National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020

May 29, 2025

Reply to Attn of: RE-25-079

Mr. JohnDavid Nance, Bureau Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: NASA White Sands Test Facility (WSTF) 400 Area Supplemental Groundwater and Soil Vapor Monitoring Report – Fourth Quarter 2024

Enclosed is the *NASA White Sands Test Facility (WSTF) 400 Area Supplemental Groundwater and Soil Vapor Monitoring Report – Fourth Quarter 2024*. This report is submitted in accordance with NMED's May 2, 2023 approval with modifications of the *400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* and the July 31, 2024 approval for rescheduling the submittal date for the fourth of four quarterly reports to May 30, 2025.

This submittal includes an Executive Summary as Enclosure 1, a printed, bound report (up to Appendix A) as Enclosure 2, and the report in PDF format and Attachment 1 (Excel input files and analytical data results) on a CD-ROM as Enclosure 3.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments concerning this submittal, please contact Antonette Doherty of my staff at 575-202-5406.

Amanda Skarsgard
Digitally signed by Amanda Skarsgard
Date: 2025.05.29 09:31:20 -06'00'

For: Timothy J. Davis
Chief, Environmental Office

3 Enclosures

cc:
Ms. Naomi Davidson
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Executive Summary

The 400 Area Supplemental Groundwater and Soil Vapor Monitoring Report – Fourth Quarter 2024 (Report) includes a summary of the fourth quarterly field groundwater and soil vapor sampling activities performed per the New Mexico Environment Department (NMED)-approved 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan (NASA, 2024a). The data collected from the four quarterly sampling events was also used in conjunction with a single dataset collected as a component of the 400 Area Closure Investigation Report (NASA, 2017) to present fourth quarter groundwater and soil vapor contaminant vertical contaminant profiles, groundwater and soil vapor concentrations over time and perform trend analyses for the 400 Area closure.

The fourth quarter field sampling event was performed between December 9 and 12, 2024. Groundwater zones were accessible for all six of the multiport soil vapor and groundwater monitoring (MSVGM) wells (400-EV-131, 400-FV-131, 400-GV-125, 400-HV-147, 400-IV-123, and 400-JV-150). For the 54 soil vapor ports within the 15 MSVGM and multiport soil vapor monitoring (MSVM) wells, four of the soil vapor ports were reported to be blocked and/or inaccessible. Of the 67 total soil vapor samples collected, 21 samples were analyzed past the standard hold time of 30 days (but within 32 days) due to California wildfires that caused widespread power outages.

Twenty-seven analytes were identified above detection limits in groundwater collected from the six MSVGM wells for the fourth quarter event. These comprised volatile organic compound(s) (VOCs) - six analytes including trichloroethene (TCE), semi-volatile organic compound(s) (SVOCs) - three analytes; N-Nitrodimethylamine (DMN), N-Nitrosodimethylamine (NDMA), and Bromacil, metals - 17 analytes, and nitrate + nitrite as nitrogen. Only NDMA was detected above White Sands Test Facility Groundwater Monitoring Plan 2024 Update cleanup levels (NASA, 2025a) within five of the MSVGM wells.

Four soil vapor analytes were identified from eight soil vapor ports above NMED residential vapor intrusion screening levels (VISLs) as identified in the latest Risk Assessment Guidance (NMED, 2022). The following analytes were detected in the listed monitoring well sampling ports:

- Chloroform (one location): 400-HV-125-130.
- Heptane (one location): 400-IV-123-80.
- Freon 11 (four locations): 400-IV-123-80; 400-SV-10-125; 400-HV-147-130; and 400-GV-125-105.
- TCE (two locations): 400-SV-10-125; and 400-IV-123-80.

Soil vapor quality control samples indicated that 67% (30 out of the 45 total analytes detected in all soil vapor samples) were also identified in field blank and/or trip blank samples. Analytical reports from the off-site soil vapor laboratory using Environmental Protection Agency Method TO-15 also showed that dilutions were necessary for soil vapor samples with elevated concentrations of Freon 11 and Freon 113. This was specific to samples that exceeded the upper calibration limits for the laboratory equipment. This resulted in the method detection limits for other constituents increasing above the corresponding NMED vapor intrusion screening level.

Using the data presented in the 2017 closure investigation report (NASA, 2017) and the four quarterly groundwater and soil vapor sampling field events, NASA presented groundwater and soil vapor contaminant vertical profiles, groundwater soil vapor concentrations over time, and a comprehensive statistical evaluation including a trend analysis within the fourth quarterly report. The results of the 400 Area monitoring program will be used to support evaluation of the vapor intrusion pathway in the 400 Area as required by NMED (NMED, 2018; Comments 17 and 18) and evaluation for potential additional investigation at the 400 Area closure and future development of a corrective measures evaluation. NASA will provide an updated risk assessment within 180 days following NMED approval of the fourth quarter report. The assessment will provide the data evaluation and subsequent human health risk and ecological health risk in accordance with the most current version of NMED Risk Assessment Guidance.

NASA Johnson Space Center White Sands Test Facility

400 Area Supplemental Groundwater and Soil Vapor Monitoring Report

Fourth Quarter 2024

May 2025

NM8800019434

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Amanda Skarsgard Digitally signed by Amanda Skarsgard Date: 2025.05.29 09:32:01 -06'00'

For: Timothy J. Davis
Chief, NASA Environmental Office

See Electronic Signature
Date

National Aeronautics and Space Administration

Johnson Space Center
White Sands Test Facility
12600 NASA Road
Las Cruces, NM 88012
www.nasa.gov/white-sands-test-facility/

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NASA Johnson Space Center White Sands Test Facility

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See Electronic Signature
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Johnson Space Center
White Sands Test Facility
12600 NASA Road
Las Cruces, NM 88012
www.nasa.gov/white-sands-test-facility/

www.nasa.gov

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List of Acronyms

µg/L	Micrograms per liter
µg/m^3	Microgram per cubic meter
bgs	Below ground surface
CoC	Chain of Custody
COPC	Contaminant of Potential Concern
DMN	N-Nitrodimethylamine
EPA	Environmental Protection Agency
Freon 11	Trichlorofluoromethane
Freon 113	1,1,2-Trichloro-1,2,2-Trifluoroethane
Freon 123a	1,2-Dichloro-1,1,2-Trifluoroethane
Freon 21	Dichlorofluoromethane
ft	Feet/foot
GMP	Groundwater Monitoring Plan
GWSVMP	Groundwater and Soil Vapor Monitoring Plan
GWSVMR	Groundwater and Soil Vapor Monitoring Report
HIS	Historical Information Summary
IR	Investigation Report
IWP	Investigation Work Plan
MDL	Method Detection Limit
mi	Miles
MSVGM	Multiport Soil Vapor and Groundwater Monitoring Well
MSVM	Multiport Soil Vapor Monitoring Well
NASA	National Aeronautics and Space Administration
ND	Non-detect
NDMA	N-Nitrosodimethylamine
NMED	New Mexico Environment Department
PCE	Tetrachloroethene
PSI	Pounds per Square Inch
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
QAR	Quality Assurance Report
RBC	Risk-Based Concentration
SL	Screening Level
SVOC	Semi-volatile Organic Compound(s)
TCE	Trichloroethene
VISL	Vapor Intrusion Screening Level
VOC	Volatile Organic Compound(s)
WSTF	White Sands Test Facility

1.0 Introduction

National Aeronautics and Space Administration (NASA) performed a field investigation of the White Sands Test Facility (WSTF) 400 Area Closure between September 2016 and September 2017. The purpose of the investigation was to determine the nature, extent, and potential migration pathways of contaminant releases at the 400 Area Closure (formerly the 400 Area hazardous waste impoundments). Investigation activities included the installation of soil borings that were subsequently converted to multiport soil vapor and groundwater monitoring (MSVGM) wells and multiport soil vapor monitoring (MSVM) wells, and the collection and analysis of soil, soil vapor, and groundwater samples. An initial comprehensive groundwater and soil vapor sampling event at the newly installed wells was performed as part of the 400 Area Closure investigation fieldwork in July and August 2017. NASA submitted the *400 Area Closure Investigation Report* (IR) to the New Mexico Environment Department (NMED) on December 27, 2017 (NASA, 2017). Following comments and revisions, NMED provided the *Approval with Modifications 400 Area Closure Investigation Report – Revision 3* on May 2, 2023 (NMED, 2023b). One of the required components of the approved IR was to provide a minimum four quarterly groundwater and soil vapor monitoring reports (GWSVMR) documenting 400 Area supplemental groundwater and soil vapor monitoring. The *Supplemental Groundwater and Soil Vapor Monitoring Report – First Quarter 2024* was provided to NMED on August 30, 2024 (NASA, 2024a), the *Supplemental Groundwater and Soil Vapor Monitoring Report – Second Quarter 2024* was provided to NMED on November 26, 2024 (NASA, 2024c), and the *Supplemental Groundwater and Soil Vapor Monitoring Report – Third Quarter 2024* was provided to NMED on February 25, 2025 (NASA, 2025a). This *400 Area Supplemental Groundwater and Soil Vapor Monitoring Report – Fourth Quarter 2024* (Report) is the fourth of four planned quarterly reports intended to satisfy this requirement.

1.1 Site Location and Description

WSTF, located in Doña Ana County, New Mexico, lies 18 miles (mi) northeast of Las Cruces, New Mexico, and 65 mi north of El Paso, Texas. Access to the site is provided via NASA Road, a paved road with a guarded security gate. NASA Road intersects U.S. Highway 70, 1 mi west of Organ, New Mexico. Figure 1.1 provides a WSTF location map. The locations of the WSTF 400 Area and 400 Area Closure are provided in Figure 1.2.

1.2 Objective and Scope

This fourth quarter 2024 report identifies the MSVGM and MSVM monitoring wells utilized for the supplemental monitoring, presents sampling methods performed at the monitoring wells and analytical requirements, and provides the groundwater and soil vapor analytical results collected for the monitoring event performed between December 9 and 12, 2024. The fourth quarterly monitoring report was also used to evaluate and present a summary of all the 400 Area Closure groundwater and soil vapor data collected to date. The data presented and summarized supplements data from the initial groundwater and soil vapor event collected during the 400 Area Closure investigation (NASA, 2017), the first quarterly monitoring event (NASA, 2024a), the second quarterly monitoring event (NASA, 2024c), and the third quarterly monitoring event (NASA, 2025a). The quarterly groundwater analysis provided includes volatile organic compounds (VOC), semi-volatile organic compounds (SVOC, including nitrosamines), inorganic compounds, and metals. The quarterly soil vapor analysis provided comprises only VOCs. The datasets will be collectively used to support evaluation of the vapor intrusion pathway in the 400 Area as required by NMED (NMED, 2018; Comments 17 and 18) and will be utilized to update the human health risk and hazard assessment at the 400 Area Closure. The data comprising the initial sampling event from 2017 and the four quarterly events will also be used to support evaluation for potential additional investigation at the 400 Area Closure and future development of a corrective measures evaluation for the 400 and 300 Area Closures contaminants of potential concern (COPCs).

Groundwater COPCs for the 400 Area Closure include un-combusted hydrazine; monomethyl hydrazine; unsymmetrical dimethylhydrazine; Aerozine 50; and nitrogen tetroxide from static hot firing rocket engine tests. In addition, trichlorofluoromethane (Freon®[1] 11), 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113), and isopropyl alcohol were used as referee propellants during early cold flow firings.

Table 1.1 provides the list of COPCs for the 400 Area including chemicals and wastes known to have been released and contaminants that were detected during previous soil, soil vapor, and groundwater investigations (NASA, 2017). The list of COPCs is comprehensive and the only screening applied was to exclude inorganic analytes considered to be non-toxic, not associated with potential contaminants, and essential nutrients (e.g., magnesium, potassium, iron, sodium, and fluoride; NASA, 2017).

2.0 Field Monitoring

2.1 Monitoring Well Network

For the fourth quarter 2024 report, NASA utilized all accessible ports and well screens in the 15 monitoring wells to collect the groundwater and soil vapor samples required to meet the objectives of the groundwater and soil vapor monitoring plan (GWSVMP; NASA, 2023a). The location of each of the wells in conjunction with other monitoring wells in the immediate vicinity of the 400 Area Closure is provided in Figure 2.1, and a summary of the design characteristics of the 15 monitoring wells and current status of the sampling screens and ports is provided in Table 2.1.

2.2 Fourth Quarter 2024 Field Sampling Event

The fourth quarter groundwater and soil vapor field sampling event was performed at the 400 Area Closure between December 9 and 12, 2024. Groundwater zones were accessible for all six of the MSVGM wells (400-EV-131, 400-FV-131, 400-GV-125, 400-HV-147, 400-IV-123, and 400-JV-150). A copy of the WSTF internal chain of custody (CoC) form for groundwater samples collected during the sampling event is provided in Appendix A.

Of the 54 soil vapor ports within the well network scheduled for sampling, four were reported to be blocked or inaccessible. These comprised soil vapor ports in well 400-FV-131 (at 104 and 130 feet [ft] below ground surface [bgs]), well 400-JV-150 (at 145 ft bgs), and well 400-KV-142 (at 137 ft bgs). A copy of the WSTF internal CoC form for soil vapor samples collected during the sampling event is provided in Appendix A.

2.2.1 Groundwater Field and Sampling Activities

Groundwater samples from the 400 Area MSVGM wells were all collected on December 11, 2024 using established site-specific procedures for low-flow sampling and for traditional purge and sample methods. Sampling was performed in accordance with the approved *Groundwater Monitoring Plan Update for 2024* (NMED, 2024; NASA, 2025b) at wells 400-EV-131, 400-FV-131, 400-GV-125, 400-HV-147, 400-IV-123, and 400-JV-150 (Table 2.1, Figure 2.1).

Groundwater field and sampling activities were recorded in the appropriate field logbook and internal CoC (Appendix A). Prior to the collection of the groundwater samples, each well was purged of three well volumes and/or until dry using a dedicated low-flow bladder pump. Each pump was composed of

[1] Freon is a registered trademark of The Chemours Company CF, LLC.

polyvinyl chloride (PVC) with Teflon®[2] bladders and has a Teflon-lined ¼-inch outer diameter air supply and groundwater sample tube. The water level was allowed to recover in each MSVGM well before groundwater samples were collected. The groundwater samples were then dispensed into laboratory-provided sample containers, which were uniquely labeled and placed in cold storage. Groundwater samples were preserved in accordance with NASA's contracted off-site analytical laboratories requirements and shipped for analysis.

Groundwater samples collected from the six MSVGM wells were analyzed for the COPCs listed in the original NMED-approved 400 Area Closure investigation work plan (IWP) (NASA, 2011a). Appendix B provides the chemical program quality assurance report (QAR) for groundwater sampling.

Groundwater samples were collected for analysis of:

- VOCs by SW-846 Method 8260C.
- SVOCs by SW-846 Method 8270D.
- Nitrosamines by EPA Method 607.
- Several metals by various SW-846 methods in accordance with the NMED-approved Groundwater Monitoring Plan (GMP; NMED 2024; NASA, 2025b).

2.2.2 Soil Vapor Field and Sampling Activities

Soil vapor samples from 400 Area MSVM and MSVGM wells were collected between December 9 and December 12, 2024. A total of 50 of the 54 soil vapor ports in the 15 MSVM and MSVGM wells were utilized for the monitoring event. Of the four blocked ports, two of the ports at 400-FV-131 (at 130 ft bgs) and 400-JV-150 (at 145 ft bgs) were located beneath the potentiometric surface at their respective locations, and the inability to sample the soil vapor implants was attributed to the groundwater table rising above the implant depths. For both MSVGM well locations, the aquifer was semi-confined, and this layer was breached during drilling. Underlying pressurized groundwater continued to rise gradually until equilibrium was reached, which resulted in submergence of the deepest soil vapor implant at both MSVGM well locations.

Soil vapor sampling at each MSVM or MSVGM well was performed in accordance with established WSTF procedures. Each vapor port at surface was affixed with an engraved aluminum tag to ensure proper port identification. The soil vapor sampling sequence began with the shallowest port and continued sequentially until the deepest port had been sampled. The sampling ports and stainless steel tubing were purged of entrained soil vapor with a non-dedicated surface vacuum pump to evacuate stagnant air below the sample collection fitting. Each port was purged for a minimum of five minutes per zone to evacuate at least three volumes of the ¼-inch tubing and soil vapor implant. Carbon dioxide, oxygen, and methane indicator parameters were monitored during purging to ensure stabilization prior to sampling and recorded in the field logbook (Appendix A).

Soil vapor samples were collected in 1-liter stainless steel SUMMA canisters. The initial pressure for all canisters verified by the analytical laboratory was -14.3 pounds per square inch (psi). The final canister pressure was noted in the field logbook (Appendix A) and external CoC form. Soil vapor samples were shipped to the laboratory for analysis for VOCs using Environmental Protection Agency (EPA) Method TO-15. Soil vapor chemical samples were collected to evaluate as many COPCs as possible from the list

[2] Teflon is a registered trademark of The Chemours Company FC, LLC.

originally provided in the NMED-approved 400 Area Closure IWP (NASA, 2011a). Appendix B provides the chemical program QAR for soil vapor sampling.

3.0 Quality Assurance/Quality Control

A total of 13 quality control (QC) samples were collected for groundwater as follows:

- Duplicate samples (6): 400-FV-131 (2412110936C for Method 8260, 2412110939C for Method 607, and 2412110941C for Metals) and 400-GV-125 (2412111111C for Method 8260, 2412111114C for Method 607, and 2412111116C for Metals).
- Field blanks (6): 400-EV-131 (2412110946A for Method 8260), 400-FV-131 (2412110937C for Method 8260), 400-GV-125 (2412111112C for Method 8260), 400-HV-147 (2412111031A for Method 8260), 400-IV-123 (2412111351A for Method 8260), and 400-JV-131 (2412111237C for Method 8260).
- Trip blanks (1): 400-FV-131 (2412110730C for Method 8260).

The chemical program QAR for groundwater sampling is provided in Appendix B.

A total of 17 QC samples were collected for soil vapor as follows:

- Duplicate samples (6) all for Method TO-15: 400-EV-131-100 (2412111319), 400-GV-125-10 (2412110946), 400-IV-123-10 (2412111056), 400-LV-125-50 (2412101112), 400-SV-07-10 (2412120816), and 400-SV-10-100 (2412091343).
- Field blanks (8) all for Method TO-15: 400-HV-147-95 (2412111410), 400-JV-150-100 (2412110917), 400-KV-142-100 (2412101028), 400-SV-02-50 (2412101404), 400-SV-03-92 (2412120920), 400-SV-07-100 (2412120836), 400-SV-09-10 (2412091406), and 400-SV-15-10 (2412101316).
- Trip blanks (3) all for Method TO-15: 400-HV-147-12 (2412111350), 400-JV-150-12.5 (2412110900), and 400-SV-03-10 (2412120900).

The chemical program QAR for soil vapor sampling is provided in Appendix B.

4.0 Groundwater and Soil Vapor Analytical Results

The results section includes any issues encountered, quality parameter measurements, analytical results, a comparison of analytical results to screening and/or cleanup levels. A total of four quarterly groundwater and soil vapor sampling field events have now been performed in February 2024 (first quarter), May 2024 (second quarter), August 2024 (third quarter), and December 2024 (fourth quarter).

In addition to the information summarized for the fourth quarterly monitoring event, contaminant vertical profiles over time and a comprehensive statistical evaluation, including a trend analysis, are included in the fourth quarterly report. Analytical results from a total of five sets of combined groundwater and soil vapor are now available for groundwater and the majority of soil vapor port locations (the 400 Area Closure IR [NASA, 2017] combined with the four quarterly 2024 reports [NASA, 2024a, 2024c, 2025a]).

4.1 Fourth Quarter Groundwater Results

4.1.1 Issues Encountered

No issues were encountered during groundwater sampling for any of the six available MSVGM wells during the fourth quarter 2024 event.

4.1.2 Groundwater Quality Parameter and Depth Measurements

As part of groundwater sample collection for laboratory chemical analyses, four water quality field parameters (temperature; specific conductivity; pH; and turbidity) were measured in each MSVGM well during the purging process and prior to sampling. This was to ensure sufficient purging had been performed and to demonstrate that all groundwater within the well and gravel pack surrounding the screened zone had been removed. Table 4.1 provides the initial groundwater quality parameter measurements for MSVGM wells. The groundwater quality parameters and other sampling records including field notes/internal CoC form are provided in Appendix A. The groundwater potentiometric surface based upon the fourth quarter groundwater elevations is provided in Figure 4.1, with groundwater flow from east-northeast to west-southwest at a gradient of approximately 0.05 ft/ft.

4.1.3 Groundwater Chemical Analytical Results

The electronic analytical results for groundwater (Excel spreadsheet) are provided in Attachment 1 to this report. The laboratory analytical reports for fourth quarter groundwater samples including external CoCs are provided in Appendix C. A summary of the groundwater analytical results above laboratory detection limits is provided in Table 4.2. Twenty-eight analytes were identified above detection limits in groundwater samples collected from the MSVGM wells:

- VOCs (7 constituents): Freon 113; 1,2-dichloro-1,1,2-trifluoroethane (Freon 123a); chloroform; Freon 21; trichloroethene (TCE); Freon 11; and toluene.
- SVOC Nitrosamines (2 constituents): N-Nitrodimethylamine (DMN) and N-Nitrosodimethylamine (NDMA).
- SVOC bromacil (1 constituent): bromacil.
- Metals (18 constituents): antimony; arsenic; barium; boron; calcium; chromium; cobalt; magnesium; manganese; molybdenum; nickel; potassium; selenium; sodium; strontium; thallium; vanadium; and zinc.

A summary of 400 Area groundwater analytical results above WSTF GMP cleanup levels is provided in Table 4.3. The only analyte with detections above the cleanup level was NDMA within five of the six wells: 400-EV-131; 400-FV-131; 400-GV-125; 400-HV-147; and 400-JV-150 (Figure 4.2).

4.1.4 Groundwater Statistical Trends

For this quarterly report, statistical evaluations were performed for constituents above WSTF cleanup levels (NDMA) as well as TCE, Freon 11, and Freon 113. With the original 400 Area 2017 sampling event presented in the IR and the four quarterly sampling events, the sample size was five. Table 4.4 summarizes results. TCE and Freon 11 showed no statistically significant trends (Appendix D). Well 400-FV-131 showed significantly decreasing trends for both Freon 113 and NDMA. Well 400-HV-147 showed an increasing trend for NDMA. All other wells showed no statistically significant trends (Appendix D; Table 4.4). 400-FV-131 is within the 400 Area arroyo downgradient of the closures, and well 400-HV-147 is located within the western toe of the west 400 Area impoundment.

4.2 Fourth Quarter Soil Vapor Results

4.2.1 Issues Encountered

Fourth quarter soil vapor samples were attempted at 54 available soil vapor ports in the 15 MSVGM and MSVM monitoring wells. Soil vapor samples were collected on the same day as groundwater samples from MSVGM wells, and all MSVGM wells were sampled on the same day (December 11, 2024). All soil vapor samples were collected on schedule between December 9 and 12, 2024 as required by the GWSVMP (NASA, 2023). Four blocked soil vapor ports were identified at 400-FV-131-104, 400-FV-131-130, 400-JV-150-145, and 400-KV-142-137 and were not sampled during the fourth quarter event.

4.2.2 Soil Vapor Quality Parameter Measurements

Soil vapor quality parameters were obtained from each sampling port through field measurements. Quality parameters and other specific sampling-related details associated with each monitoring well sampling event were recorded by technicians in the field sampling record. Table 4.5 provides a summary of the soil vapor quality parameter measurements prior to sampling for MSVGM and MSVM wells. Field notes detailing the soil vapor quality parameters and other sampling records including field notes/internal CoC forms are provided in Appendix A.

4.2.3 Soil Vapor Chemical Analytical Results

The electronic analytical results for soil vapor (Excel spreadsheet) are provided in Attachment 1 to this report. The laboratory analytical reports for soil vapor samples including external CoCs are provided in Appendix C. Of the 67 total soil vapor samples collected, 21 samples were analyzed past the standard hold time of 30 days (but within 32 days) due to California wildfires that caused widespread power outages. Soil vapor samples were analyzed for VOCs using EPA Method TO-15. Table 4.6 provides all analytes that were tested. Twenty-three of the analytes analyzed by Method TO-15 were COPCs defined for the 400 Area closure investigation (NASA, 2011a) and are identified with an asterisk in Table 4.6.

White Sands Test Facility Resource Conservation and Recovery Act Permit, Part 4, Investigation and Sampling Methods and Procedures, Section 4.5, Chemical Analyses, states,

> The detection and reporting limits for each method shall be less than applicable background, screening, and regulatory cleanup levels. The preferred method reporting (practical quantitation) limits are a maximum of 20 percent of the cleanup, screening, or background levels. Analyses conducted with detection limits that are greater than applicable background, screening, or regulatory cleanup levels shall be considered data quality exceptions, and the reasons for the elevated detection limits shall be reported to the NMED (NMED, 2023a).

An evaluation of all soil vapor analytical datasets collected during 400 Area monitoring with respect to the impact of sample dilution are provided in this fourth quarter report in Section 4.2.4.

The soil vapor analyte detections and concentration ranges for the fourth quarter are summarized in Table 4.6. Primary observations from the tabulated data are provided below:

- A total of 65 analytes were tested using EPA Method TO-15.
- 45 analytes were detected above laboratory detection levels for either soil vapor within monitoring well sampling zones or within field blank and trip blank samples.

- 20 analytes were reported as non-detect (ND) within both monitoring well sampling zones and field blank/trip blank samples.
- 15 analytes were detected only in monitoring well sampling zones.
- 30 analytes were detected in both monitoring well sampling zones and field blank/trip blank samples (67% of the 45 detected analytes within all samples).
- No analyte was detected only in field blank/trip blank samples.
- 28 analytes' detection limits were higher than the regulatory screening level (RSL) due to dilution (bolded on Table 4.6).

Analytical reports from the off-site soil vapor laboratory (ALS Laboratory) indicate that dilutions were necessary for soil vapor samples with elevated concentrations of Freon 11 and Freon 113, which exceeded the upper calibration limits for the laboratory analytical equipment. Dilution was the total number of unit volumes in which the soil vapor was dissolved, calculated by dividing unit volume by the volume of soil vapor analyzed (liters) and multiplying by the container dilution factor. Detection limits for each VOC target analyte must be increased in direct proportion to the dilution factor. The laboratory reported soil vapor dilutions for the fourth quarter from 2.5 (400-H-147-12, 400-JV-150-12.5, and 400-SV-03-10) for the lowest concentration sample up to 10,900 for the highest concentration sample (400-IV-123-80). For the samples with large dilutions and high concentrations reported for Freon 11 and Freon 113, elevated method detection limits (MDL) for other COPCs in the same samples potentially increase to above the corresponding NMED vapor intrusion screening level (VISL).

Based on consultations with the contracted analytical laboratory regarding EPA Method TO-15 sample dilution, NASA understands that there was no practical way to mitigate sample dilution that would remedy the effect on MDL for other COPCs. Each Method TO-15 soil vapor sample was analyzed collectively for the suite of target COPC. If the concentration of a single compound or multiple compounds in any sample exceeds the preliminary calibration range, the sample must be diluted for reanalysis at an optimum volume. The standard laboratory practice is to run at the greatest volume possible based on the matrix sample. There was no option other than multiple injections to analyze the largest volume possible for samples containing high concentrations of specific analytes (in this case Freon 11 and Freon 113). All steps performed in the dilution and analysis of field sample canisters were included in the MDL procedure. It was not possible to sample for specific soil vapor COPCs using Method TO-15 at lower concentrations before diluting the sample. NMED Guidance (Comment 4b.; NASA, 2021) indicated that analyses conducted with detection limits that are greater than applicable background screening and regulatory cleanup levels should be considered data quality exceptions and the reasons reported. Furthermore, when detection limits exceed screening levels (VISLs and/or risk-based concentrations [RBCs]), NMED stated that the resulting data cannot be used for statistical analysis or risk assessment. NASA acknowledged this issue (response to Comment 4b.; NASA, 2021), and stated that constituents exhibiting detection limits greater than screening or regulatory cleanup levels will be identified and fully discussed in future reports. The intent of not using data with MDLs larger than screening levels (SLs) for statistical analysis or risk assessment is to ensure that decisions regarding cleanup and human health and the environment can be made as reliable and accurate as possible. If analytes were detected, even if the detection limits were higher than SLs, the detections still represent real data, showing that the analyte is present. This logically could be used for decision-making, including statistical analyses and risk assessment. However, if the MDLs are larger than the SLs and the analyte was not detected, then decisions using this data could not be easily made, since it cannot be determined if the analyte is present at concentrations lower than SLs. Therefore, the non-detect data was not used for statistical analyses.

The term "non-detect" was not appropriate for specific COPCs for diluted samples where MDL were above the respective screening levels. The reporting strategy used in Table 4.6 identifies the modified COPC MDL due to dilution and compares it to the corresponding screening level. Bold font indicates

where the MDL exceeds the VISL (NMED, 2022)/RSL (EPA, 2024)/RBC (NASA, 2024b). Of the 65 analytes detected and reported as non-detect within the EPA Method TO-15 suite, the MDL increased above the corresponding regulatory screening level (either NMED VISL, EPA RSL, or WSTF RBC) for 28 of the analytes identified in bold in Table 4.6.

A summary of 400 Area soil vapor analytical results above NMED residential VISLs is provided in Table 4.7 and Figure 4.3. A total of eight analytical results for four analytes (chloroform, heptane, Freon 11, and TCE) exceeded the NMED VISLs and are described below.

Detected in monitoring well vapor sampling ports:

- Chloroform (one location): 400-HV-125-130.
- Heptane (one location): 400-IV-123-80.
- Freon 11 (four locations): 400-IV-123-80; 400-SV-10-125; 400-HV-125-130; and 400-GV-125-105.
- TCE (two locations): 400-SV-10-125; and 400-IV-123-80.

Detected in QC samples (field blanks):

- None for this quarter.

All analytical results that exceeded the NMED VISLs were below the equivalent depth sensitive WSTF RBC taken from the most recently approved version of the annual WSTF RBC report (NASA, 2024b).

4.2.4 Overall Dilution Effects

For this project, data used includes the original 2017 400 Area investigation soil vapor data and the four quarterly 400 Area soil vapor data. As described in Section 4.2.3, the need to dilute samples due to high concentrations of some volatile constituents (Freon 11 and Freon 113), resulted in high detection limits for other volatile constituents. Soil vapor detection limits exceeded VISLs/RSLs for 32 of the 64 analytes. Table 4.8 shows a summary of soil vapor samples where this occurred. For samples where the constituent was still detected even with a detection limit higher than regulatory cleanup levels, these data will be used for statistical evaluations and health risk. However, when the constituent was not detected, the data with detection limits higher than cleanup levels will not be used for statistical evaluations or in health risk assessments in accordance with NMED Guidance (NMED, 2021).

4.2.5 Soil Vapor Statistical Trends

For this quarterly report, statistical evaluations were performed using all four quarterly sampling events and the original 400 Area 2017 IR data for a sample size of five. If a constituent was not detected in a sample where high dilutions caused detection limits to be larger than VISLs/RSLs, that sample was not used for statistical trends in accordance with NMED guidance. If the constituent was detected, then the sample was used. Constituents with less than three detections were also not used so potential trends in data can be seen, not trends in detection limits. Trends were attempted for any constituent that had any detections larger than the VISL/RSL and Freon 113, since Freon 113 was present in all locations and depths (Appendix D).

Over the four quarters of sampling, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,4-dioxane, 2-propanol, alpha-chlorotoluene, chloroform, ethylbenzene, Freon 11, heptane, and TCE were detected at concentrations greater than VISLs/RSLs. For most sampling locations where a VISL/RSL was exceeded, trends could not be determined due to too few detections at other sampling times (IR data or for other

quarters). Trends could not be conducted for 1,3,5-trimethylbenzene, 1,4-dioxane, alpha-chlorotoluene, ethylbenzene, and heptane. Table 4.9 provides a summary of soil vapor trends. Trends for TCE, Freon 11, Freon 113, 1,2,4-trimethylbenzene, 2-propanol, benzene, and chloroform are provided in Appendix D.

All analytes showed insufficient statistical evidence of a significant trend except Freon 11, Freon 113, and TCE (Table 4.9).

- Decreasing Freon 11: 400-GV-125 at 120 ft; and 400-IV-123 at 80 ft.
- Decreasing Freon 113: 400-HV-147 at 45 ft; 400-JV-150 at 12.5 ft and 100 ft; 400-SV-07 at 100 ft.
- Increasing Freon 113: 400-LV-125 at 50 ft.
- Decreasing TCE: 400-JV-150 at 12.5 and 100 ft; 400-KV-142 at 12.5 and 50 ft; 400-SV-02 at 50 ft; and 400-SV-05 at 50 ft.

4.3 Evaluation of Groundwater and Soil Vapor Results

4.3.1 Fourth Quarter Soil Vapor Concentration Maps

Soil vapor concentrations maps for three of the primary COPCs detected in soil vapor at the 400 Area closure for the fourth quarter sampling event are provided for Freon 11 (Figure 4.4), Freon 113 (Figure 4.5), and TCE (Figure 4.6). Selection of the three COPCs was based on consideration of a combination of factors including high frequency of occurrence, concentration, recognition as a common contaminant based on 400 Area contaminant release history, and an occurrence in both soil vapor and groundwater. The soil vapor maps for the fourth quarter sampling event present the highest concentration detected for each COPC at a single location, taking into consideration all soil vapor ports within a single well.

4.3.2 Fourth Quarter Groundwater and Soil Vapor Vertical Profiles

A map delineating a line of cross-section from east-northeast (A) to west-southwest (A') across the 400 Area closure is provided in Figure 4.7. This line of cross-section defines the wells that were incorporated into the vertical profile used to present contaminant distribution in the vadose zone and underlying andesite bedrock. The vertical profile is tailored to include the wells that penetrate the two closure caps and provide as much information as possible in the area of primary interest directly below the individual closure cells.

Vertical profiles for the three primary COPCs detected in both groundwater and soil vapor at the 400 Area closure for the fourth quarter sampling event are provided in Figure 4.8 (Freon 11), Figure 4.9 (Freon 113), and Figure 4.10 (TCE). The figures present the COPC concentrations detected for each soil vapor port within a single well for the fourth quarter sampling event. A strong relationship was visible that shows increasing vapor concentrations with depth and proximity to groundwater near the alluvial-bedrock interface. A comparison of soil vapor concentrations to depth-sensitive RBCs (NASA, 2024b) can be made on the vertical profiles. No exceedances of soil vapor RBCs were reported during the fourth quarter sampling event for Freon 11, Freon 113, or TCE.

Vertical profiles for Freon 11, Freon 113, and TCE for the first (February 2024), second (May 2024), and third (August 2024) quarters are included in Appendix E. The profiles from the first three quarters visually support the trends described above for the fourth quarter.

4.3.3 Groundwater and Soil Vapor Concentrations Over Time

The primary COPC of concern in groundwater at the 400 Area is NDMA, which represents the only analyte with consistent detections above the cleanup levels since the inception of sampling. NDMA is currently identified within five of the six wells for the fourth quarter: 400-EV-131; 400-FV-131; 400-GV-125; 400-HV-147; and 400-JV-150 (Table 4.3). No comparison can be made to soil vapor due to the semi-volatile nature of NDMA and its absence from the suite of analytes in EPA Method TO-15. Well 400-HV-147 is associated with NDMA groundwater concentrations one to two orders higher in magnitude than other wells in the monitoring area (Figure 4.2). The location of the well screen directly below the toe of the downgradient 400 Area closure cell and corresponding depression in the alluvial-bedrock interface may potentially be associated with the elevated NDMA concentration.

Groundwater and soil vapor concentrations for three of the primary COPCs detected in both groundwater and soil vapor over time (Freon 11, Freon 113, and TCE) are presented using graphs for the six MSVGM wells at the 400 Area closure (400-EV-131, 400-FV-131, 400-GV-125, 400-HV-147, 400-IV-123, and 400-JV-150). Concentrations include the data collected as a component of the *NASA WSTF 400 Area Closure Investigation Report* (NASA, 2017) in conjunction with the data from the four quarterly sampling events performed in February 2024, May 2024, August 2024, December 2024. Individual graphs that track concentrations over time for groundwater and all individual soil vapor ports within a well are presented as follows:

- Freon 11 for wells: 400-EV-131 (Figure 4.11); 400-FV-131 (Figure 4.12); 400-GV-125 (Figure 4.13); 400-HV-147 (Figure 4.14); 400-IV-123 (Figure 4.15); and 400-JV-150 (Figure 4.16).
- Freon 113 for wells: 400-EV-131 (Figure 4.17); 400-FV-131 (Figure 4.18); 400-GV-125 (Figure 4.19); 400-HV-147 (Figure 4.20); 400-IV-123 (Figure 4.21); and 400-JV-150 (Figure 4.22).
- TCE for wells: 400-EV-131 (Figure 4.23); 400-FV-131 (Figure 4.24); 400-GV-125 (Figure 4.25); 400-HV-147 (Figure 4.26); 400-IV-123 (Figure 4.27); and 400-JV-150 (Figure 4.28).

An overall trend of increasing Freon 11, Freon 113, and TCE soil vapor concentration with depth and proximity to the water table was well represented for each of the six MSVGM wells. No consistent trend of declining COPC concentrations over time within groundwater or soil vapor ports was apparent for any of the 400 Area closure wells, with examples of both increasing and decreasing trends over time. Overall, groundwater and soil vapor contaminant concentrations for Freon 11, Freon 113, and TCE within a single well remain consistent and within the same order of magnitude. The absence of a distinct decrease in soil vapor COPC concentrations over time was hypothesized to be the result of 1) the relatively low concentrations of soil vapor VOCs in groundwater and soil vapor and 2) the absence of any venting mechanism for residual contaminants located below the impermeable 400 Area Closure caps.

5.0 Conclusions

Four quarterly groundwater and soil vapor sampling field events were performed as part of the 400 Area Closure monitoring program in February 2024 (first quarter, submitted August 30 [NASA, 2024a]), May 2024 (second quarter, submitted November 26 [NASA, 2024c]), August 2024 (third quarter, submitted February 25 [NASA, 2025a]), and December 2024 (fourth quarter, this report). For the fourth quarter report, NASA presented groundwater and soil vapor contaminant vertical profiles, groundwater and soil vapor concentrations over time, and provided a comprehensive statistical evaluation including a trend analysis as components for this report using five sets of analytical results that were available (the 2017 closure investigation report combined with the four quarterly reports). The results of the 400 Area

groundwater and soil vapor monitoring program will be used to support evaluation of the vapor intrusion pathway in the 400 Area as required by NMED (NMED, 2018; Comments 17 and 18) and to support evaluation for potential additional investigation at the 400 Area closure and future development of a corrective measures evaluation.

NASA will provide an updated risk assessment report for NMED review within 180 days following NMED approval of the fourth quarter report. The assessment will provide the data evaluation and subsequent human health risk and ecological health risk in accordance with the most current version of NMED Risk Assessment Guidance.

6.0 References

EPA. (2024, November). Regional Screening Level (RSL) Summary Table. Retrieved from https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

NASA Johnson Space Center White Sands Test Facility. (2011, June 27). *NASA White Sands Test Facility (WSTF) 400 Area Closure Investigation Work Plan, 400 Area Historical Information Summary (HIS), 400 Aspirator Discharge Pipes HIS, and 500 Fuel Storage Area HIS*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2017, December 27). *NASA WSTF 400 Area Closure Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021, July 27). *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023, July 11). *Response to Approval with Modifications 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2024a, August 30). *NASA White Sands Test Facility (WSTF) 400 Area Supplemental Groundwater and Soil Vapor Monitoring Report – First Quarter 2024.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2024b, September 27). *NASA White Sands Test Facility (WSTF) 2024 Soil Vapor Risk Based Concentrations (RBCs) Memorandum.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2024c, November 26). *NASA White Sands Test Facility (WSTF) 400 Area Supplemental Groundwater and Soil Vapor Monitoring Report – Second Quarter 2024*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2025a, February 25). *NASA White Sands Test Facility (WSTF) 400 Area Supplemental Groundwater and Soil Vapor Monitoring Report – Third Quarter 2024*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2025b, February 28). *Response to Approval with Modifications of NASA WSTF Groundwater Monitoring Plan Update for 2024*. Las Cruces, NM.

NMED Hazardous Waste Bureau. (2018, August 14). *Disapproval 400 Area Closure Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021, March 15). *Disapproval 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022, November). *Risk Assessment Guidance for Site Investigations and Remediation Volume I Soil Screening Guidance for Human Health Risk Assessments*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023a, March 28). *RCRA Permit EPA ID # NM8800019434*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023b, May 2). *Approval with Modifications 400 Area Closure Investigation Report - Revision 3*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2024, December 30). *Approval with Modifications NASA WSTF Groundwater Monitoring Report 2024 Update*. Santa Fe, NM.

Figures

Figure 1.1 **WSTF Location Map**

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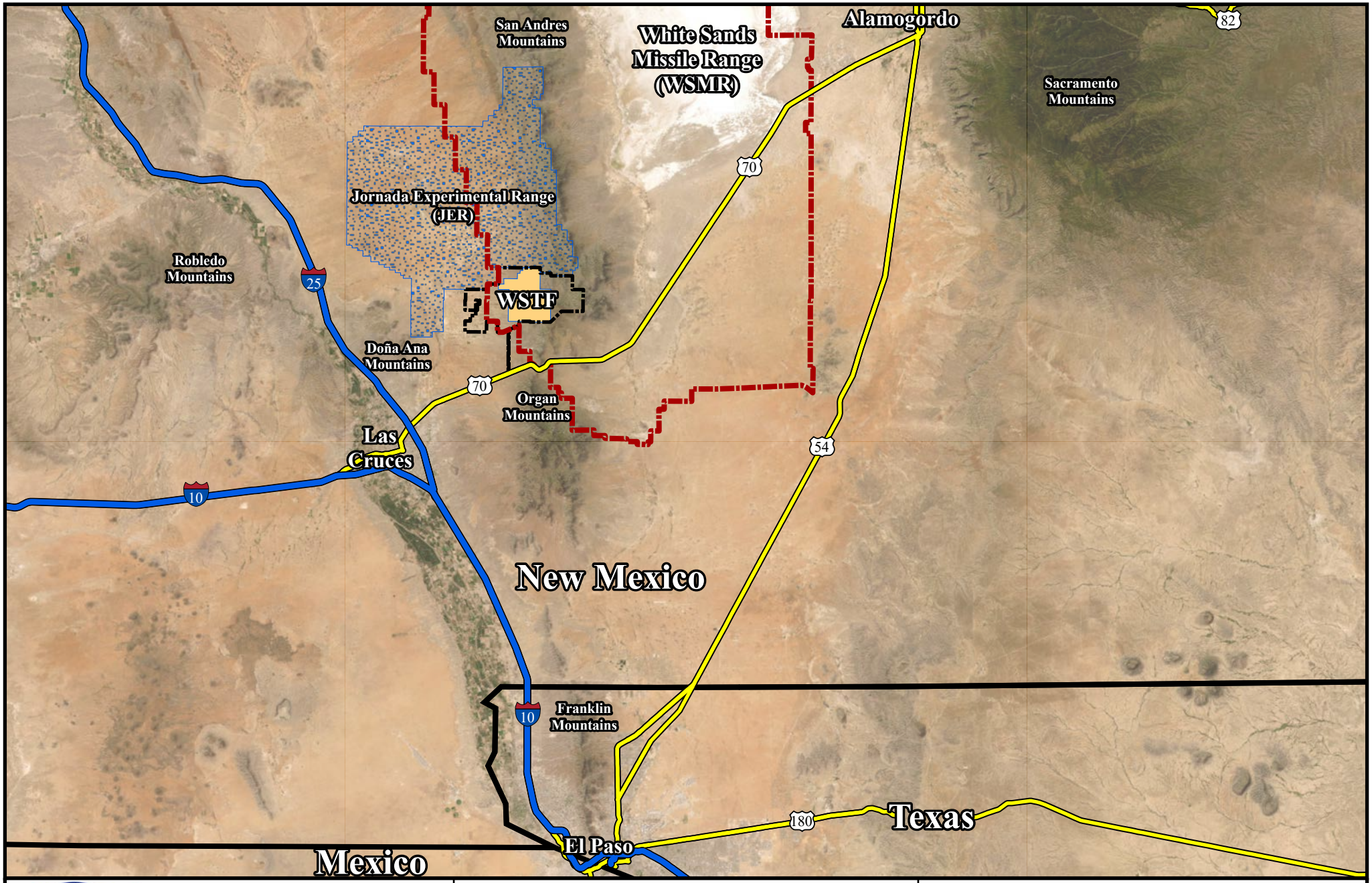

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1:750,000

May 2025

0 6 12 24 Miles

- WSMR Boundary
- WSTF Boundary
- Jornada Experimental Range (JER)
- WSTF Industrial Area

WSTF Location Map

NASA Johnson Space Center
White Sands Test Facility
Las Cruces, New Mexico

Coordinate System:
NAD 1983 StatePlane New Mexico Central FIPS 3002 Feet

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Figure 1.2 White Sands Test Facility Industrial Area

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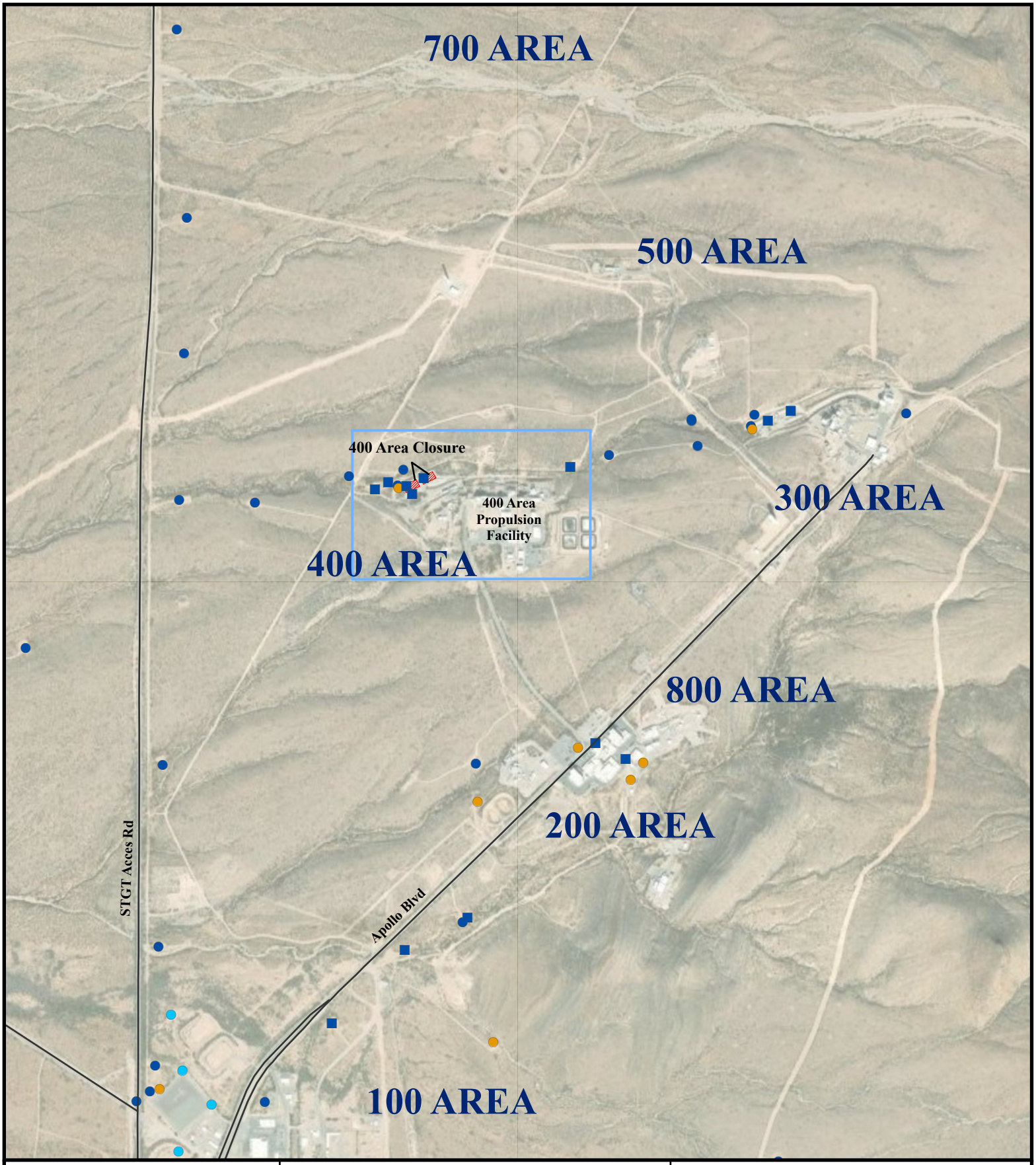

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May 2025

0 1,000 2,000 Feet

- Multiport Well
- Conventional Well
- Perched Well
- MSVGM Well
- Investigation Area Shown in Figure 2.1
- 400 Area Closure

White Sands Test Facility Industrial Area

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

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Figure 2.1 **400 Area Monitoring Well Locations**

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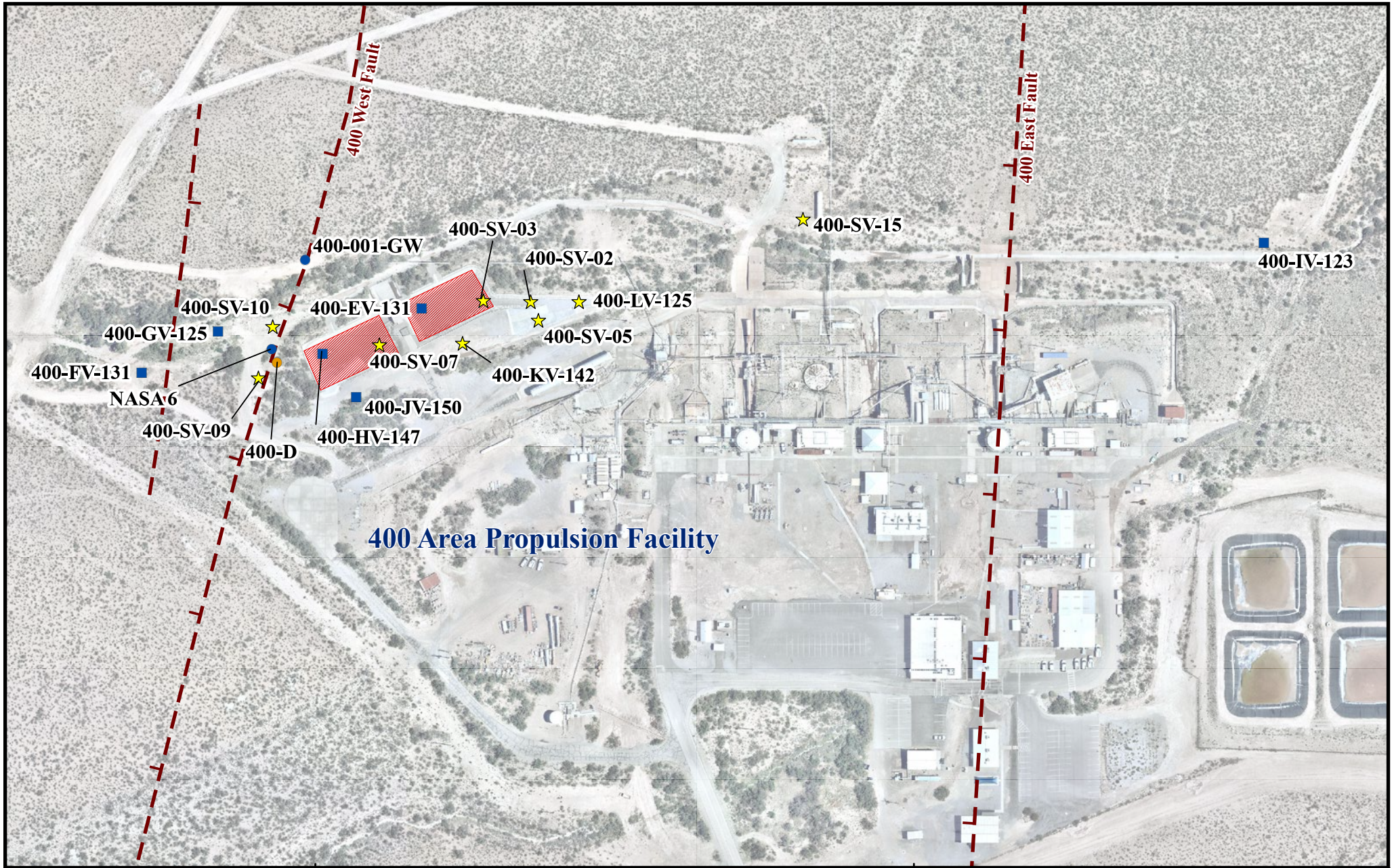

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May 2025

0 60 120 240 360 Feet

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- Inferred Fault with Displacement
- 400 Area Closure

400 Area Monitoring Well Location Map

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

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Figure 4.1 **400 Area Potentiometric Surface Map**

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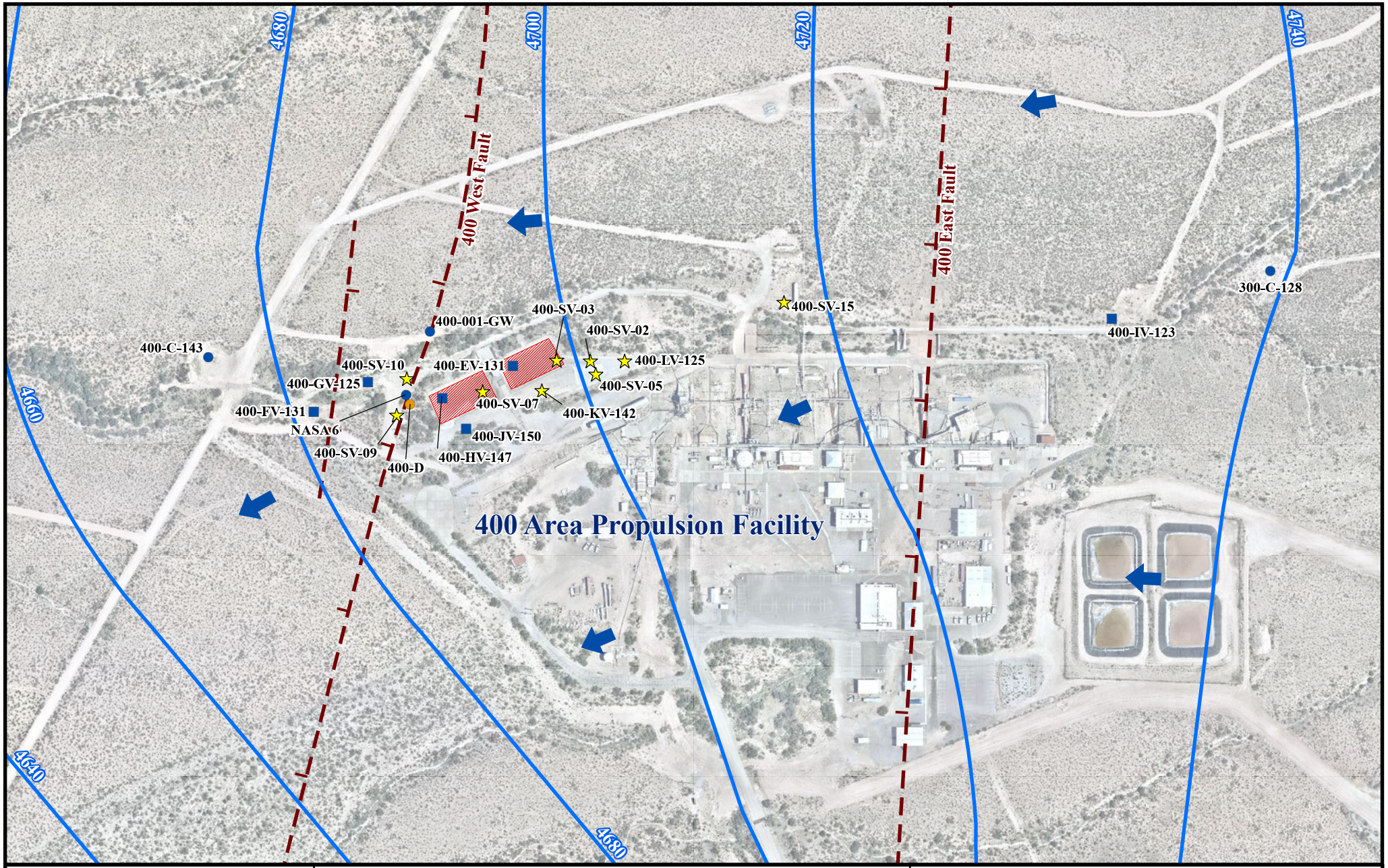

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May 2025

0 75 150 300 450 Feet

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- General Flow Direction
- Inferred Fault with Displacement
- 400 Area Closure
- Groundwater Elevation 20 Feet Contour (2024)

400 Area Potentiometric Surface Map

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

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Figure 4.2 400 Area Groundwater Analytical Cleanup Level Exceedances

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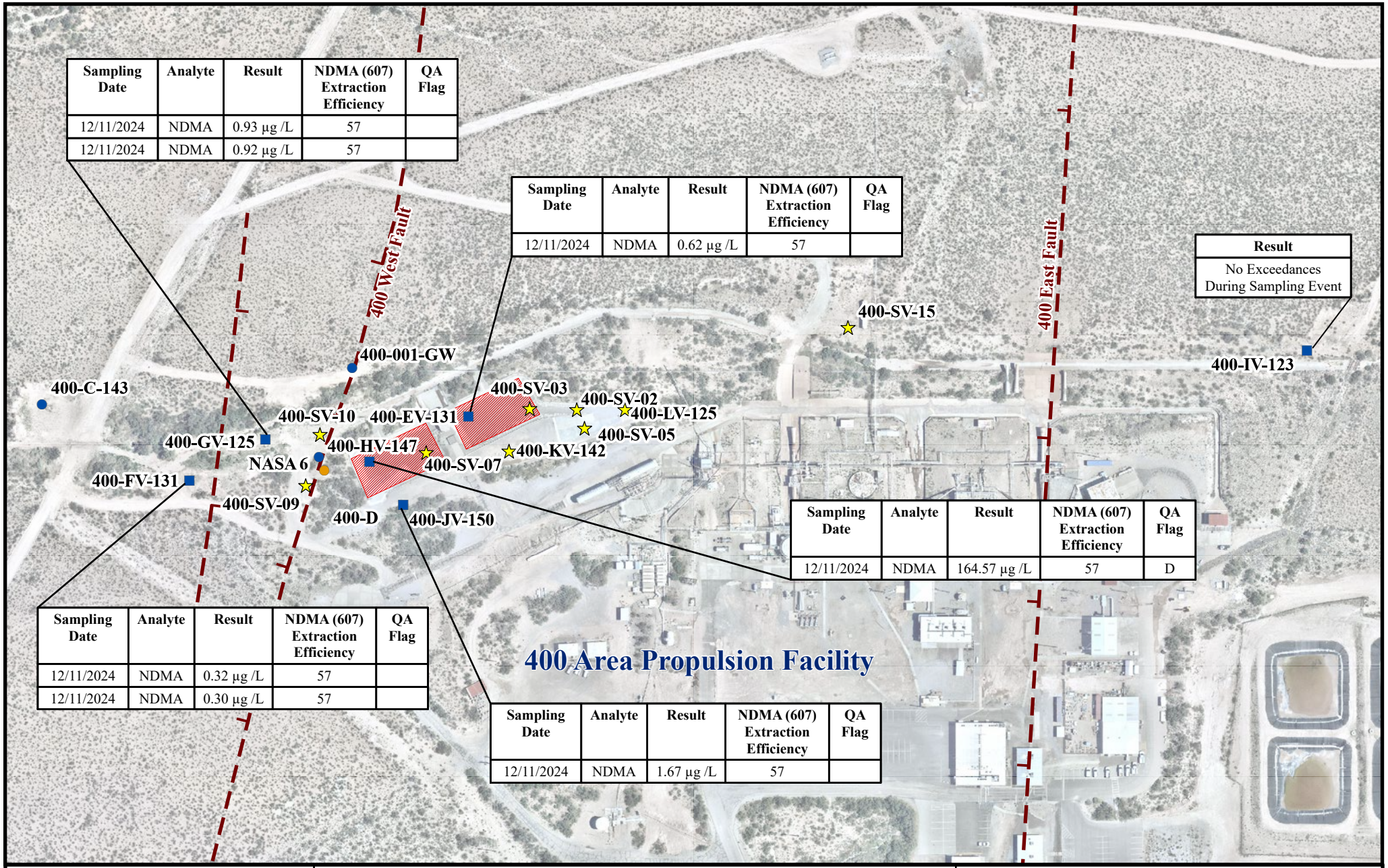

Sampling Date	Analyte	Result	NDMA (607) Extraction Efficiency	QA Flag
12/11/2024	NDMA	0.93 µg /L	57	
12/11/2024	NDMA	0.92 µg /L	57	

Sampling Date	Analyte	Result	NDMA (607) Extraction Efficiency	QA Flag
12/11/2024	NDMA	0.62 µg /L	57	

Result
No Exceedances During Sampling Event

Sampling Date	Analyte	Result	NDMA (607) Extraction Efficiency	QA Flag
12/11/2024	NDMA	164.57 µg /L	57	D

Sampling Date	Analyte	Result	NDMA (607) Extraction Efficiency	QA Flag
12/11/2024	NDMA	0.32 µg /L	57	
12/11/2024	NDMA	0.30 µg /L	57	

Sampling Date	Analyte	Result	NDMA (607) Extraction Efficiency	QA Flag
12/11/2024	NDMA	1.67 µg /L	57	

N
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May 2025

0 50 100 200 300 Feet

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- 400 Area Closure
- Inferred Fault with Displacement

NDMA Cleanup Level = 0.00491 ug/L

Notes:
D = The reported result is from a dilution.

Fourth Quarter - Groundwater Analytical Cleanup Level Exceedances

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

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Figure 4.3 400 Area Soil Vapor Analytical NMED Residential VISL Exceedances

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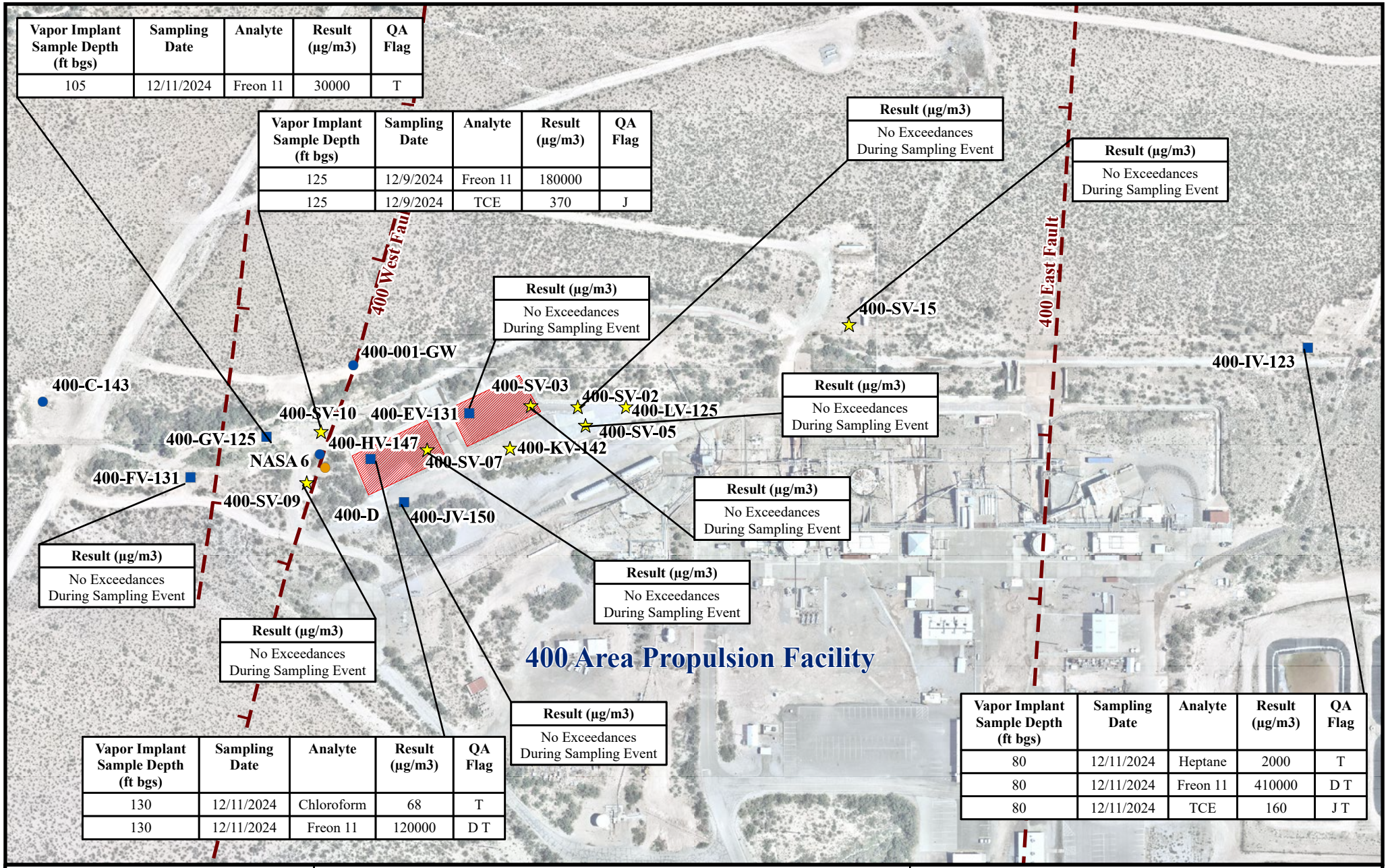

Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Result (µg/m3)	QA Flag
105	12/11/2024	Freon 11	30000	T

Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Result (µg/m3)	QA Flag
125	12/9/2024	Freon 11	180000	
125	12/9/2024	TCE	370	J

Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Result (µg/m3)	QA Flag
130	12/11/2024	Chloroform	68	T
130	12/11/2024	Freon 11	120000	D T

Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Result (µg/m3)	QA Flag
80	12/11/2024	Heptane	2000	T
80	12/11/2024	Freon 11	410000	D T
80	12/11/2024	TCE	160	J T

N
W E
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May 2025

0 50 100 200 300 Feet

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- Inferred Fault with Displacement
- 400 Area Closure

Notes:
D = The reported result is from a dilution
J = The result is and estimated value less than the quantitation limit, but greater than or equal to the detection limit.
T = The sample fell outside the 30-day holding time

No Samples Exceeded WSTF Residential RBCs

Fourth Quarter - Soil Vapor Analytical NMED Residential VISL Exceedances

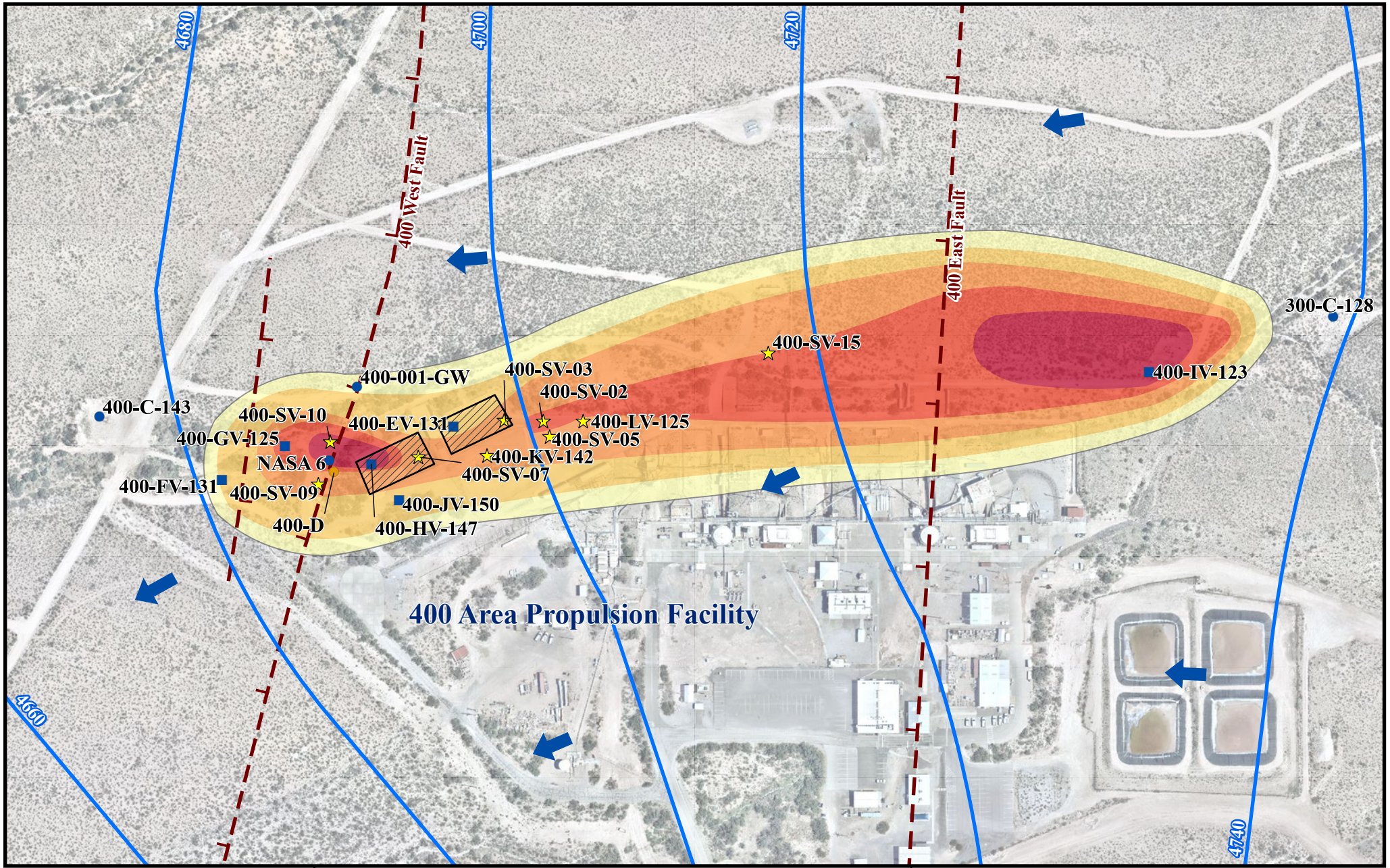
NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\400 Investigation\400_GW-SV\Quarterly-4Q-Maps\

Figure 4.4 Fourth Quarter - Freon 11 Soil Vapor Contaminant Concentration Map

(SEE NEXT PAGE)



N
W E
S

May 2025

0 50 100 200 300 Feet

Prepared by:srees

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- General Flow Direction
- 400 Area Closure
- Groundwater Elevation 20 Feet Contour
- Inferred Fault with Displacement

Freon 11 Concentration (ug/L)

10 100 1,000 10,000 100,000

Fourth Quarter - Freon 11 Soil Vapor Contaminant Concentration Map

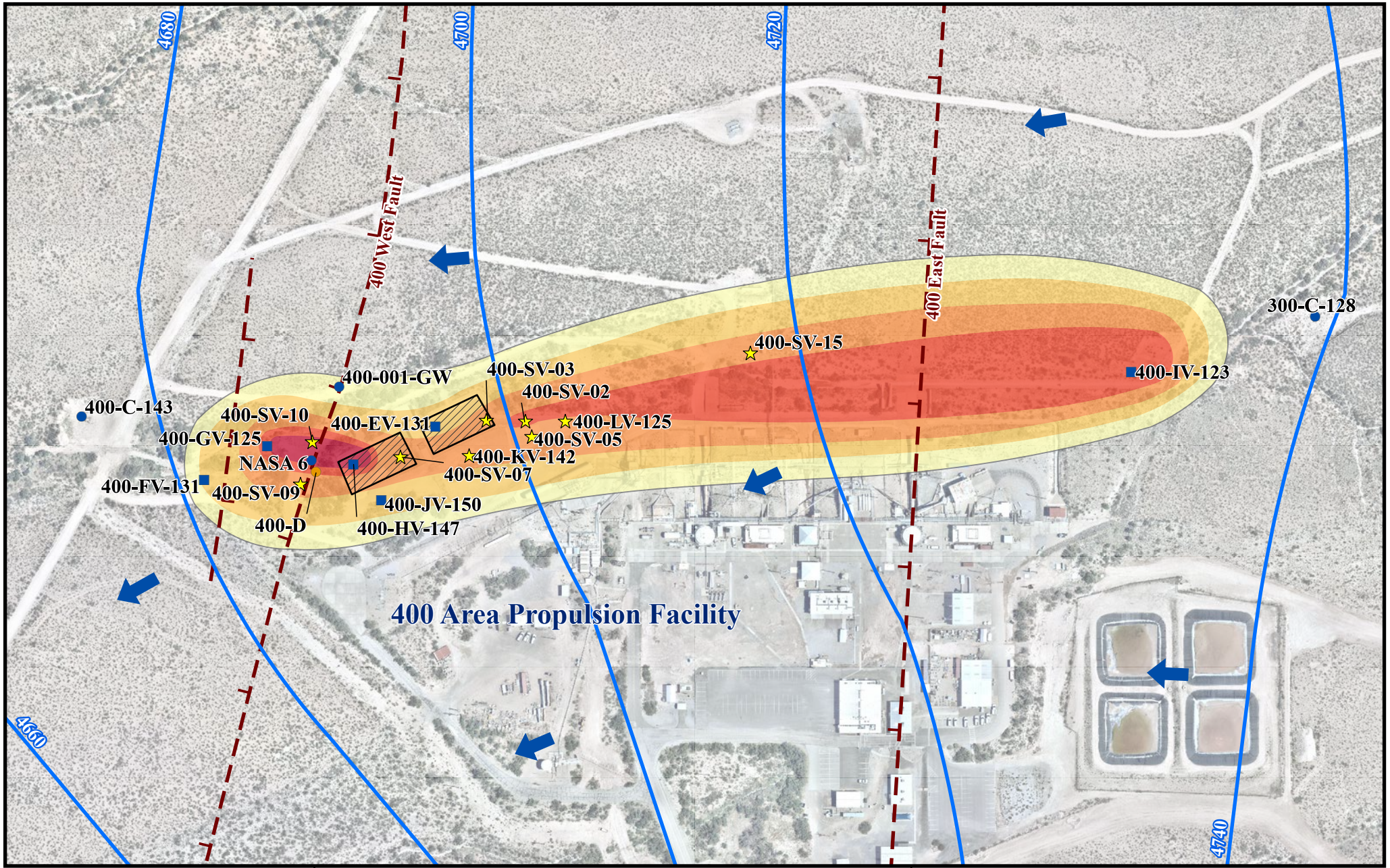
NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\400 Investigation\400_GW-SV\Quarterly-4Q-Maps\

Figure 4.5 Fourth Quarter - Freon 113 Soil Vapor Contaminant Concentration Map

(SEE NEXT PAGE)



N
W E
S

May 2025

0 50 100 200 300 Feet

Prepared by:srees

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- General Flow Direction
- 400 Area Closure
- Groundwater Elevation 20 Feet Contour
- Inferred Fault with Displacement

Freon 113 Concentration (ug/L)

10 100 1,000 10,000 100,000

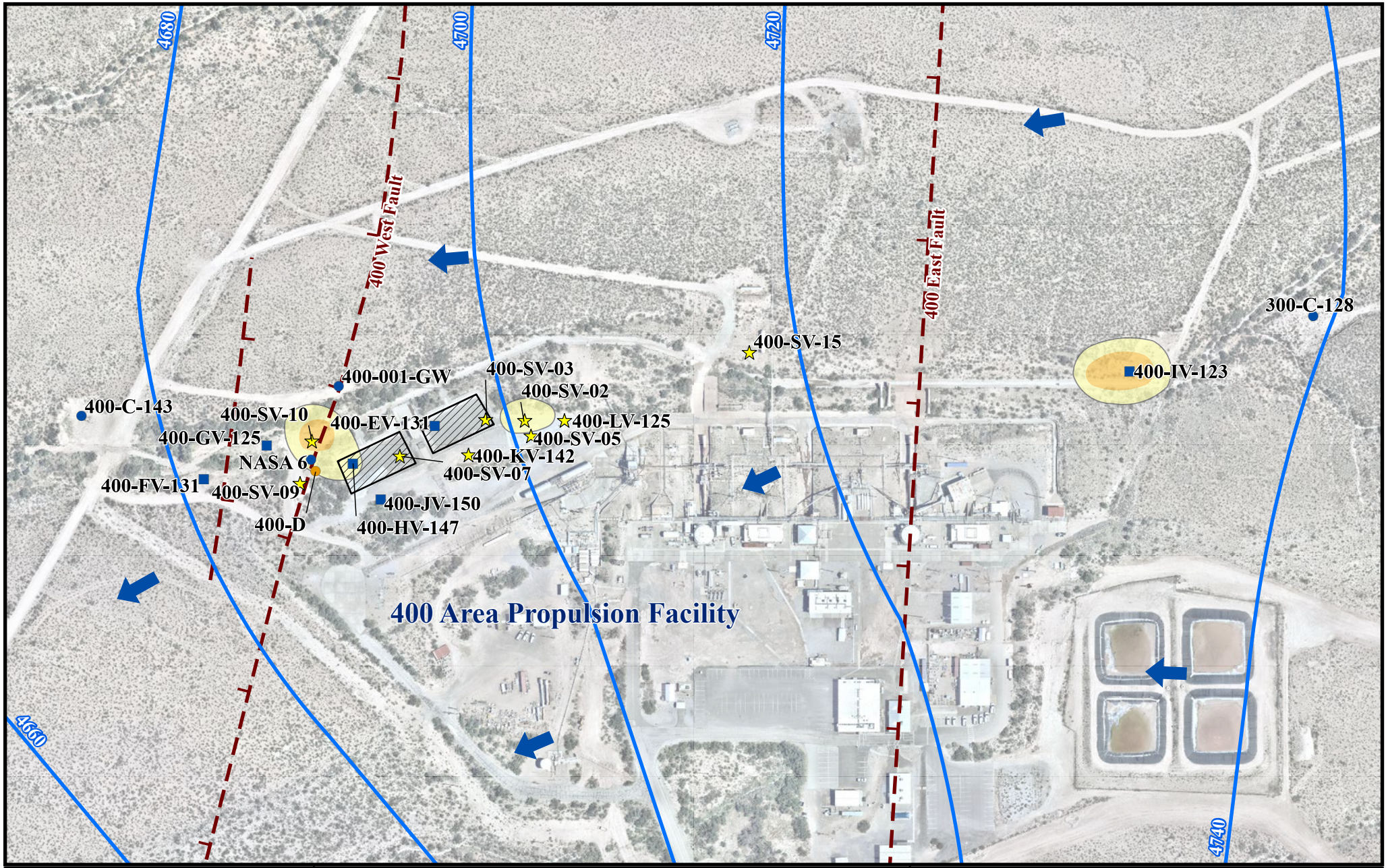
Fourth Quarter - Freon 113 Soil Vapor Contaminant Concentration Map

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet
G:\Projects\environmental\400 Investigation\400_GW-SV\Quarterly-4Q-Maps\

Figure 4.6 Fourth Quarter - TCE Soil Vapor Contaminant Concentration Map

(SEE NEXT PAGE)



N
W E
S

May 2025

Feet
0 50 100 200 300

Prepared by:srees

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- General Flow Direction
- 400 Area Closure
- Groundwater Elevation 20 Feet Contour
- Inferred Fault with Displacement

TCE Concentration (ug/L)

10 100

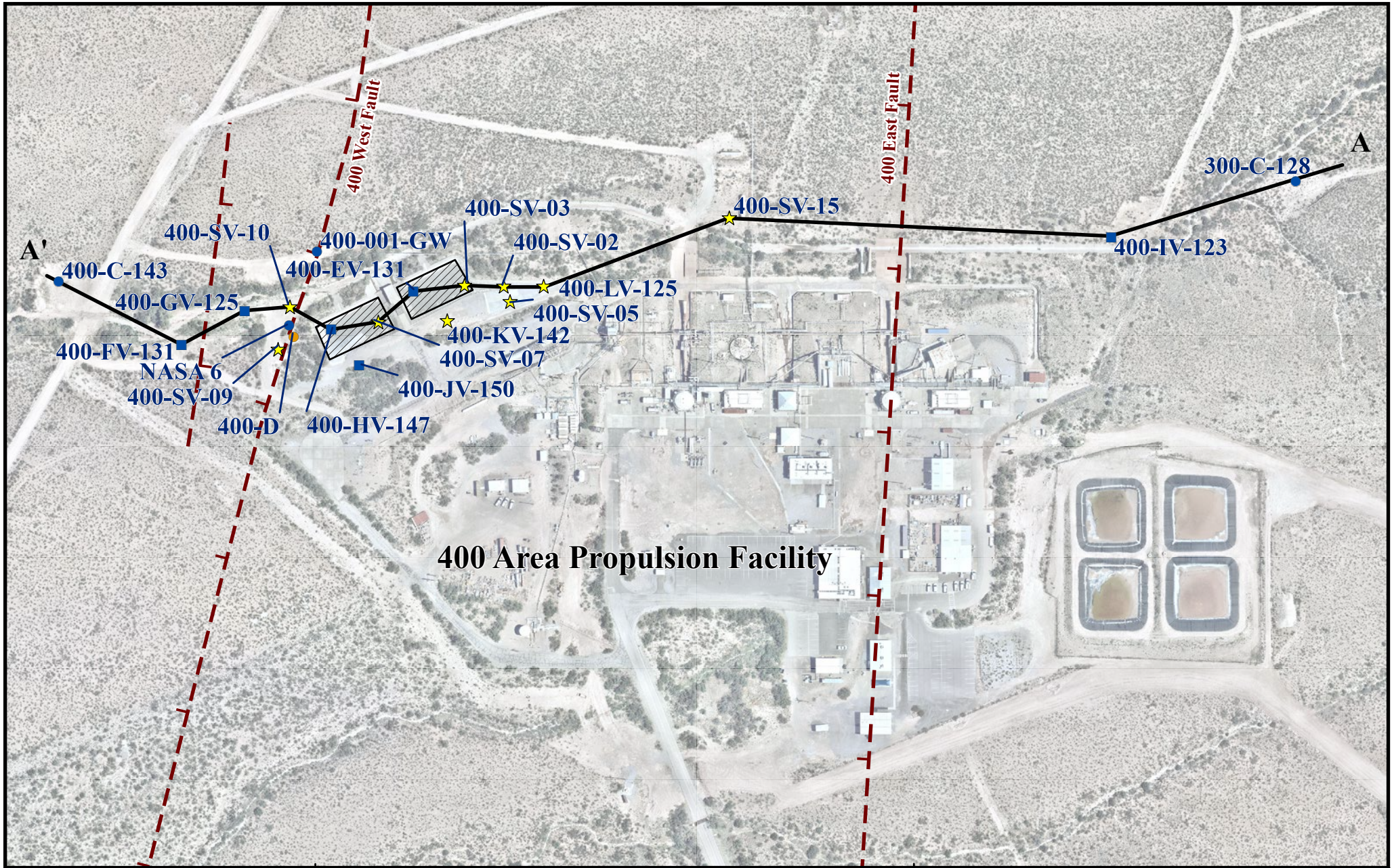
Fourth Quarter - TCE Soil Vapor Contaminant Concentration Map

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet
G:\Projects\environmental\400 Investigation\400_GW-SV\Quarterly-4Q-Maps\

Figure 4.7 **400 Area Cross-Section Location Map**

(SEE NEXT PAGE)



N
W E
S

Feet
0 50 100 200 300

May 2025

Prepared by:srees

- Conventional Well
- Multiport Well
- MSVM Well
- MSVGM Well
- Cross-Section Location
- 400 Area Closure
- Inferred Fault with Displacement

400 Area Cross-Section Location Map

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\400 Investigation\400_GW-SV\Quarterly-4Q-Maps\

Figure 4.8 400 Area Cross-Section A-A' – Fourth Quarter Freon 11

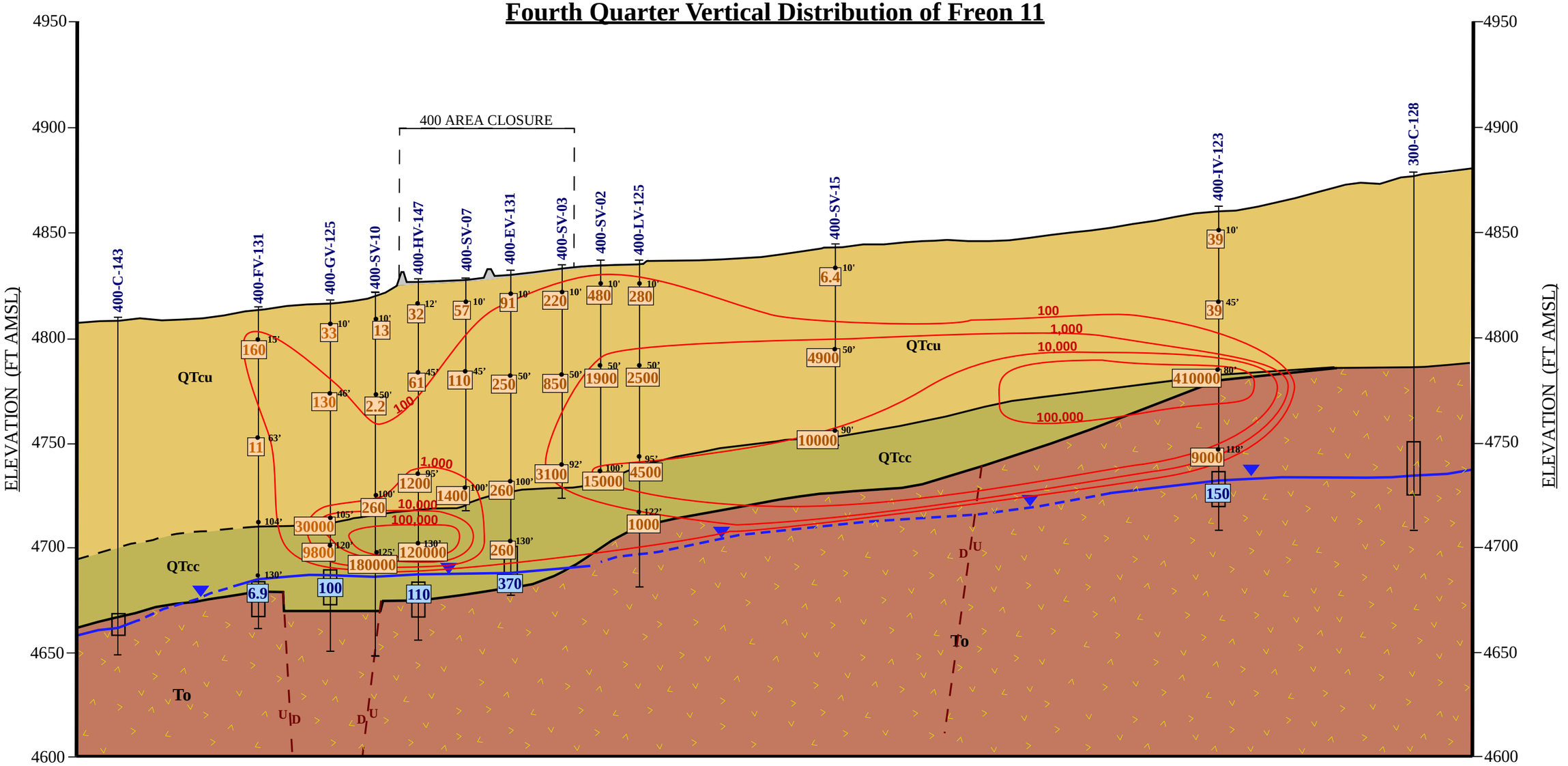
(SEE NEXT PAGE)

WEST
A’

400 AREA GEOLOGIC CROSS-SECTION A-A’

Fourth Quarter Vertical Distribution of Freon 11

EAST
A



SCALE

VERTICAL
EXAGGERATION = 1:4

100'

400'

May 2025

MONITORING WELLS

Monitoring Well

400-C-143

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

1200 Soil Vapor Concentration (ug/m^3)

Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

100 Groundwater Concentration (ug/L)

No Concentration Value Indicates A Non-detect Value Or No Sample For The Quarter

GEOLOGY

Concrete Or Other Man-made Structure

QTcu Camp Rice Formation, Undivided

QTcc Cemented Fanglomerate Facies, Camp Rice Formation

To Orejon Andesite

STRUCTURE

Contact Between Geologic Units (dashed Where Inferred)

D U Inferred Fault With Displacement

HYDROGEOLOGY

Potentiometric Surface (2024)

Soil Vapor Concentration Contour (ug/m3)

Figure 4.9 400 Area Cross-Section A-A' – Fourth Quarter Freon 113

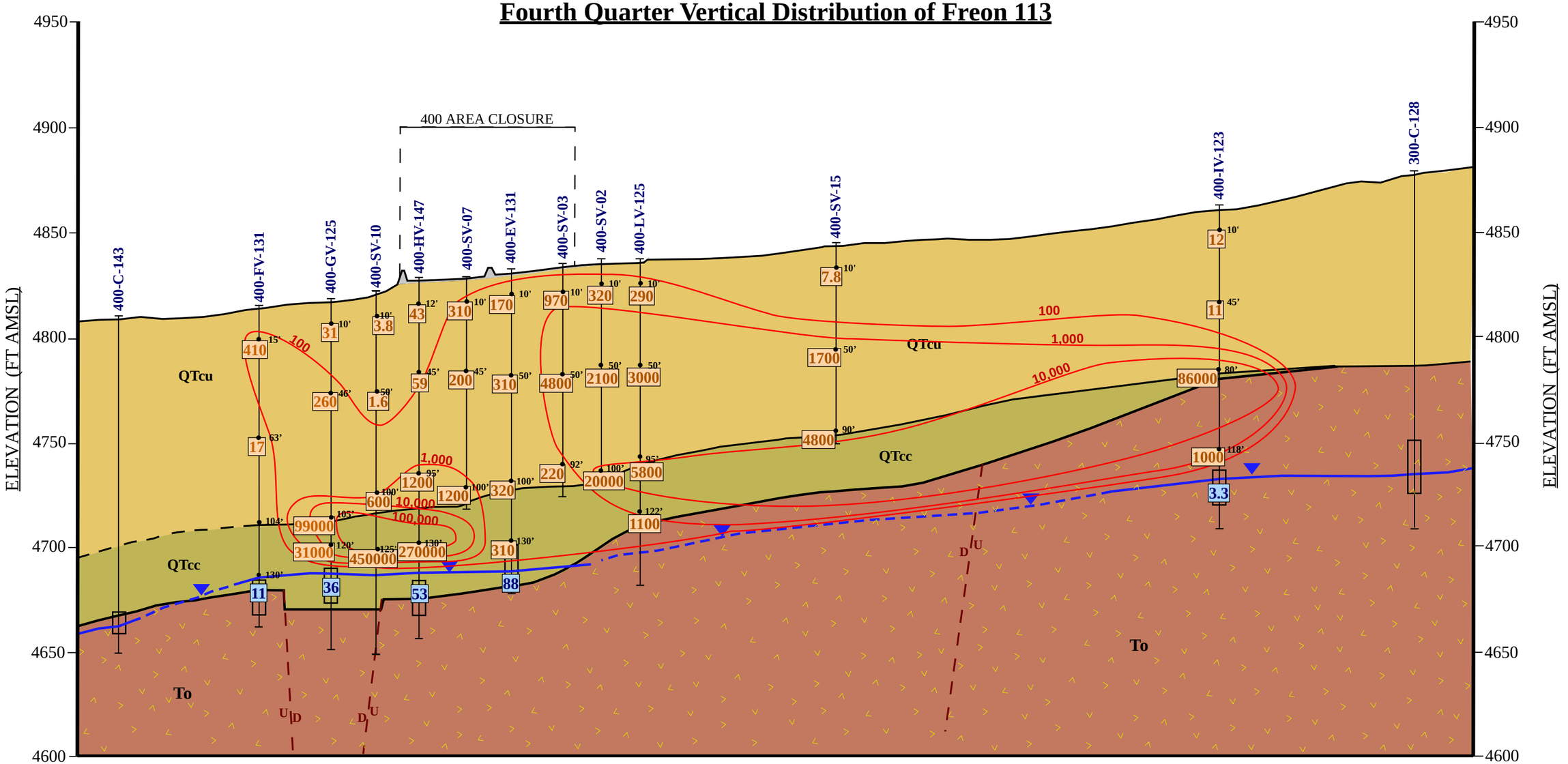
(SEE NEXT PAGE)

400 AREA GEOLOGIC CROSS-SECTION A-A’

Fourth Quarter Vertical Distribution of Freon 113

WEST
A’

EAST
A



100'

SCALE

VERTICAL
EXAGGERATION = 1:4

May 2025

400'

MONITORING WELLS

Monitoring Well

400-C-143

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

1200 Soil Vapor Concentration (ug/m^3)

Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

11 Groundwater Concentration (ug/L)

No Concentration Value Indicates A Non-detect Value Or No Sample For The Quarter

GEOLOGY

Concrete Or Other Man-made Structure

QTcu Camp Rice Formation, Undivided

QTcc Cemented Fanglomerate Facies, Camp Rice Formation

To Orejon Andesite

STRUCTURE

Contact Between Geologic Units (dashed Where Inferred)

D U Inferred Fault With Displacement

HYDROGEOLOGY

Potentiometric Surface (2024)

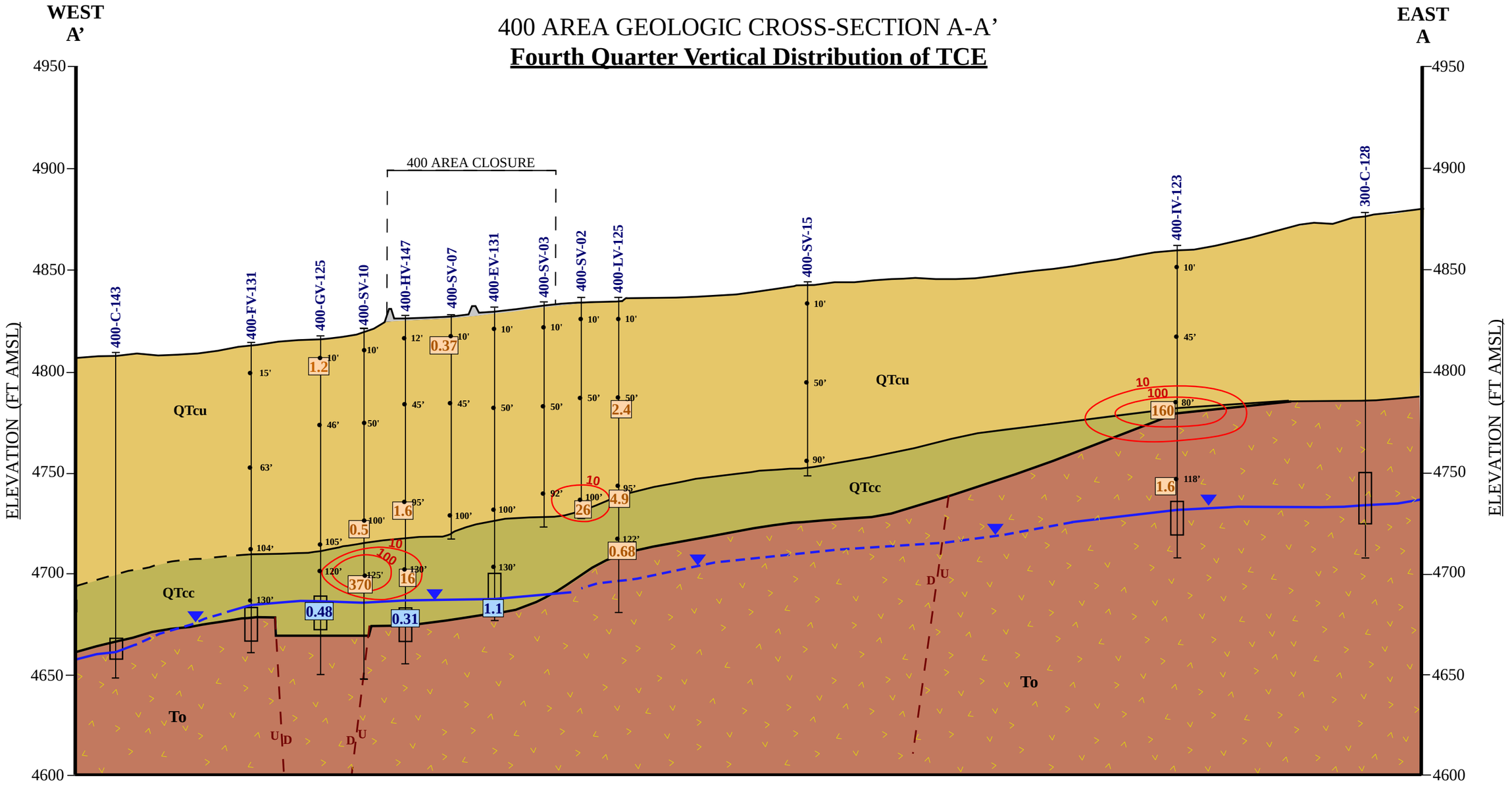
Soil Vapor Concentration Contour (ug/m3)

Figure 4.10 400 Area Cross-Section A-A' – Fourth Quarter TCE

(SEE NEXT PAGE)

400 AREA GEOLOGIC CROSS-SECTION A-A’

Fourth Quarter Vertical Distribution of TCE



100'

SCALE

VERTICAL
EXAGGERATION = 1:4

May 2025

400'

MONITORING WELLS

400-C-143 Monitoring Well

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

1200 Soil Vapor Concentration (ug/m^3)

Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

1.1 Groundwater Concentration (ug/L)

No Concentration Value Indicates A Non-detect Value Or No Sample For The Quarter

GEOLOGY

Concrete Or Other Man-made Structure

QTcu Camp Rice Formation, Undivided

QTcc Cemented Fanglomerate Facies, Camp Rice Formation

To Orejon Andesite

STRUCTURE

Contact Between Geologic Units (dashed Where Inferred)

D U Inferred Fault With Displacement

HYDROGEOLOGY

Potentiometric Surface (2024)

Soil Vapor Concentration Contour (ug/m3)

Figure 4.11 Time-Concentration Graph – Freon 11 400-EV

(SEE NEXT PAGE)

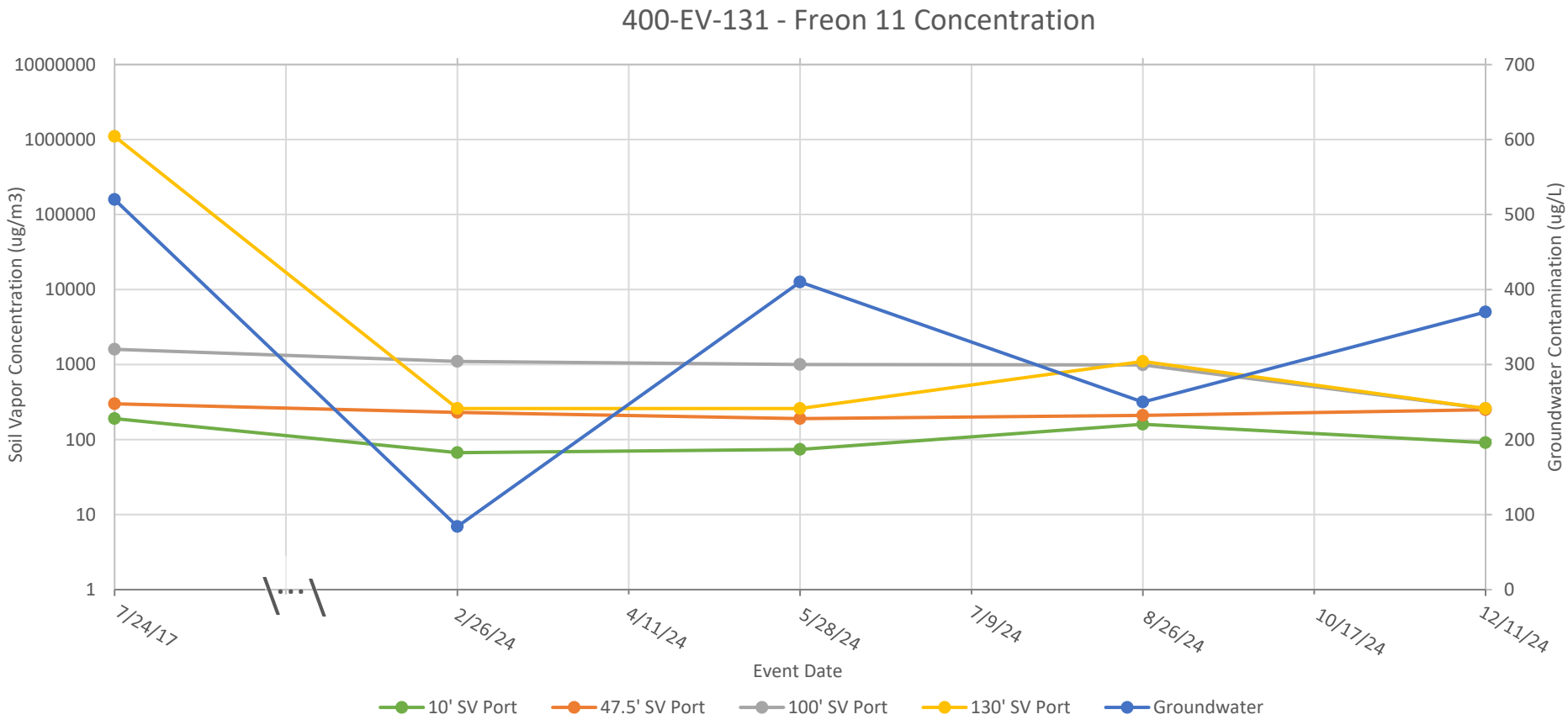

400-EV-131 - Freon 11 Concentration
Soil Vapor Concentration (ug/m3)
10000000
1000000
100000
10000
1000
100
10
1
Groundwater Contamination (ug/L)
700
600
500
400
300
200
100
0
7/24/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
47.5' SV Port
100' SV Port
130' SV Port
Groundwater

Figure 4.12 Time-Concentration Graph – Freon 11 400-FV

(SEE NEXT PAGE)

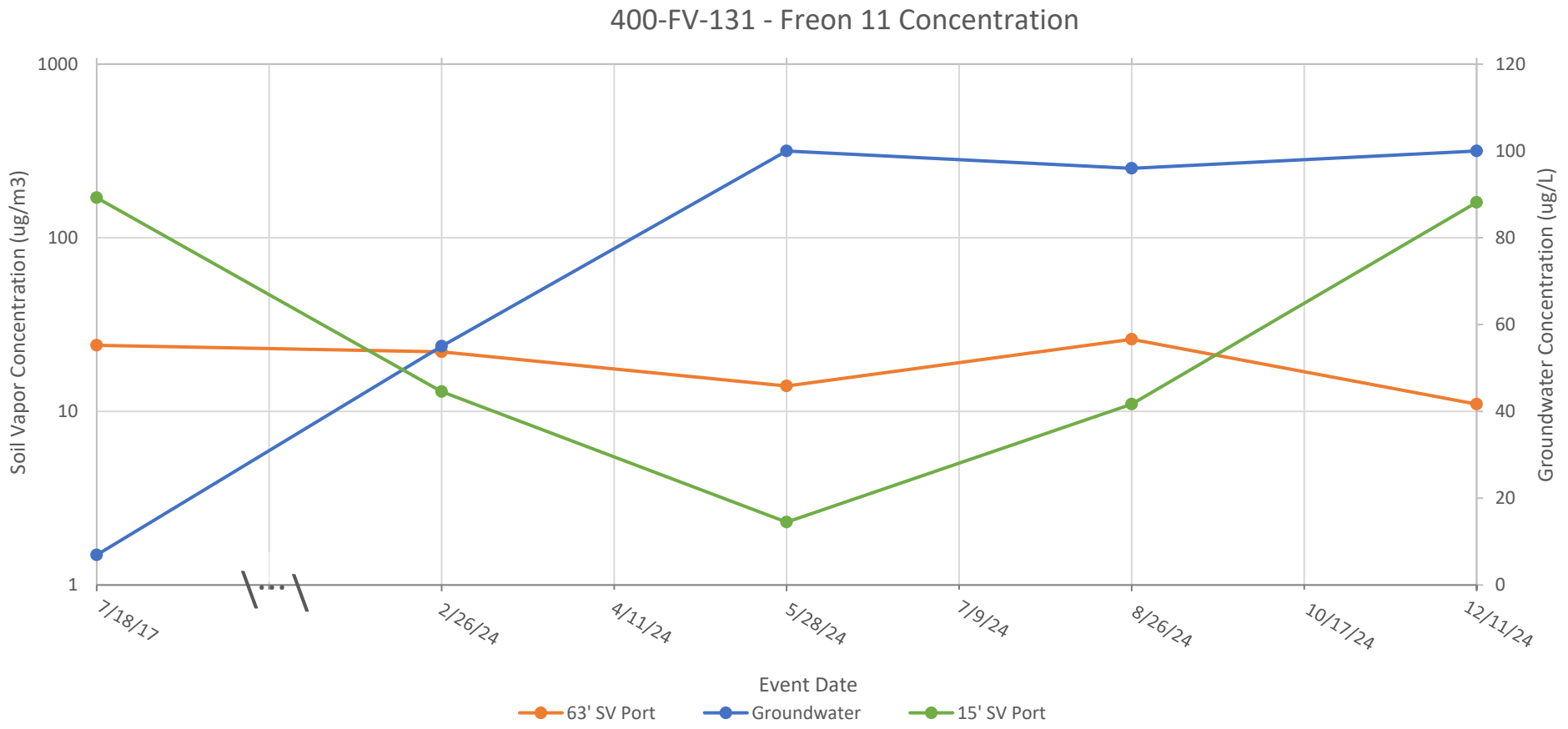

400-FV-131 - Freon 11 Concentration
Soil Vapor Concentration (ug/m3)
1000
100
10
1
Groundwater Concentration (ug/L)
120
100
80
60
40
20
0
7/18/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
63' SV Port
Groundwater
15' SV Port

Figure 4.13 Time-Concentration Graph – Freon 11 400-GV

(SEE NEXT PAGE)

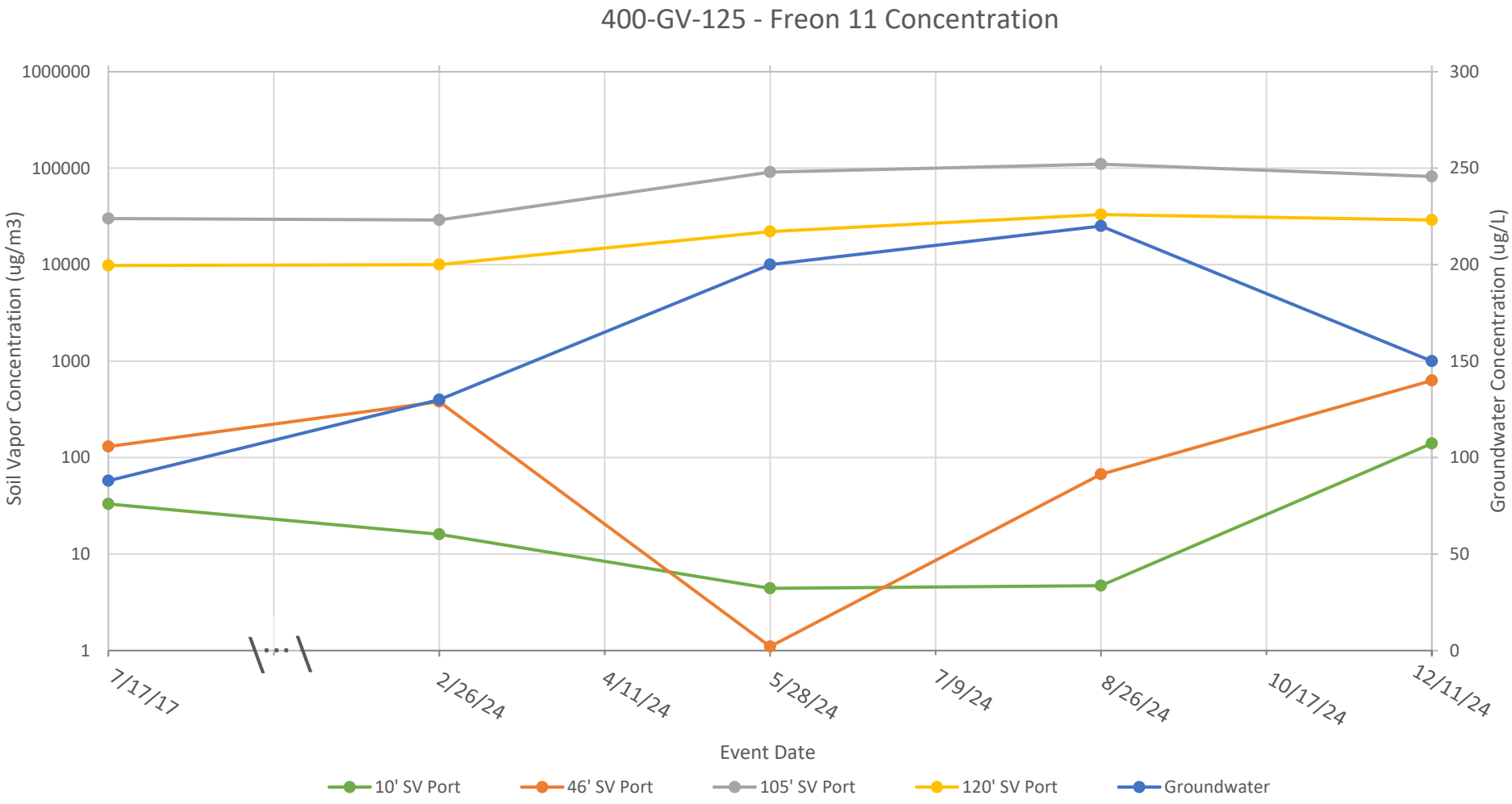
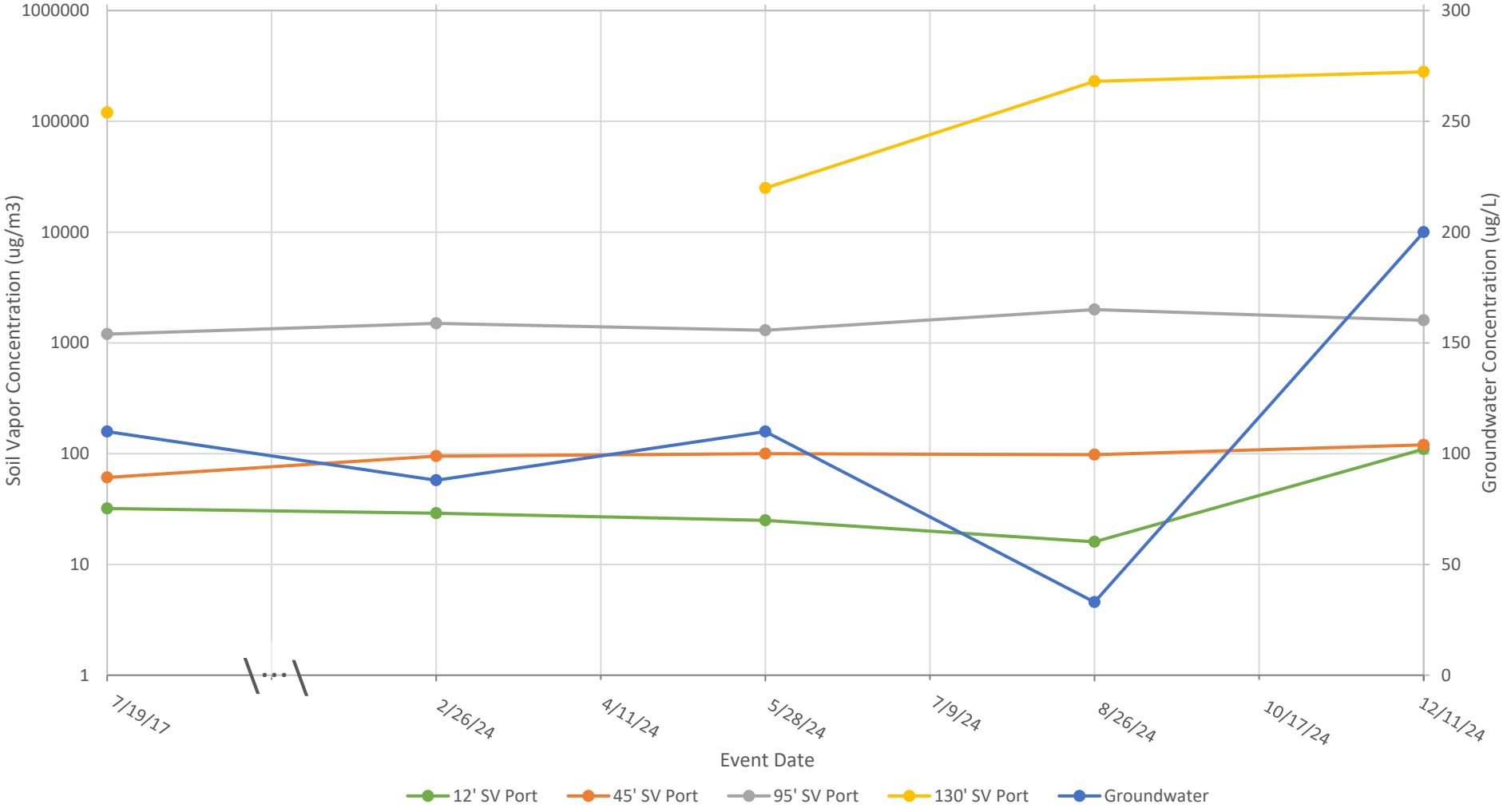

400-GV-125 - Freon 11 Concentration
Soil Vapor Concentration (ug/m3)
1000000
100000
10000
1000
100
10
1
Groundwater Concentration (ug/L)
300
250
200
150
100
50
0
7/17/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
46' SV Port
105' SV Port
120' SV Port
Groundwater

Figure 4.14 Time-Concentration Graph – Freon 11 400-HV

(SEE NEXT PAGE)

400-HV-147 - Freon 11 Concentration



Note - No data point for a sampling event indicate Non-Detect results.

Figure 4.15 Time-Concentration Graph – Freon 11 400-IV

(SEE NEXT PAGE)

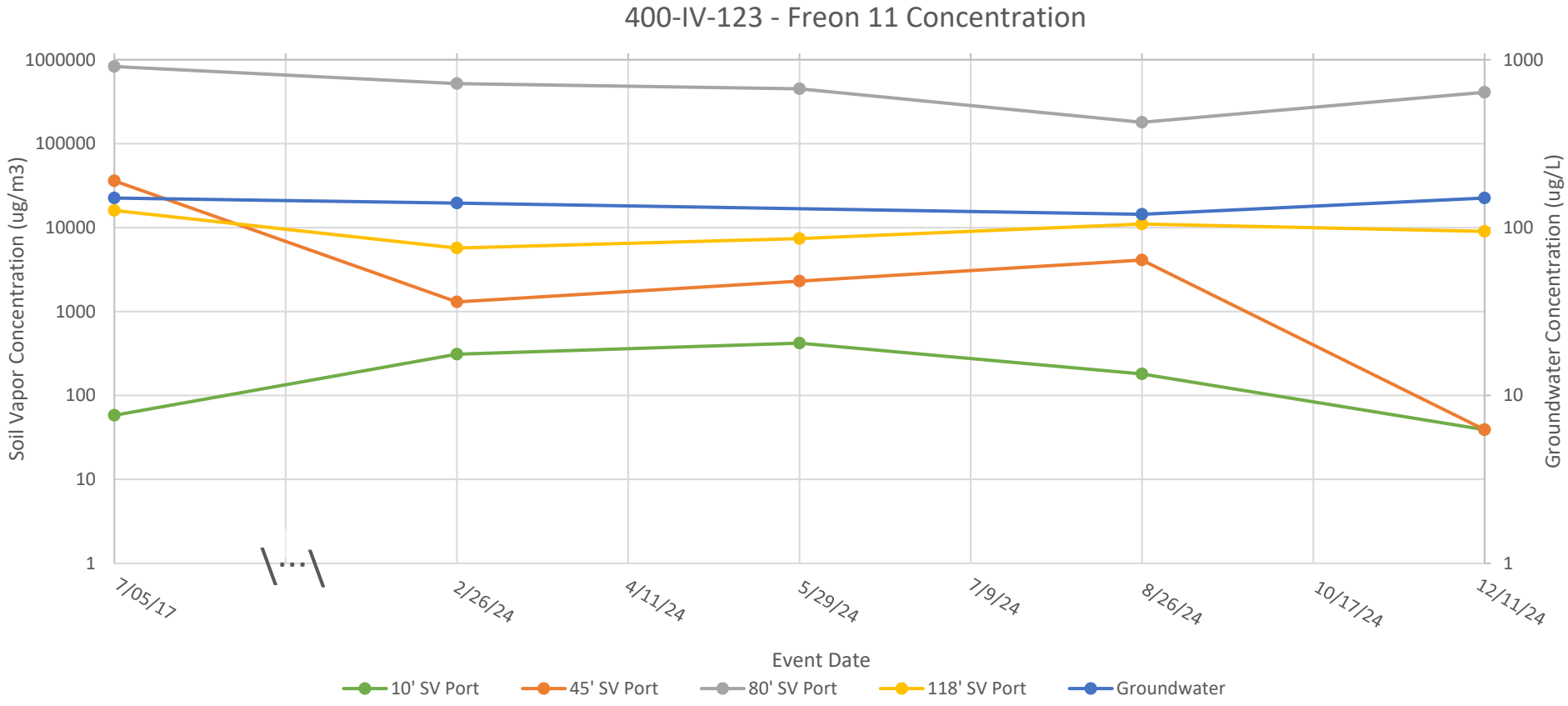

400-IV-123 - Freon 11 Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
1000
100
10
1
7/05/17
2/26/24
4/11/24
5/29/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
45' SV Port
80' SV Port
118' SV Port
Groundwater

Figure 4.16 Time-Concentration Graph – Freon 11 400-JV

(SEE NEXT PAGE)

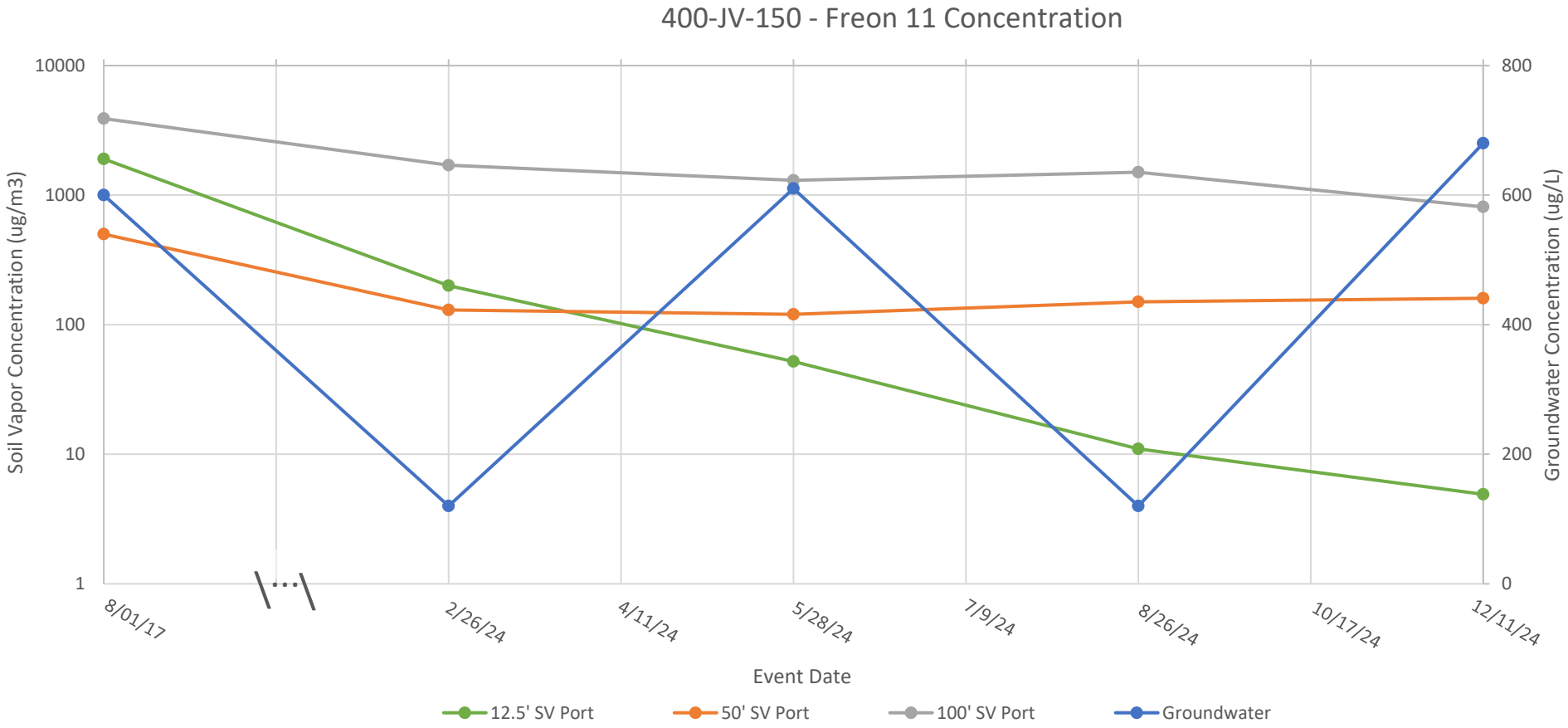

400-JV-150 - Freon 11 Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
10000
1000
100
10
1
800
600
400
200
0
8/01/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
12.5' SV Port
50' SV Port
100' SV Port
Groundwater

Figure 4.17 Time-Concentration Graph – Freon 113 400-EV

(SEE NEXT PAGE)

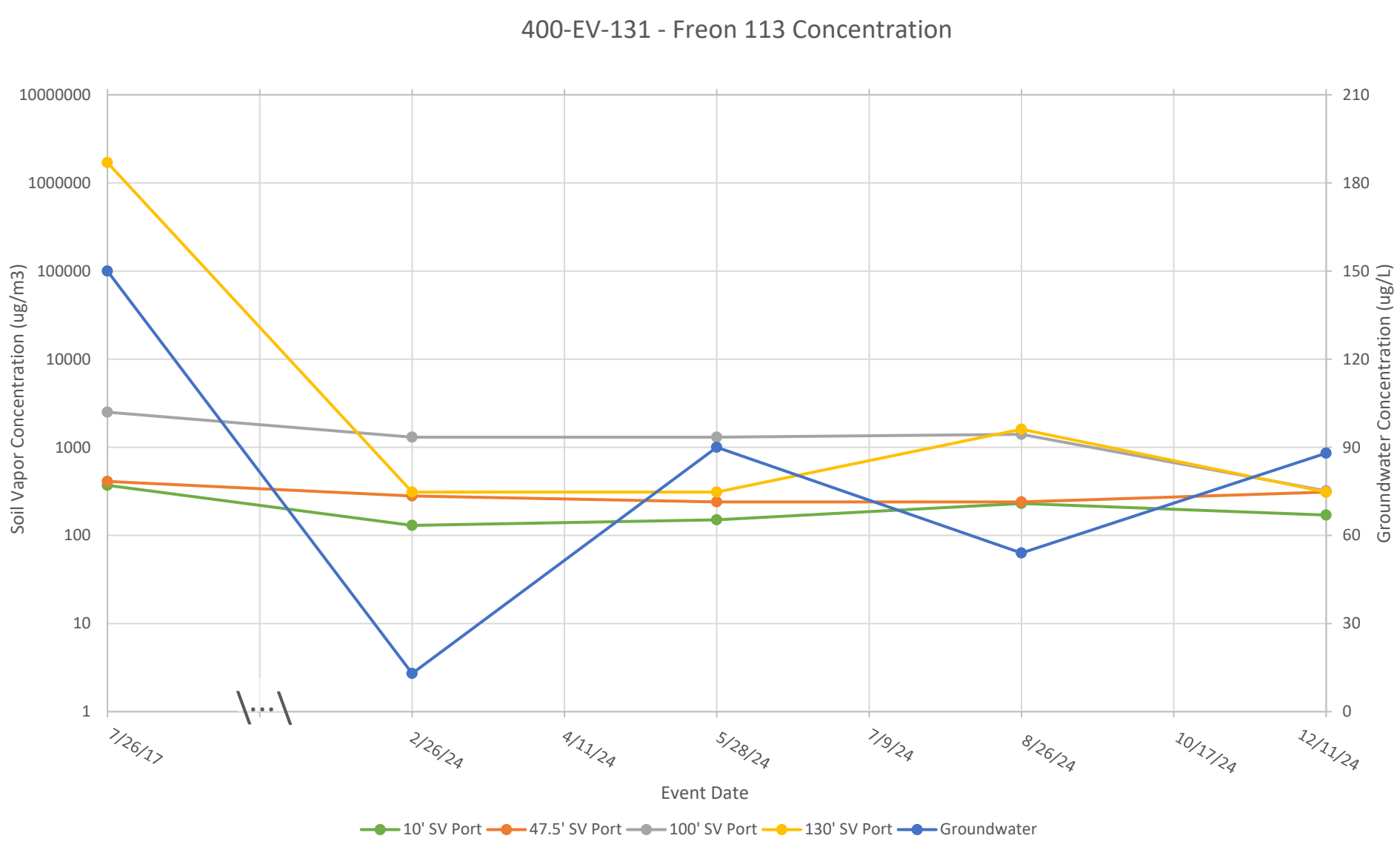

400-EV-131 - Freon 113 Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
10000000
1000000
100000
10000
1000
100
10
1
210
180
150
120
90
60
30
0
7/26/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
47.5' SV Port
100' SV Port
130' SV Port
Groundwater

Figure 4.18 Time-Concentration Graph – Freon 113 400-FV

(SEE NEXT PAGE)

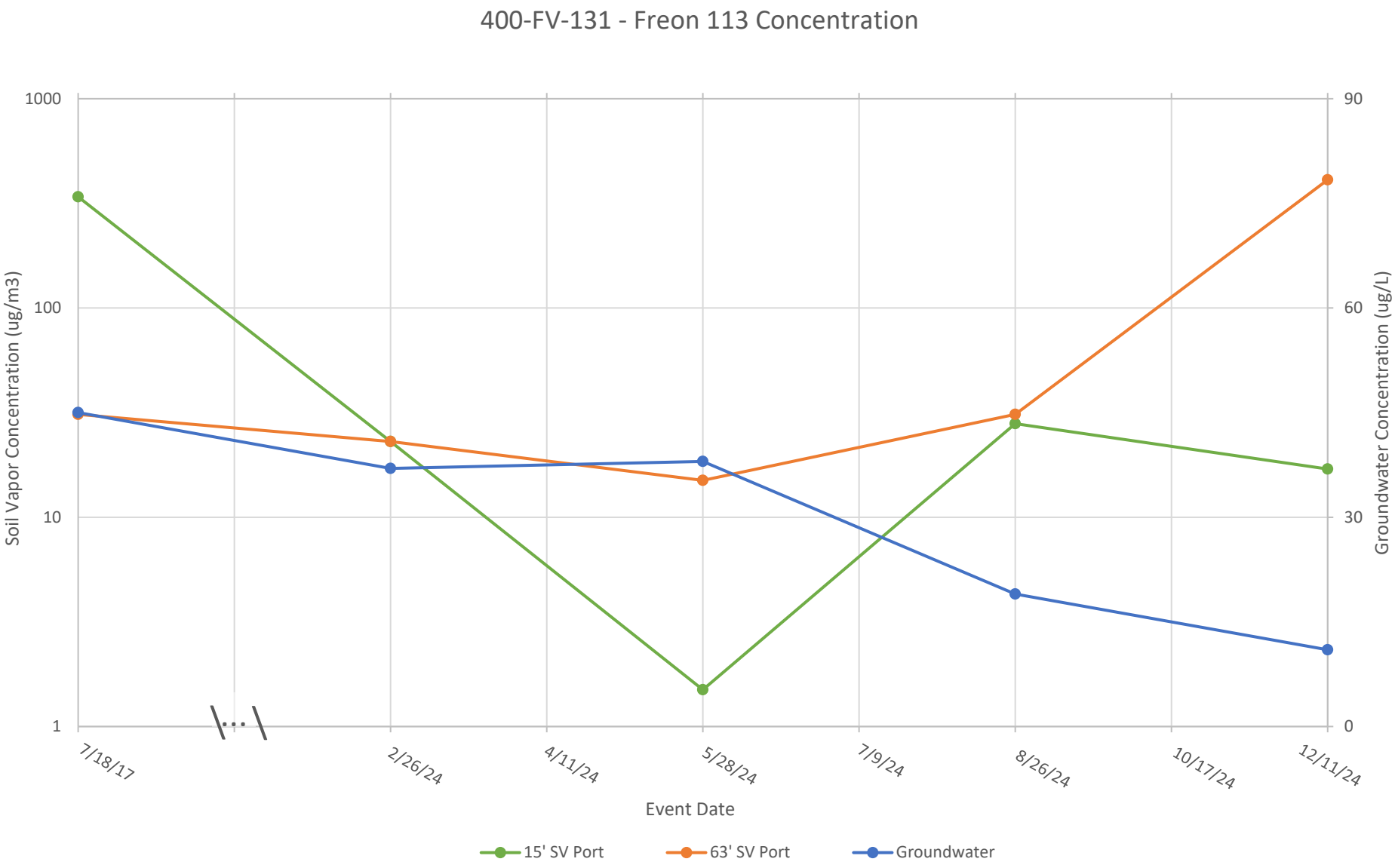

400-FV-131 - Freon 113 Concentration
Soil Vapor Concentration (ug/m3)
1000
100
10
1
Groundwater Concentration (ug/L)
90
60
30
0
7/18/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
15' SV Port
63' SV Port
Groundwater

Figure 4.19 Time-Concentration Graph – Freon 113 400-GV

(SEE NEXT PAGE)

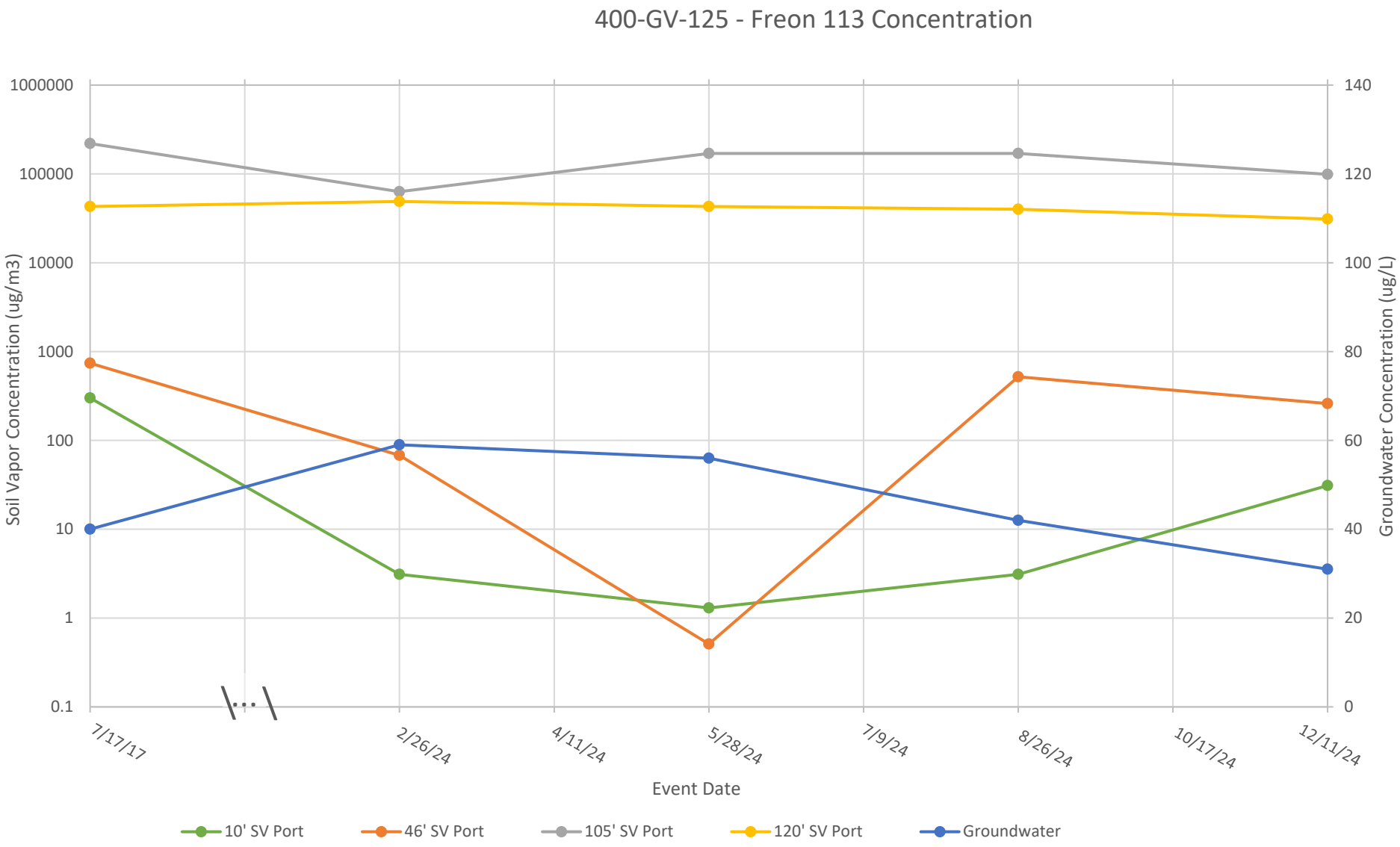
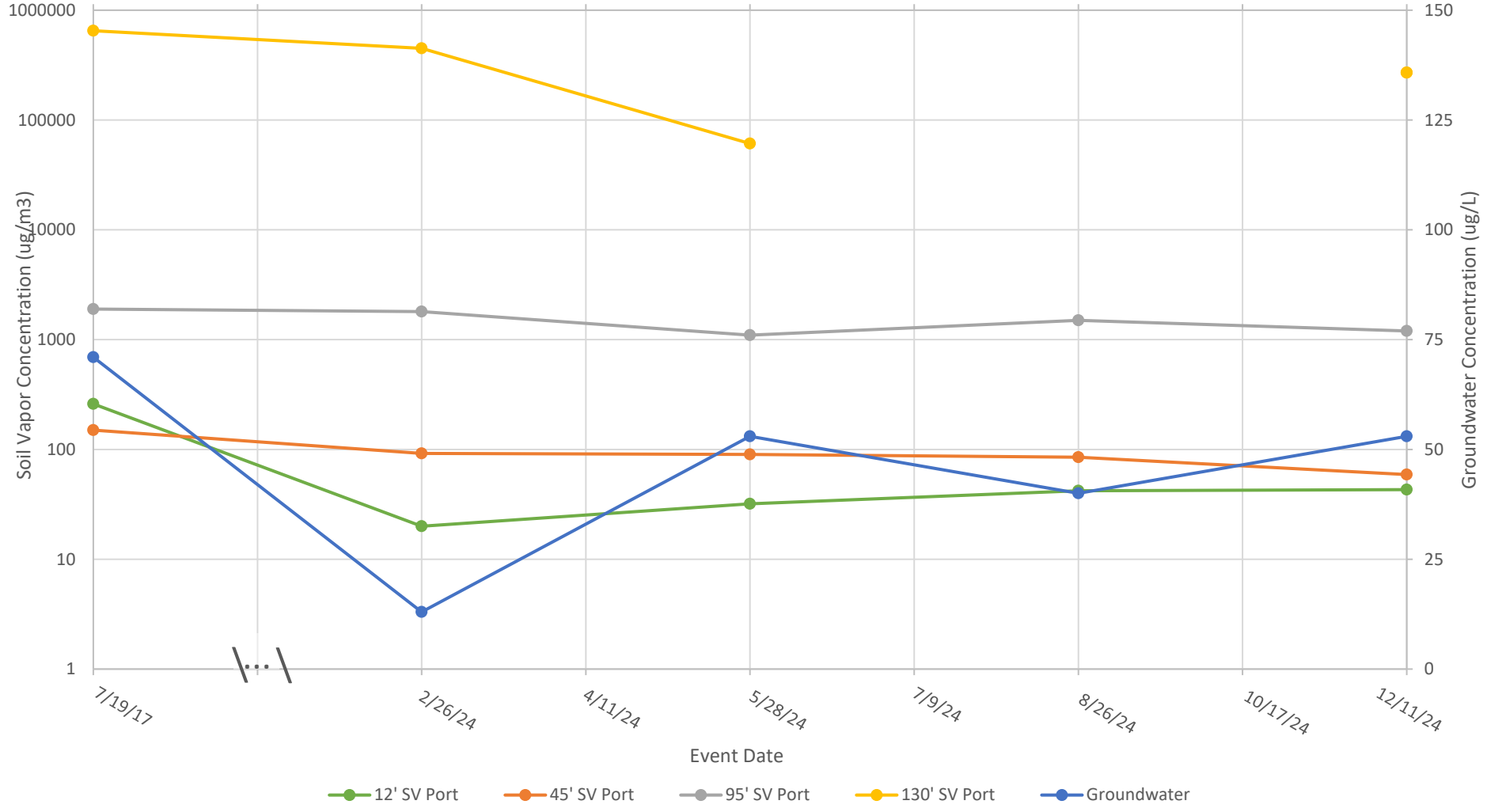

400-GV-125 - Freon 113 Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
0.1
140
120
100
80
60
40
20
0
7/17/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
46' SV Port
105' SV Port
120' SV Port
Groundwater

Figure 4.20 Time-Concentration Graph – Freon 113 400-HV

(SEE NEXT PAGE)

400-HV-147 - Freon 113 Concentration



Note - No data point for a sampling event indicate Non-Detect results.

Figure 4.21 Time-Concentration Graph – Freon 113 400-IV

(SEE NEXT PAGE)

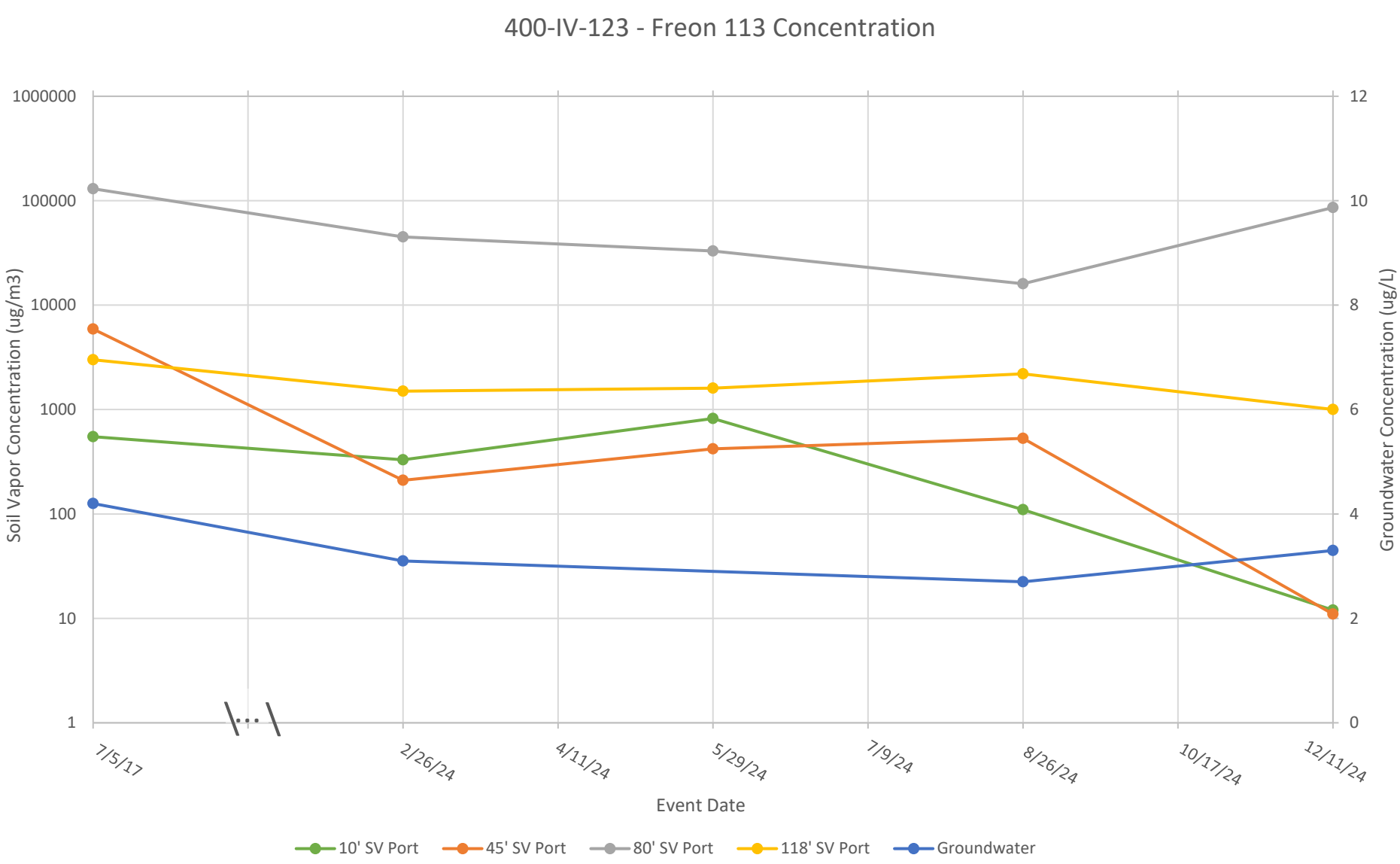

400-IV-123 - Freon 113 Concentration
1000000
100000
10000
1000
100
10
1
Soil Vapor Concentration (ug/m3)
12
10
8
6
4
2
0
Groundwater Concentration (ug/L)
7/5/17
2/26/24
4/11/24
5/29/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
45' SV Port
80' SV Port
118' SV Port
Groundwater

Figure 4.22 Time-Concentration Graph – Freon 113 400-JV

(SEE NEXT PAGE)

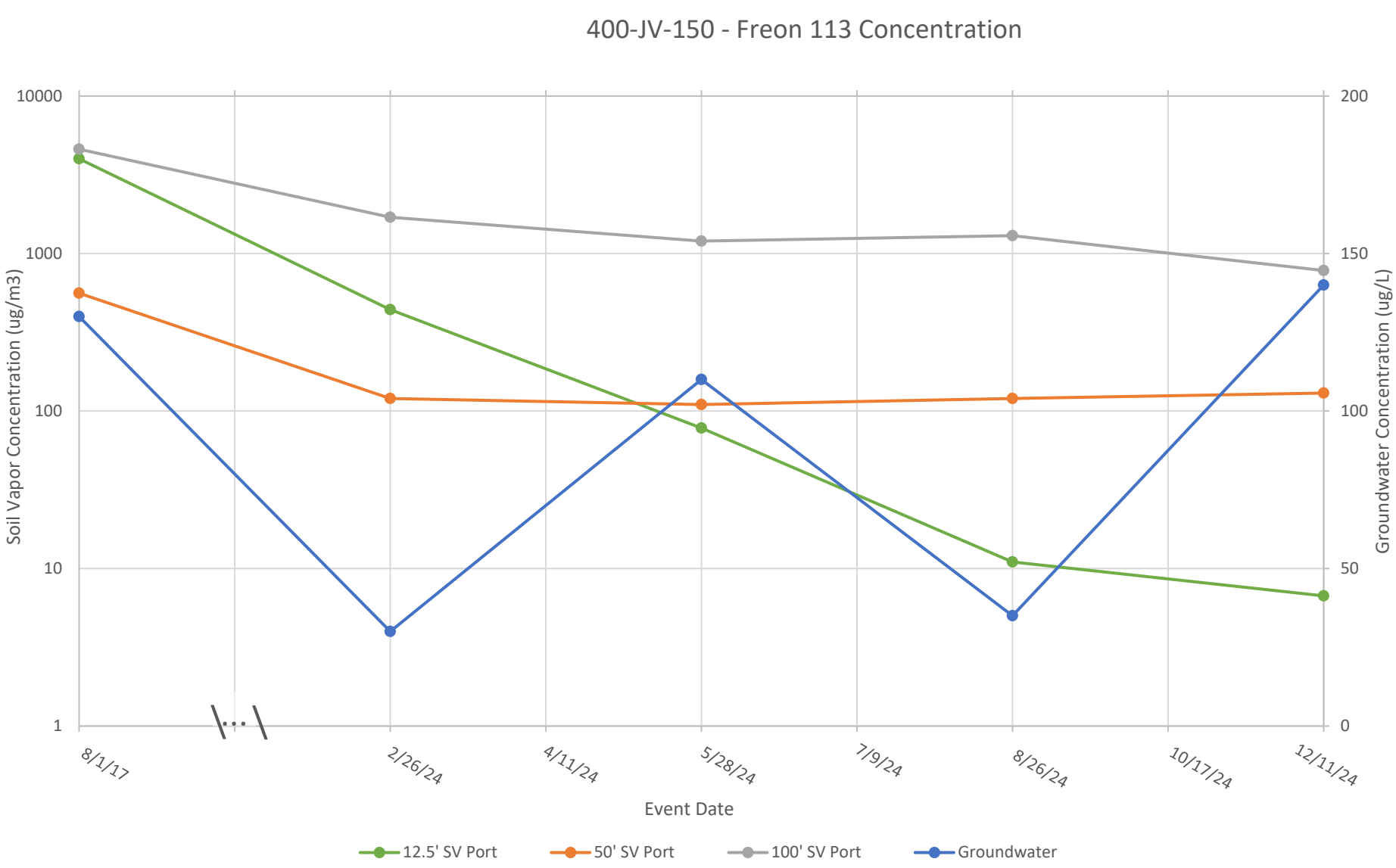

400-JV-150 - Freon 113 Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
10000
1000
100
10
1
200
150
100
50
0
8/1/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
12.5' SV Port
50' SV Port
100' SV Port
Groundwater

Figure 4.23 **Time-Concentration Graph – TCE 400-EV**

(SEE NEXT PAGE)

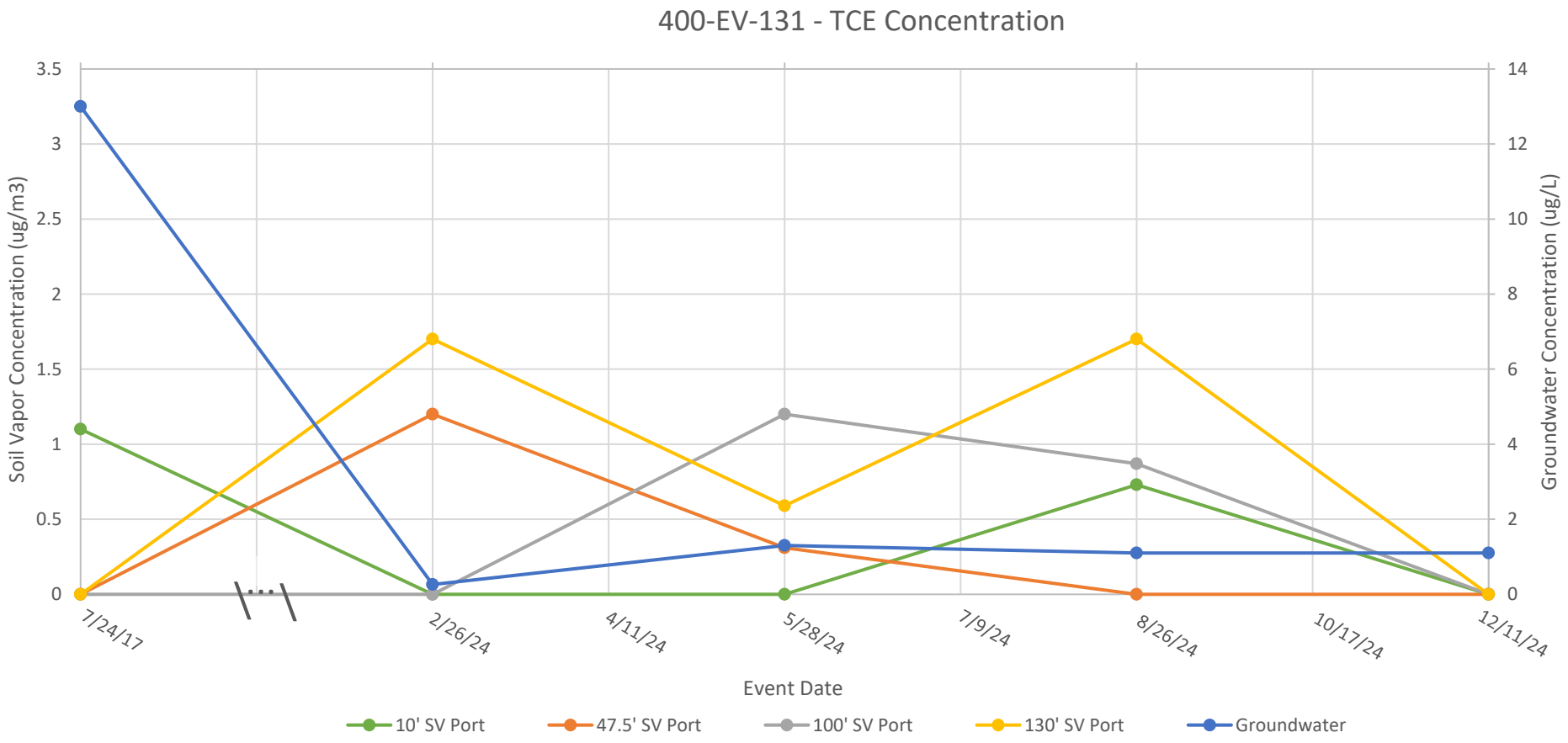

400-EV-131 - TCE Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
3.5
3
2.5
2
1.5
1
0.5
0
14
12
10
8
6
4
2
0
7/24/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
47.5' SV Port
100' SV Port
130' SV Port
Groundwater

Figure 4.24 **Time-Concentration Graph – TCE 400-FV**

(SEE NEXT PAGE)

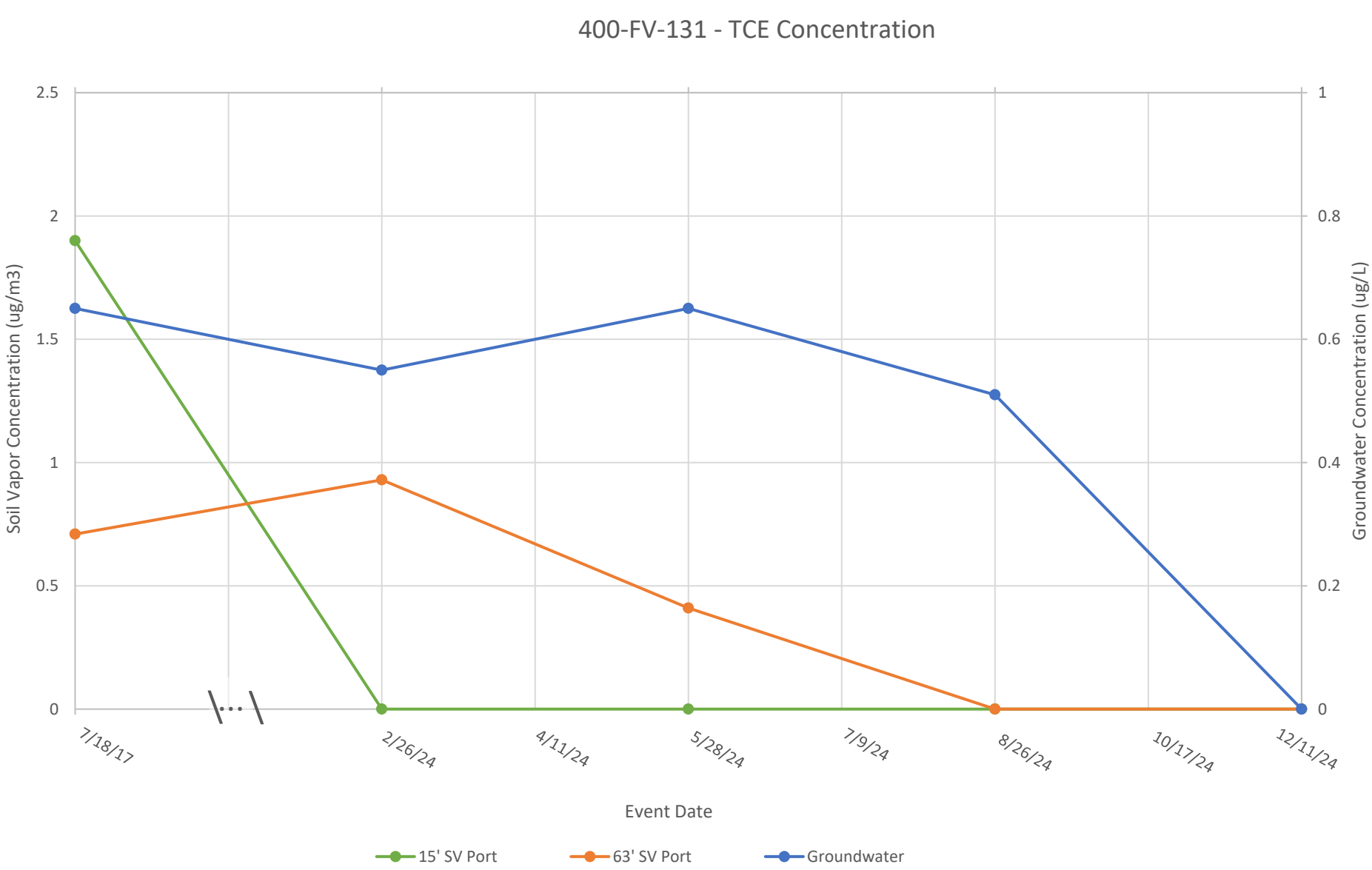

400-FV-131 - TCE Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
2.5
2
1.5
1
0.5
0
1
0.8
0.6
0.4
0.2
0
7/18/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
15' SV Port
63' SV Port
Groundwater

Figure 4.25 **Time-Concentration Graph – TCE 400-GV**

(SEE NEXT PAGE)

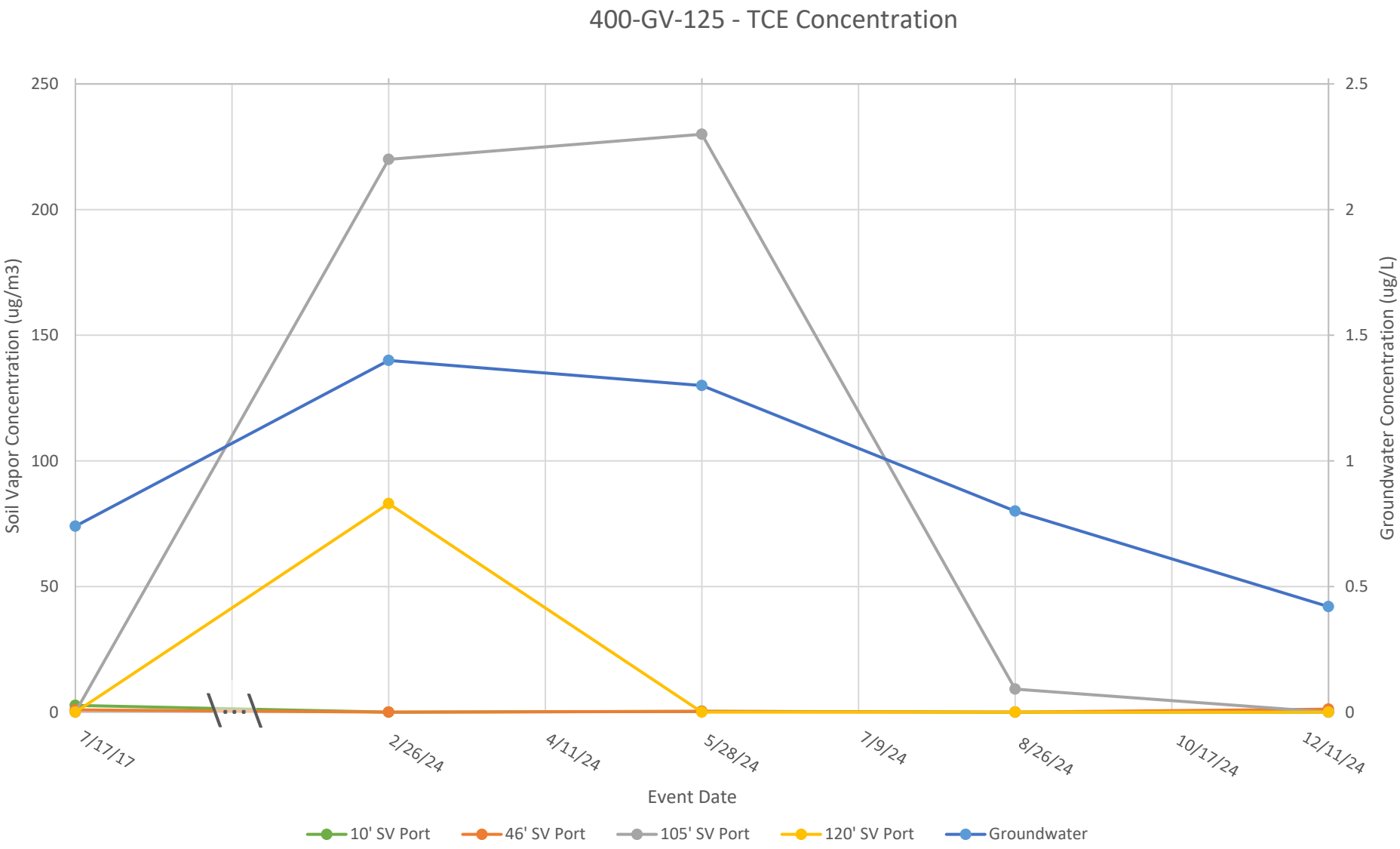
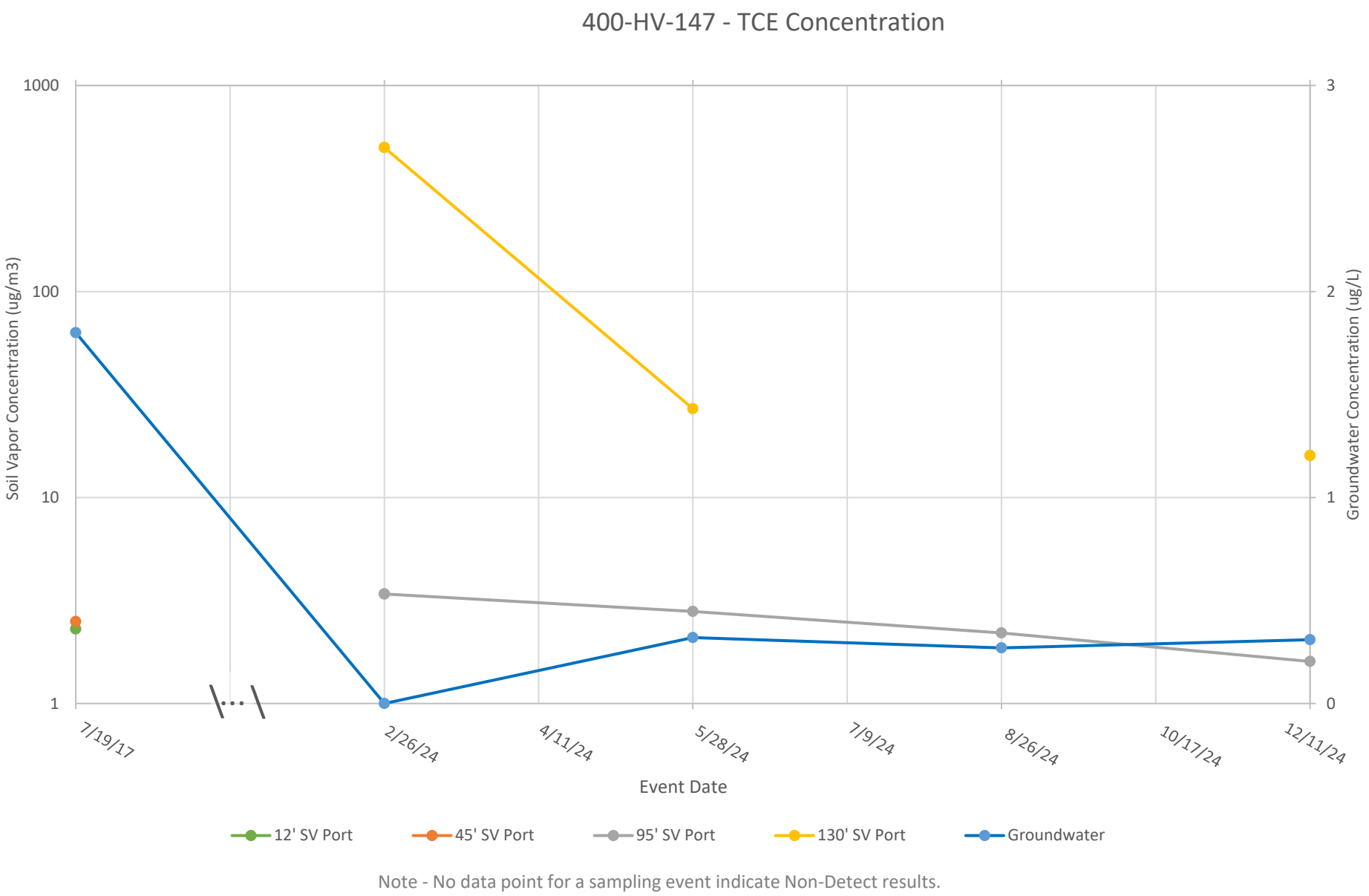

400-GV-125 - TCE Concentration
Soil Vapor Concentration (ug/m3)
Groundwater Concentration (ug/L)
250
200
150
100
50
0
2.5
2
1.5
1
0.5
0
7/17/17
2/26/24
4/11/24
5/28/24
7/9/24
8/26/24
10/17/24
12/11/24
Event Date
10' SV Port
46' SV Port
105' SV Port
120' SV Port
Groundwater

Figure 4.26 **Time-Concentration Graph – TCE 400-HV**

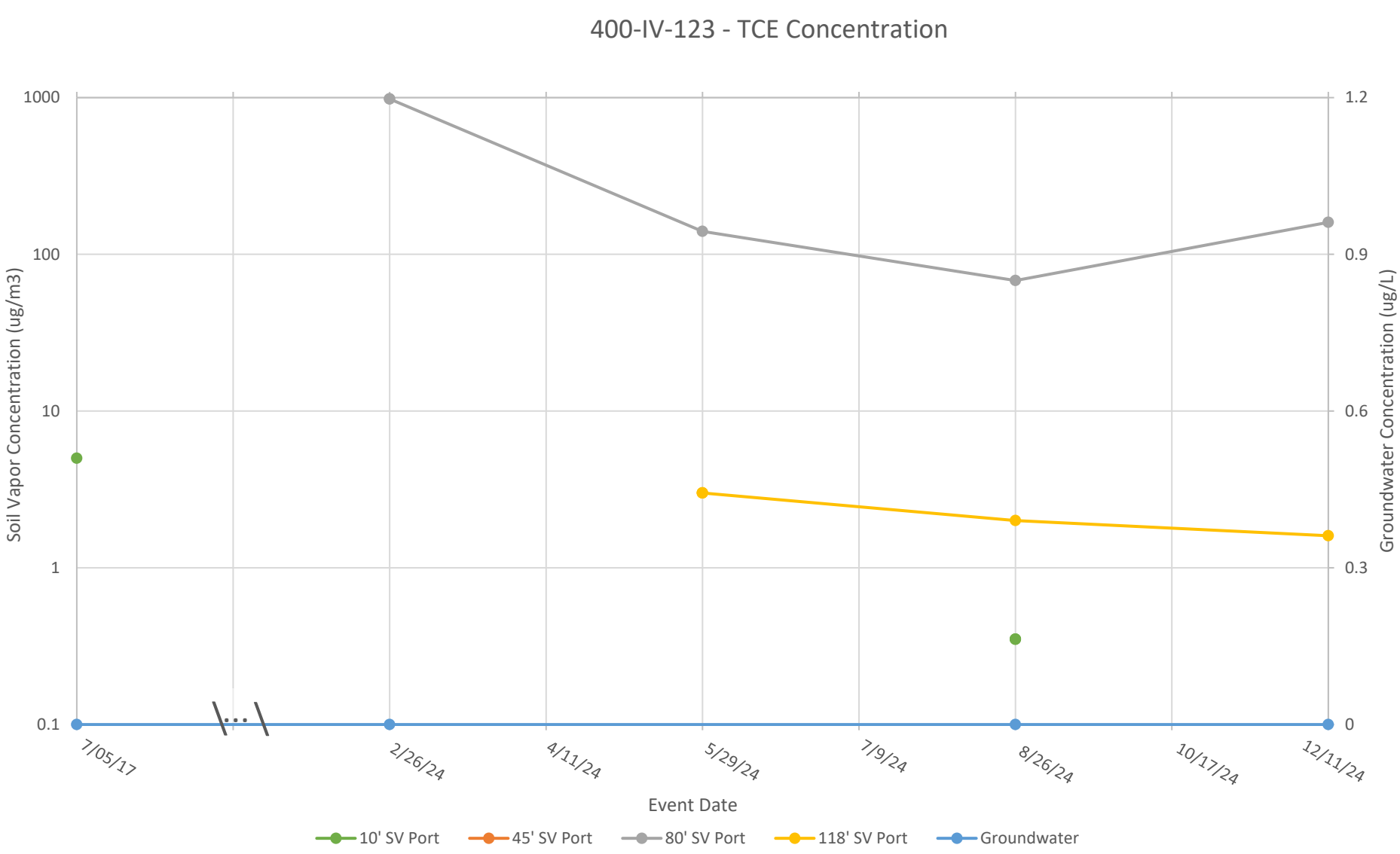
(SEE NEXT PAGE)



Note - No data point for a sampling event indicate Non-Detect results.

Figure 4.27 **Time-Concentration Graph – TCE 400-IV**

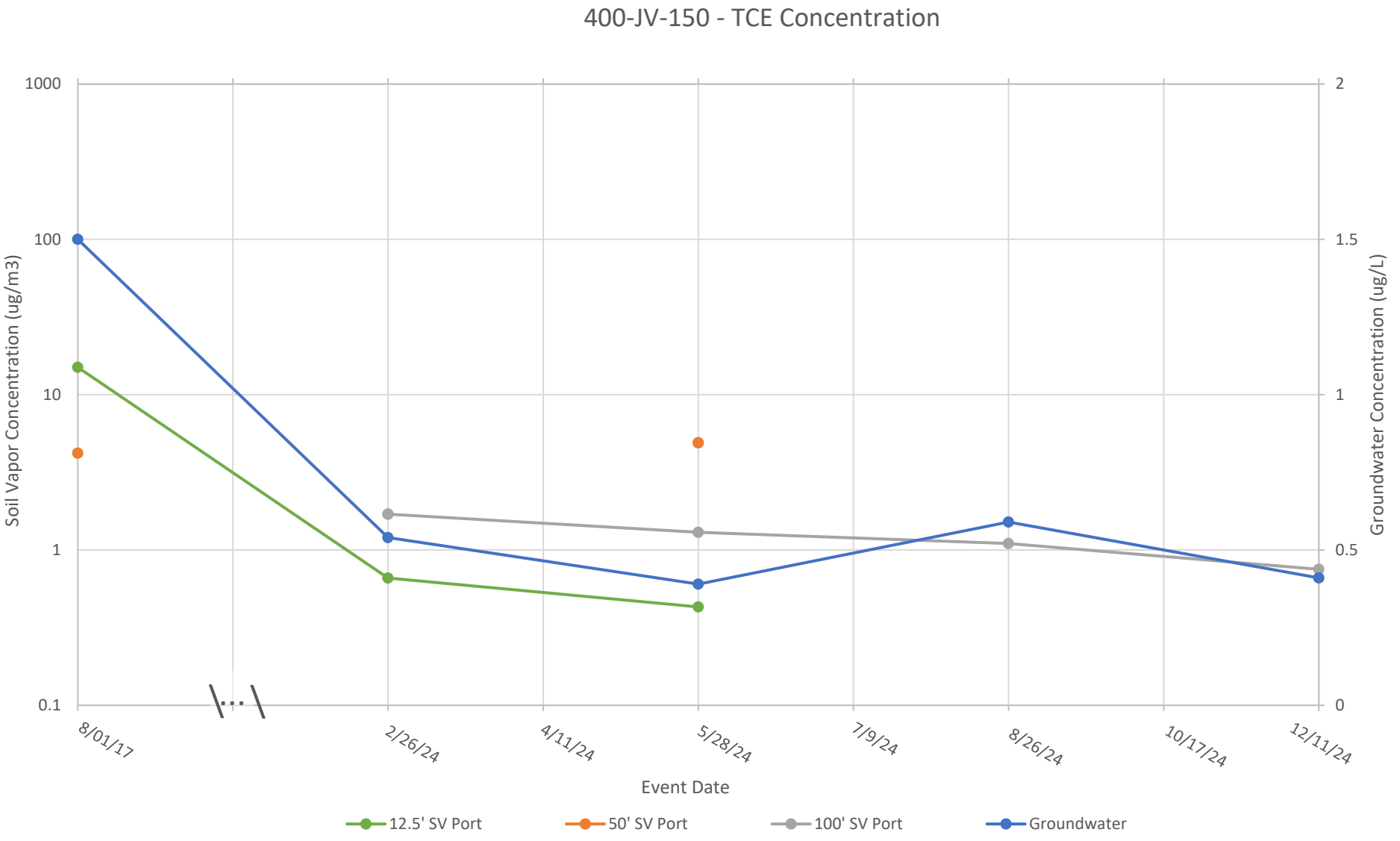
(SEE NEXT PAGE)



Note - No data point for a sampling event indicate Non-Detect results.

Figure 4.28 **Time-Concentration Graph – TCE 400-JV**

(SEE NEXT PAGE)



Note - No data point for a sampling event indicate Non-Detect results.

Tables

Table 1.1 List of Contaminants of Potential Concern for the 400 Area Closure

Constituent	Sample Type
Chloride	ANION
Cyanide	CYANIDE
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	DIOXINS/FURANS
Heptachlorodibenzo-p-dioxins (HpCDD), Total	DIOXINS/FURANS
Octachlorodibenzofuran (OCDF)	DIOXINS/FURANS
Octachlorodibenzo-p-dioxin (OCDD)	DIOXINS/FURANS
Hydrazine	HYDRAZINE
Monomethylhydrazine (MMH)	HYDRAZINE
Unsymmetrical Dimethylhydrazine (UDMH)	HYDRAZINE
Aluminum	METALS
Antimony	METALS
Arsenic	METALS
Barium	METALS
Beryllium	METALS
Boron	METALS
Cadmium	METALS
Calcium	METALS
Chromium (Total)	METALS
Chromium (VI)	METALS
Cobalt	METALS
Copper	METALS
Lead	METALS
Mercury	METALS
Molybdenum	METALS
Nickel	METALS
Selenium	METALS
Silver	METALS
Strontium	METALS
Thallium	METALS
Tin	METALS
Vanadium	METALS
Zinc	METALS
Bromacil	BROMACIL
N-Nitrodimethylamine	NITROSAMINES
N-Nitrosodimethylamine	NITROSAMINES
Nitrate	NITROGEN
Nitrite	NITROGEN
Perchlorate	PERCHLORATE
Bis(2-ethylhexyl) Phthalate	SVOA
Di-n-butyl Phthalate	SVOA
1,1,1-Trichloroethane	VOA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	VOA
1,1-Dichloroethene	VOA
1,2-Dichloro-1,1,2-trifluoroethane (Freon 123a)	VOA
1,2-Dichloroethane	VOA
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	VOA
2-Butanone (Methyl Ethyl Ketone)	VOA
2-Hexanone	VOA

Constituent	Sample Type
2-Propanol	VOA
Acetone	VOA
Bromodichloromethane	VOA
Bromoform	VOA
Chlorobenzene	VOA
Chloroform	VOA
Chloromethane	VOA
Dibromochloromethane	VOA
Dichlorofluoromethane (Freon 21)	VOA
Methyl tert-Butyl Ether	VOA
Methylene Chloride	VOA
m-Xylene & p-Xylene	VOA
Tetrachloroethene (PCE)	VOA
Toluene	VOA
trans-1,2-Dichloroethene	VOA
Trichloroethene (TCE)	VOA
Trichlorofluoromethane (Freon 11)	VOA

Table 2.1 400 Area Monitoring Well Summary

Well ID (Screen ft bgs)	Well Type	SV Port Depths (ft bgs)	Brass Cap Elevation (ft amsl)	Depth to GW (ft bgs)[1]	Groundwater Sampling System	Observations During Third Quarter Sampling
400-EV-131 (131 – 146)	MSVGM	10, 50, 100, 130	4832.08	142.33	Dedicated Low-flow Bladder Pump	
400-FV-131 (130.5 – 145.5)	MSVGM	15, 63, 104, 130	4815.43	129.76	Dedicated Low-flow Bladder Pump	Soil vapor ports at 104’ and 130’ inaccessible
400-GV-125 (125 – 140)	MSVGM	10, 46, 105, 120	4818.86	131.47	Dedicated Low-flow Bladder Pump	
400-HV-147 (147 – 162)	MSVGM	12, 45, 95, 130	4829.26	NR	Dedicated Low-flow Bladder Pump	Transducer in groundwater zone
400-IV-123 (123 – 138)	MSVGM	10, 45, 80, 118	4864.22	131.74	Dedicated Low-flow Bladder Pump	
400-JV-150 (150 – 165)	MSVGM	12.5, 50, 100, 145	4835.71	147.72	Dedicated Low-flow Bladder Pump	Soil vapor port at 145’ inaccessible
400-KV-142 (142 – 157)[2]	MSVM[2]	12.5, 50, 100, 137	4839.53	P&A	P&A	Soil vapor port at 137’ inaccessible. Groundwater zone P&A
400-LV-125 (125 – 140)[2]	MSVM[2]	10, 50, 95, 122	4838.68	P&A	P&A	Groundwater zone P&A
400-SV-02	MSVM	10, 50, 100	4836.95	NA	NA	
400-SV-03	MSVM	10, 50, 92	4833.33	NA	NA	
400-SV-05	MSVM	10, 50, 100	4839.33	NA	NA	
400-SV-07	MSVM	10, 45, 100	4828.86	NA	NA	
400-SV-09	MSVM	10, 45, 104	4824.09	NA	NA	
400-SV-10	MSVM	10, 50, 100, 125	4821.69	NA	NA	
400-SV-15	MSVM	10, 50, 90	4845.56	NA	NA	

Notes:

NA Not available.

NR Not recorded (transducer in groundwater zone).

P&A Well plugged and abandoned. Post-installation development indicated that groundwater recovery following well evacuation was less than 1/10 ft per day.

[1] Depth to groundwater measured during site-wide quarterly water level monitoring on July 24, 2024.

[2] Former groundwater screened interval, well converted from MSVGM to MSVM well on January 7, 2023.

Table 4.1 MSVGM Well Initial Groundwater Quality Parameters for Fourth Quarter 2024

Well ID (Screen Ft)	Well Type	Date and Time Sampled (yr/mo/day/time)	Temperature (°C)	Conductivity (µmhos/cm)	pH	Turbidity (NTU)	Initial Depth to Water (ft)
400-EV-131 (131-146)	MSVGM	24/12/11/0940 24/12/11/0941 24/12/11/0942	18.26 18.48 18.30	1299 1301 1311	7.01 7.01 7.01	0.43 0.76 0.80	141.00* 141.00* 141.00*
400-FV-131 (130-5-145.5)	MSVGM	24/12/11/0930 24/12/11/0932 24/12/11/0933	18.74 18.73 18.73	1161 1159 1161	7.20 7.17 7.18	2.06 1.88 1.60	127.32 127.32 127.32
400-GV-125 (125-140)	MSVGM	24/12/11/1100 24/12/11/1102 24/12/11/1104	19.21 19.20 19.21	1264 1262 1264	7.21 7.18 7.22	1.80 1.58 1.18	128.70 128.70 128.70
400-HV-147 (147-162)	MSVGM	24/12/11/1025 24/12/11/1026 24/12/11/1027	20.31 20.29 20.32	2050 2049 2049	7.42 7.40 7.41	0.85 0.43 0.56	NR NR NR
400-IV-123 (123-138)	MSVGM	24/12/11/1345 24/12/11/1346 24/12/11/1347	20.33 20.34 20.34	372.84 372.91 372.80	9.08 9.09 9.09	0.50 0.55 0.43	137.33* 137.33* 137.33*
400-JV-150 (150-165)	MSVGM	24/12/11/1230 24/12/11/1232 24/12/11/1233	18.23 18.24 18.24	2.18 2.23 2.19	7.24 7.19 7.21	3.99 3.29 3.19	144.35 144.35 144.35
400-KV-142 (142-157)	MSVM	P&A	P&A	P&A	P&A	P&A	P&A
400-LV-125 (125-140)	MSVM	P&A	P&A	P&A	P&A	P&A	P&A

Notes:

* Initial depth to water not recorded on 12/11/24. Depth to water from measurement on 1/30/25.

NR Not recorded (transducer in groundwater zone).

P&A Following the inability to sample groundwater, the groundwater screen was subsequently plugged and abandoned on January 7, 2023.

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Table 4.2 Groundwater Analytical Results Above Laboratory Detection Limits for Fourth Quarter 2024

Analyte	Sampling Date	Analytical Method	Concentration Range	Laboratory Detection Limit (DL)	Number of Wells	Maximum Concentration Well	Current WSTF GMP Cleanup Level[1]	Is DL Above Cleanup Level?
Volatile Organic Compounds (VOCs, µg /L)								
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	12/11/24	8260	3.3 - 140	0.2	6/6	400-JV-150	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon 123a)	12/11/24	8260	0.68 J – 5.1	0.2	4/6	400-GV-125	NA	NA
Chloroform	12/11/24	8260	0.51 J – 0.98 J	0.51	2/6	400-HV-147	100	No
Dichlorofluoromethane (Freon 21)	12/11/24	8260	0.33 J – 3.8	0.2	6/6	400-GV-125	NA	NA
Toluene	12/11/24	8260	0.21-0.31	0.2	3/6	400-FV-131	1,000	No
Trichloroethene (TCE)	12/11/24	8260	0.31 J – 1.1	0.2	4/6	400-EV-131	5	No
Trichlorofluoromethane (Freon 11)	12/11/24	8260	6.7 – 680 D	0.24 – 1.2	6/6	400-JV-150	1,140	No
Semi-volatile Organic Compounds (SVOCs) and Bromacil/Nitrosamines (µg /L)								
Bromacil	12/11/24	607	0.01 – 5.72 D (Ext Eff 89)	0.0047 – 0.024	6/6	400-EV-131	NA	NA
N-Nitrodimethylamine (DMN)	12/11/24	607	0.03 – 420.95 D * (Ext Eff 91)	0.0047 – 0.48	6/6	400-HV-147	NA	NA
N-Nitrosodimethylamine (NDMA)	12/11/24	607	0.3 – 164.57 D * (Ext Eff 57)	0.0047 – 0.48	6/6	400-HV-147	0.00491	Yes
Metals (mg/L)								
Aluminum	12/11/24	METALS	NA	0.03	0/6	NA	NA	NA
Antimony	12/11/24	METALS	0.0003 J – 0.0025	0.0002	2/6	400-HV-147	6	No
Arsenic	12/11/24	METALS	0.0007 J – 0.0079	0.0004	6/6	400-IV-123	10	No
Barium	12/11/24	METALS	0.027 – 0.075	0.003	6/6	400-HV-147	2,000	No
Boron	12/11/24	METALS	0.14 J – 1.36	0.02	6/6	400-JV-150	NA (3,950)[2]	No

Analyte	Sampling Date	Analytical Method	Concentration Range	Laboratory Detection Limit (DL)	Number of Wells	Maximum Concentration Well	Current WSTF GMP Cleanup Level[1]	Is DL Above Cleanup Level?
Calcium	12/11/24	METALS	16.3 - 155	0.3	6/6	400-HV-147	NA	NA
Chromium	12/11/24	METALS	0.006 J – 0.011	0.002	2/6	400-IV-123	50	No
Cobalt	12/11/24	METALS	0.002 J	0.0009	1/6	400-HV-147	50	No
Magnesium	12/11/24	METALS	26.5 - 119	0.03	6/6	400-HV-147	NA	NA
Manganese	12/11/24	METALS	0.006 J - 0.067	0.004	3/6	400-FV-131	NA (2,020)[2]	No
Molybdenum	12/11/24	METALS	0.006 J – 0.011 J	0.003	6/6	400-IV-123	NA (98.7)[2]	No
Nickel	12/11/24	METALS	0.019 J – 0.103	0.003	6/6	400-EV-131	200	No
Potassium	12/11/24	METALS	2.3 – 5.0	0.4	6/6	400-JV-150	NA	NA
Selenium	12/11/24	METALS	0.008 J – 0.012	0.007	2/6	400-JV-150	0.05	No
Sodium	12/11/24	METALS	31.7 - 230	0.3	6/6	400-JV-150	NA	NA
Strontium	12/11/24	METALS	0.87 – 6.03	0.002	6/6	400-HV-147	NA (11,800)[2]	No
Thallium	12/11/24	METALS	0.00004 J – 0.0001 J	0.00004	4/6	400-FV-131 400-GV-125	2	No
Vanadium	12/11/24	METALS	0.0008 J – 0.007 J	0.0007	5/6	400-IV-123	63.1	No
Zinc	12/11/24	METALS	0.003 J – 0.004 J	0.003	5/6	400-EV-131, 400-FV-131, 400-GV-125, 400-HV-147	10,000	No

Notes:
D The reported result is from a dilution.
J The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NA Not applicable. No WSTF cleanup level.
[1] From the WSTF Groundwater Monitoring Plan (GMP; NASA, 2025b).
[2] No WSTF cleanup level; Cleanup level listed in parentheses is from the NMED Risk Assessment Guidance (2022).

Table 4.3 Groundwater Analytical Results Above WSTF Cleanup-Screening Levels for Fourth Quarter 2024

Well Name	Sampling Date	Analytical Method	Analyte	Result	NDMA (607) Extraction Efficiency	QA Flag	WSTF GMP Cleanup Level[1]
400-EV-131	12/11/24	607	NDMA	0.62 µg /L	57		0.00491 µg /L
400-FV-131	12/11/24	607	NDMA	0.32 µg /L	57		0.00491 µg /L
400-FV-131	12/11/24	607	NDMA	0.30 µg /L	57		0.00491 µg /L
400-GV-125	12/11/24	607	NDMA	0.93 µg /L	57		0.00491 µg /L
400-GV-125	12/11/24	607	NDMA	0.92 µg /L	57		0.00491 µg /L
400-HV-147	12/11/24	607	NDMA	164.57 µg /L	57	D	0.00491 µg /L
400-JV-150	12/11/24	607	NDMA	1.67 µg /L	57		0.00491 µg /L

Notes:
D The reported result is from a dilution.
[1] From the WSTF Groundwater Monitoring Plan (GMP; NASA, 2025b).

Table 4.4 Groundwater Statistical Trends

Well	NDMA	Freon 11	TCE	Freon 113
400-EV-131	No significant trend	No significant trend	No significant trend	No significant trend
400-FV-131	Down	No significant trend	No significant trend	Down
400GV-125	No significant trend	No significant trend	No significant trend	No significant trend
400-HV-147	Up	No significant trend	No significant trend	No significant trend
400-IV-123	No significant trend	No significant trend	No significant trend	No significant trend
400-JV-150	No significant trend	No significant trend	No significant trend	No significant trend

NDMA was not corrected for extraction efficiency

Table 4.5 MSVM and MSVGM Well Soil Vapor Purge Parameters for Fourth Quarter 2024

Well Port ID – Depth (ft)	Well Type	Date and Time Sampled (yr/mo/day/time)	CH_4 (%)	CO_2 (%)	O_2 (%)	ALS Laboratory Canister ID	Final Canister Pressure (PSI)[1]
400-EV-131-10’	MSVGM	24/12/11/1300	0.0	2.9	17.1	ISC01343	0
400-EV-131-50’		24/12/11/1309	0.0	2.8	17.7	ISS01890	0
400-EV-131-100’		24/12/11/1318	0.0	2.1	17.4	ISS01698	-1
400-EV-131-100’ (D)		24/12/11/1319	0.0	1.8	17.6	ISS01786	0
400-EV-131-130’		24/12/11/1328	0.0	2.0	18.0	ISS01757	-1
400-FV-131-15’	MSVGM	24/12/11/1030	0.0	1.2	19.8	ISS00543	0
400-FV-131-63’		24/12/11/1037	0.0	2.1	18.8	ISS01748	0
400-FV-131-104’		NS	NS	NS	NS	NS	NS
400-FV-131-130’		NS	NS	NS	NS	NS	NS
400-GV-125-10’	MSVGM	24/12/11/0945	0.0	2.1	18.2	ISC01295	0
400-GV-125-10’ (D)		24/12/11/0946	0.0	2.3	18.1	ISS00892	0
400-GV-125-46’		24/12/11/0957	0.0	2.1	17.9	ISS00153	0
400-GV-125-105’		24/12/11/1005	0.0	2.9	14.7	ISS00595	-1
400-GV-125-120’		24/12/11/1013	0.0	2.5	15.0	ISS00802	-1
400-HV-147-12’ (TB)	MSVGM	24/12/11/1350	NA	NA	NA	ISS00751	NA
400-HV-147-12’		24/12/11/1351	0.0	2.3	17.6	ISS00928	0
400-HV-147-45’		24/12/11/1400	0.0	1.7	17.9	ISS00689	0
400-HV-147-95’		24/12/11/1409	0.0	2.3	17.3	ISC01032	-1
400-HV-147-95’ (FB)		24/12/11/1410	NA	NA	NA	ISS00986	0
400-HV-147-130’		24/12/11/1419	0.0	2.6	17.1	ISS00686	0
400-IV-123-10’	MSVGM	24/12/11/1055	0.0	0.3	19.5	ISS01750	0
400-IV-123-10’ (D)		24/12/11/1056	0.0	0.4	19.3	ISS01612	0
400-IV-123-45’		24/12/11/1105	0.0	0.5	19.1	ISS01593	0
400-IV-123-80’		24/12/11/1113	0.0	0.4	18.9	ISS01855	0
400-IV-123-118’		24/12/11/1121	0.0	0.8	18.3	ISS01791	0
400-JV-150-12.5’ (TB)	MSVGM	24/12/11/0900	NA	NA	NA	ISS01690	NA
400-JV-150-12.5’		24/12/11/0901	0.0	1.9	18.5	ISS00514	0
400-JV-150-50’		24/12/11/0908	0.0	2.4	18.0	ISS01608	0
400-JV-150-100’		24/12/11/0916	0.0	2.7	17.4	ISS01311	0
400-JV-150-100’ (FB)		24/12/11/0917	NA	NA	NA	ISS01250	0
400-JV-150-145’		NS	NS	NS	NS	NS	NS
400-KV-142-12.5’	MSVGM	24/12/10/1015	0.0	0.9	19.3	ISC01368	0
400-KV-142-50’		24/12/10/1021	0.0	1.7	18.9	ISC01176	0
400-KV-142-100’		24/12/10/1027	0.0	2.3	17.5	ISS00832	0
400-KV-142-100’ (FB)		24/12/10/1028	NA	NA	NA	ISC01272	0
400-KV-142-137’		NS	NS	NS	NS	NS	NS
400-LV-125-10’	MSVGM	24/12/10/1105	0.0	1.1	19.1	ISS01685	0
400-LV-125-50’		24/12/10/1111	0.0	1.4	18.6	ISS01497	0
400-LV-125-50’ (D)		24/12/10/1112	0.0	1.4	18.5	ISS01156	-1
400-LV-125-95’		24/12/10/1120	0.0	1.8	17.8	ISS01407	-1
400-LV-125-122’		24/12/10/1128	0.0	1.7	17.6	ISS01269	0
400-SV-02-10’	MSVM	24/12/10/1355	0.0	1.4	18.8	ISS00098	0
400-SV-02-50’		24/12/10/1403	0.0	1.4	18.3	ISS00504	-1
400-SV-02-50’ (FB)		24/12/10/1404	NA	NA	NA	ISC01237	0
400-SV-02-100’		24/12/10/1412	0.0	1.8	17.5	ISS01361	0
400-SV-03-10’ (TB)	MSVM	24/12/12/0900	NA	NA	NA	ISC01294	NA
400-SV-03-10’		24/12/12/0901	0.0	2.1	18.6	ISC00529	0
400-SV-03-50’		24/12/12/0910	0.0	1.9	18.4	ISS01371	0
400-SV-03-92’		24/12/12/0919	0.0	2.3	18.0	ISS01785	0
400-SV-03-92’ (FB)		24/12/12/0920	NA	NA	NA	ISS01138	0

Well Port ID – Depth (ft)	Well Type	Date and Time Sampled (yr/mo/day/time)	CH_4 (%)	CO_2 (%)	O_2 (%)	ALS Laboratory Canister ID	Final Canister Pressure (PSI)[1]
400-SV-05-10’	MSVM	24/12/10/1039	0.0	0.8	19.0	ISS00739	-14/-1
400-SV-05-50’		24/12/10/1045	0.0	1.4	18.0	ISS00870	0
400-SV-05-100’		24/12/10/1053	0.0	2.1	17.4	ISS00110	-1
400-SV-07-10’	MSVM	24/12/12/0815	0.0	2.6	18.2	ISS00205	0
400-SV-07-10’ (D)		24/12/12/0816	0.0	2.8	18.0	ISS00101	0
400-SV-07-45’		24/12/12/0826	0.0	2.4	17.9	ISS01020	-1
400-SV-07-100’		24/12/12/0835	0.0	2.9	17.6	ISS01005	0
400-SV-07-100’ (FB)		24/12/12/0836	NA	NA	NA	ISS00894	0
400-SV-09-10’	MSVM	24/12/09/1405	0.0	0.8	19.2	ISS01525	-1
400-SV-09-10’ (FB)		24/12/09/1406	NA	NA	NA	ISS01606	0
400-SV-09-45’		24/12/09/1410	0.0	1.5	18.5	ISS01638	0
400-SV-09-104’		24/12/09/1416	0.0	1.8	17.9	ISS01195	0
400-SV-10-10’	MSVM	24/12/09/1330	0.0	1.3	19.2	ISS00988	0
400-SV-10-50’		24/12/09/1335	0.0	1.7	18.2	ISC00337	0
400-SV-10-100’		24/12/09/1342	0.0	2.1	14.8	ISC00684	0
400-SV-10-100’ (D)		24/12/09/1343	0.0	2.0	14.6	ISC00358	0
400-SV-10-125’		24/12/09/1352	0.0	3.4	12.5	ISS00844	-1
400-SV-15-10’	MSVM	24/12/10/1315	0.0	0.4	19.6	ISS01144	0
400-SV-15-10’ (FB)		24/12/10/1316	NA	NA	NA	ISS00752	0
400-SV-15-50’		24/12/10/1325	0.0	1.0	19.0	ISC01370	0
400-SV-15-90’		24/12/10/1334	0.0	1.1	18.3	ISC00637	0

Notes:
D Duplicate
FB Field Blank
NA Not Applicable
NS Not Sampled (vapor port below water level or blocked)
TB Trip Blank
[1] No deviation from the initial ALS laboratory canister pressure of -14 PSI is reported for the 4Q24 field event.

Table 4.6 Soil Vapor Analytes and Concentration Ranges for Fourth Quarter 2024

Analyte	Concentration Range Within Soil Vapor Monitoring Well Sampling Zones		Concentration Range Within Field Blank and Trip Blank Samples		Range of MDL Due to Dilution (excludes Max)	Max MDL Due to Dilution	VISL[1], RSL[2], or RBC[3]	
	Minimum (µg/m³)	Maximum (µg/m³)	Minimum (µg/m³)	Maximum (µg/m³)	(µg/m³)	(µg/m³)	Residential (µg/m³)	Industrial (µg/m³)
1,1,1-Trichloroethane*	ND	ND	ND	ND	0.17 – 74	240	174,000[1]	819,000[1]
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.19 – **83**	**260**	16.1[1]	79.1[1]
1,1,2-Trichloroethane	ND	ND	ND	ND	0.14 – **60**	**190**	6.95[1]	32.8[1]
1,1-Dichloroethane	ND	ND	ND	ND	0.20 – 87	280	585[1]	2,870[1]
1,1-Dichloroethene*	ND	ND	ND	ND	0.19 – 83	260	6,950[1]	32,800[1]
1,2,4-Trichlorobenzene	ND	ND	ND	ND	0.33 – **150**	**470**	69.5[1]	328[1]
1,2,4-Trimethylbenzene	ND	1.6 J	ND	2.1 J FB	0.19 – **83**	**260**	63[2]	260[2]
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	0.16 – **69**	**220**	1.56[1]	7.65[1]
1,2-Dichlorobenzene	ND	ND	ND	ND	0.20 – 88	280	6,950[1]	32,800[1]
1,2-Dichloroethane	ND	1.4 J	ND	ND	0.15 – **66**	**210**	36[1]	176[1]
1,2-Dichloropropane	ND	6.9	ND	2.1 J FB	0.17 – 74	**240**	93.6[1]	459[1]
1,3,5-Trimethylbenzene	ND	0.61 J	ND	0.59 J FB	0.19 – **86**	**280**	63[2]	260[2]
1,3-Butadiene	ND	1.5 J	ND	ND	0.22 – **99**	**320**	31.2[1]	153[1]
1,3-Dichlorobenzene	ND	ND	ND	ND	0.20 – 90	290	NA	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	0.21 – **92**	**290**	85.1[1]	417[1]
1,4-Dioxane	ND	2.6	ND	ND	0.16 – **71**	**230**	5.6[2]	25[2]
2,2,4-Trimethylpentane	ND	3.4	ND	3.8 J FB	0.20 – 90	290	NA	NA
2-Butanone (MEK)*	ND	45,000	ND	90 T FB	0.28 – 120	390	174,000[1]	819,000[1]
2-Hexanone*	ND	3.9	ND	ND	0.17 – **74**	**240**	31[2]	130[2]
2-Propanol* (Isopropanol)	ND	100 QD	ND	90 FB	0.55 – **250**	**790**	210[2]	880[2]
3-Chloropropene (Allyl Chloride)	ND	ND	ND	ND	0.18 – **81**	**260**	4.7[2]	20[2]
4-Ethyltoluene	ND	0.57 J	ND	ND	0.21 – 95	300	NA	NA
4-Methyl-2-pentanone	ND	6.8 QD	ND	0.89 J FB	0.18 – 82	260	104,000[1]	492,000[1]
Acetone*	ND	350	ND	62 FB	3 – 1,300	4,300	1,080,000[1]	5,080,000[1]
alpha-Chlorotoluene (benzyl chloride)	ND	ND	ND	ND	0.3 – **130**	**430**	0.57[2]	2.5[2]

Analyte	Concentration Range Within Soil Vapor Monitoring Well Sampling Zones		Concentration Range Within Field Blank and Trip Blank Samples		Range of MDL Due to Dilution (excludes Max)	Max MDL Due to Dilution	VISL[1], RSL[2], or RBC[3]	
	Minimum (µg/m³)	Maximum (µg/m³)	Minimum (µg/m³)	Maximum (µg/m³)	(µg/m³)	(µg/m³)	Residential (µg/m³)	Industrial (µg/m³)
Benzene	ND	11	ND	7.2 FB	0.19 – 86	**280**	120[1]	588[1]
Bromodichloromethane*	ND	1.7 J	ND	ND	0.19 – **86**	**280**	25.3[1]	124[1]
Bromoform*	ND	0.52 J T	ND	ND	0.28 – **120**	**390**	26[2]	110[2]
Bromomethane	ND	2.2 T	ND	ND	0.19 – 83	**260**	174[1]	819[1]
Carbon Disulfide	ND	43	ND	3.6 J RB FB	0.40 – 180	570	24,300[1]	115,000[1]
Carbon Tetrachloride	ND	4.5	ND	0.56 J T FB	0.19 – 83	**260**	156[1]	765[1]
Chlorobenzene*	ND	0.29 J	ND	ND	0.18 – 80	250	1,740[1]	8,190[1]
Chloroethane (ethyl chloride)	ND	1.1 J T	ND	ND	0.17 – 74	240	4,200[2]	18,000[2]
Chloroform*	ND	68 T	ND	0.42 J T FB	0.18 – **80**	**250**	40.7[1]	199[1]
Chloromethane*	ND	2.5 T A	ND	1.1 J FB	0.22 – 96	310	520[1]	2,550[1]
cis-1,2-Dichloroethene	ND	ND	ND	ND	0.19 – **84**	**270**	42[2]	180[2]
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.21 – 93	300	NA	NA
Cumene	ND	0.33 J	ND	ND	0.19 – 86	280	13,900[1]	65,500[1]
Cyclohexane	ND	470 J T	ND	7.7 FB	0.38 – 170	540	6,300[2]	26,000[2]
Dibromochloromethane*	ND	ND	ND	ND	0.18 – **78**	**250**	34.7[1]	170[1]
Ethanol	ND	270 J	ND	110 FB	0.93 – 410	1,300	2.1×10^6 to 4.7×10^7 (3)	4.7×10^7 to 1.5×10^9 (3)
Ethyl Benzene	ND	4.4	ND	3.3 J FB	0.19 – 84	270	374[1]	1,840[1]
Freon 11*	1.7 J QD	410,000	ND	41 T FB	0.20 – 290	890	24,300[1]	115,000[1]
Freon 113*	1.2 J	450,000	ND	43 T FB	0.19 – 250	680	1,040,000[1]	4,920,000[1]
Freon 114	ND	8.4 J T	ND	ND	0.21 – 94	300	NA	NA
Freon 12	ND	520 J T	ND	2.5 T FB	0.22 – 97	310	3,480[1]	16,400[1]
Freon 123*	ND	23 J T *	ND	ND	0.60 – 270	860	5.2×10^6 to 1.3×10^8 (3)	1.3×10^8 to 4.4×10^9 (3)
Freon 123a	ND	12,000 TIC	ND	ND	NA	NA	NA	NA
Freon 21*	ND	13,000 *	ND	14 T FB *	0.6 – 270	860	2.0×10^4 to 5.3×10^5 (3)	5.1×10^5 to 1.7×10^7 (3)

Analyte	Concentration Range Within Soil Vapor Monitoring Well Sampling Zones		Concentration Range Within Field Blank and Trip Blank Samples		Range of MDL Due to Dilution (excludes Max)	Max MDL Due to Dilution	VISL[1], RSL[2], or RBC[3]	
	Minimum (µg/m³)	Maximum (µg/m³)	Minimum (µg/m³)	Maximum (µg/m³)	(µg/m³)	(µg/m³)	Residential (µg/m³)	Industrial (µg/m³)
Heptane	ND	2,000 T	ND	7.8 FB	0.21 – 95	300	420[2]	1,800[2]
Hexachlorobutadiene	ND	ND	ND	ND	0.28 – **120**	**390**	1.3[2]	5.6[2]
Hexane	ND	2,100 T	ND	4.9 FB	0.28 – 120	390	24,300[1]	115,000[1]
m,p-Xylene*	ND	14	ND	12 FB	0.35 – 160	500	3,480[1]	16,400[1]
Methyl tert-butyl ether*	ND	4.6 J	ND	0.62 J TB	0.16 – 71	230	3,600[1]	17,600[1]
Methylene Chloride*	ND	13 J	ND	2.2 T FB	0.38 – 170	540	20,900[1]	98,300[1]
o-Xylene	ND	8.6 J	ND	4.9 FB	0.19 – 86	280	3,480[1]	16,400[1]
Propylbenzene	ND	0.45 J	ND	ND	0.19 – 86	280	1,000[2]	4,400[2]
Styrene	ND	2.6 J	ND	1.9 J FB	0.22 – 96	310	34,800[1]	164,000[1]
Tetrachloroethene (PCE)*	ND	1,200 J	ND	2.5 J FB	0.17 – 77	250	1,390[1]	6,550[1]
Tetrahydrofuran	ND	7.6	ND	8.5 FB	0.17 – 75	240	2,100[2]	8,800[2]
Toluene*	ND	5,600 T	ND	86 FB	0.16 – 73	230	174,000[1]	819,000[1]
trans-1,2-Dichloroethene*	ND	ND	ND	ND	0.19 – **83**	**260**	42[2]	180[2]
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.28 – **120**	**390**	7[2]	31[2]
Trichloroethene (TCE)*	ND	370 J	ND	0.63 J TB	0.18 – **81**	**260**	69.5[1]	328[1]
Vinyl Chloride	ND	ND	ND	ND	0.14 – **64**	**200**	55.9[1]	1,040[1]

Notes:
Shaded analytes were ND for sampling zone and field blank/trip blank samples for dataset.
Bold indicates MDL due to dilution was greater than the VISL/RSL/RBC for the constituent (residential, industrial, or both).
* = Analyte is on list of potential 400 Area COPCs identified in the IWP (NASA, 2011 – 400 Area IWP).
FB = The analyte was detected in the field blank.
J = The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
ND = The analyte was not detected above the detection limit.
T = The sample fell outside the 30-day holding time due to power outages related to fires in California in December 2024.
TB = The analyte was detected in the trip blank.
TIC = The analyte was tentatively identified by gas chromatography mass spectrometry library search and the amount reported is an estimated value.
[1] VISL from NMED Risk Assessment Guidance (NMED, 2022).
[2] From RSL EPA (EPA, 2024).
[3] Range of RBC from 5 ft bgs (shallowest and most conservative) to 150 ft bgs (deepest) from latest approved version of WSTF RBCs (NASA, 2024b).

Table 4.7 Soil Vapor Analytical Results Compared to Residential NMED VISLs and WSTF RBCs for Fourth Quarter 2024

Well ID	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Result[1] (µg/m^3)	QA Flag	NMED Residential VISL[2] or EPA RSL[3] (µg/m^3)	WSTF RBC[4] Residential (µg/m^3)	Factor, Result: RBC[5] (dimensionless)
Monitoring Well Soil Vapor Sampling Zones								
400-HV-125	130	12/11/24	Chloroform	68	T	40.7	3,600 @ 100 ft bgs	53
400-IV-123	80	12/11/24	Heptane	2,000	T	420	730,000 @ 50 ft bgs	365
400-IV-123	80	12/11/24	Freon 11	410,000	D T	24,300	3,300,000 @ 50 ft bgs	8
400-SV-10	125	12/9/24	Freon 11	180,000		24,300	6,400,000 @ 100 ft bgs	36
400-HV-125	130	12/11/24	Freon 11	120,000	D T	24,300	6,400,000 @ 100 ft bgs	53
400-GV-125	105	12/11/24	Freon 11	30,000	T	24,300	6,400,000 @ 100 ft bgs	213
400-SV-10	125	12/9/24	TCE	370	J	69.5	6,800 @ 100 ft bgs	18
400-IV-123	80	12/11/24	TCE	160	J T	69.5	3,400 @ 50 ft bgs	21
QA Samples								
None	--	--	None	--	--	--	--	--

Notes:

Bold = Analytes that exceed the WSTF residential RBC (none exceeded for 4Q24).

D = The ALS laboratory reported result is from a dilution that required more than one injection volume to differentiate the volumes.

FB = The analyte was detected in the field blank.

J = The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.

NA = Not available.

T = The sample fell outside the 30-day holding time due to power outages related to fires in California in December 2024.

[1] Results are provided for all analyte occurrences that exceed the equivalent NMED VISL.

[2] VISL from NMED Risk Assessment Guidance (NMED, 2022).

[3] RSL from EPA Regional Screening Levels (EPA, 2024).

[4] From latest approved version of WSTF RBCs (NASA, 2024b). Value taken from nearest available RBC calculation depth above port depth for more conservative value.

[5] This value reflects the ratio of the soil vapor result (µg/m^3) to the equivalent RBC (µg/m^3). This is the factor by which the equivalent RBC exceeds the result.

Table 4.8 Soil Vapor Detection Limits Exceeding Residential NMED VISLs/EPA RSL (5 Sampling Events)

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-EV-131	130	July 2017	1,1,2,2-Tetrachloroethane	25-6,200	165-41,500	13/53	16.1[1]	None
400-GV-125	105							
400-GV-125	120							
400-HV-147	130							
400-IV-123	45							
400-IV-123	80							
400-IV-123	118							
400-KV-142	137							
400-LV-125	122							
400-SV-02	100							
4000-SV-10	100							
400-SV-10	125							
400-SV-15	90							
400-GV-125	105	Feb, May, Aug, Dec 2024		21-640	280-8,700	19/201	16.1[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-GV-125	120							
400-HV-147	130							
400-IV-123	80							
400-SV-02	100							
400-SV-05	100							
400-SV-10	125							
400-EV-131	130	July 2017	1,1,2-Trichloroethane	7.4-6,600	46.3-41,500	21/53	6.95[1]	None
400-GV-125	105							
400-GV-125	120							
400-HV-147	130							
400-IV-123	45							
400-IV-123	80							
400-IV-123	118							
400-JV-150	12.5							
400-JV-150	100							
400-KV-142	137							
400-LV-125	95							

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-LV-125 400-SV-02 400-SV-03 400-SV-05 400-SV-05 400-SV-09 4000-SV-10 400-SV-10 400-SV-15 400-SV-15	122 100 92 10 100 10 100 125 50 90		1,1,2-Trichloroethane					
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-02 400-SV-05 400-SV-10	105 120 130 80 100 100 125	Feb, May, Aug, Dec 2024		15- 470	280- 8,700	19/201	6.95[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-HV-147 400-IV-123 400-KV-142 400LV-125	130 130 80 137 122	July 2017	1,1-Dichloroethane	1,000- 6,600	6,520- 41,500	5/53	585[1]	None
400-IV-123 400-SV-10	80 125	Feb, May, Aug, Dec 2024		610 680	7,850 8,700	2/201	585[1]	None
400-KV-142	137	July 2017	1,1-Dichloroethene*	7,100	41,500	1/53	6,950[1]	None
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123	130 105 120 130 45 80	July 2017	1,2,4-Trichlorobenzene	72- 6,600	448- 41,500	10/53	69.5[1]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-KV-142 400-LV-125 400-SV-10 400-SV-10	137 122 100 125		1,2,4-Trichlorobenzene					
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 120 130 80 125	Feb, May, Aug, Dec 2024		71- 1,100	543- 8,700	13/201	69.5[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10	130 105 120 130 45 80 137 122 100 125	July 2017	1,2,4-Trimethylbenzene	63- 6,200	418- 41,500	10/53	63[2]	None
400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 130 80 125	Feb, May, Aug, Dec 2024		65- 640	885- 8,700	11/201	63[2]	FB: SV-15 90 ft 400-HV 130 ft
400-EV-131 400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-HV-147 400-IV-123 400-IV-123 400-IV-123	100 130 105 120 95 130 45 80 118	July 2017 July 2017	1,2-Dibromoethane (EDB)	2.6- 6,600 2.6- 6,600	16.3- 41,500 16.3- 41,500	30/53 30/53	1.56[1] 1.56[1]	None None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-JV-150	12.5		1,2-Dibromoethane (EDB)					
400-JV-150	100							
400-KV-142	12.5							
400-KV-142	100							
400-KV-142	137							
400-LV-125	95							
400-LV-125	122							
400-SV-02	10							
400-SV-02	100							
400-SV-03	92							
400-SV-05	10							
400-SV-05	50							
400-SV-05	100							
400-SV-07	10							
400-SV-07	100							
400-SV-09	10							
400-SV-10	100							
400-SV-10	125							
400-SV-15	50							
400-SV-15	90							
400-GV-125	105	Feb, May, Aug, Dec 2024		1.8-540	29.5-8,700	43/201	1.56[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-GV-125	120							
400-HV-147	130							
400-IV-123	10							
400-IV-123	80							
400-IV-123	118							
400-LV-125	95							
400-SV-02	100							
400-SV-03	92							
400-SV-05	10							
400-SV-05	50							
400-SV-05	100							

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-SV-10 400-SV-15	125 90		1,2-Dibromoethane (EDB)					
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10	130 105 120 130 45 80 137 122 100 125	July 2017	1,2-Dichloroethane	67- 6,600	418- 41,500	10/53	36[1]	None
400-GV-125 400-HV-147 400-IV-123 400-IV-123	105 130 80 125	Feb, May, Aug, Dec 2024		52- 510	885- 8,700	11/201	36[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-HV-147 400-IV-123 400-KV-142 400-LV-125 400-SV-10	130 105 130 80 137 122 125	July 2017	1,2-Dichloropropane	360- 6,600	2,280- 41,500	7/53	93.6[1]	None
400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 130 80 125	Feb, May, Aug, Dec 2024		110- 570	1,610- 8,700	7/201	93.6[1]	FB: SV-15 90 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123	130 105 120 130 45	July 2017	1,3,5-Trimethylbenzene	72- 6,600	448- 41,500	10/53	63[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10	80 137 122 100 125		1,3,5-Trimethylbenzene					
400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 130 80 125	Feb, May, Aug, Dec 2024		68- 670	885- 8,700	11/201	63[2]	FB: SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-02 400-SV-10 400-SV-10 400-SV-15	130 105 120 130 45 80 118 137 122 100 100 125 90	July 2017	1,3-Butadiene	36- 9,100	165- 41,500	13/53	31.2[1]	None
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-02 400-SV-10	105 120 130 80 100 125	Feb, May, Aug, Dec 2024		32- 770	368- 8,700	15/201	31.2[1]	FB: SV-10 50 ft SV-15 at 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-HV-147 400-IV-123	130 105 130 80	July 2017	1,4-Dichlorobenzene	320- 5,800	2,280- 41,500	7/53	85.1[1]	

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-KV-142 400-LV-125 400-SV-10	137 122 125		1,4-Dichlorobenzene					
400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 130 80 125	Feb, May, Aug, Dec 2024		90- 710	1,090- 8,700	9/201	85.1[1]	FB: SV-15 90 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-JV-150 400-JV-150 400-KV-142 400-KV-142 400-KV-142 400-LV-125 400-LV-125 400-SV-02 400-SV-03 400-SV-05 400-SV-05 400-SV-07 400-SV-09 400-SV-10 400-SV-10 400-SV-15 400-SV-15	130 105 120 130 45 80 118 12.5 100 12.5 100 137 95 122 100 92 10 100 100 10 100 125 50 90	July 2017	1,4-Dioxane	6.4- 6,600	40.3- 41,500	24/53	5.6[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-02 400-SV-05 400-SV-10 400-SV-15	105 120 130 80 100 100 125 90	Feb, May, Aug, Dec 2024	1,4-Dioxane	6.7- 550	106- 8,700	21/201	5.6[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10 400-SV-15	130 105 120 130 45 80 118 137 122 100 125 90	July 2017	2-Hexanone*	33- 6,600	208- 41,500	12/51	31[2]	None
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 120 130 80 125	Feb, May, Aug, Dec 2024		36- 570	543- 8,700	13/201	31[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-KV-142 400-LV-125	130 105 120 130 80 137 122	July 2017	2-Propanol* (Isopropanol)	230- 17,000	543- 41,500	8/51	210[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-SV-10	125		2-Propanol* (Isopropanol)					
400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 130 80 125	Feb, May, Aug, Dec 2024		240-1,900	1,090-8,700	9/201	210[2]	FB: SV-15 90 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-JV-150 400-JV-150 400-KV-142 400-KV-142 400-KV-142 400-LV-125 400-LV-125 400-SV-02 400-SV-03 400-SV-05 400-SV-05 400-SV-05 400-SV-07 400-SV-09 400-SV-10 400-SV-10 400-SV-15 400-SV-15	130 105 120 130 45 80 118 12.5 100 12.5 100 137 95 122 100 92 10 50 100 100 10 100 125 50 90	July 2017	3-Chloropropene (Allyl Chloride)	5.3-6,600	33.2-41,500	25/51	4.7[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-LV-125 400-SV-02 400-SV-03 400-SV-05 400-SV-10 400-SV-15	105 120 130 80 118 95 100 92 100 125 90	Feb, May, Aug, Dec 2024	3-Chloropropene (Allyl Chloride)	5.5-630	76-8,700	29/201	4.7[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-EV-131 400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-JV-150 400-JV-150 400-JV-150 400-KV-142 400-KV-142 400-KV-142 400-KV-142 400-LV-125 400-LV-125 400-LV-125 400-SV-02	47.5 100 130 105 120 95 130 45 80 118 12.5 50 100 12.5 50 100 137 10 95 122 10	July 2017	alpha-Chlorotoluene (benzyl chloride)	0.65-4,600	5.88-41,500	36/51	0.57[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-SV-02	50		alpha-Chlorotoluene (benzyl chloride)					
400-SV-02	100							
400-SV-03	92							
400-SV-05	10							
400-SV-05	50							
400-SV-05	100							
400-SV-07	10							
400-SV-07	45							
400-SV-07	100							
400-SV-09	10							
400-SV-10	10							
400-SV-10	100							
400-SV-10	125							
400-SV-15	50							
400-SV-15	90							
400-EV-131	100	Feb, May, Aug, Dec 2024		0.59-1,000	4.93-8,700	78/201	0.57[2]	TB: SV-02 10 ft FB: SV-05 100 ft SV-10 50 ft SV-15 90 ft 400-HV 130 ft 400-IV 80 ft 400-KV 100 ft
400-FV-131	15							
400-GV-125	10							
400-GV-125	46							
400-GV-125	105							
400-GV-125	120							
400-HV-147	45							
400-HV-147	95							
400-HV-147	130							
400-IV-123	10							
400-IV-123	45							
400-IV-123	80							
400-IV-123	118							
400-JV-150	12.5							
400-JV-150	100							
400-KV-142	100							
400-LV-125	50							

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-LV-125	95		alpha-Chlorotoluene (benzyl chloride)					
400-LV-125	122							
400-SV-02	10							
400-SV-02	50							
400-SV-02	100							
400-SV-03	10							
400-SV-03	50							
400-SV-03	92							
400-SV-05	10							
400-SV-05	50							
400-SV-05	100							
400-SV-07	10							
400-SV-07	45							
400-SV-07	100							
400-SV-09	104							
400-SV-10	100							
400-SV-10	125							
400-SV-15	10							
400-SV-15	50							
400-SV-15	90							
400-EV-131	130	July 2017	Benzene	360-6,600	2,280-41,500	7/51	120[1]	None
400-GV-125	105							
400-HV-147	130							
400-IV-123	80							
400-KV-142	137							
400-LV-125	122							
400-SV-10	125							
400-GV-125	105	Feb, May, Aug, Dec 2024		130-670	1,670-8,700	6/201	120[1]	FB: SV-15 90 ft
400-HV-147	130							
400-IV-123	80							
400-SV-10	125							

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10 400-SV-15	130 105 120 130 45 80 118 137 122 100 125 90	July 2017	Bromodichloromethane*	31- 6,200	208- 41,500	12/51	25.3[1]	None
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-02 400-SV-10	105 120 130 80 100 125	Feb, May, Aug, Dec 2024		28- 670	368- 8,700	15/201	25.3[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10 400-SV-15	130 105 120 130 45 80 118 137 122 100 125 90	July 2017	Bromoform*	31- 6,200	208- 41,500	12/51	26[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-02 400-SV-05 400-SV-10	105 120 130 80 100 100 125	Feb, May, Aug, Dec 2024	Bromoform*	31-960	280-8,700	19/201	26[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-HV-147 400-IV-123 400-KV-142 400-LV-125 400-SV-10	130 105 130 80 137 122 125	July 2017	Bromomethane	430-7,900	2,280-41,500	7/51	174[1]	None
400-HV-147 400-IV-123 400-SV-10	130 80 125	Feb, May, Aug, Dec 2024		260-640	3,580-8,700	4/201	174[1]	None
400-EV-131 400-GV-125 400-HV-147 400-IV-123 400-KV-142 400-LV-125 400-SV-10	130 105 130 80 137 122 125	July 2017	Carbon Tetrachloride	340-6,200	2,280-41,500	7/51	156[1]	None
400-HV-147 400-IV-123 400-SV-10	130 80 125	Feb, May, Aug, Dec 2024		160-640	2,160-8,700	4/201	156[1]	None
400-EV-131 400-KV-142	130 137	July 2017	Chlorobenzene*	2,900-6,600	18,200-41,500	2/51	1,740[1]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10	130 105 120 130 45 80 137 122 100 125	July 2017	Chloroform*	71- 7,100	418- 41,500	10/51	40.7[1]	None
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 120 130 80 125	Feb, May, Aug, Dec 2024		42- 620	590- 8,700	12/201	40.7[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-HV-147 400-IV-123 400-KV-142 400-LV-125	130 130 80 137 122	July 2017	Chloromethane*	980- 6,200	6,520- 41,500	5/51	520[1]	None
400-IV-123 400-SV-10	80 125	Feb, May, Aug, Dec 2024		680- 750	7,800- 8,700	2/201	520[1]	None
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10	130 105 120 130 45 80 137 122 100	July 2017	cis-1,2-Dichloroethene	67- 6,600	418- 41,500	10/51	42[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-SV-10	125		cis-1,2-Dichloroethene					
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 120 130 80 125	Feb, May, Aug, Dec 2024		44-650	590-8,700	12/201	42[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-KV-142	130 137	July 2017	Cyclohexane	7,000-12,000	24,000-41,500	2/51	6,300[2]	None
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10	130 105 120 130 45 80 137 122 100 125	July 2017	Dibromochloromethane*	67-6,600	418-41,500	10/51	34.7[1]	None
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 120 130 80 125	Feb, May, Aug, Dec 2024		38-610	543-8,700	13/201	34.7[1]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-HV-147 400-IV-123 400-KV-142 400-LV-125	130 105 130 80 137 122	July 2017	Ethyl Benzene	380-6,600	2,360-41,500	6/51	374[1]	None
400-IV-123 400-SV-10	80 125	Feb, May, Aug, Dec 2024		590-650	7,800-8,700	2/201	374[1]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-EV-131 400-KV-142	130 137	July 2017	Freon 12	4,100- 7,100	24,000- 41,500	2/51	3,480[1]	None
400-EV-131 400-HV-147 400-IV-123 400-KV-142 400-LV-125	130 130 80 137 122	July 2017	Heptane	1,100- 7,100	6,520- 41,500	5/51	420[2]	None
400-IV-123 400-SV-10	80 125	Feb, May, Aug, Dec 2024	Heptane	670- 740	7,850- 8,700	2/201	420[2]	None
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-HV-147 400-IV-123 400-IV-123 400-IV-123 400-JV-150 400-JV-150 400-KV-142 400-KV-142 400-KV-142 400-LV-125 400-LV-125 400-SV-02 400-SV-02 400-SV-03 400-SV-05 400-SV-05 400-SV-05 400-SV-07	100 105 120 95 130 45 80 118 12.5 100 12.5 100 137 95 122 10 100 92 10 50 100 10	July 2017	Hexachlorobutadiene	2.3- 5,800	16.3- 41,500	29/51	1.3[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-SV-07	100		Hexachlorobutadiene					
400-SV-09	10							
400-SV-10	100							
400-SV-10	125							
400-SV-15	50							
400-SV-15	90							
400-EV-131	100	Feb, May, Aug, Dec 2024		1.4-960	12.7-8,700	65/201	1.3[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-GV-125	105							
400-GV-125	120							
400-HV-147	95							
400-HV-147	130							
400-IV-123	45							
400-IV-123	80							
400-IV-123	118							
400-JV-150	100							
400-KV-142	100							
400-LV-125	50							
400-LV-125	95							
400-LV-125	122							
400-SV-02	50							
400-SV-02	100							
400-SV-03	92							
400-SV-05	10							
400-SV-05	50							
400-SV-05	100							
400-SV-07	100							
400-SV-09	104							
400-SV-10	125							
400-SV-15	50							
400-SV-15	90							
400-EV-131	130	July 2017	m,p-Xylene*	5,500-12,000	18,200-41,500	2/51	3,480[1]	None
400-KV-142	137							

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-EV-131 400-KV-142	130 137	July 2017	Methyl tert-butyl ether*	4,100- 7,100	24,000- 41,500	2/51	3,600[1]	None
400-EV-131 400-KV-142	130 137	July 2017	o-Xylene	3,600- 6,200	24,000- 41,500	2/51	3,480[1]	None
400-EV-131 400-HV-147 400-IV-123 400-KV-142	130 130 80 137	July 2017	Propylbenzene	1,100- 6,600	6,600- 41,500	4/51	1,000[2]	None
400-EV-131 400-KV-142	130 137	July 2017	Tetrachloroethene (PCE)*	2,600- 5,800	18,200- 41,500	2/51	1,390[1]	None
400-EV-131 400-KV-142	130 137	July 2017	Tetrahydrofuran	3,600- 8,300	18,200- 41,500	2/51	2,100[2]	None
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10	130 105 120 130 45 80 137 122 100 125	July 2017	trans-1,2-Dichloroethene*	79- 7,900	418- 41,500	10/51	42[2]	None
400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 120 130 80 125	Feb, May, Aug, Dec 2024		44- 640	590- 8,700	12/201	42[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123	130 105 120 130 45	July 2017	trans-1,3-Dichloropropene	7.4- 6,600	46.3- 41,500	21/51	7[2]	None

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m³)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m³)	QA Samples with DL > VISL/RSL
400-IV-123	80		trans-1,3-Dichloropropene					
400-IV-123	118							
400-JV-150	12.5							
400-JV-150	100							
400-KV-142	137							
400-LV-125	95							
400-LV-125	122							
400-SV-02	100							
400-SV-03	92							
400-SV-05	10							
400-SV-05	100							
400-SV-09	10							
400-SV-10	100							
400-SV-10	125							
400-SV-15	50							
400-SV-15	90							
400-GV-125	105	Feb, May, Aug, Dec 2024		8.4-960	76-8,700	29/201	7[2]	FB: SV-10 50 ft SV-15 90 ft 400-HV 130 ft
400-GV-125	120							
400-HV-147	130							
400-IV-123	80							
400-IV-123	118							
400-LV-125	95							
400-SV-02	100							
400-SV-03	92							
400-SV-05	100							
400-SV-10	125							
400-SV-15	90							
400-EV-131	130	July 2017	Trichloroethene (TCE)*	76-5,800	543-41,500	8/51	69.5[1]	None
400-GV-125	105							
400-GV-125	120							
400-HV-147	130							
400-IV-123	80							

Well ID (Depth)	Vapor Implant Sample Depth (ft bgs)	Sampling Date	Analyte	Detection Limit (> VISL/RSL) (µg/m^3)	Dilution	Number of Samples	NMED Residential VISL[1] or EPA RSL[2] (µg/m^3)	QA Samples with DL > VISL/RSL
400-IV-123 400-LV-125 400-SV-10	137 122 125		Trichloroethene (TCE)*					
400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 130 80 125	Feb, May, Aug, Dec 2024		76- 630	1,090- 8,700	9/201	69.5[1]	FB: SV-15 90 ft
400-EV-131 400-GV-125 400-GV-125 400-HV-147 400-IV-123 400-IV-123 400-KV-142 400-LV-125 400-SV-10 400-SV-10	130 105 120 130 45 80 137 122 100 125	July 2017	Vinyl Chloride	71- 7,100	418- 41,500	10/51	55.9[1]	None
400-GV-125 400-HV-147 400-IV-123 400-SV-10	105 130 80 125	Feb, May, Aug, Dec 2024		62- 500	1,090- 8,700	9/201	55.9[1]	FB: SV-15 90 ft

Notes:
* = Analyte is on list of potential 400 Area COPCs identified in the IWP (NASA, 2011b – 400 Area IWP).
FB = The analyte was detected in the field blank.
TB = The analyte was detected in the field blank.
[1] VISL from NMED Risk Assessment Guidance (NMED, 2022).
[2] RSL from EPA Regional Screening Levels (EPA, 2024).

Table 4.9 Soil Vapor Statistical Trends

Well	Zone	2-Propanol	1,2,4-Trimethylbenzene	Benzene	Chloroform	Freon 11	TCE	Freon 113
400-EV-131	10	NA	NA	NA	NA	NA	NA	No significant trend
	47.5	NA	NA	NA	NA	NA	NA	No significant trend
	100	NA	NA	NA	NA	NA	NA	No significant trend
	130	NA	NA	NA	NA	No significant trend	NA	No significant trend
400-FV-131	15	NA	NA	NA	NA	NA	NA	No significant trend
	63	NA	NA	NA	NA	NA	No significant trend	No significant trend
400-GV-125	10	NA	NA	NA	NA	NA	No significant trend	No significant trend
	46	NA	NA	NA	NA	NA	NA	No significant trend
	105	NA	NA	NA	NA	No significant trend	No significant trend	No significant trend
	120	NA	NA	NA	NA	Down	NA	No significant trend
400-HV-147	12	NA	NA	NA	NA	NA	NA	No significant trend
	45	NA	NA	NA	NA	NA	NA	Down
	95	NA	NA	NA	NA	NA	No significant trend	No significant trend
	130	NA	NA	NA	NA	No significant trend	No significant trend	No significant trend

Well	Zone	2-Propanol	1,2,4-Trimethylbenzene	Benzene	Chloroform	Freon 11	TCE	Freon 113
400-IV-123	10	NA	NA	NA	NA	NA	NA	No significant trend
	45	NA	NA	NA	NA	No significant trend	NA	No significant trend
	80	NA	NA	NA	NA	Down	No significant trend	No significant trend
	118	NA	NA	NA	NA	No significant trend	No significant trend	No significant trend
400-JV-150	12.5	No significant trend	NA	NA	NA	NA	Down	Down
	50	NA	NA	NA	NA	NA	NA	No significant trend
	100	NA	NA	NA	NA	NA	Down	Down
400-KV-142	12.5	NA	NA	NA	NA	NA	Down	No significant trend
	50	NA	NA	NA	NA	NA	Down	No significant trend
	100	NA	NA	NA	NA	NA	No significant trend	No significant trend
400-LV-125	10	NA	NA	NA	NA	NA	NA	No significant trend
	50	NA	NA	NA	NA	NA	No significant trend	Up
	95	NA	NA	NA	NA	NA	No significant trend	No significant trend
	122	NA	NA	NA	NA	No significant trend	NA	No significant trend

Well	Zone	2-Propanol	1,2,4-Trimethylbenzene	Benzene	Chloroform	Freon 11	TCE	Freon 113
400-SV-02	10	NA	NA	NA	NA	NA	NA	No significant trend
	50	NA	NA	NA	NA	NA	Down	No significant trend
	100	NA	NA	NA	NA	NA	No significant trend	No significant trend
400-SV-03	10	NA	No significant trend	NA	NA	NA	NA	No significant trend
	50	NA	NA	NA	NA	NA	NA	No significant trend
	92	NA	NA	NA	NA	NA	NA	No significant trend
400-SV-05	10	NA	NA	NA	NA	NA	NA	No significant trend
	50	NA	NA	NA	NA	NA	Down	No significant trend
	100	NA	NA	NA	NA	NA	No significant trend	No significant trend
400-SV-07	10	No significant trend	NA	NA	NA	NA	NA	No significant trend
	45	NA	NA	NA	NA	NA	NA	No significant trend
	100	NA	NA	NA	NA	NA	NA	Down
400-SV-09	10	NA	NA	NA	NA	NA	NA	No significant trend
	45	NA	NA	NA	NA	NA	NA	No significant trend
	104	NA	NA	No significant trend	NA	NA	NA	No significant trend

Well	Zone	2-Propanol	1,2,4-Trimethylbenzene	Benzene	Chloroform	Freon 11	TCE	Freon 113
400-SV-10	10	NA	NA	NA	NA	NA	NA	No significant trend
	50	NA	NA	NA	No significant trend	NA	NA	No significant trend
	100	NA	NA	NA	No significant trend	NA	No significant trend	No significant trend
	125	NA	NA	NA	NA	NA	NA	No significant trend
400-SV-15	10	NA	NA	NA	NA	NA	NA	No significant trend
	50	NA	NA	NA	NA	NA	NA	No significant trend
	90	NA	NA	NA	NA	No significant trend	NA	No significant trend

Notes:
NA = Statistical trends not completed due to less than three detections or non-detects with MDLs greater than SLs.

Appendix A
Logbook Entries and CoC Forms

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-11-2024 Page _____ of _____

Sample Location: 400-GV-125

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	506	607	Methyls					Charge Number
										HWMU
241211110c	3	G	X							
1111c Dup	3		X							
1112c FB	3		X							
1113c	1			X						
1114c Dup	1			X						
1115c	2				X					
1116c Dup	2				X					

Sample Location:

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	12-11-2024 1530	[signature]	12-12-24 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-11-2024 Page _____ of _____

Sample Location: 400-JV-150

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: U08	607	mg/kg					Charge Number: HWMU
241211236c	3	S	X							
1237c FD	3	L	X							
1238c	1	L		X						
1239c	2	L			X					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	12.11.2024 1330		12-12-24 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-11-2024 Page _____ of _____

Sample Location: 403-FV-131

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: U09	L07	Mytls					Charge Number
241211 0730 c TB	3	A	X							HWMU
0935 c	3		X							
0936 c Dup	3		X							
0937 c FB	3		X							
0938 c	1			X						
0939 c Dup	1			X						
0940 c	2				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: Mytls							Charge Number
241211 0941 c Dup	2	A								HWMU

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-11-2024 1530		[signature]	12-12-24 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-11-24 Page 1 of 1

Sample Location: 400-IV-123

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8760	607	TO-15 Metals					Charge Number
24121 1350A	3	A	X							H/WMO
1351A	3		X							~~XGMO~~
1352A	1			X						
1353A	1				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. D	12-11-24/1500			12-12-24 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-11-24 Page 1 of 1

Sample Location: 400-HW-147

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	6007	Total Metals								
241211 1030A	3	A	X										
1031A	3		X										
1032A	2			X									
1033A	1				X								

HWMU

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	12-11-24 / 1100		12-12-24 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF 381C (03/09)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12.11.24

Sample Location: 400.EV.131

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260	607	Total Metals
241211 0945 A	3	A	x		
— 0946 A (FB)	3	A	x		
— 0947 A	1	A		x	
— 0948 A	2	A			x
—					

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	12.11.24 11am		12-12-24 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF 381C (03/09)

Robert Burrows & Dan Halvorsen present. Weather is clear and very cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a dedicated discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G1 in use.

Calibrations:

Do Sensor: In 100% saturated air

PH Sensor = Using 4,7,10 Buffers

Conductivity: Using a 1413 us/cm STD.

Turbidity: Using a 10 NTU STD.

Initial DTW = 128.70 ft.

Final " = 128.78

IDW = 1/2 gal

Parameters (Time)	Temp	Cond	Do	PH	ORP	Turb
24/12/11/1000 c	19.21	1264	5.42	7.21	195	1.80
" 1102 c	19.20	1262	5.40	7.18	193	1.58
" 1104 c	19.21	1264	5.42	7.22	193	1.18

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
24/12/1110 c	VOCs by 8260	Ice/HCl	(3) 40 ml Vial	2774	ALS
" 1111 c	" " (Dup)	"	"	"	"
" 1112 c	" " (FB)	"	"	"	"
" 1113 c	NDMA/NDMA Bromacil by 607	Ice	(1) 1L Amber	1R901	SRI
" 1114 c	" " (Dup)	"	"	"	"
" 1115 c	Total metals	Ice/HNO3	(2) 125 ml Poly		ALS
" 1116 c	" " (Dup)	"	"		"

Continued from page

Read and Understood By

12-11-2024
Date

12-12-24
Date

Robert Burrows & Dan Halvorsen present weather is Clear and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a dedicated discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy Grab in use.

Calibrations:

Initial DTW = 144.35 ft
Final " = 144.68
Flow = 1/2 gal.

DO Sensor: In 100% saturated air.
PH Sensor: using 4, 7, 10 Buffers
Conductivity: using 1413 us/cm STD.
Turbidity: using a 10 Ntu STD.

Parameters (Time)	Temp	Cond	DO	PH	ORP	Turb
24/12/1230c	18.23	2.18	7.60	7.24	190	3.99
1232c	18.24	2.23	7.57	7.19	188	3.29
1233c	18.24	2.19	7.59	7.21	188	3.19

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
24/12/1/1236c	VOA by 8260	Ice/HCl	(3) 40 ml Vial	2774	ALS
1237c	" " (FB)	"	"	"	"
1238c	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	119901	SRL
1239c	Total metals	Ice/HNO3	(2) 125 ml Poly	N/A	ALS

Continued from page

Read and Understood By

Signed 12.11.2024 Date

12-12-24 Date

Robert Barrows & Dan Halvorsen present. Weather is clear and very cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a calibrated discharge hose. Water quality Parameters will be monitored using an In-Situ Aqua Troll 500. Cable #1 in use.

Calibrations:

Do Sensor: In 100% Saturated air.
PH Sensor: Using 4, 7, 10 Buffers
Conductivity: Using a 1413 uS/cm STD.
Turbidity: Using a 10 NTU STD.

Initial DTW: 127.32 ft
Final " = 127.61
IDW: .5 gal

Parameters (Time)	Temp	Cond	Do	PH	ORP	Turb
24121 0930 c	18.74	1161	1.45	7.20	184	2.06
0932 c	18.73	1159	1.43	7.17	188	1.88
0933 c	18.73	1161	1.45	7.18	188	1.60

SAMPLES

Sample #	Analysis	Preserve	Container	L.O.T	LAB
24121 0935 c	VOA by 8260	Iced (HCl)	(3) 40 ml Vial	27764	DLS
0936 c	" " (Dup)	"	"	"	"
0937 c	" " (FB)	"	"	"	"
0938 c	Aroma/Dmp Bromacil by 607	Ice	(1) 1L Amber	119901	SRL
0939 c	" " (Dup)	"	"	"	"
0940 c	Total metals	Iced/HNO3	(2) 125 ml Poly	27764	DLS
0941 c	" " (Dup)	"	"	"	"

Trip Blanks

Sample #	Analysis	Preserve	Container	L.O.T	LAB
24121 0730 c	VOA by 8260	Iced (HCl)	(3) 40 ml Vial	27764	DLS

Continued from page

Read and Understood By

Signed 12-11-2024 Date

Signed 12-12-24 Date

AL MONTES & Tony Torres PRESENT. THE WEATHER IS HAZY & cool. THIS WELL will be purged & SAMPLED using A DED. CATED TEFLON bladder pump. PARAM's will be collected from AN in SITU AquaTroll 500. Conbay 6.2

CALIBRATIONS
DO SENSOR CAL'd IN 100% SATURATION
COND SENSOR CAL'd IN 1413 STANDARD.
PH SENSOR CAL'd IN 4, 10, 7 BUFFERS
TURB # SENSOR CAL'd IN 20NTU

PARAM's

SAMPLE #	TEMP	DO	ORP	COND	PH	~~TURB~~
24121134SA	20.53	4.99	151.8	372.84	9.09	0.50
—— 1346A	20.54	4.99	152.0	372.91	9.08	0.575
—— 1347 #	20.84	5.00	152.3	372.80	9.09	0.475

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONT	LAB
24121135DA	8260	HCL HCL	(3) 40 mL VIALS	ALS
—— 1351A	" (FB)	"	"	"
—— 1352A	(EDB)	ICE HCL	(1) 1LT AMBER	SRL
—— 1353A	TOTAL METALS	ICE HNO3	(2) 125 ml POLY	ALS

Continued from page

Read and Understood By

Signed 12-11-24 Date A-11 Signed 12-12-24 Date

AL MONTES & TONY TOLLER PRESENT THE WEATHER IS CLEAR & COOL. THIS WELL WILL BE PURGED & SAMPLED USING A TEFLON BLADDER PUMP. PARAM'S COLLECTED FROM AN AQUA TROLL 500. CARboy G-2

CALIBRATIONS
DO SENSOR CAL'd IN 100% SATURATED
COND SENSOR CAL'd IN 14.13 MS/cm STANDARD.
TURB SENSOR CAL'd IN 20 NTU's
pH SENSOR CAL'd IN 4, 7 10 BUFFERS.

PARAM's

SAMPLE #	TEMP	ORP	pH	COND	DO	TURB
241211 1025A	20.31	158.4	7.42	2,049.5	2.21	0.85
1026A	20.29	158.7	7.40	2,048.7	2.20	0.43
1027A	20.32	159.1	7.41	2,048.9	2.01	0.56

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONT	LAB
241211 1030A	8260	ICE/HCl	(3) 40ml VIALS	ALS
1031A	" (F.B)	"	"	"
1032A	6010	ICE	(1) 1L AMBER	SNL
1033A	TOTAL METALS	ICE/HNO_3	(2) 125ml poly	ALS

Continued from page

Read and Understood By

12-11-24 A-12 12-11-24
Date

AL MONTES & TONY TORREZ PRESENT. THE WEATHER IS CLEAR & COLD. THIS WELL WILL BE PURGED & SAMPLED USING A DEDICATED TEFLON BLADDER PUMP. PARAMETERS COLLECTED FROM AN AQUA TROLL 500. CAMBOY 6.2

CALIBRATIONS
DO SENSOR CAL'D IN 100% SATURATION
COND SENSOR CAL'D IN 1413 µs/cm STANDARD
pH SENSOR CAL'D IN 4, 7, 10 BUFFERS
TURB SENSOR CAL'D IN 20 NTU STANDARD

PARAM'S

SAMPLE#	TEMP	COND	TURB	DO	ORP	pH
241211 0940A	18.76°C	1,299.1	0.43	6.42	226.2	7.01
—— 0941A	18.48°C	1,301.0	0.76	6.32	227.3	7.01
—— 0942A	18.30°C	1,310.8	0.80	6.23	226.4	7.01

SAMPLES

SAMPLE#	ANALYSIS	PRESERV	CONT	LAB
241211 0945A	8260	ICE/HCl	(3) 40ml VIALS	ALS
—— 0946A	" (FB)	"	"	"
—— 0947A	6007	ICE	(1) 1LT Amber	SRL
—— 0948A	TOTAL METALS	ICE/HNO3	(2) 125ml poly	ALS

Continued from page

Read and Understood By

Signed 12/11/24 Date

A-13

Signed 12-11-24 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/11/24 Page 1 of 1

Sample Location: 400-EV-131

Pertinent Notes (if any): Soil/Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-EV-131 10'	400-EV-131 50'	400-EV-131 100'	400-EV-131 130'				Charge Number
241211300	1	G	✓							HWMU
—— 1309	1	G		✓						u
—— 1318	1	G			✓					u
—— 1319 (Dup.)	1	G			✓					u
—— 1328	1	G				✓				u

Sample Location:

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Zuno	12/11/24/1445hrs.		[signature]	12/12/24 1016HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/11/24 Page 1 of 1

Sample Location: 400-HV-147

Pertinent Notes (if any): Soil/Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: LH1-400-HV-147 12'	LH1-400-HV-147 45'	LH1-400-HV-147 95'	LH1-400-HV-147 130'				Charge Number
2412111350 (TB)	1	G	✓							HWMU
1351	1	G	✓							"
1400	1	G		✓						"
1409	1	G			✓					"
1410 (FB)	1	G			✓					"
1419	1	G				✓				"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelTorro	12/11/24 / 1445hrs.		[signature]	12/12/24 1017 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/11/24 Page 1 of 1

Sample Location: 400-FV-131

Pertinent Notes (if any): Soil / Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-FV-131 15'	Analytical Requirement: 400-FV-131 63'	Charge Number
2412111030	1	G	✓		HWMU
——— 1037	1	G		✓	u

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement	Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelZenno	12/11/24 / 1100 hrs.		[signature]	12/12/24 1016 HMS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/11/24 Page 1 of 1

Sample Location: 400-GV-125

Pertinent Notes (if any): Soil/Vapor Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-GV-125 10'	400-GV-125 46'	400-GV-125 105'	400-GV-125 120'				Charge Number
2412110945	1	G	✓							HWMU
—0946 (Dupl.)	1	G	✓							4
—0957	1	G		✓						4
—1005	1	G			✓					4
—1013	1	G				✓				4

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFranco	12/11/24 / 1100hrs.		[signature]	12/12/24 1016 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/11/24 Page 1 of 1

Sample Location: 400-JV-150

Pertinent Notes (if any): Soil/Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-JV-150 12.5'	400-JV-150 50'	400-JV-150 100'	~~400-JV-150~~				Charge Number
241211 0900 (TB)	1	G	✓							HWMU
—— 0901	1	G	✓							"
—— 0908	1	G		✓						"
—— 0916	1	G			✓					"
—— 0917 (FB)	1	G			✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Zuno	12/11/24 ~~1100 hrs~~ 1120 hrs MDT		[signature]	12/12/24 1016 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/11/24 Page 1 of 1

Sample Location: 400-IV-123

Pertinent Notes (if any): Soil/Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-IV-123 10'	400-IV-123 45'	400-IV-123 80'	400-IV-123 118'				Charge Number
2412111055	1	G	✓							HWMU
——1056 (Dupl.)	1	G	✓							u
——1105	1	G		✓						u
——1113	1	G			✓					u
——1121	1	G				✓				u

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Deffenbaugh	12/11/24 / 1120hrs		[signature]	12/12/24 1016 hrs

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/10/24 Page 1 of 1

Sample Location: 400-KV-142

Pertinent Notes (if any): Soil/Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-KV-142 12.5'	400-KV-142 50'	400-KV-142 100'					Charge Number
241210 1015	1	G	✓							HWMU
—— 1021	1	G		✓						4
—— 1027	1	G			✓					4
—— 1028 (FB)	1	G			✓					4

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fiume	12/10/24/1430hrs.		[signature]	12/12/24 1015 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/10/24 Page 1 of 1

Sample Location: 400-LV-125

Pertinent Notes (if any): Soil / Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-LV-125 10'	400-LV-125 50'	400-LV-125 95'	400-LV-125 122'				Charge Number
2412101105	1	G	✓							HWMU
1111	1	G		✓						4
1112 ~~(FB)~~ Dupl.	1	G		✓						4
1120	1	G			✓					4
1128	1	G				✓				4

Sample Location:

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Frame	12/10/24/1430hrs.		[signature]	12/12/24 1015 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/10/24 Page 1 of 1

Sample Location: 400-SV-02

Pertinent Notes (if any): Soil/Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-SV-02 10'	400-SV-02 50'	400-SV-02 100'					Charge Number
241210 1355	1	G	✓							HWMU
——— 1403	1	G		✓						u
——— 1404 (FB)	1	G		✓						u
——— 1412	1	G			✓					u

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Frund	12/10/24/1430hrs.		[signature]	12/12/24 1015 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/12/24 Page 1 of 1

Sample Location: 400-SV-03

Pertinent Notes (if any): Soil | Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-SV-03 10'	400-SV-03 50'	400-SV-03 92'					Charge Number
24121209000 (TB)	1	G	✓							HWMU
——— 0901	1	G	✓							"
——— 0910	1	G		✓						"
——— 0919	1	G			✓					"
——— 0920 (FB)	1	G			✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fiume	12/12/24 / 0945hrs.		[signature]	12/12/24 1017HRS.

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/10/24 Page 1 of 1

Sample Location: 400-SV-05

Pertinent Notes (if any): Soil/Vapor Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-SV-05 10'	400-SV-05 50'	400-SV-05 100'					Charge Number
2412101039	1	G	✓							HWMU
——— 1045	1	G		✓						4
——— 1053	1	G			✓					4

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fiume	12/10/24 1430hrs.		[signature]	12/12/24 1015 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/12/24 Page 1 of 1

Sample Location: 400-SV-07

Pertinent Notes (if any): Soil/Vapor Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-SV-07 10'	400-SV-07 45'	400-SV-07 100'					Charge Number
2412120815	1	G	✓							HWMU
—0816 (Dupl.)	1	G	✓							"
—0826	1	G		✓						"
—0835	1	G			✓					"
—0836 (FB)	1	G			✓					"

Sample Location:

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	12/12/24/0945hrs.		[signature]	12/12/24 1017 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/9/24 Page 1 of 1

Sample Location: 400-SV-09

Pertinent Notes (if any): Soil / Vapor samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-SV-09 10'	400-SV-09 45'	400-SV-09 104'					Charge Number
2412091405	1	G	✓							HWMU
——— 1406 (FB)	1	G	✓							〃
——— 1410	1	G		✓						〃
——— 1416	1	G			✓					〃

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Deltrud	12/9/24 / 1440 hrs.		[signature]	12/12/24 1015 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/9/24 Page 1 of 1

Sample Location: 400-SV-10

Pertinent Notes (if any): Soil/Vapor samples

Sample Number	# of Containers	Sample Matrix*	400-SV-10 10'	400-SV-10 50'	400-SV-10 100'	400-SV-10 125'				Charge Number
2412091330	1	G	✓							HWMU
——1335	1	G		✓						"
——1342	1	G			✓					"
——1343 (Dupl.)	1	G			✓					"
——1352	1	G				✓				"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelZenno	12/9/24/1440hrs.		[signature]	12/12/24 1015 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/10/24 Page 1 of 1

Sample Location: 400-SV-15

Pertinent Notes (if any): Soil/Vapor Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 400-SV-15 10'	400-SV-15 50'	400-SV-15 90'					Charge Number
241210315	1	G	✓							HWMU
——— 1316 (FB)	1	G	✓							4
——— 1325	1	G		✓						4
——— 1334	1	G			✓					4

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	12/10/24/1430hrs.		[signature]	12/12/24 1015 HRS

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Tim Kondy & Craig Del Ferraro present. Weather is
Soil/Vapor samples will be collected from various locations throughou
the 400 area. Samples will be collected using summa canisters
and parameters will be monitored using the Landtech GA 5000
gas instrument. Calibrations performed prior to use.

Atmospheric reading: 12.45psia

400-EV-131-10'
Time - 241211300
CH_4 - 0.0%
CO_2 - 2.9%
O_2 - 17.1%
Canister # 1SC01343
Final canister pressure: Ø

400-EV-131-50 (47.5')
Time - 241211309
CH_4 - 0.0%
CO_2 - 2.8%
O_2 - 17.7%
Canister # 1SS01890
Final canister pressure: Ø

400-EV-131-100'
Time - 241211318
CH_4 - 0.0%
CO_2 - 2.1%
O_2 - 17.4%
Canister # 1SS01698
Final canister pressure: -1

400-EV-131-100' (Dupl.)
Time - 241211319
CH_4 - 0.0%
CO_2 - 1.8%
O_2 - 17.6%
Canister # 1SS01786
Final canister pressure: Ø

400-EV-131-130'
Time - 241211328
CH_4 - 0.0%
CO_2 - 2.0%
O_2 - 18.0%
Canister # 1SS01757
Final canister pressure: -1

Continued from page N/A

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400-HV-147-12' (TB)
Time - 241211350

canister # 1SS00751

400-HV-147-12'
Time - 241211351
CH4 - 0.0%
CO2 - 2.3%
O2 - 17.6%

canister # 1SS00928
final canister pressure: Ø

400-HV-147-45'
Time - 241211400
CH4 - 0.0%
CO2 - 1.7%
O2 - 17.9%

canister # 1SS00689
final canister pressure: Ø

400-HV-147-95'
Time - 241211409
CH4 - 0.0%
CO2 - 2.3%
O2 - 17.3%

canister # 1SC01632
final canister pressure: -1

400-HV-147-95' (FB)
Time - 241211410

canister # 1SS00986
final canister pressure: Ø

400-HV-147-130'
Time - 241211419
CH4 - 0.0%
CO2 - 2.6%
O2 - 17.1%

canister # 1SS00686
final canister pressure: Ø

400-FV-131-15'
Time - 241211030
CH4 - 0.0%
CO2 - 1.2%
O2 - 19.8%

canister # 1SS00543
final canister pressure: Ø

Continued from page 68

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12/12/2
Date

400-FV-131-63'
Time - 241211037
CH_4 - 0.0%
CO_2 - 2.1%
O_2 - 18.8%

canister # 1SS01748
final canister pressure: ∅

400-FV-131-104'
Time -
CH_4 -
CO_2 -
O_2 -
- well obstructed.

canister # N/A
final canister pressure: N/A

400-FV-131-130'
Time -
CH_4 -
CO_2 -
O_2 -
- N/A - well obstructed.

canister # N/A
final canister pressure: N/A

400-GV-125-10'
Time - 241210945
CH_4 - 0.0%
CO_2 - 2.1%
O_2 - 18.2%

canister # 1SC01295
final canister pressure: ∅

400-GV-125-10' (Dup.)
Time - 241210946
CH_4 - 0.0%
CO_2 - 2.3%
O_2 - 18.1%

canister # 1SS00892
final canister pressure: ∅

400-GV-125-46'
Time - 241210957
CH_4 - 0.0%
CO_2 - 2.1%
O_2 - 17.9%

canister # 1SS00153
final canister pressure: ∅

Continued from page 69

Craig Del Fiume
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12/12/24
Date

400-GV-125-105'
Time - 241211005
CH_4 - 0.0%
CO_2 - 2.9%
O_2 - 14.7%

canister # 1SS00595
final canister pressure: -1

400-GV-125-120'
Time - 241211013
CH_4 - 0.0%
CO_2 - 2.5%
O_2 - 15.0%

canister # 1SS00802
final canister pressure: -1

400-JV-150-12.5' (TB)
Time - 241210900

canister # 1SS01690 NA

400-JV-150-12.5'
Time - 241210901
CH_4 - 0.0%
CO_2 - 1.9%
O_2 - 18.5%

canister # 1SS00514
final canister pressure: Ø

400-JV-150-50'
Time - 241210908
CH_4 - 0.0%
CO_2 - 2.4%
O_2 - 18.0%

canister # 1SS01608
final canister pressure: Ø

400-JV-150-100'
Time - 241210916
CH_4 - 0.0%
CO_2 - 2.7%
O_2 - 17.4%

canister # 1SS01311
final canister pressure: Ø

Continued from page 70

400-IV-150-145'
Time -
CH4 - } - N/A - well obstructed.
CO2 -
O2 -

canister # N/A
final canister pressure: N/A

400-IV-150-~~145~~ 100' (FB)
Time - 241211 0917
CH4 - N/A
CO2 - N/A
O2 - N/A

canister # 1SS01250
final canister pressure: Ø

400-IV-123-10'
Time - 241211 1055
CH4 - 0.0%
CO2 - 0.3%
O2 - 19.5%

canister # 1SS01750
final canister pressure: Ø

400-IV-123-10' (Dupl.)
Time - 241211 1056
CH4 - 0.0%
CO2 - 0.4%
O2 - 19.3%

canister # 1SS01612
final canister pressure: Ø

400-IV-123-45'
Time - 241211 1105
CH4 - 0.0%
CO2 - 0.5%
O2 - 19.1%

canister # 1SS01593
final canister pressure: Ø

400-IV-123-80'
Time - 241211 1113
CH4 - 0.0%
CO2 - 0.4%
O2 - 18.9%

canister # 1SS01855
final canister ~~#~~ Pressure: Ø

Continued from page 71

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[illegible] C. Jones — Signed — 12/12/24 — Date

400-IV-123-118'

Time - 241211121

CH_4 - 0.0%

CO_2 - 0.8%

O_2 - 18.3%

canister # ISS01791

final canister pressure: ∅

400-KV-142-12.5'

Time - 241210105

CH_4 - 0.0%

CO_2 - 0.9%

O_2 - 19.3%

canister # ISC01368

final canister pressure: ∅

400-KV-142-50'

Time - 241210102

CH_4 - 0.0%

CO_2 - 1.7%

O_2 - 18.9%

canister # ISC01176

final canister pressure: ∅

400-KV-142-100'

Time - 241210102

CH_4 - 0.0%

CO_2 - 2.3%

O_2 - 17.5%

canister # ISS00832

final canister pressure: ∅

400-KV-142-137'

Time -

CH_4 - } well obstructed

CO_2 -

O_2 -

canister # N/A

final canister pressure: N/A

400-KV-142-~~137~~ 100' (FB)

Time - 241210102

canister # ISC01272

final canister pressure: ∅

Continued from page 72

400-LV-125-10'
Time - 24|2|0|105
CH_4 - 0.0%
CO_2 - 1.1%
O_2 - 19.1%

canister # 1SS01685
Final canister pressure: 0

400-LV-125-50'
Time - 24|2|0|111
CH_4 - 0.0%
CO_2 - 1.4%
O_2 - 18.6%

canister # 1SS01497
final canister pressure: 0

400-LV-125-50' (Dupl.)
Time - 24|2|0|112
CH_4 - 0.0%
CO_2 - 1.4%
O_2 - 18.5%

canister # 1SS01156
final canister pressure: -1

400-LV-125-95'
Time - 24|2|0|120
CH_4 - 0.0%
CO_2 - 1.8%
O_2 - 17.8%

canister # 1SS01407
final canister pressure: -1

400-LV-125-122'
Time - 24|2|0|128
CH_4 - 0.0%
CO_2 - 1.7%
O_2 - 17.6%

canister # 1SS01269
final canister pressure: 0

400-SV-02-10'
Time - 24|2|0|135
CH_4 - 0.0%
CO_2 - 1.4%
O_2 - 18.8%

canister # 1SS00098
final canister pressure: 0

Continued from page 73

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Signed Date

Signed 12/12/24
Date

400-SV-02-50'
Time - 241210 1403
CH_4 - 0.0%
CO_2 - 1.4%
O_2 - 18.3%

canister # ISS00504
final canister pressure: -1

400-SV-02-50' (FB)
Time - 241210 1404

canister # ISC01237
final canister pressure: 0

400-SV-02-100'
Time - 241210 1412
CH_4 - 0.0%
CO_2 - 1.8%
O_2 - 17.5%

canister # ~~0~~ ISS01361
final canister pressure: 0

400-SV-03-10' (TB)
Time - 241212 0900

canister # ISC01294

400-SV-03-10'
Time - 241212 0901
CH_4 - 0.0%
CO_2 - 2.1%
O_2 - 18.6%

canister # ISC00529
final canister pressure: 0

400-SV-03-50'
Time - 241212 0910
CH_4 - 0.0%
CO_2 - 1.9%
O_2 - 18.4%

canister # ISS01371
final canister pressure: 0

400-SV-03-~~100~~ 92' CO
Time - 241212 0919
CH_4 - 0.0%
CO_2 - 2.3%
O_2 - 18.0%

canister # ISS01785
final canister pressure: 0

Continued from page 74

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400-SV-03-92' (FB)
Time - 24|2|20920
CH_4 - N/A
CO_2 - N/A
O_2 - N/A

canister #1SS01138
final canister pressure: 0

400-SV-05-10'
Time - 24|2|01039
CH_4 - 0.0%
CO_2 - 0.8%
O_2 - 19.0%

canister #1SS00739
final canister pressure: -1

400-SV-05-50'
Time - 24|2|01045
CH_4 - 0.0%
CO_2 - 1.4%
O_2 - 18.0%

canister #1SS00870
final canister pressure: 0

400-SV-05-100'
Time - 24|2|01053
CH_4 - 0.0%
CO_2 - 2.1%
O_2 - 17.4%

canister #1SS00110
final canister pressure: -1

400-SV-~~05~~ 07-10'
Time - 24|2|20815
CH_4 - 0.0%
CO_2 - 2.6%
O_2 - 18.2%

canister #1SS00205
final canister pressure: 0

400-SV-07-10' (Dupl.)
Time - 24|2|20816
CH_4 - 0.0%
CO_2 - 2.8%
O_2 - 18.0%

canister #1SS00101
final canister pressure: 0

Continued from page 75

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400-SV-07-45'
Time - 2412120826
CH_4 - 0.0%
CO_2 - 2.4%
O_2 - 17.9%

canister # ISS01020
final canister pressure: -1

400-SV-07-100'
Time - 2412120835
CH_4 - 0.0%
CO_2 - 2.9%
O_2 - 17.6%

canister # ISS01005
final canister pressure: Ø

400-SV-07-100'(FB)
Time - 2412120836

canister # ISS00894
final canister pressure: Ø

400-SV-09-10'
Time - 2412091405
CH_4 - 0.0%
CO_2 - 0.8%
O_2 - 19.2%

canister # ISS01525
final canister pressure: -1

400-SV-09-10'(FB)
Time - 2412091406

canister # ISS01606
final canister pressure: Ø

400-SV-09-45'
Time - 2412091410
CH_4 - 0.0%
CO_2 - 1.5%
O_2 - 18.5%

canister # ISS01638
final canister pressure: Ø

400-SV-09-104'
Time - 2412091416
CH_4 - 0.0%
CO_2 - 1.8%
O_2 - 17.9%

canister # ISS01195
final canister pressure: Ø

Continued from page 76

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400-SV-10-10' *This well is overgrown with vegetation.
Time - 241209 1330
CH_4 - 0.0%
CO_2 - 1.3%
O_2 - 19.2%
canister # 1SS00988
final canister pressure: 0

400-SV-10-50'
Time - 241209 1335
CH_4 - 0.0%
CO_2 - 1.7%
O_2 - 18.2%
canister # 1SC00337
final canister pressure: 0

400-SV-10-100'
Time - 241209 1342
CH_4 - 0.0%
CO_2 - 2.1%
O_2 - 14.8%
canister # 1SC00684
final canister pressure: 0

400-SV-10-100'(Dup.)
Time - 241209 1343
CH_4 - 0.0%
CO_2 - 2.0%
O_2 - 14.6%
canister # 1SC00358
final canister pressure: 0

400-SV-10-125'
Time - 241209 1352
CH_4 - 0.0%
CO_2 - 3.4%
O_2 - 12.5%
canister # 1SS00844
final canister pressure: -1

400-SV-15-10'
Time - 241210 1315
CH_4 - 0.0%
CO_2 - 0.4%
O_2 - 19.6%
canister # 1SS01144
final canister pressure: 0

Continued from page 77

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400-SV-15-10' (FB)
Time - 241210 1316

canister # 1SS00752
final canister pressure: 0

400-SV-15-50'
Time - 241210 1325
CH_4 - 0.0%
CO_2 - 1.0%
O_2 - 19.0%

canister # 1SC01370
final canister pressure: 0

400-SV-15-90'
Time - 241210 1334
CH_4 - 0.0%
CO_2 - 1.1%
O_2 - 18.3%

canister # 1SC00637
final canister pressure: 0

Continued from page 78

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12/10/24 — Date
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12/12/2[illegible] — Date

Appendix B
Quality Assurance Reports

National Aeronautics and Space Administration



Quality Assurance Report for White Sands Test Facility
400 Area Supplemental Groundwater and Soil Vapor Monitoring Report

Fourth Quarter 2024

May 2025

NM 8800019434

Report Submitted: May 2025

Report Prepared by:
Stephanie M. Portillo
Environmental Scientist IV, Quality Assurance Manager
Navarro Research and Engineering, Inc.

1.0 Introduction

The 400 Area Supplemental Groundwater and Soil Vapor (GWSV) Monitoring Plan requires the preparation of an investigation report that includes soil vapor and groundwater analytical data reported. The Quality Assurance Report (QAR) prepared and reviewed by responsible environmental contractor data management personnel provides the following information:

- A summary of notable anomalies.
- A summary of notable data quality issues by analytical method, if any.
- A list of the sample events for soil vapor and groundwater samples collected in December 2024.
- The quantity and type of quality control samples collected or prepared in December 2024.
- Definitions of data qualifiers used in WSTF analytical data reporting.
- The quantity and type of data qualifiers applied to individual analytical results.
- A list of quality assurance narratives arranged by analytical method.
- A summary table of blank sample detections.

2.0 Data Quality

Samples collected during the fourth quarter of 2024 included soil vapor samples, groundwater samples, duplicates, field blanks, and trip blanks in accordance with the NMED-approved 400 Area GWSV Monitoring Plan. Soil vapor samples and duplicates were obtained by evacuating three tubing volumes of stagnant vapor from soil vapor implants and stainless steel tubing prior to sample collection into laboratory-provided SUMMA canisters. Groundwater samples and duplicates were obtained by using low-flow purging procedures prior to sample collection from the dedicated low-flow bladder pump and disposable discharge tubing into laboratory-provided containers. Evacuation and purging procedures were completed in accordance with the 400 Area GWSV Monitoring Plan and the NMED-approved Groundwater Monitoring Plan.

2.1 Notable Anomalies

The following notable anomalies were identified:

- The analytical laboratory reported that 21 of the 67 soil vapor samples collected were analyzed past the standard hold time of 30 days (but within 32 days) due to California wildfires which caused mandatory laboratory evacuations. All affected data is qualified with a “T” flag.
- Four soil vapor ports were obstructed at the time of sample collection and no soil vapor was collected. The affected well locations and port depths are as follows:
    - 400-FV-131-104
    - 400-FV-131-130
    - 400-JV-150-145
    - 400-KV-142-137
- A soil vapor field blank was designated for 400-KV-142-137. However, the quality assurance sample was shifted to 400-KV-142-100 due to the obstruction at vapor port 137 and was corrected in the logbook accordingly.
- No groundwater field blanks were collected for EPA Method 607 or Total Metals for this investigation as required by with the NMED-approved GWSV Monitoring Plan.

- No groundwater matrix spikes were collected for SW-846 Method 8260, EPA Method 607, or Total Metals for this investigation as required by with the NMED-approved GWSV Monitoring Plan.
- Six groundwater results for nitrosamines by EPA Method 607 were identified for reanalysis due to calibration exceedances for N-nitrosodimethylamine (NDMA), dimethylnitrosamine (DMN), and Bromacil. Only one result is retained for each sample specific analyte. Results for original or diluted samples, identified in the laboratory report case narrative (SwRI M607-035) were qualified as rejected accordingly and received an "R" flag. Affected samples area as follows:
    - 2412110947A (400-EV-131)
    - 2412111032A (400-HV-147)

No other notable anomalies are associated with the soil vapor or groundwater analytical data associated with this QAR.

3.0 Data Tables

Table 1 summarizes the soil vapor and groundwater sample events for the fourth quarter collected in December 2024. This report is based on data quality issues related to the sample events listed in Table 1. Table 2 through Table 7 contain information related to the sample events identified in Table 1. As specified by the GWSV Monitoring Plan, specific quality control samples are utilized to assess the quality of analytical data. Table 2 presents the quantity of quality control samples collected for each analytical method. Table 3 compares the quality control sample percentages collected to the requirements in the GWSV Monitoring Plan. When data quality criteria are not met, data qualifiers are applied to the data. Definitions of data qualifiers used for WSTF chemical analytical data are listed in Table 4. Table 5 and Table 6 present the total number of individual result records and summarize the quantity of field and laboratory data qualifiers assigned to individual analyte result records in the WSTF analytical database. Table 7 provides all quality assurance narratives associated with the sample events in Table 1. Narratives associated with qualified data are identified by bold text in Table 7. Table 8 provides a summary of all detections in 400 Area GWSV blank samples, and Table 9 sumarrizes analyte occurrence within those samples.

Table 1 – Sample Events for December 2024

Sample Location	Depth (ft bgs)	Event Date	Sample Type
400-EV	10	12/11/24	SV
400-EV	47.5	12/11/24	SV
400-EV	100	12/11/24	SV
400-EV	130	12/11/24	SV
400-EV	131	12/11/24	GW
400-FV	15	12/11/24	SV
400-FV	63	12/11/24	SV
400-FV	104	12/11/24	SV
400-FV	130	12/11/24	SV
400-FV	131	12/11/24	GW
400-GV	10	12/11/24	SV
400-GV	46	12/11/24	SV
400-GV	105	12/11/24	SV
400-GV	120	12/11/24	SV
400-GV	125	12/11/24	GW
400-HV	12	12/11/24	SV
400-HV	45	12/11/24	SV
400-HV	95	12/11/24	SV
400-HV	130	12/11/24	SV
400-HV	147	12/11/24	GW
400-IV	10	12/11/24	SV
400-IV	45	12/11/24	SV
400-IV	80	12/11/24	SV
400-IV	118	12/11/24	SV
400-IV	123	12/11/24	GW
400-JV	12.5	12/11/24	SV
400-JV	50	12/11/24	SV
400-JV	100	12/11/24	SV
400-JV	145	12/11/24	SV
400-JV	150	12/11/24	GW
400-KV	12.5	12/10/24	SV
400-KV	50	12/10/24	SV

Sample Location	Depth (ft bgs)	Event Date	Sample Type
400-KV	100	12/10/24	SV
400-KV	137	12/11/24	SV
400-LV	10	12/10/24	SV
400-LV	50	12/10/24	SV
400-LV	95	12/10/24	SV
400-LV	122	12/11/24	SV
400-SV-02	10	12/10/24	SV
400-SV-02	50	12/10/24	SV
400-SV-02	100	12/10/24	SV
400-SV-03	10	12/12/24	SV
400-SV-03	50	12/12/24	SV
400-SV-03	92	12/12/24	SV
400-SV-05	10	12/10/24	SV
400-SV-05	50	12/10/24	SV

Sample Location	Depth (ft bgs)	Event Date	Sample Type
400-SV-05	100	12/10/24	SV
400-SV-07	10	12/12/24	SV
400-SV-07	45	12/12/24	SV
400-SV-07	100	12/12/24	SV
400-SV-09	10	12/09/24	SV
400-SV-09	45	12/09/24	SV
400-SV-09	104	12/09/24	SV
400-SV-10	10	12/09/24	SV
400-SV-10	50	12/09/24	SV
400-SV-10	100	12/09/24	SV
400-SV-10	125	12/09/24	SV
400-SV-15	10	12/10/24	SV
400-SV-15	50	12/10/24	SV
400-SV-15	90	12/10/24	SV

Table 2 – Quantity of Quality Control Samples

Method	Sample Type	Samples	Field Blanks	Trip Blanks	Duplicates	Matrix Spikes
Nitrosamines by EPA Method 607	**GW**	**6**	**---**	**---**	**2**	**---**
Volatile Organics by SW-846 Method 8260	**GW**	**6**	**6**	**1**	**2**	**---**
Total Metals by Various SW-846 Methods	**GW**	**6**	**---**	**---**	**2**	**---**
Soil Gas - Volatile Organic Compounds	**SV**	**50**	**8**	**3**	**6**	**N/A**

Table 3 – Quality Control Sample Percentages

Quality Control Requirement	Requirement	Samp. Qty.	QC Qty.	QC %
Nitrosamines Field Blanks	2%	6	---	**---**
Nitrosamines Trip Blanks	N/A	6	---	**N/A**
Nitrosamines Duplicates	10%	6	2	**33%**
Nitrosamines Matrix Spikes	2%	6	---	**---**
Volatile Organics Field Blanks	1 per sample event	6	6	**100%**
Volatile Organics Trip Blanks	1 per shipment	1 shipment	1	**100%**
Volatile Organics Duplicates	10%	6	1	**17%**
Volatile Organics Matrix Spikes	2%	6	---	**---**
Total Metals Field Blanks	5%	6	---	**---**
Total Metals Trip Blanks	N/A	6	---	**N/A**
Total Metals Duplicates	10%	6	1	**17%**
Total Metals Matrix Spikes	2%	6	---	**---**
Soil Gas Field Blanks	NA	50	8	**16%**
Soil Gas Trip Blanks	NA	50	3	**6%**
Soil Gas Duplicates	NA	50	6	**12%**

Table 4 – Definitions of Data Qualifiers

Qualifier	Definition
*	User defined qualifier. See quality assurance narrative.
A	The result of an analyte for a laboratory control sample (LCS), initial calibration verification (ICV) or continuing calibration verification (CCV) was outside standard limits.
AD	Relative percent difference for analyst (laboratory) duplicates was outside standard limits.
D	The reported result is from a dilution.
EB	The analyte was detected in the equipment blank.
FB	The analyte was detected in the field blank.
G	The result is an estimated value greater than the upper calibration limit.
i	The result, quantitation limit, and/or detection limit may have been affected by matrix interference.
J	The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NA	The value/result was either not analyzed for or not applicable.
ND	The analyte was not detected above the detection limit.
Q	The result for a blind control sample was outside standard limits.
QD	The relative percent difference for a field duplicate was outside standard limits.
R	The result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
RB	The analyte was detected in the method blank.
S	The result was determined by the method of standard addition.
SP	The matrix spike recovery and/or the relative percent difference for matrix spike duplicates was outside standard limits.
T	The sample was analyzed outside the specified holding time or temperature.
TB	The analyte was detected in the trip blank.
TIC	The analyte was tentatively identified by a GC/MS library search and the amount reported is an estimated value.

Table 5 – Quantity of Field Based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	FB	EB	TB	Q	QD	SP	R
Nitrosamines by EPA Method 607	**30**	---	---	---	---	**2**	---	**6**
Volatile Organics by SW-846 Method 8260C	**520**	---	---	---	---	---	---	---
Total Metals by Various SW-846 Methods	**216**	---	---	---	---	---	---	---
Soil Gas - Volatile Organic Compounds	**3640**	**28**	---	**3**	---	**22**	---	---

Table 6 – Quantity of Laboratory based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	*	A	AD	G	RB	T	D	i	J
Nitrosamines by EPA Method 607	**30**	**4**	---	---	**3**	---	---	**6**	---	---
Volatile Organics by SW-846 Method 8260C	**520**	---	---	---	---	---	---	**2**	---	**21**
Total Metals by Various SW-846 Methods	**216**	---	---	---	---	---	---	---	---	**45**
Soil Gas - Volatile Organic Compounds	**3640**	**111**	**28**	---	---	**7**	**1161**	**28**	---	**413**

Table 7 – Quality Assurance Narratives

Location Sample ID	Event Date	Modified EPA Method 607
400-EV-131	12/11/2024	For Modified EPA Method 607, analytes NDMA, DMN, and Bromacil results are from a dilution. Bromacil was diluted 5-fold for reanalysis due to target analytte exceeding calibration curve.

Location Sample ID	Event Date	Modified EPA Method 607
400-EV-131	12/11/2024	For Modified EPA Method 607, original results for Bromacil in sample 2412110947A exceeded the callibration curve and are rejected due to sample dilution 5-fold for reanalysis. Diluted bromacil sample is retained and the original sample is maintained in the Q_disk only.
400-EV-131	12/11/2024	For Modified EPA Method 607, sample 2412110947A was diluted 5-fold due to Bromacil exceeding calibration curve in the initial analysis. Original NDMA and DMN samples are retained and the diluted samples are flagged with an "R" and maintained in the Q_disk only.
400-EV-131	12/11/2024	For Modified EPA Method 607, analytes Bromacil, NDMA, and DMN results are from dilutions.
400-EV-131	12/11/2024	For Modified EPA Method 607, analyte Bromacil result was an estimated value greater than the upper calibration limit.
400-FV-131	12/11/2024	For Modified EPA Method 607, analyte Bromacil had a relative percent difference for a field duplicate that was outside standard limits.
400-FV-131	12/11/2024	For Modified EPA Method 607, field duplicate samples 2412110938C and 2412110939C the relative percent difference for Bromacil was 28.6%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-GV-125	12/11/2024	For Modified EPA Method 607, relative percent differences (RPD) for duplicate samples 2412111113C and 2412111114C were within control limits or below the calculable range.
400-HV-147	12/11/2024	For Modified EPA Method 607, sample (2412111032A) was diluted 5-fold due to Bromacil exceeding calibration curve in the initial analysis. Original NDMA and DMN samples are retained and the diluted samples are flagged with an "R" and maintained in the Q_disk only.
400-HV-147	12/11/2024	For Modified EPA Method 607, analytes NDMA and DMN are an estimated value greater than the upper calibration limit.
400-HV-147	12/11/2024	For Modified EPA Method 607, sample 2412111032A was diluted 100-fold due to NDMA and DMN exceeding calibration curve in the initial analysis. Original Bromacil samples is retained and the diluted samples are flagged with an "R" and maintained in the Q_disk only.
400-HV-147	12/11/2024	For Modified EPA Method 607, N-Nitroso-di-n-propylamine-d14 (surrogate) was spiked into every sample before extraction at 0.50 µg/mL in extract. The surrogate recoveries for all samples were within method recovery criteria of 40-160%. Surrogate recoveries for samples 2412111032A (400-HV-147) were reported from initial analysis only.
400-HV-147	12/11/2024	For Modified EPA Method 607, analytes NDMA, DMN, and Bromacil reported results are from a dilution.

Location Sample ID	Event Date	SW-846 Method 8260
400-EV-131	12/11/2024	For SW-846 Method 8260, analyte Trichlorofluoromethane (CFC 11) (370 ug/L) reported result is from a dilution.
400-EV-131	12/11/2024	For SW-846 Method 8260, analytes Unknown (42 ug/L) and Dichlorofluoromethane (CFC 21) (0.33 ug/L) result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-EV-131	12/11/2024	For SW-846 Method 8260D, The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-EV-131	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416107-03 and RQ2416180-03
400-EV-131	12/11/2024	For SW-846 Method 8260D, Unknown was detected in the field blank (2412110946A) at 12.0 ug/L.
400-EV-131	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416107-03.

Location Sample ID	Event Date	SW-846 Method 8260
400-FV-131	12/11/2024	For SW-846 Method 8260D, The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-FV-131	12/11/2024	For SW-846 Method 8260, analytes Unknown (48 ug/L) and Toluene (0.31 ug/L) result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-FV-131	12/11/2024	For SW-846 Method 8260D, there were no detections in the trip blank.
400-FV-131	12/11/2024	For SW-846 Method 8260C, Unknown was detected in the field blank (2412110937C) at 14.0 ug/L.
400-FV-131	12/11/2024	For SW-846 Method 8260C, relative percent differences (RPD) for duplicate samples 2412110935C and 2412110936C were within control limits or below the calculable range.
400-FV-131	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416107-03.
400-GV-125	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416107-03.
400-GV-125	12/11/2024	For SW-846 Method 8260D, field duplicate samples 2412111110C and 2412111111C the relative percent difference for Trichlorofluoromethane (CFC 11) was 12.8%. Upper acceptance limit for relative percent difference is 25%.
400-GV-125	12/11/2024	For SW-846 Method 8260, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-GV-125	12/11/2024	For SW-846 Method 8260D, The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-GV-125	12/11/2024	For SW-846 Method 8260C, relative percent differences (RPD) for duplicate samples 2412111110C and 2412111111C were within control limits or below the calculable range.
400-GV-125	12/11/2024	For SW-846 Method 8260C, Unknown was detected in the field blank (2412111112C) at 11.0 ug/L.
400-GV-125	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416180-03.
400-HV-147	12/11/2024	For SW-846 Method 8260, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-HV-147	12/11/2024	For SW-846 Method 8260D, The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-HV-147	12/11/2024	For SW-846 Method 8260C, Unknown was detected in the field blank (2412111031A) at 13.0 ug/L.
400-HV-147	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416107-03.
400-IV-123	12/11/2024	For SW-846 Method 8260, analyte Unknown (31 ug/L) result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-IV-123	12/11/2024	For SW-846 Method 8260D, The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting

Location Sample ID	Event Date	SW-846 Method 8260
		Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-IV-123	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416107-03 and RQ2416180-03
400-IV-123	12/11/2024	For SW-846 Method 8260D, Unknown was detected in the field blank (2412111351A) at 11.0 ug/L.
400-JV-150	12/11/2024	For SW-846 Method 8260, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-JV-150	12/11/2024	For SW-846 Method 8260, analyte Trichlorofluoromethane (CFC 11) reported result is from a dilution.
400-JV-150	12/11/2024	For SW-846 Method 8260D, The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-JV-150	12/11/2024	For SW-846 Method 8260D, Unknown was detected in the field blank (2412111237C) at 11.0 ug/L.
400-JV-150	12/11/2024	For SW-846 Method 8260D, one unknown unknown compound was tentatively identified by a GC/MS library search in the method blank for analytical batch RQ2416107-03 and RQ2416180-03

Location Sample ID	Event Date	Total Metals
400-EV-131	12/11/2024	For Total Metals, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-FV-131	12/11/2024	For Total Metals, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-FV-131	12/11/2024	For Total Metals, relative percent differences (RPD) for duplicate samples 2412110940C and 2412110941C were within control limits or below the calculable range.
400-GV-125	12/11/2024	For Total Metals, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-GV-125	12/11/2024	For Total Metals, relative percent differences (RPD) for duplicate samples 2412111115C and 2412111116C were within control limits or below the calculable range.
400-HV-147	12/11/2024	For Total Metals, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-IV-123	12/11/2024	For Total Metals, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.
400-JV-150	12/11/2024	For Total Metals, multiple analytes result was estimated value less than the quantitation limit, but greater than or equal to the detection limit. The analyte(s) is flagged accordingly.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-EV-010	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-EV-010	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-EV-010	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-EV-010	12/11/2024	For SW-846 Method TO-15 (Air), analytes Chloromethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-EV-010	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-EV-047.5	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-EV-047.5	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-EV-047.5	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-EV-047.5	12/11/2024	For SW-846 Method TO-15 (Air), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-EV-047.5	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111319), analyte Freon 123a was identified as a tentatively identified compound by a GC/MS library search, and the amount reported is an estimated value.
400-EV-100	12/11/2024	For SW-846 Method 8021B, relative percent differences (RPD) for duplicate samples 2412111318 and 2412111319 were within control limits or below the calculable range.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111318), analytes Freon 113 and Freon 123a were identified as tentatively identified compounds by a GC/MS library search, and the amount reported is an estimated value.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111318), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111318), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111319), analyte Freon 123a was identified as tentatively identified compounds by a GC/MS library search, and the amount reported is an estimated value.
400-EV-100	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111319), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-EV-130	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 113 and Freon 11 were identified as tentatively identified compounds by a GC/MS library search, and the amount reported is an estimated value.
400-EV-130	12/11/2024	For SW-846 Method TO-15 (Air), most of the analytes were analyzed outside of the standard hold time.
400-EV-130	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-EV-130	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-EV-130	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-FV-015	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21 (2.4ug/mg) and Freon 12 (1.8 ug/mg) results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-FV-015	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-FV-015	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111030), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-FV-015	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-FV-063	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-FV-063	12/11/2024	For SW-846 Method TO-15 (Air), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-FV-063	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-FV-063	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-GV-010	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412110946) analytes Chloromethane and Methyl tert-butyl-ether are the result of an analyte for a laboratory control sample (LCS), initial calibration verification (ICV) or continuing calibration verification (CCV) was outside standard limits.
400-GV-010	12/11/2024	For SW-846 Method 8021B, relative percent differences (RPD) for duplicate samples 2412110945 and 2412110946 were within control limits or below the calculable range.
400-GV-010	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-GV-010	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-GV-010	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-GV-046	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-GV-046	12/11/2024	For SW-846 Method TO-15 (Air), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-GV-046	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-GV-046	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-GV-105	12/11/2024	For SW-846 Method TO-15 (Air), analyte Freon 113 reported result (99000 ug/mg) is from a dilution
400-GV-105	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-GV-105	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-GV-105	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 12 (520 ug/mg) and Tetrachloroethene (200 ug/mg) results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-GV-120	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-GV-120	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-GV-120	12/11/2024	For SW-846 Method TO-15 (Air), analyte Freon 123a was identified as a tentatively identified compound by a GC/MS library search, and the amount reported is an estimated value.
400-GV-120	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-HV-012	12/11/2024	For the Soil Gas Method, 2-Butanone (Methyl Ethyl Ketone) was detected in the trip blank (2412111350) at 0.45 ng/L. Carbon Disulfide was detected in the trip blank (2412111350) at 1.5 ng/L. Ethanol was detected in the trip blank (2412111350) at 1.1 ng/L.
400-HV-012	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-HV-012	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-HV-012	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-HV-012	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-HV-045	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-HV-045	12/11/2024	For SW-846 Method TO-15 (Air), analyte Freon 123a was searched for, but not found.
400-HV-045	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-HV-045	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-HV-045	12/11/2024	For SW-846 Method TO-15 (Air), The minimum criterion for Chloromethane was not met in the Continuing Calibration Verification (CCV) analyzed on January 10, 2025. In accordance with ALS Environmental standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analytes of concern was analyzed each day of analysis. The MRL check standard verified that instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. The sensitivity was shown to be adequate to detect the compound and the Laboratory Control Samples (LCS/DLCS) met acceptance criteria. This procedure is a quantitative confirmation of non-detect results at or below the MRL. The data has been flagged accordingly. Any positve results may have a low bias.
400-HV-045	12/11/2024	For SW-846 Method TO-15 (Air), The minimum criterion for Methyl tert-Butyl Ether was not met in the Continuing Calibration Verification (CCV) analyzed on January 10, 2025. In accordance with ALS Environmental standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analytes of concern was analyzed each day of analysis. The MRL check standard verified that instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-HV-095	12/11/2024	For the Soil Gas Method, 2-Butanone (Methyl Ethyl Ketone) was detected in the field blank (2412111410) at 90.0 ng/L. Acetone was detected in the field blank (2412111410) at 7.9 ng/L. Carbon Tetrachloride was detected in the field blank (2412111410) at 0.56 ng/L. Chloroform was detected in the field blank (2412111410) at 0.42 ng/L. Chloromethane was detected in the field blank (2412111410) at 0.63 ng/L. Ethanol was detected in the field blank (2412111410) at 5.4 ng/L. Freon 11 was detected in the field blank (2412111410) at 41.0 ng/L. Freon 113 was detected in the field blank (2412111410) at 43.0 ng/L. Freon 12 was detected in the field blank (2412111410) at 2.5 ng/L. Freon 21 was detected in the field blank (2412111410) at 14.0 ng/L. Heptane was detected in the field blank (2412111410) at 3.9 ng/L. Hexane was detected in the field blank (2412111410) at 1.8 ng/L. Methylene C
400-HV-095	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-HV-095	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111409) analytes Freon 11 and Freon 113 (both 1200 ug/mg) reported results are from a dilution.
400-HV-095	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-HV-095	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-HV-095	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-HV-095	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111410), Chromomethane had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-HV-130	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 11 (120000 ug/mg) and Freon 113 (270000 ug/mg) reported results are from a dilution.
400-HV-130	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-HV-130	12/11/2024	For SW-846 Method TO-15 (Air), analyte Freon 123a was identified as a tentatively identified compound by a GC/MS library search, and the amount reported is an estimated value.
400-HV-130	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-HV-130	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-IV-010	12/11/2024	For SW-846 Method 8021B, relative percent differences (RPD) for duplicate samples 2412111055 and 2412111056 were within control limits or below the calculable range.
400-IV-010	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-IV-010	12/11/2024	For SW-846 Method TO-15 (Air), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-IV-010	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-IV-010	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-IV-010	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412111056) all analytes were analyzed outside of the standard hold time.
400-IV-045	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-IV-045	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-IV-045	12/11/2024	For SW-846 Method TO-15 (Air), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-IV-045	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-IV-045	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-IV-080	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-IV-080	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-IV-080	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-IV-080	12/11/2024	For SW-846 Method TO-15 (Air), analyte Freon 11 reported result (410000 ug/mg) is from a dilution.
400-IV-080	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-IV-118	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 113 (1000 ug/mg) and Freon 11 (9000 ug/mg) reported result is from a dilution.
400-IV-118	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-IV-118	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-IV-118	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-IV-118	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-IV-118	12/11/2024	For SW-846 Method TO-15 (Air), analytes Chromomethane and Methyl-tert-butyl ether had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-JV-012.5	12/11/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-JV-012.5	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-JV-012.5	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-JV-012.5	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412110901), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-JV-012.5	12/11/2024	For the Soil Gas Method, there were no detections in the trip blank.
400-JV-050	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-JV-050	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-JV-050	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-JV-100	12/11/2024	For SW-846 Method TO-15 (Air), for sample (2412110916) analytes Freon 113 (780 ug/mg) and Freon 11 (810 ug/mg) reported result is from a dilution.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-JV-100	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-JV-100	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-JV-100	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-JV-100	12/11/2024	For the Soil Gas Method, Carbon Tetrachloride was detected in the field blank (2412110917) at 0.46 ng/L. Chloromethane was detected in the field blank (2412110917) at 0.56 ng/L. Freon 11 was detected in the field blank (2412110917) at 1.3 ng/L. Freon 113 was detected in the field blank (2412110917) at 0.66 ng/L. Freon 12 was detected in the field blank (2412110917) at 2.4 ng/L.
400-KV-012.5	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-KV-012.5	12/10/2024	For SW-846 Method TO-15 (Air), analyte Carbon Disulfide was detected in the method blank.
400-KV-012.5	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-KV-012.5	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-KV-050	12/10/2024	For SW-846 Method TO-15 (Air), analyte Freon 113 (400 ug/mg) reported result is from a dilution.
400-KV-050	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-KV-050	12/10/2024	For SW-846 Method TO-15 (Air), analyte Freon 123a was identified as a tentatively identified compound by a GC/MS library search, and the amount reported is an estimated value.
400-KV-050	12/10/2024	For SW-846 Method TO-15 (Air), analyte Carbon Disulfide was detected in the method blank.
400-KV-050	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-KV-100	12/10/2024	For SW-846 Method TO-15 (Air), analyte Freon 113 (2000 ug/mg) reported result is from a dilution.
400-KV-100	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-KV-100	12/10/2024	For SW-846 Method TO-15 (Air), analyte Carbon Disulfide was detected in the method blank.
400-KV-100	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-KV-100	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-KV-100	12/10/2024	For the Soil Gas Method, Freon 12 was detected in the field blank (2412101028) at 2.3 ng/L. Heptane was detected in the field blank (2412101028) at 7.8 ng/L. Hexane was detected in the field blank (2412101028) at 4.9 ng/L. m,p-Xylene was detected in the field blank (2412101028) at 12.0 ng/L. Methylene Chloride was detected in the field blank (2412101028) at 1.9 ng/L. o-Xylene was detected in the field blank (2412101028) at 4.9 ng/L. Styrene was detected in the field blank (2412101028) at 1.9 ng/L. Tetrachloroethene was detected in the field blank (2412101028) at 2.5 ng/L. Tetrahydrofuran was detected in the field blank (2412101028) at 8.5 ng/L. Toluene was detected in the field blank (2412101028) at 86.0 ng/L. 1,2,4-Trimethylbenzene was detected in the field blank (2412101028) at 2.1 ng/L. 1,2-Dichloropropane was detected in the field blank (2412101028) at 2.1 ng/L. 1,3,5-T
400-LV-010	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-LV-010	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-LV-010	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-LV-050	12/10/2024	For SW-846 Method TO-15 (Air), analyte Freon 113 reported result is from a dilution.
400-LV-050	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-LV-050	12/10/2024	For SW-846 Method TO-15 (Air), analyte Carbon Disulfide was detected in the method blank.
400-LV-050	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-LV-050	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-LV-095	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 113 (5800 ug/mg) and Freon 11 (4500 ug/mg) reported result is from a dilution.
400-LV-095	12/10/2024	For SW-846 Method TO-15 (Air), analytes Chloroform (8.9 ug/mg) and Trichloroethene (4.9 ug/mg) results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-LV-095	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-LV-095	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-LV-122	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 113 (1100 ug/mg) and Freon 11 (1000 ug/mg) reported result is from a dilution.
400-LV-122	12/11/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-LV-122	12/11/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-LV-122	12/11/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-02-010	12/10/2024	For SW-846 Method TO-15 (Air), analyte Freon 11 (480 ug/mg) reported result is from a dilution.
400-SV-02-010	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-SV-02-010	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-02-010	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-02-050	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 113(2100 ug/mg) and Freon 11 (1900 ug/mg) reported result is from a dilution.
400-SV-02-050	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-02-050	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-02-050	12/10/2024	For SW-846 Method TO-15 (Air), multiple analytes results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-02-050	12/10/2024	For the Soil Gas Method, Carbon Tetrachloride was detected in the field blank (2412101404) at 0.46 ng/L. Chloromethane was detected in the field blank (2412101404) at 0.55 ng/L. Freon 11 was detected in the field blank (2412101404) at 1.3 ng/L. Freon 113 was detected in the field blank (2412101404) at 0.68 ng/L. Freon 12 was detected in the field blank (2412101404) at 2.4 ng/L.
400-SV-02-100	12/10/2024	For SW-846 Method TO-15 (Air), multiple analytes results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-02-100	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-02-100	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-03-010	12/12/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-03-010	12/12/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-03-010	12/12/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-03-010	12/12/2024	For SW-846 Method TO-15 (Air), analyte Chromomethane had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-SV-03-010	12/12/2024	For the Soil Gas Method, 2-Butanone (Methyl Ethyl Ketone) was detected in the trip blank (2412120900) at 0.32 ng/L. Ethanol was detected in the trip blank (2412120900) at 1.5 ng/L. Freon 113 was detected in the trip blank (2412120900) at 0.85 ng/L. Trichloroethene was detected in the trip blank (2412120900) at 0.63 ng/L.
400-SV-03-050	12/12/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.
400-SV-03-050	12/12/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-03-050	12/12/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-03-050	12/12/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-03-092	12/12/2024	For SW-846 Method TO-15 (Air), for sample (2412120920) analyte Freon 113 (4800 ug/mg) reported result is from a dilution.
400-SV-03-092	12/12/2024	For SW-846 Method TO-15 (Air), all analytes were analyzed outside of the standard hold time.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-SV-03-092	12/12/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-03-092	12/12/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-03-092	12/12/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-03-092	12/12/2024	For the Soil Gas Method, 2-Butanone (Methyl Ethyl Ketone) was detected in the field blank (2412120920) at 1.7 ng/L. 2-Propanol was detected in the field blank (2412120920) at 16.0 ng/L. 4-Methyl-2-pentanone was detected in the field blank (2412120920) at 2.0 ng/L. Acetone was detected in the field blank (2412120920) at 16.0 ng/L. Benzene was detected in the field blank (2412120920) at 1.0 ng/L. Carbon Disulfide was detected in the field blank (2412120920) at 0.66 ng/L. Carbon Tetrachloride was detected in the field blank (2412120920) at 0.41 ng/L. Chloromethane was detected in the field blank (2412120920) at 0.59 ng/L. Cyclohexane was detected in the field blank (2412120920) at 0.66 ng/L. Ethanol was detected in the field blank (2412120920) at 23.0 ng/L. Ethyl Benzene was detected in the field blank (2412120920) at 0.32 ng/L. Freon 11 was detected in the field blank (2412120
400-SV-05-010	12/10/2024	For SW-846 Method TO-15 (Air), analyte Freon 113 (3000 ug/mg) reported result is from a dilution.
400-SV-05-010	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-05-010	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-05-010	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-05-050	12/10/2024	For SW-846 Method TO-15 (Air), analyte Chloroform (5.3 ug/mg) results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-05-050	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-05-050	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-05-100	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-05-100	12/10/2024	For SW-846 Method TO-15 (Air), analyte Carbon Disulfide was detected in the method blank.
400-SV-05-100	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-05-100	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-07-010	12/12/2024	For SW-846 Method TO-15 (Air), analyte Freon 123a was identified as a tentatively identified compound by a GC/MS library search, and the amount reported is an estimated value.
400-SV-07-010	12/12/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-07-010	12/12/2024	For SW-846 Method TO-15 (Air), analyte Chromomethane had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-SV-07-010	12/12/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-07-010	12/12/2024	For the Soil Gas Method, field duplicate samples 2412120815 and 2412120816 the relative percent difference for 2-Propanol was 160.4%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-07-010	12/12/2024	For the Soil Gas Method, field duplicate samples 2412120815 and 2412120816 the relative percent difference for Toluene was 183.8%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-07-045	12/12/2024	For SW-846 Method TO-15 (Air), analyte Freon 123a was identified as a tentatively identified compound by a GC/MS library search, and the amount reported is an estimated value.
400-SV-07-045	12/12/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-07-045	12/12/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-07-045	12/12/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-07-045	12/12/2024	For SW-846 Method TO-15 (Air), analyte Chromomethane had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-SV-07-100	12/12/2024	For SW-846 Method TO-15 (Air), for sample (241210835) analytes Freon 11 (1400 ug/mg) and Freon 113 (1200 ug/mg) reported result is from a dilution.
400-SV-07-100	12/12/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-07-100	12/12/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-07-100	12/12/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-07-100	12/12/2024	For SW-846 Method TO-15 (Air), analyte Chromomethane had results for laboratory control sample (LCS) , initial calibration verification (ICV), or continuing calibration verification (CCV) that were outside standard limits.
400-SV-07-100	12/12/2024	For the Soil Gas Method, 2-Propanol was detected in the field blank (2412120836) at 5.3 ng/L. Benzene was detected in the field blank (2412120836) at 0.31 ng/L. Carbon Disulfide was detected in the field blank (2412120836) at 0.65 ng/L. Carbon Tetrachloride was detected in the field blank (2412120836) at 0.43 ng/L. Chloromethane was detected in the field blank (2412120836) at 0.67 ng/L. Ethanol was detected in the field blank (2412120836) at 2.1 ng/L. Freon 11 was detected in the field blank (2412120836) at 1.3 ng/L. Freon 113 was detected in the field blank (2412120836) at 2.7 ng/L. Freon 12 was detected in the field blank (2412120836) at 2.3 ng/L. Toluene was detected in the field blank (2412120836) at 0.29 ng/L.
400-SV-09-010	12/9/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-09-010	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-09-010	12/9/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-SV-09-010	12/9/2024	For the Soil Gas Method, 2-Butanone (Methyl Ethyl Ketone) was detected in the field blank (2412091406) at 0.9 ng/L. Acetone was detected in the field blank (2412091406) at 7.5 ng/L. Carbon Tetrachloride was detected in the field blank (2412091406) at 0.43 ng/L. Chloromethane was detected in the field blank (2412091406) at 0.6 ng/L. Freon 11 was detected in the field blank (2412091406) at 1.2 ng/L. Freon 113 was detected in the field blank (2412091406) at 0.54 ng/L. Freon 12 was detected in the field blank (2412091406) at 2.3 ng/L.
400-SV-09-045	12/9/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-09-045	12/9/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-09-045	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-09-045	12/9/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-09-104	12/9/2024	For SW-846 Method TO-15 (Air), analyte Freon 113 (1800 ug/mg) reported result is from a dilution.
400-SV-09-104	12/9/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-09-104	12/9/2024	For SW-846 Method TO-15 (Air), analyte Carbon Disulfide was detected in the method blank.
400-SV-09-104	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-09-104	12/9/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-10-010	12/9/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-10-010	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-10-010	12/9/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-10-050	12/9/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-10-050	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-10-050	12/9/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-10-100	12/9/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-10-100	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-10-100	12/9/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-10-100	12/9/2024	For SW-846 Method TO-15 (Air), for sample (2412091343) Freon 113 (600 ug/mg) reported result is from a dilution.
400-SV-10-100	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for Freon 113 was 198.5%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for Freon 11 was 197.4%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for 2-Propanol was 154.0%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for Acetone was 86.1%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for Ethanol was 91.4%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for Toluene was 165.1%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for 4-Methyl-2-pentanone was 170.6%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for Benzene was 128.4%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-100	12/9/2024	For the Soil Gas Method, field duplicate samples 2412091342 and 2412091343 the relative percent difference for Hexane was 154.1%. This value is outside the upper acceptance limit for relative percent difference of 25%.
400-SV-10-125	12/9/2024	For SW-846 Method TO-15 (Air), Freon 113 (450000 ug/mg) reported result is from a dilution.
400-SV-10-125	12/9/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-10-125	12/9/2024	For SW-846 Method TO-15 (Air), analytes Tetrachloroethene (1200 ug/L) and Trichloroethene (370 ug/L) results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-10-125	12/9/2024	For SW-846 Method TO-15 (Air), analyte Freon 123a was identified as a tentatively identified compound by a GC/MS library search, and the amount reported is an estimated value.
400-SV-15-010	12/10/2024	For SW-846 Method TO-15 (Air), multiple analyte results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-15-010	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-15-010	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.

Location Sample ID	Event Date	EPA Method TO-15 for Air
400-SV-15-010	12/10/2024	For the Soil Gas Method, 2-Butanone (Methyl Ethyl Ketone) was detected in the field blank (2412101316) at 3.6 ng/L. 2-Propanol was detected in the field blank (2412101316) at 4.5 ng/L. Acetone was detected in the field blank (2412101316) at 15.0 ng/L. Benzene was detected in the field blank (2412101316) at 0.87 ng/L. Chloromethane was detected in the field blank (2412101316) at 0.66 ng/L. Ethanol was detected in the field blank (2412101316) at 11.0 ng/L. Freon 11 was detected in the field blank (2412101316) at 1.3 ng/L. Freon 113 was detected in the field blank (2412101316) at 1.1 ng/L. Freon 12 was detected in the field blank (2412101316) at 2.4 ng/L. Heptane was detected in the field blank (2412101316) at 0.86 ng/L. m,p-Xylene was detected in the field blank (2412101316) at 0.71 ng/L. Toluene was detected in the field blank (2412101316) at 2.1 ng/L.
400-SV-15-050	12/10/2024	For SW-846 Method TO-15 (Air), analytes o-Xylene (8 ug/mg) and m,p-Xylene (7.7 ug/mg) results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-15-050	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-15-050	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.
400-SV-15-090	12/10/2024	For SW-846 Method TO-15 (Air), analyte o-Xylene (8.6 ug/mg) results are estimated values less than the quantitation limit, but greater than or equal to the detection limit. Affected data are appropriately qualified.
400-SV-15-090	12/10/2024	For SW-846 Method TO-15 (Air), analytes Freon 21and Freon 123 were not included in the laboratory's NELAP or DoD-ELAP scope of accreditation, therefore were not analyzed as TIC. Marked with a '*' flag, See case narrative.
400-SV-15-090	12/10/2024	For SW-846 Method TO-15 (Air), Freon 123a was searched for but not found.

Table 8 – 400 SVGM Blank Sample Detections

Location Sample ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
400-FV-131	12/11/24	Carboy G1	8260	VOA-FB	TIC	Unknown	14	ug/L	J
400-HV-147	12/11/24	Carboy G2	8260	VOA-FB	TIC	Unknown	13	ug/L	J
400-EV-131	12/11/24	Carboy G2	8260	VOA-FB	TIC	Unknown	12	ug/L	J
400-JV-150	12/11/24	Carboy G1	8260	VOA-FB	TIC	Unknown	11	ug/L	J
400-IV-123	12/11/24	Carboy G2	8260	VOA-FB	TIC	Unknown	11	ug/L	J
400-GV-125	12/11/24	Carboy G1	8260	VOA-FB	TIC	Unknown	11	ug/L	J
400-HV-012	12/11/24	Final pressure= 0	TO-15	Soil Gas-TB	78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.45	ug/m^3	J T TB
400-HV-012	12/11/24	Final pressure= 0	TO-15	Soil Gas-TB	75-15-0	Carbon Disulfide	1.5	ug/m^3	J T TB
400-HV-012	12/11/24	Final pressure= 0	TO-15	Soil Gas-TB	64-17-5	Ethanol	1.1	ug/m^3	J T TB
400-SV-03-010	12/12/24	Final pressure= 0	TO-15	Soil Gas-TB	78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.32	ug/m^3	J TB
400-SV-03-010	12/12/24	Final pressure= 0	TO-15	Soil Gas-TB	64-17-5	Ethanol	1.5	ug/m^3	J TB
400-SV-03-010	12/12/24	Final pressure= 0	TO-15	Soil Gas-TB	76-13-1	Freon 113	0.85	ug/m^3	J TB
400-SV-03-010	12/12/24	Final pressure= 0	TO-15	Soil Gas-TB	79-01-6	Trichloroethene	0.63	ug/m^3	J TB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	78-93-3	2-Butanone (Methyl Ethyl Ketone)	1.7	ug/m^3	J T FB

Location Sample ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	67-63-0	2-Propanol	16	ug/m^3	T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	108-10-1	4-Methyl-2-pentanone	2	ug/m^3	T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	67-64-1	Acetone	16	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	71-43-2	Benzene	1	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	75-15-0	Carbon Disulfide	0.66	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	56-23-5	Carbon Tetrachloride	0.41	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	74-87-3	Chloromethane	0.59	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	110-82-7	Cyclohexane	0.66	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	64-17-5	Ethanol	23	ug/m^3	T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	100-41-4	Ethyl Benzene	0.32	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	75-69-4	Freon 11	2.4	ug/m^3	T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	76-13-1	Freon 113	2.9	ug/m^3	T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.3	ug/m^3	T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	142-82-5	Heptane	0.45	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	110-54-3	Hexane	1	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	179601-23-1	m,p-Xylene	0.82	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	95-47-6	o-Xylene	0.33	ug/m^3	J T FB
400-SV-03-092	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	108-88-3	Toluene	6.3	ug/m^3	T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	78-93-3	2-Butanone (Methyl Ethyl Ketone)	90	ug/m^3	T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	67-64-1	Acetone	7.9	ug/m^3	J T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	56-23-5	Carbon Tetrachloride	0.56	ug/m^3	J T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	67-66-3	Chloroform	0.42	ug/m^3	J T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	74-87-3	Chloromethane	0.63	ug/m^3	J T A FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	64-17-5	Ethanol	5.4	ug/m^3	J T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	75-69-4	Freon 11	41	ug/m^3	T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	76-13-1	Freon 113	43	ug/m^3	T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.5	ug/m^3	T FB

Location Sample ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	75-43-4	Freon 21	14	ug/m^3	T FB *
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	142-82-5	Heptane	3.9	ug/m^3	T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	110-54-3	Hexane	1.8	ug/m^3	J T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	75-09-2	Methylene Chloride	2.2	ug/m^3	T FB
400-HV-095	12/11/24	Final pressure= -1	TO-15	Soil Gas-FB	108-88-3	Toluene	6.8	ug/m^3	T FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	67-63-0	2-Propanol	5.3	ug/m^3	FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	71-43-2	Benzene	0.31	ug/m^3	J FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	75-15-0	Carbon Disulfide	0.65	ug/m^3	J FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	56-23-5	Carbon Tetrachloride	0.43	ug/m^3	J FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	74-87-3	Chloromethane	0.67	ug/m^3	J A FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	64-17-5	Ethanol	2.1	ug/m^3	J FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	75-69-4	Freon 11	1.3	ug/m^3	J FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	76-13-1	Freon 113	2.7	ug/m^3	FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.3	ug/m^3	FB
400-SV-07-100	12/12/24	Final pressure= 0	TO-15	Soil Gas-FB	108-88-3	Toluene	0.29	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.3	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	142-82-5	Heptane	7.8	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	110-54-3	Hexane	4.9	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	179601-23-1	m,p-Xylene	12	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	75-09-2	Methylene Chloride	1.9	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	95-47-6	o-Xylene	4.9	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	100-42-5	Styrene	1.9	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	127-18-4	Tetrachloroethene	2.5	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	109-99-9	Tetrahydrofuran	8.5	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	108-88-3	Toluene	86	ug/m^3	FB
400-SV-09-010	12/09/24	Final pressure = -1	TO-15	Soil Gas-FB	78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.9	ug/m^3	J FB
400-SV-09-010	12/09/24	Final pressure = -1	TO-15	Soil Gas-FB	67-64-1	Acetone	7.5	ug/m^3	J FB

Location Sample ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
400-SV-09-010	12/09/24	Final pressure = -1	TO-15	Soil Gas-FB	56-23-5	Carbon Tetrachloride	0.43	ug/m^3	J FB
400-SV-09-010	12/09/24	Final pressure = -1	TO-15	Soil Gas-FB	74-87-3	Chloromethane	0.6	ug/m^3	J FB
400-SV-09-010	12/09/24	Final pressure = -1	TO-15	Soil Gas-FB	75-69-4	Freon 11	1.2	ug/m^3	J FB
400-SV-09-010	12/09/24	Final pressure = -1	TO-15	Soil Gas-FB	76-13-1	Freon 113	0.54	ug/m^3	J FB
400-SV-09-010	12/09/24	Final pressure = -1	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.3	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	95-63-6	1,2,4-Trimethylbenzene	2.1	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	78-87-5	1,2-Dichloropropane	2.1	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	108-67-8	1,3,5-Trimethylbenzene	0.59	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	540-84-1	2,2,4-Trimethylpentane	3.8	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	78-93-3	2-Butanone (Methyl Ethyl Ketone)	7.2	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	67-63-0	2-Propanol	90	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	108-10-1	4-Methyl-2-pentanone	0.89	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	67-64-1	Acetone	62	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	71-43-2	Benzene	7.2	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	75-15-0	Carbon Disulfide	3.6	ug/m^3	J RB FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	74-87-3	Chloromethane	1.1	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	110-82-7	Cyclohexane	7.7	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	64-17-5	Ethanol	110	ug/m^3	FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	100-41-4	Ethyl Benzene	3.3	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	75-69-4	Freon 11	1.4	ug/m^3	J FB
400-KV-100	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	76-13-1	Freon 113	1	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	78-93-3	2-Butanone (Methyl Ethyl Ketone)	3.6	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	67-63-0	2-Propanol	4.5	ug/m^3	FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	67-64-1	Acetone	15	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	71-43-2	Benzene	0.87	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	74-87-3	Chloromethane	0.66	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	64-17-5	Ethanol	11	ug/m^3	J FB

Location Sample ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	75-69-4	Freon 11	1.3	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	76-13-1	Freon 113	1.1	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.4	ug/m^3	FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	142-82-5	Heptane	0.86	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	179601-23-1	m,p-Xylene	0.71	ug/m^3	J FB
400-SV-15-010	12/10/24	Final pressure= 0	TO-15	Soil Gas-FB	108-88-3	Toluene	2.1	ug/m^3	FB
400-SV-02-050	12/10/24	Final presssure= -1	TO-15	Soil Gas-FB	56-23-5	Carbon Tetrachloride	0.46	ug/m^3	J FB
400-SV-02-050	12/10/24	Final presssure= -1	TO-15	Soil Gas-FB	74-87-3	Chloromethane	0.55	ug/m^3	J FB
400-SV-02-050	12/10/24	Final presssure= -1	TO-15	Soil Gas-FB	75-69-4	Freon 11	1.3	ug/m^3	J FB
400-SV-02-050	12/10/24	Final presssure= -1	TO-15	Soil Gas-FB	76-13-1	Freon 113	0.68	ug/m^3	J FB
400-SV-02-050	12/10/24	Final presssure= -1	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.4	ug/m^3	FB
400-JV-100	12/11/24	Final pressure= 0	TO-15	Soil Gas-FB	56-23-5	Carbon Tetrachloride	0.46	ug/m^3	J FB
400-JV-100	12/11/24	Final pressure= 0	TO-15	Soil Gas-FB	74-87-3	Chloromethane	0.56	ug/m^3	J FB
400-JV-100	12/11/24	Final pressure= 0	TO-15	Soil Gas-FB	75-69-4	Freon 11	1.3	ug/m^3	J FB
400-JV-100	12/11/24	Final pressure= 0	TO-15	Soil Gas-FB	76-13-1	Freon 113	0.66	ug/m^3	J FB
400-JV-100	12/11/24	Final pressure= 0	TO-15	Soil Gas-FB	75-71-8	Freon 12	2.4	ug/m^3	FB

Table 9 – 400 SVGM Qaulity Control Analyte Occurance

Analyte	Sample Type and Analysis	Total QA/QC Samples*	QA/QC Total Sample Detections	Percentage of QA/QC Detections	Min QA/QC Detection	Max QA/QC Detection	Unit
Unknown	Groundwater: SW-846 Method 8260	7	6	86%	11	14	ug/L
1,2,4-Trimethylbenzene	Soil Vapor: EPA Method TO-15	11	1	9%	2.1	2.1	ug/m^3
1,2-Dichloropropane	Soil Vapor: EPA Method TO-15	11	1	9%	2.1	2.1	ug/m^3
1,3,5-Trimethylbenzene	Soil Vapor: EPA Method TO-15	11	1	9%	0.59	0.59	ug/m^3
2,2,4-Trimethylpentane	Soil Vapor: EPA Method TO-15	11	1	9%	3.8	3.8	ug/m^3
2-Butanone (Methyl Ethyl Ketone)	Soil Vapor: EPA Method TO-15	11	7	64%	0.32	90	ug/m^3
2-Propanol	Soil Vapor: EPA Method TO-15	11	4	36%	4.5	90	ug/m^3

Analyte	Sample Type and Analysis	Total QA/QC Samples*	QA/QC Total Sample Detections	Percentage of QA/QC Detections	Min QA/QC Detection	Max QA/QC Detection	Unit
4-Methyl-2-pentanone	Soil Vapor: EPA Method TO-15	11	2	18%	0.89	2	ug/m^3
Acetone	Soil Vapor: EPA Method TO-15	11	5	45%	7.5	62	ug/m^3
Benzene	Soil Vapor: EPA Method TO-15	11	4	36%	0.31	7.2	ug/m^3
Carbon Disulfide	Soil Vapor: EPA Method TO-15	11	4	36%	0.65	3.6	ug/m^3
Carbon Tetrachloride	Soil Vapor: EPA Method TO-15	11	6	55%	0.41	0.56	ug/m^3
Chloroform	Soil Vapor: EPA Method TO-15	11	1	9%	0.42	0.42	ug/m^3
Chloromethane	Soil Vapor: EPA Method TO-15	11	8	73%	0.55	1.1	ug/m^3
Cyclohexane	Soil Vapor: EPA Method TO-15	11	2	18%	0.66	7.7	ug/m^3
Ethanol	Soil Vapor: EPA Method TO-15	11	7	64%	1.1	110	ug/m^3
Ethyl Benzene	Soil Vapor: EPA Method TO-15	11	2	18%	0.32	3.3	ug/m^3
Freon 11	Soil Vapor: EPA Method TO-15	11	8	73%	1.2	41	ug/m^3
Freon 113	Soil Vapor: EPA Method TO-15	11	9	82%	0.54	43	ug/m^3
Freon 12	Soil Vapor: EPA Method TO-15	11	8	73%	2.3	2.5	ug/m^3
Freon 21	Soil Vapor: EPA Method TO-15	11	1	9%	14	14	ug/m^3
Heptane	Soil Vapor: EPA Method TO-15	11	4	36%	0.45	7.8	ug/m^3
Hexane	Soil Vapor: EPA Method TO-15	11	3	27%	1	4.9	ug/m^3
m,p-Xylene	Soil Vapor: EPA Method TO-15	11	3	27%	0.71	12	ug/m^3
Methylene Chloride	Soil Vapor: EPA Method TO-15	11	2	18%	1.9	2.2	ug/m^3
o-Xylene	Soil Vapor: EPA Method TO-15	11	2	18%	0.33	4.9	ug/m^3
Styrene	Soil Vapor: EPA Method TO-15	11	1	9%	1.9	1.9	ug/m^3
Tetrachloroethene	Soil Vapor: EPA Method TO-15	11	1	9%	2.5	2.5	ug/m^3
Tetrahydrofuran	Soil Vapor: EPA Method TO-15	11	1	9%	8.5	8.5	ug/m^3
Toluene	Soil Vapor: EPA Method TO-15	11	5	45%	0.29	86	ug/m^3
Trichloroethene	Soil Vapor: EPA Method TO-15	11	1	9%	0.63	0.63	ug/m^3

* QA/QC samples consist of: six field blanks and one trip blank for volitile groundwater samples by SW-846 Method 8260; and eight field blanks and three trip blanks for volatile soil vapor by EPA Method TO-15.

Appendix C
Analytical Laboratory Reports

Client Sample Id	ALS Sample ID	Date Collected	Date Ran	Time Ran	Exceeds 30 Day Holding By
2412121015	P2405136-001	12/12/2024	1/13/2025	10:53 AM	
2412121016	P2405136-002	12/12/2024	1/13/2025	11:25 AM	
2412121029	P2405136-003	12/12/2024	1/13/2025	11:58 AM	
2412121030	P2405136-004	12/12/2024	1/13/2025	12:30 PM	
2412121036	P2405136-005	12/12/2024	1/13/2025	1:02 PM	
2412121045	P2405136-006	12/12/2024	1/13/2025	1:34 PM	
2412121056	P2405136-007	12/12/2024	1/13/2025	2:06 PM	
2412121057	P2405136-008	12/12/2024	1/13/2025	2:38 PM	
2412110900	P2405139-030	12/11/2024	1/12/2025	9:20 PM	2 days 12 hrs
2412110901	P2405139-031	12/11/2024	1/12/2025	9:52 PM	2 days 12.51 hrs
2412111005	P2405139-038	12/11/2024	1/11/2025	10:40 AM	1 day 0 hr
2412111013	P2405139-039	12/11/2024	1/11/2025	3:06 PM	1 day 5 hrs
2412111056	P2405139-043	12/11/2024	1/11/2025	12:14 AM	1 day 1 hr
2412111105	P2405139-044	12/11/2024	1/11/2025	12:46 AM	1 day 2 hrs
2412111113	P2405139-045	12/11/2024	1/11/2025	4:10 PM	1 day 5 hrs
2412111121	P2405139-046	12/11/2024	1/11/2025	1:18 AM	< 1 day
2412111300	P2405139-047	12/11/2024	1/11/2025	1:50 AM	< 1 day
2412111309	P2405139-048	12/11/2024	1/11/2025	2:21 AM	< 1 day
2412111318	P2405139-049	12/11/2024	1/11/2025	2:53 AM	< 1 day
2412111319	P2405139-050	12/11/2024	1/12/2025	6:08 PM	2 days 5 hrs
2412111328	P2405139-051	12/11/2024	1/12/2025	6:40 PM	2 days 5 hrs
2412111350	P2405139-052	12/11/2024	1/12/2025	7:12 PM	2 days 5 hrs
2412111351	P2405139-053	12/11/2024	1/12/2025	7:44 PM	2 days 6 hrs
2412111400	P2405139-054	12/11/2024	1/13/2025	9:30 AM	2 days 19 hrs
2412111409	P2405139-055	12/11/2024	1/11/2025	4:12 PM	1 day 2 hrs
2412111410	P2405139-056	12/11/2024	1/13/2025	10:21 AM	2 days 20 hours
2412111419	P2405139-057	12/11/2024	1/12/2025	9:55 AM	1 day 20 hrs
2412120910	P2405139-065	12/12/2024	1/12/2025	10:59 AM	2 days 2 hrs
2412120920	P2405139-067	12/12/2024	1/12/2025	12:03 PM	2 days 3 hrs

LABORATORY REPORT

February 11, 2025

Stephanie Portillo
NASA White Sands Test Facility
12600 NASA Rd., Bldg. 120
Las Cruces, NM 88012

RE: NASA White Sands Test Facility (WSTF)

Dear Stephanie:

Your report P2405139 has been amended for the samples submitted to our laboratory on December 19, 2024. The data was reprocessed to include results for the samples that were analyzed past the holding time. The change has been indicated by the "Revised Report" footer located at the bottom right corner of each page.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

ALS | Environmental

9:35 pm, Feb 11, 2025

For Denise Posada
Project Manager

Client: NASA White Sands Test Facility Service Request No: P2405139
Project: NASA White Sands Test Facility (WSTF)

CASE NARRATIVE

The samples were received intact under chain of custody on December 19, 2024 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds and Freon 123a as a tentatively identified compound in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph/mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

Samples 2412110900 (P2405139-030), 2412110901(2405139-031), 2412111005 (P2405139-038), 2412111013 (P2405139-039), 2412111056 (P2405139-043), 2412111105(P2405139-044), 2412111113 (P2405139-045), 2412111121 (P2405139-046), 2412111300 (P2405139-047), 2412111309 (P2405139-048), 2412111318 (P2405139-049), 2412111319 (P2405139-050), 2412111328 (P2405139-051), 2412111350 (P2405139-052), 2412111351 (P2405139-053), 2412111400 (P2405139-054), 2412111409 (P2405139-055), 2412111410 (P2405139-056), 2412111419 (P2405139-057), 2412120910 (P2405139-065), 2412120919 (P2405139-066) and 2412120920 (P2405139-067) were analyzed outside of hold time.

The upper control criterion was exceeded for Bromoform in the Continuing Calibration Verification (CCV) and in the Laboratory Control Samples (LCS/LCSD) analyzed on January 4, 6 and 7, 2025. The analyte in question was not detected in the associated field samples. Since the error associated with the elevated recovery equates to a high bias, the sample data has not been significantly affected. No corrective action was required.

The minimum criterion for Chloromethane and Methyl tert-Butyl Ether was not met in the Continuing Calibration Verification (CCV) analyzed on January 10, 2025. In accordance with ALS Environmental standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analytes of concern was analyzed each day of analysis. The MRL check standard verified that instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. The sensitivity was shown to be adequate to detect the compound and the Laboratory Control Samples (LCS/DLCS) met acceptance criteria. This procedure is a quantitative confirmation of non-detect results at or below the MRL. The data has been flagged accordingly. Any positve results may have a low bias. No further corrective action was taken.

The Method Blank associated with the samples analyzed on January 6, 2024 contained a concentration of Carbon Disulfide below the Method Reporting Limit (MRL). Concentrations reported below the MRL are considered estimated and below what would generally be reported; therefore, the sample results are not significantly affected. However, the data is flagged to indicate the presence of the target analyte.

The spike recoveries of Dibromochloromethane and Styrene for the Laboratory Control Samples (LCS/LCSD) analyzed on January 4, 2025 were outside the laboratory generated control criteria. The recovery errors equate to a potential high bias. However, the spike recoveries of the analytes in question were within the method criteria; therefore, the data quality has not been significantly affected. No further corrective action was required.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	https://dec.alaska.gov/spar/csp/lab-approval/list-of-approved-labs	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	https://internet.deq.louisiana.gov/portal/divisions/lelap/accredited-laboratories	203013
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtm	CA012627
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	006-999-456
New Jersey DEP (NELAP)	https://dep.nj.gov/dsr/oqa/certified-laboratories/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oklahoma DEQ (NELAP)	labaccreditation.deq.ok.gov/labaccreditation/	2207
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068
Pennsylvania DEP	hhttp://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration only)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413
Utah DOH (NELAP)	https://uphl.utah.gov/certifications/environmental-laboratory-certification/	CA01627
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: NASA White Sands Test Facility Service Request: P2405139

Project ID: NASA White Sands Test Facility (WSTF)

Date Received: 12/19/2024

Time Received: 10:20

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfl (psig)	2nd Pi (psig)	2nd Pf (psig)	TO-15 - VOC Cans
2412091330	P2405139-001	Soil Gas	12/9/2024	13:30	1SS00988	-1.99	5.69			X
2412091335	P2405139-002	Soil Gas	12/9/2024	13:35	1SC00337	-3.05	5.78			X
2412091342	P2405139-003	Soil Gas	12/9/2024	13:42	1SC00684	0.01	5.77			X
2412091343	P2405139-004	Soil Gas	12/9/2024	13:43	1SC00358	-2.72	5.91			X
2412091352	P2405139-005	Soil Gas	12/9/2024	13:52	1SS00844	-3.13	5.96			X
2412091405	P2405139-006	Soil Gas	12/9/2024	14:05	1SS01525	-2.21	5.82			X
2412091406	P2405139-007	Soil Gas	12/9/2024	14:06	1SS01606	-2.27	5.85			X
2412091410	P2405139-008	Soil Gas	12/9/2024	14:10	1SS01638	-2.37	6.03			X
2412091416	P2405139-009	Soil Gas	12/9/2024	14:16	1SS01195	-2.19	5.68			X
2412101015	P2405139-010	Soil Gas	12/10/2024	10:15	1SC01368	-1.55	6.11			X
2412101021	P2405139-011	Soil Gas	12/10/2024	10:21	1SC01176	-1.64	5.85			X
2412101027	P2405139-012	Soil Gas	12/10/2024	10:27	1SS00832	-2.14	5.91			X
2412101028	P2405139-013	Soil Gas	12/10/2024	10:28	1SC01272	-1.31	5.67			X
2412101039	P2405139-014	Soil Gas	12/10/2024	10:39	1SS00739	-1.96	5.82			X
2412101045	P2405139-015	Soil Gas	12/10/2024	10:45	1SS00870	-2.32	5.90			X
2412101053	P2405139-016	Soil Gas	12/10/2024	10:53	1SS00110	-1.42	5.71			X
2412101105	P2405139-017	Soil Gas	12/10/2024	11:05	1SS01685	-1.94	5.92			X
2412101111	P2405139-018	Soil Gas	12/10/2024	11:11	1SS01497	-1.99	6.81			X
2412101112	P2405139-019	Soil Gas	12/10/2024	11:12	1SS01156	-2.21	7.36			X
2412101120	P2405139-020	Soil Gas	12/10/2024	11:20	1SS01407	-2.07	6.68			X
2412101128	P2405139-021	Soil Gas	12/10/2024	11:28	1SS01269	-2.49	6.55			X
2412101315	P2405139-022	Soil Gas	12/10/2024	13:15	1SS01144	-7.05	6.21			X
2412101316	P2405139-023	Soil Gas	12/10/2024	13:16	1SS00752	-1.94	6.32			X
2412101325	P2405139-024	Soil Gas	12/10/2024	13:25	1SC01370	-2.05	6.29			X
2412101334	P2405139-025	Soil Gas	12/10/2024	13:34	1SC00637	-1.61	6.15			X
2412101355	P2405139-026	Soil Gas	12/10/2024	13:55	1SS00098	-2.09	6.80			X
2412101403	P2405139-027	Soil Gas	12/10/2024	14:03	1SS00504	-2.28	7.03			X
2412101404	P2405139-028	Soil Gas	12/10/2024	14:04	1SC01237	-1.82	6.28			X
2412101412	P2405139-029	Soil Gas	12/10/2024	14:12	1SS01361	-2.02	6.63			X
2412110900	P2405139-030	Soil Gas	12/11/2024	09:00	1SS01690	6.48	6.48			X
2412110901	P2405139-031	Soil Gas	12/11/2024	09:01	1SS00514	0.23	6.50	-0.30	5.28	X
2412110908	P2405139-032	Soil Gas	12/11/2024	09:08	1SS01608	-1.67	6.58			X
2412110916	P2405139-033	Soil Gas	12/11/2024	09:16	1SS01311	-1.85	7.35			X
2412110917	P2405139-034	Soil Gas	12/11/2024	09:17	1SS01250	-1.63	6.26			X
2412110945	P2405139-035	Soil Gas	12/11/2024	09:45	1SC01295	-1.81	6.25			X
2412110946	P2405139-036	Soil Gas	12/11/2024	09:46	1SS00892	-2.02	6.74	-5.31	6.01	X
2412110957	P2405139-037	Soil Gas	12/11/2024	09:57	1SS00153	-1.99	6.18	0.02	4.92	X
2412111005	P2405139-038	Soil Gas	12/11/2024	10:05	1SS00595	-2.14	6.45			X
2412111013	P2405139-039	Soil Gas	12/11/2024	10:13	1SS00802	-2.06	7.74			X
2412111030	P2405139-040	Soil Gas	12/11/2024	10:30	1SS00543	-1.92	7.54	0.79	5.70	X

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: NASA White Sands Test Facility Service Request: P2405139

Project ID: NASA White Sands Test Facility (WSTF)

Date Received: 12/19/2024

Time Received: 10:20

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfl (psig)	2nd Pi (psig)	2nd Pf (psig)	TO-15 - VOC Cans
2412111037	P2405139-041	Soil Gas	12/11/2024	10:37	1SS01748	-1.95	5.77			X
2412111055	P2405139-042	Soil Gas	12/11/2024	10:55	1SS01750	-1.94	5.77			X
2412111056	P2405139-043	Soil Gas	12/11/2024	10:56	1SS01612	-2.19	5.99			X
2412111105	P2405139-044	Soil Gas	12/11/2024	11:05	1SS01593	-2.11	5.57			X
2412111113	P2405139-045	Soil Gas	12/11/2024	11:13	1SS01855	-2.23	5.76			X
2412111121	P2405139-046	Soil Gas	12/11/2024	11:21	1SS01791	-2.33	5.68			X
2412111300	P2405139-047	Soil Gas	12/11/2024	13:00	1SC01343	-2.00	5.75			X
2412111309	P2405139-048	Soil Gas	12/11/2024	13:09	1SS01890	-2.14	5.84			X
2412111318	P2405139-049	Soil Gas	12/11/2024	13:18	1SS01698	-2.20	5.84			X
2412111319	P2405139-050	Soil Gas	12/11/2024	13:19	1SS01786	-2.33	5.64			X
2412111328	P2405139-051	Soil Gas	12/11/2024	13:28	1SS01757	-2.34	6.03			X
2412111350	P2405139-052	Soil Gas	12/11/2024	13:50	1SS00751	5.92	5.92			X
2412111351	P2405139-053	Soil Gas	12/11/2024	13:51	1SS00928	-2.06	5.61			X
2412111400	P2405139-054	Soil Gas	12/11/2024	14:00	1SS00689	-0.35	6.13	-1.79	5.95	X
2412111409	P2405139-055	Soil Gas	12/11/2024	14:09	1SC01032	-2.51	5.84			X
2412111410	P2405139-056	Soil Gas	12/11/2024	14:10	1SS00986	-2.21	5.70			X
2412111419	P2405139-057	Soil Gas	12/11/2024	14:19	1SS00686	-2.37	5.85			X
2412120815	P2405139-058	Soil Gas	12/12/2024	08:15	1SS00205	-1.39	5.83			X
2412120816	P2405139-059	Soil Gas	12/12/2024	08:16	1SS00101	-1.91	5.93			X
2412120826	P2405139-060	Soil Gas	12/12/2024	08:26	1SS01020	-1.76	5.90			X
2412120835	P2405139-061	Soil Gas	12/12/2024	08:35	1SS01005	-1.72	5.84			X
2412120836	P2405139-062	Soil Gas	12/12/2024	08:36	1SS00894	-1.70	5.84			X
2412120900	P2405139-063	Soil Gas	12/12/2024	09:00	1SC01294	5.93	5.93			X
2412120901	P2405139-064	Soil Gas	12/12/2024	09:01	1SC00529	-1.67	6.20			X
2412120910	P2405139-065	Soil Gas	12/12/2024	09:10	1SS01371	-1.94	5.78			X
2412120919	P2405139-066	Soil Gas	12/12/2024	09:19	1SS01785	-1.98	5.77			X
2412120920	P2405139-067	Soil Gas	12/12/2024	09:20	1SS01138	-1.59	5.97			X

Five samples re-pressurized because additional volume was needed for analysis. All canisters passed the leak check step on the autosampler and the canister dilution factors have been calculated accordingly.

WSTF CHAIN OF CUSTODY RECORD

Date 12/12/24 P2405139 Page 1 of 7

Laboratory: ALS PO# 23ECO17B

Address shipping questions to:
☐ Lori Minnick, 575-524-5119
☑ Other GEOFF GILES 575-635-1284, 575-524-5352

Send sample receipt confirmation and analytical reports to:
☒ Stephanie Portillo, stephanieportillo@nasa.gov
☐ Other
☐ Other

Special Instructions
Return coolers and reusable packaging materials within 14 days as required in statement of work to:
Return Address:
NASA WSTF Environmental Department
12600 NASA Road; Bldg. 120
Las Cruces, NM 88012
Attn: Lori Minnick

	Sample Number	Sample Location	# of Containers	Sample Matrix*	Analytical Requirements: Method TO15, Analytes VOC	Charge Number (WSTF Use Only)	Comments
1	2412091330	400-SV-10 10'	1	G	X	24EEHNMU	1SS00988 CANISTER FINAL PRESSURE = 0
2	2412091335	400-SV-10 50'	1	G	X		1SC00337 " " " = 0
3	2412091342	400-SV-10 100'	1	G	X		1SC00684 " " " = 0
4	2412091343	400-SV-10 100'	1	G	X		1SC00358 " " " = 0
5	2412091352	400-SV-10 125'	1	G	X		1SS00844 " " " = -1
6	2412091405	400-SV-09 10'	1	G	X		1SS01525 " " " = -1
7	2412091406	400-SV-09 10'	1	G	X		1SS01606 " " " = 0
8	2412091410	400-SV-09 45'	1	G	X		1SS01638 " " " = 0
9	2412091416	400-SV-09 104'	1	G	X		1SS01195 " " " = 0

Relinquished By:	Date/Time:	Accepted By:	Date/Time:
FEDEX	12/12/24 1330	FEDEX	12-19-24 / 1020

* Sample Matrix: A – Aqueous; G – Gaseous; S – Solid

WSTF 381B (06/2023)

WSTF CHAIN OF CUSTODY RECORD

Date 12/12/24 P2405139 Page 2 of 7

Laboratory: ALS PO# 23EC017B

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☐ Other

Analytical Requirements: Method TO15, Analytes VOC

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Attn: Lori Minnick

	Sample Number	Sample Location	# of Containers	Sample Matrix*	Charge Number (WSTF Use Only)	Comments
10	2412101015	400-KV-142 12.5'	1	G	24EEHWMV	15C01368 CANISTER FINAL PRESSURE = 0
11	2412101021	400-KV-142 50'	1	G		15C01176 " " " = 0
12	2412101027	400-KV-142 100'	1	G		15500832 " " " = 0
13	2412101028	400-KV-142 100'	1	G		15C01272 " " " = 0
14	2412101039	400-SV-05 10'	1	G		15500739 " " " = -1
15	2412101045	400-SV-05 50'	1	G		15500870 " " " = 0
16	2412101053	400-SV-05 100'	1	G		15500110 " " " = -1
17	2412101105	400-LV-125 10'	1	G		15501685 " " " = 0
18	2412101111	400-LV-125 50'	1	G		15501497 " " " = 0
19	2412101112	400-LV-125 50'	1	G		15501156 " " " = -1
20	2412101120	400-LV-125 95'	1	G		15501407 " " " = -1
21	2412101128	400-LV-125 122'	1	G		15501269 " " " = 0

Relinquished By:	Date/Time:	Accepted By:	Date/Time:
FEDEX	12/12/24 1530	FEDEX	12-19-24 / 1020

* Sample Matrix: A – Aqueous; G – Gaseous; S – Solid

WSTF 381B (06/2023)

WSTF CHAIN OF CUSTODY RECORD

Date 12/12/24 P2405139 Page 3 of 7

Laboratory: ALS PO# 23EC017B

Address shipping questions to:
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- ☑ Other GEOFF GILES, 575-635-1284, 575-524-5352

Send sample receipt confirmation and analytical reports to:
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- ☐ Other
- ☐ Other

Analytical Requirements: Method TO15, Analytes VOC

Special Instructions

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Las Cruces, NM 88012
Attn: Lori Minnick

	Sample Number	Sample Location	# of Containers	Sample Matrix*	Charge Number (WSTF Use Only)	Comments
22	241210 1315	400-SV-15 10'	1	G	24EETHWMU	15501144 CANISTER FINAL PRESSURE = 0
23	241210 1316	400-SV-15 10'	1	G		15500752 " " " = 0
24	241210 1325	400-SV-15 50'	1	G		15C01370 " " " = 0
25	241210 1334	400-SV-15 90'	1	G		15C00637 " " " = 0
26	241210 1355	400-SV-02 10'	1	G		15500098 " " " = 0
27	241210 1403	400-SV-02 50'	1	G		15500504 " " " = -1
28	241210 1404	400-SV-02 50'	1	G		15C01239 " " " = 0
29	241210 1412	400-SV-02 100'	1	G		15501361 " " " = 0

Relinquished By:	Date/Time:	Accepted By:	Date/Time:
[signature] FEDEX	12/12/24 1330	FEDEX	12-19-24 / 1020

* Sample Matrix: A – Aqueous; G – Gaseous; S – Solid

WSTF 381B (06/2023)

WSTF CHAIN OF CUSTODY RECORD

Date 12/12/24

P2405139

Page 4 of 7

Laboratory: ALS PO# 23ELC017B

Address shipping questions to:

☐ Lori Minnick, 575-524-5119

☑ Other GEOFF GILES, 575-524-5352 575-635-1284

Send sample receipt confirmation and analytical reports to:

☒ Stephanie Portillo, stephanieportillo@nasa.gov

☐ Other

☐ Other

Analytical Requirements: Method TO15, Analytes VOC

Special Instructions

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Return Address:

NASA WSTF Environmental Department
12600 NASA Road; Bldg. 120
Las Cruces, NM 88012
Attn: Lori Minnick

	Sample Number	Sample Location	# of Containers	Sample Matrix*	Charge Number (WSTF Use Only)	Comments
30	24121110900	400-JV-150 12.5'	1	G	24EEHWHV	1SS01690 CANISTER FINAL PRESSURE = NA
31	24121110901	400-JV-150 12.5'	1	G		1SS00514 " " " = 0
32	24121110908	400-JV-150 50'	1	G		1SS01608 " " " = 0
33	24121110916	400-JV-150 100'	1	G		1SS01311 " " " = 0
34	24121110917	400-JV-150 100'	1	G		1SS01250 " " " = 0
35	24121110945	400-GV-125 10'	1	G		1SC01295 " " " = 0
36	24121110946	400-GV-125 10'	1	G		1SS00892 " " " = 0
37	24121110957	400-GV-125 46'	1	G		1SS00153 " " " = 0
38	24121111005	400-GV-125 105'	1	G		1SS00595 " " " = -1
39	24121111013	400-GV-125 120'	1	G		1SS00802 " " " = -1

Relinquished By:	Date/Time:	Accepted By:	Date/Time:
[illegible] PORTER	12/12/24 1330	PORTER	
		[signature]	12.19.24 / 1020

* Sample Matrix: A – Aqueous; G – Gaseous; S – Solid

WSTF 381B (06/2023)

WSTF CHAIN OF CUSTODY RECORD

Date 12/12/24

P2405139

Laboratory: ALS PO# 23EC017B

Address shipping questions to:

☐ Lori Minnick, 575-524-5119

☑ Other GEOFF GILES, 575-524-5352 575-635-1284

Send sample receipt confirmation and analytical reports to:

☒ Stephanie Portillo, stephanieportillo@nasa.gov

☐ Other

☐ Other

Analytical Requirements: Method 1015 VOC

Special Instructions

Return coolers and reusable packaging materials within 14 days as required in statement of work to:

Return Address:

NASA WSTF Environmental Department
12600 NASA Road; Bldg. 120
Las Cruces, NM 88012
Attn: Lori Minnick

	Sample Number	Sample Location	# of Containers	Sample Matrix*	Charge Number (WSTF Use Only)	Comments
40	241211 1030	400-FV-131, 15'	1	G	24EEHWMV	15500543 CANISTER FINAL PRESSURE = 0
41	241211 1037	400-FV-131, 63'	1	G		15501748 " " " = 0
42	241211 1055	400-IV-123, 10'	1	G		15501750 " " " = 0
43	241211 1056	400-IV-123 10'	1	G		15501612 " " " = 0
44	241211 1105	400-IV-123, 45'	1	G		15501593 " " " = 0
45	241211 1113	400-IV-123, 80'	1	G		15501855 " " " = 0
46	241211 1121	400-IV-123, 118'	1	G		15501791 " " " = 0
47	241211 1300	400-EV-131 10'	1	G		15C01343 " " " = 0
48	241211 1309	400-EV-131 50'	1	G		15501890 " " " = 0
49	241211 1318	400-EV-131 100'	1	G		15501698 " " " = -1
50	241211 1319	400-EV-131 100'	1	G		15501786 " " " = 0
51	241211 1328	400-EV-131 130'	1	G	↓	15501757 " " " = -1

Relinquished By:	Date/Time:	Accepted By:	Date/Time:
[signature]	12/12/24 1330	[signature]	12-19-24 / 1020

* Sample Matrix: A – Aqueous; G – Gaseous; S – Solid

WSTF CHAIN OF CUSTODY RECORD

Date 12/12/24 P2405139 Page 6 of 7

Laboratory: ALS PO# 23ECO17B

Address shipping questions to:
☐ Lori Minnick, 575-524-5119
☑ Other GEOFF GILES 575-635-1294, 575-524-5352

Send sample receipt confirmation and analytical reports to:
☒ Stephanie Portillo, stephanieportillo@nasa.gov
☐ Other
☐ Other

Analytical Requirements: Method 1015 VOC

Special Instructions
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Return Address:
NASA WSTF Environmental Department
12600 NASA Road; Bldg. 120
Las Cruces, NM 88012
Attn: Lori Minnick

	Sample Number	Sample Location	# of Containers	Sample Matrix*	Analytes: VOC	Charge Number (WSTF Use Only)	Comments
52	241211350	400-HV-147 12'	1	G	X	24EEHWMO	15500751 CANISTER FINAL PRESSURE = NA
53	241211351	400-HV-147 12'	1	G	X		15500928 " " " = 0
54	241211400	400-HV-147 45'	1	G	X		15500689 " " " = 0
55	241211409	400-HV-147 95'	1	G	X		15C01032 " " " = -1
56	241211410	400-HV-147 95'	1	G	X		15500986 - " " " = 0
57	241211419	400-HV-147 130'	1	G	X		15500686 " " " = 0
58	241210815	400-SV-07 10'	1	G	X		15500205 " " " = 0
59	241210816	400-SV-07 10'	1	G	X		15500101 " " " = 0
60	241210826	400-SV-07 45'	1	G	X		15501020 " " " = -1
61	241210835	400-SV-07 100'	1	G	X		15501005 " " " = 0
62	241210836	400-SV-07 100'	1	G	X		15500894 " " " = 0

Relinquished By:	Date/Time:	Accepted By:	Date/Time:
Geoff Giles FedEx	12/12/24 1330	FedEx	12-19-24 / 1020

* Sample Matrix: A – Aqueous; G – Gaseous; S – Solid

WSTF 381B (06/2023)

WSTF CHAIN OF CUSTODY RECORD

Date 12/12/24 P2406139 Page 7 of 7

Laboratory: ALS PO# 23EC017B

Address shipping questions to:
☐ Lori Minnick, 575-524-5119
☑ Other GEOFF GILES 575-635-1284, 575-524-5352

Send sample receipt confirmation and analytical reports to:
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☐ Other
☐ Other

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12600 NASA Road; Bldg. 120
Las Cruces, NM 88012
Attn: Lori Minnick

	Sample Number	Sample Location	# of Containers	Sample Matrix*	Analytical Requirements: Method TO15 Analytes VOC	Charge Number (WSTF Use Only)	Comments
63	2412120900	400-SV-03 10'	1	G	X	24EEHWMO	1SC01294 CANISTER FINAL PRESSURE = NA
64	2412120901	400-SV-03 10'	1	G	X		1SC00529 " " " = 0
65	2412120910	400-SV-03 50'	1	G	X		1SC01371 " " " = 0
66	2412120919	400-SV-03 92'	1	G	X		1SC01785 " " " = 0
67	2412120920	400-SV-03 92'	1	G	X		1SC01138 " " " = 0

Relinquished By:	Date/Time:	Accepted By:	Date/Time:
FEDEX	12/12/24 1330	FEDEX	12-19-24 1070

* Sample Matrix: A – Aqueous; G – Gaseous; S – Solid

WSTF 381B (06/2023)

ALS Environmental
Sample Acceptance Check Form

Client: NASA White Sands Test Facility Work order: P2405139

Project: NASA White Sands Test Facility (WSTF)

Sample(s) received on: 12/19/2024 Date opened: 12/19/2024 by: ANTHONY.VASQUEZ

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒
12	Lab Notification: Analyst and PM were alerted of Short HT or RUSH samples?	☐	☐	☒
13	Client Notification: Client has been notified regarding HT exceedances and/or other CoC discrepancies?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2405139-001.01	1.0 L Source Silonite Canister					
P2405139-002.01	1.0 L Source Can					
P2405139-003.01	1.0 L Source Can					
P2405139-004.01	1.0 L Source Can					
P2405139-005.01	1.0 L Source Silonite Canister					
P2405139-006.01	1.0 L Source Silonite Canister					
P2405139-007.01	1.0 L Source Silonite Canister					
P2405139-008.01	1.0 L Source Silonite Canister					
P2405139-009.01	1.0 L Source Silonite Canister					
P2405139-010.01	1.0 L Source Can					
P2405139-011.01	1.0 L Source Can					
P2405139-012.01	1.0 L Source Silonite Canister					
P2405139-013.01	1.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers):

Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: NASA White Sands Test Facility Work order: P2405139

Project: NASA White Sands Test Facility (WSTF)

Sample(s) received on: 12/19/2024 Date opened: 12/19/2024 by: ANTHONY.VASQUEZ

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2405139-014.01	1.0 L Source Silonite Canister					
P2405139-015.01	1.0 L Source Silonite Canister					
P2405139-016.01	1.0 L Source Silonite Canister					
P2405139-017.01	1.0 L Source Silonite Canister					
P2405139-018.01	1.0 L Source Silonite Canister					
P2405139-019.01	1.0 L Source Silonite Canister					
P2405139-020.01	1.0 L Source Silonite Canister					
P2405139-021.01	1.0 L Source Silonite Canister					
P2405139-022.01	1.0 L Source Silonite Canister					
P2405139-023.01	1.0 L Source Silonite Canister					
P2405139-024.01	1.0 L Source Can					
P2405139-025.01	1.0 L Source Can					
P2405139-026.01	1.0 L Source Silonite Canister					
P2405139-027.01	1.0 L Source Silonite Canister					
P2405139-028.01	1.0 L Source Can					
P2405139-029.01	1.0 L Source Silonite Canister					
P2405139-030.01	1.0 L Source Silonite Canister					
P2405139-031.01	1.0 L Source Silonite Canister					
P2405139-032.01	1.0 L Source Silonite Canister					
P2405139-033.01	1.0 L Source Silonite Canister					
P2405139-034.01	1.0 L Source Silonite Canister					
P2405139-035.01	1.0 L Source Can					
P2405139-036.01	1.0 L Source Silonite Canister					
P2405139-037.01	1.0 L Source Silonite Canister					
P2405139-038.01	1.0 L Source Silonite Canister					
P2405139-039.01	1.0 L Source Silonite Canister					
P2405139-040.01	1.0 L Source Silonite Canister					
P2405139-041.01	1.0 L Source Silonite Canister					
P2405139-042.01	1.0 L Source Silonite Canister					
P2405139-043.01	1.0 L Source Silonite Canister					
P2405139-044.01	1.0 L Source Silonite Canister					
P2405139-045.01	1.0 L Source Silonite Canister					
P2405139-046.01	1.0 L Source Silonite Canister					
P2405139-047.01	1.0 L Source Can					
P2405139-048.01	1.0 L Source Silonite Canister					
P2405139-049.01	1.0 L Source Silonite Canister					
P2405139-050.01	1.0 L Source Silonite Canister					
P2405139-051.01	1.0 L Source Silonite Canister					
P2405139-052.01	1.0 L Source Silonite Canister					
P2405139-053.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers):

Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: NASA White Sands Test Facility Work order: P2405139

Project: NASA White Sands Test Facility (WSTF)

Sample(s) received on: 12/19/2024 Date opened: 12/19/2024 by: ANTHONY.VASQUEZ

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2405139-054.01	1.0 L Source Silonite Canister					
P2405139-055.01	1.0 L Source Can					
P2405139-056.01	1.0 L Source Silonite Canister					
P2405139-057.01	1.0 L Source Silonite Canister					
P2405139-058.01	1.0 L Source Silonite Canister					
P2405139-059.01	1.0 L Source Silonite Canister					
P2405139-060.01	1.0 L Source Silonite Canister					
P2405139-061.01	1.0 L Source Silonite Canister					
P2405139-062.01	1.0 L Source Silonite Canister					
P2405139-063.01	1.0 L Source Can					
P2405139-064.01	1.0 L Source Can					
P2405139-065.01	1.0 L Source Silonite Canister					
P2405139-066.01	1.0 L Source Silonite Canister					
P2405139-067.01	1.0 L Source Silonite Canister					
P2405139-068.01	1.0 L Source Silonite Canister					
P2405139-069.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers):

Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091330** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-001

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00988

Initial Pressure (psig): -1.99 Final Pressure (psig): 5.69

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.37	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.077	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.070	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.060	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.057	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.90	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	**0.42**	2.0	0.25	**0.12**	0.56	0.070	**J**
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.94**	20	0.44	**0.32**	6.8	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.26	ND	0.49	0.064	
67-63-0	2-Propanol	ND	4.0	0.88	ND	1.6	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.092	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.069	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091330** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-001

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00988

Initial Pressure (psig): -1.99 Final Pressure (psig): 5.69

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.071	
67-64-1	Acetone	**6.0**	20	4.8	**2.5**	8.4	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	**0.32**	2.0	0.31	**0.099**	0.63	0.096	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.076	
75-15-0	Carbon Disulfide	**9.9**	20	0.64	**3.2**	6.4	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.062	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.76	0.10	
67-66-3	Chloroform	**3.8**	2.0	0.28	**0.79**	0.41	0.058	
74-87-3	Chloromethane	ND	2.0	0.34	ND	0.97	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.073	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.033	
64-17-5	Ethanol	ND	20	1.5	ND	11	0.79	
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.069	
75-69-4	Freon 11	**13**	2.0	0.32	**2.3**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091330** ALS Sample ID: P2405139-001
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00988

Initial Pressure (psig): -1.99 Final Pressure (psig): 5.69

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**3.8**	2.0	0.30	**0.49**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**2.1**	2.0	0.35	**0.43**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.96	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.96	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.083	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.041	
110-54-3	Hexane	ND	2.0	0.44	ND	0.57	0.12	
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.92	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.070	
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.34	ND	0.47	0.081	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	ND	2.0	0.26	ND	0.53	0.069	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.097	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.78	0.089	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091330** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-001

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/4/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS00988		

Initial Pressure (psig): -1.99 Final Pressure (psig): 5.69

Container Dilution Factor: 1.60

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091335** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-002

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00337

Initial Pressure (psig): -3.05 Final Pressure (psig): 5.78

Container Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.29	ND	0.40	0.053	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.33	ND	0.32	0.047	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.24	ND	0.40	0.044	
75-34-3	1,1-Dichloroethane	ND	2.2	0.34	ND	0.54	0.085	
75-35-4	1,1-Dichloroethene	ND	2.2	0.33	ND	0.56	0.082	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.57	ND	0.30	0.077	
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.33	ND	0.45	0.066	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.2	0.27	ND	0.29	0.036	
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.35	ND	0.37	0.058	
107-06-2	1,2-Dichloroethane	ND	2.2	0.26	ND	0.54	0.064	
78-87-5	1,2-Dichloropropane	ND	2.2	0.29	ND	0.48	0.063	
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.34	ND	0.45	0.069	
106-99-0	1,3-Butadiene	ND	2.2	0.39	ND	0.99	0.18	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.35	ND	0.37	0.059	
106-46-7	1,4-Dichlorobenzene	ND	2.2	0.36	ND	0.37	0.060	
123-91-1	1,4-Dioxane	ND	2.2	0.28	ND	0.61	0.077	
540-84-1	2,2,4-Trimethylpentane	ND	2.2	0.35	ND	0.47	0.075	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**2.4**	22	0.48	**0.83**	7.5	0.16	**J**
591-78-6	2-Hexanone	ND	2.2	0.29	ND	0.54	0.071	
67-63-0	2-Propanol	ND	4.4	0.97	ND	1.8	0.39	
107-05-1	3-Chloropropene	ND	2.2	0.32	ND	0.70	0.10	
622-96-8	4-Ethyltoluene	ND	2.2	0.37	ND	0.45	0.076	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091335** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-002

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00337

Initial Pressure (psig): -3.05 Final Pressure (psig): 5.78

Container Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.2	0.32	ND	0.54	0.078	
67-64-1	Acetone	**19**	22	5.3	**8.0**	9.3	2.2	**J**
100-44-7	alpha-Chlorotoluene	ND	2.2	0.53	ND	0.43	0.10	
71-43-2	Benzene	ND	2.2	0.34	ND	0.69	0.11	
75-27-4	Bromodichloromethane	ND	2.2	0.34	ND	0.33	0.051	
75-25-2	Bromoform	ND	2.2	0.48	ND	0.21	0.047	
74-83-9	Bromomethane	ND	2.2	0.33	ND	0.57	0.084	
75-15-0	Carbon Disulfide	**1.3**	22	0.70	**0.43**	7.1	0.23	**J**
56-23-5	Carbon Tetrachloride	**0.33**	2.2	0.33	**0.053**	0.35	0.052	**J**
108-90-7	Chlorobenzene	ND	2.2	0.31	ND	0.48	0.068	
75-00-3	Chloroethane	ND	2.2	0.29	ND	0.83	0.11	
67-66-3	Chloroform	ND	2.2	0.31	ND	0.45	0.064	
74-87-3	Chloromethane	**0.57**	2.2	0.38	**0.28**	1.1	0.18	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.2	0.33	ND	0.56	0.083	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.37	ND	0.48	0.080	
98-82-8	Cumene	ND	2.2	0.34	ND	0.45	0.069	
110-82-7	Cyclohexane	ND	4.4	0.66	ND	1.3	0.19	
124-48-1	Dibromochloromethane	ND	2.2	0.31	ND	0.26	0.036	
64-17-5	Ethanol	**7.6**	22	1.6	**4.1**	12	0.86	**J**
100-41-4	Ethyl Benzene	ND	2.2	0.33	ND	0.51	0.076	
75-69-4	Freon 11	**2.2**	2.2	0.36	**0.38**	0.39	0.063	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091335** ALS Sample ID: P2405139-002
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00337

Initial Pressure (psig): -3.05 Final Pressure (psig): 5.78

Container Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1.6**	2.2	0.33	**0.20**	0.29	0.044	**J**
76-14-2	Freon 114	ND	2.2	0.37	ND	0.31	0.053	
75-71-8	Freon 12	**2.3**	2.2	0.38	**0.47**	0.45	0.077	
306-83-2	Freon 123	ND	2.2	1.1	ND	0.35	0.17	**X**
75-43-4	Freon 21	ND	2.2	1.1	ND	0.52	0.25	**X**
142-82-5	Heptane	ND	2.2	0.37	ND	0.54	0.091	
87-68-3	Hexachlorobutadiene	ND	2.2	0.48	ND	0.21	0.045	
110-54-3	Hexane	ND	2.2	0.48	ND	0.62	0.14	
179601-23-1	m,p-Xylene	ND	4.4	0.62	ND	1.0	0.14	
1634-04-4	Methyl tert-butyl ether	ND	2.2	0.28	ND	0.61	0.077	
75-09-2	Methylene Chloride	ND	2.2	0.66	ND	0.63	0.19	
95-47-6	o-Xylene	ND	2.2	0.34	ND	0.51	0.078	
103-65-1	Propylbenzene	ND	2.2	0.34	ND	0.45	0.069	
100-42-5	Styrene	ND	2.2	0.38	ND	0.52	0.089	
127-18-4	Tetrachloroethene	ND	2.2	0.30	ND	0.32	0.045	
109-99-9	Tetrahydrofuran	ND	2.2	0.29	ND	0.75	0.10	
108-88-3	Toluene	**0.30**	2.2	0.29	**0.081**	0.58	0.076	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.2	0.33	ND	0.56	0.082	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.48	ND	0.48	0.11	
79-01-6	Trichloroethene	ND	2.2	0.32	ND	0.41	0.059	
75-01-4	Vinyl Chloride	ND	2.2	0.25	ND	0.86	0.098	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091335** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-002

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/4/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SC00337		

Initial Pressure (psig): -3.05 Final Pressure (psig): 5.78

Container Dilution Factor: 1.76

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091342** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-003

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00684

Initial Pressure (psig): 0.01 Final Pressure (psig): 5.77

Container Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	1.7	0.23	ND	0.32	0.042	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.26	ND	0.25	0.037	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.19	ND	0.32	0.034	
75-34-3	1,1-Dichloroethane	ND	1.7	0.27	ND	0.43	0.067	
75-35-4	1,1-Dichloroethene	ND	1.7	0.26	ND	0.44	0.065	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	0.45	ND	0.23	0.061	
95-63-6	1,2,4-Trimethylbenzene	**1.6**	1.7	0.26	**0.33**	0.35	0.052	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	1.7	0.22	ND	0.23	0.028	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.27	ND	0.29	0.046	
107-06-2	1,2-Dichloroethane	**0.23**	1.7	0.21	**0.057**	0.43	0.051	**J**
78-87-5	1,2-Dichloropropane	ND	1.7	0.23	ND	0.38	0.050	
108-67-8	1,3,5-Trimethylbenzene	**0.56**	1.7	0.27	**0.11**	0.35	0.054	**J**
106-99-0	1,3-Butadiene	**1.5**	1.7	0.31	**0.69**	0.79	0.14	**J**
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.28	ND	0.29	0.046	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.28	ND	0.29	0.047	
123-91-1	1,4-Dioxane	ND	1.7	0.22	ND	0.48	0.061	
540-84-1	2,2,4-Trimethylpentane	**3.4**	1.7	0.28	**0.73**	0.37	0.060	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**10**	17	0.38	**3.4**	5.9	0.13	**J**
591-78-6	2-Hexanone	ND	1.7	0.23	ND	0.42	0.056	
67-63-0	2-Propanol	**100**	3.5	0.76	**41**	1.4	0.31	
107-05-1	3-Chloropropene	ND	1.7	0.25	ND	0.56	0.080	
622-96-8	4-Ethyltoluene	**0.48**	1.7	0.30	**0.097**	0.35	0.060	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091342** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-003

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00684

Initial Pressure (psig): 0.01 Final Pressure (psig): 5.77

Container Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**6.8**	1.7	0.25	**1.7**	0.42	0.062	
67-64-1	Acetone	**98**	17	4.2	**41**	7.3	1.8	
100-44-7	alpha-Chlorotoluene	ND	1.7	0.42	ND	0.34	0.081	
71-43-2	Benzene	**5.5**	1.7	0.27	**1.7**	0.54	0.084	
75-27-4	Bromodichloromethane	ND	1.7	0.27	ND	0.26	0.040	
75-25-2	Bromoform	ND	1.7	0.38	ND	0.17	0.037	
74-83-9	Bromomethane	ND	1.7	0.26	ND	0.45	0.066	
75-15-0	Carbon Disulfide	**1.4**	17	0.56	**0.44**	5.6	0.18	**J**
56-23-5	Carbon Tetrachloride	**0.36**	1.7	0.26	**0.057**	0.28	0.041	**J**
108-90-7	Chlorobenzene	ND	1.7	0.25	ND	0.38	0.054	
75-00-3	Chloroethane	ND	1.7	0.23	ND	0.66	0.087	
67-66-3	Chloroform	ND	1.7	0.25	ND	0.36	0.051	
74-87-3	Chloromethane	**0.72**	1.7	0.30	**0.35**	0.84	0.14	**J**
156-59-2	cis-1,2-Dichloroethene	ND	1.7	0.26	ND	0.44	0.066	
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.29	ND	0.38	0.064	
98-82-8	Cumene	**0.33**	1.7	0.27	**0.067**	0.35	0.054	**J**
110-82-7	Cyclohexane	**9.5**	3.5	0.52	**2.8**	1.0	0.15	
124-48-1	Dibromochloromethane	ND	1.7	0.24	ND	0.20	0.029	
64-17-5	Ethanol	**110**	17	1.3	**58**	9.2	0.68	
100-41-4	Ethyl Benzene	**3.5**	1.7	0.26	**0.80**	0.40	0.060	
75-69-4	Freon 11	**1.7**	1.7	0.28	**0.30**	0.31	0.050	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091342** ALS Sample ID: P2405139-003
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00684

Initial Pressure (psig): 0.01 Final Pressure (psig): 5.77

Container Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**2.2**	1.7	0.26	**0.29**	0.23	0.034	
76-14-2	Freon 114	ND	1.7	0.29	ND	0.25	0.042	
75-71-8	Freon 12	**2.5**	1.7	0.30	**0.51**	0.35	0.061	
306-83-2	Freon 123	ND	1.7	0.83	ND	0.28	0.13	**X**
75-43-4	Freon 21	ND	1.7	0.83	ND	0.41	0.20	**X**
142-82-5	Heptane	**4.6**	1.7	0.30	**1.1**	0.42	0.072	
87-68-3	Hexachlorobutadiene	ND	1.7	0.38	ND	0.16	0.036	
110-54-3	Hexane	**6.4**	1.7	0.38	**1.8**	0.49	0.11	
179601-23-1	m,p-Xylene	**10**	3.5	0.49	**2.3**	0.80	0.11	
1634-04-4	Methyl tert-butyl ether	ND	1.7	0.22	ND	0.48	0.061	
75-09-2	Methylene Chloride	**0.92**	1.7	0.52	**0.27**	0.50	0.15	**J**
95-47-6	o-Xylene	**4.5**	1.7	0.27	**1.0**	0.40	0.062	
103-65-1	Propylbenzene	**0.43**	1.7	0.27	**0.087**	0.35	0.054	**J**
100-42-5	Styrene	**1.9**	1.7	0.30	**0.44**	0.41	0.070	
127-18-4	Tetrachloroethene	**0.53**	1.7	0.24	**0.078**	0.26	0.035	**J**
109-99-9	Tetrahydrofuran	**0.46**	1.7	0.23	**0.15**	0.59	0.079	**J**
108-88-3	Toluene	**46**	1.7	0.23	**12**	0.46	0.060	
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.26	ND	0.44	0.065	
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.38	ND	0.38	0.084	
79-01-6	Trichloroethene	**0.50**	1.7	0.25	**0.093**	0.32	0.047	**J**
75-01-4	Vinyl Chloride	ND	1.7	0.20	ND	0.68	0.078	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091342** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-003

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/4/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SC00684		

Initial Pressure (psig): 0.01 Final Pressure (psig): 5.77

Container Dilution Factor: 1.39

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091343** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-004

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Chase Griffin Date Analyzed: 1/4/25 & 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC00358

Initial Pressure (psig): -2.72 Final Pressure (psig): 5.91

Container Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.28	ND	0.39	0.052	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.32	ND	0.31	0.046	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.23	ND	0.39	0.043	
75-34-3	1,1-Dichloroethane	ND	2.2	0.34	ND	0.53	0.083	
75-35-4	1,1-Dichloroethene	ND	2.2	0.32	ND	0.54	0.080	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.56	ND	0.29	0.075	
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.32	ND	0.44	0.065	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.2	0.27	ND	0.28	0.035	
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.34	ND	0.36	0.057	
107-06-2	1,2-Dichloroethane	ND	2.2	0.25	ND	0.53	0.063	
78-87-5	1,2-Dichloropropane	ND	2.2	0.28	ND	0.47	0.061	
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.33	ND	0.44	0.067	
106-99-0	1,3-Butadiene	ND	2.2	0.38	ND	0.97	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.34	ND	0.36	0.057	
106-46-7	1,4-Dichlorobenzene	ND	2.2	0.35	ND	0.36	0.059	
123-91-1	1,4-Dioxane	ND	2.2	0.27	ND	0.60	0.075	
540-84-1	2,2,4-Trimethylpentane	ND	2.2	0.34	ND	0.46	0.074	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**4.1**	22	0.47	**1.4**	7.3	0.16	**J**
591-78-6	2-Hexanone	**0.91**	2.2	0.28	**0.22**	0.53	0.069	**J**
67-63-0	2-Propanol	**13**	4.3	0.95	**5.2**	1.8	0.39	
107-05-1	3-Chloropropene	ND	2.2	0.31	ND	0.69	0.099	
622-96-8	4-Ethyltoluene	ND	2.2	0.37	ND	0.44	0.074	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091343** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-004

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Chase Griffin Date Analyzed: 1/4/25 & 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC00358

Initial Pressure (psig): -2.72 Final Pressure (psig): 5.91

Container Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**0.54**	2.2	0.31	**0.13**	0.52	0.077	**J**
67-64-1	Acetone	**39**	22	5.2	**17**	9.1	2.2	
100-44-7	alpha-Chlorotoluene	ND	2.2	0.52	ND	0.42	0.10	
71-43-2	Benzene	**1.2**	2.2	0.33	**0.37**	0.67	0.10	**J**
75-27-4	Bromodichloromethane	**1.7**	2.2	0.33	**0.25**	0.32	0.049	**J**
75-25-2	Bromoform	ND	2.2	0.47	ND	0.21	0.046	
74-83-9	Bromomethane	ND	2.2	0.32	ND	0.55	0.082	
75-15-0	Carbon Disulfide	ND	22	0.69	ND	6.9	0.22	
56-23-5	Carbon Tetrachloride	ND	2.2	0.32	ND	0.34	0.051	
108-90-7	Chlorobenzene	ND	2.2	0.31	ND	0.47	0.066	
75-00-3	Chloroethane	ND	2.2	0.28	ND	0.82	0.11	
67-66-3	Chloroform	**19**	2.2	0.31	**3.9**	0.44	0.063	
74-87-3	Chloromethane	ND	2.2	0.37	ND	1.0	0.18	
156-59-2	cis-1,2-Dichloroethene	ND	2.2	0.32	ND	0.54	0.081	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.36	ND	0.47	0.079	
98-82-8	Cumene	ND	2.2	0.33	ND	0.44	0.067	
110-82-7	Cyclohexane	ND	4.3	0.65	ND	1.2	0.19	
124-48-1	Dibromochloromethane	ND	2.2	0.30	ND	0.25	0.035	
64-17-5	Ethanol	**41**	22	1.6	**22**	11	0.84	
100-41-4	Ethyl Benzene	**0.45**	2.2	0.32	**0.10**	0.50	0.074	**J**
75-69-4	Freon 11	**260**	2.2	0.35	**46**	0.38	0.062	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091343** ALS Sample ID: P2405139-004
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Chase Griffin Date Analyzed: 1/4/25 & 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC00358

Initial Pressure (psig): -2.72 Final Pressure (psig): 5.91

Container Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**600**	22	3.3	**79**	2.8	0.43	**D**
76-14-2	Freon 114	ND	2.2	0.36	ND	0.31	0.052	
75-71-8	Freon 12	**2.7**	2.2	0.37	**0.54**	0.43	0.076	
306-83-2	Freon 123	ND	2.2	1.0	ND	0.34	0.17	**X**
75-43-4	Freon 21	ND	2.2	1.0	ND	0.51	0.25	**X**
142-82-5	Heptane	**0.54**	2.2	0.37	**0.13**	0.52	0.089	**J**
87-68-3	Hexachlorobutadiene	ND	2.2	0.47	ND	0.20	0.044	
110-54-3	Hexane	**0.83**	2.2	0.47	**0.24**	0.61	0.13	**J**
179601-23-1	m,p-Xylene	**1.3**	4.3	0.60	**0.29**	0.99	0.14	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.2	0.27	ND	0.60	0.075	
75-09-2	Methylene Chloride	ND	2.2	0.65	ND	0.62	0.19	
95-47-6	o-Xylene	**0.47**	2.2	0.33	**0.11**	0.50	0.076	**J**
103-65-1	Propylbenzene	ND	2.2	0.33	ND	0.44	0.067	
100-42-5	Styrene	**0.52**	2.2	0.37	**0.12**	0.51	0.087	**J**
127-18-4	Tetrachloroethene	**0.47**	2.2	0.30	**0.069**	0.32	0.044	**J**
109-99-9	Tetrahydrofuran	ND	2.2	0.29	ND	0.73	0.098	
108-88-3	Toluene	**4.4**	2.2	0.28	**1.2**	0.57	0.074	
156-60-5	trans-1,2-Dichloroethene	ND	2.2	0.32	ND	0.54	0.080	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.47	ND	0.47	0.10	
79-01-6	Trichloroethene	**0.37**	2.2	0.31	**0.070**	0.40	0.058	**J**
75-01-4	Vinyl Chloride	ND	2.2	0.25	ND	0.84	0.096	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091343** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-004

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao/Chase Griffin	Date Analyzed:	1/4/25 & 1/7/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SC00358		

Initial Pressure (psig): -2.72 Final Pressure (psig): 5.91

Container Dilution Factor: 1.72

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091352** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-005

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.00050 Liter(s)
Test Notes: 0.00020 Liter(s)
Container ID: 1SS00844

Initial Pressure (psig): -3.13 Final Pressure (psig): 5.96

Container Dilution Factor: 1.79

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	1,800	240	ND	330	43	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1,800	260	ND	260	39	
79-00-5	1,1,2-Trichloroethane	ND	1,800	190	ND	330	35	
75-34-3	1,1-Dichloroethane	ND	1,800	280	ND	440	69	
75-35-4	1,1-Dichloroethene	ND	1,800	260	ND	450	67	
120-82-1	1,2,4-Trichlorobenzene	ND	1,800	470	ND	240	63	
95-63-6	1,2,4-Trimethylbenzene	ND	1,800	260	ND	360	54	
106-93-4	1,2-Dibromoethane (EDB)	ND	1,800	220	ND	230	29	
95-50-1	1,2-Dichlorobenzene	ND	1,800	280	ND	300	47	
107-06-2	1,2-Dichloroethane	ND	1,800	210	ND	440	52	
78-87-5	1,2-Dichloropropane	ND	1,800	240	ND	390	51	
108-67-8	1,3,5-Trimethylbenzene	ND	1,800	280	ND	360	56	
106-99-0	1,3-Butadiene	ND	1,800	320	ND	810	140	
541-73-1	1,3-Dichlorobenzene	ND	1,800	290	ND	300	48	
106-46-7	1,4-Dichlorobenzene	ND	1,800	290	ND	300	49	
123-91-1	1,4-Dioxane	ND	1,800	230	ND	500	63	
540-84-1	2,2,4-Trimethylpentane	ND	1,800	290	ND	380	61	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	18,000	390	ND	6,100	130	
591-78-6	2-Hexanone	ND	1,800	240	ND	440	58	
67-63-0	2-Propanol	ND	3,600	790	ND	1,500	320	
107-05-1	3-Chloropropene	ND	1,800	260	ND	570	82	
622-96-8	4-Ethyltoluene	ND	1,800	300	ND	360	62	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091352** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-005

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.00050 Liter(s)
Test Notes: 0.00020 Liter(s)
Container ID: 1SS00844

Initial Pressure (psig): -3.13 Final Pressure (psig): 5.96

Container Dilution Factor: 1.79

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	1,800	260	ND	440	64	
67-64-1	Acetone	ND	18,000	4,300	ND	7,500	1,800	
100-44-7	alpha-Chlorotoluene	ND	1,800	430	ND	350	83	
71-43-2	Benzene	ND	1,800	280	ND	560	86	
75-27-4	Bromodichloromethane	ND	1,800	280	ND	270	41	
75-25-2	Bromoform	ND	1,800	390	ND	170	38	
74-83-9	Bromomethane	ND	1,800	260	ND	460	68	
75-15-0	Carbon Disulfide	ND	18,000	570	ND	5,800	180	
56-23-5	Carbon Tetrachloride	ND	1,800	260	ND	280	42	
108-90-7	Chlorobenzene	ND	1,800	250	ND	390	55	
75-00-3	Chloroethane	ND	1,800	240	ND	680	90	
67-66-3	Chloroform	ND	1,800	250	ND	370	52	
74-87-3	Chloromethane	ND	1,800	310	ND	870	150	
156-59-2	cis-1,2-Dichloroethene	ND	1,800	270	ND	450	68	
10061-01-5	cis-1,3-Dichloropropene	ND	1,800	300	ND	390	65	
98-82-8	Cumene	ND	1,800	280	ND	360	56	
110-82-7	Cyclohexane	ND	3,600	540	ND	1,000	160	
124-48-1	Dibromochloromethane	ND	1,800	250	ND	210	29	
64-17-5	Ethanol	ND	18,000	1,300	ND	9,500	700	
100-41-4	Ethyl Benzene	ND	1,800	270	ND	410	62	
75-69-4	Freon 11	**180,000**	1,800	290	**32,000**	320	52	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091352** ALS Sample ID: P2405139-005
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.00050 Liter(s)
Test Notes: 0.00020 Liter(s)
Container ID: 1SS00844

Initial Pressure (psig): -3.13 Final Pressure (psig): 5.96

Container Dilution Factor: 1.79

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**450,000**	4,500	680	**58,000**	580	89	**D**
76-14-2	Freon 114	ND	1,800	300	ND	260	43	
75-71-8	Freon 12	ND	1,800	310	ND	360	63	
306-83-2	Freon 123	ND	1,800	860	ND	290	140	**X**
75-43-4	Freon 21	**13,000**	1,800	860	**3,100**	430	200	**X**
142-82-5	Heptane	ND	1,800	300	ND	440	74	
87-68-3	Hexachlorobutadiene	ND	1,800	390	ND	170	37	
110-54-3	Hexane	ND	1,800	390	ND	510	110	
179601-23-1	m,p-Xylene	ND	3,600	500	ND	820	120	
1634-04-4	Methyl tert-butyl ether	ND	1,800	230	ND	500	63	
75-09-2	Methylene Chloride	ND	1,800	540	ND	520	150	
95-47-6	o-Xylene	ND	1,800	280	ND	410	63	
103-65-1	Propylbenzene	ND	1,800	280	ND	360	56	
100-42-5	Styrene	ND	1,800	310	ND	420	72	
127-18-4	Tetrachloroethene	**1,200**	1,800	250	**180**	260	36	**J**
109-99-9	Tetrahydrofuran	ND	1,800	240	ND	610	81	
108-88-3	Toluene	ND	1,800	230	ND	480	62	
156-60-5	trans-1,2-Dichloroethene	ND	1,800	260	ND	450	67	
10061-02-6	trans-1,3-Dichloropropene	ND	1,800	390	ND	390	87	
79-01-6	Trichloroethene	**370**	1,800	260	**69**	330	48	**J**
75-01-4	Vinyl Chloride	ND	1,800	200	ND	700	80	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091352** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-005

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.00050 Liter(s)
Test Notes:	**T**		0.00020 Liter(s)
Container ID:	1SS00844		

Initial Pressure (psig): -3.13 Final Pressure (psig): 5.96

Container Dilution Factor: 1.79

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.60	Freon 123a	**12,000**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091405** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-006

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01525

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.82

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.27	ND	0.38	0.050	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.38	0.041	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.079	
75-35-4	1,1-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.53	ND	0.28	0.072	
95-63-6	1,2,4-Trimethylbenzene	**0.43**	2.1	0.30	**0.088**	0.42	0.062	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.51	0.060	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.44	0.059	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.42	0.064	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.93	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.055	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.57	0.072	
540-84-1	2,2,4-Trimethylpentane	**1.2**	2.1	0.33	**0.27**	0.44	0.070	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.2**	21	0.45	**0.42**	7.0	0.15	**J**
591-78-6	2-Hexanone	ND	2.1	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	ND	4.1	0.90	ND	1.7	0.37	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.66	0.094	
622-96-8	4-Ethyltoluene	ND	2.1	0.35	ND	0.42	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091405** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-006

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01525

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.82

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.30	ND	0.50	0.073	
67-64-1	Acetone	**6.2**	21	4.9	**2.6**	8.6	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.1	0.49	ND	0.40	0.095	
71-43-2	Benzene	**1.4**	2.1	0.32	**0.45**	0.64	0.099	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.047	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.20	0.044	
74-83-9	Bromomethane	ND	2.1	0.30	ND	0.53	0.078	
75-15-0	Carbon Disulfide	**1.0**	21	0.66	**0.33**	6.6	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.1	0.30	ND	0.33	0.048	
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.45	0.063	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
67-66-3	Chloroform	**1.8**	2.1	0.29	**0.37**	0.42	0.060	**J**
74-87-3	Chloromethane	ND	2.1	0.35	ND	0.99	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.078	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.1	0.32	ND	0.42	0.064	
110-82-7	Cyclohexane	**0.65**	4.1	0.62	**0.19**	1.2	0.18	**J**
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.24	0.034	
64-17-5	Ethanol	**1.8**	21	1.5	**0.95**	11	0.81	**J**
100-41-4	Ethyl Benzene	**0.64**	2.1	0.31	**0.15**	0.47	0.071	**J**
75-69-4	Freon 11	**17**	2.1	0.33	**3.1**	0.36	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091405** ALS Sample ID: P2405139-006
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01525

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.82

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**21**	2.1	0.31	**2.7**	0.27	0.041	
76-14-2	Freon 114	ND	2.1	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.2**	2.1	0.36	**0.45**	0.41	0.072	
306-83-2	Freon 123	ND	2.1	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	ND	2.1	0.98	ND	0.49	0.23	**X**
142-82-5	Heptane	**0.80**	2.1	0.35	**0.19**	0.50	0.085	**J**
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.19	0.042	
110-54-3	Hexane	ND	2.1	0.45	ND	0.58	0.13	
179601-23-1	m,p-Xylene	**2.0**	4.1	0.57	**0.46**	0.94	0.13	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.57	0.072	
75-09-2	Methylene Chloride	ND	2.1	0.62	ND	0.59	0.18	
95-47-6	o-Xylene	**1.5**	2.1	0.32	**0.34**	0.47	0.073	**J**
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.42	0.064	
100-42-5	Styrene	ND	2.1	0.35	ND	0.48	0.083	
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.30	0.042	
109-99-9	Tetrahydrofuran	ND	2.1	0.27	ND	0.70	0.093	
108-88-3	Toluene	**3.5**	2.1	0.27	**0.92**	0.54	0.071	
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.1	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091405** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-006

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/4/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01525		

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.82

Container Dilution Factor: 1.64

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091406** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-007

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01606

Initial Pressure (psig): -2.27 Final Pressure (psig): 5.85

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.27	ND	0.38	0.050	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.38	0.041	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.080	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.52	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.54	ND	0.28	0.072	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.42	0.062	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.51	0.060	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.45	0.059	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.42	0.065	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.93	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.055	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.57	0.072	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.33	ND	0.44	0.071	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.90**	21	0.45	**0.31**	7.0	0.15	**J**
591-78-6	2-Hexanone	ND	2.1	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	ND	4.1	0.91	ND	1.7	0.37	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.66	0.095	
622-96-8	4-Ethyltoluene	ND	2.1	0.35	ND	0.42	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091406** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-007

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01606

Initial Pressure (psig): -2.27 Final Pressure (psig): 5.85

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.30	ND	0.50	0.074	
67-64-1	Acetone	**7.5**	21	5.0	**3.2**	8.7	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.1	0.50	ND	0.40	0.096	
71-43-2	Benzene	ND	2.1	0.32	ND	0.65	0.099	
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.047	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.20	0.044	
74-83-9	Bromomethane	ND	2.1	0.31	ND	0.53	0.079	
75-15-0	Carbon Disulfide	ND	21	0.66	ND	6.6	0.21	
56-23-5	Carbon Tetrachloride	**0.43**	2.1	0.31	**0.069**	0.33	0.049	**J**
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.45	0.064	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
67-66-3	Chloroform	ND	2.1	0.29	ND	0.42	0.060	
74-87-3	Chloromethane	**0.60**	2.1	0.35	**0.29**	1.0	0.17	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.078	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.1	0.32	ND	0.42	0.065	
110-82-7	Cyclohexane	ND	4.1	0.62	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.24	0.034	
64-17-5	Ethanol	ND	21	1.5	ND	11	0.81	
100-41-4	Ethyl Benzene	ND	2.1	0.31	ND	0.48	0.071	
75-69-4	Freon 11	**1.2**	2.1	0.33	**0.22**	0.37	0.059	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091406** ALS Sample ID: P2405139-007
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01606

Initial Pressure (psig): -2.27 Final Pressure (psig): 5.85

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**0.54**	2.1	0.31	**0.070**	0.27	0.041	**J**
76-14-2	Freon 114	ND	2.1	0.35	ND	0.30	0.050	
75-71-8	Freon 12	**2.3**	2.1	0.36	**0.46**	0.42	0.073	
306-83-2	Freon 123	ND	2.1	0.99	ND	0.33	0.16	**X**
75-43-4	Freon 21	ND	2.1	0.99	ND	0.49	0.24	**X**
142-82-5	Heptane	ND	2.1	0.35	ND	0.50	0.086	
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.19	0.043	
110-54-3	Hexane	ND	2.1	0.45	ND	0.59	0.13	
179601-23-1	m,p-Xylene	ND	4.1	0.58	ND	0.95	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.57	0.072	
75-09-2	Methylene Chloride	ND	2.1	0.62	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.1	0.32	ND	0.48	0.073	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.42	0.065	
100-42-5	Styrene	ND	2.1	0.35	ND	0.48	0.083	
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.30	0.042	
109-99-9	Tetrahydrofuran	ND	2.1	0.28	ND	0.70	0.094	
108-88-3	Toluene	ND	2.1	0.27	ND	0.55	0.071	
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.077	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.45	0.10	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.81	0.092	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091406** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-007

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/4/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01606		

Initial Pressure (psig): -2.27 Final Pressure (psig): 5.85

Container Dilution Factor: 1.65

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091410** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-008

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01638

Initial Pressure (psig): -2.37 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.28	ND	0.39	0.051	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.31	0.045	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.23	ND	0.39	0.042	
75-34-3	1,1-Dichloroethane	ND	2.1	0.33	ND	0.52	0.081	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.53	0.078	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.55	ND	0.28	0.074	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.43	0.063	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.27	0.034	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.33	ND	0.35	0.055	
107-06-2	1,2-Dichloroethane	ND	2.1	0.25	ND	0.52	0.061	
78-87-5	1,2-Dichloropropane	ND	2.1	0.28	ND	0.45	0.060	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.43	0.066	
106-99-0	1,3-Butadiene	ND	2.1	0.37	ND	0.95	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.056	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.057	
123-91-1	1,4-Dioxane	**0.38**	2.1	0.26	**0.10**	0.58	0.073	**J**
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.34	ND	0.45	0.072	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.98**	21	0.46	**0.33**	7.1	0.16	**J**
591-78-6	2-Hexanone	ND	2.1	0.28	ND	0.51	0.068	
67-63-0	2-Propanol	ND	4.2	0.92	ND	1.7	0.38	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.67	0.097	
622-96-8	4-Ethyltoluene	ND	2.1	0.36	ND	0.43	0.073	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091410** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-008

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01638

Initial Pressure (psig): -2.37 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.31	ND	0.51	0.075	
67-64-1	Acetone	ND	21	5.0	ND	8.8	2.1	
100-44-7	alpha-Chlorotoluene	ND	2.1	0.50	ND	0.41	0.097	
71-43-2	Benzene	ND	2.1	0.32	ND	0.66	0.10	
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.048	
75-25-2	Bromoform	ND	2.1	0.46	ND	0.20	0.045	
74-83-9	Bromomethane	ND	2.1	0.31	ND	0.54	0.080	
75-15-0	Carbon Disulfide	**4.1**	21	0.67	**1.3**	6.7	0.22	**J, B**
56-23-5	Carbon Tetrachloride	ND	2.1	0.31	ND	0.33	0.049	
108-90-7	Chlorobenzene	ND	2.1	0.30	ND	0.46	0.065	
75-00-3	Chloroethane	ND	2.1	0.28	ND	0.80	0.11	
67-66-3	Chloroform	**2.9**	2.1	0.30	**0.59**	0.43	0.061	
74-87-3	Chloromethane	ND	2.1	0.36	ND	1.0	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.32	ND	0.53	0.079	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.35	ND	0.46	0.077	
98-82-8	Cumene	ND	2.1	0.32	ND	0.43	0.066	
110-82-7	Cyclohexane	ND	4.2	0.63	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.25	0.035	
64-17-5	Ethanol	ND	21	1.6	ND	11	0.83	
100-41-4	Ethyl Benzene	ND	2.1	0.32	ND	0.48	0.073	
75-69-4	Freon 11	**120**	2.1	0.34	**21**	0.37	0.061	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091410** ALS Sample ID: P2405139-008
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01638

Initial Pressure (psig): -2.37 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**120**	2.1	0.32	**16**	0.27	0.042	
76-14-2	Freon 114	ND	2.1	0.35	ND	0.30	0.050	
75-71-8	Freon 12	**2.2**	2.1	0.37	**0.44**	0.42	0.074	
306-83-2	Freon 123	ND	2.1	1.0	ND	0.34	0.16	**X**
75-43-4	Freon 21	ND	2.1	1.0	ND	0.50	0.24	**X**
142-82-5	Heptane	ND	2.1	0.36	ND	0.51	0.087	
87-68-3	Hexachlorobutadiene	ND	2.1	0.46	ND	0.20	0.043	
110-54-3	Hexane	ND	2.1	0.46	ND	0.60	0.13	
179601-23-1	m,p-Xylene	ND	4.2	0.59	ND	0.97	0.14	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.58	0.073	
75-09-2	Methylene Chloride	ND	2.1	0.63	ND	0.60	0.18	
95-47-6	o-Xylene	ND	2.1	0.32	ND	0.48	0.074	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.43	0.066	
100-42-5	Styrene	ND	2.1	0.36	ND	0.49	0.085	
127-18-4	Tetrachloroethene	ND	2.1	0.29	ND	0.31	0.043	
109-99-9	Tetrahydrofuran	ND	2.1	0.28	ND	0.71	0.095	
108-88-3	Toluene	ND	2.1	0.27	ND	0.56	0.072	
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.53	0.078	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.46	ND	0.46	0.10	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.39	0.056	
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.82	0.094	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091410** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-008

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01638		

Initial Pressure (psig): -2.37 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091416** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-009

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01195

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.68

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	8.2	1.1	ND	1.5	0.20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	8.2	1.2	ND	1.2	0.18	
79-00-5	1,1,2-Trichloroethane	ND	8.2	0.88	ND	1.5	0.16	
75-34-3	1,1-Dichloroethane	ND	8.2	1.3	ND	2.0	0.31	
75-35-4	1,1-Dichloroethene	ND	8.2	1.2	ND	2.1	0.30	
120-82-1	1,2,4-Trichlorobenzene	ND	8.2	2.1	ND	1.1	0.29	
95-63-6	1,2,4-Trimethylbenzene	ND	8.2	1.2	ND	1.7	0.25	
106-93-4	1,2-Dibromoethane (EDB)	ND	8.2	1.0	ND	1.1	0.13	
95-50-1	1,2-Dichlorobenzene	ND	8.2	1.3	ND	1.4	0.21	
107-06-2	1,2-Dichloroethane	ND	8.2	0.96	ND	2.0	0.24	
78-87-5	1,2-Dichloropropane	ND	8.2	1.1	ND	1.8	0.23	
108-67-8	1,3,5-Trimethylbenzene	ND	8.2	1.3	ND	1.7	0.26	
106-99-0	1,3-Butadiene	ND	8.2	1.4	ND	3.7	0.65	
541-73-1	1,3-Dichlorobenzene	ND	8.2	1.3	ND	1.4	0.22	
106-46-7	1,4-Dichlorobenzene	ND	8.2	1.3	ND	1.4	0.22	
123-91-1	1,4-Dioxane	**1.8**	8.2	1.0	**0.50**	2.3	0.29	**J**
540-84-1	2,2,4-Trimethylpentane	ND	8.2	1.3	ND	1.7	0.28	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.8**	82	1.8	**0.62**	28	0.61	**J**
591-78-6	2-Hexanone	ND	8.2	1.1	ND	2.0	0.26	
67-63-0	2-Propanol	ND	16	3.6	ND	6.6	1.5	
107-05-1	3-Chloropropene	ND	8.2	1.2	ND	2.6	0.38	
622-96-8	4-Ethyltoluene	ND	8.2	1.4	ND	1.7	0.28	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412091416** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-009

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01195

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.68

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	8.2	1.2	ND	2.0	0.29	
67-64-1	Acetone	ND	82	20	ND	34	8.2	
100-44-7	alpha-Chlorotoluene	ND	8.2	2.0	ND	1.6	0.38	
71-43-2	Benzene	ND	8.2	1.3	ND	2.6	0.39	
75-27-4	Bromodichloromethane	ND	8.2	1.3	ND	1.2	0.19	
75-25-2	Bromoform	ND	8.2	1.8	ND	0.79	0.17	
74-83-9	Bromomethane	ND	8.2	1.2	ND	2.1	0.31	
75-15-0	Carbon Disulfide	**43**	82	2.6	**14**	26	0.84	**J, B**
56-23-5	Carbon Tetrachloride	ND	8.2	1.2	ND	1.3	0.19	
108-90-7	Chlorobenzene	ND	8.2	1.2	ND	1.8	0.25	
75-00-3	Chloroethane	ND	8.2	1.1	ND	3.1	0.41	
67-66-3	Chloroform	**3.7**	8.2	1.2	**0.76**	1.7	0.24	**J**
74-87-3	Chloromethane	ND	8.2	1.4	ND	3.9	0.68	
156-59-2	cis-1,2-Dichloroethene	ND	8.2	1.2	ND	2.1	0.31	
10061-01-5	cis-1,3-Dichloropropene	ND	8.2	1.4	ND	1.8	0.30	
98-82-8	Cumene	ND	8.2	1.3	ND	1.7	0.26	
110-82-7	Cyclohexane	ND	16	2.4	ND	4.7	0.71	
124-48-1	Dibromochloromethane	ND	8.2	1.1	ND	0.96	0.13	
64-17-5	Ethanol	ND	82	6.0	ND	43	3.2	
100-41-4	Ethyl Benzene	ND	8.2	1.2	ND	1.9	0.28	
75-69-4	Freon 11	**1,400**	8.2	1.3	**240**	1.5	0.24	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412091416** ALS Sample ID: P2405139-009
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/9/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01195

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.68

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1,800**	20	3.1	**230**	2.7	0.40	**D**
76-14-2	Freon 114	ND	8.2	1.4	ND	1.2	0.20	
75-71-8	Freon 12	**2.3**	8.2	1.4	**0.47**	1.6	0.29	**J**
306-83-2	Freon 123	ND	8.2	3.9	ND	1.3	0.63	**X**
75-43-4	Freon 21	ND	8.2	3.9	ND	1.9	0.93	**X**
142-82-5	Heptane	ND	8.2	1.4	ND	2.0	0.34	
87-68-3	Hexachlorobutadiene	ND	8.2	1.8	ND	0.76	0.17	
110-54-3	Hexane	ND	8.2	1.8	ND	2.3	0.51	
179601-23-1	m,p-Xylene	ND	16	2.3	ND	3.8	0.53	
1634-04-4	Methyl tert-butyl ether	ND	8.2	1.0	ND	2.3	0.28	
75-09-2	Methylene Chloride	ND	8.2	2.4	ND	2.3	0.70	
95-47-6	o-Xylene	ND	8.2	1.3	ND	1.9	0.29	
103-65-1	Propylbenzene	ND	8.2	1.3	ND	1.7	0.26	
100-42-5	Styrene	ND	8.2	1.4	ND	1.9	0.33	
127-18-4	Tetrachloroethene	ND	8.2	1.1	ND	1.2	0.17	
109-99-9	Tetrahydrofuran	ND	8.2	1.1	ND	2.8	0.37	
108-88-3	Toluene	ND	8.2	1.1	ND	2.2	0.28	
156-60-5	trans-1,2-Dichloroethene	ND	8.2	1.2	ND	2.1	0.30	
10061-02-6	trans-1,3-Dichloropropene	ND	8.2	1.8	ND	1.8	0.40	
79-01-6	Trichloroethene	ND	8.2	1.2	ND	1.5	0.22	
75-01-4	Vinyl Chloride	ND	8.2	0.93	ND	3.2	0.36	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412091416** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-009

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/9/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.10 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS01195		

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.68

Container Dilution Factor: 1.63

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101015** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-010

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01368

Initial Pressure (psig): -1.55 Final Pressure (psig): 6.11

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.36	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.21	ND	0.36	0.039	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.076	
75-35-4	1,1-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.51	ND	0.27	0.069	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.29	ND	0.40	0.059	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.24	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.31	ND	0.33	0.052	
107-06-2	1,2-Dichloroethane	ND	2.0	0.23	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.056	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.30	ND	0.40	0.062	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.89	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.55	0.069	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.42	0.068	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.47**	20	0.43	**0.16**	6.7	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.26	ND	0.48	0.064	
67-63-0	2-Propanol	**2.4**	4.0	0.87	**0.98**	1.6	0.35	**J**
107-05-1	3-Chloropropene	ND	2.0	0.28	ND	0.63	0.091	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.40	0.068	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101015** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-010

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01368

Initial Pressure (psig): -1.55 Final Pressure (psig): 6.11

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.48	0.070	
67-64-1	Acetone	**6.7**	20	4.7	**2.8**	8.3	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.47	ND	0.38	0.092	
71-43-2	Benzene	ND	2.0	0.30	ND	0.62	0.095	
75-27-4	Bromodichloromethane	ND	2.0	0.30	ND	0.29	0.045	
75-25-2	Bromoform	ND	2.0	0.43	ND	0.19	0.042	
74-83-9	Bromomethane	ND	2.0	0.29	ND	0.51	0.075	
75-15-0	Carbon Disulfide	**1.2**	20	0.63	**0.38**	6.3	0.20	**J, B**
56-23-5	Carbon Tetrachloride	ND	2.0	0.29	ND	0.31	0.046	
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.061	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.75	0.099	
67-66-3	Chloroform	**0.39**	2.0	0.28	**0.080**	0.40	0.057	**J**
74-87-3	Chloromethane	ND	2.0	0.34	ND	0.96	0.16	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.072	
98-82-8	Cumene	ND	2.0	0.30	ND	0.40	0.062	
110-82-7	Cyclohexane	ND	4.0	0.59	ND	1.1	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.032	
64-17-5	Ethanol	ND	20	1.5	ND	10	0.78	
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.45	0.068	
75-69-4	Freon 11	**75**	2.0	0.32	**13**	0.35	0.057	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101015** ALS Sample ID: P2405139-010
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01368

Initial Pressure (psig): -1.55 Final Pressure (psig): 6.11

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**83**	2.0	0.30	**11**	0.26	0.039	
76-14-2	Freon 114	ND	2.0	0.33	ND	0.28	0.047	
75-71-8	Freon 12	**2.2**	2.0	0.34	**0.45**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.95	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.95	ND	0.47	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.48	0.082	
87-68-3	Hexachlorobutadiene	ND	2.0	0.43	ND	0.19	0.041	
110-54-3	Hexane	ND	2.0	0.43	ND	0.56	0.12	
179601-23-1	m,p-Xylene	ND	4.0	0.55	ND	0.91	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.069	
75-09-2	Methylene Chloride	ND	2.0	0.59	ND	0.57	0.17	
95-47-6	o-Xylene	ND	2.0	0.30	ND	0.45	0.070	
103-65-1	Propylbenzene	ND	2.0	0.30	ND	0.40	0.062	
100-42-5	Styrene	ND	2.0	0.34	ND	0.46	0.080	
127-18-4	Tetrachloroethene	ND	2.0	0.27	ND	0.29	0.040	
109-99-9	Tetrahydrofuran	ND	2.0	0.26	ND	0.67	0.090	
108-88-3	Toluene	ND	2.0	0.26	ND	0.52	0.068	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ND	0.44	0.096	
79-01-6	Trichloroethene	ND	2.0	0.28	ND	0.37	0.053	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.77	0.088	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101015** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-010

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SC01368		

Initial Pressure (psig): -1.55 Final Pressure (psig): 6.11

Container Dilution Factor: 1.58

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101021** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-011

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC01176

Initial Pressure (psig): -1.64 Final Pressure (psig): 5.85

Container Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.36	0.047	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ND	0.29	0.042	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.21	ND	0.36	0.039	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.076	
75-35-4	1,1-Dichloroethene	ND	2.0	0.29	ND	0.50	0.073	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.51	ND	0.26	0.069	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.29	ND	0.40	0.059	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.24	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.31	ND	0.33	0.052	
107-06-2	1,2-Dichloroethane	ND	2.0	0.23	ND	0.49	0.057	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.42	0.056	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.30	ND	0.40	0.062	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.89	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.31	ND	0.33	0.052	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.54	0.069	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.31	ND	0.42	0.067	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**3.0**	20	0.43	**1.0**	6.7	0.15	**J**
591-78-6	2-Hexanone	**0.82**	2.0	0.26	**0.20**	0.48	0.063	**J**
67-63-0	2-Propanol	ND	3.9	0.86	ND	1.6	0.35	
107-05-1	3-Chloropropene	ND	2.0	0.28	ND	0.63	0.090	
622-96-8	4-Ethyltoluene	ND	2.0	0.33	ND	0.40	0.068	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101021** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-011

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC01176

Initial Pressure (psig): -1.64 Final Pressure (psig): 5.85

Container Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.48	0.070	
67-64-1	Acetone	**14**	20	4.7	**5.9**	8.3	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.47	ND	0.38	0.091	
71-43-2	Benzene	**0.51**	2.0	0.30	**0.16**	0.61	0.095	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.30	ND	0.29	0.045	
75-25-2	Bromoform	ND	2.0	0.43	ND	0.19	0.042	
74-83-9	Bromomethane	ND	2.0	0.29	ND	0.51	0.075	
75-15-0	Carbon Disulfide	**2.8**	20	0.63	**0.89**	6.3	0.20	**J, B**
56-23-5	Carbon Tetrachloride	ND	2.0	0.29	ND	0.31	0.046	
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.061	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.74	0.098	
67-66-3	Chloroform	**3.5**	2.0	0.28	**0.72**	0.40	0.057	
74-87-3	Chloromethane	ND	2.0	0.34	ND	0.95	0.16	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.43	0.072	
98-82-8	Cumene	ND	2.0	0.30	ND	0.40	0.062	
110-82-7	Cyclohexane	ND	3.9	0.59	ND	1.1	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.27	ND	0.23	0.032	
64-17-5	Ethanol	ND	20	1.5	ND	10	0.77	
100-41-4	Ethyl Benzene	ND	2.0	0.29	ND	0.45	0.068	
75-69-4	Freon 11	**360**	2.0	0.32	**64**	0.35	0.057	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101021** ALS Sample ID: P2405139-011
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC01176

Initial Pressure (psig): -1.64 Final Pressure (psig): 5.85

Container Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**400**	20	3.0	**52**	2.6	0.39	**D**
76-14-2	Freon 114	ND	2.0	0.33	ND	0.28	0.047	
75-71-8	Freon 12	**2.2**	2.0	0.34	**0.45**	0.40	0.069	
306-83-2	Freon 123	ND	2.0	0.94	ND	0.31	0.15	**X**
75-43-4	Freon 21	**2.3**	2.0	0.94	**0.54**	0.47	0.22	**X**
142-82-5	Heptane	ND	2.0	0.33	ND	0.48	0.081	
87-68-3	Hexachlorobutadiene	ND	2.0	0.43	ND	0.18	0.040	
110-54-3	Hexane	ND	2.0	0.43	ND	0.56	0.12	
179601-23-1	m,p-Xylene	ND	3.9	0.55	ND	0.90	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.54	0.069	
75-09-2	Methylene Chloride	ND	2.0	0.59	ND	0.57	0.17	
95-47-6	o-Xylene	ND	2.0	0.30	ND	0.45	0.070	
103-65-1	Propylbenzene	ND	2.0	0.30	ND	0.40	0.062	
100-42-5	Styrene	ND	2.0	0.34	ND	0.46	0.079	
127-18-4	Tetrachloroethene	**0.27**	2.0	0.27	**0.041**	0.29	0.040	**J**
109-99-9	Tetrahydrofuran	ND	2.0	0.26	ND	0.67	0.089	
108-88-3	Toluene	**0.42**	2.0	0.26	**0.11**	0.52	0.068	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ND	0.50	0.073	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ND	0.43	0.095	
79-01-6	Trichloroethene	**0.81**	2.0	0.28	**0.15**	0.37	0.053	**J**
75-01-4	Vinyl Chloride	ND	2.0	0.22	ND	0.77	0.088	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101021** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-011

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**T**		0.040 Liter(s)
Container ID:	1SC01176		

Initial Pressure (psig): -1.64 Final Pressure (psig): 5.85

Container Dilution Factor: 1.57

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.62	Freon 123a	**9.5**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101027** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-012

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.080 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00832

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.91

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	10	1.4	ND	1.9	0.25	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	1.5	ND	1.5	0.22	
79-00-5	1,1,2-Trichloroethane	ND	10	1.1	ND	1.9	0.20	
75-34-3	1,1-Dichloroethane	ND	10	1.6	ND	2.5	0.40	
75-35-4	1,1-Dichloroethene	ND	10	1.5	ND	2.6	0.38	
120-82-1	1,2,4-Trichlorobenzene	ND	10	2.7	ND	1.4	0.36	
95-63-6	1,2,4-Trimethylbenzene	ND	10	1.5	ND	2.1	0.31	
106-93-4	1,2-Dibromoethane (EDB)	ND	10	1.3	ND	1.3	0.17	
95-50-1	1,2-Dichlorobenzene	ND	10	1.6	ND	1.7	0.27	
107-06-2	1,2-Dichloroethane	ND	10	1.2	ND	2.5	0.30	
78-87-5	1,2-Dichloropropane	ND	10	1.4	ND	2.2	0.29	
108-67-8	1,3,5-Trimethylbenzene	ND	10	1.6	ND	2.1	0.32	
106-99-0	1,3-Butadiene	ND	10	1.8	ND	4.6	0.82	
541-73-1	1,3-Dichlorobenzene	ND	10	1.6	ND	1.7	0.27	
106-46-7	1,4-Dichlorobenzene	ND	10	1.7	ND	1.7	0.28	
123-91-1	1,4-Dioxane	ND	10	1.3	ND	2.8	0.36	
540-84-1	2,2,4-Trimethylpentane	ND	10	1.6	ND	2.2	0.35	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**8.8**	100	2.3	**3.0**	35	0.76	**J**
591-78-6	2-Hexanone	ND	10	1.4	ND	2.5	0.33	
67-63-0	2-Propanol	ND	21	4.5	ND	8.3	1.8	
107-05-1	3-Chloropropene	ND	10	1.5	ND	3.3	0.47	
622-96-8	4-Ethyltoluene	ND	10	1.7	ND	2.1	0.35	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101027** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-012

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.080 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00832

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.91

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	10	1.5	ND	2.5	0.37	
67-64-1	Acetone	**80**	100	25	**34**	43	10	**J**
100-44-7	alpha-Chlorotoluene	ND	10	2.5	ND	2.0	0.48	
71-43-2	Benzene	ND	10	1.6	ND	3.2	0.49	
75-27-4	Bromodichloromethane	ND	10	1.6	ND	1.5	0.24	
75-25-2	Bromoform	ND	10	2.3	ND	0.99	0.22	
74-83-9	Bromomethane	ND	10	1.5	ND	2.6	0.39	
75-15-0	Carbon Disulfide	**16**	100	3.3	**5.3**	33	1.1	**J, B**
56-23-5	Carbon Tetrachloride	ND	10	1.5	ND	1.6	0.24	
108-90-7	Chlorobenzene	ND	10	1.5	ND	2.2	0.32	
75-00-3	Chloroethane	ND	10	1.4	ND	3.9	0.51	
67-66-3	Chloroform	**10**	10	1.5	**2.0**	2.1	0.30	**J**
74-87-3	Chloromethane	ND	10	1.8	ND	5.0	0.85	
156-59-2	cis-1,2-Dichloroethene	ND	10	1.5	ND	2.6	0.39	
10061-01-5	cis-1,3-Dichloropropene	ND	10	1.7	ND	2.3	0.37	
98-82-8	Cumene	ND	10	1.6	ND	2.1	0.32	
110-82-7	Cyclohexane	ND	21	3.1	ND	6.0	0.89	
124-48-1	Dibromochloromethane	ND	10	1.4	ND	1.2	0.17	
64-17-5	Ethanol	ND	100	7.6	ND	54	4.0	
100-41-4	Ethyl Benzene	ND	10	1.5	ND	2.4	0.35	
75-69-4	Freon 11	**1,400**	10	1.7	**240**	1.8	0.30	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101027** ALS Sample ID: P2405139-012
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.080 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00832

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.91

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**2,000**	21	3.1	**260**	2.7	0.41	**D**
76-14-2	Freon 114	ND	10	1.7	ND	1.5	0.25	
75-71-8	Freon 12	**2.2**	10	1.8	**0.45**	2.1	0.36	**J**
306-83-2	Freon 123	ND	10	4.9	ND	1.6	0.79	**X**
75-43-4	Freon 21	ND	10	4.9	ND	2.4	1.2	**X**
142-82-5	Heptane	ND	10	1.7	ND	2.5	0.43	
87-68-3	Hexachlorobutadiene	ND	10	2.3	ND	0.96	0.21	
110-54-3	Hexane	ND	10	2.3	ND	2.9	0.64	
179601-23-1	m,p-Xylene	ND	21	2.9	ND	4.7	0.66	
1634-04-4	Methyl tert-butyl ether	ND	10	1.3	ND	2.8	0.36	
75-09-2	Methylene Chloride	ND	10	3.1	ND	3.0	0.89	
95-47-6	o-Xylene	ND	10	1.6	ND	2.4	0.36	
103-65-1	Propylbenzene	ND	10	1.6	ND	2.1	0.32	
100-42-5	Styrene	ND	10	1.8	ND	2.4	0.41	
127-18-4	Tetrachloroethene	ND	10	1.4	ND	1.5	0.21	
109-99-9	Tetrahydrofuran	ND	10	1.4	ND	3.5	0.47	
108-88-3	Toluene	ND	10	1.3	ND	2.7	0.35	
156-60-5	trans-1,2-Dichloroethene	ND	10	1.5	ND	2.6	0.38	
10061-02-6	trans-1,3-Dichloropropene	ND	10	2.3	ND	2.3	0.50	
79-01-6	Trichloroethene	**1.6**	10	1.5	**0.30**	1.9	0.27	**J**
75-01-4	Vinyl Chloride	ND	10	1.2	ND	4.0	0.46	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101027** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-012

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6 - 1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.080 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS00832		

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.91

Container Dilution Factor: 1.64

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101028** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-013

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.20 Liter(s)
Test Notes:
Container ID: 1SC01272

Initial Pressure (psig): -1.31 Final Pressure (psig): 5.67

Container Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	3.8	0.50	ND	0.70	0.092	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.8	0.56	ND	0.55	0.082	
79-00-5	1,1,2-Trichloroethane	ND	3.8	0.41	ND	0.70	0.075	
75-34-3	1,1-Dichloroethane	ND	3.8	0.59	ND	0.94	0.15	
75-35-4	1,1-Dichloroethene	ND	3.8	0.56	ND	0.96	0.14	
120-82-1	1,2,4-Trichlorobenzene	ND	3.8	0.99	ND	0.51	0.13	
95-63-6	1,2,4-Trimethylbenzene	**2.1**	3.8	0.56	**0.42**	0.77	0.11	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	3.8	0.47	ND	0.49	0.061	
95-50-1	1,2-Dichlorobenzene	ND	3.8	0.60	ND	0.63	0.10	
107-06-2	1,2-Dichloroethane	ND	3.8	0.45	ND	0.94	0.11	
78-87-5	1,2-Dichloropropane	**2.1**	3.8	0.50	**0.46**	0.82	0.11	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.59**	3.8	0.59	**0.12**	0.77	0.12	**J**
106-99-0	1,3-Butadiene	ND	3.8	0.67	ND	1.7	0.30	
541-73-1	1,3-Dichlorobenzene	ND	3.8	0.61	ND	0.63	0.10	
106-46-7	1,4-Dichlorobenzene	ND	3.8	0.62	ND	0.63	0.10	
123-91-1	1,4-Dioxane	ND	3.8	0.48	ND	1.1	0.13	
540-84-1	2,2,4-Trimethylpentane	**3.8**	3.8	0.61	**0.81**	0.81	0.13	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**7.2**	38	0.84	**2.5**	13	0.28	**J**
591-78-6	2-Hexanone	ND	3.8	0.50	ND	0.93	0.12	
67-63-0	2-Propanol	**90**	7.6	1.7	**36**	3.1	0.68	
107-05-1	3-Chloropropene	ND	3.8	0.55	ND	1.2	0.17	
622-96-8	4-Ethyltoluene	ND	3.8	0.65	ND	0.77	0.13	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101028** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-013

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.20 Liter(s)
Test Notes:
Container ID: 1SC01272

Initial Pressure (psig): -1.31 Final Pressure (psig): 5.67

Container Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**0.89**	3.8	0.55	**0.22**	0.93	0.14	**J**
67-64-1	Acetone	**62**	38	9.1	**26**	16	3.8	
100-44-7	alpha-Chlorotoluene	ND	3.8	0.91	ND	0.73	0.18	
71-43-2	Benzene	**7.2**	3.8	0.59	**2.3**	1.2	0.18	
75-27-4	Bromodichloromethane	ND	3.8	0.59	ND	0.57	0.087	
75-25-2	Bromoform	ND	3.8	0.84	ND	0.37	0.081	
74-83-9	Bromomethane	ND	3.8	0.56	ND	0.98	0.14	
75-15-0	Carbon Disulfide	**3.6**	38	1.2	**1.2**	12	0.39	**J, B**
56-23-5	Carbon Tetrachloride	ND	3.8	0.56	ND	0.60	0.089	
108-90-7	Chlorobenzene	ND	3.8	0.54	ND	0.83	0.12	
75-00-3	Chloroethane	ND	3.8	0.50	ND	1.4	0.19	
67-66-3	Chloroform	ND	3.8	0.54	ND	0.78	0.11	
74-87-3	Chloromethane	**1.1**	3.8	0.65	**0.55**	1.8	0.32	**J**
156-59-2	cis-1,2-Dichloroethene	ND	3.8	0.57	ND	0.96	0.14	
10061-01-5	cis-1,3-Dichloropropene	ND	3.8	0.63	ND	0.84	0.14	
98-82-8	Cumene	ND	3.8	0.59	ND	0.77	0.12	
110-82-7	Cyclohexane	**7.7**	7.6	1.1	**2.3**	2.2	0.33	
124-48-1	Dibromochloromethane	ND	3.8	0.53	ND	0.45	0.062	
64-17-5	Ethanol	**110**	38	2.8	**60**	20	1.5	
100-41-4	Ethyl Benzene	**3.3**	3.8	0.57	**0.76**	0.88	0.13	**J**
75-69-4	Freon 11	**1.4**	3.8	0.62	**0.24**	0.68	0.11	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101028** ALS Sample ID: P2405139-013
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.20 Liter(s)
Test Notes:
Container ID: 1SC01272

Initial Pressure (psig): -1.31 Final Pressure (psig): 5.67

Container Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1.0**	3.8	0.58	**0.13**	0.50	0.075	**J**
76-14-2	Freon 114	ND	3.8	0.64	ND	0.54	0.091	
75-71-8	Freon 12	**2.3**	3.8	0.66	**0.47**	0.77	0.13	**J**
306-83-2	Freon 123	ND	3.8	1.8	ND	0.61	0.29	**X**
75-43-4	Freon 21	ND	3.8	1.8	ND	0.90	0.43	**X**
142-82-5	Heptane	**7.8**	3.8	0.65	**1.9**	0.93	0.16	
87-68-3	Hexachlorobutadiene	ND	3.8	0.84	ND	0.36	0.078	
110-54-3	Hexane	**4.9**	3.8	0.84	**1.4**	1.1	0.24	
179601-23-1	m,p-Xylene	**12**	7.6	1.1	**2.7**	1.8	0.25	
1634-04-4	Methyl tert-butyl ether	ND	3.8	0.48	ND	1.1	0.13	
75-09-2	Methylene Chloride	**1.9**	3.8	1.1	**0.55**	1.1	0.33	**J**
95-47-6	o-Xylene	**4.9**	3.8	0.59	**1.1**	0.88	0.13	
103-65-1	Propylbenzene	ND	3.8	0.59	ND	0.77	0.12	
100-42-5	Styrene	**1.9**	3.8	0.65	**0.45**	0.89	0.15	**J**
127-18-4	Tetrachloroethene	**2.5**	3.8	0.52	**0.36**	0.56	0.077	**J**
109-99-9	Tetrahydrofuran	**8.5**	3.8	0.51	**2.9**	1.3	0.17	
108-88-3	Toluene	**86**	3.8	0.49	**23**	1.0	0.13	
156-60-5	trans-1,2-Dichloroethene	ND	3.8	0.56	ND	0.96	0.14	
10061-02-6	trans-1,3-Dichloropropene	ND	3.8	0.84	ND	0.84	0.18	
79-01-6	Trichloroethene	ND	3.8	0.55	ND	0.71	0.10	
75-01-4	Vinyl Chloride	ND	3.8	0.43	ND	1.5	0.17	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101028** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-013

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 12/10/24

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24

Analyst: Simon Cao Date Analyzed: 1/7/25

Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.20 Liter(s)

Test Notes:

Container ID: 1SC01272

Initial Pressure (psig): -1.31 Final Pressure (psig): 5.67

Container Dilution Factor: 1.52

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101039** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-014

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes: 0.015 Liter(s)
Container ID: 1SS00739

Initial Pressure (psig): -1.96 Final Pressure (psig): 5.82

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	16	2.1	ND	3.0	0.39	
79-34-5	1,1,2,2-Tetrachloroethane	ND	16	2.4	ND	2.3	0.35	
79-00-5	1,1,2-Trichloroethane	ND	16	1.7	ND	3.0	0.32	
75-34-3	1,1-Dichloroethane	ND	16	2.5	ND	4.0	0.62	
75-35-4	1,1-Dichloroethene	ND	16	2.4	ND	4.1	0.60	
120-82-1	1,2,4-Trichlorobenzene	ND	16	4.2	ND	2.2	0.56	
95-63-6	1,2,4-Trimethylbenzene	ND	16	2.4	ND	3.3	0.48	
106-93-4	1,2-Dibromoethane (EDB)	ND	16	2.0	ND	2.1	0.26	
95-50-1	1,2-Dichlorobenzene	ND	16	2.5	ND	2.7	0.42	
107-06-2	1,2-Dichloroethane	ND	16	1.9	ND	4.0	0.47	
78-87-5	1,2-Dichloropropane	ND	16	2.1	ND	3.5	0.46	
108-67-8	1,3,5-Trimethylbenzene	ND	16	2.5	ND	3.3	0.50	
106-99-0	1,3-Butadiene	ND	16	2.8	ND	7.3	1.3	
541-73-1	1,3-Dichlorobenzene	ND	16	2.6	ND	2.7	0.43	
106-46-7	1,4-Dichlorobenzene	ND	16	2.6	ND	2.7	0.44	
123-91-1	1,4-Dioxane	ND	16	2.0	ND	4.5	0.56	
540-84-1	2,2,4-Trimethylpentane	ND	16	2.6	ND	3.4	0.55	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	160	3.5	ND	55	1.2	
591-78-6	2-Hexanone	ND	16	2.1	ND	3.9	0.52	
67-63-0	2-Propanol	ND	32	7.1	ND	13	2.9	
107-05-1	3-Chloropropene	ND	16	2.3	ND	5.1	0.74	
622-96-8	4-Ethyltoluene	ND	16	2.7	ND	3.3	0.56	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101039** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-014

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes: 0.015 Liter(s)
Container ID: 1SS00739

Initial Pressure (psig): -1.96 Final Pressure (psig): 5.82

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	16	2.4	ND	3.9	0.57	
67-64-1	Acetone	ND	160	39	ND	68	16	
100-44-7	alpha-Chlorotoluene	ND	16	3.9	ND	3.1	0.75	
71-43-2	Benzene	ND	16	2.5	ND	5.0	0.78	
75-27-4	Bromodichloromethane	ND	16	2.5	ND	2.4	0.37	
75-25-2	Bromoform	ND	16	3.5	ND	1.6	0.34	
74-83-9	Bromomethane	ND	16	2.4	ND	4.1	0.61	
75-15-0	Carbon Disulfide	ND	160	5.2	ND	52	1.7	
56-23-5	Carbon Tetrachloride	ND	16	2.4	ND	2.6	0.38	
108-90-7	Chlorobenzene	ND	16	2.3	ND	3.5	0.50	
75-00-3	Chloroethane	ND	16	2.1	ND	6.1	0.81	
67-66-3	Chloroform	**3.5**	16	2.3	**0.72**	3.3	0.47	**J**
74-87-3	Chloromethane	ND	16	2.8	ND	7.8	1.3	
156-59-2	cis-1,2-Dichloroethene	ND	16	2.4	ND	4.1	0.61	
10061-01-5	cis-1,3-Dichloropropene	ND	16	2.7	ND	3.5	0.59	
98-82-8	Cumene	ND	16	2.5	ND	3.3	0.50	
110-82-7	Cyclohexane	ND	32	4.8	ND	9.4	1.4	
124-48-1	Dibromochloromethane	ND	16	2.3	ND	1.9	0.26	
64-17-5	Ethanol	**12**	160	12	**6.5**	85	6.3	**J**
100-41-4	Ethyl Benzene	ND	16	2.4	ND	3.7	0.56	
75-69-4	Freon 11	**3,100**	16	2.6	**560**	2.9	0.46	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101039** ALS Sample ID: P2405139-014
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes: 0.015 Liter(s)
Container ID: 1SS00739

Initial Pressure (psig): -1.96 Final Pressure (psig): 5.82

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**3,000**	54	8.2	**390**	7.0	1.1	**D**
76-14-2	Freon 114	ND	16	2.7	ND	2.3	0.39	
75-71-8	Freon 12	ND	16	2.8	ND	3.3	0.57	
306-83-2	Freon 123	ND	16	7.7	ND	2.6	1.2	**X**
75-43-4	Freon 21	ND	16	7.7	ND	3.8	1.8	**X**
142-82-5	Heptane	ND	16	2.7	ND	3.9	0.67	
87-68-3	Hexachlorobutadiene	ND	16	3.5	ND	1.5	0.33	
110-54-3	Hexane	ND	16	3.5	ND	4.6	1.0	
179601-23-1	m,p-Xylene	ND	32	4.5	ND	7.4	1.0	
1634-04-4	Methyl tert-butyl ether	ND	16	2.0	ND	4.5	0.56	
75-09-2	Methylene Chloride	ND	16	4.8	ND	4.6	1.4	
95-47-6	o-Xylene	ND	16	2.5	ND	3.7	0.57	
103-65-1	Propylbenzene	ND	16	2.5	ND	3.3	0.50	
100-42-5	Styrene	ND	16	2.8	ND	3.8	0.65	
127-18-4	Tetrachloroethene	ND	16	2.2	ND	2.4	0.33	
109-99-9	Tetrahydrofuran	ND	16	2.2	ND	5.5	0.73	
108-88-3	Toluene	**9.8**	16	2.1	**2.6**	4.3	0.56	**J**
156-60-5	trans-1,2-Dichloroethene	ND	16	2.4	ND	4.1	0.60	
10061-02-6	trans-1,3-Dichloropropene	ND	16	3.5	ND	3.5	0.78	
79-01-6	Trichloroethene	ND	16	2.3	ND	3.0	0.43	
75-01-4	Vinyl Chloride	ND	16	1.8	ND	6.3	0.72	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101039** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-014

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6 - 1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.050 Liter(s)
Test Notes:			0.015 Liter(s)
Container ID:	1SS00739		

Initial Pressure (psig): -1.96 Final Pressure (psig): 5.82

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101045** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-015

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00870

Initial Pressure (psig): -2.32 Final Pressure (psig): 5.90

Container Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	17	2.2	ND	3.0	0.40	
79-34-5	1,1,2,2-Tetrachloroethane	ND	17	2.5	ND	2.4	0.36	
79-00-5	1,1,2-Trichloroethane	ND	17	1.8	ND	3.0	0.33	
75-34-3	1,1-Dichloroethane	ND	17	2.6	ND	4.1	0.64	
75-35-4	1,1-Dichloroethene	ND	17	2.5	ND	4.2	0.62	
120-82-1	1,2,4-Trichlorobenzene	ND	17	4.3	ND	2.2	0.58	
95-63-6	1,2,4-Trimethylbenzene	ND	17	2.5	ND	3.4	0.50	
106-93-4	1,2-Dibromoethane (EDB)	ND	17	2.1	ND	2.2	0.27	
95-50-1	1,2-Dichlorobenzene	ND	17	2.6	ND	2.8	0.44	
107-06-2	1,2-Dichloroethane	ND	17	2.0	ND	4.1	0.48	
78-87-5	1,2-Dichloropropane	ND	17	2.2	ND	3.6	0.47	
108-67-8	1,3,5-Trimethylbenzene	ND	17	2.6	ND	3.4	0.52	
106-99-0	1,3-Butadiene	ND	17	2.9	ND	7.5	1.3	
541-73-1	1,3-Dichlorobenzene	ND	17	2.7	ND	2.8	0.44	
106-46-7	1,4-Dichlorobenzene	ND	17	2.7	ND	2.8	0.45	
123-91-1	1,4-Dioxane	ND	17	2.1	ND	4.6	0.58	
540-84-1	2,2,4-Trimethylpentane	ND	17	2.7	ND	3.6	0.57	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	170	3.7	ND	56	1.2	
591-78-6	2-Hexanone	ND	17	2.2	ND	4.1	0.54	
67-63-0	2-Propanol	ND	33	7.3	ND	14	3.0	
107-05-1	3-Chloropropene	ND	17	2.4	ND	5.3	0.76	
622-96-8	4-Ethyltoluene	ND	17	2.8	ND	3.4	0.57	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101045** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-015

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00870

Initial Pressure (psig): -2.32 Final Pressure (psig): 5.90

Container Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	17	2.4	ND	4.1	0.59	
67-64-1	Acetone	ND	170	40	ND	70	17	
100-44-7	alpha-Chlorotoluene	ND	17	4.0	ND	3.2	0.77	
71-43-2	Benzene	ND	17	2.6	ND	5.2	0.80	
75-27-4	Bromodichloromethane	ND	17	2.6	ND	2.5	0.38	
75-25-2	Bromoform	ND	17	3.7	ND	1.6	0.35	
74-83-9	Bromomethane	ND	17	2.5	ND	4.3	0.63	
75-15-0	Carbon Disulfide	ND	170	5.3	ND	53	1.7	
56-23-5	Carbon Tetrachloride	ND	17	2.5	ND	2.6	0.39	
108-90-7	Chlorobenzene	ND	17	2.4	ND	3.6	0.51	
75-00-3	Chloroethane	ND	17	2.2	ND	6.3	0.83	
67-66-3	Chloroform	**5.3**	17	2.4	**1.1**	3.4	0.48	**J**
74-87-3	Chloromethane	ND	17	2.9	ND	8.0	1.4	
156-59-2	cis-1,2-Dichloroethene	ND	17	2.5	ND	4.2	0.63	
10061-01-5	cis-1,3-Dichloropropene	ND	17	2.8	ND	3.7	0.61	
98-82-8	Cumene	ND	17	2.6	ND	3.4	0.52	
110-82-7	Cyclohexane	ND	33	5.0	ND	9.6	1.4	
124-48-1	Dibromochloromethane	ND	17	2.3	ND	1.9	0.27	
64-17-5	Ethanol	ND	170	12	ND	88	6.5	
100-41-4	Ethyl Benzene	ND	17	2.5	ND	3.8	0.57	
75-69-4	Freon 11	**2,300**	17	2.7	**410**	3.0	0.48	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101045** ALS Sample ID: P2405139-015
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00870

Initial Pressure (psig): -2.32 Final Pressure (psig): 5.90

Container Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**2,800**	17	2.5	**370**	2.2	0.33	
76-14-2	Freon 114	ND	17	2.8	ND	2.4	0.40	
75-71-8	Freon 12	ND	17	2.9	ND	3.4	0.58	
306-83-2	Freon 123	ND	17	8.0	ND	2.7	1.3	**X**
75-43-4	Freon 21	ND	17	8.0	ND	3.9	1.9	**X**
142-82-5	Heptane	ND	17	2.8	ND	4.1	0.69	
87-68-3	Hexachlorobutadiene	ND	17	3.7	ND	1.6	0.34	
110-54-3	Hexane	ND	17	3.7	ND	4.7	1.0	
179601-23-1	m,p-Xylene	ND	33	4.6	ND	7.6	1.1	
1634-04-4	Methyl tert-butyl ether	ND	17	2.1	ND	4.6	0.58	
75-09-2	Methylene Chloride	ND	17	5.0	ND	4.8	1.4	
95-47-6	o-Xylene	ND	17	2.6	ND	3.8	0.59	
103-65-1	Propylbenzene	ND	17	2.6	ND	3.4	0.52	
100-42-5	Styrene	ND	17	2.9	ND	3.9	0.67	
127-18-4	Tetrachloroethene	ND	17	2.3	ND	2.4	0.34	
109-99-9	Tetrahydrofuran	ND	17	2.2	ND	5.6	0.75	
108-88-3	Toluene	ND	17	2.2	ND	4.4	0.57	
156-60-5	trans-1,2-Dichloroethene	ND	17	2.5	ND	4.2	0.62	
10061-02-6	trans-1,3-Dichloropropene	ND	17	3.7	ND	3.7	0.80	
79-01-6	Trichloroethene	ND	17	2.4	ND	3.1	0.44	
75-01-4	Vinyl Chloride	ND	17	1.9	ND	6.5	0.74	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101045** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-015

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.050 Liter(s)
Test Notes:			
Container ID:	1SS00870		

Initial Pressure (psig): -2.32 Final Pressure (psig): 5.90

Container Dilution Factor: 1.66

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101053** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-016

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00110

Initial Pressure (psig): -1.42 Final Pressure (psig): 5.71

Container Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	1.9	0.25	ND	0.35	0.047	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.28	ND	0.28	0.042	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.21	ND	0.35	0.038	
75-34-3	1,1-Dichloroethane	ND	1.9	0.30	ND	0.48	0.074	
75-35-4	1,1-Dichloroethene	ND	1.9	0.28	ND	0.49	0.072	
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.50	ND	0.26	0.067	
95-63-6	1,2,4-Trimethylbenzene	**1.4**	1.9	0.28	**0.28**	0.39	0.058	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	1.9	0.24	ND	0.25	0.031	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.30	ND	0.32	0.051	
107-06-2	1,2-Dichloroethane	**1.4**	1.9	0.23	**0.34**	0.48	0.056	**J**
78-87-5	1,2-Dichloropropane	**6.9**	1.9	0.25	**1.5**	0.42	0.055	
108-67-8	1,3,5-Trimethylbenzene	**0.61**	1.9	0.30	**0.12**	0.39	0.060	**J**
106-99-0	1,3-Butadiene	**0.39**	1.9	0.34	**0.17**	0.87	0.15	**J**
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.31	ND	0.32	0.051	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.32	ND	0.32	0.053	
123-91-1	1,4-Dioxane	ND	1.9	0.24	ND	0.53	0.067	
540-84-1	2,2,4-Trimethylpentane	**2.3**	1.9	0.31	**0.50**	0.41	0.066	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**7.8**	19	0.42	**2.6**	6.5	0.14	**J**
591-78-6	2-Hexanone	ND	1.9	0.25	ND	0.47	0.062	
67-63-0	2-Propanol	**80**	3.9	0.85	**32**	1.6	0.34	
107-05-1	3-Chloropropene	ND	1.9	0.28	ND	0.62	0.089	
622-96-8	4-Ethyltoluene	**0.57**	1.9	0.33	**0.12**	0.39	0.067	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101053** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-016

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00110

Initial Pressure (psig): -1.42 Final Pressure (psig): 5.71

Container Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**1.3**	1.9	0.28	**0.33**	0.47	0.069	**J**
67-64-1	Acetone	**60**	19	4.6	**25**	8.1	1.9	
100-44-7	alpha-Chlorotoluene	ND	1.9	0.46	ND	0.37	0.089	
71-43-2	Benzene	**5.5**	1.9	0.30	**1.7**	0.60	0.093	
75-27-4	Bromodichloromethane	ND	1.9	0.30	ND	0.29	0.044	
75-25-2	Bromoform	ND	1.9	0.42	ND	0.19	0.041	
74-83-9	Bromomethane	**0.30**	1.9	0.28	**0.078**	0.50	0.073	**J**
75-15-0	Carbon Disulfide	**1.9**	19	0.62	**0.62**	6.2	0.20	**J, B**
56-23-5	Carbon Tetrachloride	**0.49**	1.9	0.28	**0.078**	0.31	0.045	**J**
108-90-7	Chlorobenzene	**0.29**	1.9	0.27	**0.063**	0.42	0.059	**J**
75-00-3	Chloroethane	ND	1.9	0.25	ND	0.73	0.096	
67-66-3	Chloroform	**0.27**	1.9	0.27	**0.056**	0.39	0.056	**J**
74-87-3	Chloromethane	**0.77**	1.9	0.33	**0.37**	0.93	0.16	**J**
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.29	ND	0.49	0.073	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.32	ND	0.42	0.070	
98-82-8	Cumene	**0.30**	1.9	0.30	**0.062**	0.39	0.060	**J**
110-82-7	Cyclohexane	**4.0**	3.9	0.58	**1.1**	1.1	0.17	
124-48-1	Dibromochloromethane	ND	1.9	0.27	ND	0.23	0.032	
64-17-5	Ethanol	**120**	19	1.4	**63**	10	0.76	
100-41-4	Ethyl Benzene	**4.4**	1.9	0.29	**1.0**	0.44	0.067	
75-69-4	Freon 11	**1.9**	1.9	0.31	**0.33**	0.34	0.056	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101053** ALS Sample ID: P2405139-016
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00110

Initial Pressure (psig): -1.42 Final Pressure (psig): 5.71

Container Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1.2**	1.9	0.29	**0.16**	0.25	0.038	**J**
76-14-2	Freon 114	ND	1.9	0.32	ND	0.28	0.046	
75-71-8	Freon 12	**2.4**	1.9	0.33	**0.48**	0.39	0.068	
306-83-2	Freon 123	ND	1.9	0.92	ND	0.31	0.15	**X**
75-43-4	Freon 21	ND	1.9	0.92	ND	0.46	0.22	**X**
142-82-5	Heptane	**3.3**	1.9	0.33	**0.80**	0.47	0.080	
87-68-3	Hexachlorobutadiene	ND	1.9	0.42	ND	0.18	0.040	
110-54-3	Hexane	**5.2**	1.9	0.42	**1.5**	0.55	0.12	
179601-23-1	m,p-Xylene	**14**	3.9	0.54	**3.2**	0.89	0.12	
1634-04-4	Methyl tert-butyl ether	ND	1.9	0.24	ND	0.53	0.067	
75-09-2	Methylene Chloride	**3.8**	1.9	0.58	**1.1**	0.55	0.17	
95-47-6	o-Xylene	**5.6**	1.9	0.30	**1.3**	0.44	0.068	
103-65-1	Propylbenzene	**0.39**	1.9	0.30	**0.080**	0.39	0.060	**J**
100-42-5	Styrene	**2.3**	1.9	0.33	**0.54**	0.45	0.078	
127-18-4	Tetrachloroethene	**5.9**	1.9	0.27	**0.87**	0.28	0.039	
109-99-9	Tetrahydrofuran	**7.6**	1.9	0.26	**2.6**	0.65	0.087	
108-88-3	Toluene	**150**	1.9	0.25	**41**	0.51	0.066	
156-60-5	trans-1,2-Dichloroethene	ND	1.9	0.28	ND	0.49	0.072	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.42	ND	0.42	0.093	
79-01-6	Trichloroethene	ND	1.9	0.28	ND	0.36	0.052	
75-01-4	Vinyl Chloride	ND	1.9	0.22	ND	0.75	0.086	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101053** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-016

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS00110		

Initial Pressure (psig): -1.42 Final Pressure (psig): 5.71

Container Dilution Factor: 1.54

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101105** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-017

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01685

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.92

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.32	ND	0.50	0.078	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.53	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.34	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.36	ND	0.92	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.34	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.055	
123-91-1	1,4-Dioxane	ND	2.0	0.26	ND	0.56	0.071	
540-84-1	2,2,4-Trimethylpentane	**0.46**	2.0	0.32	**0.098**	0.43	0.069	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**2.0**	20	0.45	**0.66**	6.9	0.15	**J**
591-78-6	2-Hexanone	**0.69**	2.0	0.27	**0.17**	0.49	0.065	**J**
67-63-0	2-Propanol	**2.4**	4.1	0.89	**0.97**	1.6	0.36	**J**
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.65	0.093	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101105** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-017

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01685

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.92

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.30	ND	0.49	0.072	
67-64-1	Acetone	**7.9**	20	4.9	**3.3**	8.5	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.49	ND	0.39	0.094	
71-43-2	Benzene	**0.59**	2.0	0.31	**0.18**	0.63	0.098	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.047	
75-25-2	Bromoform	ND	2.0	0.45	ND	0.20	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.077	
75-15-0	Carbon Disulfide	ND	20	0.65	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.048	
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.062	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.77	0.10	
67-66-3	Chloroform	**0.63**	2.0	0.29	**0.13**	0.41	0.059	**J**
74-87-3	Chloromethane	ND	2.0	0.35	ND	0.98	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.077	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.34	ND	0.45	0.074	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.1	0.61	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.24	0.033	
64-17-5	Ethanol	**2.5**	20	1.5	**1.3**	11	0.80	**J**
100-41-4	Ethyl Benzene	**1.2**	2.0	0.30	**0.28**	0.47	0.070	**J**
75-69-4	Freon 11	**280**	2.0	0.33	**49**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101105** ALS Sample ID: P2405139-017
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01685

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.92

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**290**	2.0	0.31	**38**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.3**	2.0	0.35	**0.47**	0.41	0.071	
306-83-2	Freon 123	ND	2.0	0.97	ND	0.32	0.16	**X**
75-43-4	Freon 21	ND	2.0	0.97	ND	0.48	0.23	**X**
142-82-5	Heptane	**0.62**	2.0	0.34	**0.15**	0.49	0.084	**J**
87-68-3	Hexachlorobutadiene	ND	2.0	0.45	ND	0.19	0.042	
110-54-3	Hexane	ND	2.0	0.45	ND	0.57	0.13	
179601-23-1	m,p-Xylene	**3.0**	4.1	0.57	**0.68**	0.93	0.13	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.26	ND	0.56	0.071	
75-09-2	Methylene Chloride	ND	2.0	0.61	ND	0.58	0.17	
95-47-6	o-Xylene	**1.2**	2.0	0.31	**0.28**	0.47	0.072	**J**
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.35	ND	0.48	0.082	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.69	0.092	
108-88-3	Toluene	**8.8**	2.0	0.26	**2.3**	0.54	0.070	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.45	ND	0.45	0.098	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.38	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.79	0.090	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101105** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-017

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01685		

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.92

Container Dilution Factor: 1.62

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101111** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-018

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01497

Initial Pressure (psig): -1.99 Final Pressure (psig): 6.81

Container Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.28	ND	0.39	0.051	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.31	0.046	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.23	ND	0.39	0.042	
75-34-3	1,1-Dichloroethane	ND	2.1	0.33	ND	0.52	0.081	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.53	0.079	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.55	ND	0.28	0.074	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.43	0.064	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.27	0.034	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.33	ND	0.35	0.056	
107-06-2	1,2-Dichloroethane	ND	2.1	0.25	ND	0.52	0.062	
78-87-5	1,2-Dichloropropane	ND	2.1	0.28	ND	0.46	0.060	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.33	ND	0.43	0.066	
106-99-0	1,3-Butadiene	ND	2.1	0.37	ND	0.96	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.056	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.35	ND	0.35	0.058	
123-91-1	1,4-Dioxane	ND	2.1	0.27	ND	0.59	0.074	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.34	ND	0.45	0.072	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.97**	21	0.46	**0.33**	7.2	0.16	**J**
591-78-6	2-Hexanone	ND	2.1	0.28	ND	0.52	0.068	
67-63-0	2-Propanol	**0.96**	4.2	0.93	**0.39**	1.7	0.38	**J**
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.68	0.097	
622-96-8	4-Ethyltoluene	ND	2.1	0.36	ND	0.43	0.073	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101111** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-018

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01497

Initial Pressure (psig): -1.99 Final Pressure (psig): 6.81

Container Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.31	ND	0.52	0.075	
67-64-1	Acetone	**7.1**	21	5.1	**3.0**	8.9	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.1	0.51	ND	0.41	0.098	
71-43-2	Benzene	ND	2.1	0.33	ND	0.66	0.10	
75-27-4	Bromodichloromethane	ND	2.1	0.33	ND	0.32	0.049	
75-25-2	Bromoform	ND	2.1	0.46	ND	0.20	0.045	
74-83-9	Bromomethane	ND	2.1	0.31	ND	0.54	0.081	
75-15-0	Carbon Disulfide	**1.6**	21	0.68	**0.52**	6.8	0.22	**J, B**
56-23-5	Carbon Tetrachloride	**0.41**	2.1	0.31	**0.065**	0.34	0.050	**J**
108-90-7	Chlorobenzene	ND	2.1	0.30	ND	0.46	0.065	
75-00-3	Chloroethane	ND	2.1	0.28	ND	0.80	0.11	
67-66-3	Chloroform	**0.74**	2.1	0.30	**0.15**	0.43	0.061	**J**
74-87-3	Chloromethane	**0.52**	2.1	0.36	**0.25**	1.0	0.18	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.32	ND	0.53	0.080	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.35	ND	0.47	0.077	
98-82-8	Cumene	ND	2.1	0.33	ND	0.43	0.066	
110-82-7	Cyclohexane	ND	4.2	0.63	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.30	ND	0.25	0.035	
64-17-5	Ethanol	ND	21	1.6	ND	11	0.83	
100-41-4	Ethyl Benzene	ND	2.1	0.32	ND	0.49	0.073	
75-69-4	Freon 11	**350**	2.1	0.34	**62**	0.38	0.061	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and the associated method blank.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101111** ALS Sample ID: P2405139-018
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01497

Initial Pressure (psig): -1.99 Final Pressure (psig): 6.81

Container Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**340**	21	3.2	**45**	2.8	0.42	**D**
76-14-2	Freon 114	ND	2.1	0.35	ND	0.30	0.051	
75-71-8	Freon 12	**2.4**	2.1	0.37	**0.48**	0.43	0.074	
306-83-2	Freon 123	ND	2.1	1.0	ND	0.34	0.16	**X**
75-43-4	Freon 21	ND	2.1	1.0	ND	0.50	0.24	**X**
142-82-5	Heptane	ND	2.1	0.36	ND	0.52	0.088	
87-68-3	Hexachlorobutadiene	ND	2.1	0.46	ND	0.20	0.044	
110-54-3	Hexane	ND	2.1	0.46	ND	0.60	0.13	
179601-23-1	m,p-Xylene	ND	4.2	0.59	ND	0.97	0.14	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.27	ND	0.59	0.074	
75-09-2	Methylene Chloride	ND	2.1	0.63	ND	0.61	0.18	
95-47-6	o-Xylene	ND	2.1	0.33	ND	0.49	0.075	
103-65-1	Propylbenzene	ND	2.1	0.33	ND	0.43	0.066	
100-42-5	Styrene	ND	2.1	0.36	ND	0.50	0.085	
127-18-4	Tetrachloroethene	ND	2.1	0.29	ND	0.31	0.043	
109-99-9	Tetrahydrofuran	ND	2.1	0.28	ND	0.72	0.096	
108-88-3	Toluene	**1.6**	2.1	0.27	**0.43**	0.56	0.073	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.53	0.079	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.46	ND	0.47	0.10	
79-01-6	Trichloroethene	**0.37**	2.1	0.30	**0.069**	0.39	0.057	**J**
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.83	0.094	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101111** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-018

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6 - 1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS01497		

Initial Pressure (psig): -1.99 Final Pressure (psig): 6.81

Container Dilution Factor: 1.69

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101112** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-019

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.060 Liter(s)
Test Notes: 0.020 Liter(s)
Container ID: 1SS01156

Initial Pressure (psig): -2.21 Final Pressure (psig): 7.36

Container Dilution Factor: 1.77

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	15	1.9	ND	2.7	0.36	
79-34-5	1,1,2,2-Tetrachloroethane	ND	15	2.2	ND	2.1	0.32	
79-00-5	1,1,2-Trichloroethane	ND	15	1.6	ND	2.7	0.29	
75-34-3	1,1-Dichloroethane	ND	15	2.3	ND	3.6	0.57	
75-35-4	1,1-Dichloroethene	ND	15	2.2	ND	3.7	0.55	
120-82-1	1,2,4-Trichlorobenzene	ND	15	3.8	ND	2.0	0.52	
95-63-6	1,2,4-Trimethylbenzene	ND	15	2.2	ND	3.0	0.44	
106-93-4	1,2-Dibromoethane (EDB)	ND	15	1.8	ND	1.9	0.24	
95-50-1	1,2-Dichlorobenzene	ND	15	2.3	ND	2.5	0.39	
107-06-2	1,2-Dichloroethane	ND	15	1.7	ND	3.6	0.43	
78-87-5	1,2-Dichloropropane	ND	15	1.9	ND	3.2	0.42	
108-67-8	1,3,5-Trimethylbenzene	ND	15	2.3	ND	3.0	0.46	
106-99-0	1,3-Butadiene	ND	15	2.6	ND	6.7	1.2	
541-73-1	1,3-Dichlorobenzene	ND	15	2.4	ND	2.5	0.39	
106-46-7	1,4-Dichlorobenzene	ND	15	2.4	ND	2.5	0.40	
123-91-1	1,4-Dioxane	ND	15	1.9	ND	4.1	0.52	
540-84-1	2,2,4-Trimethylpentane	ND	15	2.4	ND	3.2	0.51	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	150	3.2	ND	50	1.1	
591-78-6	2-Hexanone	ND	15	1.9	ND	3.6	0.48	
67-63-0	2-Propanol	ND	30	6.5	ND	12	2.6	
107-05-1	3-Chloropropene	ND	15	2.1	ND	4.7	0.68	
622-96-8	4-Ethyltoluene	ND	15	2.5	ND	3.0	0.51	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101112** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-019

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.060 Liter(s)
Test Notes: 0.020 Liter(s)
Container ID: 1SS01156

Initial Pressure (psig): -2.21 Final Pressure (psig): 7.36

Container Dilution Factor: 1.77

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	15	2.2	ND	3.6	0.53	
67-64-1	Acetone	ND	150	35	ND	62	15	
100-44-7	alpha-Chlorotoluene	ND	15	3.5	ND	2.9	0.68	
71-43-2	Benzene	ND	15	2.3	ND	4.6	0.71	
75-27-4	Bromodichloromethane	ND	15	2.3	ND	2.2	0.34	
75-25-2	Bromoform	ND	15	3.2	ND	1.4	0.31	
74-83-9	Bromomethane	ND	15	2.2	ND	3.8	0.56	
75-15-0	Carbon Disulfide	ND	150	4.7	ND	47	1.5	
56-23-5	Carbon Tetrachloride	ND	15	2.2	ND	2.3	0.35	
108-90-7	Chlorobenzene	ND	15	2.1	ND	3.2	0.45	
75-00-3	Chloroethane	ND	15	1.9	ND	5.6	0.74	
67-66-3	Chloroform	**4.7**	15	2.1	**0.96**	3.0	0.43	**J**
74-87-3	Chloromethane	ND	15	2.5	ND	7.1	1.2	
156-59-2	cis-1,2-Dichloroethene	ND	15	2.2	ND	3.7	0.56	
10061-01-5	cis-1,3-Dichloropropene	ND	15	2.4	ND	3.3	0.54	
98-82-8	Cumene	ND	15	2.3	ND	3.0	0.46	
110-82-7	Cyclohexane	ND	30	4.4	ND	8.6	1.3	
124-48-1	Dibromochloromethane	ND	15	2.1	ND	1.7	0.24	
64-17-5	Ethanol	ND	150	11	ND	78	5.8	
100-41-4	Ethyl Benzene	ND	15	2.2	ND	3.4	0.51	
75-69-4	Freon 11	**2,500**	15	2.4	**440**	2.6	0.43	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101112** ALS Sample ID: P2405139-019
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/6 - 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.060 Liter(s)
Test Notes: 0.020 Liter(s)
Container ID: 1SS01156

Initial Pressure (psig): -2.21 Final Pressure (psig): 7.36

Container Dilution Factor: 1.77

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**3,000**	44	6.7	**400**	5.8	0.88	**D**
76-14-2	Freon 114	ND	15	2.5	ND	2.1	0.35	
75-71-8	Freon 12	ND	15	2.6	ND	3.0	0.52	
306-83-2	Freon 123	ND	15	7.1	ND	2.4	1.1	**X**
75-43-4	Freon 21	ND	15	7.1	ND	3.5	1.7	**X**
142-82-5	Heptane	ND	15	2.5	ND	3.6	0.61	
87-68-3	Hexachlorobutadiene	ND	15	3.2	ND	1.4	0.30	
110-54-3	Hexane	ND	15	3.2	ND	4.2	0.92	
179601-23-1	m,p-Xylene	ND	30	4.1	ND	6.8	0.95	
1634-04-4	Methyl tert-butyl ether	ND	15	1.9	ND	4.1	0.52	
75-09-2	Methylene Chloride	ND	15	4.4	ND	4.2	1.3	
95-47-6	o-Xylene	ND	15	2.3	ND	3.4	0.52	
103-65-1	Propylbenzene	ND	15	2.3	ND	3.0	0.46	
100-42-5	Styrene	ND	15	2.5	ND	3.5	0.60	
127-18-4	Tetrachloroethene	ND	15	2.0	ND	2.2	0.30	
109-99-9	Tetrahydrofuran	ND	15	2.0	ND	5.0	0.67	
108-88-3	Toluene	ND	15	1.9	ND	3.9	0.51	
156-60-5	trans-1,2-Dichloroethene	ND	15	2.2	ND	3.7	0.55	
10061-02-6	trans-1,3-Dichloropropene	ND	15	3.2	ND	3.3	0.72	
79-01-6	Trichloroethene	**2.4**	15	2.1	**0.44**	2.7	0.40	**J**
75-01-4	Vinyl Chloride	ND	15	1.7	ND	5.8	0.66	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101112** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-019

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/6 - 1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.060 Liter(s)
Test Notes:			0.020 Liter(s)
Container ID:	1SS01156		

Initial Pressure (psig): -2.21 Final Pressure (psig): 7.36

Container Dilution Factor: 1.77

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101120** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-020

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes: 0.0080 Liter(s)
Container ID: 1SS01407

Initial Pressure (psig): -2.07 Final Pressure (psig): 6.68

Container Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	28	3.7	ND	5.2	0.68	
79-34-5	1,1,2,2-Tetrachloroethane	ND	28	4.2	ND	4.1	0.61	
79-00-5	1,1,2-Trichloroethane	ND	28	3.0	ND	5.2	0.56	
75-34-3	1,1-Dichloroethane	ND	28	4.4	ND	7.0	1.1	
75-35-4	1,1-Dichloroethene	ND	28	4.2	ND	7.1	1.1	
120-82-1	1,2,4-Trichlorobenzene	ND	28	7.3	ND	3.8	0.99	
95-63-6	1,2,4-Trimethylbenzene	ND	28	4.2	ND	5.7	0.85	
106-93-4	1,2-Dibromoethane (EDB)	ND	28	3.5	ND	3.7	0.45	
95-50-1	1,2-Dichlorobenzene	ND	28	4.5	ND	4.7	0.74	
107-06-2	1,2-Dichloroethane	ND	28	3.3	ND	7.0	0.82	
78-87-5	1,2-Dichloropropane	ND	28	3.7	ND	6.1	0.80	
108-67-8	1,3,5-Trimethylbenzene	ND	28	4.3	ND	5.7	0.88	
106-99-0	1,3-Butadiene	ND	28	5.0	ND	13	2.2	
541-73-1	1,3-Dichlorobenzene	ND	28	4.5	ND	4.7	0.75	
106-46-7	1,4-Dichlorobenzene	ND	28	4.6	ND	4.7	0.77	
123-91-1	1,4-Dioxane	ND	28	3.5	ND	7.8	0.99	
540-84-1	2,2,4-Trimethylpentane	ND	28	4.5	ND	6.0	0.97	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	280	6.2	ND	96	2.1	
591-78-6	2-Hexanone	ND	28	3.7	ND	6.9	0.91	
67-63-0	2-Propanol	ND	56	12	ND	23	5.0	
107-05-1	3-Chloropropene	ND	28	4.1	ND	9.0	1.3	
622-96-8	4-Ethyltoluene	ND	28	4.8	ND	5.7	0.97	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101120** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-020

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes: 0.0080 Liter(s)
Container ID: 1SS01407

Initial Pressure (psig): -2.07 Final Pressure (psig): 6.68

Container Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	28	4.1	ND	6.9	1.0	
67-64-1	Acetone	ND	280	68	ND	120	28	
100-44-7	alpha-Chlorotoluene	ND	28	6.8	ND	5.4	1.3	
71-43-2	Benzene	ND	28	4.3	ND	8.8	1.4	
75-27-4	Bromodichloromethane	ND	28	4.3	ND	4.2	0.65	
75-25-2	Bromoform	ND	28	6.2	ND	2.7	0.60	
74-83-9	Bromomethane	ND	28	4.2	ND	7.3	1.1	
75-15-0	Carbon Disulfide	ND	280	9.0	ND	90	2.9	
56-23-5	Carbon Tetrachloride	ND	28	4.2	ND	4.5	0.66	
108-90-7	Chlorobenzene	ND	28	4.0	ND	6.1	0.87	
75-00-3	Chloroethane	ND	28	3.7	ND	11	1.4	
67-66-3	Chloroform	**8.9**	28	4.0	**1.8**	5.8	0.82	**J**
74-87-3	Chloromethane	ND	28	4.8	ND	14	2.3	
156-59-2	cis-1,2-Dichloroethene	ND	28	4.2	ND	7.1	1.1	
10061-01-5	cis-1,3-Dichloropropene	ND	28	4.7	ND	6.2	1.0	
98-82-8	Cumene	ND	28	4.3	ND	5.7	0.88	
110-82-7	Cyclohexane	ND	56	8.5	ND	16	2.5	
124-48-1	Dibromochloromethane	ND	28	3.9	ND	3.3	0.46	
64-17-5	Ethanol	ND	280	21	ND	150	11	
100-41-4	Ethyl Benzene	ND	28	4.2	ND	6.5	0.97	
75-69-4	Freon 11	**4,500**	110	17	**800**	19	3.0	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101120** ALS Sample ID: P2405139-020
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes: 0.0080 Liter(s)
Container ID: 1SS01407

Initial Pressure (psig): -2.07 Final Pressure (psig): 6.68

Container Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**5,800**	110	16	**760**	14	2.1	**D**
76-14-2	Freon 114	ND	28	4.7	ND	4.0	0.68	
75-71-8	Freon 12	ND	28	4.9	ND	5.7	0.99	
306-83-2	Freon 123	ND	28	14	ND	4.5	2.2	**X**
75-43-4	Freon 21	ND	28	14	ND	6.7	3.2	**X**
142-82-5	Heptane	ND	28	4.8	ND	6.9	1.2	
87-68-3	Hexachlorobutadiene	ND	28	6.2	ND	2.6	0.58	
110-54-3	Hexane	ND	28	6.2	ND	8.0	1.8	
179601-23-1	m,p-Xylene	ND	56	7.9	ND	13	1.8	
1634-04-4	Methyl tert-butyl ether	ND	28	3.5	ND	7.8	0.98	
75-09-2	Methylene Chloride	ND	28	8.5	ND	8.1	2.4	
95-47-6	o-Xylene	ND	28	4.3	ND	6.5	1.0	
103-65-1	Propylbenzene	ND	28	4.3	ND	5.7	0.88	
100-42-5	Styrene	ND	28	4.8	ND	6.6	1.1	
127-18-4	Tetrachloroethene	ND	28	3.9	ND	4.2	0.57	
109-99-9	Tetrahydrofuran	ND	28	3.8	ND	9.6	1.3	
108-88-3	Toluene	ND	28	3.7	ND	7.5	0.97	
156-60-5	trans-1,2-Dichloroethene	ND	28	4.2	ND	7.1	1.1	
10061-02-6	trans-1,3-Dichloropropene	ND	28	6.2	ND	6.2	1.4	
79-01-6	Trichloroethene	**4.9**	28	4.1	**0.91**	5.2	0.76	**J**
75-01-4	Vinyl Chloride	ND	28	3.2	ND	11	1.3	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101120** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-020

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.030 Liter(s)
Test Notes:			0.0080 Liter(s)
Container ID:	1SS01407		

Initial Pressure (psig): -2.07 Final Pressure (psig): 6.68

Container Dilution Factor: 1.69

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101128** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-021

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01269

Initial Pressure (psig): -2.49 Final Pressure (psig): 6.55

Container Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.29	ND	0.40	0.053	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.32	ND	0.32	0.047	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.23	ND	0.40	0.043	
75-34-3	1,1-Dichloroethane	ND	2.2	0.34	ND	0.54	0.084	
75-35-4	1,1-Dichloroethene	ND	2.2	0.32	ND	0.55	0.081	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.57	ND	0.29	0.076	
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.32	ND	0.44	0.066	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.2	0.27	ND	0.28	0.035	
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.34	ND	0.36	0.057	
107-06-2	1,2-Dichloroethane	ND	2.2	0.26	ND	0.54	0.063	
78-87-5	1,2-Dichloropropane	ND	2.2	0.29	ND	0.47	0.062	
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.33	ND	0.44	0.068	
106-99-0	1,3-Butadiene	ND	2.2	0.38	ND	0.98	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.35	ND	0.36	0.058	
106-46-7	1,4-Dichlorobenzene	ND	2.2	0.36	ND	0.36	0.059	
123-91-1	1,4-Dioxane	ND	2.2	0.27	ND	0.60	0.076	
540-84-1	2,2,4-Trimethylpentane	**0.71**	2.2	0.35	**0.15**	0.47	0.075	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**3.9**	22	0.48	**1.3**	7.4	0.16	**J**
591-78-6	2-Hexanone	**0.84**	2.2	0.29	**0.21**	0.53	0.070	**J**
67-63-0	2-Propanol	**2.0**	4.4	0.96	**0.83**	1.8	0.39	**J**
107-05-1	3-Chloropropene	ND	2.2	0.31	ND	0.70	0.10	
622-96-8	4-Ethyltoluene	ND	2.2	0.37	ND	0.44	0.075	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101128** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-021

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01269

Initial Pressure (psig): -2.49 Final Pressure (psig): 6.55

Container Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**0.38**	2.2	0.32	**0.092**	0.53	0.078	**J**
67-64-1	Acetone	**19**	22	5.2	**8.0**	9.2	2.2	**J**
100-44-7	alpha-Chlorotoluene	ND	2.2	0.52	ND	0.42	0.10	
71-43-2	Benzene	**2.0**	2.2	0.33	**0.62**	0.68	0.10	**J**
75-27-4	Bromodichloromethane	ND	2.2	0.33	ND	0.32	0.050	
75-25-2	Bromoform	ND	2.2	0.48	ND	0.21	0.046	
74-83-9	Bromomethane	**0.74**	2.2	0.32	**0.19**	0.56	0.083	**J**
75-15-0	Carbon Disulfide	ND	22	0.70	ND	7.0	0.22	
56-23-5	Carbon Tetrachloride	ND	2.2	0.32	ND	0.35	0.051	
108-90-7	Chlorobenzene	ND	2.2	0.31	ND	0.47	0.067	
75-00-3	Chloroethane	ND	2.2	0.29	ND	0.82	0.11	
67-66-3	Chloroform	**1.6**	2.2	0.31	**0.33**	0.45	0.063	**J**
74-87-3	Chloromethane	**0.73**	2.2	0.37	**0.35**	1.1	0.18	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.2	0.33	ND	0.55	0.082	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.36	ND	0.48	0.080	
98-82-8	Cumene	ND	2.2	0.33	ND	0.44	0.068	
110-82-7	Cyclohexane	ND	4.4	0.65	ND	1.3	0.19	
124-48-1	Dibromochloromethane	ND	2.2	0.30	ND	0.26	0.036	
64-17-5	Ethanol	**7.7**	22	1.6	**4.1**	12	0.85	**J**
100-41-4	Ethyl Benzene	ND	2.2	0.33	ND	0.50	0.075	
75-69-4	Freon 11	**1,000**	22	3.5	**180**	3.9	0.63	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101128** ALS Sample ID: P2405139-021
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01269

Initial Pressure (psig): -2.49 Final Pressure (psig): 6.55

Container Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1,100**	22	3.3	**140**	2.8	0.43	**D**
76-14-2	Freon 114	ND	2.2	0.37	ND	0.31	0.052	
75-71-8	Freon 12	**2.3**	2.2	0.38	**0.47**	0.44	0.077	
306-83-2	Freon 123	ND	2.2	1.0	ND	0.35	0.17	**X**
75-43-4	Freon 21	ND	2.2	1.0	ND	0.52	0.25	**X**
142-82-5	Heptane	**0.90**	2.2	0.37	**0.22**	0.53	0.090	**J**
87-68-3	Hexachlorobutadiene	ND	2.2	0.48	ND	0.20	0.045	
110-54-3	Hexane	**1.7**	2.2	0.48	**0.48**	0.62	0.14	**J**
179601-23-1	m,p-Xylene	ND	4.4	0.61	ND	1.0	0.14	
1634-04-4	Methyl tert-butyl ether	ND	2.2	0.27	ND	0.60	0.076	
75-09-2	Methylene Chloride	ND	2.2	0.65	ND	0.63	0.19	
95-47-6	o-Xylene	ND	2.2	0.33	ND	0.50	0.077	
103-65-1	Propylbenzene	ND	2.2	0.33	ND	0.44	0.068	
100-42-5	Styrene	ND	2.2	0.37	ND	0.51	0.088	
127-18-4	Tetrachloroethene	**0.75**	2.2	0.30	**0.11**	0.32	0.044	**J**
109-99-9	Tetrahydrofuran	ND	2.2	0.29	ND	0.74	0.099	
108-88-3	Toluene	**2.5**	2.2	0.28	**0.67**	0.58	0.075	
156-60-5	trans-1,2-Dichloroethene	ND	2.2	0.32	ND	0.55	0.081	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.48	ND	0.48	0.11	
79-01-6	Trichloroethene	**0.68**	2.2	0.31	**0.13**	0.40	0.058	**J**
75-01-4	Vinyl Chloride	ND	2.2	0.25	ND	0.85	0.097	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101128** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-021

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS01269		

Initial Pressure (psig): -2.49 Final Pressure (psig): 6.55

Container Dilution Factor: 1.74

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101315** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-022

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01144

Initial Pressure (psig): -7.05 Final Pressure (psig): 6.21

Container Dilution Factor: 2.73

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	3.4	0.45	ND	0.63	0.083	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.4	0.51	ND	0.50	0.074	
79-00-5	1,1,2-Trichloroethane	ND	3.4	0.37	ND	0.63	0.068	
75-34-3	1,1-Dichloroethane	ND	3.4	0.53	ND	0.84	0.13	
75-35-4	1,1-Dichloroethene	ND	3.4	0.51	ND	0.86	0.13	
120-82-1	1,2,4-Trichlorobenzene	ND	3.4	0.89	ND	0.46	0.12	
95-63-6	1,2,4-Trimethylbenzene	**1.3**	3.4	0.51	**0.27**	0.69	0.10	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	3.4	0.42	ND	0.44	0.055	
95-50-1	1,2-Dichlorobenzene	ND	3.4	0.54	ND	0.57	0.090	
107-06-2	1,2-Dichloroethane	**0.88**	3.4	0.40	**0.22**	0.84	0.10	**J**
78-87-5	1,2-Dichloropropane	**4.8**	3.4	0.45	**1.0**	0.74	0.098	
108-67-8	1,3,5-Trimethylbenzene	ND	3.4	0.53	ND	0.69	0.11	
106-99-0	1,3-Butadiene	ND	3.4	0.60	ND	1.5	0.27	
541-73-1	1,3-Dichlorobenzene	ND	3.4	0.55	ND	0.57	0.091	
106-46-7	1,4-Dichlorobenzene	ND	3.4	0.56	ND	0.57	0.093	
123-91-1	1,4-Dioxane	ND	3.4	0.43	ND	0.95	0.12	
540-84-1	2,2,4-Trimethylpentane	**1.6**	3.4	0.55	**0.34**	0.73	0.12	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**7.3**	34	0.75	**2.5**	12	0.25	**J**
591-78-6	2-Hexanone	ND	3.4	0.45	ND	0.83	0.11	
67-63-0	2-Propanol	**56**	6.8	1.5	**23**	2.8	0.61	
107-05-1	3-Chloropropene	ND	3.4	0.49	ND	1.1	0.16	
622-96-8	4-Ethyltoluene	ND	3.4	0.58	ND	0.69	0.12	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101315** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-022

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01144

Initial Pressure (psig): -7.05 Final Pressure (psig): 6.21

Container Dilution Factor: 2.73

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**0.98**	3.4	0.50	**0.24**	0.83	0.12	**J**
67-64-1	Acetone	**49**	34	8.2	**21**	14	3.4	
100-44-7	alpha-Chlorotoluene	ND	3.4	0.82	ND	0.66	0.16	
71-43-2	Benzene	**11**	3.4	0.53	**3.3**	1.1	0.16	
75-27-4	Bromodichloromethane	ND	3.4	0.53	ND	0.51	0.078	
75-25-2	Bromoform	ND	3.4	0.75	ND	0.33	0.073	
74-83-9	Bromomethane	ND	3.4	0.51	ND	0.88	0.13	
75-15-0	Carbon Disulfide	ND	34	1.1	ND	11	0.35	
56-23-5	Carbon Tetrachloride	ND	3.4	0.51	ND	0.54	0.080	
108-90-7	Chlorobenzene	ND	3.4	0.48	ND	0.74	0.11	
75-00-3	Chloroethane	ND	3.4	0.45	ND	1.3	0.17	
67-66-3	Chloroform	ND	3.4	0.48	ND	0.70	0.099	
74-87-3	Chloromethane	**0.68**	3.4	0.59	**0.33**	1.7	0.28	**J**
156-59-2	cis-1,2-Dichloroethene	ND	3.4	0.51	ND	0.86	0.13	
10061-01-5	cis-1,3-Dichloropropene	ND	3.4	0.57	ND	0.75	0.12	
98-82-8	Cumene	ND	3.4	0.53	ND	0.69	0.11	
110-82-7	Cyclohexane	**2.8**	6.8	1.0	**0.82**	2.0	0.30	**J**
124-48-1	Dibromochloromethane	ND	3.4	0.48	ND	0.40	0.056	
64-17-5	Ethanol	**100**	34	2.5	**54**	18	1.3	
100-41-4	Ethyl Benzene	**2.9**	3.4	0.51	**0.66**	0.79	0.12	**J**
75-69-4	Freon 11	**6.4**	3.4	0.55	**1.1**	0.61	0.098	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101315** ALS Sample ID: P2405139-022
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01144

Initial Pressure (psig): -7.05 Final Pressure (psig): 6.21

Container Dilution Factor: 2.73

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**7.8**	3.4	0.52	**1.0**	0.45	0.068	
76-14-2	Freon 114	ND	3.4	0.57	ND	0.49	0.082	
75-71-8	Freon 12	**2.3**	3.4	0.59	**0.47**	0.69	0.12	**J**
306-83-2	Freon 123	ND	3.4	1.6	ND	0.55	0.26	**X**
75-43-4	Freon 21	ND	3.4	1.6	ND	0.81	0.39	**X**
142-82-5	Heptane	**2.3**	3.4	0.58	**0.57**	0.83	0.14	**J**
87-68-3	Hexachlorobutadiene	ND	3.4	0.75	ND	0.32	0.070	
110-54-3	Hexane	**3.4**	3.4	0.75	**0.96**	0.97	0.21	**J**
179601-23-1	m,p-Xylene	**9.4**	6.8	0.96	**2.2**	1.6	0.22	
1634-04-4	Methyl tert-butyl ether	ND	3.4	0.43	ND	0.95	0.12	
75-09-2	Methylene Chloride	**2.7**	3.4	1.0	**0.78**	0.98	0.29	**J**
95-47-6	o-Xylene	**3.9**	3.4	0.53	**0.91**	0.79	0.12	
103-65-1	Propylbenzene	ND	3.4	0.53	ND	0.69	0.11	
100-42-5	Styrene	**2.6**	3.4	0.59	**0.62**	0.80	0.14	**J**
127-18-4	Tetrachloroethene	**3.0**	3.4	0.47	**0.45**	0.50	0.069	**J**
109-99-9	Tetrahydrofuran	**6.2**	3.4	0.46	**2.1**	1.2	0.16	
108-88-3	Toluene	**100**	3.4	0.44	**28**	0.91	0.12	
156-60-5	trans-1,2-Dichloroethene	ND	3.4	0.51	ND	0.86	0.13	
10061-02-6	trans-1,3-Dichloropropene	ND	3.4	0.75	ND	0.75	0.17	
79-01-6	Trichloroethene	ND	3.4	0.49	ND	0.64	0.091	
75-01-4	Vinyl Chloride	ND	3.4	0.39	ND	1.3	0.15	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101315** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-022

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01144		

Initial Pressure (psig): -7.05 Final Pressure (psig): 6.21

Container Dilution Factor: 2.73

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101316** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-023

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00752

Initial Pressure (psig): -1.94 Final Pressure (psig): 6.32

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.27	ND	0.38	0.050	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.38	0.041	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.080	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.52	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.54	ND	0.28	0.072	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.42	0.062	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.51	0.060	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.45	0.059	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.42	0.065	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.93	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.055	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.57	0.072	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.33	ND	0.44	0.071	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**3.6**	21	0.45	**1.2**	7.0	0.15	**J**
591-78-6	2-Hexanone	ND	2.1	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	**4.5**	4.1	0.91	**1.8**	1.7	0.37	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.66	0.095	
622-96-8	4-Ethyltoluene	ND	2.1	0.35	ND	0.42	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101316** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-023

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00752

Initial Pressure (psig): -1.94 Final Pressure (psig): 6.32

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.30	ND	0.50	0.074	
67-64-1	Acetone	**15**	21	5.0	**6.3**	8.7	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.1	0.50	ND	0.40	0.096	
71-43-2	Benzene	**0.87**	2.1	0.32	**0.27**	0.65	0.099	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.047	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.20	0.044	
74-83-9	Bromomethane	ND	2.1	0.31	ND	0.53	0.079	
75-15-0	Carbon Disulfide	ND	21	0.66	ND	6.6	0.21	
56-23-5	Carbon Tetrachloride	ND	2.1	0.31	ND	0.33	0.049	
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.45	0.064	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
67-66-3	Chloroform	ND	2.1	0.29	ND	0.42	0.060	
74-87-3	Chloromethane	**0.66**	2.1	0.35	**0.32**	1.0	0.17	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.078	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.1	0.32	ND	0.42	0.065	
110-82-7	Cyclohexane	ND	4.1	0.62	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.24	0.034	
64-17-5	Ethanol	**11**	21	1.5	**5.6**	11	0.81	**J**
100-41-4	Ethyl Benzene	ND	2.1	0.31	ND	0.48	0.071	
75-69-4	Freon 11	**1.3**	2.1	0.33	**0.23**	0.37	0.059	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101316** ALS Sample ID: P2405139-023
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00752

Initial Pressure (psig): -1.94 Final Pressure (psig): 6.32

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1.1**	2.1	0.31	**0.15**	0.27	0.041	**J**
76-14-2	Freon 114	ND	2.1	0.35	ND	0.30	0.050	
75-71-8	Freon 12	**2.4**	2.1	0.36	**0.49**	0.42	0.073	
306-83-2	Freon 123	ND	2.1	0.99	ND	0.33	0.16	**X**
75-43-4	Freon 21	ND	2.1	0.99	ND	0.49	0.24	**X**
142-82-5	Heptane	**0.86**	2.1	0.35	**0.21**	0.50	0.086	**J**
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.19	0.043	
110-54-3	Hexane	ND	2.1	0.45	ND	0.59	0.13	
179601-23-1	m,p-Xylene	**0.71**	4.1	0.58	**0.16**	0.95	0.13	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.57	0.072	
75-09-2	Methylene Chloride	ND	2.1	0.62	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.1	0.32	ND	0.48	0.073	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.42	0.065	
100-42-5	Styrene	ND	2.1	0.35	ND	0.48	0.083	
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.30	0.042	
109-99-9	Tetrahydrofuran	ND	2.1	0.28	ND	0.70	0.094	
108-88-3	Toluene	**2.1**	2.1	0.27	**0.55**	0.55	0.071	
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.077	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.45	0.10	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.81	0.092	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101316** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-023

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS00752		

Initial Pressure (psig): -1.94 Final Pressure (psig): 6.32

Container Dilution Factor: 1.65

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101325** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-024

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes:
Container ID: 1SC01370

Initial Pressure (psig): -2.05 Final Pressure (psig): 6.29

Container Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	28	3.7	ND	5.1	0.67	
79-34-5	1,1,2,2-Tetrachloroethane	ND	28	4.1	ND	4.0	0.60	
79-00-5	1,1,2-Trichloroethane	ND	28	3.0	ND	5.1	0.55	
75-34-3	1,1-Dichloroethane	ND	28	4.3	ND	6.8	1.1	
75-35-4	1,1-Dichloroethene	ND	28	4.1	ND	7.0	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	28	7.2	ND	3.7	0.97	
95-63-6	1,2,4-Trimethylbenzene	ND	28	4.1	ND	5.6	0.83	
106-93-4	1,2-Dibromoethane (EDB)	ND	28	3.4	ND	3.6	0.45	
95-50-1	1,2-Dichlorobenzene	ND	28	4.4	ND	4.6	0.73	
107-06-2	1,2-Dichloroethane	ND	28	3.3	ND	6.8	0.81	
78-87-5	1,2-Dichloropropane	ND	28	3.7	ND	6.0	0.79	
108-67-8	1,3,5-Trimethylbenzene	ND	28	4.3	ND	5.6	0.87	
106-99-0	1,3-Butadiene	ND	28	4.9	ND	13	2.2	
541-73-1	1,3-Dichlorobenzene	ND	28	4.4	ND	4.6	0.74	
106-46-7	1,4-Dichlorobenzene	ND	28	4.5	ND	4.6	0.75	
123-91-1	1,4-Dioxane	ND	28	3.5	ND	7.7	0.97	
540-84-1	2,2,4-Trimethylpentane	ND	28	4.4	ND	5.9	0.95	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	280	6.1	ND	94	2.1	
591-78-6	2-Hexanone	ND	28	3.7	ND	6.8	0.89	
67-63-0	2-Propanol	ND	55	12	ND	23	5.0	
107-05-1	3-Chloropropene	ND	28	4.0	ND	8.8	1.3	
622-96-8	4-Ethyltoluene	ND	28	4.7	ND	5.6	0.96	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101325** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-024

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes:
Container ID: 1SC01370

Initial Pressure (psig): -2.05 Final Pressure (psig): 6.29

Container Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	28	4.0	ND	6.8	0.99	
67-64-1	Acetone	ND	280	66	ND	120	28	
100-44-7	alpha-Chlorotoluene	ND	28	6.6	ND	5.3	1.3	
71-43-2	Benzene	ND	28	4.3	ND	8.7	1.3	
75-27-4	Bromodichloromethane	ND	28	4.3	ND	4.1	0.64	
75-25-2	Bromoform	ND	28	6.1	ND	2.7	0.59	
74-83-9	Bromomethane	ND	28	4.1	ND	7.1	1.1	
75-15-0	Carbon Disulfide	ND	280	8.9	ND	89	2.8	
56-23-5	Carbon Tetrachloride	ND	28	4.1	ND	4.4	0.65	
108-90-7	Chlorobenzene	ND	28	3.9	ND	6.0	0.85	
75-00-3	Chloroethane	ND	28	3.7	ND	10	1.4	
67-66-3	Chloroform	ND	28	3.9	ND	5.7	0.80	
74-87-3	Chloromethane	ND	28	4.8	ND	13	2.3	
156-59-2	cis-1,2-Dichloroethene	ND	28	4.2	ND	7.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	ND	28	4.6	ND	6.1	1.0	
98-82-8	Cumene	ND	28	4.3	ND	5.6	0.87	
110-82-7	Cyclohexane	ND	55	8.3	ND	16	2.4	
124-48-1	Dibromochloromethane	ND	28	3.9	ND	3.2	0.45	
64-17-5	Ethanol	ND	280	20	ND	150	11	
100-41-4	Ethyl Benzene	ND	28	4.2	ND	6.4	0.96	
75-69-4	Freon 11	**4,900**	28	4.5	**880**	4.9	0.80	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101325** ALS Sample ID: P2405139-024
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes:
Container ID: 1SC01370

Initial Pressure (psig): -2.05 Final Pressure (psig): 6.29

Container Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1,700**	28	4.2	**230**	3.6	0.55	
76-14-2	Freon 114	ND	28	4.6	ND	4.0	0.67	
75-71-8	Freon 12	ND	28	4.8	ND	5.6	0.97	
306-83-2	Freon 123	ND	28	13	ND	4.4	2.1	**X**
75-43-4	Freon 21	ND	28	13	ND	6.6	3.2	**X**
142-82-5	Heptane	ND	28	4.7	ND	6.8	1.1	
87-68-3	Hexachlorobutadiene	ND	28	6.1	ND	2.6	0.57	
110-54-3	Hexane	ND	28	6.1	ND	7.9	1.7	
179601-23-1	m,p-Xylene	**7.7**	55	7.7	**1.8**	13	1.8	**J**
1634-04-4	Methyl tert-butyl ether	ND	28	3.5	ND	7.7	0.97	
75-09-2	Methylene Chloride	ND	28	8.3	ND	8.0	2.4	
95-47-6	o-Xylene	**8.0**	28	4.3	**1.8**	6.4	0.98	**J**
103-65-1	Propylbenzene	ND	28	4.3	ND	5.6	0.87	
100-42-5	Styrene	ND	28	4.8	ND	6.5	1.1	
127-18-4	Tetrachloroethene	ND	28	3.8	ND	4.1	0.56	
109-99-9	Tetrahydrofuran	ND	28	3.7	ND	9.4	1.3	
108-88-3	Toluene	ND	28	3.6	ND	7.3	0.95	
156-60-5	trans-1,2-Dichloroethene	ND	28	4.1	ND	7.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	ND	28	6.1	ND	6.1	1.3	
79-01-6	Trichloroethene	ND	28	4.0	ND	5.2	0.74	
75-01-4	Vinyl Chloride	ND	28	3.2	ND	11	1.2	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101325** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-024

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.030 Liter(s)
Test Notes:			
Container ID:	1SC01370		

Initial Pressure (psig): -2.05 Final Pressure (psig): 6.29

Container Dilution Factor: 1.66

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101334** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-025

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes:
Container ID: 1SC00637

Initial Pressure (psig): -1.61 Final Pressure (psig): 6.15

Container Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	53	7.0	ND	9.7	1.3	
79-34-5	1,1,2,2-Tetrachloroethane	ND	53	7.8	ND	7.7	1.1	
79-00-5	1,1,2-Trichloroethane	ND	53	5.7	ND	9.7	1.0	
75-34-3	1,1-Dichloroethane	ND	53	8.3	ND	13	2.0	
75-35-4	1,1-Dichloroethene	ND	53	7.8	ND	13	2.0	
120-82-1	1,2,4-Trichlorobenzene	ND	53	14	ND	7.1	1.9	
95-63-6	1,2,4-Trimethylbenzene	ND	53	7.8	ND	11	1.6	
106-93-4	1,2-Dibromoethane (EDB)	ND	53	6.6	ND	6.9	0.86	
95-50-1	1,2-Dichlorobenzene	ND	53	8.4	ND	8.8	1.4	
107-06-2	1,2-Dichloroethane	ND	53	6.3	ND	13	1.5	
78-87-5	1,2-Dichloropropane	ND	53	7.0	ND	11	1.5	
108-67-8	1,3,5-Trimethylbenzene	ND	53	8.2	ND	11	1.7	
106-99-0	1,3-Butadiene	ND	53	9.3	ND	24	4.2	
541-73-1	1,3-Dichlorobenzene	ND	53	8.5	ND	8.8	1.4	
106-46-7	1,4-Dichlorobenzene	ND	53	8.7	ND	8.8	1.4	
123-91-1	1,4-Dioxane	ND	53	6.7	ND	15	1.9	
540-84-1	2,2,4-Trimethylpentane	ND	53	8.5	ND	11	1.8	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	530	12	ND	180	4.0	
591-78-6	2-Hexanone	ND	53	7.0	ND	13	1.7	
67-63-0	2-Propanol	ND	110	23	ND	43	9.5	
107-05-1	3-Chloropropene	ND	53	7.6	ND	17	2.4	
622-96-8	4-Ethyltoluene	ND	53	9.0	ND	11	1.8	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101334** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-025

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes:
Container ID: 1SC00637

Initial Pressure (psig): -1.61 Final Pressure (psig): 6.15

Container Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	53	7.7	ND	13	1.9	
67-64-1	Acetone	ND	530	130	ND	220	54	
100-44-7	alpha-Chlorotoluene	ND	53	13	ND	10	2.5	
71-43-2	Benzene	ND	53	8.2	ND	17	2.6	
75-27-4	Bromodichloromethane	ND	53	8.2	ND	7.9	1.2	
75-25-2	Bromoform	ND	53	12	ND	5.1	1.1	
74-83-9	Bromomethane	ND	53	7.8	ND	14	2.0	
75-15-0	Carbon Disulfide	ND	530	17	ND	170	5.4	
56-23-5	Carbon Tetrachloride	ND	53	7.8	ND	8.4	1.2	
108-90-7	Chlorobenzene	ND	53	7.5	ND	12	1.6	
75-00-3	Chloroethane	ND	53	7.0	ND	20	2.7	
67-66-3	Chloroform	ND	53	7.5	ND	11	1.5	
74-87-3	Chloromethane	ND	53	9.1	ND	26	4.4	
156-59-2	cis-1,2-Dichloroethene	ND	53	8.0	ND	13	2.0	
10061-01-5	cis-1,3-Dichloropropene	ND	53	8.8	ND	12	1.9	
98-82-8	Cumene	ND	53	8.2	ND	11	1.7	
110-82-7	Cyclohexane	ND	110	16	ND	31	4.6	
124-48-1	Dibromochloromethane	ND	53	7.4	ND	6.2	0.87	
64-17-5	Ethanol	ND	530	39	ND	280	21	
100-41-4	Ethyl Benzene	ND	53	8.0	ND	12	1.8	
75-69-4	Freon 11	**10,000**	53	8.6	**1,800**	9.4	1.5	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101334** ALS Sample ID: P2405139-025
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes:
Container ID: 1SC00637

Initial Pressure (psig): -1.61 Final Pressure (psig): 6.15

Container Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**4,800**	53	8.1	**630**	6.9	1.1	
76-14-2	Freon 114	ND	53	8.9	ND	7.6	1.3	
75-71-8	Freon 12	ND	53	9.2	ND	11	1.9	
306-83-2	Freon 123	ND	53	25	ND	8.5	4.1	**X**
75-43-4	Freon 21	ND	53	25	ND	13	6.0	**X**
142-82-5	Heptane	ND	53	9.0	ND	13	2.2	
87-68-3	Hexachlorobutadiene	ND	53	12	ND	5.0	1.1	
110-54-3	Hexane	ND	53	12	ND	15	3.3	
179601-23-1	m,p-Xylene	ND	110	15	ND	24	3.4	
1634-04-4	Methyl tert-butyl ether	ND	53	6.7	ND	15	1.9	
75-09-2	Methylene Chloride	ND	53	16	ND	15	4.6	
95-47-6	o-Xylene	**8.6**	53	8.2	**2.0**	12	1.9	**J**
103-65-1	Propylbenzene	ND	53	8.2	ND	11	1.7	
100-42-5	Styrene	ND	53	9.1	ND	12	2.1	
127-18-4	Tetrachloroethene	ND	53	7.3	ND	7.8	1.1	
109-99-9	Tetrahydrofuran	ND	53	7.1	ND	18	2.4	
108-88-3	Toluene	ND	53	6.9	ND	14	1.8	
156-60-5	trans-1,2-Dichloroethene	ND	53	7.8	ND	13	2.0	
10061-02-6	trans-1,3-Dichloropropene	ND	53	12	ND	12	2.6	
79-01-6	Trichloroethene	ND	53	7.6	ND	9.9	1.4	
75-01-4	Vinyl Chloride	ND	53	6.0	ND	21	2.4	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101334** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-025

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.015 Liter(s)
Test Notes:			
Container ID:	1SC00637		

Initial Pressure (psig): -1.61 Final Pressure (psig): 6.15

Container Dilution Factor: 1.59

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101355** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-026

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00098

Initial Pressure (psig): -2.09 Final Pressure (psig): 6.80

Container Dilution Factor: 1.70

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.28	ND	0.39	0.051	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.31	0.046	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.23	ND	0.39	0.042	
75-34-3	1,1-Dichloroethane	ND	2.1	0.33	ND	0.53	0.082	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.54	0.079	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.55	ND	0.29	0.074	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.43	0.064	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.28	0.034	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.056	
107-06-2	1,2-Dichloroethane	ND	2.1	0.25	ND	0.53	0.062	
78-87-5	1,2-Dichloropropane	ND	2.1	0.28	ND	0.46	0.061	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.33	ND	0.43	0.067	
106-99-0	1,3-Butadiene	ND	2.1	0.37	ND	0.96	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.057	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.35	ND	0.35	0.058	
123-91-1	1,4-Dioxane	**0.69**	2.1	0.27	**0.19**	0.59	0.074	**J**
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.34	ND	0.46	0.073	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.7**	21	0.47	**0.59**	7.2	0.16	**J**
591-78-6	2-Hexanone	ND	2.1	0.28	ND	0.52	0.069	
67-63-0	2-Propanol	**8.9**	4.3	0.94	**3.6**	1.7	0.38	
107-05-1	3-Chloropropene	ND	2.1	0.31	ND	0.68	0.098	
622-96-8	4-Ethyltoluene	ND	2.1	0.36	ND	0.43	0.074	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101355** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-026

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00098

Initial Pressure (psig): -2.09 Final Pressure (psig): 6.80

Container Dilution Factor: 1.70

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.31	ND	0.52	0.076	
67-64-1	Acetone	**20**	21	5.1	**8.5**	8.9	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.1	0.51	ND	0.41	0.099	
71-43-2	Benzene	**2.0**	2.1	0.33	**0.64**	0.67	0.10	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.33	ND	0.32	0.049	
75-25-2	Bromoform	ND	2.1	0.47	ND	0.21	0.045	
74-83-9	Bromomethane	ND	2.1	0.31	ND	0.55	0.081	
75-15-0	Carbon Disulfide	**3.1**	21	0.68	**0.98**	6.8	0.22	**J**
56-23-5	Carbon Tetrachloride	ND	2.1	0.31	ND	0.34	0.050	
108-90-7	Chlorobenzene	ND	2.1	0.30	ND	0.46	0.066	
75-00-3	Chloroethane	ND	2.1	0.28	ND	0.81	0.11	
67-66-3	Chloroform	**0.76**	2.1	0.30	**0.15**	0.44	0.062	**J**
74-87-3	Chloromethane	ND	2.1	0.37	ND	1.0	0.18	
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.32	ND	0.54	0.080	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.35	ND	0.47	0.078	
98-82-8	Cumene	ND	2.1	0.33	ND	0.43	0.067	
110-82-7	Cyclohexane	ND	4.3	0.64	ND	1.2	0.19	
124-48-1	Dibromochloromethane	ND	2.1	0.30	ND	0.25	0.035	
64-17-5	Ethanol	**35**	21	1.6	**18**	11	0.83	
100-41-4	Ethyl Benzene	ND	2.1	0.32	ND	0.49	0.073	
75-69-4	Freon 11	**480**	21	3.4	**85**	3.8	0.61	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101355** ALS Sample ID: P2405139-026
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00098

Initial Pressure (psig): -2.09 Final Pressure (psig): 6.80

Container Dilution Factor: 1.70

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**320**	2.1	0.32	**41**	0.28	0.042	
76-14-2	Freon 114	ND	2.1	0.36	ND	0.30	0.051	
75-71-8	Freon 12	**2.5**	2.1	0.37	**0.50**	0.43	0.075	
306-83-2	Freon 123	ND	2.1	1.0	ND	0.34	0.16	**X**
75-43-4	Freon 21	ND	2.1	1.0	ND	0.51	0.24	**X**
142-82-5	Heptane	ND	2.1	0.36	ND	0.52	0.088	
87-68-3	Hexachlorobutadiene	ND	2.1	0.47	ND	0.20	0.044	
110-54-3	Hexane	ND	2.1	0.47	ND	0.60	0.13	
179601-23-1	m,p-Xylene	**0.71**	4.3	0.60	**0.16**	0.98	0.14	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.27	ND	0.59	0.074	
75-09-2	Methylene Chloride	ND	2.1	0.64	ND	0.61	0.18	
95-47-6	o-Xylene	ND	2.1	0.33	ND	0.49	0.075	
103-65-1	Propylbenzene	ND	2.1	0.33	ND	0.43	0.067	
100-42-5	Styrene	ND	2.1	0.37	ND	0.50	0.086	
127-18-4	Tetrachloroethene	ND	2.1	0.29	ND	0.31	0.043	
109-99-9	Tetrahydrofuran	**0.96**	2.1	0.28	**0.33**	0.72	0.097	**J**
108-88-3	Toluene	**4.8**	2.1	0.28	**1.3**	0.56	0.073	
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.54	0.079	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.47	ND	0.47	0.10	
79-01-6	Trichloroethene	ND	2.1	0.31	ND	0.40	0.057	
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.83	0.095	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101355** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-026

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS00098		

Initial Pressure (psig): -2.09 Final Pressure (psig): 6.80

Container Dilution Factor: 1.70

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101403** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-027

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00504

Initial Pressure (psig): -2.28 Final Pressure (psig): 7.03

Container Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	8.8	1.2	ND	1.6	0.21	
79-34-5	1,1,2,2-Tetrachloroethane	ND	8.8	1.3	ND	1.3	0.19	
79-00-5	1,1,2-Trichloroethane	ND	8.8	0.95	ND	1.6	0.17	
75-34-3	1,1-Dichloroethane	ND	8.8	1.4	ND	2.2	0.34	
75-35-4	1,1-Dichloroethene	ND	8.8	1.3	ND	2.2	0.33	
120-82-1	1,2,4-Trichlorobenzene	ND	8.8	2.3	ND	1.2	0.31	
95-63-6	1,2,4-Trimethylbenzene	ND	8.8	1.3	ND	1.8	0.26	
106-93-4	1,2-Dibromoethane (EDB)	ND	8.8	1.1	ND	1.1	0.14	
95-50-1	1,2-Dichlorobenzene	ND	8.8	1.4	ND	1.5	0.23	
107-06-2	1,2-Dichloroethane	ND	8.8	1.0	ND	2.2	0.26	
78-87-5	1,2-Dichloropropane	ND	8.8	1.2	ND	1.9	0.25	
108-67-8	1,3,5-Trimethylbenzene	ND	8.8	1.3	ND	1.8	0.27	
106-99-0	1,3-Butadiene	ND	8.8	1.5	ND	4.0	0.70	
541-73-1	1,3-Dichlorobenzene	ND	8.8	1.4	ND	1.5	0.23	
106-46-7	1,4-Dichlorobenzene	ND	8.8	1.4	ND	1.5	0.24	
123-91-1	1,4-Dioxane	ND	8.8	1.1	ND	2.4	0.31	
540-84-1	2,2,4-Trimethylpentane	ND	8.8	1.4	ND	1.9	0.30	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	88	1.9	ND	30	0.65	
591-78-6	2-Hexanone	ND	8.8	1.2	ND	2.1	0.28	
67-63-0	2-Propanol	ND	18	3.9	ND	7.1	1.6	
107-05-1	3-Chloropropene	ND	8.8	1.3	ND	2.8	0.40	
622-96-8	4-Ethyltoluene	ND	8.8	1.5	ND	1.8	0.30	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101403** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-027

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00504

Initial Pressure (psig): -2.28 Final Pressure (psig): 7.03

Container Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	8.8	1.3	ND	2.1	0.31	
67-64-1	Acetone	ND	88	21	ND	37	8.8	
100-44-7	alpha-Chlorotoluene	ND	8.8	2.1	ND	1.7	0.41	
71-43-2	Benzene	ND	8.8	1.3	ND	2.7	0.42	
75-27-4	Bromodichloromethane	ND	8.8	1.3	ND	1.3	0.20	
75-25-2	Bromoform	ND	8.8	1.9	ND	0.85	0.19	
74-83-9	Bromomethane	ND	8.8	1.3	ND	2.3	0.33	
75-15-0	Carbon Disulfide	ND	88	2.8	ND	28	0.90	
56-23-5	Carbon Tetrachloride	ND	8.8	1.3	ND	1.4	0.21	
108-90-7	Chlorobenzene	ND	8.8	1.2	ND	1.9	0.27	
75-00-3	Chloroethane	ND	8.8	1.2	ND	3.3	0.44	
67-66-3	Chloroform	**4.7**	8.8	1.2	**0.96**	1.8	0.25	**J**
74-87-3	Chloromethane	ND	8.8	1.5	ND	4.2	0.73	
156-59-2	cis-1,2-Dichloroethene	ND	8.8	1.3	ND	2.2	0.33	
10061-01-5	cis-1,3-Dichloropropene	ND	8.8	1.5	ND	1.9	0.32	
98-82-8	Cumene	ND	8.8	1.3	ND	1.8	0.27	
110-82-7	Cyclohexane	ND	18	2.6	ND	5.1	0.76	
124-48-1	Dibromochloromethane	ND	8.8	1.2	ND	1.0	0.14	
64-17-5	Ethanol	ND	88	6.5	ND	46	3.4	
100-41-4	Ethyl Benzene	ND	8.8	1.3	ND	2.0	0.30	
75-69-4	Freon 11	**1,900**	22	3.5	**330**	3.9	0.63	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101403** ALS Sample ID: P2405139-027
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00504

Initial Pressure (psig): -2.28 Final Pressure (psig): 7.03

Container Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**2,100**	22	3.3	**280**	2.9	0.43	**D**
76-14-2	Freon 114	ND	8.8	1.5	ND	1.3	0.21	
75-71-8	Freon 12	**2.5**	8.8	1.5	**0.51**	1.8	0.31	**J**
306-83-2	Freon 123	ND	8.8	4.2	ND	1.4	0.67	**X**
75-43-4	Freon 21	ND	8.8	4.2	ND	2.1	1.0	**X**
142-82-5	Heptane	ND	8.8	1.5	ND	2.1	0.36	
87-68-3	Hexachlorobutadiene	ND	8.8	1.9	ND	0.82	0.18	
110-54-3	Hexane	ND	8.8	1.9	ND	2.5	0.55	
179601-23-1	m,p-Xylene	ND	18	2.5	ND	4.0	0.56	
1634-04-4	Methyl tert-butyl ether	ND	8.8	1.1	ND	2.4	0.31	
75-09-2	Methylene Chloride	ND	8.8	2.6	ND	2.5	0.76	
95-47-6	o-Xylene	ND	8.8	1.3	ND	2.0	0.31	
103-65-1	Propylbenzene	ND	8.8	1.3	ND	1.8	0.27	
100-42-5	Styrene	ND	8.8	1.5	ND	2.1	0.35	
127-18-4	Tetrachloroethene	ND	8.8	1.2	ND	1.3	0.18	
109-99-9	Tetrahydrofuran	ND	8.8	1.2	ND	3.0	0.40	
108-88-3	Toluene	ND	8.8	1.1	ND	2.3	0.30	
156-60-5	trans-1,2-Dichloroethene	ND	8.8	1.3	ND	2.2	0.33	
10061-02-6	trans-1,3-Dichloropropene	ND	8.8	1.9	ND	1.9	0.42	
79-01-6	Trichloroethene	ND	8.8	1.3	ND	1.6	0.23	
75-01-4	Vinyl Chloride	ND	8.8	1.0	ND	3.4	0.39	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101403** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-027

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.10 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS00504		

Initial Pressure (psig): -2.28 Final Pressure (psig): 7.03

Container Dilution Factor: 1.75

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101404** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-028

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01237

Initial Pressure (psig): -1.82 Final Pressure (psig): 6.28

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.32	ND	0.50	0.079	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.53	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.064	
106-99-0	1,3-Butadiene	ND	2.0	0.36	ND	0.92	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.0	0.26	ND	0.57	0.071	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.33	ND	0.44	0.070	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	20	0.45	ND	6.9	0.15	
591-78-6	2-Hexanone	ND	2.0	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	ND	4.1	0.90	ND	1.7	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.65	0.094	
622-96-8	4-Ethyltoluene	ND	2.0	0.35	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101404** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-028

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01237

Initial Pressure (psig): -1.82 Final Pressure (psig): 6.28

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.30	ND	0.50	0.073	
67-64-1	Acetone	ND	20	4.9	ND	8.6	2.1	
100-44-7	alpha-Chlorotoluene	ND	2.0	0.49	ND	0.39	0.094	
71-43-2	Benzene	ND	2.0	0.31	ND	0.64	0.098	
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.047	
75-25-2	Bromoform	ND	2.0	0.45	ND	0.20	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.078	
75-15-0	Carbon Disulfide	ND	20	0.65	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	**0.46**	2.0	0.30	**0.073**	0.32	0.048	**J**
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.063	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.77	0.10	
67-66-3	Chloroform	ND	2.0	0.29	ND	0.42	0.059	
74-87-3	Chloromethane	**0.55**	2.0	0.35	**0.26**	0.99	0.17	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.31	ND	0.51	0.077	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.064	
110-82-7	Cyclohexane	ND	4.1	0.61	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.29	ND	0.24	0.033	
64-17-5	Ethanol	ND	20	1.5	ND	11	0.80	
100-41-4	Ethyl Benzene	ND	2.0	0.31	ND	0.47	0.070	
75-69-4	Freon 11	**1.3**	2.0	0.33	**0.23**	0.36	0.059	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101404** ALS Sample ID: P2405139-028
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01237

Initial Pressure (psig): -1.82 Final Pressure (psig): 6.28

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**0.68**	2.0	0.31	**0.089**	0.27	0.040	**J**
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.4**	2.0	0.35	**0.49**	0.41	0.072	
306-83-2	Freon 123	ND	2.0	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	ND	2.0	0.98	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.35	ND	0.50	0.085	
87-68-3	Hexachlorobutadiene	ND	2.0	0.45	ND	0.19	0.042	
110-54-3	Hexane	ND	2.0	0.45	ND	0.58	0.13	
179601-23-1	m,p-Xylene	ND	4.1	0.57	ND	0.94	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.26	ND	0.57	0.071	
75-09-2	Methylene Chloride	ND	2.0	0.61	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.47	0.072	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.064	
100-42-5	Styrene	ND	2.0	0.35	ND	0.48	0.082	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.69	0.093	
108-88-3	Toluene	ND	2.0	0.26	ND	0.54	0.070	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101404** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-028

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SC01237		

Initial Pressure (psig): -1.82 Final Pressure (psig): 6.28

Container Dilution Factor: 1.63

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101412** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-029

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0060 Liter(s)
Test Notes:
Container ID: 1SS01361

Initial Pressure (psig): -2.02 Final Pressure (psig): 6.63

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	140	18	ND	26	3.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	140	21	ND	20	3.0	
79-00-5	1,1,2-Trichloroethane	ND	140	15	ND	26	2.8	
75-34-3	1,1-Dichloroethane	ND	140	22	ND	35	5.4	
75-35-4	1,1-Dichloroethene	ND	140	21	ND	35	5.2	
120-82-1	1,2,4-Trichlorobenzene	ND	140	36	ND	19	4.9	
95-63-6	1,2,4-Trimethylbenzene	ND	140	21	ND	28	4.2	
106-93-4	1,2-Dibromoethane (EDB)	ND	140	17	ND	18	2.3	
95-50-1	1,2-Dichlorobenzene	ND	140	22	ND	23	3.7	
107-06-2	1,2-Dichloroethane	ND	140	17	ND	35	4.1	
78-87-5	1,2-Dichloropropane	ND	140	18	ND	30	4.0	
108-67-8	1,3,5-Trimethylbenzene	ND	140	22	ND	28	4.4	
106-99-0	1,3-Butadiene	ND	140	25	ND	63	11	
541-73-1	1,3-Dichlorobenzene	ND	140	22	ND	23	3.7	
106-46-7	1,4-Dichlorobenzene	ND	140	23	ND	23	3.8	
123-91-1	1,4-Dioxane	ND	140	18	ND	39	4.9	
540-84-1	2,2,4-Trimethylpentane	ND	140	22	ND	30	4.8	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	1,400	31	ND	470	10	
591-78-6	2-Hexanone	ND	140	18	ND	34	4.5	
67-63-0	2-Propanol	ND	280	62	ND	110	25	
107-05-1	3-Chloropropene	ND	140	20	ND	45	6.4	
622-96-8	4-Ethyltoluene	ND	140	24	ND	28	4.8	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412101412** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-029

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0060 Liter(s)
Test Notes:
Container ID: 1SS01361

Initial Pressure (psig): -2.02 Final Pressure (psig): 6.63

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	140	20	ND	34	5.0	
67-64-1	Acetone	ND	1,400	340	ND	590	140	
100-44-7	alpha-Chlorotoluene	ND	140	34	ND	27	6.5	
71-43-2	Benzene	ND	140	22	ND	44	6.8	
75-27-4	Bromodichloromethane	ND	140	22	ND	21	3.2	
75-25-2	Bromoform	ND	140	31	ND	14	3.0	
74-83-9	Bromomethane	ND	140	21	ND	36	5.3	
75-15-0	Carbon Disulfide	ND	1,400	45	ND	450	14	
56-23-5	Carbon Tetrachloride	ND	140	21	ND	22	3.3	
108-90-7	Chlorobenzene	ND	140	20	ND	30	4.3	
75-00-3	Chloroethane	ND	140	18	ND	53	7.0	
67-66-3	Chloroform	ND	140	20	ND	29	4.1	
74-87-3	Chloromethane	ND	140	24	ND	68	12	
156-59-2	cis-1,2-Dichloroethene	ND	140	21	ND	35	5.3	
10061-01-5	cis-1,3-Dichloropropene	ND	140	23	ND	31	5.1	
98-82-8	Cumene	ND	140	22	ND	28	4.4	
110-82-7	Cyclohexane	ND	280	42	ND	81	12	
124-48-1	Dibromochloromethane	ND	140	20	ND	16	2.3	
64-17-5	Ethanol	**270**	1,400	100	**150**	740	55	**J**
100-41-4	Ethyl Benzene	ND	140	21	ND	32	4.8	
75-69-4	Freon 11	**15,000**	140	23	**2,700**	25	4.0	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412101412** ALS Sample ID: P2405139-029
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/10/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0060 Liter(s)
Test Notes:
Container ID: 1SS01361

Initial Pressure (psig): -2.02 Final Pressure (psig): 6.63

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**20,000**	140	21	**2,600**	18	2.8	
76-14-2	Freon 114	ND	140	24	ND	20	3.4	
75-71-8	Freon 12	ND	140	24	ND	28	4.9	
306-83-2	Freon 123	ND	140	67	ND	22	11	**X**
75-43-4	Freon 21	ND	140	67	ND	33	16	**X**
142-82-5	Heptane	ND	140	24	ND	34	5.8	
87-68-3	Hexachlorobutadiene	ND	140	31	ND	13	2.9	
110-54-3	Hexane	ND	140	31	ND	40	8.7	
179601-23-1	m,p-Xylene	ND	280	39	ND	64	9.0	
1634-04-4	Methyl tert-butyl ether	ND	140	18	ND	39	4.9	
75-09-2	Methylene Chloride	ND	140	42	ND	40	12	
95-47-6	o-Xylene	ND	140	22	ND	32	5.0	
103-65-1	Propylbenzene	ND	140	22	ND	28	4.4	
100-42-5	Styrene	ND	140	24	ND	33	5.7	
127-18-4	Tetrachloroethene	**64**	140	19	**9.5**	21	2.9	**J**
109-99-9	Tetrahydrofuran	ND	140	19	ND	47	6.4	
108-88-3	Toluene	ND	140	18	ND	37	4.8	
156-60-5	trans-1,2-Dichloroethene	ND	140	21	ND	35	5.2	
10061-02-6	trans-1,3-Dichloropropene	ND	140	31	ND	31	6.8	
79-01-6	Trichloroethene	**26**	140	20	**4.8**	26	3.8	**J**
75-01-4	Vinyl Chloride	ND	140	16	ND	55	6.2	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412101412** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-029

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/10/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.0060 Liter(s)
Test Notes:			
Container ID:	1SS01361		

Initial Pressure (psig): -2.02 Final Pressure (psig): 6.63

Container Dilution Factor: 1.68

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110900** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-030

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01690

Initial Pressure (psig): 6.48 Final Pressure (psig): 6.48

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	1.3	0.17	ND	0.23	0.030	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.3	0.19	ND	0.18	0.027	
79-00-5	1,1,2-Trichloroethane	ND	1.3	0.14	ND	0.23	0.025	
75-34-3	1,1-Dichloroethane	ND	1.3	0.20	ND	0.31	0.048	
75-35-4	1,1-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
120-82-1	1,2,4-Trichlorobenzene	ND	1.3	0.33	ND	0.17	0.044	
95-63-6	1,2,4-Trimethylbenzene	ND	1.3	0.19	ND	0.25	0.038	
106-93-4	1,2-Dibromoethane (EDB)	ND	1.3	0.16	ND	0.16	0.020	
95-50-1	1,2-Dichlorobenzene	ND	1.3	0.20	ND	0.21	0.033	
107-06-2	1,2-Dichloroethane	ND	1.3	0.15	ND	0.31	0.036	
78-87-5	1,2-Dichloropropane	ND	1.3	0.17	ND	0.27	0.036	
108-67-8	1,3,5-Trimethylbenzene	ND	1.3	0.19	ND	0.25	0.039	
106-99-0	1,3-Butadiene	ND	1.3	0.22	ND	0.57	0.099	
541-73-1	1,3-Dichlorobenzene	ND	1.3	0.20	ND	0.21	0.033	
106-46-7	1,4-Dichlorobenzene	ND	1.3	0.21	ND	0.21	0.034	
123-91-1	1,4-Dioxane	ND	1.3	0.16	ND	0.35	0.044	
540-84-1	2,2,4-Trimethylpentane	ND	1.3	0.20	ND	0.27	0.043	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	13	0.28	ND	4.2	0.093	
591-78-6	2-Hexanone	ND	1.3	0.17	ND	0.31	0.040	
67-63-0	2-Propanol	ND	2.5	0.55	ND	1.0	0.22	
107-05-1	3-Chloropropene	ND	1.3	0.18	ND	0.40	0.058	
622-96-8	4-Ethyltoluene	ND	1.3	0.21	ND	0.25	0.043	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110900** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-030

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01690

Initial Pressure (psig): 6.48 Final Pressure (psig): 6.48

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	1.3	0.18	ND	0.31	0.045	
67-64-1	Acetone	ND	13	3.0	ND	5.3	1.3	
100-44-7	alpha-Chlorotoluene	ND	1.3	0.30	ND	0.24	0.058	
71-43-2	Benzene	ND	1.3	0.19	ND	0.39	0.060	
75-27-4	Bromodichloromethane	ND	1.3	0.19	ND	0.19	0.029	
75-25-2	Bromoform	ND	1.3	0.28	ND	0.12	0.027	
74-83-9	Bromomethane	ND	1.3	0.19	ND	0.32	0.048	
75-15-0	Carbon Disulfide	ND	13	0.40	ND	4.0	0.13	
56-23-5	Carbon Tetrachloride	ND	1.3	0.19	ND	0.20	0.029	
108-90-7	Chlorobenzene	ND	1.3	0.18	ND	0.27	0.039	
75-00-3	Chloroethane	ND	1.3	0.17	ND	0.47	0.063	
67-66-3	Chloroform	ND	1.3	0.18	ND	0.26	0.036	
74-87-3	Chloromethane	ND	1.3	0.22	ND	0.61	0.10	
156-59-2	cis-1,2-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
10061-01-5	cis-1,3-Dichloropropene	ND	1.3	0.21	ND	0.28	0.046	
98-82-8	Cumene	ND	1.3	0.19	ND	0.25	0.039	
110-82-7	Cyclohexane	ND	2.5	0.38	ND	0.73	0.11	
124-48-1	Dibromochloromethane	ND	1.3	0.18	ND	0.15	0.021	
64-17-5	Ethanol	ND	13	0.93	ND	6.6	0.49	
100-41-4	Ethyl Benzene	ND	1.3	0.19	ND	0.29	0.043	
75-69-4	Freon 11	ND	1.3	0.20	ND	0.22	0.036	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110900** ALS Sample ID: P2405139-030
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01690

Initial Pressure (psig): 6.48 Final Pressure (psig): 6.48

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	1.3	0.19	ND	0.16	0.025	
76-14-2	Freon 114	ND	1.3	0.21	ND	0.18	0.030	
75-71-8	Freon 12	ND	1.3	0.22	ND	0.25	0.044	
306-83-2	Freon 123	ND	1.3	0.60	ND	0.20	0.096	**X**
75-43-4	Freon 21	ND	1.3	0.60	ND	0.30	0.14	**X**
142-82-5	Heptane	ND	1.3	0.21	ND	0.31	0.052	
87-68-3	Hexachlorobutadiene	ND	1.3	0.28	ND	0.12	0.026	
110-54-3	Hexane	ND	1.3	0.28	ND	0.35	0.078	
179601-23-1	m,p-Xylene	ND	2.5	0.35	ND	0.58	0.081	
1634-04-4	Methyl tert-butyl ether	ND	1.3	0.16	ND	0.35	0.044	
75-09-2	Methylene Chloride	ND	1.3	0.38	ND	0.36	0.11	
95-47-6	o-Xylene	ND	1.3	0.19	ND	0.29	0.044	
103-65-1	Propylbenzene	ND	1.3	0.19	ND	0.25	0.039	
100-42-5	Styrene	ND	1.3	0.22	ND	0.29	0.051	
127-18-4	Tetrachloroethene	ND	1.3	0.17	ND	0.18	0.025	
109-99-9	Tetrahydrofuran	ND	1.3	0.17	ND	0.42	0.057	
108-88-3	Toluene	ND	1.3	0.16	ND	0.33	0.043	
156-60-5	trans-1,2-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
10061-02-6	trans-1,3-Dichloropropene	ND	1.3	0.28	ND	0.28	0.061	
79-01-6	Trichloroethene	ND	1.3	0.18	ND	0.23	0.034	
75-01-4	Vinyl Chloride	ND	1.3	0.14	ND	0.49	0.056	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110900** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-030

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS01690		

Initial Pressure (psig): 6.48 Final Pressure (psig): 6.48

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110901** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-031

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00514

Initial Pressure (psig): 0.23 Final Pressure (psig): 6.50
Initial Pressure 2 (psig): -0.30 Final Pressure 2 (psig): 5.28
Container Dilution Factor: 1.97

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.33	ND	0.45	0.060	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.5	0.36	ND	0.36	0.053	
79-00-5	1,1,2-Trichloroethane	ND	2.5	0.27	ND	0.45	0.049	
75-34-3	1,1-Dichloroethane	ND	2.5	0.38	ND	0.61	0.095	
75-35-4	1,1-Dichloroethene	ND	2.5	0.36	ND	0.62	0.092	
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.64	ND	0.33	0.086	
95-63-6	1,2,4-Trimethylbenzene	**0.53**	2.5	0.36	**0.11**	0.50	0.074	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	2.5	0.31	ND	0.32	0.040	
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.39	ND	0.41	0.065	
107-06-2	1,2-Dichloroethane	**0.30**	2.5	0.29	**0.073**	0.61	0.072	**J**
78-87-5	1,2-Dichloropropane	**1.0**	2.5	0.33	**0.22**	0.53	0.070	**J**
108-67-8	1,3,5-Trimethylbenzene	ND	2.5	0.38	ND	0.50	0.077	
106-99-0	1,3-Butadiene	ND	2.5	0.43	ND	1.1	0.20	
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.39	ND	0.41	0.066	
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.40	ND	0.41	0.067	
123-91-1	1,4-Dioxane	ND	2.5	0.31	ND	0.68	0.086	
540-84-1	2,2,4-Trimethylpentane	**0.68**	2.5	0.39	**0.15**	0.53	0.084	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**2.1**	25	0.54	**0.70**	8.4	0.18	**J**
591-78-6	2-Hexanone	ND	2.5	0.33	ND	0.60	0.079	
67-63-0	2-Propanol	**18**	4.9	1.1	**7.4**	2.0	0.44	
107-05-1	3-Chloropropene	ND	2.5	0.35	ND	0.79	0.11	
622-96-8	4-Ethyltoluene	ND	2.5	0.42	ND	0.50	0.085	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110901** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-031

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00514

Initial Pressure (psig): 0.23 Final Pressure (psig): 6.50
Initial Pressure 2 (psig): -0.30 Final Pressure 2 (psig): 5.28

Container Dilution Factor: 1.97

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**1.3**	2.5	0.36	**0.32**	0.60	0.088	**J**
67-64-1	Acetone	**20**	25	5.9	**8.3**	10	2.5	**J**
100-44-7	alpha-Chlorotoluene	ND	2.5	0.59	ND	0.48	0.11	
71-43-2	Benzene	**1.8**	2.5	0.38	**0.57**	0.77	0.12	**J**
75-27-4	Bromodichloromethane	ND	2.5	0.38	ND	0.37	0.057	
75-25-2	Bromoform	ND	2.5	0.54	ND	0.24	0.052	
74-83-9	Bromomethane	ND	2.5	0.36	ND	0.63	0.094	
75-15-0	Carbon Disulfide	ND	25	0.79	ND	7.9	0.25	
56-23-5	Carbon Tetrachloride	**0.65**	2.5	0.36	**0.10**	0.39	0.058	**J**
108-90-7	Chlorobenzene	ND	2.5	0.35	ND	0.53	0.076	
75-00-3	Chloroethane	ND	2.5	0.33	ND	0.93	0.12	
67-66-3	Chloroform	ND	2.5	0.35	ND	0.50	0.072	
74-87-3	Chloromethane	**1.0**	2.5	0.42	**0.49**	1.2	0.21	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.37	ND	0.62	0.093	
10061-01-5	cis-1,3-Dichloropropene	ND	2.5	0.41	ND	0.54	0.090	
98-82-8	Cumene	ND	2.5	0.38	ND	0.50	0.077	
110-82-7	Cyclohexane	**1.8**	4.9	0.74	**0.53**	1.4	0.21	**J**
124-48-1	Dibromochloromethane	ND	2.5	0.34	ND	0.29	0.040	
64-17-5	Ethanol	**42**	25	1.8	**22**	13	0.97	
100-41-4	Ethyl Benzene	**1.2**	2.5	0.37	**0.27**	0.57	0.085	**J**
75-69-4	Freon 11	**4.9**	2.5	0.40	**0.88**	0.44	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110901** ALS Sample ID: P2405139-031
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00514

Initial Pressure (psig): 0.23 Final Pressure (psig): 6.50
Initial Pressure 2 (psig): -0.30 Final Pressure 2 (psig): 5.28

Container Dilution Factor: 1.97

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**6.7**	2.5	0.37	**0.87**	0.32	0.049	
76-14-2	Freon 114	ND	2.5	0.41	ND	0.35	0.059	
75-71-8	Freon 12	**3.8**	2.5	0.43	**0.77**	0.50	0.087	
306-83-2	Freon 123	ND	2.5	1.2	ND	0.39	0.19	**X**
75-43-4	Freon 21	ND	2.5	1.2	ND	0.59	0.28	**X**
142-82-5	Heptane	**0.96**	2.5	0.42	**0.23**	0.60	0.10	**J**
87-68-3	Hexachlorobutadiene	ND	2.5	0.54	ND	0.23	0.051	
110-54-3	Hexane	**1.9**	2.5	0.54	**0.54**	0.70	0.15	**J**
179601-23-1	m,p-Xylene	**3.9**	4.9	0.69	**0.89**	1.1	0.16	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.5	0.31	ND	0.68	0.086	
75-09-2	Methylene Chloride	**13**	2.5	0.74	**3.6**	0.71	0.21	
95-47-6	o-Xylene	**1.8**	2.5	0.38	**0.40**	0.57	0.087	**J**
103-65-1	Propylbenzene	ND	2.5	0.38	ND	0.50	0.077	
100-42-5	Styrene	**1.5**	2.5	0.42	**0.35**	0.58	0.10	**J**
127-18-4	Tetrachloroethene	**0.68**	2.5	0.34	**0.10**	0.36	0.050	**J**
109-99-9	Tetrahydrofuran	**0.84**	2.5	0.33	**0.28**	0.84	0.11	**J**
108-88-3	Toluene	**21**	2.5	0.32	**5.5**	0.65	0.085	
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.36	ND	0.62	0.092	
10061-02-6	trans-1,3-Dichloropropene	ND	2.5	0.54	ND	0.54	0.12	
79-01-6	Trichloroethene	ND	2.5	0.35	ND	0.46	0.066	
75-01-4	Vinyl Chloride	ND	2.5	0.28	ND	0.96	0.11	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110901** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-031

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS00514		

Initial Pressure (psig):	0.23	Final Pressure (psig):	6.50
Initial Pressure 2 (psig):	-0.30	Final Pressure 2 (psig):	5.28

Container Dilution Factor: 1.97

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110908** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-032

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01608

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.58

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.32	ND	0.50	0.079	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.53	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.064	
106-99-0	1,3-Butadiene	ND	2.0	0.36	ND	0.92	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.0	0.26	ND	0.57	0.071	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.33	ND	0.44	0.070	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.87**	20	0.45	**0.29**	6.9	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	ND	4.1	0.90	ND	1.7	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.65	0.094	
622-96-8	4-Ethyltoluene	ND	2.0	0.35	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110908** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-032

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01608

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.58

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.30	ND	0.50	0.073	
67-64-1	Acetone	**6.4**	20	4.9	**2.7**	8.6	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.49	ND	0.39	0.094	
71-43-2	Benzene	ND	2.0	0.31	ND	0.64	0.098	
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.047	
75-25-2	Bromoform	ND	2.0	0.45	ND	0.20	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.078	
75-15-0	Carbon Disulfide	**0.78**	20	0.65	**0.25**	6.5	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.048	
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.063	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.77	0.10	
67-66-3	Chloroform	**4.2**	2.0	0.29	**0.87**	0.42	0.059	
74-87-3	Chloromethane	ND	2.0	0.35	ND	0.99	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.31	ND	0.51	0.077	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.064	
110-82-7	Cyclohexane	ND	4.1	0.61	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.29	ND	0.24	0.033	
64-17-5	Ethanol	**1.8**	20	1.5	**0.95**	11	0.80	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.31	ND	0.47	0.070	
75-69-4	Freon 11	**160**	2.0	0.33	**28**	0.36	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110908** ALS Sample ID: P2405139-032
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01608

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.58

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**130**	2.0	0.31	**17**	0.27	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.4**	2.0	0.35	**0.48**	0.41	0.072	
306-83-2	Freon 123	ND	2.0	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	ND	2.0	0.98	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.35	ND	0.50	0.085	
87-68-3	Hexachlorobutadiene	ND	2.0	0.45	ND	0.19	0.042	
110-54-3	Hexane	ND	2.0	0.45	ND	0.58	0.13	
179601-23-1	m,p-Xylene	ND	4.1	0.57	ND	0.94	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.26	ND	0.57	0.071	
75-09-2	Methylene Chloride	ND	2.0	0.61	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.47	0.072	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.064	
100-42-5	Styrene	ND	2.0	0.35	ND	0.48	0.082	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.69	0.093	
108-88-3	Toluene	ND	2.0	0.26	ND	0.54	0.070	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110908** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-032

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01608		

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.58

Container Dilution Factor: 1.63

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110916** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-033

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25 & 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01311

Initial Pressure (psig): -1.85 Final Pressure (psig): 7.35

Container Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.28	ND	0.39	0.052	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.32	ND	0.31	0.046	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.23	ND	0.39	0.043	
75-34-3	1,1-Dichloroethane	ND	2.2	0.34	ND	0.53	0.083	
75-35-4	1,1-Dichloroethene	ND	2.2	0.32	ND	0.54	0.080	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.56	ND	0.29	0.075	
95-63-6	1,2,4-Trimethylbenzene	**1.0**	2.2	0.32	**0.20**	0.44	0.065	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	2.2	0.27	ND	0.28	0.035	
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.34	ND	0.36	0.057	
107-06-2	1,2-Dichloroethane	ND	2.2	0.25	ND	0.53	0.063	
78-87-5	1,2-Dichloropropane	ND	2.2	0.28	ND	0.47	0.061	
108-67-8	1,3,5-Trimethylbenzene	**0.36**	2.2	0.33	**0.074**	0.44	0.067	**J**
106-99-0	1,3-Butadiene	ND	2.2	0.38	ND	0.97	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.34	ND	0.36	0.057	
106-46-7	1,4-Dichlorobenzene	ND	2.2	0.35	ND	0.36	0.059	
123-91-1	1,4-Dioxane	**0.39**	2.2	0.27	**0.11**	0.60	0.075	**J**
540-84-1	2,2,4-Trimethylpentane	**1.8**	2.2	0.34	**0.39**	0.46	0.074	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**75**	22	0.47	**25**	7.3	0.16	
591-78-6	2-Hexanone	**3.9**	2.2	0.28	**0.95**	0.53	0.069	
67-63-0	2-Propanol	**5.5**	4.3	0.95	**2.2**	1.8	0.39	
107-05-1	3-Chloropropene	ND	2.2	0.31	ND	0.69	0.099	
622-96-8	4-Ethyltoluene	ND	2.2	0.37	ND	0.44	0.074	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110916** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-033

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25 & 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01311

Initial Pressure (psig): -1.85 Final Pressure (psig): 7.35

Container Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**2.3**	2.2	0.31	**0.57**	0.52	0.077	
67-64-1	Acetone	**350**	22	5.2	**150**	9.1	2.2	
100-44-7	alpha-Chlorotoluene	ND	2.2	0.52	ND	0.42	0.10	
71-43-2	Benzene	**1.7**	2.2	0.33	**0.54**	0.67	0.10	**J**
75-27-4	Bromodichloromethane	ND	2.2	0.33	ND	0.32	0.049	
75-25-2	Bromoform	ND	2.2	0.47	ND	0.21	0.046	
74-83-9	Bromomethane	**0.45**	2.2	0.32	**0.12**	0.55	0.082	**J**
75-15-0	Carbon Disulfide	ND	22	0.69	ND	6.9	0.22	
56-23-5	Carbon Tetrachloride	ND	2.2	0.32	ND	0.34	0.051	
108-90-7	Chlorobenzene	ND	2.2	0.31	ND	0.47	0.066	
75-00-3	Chloroethane	**0.65**	2.2	0.28	**0.25**	0.82	0.11	**J**
67-66-3	Chloroform	**4.6**	2.2	0.31	**0.94**	0.44	0.063	
74-87-3	Chloromethane	**1.0**	2.2	0.37	**0.50**	1.0	0.18	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.2	0.32	ND	0.54	0.081	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.36	ND	0.47	0.079	
98-82-8	Cumene	ND	2.2	0.33	ND	0.44	0.067	
110-82-7	Cyclohexane	**0.99**	4.3	0.65	**0.29**	1.2	0.19	**J**
124-48-1	Dibromochloromethane	ND	2.2	0.30	ND	0.25	0.035	
64-17-5	Ethanol	**11**	22	1.6	**5.8**	11	0.84	**J**
100-41-4	Ethyl Benzene	**1.4**	2.2	0.32	**0.33**	0.50	0.074	**J**
75-69-4	Freon 11	**810**	22	3.5	**140**	3.8	0.62	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110916** ALS Sample ID: P2405139-033
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25 & 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01311

Initial Pressure (psig): -1.85 Final Pressure (psig): 7.35

Container Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**780**	22	3.3	**100**	2.8	0.43	**D**
76-14-2	Freon 114	ND	2.2	0.36	ND	0.31	0.052	
75-71-8	Freon 12	**2.4**	2.2	0.37	**0.48**	0.43	0.076	
306-83-2	Freon 123	ND	2.2	1.0	ND	0.34	0.17	**X**
75-43-4	Freon 21	ND	2.2	1.0	ND	0.51	0.25	**X**
142-82-5	Heptane	**2.7**	2.2	0.37	**0.66**	0.52	0.089	
87-68-3	Hexachlorobutadiene	ND	2.2	0.47	ND	0.20	0.044	
110-54-3	Hexane	**1.1**	2.2	0.47	**0.30**	0.61	0.13	**J**
179601-23-1	m,p-Xylene	**4.6**	4.3	0.60	**1.0**	0.99	0.14	
1634-04-4	Methyl tert-butyl ether	ND	2.2	0.27	ND	0.60	0.075	
75-09-2	Methylene Chloride	ND	2.2	0.65	ND	0.62	0.19	
95-47-6	o-Xylene	**1.5**	2.2	0.33	**0.35**	0.50	0.076	**J**
103-65-1	Propylbenzene	**0.45**	2.2	0.33	**0.092**	0.44	0.067	**J**
100-42-5	Styrene	ND	2.2	0.37	ND	0.51	0.087	
127-18-4	Tetrachloroethene	ND	2.2	0.30	ND	0.32	0.044	
109-99-9	Tetrahydrofuran	ND	2.2	0.29	ND	0.73	0.098	
108-88-3	Toluene	**12**	2.2	0.28	**3.1**	0.57	0.074	
156-60-5	trans-1,2-Dichloroethene	ND	2.2	0.32	ND	0.54	0.080	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.47	ND	0.47	0.10	
79-01-6	Trichloroethene	**0.75**	2.2	0.31	**0.14**	0.40	0.058	**J**
75-01-4	Vinyl Chloride	ND	2.2	0.25	ND	0.84	0.096	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110916** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-033

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25 & 1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS01311		

Initial Pressure (psig): -1.85 Final Pressure (psig): 7.35

Container Dilution Factor: 1.72

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110917** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-034

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01250

Initial Pressure (psig): -1.63 Final Pressure (psig): 6.26

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.37	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.077	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.070	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.060	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.057	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.90	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.56	0.070	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	20	0.44	ND	6.8	0.15	
591-78-6	2-Hexanone	ND	2.0	0.26	ND	0.49	0.064	
67-63-0	2-Propanol	ND	4.0	0.88	ND	1.6	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.092	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.069	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110917** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-034

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01250

Initial Pressure (psig): -1.63 Final Pressure (psig): 6.26

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.071	
67-64-1	Acetone	ND	20	4.8	ND	8.4	2.0	
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	ND	2.0	0.31	ND	0.63	0.096	
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.076	
75-15-0	Carbon Disulfide	ND	20	0.64	ND	6.4	0.21	
56-23-5	Carbon Tetrachloride	**0.46**	2.0	0.30	**0.074**	0.32	0.047	**J**
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.062	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.76	0.10	
67-66-3	Chloroform	ND	2.0	0.28	ND	0.41	0.058	
74-87-3	Chloromethane	**0.56**	2.0	0.34	**0.27**	0.97	0.17	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.073	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.033	
64-17-5	Ethanol	ND	20	1.5	ND	11	0.79	
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.069	
75-69-4	Freon 11	**1.3**	2.0	0.32	**0.23**	0.36	0.058	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110917** ALS Sample ID: P2405139-034
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01250

Initial Pressure (psig): -1.63 Final Pressure (psig): 6.26

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**0.66**	2.0	0.30	**0.086**	0.26	0.040	**J**
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**2.4**	2.0	0.35	**0.49**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.96	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.96	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.083	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.041	
110-54-3	Hexane	ND	2.0	0.44	ND	0.57	0.12	
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.92	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.070	
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.34	ND	0.47	0.081	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	ND	2.0	0.26	ND	0.53	0.069	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.097	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.78	0.089	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110917** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-034

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01250		

Initial Pressure (psig): -1.63 Final Pressure (psig): 6.26

Container Dilution Factor: 1.60

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110945** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-035

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01295

Initial Pressure (psig): -1.81 Final Pressure (psig): 6.25

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.32	ND	0.50	0.079	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.53	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.064	
106-99-0	1,3-Butadiene	ND	2.0	0.36	ND	0.92	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.0	0.26	ND	0.57	0.071	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.33	ND	0.44	0.070	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.2**	20	0.45	**0.41**	6.9	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	ND	4.1	0.90	ND	1.7	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.65	0.094	
622-96-8	4-Ethyltoluene	ND	2.0	0.35	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110945** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-035

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01295

Initial Pressure (psig): -1.81 Final Pressure (psig): 6.25

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.30	ND	0.50	0.073	
67-64-1	Acetone	**8.8**	20	4.9	**3.7**	8.6	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.49	ND	0.39	0.094	
71-43-2	Benzene	**0.56**	2.0	0.31	**0.18**	0.64	0.098	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.047	
75-25-2	Bromoform	ND	2.0	0.45	ND	0.20	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.078	
75-15-0	Carbon Disulfide	ND	20	0.65	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.048	
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.063	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.77	0.10	
67-66-3	Chloroform	**2.4**	2.0	0.29	**0.49**	0.42	0.059	
74-87-3	Chloromethane	ND	2.0	0.35	ND	0.99	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.31	ND	0.51	0.077	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.064	
110-82-7	Cyclohexane	ND	4.1	0.61	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.29	ND	0.24	0.033	
64-17-5	Ethanol	**3.7**	20	1.5	**1.9**	11	0.80	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.31	ND	0.47	0.070	
75-69-4	Freon 11	**33**	2.0	0.33	**5.9**	0.36	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110945** ALS Sample ID: P2405139-035
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01295

Initial Pressure (psig): -1.81 Final Pressure (psig): 6.25

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**31**	2.0	0.31	**4.1**	0.27	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.4**	2.0	0.35	**0.49**	0.41	0.072	
306-83-2	Freon 123	ND	2.0	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	ND	2.0	0.98	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.35	ND	0.50	0.085	
87-68-3	Hexachlorobutadiene	ND	2.0	0.45	ND	0.19	0.042	
110-54-3	Hexane	ND	2.0	0.45	ND	0.58	0.13	
179601-23-1	m,p-Xylene	ND	4.1	0.57	ND	0.94	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.26	ND	0.57	0.071	
75-09-2	Methylene Chloride	ND	2.0	0.61	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.47	0.072	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.064	
100-42-5	Styrene	ND	2.0	0.35	ND	0.48	0.082	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.69	0.093	
108-88-3	Toluene	ND	2.0	0.26	ND	0.54	0.070	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110945** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-035

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SC01295		

Initial Pressure (psig): -1.81 Final Pressure (psig): 6.25

Container Dilution Factor: 1.63

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110946** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-036

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00892

Initial Pressure (psig): -2.02 Final Pressure (psig): 6.74
Initial Pressure 2 (psig): -5.31 Final Pressure 2 (psig): 6.01
Container Dilution Factor: 3.73

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	4.7	0.62	ND	0.85	0.11	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.7	0.69	ND	0.68	0.10	
79-00-5	1,1,2-Trichloroethane	ND	4.7	0.50	ND	0.85	0.092	
75-34-3	1,1-Dichloroethane	ND	4.7	0.73	ND	1.2	0.18	
75-35-4	1,1-Dichloroethene	ND	4.7	0.69	ND	1.2	0.17	
120-82-1	1,2,4-Trichlorobenzene	ND	4.7	1.2	ND	0.63	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	4.7	0.69	ND	0.95	0.14	
106-93-4	1,2-Dibromoethane (EDB)	ND	4.7	0.58	ND	0.61	0.075	
95-50-1	1,2-Dichlorobenzene	ND	4.7	0.74	ND	0.78	0.12	
107-06-2	1,2-Dichloroethane	ND	4.7	0.55	ND	1.2	0.14	
78-87-5	1,2-Dichloropropane	ND	4.7	0.62	ND	1.0	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	4.7	0.72	ND	0.95	0.15	
106-99-0	1,3-Butadiene	ND	4.7	0.82	ND	2.1	0.37	
541-73-1	1,3-Dichlorobenzene	ND	4.7	0.75	ND	0.78	0.12	
106-46-7	1,4-Dichlorobenzene	ND	4.7	0.76	ND	0.78	0.13	
123-91-1	1,4-Dioxane	ND	4.7	0.59	ND	1.3	0.16	
540-84-1	2,2,4-Trimethylpentane	ND	4.7	0.75	ND	1.0	0.16	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.1**	47	1.0	**0.38**	16	0.35	**J**
591-78-6	2-Hexanone	ND	4.7	0.62	ND	1.1	0.15	
67-63-0	2-Propanol	ND	9.3	2.1	ND	3.8	0.83	
107-05-1	3-Chloropropene	ND	4.7	0.67	ND	1.5	0.21	
622-96-8	4-Ethyltoluene	ND	4.7	0.79	ND	0.95	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110946** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-036

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00892

Initial Pressure (psig): -2.02 Final Pressure (psig): 6.74
Initial Pressure 2 (psig): -5.31 Final Pressure 2 (psig): 6.01

Container Dilution Factor: 3.73

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	4.7	0.68	ND	1.1	0.17	
67-64-1	Acetone	ND	47	11	ND	20	4.7	
100-44-7	alpha-Chlorotoluene	ND	4.7	1.1	ND	0.90	0.22	
71-43-2	Benzene	ND	4.7	0.72	ND	1.5	0.22	
75-27-4	Bromodichloromethane	ND	4.7	0.72	ND	0.70	0.11	
75-25-2	Bromoform	ND	4.7	1.0	ND	0.45	0.099	
74-83-9	Bromomethane	ND	4.7	0.69	ND	1.2	0.18	
75-15-0	Carbon Disulfide	**6.8**	47	1.5	**2.2**	15	0.48	**J**
56-23-5	Carbon Tetrachloride	ND	4.7	0.69	ND	0.74	0.11	
108-90-7	Chlorobenzene	ND	4.7	0.66	ND	1.0	0.14	
75-00-3	Chloroethane	ND	4.7	0.62	ND	1.8	0.23	
67-66-3	Chloroform	**2.3**	4.7	0.66	**0.46**	0.96	0.14	**J**
74-87-3	Chloromethane	ND	4.7	0.80	ND	2.3	0.39	**V**
156-59-2	cis-1,2-Dichloroethene	ND	4.7	0.70	ND	1.2	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	4.7	0.77	ND	1.0	0.17	
98-82-8	Cumene	ND	4.7	0.72	ND	0.95	0.15	
110-82-7	Cyclohexane	ND	9.3	1.4	ND	2.7	0.41	
124-48-1	Dibromochloromethane	ND	4.7	0.65	ND	0.55	0.077	
64-17-5	Ethanol	**5.1**	47	3.5	**2.7**	25	1.8	**J**
100-41-4	Ethyl Benzene	ND	4.7	0.70	ND	1.1	0.16	
75-69-4	Freon 11	**11**	4.7	0.76	**1.9**	0.83	0.13	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110946** ALS Sample ID: P2405139-036
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00892

Initial Pressure (psig): -2.02 Final Pressure (psig): 6.74
Initial Pressure 2 (psig): -5.31 Final Pressure 2 (psig): 6.01

Container Dilution Factor: 3.73

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**10**	4.7	0.71	**1.4**	0.61	0.093	
76-14-2	Freon 114	ND	4.7	0.78	ND	0.67	0.11	
75-71-8	Freon 12	**2.3**	4.7	0.81	**0.46**	0.94	0.16	**J**
306-83-2	Freon 123	ND	4.7	2.2	ND	0.75	0.36	**X**
75-43-4	Freon 21	ND	4.7	2.2	ND	1.1	0.53	**X**
142-82-5	Heptane	ND	4.7	0.79	ND	1.1	0.19	
87-68-3	Hexachlorobutadiene	ND	4.7	1.0	ND	0.44	0.096	
110-54-3	Hexane	ND	4.7	1.0	ND	1.3	0.29	
179601-23-1	m,p-Xylene	ND	9.3	1.3	ND	2.1	0.30	
1634-04-4	Methyl tert-butyl ether	ND	4.7	0.59	ND	1.3	0.16	**V**
75-09-2	Methylene Chloride	ND	4.7	1.4	ND	1.3	0.40	
95-47-6	o-Xylene	ND	4.7	0.72	ND	1.1	0.17	
103-65-1	Propylbenzene	ND	4.7	0.72	ND	0.95	0.15	
100-42-5	Styrene	ND	4.7	0.80	ND	1.1	0.19	
127-18-4	Tetrachloroethene	**1.2**	4.7	0.64	**0.18**	0.69	0.095	**J**
109-99-9	Tetrahydrofuran	ND	4.7	0.62	ND	1.6	0.21	
108-88-3	Toluene	ND	4.7	0.61	ND	1.2	0.16	
156-60-5	trans-1,2-Dichloroethene	ND	4.7	0.69	ND	1.2	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	4.7	1.0	ND	1.0	0.23	
79-01-6	Trichloroethene	**1.2**	4.7	0.67	**0.22**	0.87	0.12	**J**
75-01-4	Vinyl Chloride	ND	4.7	0.53	ND	1.8	0.21	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110946** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-036

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/10/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS00892		

Initial Pressure (psig):	-2.02	Final Pressure (psig):	6.74
Initial Pressure 2 (psig):	-5.31	Final Pressure 2 (psig):	6.01

Container Dilution Factor: 3.73

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110957** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-037

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00153

Initial Pressure (psig): -1.99 Final Pressure (psig): 6.18
Initial Pressure 2 (psig): 0.02 Final Pressure 2 (psig): 4.92
Container Dilution Factor: 2.19

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.7	0.36	ND	0.50	0.066	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.7	0.41	ND	0.40	0.059	
79-00-5	1,1,2-Trichloroethane	ND	2.7	0.30	ND	0.50	0.054	
75-34-3	1,1-Dichloroethane	ND	2.7	0.43	ND	0.68	0.11	
75-35-4	1,1-Dichloroethene	ND	2.7	0.41	ND	0.69	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	2.7	0.71	ND	0.37	0.096	
95-63-6	1,2,4-Trimethylbenzene	ND	2.7	0.41	ND	0.56	0.082	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.7	0.34	ND	0.36	0.044	
95-50-1	1,2-Dichlorobenzene	ND	2.7	0.43	ND	0.46	0.072	
107-06-2	1,2-Dichloroethane	ND	2.7	0.32	ND	0.68	0.080	
78-87-5	1,2-Dichloropropane	ND	2.7	0.36	ND	0.59	0.078	
108-67-8	1,3,5-Trimethylbenzene	ND	2.7	0.42	ND	0.56	0.086	
106-99-0	1,3-Butadiene	ND	2.7	0.48	ND	1.2	0.22	
541-73-1	1,3-Dichlorobenzene	ND	2.7	0.44	ND	0.46	0.073	
106-46-7	1,4-Dichlorobenzene	ND	2.7	0.45	ND	0.46	0.075	
123-91-1	1,4-Dioxane	**0.68**	2.7	0.34	**0.19**	0.76	0.096	**J**
540-84-1	2,2,4-Trimethylpentane	ND	2.7	0.44	ND	0.59	0.094	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**2.5**	27	0.60	**0.83**	9.3	0.20	**J**
591-78-6	2-Hexanone	**0.44**	2.7	0.36	**0.11**	0.67	0.088	**J**
67-63-0	2-Propanol	ND	5.5	1.2	ND	2.2	0.49	
107-05-1	3-Chloropropene	ND	2.7	0.39	ND	0.87	0.13	
622-96-8	4-Ethyltoluene	ND	2.7	0.47	ND	0.56	0.095	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412110957** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-037

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00153

Initial Pressure (psig): -1.99 Final Pressure (psig): 6.18
Initial Pressure 2 (psig): 0.02 Final Pressure 2 (psig): 4.92
Container Dilution Factor: 2.19

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.7	0.40	ND	0.67	0.098	
67-64-1	Acetone	**14**	27	6.6	**5.8**	12	2.8	**J**
100-44-7	alpha-Chlorotoluene	ND	2.7	0.66	ND	0.53	0.13	
71-43-2	Benzene	**3.5**	2.7	0.42	**1.1**	0.86	0.13	
75-27-4	Bromodichloromethane	ND	2.7	0.42	ND	0.41	0.063	
75-25-2	Bromoform	ND	2.7	0.60	ND	0.26	0.058	
74-83-9	Bromomethane	ND	2.7	0.41	ND	0.71	0.10	
75-15-0	Carbon Disulfide	**15**	27	0.88	**4.7**	8.8	0.28	**J**
56-23-5	Carbon Tetrachloride	ND	2.7	0.41	ND	0.44	0.064	
108-90-7	Chlorobenzene	ND	2.7	0.39	ND	0.59	0.084	
75-00-3	Chloroethane	ND	2.7	0.36	ND	1.0	0.14	
67-66-3	Chloroform	**1.6**	2.7	0.39	**0.34**	0.56	0.080	**J**
74-87-3	Chloromethane	**0.47**	2.7	0.47	**0.23**	1.3	0.23	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.7	0.41	ND	0.69	0.10	
10061-01-5	cis-1,3-Dichloropropene	ND	2.7	0.45	ND	0.60	0.10	
98-82-8	Cumene	ND	2.7	0.42	ND	0.56	0.086	
110-82-7	Cyclohexane	ND	5.5	0.82	ND	1.6	0.24	
124-48-1	Dibromochloromethane	ND	2.7	0.38	ND	0.32	0.045	
64-17-5	Ethanol	**5.9**	27	2.0	**3.1**	15	1.1	**J**
100-41-4	Ethyl Benzene	ND	2.7	0.41	ND	0.63	0.095	
75-69-4	Freon 11	**130**	2.7	0.44	**22**	0.49	0.079	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412110957** ALS Sample ID: P2405139-037
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00153

Initial Pressure (psig): -1.99 Final Pressure (psig): 6.18
Initial Pressure 2 (psig): 0.02 Final Pressure 2 (psig): 4.92
Container Dilution Factor: 2.19

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**260**	2.7	0.42	**34**	0.36	0.054	
76-14-2	Freon 114	ND	2.7	0.46	ND	0.39	0.066	
75-71-8	Freon 12	**1.2**	2.7	0.48	**0.24**	0.55	0.096	**J**
306-83-2	Freon 123	ND	2.7	1.3	ND	0.44	0.21	**X**
75-43-4	Freon 21	ND	2.7	1.3	ND	0.65	0.31	**X**
142-82-5	Heptane	ND	2.7	0.47	ND	0.67	0.11	
87-68-3	Hexachlorobutadiene	ND	2.7	0.60	ND	0.26	0.056	
110-54-3	Hexane	ND	2.7	0.60	ND	0.78	0.17	
179601-23-1	m,p-Xylene	ND	5.5	0.77	ND	1.3	0.18	
1634-04-4	Methyl tert-butyl ether	ND	2.7	0.34	ND	0.76	0.096	**V**
75-09-2	Methylene Chloride	**2.7**	2.7	0.82	**0.79**	0.79	0.24	
95-47-6	o-Xylene	ND	2.7	0.42	ND	0.63	0.097	
103-65-1	Propylbenzene	ND	2.7	0.42	ND	0.56	0.086	
100-42-5	Styrene	ND	2.7	0.47	ND	0.64	0.11	
127-18-4	Tetrachloroethene	ND	2.7	0.38	ND	0.40	0.056	
109-99-9	Tetrahydrofuran	ND	2.7	0.37	ND	0.93	0.12	
108-88-3	Toluene	ND	2.7	0.36	ND	0.73	0.094	
156-60-5	trans-1,2-Dichloroethene	ND	2.7	0.41	ND	0.69	0.10	
10061-02-6	trans-1,3-Dichloropropene	ND	2.7	0.60	ND	0.60	0.13	
79-01-6	Trichloroethene	ND	2.7	0.39	ND	0.51	0.073	
75-01-4	Vinyl Chloride	ND	2.7	0.31	ND	1.1	0.12	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412110957** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-037

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/10/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS00153		

Initial Pressure (psig):	-1.99	Final Pressure (psig):	6.18
Initial Pressure 2 (psig):	0.02	Final Pressure 2 (psig):	4.92

Container Dilution Factor: 2.19

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111005** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-038

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes: **H1** 0.00070 Liter(s)
Container ID: 1SS00595

Initial Pressure (psig): -2.14 Final Pressure (psig): 6.45

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	560	74	ND	100	14	
79-34-5	1,1,2,2-Tetrachloroethane	ND	560	83	ND	82	12	
79-00-5	1,1,2-Trichloroethane	ND	560	60	ND	100	11	
75-34-3	1,1-Dichloroethane	ND	560	87	ND	140	22	
75-35-4	1,1-Dichloroethene	ND	560	83	ND	140	21	
120-82-1	1,2,4-Trichlorobenzene	ND	560	150	ND	75	20	
95-63-6	1,2,4-Trimethylbenzene	ND	560	83	ND	110	17	
106-93-4	1,2-Dibromoethane (EDB)	ND	560	69	ND	73	9.0	
95-50-1	1,2-Dichlorobenzene	ND	560	88	ND	93	15	
107-06-2	1,2-Dichloroethane	ND	560	66	ND	140	16	
78-87-5	1,2-Dichloropropane	ND	560	74	ND	120	16	
108-67-8	1,3,5-Trimethylbenzene	ND	560	86	ND	110	18	
106-99-0	1,3-Butadiene	ND	560	99	ND	250	45	
541-73-1	1,3-Dichlorobenzene	ND	560	90	ND	93	15	
106-46-7	1,4-Dichlorobenzene	ND	560	92	ND	93	15	
123-91-1	1,4-Dioxane	ND	560	71	ND	160	20	
540-84-1	2,2,4-Trimethylpentane	ND	560	90	ND	120	19	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5,600	120	ND	1,900	42	
591-78-6	2-Hexanone	ND	560	74	ND	140	18	
67-63-0	2-Propanol	ND	1,100	250	ND	460	100	
107-05-1	3-Chloropropene	ND	560	81	ND	180	26	
622-96-8	4-Ethyltoluene	ND	560	95	ND	110	19	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111005** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-038

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes: **H1** 0.00070 Liter(s)
Container ID: 1SS00595

Initial Pressure (psig): -2.14 Final Pressure (psig): 6.45

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	560	82	ND	140	20	
67-64-1	Acetone	ND	5,600	1,300	ND	2,400	570	
100-44-7	alpha-Chlorotoluene	ND	560	130	ND	110	26	
71-43-2	Benzene	ND	560	86	ND	180	27	
75-27-4	Bromodichloromethane	ND	560	86	ND	84	13	
75-25-2	Bromoform	ND	560	120	ND	54	12	
74-83-9	Bromomethane	ND	560	83	ND	140	21	
75-15-0	Carbon Disulfide	ND	5,600	180	ND	1,800	58	
56-23-5	Carbon Tetrachloride	ND	560	83	ND	89	13	
108-90-7	Chlorobenzene	ND	560	80	ND	120	17	
75-00-3	Chloroethane	ND	560	74	ND	210	28	
67-66-3	Chloroform	ND	560	80	ND	110	16	
74-87-3	Chloromethane	ND	560	96	ND	270	47	
156-59-2	cis-1,2-Dichloroethene	ND	560	84	ND	140	21	
10061-01-5	cis-1,3-Dichloropropene	ND	560	93	ND	120	20	
98-82-8	Cumene	ND	560	86	ND	110	18	
110-82-7	Cyclohexane	ND	1,100	170	ND	330	49	
124-48-1	Dibromochloromethane	ND	560	78	ND	66	9.2	
64-17-5	Ethanol	ND	5,600	410	ND	3,000	220	
100-41-4	Ethyl Benzene	ND	560	84	ND	130	19	
75-69-4	Freon 11	**30,000**	560	91	**5,300**	100	16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111005** ALS Sample ID: P2405139-038
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes: **H1** 0.00070 Liter(s)
Container ID: 1SS00595

Initial Pressure (psig): -2.14 Final Pressure (psig): 6.45

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**99,000**	1,200	180	**13,000**	160	24	**D**
76-14-2	Freon 114	ND	560	94	ND	80	13	
75-71-8	Freon 12	**520**	560	97	**100**	110	20	**J**
306-83-2	Freon 123	ND	560	270	ND	90	43	**X**
75-43-4	Freon 21	**1,000**	560	270	**250**	130	64	**X**
142-82-5	Heptane	ND	560	95	ND	140	23	
87-68-3	Hexachlorobutadiene	ND	560	120	ND	53	12	
110-54-3	Hexane	ND	560	120	ND	160	35	
179601-23-1	m,p-Xylene	ND	1,100	160	ND	260	36	
1634-04-4	Methyl tert-butyl ether	ND	560	71	ND	160	20	
75-09-2	Methylene Chloride	ND	560	170	ND	160	48	
95-47-6	o-Xylene	ND	560	86	ND	130	20	
103-65-1	Propylbenzene	ND	560	86	ND	110	18	
100-42-5	Styrene	ND	560	96	ND	130	23	
127-18-4	Tetrachloroethene	**200**	560	77	**30**	83	11	**J**
109-99-9	Tetrahydrofuran	ND	560	75	ND	190	25	
108-88-3	Toluene	ND	560	73	ND	150	19	
156-60-5	trans-1,2-Dichloroethene	ND	560	83	ND	140	21	
10061-02-6	trans-1,3-Dichloropropene	ND	560	120	ND	120	27	
79-01-6	Trichloroethene	ND	560	81	ND	100	15	
75-01-4	Vinyl Chloride	ND	560	64	ND	220	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111005** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-038

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.0015 Liter(s)
Test Notes:	**H1, T**		0.00070 Liter(s)
Container ID:	1SS00595		

Initial Pressure (psig): -2.14 Final Pressure (psig): 6.45

Container Dilution Factor: 1.68

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.60	Freon 123a	**5,100**	

T = Analyte is a tentatively identified compound, result is estimated.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111013** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-039

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0040 Liter(s)
Test Notes: **H1**
Container ID: 1SS00802

Initial Pressure (psig): -2.06 Final Pressure (psig): 7.74

Container Dilution Factor: 1.78

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	220	29	ND	41	5.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	220	33	ND	32	4.8	
79-00-5	1,1,2-Trichloroethane	ND	220	24	ND	41	4.4	
75-34-3	1,1-Dichloroethane	ND	220	35	ND	55	8.6	
75-35-4	1,1-Dichloroethene	ND	220	33	ND	56	8.3	
120-82-1	1,2,4-Trichlorobenzene	ND	220	58	ND	30	7.8	
95-63-6	1,2,4-Trimethylbenzene	ND	220	33	ND	45	6.7	
106-93-4	1,2-Dibromoethane (EDB)	ND	220	28	ND	29	3.6	
95-50-1	1,2-Dichlorobenzene	ND	220	35	ND	37	5.8	
107-06-2	1,2-Dichloroethane	ND	220	26	ND	55	6.5	
78-87-5	1,2-Dichloropropane	ND	220	29	ND	48	6.4	
108-67-8	1,3,5-Trimethylbenzene	ND	220	34	ND	45	7.0	
106-99-0	1,3-Butadiene	ND	220	39	ND	100	18	
541-73-1	1,3-Dichlorobenzene	ND	220	36	ND	37	5.9	
106-46-7	1,4-Dichlorobenzene	ND	220	36	ND	37	6.1	
123-91-1	1,4-Dioxane	ND	220	28	ND	62	7.8	
540-84-1	2,2,4-Trimethylpentane	ND	220	36	ND	48	7.6	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	2,200	49	ND	750	17	
591-78-6	2-Hexanone	ND	220	29	ND	54	7.2	
67-63-0	2-Propanol	ND	450	98	ND	180	40	
107-05-1	3-Chloropropene	ND	220	32	ND	71	10	
622-96-8	4-Ethyltoluene	ND	220	38	ND	45	7.7	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111013** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-039

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0040 Liter(s)
Test Notes: **H1**
Container ID: 1SS00802

Initial Pressure (psig): -2.06 Final Pressure (psig): 7.74

Container Dilution Factor: 1.78

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	220	32	ND	54	7.9	
67-64-1	Acetone	ND	2,200	530	ND	940	220	
100-44-7	alpha-Chlorotoluene	ND	220	53	ND	43	10	
71-43-2	Benzene	ND	220	34	ND	70	11	
75-27-4	Bromodichloromethane	ND	220	34	ND	33	5.1	
75-25-2	Bromoform	ND	220	49	ND	22	4.7	
74-83-9	Bromomethane	ND	220	33	ND	57	8.5	
75-15-0	Carbon Disulfide	ND	2,200	71	ND	710	23	
56-23-5	Carbon Tetrachloride	ND	220	33	ND	35	5.2	
108-90-7	Chlorobenzene	ND	220	32	ND	48	6.9	
75-00-3	Chloroethane	ND	220	29	ND	84	11	
67-66-3	Chloroform	ND	220	32	ND	46	6.5	
74-87-3	Chloromethane	ND	220	38	ND	110	19	
156-59-2	cis-1,2-Dichloroethene	ND	220	33	ND	56	8.4	
10061-01-5	cis-1,3-Dichloropropene	ND	220	37	ND	49	8.1	
98-82-8	Cumene	ND	220	34	ND	45	7.0	
110-82-7	Cyclohexane	ND	450	67	ND	130	19	
124-48-1	Dibromochloromethane	ND	220	31	ND	26	3.7	
64-17-5	Ethanol	ND	2,200	160	ND	1,200	87	
100-41-4	Ethyl Benzene	ND	220	33	ND	51	7.7	
75-69-4	Freon 11	**9,800**	220	36	**1,700**	40	6.4	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111013** ALS Sample ID: P2405139-039
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0040 Liter(s)
Test Notes: **H1**
Container ID: 1SS00802

Initial Pressure (psig): -2.06 Final Pressure (psig): 7.74

Container Dilution Factor: 1.78

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**31,000**	220	34	**4,000**	29	4.4	
76-14-2	Freon 114	ND	220	37	ND	32	5.3	
75-71-8	Freon 12	**140**	220	39	**28**	45	7.8	**J**
306-83-2	Freon 123	ND	220	110	ND	36	17	**X**
75-43-4	Freon 21	**140**	220	110	**32**	53	25	**J, X**
142-82-5	Heptane	ND	220	38	ND	54	9.2	
87-68-3	Hexachlorobutadiene	ND	220	49	ND	21	4.6	
110-54-3	Hexane	ND	220	49	ND	63	14	
179601-23-1	m,p-Xylene	ND	450	62	ND	100	14	
1634-04-4	Methyl tert-butyl ether	ND	220	28	ND	62	7.8	
75-09-2	Methylene Chloride	ND	220	67	ND	64	19	
95-47-6	o-Xylene	ND	220	34	ND	51	7.9	
103-65-1	Propylbenzene	ND	220	34	ND	45	7.0	
100-42-5	Styrene	ND	220	38	ND	52	9.0	
127-18-4	Tetrachloroethene	**76**	220	31	**11**	33	4.5	**J**
109-99-9	Tetrahydrofuran	ND	220	30	ND	75	10	
108-88-3	Toluene	ND	220	29	ND	59	7.7	
156-60-5	trans-1,2-Dichloroethene	ND	220	33	ND	56	8.3	
10061-02-6	trans-1,3-Dichloropropene	ND	220	49	ND	49	11	
79-01-6	Trichloroethene	ND	220	32	ND	41	6.0	
75-01-4	Vinyl Chloride	ND	220	25	ND	87	9.9	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111013** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-039

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.0040 Liter(s)
Test Notes:	**H1, T**		
Container ID:	1SS00802		

Initial Pressure (psig): -2.06 Final Pressure (psig): 7.74

Container Dilution Factor: 1.78

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.61	Freon 123a	**1,100**	

T = Analyte is a tentatively identified compound, result is estimated.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111030** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-040

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00543

Initial Pressure (psig): -1.92 Final Pressure (psig): 7.54
Initial Pressure 2 (psig): 0.79 Final Pressure 2 (psig): 5.70
Container Dilution Factor: 2.29

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.9	0.38	ND	0.52	0.069	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.9	0.42	ND	0.42	0.062	
79-00-5	1,1,2-Trichloroethane	ND	2.9	0.31	ND	0.52	0.057	
75-34-3	1,1-Dichloroethane	ND	2.9	0.45	ND	0.71	0.11	
75-35-4	1,1-Dichloroethene	ND	2.9	0.42	ND	0.72	0.11	
120-82-1	1,2,4-Trichlorobenzene	ND	2.9	0.74	ND	0.39	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	2.9	0.42	ND	0.58	0.086	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.9	0.35	ND	0.37	0.046	
95-50-1	1,2-Dichlorobenzene	ND	2.9	0.45	ND	0.48	0.075	
107-06-2	1,2-Dichloroethane	ND	2.9	0.34	ND	0.71	0.083	
78-87-5	1,2-Dichloropropane	ND	2.9	0.38	ND	0.62	0.082	
108-67-8	1,3,5-Trimethylbenzene	ND	2.9	0.44	ND	0.58	0.090	
106-99-0	1,3-Butadiene	ND	2.9	0.50	ND	1.3	0.23	
541-73-1	1,3-Dichlorobenzene	ND	2.9	0.46	ND	0.48	0.076	
106-46-7	1,4-Dichlorobenzene	ND	2.9	0.47	ND	0.48	0.078	
123-91-1	1,4-Dioxane	ND	2.9	0.36	ND	0.79	0.10	
540-84-1	2,2,4-Trimethylpentane	ND	2.9	0.46	ND	0.61	0.098	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	29	0.63	ND	9.7	0.21	
591-78-6	2-Hexanone	ND	2.9	0.38	ND	0.70	0.092	
67-63-0	2-Propanol	ND	5.7	1.3	ND	2.3	0.51	
107-05-1	3-Chloropropene	ND	2.9	0.41	ND	0.91	0.13	
622-96-8	4-Ethyltoluene	ND	2.9	0.49	ND	0.58	0.099	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111030** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-040

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00543

Initial Pressure (psig): -1.92 Final Pressure (psig): 7.54
Initial Pressure 2 (psig): 0.79 Final Pressure 2 (psig): 5.70
Container Dilution Factor: 2.29

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.9	0.42	ND	0.70	0.10	
67-64-1	Acetone	ND	29	6.9	ND	12	2.9	
100-44-7	alpha-Chlorotoluene	ND	2.9	0.69	ND	0.55	0.13	
71-43-2	Benzene	ND	2.9	0.44	ND	0.90	0.14	
75-27-4	Bromodichloromethane	ND	2.9	0.44	ND	0.43	0.066	
75-25-2	Bromoform	ND	2.9	0.63	ND	0.28	0.061	
74-83-9	Bromomethane	ND	2.9	0.42	ND	0.74	0.11	
75-15-0	Carbon Disulfide	ND	29	0.92	ND	9.2	0.29	
56-23-5	Carbon Tetrachloride	ND	2.9	0.42	ND	0.46	0.067	
108-90-7	Chlorobenzene	ND	2.9	0.41	ND	0.62	0.088	
75-00-3	Chloroethane	ND	2.9	0.38	ND	1.1	0.14	
67-66-3	Chloroform	ND	2.9	0.41	ND	0.59	0.083	
74-87-3	Chloromethane	ND	2.9	0.49	ND	1.4	0.24	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.9	0.43	ND	0.72	0.11	
10061-01-5	cis-1,3-Dichloropropene	ND	2.9	0.48	ND	0.63	0.10	
98-82-8	Cumene	ND	2.9	0.44	ND	0.58	0.090	
110-82-7	Cyclohexane	ND	5.7	0.86	ND	1.7	0.25	
124-48-1	Dibromochloromethane	ND	2.9	0.40	ND	0.34	0.047	
64-17-5	Ethanol	ND	29	2.1	ND	15	1.1	
100-41-4	Ethyl Benzene	ND	2.9	0.43	ND	0.66	0.099	
75-69-4	Freon 11	**160**	2.9	0.46	**28**	0.51	0.083	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111030** ALS Sample ID: P2405139-040
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00543

Initial Pressure (psig): -1.92 Final Pressure (psig): 7.54
Initial Pressure 2 (psig): 0.79 Final Pressure 2 (psig): 5.70

Container Dilution Factor: 2.29

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**410**	2.9	0.44	**53**	0.37	0.057	
76-14-2	Freon 114	ND	2.9	0.48	ND	0.41	0.069	
75-71-8	Freon 12	**1.8**	2.9	0.50	**0.36**	0.58	0.10	**J**
306-83-2	Freon 123	ND	2.9	1.4	ND	0.46	0.22	**X**
75-43-4	Freon 21	**2.4**	2.9	1.4	**0.56**	0.68	0.33	**J, X**
142-82-5	Heptane	ND	2.9	0.49	ND	0.70	0.12	
87-68-3	Hexachlorobutadiene	ND	2.9	0.63	ND	0.27	0.059	
110-54-3	Hexane	ND	2.9	0.63	ND	0.81	0.18	
179601-23-1	m,p-Xylene	ND	5.7	0.80	ND	1.3	0.18	
1634-04-4	Methyl tert-butyl ether	ND	2.9	0.36	ND	0.79	0.10	**V**
75-09-2	Methylene Chloride	ND	2.9	0.86	ND	0.82	0.25	
95-47-6	o-Xylene	ND	2.9	0.44	ND	0.66	0.10	
103-65-1	Propylbenzene	ND	2.9	0.44	ND	0.58	0.090	
100-42-5	Styrene	ND	2.9	0.49	ND	0.67	0.12	
127-18-4	Tetrachloroethene	ND	2.9	0.40	ND	0.42	0.058	
109-99-9	Tetrahydrofuran	ND	2.9	0.38	ND	0.97	0.13	
108-88-3	Toluene	ND	2.9	0.37	ND	0.76	0.099	
156-60-5	trans-1,2-Dichloroethene	ND	2.9	0.42	ND	0.72	0.11	
10061-02-6	trans-1,3-Dichloropropene	ND	2.9	0.63	ND	0.63	0.14	
79-01-6	Trichloroethene	ND	2.9	0.41	ND	0.53	0.077	
75-01-4	Vinyl Chloride	ND	2.9	0.33	ND	1.1	0.13	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111030** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-040

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/10/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS00543		

Initial Pressure (psig):	-1.92	Final Pressure (psig):	7.54
Initial Pressure 2 (psig):	0.79	Final Pressure 2 (psig):	5.70

Container Dilution Factor: 2.29

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111037** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-041

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01748

Initial Pressure (psig): -1.95 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.50	0.078	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.91	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.56	0.070	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.7**	20	0.44	**0.59**	6.8	0.15	**J**
591-78-6	2-Hexanone	**0.30**	2.0	0.27	**0.073**	0.49	0.065	**J**
67-63-0	2-Propanol	**3.1**	4.0	0.89	**1.3**	1.6	0.36	**J**
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.093	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111037** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-041

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01748

Initial Pressure (psig): -1.95 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.072	
67-64-1	Acetone	**9.1**	20	4.8	**3.9**	8.5	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	**0.35**	2.0	0.31	**0.11**	0.63	0.097	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.077	
75-15-0	Carbon Disulfide	ND	20	0.64	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	**0.30**	2.0	0.30	**0.048**	0.32	0.047	**J**
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.062	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.76	0.10	
67-66-3	Chloroform	ND	2.0	0.29	ND	0.41	0.059	
74-87-3	Chloromethane	**0.47**	2.0	0.35	**0.23**	0.97	0.17	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.074	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.24	0.033	
64-17-5	Ethanol	**9.4**	20	1.5	**5.0**	11	0.79	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.070	
75-69-4	Freon 11	**11**	2.0	0.33	**2.0**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111037** ALS Sample ID: P2405139-041
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01748

Initial Pressure (psig): -1.95 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**17**	2.0	0.31	**2.3**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**2.4**	2.0	0.35	**0.49**	0.41	0.071	
306-83-2	Freon 123	ND	2.0	0.97	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.97	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.084	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.042	
110-54-3	Hexane	ND	2.0	0.44	ND	0.57	0.13	
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.93	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.56	0.070	**V**
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.35	ND	0.47	0.081	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	**0.64**	2.0	0.26	**0.17**	0.53	0.069	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.098	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.79	0.090	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111037** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-041

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/10/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01748		

Initial Pressure (psig): -1.95 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111055** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-042

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01750

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.77

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.37	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.077	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.070	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.060	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.057	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.90	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.56	0.070	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**2.1**	20	0.44	**0.71**	6.8	0.15	**J**
591-78-6	2-Hexanone	**0.27**	2.0	0.26	**0.066**	0.49	0.064	**J**
67-63-0	2-Propanol	**3.7**	4.0	0.88	**1.5**	1.6	0.36	**J**
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.092	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.069	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111055** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-042

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01750

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.77

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.071	
67-64-1	Acetone	**6.9**	20	4.8	**2.9**	8.4	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	**0.40**	2.0	0.31	**0.13**	0.63	0.096	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.076	
75-15-0	Carbon Disulfide	ND	20	0.64	ND	6.4	0.21	
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.062	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.76	0.10	
67-66-3	Chloroform	ND	2.0	0.28	ND	0.41	0.058	
74-87-3	Chloromethane	ND	2.0	0.34	ND	0.97	0.17	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.073	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.033	
64-17-5	Ethanol	**7.1**	20	1.5	**3.8**	11	0.79	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.069	
75-69-4	Freon 11	**39**	2.0	0.32	**6.9**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111055** ALS Sample ID: P2405139-042
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01750

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.77

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**12**	2.0	0.30	**1.6**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**2.4**	2.0	0.35	**0.49**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.96	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.96	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.083	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.041	
110-54-3	Hexane	**0.70**	2.0	0.44	**0.20**	0.57	0.12	**J**
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.92	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.070	**V**
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.34	ND	0.47	0.081	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	ND	2.0	0.26	ND	0.53	0.069	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.097	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.78	0.089	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111055** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-042

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/10/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS01750		

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.77

Container Dilution Factor: 1.60

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111056** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-043

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01612

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.99

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.27	ND	0.38	0.050	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.38	0.041	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.080	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.52	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.54	ND	0.28	0.072	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.42	0.062	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.51	0.060	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.45	0.059	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.42	0.065	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.93	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.055	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.57	0.072	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.33	ND	0.44	0.071	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.80**	21	0.45	**0.27**	7.0	0.15	**J**
591-78-6	2-Hexanone	ND	2.1	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	ND	4.1	0.91	ND	1.7	0.37	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.66	0.095	
622-96-8	4-Ethyltoluene	ND	2.1	0.35	ND	0.42	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111056** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-043

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01612

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.99

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.30	ND	0.50	0.074	
67-64-1	Acetone	ND	21	5.0	ND	8.7	2.1	
100-44-7	alpha-Chlorotoluene	ND	2.1	0.50	ND	0.40	0.096	
71-43-2	Benzene	ND	2.1	0.32	ND	0.65	0.099	
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.047	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.20	0.044	
74-83-9	Bromomethane	ND	2.1	0.31	ND	0.53	0.079	
75-15-0	Carbon Disulfide	**1.4**	21	0.66	**0.44**	6.6	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.1	0.31	ND	0.33	0.049	
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.45	0.064	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
67-66-3	Chloroform	ND	2.1	0.29	ND	0.42	0.060	
74-87-3	Chloromethane	ND	2.1	0.35	ND	1.0	0.17	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.078	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.1	0.32	ND	0.42	0.065	
110-82-7	Cyclohexane	ND	4.1	0.62	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.24	0.034	
64-17-5	Ethanol	**1.9**	21	1.5	**1.0**	11	0.81	**J**
100-41-4	Ethyl Benzene	ND	2.1	0.31	ND	0.48	0.071	
75-69-4	Freon 11	**37**	2.1	0.33	**6.6**	0.37	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111056** ALS Sample ID: P2405139-043
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01612

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.99

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**11**	2.1	0.31	**1.4**	0.27	0.041	
76-14-2	Freon 114	ND	2.1	0.35	ND	0.30	0.050	
75-71-8	Freon 12	**2.4**	2.1	0.36	**0.48**	0.42	0.073	
306-83-2	Freon 123	ND	2.1	0.99	ND	0.33	0.16	**X**
75-43-4	Freon 21	ND	2.1	0.99	ND	0.49	0.24	**X**
142-82-5	Heptane	ND	2.1	0.35	ND	0.50	0.086	
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.19	0.043	
110-54-3	Hexane	**0.59**	2.1	0.45	**0.17**	0.59	0.13	**J**
179601-23-1	m,p-Xylene	ND	4.1	0.58	ND	0.95	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.57	0.072	**V**
75-09-2	Methylene Chloride	ND	2.1	0.62	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.1	0.32	ND	0.48	0.073	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.42	0.065	
100-42-5	Styrene	ND	2.1	0.35	ND	0.48	0.083	
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.30	0.042	
109-99-9	Tetrahydrofuran	ND	2.1	0.28	ND	0.70	0.094	
108-88-3	Toluene	ND	2.1	0.27	ND	0.55	0.071	
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.077	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.45	0.10	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.81	0.092	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111056** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-043

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS01612		

Initial Pressure (psig): -2.19 Final Pressure (psig): 5.99

Container Dilution Factor: 1.65

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111105** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-044

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01593

Initial Pressure (psig): -2.11 Final Pressure (psig): 5.57

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.50	0.078	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.91	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.56	0.070	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.6**	20	0.44	**0.55**	6.8	0.15	**J**
591-78-6	2-Hexanone	**0.38**	2.0	0.27	**0.093**	0.49	0.065	**J**
67-63-0	2-Propanol	ND	4.0	0.89	ND	1.6	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.093	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111105** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-044

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01593

Initial Pressure (psig): -2.11 Final Pressure (psig): 5.57

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.072	
67-64-1	Acetone	**7.5**	20	4.8	**3.2**	8.5	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	ND	2.0	0.31	ND	0.63	0.097	
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.077	
75-15-0	Carbon Disulfide	ND	20	0.64	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.062	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.76	0.10	
67-66-3	Chloroform	ND	2.0	0.29	ND	0.41	0.059	
74-87-3	Chloromethane	ND	2.0	0.35	ND	0.97	0.17	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.074	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.24	0.033	
64-17-5	Ethanol	**2.7**	20	1.5	**1.4**	11	0.79	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.070	
75-69-4	Freon 11	**39**	2.0	0.33	**6.9**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111105** ALS Sample ID: P2405139-044
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01593

Initial Pressure (psig): -2.11 Final Pressure (psig): 5.57

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**11**	2.0	0.31	**1.4**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**2.4**	2.0	0.35	**0.48**	0.41	0.071	
306-83-2	Freon 123	ND	2.0	0.97	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.97	ND	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.084	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.042	
110-54-3	Hexane	**0.53**	2.0	0.44	**0.15**	0.57	0.13	**J**
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.93	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.56	0.070	**V**
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.35	ND	0.47	0.081	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	ND	2.0	0.26	ND	0.53	0.069	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.098	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.79	0.090	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111105** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-044

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS01593		

Initial Pressure (psig): -2.11 Final Pressure (psig): 5.57

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111113** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-045

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes: **H1** 0.00015 Liter(s)
Container ID: 1SS01855

Initial Pressure (psig): -2.23 Final Pressure (psig): 5.76

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	550	72	ND	100	13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	550	81	ND	80	12	
79-00-5	1,1,2-Trichloroethane	ND	550	59	ND	100	11	
75-34-3	1,1-Dichloroethane	ND	550	85	ND	140	21	
75-35-4	1,1-Dichloroethene	ND	550	81	ND	140	20	
120-82-1	1,2,4-Trichlorobenzene	ND	550	140	ND	74	19	
95-63-6	1,2,4-Trimethylbenzene	ND	550	81	ND	110	16	
106-93-4	1,2-Dibromoethane (EDB)	ND	550	68	ND	71	8.8	
95-50-1	1,2-Dichlorobenzene	ND	550	86	ND	91	14	
107-06-2	1,2-Dichloroethane	ND	550	65	ND	140	16	
78-87-5	1,2-Dichloropropane	ND	550	72	ND	120	16	
108-67-8	1,3,5-Trimethylbenzene	ND	550	84	ND	110	17	
106-99-0	1,3-Butadiene	ND	550	96	ND	250	44	
541-73-1	1,3-Dichlorobenzene	ND	550	87	ND	91	15	
106-46-7	1,4-Dichlorobenzene	ND	550	90	ND	91	15	
123-91-1	1,4-Dioxane	ND	550	69	ND	150	19	
540-84-1	2,2,4-Trimethylpentane	ND	550	87	ND	120	19	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**45,000**	5,500	120	**15,000**	1,900	41	
591-78-6	2-Hexanone	ND	550	72	ND	130	18	
67-63-0	2-Propanol	ND	1,100	240	ND	440	98	
107-05-1	3-Chloropropene	ND	550	79	ND	170	25	
622-96-8	4-Ethyltoluene	ND	550	93	ND	110	19	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111113** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-045

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes: **H1** 0.00015 Liter(s)
Container ID: 1SS01855

Initial Pressure (psig): -2.23 Final Pressure (psig): 5.76

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	550	80	ND	130	19	
67-64-1	Acetone	ND	5,500	1,300	ND	2,300	550	
100-44-7	alpha-Chlorotoluene	ND	550	130	ND	110	25	
71-43-2	Benzene	ND	550	84	ND	170	26	
75-27-4	Bromodichloromethane	ND	550	84	ND	82	13	
75-25-2	Bromoform	ND	550	120	ND	53	12	
74-83-9	Bromomethane	ND	550	81	ND	140	21	
75-15-0	Carbon Disulfide	ND	5,500	170	ND	1,800	56	
56-23-5	Carbon Tetrachloride	ND	550	81	ND	87	13	
108-90-7	Chlorobenzene	ND	550	78	ND	120	17	
75-00-3	Chloroethane	ND	550	72	ND	210	27	
67-66-3	Chloroform	ND	550	78	ND	110	16	
74-87-3	Chloromethane	ND	550	94	ND	260	46	
156-59-2	cis-1,2-Dichloroethene	ND	550	82	ND	140	21	
10061-01-5	cis-1,3-Dichloropropene	ND	550	91	ND	120	20	
98-82-8	Cumene	ND	550	84	ND	110	17	
110-82-7	Cyclohexane	**470**	1,100	160	**140**	320	48	**J**
124-48-1	Dibromochloromethane	ND	550	77	ND	64	9.0	
64-17-5	Ethanol	ND	5,500	400	ND	2,900	210	
100-41-4	Ethyl Benzene	ND	550	82	ND	130	19	
75-69-4	Freon 11	**410,000**	5,500	890	**73,000**	970	160	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111113** ALS Sample ID: P2405139-045
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes: **H1** 0.00015 Liter(s)
Container ID: 1SS01855

Initial Pressure (psig): -2.23 Final Pressure (psig): 5.76

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**86,000**	550	83	**11,000**	71	11	
76-14-2	Freon 114	ND	550	92	ND	78	13	
75-71-8	Freon 12	ND	550	95	ND	110	19	
306-83-2	Freon 123	ND	550	260	ND	87	42	**X**
75-43-4	Freon 21	ND	550	260	ND	130	62	**X**
142-82-5	Heptane	**2,000**	550	93	**490**	130	23	
87-68-3	Hexachlorobutadiene	ND	550	120	ND	51	11	
110-54-3	Hexane	**2,100**	550	120	**600**	160	34	
179601-23-1	m,p-Xylene	ND	1,100	150	ND	250	35	
1634-04-4	Methyl tert-butyl ether	ND	550	69	ND	150	19	
75-09-2	Methylene Chloride	ND	550	160	ND	160	47	
95-47-6	o-Xylene	ND	550	84	ND	130	19	
103-65-1	Propylbenzene	ND	550	84	ND	110	17	
100-42-5	Styrene	ND	550	94	ND	130	22	
127-18-4	Tetrachloroethene	**240**	550	75	**36**	81	11	**J**
109-99-9	Tetrahydrofuran	ND	550	73	ND	190	25	
108-88-3	Toluene	**5,600**	550	71	**1,500**	150	19	
156-60-5	trans-1,2-Dichloroethene	ND	550	81	ND	140	20	
10061-02-6	trans-1,3-Dichloropropene	ND	550	120	ND	120	27	
79-01-6	Trichloroethene	**160**	550	79	**30**	100	15	**J**
75-01-4	Vinyl Chloride	ND	550	62	ND	210	24	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111113** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-045

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao/Logan Simon	Date Analyzed:	1/11 - 1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.0015 Liter(s)
Test Notes:	**H1**		0.00015 Liter(s)
Container ID:	1SS01855		

Initial Pressure (psig): -2.23 Final Pressure (psig): 5.76

Container Dilution Factor: 1.64

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111121** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-046

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes: **H1** 0.015 Liter(s)
Container ID: 1SS01791

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.68

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	5.5	0.73	ND	1.0	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.5	0.81	ND	0.80	0.12	
79-00-5	1,1,2-Trichloroethane	ND	5.5	0.59	ND	1.0	0.11	
75-34-3	1,1-Dichloroethane	ND	5.5	0.86	ND	1.4	0.21	
75-35-4	1,1-Dichloroethene	ND	5.5	0.81	ND	1.4	0.21	
120-82-1	1,2,4-Trichlorobenzene	ND	5.5	1.4	ND	0.74	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	5.5	0.81	ND	1.1	0.17	
106-93-4	1,2-Dibromoethane (EDB)	ND	5.5	0.68	ND	0.72	0.089	
95-50-1	1,2-Dichlorobenzene	ND	5.5	0.87	ND	0.92	0.14	
107-06-2	1,2-Dichloroethane	ND	5.5	0.65	ND	1.4	0.16	
78-87-5	1,2-Dichloropropane	ND	5.5	0.73	ND	1.2	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	5.5	0.85	ND	1.1	0.17	
106-99-0	1,3-Butadiene	ND	5.5	0.97	ND	2.5	0.44	
541-73-1	1,3-Dichlorobenzene	ND	5.5	0.88	ND	0.92	0.15	
106-46-7	1,4-Dichlorobenzene	ND	5.5	0.90	ND	0.92	0.15	
123-91-1	1,4-Dioxane	ND	5.5	0.69	ND	1.5	0.19	
540-84-1	2,2,4-Trimethylpentane	ND	5.5	0.88	ND	1.2	0.19	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**9.6**	55	1.2	**3.3**	19	0.41	**J**
591-78-6	2-Hexanone	**2.3**	5.5	0.73	**0.57**	1.3	0.18	**J**
67-63-0	2-Propanol	ND	11	2.4	ND	4.5	0.98	
107-05-1	3-Chloropropene	ND	5.5	0.79	ND	1.8	0.25	
622-96-8	4-Ethyltoluene	ND	5.5	0.94	ND	1.1	0.19	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111121** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-046

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes: **H1** 0.015 Liter(s)
Container ID: 1SS01791

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.68

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**0.98**	5.5	0.80	**0.24**	1.3	0.20	**J**
67-64-1	Acetone	**50**	55	13	**21**	23	5.6	**J**
100-44-7	alpha-Chlorotoluene	ND	5.5	1.3	ND	1.1	0.26	
71-43-2	Benzene	ND	5.5	0.85	ND	1.7	0.27	
75-27-4	Bromodichloromethane	ND	5.5	0.85	ND	0.82	0.13	
75-25-2	Bromoform	ND	5.5	1.2	ND	0.53	0.12	
74-83-9	Bromomethane	ND	5.5	0.81	ND	1.4	0.21	
75-15-0	Carbon Disulfide	ND	55	1.8	ND	18	0.57	
56-23-5	Carbon Tetrachloride	ND	5.5	0.81	ND	0.87	0.13	
108-90-7	Chlorobenzene	ND	5.5	0.78	ND	1.2	0.17	
75-00-3	Chloroethane	ND	5.5	0.73	ND	2.1	0.28	
67-66-3	Chloroform	ND	5.5	0.78	ND	1.1	0.16	
74-87-3	Chloromethane	ND	5.5	0.95	ND	2.7	0.46	**V**
156-59-2	cis-1,2-Dichloroethene	ND	5.5	0.83	ND	1.4	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	5.5	0.91	ND	1.2	0.20	
98-82-8	Cumene	ND	5.5	0.85	ND	1.1	0.17	
110-82-7	Cyclohexane	ND	11	1.7	ND	3.2	0.48	
124-48-1	Dibromochloromethane	ND	5.5	0.77	ND	0.65	0.090	
64-17-5	Ethanol	**16**	55	4.1	**8.5**	29	2.2	**J**
100-41-4	Ethyl Benzene	ND	5.5	0.83	ND	1.3	0.19	
75-69-4	Freon 11	**9,000**	55	8.9	**1,600**	9.8	1.6	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111121** ALS Sample ID: P2405139-046
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes: **H1** 0.015 Liter(s)
Container ID: 1SS01791

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.68

Container Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1,000**	55	8.4	**130**	7.2	1.1	**D**
76-14-2	Freon 114	ND	5.5	0.92	ND	0.79	0.13	
75-71-8	Freon 12	**2.7**	5.5	0.96	**0.55**	1.1	0.19	**J**
306-83-2	Freon 123	ND	5.5	2.6	ND	0.88	0.42	**X**
75-43-4	Freon 21	**7.7**	5.5	2.6	**1.8**	1.3	0.63	**X**
142-82-5	Heptane	ND	5.5	0.94	ND	1.3	0.23	
87-68-3	Hexachlorobutadiene	ND	5.5	1.2	ND	0.52	0.11	
110-54-3	Hexane	ND	5.5	1.2	ND	1.6	0.34	
179601-23-1	m,p-Xylene	ND	11	1.5	ND	2.5	0.35	
1634-04-4	Methyl tert-butyl ether	ND	5.5	0.69	ND	1.5	0.19	**V**
75-09-2	Methylene Chloride	ND	5.5	1.7	ND	1.6	0.48	
95-47-6	o-Xylene	ND	5.5	0.85	ND	1.3	0.20	
103-65-1	Propylbenzene	ND	5.5	0.85	ND	1.1	0.17	
100-42-5	Styrene	ND	5.5	0.95	ND	1.3	0.22	
127-18-4	Tetrachloroethene	ND	5.5	0.76	ND	0.81	0.11	
109-99-9	Tetrahydrofuran	ND	5.5	0.74	ND	1.9	0.25	
108-88-3	Toluene	ND	5.5	0.72	ND	1.5	0.19	
156-60-5	trans-1,2-Dichloroethene	ND	5.5	0.81	ND	1.4	0.21	
10061-02-6	trans-1,3-Dichloropropene	ND	5.5	1.2	ND	1.2	0.27	
79-01-6	Trichloroethene	**1.6**	5.5	0.79	**0.29**	1.0	0.15	**J**
75-01-4	Vinyl Chloride	ND	5.5	0.63	ND	2.2	0.25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111121** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-046

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.15 Liter(s)
Test Notes:	**H1**		0.015 Liter(s)
Container ID:	1SS01791		

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.68

Container Dilution Factor: 1.65

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111300** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-047

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SC01343

Initial Pressure (psig): -2.00 Final Pressure (psig): 5.75

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.50	0.078	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.91	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.56	0.070	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**12**	20	0.44	**4.1**	6.8	0.15	**J**
591-78-6	2-Hexanone	**0.93**	2.0	0.27	**0.23**	0.49	0.065	**J**
67-63-0	2-Propanol	**5.6**	4.0	0.89	**2.3**	1.6	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.093	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111300** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-047

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SC01343

Initial Pressure (psig): -2.00 Final Pressure (psig): 5.75

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**1.1**	2.0	0.29	**0.27**	0.49	0.072	**J**
67-64-1	Acetone	**49**	20	4.8	**21**	8.5	2.0	
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	**0.86**	2.0	0.31	**0.27**	0.63	0.097	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	**2.2**	2.0	0.30	**0.58**	0.52	0.077	
75-15-0	Carbon Disulfide	ND	20	0.64	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.062	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.76	0.10	
67-66-3	Chloroform	**1.9**	2.0	0.29	**0.38**	0.41	0.059	**J**
74-87-3	Chloromethane	**0.65**	2.0	0.35	**0.32**	0.97	0.17	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.074	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.24	0.033	
64-17-5	Ethanol	**6.6**	20	1.5	**3.5**	11	0.79	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.070	
75-69-4	Freon 11	**91**	2.0	0.33	**16**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111300** ALS Sample ID: P2405139-047
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SC01343

Initial Pressure (psig): -2.00 Final Pressure (psig): 5.75

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**170**	2.0	0.31	**22**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**3.4**	2.0	0.35	**0.70**	0.41	0.071	
306-83-2	Freon 123	ND	2.0	0.97	ND	0.32	0.15	**X**
75-43-4	Freon 21	**6.1**	2.0	0.97	**1.5**	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.084	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.042	
110-54-3	Hexane	ND	2.0	0.44	ND	0.57	0.13	
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.93	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.56	0.070	**V**
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.35	ND	0.47	0.081	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	**2.1**	2.0	0.26	**0.55**	0.53	0.069	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.098	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.79	0.090	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
X = See case narrative.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111300** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-047

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SC01343		

Initial Pressure (psig): -2.00 Final Pressure (psig): 5.75

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111309** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-048

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01890

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.27	ND	0.38	0.050	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.38	0.041	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.079	
75-35-4	1,1-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.53	ND	0.28	0.072	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.30	ND	0.42	0.062	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.51	0.060	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.44	0.059	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.42	0.064	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.93	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.055	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.57	0.072	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.33	ND	0.44	0.070	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**2.7**	21	0.45	**0.92**	7.0	0.15	**J**
591-78-6	2-Hexanone	**0.52**	2.1	0.27	**0.13**	0.50	0.066	**J**
67-63-0	2-Propanol	ND	4.1	0.90	ND	1.7	0.37	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.66	0.094	
622-96-8	4-Ethyltoluene	ND	2.1	0.35	ND	0.42	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111309** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-048

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01890

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.30	ND	0.50	0.073	
67-64-1	Acetone	**23**	21	4.9	**9.8**	8.6	2.1	
100-44-7	alpha-Chlorotoluene	ND	2.1	0.49	ND	0.40	0.095	
71-43-2	Benzene	**0.52**	2.1	0.32	**0.16**	0.64	0.099	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.047	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.20	0.044	
74-83-9	Bromomethane	ND	2.1	0.30	ND	0.53	0.078	
75-15-0	Carbon Disulfide	**17**	21	0.66	**5.5**	6.6	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.1	0.30	ND	0.33	0.048	
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.45	0.063	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
67-66-3	Chloroform	**3.7**	2.1	0.29	**0.77**	0.42	0.060	
74-87-3	Chloromethane	**0.39**	2.1	0.35	**0.19**	0.99	0.17	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.078	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.1	0.32	ND	0.42	0.064	
110-82-7	Cyclohexane	ND	4.1	0.62	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.24	0.034	
64-17-5	Ethanol	**7.3**	21	1.5	**3.9**	11	0.81	**J**
100-41-4	Ethyl Benzene	**2.0**	2.1	0.31	**0.45**	0.47	0.071	**J**
75-69-4	Freon 11	**250**	2.1	0.33	**45**	0.36	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111309** ALS Sample ID: P2405139-048
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01890

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**310**	2.1	0.31	**41**	0.27	0.041	
76-14-2	Freon 114	ND	2.1	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**1.8**	2.1	0.36	**0.37**	0.41	0.072	**J**
306-83-2	Freon 123	ND	2.1	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	**5.0**	2.1	0.98	**1.2**	0.49	0.23	**X**
142-82-5	Heptane	ND	2.1	0.35	ND	0.50	0.085	
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.19	0.042	
110-54-3	Hexane	**0.96**	2.1	0.45	**0.27**	0.58	0.13	**J**
179601-23-1	m,p-Xylene	**8.6**	4.1	0.57	**2.0**	0.94	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.57	0.072	**V**
75-09-2	Methylene Chloride	ND	2.1	0.62	ND	0.59	0.18	
95-47-6	o-Xylene	**8.2**	2.1	0.32	**1.9**	0.47	0.073	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.42	0.064	
100-42-5	Styrene	ND	2.1	0.35	ND	0.48	0.083	
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.30	0.042	
109-99-9	Tetrahydrofuran	ND	2.1	0.27	ND	0.70	0.093	
108-88-3	Toluene	**0.58**	2.1	0.27	**0.15**	0.54	0.071	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.1	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111309** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-048

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS01890		

Initial Pressure (psig): -2.14 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111318** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-049

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01698

Initial Pressure (psig): -2.20 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.27	ND	0.38	0.050	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.38	0.041	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.079	
75-35-4	1,1-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.53	ND	0.28	0.072	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.30	ND	0.42	0.062	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.51	0.060	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.44	0.059	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.42	0.064	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.93	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.055	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.57	0.072	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.33	ND	0.44	0.070	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**2.6**	21	0.45	**0.88**	7.0	0.15	**J**
591-78-6	2-Hexanone	**0.38**	2.1	0.27	**0.093**	0.50	0.066	**J**
67-63-0	2-Propanol	**5.1**	4.1	0.90	**2.1**	1.7	0.37	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.66	0.094	
622-96-8	4-Ethyltoluene	ND	2.1	0.35	ND	0.42	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111318** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-049

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01698

Initial Pressure (psig): -2.20 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.30	ND	0.50	0.073	
67-64-1	Acetone	**11**	21	4.9	**4.7**	8.6	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.1	0.49	ND	0.40	0.095	
71-43-2	Benzene	**0.46**	2.1	0.32	**0.14**	0.64	0.099	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.047	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.20	0.044	
74-83-9	Bromomethane	ND	2.1	0.30	ND	0.53	0.078	
75-15-0	Carbon Disulfide	ND	21	0.66	ND	6.6	0.21	
56-23-5	Carbon Tetrachloride	ND	2.1	0.30	ND	0.33	0.048	
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.45	0.063	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
67-66-3	Chloroform	**3.9**	2.1	0.29	**0.80**	0.42	0.060	
74-87-3	Chloromethane	ND	2.1	0.35	ND	0.99	0.17	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.078	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.1	0.32	ND	0.42	0.064	
110-82-7	Cyclohexane	ND	4.1	0.62	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.24	0.034	
64-17-5	Ethanol	**6.2**	21	1.5	**3.3**	11	0.81	**J**
100-41-4	Ethyl Benzene	ND	2.1	0.31	ND	0.47	0.071	
75-69-4	Freon 11	**260**	2.1	0.33	**47**	0.36	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111318** ALS Sample ID: P2405139-049
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01698

Initial Pressure (psig): -2.20 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**320**	2.1	0.31	**42**	0.27	0.041	
76-14-2	Freon 114	ND	2.1	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.0**	2.1	0.36	**0.40**	0.41	0.072	**J**
306-83-2	Freon 123	ND	2.1	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	**5.0**	2.1	0.98	**1.2**	0.49	0.23	**X**
142-82-5	Heptane	ND	2.1	0.35	ND	0.50	0.085	
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.19	0.042	
110-54-3	Hexane	**0.86**	2.1	0.45	**0.24**	0.58	0.13	**J**
179601-23-1	m,p-Xylene	ND	4.1	0.57	ND	0.94	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.57	0.072	**V**
75-09-2	Methylene Chloride	ND	2.1	0.62	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.1	0.32	ND	0.47	0.073	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.42	0.064	
100-42-5	Styrene	ND	2.1	0.35	ND	0.48	0.083	
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.30	0.042	
109-99-9	Tetrahydrofuran	ND	2.1	0.27	ND	0.70	0.093	
108-88-3	Toluene	**0.28**	2.1	0.27	**0.075**	0.54	0.071	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.1	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111318** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-049

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Chase Griffin	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1, T**		
Container ID:	1SS01698		

Initial Pressure (psig): -2.20 Final Pressure (psig): 5.84

Container Dilution Factor: 1.64

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.60	Freon 123a	**17**	

T = Analyte is a tentatively identified compound, result is estimated.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111319** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-050

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01786

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.64

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.27	ND	0.38	0.050	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.38	0.041	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.079	
75-35-4	1,1-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.53	ND	0.28	0.072	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.30	ND	0.42	0.062	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.51	0.060	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.44	0.059	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.42	0.064	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.93	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.33	ND	0.34	0.055	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.57	0.072	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.33	ND	0.44	0.070	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.8**	21	0.45	**0.62**	7.0	0.15	**J**
591-78-6	2-Hexanone	**0.33**	2.1	0.27	**0.080**	0.50	0.066	**J**
67-63-0	2-Propanol	**6.4**	4.1	0.90	**2.6**	1.7	0.37	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.66	0.094	
622-96-8	4-Ethyltoluene	ND	2.1	0.35	ND	0.42	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111319** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-050

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01786

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.64

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.30	ND	0.50	0.073	
67-64-1	Acetone	**6.2**	21	4.9	**2.6**	8.6	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.1	0.49	ND	0.40	0.095	
71-43-2	Benzene	**0.45**	2.1	0.32	**0.14**	0.64	0.099	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.047	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.20	0.044	
74-83-9	Bromomethane	ND	2.1	0.30	ND	0.53	0.078	
75-15-0	Carbon Disulfide	**0.77**	21	0.66	**0.25**	6.6	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.1	0.30	ND	0.33	0.048	
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.45	0.063	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
67-66-3	Chloroform	**3.7**	2.1	0.29	**0.76**	0.42	0.060	
74-87-3	Chloromethane	ND	2.1	0.35	ND	0.99	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.31	ND	0.52	0.078	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.1	0.32	ND	0.42	0.064	
110-82-7	Cyclohexane	ND	4.1	0.62	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.24	0.034	
64-17-5	Ethanol	**5.6**	21	1.5	**3.0**	11	0.81	**J**
100-41-4	Ethyl Benzene	ND	2.1	0.31	ND	0.47	0.071	
75-69-4	Freon 11	**250**	2.1	0.33	**44**	0.36	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111319** ALS Sample ID: P2405139-050
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01786

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.64

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**320**	2.1	0.31	**41**	0.27	0.041	
76-14-2	Freon 114	ND	2.1	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.1**	2.1	0.36	**0.42**	0.41	0.072	
306-83-2	Freon 123	ND	2.1	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	**5.0**	2.1	0.98	**1.2**	0.49	0.23	**X**
142-82-5	Heptane	ND	2.1	0.35	ND	0.50	0.085	
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.19	0.042	
110-54-3	Hexane	**0.89**	2.1	0.45	**0.25**	0.58	0.13	**J**
179601-23-1	m,p-Xylene	ND	4.1	0.57	ND	0.94	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.57	0.072	
75-09-2	Methylene Chloride	ND	2.1	0.62	ND	0.59	0.18	
95-47-6	o-Xylene	ND	2.1	0.32	ND	0.47	0.073	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.42	0.064	
100-42-5	Styrene	ND	2.1	0.35	ND	0.48	0.083	
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.30	0.042	
109-99-9	Tetrahydrofuran	ND	2.1	0.27	ND	0.70	0.093	
108-88-3	Toluene	**0.30**	2.1	0.27	**0.079**	0.54	0.071	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.30	ND	0.52	0.077	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.1	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111319** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-050

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1, T**		
Container ID:	1SS01786		

Initial Pressure (psig): -2.33 Final Pressure (psig): 5.64

Container Dilution Factor: 1.64

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.60	Freon 123a	**16**	

T = Analyte is a tentatively identified compound, result is estimated.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111328** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-051

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01757

Initial Pressure (psig): -2.34 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.28	ND	0.39	0.051	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.31	0.045	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.23	ND	0.39	0.042	
75-34-3	1,1-Dichloroethane	ND	2.1	0.33	ND	0.52	0.081	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.53	0.078	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.55	ND	0.28	0.074	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.43	0.063	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.27	0.034	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.33	ND	0.35	0.055	
107-06-2	1,2-Dichloroethane	ND	2.1	0.25	ND	0.52	0.061	
78-87-5	1,2-Dichloropropane	ND	2.1	0.28	ND	0.45	0.060	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.43	0.066	
106-99-0	1,3-Butadiene	ND	2.1	0.37	ND	0.95	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.056	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.057	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.58	0.073	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.34	ND	0.45	0.072	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**23**	21	0.46	**7.9**	7.1	0.16	
591-78-6	2-Hexanone	**1.1**	2.1	0.28	**0.28**	0.51	0.068	**J**
67-63-0	2-Propanol	**2.4**	4.2	0.92	**0.96**	1.7	0.38	**J**
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.67	0.097	
622-96-8	4-Ethyltoluene	ND	2.1	0.36	ND	0.43	0.073	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111328** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-051

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01757

Initial Pressure (psig): -2.34 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**0.63**	2.1	0.31	**0.15**	0.51	0.075	**J**
67-64-1	Acetone	**230**	21	5.0	**95**	8.8	2.1	
100-44-7	alpha-Chlorotoluene	ND	2.1	0.50	ND	0.41	0.097	
71-43-2	Benzene	**1.5**	2.1	0.32	**0.46**	0.66	0.10	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.048	
75-25-2	Bromoform	ND	2.1	0.46	ND	0.20	0.045	
74-83-9	Bromomethane	**1.2**	2.1	0.31	**0.31**	0.54	0.080	**J**
75-15-0	Carbon Disulfide	**1.3**	21	0.67	**0.41**	6.7	0.22	**J**
56-23-5	Carbon Tetrachloride	ND	2.1	0.31	ND	0.33	0.049	
108-90-7	Chlorobenzene	ND	2.1	0.30	ND	0.46	0.065	
75-00-3	Chloroethane	**1.1**	2.1	0.28	**0.42**	0.80	0.11	**J**
67-66-3	Chloroform	**4.2**	2.1	0.30	**0.85**	0.43	0.061	
74-87-3	Chloromethane	**1.8**	2.1	0.36	**0.85**	1.0	0.17	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.32	ND	0.53	0.079	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.35	ND	0.46	0.077	
98-82-8	Cumene	ND	2.1	0.32	ND	0.43	0.066	
110-82-7	Cyclohexane	ND	4.2	0.63	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.25	0.035	
64-17-5	Ethanol	**13**	21	1.6	**6.9**	11	0.83	**J**
100-41-4	Ethyl Benzene	**2.7**	2.1	0.32	**0.62**	0.48	0.073	
75-69-4	Freon 11	**260**	2.1	0.34	**46**	0.37	0.061	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111328** ALS Sample ID: P2405139-051
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01757

Initial Pressure (psig): -2.34 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**310**	2.1	0.32	**41**	0.27	0.042	
76-14-2	Freon 114	ND	2.1	0.35	ND	0.30	0.050	
75-71-8	Freon 12	**2.3**	2.1	0.37	**0.47**	0.42	0.074	
306-83-2	Freon 123	ND	2.1	1.0	ND	0.34	0.16	**X**
75-43-4	Freon 21	**5.4**	2.1	1.0	**1.3**	0.50	0.24	**X**
142-82-5	Heptane	**0.38**	2.1	0.36	**0.093**	0.51	0.087	**J**
87-68-3	Hexachlorobutadiene	ND	2.1	0.46	ND	0.20	0.043	
110-54-3	Hexane	**0.80**	2.1	0.46	**0.23**	0.60	0.13	**J**
179601-23-1	m,p-Xylene	**6.9**	4.2	0.59	**1.6**	0.97	0.14	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.58	0.073	
75-09-2	Methylene Chloride	ND	2.1	0.63	ND	0.60	0.18	
95-47-6	o-Xylene	**7.4**	2.1	0.32	**1.7**	0.48	0.074	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.43	0.066	
100-42-5	Styrene	ND	2.1	0.36	ND	0.49	0.085	
127-18-4	Tetrachloroethene	ND	2.1	0.29	ND	0.31	0.043	
109-99-9	Tetrahydrofuran	ND	2.1	0.28	ND	0.71	0.095	
108-88-3	Toluene	**1.9**	2.1	0.27	**0.51**	0.56	0.072	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.53	0.078	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.46	ND	0.46	0.10	
79-01-6	Trichloroethene	ND	2.1	0.30	ND	0.39	0.056	
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.82	0.094	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111328** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-051

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS01757		

Initial Pressure (psig): -2.34 Final Pressure (psig): 6.03

Container Dilution Factor: 1.68

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111350** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-052

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00751

Initial Pressure (psig): 5.92 Final Pressure (psig): 5.92

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	1.3	0.17	ND	0.23	0.030	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.3	0.19	ND	0.18	0.027	
79-00-5	1,1,2-Trichloroethane	ND	1.3	0.14	ND	0.23	0.025	
75-34-3	1,1-Dichloroethane	ND	1.3	0.20	ND	0.31	0.048	
75-35-4	1,1-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
120-82-1	1,2,4-Trichlorobenzene	ND	1.3	0.33	ND	0.17	0.044	
95-63-6	1,2,4-Trimethylbenzene	ND	1.3	0.19	ND	0.25	0.038	
106-93-4	1,2-Dibromoethane (EDB)	ND	1.3	0.16	ND	0.16	0.020	
95-50-1	1,2-Dichlorobenzene	ND	1.3	0.20	ND	0.21	0.033	
107-06-2	1,2-Dichloroethane	ND	1.3	0.15	ND	0.31	0.036	
78-87-5	1,2-Dichloropropane	ND	1.3	0.17	ND	0.27	0.036	
108-67-8	1,3,5-Trimethylbenzene	ND	1.3	0.19	ND	0.25	0.039	
106-99-0	1,3-Butadiene	ND	1.3	0.22	ND	0.57	0.099	
541-73-1	1,3-Dichlorobenzene	ND	1.3	0.20	ND	0.21	0.033	
106-46-7	1,4-Dichlorobenzene	ND	1.3	0.21	ND	0.21	0.034	
123-91-1	1,4-Dioxane	ND	1.3	0.16	ND	0.35	0.044	
540-84-1	2,2,4-Trimethylpentane	ND	1.3	0.20	ND	0.27	0.043	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.45**	13	0.28	**0.15**	4.2	0.093	**J**
591-78-6	2-Hexanone	ND	1.3	0.17	ND	0.31	0.040	
67-63-0	2-Propanol	ND	2.5	0.55	ND	1.0	0.22	
107-05-1	3-Chloropropene	ND	1.3	0.18	ND	0.40	0.058	
622-96-8	4-Ethyltoluene	ND	1.3	0.21	ND	0.25	0.043	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111350** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-052

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00751

Initial Pressure (psig): 5.92 Final Pressure (psig): 5.92

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	1.3	0.18	ND	0.31	0.045	
67-64-1	Acetone	ND	13	3.0	ND	5.3	1.3	
100-44-7	alpha-Chlorotoluene	ND	1.3	0.30	ND	0.24	0.058	
71-43-2	Benzene	ND	1.3	0.19	ND	0.39	0.060	
75-27-4	Bromodichloromethane	ND	1.3	0.19	ND	0.19	0.029	
75-25-2	Bromoform	ND	1.3	0.28	ND	0.12	0.027	
74-83-9	Bromomethane	ND	1.3	0.19	ND	0.32	0.048	
75-15-0	Carbon Disulfide	**1.5**	13	0.40	**0.48**	4.0	0.13	**J**
56-23-5	Carbon Tetrachloride	ND	1.3	0.19	ND	0.20	0.029	
108-90-7	Chlorobenzene	ND	1.3	0.18	ND	0.27	0.039	
75-00-3	Chloroethane	ND	1.3	0.17	ND	0.47	0.063	
67-66-3	Chloroform	ND	1.3	0.18	ND	0.26	0.036	
74-87-3	Chloromethane	ND	1.3	0.22	ND	0.61	0.10	
156-59-2	cis-1,2-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
10061-01-5	cis-1,3-Dichloropropene	ND	1.3	0.21	ND	0.28	0.046	
98-82-8	Cumene	ND	1.3	0.19	ND	0.25	0.039	
110-82-7	Cyclohexane	ND	2.5	0.38	ND	0.73	0.11	
124-48-1	Dibromochloromethane	ND	1.3	0.18	ND	0.15	0.021	
64-17-5	Ethanol	**1.1**	13	0.93	**0.56**	6.6	0.49	**J**
100-41-4	Ethyl Benzene	ND	1.3	0.19	ND	0.29	0.043	
75-69-4	Freon 11	ND	1.3	0.20	ND	0.22	0.036	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111350** ALS Sample ID: P2405139-052
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00751

Initial Pressure (psig): 5.92 Final Pressure (psig): 5.92

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	1.3	0.19	ND	0.16	0.025	
76-14-2	Freon 114	ND	1.3	0.21	ND	0.18	0.030	
75-71-8	Freon 12	ND	1.3	0.22	ND	0.25	0.044	
306-83-2	Freon 123	ND	1.3	0.60	ND	0.20	0.096	**X**
75-43-4	Freon 21	ND	1.3	0.60	ND	0.30	0.14	**X**
142-82-5	Heptane	ND	1.3	0.21	ND	0.31	0.052	
87-68-3	Hexachlorobutadiene	ND	1.3	0.28	ND	0.12	0.026	
110-54-3	Hexane	ND	1.3	0.28	ND	0.35	0.078	
179601-23-1	m,p-Xylene	ND	2.5	0.35	ND	0.58	0.081	
1634-04-4	Methyl tert-butyl ether	ND	1.3	0.16	ND	0.35	0.044	
75-09-2	Methylene Chloride	ND	1.3	0.38	ND	0.36	0.11	
95-47-6	o-Xylene	ND	1.3	0.19	ND	0.29	0.044	
103-65-1	Propylbenzene	ND	1.3	0.19	ND	0.25	0.039	
100-42-5	Styrene	ND	1.3	0.22	ND	0.29	0.051	
127-18-4	Tetrachloroethene	ND	1.3	0.17	ND	0.18	0.025	
109-99-9	Tetrahydrofuran	ND	1.3	0.17	ND	0.42	0.057	
108-88-3	Toluene	ND	1.3	0.16	ND	0.33	0.043	
156-60-5	trans-1,2-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
10061-02-6	trans-1,3-Dichloropropene	ND	1.3	0.28	ND	0.28	0.061	
79-01-6	Trichloroethene	ND	1.3	0.18	ND	0.23	0.034	
75-01-4	Vinyl Chloride	ND	1.3	0.14	ND	0.49	0.056	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111350** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-052

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS00751		

Initial Pressure (psig): 5.92 Final Pressure (psig): 5.92

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111351** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-053

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00928

Initial Pressure (psig): -2.06 Final Pressure (psig): 5.61

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.50	0.078	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.91	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	**0.29**	2.0	0.25	**0.082**	0.56	0.070	**J**
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.94**	20	0.44	**0.32**	6.8	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.27	ND	0.49	0.065	
67-63-0	2-Propanol	ND	4.0	0.89	ND	1.6	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.093	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111351** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-053

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00928

Initial Pressure (psig): -2.06 Final Pressure (psig): 5.61

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.072	
67-64-1	Acetone	**14**	20	4.8	**5.9**	8.5	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	ND	2.0	0.31	ND	0.63	0.097	
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.077	
75-15-0	Carbon Disulfide	**7.1**	20	0.64	**2.3**	6.5	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.062	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.76	0.10	
67-66-3	Chloroform	**2.4**	2.0	0.29	**0.49**	0.41	0.059	
74-87-3	Chloromethane	ND	2.0	0.35	ND	0.97	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.074	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.24	0.033	
64-17-5	Ethanol	ND	20	1.5	ND	11	0.79	
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.070	
75-69-4	Freon 11	**32**	2.0	0.33	**5.6**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111351** ALS Sample ID: P2405139-053
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00928

Initial Pressure (psig): -2.06 Final Pressure (psig): 5.61

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**43**	2.0	0.31	**5.6**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**2.1**	2.0	0.35	**0.42**	0.41	0.071	
306-83-2	Freon 123	ND	2.0	0.97	ND	0.32	0.15	**X**
75-43-4	Freon 21	**2.0**	2.0	0.97	**0.48**	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.084	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.042	
110-54-3	Hexane	ND	2.0	0.44	ND	0.57	0.13	
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.93	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.56	0.070	
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.35	ND	0.47	0.081	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	ND	2.0	0.26	ND	0.53	0.069	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.098	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.79	0.090	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111351** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-053

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS00928		

Initial Pressure (psig): -2.06 Final Pressure (psig): 5.61

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111400** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-054

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00689

Initial Pressure (psig): -0.35 Final Pressure (psig): 6.13
Initial Pressure 2 (psig): -1.79 Final Pressure 2 (psig): 5.95
Container Dilution Factor: 2.32

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.9	0.38	ND	0.53	0.070	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.9	0.43	ND	0.42	0.063	
79-00-5	1,1,2-Trichloroethane	ND	2.9	0.31	ND	0.53	0.057	
75-34-3	1,1-Dichloroethane	ND	2.9	0.45	ND	0.72	0.11	
75-35-4	1,1-Dichloroethene	ND	2.9	0.43	ND	0.73	0.11	
120-82-1	1,2,4-Trichlorobenzene	ND	2.9	0.75	ND	0.39	0.10	
95-63-6	1,2,4-Trimethylbenzene	**0.43**	2.9	0.43	**0.087**	0.59	0.087	**J**
106-93-4	1,2-Dibromoethane (EDB)	ND	2.9	0.36	ND	0.38	0.047	
95-50-1	1,2-Dichlorobenzene	ND	2.9	0.46	ND	0.48	0.076	
107-06-2	1,2-Dichloroethane	ND	2.9	0.34	ND	0.72	0.085	
78-87-5	1,2-Dichloropropane	ND	2.9	0.38	ND	0.63	0.083	
108-67-8	1,3,5-Trimethylbenzene	ND	2.9	0.45	ND	0.59	0.091	
106-99-0	1,3-Butadiene	ND	2.9	0.51	ND	1.3	0.23	
541-73-1	1,3-Dichlorobenzene	ND	2.9	0.46	ND	0.48	0.077	
106-46-7	1,4-Dichlorobenzene	ND	2.9	0.48	ND	0.48	0.079	
123-91-1	1,4-Dioxane	ND	2.9	0.37	ND	0.81	0.10	
540-84-1	2,2,4-Trimethylpentane	**0.65**	2.9	0.46	**0.14**	0.62	0.099	**J**
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**7.7**	29	0.64	**2.6**	9.8	0.22	**J**
591-78-6	2-Hexanone	**0.39**	2.9	0.38	**0.096**	0.71	0.093	**J**
67-63-0	2-Propanol	**16**	5.8	1.3	**6.7**	2.4	0.52	
107-05-1	3-Chloropropene	ND	2.9	0.42	ND	0.93	0.13	
622-96-8	4-Ethyltoluene	ND	2.9	0.49	ND	0.59	0.10	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111400** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-054

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00689

Initial Pressure (psig): -0.35 Final Pressure (psig): 6.13
Initial Pressure 2 (psig): -1.79 Final Pressure 2 (psig): 5.95
Container Dilution Factor: 2.32

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**2.5**	2.9	0.42	**0.62**	0.71	0.10	**J**
67-64-1	Acetone	**51**	29	7.0	**22**	12	2.9	
100-44-7	alpha-Chlorotoluene	ND	2.9	0.70	ND	0.56	0.13	
71-43-2	Benzene	**1.1**	2.9	0.45	**0.35**	0.91	0.14	**J**
75-27-4	Bromodichloromethane	ND	2.9	0.45	ND	0.43	0.067	
75-25-2	Bromoform	ND	2.9	0.64	ND	0.28	0.062	
74-83-9	Bromomethane	**2.1**	2.9	0.43	**0.53**	0.75	0.11	**J**
75-15-0	Carbon Disulfide	**2.9**	29	0.93	**0.94**	9.3	0.30	**J**
56-23-5	Carbon Tetrachloride	ND	2.9	0.43	ND	0.46	0.068	
108-90-7	Chlorobenzene	ND	2.9	0.41	ND	0.63	0.089	
75-00-3	Chloroethane	**0.70**	2.9	0.38	**0.27**	1.1	0.15	**J**
67-66-3	Chloroform	**2.9**	2.9	0.41	**0.60**	0.59	0.084	
74-87-3	Chloromethane	**2.5**	2.9	0.50	**1.2**	1.4	0.24	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.9	0.44	ND	0.73	0.11	
10061-01-5	cis-1,3-Dichloropropene	ND	2.9	0.48	ND	0.64	0.11	
98-82-8	Cumene	ND	2.9	0.45	ND	0.59	0.091	
110-82-7	Cyclohexane	**1.5**	5.8	0.87	**0.43**	1.7	0.25	**J**
124-48-1	Dibromochloromethane	ND	2.9	0.41	ND	0.34	0.048	
64-17-5	Ethanol	**48**	29	2.1	**26**	15	1.1	
100-41-4	Ethyl Benzene	**0.75**	2.9	0.44	**0.17**	0.67	0.10	**J**
75-69-4	Freon 11	**61**	2.9	0.47	**11**	0.52	0.084	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111400** ALS Sample ID: P2405139-054
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00689

Initial Pressure (psig): -0.35 Final Pressure (psig): 6.13
Initial Pressure 2 (psig): -1.79 Final Pressure 2 (psig): 5.95

Container Dilution Factor: 2.32

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**59**	2.9	0.44	**7.8**	0.38	0.058	
76-14-2	Freon 114	ND	2.9	0.49	ND	0.42	0.070	
75-71-8	Freon 12	**2.6**	2.9	0.50	**0.52**	0.59	0.10	**J**
306-83-2	Freon 123	ND	2.9	1.4	ND	0.46	0.22	**X**
75-43-4	Freon 21	ND	2.9	1.4	ND	0.69	0.33	**X**
142-82-5	Heptane	**0.77**	2.9	0.49	**0.19**	0.71	0.12	**J**
87-68-3	Hexachlorobutadiene	ND	2.9	0.64	ND	0.27	0.060	
110-54-3	Hexane	**1.4**	2.9	0.64	**0.39**	0.82	0.18	**J**
179601-23-1	m,p-Xylene	**2.3**	5.8	0.81	**0.53**	1.3	0.19	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.9	0.37	ND	0.80	0.10	
75-09-2	Methylene Chloride	**4.8**	2.9	0.87	**1.4**	0.84	0.25	
95-47-6	o-Xylene	**1.1**	2.9	0.45	**0.24**	0.67	0.10	**J**
103-65-1	Propylbenzene	ND	2.9	0.45	ND	0.59	0.091	
100-42-5	Styrene	**0.99**	2.9	0.50	**0.23**	0.68	0.12	**J**
127-18-4	Tetrachloroethene	ND	2.9	0.40	ND	0.43	0.059	
109-99-9	Tetrahydrofuran	ND	2.9	0.39	ND	0.98	0.13	
108-88-3	Toluene	**9.0**	2.9	0.38	**2.4**	0.77	0.10	
156-60-5	trans-1,2-Dichloroethene	ND	2.9	0.43	ND	0.73	0.11	
10061-02-6	trans-1,3-Dichloropropene	ND	2.9	0.64	ND	0.64	0.14	
79-01-6	Trichloroethene	ND	2.9	0.42	ND	0.54	0.078	
75-01-4	Vinyl Chloride	ND	2.9	0.33	ND	1.1	0.13	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111400** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-054

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/13/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS00689		

Initial Pressure (psig):	-0.35	Final Pressure (psig):	6.13
Initial Pressure 2 (psig):	-1.79	Final Pressure 2 (psig):	5.95

Container Dilution Factor: 2.32

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111409** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-055

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1** 0.040 Liter(s)
Container ID: 1SC01032

Initial Pressure (psig): -2.51 Final Pressure (psig): 5.84

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.28	ND	0.39	0.051	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.31	ND	0.31	0.045	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.23	ND	0.39	0.042	
75-34-3	1,1-Dichloroethane	ND	2.1	0.33	ND	0.52	0.081	
75-35-4	1,1-Dichloroethene	ND	2.1	0.31	ND	0.53	0.078	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.55	ND	0.28	0.074	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.31	ND	0.43	0.063	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.1	0.26	ND	0.27	0.034	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.33	ND	0.35	0.055	
107-06-2	1,2-Dichloroethane	ND	2.1	0.25	ND	0.52	0.061	
78-87-5	1,2-Dichloropropane	ND	2.1	0.28	ND	0.45	0.060	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.32	ND	0.43	0.066	
106-99-0	1,3-Butadiene	ND	2.1	0.37	ND	0.95	0.17	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.056	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.34	ND	0.35	0.057	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.58	0.073	
540-84-1	2,2,4-Trimethylpentane	ND	2.1	0.34	ND	0.45	0.072	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**4.3**	21	0.46	**1.5**	7.1	0.16	**J**
591-78-6	2-Hexanone	**1.2**	2.1	0.28	**0.30**	0.51	0.068	**J**
67-63-0	2-Propanol	ND	4.2	0.92	ND	1.7	0.38	
107-05-1	3-Chloropropene	ND	2.1	0.30	ND	0.67	0.097	
622-96-8	4-Ethyltoluene	ND	2.1	0.36	ND	0.43	0.073	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111409** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-055

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1** 0.040 Liter(s)
Container ID: 1SC01032

Initial Pressure (psig): -2.51 Final Pressure (psig): 5.84

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.1	0.31	ND	0.51	0.075	
67-64-1	Acetone	**22**	21	5.0	**9.4**	8.8	2.1	
100-44-7	alpha-Chlorotoluene	ND	2.1	0.50	ND	0.41	0.097	
71-43-2	Benzene	**0.51**	2.1	0.32	**0.16**	0.66	0.10	**J**
75-27-4	Bromodichloromethane	ND	2.1	0.32	ND	0.31	0.048	
75-25-2	Bromoform	**0.52**	2.1	0.46	**0.050**	0.20	0.045	**J**
74-83-9	Bromomethane	ND	2.1	0.31	ND	0.54	0.080	
75-15-0	Carbon Disulfide	ND	21	0.67	ND	6.7	0.22	
56-23-5	Carbon Tetrachloride	ND	2.1	0.31	ND	0.33	0.049	
108-90-7	Chlorobenzene	ND	2.1	0.30	ND	0.46	0.065	
75-00-3	Chloroethane	ND	2.1	0.28	ND	0.80	0.11	
67-66-3	Chloroform	**7.4**	2.1	0.30	**1.5**	0.43	0.061	
74-87-3	Chloromethane	ND	2.1	0.36	ND	1.0	0.17	
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.32	ND	0.53	0.079	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.35	ND	0.46	0.077	
98-82-8	Cumene	ND	2.1	0.32	ND	0.43	0.066	
110-82-7	Cyclohexane	ND	4.2	0.63	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.1	0.29	ND	0.25	0.035	
64-17-5	Ethanol	**2.8**	21	1.6	**1.5**	11	0.83	**J**
100-41-4	Ethyl Benzene	ND	2.1	0.32	ND	0.48	0.073	
75-69-4	Freon 11	**1,200**	21	3.4	**210**	3.7	0.61	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111409** ALS Sample ID: P2405139-055
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1** 0.040 Liter(s)
Container ID: 1SC01032

Initial Pressure (psig): -2.51 Final Pressure (psig): 5.84

Container Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1,200**	21	3.2	**150**	2.7	0.42	**D**
76-14-2	Freon 114	ND	2.1	0.35	ND	0.30	0.050	
75-71-8	Freon 12	**2.5**	2.1	0.37	**0.50**	0.42	0.074	
306-83-2	Freon 123	ND	2.1	1.0	ND	0.34	0.16	**X**
75-43-4	Freon 21	**1.2**	2.1	1.0	**0.27**	0.50	0.24	**J, X**
142-82-5	Heptane	ND	2.1	0.36	ND	0.51	0.087	
87-68-3	Hexachlorobutadiene	ND	2.1	0.46	ND	0.20	0.043	
110-54-3	Hexane	ND	2.1	0.46	ND	0.60	0.13	
179601-23-1	m,p-Xylene	ND	4.2	0.59	ND	0.97	0.14	
1634-04-4	Methyl tert-butyl ether	ND	2.1	0.26	ND	0.58	0.073	
75-09-2	Methylene Chloride	**1.3**	2.1	0.63	**0.36**	0.60	0.18	**J**
95-47-6	o-Xylene	ND	2.1	0.32	ND	0.48	0.074	
103-65-1	Propylbenzene	ND	2.1	0.32	ND	0.43	0.066	
100-42-5	Styrene	ND	2.1	0.36	ND	0.49	0.085	
127-18-4	Tetrachloroethene	ND	2.1	0.29	ND	0.31	0.043	
109-99-9	Tetrahydrofuran	ND	2.1	0.28	ND	0.71	0.095	
108-88-3	Toluene	**0.42**	2.1	0.27	**0.11**	0.56	0.072	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.31	ND	0.53	0.078	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.46	ND	0.46	0.10	
79-01-6	Trichloroethene	**1.6**	2.1	0.30	**0.30**	0.39	0.056	**J**
75-01-4	Vinyl Chloride	ND	2.1	0.24	ND	0.82	0.094	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111409** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-055

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao/Logan Simon	Date Analyzed:	1/11 - 1/12/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		0.040 Liter(s)
Container ID:	1SC01032		

Initial Pressure (psig): -2.51 Final Pressure (psig): 5.84

Container Dilution Factor: 1.68

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111410** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-056

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00986

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.70

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.30	0.044	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.32	ND	0.50	0.079	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.53	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.27	0.033	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.34	0.054	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.064	
106-99-0	1,3-Butadiene	ND	2.0	0.36	ND	0.92	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.34	0.056	
123-91-1	1,4-Dioxane	ND	2.0	0.26	ND	0.57	0.071	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.33	ND	0.44	0.070	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**90**	20	0.45	**30**	6.9	0.15	
591-78-6	2-Hexanone	ND	2.0	0.27	ND	0.50	0.066	
67-63-0	2-Propanol	ND	4.1	0.90	ND	1.7	0.36	
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.65	0.094	
622-96-8	4-Ethyltoluene	ND	2.0	0.35	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111410** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-056

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00986

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.70

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.30	ND	0.50	0.073	
67-64-1	Acetone	**7.9**	20	4.9	**3.3**	8.6	2.1	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.49	ND	0.39	0.094	
71-43-2	Benzene	ND	2.0	0.31	ND	0.64	0.098	
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.047	
75-25-2	Bromoform	ND	2.0	0.45	ND	0.20	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.078	
75-15-0	Carbon Disulfide	ND	20	0.65	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	**0.56**	2.0	0.30	**0.089**	0.32	0.048	**J**
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.063	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.77	0.10	
67-66-3	Chloroform	**0.42**	2.0	0.29	**0.086**	0.42	0.059	**J**
74-87-3	Chloromethane	**0.63**	2.0	0.35	**0.31**	0.99	0.17	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.31	ND	0.51	0.077	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.34	ND	0.45	0.075	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.064	
110-82-7	Cyclohexane	ND	4.1	0.61	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.29	ND	0.24	0.033	
64-17-5	Ethanol	**5.4**	20	1.5	**2.9**	11	0.80	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.31	ND	0.47	0.070	
75-69-4	Freon 11	**41**	2.0	0.33	**7.3**	0.36	0.059	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111410** ALS Sample ID: P2405139-056
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS00986

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.70

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**43**	2.0	0.31	**5.6**	0.27	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.049	
75-71-8	Freon 12	**2.5**	2.0	0.35	**0.50**	0.41	0.072	
306-83-2	Freon 123	ND	2.0	0.98	ND	0.33	0.16	**X**
75-43-4	Freon 21	**14**	2.0	0.98	**3.4**	0.48	0.23	**X**
142-82-5	Heptane	**3.9**	2.0	0.35	**0.95**	0.50	0.085	
87-68-3	Hexachlorobutadiene	ND	2.0	0.45	ND	0.19	0.042	
110-54-3	Hexane	**1.8**	2.0	0.45	**0.52**	0.58	0.13	**J**
179601-23-1	m,p-Xylene	ND	4.1	0.57	ND	0.94	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.26	ND	0.57	0.071	
75-09-2	Methylene Chloride	**2.2**	2.0	0.61	**0.64**	0.59	0.18	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.47	0.072	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.064	
100-42-5	Styrene	ND	2.0	0.35	ND	0.48	0.082	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ND	0.30	0.041	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.69	0.093	
108-88-3	Toluene	**6.8**	2.0	0.26	**1.8**	0.54	0.070	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.45	ND	0.45	0.099	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.38	0.055	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.80	0.091	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111410** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-056

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/13/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS00986		

Initial Pressure (psig): -2.21 Final Pressure (psig): 5.70

Container Dilution Factor: 1.63

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111419** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-057

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: **H1** 0.00050 Liter(s)
Container ID: 1SS00686

Initial Pressure (psig): -2.37 Final Pressure (psig): 5.85

Container Dilution Factor: 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	42	5.5	ND	7.7	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	42	6.2	ND	6.1	0.90	
79-00-5	1,1,2-Trichloroethane	ND	42	4.5	ND	7.7	0.83	
75-34-3	1,1-Dichloroethane	ND	42	6.5	ND	10	1.6	
75-35-4	1,1-Dichloroethene	ND	42	6.2	ND	11	1.6	
120-82-1	1,2,4-Trichlorobenzene	ND	42	11	ND	5.6	1.5	
95-63-6	1,2,4-Trimethylbenzene	ND	42	6.2	ND	8.5	1.3	
106-93-4	1,2-Dibromoethane (EDB)	ND	42	5.2	ND	5.4	0.67	
95-50-1	1,2-Dichlorobenzene	ND	42	6.6	ND	6.9	1.1	
107-06-2	1,2-Dichloroethane	ND	42	4.9	ND	10	1.2	
78-87-5	1,2-Dichloropropane	ND	42	5.5	ND	9.0	1.2	
108-67-8	1,3,5-Trimethylbenzene	ND	42	6.4	ND	8.5	1.3	
106-99-0	1,3-Butadiene	ND	42	7.3	ND	19	3.3	
541-73-1	1,3-Dichlorobenzene	ND	42	6.7	ND	6.9	1.1	
106-46-7	1,4-Dichlorobenzene	ND	42	6.8	ND	6.9	1.1	
123-91-1	1,4-Dioxane	ND	42	5.3	ND	12	1.5	
540-84-1	2,2,4-Trimethylpentane	ND	42	6.7	ND	8.9	1.4	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	420	9.2	ND	140	3.1	
591-78-6	2-Hexanone	ND	42	5.5	ND	10	1.3	
67-63-0	2-Propanol	ND	84	18	ND	34	7.5	
107-05-1	3-Chloropropene	ND	42	6.0	ND	13	1.9	
622-96-8	4-Ethyltoluene	ND	42	7.1	ND	8.5	1.4	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412111419** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-057

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: **H1** 0.00050 Liter(s)
Container ID: 1SS00686

Initial Pressure (psig): -2.37 Final Pressure (psig): 5.85

Container Dilution Factor: 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	42	6.1	ND	10	1.5	
67-64-1	Acetone	ND	420	100	ND	180	42	
100-44-7	alpha-Chlorotoluene	ND	42	10	ND	8.1	1.9	
71-43-2	Benzene	ND	42	6.4	ND	13	2.0	
75-27-4	Bromodichloromethane	ND	42	6.4	ND	6.2	0.96	
75-25-2	Bromoform	ND	42	9.2	ND	4.0	0.89	
74-83-9	Bromomethane	ND	42	6.2	ND	11	1.6	
75-15-0	Carbon Disulfide	ND	420	13	ND	130	4.3	
56-23-5	Carbon Tetrachloride	ND	42	6.2	ND	6.6	0.98	
108-90-7	Chlorobenzene	ND	42	5.9	ND	9.1	1.3	
75-00-3	Chloroethane	ND	42	5.5	ND	16	2.1	
67-66-3	Chloroform	**68**	42	5.9	**14**	8.6	1.2	
74-87-3	Chloromethane	ND	42	7.2	ND	20	3.5	
156-59-2	cis-1,2-Dichloroethene	ND	42	6.3	ND	11	1.6	
10061-01-5	cis-1,3-Dichloropropene	ND	42	6.9	ND	9.2	1.5	
98-82-8	Cumene	ND	42	6.4	ND	8.5	1.3	
110-82-7	Cyclohexane	ND	84	13	ND	24	3.6	
124-48-1	Dibromochloromethane	ND	42	5.8	ND	4.9	0.69	
64-17-5	Ethanol	ND	420	31	ND	220	16	
100-41-4	Ethyl Benzene	ND	42	6.3	ND	9.6	1.4	
75-69-4	Freon 11	**120,000**	1,700	270	**20,000**	300	48	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412111419** ALS Sample ID: P2405139-057
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/11/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: **H1** 0.00050 Liter(s)
Container ID: 1SS00686

Initial Pressure (psig): -2.37 Final Pressure (psig): 5.85

Container Dilution Factor: 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**270,000**	1,700	250	**35,000**	220	33	**D**
76-14-2	Freon 114	**8.4**	42	7.0	**1.2**	6.0	1.0	**J**
75-71-8	Freon 12	**27**	42	7.3	**5.5**	8.4	1.5	**J**
306-83-2	Freon 123	**23**	42	20	**3.6**	6.7	3.2	**J, X**
75-43-4	Freon 21	**85**	42	20	**20**	9.9	4.8	**X**
142-82-5	Heptane	ND	42	7.1	ND	10	1.7	
87-68-3	Hexachlorobutadiene	ND	42	9.2	ND	3.9	0.86	
110-54-3	Hexane	ND	42	9.2	ND	12	2.6	
179601-23-1	m,p-Xylene	ND	84	12	ND	19	2.7	
1634-04-4	Methyl tert-butyl ether	ND	42	5.3	ND	12	1.5	
75-09-2	Methylene Chloride	ND	42	13	ND	12	3.6	
95-47-6	o-Xylene	ND	42	6.4	ND	9.6	1.5	
103-65-1	Propylbenzene	ND	42	6.4	ND	8.5	1.3	
100-42-5	Styrene	ND	42	7.2	ND	9.8	1.7	
127-18-4	Tetrachloroethene	ND	42	5.8	ND	6.2	0.85	
109-99-9	Tetrahydrofuran	ND	42	5.6	ND	14	1.9	
108-88-3	Toluene	ND	42	5.4	ND	11	1.4	
156-60-5	trans-1,2-Dichloroethene	ND	42	6.2	ND	11	1.6	
10061-02-6	trans-1,3-Dichloropropene	ND	42	9.2	ND	9.2	2.0	
79-01-6	Trichloroethene	**16**	42	6.0	**2.9**	7.8	1.1	**J**
75-01-4	Vinyl Chloride	ND	42	4.8	ND	16	1.9	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412111419** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-057

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/11/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.020 Liter(s)
Test Notes:	**H1, T**		0.00050 Liter(s)
Container ID:	1SS00686		

Initial Pressure (psig): -2.37 Final Pressure (psig): 5.85

Container Dilution Factor: 1.67

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.62	Freon 123a	**450**	

T = Analyte is a tentatively identified compound, result is estimated.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120815** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-058

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00205

Initial Pressure (psig): -1.39 Final Pressure (psig): 5.83

Container Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	1.9	0.25	ND	0.35	0.047	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.28	ND	0.28	0.042	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.21	ND	0.35	0.038	
75-34-3	1,1-Dichloroethane	ND	1.9	0.30	ND	0.48	0.074	
75-35-4	1,1-Dichloroethene	ND	1.9	0.28	ND	0.49	0.072	
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.50	ND	0.26	0.067	
95-63-6	1,2,4-Trimethylbenzene	ND	1.9	0.28	ND	0.39	0.058	
106-93-4	1,2-Dibromoethane (EDB)	ND	1.9	0.24	ND	0.25	0.031	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.30	ND	0.32	0.051	
107-06-2	1,2-Dichloroethane	ND	1.9	0.23	ND	0.48	0.056	
78-87-5	1,2-Dichloropropane	ND	1.9	0.25	ND	0.42	0.055	
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	0.30	ND	0.39	0.060	
106-99-0	1,3-Butadiene	ND	1.9	0.34	ND	0.87	0.15	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.31	ND	0.32	0.051	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.32	ND	0.32	0.053	
123-91-1	1,4-Dioxane	**1.6**	1.9	0.24	**0.46**	0.53	0.067	**J**
540-84-1	2,2,4-Trimethylpentane	ND	1.9	0.31	ND	0.41	0.066	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**3.9**	19	0.42	**1.3**	6.5	0.14	**J**
591-78-6	2-Hexanone	**0.41**	1.9	0.25	**0.10**	0.47	0.062	**J**
67-63-0	2-Propanol	**20**	3.9	0.85	**8.2**	1.6	0.34	
107-05-1	3-Chloropropene	ND	1.9	0.28	ND	0.62	0.089	
622-96-8	4-Ethyltoluene	ND	1.9	0.33	ND	0.39	0.067	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120815** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-058

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00205

Initial Pressure (psig): -1.39 Final Pressure (psig): 5.83

Container Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**3.7**	1.9	0.28	**0.90**	0.47	0.069	
67-64-1	Acetone	**27**	19	4.6	**11**	8.1	1.9	
100-44-7	alpha-Chlorotoluene	ND	1.9	0.46	ND	0.37	0.089	
71-43-2	Benzene	**1.3**	1.9	0.30	**0.41**	0.60	0.093	**J**
75-27-4	Bromodichloromethane	ND	1.9	0.30	ND	0.29	0.044	
75-25-2	Bromoform	ND	1.9	0.42	ND	0.19	0.041	
74-83-9	Bromomethane	ND	1.9	0.28	ND	0.50	0.073	
75-15-0	Carbon Disulfide	**43**	19	0.62	**14**	6.2	0.20	
56-23-5	Carbon Tetrachloride	ND	1.9	0.28	ND	0.31	0.045	
108-90-7	Chlorobenzene	ND	1.9	0.27	ND	0.42	0.059	
75-00-3	Chloroethane	ND	1.9	0.25	ND	0.73	0.096	
67-66-3	Chloroform	**1.7**	1.9	0.27	**0.35**	0.39	0.056	**J**
74-87-3	Chloromethane	ND	1.9	0.33	ND	0.93	0.16	**V**
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.29	ND	0.49	0.073	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.32	ND	0.42	0.070	
98-82-8	Cumene	ND	1.9	0.30	ND	0.39	0.060	
110-82-7	Cyclohexane	**1.3**	3.9	0.58	**0.38**	1.1	0.17	**J**
124-48-1	Dibromochloromethane	ND	1.9	0.27	ND	0.23	0.032	
64-17-5	Ethanol	**31**	19	1.4	**17**	10	0.76	
100-41-4	Ethyl Benzene	**0.50**	1.9	0.29	**0.11**	0.44	0.067	**J**
75-69-4	Freon 11	**50**	1.9	0.31	**8.8**	0.34	0.056	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120815** ALS Sample ID: P2405139-058
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00205

Initial Pressure (psig): -1.39 Final Pressure (psig): 5.83

Container Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**310**	1.9	0.29	**41**	0.25	0.038	
76-14-2	Freon 114	ND	1.9	0.32	ND	0.28	0.046	
75-71-8	Freon 12	**4.4**	1.9	0.33	**0.89**	0.39	0.068	
306-83-2	Freon 123	**1.2**	1.9	0.92	**0.19**	0.31	0.15	**J, X**
75-43-4	Freon 21	**5.8**	1.9	0.92	**1.4**	0.46	0.22	**X**
142-82-5	Heptane	**0.74**	1.9	0.33	**0.18**	0.47	0.080	**J**
87-68-3	Hexachlorobutadiene	ND	1.9	0.42	ND	0.18	0.040	
110-54-3	Hexane	**2.3**	1.9	0.42	**0.65**	0.55	0.12	
179601-23-1	m,p-Xylene	**1.5**	3.9	0.54	**0.34**	0.89	0.12	**J**
1634-04-4	Methyl tert-butyl ether	ND	1.9	0.24	ND	0.53	0.067	
75-09-2	Methylene Chloride	ND	1.9	0.58	ND	0.55	0.17	
95-47-6	o-Xylene	**0.65**	1.9	0.30	**0.15**	0.44	0.068	**J**
103-65-1	Propylbenzene	ND	1.9	0.30	ND	0.39	0.060	
100-42-5	Styrene	ND	1.9	0.33	ND	0.45	0.078	
127-18-4	Tetrachloroethene	ND	1.9	0.27	ND	0.28	0.039	
109-99-9	Tetrahydrofuran	**0.82**	1.9	0.26	**0.28**	0.65	0.087	**J**
108-88-3	Toluene	**9.0**	1.9	0.25	**2.4**	0.51	0.066	
156-60-5	trans-1,2-Dichloroethene	ND	1.9	0.28	ND	0.49	0.072	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.42	ND	0.42	0.093	
79-01-6	Trichloroethene	ND	1.9	0.28	ND	0.36	0.052	
75-01-4	Vinyl Chloride	ND	1.9	0.22	ND	0.75	0.086	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120815** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-058

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**T**		
Container ID:	1SS00205		

Initial Pressure (psig): -1.39 Final Pressure (psig): 5.83

Container Dilution Factor: 1.54

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.61	Freon 123a	**38**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120816** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-059

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00101

Initial Pressure (psig): -1.91 Final Pressure (psig): 5.93

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.27	ND	0.37	0.049	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.50	0.078	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.071	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.061	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.50	0.059	
78-87-5	1,2-Dichloropropane	ND	2.0	0.27	ND	0.44	0.058	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.91	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	**0.50**	2.0	0.25	**0.14**	0.56	0.070	**J**
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.2**	20	0.44	**0.39**	6.8	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.27	ND	0.49	0.065	
67-63-0	2-Propanol	**2.2**	4.0	0.89	**0.90**	1.6	0.36	**J**
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.093	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.070	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120816** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-059

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00101

Initial Pressure (psig): -1.91 Final Pressure (psig): 5.93

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.072	
67-64-1	Acetone	**11**	20	4.8	**4.6**	8.5	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	**0.46**	2.0	0.31	**0.14**	0.63	0.097	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.077	
75-15-0	Carbon Disulfide	ND	20	0.64	ND	6.5	0.21	
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.29	ND	0.44	0.062	
75-00-3	Chloroethane	ND	2.0	0.27	ND	0.76	0.10	
67-66-3	Chloroform	**1.8**	2.0	0.29	**0.37**	0.41	0.059	**J**
74-87-3	Chloromethane	ND	2.0	0.35	ND	0.97	0.17	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.074	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.18	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.24	0.033	
64-17-5	Ethanol	**3.8**	20	1.5	**2.0**	11	0.79	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.070	
75-69-4	Freon 11	**57**	2.0	0.33	**10**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120816** ALS Sample ID: P2405139-059
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00101

Initial Pressure (psig): -1.91 Final Pressure (psig): 5.93

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**280**	2.0	0.31	**37**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**4.8**	2.0	0.35	**0.96**	0.41	0.071	
306-83-2	Freon 123	**1.0**	2.0	0.97	**0.17**	0.32	0.15	**J, X**
75-43-4	Freon 21	**6.1**	2.0	0.97	**1.5**	0.48	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.084	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.042	
110-54-3	Hexane	**0.71**	2.0	0.44	**0.20**	0.57	0.13	**J**
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.93	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.56	0.070	
75-09-2	Methylene Chloride	**3.3**	2.0	0.60	**0.94**	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.35	ND	0.47	0.081	
127-18-4	Tetrachloroethene	**0.42**	2.0	0.28	**0.062**	0.30	0.041	**J**
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	**0.38**	2.0	0.26	**0.10**	0.53	0.069	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.51	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.098	
79-01-6	Trichloroethene	**0.37**	2.0	0.29	**0.069**	0.37	0.054	**J**
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.79	0.090	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120816** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-059

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**T**		
Container ID:	1SS00101		

Initial Pressure (psig): -1.91 Final Pressure (psig): 5.93

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.59	Freon 123a	**35**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120826** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-060

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01020

Initial Pressure (psig): -1.76 Final Pressure (psig): 5.90

Container Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.36	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.21	ND	0.36	0.039	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.077	
75-35-4	1,1-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.070	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.29	ND	0.40	0.060	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.31	ND	0.33	0.052	
107-06-2	1,2-Dichloroethane	ND	2.0	0.23	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.057	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.40	0.062	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.90	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.054	
123-91-1	1,4-Dioxane	**2.6**	2.0	0.25	**0.72**	0.55	0.070	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.068	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.55**	20	0.44	**0.19**	6.7	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.26	ND	0.49	0.064	
67-63-0	2-Propanol	**1.1**	4.0	0.87	**0.44**	1.6	0.36	**J**
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.091	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.40	0.069	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120826** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-060

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01020

Initial Pressure (psig): -1.76 Final Pressure (psig): 5.90

Container Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.071	
67-64-1	Acetone	ND	20	4.8	ND	8.4	2.0	
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.38	0.092	
71-43-2	Benzene	**0.53**	2.0	0.31	**0.17**	0.62	0.096	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.042	
74-83-9	Bromomethane	ND	2.0	0.29	ND	0.51	0.076	
75-15-0	Carbon Disulfide	**12**	20	0.64	**3.8**	6.4	0.20	**J**
56-23-5	Carbon Tetrachloride	ND	2.0	0.29	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.061	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.75	0.099	
67-66-3	Chloroform	**3.6**	2.0	0.28	**0.74**	0.41	0.058	
74-87-3	Chloromethane	ND	2.0	0.34	ND	0.96	0.17	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.073	
98-82-8	Cumene	ND	2.0	0.31	ND	0.40	0.062	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.033	
64-17-5	Ethanol	**1.7**	20	1.5	**0.93**	11	0.78	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.069	
75-69-4	Freon 11	**110**	2.0	0.32	**20**	0.35	0.057	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120826** ALS Sample ID: P2405139-060
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS01020

Initial Pressure (psig): -1.76 Final Pressure (psig): 5.90

Container Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**200**	2.0	0.30	**26**	0.26	0.039	
76-14-2	Freon 114	ND	2.0	0.33	ND	0.28	0.048	
75-71-8	Freon 12	**2.3**	2.0	0.35	**0.46**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.95	ND	0.32	0.15	**X**
75-43-4	Freon 21	**4.1**	2.0	0.95	**0.99**	0.47	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.082	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.041	
110-54-3	Hexane	**0.86**	2.0	0.44	**0.24**	0.56	0.12	**J**
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.92	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.069	
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.57	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.070	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.40	0.062	
100-42-5	Styrene	ND	2.0	0.34	ND	0.47	0.080	
127-18-4	Tetrachloroethene	ND	2.0	0.27	ND	0.29	0.040	
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.67	0.090	
108-88-3	Toluene	**0.44**	2.0	0.26	**0.12**	0.53	0.069	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.096	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.053	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.78	0.089	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120826** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-060

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**T**		
Container ID:	1SS01020		

Initial Pressure (psig): -1.76 Final Pressure (psig): 5.90

Container Dilution Factor: 1.59

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.60	Freon 123a	**19**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120835** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-061

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01005

Initial Pressure (psig): -1.72 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.36	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.21	ND	0.36	0.039	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.076	
75-35-4	1,1-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.51	ND	0.27	0.069	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.29	ND	0.40	0.059	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.24	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.31	ND	0.33	0.052	
107-06-2	1,2-Dichloroethane	ND	2.0	0.23	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.056	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.30	ND	0.40	0.062	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.89	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.55	0.069	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.42	0.068	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.7**	20	0.43	**0.59**	6.7	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.26	ND	0.48	0.064	
67-63-0	2-Propanol	ND	4.0	0.87	ND	1.6	0.35	
107-05-1	3-Chloropropene	ND	2.0	0.28	ND	0.63	0.091	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.40	0.068	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120835** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-061

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01005

Initial Pressure (psig): -1.72 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.48	0.070	
67-64-1	Acetone	**41**	20	4.7	**17**	8.3	2.0	
100-44-7	alpha-Chlorotoluene	ND	2.0	0.47	ND	0.38	0.092	
71-43-2	Benzene	**2.0**	2.0	0.30	**0.64**	0.62	0.095	
75-27-4	Bromodichloromethane	ND	2.0	0.30	ND	0.29	0.045	
75-25-2	Bromoform	ND	2.0	0.43	ND	0.19	0.042	
74-83-9	Bromomethane	**0.70**	2.0	0.29	**0.18**	0.51	0.075	**J**
75-15-0	Carbon Disulfide	**26**	20	0.63	**8.2**	6.3	0.20	
56-23-5	Carbon Tetrachloride	**4.5**	2.0	0.29	**0.71**	0.31	0.046	
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.061	
75-00-3	Chloroethane	**0.71**	2.0	0.26	**0.27**	0.75	0.099	**J**
67-66-3	Chloroform	**9.5**	2.0	0.28	**1.9**	0.40	0.057	
74-87-3	Chloromethane	ND	2.0	0.34	ND	0.96	0.16	**V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.072	
98-82-8	Cumene	ND	2.0	0.30	ND	0.40	0.062	
110-82-7	Cyclohexane	**7.5**	4.0	0.59	**2.2**	1.1	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.032	
64-17-5	Ethanol	**7.2**	20	1.5	**3.8**	10	0.78	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.45	0.068	
75-69-4	Freon 11	**1,400**	20	3.2	**250**	3.5	0.57	**D**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
D = The reported result is from a dilution.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120835** ALS Sample ID: P2405139-061
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01005

Initial Pressure (psig): -1.72 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**1,200**	20	3.0	**160**	2.6	0.39	**D**
76-14-2	Freon 114	ND	2.0	0.33	ND	0.28	0.047	
75-71-8	Freon 12	**1.3**	2.0	0.34	**0.27**	0.40	0.070	**J**
306-83-2	Freon 123	ND	2.0	0.95	ND	0.32	0.15	**X**
75-43-4	Freon 21	**2.5**	2.0	0.95	**0.60**	0.47	0.23	**X**
142-82-5	Heptane	**0.70**	2.0	0.34	**0.17**	0.48	0.082	**J**
87-68-3	Hexachlorobutadiene	ND	2.0	0.43	ND	0.19	0.041	
110-54-3	Hexane	**9.1**	2.0	0.43	**2.6**	0.56	0.12	
179601-23-1	m,p-Xylene	ND	4.0	0.55	ND	0.91	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.069	
75-09-2	Methylene Chloride	**0.62**	2.0	0.59	**0.18**	0.57	0.17	**J**
95-47-6	o-Xylene	ND	2.0	0.30	ND	0.45	0.070	
103-65-1	Propylbenzene	ND	2.0	0.30	ND	0.40	0.062	
100-42-5	Styrene	ND	2.0	0.34	ND	0.46	0.080	
127-18-4	Tetrachloroethene	ND	2.0	0.27	ND	0.29	0.040	
109-99-9	Tetrahydrofuran	ND	2.0	0.26	ND	0.67	0.090	
108-88-3	Toluene	**0.64**	2.0	0.26	**0.17**	0.52	0.068	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ND	0.44	0.096	
79-01-6	Trichloroethene	ND	2.0	0.28	ND	0.37	0.053	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.77	0.088	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120835** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-061

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao/Logan Simon	Date Analyzed:	1/11 - 1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SS01005		

Initial Pressure (psig): -1.72 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120836** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-062

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00894

Initial Pressure (psig): -1.70 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.36	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.21	ND	0.36	0.039	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.076	
75-35-4	1,1-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.51	ND	0.27	0.069	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.29	ND	0.40	0.059	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.24	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.31	ND	0.33	0.052	
107-06-2	1,2-Dichloroethane	ND	2.0	0.23	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.056	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.30	ND	0.40	0.062	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.89	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.55	0.069	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.42	0.068	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	20	0.43	ND	6.7	0.15	
591-78-6	2-Hexanone	ND	2.0	0.26	ND	0.48	0.064	
67-63-0	2-Propanol	**5.3**	4.0	0.87	**2.2**	1.6	0.35	
107-05-1	3-Chloropropene	ND	2.0	0.28	ND	0.63	0.091	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.40	0.068	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120836** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-062

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00894

Initial Pressure (psig): -1.70 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.48	0.070	
67-64-1	Acetone	ND	20	4.7	ND	8.3	2.0	
100-44-7	alpha-Chlorotoluene	ND	2.0	0.47	ND	0.38	0.092	
71-43-2	Benzene	**0.31**	2.0	0.30	**0.096**	0.62	0.095	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.30	ND	0.29	0.045	
75-25-2	Bromoform	ND	2.0	0.43	ND	0.19	0.042	
74-83-9	Bromomethane	ND	2.0	0.29	ND	0.51	0.075	
75-15-0	Carbon Disulfide	**0.65**	20	0.63	**0.21**	6.3	0.20	**J**
56-23-5	Carbon Tetrachloride	**0.43**	2.0	0.29	**0.068**	0.31	0.046	**J**
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.061	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.75	0.099	
67-66-3	Chloroform	ND	2.0	0.28	ND	0.40	0.057	
74-87-3	Chloromethane	**0.67**	2.0	0.34	**0.33**	0.96	0.16	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.072	
98-82-8	Cumene	ND	2.0	0.30	ND	0.40	0.062	
110-82-7	Cyclohexane	ND	4.0	0.59	ND	1.1	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.032	
64-17-5	Ethanol	**2.1**	20	1.5	**1.1**	10	0.78	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.45	0.068	
75-69-4	Freon 11	**1.3**	2.0	0.32	**0.24**	0.35	0.057	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120836** ALS Sample ID: P2405139-062
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00894

Initial Pressure (psig): -1.70 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**2.7**	2.0	0.30	**0.35**	0.26	0.039	
76-14-2	Freon 114	ND	2.0	0.33	ND	0.28	0.047	
75-71-8	Freon 12	**2.3**	2.0	0.34	**0.46**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.95	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.95	ND	0.47	0.23	**X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.48	0.082	
87-68-3	Hexachlorobutadiene	ND	2.0	0.43	ND	0.19	0.041	
110-54-3	Hexane	ND	2.0	0.43	ND	0.56	0.12	
179601-23-1	m,p-Xylene	ND	4.0	0.55	ND	0.91	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.069	
75-09-2	Methylene Chloride	ND	2.0	0.59	ND	0.57	0.17	
95-47-6	o-Xylene	ND	2.0	0.30	ND	0.45	0.070	
103-65-1	Propylbenzene	ND	2.0	0.30	ND	0.40	0.062	
100-42-5	Styrene	ND	2.0	0.34	ND	0.46	0.080	
127-18-4	Tetrachloroethene	ND	2.0	0.27	ND	0.29	0.040	
109-99-9	Tetrahydrofuran	ND	2.0	0.26	ND	0.67	0.090	
108-88-3	Toluene	**0.29**	2.0	0.26	**0.077**	0.52	0.068	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ND	0.44	0.096	
79-01-6	Trichloroethene	ND	2.0	0.28	ND	0.37	0.053	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.77	0.088	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120836** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-062

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SS00894		

Initial Pressure (psig): -1.70 Final Pressure (psig): 5.84

Container Dilution Factor: 1.58

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120900** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-063

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01294

Initial Pressure (psig): 5.93 Final Pressure (psig): 5.93

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	1.3	0.17	ND	0.23	0.030	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.3	0.19	ND	0.18	0.027	
79-00-5	1,1,2-Trichloroethane	ND	1.3	0.14	ND	0.23	0.025	
75-34-3	1,1-Dichloroethane	ND	1.3	0.20	ND	0.31	0.048	
75-35-4	1,1-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
120-82-1	1,2,4-Trichlorobenzene	ND	1.3	0.33	ND	0.17	0.044	
95-63-6	1,2,4-Trimethylbenzene	ND	1.3	0.19	ND	0.25	0.038	
106-93-4	1,2-Dibromoethane (EDB)	ND	1.3	0.16	ND	0.16	0.020	
95-50-1	1,2-Dichlorobenzene	ND	1.3	0.20	ND	0.21	0.033	
107-06-2	1,2-Dichloroethane	ND	1.3	0.15	ND	0.31	0.036	
78-87-5	1,2-Dichloropropane	ND	1.3	0.17	ND	0.27	0.036	
108-67-8	1,3,5-Trimethylbenzene	ND	1.3	0.19	ND	0.25	0.039	
106-99-0	1,3-Butadiene	ND	1.3	0.22	ND	0.57	0.099	
541-73-1	1,3-Dichlorobenzene	ND	1.3	0.20	ND	0.21	0.033	
106-46-7	1,4-Dichlorobenzene	ND	1.3	0.21	ND	0.21	0.034	
123-91-1	1,4-Dioxane	ND	1.3	0.16	ND	0.35	0.044	
540-84-1	2,2,4-Trimethylpentane	ND	1.3	0.20	ND	0.27	0.043	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**0.32**	13	0.28	**0.11**	4.2	0.093	**J**
591-78-6	2-Hexanone	ND	1.3	0.17	ND	0.31	0.040	
67-63-0	2-Propanol	ND	2.5	0.55	ND	1.0	0.22	
107-05-1	3-Chloropropene	ND	1.3	0.18	ND	0.40	0.058	
622-96-8	4-Ethyltoluene	ND	1.3	0.21	ND	0.25	0.043	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120900** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-063

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01294

Initial Pressure (psig): 5.93 Final Pressure (psig): 5.93

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	1.3	0.18	ND	0.31	0.045	
67-64-1	Acetone	ND	13	3.0	ND	5.3	1.3	
100-44-7	alpha-Chlorotoluene	ND	1.3	0.30	ND	0.24	0.058	
71-43-2	Benzene	ND	1.3	0.19	ND	0.39	0.060	
75-27-4	Bromodichloromethane	ND	1.3	0.19	ND	0.19	0.029	
75-25-2	Bromoform	ND	1.3	0.28	ND	0.12	0.027	
74-83-9	Bromomethane	ND	1.3	0.19	ND	0.32	0.048	
75-15-0	Carbon Disulfide	ND	13	0.40	ND	4.0	0.13	
56-23-5	Carbon Tetrachloride	ND	1.3	0.19	ND	0.20	0.029	
108-90-7	Chlorobenzene	ND	1.3	0.18	ND	0.27	0.039	
75-00-3	Chloroethane	ND	1.3	0.17	ND	0.47	0.063	
67-66-3	Chloroform	ND	1.3	0.18	ND	0.26	0.036	
74-87-3	Chloromethane	ND	1.3	0.22	ND	0.61	0.10	**V**
156-59-2	cis-1,2-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
10061-01-5	cis-1,3-Dichloropropene	ND	1.3	0.21	ND	0.28	0.046	
98-82-8	Cumene	ND	1.3	0.19	ND	0.25	0.039	
110-82-7	Cyclohexane	ND	2.5	0.38	ND	0.73	0.11	
124-48-1	Dibromochloromethane	ND	1.3	0.18	ND	0.15	0.021	
64-17-5	Ethanol	**1.5**	13	0.93	**0.82**	6.6	0.49	**J**
100-41-4	Ethyl Benzene	ND	1.3	0.19	ND	0.29	0.043	
75-69-4	Freon 11	ND	1.3	0.20	ND	0.22	0.036	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120900** ALS Sample ID: P2405139-063
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01294

Initial Pressure (psig): 5.93 Final Pressure (psig): 5.93

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**0.85**	1.3	0.19	**0.11**	0.16	0.025	**J**
76-14-2	Freon 114	ND	1.3	0.21	ND	0.18	0.030	
75-71-8	Freon 12	ND	1.3	0.22	ND	0.25	0.044	
306-83-2	Freon 123	ND	1.3	0.60	ND	0.20	0.096	**X**
75-43-4	Freon 21	ND	1.3	0.60	ND	0.30	0.14	**X**
142-82-5	Heptane	ND	1.3	0.21	ND	0.31	0.052	
87-68-3	Hexachlorobutadiene	ND	1.3	0.28	ND	0.12	0.026	
110-54-3	Hexane	ND	1.3	0.28	ND	0.35	0.078	
179601-23-1	m,p-Xylene	ND	2.5	0.35	ND	0.58	0.081	
1634-04-4	Methyl tert-butyl ether	ND	1.3	0.16	ND	0.35	0.044	
75-09-2	Methylene Chloride	ND	1.3	0.38	ND	0.36	0.11	
95-47-6	o-Xylene	ND	1.3	0.19	ND	0.29	0.044	
103-65-1	Propylbenzene	ND	1.3	0.19	ND	0.25	0.039	
100-42-5	Styrene	ND	1.3	0.22	ND	0.29	0.051	
127-18-4	Tetrachloroethene	ND	1.3	0.17	ND	0.18	0.025	
109-99-9	Tetrahydrofuran	ND	1.3	0.17	ND	0.42	0.057	
108-88-3	Toluene	ND	1.3	0.16	ND	0.33	0.043	
156-60-5	trans-1,2-Dichloroethene	ND	1.3	0.19	ND	0.32	0.047	
10061-02-6	trans-1,3-Dichloropropene	ND	1.3	0.28	ND	0.28	0.061	
79-01-6	Trichloroethene	**0.63**	1.3	0.18	**0.12**	0.23	0.034	**J**
75-01-4	Vinyl Chloride	ND	1.3	0.14	ND	0.49	0.056	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120900** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-063

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SC01294		

Initial Pressure (psig): 5.93 Final Pressure (psig): 5.93

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120901** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-064

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00529

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.20

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.37	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.30	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.22	ND	0.37	0.040	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.077	
75-35-4	1,1-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.52	ND	0.27	0.070	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.30	ND	0.41	0.060	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.25	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
107-06-2	1,2-Dichloroethane	ND	2.0	0.24	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.057	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.31	ND	0.41	0.063	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.90	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.33	ND	0.33	0.055	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.56	0.070	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.43	0.069	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**7.3**	20	0.44	**2.5**	6.8	0.15	**J**
591-78-6	2-Hexanone	**1.1**	2.0	0.26	**0.27**	0.49	0.064	**J**
67-63-0	2-Propanol	**1.3**	4.0	0.88	**0.53**	1.6	0.36	**J**
107-05-1	3-Chloropropene	ND	2.0	0.29	ND	0.64	0.092	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.41	0.069	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120901** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-064

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00529

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.20

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.29	ND	0.49	0.071	
67-64-1	Acetone	**30**	20	4.8	**12**	8.4	2.0	
100-44-7	alpha-Chlorotoluene	ND	2.0	0.48	ND	0.39	0.093	
71-43-2	Benzene	**0.32**	2.0	0.31	**0.10**	0.63	0.096	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.31	ND	0.30	0.046	
75-25-2	Bromoform	ND	2.0	0.44	ND	0.19	0.043	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.076	
75-15-0	Carbon Disulfide	**1.2**	20	0.64	**0.38**	6.4	0.21	**J**
56-23-5	Carbon Tetrachloride	ND	2.0	0.30	ND	0.32	0.047	
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.062	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.76	0.10	
67-66-3	Chloroform	**1.3**	2.0	0.28	**0.28**	0.41	0.058	**J**
74-87-3	Chloromethane	**0.56**	2.0	0.34	**0.27**	0.97	0.17	**J, V**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.073	
98-82-8	Cumene	ND	2.0	0.31	ND	0.41	0.063	
110-82-7	Cyclohexane	ND	4.0	0.60	ND	1.2	0.17	
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.033	
64-17-5	Ethanol	**3.0**	20	1.5	**1.6**	11	0.79	**J**
100-41-4	Ethyl Benzene	ND	2.0	0.30	ND	0.46	0.069	
75-69-4	Freon 11	**220**	2.0	0.32	**38**	0.36	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120901** ALS Sample ID: P2405139-064
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00529

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.20

Container Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**220**	2.0	0.30	**28**	0.26	0.040	
76-14-2	Freon 114	ND	2.0	0.34	ND	0.29	0.048	
75-71-8	Freon 12	**2.2**	2.0	0.35	**0.45**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.96	ND	0.32	0.15	**X**
75-43-4	Freon 21	**1.4**	2.0	0.96	**0.33**	0.48	0.23	**J, X**
142-82-5	Heptane	ND	2.0	0.34	ND	0.49	0.083	
87-68-3	Hexachlorobutadiene	ND	2.0	0.44	ND	0.19	0.041	
110-54-3	Hexane	**0.44**	2.0	0.44	**0.12**	0.57	0.12	**J**
179601-23-1	m,p-Xylene	ND	4.0	0.56	ND	0.92	0.13	
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.070	
75-09-2	Methylene Chloride	ND	2.0	0.60	ND	0.58	0.17	
95-47-6	o-Xylene	ND	2.0	0.31	ND	0.46	0.071	
103-65-1	Propylbenzene	ND	2.0	0.31	ND	0.41	0.063	
100-42-5	Styrene	ND	2.0	0.34	ND	0.47	0.081	
127-18-4	Tetrachloroethene	**0.32**	2.0	0.28	**0.047**	0.30	0.041	**J**
109-99-9	Tetrahydrofuran	ND	2.0	0.27	ND	0.68	0.091	
108-88-3	Toluene	ND	2.0	0.26	ND	0.53	0.069	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.44	ND	0.44	0.097	
79-01-6	Trichloroethene	ND	2.0	0.29	ND	0.37	0.054	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.78	0.089	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120901** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-064

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Logan Simon	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			
Container ID:	1SC00529		

Initial Pressure (psig): -1.67 Final Pressure (psig): 6.20

Container Dilution Factor: 1.60

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120910** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-065

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes: **H1**
Container ID: 1SS01371

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.78

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	5.4	0.71	ND	0.98	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.4	0.79	ND	0.78	0.12	
79-00-5	1,1,2-Trichloroethane	ND	5.4	0.58	ND	0.98	0.11	
75-34-3	1,1-Dichloroethane	ND	5.4	0.84	ND	1.3	0.21	
75-35-4	1,1-Dichloroethene	ND	5.4	0.79	ND	1.4	0.20	
120-82-1	1,2,4-Trichlorobenzene	ND	5.4	1.4	ND	0.72	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	5.4	0.79	ND	1.1	0.16	
106-93-4	1,2-Dibromoethane (EDB)	ND	5.4	0.67	ND	0.70	0.087	
95-50-1	1,2-Dichlorobenzene	ND	5.4	0.85	ND	0.89	0.14	
107-06-2	1,2-Dichloroethane	ND	5.4	0.63	ND	1.3	0.16	
78-87-5	1,2-Dichloropropane	ND	5.4	0.71	ND	1.2	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	5.4	0.83	ND	1.1	0.17	
106-99-0	1,3-Butadiene	ND	5.4	0.94	ND	2.4	0.43	
541-73-1	1,3-Dichlorobenzene	ND	5.4	0.86	ND	0.89	0.14	
106-46-7	1,4-Dichlorobenzene	ND	5.4	0.88	ND	0.89	0.15	
123-91-1	1,4-Dioxane	ND	5.4	0.68	ND	1.5	0.19	
540-84-1	2,2,4-Trimethylpentane	ND	5.4	0.86	ND	1.1	0.18	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.3**	54	1.2	**0.44**	18	0.40	**J**
591-78-6	2-Hexanone	ND	5.4	0.71	ND	1.3	0.17	
67-63-0	2-Propanol	ND	11	2.4	ND	4.4	0.96	
107-05-1	3-Chloropropene	ND	5.4	0.77	ND	1.7	0.25	
622-96-8	4-Ethyltoluene	ND	5.4	0.91	ND	1.1	0.19	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120910** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-065

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes: **H1**
Container ID: 1SS01371

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.78

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	5.4	0.78	ND	1.3	0.19	
67-64-1	Acetone	ND	54	13	ND	23	5.4	
100-44-7	alpha-Chlorotoluene	ND	5.4	1.3	ND	1.0	0.25	
71-43-2	Benzene	ND	5.4	0.83	ND	1.7	0.26	
75-27-4	Bromodichloromethane	ND	5.4	0.83	ND	0.80	0.12	
75-25-2	Bromoform	ND	5.4	1.2	ND	0.52	0.11	
74-83-9	Bromomethane	ND	5.4	0.79	ND	1.4	0.20	
75-15-0	Carbon Disulfide	ND	54	1.7	ND	17	0.55	
56-23-5	Carbon Tetrachloride	ND	5.4	0.79	ND	0.85	0.13	
108-90-7	Chlorobenzene	ND	5.4	0.76	ND	1.2	0.17	
75-00-3	Chloroethane	ND	5.4	0.71	ND	2.0	0.27	
67-66-3	Chloroform	**4.1**	5.4	0.76	**0.84**	1.1	0.16	**J**
74-87-3	Chloromethane	ND	5.4	0.92	ND	2.6	0.45	
156-59-2	cis-1,2-Dichloroethene	ND	5.4	0.81	ND	1.4	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	5.4	0.89	ND	1.2	0.20	
98-82-8	Cumene	ND	5.4	0.83	ND	1.1	0.17	
110-82-7	Cyclohexane	ND	11	1.6	ND	3.1	0.47	
124-48-1	Dibromochloromethane	ND	5.4	0.75	ND	0.63	0.088	
64-17-5	Ethanol	ND	54	4.0	ND	28	2.1	
100-41-4	Ethyl Benzene	ND	5.4	0.81	ND	1.2	0.19	
75-69-4	Freon 11	**850**	5.4	0.87	**150**	0.96	0.15	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120910** ALS Sample ID: P2405139-065
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes: **H1**
Container ID: 1SS01371

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.78

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**970**	5.4	0.82	**130**	0.70	0.11	
76-14-2	Freon 114	ND	5.4	0.90	ND	0.77	0.13	
75-71-8	Freon 12	**1.0**	5.4	0.93	**0.20**	1.1	0.19	**J**
306-83-2	Freon 123	ND	5.4	2.6	ND	0.86	0.41	**X**
75-43-4	Freon 21	ND	5.4	2.6	ND	1.3	0.61	**X**
142-82-5	Heptane	ND	5.4	0.91	ND	1.3	0.22	
87-68-3	Hexachlorobutadiene	ND	5.4	1.2	ND	0.50	0.11	
110-54-3	Hexane	ND	5.4	1.2	ND	1.5	0.34	
179601-23-1	m,p-Xylene	**3.1**	11	1.5	**0.72**	2.5	0.35	**J**
1634-04-4	Methyl tert-butyl ether	ND	5.4	0.68	ND	1.5	0.19	
75-09-2	Methylene Chloride	ND	5.4	1.6	ND	1.5	0.46	
95-47-6	o-Xylene	**4.7**	5.4	0.83	**1.1**	1.2	0.19	**J**
103-65-1	Propylbenzene	ND	5.4	0.83	ND	1.1	0.17	
100-42-5	Styrene	ND	5.4	0.92	ND	1.3	0.22	
127-18-4	Tetrachloroethene	ND	5.4	0.74	ND	0.79	0.11	
109-99-9	Tetrahydrofuran	ND	5.4	0.72	ND	1.8	0.24	
108-88-3	Toluene	ND	5.4	0.70	ND	1.4	0.19	
156-60-5	trans-1,2-Dichloroethene	ND	5.4	0.79	ND	1.4	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	5.4	1.2	ND	1.2	0.26	
79-01-6	Trichloroethene	ND	5.4	0.77	ND	1.0	0.14	
75-01-4	Vinyl Chloride	ND	5.4	0.61	ND	2.1	0.24	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120910** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-065

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.15 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS01371		

Initial Pressure (psig): -1.94 Final Pressure (psig): 5.78

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120919** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-066

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes: **H1** 0.015 Liter(s)
Container ID: 1SS01785

Initial Pressure (psig): -1.98 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	16	2.1	ND	3.0	0.39	
79-34-5	1,1,2,2-Tetrachloroethane	ND	16	2.4	ND	2.3	0.35	
79-00-5	1,1,2-Trichloroethane	ND	16	1.7	ND	3.0	0.32	
75-34-3	1,1-Dichloroethane	ND	16	2.5	ND	4.0	0.62	
75-35-4	1,1-Dichloroethene	ND	16	2.4	ND	4.1	0.60	
120-82-1	1,2,4-Trichlorobenzene	ND	16	4.2	ND	2.2	0.56	
95-63-6	1,2,4-Trimethylbenzene	ND	16	2.4	ND	3.3	0.48	
106-93-4	1,2-Dibromoethane (EDB)	ND	16	2.0	ND	2.1	0.26	
95-50-1	1,2-Dichlorobenzene	ND	16	2.5	ND	2.7	0.42	
107-06-2	1,2-Dichloroethane	ND	16	1.9	ND	4.0	0.47	
78-87-5	1,2-Dichloropropane	ND	16	2.1	ND	3.5	0.46	
108-67-8	1,3,5-Trimethylbenzene	ND	16	2.5	ND	3.3	0.50	
106-99-0	1,3-Butadiene	ND	16	2.8	ND	7.3	1.3	
541-73-1	1,3-Dichlorobenzene	ND	16	2.6	ND	2.7	0.43	
106-46-7	1,4-Dichlorobenzene	ND	16	2.6	ND	2.7	0.44	
123-91-1	1,4-Dioxane	ND	16	2.0	ND	4.5	0.56	
540-84-1	2,2,4-Trimethylpentane	ND	16	2.6	ND	3.4	0.55	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	160	3.5	ND	55	1.2	
591-78-6	2-Hexanone	ND	16	2.1	ND	3.9	0.52	
67-63-0	2-Propanol	ND	32	7.1	ND	13	2.9	
107-05-1	3-Chloropropene	ND	16	2.3	ND	5.1	0.74	
622-96-8	4-Ethyltoluene	ND	16	2.7	ND	3.3	0.56	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120919** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-066

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes: **H1** 0.015 Liter(s)
Container ID: 1SS01785

Initial Pressure (psig): -1.98 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	16	2.4	ND	3.9	0.57	
67-64-1	Acetone	ND	160	39	ND	68	16	
100-44-7	alpha-Chlorotoluene	ND	16	3.9	ND	3.1	0.75	
71-43-2	Benzene	ND	16	2.5	ND	5.0	0.78	
75-27-4	Bromodichloromethane	ND	16	2.5	ND	2.4	0.37	
75-25-2	Bromoform	ND	16	3.5	ND	1.6	0.34	
74-83-9	Bromomethane	ND	16	2.4	ND	4.1	0.61	
75-15-0	Carbon Disulfide	ND	160	5.2	ND	52	1.7	
56-23-5	Carbon Tetrachloride	ND	16	2.4	ND	2.6	0.38	
108-90-7	Chlorobenzene	ND	16	2.3	ND	3.5	0.50	
75-00-3	Chloroethane	ND	16	2.1	ND	6.1	0.81	
67-66-3	Chloroform	**9.4**	16	2.3	**1.9**	3.3	0.47	**J**
74-87-3	Chloromethane	ND	16	2.8	ND	7.8	1.3	
156-59-2	cis-1,2-Dichloroethene	ND	16	2.4	ND	4.1	0.61	
10061-01-5	cis-1,3-Dichloropropene	ND	16	2.7	ND	3.5	0.59	
98-82-8	Cumene	ND	16	2.5	ND	3.3	0.50	
110-82-7	Cyclohexane	ND	32	4.8	ND	9.4	1.4	
124-48-1	Dibromochloromethane	ND	16	2.3	ND	1.9	0.26	
64-17-5	Ethanol	ND	160	12	ND	85	6.3	
100-41-4	Ethyl Benzene	ND	16	2.4	ND	3.7	0.56	
75-69-4	Freon 11	**3,100**	16	2.6	**560**	2.9	0.46	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120919** ALS Sample ID: P2405139-066
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao/Logan Simon Date Analyzed: 1/11 - 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes: **H1** 0.015 Liter(s)
Container ID: 1SS01785

Initial Pressure (psig): -1.98 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**4,800**	54	8.2	**620**	7.0	1.1	**D**
76-14-2	Freon 114	ND	16	2.7	ND	2.3	0.39	
75-71-8	Freon 12	ND	16	2.8	ND	3.3	0.57	
306-83-2	Freon 123	ND	16	7.7	ND	2.6	1.2	**X**
75-43-4	Freon 21	ND	16	7.7	ND	3.8	1.8	**X**
142-82-5	Heptane	ND	16	2.7	ND	3.9	0.67	
87-68-3	Hexachlorobutadiene	ND	16	3.5	ND	1.5	0.33	
110-54-3	Hexane	ND	16	3.5	ND	4.6	1.0	
179601-23-1	m,p-Xylene	ND	32	4.5	ND	7.4	1.0	
1634-04-4	Methyl tert-butyl ether	ND	16	2.0	ND	4.5	0.56	
75-09-2	Methylene Chloride	ND	16	4.8	ND	4.6	1.4	
95-47-6	o-Xylene	**5.8**	16	2.5	**1.3**	3.7	0.57	**J**
103-65-1	Propylbenzene	ND	16	2.5	ND	3.3	0.50	
100-42-5	Styrene	ND	16	2.8	ND	3.8	0.65	
127-18-4	Tetrachloroethene	ND	16	2.2	ND	2.4	0.33	
109-99-9	Tetrahydrofuran	ND	16	2.2	ND	5.5	0.73	
108-88-3	Toluene	ND	16	2.1	ND	4.3	0.56	
156-60-5	trans-1,2-Dichloroethene	ND	16	2.4	ND	4.1	0.60	
10061-02-6	trans-1,3-Dichloropropene	ND	16	3.5	ND	3.5	0.78	
79-01-6	Trichloroethene	ND	16	2.3	ND	3.0	0.43	
75-01-4	Vinyl Chloride	ND	16	1.8	ND	6.3	0.72	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120919** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-066

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao/Logan Simon	Date Analyzed:	1/11 - 1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.050 Liter(s)
Test Notes:	**H1**		0.015 Liter(s)
Container ID:	1SS01785		

Initial Pressure (psig): -1.98 Final Pressure (psig): 5.77

Container Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120920** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-067

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01138

Initial Pressure (psig): -1.59 Final Pressure (psig): 5.97

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.26	ND	0.36	0.048	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ND	0.29	0.043	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.21	ND	0.36	0.039	
75-34-3	1,1-Dichloroethane	ND	2.0	0.31	ND	0.49	0.076	
75-35-4	1,1-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.51	ND	0.27	0.069	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.29	ND	0.40	0.059	
106-93-4	1,2-Dibromoethane (EDB)	ND	2.0	0.24	ND	0.26	0.032	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.31	ND	0.33	0.052	
107-06-2	1,2-Dichloroethane	ND	2.0	0.23	ND	0.49	0.058	
78-87-5	1,2-Dichloropropane	ND	2.0	0.26	ND	0.43	0.056	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.30	ND	0.40	0.062	
106-99-0	1,3-Butadiene	ND	2.0	0.35	ND	0.89	0.16	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.053	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	ND	0.33	0.054	
123-91-1	1,4-Dioxane	ND	2.0	0.25	ND	0.55	0.069	
540-84-1	2,2,4-Trimethylpentane	ND	2.0	0.32	ND	0.42	0.068	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	**1.7**	20	0.43	**0.58**	6.7	0.15	**J**
591-78-6	2-Hexanone	ND	2.0	0.26	ND	0.48	0.064	
67-63-0	2-Propanol	**16**	4.0	0.87	**6.5**	1.6	0.35	
107-05-1	3-Chloropropene	ND	2.0	0.28	ND	0.63	0.091	
622-96-8	4-Ethyltoluene	ND	2.0	0.34	ND	0.40	0.068	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **2412120920** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-067

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01138

Initial Pressure (psig): -1.59 Final Pressure (psig): 5.97

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	**2.0**	2.0	0.29	**0.49**	0.48	0.070	
67-64-1	Acetone	**16**	20	4.7	**6.7**	8.3	2.0	**J**
100-44-7	alpha-Chlorotoluene	ND	2.0	0.47	ND	0.38	0.092	
71-43-2	Benzene	**1.0**	2.0	0.30	**0.32**	0.62	0.095	**J**
75-27-4	Bromodichloromethane	ND	2.0	0.30	ND	0.29	0.045	
75-25-2	Bromoform	ND	2.0	0.43	ND	0.19	0.042	
74-83-9	Bromomethane	ND	2.0	0.29	ND	0.51	0.075	
75-15-0	Carbon Disulfide	**0.66**	20	0.63	**0.21**	6.3	0.20	**J**
56-23-5	Carbon Tetrachloride	**0.41**	2.0	0.29	**0.065**	0.31	0.046	**J**
108-90-7	Chlorobenzene	ND	2.0	0.28	ND	0.43	0.061	
75-00-3	Chloroethane	ND	2.0	0.26	ND	0.75	0.099	
67-66-3	Chloroform	ND	2.0	0.28	ND	0.40	0.057	
74-87-3	Chloromethane	**0.59**	2.0	0.34	**0.29**	0.96	0.16	**J**
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.30	ND	0.50	0.075	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.33	ND	0.44	0.072	
98-82-8	Cumene	ND	2.0	0.30	ND	0.40	0.062	
110-82-7	Cyclohexane	**0.66**	4.0	0.59	**0.19**	1.1	0.17	**J**
124-48-1	Dibromochloromethane	ND	2.0	0.28	ND	0.23	0.032	
64-17-5	Ethanol	**23**	20	1.5	**12**	10	0.78	
100-41-4	Ethyl Benzene	**0.32**	2.0	0.30	**0.073**	0.45	0.068	**J**
75-69-4	Freon 11	**2.4**	2.0	0.32	**0.43**	0.35	0.057	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **2412120920** ALS Sample ID: P2405139-067
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: 12/12/24
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 12/19/24
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: **H1**
Container ID: 1SS01138

Initial Pressure (psig): -1.59 Final Pressure (psig): 5.97

Container Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	**2.9**	2.0	0.30	**0.38**	0.26	0.039	
76-14-2	Freon 114	ND	2.0	0.33	ND	0.28	0.047	
75-71-8	Freon 12	**2.3**	2.0	0.34	**0.47**	0.40	0.070	
306-83-2	Freon 123	ND	2.0	0.95	ND	0.32	0.15	**X**
75-43-4	Freon 21	ND	2.0	0.95	ND	0.47	0.23	**X**
142-82-5	Heptane	**0.45**	2.0	0.34	**0.11**	0.48	0.082	**J**
87-68-3	Hexachlorobutadiene	ND	2.0	0.43	ND	0.19	0.041	
110-54-3	Hexane	**1.0**	2.0	0.43	**0.29**	0.56	0.12	**J**
179601-23-1	m,p-Xylene	**0.82**	4.0	0.55	**0.19**	0.91	0.13	**J**
1634-04-4	Methyl tert-butyl ether	ND	2.0	0.25	ND	0.55	0.069	
75-09-2	Methylene Chloride	ND	2.0	0.59	ND	0.57	0.17	
95-47-6	o-Xylene	**0.33**	2.0	0.30	**0.076**	0.45	0.070	**J**
103-65-1	Propylbenzene	ND	2.0	0.30	ND	0.40	0.062	
100-42-5	Styrene	ND	2.0	0.34	ND	0.46	0.080	
127-18-4	Tetrachloroethene	ND	2.0	0.27	ND	0.29	0.040	
109-99-9	Tetrahydrofuran	ND	2.0	0.26	ND	0.67	0.090	
108-88-3	Toluene	**6.3**	2.0	0.26	**1.7**	0.52	0.068	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.29	ND	0.50	0.074	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.43	ND	0.44	0.096	
79-01-6	Trichloroethene	ND	2.0	0.28	ND	0.37	0.053	
75-01-4	Vinyl Chloride	ND	2.0	0.23	ND	0.77	0.088	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
X = See case narrative.

Client: **NASA White Sands Test Facility**

Client Sample ID: **2412120920** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P2405139-067

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	12/12/24
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	12/19/24
Analyst:	Simon Cao	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:	**H1**		
Container ID:	1SS01138		

Initial Pressure (psig): -1.59 Final Pressure (psig): 5.97

Container Dilution Factor: 1.58

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250104-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.066	ND	0.092	0.012	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.074	ND	0.073	0.011	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.054	ND	0.092	0.0099	
75-34-3	1,1-Dichloroethane	ND	0.50	0.078	ND	0.12	0.019	
75-35-4	1,1-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.13	ND	0.067	0.018	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.074	ND	0.10	0.015	
106-93-4	1,2-Dibromoethane (EDB)	ND	0.50	0.062	ND	0.065	0.0081	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.079	ND	0.083	0.013	
107-06-2	1,2-Dichloroethane	ND	0.50	0.059	ND	0.12	0.015	
78-87-5	1,2-Dichloropropane	ND	0.50	0.066	ND	0.11	0.014	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.077	ND	0.10	0.016	
106-99-0	1,3-Butadiene	ND	0.50	0.088	ND	0.23	0.040	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.080	ND	0.083	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.082	ND	0.083	0.014	
123-91-1	1,4-Dioxane	ND	0.50	0.063	ND	0.14	0.017	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.080	ND	0.11	0.017	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5.0	0.11	ND	1.7	0.037	
591-78-6	2-Hexanone	ND	0.50	0.066	ND	0.12	0.016	
67-63-0	2-Propanol	ND	1.0	0.22	ND	0.41	0.090	
107-05-1	3-Chloropropene	ND	0.50	0.072	ND	0.16	0.023	
622-96-8	4-Ethyltoluene	ND	0.50	0.085	ND	0.10	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250104-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.073	ND	0.12	0.018	
67-64-1	Acetone	ND	5.0	1.2	ND	2.1	0.51	
100-44-7	alpha-Chlorotoluene	ND	0.50	0.12	ND	0.097	0.023	
71-43-2	Benzene	ND	0.50	0.077	ND	0.16	0.024	
75-27-4	Bromodichloromethane	ND	0.50	0.077	ND	0.075	0.011	
75-25-2	Bromoform	ND	0.50	0.11	ND	0.048	0.011	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-15-0	Carbon Disulfide	ND	5.0	0.16	ND	1.6	0.051	
56-23-5	Carbon Tetrachloride	ND	0.50	0.074	ND	0.080	0.012	
108-90-7	Chlorobenzene	ND	0.50	0.071	ND	0.11	0.015	
75-00-3	Chloroethane	ND	0.50	0.066	ND	0.19	0.025	
67-66-3	Chloroform	ND	0.50	0.071	ND	0.10	0.015	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.075	ND	0.13	0.019	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.083	ND	0.11	0.018	
98-82-8	Cumene	ND	0.50	0.077	ND	0.10	0.016	
110-82-7	Cyclohexane	ND	1.0	0.15	ND	0.29	0.044	
124-48-1	Dibromochloromethane	ND	0.50	0.070	ND	0.059	0.0082	
64-17-5	Ethanol	ND	5.0	0.37	ND	2.7	0.20	
100-41-4	Ethyl Benzene	ND	0.50	0.075	ND	0.12	0.017	
75-69-4	Freon 11	ND	0.50	0.081	ND	0.089	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **Method Blank** ALS Sample ID: P250104-MB
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	0.50	0.076	ND	0.065	0.0099	
76-14-2	Freon 114	ND	0.50	0.084	ND	0.072	0.012	
75-71-8	Freon 12	ND	0.50	0.087	ND	0.10	0.018	
306-83-2	Freon 123	ND	0.50	0.24	ND	0.080	0.038	**X**
75-43-4	Freon 21	ND	0.50	0.24	ND	0.12	0.057	**X**
142-82-5	Heptane	ND	0.50	0.085	ND	0.12	0.021	
87-68-3	Hexachlorobutadiene	ND	0.50	0.11	ND	0.047	0.010	
110-54-3	Hexane	ND	0.50	0.11	ND	0.14	0.031	
179601-23-1	m,p-Xylene	ND	1.0	0.14	ND	0.23	0.032	
1634-04-4	Methyl tert-butyl ether	ND	0.50	0.063	ND	0.14	0.017	
75-09-2	Methylene Chloride	ND	0.50	0.15	ND	0.14	0.043	
95-47-6	o-Xylene	ND	0.50	0.077	ND	0.12	0.018	
103-65-1	Propylbenzene	ND	0.50	0.077	ND	0.10	0.016	
100-42-5	Styrene	ND	0.50	0.086	ND	0.12	0.020	
127-18-4	Tetrachloroethene	ND	0.50	0.069	ND	0.074	0.010	
109-99-9	Tetrahydrofuran	ND	0.50	0.067	ND	0.17	0.023	
108-88-3	Toluene	ND	0.50	0.065	ND	0.13	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.11	ND	0.11	0.024	
79-01-6	Trichloroethene	ND	0.50	0.072	ND	0.093	0.013	
75-01-4	Vinyl Chloride	ND	0.50	0.057	ND	0.20	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client:	**NASA White Sands Test Facility**		
Client Sample ID:	**Method Blank**	ALS Project ID:	P2405139
Client Project ID:	**NASA White Sands Test Facility (WSTF)**	ALS Sample ID:	P250104-MB

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Simon Cao	Date Analyzed:	1/4/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250106-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.066	ND	0.092	0.012	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.074	ND	0.073	0.011	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.054	ND	0.092	0.0099	
75-34-3	1,1-Dichloroethane	ND	0.50	0.078	ND	0.12	0.019	
75-35-4	1,1-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.13	ND	0.067	0.018	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.074	ND	0.10	0.015	
106-93-4	1,2-Dibromoethane (EDB)	ND	0.50	0.062	ND	0.065	0.0081	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.079	ND	0.083	0.013	
107-06-2	1,2-Dichloroethane	ND	0.50	0.059	ND	0.12	0.015	
78-87-5	1,2-Dichloropropane	ND	0.50	0.066	ND	0.11	0.014	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.077	ND	0.10	0.016	
106-99-0	1,3-Butadiene	ND	0.50	0.088	ND	0.23	0.040	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.080	ND	0.083	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.082	ND	0.083	0.014	
123-91-1	1,4-Dioxane	ND	0.50	0.063	ND	0.14	0.017	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.080	ND	0.11	0.017	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5.0	0.11	ND	1.7	0.037	
591-78-6	2-Hexanone	ND	0.50	0.066	ND	0.12	0.016	
67-63-0	2-Propanol	ND	1.0	0.22	ND	0.41	0.090	
107-05-1	3-Chloropropene	ND	0.50	0.072	ND	0.16	0.023	
622-96-8	4-Ethyltoluene	ND	0.50	0.085	ND	0.10	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250106-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.073	ND	0.12	0.018	
67-64-1	Acetone	ND	5.0	1.2	ND	2.1	0.51	
100-44-7	alpha-Chlorotoluene	ND	0.50	0.12	ND	0.097	0.023	
71-43-2	Benzene	ND	0.50	0.077	ND	0.16	0.024	
75-27-4	Bromodichloromethane	ND	0.50	0.077	ND	0.075	0.011	
75-25-2	Bromoform	ND	0.50	0.11	ND	0.048	0.011	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-15-0	Carbon Disulfide	**0.59**	5.0	0.16	**0.19**	1.6	0.051	**J**
56-23-5	Carbon Tetrachloride	ND	0.50	0.074	ND	0.080	0.012	
108-90-7	Chlorobenzene	ND	0.50	0.071	ND	0.11	0.015	
75-00-3	Chloroethane	ND	0.50	0.066	ND	0.19	0.025	
67-66-3	Chloroform	ND	0.50	0.071	ND	0.10	0.015	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.075	ND	0.13	0.019	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.083	ND	0.11	0.018	
98-82-8	Cumene	ND	0.50	0.077	ND	0.10	0.016	
110-82-7	Cyclohexane	ND	1.0	0.15	ND	0.29	0.044	
124-48-1	Dibromochloromethane	ND	0.50	0.070	ND	0.059	0.0082	
64-17-5	Ethanol	ND	5.0	0.37	ND	2.7	0.20	
100-41-4	Ethyl Benzene	ND	0.50	0.075	ND	0.12	0.017	
75-69-4	Freon 11	ND	0.50	0.081	ND	0.089	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **Method Blank** ALS Sample ID: P250106-MB
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	0.50	0.076	ND	0.065	0.0099	
76-14-2	Freon 114	ND	0.50	0.084	ND	0.072	0.012	
75-71-8	Freon 12	ND	0.50	0.087	ND	0.10	0.018	
306-83-2	Freon 123	ND	0.50	0.24	ND	0.080	0.038	**X**
75-43-4	Freon 21	ND	0.50	0.24	ND	0.12	0.057	**X**
142-82-5	Heptane	ND	0.50	0.085	ND	0.12	0.021	
87-68-3	Hexachlorobutadiene	ND	0.50	0.11	ND	0.047	0.010	
110-54-3	Hexane	ND	0.50	0.11	ND	0.14	0.031	
179601-23-1	m,p-Xylene	ND	1.0	0.14	ND	0.23	0.032	
1634-04-4	Methyl tert-butyl ether	ND	0.50	0.063	ND	0.14	0.017	
75-09-2	Methylene Chloride	ND	0.50	0.15	ND	0.14	0.043	
95-47-6	o-Xylene	ND	0.50	0.077	ND	0.12	0.018	
103-65-1	Propylbenzene	ND	0.50	0.077	ND	0.10	0.016	
100-42-5	Styrene	ND	0.50	0.086	ND	0.12	0.020	
127-18-4	Tetrachloroethene	ND	0.50	0.069	ND	0.074	0.010	
109-99-9	Tetrahydrofuran	ND	0.50	0.067	ND	0.17	0.023	
108-88-3	Toluene	ND	0.50	0.065	ND	0.13	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.11	ND	0.11	0.024	
79-01-6	Trichloroethene	ND	0.50	0.072	ND	0.093	0.013	
75-01-4	Vinyl Chloride	ND	0.50	0.057	ND	0.20	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client:	**NASA White Sands Test Facility**		
Client Sample ID:	**Method Blank**	ALS Project ID:	P2405139
Client Project ID:	**NASA White Sands Test Facility (WSTF)**	ALS Sample ID:	P250106-MB

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Simon Cao	Date Analyzed:	1/6/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250107-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.066	ND	0.092	0.012	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.074	ND	0.073	0.011	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.054	ND	0.092	0.0099	
75-34-3	1,1-Dichloroethane	ND	0.50	0.078	ND	0.12	0.019	
75-35-4	1,1-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.13	ND	0.067	0.018	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.074	ND	0.10	0.015	
106-93-4	1,2-Dibromoethane (EDB)	ND	0.50	0.062	ND	0.065	0.0081	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.079	ND	0.083	0.013	
107-06-2	1,2-Dichloroethane	ND	0.50	0.059	ND	0.12	0.015	
78-87-5	1,2-Dichloropropane	ND	0.50	0.066	ND	0.11	0.014	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.077	ND	0.10	0.016	
106-99-0	1,3-Butadiene	ND	0.50	0.088	ND	0.23	0.040	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.080	ND	0.083	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.082	ND	0.083	0.014	
123-91-1	1,4-Dioxane	ND	0.50	0.063	ND	0.14	0.017	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.080	ND	0.11	0.017	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5.0	0.11	ND	1.7	0.037	
591-78-6	2-Hexanone	ND	0.50	0.066	ND	0.12	0.016	
67-63-0	2-Propanol	ND	1.0	0.22	ND	0.41	0.090	
107-05-1	3-Chloropropene	ND	0.50	0.072	ND	0.16	0.023	
622-96-8	4-Ethyltoluene	ND	0.50	0.085	ND	0.10	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250107-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.073	ND	0.12	0.018	
67-64-1	Acetone	ND	5.0	1.2	ND	2.1	0.51	
100-44-7	alpha-Chlorotoluene	ND	0.50	0.12	ND	0.097	0.023	
71-43-2	Benzene	ND	0.50	0.077	ND	0.16	0.024	
75-27-4	Bromodichloromethane	ND	0.50	0.077	ND	0.075	0.011	
75-25-2	Bromoform	ND	0.50	0.11	ND	0.048	0.011	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-15-0	Carbon Disulfide	ND	5.0	0.16	ND	1.6	0.051	
56-23-5	Carbon Tetrachloride	ND	0.50	0.074	ND	0.080	0.012	
108-90-7	Chlorobenzene	ND	0.50	0.071	ND	0.11	0.015	
75-00-3	Chloroethane	ND	0.50	0.066	ND	0.19	0.025	
67-66-3	Chloroform	ND	0.50	0.071	ND	0.10	0.015	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.075	ND	0.13	0.019	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.083	ND	0.11	0.018	
98-82-8	Cumene	ND	0.50	0.077	ND	0.10	0.016	
110-82-7	Cyclohexane	ND	1.0	0.15	ND	0.29	0.044	
124-48-1	Dibromochloromethane	ND	0.50	0.070	ND	0.059	0.0082	
64-17-5	Ethanol	ND	5.0	0.37	ND	2.7	0.20	
100-41-4	Ethyl Benzene	ND	0.50	0.075	ND	0.12	0.017	
75-69-4	Freon 11	ND	0.50	0.081	ND	0.089	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **Method Blank** ALS Sample ID: P250107-MB
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	0.50	0.076	ND	0.065	0.0099	
76-14-2	Freon 114	ND	0.50	0.084	ND	0.072	0.012	
75-71-8	Freon 12	ND	0.50	0.087	ND	0.10	0.018	
306-83-2	Freon 123	ND	0.50	0.24	ND	0.080	0.038	**X**
75-43-4	Freon 21	ND	0.50	0.24	ND	0.12	0.057	**X**
142-82-5	Heptane	ND	0.50	0.085	ND	0.12	0.021	
87-68-3	Hexachlorobutadiene	ND	0.50	0.11	ND	0.047	0.010	
110-54-3	Hexane	ND	0.50	0.11	ND	0.14	0.031	
179601-23-1	m,p-Xylene	ND	1.0	0.14	ND	0.23	0.032	
1634-04-4	Methyl tert-butyl ether	ND	0.50	0.063	ND	0.14	0.017	
75-09-2	Methylene Chloride	ND	0.50	0.15	ND	0.14	0.043	
95-47-6	o-Xylene	ND	0.50	0.077	ND	0.12	0.018	
103-65-1	Propylbenzene	ND	0.50	0.077	ND	0.10	0.016	
100-42-5	Styrene	ND	0.50	0.086	ND	0.12	0.020	
127-18-4	Tetrachloroethene	ND	0.50	0.069	ND	0.074	0.010	
109-99-9	Tetrahydrofuran	ND	0.50	0.067	ND	0.17	0.023	
108-88-3	Toluene	ND	0.50	0.065	ND	0.13	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.11	ND	0.11	0.024	
79-01-6	Trichloroethene	ND	0.50	0.072	ND	0.093	0.013	
75-01-4	Vinyl Chloride	ND	0.50	0.057	ND	0.20	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client:	**NASA White Sands Test Facility**		
Client Sample ID:	**Method Blank**	ALS Project ID:	P2405139
Client Project ID:	**NASA White Sands Test Facility (WSTF)**	ALS Sample ID:	P250107-MB

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Simon Cao	Date Analyzed:	1/7/25
Sampling Media:	1.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250110-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.066	ND	0.092	0.012	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.074	ND	0.073	0.011	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.054	ND	0.092	0.0099	
75-34-3	1,1-Dichloroethane	ND	0.50	0.078	ND	0.12	0.019	
75-35-4	1,1-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.13	ND	0.067	0.018	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.074	ND	0.10	0.015	
106-93-4	1,2-Dibromoethane (EDB)	ND	0.50	0.062	ND	0.065	0.0081	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.079	ND	0.083	0.013	
107-06-2	1,2-Dichloroethane	ND	0.50	0.059	ND	0.12	0.015	
78-87-5	1,2-Dichloropropane	ND	0.50	0.066	ND	0.11	0.014	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.077	ND	0.10	0.016	
106-99-0	1,3-Butadiene	ND	0.50	0.088	ND	0.23	0.040	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.080	ND	0.083	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.082	ND	0.083	0.014	
123-91-1	1,4-Dioxane	ND	0.50	0.063	ND	0.14	0.017	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.080	ND	0.11	0.017	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5.0	0.11	ND	1.7	0.037	
591-78-6	2-Hexanone	ND	0.50	0.066	ND	0.12	0.016	
67-63-0	2-Propanol	ND	1.0	0.22	ND	0.41	0.090	
107-05-1	3-Chloropropene	ND	0.50	0.072	ND	0.16	0.023	
622-96-8	4-Ethyltoluene	ND	0.50	0.085	ND	0.10	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250110-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.073	ND	0.12	0.018	
67-64-1	Acetone	ND	5.0	1.2	ND	2.1	0.51	
100-44-7	alpha-Chlorotoluene	ND	0.50	0.12	ND	0.097	0.023	
71-43-2	Benzene	ND	0.50	0.077	ND	0.16	0.024	
75-27-4	Bromodichloromethane	ND	0.50	0.077	ND	0.075	0.011	
75-25-2	Bromoform	ND	0.50	0.11	ND	0.048	0.011	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-15-0	Carbon Disulfide	ND	5.0	0.16	ND	1.6	0.051	
56-23-5	Carbon Tetrachloride	ND	0.50	0.074	ND	0.080	0.012	
108-90-7	Chlorobenzene	ND	0.50	0.071	ND	0.11	0.015	
75-00-3	Chloroethane	ND	0.50	0.066	ND	0.19	0.025	
67-66-3	Chloroform	ND	0.50	0.071	ND	0.10	0.015	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	**V**
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.075	ND	0.13	0.019	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.083	ND	0.11	0.018	
98-82-8	Cumene	ND	0.50	0.077	ND	0.10	0.016	
110-82-7	Cyclohexane	ND	1.0	0.15	ND	0.29	0.044	
124-48-1	Dibromochloromethane	ND	0.50	0.070	ND	0.059	0.0082	
64-17-5	Ethanol	ND	5.0	0.37	ND	2.7	0.20	
100-41-4	Ethyl Benzene	ND	0.50	0.075	ND	0.12	0.017	
75-69-4	Freon 11	ND	0.50	0.081	ND	0.089	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **Method Blank** ALS Sample ID: P250110-MB
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	0.50	0.076	ND	0.065	0.0099	
76-14-2	Freon 114	ND	0.50	0.084	ND	0.072	0.012	
75-71-8	Freon 12	ND	0.50	0.087	ND	0.10	0.018	
306-83-2	Freon 123	ND	0.50	0.24	ND	0.080	0.038	**X**
75-43-4	Freon 21	ND	0.50	0.24	ND	0.12	0.057	**X**
142-82-5	Heptane	ND	0.50	0.085	ND	0.12	0.021	
87-68-3	Hexachlorobutadiene	ND	0.50	0.11	ND	0.047	0.010	
110-54-3	Hexane	ND	0.50	0.11	ND	0.14	0.031	
179601-23-1	m,p-Xylene	ND	1.0	0.14	ND	0.23	0.032	
1634-04-4	Methyl tert-butyl ether	ND	0.50	0.063	ND	0.14	0.017	**V**
75-09-2	Methylene Chloride	ND	0.50	0.15	ND	0.14	0.043	
95-47-6	o-Xylene	ND	0.50	0.077	ND	0.12	0.018	
103-65-1	Propylbenzene	ND	0.50	0.077	ND	0.10	0.016	
100-42-5	Styrene	ND	0.50	0.086	ND	0.12	0.020	
127-18-4	Tetrachloroethene	ND	0.50	0.069	ND	0.074	0.010	
109-99-9	Tetrahydrofuran	ND	0.50	0.067	ND	0.17	0.023	
108-88-3	Toluene	ND	0.50	0.065	ND	0.13	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.11	ND	0.11	0.024	
79-01-6	Trichloroethene	ND	0.50	0.072	ND	0.093	0.013	
75-01-4	Vinyl Chloride	ND	0.50	0.057	ND	0.20	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client:	**NASA White Sands Test Facility**		
Client Sample ID:	**Method Blank**	ALS Project ID:	P2405139
Client Project ID:	**NASA White Sands Test Facility (WSTF)**	ALS Sample ID:	P250110-MB

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Chase Griffin	Date Analyzed:	1/10/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250111-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.066	ND	0.092	0.012	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.074	ND	0.073	0.011	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.054	ND	0.092	0.0099	
75-34-3	1,1-Dichloroethane	ND	0.50	0.078	ND	0.12	0.019	
75-35-4	1,1-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.13	ND	0.067	0.018	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.074	ND	0.10	0.015	
106-93-4	1,2-Dibromoethane (EDB)	ND	0.50	0.062	ND	0.065	0.0081	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.079	ND	0.083	0.013	
107-06-2	1,2-Dichloroethane	ND	0.50	0.059	ND	0.12	0.015	
78-87-5	1,2-Dichloropropane	ND	0.50	0.066	ND	0.11	0.014	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.077	ND	0.10	0.016	
106-99-0	1,3-Butadiene	ND	0.50	0.088	ND	0.23	0.040	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.080	ND	0.083	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.082	ND	0.083	0.014	
123-91-1	1,4-Dioxane	ND	0.50	0.063	ND	0.14	0.017	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.080	ND	0.11	0.017	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5.0	0.11	ND	1.7	0.037	
591-78-6	2-Hexanone	ND	0.50	0.066	ND	0.12	0.016	
67-63-0	2-Propanol	ND	1.0	0.22	ND	0.41	0.090	
107-05-1	3-Chloropropene	ND	0.50	0.072	ND	0.16	0.023	
622-96-8	4-Ethyltoluene	ND	0.50	0.085	ND	0.10	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250111-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.073	ND	0.12	0.018	
67-64-1	Acetone	ND	5.0	1.2	ND	2.1	0.51	
100-44-7	alpha-Chlorotoluene	ND	0.50	0.12	ND	0.097	0.023	
71-43-2	Benzene	ND	0.50	0.077	ND	0.16	0.024	
75-27-4	Bromodichloromethane	ND	0.50	0.077	ND	0.075	0.011	
75-25-2	Bromoform	ND	0.50	0.11	ND	0.048	0.011	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-15-0	Carbon Disulfide	ND	5.0	0.16	ND	1.6	0.051	
56-23-5	Carbon Tetrachloride	ND	0.50	0.074	ND	0.080	0.012	
108-90-7	Chlorobenzene	ND	0.50	0.071	ND	0.11	0.015	
75-00-3	Chloroethane	ND	0.50	0.066	ND	0.19	0.025	
67-66-3	Chloroform	ND	0.50	0.071	ND	0.10	0.015	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	**V**
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.075	ND	0.13	0.019	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.083	ND	0.11	0.018	
98-82-8	Cumene	ND	0.50	0.077	ND	0.10	0.016	
110-82-7	Cyclohexane	ND	1.0	0.15	ND	0.29	0.044	
124-48-1	Dibromochloromethane	ND	0.50	0.070	ND	0.059	0.0082	
64-17-5	Ethanol	ND	5.0	0.37	ND	2.7	0.20	
100-41-4	Ethyl Benzene	ND	0.50	0.075	ND	0.12	0.017	
75-69-4	Freon 11	ND	0.50	0.081	ND	0.089	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **Method Blank** ALS Sample ID: P250111-MB
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	0.50	0.076	ND	0.065	0.0099	
76-14-2	Freon 114	ND	0.50	0.084	ND	0.072	0.012	
75-71-8	Freon 12	ND	0.50	0.087	ND	0.10	0.018	
306-83-2	Freon 123	ND	0.50	0.24	ND	0.080	0.038	**X**
75-43-4	Freon 21	ND	0.50	0.24	ND	0.12	0.057	**X**
142-82-5	Heptane	ND	0.50	0.085	ND	0.12	0.021	
87-68-3	Hexachlorobutadiene	ND	0.50	0.11	ND	0.047	0.010	
110-54-3	Hexane	ND	0.50	0.11	ND	0.14	0.031	
179601-23-1	m,p-Xylene	ND	1.0	0.14	ND	0.23	0.032	
1634-04-4	Methyl tert-butyl ether	ND	0.50	0.063	ND	0.14	0.017	
75-09-2	Methylene Chloride	ND	0.50	0.15	ND	0.14	0.043	
95-47-6	o-Xylene	ND	0.50	0.077	ND	0.12	0.018	
103-65-1	Propylbenzene	ND	0.50	0.077	ND	0.10	0.016	
100-42-5	Styrene	ND	0.50	0.086	ND	0.12	0.020	
127-18-4	Tetrachloroethene	ND	0.50	0.069	ND	0.074	0.010	
109-99-9	Tetrahydrofuran	ND	0.50	0.067	ND	0.17	0.023	
108-88-3	Toluene	ND	0.50	0.065	ND	0.13	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.11	ND	0.11	0.024	
79-01-6	Trichloroethene	ND	0.50	0.072	ND	0.093	0.013	
75-01-4	Vinyl Chloride	ND	0.50	0.057	ND	0.20	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

X = See case narrative.

Client:	**NASA White Sands Test Facility**		
Client Sample ID:	**Method Blank**	ALS Project ID:	P2405139
Client Project ID:	**NASA White Sands Test Facility (WSTF)**	ALS Sample ID:	P250111-MB

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Chase Griffin	Date Analyzed:	1/11/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250112-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Logan Simon Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.066	ND	0.092	0.012	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.074	ND	0.073	0.011	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.054	ND	0.092	0.0099	
75-34-3	1,1-Dichloroethane	ND	0.50	0.078	ND	0.12	0.019	
75-35-4	1,1-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.13	ND	0.067	0.018	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.074	ND	0.10	0.015	
106-93-4	1,2-Dibromoethane (EDB)	ND	0.50	0.062	ND	0.065	0.0081	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.079	ND	0.083	0.013	
107-06-2	1,2-Dichloroethane	ND	0.50	0.059	ND	0.12	0.015	
78-87-5	1,2-Dichloropropane	ND	0.50	0.066	ND	0.11	0.014	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.077	ND	0.10	0.016	
106-99-0	1,3-Butadiene	ND	0.50	0.088	ND	0.23	0.040	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.080	ND	0.083	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.082	ND	0.083	0.014	
123-91-1	1,4-Dioxane	ND	0.50	0.063	ND	0.14	0.017	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.080	ND	0.11	0.017	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5.0	0.11	ND	1.7	0.037	
591-78-6	2-Hexanone	ND	0.50	0.066	ND	0.12	0.016	
67-63-0	2-Propanol	ND	1.0	0.22	ND	0.41	0.090	
107-05-1	3-Chloropropene	ND	0.50	0.072	ND	0.16	0.023	
622-96-8	4-Ethyltoluene	ND	0.50	0.085	ND	0.10	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250112-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Logan Simon Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.073	ND	0.12	0.018	
67-64-1	Acetone	ND	5.0	1.2	ND	2.1	0.51	
100-44-7	alpha-Chlorotoluene	ND	0.50	0.12	ND	0.097	0.023	
71-43-2	Benzene	ND	0.50	0.077	ND	0.16	0.024	
75-27-4	Bromodichloromethane	ND	0.50	0.077	ND	0.075	0.011	
75-25-2	Bromoform	ND	0.50	0.11	ND	0.048	0.011	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-15-0	Carbon Disulfide	ND	5.0	0.16	ND	1.6	0.051	
56-23-5	Carbon Tetrachloride	ND	0.50	0.074	ND	0.080	0.012	
108-90-7	Chlorobenzene	ND	0.50	0.071	ND	0.11	0.015	
75-00-3	Chloroethane	ND	0.50	0.066	ND	0.19	0.025	
67-66-3	Chloroform	ND	0.50	0.071	ND	0.10	0.015	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.075	ND	0.13	0.019	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.083	ND	0.11	0.018	
98-82-8	Cumene	ND	0.50	0.077	ND	0.10	0.016	
110-82-7	Cyclohexane	ND	1.0	0.15	ND	0.29	0.044	
124-48-1	Dibromochloromethane	ND	0.50	0.070	ND	0.059	0.0082	
64-17-5	Ethanol	ND	5.0	0.37	ND	2.7	0.20	
100-41-4	Ethyl Benzene	ND	0.50	0.075	ND	0.12	0.017	
75-69-4	Freon 11	ND	0.50	0.081	ND	0.089	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **Method Blank** ALS Sample ID: P250112-MB
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Logan Simon Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	0.50	0.076	ND	0.065	0.0099	
76-14-2	Freon 114	ND	0.50	0.084	ND	0.072	0.012	
75-71-8	Freon 12	ND	0.50	0.087	ND	0.10	0.018	
306-83-2	Freon 123	ND	0.50	0.24	ND	0.080	0.038	**X**
75-43-4	Freon 21	ND	0.50	0.24	ND	0.12	0.057	**X**
142-82-5	Heptane	ND	0.50	0.085	ND	0.12	0.021	
87-68-3	Hexachlorobutadiene	ND	0.50	0.11	ND	0.047	0.010	
110-54-3	Hexane	ND	0.50	0.11	ND	0.14	0.031	
179601-23-1	m,p-Xylene	ND	1.0	0.14	ND	0.23	0.032	
1634-04-4	Methyl tert-butyl ether	ND	0.50	0.063	ND	0.14	0.017	
75-09-2	Methylene Chloride	ND	0.50	0.15	ND	0.14	0.043	
95-47-6	o-Xylene	ND	0.50	0.077	ND	0.12	0.018	
103-65-1	Propylbenzene	ND	0.50	0.077	ND	0.10	0.016	
100-42-5	Styrene	ND	0.50	0.086	ND	0.12	0.020	
127-18-4	Tetrachloroethene	ND	0.50	0.069	ND	0.074	0.010	
109-99-9	Tetrahydrofuran	ND	0.50	0.067	ND	0.17	0.023	
108-88-3	Toluene	ND	0.50	0.065	ND	0.13	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.11	ND	0.11	0.024	
79-01-6	Trichloroethene	ND	0.50	0.072	ND	0.093	0.013	
75-01-4	Vinyl Chloride	ND	0.50	0.057	ND	0.20	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client:	**NASA White Sands Test Facility**		
Client Sample ID:	**Method Blank**	ALS Project ID:	P2405139
Client Project ID:	**NASA White Sands Test Facility (WSTF)**	ALS Sample ID:	P250112-MB

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Logan Simon	Date Analyzed:	1/12/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250113-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.066	ND	0.092	0.012	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.074	ND	0.073	0.011	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.054	ND	0.092	0.0099	
75-34-3	1,1-Dichloroethane	ND	0.50	0.078	ND	0.12	0.019	
75-35-4	1,1-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.13	ND	0.067	0.018	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.074	ND	0.10	0.015	
106-93-4	1,2-Dibromoethane (EDB)	ND	0.50	0.062	ND	0.065	0.0081	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.079	ND	0.083	0.013	
107-06-2	1,2-Dichloroethane	ND	0.50	0.059	ND	0.12	0.015	
78-87-5	1,2-Dichloropropane	ND	0.50	0.066	ND	0.11	0.014	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.077	ND	0.10	0.016	
106-99-0	1,3-Butadiene	ND	0.50	0.088	ND	0.23	0.040	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.080	ND	0.083	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.082	ND	0.083	0.014	
123-91-1	1,4-Dioxane	ND	0.50	0.063	ND	0.14	0.017	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.080	ND	0.11	0.017	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	ND	5.0	0.11	ND	1.7	0.037	
591-78-6	2-Hexanone	ND	0.50	0.066	ND	0.12	0.016	
67-63-0	2-Propanol	ND	1.0	0.22	ND	0.41	0.090	
107-05-1	3-Chloropropene	ND	0.50	0.072	ND	0.16	0.023	
622-96-8	4-Ethyltoluene	ND	0.50	0.085	ND	0.10	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Method Blank** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250113-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.073	ND	0.12	0.018	
67-64-1	Acetone	ND	5.0	1.2	ND	2.1	0.51	
100-44-7	alpha-Chlorotoluene	ND	0.50	0.12	ND	0.097	0.023	
71-43-2	Benzene	ND	0.50	0.077	ND	0.16	0.024	
75-27-4	Bromodichloromethane	ND	0.50	0.077	ND	0.075	0.011	
75-25-2	Bromoform	ND	0.50	0.11	ND	0.048	0.011	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-15-0	Carbon Disulfide	ND	5.0	0.16	ND	1.6	0.051	
56-23-5	Carbon Tetrachloride	ND	0.50	0.074	ND	0.080	0.012	
108-90-7	Chlorobenzene	ND	0.50	0.071	ND	0.11	0.015	
75-00-3	Chloroethane	ND	0.50	0.066	ND	0.19	0.025	
67-66-3	Chloroform	ND	0.50	0.071	ND	0.10	0.015	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.075	ND	0.13	0.019	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.083	ND	0.11	0.018	
98-82-8	Cumene	ND	0.50	0.077	ND	0.10	0.016	
110-82-7	Cyclohexane	ND	1.0	0.15	ND	0.29	0.044	
124-48-1	Dibromochloromethane	ND	0.50	0.070	ND	0.059	0.0082	
64-17-5	Ethanol	ND	5.0	0.37	ND	2.7	0.20	
100-41-4	Ethyl Benzene	ND	0.50	0.075	ND	0.12	0.017	
75-69-4	Freon 11	ND	0.50	0.081	ND	0.089	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Sample ID: **Method Blank** ALS Sample ID: P250113-MB
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
76-13-1	Freon 113	ND	0.50	0.076	ND	0.065	0.0099	
76-14-2	Freon 114	ND	0.50	0.084	ND	0.072	0.012	
75-71-8	Freon 12	ND	0.50	0.087	ND	0.10	0.018	
306-83-2	Freon 123	ND	0.50	0.24	ND	0.080	0.038	**X**
75-43-4	Freon 21	ND	0.50	0.24	ND	0.12	0.057	**X**
142-82-5	Heptane	ND	0.50	0.085	ND	0.12	0.021	
87-68-3	Hexachlorobutadiene	ND	0.50	0.11	ND	0.047	0.010	
110-54-3	Hexane	ND	0.50	0.11	ND	0.14	0.031	
179601-23-1	m,p-Xylene	ND	1.0	0.14	ND	0.23	0.032	
1634-04-4	Methyl tert-butyl ether	ND	0.50	0.063	ND	0.14	0.017	
75-09-2	Methylene Chloride	ND	0.50	0.15	ND	0.14	0.043	
95-47-6	o-Xylene	ND	0.50	0.077	ND	0.12	0.018	
103-65-1	Propylbenzene	ND	0.50	0.077	ND	0.10	0.016	
100-42-5	Styrene	ND	0.50	0.086	ND	0.12	0.020	
127-18-4	Tetrachloroethene	ND	0.50	0.069	ND	0.074	0.010	
109-99-9	Tetrahydrofuran	ND	0.50	0.067	ND	0.17	0.023	
108-88-3	Toluene	ND	0.50	0.065	ND	0.13	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.074	ND	0.13	0.019	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.11	ND	0.11	0.024	
79-01-6	Trichloroethene	ND	0.50	0.072	ND	0.093	0.013	
75-01-4	Vinyl Chloride	ND	0.50	0.057	ND	0.20	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

Client:	**NASA White Sands Test Facility**		
Client Sample ID:	**Method Blank**	ALS Project ID:	P2405139
Client Project ID:	**NASA White Sands Test Facility (WSTF)**	ALS Sample ID:	P250113-MB

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Simon Cao	Date Analyzed:	1/13/25
Sampling Media:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Freon 123a	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **NASA White Sands Test Facility**
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Project ID: P2405139

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 12/9 - 12/12/24
Analyst: Simon Cao/Logan Simon/Chase Griffin Date(s) Received: 12/19/24
Sampling Media: 1.0 L Silonite Summa Canister(s) / 1.0 L Summa Canister(s) Date(s) Analyzed: 1/4 - 1/13/25
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P250104-MB	**97**	**110**	**110**	70-130	
Method Blank	P250106-MB	**96**	**109**	**116**	70-130	
Method Blank	P250107-MB	**96**	**106**	**114**	70-130	
Method Blank	P250110-MB	**104**	**99**	**102**	70-130	
Method Blank	P250111-MB	**103**	**105**	**100**	70-130	
Method Blank	P250112-MB	**99**	**102**	**103**	70-130	
Method Blank	P250113-MB	**99**	**102**	**104**	70-130	
Lab Control Sample	P250104-LCS	**96**	**109**	**113**	70-130	
Lab Control Sample	P250106-LCS	**94**	**107**	**117**	70-130	
Lab Control Sample	P250107-LCS	**97**	**106**	**117**	70-130	
Lab Control Sample	P250110-LCS	**104**	**99**	**101**	70-130	
Lab Control Sample	P250111-LCS	**102**	**104**	**99**	70-130	
Lab Control Sample	P250112-LCS	**99**	**103**	**104**	70-130	
Lab Control Sample	P250113-LCS	**100**	**102**	**103**	70-130	
Duplicate Lab Control Sample	P250104-DLCS	**96**	**110**	**112**	70-130	
Duplicate Lab Control Sample	P250106-DLCS	**94**	**106**	**118**	70-130	
Duplicate Lab Control Sample	P250107-DLCS	**97**	**106**	**117**	70-130	
Duplicate Lab Control Sample	P250110-DLCS	**103**	**100**	**101**	70-130	
Duplicate Lab Control Sample	P250111-DLCS	**101**	**105**	**100**	70-130	
Duplicate Lab Control Sample	P250112-DLCS	**99**	**103**	**104**	70-130	
Duplicate Lab Control Sample	P250113-DLCS	**99**	**102**	**103**	70-130	
2412091330	P2405139-001	**94**	**107**	**114**	70-130	
2412091335	P2405139-002	**96**	**106**	**114**	70-130	
2412091342	P2405139-003	**96**	**105**	**113**	70-130	
2412091343	P2405139-004	**97**	**106**	**114**	70-130	
2412091352	P2405139-005	**96**	**105**	**118**	70-130	
2412091405	P2405139-006	**96**	**104**	**114**	70-130	
2412091406	P2405139-007	**97**	**106**	**116**	70-130	
2412091410	P2405139-008	**95**	**105**	**118**	70-130	
2412091416	P2405139-009	**96**	**106**	**119**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

Client: **NASA White Sands Test Facility**
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Project ID: P2405139

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 12/9 - 12/12/24
Analyst: Simon Cao/Logan Simon/Chase Griffin Date(s) Received: 12/19/24
Sampling Media: 1.0 L Silonite Summa Canister(s) / 1.0 L Summa Canister(s) Date(s) Analyzed: 1/4 - 1/13/25
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
2412101015	P2405139-010	**95**	**105**	**118**	70-130	
2412101021	P2405139-011	**97**	**105**	**118**	70-130	
2412101027	P2405139-012	**96**	**105**	**114**	70-130	
2412101028	P2405139-013	**100**	**105**	**115**	70-130	
2412101039	P2405139-014	**98**	**105**	**113**	70-130	
2412101045	P2405139-015	**97**	**105**	**114**	70-130	
2412101053	P2405139-016	**100**	**103**	**114**	70-130	
2412101105	P2405139-017	**97**	**106**	**118**	70-130	
2412101111	P2405139-018	**97**	**105**	**115**	70-130	
2412101112	P2405139-019	**98**	**105**	**115**	70-130	
2412101120	P2405139-020	**98**	**103**	**117**	70-130	
2412101128	P2405139-021	**99**	**102**	**116**	70-130	
2412101315	P2405139-022	**99**	**102**	**117**	70-130	
2412101316	P2405139-023	**98**	**103**	**119**	70-130	
2412101325	P2405139-024	**97**	**103**	**116**	70-130	
2412101334	P2405139-025	**98**	**102**	**115**	70-130	
2412101355	P2405139-026	**99**	**101**	**118**	70-130	
2412101403	P2405139-027	**100**	**101**	**114**	70-130	
2412101404	P2405139-028	**102**	**100**	**114**	70-130	
2412101412	P2405139-029	**99**	**102**	**116**	70-130	
2412110900	P2405139-030	**100**	**100**	**102**	70-130	
2412110901	P2405139-031	**100**	**100**	**103**	70-130	
2412110908	P2405139-032	**103**	**100**	**112**	70-130	
2412110916	P2405139-033	**101**	**100**	**113**	70-130	
2412110917	P2405139-034	**102**	**100**	**111**	70-130	
2412110945	P2405139-035	**102**	**100**	**113**	70-130	
2412110946	P2405139-036	**103**	**99**	**101**	70-130	
2412110957	P2405139-037	**104**	**101**	**102**	70-130	
2412111005	P2405139-038	**103**	**101**	**103**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **NASA White Sands Test Facility**
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Project ID: P2405139

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 12/9 - 12/12/24
Analyst: Simon Cao/Logan Simon/Chase Griffin Date(s) Received: 12/19/24
Sampling Media: 1.0 L Silonite Summa Canister(s) / 1.0 L Summa Canister(s) Date(s) Analyzed: 1/4 - 1/13/25
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
2412111013	P2405139-039	**102**	**98**	**106**	70-130	
2412111030	P2405139-040	**104**	**100**	**100**	70-130	
2412111037	P2405139-041	**106**	**100**	**99**	70-130	
2412111055	P2405139-042	**106**	**101**	**99**	70-130	
2412111056	P2405139-043	**106**	**100**	**98**	70-130	
2412111105	P2405139-044	**106**	**99**	**99**	70-130	
2412111113	P2405139-045	**103**	**97**	**105**	70-130	
2412111121	P2405139-046	**107**	**99**	**98**	70-130	
2412111300	P2405139-047	**106**	**100**	**100**	70-130	
2412111309	P2405139-048	**107**	**101**	**99**	70-130	
2412111318	P2405139-049	**106**	**101**	**99**	70-130	
2412111319	P2405139-050	**99**	**105**	**106**	70-130	
2412111328	P2405139-051	**98**	**101**	**107**	70-130	
2412111350	P2405139-052	**99**	**102**	**107**	70-130	
2412111351	P2405139-053	**99**	**101**	**103**	70-130	
2412111400	P2405139-054	**98**	**105**	**109**	70-130	
2412111409	P2405139-055	**104**	**95**	**104**	70-130	
2412111410	P2405139-056	**97**	**102**	**109**	70-130	
2412111419	P2405139-057	**97**	**103**	**105**	70-130	
2412120815	P2405139-058	**97**	**101**	**108**	70-130	
2412120816	P2405139-059	**98**	**101**	**106**	70-130	
2412120826	P2405139-060	**98**	**101**	**106**	70-130	
2412120835	P2405139-061	**98**	**101**	**104**	70-130	
2412120836	P2405139-062	**98**	**101**	**106**	70-130	
2412120900	P2405139-063	**99**	**101**	**105**	70-130	
2412120901	P2405139-064	**100**	**101**	**106**	70-130	
2412120910	P2405139-065	**99**	**103**	**105**	70-130	
2412120919	P2405139-066	**100**	**101**	**104**	70-130	
2412120920	P2405139-067	**99**	**101**	**105**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250104-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
71-55-6	1,1,1-Trichloroethane	210	222	220	**106**	**105**	67-125	0.9	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	238	241	**110**	**112**	71-128	2	25	
79-00-5	1,1,2-Trichloroethane	216	221	220	**102**	**102**	71-119	0	25	
75-34-3	1,1-Dichloroethane	218	193	192	**89**	**88**	66-120	1	25	
75-35-4	1,1-Dichloroethene	208	208	206	**100**	**99**	75-120	1	25	
120-82-1	1,2,4-Trichlorobenzene	436	550	573	**126**	**131**	50-137	4	25	
95-63-6	1,2,4-Trimethylbenzene	212	259	263	**122**	**124**	67-130	2	25	
106-93-4	1,2-Dibromoethane (EDB)	204	255	254	**125**	**125**	69-129	0	25	
95-50-1	1,2-Dichlorobenzene	212	247	251	**117**	**118**	57-138	0.9	25	
107-06-2	1,2-Dichloroethane	204	195	195	**96**	**96**	64-138	0	25	
78-87-5	1,2-Dichloropropane	214	197	194	**92**	**91**	68-121	1	25	
108-67-8	1,3,5-Trimethylbenzene	216	260	262	**120**	**121**	66-125	0.8	25	
106-99-0	1,3-Butadiene	212	237	230	**112**	**108**	62-132	4	25	
541-73-1	1,3-Dichlorobenzene	212	258	261	**122**	**123**	57-135	0.8	25	
106-46-7	1,4-Dichlorobenzene	212	249	253	**117**	**119**	56-129	2	25	
123-91-1	1,4-Dioxane	214	222	224	**104**	**105**	76-127	1	25	
540-84-1	2,2,4-Trimethylpentane	214	192	191	**90**	**89**	62-124	1	25	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	412	388	387	**94**	**94**	70-125	0	25	
591-78-6	2-Hexanone	424	472	477	**111**	**113**	70-136	2	25	
67-63-0	2-Propanol	416	387	387	**93**	**93**	59-132	0	25	
107-05-1	3-Chloropropene	214	155	156	**72**	**73**	50-118	1	25	
622-96-8	4-Ethyltoluene	218	268	269	**123**	**123**	67-128	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250104-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
108-10-1	4-Methyl-2-pentanone	426	423	420	**99**	**99**	67-137	0	25	
67-64-1	Acetone	1,050	879	865	**84**	**82**	61-120	2	25	
100-44-7	alpha-Chlorotoluene	426	568	577	**133**	**135**	58-151	1	25	
71-43-2	Benzene	206	188	187	**91**	**91**	73-128	0	25	
75-27-4	Bromodichloromethane	218	235	234	**108**	**107**	70-125	0.9	25	
75-25-2	Bromoform	218	329	328	**151**	**150**	63-132	0.7	25	**L**
74-83-9	Bromomethane	210	233	229	**111**	**109**	72-120	2	25	
75-15-0	Carbon Disulfide	430	404	402	**94**	**93**	69-115	1	25	
56-23-5	Carbon Tetrachloride	210	226	224	**108**	**107**	71-134	0.9	25	
108-90-7	Chlorobenzene	216	240	240	**111**	**111**	63-124	0	25	
75-00-3	Chloroethane	212	188	184	**89**	**87**	67-123	2	25	
67-66-3	Chloroform	216	209	208	**97**	**96**	64-121	1	25	
74-87-3	Chloromethane	208	148	150	**71**	**72**	56-131	1	25	
156-59-2	cis-1,2-Dichloroethene	214	198	197	**93**	**92**	64-120	1	25	
10061-01-5	cis-1,3-Dichloropropene	212	227	227	**107**	**107**	87-137	0	25	
98-82-8	Cumene	214	252	253	**118**	**118**	66-126	0	25	
110-82-7	Cyclohexane	430	415	414	**97**	**96**	71-118	1	25	
124-48-1	Dibromochloromethane	216	279	280	**129**	**130**	67-128	0.8	25	**L**
64-17-5	Ethanol	1,050	913	909	**87**	**87**	52-120	0	25	
100-41-4	Ethyl Benzene	218	254	256	**117**	**117**	64-119	0	25	
75-69-4	Freon 11	208	201	199	**97**	**96**	65-122	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250104-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
76-13-1	Freon 113	210	221	217	**105**	**103**	65-121	2	25	
76-14-2	Freon 114	208	221	219	**106**	**105**	63-120	0.9	25	
75-71-8	Freon 12	206	193	190	**94**	**92**	66-122	2	25	
142-82-5	Heptane	214	203	203	**95**	**95**	72-121	0	25	
87-68-3	Hexachlorobutadiene	212	262	269	**124**	**127**	50-133	2	25	
110-54-3	Hexane	212	181	179	**85**	**84**	60-125	1	25	
179601-23-1	m,p-Xylene	432	503	504	**116**	**117**	64-121	0.9	25	
1634-04-4	Methyl tert-butyl ether	216	199	215	**92**	**100**	65-124	8	25	
75-09-2	Methylene Chloride	204	186	184	**91**	**90**	71-123	1	25	
95-47-6	o-Xylene	216	254	254	**118**	**118**	66-122	0	25	
103-65-1	Propylbenzene	214	250	250	**117**	**117**	67-126	0	25	
100-42-5	Styrene	214	273	275	**128**	**129**	71-125	0.8	25	**L**
127-18-4	Tetrachloroethene	214	264	265	**123**	**124**	55-132	0.8	25	
109-99-9	Tetrahydrofuran	404	378	376	**94**	**93**	67-117	1	25	
108-88-3	Toluene	216	235	237	**109**	**110**	64-121	0.9	25	
156-60-5	trans-1,2-Dichloroethene	218	204	202	**94**	**93**	67-123	1	25	
10061-02-6	trans-1,3-Dichloropropene	196	209	208	**107**	**106**	73-127	0.9	25	
79-01-6	Trichloroethene	214	220	217	**103**	**101**	68-124	2	25	
75-01-4	Vinyl Chloride	210	207	206	**99**	**98**	57-129	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250106-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
71-55-6	1,1,1-Trichloroethane	210	213	207	**101**	**99**	67-125	2	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	221	219	**102**	**101**	71-128	1	25	
79-00-5	1,1,2-Trichloroethane	216	211	208	**98**	**96**	71-119	2	25	
75-34-3	1,1-Dichloroethane	218	184	180	**84**	**83**	66-120	1	25	
75-35-4	1,1-Dichloroethene	208	199	195	**96**	**94**	75-120	2	25	
120-82-1	1,2,4-Trichlorobenzene	436	485	518	**111**	**119**	50-137	7	25	
95-63-6	1,2,4-Trimethylbenzene	212	241	241	**114**	**114**	67-130	0	25	
106-93-4	1,2-Dibromoethane (EDB)	204	238	232	**117**	**114**	69-129	3	25	
95-50-1	1,2-Dichlorobenzene	212	230	231	**108**	**109**	57-138	0.9	25	
107-06-2	1,2-Dichloroethane	204	186	182	**91**	**89**	64-138	2	25	
78-87-5	1,2-Dichloropropane	214	188	183	**88**	**86**	68-121	2	25	
108-67-8	1,3,5-Trimethylbenzene	216	243	241	**113**	**112**	66-125	0.9	25	
106-99-0	1,3-Butadiene	212	174	178	**82**	**84**	62-132	2	25	
541-73-1	1,3-Dichlorobenzene	212	240	241	**113**	**114**	57-135	0.9	25	
106-46-7	1,4-Dichlorobenzene	212	230	233	**108**	**110**	56-129	2	25	
123-91-1	1,4-Dioxane	214	213	209	**100**	**98**	76-127	2	25	
540-84-1	2,2,4-Trimethylpentane	214	183	180	**86**	**84**	62-124	2	25	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	412	370	363	**90**	**88**	70-125	2	25	
591-78-6	2-Hexanone	424	438	429	**103**	**101**	70-136	2	25	
67-63-0	2-Propanol	416	365	358	**88**	**86**	59-132	2	25	
107-05-1	3-Chloropropene	214	141	139	**66**	**65**	50-118	2	25	
622-96-8	4-Ethyltoluene	218	247	249	**113**	**114**	67-128	0.9	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250106-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
108-10-1	4-Methyl-2-pentanone	426	404	396	**95**	**93**	67-137	2	25	
67-64-1	Acetone	1,050	837	818	**80**	**78**	61-120	3	25	
100-44-7	alpha-Chlorotoluene	426	459	473	**108**	**111**	58-151	3	25	
71-43-2	Benzene	206	181	178	**88**	**86**	73-128	2	25	
75-27-4	Bromodichloromethane	218	226	221	**104**	**101**	70-125	3	25	
75-25-2	Bromoform	218	309	303	**142**	**139**	63-132	2	25	**L**
74-83-9	Bromomethane	210	225	217	**107**	**103**	72-120	4	25	
75-15-0	Carbon Disulfide	430	388	381	**90**	**89**	69-115	1	25	
56-23-5	Carbon Tetrachloride	210	215	212	**102**	**101**	71-134	1	25	
108-90-7	Chlorobenzene	216	226	220	**105**	**102**	63-124	3	25	
75-00-3	Chloroethane	212	180	174	**85**	**82**	67-123	4	25	
67-66-3	Chloroform	216	200	195	**93**	**90**	64-121	3	25	
74-87-3	Chloromethane	208	118	124	**57**	**60**	56-131	5	25	
156-59-2	cis-1,2-Dichloroethene	214	189	183	**88**	**86**	64-120	2	25	
10061-01-5	cis-1,3-Dichloropropene	212	216	212	**102**	**100**	87-137	2	25	
98-82-8	Cumene	214	237	232	**111**	**108**	66-126	3	25	
110-82-7	Cyclohexane	430	399	391	**93**	**91**	71-118	2	25	
124-48-1	Dibromochloromethane	216	263	257	**122**	**119**	67-128	2	25	
64-17-5	Ethanol	1,050	871	852	**83**	**81**	52-120	2	25	
100-41-4	Ethyl Benzene	218	237	233	**109**	**107**	64-119	2	25	
75-69-4	Freon 11	208	193	188	**93**	**90**	65-122	3	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250106-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
76-13-1	Freon 113	210	214	211	**102**	**100**	65-121	2	25	
76-14-2	Freon 114	208	216	212	**104**	**102**	63-120	2	25	
75-71-8	Freon 12	206	188	180	**91**	**87**	66-122	4	25	
142-82-5	Heptane	214	195	191	**91**	**89**	72-121	2	25	
87-68-3	Hexachlorobutadiene	212	237	244	**112**	**115**	50-133	3	25	
110-54-3	Hexane	212	173	169	**82**	**80**	60-125	2	25	
179601-23-1	m,p-Xylene	432	471	461	**109**	**107**	64-121	2	25	
1634-04-4	Methyl tert-butyl ether	216	164	178	**76**	**82**	65-124	8	25	
75-09-2	Methylene Chloride	204	179	175	**88**	**86**	71-123	2	25	
95-47-6	o-Xylene	216	236	231	**109**	**107**	66-122	2	25	
103-65-1	Propylbenzene	214	233	230	**109**	**107**	67-126	2	25	
100-42-5	Styrene	214	254	250	**119**	**117**	71-125	2	25	
127-18-4	Tetrachloroethene	214	251	245	**117**	**114**	55-132	3	25	
109-99-9	Tetrahydrofuran	404	358	355	**89**	**88**	67-117	1	25	
108-88-3	Toluene	216	221	216	**102**	**100**	64-121	2	25	
156-60-5	trans-1,2-Dichloroethene	218	193	190	**89**	**87**	67-123	2	25	
10061-02-6	trans-1,3-Dichloropropene	196	194	191	**99**	**97**	73-127	2	25	
79-01-6	Trichloroethene	214	212	207	**99**	**97**	68-124	2	25	
75-01-4	Vinyl Chloride	210	198	194	**94**	**92**	57-129	2	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250107-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
71-55-6	1,1,1-Trichloroethane	210	217	212	**103**	**101**	67-125	2	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	213	216	**99**	**100**	71-128	1	25	
79-00-5	1,1,2-Trichloroethane	216	208	208	**96**	**96**	71-119	0	25	
75-34-3	1,1-Dichloroethane	218	181	181	**83**	**83**	66-120	0	25	
75-35-4	1,1-Dichloroethene	208	196	195	**94**	**94**	75-120	0	25	
120-82-1	1,2,4-Trichlorobenzene	436	465	514	**107**	**118**	50-137	10	25	
95-63-6	1,2,4-Trimethylbenzene	212	235	240	**111**	**113**	67-130	2	25	
106-93-4	1,2-Dibromoethane (EDB)	204	230	231	**113**	**113**	69-129	0	25	
95-50-1	1,2-Dichlorobenzene	212	221	230	**104**	**108**	57-138	4	25	
107-06-2	1,2-Dichloroethane	204	189	188	**93**	**92**	64-138	1	25	
78-87-5	1,2-Dichloropropane	214	185	183	**86**	**86**	68-121	0	25	
108-67-8	1,3,5-Trimethylbenzene	216	235	238	**109**	**110**	66-125	0.9	25	
106-99-0	1,3-Butadiene	212	208	210	**98**	**99**	62-132	1	25	
541-73-1	1,3-Dichlorobenzene	212	231	239	**109**	**113**	57-135	4	25	
106-46-7	1,4-Dichlorobenzene	212	222	230	**105**	**108**	56-129	3	25	
123-91-1	1,4-Dioxane	214	209	207	**98**	**97**	76-127	1	25	
540-84-1	2,2,4-Trimethylpentane	214	181	179	**85**	**84**	62-124	1	25	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	412	360	362	**87**	**88**	70-125	1	25	
591-78-6	2-Hexanone	424	421	425	**99**	**100**	70-136	1	25	
67-63-0	2-Propanol	416	365	365	**88**	**88**	59-132	0	25	
107-05-1	3-Chloropropene	214	141	143	**66**	**67**	50-118	2	25	
622-96-8	4-Ethyltoluene	218	239	245	**110**	**112**	67-128	2	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250107-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
108-10-1	4-Methyl-2-pentanone	426	397	394	**93**	**92**	67-137	1	25	
67-64-1	Acetone	1,050	821	817	**78**	**78**	61-120	0	25	
100-44-7	alpha-Chlorotoluene	426	480	503	**113**	**118**	58-151	4	25	
71-43-2	Benzene	206	178	176	**86**	**85**	73-128	1	25	
75-27-4	Bromodichloromethane	218	227	223	**104**	**102**	70-125	2	25	
75-25-2	Bromoform	218	300	304	**138**	**139**	63-132	0.7	25	**L**
74-83-9	Bromomethane	210	219	217	**104**	**103**	72-120	1	25	
75-15-0	Carbon Disulfide	430	378	380	**88**	**88**	69-115	0	25	
56-23-5	Carbon Tetrachloride	210	222	217	**106**	**103**	71-134	3	25	
108-90-7	Chlorobenzene	216	217	218	**100**	**101**	63-124	1	25	
75-00-3	Chloroethane	212	176	172	**83**	**81**	67-123	2	25	
67-66-3	Chloroform	216	199	199	**92**	**92**	64-121	0	25	
74-87-3	Chloromethane	208	126	137	**61**	**66**	56-131	8	25	
156-59-2	cis-1,2-Dichloroethene	214	186	185	**87**	**86**	64-120	1	25	
10061-01-5	cis-1,3-Dichloropropene	212	214	212	**101**	**100**	87-137	1	25	
98-82-8	Cumene	214	229	231	**107**	**108**	66-126	0.9	25	
110-82-7	Cyclohexane	430	393	388	**91**	**90**	71-118	1	25	
124-48-1	Dibromochloromethane	216	256	257	**119**	**119**	67-128	0	25	
64-17-5	Ethanol	1,050	854	854	**81**	**81**	52-120	0	25	
100-41-4	Ethyl Benzene	218	231	232	**106**	**106**	64-119	0	25	
75-69-4	Freon 11	208	194	193	**93**	**93**	65-122	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250107-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
76-13-1	Freon 113	210	212	213	**101**	**101**	65-121	0	25	
76-14-2	Freon 114	208	210	212	**101**	**102**	63-120	1	25	
75-71-8	Freon 12	206	187	183	**91**	**89**	66-122	2	25	
142-82-5	Heptane	214	193	190	**90**	**89**	72-121	1	25	
87-68-3	Hexachlorobutadiene	212	229	244	**108**	**115**	50-133	6	25	
110-54-3	Hexane	212	169	167	**80**	**79**	60-125	1	25	
179601-23-1	m,p-Xylene	432	458	460	**106**	**106**	64-121	0	25	
1634-04-4	Methyl tert-butyl ether	216	175	194	**81**	**90**	65-124	11	25	
75-09-2	Methylene Chloride	204	175	174	**86**	**85**	71-123	1	25	
95-47-6	o-Xylene	216	229	231	**106**	**107**	66-122	0.9	25	
103-65-1	Propylbenzene	214	225	227	**105**	**106**	67-126	0.9	25	
100-42-5	Styrene	214	244	248	**114**	**116**	71-125	2	25	
127-18-4	Tetrachloroethene	214	242	243	**113**	**114**	55-132	0.9	25	
109-99-9	Tetrahydrofuran	404	349	350	**86**	**87**	67-117	1	25	
108-88-3	Toluene	216	214	214	**99**	**99**	64-121	0	25	
156-60-5	trans-1,2-Dichloroethene	218	191	191	**88**	**88**	67-123	0	25	
10061-02-6	trans-1,3-Dichloropropene	196	195	193	**99**	**98**	73-127	1	25	
79-01-6	Trichloroethene	214	209	207	**98**	**97**	68-124	1	25	
75-01-4	Vinyl Chloride	210	191	192	**91**	**91**	57-129	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250110-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
71-55-6	1,1,1-Trichloroethane	210	197	199	**94**	**95**	67-125	1	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	182	191	**84**	**88**	71-128	5	25	
79-00-5	1,1,2-Trichloroethane	216	189	193	**88**	**89**	71-119	1	25	
75-34-3	1,1-Dichloroethane	218	175	177	**80**	**81**	66-120	1	25	
75-35-4	1,1-Dichloroethene	208	178	183	**86**	**88**	75-120	2	25	
120-82-1	1,2,4-Trichlorobenzene	436	362	414	**83**	**95**	50-137	13	25	
95-63-6	1,2,4-Trimethylbenzene	212	201	210	**95**	**99**	67-130	4	25	
106-93-4	1,2-Dibromoethane (EDB)	204	193	200	**95**	**98**	69-129	3	25	
95-50-1	1,2-Dichlorobenzene	212	182	193	**86**	**91**	57-138	6	25	
107-06-2	1,2-Dichloroethane	204	183	184	**90**	**90**	64-138	0	25	
78-87-5	1,2-Dichloropropane	214	174	178	**81**	**83**	68-121	2	25	
108-67-8	1,3,5-Trimethylbenzene	216	201	209	**93**	**97**	66-125	4	25	
106-99-0	1,3-Butadiene	212	210	215	**99**	**101**	62-132	2	25	
541-73-1	1,3-Dichlorobenzene	212	191	202	**90**	**95**	57-135	5	25	
106-46-7	1,4-Dichlorobenzene	212	181	193	**85**	**91**	56-129	7	25	
123-91-1	1,4-Dioxane	214	189	193	**88**	**90**	76-127	2	25	
540-84-1	2,2,4-Trimethylpentane	214	175	179	**82**	**84**	62-124	2	25	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	412	342	350	**83**	**85**	70-125	2	25	
591-78-6	2-Hexanone	424	397	411	**94**	**97**	70-136	3	25	
67-63-0	2-Propanol	416	365	375	**88**	**90**	59-132	2	25	
107-05-1	3-Chloropropene	214	144	149	**67**	**70**	50-118	4	25	
622-96-8	4-Ethyltoluene	218	206	216	**94**	**99**	67-128	5	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250110-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
108-10-1	4-Methyl-2-pentanone	426	382	390	**90**	**92**	67-137	2	25	
67-64-1	Acetone	1,050	801	816	**76**	**78**	61-120	3	25	
100-44-7	alpha-Chlorotoluene	426	419	446	**98**	**105**	58-151	7	25	
71-43-2	Benzene	206	164	167	**80**	**81**	73-128	1	25	
75-27-4	Bromodichloromethane	218	210	212	**96**	**97**	70-125	1	25	
75-25-2	Bromoform	218	246	253	**113**	**116**	63-132	3	25	
74-83-9	Bromomethane	210	203	206	**97**	**98**	72-120	1	25	
75-15-0	Carbon Disulfide	430	354	360	**82**	**84**	69-115	2	25	
56-23-5	Carbon Tetrachloride	210	200	201	**95**	**96**	71-134	1	25	
108-90-7	Chlorobenzene	216	184	189	**85**	**88**	63-124	3	25	
75-00-3	Chloroethane	212	170	171	**80**	**81**	67-123	1	25	
67-66-3	Chloroform	216	187	189	**87**	**88**	64-121	1	25	
74-87-3	Chloromethane	208	130	145	**63**	**70**	56-131	11	25	
156-59-2	cis-1,2-Dichloroethene	214	181	182	**85**	**85**	64-120	0	25	
10061-01-5	cis-1,3-Dichloropropene	212	198	201	**93**	**95**	87-137	2	25	
98-82-8	Cumene	214	196	203	**92**	**95**	66-126	3	25	
110-82-7	Cyclohexane	430	362	371	**84**	**86**	71-118	2	25	
124-48-1	Dibromochloromethane	216	216	221	**100**	**102**	67-128	2	25	
64-17-5	Ethanol	1,050	863	882	**82**	**84**	52-120	2	25	
100-41-4	Ethyl Benzene	218	199	206	**91**	**94**	64-119	3	25	
75-69-4	Freon 11	208	180	182	**87**	**88**	65-122	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250110-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
76-13-1	Freon 113	210	188	191	**90**	**91**	65-121	1	25	
76-14-2	Freon 114	208	193	194	**93**	**93**	63-120	0	25	
75-71-8	Freon 12	206	178	175	**86**	**85**	66-122	1	25	
142-82-5	Heptane	214	181	183	**85**	**86**	72-121	1	25	
87-68-3	Hexachlorobutadiene	212	181	200	**85**	**94**	50-133	10	25	
110-54-3	Hexane	212	168	171	**79**	**81**	60-125	3	25	
179601-23-1	m,p-Xylene	432	395	408	**91**	**94**	64-121	3	25	
1634-04-4	Methyl tert-butyl ether	216	178	199	**82**	**92**	65-124	11	25	
75-09-2	Methylene Chloride	204	162	165	**79**	**81**	71-123	3	25	
95-47-6	o-Xylene	216	198	204	**92**	**94**	66-122	2	25	
103-65-1	Propylbenzene	214	195	202	**91**	**94**	67-126	3	25	
100-42-5	Styrene	214	206	216	**96**	**101**	71-125	5	25	
127-18-4	Tetrachloroethene	214	199	203	**93**	**95**	55-132	2	25	
109-99-9	Tetrahydrofuran	404	334	341	**83**	**84**	67-117	1	25	
108-88-3	Toluene	216	183	189	**85**	**88**	64-121	3	25	
156-60-5	trans-1,2-Dichloroethene	218	186	188	**85**	**86**	67-123	1	25	
10061-02-6	trans-1,3-Dichloropropene	196	180	184	**92**	**94**	73-127	2	25	
79-01-6	Trichloroethene	214	185	188	**86**	**88**	68-124	2	25	
75-01-4	Vinyl Chloride	210	188	198	**90**	**94**	57-129	4	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250111-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
71-55-6	1,1,1-Trichloroethane	210	193	193	**92**	**92**	67-125	0	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	191	198	**88**	**92**	71-128	4	25	
79-00-5	1,1,2-Trichloroethane	216	190	191	**88**	**88**	71-119	0	25	
75-34-3	1,1-Dichloroethane	218	175	175	**80**	**80**	66-120	0	25	
75-35-4	1,1-Dichloroethene	208	181	181	**87**	**87**	75-120	0	25	
120-82-1	1,2,4-Trichlorobenzene	436	374	424	**86**	**97**	50-137	12	25	
95-63-6	1,2,4-Trimethylbenzene	212	208	216	**98**	**102**	67-130	4	25	
106-93-4	1,2-Dibromoethane (EDB)	204	204	207	**100**	**101**	69-129	1	25	
95-50-1	1,2-Dichlorobenzene	212	187	199	**88**	**94**	57-138	7	25	
107-06-2	1,2-Dichloroethane	204	179	178	**88**	**87**	64-138	1	25	
78-87-5	1,2-Dichloropropane	214	176	176	**82**	**82**	68-121	0	25	
108-67-8	1,3,5-Trimethylbenzene	216	208	216	**96**	**100**	66-125	4	25	
106-99-0	1,3-Butadiene	212	214	213	**101**	**100**	62-132	1	25	
541-73-1	1,3-Dichlorobenzene	212	196	208	**92**	**98**	57-135	6	25	
106-46-7	1,4-Dichlorobenzene	212	189	199	**89**	**94**	56-129	5	25	
123-91-1	1,4-Dioxane	214	189	190	**88**	**89**	76-127	1	25	
540-84-1	2,2,4-Trimethylpentane	214	176	176	**82**	**82**	62-124	0	25	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	412	344	346	**83**	**84**	70-125	1	25	
591-78-6	2-Hexanone	424	409	417	**96**	**98**	70-136	2	25	
67-63-0	2-Propanol	416	365	365	**88**	**88**	59-132	0	25	
107-05-1	3-Chloropropene	214	143	143	**67**	**67**	50-118	0	25	
622-96-8	4-Ethyltoluene	218	216	219	**99**	**100**	67-128	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250111-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
108-10-1	4-Methyl-2-pentanone	426	381	382	**89**	**90**	67-137	1	25	
67-64-1	Acetone	1,050	807	803	**77**	**76**	61-120	1	25	
100-44-7	alpha-Chlorotoluene	426	428	455	**100**	**107**	58-151	7	25	
71-43-2	Benzene	206	166	165	**81**	**80**	73-128	1	25	
75-27-4	Bromodichloromethane	218	207	206	**95**	**94**	70-125	1	25	
75-25-2	Bromoform	218	254	260	**117**	**119**	63-132	2	25	
74-83-9	Bromomethane	210	202	199	**96**	**95**	72-120	1	25	
75-15-0	Carbon Disulfide	430	357	357	**83**	**83**	69-115	0	25	
56-23-5	Carbon Tetrachloride	210	196	194	**93**	**92**	71-134	1	25	
108-90-7	Chlorobenzene	216	194	197	**90**	**91**	63-124	1	25	
75-00-3	Chloroethane	212	172	168	**81**	**79**	67-123	3	25	
67-66-3	Chloroform	216	186	186	**86**	**86**	64-121	0	25	
74-87-3	Chloromethane	208	137	140	**66**	**67**	56-131	2	25	
156-59-2	cis-1,2-Dichloroethene	214	179	178	**84**	**83**	64-120	1	25	
10061-01-5	cis-1,3-Dichloropropene	212	198	199	**93**	**94**	87-137	1	25	
98-82-8	Cumene	214	205	209	**96**	**98**	66-126	2	25	
110-82-7	Cyclohexane	430	366	365	**85**	**85**	71-118	0	25	
124-48-1	Dibromochloromethane	216	222	226	**103**	**105**	67-128	2	25	
64-17-5	Ethanol	1,050	865	865	**82**	**82**	52-120	0	25	
100-41-4	Ethyl Benzene	218	209	213	**96**	**98**	64-119	2	25	
75-69-4	Freon 11	208	179	177	**86**	**85**	65-122	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250111-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
76-13-1	Freon 113	210	191	190	**91**	**90**	65-121	1	25	
76-14-2	Freon 114	208	193	191	**93**	**92**	63-120	1	25	
75-71-8	Freon 12	206	174	170	**84**	**83**	66-122	1	25	
142-82-5	Heptane	214	181	181	**85**	**85**	72-121	0	25	
87-68-3	Hexachlorobutadiene	212	186	202	**88**	**95**	50-133	8	25	
110-54-3	Hexane	212	168	169	**79**	**80**	60-125	1	25	
179601-23-1	m,p-Xylene	432	414	420	**96**	**97**	64-121	1	25	
1634-04-4	Methyl tert-butyl ether	216	181	180	**84**	**83**	65-124	1	25	
75-09-2	Methylene Chloride	204	163	163	**80**	**80**	71-123	0	25	
95-47-6	o-Xylene	216	207	211	**96**	**98**	66-122	2	25	
103-65-1	Propylbenzene	214	204	209	**95**	**98**	67-126	3	25	
100-42-5	Styrene	214	218	224	**102**	**105**	71-125	3	25	
127-18-4	Tetrachloroethene	214	210	212	**98**	**99**	55-132	1	25	
109-99-9	Tetrahydrofuran	404	337	339	**83**	**84**	67-117	1	25	
108-88-3	Toluene	216	194	196	**90**	**91**	64-121	1	25	
156-60-5	trans-1,2-Dichloroethene	218	185	185	**85**	**85**	67-123	0	25	
10061-02-6	trans-1,3-Dichloropropene	196	179	179	**91**	**91**	73-127	0	25	
79-01-6	Trichloroethene	214	187	186	**87**	**87**	68-124	0	25	
75-01-4	Vinyl Chloride	210	188	188	**90**	**90**	57-129	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250112-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Logan Simon Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
71-55-6	1,1,1-Trichloroethane	210	182	183	**87**	**87**	67-125	0	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	185	188	**86**	**87**	71-128	1	25	
79-00-5	1,1,2-Trichloroethane	216	186	188	**86**	**87**	71-119	1	25	
75-34-3	1,1-Dichloroethane	218	171	172	**78**	**79**	66-120	1	25	
75-35-4	1,1-Dichloroethene	208	176	179	**85**	**86**	75-120	1	25	
120-82-1	1,2,4-Trichlorobenzene	436	353	400	**81**	**92**	50-137	13	25	
95-63-6	1,2,4-Trimethylbenzene	212	200	204	**94**	**96**	67-130	2	25	
106-93-4	1,2-Dibromoethane (EDB)	204	196	197	**96**	**97**	69-129	1	25	
95-50-1	1,2-Dichlorobenzene	212	179	189	**84**	**89**	57-138	6	25	
107-06-2	1,2-Dichloroethane	204	171	171	**84**	**84**	64-138	0	25	
78-87-5	1,2-Dichloropropane	214	173	174	**81**	**81**	68-121	0	25	
108-67-8	1,3,5-Trimethylbenzene	216	200	204	**93**	**94**	66-125	1	25	
106-99-0	1,3-Butadiene	212	207	213	**98**	**100**	62-132	2	25	
541-73-1	1,3-Dichlorobenzene	212	189	195	**89**	**92**	57-135	3	25	
106-46-7	1,4-Dichlorobenzene	212	180	189	**85**	**89**	56-129	5	25	
123-91-1	1,4-Dioxane	214	185	187	**86**	**87**	76-127	1	25	
540-84-1	2,2,4-Trimethylpentane	214	173	175	**81**	**82**	62-124	1	25	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	412	338	343	**82**	**83**	70-125	1	25	
591-78-6	2-Hexanone	424	402	403	**95**	**95**	70-136	0	25	
67-63-0	2-Propanol	416	355	361	**85**	**87**	59-132	2	25	
107-05-1	3-Chloropropene	214	142	144	**66**	**67**	50-118	2	25	
622-96-8	4-Ethyltoluene	218	204	211	**94**	**97**	67-128	3	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250112-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Logan Simon Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
108-10-1	4-Methyl-2-pentanone	426	377	382	**88**	**90**	67-137	2	25	
67-64-1	Acetone	1,050	795	803	**76**	**76**	61-120	0	25	
100-44-7	alpha-Chlorotoluene	426	396	417	**93**	**98**	58-151	5	25	
71-43-2	Benzene	206	162	164	**79**	**80**	73-128	1	25	
75-27-4	Bromodichloromethane	218	198	200	**91**	**92**	70-125	1	25	
75-25-2	Bromoform	218	237	238	**109**	**109**	63-132	0	25	
74-83-9	Bromomethane	210	198	197	**94**	**94**	72-120	0	25	
75-15-0	Carbon Disulfide	430	349	354	**81**	**82**	69-115	1	25	
56-23-5	Carbon Tetrachloride	210	182	183	**87**	**87**	71-134	0	25	
108-90-7	Chlorobenzene	216	186	188	**86**	**87**	63-124	1	25	
75-00-3	Chloroethane	212	166	166	**78**	**78**	67-123	0	25	
67-66-3	Chloroform	216	178	180	**82**	**83**	64-121	1	25	
74-87-3	Chloromethane	208	129	131	**62**	**63**	56-131	2	25	
156-59-2	cis-1,2-Dichloroethene	214	175	177	**82**	**83**	64-120	1	25	
10061-01-5	cis-1,3-Dichloropropene	212	190	194	**90**	**92**	87-137	2	25	
98-82-8	Cumene	214	198	200	**93**	**93**	66-126	0	25	
110-82-7	Cyclohexane	430	358	361	**83**	**84**	71-118	1	25	
124-48-1	Dibromochloromethane	216	211	211	**98**	**98**	67-128	0	25	
64-17-5	Ethanol	1,050	847	858	**81**	**82**	52-120	1	25	
100-41-4	Ethyl Benzene	218	201	202	**92**	**93**	64-119	1	25	
75-69-4	Freon 11	208	168	169	**81**	**81**	65-122	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250112-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Logan Simon Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
76-13-1	Freon 113	210	182	186	**87**	**89**	65-121	2	25	
76-14-2	Freon 114	208	184	187	**88**	**90**	63-120	2	25	
75-71-8	Freon 12	206	165	164	**80**	**80**	66-122	0	25	
142-82-5	Heptane	214	178	181	**83**	**85**	72-121	2	25	
87-68-3	Hexachlorobutadiene	212	173	188	**82**	**89**	50-133	8	25	
110-54-3	Hexane	212	166	168	**78**	**79**	60-125	1	25	
179601-23-1	m,p-Xylene	432	395	397	**91**	**92**	64-121	1	25	
1634-04-4	Methyl tert-butyl ether	216	177	178	**82**	**82**	65-124	0	25	
75-09-2	Methylene Chloride	204	160	161	**78**	**79**	71-123	1	25	
95-47-6	o-Xylene	216	198	199	**92**	**92**	66-122	0	25	
103-65-1	Propylbenzene	214	197	198	**92**	**93**	67-126	1	25	
100-42-5	Styrene	214	211	213	**99**	**100**	71-125	1	25	
127-18-4	Tetrachloroethene	214	198	199	**93**	**93**	55-132	0	25	
109-99-9	Tetrahydrofuran	404	329	337	**81**	**83**	67-117	2	25	
108-88-3	Toluene	216	187	188	**87**	**87**	64-121	0	25	
156-60-5	trans-1,2-Dichloroethene	218	180	182	**83**	**83**	67-123	0	25	
10061-02-6	trans-1,3-Dichloropropene	196	170	174	**87**	**89**	73-127	2	25	
79-01-6	Trichloroethene	214	180	182	**84**	**85**	68-124	1	25	
75-01-4	Vinyl Chloride	210	183	189	**87**	**90**	57-129	3	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250113-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
71-55-6	1,1,1-Trichloroethane	210	176	177	**84**	**84**	67-125	0	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	178	182	**82**	**84**	71-128	2	25	
79-00-5	1,1,2-Trichloroethane	216	179	180	**83**	**83**	71-119	0	25	
75-34-3	1,1-Dichloroethane	218	167	166	**77**	**76**	66-120	1	25	
75-35-4	1,1-Dichloroethene	208	172	171	**83**	**82**	75-120	1	25	
120-82-1	1,2,4-Trichlorobenzene	436	321	375	**74**	**86**	50-137	15	25	
95-63-6	1,2,4-Trimethylbenzene	212	189	193	**89**	**91**	67-130	2	25	
106-93-4	1,2-Dibromoethane (EDB)	204	186	187	**91**	**92**	69-129	1	25	
95-50-1	1,2-Dichlorobenzene	212	170	178	**80**	**84**	57-138	5	25	
107-06-2	1,2-Dichloroethane	204	165	165	**81**	**81**	64-138	0	25	
78-87-5	1,2-Dichloropropane	214	169	170	**79**	**79**	68-121	0	25	
108-67-8	1,3,5-Trimethylbenzene	216	190	194	**88**	**90**	66-125	2	25	
106-99-0	1,3-Butadiene	212	206	204	**97**	**96**	62-132	1	25	
541-73-1	1,3-Dichlorobenzene	212	179	184	**84**	**87**	57-135	4	25	
106-46-7	1,4-Dichlorobenzene	212	170	178	**80**	**84**	56-129	5	25	
123-91-1	1,4-Dioxane	214	179	180	**84**	**84**	76-127	0	25	
540-84-1	2,2,4-Trimethylpentane	214	169	170	**79**	**79**	62-124	0	25	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	412	336	331	**82**	**80**	70-125	2	25	
591-78-6	2-Hexanone	424	383	387	**90**	**91**	70-136	1	25	
67-63-0	2-Propanol	416	351	348	**84**	**84**	59-132	0	25	
107-05-1	3-Chloropropene	214	139	137	**65**	**64**	50-118	2	25	
622-96-8	4-Ethyltoluene	218	197	197	**90**	**90**	67-128	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250113-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
108-10-1	4-Methyl-2-pentanone	426	365	370	**86**	**87**	67-137	1	25	
67-64-1	Acetone	1,050	779	772	**74**	**74**	61-120	0	25	
100-44-7	alpha-Chlorotoluene	426	382	403	**90**	**95**	58-151	5	25	
71-43-2	Benzene	206	157	158	**76**	**77**	73-128	1	25	
75-27-4	Bromodichloromethane	218	192	191	**88**	**88**	70-125	0	25	
75-25-2	Bromoform	218	225	226	**103**	**104**	63-132	1	25	
74-83-9	Bromomethane	210	197	192	**94**	**91**	72-120	3	25	
75-15-0	Carbon Disulfide	430	343	341	**80**	**79**	69-115	1	25	
56-23-5	Carbon Tetrachloride	210	176	176	**84**	**84**	71-134	0	25	
108-90-7	Chlorobenzene	216	177	178	**82**	**82**	63-124	0	25	
75-00-3	Chloroethane	212	166	161	**78**	**76**	67-123	3	25	
67-66-3	Chloroform	216	174	173	**81**	**80**	64-121	1	25	
74-87-3	Chloromethane	208	134	131	**64**	**63**	56-131	2	25	
156-59-2	cis-1,2-Dichloroethene	214	172	171	**80**	**80**	64-120	0	25	
10061-01-5	cis-1,3-Dichloropropene	212	186	188	**88**	**89**	87-137	1	25	
98-82-8	Cumene	214	188	189	**88**	**88**	66-126	0	25	
110-82-7	Cyclohexane	430	348	351	**81**	**82**	71-118	1	25	
124-48-1	Dibromochloromethane	216	201	201	**93**	**93**	67-128	0	25	
64-17-5	Ethanol	1,050	841	827	**80**	**79**	52-120	1	25	
100-41-4	Ethyl Benzene	218	193	192	**89**	**88**	64-119	1	25	
75-69-4	Freon 11	208	164	162	**79**	**78**	65-122	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)** ALS Sample ID: P250113-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
76-13-1	Freon 113	210	177	176	**84**	**84**	65-121	0	25	
76-14-2	Freon 114	208	183	179	**88**	**86**	63-120	2	25	
75-71-8	Freon 12	206	161	159	**78**	**77**	66-122	1	25	
142-82-5	Heptane	214	173	174	**81**	**81**	72-121	0	25	
87-68-3	Hexachlorobutadiene	212	162	177	**76**	**83**	50-133	9	25	
110-54-3	Hexane	212	163	162	**77**	**76**	60-125	1	25	
179601-23-1	m,p-Xylene	432	378	378	**88**	**88**	64-121	0	25	
1634-04-4	Methyl tert-butyl ether	216	178	177	**82**	**82**	65-124	0	25	
75-09-2	Methylene Chloride	204	157	156	**77**	**76**	71-123	1	25	
95-47-6	o-Xylene	216	190	191	**88**	**88**	66-122	0	25	
103-65-1	Propylbenzene	214	187	189	**87**	**88**	67-126	1	25	
100-42-5	Styrene	214	201	203	**94**	**95**	71-125	1	25	
127-18-4	Tetrachloroethene	214	188	188	**88**	**88**	55-132	0	25	
109-99-9	Tetrahydrofuran	404	325	323	**80**	**80**	67-117	0	25	
108-88-3	Toluene	216	179	180	**83**	**83**	64-121	0	25	
156-60-5	trans-1,2-Dichloroethene	218	177	176	**81**	**81**	67-123	0	25	
10061-02-6	trans-1,3-Dichloropropene	196	165	169	**84**	**86**	73-127	2	25	
79-01-6	Trichloroethene	214	174	175	**81**	**82**	68-124	1	25	
75-01-4	Vinyl Chloride	210	184	182	**88**	**87**	57-129	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01042504.D
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 04:48
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P250104-LCS	01042505.D	05:20
Duplicate Lab Control Sample	P250104-DLCS	01042506.D	05:52
2412091330	P2405139-001	01042510.D	12:42
2412091335	P2405139-002	01042514.D	14:50
2412091342	P2405139-003	01042515.D	15:22
2412091343	P2405139-004	01042516.D	15:55
2412091405	P2405139-006	01042517.D	16:27
2412091406	P2405139-007	01042518.D	16:59

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01062504.D
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 09:31
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P250106-LCS	01062505.D	10:03
Duplicate Lab Control Sample	P250106-DLCS	01062506.D	10:35
2412091410	P2405139-008	01062510.D	13:22
2412091416 (Dilution)	P2405139-009	01062511.D	13:54
2412101015	P2405139-010	01062512.D	14:26
2412091416	P2405139-009	01062513.D	14:58
2412091352 (Dilution)	P2405139-005	01062514.D	15:31
2412091352	P2405139-005	01062516.D	16:43
2412101021	P2405139-011	01062519.D	18:20
2412101027 (Dilution)	P2405139-012	01062520.D	18:52
2412101039 (Dilution)	P2405139-014	01062523.D	20:29
2412101105	P2405139-017	01062526.D	22:06
2412101111	P2405139-018	01062527.D	22:38
2412101112 (Dilution)	P2405139-019	01062528.D	23:11
2412101021 (Dilution)	P2405139-011	01062529.D	23:43
2412101027	P2405139-012	01062530.D	00:15
2412101028	P2405139-013	01062531.D	00:48
2412101039	P2405139-014	01062532.D	01:20
2412101045	P2405139-015	01062534.D	02:24
2412101053	P2405139-016	01062535.D	02:57

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01072504.D
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister(s) Time Analyzed: 05:06
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P250107-LCS	01072505.D	05:38
Duplicate Lab Control Sample	P250107-DLCS	01072506.D	06:11
2412101111 (Dilution)	P2405139-018	01072508.D	07:16
2412101112	P2405139-019	01072509.D	07:48
2412091343 (Dilution)	P2405139-004	01072510.D	08:46
2412101120 (Dilution)	P2405139-020	01072511.D	09:59
2412101128	P2405139-021	01072512.D	10:31
2412101315	P2405139-022	01072513.D	11:03
2412101316	P2405139-023	01072514.D	11:35
2412101120	P2405139-020	01072515.D	12:08
2412101128 (Dilution)	P2405139-021	01072516.D	12:40
2412101325	P2405139-024	01072517.D	13:12
2412101334	P2405139-025	01072518.D	13:44
2412101355	P2405139-026	01072519.D	14:17
2412101403 (Dilution)	P2405139-027	01072520.D	14:49
2412101412	P2405139-029	01072521.D	15:22
2412101355 (Dilution)	P2405139-026	01072523.D	16:27
2412101403	P2405139-027	01072525.D	17:38
2412101404	P2405139-028	01072526.D	18:11
2412110908	P2405139-032	01072529.D	19:47
2412110916	P2405139-033	01072530.D	20:20
2412110917	P2405139-034	01072531.D	20:52
2412110945	P2405139-035	01072532.D	21:24

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01102505.D
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 19:27
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P250110-LCS	01102506.D	19:59
Duplicate Lab Control Sample	P250110-DLCS	01102507.D	20:31
2412110946	P2405139-036	01102509.D	21:34
2412110957	P2405139-037	01102510.D	22:06
2412111030	P2405139-040	01102511.D	22:38
2412111037	P2405139-041	01102512.D	23:10
2412111055	P2405139-042	01102513.D	23:42
2412111056	P2405139-043	01102514.D	00:14
2412111105	P2405139-044	01102515.D	00:46
2412111121	P2405139-046	01102516.D	01:18
2412111300	P2405139-047	01102517.D	01:50
2412111309	P2405139-048	01102518.D	02:21
2412111318	P2405139-049	01102519.D	02:53

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01112503.D
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 06:05
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P250111-LCS	01112504.D	06:36
Duplicate Lab Control Sample	P250111-DLCS	01112505.D	07:08
2412111113	P2405139-045	01112518.D	16:10
2412111409	P2405139-055	01112519.D	16:42
2412120815	P2405139-058	01112521.D	17:46
2412120816	P2405139-059	01112522.D	18:18
2412120826	P2405139-060	01112523.D	18:50
2412120835	P2405139-061	01112524.D	19:22
2412120836	P2405139-062	01112525.D	19:54
2412120900	P2405139-063	01112526.D	20:26
2412120901	P2405139-064	01112527.D	20:58
2412120919 (Dilution)	P2405139-066	01112529.D	22:02

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01122503.D
Analyst: Logan Simon Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 00:42
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P250112-LCS	01122504.D	01:14
Duplicate Lab Control Sample	P250112-DLCS	01122505.D	01:46
2412111113 (Dilution)	P2405139-045	01122508.D	08:51
2412111409 (Dilution)	P2405139-055	01122509.D	09:23
2412111419	P2405139-057	01122510.D	09:55
2412120835 (Dilution)	P2405139-061	01122511.D	10:27
2412120910	P2405139-065	01122512.D	10:59
2412120919	P2405139-066	01122513.D	11:31
2412120920	P2405139-067	01122514.D	12:03
2412111419 (Dilution)	P2405139-057	01122515.D	12:53
2412111319	P2405139-050	01122524.D	18:08
2412111328	P2405139-051	01122525.D	18:40
2412111350	P2405139-052	01122526.D	19:12
2412111351	P2405139-053	01122527.D	19:44
2412110900	P2405139-030	01122530.D	21:20
2412110901	P2405139-031	01122531.D	21:52
2412110916 (Dilution)	P2405139-033	01122532.D	22:24

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01132503.D
Analyst: Simon Cao Date Analyzed: 1/13/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 00:32
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P250113-LCS	01132504.D	01:04
Duplicate Lab Control Sample	P250113-DLCS	01132505.D	01:36
2412111400	P2405139-054	01132508.D	09:30
2412111410	P2405139-056	01132509.D	10:21

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01042502.D
Analyst: Simon Cao Date Analyzed: 1/4/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 03:44
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	156900	7.28	669874	9.33	115081	14.85
	Upper Limit	219660	7.61	937824	9.66	161113	15.18
	Lower Limit	94140	6.95	401924	9.00	69049	14.52
	Client Sample ID						
01	Method Blank	149003	7.23	643130	9.30	108240	14.84
02	Lab Control Sample	155824	7.28	666756	9.34	112194	14.85
03	Duplicate Lab Control Sample	155933	7.28	670083	9.33	112415	14.85
04	2412091330	158655	7.23	677534	9.30	118413	14.84
05	2412091335	155481	7.23	666994	9.30	118223	14.84
06	2412091342	155147	7.25	659895	9.31	118531	14.84
07	2412091343	152310	7.24	653462	9.30	116317	14.84
08	2412091405	152074	7.23	652902	9.30	117552	14.84
09	2412091406	149570	7.23	642785	9.30	113588	14.84
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the speicified limits.

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01062502.D
Analyst: Simon Cao Date Analyzed: 1/6/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 08:27
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	171292	7.28	733110	9.33	125258	14.85
	Upper Limit	239809	7.61	1026354	9.66	175361	15.18
	Lower Limit	102775	6.95	439866	9.00	75155	14.52
	Client Sample ID						
01	Method Blank	162348	7.23	706748	9.30	119910	14.84
02	Lab Control Sample	167609	7.27	717798	9.33	124105	14.85
03	Duplicate Lab Control Sample	171000	7.27	731985	9.33	127274	14.85
04	2412091410	166893	7.23	713361	9.30	126432	14.84
05	2412091416 (Dilution)	162153	7.23	695031	9.30	122904	14.84
06	2412101015	157985	7.23	678920	9.30	120078	14.84
07	2412091416	155804	7.23	667028	9.30	117388	14.84
08	2412091352 (Dilution)	158616	7.23	673472	9.30	119089	14.84
09	2412091352	157589	7.23	671926	9.30	119341	14.83
10	2412101021	156551	7.23	675900	9.30	121465	14.83
11	2412101027 (Dilution)	158243	7.23	667799	9.30	119391	14.83
12	2412101039 (Dilution)	149701	7.23	634905	9.30	111831	14.84
13	2412101105	146008	7.23	625687	9.30	110342	14.84
14	2412101111	144511	7.23	614226	9.30	108392	14.84
15	2412101112 (Dilution)	141841	7.23	608101	9.30	107300	14.83
16	2412101021 (Dilution)	139934	7.23	592704	9.30	105287	14.83
17	2412101027	141730	7.23	595237	9.30	104590	14.84
18	2412101028	136818	7.24	590529	9.31	104403	14.84
19	2412101039	140771	7.23	596110	9.30	105058	14.83
20	2412101045	137121	7.23	575639	9.30	102194	14.83
21	2412101053	134481	7.25	580144	9.31	104225	14.84

IS1 (BCM) = Bromochloromethane
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IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
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Client: **NASA White Sands Test Facility** ALS Project ID: P2405139

Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01072502.D

Analyst: Simon Cao Date Analyzed: 1/7/25

Sampling Media: 1.0 L Summa Canister(s) Time Analyzed: 04:01

Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	140642	7.27	603164	9.33	107329	14.85
	Upper Limit	196899	7.60	844430	9.66	150261	15.18
	Lower Limit	84385	6.94	361898	9.00	64397	14.52
	Client Sample ID						
01	Method Blank	139011	7.23	581953	9.30	102537	14.84
02	Lab Control Sample	144204	7.28	610240	9.33	107782	14.85
03	Duplicate Lab Control Sample	144848	7.27	622245	9.33	108697	14.85
04	2412101111 (Dilution)	142153	7.23	599497	9.30	105278	14.84
05	2412101112	139156	7.23	592245	9.30	104933	14.84
06	2412091343 (Dilution)	147808	7.23	621257	9.29	111240	14.83
07	2412101120 (Dilution)	144415	7.23	612727	9.30	109674	14.83
08	2412101128	139454	7.23	591789	9.30	109000	14.84
09	2412101315	139131	7.25	592997	9.31	108522	14.84
10	2412101316	138456	7.23	590763	9.30	107797	14.84
11	2412101120	137522	7.23	584850	9.30	106482	14.84
12	2412101128 (Dilution)	136165	7.23	579771	9.30	106413	14.84
13	2412101325	134822	7.23	564437	9.30	104086	14.84
14	2412101334	132344	7.23	561813	9.30	102197	14.84
15	2412101355	136776	7.24	576913	9.31	107106	14.84
16	2412101403 (Dilution)	134255	7.23	573981	9.30	106928	14.84
17	2412101412	135095	7.23	573765	9.30	105104	14.84
18	2412101355 (Dilution)	128278	7.23	541111	9.30	101942	14.84
19	2412101403	128136	7.23	542858	9.30	100318	14.84
20	2412101404	127820	7.23	549408	9.30	102224	14.84

IS1 (BCM) = Bromochloromethane
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IS3 (CBZ) = Chlorobenzene-d5

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RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

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Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01072502.D
Analyst: Simon Cao Date Analyzed: 1/7/25
Sampling Media: 1.0 L Summa Canister(s) Time Analyzed: 04:01
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	140642	7.27	603164	9.33	107329	14.85
	Upper Limit	196899	7.60	844430	9.66	150261	15.18
	Lower Limit	84385	6.94	361898	9.00	64397	14.52
	Client Sample ID						
20	2412101404	127820	7.23	549408	9.30	102224	14.84
21	2412110908	125606	7.23	533212	9.30	100456	14.84
22	2412110916	127227	7.24	534568	9.31	101251	14.84
23	2412110917	123921	7.23	526175	9.30	99272	14.84
24	2412110945	122692	7.23	521819	9.30	97989	14.84
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01102503.D
Analyst: Chase Griffin Date Analyzed: 1/10/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 18:23
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	163033	7.28	707336	9.33	139545	14.85
	Upper Limit	228246	7.61	990270	9.66	195363	15.18
	Lower Limit	97820	6.95	424402	9.00	83727	14.52
	Client Sample ID						
01	Method Blank	143679	7.23	622780	9.30	117360	14.84
02	Lab Control Sample	157590	7.28	681017	9.33	128000	14.85
03	Duplicate Lab Control Sample	158558	7.28	684992	9.33	127239	14.85
04	2412110946	149095	7.23	640356	9.30	120446	14.84
05	2412110957	145845	7.23	623859	9.30	116888	14.84
06	2412111030	143170	7.23	614444	9.30	115282	14.84
07	2412111037	140374	7.23	610197	9.30	113840	14.84
08	2412111055	138292	7.23	602443	9.30	111888	14.84
09	2412111056	136544	7.23	597933	9.30	111024	14.84
10	2412111105	137967	7.23	595889	9.30	112642	14.84
11	2412111121	137685	7.23	599904	9.30	111611	14.84
12	2412111300	140283	7.23	609346	9.30	113566	14.84
13	2412111309	143067	7.23	620695	9.30	115280	14.84
14	2412111318	141092	7.23	608760	9.30	113703	14.84
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IS1 (BCM) = Bromochloromethane
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01112501.D
Analyst: Chase Griffin Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 05:01
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	153218	7.28	675428	9.33	125466	14.85
	Upper Limit	214505	7.61	945599	9.66	175652	15.18
	Lower Limit	91931	6.95	405257	9.00	75280	14.52
	Client Sample ID						
01	Method Blank	145433	7.23	643052	9.30	113897	14.84
02	Lab Control Sample	161623	7.28	699274	9.33	124623	14.85
03	Duplicate Lab Control Sample	162769	7.28	706141	9.33	124226	14.85
08	2412111113	151032	7.23	648009	9.30	126238	14.83
14	2412111409	142184	7.23	617655	9.30	123607	14.83
04	2412120815	146686	7.23	639629	9.30	120820	14.84
05	2412120816	153212	7.22	664975	9.30	126171	14.84
06	2412120826	150473	7.23	665498	9.30	125473	14.84
07	2412120835	152827	7.23	664146	9.30	125146	14.84
08	2412120836	151787	7.23	658859	9.30	123148	14.83
09	2412120900	147377	7.23	642568	9.30	120609	14.83
10	2412120901	148787	7.23	643622	9.30	121356	14.84
11	2412120919 (Dilution)	143206	7.23	623785	9.30	116425	14.84
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IS1 (BCM) = Bromochloromethane
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AREA UPPER LIMIT = 140% of internal standard area
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01122501.D
Analyst: Logan Simon Date Analyzed: 1/11/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 23:38
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	152676	7.28	659998	9.33	124342	14.85
	Upper Limit	213746	7.61	923997	9.66	174079	15.18
	Lower Limit	91606	6.95	395999	9.00	74605	14.52
	Client Sample ID						
01	Method Blank	145387	7.23	636395	9.30	117647	14.84
02	Lab Control Sample	161084	7.28	698191	9.33	126334	14.85
03	Duplicate Lab Control Sample	161143	7.28	701246	9.33	128101	14.85
04	2412111419	144525	7.24	627343	9.31	113534	14.84
05	2412120835 (Dilution)	144527	7.23	630193	9.30	113954	14.84
06	2412120910	141496	7.23	614579	9.30	112065	14.84
07	2412120919	138288	7.23	603216	9.30	111733	14.84
08	2412120920	139824	7.23	606076	9.30	112914	14.84
09	2412111419 (Dilution)	143693	7.23	618898	9.30	114678	14.83
10	2412111319	147627	7.23	635750	9.30	115077	14.84
11	2412111328	139104	7.24	595168	9.30	113050	14.84
12	2412111350	140450	7.23	588472	9.30	109385	14.84
13	2412111351	145222	7.23	627003	9.30	119788	14.84
14	2412110900	146712	7.23	641217	9.30	120803	14.84
15	2412110901	144878	7.23	633767	9.30	119492	14.83
16	2412110916 (Dilution)	144213	7.23	621856	9.30	116922	14.84
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20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
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RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

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Client: **NASA White Sands Test Facility** ALS Project ID: P2405139
Client Project ID: **NASA White Sands Test Facility (WSTF)**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 01132501.D
Analyst: Simon Cao Date Analyzed: 1/12/25
Sampling Media: 1.0 L Silonite Summa Canister(s) Time Analyzed: 23:28
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	150145	7.28	663393	9.34	125666	14.85
	Upper Limit	210203	7.61	928750	9.67	175932	15.18
	Lower Limit	90087	6.95	398036	9.01	75400	14.52
	Client Sample ID						
01	Method Blank	143036	7.23	628917	9.30	116529	14.84
02	Lab Control Sample	155107	7.28	680020	9.33	124146	14.85
03	Duplicate Lab Control Sample	156532	7.28	681097	9.33	125149	14.85
04	2412111400	145423	7.24	634811	9.30	111849	14.84
05	2412111410	149550	7.23	642318	9.30	118026	14.83
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RT UPPER LIMIT = 0.33 minutes of internal standard RT
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Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 06 18:31:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/6/25

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	158655	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	677534	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	118413	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	255033	11.799 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.40%			
57) Toluene-d8 (SS2)	12.43	98	703983	13.402 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.20%			
73) Bromofluorobenzene (SS3)	16.82	174	257863	14.225 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.76%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	16521m	0.533 ng		
4) Chloromethane	3.47	50	181	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	342	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	4.16	64	291	N.D.		
10) Ethanol	4.31	45	2676	0.228 ng		89
11) Acetonitrile	4.46	41	1077	N.D.		
12) Acrolein	4.55	56	1413	0.141 ng		88
13) Acetone	4.65	58	16088	1.506 ng		87
14) Trichlorofluoromethane	4.76	101	92994	3.197 ng		99
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d		
16) Acrylonitrile	5.05	53	60	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.35	59	146	N.D.		
19) Methylene Chloride	5.36	84	126	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.60	151	12308	0.938 ng		95
22) Carbon Disulfide	5.60	76	119477	2.472 ng		98
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	1038	0.401 ng	#	28
27) 2-Butanone (MEK)	6.69	72	2014	0.235 ng	#	74
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.30	57	1408	0.059 ng	#	87
32) Chloroform	7.36	83	24772	0.959 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.55	61	576	No Calib	#	
40) 1-Butanol	8.81	56	8579	No Calib	#	
41) Benzene	8.90	78	4317	0.079 ng		97
42) Carbon Tetrachloride	9.06	117	561	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.08	83	895	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	10.13	88	984	0.104 ng		91

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

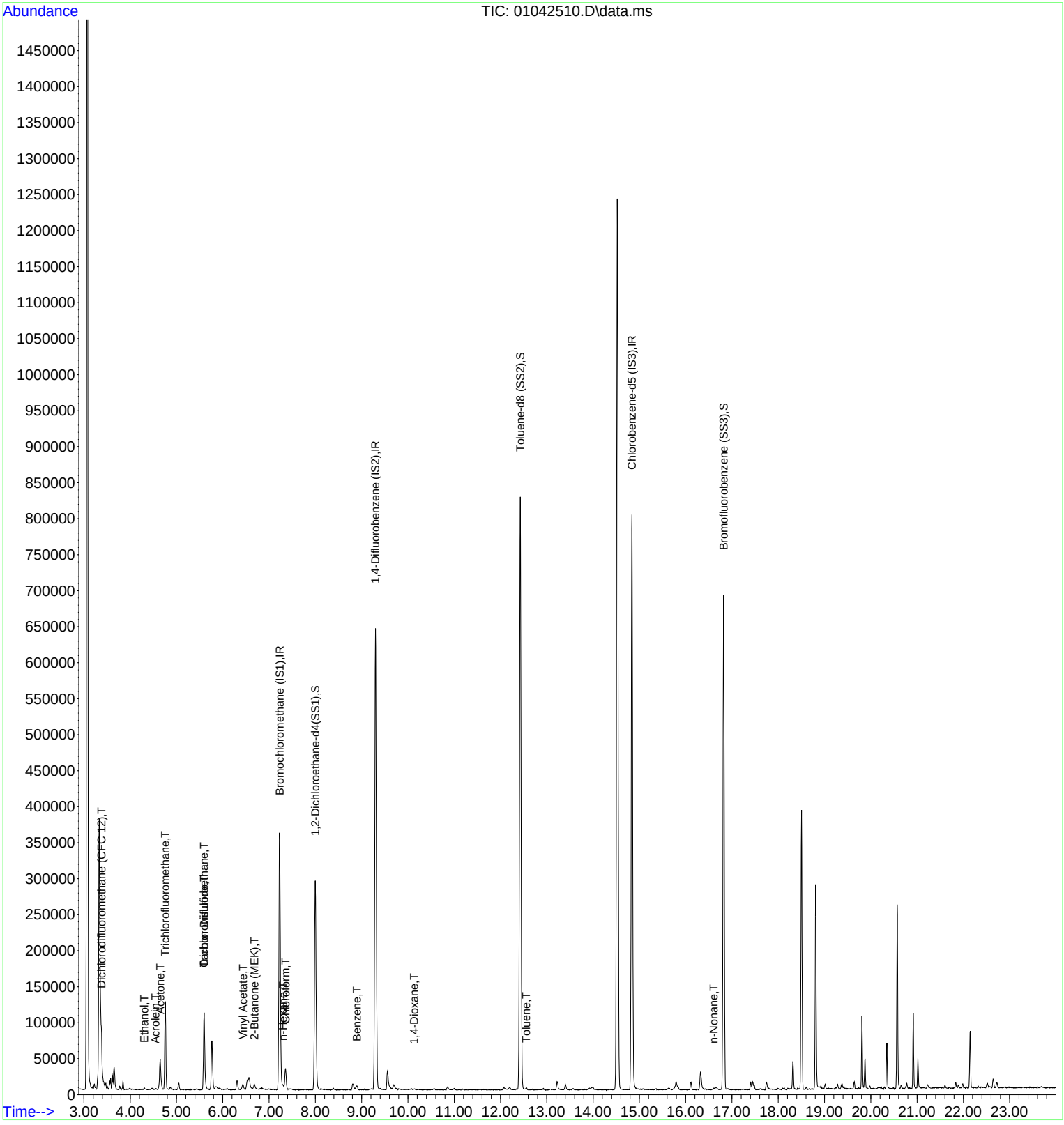
Quant Time: Jan 06 18:31:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.13	57	112	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.57	71	365	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.55	91	2971	0.059 ng	93
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.80	43	111	N.D.	
63) n-Octane	13.92	57	425	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	610	N.D.	
67) m- & p-Xylenes	15.62	91	1536	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.11	104	124	N.D.	
70) o-Xylene	16.23	91	406	N.D.	
71) n-Nonane	16.61	43	1255	0.052 ng	89
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	298	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.86	105	191	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	448	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.56	91	303	N.D.	
85) 1,3-Dichlorobenzene	18.50	146	359	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	1954	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	365	N.D.	
95) Naphthalene	20.94	128	1418	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	19.38	91	798	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 06 18:31:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 18:31:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	158655	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	677534	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	118413	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	255033	11.799	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.40%				
57) Toluene-d8 (SS2)	12.43	98	703983	13.402	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.20%				
73) Bromofluorobenzene (SS3)	16.82	174	257863	14.225	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.76%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16521m	0.533	ng		
10) Ethanol	4.31	45	2676	0.228	ng		89
12) Acrolein	4.55	56	1413	0.141	ng		88
13) Acetone	4.65	58	16088	1.506	ng		87
14) Trichlorofluoromethane	4.76	101	92994	3.197	ng		99
21) Trichlorotrifluoroethane	5.60	151	12308	0.938	ng		95
22) Carbon Disulfide	5.60	76	119477	2.472	ng		98
26) Vinyl Acetate	6.44	86	1038	0.401	ng	#	28
27) 2-Butanone (MEK)	6.69	72	2014	0.235	ng	#	74
31) n-Hexane	7.30	57	1408	0.059	ng	#	87
32) Chloroform	7.36	83	24772	0.959	ng		99
41) Benzene	8.90	78	4317	0.079	ng		97
48) 1,4-Dioxane	10.13	88	984	0.104	ng		91
58) Toluene	12.55	91	2971	0.059	ng		93
71) n-Nonane	16.61	43	1255	0.052	ng		89

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

Data Path : I:\MS09\DATA\2025 01\04\
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Operator : CG
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Quant Time: Jan 06 18:31:53 2025
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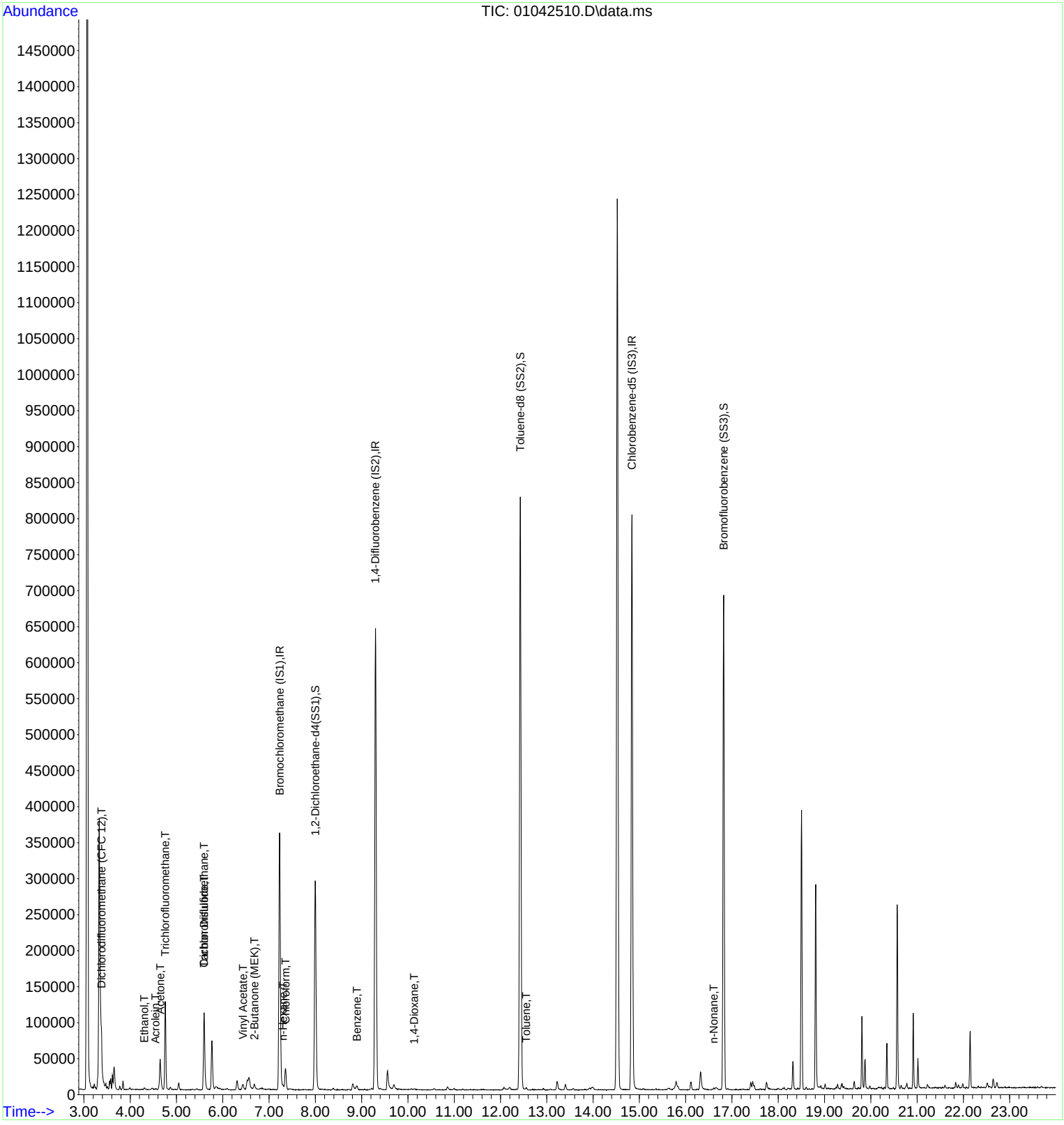
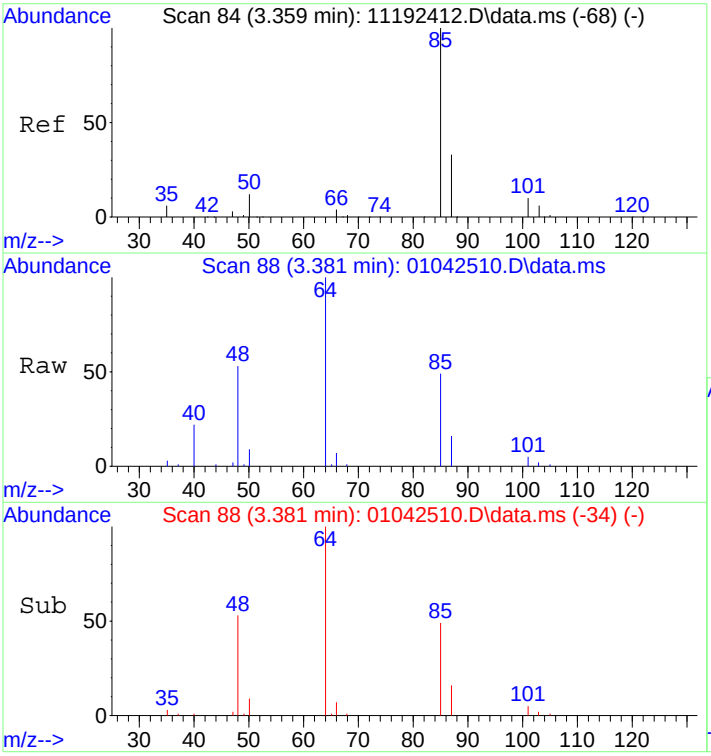
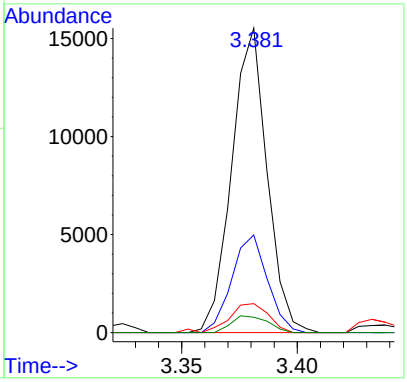


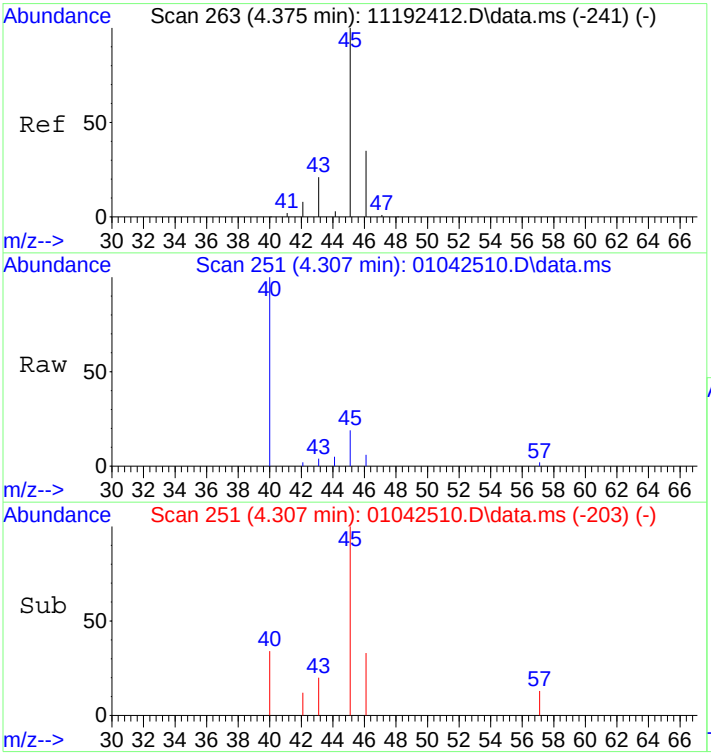


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.53 ng m
RT: 3.38 min Scan# 88
Delta R.T. 0.054 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 85 Resp: 16521

Ion	Ratio	Lower	Upper
85	100		
87	32.3	12.6	52.6
101	10.4	0.0	29.6
103	5.6	0.0	26.2

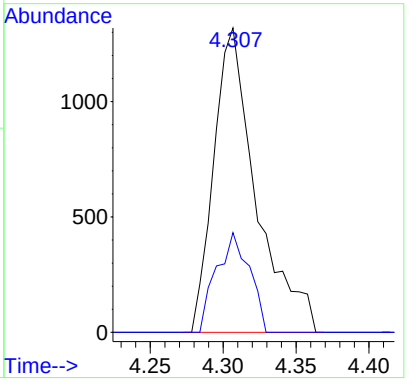


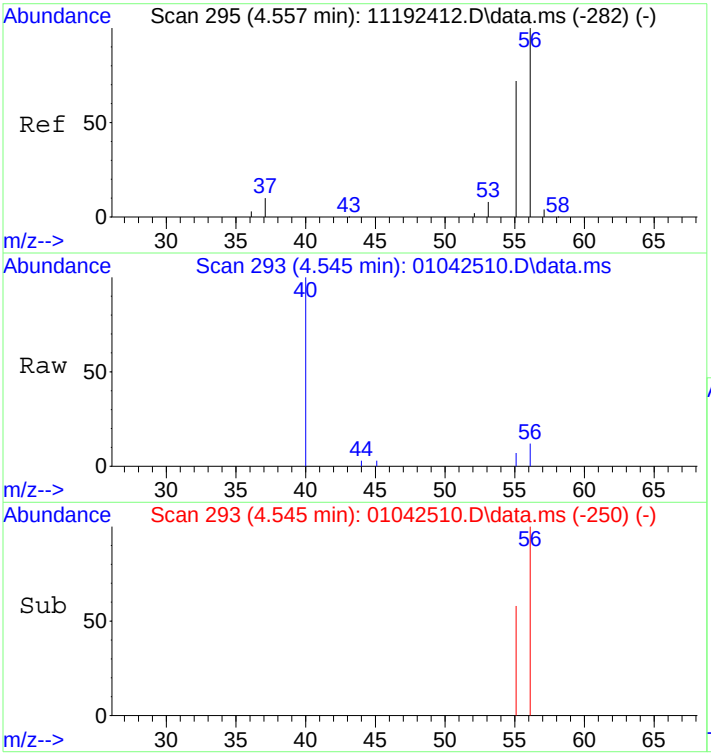


#10
Ethanol
Concen: 0.23 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.022 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 45 Resp: 2676

Ion	Ratio	Lower	Upper
45	100		
46	25.4	11.8	51.8

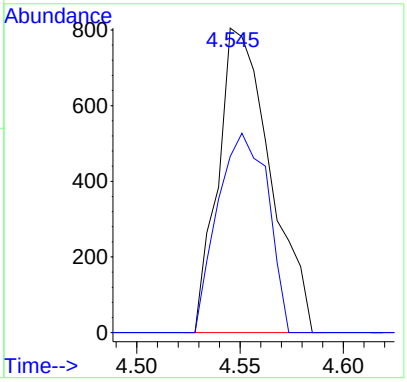


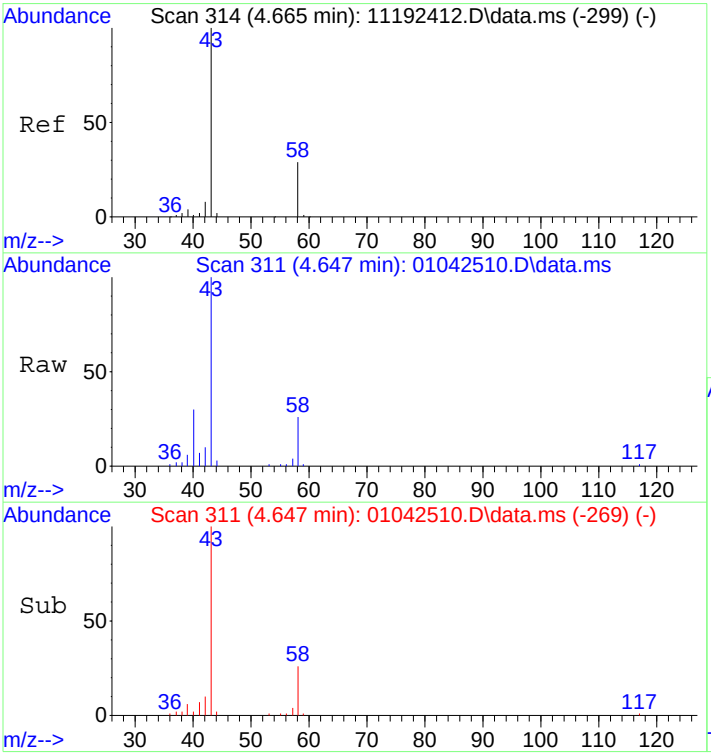


#12
Acrolein
Concen: 0.14 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 56 Resp: 1413

Ion	Ratio	Lower	Upper
56	100		
55	63.2	53.1	93.1

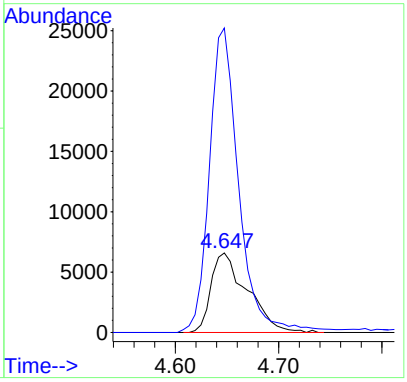


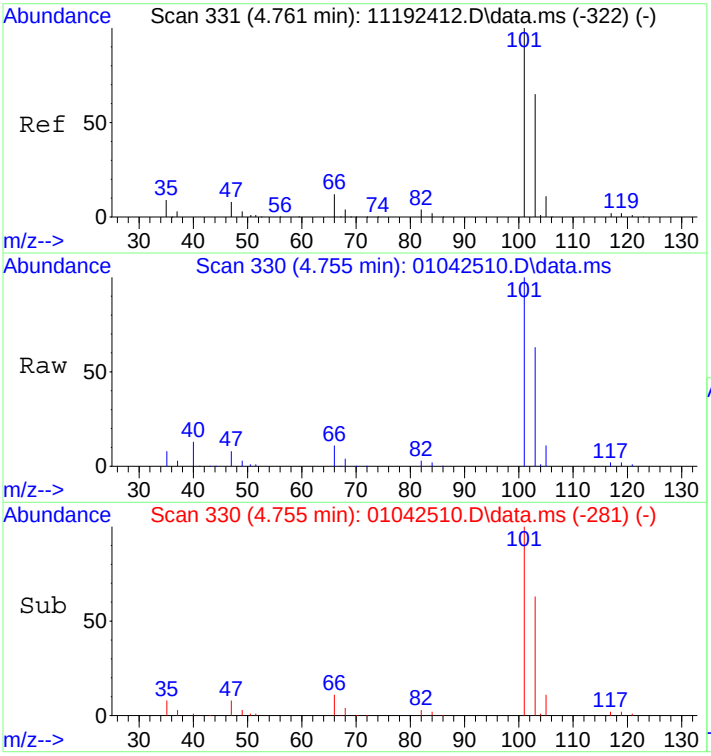


#13
Acetone
Concen: 1.51 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 58 Resp: 16088

Ion	Ratio	Lower	Upper
58	100		
43	315.1	312.5	372.5

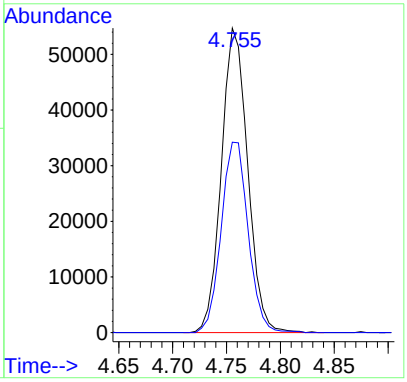


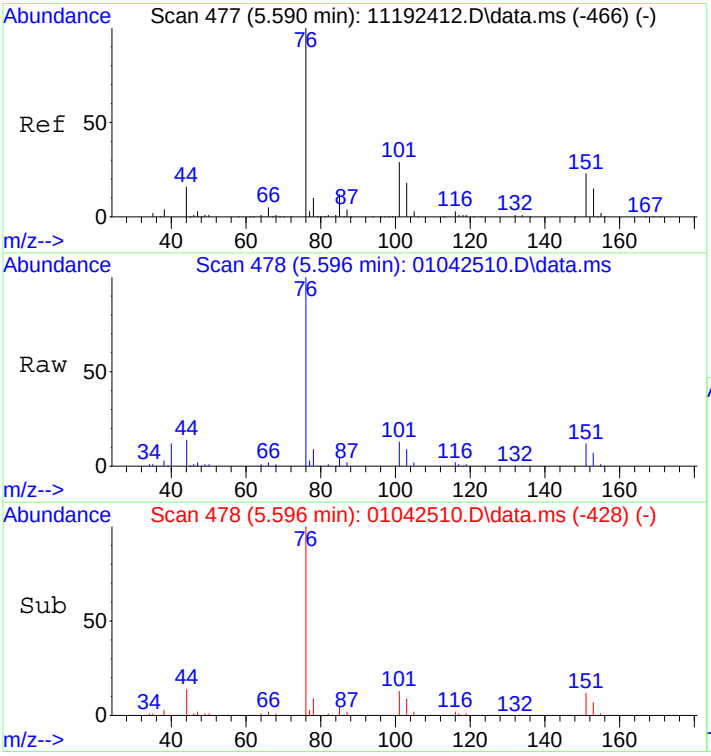


#14
Trichlorofluoromethane
Concen: 3.20 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion:101 Resp: 92994

Ion	Ratio	Lower	Upper
101	100		
103	64.0	44.8	84.8

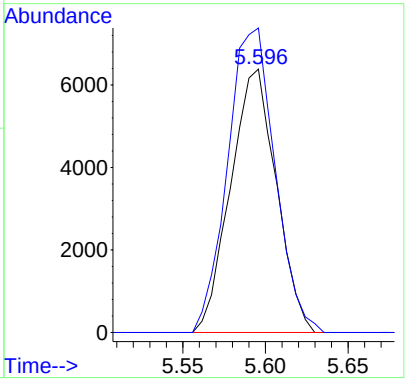


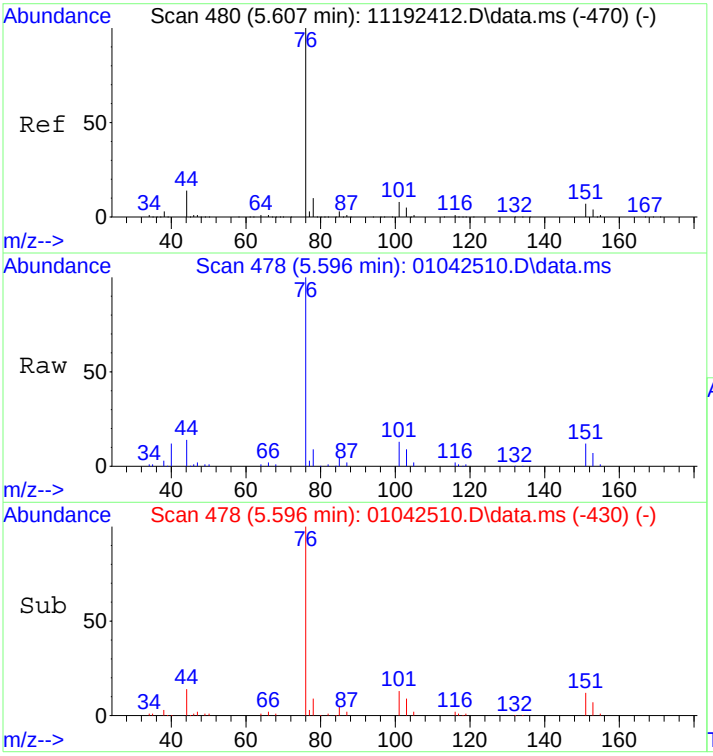


#21
Trichlorotrifluoroethane
Concen: 0.94 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.035 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion:151 Resp: 12308

Ion	Ratio	Lower	Upper
151	100		
101	119.7	105.0	145.0

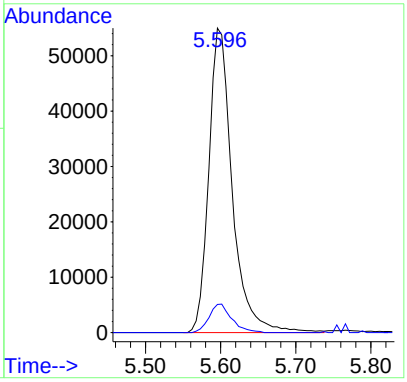


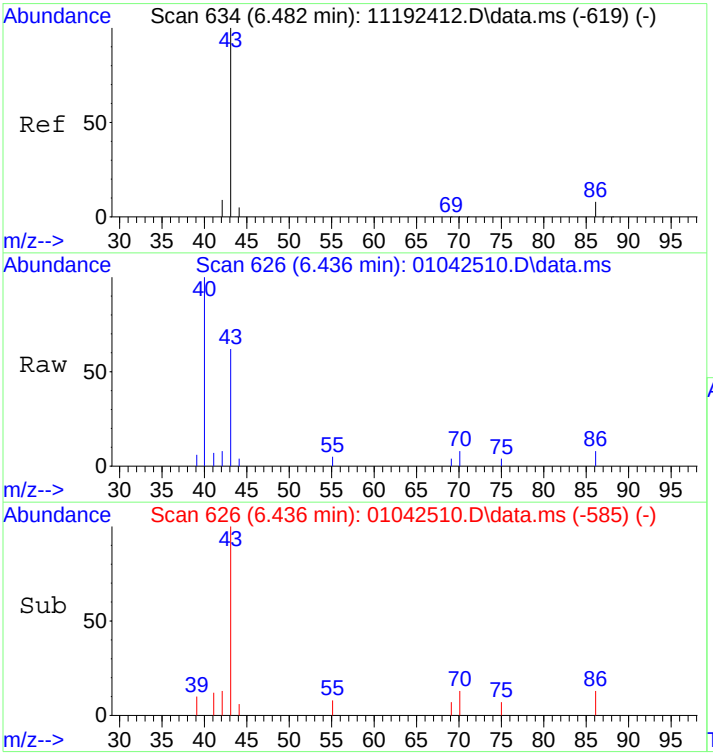


#22
Carbon Disulfide
Concen: 2.47 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.024 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 76 Resp: 119477

Ion	Ratio	Lower	Upper
76	100		
78	9.0	0.0	29.6

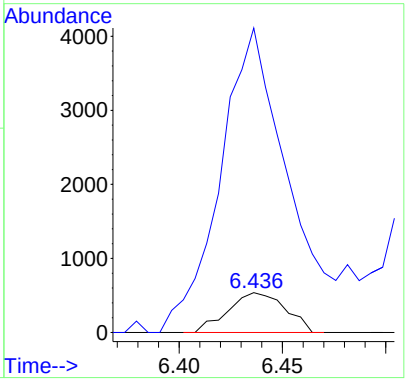


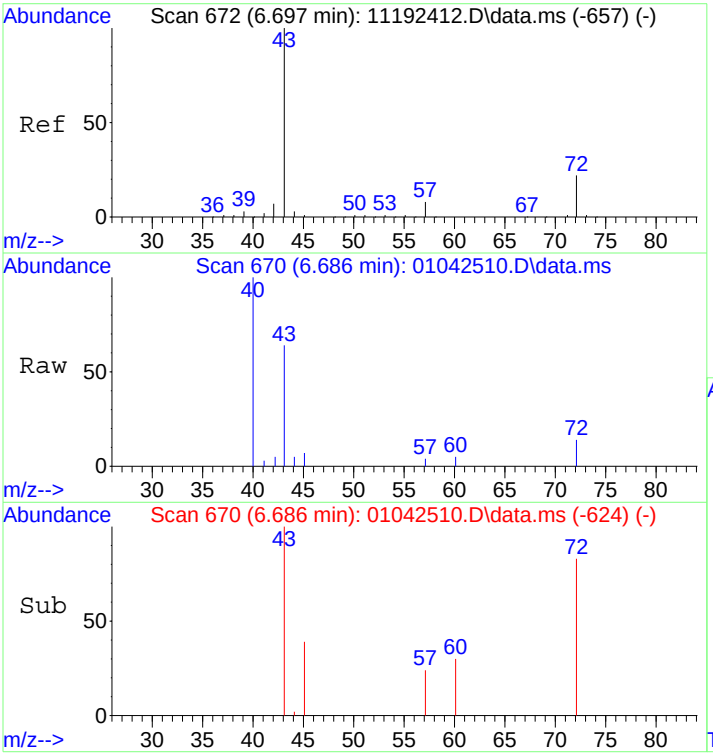


#26
Vinyl Acetate
Concen: 0.40 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 86 Resp: 1038

Ion	Ratio	Lower	Upper
86	100		
43	955.0	1331.6	1371.6#

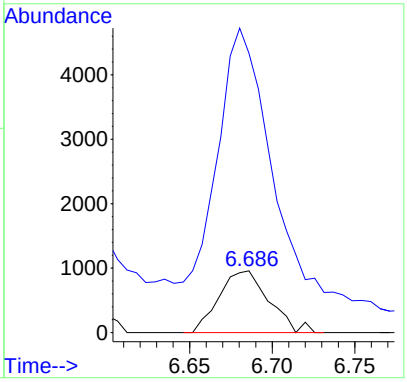


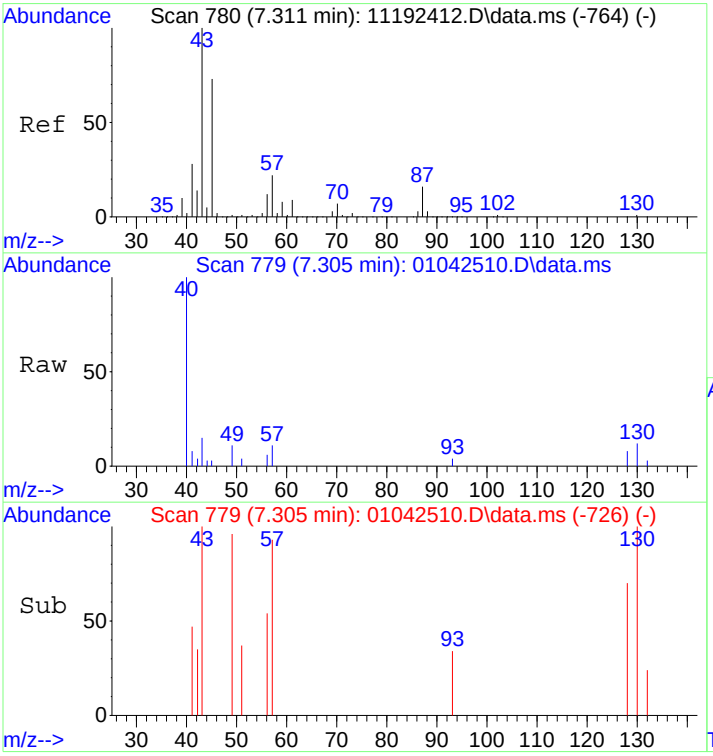


#27
2-Butanone (MEK)
Concen: 0.23 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 72 Resp: 2014

Ion	Ratio	Lower	Upper
72	100		
43	527.8	439.8	479.8#

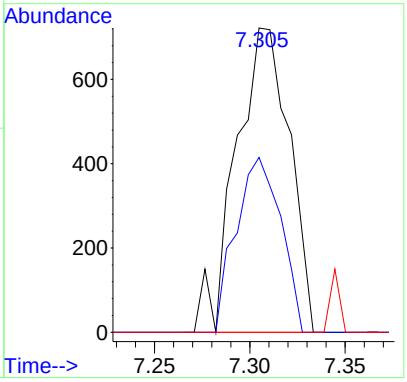


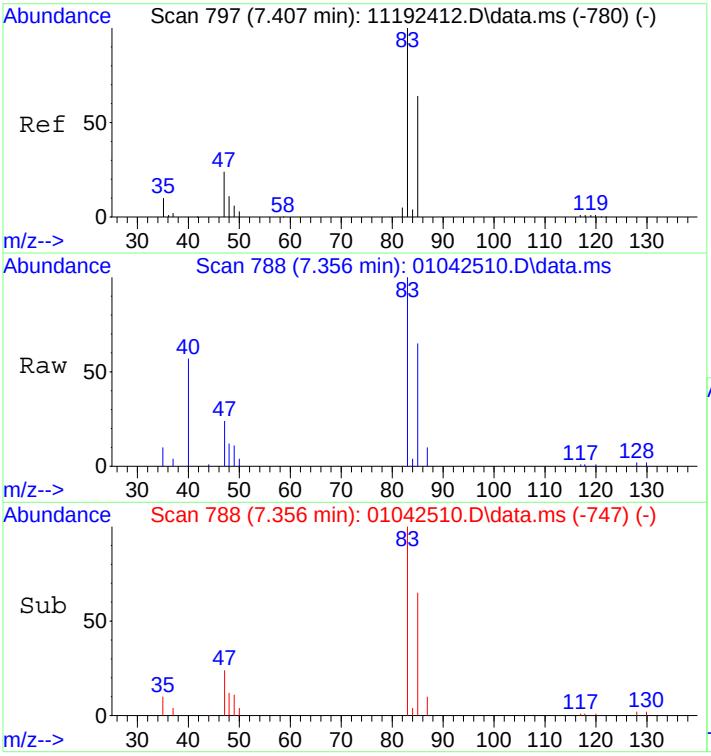


#31
n-Hexane
Concen: 0.06 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 57 Resp: 1408

Ion	Ratio	Lower	Upper
57	100		
56	48.3	43.4	65.0
86	0.0	10.9	16.3#

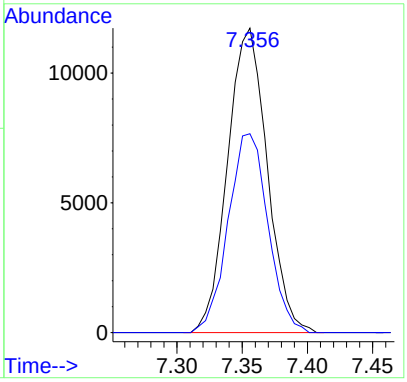


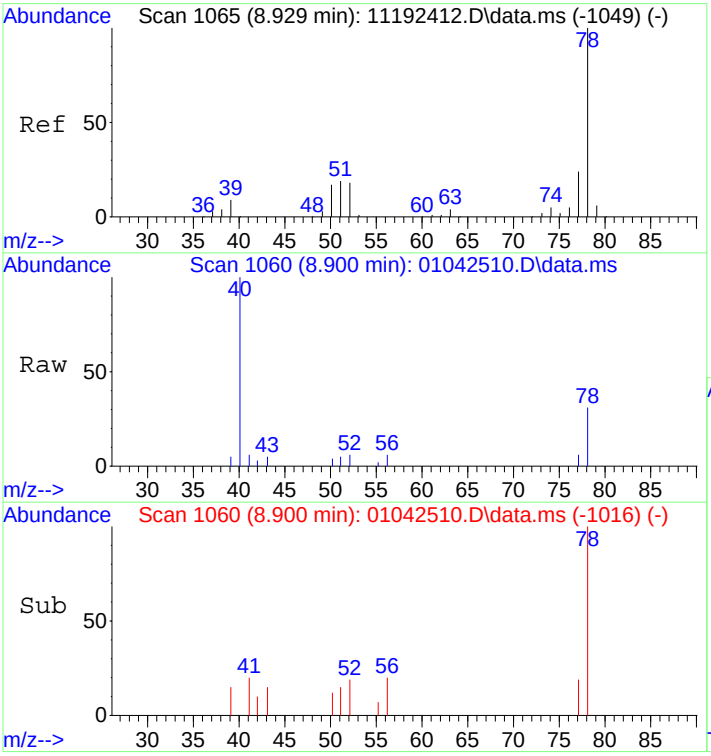


#32
Chloroform
Concen: 0.96 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 83 Resp: 24772

Ion	Ratio	Lower	Upper
83	100		
85	65.6	45.1	85.1

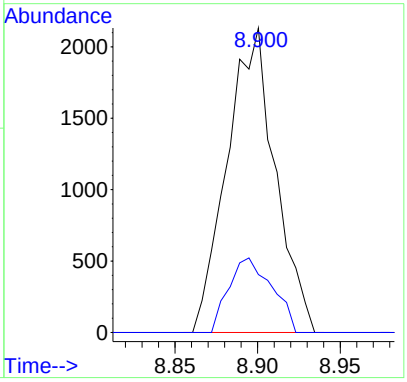


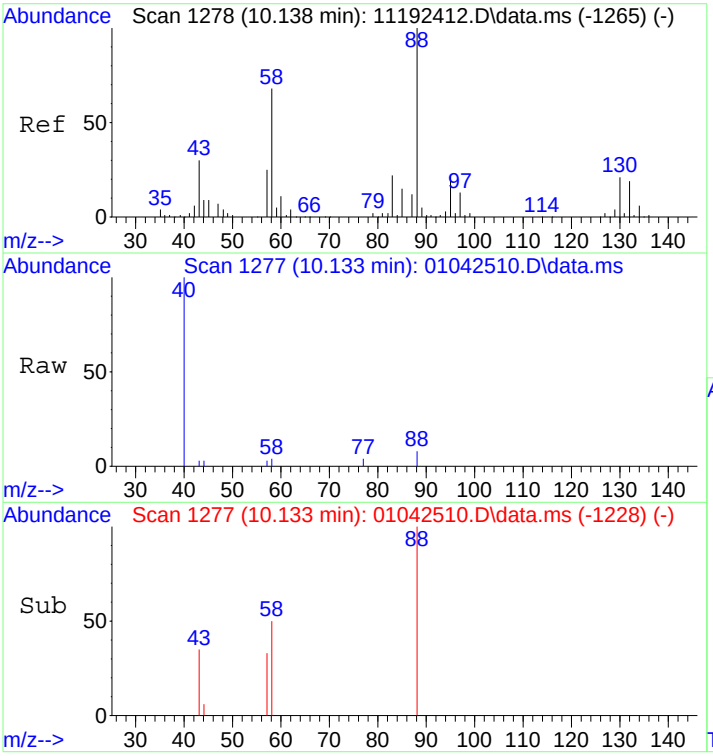


#41
Benzene
Concen: 0.08 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 78 Resp: 4317

Ion	Ratio	Lower	Upper
78	100		
77	22.1	3.7	43.7

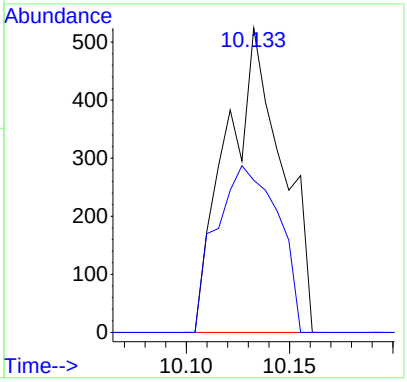


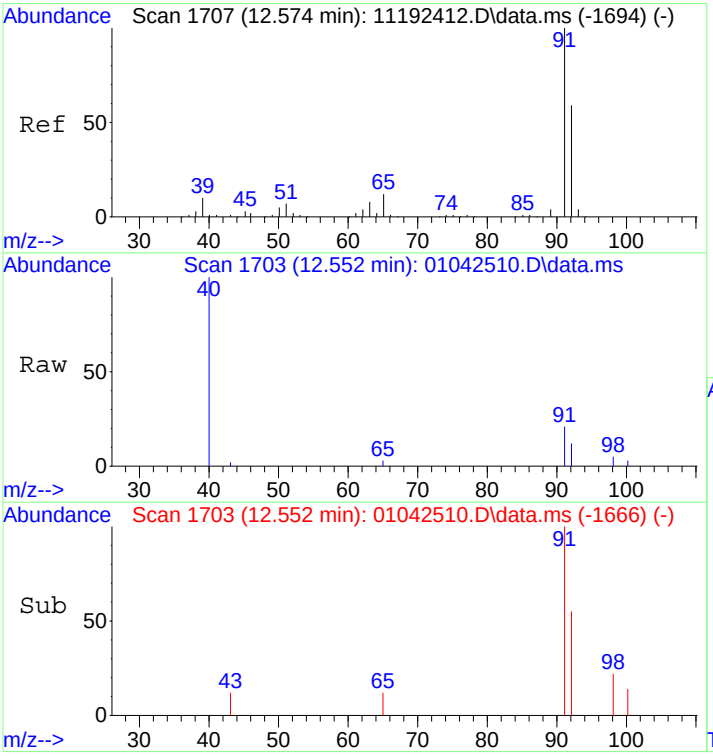


#48
1,4-Dioxane
Concen: 0.10 ng
RT: 10.13 min Scan# 1277
Delta R.T. 0.026 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 88 Resp: 984

Ion	Ratio	Lower	Upper
88	100		
58	60.8	47.8	87.8

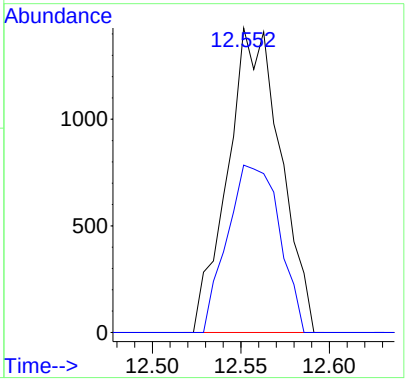


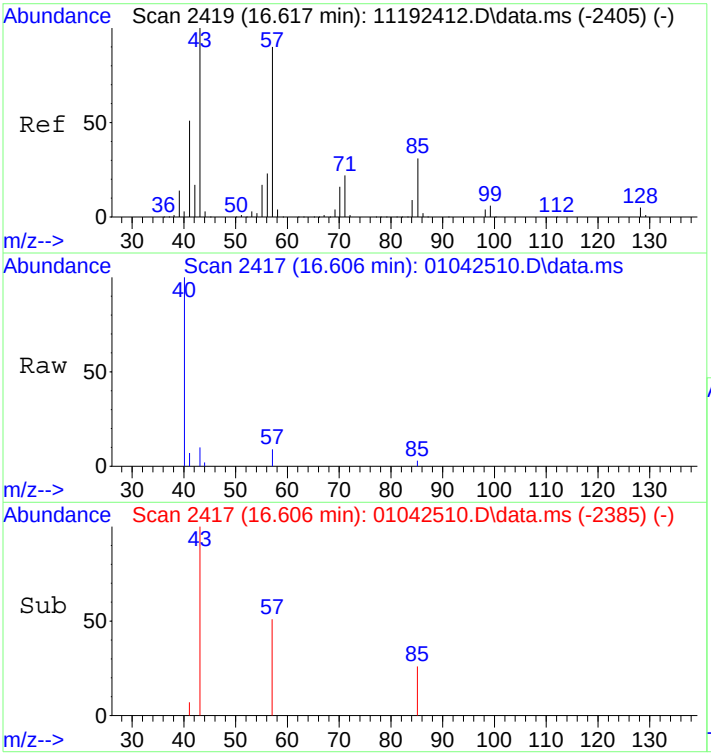


#58
Toluene
Concen: 0.06 ng
RT: 12.55 min Scan# 1703
Delta R.T. -0.040 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 91 Resp: 2971

Ion	Ratio	Lower	Upper
91	100		
92	54.0	39.2	79.2

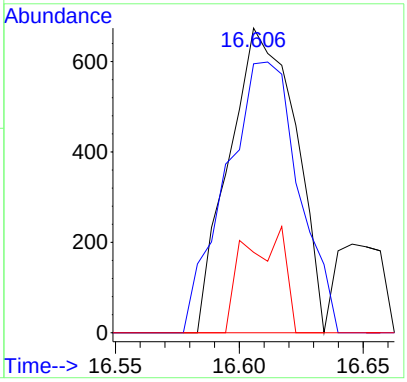




#71
n-Nonane
Concen: 0.05 ng
RT: 16.61 min Scan# 2417
Delta R.T. -0.017 min
Lab File: 01042510.D
Acq: 4 Jan 2025 12:42

Tgt Ion: 43 Resp: 1255

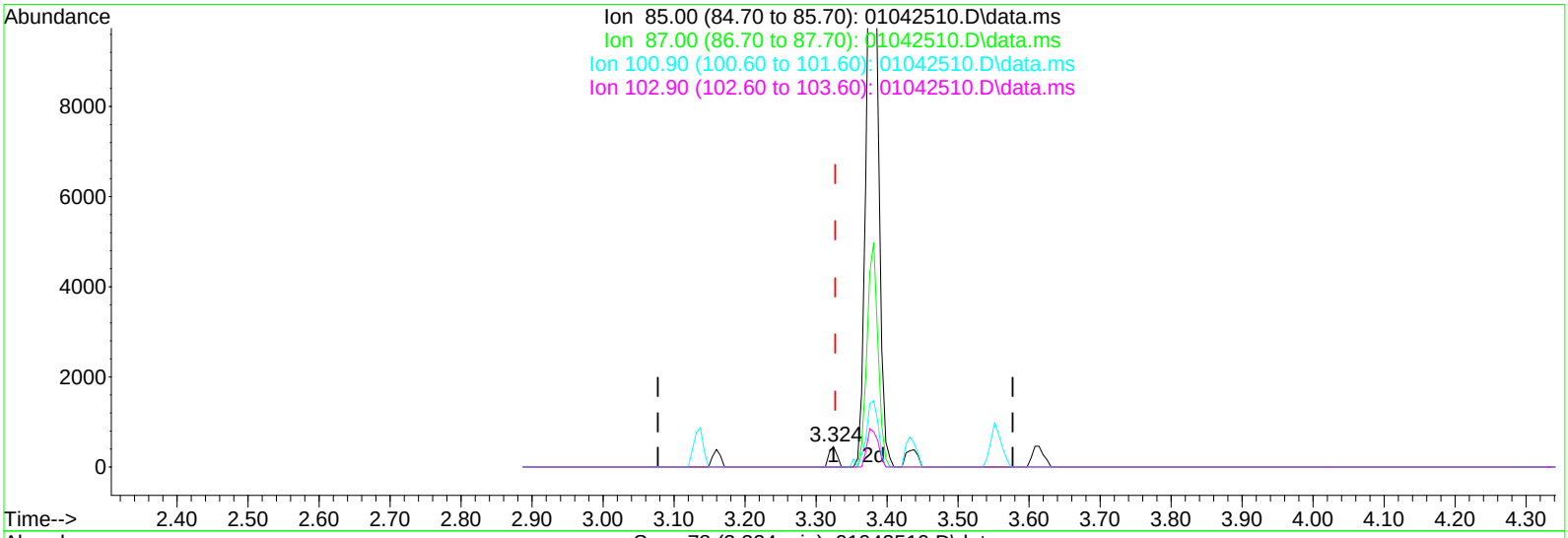
Ion	Ratio	Lower	Upper
43	100		
57	97.8	69.4	109.4
85	21.0	10.5	50.5

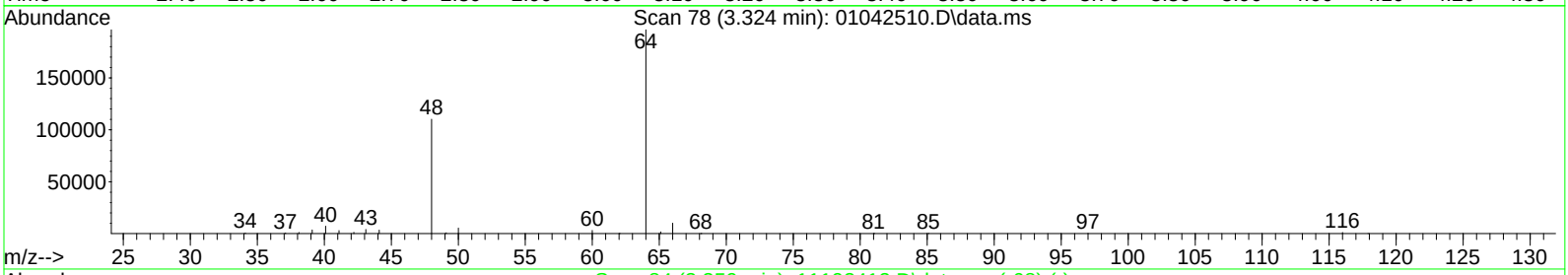


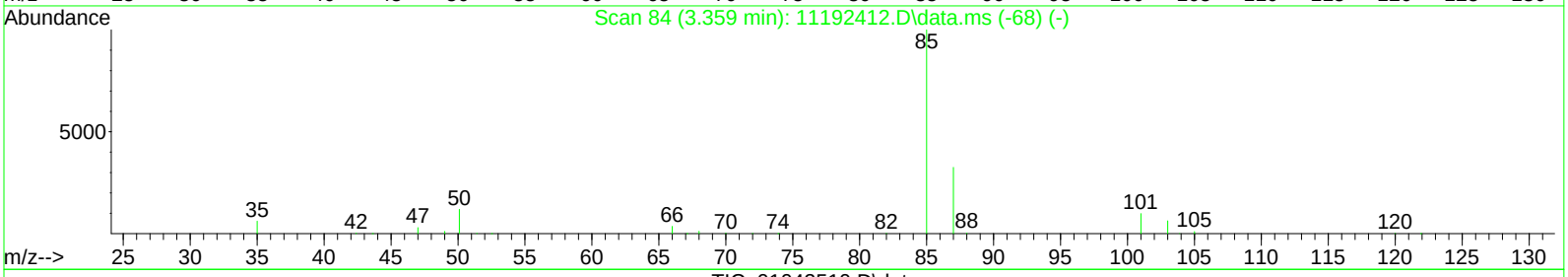
Quantitation Report (Qedit)

Data Path : J:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 05 15:07:33 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042510.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.324min (-0.003) 0.01ng

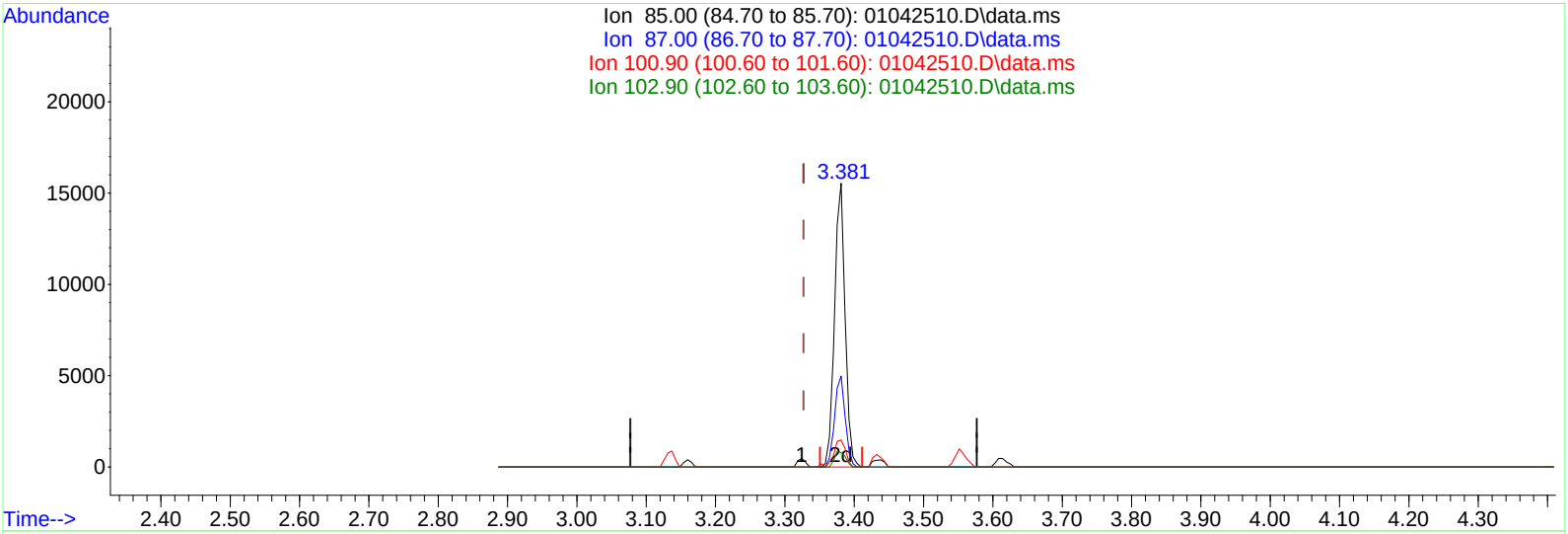
response 354

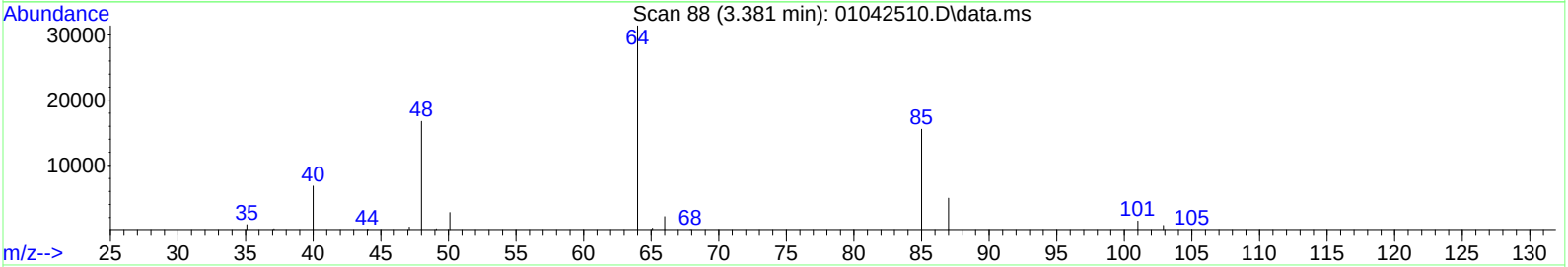
Ion	Exp%	Act%
85.00	100	100
87.00	32.60	0.00#
100.90	9.60	0.00
102.90	6.20	0.00

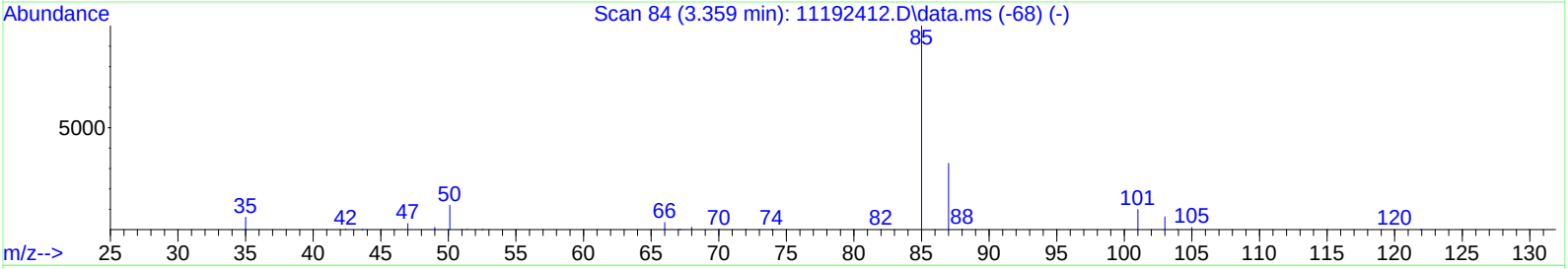
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 06 18:25:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01042510.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.381min (+0.054) 0.53ng m

response 16521

Ion	Exp%	Act%
85.00	100	100
87.00	32.60	32.30
100.90	9.60	10.37
102.90	6.20	5.64

MP

VOA 1/6/25

1/7/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

1/6/25

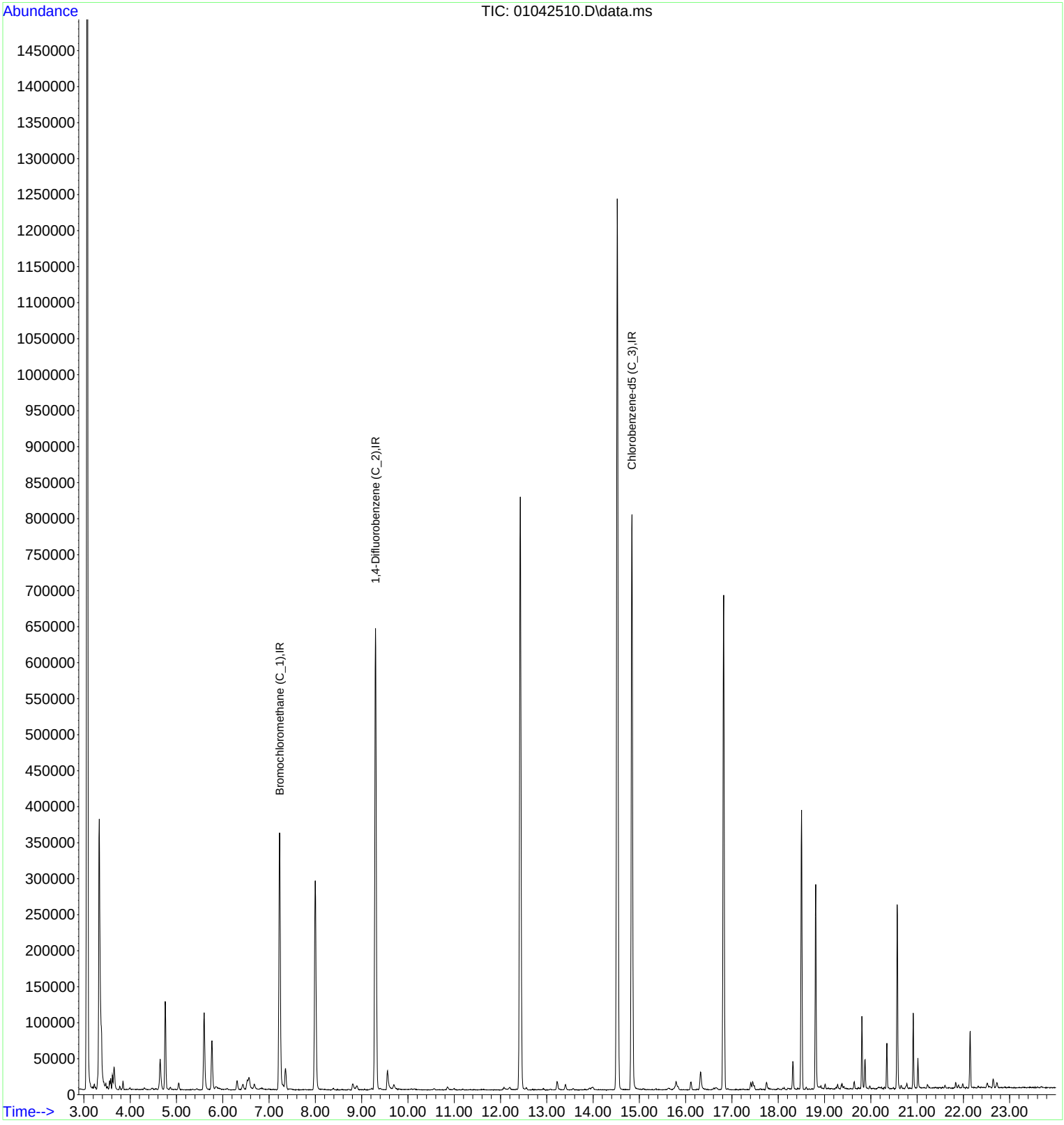
Quant Time: Jan 06 20:23:32 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	160085	12.500 ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	678111	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	118413	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.16	85	300	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d	
4) 1,1-Difluoroethane	3.25	65	821	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D. d	
6) 1-Chloro-1,1-Difluoroe...	3.50	65	410	N.D.	
7) Dichlorofluoromethane ...	4.27	67	321	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.35	43	188	N.D.	
12) 2-Methylpentane	6.49	71	131	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	11.42	55	52	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	16.33	75	1269	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.68	91	298	N.D.	
27) 4-Chlorotoluene	17.68	91	298	N.D.	
28) Indane	19.11	117	115	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	20.57	119	997	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 06 20:23:32 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01042510.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.330	69	79	100	rBV	375432	946823	34.24%	6.330%
2	3.552	114	118	120	rBV	11282	13361	0.48%	0.089%
3	3.580	120	123	126	rVV	14892	17208	0.62%	0.115%
4	3.614	126	129	132	rVV	19581	25224	0.91%	0.169%
5	3.648	132	135	151	rVB	31291	62130	2.25%	0.415%
6	3.841	165	169	174	rVB	11646	15339	0.55%	0.103%
7	4.647	301	311	322	rBV	42404	92127	3.33%	0.616%
8	4.755	322	330	344	rVB	122541	208935	7.56%	1.397%
9	5.045	374	381	387	rBV2	9530	16741	0.61%	0.112%
10	5.596	471	478	491	rBV2	106887	217883	7.88%	1.457%
11	5.766	500	508	517	rBV	68007	137511	4.97%	0.919%
12	6.311	597	604	611	rBV	12897	26976	0.98%	0.180%
13	6.430	618	625	632	rBV4	7565	18601	0.67%	0.124%
14	6.533	636	643	645	rVV2	13591	28039	1.01%	0.187%
15	6.567	646	649	660	rVV4	16643	38583	1.40%	0.258%
16	6.680	663	669	678	rVB2	6990	16509	0.60%	0.110%
17	7.225	756	765	782	rBV	356808	802690	29.03%	5.366%
18	7.356	782	788	797	rVB	29136	64196	2.32%	0.429%
19	7.998	890	901	917	rBV	290650	674312	24.39%	4.508%
20	8.810	1036	1044	1050	rBV3	8710	21546	0.78%	0.144%
21	8.895	1053	1059	1066	rVB3	5472	13653	0.49%	0.091%
22	9.298	1121	1130	1144	rBV	640086	1464620	52.97%	9.791%
23	9.559	1170	1176	1193	rBV	26527	67620	2.45%	0.452%
24	9.695	1195	1200	1208	rVB5	5595	12753	0.46%	0.085%
25	12.427	1668	1681	1697	rBV	823217	1869067	67.60%	12.495%
26	13.222	1815	1821	1830	rBV3	11448	24696	0.89%	0.165%
27	13.403	1846	1853	1860	rBV4	7305	14697	0.53%	0.098%
28	14.522	2036	2050	2069	rBV	1237764	2765066	100.00%	18.485%
29	14.840	2096	2106	2120	rBV	798713	1674815	60.57%	11.196%
30	15.794	2260	2274	2279	rBV3	11090	29817	1.08%	0.199%
31	16.117	2322	2331	2340	rBV3	10867	21547	0.78%	0.144%
32	16.322	2359	2367	2379	rBV2	24563	61122	2.21%	0.409%
33	16.822	2444	2455	2466	rBV	686821	1300316	47.03%	8.693%
34	17.406	2552	2558	2562	rBV4	10065	18582	0.67%	0.124%
35	17.446	2562	2565	2570	rVV	7391	11732	0.42%	0.078%
36	17.747	2613	2618	2625	rBV3	10514	21941	0.79%	0.147%
37	18.315	2711	2718	2724	rBV	38749	60326	2.18%	0.403%
38	18.502	2744	2751	2761	rVB	388248	622326	22.51%	4.160%
39	18.809	2796	2805	2815	rBV	284722	415074	15.01%	2.775%
40	19.377	2898	2905	2910	rBV5	7809	16218	0.59%	0.108%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

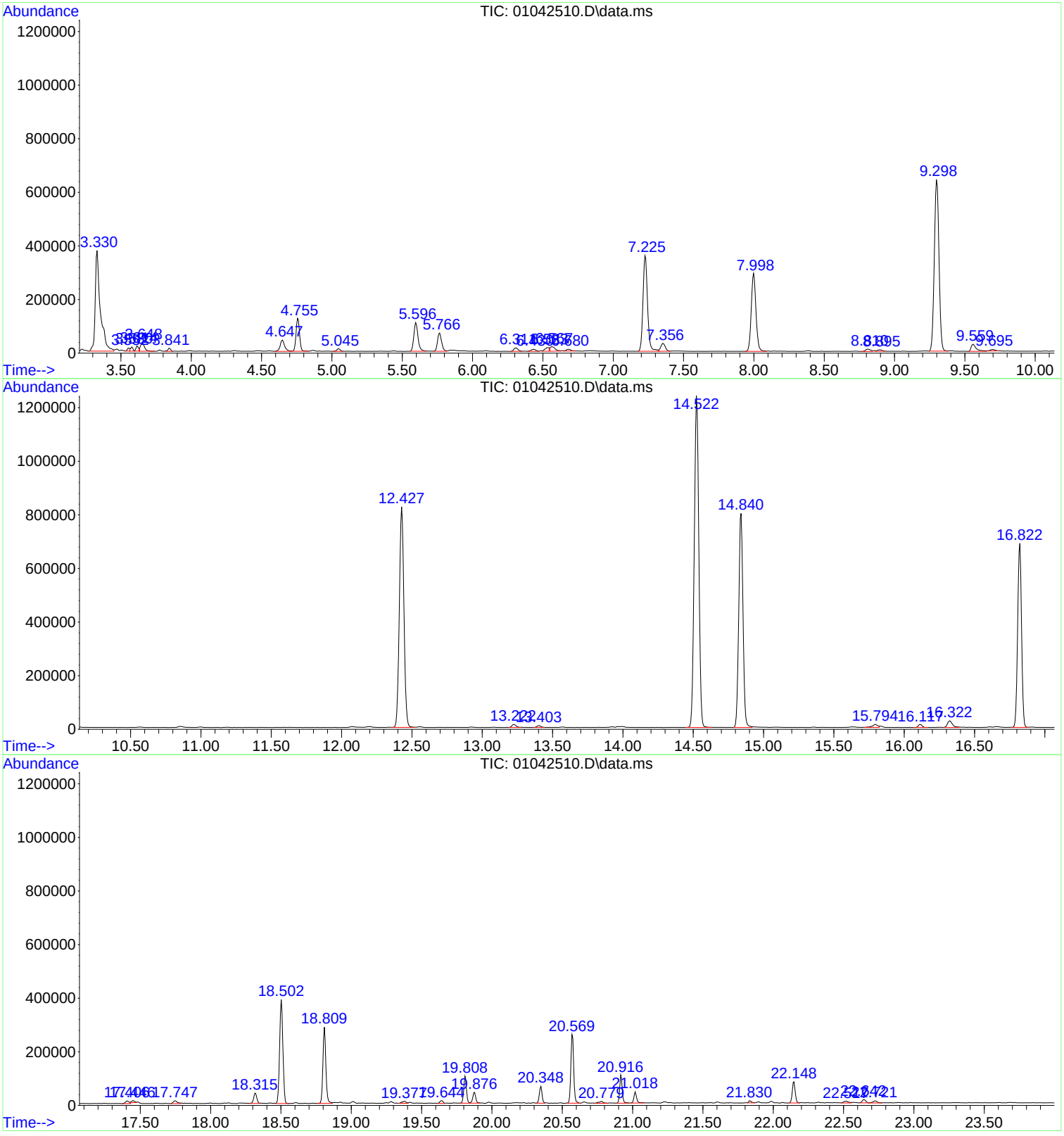
41	19.644	2946	2952	2956	rBV3	10486	16684	0.60%	0.112%
42	19.808	2975	2981	2987	rBV	100736	132750	4.80%	0.887%
43	19.876	2987	2993	3000	rVB	39877	58754	2.12%	0.393%
44	20.348	3070	3076	3081	rBV	63017	81397	2.94%	0.544%
45	20.569	3109	3115	3126	rVB2	255812	360880	13.05%	2.413%
46	20.779	3143	3152	3160	rBV4	7558	16098	0.58%	0.108%
47	20.916	3171	3176	3186	rBV	105111	129925	4.70%	0.869%
48	21.018	3189	3194	3205	rVV	41727	54929	1.99%	0.367%
49	21.830	3335	3337	3344	rVB4	7550	10516	0.38%	0.070%
50	22.148	3387	3393	3400	rBV	79139	113589	4.11%	0.759%
51	22.517	3452	3458	3465	rBV3	6609	15281	0.55%	0.102%
52	22.642	3476	3480	3488	rVV3	12027	20631	0.75%	0.138%
53	22.721	3488	3494	3503	rVB3	7594	16600	0.60%	0.111%

Sum of corrected areas: 14958756

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:42
Operator : CG
Sample : P2405139-001 (400mL)
Misc : S37-12312401
ALS Vial : 4 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\04\\
Data File : 01042510.D
Acq On : 4 Jan 2025 12:422
Operator : CGG
Sample : P2405139-001 (400mL))
Misc : S37-123124011
ALS Vial : 4 Sample Multiplier: 11

MOA 1/6/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 18:34:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	155481	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	666994	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	118223	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	254335	12.007 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.08%			
57) Toluene-d8 (SS2)	12.43	98	693877	13.230 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%			
73) Bromofluorobenzene (SS3)	16.82	174	257223	14.212 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.68%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	16101	0.530 ng		98
4) Chloromethane	3.52	50	2926	0.130 ng		86
5) 1,2-Dichloro-1,1,2,2-t...	3.63	135	312	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	4.02	94	208	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.30	45	19971	1.737 ng		79
11) Acetonitrile	0.00	41	0	N.D. d		
12) Acrolein	4.55	56	56	N.D.		
13) Acetone	4.64	58	45360	4.333 ng		90
14) Trichlorofluoromethane	4.77	101	13998	0.491 ng		98
15) 2-Propanol (Isopropanol)	4.94	45	59	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.34	59	540	N.D.		
19) Methylene Chloride	5.37	84	1559	0.106 ng		100
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.60	151	4545	0.353 ng		92
22) Carbon Disulfide	5.61	76	14296	0.302 ng		96
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	929	0.367 ng	#	45
27) 2-Butanone (MEK)	6.68	72	4657	0.554 ng		96
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.30	61	439	0.085 ng		100
31) n-Hexane	7.30	57	1076	N.D.		
32) Chloroform	7.36	83	1139	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	7754	No Calib		
41) Benzene	8.89	78	2687	0.050 ng		93
42) Carbon Tetrachloride	9.07	117	1633	0.076 ng		91
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

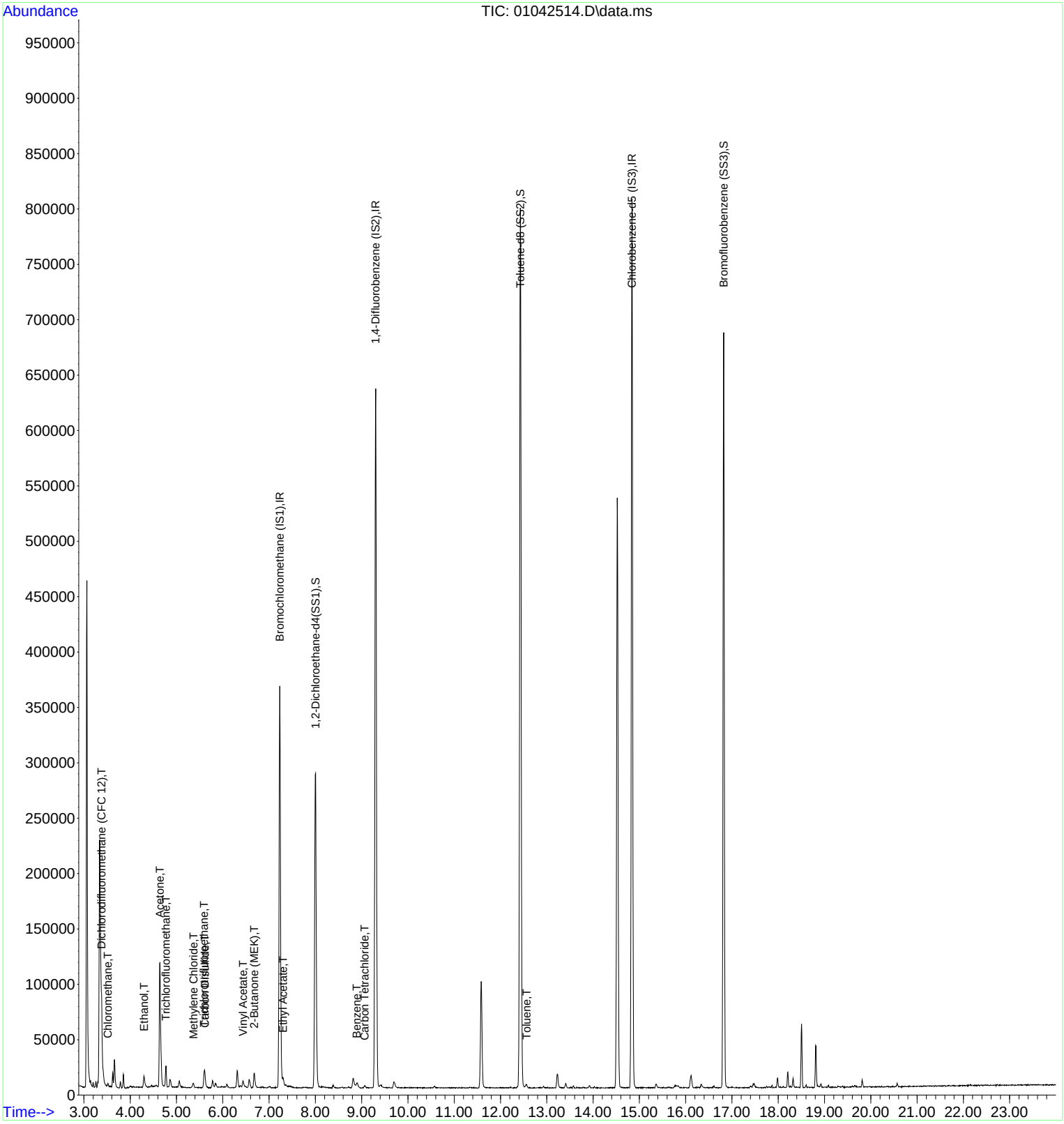
Quant Time: Jan 06 18:34:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	248	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.58	71	316	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	3501	0.069 ng	96
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.78	43	678	N.D.	
63) n-Octane	13.92	57	399	N.D.	
64) Tetrachloroethene	14.03	166	357	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	550	N.D.	
67) m- & p-Xylenes	15.62	91	979	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.11	104	252	N.D.	
70) o-Xylene	16.24	91	322	N.D.	
71) n-Nonane	16.61	43	894	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.51	93	481	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	339	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	18.66	146	108	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	108	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	2338	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.08	68	452	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.98	58	553	No Calib	#
94) 1,2,4-Trichlorobenzene	20.84	180	245	N.D.	
95) Naphthalene	20.94	128	342	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	1109	N.D.	
100) n-Butylbenzene	19.38	91	224	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 18:34:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

NOA 1/6/25

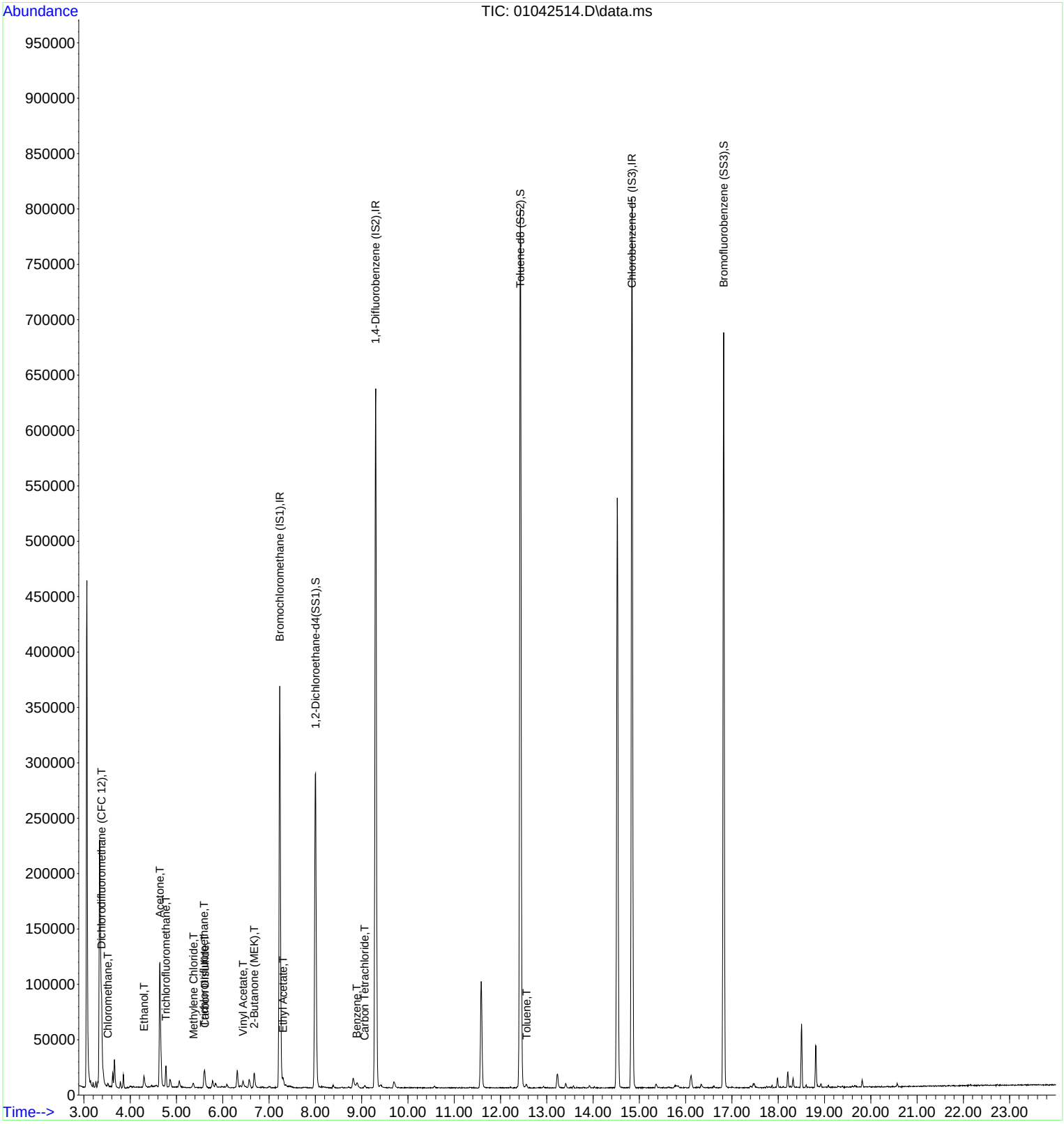
Quant Time: Jan 06 18:34:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

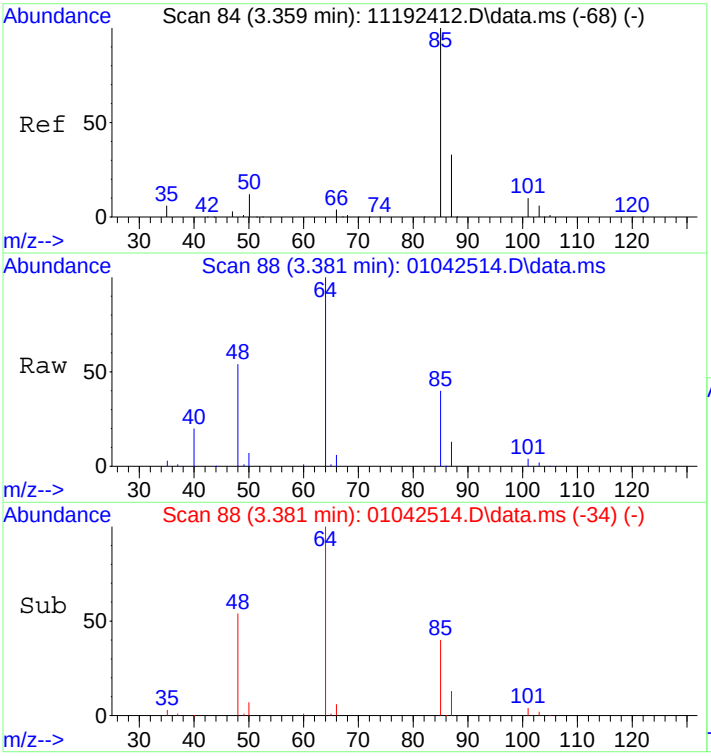
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	155481	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	666994	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	118223	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	254335	12.007	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.08%				
57) Toluene-d8 (SS2)	12.43	98	693877	13.230	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%				
73) Bromofluorobenzene (SS3)	16.82	174	257223	14.212	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.68%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16101	0.530	ng		98
4) Chloromethane	3.52	50	2926	0.130	ng		86
10) Ethanol	4.30	45	19971	1.737	ng		79
13) Acetone	4.64	58	45360	4.333	ng		90
14) Trichlorofluoromethane	4.77	101	13998	0.491	ng		98
19) Methylene Chloride	5.37	84	1559	0.106	ng		100
21) Trichlorotrifluoroethane	5.60	151	4545	0.353	ng		92
22) Carbon Disulfide	5.61	76	14296	0.302	ng		96
26) Vinyl Acetate	6.44	86	929	0.367	ng	#	45
27) 2-Butanone (MEK)	6.68	72	4657	0.554	ng		96
30) Ethyl Acetate	7.30	61	439	0.085	ng		100
41) Benzene	8.89	78	2687	0.050	ng		93
42) Carbon Tetrachloride	9.07	117	1633	0.076	ng		91
58) Toluene	12.56	91	3501	0.069	ng		96

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 18:34:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

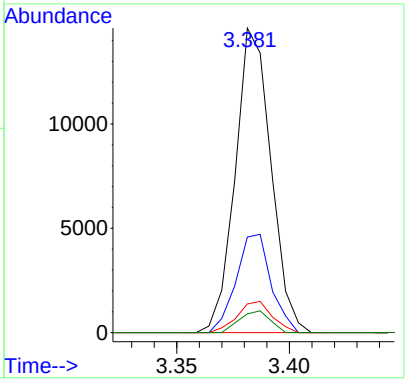


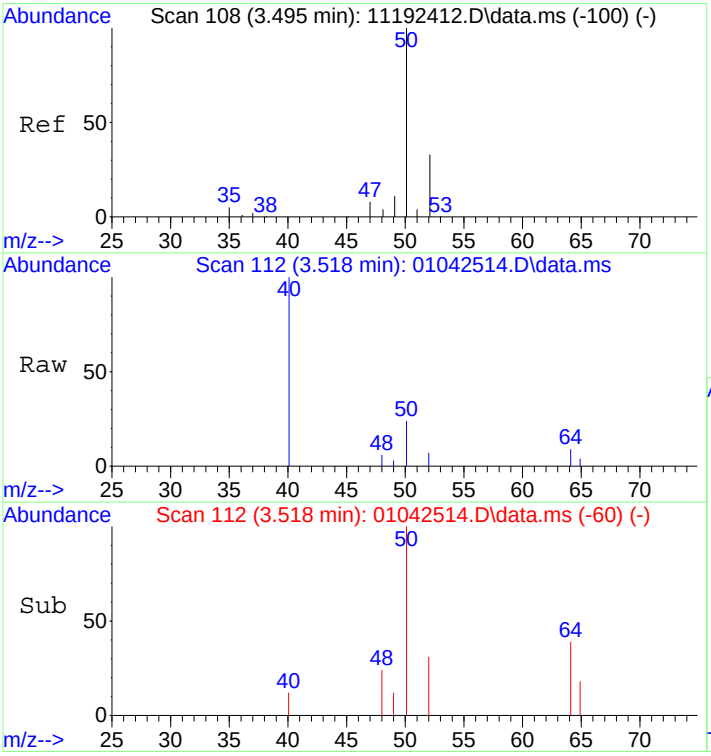


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.53 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.054 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 85 Resp: 16101

Ion	Ratio	Lower	Upper
85	100		
87	31.6	12.6	52.6
101	10.0	0.0	29.6
103	6.1	0.0	26.2

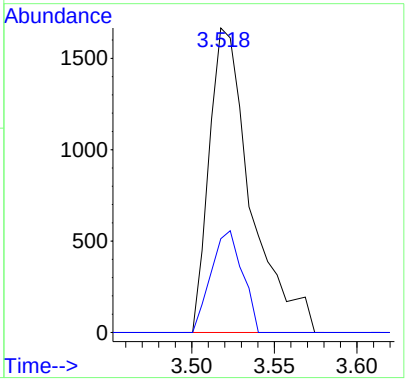


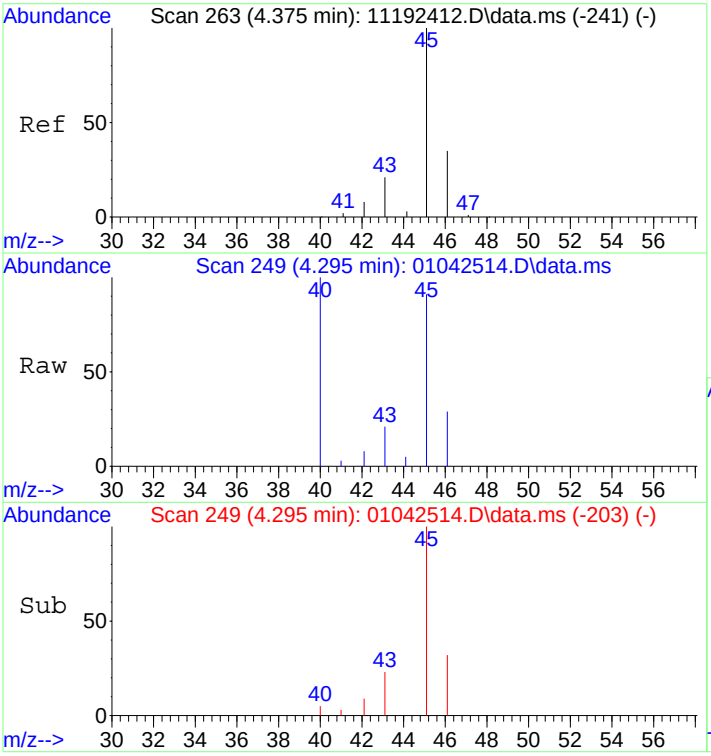


#4
Chloromethane
Concen: 0.13 ng
RT: 3.52 min Scan# 112
Delta R.T. 0.044 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 50 Resp: 2926

Ion	Ratio	Lower	Upper
50	100		
52	25.2	13.0	53.0

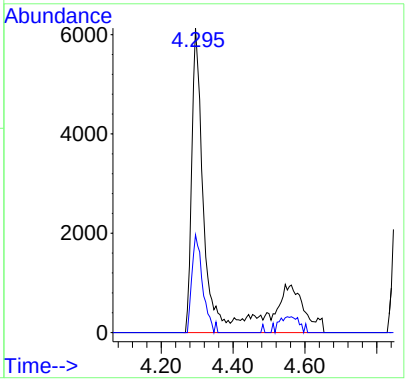


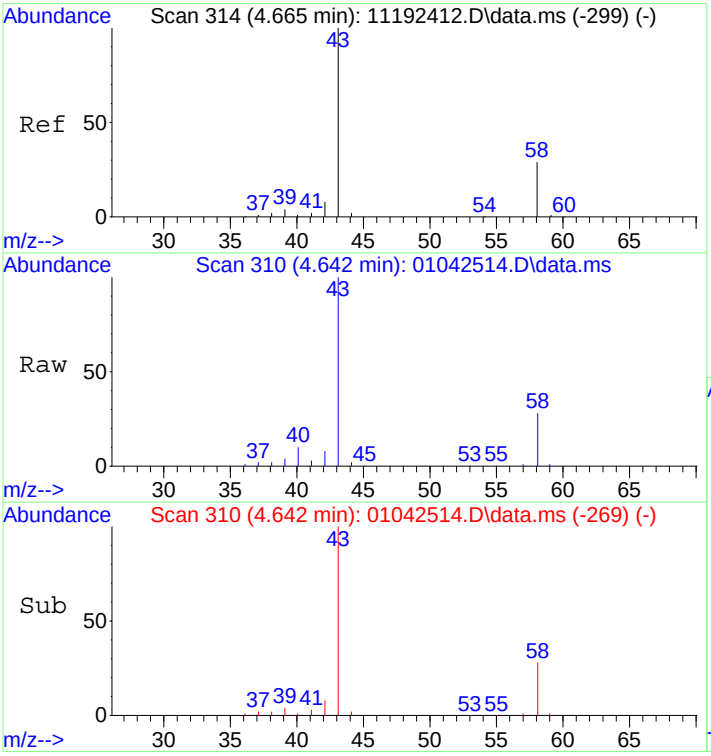


#10
Ethanol
Concen: 1.74 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 45 Resp: 19971

Ion	Ratio	Lower	Upper
45	100		
46	20.2	11.8	51.8

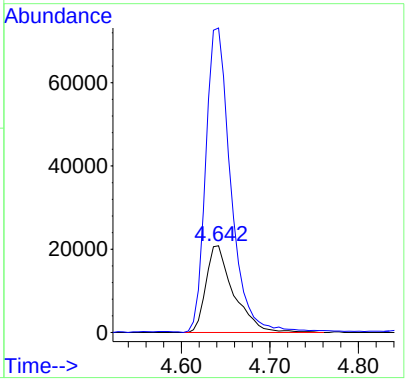


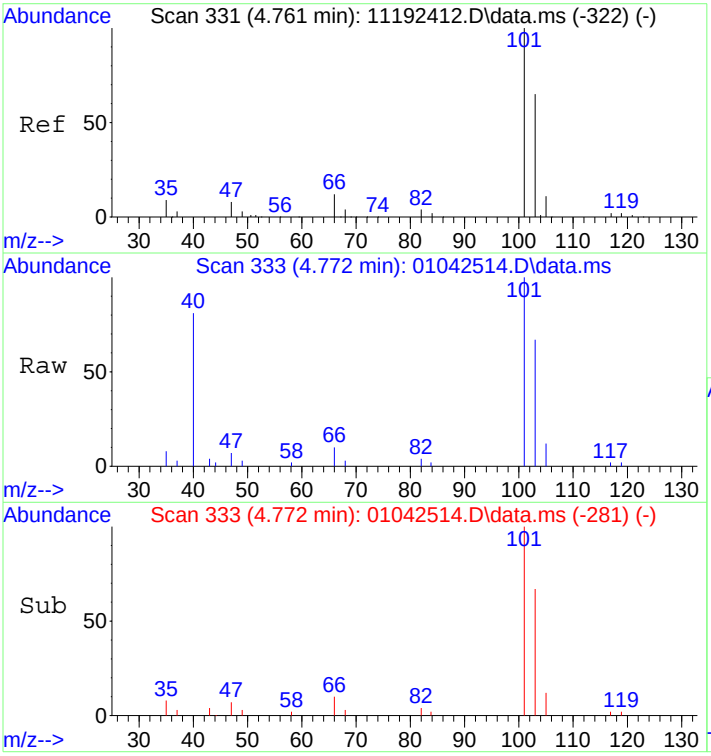


#13
Acetone
Concen: 4.33 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 58 Resp: 45360

Ion	Ratio	Lower	Upper
58	100		
43	321.2	312.5	372.5

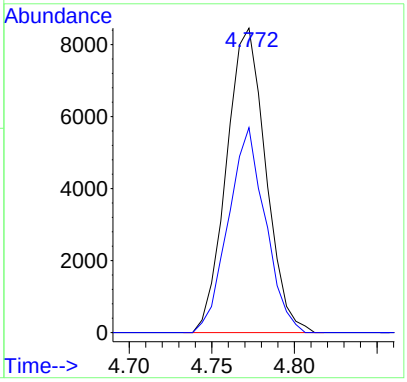


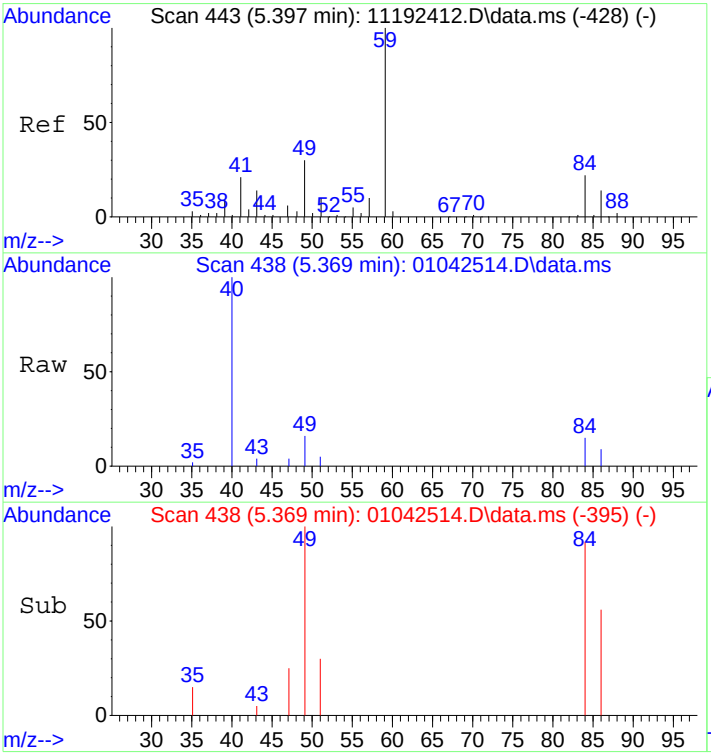


#14
Trichlorofluoromethane
Concen: 0.49 ng
RT: 4.77 min Scan# 333
Delta R.T. 0.045 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion:101 Resp: 13998

Ion	Ratio	Lower	Upper
101	100		
103	63.5	44.8	84.8

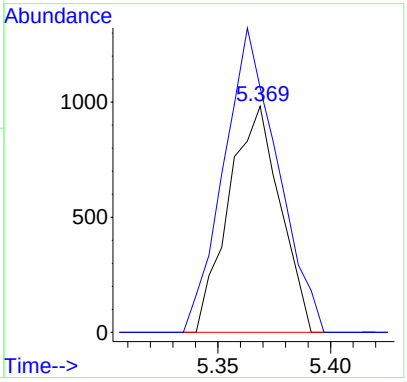


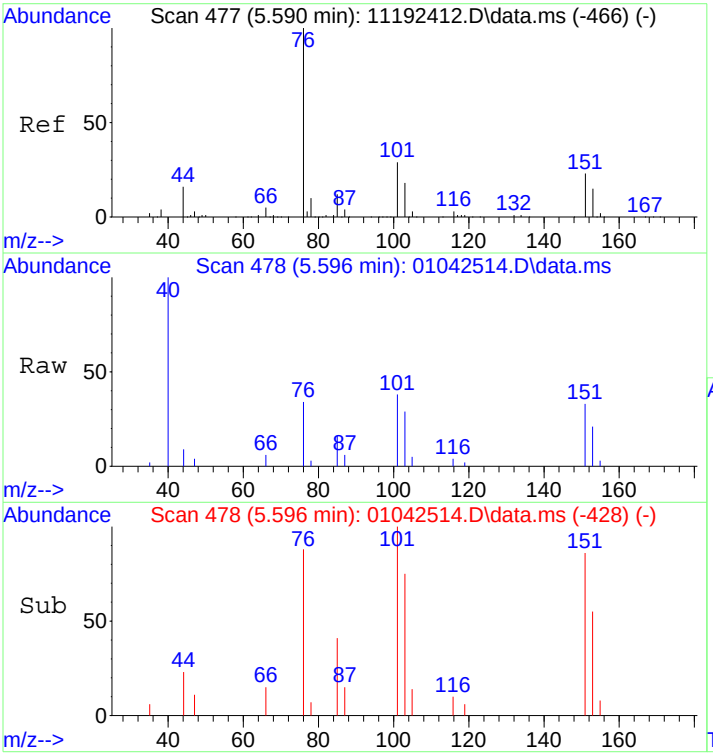


#19
Methylene Chloride
Concen: 0.11 ng
RT: 5.37 min Scan# 438
Delta R.T. -0.006 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 84 Resp: 1559

Ion	Ratio	Lower	Upper
84	100		
49	140.7	116.0	166.0

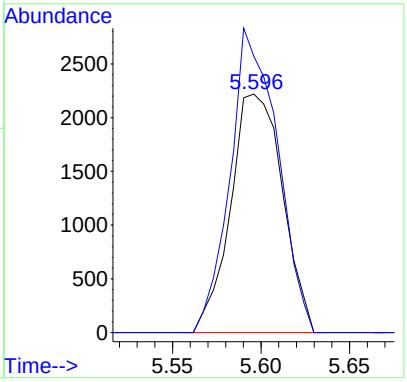


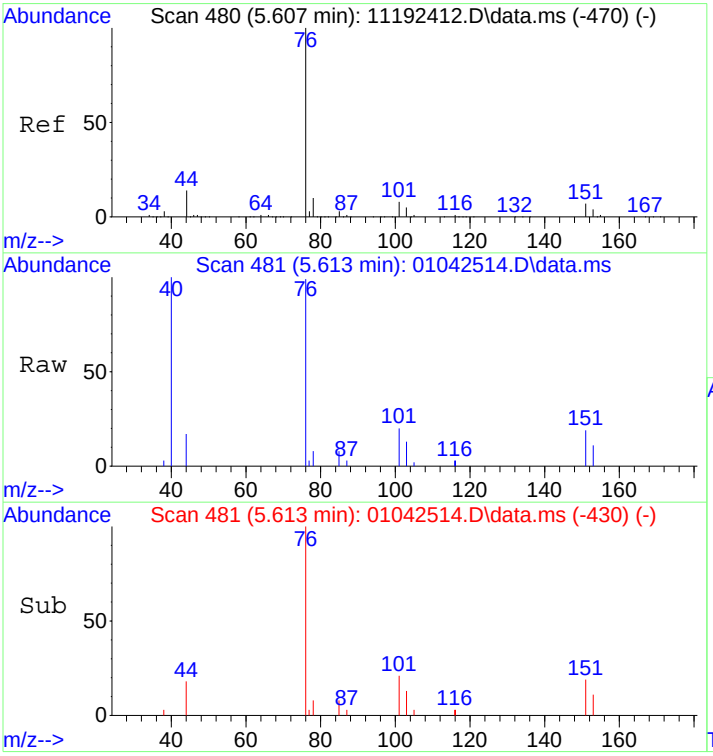


#21
Trichlorotrifluoroethane
Concen: 0.35 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.036 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion:151 Resp: 4545

Ion	Ratio	Lower	Upper
151	100		
101	115.9	105.0	145.0

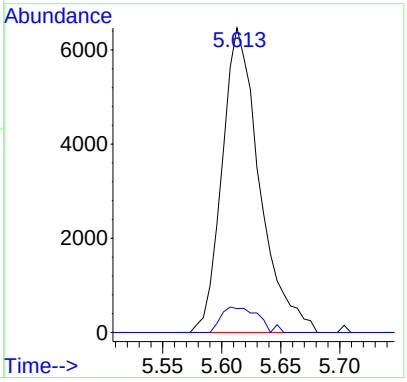


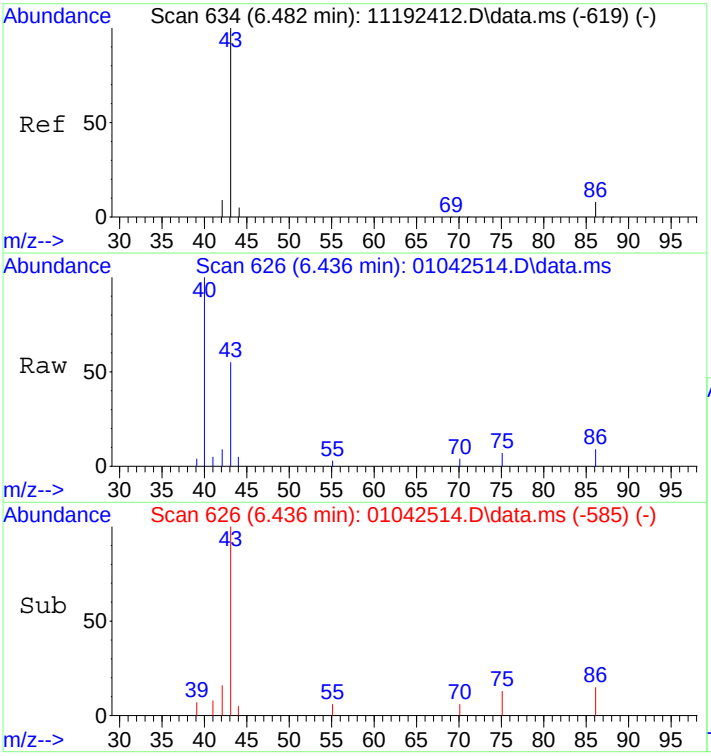


#22
Carbon Disulfide
Concen: 0.30 ng
RT: 5.61 min Scan# 481
Delta R.T. 0.041 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 76 Resp: 14296

Ion	Ratio	Lower	Upper
76	100		
78	8.2	0.0	29.6

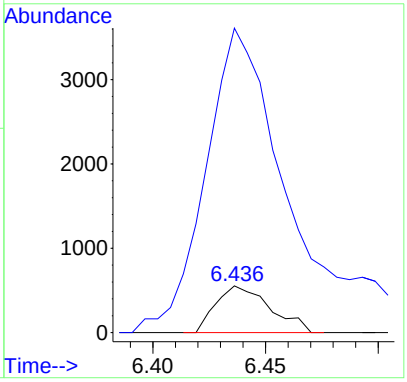


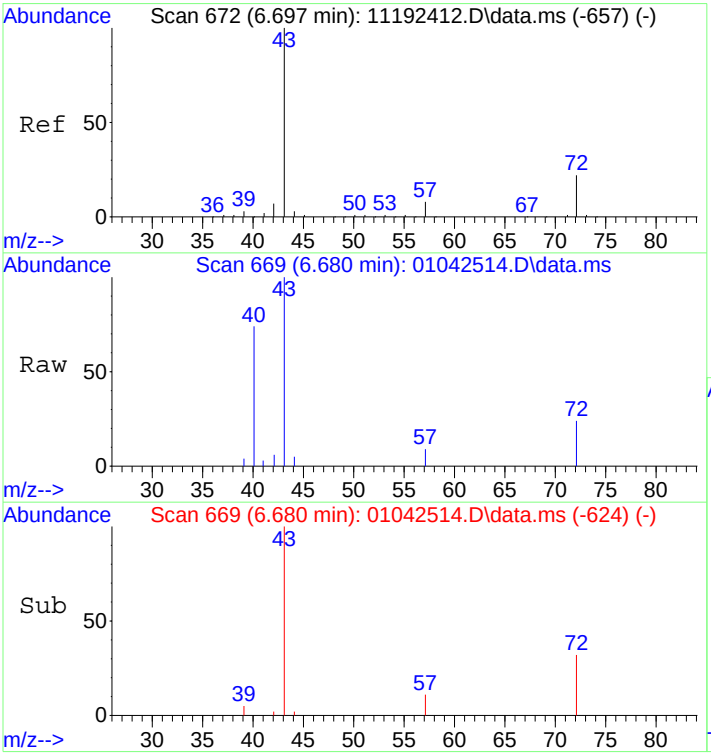


#26
Vinyl Acetate
Concen: 0.37 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 86 Resp: 929

Ion	Ratio	Lower	Upper
86	100		
43	1047.3	1331.6	1371.6#

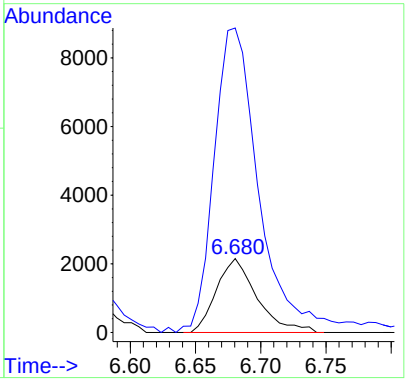


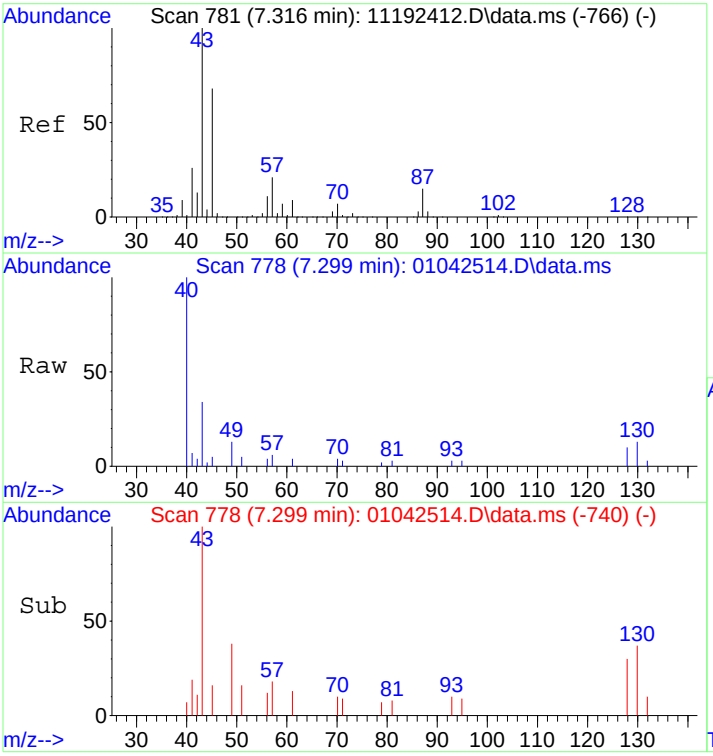


#27
2-Butanone (MEK)
Concen: 0.55 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 72 Resp: 4657

Ion	Ratio	Lower	Upper
72	100		
43	470.7	439.8	479.8

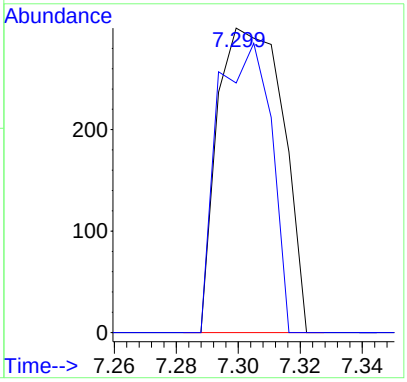


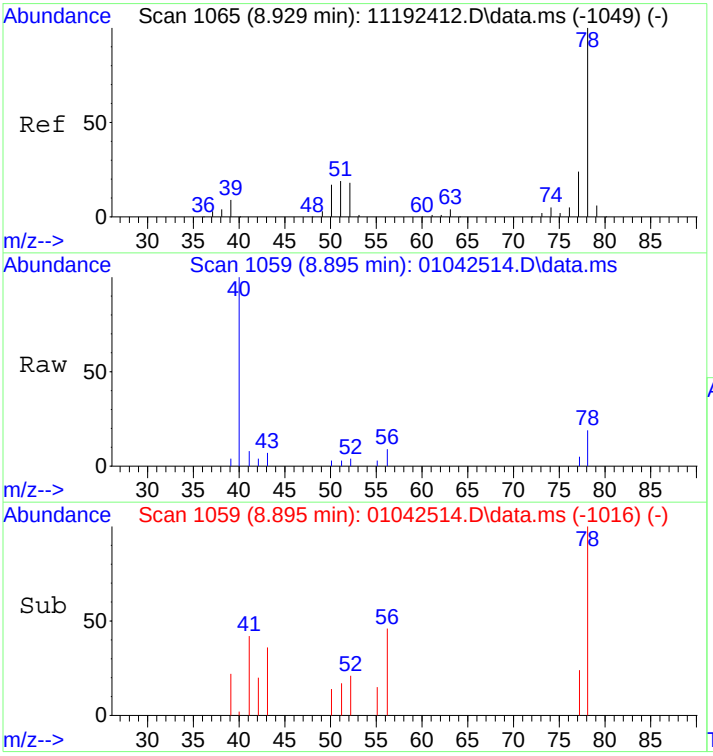


#30
Ethyl Acetate
Concen: 0.08 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.018 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 61 Resp: 439

Ion	Ratio	Lower	Upper
61	100		
70	77.7	57.3	97.3

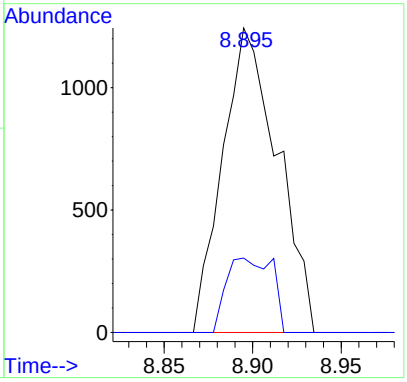


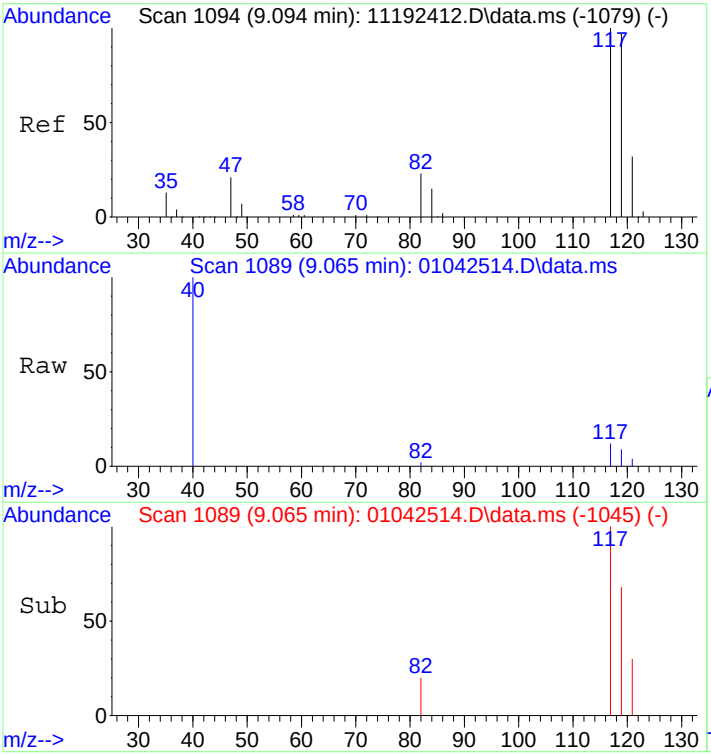


#41
Benzene
Concen: 0.05 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 78 Resp: 2687

Ion	Ratio	Lower	Upper
78	100		
77	20.4	3.7	43.7

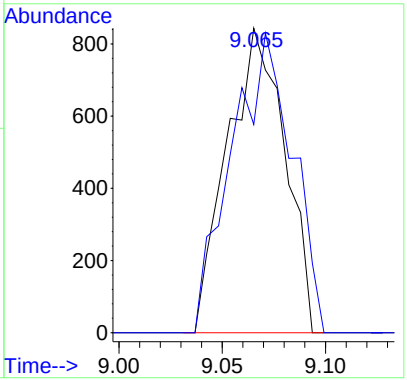


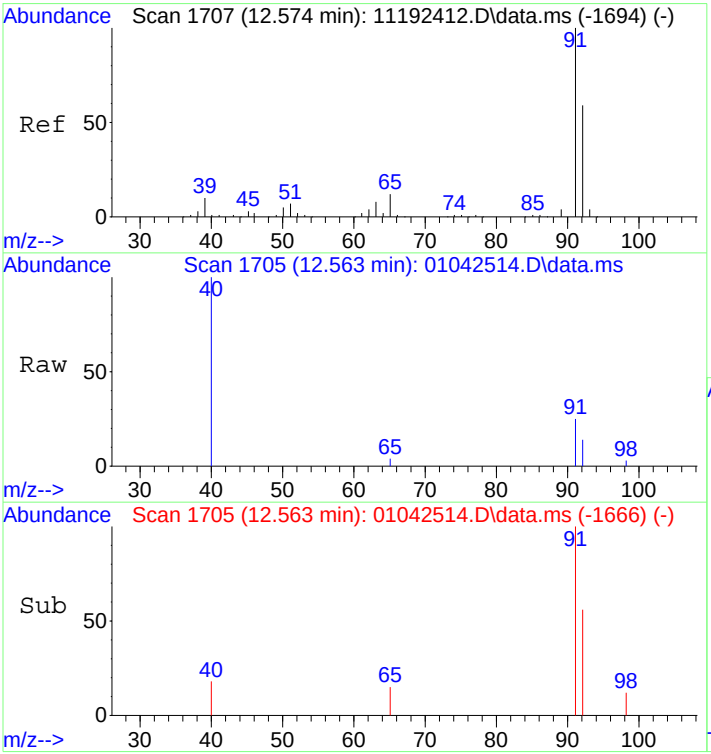


#42
Carbon Tetrachloride
Concen: 0.08 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion:117 Resp: 1633

Ion	Ratio	Lower	Upper
117	100		
119	104.0	75.7	115.7

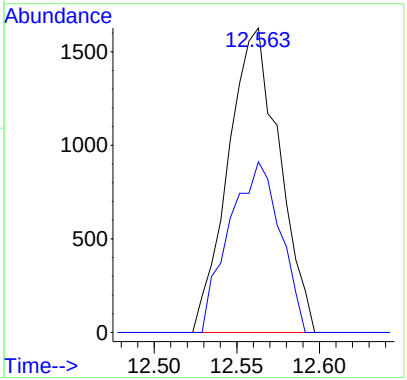




#58
Toluene
Concen: 0.07 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01042514.D
Acq: 4 Jan 2025 14:50

Tgt Ion: 91 Resp: 3501

Ion	Ratio	Lower	Upper
91	100		
92	55.9	39.2	79.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 20:24:28 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

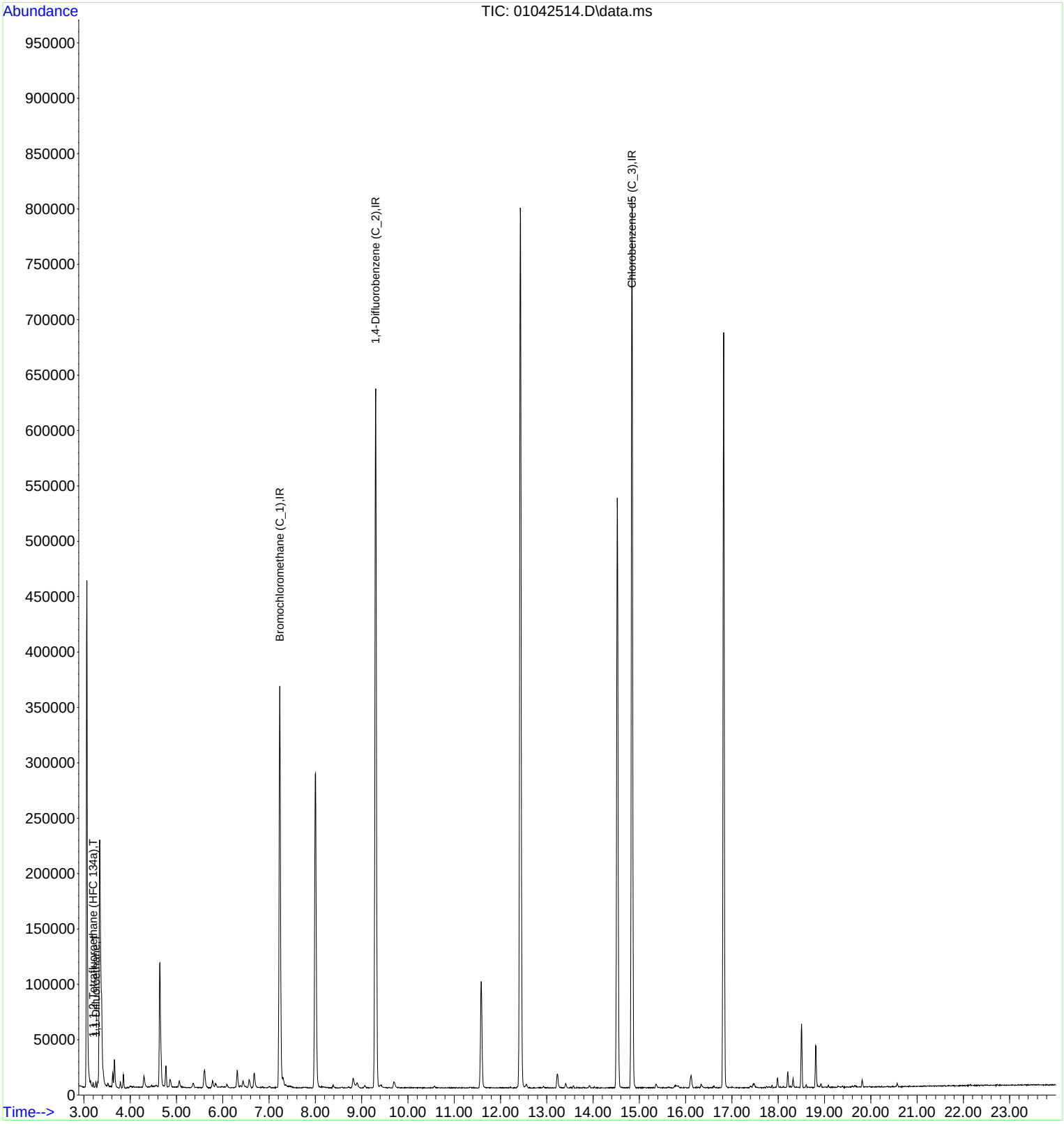
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	158233	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	669013	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	118223	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	144	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	2014	0.140	ng	93
4) 1,1-Difluoroethane	3.26	65	1379	0.108	ng	98
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	417	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.35	43	1441	N.D.		
12) 2-Methylpentane	6.49	71	115	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.42	55	110	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	16.34	75	277	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	55	N.D.		
27) 4-Chlorotoluene	17.68	91	55	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 20:24:28 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01042514.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.342	75	81	104	rVB	221612	618895	33.71%	5.860%
2	3.620	126	130	133	rBV	13017	16048	0.87%	0.152%
3	3.660	133	137	150	rVB	25339	43108	2.35%	0.408%
4	3.853	164	171	179	rVB2	12725	18645	1.02%	0.177%
5	4.296	243	249	264	rVB	10489	23310	1.27%	0.221%
6	4.642	303	310	321	rBV	112314	228151	12.43%	2.160%
7	4.772	327	333	338	rVB	19204	30019	1.64%	0.284%
8	4.858	343	348	357	rVB2	7039	15098	0.82%	0.143%
9	5.062	378	384	393	rVB3	6014	11886	0.65%	0.113%
10	5.607	472	480	495	rVB3	16539	43564	2.37%	0.412%
11	5.778	503	510	517	rBV	6482	13183	0.72%	0.125%
12	6.311	599	604	611	rBV	14683	27891	1.52%	0.264%
13	6.567	643	649	658	rVB4	7726	17798	0.97%	0.169%
14	6.680	663	669	680	rVB	13047	29384	1.60%	0.278%
15	7.231	757	766	776	rBV	362272	779351	42.45%	7.379%
16	7.294	776	777	786	rVB3	7371	12777	0.70%	0.121%
17	8.003	889	902	915	rBV	284462	672049	36.61%	6.363%
18	8.815	1037	1045	1055	rBV4	8777	25645	1.40%	0.243%
19	8.901	1055	1060	1073	rVB4	4923	13742	0.75%	0.130%
20	9.304	1120	1131	1144	rBV	631063	1448875	78.92%	13.719%
21	9.696	1194	1200	1215	rBV3	5727	17249	0.94%	0.163%
22	11.581	1520	1532	1546	rBV	96461	228348	12.44%	2.162%
23	12.427	1670	1681	1698	rVB	793622	1835929	100.00%	17.384%
24	13.227	1815	1822	1831	rBV5	12721	29486	1.61%	0.279%
25	14.522	2040	2050	2061	rBV	532802	1171345	63.80%	11.091%
26	14.840	2096	2106	2122	rVB	803088	1653038	90.04%	15.652%
27	16.118	2322	2331	2340	rBV6	11118	28630	1.56%	0.271%
28	16.822	2444	2455	2470	rBV	681984	1296368	70.61%	12.275%
29	17.986	2655	2660	2665	rBV4	8561	13537	0.74%	0.128%
30	18.207	2693	2699	2705	rBV2	13875	21856	1.19%	0.207%
31	18.321	2713	2719	2727	rVB6	8500	13021	0.71%	0.123%
32	18.502	2745	2751	2758	rVB	57611	90225	4.91%	0.854%
33	18.809	2800	2805	2817	rBV	37932	62103	3.38%	0.588%
34	19.814	2977	2982	2988	rVB4	6842	10551	0.57%	0.100%

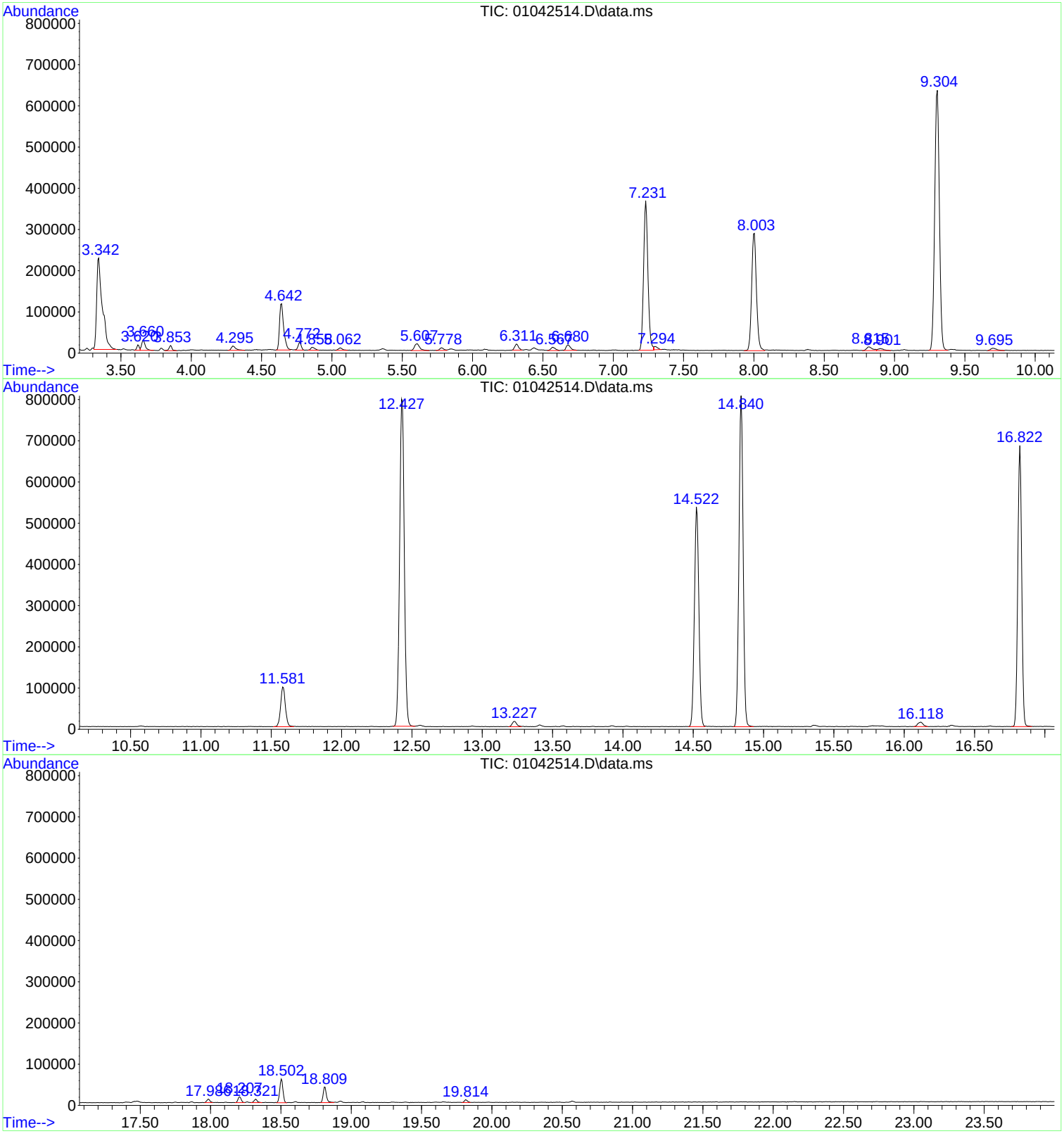
Sum of corrected areas: 10561105

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:50
Operator : CG
Sample : P2405139-002 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\04\\
Data File : 01042514.D
Acq On : 4 Jan 2025 14:500
Operator : CGG
Sample : P2405139-002 (400mL))
Misc : S37-123124011
ALS Vial : 8 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/6/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 18:39:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/6/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	155147	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	659895	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	118531	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	252893	11.964	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.68%				
57) Toluene-d8 (SS2)	12.43	98	688295	13.090	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.72%				
73) Bromofluorobenzene (SS3)	16.82	174	256321	14.126	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.04%				
Target Compounds							Qvalue
2) Propene	3.30	42	40782	2.461	ng	#	62
3) Dichlorodifluoromethan...	3.36	85	21999	0.725	ng		99
4) Chloromethane	3.50	50	4664	0.207	ng		94
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	339	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.81	54	4976m	0.436	ng		
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.16	64	288	N.D.			
10) Ethanol	4.33	45	359949	31.366	ng		97
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	4.54	56	10726	1.093	ng		96
13) Acetone	4.63	58	295196	28.258	ng	#	81
14) Trichlorofluoromethane	4.76	101	13679	0.481	ng		100
15) 2-Propanol (Isopropanol)	4.88	45	1097709	29.343	ng		95
16) Acrylonitrile	0.00	53	0	N.D.	d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.36	59	35172	1.173	ng	#	1
19) Methylene Chloride	5.37	84	3913	0.266	ng		97
20) 3-Chloro-1-propene (Al...	5.45	41	618	N.D.			
21) Trichlorotrifluoroethane	5.59	151	8073	0.629	ng		92
22) Carbon Disulfide	5.61	76	18542	0.392	ng		99
23) trans-1,2-Dichloroethene	6.15	61	1055	0.053	ng		88
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.37	73	1135	N.D.			
26) Vinyl Acetate	6.45	86	8434	3.336	ng	#	89
27) 2-Butanone (MEK)	6.67	72	24537	2.924	ng	#	91
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	7.29	61	309973	59.837	ng		99
31) n-Hexane	7.30	57	43046	1.847	ng		97
32) Chloroform	7.38	83	1158	N.D.			
34) Tetrahydrofuran (THF)	7.76	72	1034	0.131	ng	#	41
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.13	62	1411	0.066	ng		69
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	21613	No Calib		#	
41) Benzene	8.90	78	83887	1.584	ng		100
42) Carbon Tetrachloride	9.08	117	2212	0.104	ng		98
43) Cyclohexane	9.22	84	50338	2.724	ng		96
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	9.87	63	810	0.063	ng		91
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	10.16	130	2163	0.143	ng	#	19
48) 1,4-Dioxane	0.00	88	0	N.D.	d		

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

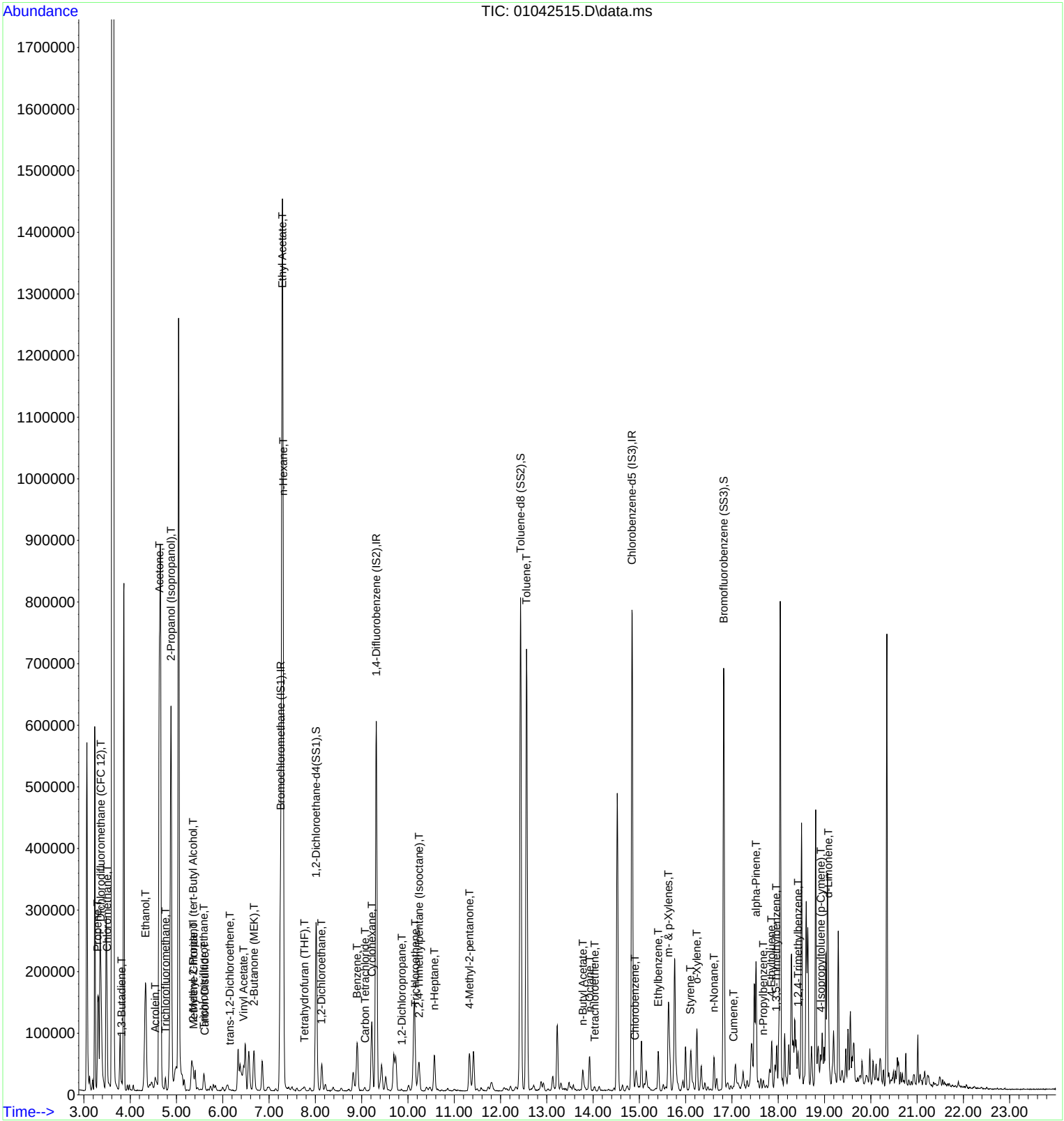
Quant Time: Jan 06 18:39:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	54148	0.977 ng		81
50) Methyl Methacrylate	10.42	100	121	N.D.		
51) n-Heptane	10.57	71	15710	1.330 ng		96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	22263	1.954 ng		95
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	666328	13.170 ng		99
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	31769	1.147 ng		96
63) n-Octane	13.93	57	10812	1.031 ng		98
64) Tetrachloroethene	14.03	166	2288	0.152 ng		96
65) Chlorobenzene	14.90	112	2201	0.062 ng		83
66) Ethylbenzene	15.41	91	55605	0.994 ng		99
67) m- & p-Xylenes	15.63	91	133971	2.926 ng		100
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	17172	0.537 ng		97
70) o-Xylene	16.24	91	58211	1.285 ng		100
71) n-Nonane	16.61	43	22044	0.916 ng		97
72) 1,1,2,2-Tetrachloroethane	16.21	83	314	N.D.		
74) Cumene	17.03	105	5341	0.095 ng		96
75) alpha-Pinene	17.52	93	88463	3.181 ng		99
76) n-Propylbenzene	17.68	91	8239	0.123 ng		98
77) 3-Ethyltoluene	17.03	105	5341	No Calib		
78) 4-Ethyltoluene	17.86	105	7291	0.137 ng		98
79) 1,3,5-Trimethylbenzene	17.96	105	7504	0.162 ng		97
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	5341	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	22241	0.473 ng		90
83) n-Decane	17.08	58	2057	No Calib	#	
84) Benzyl Chloride	18.56	91	352	N.D.		
85) 1,3-Dichlorobenzene	18.66	146	987	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	987	N.D.		
87) sec-Butylbenzene	18.74	105	1542	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	9682	0.187 ng		87
89) 1,2,3-Trimethylbenzene	17.03	105	5341	No Calib		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	35550	2.370 ng		95
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	17.96	58	1239	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	129	N.D.		
95) Naphthalene	20.94	128	971	N.D.		
96) n-Dodecane	18.95	58	1424	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.19	55	717	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D. d		
100) n-Butylbenzene	0.00	91	0	N.D. d		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 18:39:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

VOA 1/6/25

Quant Time: Jan 06 18:39:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	155147	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	659895	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	118531	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	252893	11.964	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.68%				
57) Toluene-d8 (SS2)	12.43	98	688295	13.090	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.72%				
73) Bromofluorobenzene (SS3)	16.82	174	256321	14.126	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.04%				
Target Compounds							Qvalue
2) Propene	3.30	42	40782	2.461	ng	#	62
3) Dichlorodifluoromethan...	3.36	85	21999	0.725	ng		99
4) Chloromethane	3.50	50	4664	0.207	ng		94
7) 1,3-Butadiene	3.81	54	4976m	0.436	ng		
10) Ethanol	4.33	45	359949	31.366	ng		97
12) Acrolein	4.54	56	10726	1.093	ng		96
13) Acetone	4.63	58	295196	28.258	ng	#	81
14) Trichlorofluoromethane	4.76	101	13679	0.481	ng		100
15) 2-Propanol (Isopropanol)	4.88	45	1097709	29.343	ng		95
18) 2-Methyl-2-Propanol (t...	5.36	59	35172	1.173	ng	#	1
19) Methylene Chloride	5.37	84	3913	0.266	ng		97
21) Trichlorotrifluoroethane	5.59	151	8073	0.629	ng		92
22) Carbon Disulfide	5.61	76	18542	0.392	ng		99
23) trans-1,2-Dichloroethene	6.15	61	1055	0.053	ng		88
26) Vinyl Acetate	6.45	86	8434	3.336	ng	#	89
27) 2-Butanone (MEK)	6.67	72	24537	2.924	ng	#	91
30) Ethyl Acetate	7.29	61	309973	59.837	ng		99
31) n-Hexane	7.30	57	43046	1.847	ng		97
34) Tetrahydrofuran (THF)	7.76	72	1034	0.131	ng	#	41
36) 1,2-Dichloroethane	8.13	62	1411	0.066	ng		69
41) Benzene	8.90	78	83887	1.584	ng		100
42) Carbon Tetrachloride	9.08	117	2212	0.104	ng		98
43) Cyclohexane	9.22	84	50338	2.724	ng		96
45) 1,2-Dichloropropane	9.87	63	810	0.063	ng		91
47) Trichloroethene	10.16	130	2163	0.143	ng	#	19
49) 2,2,4-Trimethylpentane...	10.24	57	54148	0.977	ng		81
51) n-Heptane	10.57	71	15710	1.330	ng		96
53) 4-Methyl-2-pentanone	11.33	58	22263	1.954	ng		95
58) Toluene	12.56	91	666328	13.170	ng		99
62) n-Butyl Acetate	13.78	43	31769	1.147	ng		96
63) n-Octane	13.93	57	10812	1.031	ng		98
64) Tetrachloroethene	14.03	166	2288	0.152	ng		96
65) Chlorobenzene	14.90	112	2201	0.062	ng		83
66) Ethylbenzene	15.41	91	55605	0.994	ng		99
67) m- & p-Xylenes	15.63	91	133971	2.926	ng		100
69) Styrene	16.10	104	17172	0.537	ng		97
70) o-Xylene	16.24	91	58211	1.285	ng		100
71) n-Nonane	16.61	43	22044	0.916	ng		97
74) Cumene	17.03	105	5341	0.095	ng		96
75) alpha-Pinene	17.52	93	88463	3.181	ng		99
76) n-Propylbenzene	17.68	91	8239	0.123	ng		98
78) 4-Ethyltoluene	17.86	105	7291	0.137	ng		98
79) 1,3,5-Trimethylbenzene	17.96	105	7504	0.162	ng		97
82) 1,2,4-Trimethylbenzene	18.43	105	22241	0.473	ng		90
88) 4-Isopropyltoluene (p-...	18.92	119	9682	0.187	ng		87

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

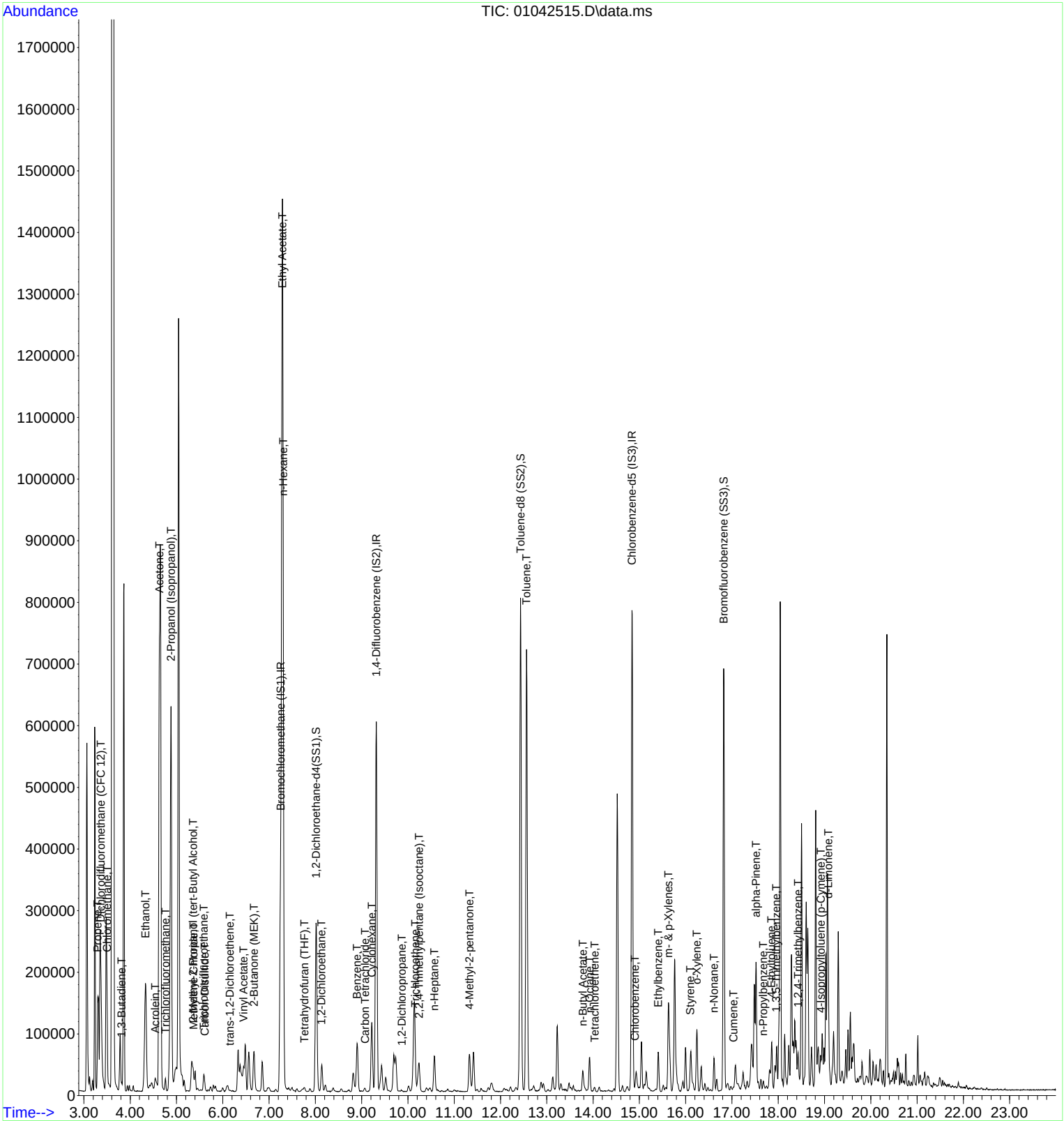
Quant Time: Jan 06 18:39:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

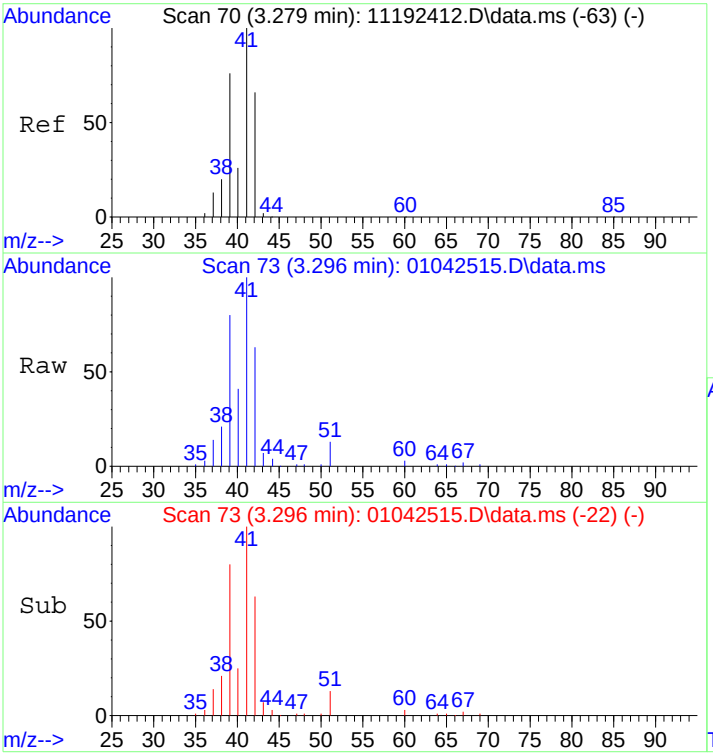
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) d-Limonene	19.08	68	35550	2.370	ng	95

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 18:39:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

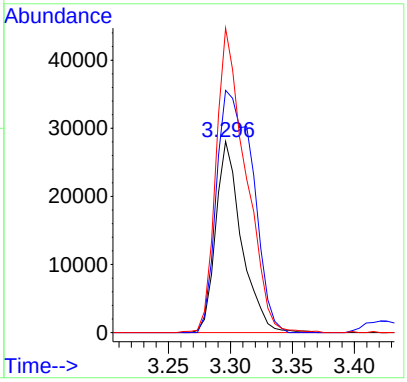


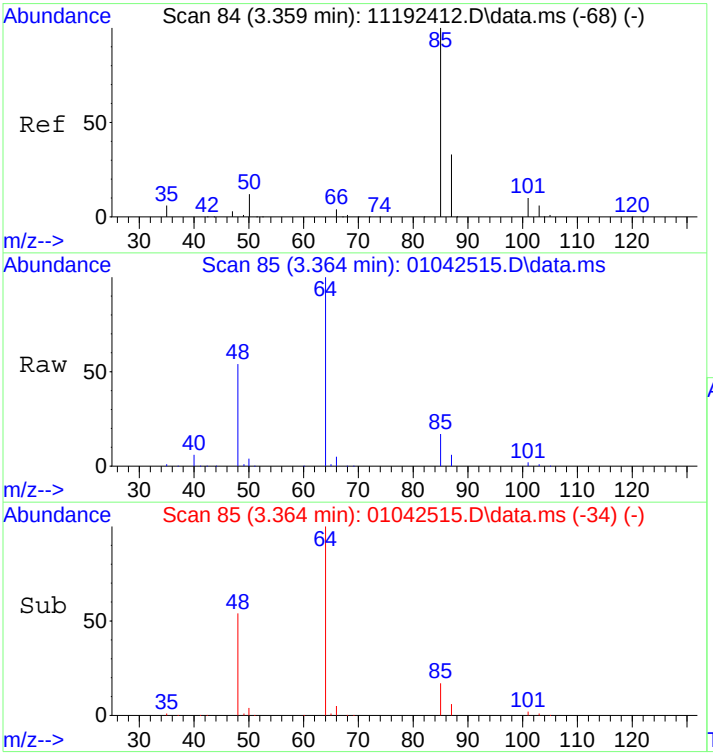


#2
Propene
Concen: 2.46 ng
RT: 3.30 min Scan# 73
Delta R.T. 0.042 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 42 Resp: 40782

Ion	Ratio	Lower	Upper
42	100		
39	177.0	95.4	135.4#
41	181.9	131.9	171.9#

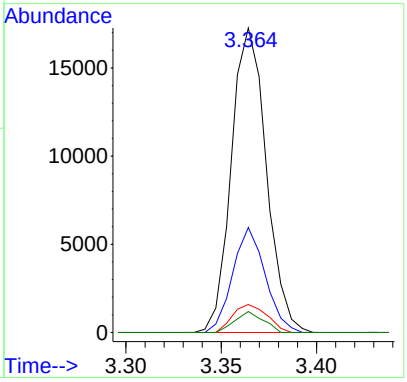


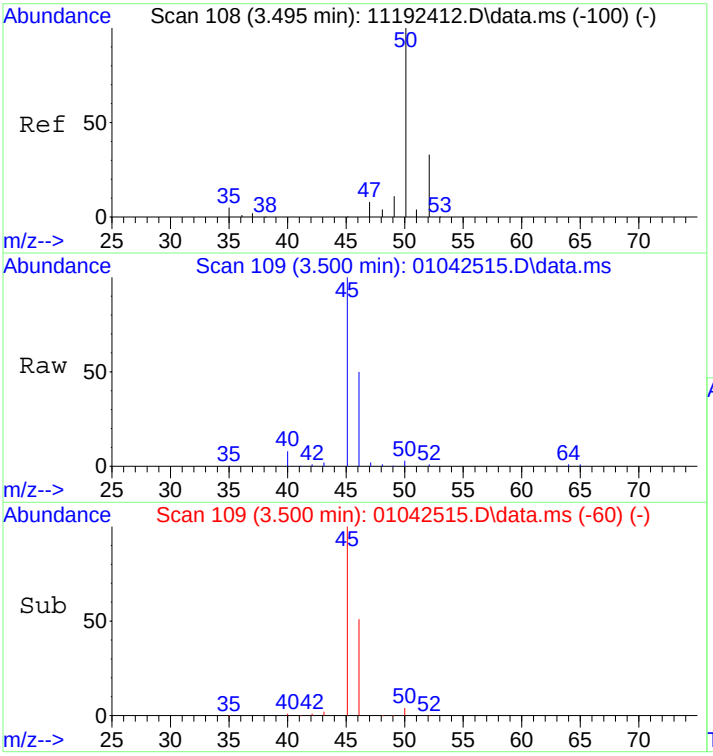


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.73 ng
RT: 3.36 min Scan# 85
Delta R.T. 0.037 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 85 Resp: 21999

Ion	Ratio	Lower	Upper
85	100		
87	32.2	12.6	52.6
101	9.0	0.0	29.6
103	5.6	0.0	26.2

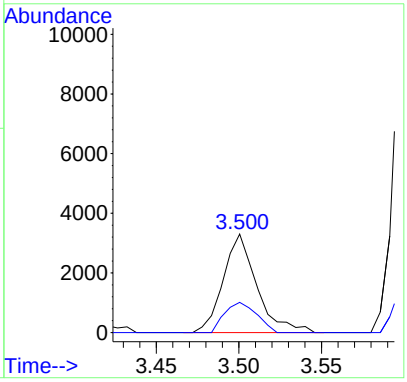


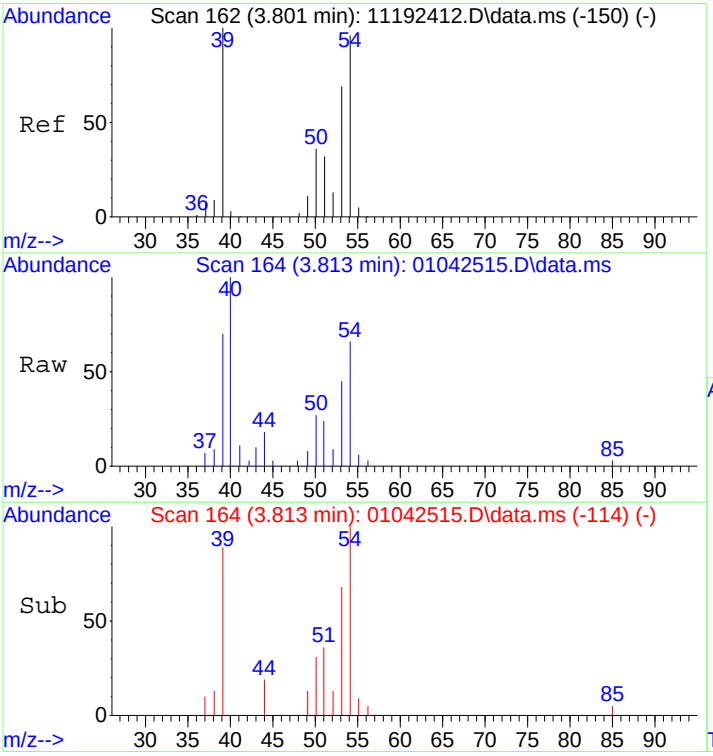


#4
Chloromethane
Concen: 0.21 ng
RT: 3.50 min Scan# 109
Delta R.T. 0.027 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 50 Resp: 4664

Ion	Ratio	Lower	Upper
50	100		
52	29.4	13.0	53.0

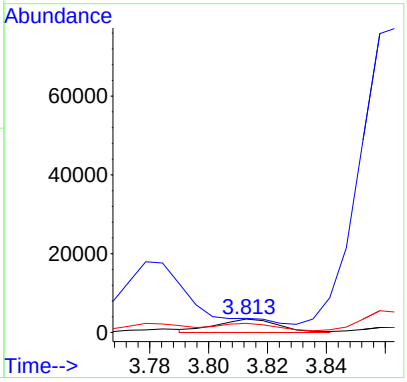


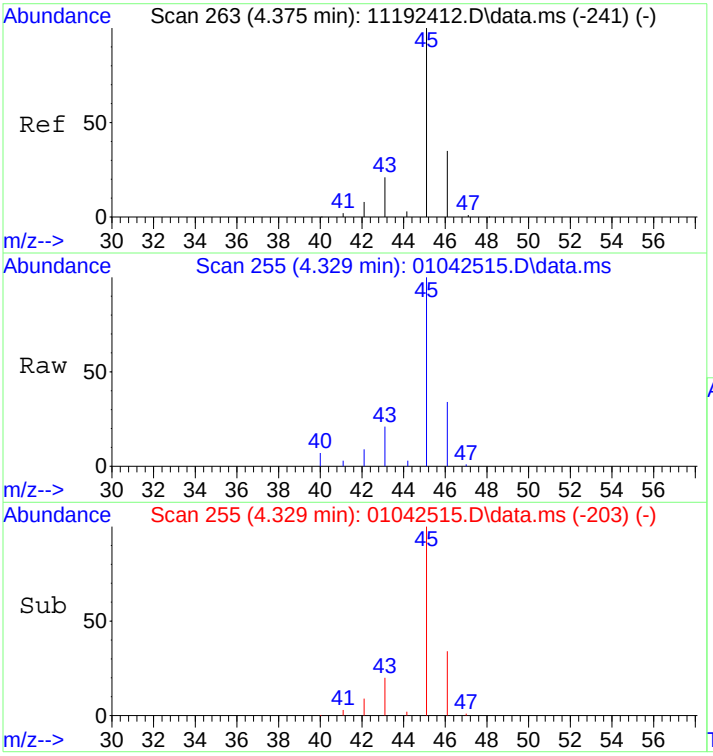


#7
1,3-Butadiene
Concen: 0.44 ng m
RT: 3.81 min Scan# 164
Delta R.T. 0.036 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 54 Resp: 4976

Ion	Ratio	Lower	Upper
54	100		
39	102.1	83.2	123.2
53	70.5	50.9	90.9

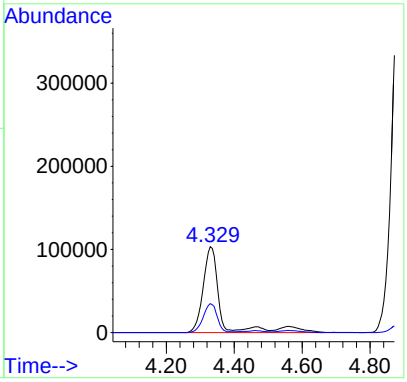


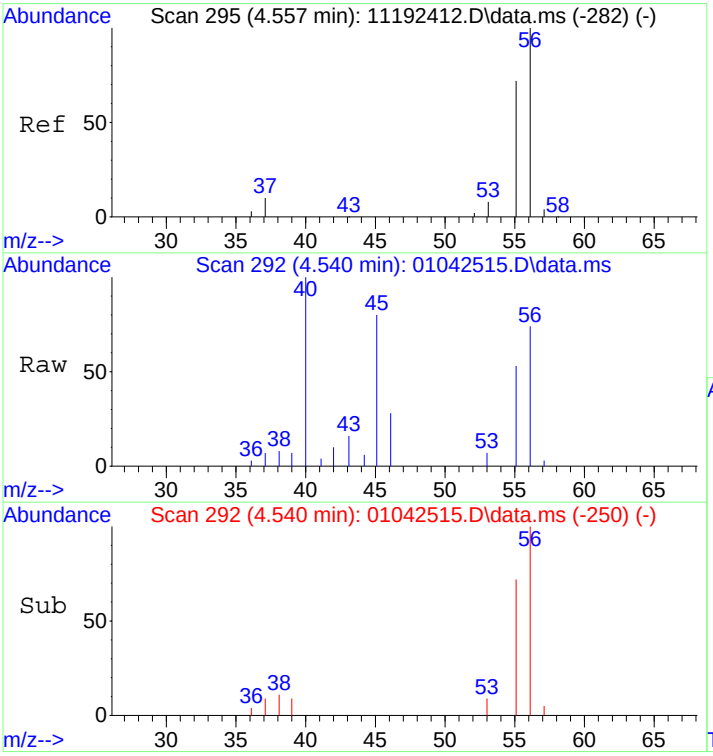


#10
Ethanol
Concen: 31.37 ng
RT: 4.33 min Scan# 255
Delta R.T. 0.045 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 45 Resp: 359949

Ion	Ratio	Lower	Upper
45	100		
46	33.5	11.8	51.8

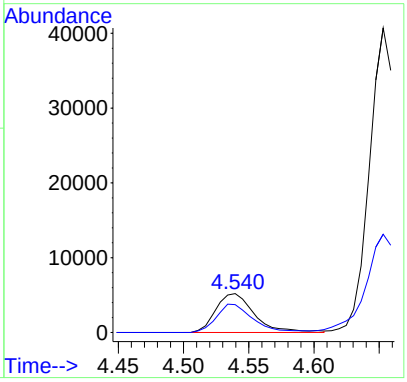


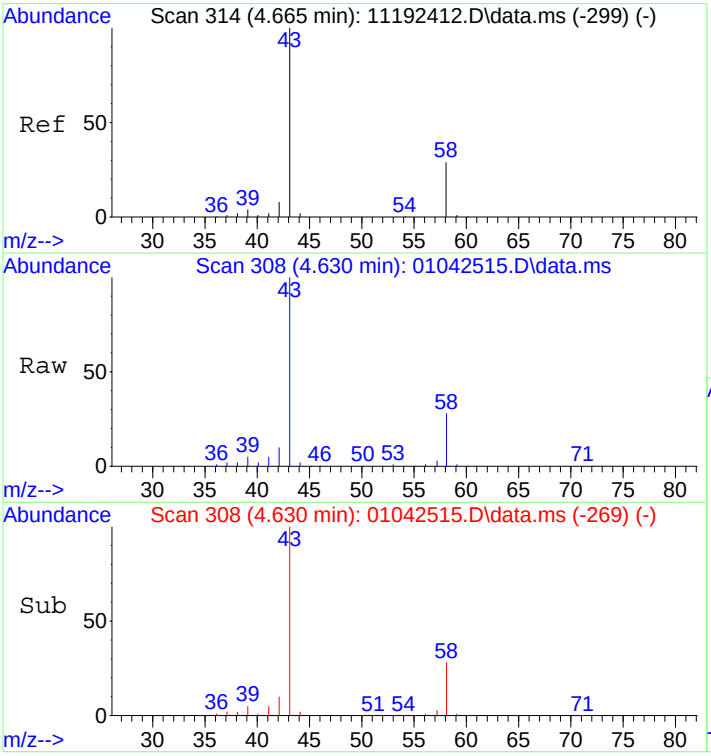


#12
Acrolein
Concen: 1.09 ng
RT: 4.54 min Scan# 292
Delta R.T. -0.014 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 56 Resp: 10726

Ion	Ratio	Lower	Upper
56	100		
55	69.9	53.1	93.1

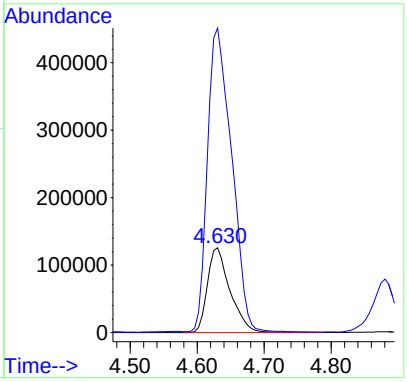


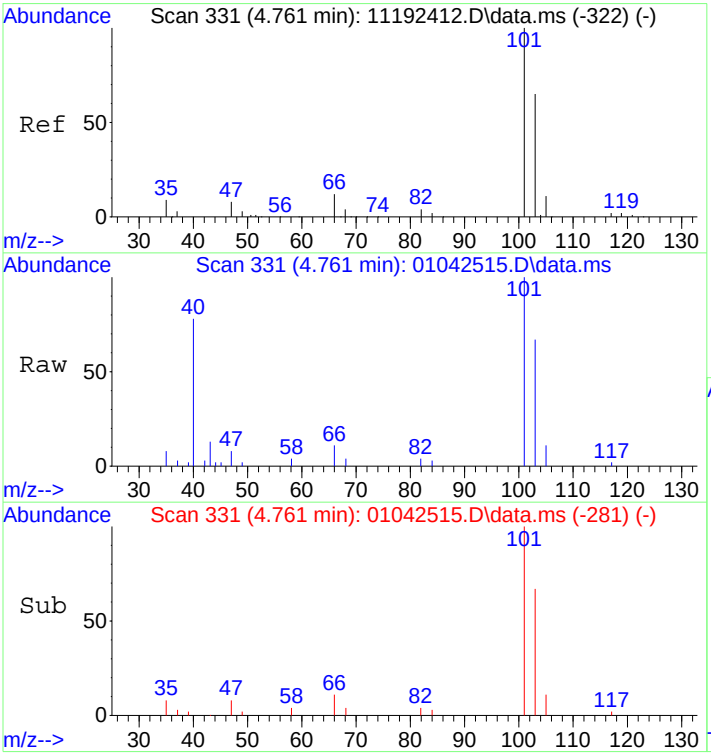


#13
Acetone
Concen: 28.26 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 58 Resp: 295196

Ion	Ratio	Lower	Upper
58	100		
43	383.0	312.5	372.5#

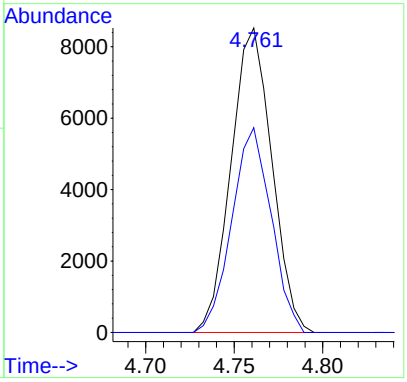


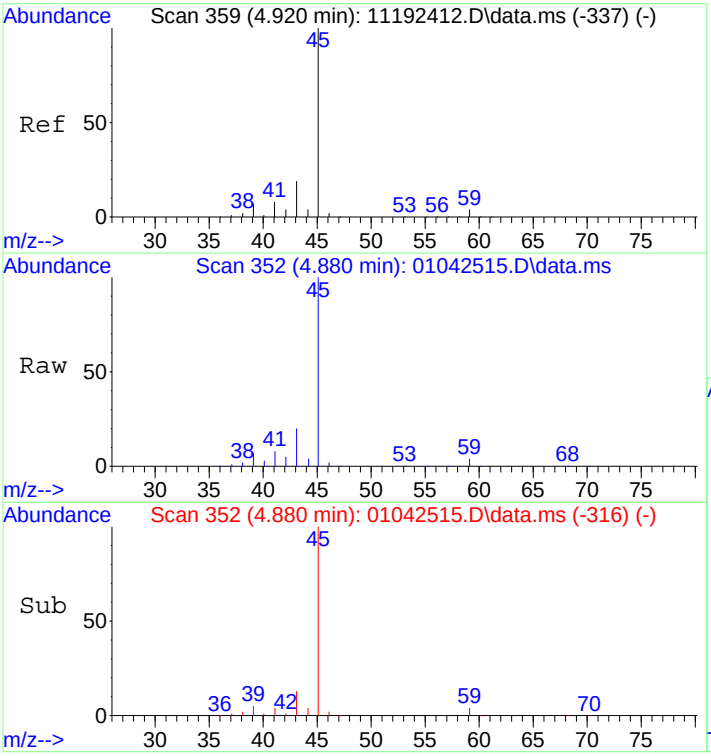


#14
Trichlorofluoromethane
Concen: 0.48 ng
RT: 4.76 min Scan# 331
Delta R.T. 0.033 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:101 Resp: 13679

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

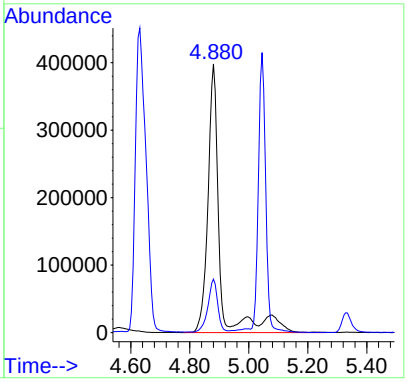


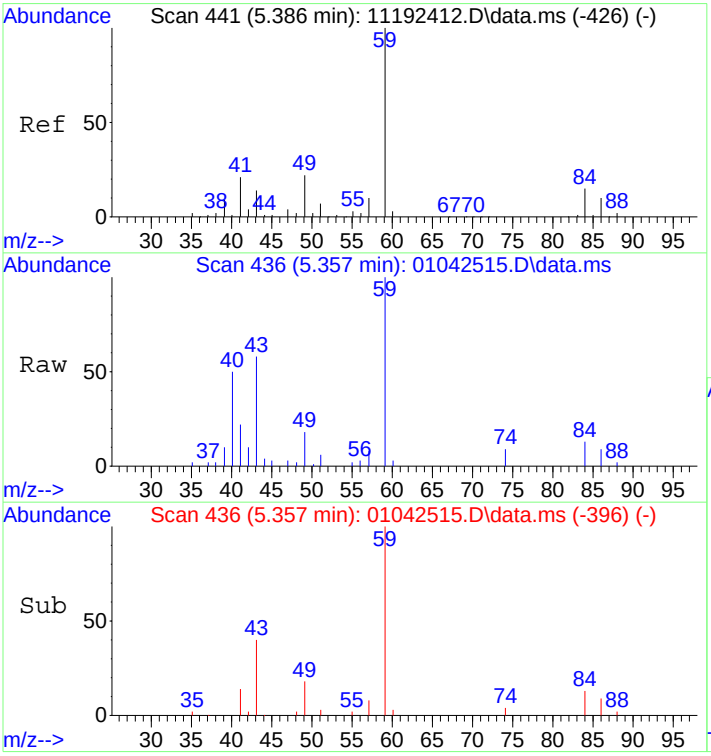


#15
2-Propanol (Isopropanol)
Concen: 29.34 ng
RT: 4.88 min Scan# 352
Delta R.T. -0.044 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 45 Resp: 1097709

Ion	Ratio	Lower	Upper
45	100		
43	17.8	0.2	40.2

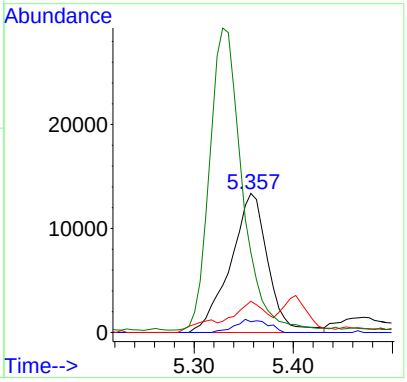


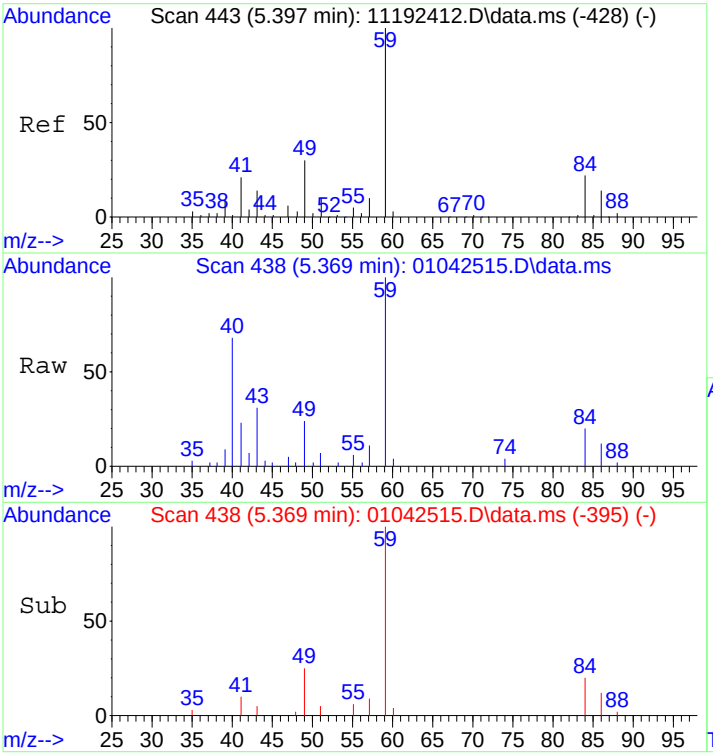


#18
2-Methyl-2-Propanol (tert-Butyl Alcohol
Concen: 1.17 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.023 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 59 Resp: 35172

Ion	Ratio	Lower	Upper
59	100		
57	8.0	0.0	29.9
41	0.0	0.0	39.4
43	194.4	0.0	34.5#

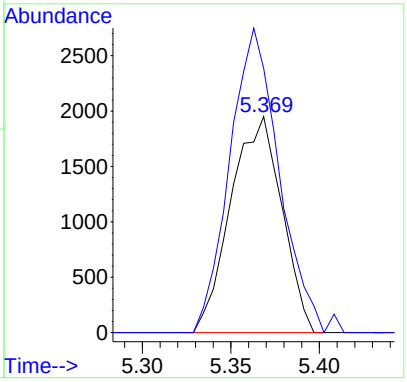


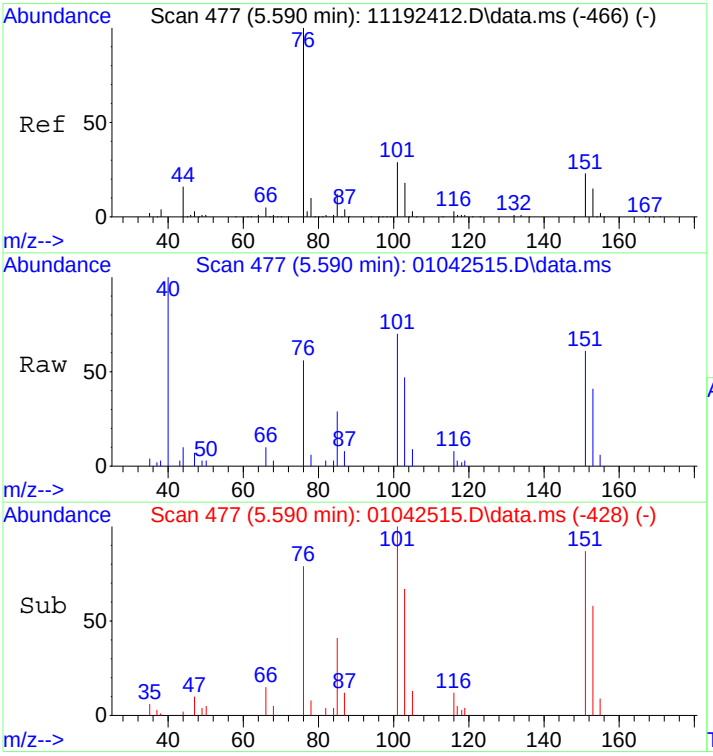


#19
Methylene Chloride
Concen: 0.27 ng
RT: 5.37 min Scan# 438
Delta R.T. -0.006 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 84 Resp: 3913

Ion	Ratio	Lower	Upper
84	100		
49	137.6	116.0	166.0

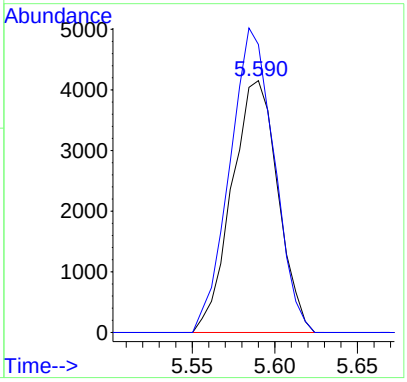


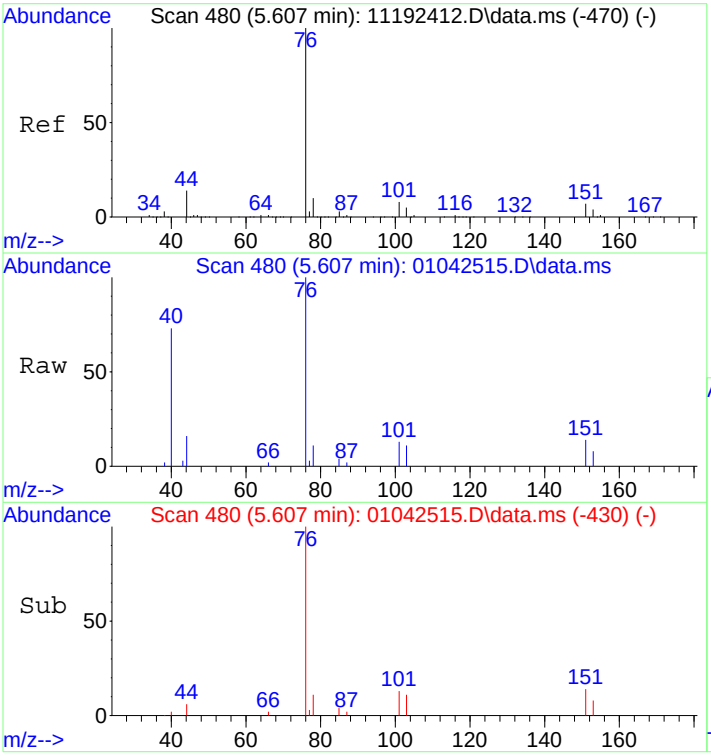


#21
Trichlorotrifluoroethane
Concen: 0.63 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:151 Resp: 8073

Ion	Ratio	Lower	Upper
151	100		
101	116.4	105.0	145.0

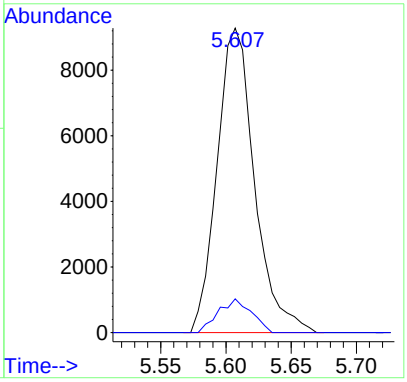


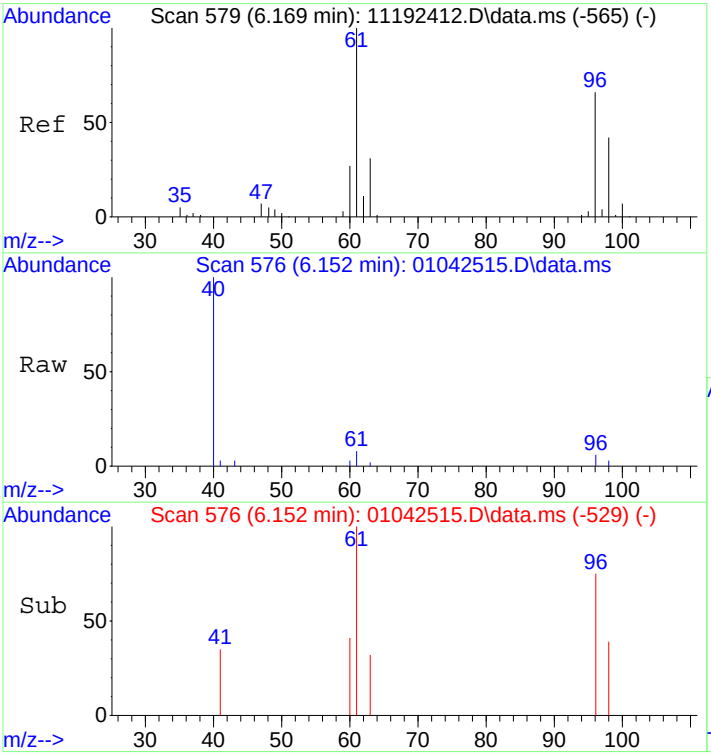


#22
Carbon Disulfide
Concen: 0.39 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.035 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 76 Resp: 18542

Ion	Ratio	Lower	Upper
76	100		
78	9.8	0.0	29.6

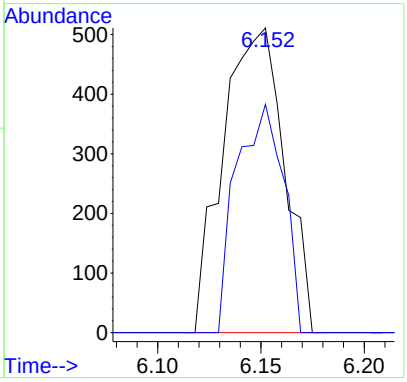


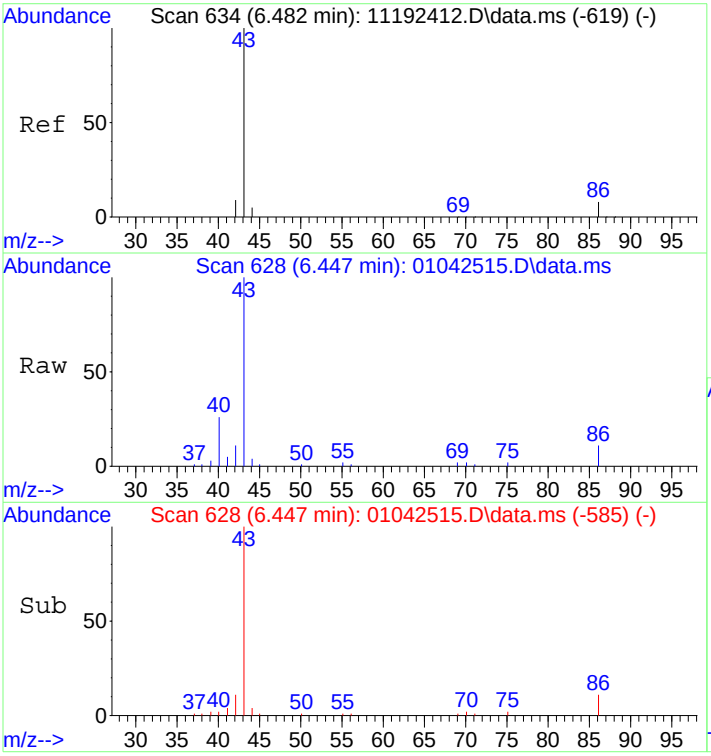


#23
trans-1,2-Dichloroethene
Concen: 0.05 ng
RT: 6.15 min Scan# 576
Delta R.T. 0.018 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 61 Resp: 1055

Ion	Ratio	Lower	Upper
61	100		
96	57.6	47.2	87.2

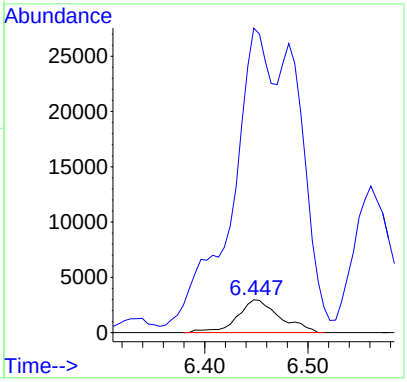


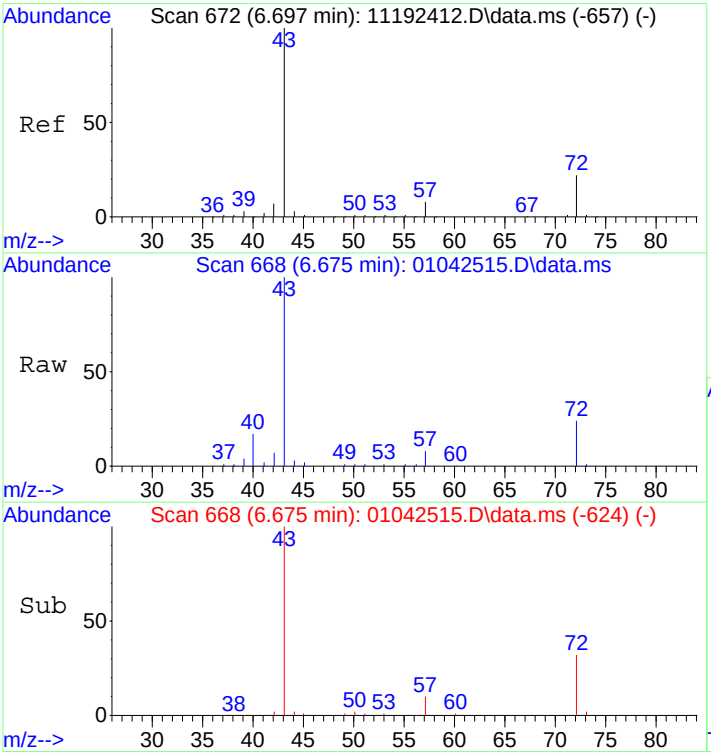


#26
Vinyl Acetate
Concen: 3.34 ng
RT: 6.45 min Scan# 628
Delta R.T. -0.007 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 86 Resp: 8434

Ion	Ratio	Lower	Upper
86	100		
43	1410.6	1331.6	1371.6#

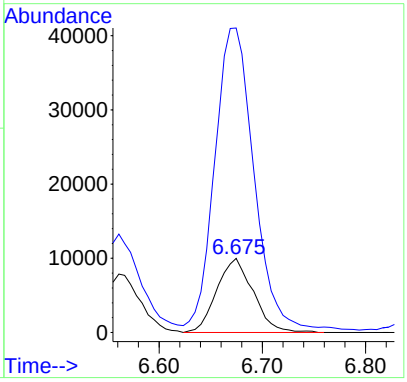


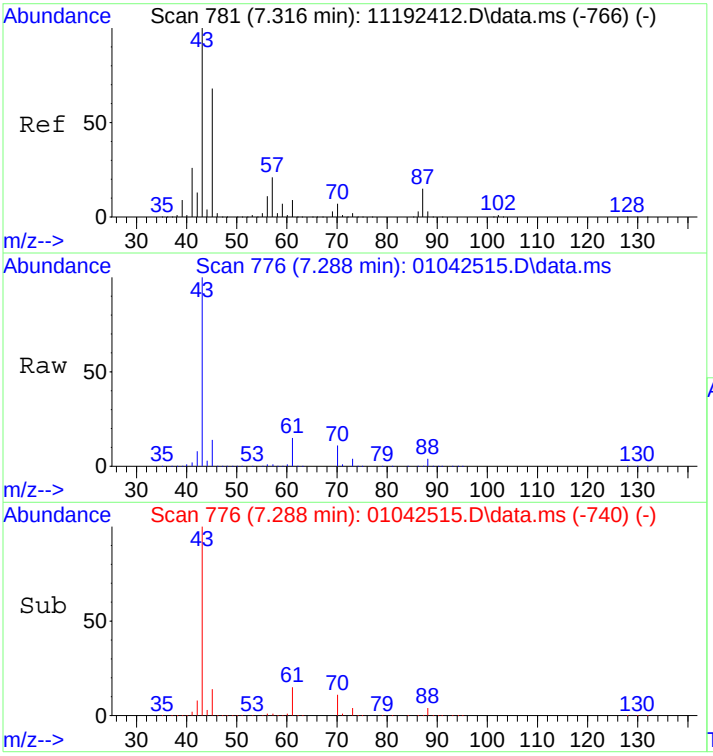


#27
2-Butanone (MEK)
Concen: 2.92 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.000 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 72 Resp: 24537

Ion	Ratio	Lower	Upper
72	100		
43	436.8	439.8	479.8#

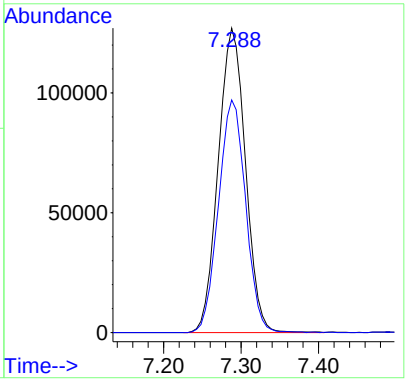


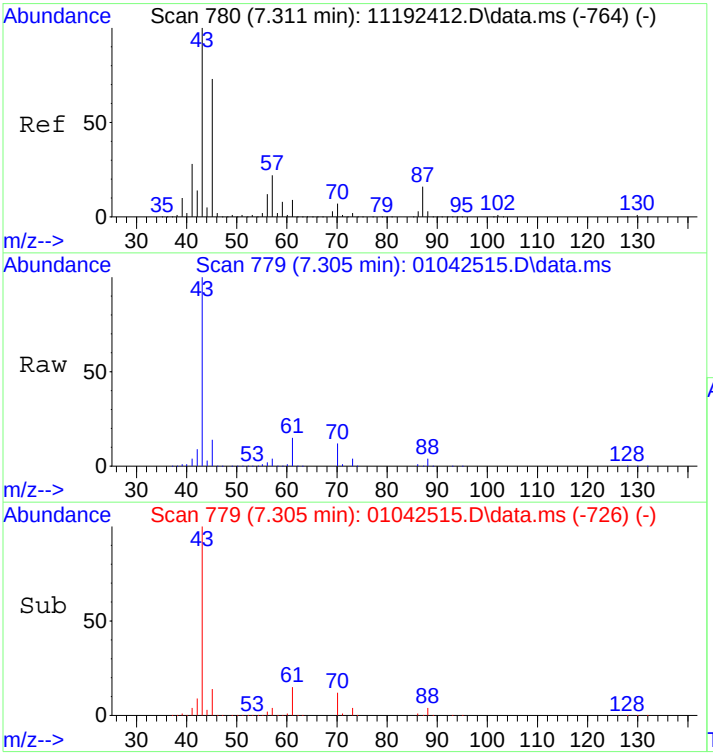


#30
Ethyl Acetate
Concen: 59.84 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 61 Resp: 309973

Ion	Ratio	Lower	Upper
61	100		
70	76.2	57.3	97.3

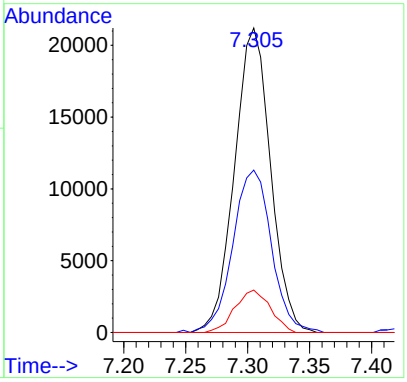


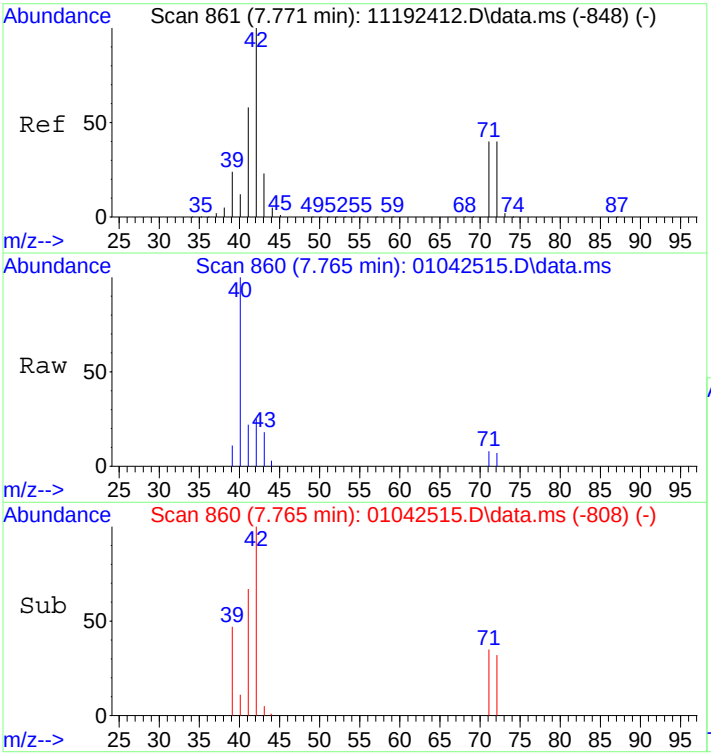


#31
n-Hexane
Concen: 1.85 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 57 Resp: 43046

Ion	Ratio	Lower	Upper
57	100		
56	57.2	43.4	65.0
86	13.7	10.9	16.3

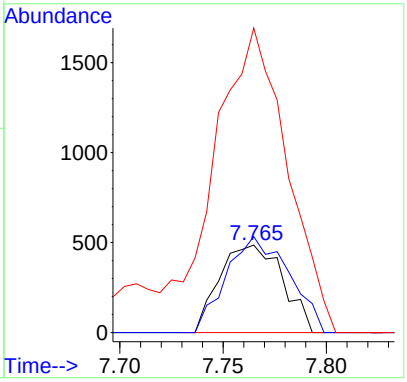


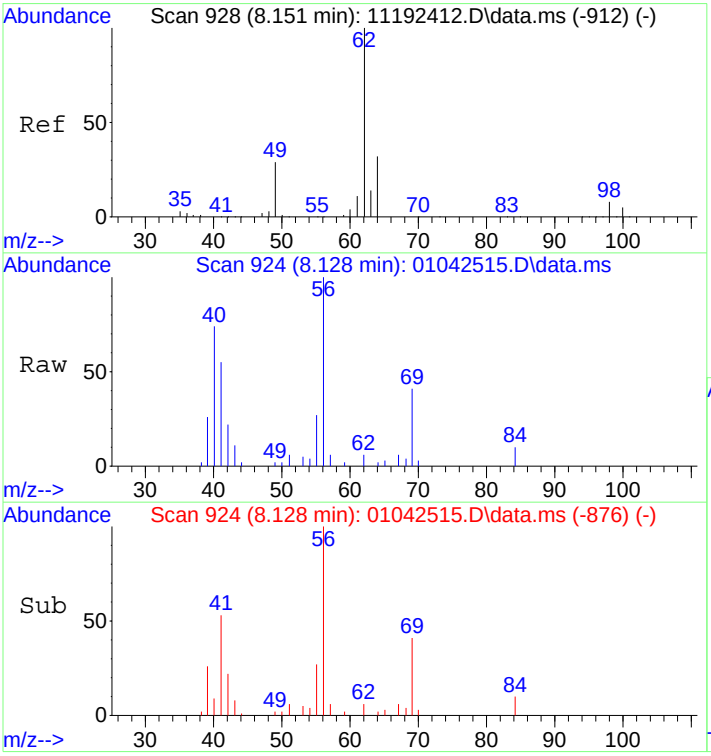


#34
Tetrahydrofuran (THF)
Concen: 0.13 ng
RT: 7.76 min Scan# 860
Delta R.T. 0.044 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 72 Resp: 1034

Ion	Ratio	Lower	Upper
72	100		
71	109.2	78.6	118.6
42	402.0	243.4	283.4#

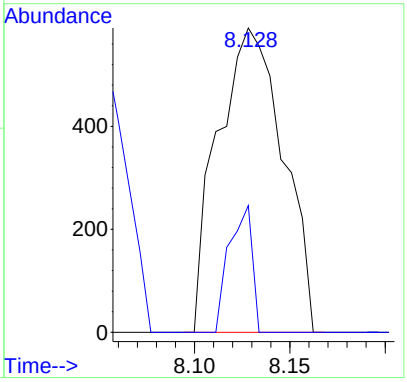


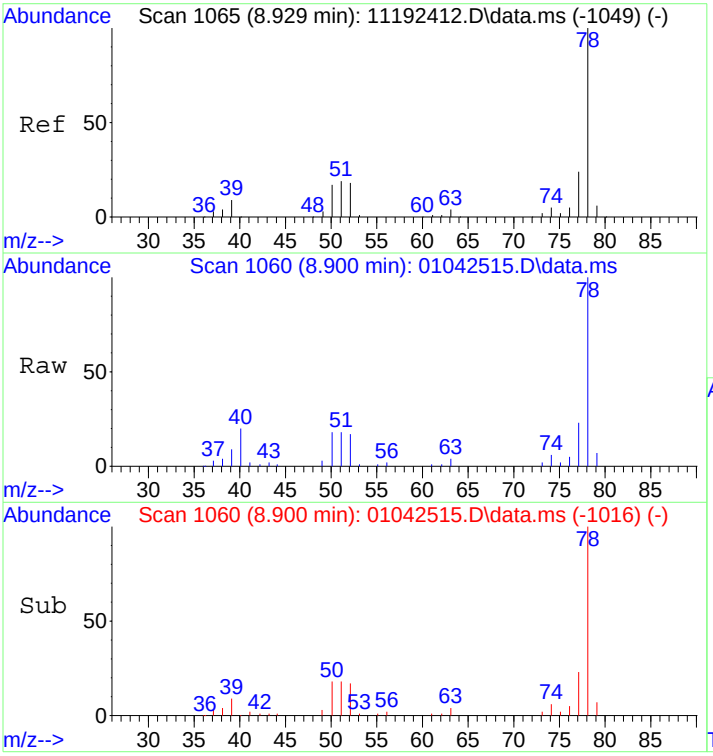


#36
1,2-Dichloroethane
Concen: 0.07 ng
RT: 8.13 min Scan# 924
Delta R.T. 0.025 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 62 Resp: 1411

Ion	Ratio	Lower	Upper
62	100		
64	14.7	12.0	52.0

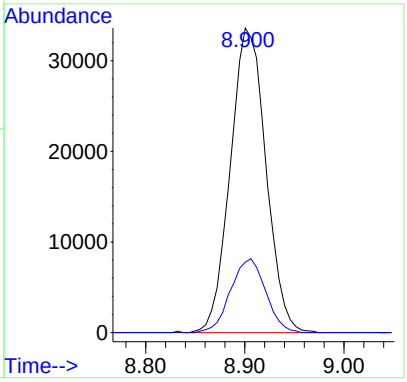


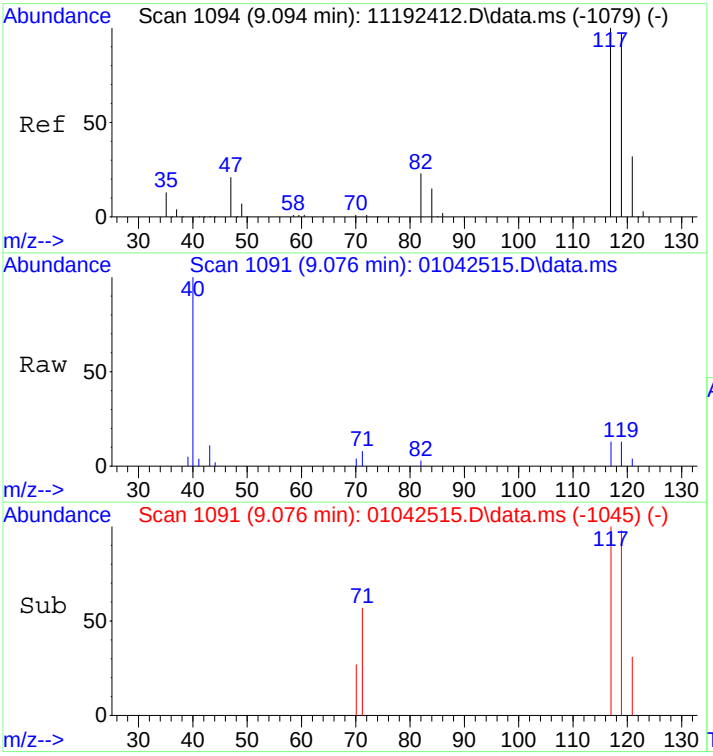


#41
Benzene
Concen: 1.58 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 78 Resp: 83887

Ion	Ratio	Lower	Upper
78	100		
77	23.8	3.7	43.7

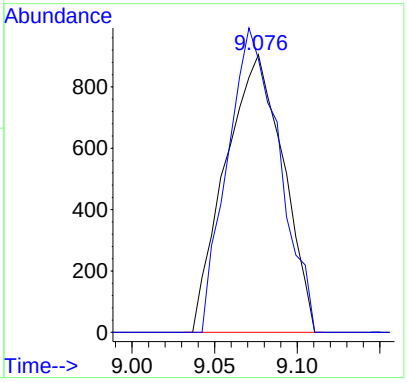


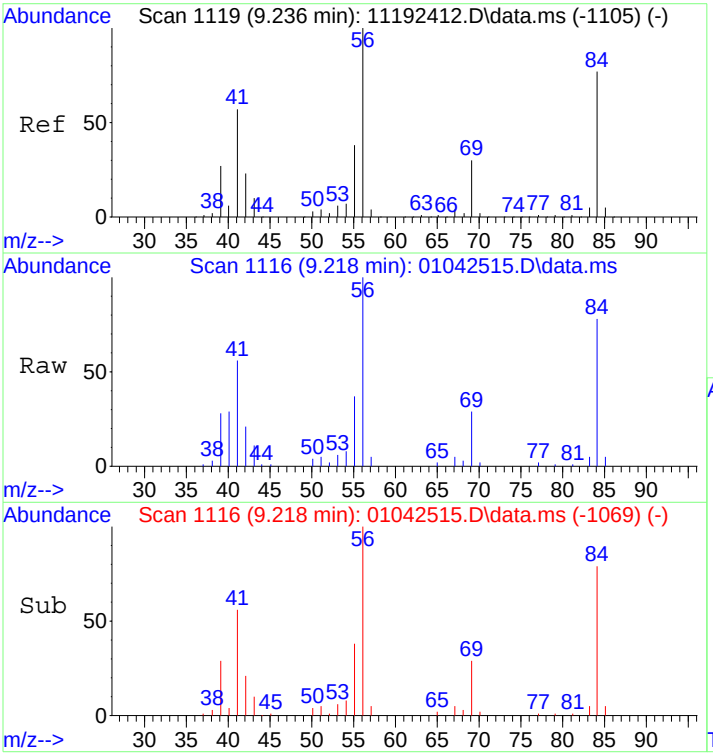


#42
Carbon Tetrachloride
Concen: 0.10 ng
RT: 9.08 min Scan# 1091
Delta R.T. 0.009 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:117 Resp: 2212

Ion	Ratio	Lower	Upper
117	100		
119	97.4	75.7	115.7

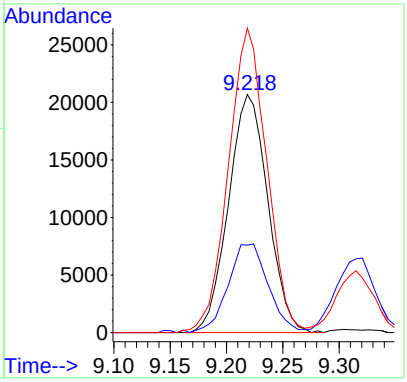


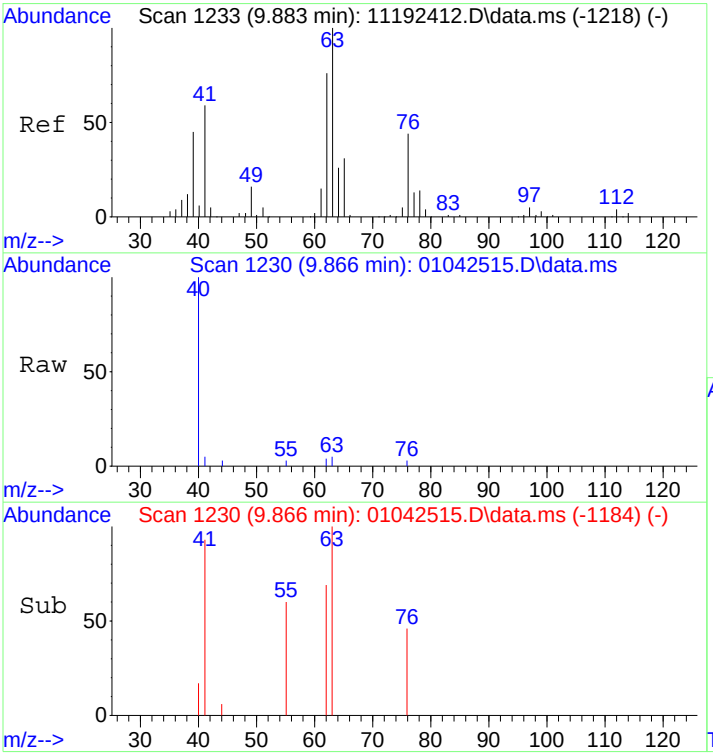


#43
Cyclohexane
Concen: 2.72 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 84 Resp: 50338

Ion	Ratio	Lower	Upper
84	100		
69	38.1	18.3	58.3
56	124.7	110.7	150.7

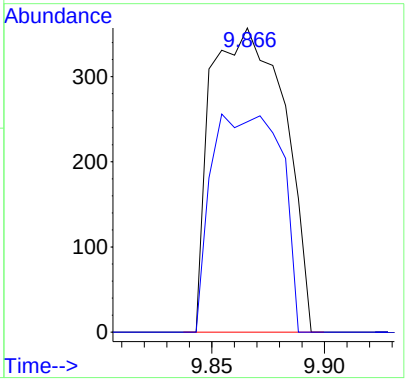


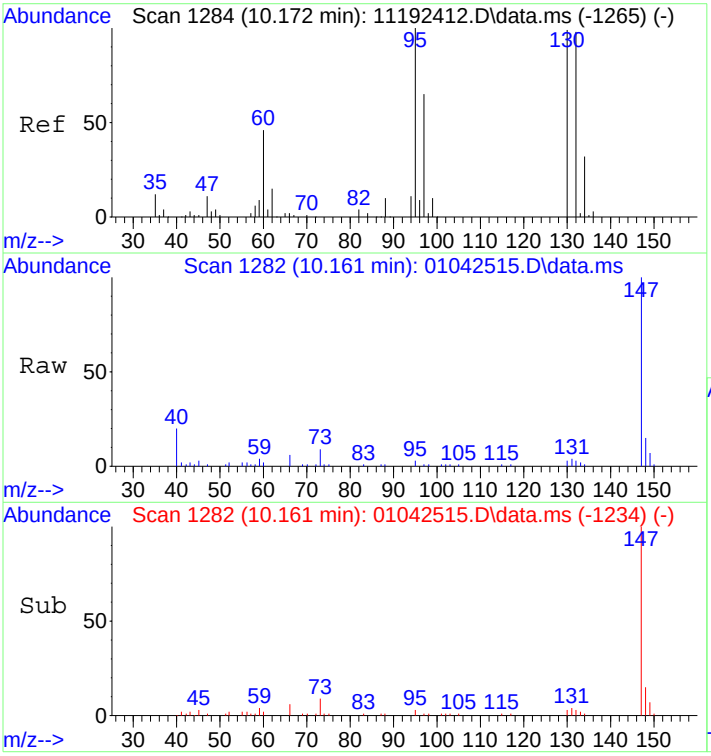


#45
1,2-Dichloropropane
Concen: 0.06 ng
RT: 9.87 min Scan# 1230
Delta R.T. 0.014 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 63 Resp: 810

Ion	Ratio	Lower	Upper
63	100		
62	68.0	55.9	95.9

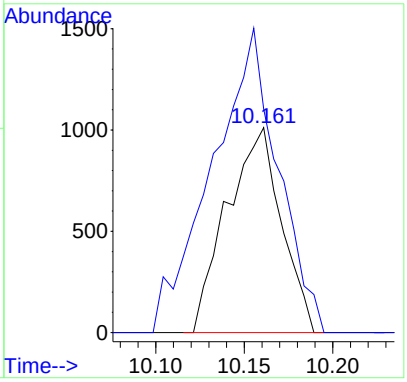


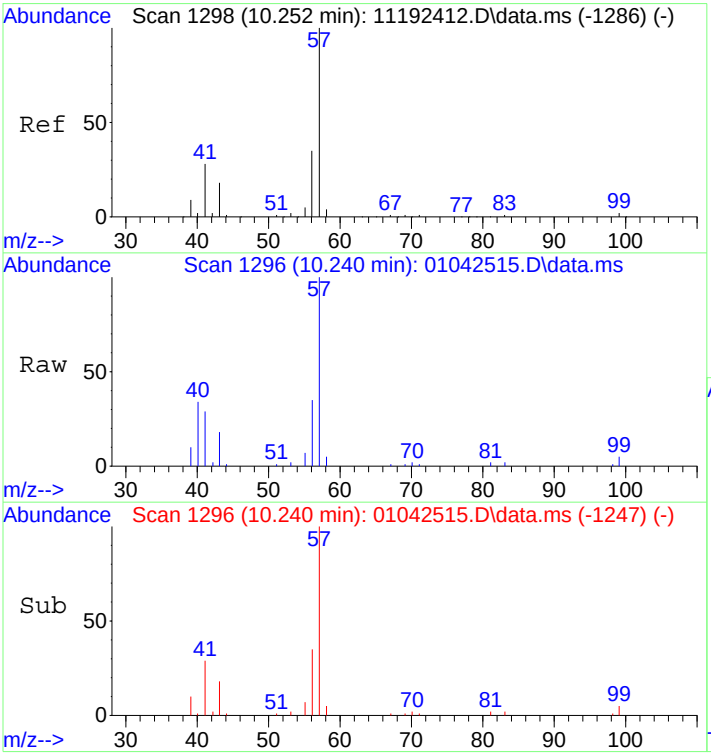


#47
Trichloroethene
Concen: 0.14 ng
RT: 10.16 min Scan# 1282
Delta R.T. 0.021 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:130 Resp: 2163

Ion	Ratio	Lower	Upper
130	100		
132	180.1	79.3	119.3#

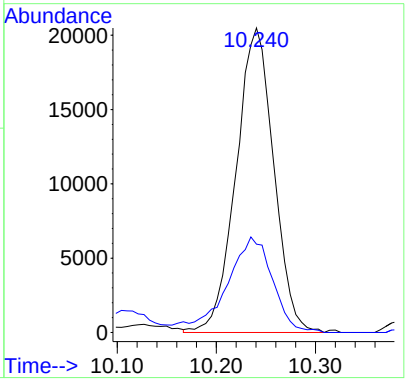


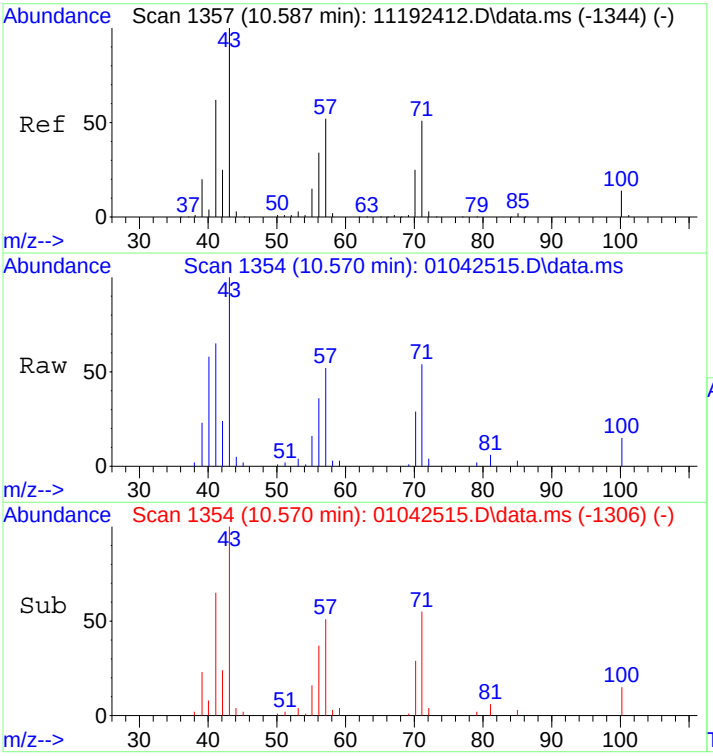


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.98 ng
RT: 10.24 min Scan# 1296
Delta R.T. 0.027 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 57 Resp: 54148

Ion	Ratio	Lower	Upper
57	100		
41	38.3	8.3	48.3

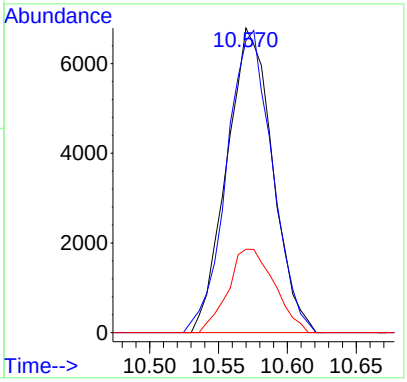


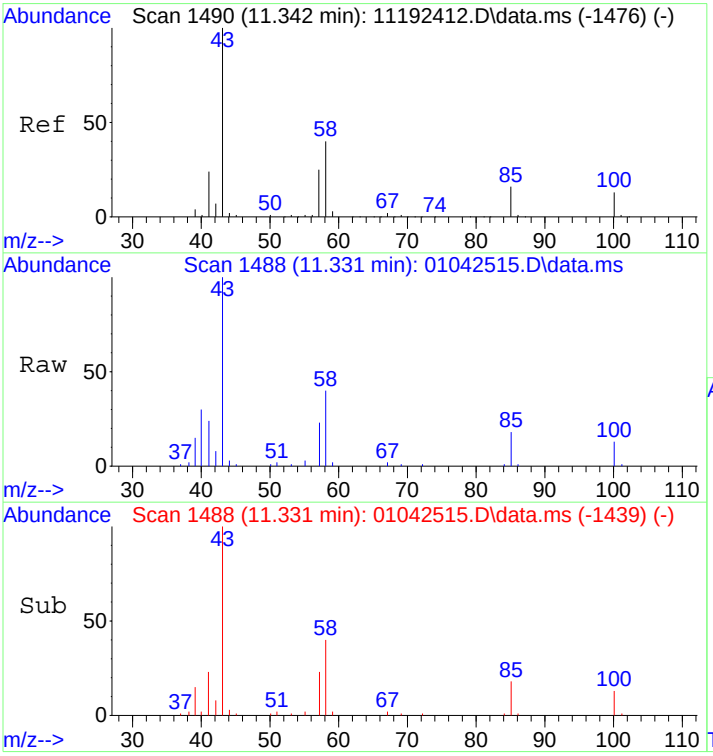


#51
n-Heptane
Concen: 1.33 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 71 Resp: 15710

Ion	Ratio	Lower	Upper
71	100		
57	98.7	83.3	123.3
100	27.7	8.7	48.7

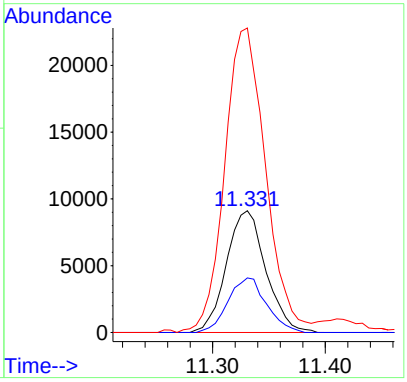


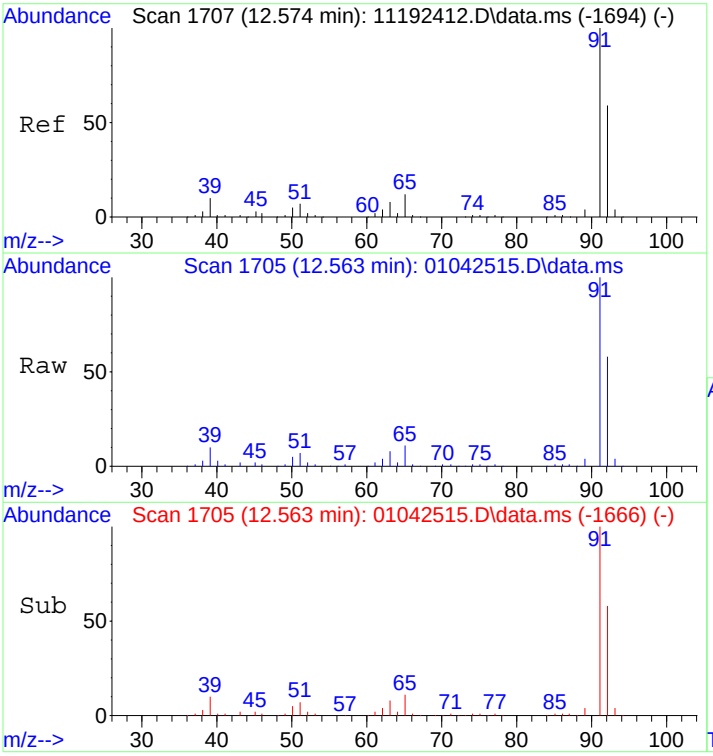


#53
4-Methyl-2-pentanone
Concen: 1.95 ng
RT: 11.33 min Scan# 1488
Delta R.T. 0.027 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 58 Resp: 22263

Ion	Ratio	Lower	Upper
58	100		
85	43.5	33.8	50.6
43	258.5	199.5	299.3

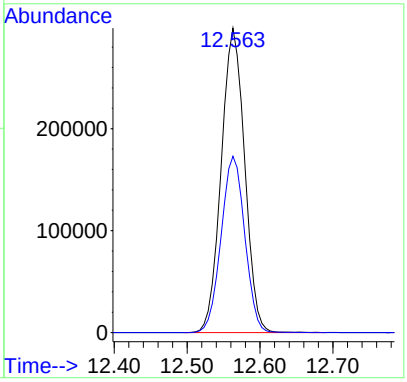


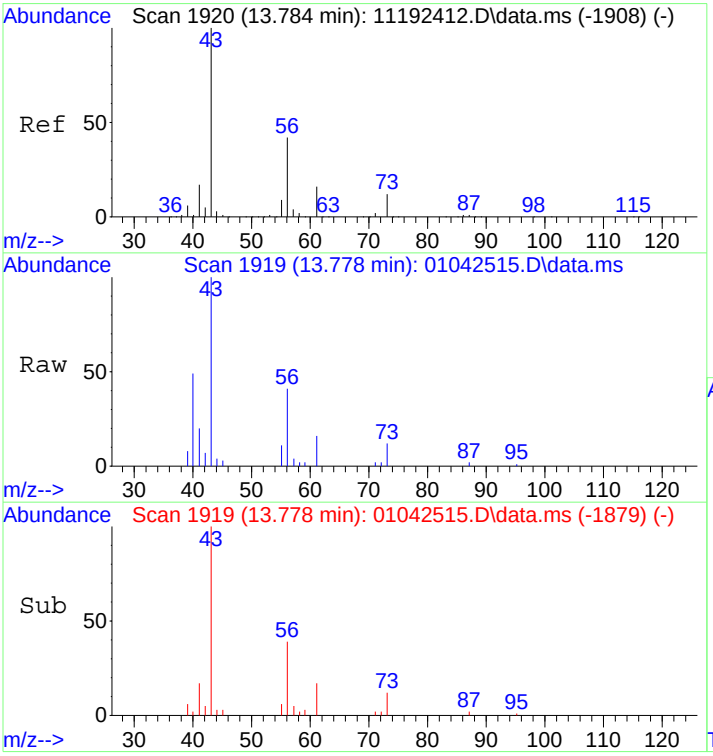


#58
Toluene
Concen: 13.17 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 91 Resp: 666328

Ion	Ratio	Lower	Upper
91	100		
92	58.5	39.2	79.2

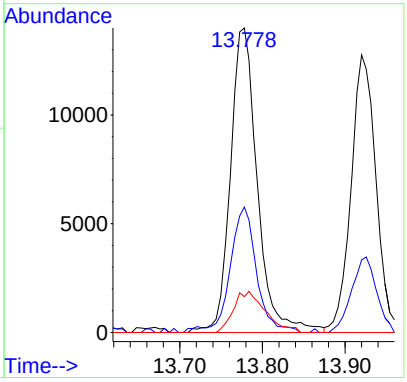


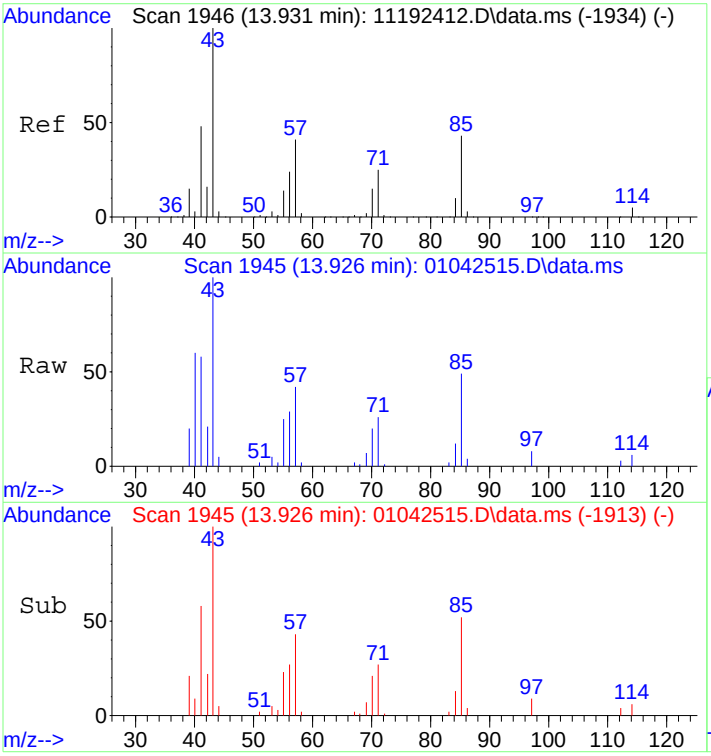


#62
n-Butyl Acetate
Concen: 1.15 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 43 Resp: 31769

Ion	Ratio	Lower	Upper
43	100		
56	39.5	20.9	60.9
73	15.9	0.0	32.0

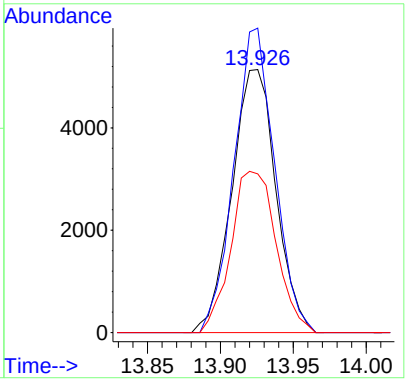


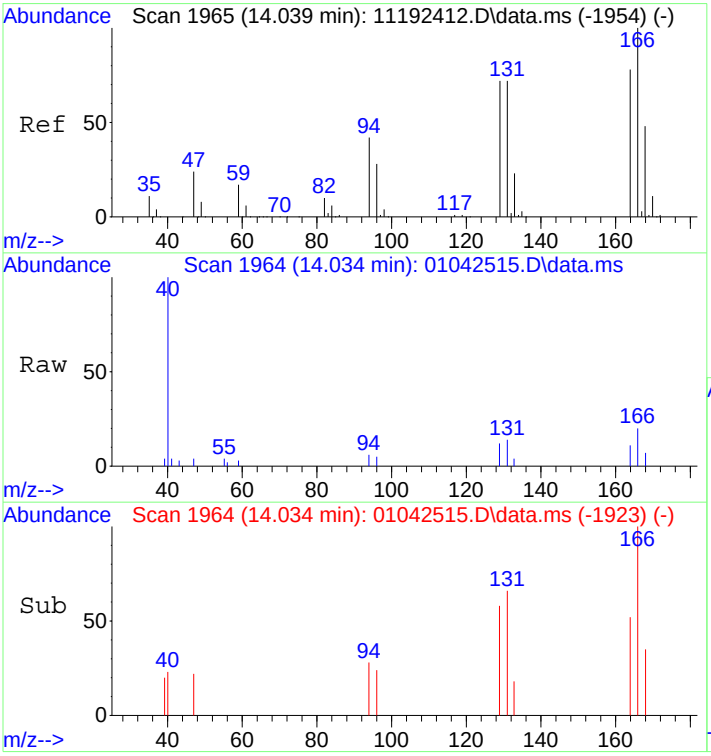


#63
n-Octane
Concen: 1.03 ng
RT: 13.93 min Scan# 1945
Delta R.T. -0.017 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 57 Resp: 10812

Ion	Ratio	Lower	Upper
57	100		
85	106.5	83.6	125.4
71	62.7	49.0	73.4

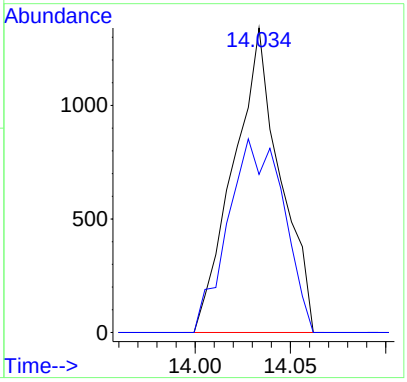


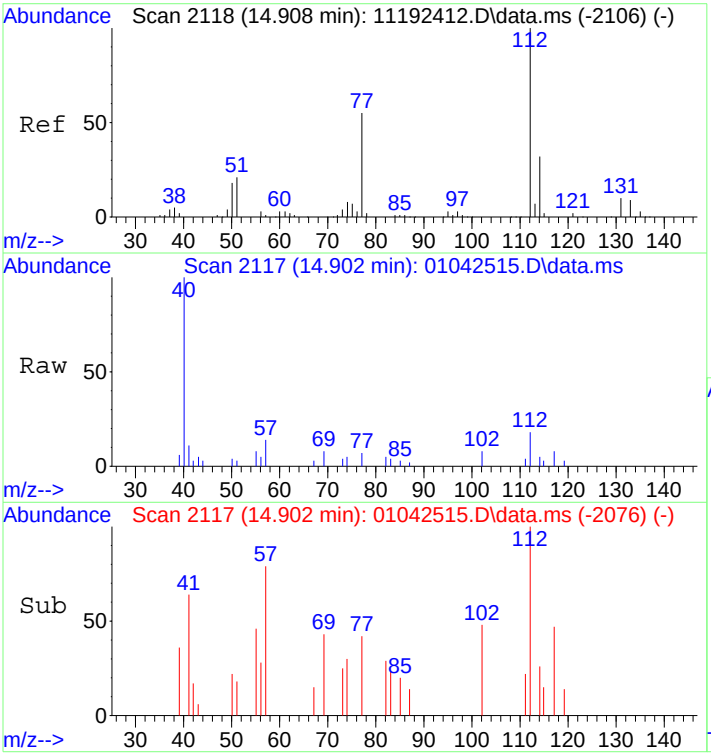


#64
Tetrachloroethene
Concen: 0.15 ng
RT: 14.03 min Scan# 1964
Delta R.T. -0.017 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:166 Resp: 2288

Ion	Ratio	Lower	Upper
166	100		
164	75.5	58.7	98.7

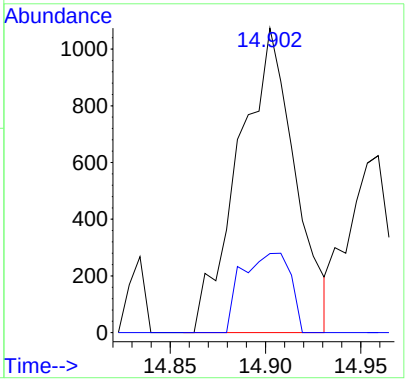


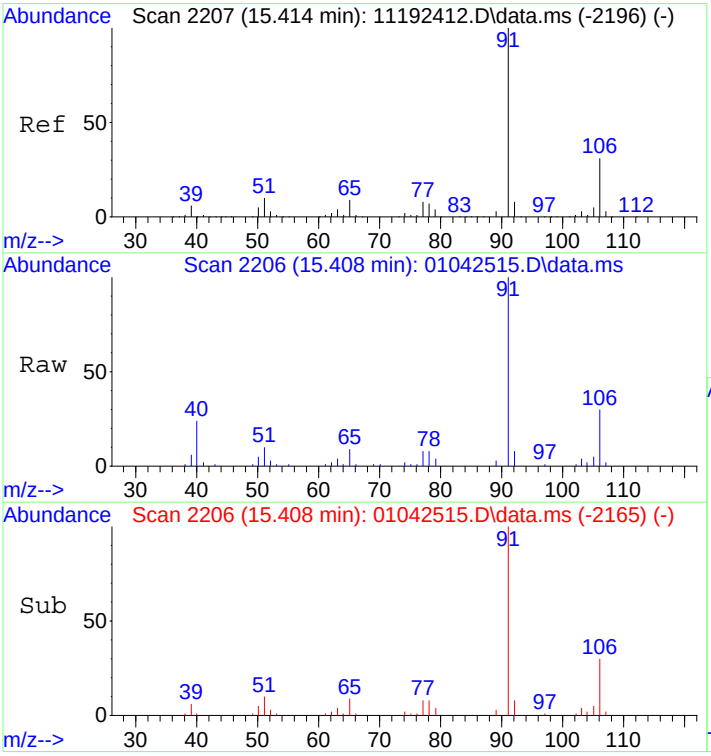


#65
Chlorobenzene
Concen: 0.06 ng
RT: 14.90 min Scan# 2117
Delta R.T. -0.017 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:112 Resp: 2201

Ion	Ratio	Lower	Upper
112	100		
114	22.5	12.1	52.1

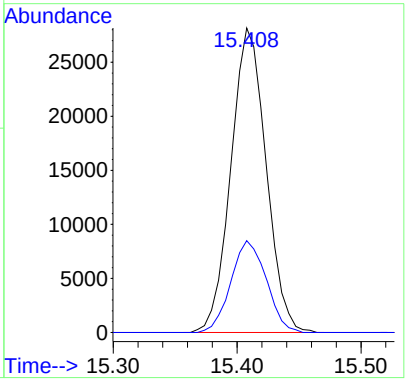


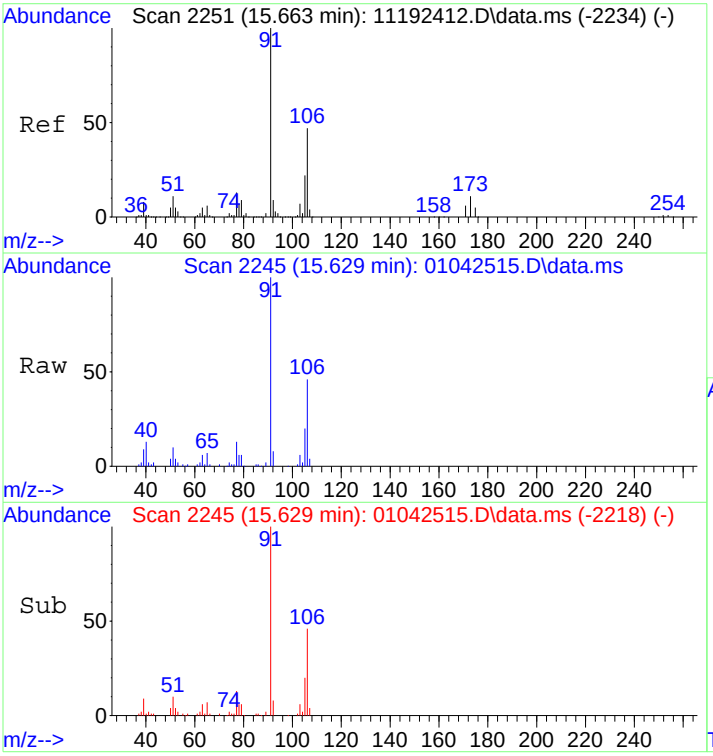


#66
Ethylbenzene
Concen: 0.99 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 91 Resp: 55605

Ion	Ratio	Lower	Upper
91	100		
106	30.4	10.7	50.7

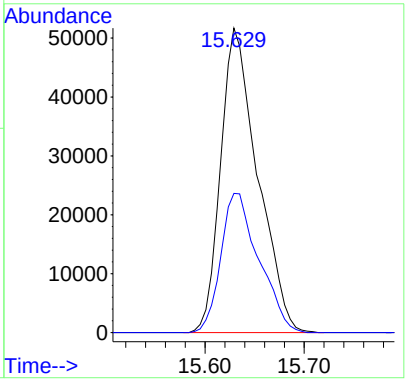


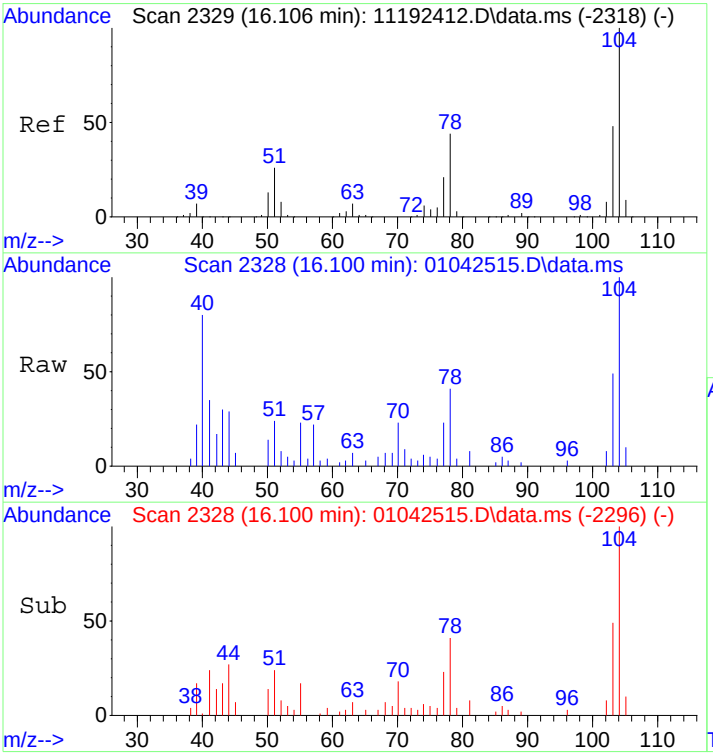


#67
m- & p-Xylenes
Concen: 2.93 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.046 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 91 Resp: 133971

Ion	Ratio	Lower	Upper
91	100		
106	47.0	27.1	67.1

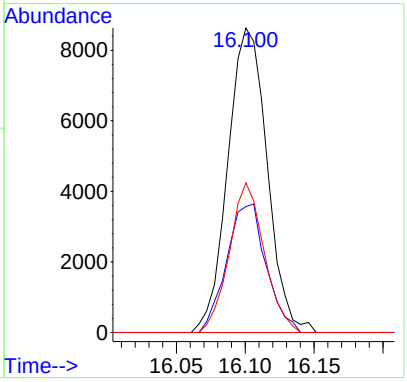


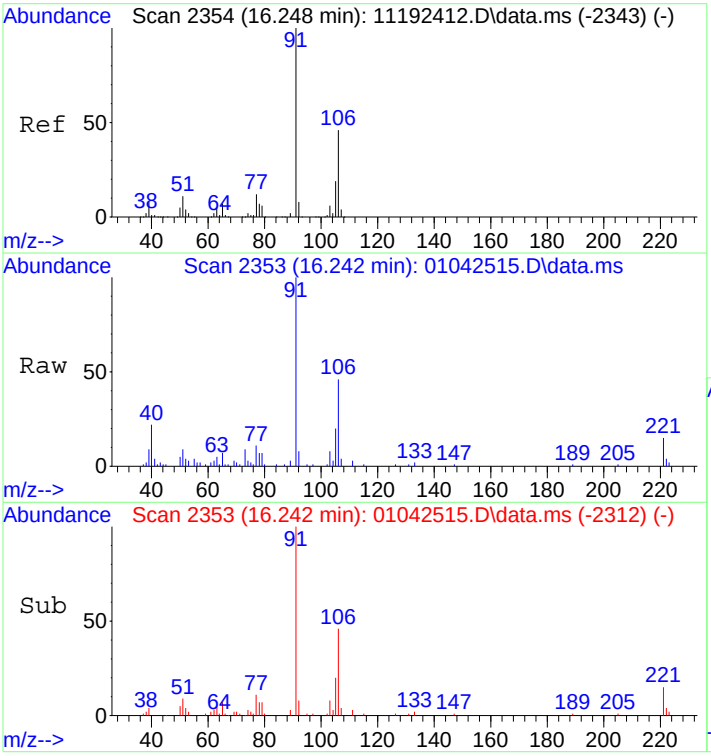


#69
Styrene
Concen: 0.54 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:104 Resp: 17172

Ion	Ratio	Lower	Upper
104	100		
78	42.4	23.0	63.0
103	43.6	27.5	67.5

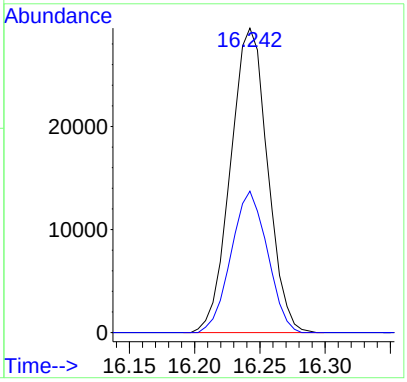


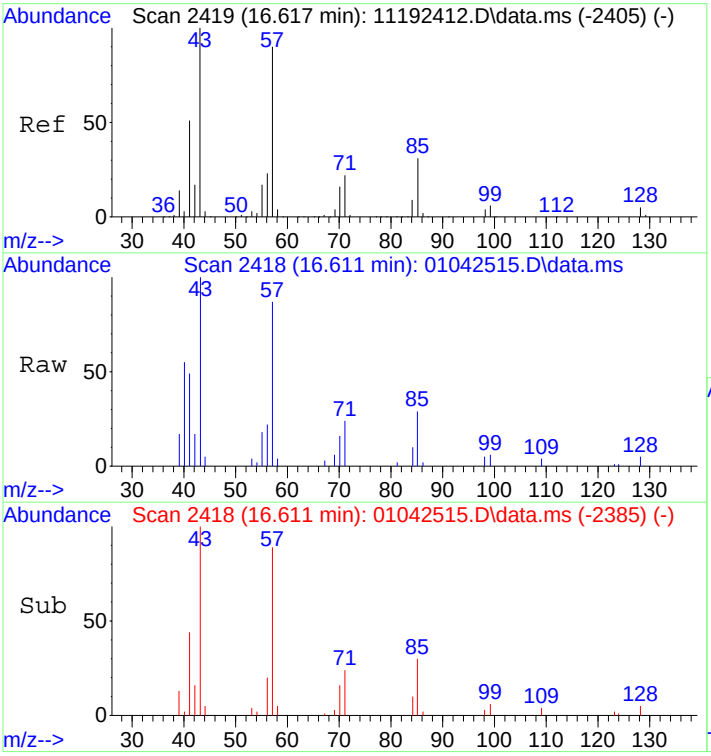


#70
o-Xylene
Concen: 1.28 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 91 Resp: 58211

Ion	Ratio	Lower	Upper
91	100		
106	45.7	25.8	65.8

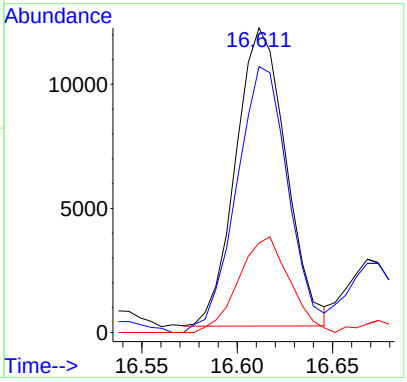


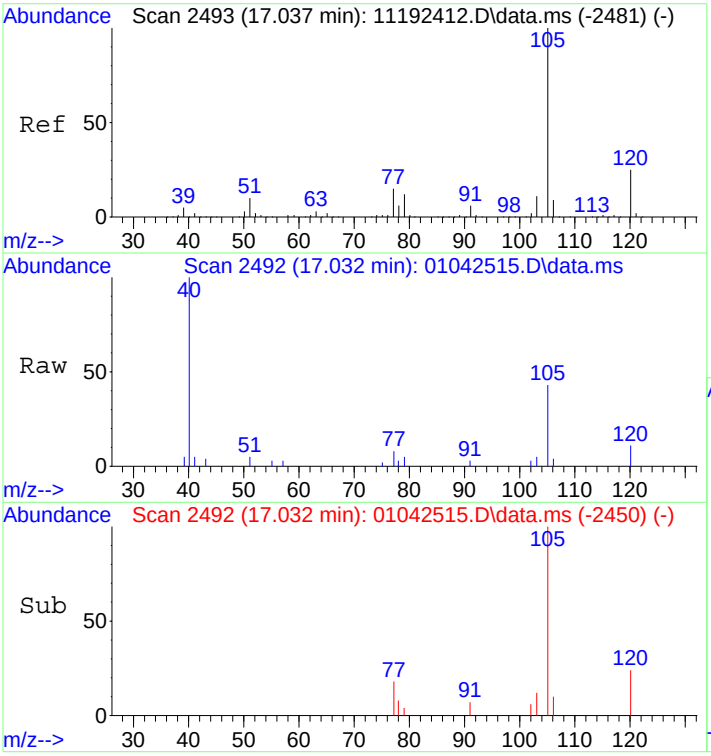


#71
n-Nonane
Concen: 0.92 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 43 Resp: 22044

Ion	Ratio	Lower	Upper
43	100		
57	91.9	69.4	109.4
85	32.2	10.5	50.5

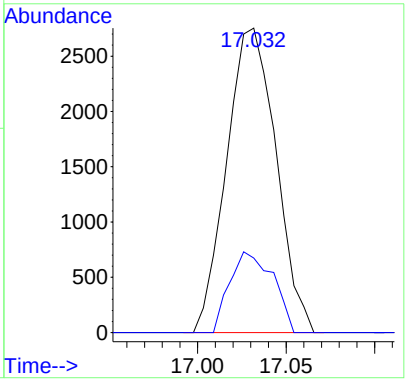


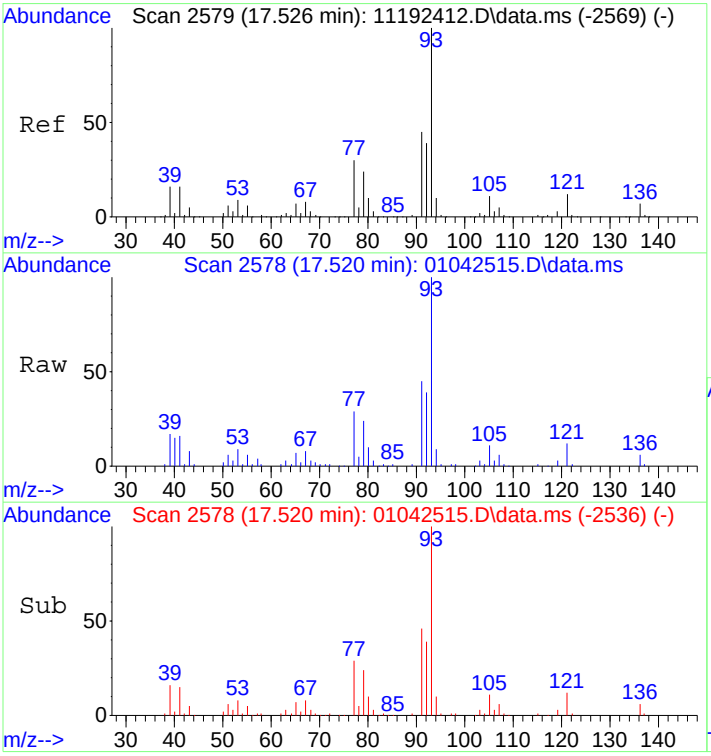


#74
Cumene
Concen: 0.09 ng
RT: 17.03 min Scan# 2492
Delta R.T. -0.011 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:105 Resp: 5341

Ion	Ratio	Lower	Upper
105	100		
120	23.3	5.3	45.3

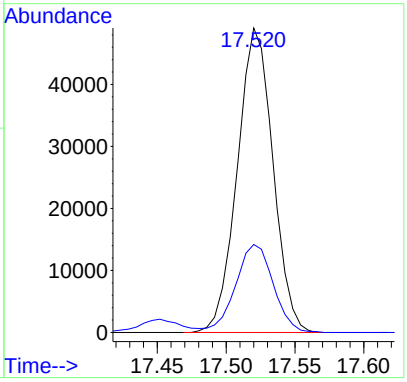


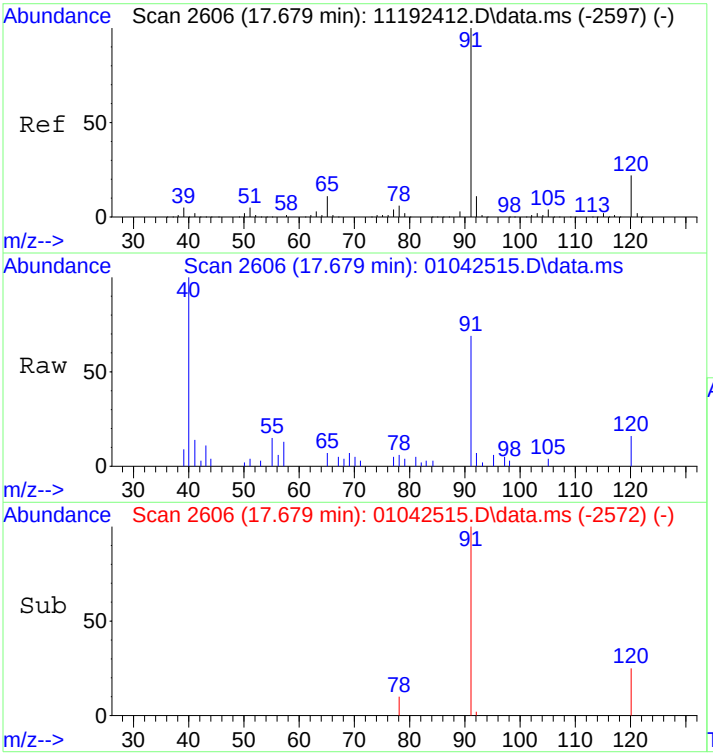


#75
alpha-Pinene
Concen: 3.18 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 93 Resp: 88463

Ion	Ratio	Lower	Upper
93	100		
77	30.6	10.1	50.1

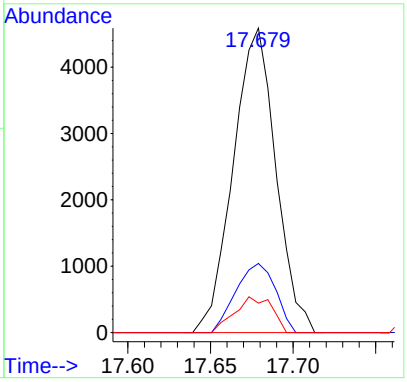


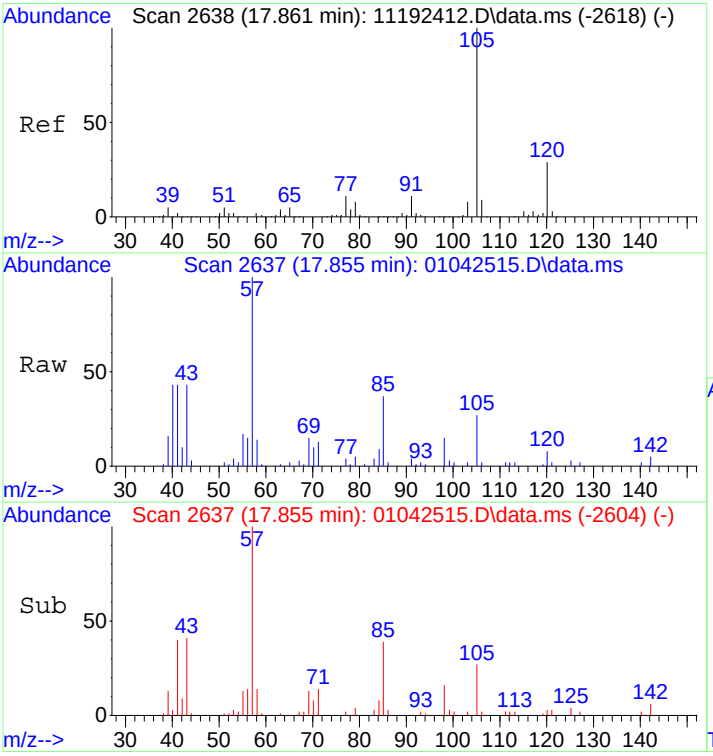


#76
n-Propylbenzene
Concen: 0.12 ng
RT: 17.68 min Scan# 2606
Delta R.T. -0.006 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion: 91 Resp: 8239

Ion	Ratio	Lower	Upper
91	100		
120	21.1	2.3	42.3
65	10.2	0.0	30.7

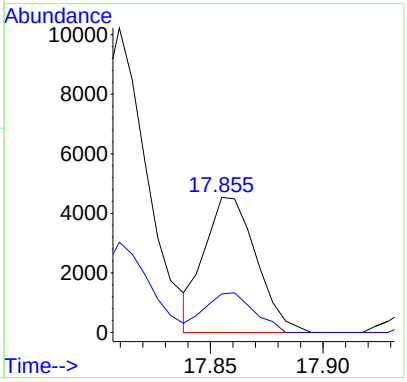


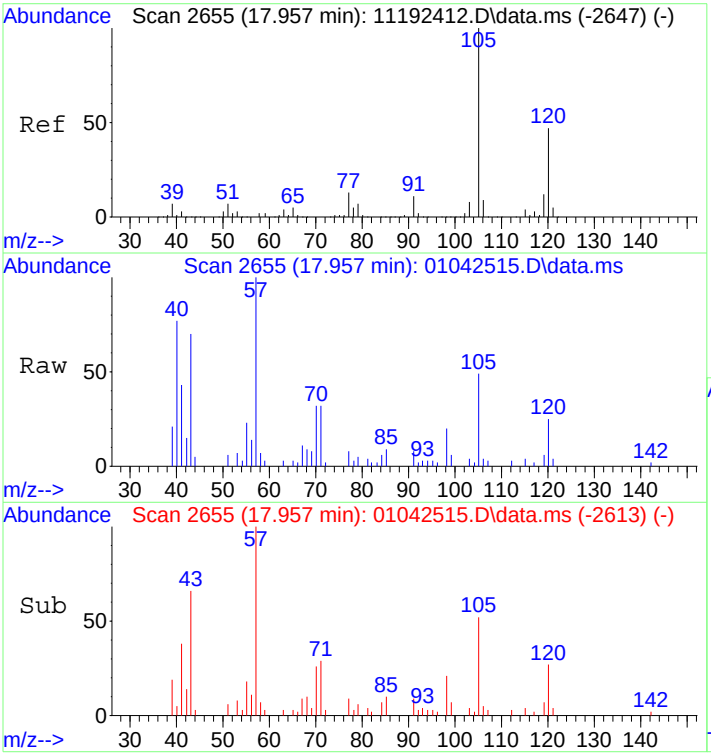


#78
4-Ethyltoluene
Concen: 0.14 ng
RT: 17.86 min Scan# 2637
Delta R.T. -0.011 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:105 Resp: 7291

Ion	Ratio	Lower	Upper
105	100		
120	27.8	8.9	48.9

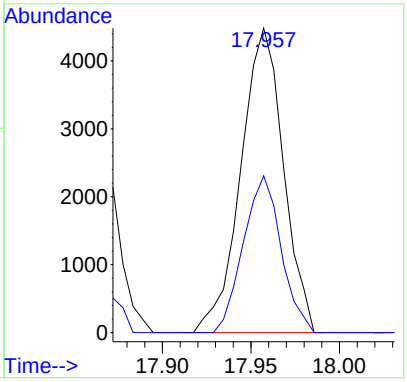


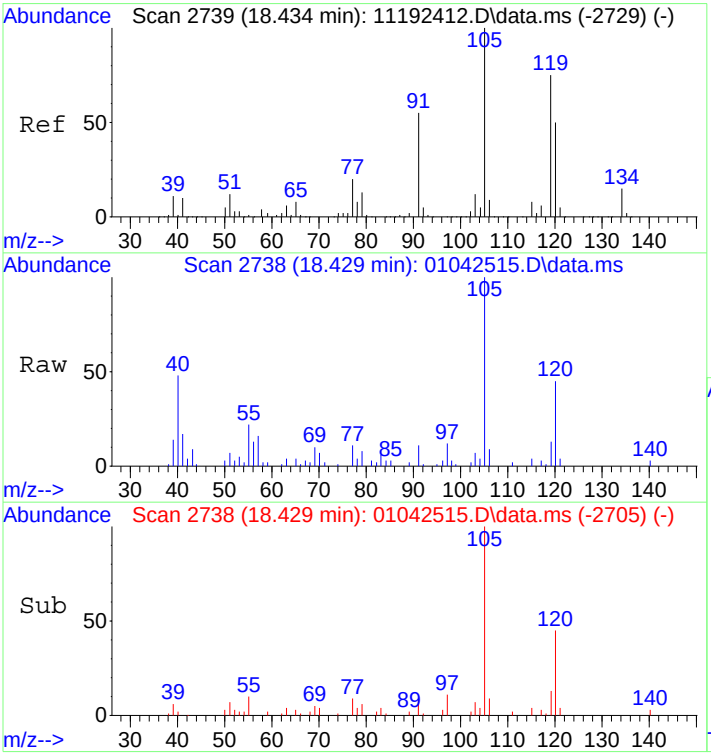


#79
1,3,5-Trimethylbenzene
Concen: 0.16 ng
RT: 17.96 min Scan# 2655
Delta R.T. -0.011 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:105 Resp: 7504

Ion	Ratio	Lower	Upper
105	100		
120	45.5	27.5	67.5

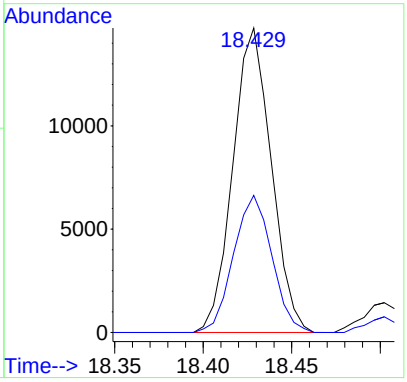


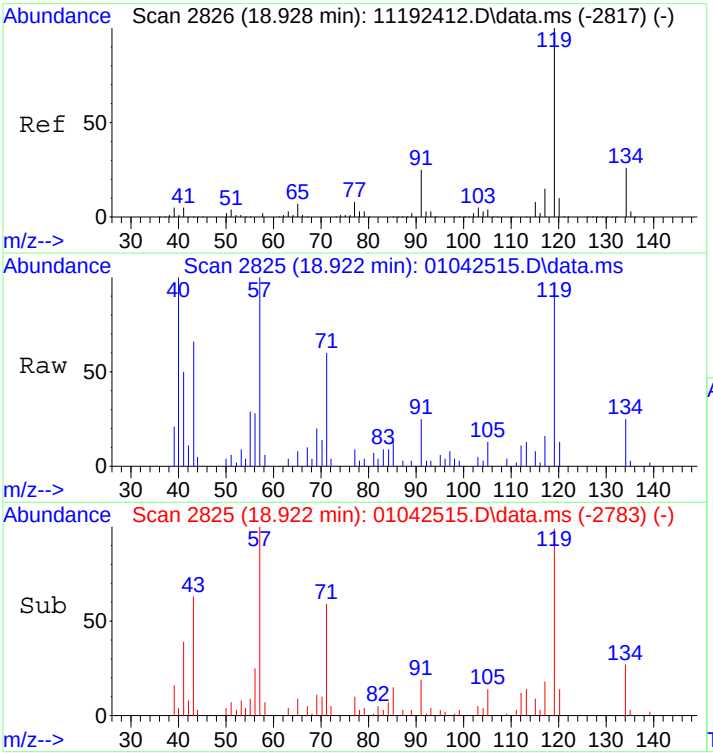


#82
1,2,4-Trimethylbenzene
Concen: 0.47 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:105 Resp: 22241

Ion	Ratio	Lower	Upper
105	100		
120	44.9	31.8	71.8

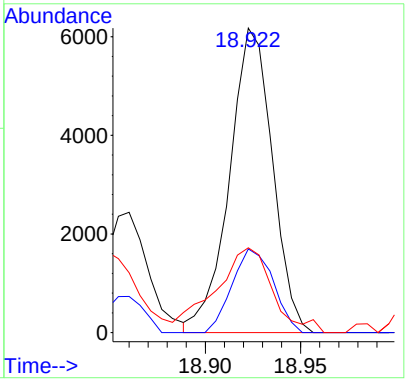


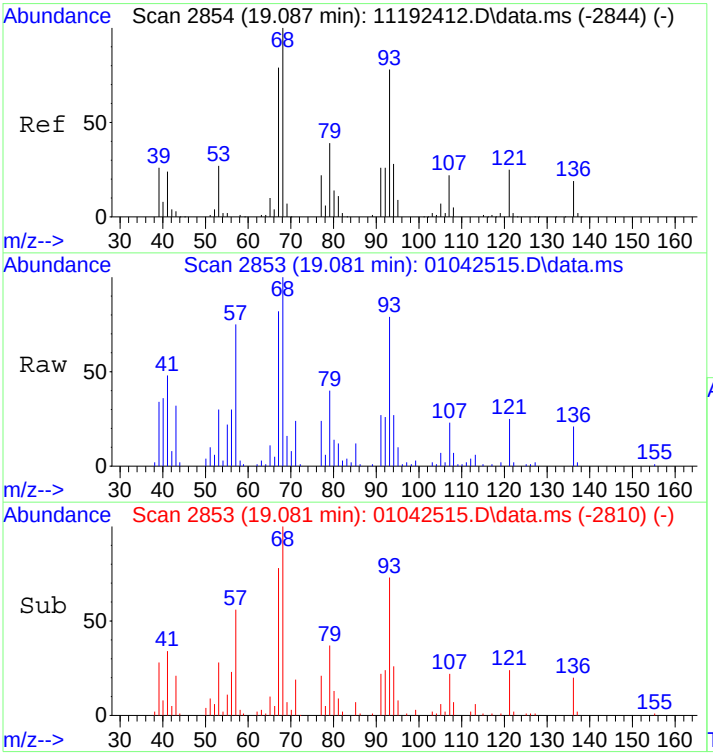


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.19 ng
RT: 18.92 min Scan# 2825
Delta R.T. -0.011 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

Tgt Ion:119 Resp: 9682

Ion	Ratio	Lower	Upper
119	100		
134	26.4	5.8	45.8
91	37.0	4.6	44.6

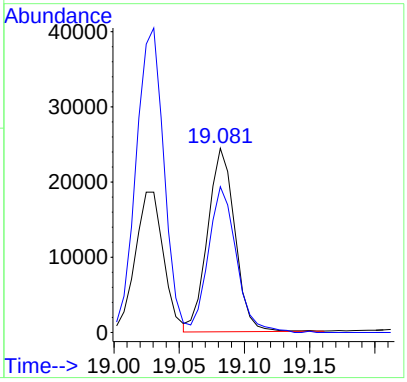




#91
d-Limonene
Concen: 2.37 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01042515.D
Acq: 4 Jan 2025 15:22

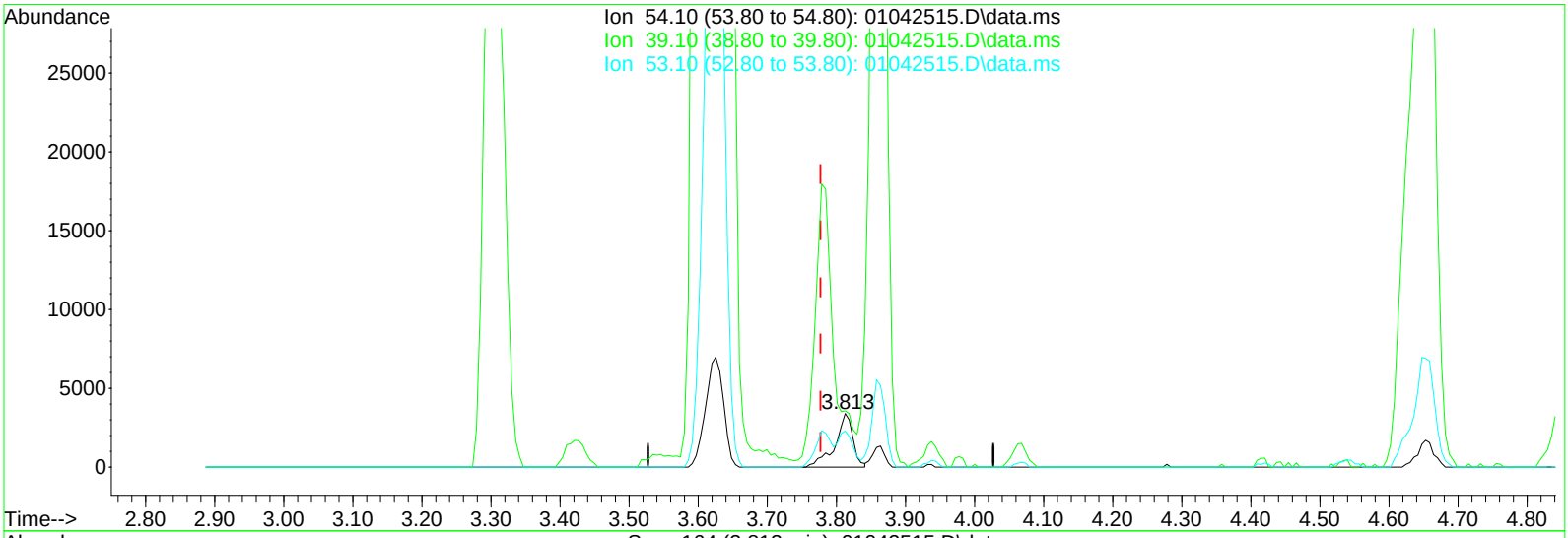
Tgt Ion: 68 Resp: 35550

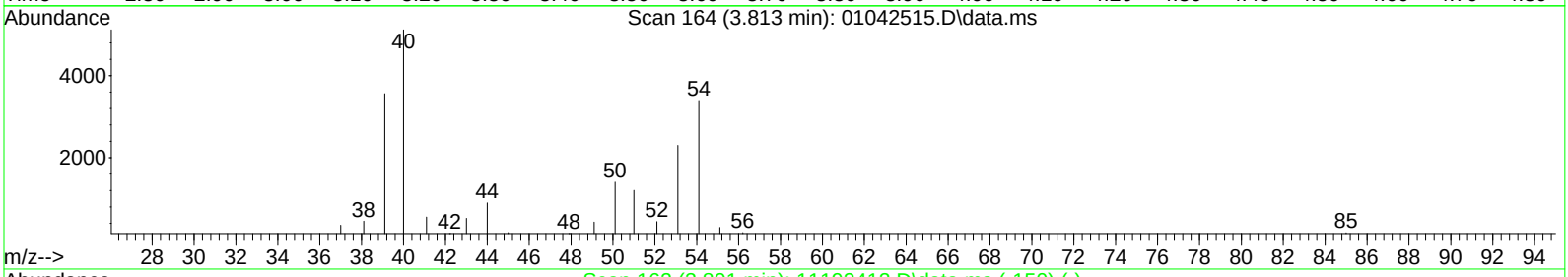
Ion	Ratio	Lower	Upper
68	100		
93	81.1	56.6	96.6

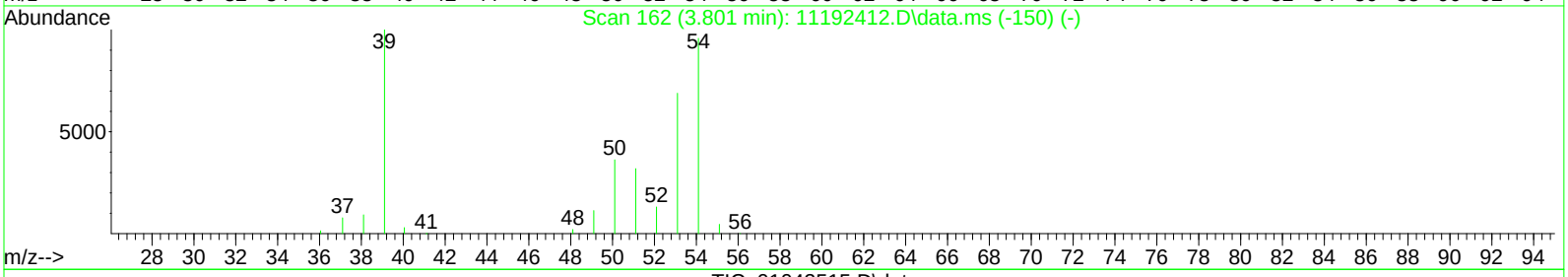


Data Path : J:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 05 15:07:47 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042515.D\data.ms

(7) 1,3-Butadiene (T)

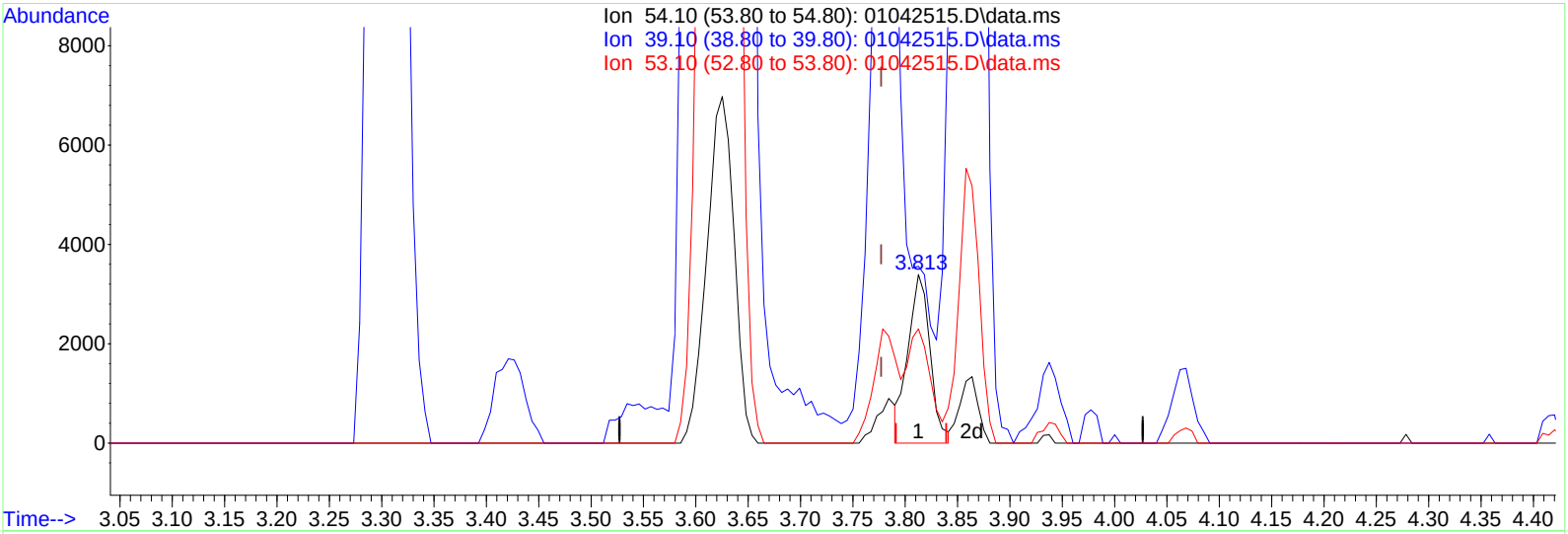
3.813min (+0.036) 0.53ng

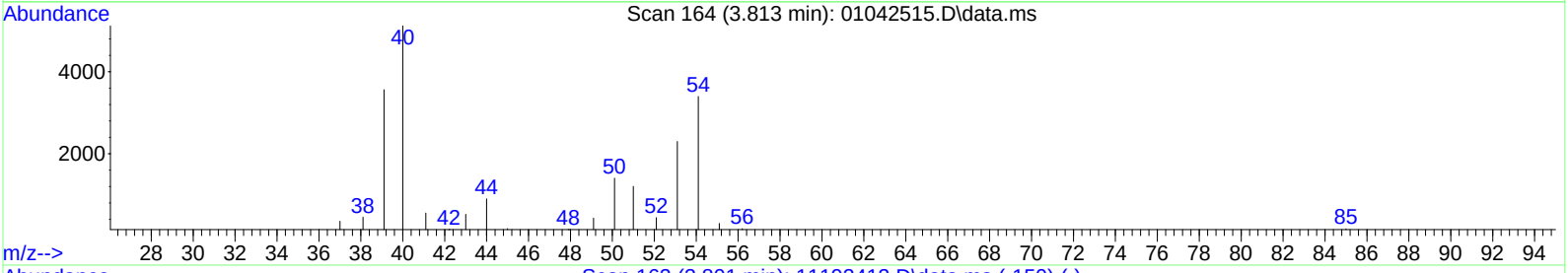
response 6078

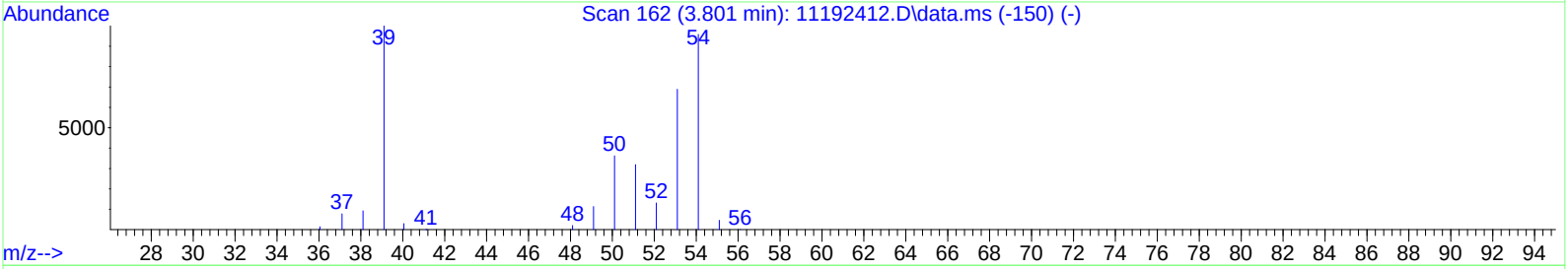
Ion	Exp%	Act%
54.10	100	100
39.10	103.20	0.00#
53.10	70.90	57.70
0.00	0.00	0.00

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 18:25:32 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01042515.D\data.ms

(7) 1,3-Butadiene (T)

3.813min (+0.036) 0.44ng m

IPC

response 4976

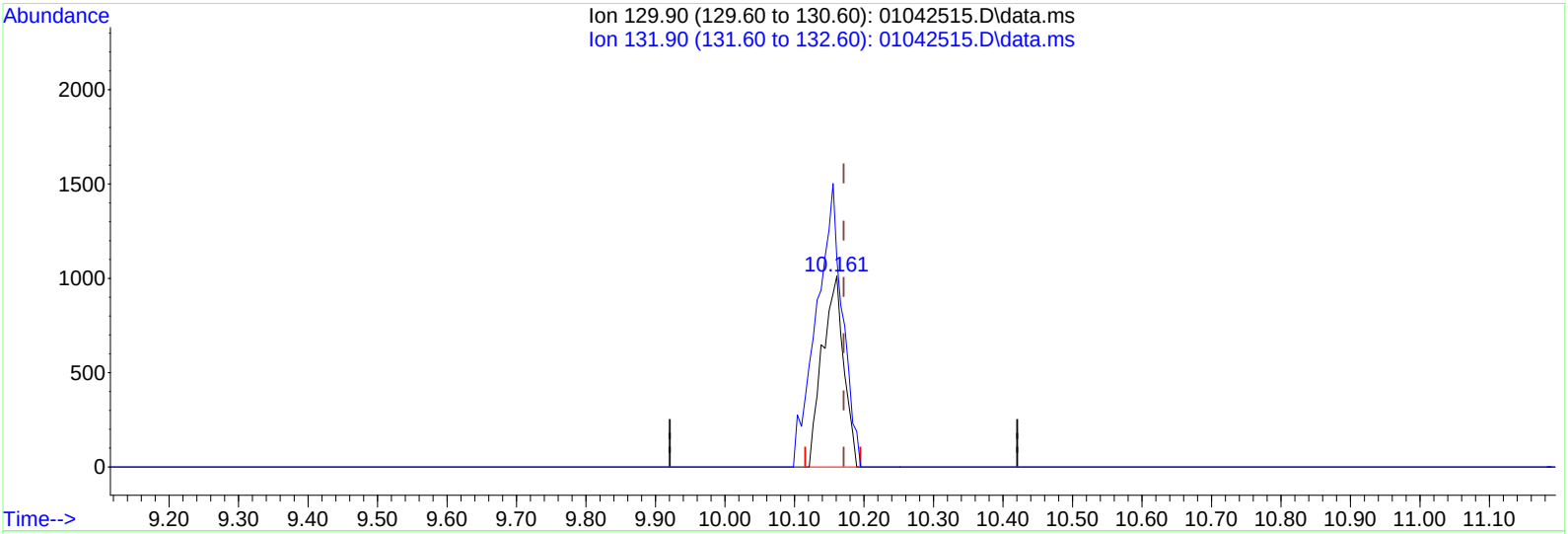
Ion	Exp%	Act%
54.10	100	100
39.10	103.20	102.09
53.10	70.90	70.48
0.00	0.00	0.00

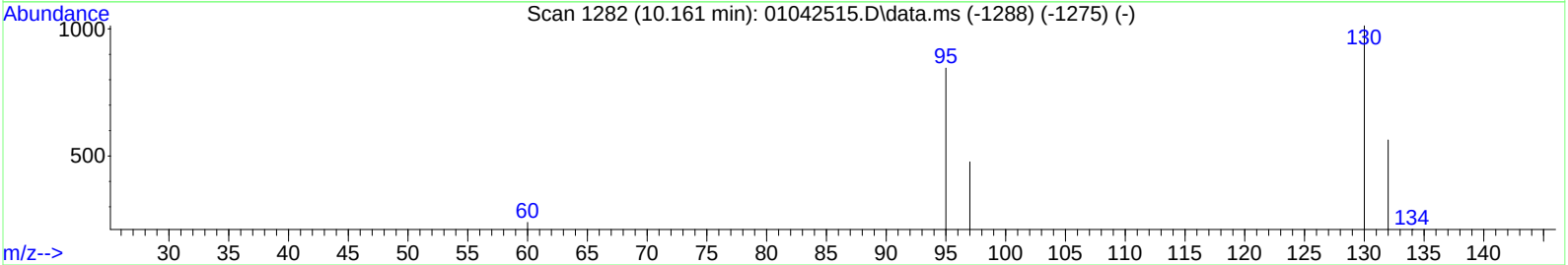
MA 1/6/25

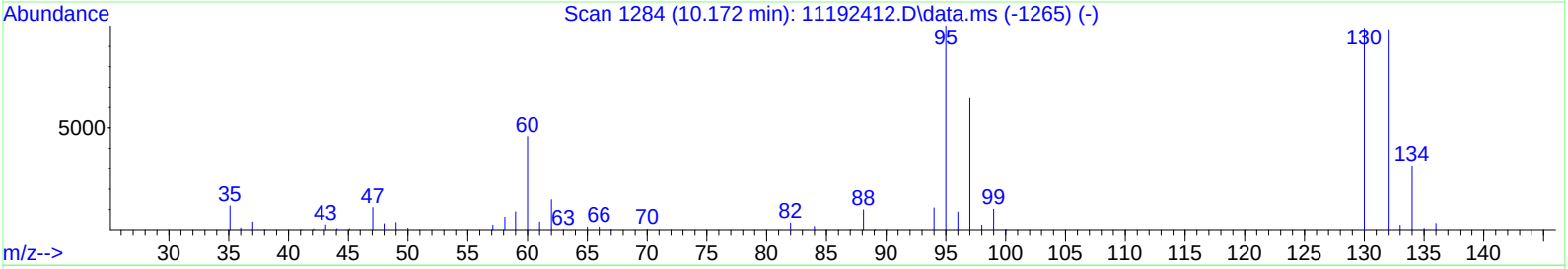
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 06:19:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042515.D\data.ms

(47) Trichloroethene (T)

ABS

10.161min (-0.010) 0.14ng

response 2163

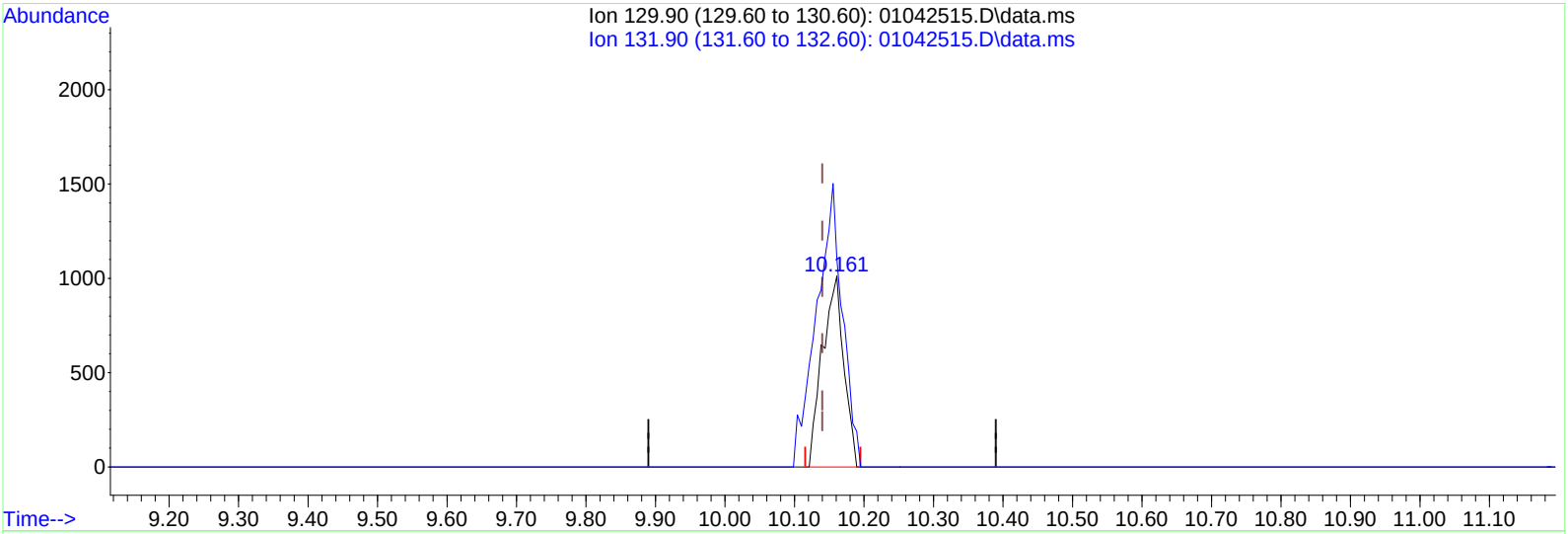
Ion	Exp%	Act%
129.90	100	100
131.90	99.30	180.07#
0.00	0.00	0.00
0.00	0.00	0.00

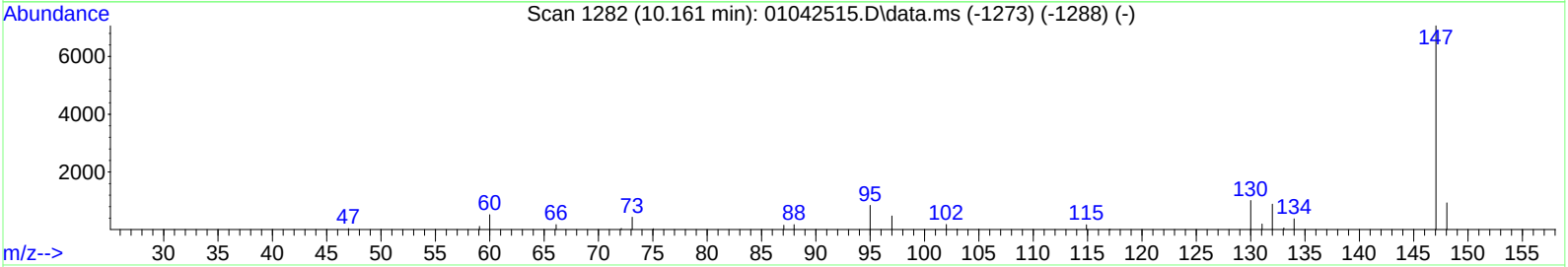
1/6/25

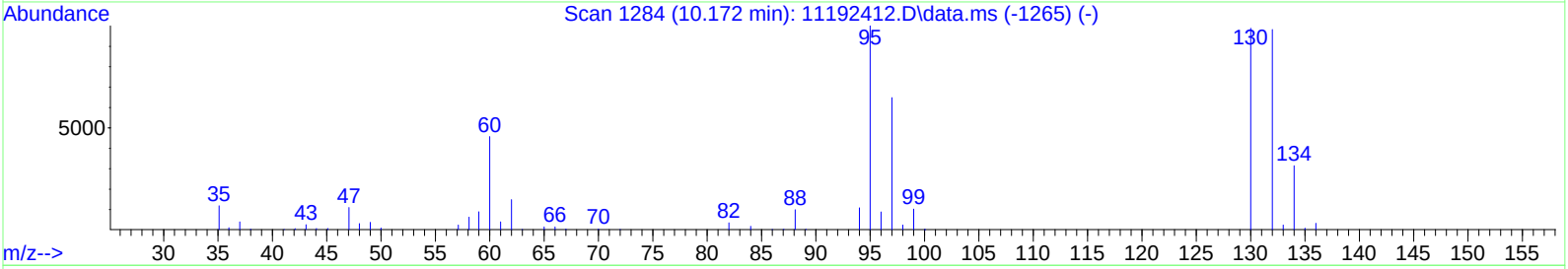
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 18:25:32 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01042515.D\data.ms

(47) Trichloroethene (T)

10.161min (+0.021) 0.14ng

response 2163

Ion	Exp%	Act%
129.90	100	100
131.90	99.30	180.07#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 20:30:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

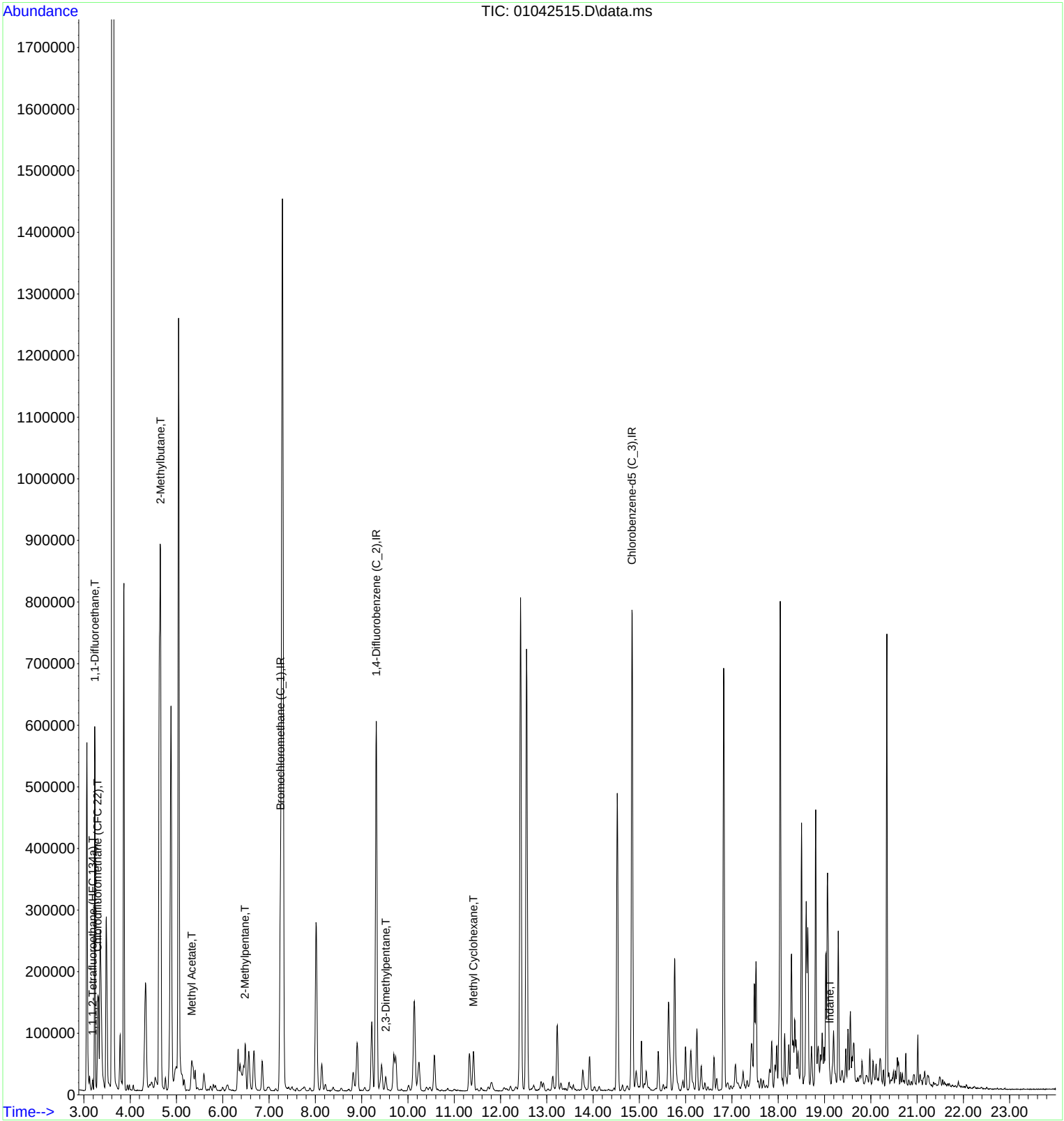
MA 1/6/25

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (C_1)	7.25	130	155147	12.500 ng		0.00
16) 1,4-Difluorobenzene (C_2)	9.31	114	659895	12.500 ng		0.00
19) Chlorobenzene-d5 (C_3)	14.84	54	118531	12.500 ng		0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.14	85	230	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	8095	0.574 ng	#	80
4) 1,1-Difluoroethane	3.23	65	165710	13.191 ng		99
5) Chlorodifluoromethane ...	3.30	67	1157	0.268 ng	#	83
6) 1-Chloro-1,1-Difluoroe...	3.50	65	612	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.65	57	183222	12.237 ng		84
11) Methyl Acetate	5.33	43	72228	2.032 ng	#	91
12) 2-Methylpentane	6.48	71	16372	1.283 ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	9.52	56	12366	0.472 ng	#	79
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.42	55	27372	1.294 ng		96
21) 1,3-Dichloropropane	0.00	76	0	N.D. d		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D. d		
25) Bromobenzene	17.03	77	812	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D. d		
27) 4-Chlorotoluene	0.00	91	0	N.D. d		
28) Indane	19.11	117	5330	0.105 ng		91
29) Indene	19.21	115	304	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	1220	N.D.		
31) 1,2,3,4-Tetramethylben...	20.22	119	1939	N.D.		
32) 1,2,3,5-Tetramethylben...	20.60	119	700	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 20:30:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01042515.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.234	59	62	69	rVB	585998	652317	2.82%	0.993%
2	3.302	69	74	79	rVV2	149340	329997	1.43%	0.502%
3	3.353	79	83	100	rVV	257436	657159	2.84%	1.000%
4	3.483	100	106	121	rVV	278719	564203	2.44%	0.859%
5	3.625	122	131	150	rVV	12296274	23156237	100.00%	35.239%
6	3.784	152	159	166	rVV	88898	156600	0.68%	0.238%
7	3.864	166	173	182	rVB	822970	1142174	4.93%	1.738%
8	3.938	182	186	190	rBV3	8614	11288	0.05%	0.017%
9	3.983	190	194	203	rVB4	9005	12962	0.06%	0.020%
10	4.068	203	209	214	rVB	8624	12452	0.05%	0.019%
11	4.329	242	255	266	rBV	175289	497974	2.15%	0.758%
12	4.460	273	278	285	rVB4	8994	21806	0.09%	0.033%
13	4.540	286	292	301	rVV2	16999	50607	0.22%	0.077%
14	4.647	301	311	325	rVB2	884677	2533050	10.94%	3.855%
15	4.761	325	331	336	rVB	19960	32108	0.14%	0.049%
16	4.880	338	352	361	rBV	622924	1426743	6.16%	2.171%
17	4.994	362	372	374	rVV4	37722	123486	0.53%	0.188%
18	5.045	374	381	399	rVV	1253322	2240037	9.67%	3.409%
19	5.164	399	402	409	rVB2	17551	29620	0.13%	0.045%
20	5.329	422	431	440	rBV2	48112	168318	0.73%	0.256%
21	5.403	440	444	449	rVB	30194	52515	0.23%	0.080%
22	5.590	470	477	488	rVB2	26787	63429	0.27%	0.097%
23	5.732	497	502	509	rVB3	6805	13715	0.06%	0.021%
24	5.794	509	513	518	rBV	9582	18171	0.08%	0.028%
25	5.840	518	521	528	rVB2	7937	13992	0.06%	0.021%
26	5.993	541	548	556	rVB3	5867	13222	0.06%	0.020%
27	6.101	556	567	574	rBV3	9580	30986	0.13%	0.047%
28	6.334	595	608	612	rBV	67847	152664	0.66%	0.232%
29	6.374	612	615	623	rVV	43212	123048	0.53%	0.187%
30	6.447	624	628	630	rVV	40193	73079	0.32%	0.111%
31	6.481	630	634	641	rVV2	76024	161510	0.70%	0.246%
32	6.561	641	648	659	rVV2	63919	162582	0.70%	0.247%
33	6.675	659	668	682	rVB	63962	167012	0.72%	0.254%
34	6.851	689	699	709	rVB	47774	103358	0.45%	0.157%
35	7.288	758	776	797	rBV	1448335	4400556	19.00%	6.697%
36	7.498	806	813	823	rVV4	5666	12759	0.06%	0.019%
37	7.606	826	832	838	rBV4	4627	10032	0.04%	0.015%
38	7.759	856	859	869	rVB4	6655	15319	0.07%	0.023%
39	8.015	892	904	917	rVV	273476	698804	3.02%	1.063%
40	8.140	917	926	933	rVV2	43323	101594	0.44%	0.155%

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	8.213	933	939	947	rVB5	10236	24283	0.10%	0.037%
42	8.384	958	969	981	rBV4	6541	19710	0.09%	0.030%
43	8.560	993	1000	1007	rBV2	4420	10687	0.05%	0.016%
44	8.815	1035	1045	1053	rBV4	30140	81305	0.35%	0.124%
45	8.900	1053	1060	1070	rVB	77504	197126	0.85%	0.300%
46	9.065	1083	1089	1097	rVB5	5462	12494	0.05%	0.019%
47	9.218	1105	1116	1123	rBV	111567	269586	1.16%	0.410%
48	9.315	1123	1133	1143	rVV	598970	1434657	6.20%	2.183%
49	9.428	1143	1153	1161	rVV	41029	115520	0.50%	0.176%
50	9.519	1161	1169	1178	rVB3	21125	49009	0.21%	0.075%
51	9.695	1187	1200	1204	rBV2	59918	156008	0.67%	0.237%
52	9.735	1204	1207	1218	rVB3	55298	115291	0.50%	0.175%
53	10.019	1248	1257	1262	rBV4	8900	22013	0.10%	0.033%
54	10.138	1264	1278	1287	rVV	145640	438614	1.89%	0.667%
55	10.240	1287	1296	1309	rVB	46358	141285	0.61%	0.215%
56	10.399	1318	1324	1331	rBV5	5940	15872	0.07%	0.024%
57	10.473	1331	1337	1344	rVB7	5765	15672	0.07%	0.024%
58	10.570	1344	1354	1363	rBV	57693	139971	0.60%	0.213%
59	11.325	1478	1487	1495	rBV2	60141	156338	0.68%	0.238%
60	11.416	1495	1503	1512	rVB	62893	155294	0.67%	0.236%
61	11.734	1551	1559	1563	rBV4	6439	15112	0.07%	0.023%
62	11.808	1563	1572	1586	rVB5	13655	50859	0.22%	0.077%
63	12.080	1611	1620	1626	rBV6	5628	16859	0.07%	0.026%
64	12.217	1637	1644	1651	rVB5	7440	17346	0.07%	0.026%
65	12.330	1654	1664	1670	rBV7	6411	19023	0.08%	0.029%
66	12.432	1670	1682	1695	rVV	799984	1877866	8.11%	2.858%
67	12.563	1695	1705	1716	rVB	716030	1622601	7.01%	2.469%
68	12.716	1725	1732	1741	rVB5	8511	21393	0.09%	0.033%
69	12.875	1752	1760	1765	rBV3	13482	32080	0.14%	0.049%
70	12.926	1765	1769	1779	rVB4	12876	28774	0.12%	0.044%
71	13.131	1795	1805	1812	rBV4	23211	56699	0.24%	0.086%
72	13.227	1814	1822	1830	rVV	104895	223605	0.97%	0.340%
73	13.301	1830	1835	1843	rVB2	10354	22720	0.10%	0.035%
74	13.483	1860	1867	1872	rBV	12939	29101	0.13%	0.044%
75	13.574	1878	1883	1889	rVB2	7852	12702	0.05%	0.019%
76	13.778	1913	1919	1932	rBV3	31756	78323	0.34%	0.119%
77	13.926	1936	1945	1954	rVB	54796	116081	0.50%	0.177%
78	14.034	1956	1964	1973	rVB7	7067	17417	0.08%	0.027%
79	14.130	1973	1981	1987	rBV3	7565	17039	0.07%	0.026%
80	14.522	2041	2050	2060	rVB	482832	1048140	4.53%	1.595%
81	14.635	2063	2070	2077	rVB3	9305	18452	0.08%	0.028%
82	14.738	2080	2088	2095	rBV7	8053	23509	0.10%	0.036%
83	14.840	2095	2106	2116	rBV	779226	1657298	7.16%	2.522%
84	14.931	2116	2122	2131	rVV4	27815	67834	0.29%	0.103%
85	15.044	2135	2142	2149	rVB	76113	140236	0.61%	0.213%

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

86	15.112	2149	2154	2155	rBV5	7024	10774	0.05%	0.016%
87	15.146	2155	2160	2167	rVB	26190	50389	0.22%	0.077%
88	15.408	2200	2206	2216	rVB	64431	130743	0.56%	0.199%
89	15.516	2216	2225	2230	rBV5	10477	23448	0.10%	0.036%
90	15.629	2238	2245	2257	rVB	143354	378866	1.64%	0.577%
91	15.760	2257	2268	2290	rVB	214899	536305	2.32%	0.816%
92	15.941	2290	2300	2304	rBV	16401	38955	0.17%	0.059%
93	15.998	2304	2310	2318	rVV	70411	131372	0.57%	0.200%
94	16.112	2318	2330	2345	rVV4	63733	175507	0.76%	0.267%
95	16.242	2345	2353	2361	rVB2	100129	205523	0.89%	0.313%
96	16.339	2361	2370	2377	rBV2	39965	84719	0.37%	0.129%
97	16.413	2377	2383	2390	rVB3	11727	22903	0.10%	0.035%
98	16.611	2411	2418	2424	rBV	53230	102074	0.44%	0.155%
99	16.674	2424	2429	2436	rVB2	19102	36163	0.16%	0.055%
100	16.822	2446	2455	2464	rBV	683913	1296579	5.60%	1.973%
101	16.907	2464	2470	2477	rVB8	10512	28241	0.12%	0.043%
102	16.981	2478	2483	2488	rBV5	5570	10829	0.05%	0.016%
103	17.077	2494	2500	2508	rBV3	35402	78079	0.34%	0.119%
104	17.242	2519	2529	2539	rBV4	27542	68335	0.30%	0.104%
105	17.327	2539	2544	2550	rBV6	12383	24422	0.11%	0.037%
106	17.423	2550	2561	2567	rBV3	69792	206398	0.89%	0.314%
107	17.480	2567	2571	2575	rVV	161079	312111	1.35%	0.475%
108	17.520	2575	2578	2585	rVB	195911	316795	1.37%	0.482%
109	17.622	2591	2596	2601	rBV4	14918	25865	0.11%	0.039%
110	17.679	2601	2606	2613	rBV3	12215	22760	0.10%	0.035%
111	17.810	2622	2629	2633	rBV	30009	64903	0.28%	0.099%
112	17.861	2633	2638	2645	rVB2	74530	137834	0.60%	0.210%
113	17.929	2645	2650	2653	rBV3	36268	66007	0.29%	0.100%
114	17.969	2653	2657	2661	rVV2	59001	91958	0.40%	0.140%
115	18.042	2661	2670	2677	rVB	776541	1385385	5.98%	2.108%
116	18.139	2682	2687	2696	rVV2	85954	151982	0.66%	0.231%
117	18.230	2696	2703	2707	rVV	67341	132517	0.57%	0.202%
118	18.287	2707	2713	2718	rVV2	214429	439404	1.90%	0.669%
119	18.321	2718	2719	2722	rVV2	73229	89488	0.39%	0.136%
120	18.355	2722	2725	2729	rVV	107453	195305	0.84%	0.297%
121	18.383	2729	2730	2734	rVV	74541	91199	0.39%	0.139%
122	18.429	2734	2738	2744	rVV2	54737	112322	0.49%	0.171%
123	18.502	2744	2751	2758	rVV	426111	692528	2.99%	1.054%
124	18.605	2758	2769	2772	rVV	298263	542209	2.34%	0.825%
125	18.639	2772	2775	2783	rVV2	255214	431964	1.87%	0.657%
126	18.718	2783	2789	2797	rVB4	64082	121803	0.53%	0.185%
127	18.809	2797	2805	2810	rBV	447948	682296	2.95%	1.038%
128	18.866	2810	2815	2820	rVV5	61139	146773	0.63%	0.223%
129	18.917	2820	2824	2826	rVV3	47647	77887	0.34%	0.119%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

130	18.951	2826	2830	2834	rVV2	82633	153063	0.66%	0.233%
131	18.991	2834	2837	2839	rVV	59580	82315	0.36%	0.125%
132	19.030	2839	2844	2846	rVV	211288	321658	1.39%	0.489%
133	19.064	2846	2850	2863	rVB2	342698	775392	3.35%	1.180%
134	19.195	2863	2873	2884	rBV2	86428	211205	0.91%	0.321%
135	19.297	2884	2891	2899	rVV	246078	396283	1.71%	0.603%
136	19.377	2899	2905	2912	rVB9	19685	45748	0.20%	0.070%
137	19.462	2913	2920	2924	rVV3	54079	89840	0.39%	0.137%
138	19.507	2924	2928	2932	rVV2	85849	143824	0.62%	0.219%
139	19.558	2932	2937	2941	rVV2	114180	194941	0.84%	0.297%
140	19.598	2941	2944	2946	rVV2	40213	59416	0.26%	0.090%
141	19.632	2946	2950	2962	rVB5	62307	131233	0.57%	0.200%
142	19.763	2968	2973	2977	rBV6	9197	22236	0.10%	0.034%
143	19.808	2977	2981	2990	rVB3	37281	66915	0.29%	0.102%
144	19.905	2990	2998	3006	rBV7	13975	44725	0.19%	0.068%
145	19.979	3006	3011	3017	rVB	57962	81362	0.35%	0.124%
146	20.047	3017	3023	3030	rBV	38005	75479	0.33%	0.115%
147	20.115	3030	3035	3040	rVV3	28921	42531	0.18%	0.065%
148	20.200	3044	3050	3059	rVB3	39851	100622	0.43%	0.153%
149	20.274	3059	3063	3067	rVB3	25972	37745	0.16%	0.057%
150	20.348	3067	3076	3081	rBV	733754	1008940	4.36%	1.535%
151	20.387	3081	3083	3087	rVB2	17055	21133	0.09%	0.032%
152	20.439	3087	3092	3095	rBV5	5977	11584	0.05%	0.018%
153	20.490	3098	3101	3104	rVB2	18870	22967	0.10%	0.035%
154	20.529	3104	3108	3111	rBV3	19339	24613	0.11%	0.037%
155	20.575	3111	3116	3118	rVV2	39745	58196	0.25%	0.089%
156	20.598	3118	3120	3124	rVB3	35681	43991	0.19%	0.067%
157	20.643	3124	3128	3131	rBV	19282	20950	0.09%	0.032%
158	20.683	3131	3135	3138	rBV	14082	16082	0.07%	0.024%
159	20.757	3144	3148	3155	rVB2	51867	69943	0.30%	0.106%
160	20.819	3155	3159	3165	rBV7	8446	13404	0.06%	0.020%
161	20.933	3173	3179	3187	rBV9	16665	40448	0.17%	0.062%
162	21.018	3187	3194	3198	rBV2	80357	108470	0.47%	0.165%
163	21.069	3198	3203	3206	rBV6	13131	20711	0.09%	0.032%
164	21.165	3211	3220	3225	rVB4	21331	45604	0.20%	0.069%
165	21.234	3225	3232	3250	rVB7	18961	68145	0.29%	0.104%
166	21.353	3250	3253	3257	rBV6	7236	12398	0.05%	0.019%
167	21.489	3271	3277	3284	rVB8	13906	33204	0.14%	0.051%
168	21.892	3343	3348	3353	rBV3	9238	13980	0.06%	0.021%

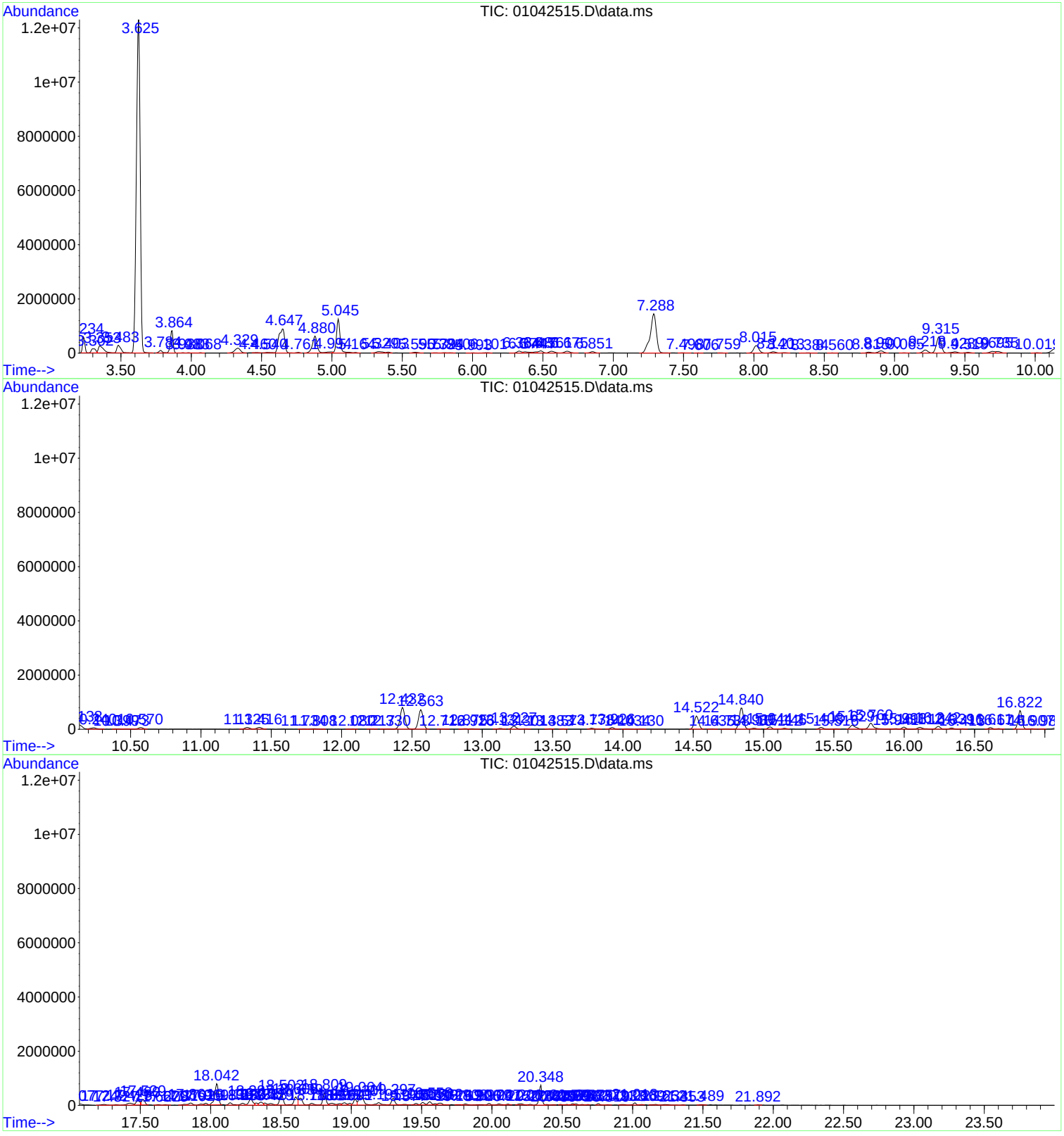
Sum of corrected areas: 65712504

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:22
Operator : CG
Sample : P2405139-003 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\04\\
Data File : 01042515.D
Acq On : 4 Jan 2025 15:222
Operator : CGG
Sample : P2405139-003 (400mL))
Misc : S37-123124011
ALS Vial : 9 Sample Multiplier: 11

VOA 1/6/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 19:14:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	152310	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.30	114	653462	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	116317	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250868	12.090	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.72%				
57) Toluene-d8 (SS2)	12.43	98	684018	13.256	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.08%				
73) Bromofluorobenzene (SS3)	16.82	174	254326	14.283	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.24%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.37	85	18426m	0.619	ng		
4) Chloromethane	3.52	50	1652	0.075	ng		87
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	474	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.81	54	343	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.15	64	156	N.D.			
10) Ethanol	4.30	45	107729	9.562	ng		96
11) Acetonitrile	0.00	41	0	N.D. d			
12) Acrolein	4.54	56	4937	0.513	ng		93
13) Acetone	4.64	58	94051	9.171	ng		88
14) Trichlorofluoromethane	4.76	101	1661650	59.510	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	109351	2.978	ng		94
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.34	59	4949	0.168	ng	#	1
19) Methylene Chloride	5.36	84	1148	0.080	ng		98
20) 3-Chloro-1-propene (Al...	5.40	41	485	N.D.			
21) Trichlorotrifluoroethane	5.58	151	2300723	182.628	ng		93
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.32	73	295	N.D.			
26) Vinyl Acetate	6.44	86	4272	1.721	ng	#	30
27) 2-Butanone (MEK)	6.66	72	7942	0.964	ng		100
28) cis-1,2-Dichloroethene	7.08	61	1305	0.068	ng		91
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.28	61	63994	12.584	ng		99
31) n-Hexane	7.30	57	4410	0.193	ng	#	98
32) Chloroform	7.36	83	110050	4.439	ng		99
34) Tetrahydrofuran (THF)	7.77	72	371	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.81	56	11392	No Calib		#	
41) Benzene	8.90	78	14330	0.273	ng		99
42) Carbon Tetrachloride	9.07	117	283	N.D.			
43) Cyclohexane	9.22	84	2014	0.110	ng		96
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	7113	0.392	ng		97
47) Trichloroethene	10.16	130	1294	0.087	ng	#	80
48) 1,4-Dioxane	10.13	88	377	N.D.			

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 06 19:14:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	3612	0.066	ng		69
50) Methyl Methacrylate	0.00	100	0	N.D.			
51) n-Heptane	10.56	71	1478	0.126	ng		95
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	11.33	58	1413	0.125	ng		78
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.			
58) Toluene	12.56	91	51086	1.029	ng		99
59) 2-Hexanone	12.91	43	5111	0.211	ng		81
60) Dibromochloromethane	13.07	129	563	N.D.			
61) 1,2-Dibromoethane	0.00	107	0	N.D.			
62) n-Butyl Acetate	13.78	43	6484	0.238	ng		100
63) n-Octane	13.93	57	1018	0.099	ng		85
64) Tetrachloroethene	14.03	166	1605	0.109	ng		100
65) Chlorobenzene	0.00	112	0	N.D.			
66) Ethylbenzene	15.41	91	5690	0.104	ng		95
67) m- & p-Xylenes	15.63	91	13081	0.291	ng		97
68) Bromoform	0.00	173	0	N.D.			
69) Styrene	16.10	104	3807	0.121	ng		99
70) o-Xylene	16.24	91	4898	0.110	ng		99
71) n-Nonane	16.61	43	3125	0.132	ng		94
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.			
74) Cumene	17.03	105	400	N.D.			
75) alpha-Pinene	17.52	93	9223	0.338	ng		95
76) n-Propylbenzene	17.68	91	1265	N.D.			
77) 3-Ethyltoluene	17.03	105	400	No Calib		#	
78) 4-Ethyltoluene	17.86	105	807	N.D.			
79) 1,3,5-Trimethylbenzene	17.96	105	759	N.D.			
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.03	105	400	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.43	105	2554	0.055	ng		90
83) n-Decane	0.00	58	0	N.D.			
84) Benzyl Chloride	18.55	91	178	N.D.			
85) 1,3-Dichlorobenzene	18.66	146	327	N.D.			
86) 1,4-Dichlorobenzene	18.66	146	327	N.D.			
87) sec-Butylbenzene	18.74	105	106	N.D.			
88) 4-Isopropyltoluene (p-...	18.92	119	1950	N.D.			
89) 1,2,3-Trimethylbenzene	17.03	105	400	No Calib		#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.			
91) d-Limonene	19.08	68	12054	0.819	ng		98
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.			
93) n-Undecane	17.98	58	168	No Calib		#	
94) 1,2,4-Trichlorobenzene	20.84	180	156	N.D.			
95) Naphthalene	20.94	128	448	N.D.			
96) n-Dodecane	18.95	58	270	No Calib		#	
97) Hexachlorobutadiene	0.00	225	0	N.D.			
98) Cyclohexanone	15.20	55	843	No Calib		#	
99) tert-Butylbenzene	18.43	119	141	N.D.			
100) n-Butylbenzene	19.38	91	1594	N.D.			
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 06 19:14:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
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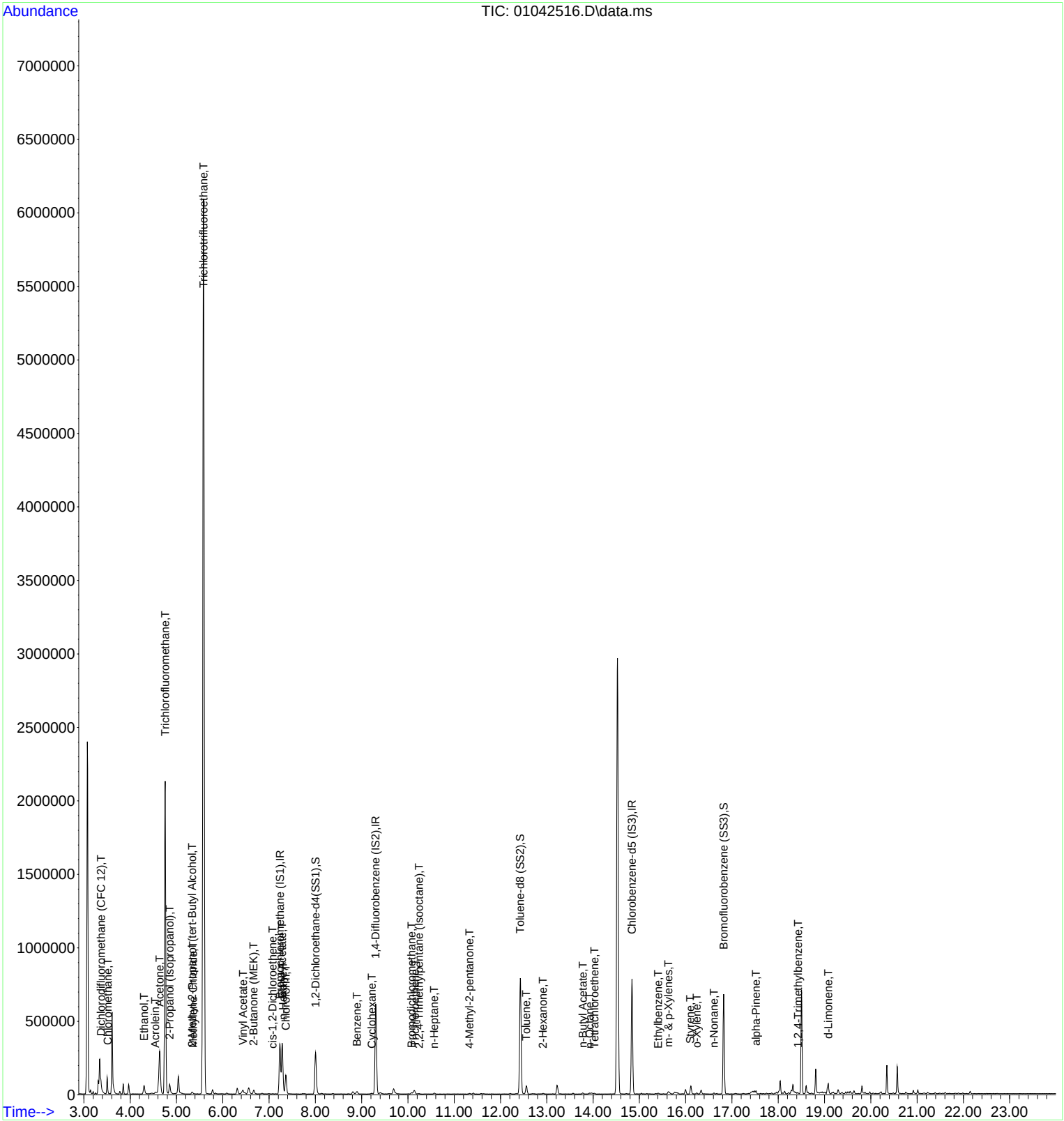

Quantitation Report (QT Reviewed)

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QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	152310	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.30	114	653462	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	116317	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250868	12.090	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.72%				
57) Toluene-d8 (SS2)	12.43	98	684018	13.256	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.08%				
73) Bromofluorobenzene (SS3)	16.82	174	254326	14.283	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.24%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.37	85	18426m	0.619	ng		
4) Chloromethane	3.52	50	1652	0.075	ng		87
10) Ethanol	4.30	45	107729	9.562	ng		96
12) Acrolein	4.54	56	4937	0.513	ng		93
13) Acetone	4.64	58	94051	9.171	ng		88
14) Trichlorofluoromethane	4.76	101	1661650	59.510	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	109351	2.978	ng		94
18) 2-Methyl-2-Propanol (t...	5.34	59	4949	0.168	ng	#	1
19) Methylene Chloride	5.36	84	1148	0.080	ng		98
21) Trichlorotrifluoroethane	5.58	151	2300723	182.628	ng		93
26) Vinyl Acetate	6.44	86	4272	1.721	ng	#	30
27) 2-Butanone (MEK)	6.66	72	7942	0.964	ng		100
28) cis-1,2-Dichloroethene	7.08	61	1305	0.068	ng		91
30) Ethyl Acetate	7.28	61	63994	12.584	ng		99
31) n-Hexane	7.30	57	4410	0.193	ng	#	98
32) Chloroform	7.36	83	110050	4.439	ng		99
41) Benzene	8.90	78	14330	0.273	ng		99
43) Cyclohexane	9.22	84	2014	0.110	ng		96
46) Bromodichloromethane	10.08	83	7113	0.392	ng		97
47) Trichloroethene	10.16	130	1294	0.087	ng	#	80
49) 2,2,4-Trimethylpentane...	10.24	57	3612	0.066	ng		69
51) n-Heptane	10.56	71	1478	0.126	ng		95
53) 4-Methyl-2-pentanone	11.33	58	1413	0.125	ng		78
58) Toluene	12.56	91	51086	1.029	ng		99
59) 2-Hexanone	12.91	43	5111	0.211	ng		81
62) n-Butyl Acetate	13.78	43	6484	0.238	ng		100
63) n-Octane	13.93	57	1018	0.099	ng		85
64) Tetrachloroethene	14.03	166	1605	0.109	ng		100
66) Ethylbenzene	15.41	91	5690	0.104	ng		95
67) m- & p-Xylenes	15.63	91	13081	0.291	ng		97
69) Styrene	16.10	104	3807	0.121	ng		99
70) o-Xylene	16.24	91	4898	0.110	ng		99
71) n-Nonane	16.61	43	3125	0.132	ng		94
75) alpha-Pinene	17.52	93	9223	0.338	ng		95
82) 1,2,4-Trimethylbenzene	18.43	105	2554	0.055	ng		90
91) d-Limonene	19.08	68	12054	0.819	ng		98

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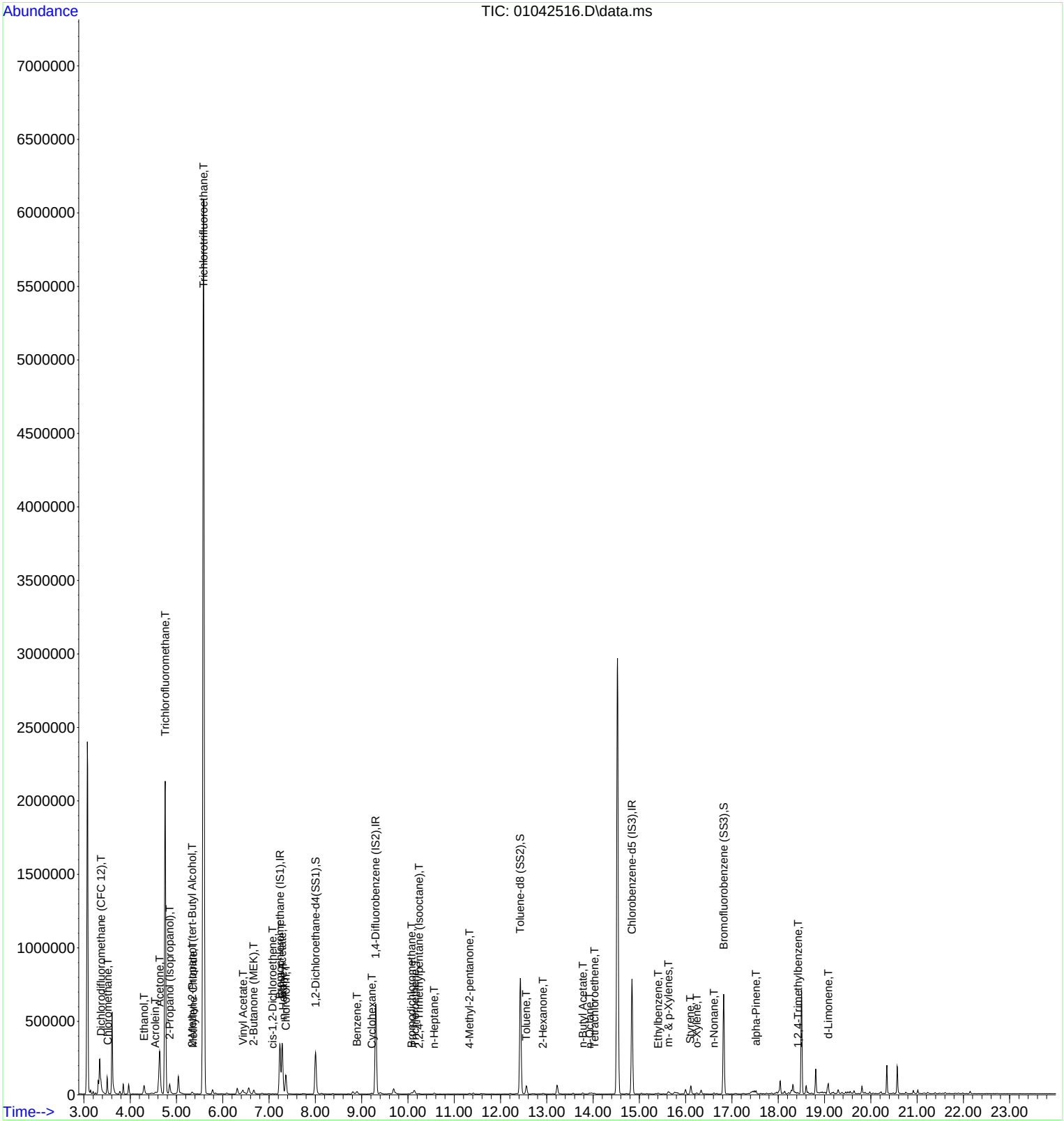
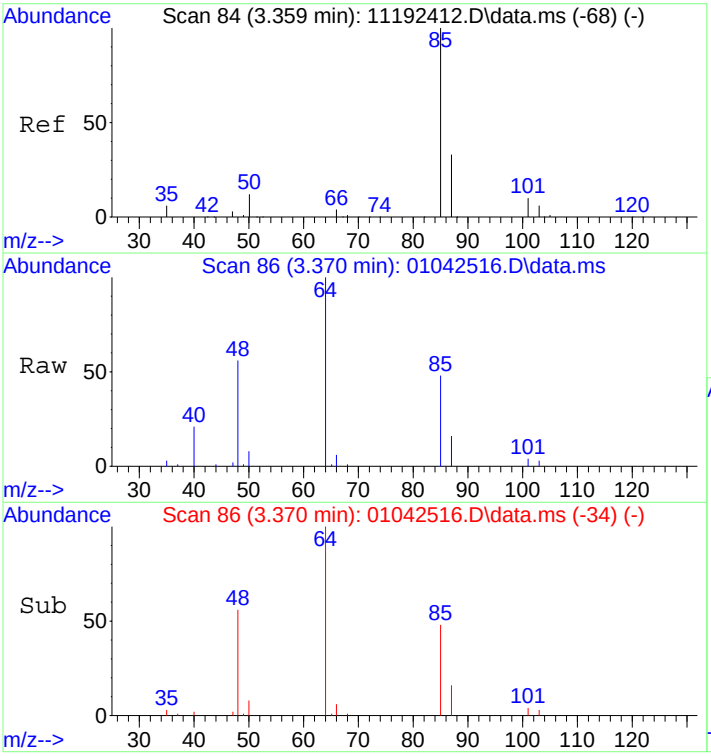
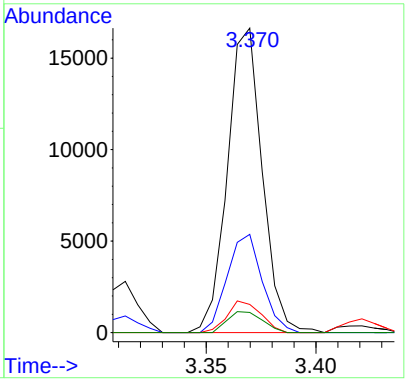


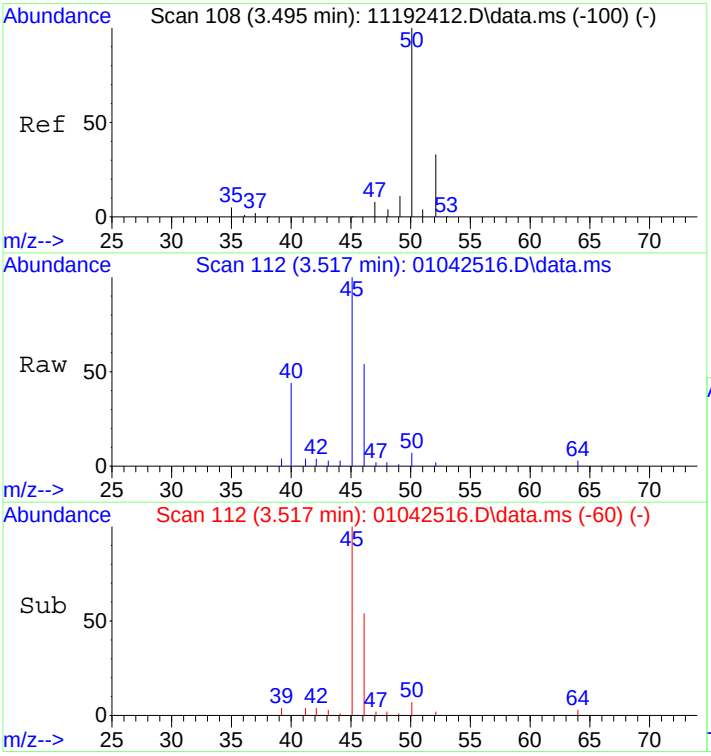


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.62 ng m
RT: 3.37 min Scan# 86
Delta R.T. 0.043 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 85 Resp: 18426

Ion	Ratio	Lower	Upper
85	100		
87	32.4	12.6	52.6
101	10.0	0.0	29.6
103	6.9	0.0	26.2

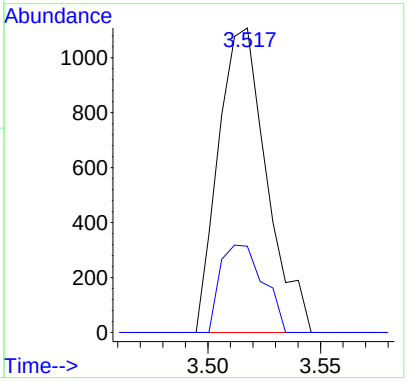


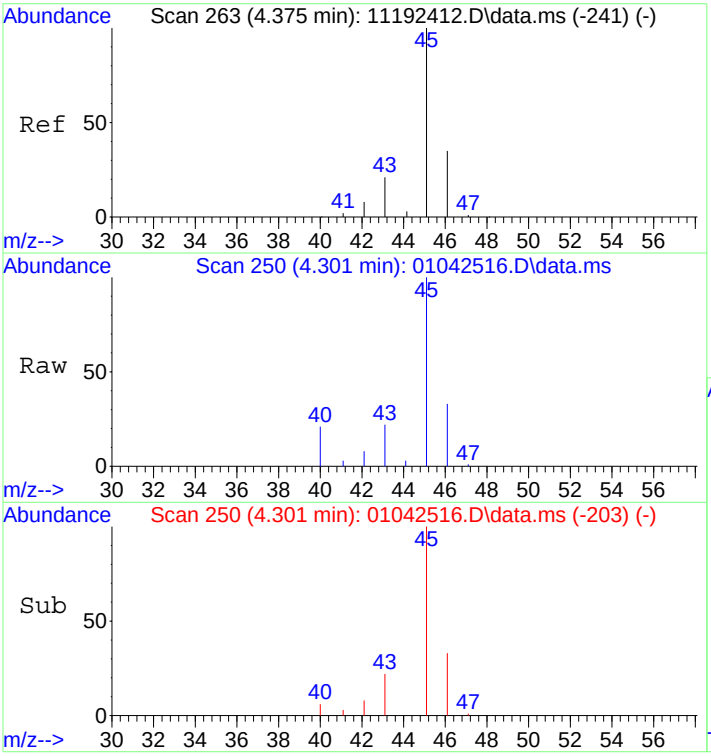


#4
Chloromethane
Concen: 0.07 ng
RT: 3.52 min Scan# 112
Delta R.T. 0.044 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 50 Resp: 1652

Ion	Ratio	Lower	Upper
50	100		
52	25.7	13.0	53.0

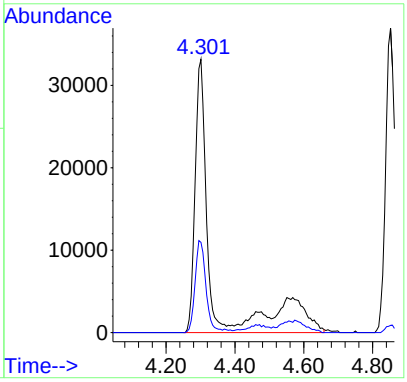


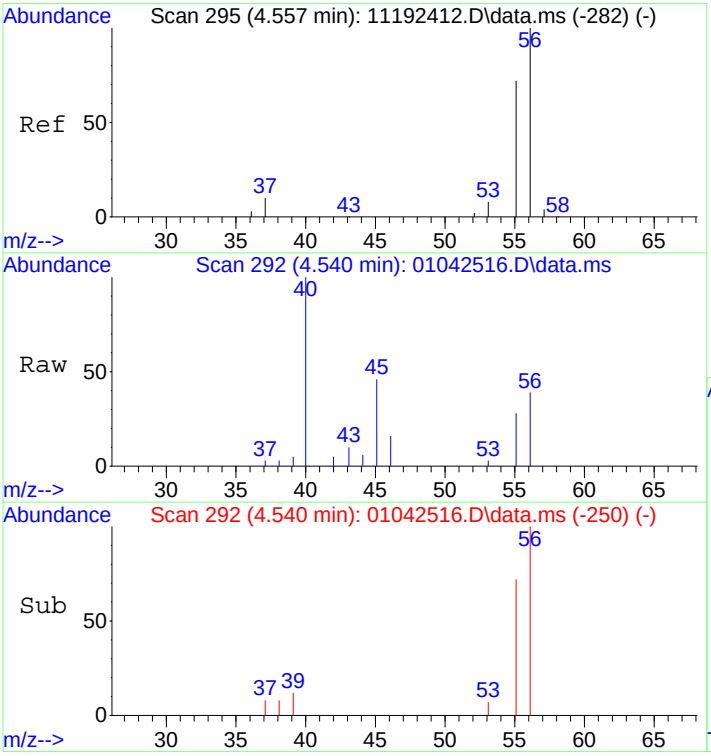


#10
Ethanol
Concen: 9.56 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 45 Resp: 107729

Ion	Ratio	Lower	Upper
45	100		
46	33.9	11.8	51.8

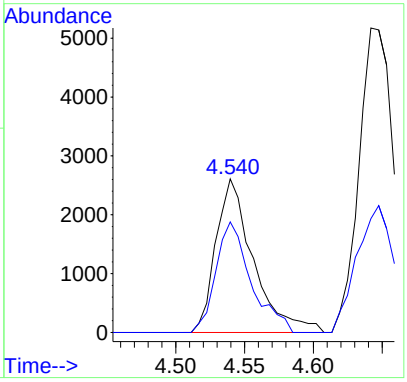


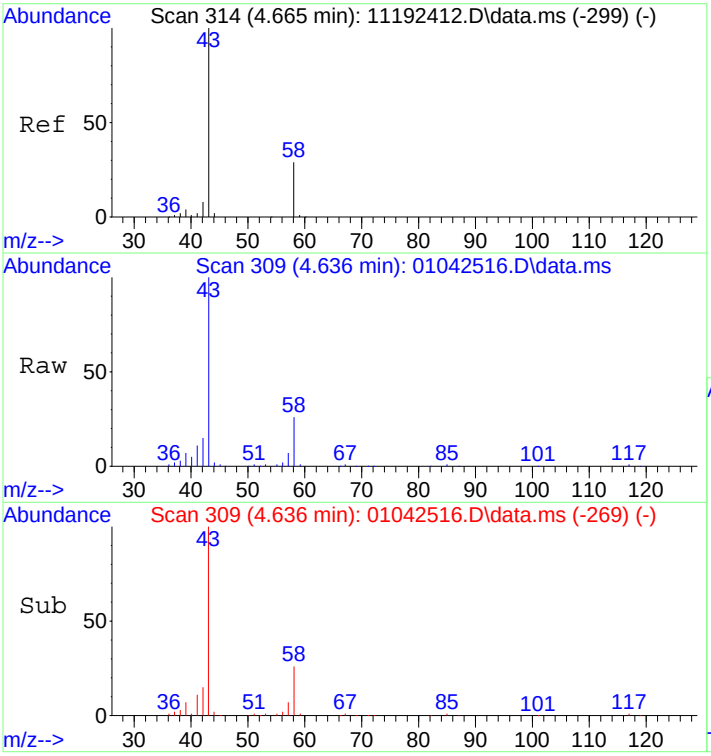


#12
Acrolein
Concen: 0.51 ng
RT: 4.54 min Scan# 292
Delta R.T. -0.014 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 56 Resp: 4937

Ion	Ratio	Lower	Upper
56	100		
55	67.5	53.1	93.1

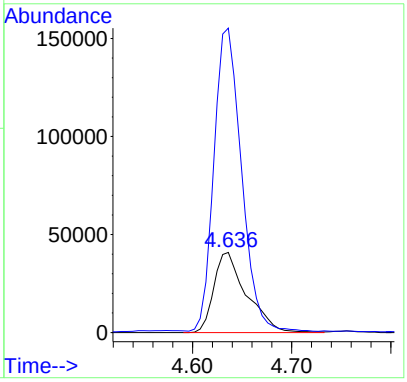


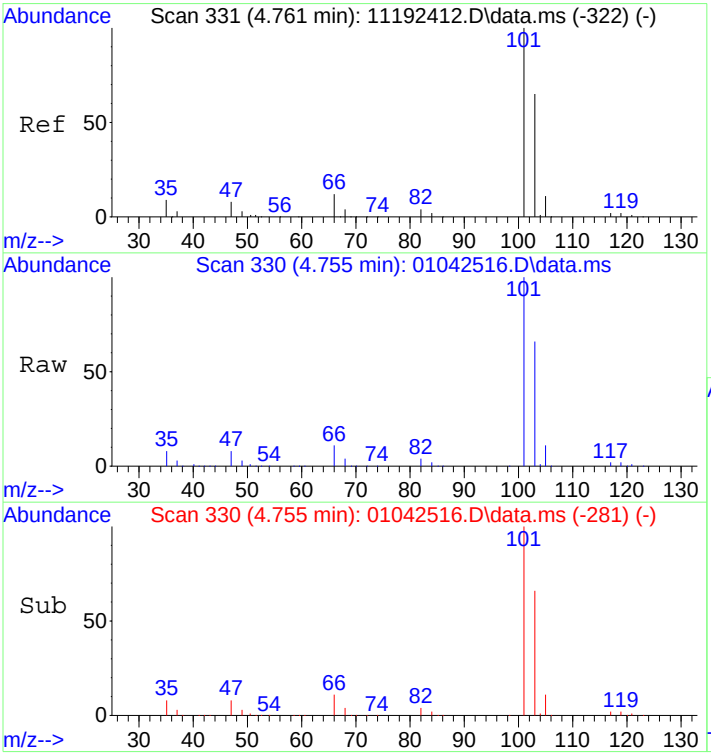


#13
Acetone
Concen: 9.17 ng
RT: 4.64 min Scan# 309
Delta R.T. -0.024 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 58 Resp: 94051

Ion	Ratio	Lower	Upper
58	100		
43	317.6	312.5	372.5

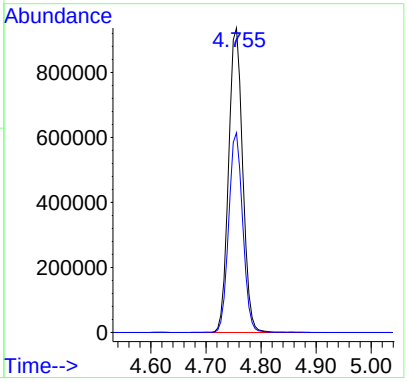


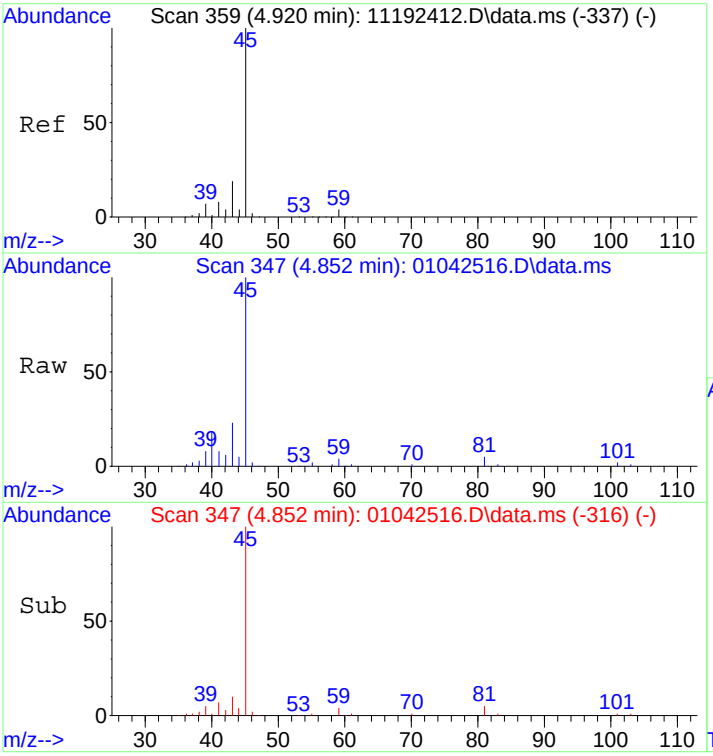


#14
Trichlorofluoromethane
Concen: 59.51 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion:101 Resp: 1661650

Ion	Ratio	Lower	Upper
101	100		
103	65.2	44.8	84.8

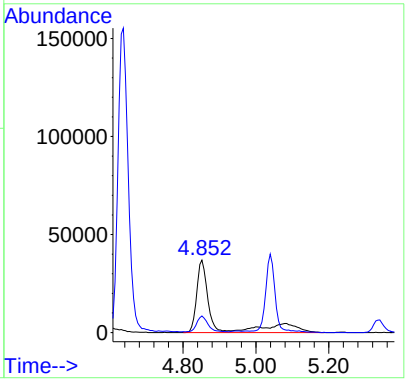


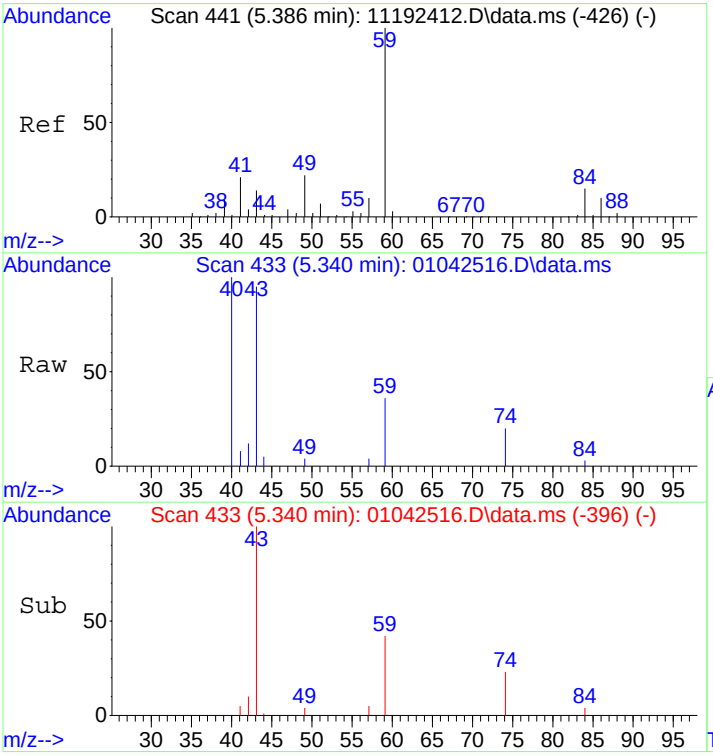


#15
2-Propanol (Isopropanol)
Concen: 2.98 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 45 Resp: 109351

Ion	Ratio	Lower	Upper
45	100		
43	17.4	0.2	40.2

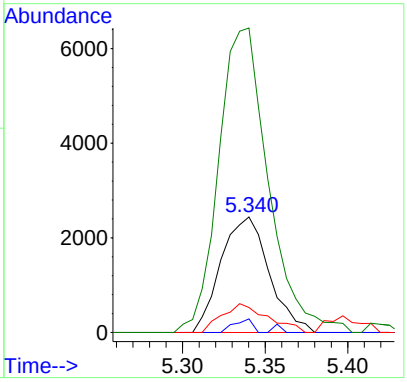


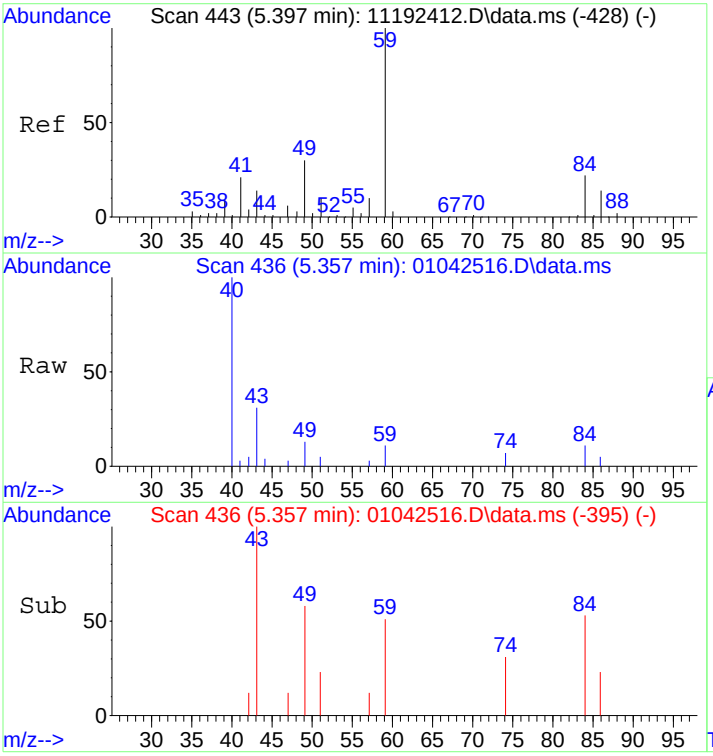


#18
2-Methyl-2-Propanol (tert-Butyl Alcohol
Concen: 0.17 ng
RT: 5.34 min Scan# 433
Delta R.T. -0.040 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 59 Resp: 4949

Ion	Ratio	Lower	Upper
59	100		
57	4.5	0.0	29.9
41	23.6	0.0	39.4
43	272.5	0.0	34.5#

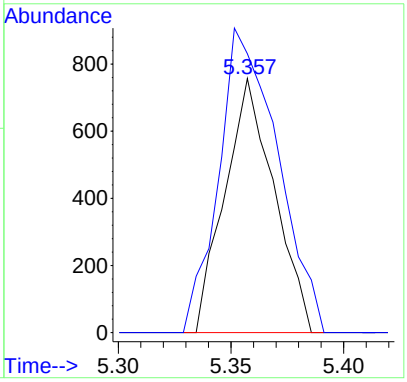


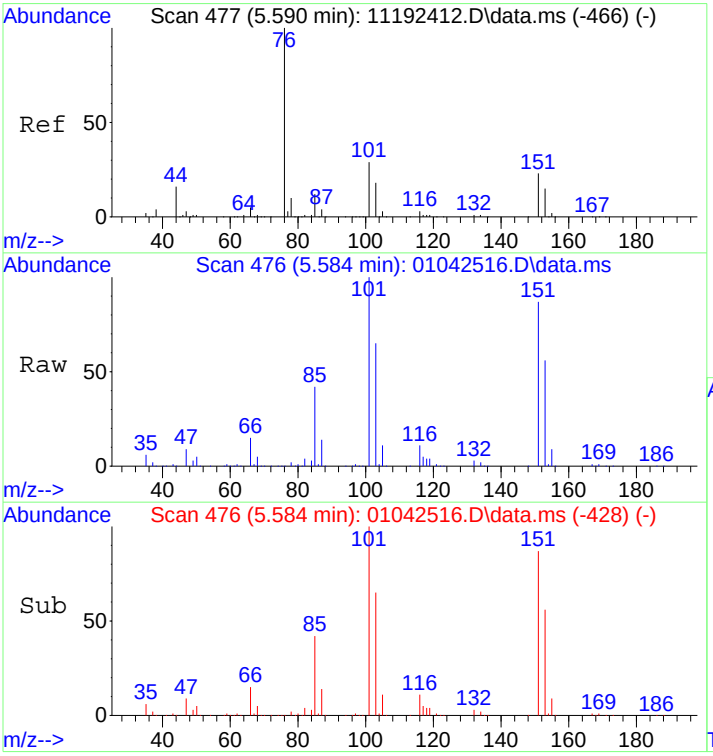


#19
Methylene Chloride
Concen: 0.08 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.017 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 84 Resp: 1148

Ion	Ratio	Lower	Upper
84	100		
49	143.6	116.0	166.0

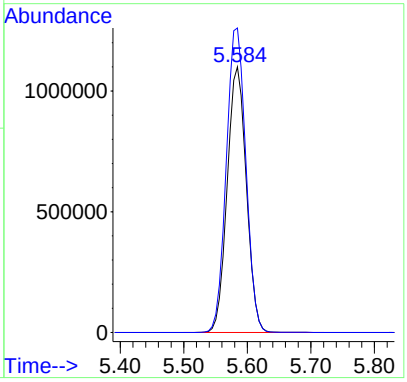


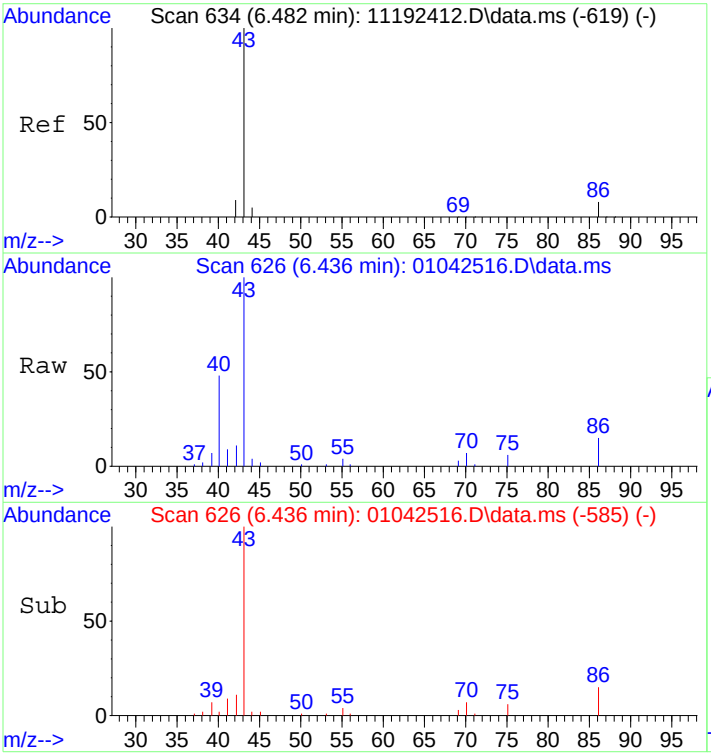


#21
Trichlorotrifluoroethane
Concen: 182.63 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion:151 Resp: 2300723

Ion	Ratio	Lower	Upper
151	100		
101	117.1	105.0	145.0

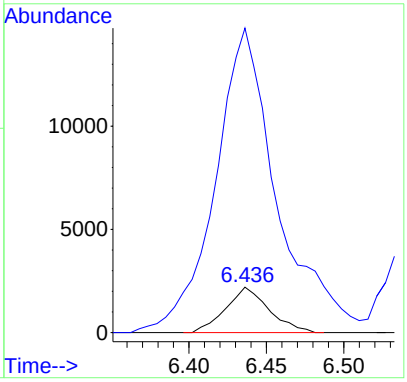


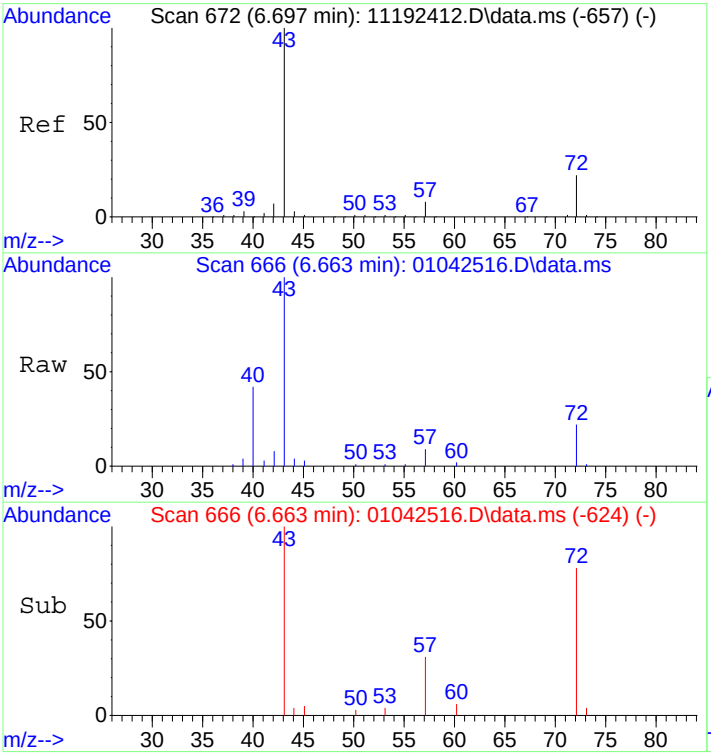


#26
Vinyl Acetate
Concen: 1.72 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 86 Resp: 4272

Ion	Ratio	Lower	Upper
86	100		
43	965.4	1331.6	1371.6#

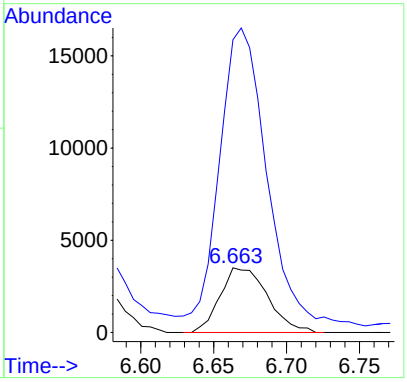


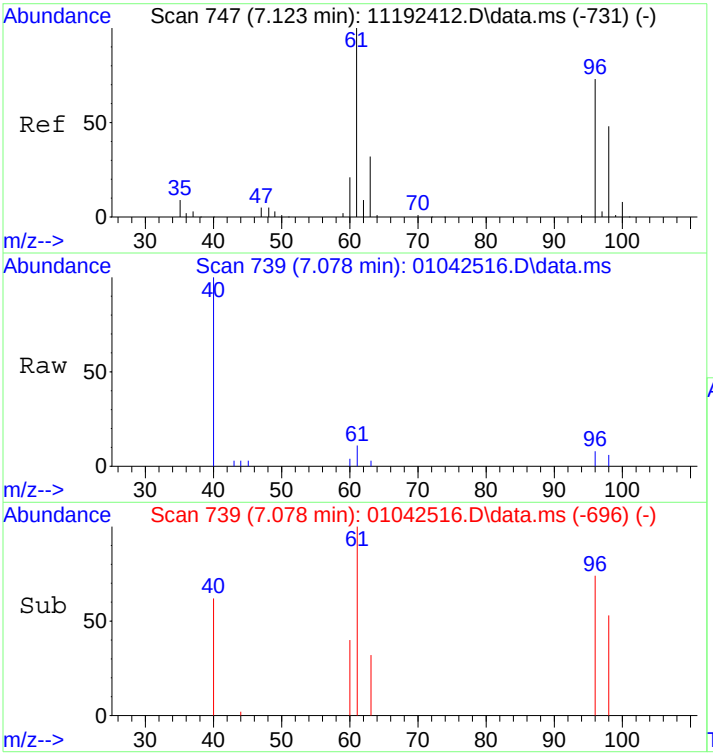


#27
2-Butanone (MEK)
Concen: 0.96 ng
RT: 6.66 min Scan# 666
Delta R.T. -0.011 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 72 Resp: 7942

Ion	Ratio	Lower	Upper
72	100		
43	458.8	439.8	479.8

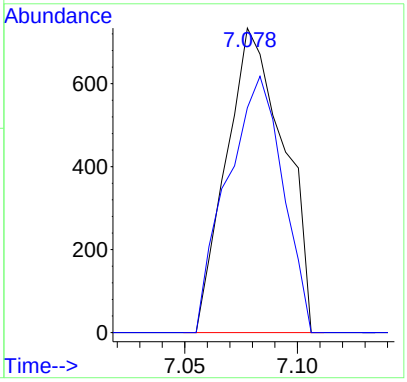


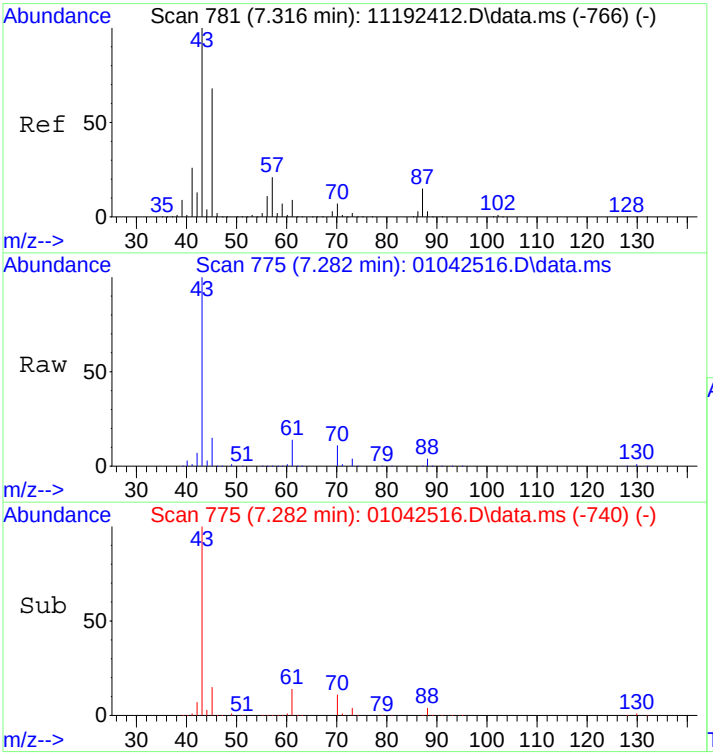


#28
cis-1,2-Dichloroethene
Concen: 0.07 ng
RT: 7.08 min Scan# 739
Delta R.T. -0.007 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 61 Resp: 1305

Ion	Ratio	Lower	Upper
61	100		
96	81.5	53.8	93.8

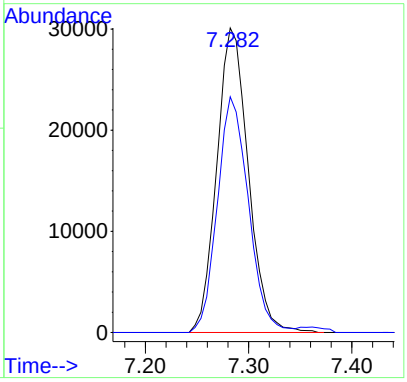


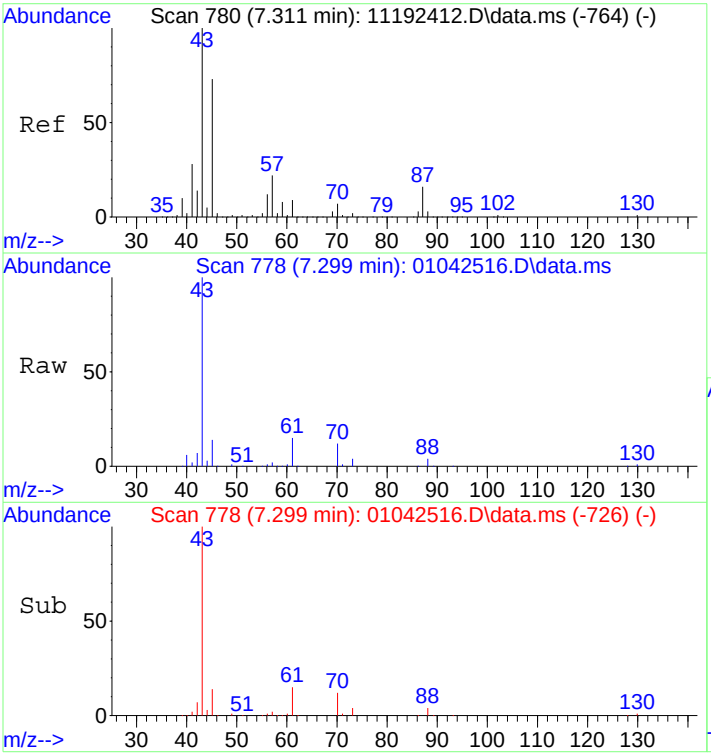


#30
Ethyl Acetate
Concen: 12.58 ng
RT: 7.28 min Scan# 775
Delta R.T. 0.001 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 61 Resp: 63994

Ion	Ratio	Lower	Upper
61	100		
70	76.3	57.3	97.3

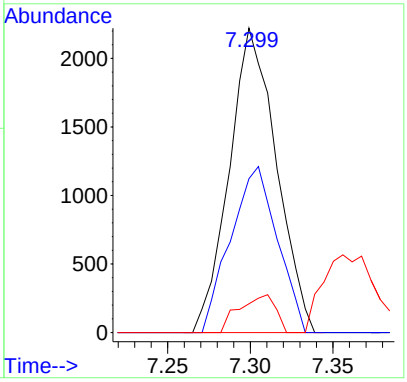


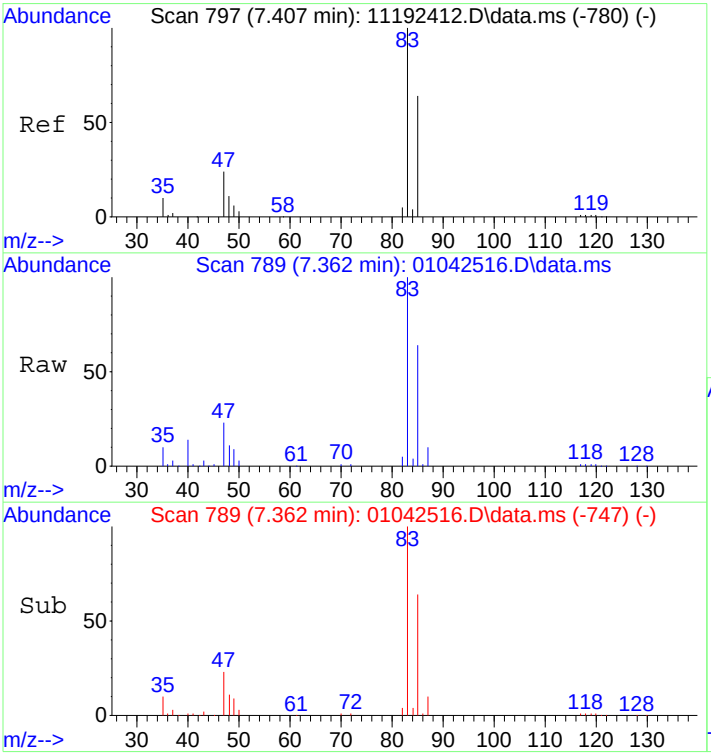


#31
n-Hexane
Concen: 0.19 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 57 Resp: 4410

Ion	Ratio	Lower	Upper
57	100		
56	54.0	43.4	65.0
86	9.5	10.9	16.3#

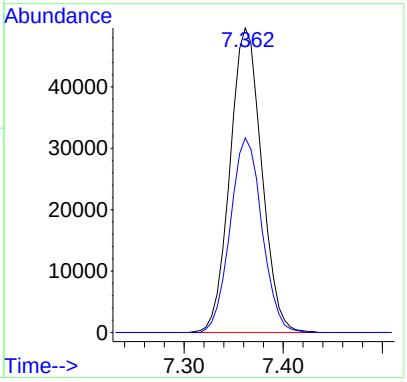


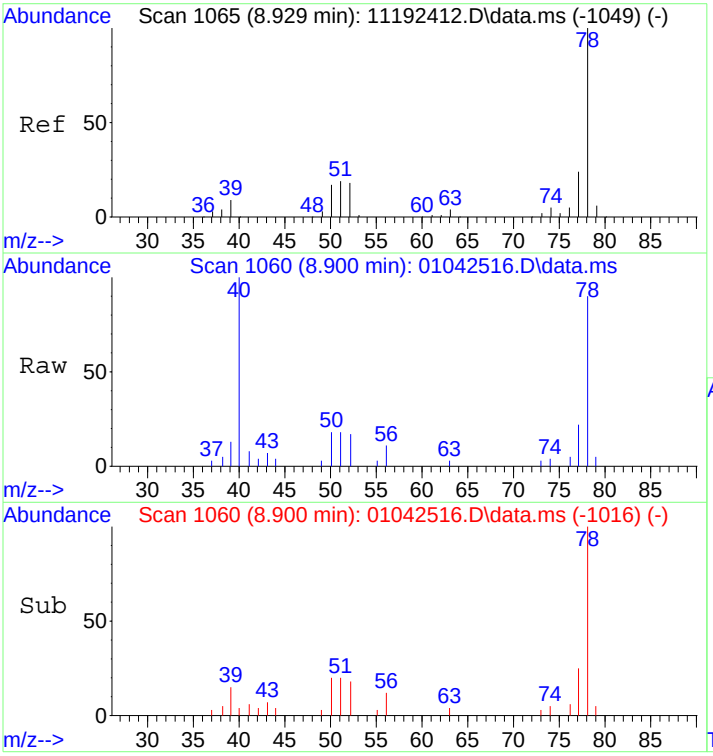


#32
Chloroform
Concen: 4.44 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 83 Resp: 110050

Ion	Ratio	Lower	Upper
83	100		
85	64.0	45.1	85.1

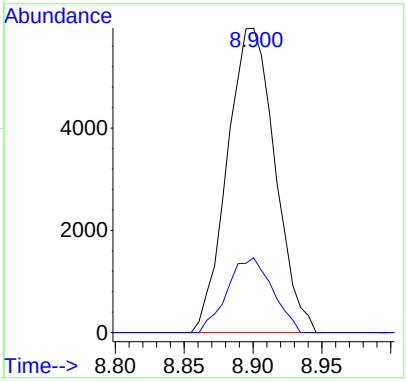


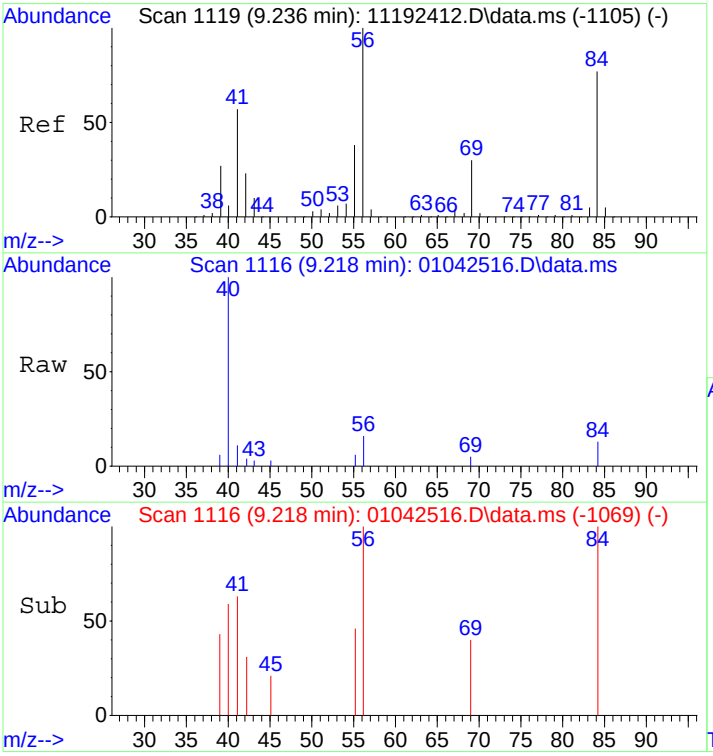


#41
Benzene
Concen: 0.27 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 78 Resp: 14330

Ion	Ratio	Lower	Upper
78	100		
77	23.3	3.7	43.7

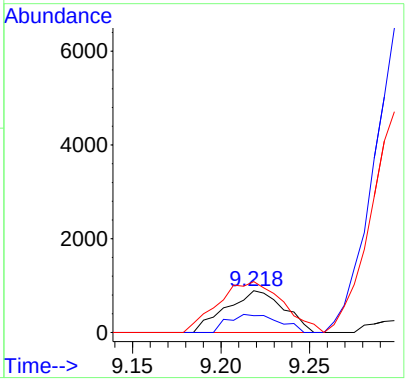


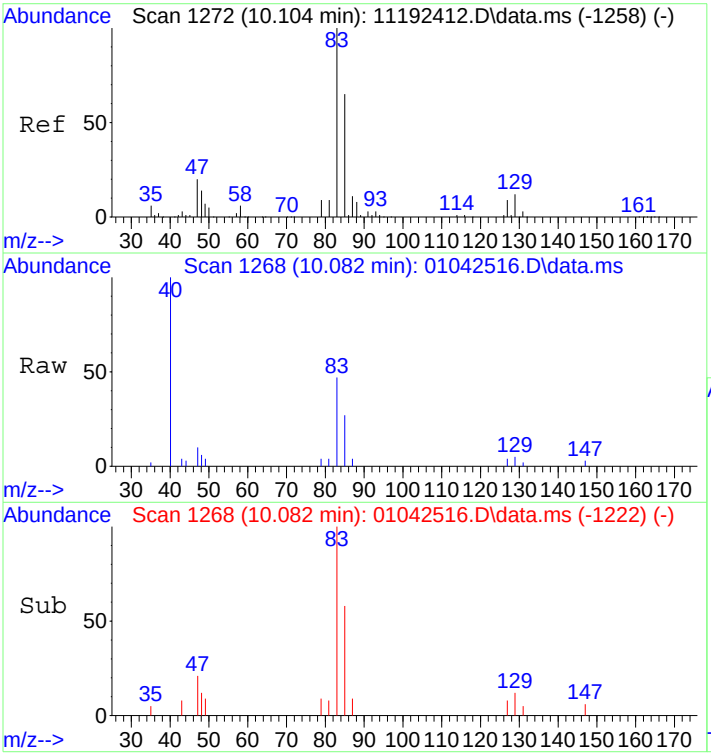


#43
Cyclohexane
Concen: 0.11 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 84 Resp: 2014

Ion	Ratio	Lower	Upper
84	100		
69	38.4	18.3	58.3
56	137.1	110.7	150.7

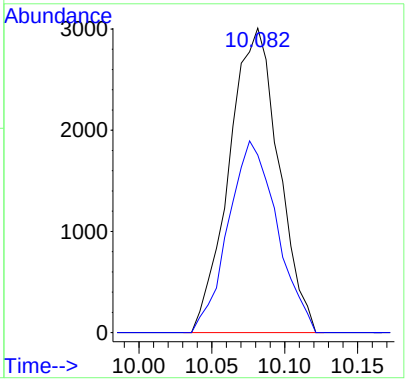


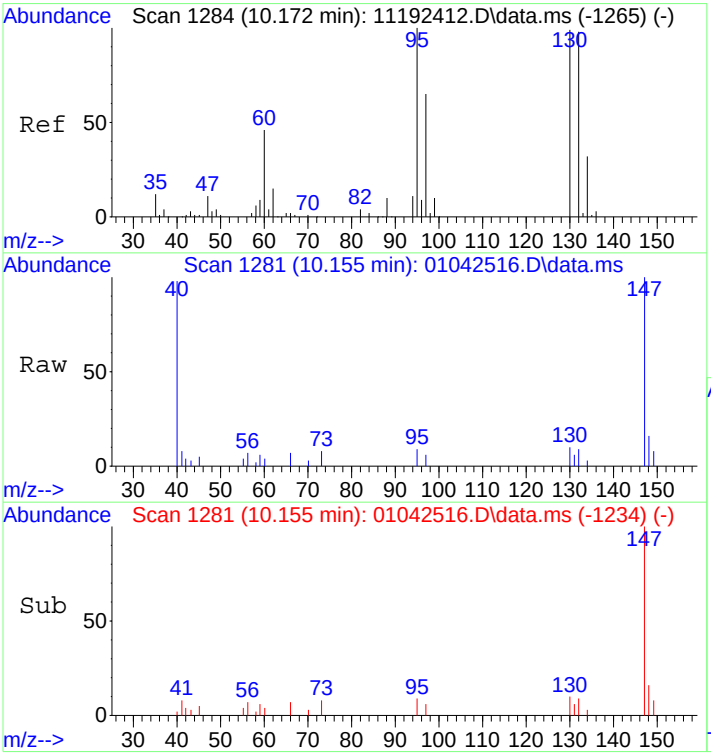


#46
Bromodichloromethane
Concen: 0.39 ng
RT: 10.08 min Scan# 1268
Delta R.T. 0.009 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 83 Resp: 7113

Ion	Ratio	Lower	Upper
83	100		
85	62.0	44.3	84.3

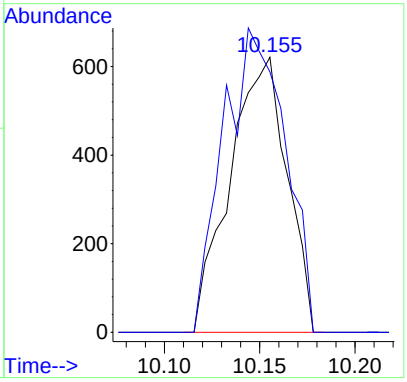


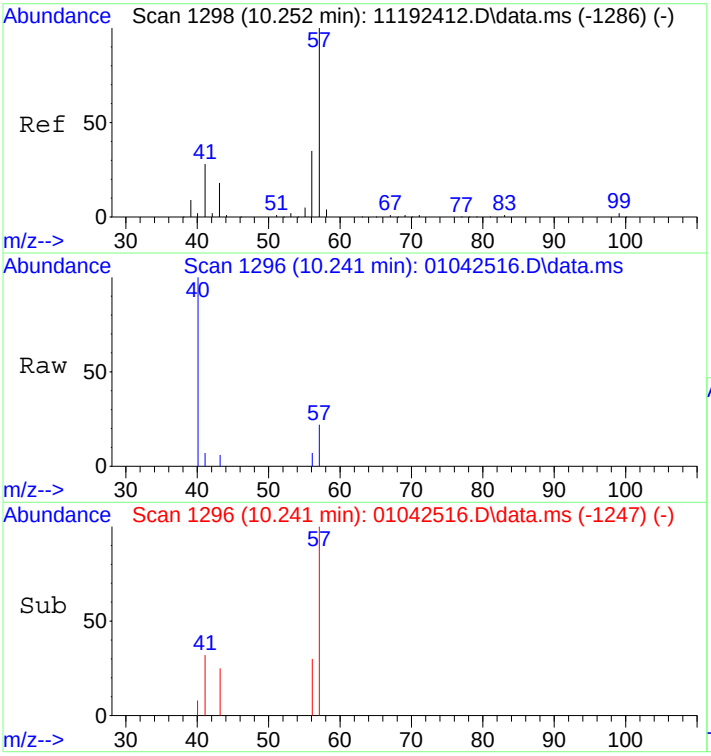


#47
Trichloroethene
Concen: 0.09 ng
RT: 10.16 min Scan# 1281
Delta R.T. 0.015 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion:130 Resp: 1294

Ion	Ratio	Lower	Upper
130	100		
132	119.6	79.3	119.3#

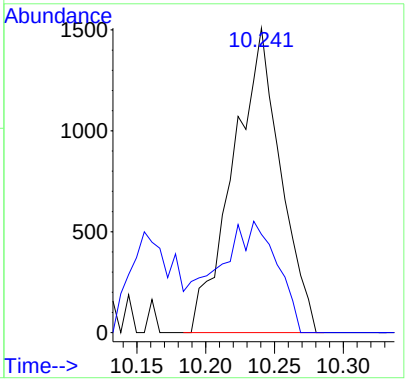


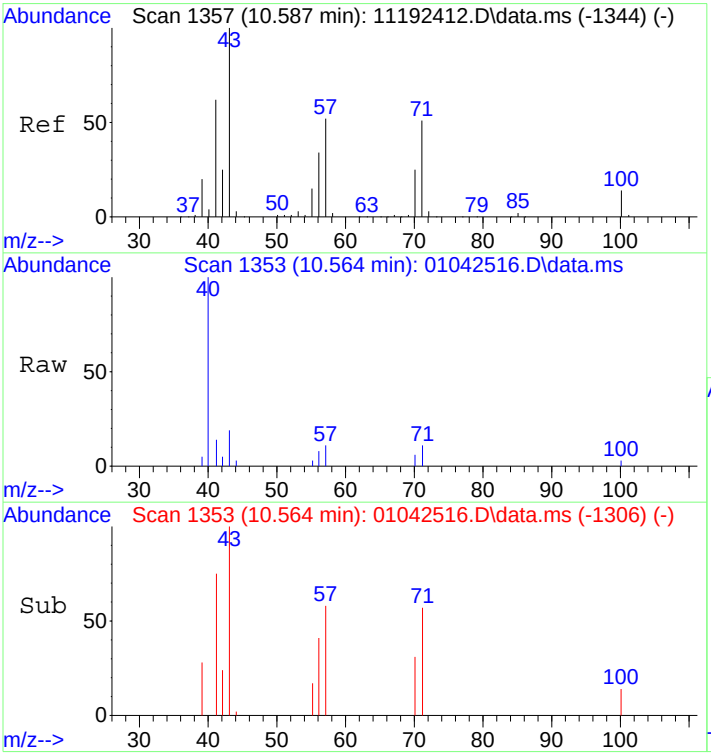


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.07 ng
RT: 10.24 min Scan# 1296
Delta R.T. 0.027 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 57 Resp: 3612

Ion	Ratio	Lower	Upper
57	100		
41	44.7	8.3	48.3

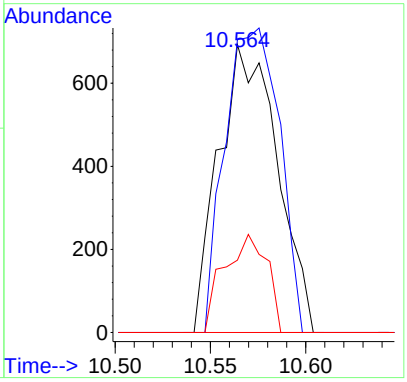


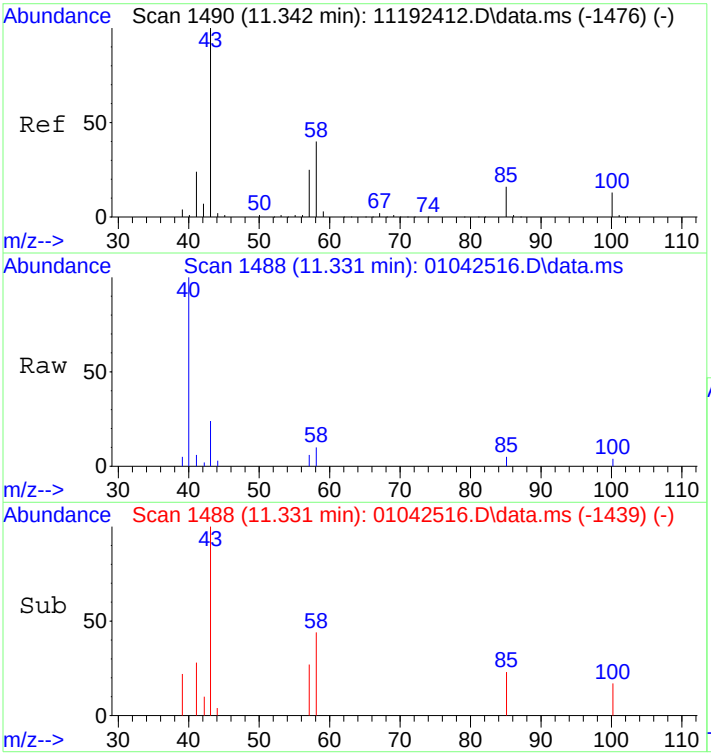


#51
n-Heptane
Concen: 0.13 ng
RT: 10.56 min Scan# 1353
Delta R.T. 0.017 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 71 Resp: 1478

Ion	Ratio	Lower	Upper
71	100		
57	98.6	83.3	123.3
100	24.9	8.7	48.7

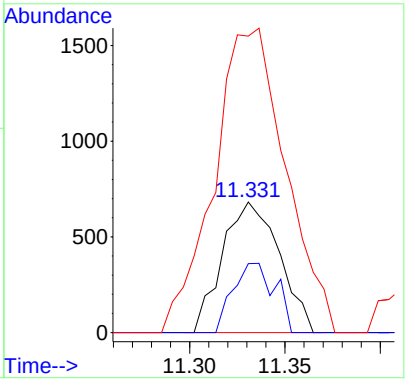


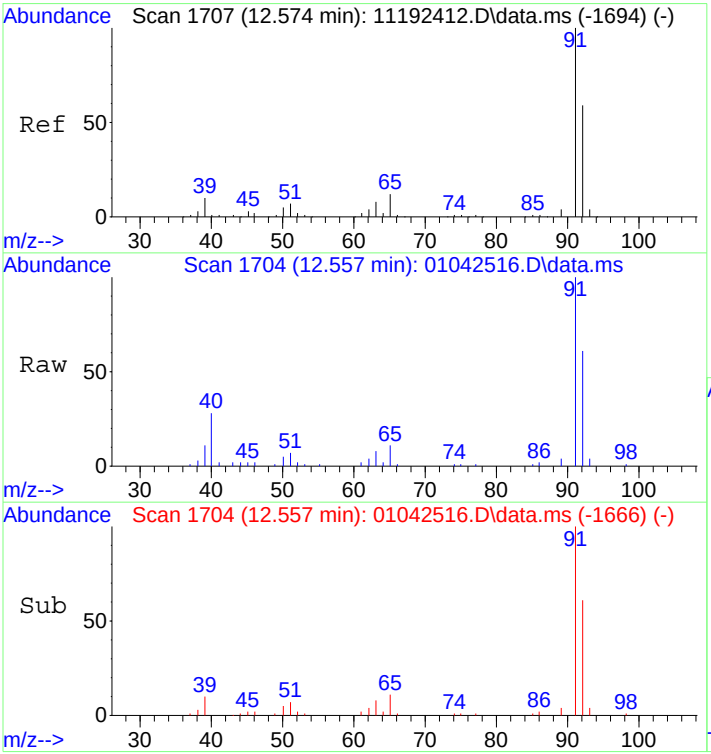


#53
4-Methyl-2-pentanone
Concen: 0.13 ng
RT: 11.33 min Scan# 1488
Delta R.T. 0.027 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 58 Resp: 1413

Ion	Ratio	Lower	Upper
58	100		
85	39.3	33.8	50.6
43	293.6	199.5	299.3

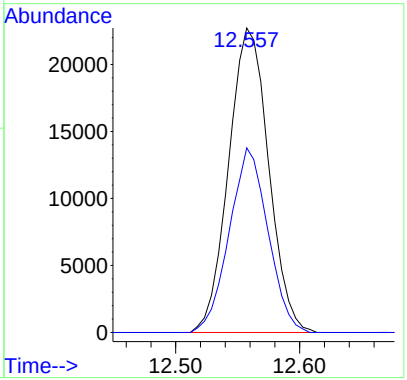


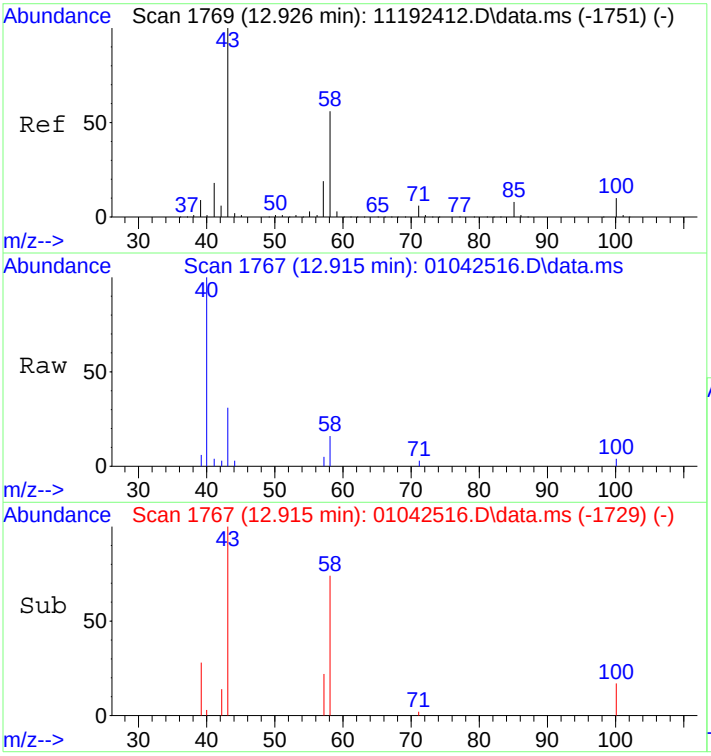


#58
Toluene
Concen: 1.03 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 91 Resp: 51086

Ion	Ratio	Lower	Upper
91	100		
92	58.5	39.2	79.2

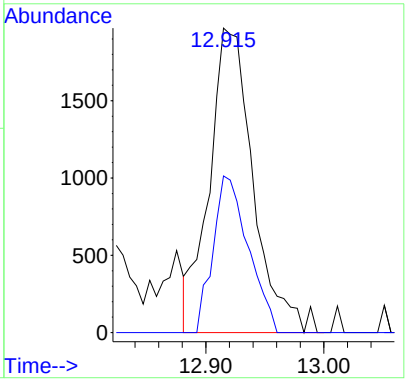


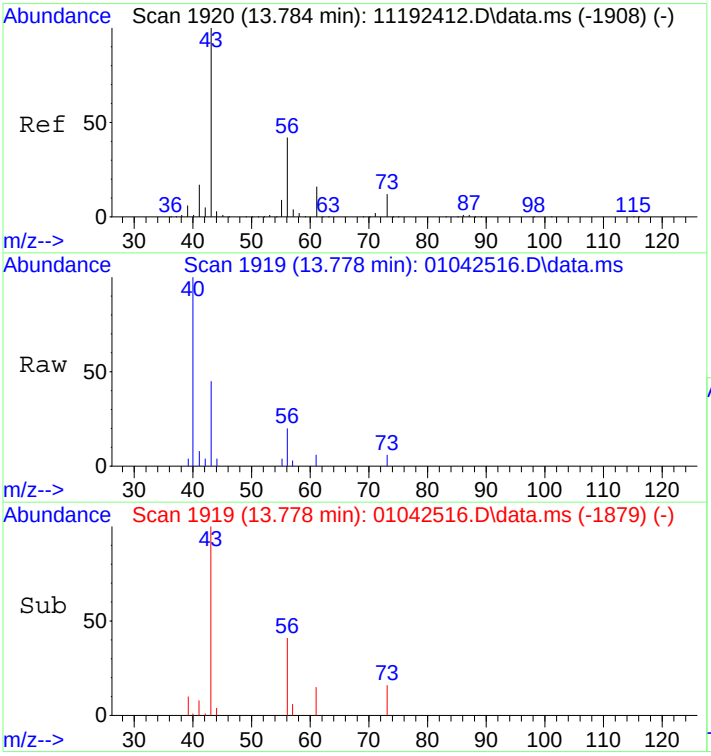


#59
2-Hexanone
Concen: 0.21 ng
RT: 12.91 min Scan# 1767
Delta R.T. -0.034 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 43 Resp: 5111

Ion	Ratio	Lower	Upper
43	100		
58	41.1	35.2	75.2

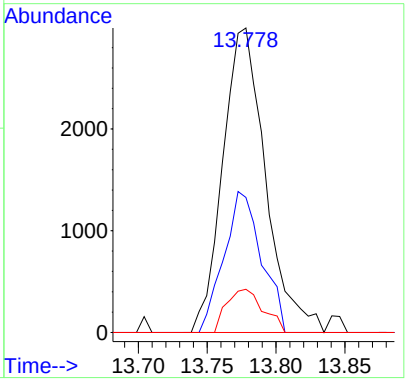


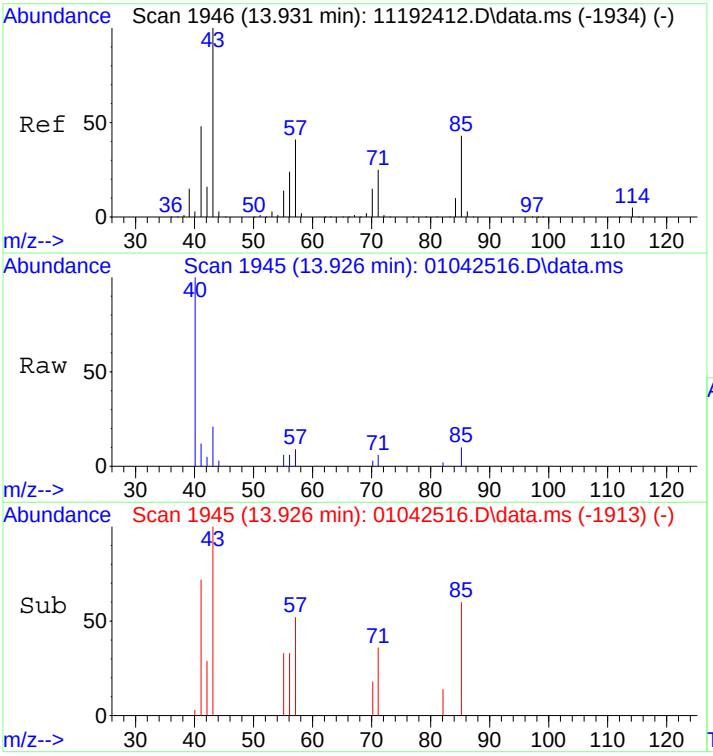


#62
n-Butyl Acetate
Concen: 0.24 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 43 Resp: 6484

Ion	Ratio	Lower	Upper
43	100		
56	40.7	20.9	60.9
73	12.2	0.0	32.0

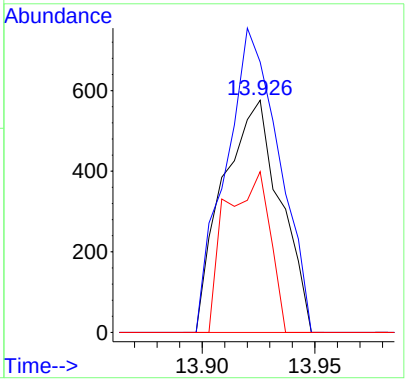


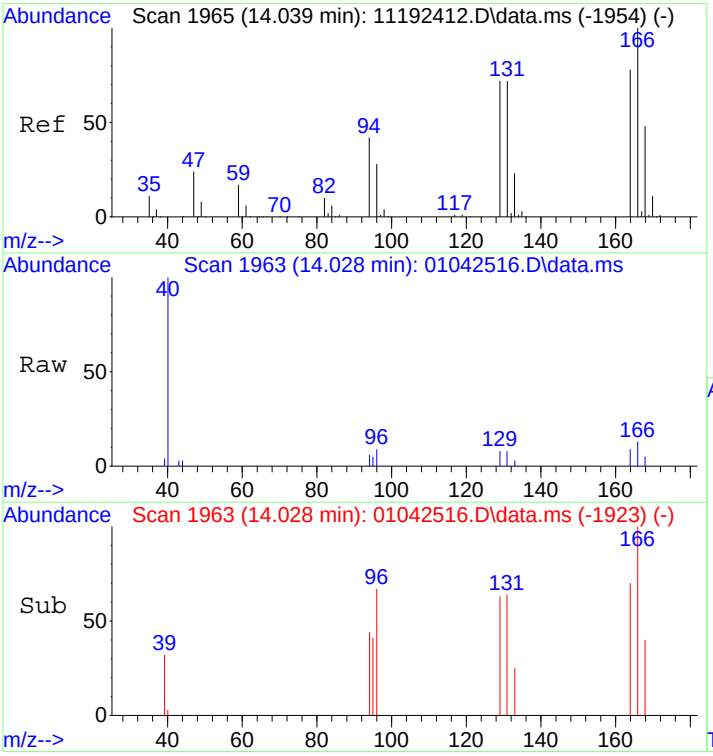


#63
n-Octane
Concen: 0.10 ng
RT: 13.93 min Scan# 1945
Delta R.T. -0.017 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 57 Resp: 1018

Ion	Ratio	Lower	Upper
57	100		
85	122.8	83.6	125.4
71	52.9	49.0	73.4

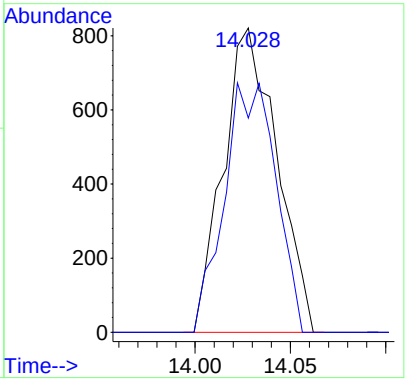


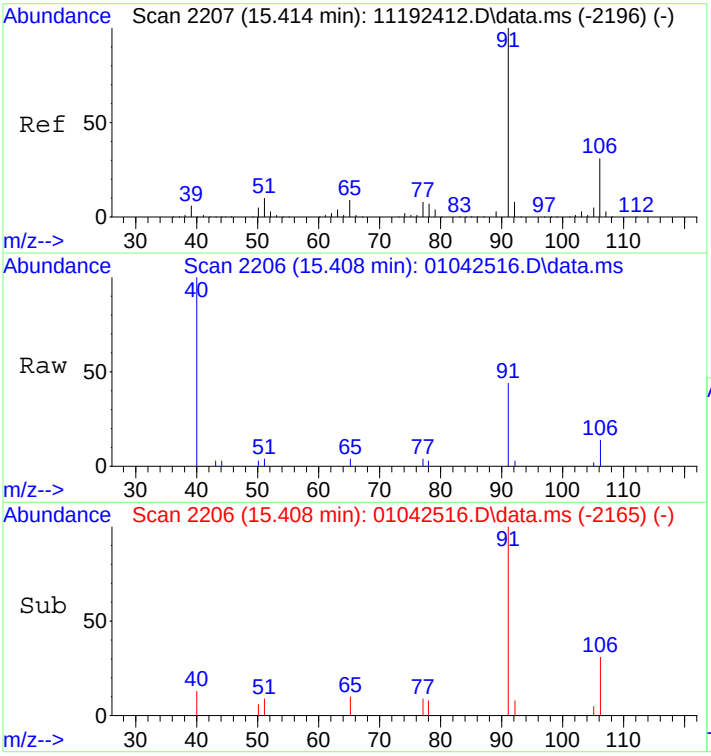


#64
Tetrachloroethene
Concen: 0.11 ng
RT: 14.03 min Scan# 1963
Delta R.T. -0.023 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion:166 Resp: 1605

Ion	Ratio	Lower	Upper
166	100		
164	78.9	58.7	98.7

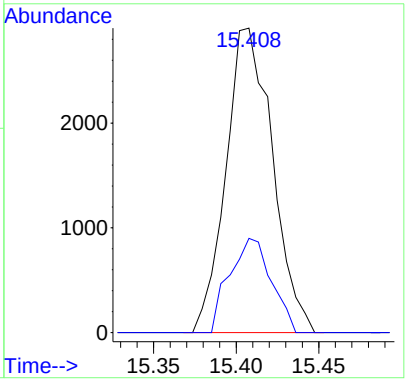


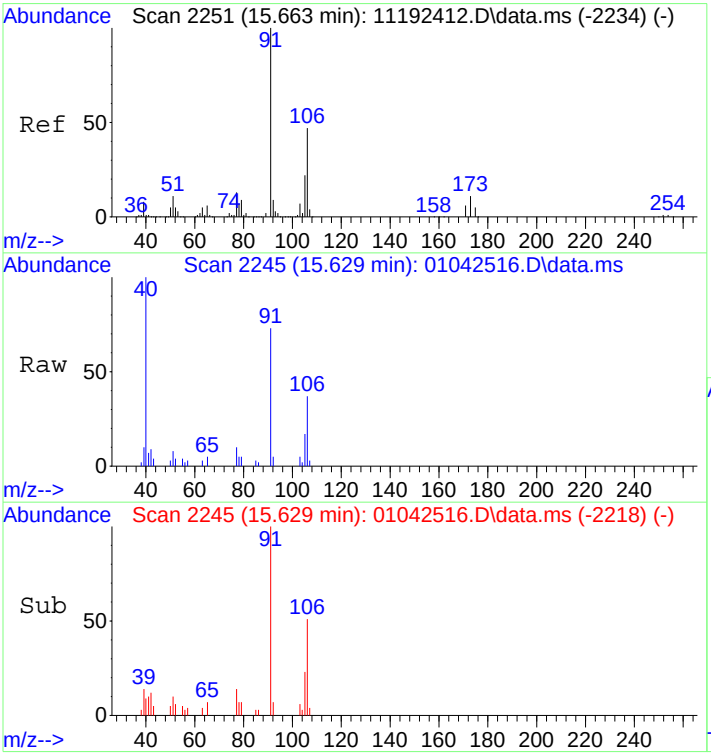


#66
Ethylbenzene
Concen: 0.10 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 91 Resp: 5690

Ion	Ratio	Lower	Upper
91	100		
106	27.9	10.7	50.7

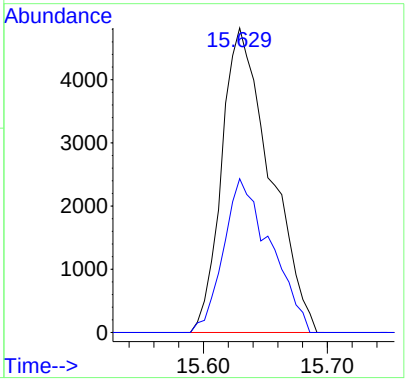


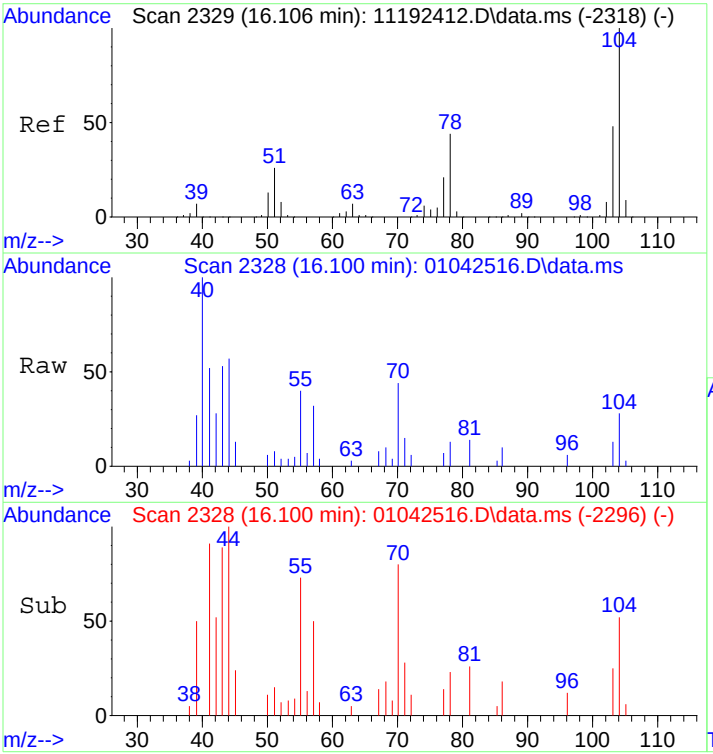


#67
m- & p-Xylenes
Concen: 0.29 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 91 Resp: 13081

Ion	Ratio	Lower	Upper
91	100		
106	49.2	27.1	67.1

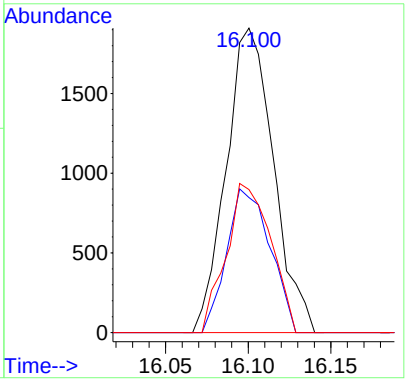


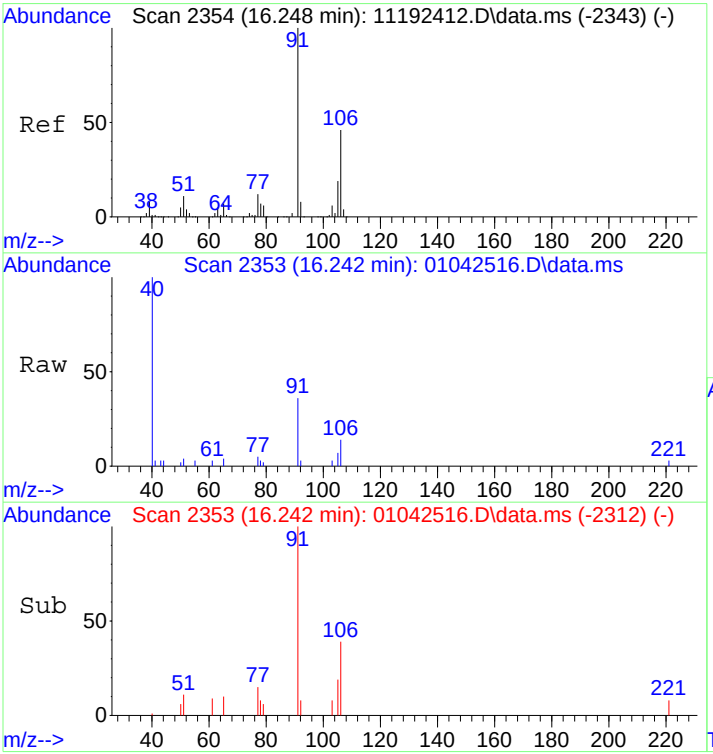


#69
Styrene
Concen: 0.12 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion:104 Resp: 3807

Ion	Ratio	Lower	Upper
104	100		
78	43.3	23.0	63.0
103	46.2	27.5	67.5

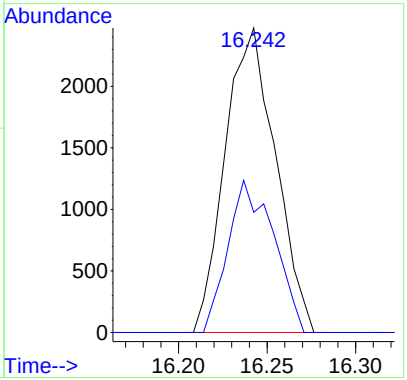


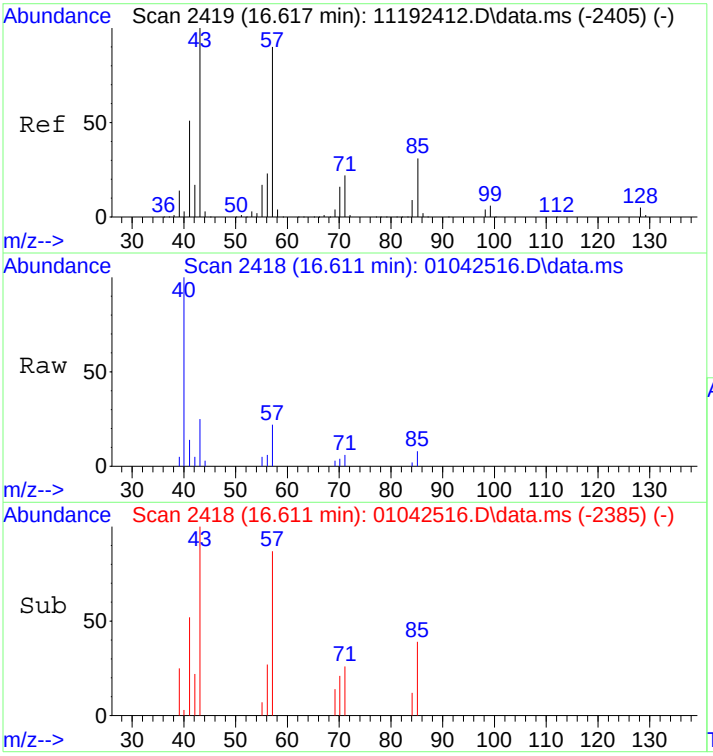


#70
o-Xylene
Concen: 0.11 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 91 Resp: 4898

Ion	Ratio	Lower	Upper
91	100		
106	45.4	25.8	65.8

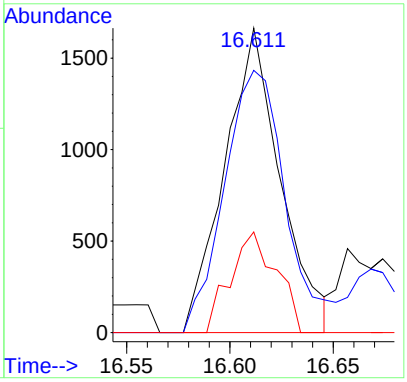


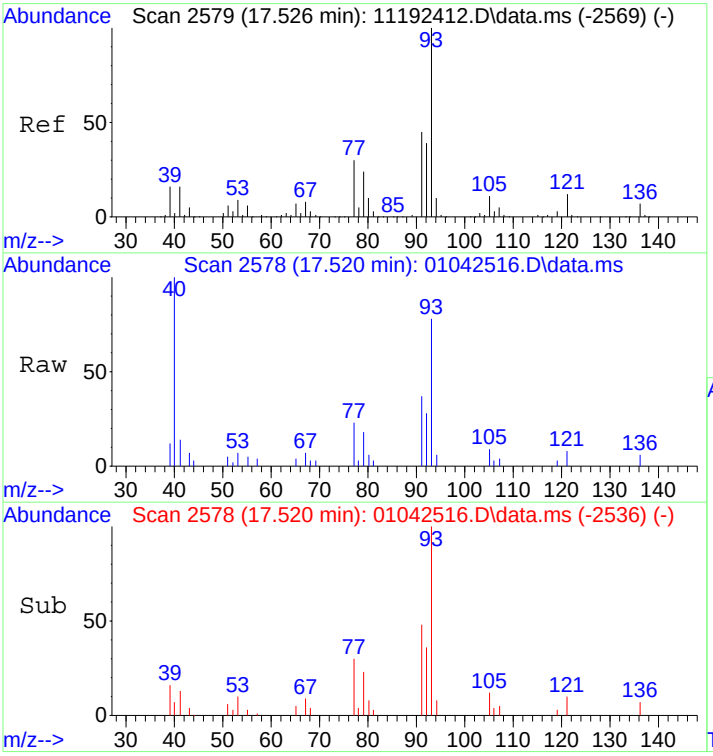


#71
n-Nonane
Concen: 0.13 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 43 Resp: 3125

Ion	Ratio	Lower	Upper
43	100		
57	95.0	69.4	109.4
85	27.2	10.5	50.5

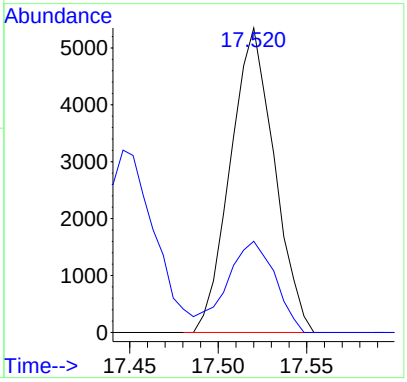


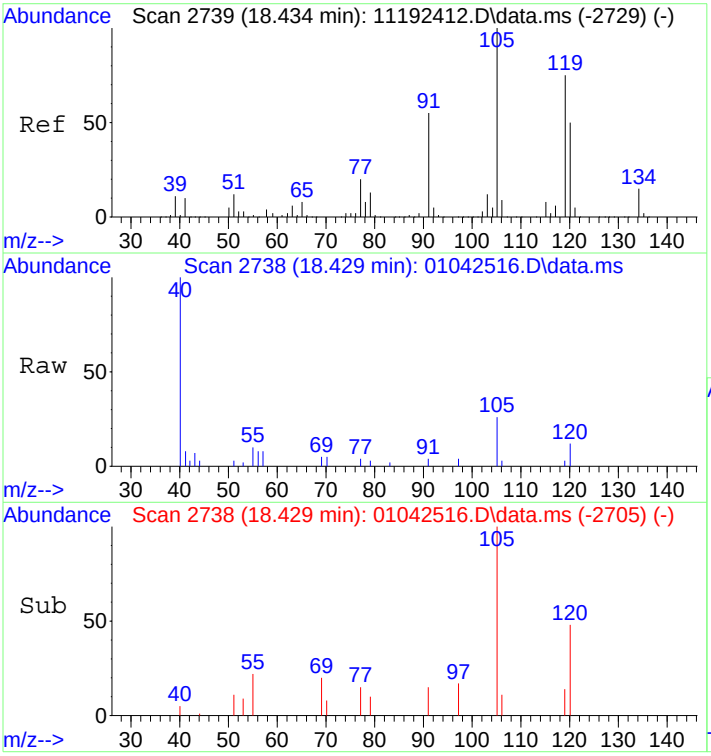


#75
alpha-Pinene
Concen: 0.34 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 93 Resp: 9223

Ion	Ratio	Lower	Upper
93	100		
77	33.1	10.1	50.1

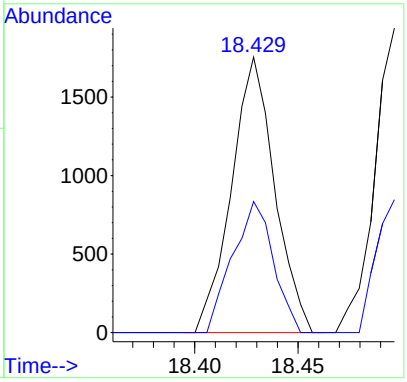


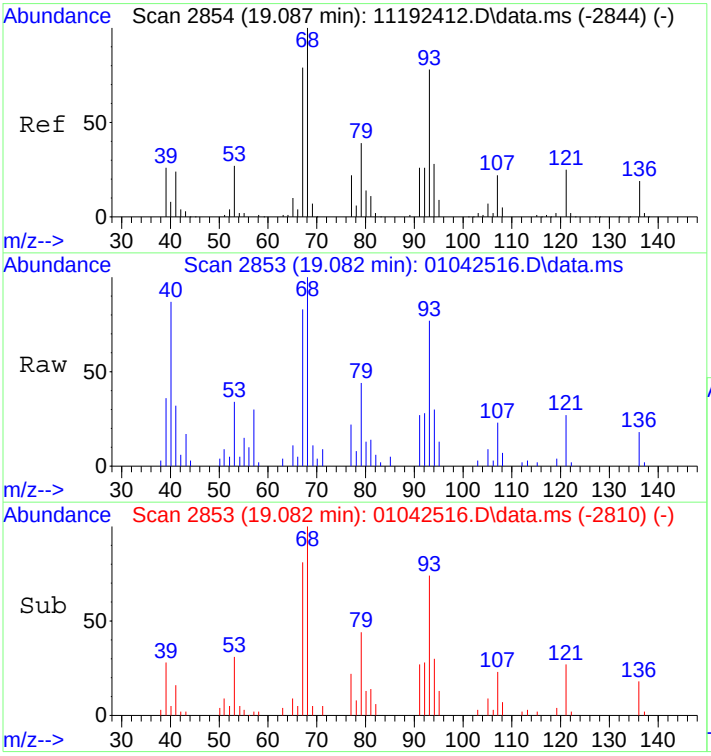


#82
1,2,4-Trimethylbenzene
Concen: 0.06 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion:105 Resp: 2554

Ion	Ratio	Lower	Upper
105	100		
120	44.8	31.8	71.8

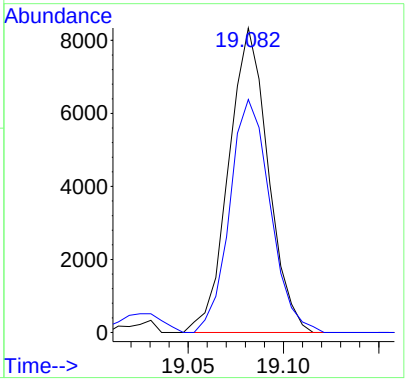




#91
d-Limonene
Concen: 0.82 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01042516.D
Acq: 4 Jan 2025 15:55

Tgt Ion: 68 Resp: 12054

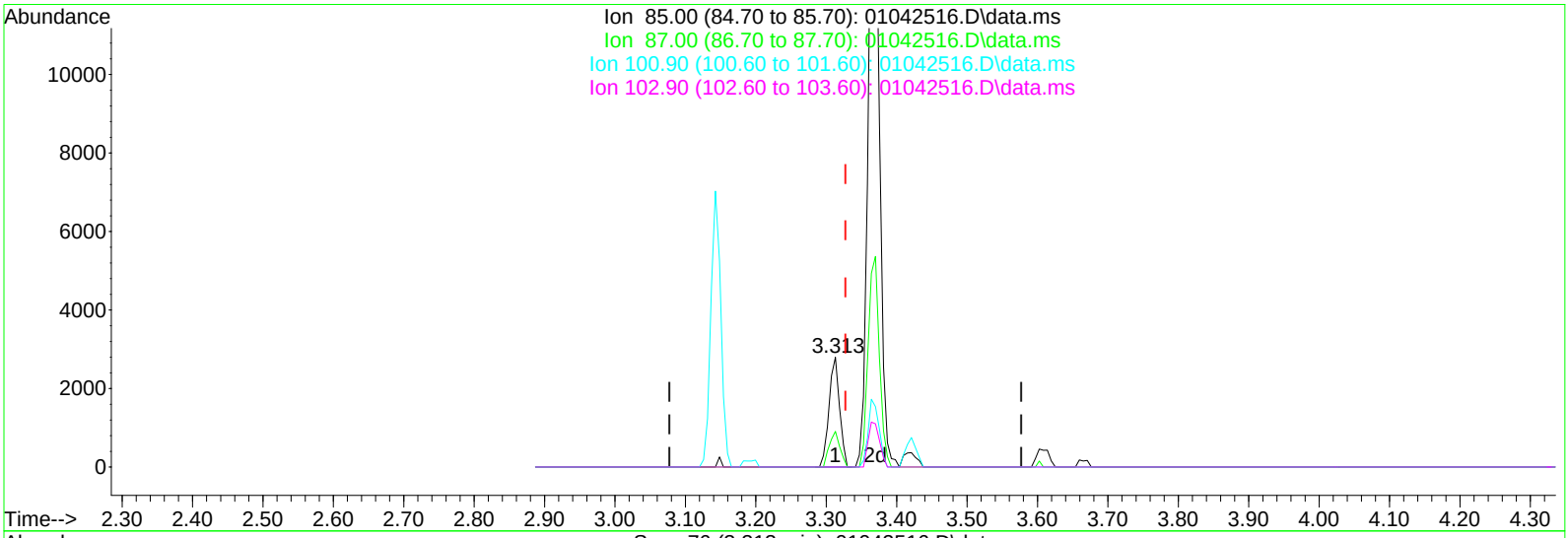
Ion	Ratio	Lower	Upper
68	100		
93	78.3	56.6	96.6

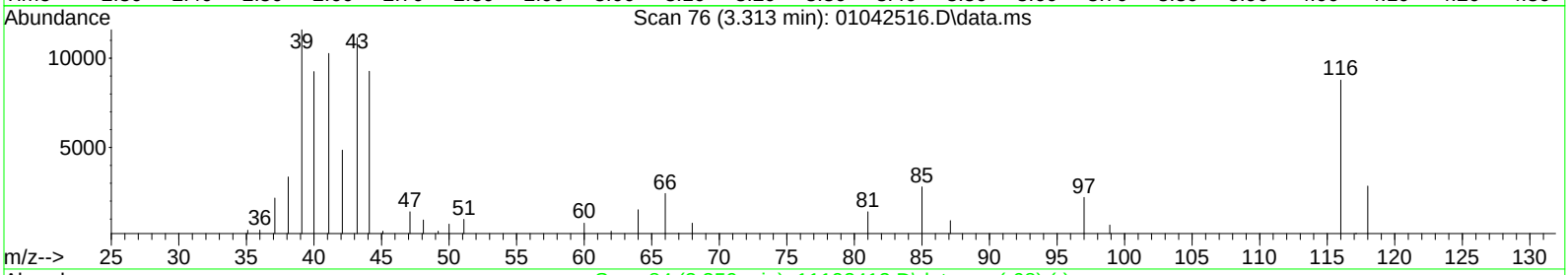


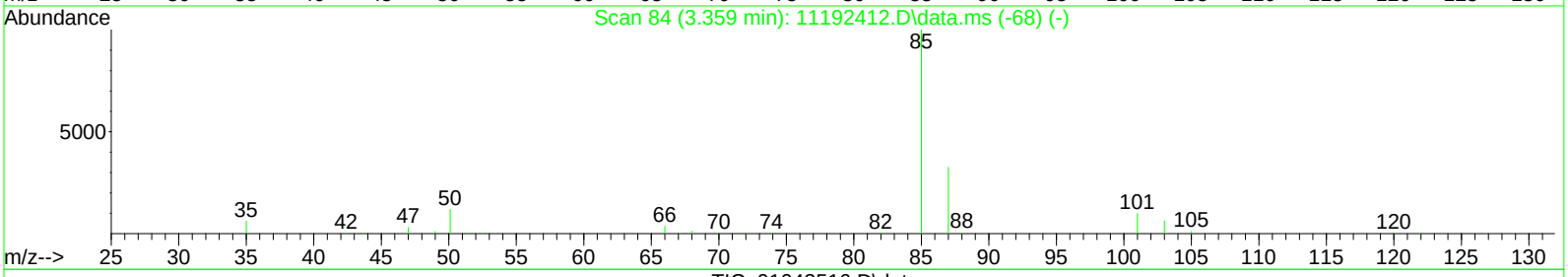
Quantitation Report (Qedit)

Data Path : J:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 05 15:07:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042516.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.313min (-0.014) 0.10ng

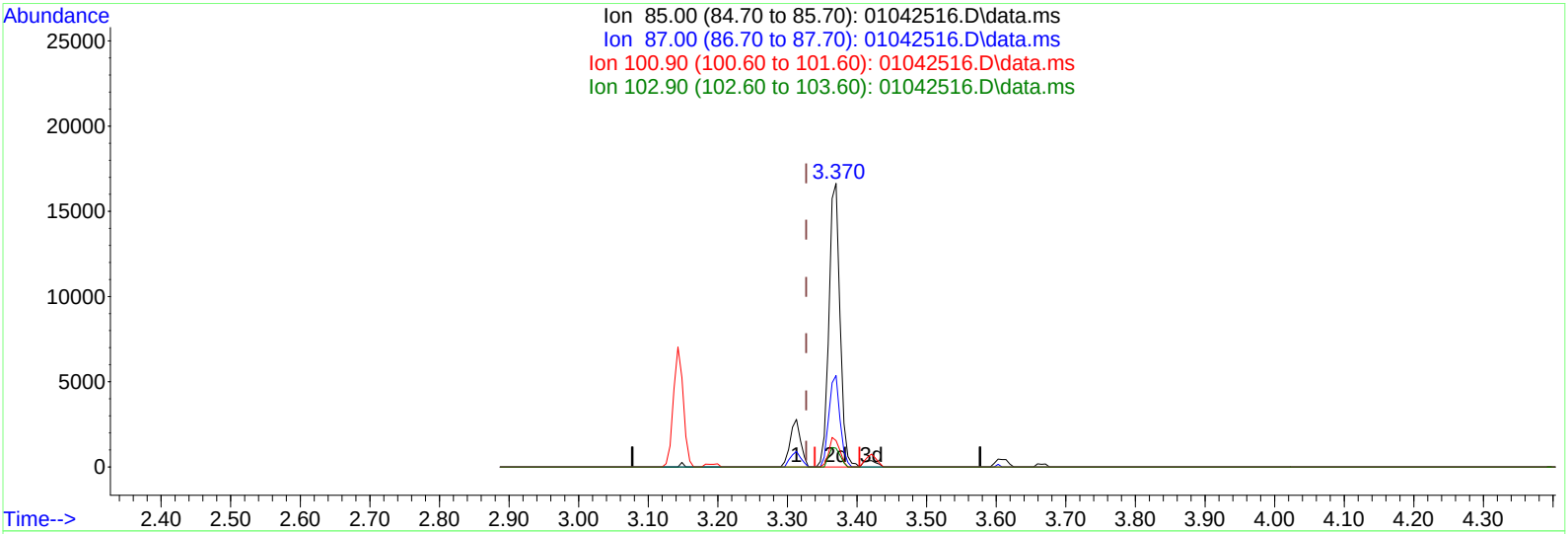
response 2904

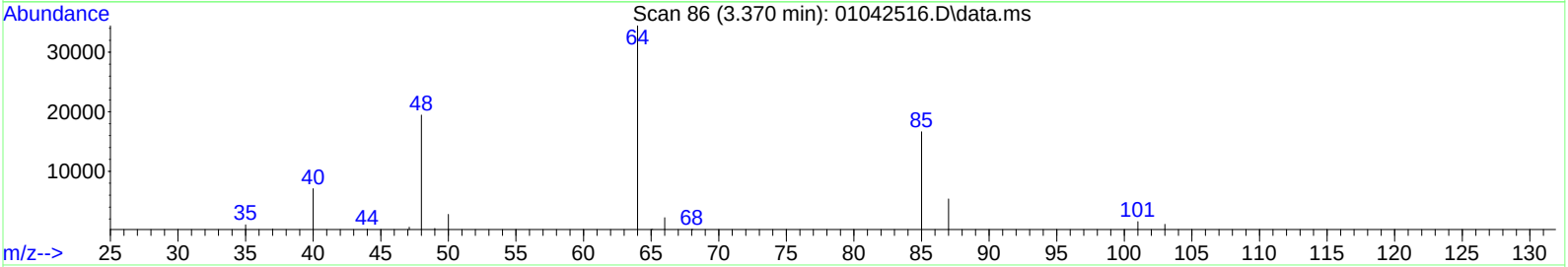
Ion	Exp%	Act%
85.00	100	100
87.00	32.60	32.75
100.90	9.60	0.00
102.90	6.20	0.00

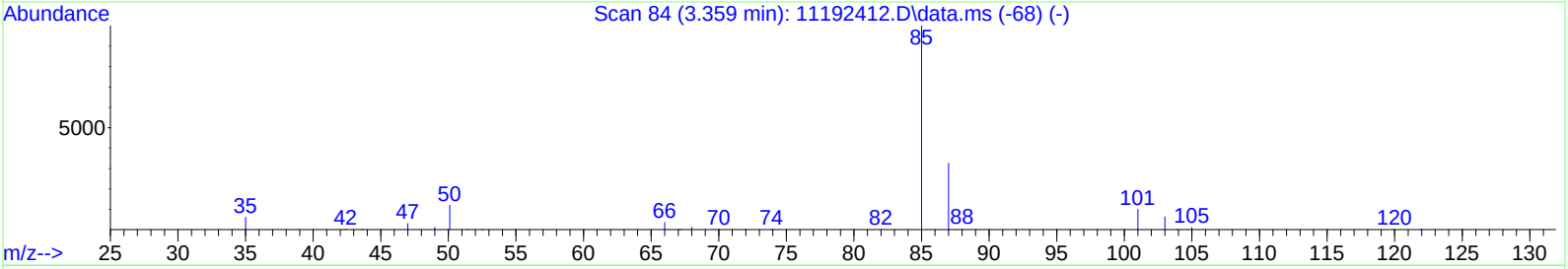
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 06 18:25:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01042516.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.370min (+0.043) 0.62ng m

response 18426

Ion	Exp%	Act%
85.00	100	100
87.00	32.60	32.42
100.90	9.60	10.02
102.90	6.20	6.93

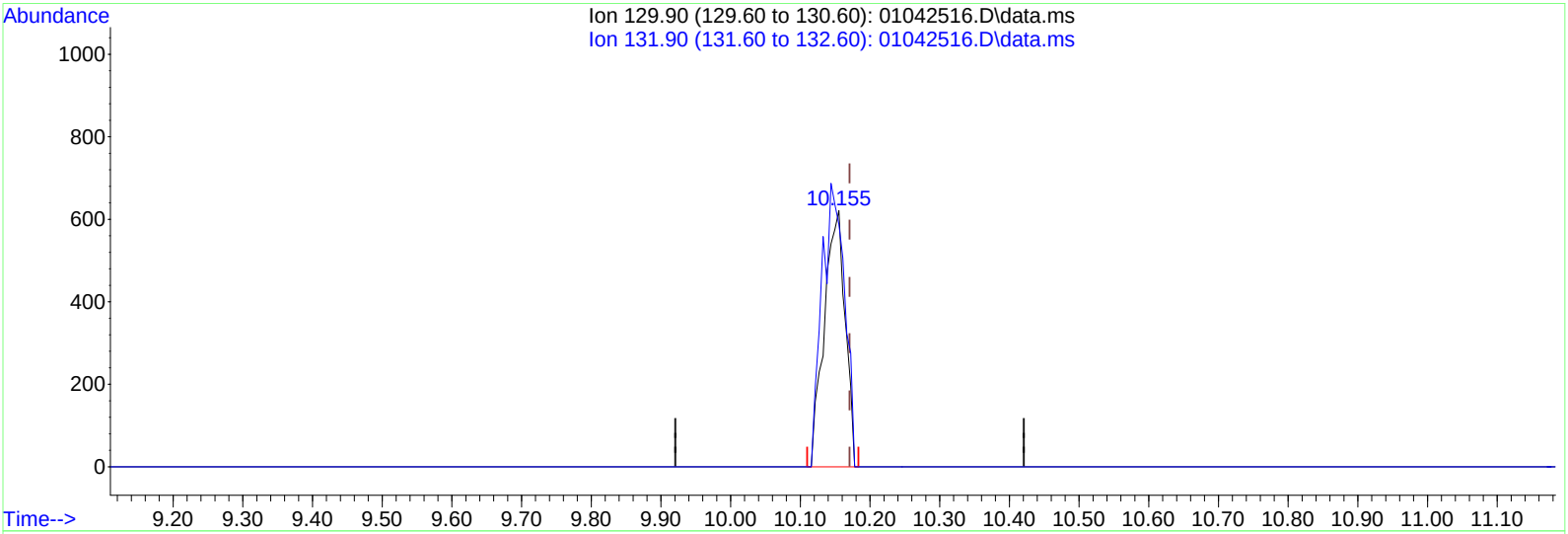
MP

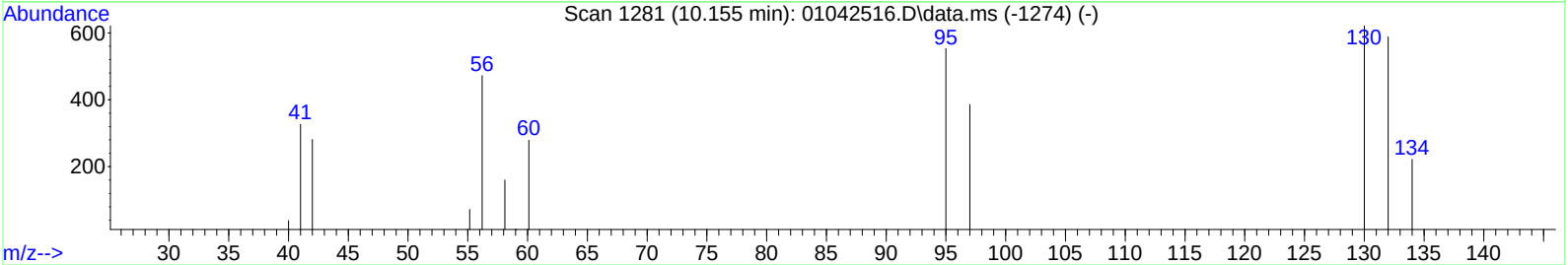
1/6/25

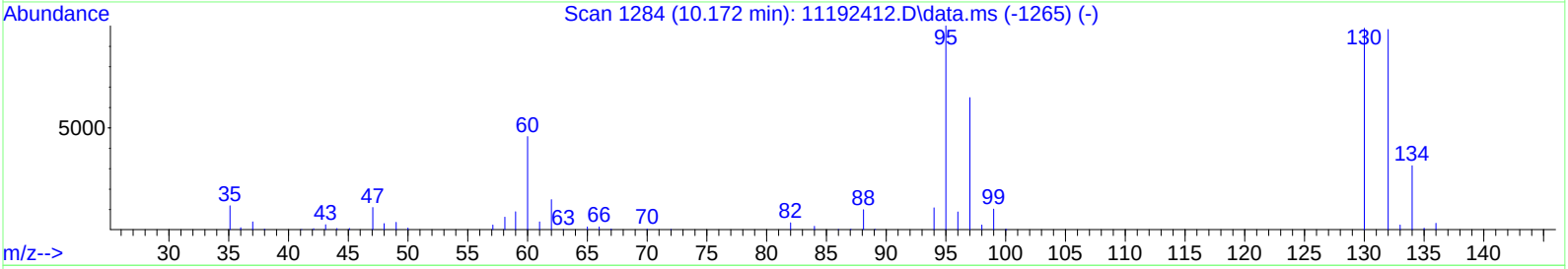
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 06 06:43:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042516.D\data.ms

(47) Trichloroethene (T)

10.155min (-0.015) 0.09ng

response 1294

Ion	Exp%	Act%
129.90	100	100
131.90	99.30	119.55#
0.00	0.00	0.00
0.00	0.00	0.00

ABS

1/6/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

NOA 1/6/25

Quant Time: Jan 06 20:26:36 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

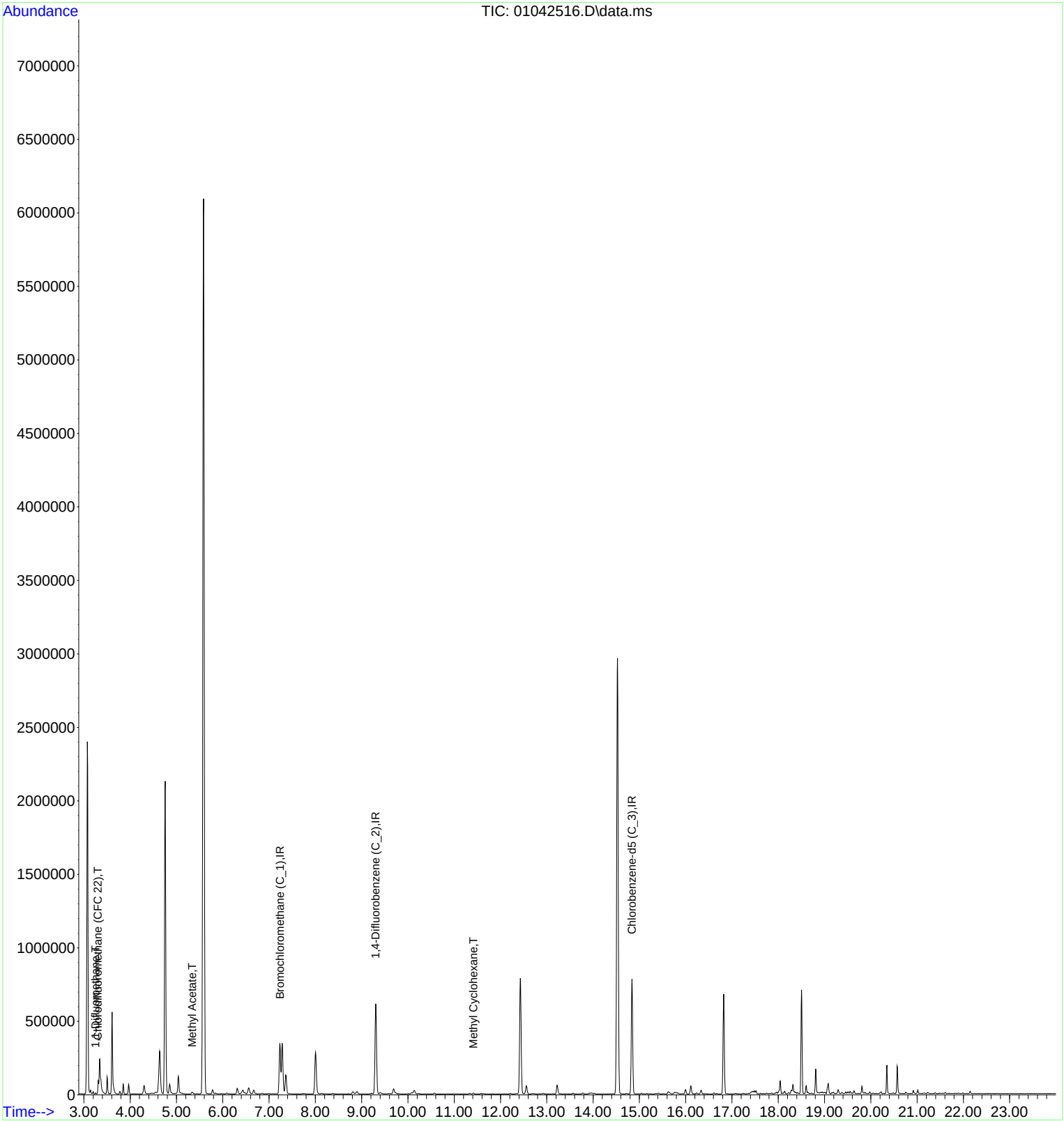
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.24	130	153942	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	654641	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	116317	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	89	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	d		
4) 1,1-Difluoroethane	3.25	65	1724	0.138	ng		97
5) Chlorodifluoromethane ...	3.30	67	794	0.185	ng		88
6) 1-Chloro-1,1-Difluoroe...	3.51	65	465	N.D.			
7) Dichlorofluoromethane ...	4.24	67	409	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	719	N.D.			
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.34	43	13487	0.382	ng	#	73
12) 2-Methylpentane	0.00	71	0	N.D.	d		
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	9.51	56	636	N.D.			
18) Dibromomethane	9.80	174	117	N.D.			
20) Methyl Cyclohexane	11.42	55	2530	0.122	ng		100
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	15.20	91	116	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	d		
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	1265	N.D.			
27) 4-Chlorotoluene	17.68	91	1265	N.D.			
28) Indane	19.12	117	437	N.D.			
29) Indene	19.08	115	52	N.D.			
30) 1,2,4,5-Tetramethylben...	20.17	119	71	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	623	N.D.			
32) 1,2,3,5-Tetramethylben...	20.57	119	824	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 06 20:26:36 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072510.D
Acq On : 7 Jan 2025 8:46
Operator : SC
Sample : P2405139-004Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

NOA 1/7/25

Quant Time: Jan 07 09:19:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	147808	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.29	114	621257	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.83	54	111240	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.99	65	244287	12.131	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.04%				
57) Toluene-d8 (SS2)	12.42	98	634864	12.865	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.96%				
73) Bromofluorobenzene (SS3)	16.82	174	243906	14.323	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.56%				
Target Compounds							Qvalue
2) Propene	3.33	42	429	N.D.			
3) Dichlorodifluoromethan...	3.39	85	1552	0.054	ng	#	87
4) Chloromethane	3.53	50	239	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.29	45	6038	0.552	ng		98
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	4.56	56	199	N.D.			
13) Acetone	4.65	58	7163	0.720	ng		94
14) Trichlorofluoromethane	4.76	101	126041	4.651	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	5379	0.151	ng		93
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.36	59	294	N.D.			
19) Methylene Chloride	5.35	84	322	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	171796	14.052	ng		93
22) Carbon Disulfide	5.62	76	1370	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	273	N.D.			
28) cis-1,2-Dichloroethene	7.07	61	212	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.29	61	3819	0.774	ng		100
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.34	83	7378	0.307	ng		97
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.85	56	727	No Calib		#	
41) Benzene	8.89	78	1453	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	320	N.D.			
47) Trichloroethene	10.14	130	350	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072510.D
Acq On : 7 Jan 2025 8:46
Operator : SC
Sample : P2405139-004Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

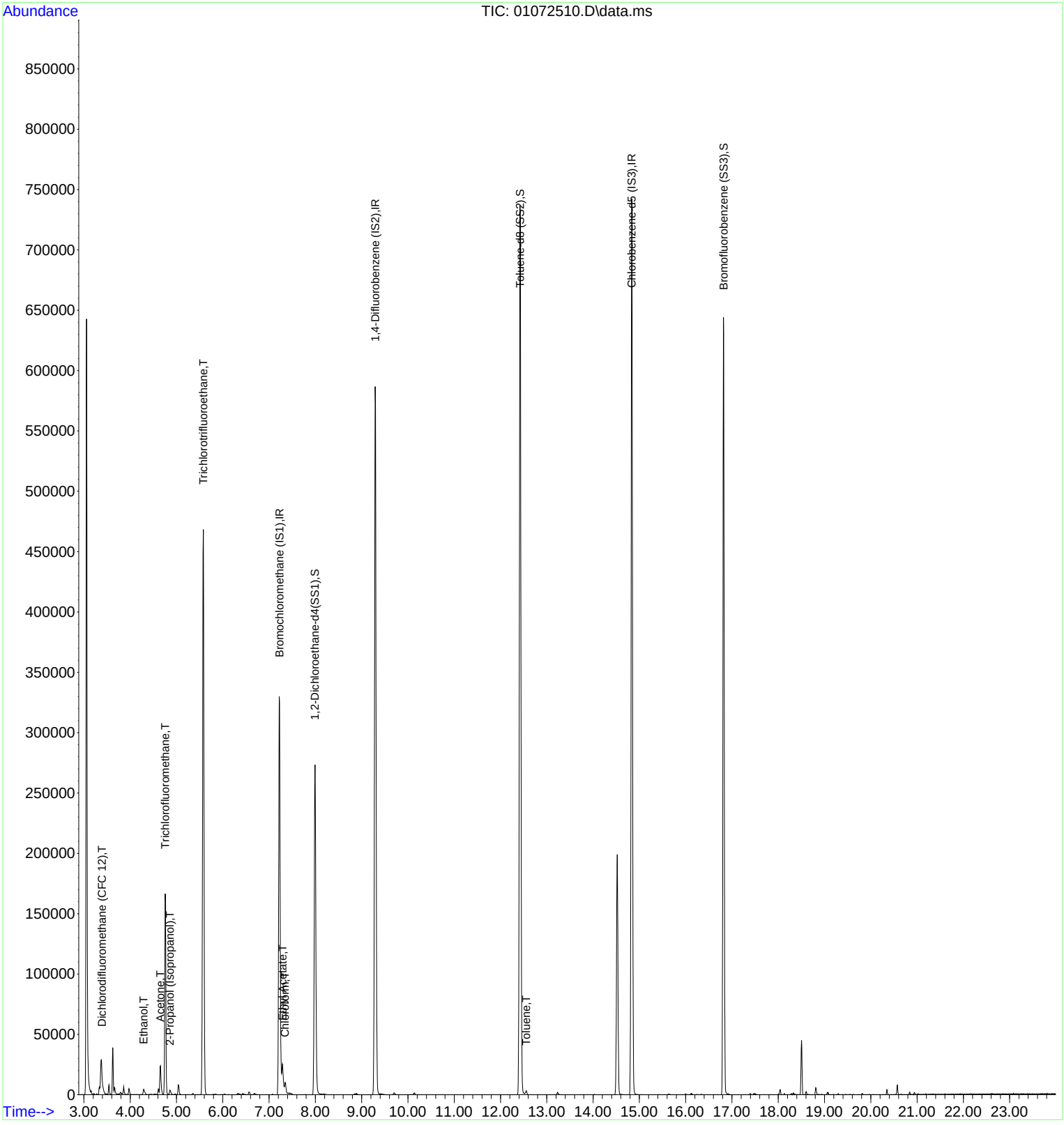
Quant Time: Jan 07 09:19:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	3649	0.077 ng	96
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.78	43	108	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.02	166	169	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	329	N.D.	
67) m- & p-Xylenes	15.64	91	1153	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.11	104	142	N.D.	
70) o-Xylene	16.25	91	300	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.53	93	387	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.42	105	315	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.56	91	116	N.D.	
85) 1,3-Dichlorobenzene	18.57	146	239	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	231	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	124	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	19.04	146	195	N.D.	
91) d-Limonene	19.08	68	430	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	909	N.D.	
95) Naphthalene	20.94	128	1914	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.51	119	1001	N.D.	
100) n-Butylbenzene	19.38	91	120	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

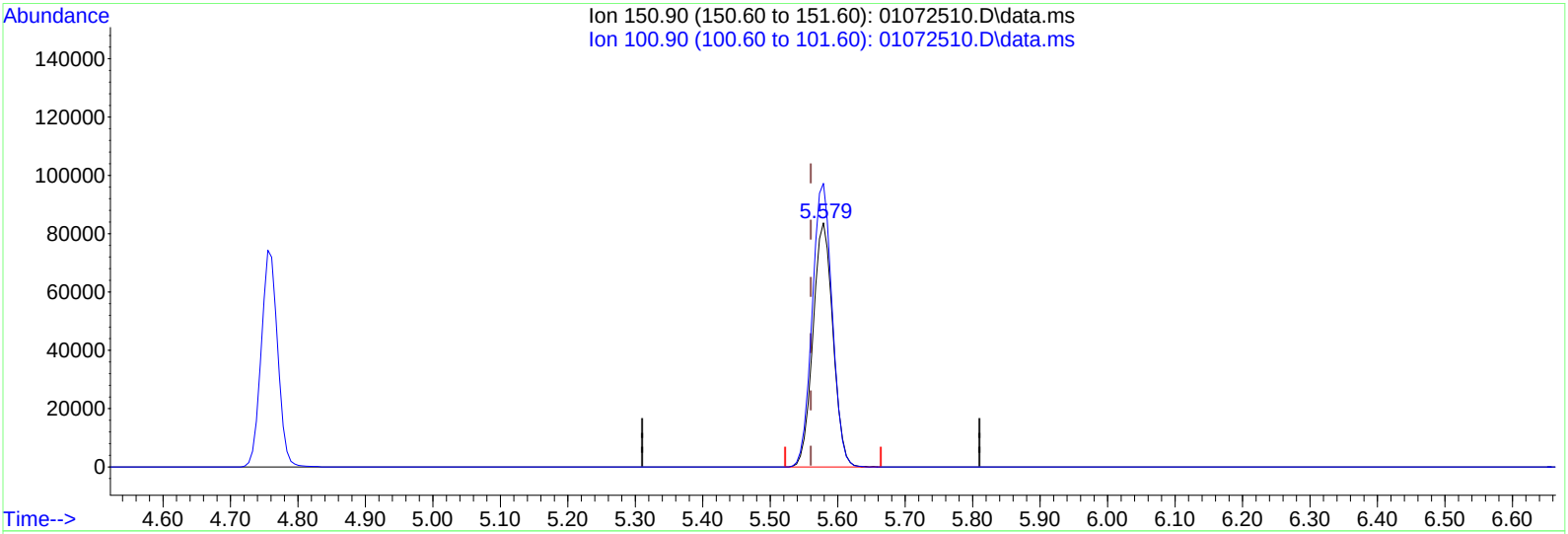
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072510.D
Acq On : 7 Jan 2025 8:46
Operator : SC
Sample : P2405139-004Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

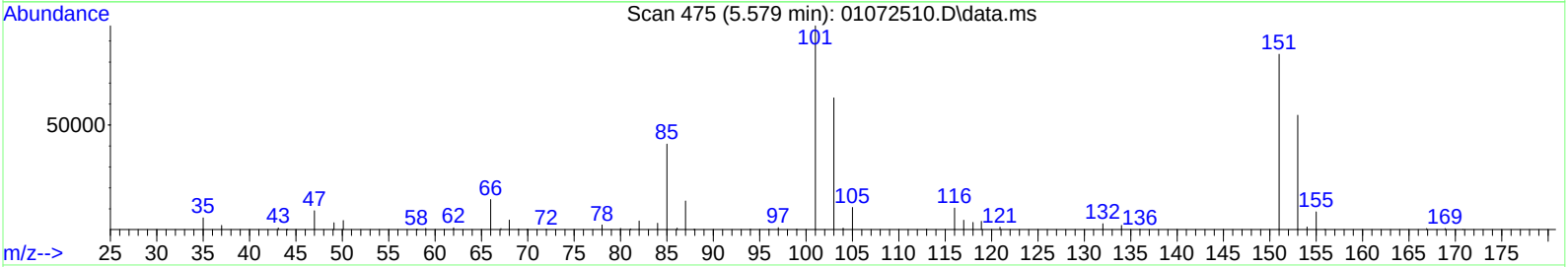
Quant Time: Jan 07 09:19:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

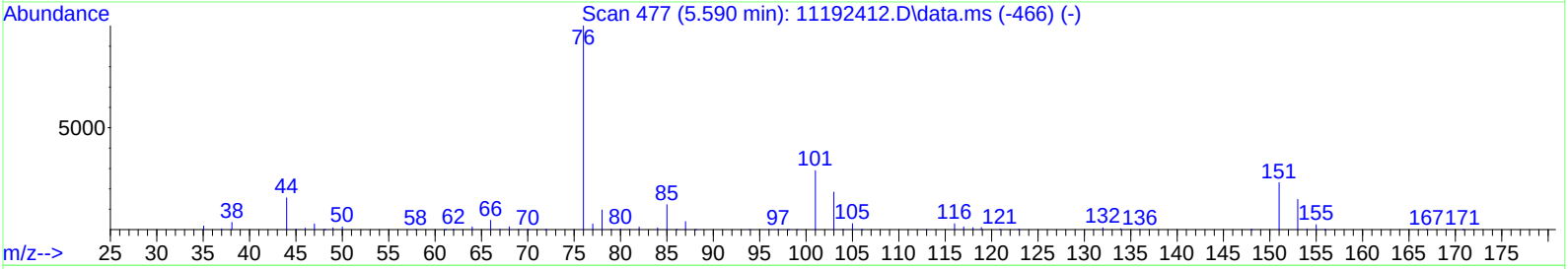


Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072510.D
Acq On : 7 Jan 2025 8:46
Operator : SC
Sample : P2405139-004Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 07 09:19:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072510.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.018) 14.05ng

response 171796

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.53
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01042516.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.307	69	75	77	rBV2	90807	115025	0.89%	0.291%
2	3.341	77	81	101	rVV	237351	543966	4.21%	1.377%
3	3.500	104	109	118	rVV	115250	157368	1.22%	0.398%
4	3.608	122	128	151	rVV	557093	848825	6.58%	2.149%
5	3.773	151	157	162	rVV	16715	22848	0.18%	0.058%
6	3.847	165	170	177	rVB	68447	87828	0.68%	0.222%
7	3.966	186	191	197	rVB	64391	87419	0.68%	0.221%
8	4.301	242	250	264	rBV	56770	125450	0.97%	0.318%
9	4.545	287	293	298	rBV3	8099	20092	0.16%	0.051%
10	4.636	299	309	322	rVV2	288054	714081	5.53%	1.808%
11	4.755	322	330	341	rVV	2125382	3754461	29.09%	9.504%
12	4.852	341	347	361	rVB	64540	133039	1.03%	0.337%
13	5.039	372	380	393	rBV	115539	204174	1.58%	0.517%
14	5.340	425	433	440	rBV2	12536	27990	0.22%	0.071%
15	5.584	458	476	499	rBV	6089924	12905646	100.00%	32.671%
16	5.777	503	510	517	rVV	27926	53378	0.41%	0.135%
17	5.846	517	522	530	rVB2	5646	10689	0.08%	0.027%
18	6.084	559	564	572	rBV3	5684	12287	0.10%	0.031%
19	6.311	595	604	612	rBV	38102	78746	0.61%	0.199%
20	6.436	617	626	639	rVV2	25974	81752	0.63%	0.207%
21	6.561	639	648	659	rVV3	40495	105875	0.82%	0.268%
22	6.669	659	667	676	rVB	25166	56018	0.43%	0.142%
23	6.845	690	698	704	rBV2	4698	10781	0.08%	0.027%
24	7.231	757	766	771	rBV	342000	780659	6.05%	1.976%
25	7.282	771	775	783	rVV	345919	733518	5.68%	1.857%
26	7.362	783	789	800	rVB	127009	281532	2.18%	0.713%
27	8.003	892	902	916	rBV	281732	672246	5.21%	1.702%
28	8.134	919	925	932	rVB5	4648	11846	0.09%	0.030%
29	8.810	1037	1044	1052	rBV	15144	37895	0.29%	0.096%
30	8.900	1052	1060	1069	rVB	16054	41943	0.32%	0.106%
31	9.304	1121	1131	1142	rBV	612391	1414193	10.96%	3.580%
32	9.400	1142	1148	1160	rVB3	7643	23657	0.18%	0.060%
33	9.690	1191	1199	1215	rVB2	34871	94674	0.73%	0.240%
34	10.076	1261	1267	1270	rBV4	7872	15521	0.12%	0.039%
35	10.138	1270	1278	1287	rVB	23387	65846	0.51%	0.167%
36	10.570	1348	1354	1363	rVB5	5758	13676	0.11%	0.035%
37	11.410	1496	1502	1511	rVB4	6702	13750	0.11%	0.035%
38	12.427	1671	1681	1695	rVV	785366	1808547	14.01%	4.578%
39	12.557	1695	1704	1716	rVB	55849	127508	0.99%	0.323%
40	13.222	1813	1821	1832	rBV	59278	126529	0.98%	0.320%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	13.568	1876	1882	1889	rVB2	6089	10904	0.08%	0.028%
42	13.778	1911	1919	1925	rBV2	7144	14713	0.11%	0.037%
43	13.920	1935	1944	1947	rBV4	6015	11988	0.09%	0.030%
44	13.960	1947	1951	1959	rVV3	6835	20699	0.16%	0.052%
45	14.022	1959	1962	1972	rVB3	5017	10296	0.08%	0.026%
46	14.528	2040	2051	2065	rBV	2964503	6786896	52.59%	17.181%
47	14.840	2096	2106	2120	rBV	780769	1617871	12.54%	4.096%
48	15.357	2188	2197	2202	rBV4	4093	10392	0.08%	0.026%
49	15.408	2202	2206	2216	rVB3	5770	12658	0.10%	0.032%
50	15.629	2236	2245	2258	rBV4	15435	46932	0.36%	0.119%
51	15.765	2258	2269	2272	rBV4	11620	28251	0.22%	0.072%
52	15.998	2303	2310	2319	rVB	29647	55989	0.43%	0.142%
53	16.112	2323	2330	2337	rBV2	53703	106085	0.82%	0.269%
54	16.237	2346	2352	2358	rBV3	7715	15677	0.12%	0.040%
55	16.333	2361	2369	2378	rVV2	25268	50757	0.39%	0.128%
56	16.611	2410	2418	2423	rBV2	7168	13232	0.10%	0.033%
57	16.822	2440	2455	2466	rBV	678378	1288907	9.99%	3.263%
58	17.418	2552	2560	2561	rBV6	10489	18440	0.14%	0.047%
59	17.480	2568	2571	2575	rVV	10028	15362	0.12%	0.039%
60	17.520	2575	2578	2584	rVB2	20238	31510	0.24%	0.080%
61	17.747	2612	2618	2625	rBV5	5163	12911	0.10%	0.033%
62	18.042	2660	2670	2676	rVB	86104	163390	1.27%	0.414%
63	18.139	2682	2687	2695	rVB2	17441	29164	0.23%	0.074%
64	18.224	2695	2702	2707	rBV4	7316	15598	0.12%	0.039%
65	18.287	2707	2713	2715	rBV2	22923	40604	0.31%	0.103%
66	18.315	2715	2718	2724	rVB2	51778	76647	0.59%	0.194%
67	18.423	2733	2737	2743	rVB5	6839	11421	0.09%	0.029%
68	18.502	2743	2751	2759	rVB	706308	1150775	8.92%	2.913%
69	18.605	2763	2769	2773	rVV	53538	83375	0.65%	0.211%
70	18.639	2773	2775	2781	rVB4	10567	15136	0.12%	0.038%
71	18.809	2798	2805	2811	rBV	168664	247996	1.92%	0.628%
72	19.082	2845	2853	2863	rVB2	68504	151979	1.18%	0.385%
73	19.161	2863	2867	2870	rBV3	7781	12903	0.10%	0.033%
74	19.195	2870	2873	2878	rVB2	8645	11793	0.09%	0.030%
75	19.292	2885	2890	2898	rVB3	24948	42535	0.33%	0.108%
76	19.377	2900	2905	2911	rVB4	6897	12820	0.10%	0.032%
77	19.456	2914	2919	2924	rBV3	9650	14533	0.11%	0.037%
78	19.507	2924	2928	2932	rVV2	10770	16396	0.13%	0.042%
79	19.553	2932	2936	2941	rVB3	13648	19879	0.15%	0.050%
80	19.638	2946	2951	2958	rVB5	19830	31800	0.25%	0.081%
81	19.808	2972	2981	2990	rBV3	49359	80035	0.62%	0.203%
82	19.979	3007	3011	3017	rVB3	11806	16088	0.12%	0.041%
83	20.223	3049	3054	3059	rVB4	13047	21000	0.16%	0.053%
84	20.348	3069	3076	3088	rVB	192960	252262	1.95%	0.639%
85	20.569	3110	3115	3125	rVB2	185682	264751	2.05%	0.670%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

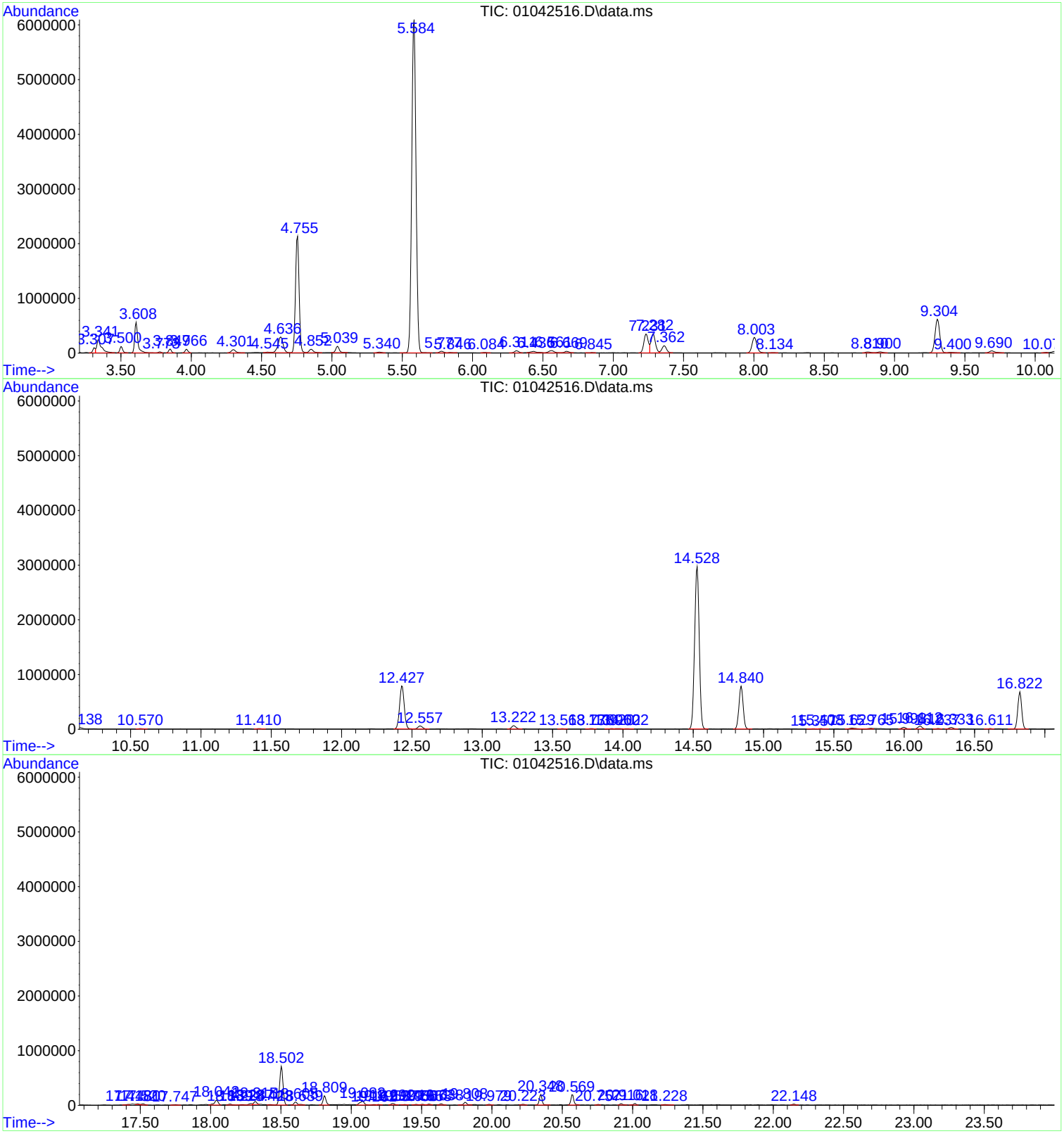
86	20.757	3143	3148	3151	rBV3	9325	11814	0.09%	0.030%
87	20.916	3172	3176	3184	rBV5	21864	32240	0.25%	0.082%
88	21.018	3186	3194	3198	rBV2	25361	35072	0.27%	0.089%
89	21.228	3226	3231	3243	rBV8	8120	16943	0.13%	0.043%
90	22.148	3388	3393	3399	rBV	15081	21632	0.17%	0.055%

Sum of corrected areas: 39502329

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:55
Operator : CG
Sample : P2405139-004 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\04\\
Data File : 01042516.D
Acq On : 4 Jan 2025 15:555
Operator : CGG
Sample : P2405139-004 (400mL))
Misc : S37-123124011
ALS Vial : 10 Sample Multiplier: 11

MA 1/6/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 20:44:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	157589	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	671926	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	119341	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	256777	11.960	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.68%				
57) Toluene-d8 (SS2)	12.43	98	695222	13.132	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%				
73) Bromofluorobenzene (SS3)	16.82	174	268970	14.722	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.76%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	3.39	85	334	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	0.00	45	0	N.D.	d		
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.68	58	1438	0.136	ng	#	59
14) Trichlorofluoromethane	4.76	101	1466250	50.753	ng		99
15) 2-Propanol (Isopropanol)	4.90	45	348	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	1617088	124.062	ng		92
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	478	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.87	56	228	No Calib		#	
41) Benzene	8.90	78	1813	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	1598	0.104	ng		88
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 20:44:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

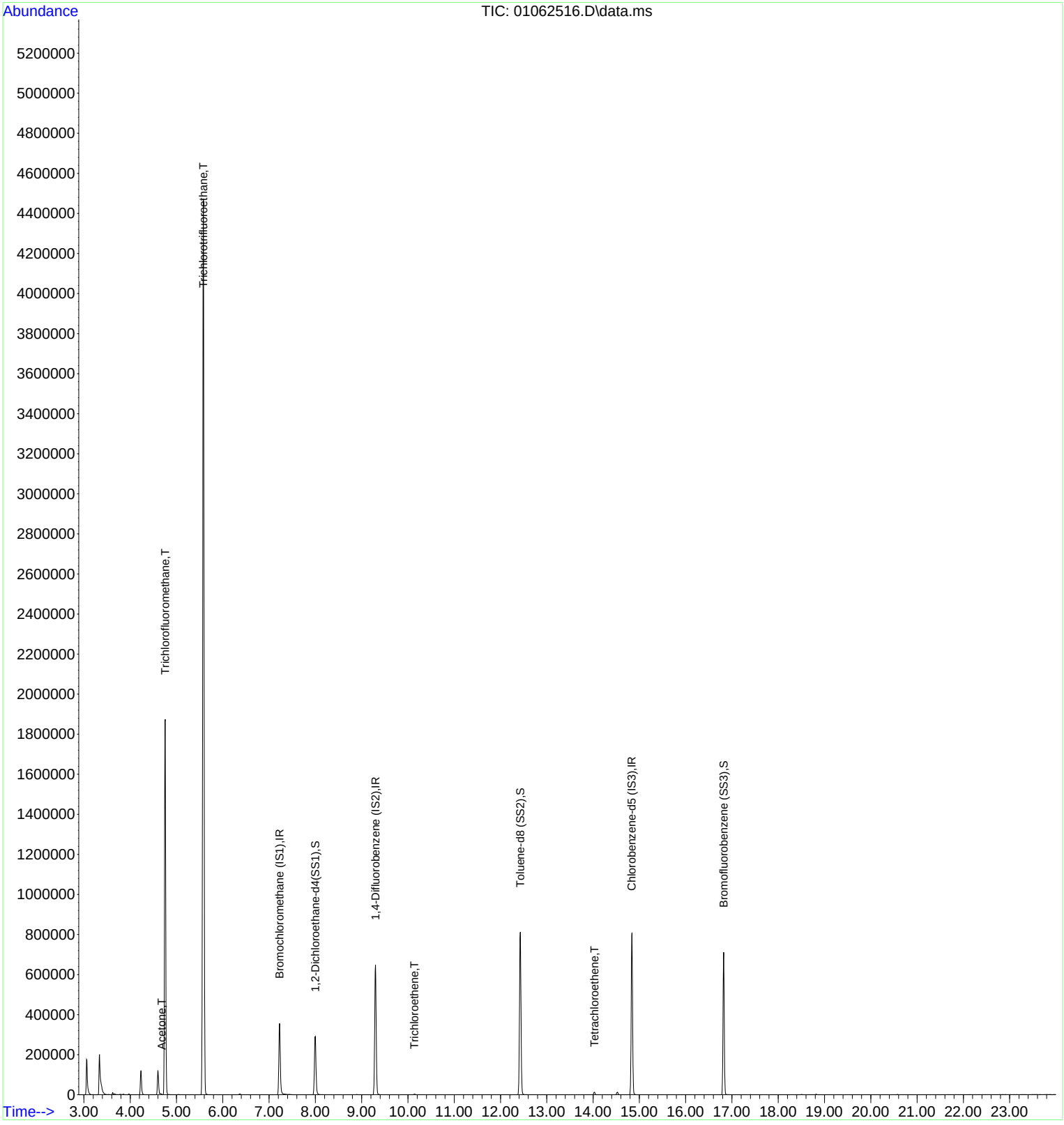
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	569	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	14.03	166	5116	0.338	ng	100
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	15.63	91	701	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	17.52	93	198	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	354	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.85	180	182	N.D.		
95) Naphthalene	20.96	128	181	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 20:44:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

NOA 1/6/25

Quant Time: Jan 06 20:44:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

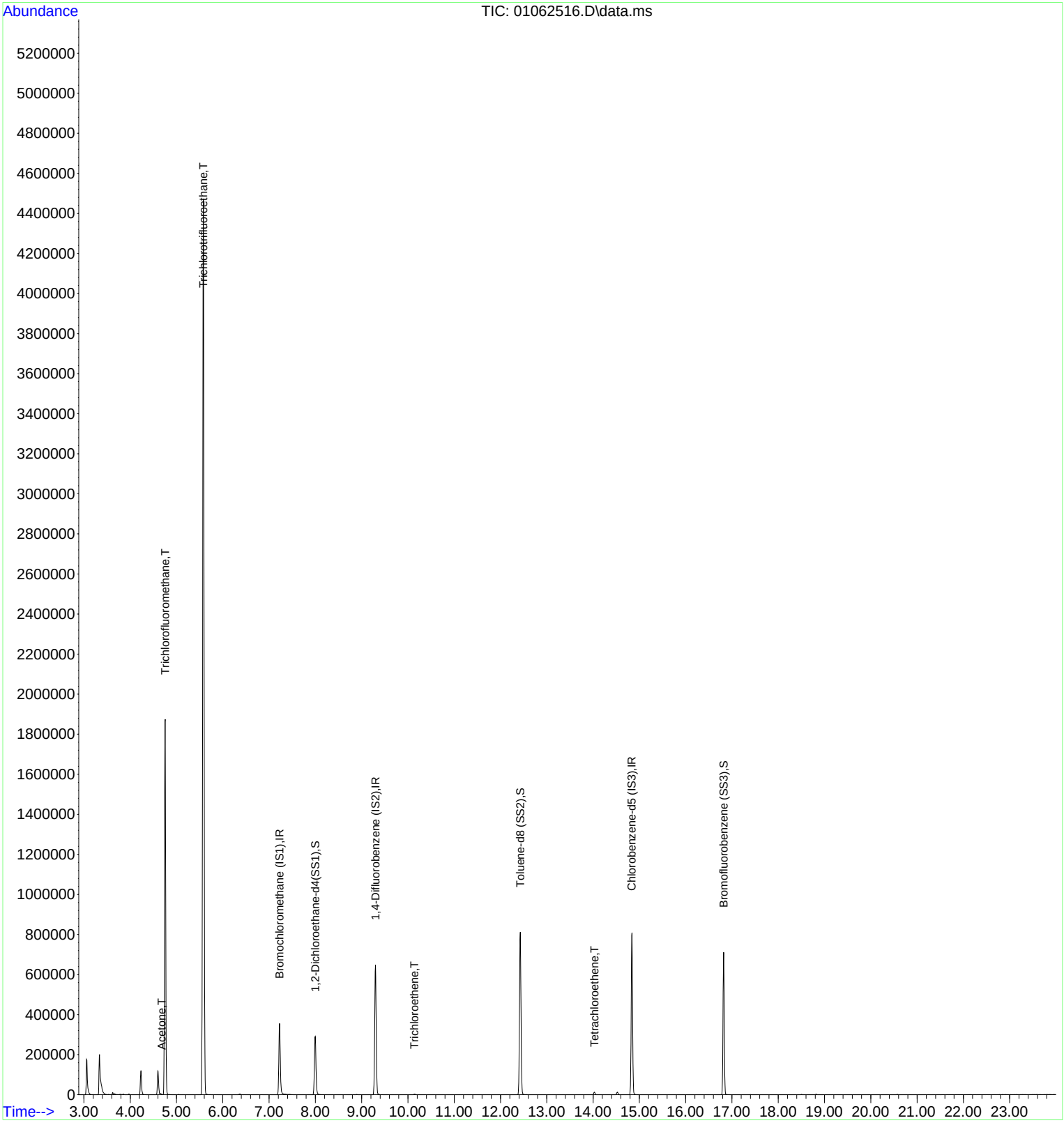
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	157589	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	671926	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	119341	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	256777	11.960	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.68%				
57) Toluene-d8 (SS2)	12.43	98	695222	13.132	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%				
73) Bromofluorobenzene (SS3)	16.82	174	268970	14.722	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.76%				
Target Compounds							Qvalue
13) Acetone	4.68	58	1438	0.136	ng	#	59
14) Trichlorofluoromethane	4.76	101	1466250	50.753	ng		99
21) Trichlorotrifluoroethane	5.58	151	1617088	124.062	ng		92
47) Trichloroethene	10.14	130	1598	0.104	ng		88
64) Tetrachloroethene	14.03	166	5116	0.338	ng		100

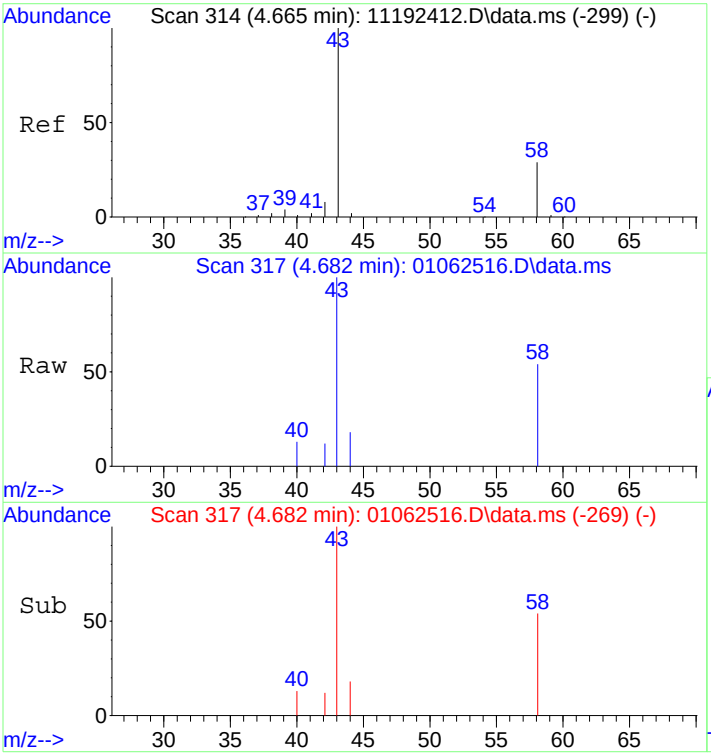
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 20:44:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

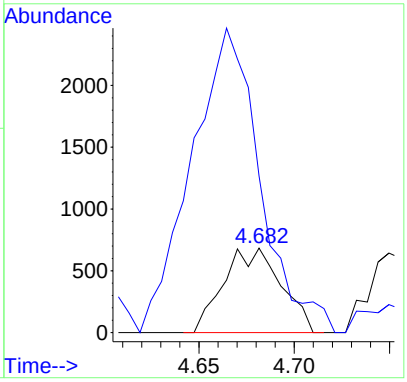


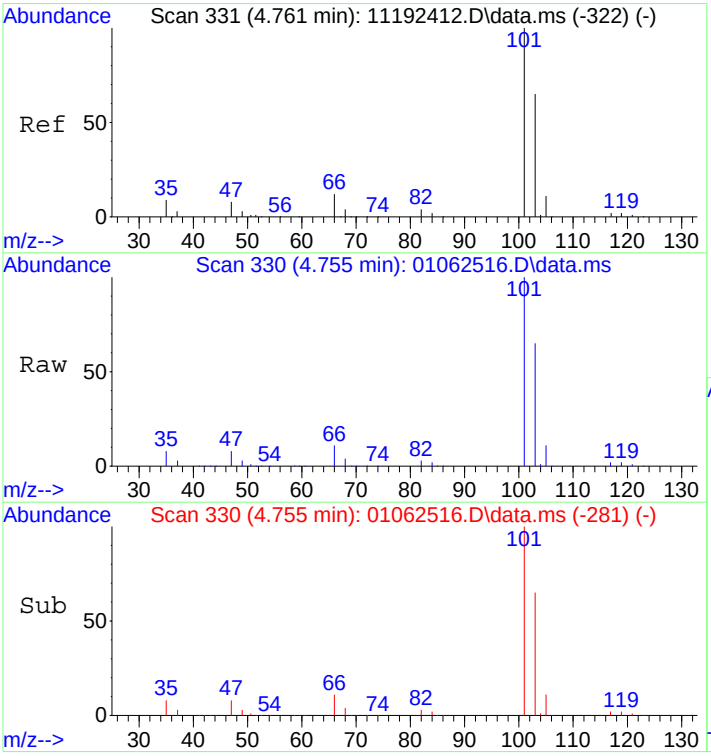


#13
Acetone
Concen: 0.14 ng
RT: 4.68 min Scan# 317
Delta R.T. 0.021 min
Lab File: 01062516.D
Acq: 6 Jan 2025 16:43

Tgt Ion: 58 Resp: 1438

Ion	Ratio	Lower	Upper
58	100		
43	429.7	312.5	372.5#

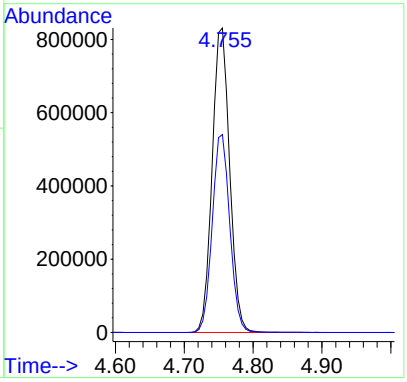


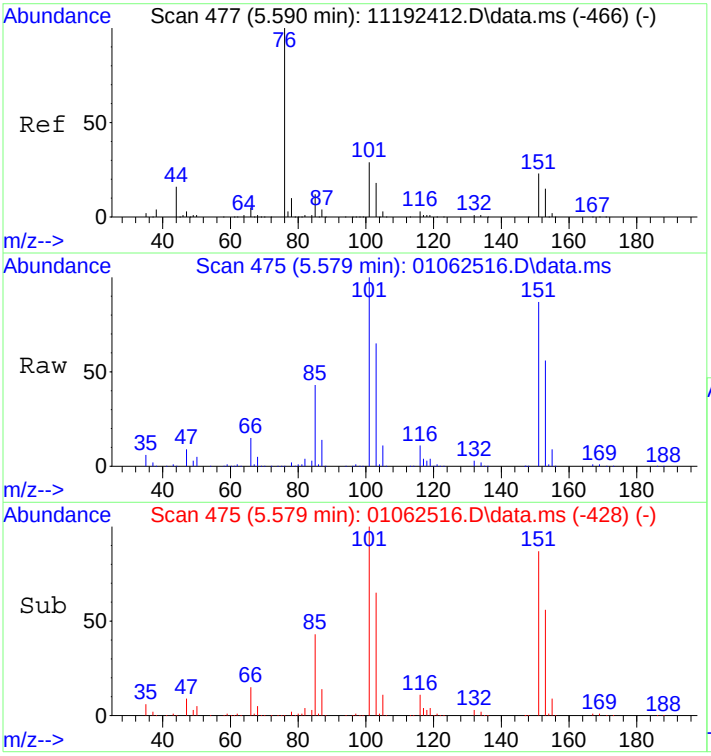


#14
Trichlorofluoromethane
Concen: 50.75 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01062516.D
Acq: 6 Jan 2025 16:43

Tgt Ion:101 Resp: 1466250

Ion	Ratio	Lower	Upper
101	100		
103	65.3	44.8	84.8

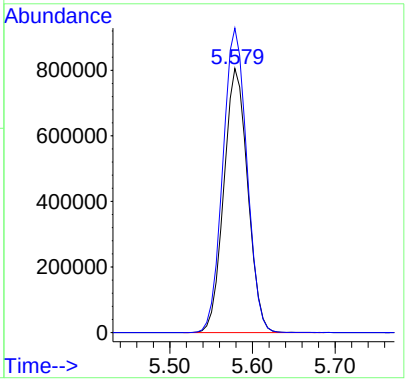


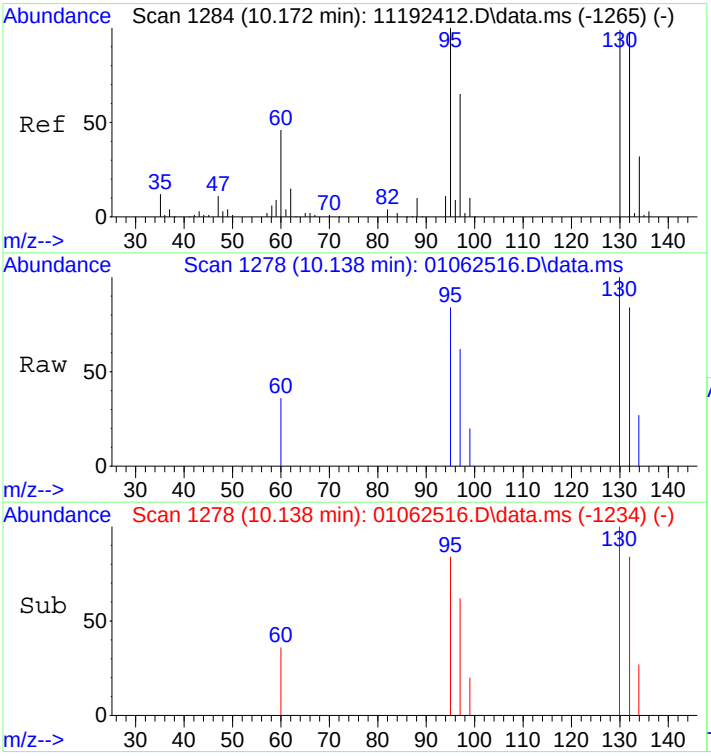


#21
Trichlorotrifluoroethane
Concen: 124.06 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01062516.D
Acq: 6 Jan 2025 16:43

Tgt Ion:151 Resp: 1617088

Ion	Ratio	Lower	Upper
151	100		
101	116.2	105.0	145.0

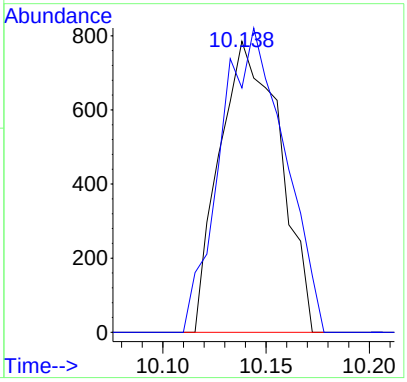


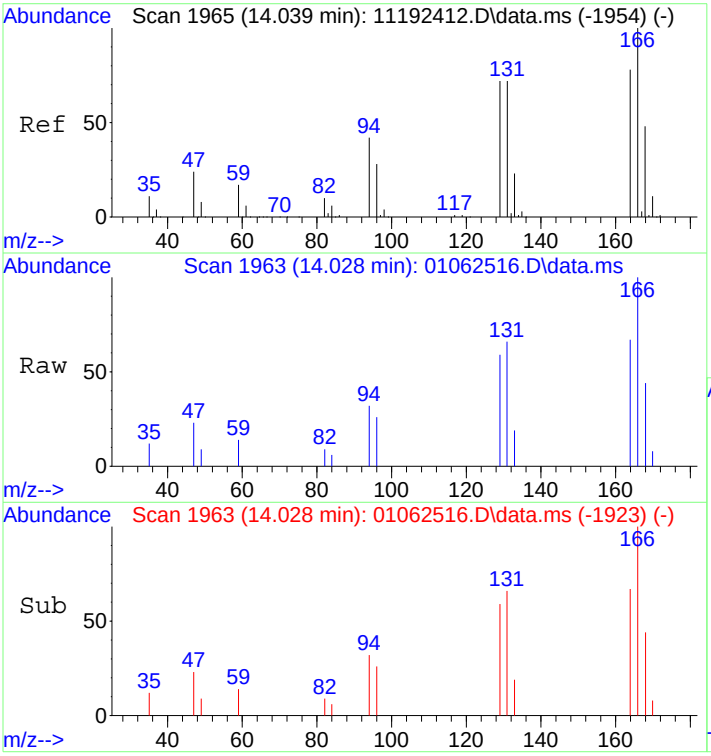


#47
Trichloroethene
Concen: 0.10 ng
RT: 10.14 min Scan# 1278
Delta R.T. -0.002 min
Lab File: 01062516.D
Acq: 6 Jan 2025 16:43

Tgt Ion:130 Resp: 1598

Ion	Ratio	Lower	Upper
130	100		
132	111.5	79.3	119.3

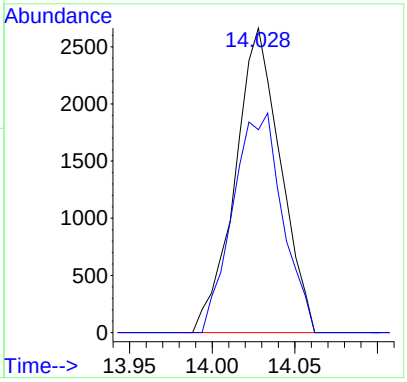




#64
Tetrachloroethene
Concen: 0.34 ng
RT: 14.03 min Scan# 1963
Delta R.T. -0.023 min
Lab File: 01062516.D
Acq: 6 Jan 2025 16:43

Tgt Ion:166 Resp: 5116

Ion	Ratio	Lower	Upper
166	100		
164	78.4	58.7	98.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 21:08:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

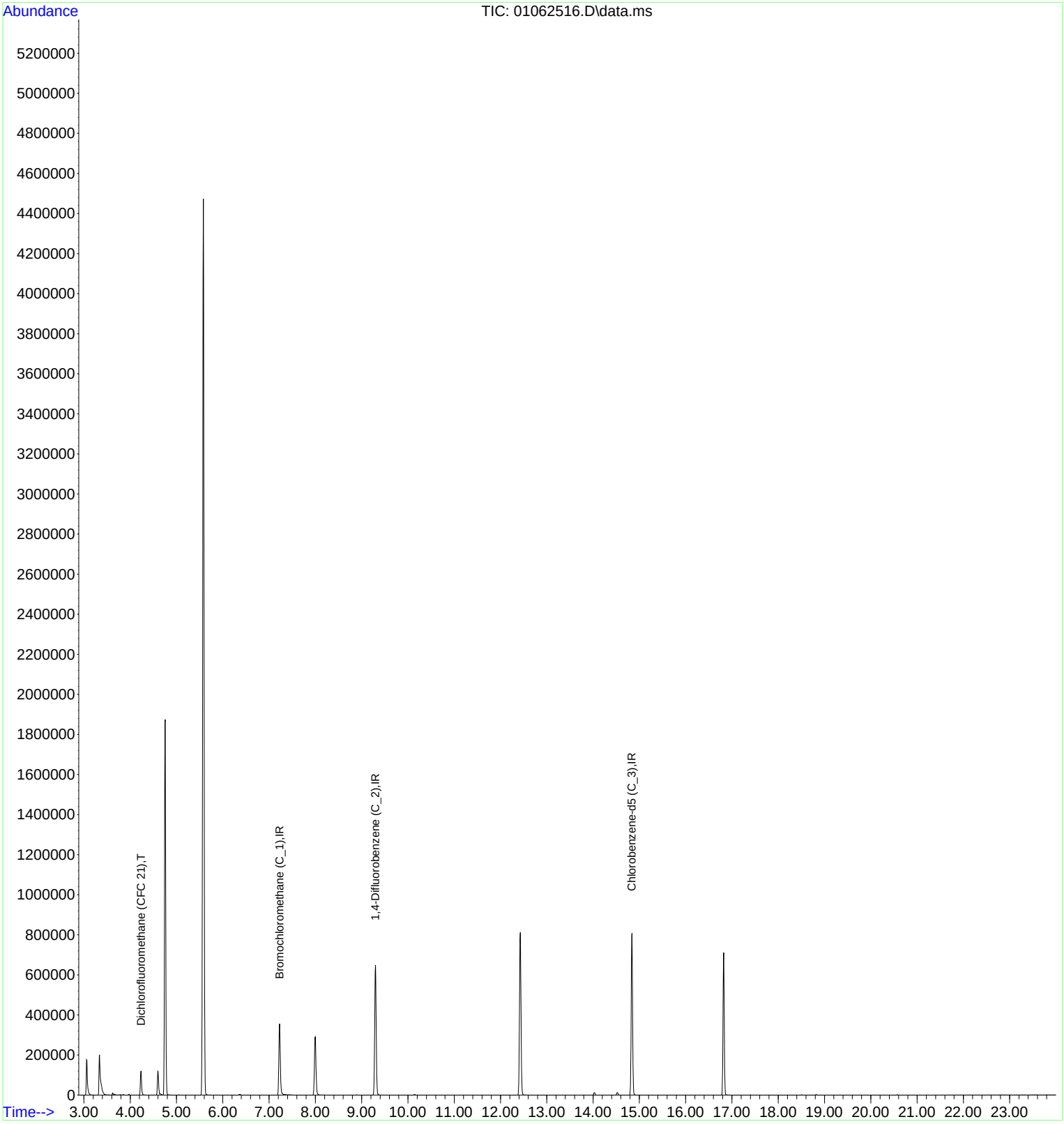
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	159819	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	671926	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	119341	12.500	ng	-0.01
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	472	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.23	67	116250	3.590	ng	99
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	d	
10) 2-Methylbutane	4.65	57	1510	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

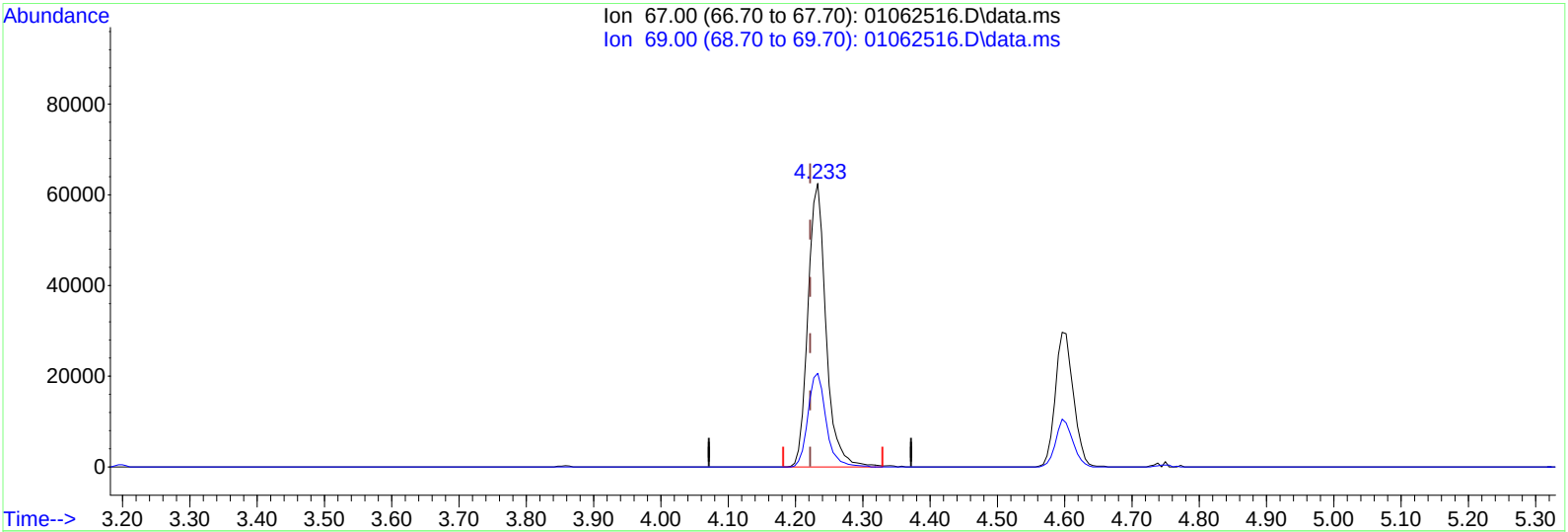
Quant Time: Jan 06 21:08:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

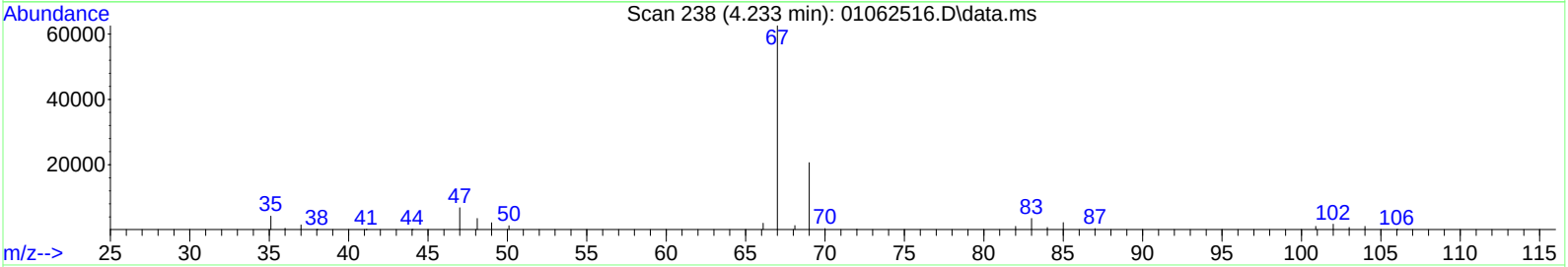


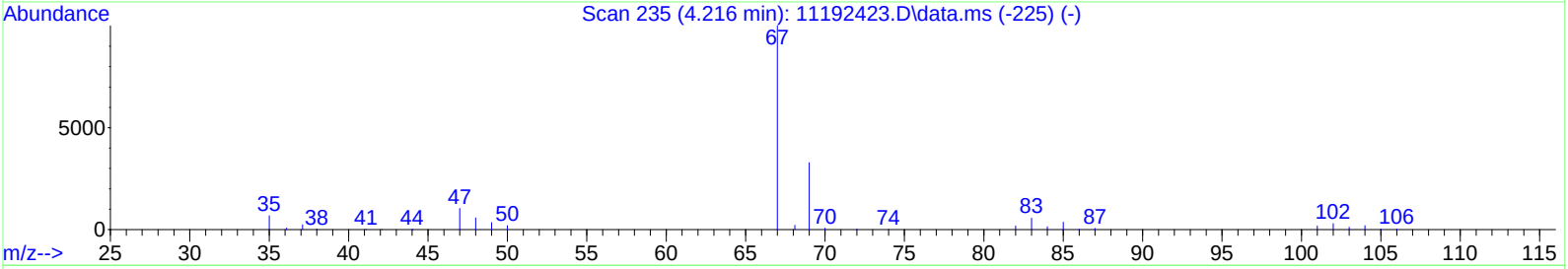
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 21:04:35 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01062516.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 3.59ng

response 116250

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.16
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062514.D
Acq On : 6 Jan 2025 15:31
Operator : SC
Sample : P2405139-005Dil (0.2mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

NOA 1/6/25

Quant Time: Jan 06 20:41:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	158616	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	673472	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	119089	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	257594	11.920	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.36%				
57) Toluene-d8 (SS2)	12.43	98	693513	13.127	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%				
73) Bromofluorobenzene (SS3)	16.82	174	270239	14.823	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.56%				
Target Compounds							Qvalue
2) Propene	3.32	42	927	0.055	ng	#	68
3) Dichlorodifluoromethan...	3.32	85	679	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	0.00	45	0	N.D. d			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.67	58	2067	0.194	ng		97
14) Trichlorofluoromethane	4.76	101	600110	20.638	ng		100
15) 2-Propanol (Isopropanol)	4.89	45	485	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	656052	50.006	ng		92
22) Carbon Disulfide	5.62	76	5556	0.115	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	486	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.86	56	166	No Calib		#	
41) Benzene	8.89	78	2319	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	1783	0.116	ng		89
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062514.D
Acq On : 6 Jan 2025 15:31
Operator : SC
Sample : P2405139-005Dil (0.2mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

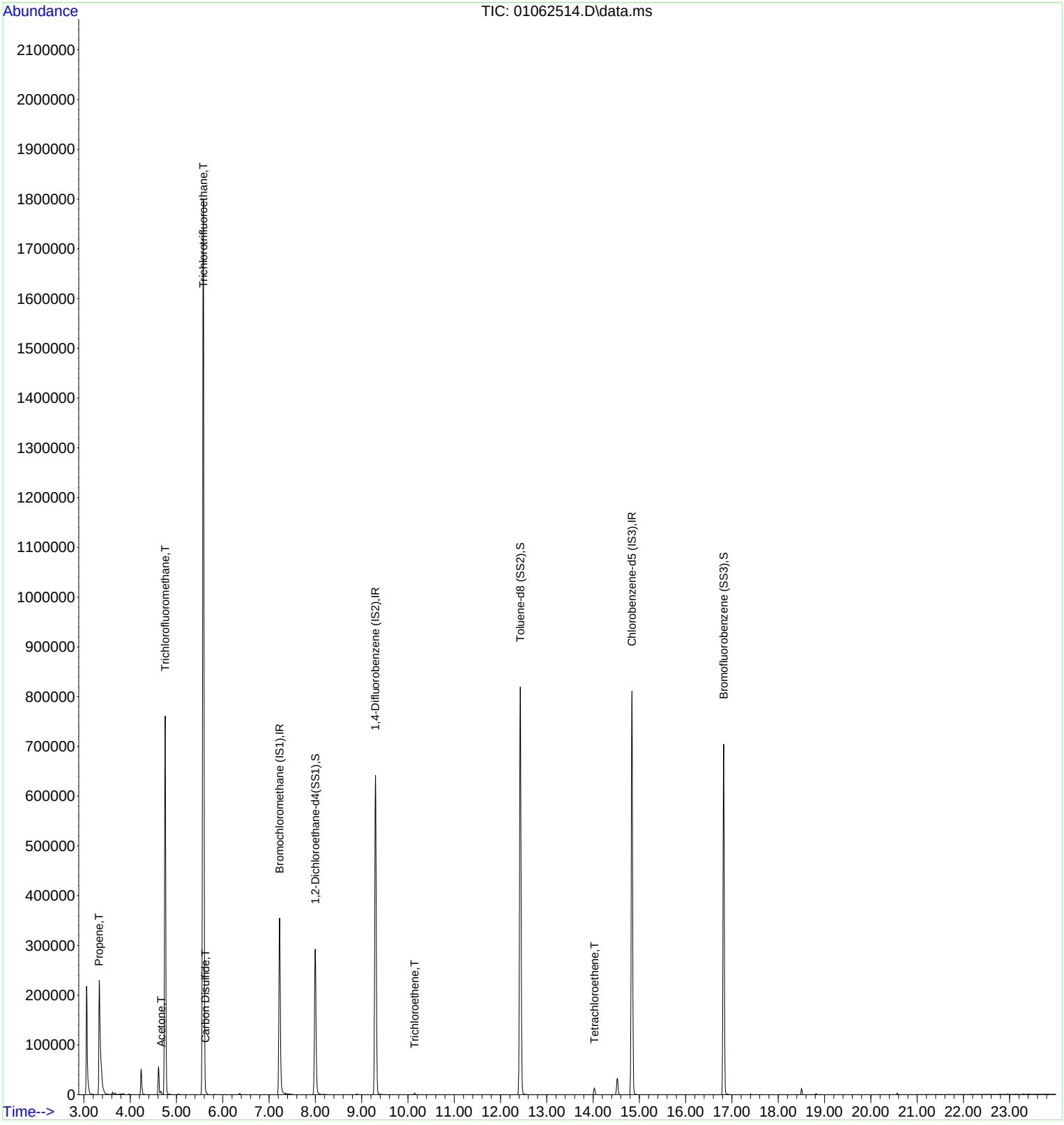
Quant Time: Jan 06 20:41:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	505	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	5087	0.336 ng	98
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	115	N.D.	
67) m- & p-Xylenes	15.64	91	738	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.51	93	274	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	465	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	226	N.D.	
95) Naphthalene	20.96	128	180	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	139	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062514.D
Acq On : 6 Jan 2025 15:31
Operator : SC
Sample : P2405139-005Dil (0.2mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

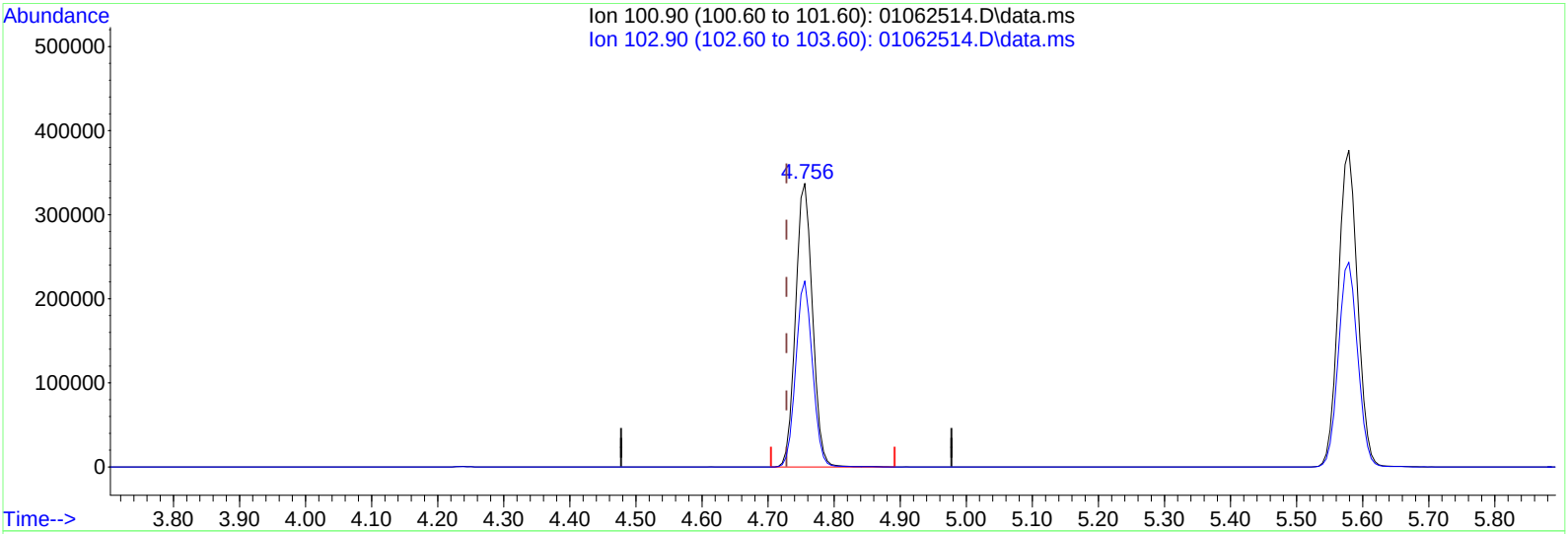
Quant Time: Jan 06 20:41:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

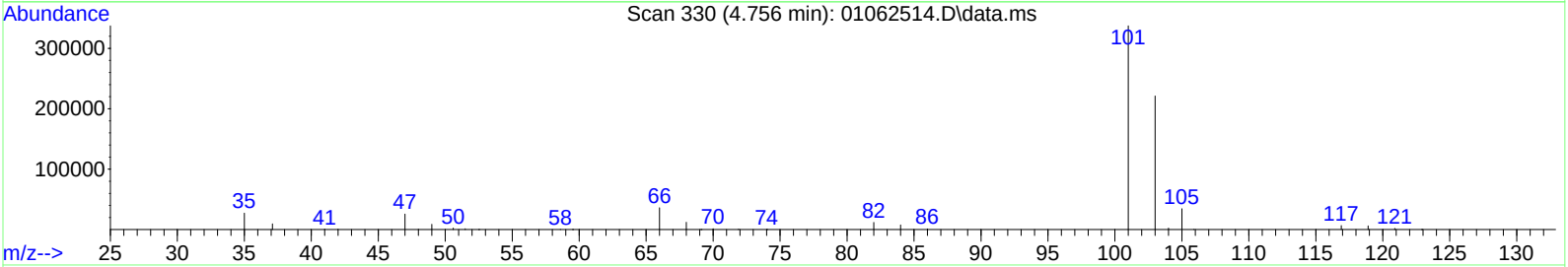


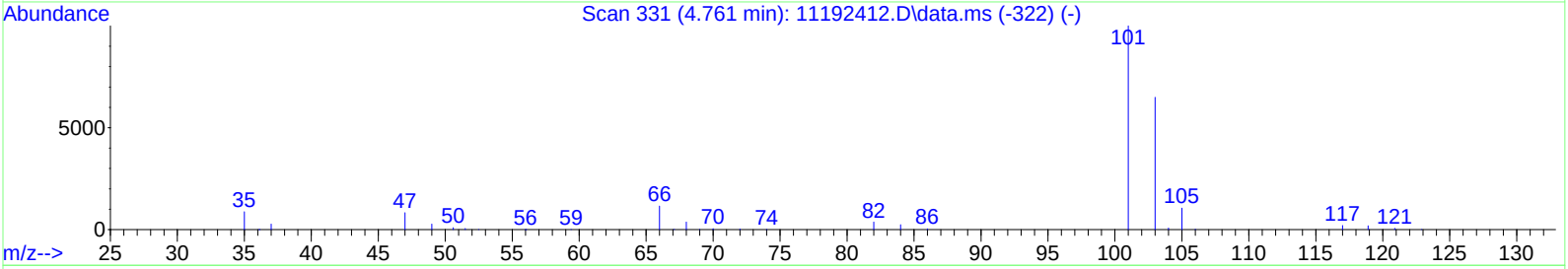
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062514.D
Acq On : 6 Jan 2025 15:31
Operator : SC
Sample : P2405139-005Dil (0.2mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 15:52:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062514.D\data.ms

(14) Trichlorofluoromethane (T)

4.756min (+0.028) 20.64ng

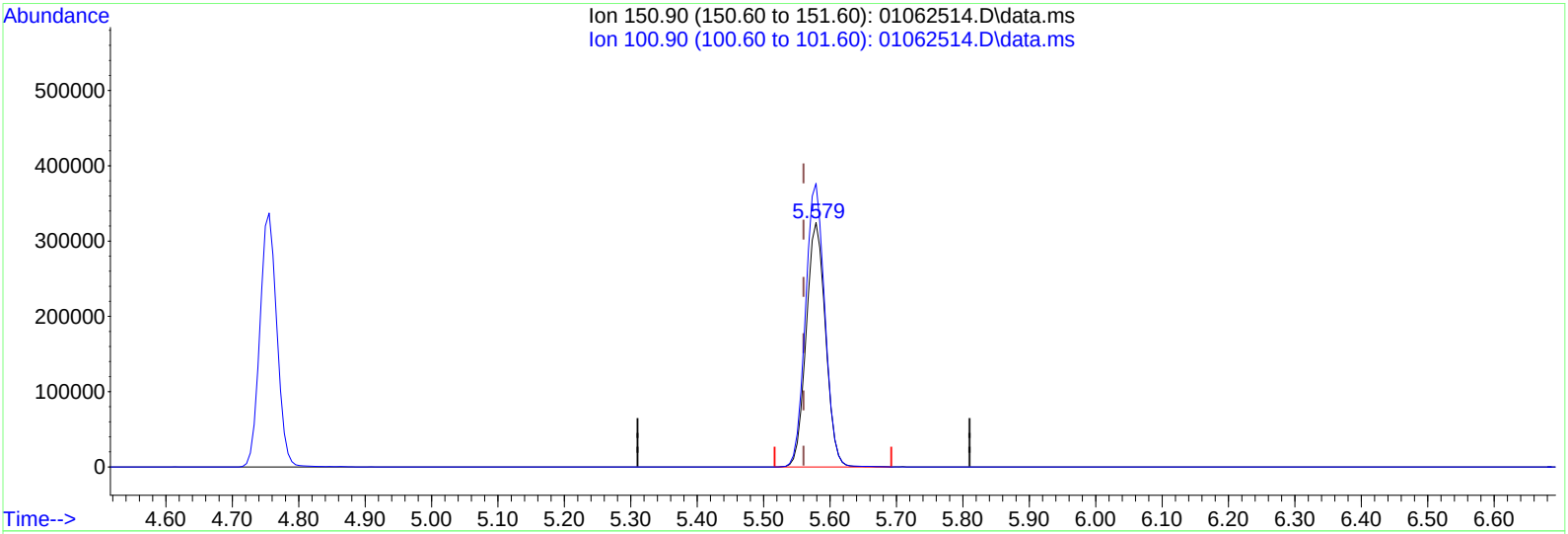
response 600110

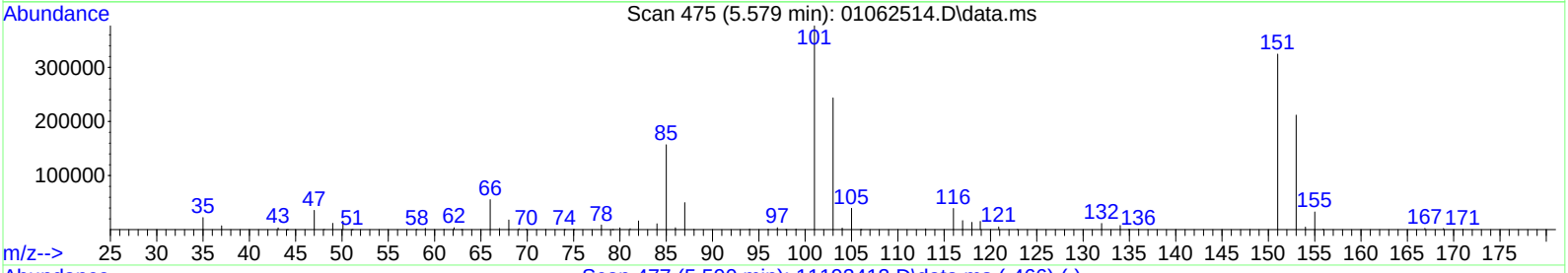
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.82
0.00	0.00	0.00
0.00	0.00	0.00

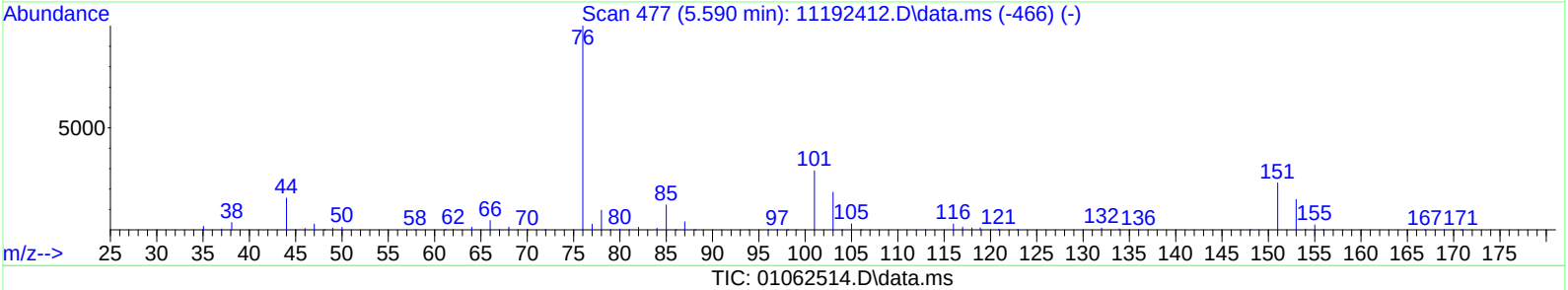
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062514.D
Acq On : 6 Jan 2025 15:31
Operator : SC
Sample : P2405139-005Dil (0.2mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 15:52:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062514.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.019) 50.01ng

response 656052

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.11
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062516.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.336	74	80	112	rBV	201059	475266	5.28%	2.252%
2	3.620	126	130	134	rBV	10626	12827	0.14%	0.061%
3	4.233	230	238	250	rBV	121107	219680	2.44%	1.041%
4	4.596	293	302	309	rBV	118817	219550	2.44%	1.040%
5	4.653	309	312	321	rVV4	6321	13532	0.15%	0.064%
6	4.755	321	330	345	rVV	1873504	3320045	36.88%	15.734%
7	5.579	462	475	497	rBV	4473849	9002310	100.00%	42.664%
8	7.225	756	765	785	rBV	355662	790904	8.79%	3.748%
9	7.998	891	901	920	rBV	290605	671392	7.46%	3.182%
10	9.298	1118	1130	1149	rBV	648865	1457083	16.19%	6.905%
11	12.427	1670	1681	1702	rBV	812203	1847306	20.52%	8.755%
12	14.028	1956	1963	1970	rBB2	13156	26355	0.29%	0.125%
13	14.522	2042	2050	2059	rBB	13293	28009	0.31%	0.133%
14	14.840	2096	2106	2119	rBV	808156	1673397	18.59%	7.931%
15	16.822	2446	2455	2477	rBV	711047	1342795	14.92%	6.364%

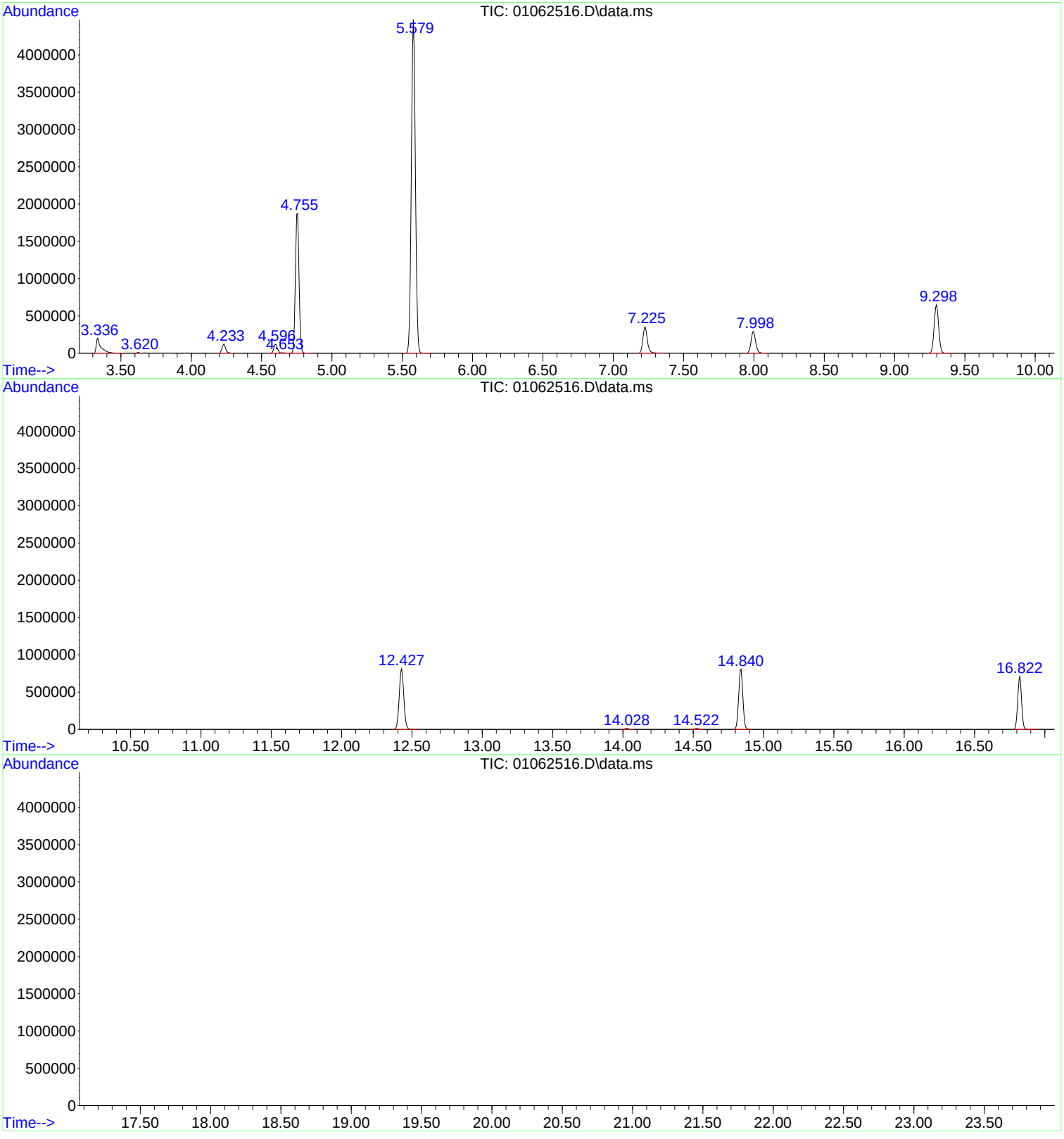
Sum of corrected areas: 21100451

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

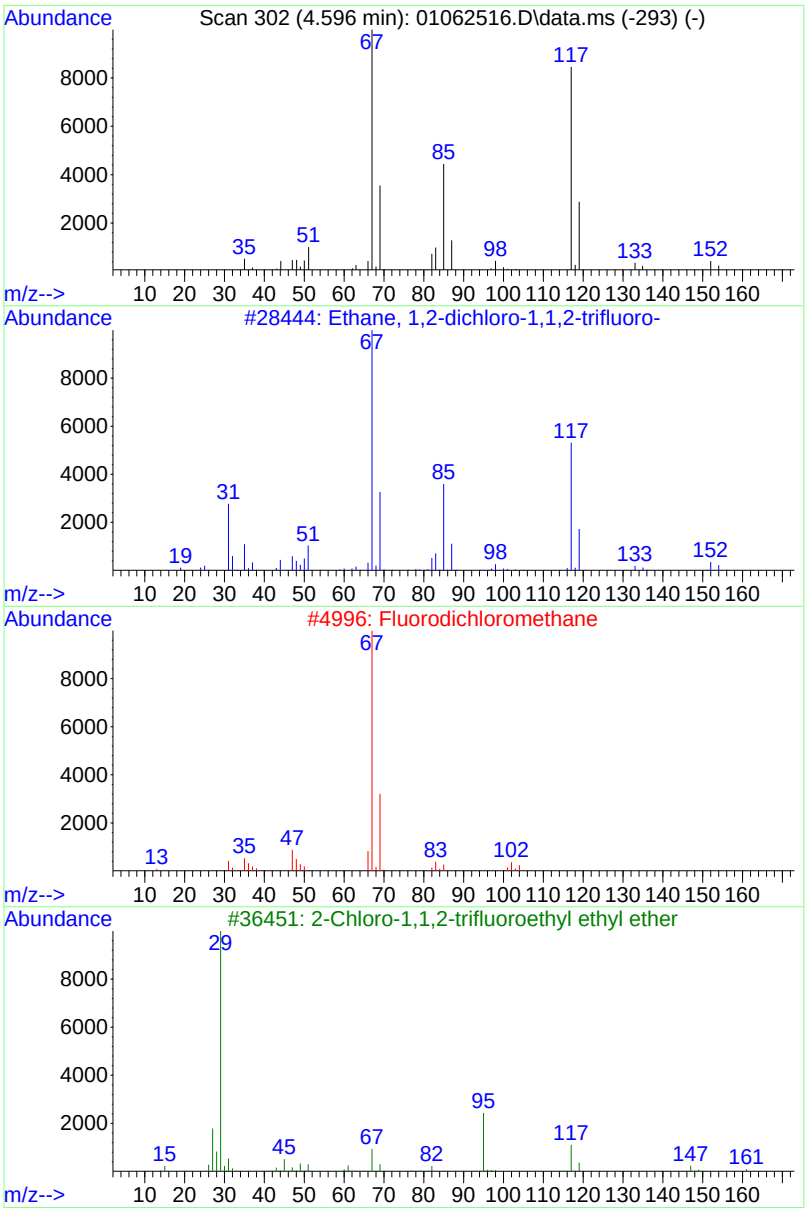
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

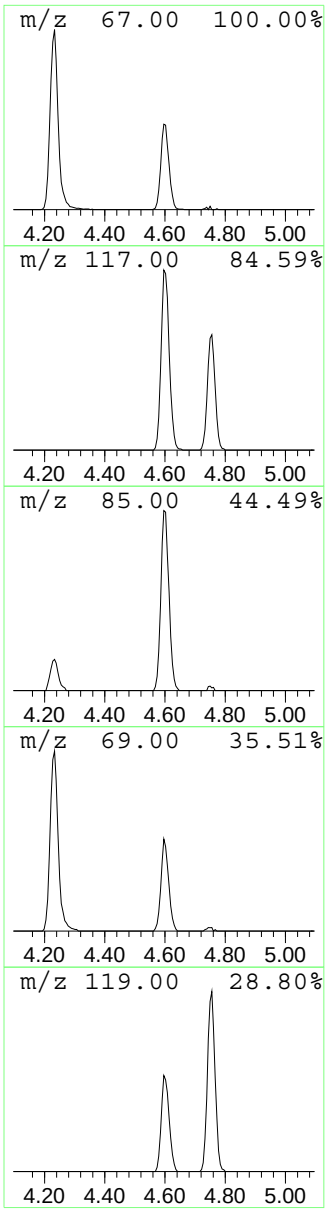
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 3 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.596	3.47 ng	219550	Bromochloromethane (IS1)	7.225

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	91
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
3	2-Chloro-1,1,2-trifluoroethyl et...	162	C4H6ClF3O	000310-71-4	12
4	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	10
5	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	9





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\06\
Data File : 01062516.D
Acq On : 6 Jan 2025 16:43
Operator : SC
Sample : P2405139-005 (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

VOA 1/7/25

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc
Ethane, 1,2-dic...	4.596	3.5	ng	219550	1	7.225	790904	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

MA 1/6/25

Quant Time: Jan 06 19:18:38 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	152074	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	652902	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	117552	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	248186	11.979 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.84%			
57) Toluene-d8 (SS2)	12.43	98	681141	13.062 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.48%			
73) Bromofluorobenzene (SS3)	16.82	174	255623	14.205 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.60%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	16169m	0.544 ng		
4) Chloromethane	3.52	50	465	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	318	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.31	45	4902	0.436 ng		96
11) Acetonitrile	4.45	41	645	N.D.		
12) Acrolein	4.55	56	991	0.103 ng		98
13) Acetone	4.65	58	15533	1.517 ng	#	69
14) Trichlorofluoromethane	4.76	101	116832	4.191 ng		100
15) 2-Propanol (Isopropanol)	4.86	45	2092	0.057 ng	#	29
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.35	59	244	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.59	151	64524	5.130 ng		94
22) Carbon Disulfide	5.61	76	11708	0.253 ng		64
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	789	0.318 ng	#	61
27) 2-Butanone (MEK)	6.69	72	2496	0.303 ng	#	82
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.31	57	2088	0.091 ng	#	93
32) Chloroform	7.36	83	10925	0.441 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	4778	No Calib	#	
41) Benzene	8.90	78	18309	0.349 ng		98
42) Carbon Tetrachloride	9.07	117	673	N.D.		
43) Cyclohexane	9.22	84	2888	0.158 ng		93
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.07	83	723	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

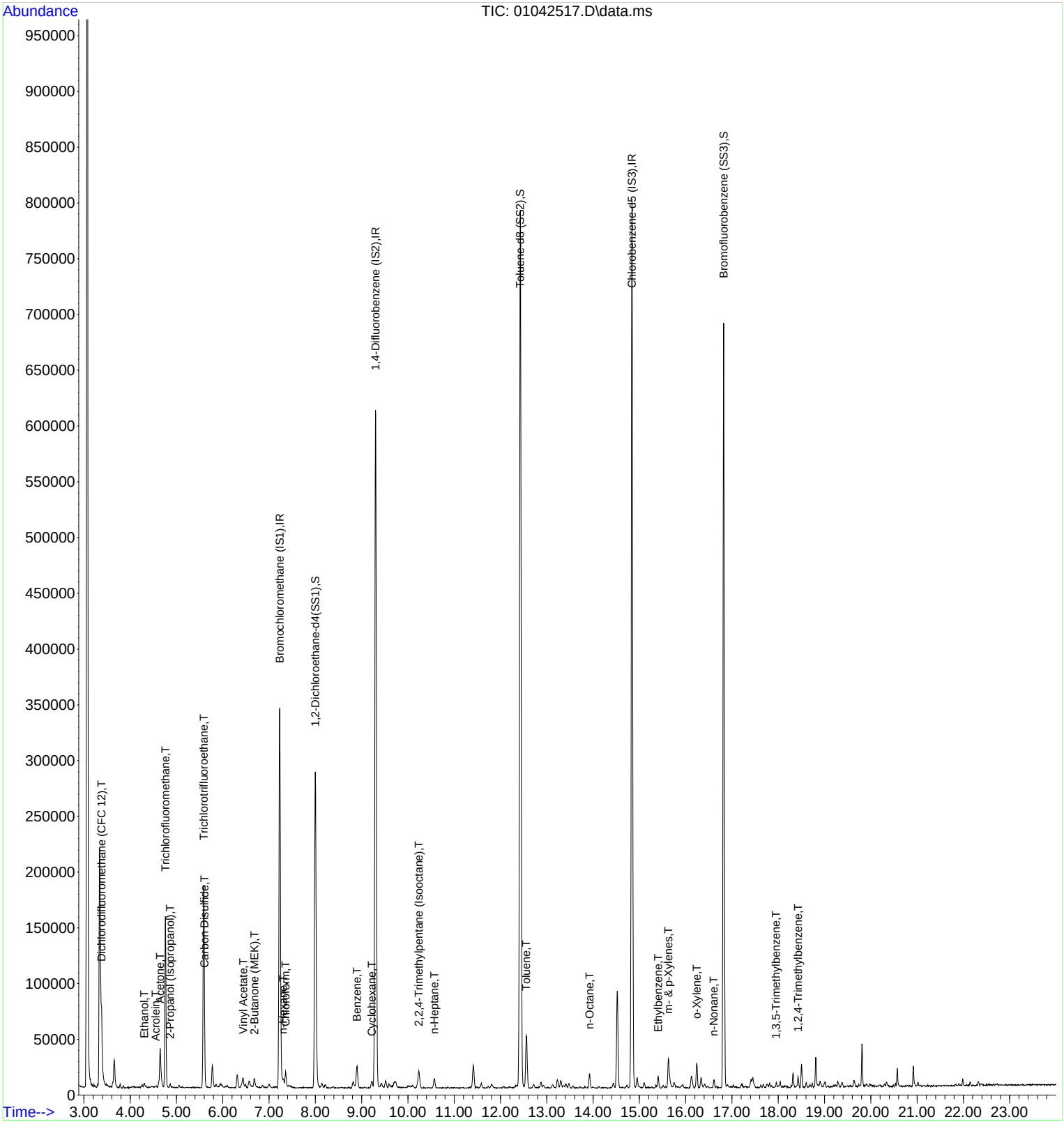
Quant Time: Jan 06 19:18:38 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	16681	0.304 ng	84
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.57	71	2267	0.194 ng	92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	42620	0.849 ng	97
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	13.93	57	1915	0.184 ng	94
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	14.95	112	812	N.D.	
66) Ethylbenzene	15.41	91	8615	0.155 ng	95
67) m- & p-Xylenes	15.63	91	22118	0.487 ng	97
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	16084	0.358 ng	99
71) n-Nonane	16.61	43	3073	0.129 ng	91
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	2131	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	2644	N.D.	
77) 3-Ethyltoluene	17.03	105	2131	No Calib	
78) 4-Ethyltoluene	17.86	105	260	N.D.	
79) 1,3,5-Trimethylbenzene	17.95	105	2372	0.051 ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	2131	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	4873	0.105 ng	92
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	2017	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	1528	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	2131	No Calib	
90) 1,2-Dichlorobenzene	19.04	146	135	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	242	N.D.	
95) Naphthalene	20.94	128	2127	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.25	55	119	No Calib #	
99) tert-Butylbenzene	18.43	119	715	N.D.	
100) n-Butylbenzene	19.38	91	969	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 19:18:38 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

VOA 1/6/25

Quant Time: Jan 06 19:18:38 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

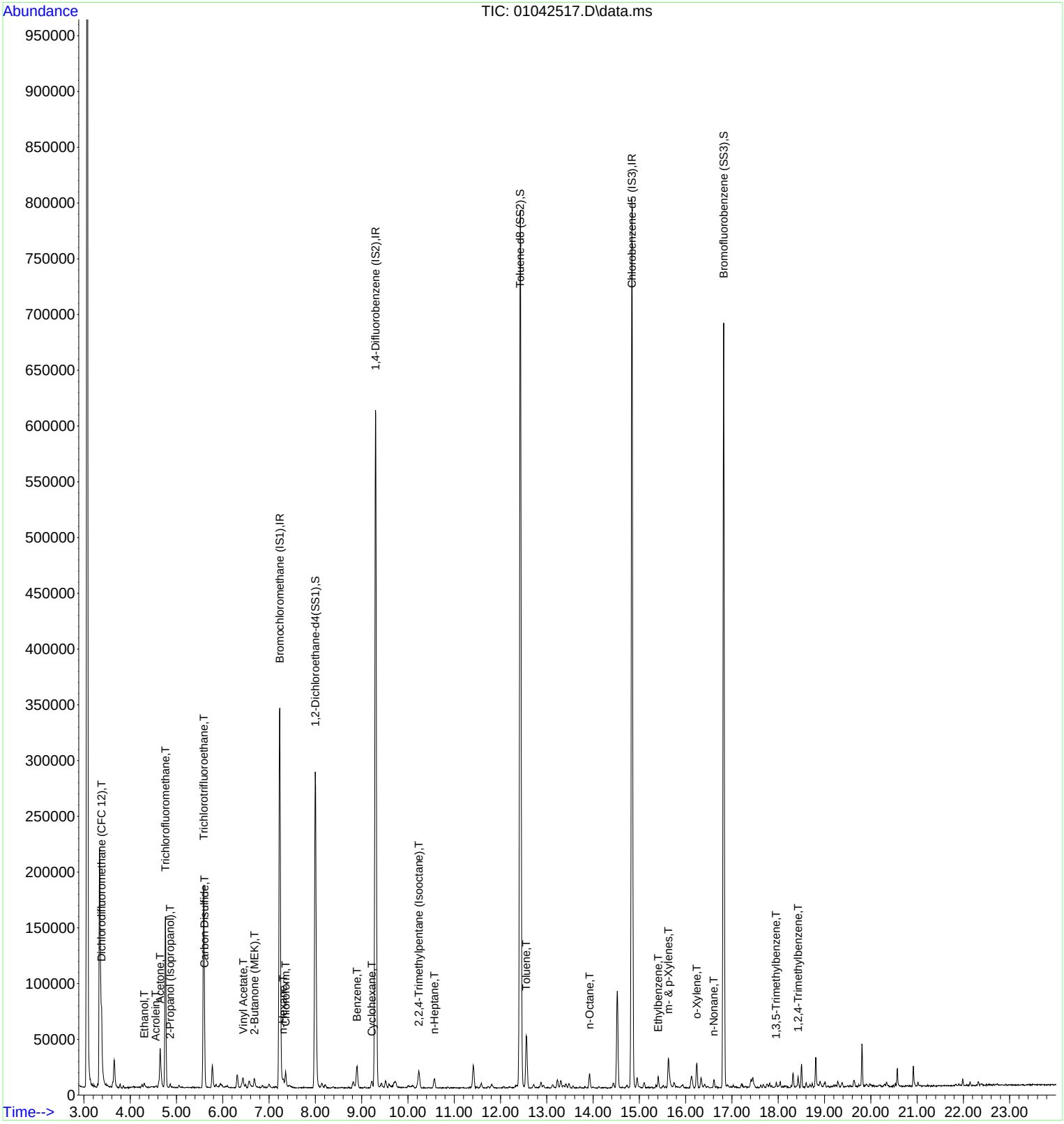
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	152074	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	652902	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	117552	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	248186	11.979	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.84%				
57) Toluene-d8 (SS2)	12.43	98	681141	13.062	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.48%				
73) Bromofluorobenzene (SS3)	16.82	174	255623	14.205	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.60%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16169m	0.544	ng		
10) Ethanol	4.31	45	4902	0.436	ng		96
12) Acrolein	4.55	56	991	0.103	ng		98
13) Acetone	4.65	58	15533	1.517	ng	#	69
14) Trichlorofluoromethane	4.76	101	116832	4.191	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	2092	0.057	ng	#	29
21) Trichlorotrifluoroethane	5.59	151	64524	5.130	ng		94
22) Carbon Disulfide	5.61	76	11708	0.253	ng		64
26) Vinyl Acetate	6.44	86	789	0.318	ng	#	61
27) 2-Butanone (MEK)	6.69	72	2496	0.303	ng	#	82
31) n-Hexane	7.31	57	2088	0.091	ng	#	93
32) Chloroform	7.36	83	10925	0.441	ng		99
41) Benzene	8.90	78	18309	0.349	ng		98
43) Cyclohexane	9.22	84	2888	0.158	ng		93
49) 2,2,4-Trimethylpentane...	10.23	57	16681	0.304	ng		84
51) n-Heptane	10.57	71	2267	0.194	ng		92
58) Toluene	12.56	91	42620	0.849	ng		97
63) n-Octane	13.93	57	1915	0.184	ng		94
66) Ethylbenzene	15.41	91	8615	0.155	ng		95
67) m- & p-Xylenes	15.63	91	22118	0.487	ng		97
70) o-Xylene	16.24	91	16084	0.358	ng		99
71) n-Nonane	16.61	43	3073	0.129	ng		91
79) 1,3,5-Trimethylbenzene	17.95	105	2372	0.051	ng		100
82) 1,2,4-Trimethylbenzene	18.43	105	4873	0.105	ng		92

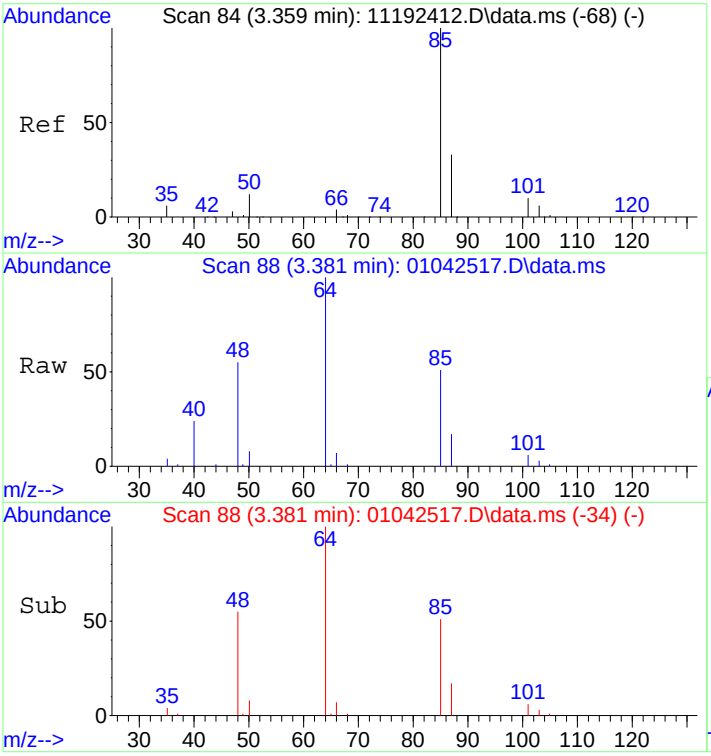
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 19:18:38 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

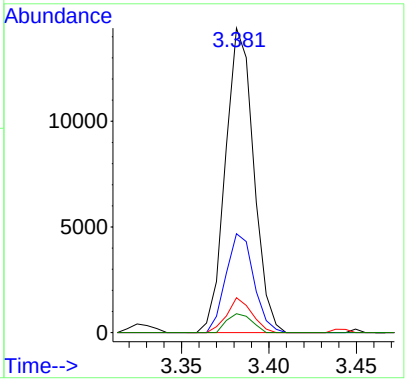


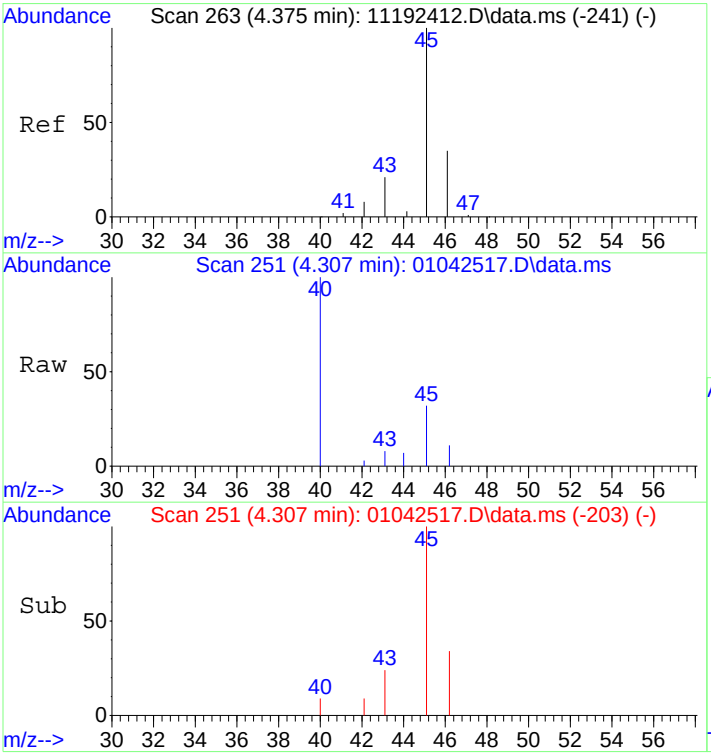


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.54 ng m
RT: 3.38 min Scan# 88
Delta R.T. 0.054 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 85 Resp: 16169

Ion	Ratio	Lower	Upper
85	100		
87	32.1	12.6	52.6
101	10.1	0.0	29.6
103	5.5	0.0	26.2

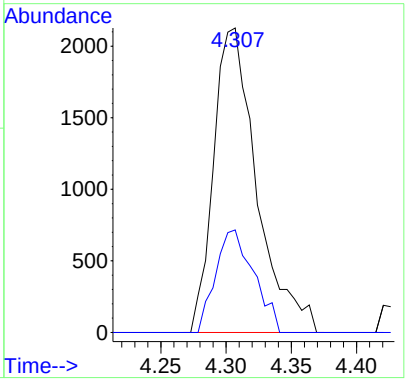


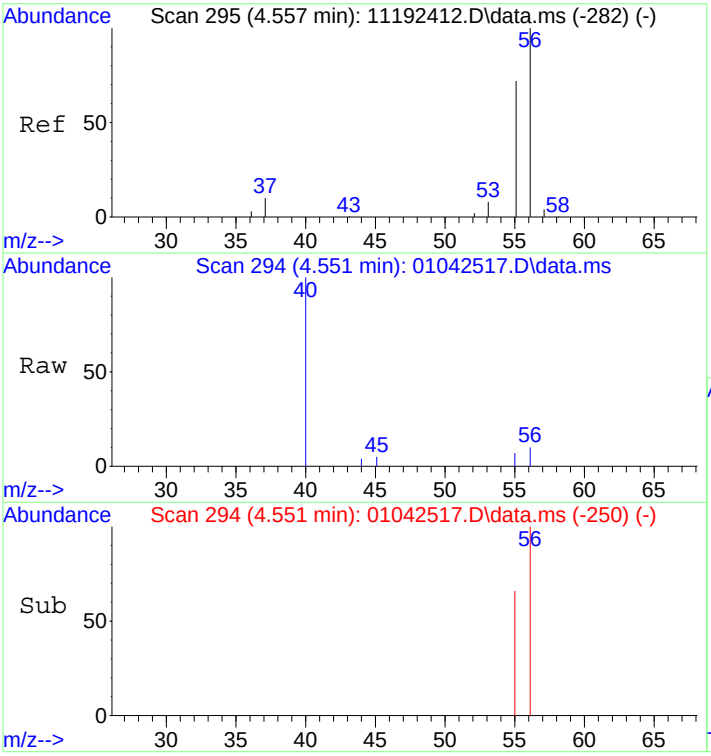


#10
Ethanol
Concen: 0.44 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 45 Resp: 4902

Ion	Ratio	Lower	Upper
45	100		
46	29.7	11.8	51.8

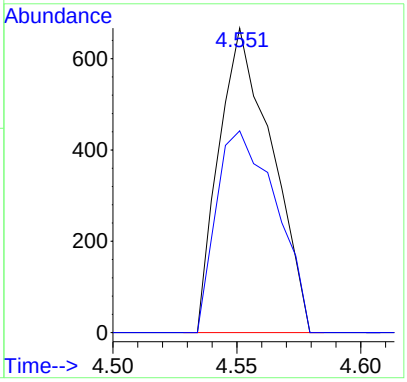


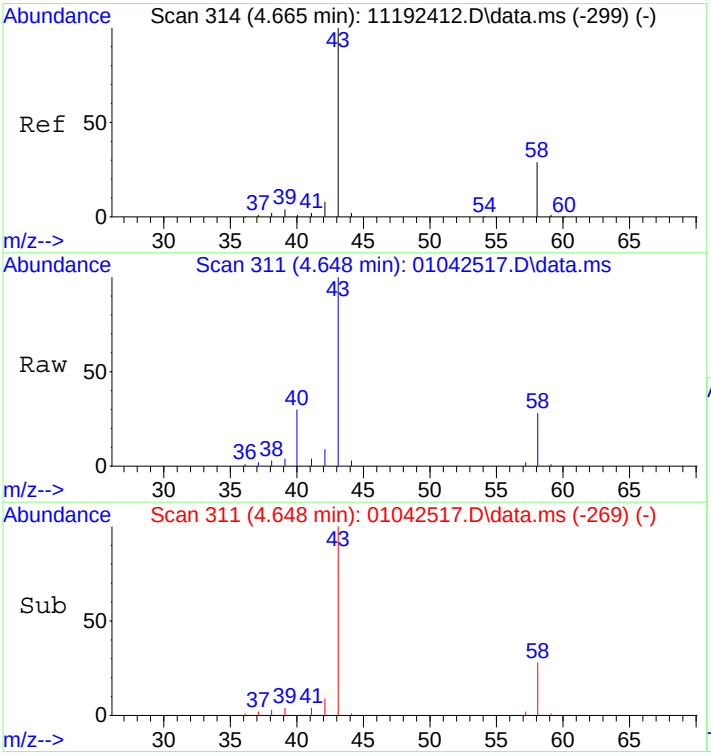


#12
Acrolein
Concen: 0.10 ng
RT: 4.55 min Scan# 294
Delta R.T. -0.002 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 56 Resp: 991

Ion	Ratio	Lower	Upper
56	100		
55	75.2	53.1	93.1

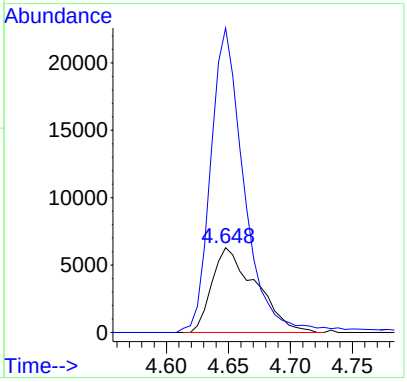


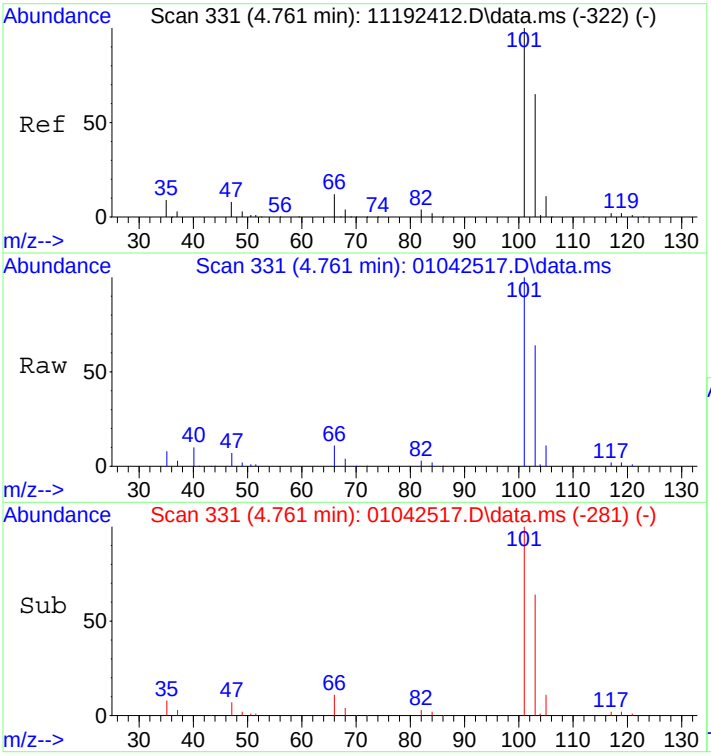


#13
Acetone
Concen: 1.52 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 58 Resp: 15533

Ion	Ratio	Lower	Upper
58	100		
43	276.6	312.5	372.5#

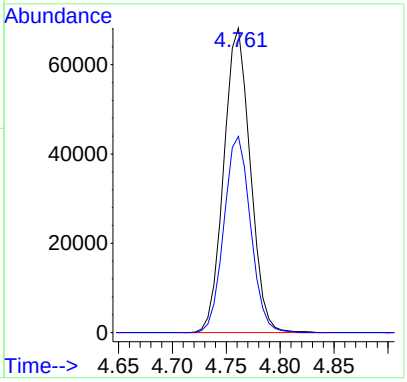


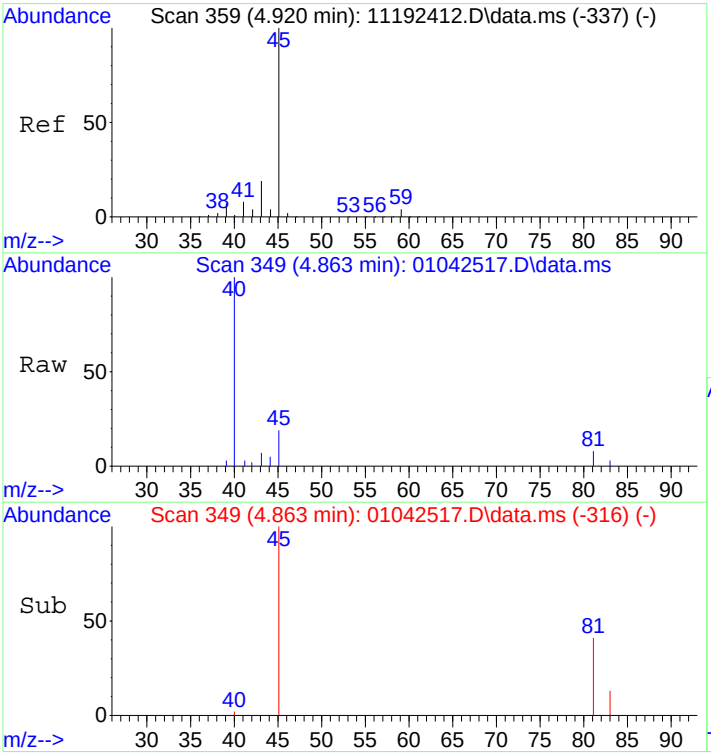


#14
Trichlorofluoromethane
Concen: 4.19 ng
RT: 4.76 min Scan# 331
Delta R.T. 0.033 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion:101 Resp: 116832

Ion	Ratio	Lower	Upper
101	100		
103	64.6	44.8	84.8

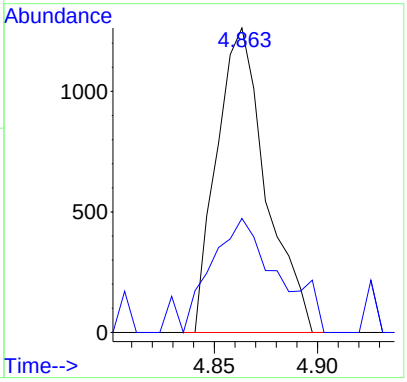


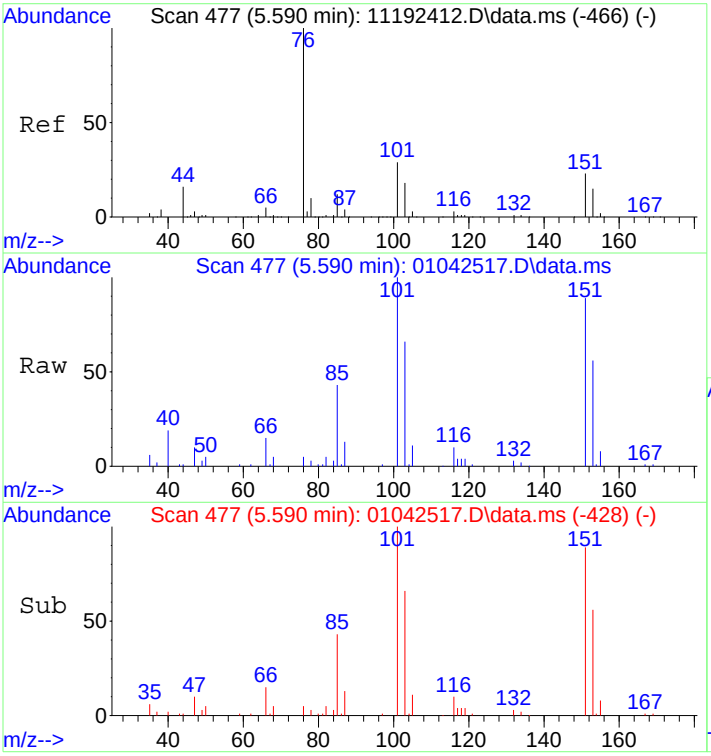


#15
2-Propanol (Isopropanol)
Concen: 0.06 ng
RT: 4.86 min Scan# 349
Delta R.T. -0.061 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 45 Resp: 2092

Ion	Ratio	Lower	Upper
45	100		
43	52.9	0.2	40.2#

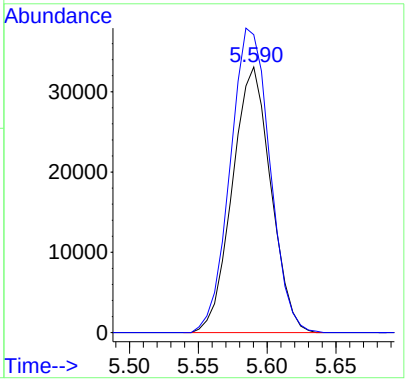


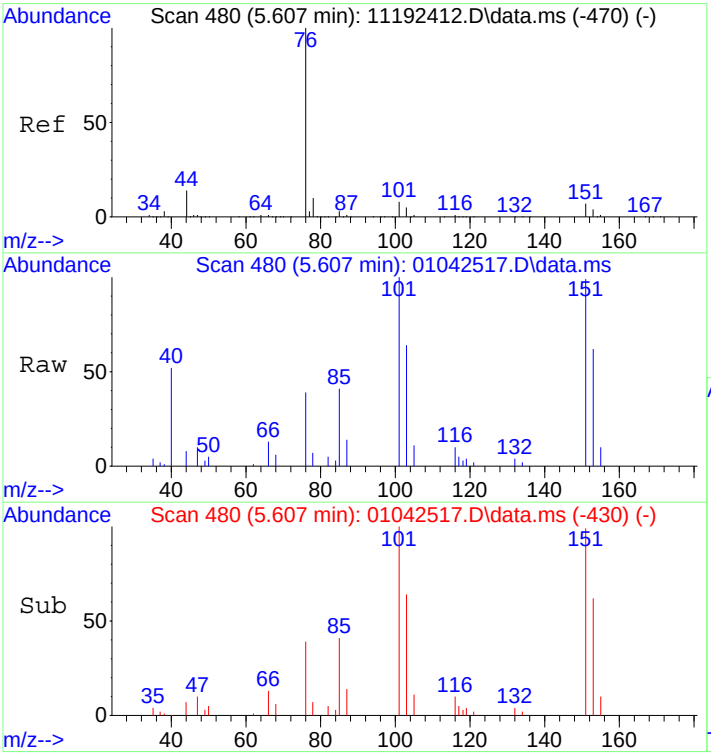


#21
Trichlorotrifluoroethane
Concen: 5.13 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion:151 Resp: 64524

Ion	Ratio	Lower	Upper
151	100		
101	117.9	105.0	145.0

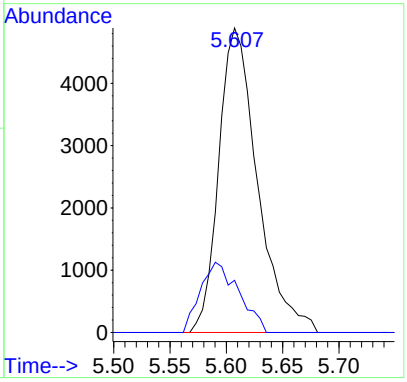


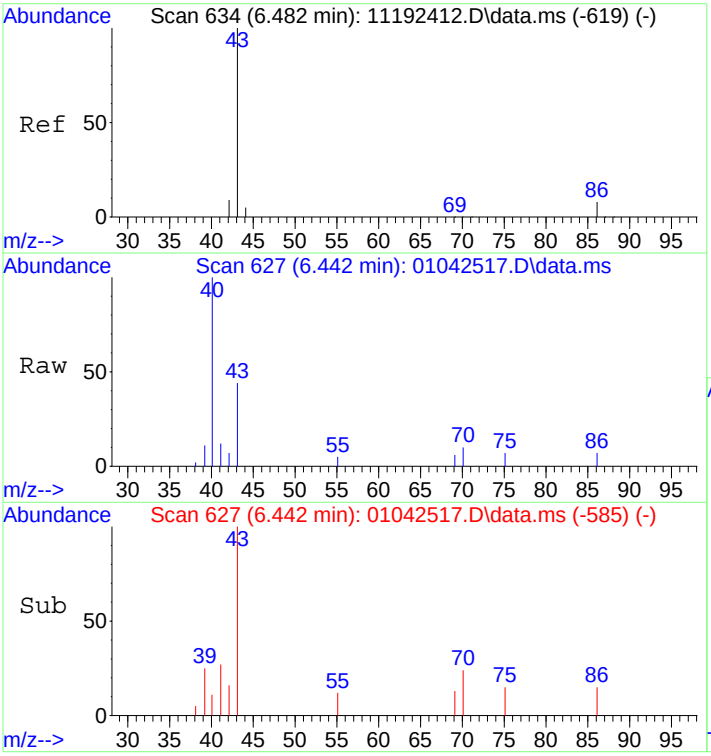


#22
Carbon Disulfide
Concen: 0.25 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.036 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 76 Resp: 11708

Ion	Ratio	Lower	Upper
76	100		
78	22.8	0.0	29.6

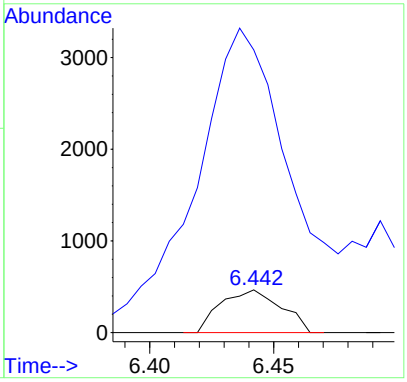


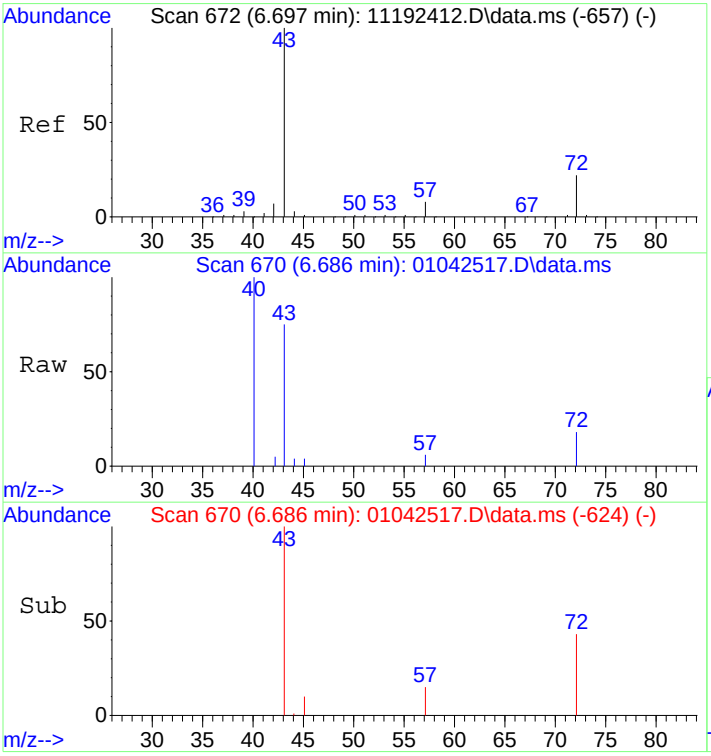


#26
Vinyl Acetate
Concen: 0.32 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 86 Resp: 789

Ion	Ratio	Lower	Upper
86	100		
43	1136.0	1331.6	1371.6#

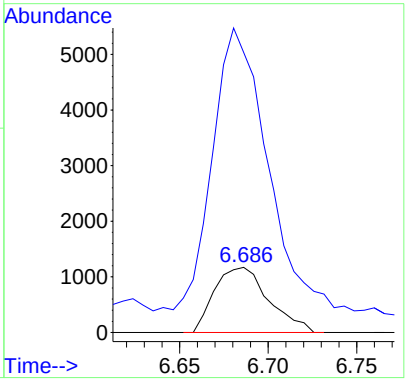


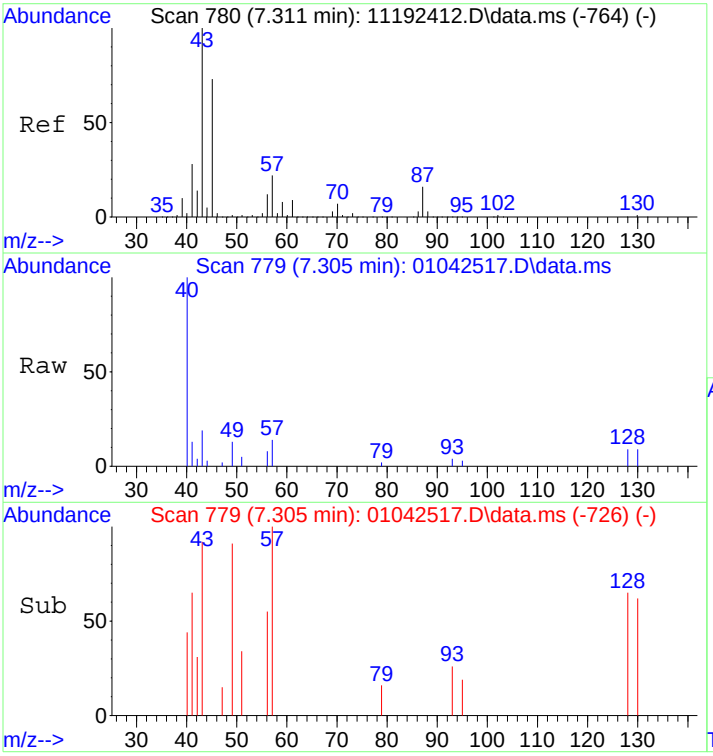


#27
2-Butanone (MEK)
Concen: 0.30 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 72 Resp: 2496

Ion	Ratio	Lower	Upper
72	100		
43	506.7	439.8	479.8#

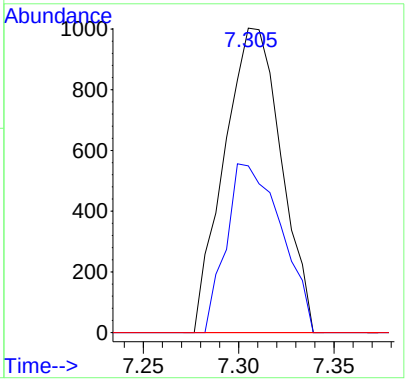


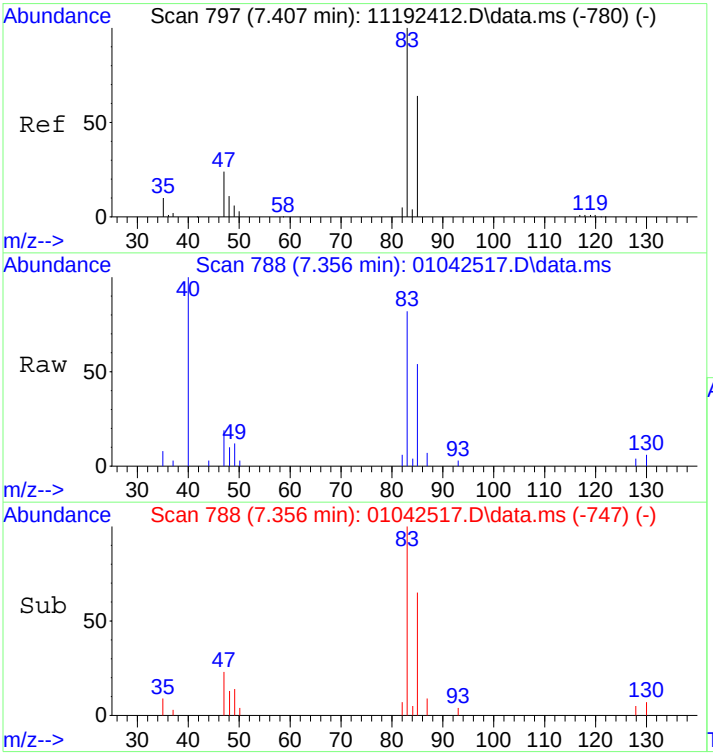


#31
n-Hexane
Concen: 0.09 ng
RT: 7.31 min Scan# 779
Delta R.T. 0.052 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 57 Resp: 2088

Ion	Ratio	Lower	Upper
57	100		
56	53.5	43.4	65.0
86	0.0	10.9	16.3#

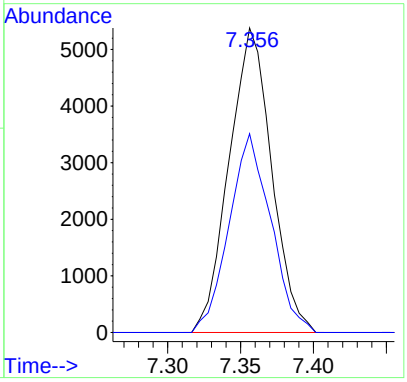


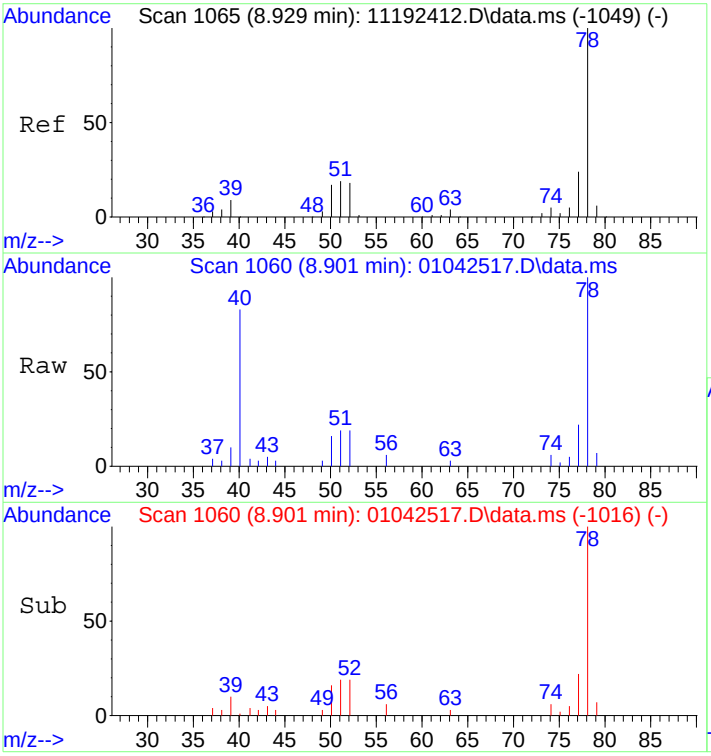


#32
Chloroform
Concen: 0.44 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 83 Resp: 10925

Ion	Ratio	Lower	Upper
83	100		
85	64.0	45.1	85.1

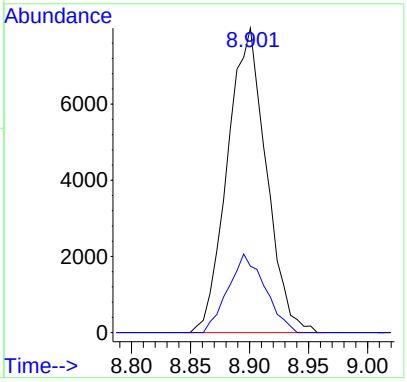


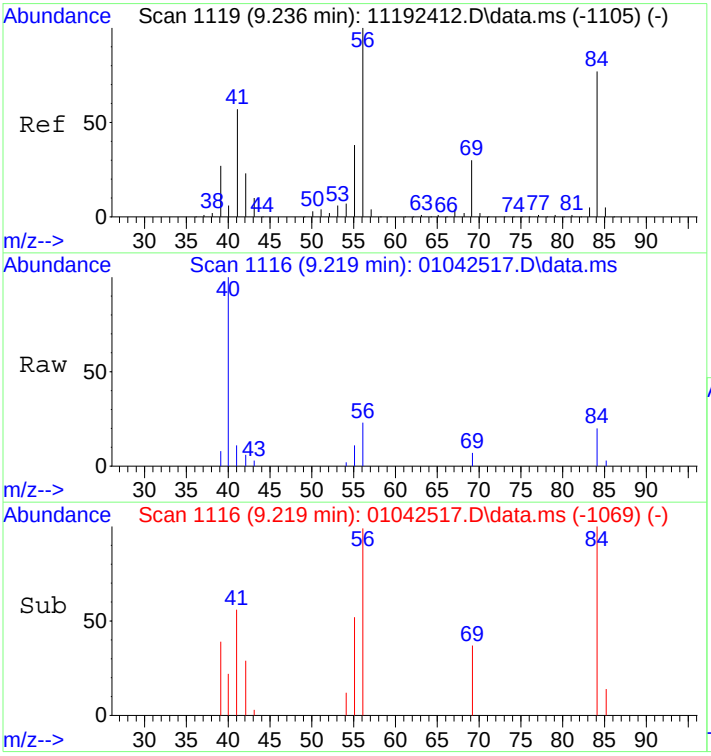


#41
Benzene
Concen: 0.35 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 78 Resp: 18309

Ion	Ratio	Lower	Upper
78	100		
77	24.6	3.7	43.7

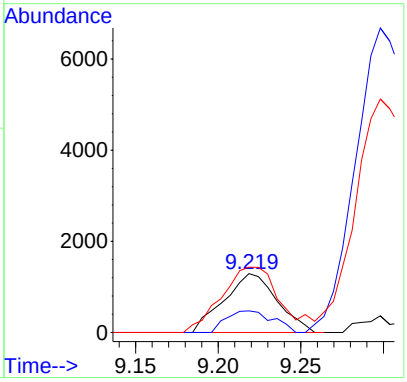


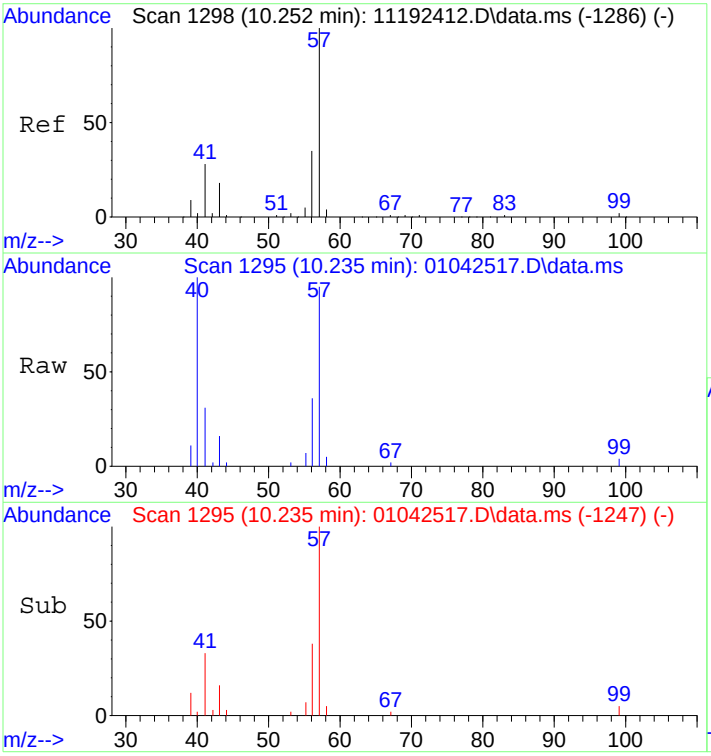


#43
Cyclohexane
Concen: 0.16 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 84 Resp: 2888

Ion	Ratio	Lower	Upper
84	100		
69	32.3	18.3	58.3
56	123.3	110.7	150.7

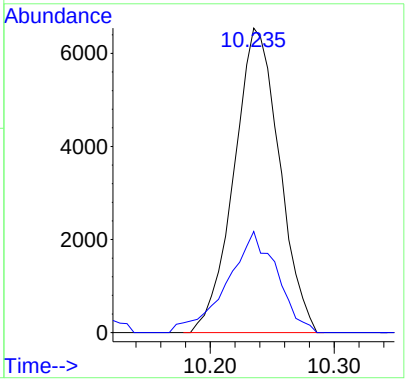


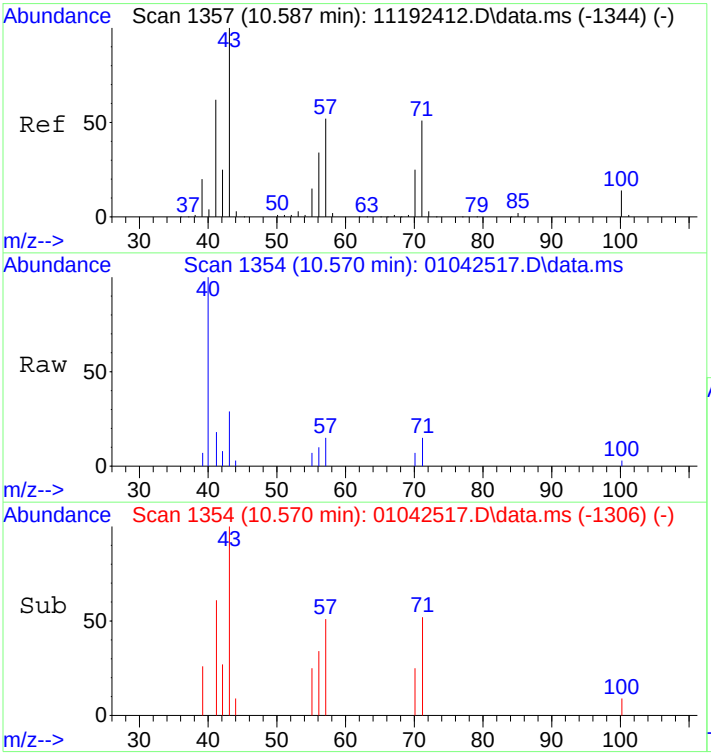


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.30 ng
RT: 10.23 min Scan# 1295
Delta R.T. 0.021 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 57 Resp: 16681

Ion	Ratio	Lower	Upper
57	100		
41	36.5	8.3	48.3

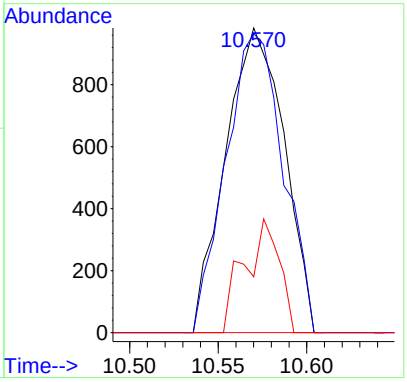


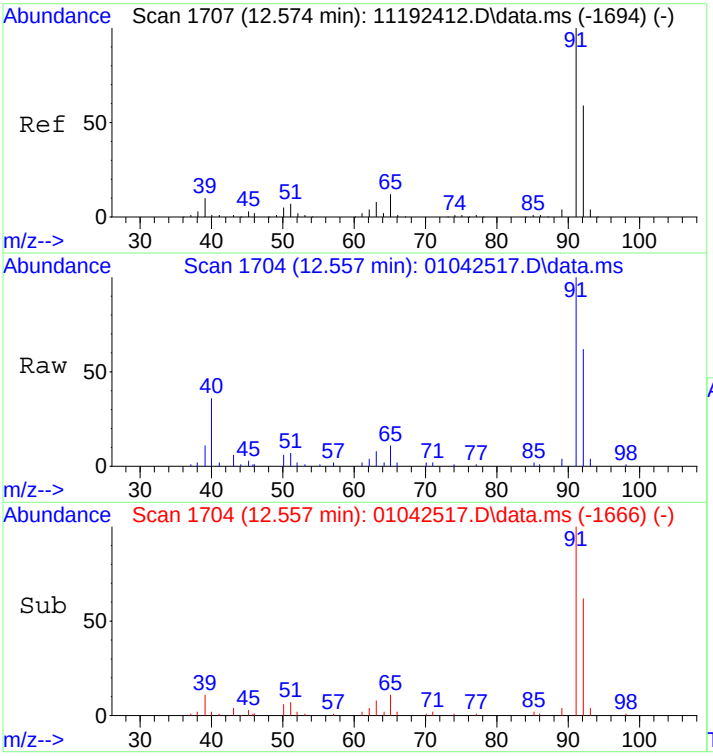


#51
n-Heptane
Concen: 0.19 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 71 Resp: 2267

Ion	Ratio	Lower	Upper
71	100		
57	95.9	83.3	123.3
100	22.2	8.7	48.7

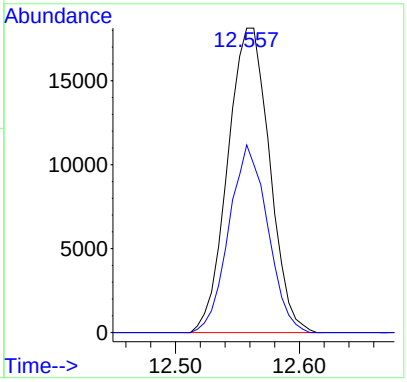


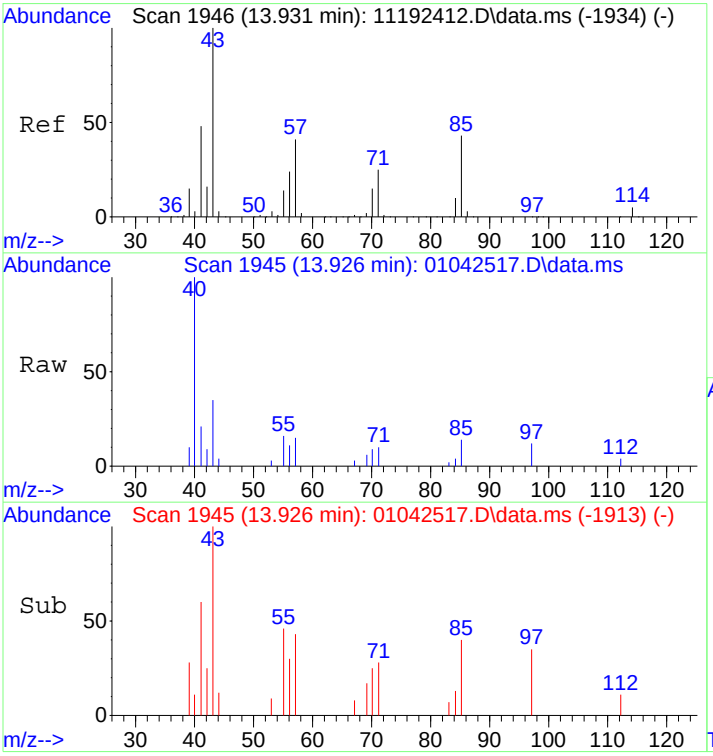


#58
Toluene
Concen: 0.85 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 91 Resp: 42620

Ion	Ratio	Lower	Upper
91	100		
92	57.1	39.2	79.2

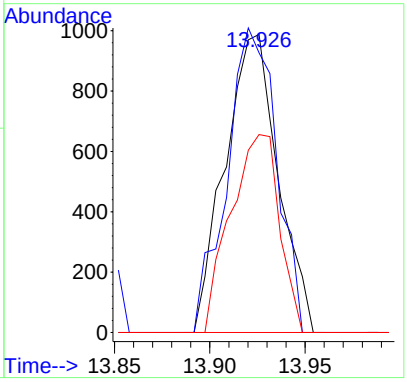


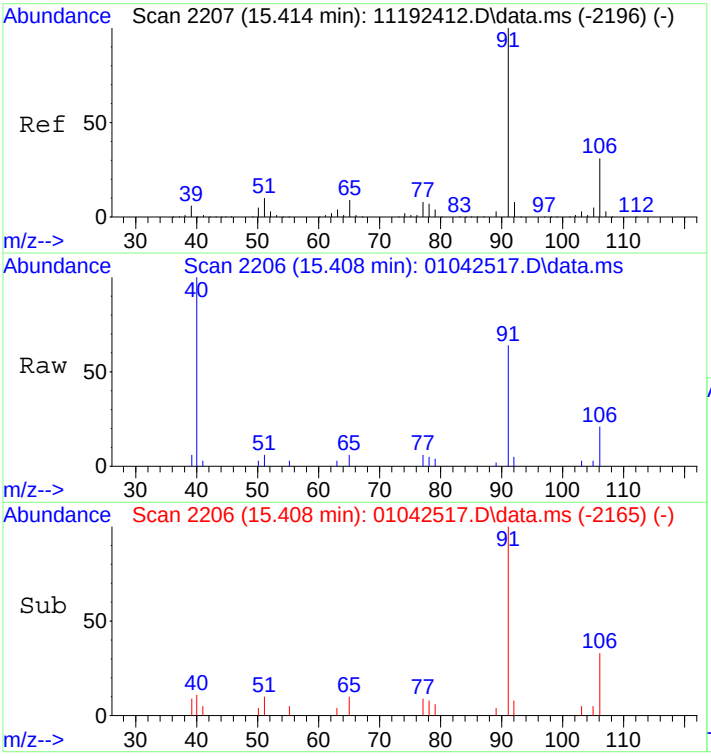


#63
n-Octane
Concen: 0.18 ng
RT: 13.93 min Scan# 1945
Delta R.T. -0.017 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 57 Resp: 1915

Ion	Ratio	Lower	Upper
57	100		
85	95.4	83.6	125.4
71	61.0	49.0	73.4

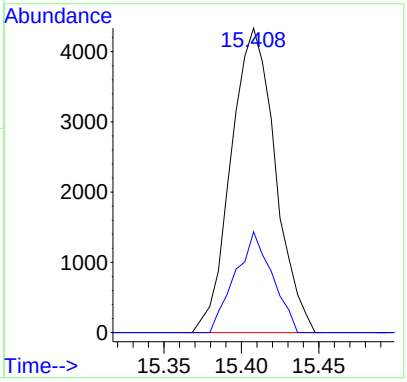


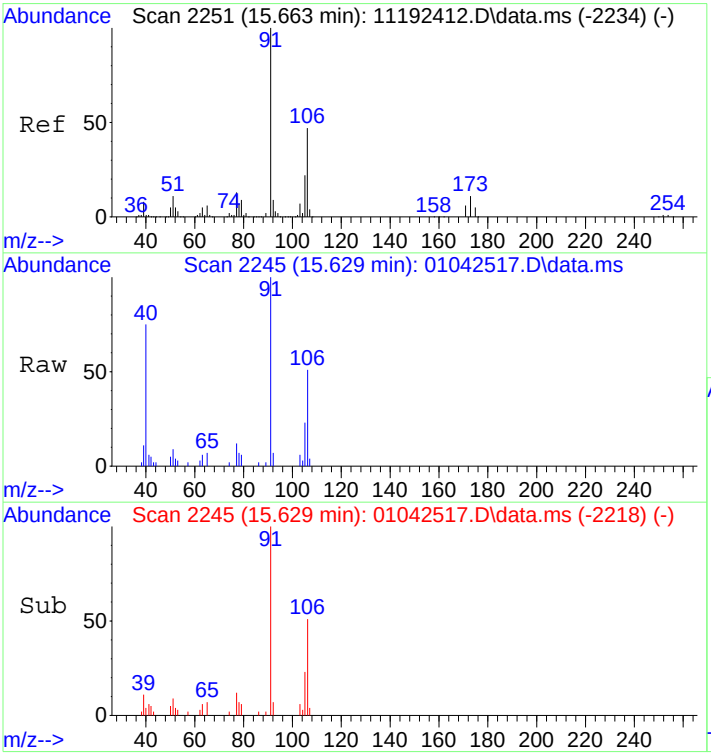


#66
Ethylbenzene
Concen: 0.16 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 91 Resp: 8615

Ion	Ratio	Lower	Upper
91	100		
106	27.7	10.7	50.7

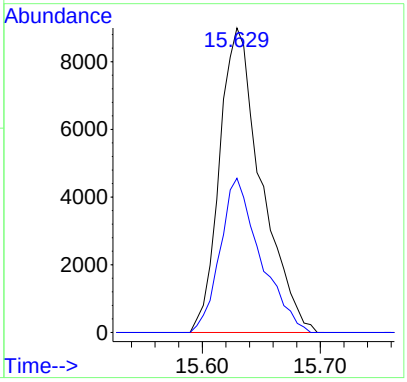


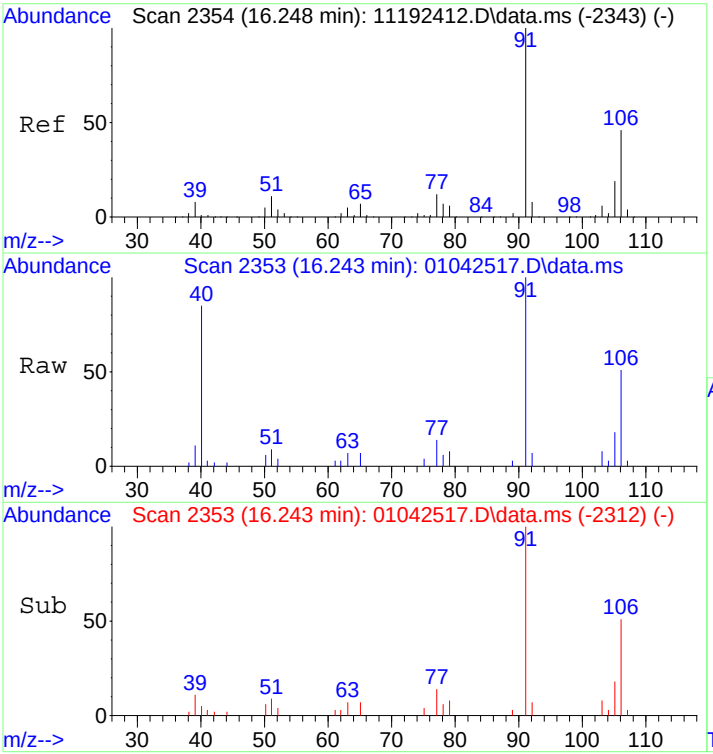


#67
m- & p-Xylenes
Concen: 0.49 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 91 Resp: 22118

Ion	Ratio	Lower	Upper
91	100		
106	48.8	27.1	67.1

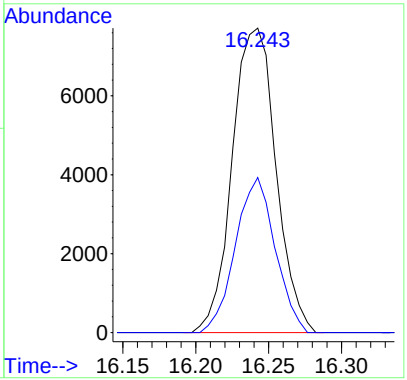


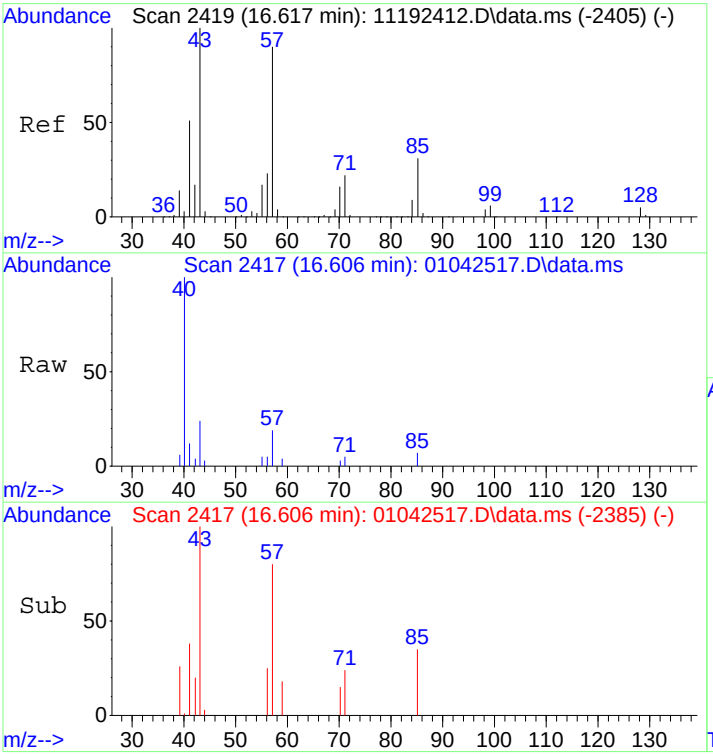


#70
o-Xylene
Concen: 0.36 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 91 Resp: 16084

Ion	Ratio	Lower	Upper
91	100		
106	46.3	25.8	65.8

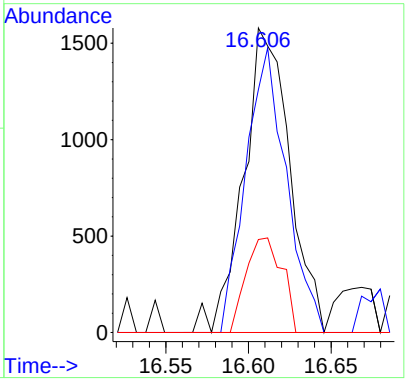


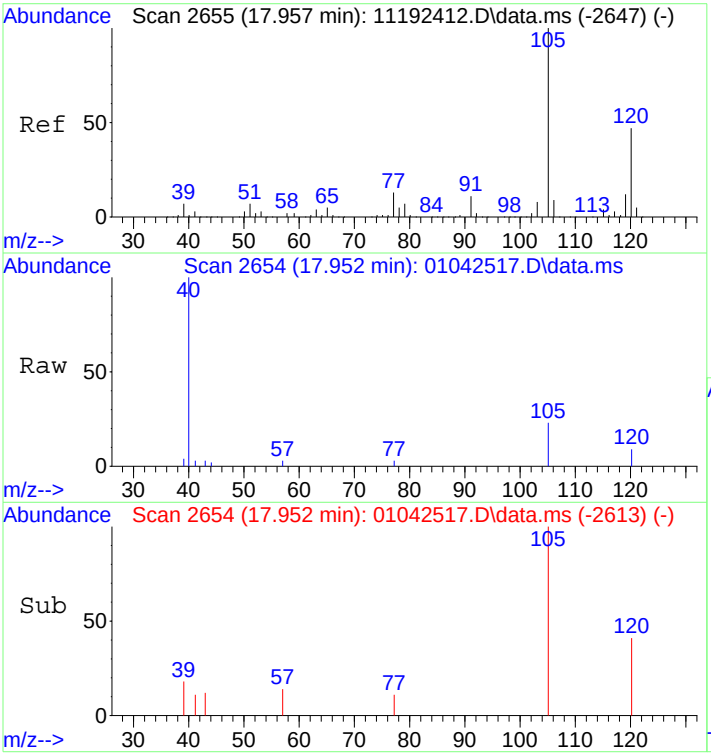


#71
n-Nonane
Concen: 0.13 ng
RT: 16.61 min Scan# 2417
Delta R.T. -0.017 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion: 43 Resp: 3073

Ion	Ratio	Lower	Upper
43	100		
57	82.1	69.4	109.4
85	24.3	10.5	50.5

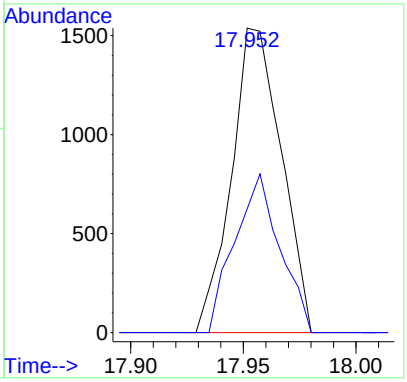


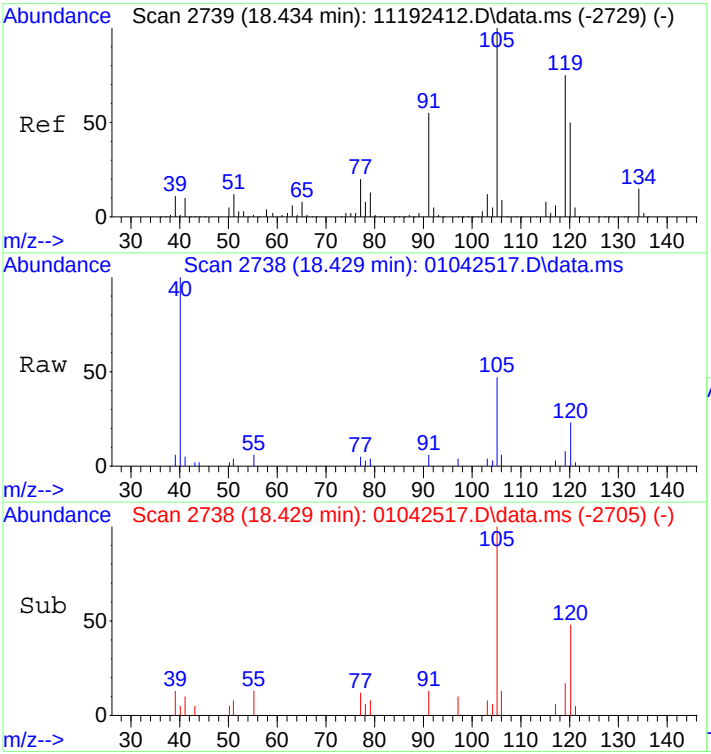


#79
1,3,5-Trimethylbenzene
Concen: 0.05 ng
RT: 17.95 min Scan# 2654
Delta R.T. -0.017 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion:105 Resp: 2372

Ion	Ratio	Lower	Upper
105	100		
120	47.2	27.5	67.5

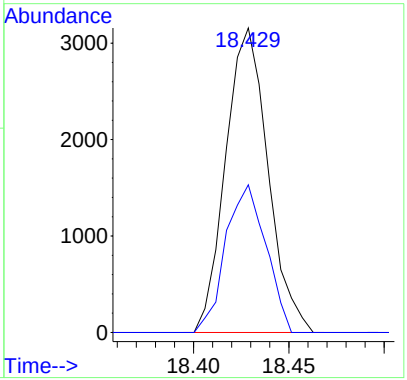




#82
1,2,4-Trimethylbenzene
Concen: 0.10 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01042517.D
Acq: 4 Jan 2025 16:27

Tgt Ion:105 Resp: 4873

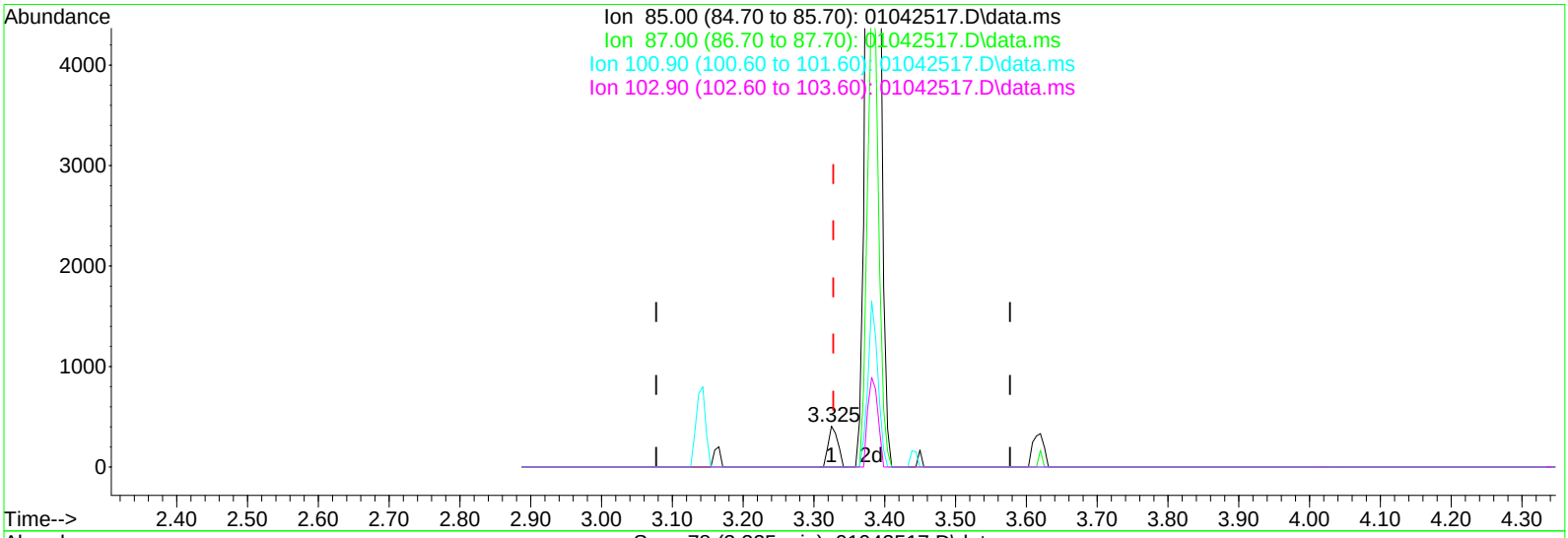
Ion	Ratio	Lower	Upper
105	100		
120	46.2	31.8	71.8

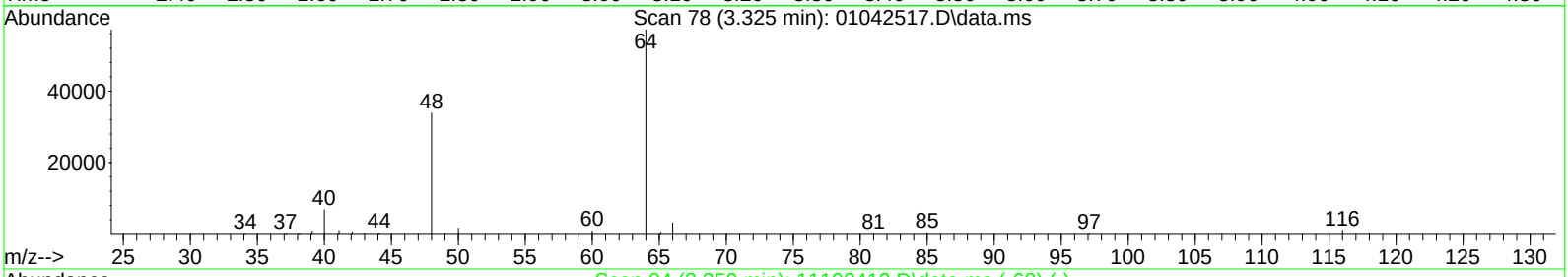


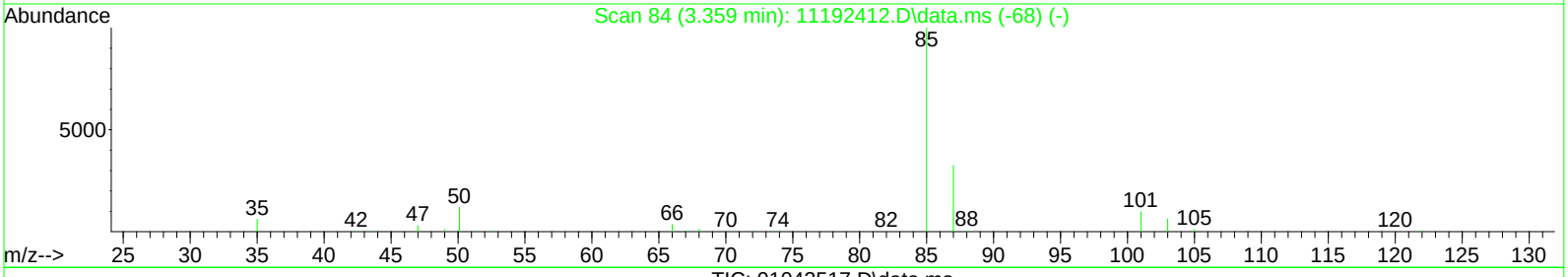
Quantitation Report (Qedit)

Data Path : J:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 05 15:07:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042517.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.325min (-0.003) 0.01ng

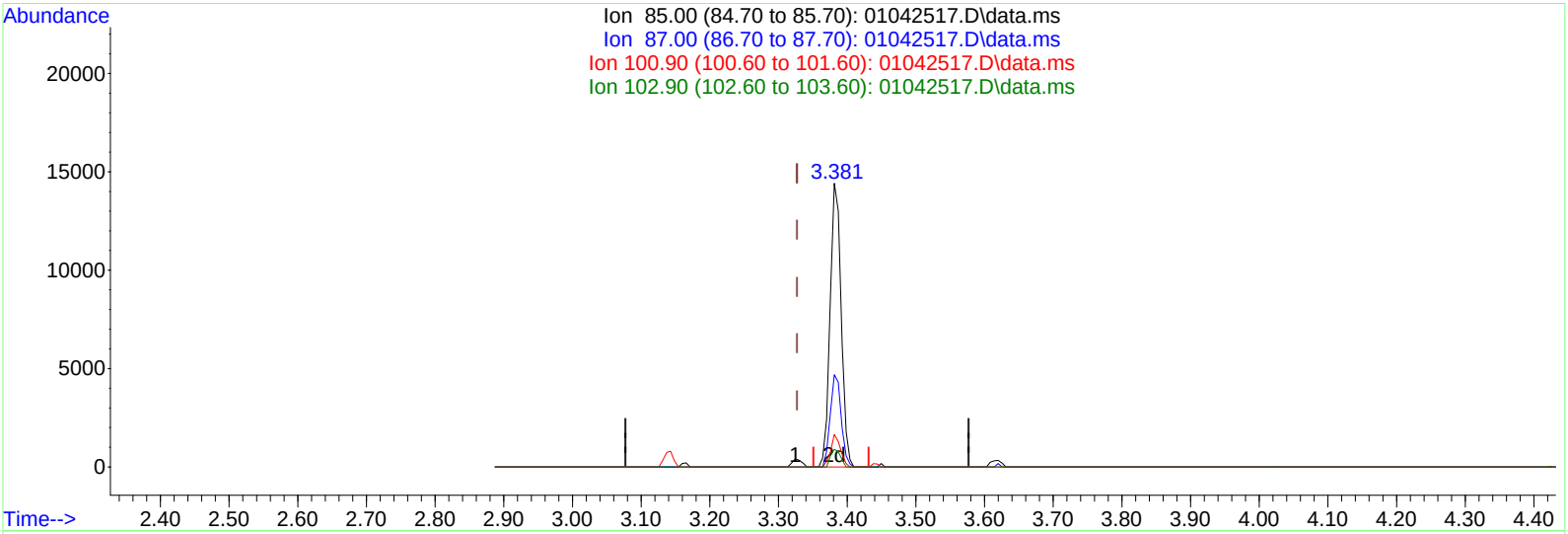
response 379

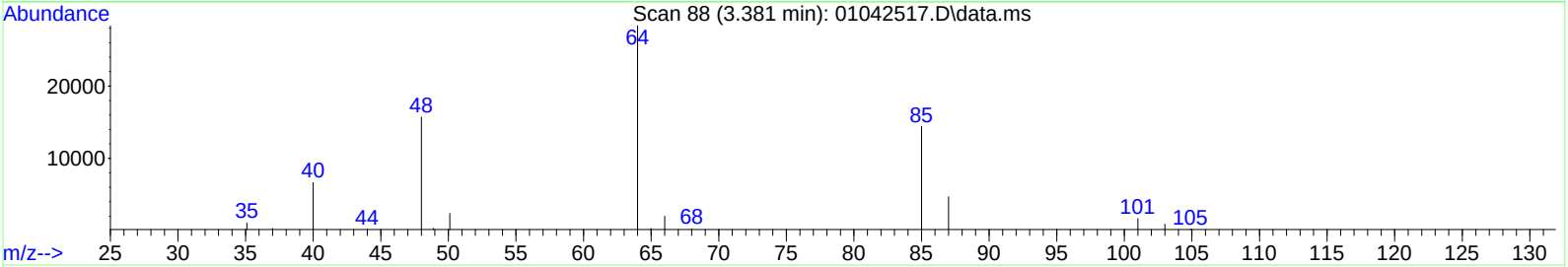
Ion	Exp%	Act%
85.00	100	100
87.00	32.60	0.00#
100.90	9.60	0.00
102.90	6.20	0.00

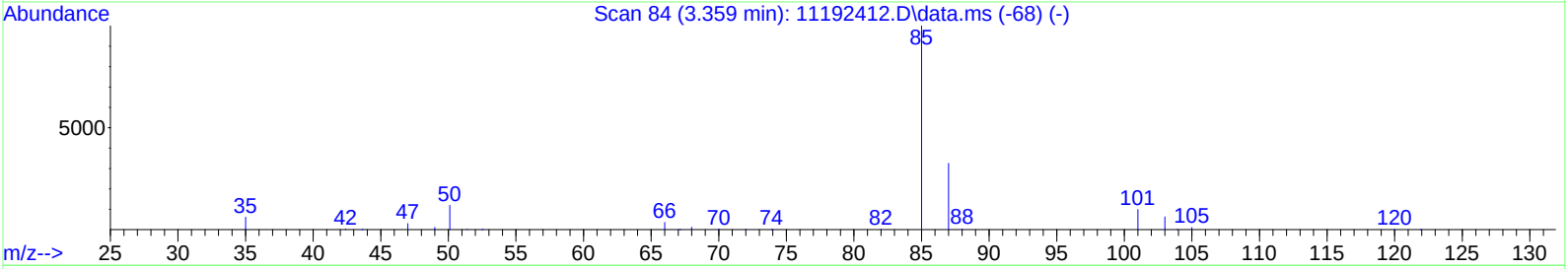
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 18:25:37 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01042517.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.381min (+0.054) 0.54ng m

response 16169

Ion	Exp%	Act%
85.00	100	100
87.00	32.60	32.11
100.90	9.60	10.12
102.90	6.20	5.47

MP

1/6/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 20:26:56 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

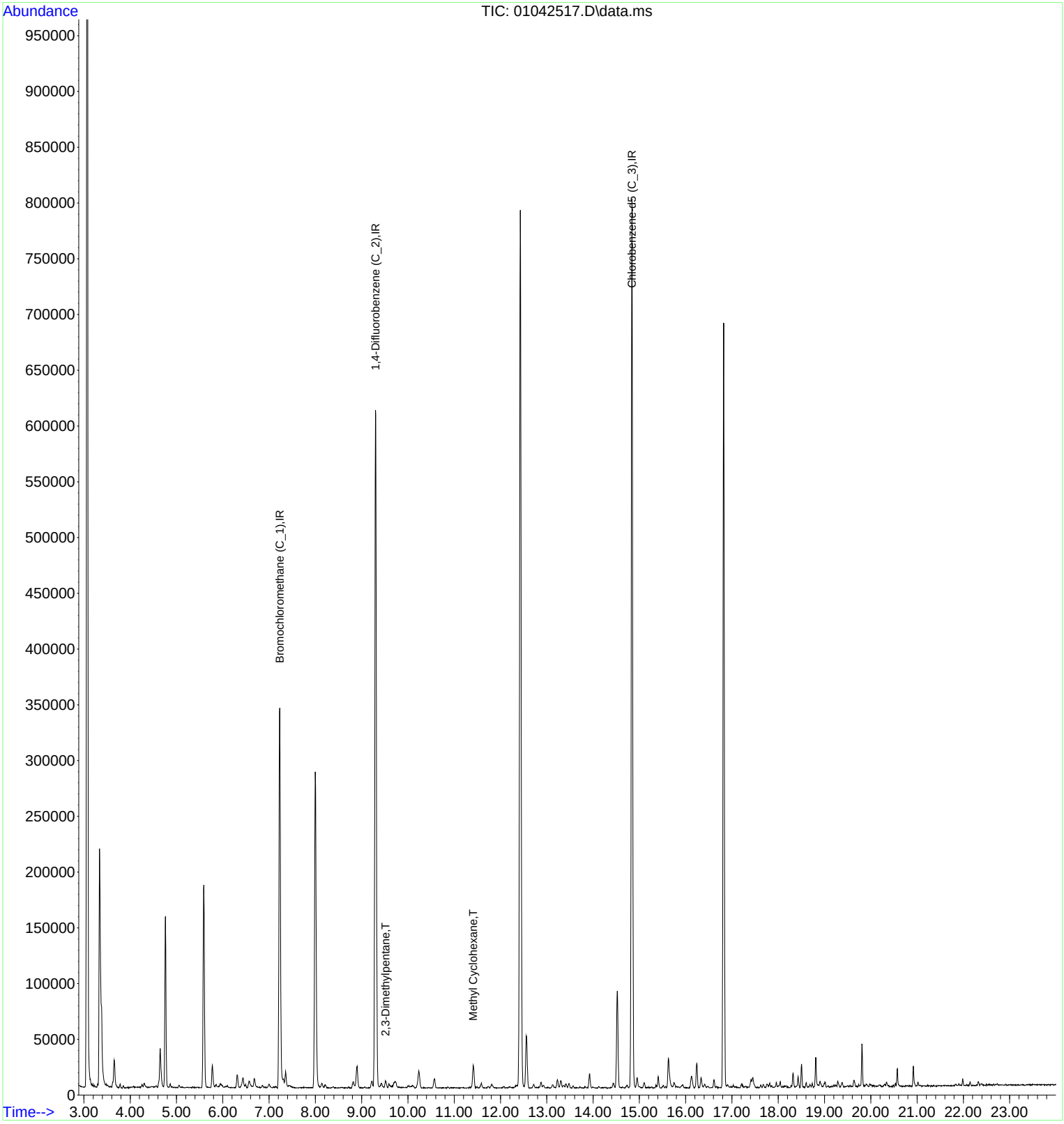
1/6/25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	153903	12.500 ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	652902	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	117552	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.17	85	127	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	1311	N.D.	
4) 1,1-Difluoroethane	3.26	65	120	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D. d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	301	N.D.	
7) Dichlorofluoromethane ...	4.26	67	2694	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.36	43	179	N.D.	
12) 2-Methylpentane	6.49	71	500	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	9.51	56	3210	0.124 ng	92
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	11.41	55	8796	0.419 ng	97
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	16.33	75	64	N.D.	
25) Bromobenzene	17.03	77	121	N.D.	
26) 2-Chlorotoluene	17.68	91	2644	N.D.	
27) 4-Chlorotoluene	17.68	91	2644	N.D.	
28) Indane	19.01	117	393	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	20.18	119	109	N.D.	
31) 1,2,3,4-Tetramethylben...	20.22	119	140	N.D.	
32) 1,2,3,5-Tetramethylben...	20.64	119	52	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 20:26:56 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01042517.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.336	75	80	103	rBV	212079	553184	30.39%	5.462%
2	3.654	131	136	150	rVB2	24521	53229	2.92%	0.526%
3	4.648	301	311	324	rBV	34785	78365	4.30%	0.774%
4	4.761	324	331	341	rVB	153029	261031	14.34%	2.577%
5	5.590	468	477	488	rBV	181852	371431	20.40%	3.667%
6	5.772	503	509	519	rBV	19769	39691	2.18%	0.392%
7	6.311	597	604	611	rBV2	11718	24567	1.35%	0.243%
8	6.436	614	626	633	rBV5	8788	23849	1.31%	0.235%
9	6.567	643	649	659	rBV3	6112	18341	1.01%	0.181%
10	6.680	663	669	681	rVB2	7918	18525	1.02%	0.183%
11	7.231	757	766	777	rBV	340941	768563	42.22%	7.588%
12	7.356	783	788	797	rVB	13551	26681	1.47%	0.263%
13	7.998	892	901	914	rBV	283471	654089	35.93%	6.458%
14	8.815	1038	1045	1052	rBV3	5880	16211	0.89%	0.160%
15	8.901	1052	1060	1070	rVB3	19519	47680	2.62%	0.471%
16	9.224	1110	1117	1121	rBV4	6010	13470	0.74%	0.133%
17	9.298	1121	1130	1146	rVB	607309	1412273	77.57%	13.944%
18	9.514	1163	1168	1177	rVB2	6178	13746	0.76%	0.136%
19	9.724	1204	1205	1216	rVB6	5522	10608	0.58%	0.105%
20	10.235	1286	1295	1305	rVB	15493	43066	2.37%	0.425%
21	10.576	1345	1355	1360	rBV4	8454	19901	1.09%	0.196%
22	11.410	1491	1502	1512	rVB3	20459	49730	2.73%	0.491%
23	12.427	1670	1681	1696	rVV	786242	1820568	100.00%	17.975%
24	12.557	1696	1704	1714	rVB	46845	111080	6.10%	1.097%
25	13.227	1815	1822	1828	rBV3	7418	15843	0.87%	0.156%
26	13.301	1830	1835	1841	rVB4	5905	12273	0.67%	0.121%
27	13.926	1939	1945	1953	rVB4	12773	24946	1.37%	0.246%
28	14.522	2042	2050	2060	rBV2	86431	189435	10.41%	1.870%
29	14.840	2097	2106	2119	rVB	796944	1631284	89.60%	16.106%
30	14.954	2119	2126	2133	rBV2	8691	17633	0.97%	0.174%
31	15.408	2201	2206	2214	rVB	9998	17383	0.95%	0.172%
32	15.629	2237	2245	2258	rBV2	26501	67471	3.71%	0.666%
33	16.129	2325	2333	2342	rVB5	10683	28858	1.59%	0.285%
34	16.243	2345	2353	2359	rBV	21945	43106	2.37%	0.426%
35	16.333	2363	2369	2377	rBV3	9040	18774	1.03%	0.185%
36	16.612	2411	2418	2424	rVB2	7140	12866	0.71%	0.127%
37	16.822	2445	2455	2466	rBV	685994	1294046	71.08%	12.777%
38	17.412	2552	2559	2562	rBV4	7067	14639	0.80%	0.145%
39	17.452	2562	2566	2581	rVB4	9316	22765	1.25%	0.225%
40	18.321	2714	2719	2724	rVB3	12309	19631	1.08%	0.194%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

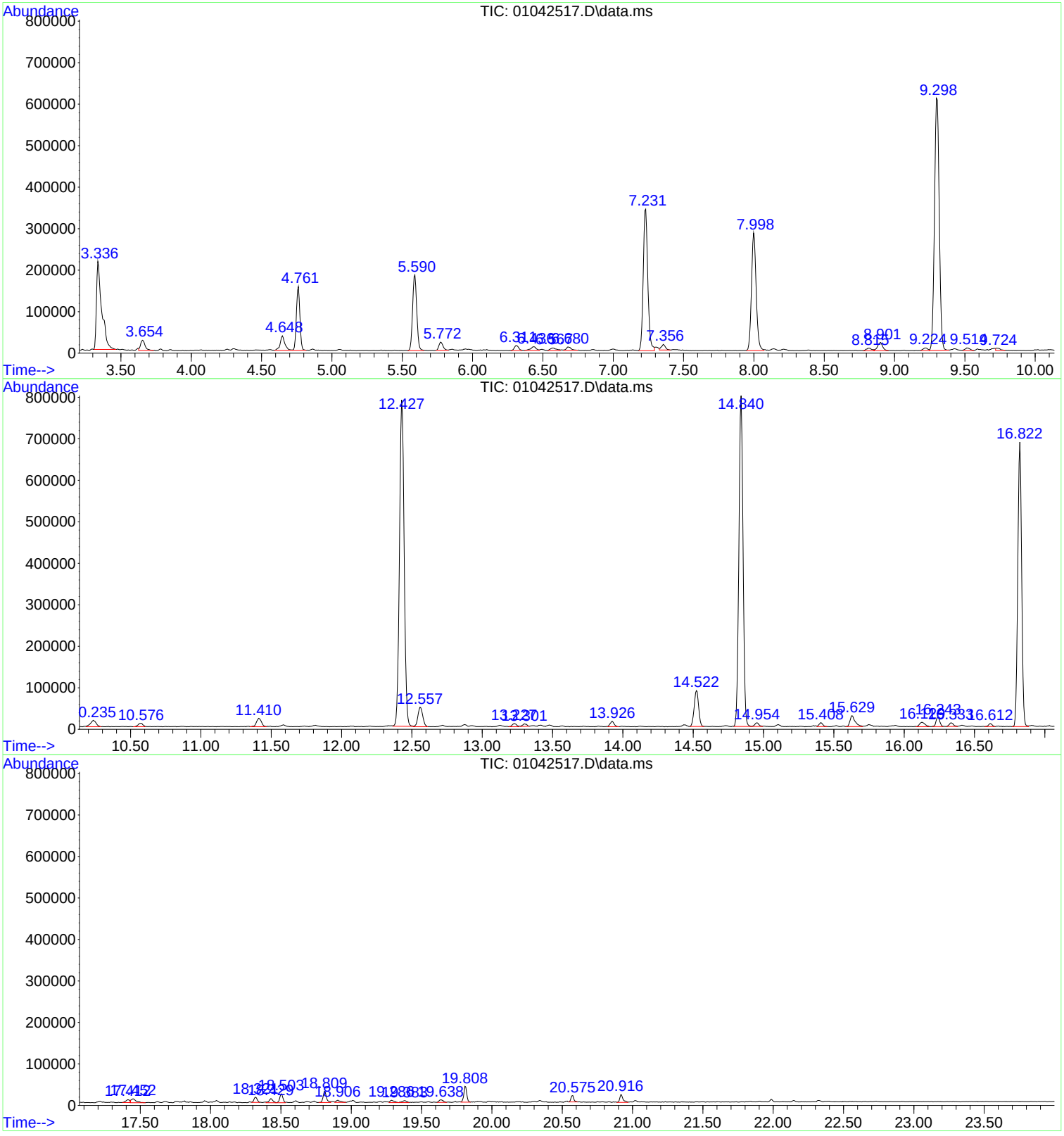
41	18.429	2732	2738	2744	rVB3	10125	18125	1.00%	0.179%
42	18.503	2744	2751	2756	rBV3	21439	33402	1.83%	0.330%
43	18.809	2798	2805	2813	rBV	26744	43946	2.41%	0.434%
44	18.906	2818	2822	2832	rVB4	5044	10878	0.60%	0.107%
45	19.286	2886	2889	2898	rVB4	5609	10856	0.60%	0.107%
46	19.383	2898	2906	2911	rBV4	4540	10425	0.57%	0.103%
47	19.638	2946	2951	2958	rBV6	6054	12718	0.70%	0.126%
48	19.809	2976	2981	2988	rVB2	38181	55031	3.02%	0.543%
49	20.575	3111	3116	3122	rBV2	15360	22006	1.21%	0.217%
50	20.916	3171	3176	3185	rBV4	18369	29960	1.65%	0.296%

Sum of corrected areas: 10128179

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:27
Operator : CG
Sample : P2405139-006 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\04\\
Data File : 01042517.D
Acq On : 4 Jan 2025 16:277
Operator : CGG
Sample : P2405139-006 (400mL))
Misc : S37-123124011
ALS Vial : 11 Sample Multiplier: 11

NOA 1/6/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 19:20:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	149570	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	642785	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113588	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	247026	12.122	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.96%				
57) Toluene-d8 (SS2)	12.43	98	669394	13.284	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.24%				
73) Bromofluorobenzene (SS3)	16.82	174	251148	14.443	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.52%				

Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.39	85	16062	0.549	ng		98
4) Chloromethane	3.52	50	3177	0.146	ng		91
5) 1,2-Dichloro-1,1,2,2-t...	3.64	135	345	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.31	45	1819	0.164	ng		82
11) Acetonitrile	4.47	41	1037	N.D.			
12) Acrolein	4.56	56	922	0.097	ng		80
13) Acetone	4.65	58	18318	1.819	ng	#	76
14) Trichlorofluoromethane	4.78	101	8194	0.299	ng		96
15) 2-Propanol (Isopropanol)	4.95	45	293	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.37	84	969	0.068	ng		97
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.60	151	1612	0.130	ng		93
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	1771	0.219	ng	#	80
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	162	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	5561	No Calib		#	
41) Benzene	8.90	78	1899	N.D.			
42) Carbon Tetrachloride	9.07	117	2175	0.105	ng		94
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

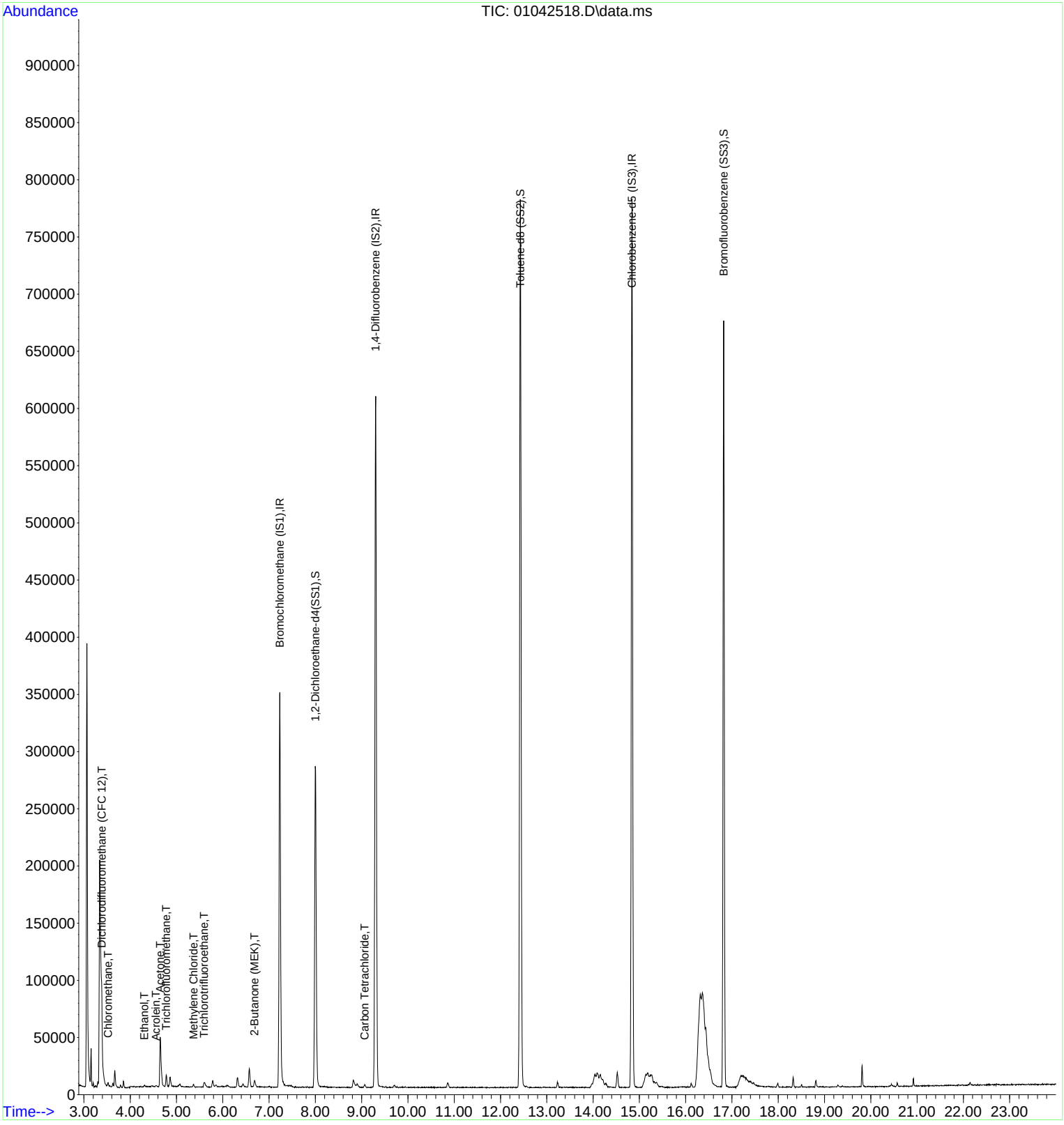
Quant Time: Jan 06 19:20:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	107	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	912	N.D.		
59) 2-Hexanone	12.94	43	522	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	16.61	43	124	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	341	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	17.99	58	180	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	109	N.D.		
95) Naphthalene	20.94	128	162	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	19.39	91	202	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 19:20:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

MOA 1/6/25

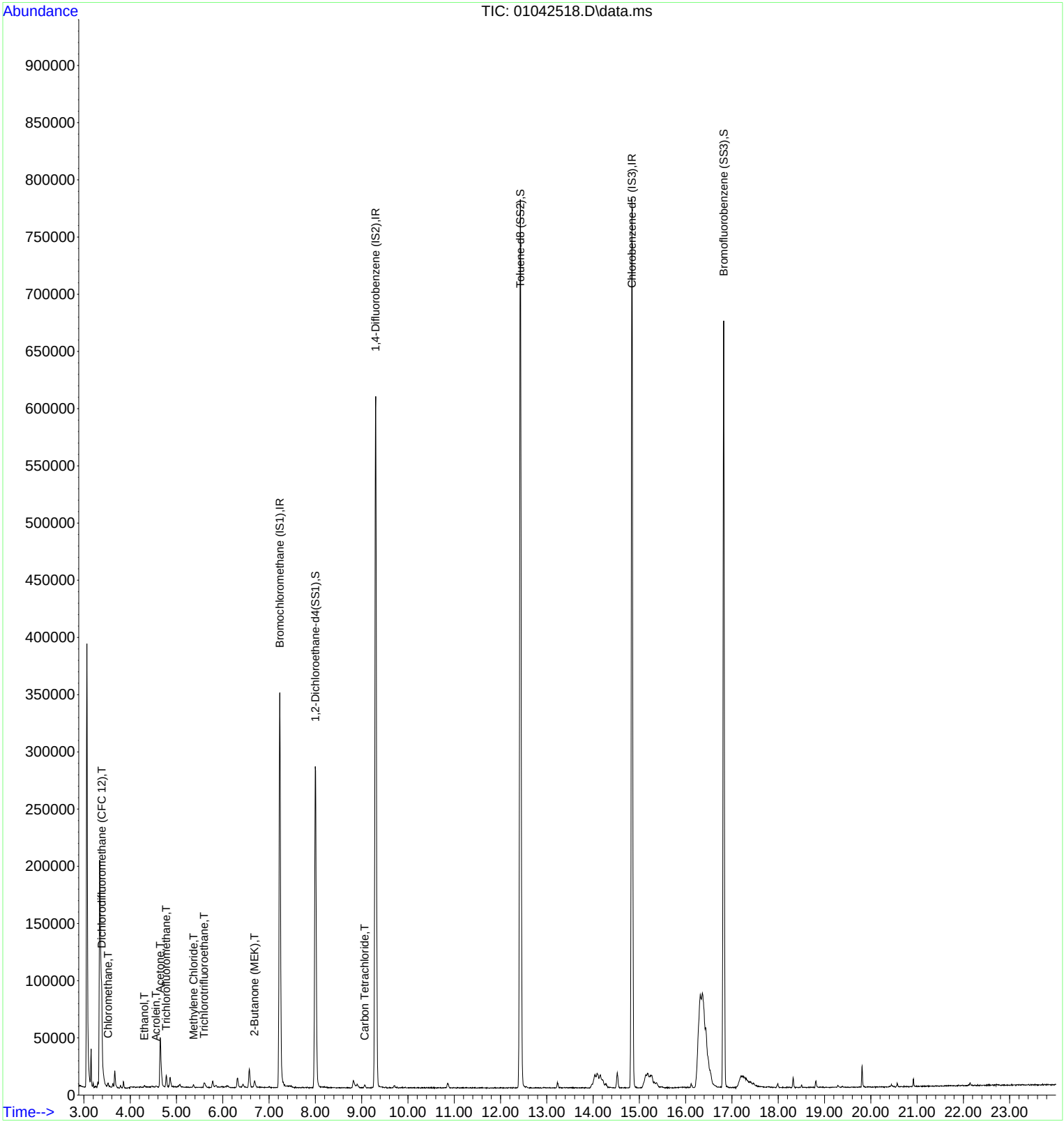
Quant Time: Jan 06 19:20:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

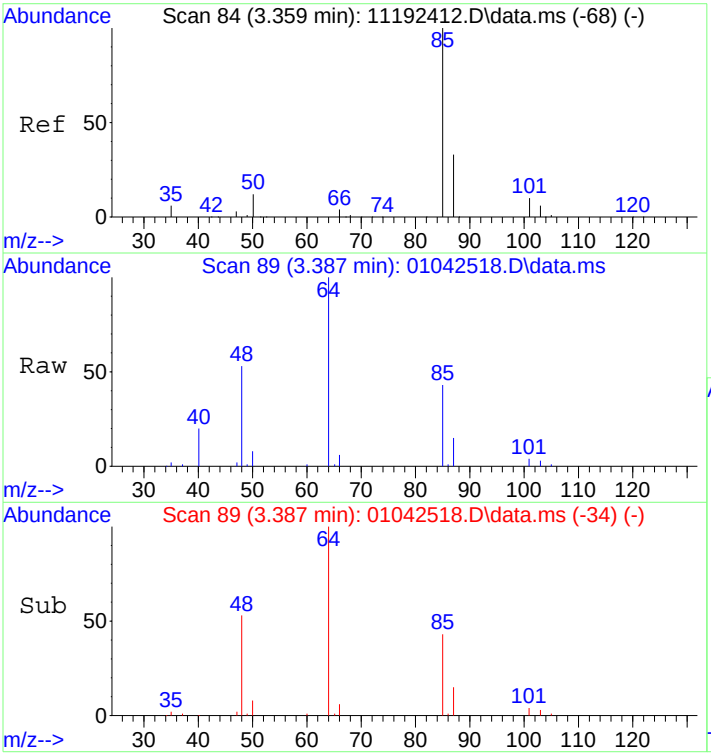
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	149570	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	642785	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113588	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	247026	12.122	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.96%				
57) Toluene-d8 (SS2)	12.43	98	669394	13.284	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.24%				
73) Bromofluorobenzene (SS3)	16.82	174	251148	14.443	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.52%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	16062	0.549	ng		98
4) Chloromethane	3.52	50	3177	0.146	ng		91
10) Ethanol	4.31	45	1819	0.164	ng		82
12) Acrolein	4.56	56	922	0.097	ng		80
13) Acetone	4.65	58	18318	1.819	ng	#	76
14) Trichlorofluoromethane	4.78	101	8194	0.299	ng		96
19) Methylene Chloride	5.37	84	969	0.068	ng		97
21) Trichlorotrifluoroethane	5.60	151	1612	0.130	ng		93
27) 2-Butanone (MEK)	6.69	72	1771	0.219	ng	#	80
42) Carbon Tetrachloride	9.07	117	2175	0.105	ng		94

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

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 19:20:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

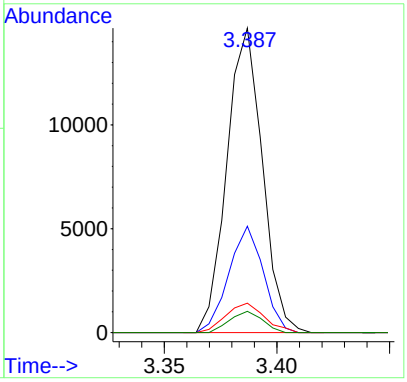


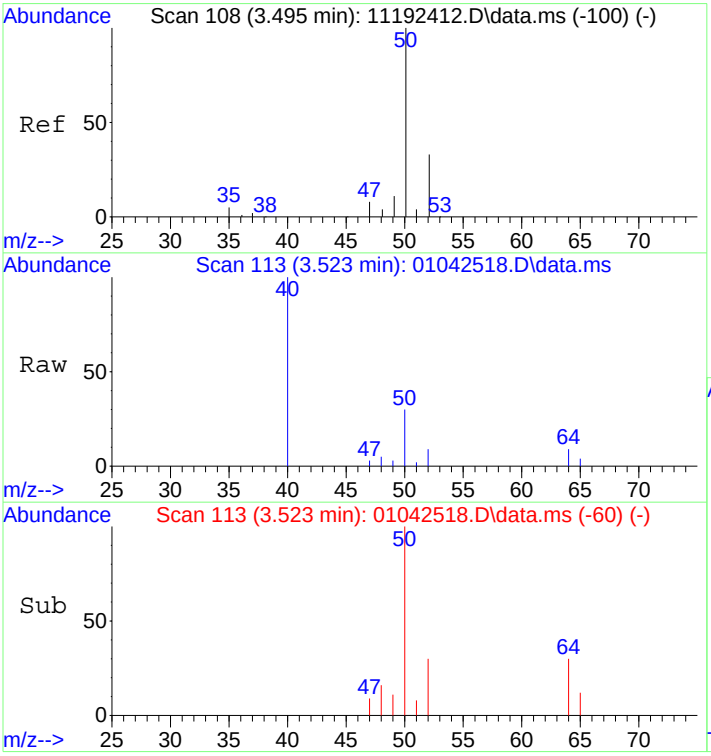


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.55 ng
RT: 3.39 min Scan# 89
Delta R.T. 0.060 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion: 85 Resp: 16062

Ion	Ratio	Lower	Upper
85	100		
87	34.0	12.6	52.6
101	10.5	0.0	29.6
103	6.5	0.0	26.2

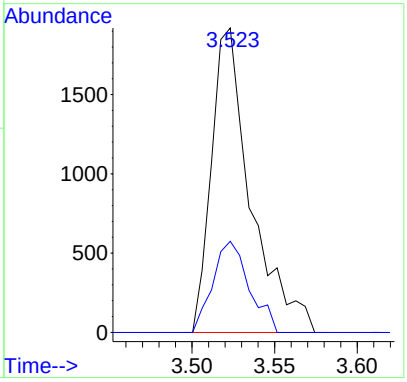


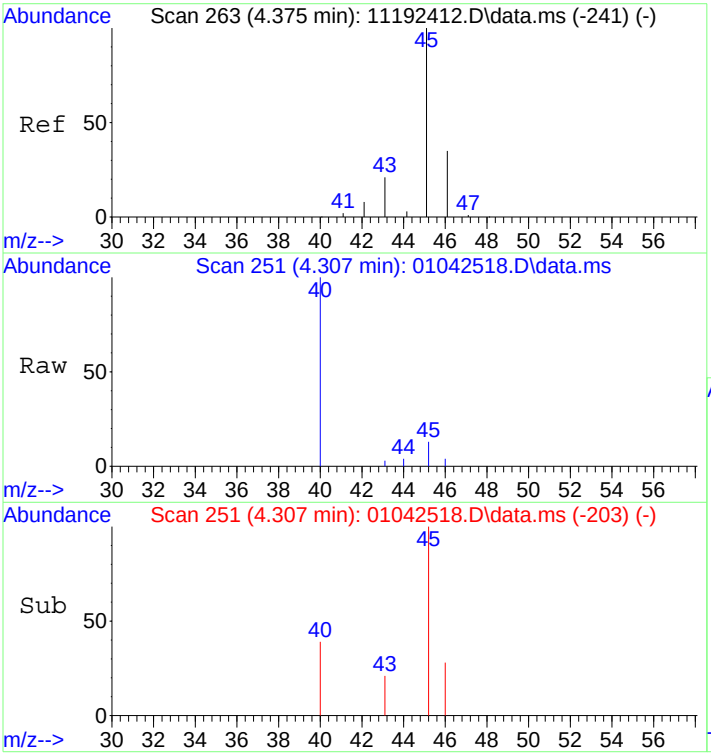


#4
Chloromethane
Concen: 0.15 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion: 50 Resp: 3177

Ion	Ratio	Lower	Upper
50	100		
52	27.7	13.0	53.0

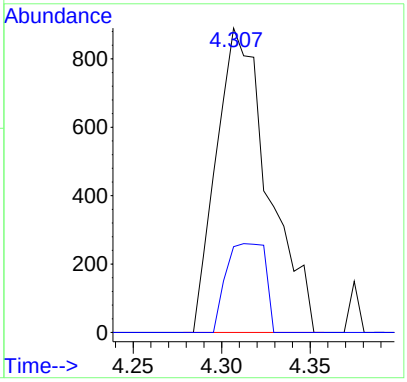


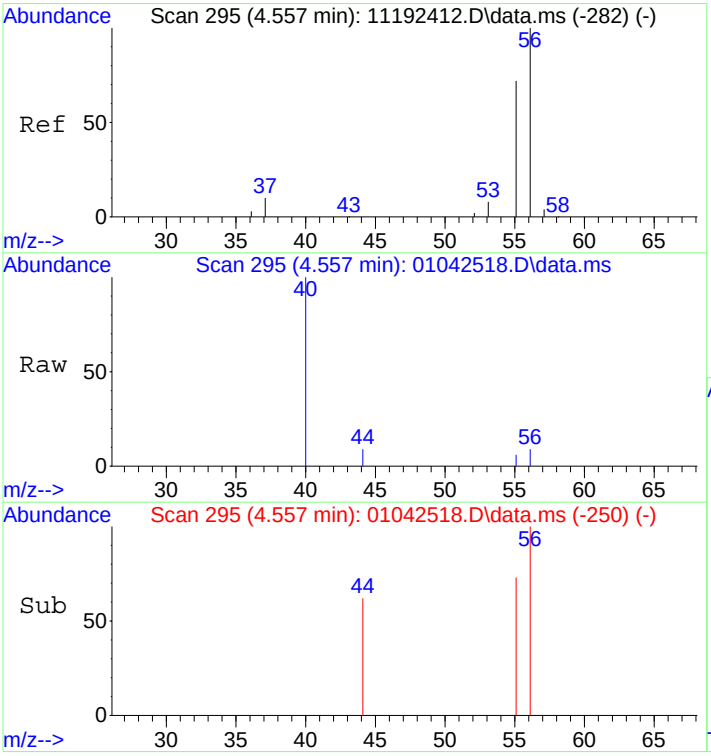


#10
Ethanol
Concen: 0.16 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.022 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion: 45 Resp: 1819

Ion	Ratio	Lower	Upper
45	100		
46	22.0	11.8	51.8

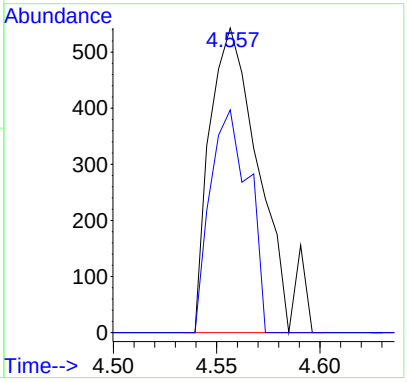


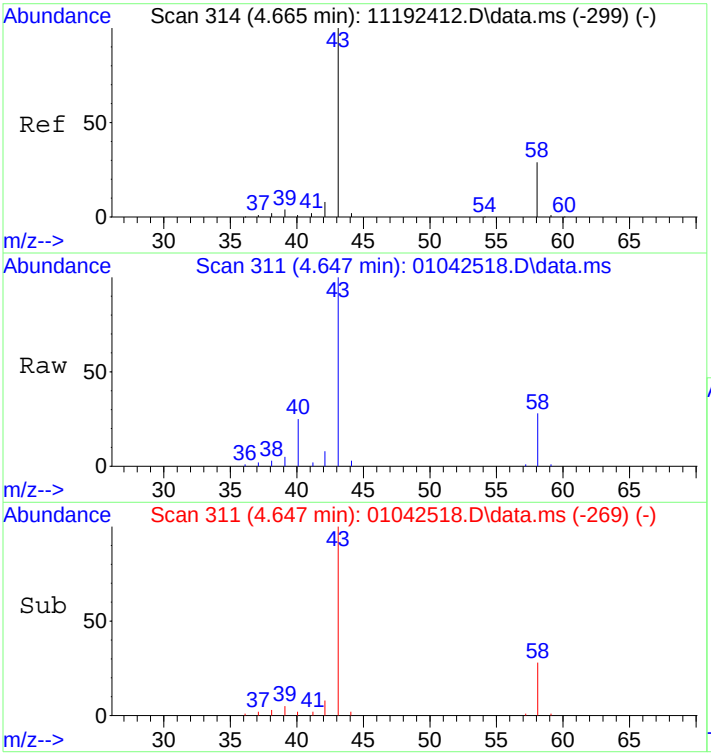


#12
Acrolein
Concen: 0.10 ng
RT: 4.56 min Scan# 295
Delta R.T. 0.003 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion: 56 Resp: 922

Ion	Ratio	Lower	Upper
56	100		
55	56.1	53.1	93.1

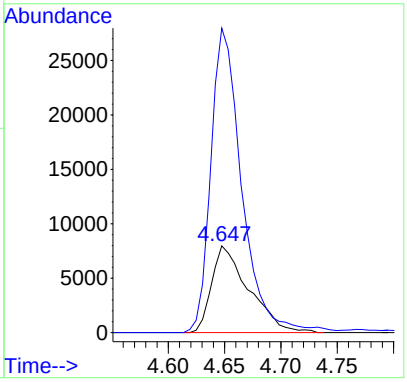


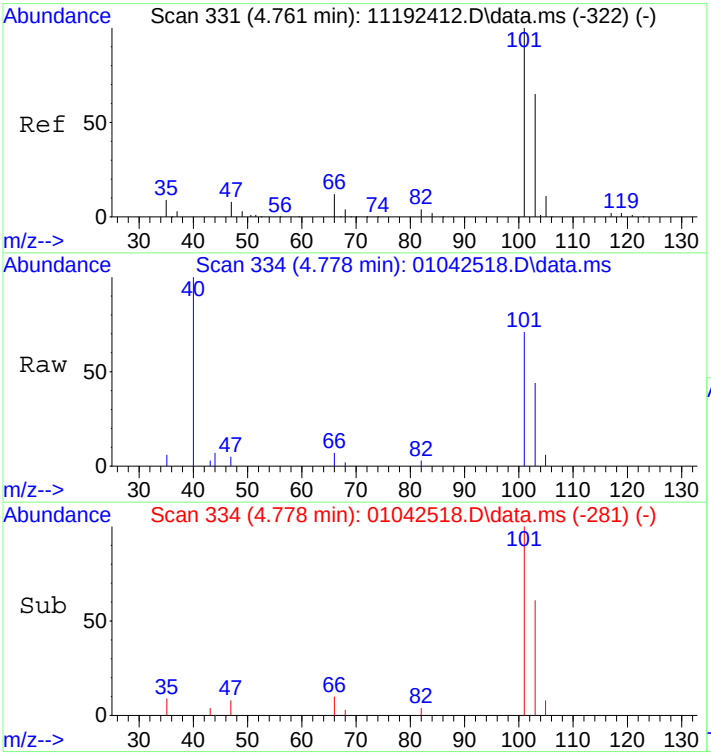


#13
Acetone
Concen: 1.82 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion: 58 Resp: 18318

Ion	Ratio	Lower	Upper
58	100		
43	292.1	312.5	372.5#

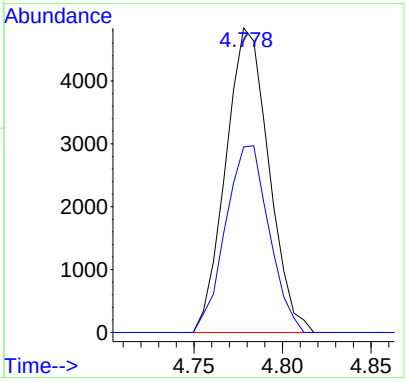


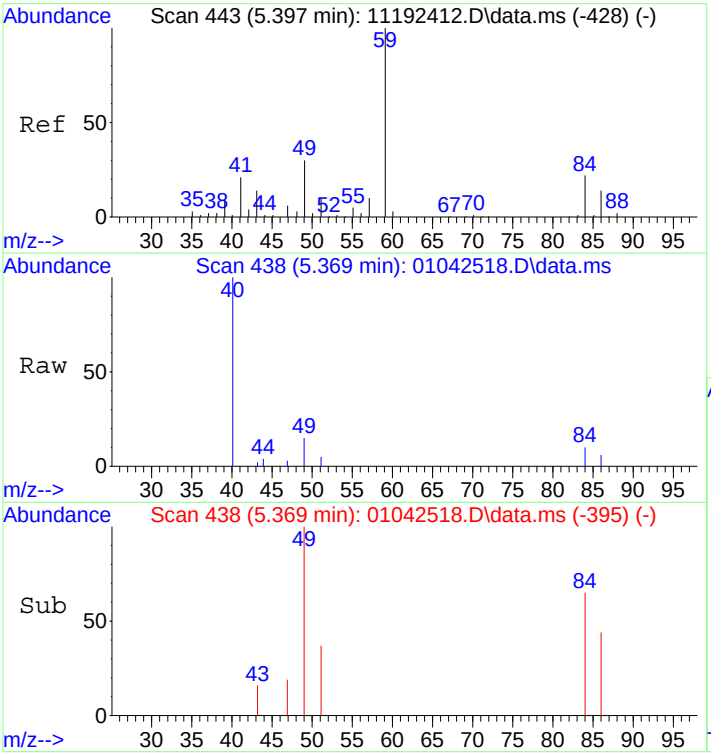


#14
Trichlorofluoromethane
Concen: 0.30 ng
RT: 4.78 min Scan# 334
Delta R.T. 0.050 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion:101 Resp: 8194

Ion	Ratio	Lower	Upper
101	100		
103	62.0	44.8	84.8

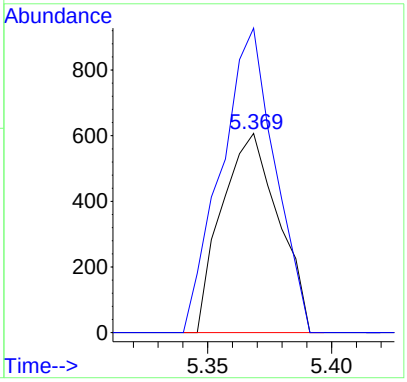


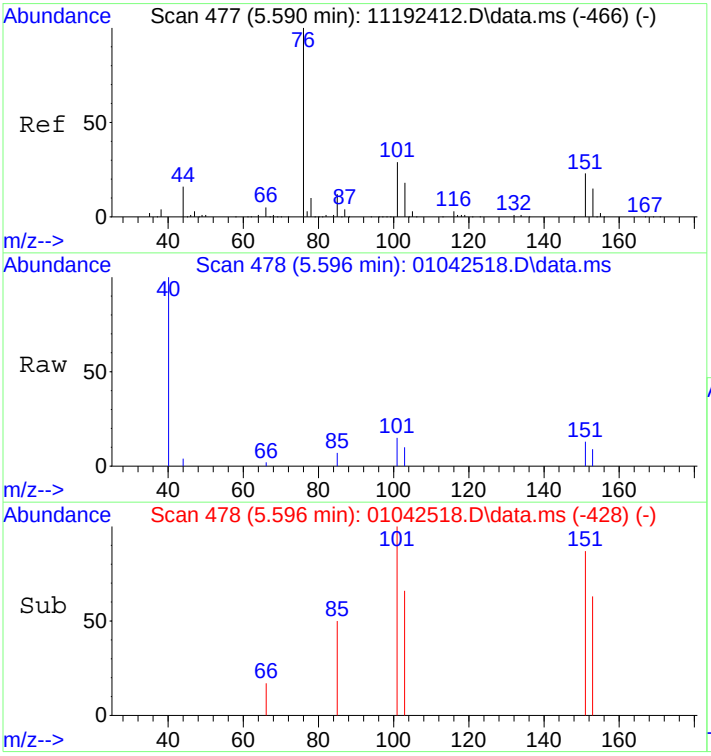


#19
Methylene Chloride
Concen: 0.07 ng
RT: 5.37 min Scan# 438
Delta R.T. -0.006 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion: 84 Resp: 969

Ion	Ratio	Lower	Upper
84	100		
49	144.8	116.0	166.0

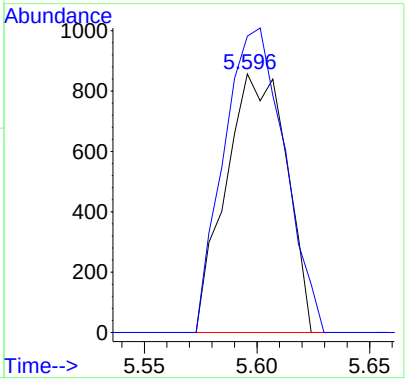


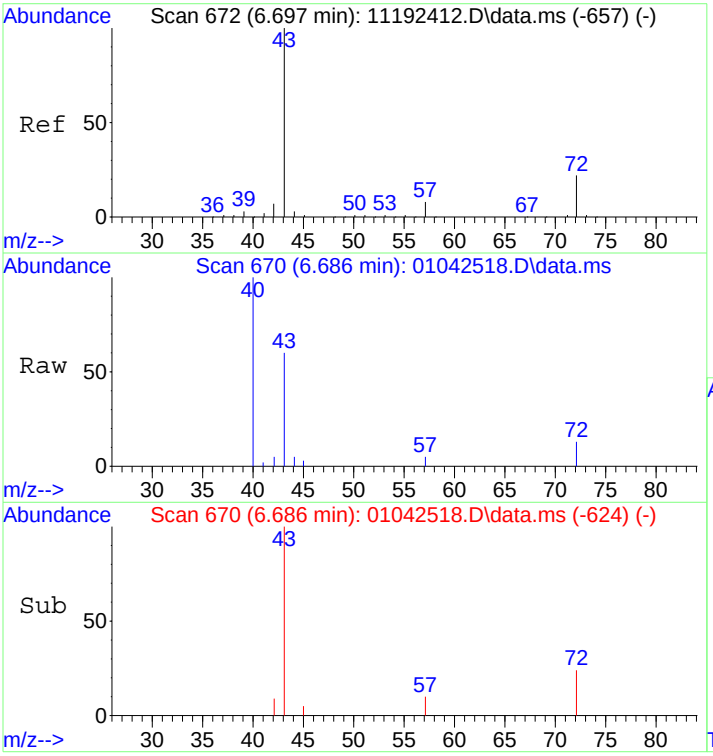


#21
Trichlorotrifluoroethane
Concen: 0.13 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.035 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion:151 Resp: 1612

Ion	Ratio	Lower	Upper
151	100		
101	117.4	105.0	145.0

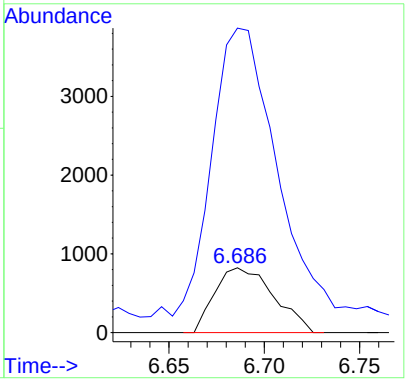


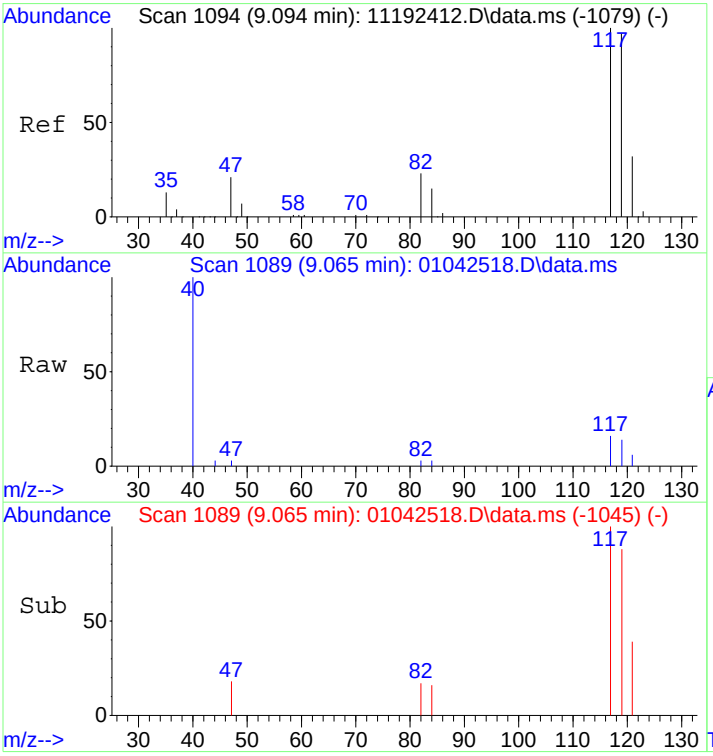


#27
2-Butanone (MEK)
Concen: 0.22 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

Tgt Ion: 72 Resp: 1771

Ion	Ratio	Lower	Upper
72	100		
43	512.6	439.8	479.8#

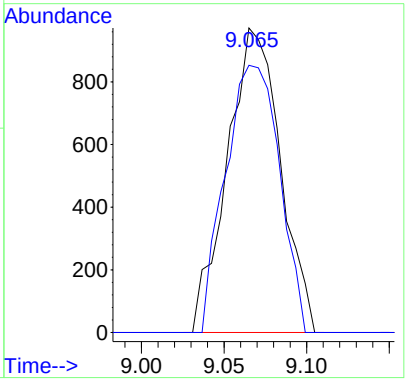




#42
Carbon Tetrachloride
Concen: 0.11 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01042518.D
Acq: 4 Jan 2025 16:59

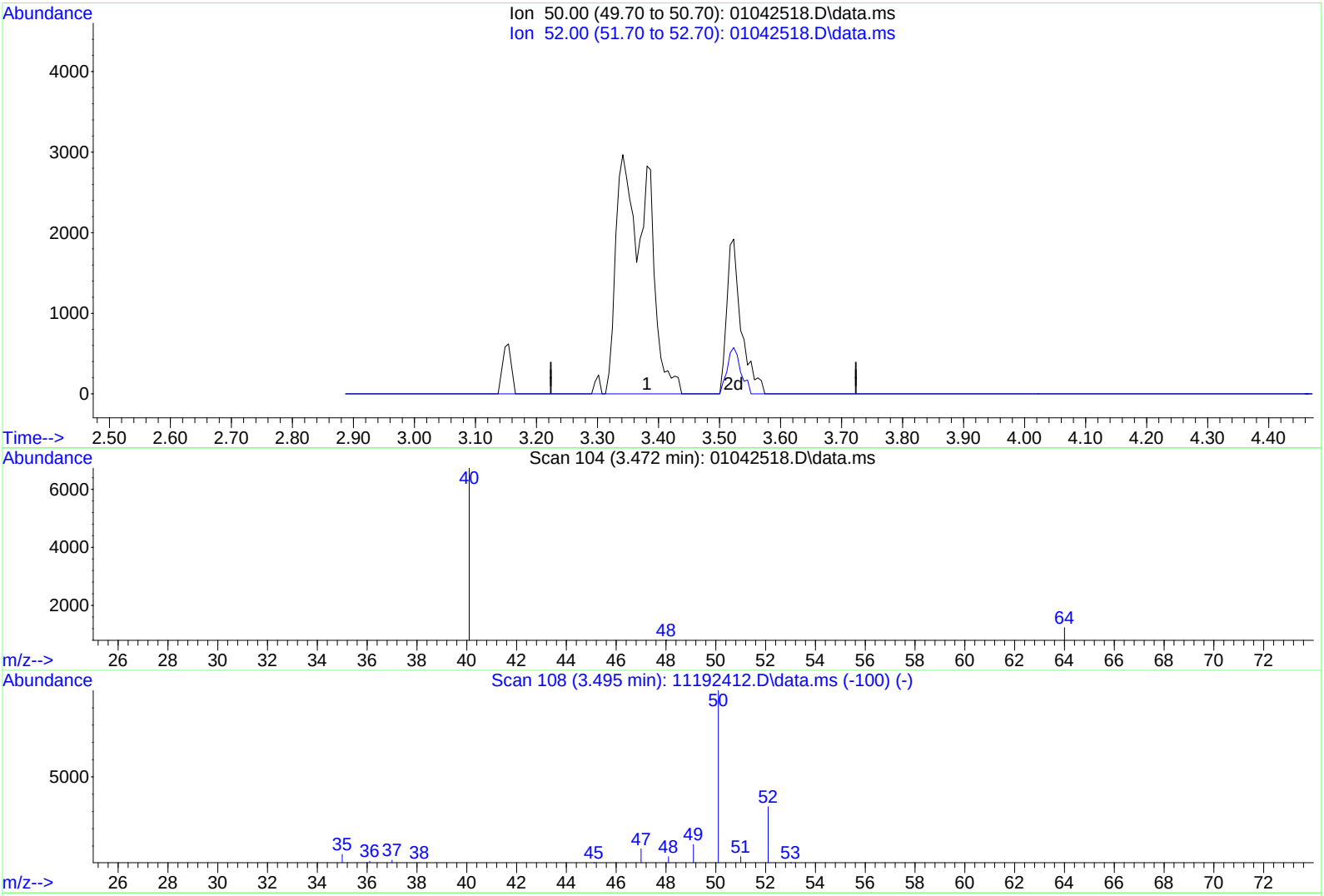
Tgt Ion:117 Resp: 2175

Ion	Ratio	Lower	Upper
117	100		
119	89.4	75.7	115.7



Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 06:48:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration



TIC: 01042518.D\data.ms

(4) Chloromethane (T)

3.473min 0.00ng d

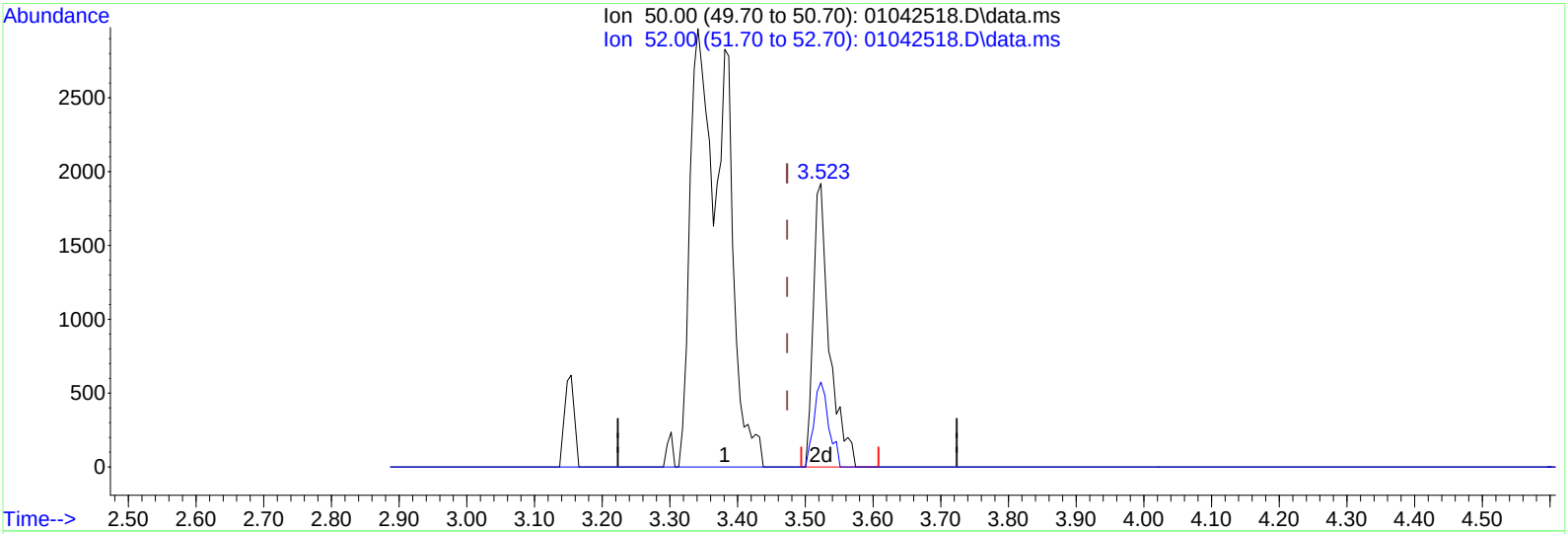
response 0

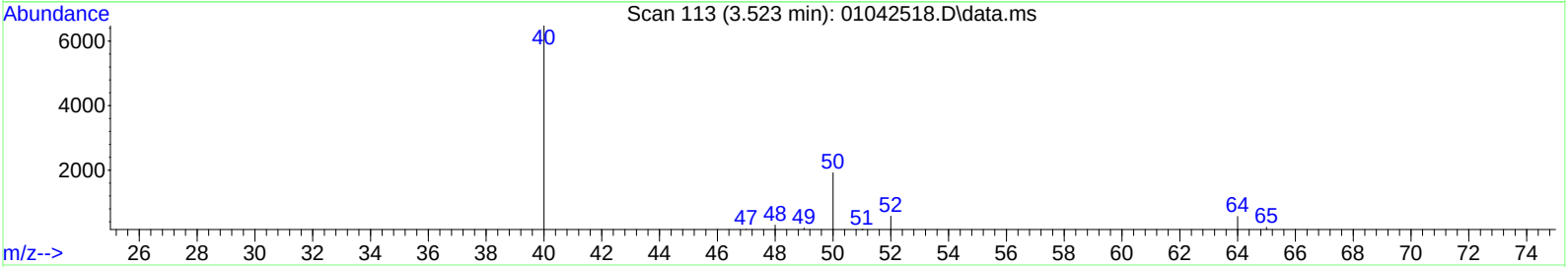
Ion	Exp%	Act%
50.00	100	0.00
52.00	33.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

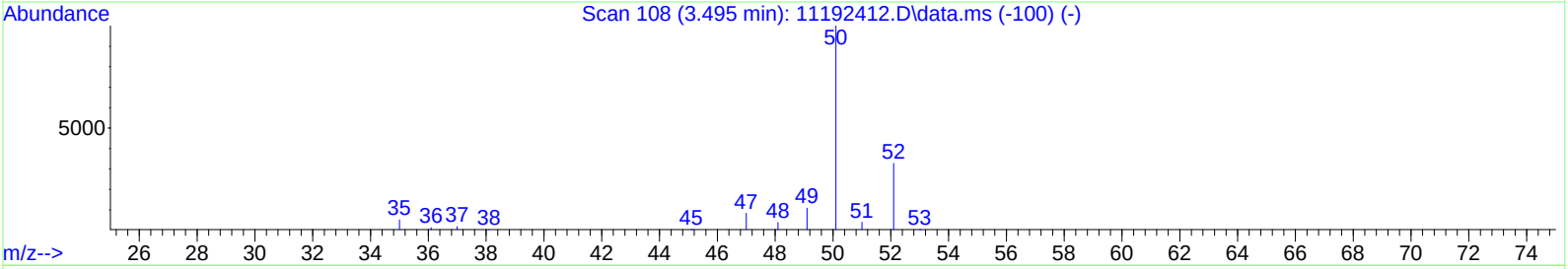
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 06:48:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042518.D\data.ms

(4) Chloromethane (T)

3.523min (+0.050) 0.15ng m

response 3178

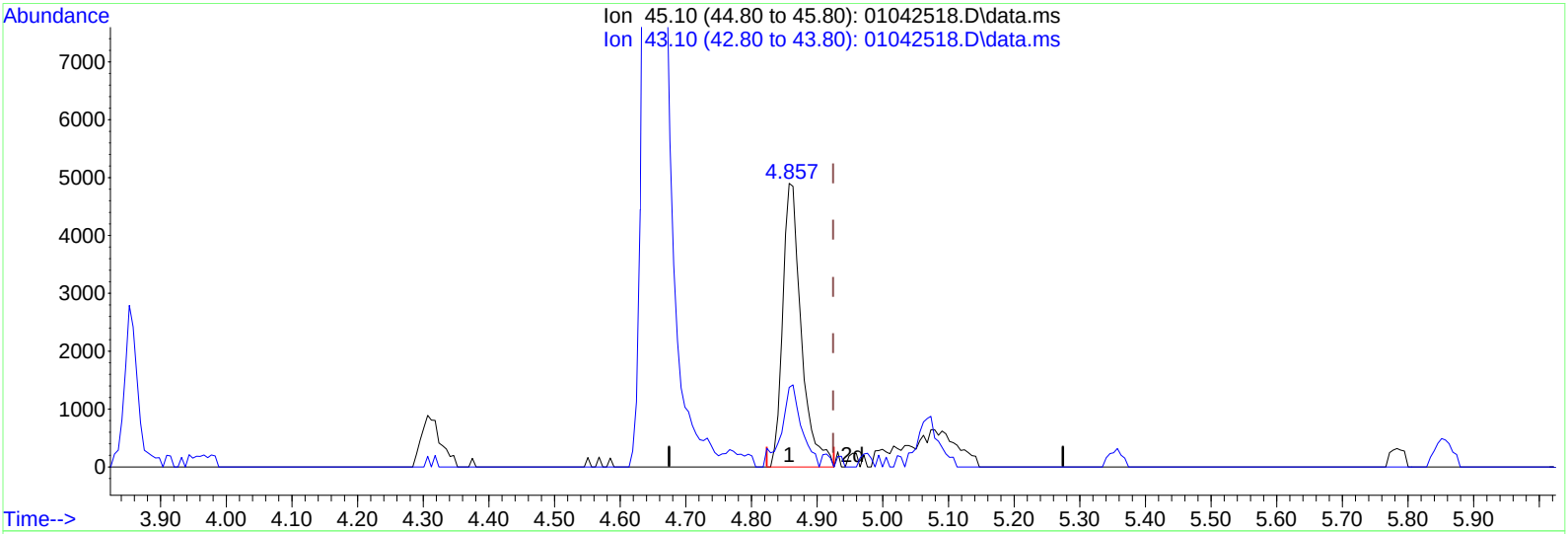
Ion	Exp%	Act%
50.00	100	100
52.00	33.00	27.69
0.00	0.00	0.00
0.00	0.00	0.00

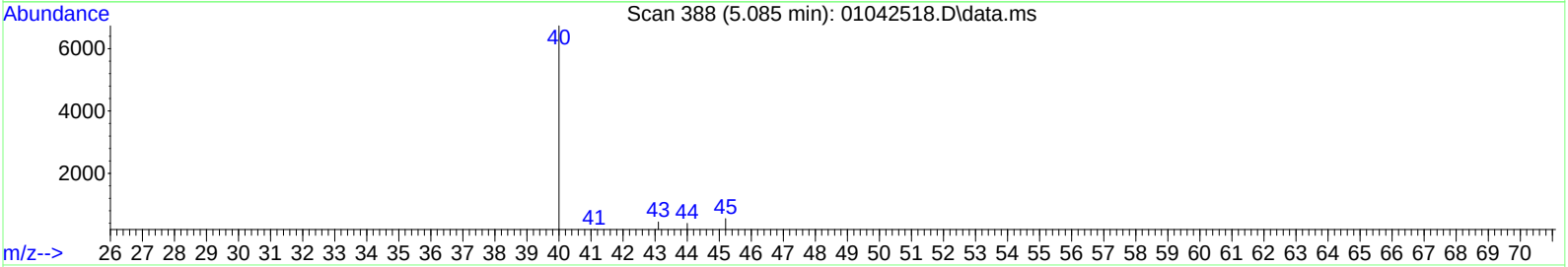
IC-

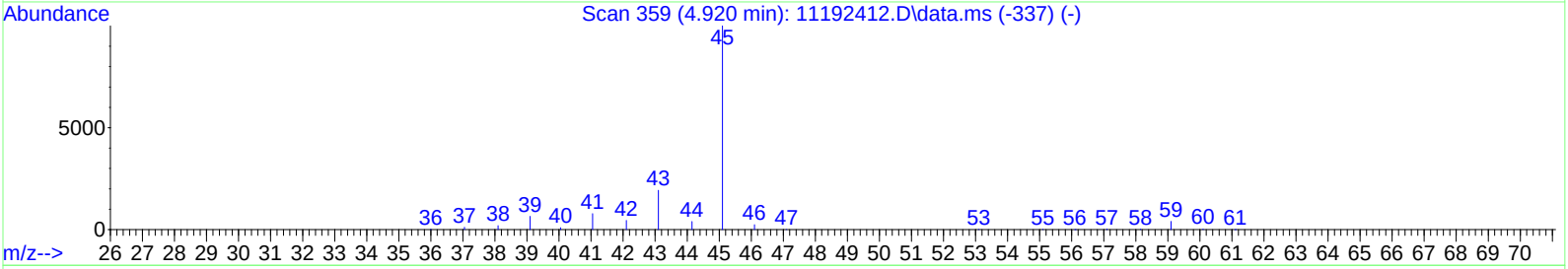
1/6/25

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 06:48:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042518.D\data.ms

(15) 2-Propanol (Isopropanol) (T)

4.857min (-0.067) 0.27ng

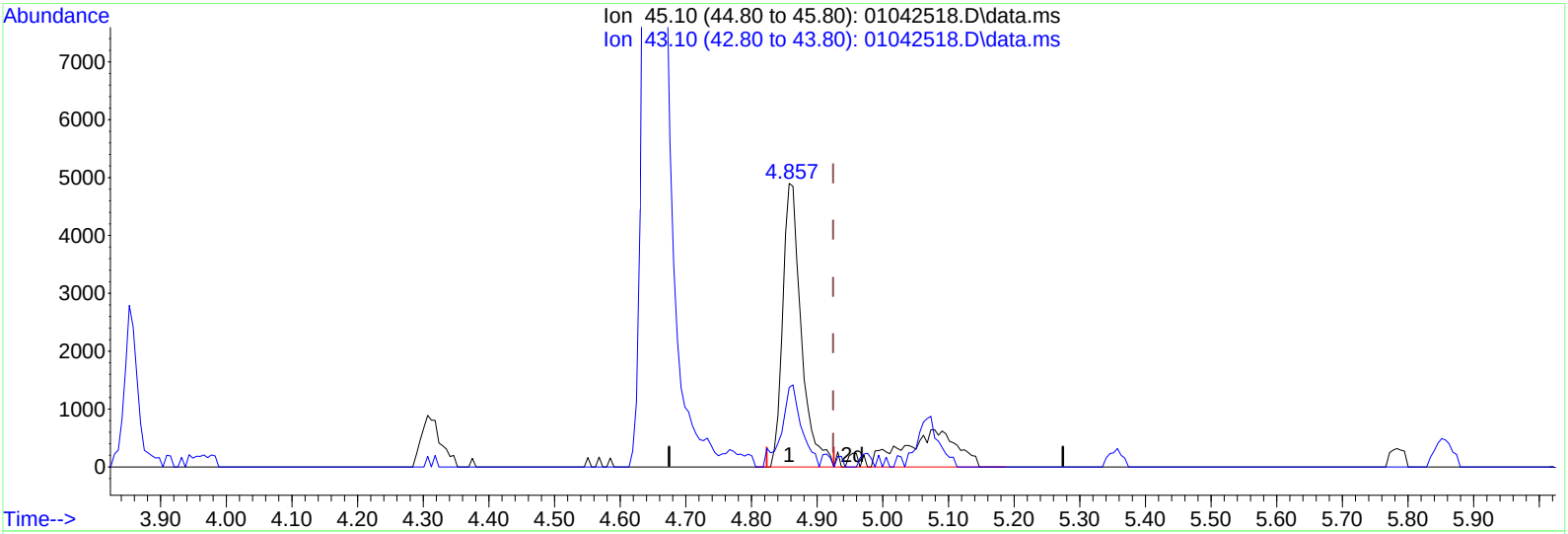
response 9584

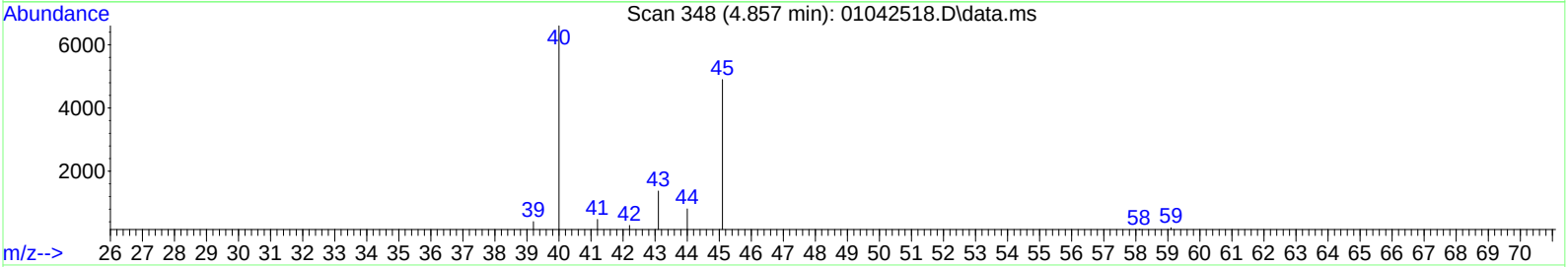
Ion	Exp%	Act%
45.10	100	100
43.10	20.20	31.28
0.00	0.00	0.00
0.00	0.00	0.00

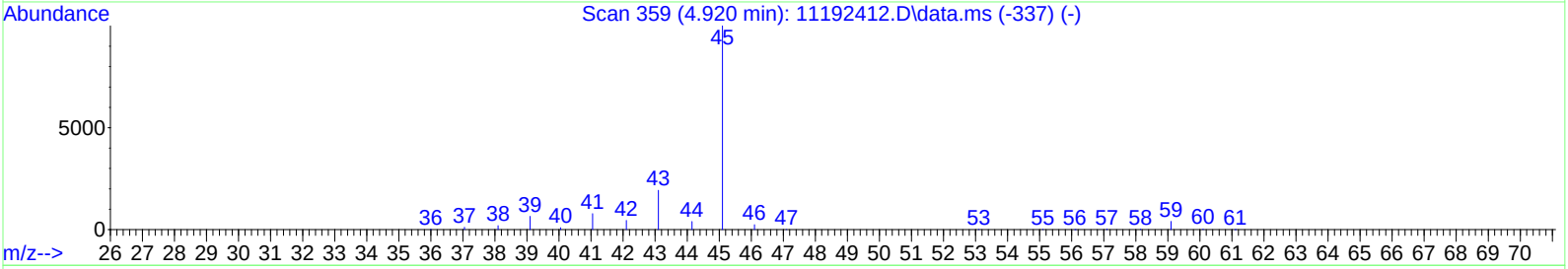
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 06:48:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration







TIC: 01042518.D\data.ms

(15) 2-Propanol (Isopropanol) (T)

4.857min (-0.067) 0.38ng m

response 13575

Ion	Exp%	Act%
45.10	100	100
43.10	20.20	22.08
0.00	0.00	0.00
0.00	0.00	0.00

SP

1/6/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 20:27:41 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

NOA 1/6/25

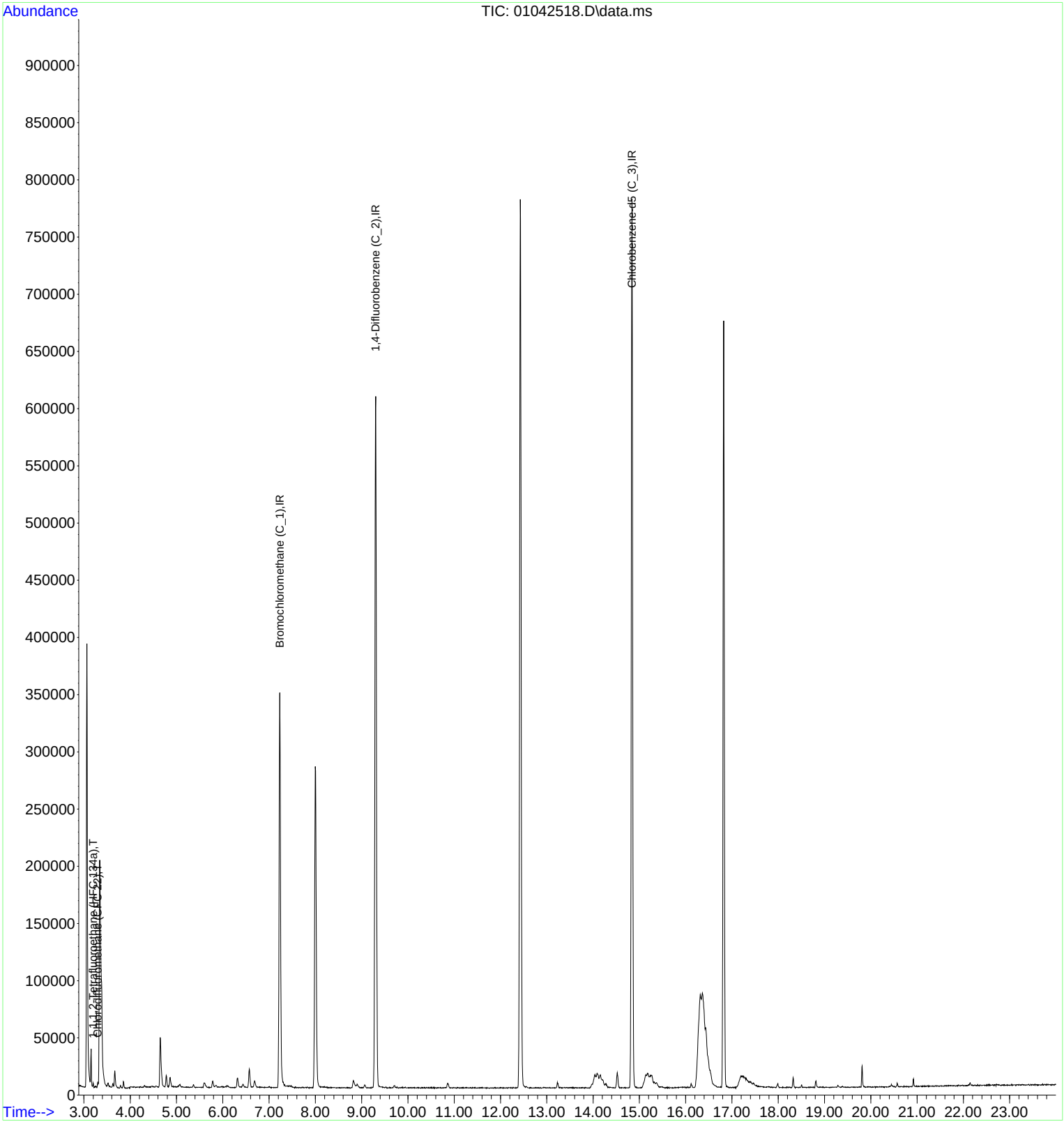
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	151764	12.500 ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	644709	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	113588	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.17	85	220	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	1675	0.121 ng	98
4) 1,1-Difluoroethane	3.26	65	152	N.D.	
5) Chlorodifluoromethane ...	3.30	67	707	0.167 ng	99
6) 1-Chloro-1,1-Difluoroe...	3.51	65	412	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.36	43	445	N.D.	
12) 2-Methylpentane	6.58	71	249	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	9.07	84	52	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	0.00	91	0	N.D.	
27) 4-Chlorotoluene	0.00	91	0	N.D.	
28) Indane	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	20.22	119	51	N.D.	
31) 1,2,3,4-Tetramethylben...	20.22	119	51	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 20:27:41 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01042518.D\data.ms

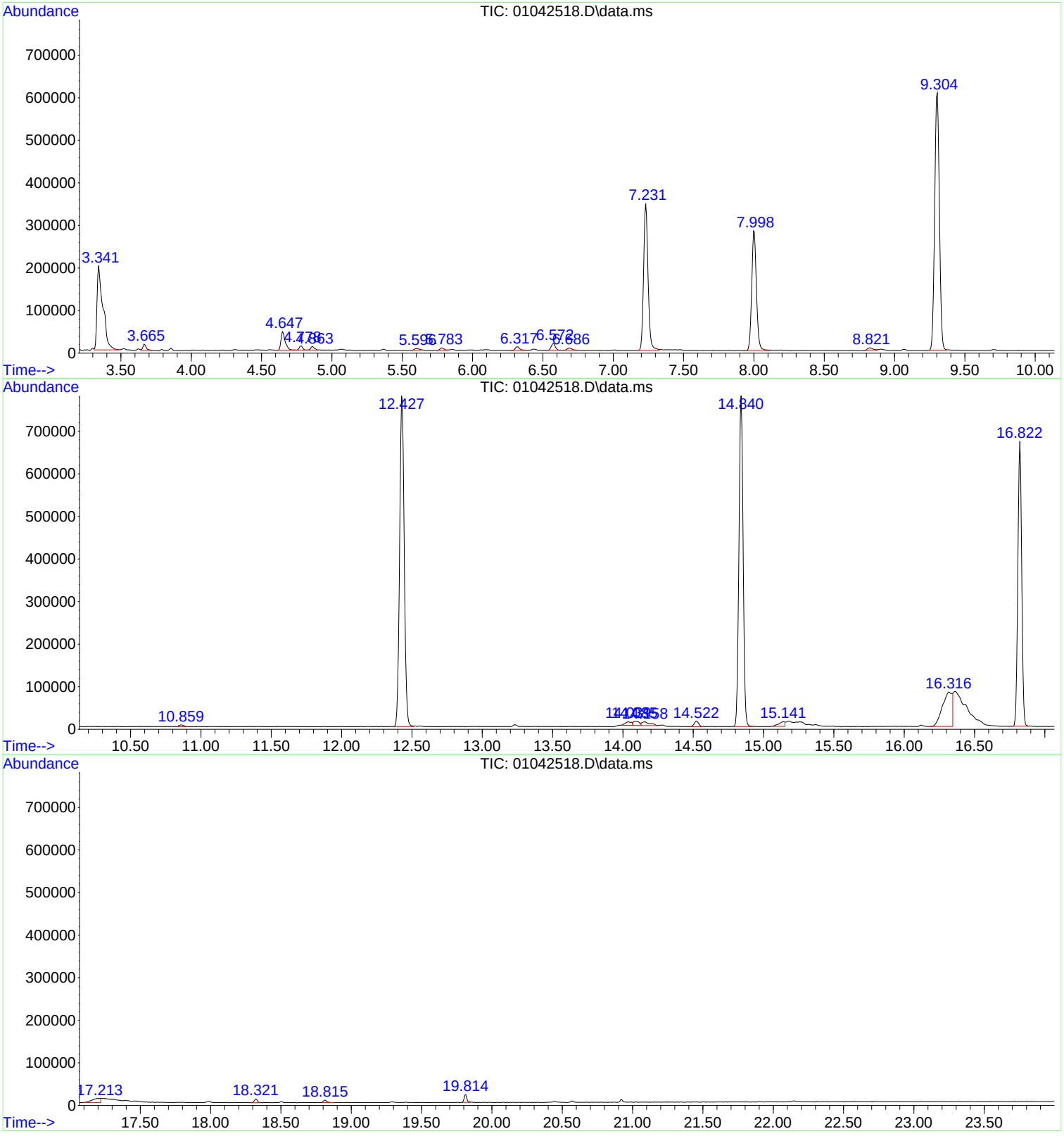
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.341	75	81	106	rVB2	197761	578066	32.69%	6.484%
2	3.665	134	138	148	rVB	14825	24181	1.37%	0.271%
3	4.647	304	311	329	rBV	43646	92840	5.25%	1.041%
4	4.778	329	334	341	rVB	10191	17106	0.97%	0.192%
5	4.863	343	349	355	rBV2	8231	15412	0.87%	0.173%
6	5.596	474	478	485	rBV3	4023	10392	0.59%	0.117%
7	5.783	504	511	518	rBV	5817	11873	0.67%	0.133%
8	6.317	597	605	614	rBV2	8401	18562	1.05%	0.208%
9	6.572	642	650	657	rBV2	16209	32787	1.85%	0.368%
10	6.686	664	670	680	rVB2	5730	13595	0.77%	0.152%
11	7.231	757	766	783	rBV	345221	757230	42.82%	8.493%
12	7.998	892	901	921	rBV	281106	652674	36.91%	7.320%
13	8.821	1040	1046	1056	rBV2	6287	16985	0.96%	0.191%
14	9.304	1121	1131	1143	rBV	603938	1394935	78.88%	15.646%
15	10.859	1400	1405	1413	rVB3	4319	10028	0.57%	0.112%
16	12.427	1671	1681	1696	rBV	776508	1768436	100.00%	19.835%
17	14.039	1956	1965	1970	rBV4	8614	26879	1.52%	0.301%
18	14.085	1970	1973	1980	rVV4	9911	27894	1.58%	0.313%
19	14.158	1981	1986	2002	rVB3	9055	34830	1.97%	0.391%
20	14.522	2042	2050	2058	rBV2	13427	29055	1.64%	0.326%
21	14.840	2096	2106	2121	rBV	777136	1598481	90.39%	17.928%
22	15.141	2146	2159	2161	rBV2	10983	32787	1.85%	0.368%
23	16.316	2343	2366	2371	rBV	81318	401302	22.69%	4.501%
24	16.822	2447	2455	2466	rBV	669779	1260458	71.28%	14.137%
25	17.213	2503	2524	2525	rBV2	9909	41330	2.34%	0.464%
26	18.321	2713	2719	2724	rBV3	8875	13043	0.74%	0.146%
27	18.815	2802	2806	2818	rBV2	5819	10252	0.58%	0.115%
28	19.814	2978	2982	2988	rBV	18224	24468	1.38%	0.274%

Sum of corrected areas: 8915881

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:59
Operator : CG
Sample : P2405139-007 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\04\\
Data File : 01042518.D
Acq On : 4 Jan 2025 16:599
Operator : CGG
Sample : P2405139-007 (400mL))
Misc : S37-123124011
ALS Vial : 12 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

MOA 1/6/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

NOA 1/6/25

Quant Time: Jan 06 20:32:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	166893	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	713361	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	126432	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	269780	11.865	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.88%				
57) Toluene-d8 (SS2)	12.43	98	738558	13.168	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.36%				
73) Bromofluorobenzene (SS3)	16.82	174	285910	14.772	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.16%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.38	85	16984m	0.521	ng		
4) Chloromethane	3.51	50	412	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	334	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	4.01	94	144	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.31	45	4507	0.365	ng		98
11) Acetonitrile	4.46	41	578	N.D.			
12) Acrolein	4.56	56	1178	0.112	ng		91
13) Acetone	4.65	58	12475	1.110	ng	#	83
14) Trichlorofluoromethane	4.75	101	849850	27.777	ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.34	59	54	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	392667	28.446	ng		93
22) Carbon Disulfide	5.60	76	49442	0.973	ng	#	45
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.31	73	553	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.68	72	2108	0.233	ng	#	49
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	255	N.D.			
32) Chloroform	7.36	83	18666	0.687	ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	4654	No Calib		#	
41) Benzene	8.90	78	2119	N.D.			
42) Carbon Tetrachloride	9.05	117	118	N.D.			
43) Cyclohexane	9.28	84	118	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.07	83	445	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	10.13	88	888	0.090	ng		96

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

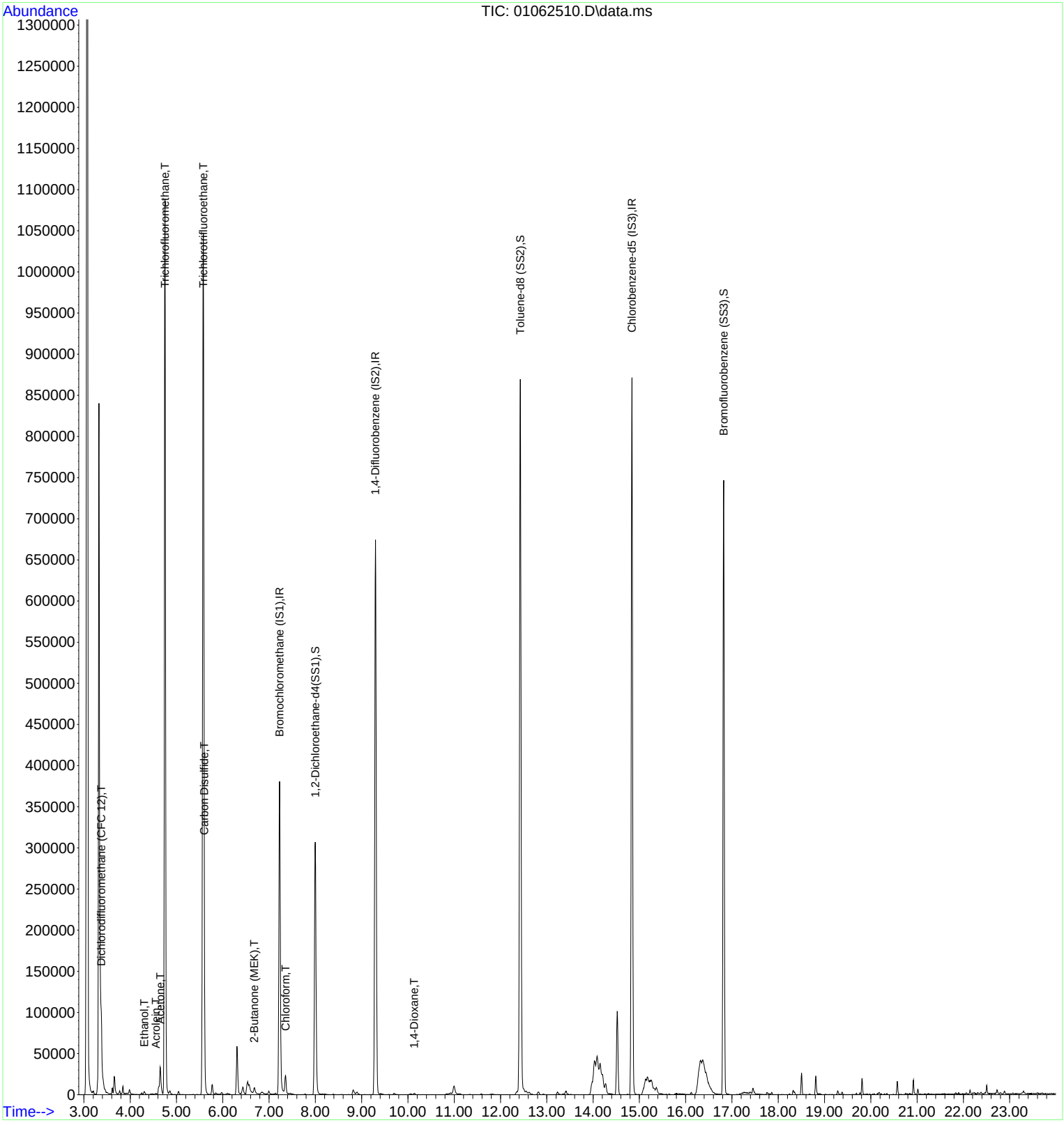
Quant Time: Jan 06 20:32:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	134	N.D.
50) Methyl Methacrylate	0.00	100	0	N.D.
51) n-Heptane	0.00	71	0	N.D.
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.
58) Toluene	12.56	91	1257	N.D.
59) 2-Hexanone	12.92	43	1104	N.D.
60) Dibromochloromethane	0.00	129	0	N.D.
61) 1,2-Dibromoethane	0.00	107	0	N.D.
62) n-Butyl Acetate	0.00	43	0	N.D.
63) n-Octane	0.00	57	0	N.D.
64) Tetrachloroethene	0.00	166	0	N.D.
65) Chlorobenzene	0.00	112	0	N.D.
66) Ethylbenzene	15.41	91	303	N.D.
67) m- & p-Xylenes	15.65	91	157	N.D.
68) Bromoform	0.00	173	0	N.D.
69) Styrene	16.11	104	181	N.D.
70) o-Xylene	16.24	91	195	N.D.
71) n-Nonane	16.61	43	216	N.D.
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.
74) Cumene	0.00	105	0	N.D.
75) alpha-Pinene	0.00	93	0	N.D.
76) n-Propylbenzene	17.68	91	213	N.D.
77) 3-Ethyltoluene	0.00	105	0	N.D.
78) 4-Ethyltoluene	0.00	105	0	N.D.
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.
80) alpha-Methylstyrene	0.00	118	0	N.D.
81) 2-Ethyltoluene	0.00	105	0	N.D.
82) 1,2,4-Trimethylbenzene	18.43	105	126	N.D.
83) n-Decane	0.00	58	0	N.D.
84) Benzyl Chloride	18.57	91	149	N.D.
85) 1,3-Dichlorobenzene	18.58	146	142	N.D.
86) 1,4-Dichlorobenzene	18.65	146	160	N.D.
87) sec-Butylbenzene	0.00	105	0	N.D.
88) 4-Isopropyltoluene (p-...	18.93	119	567	N.D.
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.
90) 1,2-Dichlorobenzene	19.03	146	218	N.D.
91) d-Limonene	0.00	68	0	N.D.
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.
93) n-Undecane	0.00	58	0	N.D.
94) 1,2,4-Trichlorobenzene	20.84	180	714	N.D.
95) Naphthalene	20.94	128	1264	N.D.
96) n-Dodecane	0.00	58	0	N.D.
97) Hexachlorobutadiene	0.00	225	0	N.D.
98) Cyclohexanone	15.36	55	636	No Calib #
99) tert-Butylbenzene	18.50	119	634	N.D.
100) n-Butylbenzene	19.38	91	392	N.D.
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 06 20:32:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 06 20:32:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

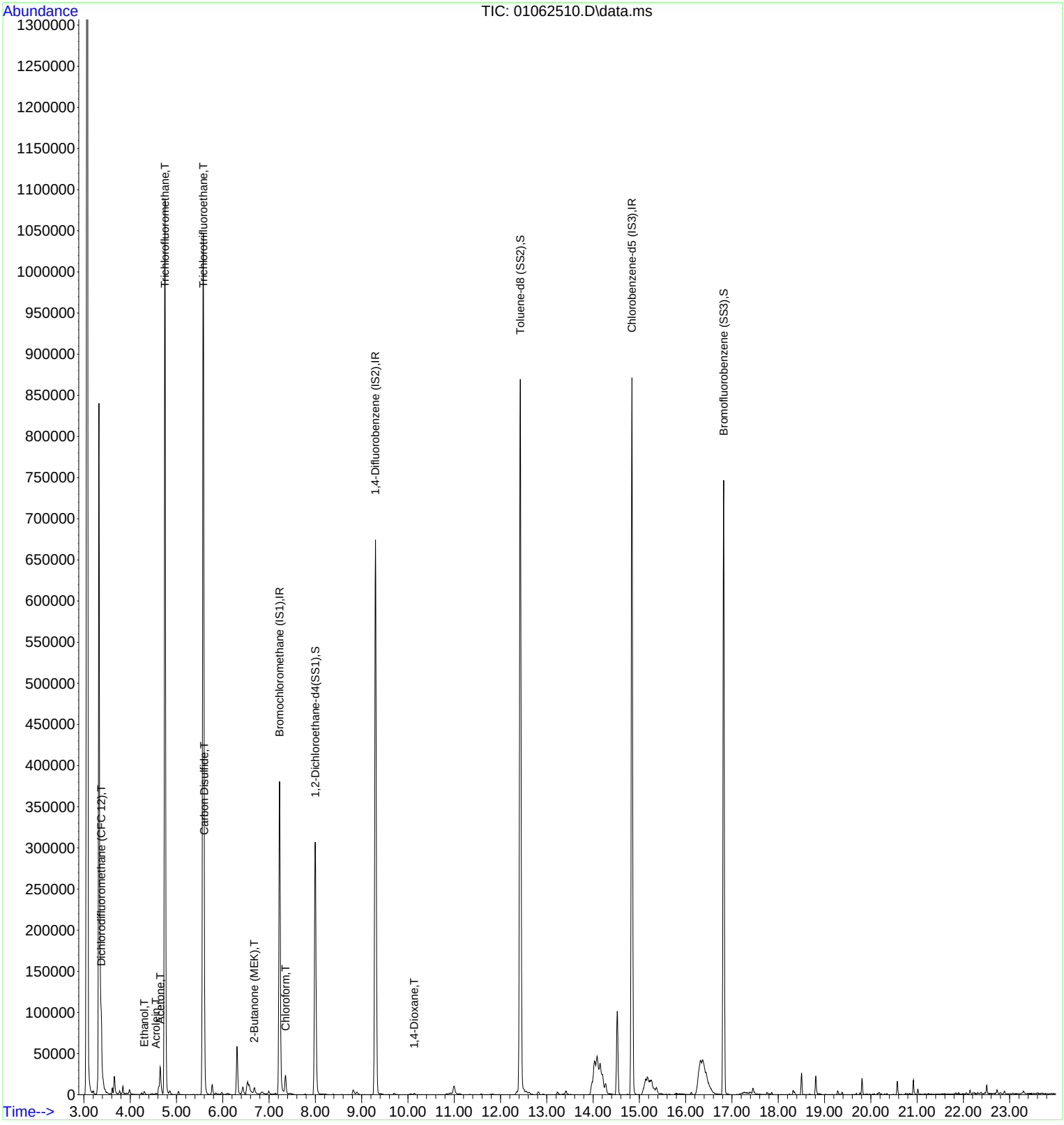
VOA 1/6/25

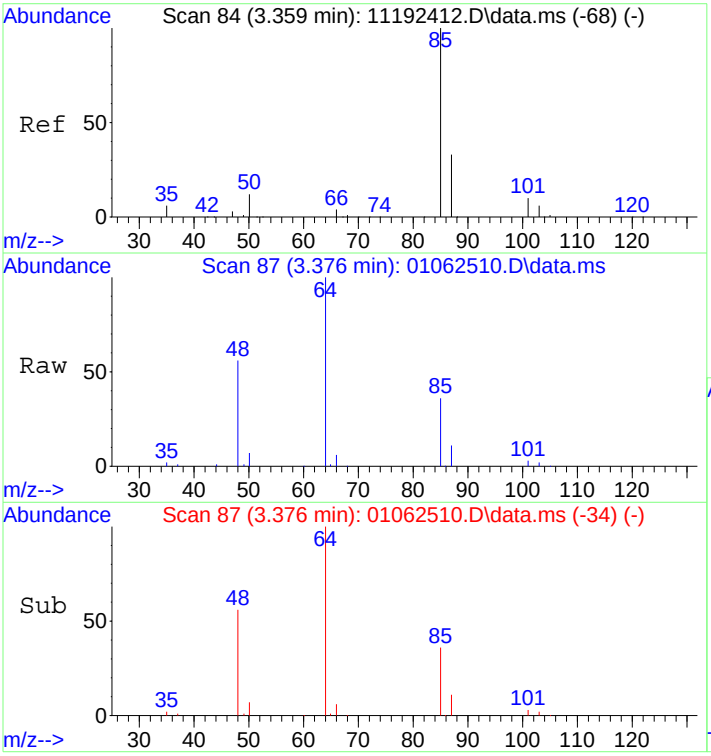
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	166893	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	713361	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	126432	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	269780	11.865	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.88%				
57) Toluene-d8 (SS2)	12.43	98	738558	13.168	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.36%				
73) Bromofluorobenzene (SS3)	16.82	174	285910	14.772	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.16%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16984m	0.521	ng		
10) Ethanol	4.31	45	4507	0.365	ng		98
12) Acrolein	4.56	56	1178	0.112	ng		91
13) Acetone	4.65	58	12475	1.110	ng	#	83
14) Trichlorofluoromethane	4.75	101	849850	27.777	ng		100
21) Trichlorotrifluoroethane	5.58	151	392667	28.446	ng		93
22) Carbon Disulfide	5.60	76	49442	0.973	ng	#	45
27) 2-Butanone (MEK)	6.68	72	2108	0.233	ng	#	49
32) Chloroform	7.36	83	18666	0.687	ng		100
48) 1,4-Dioxane	10.13	88	888	0.090	ng		96

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 06 20:32:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

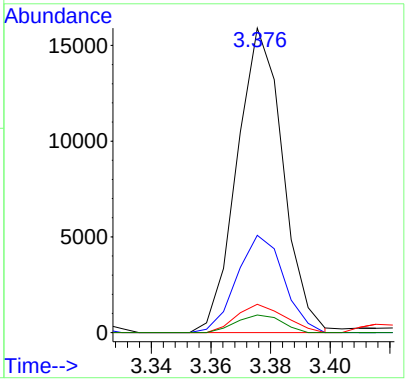


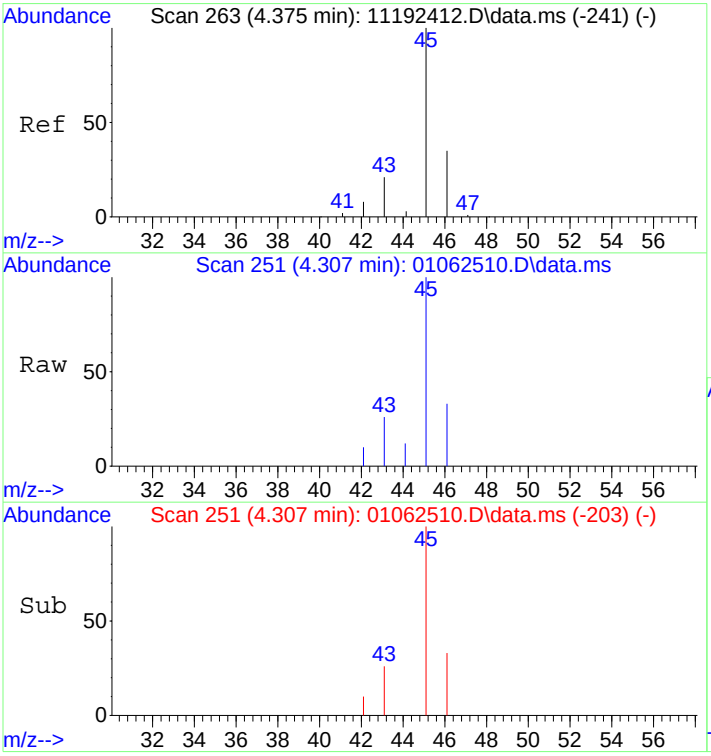


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.52 ng m
RT: 3.38 min Scan# 87
Delta R.T. 0.048 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 85 Resp: 16984

Ion	Ratio	Lower	Upper
85	100		
87	32.7	12.6	52.6
101	9.7	0.0	29.6
103	5.7	0.0	26.2

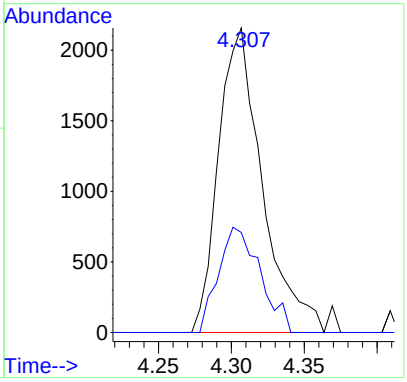


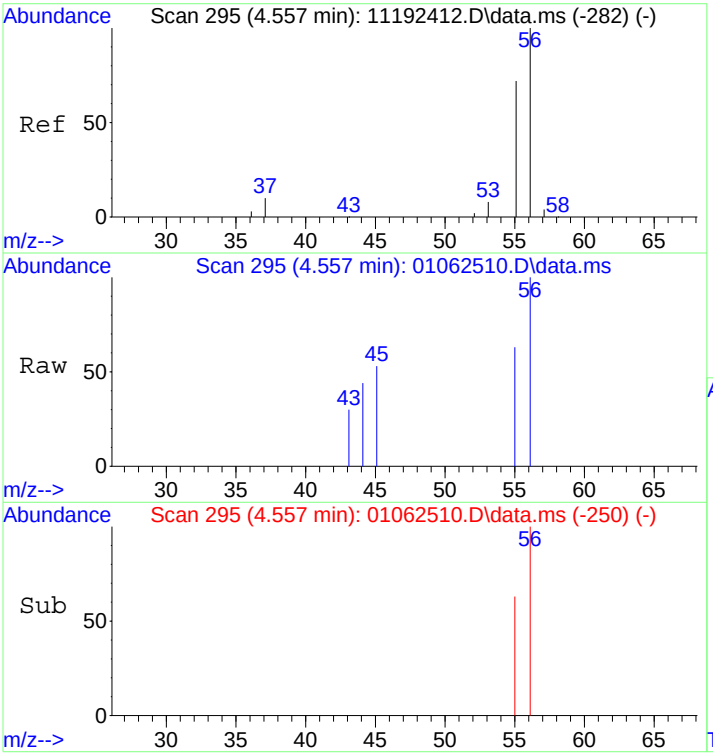


#10
Ethanol
Concen: 0.37 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.022 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 45 Resp: 4507

Ion	Ratio	Lower	Upper
45	100		
46	32.9	11.8	51.8

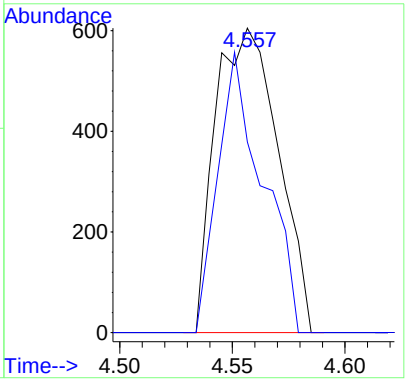


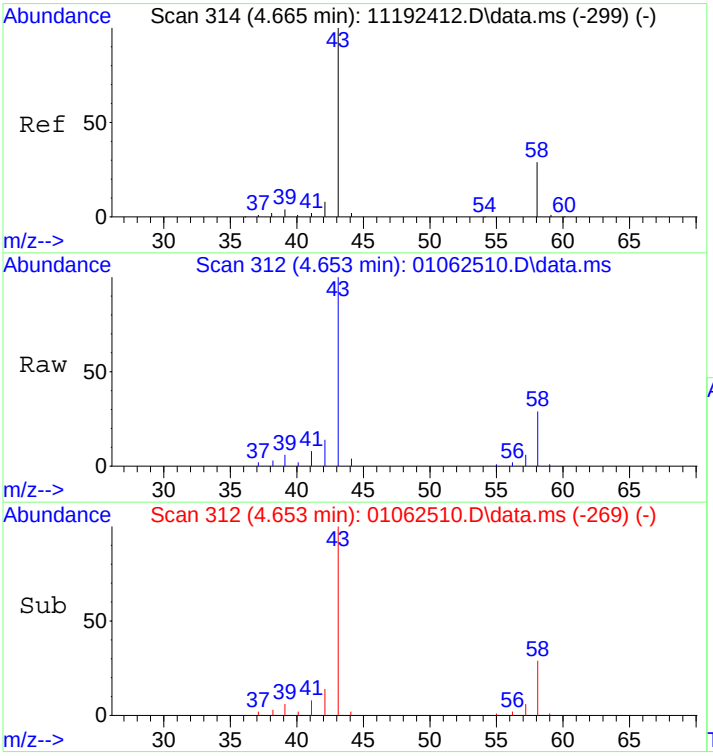


#12
Acrolein
Concen: 0.11 ng
RT: 4.56 min Scan# 295
Delta R.T. 0.003 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 56 Resp: 1178

Ion	Ratio	Lower	Upper
56	100		
55	65.8	53.1	93.1

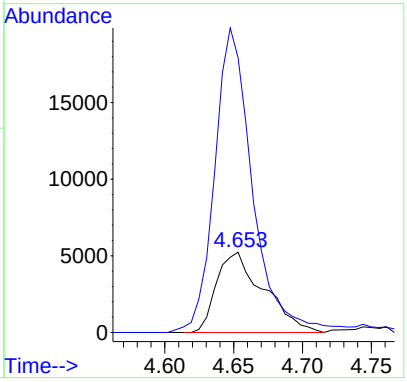


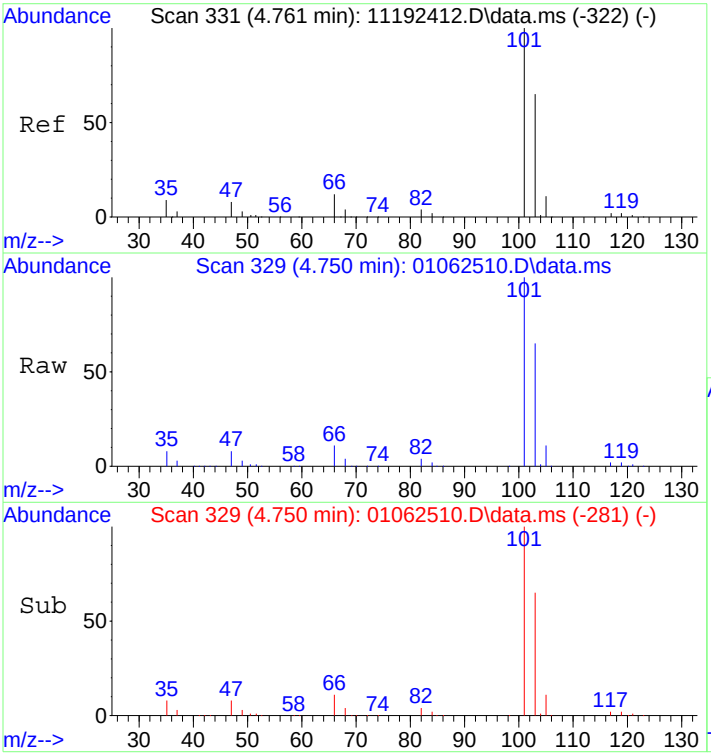


#13
Acetone
Concen: 1.11 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 58 Resp: 12475

Ion	Ratio	Lower	Upper
58	100		
43	305.5	312.5	372.5#

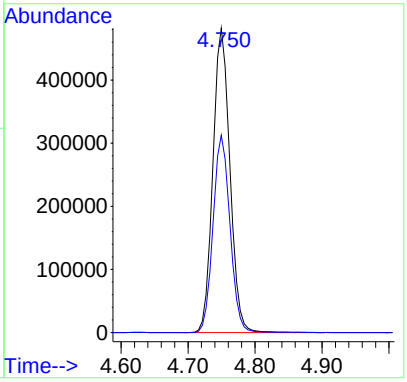


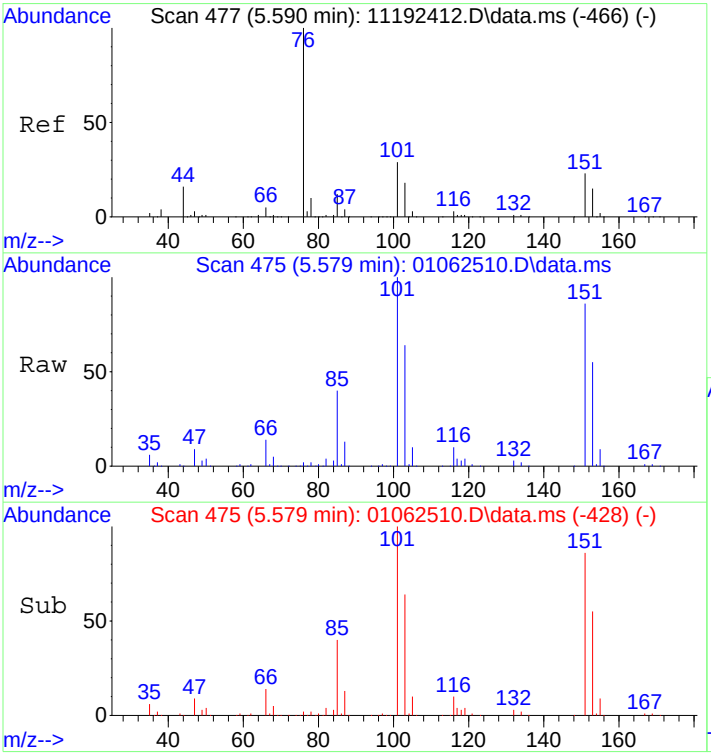


#14
Trichlorofluoromethane
Concen: 27.78 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion:101 Resp: 849850

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.8	84.8

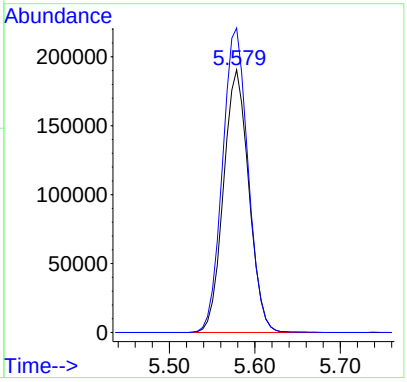


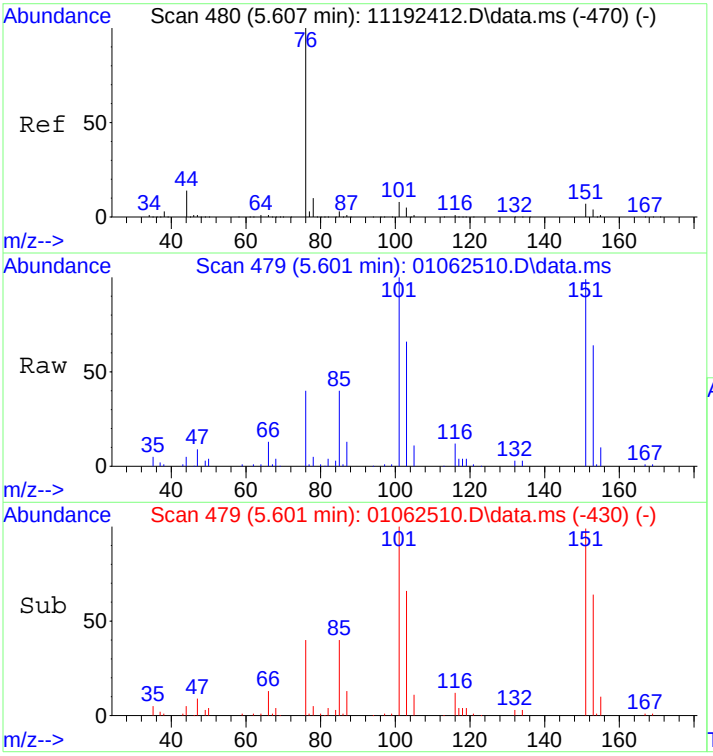


#21
Trichlorotrifluoroethane
Concen: 28.45 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion:151 Resp: 392667

Ion	Ratio	Lower	Upper
151	100		
101	116.8	105.0	145.0

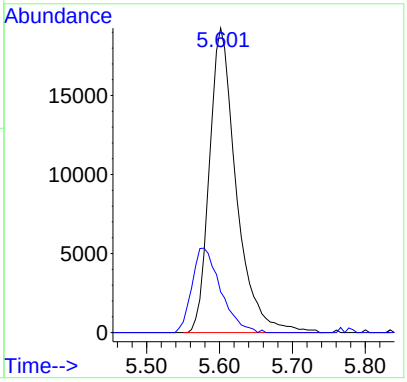


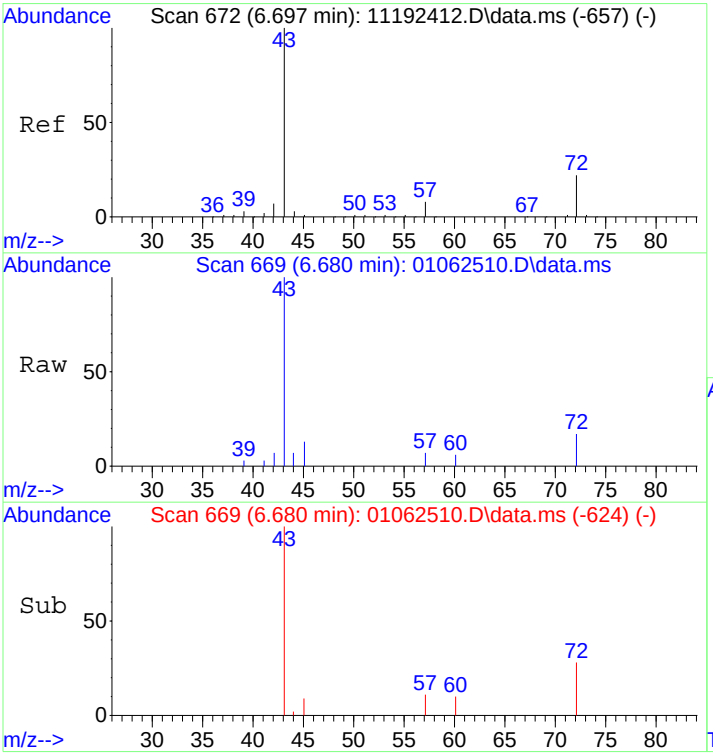


#22
Carbon Disulfide
Concen: 0.97 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 76 Resp: 49442

Ion	Ratio	Lower	Upper
76	100		
78	29.6	0.0	29.6#

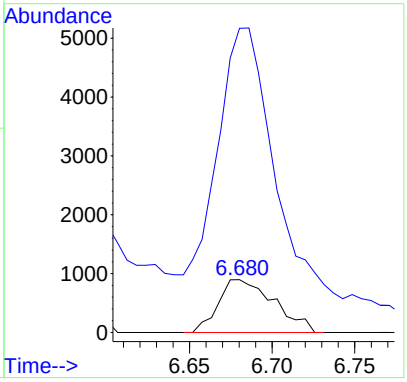


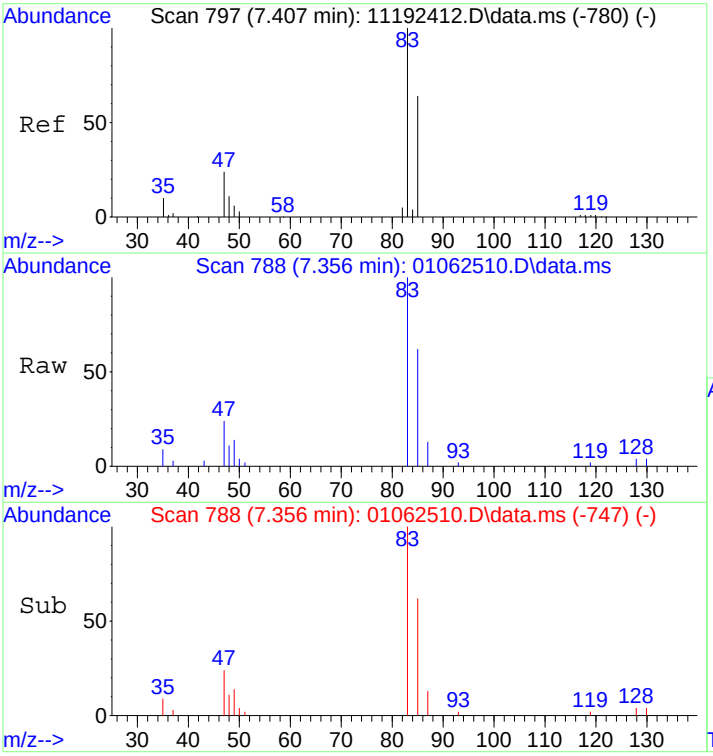


#27
2-Butanone (MEK)
Concen: 0.23 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 72 Resp: 2108

Ion	Ratio	Lower	Upper
72	100		
43	591.7	439.8	479.8#

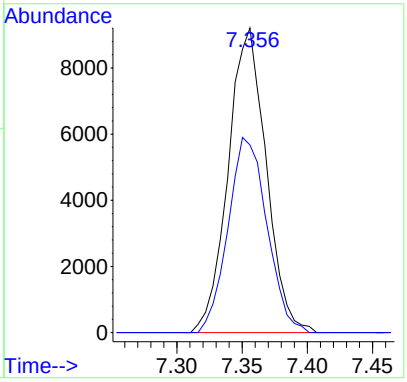


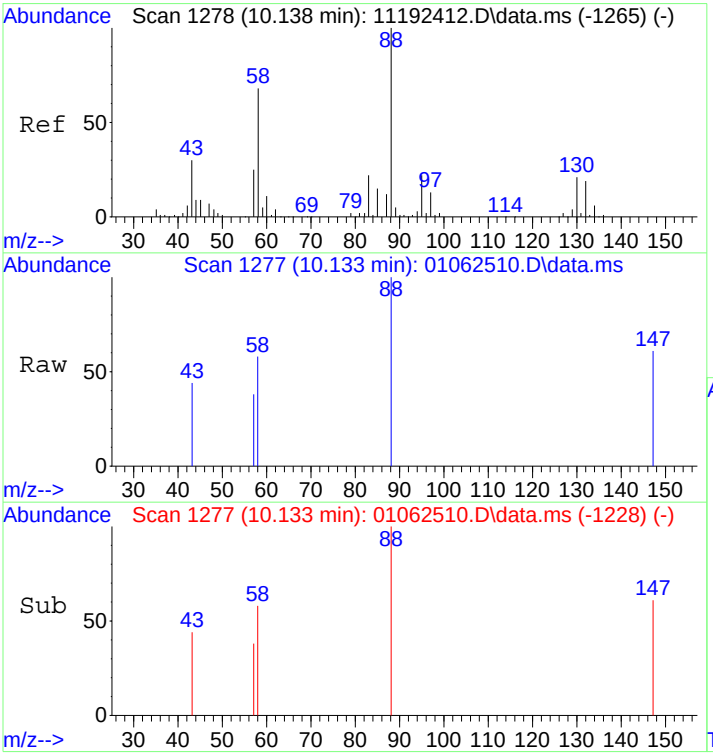


#32
Chloroform
Concen: 0.69 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 83 Resp: 18666

Ion	Ratio	Lower	Upper
83	100		
85	65.4	45.1	85.1

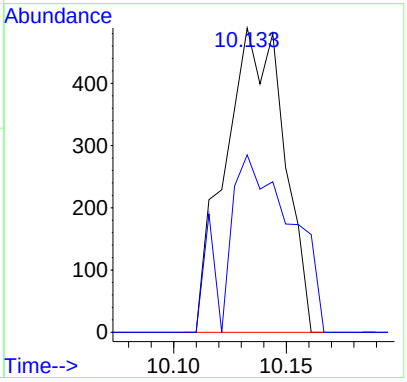




#48
1,4-Dioxane
Concen: 0.09 ng
RT: 10.13 min Scan# 1277
Delta R.T. 0.026 min
Lab File: 01062510.D
Acq: 6 Jan 2025 13:22

Tgt Ion: 88 Resp: 888

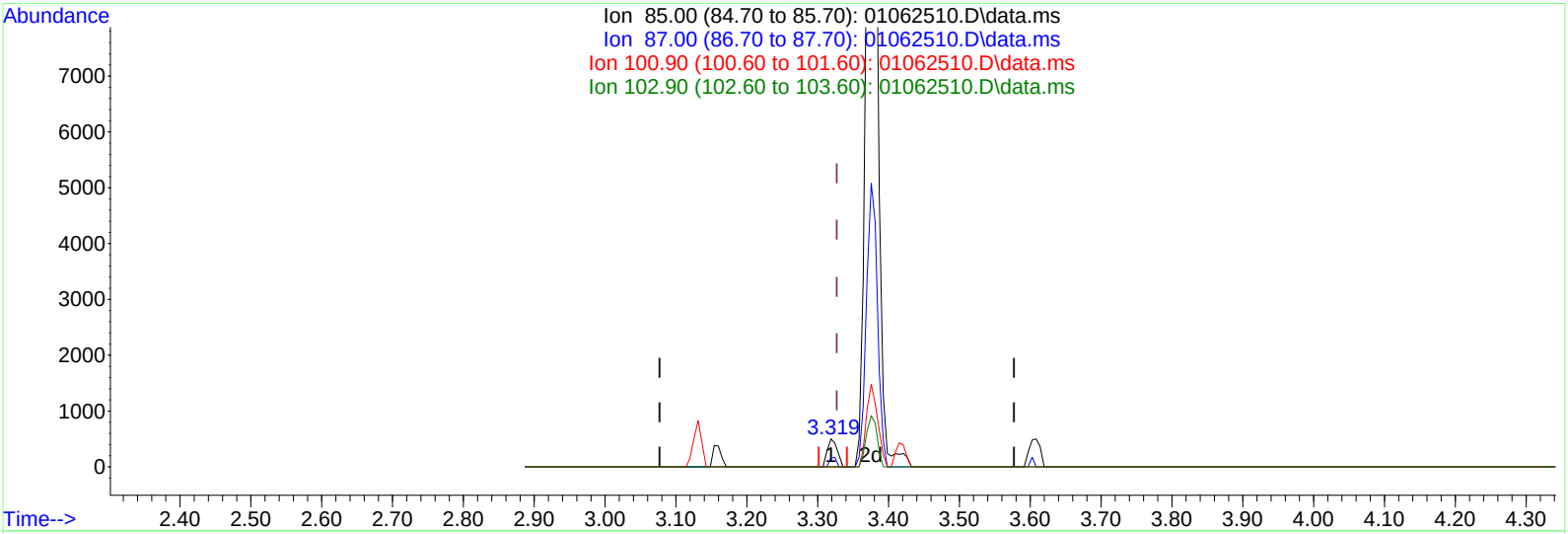
Ion	Ratio	Lower	Upper
88	100		
58	64.6	47.8	87.8

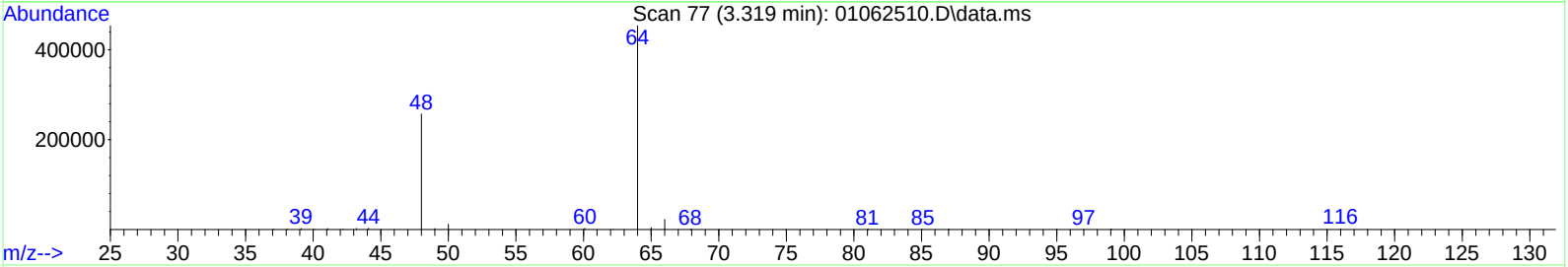


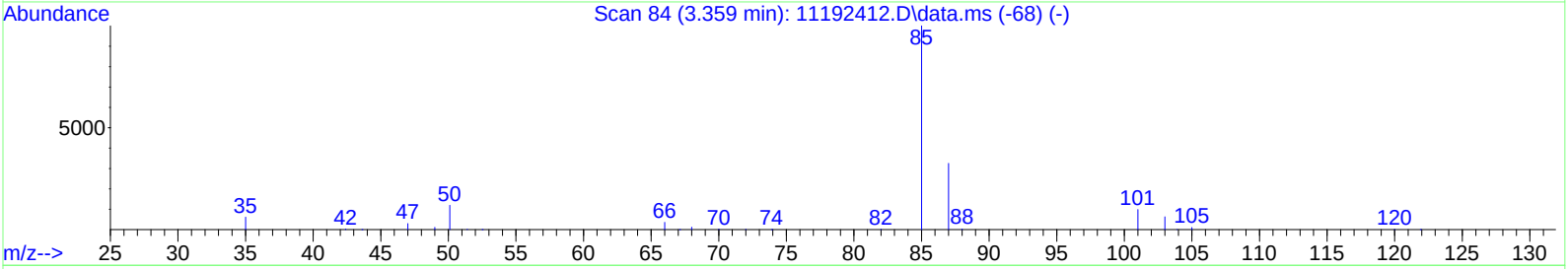
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 06 13:43:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062510.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.319min (-0.008) 0.01ng

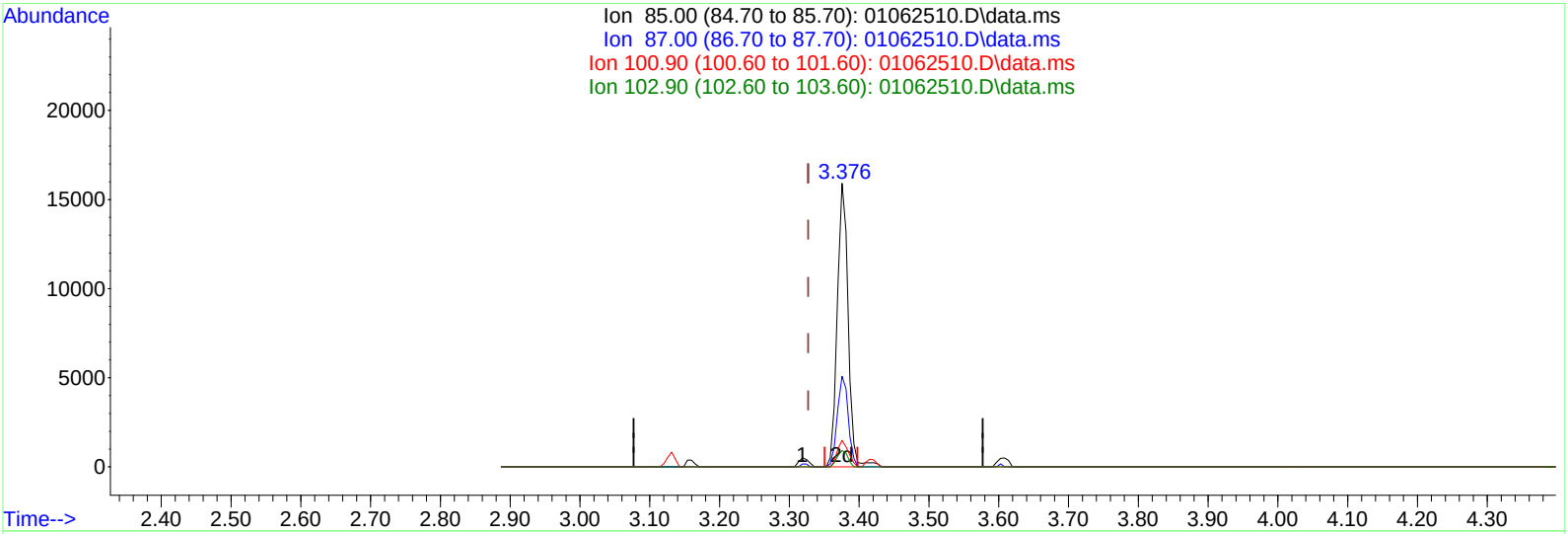
response 485

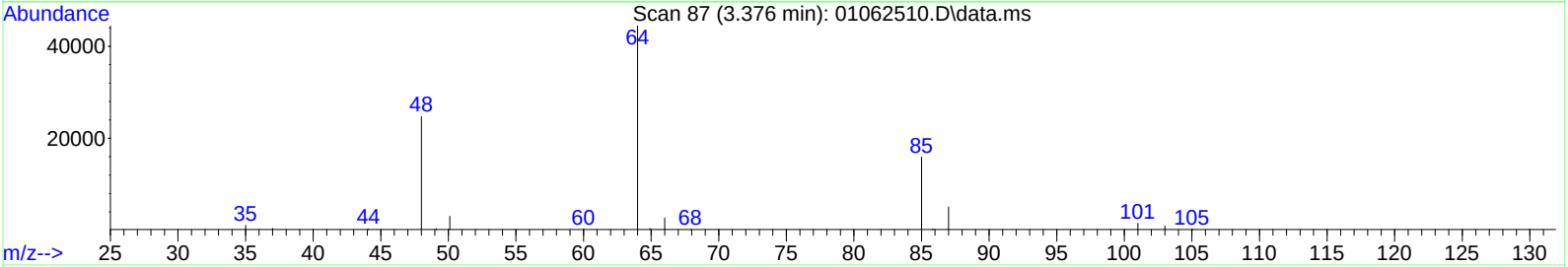
Ion	Exp%	Act%
85.00	100	100
87.00	32.60	23.09
100.90	9.60	0.00
102.90	6.20	0.00

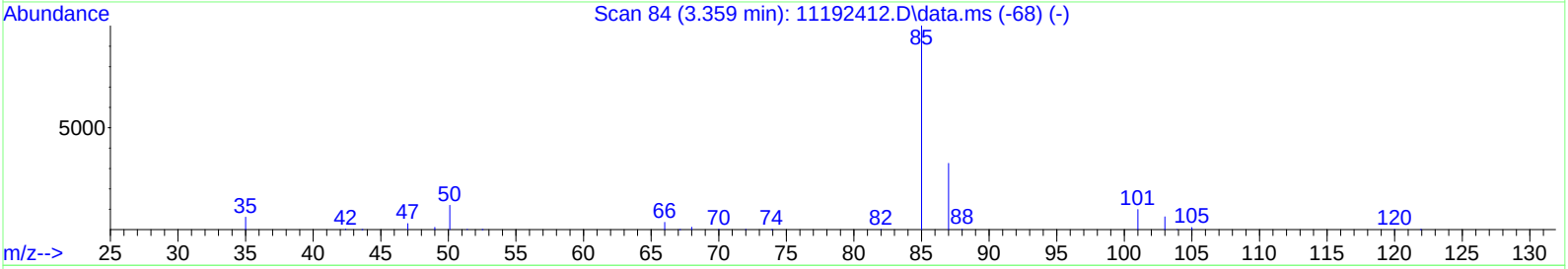
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 06 13:43:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062510.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.376min (+0.048) 0.52ng m

response 16984

Ion	Exp%	Act%
85.00	100	100
87.00	32.60	32.73
100.90	9.60	9.72
102.90	6.20	5.74

MP

1/6/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

NOA 1/6/25

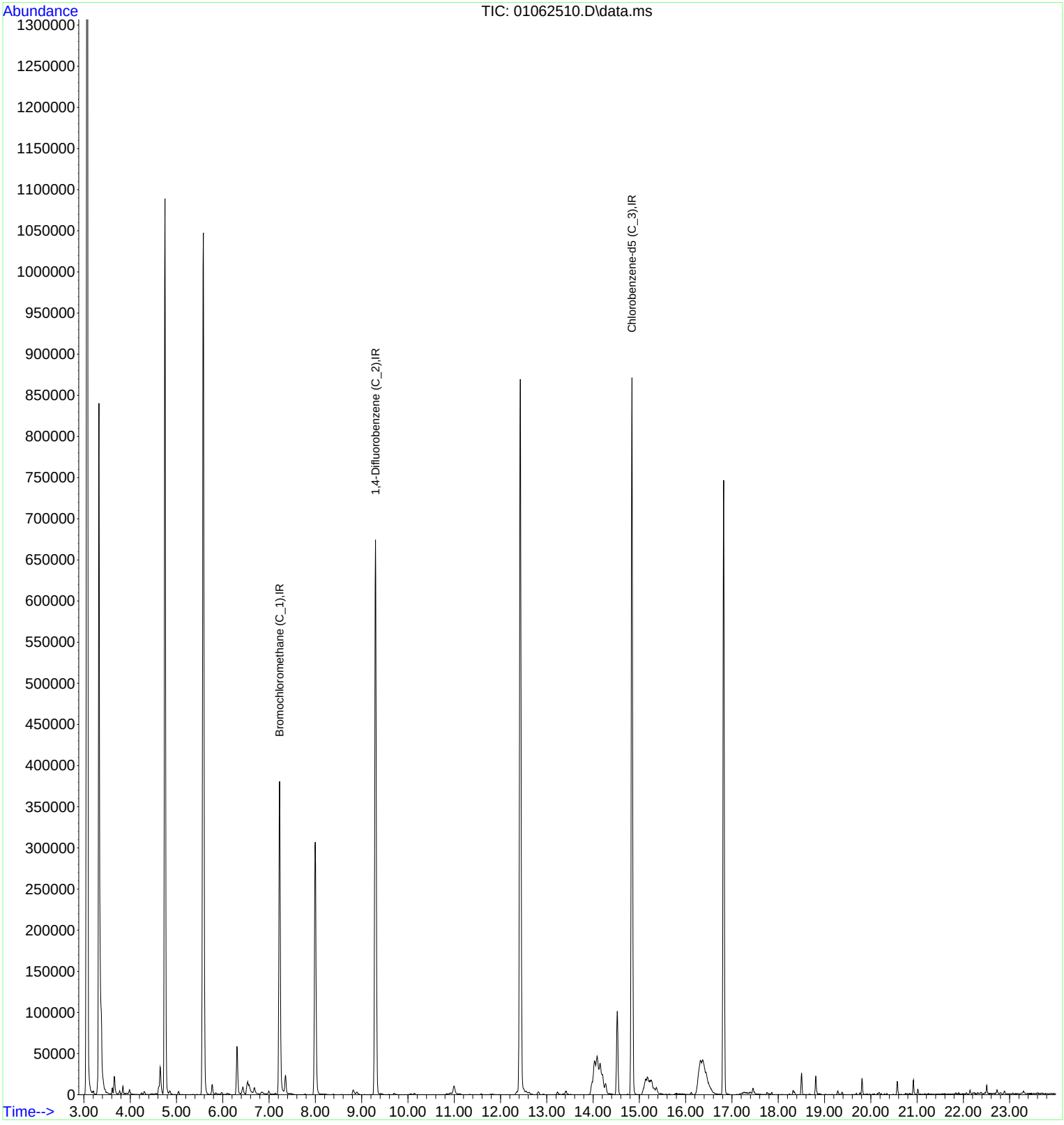
Quant Time: Jan 06 21:05:13 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	168604	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	713348	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	126432	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	309	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	1196	N.D.		
4) 1,1-Difluoroethane	3.25	65	133	N.D.		
5) Chlorodifluoromethane ...	3.28	67	463	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.49	65	412	N.D.		
7) Dichlorofluoromethane ...	4.24	67	638	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.62	83	274	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.35	43	56	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.58	55	52	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	213	N.D.		
27) 4-Chlorotoluene	17.68	91	213	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	20.60	119	56	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 06 21:05:13 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062510.D\data.ms

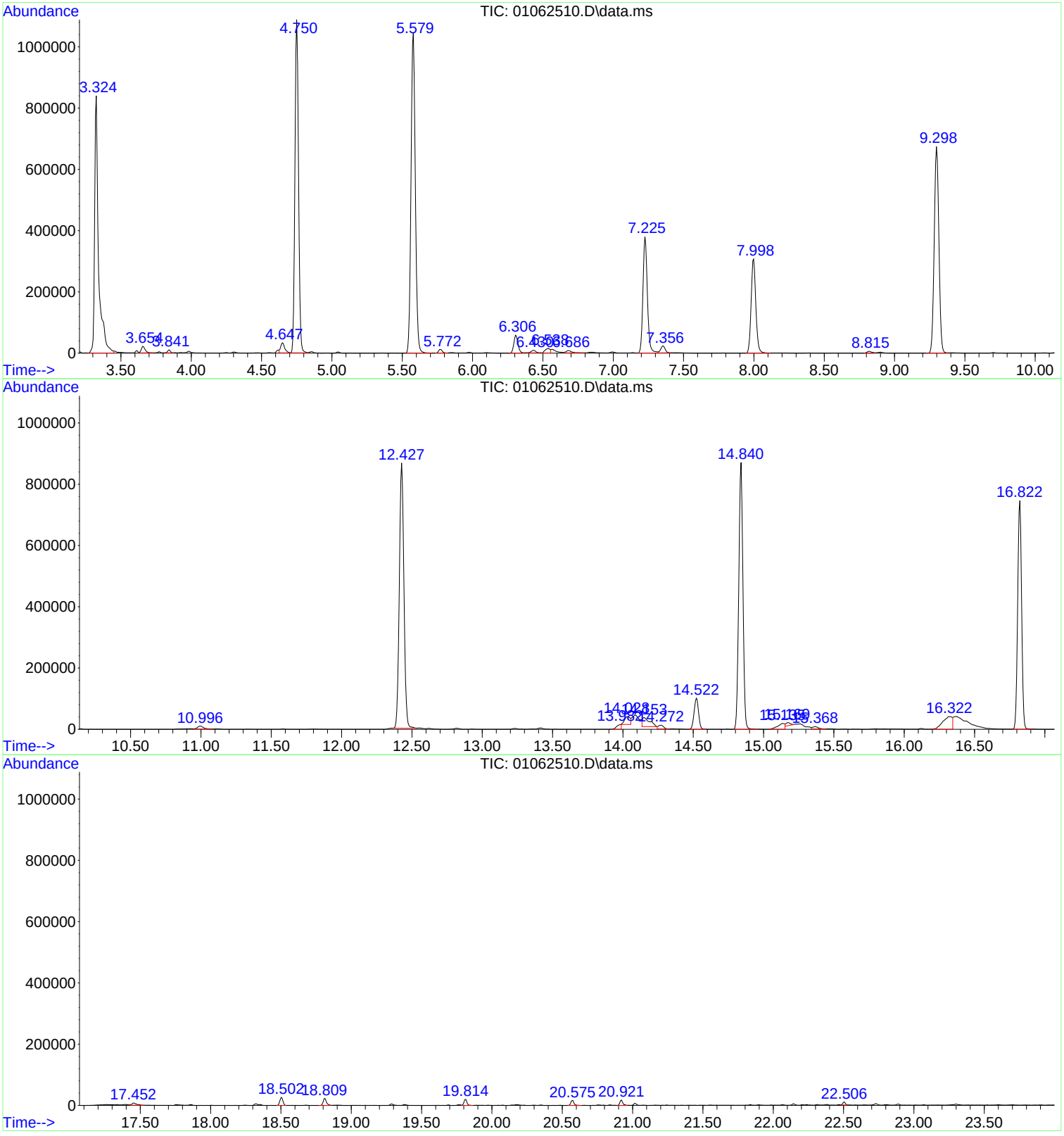
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.324	68	78	100	rBV	840044	1628696	72.80%	10.565%
2	3.654	132	136	150	rVB	21078	39736	1.78%	0.258%
3	3.841	164	169	175	rBV2	9290	12216	0.55%	0.079%
4	4.647	307	311	321	rVB	32368	63140	2.82%	0.410%
5	4.750	321	329	343	rBV	1087778	1904133	85.11%	12.351%
6	5.579	465	475	498	rBV	1047662	2237314	100.00%	14.512%
7	5.772	502	509	518	rBV	11900	22227	0.99%	0.144%
8	6.306	595	603	615	rBV	58668	122132	5.46%	0.792%
9	6.430	618	625	633	rVB3	8395	18437	0.82%	0.120%
10	6.538	636	644	647	rBV2	15034	36546	1.63%	0.237%
11	6.686	663	670	690	rVB2	7474	20290	0.91%	0.132%
12	7.225	756	765	781	rBV	380234	828629	37.04%	5.375%
13	7.356	781	788	797	rVB	22229	48159	2.15%	0.312%
14	7.998	891	901	922	rBV	306852	709868	31.73%	4.605%
15	8.815	1039	1045	1053	rBV3	5833	14857	0.66%	0.096%
16	9.298	1117	1130	1144	rBV	674373	1540040	68.83%	9.990%
17	10.996	1421	1429	1444	rVB3	9835	28834	1.29%	0.187%
18	12.427	1669	1681	1699	rBV	866416	1968889	88.00%	12.771%
19	13.982	1944	1955	1956	rBV	15875	35304	1.58%	0.229%
20	14.028	1956	1963	1968	rBV3	25527	72906	3.26%	0.473%
21	14.153	1982	1985	2001	rVB2	29279	101127	4.52%	0.656%
22	14.272	2001	2006	2017	rVB2	12281	30416	1.36%	0.197%
23	14.522	2041	2050	2063	rBB	101588	222774	9.96%	1.445%
24	14.840	2096	2106	2127	rBV	871355	1781201	79.61%	11.554%
25	15.135	2141	2158	2161	rBV3	18969	66752	2.98%	0.433%
26	15.169	2161	2164	2172	rVB2	7488	21721	0.97%	0.141%
27	15.368	2194	2199	2213	rVB5	7812	20633	0.92%	0.134%
28	16.322	2345	2367	2371	rBV3	41539	198709	8.88%	1.289%
29	16.822	2446	2455	2470	rVB	746512	1433585	64.08%	9.299%
30	17.452	2562	2566	2580	rVB3	7292	16955	0.76%	0.110%
31	18.502	2745	2751	2757	rBB2	26477	40012	1.79%	0.260%
32	18.809	2798	2805	2813	rBV	22871	37483	1.68%	0.243%
33	19.814	2977	2982	2991	rVB2	19565	29031	1.30%	0.188%
34	20.575	3110	3116	3127	rBV3	16242	25968	1.16%	0.168%
35	20.921	3172	3177	3184	rBV2	17611	25582	1.14%	0.166%
36	22.506	3452	3456	3460	rVB	10056	12243	0.55%	0.079%

Sum of corrected areas: 15416545

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:22
Operator : SC
Sample : P2405139-008 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062510.D
Acq On : 6 Jan 2025 13:222
Operator : SCC
Sample : P2405139-008 (400mL))
Misc : S37-123124011
ALS Vial : 5 Sample Multiplier: 11

VOA 1/6/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

NOA 1/6/25

Quant Time: Jan 06 20:39:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	155804	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	667028	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	117388	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.99	65	254297	11.980 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.84%			
57) Toluene-d8 (SS2)	12.43	98	688436	13.220 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.76%			
73) Bromofluorobenzene (SS3)	16.82	174	266888	14.851 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.80%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	4364	0.143 ng		98
4) Chloromethane	3.52	50	308	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.30	45	1640	0.142 ng		90
11) Acetonitrile	4.48	41	447	N.D.		
12) Acrolein	4.56	56	337	N.D.		
13) Acetone	4.65	58	7199	0.686 ng		88
14) Trichlorofluoromethane	4.75	101	2409519	84.359 ng		100
15) 2-Propanol (Isopropanol)	4.86	45	1249	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.34	59	395	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.58	151	1434291	111.299 ng		92
22) Carbon Disulfide	5.60	76	123807	2.609 ng	#	17
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	6.31	73	115	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D. d		
27) 2-Butanone (MEK)	6.69	72	945	0.112 ng	#	1
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	7.36	87	414	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.35	83	5786	0.228 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	1951	No Calib	#	
41) Benzene	8.90	78	2292	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.15	130	196	N.D.		
48) 1,4-Dioxane	10.13	88	1017	0.110 ng		94

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

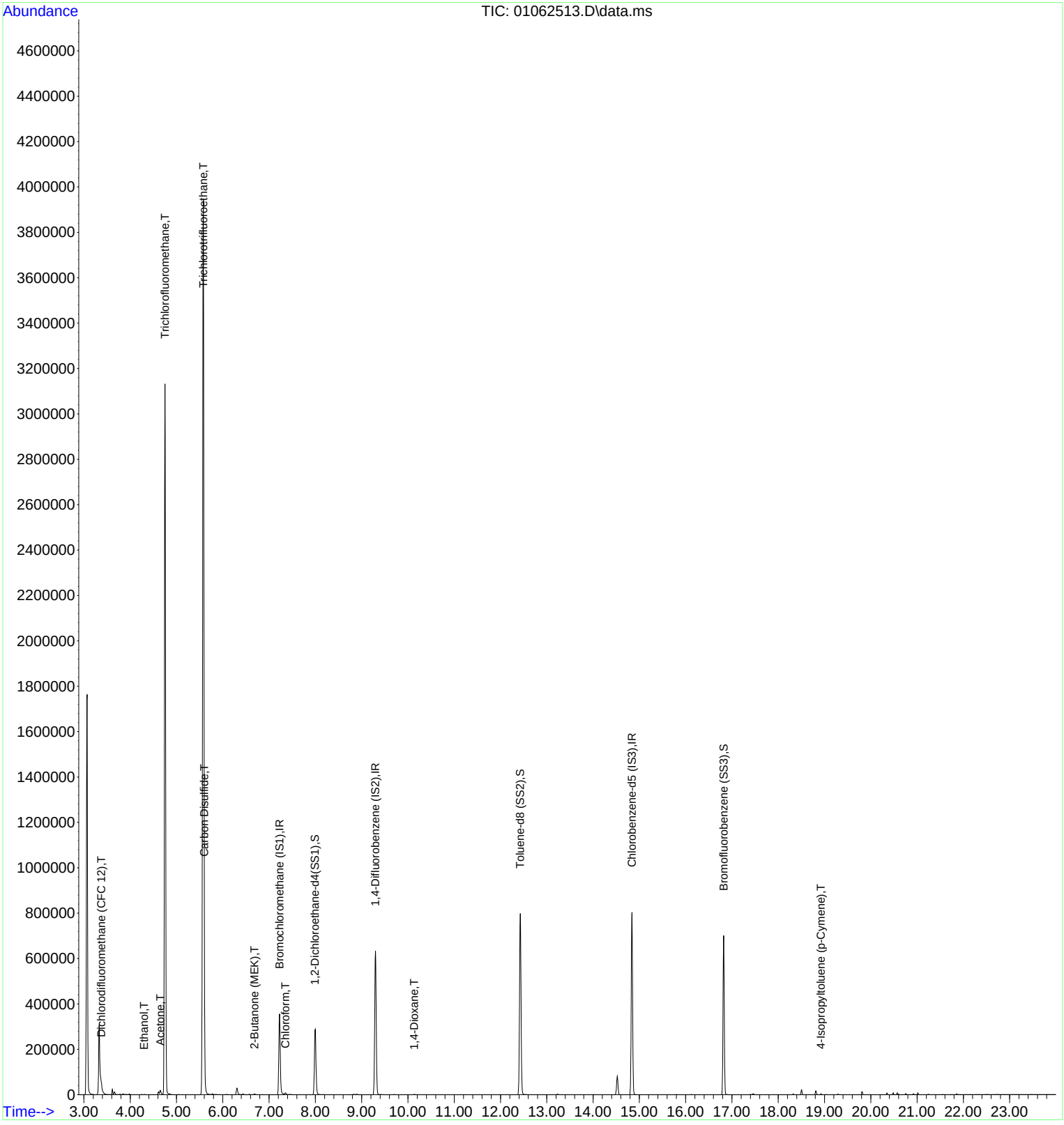
Quant Time: Jan 06 20:39:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.14	57	115	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	952	N.D.		
59) 2-Hexanone	12.94	43	503	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	2839	0.055	ng	94
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	299	N.D.		
95) Naphthalene	20.94	128	624	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	453	N.D.		
100) n-Butylbenzene	19.39	91	197	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 06 20:39:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

1/6/25

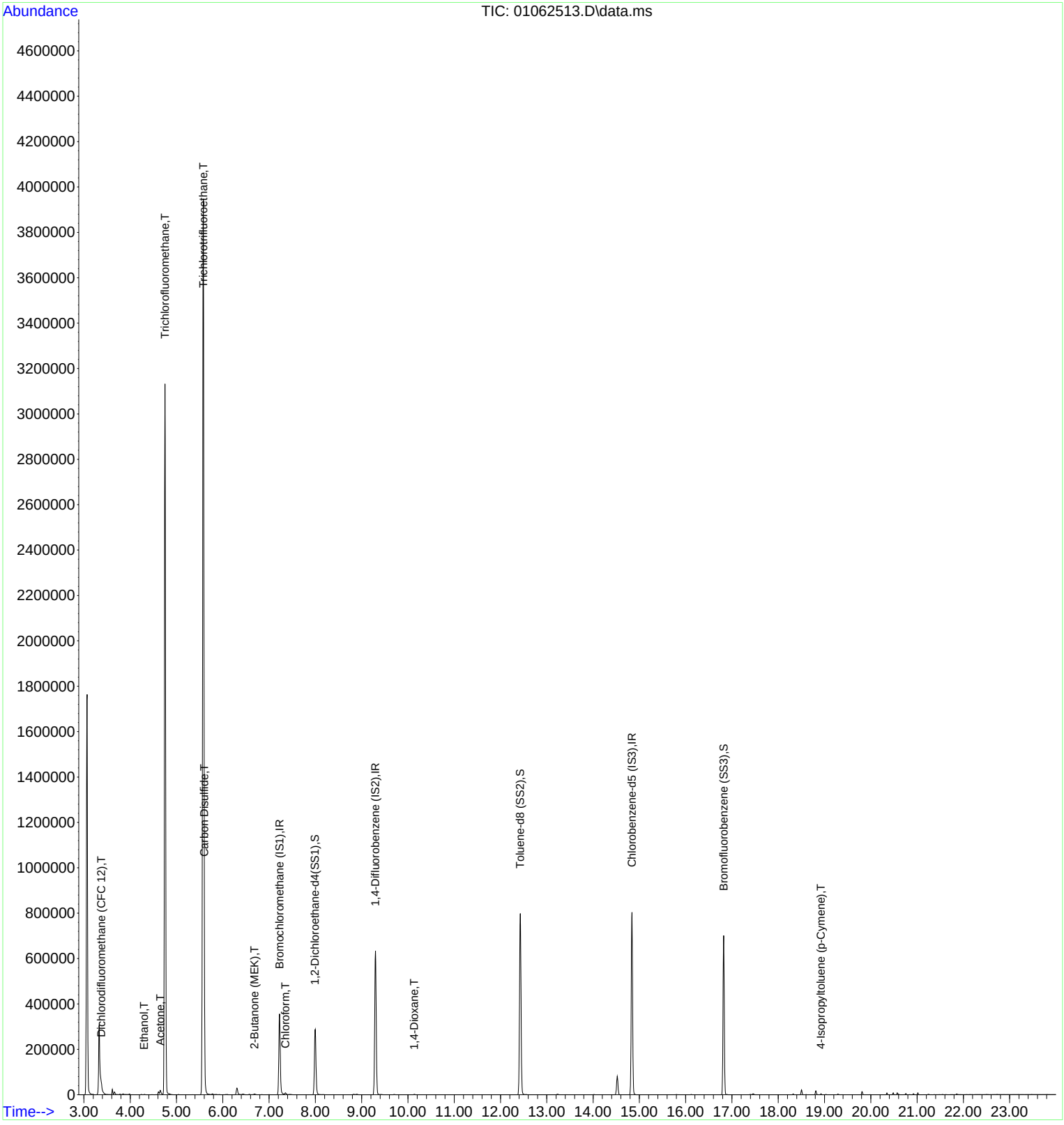
Quant Time: Jan 06 20:39:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

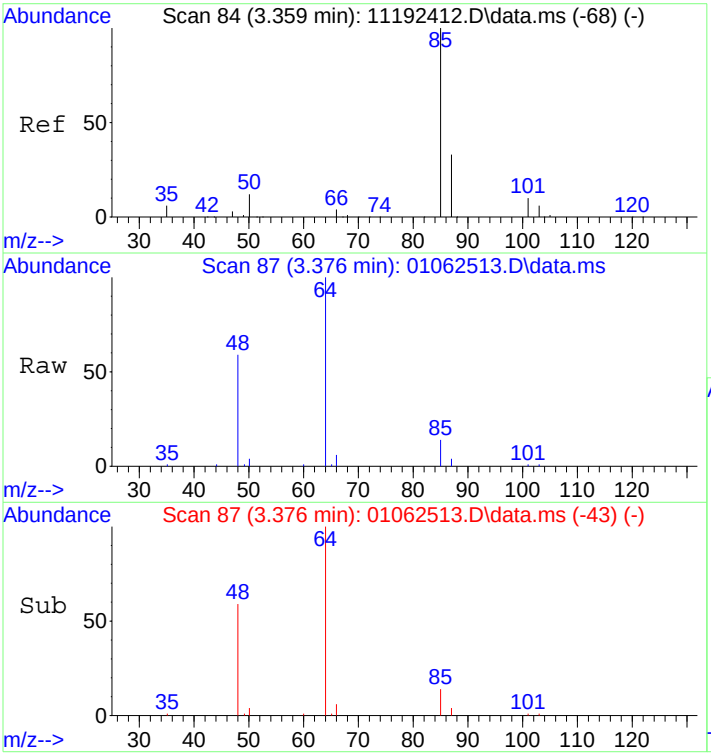
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	155804	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	667028	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	117388	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.99	65	254297	11.980	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.84%				
57) Toluene-d8 (SS2)	12.43	98	688436	13.220	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.76%				
73) Bromofluorobenzene (SS3)	16.82	174	266888	14.851	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.80%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	4364	0.143	ng		98
10) Ethanol	4.30	45	1640	0.142	ng		90
13) Acetone	4.65	58	7199	0.686	ng		88
14) Trichlorofluoromethane	4.75	101	2409519	84.359	ng		100
21) Trichlorotrifluoroethane	5.58	151	1434291	111.299	ng		92
22) Carbon Disulfide	5.60	76	123807	2.609	ng	#	17
27) 2-Butanone (MEK)	6.69	72	945	0.112	ng	#	1
32) Chloroform	7.35	83	5786	0.228	ng		99
48) 1,4-Dioxane	10.13	88	1017	0.110	ng		94
88) 4-Isopropyltoluene (p-...	18.92	119	2839	0.055	ng		94

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 06 20:39:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

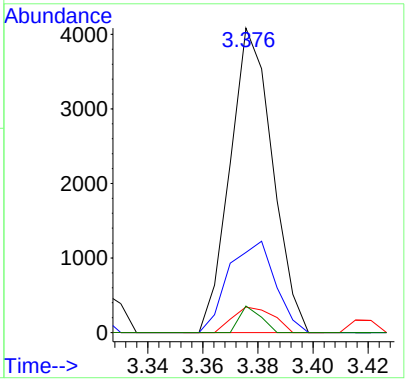


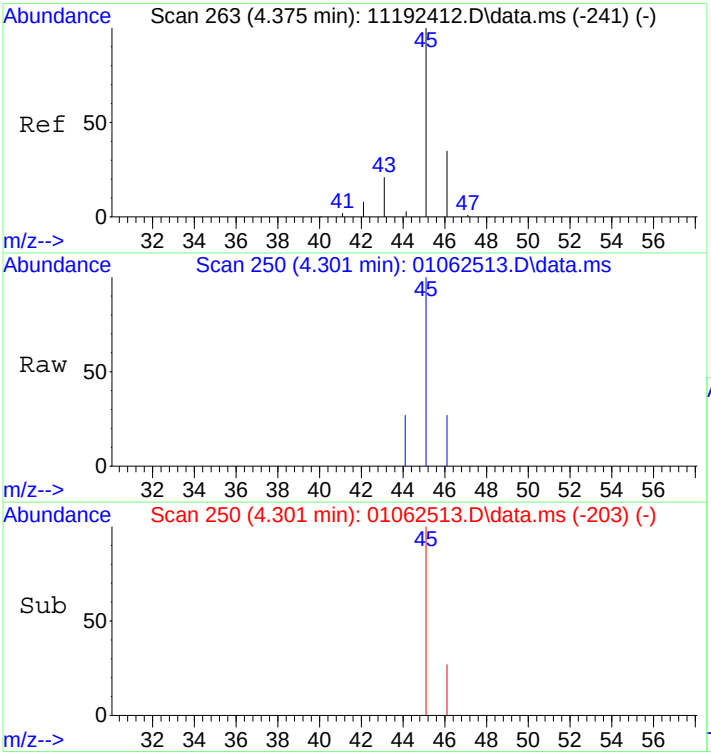


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.14 ng
RT: 3.38 min Scan# 87
Delta R.T. -0.000 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion: 85 Resp: 4364

Ion	Ratio	Lower	Upper
85	100		
87	33.1	12.6	52.6
101	8.0	0.0	29.6
103	4.4	0.0	26.2

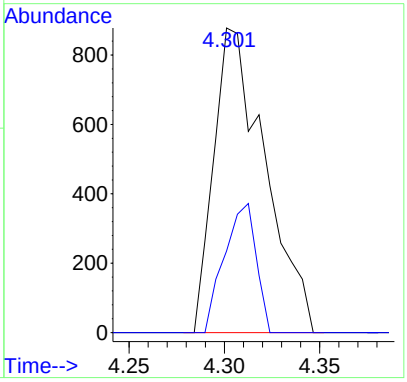


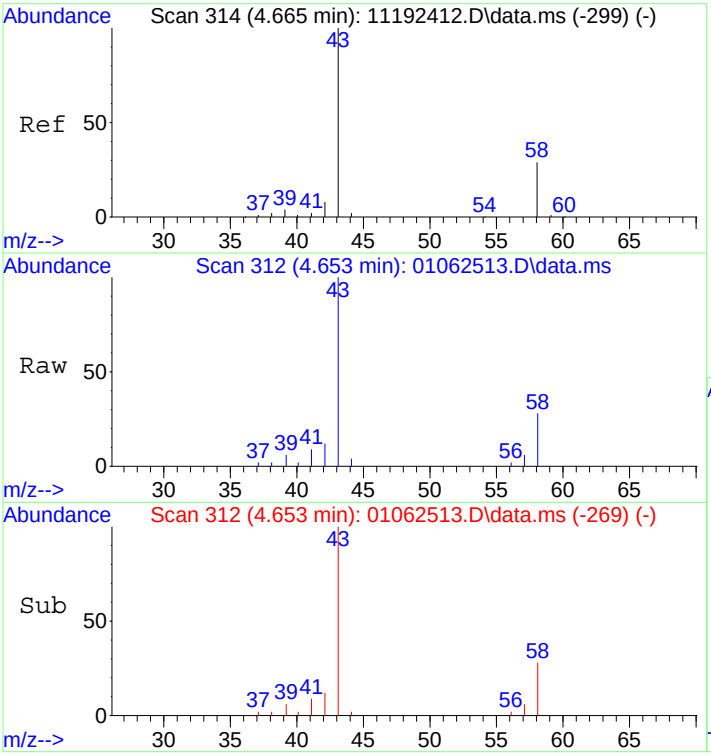


#10
Ethanol
Concen: 0.14 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion: 45 Resp: 1640

Ion	Ratio	Lower	Upper
45	100		
46	26.3	11.8	51.8

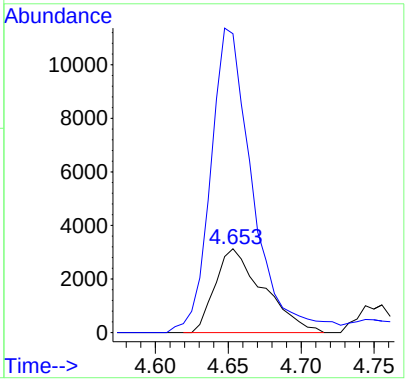


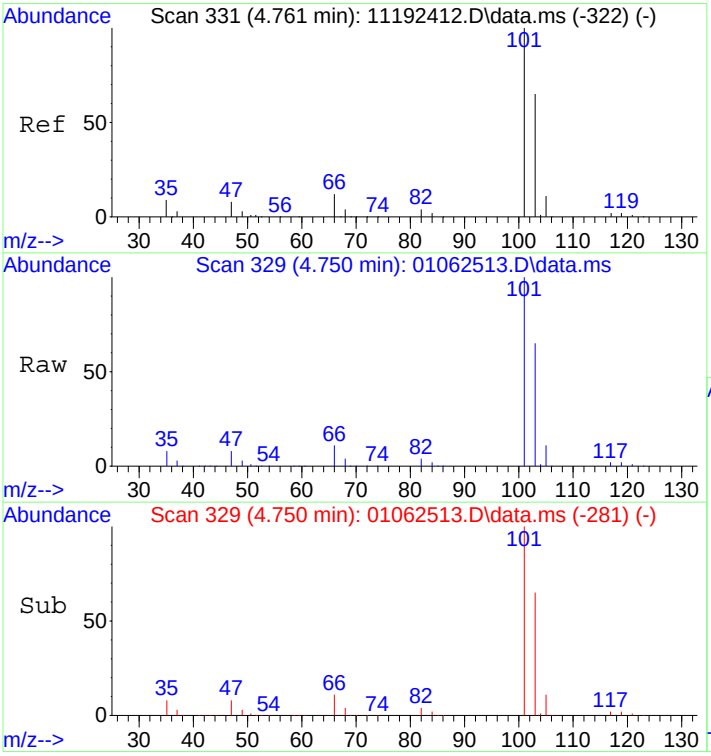


#13
Acetone
Concen: 0.69 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion: 58 Resp: 7199

Ion	Ratio	Lower	Upper
58	100		
43	315.9	312.5	372.5

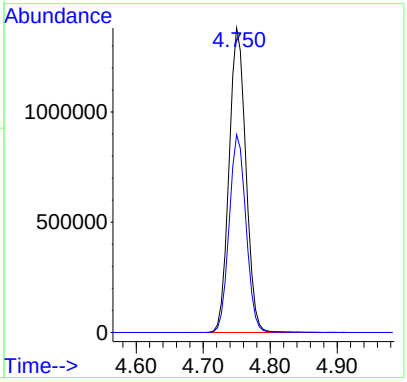


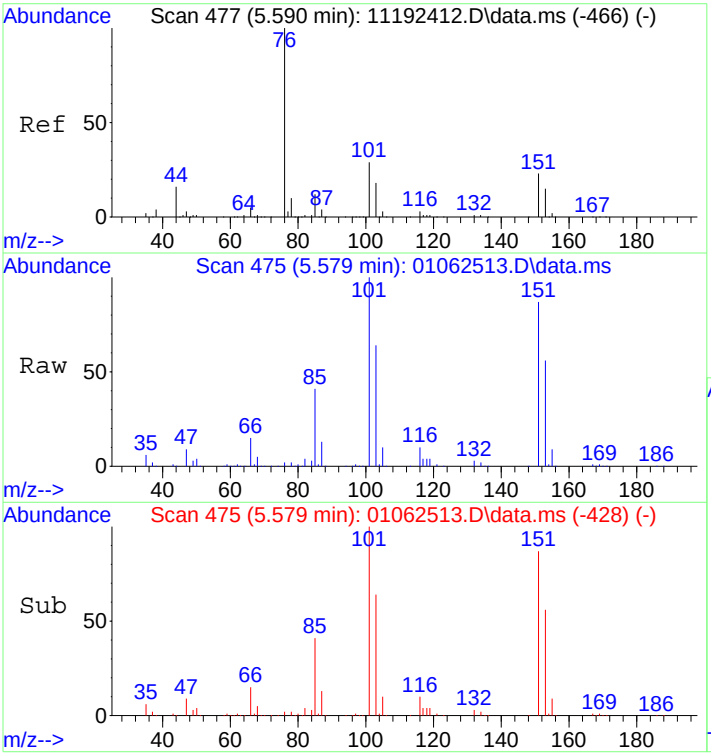


#14
Trichlorofluoromethane
Concen: 84.36 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion:101 Resp: 2409519

Ion	Ratio	Lower	Upper
101	100		
103	65.0	44.8	84.8

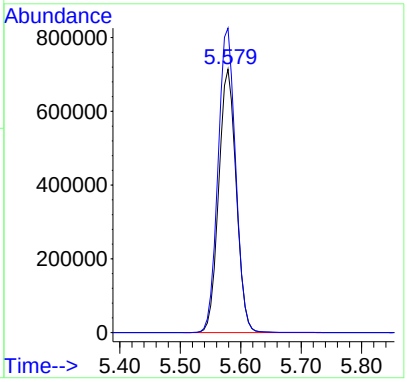


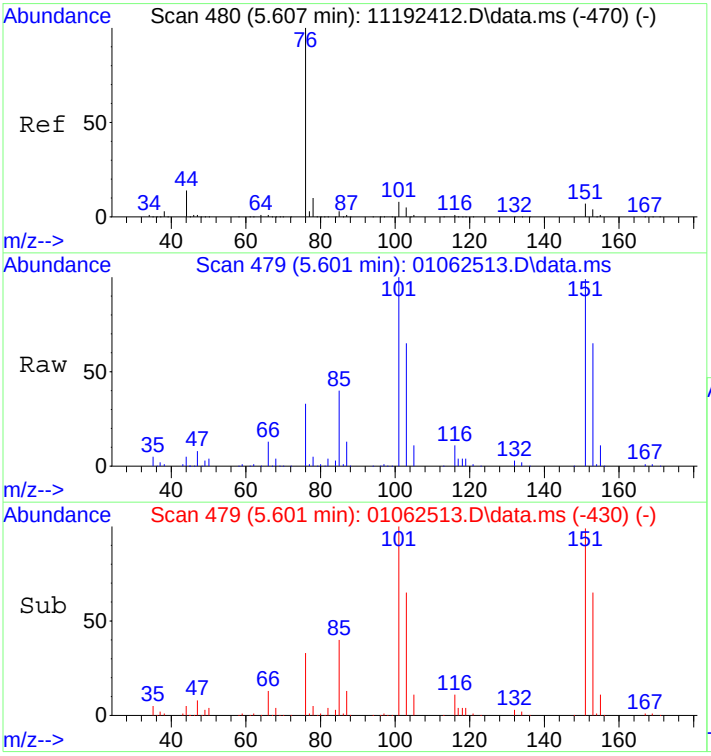


#21
Trichlorotrifluoroethane
Concen: 111.30 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion:151 Resp: 1434291

Ion	Ratio	Lower	Upper
151	100		
101	116.1	105.0	145.0

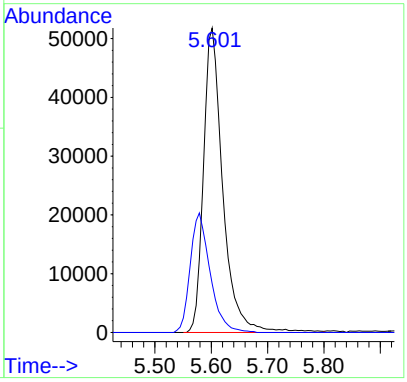


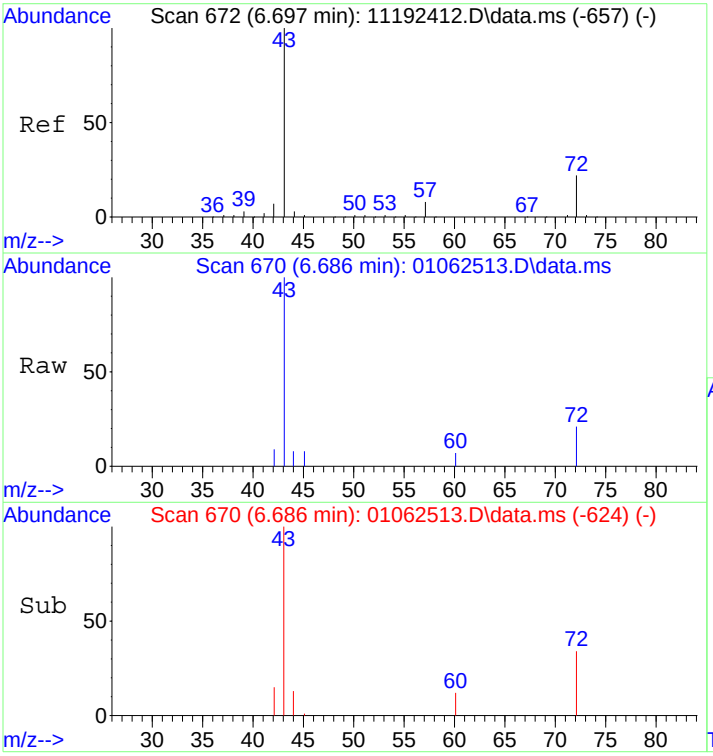


#22
Carbon Disulfide
Concen: 2.61 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion: 76 Resp: 123807

Ion	Ratio	Lower	Upper
76	100		
78	40.2	0.0	29.6#

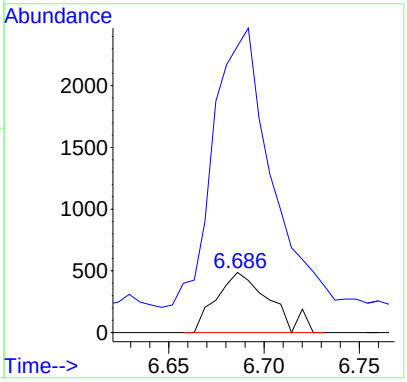


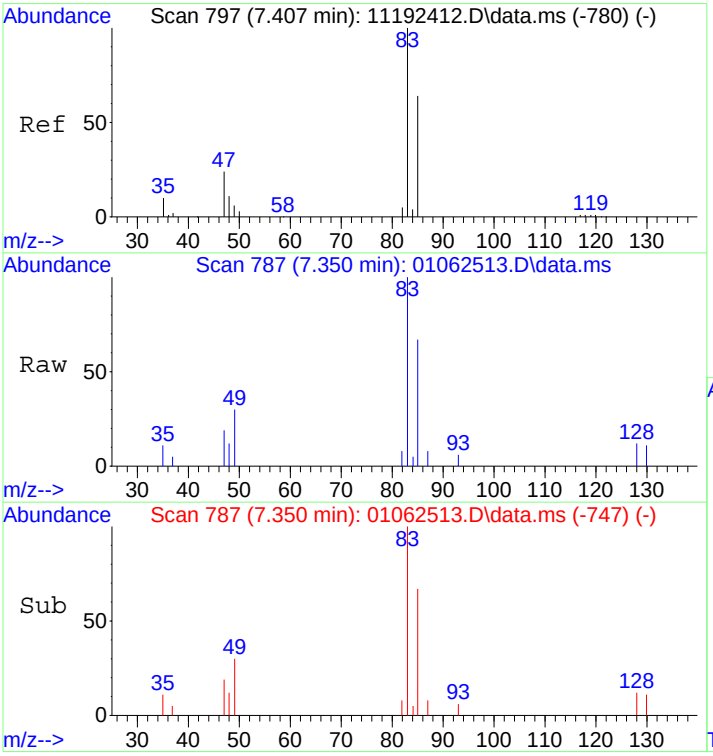


#27
2-Butanone (MEK)
Concen: 0.11 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion: 72 Resp: 945

Ion	Ratio	Lower	Upper
72	100		
43	718.2	439.8	479.8#

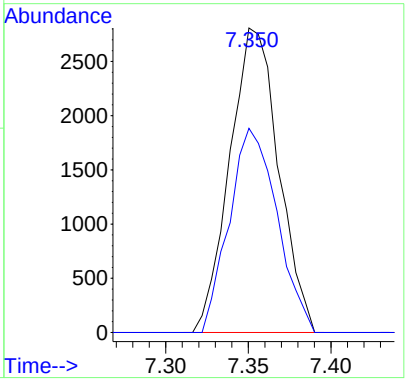


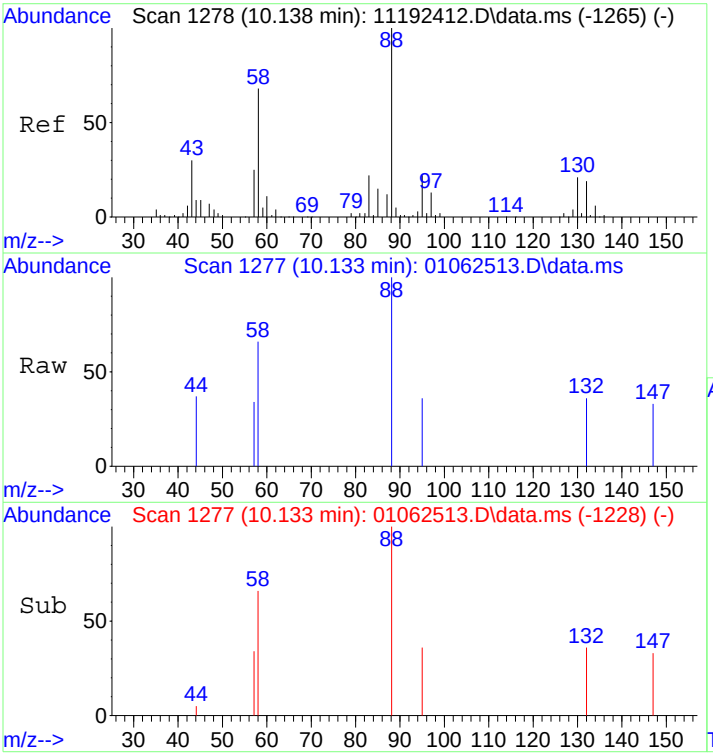


#32
Chloroform
Concen: 0.23 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion: 83 Resp: 5786

Ion	Ratio	Lower	Upper
83	100		
85	65.6	45.1	85.1

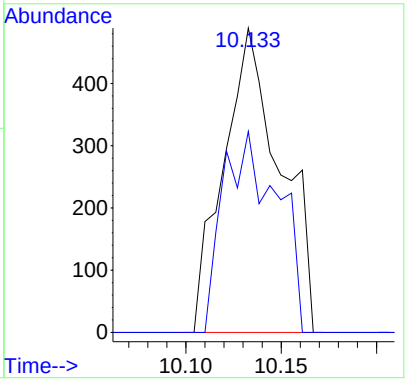


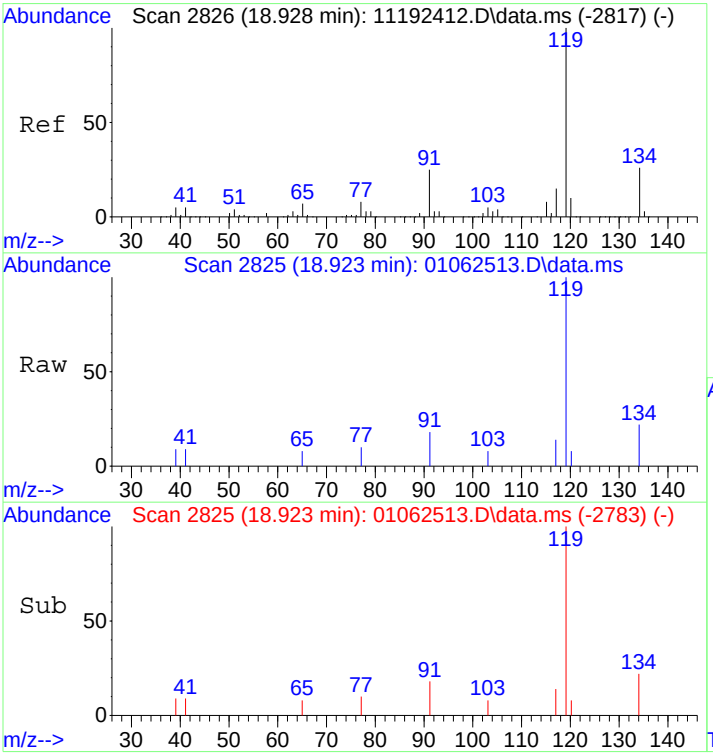


#48
1,4-Dioxane
Concen: 0.11 ng
RT: 10.13 min Scan# 1277
Delta R.T. 0.026 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion: 88 Resp: 1017

Ion	Ratio	Lower	Upper
88	100		
58	63.2	47.8	87.8

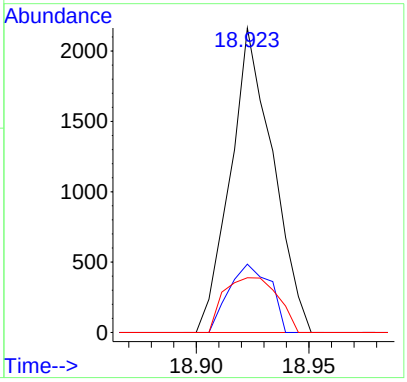




#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.06 ng
RT: 18.92 min Scan# 2825
Delta R.T. -0.011 min
Lab File: 01062513.D
Acq: 6 Jan 2025 14:58

Tgt Ion:119 Resp: 2839

Ion	Ratio	Lower	Upper
119	100		
134	21.9	5.8	45.8
91	22.8	4.6	44.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 21:04:34 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

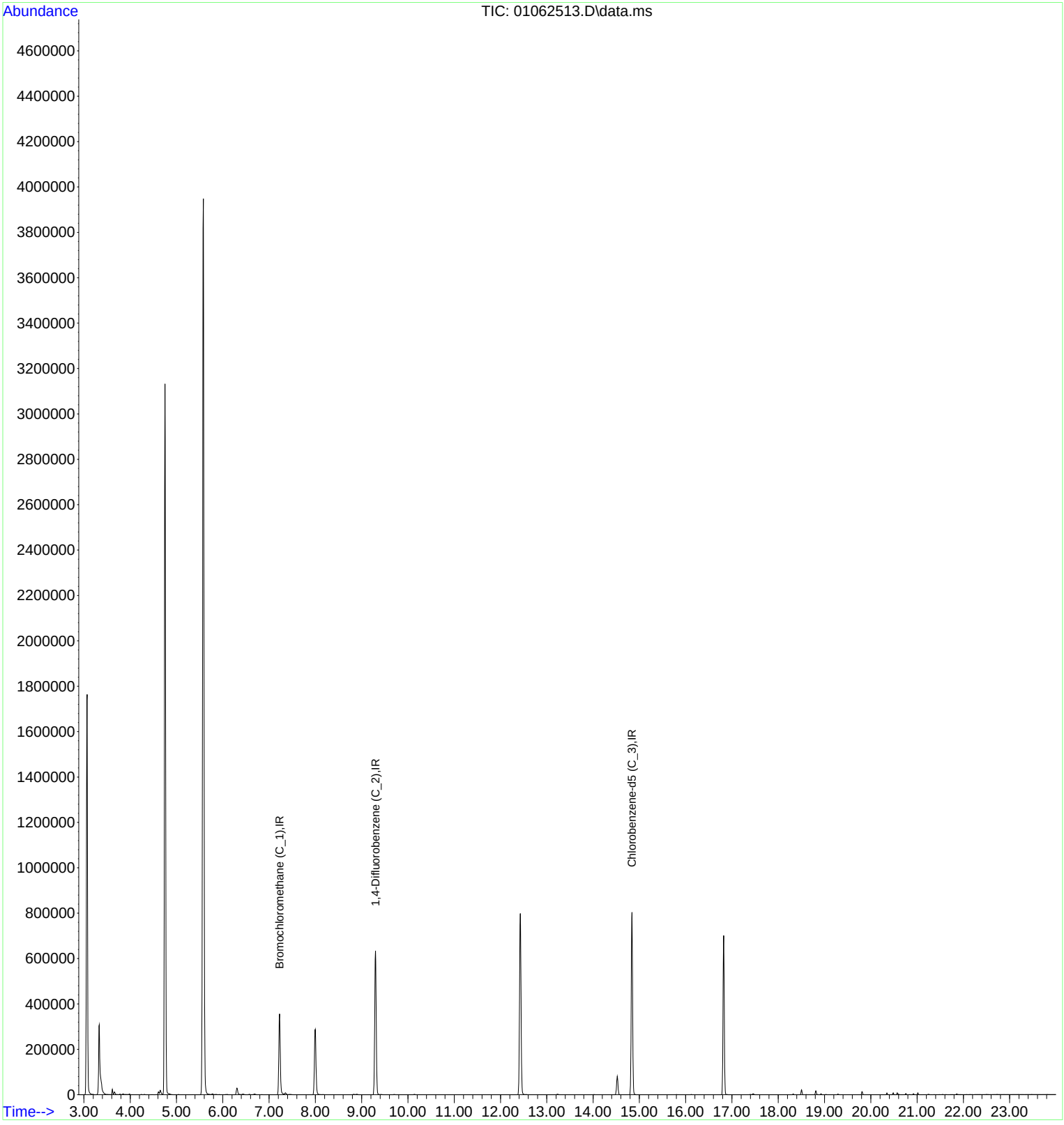
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	158697	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	666898	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	117388	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	179	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	3.29	67	64	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.24	67	1036	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.61	83	326	N.D.		
10) 2-Methylbutane	4.65	57	1449	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 06 21:04:34 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062511.D
Acq On : 6 Jan 2025 13:54
Operator : SC
Sample : P2405139-009 Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

MOA 1/6/25

Quant Time: Jan 06 14:16:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	162153	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	695031	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	122904	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	260409	11.788	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.32%				
57) Toluene-d8 (SS2)	12.43	98	723420	13.268	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.16%				
73) Bromofluorobenzene (SS3)	16.82	174	279122	14.835	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.64%				
Target Compounds							Qvalue
2) Propene	3.34	42	560	N.D.			
3) Dichlorodifluoromethan...	3.33	85	236	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	944	0.079	ng		77
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	4.57	56	54	N.D.			
13) Acetone	4.66	58	3202	0.293	ng	#	83
14) Trichlorofluoromethane	4.76	101	1002178	33.713	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	374	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	590273	44.011	ng		93
22) Carbon Disulfide	5.61	76	53673	1.087	ng	#	19
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	2247	0.085	ng		98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.85	56	511	No Calib		#	
41) Benzene	8.91	78	1379	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	10.14	88	255	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062511.D
Acq On : 6 Jan 2025 13:54
Operator : SC
Sample : P2405139-009 Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 06 14:16:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

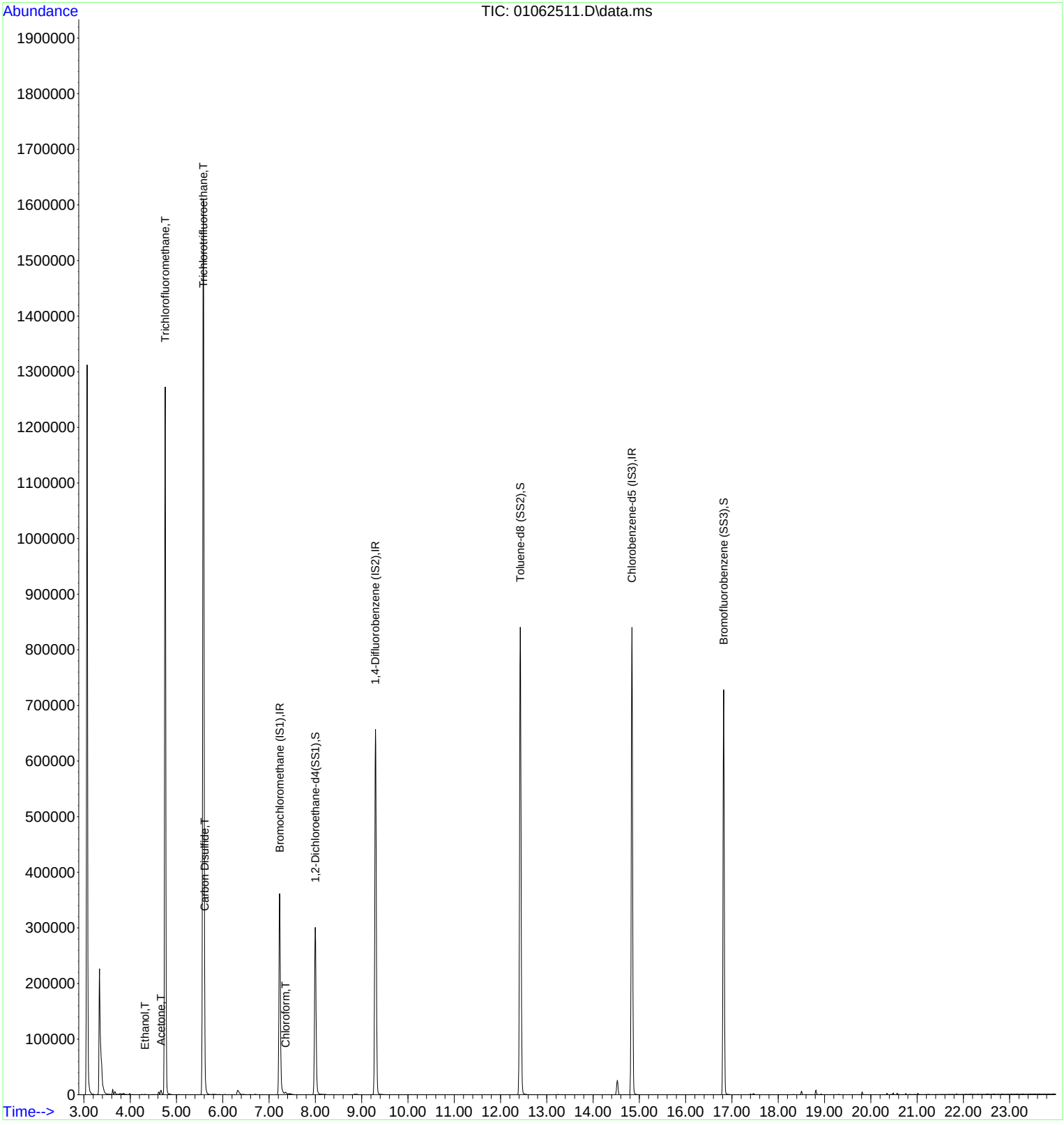
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	484	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	1034	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	286	N.D.		
95) Naphthalene	20.95	128	476	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

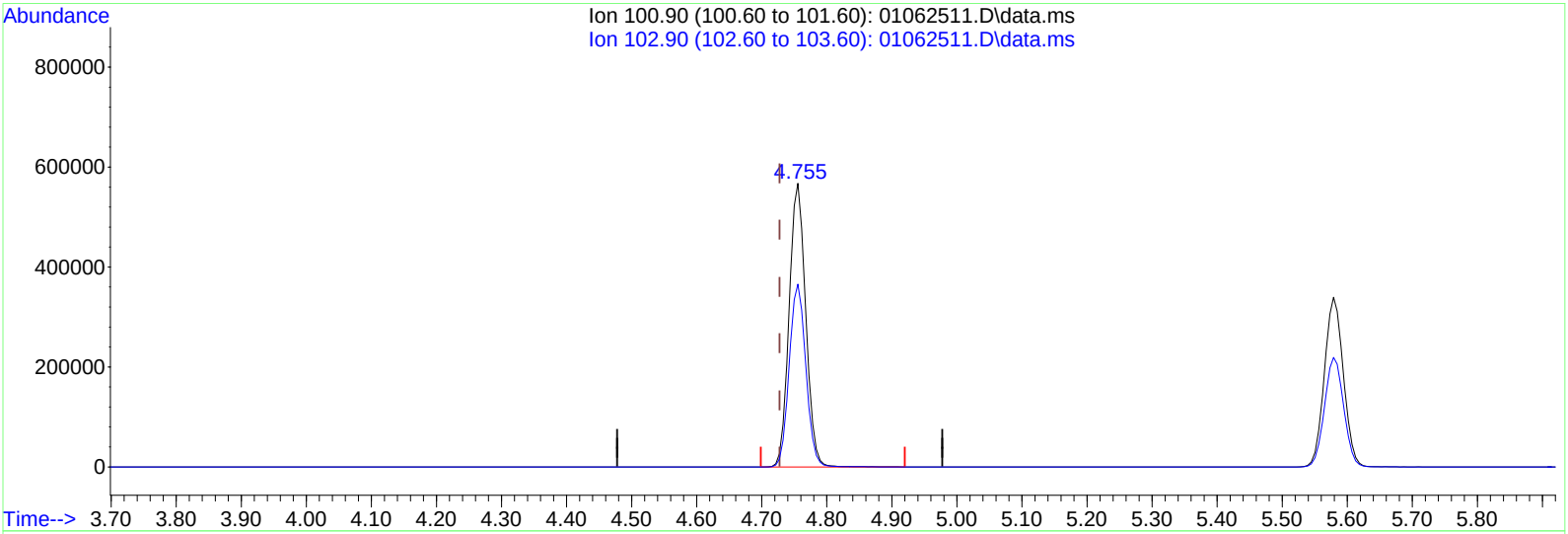
Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062511.D
Acq On : 6 Jan 2025 13:54
Operator : SC
Sample : P2405139-009 Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

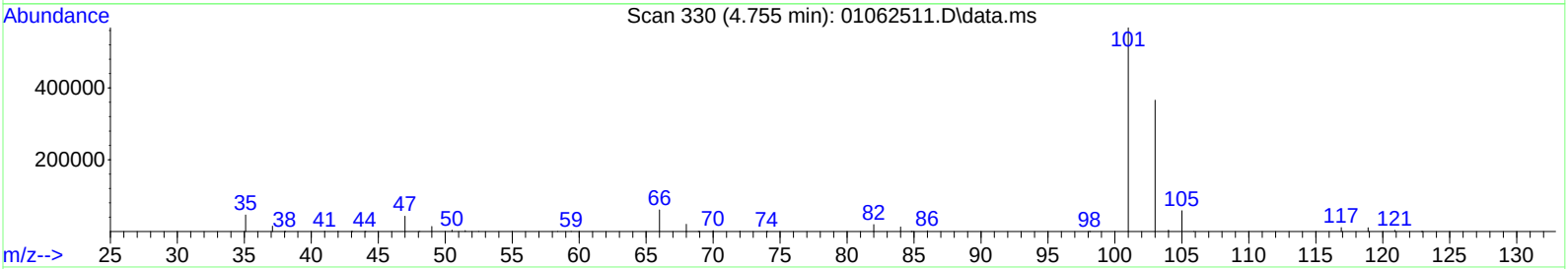
Quant Time: Jan 06 14:16:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

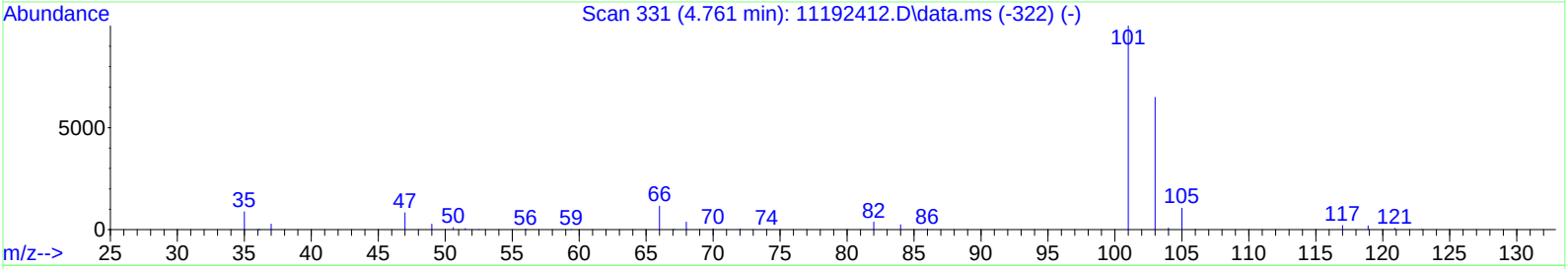


Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062511.D
Acq On : 6 Jan 2025 13:54
Operator : SC
Sample : P2405139-009 Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 06 14:16:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062511.D\data.ms

(14) Trichlorofluoromethane (T)

4.755min (+0.028) 33.71ng

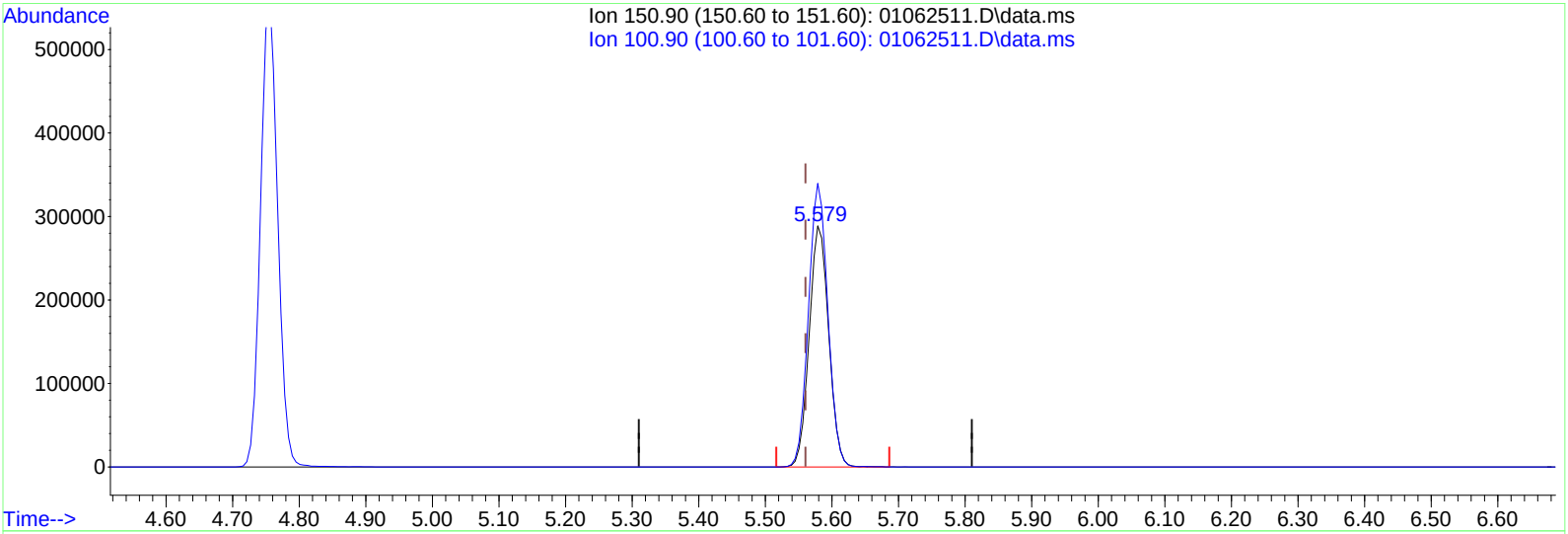
response 1002178

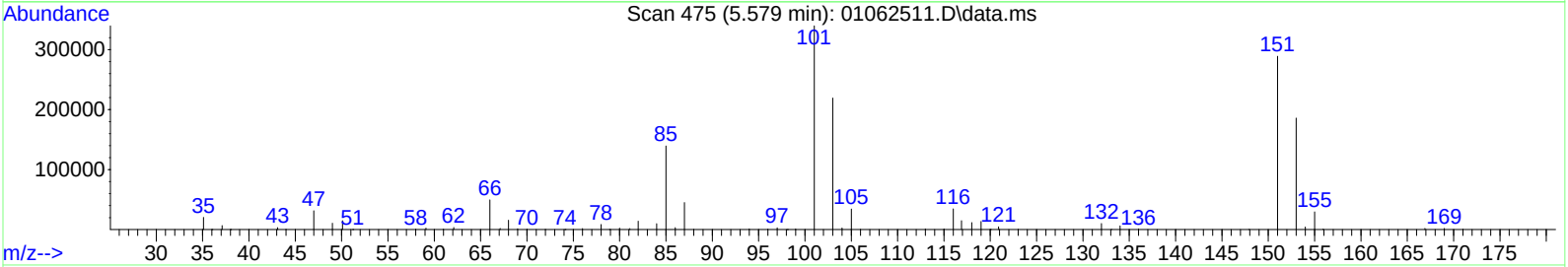
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.77
0.00	0.00	0.00
0.00	0.00	0.00

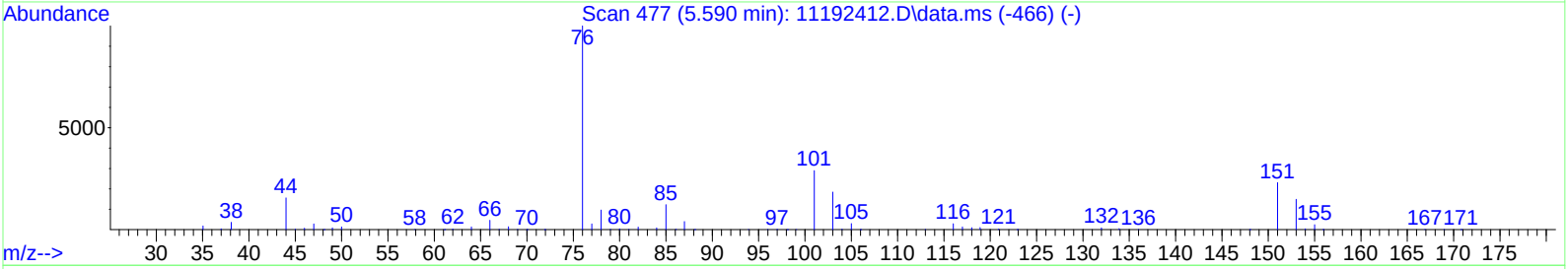
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062511.D
Acq On : 6 Jan 2025 13:54
Operator : SC
Sample : P2405139-009 Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 06 14:16:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062511.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.019) 44.01ng

response 590273

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.54
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062513.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.330	69	79	105	rBV	308370	708134	8.73%	3.156%
2	3.614	124	129	133	rBV	23173	26583	0.33%	0.118%
3	3.660	133	137	146	rVB	11753	19274	0.24%	0.086%
4	4.613	299	305	307	rBV	12797	18933	0.23%	0.084%
5	4.648	307	311	321	rVB2	18835	35356	0.44%	0.158%
6	4.750	321	329	344	rBV	3131106	5441367	67.08%	24.250%
7	5.579	463	475	495	rBV	3948643	8112178	100.00%	36.153%
8	6.306	595	603	619	rBV	29900	70499	0.87%	0.314%
9	7.225	756	765	782	rBV	356605	783914	9.66%	3.494%
10	7.350	782	787	799	rVB2	7272	15582	0.19%	0.069%
11	7.998	891	901	920	rBV	287731	663011	8.17%	2.955%
12	9.298	1120	1130	1146	rBV	634550	1437815	17.72%	6.408%
13	12.427	1671	1681	1695	rBV	798889	1825661	22.51%	8.136%
14	14.522	2041	2050	2063	rBB	80913	174666	2.15%	0.778%
15	14.840	2096	2106	2126	rBV	803877	1658524	20.44%	7.391%
16	16.822	2446	2455	2467	rBV	701357	1332970	16.43%	5.941%
17	18.502	2746	2751	2756	rVB2	21738	32510	0.40%	0.145%
18	18.809	2800	2805	2812	rBV	17471	27620	0.34%	0.123%
19	19.814	2976	2982	2988	rBV	13880	20293	0.25%	0.090%
20	20.348	3071	3076	3083	rVB	7898	10227	0.13%	0.046%
21	20.484	3096	3100	3105	rVB2	8391	10206	0.13%	0.045%
22	20.569	3108	3115	3120	rBV	8552	13141	0.16%	0.059%

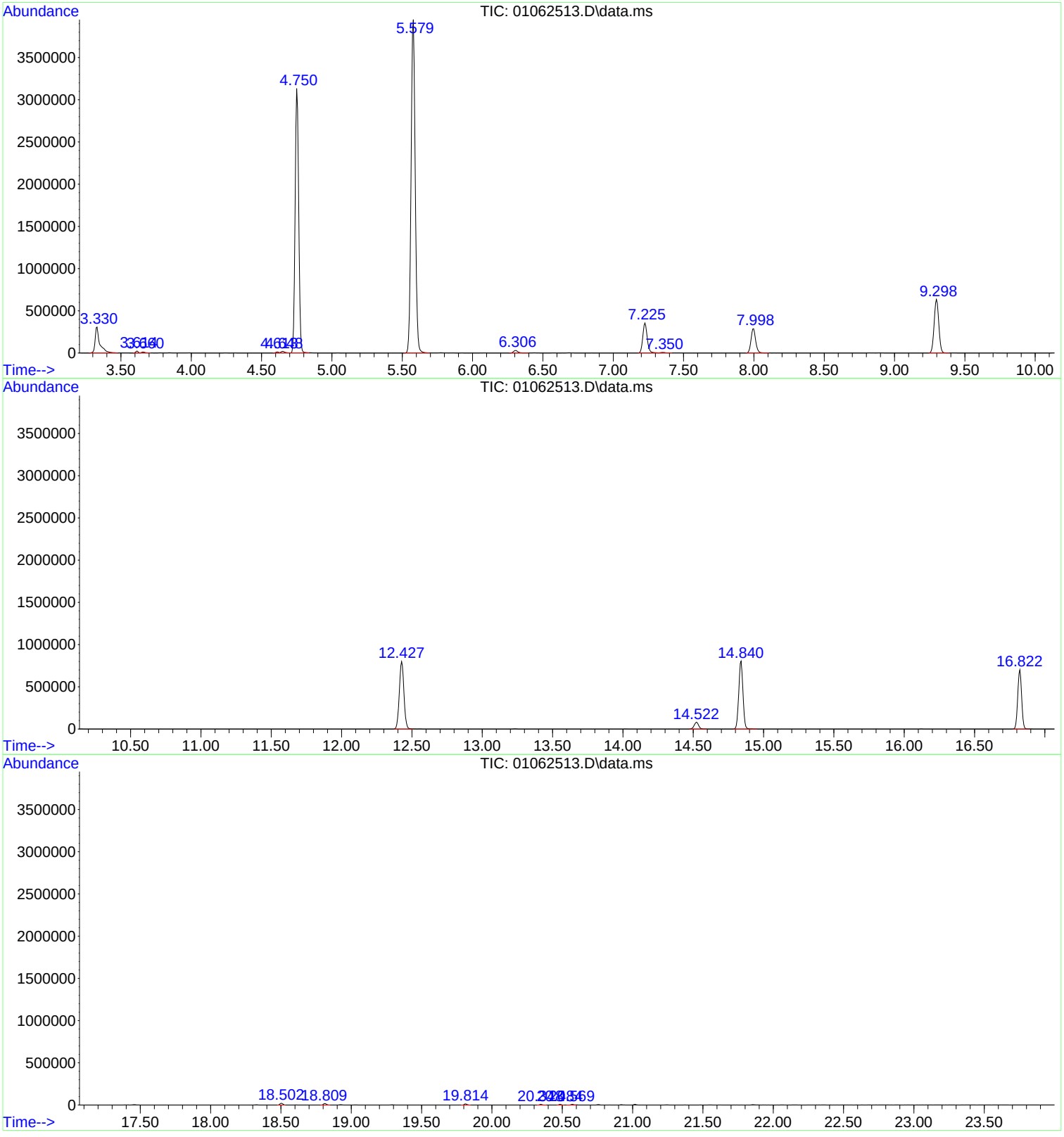
Sum of corrected areas: 22438464

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:58
Operator : SC
Sample : P2405139-009 (100mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062513.D
Acq On : 6 Jan 2025 14:588
Operator : SCC
Sample : P2405139-009 (100mL))
Misc : S37-123124011
ALS Vial : 6 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

MOA 1/6/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

MOA 1/6/25

Quant Time: Jan 06 20:37:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	157985	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	678920	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	120078	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	256203	11.903	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.20%				
57) Toluene-d8 (SS2)	12.43	98	699563	13.133	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%				
73) Bromofluorobenzene (SS3)	16.82	174	271558	14.773	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.16%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.38	85	17573	0.569	ng		99
4) Chloromethane	0.00	50	0	N.D. d			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	383	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	4.01	94	140	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.31	45	2149	0.184	ng		90
11) Acetonitrile	4.46	41	412	N.D.			
12) Acrolein	4.55	56	412	N.D.			
13) Acetone	4.64	58	17984	1.691	ng		96
14) Trichlorofluoromethane	4.75	101	548426	18.936	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	23159	0.608	ng		98
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.34	59	114	N.D.			
19) Methylene Chloride	5.35	84	117	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	274996	21.045	ng		92
22) Carbon Disulfide	5.61	76	14457	0.300	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.44	86	242	0.094	ng	#	31
27) 2-Butanone (MEK)	6.69	72	1005	0.118	ng	#	47
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D. d			
31) n-Hexane	7.30	57	245	N.D.			
32) Chloroform	7.35	83	2534	0.099	ng		95
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	1084	No Calib		#	
41) Benzene	8.90	78	2371	N.D.			
42) Carbon Tetrachloride	9.05	117	630	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	408	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 06 20:37:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

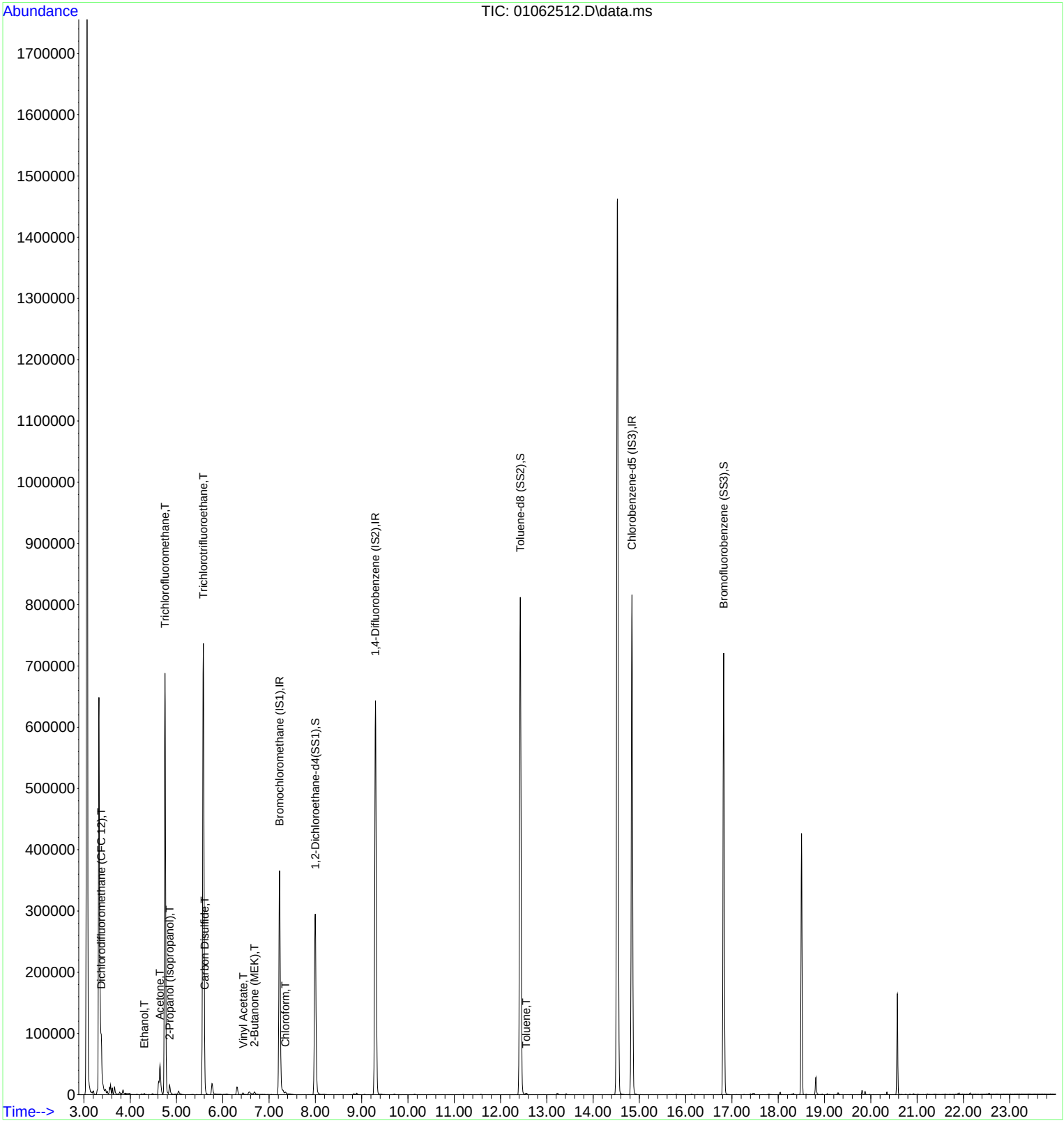
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	2812	0.055 ng	100
59) 2-Hexanone	12.94	43	202	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	132	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	0.00	91	0	N.D.	
67) m- & p-Xylenes	15.64	91	236	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.50	105	2095	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	18.50	146	426	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	332	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	310	N.D.	
95) Naphthalene	20.94	128	549	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	19.38	91	168	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 06 20:37:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
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Quant Time: Jan 06 20:37:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

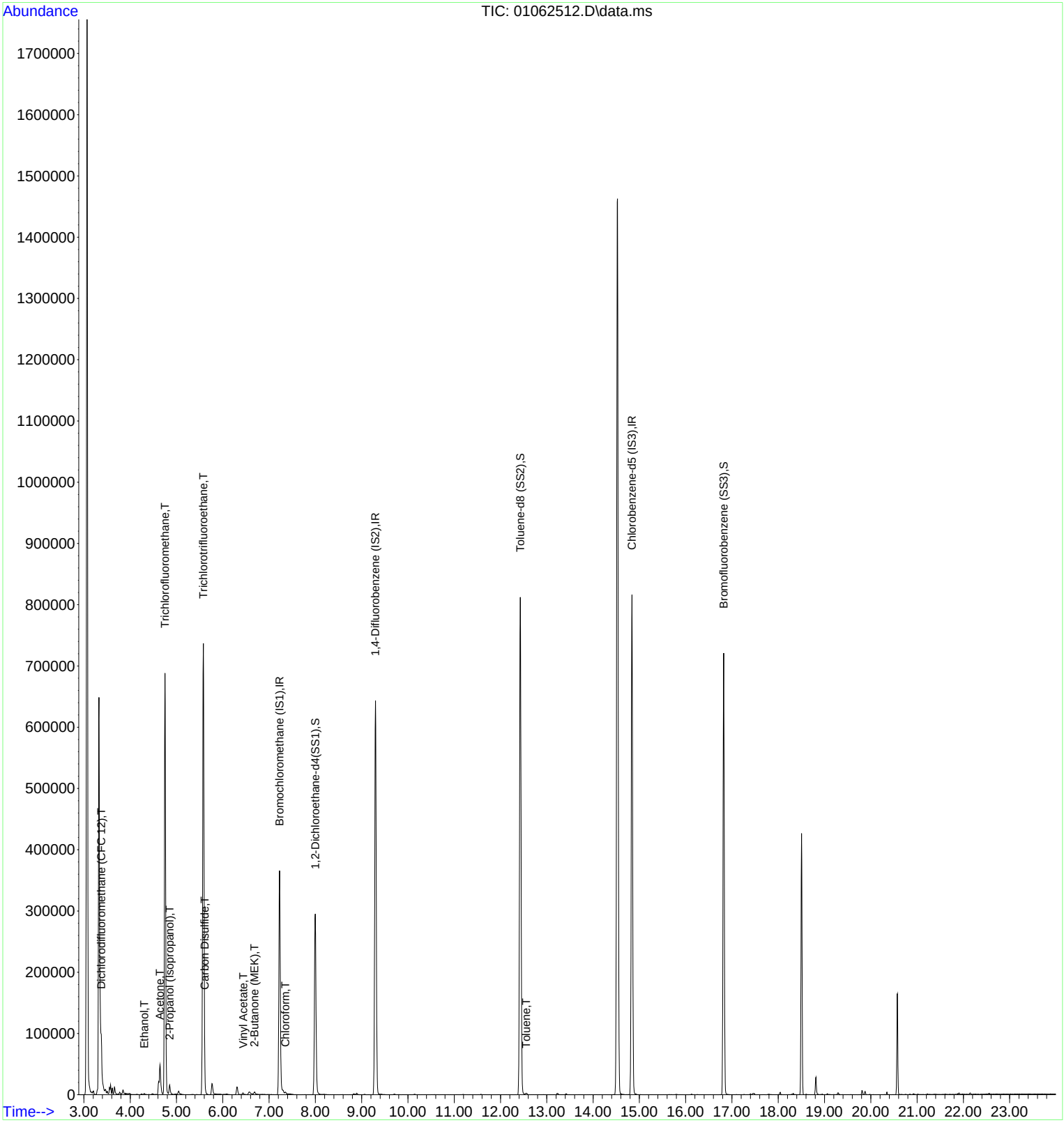
VOA 1/6/25

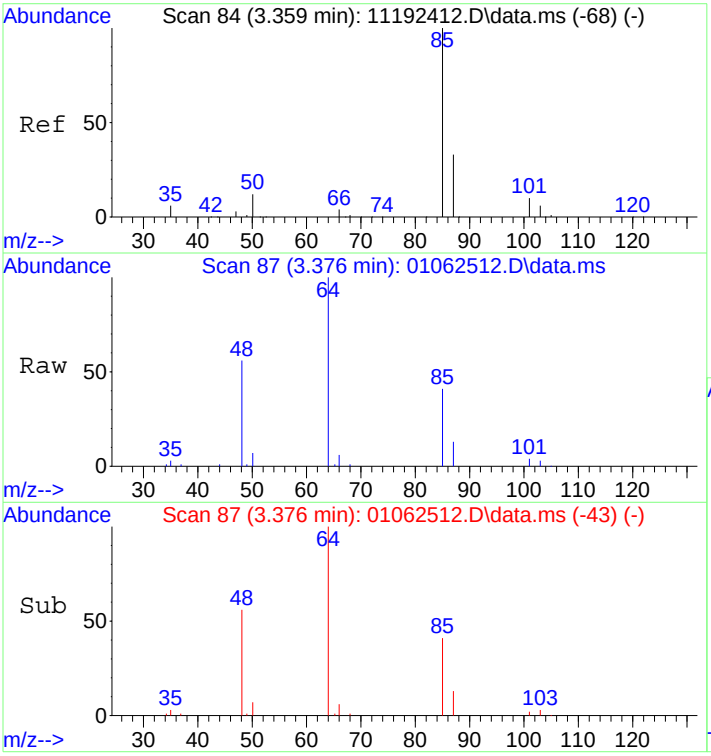
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	157985	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	678920	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	120078	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	256203	11.903	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.20%				
57) Toluene-d8 (SS2)	12.43	98	699563	13.133	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%				
73) Bromofluorobenzene (SS3)	16.82	174	271558	14.773	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.16%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	17573	0.569	ng		99
10) Ethanol	4.31	45	2149	0.184	ng		90
13) Acetone	4.64	58	17984	1.691	ng		96
14) Trichlorofluoromethane	4.75	101	548426	18.936	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	23159	0.608	ng		98
21) Trichlorotrifluoroethane	5.58	151	274996	21.045	ng		92
22) Carbon Disulfide	5.61	76	14457	0.300	ng	#	1
26) Vinyl Acetate	6.44	86	242	0.094	ng	#	31
27) 2-Butanone (MEK)	6.69	72	1005	0.118	ng	#	47
32) Chloroform	7.35	83	2534	0.099	ng		95
58) Toluene	12.56	91	2812	0.055	ng		100

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 06 20:37:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

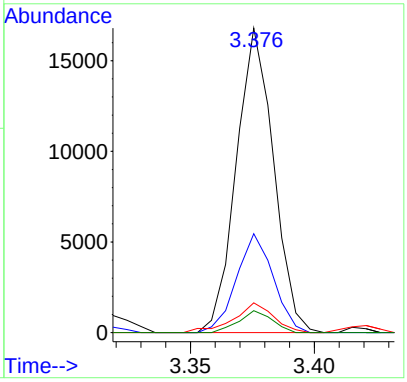


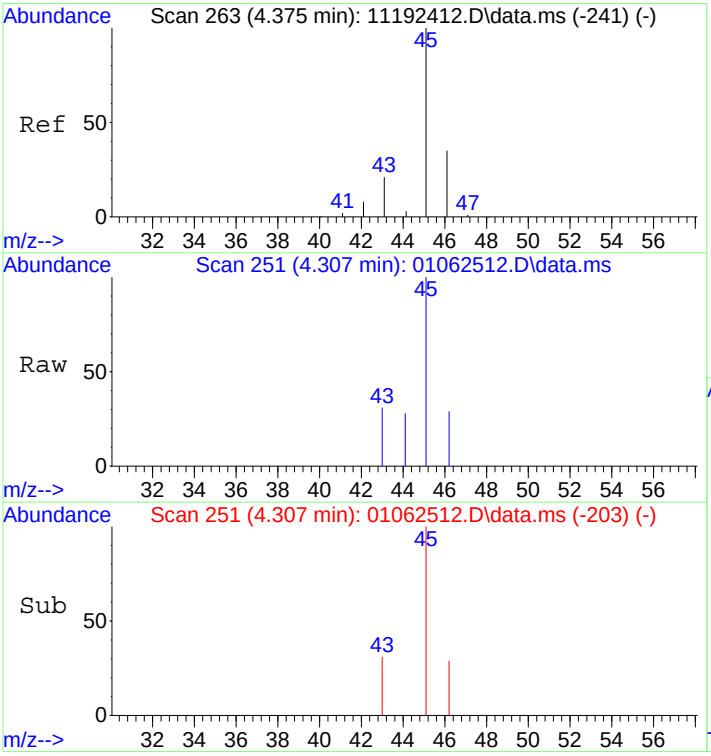


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.57 ng
RT: 3.38 min Scan# 87
Delta R.T. -0.000 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 85 Resp: 17573

Ion	Ratio	Lower	Upper
85	100		
87	32.1	12.6	52.6
101	10.3	0.0	29.6
103	6.4	0.0	26.2

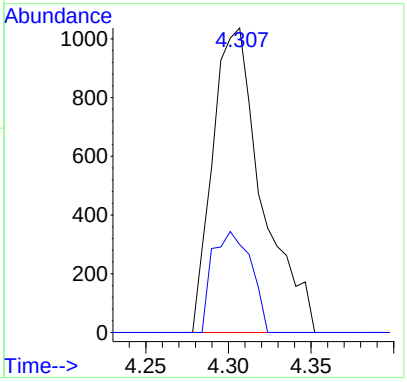


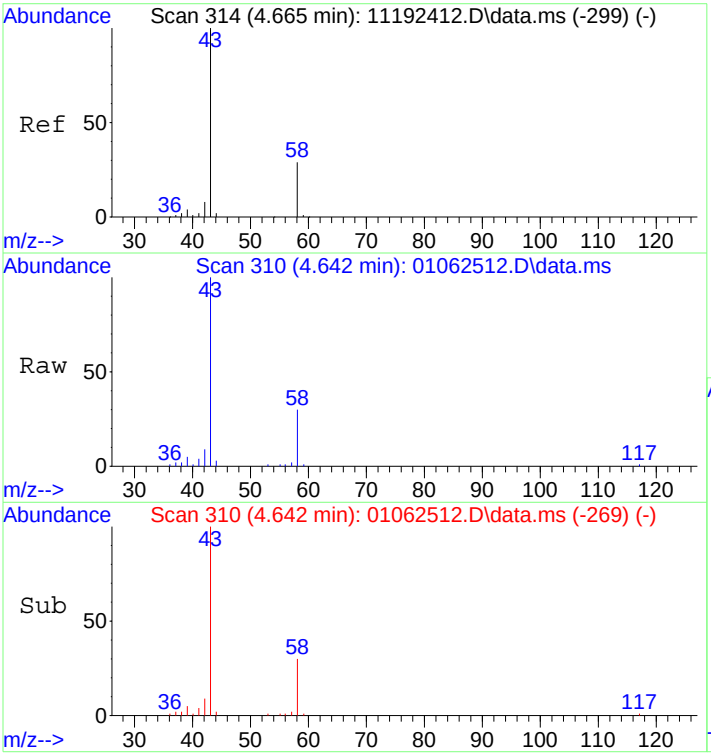


#10
Ethanol
Concen: 0.18 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.022 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 45 Resp: 2149

Ion	Ratio	Lower	Upper
45	100		
46	26.0	11.8	51.8

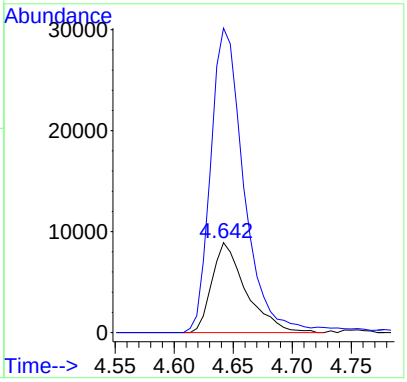


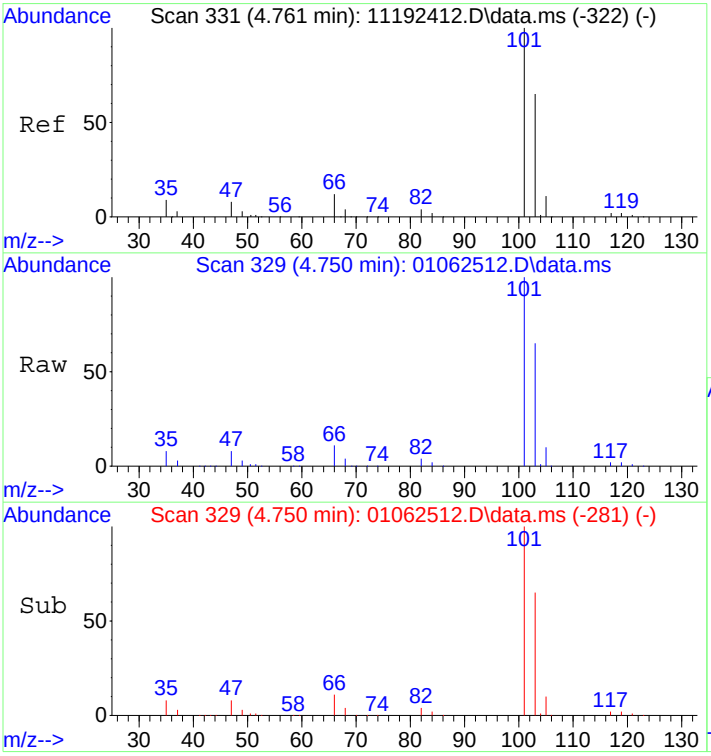


#13
Acetone
Concen: 1.69 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.019 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 58 Resp: 17984

Ion	Ratio	Lower	Upper
58	100		
43	334.2	312.5	372.5

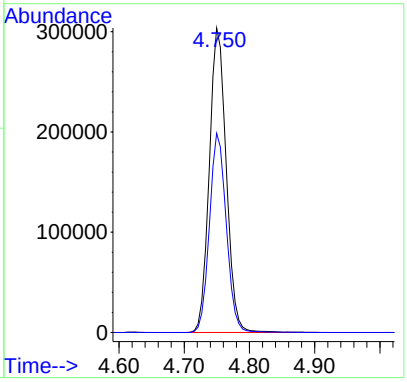


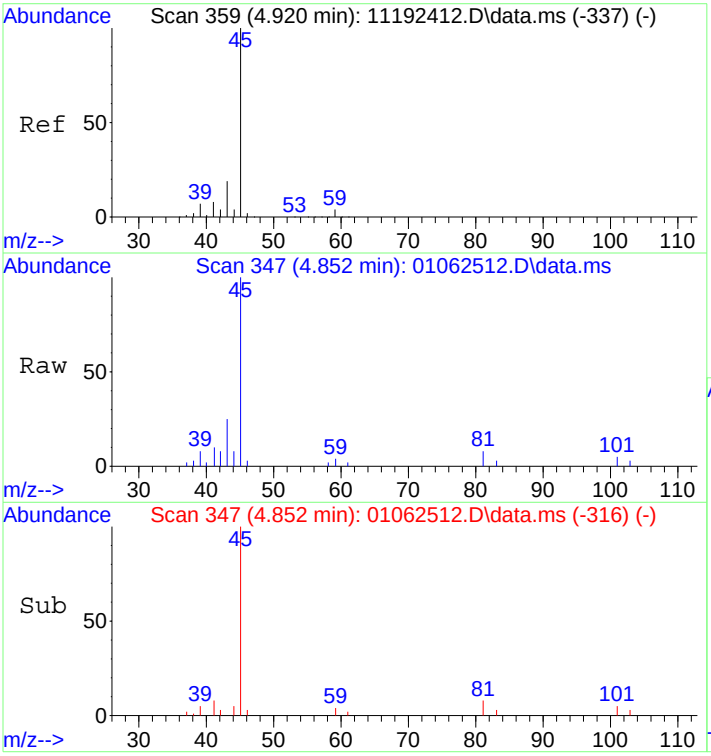


#14
Trichlorofluoromethane
Concen: 18.94 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion:101 Resp: 548426

Ion	Ratio	Lower	Upper
101	100		
103	64.9	44.8	84.8

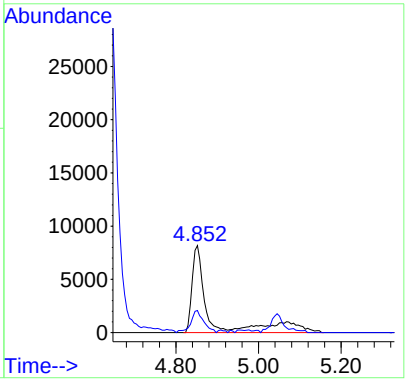


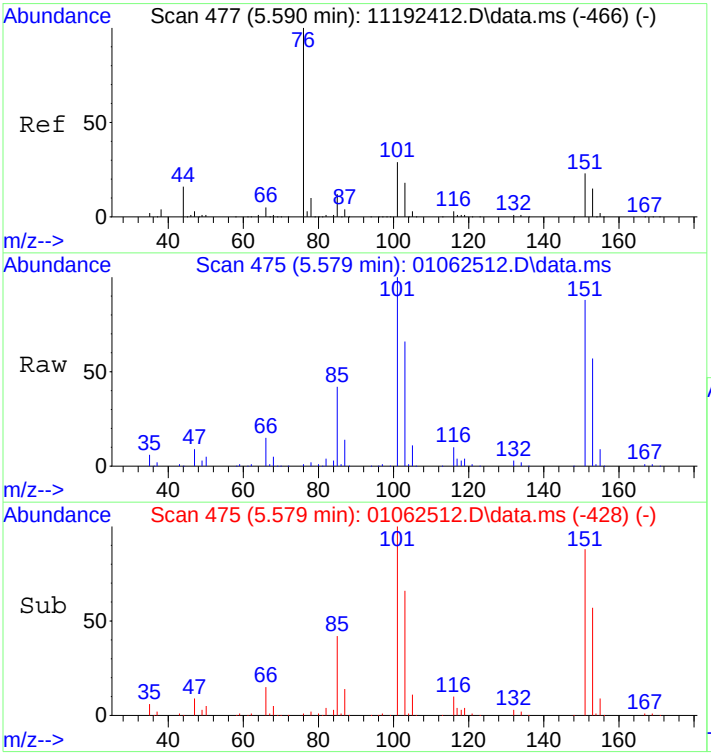


#15
2-Propanol (Isopropanol)
Concen: 0.61 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 45 Resp: 23159

Ion	Ratio	Lower	Upper
45	100		
43	19.2	0.2	40.2

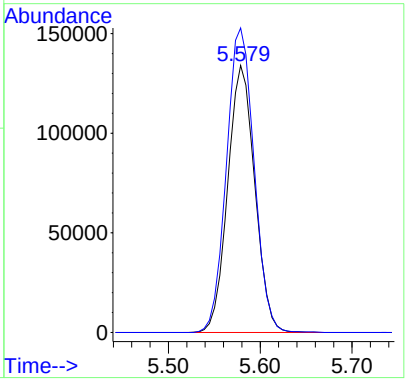


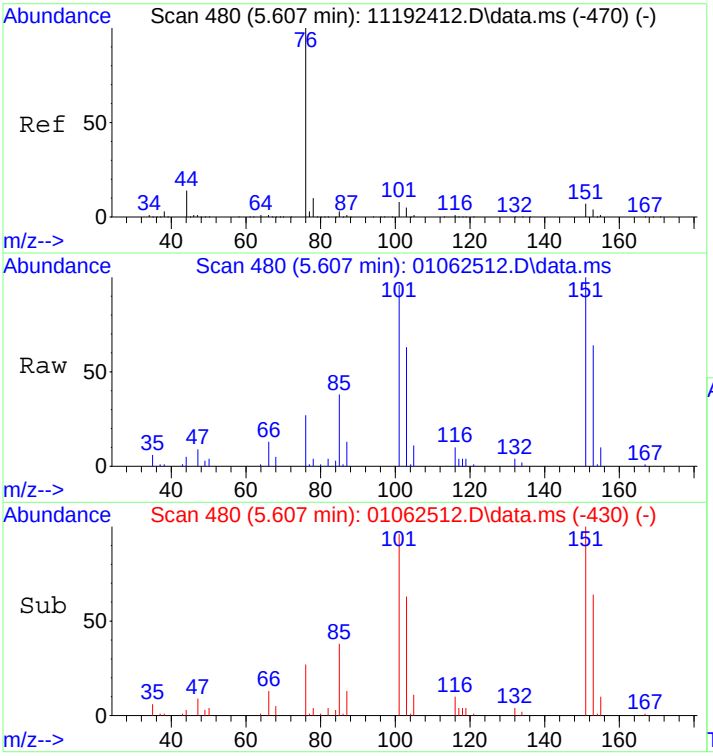


#21
Trichlorotrifluoroethane
Concen: 21.04 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion:151 Resp: 274996

Ion	Ratio	Lower	Upper
151	100		
101	116.3	105.0	145.0

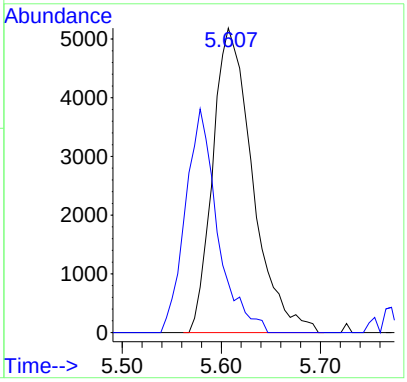


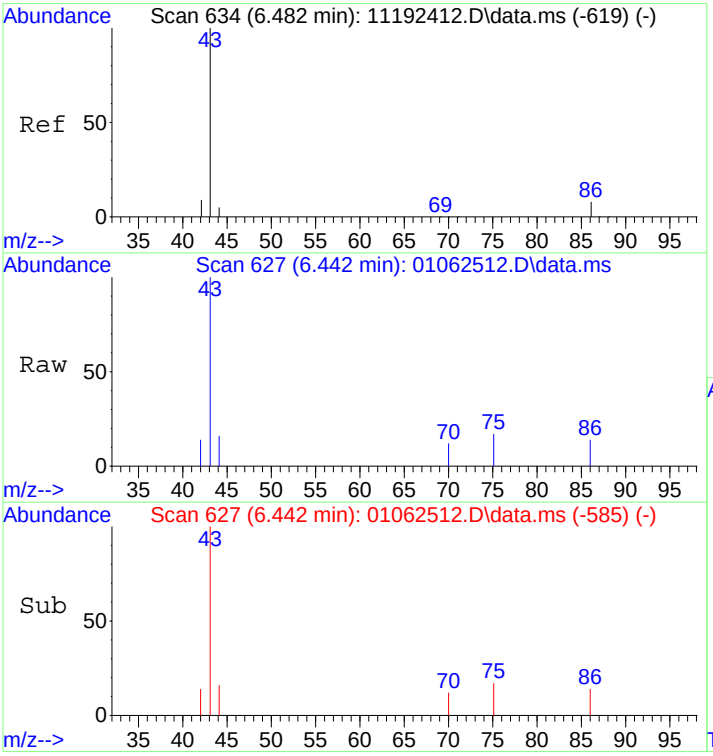


#22
Carbon Disulfide
Concen: 0.30 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.035 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 76 Resp: 14457

Ion	Ratio	Lower	Upper
76	100		
78	59.4	0.0	29.6#

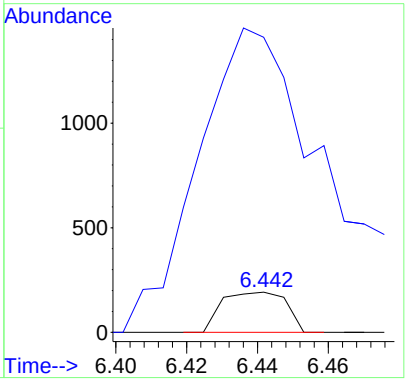


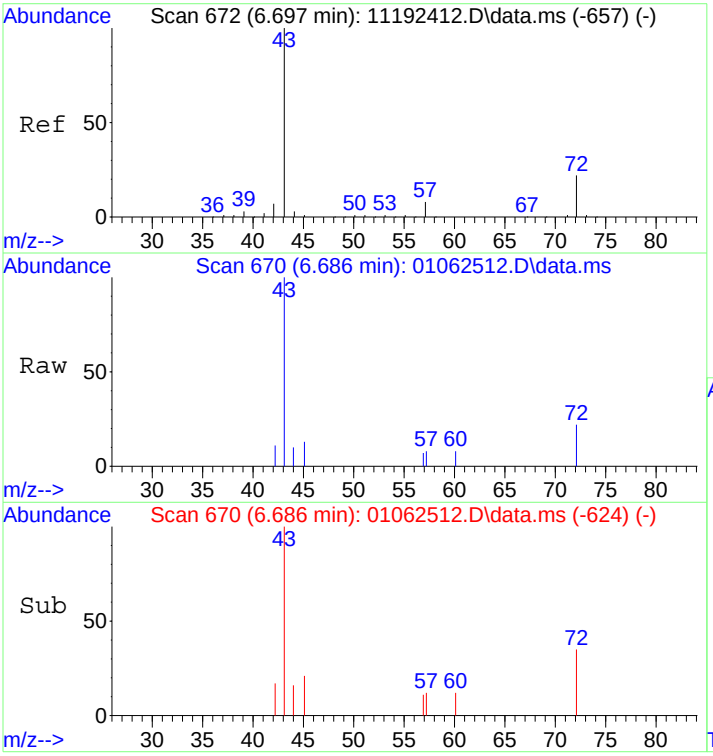


#26
Vinyl Acetate
Concen: 0.09 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 86 Resp: 242

Ion	Ratio	Lower	Upper
86	100		
43	1735.5	1331.6	1371.6#

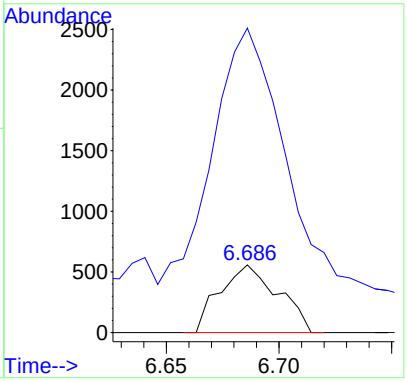


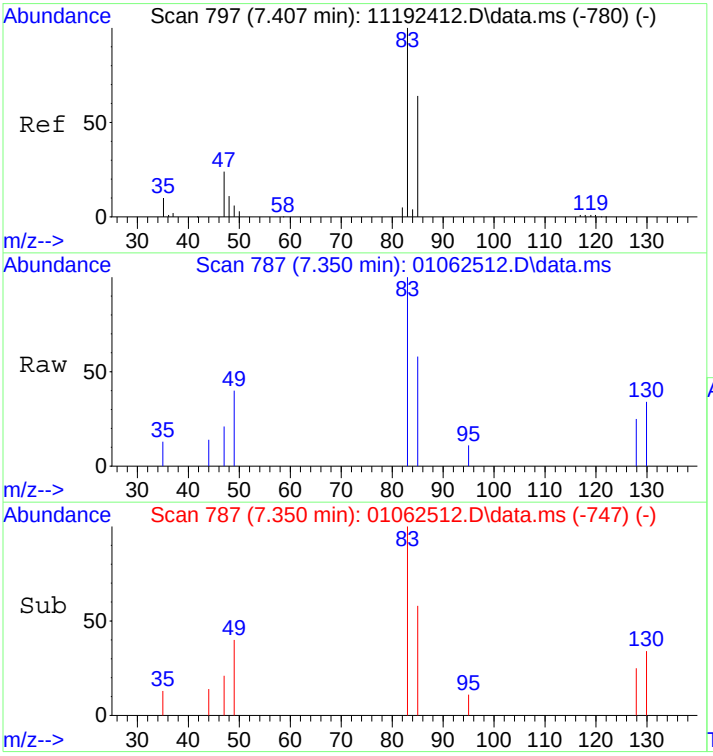


#27
2-Butanone (MEK)
Concen: 0.12 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 72 Resp: 1005

Ion	Ratio	Lower	Upper
72	100		
43	598.6	439.8	479.8#

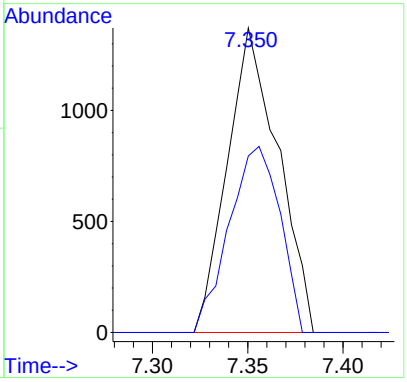


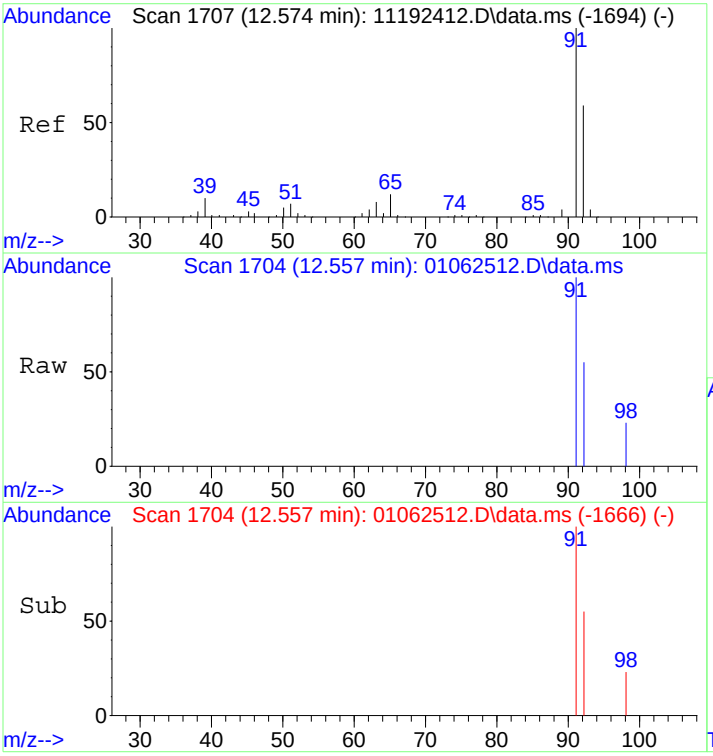


#32
Chloroform
Concen: 0.10 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 83 Resp: 2534

Ion	Ratio	Lower	Upper
83	100		
85	61.4	45.1	85.1

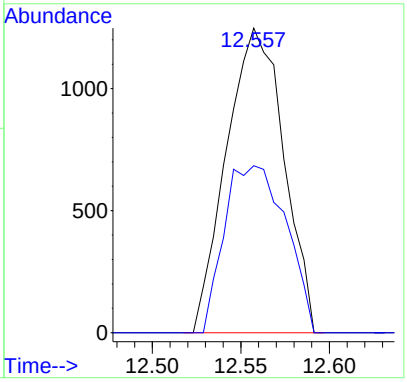




#58
Toluene
Concen: 0.05 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01062512.D
Acq: 6 Jan 2025 14:26

Tgt Ion: 91 Resp: 2812

Ion	Ratio	Lower	Upper
91	100		
92	58.9	39.2	79.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 21:05:55 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

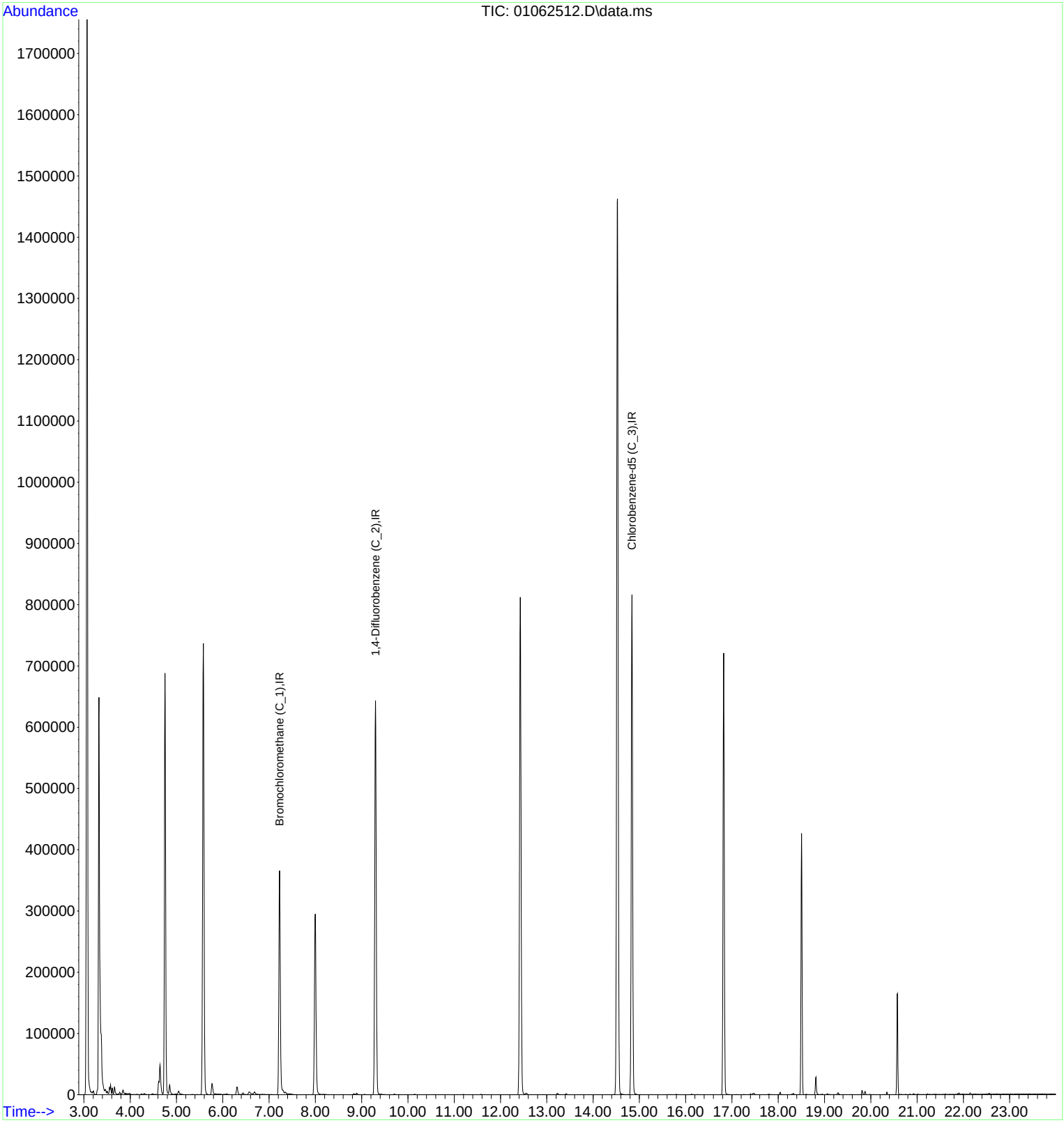
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	161023	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	678949	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	120078	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	191	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	1374	N.D.		
4) 1,1-Difluoroethane	3.24	65	110	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d	
6) 1-Chloro-1,1-Difluoroe...	3.49	65	367	N.D.		
7) Dichlorofluoromethane ...	4.25	67	1305	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	123	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.36	43	187	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.80	174	114	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	20.57	119	576	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 06 21:05:55 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062512.D\data.ms

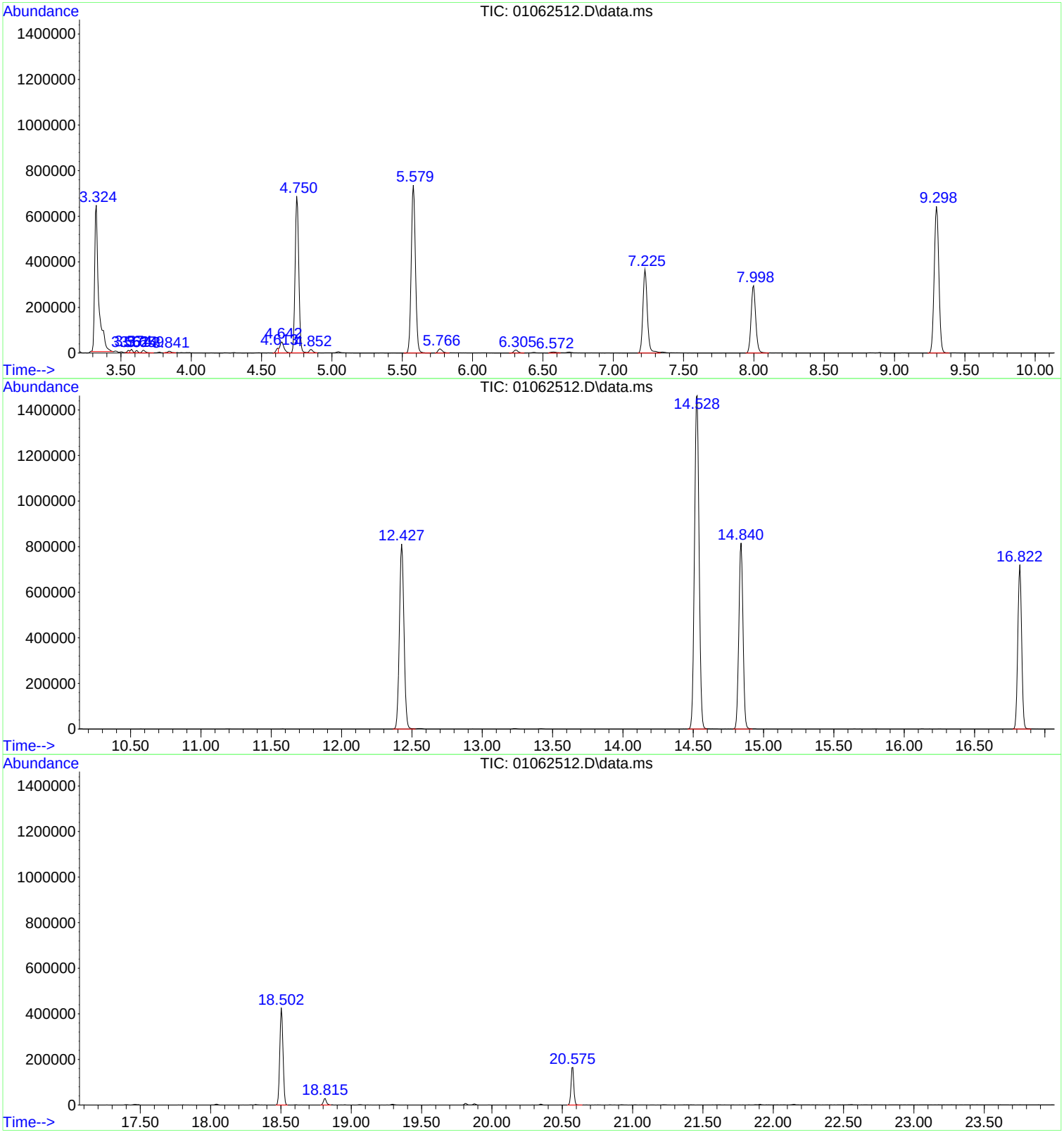
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.324	72	78	99	rVB	642349	1280203	38.51%	7.781%
2	3.552	114	118	120	rBV	9958	11654	0.35%	0.071%
3	3.574	120	122	126	rVV	14530	14925	0.45%	0.091%
4	3.614	126	129	133	rVV2	9422	10403	0.31%	0.063%
5	3.659	133	137	150	rVB	11726	19019	0.57%	0.116%
6	3.841	162	169	178	rBV3	6649	11810	0.36%	0.072%
7	4.613	299	305	306	rBV	20985	25666	0.77%	0.156%
8	4.642	306	310	321	rVV	48437	97755	2.94%	0.594%
9	4.750	321	329	342	rVV	687552	1228818	36.97%	7.469%
10	4.852	342	347	355	rVB	14883	25884	0.78%	0.157%
11	5.579	463	475	497	rBB	736968	1538571	46.29%	9.352%
12	5.766	502	508	520	rBV	18030	39316	1.18%	0.239%
13	6.305	595	603	614	rBV	12759	28465	0.86%	0.173%
14	6.572	644	650	659	rBV5	4602	15029	0.45%	0.091%
15	7.225	756	765	784	rBV	365931	803501	24.17%	4.884%
16	7.998	891	901	920	rBV	295211	675859	20.33%	4.108%
17	9.298	1119	1130	1146	rBV	643220	1465293	44.08%	8.906%
18	12.427	1670	1681	1698	rBV	812264	1846454	55.55%	11.223%
19	14.528	2039	2051	2063	rBV	1463014	3323985	100.00%	20.204%
20	14.840	2096	2106	2120	rBV	816389	1687044	50.75%	10.254%
21	16.822	2446	2455	2469	rBV	720989	1354350	40.74%	8.232%
22	18.502	2744	2751	2759	rVB	426460	676188	20.34%	4.110%
23	18.815	2800	2806	2813	rBV	28627	44316	1.33%	0.269%
24	20.575	3109	3116	3128	rBB2	165064	227650	6.85%	1.384%

Sum of corrected areas: 16452158

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:26
Operator : SC
Sample : P2405139-010 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062512.D
Acq On : 6 Jan 2025 14:266
Operator : SCC
Sample : P2405139-010 (400mL))
Misc : S37-123124011
ALS Vial : 7 Sample Multiplier: 11

MA 1/6/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected

****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 20:46:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	156551	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	675900	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	121465	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	259034	12.145 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.12%			
57) Toluene-d8 (SS2)	12.43	98	704644	13.077 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%			
73) Bromofluorobenzene (SS3)	16.82	174	274842	14.781 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.24%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	17358	0.567 ng		99
4) Chloromethane	0.00	50	0	N.D. d		
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	342	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	3.78	54	107	N.D.		
8) Bromomethane	4.02	94	134	N.D.		
9) Chloroethane	0.00	64	0	N.D. d		
10) Ethanol	4.32	45	1801	0.156 ng		78
11) Acetonitrile	4.47	41	1820	0.061 ng	#	70
12) Acrolein	0.00	56	0	N.D. d		
13) Acetone	4.64	58	37662	3.573 ng	#	84
14) Trichlorofluoromethane	4.75	101	2632545	91.727 ng		100
15) 2-Propanol (Isopropanol)	4.95	45	113	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.34	59	7595	0.251 ng		85
19) Methylene Chloride	5.36	84	665	N.D.		
20) 3-Chloro-1-propene (Al...	5.40	41	259	N.D.		
21) Trichlorotrifluoroethane	5.58	151	1455387	112.397 ng		92
22) Carbon Disulfide	5.60	76	33495	0.702 ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.68	72	6447	0.761 ng	#	91
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.31	57	920	N.D.		
32) Chloroform	7.36	83	22929	0.900 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	2439	No Calib	#	
41) Benzene	8.89	78	7004	0.129 ng		99
42) Carbon Tetrachloride	9.07	117	512	N.D.		
43) Cyclohexane	9.21	84	204	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.06	83	571	N.D.		
47) Trichloroethene	10.15	130	3190	0.206 ng		97
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 20:46:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

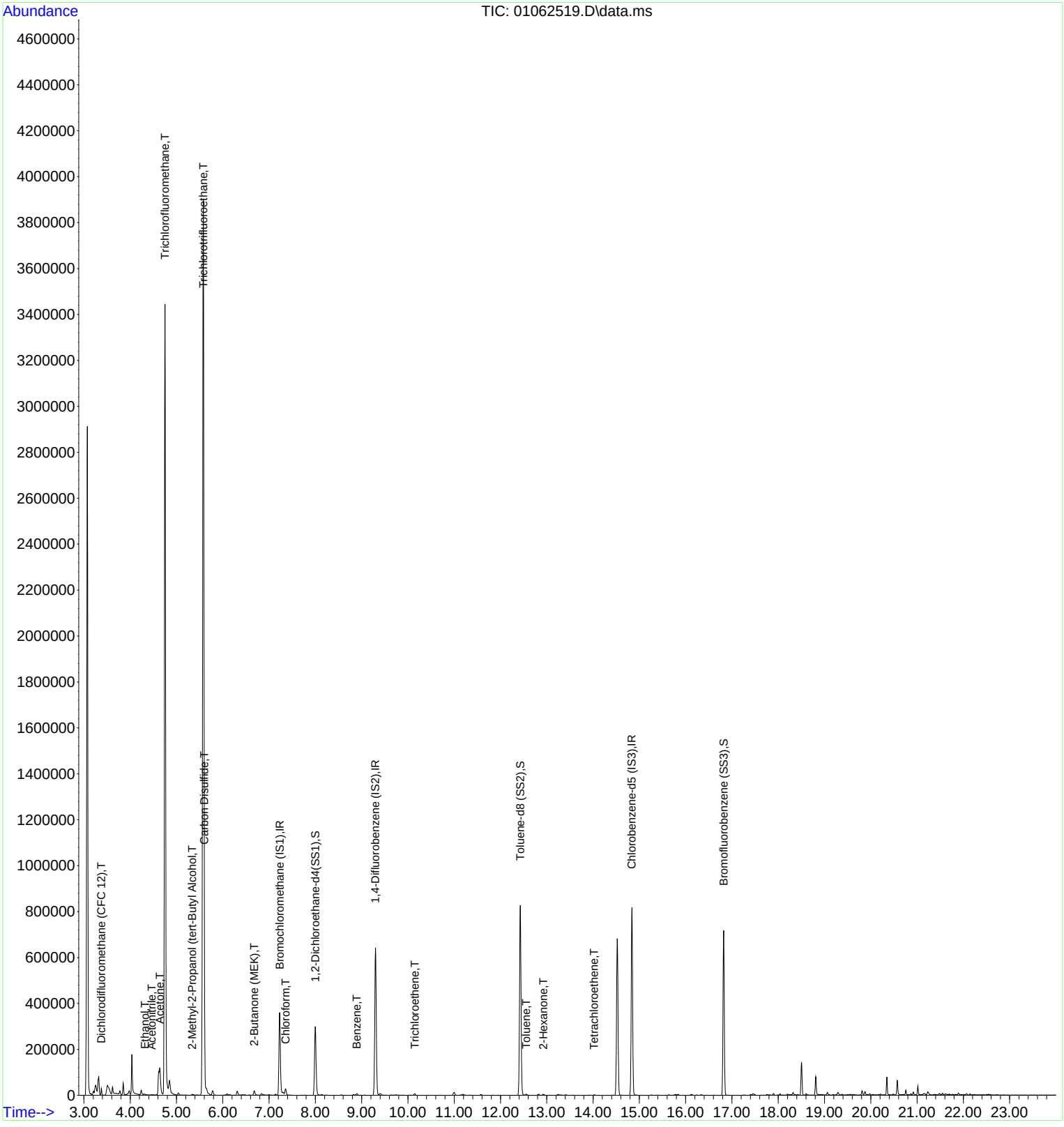
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.34	58	127	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	5470	0.106 ng	92
59) 2-Hexanone	12.93	43	5290	0.209 ng	86
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	13.93	57	177	N.D.	
64) Tetrachloroethene	14.02	166	1084	0.070 ng	93
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	1292	N.D.	
67) m- & p-Xylenes	15.64	91	2050	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.10	104	584	N.D.	
70) o-Xylene	16.24	91	579	N.D.	
71) n-Nonane	16.62	43	843	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	697	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.86	105	604	N.D.	
79) 1,3,5-Trimethylbenzene	17.95	105	276	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	1385	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	108	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	665	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.09	68	262	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	216	N.D.	
95) Naphthalene	20.94	128	868	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.21	55	133	No Calib #	
99) tert-Butylbenzene	18.42	119	170	N.D.	
100) n-Butylbenzene	19.38	91	1007	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 20:46:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

VOA 1/6/25

Quant Time: Jan 06 20:46:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

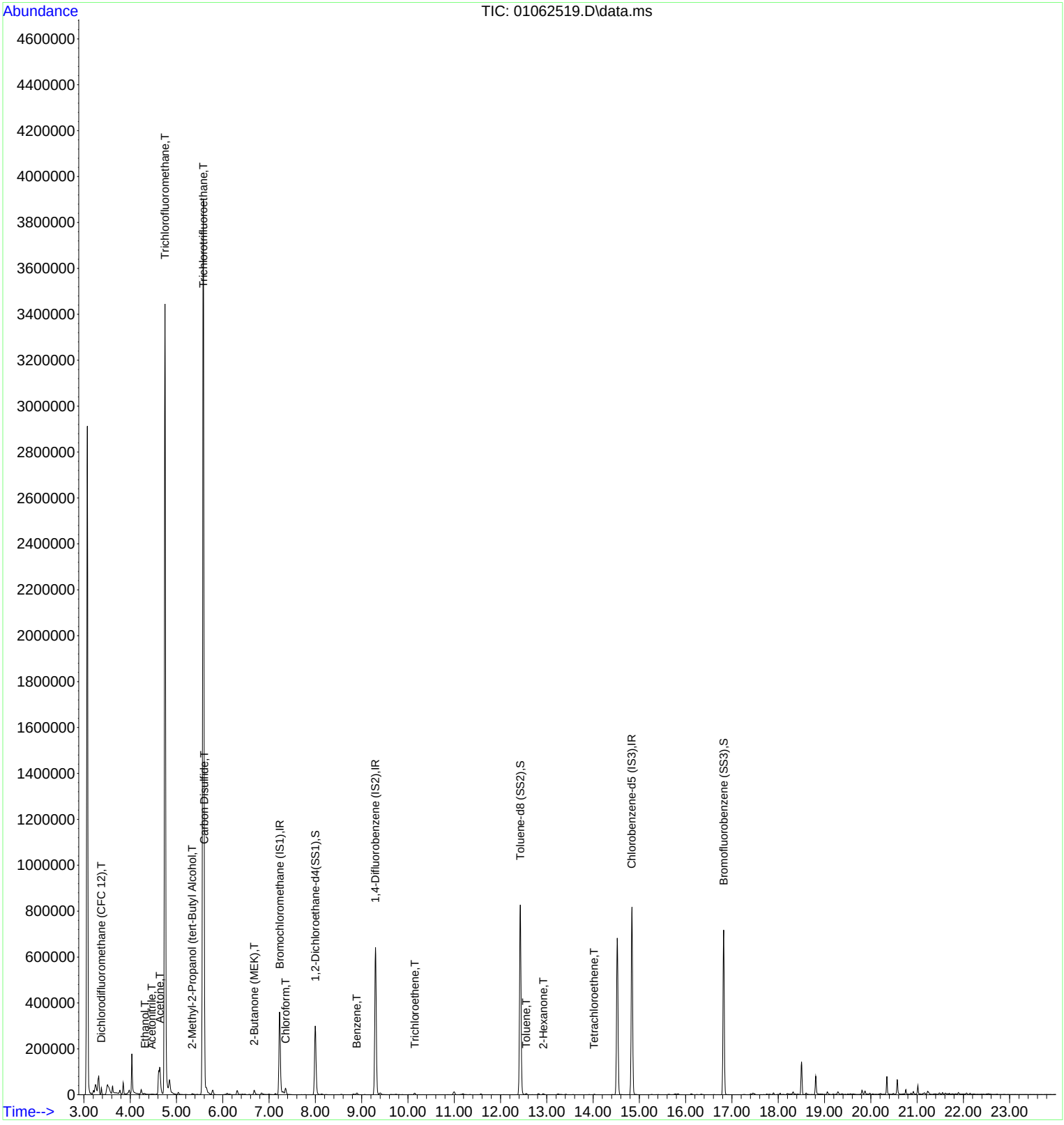
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	156551	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	675900	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	121465	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	259034	12.145	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.12%				
57) Toluene-d8 (SS2)	12.43	98	704644	13.077	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
73) Bromofluorobenzene (SS3)	16.82	174	274842	14.781	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.24%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	17358	0.567	ng		99
10) Ethanol	4.32	45	1801	0.156	ng		78
11) Acetonitrile	4.47	41	1820	0.061	ng	#	70
13) Acetone	4.64	58	37662	3.573	ng	#	84
14) Trichlorofluoromethane	4.75	101	2632545	91.727	ng		100
18) 2-Methyl-2-Propanol (t...	5.34	59	7595	0.251	ng		85
21) Trichlorotrifluoroethane	5.58	151	1455387	112.397	ng		92
22) Carbon Disulfide	5.60	76	33495	0.702	ng	#	1
27) 2-Butanone (MEK)	6.68	72	6447	0.761	ng	#	91
32) Chloroform	7.36	83	22929	0.900	ng		99
41) Benzene	8.89	78	7004	0.129	ng		99
47) Trichloroethene	10.15	130	3190	0.206	ng		97
58) Toluene	12.56	91	5470	0.106	ng		92
59) 2-Hexanone	12.93	43	5290	0.209	ng		86
64) Tetrachloroethene	14.02	166	1084	0.070	ng		93

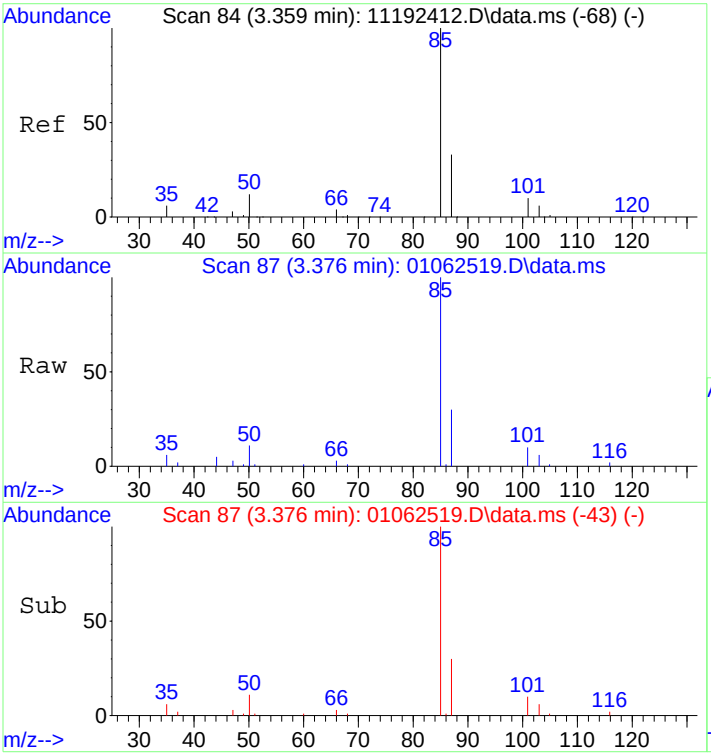
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 20:46:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

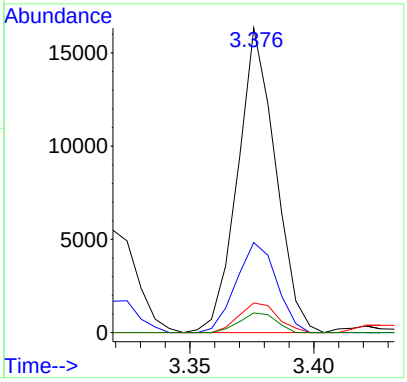


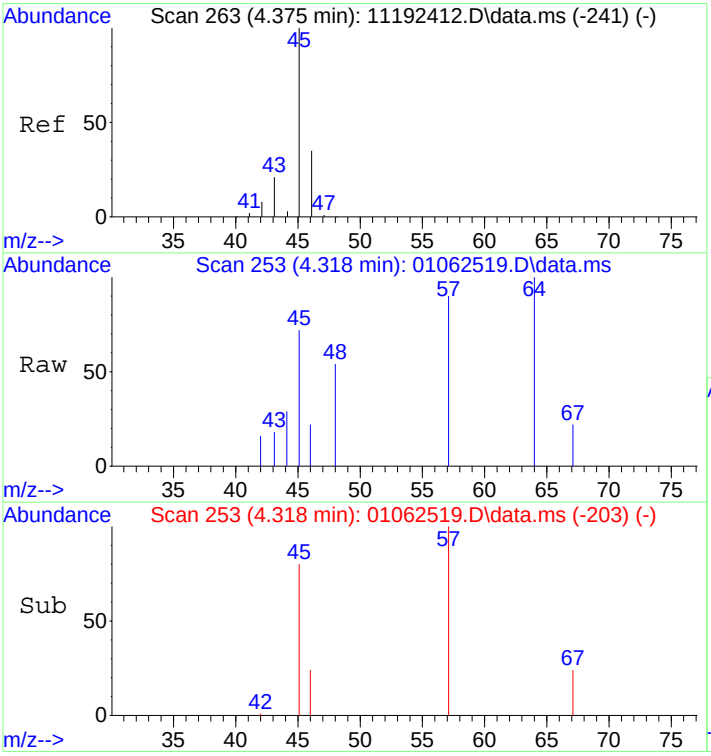


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.57 ng
RT: 3.38 min Scan# 87
Delta R.T. -0.000 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 85 Resp: 17358

Ion	Ratio	Lower	Upper
85	100		
87	31.7	12.6	52.6
101	10.0	0.0	29.6
103	6.3	0.0	26.2

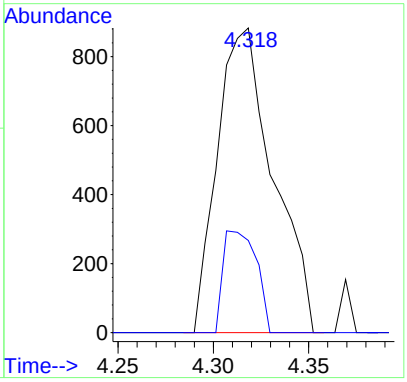


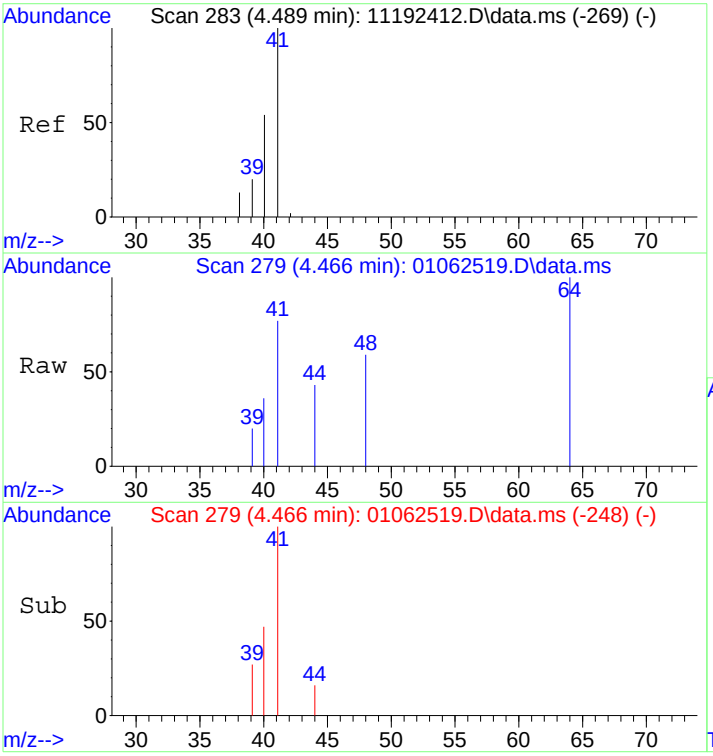


#10
Ethanol
Concen: 0.16 ng
RT: 4.32 min Scan# 253
Delta R.T. 0.034 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 45 Resp: 1801

Ion	Ratio	Lower	Upper
45	100		
46	19.8	11.8	51.8

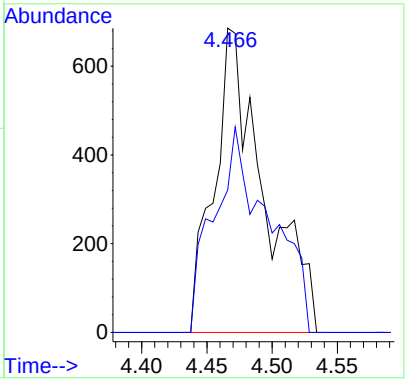


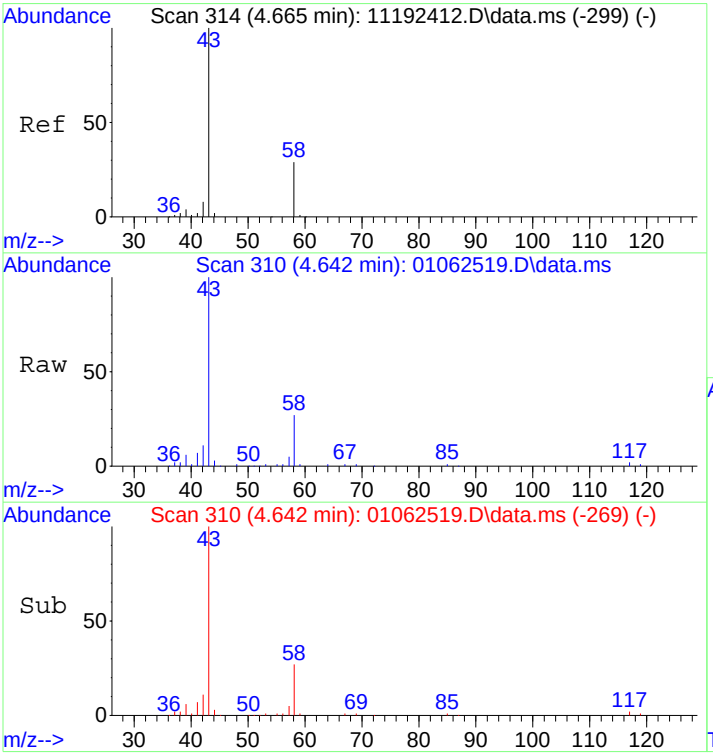


#11
Acetonitrile
Concen: 0.06 ng
RT: 4.47 min Scan# 279
Delta R.T. -0.026 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 41 Resp: 1820

Ion	Ratio	Lower	Upper
41	100		
40	75.3	33.8	73.8#

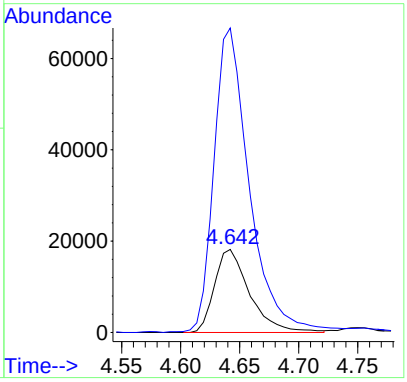


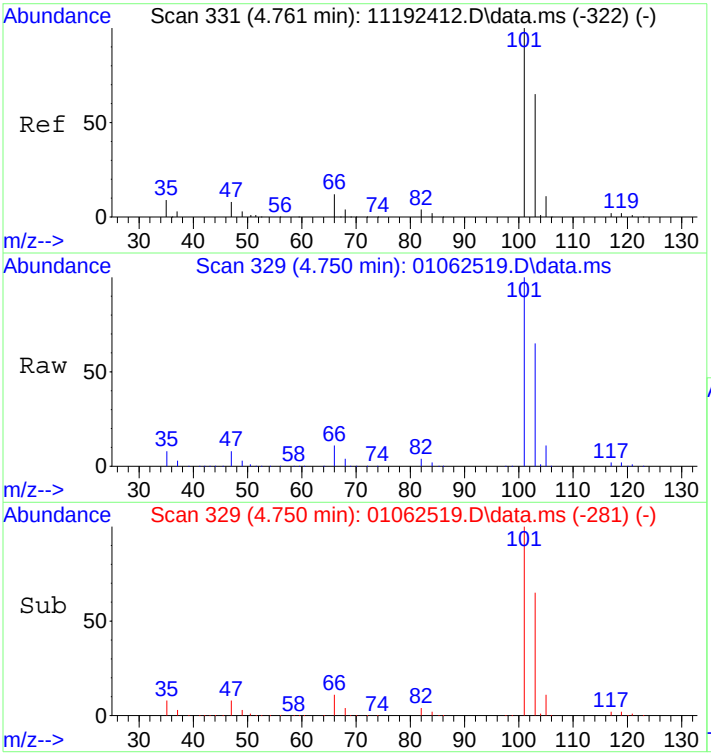


#13
Acetone
Concen: 3.57 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 58 Resp: 37662

Ion	Ratio	Lower	Upper
58	100		
43	376.3	312.5	372.5#

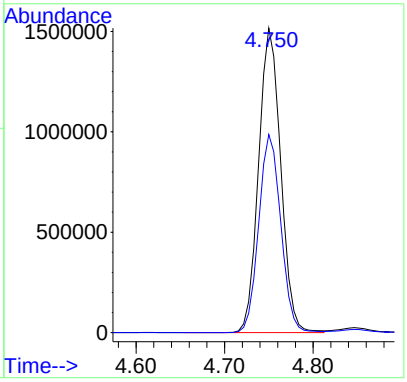


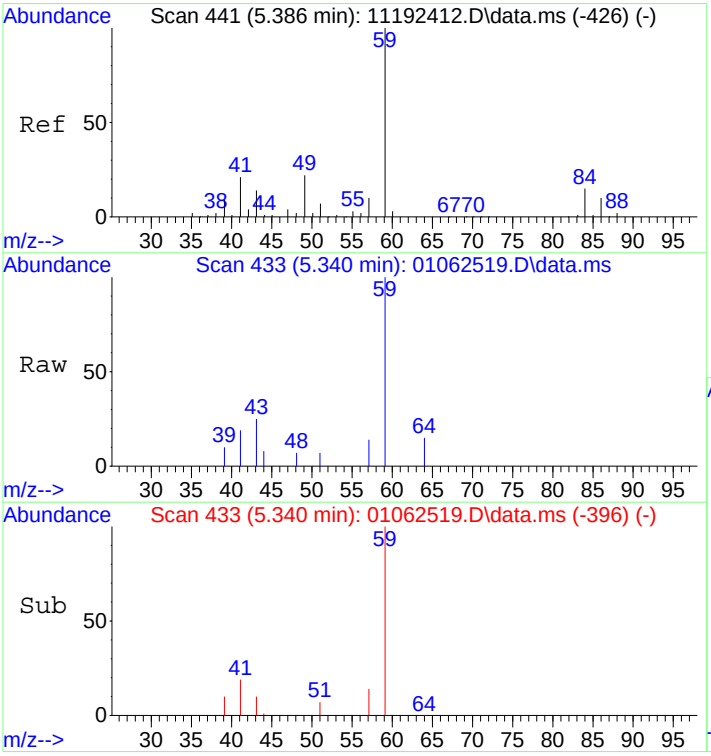


#14
Trichlorofluoromethane
Concen: 91.73 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion:101 Resp: 2632545

Ion	Ratio	Lower	Upper
101	100		
103	64.9	44.8	84.8

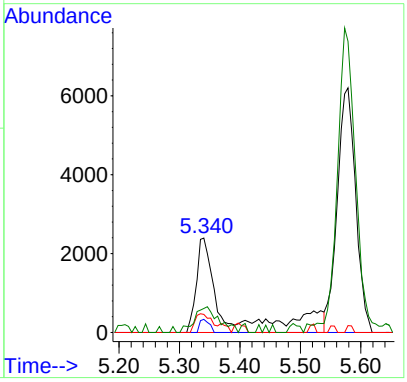


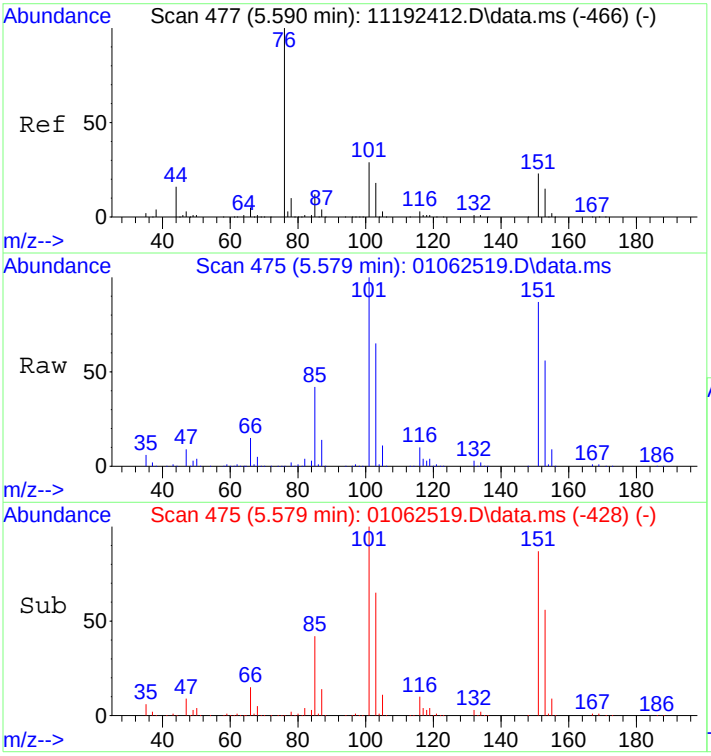


#18
2-Methyl-2-Propanol (tert-Butyl Alcohol
Concen: 0.25 ng
RT: 5.34 min Scan# 433
Delta R.T. -0.040 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 59 Resp: 7595

Ion	Ratio	Lower	Upper
59	100		
57	4.8	0.0	29.9
41	14.4	0.0	39.4
43	23.8	0.0	34.5

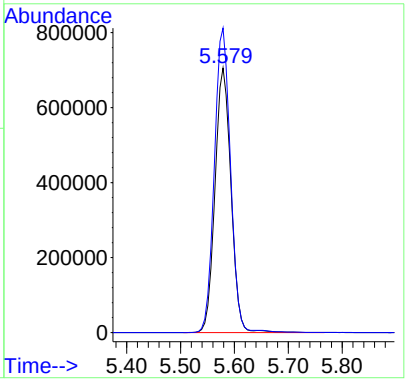


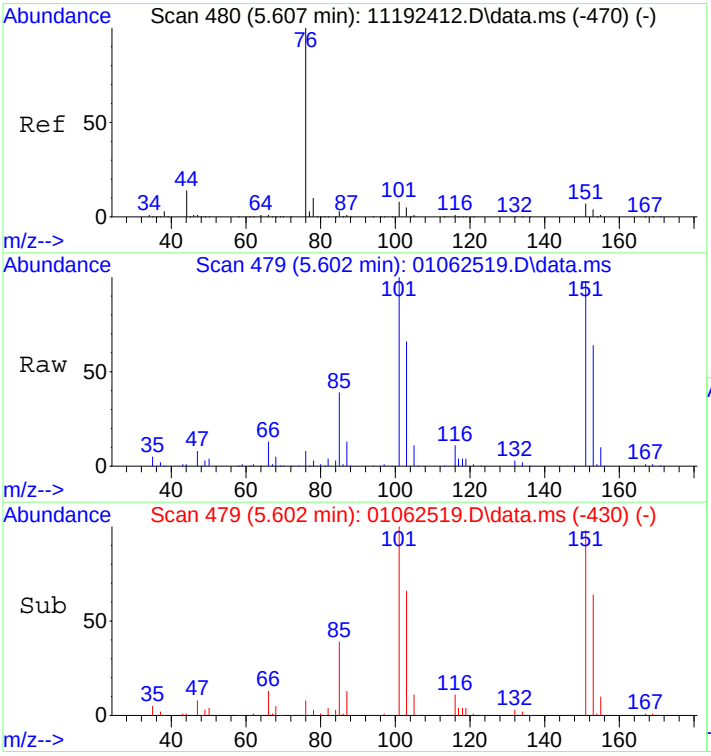


#21
Trichlorotrifluoroethane
Concen: 112.40 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion:151 Resp: 1455387

Ion	Ratio	Lower	Upper
151	100		
101	116.0	105.0	145.0

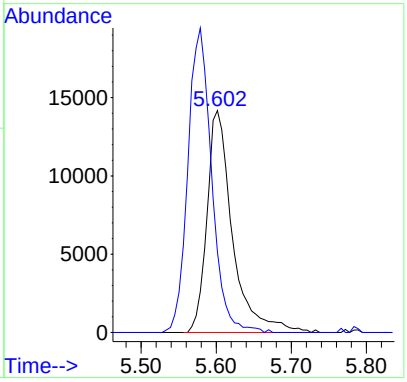


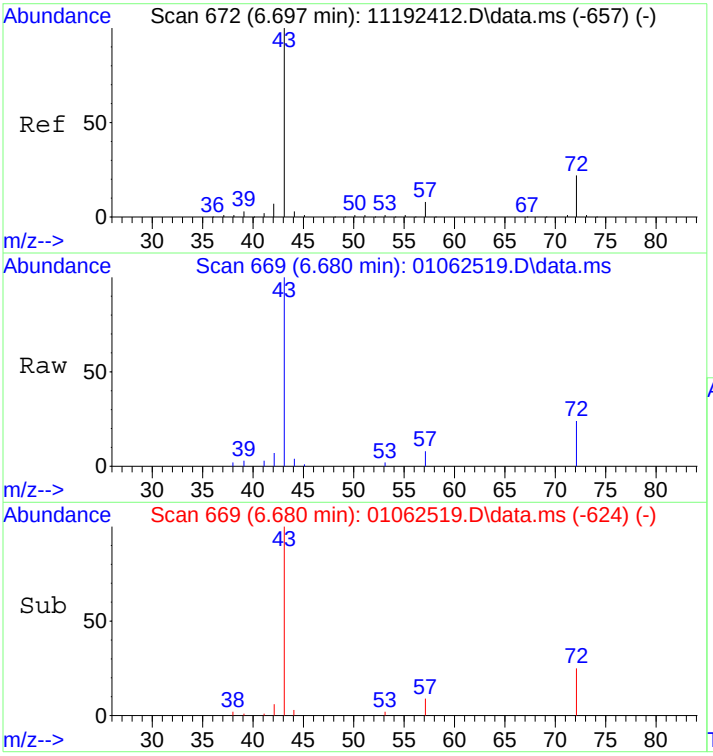


#22
Carbon Disulfide
Concen: 0.70 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 76 Resp: 33495

Ion	Ratio	Lower	Upper
76	100		
78	127.7	0.0	29.6#

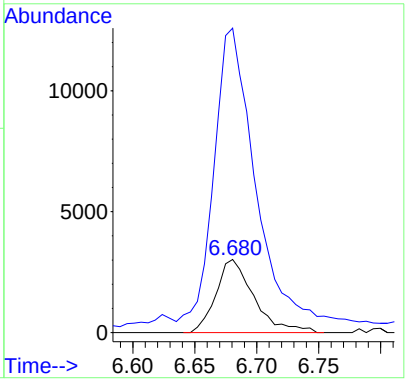


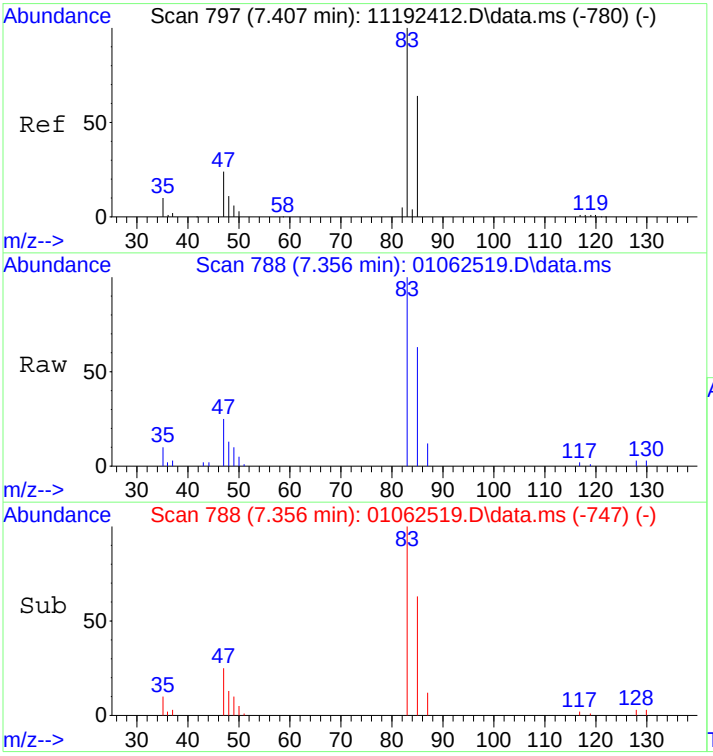


#27
2-Butanone (MEK)
Concen: 0.76 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 72 Resp: 6447

Ion	Ratio	Lower	Upper
72	100		
43	435.9	439.8	479.8#

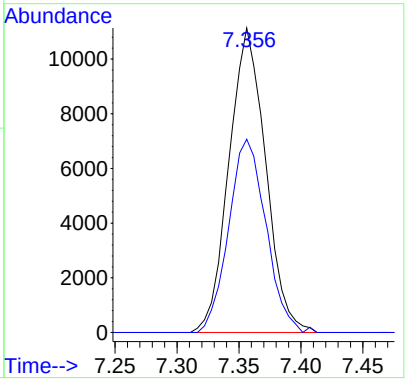


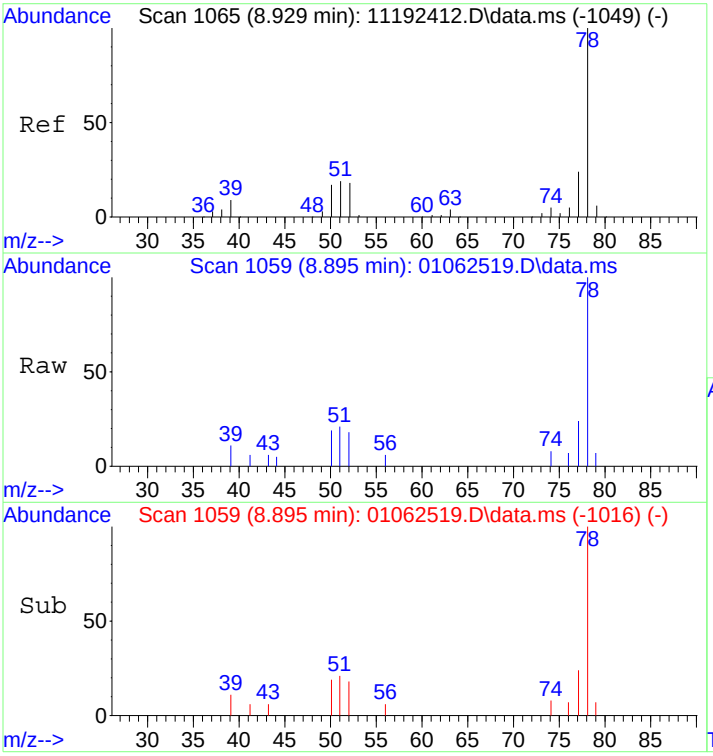


#32
Chloroform
Concen: 0.90 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 83 Resp: 22929

Ion	Ratio	Lower	Upper
83	100		
85	64.6	45.1	85.1

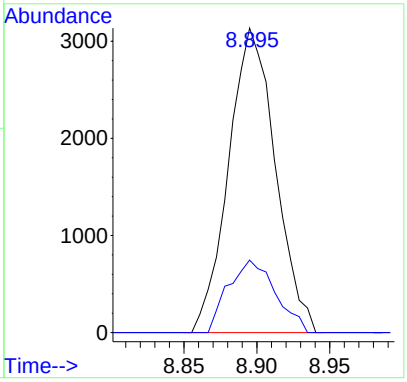


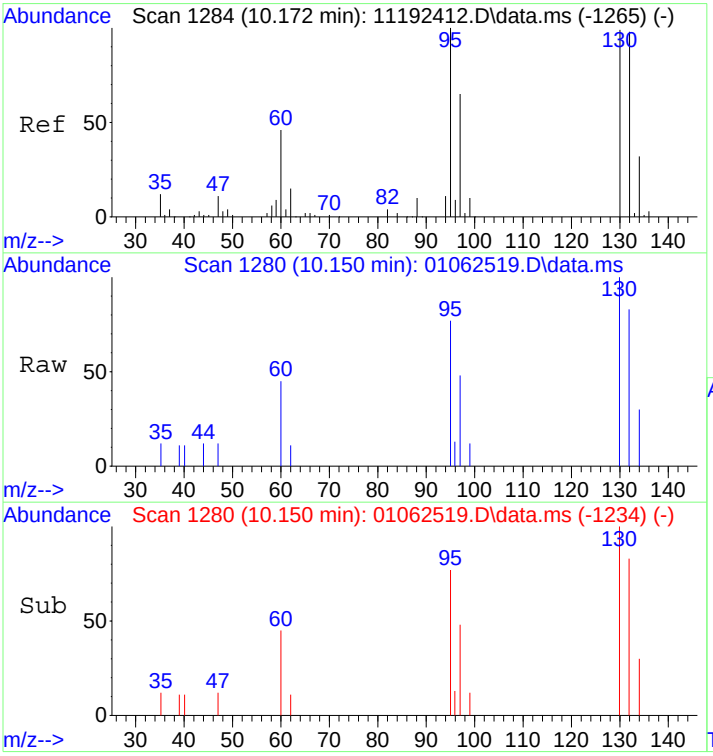


#41
Benzene
Concen: 0.13 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 78 Resp: 7004

Ion	Ratio	Lower	Upper
78	100		
77	24.0	3.7	43.7

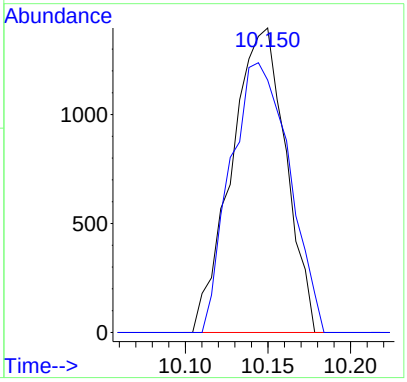


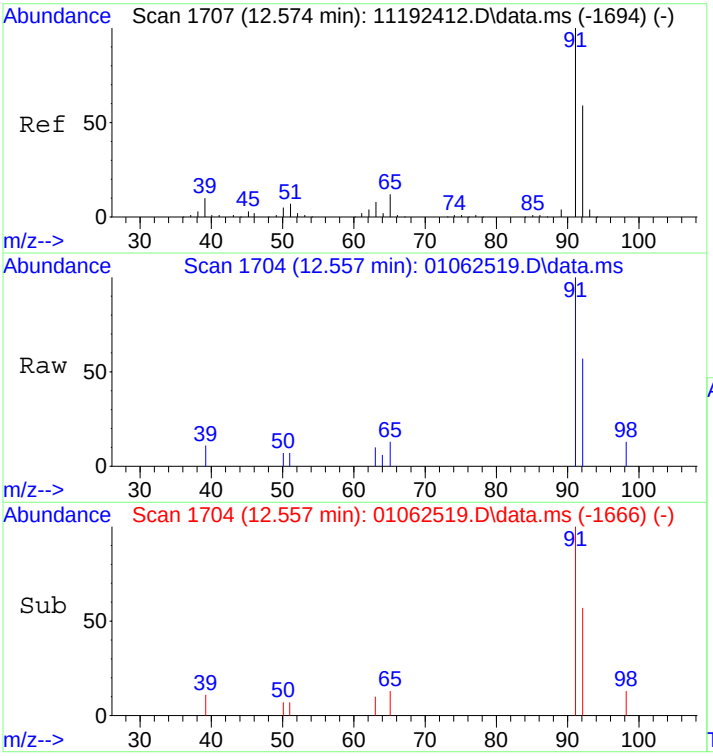


#47
Trichloroethene
Concen: 0.21 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion:130 Resp: 3190

Ion	Ratio	Lower	Upper
130	100		
132	96.0	79.3	119.3

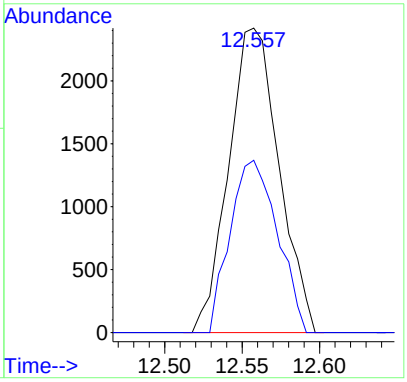


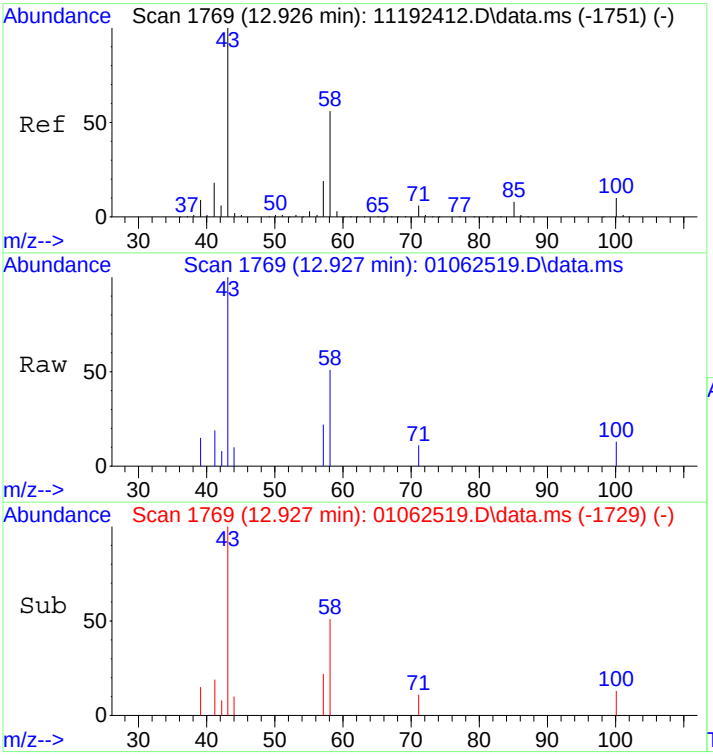


#58
Toluene
Concen: 0.11 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 91 Resp: 5470

Ion	Ratio	Lower	Upper
91	100		
92	53.2	39.2	79.2

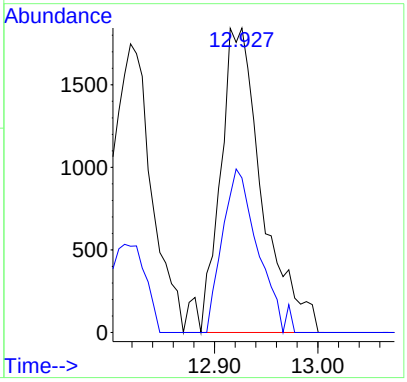


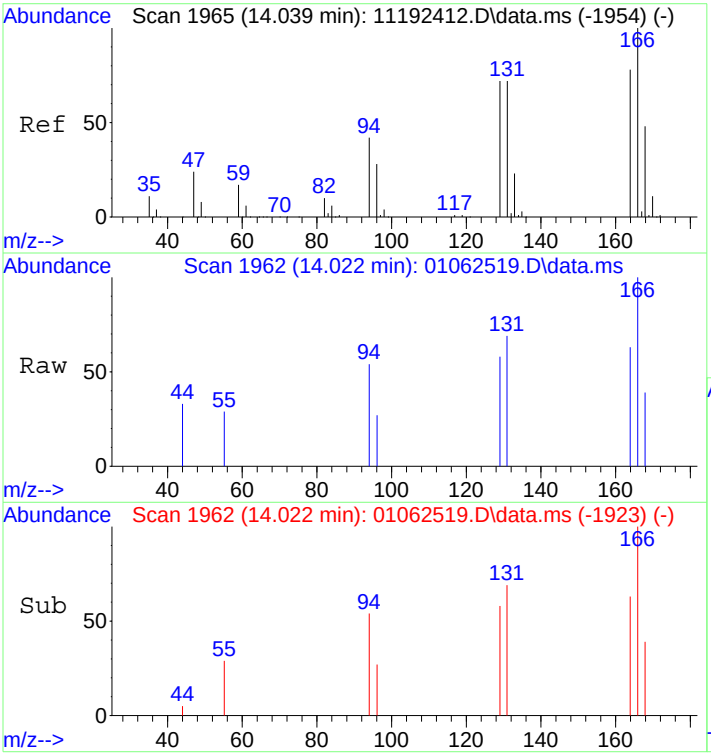


#59
2-Hexanone
Concen: 0.21 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion: 43 Resp: 5290

Ion	Ratio	Lower	Upper
43	100		
58	44.7	35.2	75.2

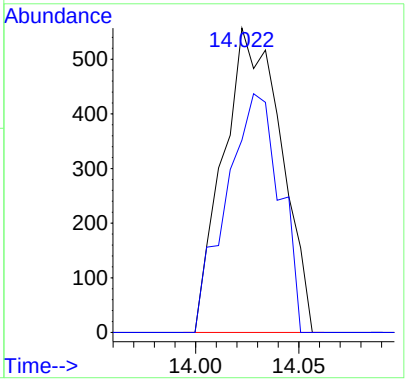




#64
Tetrachloroethene
Concen: 0.07 ng
RT: 14.02 min Scan# 1962
Delta R.T. -0.029 min
Lab File: 01062519.D
Acq: 6 Jan 2025 18:20

Tgt Ion:166 Resp: 1084

Ion	Ratio	Lower	Upper
166	100		
164	72.7	58.7	98.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/6/25

Quant Time: Jan 06 21:09:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

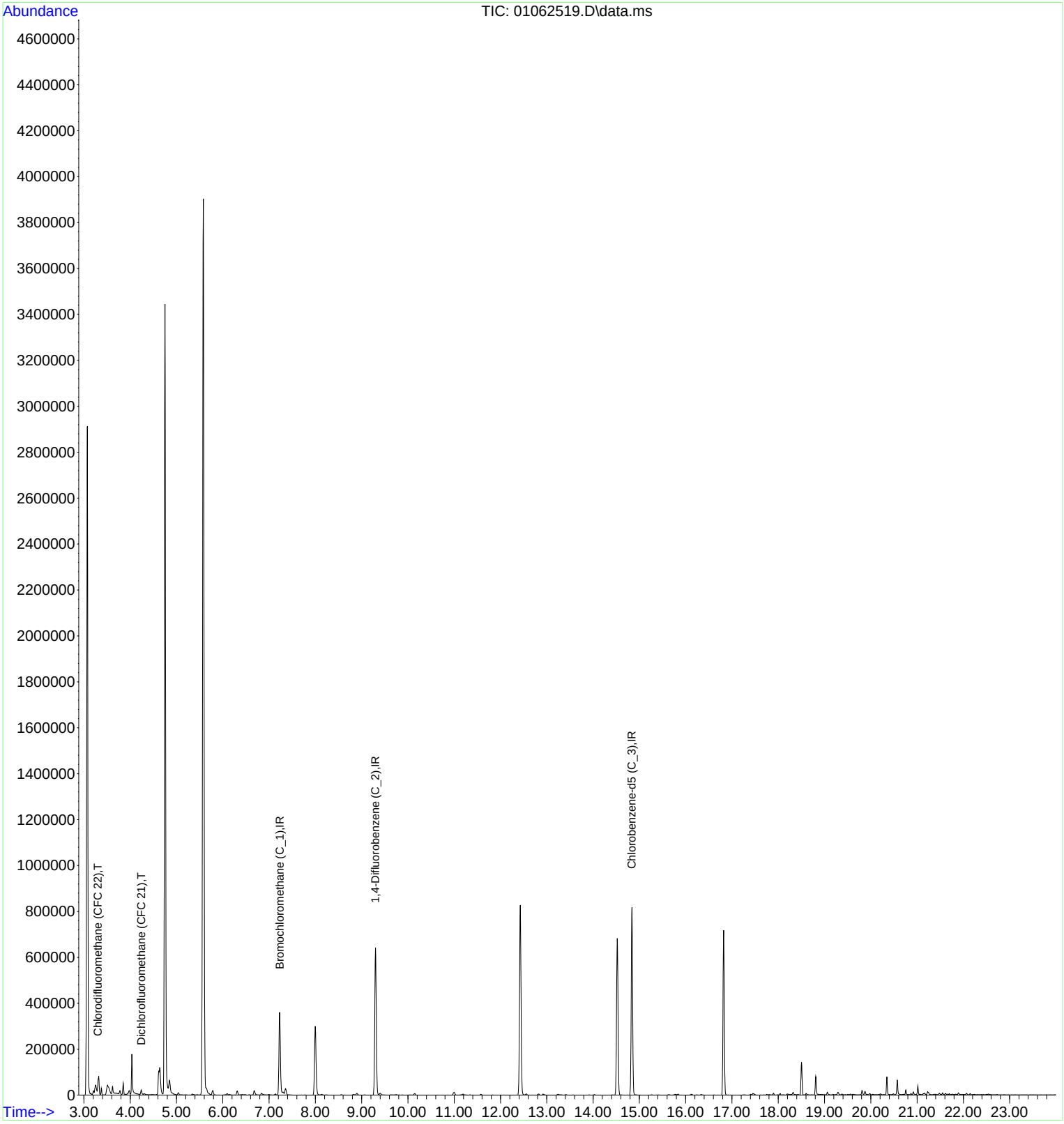
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	159126	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	675900	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	121465	12.500	ng		-0.01
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	130	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1329	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	1437	0.324	ng	#	64
6) 1-Chloro-1,1-Difluoroe...	3.51	65	1153	N.D.			
7) Dichlorofluoromethane ...	4.24	67	18497	0.574	ng		97
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.58	83	938	N.D.			
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.35	43	1807	N.D.			
12) 2-Methylpentane	6.47	71	539	N.D.			
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	0.00	56	0	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.40	55	58	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.67	91	697	N.D.			
27) 4-Chlorotoluene	17.67	91	697	N.D.			
28) Indane	19.11	117	226	N.D.			
29) Indene	19.11	115	52	N.D.			
30) 1,2,4,5-Tetramethylben...	20.22	119	497	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	497	N.D.			
32) 1,2,3,5-Tetramethylben...	20.58	119	256	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

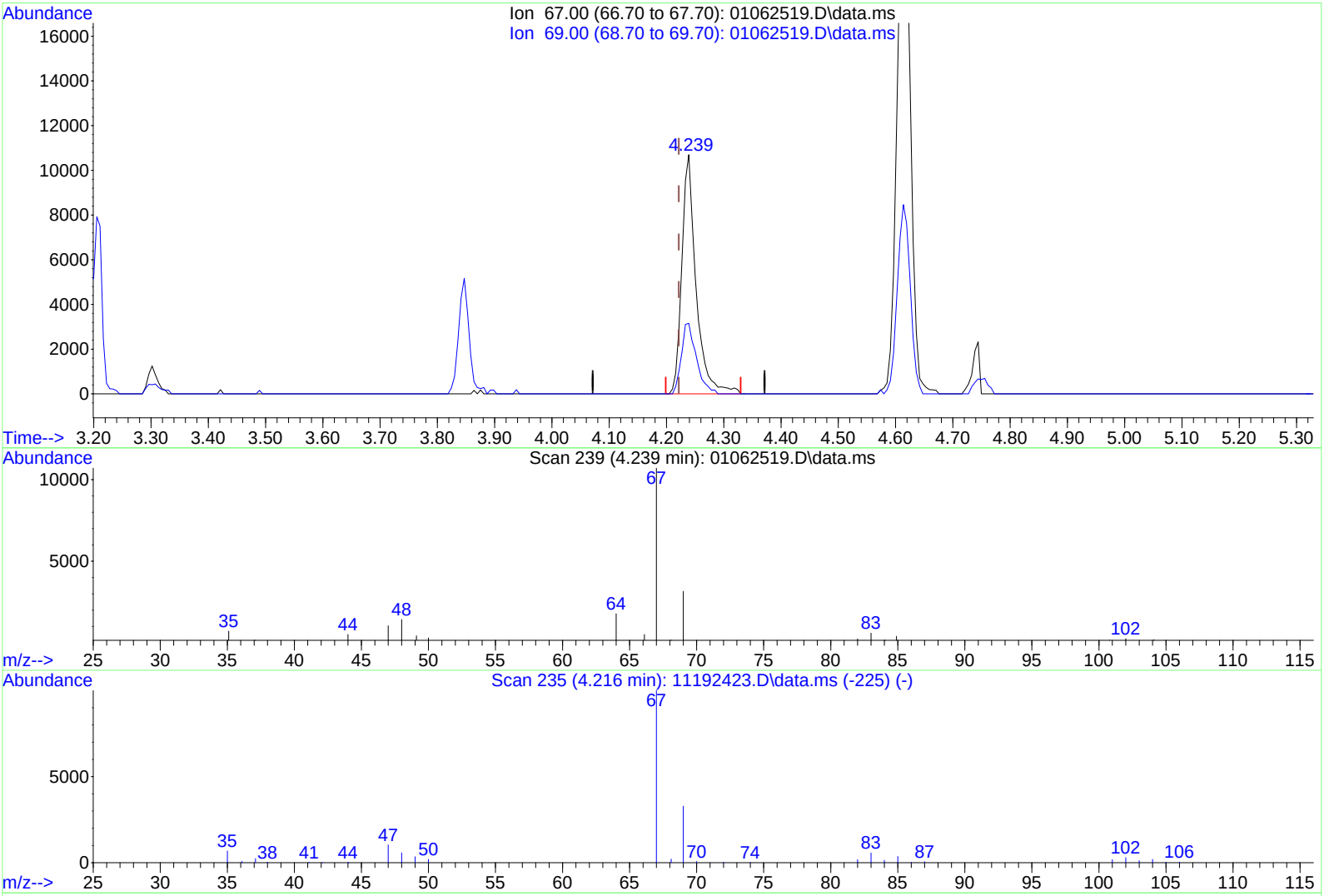
Quant Time: Jan 06 21:09:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 21:04:36 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



TIC: 01062519.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.239min (+0.017) 0.57ng

response 18497

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.12
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062529.D
Acq On : 6 Jan 2025 23:43
Operator : SC
Sample : P2405139-011dil (40mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

MOA 1/7/25

Quant Time: Jan 07 05:23:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139934	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	592704	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	105287	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.99	65	231412	12.138	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.12%				
57) Toluene-d8 (SS2)	12.43	98	608464	13.027	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%				
73) Bromofluorobenzene (SS3)	16.82	174	229006	14.208	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.68%				
Target Compounds							Qvalue
2) Propene	3.33	42	257	N.D.			
3) Dichlorodifluoromethan...	3.33	85	318	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	0.00	45	0	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.65	58	3207	0.340	ng		91
14) Trichlorofluoromethane	4.76	101	231415	9.021	ng		99
15) 2-Propanol (Isopropanol)	4.89	45	62	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.39	59	156	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	117489	10.151	ng		93
22) Carbon Disulfide	5.61	76	4672	0.110	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.70	72	117	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	1586	0.070	ng		95
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	1093	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062529.D
Acq On : 6 Jan 2025 23:43
Operator : SC
Sample : P2405139-011dil (40mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

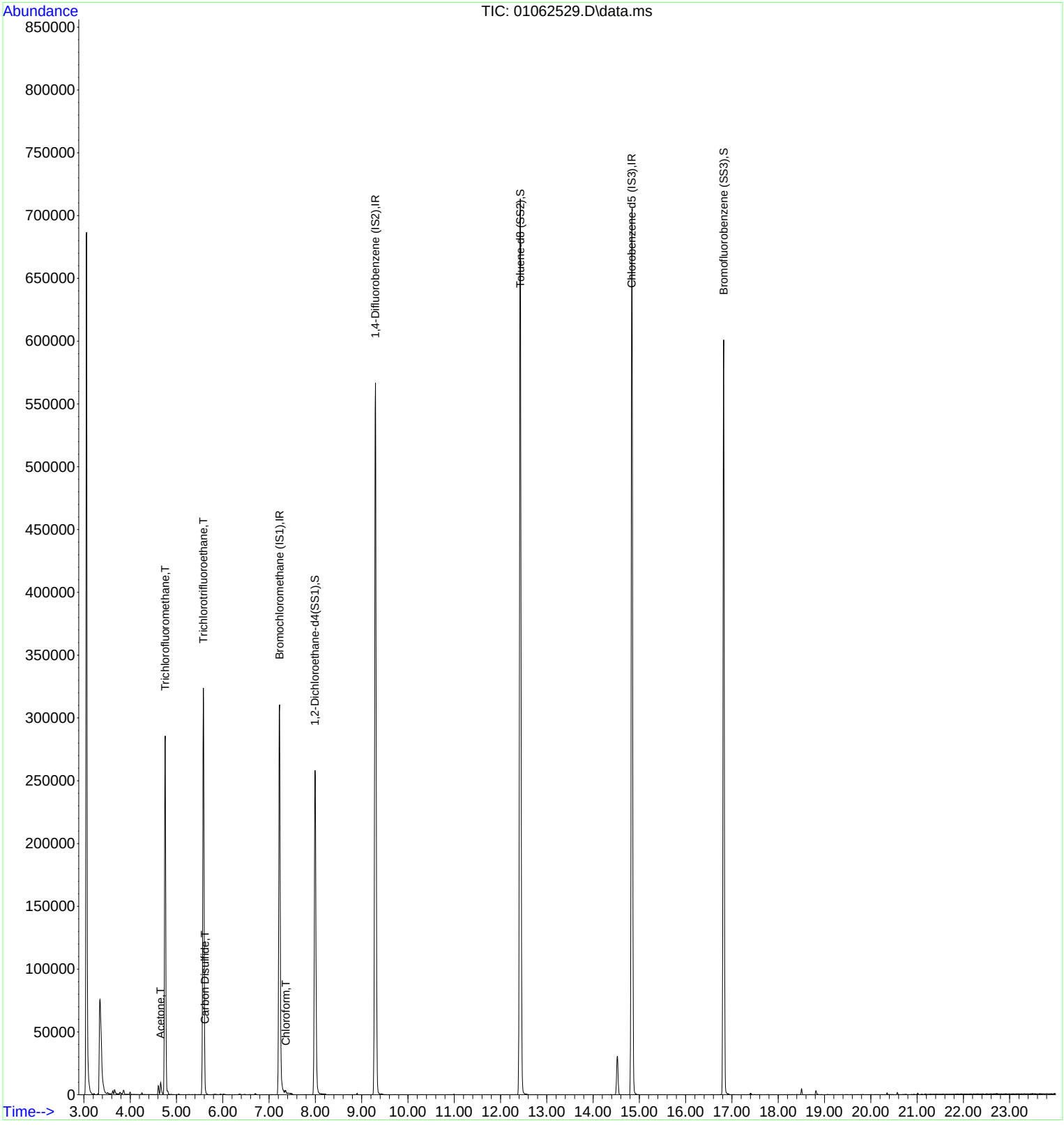
Quant Time: Jan 07 05:23:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.57	91	452	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062529.D
Acq On : 6 Jan 2025 23:43
Operator : SC
Sample : P2405139-011dil (40mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

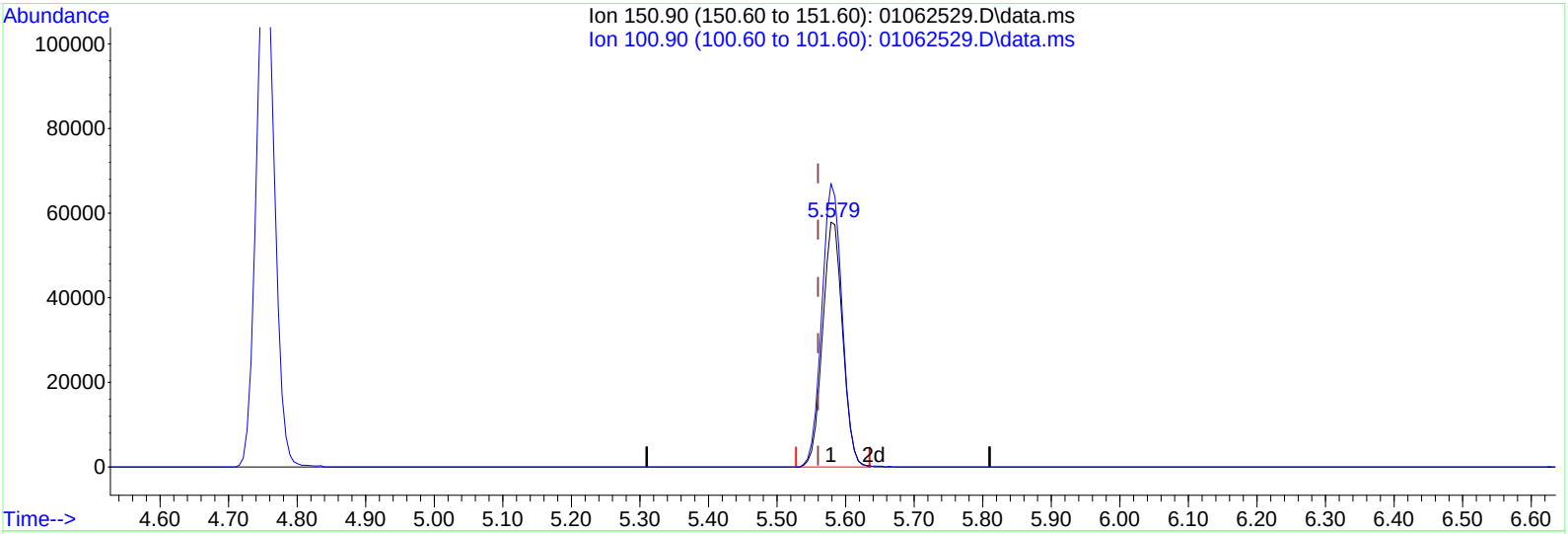
Quant Time: Jan 07 05:23:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

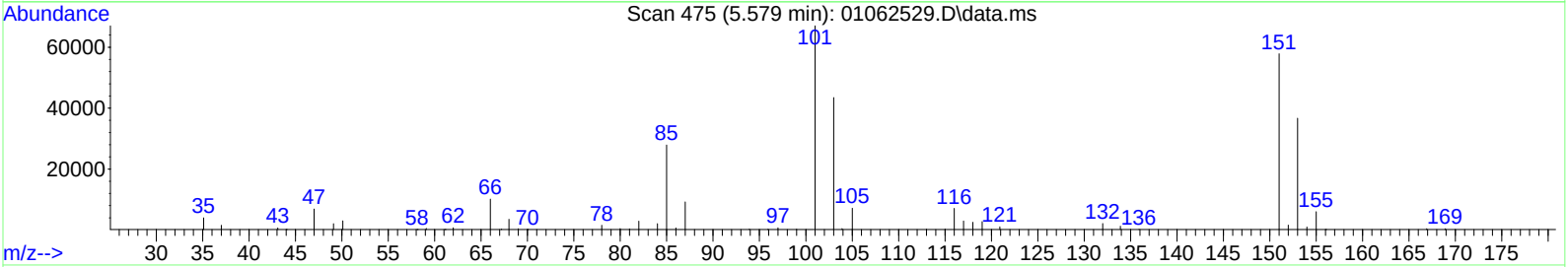


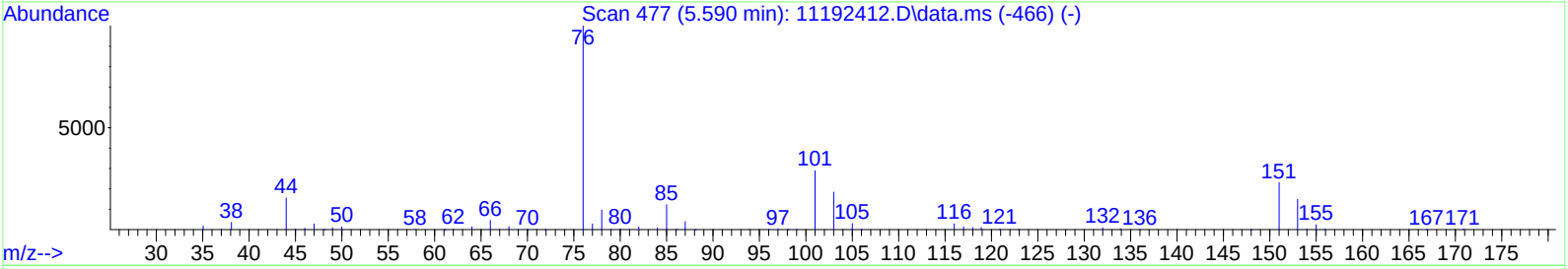
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062529.D
Acq On : 6 Jan 2025 23:43
Operator : SC
Sample : P2405139-011dil (40mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 07 05:23:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062529.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.019) 10.15ng

response 117489

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.60
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062519.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.251	60	65	71	rBV	32836	76233	0.94%	0.291%
2	3.319	71	77	83	rVB4	80019	153781	1.89%	0.586%
3	3.376	83	87	92	rVB	29611	32684	0.40%	0.125%
4	3.512	100	111	125	rBV2	43639	181327	2.23%	0.691%
5	3.620	125	130	139	rVV2	31283	47696	0.59%	0.182%
6	3.779	153	158	163	rVB2	16549	25543	0.31%	0.097%
7	3.847	163	170	175	rBV	49956	65779	0.81%	0.251%
8	3.978	188	193	198	rVB	15955	26691	0.33%	0.102%
9	4.034	198	203	234	rVB	175054	266401	3.28%	1.016%
10	4.239	234	239	246	rBV	19470	30035	0.37%	0.115%
11	4.619	299	306	307	rBV	102018	153203	1.89%	0.584%
12	4.636	307	309	321	rVV	115582	214367	2.64%	0.817%
13	4.750	321	329	341	rVV	3441778	6025101	74.21%	22.974%
14	4.846	341	346	362	rVB2	60689	155271	1.91%	0.592%
15	5.039	374	380	393	rVB	8853	15805	0.19%	0.060%
16	5.340	426	433	444	rBV3	4436	11961	0.15%	0.046%
17	5.579	462	475	505	rBV	3903219	8118702	100.00%	30.958%
18	5.783	505	511	518	rVB4	18686	39851	0.49%	0.152%
19	6.311	597	604	612	rBV	17740	37455	0.46%	0.143%
20	6.680	661	669	678	rBV	18885	40822	0.50%	0.156%
21	6.834	692	696	710	rBV5	6800	18676	0.23%	0.071%
22	7.226	757	765	776	rBV	360038	791389	9.75%	3.018%
23	7.356	783	788	798	rVB	27170	55849	0.69%	0.213%
24	7.998	890	901	916	rBV	299829	679362	8.37%	2.590%
25	8.895	1053	1059	1070	rVB	7060	16125	0.20%	0.061%
26	9.298	1116	1130	1143	rBV	642127	1465844	18.06%	5.589%
27	9.400	1143	1148	1159	rVB3	7188	18563	0.23%	0.071%
28	10.144	1272	1279	1286	rVB2	6868	15678	0.19%	0.060%
29	10.996	1421	1429	1440	rVB3	12782	32084	0.40%	0.122%
30	11.189	1455	1463	1471	rVB3	3941	10841	0.13%	0.041%
31	12.427	1670	1681	1697	rBV	827489	1873819	23.08%	7.145%
32	12.557	1697	1704	1711	rVB2	5436	12656	0.16%	0.048%
33	12.824	1743	1751	1759	rBV4	4939	12215	0.15%	0.047%
34	12.921	1762	1768	1774	rBV3	4503	10319	0.13%	0.039%
35	13.245	1817	1825	1831	rBV4	3847	10605	0.13%	0.040%
36	14.522	2039	2050	2062	rBV	682919	1516515	18.68%	5.783%
37	14.840	2096	2106	2118	rBV	817671	1701162	20.95%	6.487%
38	16.822	2446	2455	2469	rBV	717780	1385050	17.06%	5.281%
39	17.452	2562	2566	2584	rVB4	6990	21124	0.26%	0.081%
40	17.901	2639	2645	2651	rVB	7940	13373	0.16%	0.051%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	18.043	2665	2670	2676	rVB3	6695	10924	0.13%	0.042%
42	18.196	2689	2697	2708	rBV5	5078	16824	0.21%	0.064%
43	18.321	2714	2719	2725	rVB2	8757	11796	0.15%	0.045%
44	18.503	2745	2751	2758	rBV2	142353	231497	2.85%	0.883%
45	18.605	2764	2769	2772	rBV2	6560	10269	0.13%	0.039%
46	18.809	2796	2805	2814	rBV	80725	129741	1.60%	0.495%
47	19.059	2844	2849	2855	rBV2	11027	17174	0.21%	0.065%
48	19.292	2885	2890	2897	rVB3	10968	21350	0.26%	0.081%
49	19.809	2977	2981	2988	rBV2	17704	26372	0.32%	0.101%
50	19.871	2988	2992	2997	rVB	13424	20129	0.25%	0.077%
51	20.348	3069	3076	3086	rBV	77992	104840	1.29%	0.400%
52	20.569	3109	3115	3125	rBV2	63598	97259	1.20%	0.371%
53	20.757	3143	3148	3160	rVB	20666	27591	0.34%	0.105%
54	20.921	3172	3177	3186	rBV4	12551	19950	0.25%	0.076%
55	21.018	3186	3194	3198	rBV	38731	51609	0.64%	0.197%
56	21.228	3226	3231	3240	rVB4	12568	26746	0.33%	0.102%
57	21.892	3344	3348	3353	rBV4	6932	10193	0.13%	0.039%
58	22.068	3374	3379	3387	rVB3	6023	10965	0.14%	0.042%

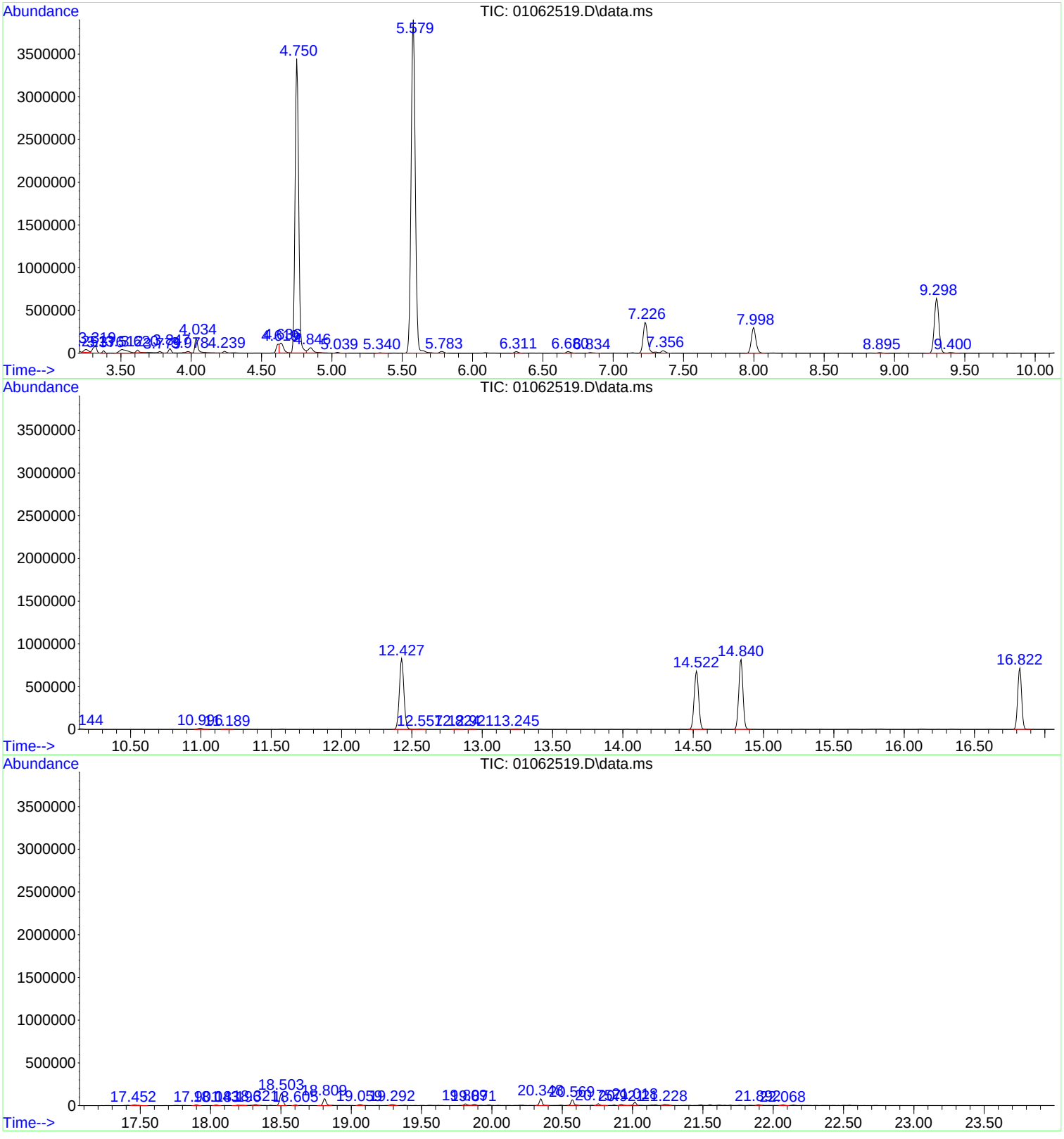
Sum of corrected areas: 26225186

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

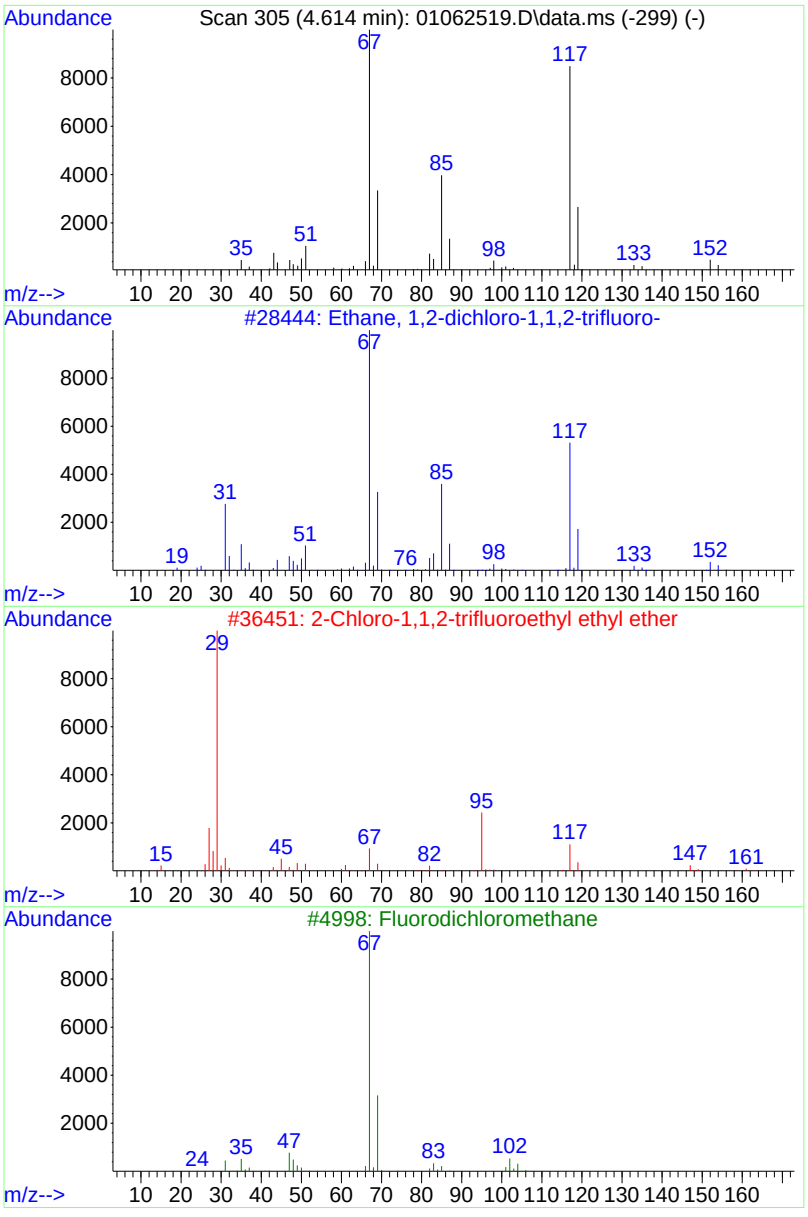
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

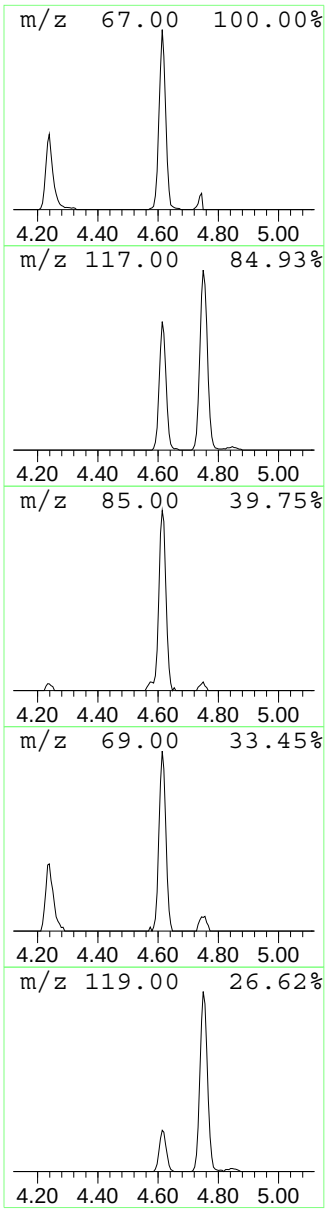
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 6 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.619	2.42 ng	153203	Bromochloromethane (IS1)	7.231

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	91
2	2-Chloro-1,1,2-trifluoroethyl et...	162	C4H6ClF3O	000310-71-4	17
3	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
4	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
5	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	10





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\06\
Data File : 01062519.D
Acq On : 6 Jan 2025 18:20
Operator : SC
Sample : P2405139-011 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

MA 1/7/25

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.619	2.4	ng	153203	1	7.231	791389	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 07 06:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/7/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141730	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	595237	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	104590	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	232698	12.051	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.40%				
57) Toluene-d8 (SS2)	12.43	98	607945	13.103	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.80%				
73) Bromofluorobenzene (SS3)	16.82	174	227887	14.233	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.84%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.38	85	3003	0.108	ng		92
4) Chloromethane	3.52	50	1722	0.084	ng		84
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.77	54	161	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	627	0.060	ng	#	43
11) Acetonitrile	4.46	41	477	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.64	58	37157	3.894	ng		92
14) Trichlorofluoromethane	4.75	101	1729315	66.556	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	573	N.D.			
16) Acrylonitrile	5.04	53	411	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.35	59	6645	0.243	ng	#	79
19) Methylene Chloride	5.35	84	312	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	5.58	151	1118706	95.430	ng		92
22) Carbon Disulfide	5.60	76	34636	0.802	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.68	72	3291	0.429	ng	#	87
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	1271	0.060	ng	#	90
32) Chloroform	7.36	83	11240	0.487	ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	2861	0.060	ng		91
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.15	130	1074	0.079	ng		97
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 07 06:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

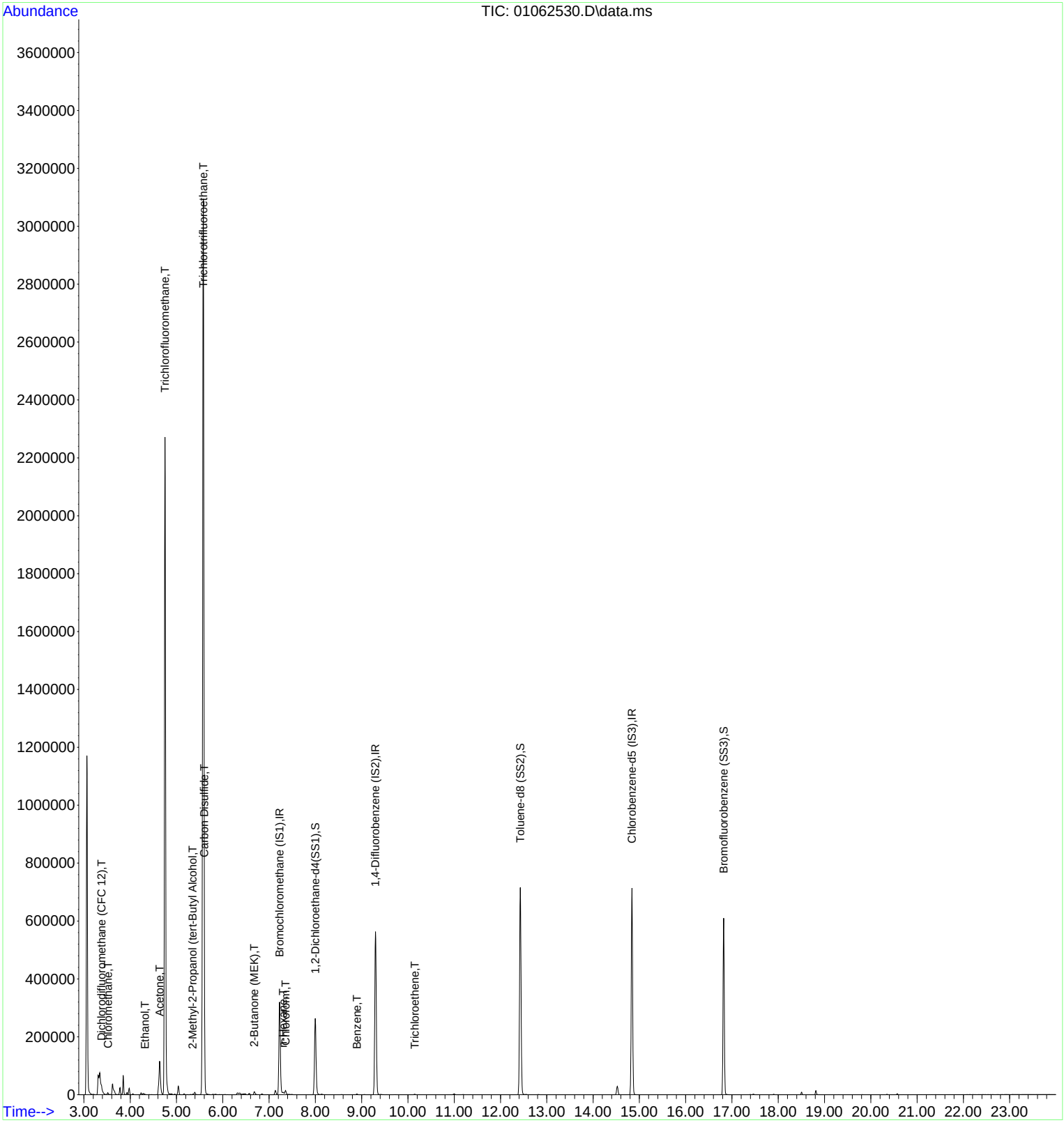
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.57	91	1311	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 07 06:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

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1/7/25

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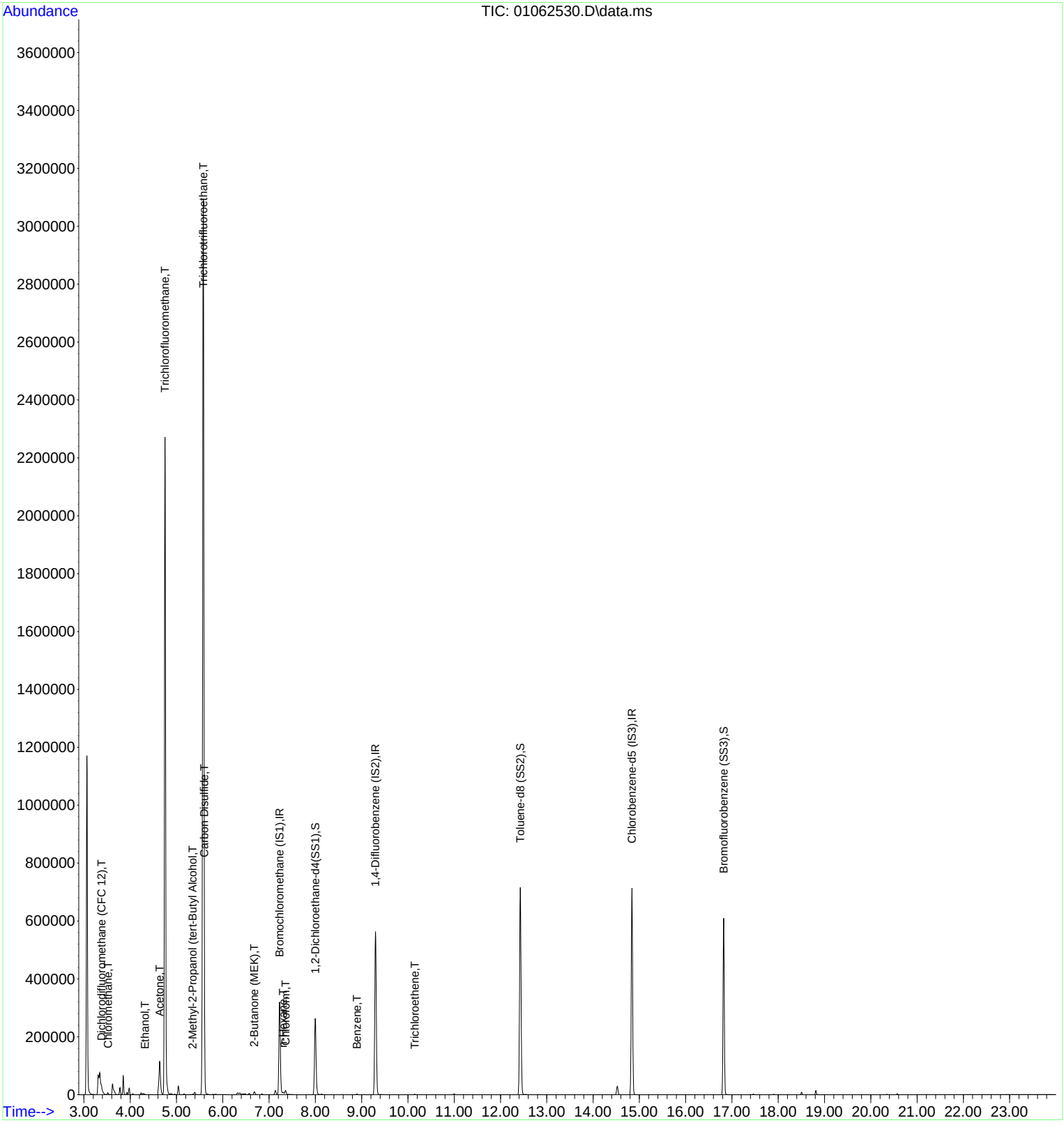
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141730	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	595237	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	104590	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	232698	12.051	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.40%				
57) Toluene-d8 (SS2)	12.43	98	607945	13.103	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.80%				
73) Bromofluorobenzene (SS3)	16.82	174	227887	14.233	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.84%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	3003	0.108	ng		92
4) Chloromethane	3.52	50	1722	0.084	ng		84
10) Ethanol	4.32	45	627	0.060	ng	#	43
13) Acetone	4.64	58	37157	3.894	ng		92
14) Trichlorofluoromethane	4.75	101	1729315	66.556	ng		100
18) 2-Methyl-2-Propanol (t...	5.35	59	6645	0.243	ng	#	79
21) Trichlorotrifluoroethane	5.58	151	1118706	95.430	ng		92
22) Carbon Disulfide	5.60	76	34636	0.802	ng	#	1
27) 2-Butanone (MEK)	6.68	72	3291	0.429	ng	#	87
31) n-Hexane	7.30	57	1271	0.060	ng	#	90
32) Chloroform	7.36	83	11240	0.487	ng		99
41) Benzene	8.90	78	2861	0.060	ng		91
47) Trichloroethene	10.15	130	1074	0.079	ng		97

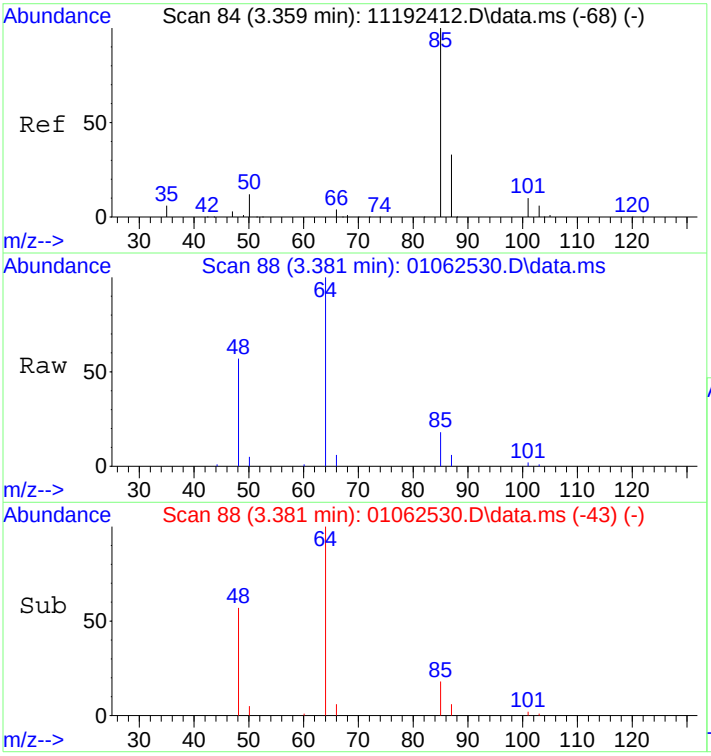
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 07 06:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

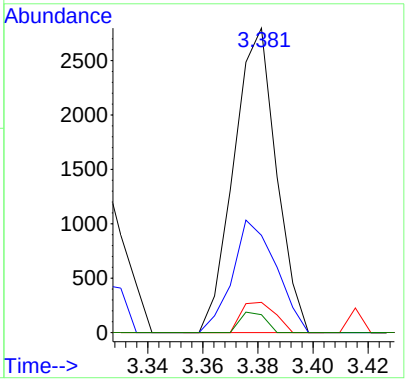


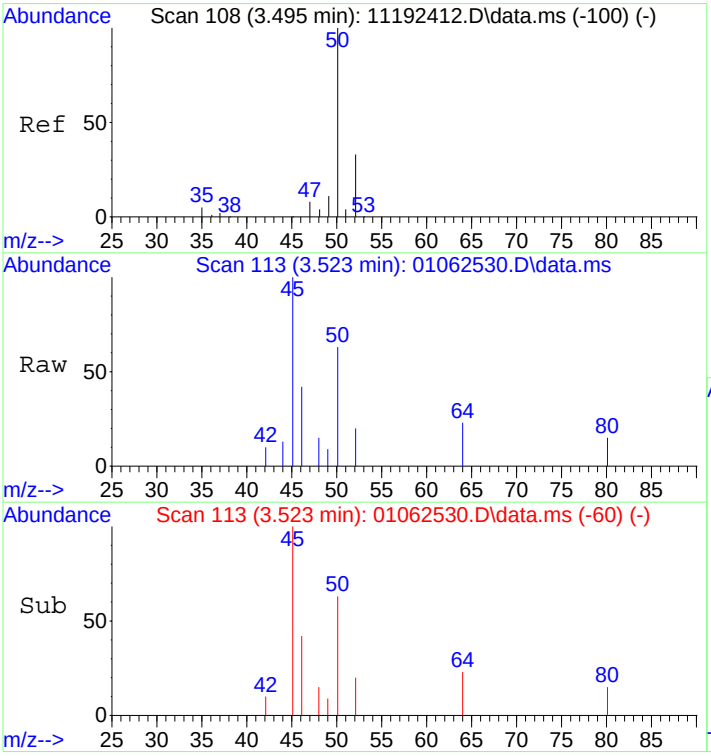


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.11 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.005 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 85 Resp: 3003

Ion	Ratio	Lower	Upper
85	100		
87	38.0	12.6	52.6
101	8.0	0.0	29.6
103	4.0	0.0	26.2

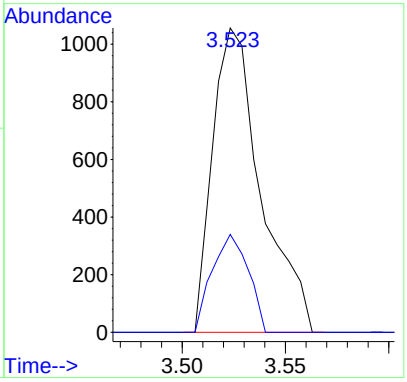


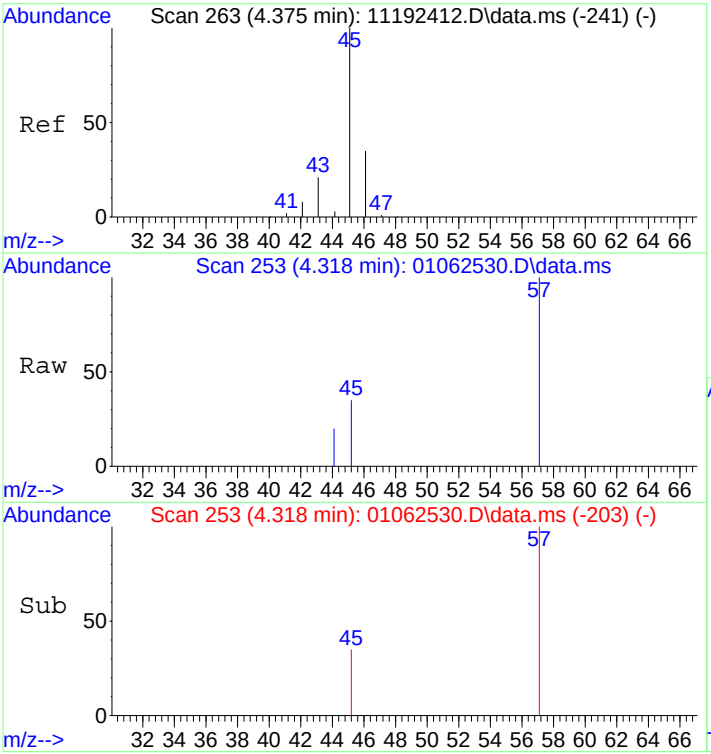


#4
Chloromethane
Concen: 0.08 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 50 Resp: 1722

Ion	Ratio	Lower	Upper
50	100		
52	24.1	13.0	53.0

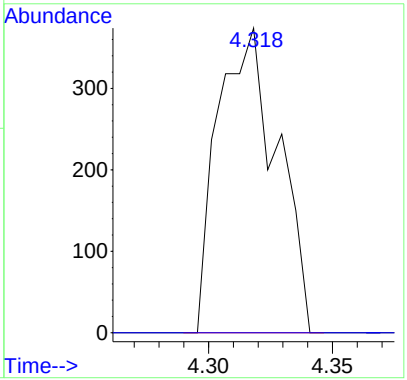


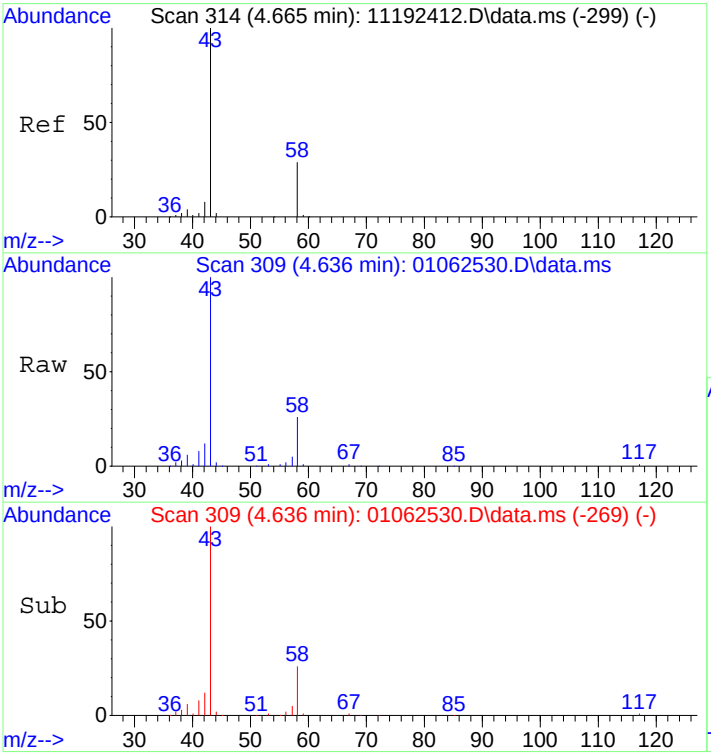


#10
Ethanol
Concen: 0.06 ng
RT: 4.32 min Scan# 253
Delta R.T. 0.034 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 45 Resp: 627

Ion	Ratio	Lower	Upper
45	100		
46	0.0	11.8	51.8#

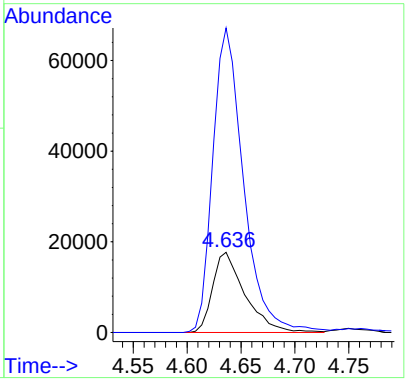


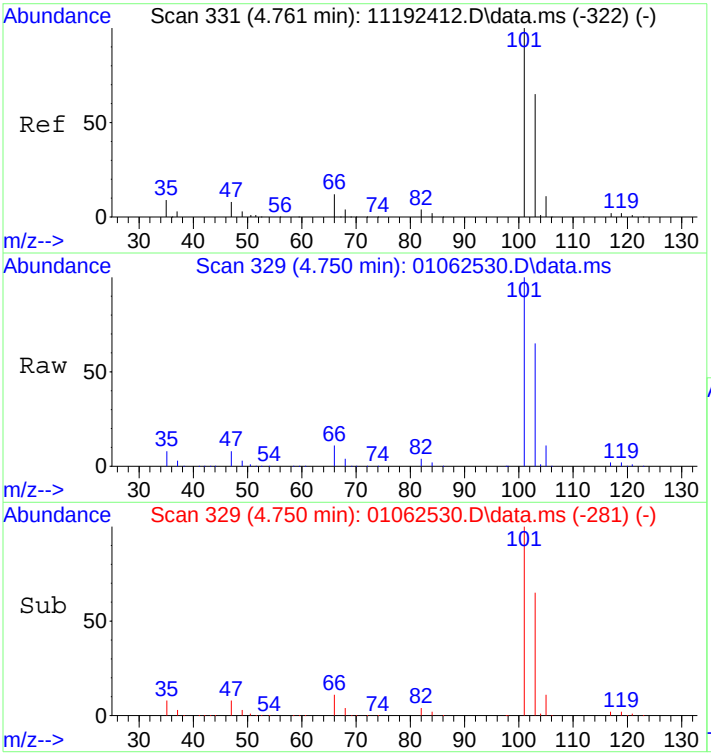


#13
Acetone
Concen: 3.89 ng
RT: 4.64 min Scan# 309
Delta R.T. -0.024 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 58 Resp: 37157

Ion	Ratio	Lower	Upper
58	100		
43	359.6	312.5	372.5

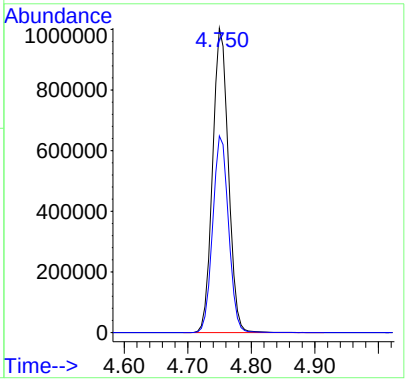


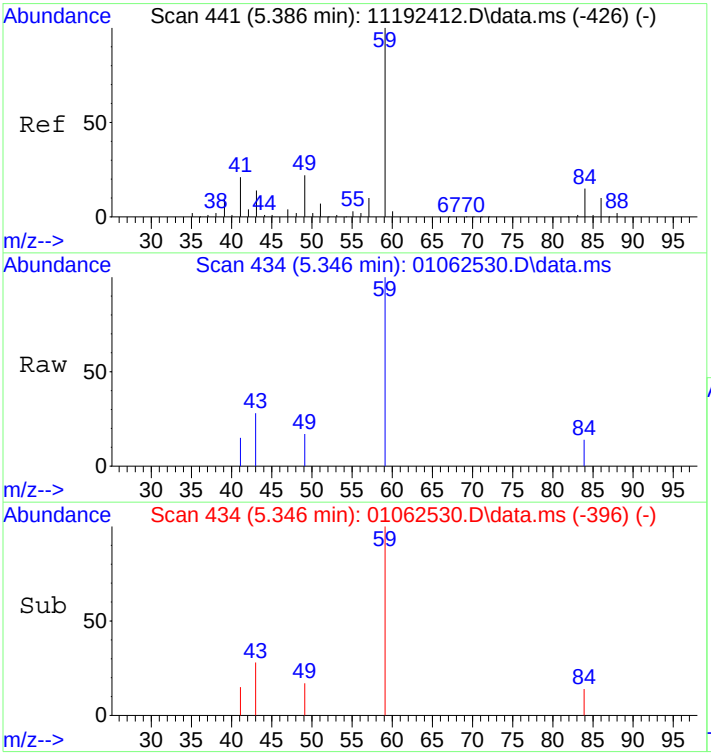


#14
Trichlorofluoromethane
Concen: 66.56 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion:101 Resp: 1729315

Ion	Ratio	Lower	Upper
101	100		
103	64.9	44.8	84.8

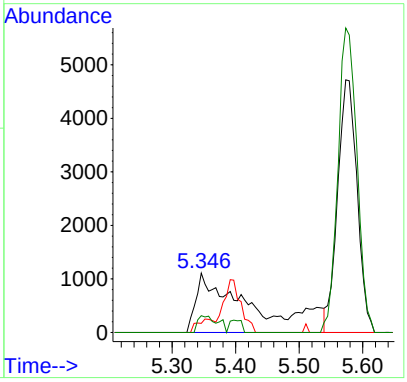


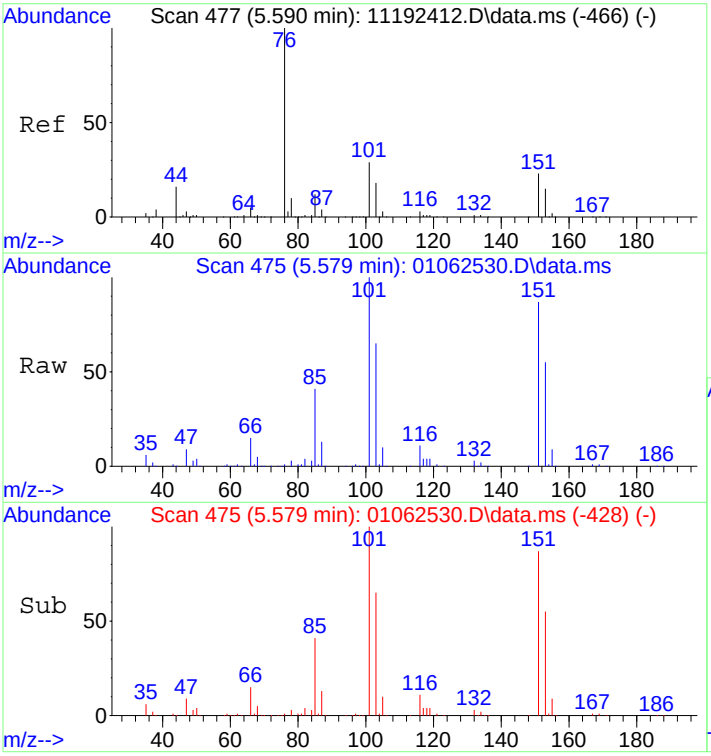


#18
2-Methyl-2-Propanol (tert-Butyl Alcohol
Concen: 0.24 ng
RT: 5.35 min Scan# 434
Delta R.T. -0.034 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 59 Resp: 6645

Ion	Ratio	Lower	Upper
59	100		
57	0.0	0.0	29.9
41	7.3	0.0	39.4
43	10.0	0.0	34.5

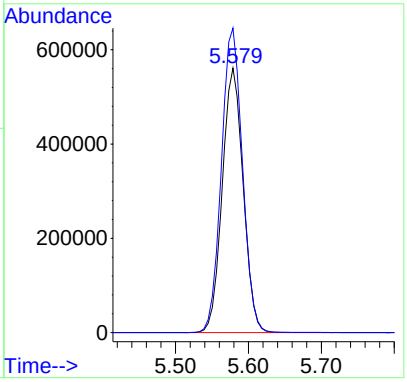


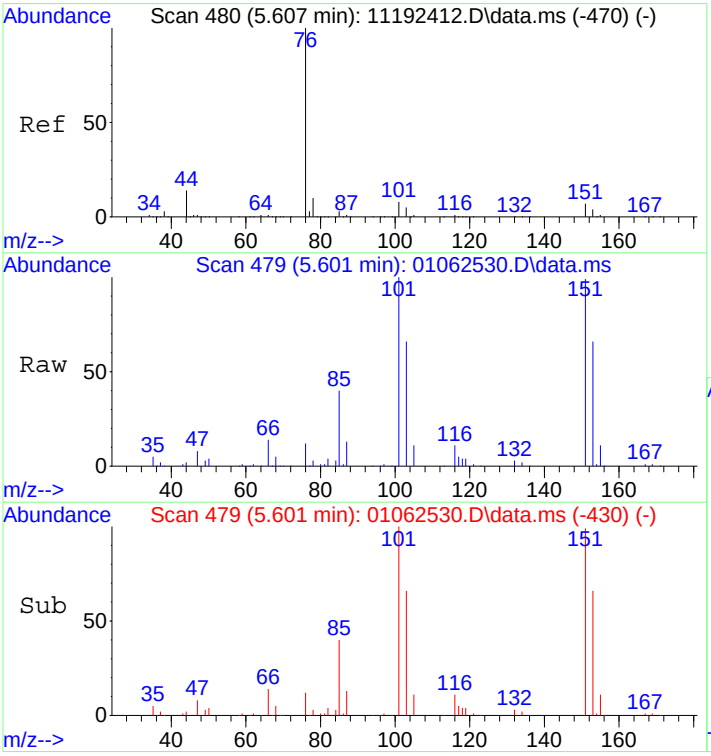


#21
Trichlorotrifluoroethane
Concen: 95.43 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion:151 Resp: 1118706

Ion	Ratio	Lower	Upper
151	100		
101	115.8	105.0	145.0

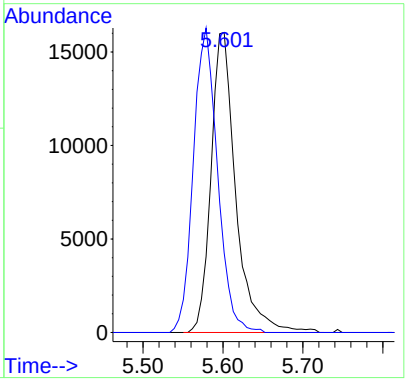


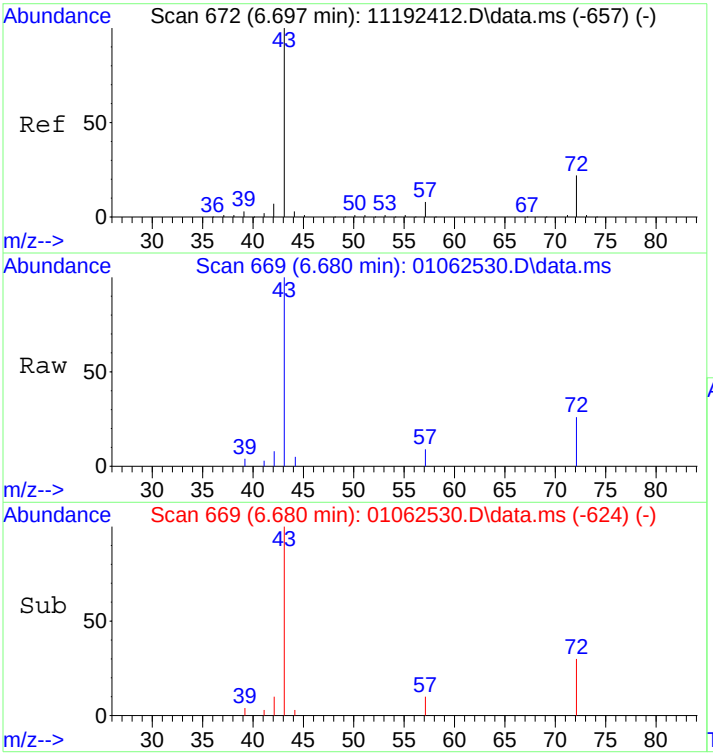


#22
Carbon Disulfide
Concen: 0.80 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 76 Resp: 34636

Ion	Ratio	Lower	Upper
76	100		
78	98.6	0.0	29.6#

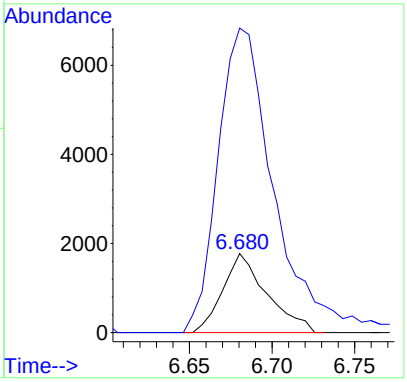


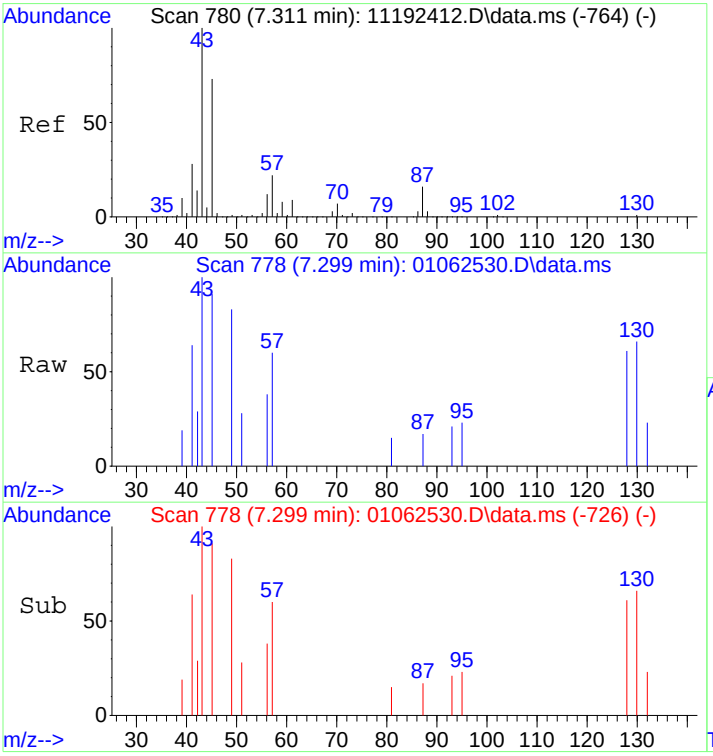


#27
2-Butanone (MEK)
Concen: 0.43 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 72 Resp: 3291

Ion	Ratio	Lower	Upper
72	100		
43	492.4	439.8	479.8#

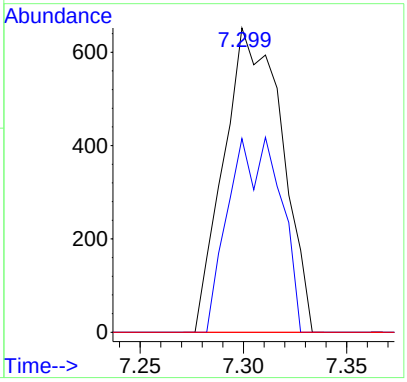


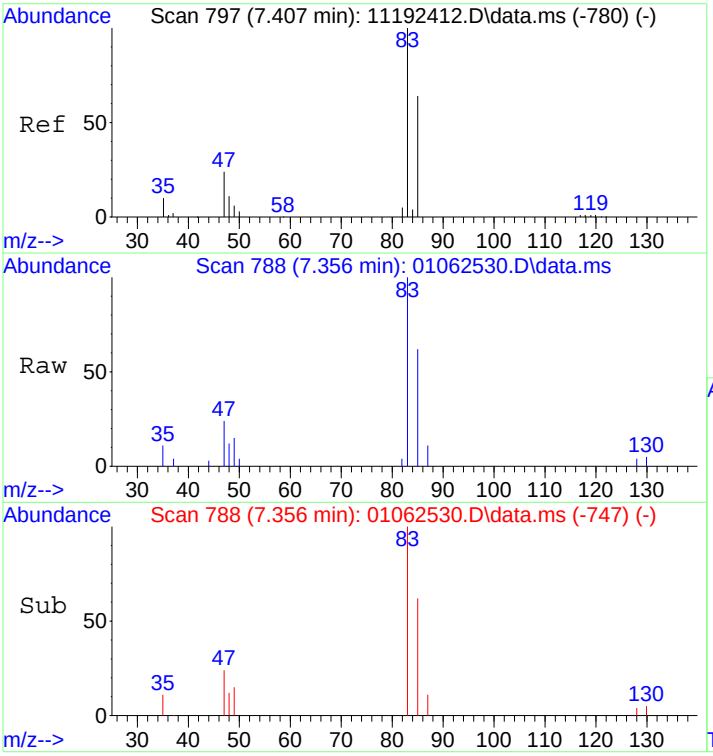


#31
n-Hexane
Concen: 0.06 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 57 Resp: 1271

Ion	Ratio	Lower	Upper
57	100		
56	57.4	43.4	65.0
86	0.0	10.9	16.3#

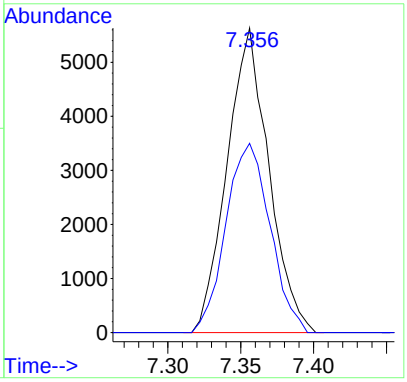


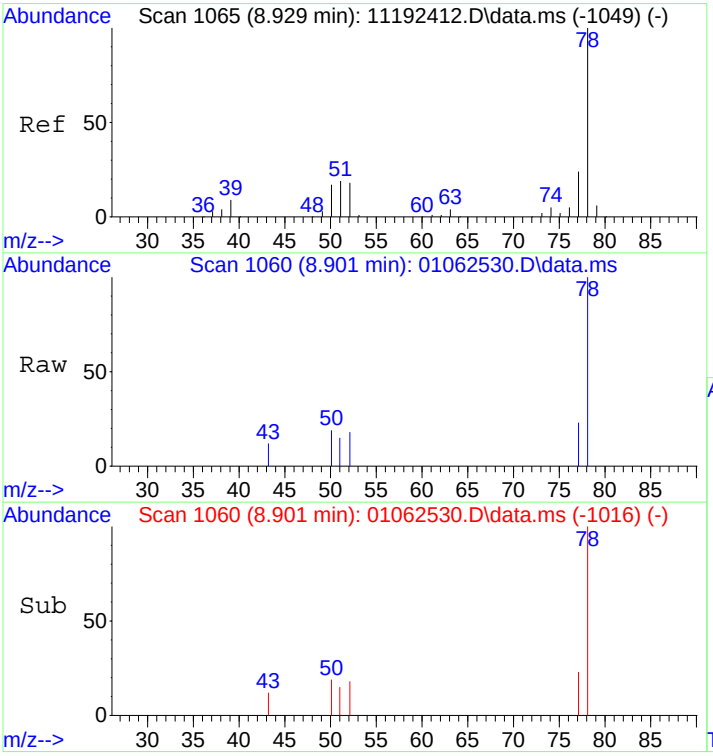


#32
Chloroform
Concen: 0.49 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 83 Resp: 11240

Ion	Ratio	Lower	Upper
83	100		
85	65.7	45.1	85.1

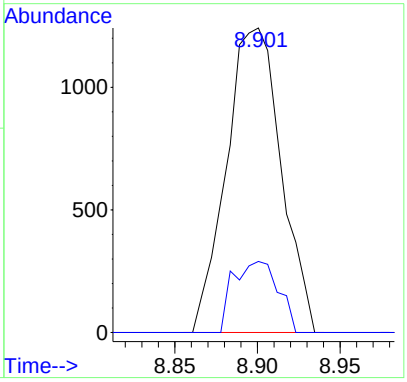


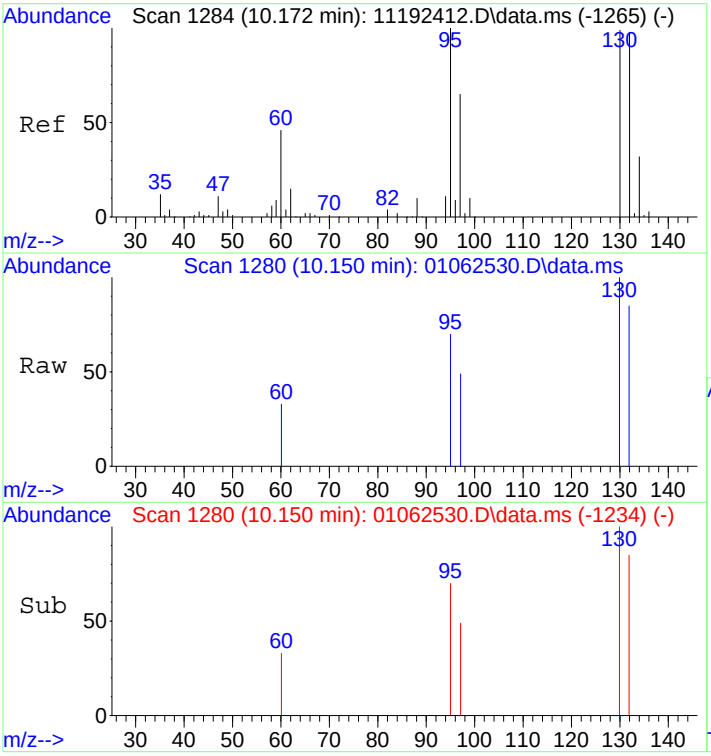


#41
Benzene
Concen: 0.06 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion: 78 Resp: 2861

Ion	Ratio	Lower	Upper
78	100		
77	19.3	3.7	43.7

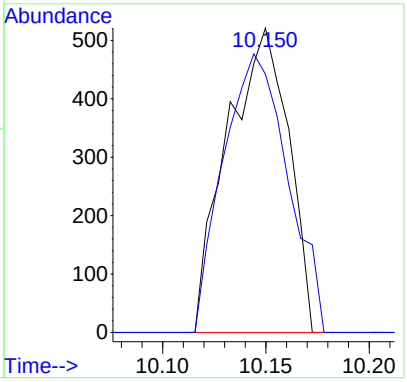




#47
Trichloroethene
Concen: 0.08 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01062530.D
Acq: 7 Jan 2025 00:15

Tgt Ion:130 Resp: 1074

Ion	Ratio	Lower	Upper
130	100		
132	96.3	79.3	119.3



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

1/7/25

Quant Time: Jan 07 06:36:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

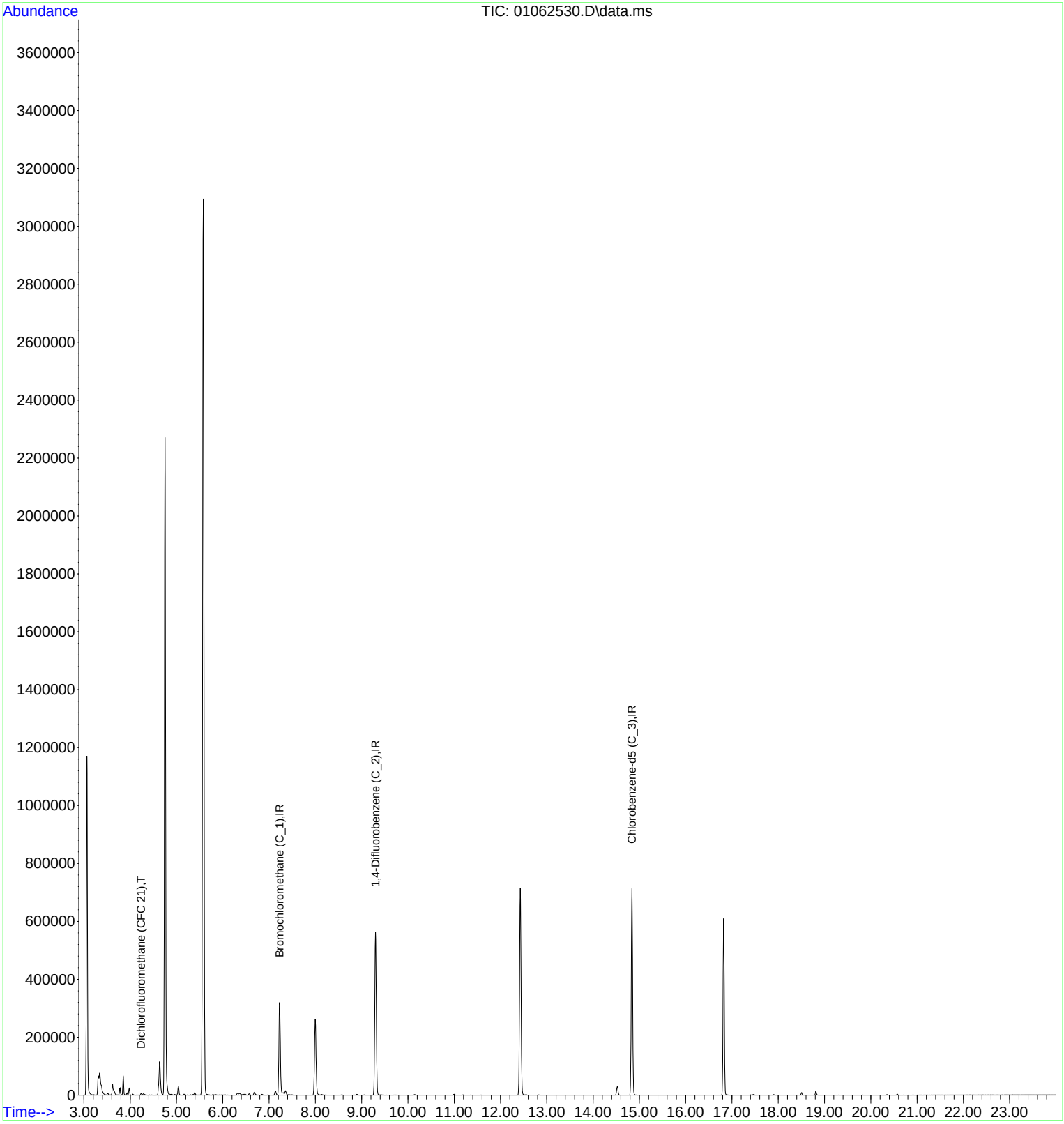
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	143931	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	595749	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	104590	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	147	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	3.30	67	245	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.23	67	5531	0.190	ng	98
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	156	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.35	43	667	N.D.		
12) 2-Methylpentane	6.48	71	646	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.80	174	52	N.D.		
20) Methyl Cyclohexane	11.58	55	174	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

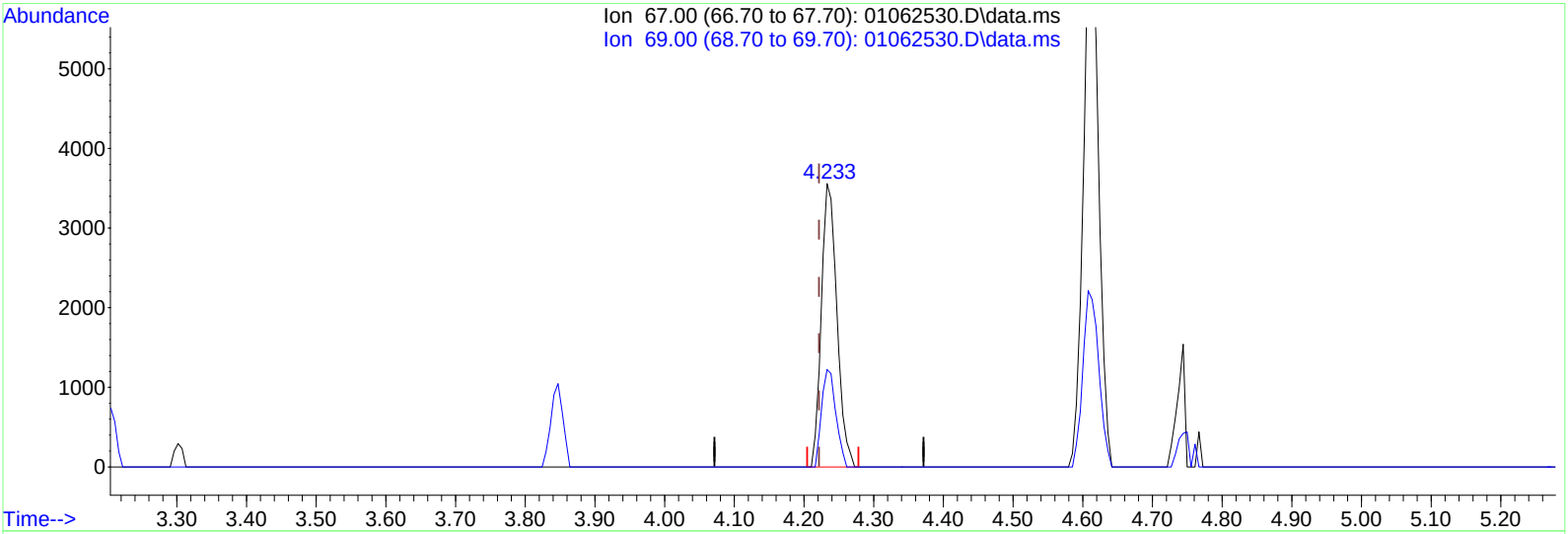
Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

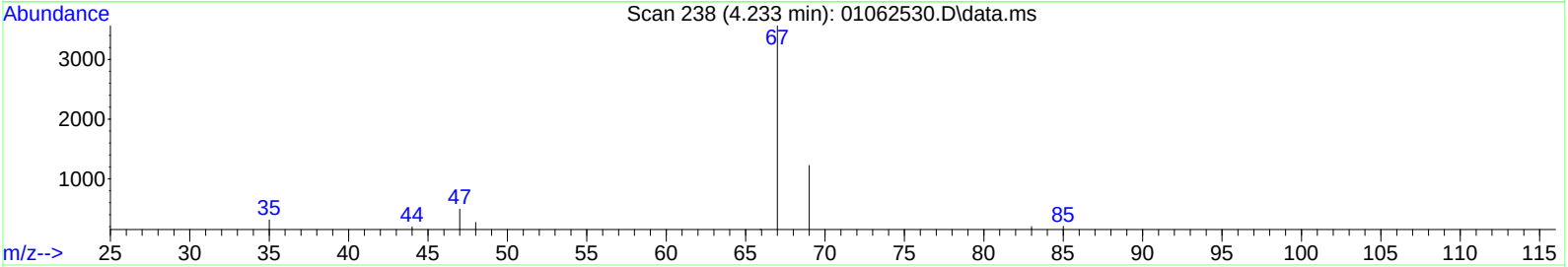
Quant Time: Jan 07 06:36:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

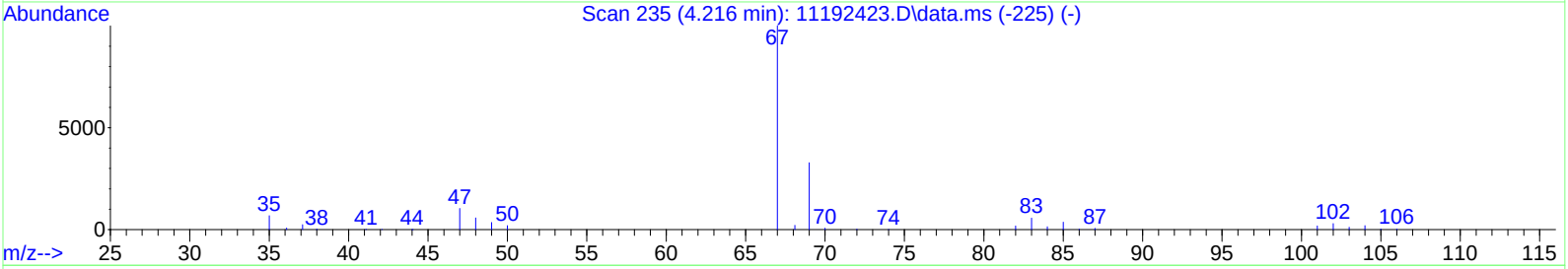


Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 07 06:30:13 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01062530.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.19ng

response 5531

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.42
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062520.D
Acq On : 6 Jan 2025 18:52
Operator : SC
Sample : P2405139-012dil (40mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 20:43:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/7/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	158243	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	667799	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	119391	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.99	65	254437	11.802	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.40%				
57) Toluene-d8 (SS2)	12.43	98	694506	13.113	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.88%				
73) Bromofluorobenzene (SS3)	16.82	174	266131	14.561	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.48%				
Target Compounds							Qvalue
2) Propene	3.31	42	4037	0.239	ng	#	1
3) Dichlorodifluoromethan...	3.38	85	1797	0.058	ng	#	87
4) Chloromethane	3.52	50	1116	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.77	54	118	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.31	45	564	N.D.			
11) Acetonitrile	4.47	41	372	N.D.			
12) Acrolein	4.55	56	54	N.D.			
13) Acetone	4.64	58	21086	1.979	ng		92
14) Trichlorofluoromethane	4.74	101	955563	32.939	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	360	N.D.			
16) Acrylonitrile	5.04	53	187	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.39	59	4152	0.136	ng		76
19) Methylene Chloride	5.35	84	110	N.D.			
20) 3-Chloro-1-propene (Al...	5.39	41	1555	0.063	ng	#	44
21) Trichlorotrifluoroethane	5.57	151	625014	47.753	ng		93
22) Carbon Disulfide	5.60	76	23153	0.480	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	1829	0.214	ng	#	80
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.31	87	183	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	631	N.D.			
32) Chloroform	7.35	83	6275	0.244	ng		97
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.86	56	192	No Calib		#	
41) Benzene	8.89	78	2849	0.053	ng		86
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.12	130	109	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062520.D
Acq On : 6 Jan 2025 18:52
Operator : SC
Sample : P2405139-012dil (40mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

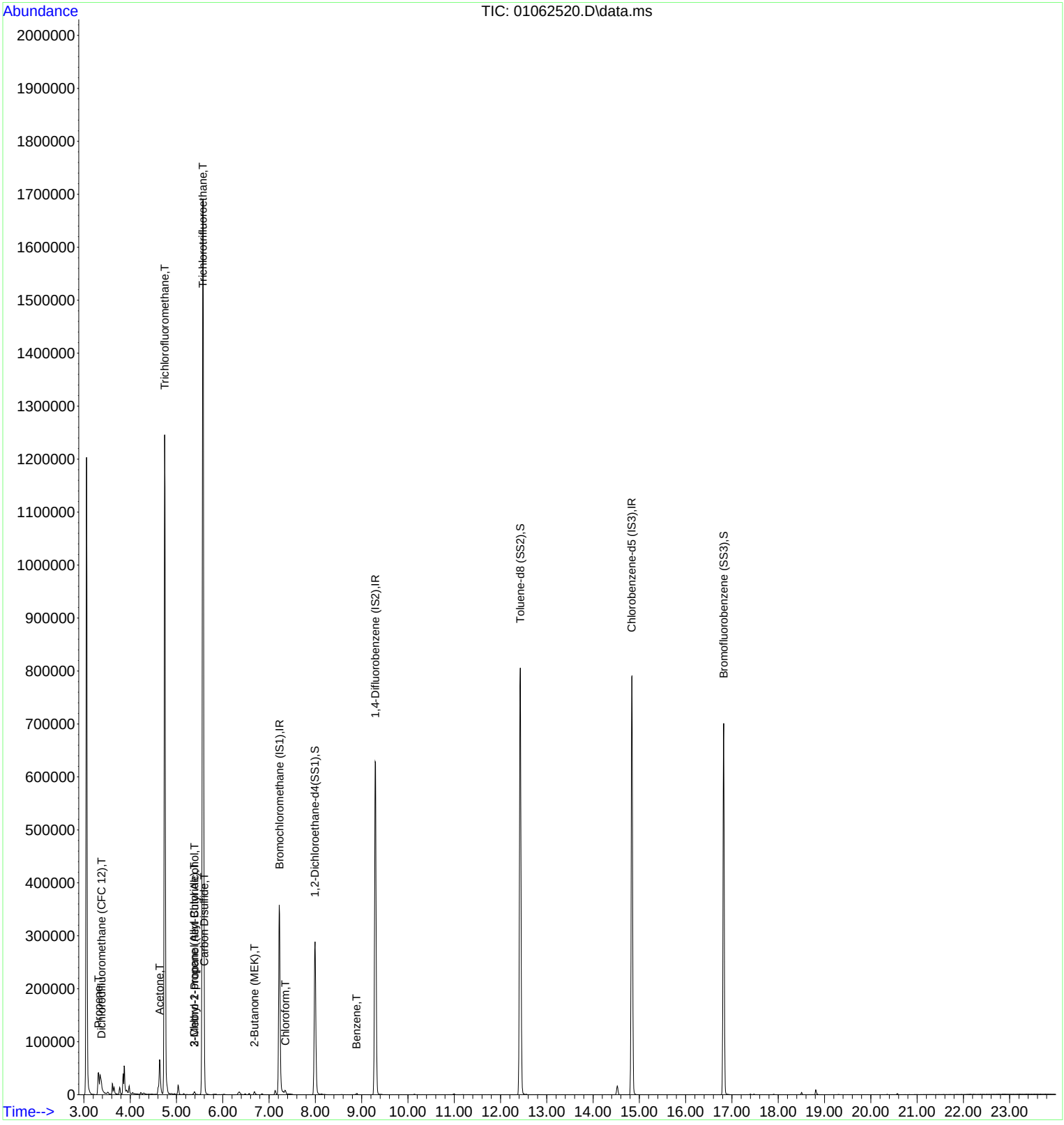
Quant Time: Jan 06 20:43:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	803	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062520.D
Acq On : 6 Jan 2025 18:52
Operator : SC
Sample : P2405139-012dil (40mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

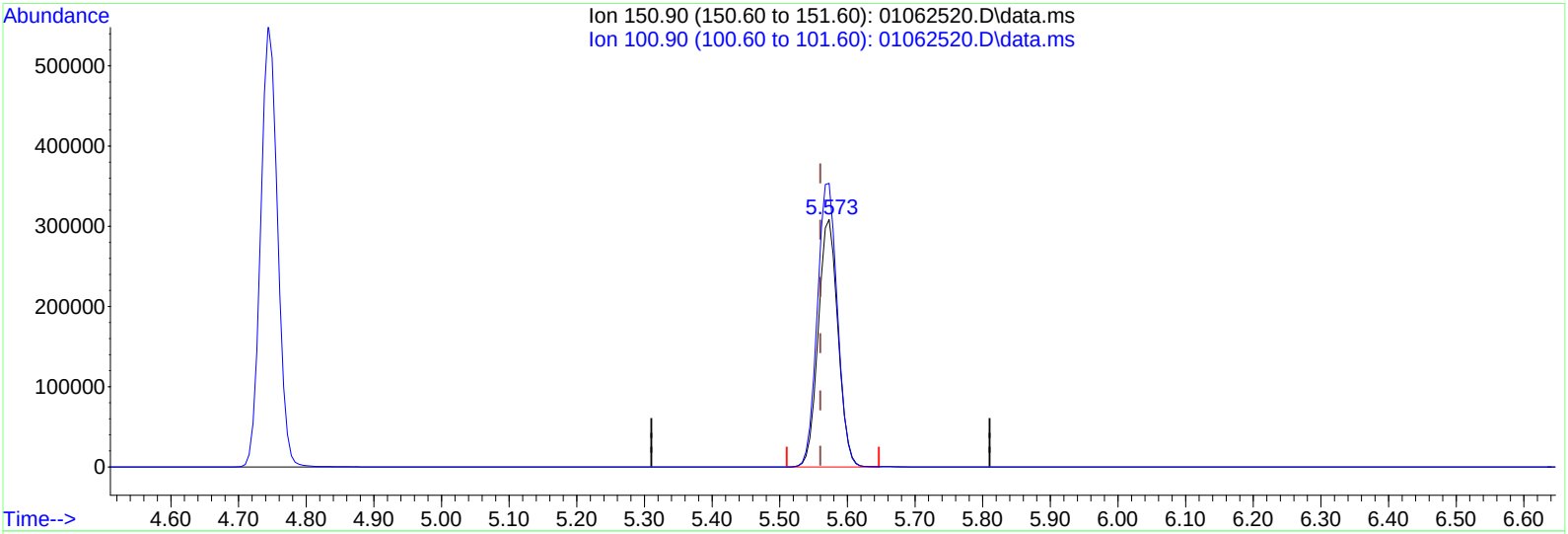
Quant Time: Jan 06 20:43:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

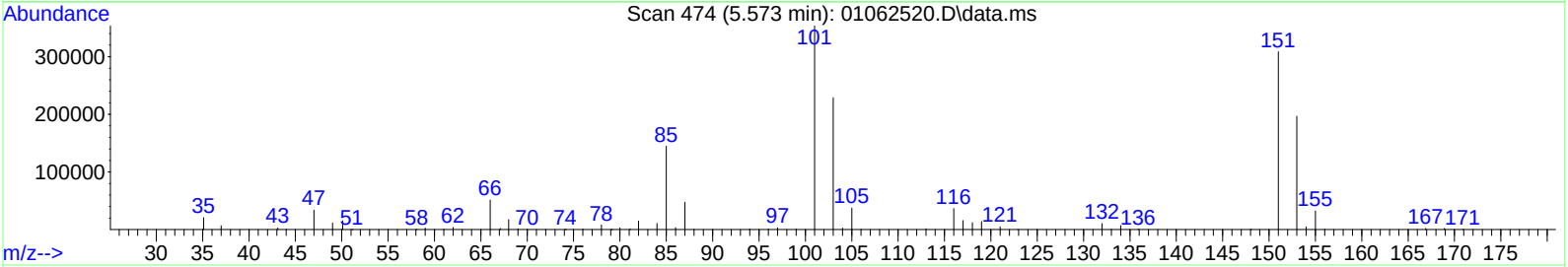


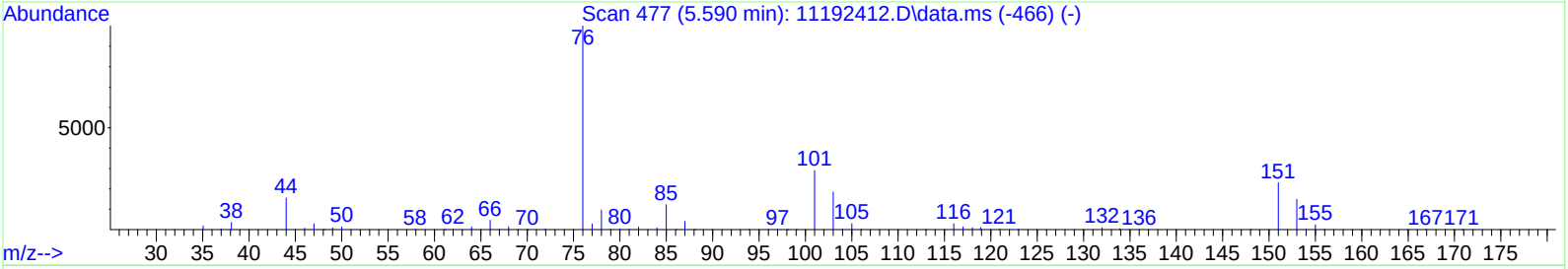
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062520.D
Acq On : 6 Jan 2025 18:52
Operator : SC
Sample : P2405139-012dil (40mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 06 20:43:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062520.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.573min (+0.013) 47.75ng

response 625014

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.78
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062530.D\data.ms

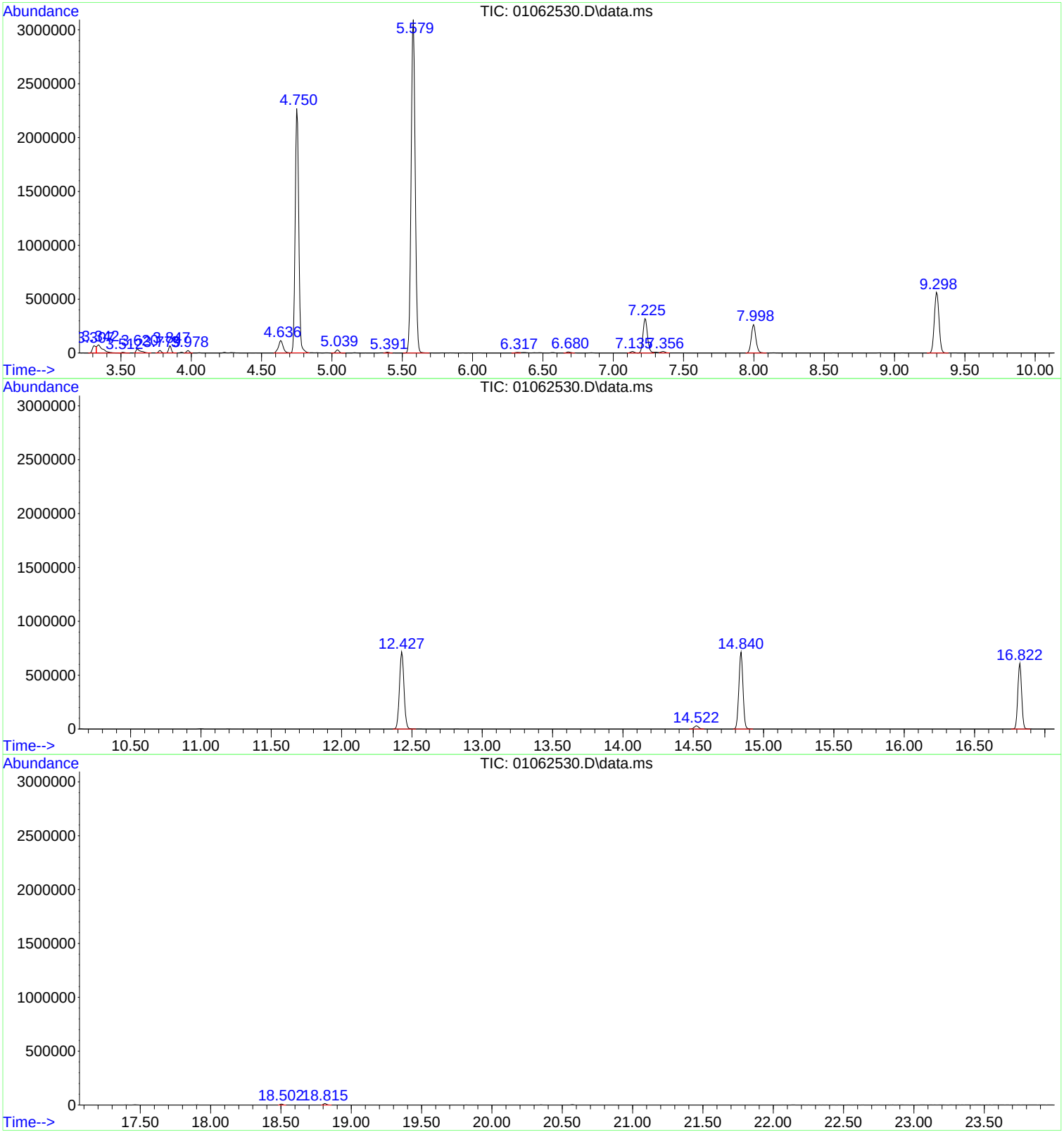
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.307	68	75	78	rBV3	67463	122469	1.95%	0.675%
2	3.342	78	81	107	rVV	75717	213810	3.41%	1.179%
3	3.512	107	111	120	rVB3	6433	10486	0.17%	0.058%
4	3.620	125	130	147	rBV2	36503	84519	1.35%	0.466%
5	3.779	152	158	165	rVV2	23555	31750	0.51%	0.175%
6	3.847	165	170	179	rVB	66340	84730	1.35%	0.467%
7	3.978	188	193	199	rVB	22261	31788	0.51%	0.175%
8	4.636	300	309	321	rBV2	115684	268142	4.28%	1.478%
9	4.750	321	329	345	rVV	2269539	3951407	63.03%	21.781%
10	5.039	372	380	390	rBV2	29321	49478	0.79%	0.273%
11	5.391	438	442	449	rVB	8085	13272	0.21%	0.073%
12	5.579	462	475	495	rBV	3095183	6268888	100.00%	34.556%
13	6.317	598	605	609	rBV2	6306	14328	0.23%	0.079%
14	6.680	663	669	677	rBV	10508	21956	0.35%	0.121%
15	7.135	743	749	757	rBV2	14504	28092	0.45%	0.155%
16	7.225	757	765	776	rBV	319646	706480	11.27%	3.894%
17	7.356	783	788	796	rVB	13671	27361	0.44%	0.151%
18	7.998	891	901	917	rBV	263709	605481	9.66%	3.338%
19	9.298	1118	1130	1145	rBV	563312	1294004	20.64%	7.133%
20	12.427	1670	1681	1699	rBV	716009	1617680	25.80%	8.917%
21	14.522	2041	2050	2060	rBB	29163	64449	1.03%	0.355%
22	14.840	2096	2106	2121	rBV	713854	1455192	23.21%	8.021%
23	16.822	2444	2455	2468	rBV	609797	1141389	18.21%	6.292%
24	18.502	2747	2751	2757	rBB	8843	12618	0.20%	0.070%
25	18.815	2801	2806	2814	rBB	14133	21701	0.35%	0.120%

Sum of corrected areas: 18141470

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:15
Operator : SC
Sample : P2405139-012 (80mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062530.D
Acq On : 7 Jan 2025 00:155
Operator : SCC
Sample : P2405139-012 (80mL))
Misc : S37-123124011
ALS Vial : 9 Sample Multiplier: 11

1/7/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

						Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected

****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

1/7/25

Quant Time: Jan 07 06:08:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	136818	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	590529	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	104403	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	232506	12.473	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
57) Toluene-d8 (SS2)	12.43	98	605618	13.076	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
73) Bromofluorobenzene (SS3)	16.82	174	228991	14.327	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.64%				
Target Compounds							Qvalue
2) Propene	3.31	42	10778	0.738	ng	#	36
3) Dichlorodifluoromethan...	3.36	85	8245	0.308	ng		98
4) Chloromethane	3.52	50	2955	0.149	ng		90
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	111	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.82	54	606m	0.060	ng		
8) Bromomethane	4.03	94	186	N.D.			
9) Chloroethane	4.16	64	120	N.D.			
10) Ethanol	4.32	45	151541	14.974	ng		97
11) Acetonitrile	4.45	41	3649	0.140	ng		98
12) Acrolein	4.53	56	1976	0.228	ng		80
13) Acetone	4.62	58	75225	8.166	ng	#	23
14) Trichlorofluoromethane	4.76	101	4524	0.180	ng		94
15) 2-Propanol (Isopropanol)	4.87	45	388631	11.780	ng		98
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	3239	0.250	ng		97
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	5.59	151	1487	0.131	ng		96
22) Carbon Disulfide	5.61	76	19976	0.479	ng		97
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D. d			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D. d			
26) Vinyl Acetate	6.45	86	4613	2.069	ng	#	93
27) 2-Butanone (MEK)	6.67	72	7047	0.952	ng	#	92
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.29	61	254800	55.776	ng		99
31) n-Hexane	7.30	57	13179	0.641	ng		92
32) Chloroform	7.38	83	1025	N.D.			
34) Tetrahydrofuran (THF)	7.75	72	7759	1.112	ng	#	91
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D. d			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	18117	No Calib		#	
41) Benzene	8.90	78	44857	0.946	ng		100
42) Carbon Tetrachloride	9.08	117	850	N.D.			
43) Cyclohexane	9.22	84	16858	1.019	ng		94
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	9.87	63	3236	0.280	ng		100
46) Bromodichloromethane	10.02	83	274	N.D.			
47) Trichloroethene	10.15	130	234	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D. d			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

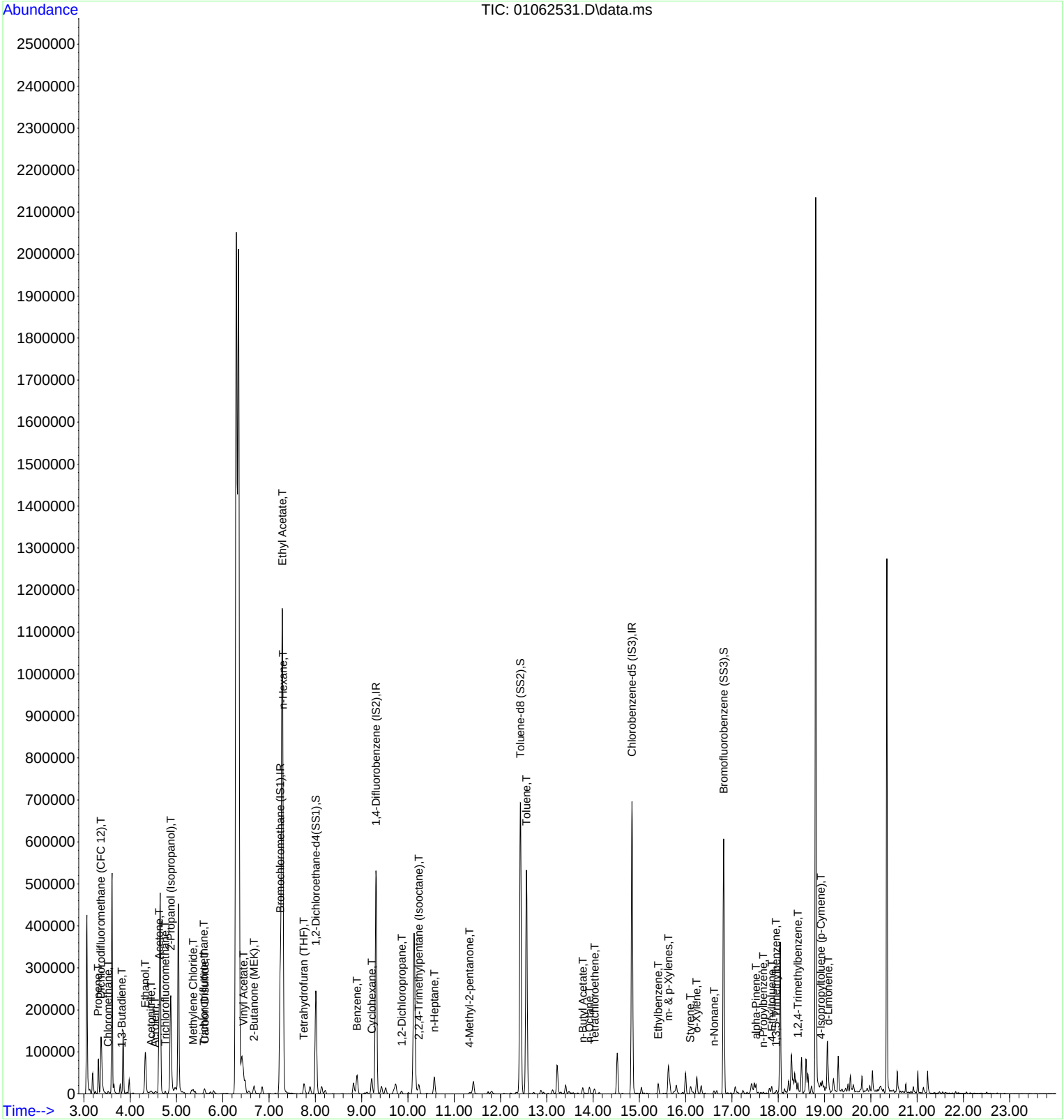
Quant Time: Jan 07 06:08:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	24584	0.496 ng		88
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.57	71	10832	1.025 ng		99
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	1198	0.117 ng	#	60
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	505029	11.333 ng		99
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	13693	0.561 ng		99
63) n-Octane	13.92	57	3149	0.341 ng		97
64) Tetrachloroethene	14.03	166	4297	0.324 ng		98
65) Chlorobenzene	14.90	112	1311	N.D.		
66) Ethylbenzene	15.41	91	21298	0.432 ng		100
67) m- & p-Xylenes	15.63	91	62162	1.541 ng		100
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	7161	0.254 ng		97
70) o-Xylene	16.24	91	25799	0.646 ng		100
71) n-Nonane	16.62	43	3440	0.162 ng		94
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	1381	N.D.		
75) alpha-Pinene	17.52	93	9028	0.369 ng		93
76) n-Propylbenzene	17.67	91	3288	0.056 ng		89
77) 3-Ethyltoluene	17.03	105	1381	No Calib		
78) 4-Ethyltoluene	17.86	105	3645	0.078 ng		96
79) 1,3,5-Trimethylbenzene	17.95	105	3211	0.078 ng		99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	1381	No Calib		
82) 1,2,4-Trimethylbenzene	18.42	105	11267	0.272 ng		91
83) n-Decane	17.08	58	356	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	18.66	146	240	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	240	N.D.		
87) sec-Butylbenzene	18.74	105	356	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	4876	0.107 ng		88
89) 1,2,3-Trimethylbenzene	17.03	105	1381	No Calib		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	7803	0.590 ng		99
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	8865	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	111	N.D.		
95) Naphthalene	20.94	128	594	N.D.		
96) n-Dodecane	18.96	58	852	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.21	55	292	No Calib	#	
99) tert-Butylbenzene	18.43	119	1435	N.D.		
100) n-Butylbenzene	19.39	91	1291	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 07 06:08:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

MOA 1/7/25

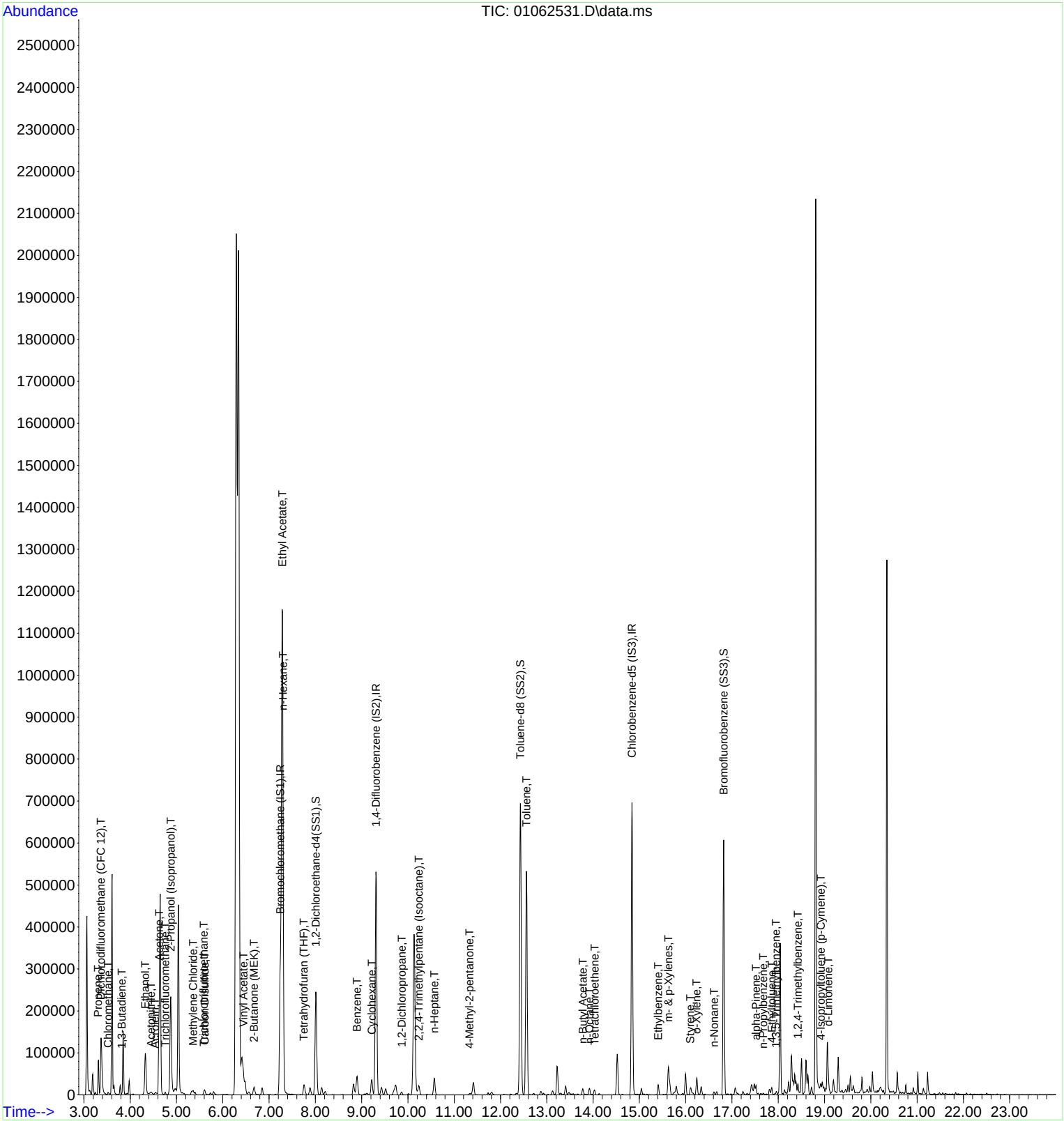
Quant Time: Jan 07 06:08:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

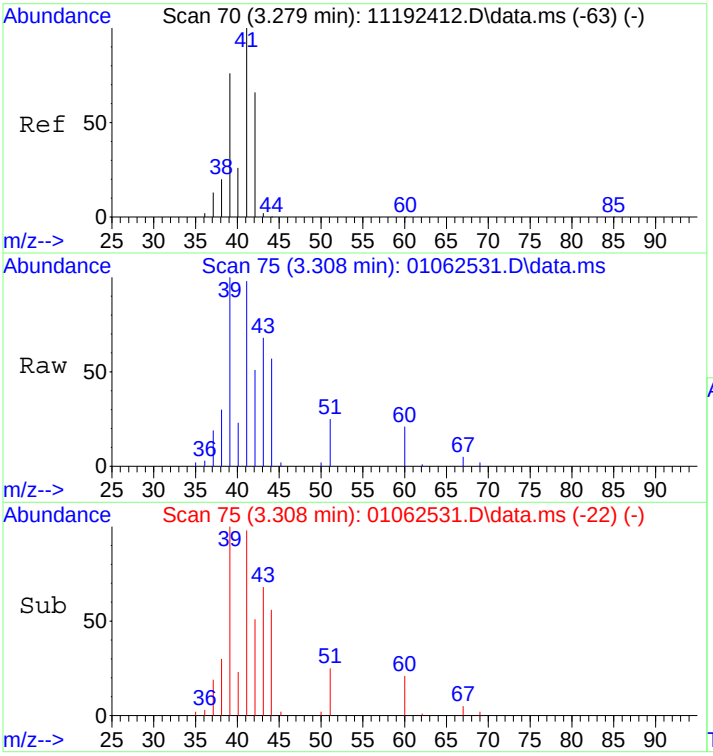
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	136818	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	590529	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	104403	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	232506	12.473	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
57) Toluene-d8 (SS2)	12.43	98	605618	13.076	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
73) Bromofluorobenzene (SS3)	16.82	174	228991	14.327	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.64%				
Target Compounds							Qvalue
2) Propene	3.31	42	10778	0.738	ng	#	36
3) Dichlorodifluoromethan...	3.36	85	8245	0.308	ng		98
4) Chloromethane	3.52	50	2955	0.149	ng		90
7) 1,3-Butadiene	3.82	54	606m	0.060	ng		
10) Ethanol	4.32	45	151541	14.974	ng		97
11) Acetonitrile	4.45	41	3649	0.140	ng		98
12) Acrolein	4.53	56	1976	0.228	ng		80
13) Acetone	4.62	58	75225	8.166	ng	#	23
14) Trichlorofluoromethane	4.76	101	4524	0.180	ng		94
15) 2-Propanol (Isopropanol)	4.87	45	388631	11.780	ng		98
19) Methylene Chloride	5.36	84	3239	0.250	ng		97
21) Trichlorotrifluoroethane	5.59	151	1487	0.131	ng		96
22) Carbon Disulfide	5.61	76	19976	0.479	ng		97
26) Vinyl Acetate	6.45	86	4613	2.069	ng	#	93
27) 2-Butanone (MEK)	6.67	72	7047	0.952	ng	#	92
30) Ethyl Acetate	7.29	61	254800	55.776	ng		99
31) n-Hexane	7.30	57	13179	0.641	ng		92
34) Tetrahydrofuran (THF)	7.75	72	7759	1.112	ng	#	91
41) Benzene	8.90	78	44857	0.946	ng		100
43) Cyclohexane	9.22	84	16858	1.019	ng		94
45) 1,2-Dichloropropane	9.87	63	3236	0.280	ng		100
49) 2,2,4-Trimethylpentane...	10.23	57	24584	0.496	ng		88
51) n-Heptane	10.57	71	10832	1.025	ng		99
53) 4-Methyl-2-pentanone	11.33	58	1198	0.117	ng	#	60
58) Toluene	12.56	91	505029	11.333	ng		99
62) n-Butyl Acetate	13.78	43	13693	0.561	ng		99
63) n-Octane	13.92	57	3149	0.341	ng		97
64) Tetrachloroethene	14.03	166	4297	0.324	ng		98
66) Ethylbenzene	15.41	91	21298	0.432	ng		100
67) m- & p-Xylenes	15.63	91	62162	1.541	ng		100
69) Styrene	16.10	104	7161	0.254	ng		97
70) o-Xylene	16.24	91	25799	0.646	ng		100
71) n-Nonane	16.62	43	3440	0.162	ng		94
75) alpha-Pinene	17.52	93	9028	0.369	ng		93
76) n-Propylbenzene	17.67	91	3288	0.056	ng		89
78) 4-Ethyltoluene	17.86	105	3645	0.078	ng		96
79) 1,3,5-Trimethylbenzene	17.95	105	3211	0.078	ng		99
82) 1,2,4-Trimethylbenzene	18.42	105	11267	0.272	ng		91
88) 4-Isopropyltoluene (p-...	18.92	119	4876	0.107	ng		88
91) d-Limonene	19.08	68	7803	0.590	ng		99

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 07 06:08:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

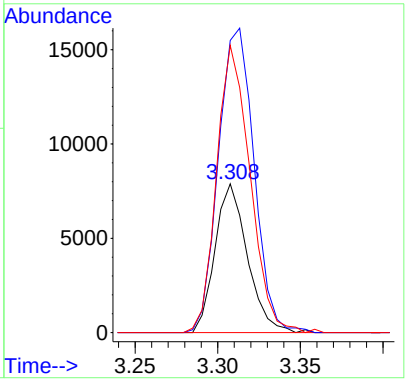


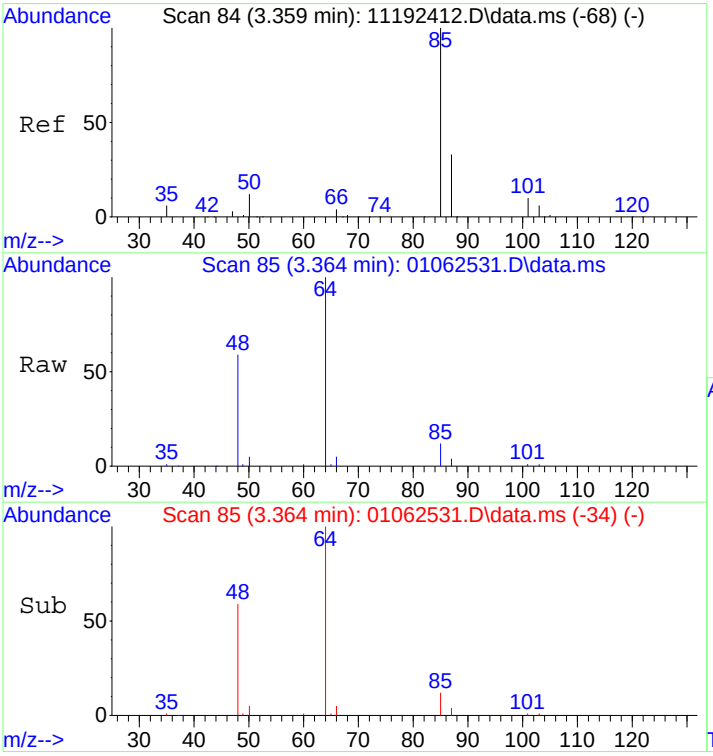


#2
Propene
Concen: 0.74 ng
RT: 3.31 min Scan# 75
Delta R.T. 0.054 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 42 Resp: 10778

Ion	Ratio	Lower	Upper
42	100		
39	224.6	95.4	135.4#
41	199.3	131.9	171.9#

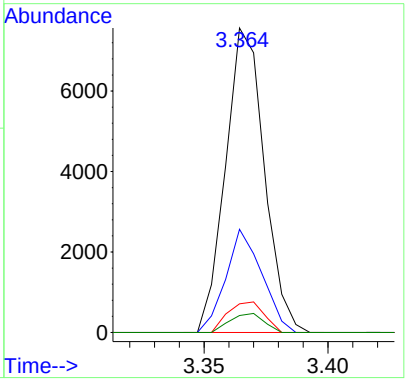


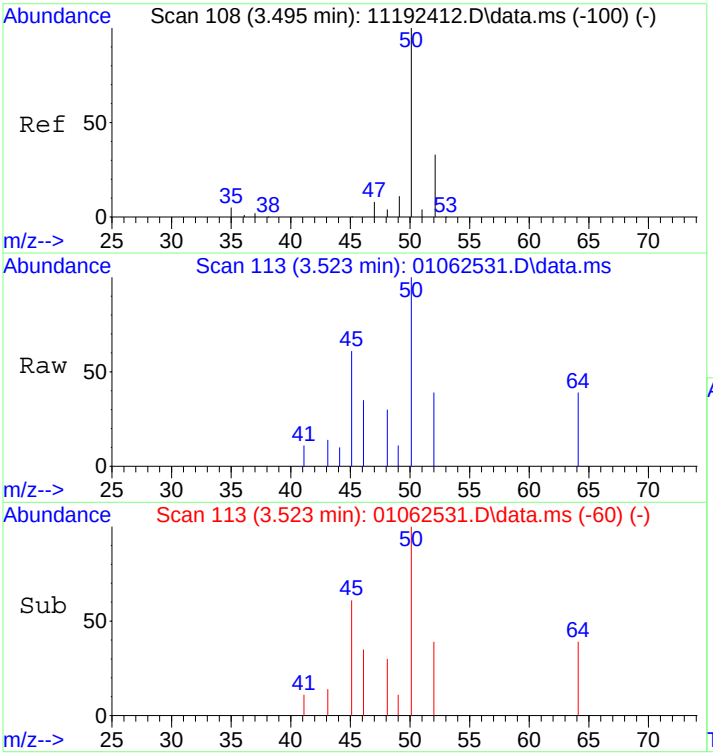


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.31 ng
RT: 3.36 min Scan# 85
Delta R.T. 0.037 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 85 Resp: 8245

Ion	Ratio	Lower	Upper
85	100		
87	31.6	12.6	52.6
101	9.4	0.0	29.6
103	5.5	0.0	26.2

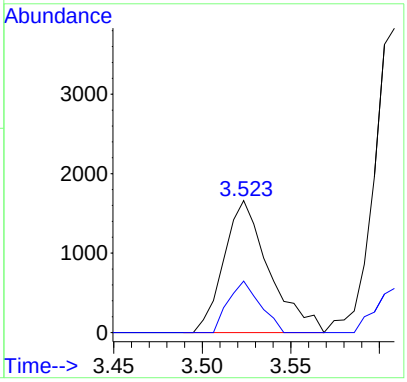


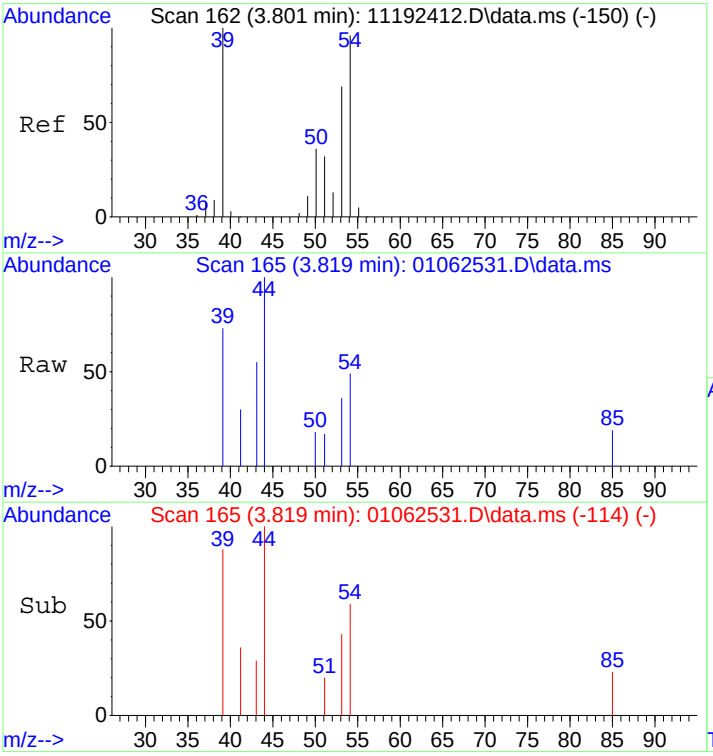


#4
Chloromethane
Concen: 0.15 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 50 Resp: 2955

Ion	Ratio	Lower	Upper
50	100		
52	27.5	13.0	53.0

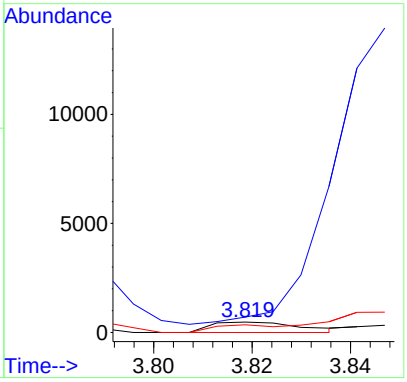


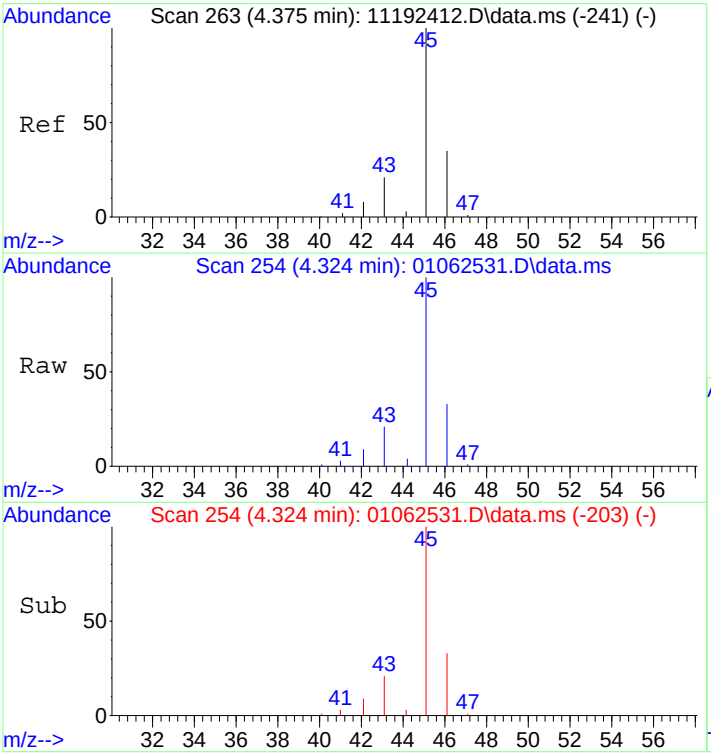


#7
1,3-Butadiene
Concen: 0.06 ng m
RT: 3.82 min Scan# 165
Delta R.T. 0.041 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 54 Resp: 606

Ion	Ratio	Lower	Upper
54	100		
39	121.1	83.2	123.2
53	69.5	50.9	90.9

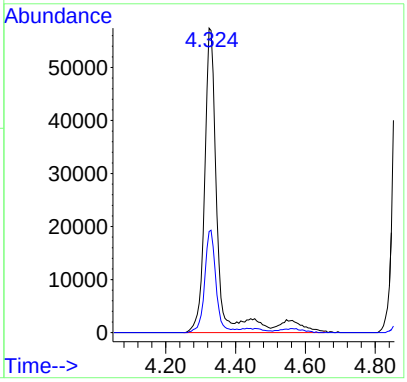


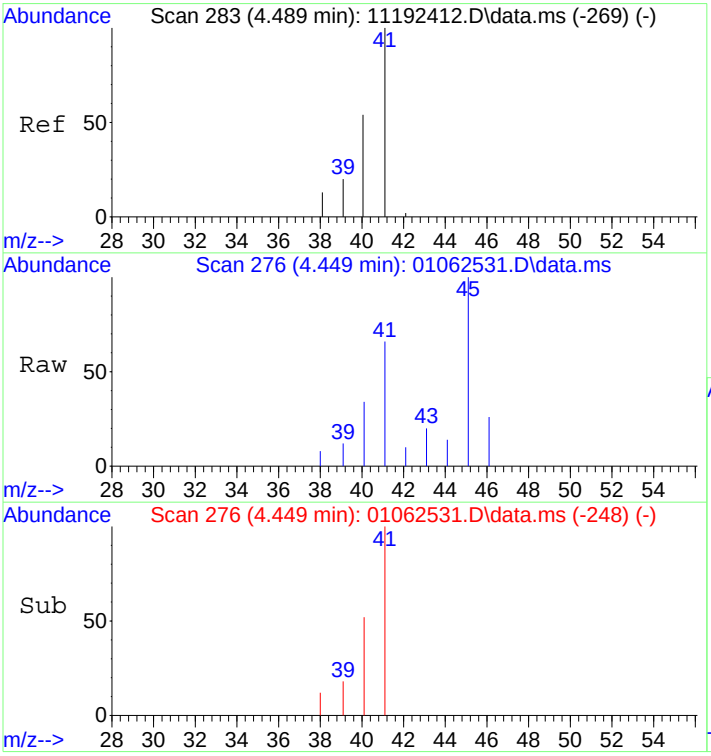


#10
Ethanol
Concen: 14.97 ng
RT: 4.32 min Scan# 254
Delta R.T. 0.040 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 45 Resp: 151541

Ion	Ratio	Lower	Upper
45	100		
46	33.3	11.8	51.8

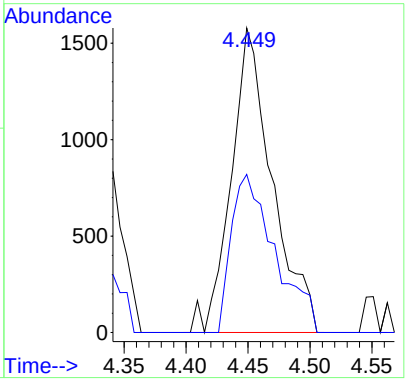


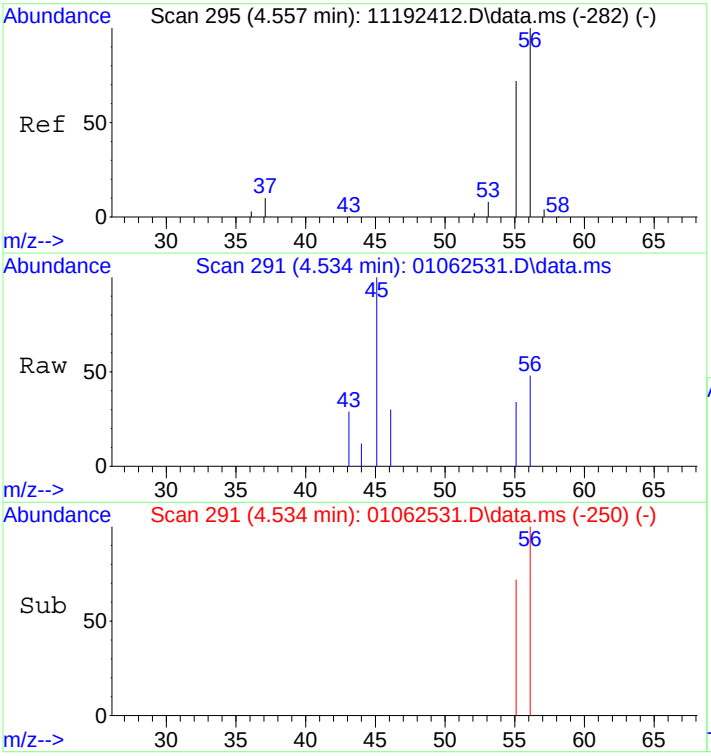


#11
Acetonitrile
Concen: 0.14 ng
RT: 4.45 min Scan# 276
Delta R.T. -0.043 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 41 Resp: 3649

Ion	Ratio	Lower	Upper
41	100		
40	55.1	33.8	73.8

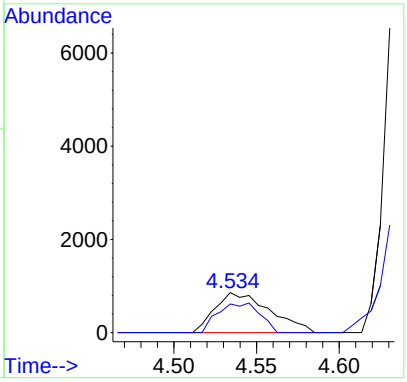


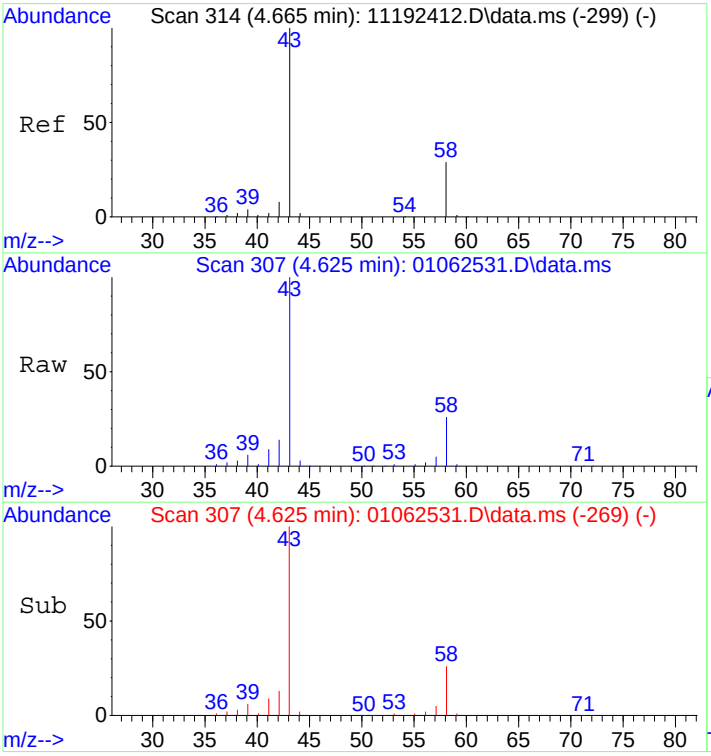


#12
Acrolein
Concen: 0.23 ng
RT: 4.53 min Scan# 291
Delta R.T. -0.019 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 56 Resp: 1976

Ion	Ratio	Lower	Upper
56	100		
55	56.7	53.1	93.1

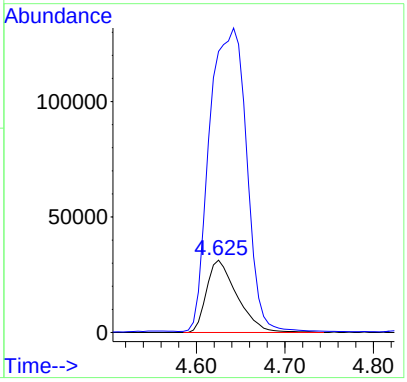


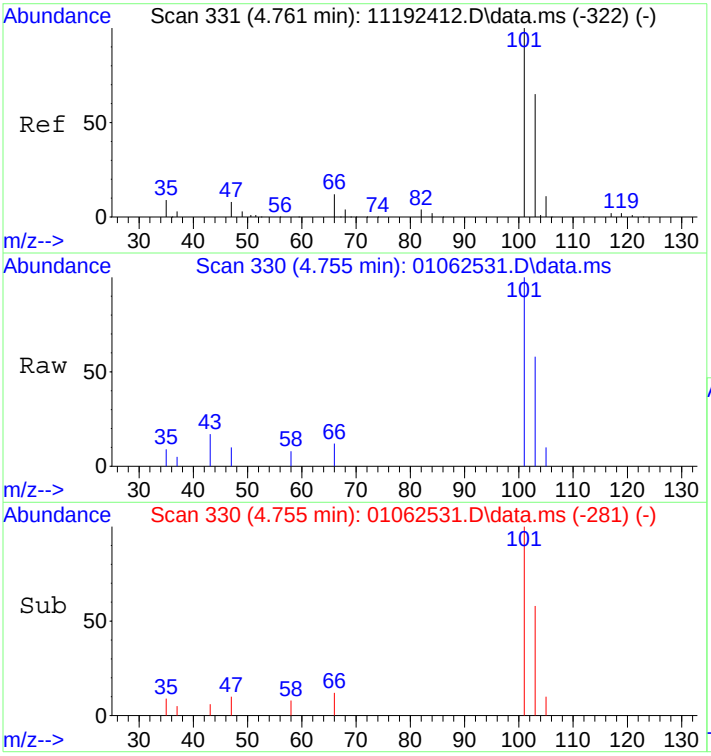


#13
Acetone
Concen: 8.17 ng
RT: 4.62 min Scan# 307
Delta R.T. -0.035 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 58 Resp: 75225

Ion	Ratio	Lower	Upper
58	100		
43	506.9	312.5	372.5#

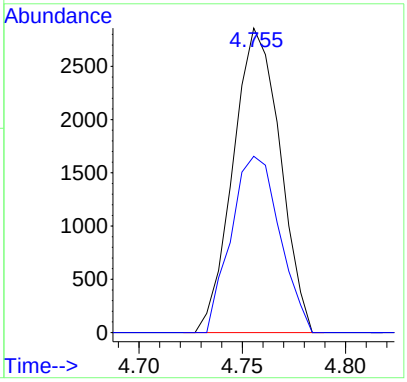


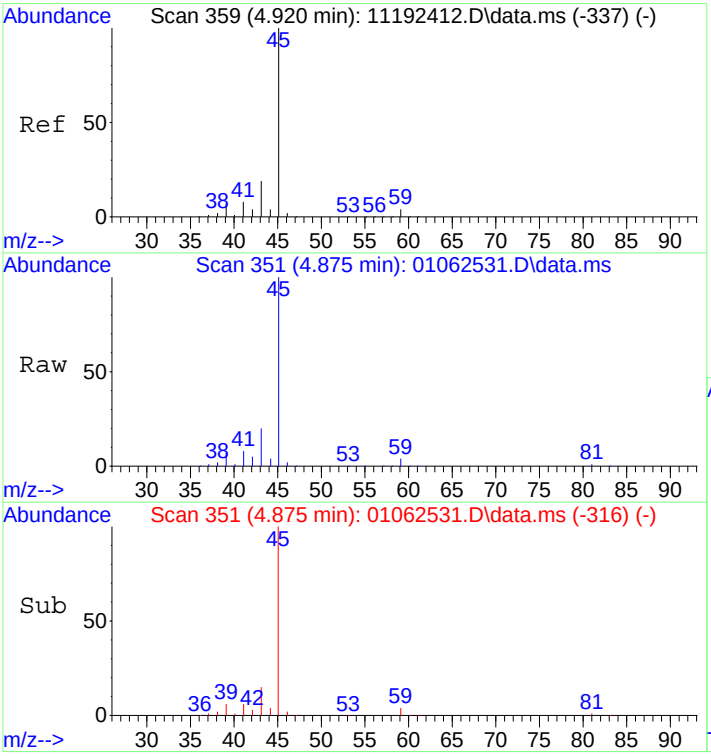


#14
Trichlorofluoromethane
Concen: 0.18 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:101 Resp: 4524

Ion	Ratio	Lower	Upper
101	100		
103	60.0	44.8	84.8

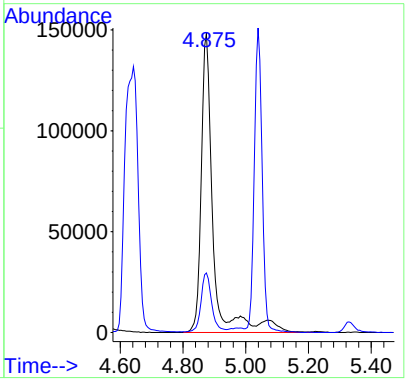


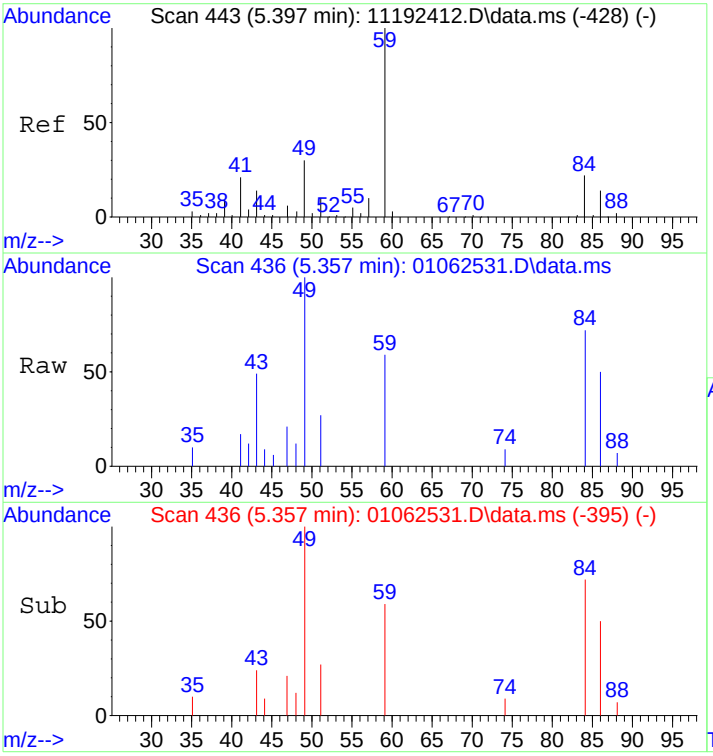


#15
2-Propanol (Isopropanol)
Concen: 11.78 ng
RT: 4.87 min Scan# 351
Delta R.T. -0.050 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 45 Resp: 388631

Ion	Ratio	Lower	Upper
45	100		
43	19.5	0.2	40.2

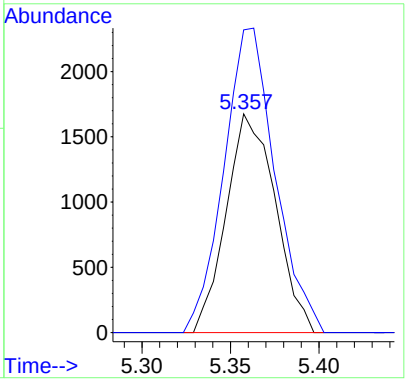


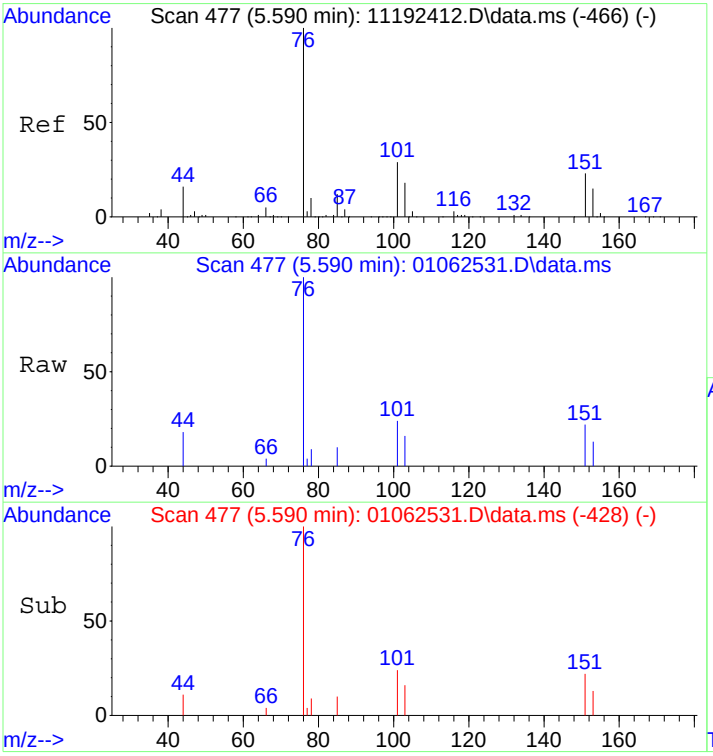


#19
Methylene Chloride
Concen: 0.25 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.017 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 84 Resp: 3239

Ion	Ratio	Lower	Upper
84	100		
49	145.2	116.0	166.0

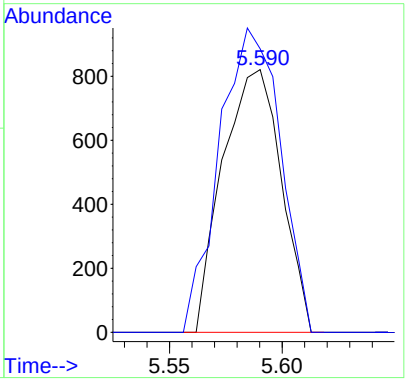


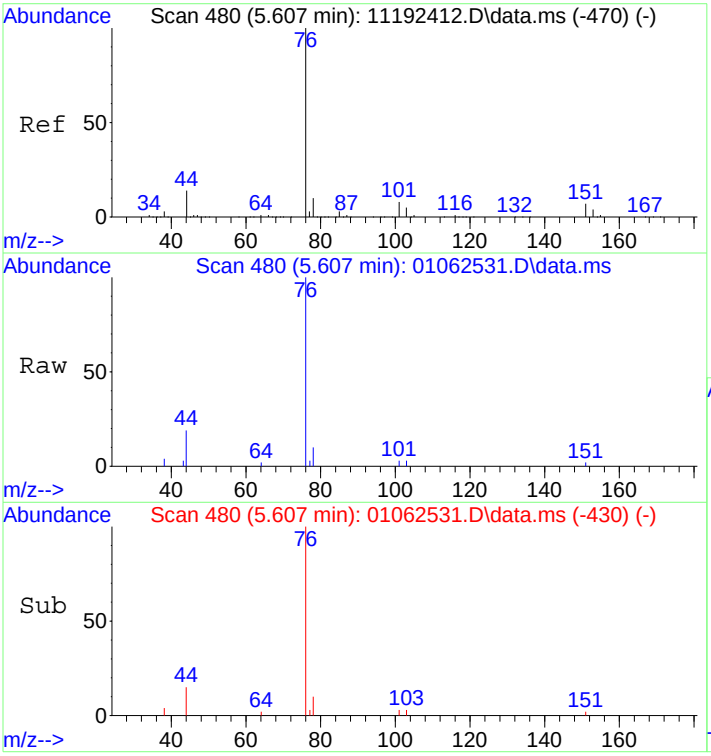


#21
Trichlorotrifluoroethane
Concen: 0.13 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:151 Resp: 1487

Ion	Ratio	Lower	Upper
151	100		
101	120.7	105.0	145.0

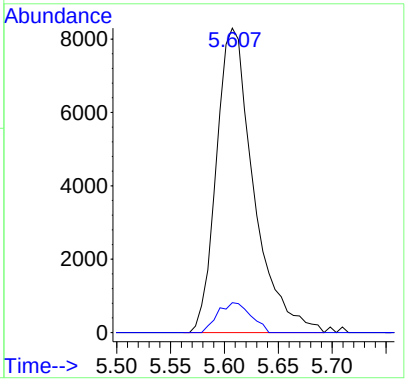


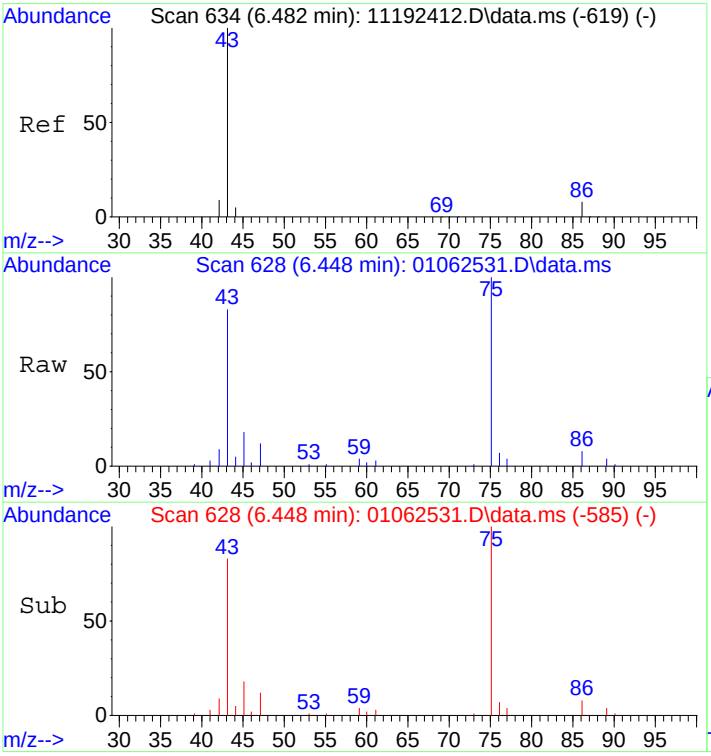


#22
Carbon Disulfide
Concen: 0.48 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.036 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 76 Resp: 19976

Ion	Ratio	Lower	Upper
76	100		
78	8.7	0.0	29.6

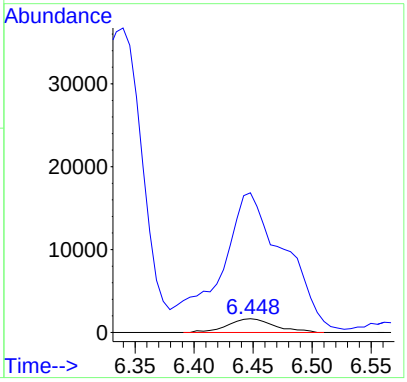


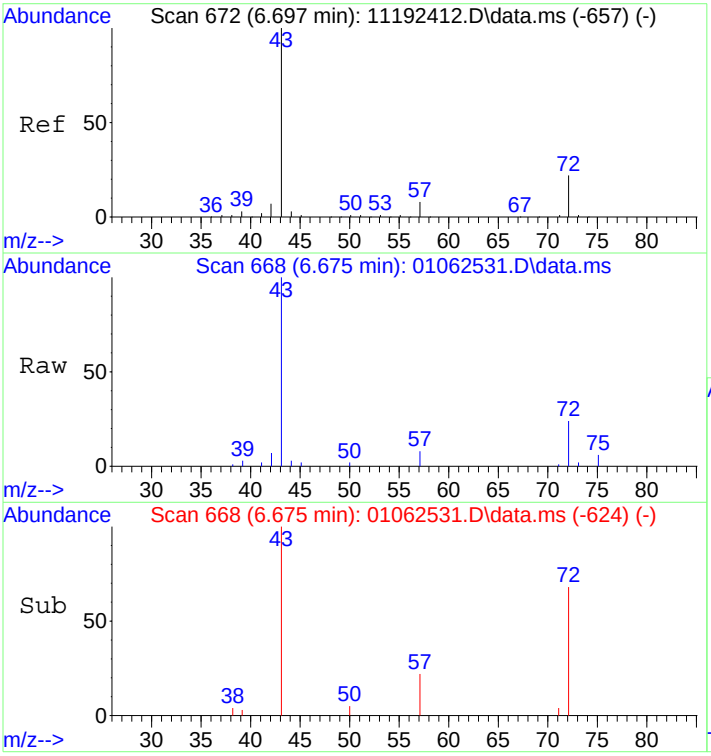


#26
Vinyl Acetate
Concen: 2.07 ng
RT: 6.45 min Scan# 628
Delta R.T. -0.007 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 86 Resp: 4613

Ion	Ratio	Lower	Upper
86	100		
43	1312.8	1331.6	1371.6#

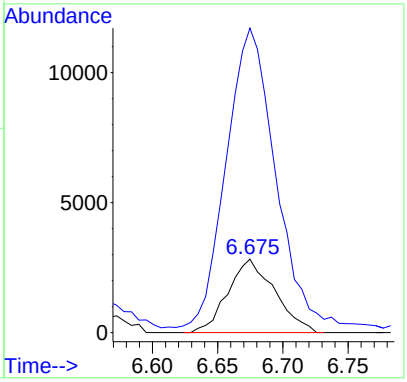


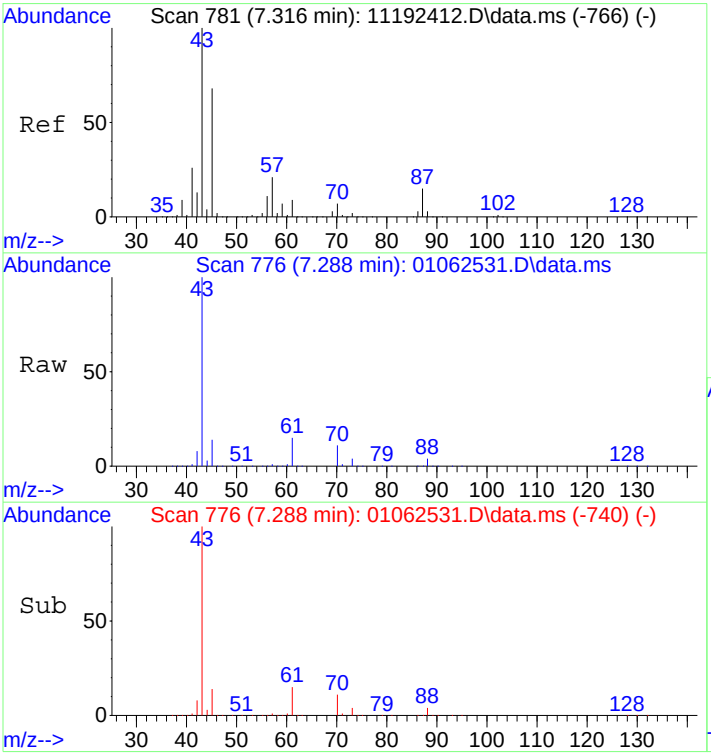


#27
2-Butanone (MEK)
Concen: 0.95 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 72 Resp: 7047

Ion	Ratio	Lower	Upper
72	100		
43	438.8	439.8	479.8#

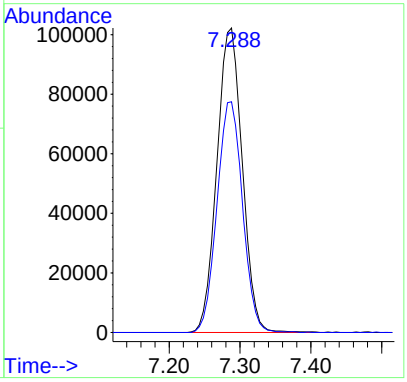


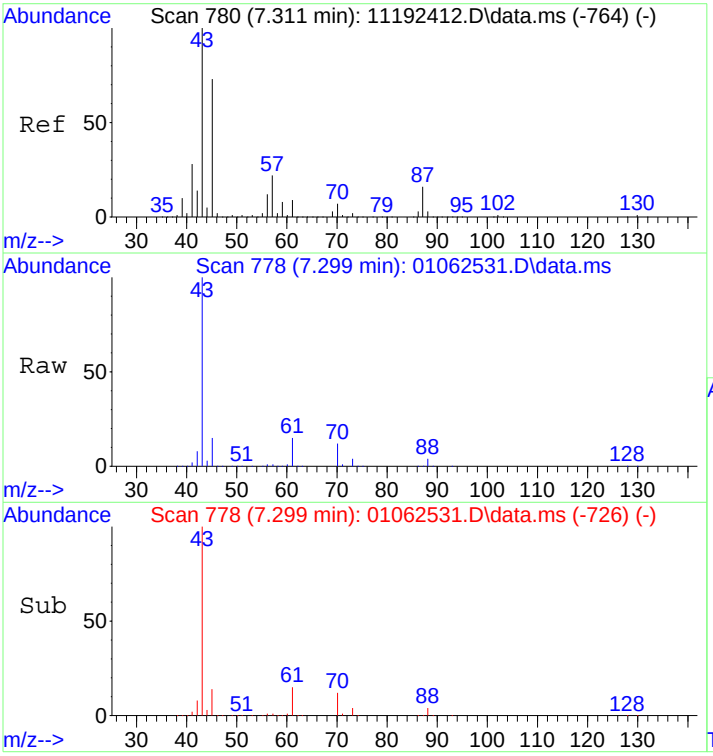


#30
Ethyl Acetate
Concen: 55.78 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 61 Resp: 254800

Ion	Ratio	Lower	Upper
61	100		
70	76.2	57.3	97.3

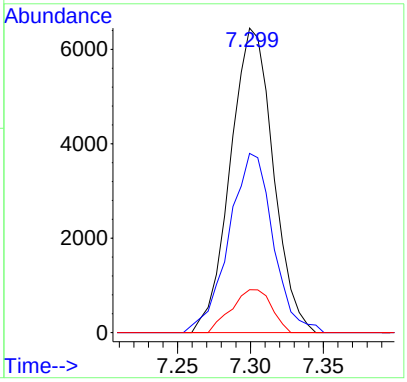


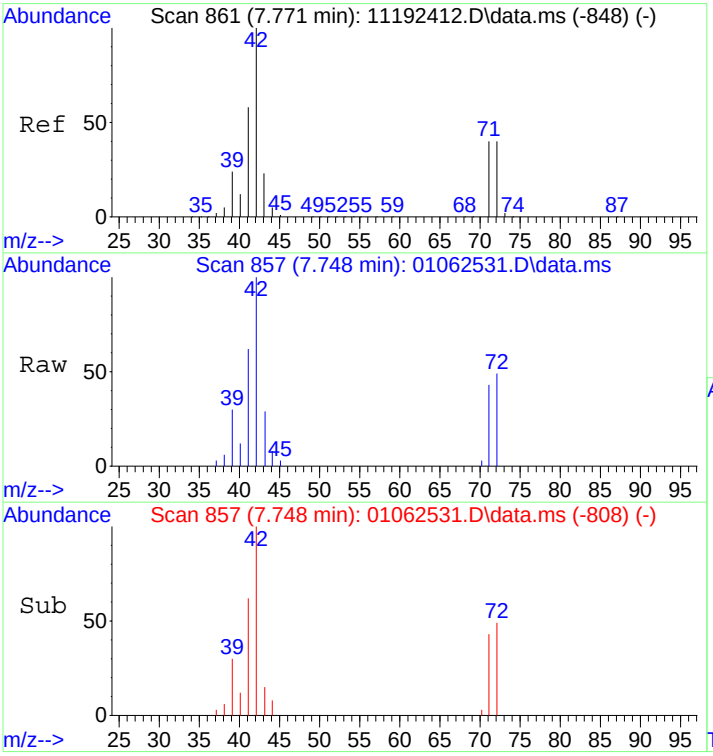


#31
n-Hexane
Concen: 0.64 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 57 Resp: 13179

Ion	Ratio	Lower	Upper
57	100		
56	60.8	43.4	65.0
86	13.1	10.9	16.3

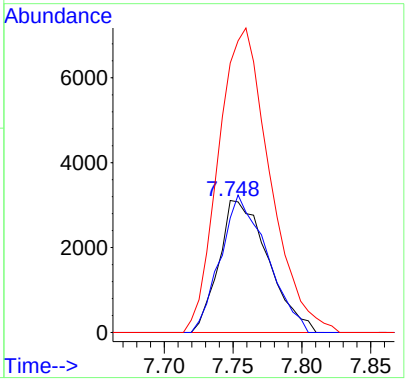


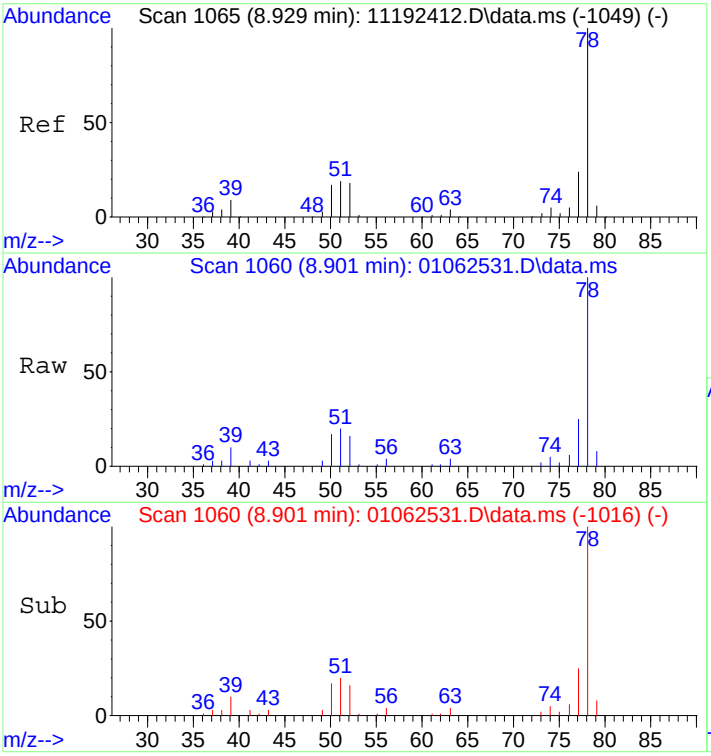


#34
Tetrahydrofuran (THF)
Concen: 1.11 ng
RT: 7.75 min Scan# 857
Delta R.T. 0.028 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 72 Resp: 7759

Ion	Ratio	Lower	Upper
72	100		
71	98.1	78.6	118.6
42	240.6	243.4	283.4#

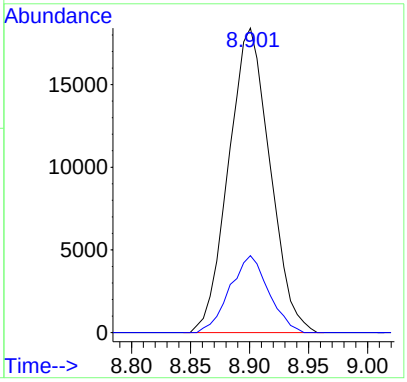


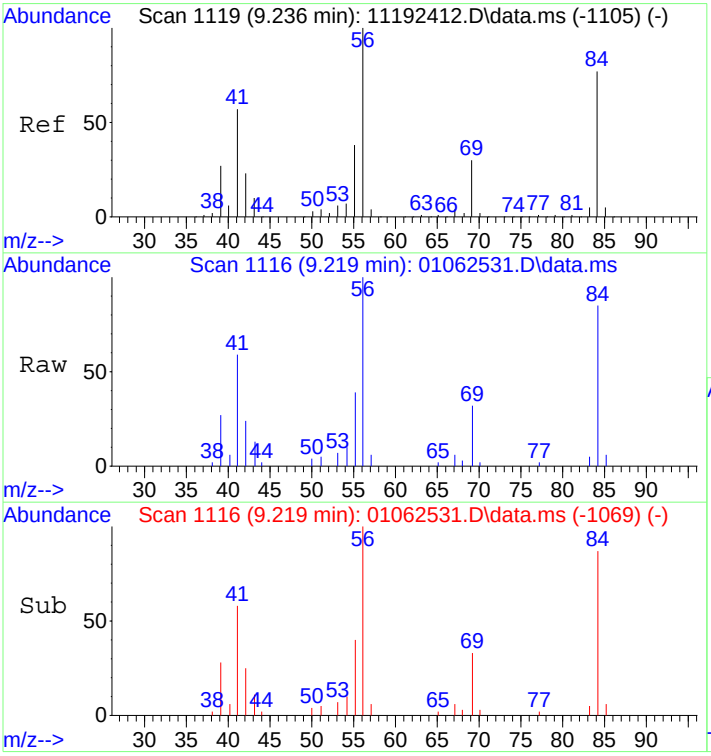


#41
Benzene
Concen: 0.95 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 78 Resp: 44857

Ion	Ratio	Lower	Upper
78	100		
77	23.8	3.7	43.7

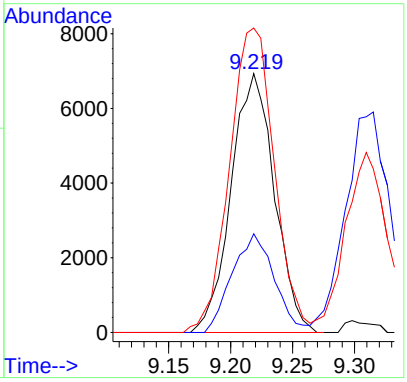


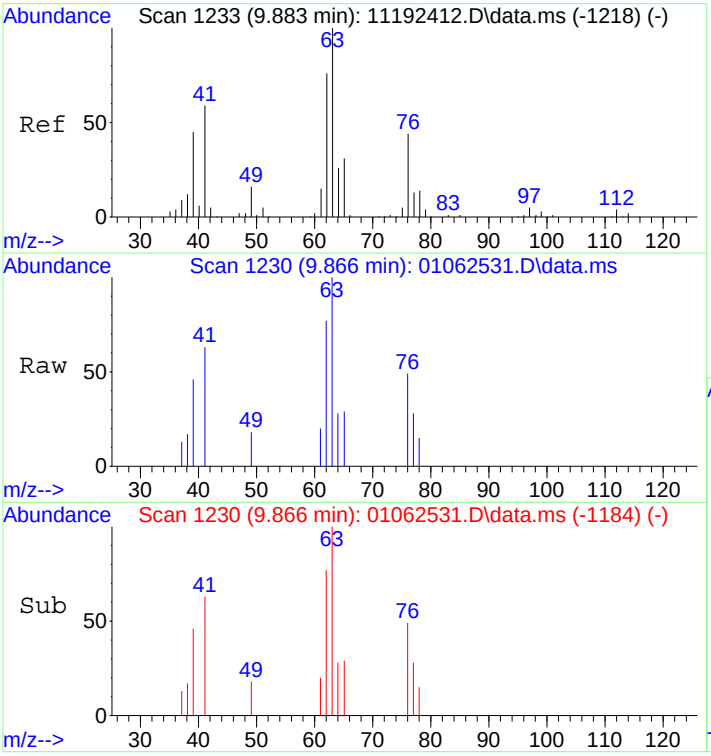


#43
Cyclohexane
Concen: 1.02 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 84 Resp: 16858

Ion	Ratio	Lower	Upper
84	100		
69	37.2	18.3	58.3
56	121.7	110.7	150.7

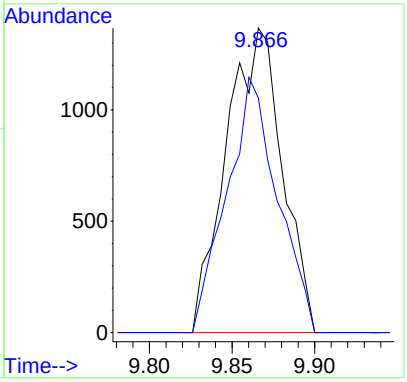


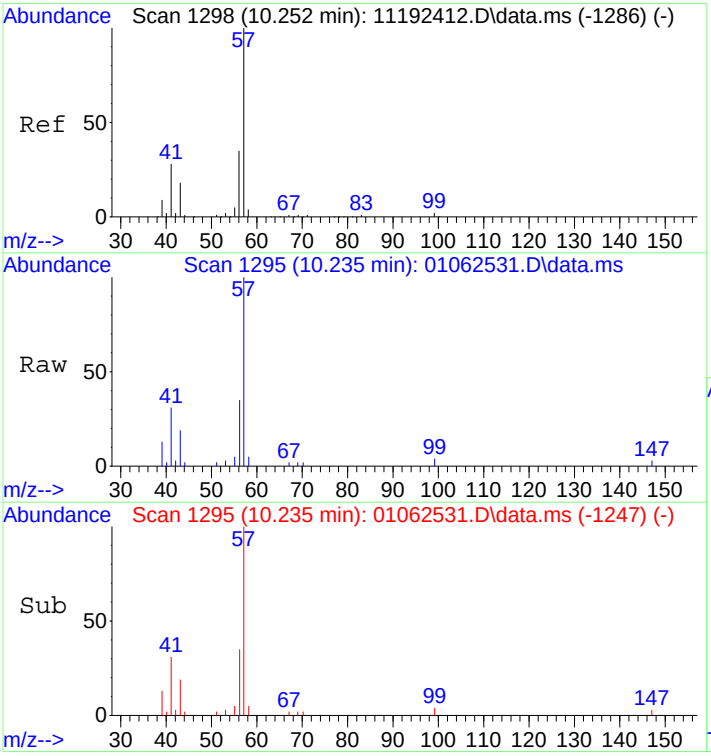


#45
1,2-Dichloropropane
Concen: 0.28 ng
RT: 9.87 min Scan# 1230
Delta R.T. 0.014 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 63 Resp: 3236

Ion	Ratio	Lower	Upper
63	100		
62	75.5	55.9	95.9

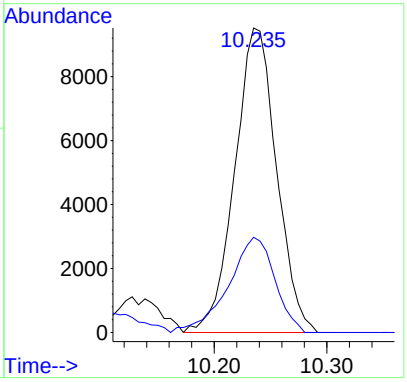


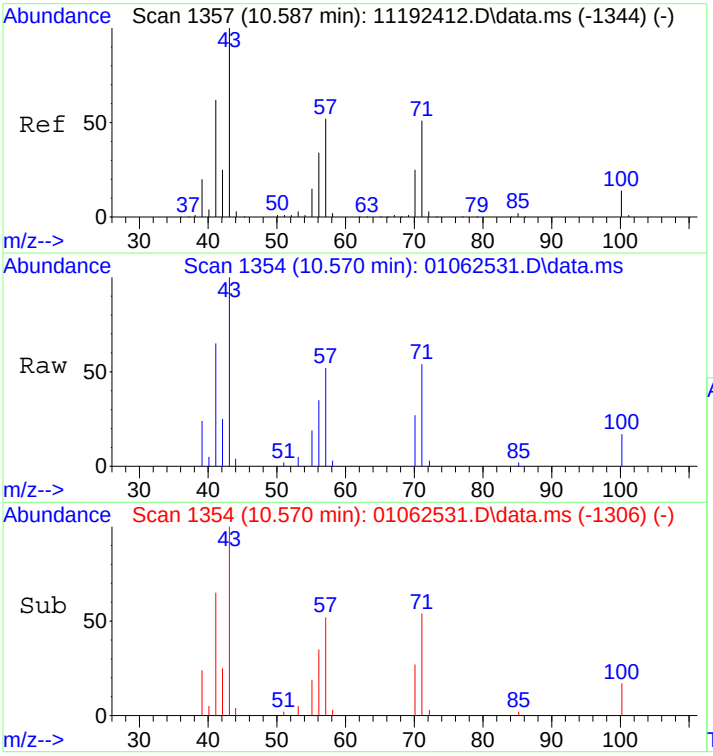


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.50 ng
RT: 10.23 min Scan# 1295
Delta R.T. 0.021 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 57 Resp: 24584

Ion	Ratio	Lower	Upper
57	100		
41	34.7	8.3	48.3

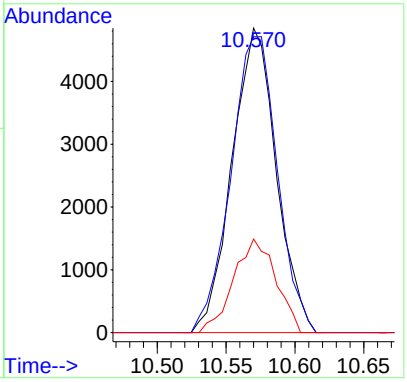


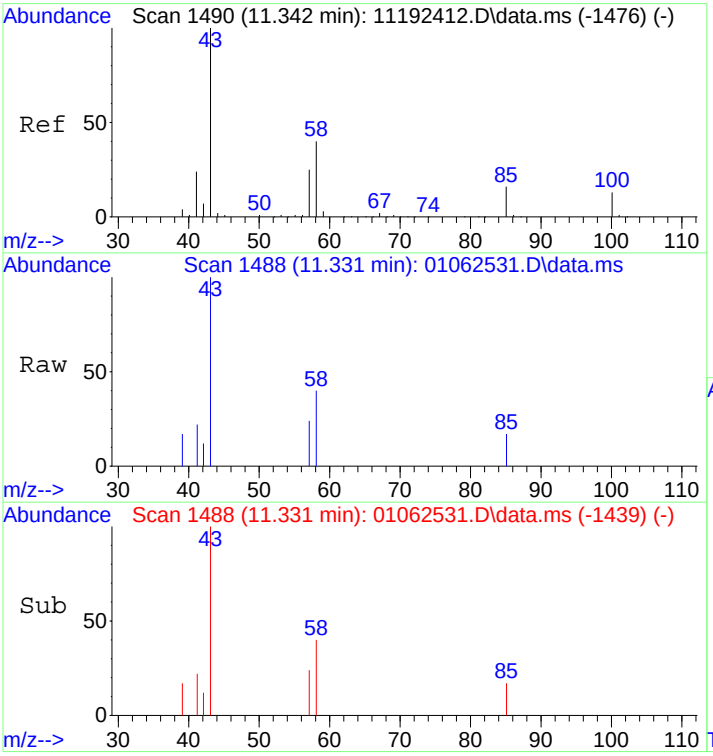


#51
n-Heptane
Concen: 1.02 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 71 Resp: 10832

Ion	Ratio	Lower	Upper
71	100		
57	102.3	83.3	123.3
100	29.4	8.7	48.7

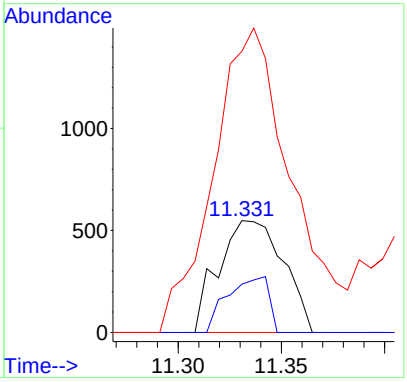


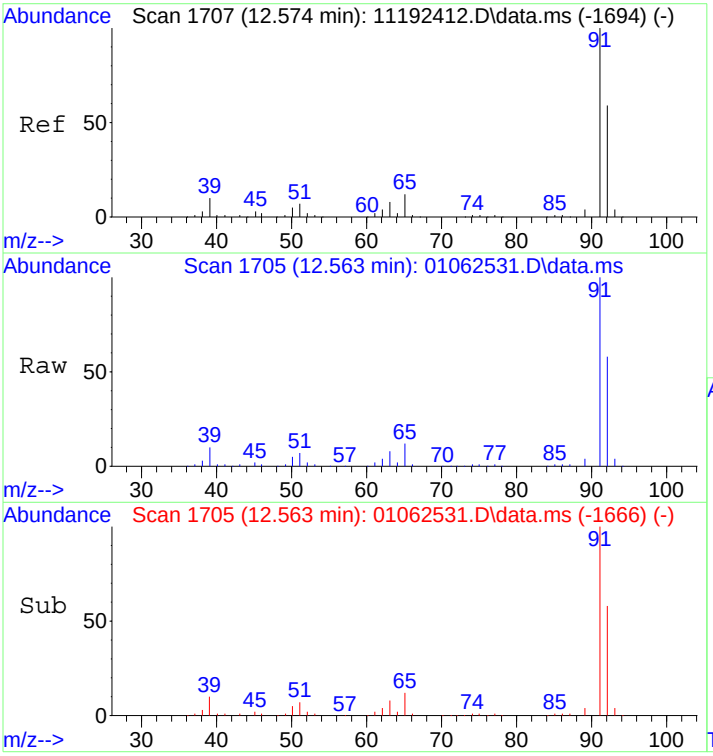


#53
4-Methyl-2-pentanone
Concen: 0.12 ng
RT: 11.33 min Scan# 1488
Delta R.T. 0.027 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 58 Resp: 1198

Ion	Ratio	Lower	Upper
58	100		
85	31.6	33.8	50.6#
43	325.8	199.5	299.3#

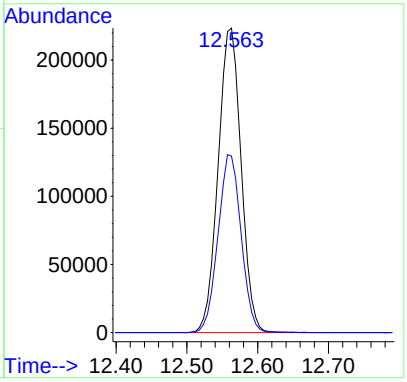


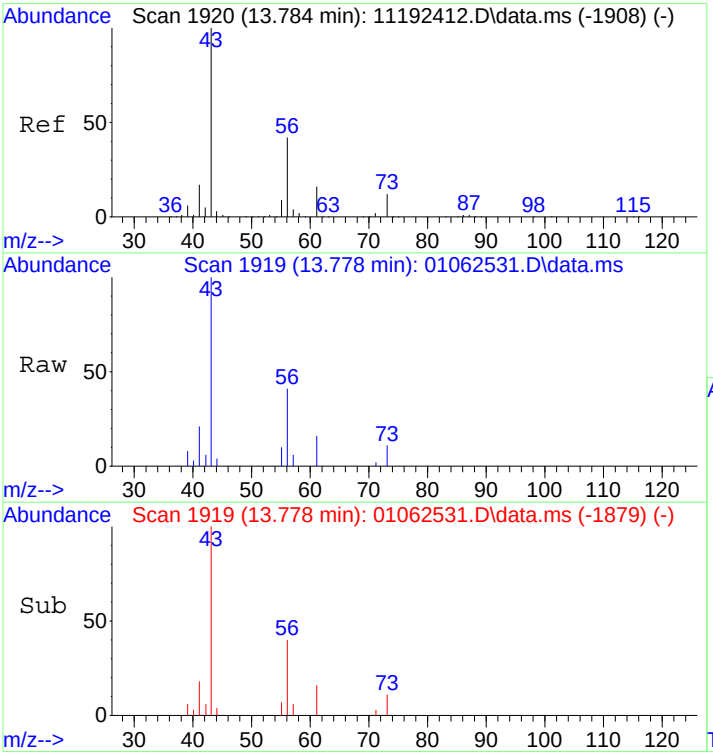


#58
Toluene
Concen: 11.33 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 91 Resp: 505029

Ion	Ratio	Lower	Upper
91	100		
92	58.6	39.2	79.2

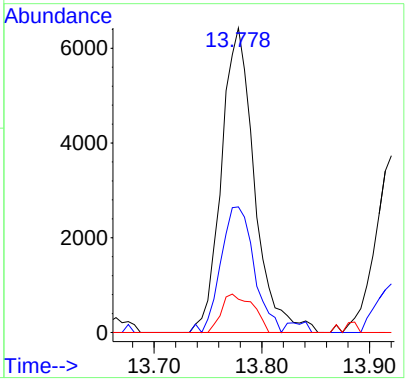


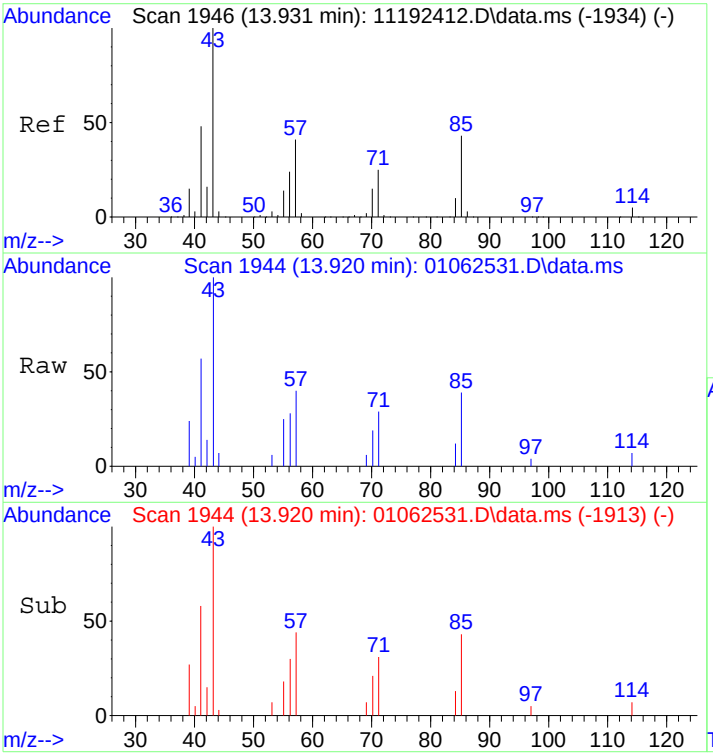


#62
n-Butyl Acetate
Concen: 0.56 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 43 Resp: 13693

Ion	Ratio	Lower	Upper
43	100		
56	41.4	20.9	60.9
73	12.0	0.0	32.0

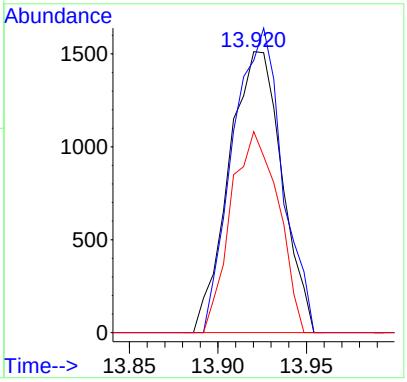


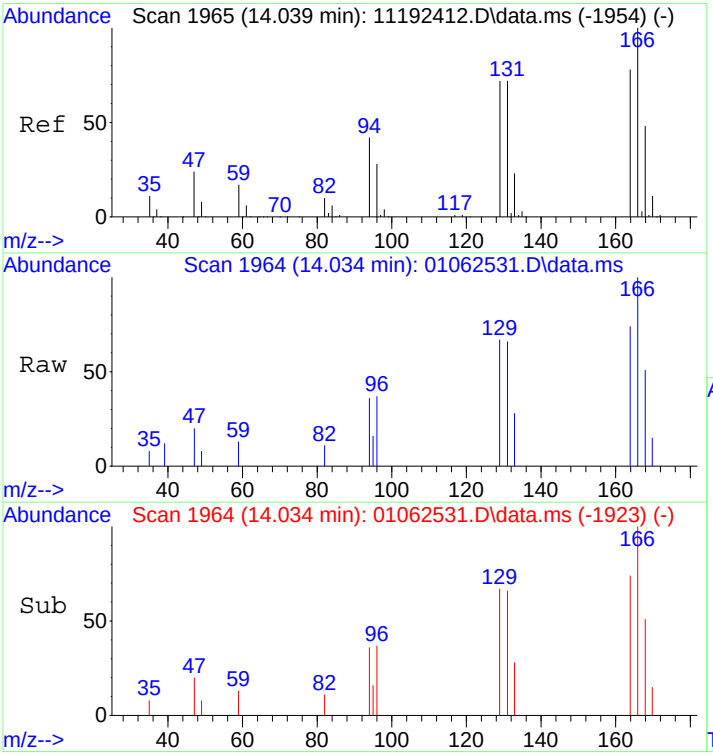


#63
n-Octane
Concen: 0.34 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 57 Resp: 3149

Ion	Ratio	Lower	Upper
57	100		
85	101.1	83.6	125.4
71	64.0	49.0	73.4

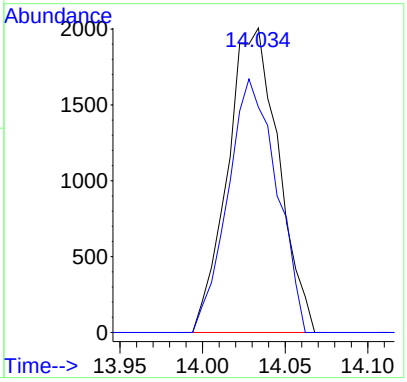


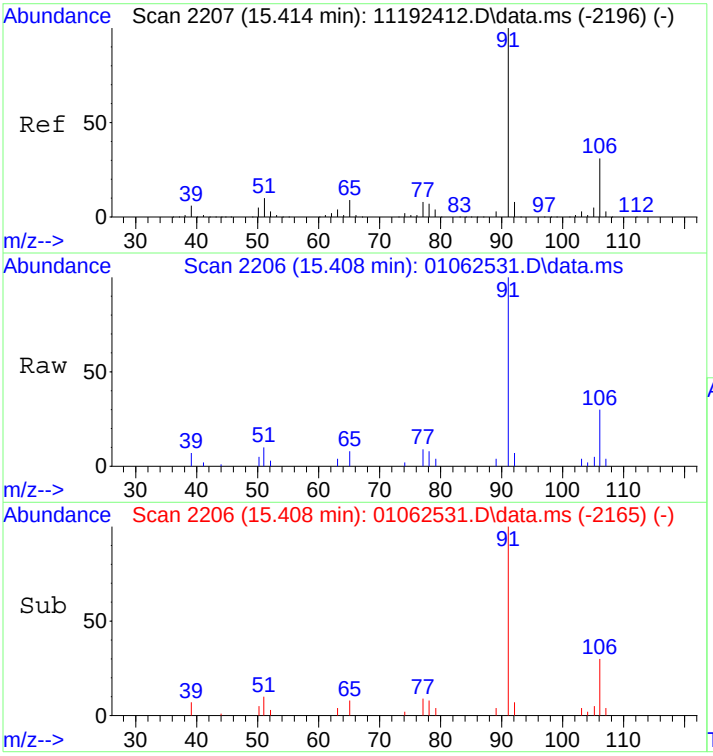


#64
Tetrachloroethene
Concen: 0.32 ng
RT: 14.03 min Scan# 1964
Delta R.T. -0.017 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:166 Resp: 4297

Ion	Ratio	Lower	Upper
166	100		
164	80.1	58.7	98.7

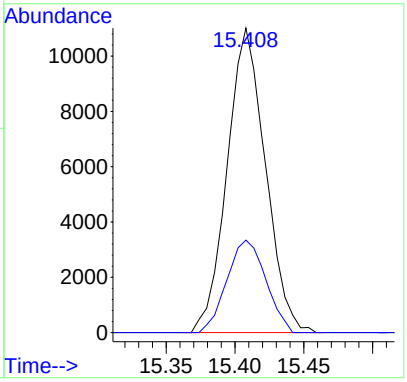


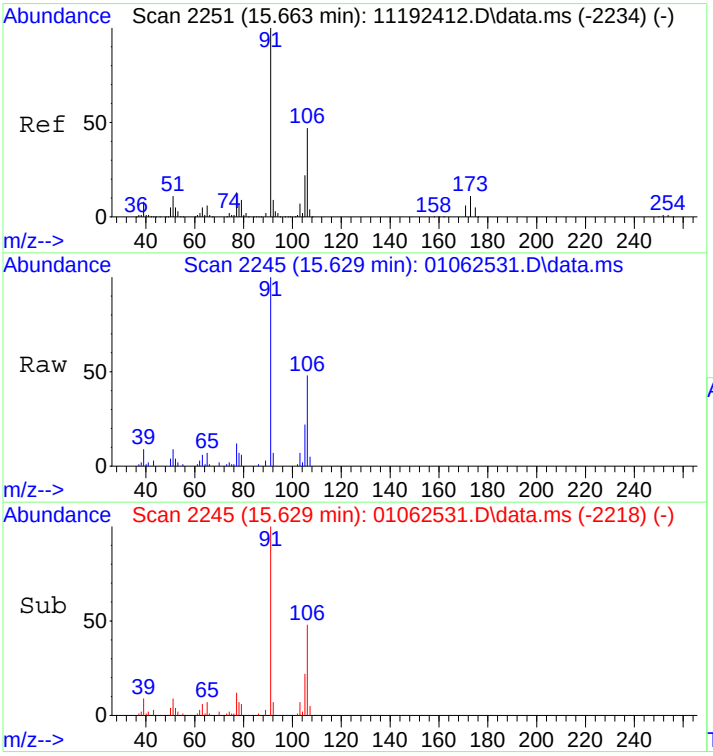


#66
Ethylbenzene
Concen: 0.43 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 91 Resp: 21298

Ion	Ratio	Lower	Upper
91	100		
106	30.9	10.7	50.7

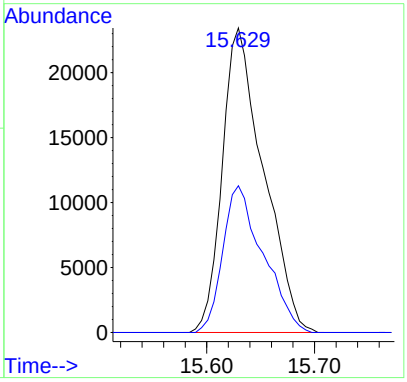


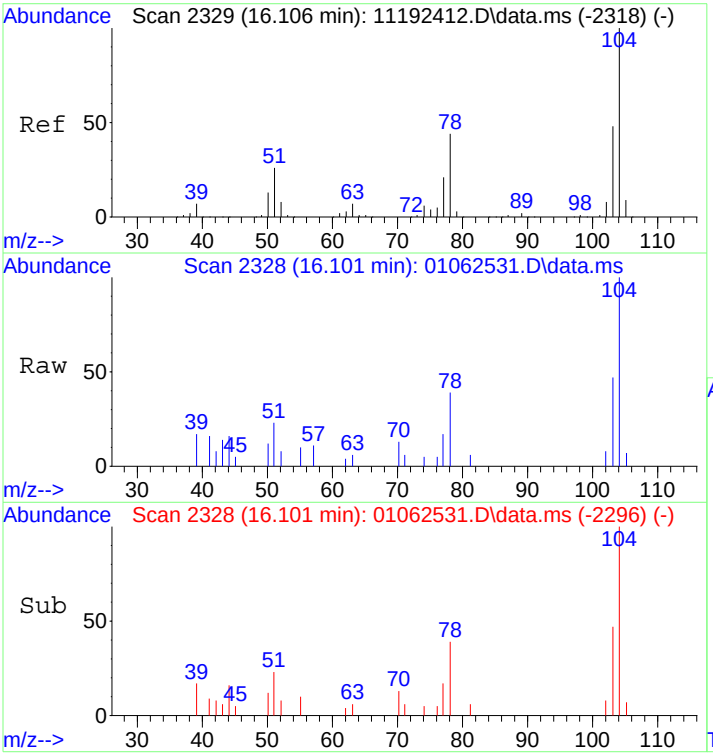


#67
m- & p-Xylenes
Concen: 1.54 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 91 Resp: 62162

Ion	Ratio	Lower	Upper
91	100		
106	47.1	27.1	67.1

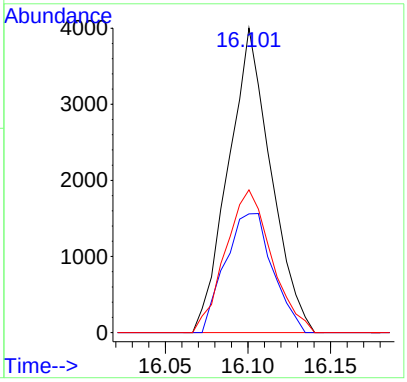


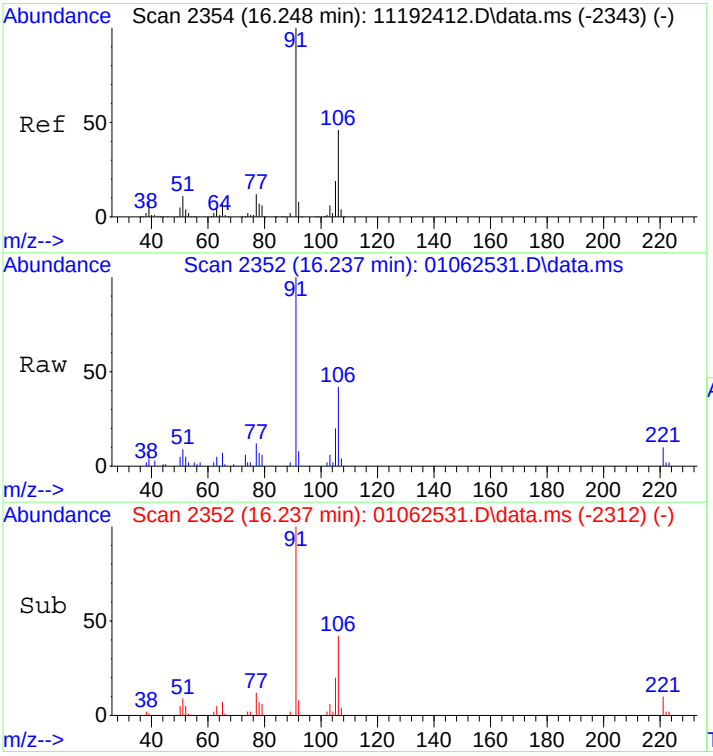


#69
Styrene
Concen: 0.25 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:104 Resp: 7161

Ion	Ratio	Lower	Upper
104	100		
78	43.6	23.0	63.0
103	50.9	27.5	67.5

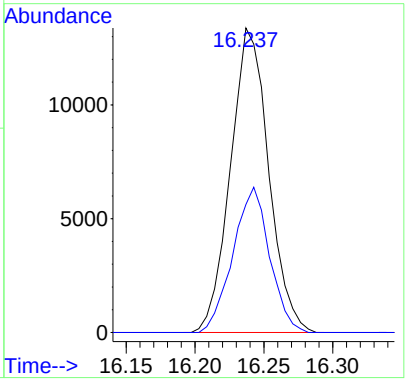


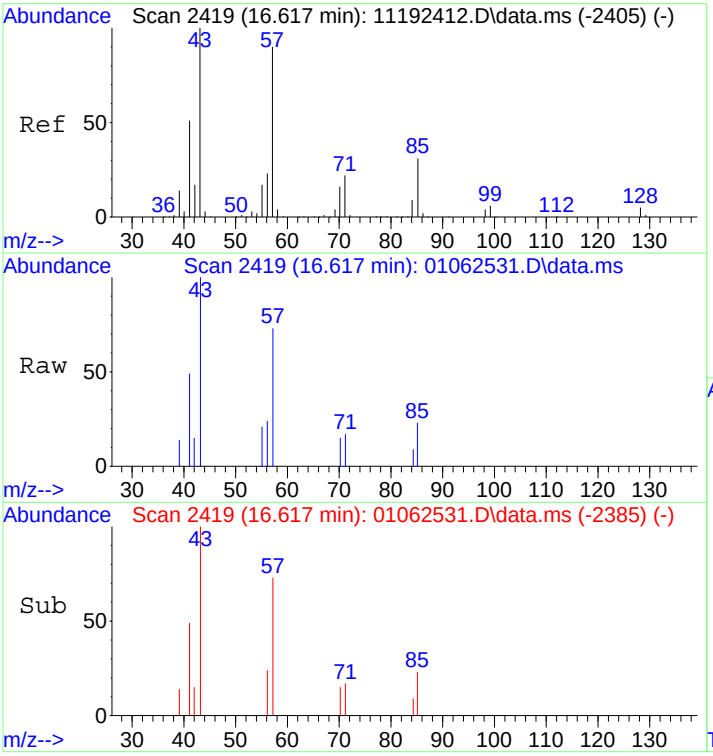


#70
o-Xylene
Concen: 0.65 ng
RT: 16.24 min Scan# 2352
Delta R.T. -0.023 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 91 Resp: 25799

Ion	Ratio	Lower	Upper
91	100		
106	45.8	25.8	65.8

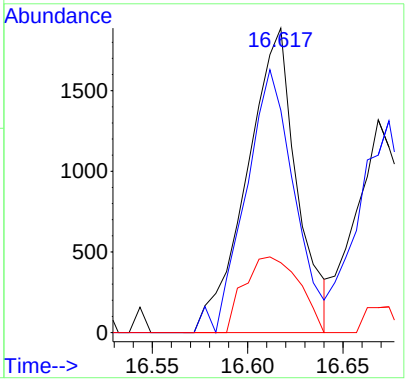


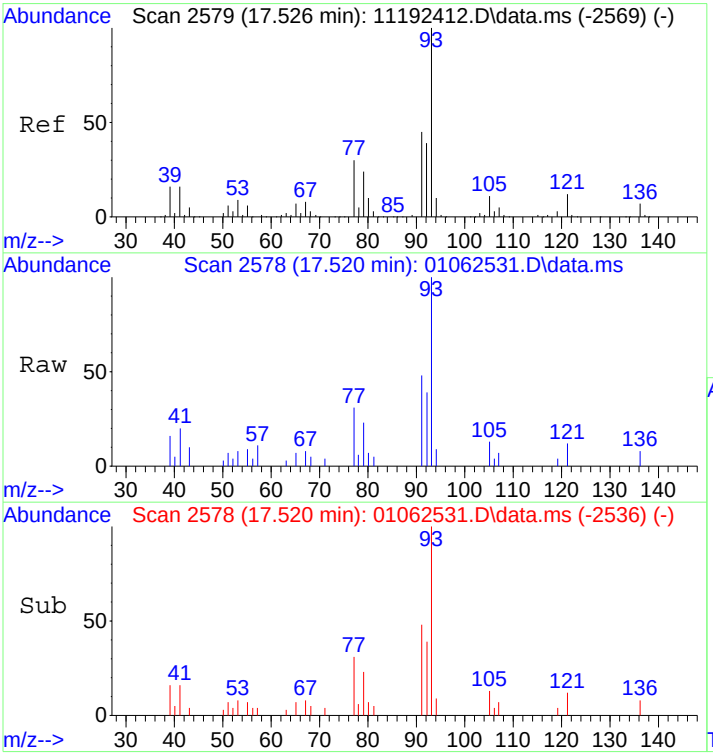


#71
n-Nonane
Concen: 0.16 ng
RT: 16.62 min Scan# 2419
Delta R.T. -0.006 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 43 Resp: 3440

Ion	Ratio	Lower	Upper
43	100		
57	84.2	69.4	109.4
85	27.3	10.5	50.5

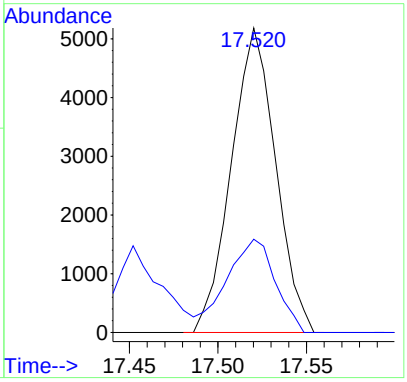


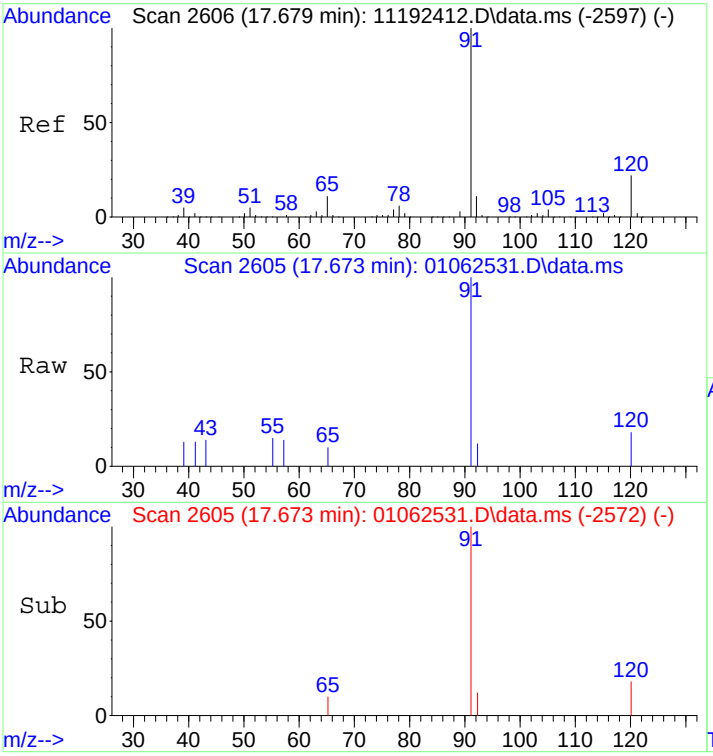


#75
alpha-Pinene
Concen: 0.37 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 93 Resp: 9028

Ion	Ratio	Lower	Upper
93	100		
77	33.7	10.1	50.1

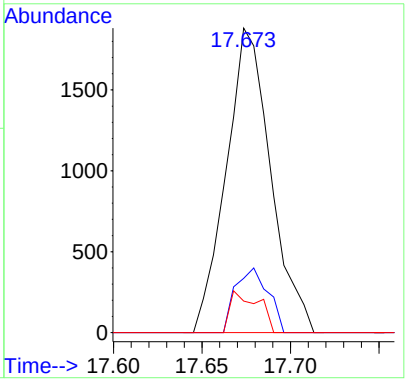


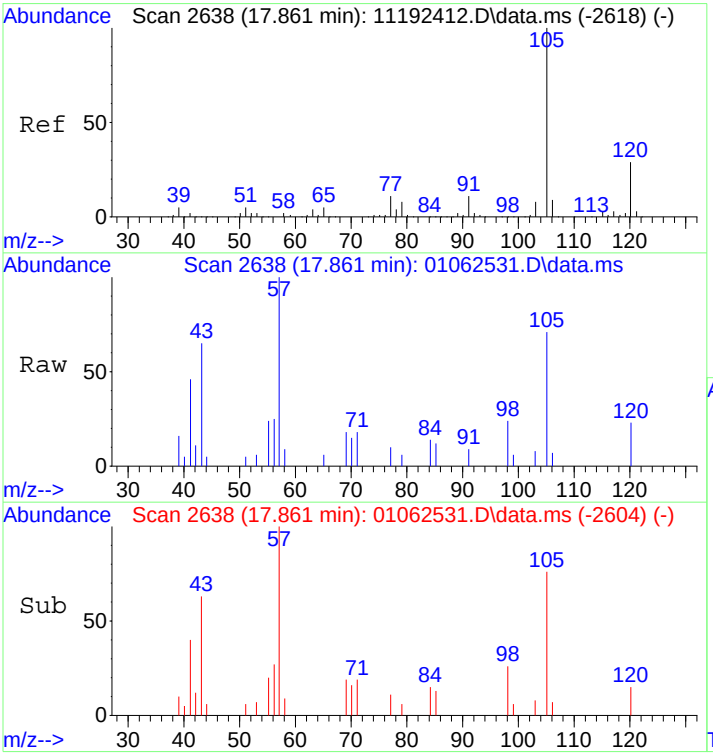


#76
n-Propylbenzene
Concen: 0.06 ng
RT: 17.67 min Scan# 2605
Delta R.T. -0.011 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 91 Resp: 3288

Ion	Ratio	Lower	Upper
91	100		
120	15.6	2.3	42.3
65	8.7	0.0	30.7

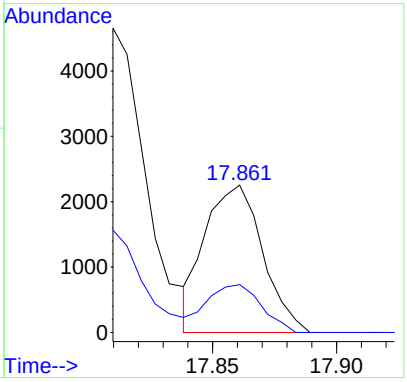


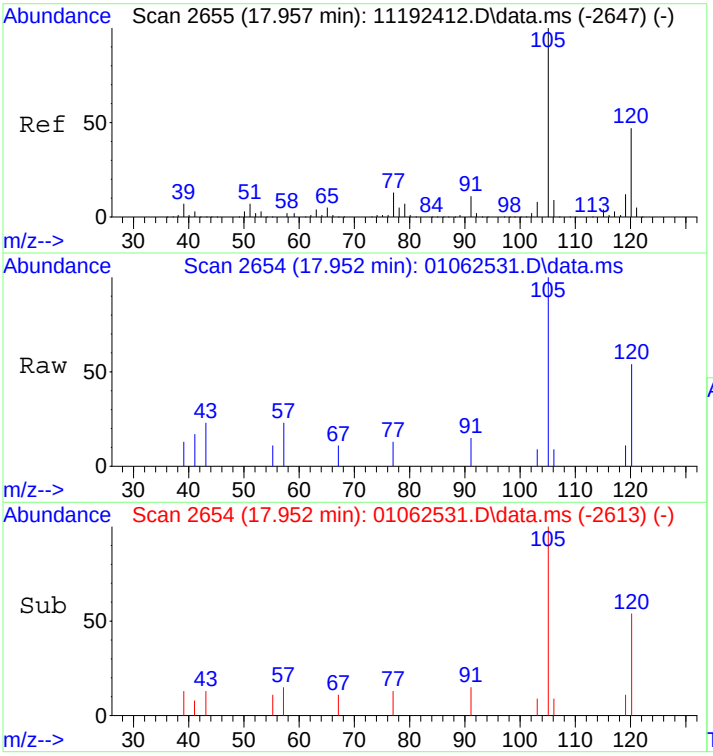


#78
4-Ethyltoluene
Concen: 0.08 ng
RT: 17.86 min Scan# 2638
Delta R.T. -0.006 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:105 Resp: 3645

Ion	Ratio	Lower	Upper
105	100		
120	30.9	8.9	48.9

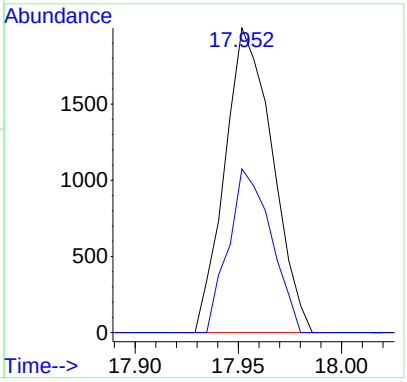


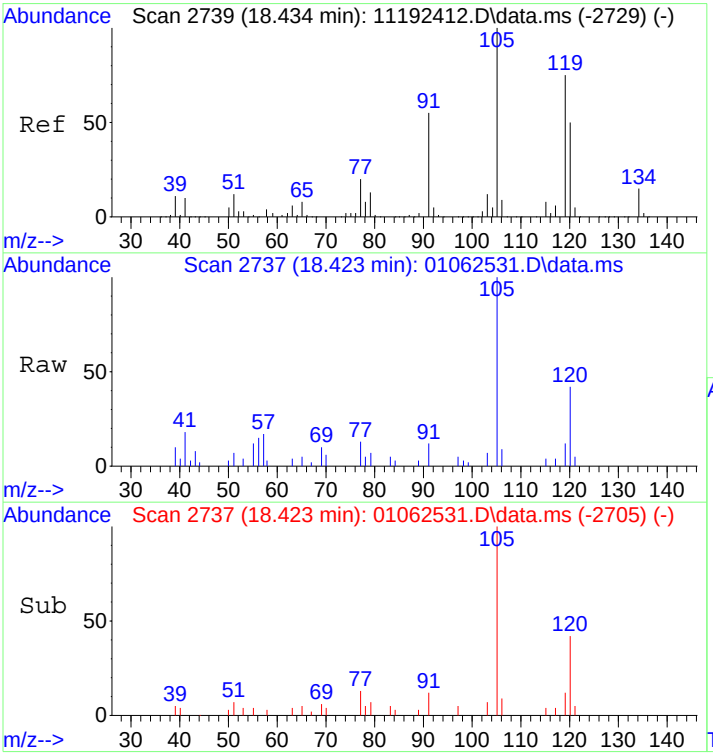


#79
1,3,5-Trimethylbenzene
Concen: 0.08 ng
RT: 17.95 min Scan# 2654
Delta R.T. -0.017 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:105 Resp: 3211

Ion	Ratio	Lower	Upper
105	100		
120	48.0	27.5	67.5

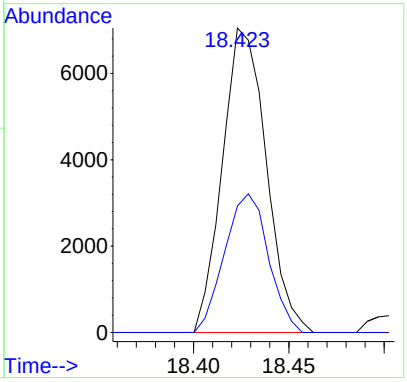


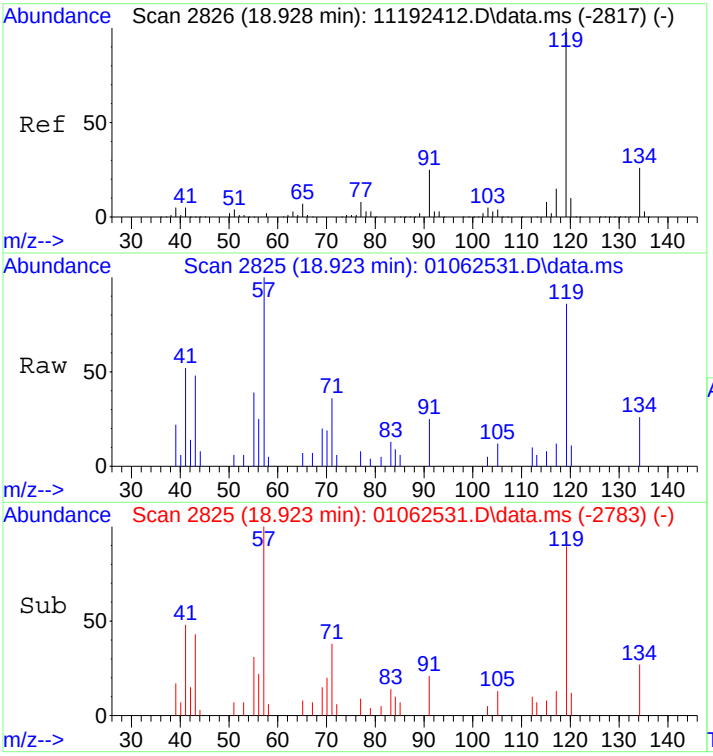


#82
1,2,4-Trimethylbenzene
Concen: 0.27 ng
RT: 18.42 min Scan# 2737
Delta R.T. -0.017 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:105 Resp: 11267

Ion	Ratio	Lower	Upper
105	100		
120	45.5	31.8	71.8

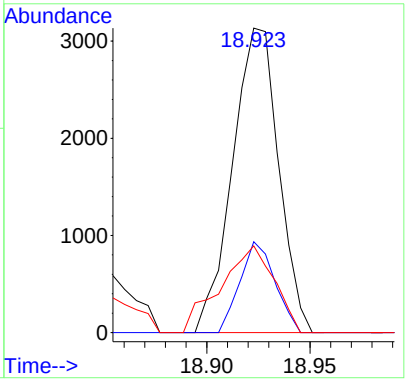


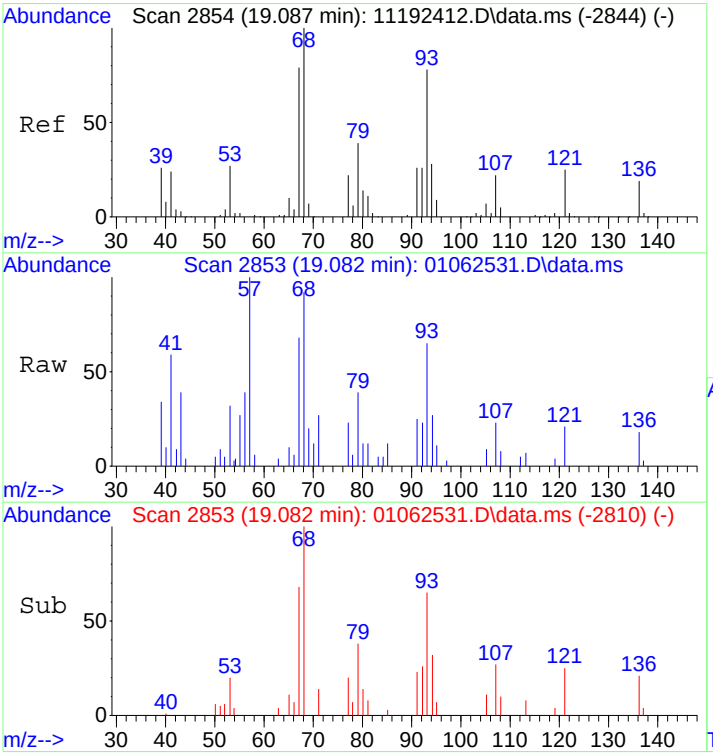


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.11 ng
RT: 18.92 min Scan# 2825
Delta R.T. -0.011 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion:119 Resp: 4876

Ion	Ratio	Lower	Upper
119	100		
134	22.7	5.8	45.8
91	33.1	4.6	44.6

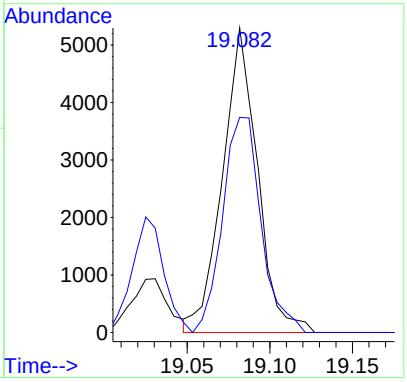




#91
d-Limonene
Concen: 0.59 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01062531.D
Acq: 7 Jan 2025 00:48

Tgt Ion: 68 Resp: 7803

Ion	Ratio	Lower	Upper
68	100		
93	77.7	56.6	96.6



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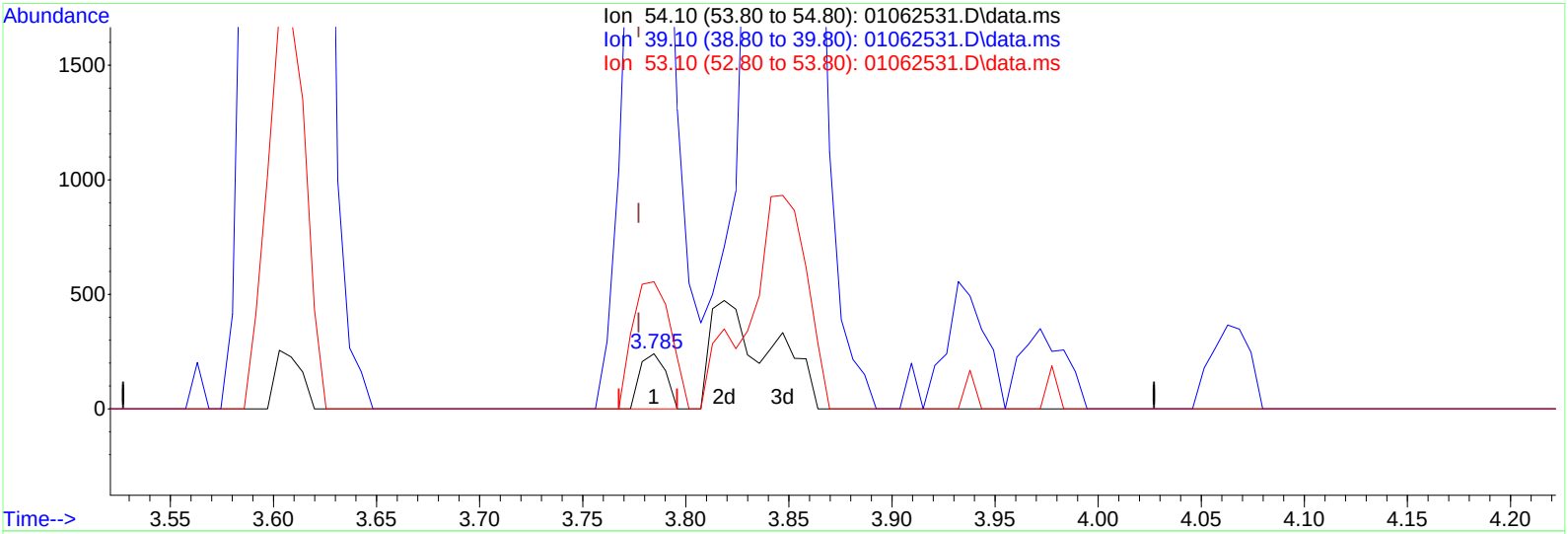
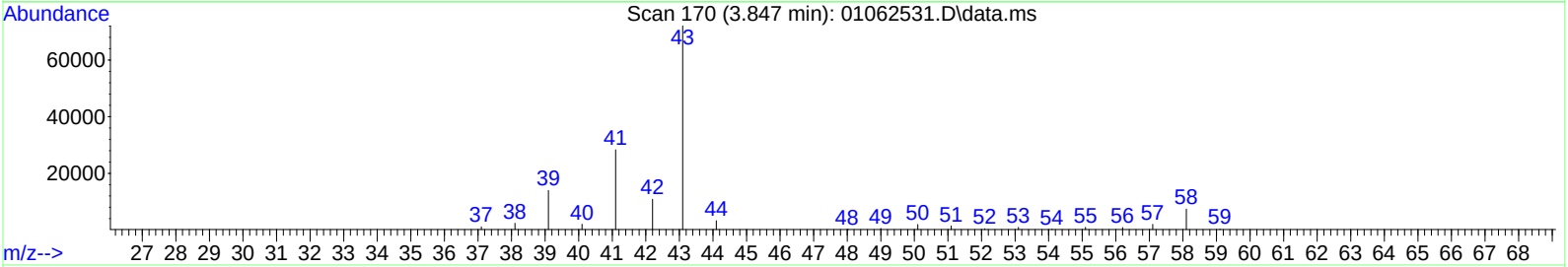
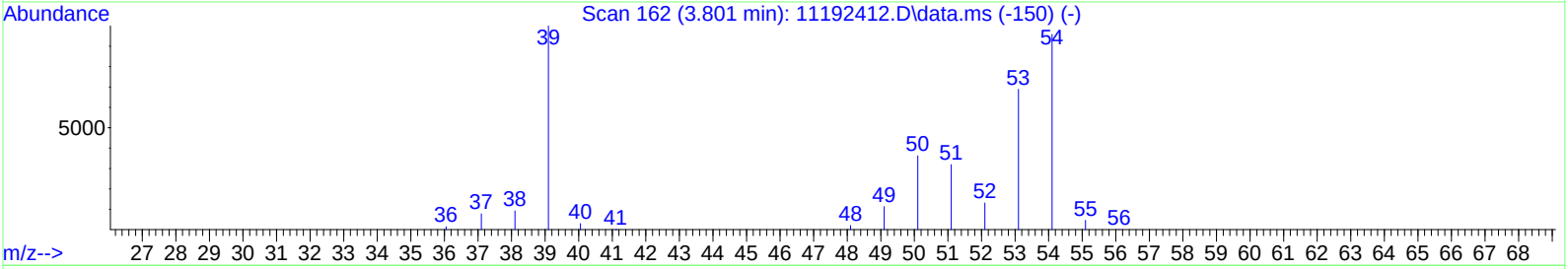
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 07 05:23:57 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062531.D\data.ms

(7) 1,3-Butadiene (T)

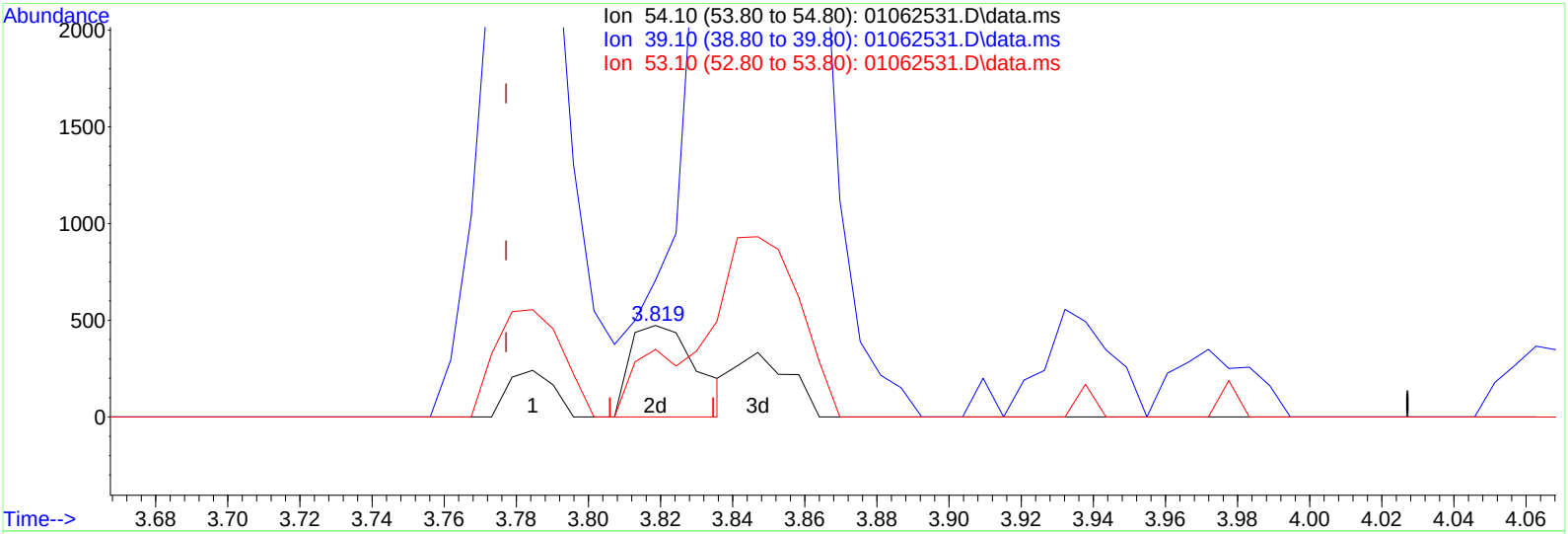
3.785min (+0.007) 0.02ng

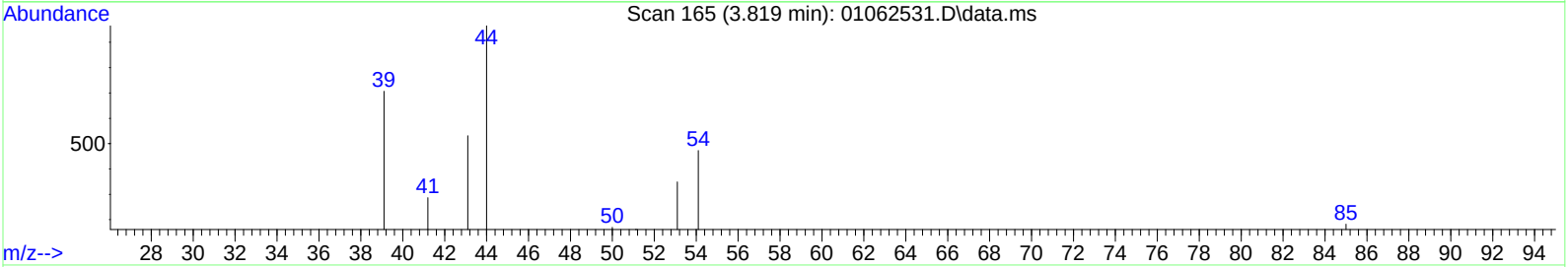
response 209

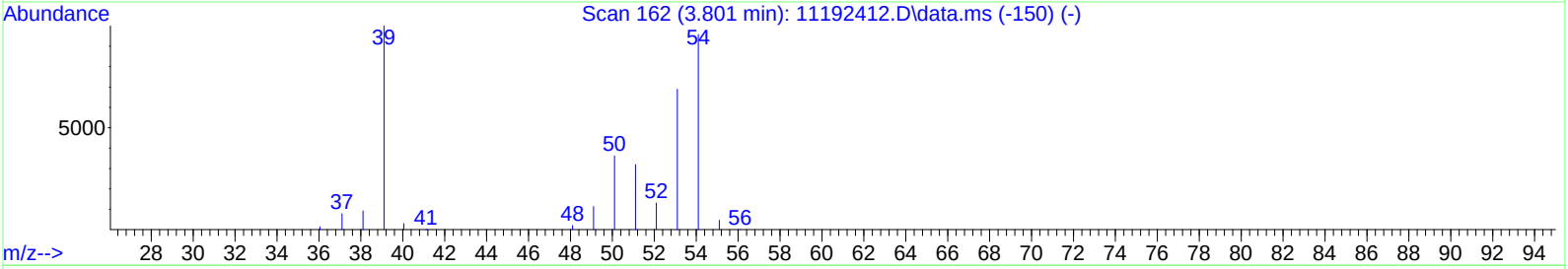
Ion	Exp%	Act%
54.10	100	100
39.10	103.20	2744.02#
53.10	70.90	343.06#
0.00	0.00	0.00

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 07 05:23:57 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062531.D\data.ms

(7) 1,3-Butadiene (T)

3.819min (+0.041) 0.06ng m

response 606

Ion	Exp%	Act%
54.10	100	100
39.10	103.20	121.12
53.10	70.90	69.47
0.00	0.00	0.00

MP

1/7/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

WA 1/7/25

Quant Time: Jan 07 06:36:49 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

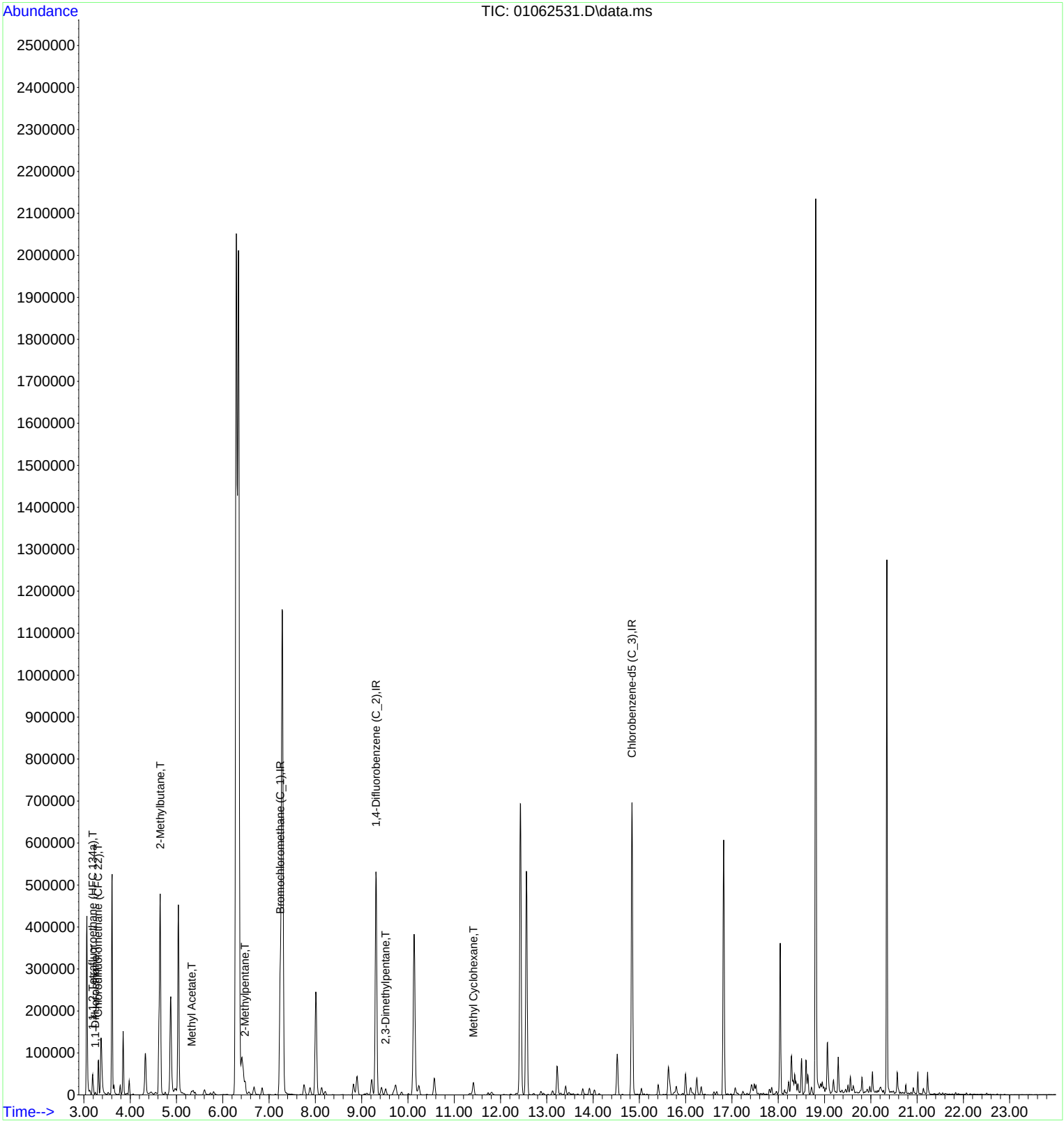
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.24	130	136818	12.500	ng		-0.01
16) 1,4-Difluorobenzene (C_2)	9.31	114	590794	12.500	ng		-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	104403	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	35956	2.891	ng		91
4) 1,1-Difluoroethane	3.25	65	2066	0.186	ng		95
5) Chlorodifluoromethane ...	3.31	67	845	0.222	ng	#	78
6) 1-Chloro-1,1-Difluoroe...	3.51	65	266	N.D.			
7) Dichlorofluoromethane ...	0.00	67	0	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.			
10) 2-Methylbutane	4.65	57	102543	7.766	ng		91
11) Methyl Acetate	5.33	43	12674	0.404	ng	#	92
12) 2-Methylpentane	6.48	71	5671	0.504	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	9.51	56	8139	0.347	ng		94
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.42	55	13536	0.727	ng		97
21) 1,3-Dichloropropane	0.00	76	0	N.D.	d		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	16.38	75	51	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.67	91	3288	N.D.			
27) 4-Chlorotoluene	17.67	91	3288	N.D.			
28) Indane	19.11	117	1299	N.D.			
29) Indene	19.21	115	242	N.D.			
30) 1,2,4,5-Tetramethylben...	20.22	119	768	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	768	N.D.			
32) 1,2,3,5-Tetramethylben...	20.59	119	216	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 07 06:36:49 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062531.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.313	71	76	80	rBV2	82934	118200	2.25%	0.330%
2	3.370	80	86	109	rVV	135517	312576	5.95%	0.873%
3	3.523	109	113	122	rVV6	4904	10650	0.20%	0.030%
4	3.608	122	128	133	rVV	524854	697995	13.29%	1.950%
5	3.648	133	135	146	rVB	21850	29596	0.56%	0.083%
6	3.785	152	159	163	rBV	21899	29131	0.55%	0.081%
7	3.847	163	170	179	rVB	149995	210140	4.00%	0.587%
8	3.978	188	193	199	rVB	33620	46161	0.88%	0.129%
9	4.330	240	255	267	rBV	98604	219310	4.18%	0.613%
10	4.455	271	277	286	rVV5	6472	19760	0.38%	0.055%
11	4.545	286	293	300	rVV4	5016	15055	0.29%	0.042%
12	4.648	300	311	326	rVB3	478028	1036355	19.74%	2.896%
13	4.875	339	351	362	rBV	233729	532730	10.15%	1.489%
14	4.966	362	367	373	rVV3	12202	37466	0.71%	0.105%
15	5.039	373	380	393	rVB	448979	778553	14.83%	2.175%
16	5.323	423	430	433	rBV4	8816	17572	0.33%	0.049%
17	5.357	433	436	441	rVV	10681	21421	0.41%	0.060%
18	5.607	471	480	491	rBV	12316	33015	0.63%	0.092%
19	5.800	507	514	526	rVB	7407	18122	0.35%	0.051%
20	6.294	586	601	605	rBV	2051931	5250087	100.00%	14.670%
21	6.340	605	609	618	rVV	1994317	4426266	84.31%	12.368%
22	6.414	618	622	632	rVB2	60011	179669	3.42%	0.502%
23	6.561	642	648	657	rVB4	5914	14898	0.28%	0.042%
24	6.675	660	668	677	rVB	17830	43260	0.82%	0.121%
25	6.851	691	699	706	rVB	16269	33606	0.64%	0.094%
26	7.282	757	775	796	rBV	1156496	3607022	68.70%	10.079%
27	7.754	851	858	873	rVV2	24018	62116	1.18%	0.174%
28	7.884	873	881	893	rVB3	17335	43636	0.83%	0.122%
29	8.009	893	903	917	rBV	245639	607425	11.57%	1.697%
30	8.134	917	925	932	rVV2	17307	41427	0.79%	0.116%
31	8.214	932	939	946	rVB2	8265	19693	0.38%	0.055%
32	8.821	1039	1046	1053	rBV	25815	60611	1.15%	0.169%
33	8.901	1053	1060	1071	rVB	44063	109425	2.08%	0.306%
34	9.116	1091	1098	1106	rVB	4192	11767	0.22%	0.033%
35	9.219	1106	1116	1123	rBV2	36521	89918	1.71%	0.251%
36	9.309	1123	1132	1145	rVV	531455	1286348	24.50%	3.594%
37	9.429	1145	1153	1161	rVV2	17777	44297	0.84%	0.124%
38	9.520	1161	1169	1179	rVB2	14462	35017	0.67%	0.098%
39	9.735	1189	1207	1217	rBB5	23576	80734	1.54%	0.226%
40	9.866	1223	1230	1236	rBB3	6879	15266	0.29%	0.043%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	10.133	1264	1277	1289	rBV	382864	1061797	20.22%	2.967%
42	10.235	1289	1295	1305	rVB	22153	57894	1.10%	0.162%
43	10.570	1345	1354	1363	rBV	39627	91524	1.74%	0.256%
44	11.416	1494	1503	1512	rVB3	29616	74960	1.43%	0.209%
45	11.734	1552	1559	1564	rBV3	5000	10078	0.19%	0.028%
46	11.814	1564	1573	1584	rVB6	6114	19391	0.37%	0.054%
47	12.427	1670	1681	1694	rVB	692904	1633817	31.12%	4.565%
48	12.557	1694	1704	1718	rVB	531854	1211754	23.08%	3.386%
49	12.875	1750	1760	1765	rBV2	8400	18526	0.35%	0.052%
50	13.125	1795	1804	1811	rBV3	9701	24157	0.46%	0.067%
51	13.222	1814	1821	1830	rVV	66887	139539	2.66%	0.390%
52	13.409	1846	1854	1861	rBV2	20261	40245	0.77%	0.112%
53	13.778	1911	1919	1932	rBV	14435	32506	0.62%	0.091%
54	13.920	1936	1944	1950	rVV3	14952	29562	0.56%	0.083%
55	14.028	1957	1963	1971	rVB3	11870	25978	0.49%	0.073%
56	14.522	2041	2050	2061	rVB	97318	208562	3.97%	0.583%
57	14.840	2095	2106	2121	rBV	696374	1457830	27.77%	4.073%
58	15.044	2136	2142	2149	rVB2	14949	26544	0.51%	0.074%
59	15.408	2199	2206	2215	rVB	23987	45417	0.87%	0.127%
60	15.629	2237	2245	2258	rVB	66523	172285	3.28%	0.481%
61	15.800	2265	2275	2289	rVB3	20173	57363	1.09%	0.160%
62	15.998	2303	2310	2319	rVB	49677	92351	1.76%	0.258%
63	16.106	2322	2329	2337	rBV4	17322	45416	0.87%	0.127%
64	16.243	2345	2353	2362	rVB2	40748	81151	1.55%	0.227%
65	16.339	2362	2370	2378	rBV	19476	39533	0.75%	0.110%
66	16.612	2411	2418	2423	rBV2	7189	13445	0.26%	0.038%
67	16.674	2423	2429	2436	rVB2	7862	14893	0.28%	0.042%
68	16.822	2446	2455	2464	rBV	607436	1151068	21.92%	3.216%
69	17.072	2487	2499	2506	rBV3	16460	38202	0.73%	0.107%
70	17.236	2520	2528	2540	rBV3	8352	20470	0.39%	0.057%
71	17.424	2549	2561	2567	rBV5	23651	66259	1.26%	0.185%
72	17.480	2567	2571	2575	rVV	23946	46853	0.89%	0.131%
73	17.520	2575	2578	2583	rVB	20214	30280	0.58%	0.085%
74	17.810	2623	2629	2633	rBV	12878	24419	0.47%	0.068%
75	17.861	2633	2638	2646	rVB3	16888	30472	0.58%	0.085%
76	17.957	2646	2655	2660	rBV3	7293	16005	0.30%	0.045%
77	18.043	2660	2670	2677	rBV	360360	588039	11.20%	1.643%
78	18.139	2682	2687	2690	rBV2	9986	15624	0.30%	0.044%
79	18.224	2695	2702	2706	rVV2	28428	51270	0.98%	0.143%
80	18.287	2706	2713	2718	rVV3	89964	191121	3.64%	0.534%
81	18.355	2722	2725	2728	rVV	45724	70389	1.34%	0.197%
82	18.383	2728	2730	2734	rVV2	28395	40060	0.76%	0.112%
83	18.423	2734	2737	2742	rVV2	22602	36823	0.70%	0.103%
84	18.503	2746	2751	2757	rVB2	85592	136411	2.60%	0.381%
85	18.599	2757	2768	2772	rBV2	81089	145375	2.77%	0.406%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

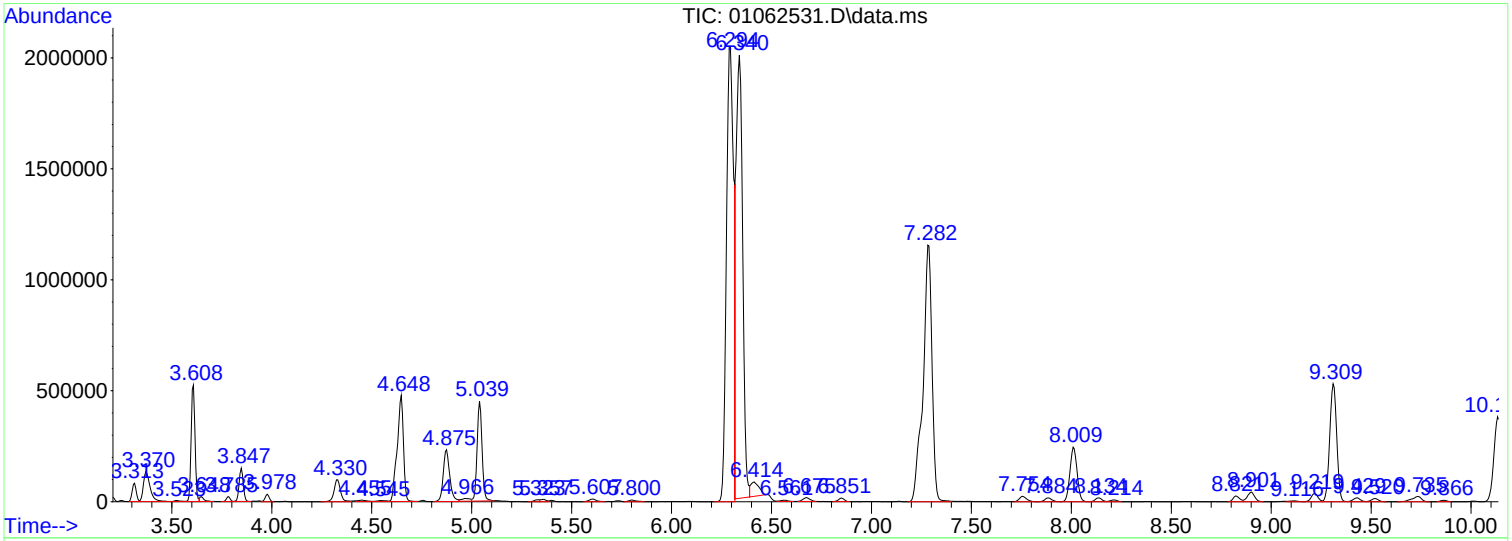
86	18.639	2772	2775	2782	rVB	45951	75024	1.43%	0.210%
87	18.718	2782	2789	2797	rVB3	16602	32103	0.61%	0.090%
88	18.809	2797	2805	2820	rBV	2133589	3157649	60.14%	8.823%
89	18.917	2820	2824	2827	rVV4	20425	39458	0.75%	0.110%
90	18.951	2827	2830	2834	rVV	23815	40666	0.77%	0.114%
91	18.985	2834	2836	2840	rVV2	12155	15909	0.30%	0.044%
92	19.025	2840	2843	2845	rVV2	9173	11959	0.23%	0.033%
93	19.065	2845	2850	2862	rVB	121120	246113	4.69%	0.688%
94	19.195	2862	2873	2879	rBV	32477	66928	1.27%	0.187%
95	19.297	2885	2891	2901	rBV	85128	132734	2.53%	0.371%
96	19.377	2901	2905	2910	rVB4	6704	11541	0.22%	0.032%
97	19.456	2910	2919	2923	rBV4	8368	16349	0.31%	0.046%
98	19.508	2923	2928	2932	rVV2	17610	25466	0.49%	0.071%
99	19.559	2932	2937	2941	rVV	38156	58500	1.11%	0.163%
100	19.621	2945	2948	2954	rVB2	16601	28482	0.54%	0.080%
101	19.809	2977	2981	2987	rVB2	36938	55859	1.06%	0.156%
102	19.922	2995	3001	3006	rVB6	8455	14350	0.27%	0.040%
103	19.979	3006	3011	3016	rBV2	13812	19752	0.38%	0.055%
104	20.036	3016	3021	3032	rVB4	49571	73266	1.40%	0.205%
105	20.212	3045	3052	3060	rVB3	12301	34525	0.66%	0.096%
106	20.274	3060	3063	3067	rVB4	8260	11144	0.21%	0.031%
107	20.348	3067	3076	3087	rBV	1272380	1648097	31.39%	4.605%
108	20.569	3110	3115	3125	rVB2	50220	85907	1.64%	0.240%
109	20.757	3143	3148	3153	rVB	20580	25165	0.48%	0.070%
110	20.916	3172	3176	3188	rBV5	14426	23190	0.44%	0.065%
111	21.018	3188	3194	3199	rBV	52521	64682	1.23%	0.181%
112	21.137	3210	3215	3225	rBV2	13042	24286	0.46%	0.068%
113	21.228	3225	3231	3244	rVB	53137	77432	1.47%	0.216%

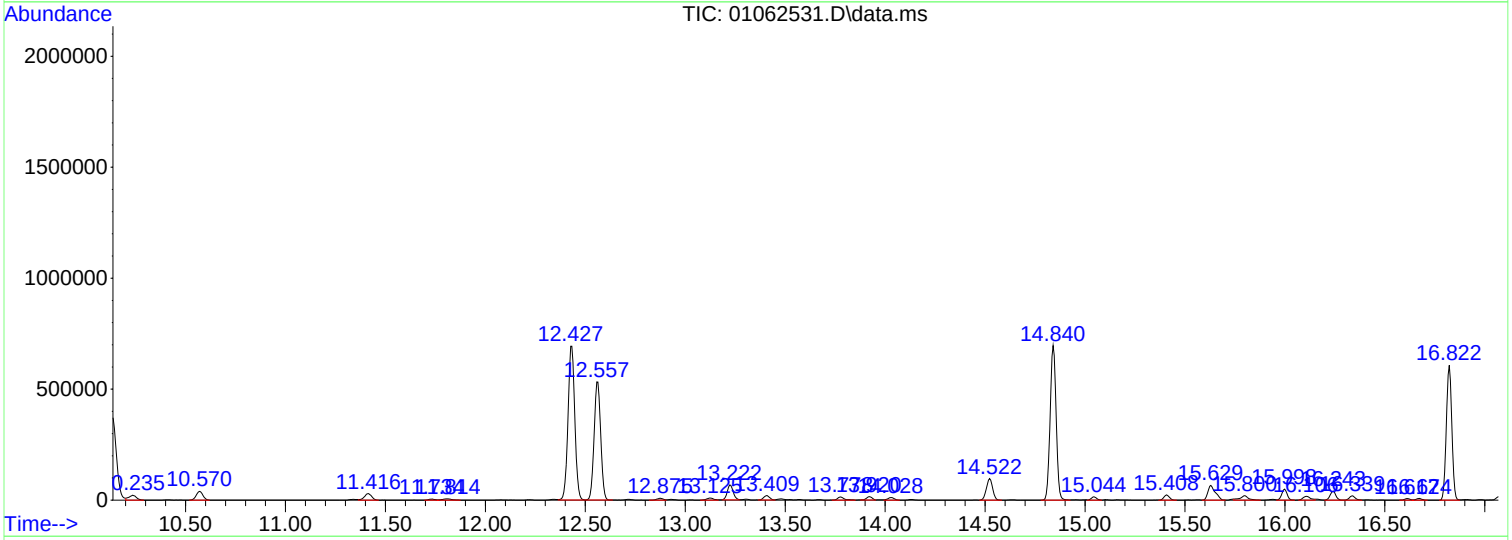
Sum of corrected areas: 35788490

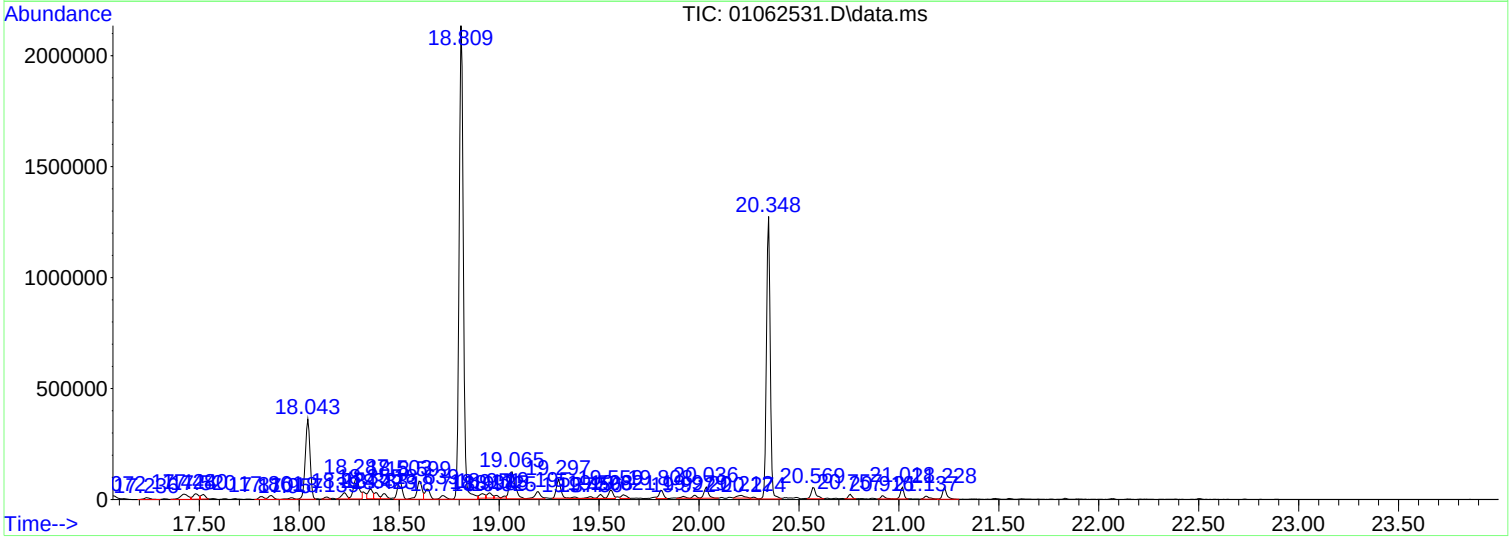
Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:48
Operator : SC
Sample : P2405139-013 (200mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062531.D
Acq On : 7 Jan 2025 00:488
Operator : SCC
Sample : P2405139-013 (200mL))
Misc : S37-123124011
ALS Vial : 10 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/7/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

1/7/25

Quant Time: Jan 07 06:10:46 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140771	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	596110	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	105058	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	234765	12.241	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.92%				
57) Toluene-d8 (SS2)	12.43	98	609141	13.070	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.56%				
73) Bromofluorobenzene (SS3)	16.82	174	226865	14.106	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.88%				
Target Compounds							Qvalue
2) Propene	3.34	42	618	N.D.			
3) Dichlorodifluoromethan...	3.39	85	1902	0.069	ng	#	94
4) Chloromethane	3.53	50	450	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	3976	0.382	ng		92
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.65	58	2923	0.308	ng	#	60
14) Trichlorofluoromethane	4.75	101	2520011	97.649	ng		99
15) 2-Propanol (Isopropanol)	4.96	45	117	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	268	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	1639143	140.778	ng		93
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.30	87	478	N.D.			
30) Ethyl Acetate	7.29	61	5133	1.092	ng		89
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.35	83	2508	0.109	ng		97
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.86	56	203	No Calib		#	
41) Benzene	8.89	78	1908	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	625	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 07 06:10:46 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

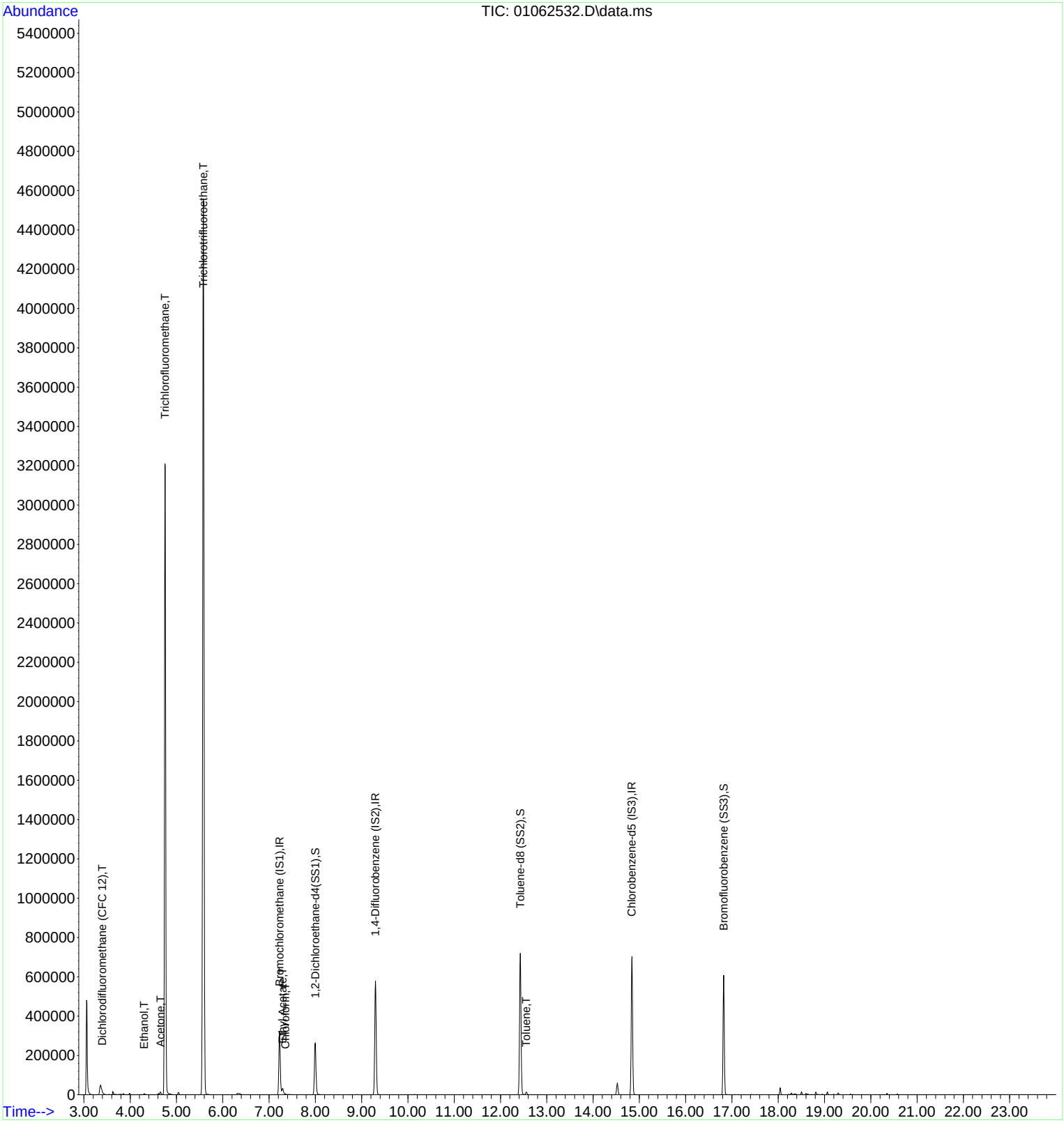
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	13630	0.304 ng	95
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	271	N.D.	
67) m- & p-Xylenes	15.63	91	935	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	388	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.52	93	114	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	18.04	58	615	No Calib	#
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	295	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 07 06:10:46 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

NOA 1/7/25

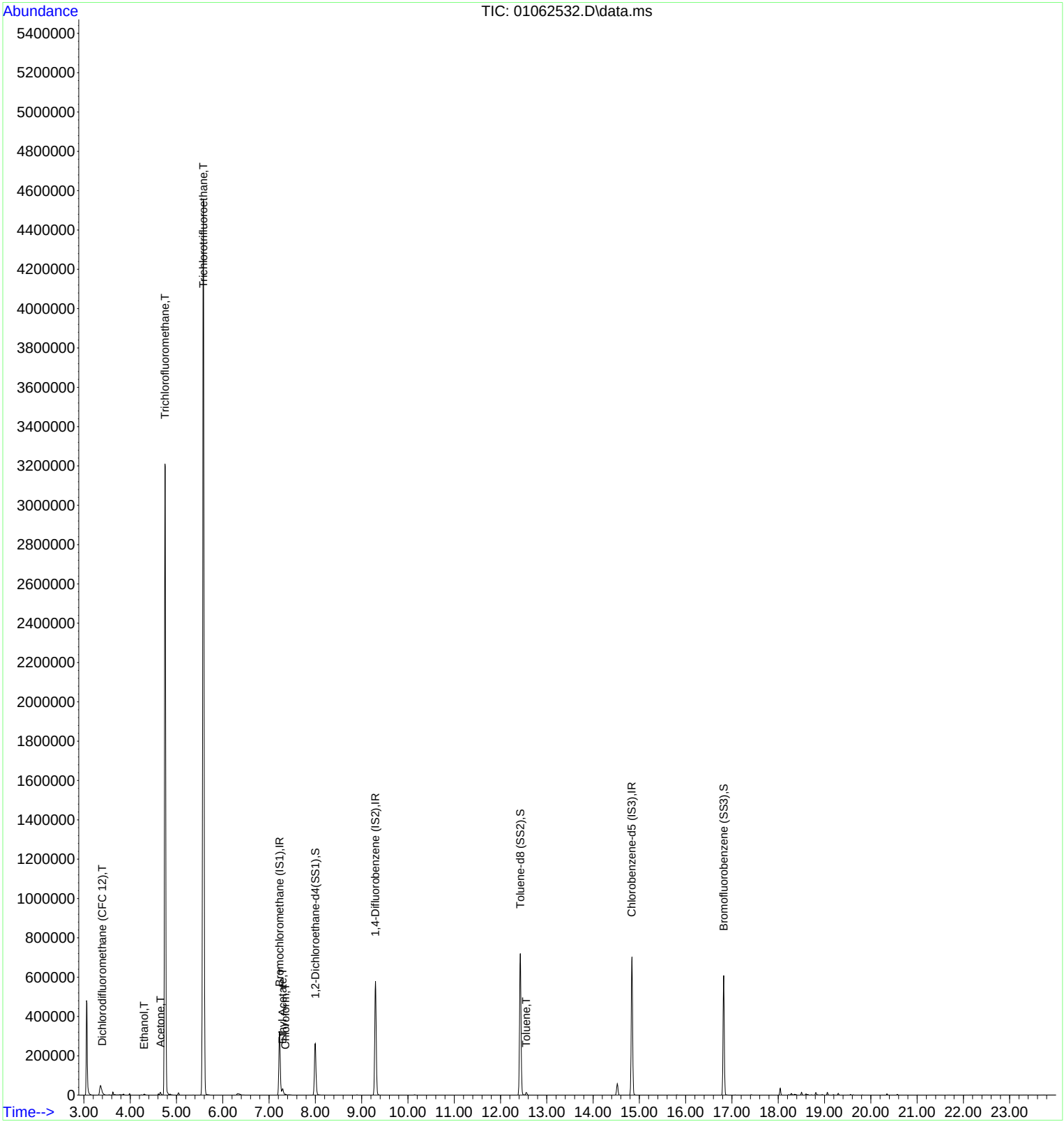
Quant Time: Jan 07 06:10:46 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

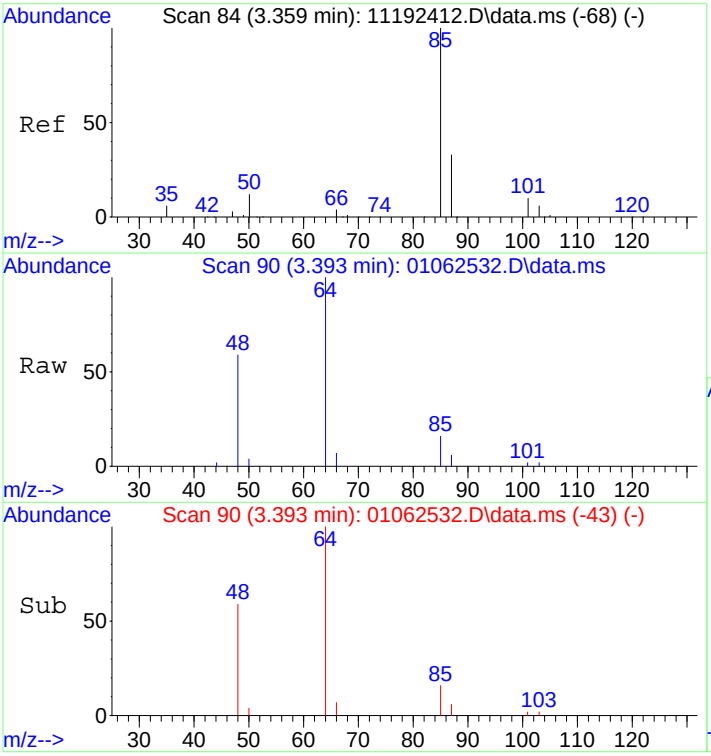
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140771	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	596110	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	105058	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	234765	12.241	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.92%				
57) Toluene-d8 (SS2)	12.43	98	609141	13.070	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.56%				
73) Bromofluorobenzene (SS3)	16.82	174	226865	14.106	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.88%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	1902	0.069	ng	#	94
10) Ethanol	4.30	45	3976	0.382	ng		92
13) Acetone	4.65	58	2923	0.308	ng	#	60
14) Trichlorofluoromethane	4.75	101	2520011	97.649	ng		99
21) Trichlorotrifluoroethane	5.58	151	1639143	140.778	ng		93
30) Ethyl Acetate	7.29	61	5133	1.092	ng		89
32) Chloroform	7.35	83	2508	0.109	ng		97
58) Toluene	12.56	91	13630	0.304	ng		95

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 07 06:10:46 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

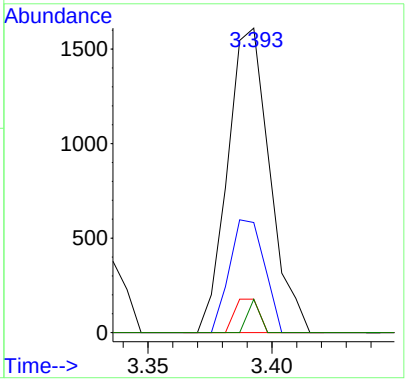


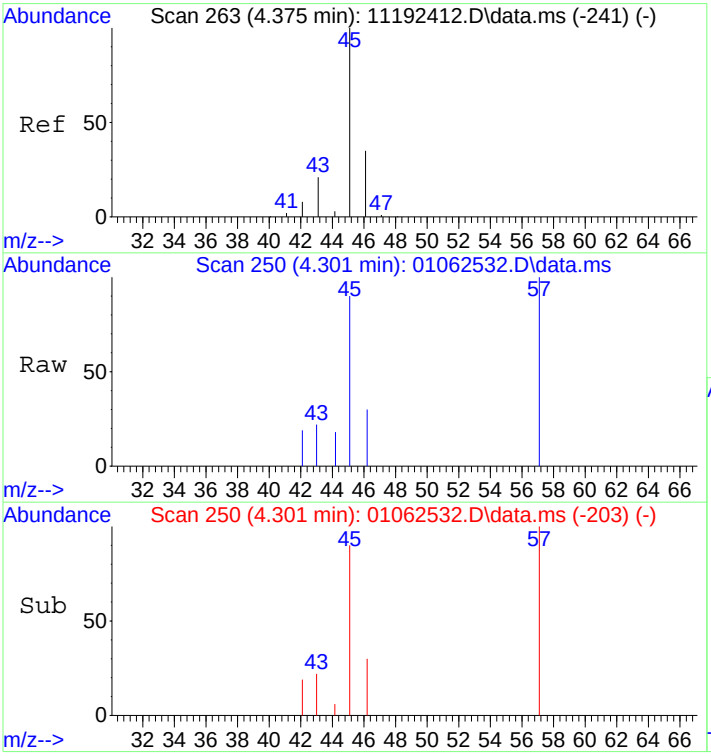


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.07 ng
RT: 3.39 min Scan# 90
Delta R.T. 0.017 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion: 85 Resp: 1902

Ion	Ratio	Lower	Upper
85	100		
87	30.8	12.6	52.6
101	6.4	0.0	29.6
103	0.0	0.0	26.2

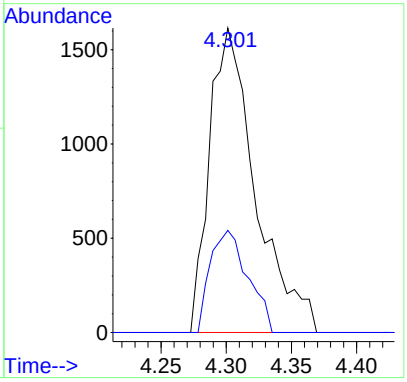


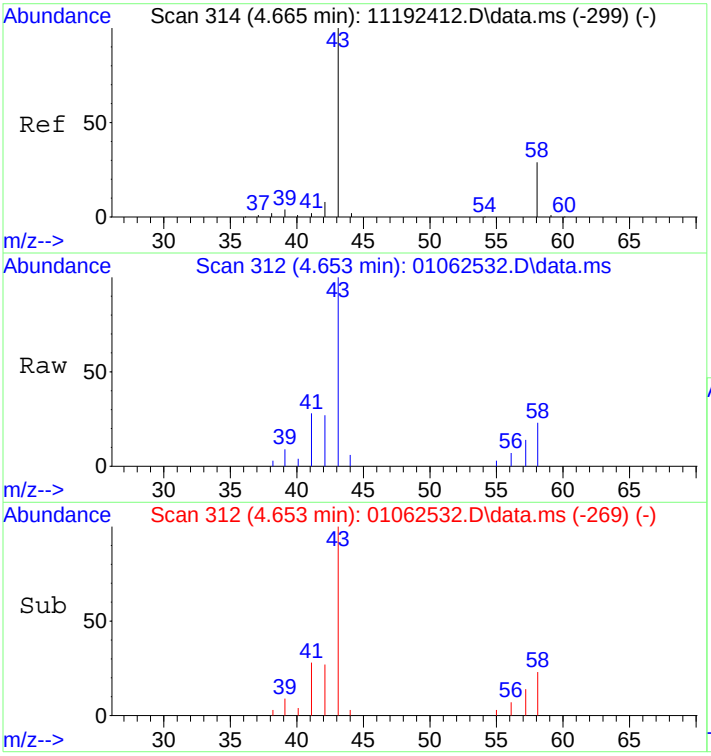


#10
Ethanol
Concen: 0.38 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion: 45 Resp: 3976

Ion	Ratio	Lower	Upper
45	100		
46	27.4	11.8	51.8

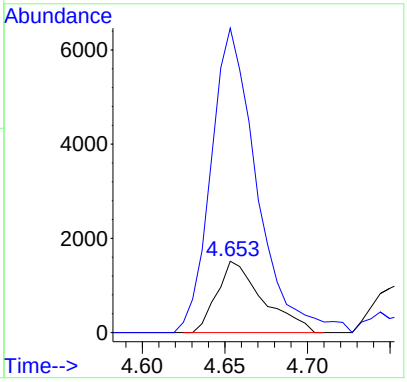


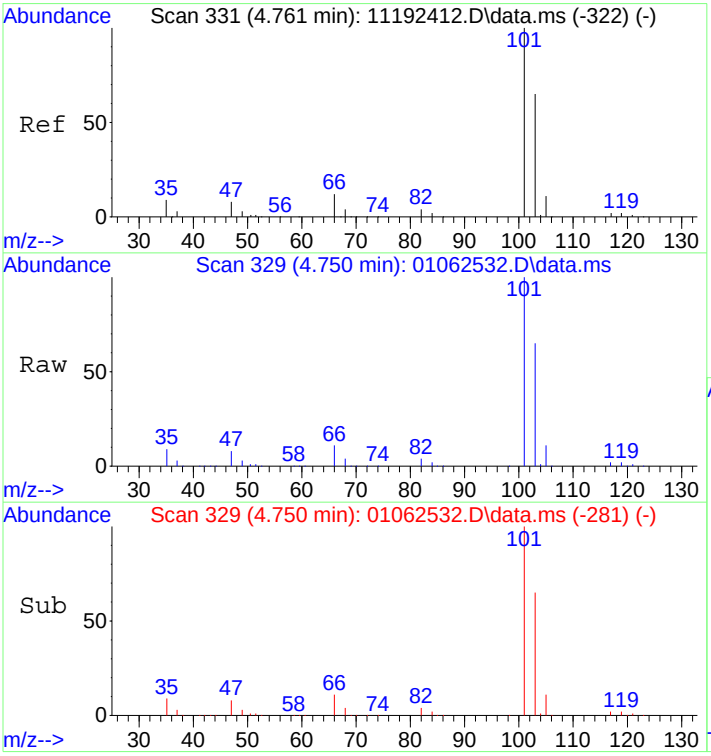


#13
Acetone
Concen: 0.31 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion: 58 Resp: 2923

Ion	Ratio	Lower	Upper
58	100		
43	427.6	312.5	372.5#

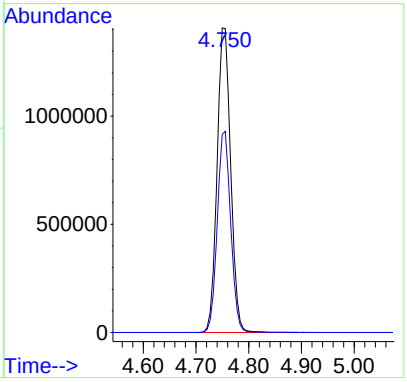


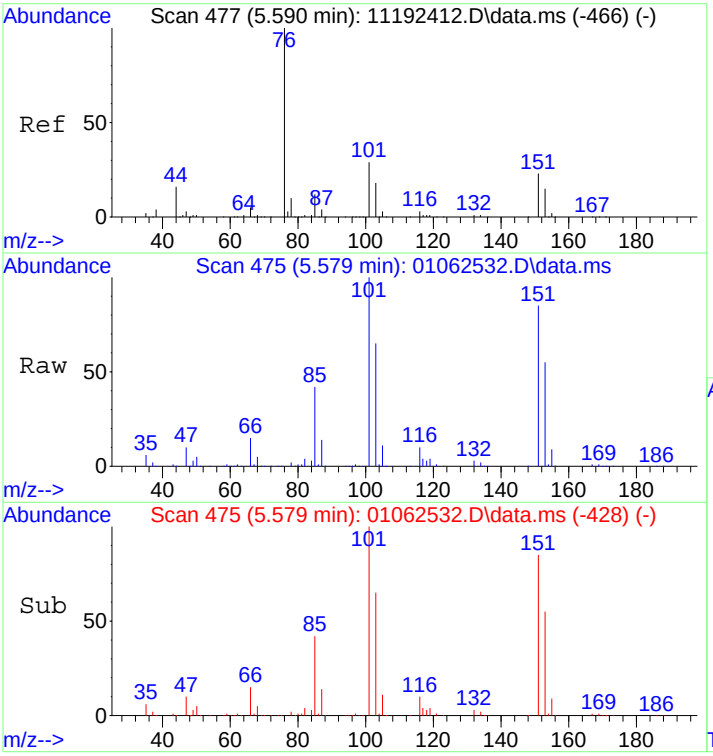


#14
Trichlorofluoromethane
Concen: 97.65 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion:101 Resp: 2520011

Ion	Ratio	Lower	Upper
101	100		
103	65.3	44.8	84.8

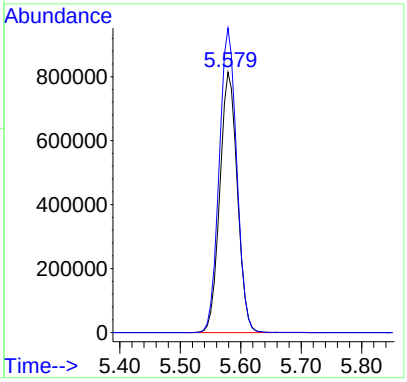


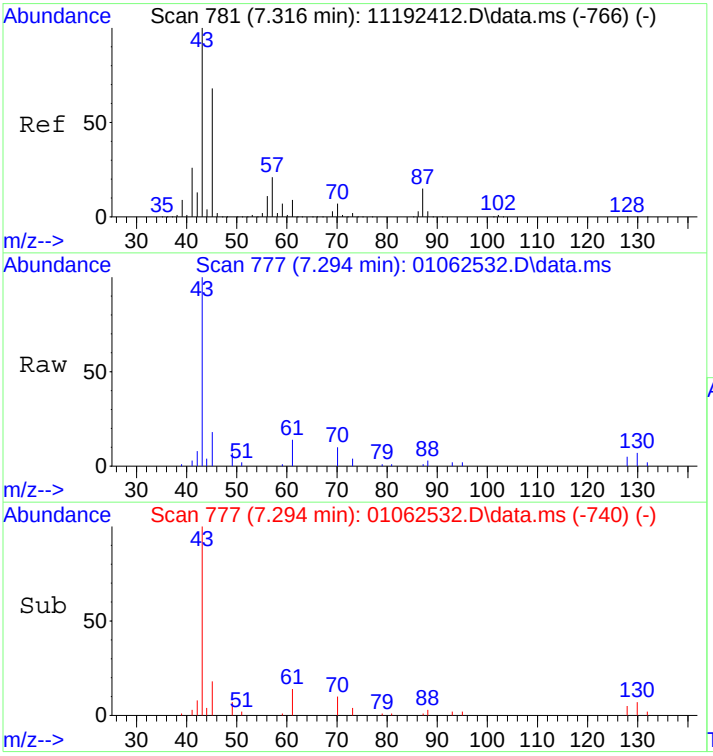


#21
Trichlorotrifluoroethane
Concen: 140.78 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion:151 Resp: 1639143

Ion	Ratio	Lower	Upper
151	100		
101	116.7	105.0	145.0

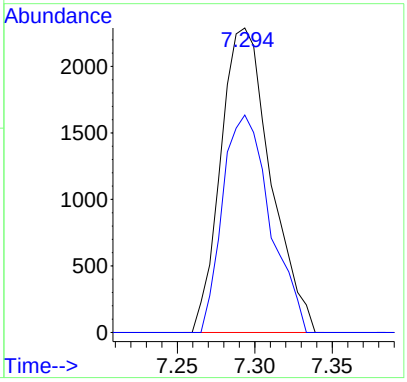


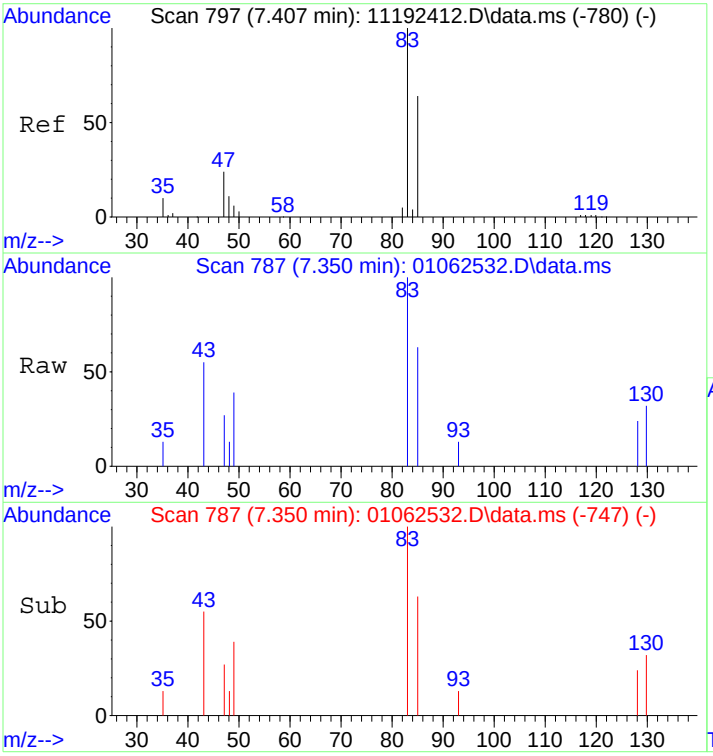


#30
Ethyl Acetate
Concen: 1.09 ng
RT: 7.29 min Scan# 777
Delta R.T. 0.012 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion: 61 Resp: 5133

Ion	Ratio	Lower	Upper
61	100		
70	67.9	57.3	97.3

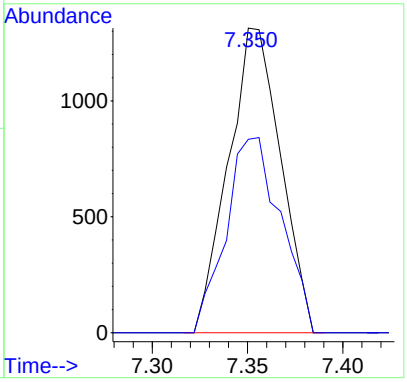


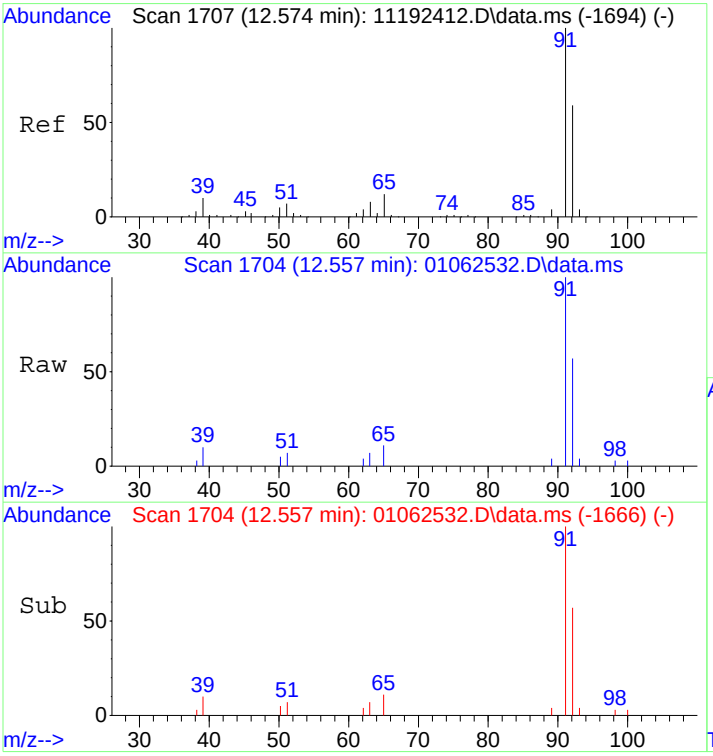


#32
Chloroform
Concen: 0.11 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion: 83 Resp: 2508

Ion	Ratio	Lower	Upper
83	100		
85	67.3	45.1	85.1

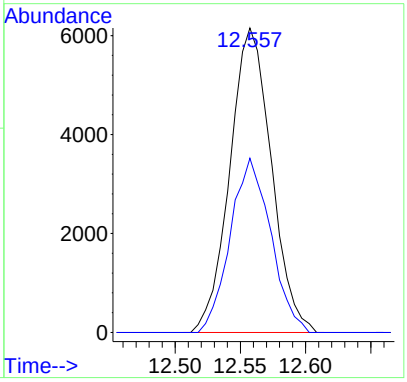




#58
Toluene
Concen: 0.30 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01062532.D
Acq: 7 Jan 2025 1:20

Tgt Ion: 91 Resp: 13630

Ion	Ratio	Lower	Upper
91	100		
92	55.7	39.2	79.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

MA 1/7/25

Quant Time: Jan 07 06:37:14 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

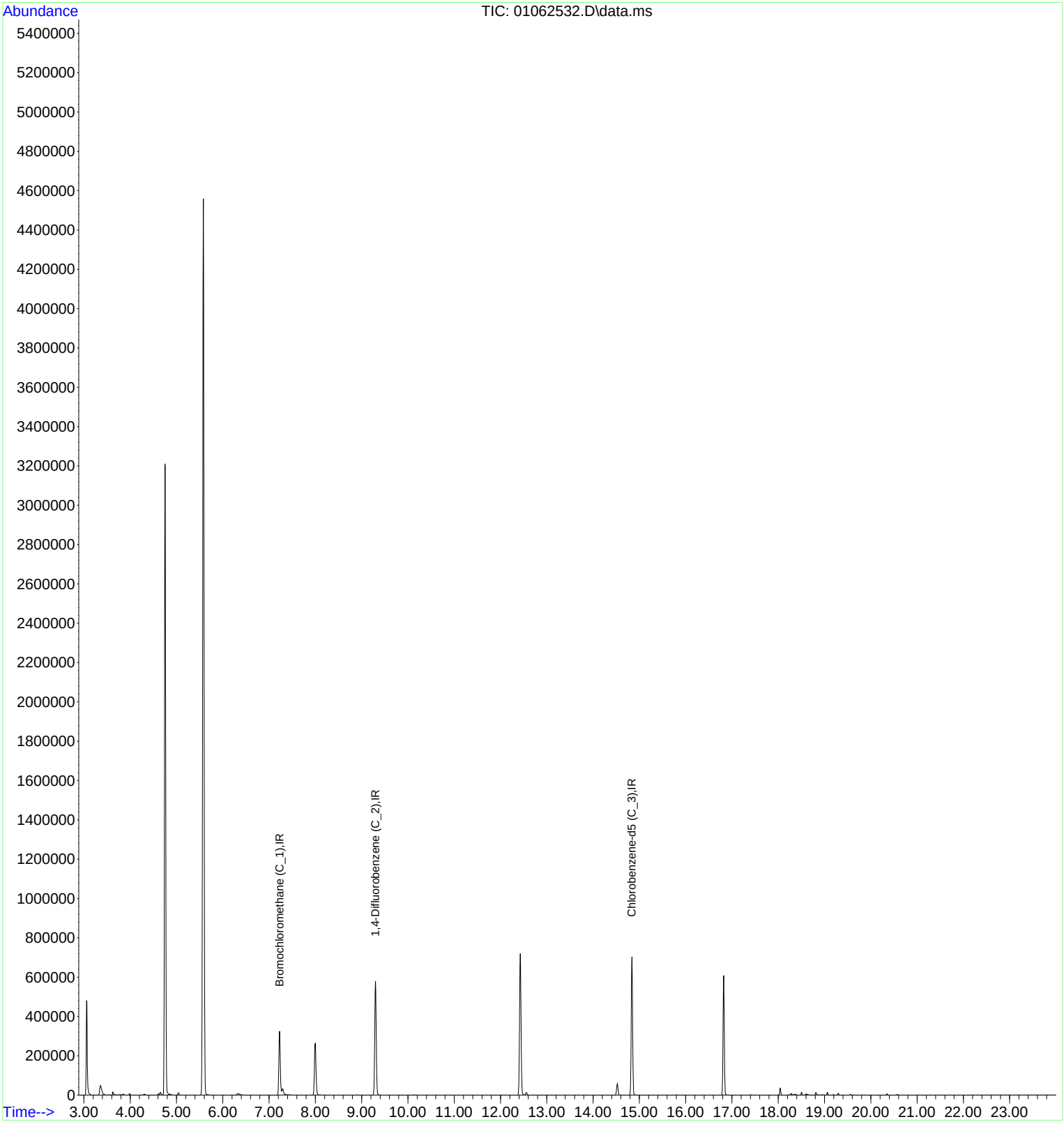
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	141959	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	596110	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	105058	12.500	ng	-0.01
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	202	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.24	67	1670	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.35	43	321	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 07 06:37:14 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062523.D
Acq On : 6 Jan 2025 20:29
Operator : SC
Sample : P2405139-014dil (15mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

VOA 1/7/25

Quant Time: Jan 06 20:51:44 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	149701	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	634905	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111831	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	243713	11.949	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.60%				
57) Toluene-d8 (SS2)	12.43	98	651404	13.131	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%				
73) Bromofluorobenzene (SS3)	16.82	174	250805	14.650	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.20%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	3.39	85	351	N.D.			
4) Chloromethane	3.39	50	1138	0.052	ng	#	42
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.08	64	189	N.D.			
10) Ethanol	4.32	45	763	0.069	ng	#	55
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.68	58	721	0.072	ng	#	51
14) Trichlorofluoromethane	4.76	101	539018	19.641	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1071	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	106	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	347392	28.056	ng		92
22) Carbon Disulfide	5.64	76	1571	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	7.31	61	796	0.159	ng		78
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	437	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.91	78	618	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.28	84	494	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062523.D
Acq On : 6 Jan 2025 20:29
Operator : SC
Sample : P2405139-014dil (15mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 20:51:44 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

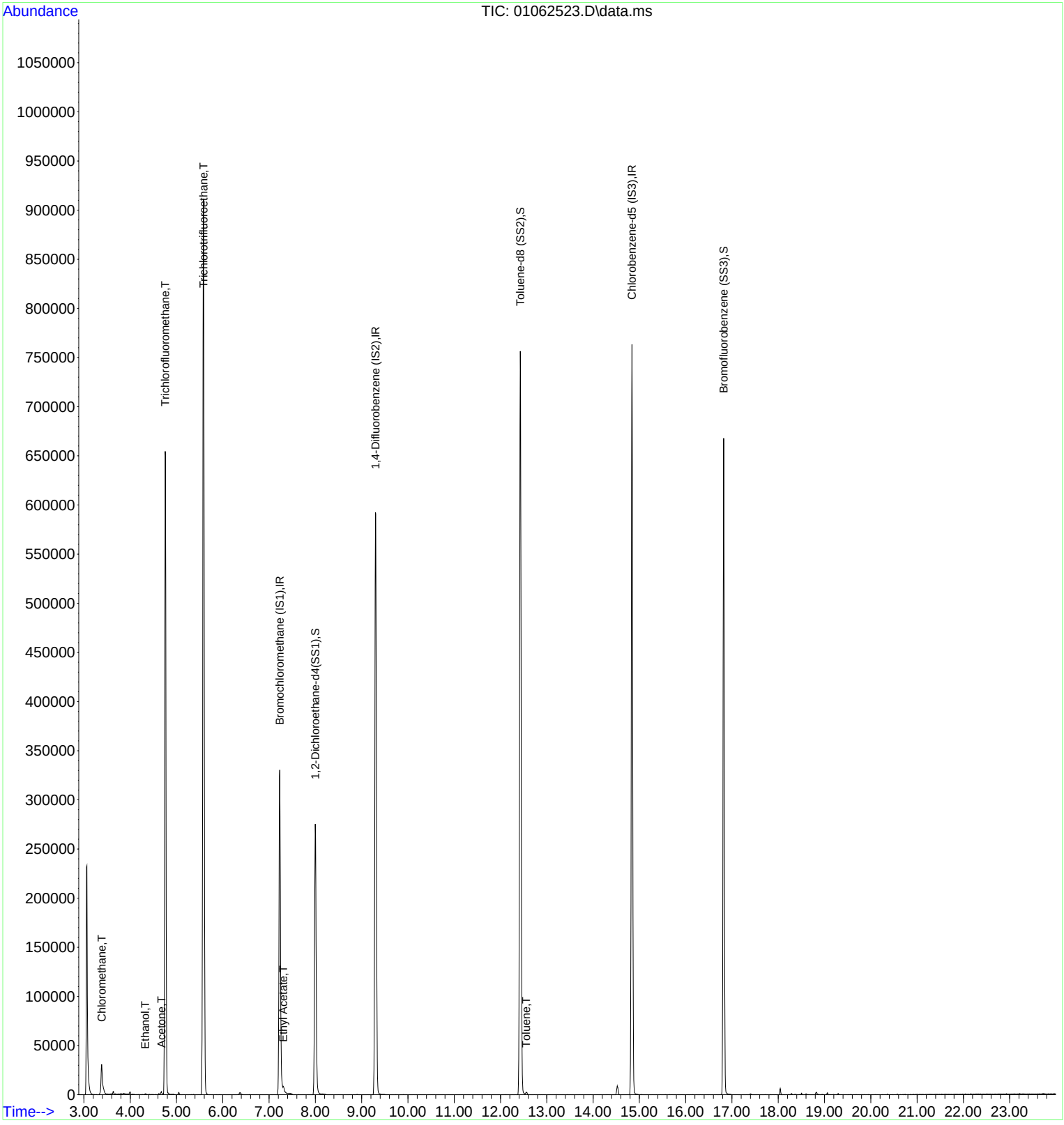
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	2877	0.060 ng	97
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	0.00	91	0	N.D.	
67) m- & p-Xylenes	0.00	91	0	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062523.D
Acq On : 6 Jan 2025 20:29
Operator : SC
Sample : P2405139-014dil (15mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

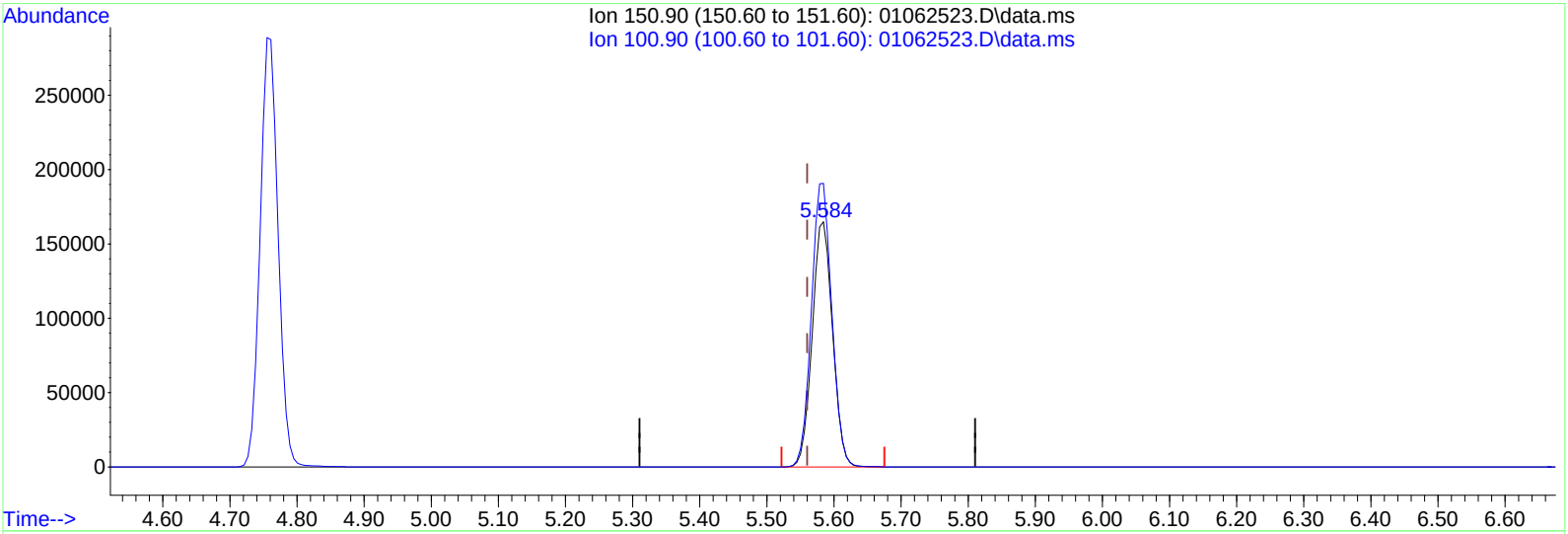
Quant Time: Jan 06 20:51:44 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

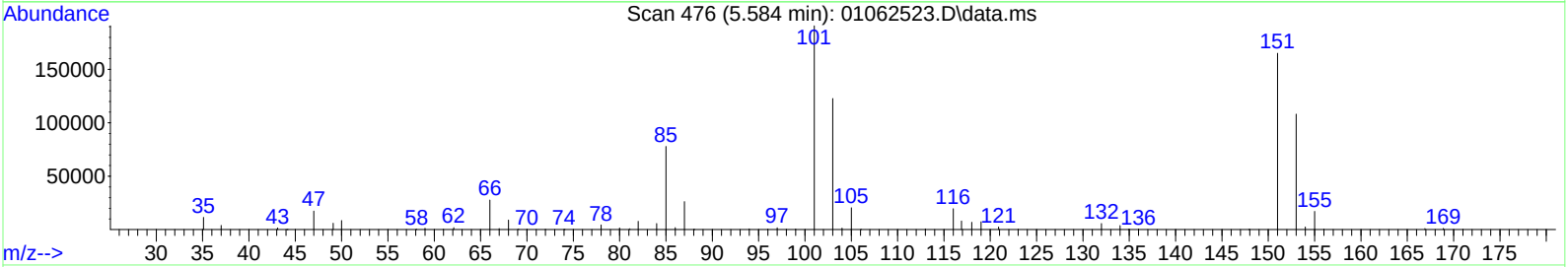


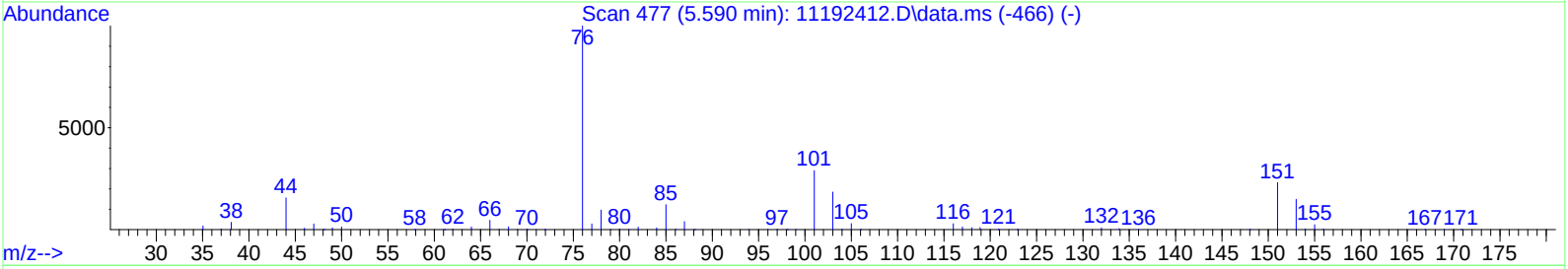
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062523.D
Acq On : 6 Jan 2025 20:29
Operator : SC
Sample : P2405139-014dil (15mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 20:51:44 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062523.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.584min (+0.024) 28.06ng

response 347392

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.15
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062532.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.359	76	84	108	rBV	48517	159391	1.74%	0.713%
2	3.625	127	131	136	rBV	15063	18486	0.20%	0.083%
3	4.307	245	251	262	rVB2	4902	10913	0.12%	0.049%
4	4.653	307	312	321	rVB2	13886	24518	0.27%	0.110%
5	4.750	321	329	345	rBV	3209892	5721076	62.30%	25.599%
6	5.045	374	381	387	rBB	11622	20149	0.22%	0.090%
7	5.579	463	475	492	rBV	4559218	9182872	100.00%	41.089%
8	6.323	598	606	609	rBV	7389	17257	0.19%	0.077%
9	7.225	756	765	773	rBV	324465	699302	7.62%	3.129%
10	7.294	773	777	786	rVB2	28452	61289	0.67%	0.274%
11	7.998	891	901	918	rBV	261857	606820	6.61%	2.715%
12	9.298	1118	1130	1145	rBV	578954	1297846	14.13%	5.807%
13	12.427	1670	1681	1695	rBV	720342	1617870	17.62%	7.239%
14	12.557	1697	1704	1713	rVB	13311	29296	0.32%	0.131%
15	14.522	2041	2050	2060	rBV	58237	124470	1.36%	0.557%
16	14.840	2096	2106	2119	rBV	703263	1457827	15.88%	6.523%
17	16.822	2446	2455	2473	rBV	608020	1139849	12.41%	5.100%
18	18.042	2663	2670	2677	rBB	34795	55400	0.60%	0.248%
19	18.281	2706	2712	2717	rBV	8295	13824	0.15%	0.062%
20	18.502	2746	2751	2756	rBB3	14117	20139	0.22%	0.090%
21	18.599	2762	2768	2773	rBV2	6446	11517	0.13%	0.052%
22	18.815	2801	2806	2819	rBV	13406	25027	0.27%	0.112%
23	19.059	2844	2849	2858	rBB	13720	20272	0.22%	0.091%
24	19.297	2886	2891	2897	rBV2	9141	13302	0.14%	0.060%

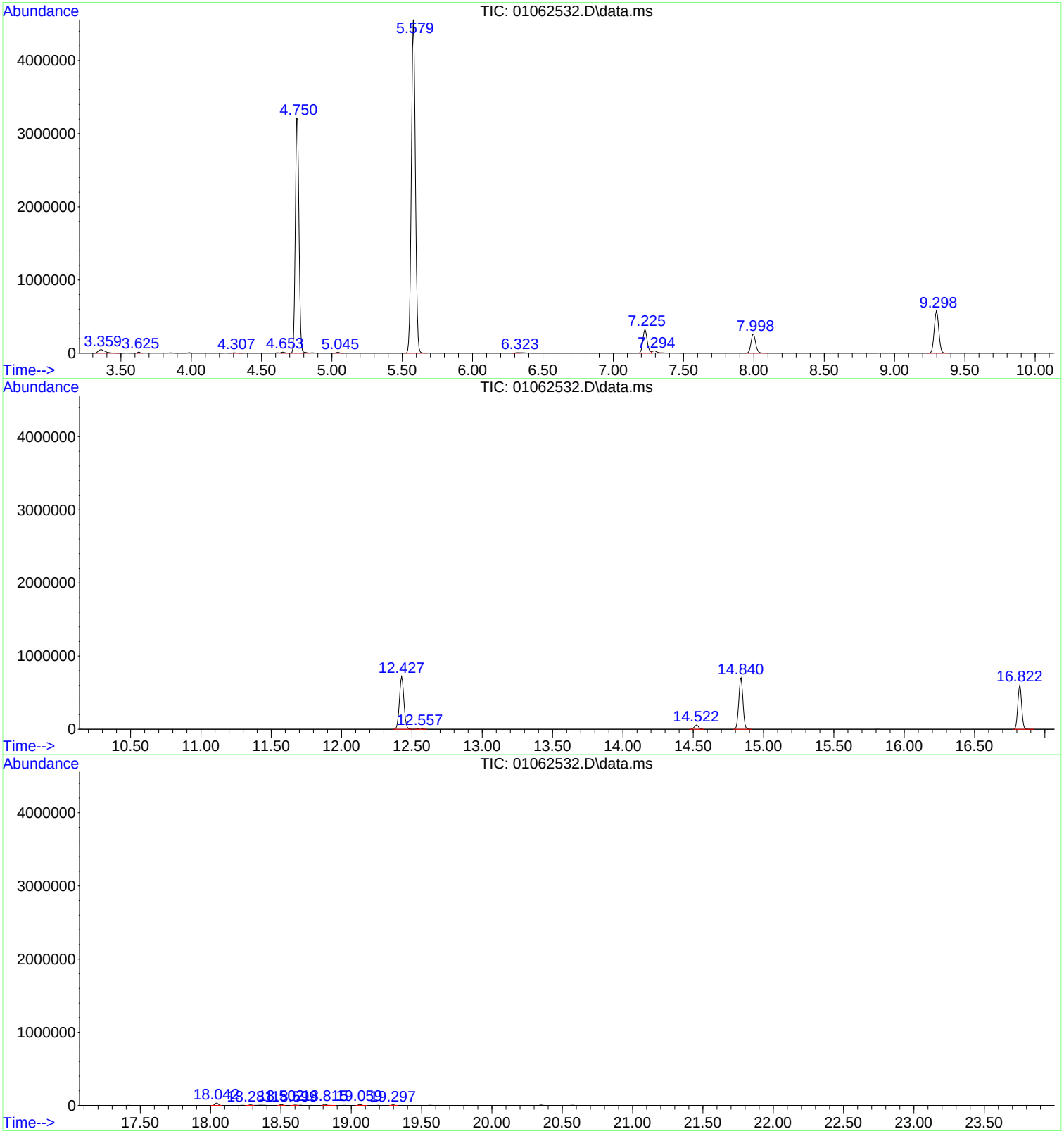
Sum of corrected areas: 22348712

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:20
Operator : SC
Sample : P2405139-014 (50mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062532.D
Acq On : 7 Jan 2025 1:200
Operator : SCC
Sample : P2405139-014 (50mL))
Misc : S37-123124011
ALS Vial : 11 Sample Multiplier: 11

VOA 1/7/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 07 06:14:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/7/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	137121	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	575639	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	102194	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	227674	12.187	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.52%				
57) Toluene-d8 (SS2)	12.43	98	593334	13.088	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.72%				
73) Bromofluorobenzene (SS3)	16.82	174	222397	14.215	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.76%				
Target Compounds							Qvalue
2) Propene	3.34	42	251	N.D.			
3) Dichlorodifluoromethan...	3.39	85	1950	0.073	ng	#	95
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	1336	0.132	ng		86
11) Acetonitrile	4.48	41	253	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.65	58	8081	0.875	ng		99
14) Trichlorofluoromethane	4.75	101	1735346	69.033	ng		100
15) 2-Propanol (Isopropanol)	4.89	45	328	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.38	59	1121	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	960605	84.698	ng		92
22) Carbon Disulfide	5.61	76	4889	0.117	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.31	61	116	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	3596	0.161	ng		95
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	1144	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.28	84	298	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.15	130	739	0.056	ng		92
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 07 06:14:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

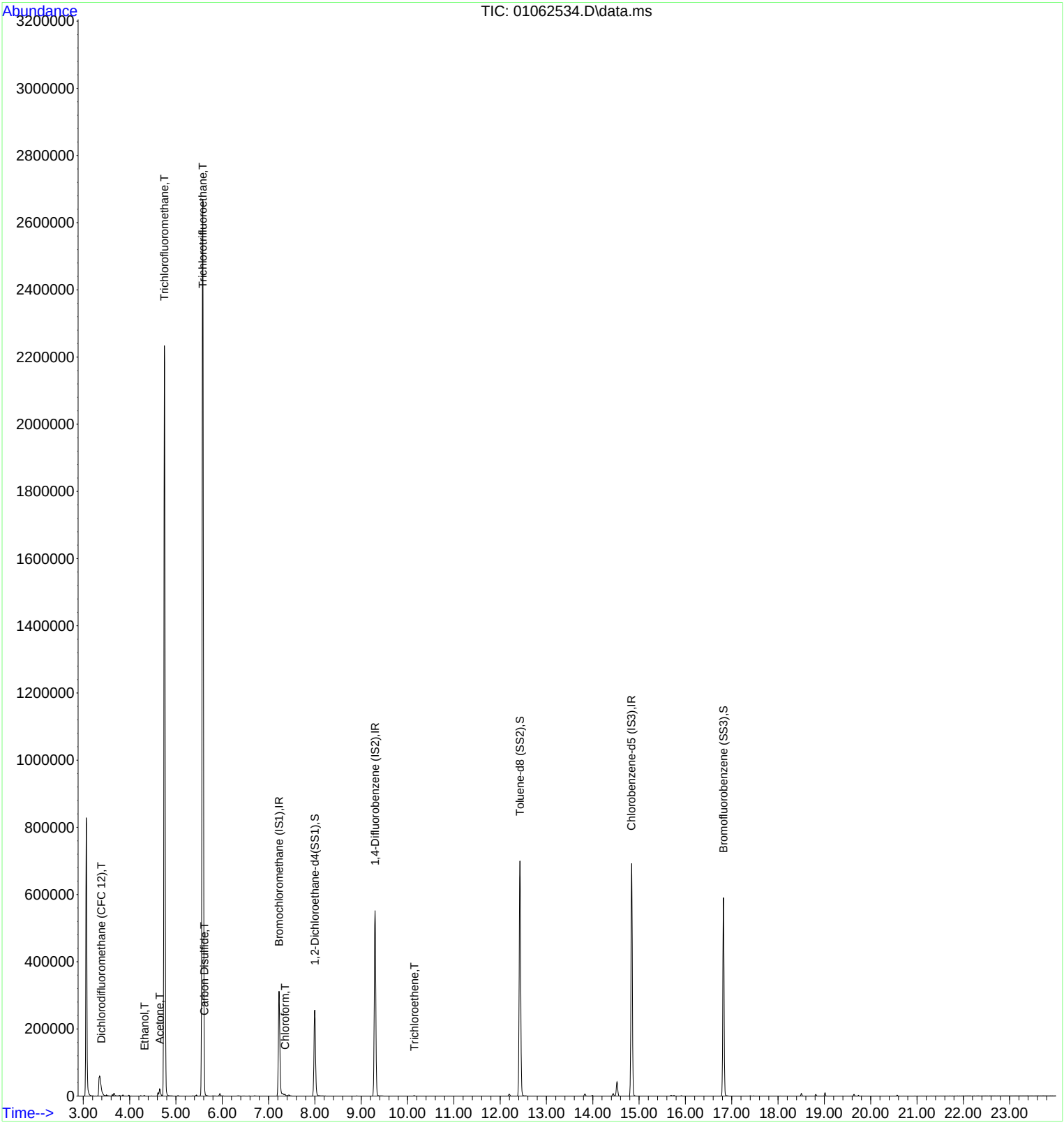
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	586	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	19.01	119	385	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 07 06:14:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

MOA 1/7/25

Quant Time: Jan 07 06:14:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

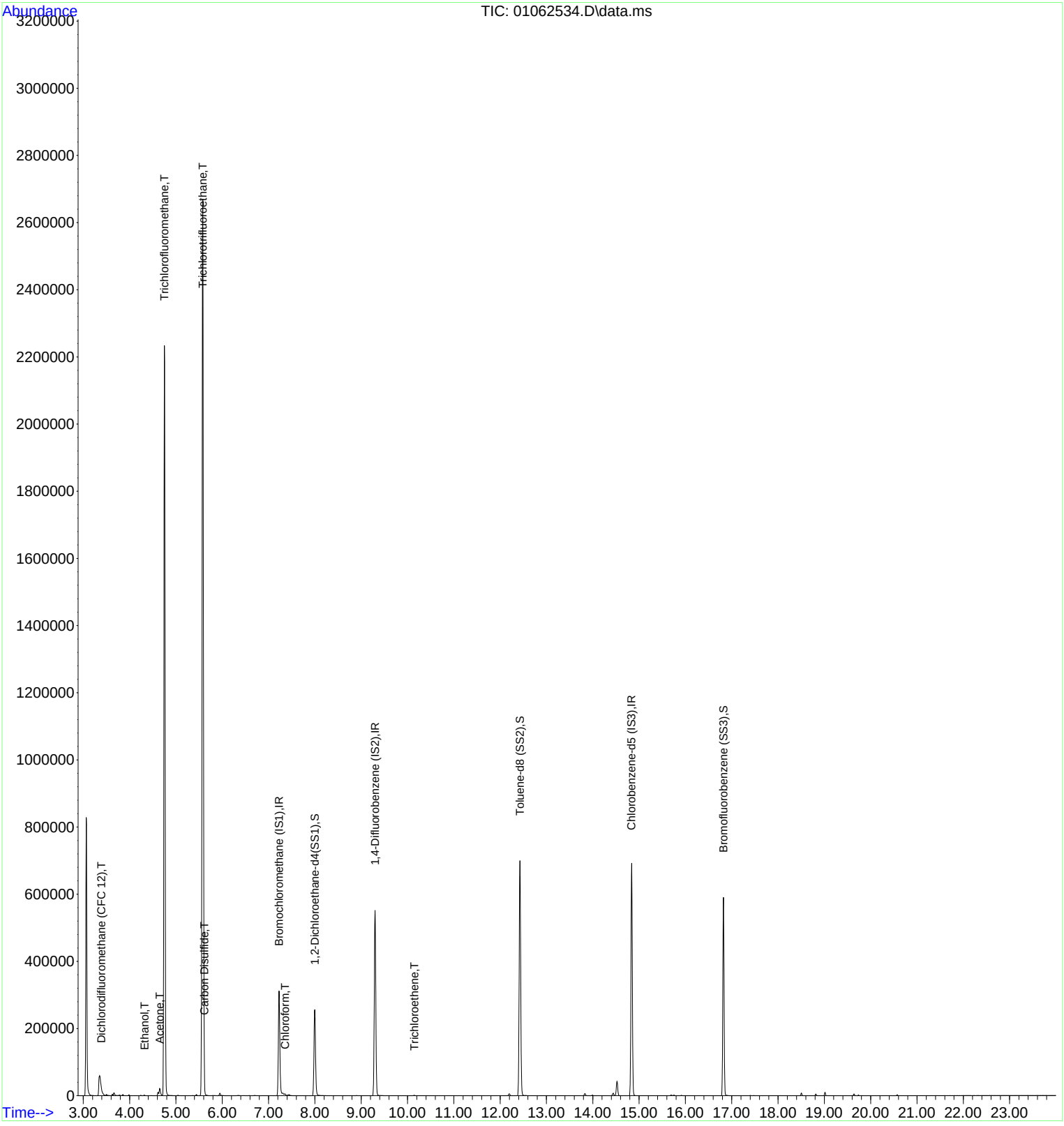
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	137121	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	575639	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	102194	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	227674	12.187	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.52%				
57) Toluene-d8 (SS2)	12.43	98	593334	13.088	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.72%				
73) Bromofluorobenzene (SS3)	16.82	174	222397	14.215	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.76%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	1950	0.073	ng	#	95
10) Ethanol	4.32	45	1336	0.132	ng		86
13) Acetone	4.65	58	8081	0.875	ng		99
14) Trichlorofluoromethane	4.75	101	1735346	69.033	ng		100
21) Trichlorotrifluoroethane	5.58	151	960605	84.698	ng		92
22) Carbon Disulfide	5.61	76	4889	0.117	ng	#	1
32) Chloroform	7.36	83	3596	0.161	ng		95
47) Trichloroethene	10.15	130	739	0.056	ng		92

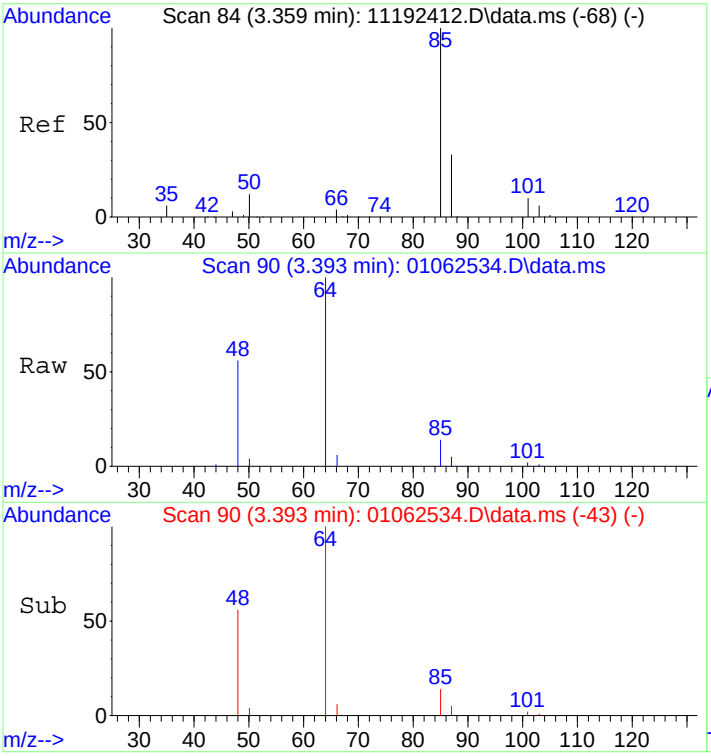
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 07 06:14:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

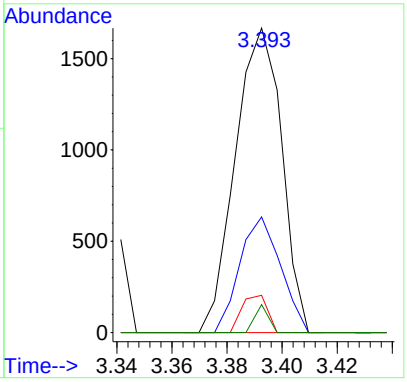


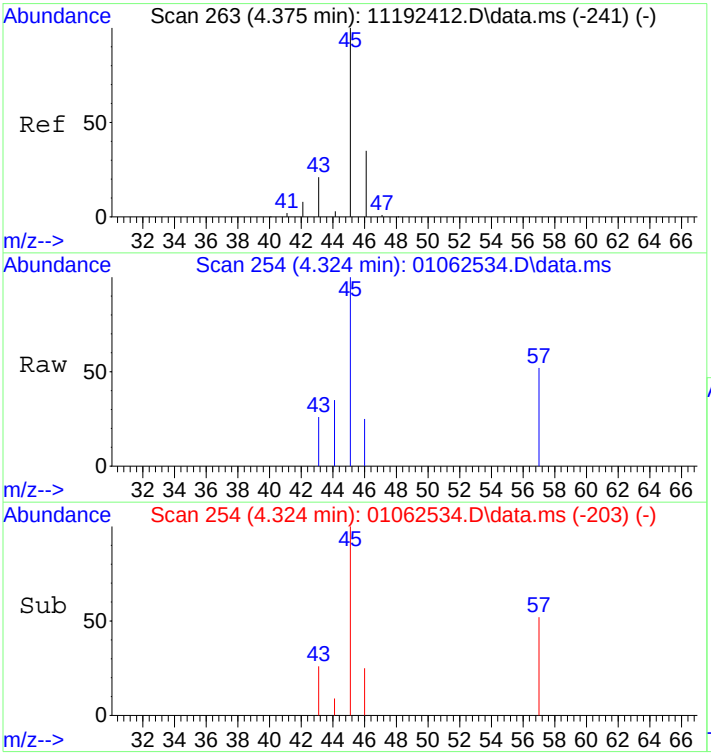


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.07 ng
RT: 3.39 min Scan# 90
Delta R.T. 0.017 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion: 85 Resp: 1950

Ion	Ratio	Lower	Upper
85	100		
87	33.4	12.6	52.6
101	6.8	0.0	29.6
103	0.0	0.0	26.2

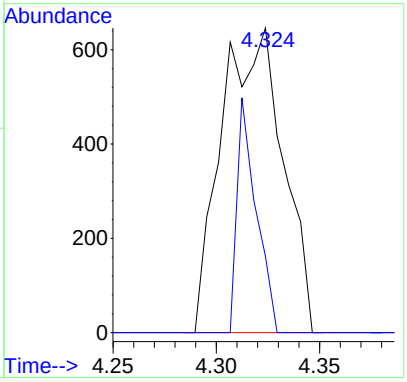


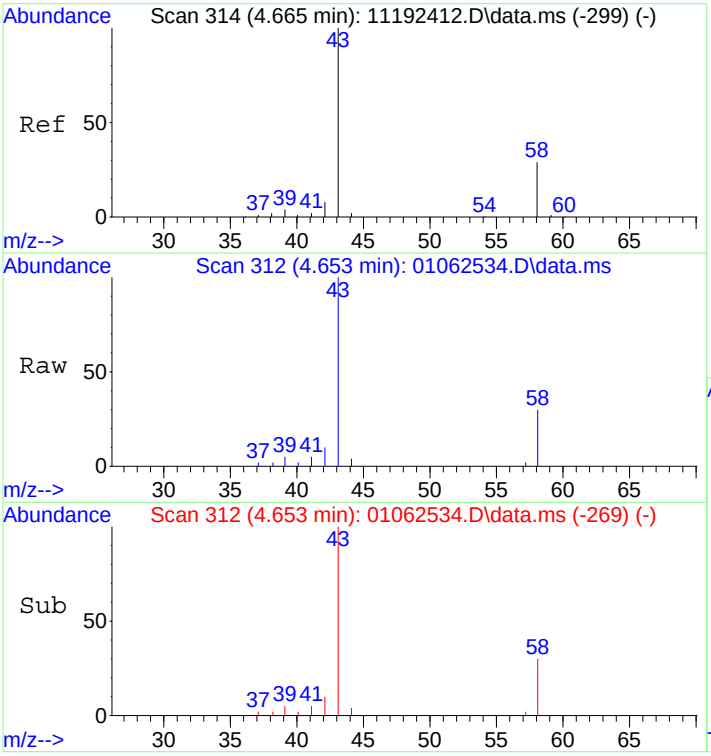


#10
Ethanol
Concen: 0.13 ng
RT: 4.32 min Scan# 254
Delta R.T. 0.039 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion: 45 Resp: 1336

Ion	Ratio	Lower	Upper
45	100		
46	24.0	11.8	51.8

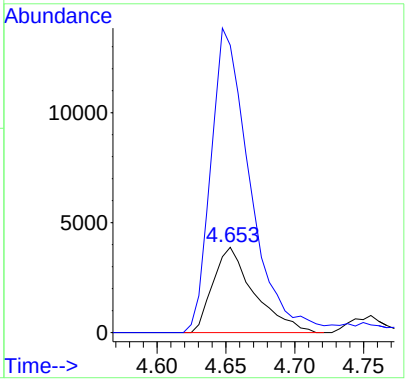


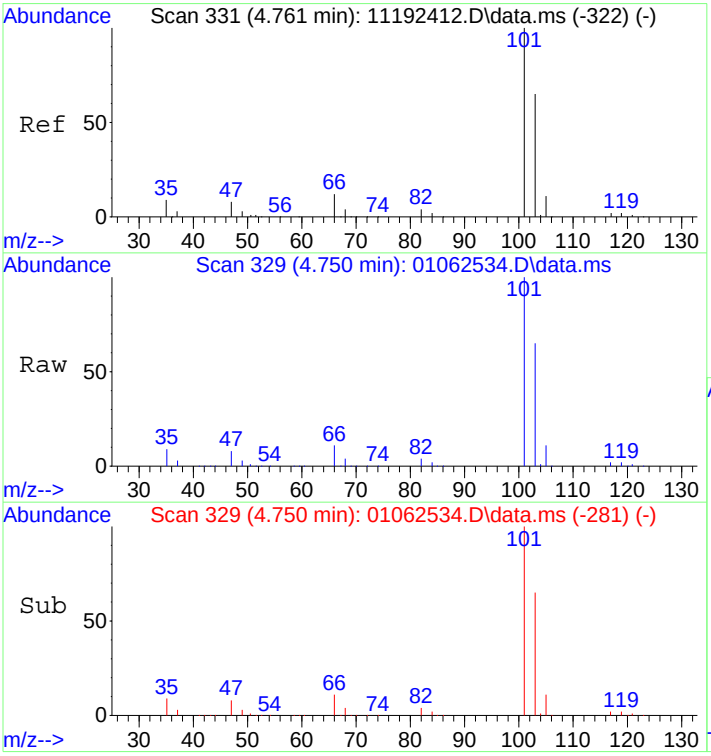


#13
Acetone
Concen: 0.88 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion: 58 Resp: 8081

Ion	Ratio	Lower	Upper
58	100		
43	340.2	312.5	372.5

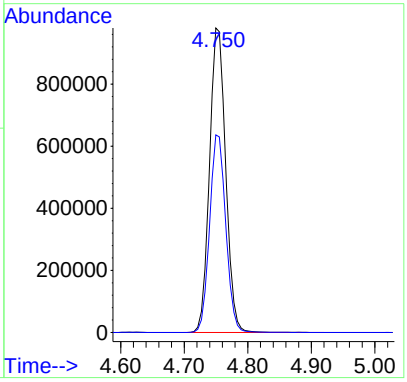


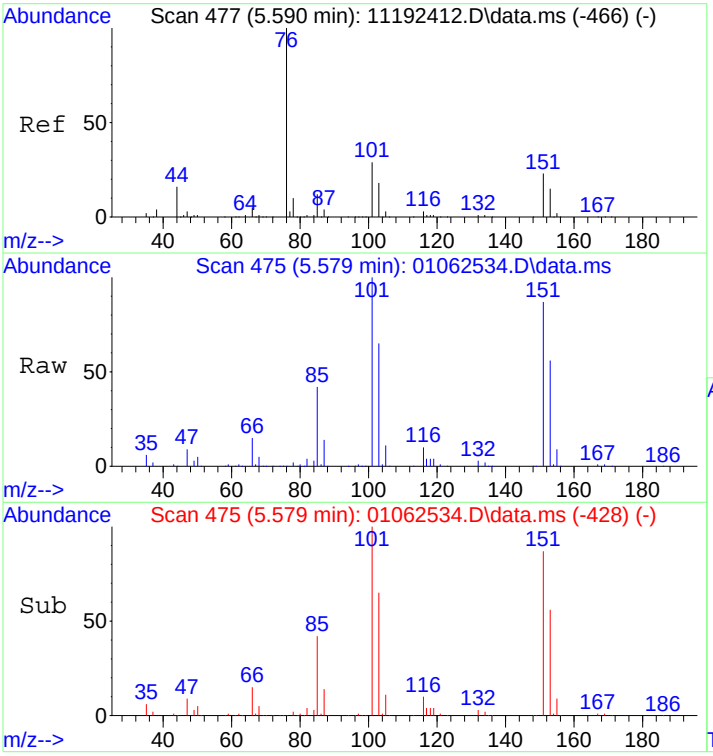


#14
Trichlorofluoromethane
Concen: 69.03 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion:101 Resp: 1735346

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

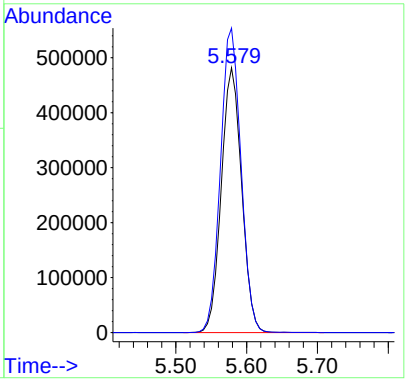


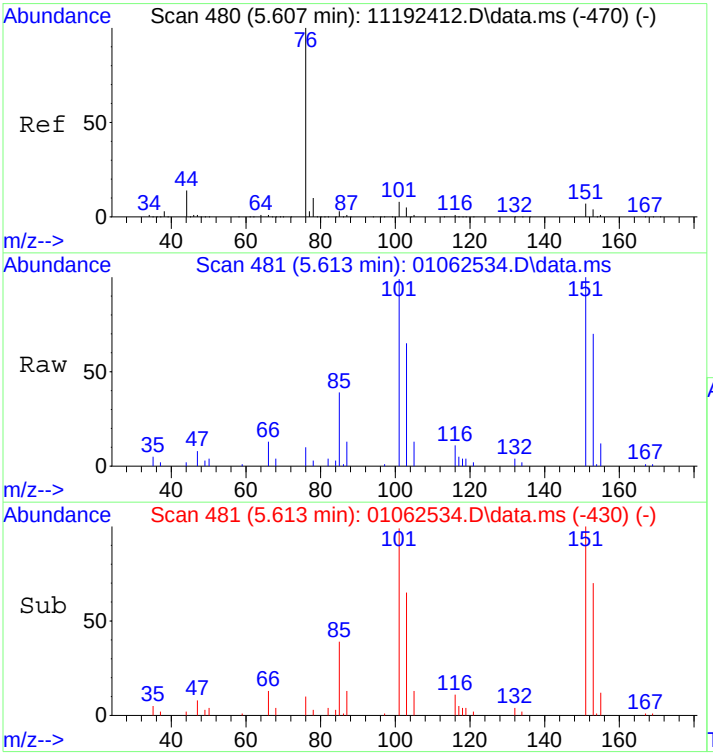


#21
Trichlorotrifluoroethane
Concen: 84.70 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion:151 Resp: 960605

Ion	Ratio	Lower	Upper
151	100		
101	115.8	105.0	145.0

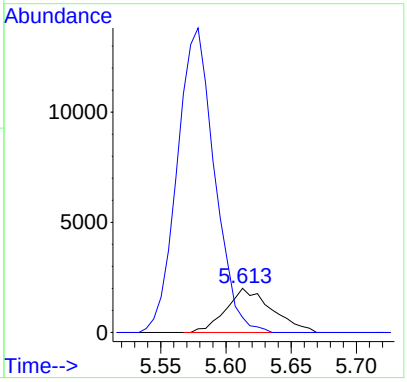


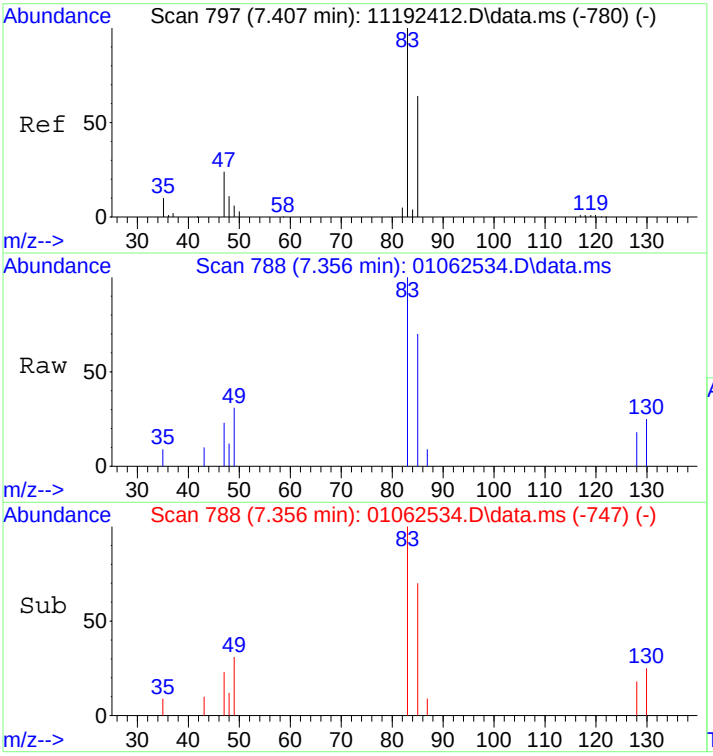


#22
Carbon Disulfide
Concen: 0.12 ng
RT: 5.61 min Scan# 481
Delta R.T. 0.041 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion: 76 Resp: 4889

Ion	Ratio	Lower	Upper
76	100		
78	563.3	0.0	29.6#

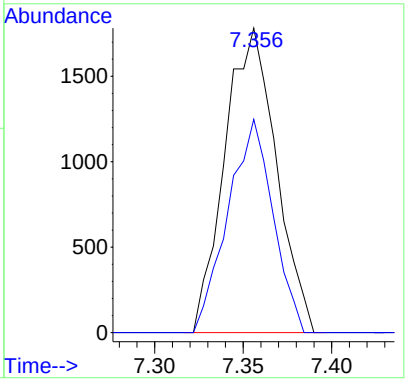


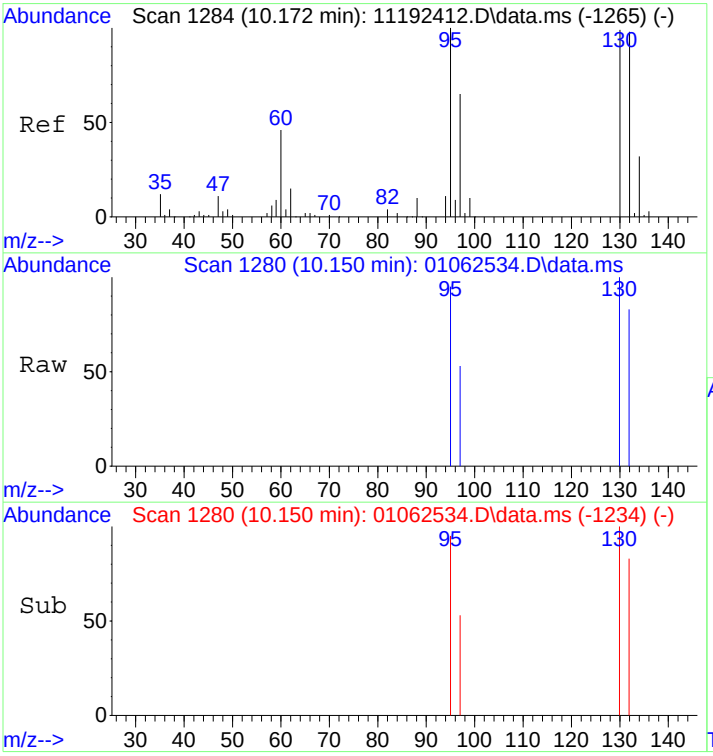


#32
Chloroform
Concen: 0.16 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion: 83 Resp: 3596

Ion	Ratio	Lower	Upper
83	100		
85	61.4	45.1	85.1

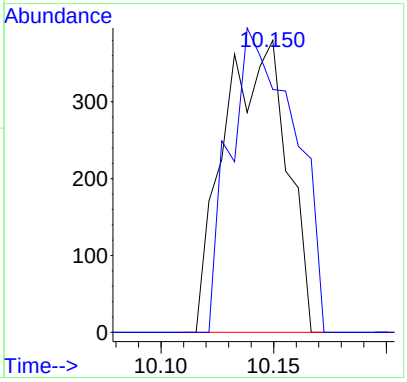




#47
Trichloroethene
Concen: 0.06 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01062534.D
Acq: 7 Jan 2025 2:24

Tgt Ion:130 Resp: 739

Ion	Ratio	Lower	Upper
130	100		
132	107.2	79.3	119.3



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

NOA 1/7/25

Quant Time: Jan 07 06:30:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

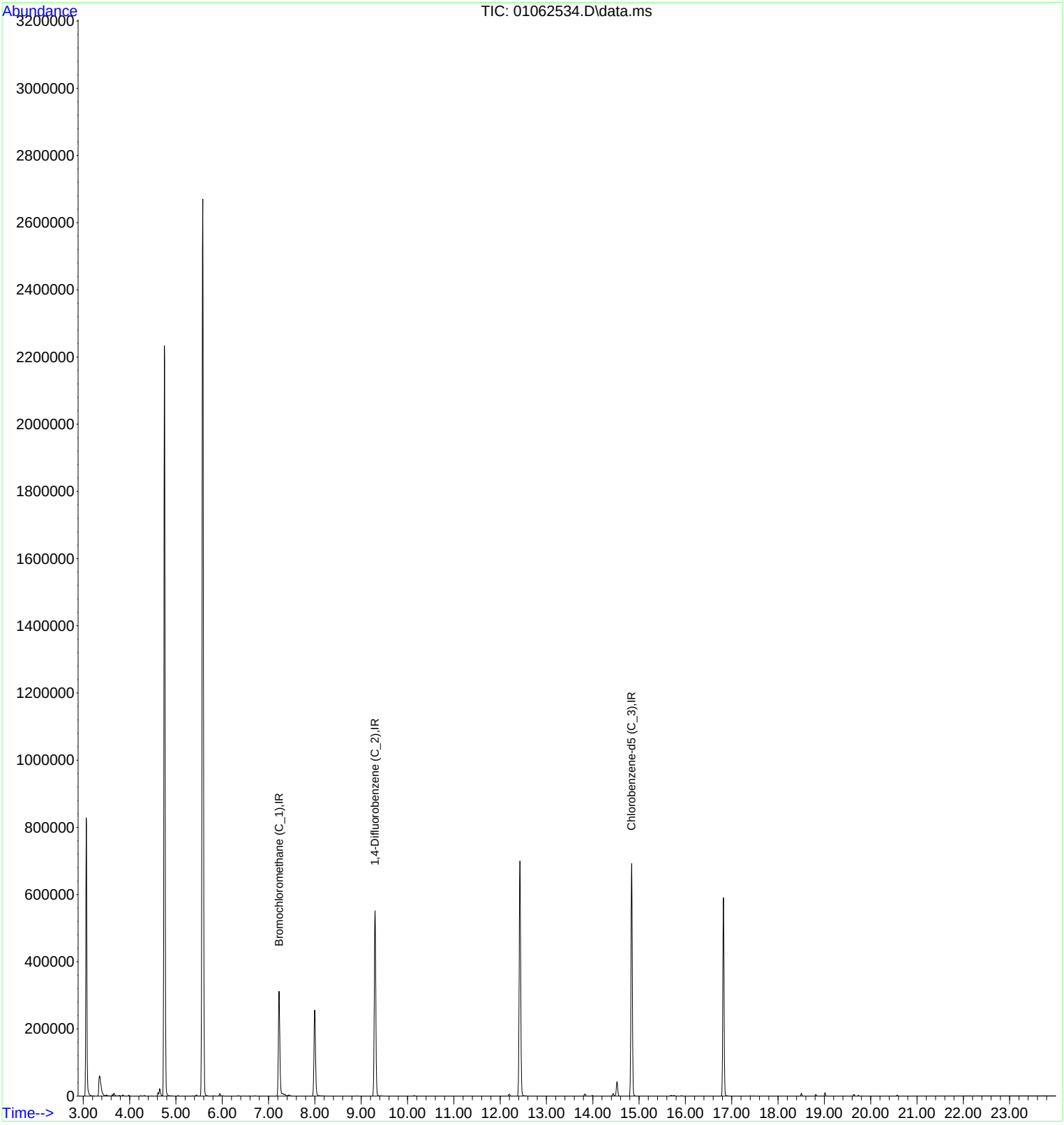
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	138252	12.500 ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	576985	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	102194	12.500 ng	-0.01
Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	114	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	4.24	67	1363	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	4.61	83	309	N.D.	
10) 2-Methylbutane	4.65	57	703	N.D.	
11) Methyl Acetate	5.36	43	394	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	0.00	91	0	N.D.	
27) 4-Chlorotoluene	0.00	91	0	N.D.	
28) Indane	19.01	117	1059	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 07 06:30:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062534.D\data.ms

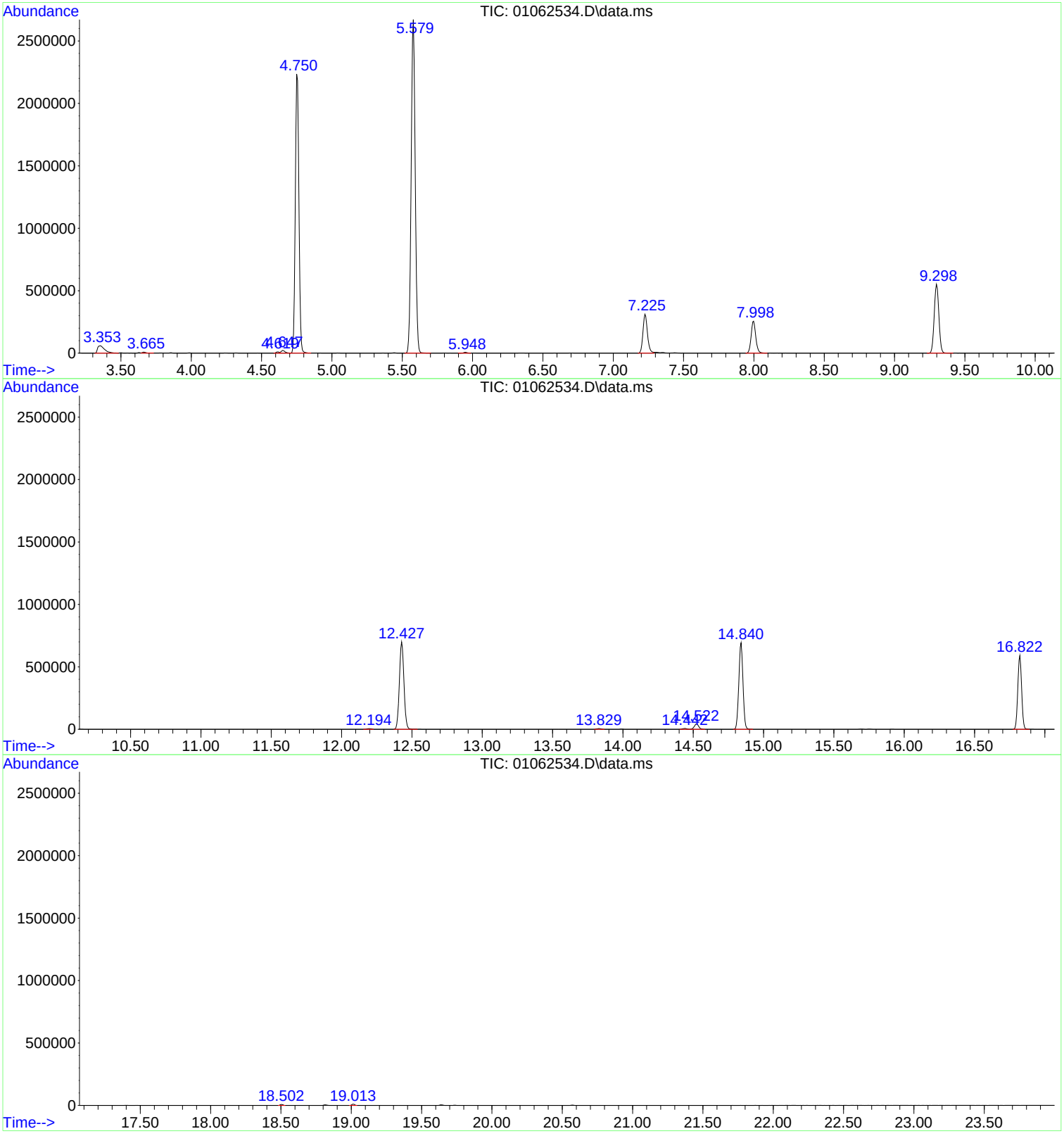
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.353	76	83	106	rBV	59221	205975	3.84%	1.257%
2	3.665	134	138	150	rVB	7956	13332	0.25%	0.081%
3	4.619	300	306	308	rBV2	10151	17295	0.32%	0.106%
4	4.647	308	311	321	rVV	21699	41610	0.78%	0.254%
5	4.750	321	329	347	rVB	2233300	3918184	73.00%	23.911%
6	5.579	464	475	497	rBB	2670906	5367292	100.00%	32.754%
7	5.948	531	540	547	rBV2	7327	13474	0.25%	0.082%
8	7.225	756	765	776	rBV	312263	694936	12.95%	4.241%
9	7.998	891	901	918	rBV	256452	588152	10.96%	3.589%
10	9.298	1118	1130	1151	rBV	552151	1257749	23.43%	7.675%
11	12.194	1633	1640	1646	rBB3	5781	11475	0.21%	0.070%
12	12.427	1671	1681	1701	rBV	699917	1582206	29.48%	9.655%
13	13.829	1922	1928	1935	rBB3	6343	12368	0.23%	0.075%
14	14.442	2029	2036	2042	rBV	7327	13601	0.25%	0.083%
15	14.522	2042	2050	2061	rVB	42716	93098	1.73%	0.568%
16	14.840	2096	2106	2121	rBV	692417	1421973	26.49%	8.678%
17	16.822	2446	2455	2467	rBV	590752	1107730	20.64%	6.760%
18	18.502	2747	2751	2756	rBB2	8163	11720	0.22%	0.072%
19	19.013	2836	2841	2846	rBB2	10186	14630	0.27%	0.089%

Sum of corrected areas: 16386800

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:24
Operator : SC
Sample : P2405139-015 (50mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062534.D
Acq On : 7 Jan 2025 2:244
Operator : SCC
Sample : P2405139-015 (50mL))
Misc : S37-123124011
ALS Vial : 12 Sample Multiplier: 11

VOA 1/7/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

NOA 1/7/25

Quant Time: Jan 07 06:19:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	134481	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	580144	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	104225	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	229148	12.507	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
57) Toluene-d8 (SS2)	12.43	98	596497	12.901	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.20%				
73) Bromofluorobenzene (SS3)	16.82	174	226913	14.221	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.76%				
Target Compounds							Qvalue
2) Propene	3.30	42	31984	2.227	ng	#	1
3) Dichlorodifluoromethan...	3.36	85	16317	0.621	ng		98
4) Chloromethane	3.51	50	3905	0.200	ng		95
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	338	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.81	54	987m	0.100	ng		
8) Bromomethane	4.02	94	747	0.079	ng		93
9) Chloroethane	0.00	64	0	N.D. d			
10) Ethanol	4.32	45	305073	30.669	ng		96
11) Acetonitrile	4.44	41	2771	0.108	ng		99
12) Acrolein	4.53	56	3901	0.459	ng		95
13) Acetone	4.62	58	140132	15.476	ng	#	1
14) Trichlorofluoromethane	4.76	101	11860	0.481	ng		96
15) 2-Propanol (Isopropanol)	4.87	45	669883	20.659	ng		98
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.36	59	16289	0.627	ng	#	1
19) Methylene Chloride	5.35	84	12678	0.995	ng		91
20) 3-Chloro-1-propene (Al...	5.45	41	263	N.D.			
21) Trichlorotrifluoroethane	5.58	151	3496	0.314	ng		85
22) Carbon Disulfide	5.60	76	20632	0.504	ng		96
23) trans-1,2-Dichloroethene	6.15	61	843	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D. d			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D. d			
26) Vinyl Acetate	6.45	86	5914	2.698	ng	#	96
27) 2-Butanone (MEK)	6.67	72	14658	2.015	ng	#	91
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.29	61	440372	98.074	ng		99
31) n-Hexane	7.30	57	27279	1.350	ng		95
32) Chloroform	7.38	83	1563	0.071	ng		96
34) Tetrahydrofuran (THF)	7.75	72	13599	1.982	ng	#	88
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.13	62	6669	0.360	ng		97
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	28702	No Calib		#	
41) Benzene	8.90	78	67114	1.441	ng		100
42) Carbon Tetrachloride	9.07	117	2381	0.128	ng		96
43) Cyclohexane	9.21	84	16684	1.027	ng		96
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	9.87	63	20442	1.799	ng		98
46) Bromodichloromethane	10.12	83	743	N.D.			
47) Trichloroethene	10.16	130	934	0.070	ng	#	1
48) 1,4-Dioxane	0.00	88	0	N.D. d			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 07 06:19:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	29399	0.603 ng		81
50) Methyl Methacrylate	10.41	100	1014	0.239 ng		90
51) n-Heptane	10.57	71	8816	0.849 ng		98
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	3461	0.346 ng		82
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	1780705	40.028 ng		99
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	33825	1.388 ng		97
63) n-Octane	13.93	57	5152	0.559 ng		97
64) Tetrachloroethene	14.03	166	20283	1.533 ng		99
65) Chlorobenzene	14.90	112	2342	0.075 ng		93
66) Ethylbenzene	15.41	91	56192	1.142 ng		100
67) m- & p-Xylenes	15.63	91	145101	3.604 ng		100
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	16876	0.600 ng		100
70) o-Xylene	16.24	91	57703	1.448 ng		100
71) n-Nonane	16.61	43	7349	0.347 ng		98
72) 1,1,2,2-Tetrachloroethane	16.13	83	318	N.D.		
74) Cumene	17.03	105	3930	0.079 ng		97
75) alpha-Pinene	17.52	93	31840	1.302 ng		94
76) n-Propylbenzene	17.68	91	5978	0.102 ng		98
77) 3-Ethyltoluene	17.03	105	3930	No Calib		
78) 4-Ethyltoluene	17.86	105	6964	0.149 ng		100
79) 1,3,5-Trimethylbenzene	17.95	105	6438	0.158 ng		100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	3930	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	14979	0.363 ng		89
83) n-Decane	17.07	58	9363	No Calib	#	
84) Benzyl Chloride	18.60	91	768	N.D.		
85) 1,3-Dichlorobenzene	18.57	146	1148	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	640	N.D.		
87) sec-Butylbenzene	18.74	105	990	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	14703	0.324 ng		94
89) 1,2,3-Trimethylbenzene	17.03	105	3930	No Calib		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	25776	1.954 ng		95
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	17.96	58	468	No Calib	#	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	18.92	58	1119	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.21	55	1637	No Calib	#	
99) tert-Butylbenzene	18.43	119	1857	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D. d		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

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Data File : 01062535.D
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Quant Time: Jan 07 06:19:40 2025
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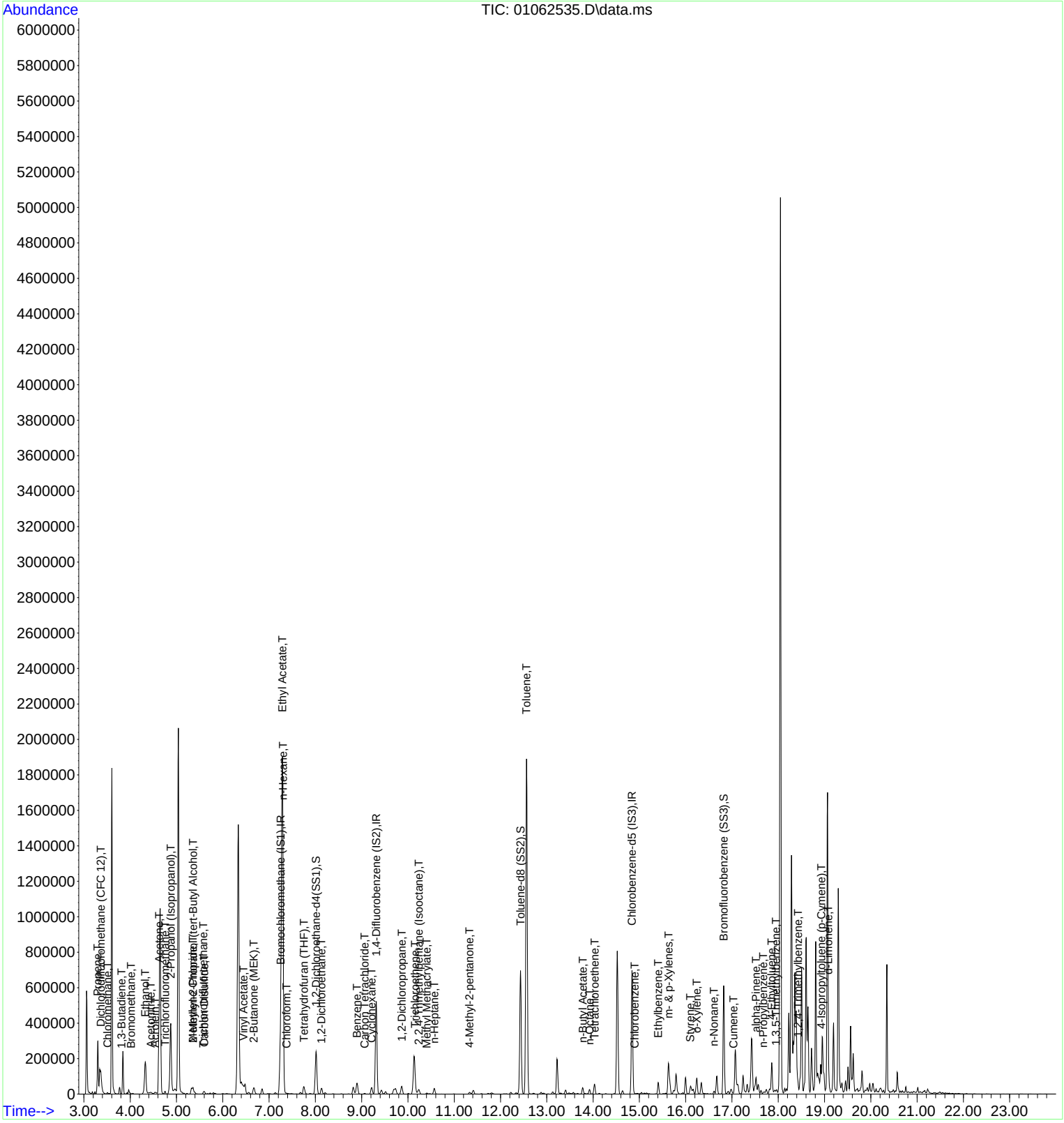
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

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VOA 1/7/25

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Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	134481	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	580144	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	104225	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	229148	12.507	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
57) Toluene-d8 (SS2)	12.43	98	596497	12.901	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.20%				
73) Bromofluorobenzene (SS3)	16.82	174	226913	14.221	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.76%				
Target Compounds							Qvalue
2) Propene	3.30	42	31984	2.227	ng	#	1
3) Dichlorodifluoromethan...	3.36	85	16317	0.621	ng		98
4) Chloromethane	3.51	50	3905	0.200	ng		95
7) 1,3-Butadiene	3.81	54	987m	0.100	ng		
8) Bromomethane	4.02	94	747	0.079	ng		93
10) Ethanol	4.32	45	305073	30.669	ng		96
11) Acetonitrile	4.44	41	2771	0.108	ng		99
12) Acrolein	4.53	56	3901	0.459	ng		95
13) Acetone	4.62	58	140132	15.476	ng	#	1
14) Trichlorofluoromethane	4.76	101	11860	0.481	ng		96
15) 2-Propanol (Isopropanol)	4.87	45	669883	20.659	ng		98
18) 2-Methyl-2-Propanol (t...	5.36	59	16289	0.627	ng	#	1
19) Methylene Chloride	5.35	84	12678	0.995	ng		91
21) Trichlorotrifluoroethane	5.58	151	3496	0.314	ng		85
22) Carbon Disulfide	5.60	76	20632	0.504	ng		96
26) Vinyl Acetate	6.45	86	5914	2.698	ng	#	96
27) 2-Butanone (MEK)	6.67	72	14658	2.015	ng	#	91
30) Ethyl Acetate	7.29	61	440372	98.074	ng		99
31) n-Hexane	7.30	57	27279	1.350	ng		95
32) Chloroform	7.38	83	1563	0.071	ng		96
34) Tetrahydrofuran (THF)	7.75	72	13599	1.982	ng	#	88
36) 1,2-Dichloroethane	8.13	62	6669	0.360	ng		97
41) Benzene	8.90	78	67114	1.441	ng		100
42) Carbon Tetrachloride	9.07	117	2381	0.128	ng		96
43) Cyclohexane	9.21	84	16684	1.027	ng		96
45) 1,2-Dichloropropane	9.87	63	20442	1.799	ng		98
47) Trichloroethene	10.16	130	934	0.070	ng	#	1
49) 2,2,4-Trimethylpentane...	10.23	57	29399	0.603	ng		81
50) Methyl Methacrylate	10.41	100	1014	0.239	ng		90
51) n-Heptane	10.57	71	8816	0.849	ng		98
53) 4-Methyl-2-pentanone	11.33	58	3461	0.346	ng		82
58) Toluene	12.56	91	1780705	40.028	ng		99
62) n-Butyl Acetate	13.78	43	33825	1.388	ng		97
63) n-Octane	13.93	57	5152	0.559	ng		97
64) Tetrachloroethene	14.03	166	20283	1.533	ng		99
65) Chlorobenzene	14.90	112	2342	0.075	ng		93
66) Ethylbenzene	15.41	91	56192	1.142	ng		100
67) m- & p-Xylenes	15.63	91	145101	3.604	ng		100
69) Styrene	16.10	104	16876	0.600	ng		100
70) o-Xylene	16.24	91	57703	1.448	ng		100
71) n-Nonane	16.61	43	7349	0.347	ng		98
74) Cumene	17.03	105	3930	0.079	ng		97
75) alpha-Pinene	17.52	93	31840	1.302	ng		94
76) n-Propylbenzene	17.68	91	5978	0.102	ng		98
78) 4-Ethyltoluene	17.86	105	6964	0.149	ng		100

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QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
79) 1,3,5-Trimethylbenzene	17.95	105	6438	0.158	ng	100
82) 1,2,4-Trimethylbenzene	18.43	105	14979	0.363	ng	89
88) 4-Isopropyltoluene (p-...	18.93	119	14703	0.324	ng	94
91) d-Limonene	19.08	68	25776	1.954	ng	95

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

Quantitation Report (QT Reviewed)

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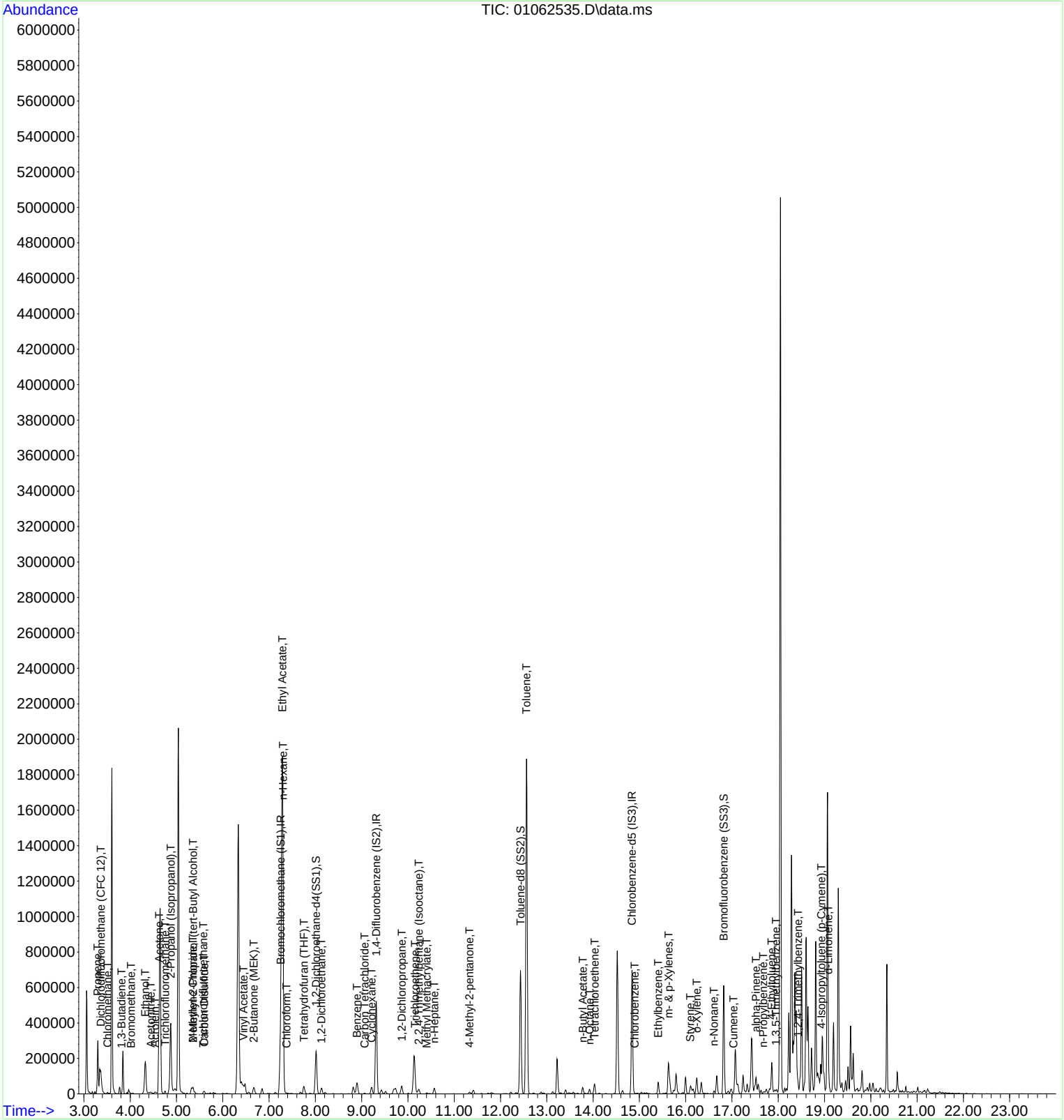
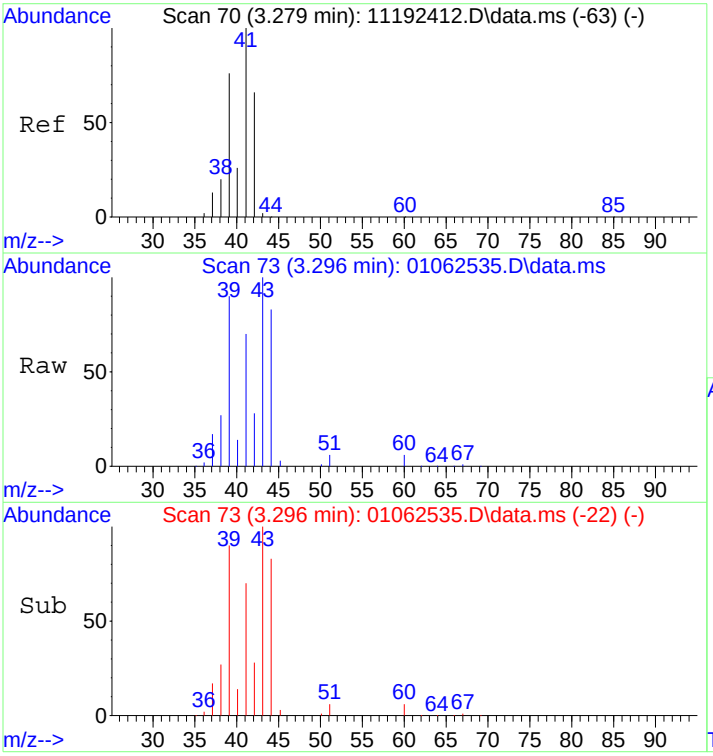
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

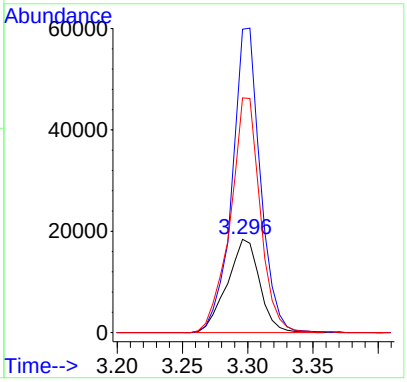


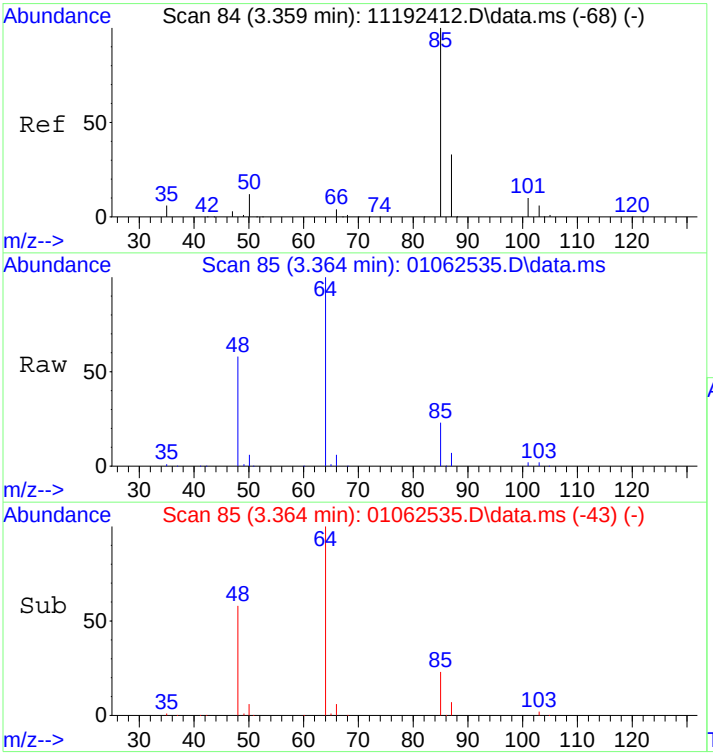


#2
Propene
Concen: 2.23 ng
RT: 3.30 min Scan# 73
Delta R.T. 0.042 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 42 Resp: 31984

Ion	Ratio	Lower	Upper
42	100		
39	283.0	95.4	135.4#
41	230.9	131.9	171.9#

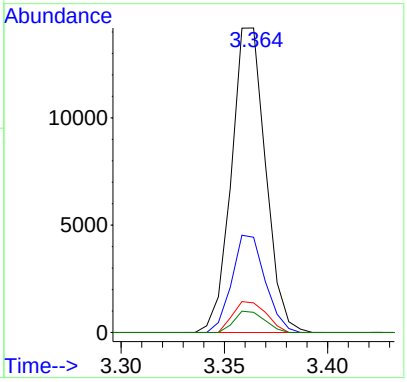


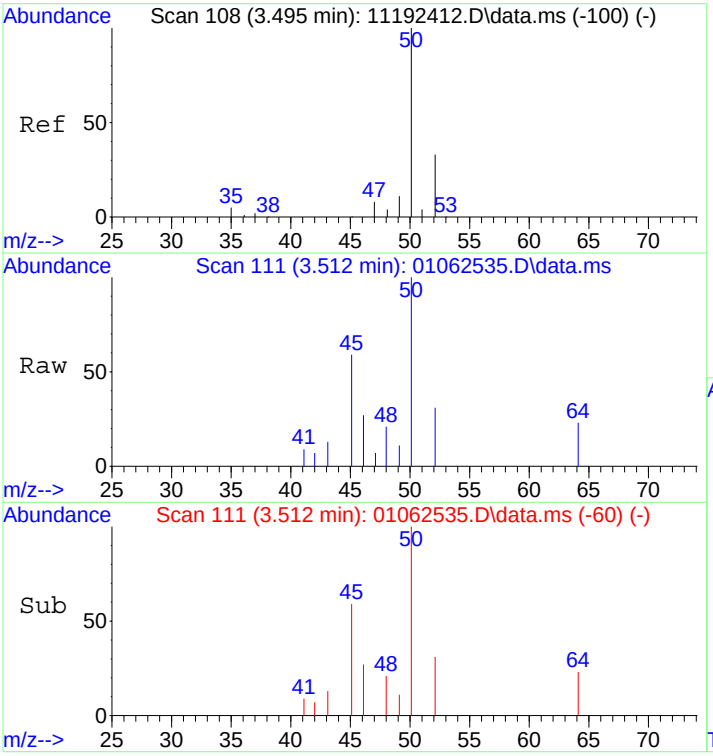


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.62 ng
RT: 3.36 min Scan# 85
Delta R.T. -0.012 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 85 Resp: 16317

Ion	Ratio	Lower	Upper
85	100		
87	31.1	12.6	52.6
101	9.9	0.0	29.6
103	6.2	0.0	26.2

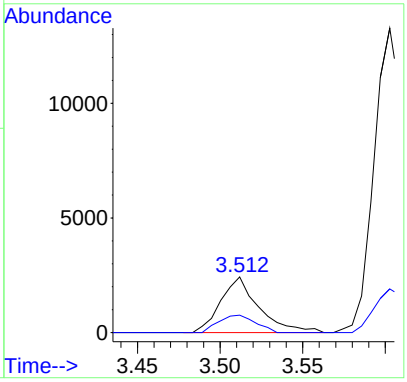


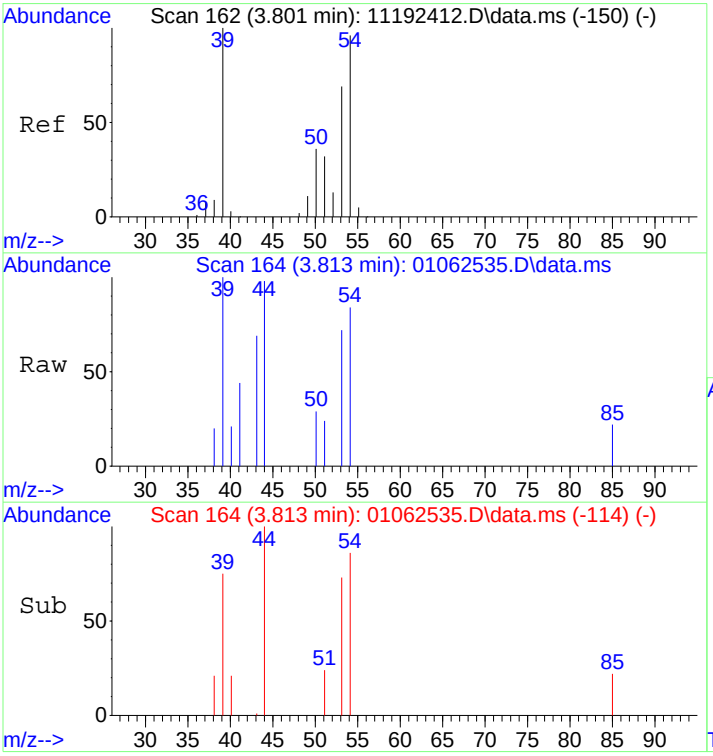


#4
Chloromethane
Concen: 0.20 ng
RT: 3.51 min Scan# 111
Delta R.T. 0.038 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 50 Resp: 3905

Ion	Ratio	Lower	Upper
50	100		
52	30.3	13.0	53.0

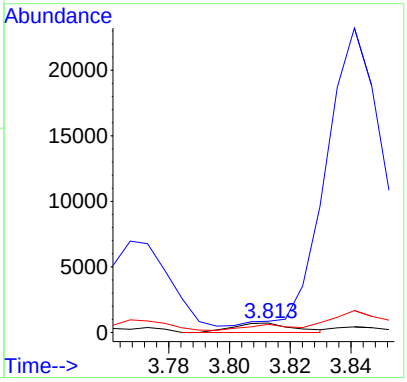


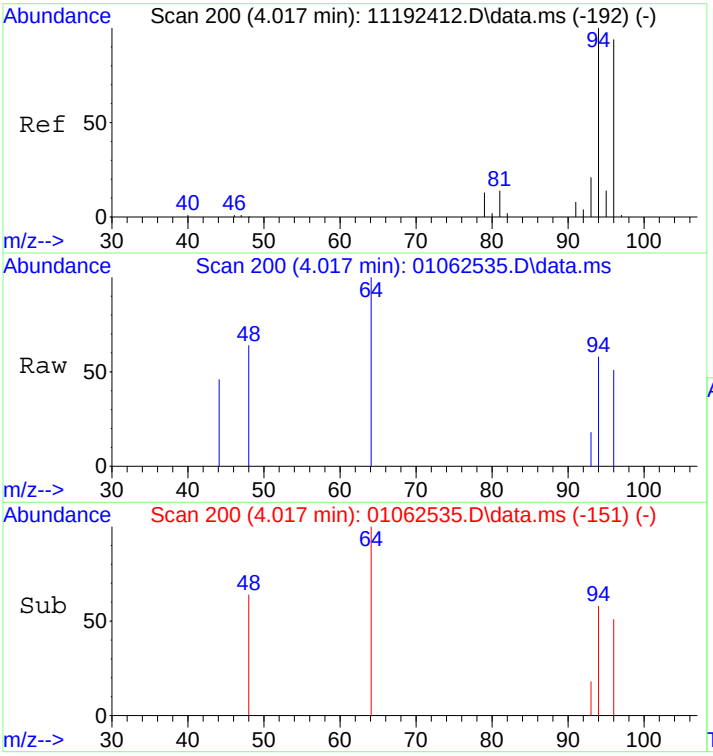


#7
1,3-Butadiene
Concen: 0.10 ng m
RT: 3.81 min Scan# 164
Delta R.T. 0.036 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 54 Resp: 987

Ion	Ratio	Lower	Upper
54	100		
39	110.6	83.2	123.2
53	61.7	50.9	90.9

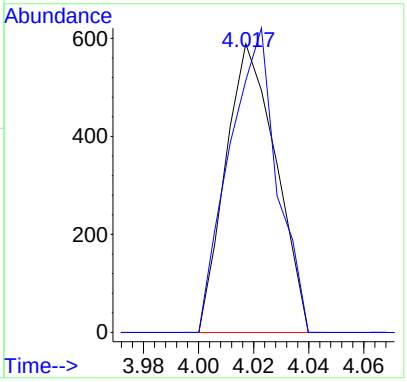


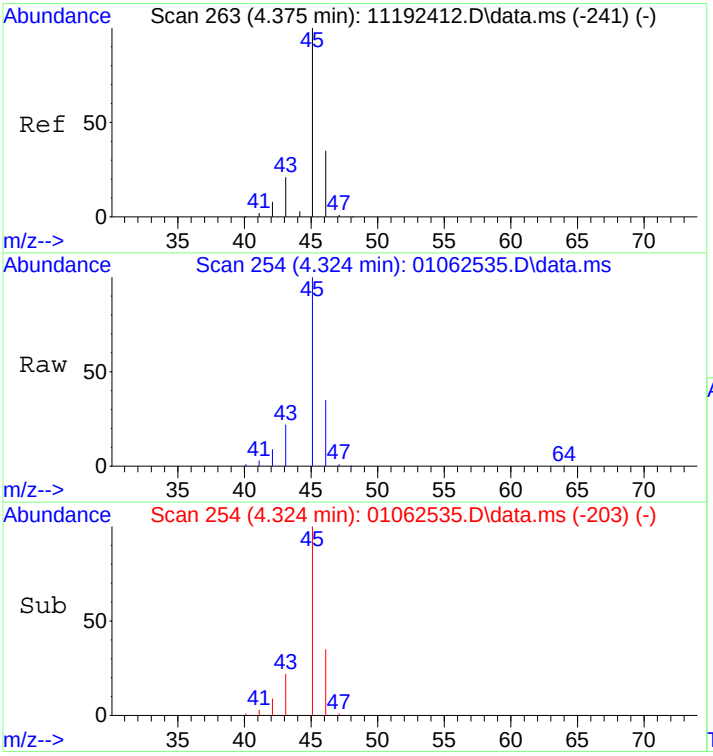


#8
Bromomethane
Concen: 0.08 ng
RT: 4.02 min Scan# 200
Delta R.T. 0.026 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 94 Resp: 747

Ion	Ratio	Lower	Upper
94	100		
96	100.0	73.5	113.5

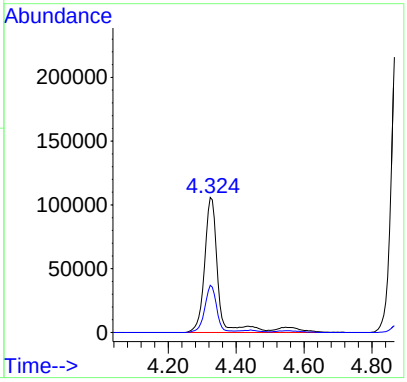


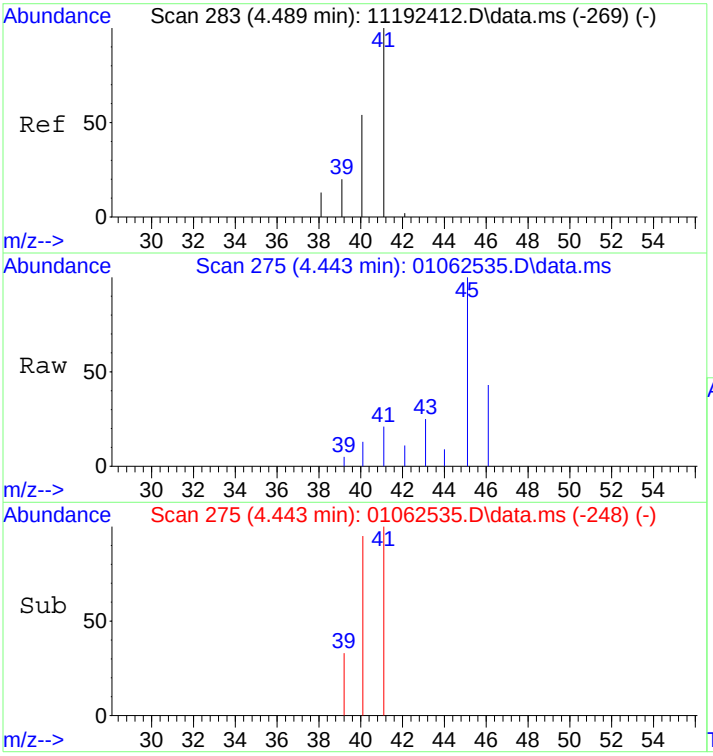


#10
Ethanol
Concen: 30.67 ng
RT: 4.32 min Scan# 254
Delta R.T. 0.040 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 45 Resp: 305073

Ion	Ratio	Lower	Upper
45	100		
46	34.1	11.8	51.8

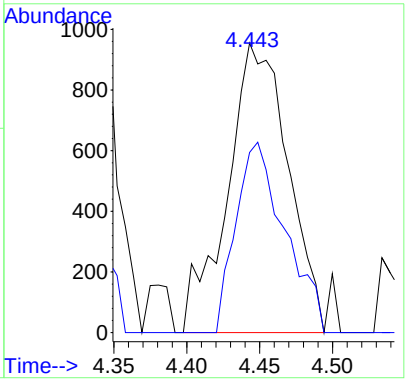


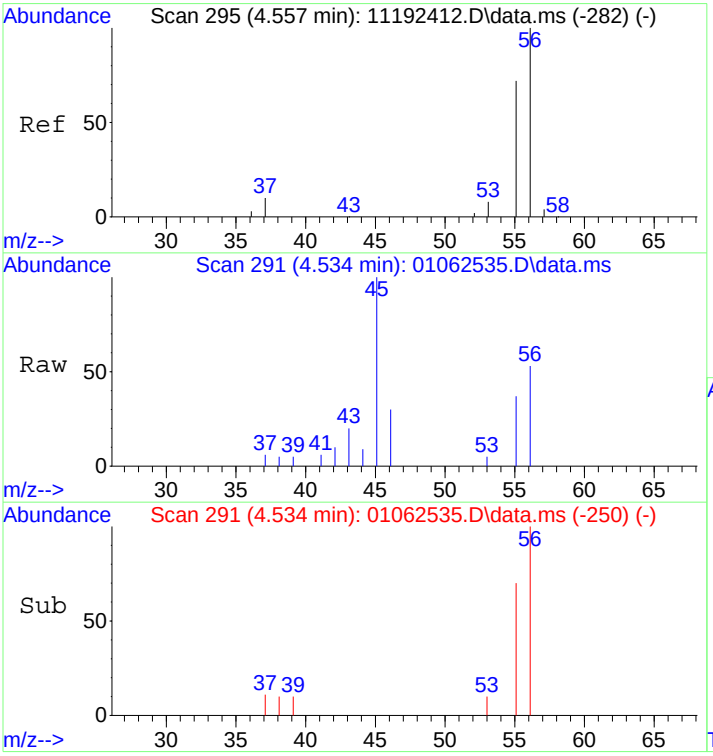


#11
Acetonitrile
Concen: 0.11 ng
RT: 4.44 min Scan# 275
Delta R.T. -0.049 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 41 Resp: 2771

Ion	Ratio	Lower	Upper
41	100		
40	53.0	33.8	73.8

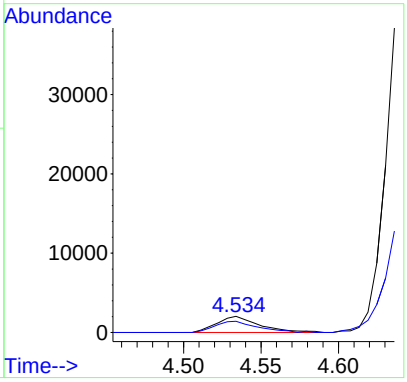


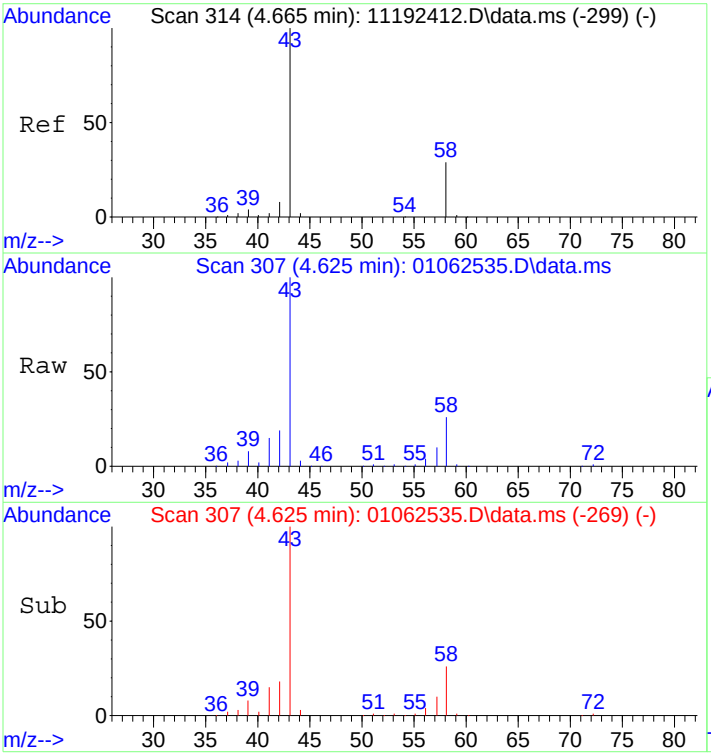


#12
Acrolein
Concen: 0.46 ng
RT: 4.53 min Scan# 291
Delta R.T. -0.020 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 56 Resp: 3901

Ion	Ratio	Lower	Upper
56	100		
55	69.3	53.1	93.1

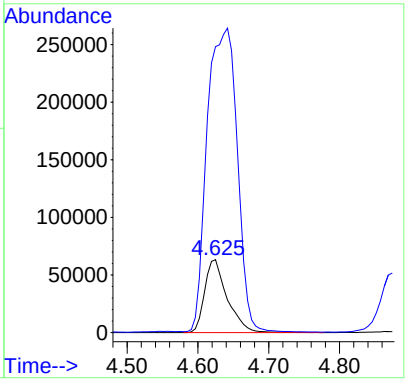


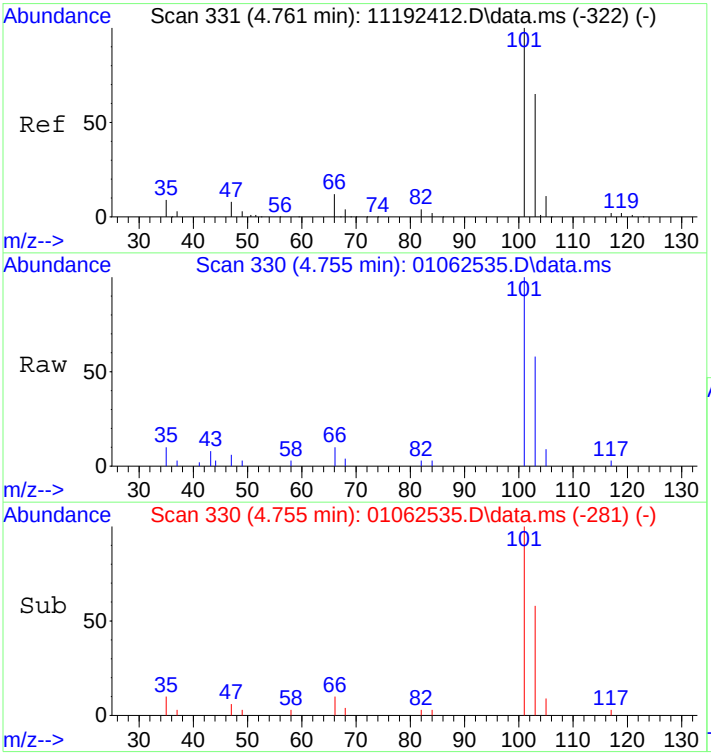


#13
Acetone
Concen: 15.48 ng
RT: 4.62 min Scan# 307
Delta R.T. -0.036 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 58 Resp: 140132

Ion	Ratio	Lower	Upper
58	100		
43	555.9	312.5	372.5#

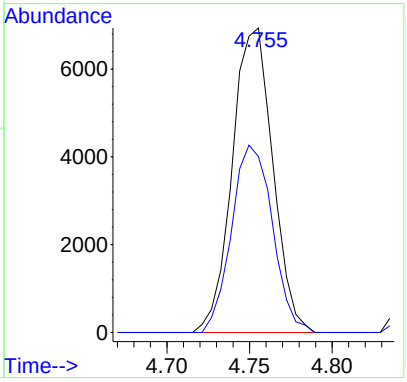


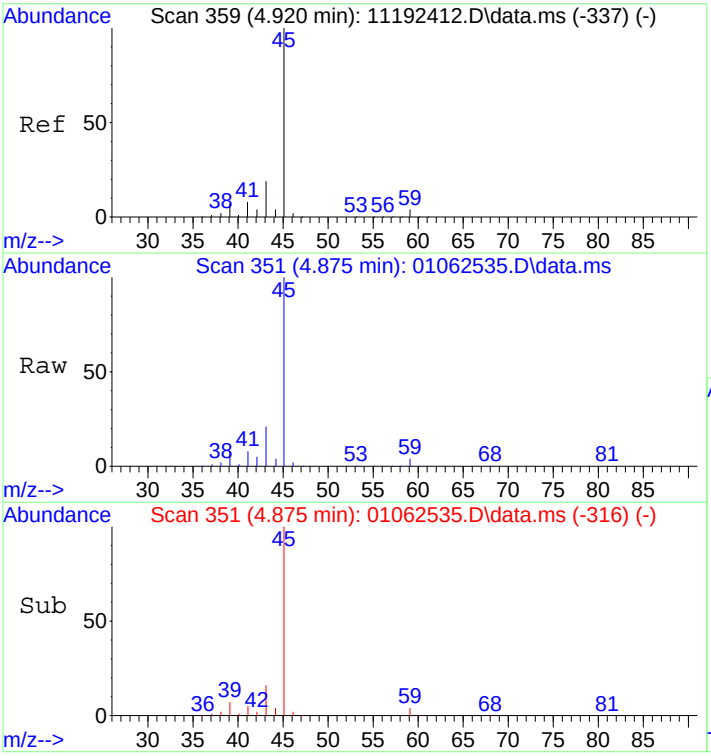


#14
Trichlorofluoromethane
Concen: 0.48 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:101 Resp: 11860

Ion	Ratio	Lower	Upper
101	100		
103	62.0	44.8	84.8

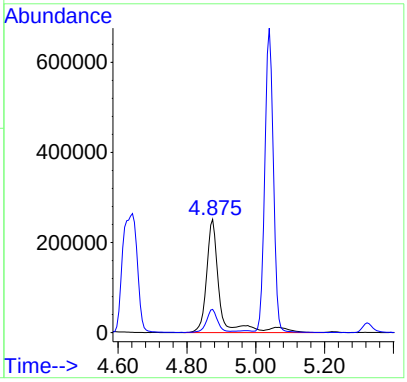


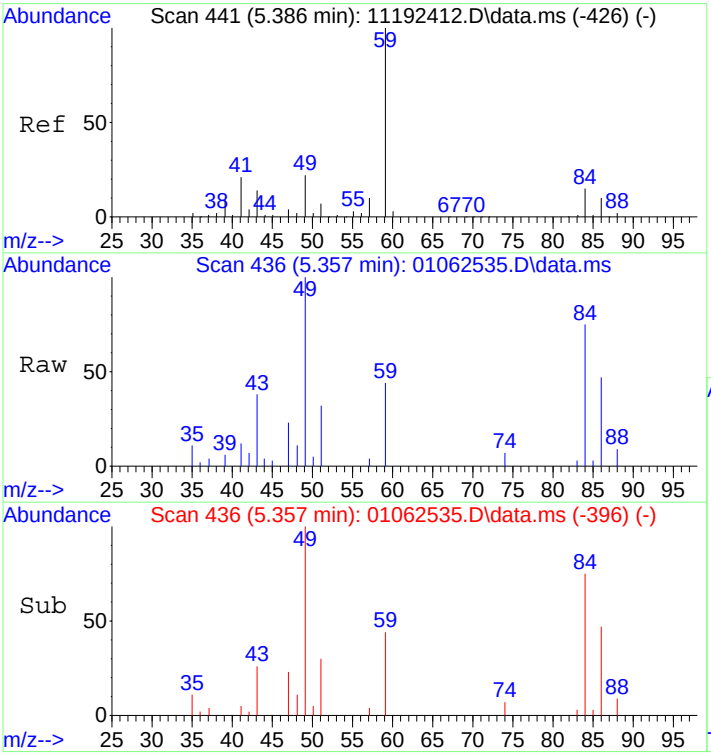


#15
2-Propanol (Isopropanol)
Concen: 20.66 ng
RT: 4.87 min Scan# 351
Delta R.T. -0.050 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 45 Resp: 669883

Ion	Ratio	Lower	Upper
45	100		
43	19.2	0.2	40.2

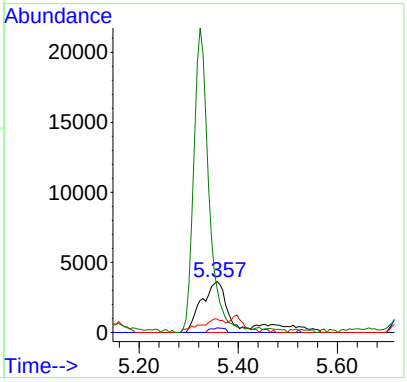


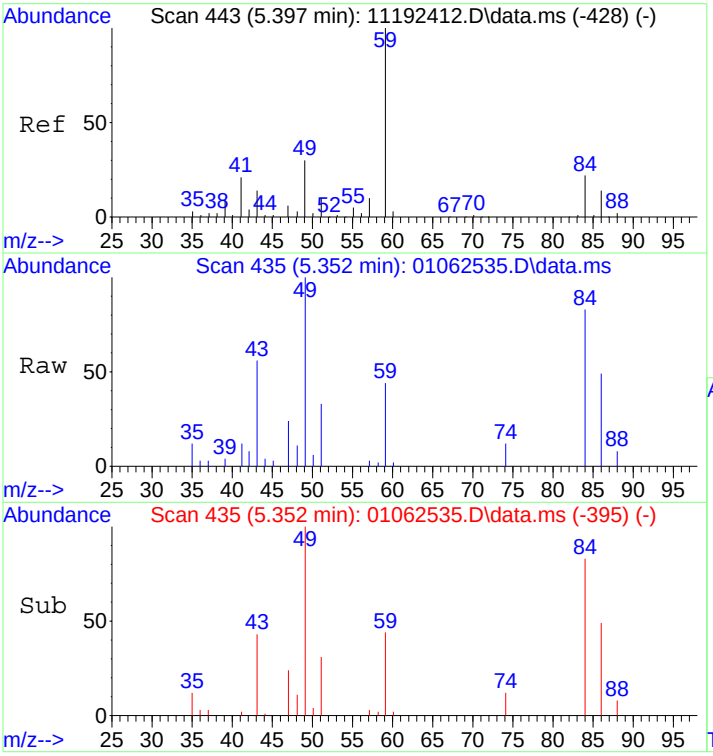


#18
2-Methyl-2-Propanol (tert-Butyl Alcohol
Concen: 0.63 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.023 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 59 Resp: 16289

Ion	Ratio	Lower	Upper
59	100		
57	4.1	0.0	29.9
41	34.7	0.0	39.4
43	290.6	0.0	34.5#

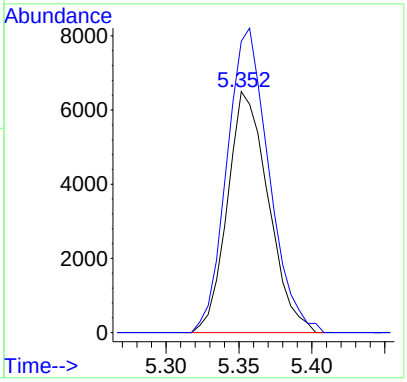


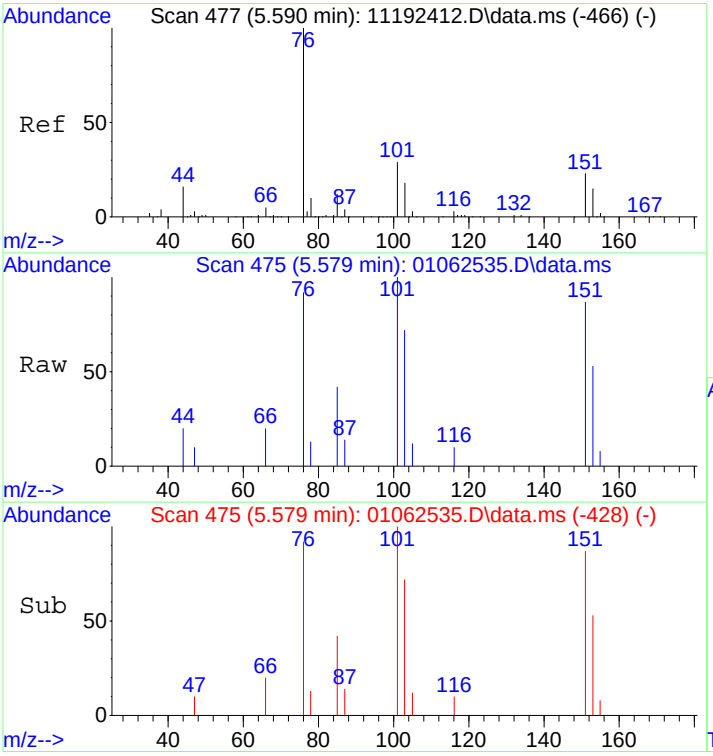


#19
Methylene Chloride
Concen: 1.00 ng
RT: 5.35 min Scan# 435
Delta R.T. -0.023 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 84 Resp: 12678

Ion	Ratio	Lower	Upper
84	100		
49	129.6	116.0	166.0

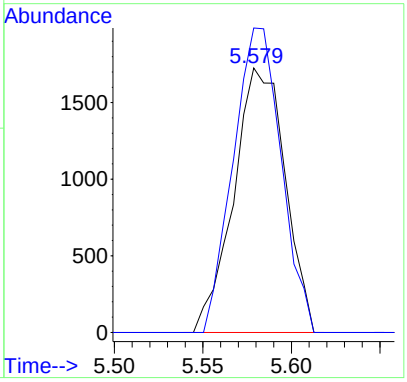


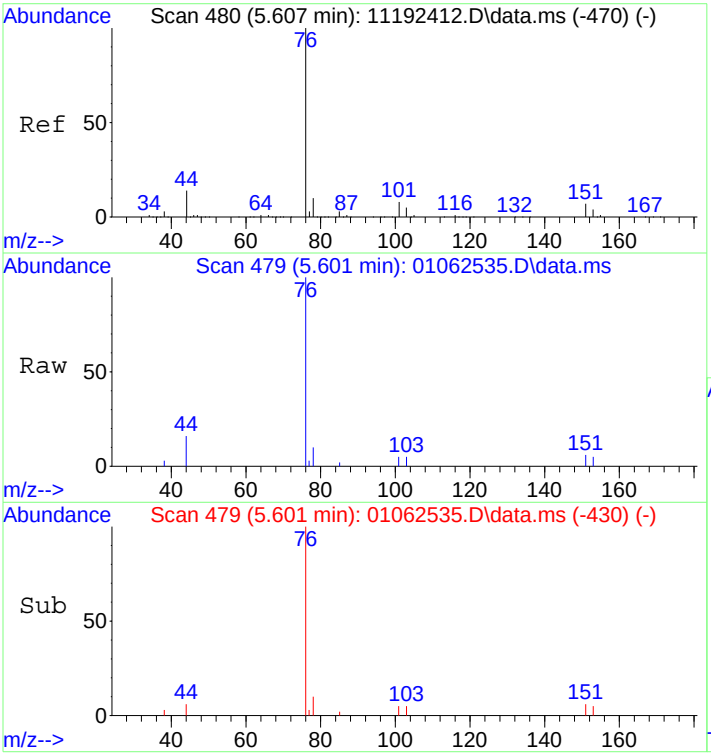


#21
Trichlorotrifluoroethane
Concen: 0.31 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:151 Resp: 3496

Ion	Ratio	Lower	Upper
151	100		
101	107.4	105.0	145.0

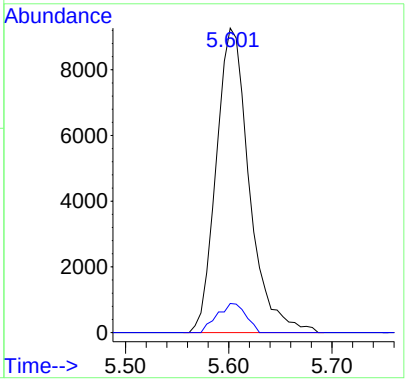


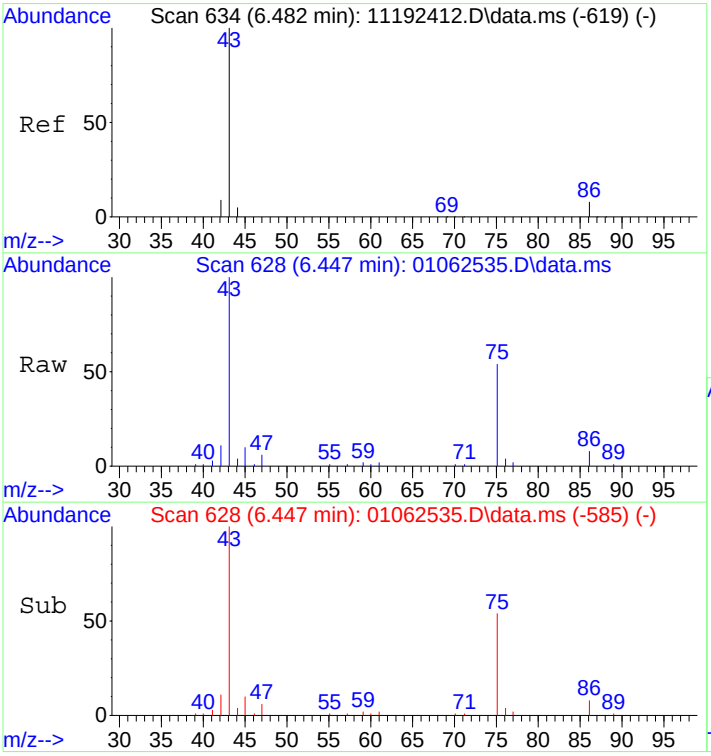


#22
Carbon Disulfide
Concen: 0.50 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 76 Resp: 20632

Ion	Ratio	Lower	Upper
76	100		
78	8.3	0.0	29.6

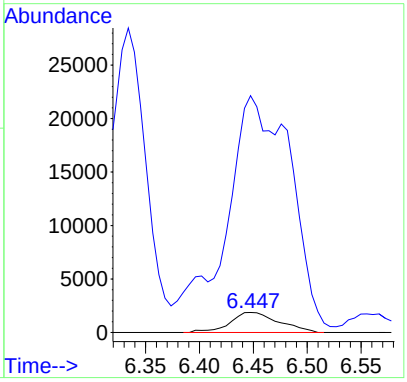


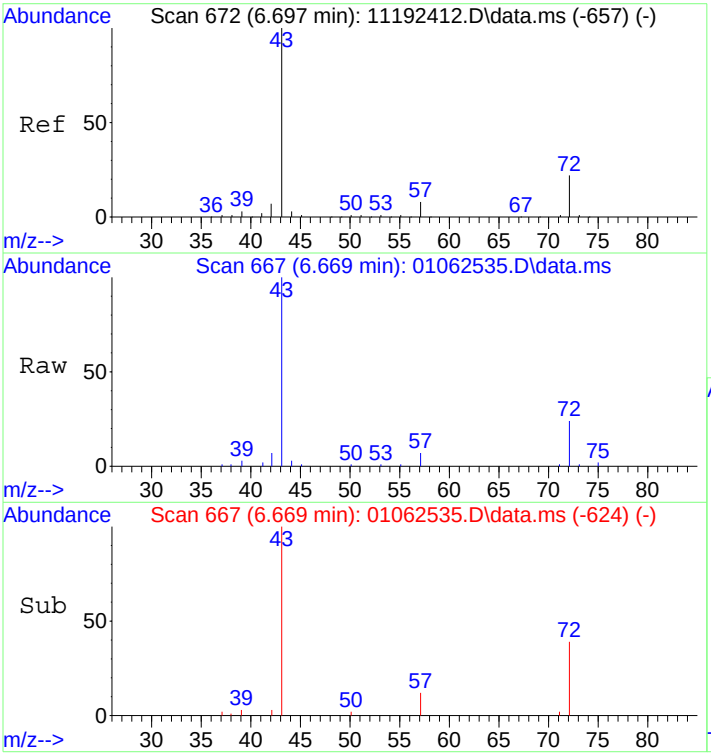


#26
Vinyl Acetate
Concen: 2.70 ng
RT: 6.45 min Scan# 628
Delta R.T. -0.007 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 86 Resp: 5914

Ion	Ratio	Lower	Upper
86	100		
43	1372.5	1331.6	1371.6#

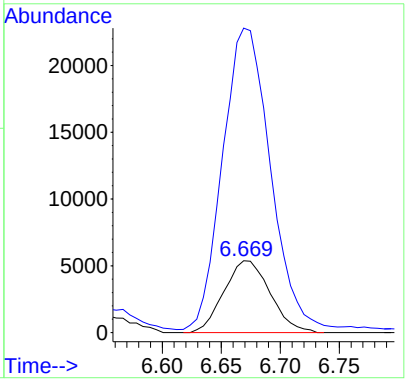


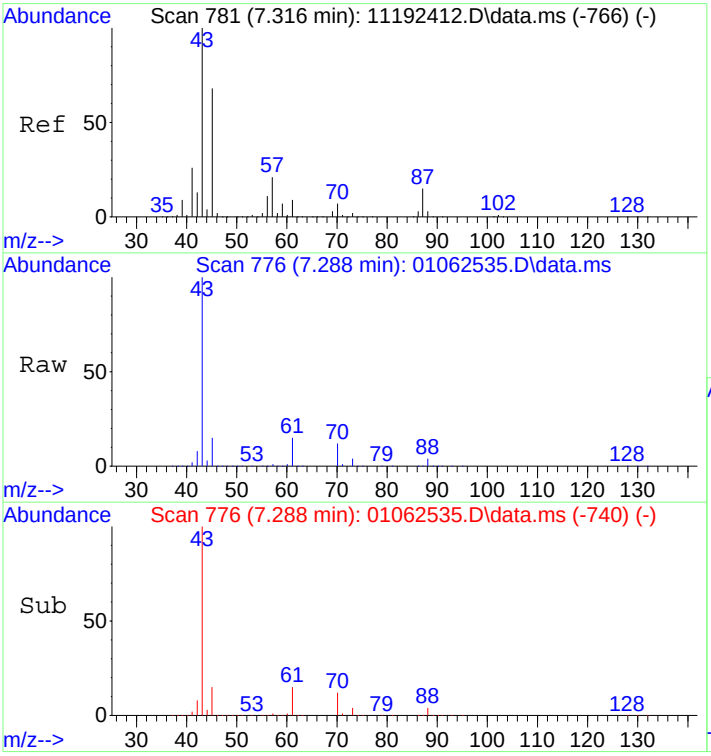


#27
2-Butanone (MEK)
Concen: 2.01 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 72 Resp: 14658

Ion	Ratio	Lower	Upper
72	100		
43	436.1	439.8	479.8#

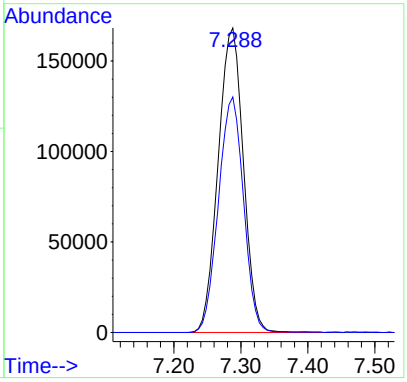


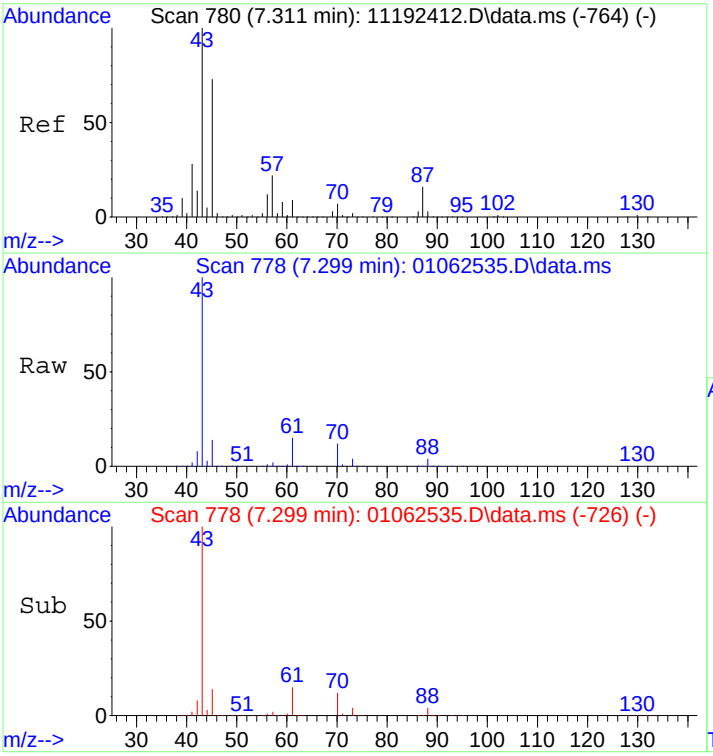


#30
Ethyl Acetate
Concen: 98.07 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 61 Resp: 440372

Ion	Ratio	Lower	Upper
61	100		
70	76.8	57.3	97.3

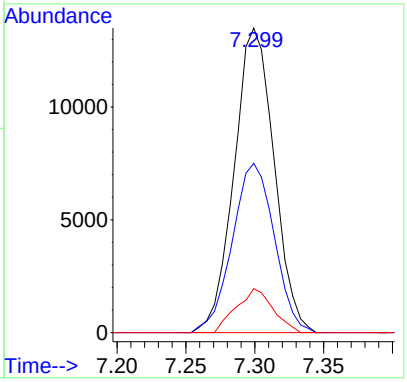


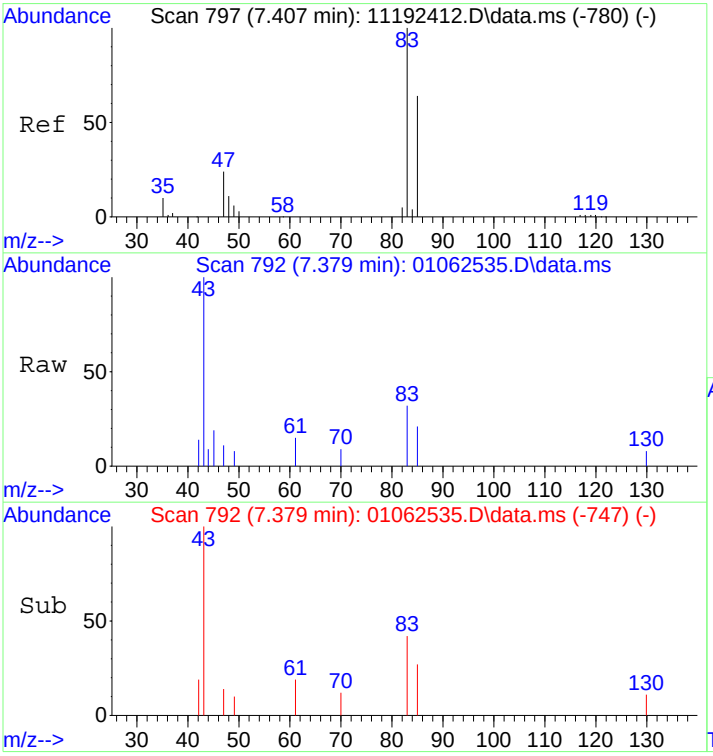


#31
n-Hexane
Concen: 1.35 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 57 Resp: 27279

Ion	Ratio	Lower	Upper
57	100		
56	58.4	43.4	65.0
86	13.2	10.9	16.3

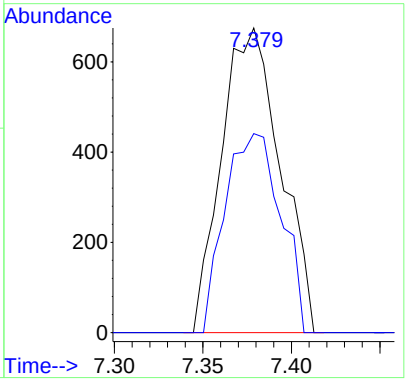


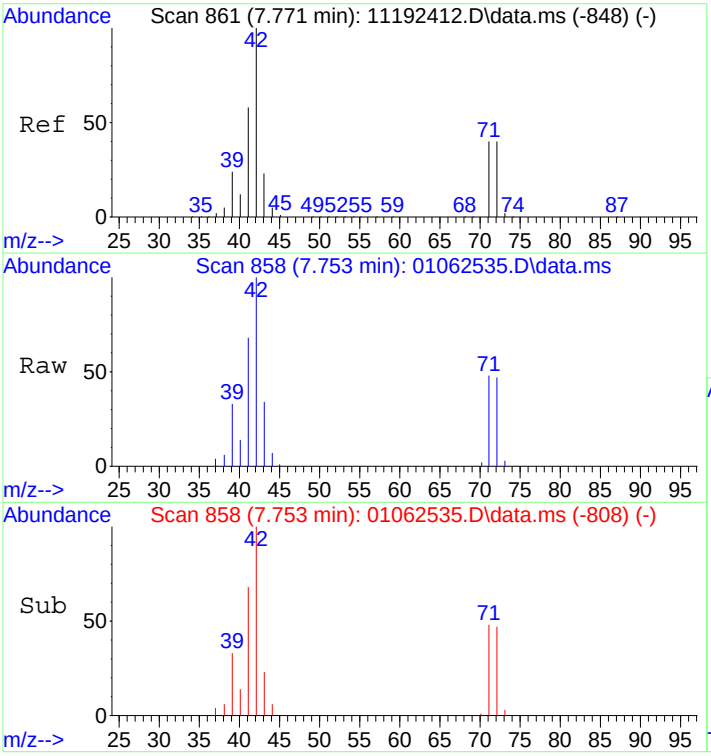


#32
Chloroform
Concen: 0.07 ng
RT: 7.38 min Scan# 792
Delta R.T. 0.007 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 83 Resp: 1563

Ion	Ratio	Lower	Upper
83	100		
85	61.9	45.1	85.1

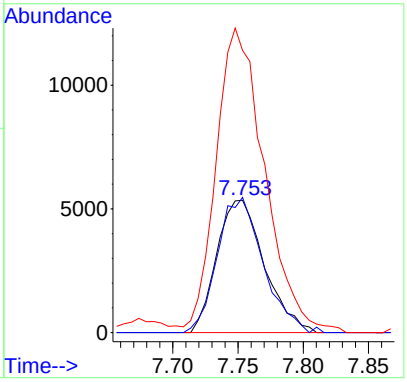


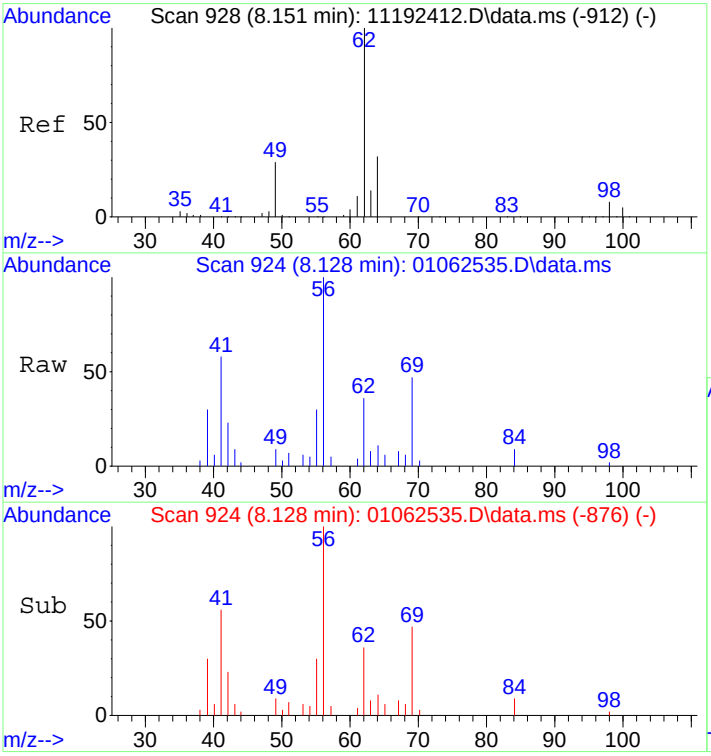


#34
Tetrahydrofuran (THF)
Concen: 1.98 ng
RT: 7.75 min Scan# 858
Delta R.T. 0.033 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 72 Resp: 13599

Ion	Ratio	Lower	Upper
72	100		
71	97.9	78.6	118.6
42	234.5	243.4	283.4#

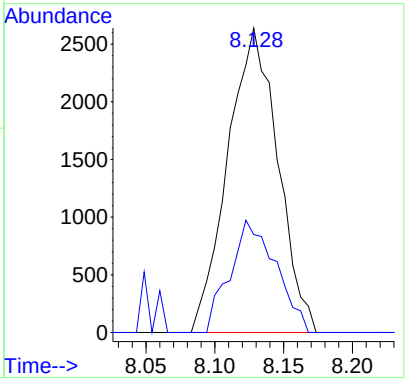


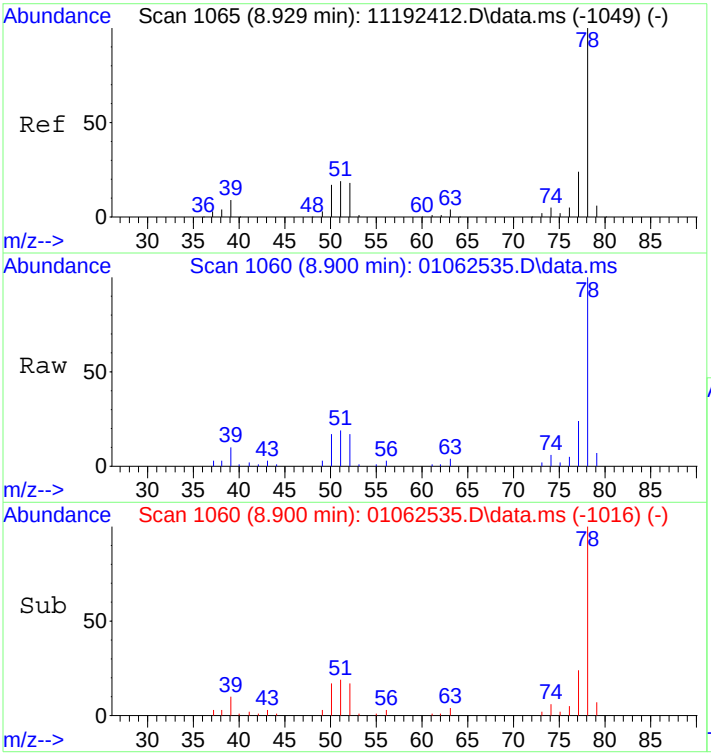


#36
1,2-Dichloroethane
Concen: 0.36 ng
RT: 8.13 min Scan# 924
Delta R.T. 0.025 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 62 Resp: 6669

Ion	Ratio	Lower	Upper
62	100		
64	33.8	12.0	52.0

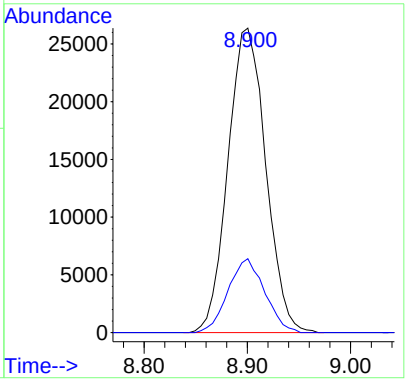


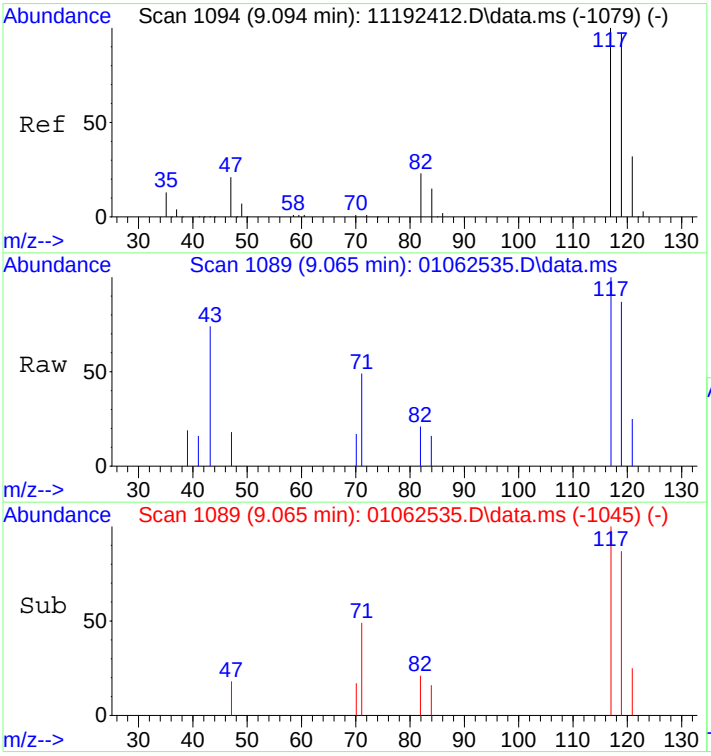


#41
Benzene
Concen: 1.44 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 78 Resp: 67114

Ion	Ratio	Lower	Upper
78	100		
77	23.5	3.7	43.7

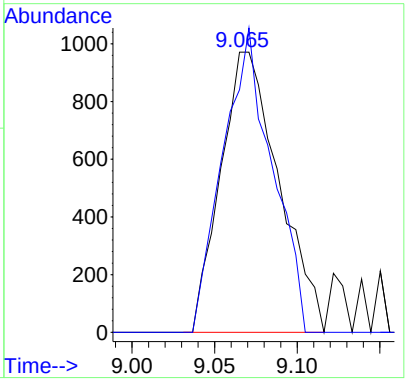


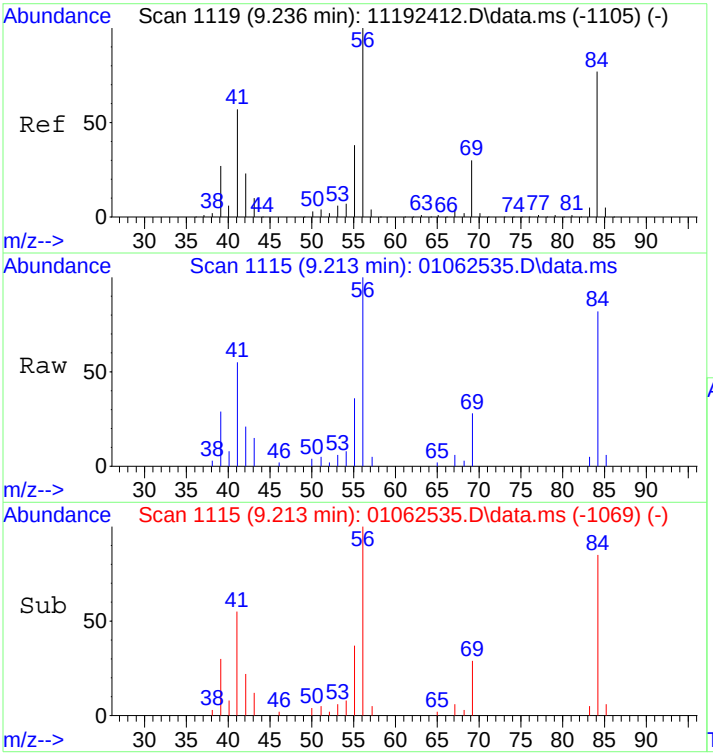


#42
Carbon Tetrachloride
Concen: 0.13 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:117 Resp: 2381

Ion	Ratio	Lower	Upper
117	100		
119	91.7	75.7	115.7

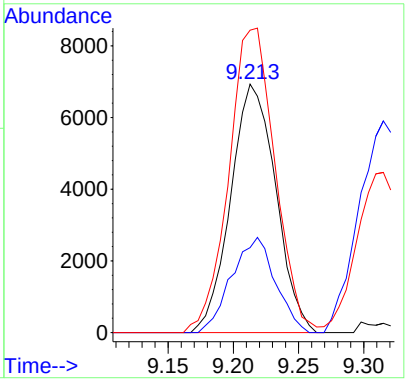


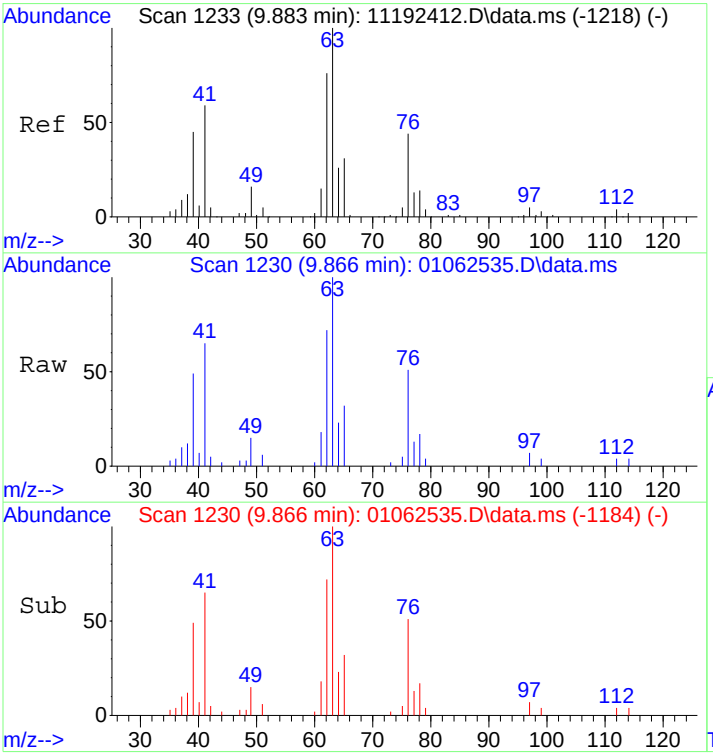


#43
Cyclohexane
Concen: 1.03 ng
RT: 9.21 min Scan# 1115
Delta R.T. 0.010 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 84 Resp: 16684

Ion	Ratio	Lower	Upper
84	100		
69	37.1	18.3	58.3
56	125.3	110.7	150.7

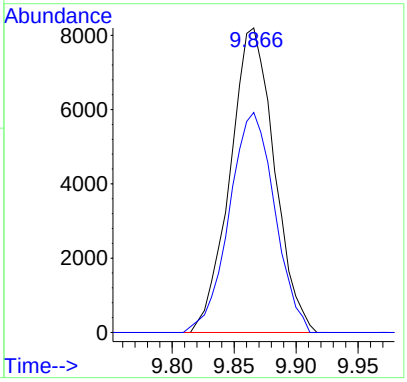


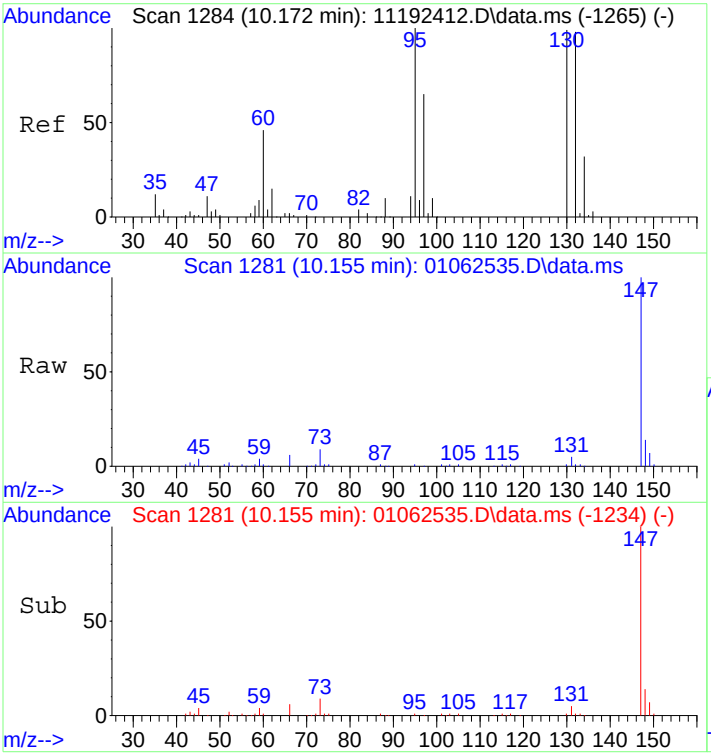


#45
1,2-Dichloropropane
Concen: 1.80 ng
RT: 9.87 min Scan# 1230
Delta R.T. 0.014 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 63 Resp: 20442

Ion	Ratio	Lower	Upper
63	100		
62	74.1	55.9	95.9

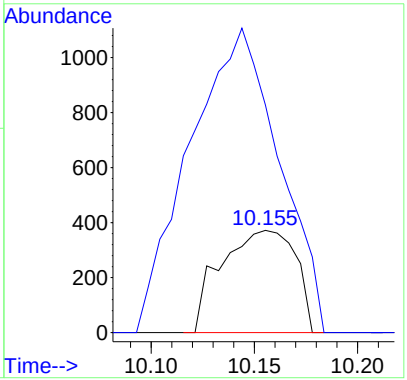


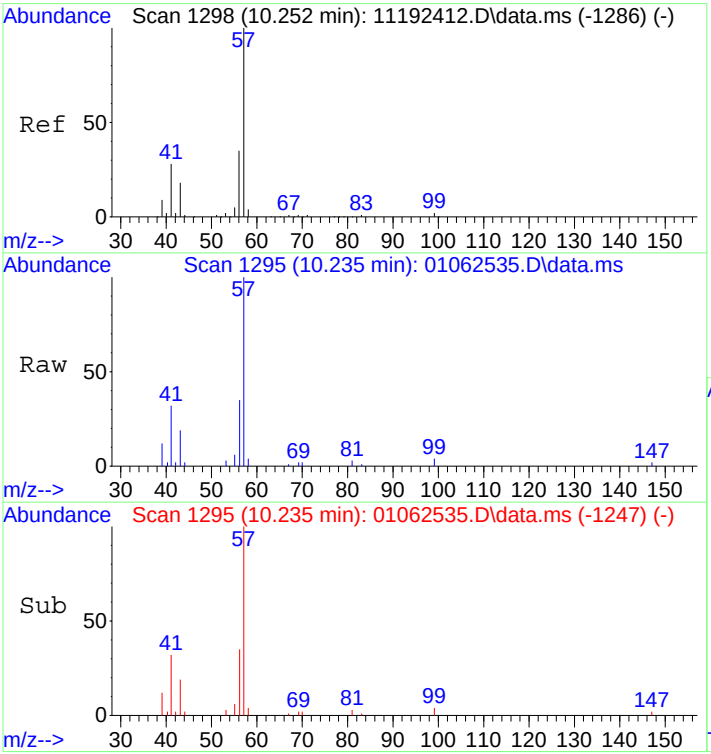


#47
Trichloroethene
Concen: 0.07 ng
RT: 10.16 min Scan# 1281
Delta R.T. 0.015 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:130 Resp: 934

Ion	Ratio	Lower	Upper
130	100		
132	358.2	79.3	119.3#

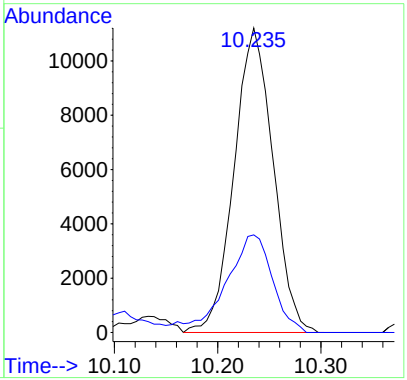


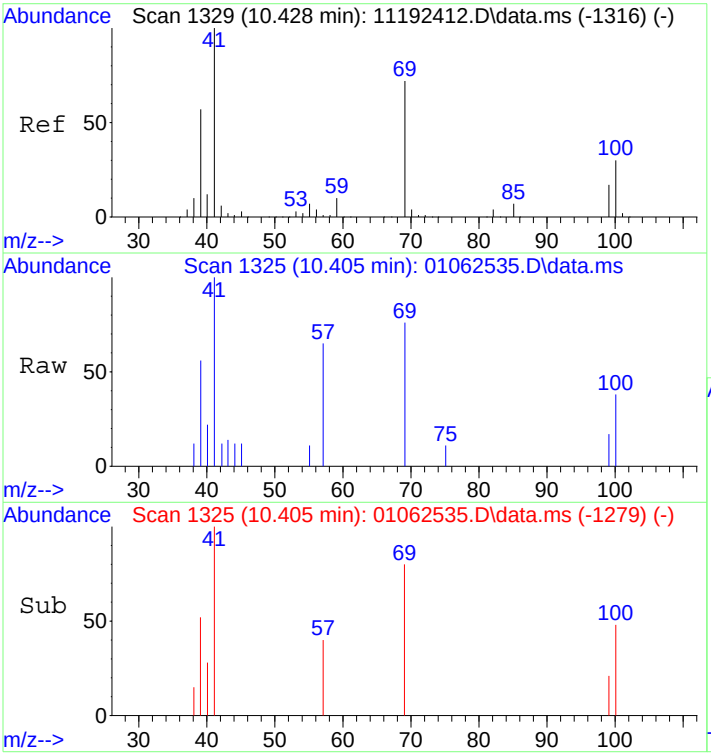


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.60 ng
RT: 10.23 min Scan# 1295
Delta R.T. 0.021 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 57 Resp: 29399

Ion	Ratio	Lower	Upper
57	100		
41	38.5	8.3	48.3

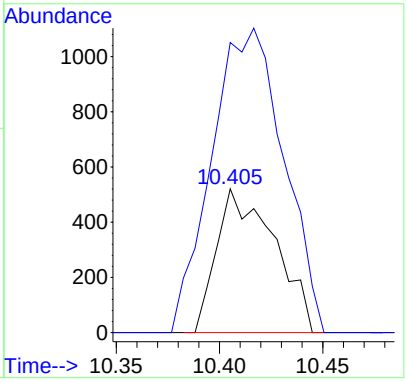


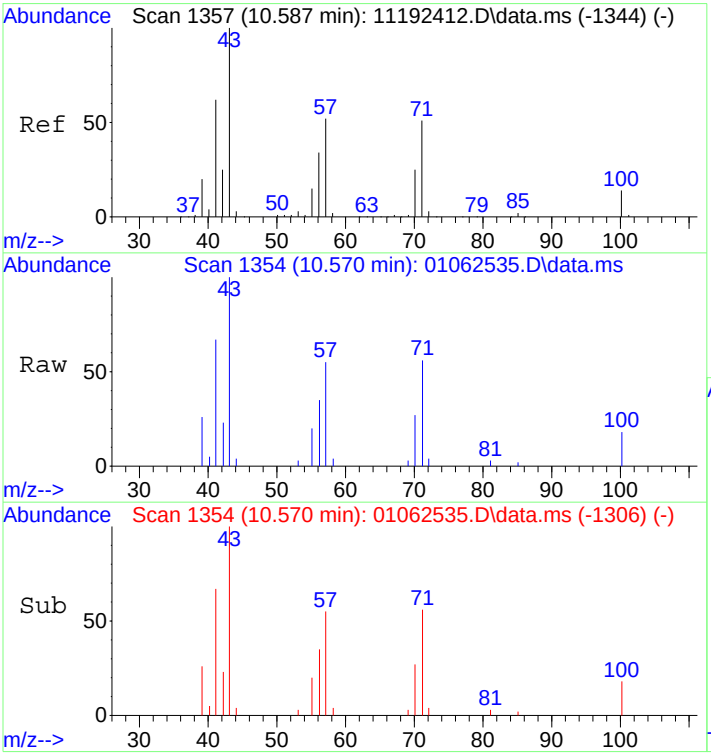


#50
Methyl Methacrylate
Concen: 0.24 ng
RT: 10.41 min Scan# 1325
Delta R.T. 0.011 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:100 Resp: 1014

Ion	Ratio	Lower	Upper
100	100		
69	264.1	226.3	266.3

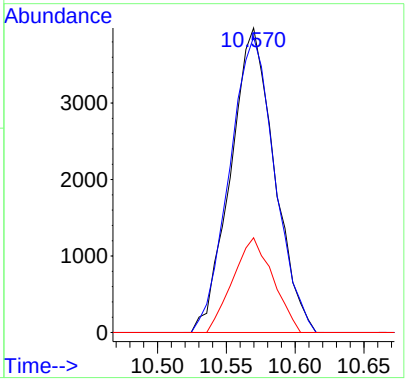


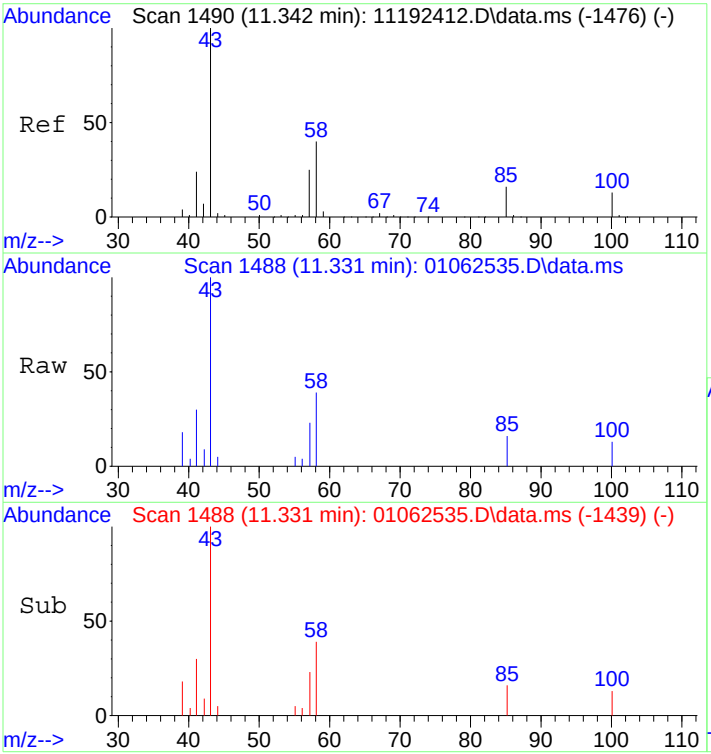


#51
n-Heptane
Concen: 0.85 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 71 Resp: 8816

Ion	Ratio	Lower	Upper
71	100		
57	100.4	83.3	123.3
100	28.4	8.7	48.7

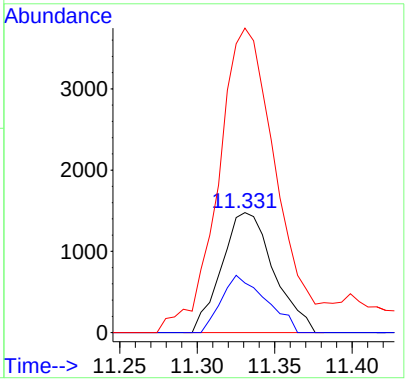


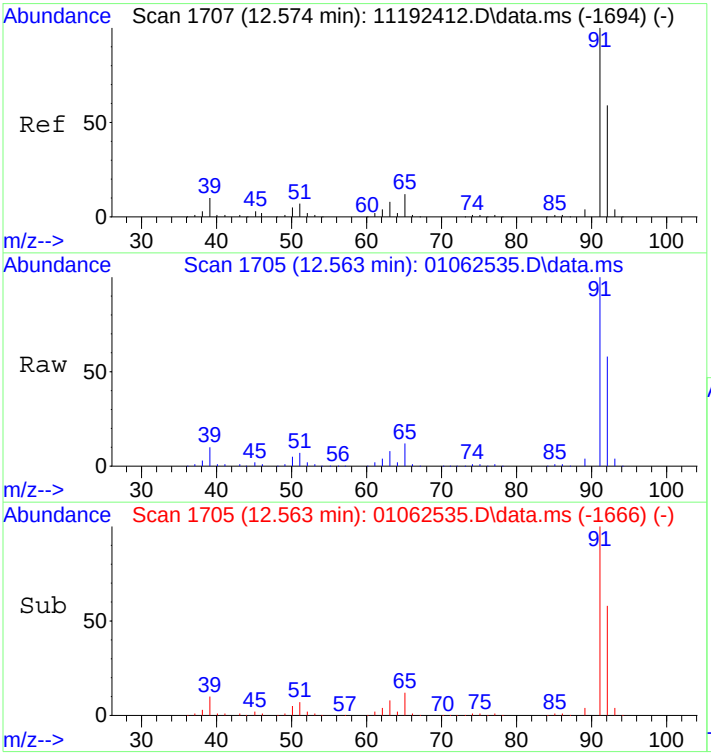


#53
4-Methyl-2-pentanone
Concen: 0.35 ng
RT: 11.33 min Scan# 1488
Delta R.T. 0.027 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 58 Resp: 3461

Ion	Ratio	Lower	Upper
58	100		
85	40.9	33.8	50.6
43	286.2	199.5	299.3

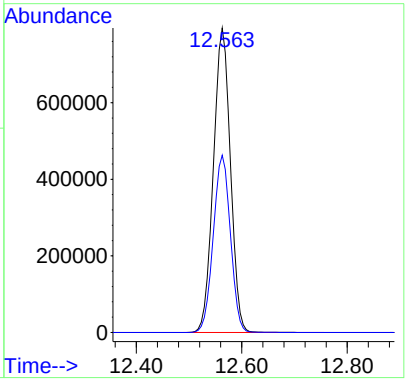


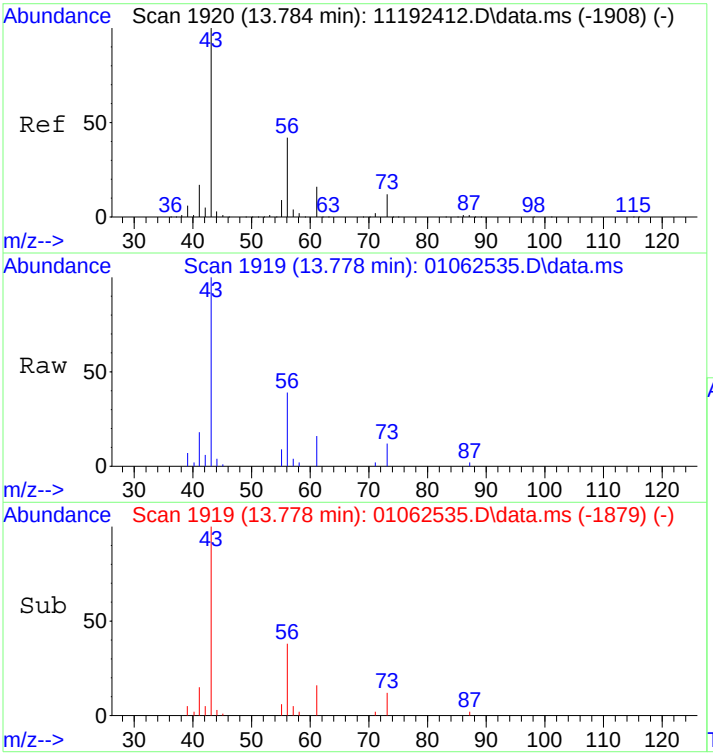


#58
Toluene
Concen: 40.03 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 91 Resp: 1780705

Ion	Ratio	Lower	Upper
91	100		
92	58.6	39.2	79.2

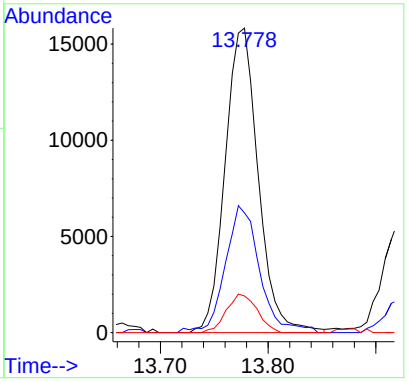


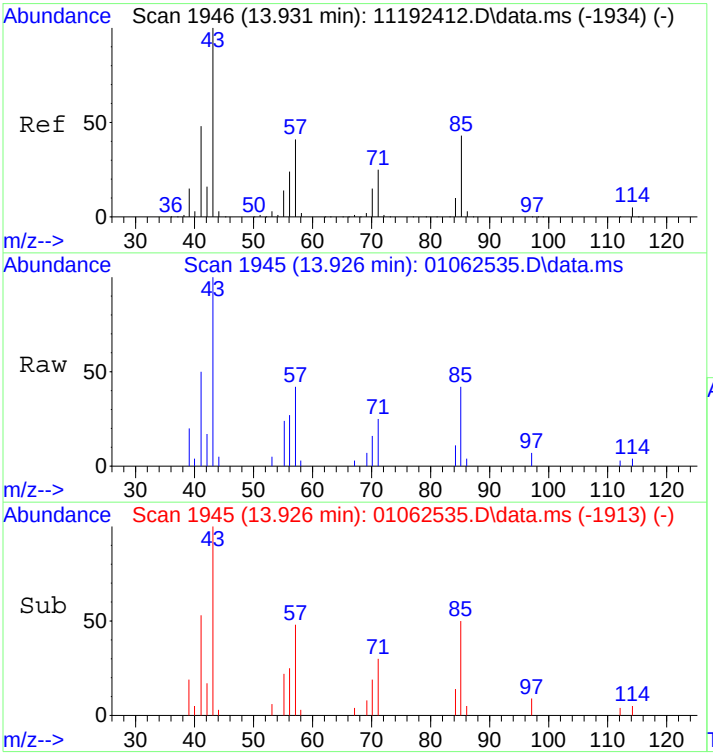


#62
n-Butyl Acetate
Concen: 1.39 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 43 Resp: 33825

Ion	Ratio	Lower	Upper
43	100		
56	43.1	20.9	60.9
73	11.7	0.0	32.0

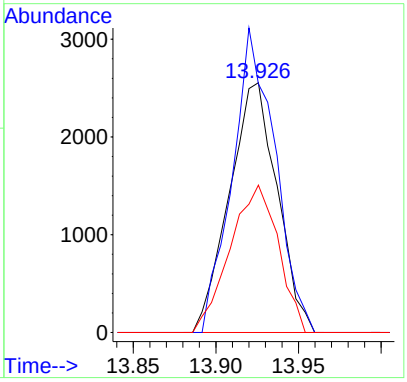


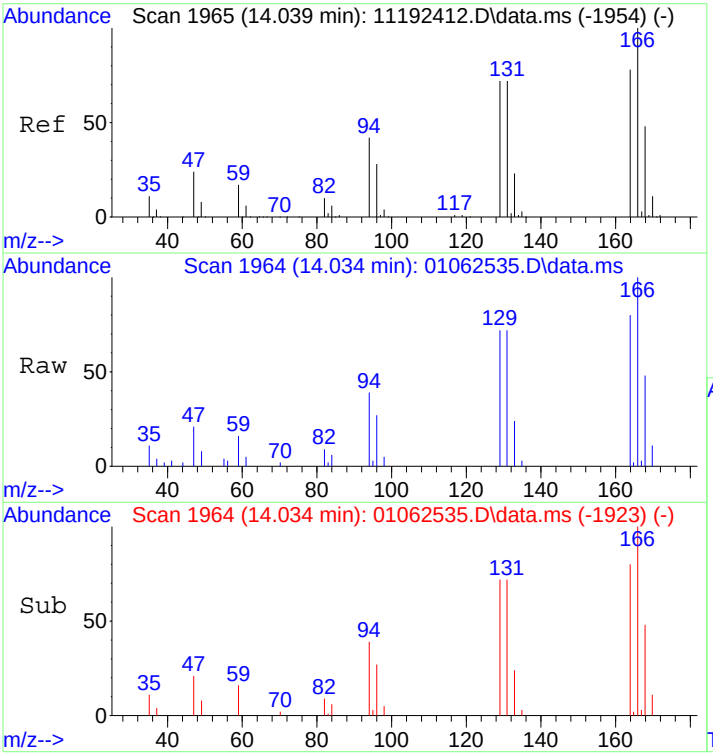


#63
n-Octane
Concen: 0.56 ng
RT: 13.93 min Scan# 1945
Delta R.T. -0.017 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 57 Resp: 5152

Ion	Ratio	Lower	Upper
57	100		
85	108.7	83.6	125.4
71	59.5	49.0	73.4

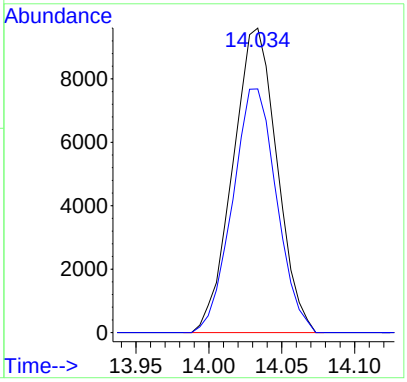


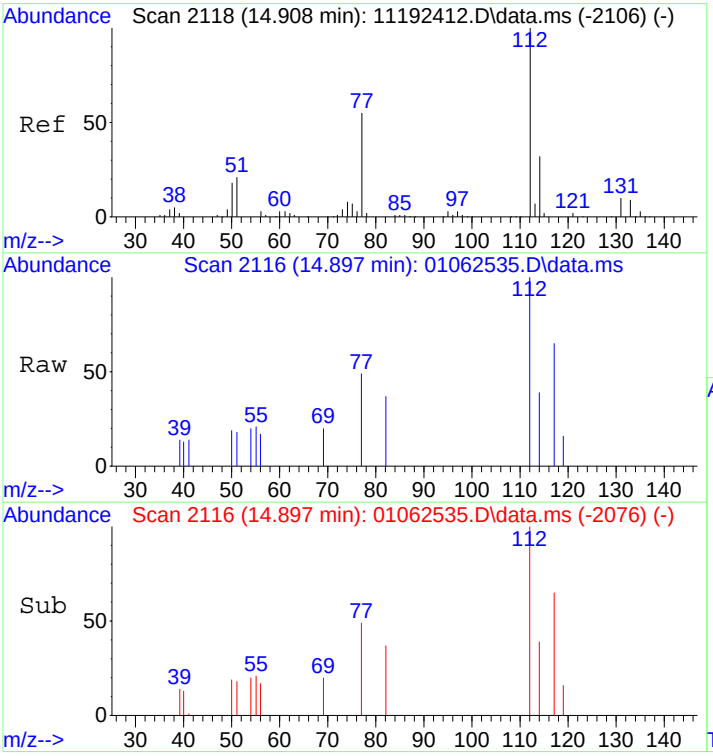


#64
Tetrachloroethene
Concen: 1.53 ng
RT: 14.03 min Scan# 1964
Delta R.T. -0.017 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:166 Resp: 20283

Ion	Ratio	Lower	Upper
166	100		
164	79.7	58.7	98.7

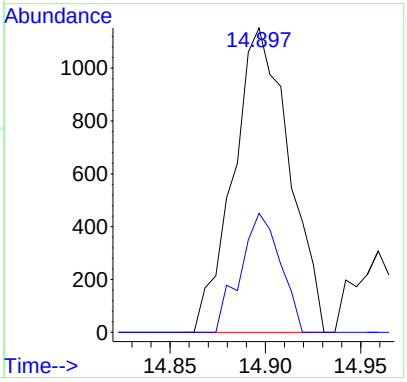


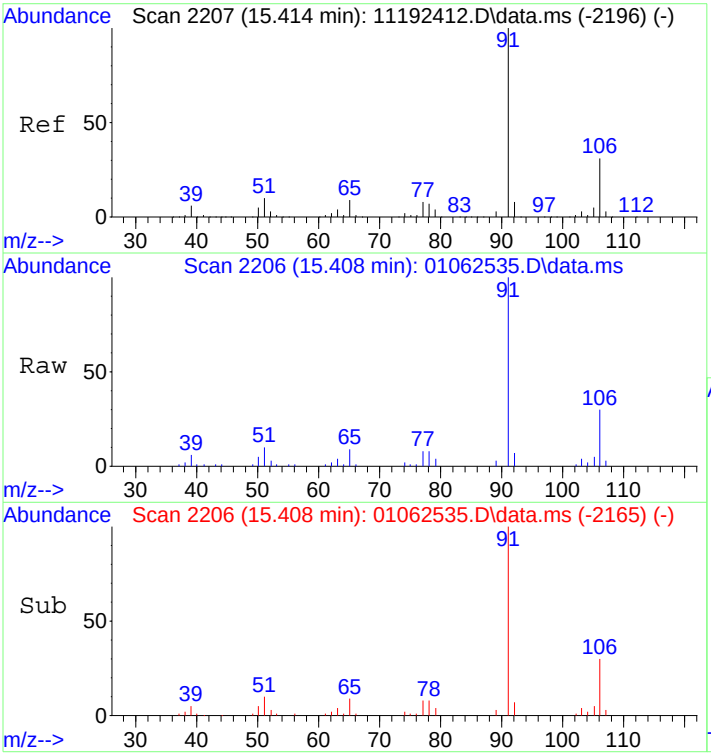


#65
Chlorobenzene
Concen: 0.07 ng
RT: 14.90 min Scan# 2116
Delta R.T. -0.023 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:112 Resp: 2342

Ion	Ratio	Lower	Upper
112	100		
114	28.2	12.1	52.1

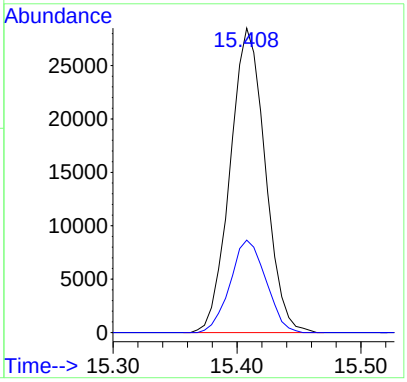


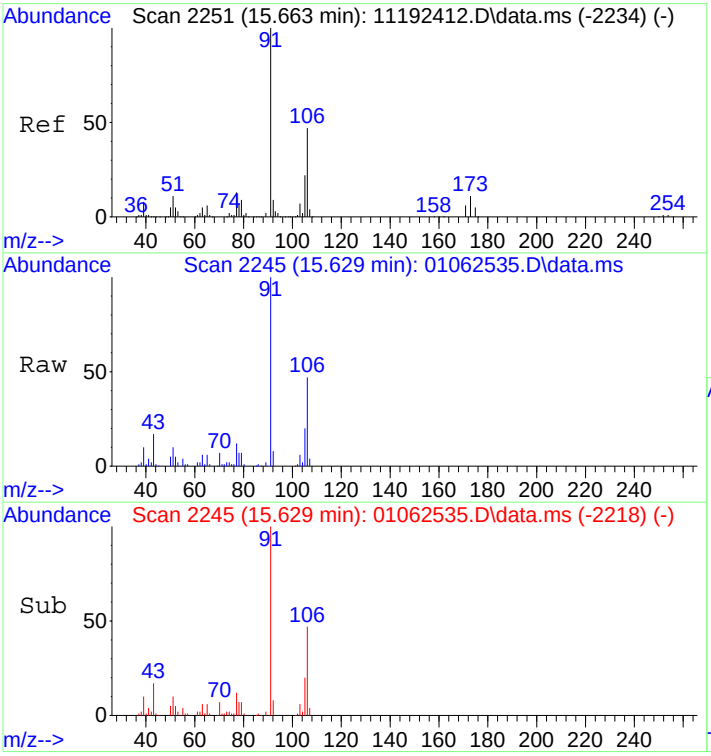


#66
Ethylbenzene
Concen: 1.14 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 91 Resp: 56192

Ion	Ratio	Lower	Upper
91	100		
106	30.9	10.7	50.7

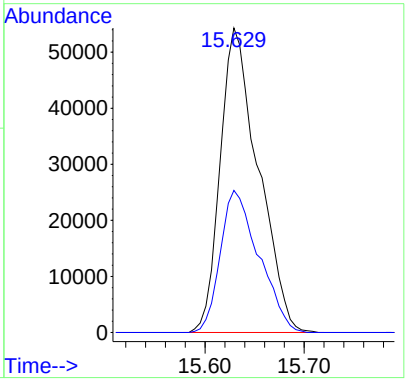


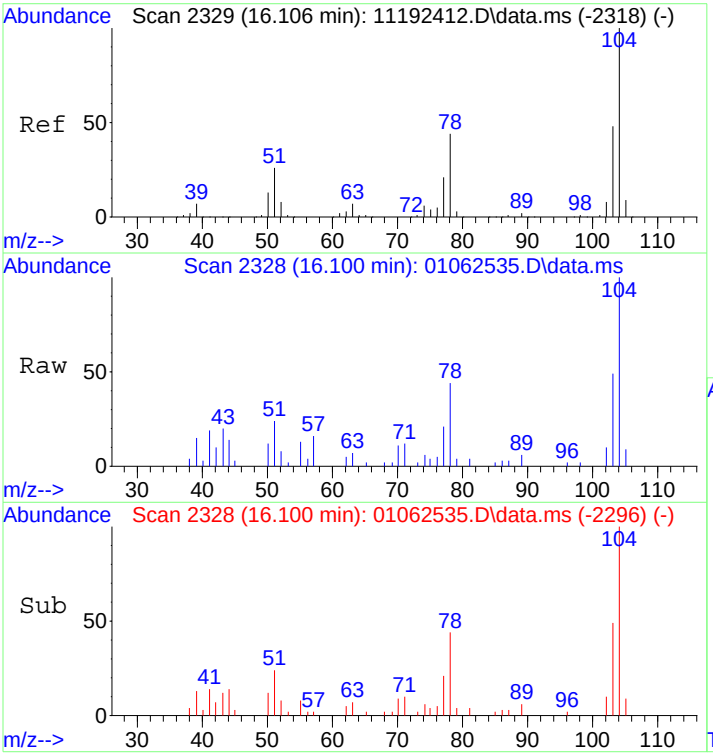


#67
m- & p-Xylenes
Concen: 3.60 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 91 Resp: 145101

Ion	Ratio	Lower	Upper
91	100		
106	47.2	27.1	67.1

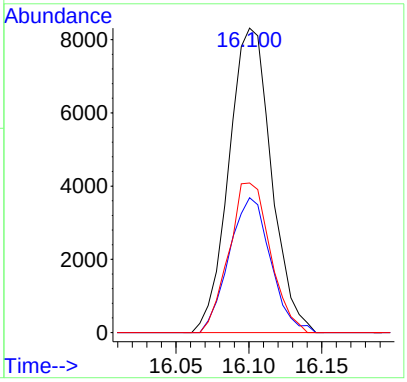


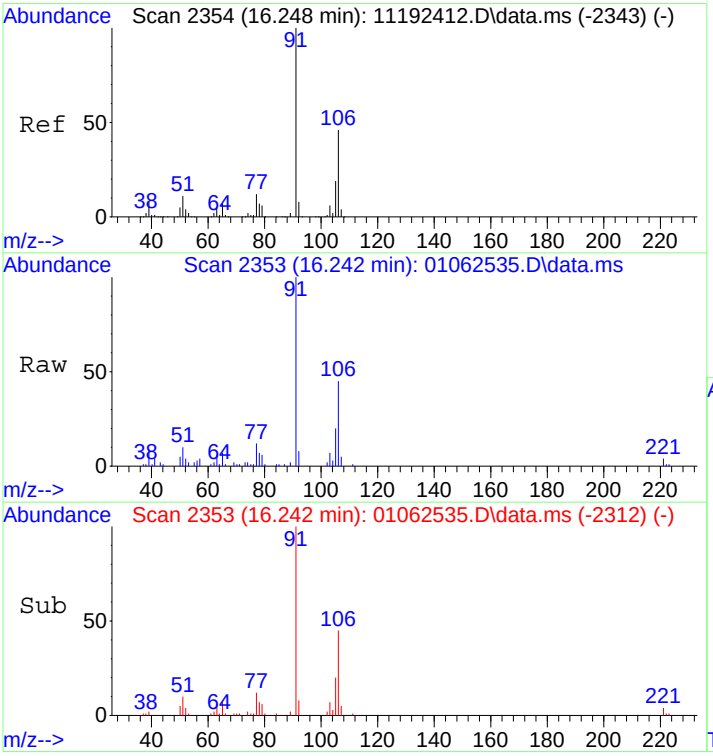


#69
Styrene
Concen: 0.60 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:104 Resp: 16876

Ion	Ratio	Lower	Upper
104	100		
78	43.3	23.0	63.0
103	47.8	27.5	67.5

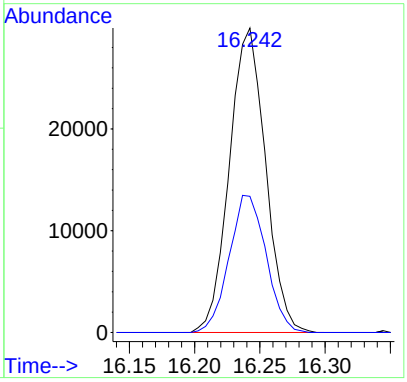


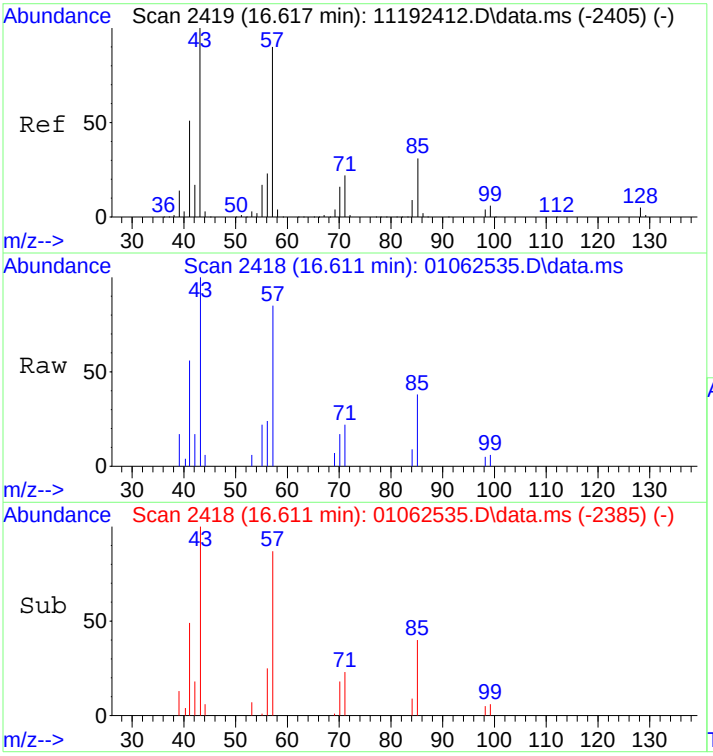


#70
o-Xylene
Concen: 1.45 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 91 Resp: 57703

Ion	Ratio	Lower	Upper
91	100		
106	46.0	25.8	65.8

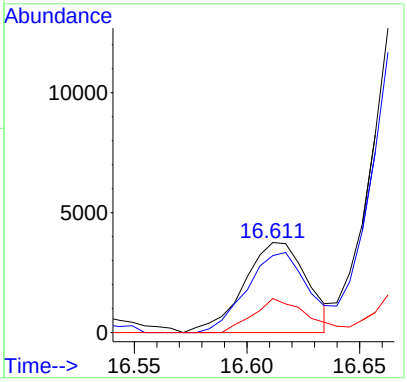


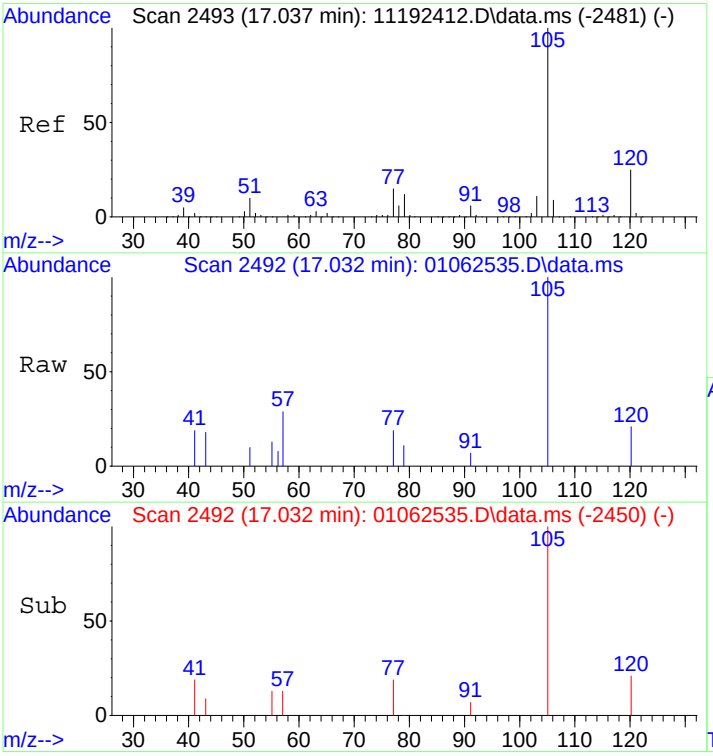


#71
n-Nonane
Concen: 0.35 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 43 Resp: 7349

Ion	Ratio	Lower	Upper
43	100		
57	90.1	69.4	109.4
85	32.6	10.5	50.5

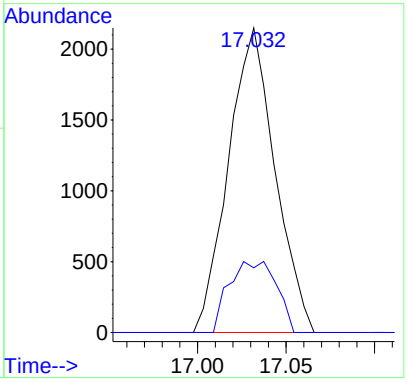


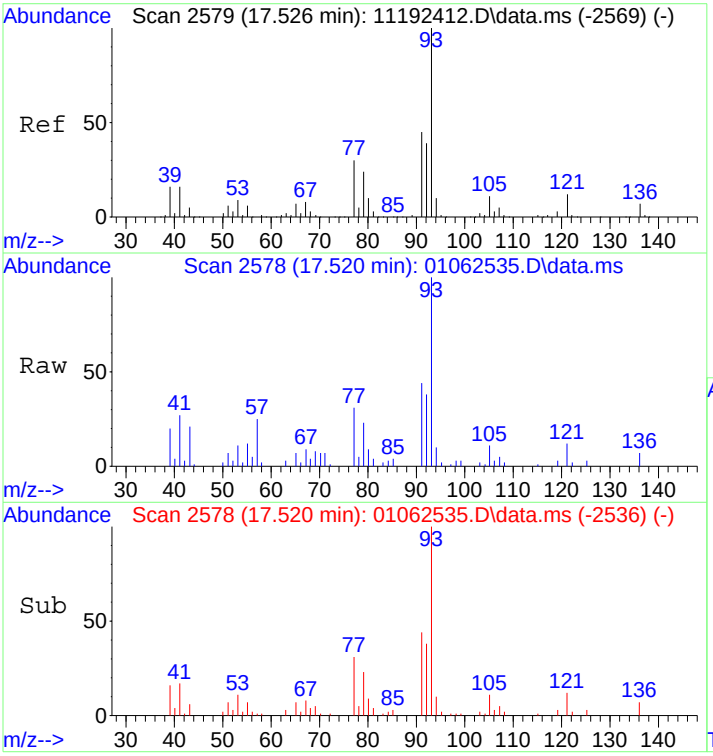


#74
Cumene
Concen: 0.08 ng
RT: 17.03 min Scan# 2492
Delta R.T. -0.011 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:105 Resp: 3930

Ion	Ratio	Lower	Upper
105	100		
120	23.8	5.3	45.3

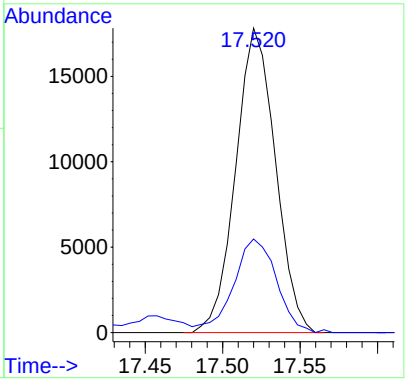


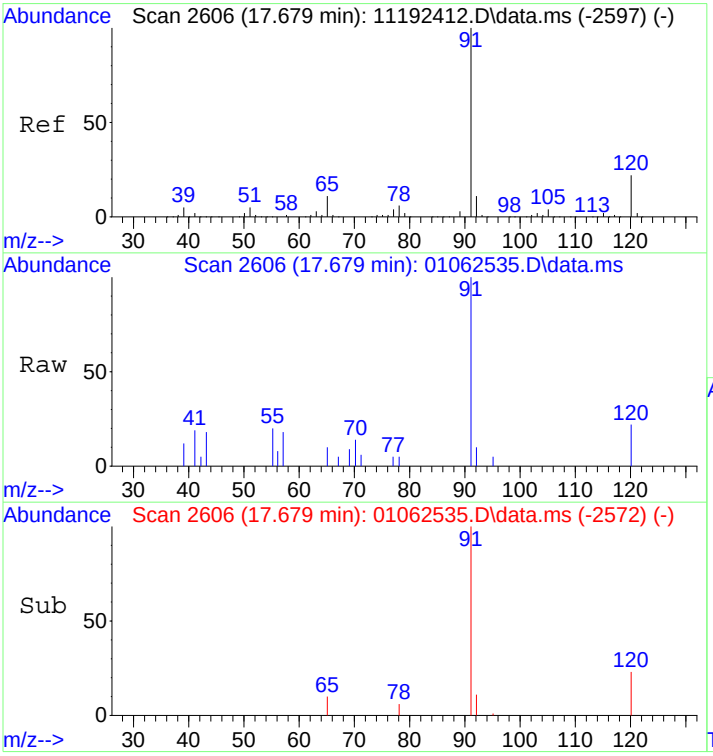


#75
alpha-Pinene
Concen: 1.30 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 93 Resp: 31840

Ion	Ratio	Lower	Upper
93	100		
77	33.3	10.1	50.1

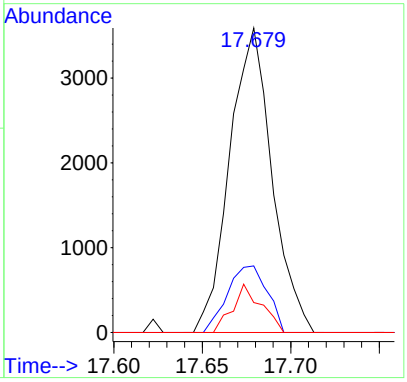


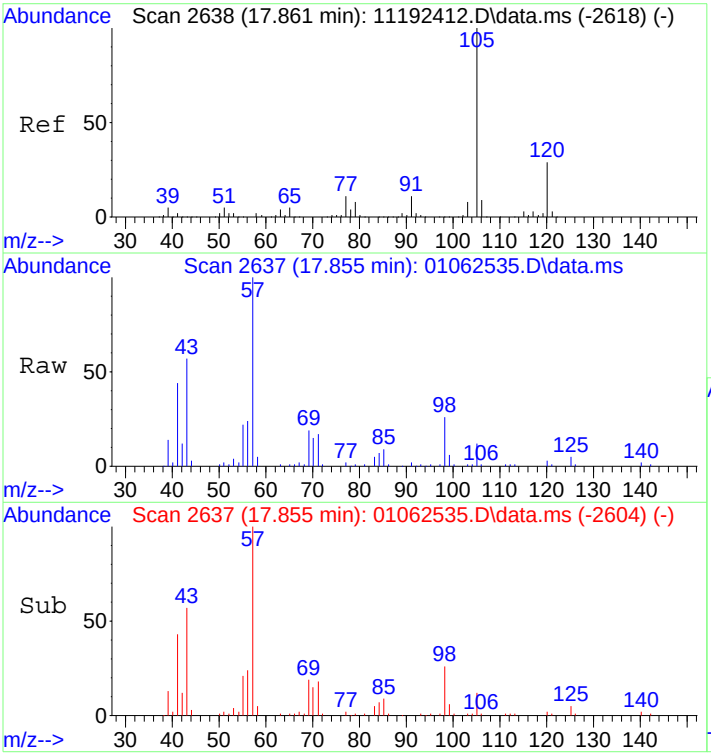


#76
n-Propylbenzene
Concen: 0.10 ng
RT: 17.68 min Scan# 2606
Delta R.T. -0.006 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 91 Resp: 5978

Ion	Ratio	Lower	Upper
91	100		
120	20.6	2.3	42.3
65	10.7	0.0	30.7

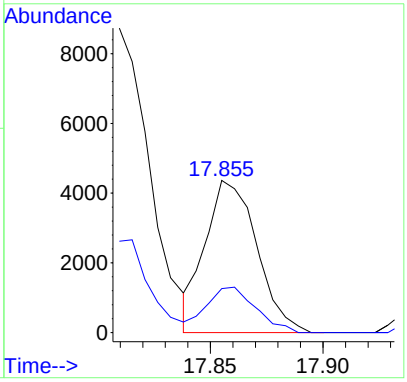


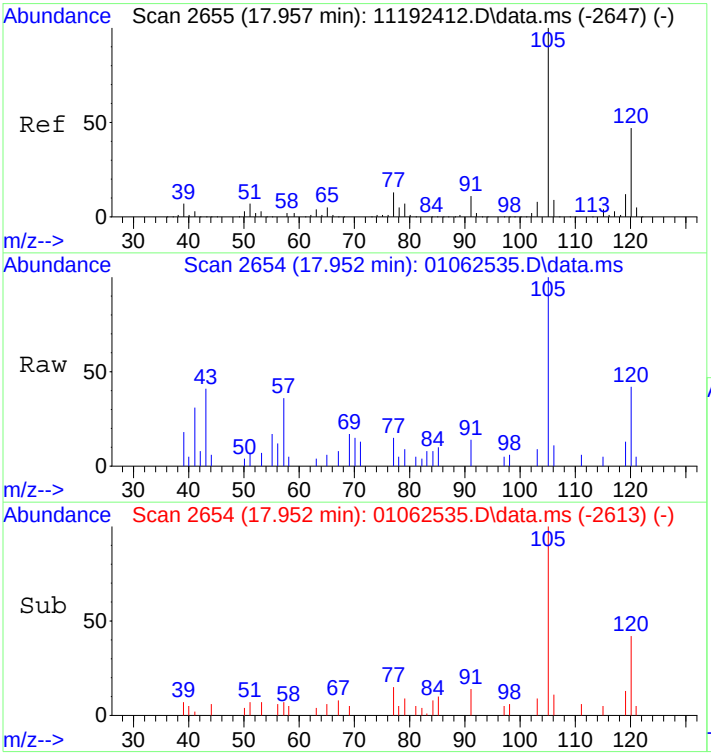


#78
4-Ethyltoluene
Concen: 0.15 ng
RT: 17.86 min Scan# 2637
Delta R.T. -0.011 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:105 Resp: 6964

Ion	Ratio	Lower	Upper
105	100		
120	28.6	8.9	48.9

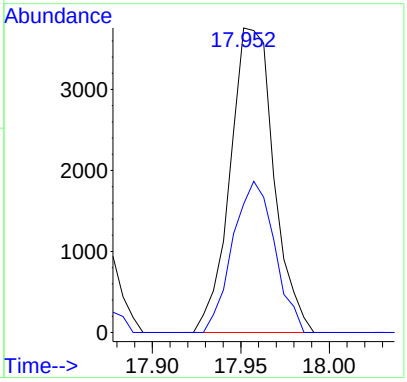


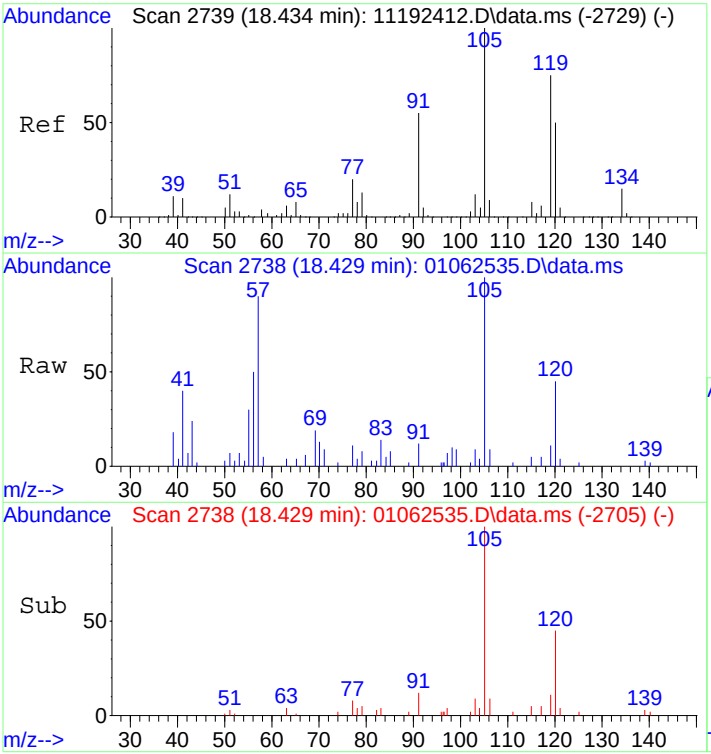


#79
1,3,5-Trimethylbenzene
Concen: 0.16 ng
RT: 17.95 min Scan# 2654
Delta R.T. -0.017 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:105 Resp: 6438

Ion	Ratio	Lower	Upper
105	100		
120	47.7	27.5	67.5

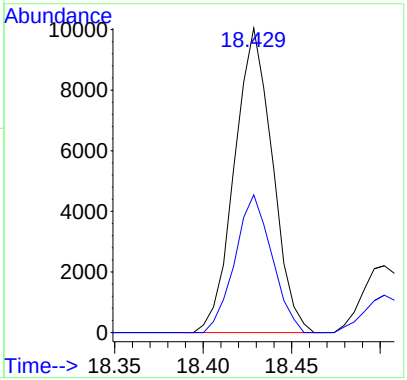


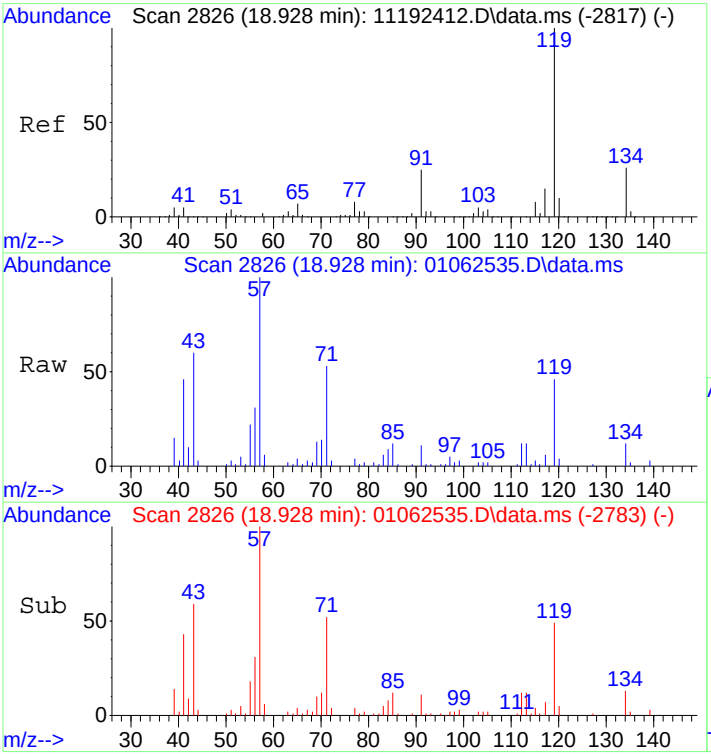


#82
1,2,4-Trimethylbenzene
Concen: 0.36 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:105 Resp: 14979

Ion	Ratio	Lower	Upper
105	100		
120	44.1	31.8	71.8

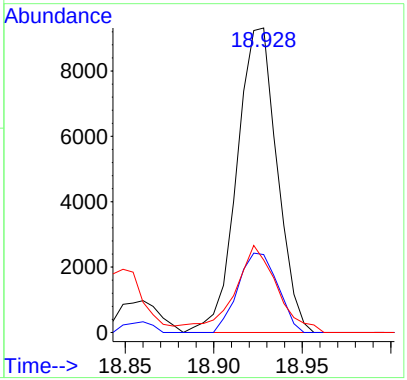


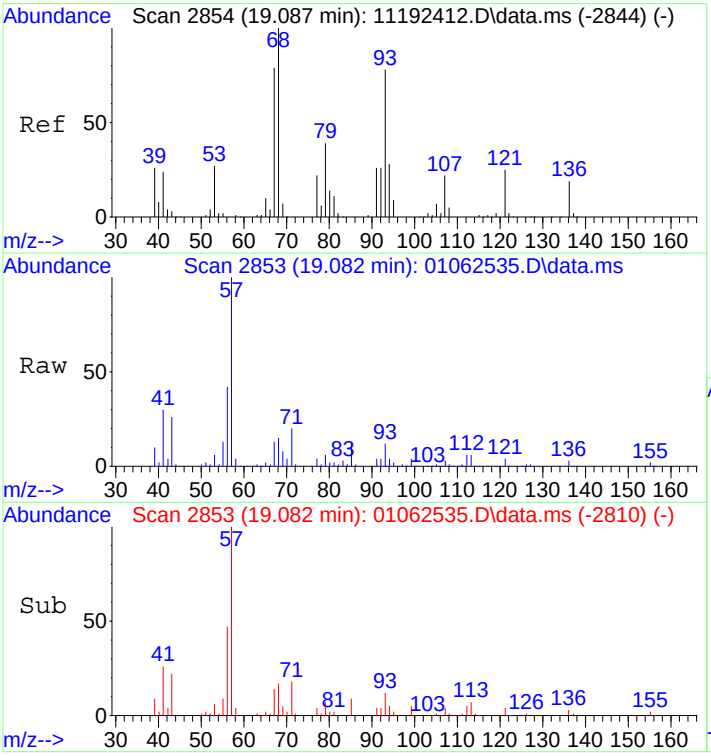


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.32 ng
RT: 18.93 min Scan# 2826
Delta R.T. -0.006 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion:119 Resp: 14703

Ion	Ratio	Lower	Upper
119	100		
134	25.8	5.8	45.8
91	30.2	4.6	44.6

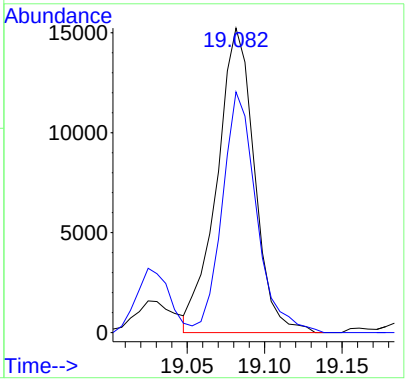




#91
d-Limonene
Concen: 1.95 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01062535.D
Acq: 7 Jan 2025 2:57

Tgt Ion: 68 Resp: 25776

Ion	Ratio	Lower	Upper
68	100		
93	71.9	56.6	96.6



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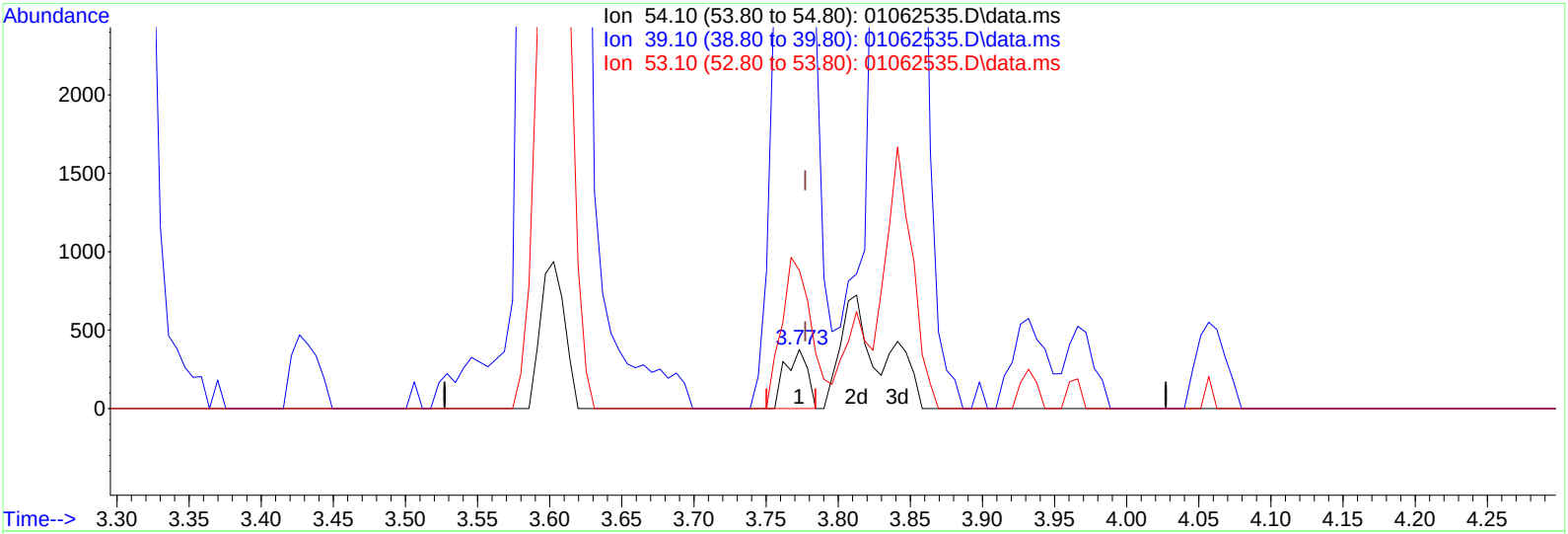
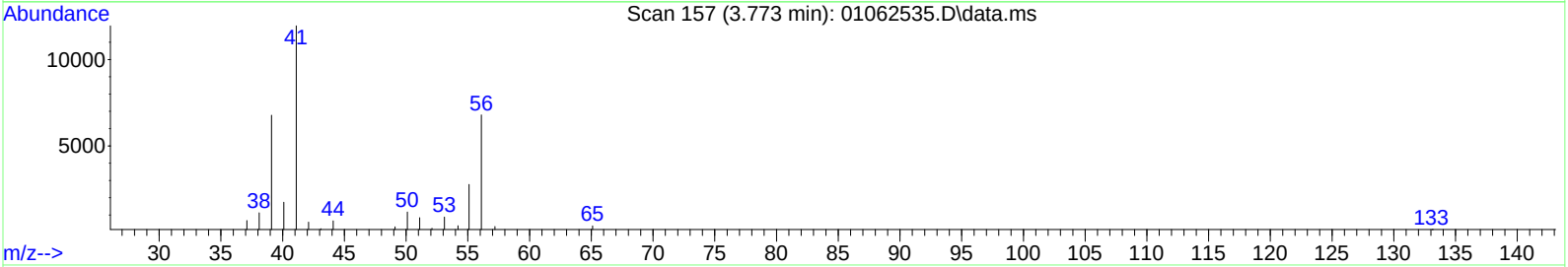
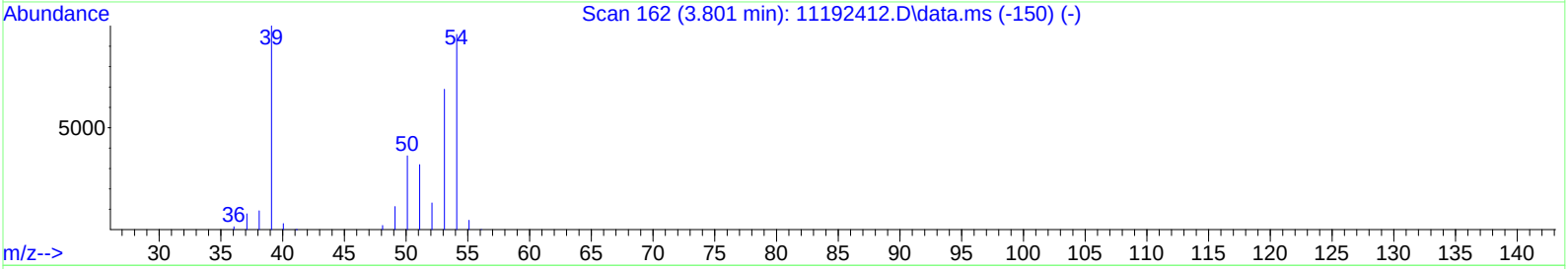
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 07 06:13:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062535.D\data.ms

(7) 1,3-Butadiene (T)

3.773min (-0.004) 0.04ng

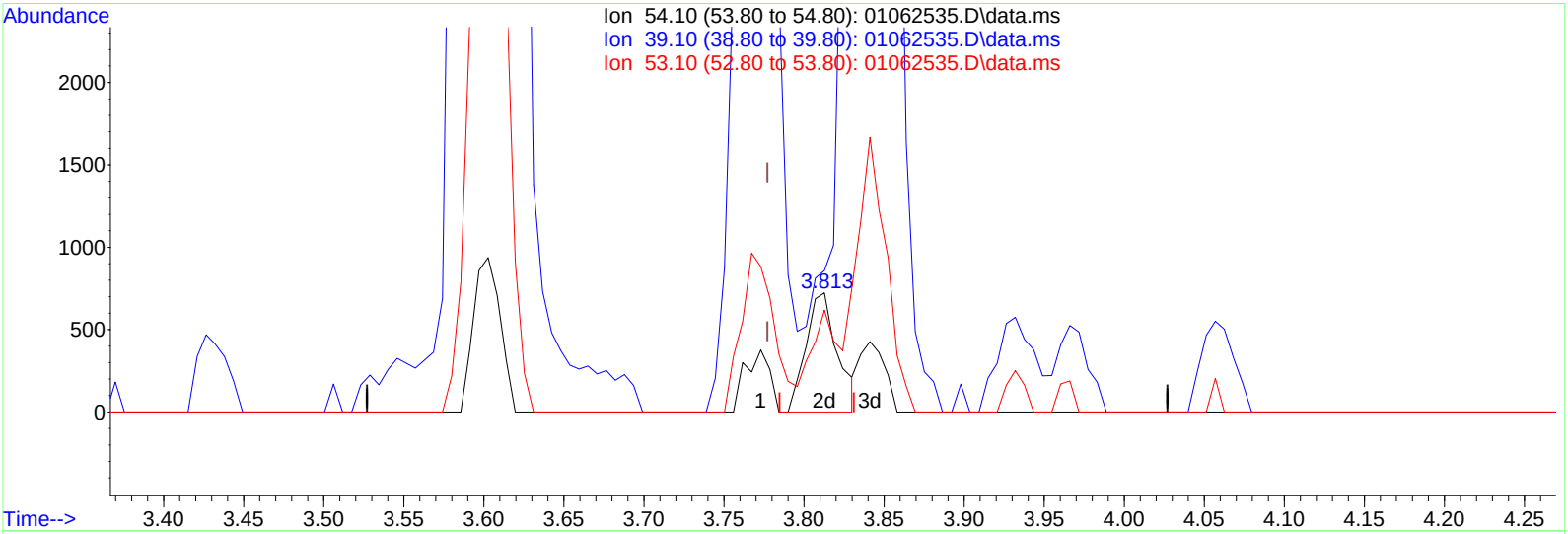
response 401

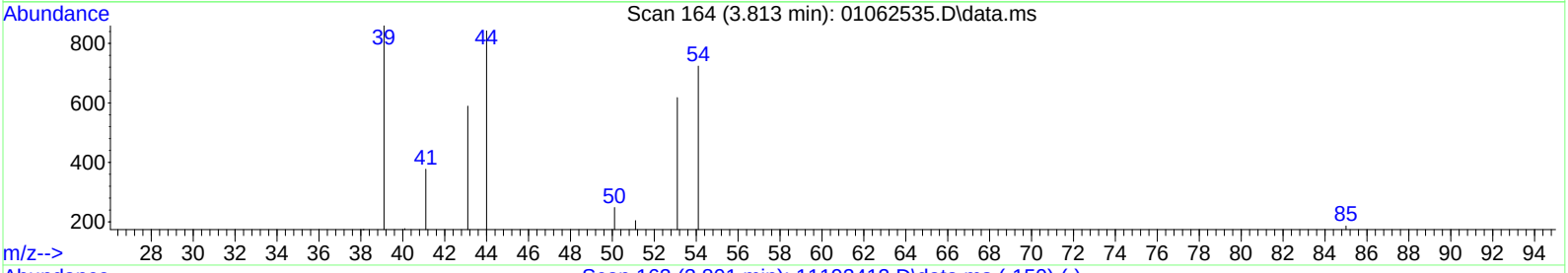
Ion	Exp%	Act%
54.10	100	100
39.10	103.20	2657.36#
53.10	70.90	349.88#
0.00	0.00	0.00

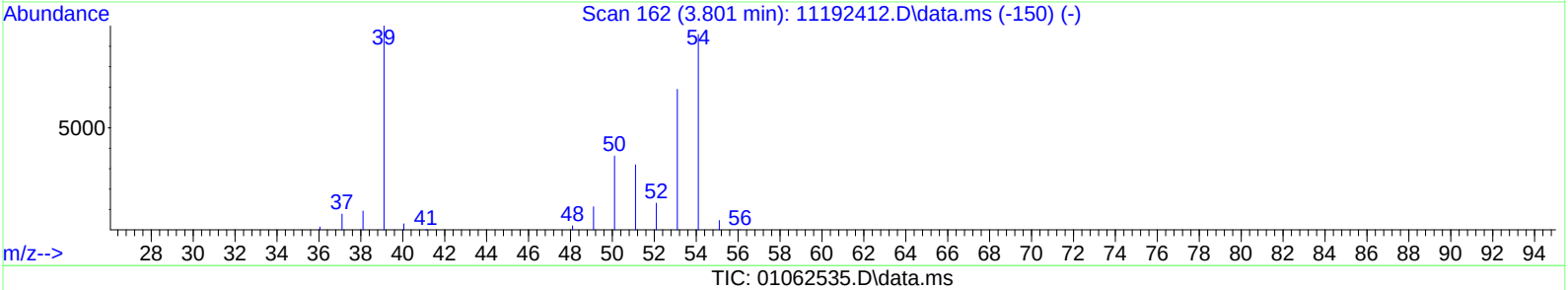
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 07 06:13:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062535.D\data.ms

(7) 1,3-Butadiene (T)

3.813min (+0.036) 0.10ng m

WP

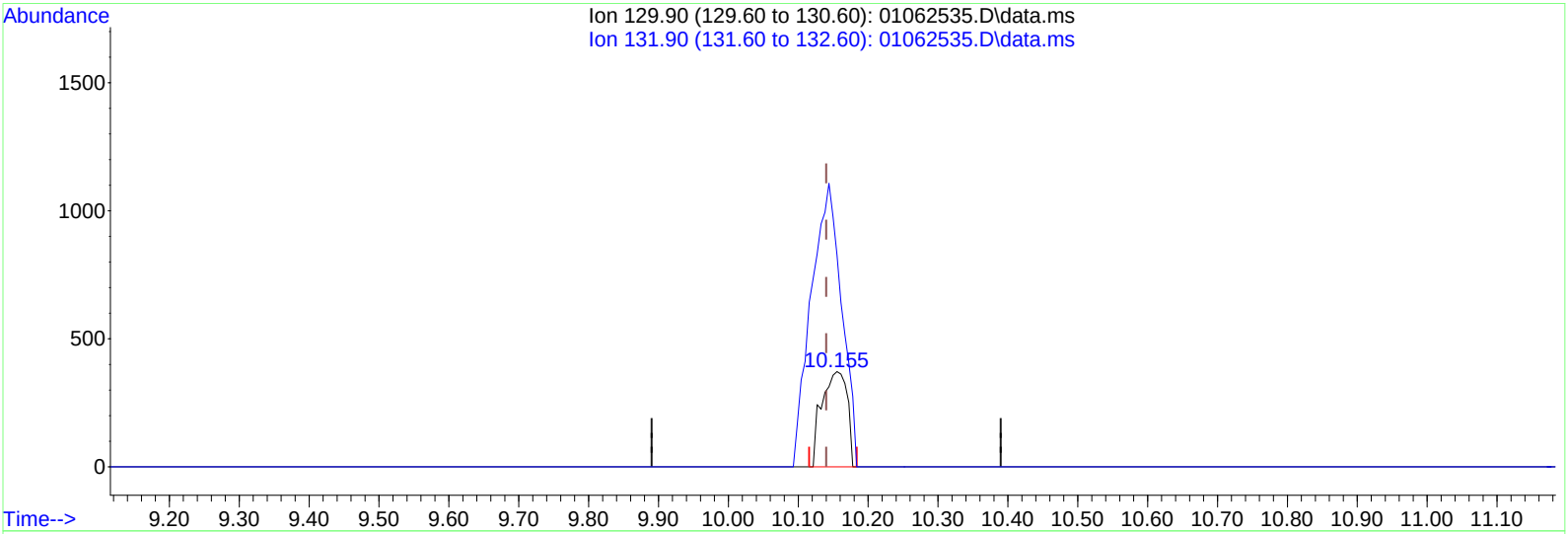
response 987

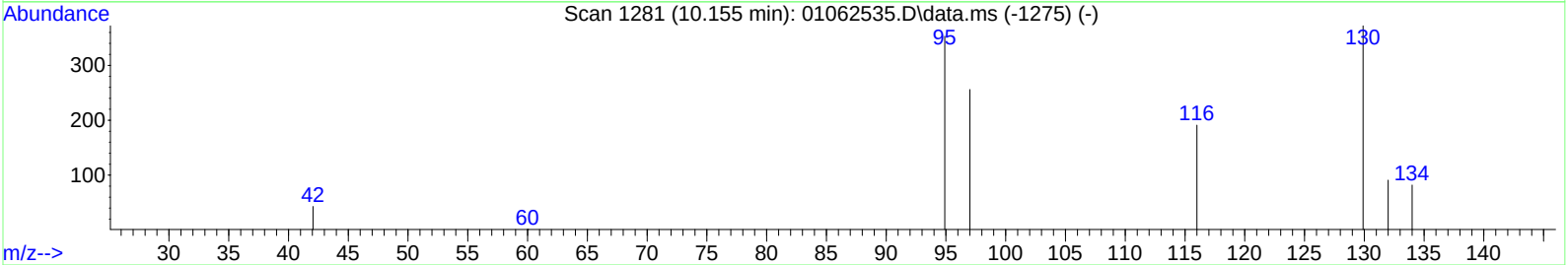
Ion	Exp%	Act%
54.10	100	100
39.10	103.20	110.64
53.10	70.90	61.70
0.00	0.00	0.00

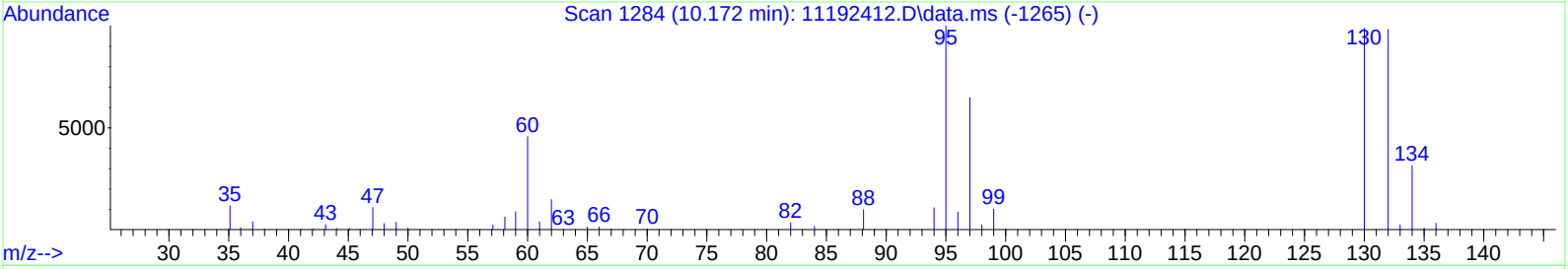
1/7/25

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 07 06:13:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062535.D\data.ms

(47) Trichloroethene (T)

10.155min (+0.015) 0.07ng

response 934

Ion	Exp%	Act%
129.90	100	100
131.90	99.30	358.24#
0.00	0.00	0.00
0.00	0.00	0.00

ABS

1/7/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

MA 1/7/25

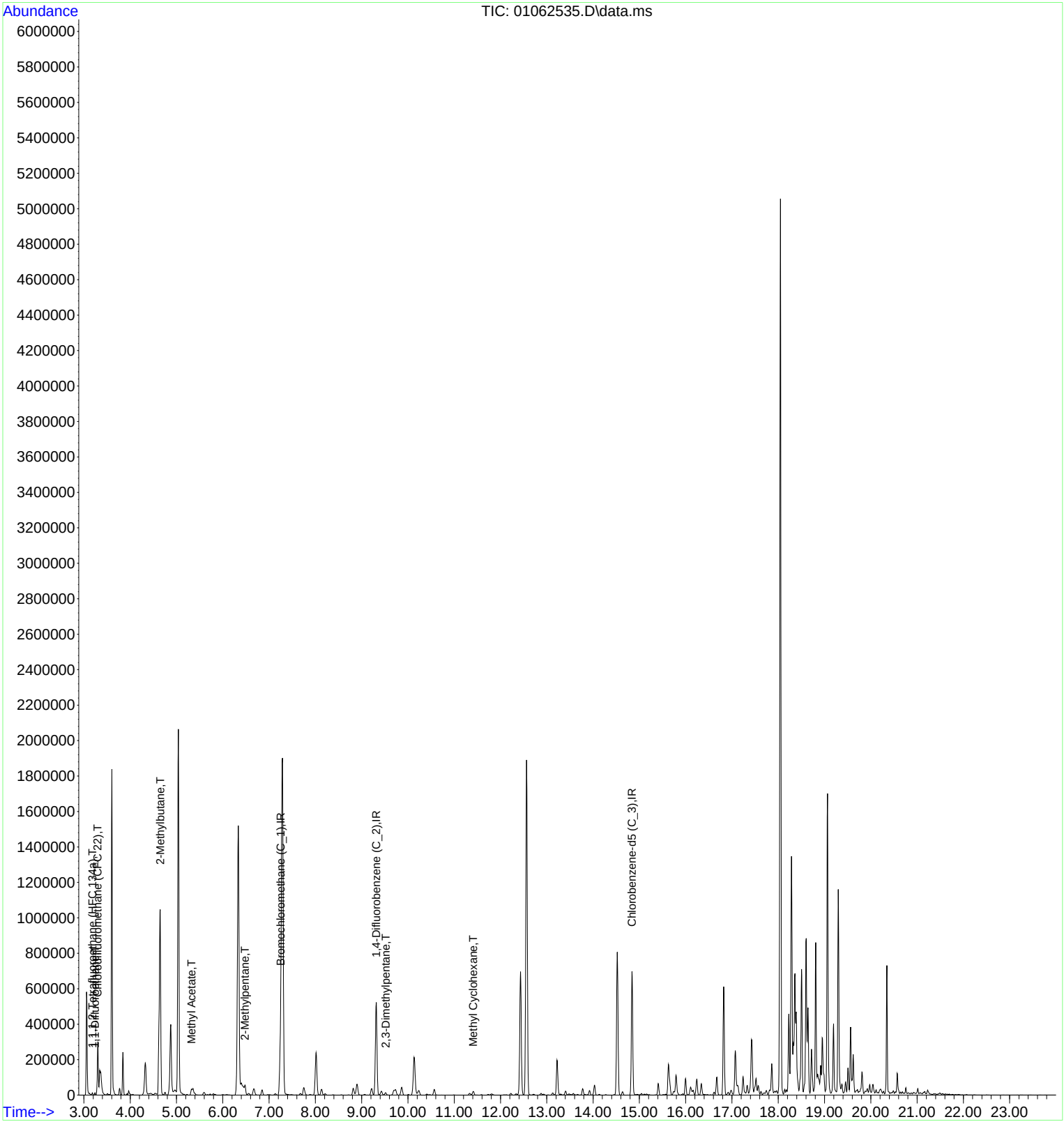
Quant Time: Jan 07 06:38:39 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (C_1)	7.25	130	134481	12.500 ng		0.00
16) 1,4-Difluorobenzene (C_2)	9.31	114	580144	12.500 ng		0.00
19) Chlorobenzene-d5 (C_3)	14.84	54	104225	12.500 ng		0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	7516	0.615 ng		98
4) 1,1-Difluoroethane	3.24	65	3530	0.324 ng		97
5) Chlorodifluoromethane ...	3.30	67	791	0.211 ng		88
6) 1-Chloro-1,1-Difluoroe...	3.50	65	493	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.65	57	255167	19.662 ng		92
11) Methyl Acetate	5.32	43	47329	1.536 ng	#	94
12) 2-Methylpentane	6.48	71	11320	1.023 ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	9.07	84	118	N.D.		
17) 2,3-Dimethylpentane	9.52	56	7222	0.314 ng	#	82
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.41	55	9733	0.523 ng		93
21) 1,3-Dichloropropane	0.00	76	0	N.D. d		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D. d		
25) Bromobenzene	17.03	77	1315	N.D.		
26) 2-Chlorotoluene	17.62	91	53	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D. d		
28) Indane	19.12	117	2092	N.D.		
29) Indene	19.21	115	108	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	325	N.D.		
31) 1,2,3,4-Tetramethylben...	20.22	119	907	N.D.		
32) 1,2,3,5-Tetramethylben...	20.57	119	482	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 07 06:38:39 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062535.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.239	59	63	66	rBV	12915	14942	0.17%	0.021%
2	3.302	66	74	78	rVV	298550	449437	5.21%	0.638%
3	3.341	78	81	105	rVB2	138863	441826	5.12%	0.627%
4	3.506	105	110	115	rBV3	7587	12352	0.14%	0.018%
5	3.603	121	127	148	rVB	1837956	2416138	28.02%	3.431%
6	3.767	151	156	161	rBV	36998	54606	0.63%	0.078%
7	3.841	161	169	177	rVB	241003	330647	3.83%	0.470%
8	3.966	187	191	199	rVB2	21613	31538	0.37%	0.045%
9	4.324	240	254	265	rBV	180483	446627	5.18%	0.634%
10	4.443	270	275	285	rVV4	9037	28296	0.33%	0.040%
11	4.534	285	291	300	rVV3	9262	28020	0.32%	0.040%
12	4.647	300	311	324	rVB3	1044825	2325555	26.97%	3.303%
13	4.750	324	329	336	rVB	15170	25908	0.30%	0.037%
14	4.875	336	351	361	rBV	397548	908904	10.54%	1.291%
15	4.965	362	367	372	rVV3	24994	71777	0.83%	0.102%
16	5.039	372	380	399	rVB	2059653	3555810	41.24%	5.050%
17	5.323	421	430	432	rBV	34399	60384	0.70%	0.086%
18	5.352	433	435	450	rVB2	37049	82054	0.95%	0.117%
19	5.590	469	477	486	rBV2	14852	40201	0.47%	0.057%
20	5.732	496	502	508	rBV3	5604	10476	0.12%	0.015%
21	5.794	508	513	518	rBV	7380	14778	0.17%	0.021%
22	6.334	594	608	617	rBV	1520640	3736995	43.34%	5.307%
23	6.482	630	634	641	rVB	54983	107438	1.25%	0.153%
24	6.555	641	647	657	rVB3	8586	23625	0.27%	0.034%
25	6.669	657	667	682	rVB	34986	97941	1.14%	0.139%
26	6.851	689	699	706	rBV	28979	60857	0.71%	0.086%
27	7.135	741	749	757	rVB2	8322	19030	0.22%	0.027%
28	7.288	757	776	805	rBV	1901357	5738988	66.55%	8.150%
29	7.674	836	844	850	rBV2	9167	20855	0.24%	0.030%
30	7.748	850	857	872	rVV2	41851	111137	1.29%	0.158%
31	7.890	874	882	893	rVB3	3638	11036	0.13%	0.016%
32	8.015	893	904	917	rBV	239250	605931	7.03%	0.860%
33	8.134	917	925	933	rVV2	33191	79440	0.92%	0.113%
34	8.208	933	938	947	rVB3	8152	18329	0.21%	0.026%
35	8.815	1036	1045	1052	rBV	38632	92363	1.07%	0.131%
36	8.900	1052	1060	1070	rVB	61591	161059	1.87%	0.229%
37	9.218	1106	1116	1122	rBV2	36532	91009	1.06%	0.129%
38	9.315	1122	1133	1144	rVV	522684	1272090	14.75%	1.807%
39	9.423	1144	1152	1160	rVV	21663	57309	0.66%	0.081%
40	9.519	1160	1169	1177	rVB2	13587	33611	0.39%	0.048%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	9.701	1187	1201	1202	rBV2	27396	57103	0.66%	0.081%
42	9.729	1204	1206	1218	rVB3	31764	58428	0.68%	0.083%
43	9.866	1220	1230	1239	rBB2	44540	109889	1.27%	0.156%
44	10.133	1263	1277	1288	rBV	213409	619168	7.18%	0.879%
45	10.235	1289	1295	1306	rVB	26235	69503	0.81%	0.099%
46	10.405	1317	1325	1332	rBV4	6324	15413	0.18%	0.022%
47	10.570	1345	1354	1364	rBV2	32001	72954	0.85%	0.104%
48	11.331	1482	1488	1494	rBV2	9803	24084	0.28%	0.034%
49	11.410	1494	1502	1513	rVB3	20498	53855	0.62%	0.076%
50	11.808	1564	1572	1585	rVB6	6808	22752	0.26%	0.032%
51	12.222	1637	1645	1656	rBB2	9861	24047	0.28%	0.034%
52	12.336	1657	1665	1670	rBV3	7613	18898	0.22%	0.027%
53	12.432	1670	1682	1694	rVV	696435	1626928	18.87%	2.310%
54	12.563	1694	1705	1721	rVV	1890428	4257268	49.37%	6.046%
55	12.711	1724	1731	1740	rVB5	4800	12249	0.14%	0.017%
56	12.875	1753	1760	1765	rBV3	9577	19648	0.23%	0.028%
57	12.932	1765	1770	1779	rVB5	5217	12651	0.15%	0.018%
58	13.125	1797	1804	1811	rBV2	12122	28602	0.33%	0.041%
59	13.222	1811	1821	1831	rVV	194877	409831	4.75%	0.582%
60	13.403	1842	1853	1860	rBV2	21899	45672	0.53%	0.065%
61	13.477	1860	1866	1871	rBV2	4976	10148	0.12%	0.014%
62	13.574	1878	1883	1888	rVB3	7112	12540	0.15%	0.018%
63	13.772	1910	1918	1925	rBV	35834	74377	0.86%	0.106%
64	13.920	1937	1944	1951	rVB	25228	52720	0.61%	0.075%
65	14.028	1953	1963	1971	rVB	56352	122973	1.43%	0.175%
66	14.130	1975	1981	1987	rBV5	4699	10327	0.12%	0.015%
67	14.522	2040	2050	2061	rVB	806072	1779988	20.64%	2.528%
68	14.635	2063	2070	2079	rVB2	19217	39896	0.46%	0.057%
69	14.840	2096	2106	2120	rBV	696520	1446615	16.78%	2.054%
70	15.044	2137	2142	2147	rVB2	8809	15169	0.18%	0.022%
71	15.107	2147	2153	2157	rBV2	5387	10049	0.12%	0.014%
72	15.408	2198	2206	2216	rVB	65242	128414	1.49%	0.182%
73	15.629	2237	2245	2258	rVB	172423	444304	5.15%	0.631%
74	15.743	2258	2265	2268	rBV	20266	44558	0.52%	0.063%
75	15.794	2268	2274	2290	rVB	111909	250578	2.91%	0.356%
76	15.941	2290	2300	2303	rBV3	7120	16888	0.20%	0.024%
77	15.998	2303	2310	2319	rVB	91811	171234	1.99%	0.243%
78	16.106	2319	2329	2335	rBV6	44493	114856	1.33%	0.163%
79	16.163	2335	2339	2345	rVV	25272	47735	0.55%	0.068%
80	16.242	2345	2353	2361	rVB	90165	187913	2.18%	0.267%
81	16.339	2361	2370	2379	rBV	63349	132274	1.53%	0.188%
82	16.611	2411	2418	2422	rBV	16396	31111	0.36%	0.044%
83	16.674	2422	2429	2440	rVB	100946	204180	2.37%	0.290%
84	16.822	2446	2455	2465	rBV	610858	1151750	13.36%	1.636%
85	16.918	2465	2472	2477	rBV3	12619	24191	0.28%	0.034%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

86	16.981	2477	2483	2492	rBV3	23009	54018	0.63%	0.077%
87	17.071	2492	2499	2506	rBV	245912	531131	6.16%	0.754%
88	17.242	2520	2529	2539	rBV	102594	220754	2.56%	0.313%
89	17.327	2539	2544	2550	rVV3	52899	108352	1.26%	0.154%
90	17.423	2550	2561	2569	rVV2	311163	754085	8.75%	1.071%
91	17.520	2569	2578	2583	rVV4	91163	239358	2.78%	0.340%
92	17.565	2583	2586	2593	rVV	51106	95802	1.11%	0.136%
93	17.628	2593	2597	2602	rVB3	17892	28346	0.33%	0.040%
94	17.702	2602	2610	2612	rBV3	9246	22725	0.26%	0.032%
95	17.747	2612	2618	2624	rVV2	22315	44675	0.52%	0.063%
96	17.815	2624	2630	2632	rVV	25115	46479	0.54%	0.066%
97	17.861	2632	2638	2645	rVV	173612	335547	3.89%	0.477%
98	17.929	2645	2650	2653	rVV5	18106	39594	0.46%	0.056%
99	17.963	2653	2656	2661	rVV3	20162	37372	0.43%	0.053%
100	18.048	2661	2671	2682	rVV	5051860	8622997	100.00%	12.246%
101	18.139	2682	2687	2690	rVV	27706	42304	0.49%	0.060%
102	18.173	2690	2693	2696	rVV2	25295	39785	0.46%	0.056%
103	18.230	2696	2703	2707	rVV	452843	794109	9.21%	1.128%
104	18.287	2707	2713	2718	rVV2	1341660	2542853	29.49%	3.611%
105	18.326	2718	2720	2722	rVV	288720	376824	4.37%	0.535%
106	18.360	2722	2726	2729	rVV	679821	1217425	14.12%	1.729%
107	18.389	2729	2731	2741	rVV	463092	713254	8.27%	1.013%
108	18.502	2741	2751	2758	rVV2	703953	1292771	14.99%	1.836%
109	18.605	2758	2769	2773	rVV2	877680	1662146	19.28%	2.360%
110	18.644	2773	2776	2783	rVV	485963	740002	8.58%	1.051%
111	18.718	2783	2789	2797	rVV2	251749	480907	5.58%	0.683%
112	18.809	2797	2805	2810	rVV	853496	1305683	15.14%	1.854%
113	18.849	2810	2812	2820	rVV6	109443	296656	3.44%	0.421%
114	18.917	2820	2824	2827	rVV3	160056	277551	3.22%	0.394%
115	18.951	2827	2830	2841	rVV2	314048	699506	8.11%	0.993%
116	19.064	2841	2850	2862	rVV	1692427	2789896	32.35%	3.962%
117	19.195	2862	2873	2884	rVV	393698	658653	7.64%	0.935%
118	19.297	2884	2891	2901	rVV	1150397	1919605	22.26%	2.726%
119	19.377	2901	2905	2910	rVV2	52444	91993	1.07%	0.131%
120	19.456	2910	2919	2923	rVV	63551	115090	1.33%	0.163%
121	19.507	2923	2928	2933	rVV	143154	238728	2.77%	0.339%
122	19.564	2933	2938	2944	rVV	373261	635482	7.37%	0.902%
123	19.621	2944	2948	2955	rVV	218503	347624	4.03%	0.494%
124	19.683	2955	2959	2961	rVV4	13330	24407	0.28%	0.035%
125	19.712	2961	2964	2967	rVV3	19970	27582	0.32%	0.039%
126	19.808	2967	2981	2988	rVB2	122298	265865	3.08%	0.378%
127	19.876	2988	2993	2997	rBV3	13967	27909	0.32%	0.040%
128	19.922	2997	3001	3005	rVV3	24900	41668	0.48%	0.059%
129	19.979	3005	3011	3016	rVV	47276	76770	0.89%	0.109%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

130	20.047	3016	3023	3030	rVB3	47975	96814	1.12%	0.137%
131	20.115	3030	3035	3039	rBV4	17832	23554	0.27%	0.033%
132	20.211	3044	3052	3059	rVV3	25584	76879	0.89%	0.109%
133	20.274	3059	3063	3067	rVB4	14790	21754	0.25%	0.031%
134	20.348	3067	3076	3087	rBV	724440	990340	11.48%	1.406%
135	20.490	3094	3101	3104	rVB5	14752	25754	0.30%	0.037%
136	20.529	3104	3108	3110	rVV3	9709	12675	0.15%	0.018%
137	20.569	3110	3115	3125	rVB2	114093	190222	2.21%	0.270%
138	20.683	3131	3135	3139	rBV2	9287	10721	0.12%	0.015%
139	20.757	3144	3148	3153	rVV	33253	41329	0.48%	0.059%
140	20.808	3153	3157	3164	rVB7	5605	13363	0.15%	0.019%
141	20.921	3173	3177	3186	rBV9	8640	23236	0.27%	0.033%
142	21.018	3186	3194	3198	rVV2	31684	53129	0.62%	0.075%
143	21.069	3198	3203	3210	rVV8	8080	20388	0.24%	0.029%
144	21.137	3210	3215	3217	rVV3	10509	17515	0.20%	0.025%
145	21.165	3217	3220	3224	rVV3	16094	23919	0.28%	0.034%
146	21.228	3224	3231	3250	rVB4	24279	61019	0.71%	0.087%
147	21.495	3272	3278	3283	rVB8	7509	16440	0.19%	0.023%

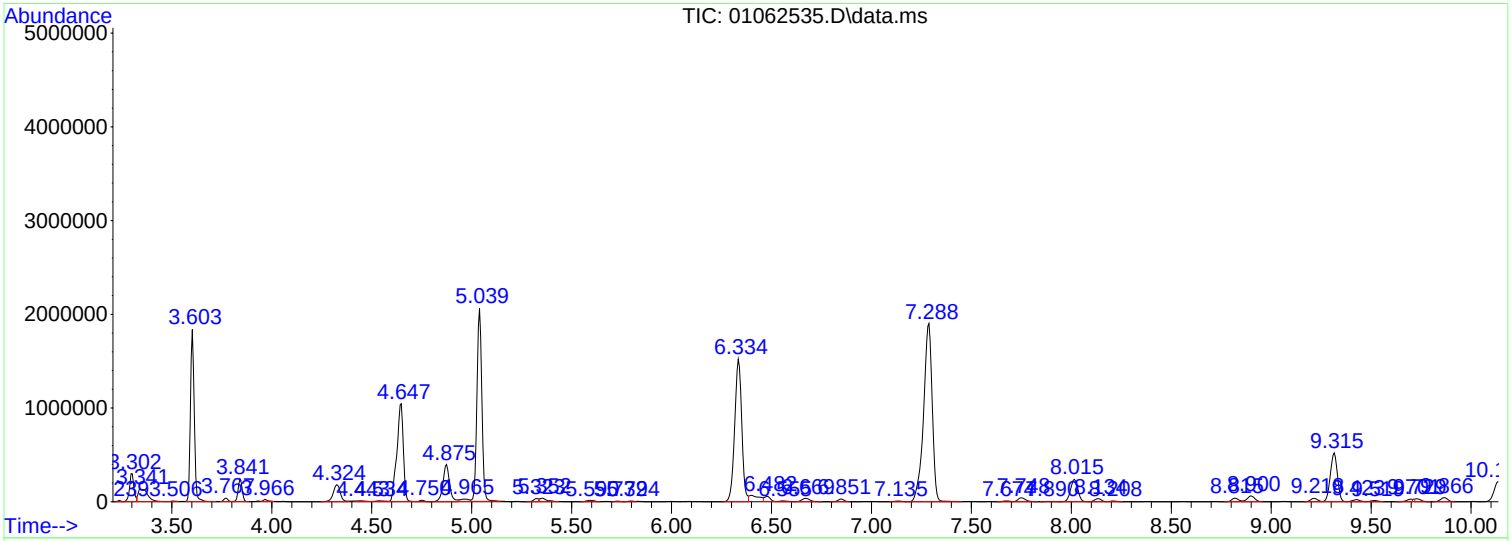
Sum of corrected areas: 70416384

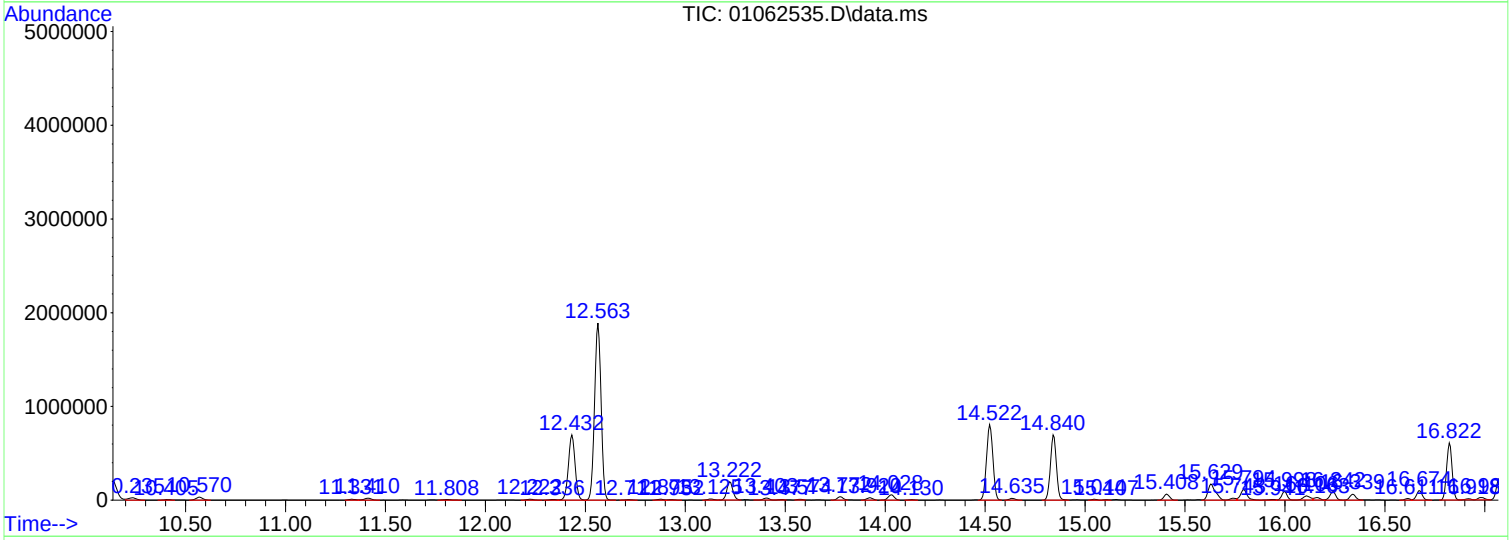
LSC Report - Integrated Chromatogram

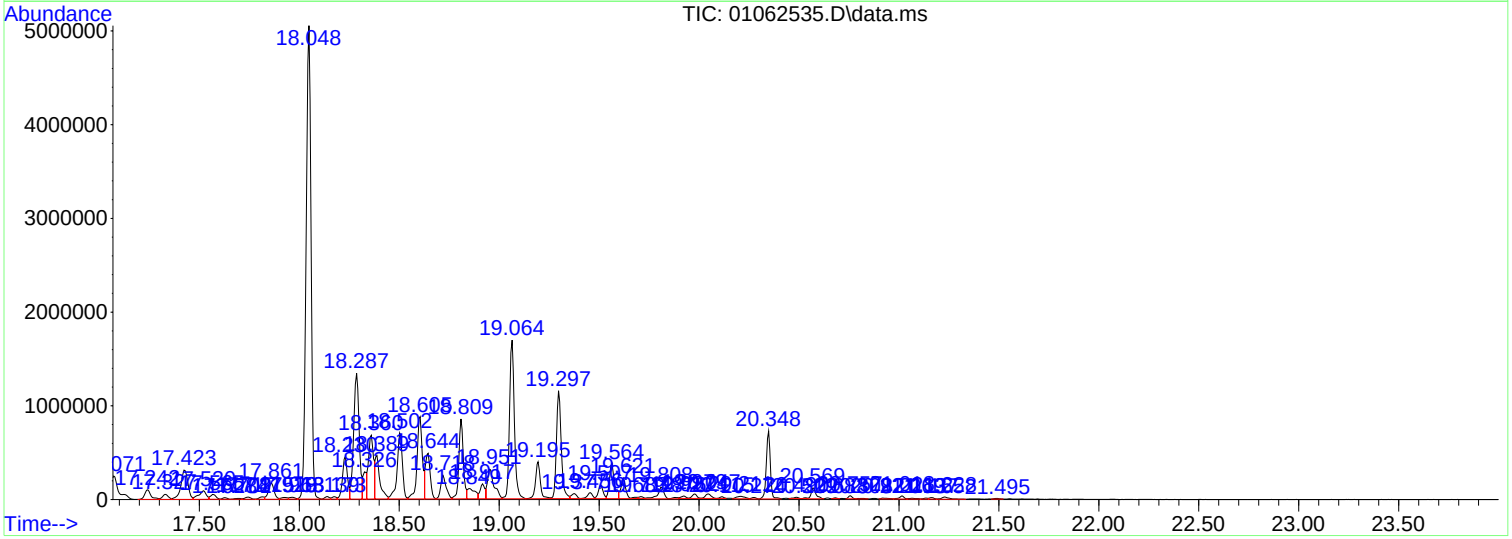
Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:57
Operator : SC
Sample : P2405139-016 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\06\\
Data File : 01062535.D
Acq On : 7 Jan 2025 2:577
Operator : SCC
Sample : P2405139-016 (400mL))
Misc : S37-123124011
ALS Vial : 13 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/7/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

1/7/25

Quant Time: Jan 07 05:51:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	146008	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	625687	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	110342	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	240637	12.097	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.80%				
57) Toluene-d8 (SS2)	12.43	98	648349	13.245	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%				
73) Bromofluorobenzene (SS3)	16.82	174	248425	14.707	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.68%				
Target Compounds							Qvalue
2) Propene	3.32	42	569	N.D.			
3) Dichlorodifluoromethan...	3.38	85	16424	0.575	ng		97
4) Chloromethane	3.52	50	309	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	403	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	6759	0.626	ng		93
11) Acetonitrile	4.47	41	215	N.D.			
12) Acrolein	4.55	56	632	0.068	ng	#	71
13) Acetone	4.65	58	19104	1.943	ng		89
14) Trichlorofluoromethane	4.75	101	1834248	68.527	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	20671	0.587	ng	#	55
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.33	59	1361	N.D.			
19) Methylene Chloride	5.36	84	275	N.D.			
20) 3-Chloro-1-propene (Al...	5.34	41	273	N.D.			
21) Trichlorotrifluoroethane	5.58	151	857825	71.032	ng		93
22) Carbon Disulfide	5.62	76	6060	0.136	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.68	72	3813	0.483	ng	#	88
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.34	87	106	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.31	57	212	N.D.			
32) Chloroform	7.36	83	3677	0.155	ng		96
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.81	56	7346	No Calib		#	
41) Benzene	8.89	78	7306	0.145	ng		100
42) Carbon Tetrachloride	9.06	117	980	N.D.			
43) Cyclohexane	9.22	84	1953	0.111	ng		92
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	114	N.D.			
47) Trichloroethene	10.14	130	613	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

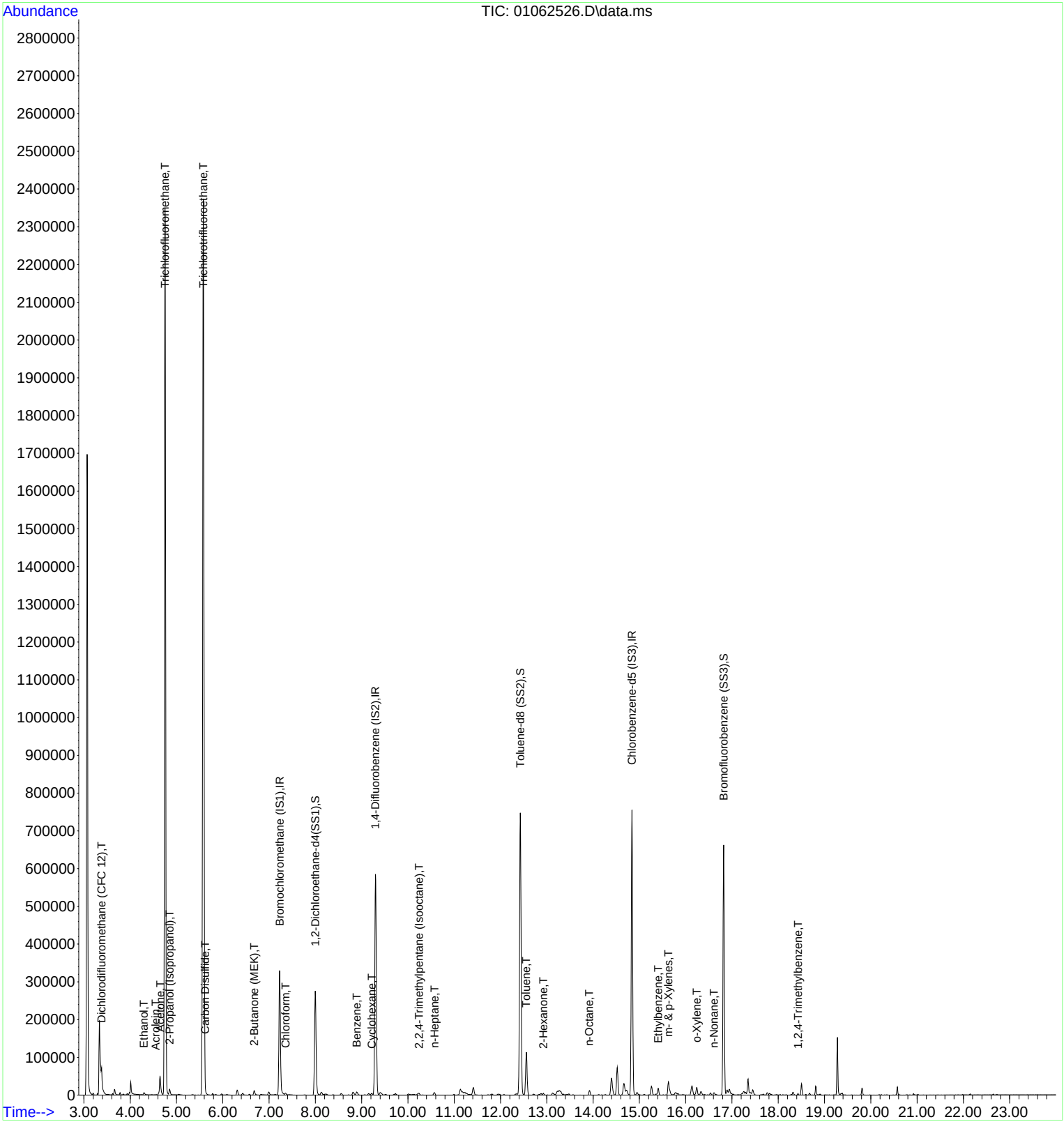
Quant Time: Jan 07 05:51:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	5956	0.113 ng	66
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.58	71	1711	0.153 ng	96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D. d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	102756	2.182 ng	99
59) 2-Hexanone	12.93	43	3910	0.170 ng	80
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	13.91	57	1903	0.195 ng	98
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	14.95	112	687	N.D.	
66) Ethylbenzene	15.41	91	15829	0.304 ng	100
67) m- & p-Xylenes	15.63	91	31158	0.731 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.11	104	267	N.D.	
70) o-Xylene	16.24	91	12623	0.299 ng	98
71) n-Nonane	16.61	43	3665	0.164 ng	81
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	1701	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	3044	N.D.	
77) 3-Ethyltoluene	17.03	105	1701	No Calib	
78) 4-Ethyltoluene	17.86	105	854	N.D.	
79) 1,3,5-Trimethylbenzene	17.96	105	1010	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	1701	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	2440	0.056 ng	86
83) n-Decane	16.96	58	171	No Calib #	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	340	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	517	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	1701	No Calib	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.94	128	513	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.26	55	2317	No Calib #	
99) tert-Butylbenzene	18.43	119	254	N.D.	
100) n-Butylbenzene	19.38	91	383	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 07 05:51:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

VOA 1/7/25

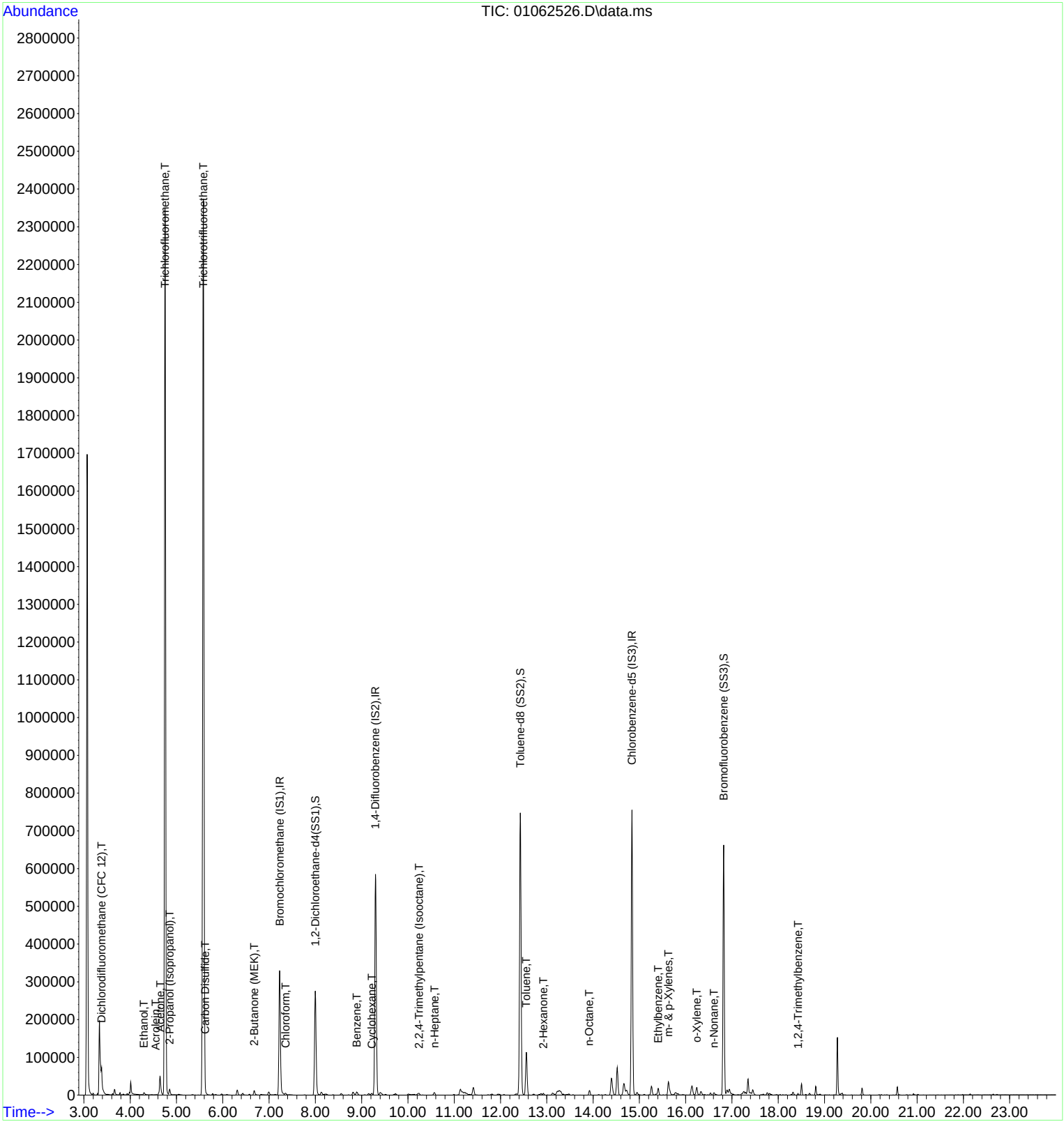
Quant Time: Jan 07 05:51:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

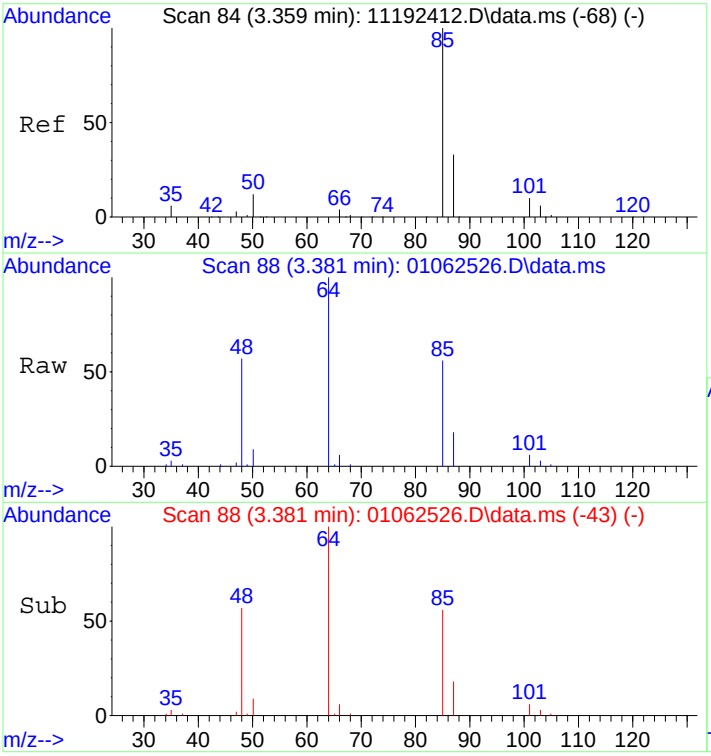
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	146008	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	625687	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	110342	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	240637	12.097	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.80%				
57) Toluene-d8 (SS2)	12.43	98	648349	13.245	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%				
73) Bromofluorobenzene (SS3)	16.82	174	248425	14.707	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.68%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16424	0.575	ng		97
10) Ethanol	4.30	45	6759	0.626	ng		93
12) Acrolein	4.55	56	632	0.068	ng	#	71
13) Acetone	4.65	58	19104	1.943	ng		89
14) Trichlorofluoromethane	4.75	101	1834248	68.527	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	20671	0.587	ng	#	55
21) Trichlorotrifluoroethane	5.58	151	857825	71.032	ng		93
22) Carbon Disulfide	5.62	76	6060	0.136	ng	#	1
27) 2-Butanone (MEK)	6.68	72	3813	0.483	ng	#	88
32) Chloroform	7.36	83	3677	0.155	ng		96
41) Benzene	8.89	78	7306	0.145	ng		100
43) Cyclohexane	9.22	84	1953	0.111	ng		92
49) 2,2,4-Trimethylpentane...	10.24	57	5956	0.113	ng		66
51) n-Heptane	10.58	71	1711	0.153	ng		96
58) Toluene	12.56	91	102756	2.182	ng		99
59) 2-Hexanone	12.93	43	3910	0.170	ng		80
63) n-Octane	13.91	57	1903	0.195	ng		98
66) Ethylbenzene	15.41	91	15829	0.304	ng		100
67) m- & p-Xylenes	15.63	91	31158	0.731	ng		99
70) o-Xylene	16.24	91	12623	0.299	ng		98
71) n-Nonane	16.61	43	3665	0.164	ng		81
82) 1,2,4-Trimethylbenzene	18.43	105	2440	0.056	ng		86

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 07 05:51:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

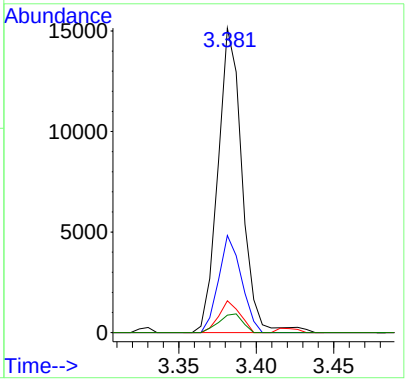


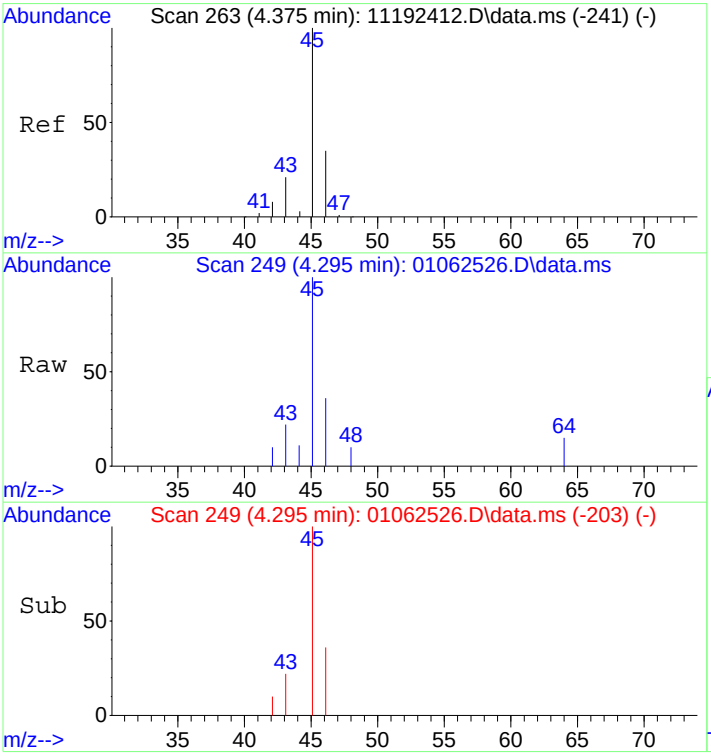


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.58 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.005 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 85 Resp: 16424

Ion	Ratio	Lower	Upper
85	100		
87	30.1	12.6	52.6
101	9.1	0.0	29.6
103	6.0	0.0	26.2

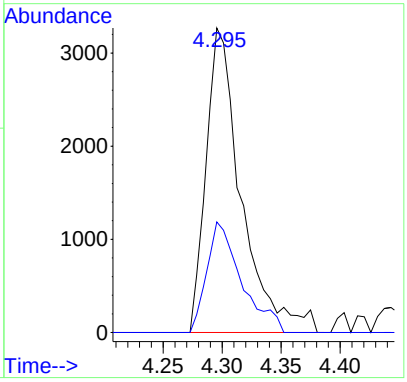


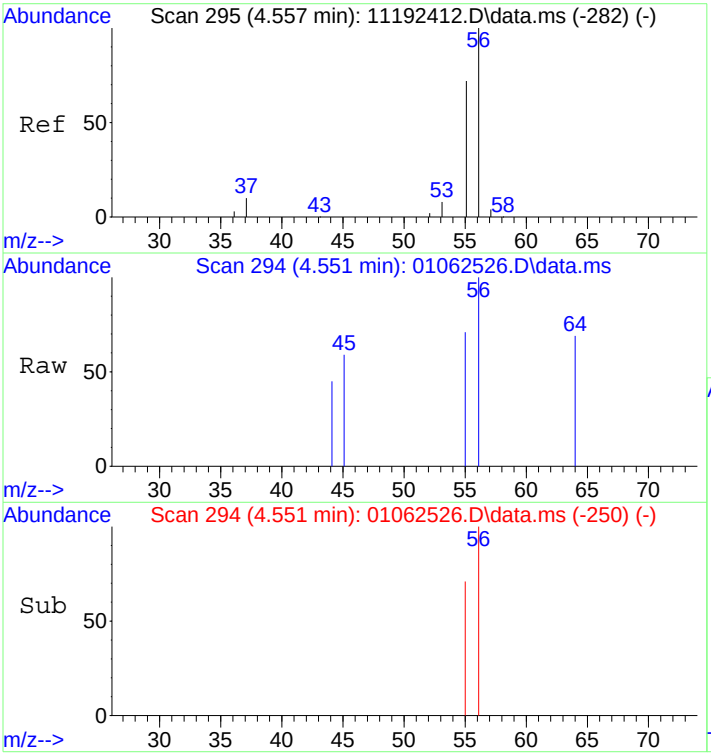


#10
Ethanol
Concen: 0.63 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 45 Resp: 6759

Ion	Ratio	Lower	Upper
45	100		
46	35.7	11.8	51.8

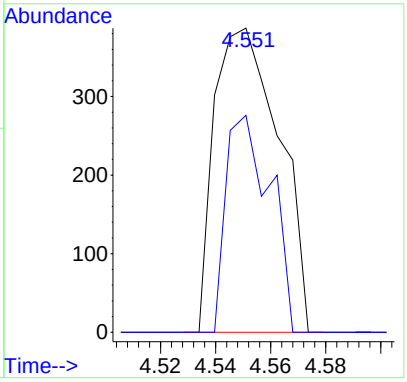


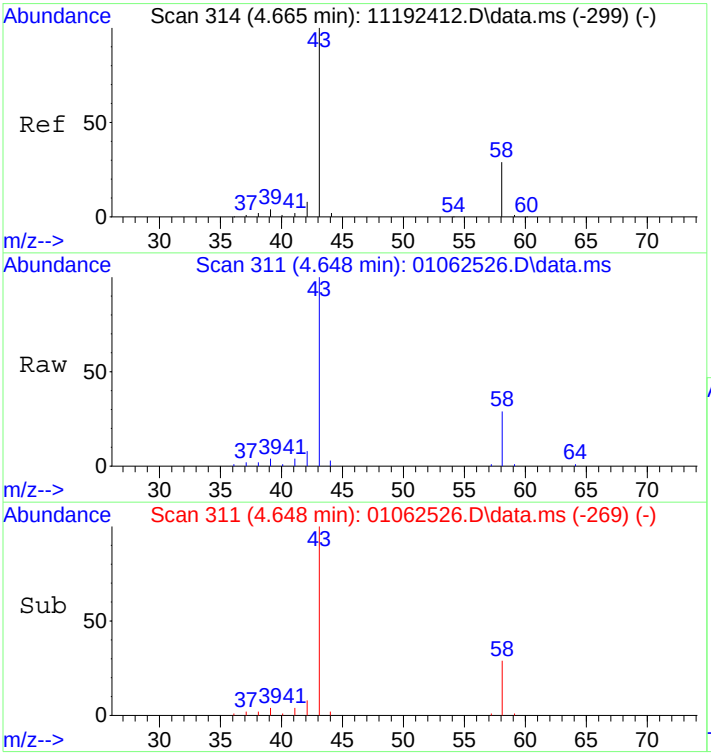


#12
Acrolein
Concen: 0.07 ng
RT: 4.55 min Scan# 294
Delta R.T. -0.002 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 56 Resp: 632

Ion	Ratio	Lower	Upper
56	100		
55	48.9	53.1	93.1#

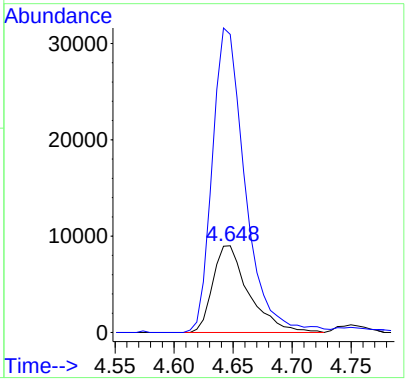


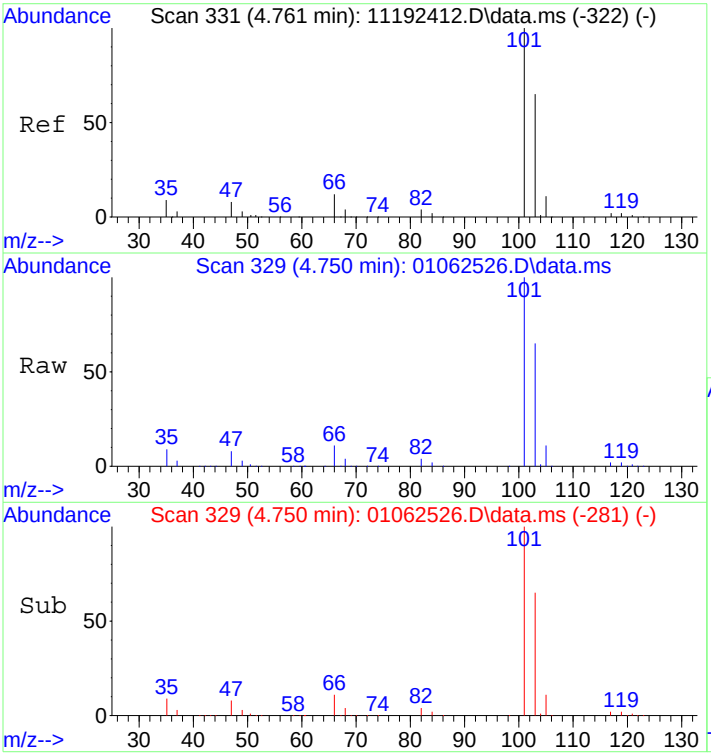


#13
Acetone
Concen: 1.94 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 58 Resp: 19104

Ion	Ratio	Lower	Upper
58	100		
43	319.7	312.5	372.5

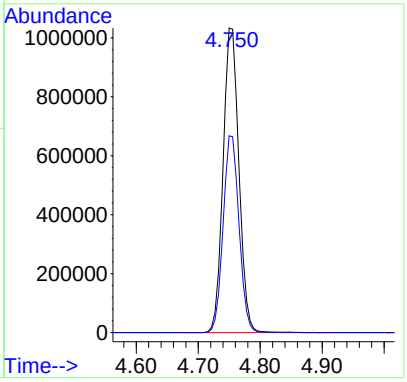


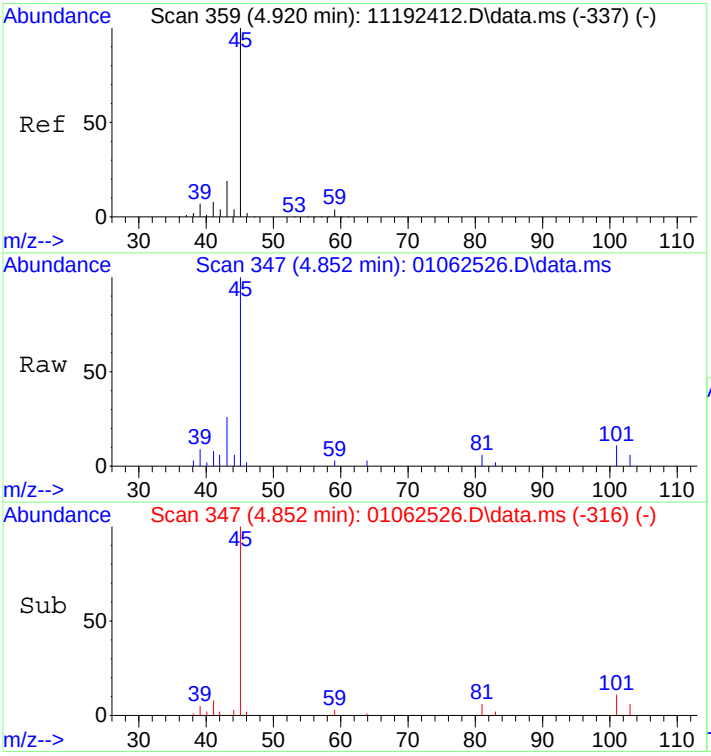


#14
Trichlorofluoromethane
Concen: 68.53 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion:101 Resp: 1834248

Ion	Ratio	Lower	Upper
101	100		
103	64.9	44.8	84.8

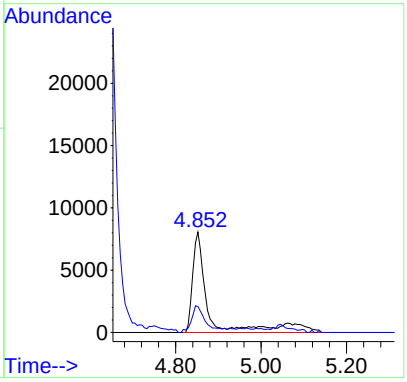


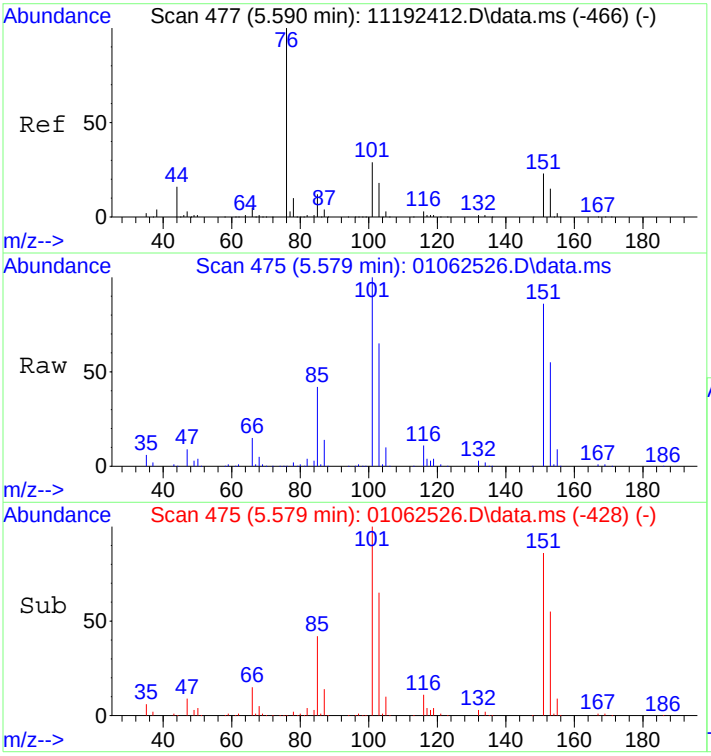


#15
2-Propanol (Isopropanol)
Concen: 0.59 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 45 Resp: 20671

Ion	Ratio	Lower	Upper
45	100		
43	40.9	0.2	40.2#

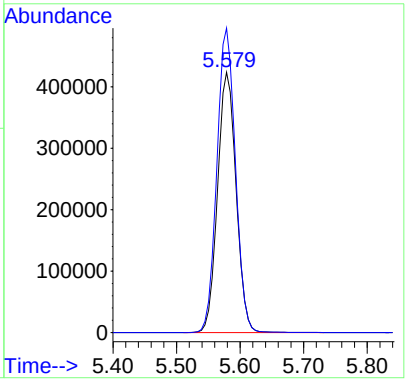


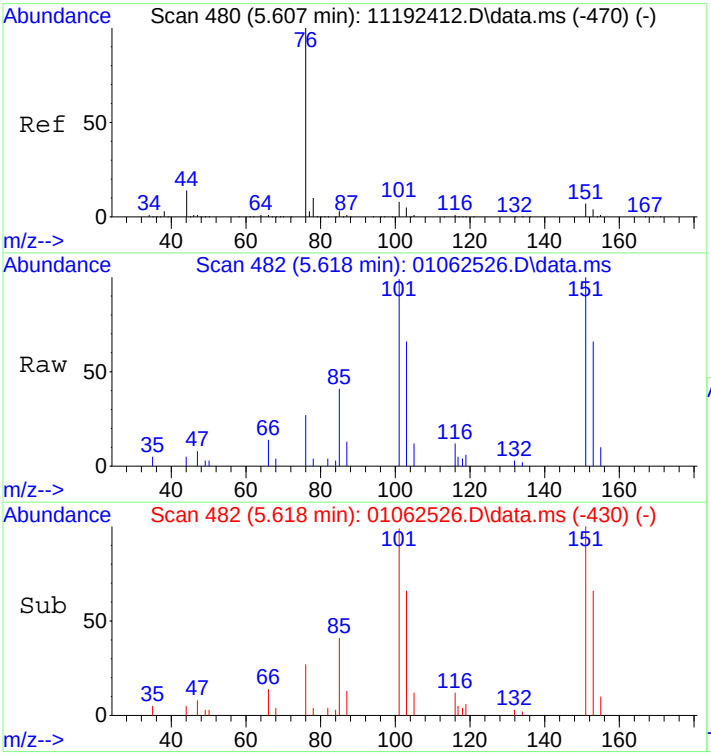


#21
Trichlorotrifluoroethane
Concen: 71.03 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion:151 Resp: 857825

Ion	Ratio	Lower	Upper
151	100		
101	116.7	105.0	145.0

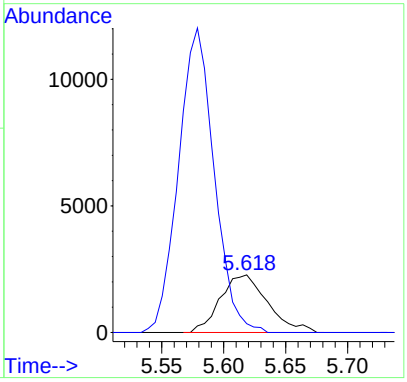


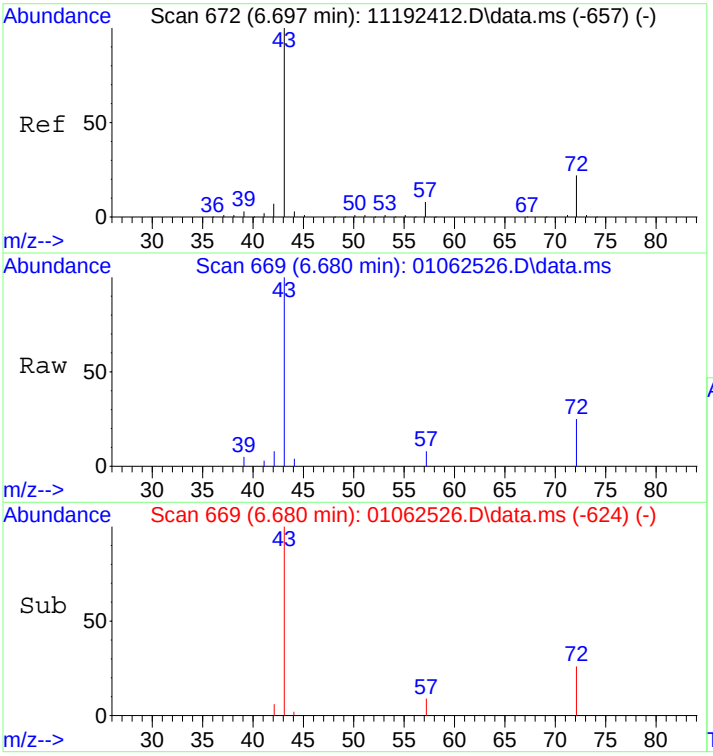


#22
Carbon Disulfide
Concen: 0.14 ng
RT: 5.62 min Scan# 482
Delta R.T. 0.047 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 76 Resp: 6060

Ion	Ratio	Lower	Upper
76	100		
78	397.5	0.0	29.6#

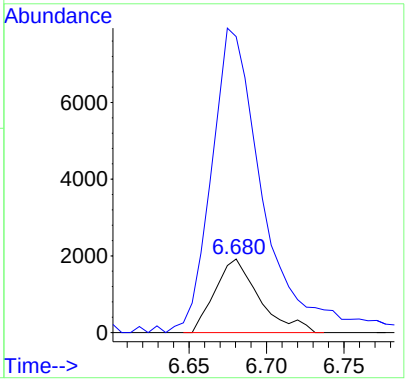


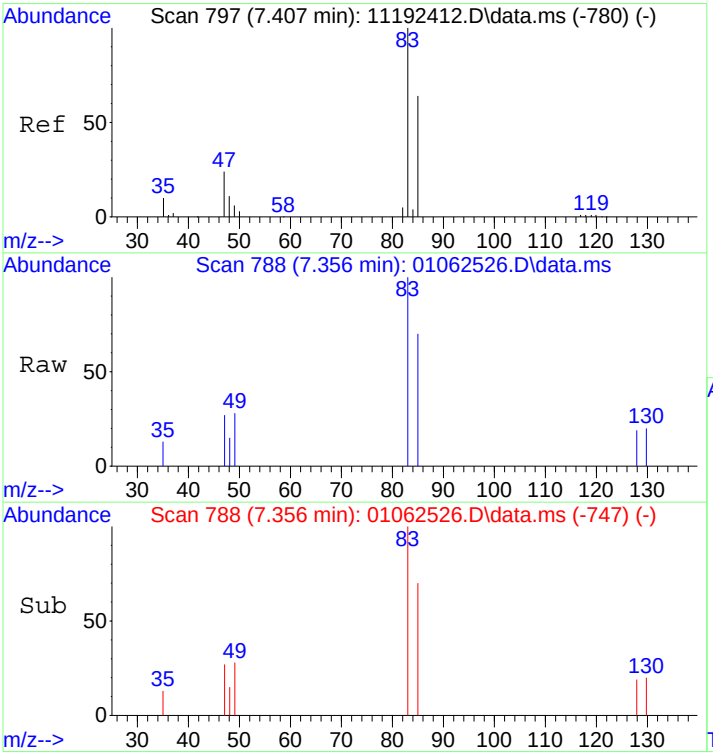


#27
2-Butanone (MEK)
Concen: 0.48 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 72 Resp: 3813

Ion	Ratio	Lower	Upper
72	100		
43	491.9	439.8	479.8#

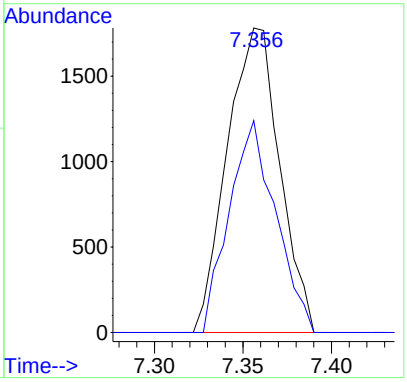


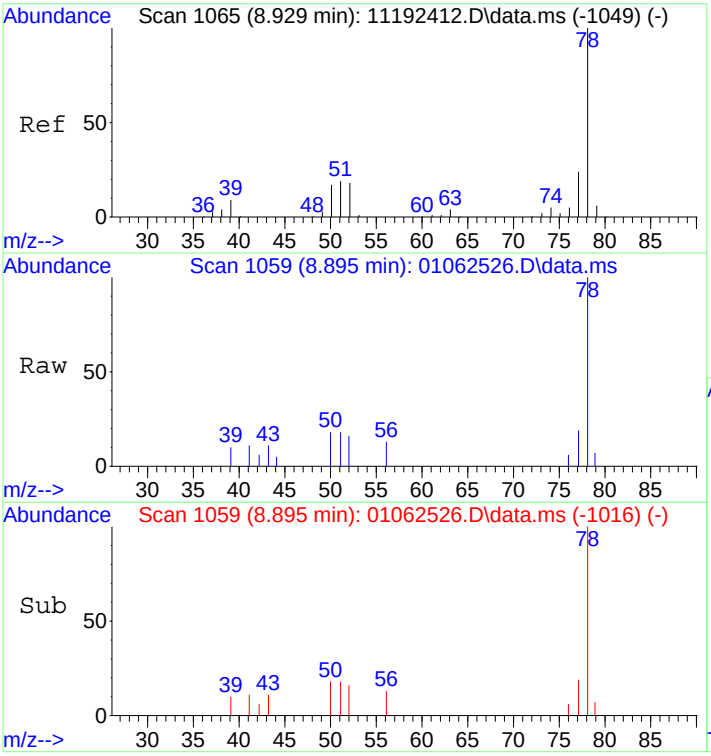


#32
Chloroform
Concen: 0.15 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 83 Resp: 3677

Ion	Ratio	Lower	Upper
83	100		
85	61.6	45.1	85.1

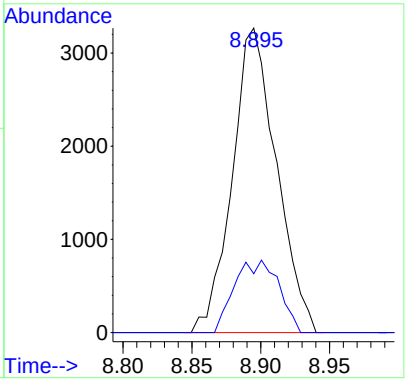


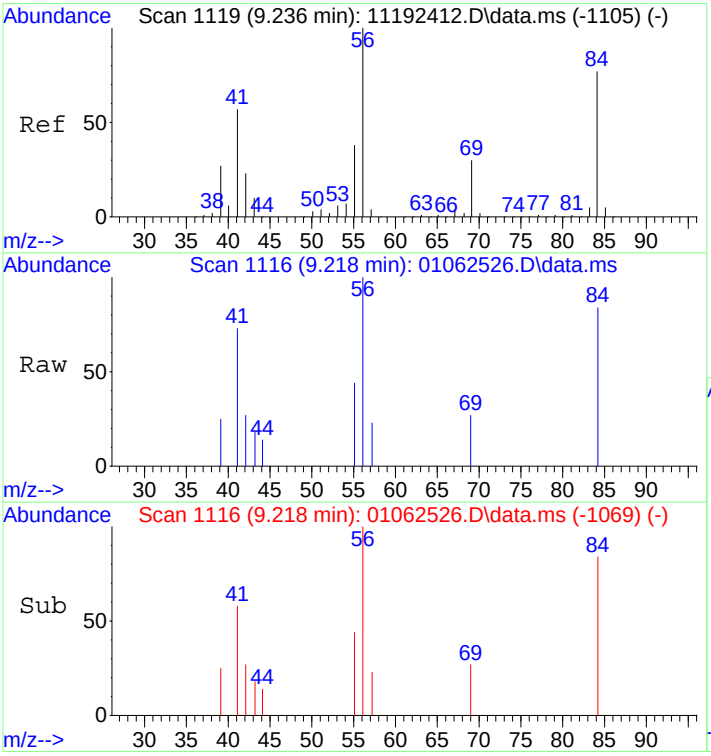


#41
Benzene
Concen: 0.15 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 78 Resp: 7306

Ion	Ratio	Lower	Upper
78	100		
77	23.8	3.7	43.7

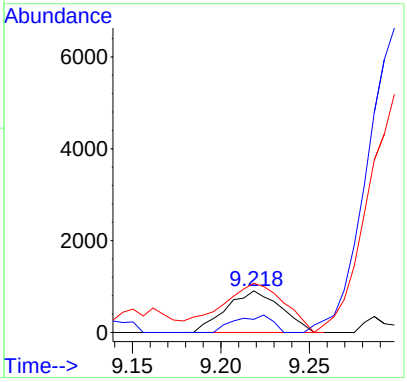


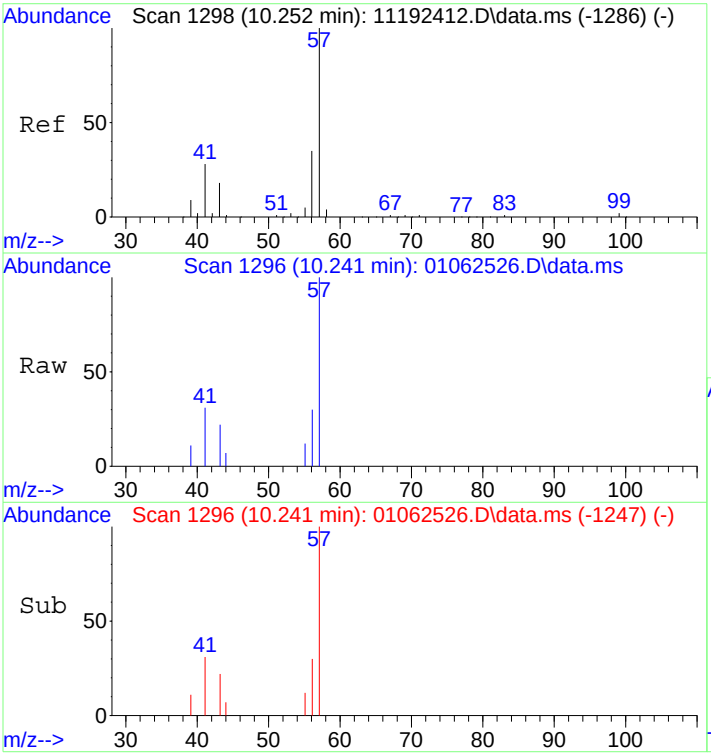


#43
Cyclohexane
Concen: 0.11 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 84 Resp: 1953

Ion	Ratio	Lower	Upper
84	100		
69	28.5	18.3	58.3
56	136.6	110.7	150.7

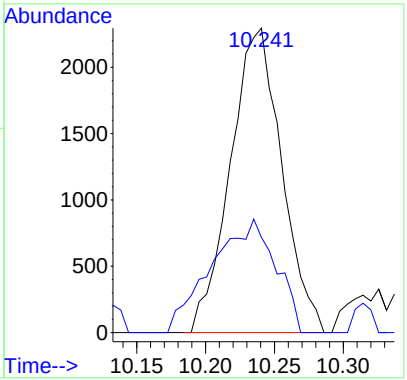


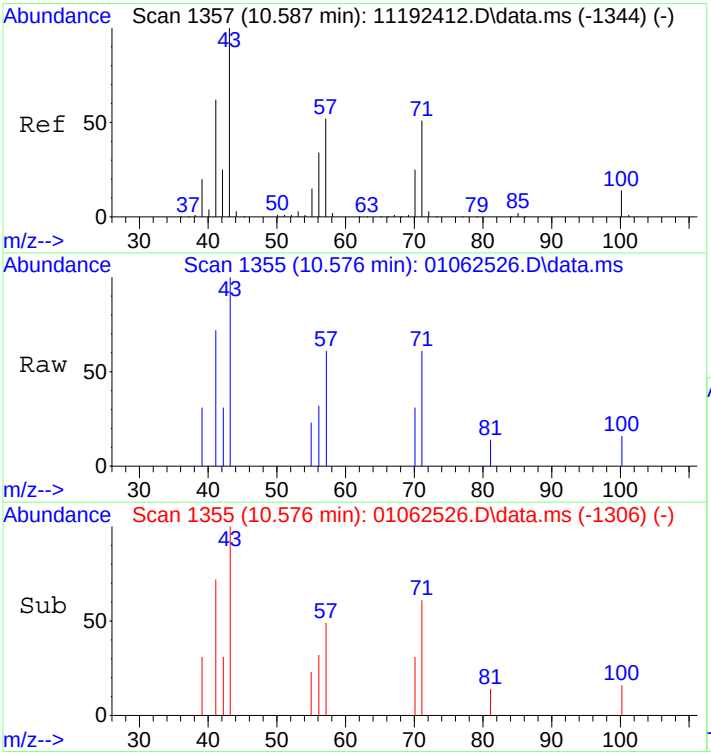


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.11 ng
RT: 10.24 min Scan# 1296
Delta R.T. 0.027 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 57 Resp: 5956

Ion	Ratio	Lower	Upper
57	100		
41	46.5	8.3	48.3

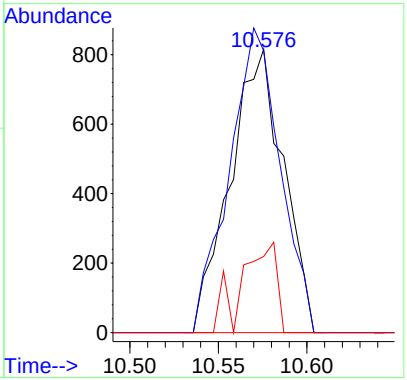


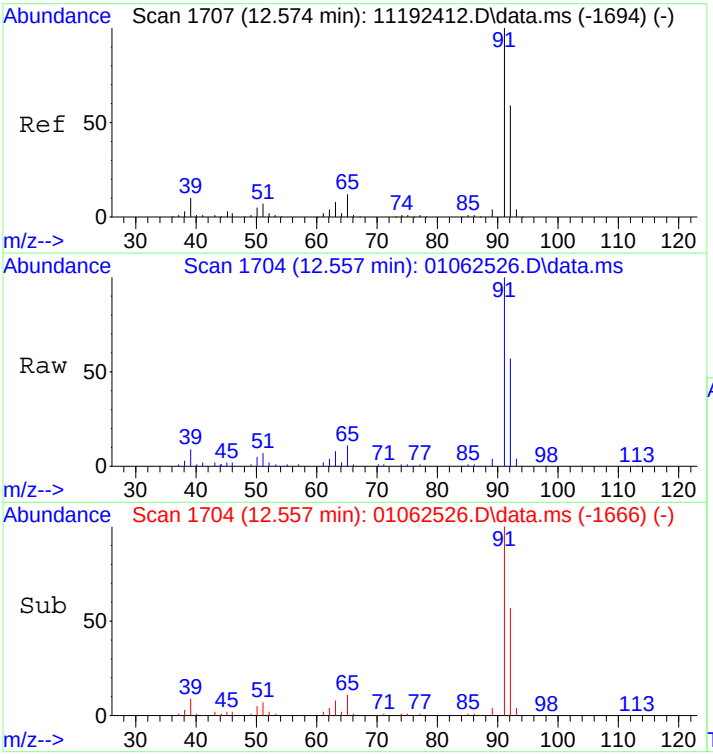


#51
n-Heptane
Concen: 0.15 ng
RT: 10.58 min Scan# 1355
Delta R.T. 0.029 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 71 Resp: 1711

Ion	Ratio	Lower	Upper
71	100		
57	102.7	83.3	123.3
100	21.0	8.7	48.7

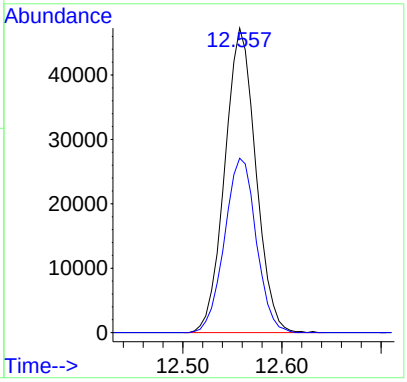


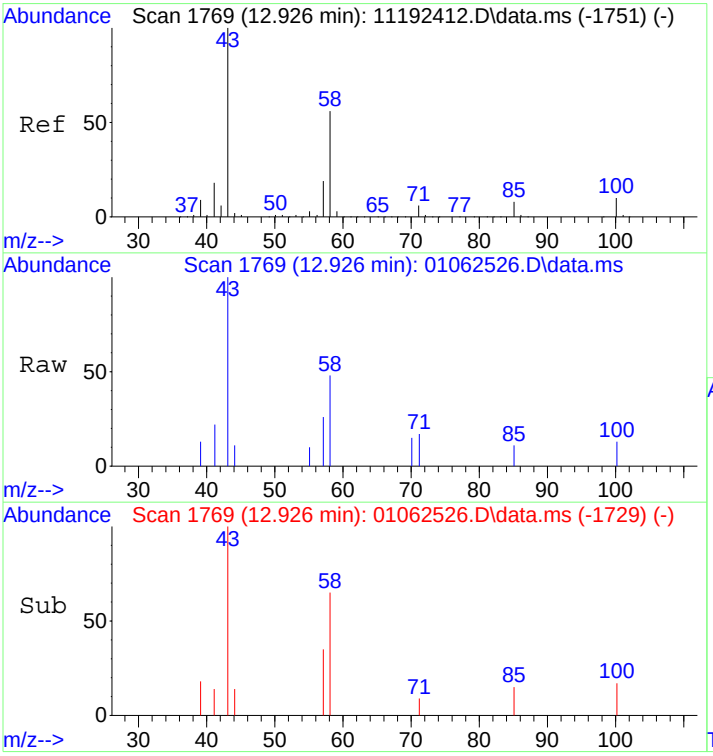


#58
Toluene
Concen: 2.18 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 91 Resp: 102756

Ion	Ratio	Lower	Upper
91	100		
92	58.4	39.2	79.2

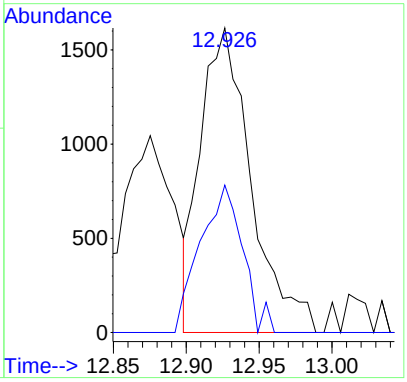


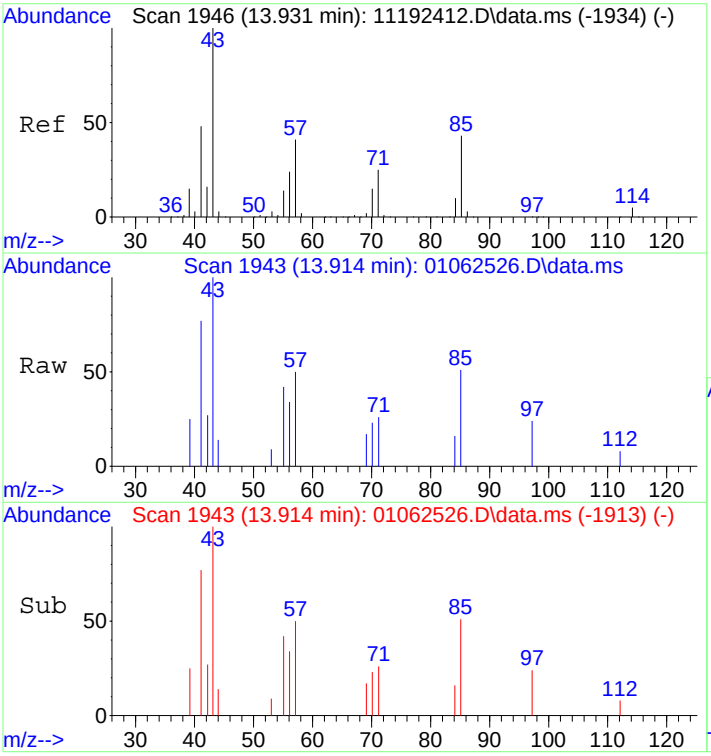


#59
2-Hexanone
Concen: 0.17 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 43 Resp: 3910

Ion	Ratio	Lower	Upper
43	100		
58	40.4	35.2	75.2

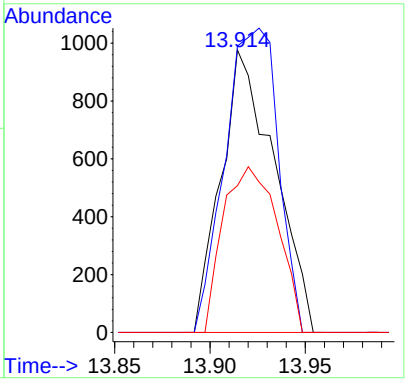


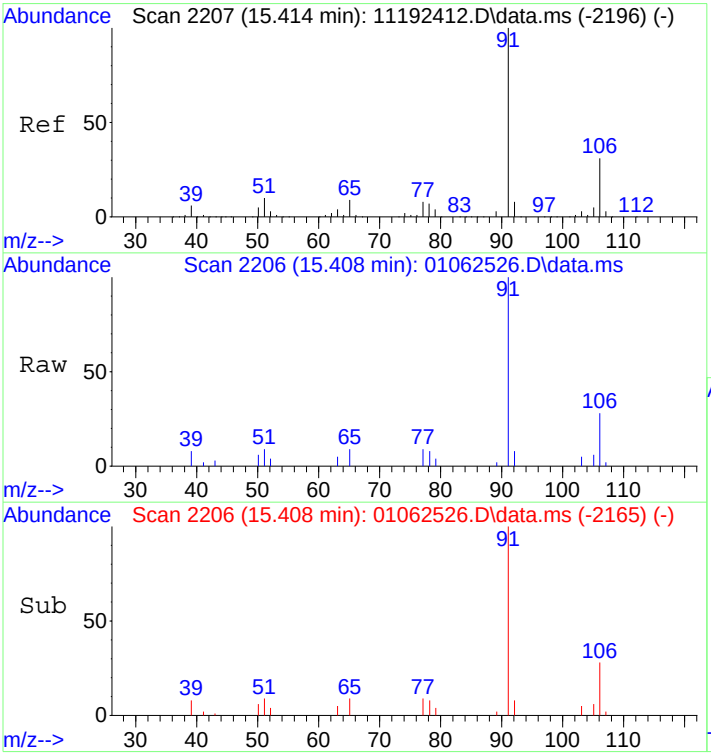


#63
n-Octane
Concen: 0.19 ng
RT: 13.91 min Scan# 1943
Delta R.T. -0.028 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 57 Resp: 1903

Ion	Ratio	Lower	Upper
57	100		
85	107.5	83.6	125.4
71	59.9	49.0	73.4

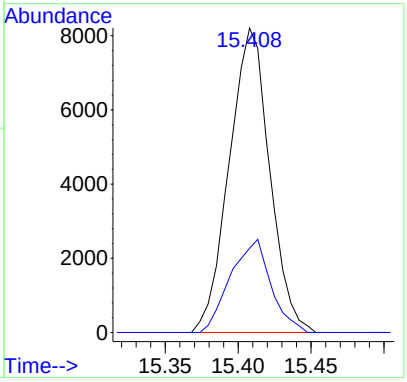


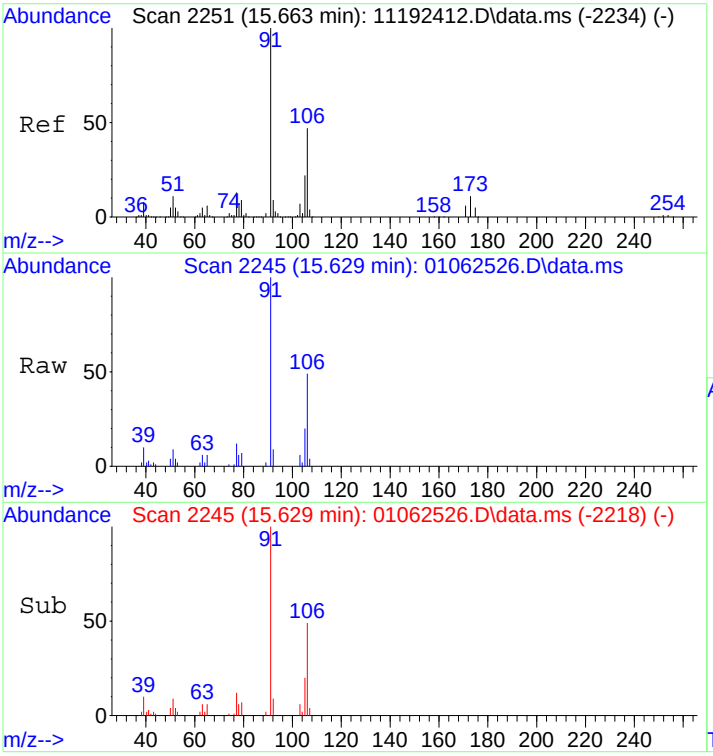


#66
Ethylbenzene
Concen: 0.30 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 91 Resp: 15829

Ion	Ratio	Lower	Upper
91	100		
106	30.6	10.7	50.7

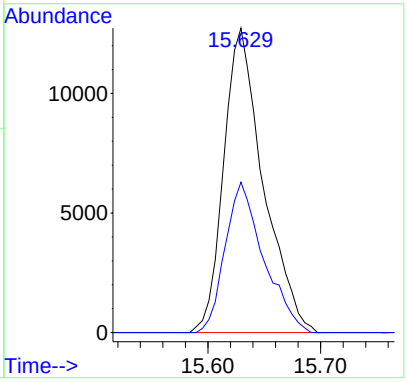


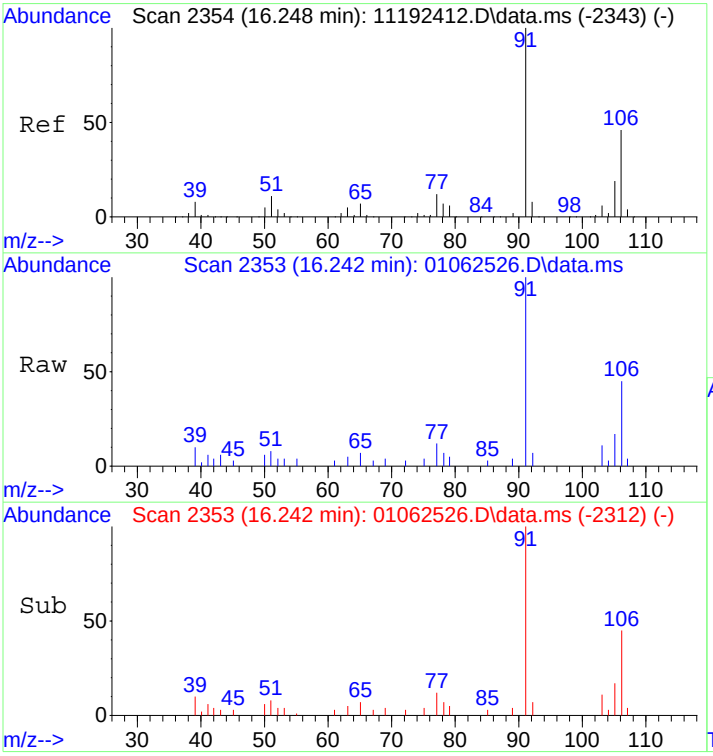


#67
m- & p-Xylenes
Concen: 0.73 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 91 Resp: 31158

Ion	Ratio	Lower	Upper
91	100		
106	48.1	27.1	67.1

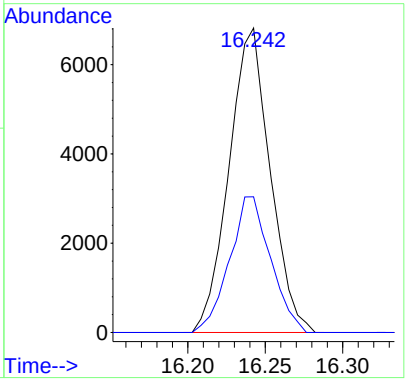


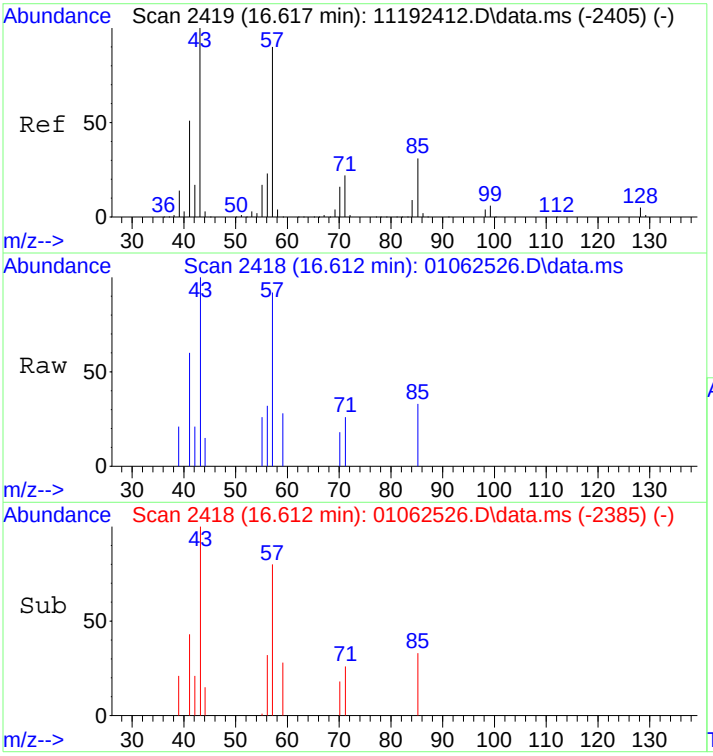


#70
o-Xylene
Concen: 0.30 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 91 Resp: 12623

Ion	Ratio	Lower	Upper
91	100		
106	44.5	25.8	65.8

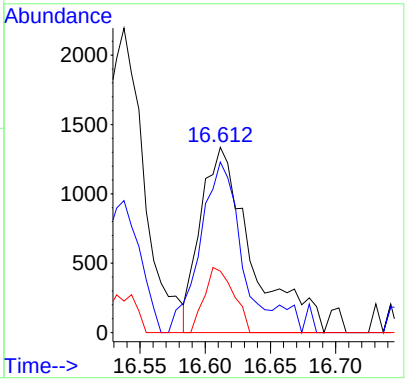


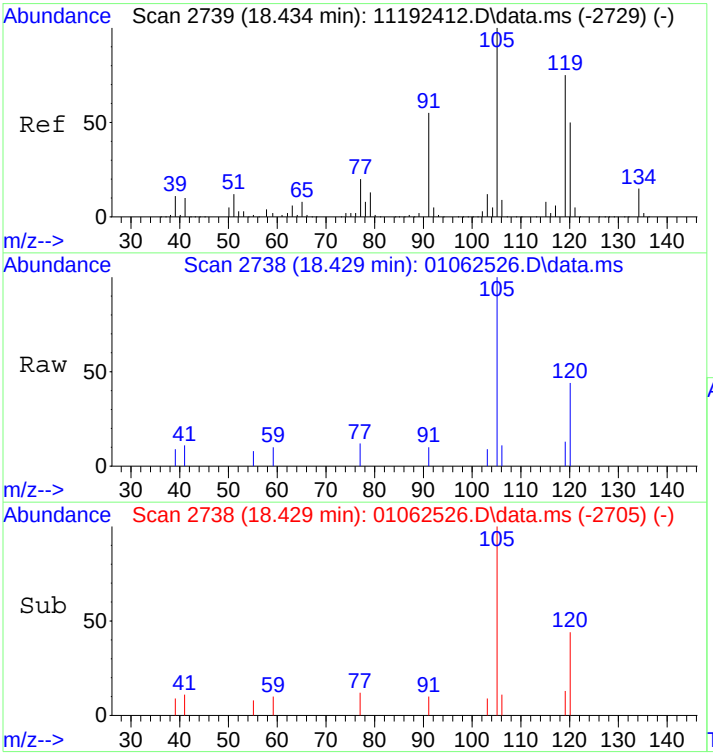


#71
n-Nonane
Concen: 0.16 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion: 43 Resp: 3665

Ion	Ratio	Lower	Upper
43	100		
57	72.0	69.4	109.4
85	20.0	10.5	50.5

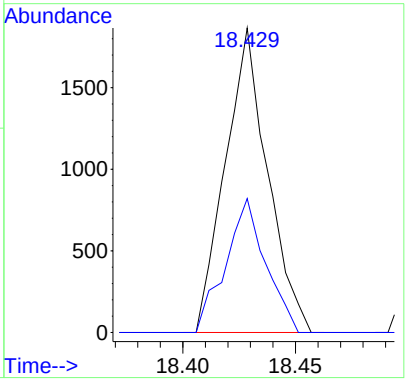




#82
1,2,4-Trimethylbenzene
Concen: 0.06 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01062526.D
Acq: 6 Jan 2025 22:06

Tgt Ion:105 Resp: 2440

Ion	Ratio	Lower	Upper
105	100		
120	41.7	31.8	71.8



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

MA 1/7/25

Quant Time: Jan 07 06:30:11 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

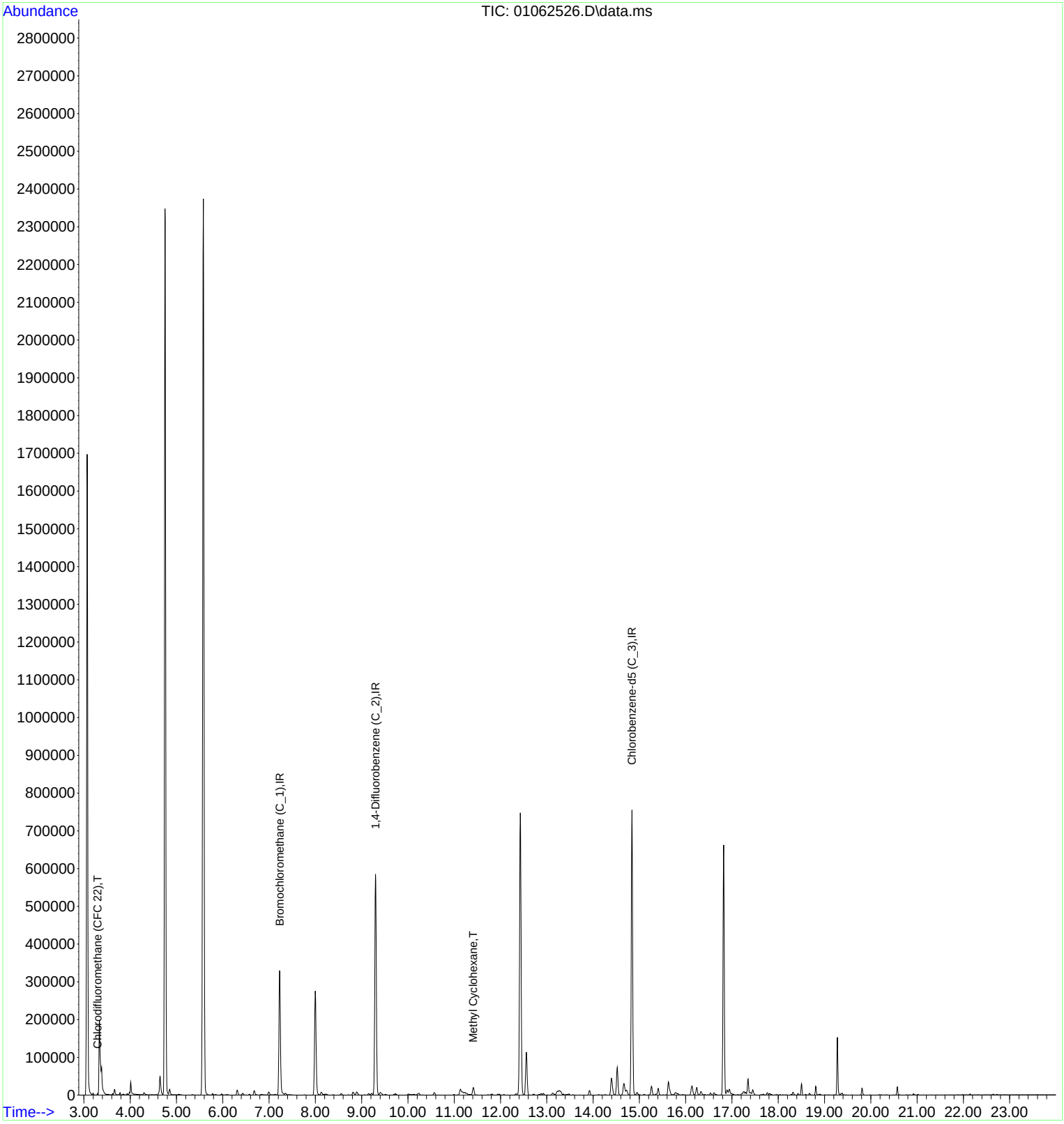
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	148619	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	625687	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	110342	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.17	85	170	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	1289	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	594	0.144	ng	#	73
6) 1-Chloro-1,1-Difluoroe...	3.51	65	400	N.D.			
7) Dichlorofluoromethane ...	0.00	67	0	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	112	N.D.			
10) 2-Methylbutane	4.65	57	971	N.D.			
11) Methyl Acetate	5.33	43	324	N.D.			
12) 2-Methylpentane	0.00	71	0	N.D.			
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	9.51	56	918	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.41	55	9117	0.463	ng		97
21) 1,3-Dichloropropane	12.56	76	255	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	16.33	75	347	N.D.			
25) Bromobenzene	17.03	77	57	N.D.			
26) 2-Chlorotoluene	17.67	91	3044	N.D.			
27) 4-Chlorotoluene	17.67	91	3044	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	20.23	119	495	N.D.			
31) 1,2,3,4-Tetramethylben...	20.23	119	495	N.D.			
32) 1,2,3,5-Tetramethylben...	20.61	119	535	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 07 06:30:11 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062526.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.336	75	80	86	rBV	195336	376197	7.86%	1.994%
2	3.381	86	88	108	rVB	70867	114501	2.39%	0.607%
3	3.660	133	137	147	rVB	14026	24267	0.51%	0.129%
4	4.012	196	199	212	rVB	32151	42864	0.90%	0.227%
5	4.295	244	249	261	rVB	5687	11081	0.23%	0.059%
6	4.642	301	310	321	rBV	49334	103802	2.17%	0.550%
7	4.750	321	329	342	rVV	2347552	4143366	86.53%	21.963%
8	4.852	342	347	361	rVB	14633	27598	0.58%	0.146%
9	5.579	463	475	496	rBV	2374457	4788600	100.00%	25.384%
10	6.311	597	604	611	rBV	13523	27231	0.57%	0.144%
11	6.680	661	669	682	rBV	11815	26402	0.55%	0.140%
12	6.993	718	724	734	rBV2	7741	17228	0.36%	0.091%
13	7.225	756	765	783	rBV	328754	737423	15.40%	3.909%
14	7.998	891	901	914	rBV	275613	628257	13.12%	3.330%
15	8.128	918	924	933	rVV4	6592	15257	0.32%	0.081%
16	8.810	1038	1044	1053	rBV4	7313	19818	0.41%	0.105%
17	8.889	1053	1058	1070	rVB3	8278	20792	0.43%	0.110%
18	9.298	1121	1130	1143	rVV	583960	1349103	28.17%	7.151%
19	9.400	1143	1148	1163	rVB2	6639	20591	0.43%	0.109%
20	10.235	1283	1295	1305	rBB4	4929	16891	0.35%	0.090%
21	10.570	1344	1354	1361	rBB3	6824	15753	0.33%	0.084%
22	11.132	1445	1453	1460	rBV	14993	42238	0.88%	0.224%
23	11.229	1466	1470	1485	rVB5	5979	20306	0.42%	0.108%
24	11.416	1493	1503	1511	rBV2	19724	47358	0.99%	0.251%
25	12.427	1669	1681	1695	rVB	746697	1729757	36.12%	9.169%
26	12.557	1695	1704	1716	rVB	113698	254160	5.31%	1.347%
27	13.125	1798	1804	1813	rBV5	5485	16616	0.35%	0.088%
28	13.233	1813	1823	1825	rVV5	9802	23300	0.49%	0.124%
29	13.267	1825	1829	1842	rVB5	10727	40847	0.85%	0.217%
30	13.920	1938	1944	1952	rVB3	12040	24378	0.51%	0.129%
31	14.397	2019	2028	2040	rBV	44789	118623	2.48%	0.629%
32	14.522	2040	2050	2060	rVB	73217	161190	3.37%	0.854%
33	14.664	2064	2075	2082	rBV3	30844	87204	1.82%	0.462%
34	14.721	2082	2085	2095	rVV7	13069	31418	0.66%	0.167%
35	14.840	2095	2106	2119	rVV	755155	1557348	32.52%	8.255%
36	14.948	2119	2125	2139	rVB4	7023	17412	0.36%	0.092%
37	15.260	2172	2180	2192	rVB2	23552	50764	1.06%	0.269%
38	15.408	2200	2206	2216	rVB	17936	36990	0.77%	0.196%
39	15.629	2236	2245	2259	rBV	34979	88083	1.84%	0.467%
40	15.788	2261	2273	2278	rBV7	6013	18122	0.38%	0.096%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

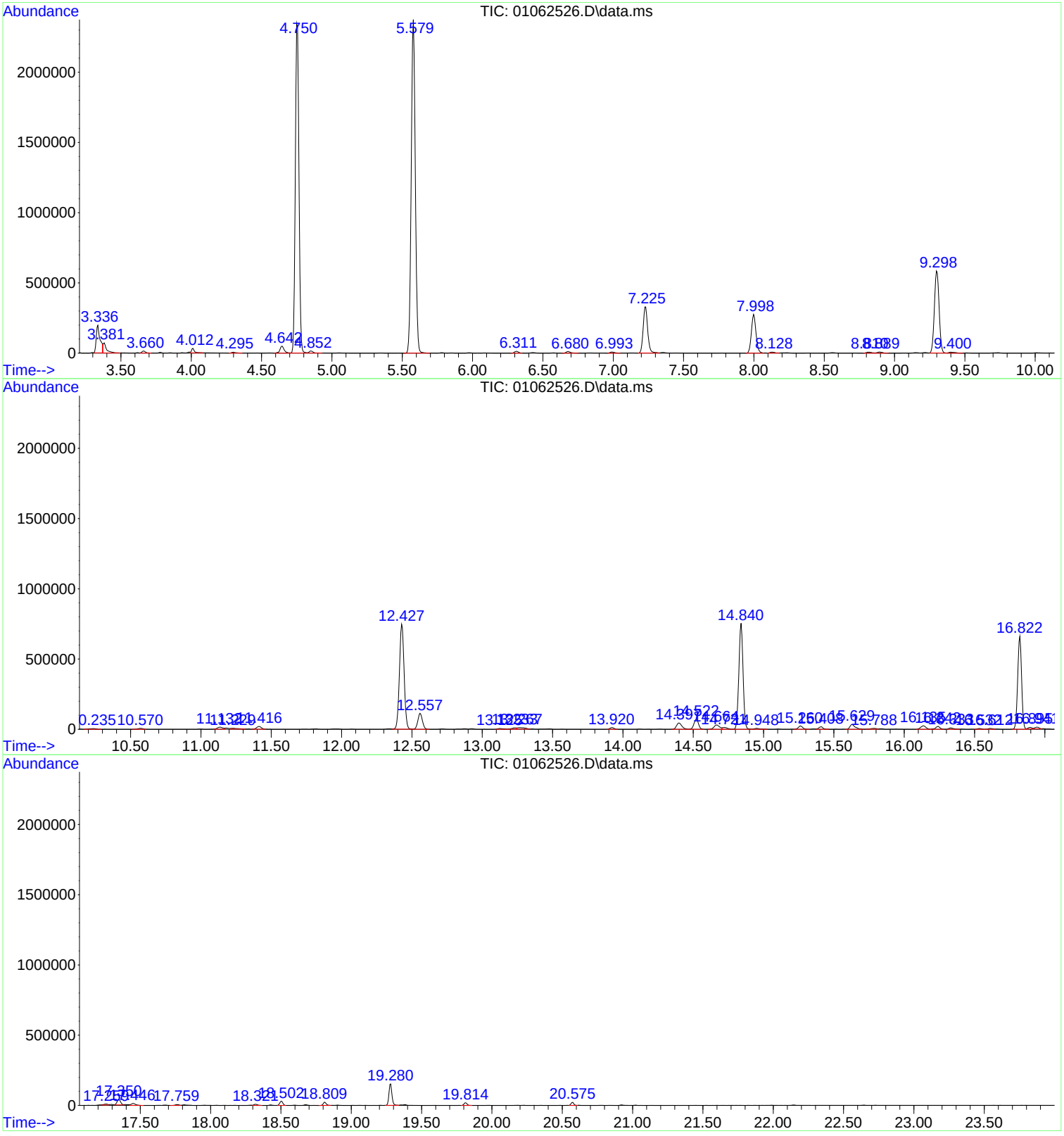
41	16.135	2325	2334	2343	rBV4	24482	62746	1.31%	0.333%
42	16.242	2343	2353	2360	rVB	20220	43517	0.91%	0.231%
43	16.333	2363	2369	2379	rBV2	9369	22854	0.48%	0.121%
44	16.532	2398	2404	2410	rBV3	5769	11438	0.24%	0.061%
45	16.612	2410	2418	2424	rBV5	5936	12547	0.26%	0.067%
46	16.822	2445	2455	2463	rBV	662112	1263706	26.39%	6.699%
47	16.895	2463	2468	2472	rVV3	10847	21856	0.46%	0.116%
48	16.941	2472	2476	2483	rVB3	11492	23176	0.48%	0.123%
49	17.259	2525	2532	2535	rBV6	6388	12383	0.26%	0.066%
50	17.350	2542	2548	2554	rBV	38528	68437	1.43%	0.363%
51	17.446	2561	2565	2579	rVB	14159	32028	0.67%	0.170%
52	17.759	2612	2620	2625	rBV6	6054	12735	0.27%	0.068%
53	18.321	2715	2719	2727	rVB5	7574	14284	0.30%	0.076%
54	18.502	2746	2751	2757	rVB2	30220	46539	0.97%	0.247%
55	18.809	2798	2805	2813	rBV	22994	35695	0.75%	0.189%
56	19.280	2881	2888	2898	rBV	152577	227288	4.75%	1.205%
57	19.814	2976	2982	2990	rVB2	18718	30162	0.63%	0.160%
58	20.575	3111	3116	3122	rBV2	21645	30300	0.63%	0.161%

Sum of corrected areas: 18864827

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : I:\MS09\DATA\2025_01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\06\
Data File : 01062526.D
Acq On : 6 Jan 2025 22:06
Operator : SC
Sample : P2405139-017 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 05:57:41 2025 1/7/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144511	12.500 ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	614226	12.500 ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	108392	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	8.00	65	237633	12.070 ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.56%		
57) Toluene-d8 (SS2)	12.43	98	633112	13.167 ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.36%		
73) Bromofluorobenzene (SS3)	16.82	174	239378	14.426 ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.44%		
Target Compounds					Qvalue
2) Propene	0.00	42	0	N.D. d	
3) Dichlorodifluoromethan...	3.38	85	15860	0.561 ng	99
4) Chloromethane	3.51	50	2576	0.123 ng	89
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	310	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	0.00	54	0	N.D.	
8) Bromomethane	0.00	94	0	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	4.31	45	3543	0.331 ng	93
11) Acetonitrile	4.47	41	977	N.D.	
12) Acrolein	4.55	56	348	N.D.	
13) Acetone	4.64	58	16344	1.680 ng	96
14) Trichlorofluoromethane	4.75	101	2192560	82.761 ng	100
15) 2-Propanol (Isopropanol)	4.86	45	7941m	0.228 ng	
16) Acrylonitrile	5.05	53	53	N.D.	
17) 1,1-Dichloroethene	0.00	96	0	N.D.	
18) 2-Methyl-2-Propanol (t...	5.34	59	549	N.D.	
19) Methylene Chloride	5.36	84	1209	0.088 ng	97
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	
21) Trichlorotrifluoroethane	5.58	151	1174535	98.265 ng	92
22) Carbon Disulfide	5.60	76	16757	0.381 ng #	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.	
24) 1,1-Dichloroethane	0.00	63	0	N.D.	
25) Methyl tert-Butyl Ether	6.29	73	292	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	6.69	72	1792	0.229 ng	93
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.	
29) Diisopropyl Ether	0.00	87	0	N.D. d	
30) Ethyl Acetate	7.30	61	2367	0.491 ng	91
31) n-Hexane	7.31	57	505	N.D.	
32) Chloroform	7.36	83	4118	0.175 ng	100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	0.00	62	0	N.D.	
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.	
39) Isopropyl Acetate	0.00	61	0	N.D.	
40) 1-Butanol	8.84	56	1303	No Calib #	
41) Benzene	8.89	78	3619	0.073 ng	92
42) Carbon Tetrachloride	9.07	117	1907	0.097 ng	94
43) Cyclohexane	0.00	84	0	N.D.	
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	
46) Bromodichloromethane	0.00	83	0	N.D.	
47) Trichloroethene	10.14	130	1235	0.088 ng	97
48) 1,4-Dioxane	0.00	88	0	N.D.	

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

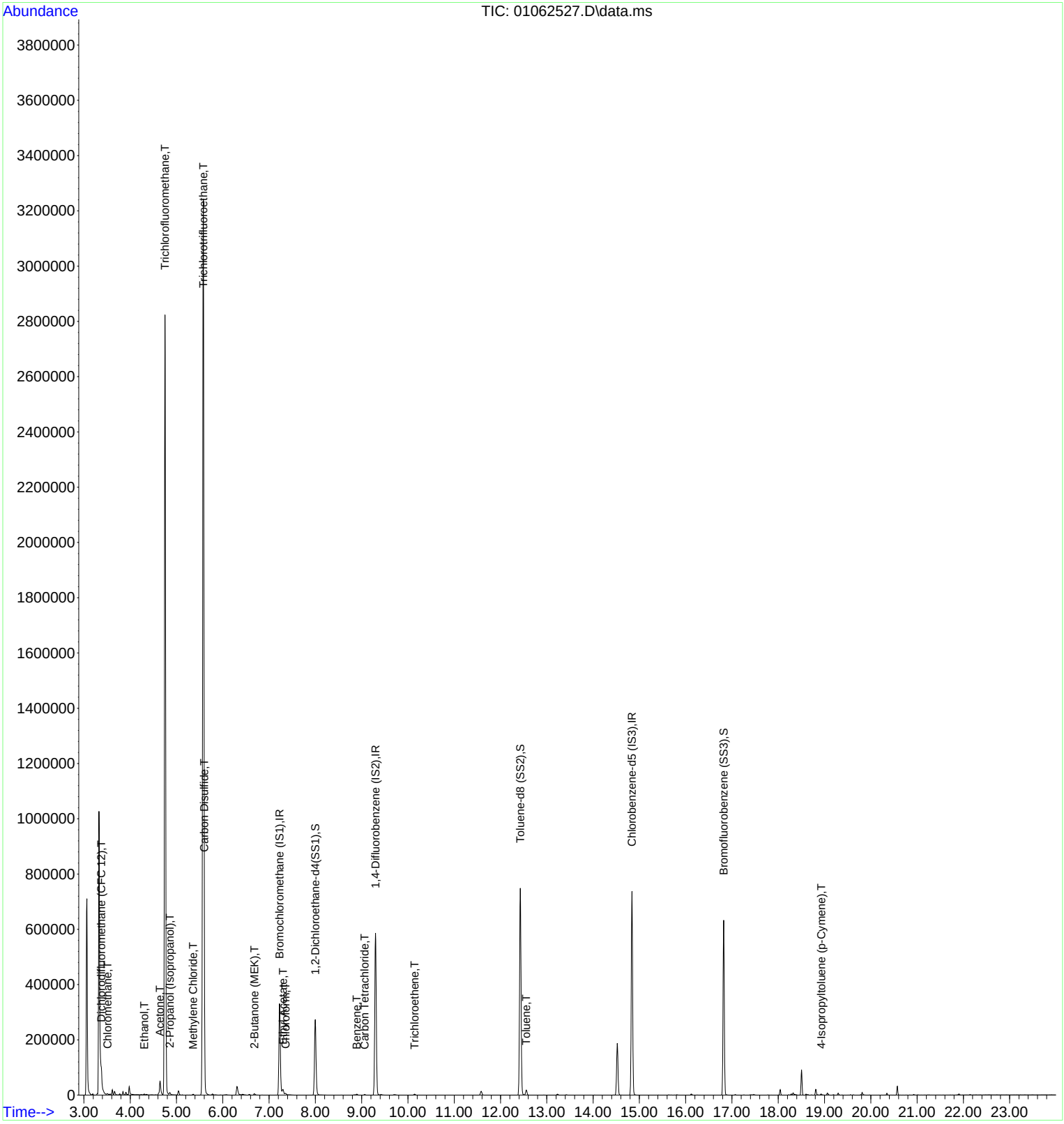
Quant Time: Jan 07 05:57:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	248	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	17685	0.382 ng	99
59) 2-Hexanone	12.94	43	542	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.02	166	261	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.42	91	580	N.D.	
67) m- & p-Xylenes	15.63	91	1330	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	510	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.52	93	137	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.81	105	124	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.51	105	414	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	2419	0.051 ng	94
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.08	68	643	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	18.04	58	474	No Calib #	
94) 1,2,4-Trichlorobenzene	20.84	180	179	N.D.	
95) Naphthalene	20.94	128	124	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	1816	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 05:57:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

MOA 1/7/25

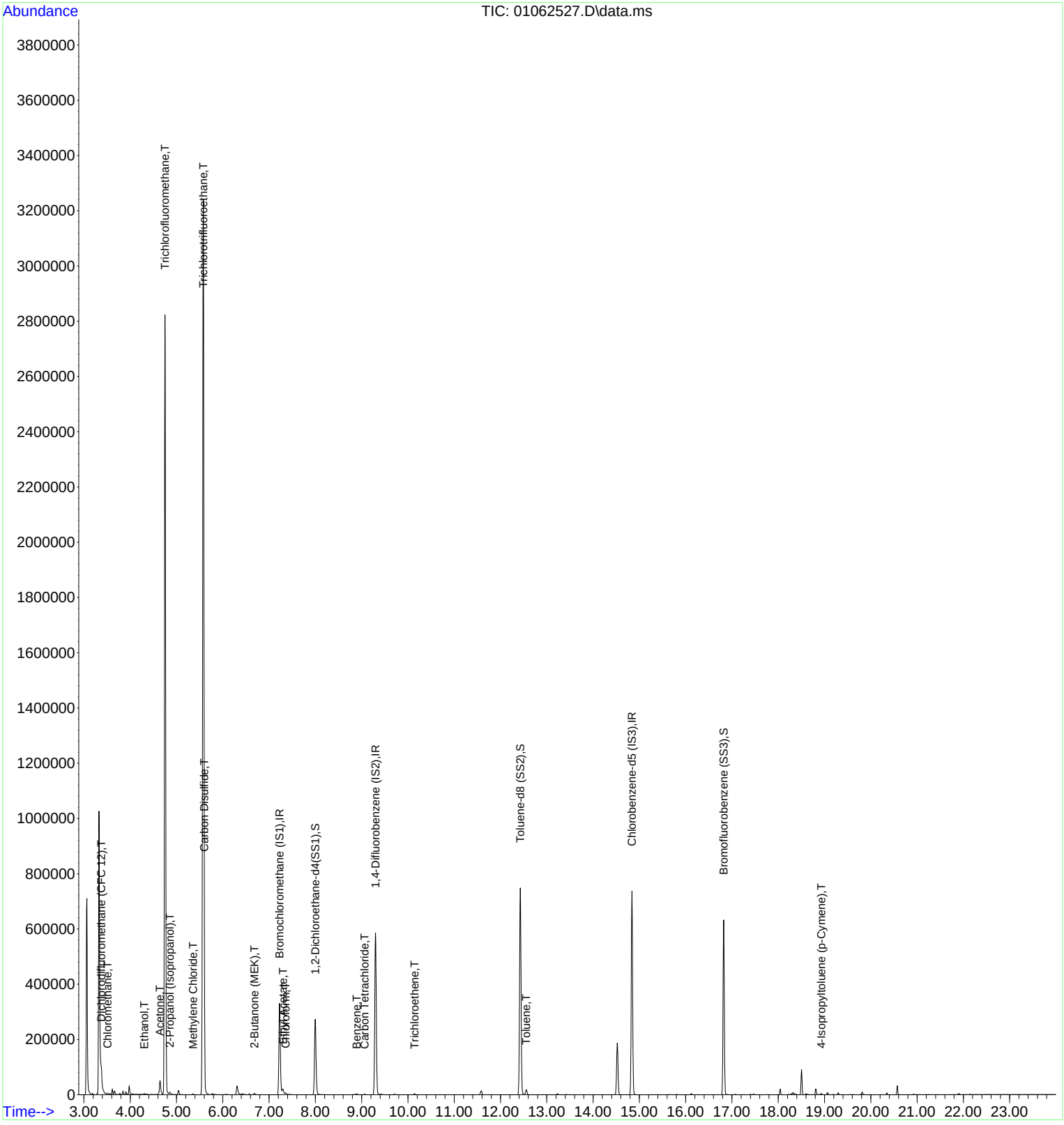
Quant Time: Jan 07 05:57:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

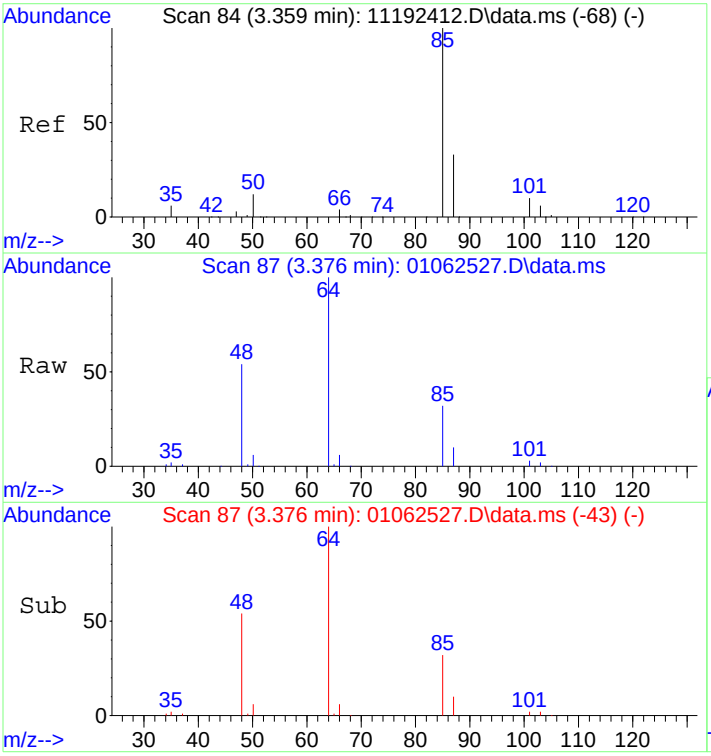
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144511	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	614226	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	108392	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	237633	12.070	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.56%				
57) Toluene-d8 (SS2)	12.43	98	633112	13.167	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.36%				
73) Bromofluorobenzene (SS3)	16.82	174	239378	14.426	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.44%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	15860	0.561	ng		99
4) Chloromethane	3.51	50	2576	0.123	ng		89
10) Ethanol	4.31	45	3543	0.331	ng		93
13) Acetone	4.64	58	16344	1.680	ng		96
14) Trichlorofluoromethane	4.75	101	2192560	82.761	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	7941m	0.228	ng		
19) Methylene Chloride	5.36	84	1209	0.088	ng		97
21) Trichlorotrifluoroethane	5.58	151	1174535	98.265	ng		92
22) Carbon Disulfide	5.60	76	16757	0.381	ng	#	1
27) 2-Butanone (MEK)	6.69	72	1792	0.229	ng		93
30) Ethyl Acetate	7.30	61	2367	0.491	ng		91
32) Chloroform	7.36	83	4118	0.175	ng		100
41) Benzene	8.89	78	3619	0.073	ng		92
42) Carbon Tetrachloride	9.07	117	1907	0.097	ng		94
47) Trichloroethene	10.14	130	1235	0.088	ng		97
58) Toluene	12.56	91	17685	0.382	ng		99
88) 4-Isopropyltoluene (p-...	18.93	119	2419	0.051	ng		94

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 05:57:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

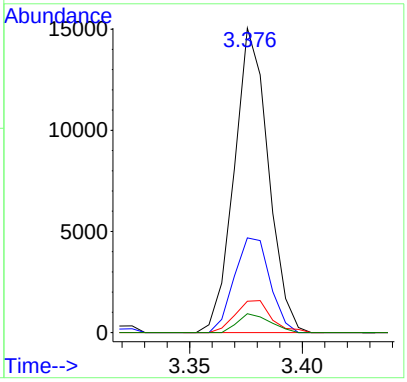


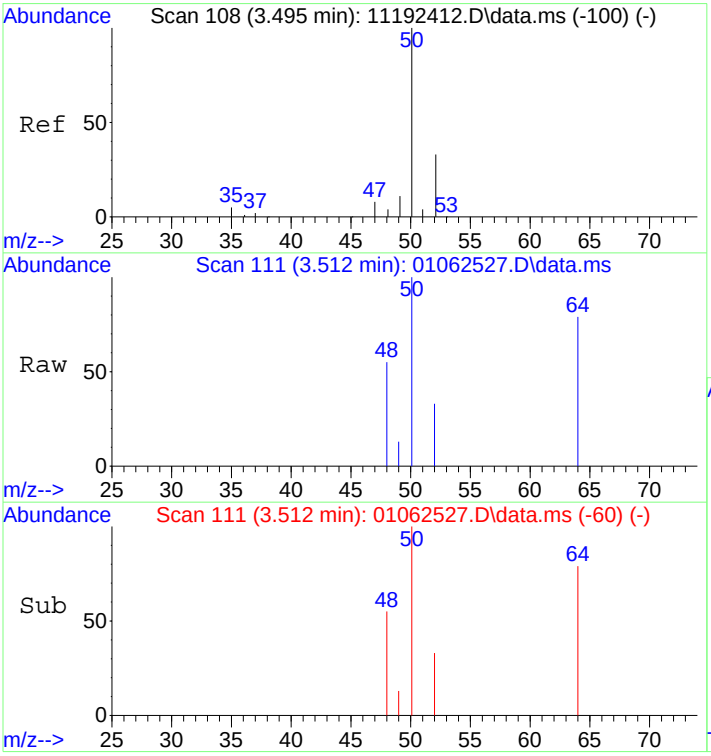


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.56 ng
RT: 3.38 min Scan# 87
Delta R.T. -0.000 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 85 Resp: 15860

Ion	Ratio	Lower	Upper
85	100		
87	32.6	12.6	52.6
101	11.1	0.0	29.6
103	5.9	0.0	26.2

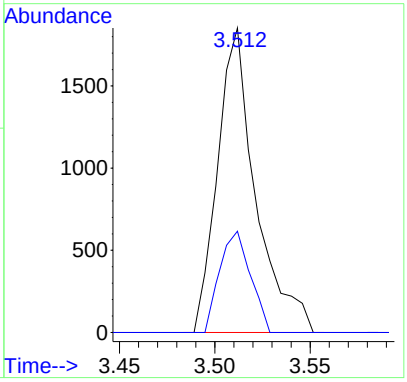


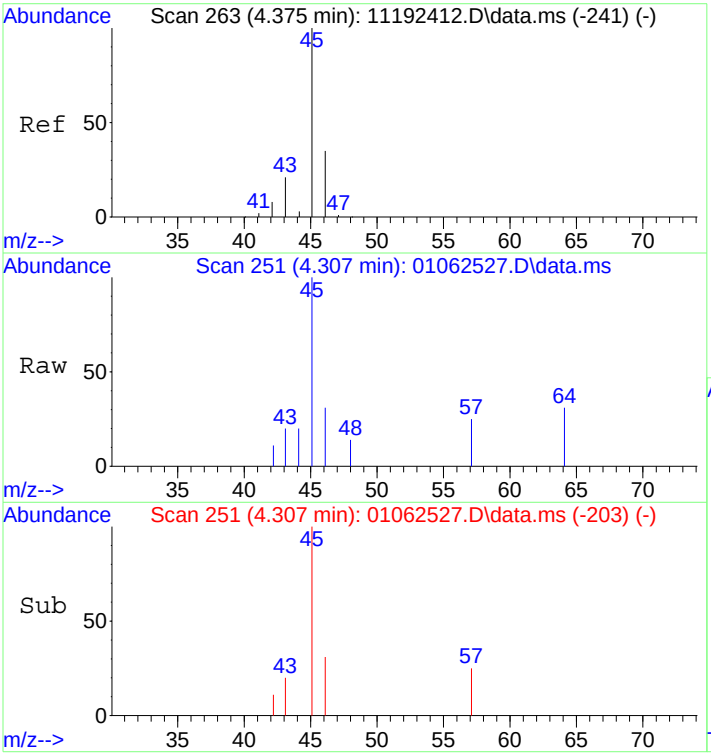


#4
Chloromethane
Concen: 0.12 ng
RT: 3.51 min Scan# 111
Delta R.T. 0.038 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 50 Resp: 2576

Ion	Ratio	Lower	Upper
50	100		
52	26.8	13.0	53.0

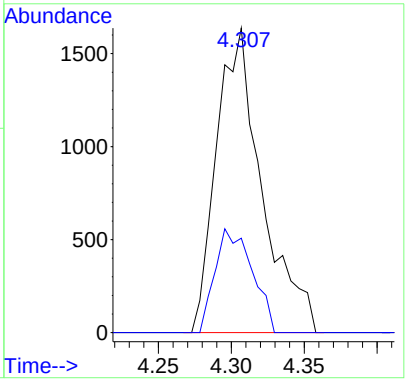


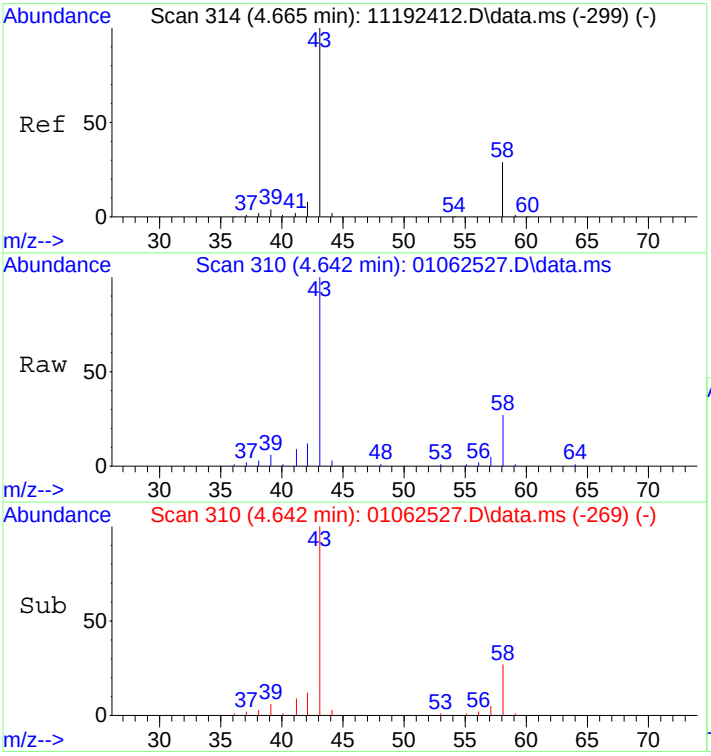


#10
Ethanol
Concen: 0.33 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 45 Resp: 3543

Ion	Ratio	Lower	Upper
45	100		
46	28.0	11.8	51.8

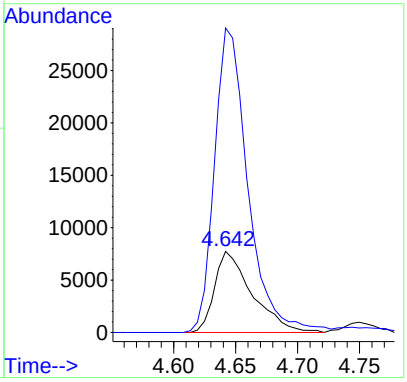


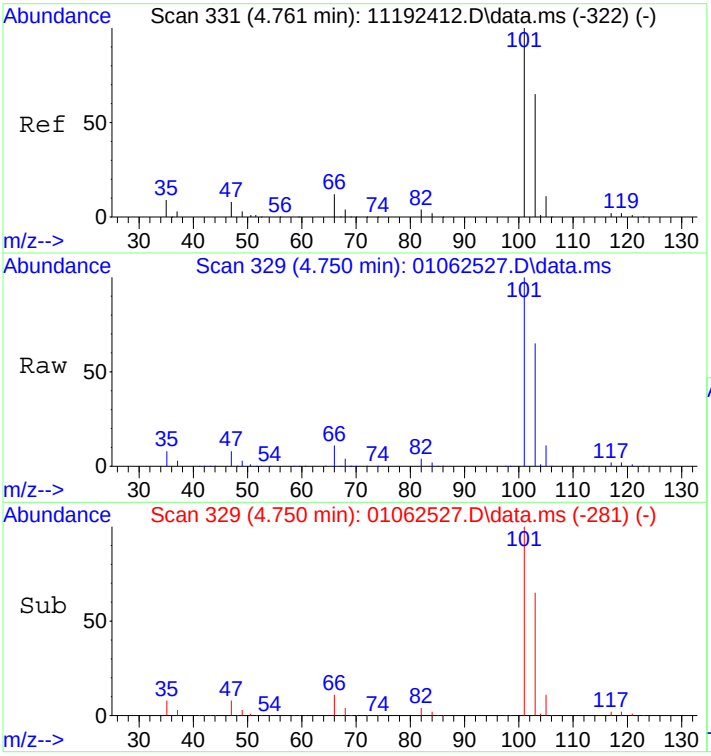


#13
Acetone
Concen: 1.68 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 58 Resp: 16344

Ion	Ratio	Lower	Upper
58	100		
43	334.2	312.5	372.5

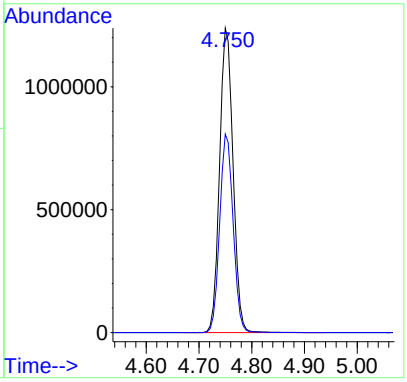


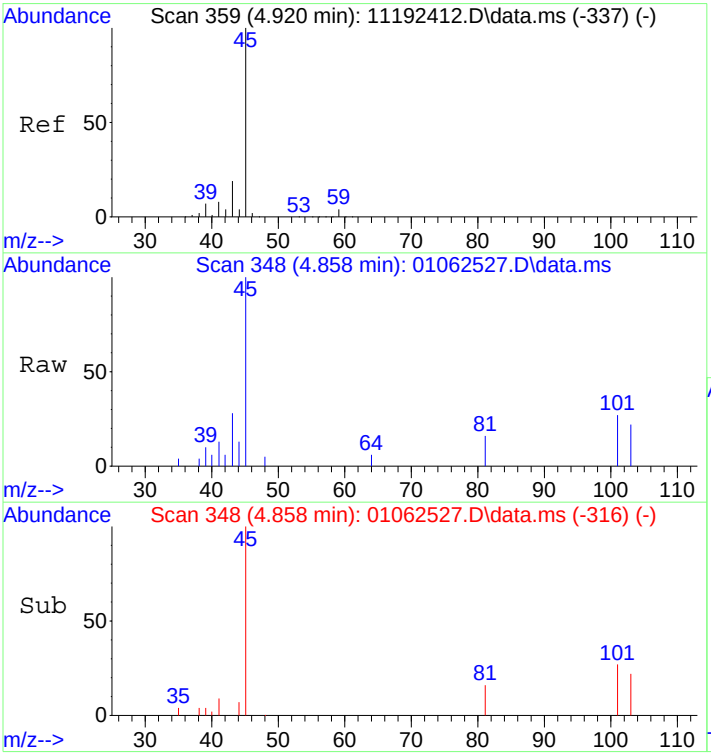


#14
Trichlorofluoromethane
Concen: 82.76 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion:101 Resp: 2192560

Ion	Ratio	Lower	Upper
101	100		
103	65.1	44.8	84.8

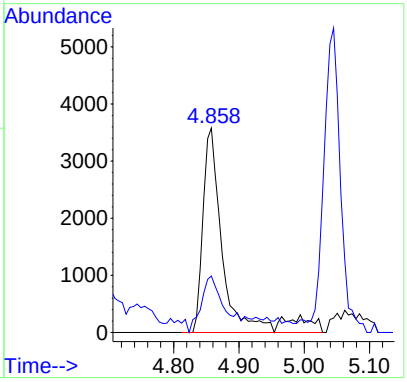


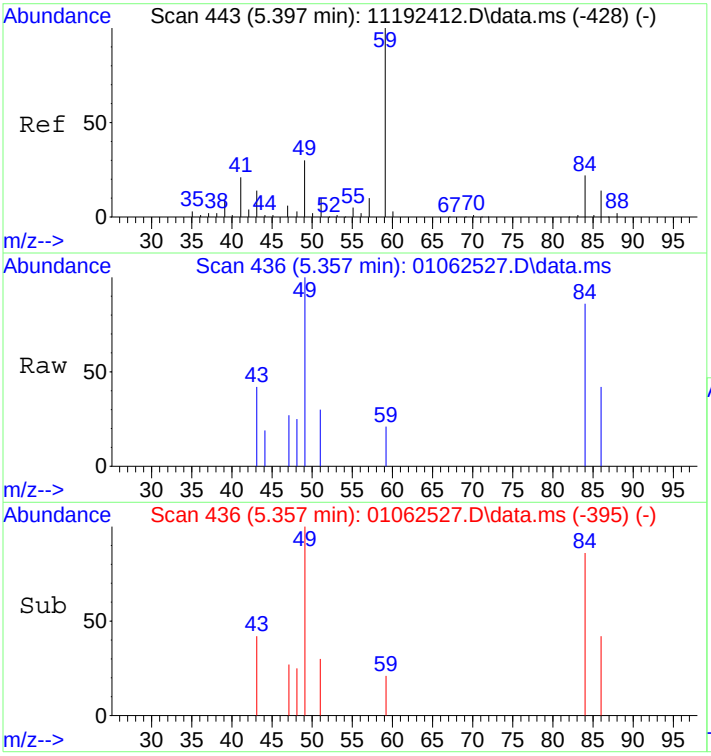


#15
2-Propanol (Isopropanol)
Concen: 0.23 ng m
RT: 4.86 min Scan# 348
Delta R.T. -0.067 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 45 Resp: 7941

Ion	Ratio	Lower	Upper
45	100		
43	46.4	0.2	40.2#

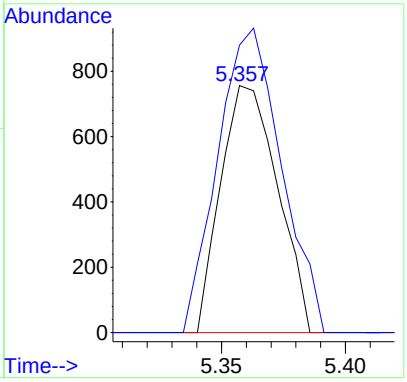


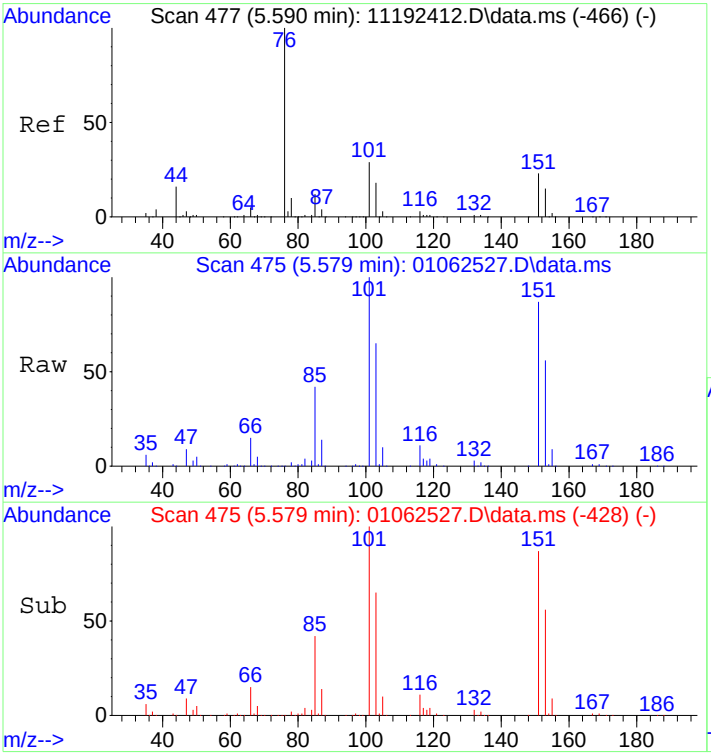


#19
Methylene Chloride
Concen: 0.09 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.017 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 84 Resp: 1209

Ion	Ratio	Lower	Upper
84	100		
49	137.7	116.0	166.0

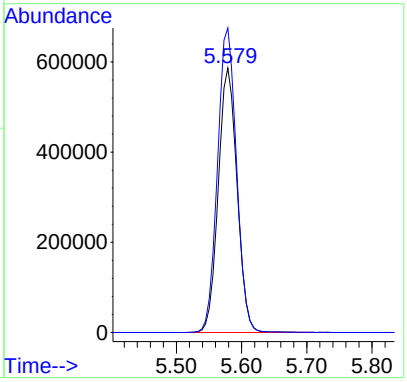


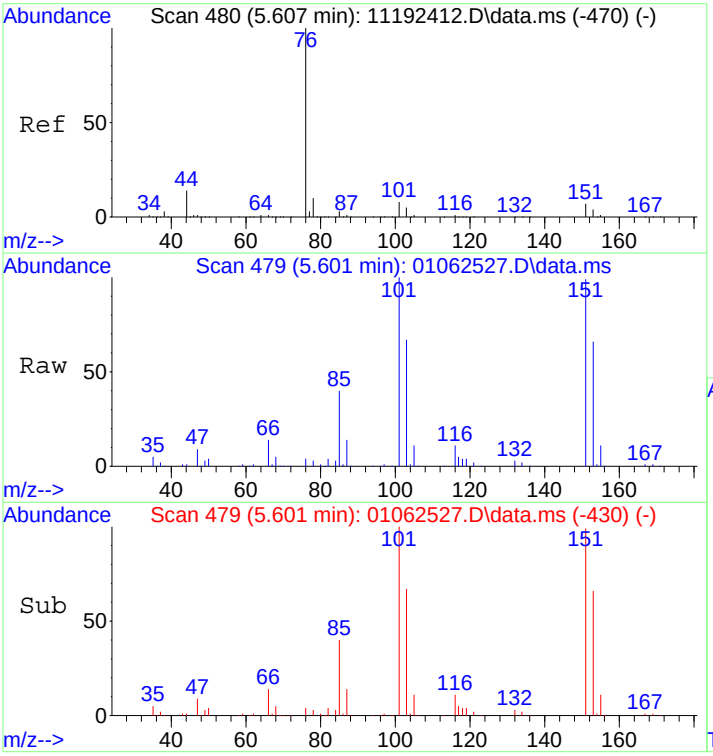


#21
Trichlorotrifluoroethane
Concen: 98.26 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion:151 Resp: 1174535

Ion	Ratio	Lower	Upper
151	100		
101	116.2	105.0	145.0

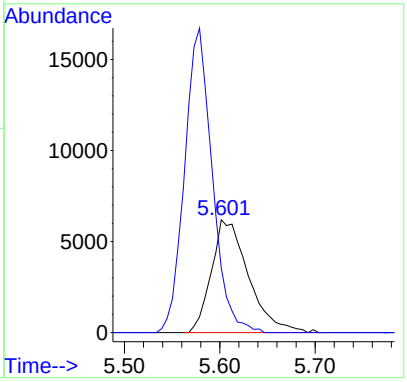


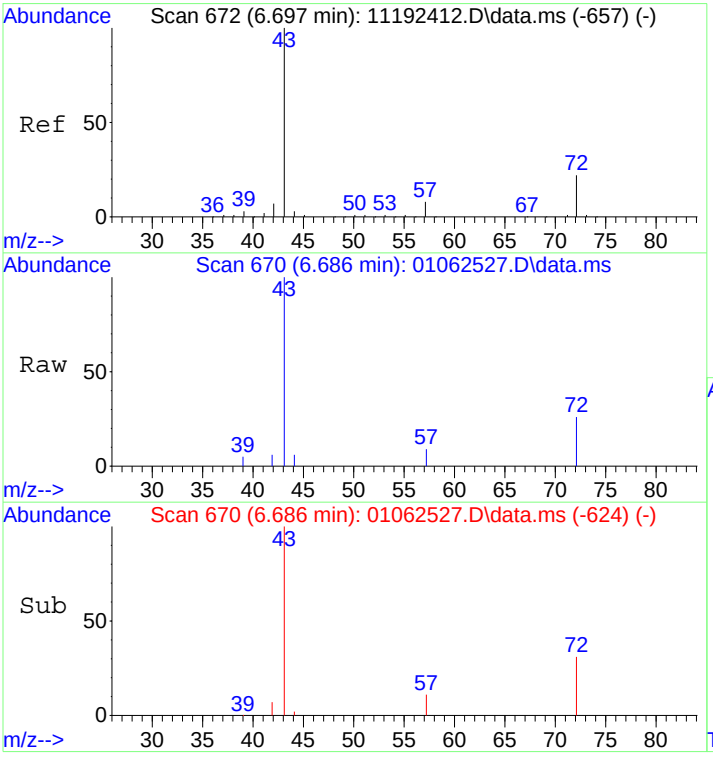


#22
Carbon Disulfide
Concen: 0.38 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 76 Resp: 16757

Ion	Ratio	Lower	Upper
76	100		
78	201.4	0.0	29.6#

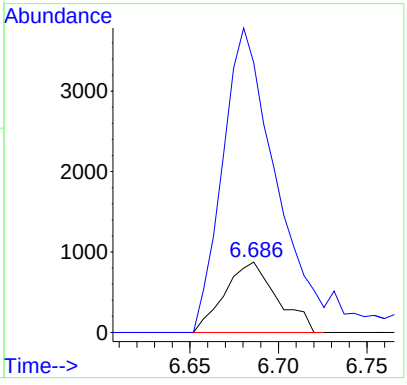


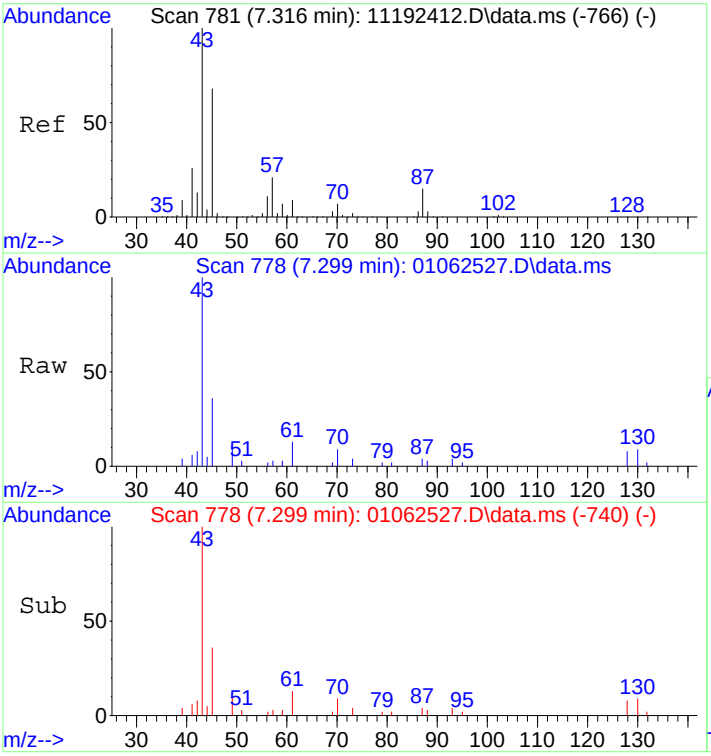


#27
2-Butanone (MEK)
Concen: 0.23 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 72 Resp: 1792

Ion	Ratio	Lower	Upper
72	100		
43	478.2	439.8	479.8

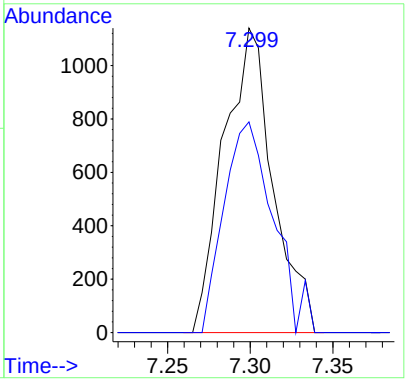


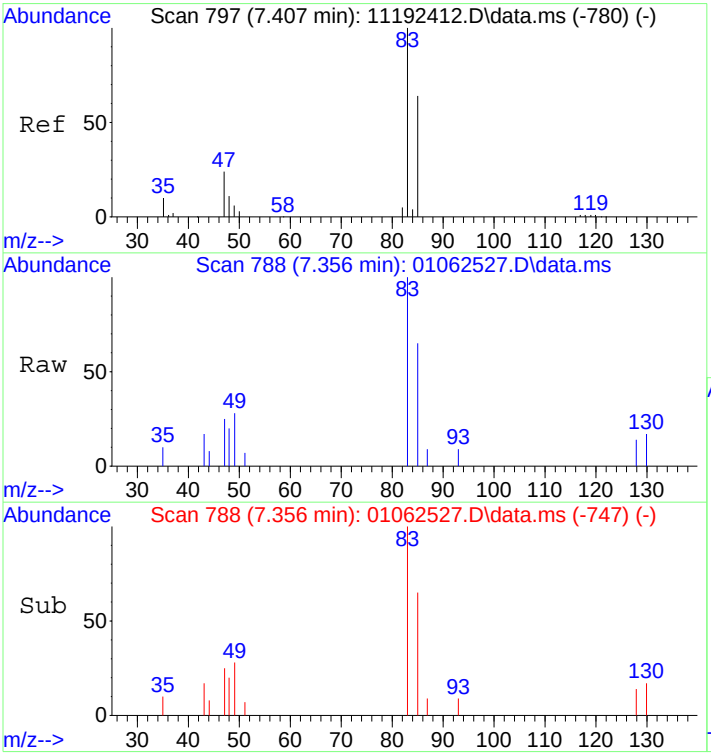


#30
Ethyl Acetate
Concen: 0.49 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.018 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 61 Resp: 2367

Ion	Ratio	Lower	Upper
61	100		
70	69.6	57.3	97.3

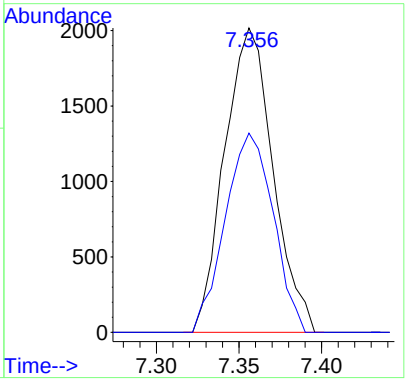


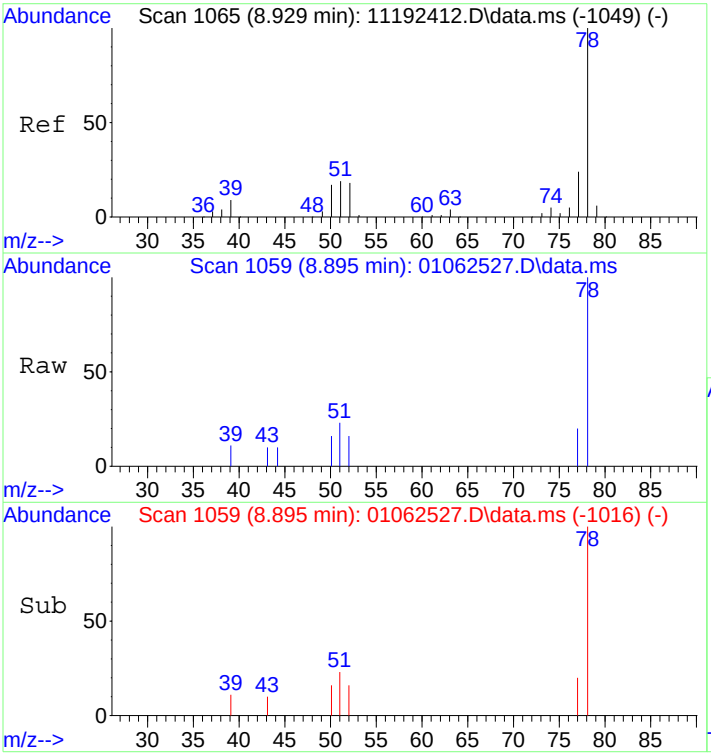


#32
Chloroform
Concen: 0.18 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 83 Resp: 4118

Ion	Ratio	Lower	Upper
83	100		
85	64.8	45.1	85.1

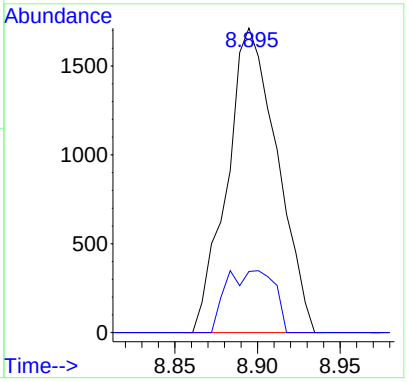


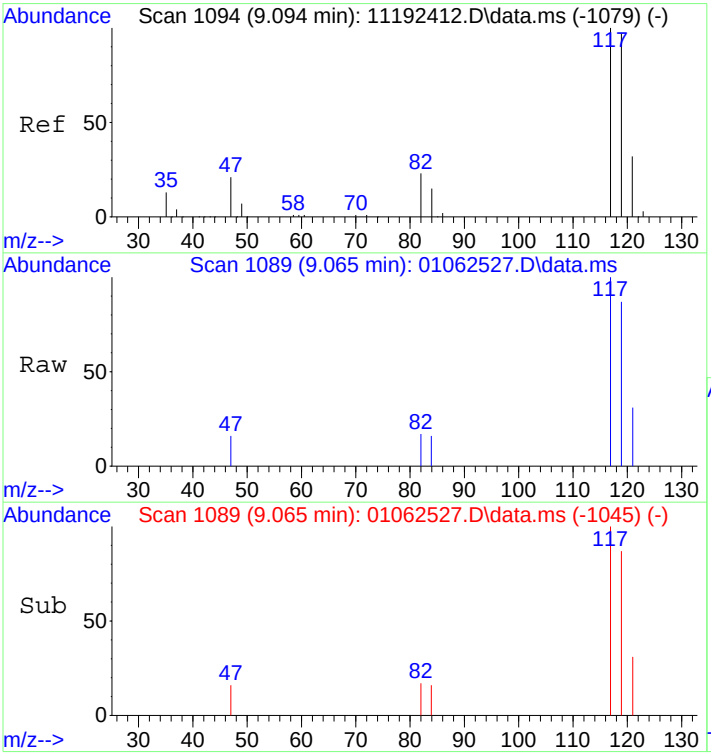


#41
Benzene
Concen: 0.07 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 78 Resp: 3619

Ion	Ratio	Lower	Upper
78	100		
77	19.6	3.7	43.7

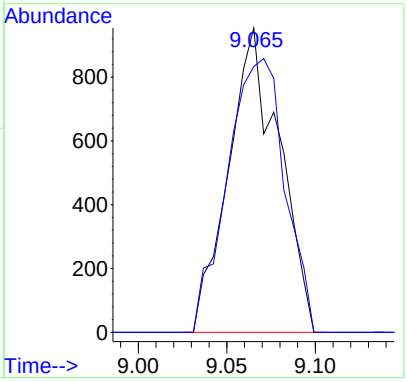


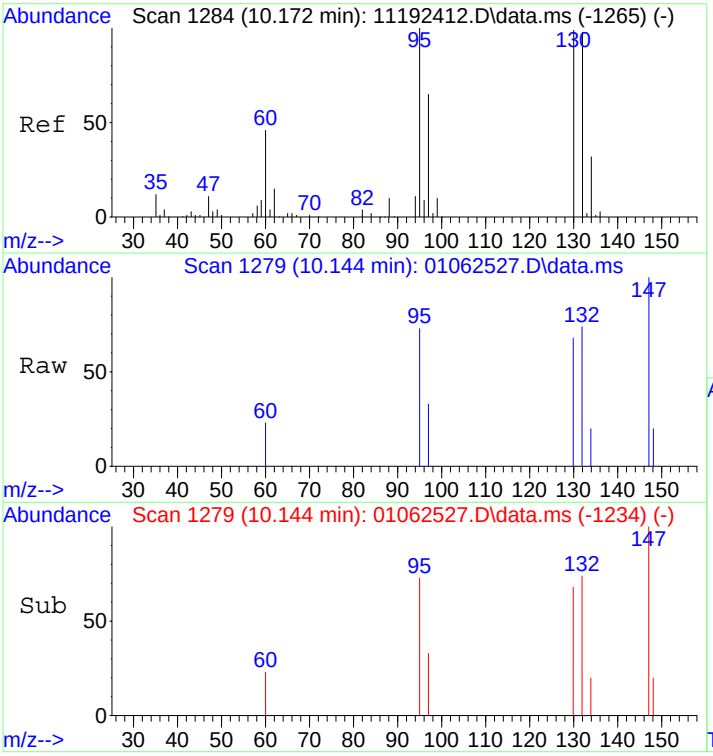


#42
Carbon Tetrachloride
Concen: 0.10 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion:117 Resp: 1907

Ion	Ratio	Lower	Upper
117	100		
119	101.7	75.7	115.7

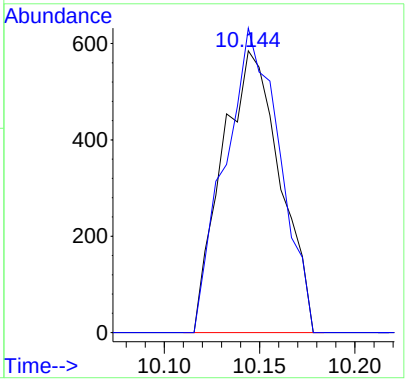


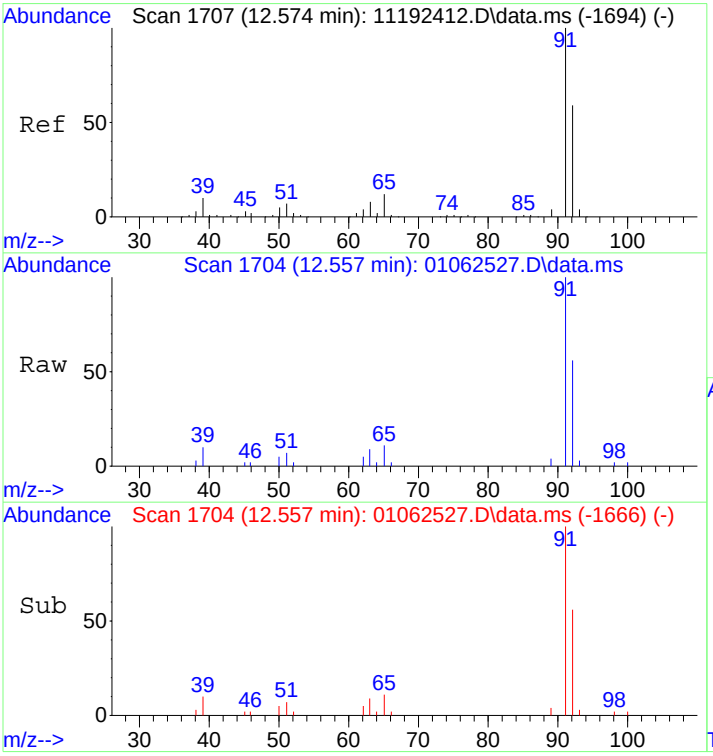


#47
Trichloroethene
Concen: 0.09 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion:130 Resp: 1235

Ion	Ratio	Lower	Upper
130	100		
132	101.9	79.3	119.3

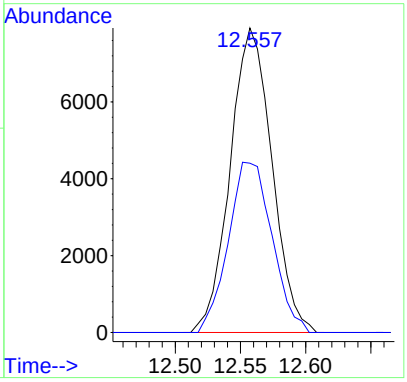


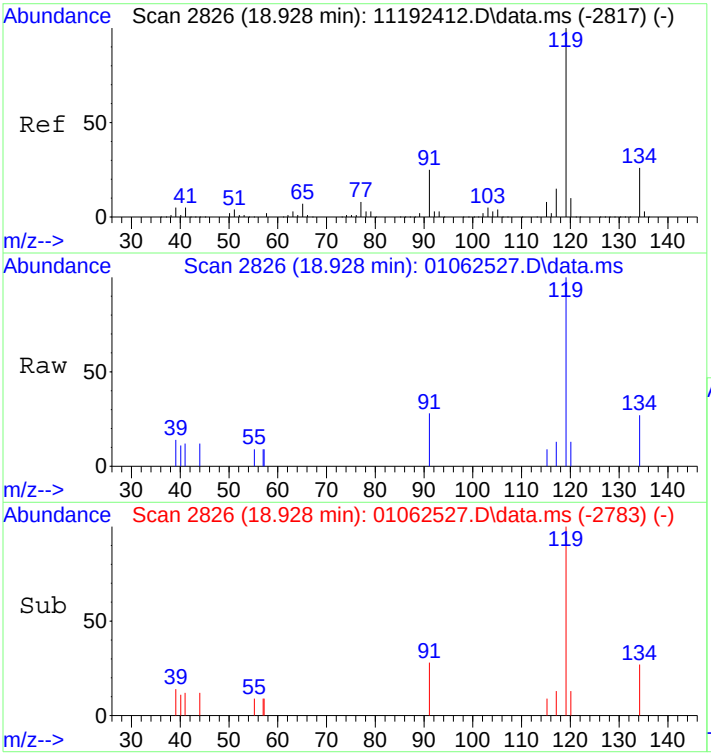


#58
Toluene
Concen: 0.38 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion: 91 Resp: 17685

Ion	Ratio	Lower	Upper
91	100		
92	58.4	39.2	79.2

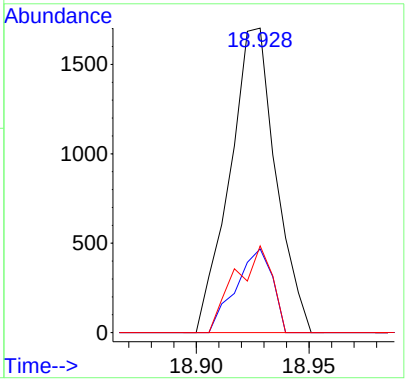




#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.05 ng
RT: 18.93 min Scan# 2826
Delta R.T. -0.006 min
Lab File: 01062527.D
Acq: 6 Jan 2025 22:38

Tgt Ion:119 Resp: 2419

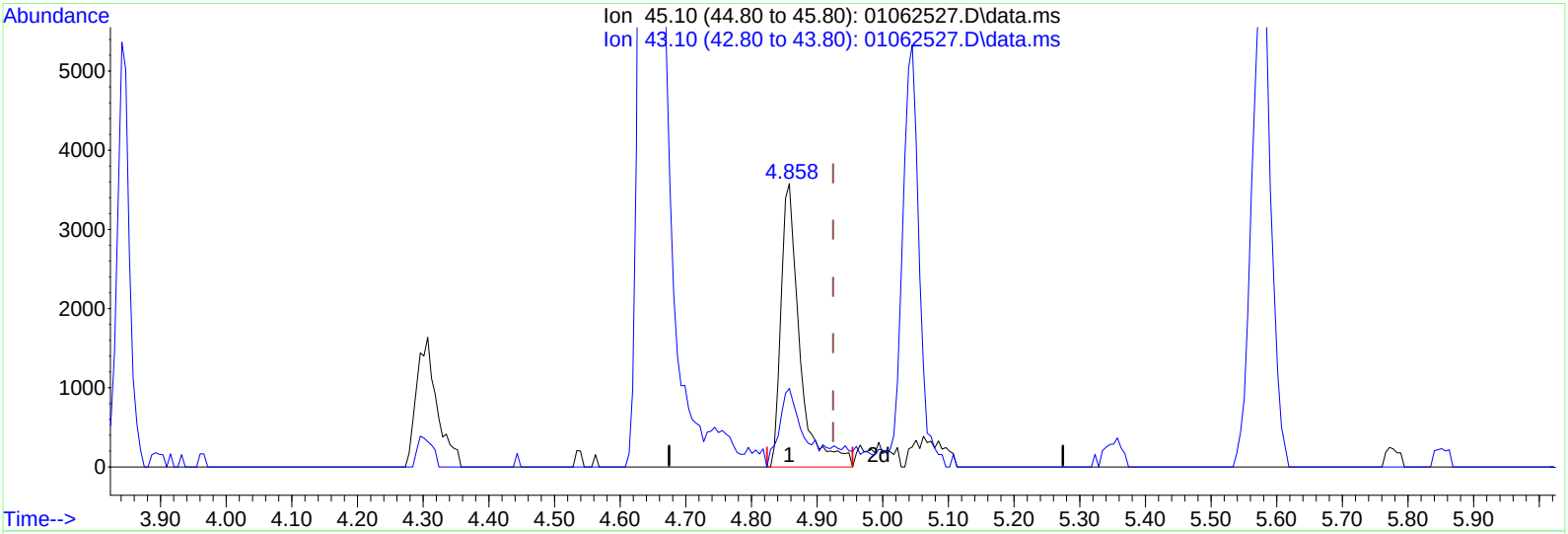
Ion	Ratio	Lower	Upper
119	100		
134	21.9	5.8	45.8
91	23.0	4.6	44.6

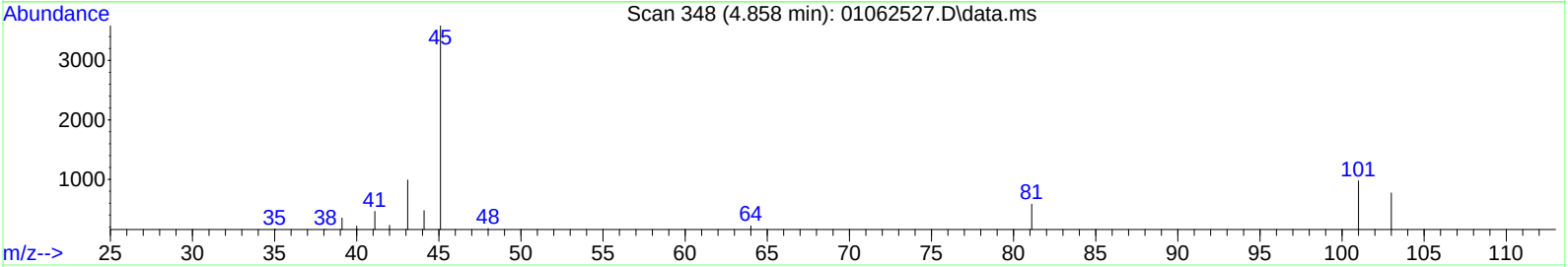


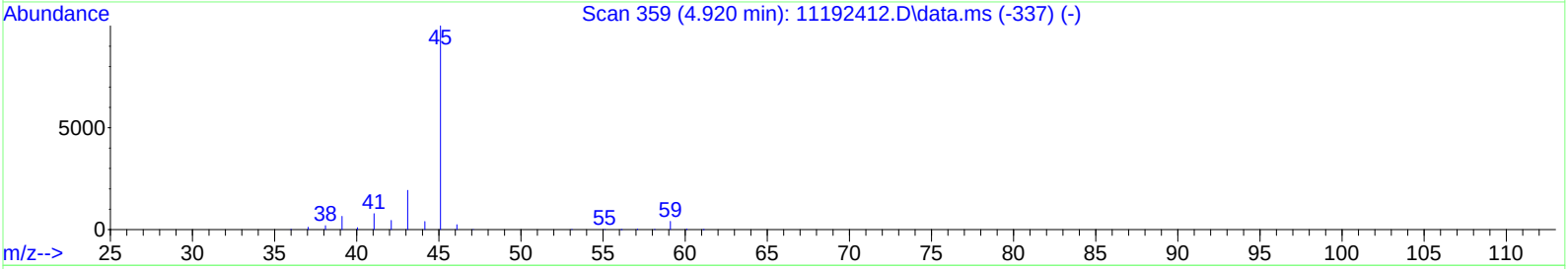
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 05:41:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062527.D\data.ms

(15) 2-Propanol (Isopropanol) (T)

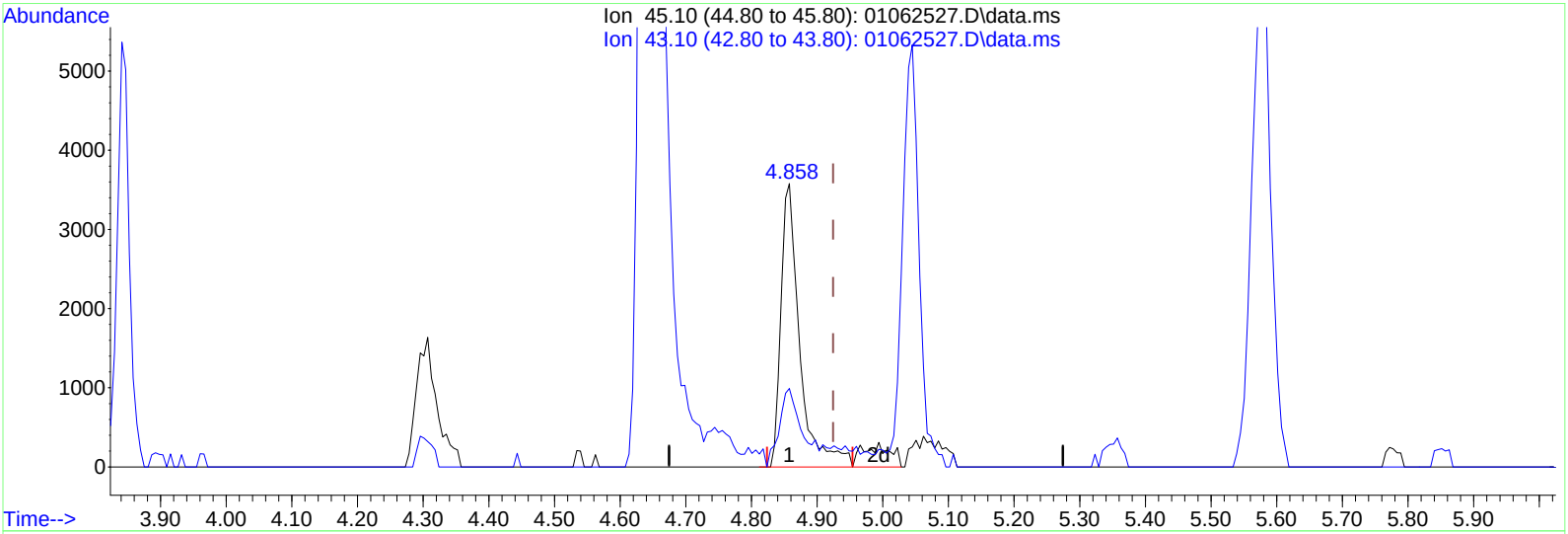
4.858min (-0.067) 0.20ng

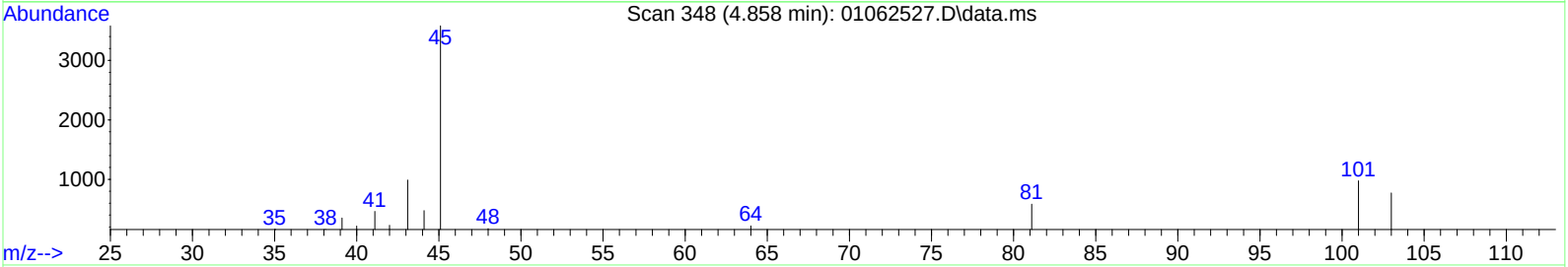
response 7081

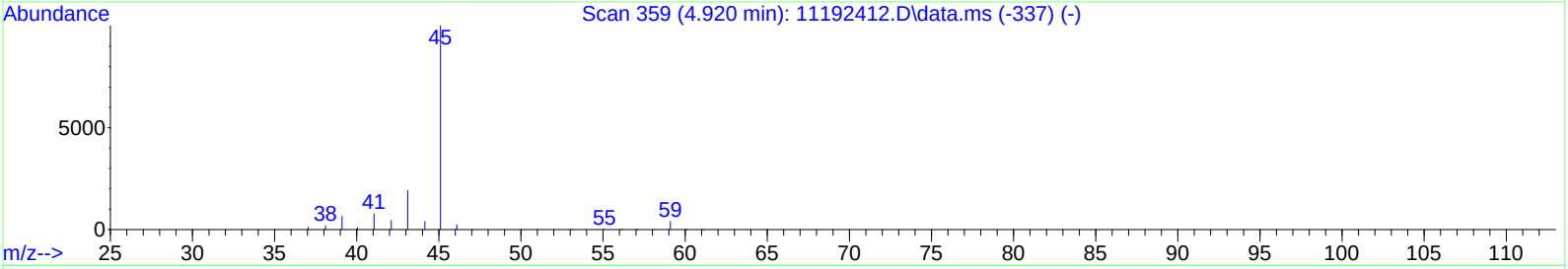
Ion	Exp%	Act%
45.10	100	100
43.10	20.20	52.03#
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 05:41:19 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062527.D\data.ms

(15) 2-Propanol (Isopropanol) (T)

4.858min (-0.067) 0.23ng m

response 7941

Ion	Exp%	Act%
45.10	100	100
43.10	20.20	46.39#
0.00	0.00	0.00
0.00	0.00	0.00

IC-

1/7/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

1/7/25

Quant Time: Jan 07 06:31:48 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	146380	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	616235	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	108392	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.16	85	188	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	d	
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	3.28	67	650	0.159	ng	96
6) 1-Chloro-1,1-Difluoroe...	3.49	65	536	N.D.		
7) Dichlorofluoromethane ...	4.23	67	1066	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.61	83	53	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.36	43	671	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	9.06	84	105	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
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Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 06:31:48 2025
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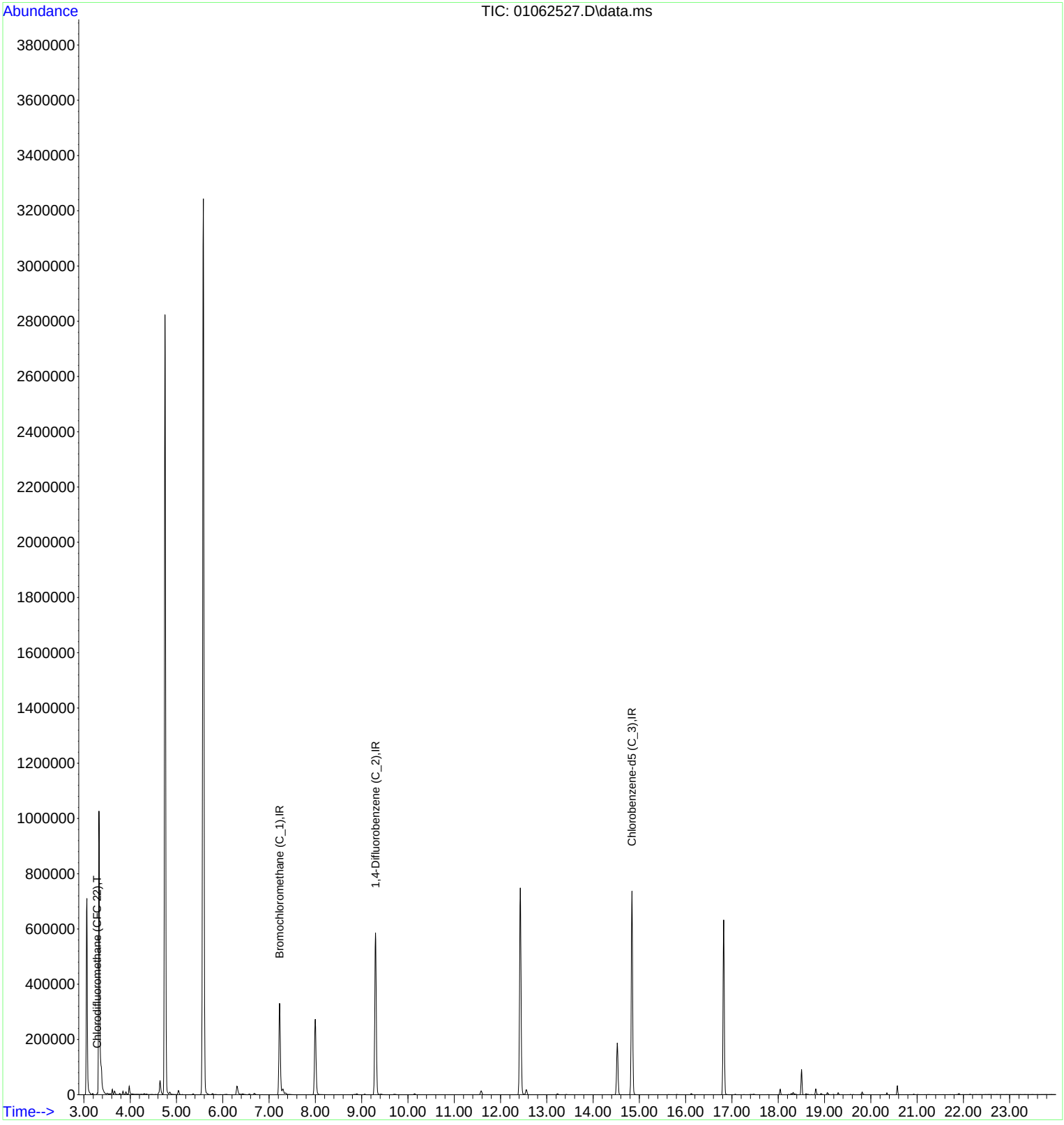
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072508.D
Acq On : 7 Jan 2025 7:16
Operator : SC
Sample : P2405139-018dil (40mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

MOA 1/7/25

Quant Time: Jan 07 09:17:22 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	142153	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	599497	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	105278	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	232735	12.017	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.16%			
57) Toluene-d8 (SS2)	12.43	98	618906	13.252	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%			
73) Bromofluorobenzene (SS3)	16.82	174	231748	14.379	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.04%			
Target Compounds						Qvalue
2) Propene	3.35	42	142	N.D.		
3) Dichlorodifluoromethan...	3.40	85	1232	N.D.		
4) Chloromethane	3.55	50	315	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.68	58	1563	0.163	ng	90
14) Trichlorofluoromethane	4.76	101	181085	6.949	ng	100
15) 2-Propanol (Isopropanol)	4.93	45	397	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.59	151	95349	8.109	ng	92
22) Carbon Disulfide	5.63	76	1543	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.36	83	104	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.89	78	957	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

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Acq On : 7 Jan 2025 7:16
Operator : SC
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Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 09:17:22 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.55	91	2039	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.57	91	152	N.D.		
85) 1,3-Dichlorobenzene	18.66	146	255	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	255	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	162	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.04	146	147	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	644	N.D.		
95) Naphthalene	20.95	128	1066	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

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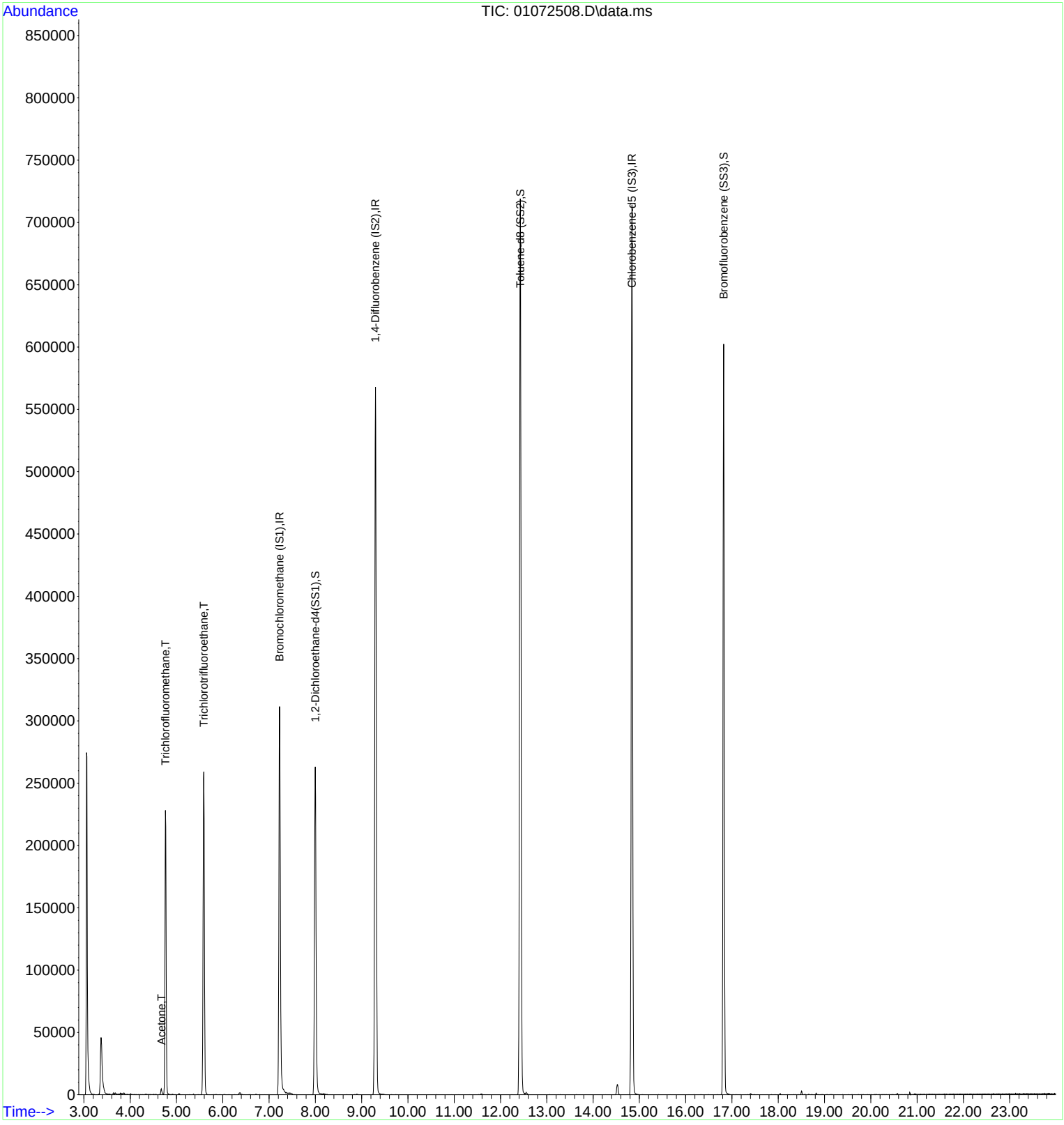
Data File : 01072508.D
Acq On : 7 Jan 2025 7:16
Operator : SC
Sample : P2405139-018dil (40mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 09:17:22 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072508.D
Acq On : 7 Jan 2025 7:16
Operator : SC
Sample : P2405139-018dil (40mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 09:17:11 2025
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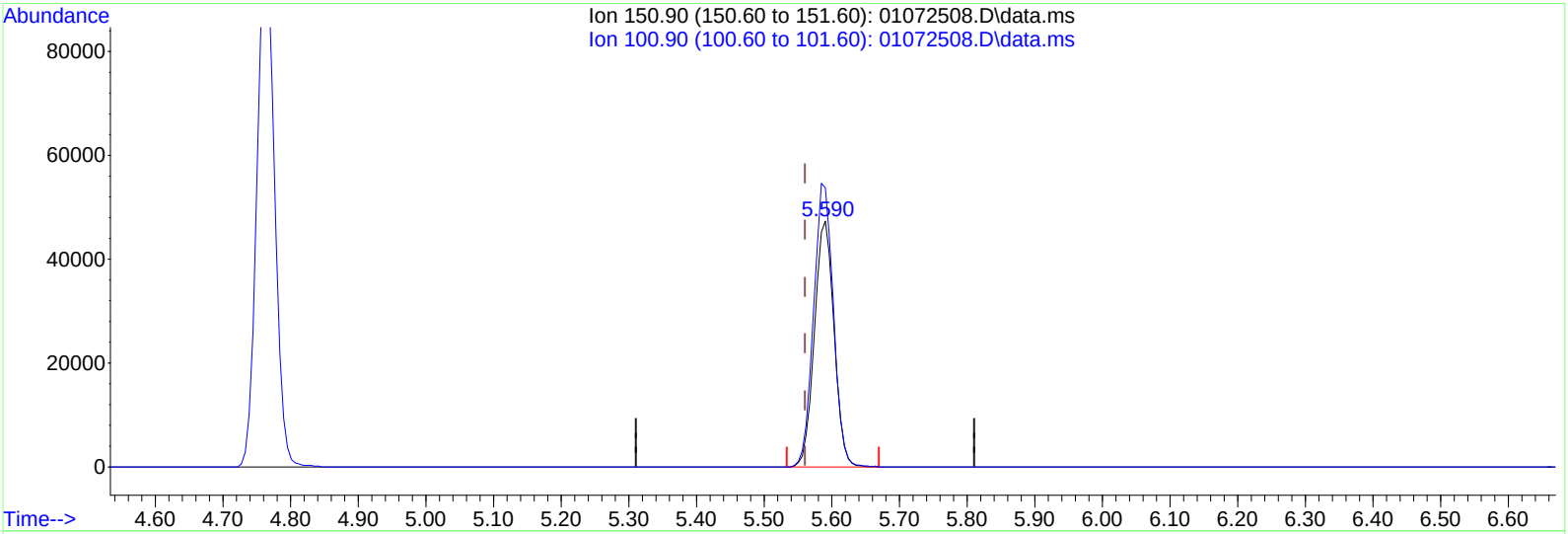
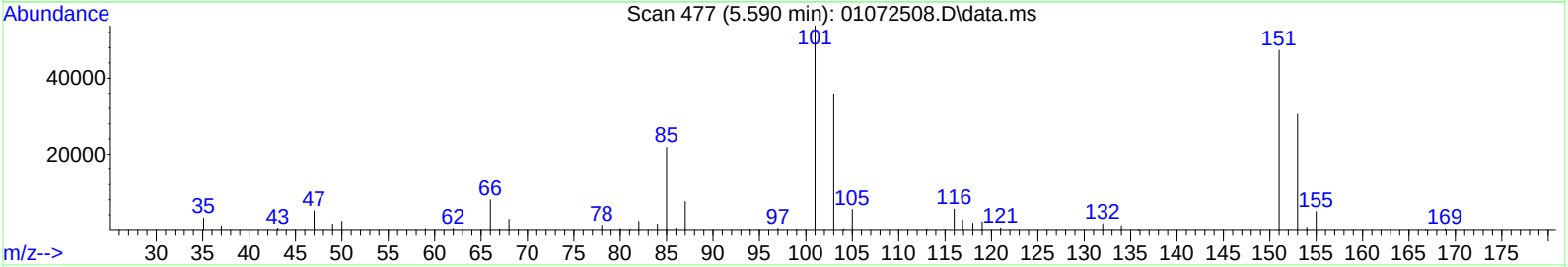
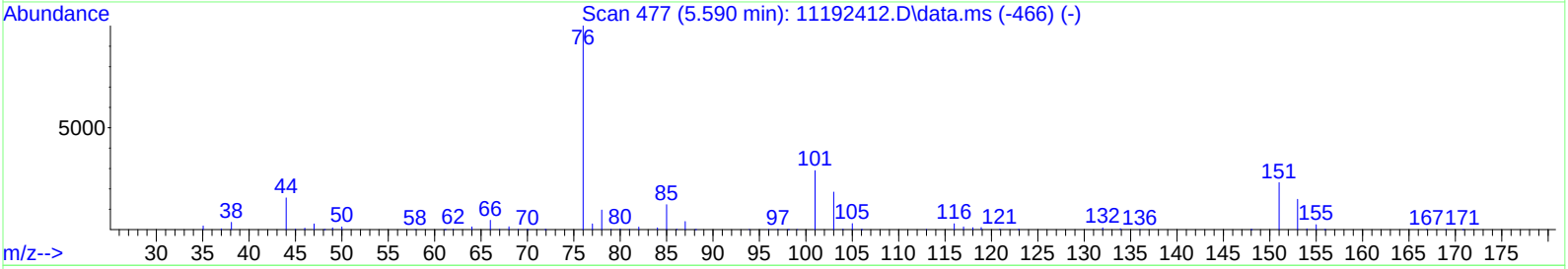
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072508.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.590min (+0.030) 8.11ng

response 95349

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.08
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062527.D
Acq On : 6 Jan 2025 22:38
Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01062527.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.324	73	78	106	rVB	1023928	1817053	27.67%	8.419%
2	3.614	125	129	133	rVB	18122	20634	0.31%	0.096%
3	3.659	133	137	149	rVB	12818	21794	0.33%	0.101%
4	3.841	164	169	176	rBV	12182	15303	0.23%	0.071%
5	3.904	177	180	189	rBV	8944	12400	0.19%	0.057%
6	3.977	189	193	204	rBV2	28380	40685	0.62%	0.189%
7	4.642	300	310	321	rBV	50088	104980	1.60%	0.486%
8	4.750	321	329	343	rVV	2822947	4958472	75.52%	22.974%
9	4.858	343	348	356	rVB2	8129	15321	0.23%	0.071%
10	5.039	374	380	387	rBV	14965	25163	0.38%	0.117%
11	5.579	464	475	501	rBV	3244087	6566014	100.00%	30.422%
12	6.306	596	603	617	rBV	31126	76595	1.17%	0.355%
13	6.680	663	669	682	rBV2	5359	12111	0.18%	0.056%
14	7.225	756	765	774	rBV	331260	721153	10.98%	3.341%
15	7.299	774	778	784	rVV2	20412	45375	0.69%	0.210%
16	7.356	784	788	795	rVB3	5562	11641	0.18%	0.054%
17	7.998	891	901	917	rBV	273359	620872	9.46%	2.877%
18	9.298	1118	1130	1144	rBV	586231	1337463	20.37%	6.197%
19	11.581	1525	1532	1542	rBB2	13605	31540	0.48%	0.146%
20	12.427	1670	1681	1696	rBV	749127	1679815	25.58%	7.783%
21	12.557	1696	1704	1713	rVB2	18065	39962	0.61%	0.185%
22	14.522	2040	2050	2060	rBV	187128	398712	6.07%	1.847%
23	14.840	2096	2106	2122	rBV	737374	1519972	23.15%	7.043%
24	16.822	2446	2455	2475	rBB	633198	1198701	18.26%	5.554%
25	18.042	2664	2670	2677	rVB2	19839	31235	0.48%	0.145%
26	18.502	2745	2751	2757	rBB	91211	139722	2.13%	0.647%
27	18.809	2800	2805	2815	rBV	21079	35085	0.53%	0.163%
28	19.059	2844	2849	2857	rBV2	7315	13162	0.20%	0.061%
29	19.297	2885	2891	2899	rBB2	7217	12146	0.18%	0.056%
30	19.814	2978	2982	2992	rVB3	9483	13711	0.21%	0.064%
31	20.575	3110	3116	3124	rVB2	32445	46032	0.70%	0.213%

Sum of corrected areas: 21582824

LSC Report - Integrated Chromatogram

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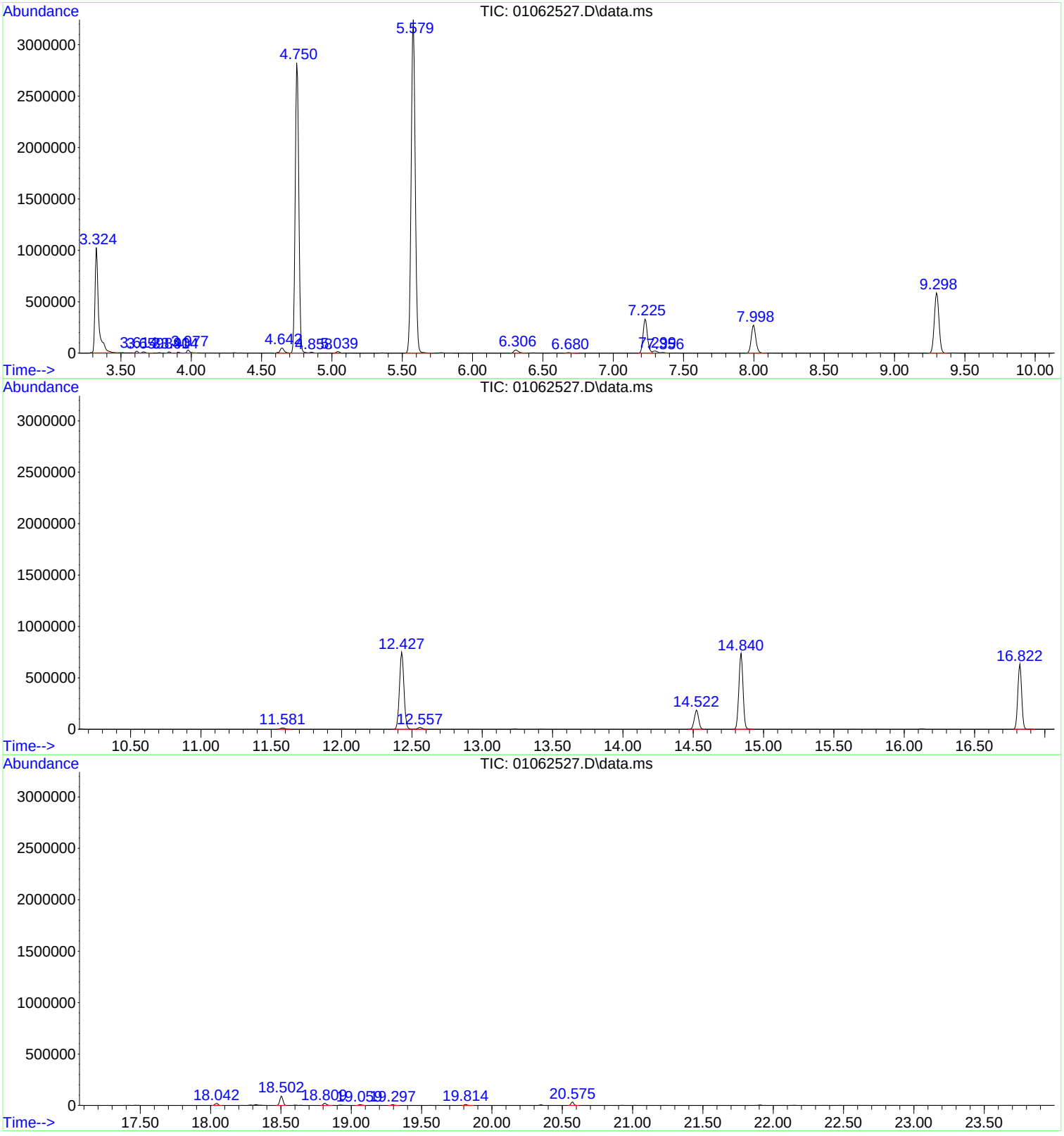
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



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Operator : SC
Sample : P2405139-018 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****

Peak Number 1 Sulfur dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
3.324	31.50 ng	1817050	Bromochloromethane (IS1)	7.225

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Sulfur dioxide	64	O2S	007446-09-5	83
2	Sulfur dioxide	64	O2S	007446-09-5	83
3	Aminomethanesulfonic acid	111	CH5NO3S	013881-91-9	74
4	L-Alanine, 3-sulfo-	169	C3H7NO5S	000498-40-8	9
5	Aminomethanesulfonic acid	111	CH5NO3S	013881-91-9	9

****

Peak Number 2 Cyclotrisiloxane, hexamethyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.522	3.28 ng	398712	Chlorobenzene-d5 (IS3)	14.840

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	91
2	Arsenous acid, tris(trimethylsil...	342	C9H27AsO3Si3	055429-29-3	78
3	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	72
4	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	49
5	Cyclohexane-1,3-dione, 2-allylam...	207	C12H17NO2	104926-37-6	43

Tentatively Identified Compound (LSC) summary

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Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Sulfur dioxide	3.324	31.5	ng	1817050	1	7.225	721153	12.5
Cyclotrisiloxan...	14.522	3.3	ng	398712	3	14.840	1519970	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 09:20:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/7/25

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139156	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	592245	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	104933	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	231864	12.230 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.84%			
57) Toluene-d8 (SS2)	12.43	98	610412	13.113 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.88%			
73) Bromofluorobenzene (SS3)	16.82	174	230559	14.352 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.80%			
Target Compounds						Qvalue
2) Propene	3.33	42	358	N.D.		
3) Dichlorodifluoromethan...	3.39	85	2240	0.082 ng	#	96
4) Chloromethane	3.43	50	135	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.66	58	2636	0.281 ng		88
14) Trichlorofluoromethane	4.75	101	2120964	83.140 ng		100
15) 2-Propanol (Isopropanol)	4.89	45	204	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.58	151	1151435	100.039 ng		92
22) Carbon Disulfide	5.62	76	5166	0.122 ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.70	72	200	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.35	83	3592	0.159 ng		98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.89	78	994	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.06	83	130	N.D.		
47) Trichloroethene	10.16	130	1087	0.080 ng		89
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

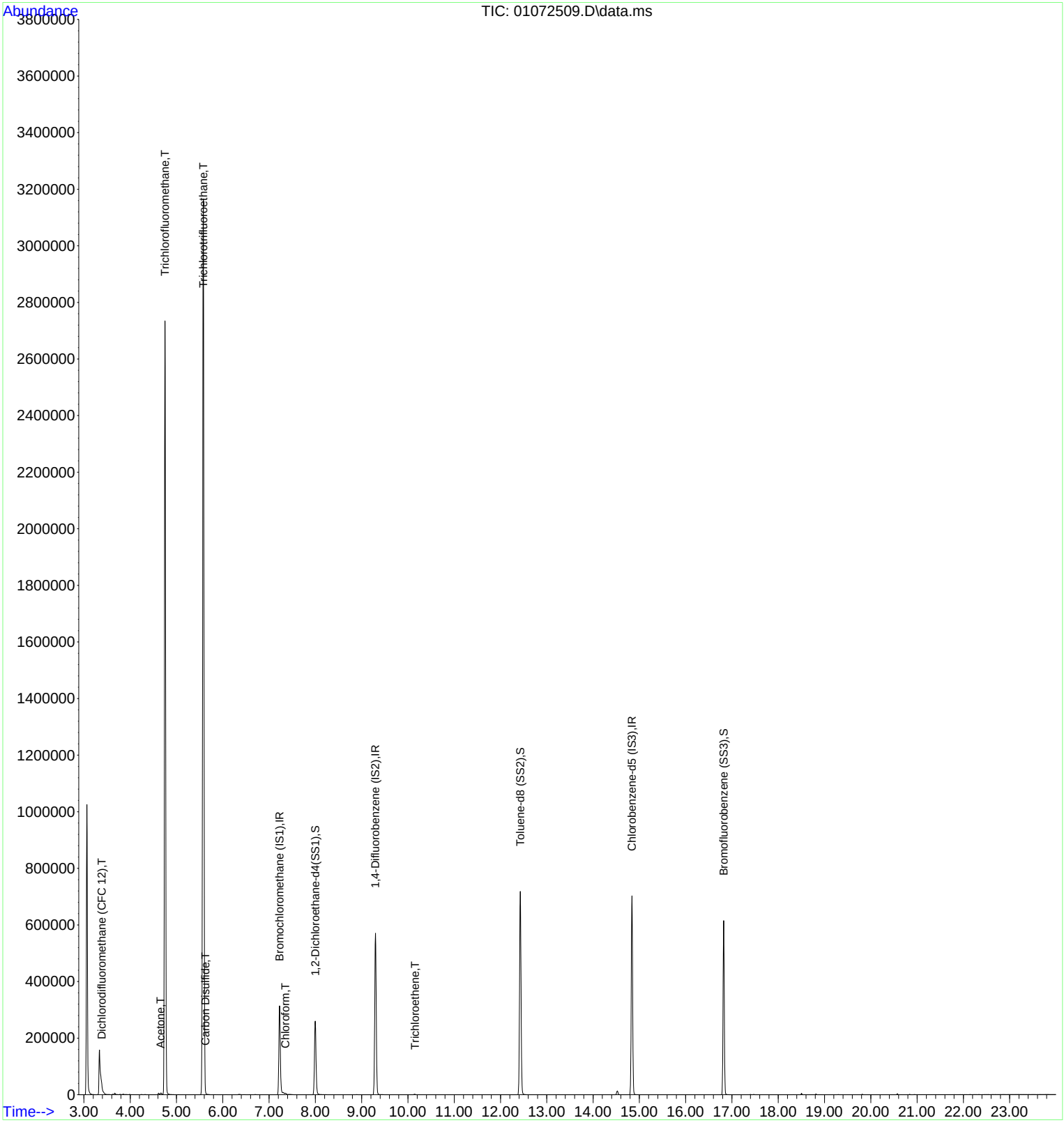
Quant Time: Jan 07 09:20:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0		N.D.	
50) Methyl Methacrylate	0.00	100	0		N.D.	
51) n-Heptane	0.00	71	0		N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0		N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0		N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0		N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0		N.D.	
58) Toluene	12.55	91	115		N.D.	
59) 2-Hexanone	12.96	43	130		N.D.	
60) Dibromochloromethane	0.00	129	0		N.D.	
61) 1,2-Dibromoethane	0.00	107	0		N.D.	
62) n-Butyl Acetate	0.00	43	0		N.D.	
63) n-Octane	0.00	57	0		N.D.	
64) Tetrachloroethene	0.00	166	0		N.D.	
65) Chlorobenzene	0.00	112	0		N.D.	
66) Ethylbenzene	0.00	91	0		N.D.	
67) m- & p-Xylenes	0.00	91	0		N.D.	
68) Bromoform	0.00	173	0		N.D.	
69) Styrene	0.00	104	0		N.D.	
70) o-Xylene	0.00	91	0		N.D.	
71) n-Nonane	0.00	43	0		N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0		N.D.	
74) Cumene	0.00	105	0		N.D.	
75) alpha-Pinene	0.00	93	0		N.D.	
76) n-Propylbenzene	0.00	91	0		N.D.	
77) 3-Ethyltoluene	0.00	105	0		N.D.	
78) 4-Ethyltoluene	0.00	105	0		N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0		N.D.	
80) alpha-Methylstyrene	0.00	118	0		N.D.	
81) 2-Ethyltoluene	0.00	105	0		N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0		N.D.	
83) n-Decane	0.00	58	0		N.D.	
84) Benzyl Chloride	0.00	91	0		N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0		N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0		N.D.	
87) sec-Butylbenzene	0.00	105	0		N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0		N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0		N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0		N.D.	
91) d-Limonene	0.00	68	0		N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0		N.D.	
93) n-Undecane	0.00	58	0		N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	587		N.D.	
95) Naphthalene	20.94	128	927		N.D.	
96) n-Dodecane	0.00	58	0		N.D.	
97) Hexachlorobutadiene	0.00	225	0		N.D.	
98) Cyclohexanone	0.00	55	0		N.D.	
99) tert-Butylbenzene	0.00	119	0		N.D.	
100) n-Butylbenzene	0.00	91	0		N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0		N.D.	

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 09:20:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
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NOA 1/7/25

Quant Time: Jan 07 09:20:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

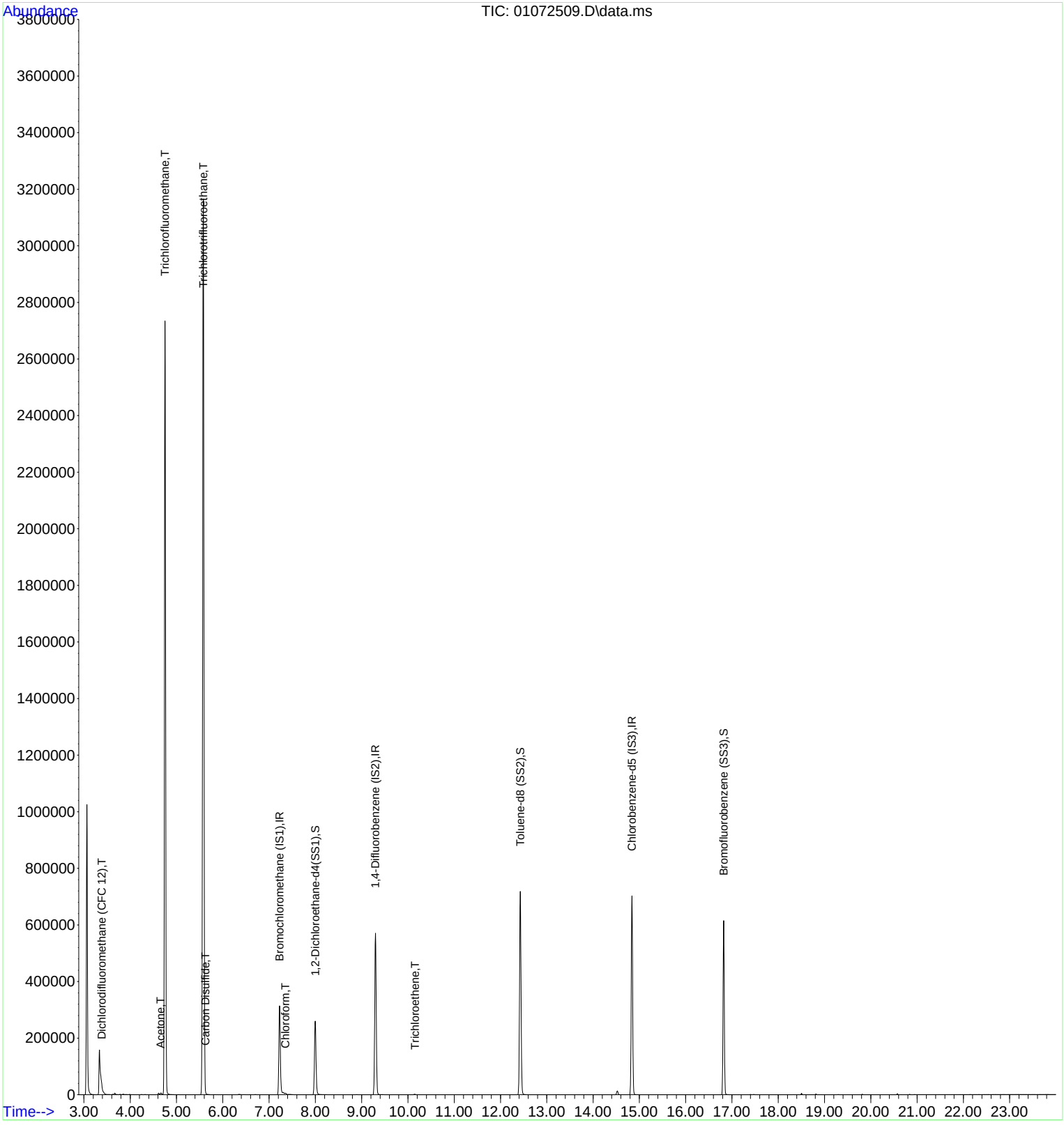
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139156	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	592245	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	104933	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	231864	12.230	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.84%				
57) Toluene-d8 (SS2)	12.43	98	610412	13.113	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.88%				
73) Bromofluorobenzene (SS3)	16.82	174	230559	14.352	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.80%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	2240	0.082	ng	#	96
13) Acetone	4.66	58	2636	0.281	ng		88
14) Trichlorofluoromethane	4.75	101	2120964	83.140	ng		100
21) Trichlorotrifluoroethane	5.58	151	1151435	100.039	ng		92
22) Carbon Disulfide	5.62	76	5166	0.122	ng	#	1
32) Chloroform	7.35	83	3592	0.159	ng		98
47) Trichloroethene	10.16	130	1087	0.080	ng		89

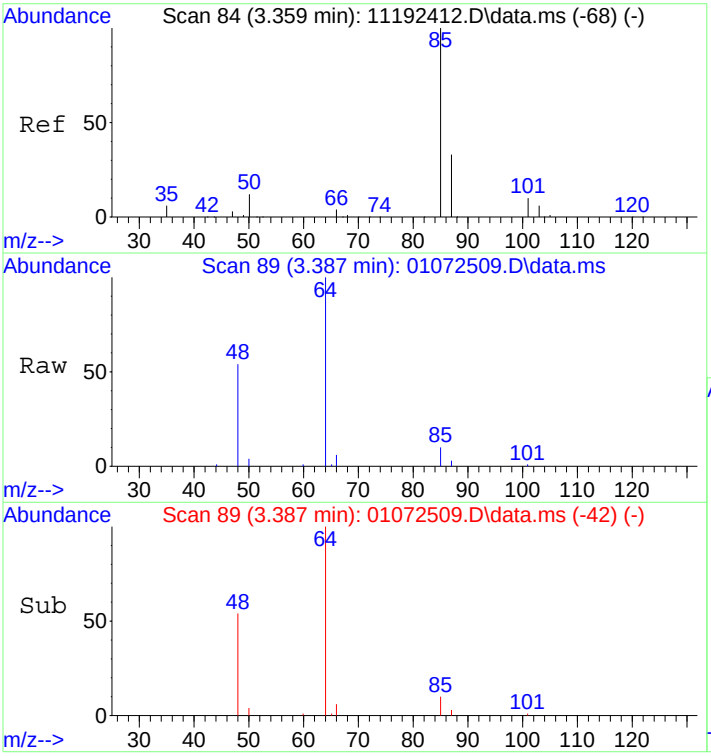
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 09:20:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

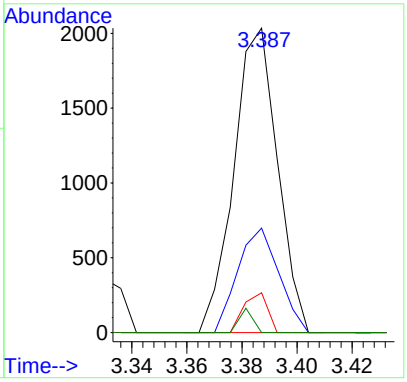


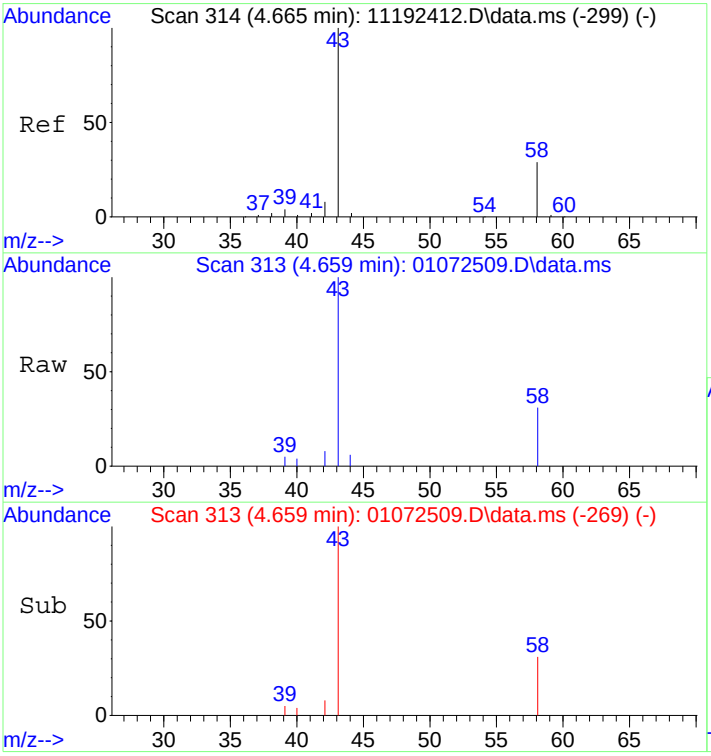


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.08 ng
RT: 3.39 min Scan# 89
Delta R.T. 0.015 min
Lab File: 01072509.D
Acq: 7 Jan 2025 7:48

Tgt Ion: 85 Resp: 2240

Ion	Ratio	Lower	Upper
85	100		
87	32.4	12.6	52.6
101	7.1	0.0	29.6
103	0.0	0.0	26.2

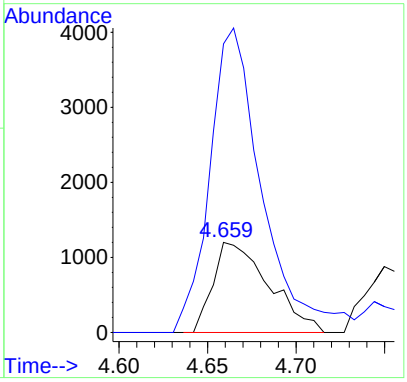


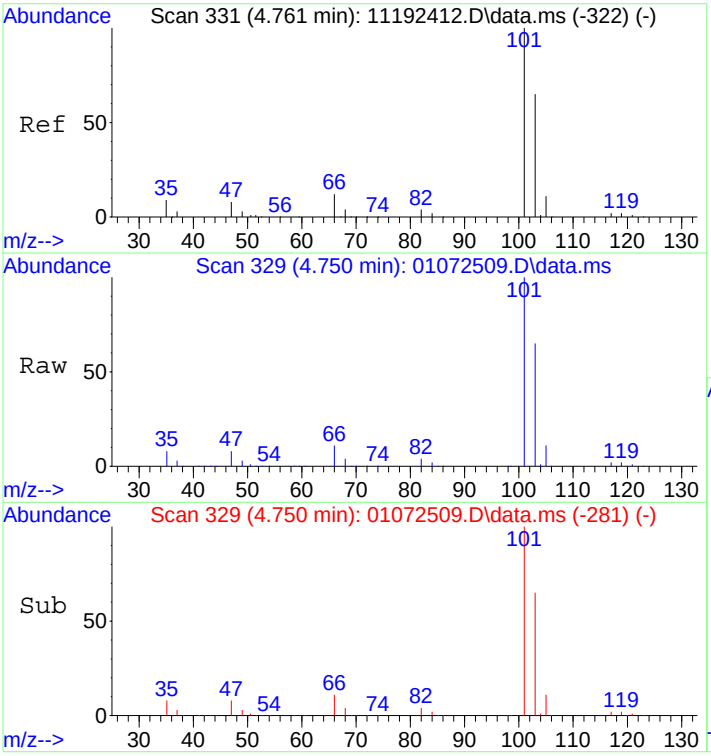


#13
Acetone
Concen: 0.28 ng
RT: 4.66 min Scan# 313
Delta R.T. -0.001 min
Lab File: 01072509.D
Acq: 7 Jan 2025 7:48

Tgt Ion: 58 Resp: 2636

Ion	Ratio	Lower	Upper
58	100		
43	317.3	312.5	372.5

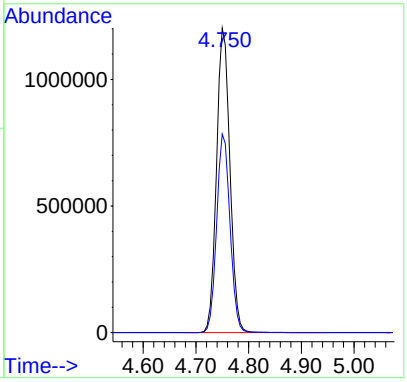


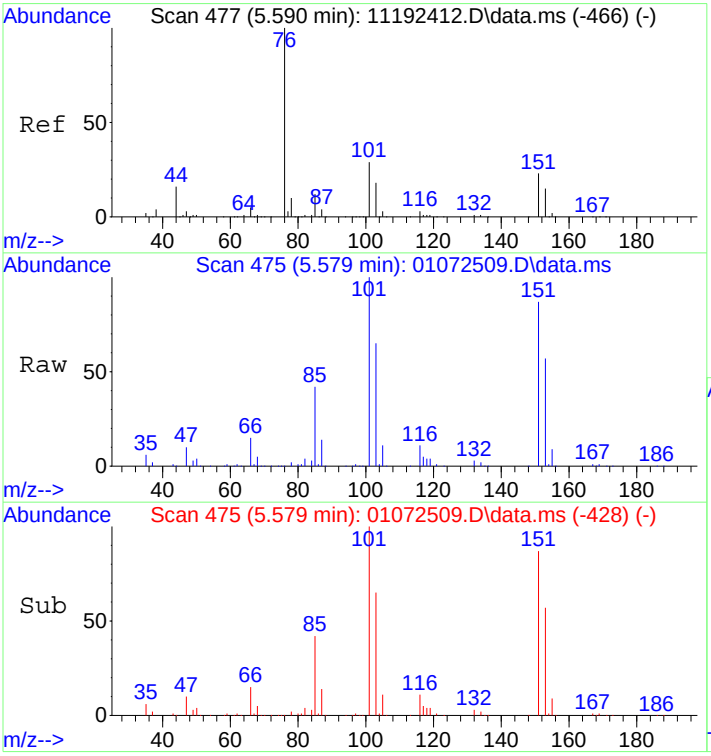


#14
Trichlorofluoromethane
Concen: 83.14 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01072509.D
Acq: 7 Jan 2025 7:48

Tgt Ion:101 Resp: 2120964

Ion	Ratio	Lower	Upper
101	100		
103	65.1	44.8	84.8

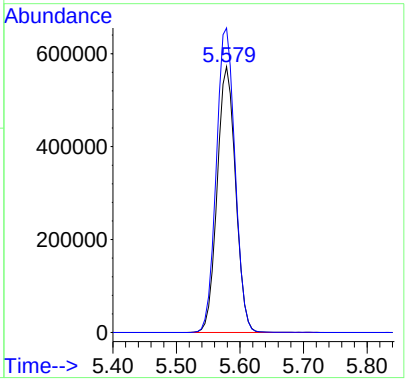


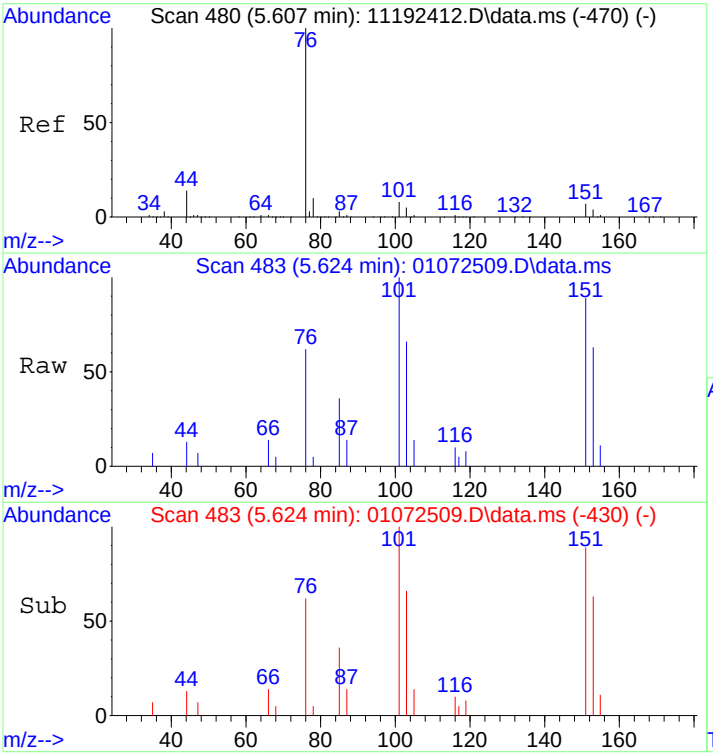


#21
Trichlorotrifluoroethane
Concen: 100.04 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01072509.D
Acq: 7 Jan 2025 7:48

Tgt Ion:151 Resp: 1151435

Ion	Ratio	Lower	Upper
151	100		
101	116.1	105.0	145.0

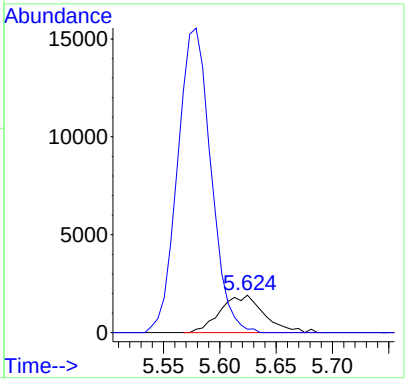


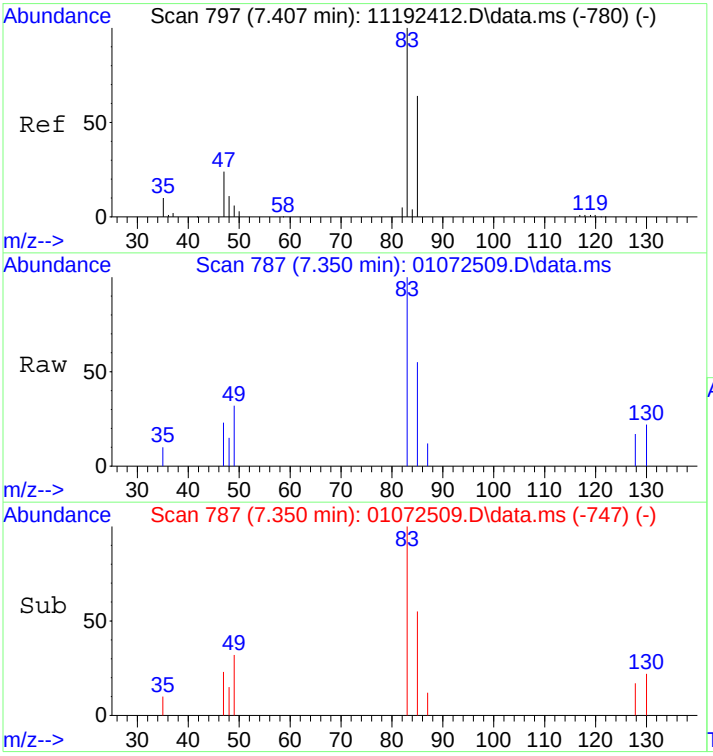


#22
Carbon Disulfide
Concen: 0.12 ng
RT: 5.62 min Scan# 483
Delta R.T. 0.053 min
Lab File: 01072509.D
Acq: 7 Jan 2025 7:48

Tgt Ion: 76 Resp: 5166

Ion	Ratio	Lower	Upper
76	100		
78	619.5	0.0	29.6#

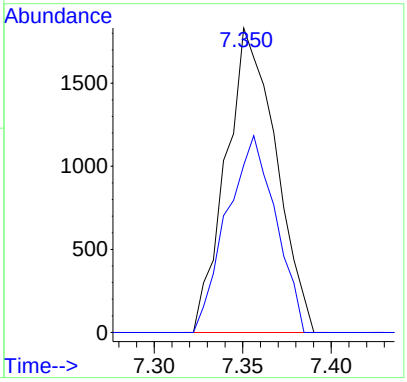


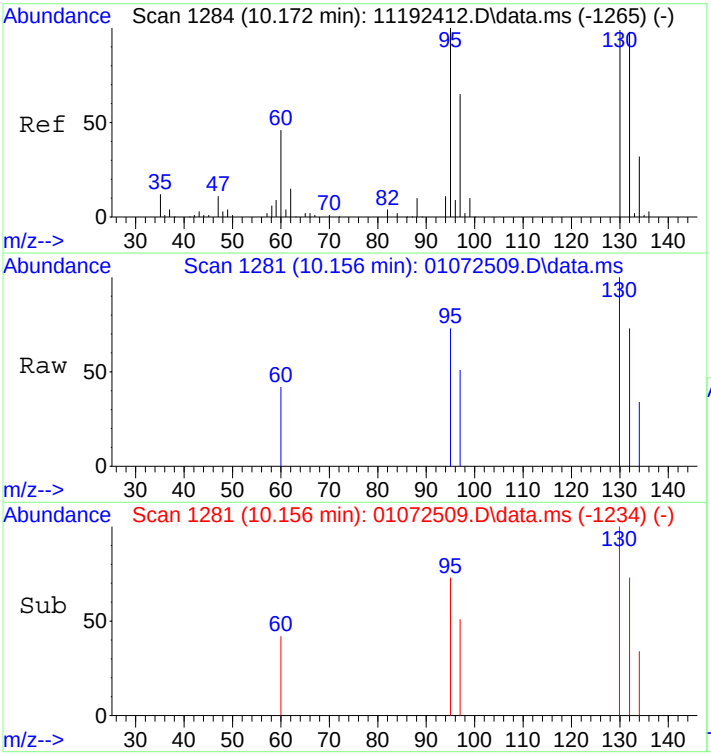


#32
Chloroform
Concen: 0.16 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01072509.D
Acq: 7 Jan 2025 7:48

Tgt Ion: 83 Resp: 3592

Ion	Ratio	Lower	Upper
83	100		
85	63.3	45.1	85.1

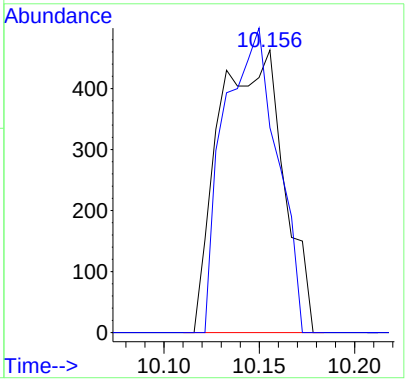




#47
Trichloroethene
Concen: 0.08 ng
RT: 10.16 min Scan# 1281
Delta R.T. 0.015 min
Lab File: 01072509.D
Acq: 7 Jan 2025 7:48

Tgt Ion:130 Resp: 1087

Ion	Ratio	Lower	Upper
130	100		
132	88.8	79.3	119.3



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

NOA 1/7/25

Quant Time: Jan 07 09:22:38 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

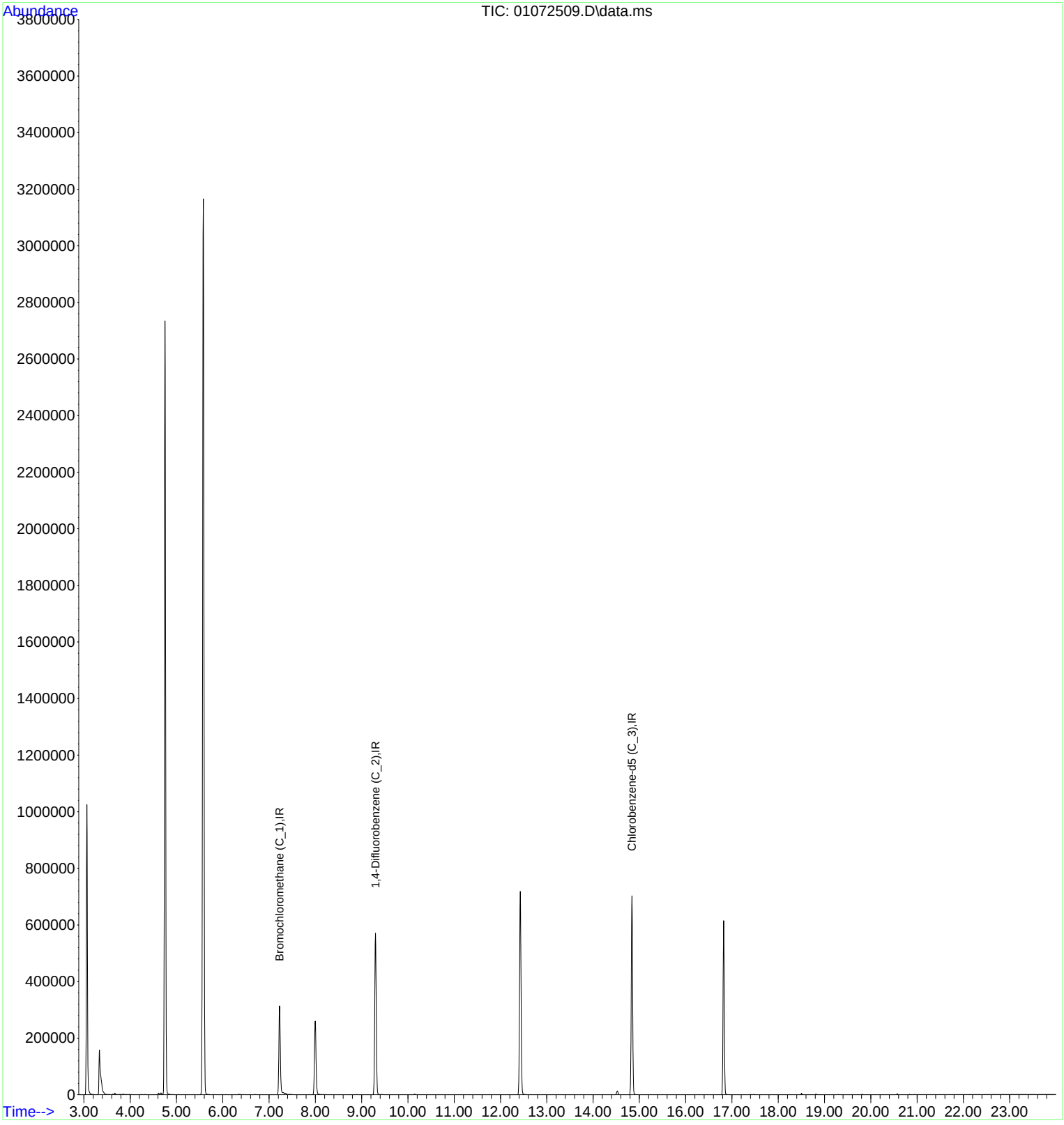
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	141707	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	593932	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	104933	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	59	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.25	67	1084	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.61	83	57	N.D.		
10) 2-Methylbutane	4.65	57	53	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 09:22:38 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062528.D
Acq On : 6 Jan 2025 23:11
Operator : SC
Sample : P2405139-019dil (20mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

NOA 1/7/25

Quant Time: Jan 07 05:23:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141841	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	608101	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	107300	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.99	65	237253	12.277	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
57) Toluene-d8 (SS2)	12.43	98	626057	13.152	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.20%				
73) Bromofluorobenzene (SS3)	16.82	174	234814	14.295	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.32%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	3.38	85	755	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	110	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.67	58	906	0.095	ng	#	84
14) Trichlorofluoromethane	4.75	101	765882	29.454	ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.57	151	404212	34.454	ng		92
22) Carbon Disulfide	5.62	76	6903	0.160	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.32	87	119	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.34	83	1122	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	720	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.28	84	699	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	121	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062528.D
Acq On : 6 Jan 2025 23:11
Operator : SC
Sample : P2405139-019dil (20mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

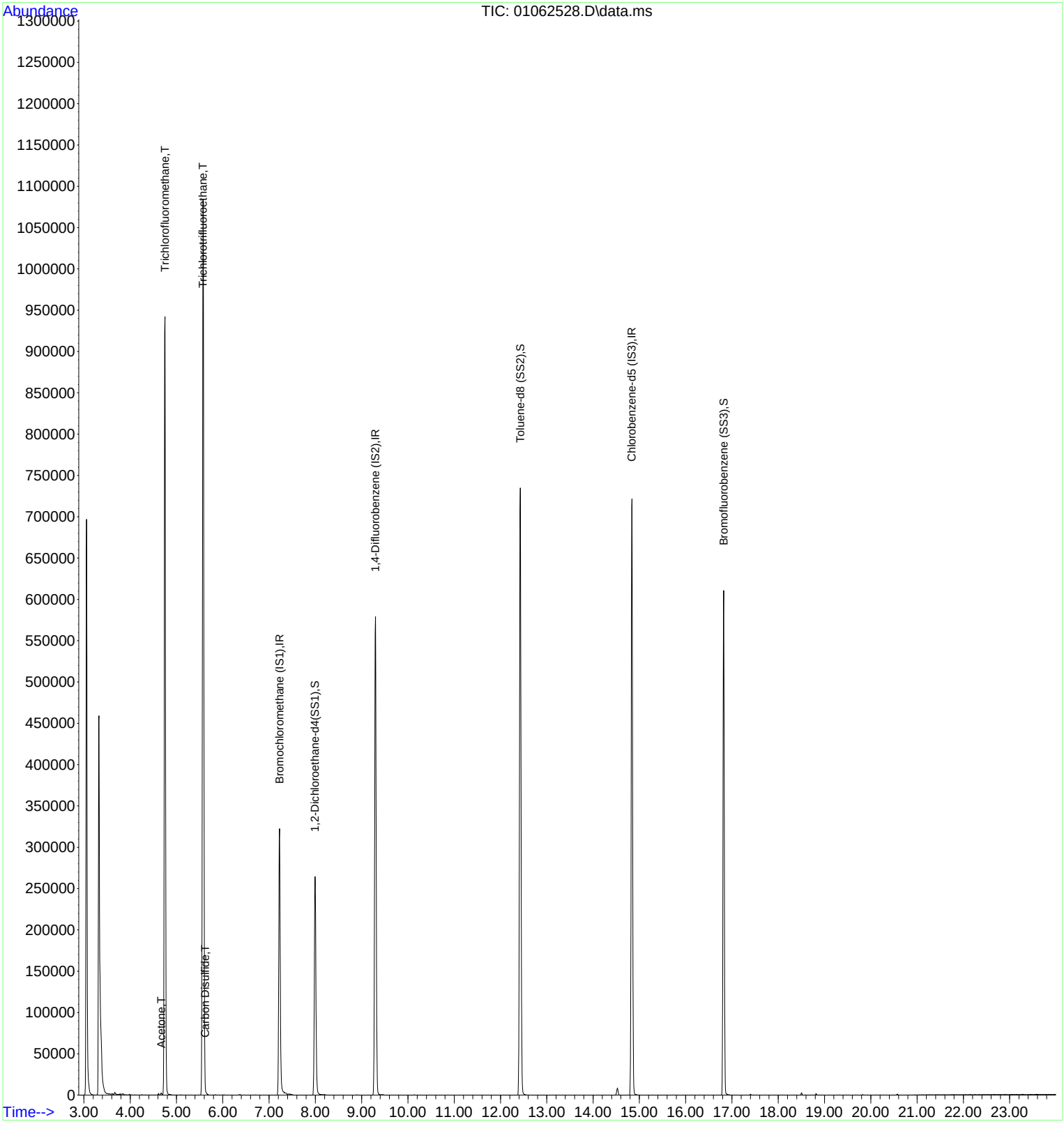
Quant Time: Jan 07 05:23:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0		N.D.	
50) Methyl Methacrylate	0.00	100	0		N.D.	
51) n-Heptane	0.00	71	0		N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0		N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0		N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0		N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0		N.D.	
58) Toluene	0.00	91	0		N.D.	
59) 2-Hexanone	0.00	43	0		N.D.	
60) Dibromochloromethane	0.00	129	0		N.D.	
61) 1,2-Dibromoethane	0.00	107	0		N.D.	
62) n-Butyl Acetate	0.00	43	0		N.D.	
63) n-Octane	0.00	57	0		N.D.	
64) Tetrachloroethene	0.00	166	0		N.D.	
65) Chlorobenzene	0.00	112	0		N.D.	
66) Ethylbenzene	0.00	91	0		N.D.	
67) m- & p-Xylenes	0.00	91	0		N.D.	
68) Bromoform	0.00	173	0		N.D.	
69) Styrene	0.00	104	0		N.D.	
70) o-Xylene	0.00	91	0		N.D.	
71) n-Nonane	0.00	43	0		N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0		N.D.	
74) Cumene	0.00	105	0		N.D.	
75) alpha-Pinene	0.00	93	0		N.D.	
76) n-Propylbenzene	0.00	91	0		N.D.	
77) 3-Ethyltoluene	0.00	105	0		N.D.	
78) 4-Ethyltoluene	0.00	105	0		N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0		N.D.	
80) alpha-Methylstyrene	0.00	118	0		N.D.	
81) 2-Ethyltoluene	0.00	105	0		N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0		N.D.	
83) n-Decane	0.00	58	0		N.D.	
84) Benzyl Chloride	0.00	91	0		N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0		N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0		N.D.	
87) sec-Butylbenzene	0.00	105	0		N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0		N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0		N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0		N.D.	
91) d-Limonene	0.00	68	0		N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0		N.D.	
93) n-Undecane	0.00	58	0		N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	109		N.D.	
95) Naphthalene	0.00	128	0		N.D.	
96) n-Dodecane	0.00	58	0		N.D.	
97) Hexachlorobutadiene	0.00	225	0		N.D.	
98) Cyclohexanone	0.00	55	0		N.D.	
99) tert-Butylbenzene	0.00	119	0		N.D.	
100) n-Butylbenzene	0.00	91	0		N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0		N.D.	

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

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062528.D
Acq On : 6 Jan 2025 23:11
Operator : SC
Sample : P2405139-019dil (20mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

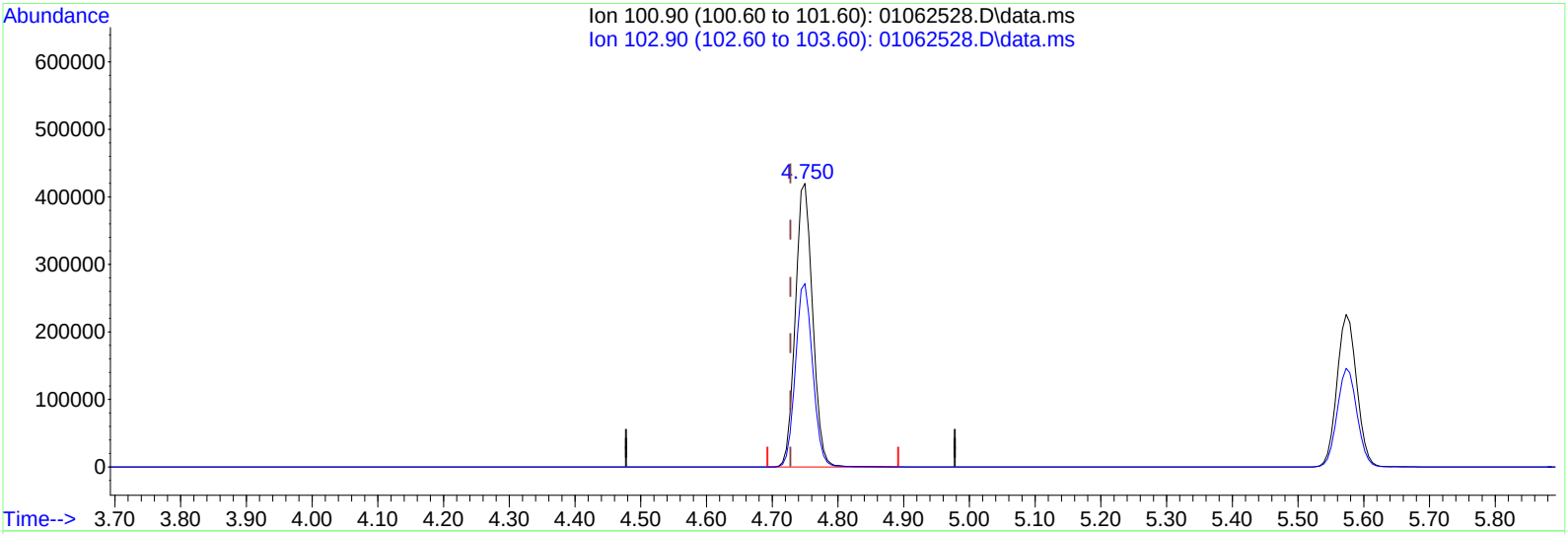
Quant Time: Jan 07 05:23:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

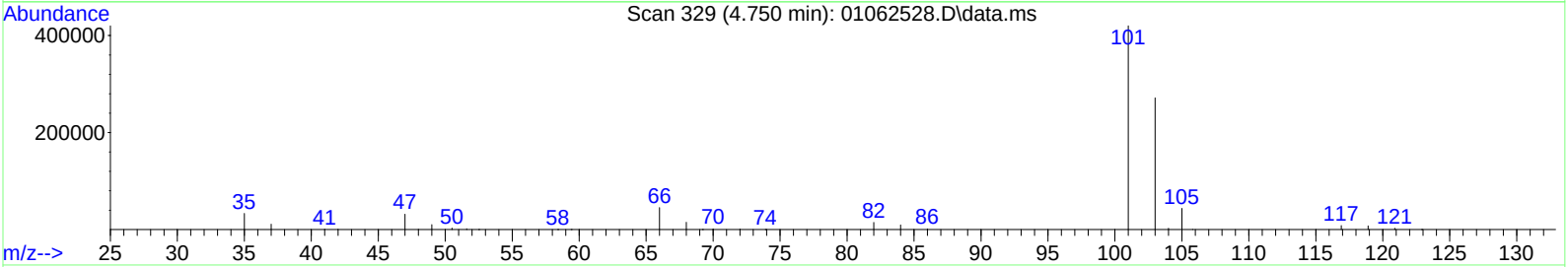


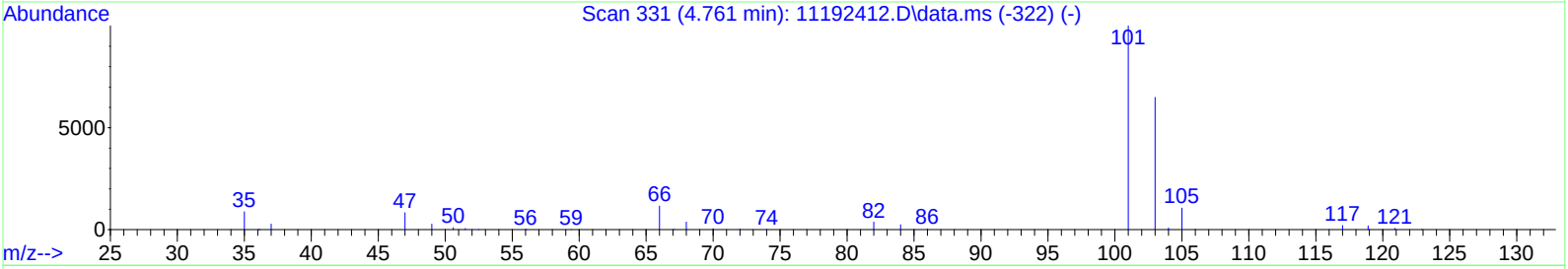
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062528.D
Acq On : 6 Jan 2025 23:11
Operator : SC
Sample : P2405139-019dil (20mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 05:23:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062528.D\data.ms

(14) Trichlorofluoromethane (T)

4.750min (+0.022) 29.45ng

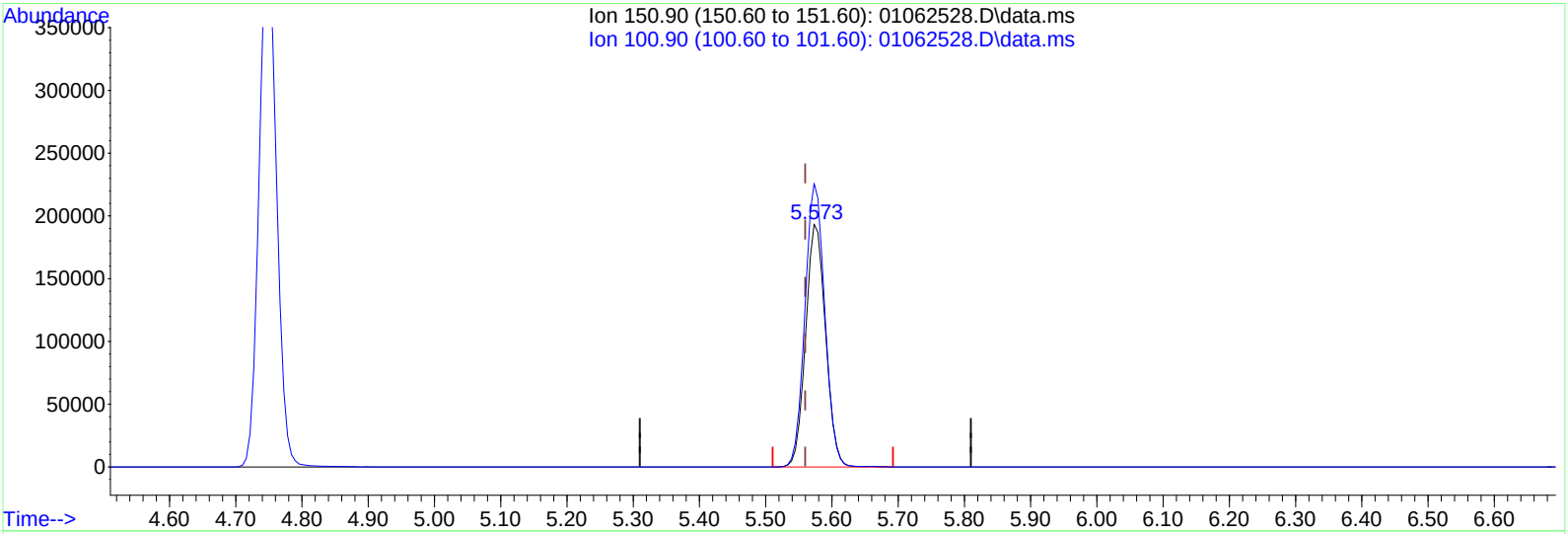
response 765882

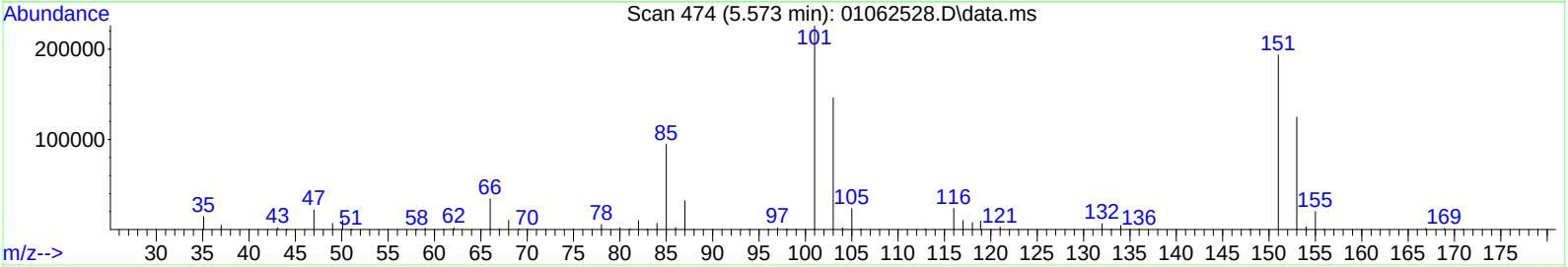
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.62
0.00	0.00	0.00
0.00	0.00	0.00

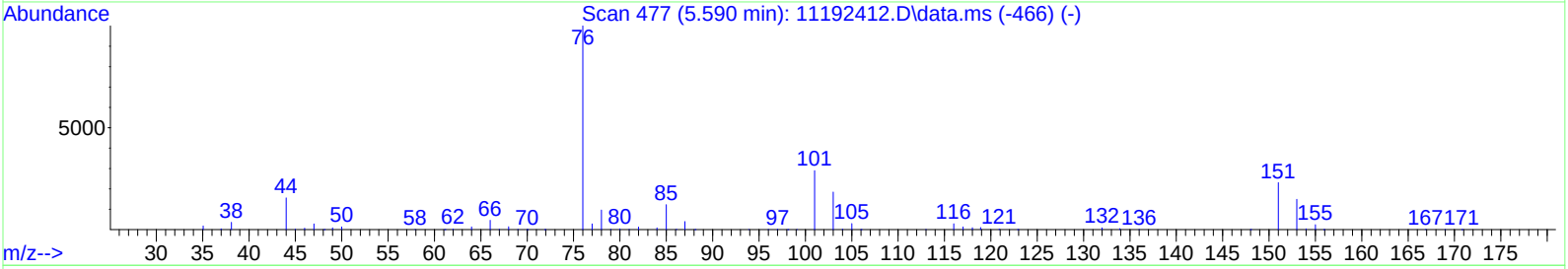
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062528.D
Acq On : 6 Jan 2025 23:11
Operator : SC
Sample : P2405139-019dil (20mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 05:23:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01062528.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.573min (+0.013) 34.45ng

response 404212

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.42
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072509.D\data.ms

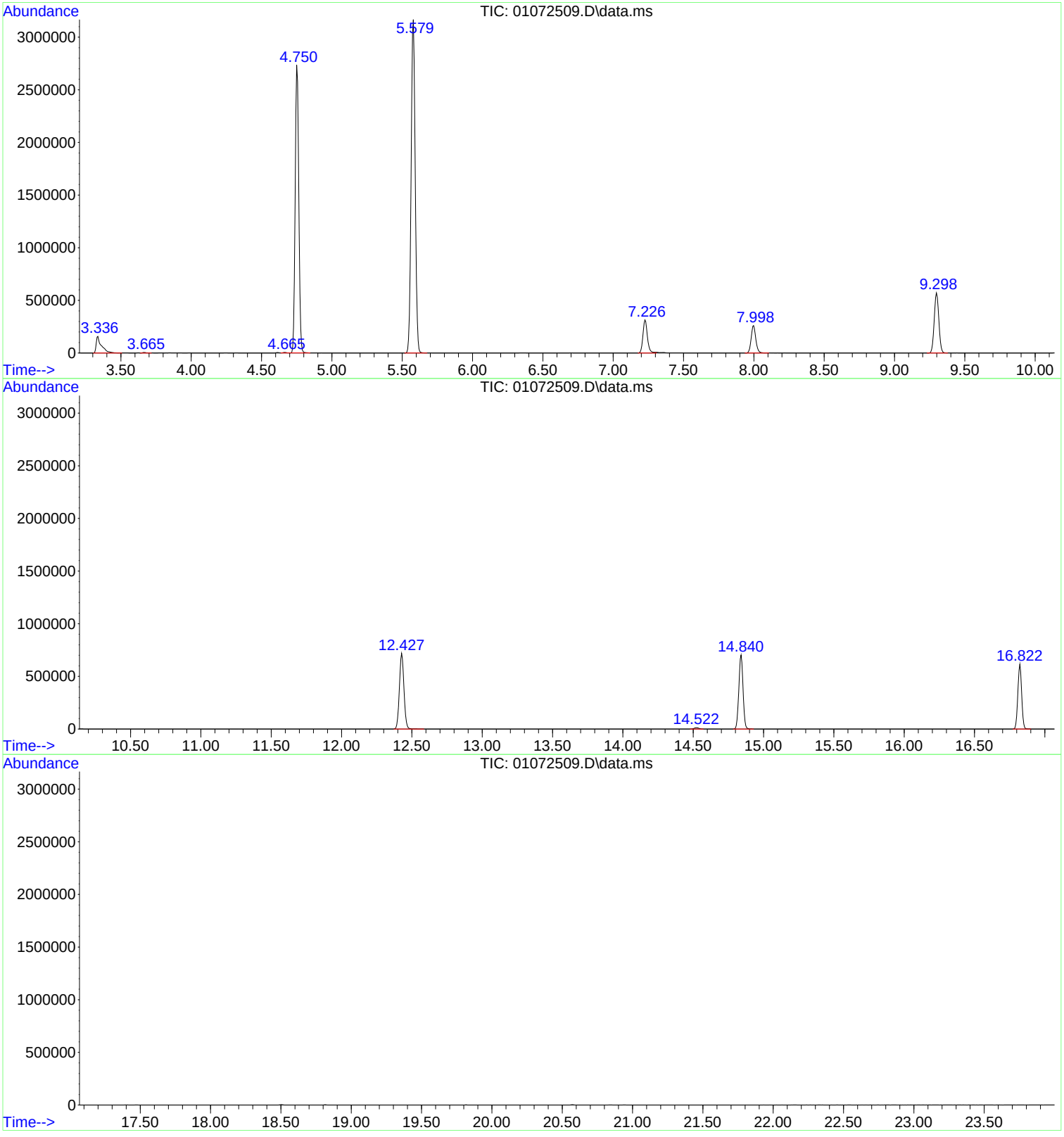
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.336	74	80	110	rBV	157762	409772	6.39%	2.217%
2	3.665	133	138	147	rBV	5468	10046	0.16%	0.054%
3	4.665	309	314	321	rBV	5661	10163	0.16%	0.055%
4	4.750	321	329	346	rVV	2734159	4798574	74.87%	25.961%
5	5.579	464	475	492	rBV	3166738	6409001	100.00%	34.674%
6	7.226	756	765	779	rBV	314431	700197	10.93%	3.788%
7	7.998	890	901	920	rBV	260574	599630	9.36%	3.244%
8	9.298	1118	1130	1144	rBV	571270	1290964	20.14%	6.984%
9	12.427	1671	1681	1709	rBB	718954	1620640	25.29%	8.768%
10	14.522	2042	2050	2059	rBB2	13028	28738	0.45%	0.155%
11	14.840	2096	2106	2122	rBV	703491	1456917	22.73%	7.882%
12	16.822	2446	2455	2469	rBV	615723	1149173	17.93%	6.217%

Sum of corrected areas: 18483815

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:48
Operator : SC
Sample : P2405139-019 (60mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072509.D
Acq On : 7 Jan 2025 7:488
Operator : SCC
Sample : P2405139-019 (60mL))
Misc : S37-123124011
ALS Vial : 16 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

WA 1/7/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 12:19:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/12/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	137522	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	584850	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	106482	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	230648	12.310	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.48%			
57) Toluene-d8 (SS2)	12.43	98	609887	12.911	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.28%			
73) Bromofluorobenzene (SS3)	16.82	174	237619	14.577	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.64%			
Target Compounds						Qvalue
2) Propene	3.34	42	692	N.D.		
3) Dichlorodifluoromethan...	3.34	85	508	N.D.		
4) Chloromethane	0.00	50	0	N.D. d		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.34	45	300	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.67	58	1312	0.142	ng	97
14) Trichlorofluoromethane	4.76	101	3110075	123.360	ng	100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.58	151	1873118	164.674	ng	93
22) Carbon Disulfide	0.00	76	0	N.D. d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.36	83	3543	0.158	ng	99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.90	78	569	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.29	84	549	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.14	130	1167	0.087	ng	91
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 12:19:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

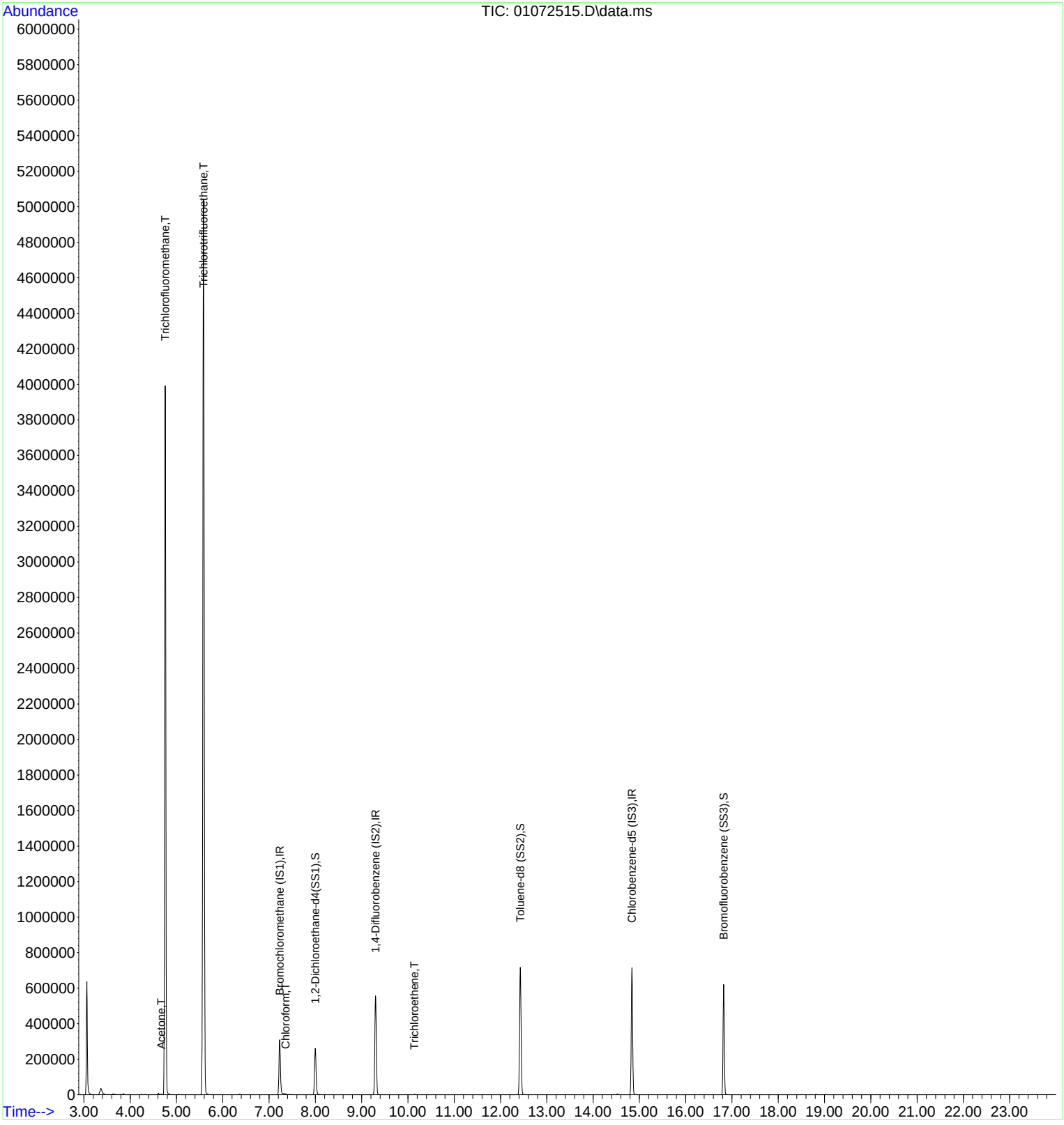
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	202	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 12:19:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 12:19:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

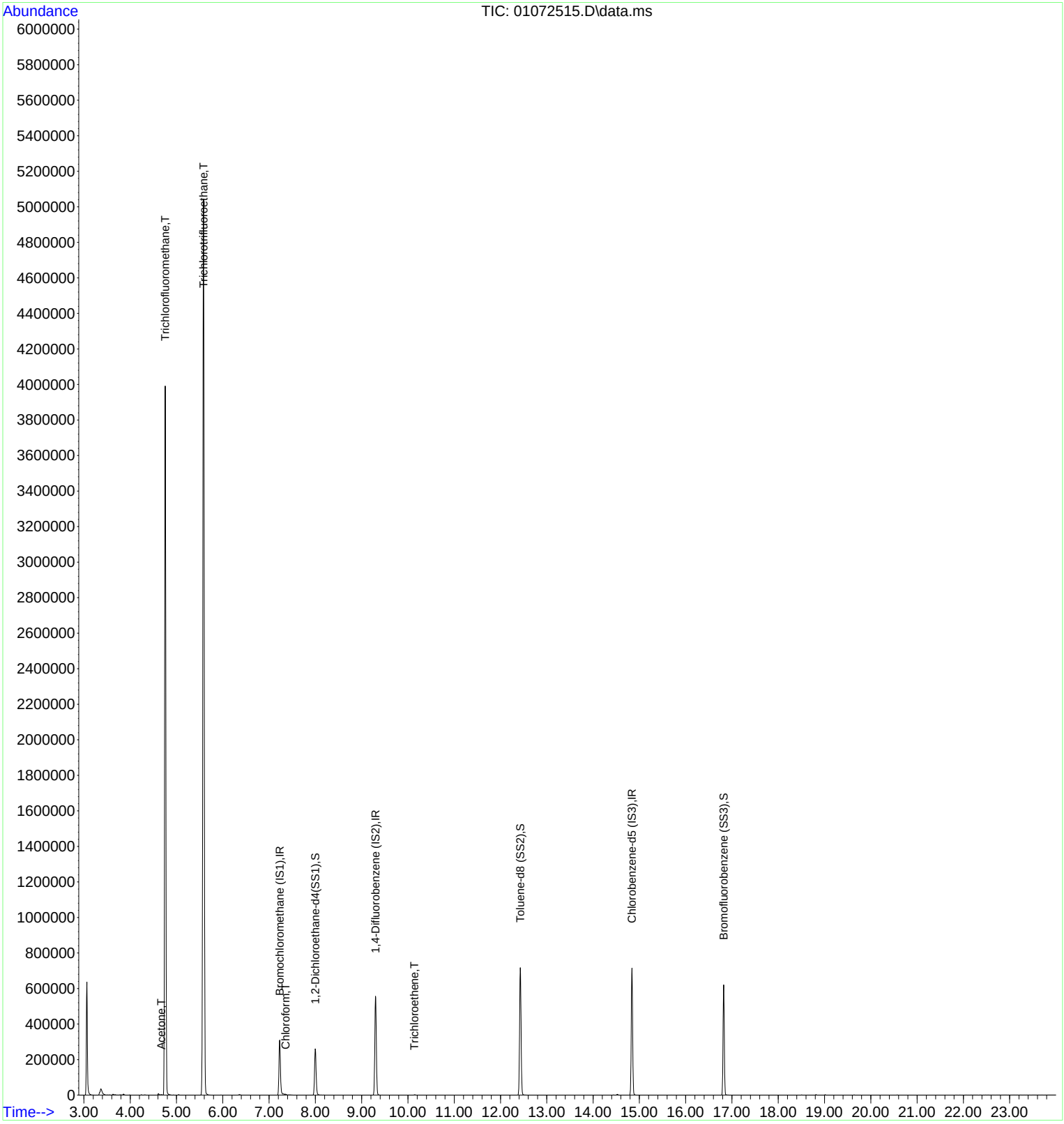
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	137522	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	584850	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	106482	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	230648	12.310	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.48%			
57) Toluene-d8 (SS2)	12.43	98	609887	12.911	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.28%			
73) Bromofluorobenzene (SS3)	16.82	174	237619	14.577	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.64%			
Target Compounds						Qvalue
13) Acetone	4.67	58	1312	0.142	ng	97
14) Trichlorofluoromethane	4.76	101	3110075	123.360	ng	100
21) Trichlorotrifluoroethane	5.58	151	1873118	164.674	ng	93
32) Chloroform	7.36	83	3543	0.158	ng	99
47) Trichloroethene	10.14	130	1167	0.087	ng	91

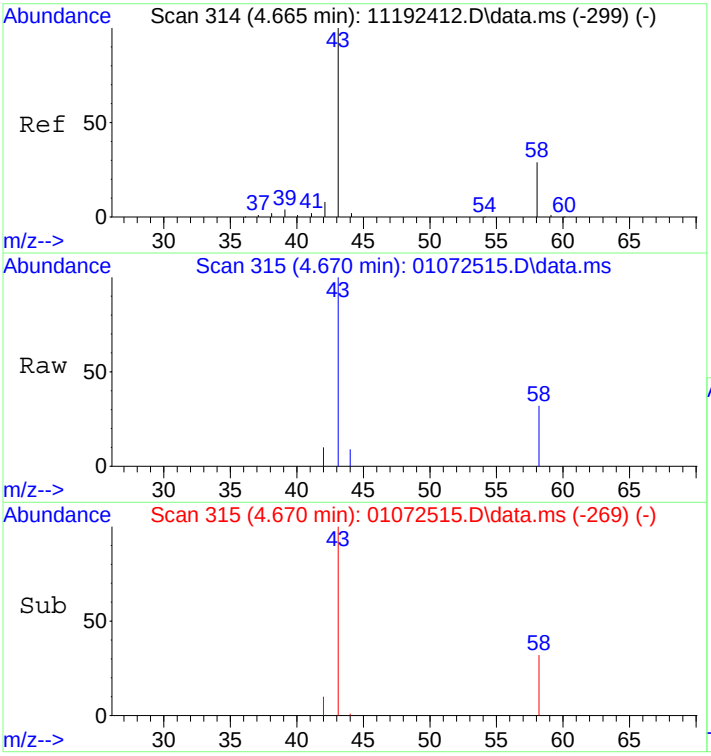
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 12:19:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

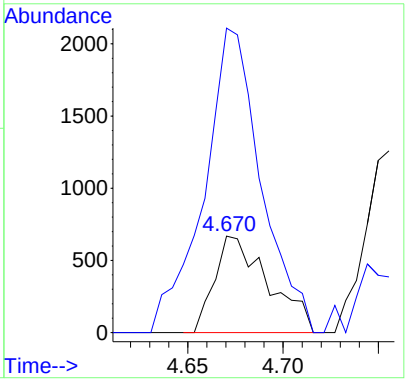


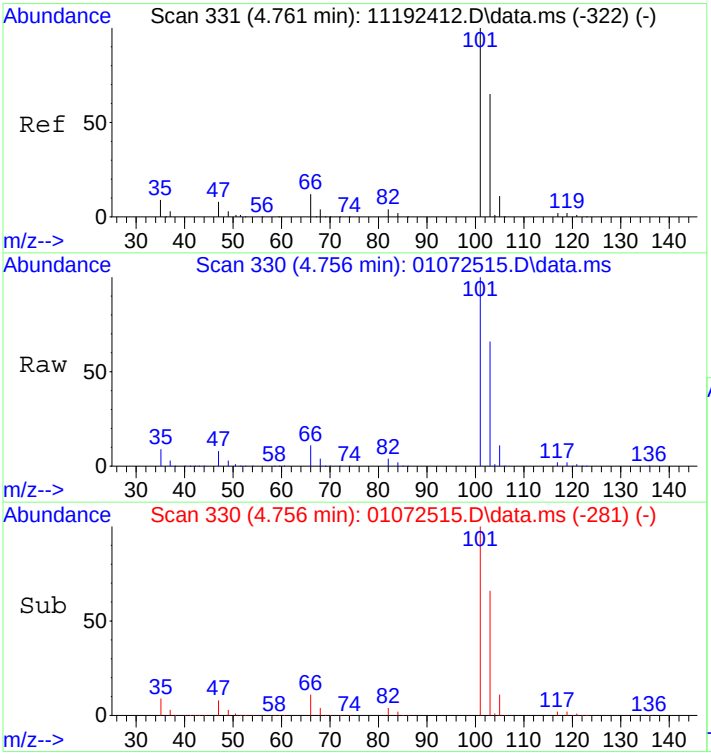


#13
Acetone
Concen: 0.14 ng
RT: 4.67 min Scan# 315
Delta R.T. 0.010 min
Lab File: 01072515.D
Acq: 7 Jan 2025 12:08

Tgt Ion: 58 Resp: 1312

Ion	Ratio	Lower	Upper
58	100		
43	336.1	312.5	372.5

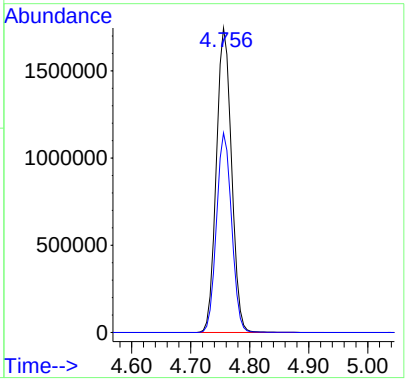


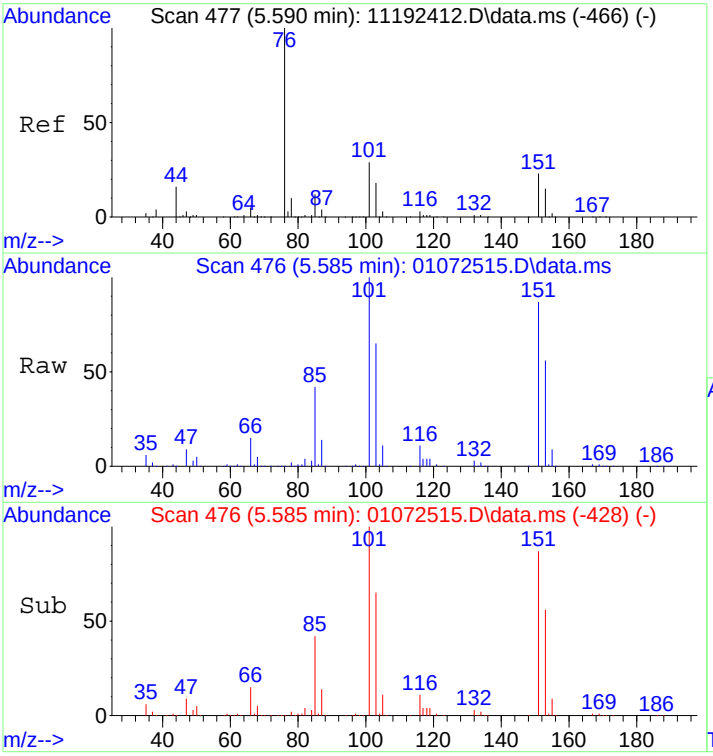


#14
Trichlorofluoromethane
Concen: 123.36 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072515.D
Acq: 7 Jan 2025 12:08

Tgt Ion:101 Resp: 3110075

Ion	Ratio	Lower	Upper
101	100		
103	65.2	44.8	84.8

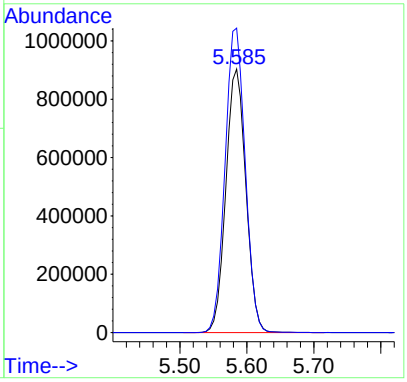


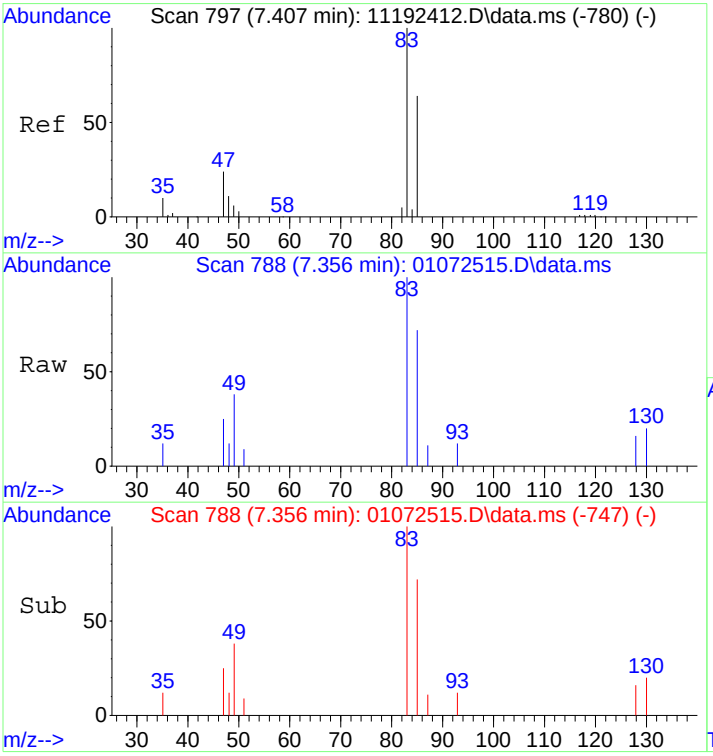


#21
Trichlorotrifluoroethane
Concen: 164.67 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01072515.D
Acq: 7 Jan 2025 12:08

Tgt Ion:151 Resp: 1873118

Ion	Ratio	Lower	Upper
151	100		
101	116.5	105.0	145.0

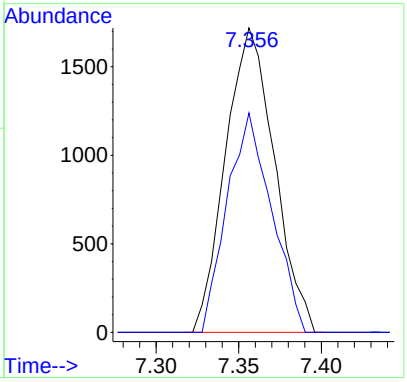


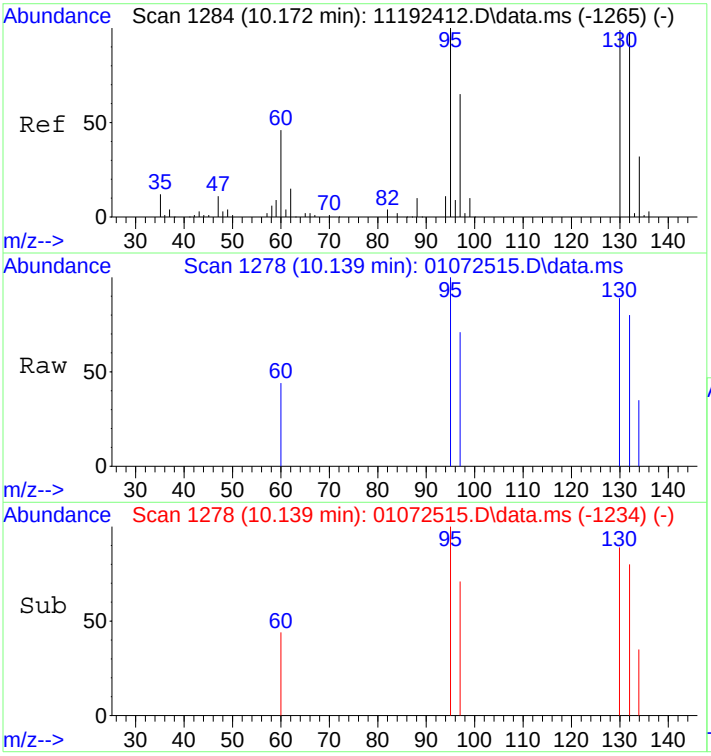


#32
Chloroform
Concen: 0.16 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01072515.D
Acq: 7 Jan 2025 12:08

Tgt Ion: 83 Resp: 3543

Ion	Ratio	Lower	Upper
83	100		
85	65.5	45.1	85.1

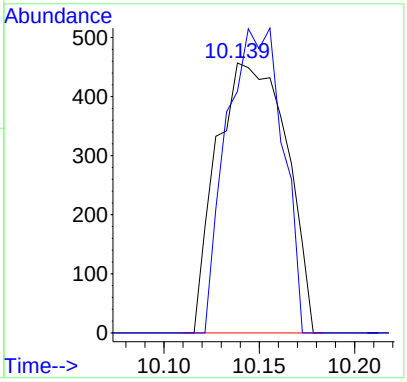




#47
Trichloroethene
Concen: 0.09 ng
RT: 10.14 min Scan# 1278
Delta R.T. -0.002 min
Lab File: 01072515.D
Acq: 7 Jan 2025 12:08

Tgt Ion:130 Resp: 1167

Ion	Ratio	Lower	Upper
130	100		
132	90.1	79.3	119.3



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 13:28:43 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

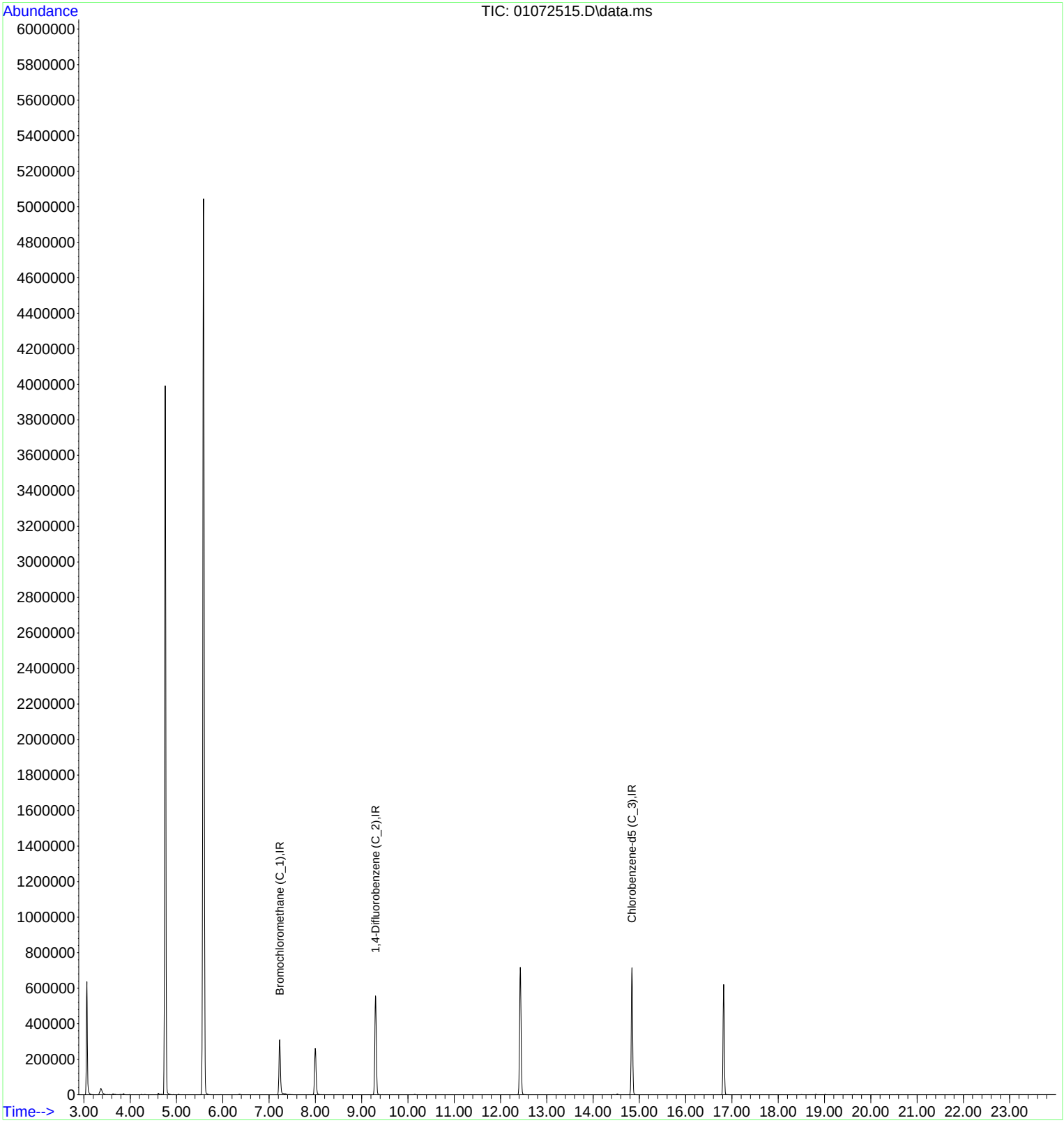
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	140048	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	584850	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	106482	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.24	67	2009	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	55	N.D.		
10) 2-Methylbutane	4.65	57	477	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	19.02	117	206	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 13:28:43 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072511.D
Acq On : 7 Jan 2025 9:59
Operator : SC
Sample : P2405139-020Dil (8.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 10:43:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/12/25

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144415	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	612727	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	109674	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.99	65	240579	12.227 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.84%			
57) Toluene-d8 (SS2)	12.42	98	628863	12.925 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%			
73) Bromofluorobenzene (SS3)	16.82	174	245091	14.598 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.80%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	5509	0.195 ng		98
4) Chloromethane	0.00	50	0	N.D. d		
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	145	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.29	45	26289	2.461 ng		89
11) Acetonitrile	4.45	41	927	N.D.		
12) Acrolein	4.55	56	377	N.D.		
13) Acetone	4.65	58	12204	1.255 ng	#	67
14) Trichlorofluoromethane	4.75	101	566706	21.405 ng		100
15) 2-Propanol (Isopropanol)	4.86	45	5660	0.163 ng		73
16) Acrylonitrile	5.12	53	597	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.35	84	11441	0.836 ng		89
20) 3-Chloro-1-propene (Al...	5.35	41	280	N.D.		
21) Trichlorotrifluoroethane	5.57	151	329893	27.618 ng		93
22) Carbon Disulfide	5.61	76	4670	0.106 ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.69	72	514	0.066 ng	#	56
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.29	61	4504	0.934 ng		95
31) n-Hexane	7.31	57	742	N.D.		
32) Chloroform	7.35	83	1091	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.11	62	197	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.84	56	1403	No Calib	#	
41) Benzene	8.89	78	3155	0.064 ng		97
42) Carbon Tetrachloride	9.05	117	828	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.14	130	1374	0.098 ng		83
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072511.D
Acq On : 7 Jan 2025 9:59
Operator : SC
Sample : P2405139-020Dil (8.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

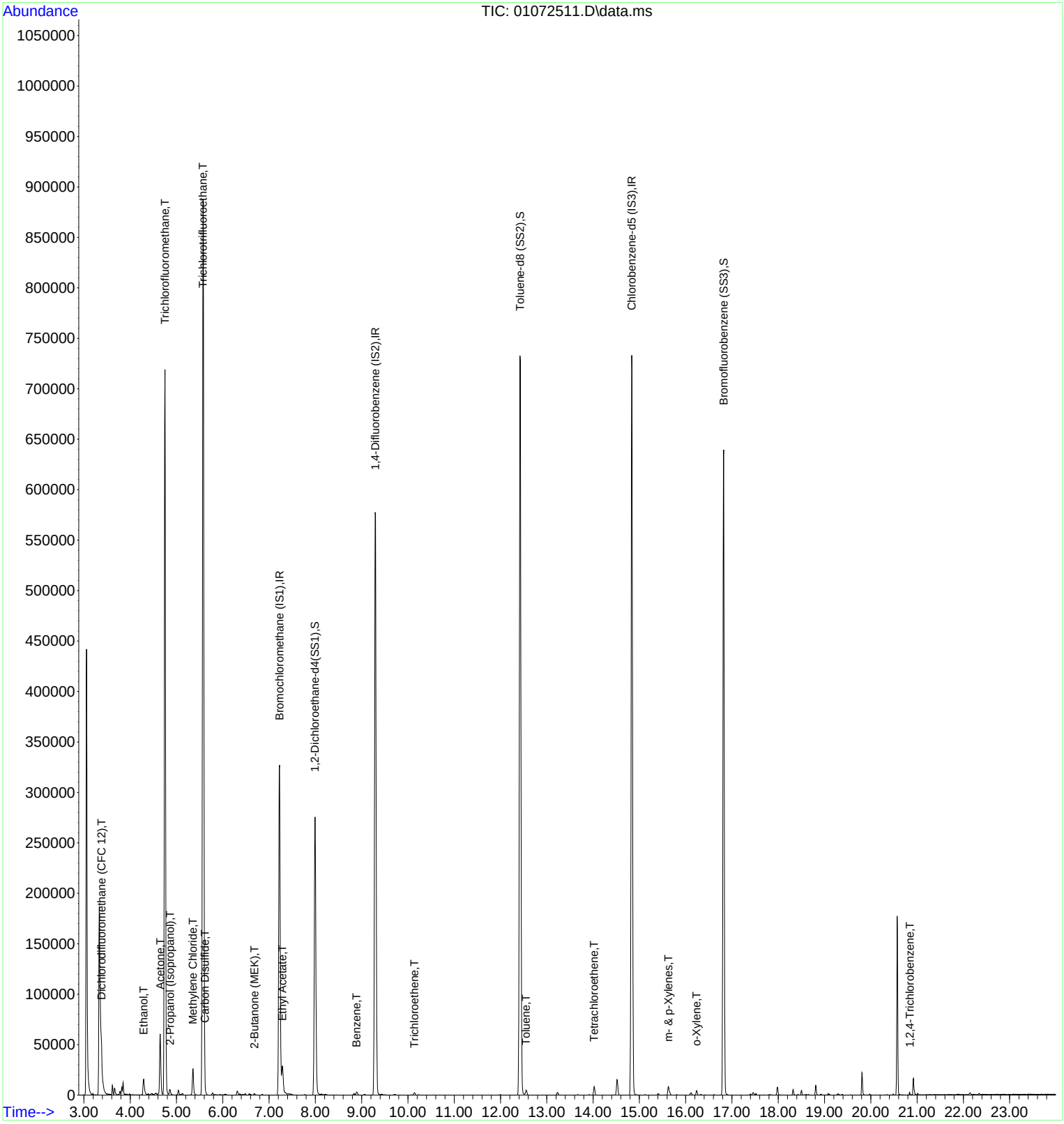
Quant Time: Jan 12 10:43:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	636	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.55	91	5124	0.109 ng	99
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.02	166	3071	0.221 ng	97
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.40	91	2242	N.D.	
67) m- & p-Xylenes	15.63	91	8522	0.201 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.09	104	1375	N.D.	
70) o-Xylene	16.24	91	3890	0.093 ng	98
71) n-Nonane	16.61	43	224	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.51	93	813	N.D.	
76) n-Propylbenzene	17.68	91	190	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.86	105	124	N.D.	
79) 1,3,5-Trimethylbenzene	17.95	105	203	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	601	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.57	91	272	N.D.	
85) 1,3-Dichlorobenzene	18.58	146	131	N.D.	
86) 1,4-Dichlorobenzene	18.65	146	311	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	937	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	19.04	146	138	N.D.	
91) d-Limonene	19.08	68	479	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.98	58	430	No Calib #	
94) 1,2,4-Trichlorobenzene	20.84	180	1013	0.053 ng #	93
95) Naphthalene	20.94	128	2729	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	19.39	91	390	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072511.D
Acq On : 7 Jan 2025 9:59
Operator : SC
Sample : P2405139-020Dil (8.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

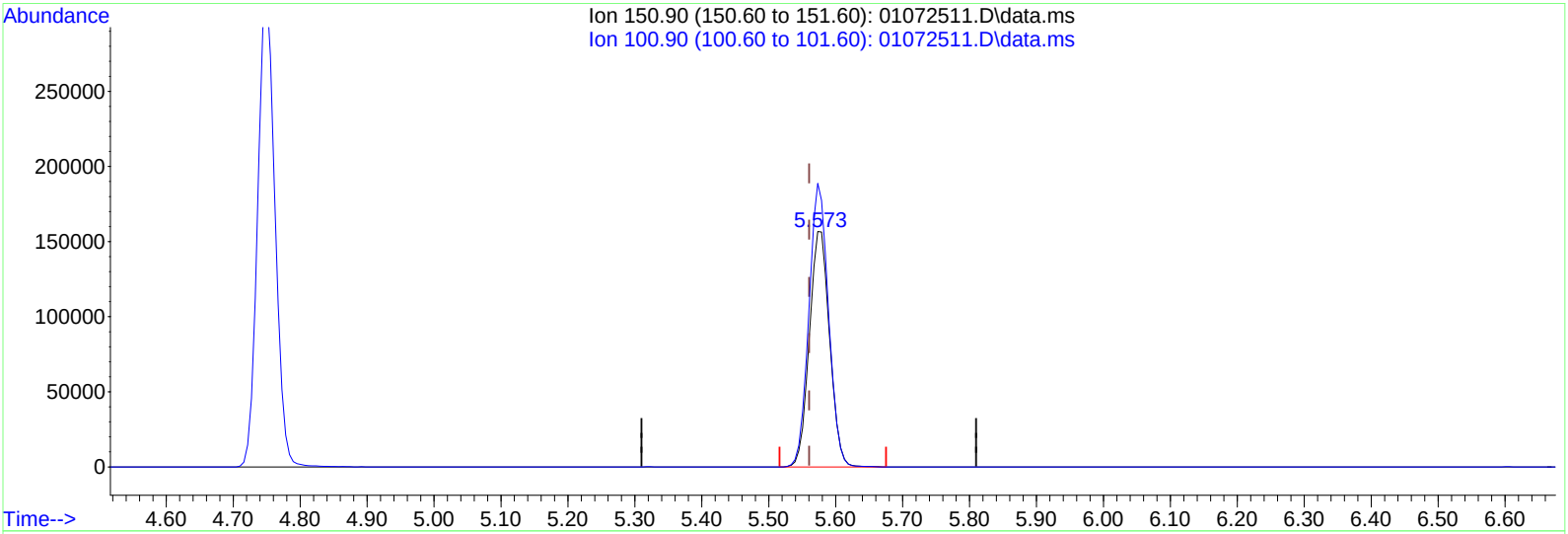
Quant Time: Jan 12 10:43:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

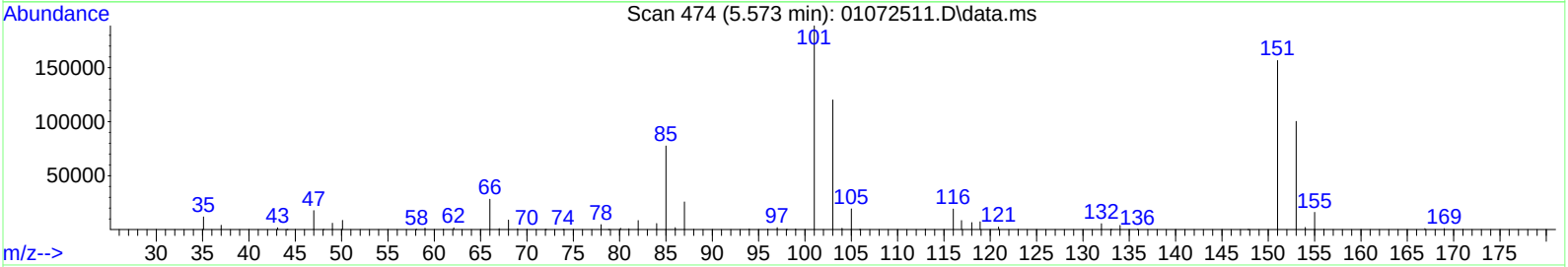


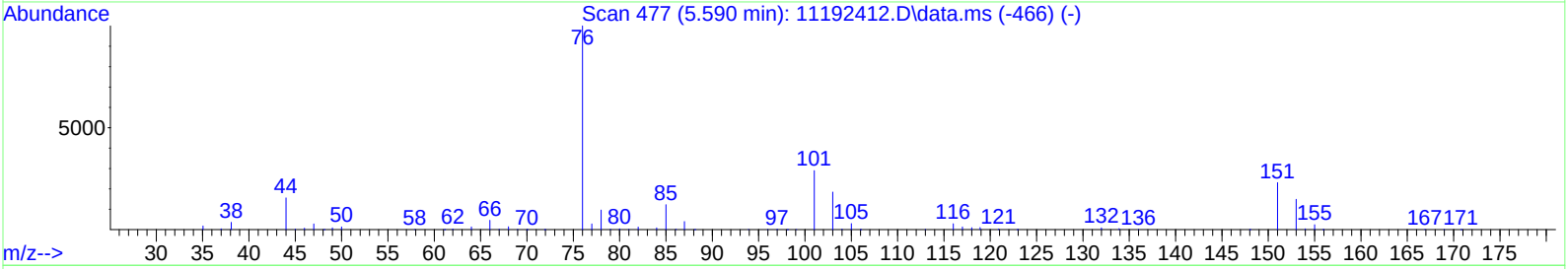
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072511.D
Acq On : 7 Jan 2025 9:59
Operator : SC
Sample : P2405139-020Dil (8.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 07 10:26:09 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072511.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.573min (+0.013) 27.62ng

response 329893

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.49
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072515.D\data.ms

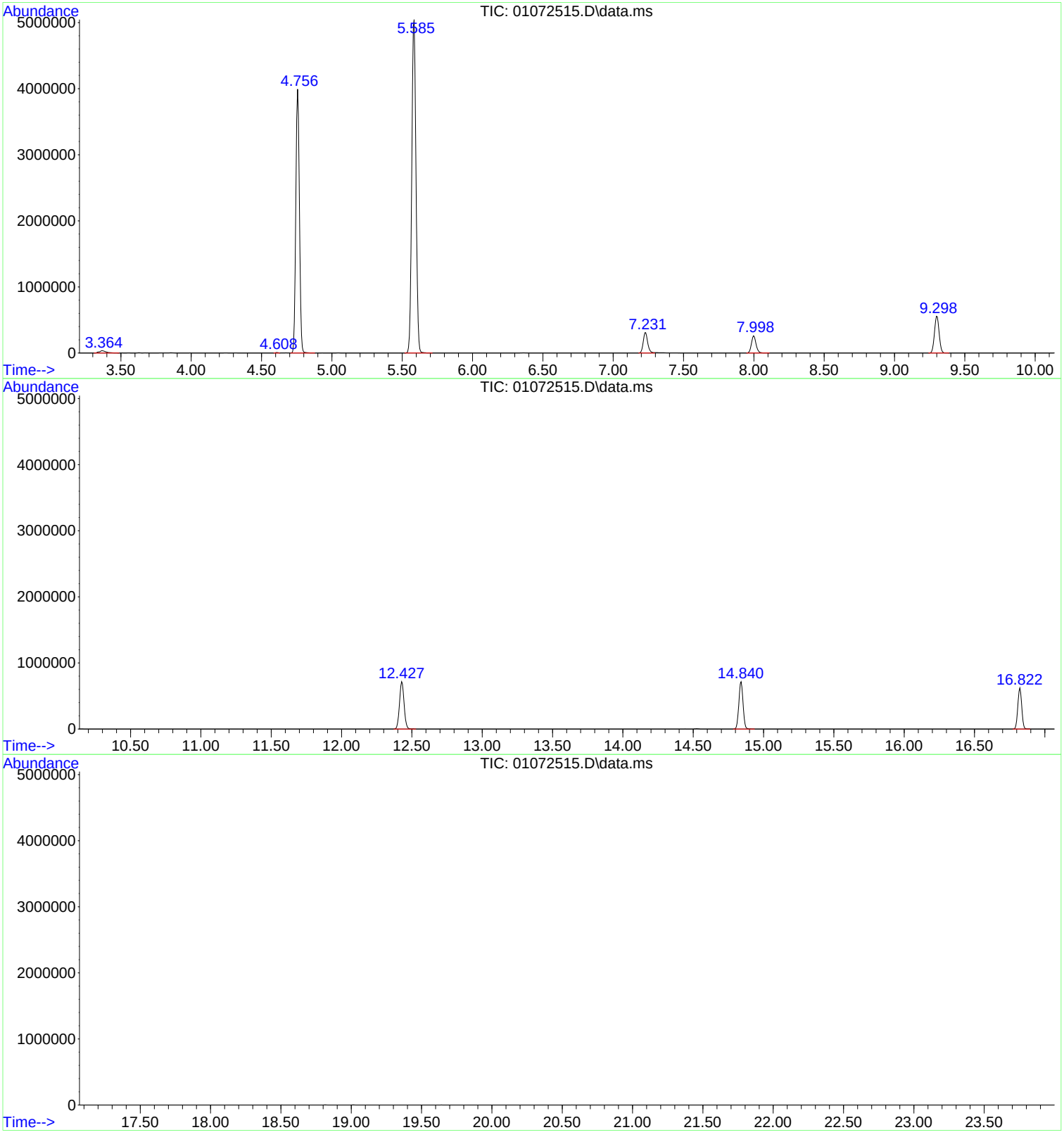
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.364	75	85	107	rBV	34883	123005	1.17%	0.501%
2	4.608	300	304	308	rBV2	7825	11809	0.11%	0.048%
3	4.756	321	330	352	rBV	3991492	7070011	67.39%	28.789%
4	5.585	464	476	499	rBV	5045533	10490505	100.00%	42.717%
5	7.231	757	766	777	rBV	308988	692308	6.60%	2.819%
6	7.998	892	901	921	rBV	261212	600842	5.73%	2.447%
7	9.298	1120	1130	1146	rBV	556809	1274727	12.15%	5.191%
8	12.427	1671	1681	1699	rBV	717789	1624648	15.49%	6.615%
9	14.840	2096	2106	2123	rBV	715452	1482048	14.13%	6.035%
10	16.822	2446	2455	2468	rBV	621248	1188457	11.33%	4.839%

Sum of corrected areas: 24558360

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:08
Operator : SC
Sample : P2405139-020 (30mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072515.D
Acq On : 7 Jan 2025 12:088
Operator : SCC
Sample : P2405139-020 (30mL))
Misc : S37-123124011
ALS Vial : 5 Sample Multiplier: 11

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

MOA 1/12/25

Quant Time: Jan 12 10:49:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139454	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	591789	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	109000	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	234363	12.335	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.72%				
57) Toluene-d8 (SS2)	12.43	98	615110	12.721	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
73) Bromofluorobenzene (SS3)	16.82	174	241935	14.499	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.00%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.37	85	14414	0.529	ng		99
4) Chloromethane	3.50	50	3398	0.168	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	291	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D. d			
8) Bromomethane	4.03	94	1682	0.171	ng		90
9) Chloroethane	0.00	64	0	N.D. d			
10) Ethanol	4.31	45	18164	1.761	ng		86
11) Acetonitrile	4.47	41	2231	0.084	ng		90
12) Acrolein	4.55	56	1602	0.182	ng		94
13) Acetone	4.64	58	40762	4.341	ng	#	82
14) Trichlorofluoromethane	4.76	101	6077217	237.712	ng		99
15) 2-Propanol (Isopropanol)	4.86	45	15750	0.468	ng	#	38
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	958	0.073	ng		94
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	5.58	151	3130308	271.386	ng		91
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.31	73	455	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.67	72	6744	0.894	ng	#	65
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.29	61	4213	0.905	ng		94
31) n-Hexane	7.30	57	8216	0.392	ng		93
32) Chloroform	7.36	83	8488	0.374	ng		100
34) Tetrahydrofuran (THF)	7.78	72	305	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	5153	No Calib		#	
41) Benzene	8.90	78	21625	0.455	ng		98
42) Carbon Tetrachloride	9.07	117	881	N.D.			
43) Cyclohexane	9.21	84	666	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	663	N.D.			
47) Trichloroethene	10.14	130	2122	0.157	ng		98
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 10:49:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

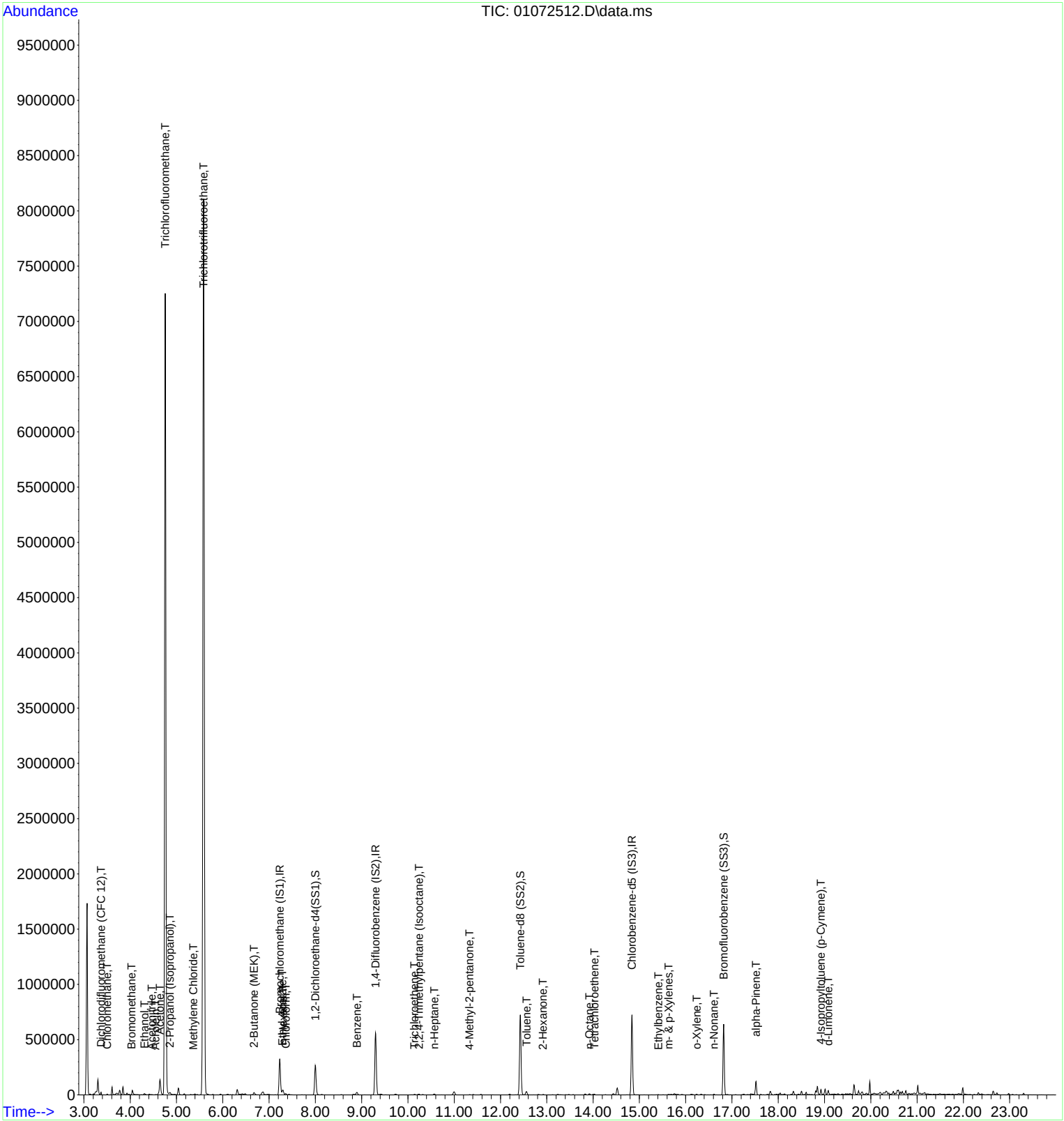
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	8174	0.164 ng		80
50) Methyl Methacrylate	0.00	100	0	N.D. d		
51) n-Heptane	10.57	71	2199	0.208 ng		84
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	884	0.087 ng	#	50
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	27102	0.583 ng		99
59) 2-Hexanone	12.92	43	4385	0.193 ng		81
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	167	N.D.		
63) n-Octane	13.92	57	1960	0.203 ng		91
64) Tetrachloroethene	14.03	166	2374	0.172 ng		97
65) Chlorobenzene	14.90	112	232	N.D.		
66) Ethylbenzene	15.41	91	3251	0.063 ng		92
67) m- & p-Xylenes	15.63	91	4618	0.110 ng		91
68) Bromoform	15.67	173	396	N.D.		
69) Styrene	16.11	104	739	N.D.		
70) o-Xylene	16.24	91	3086	0.074 ng		93
71) n-Nonane	16.61	43	3203	0.145 ng		96
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	376	N.D.		
75) alpha-Pinene	17.52	93	52010	2.034 ng		99
76) n-Propylbenzene	17.68	91	1196	N.D.		
77) 3-Ethyltoluene	17.03	105	376	No Calib	#	
78) 4-Ethyltoluene	0.00	105	0	N.D. d		
79) 1,3,5-Trimethylbenzene	17.96	105	432	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	376	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.42	105	1361	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.56	91	279	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	18.74	105	121	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	24624	0.518 ng		99
89) 1,2,3-Trimethylbenzene	17.03	105	376	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	6251	0.453 ng		95
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	259	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	351	N.D.		
95) Naphthalene	20.94	128	823	N.D.		
96) n-Dodecane	18.92	58	263	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.26	55	580	No Calib	#	
99) tert-Butylbenzene	18.42	119	130	N.D.		
100) n-Butylbenzene	19.39	91	845	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 10:49:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 10:49:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

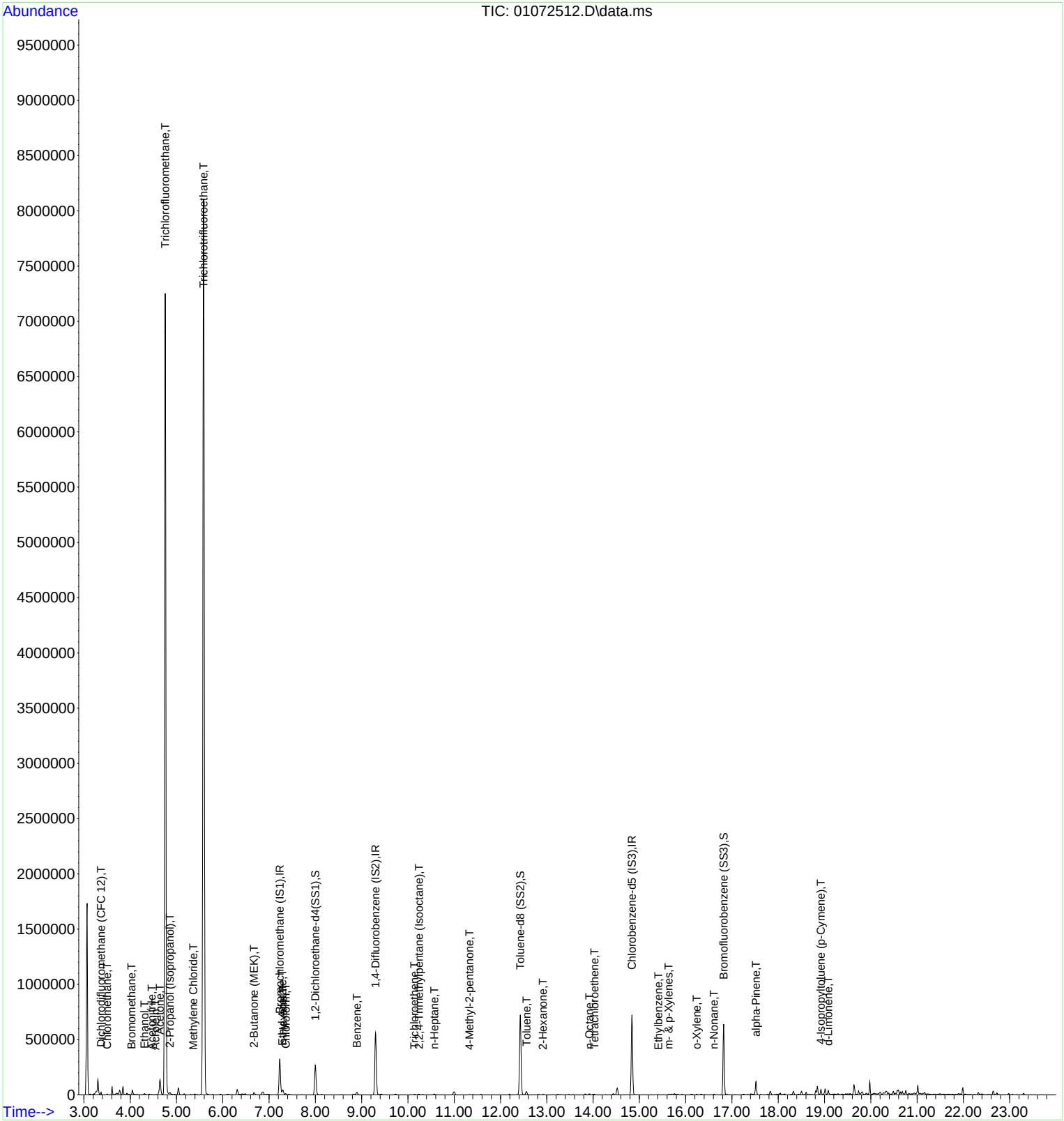
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139454	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	591789	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	109000	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	234363	12.335	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.72%				
57) Toluene-d8 (SS2)	12.43	98	615110	12.721	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
73) Bromofluorobenzene (SS3)	16.82	174	241935	14.499	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.00%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.37	85	14414	0.529	ng		99
4) Chloromethane	3.50	50	3398	0.168	ng		99
8) Bromomethane	4.03	94	1682	0.171	ng		90
10) Ethanol	4.31	45	18164	1.761	ng		86
11) Acetonitrile	4.47	41	2231	0.084	ng		90
12) Acrolein	4.55	56	1602	0.182	ng		94
13) Acetone	4.64	58	40762	4.341	ng	#	82
14) Trichlorofluoromethane	4.76	101	6077217	237.712	ng		99
15) 2-Propanol (Isopropanol)	4.86	45	15750	0.468	ng	#	38
19) Methylene Chloride	5.36	84	958	0.073	ng		94
21) Trichlorotrifluoroethane	5.58	151	3130308	271.386	ng		91
27) 2-Butanone (MEK)	6.67	72	6744	0.894	ng	#	65
30) Ethyl Acetate	7.29	61	4213	0.905	ng		94
31) n-Hexane	7.30	57	8216	0.392	ng		93
32) Chloroform	7.36	83	8488	0.374	ng		100
41) Benzene	8.90	78	21625	0.455	ng		98
47) Trichloroethene	10.14	130	2122	0.157	ng		98
49) 2,2,4-Trimethylpentane...	10.24	57	8174	0.164	ng		80
51) n-Heptane	10.57	71	2199	0.208	ng		84
53) 4-Methyl-2-pentanone	11.33	58	884	0.087	ng	#	50
58) Toluene	12.56	91	27102	0.583	ng		99
59) 2-Hexanone	12.92	43	4385	0.193	ng		81
63) n-Octane	13.92	57	1960	0.203	ng		91
64) Tetrachloroethene	14.03	166	2374	0.172	ng		97
66) Ethylbenzene	15.41	91	3251	0.063	ng		92
67) m- & p-Xylenes	15.63	91	4618	0.110	ng		91
70) o-Xylene	16.24	91	3086	0.074	ng		93
71) n-Nonane	16.61	43	3203	0.145	ng		96
75) alpha-Pinene	17.52	93	52010	2.034	ng		99
88) 4-Isopropyltoluene (p-...	18.92	119	24624	0.518	ng		99
91) d-Limonene	19.08	68	6251	0.453	ng		95

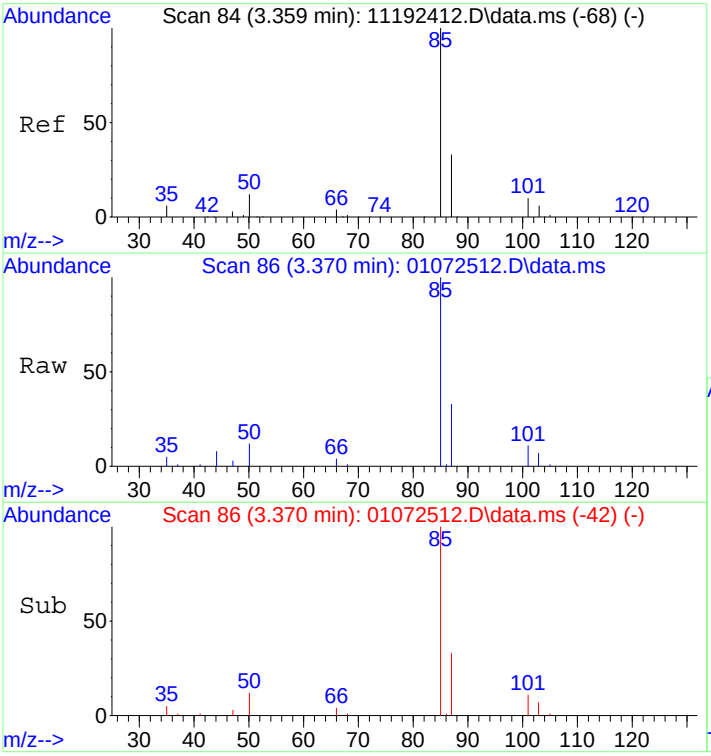
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 10:49:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

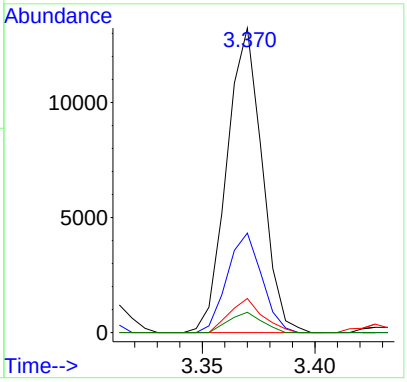


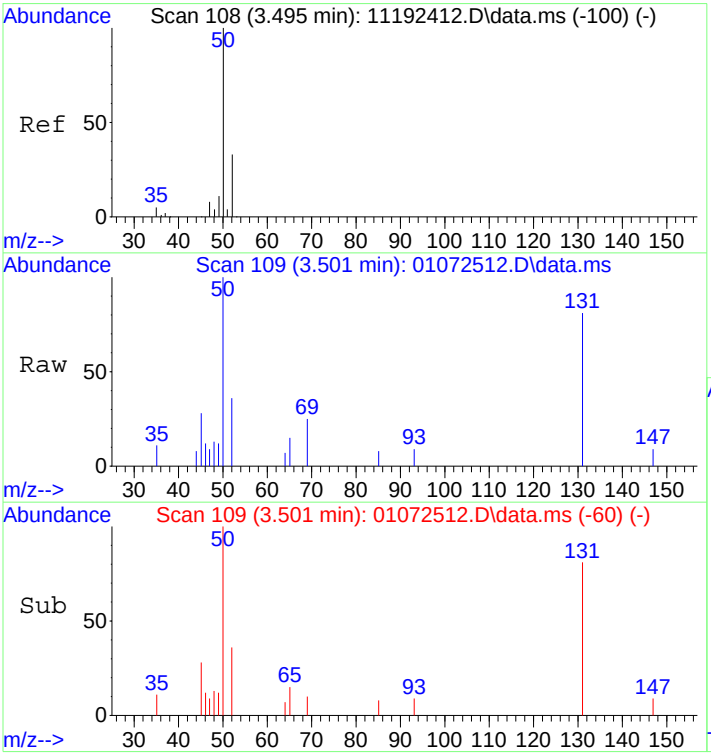


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.53 ng
RT: 3.37 min Scan# 86
Delta R.T. -0.002 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 85 Resp: 14414

Ion	Ratio	Lower	Upper
85	100		
87	32.1	12.6	52.6
101	10.5	0.0	29.6
103	6.3	0.0	26.2

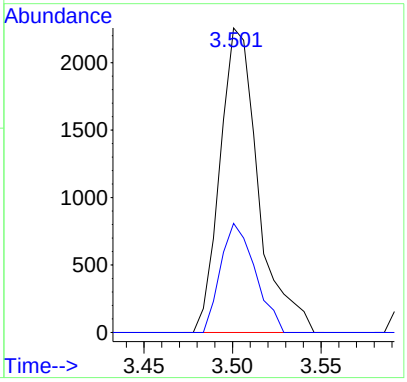


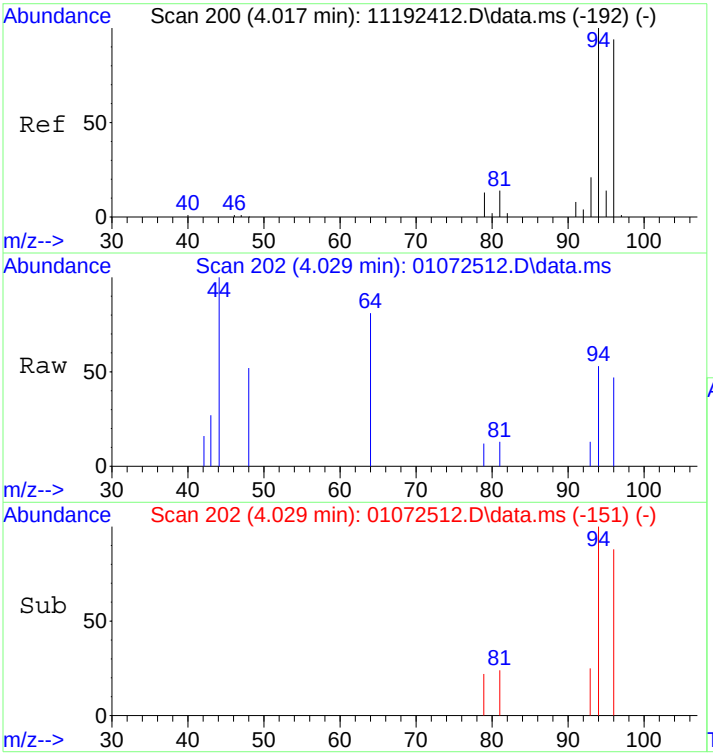


#4
Chloromethane
Concen: 0.17 ng
RT: 3.50 min Scan# 109
Delta R.T. 0.027 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 50 Resp: 3398

Ion	Ratio	Lower	Upper
50	100		
52	32.5	13.0	53.0

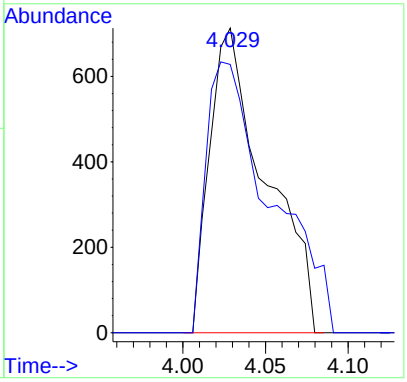


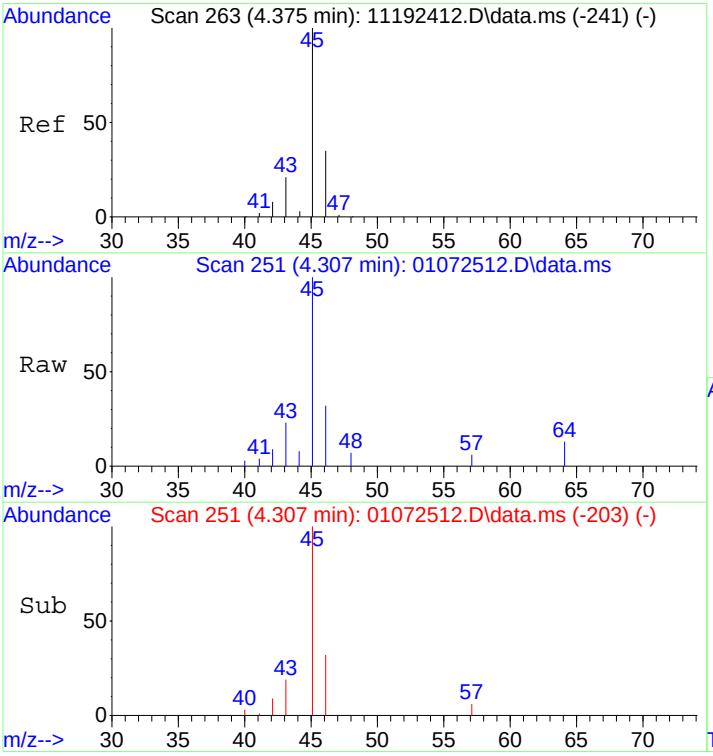


#8
Bromomethane
Concen: 0.17 ng
RT: 4.03 min Scan# 202
Delta R.T. 0.038 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 94 Resp: 1682

Ion	Ratio	Lower	Upper
94	100		
96	103.4	73.5	113.5

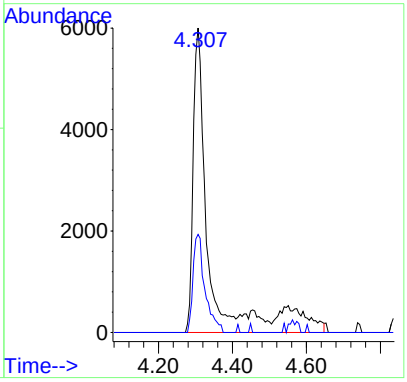


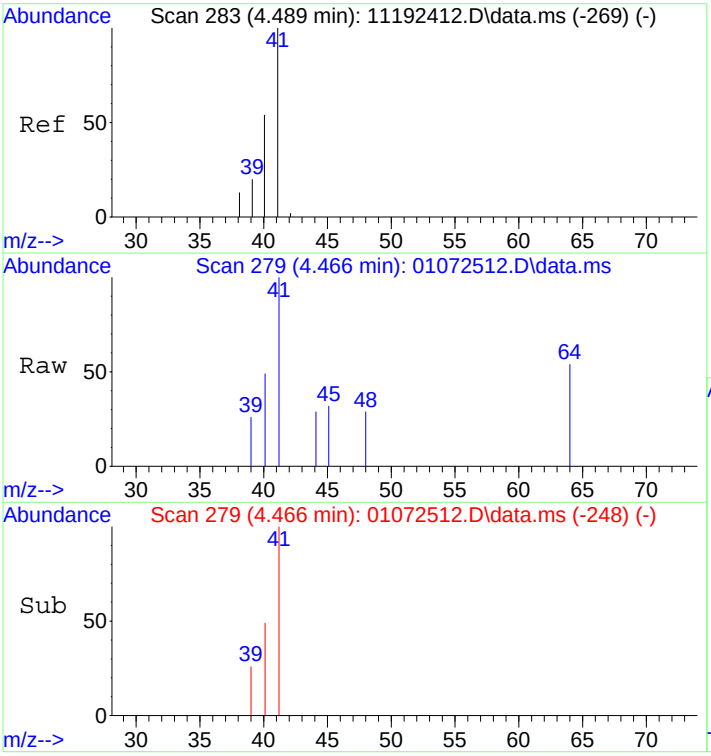


#10
Ethanol
Concen: 1.76 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 45 Resp: 18164

Ion	Ratio	Lower	Upper
45	100		
46	23.7	11.8	51.8

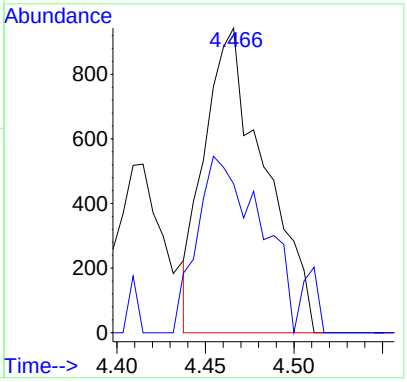


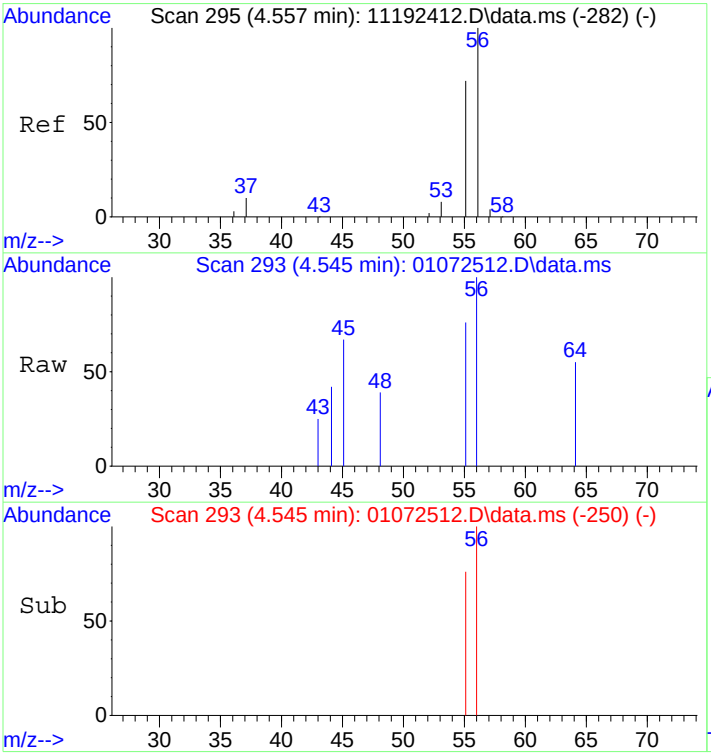


#11
Acetonitrile
Concen: 0.08 ng
RT: 4.47 min Scan# 279
Delta R.T. -0.026 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 41 Resp: 2231

Ion	Ratio	Lower	Upper
41	100		
40	61.0	33.8	73.8

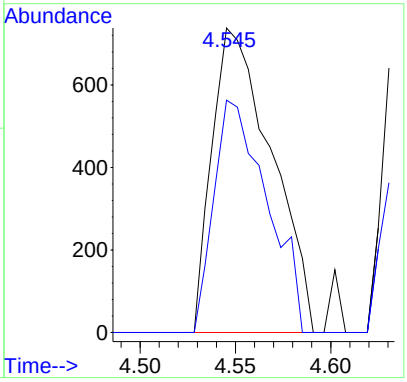


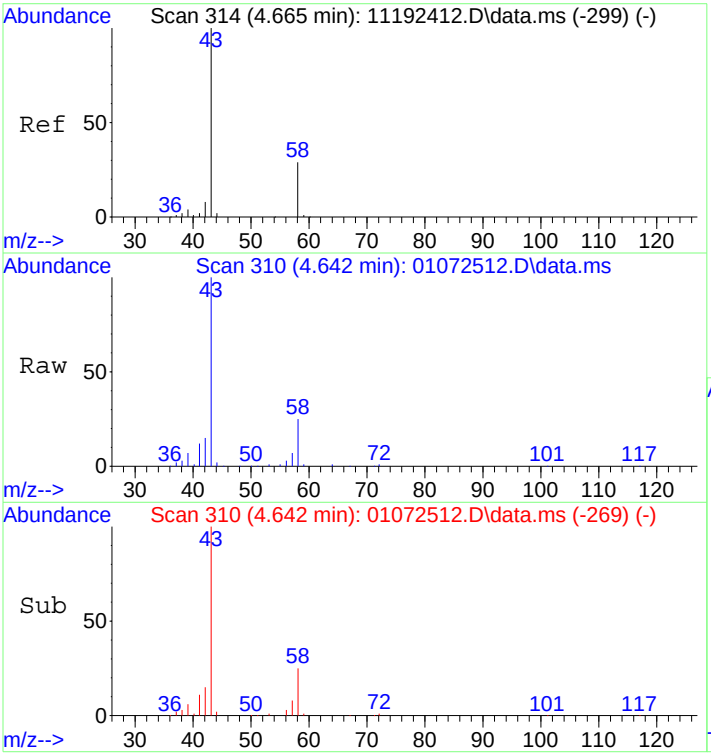


#12
Acrolein
Concen: 0.18 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 56 Resp: 1602

Ion	Ratio	Lower	Upper
56	100		
55	68.1	53.1	93.1

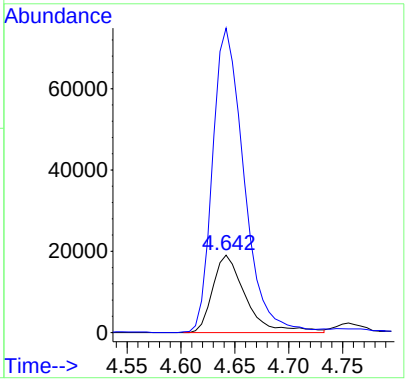


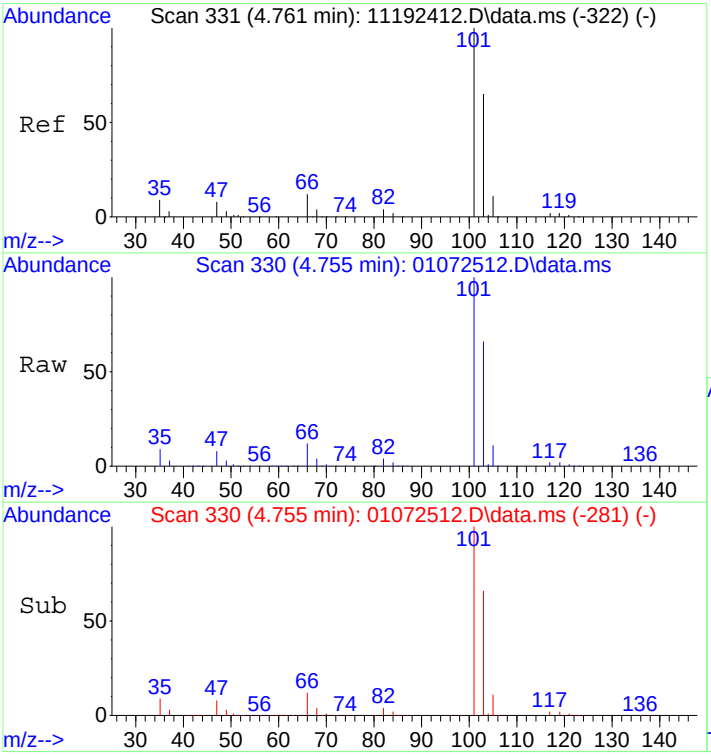


#13
Acetone
Concen: 4.34 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 58 Resp: 40762

Ion	Ratio	Lower	Upper
58	100		
43	381.3	312.5	372.5#

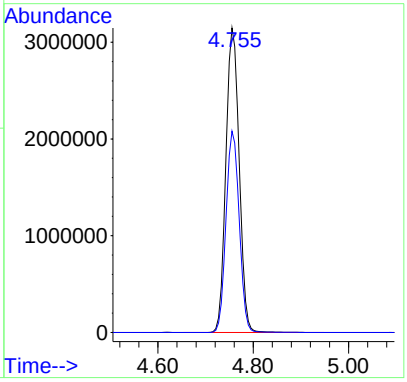


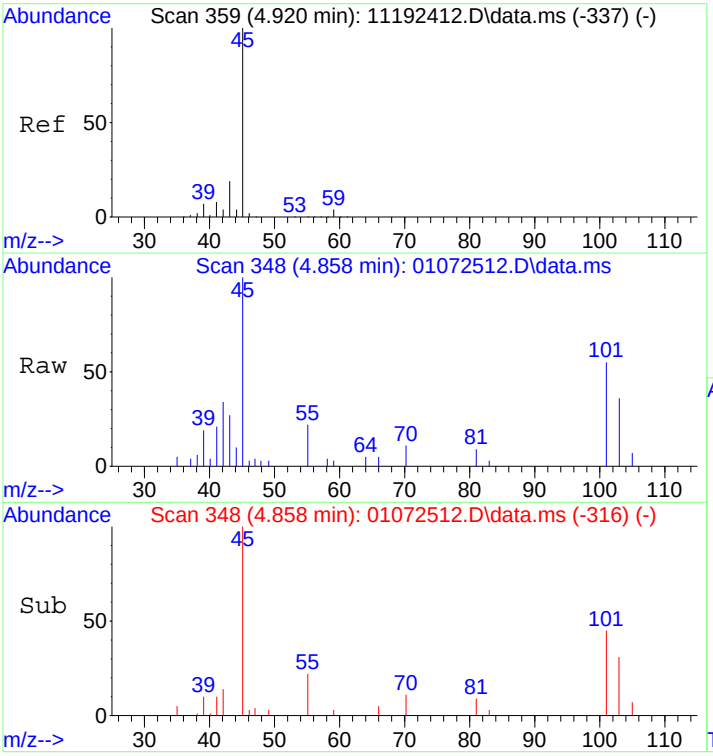


#14
Trichlorofluoromethane
Concen: 237.71 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion:101 Resp: 6077217

Ion	Ratio	Lower	Upper
101	100		
103	65.7	44.8	84.8

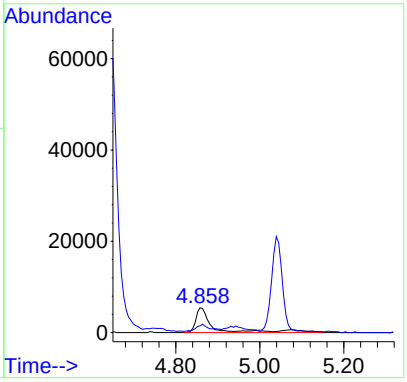


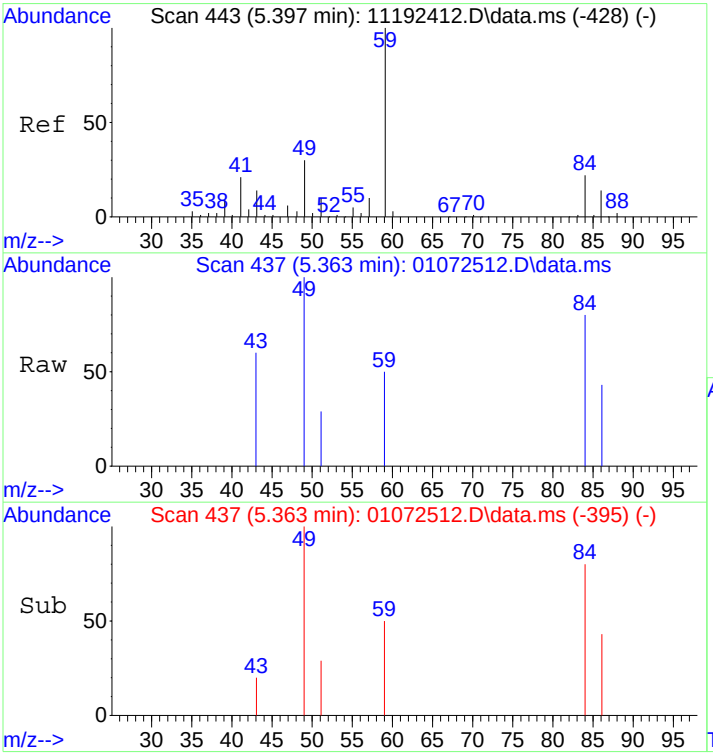


#15
2-Propanol (Isopropanol)
Concen: 0.47 ng
RT: 4.86 min Scan# 348
Delta R.T. -0.067 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 45 Resp: 15750

Ion	Ratio	Lower	Upper
45	100		
43	48.7	0.2	40.2#

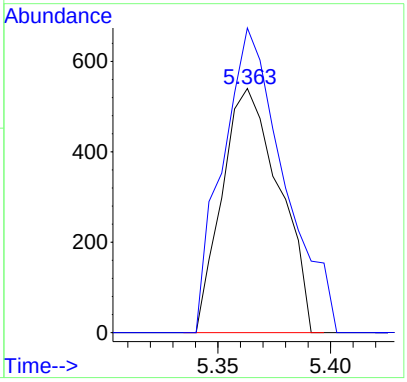


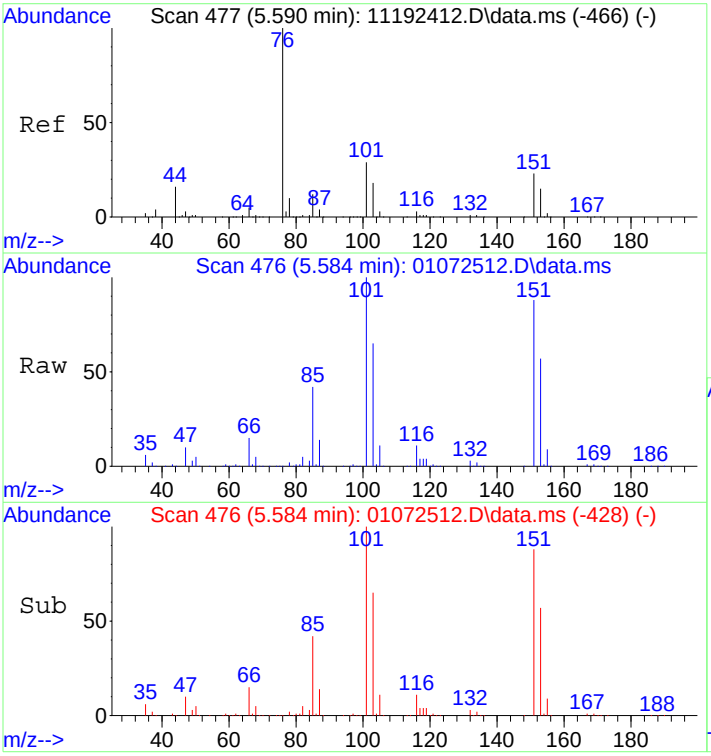


#19
Methylene Chloride
Concen: 0.07 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 84 Resp: 958

Ion	Ratio	Lower	Upper
84	100		
49	133.7	116.0	166.0

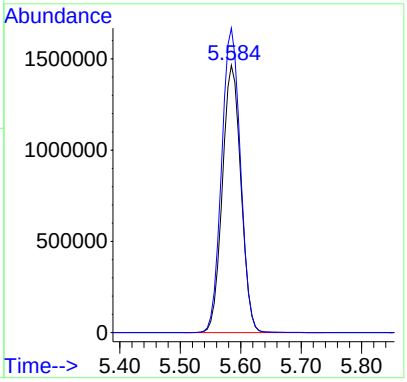


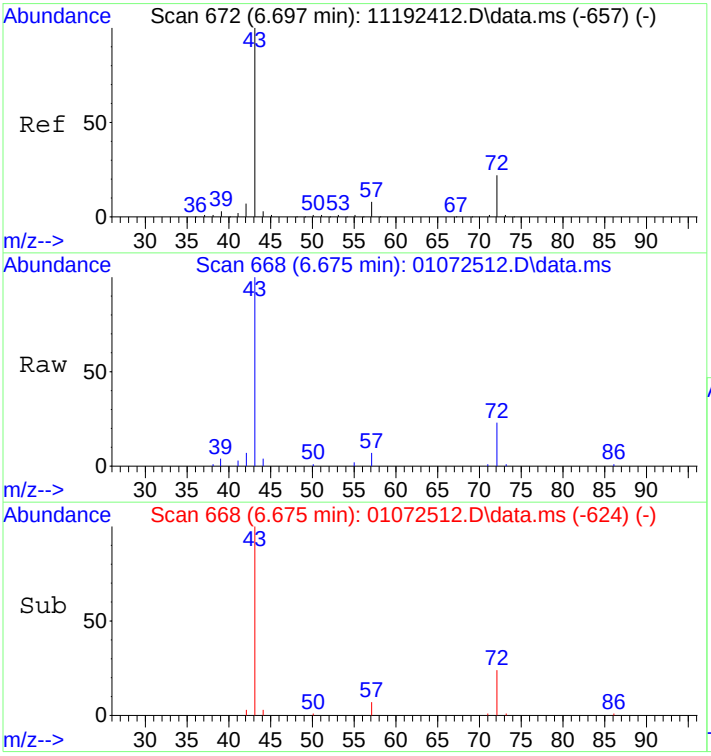


#21
Trichlorotrifluoroethane
Concen: 271.39 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion:151 Resp: 3130308

Ion	Ratio	Lower	Upper
151	100		
101	115.1	105.0	145.0

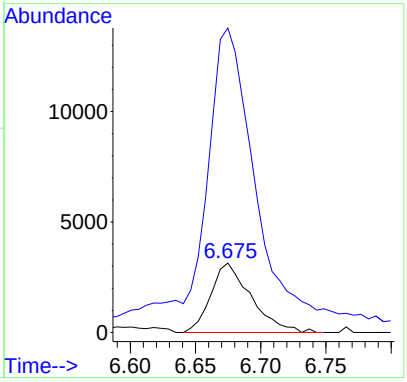


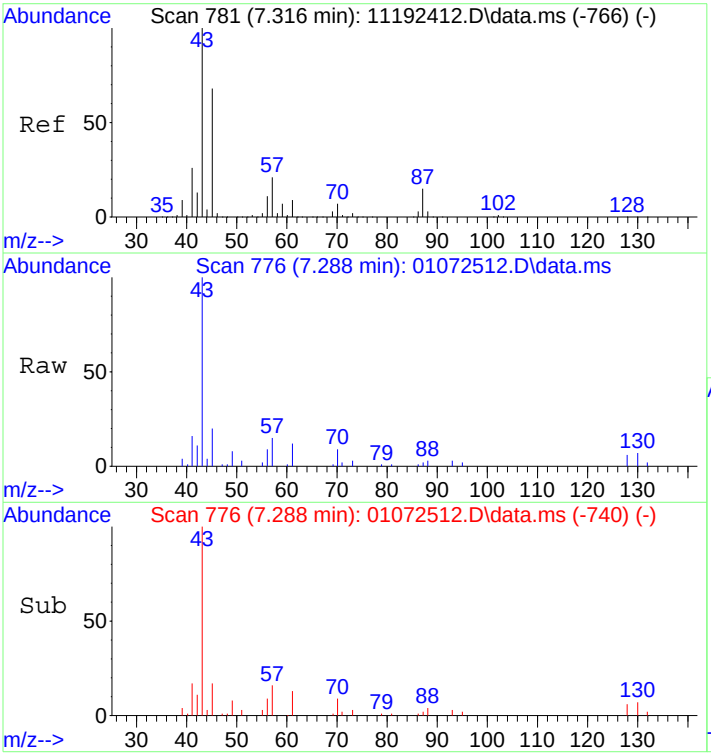


#27
2-Butanone (MEK)
Concen: 0.89 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 72 Resp: 6744

Ion	Ratio	Lower	Upper
72	100		
43	550.8	439.8	479.8#

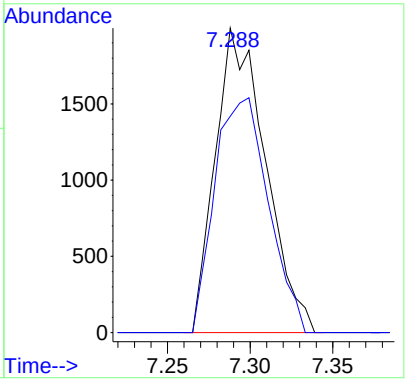


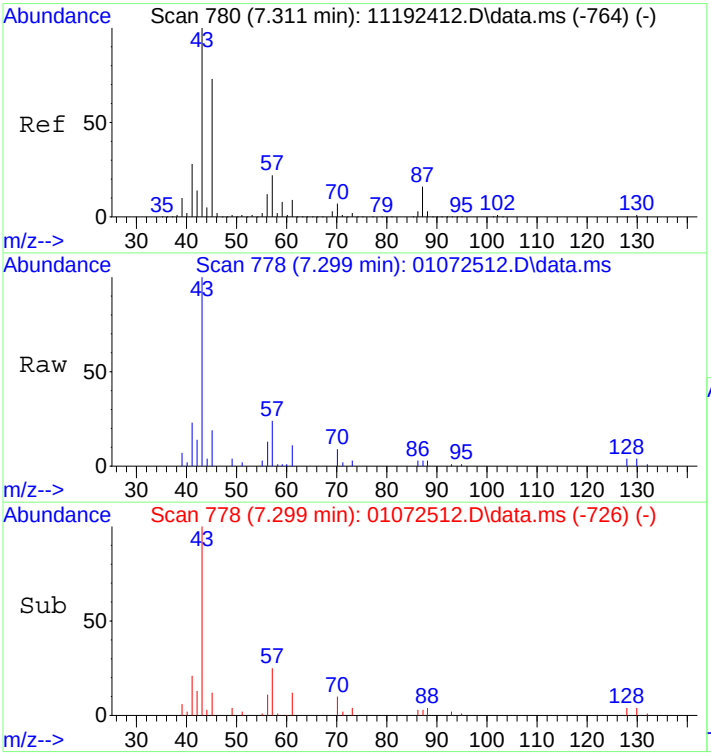


#30
Ethyl Acetate
Concen: 0.90 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 61 Resp: 4213

Ion	Ratio	Lower	Upper
61	100		
70	82.3	57.3	97.3

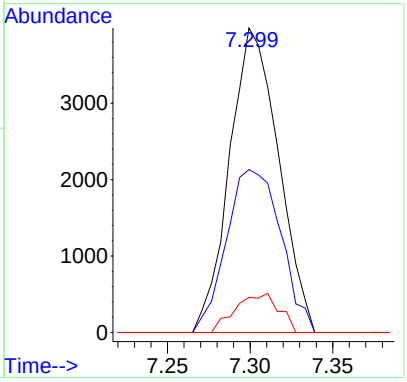


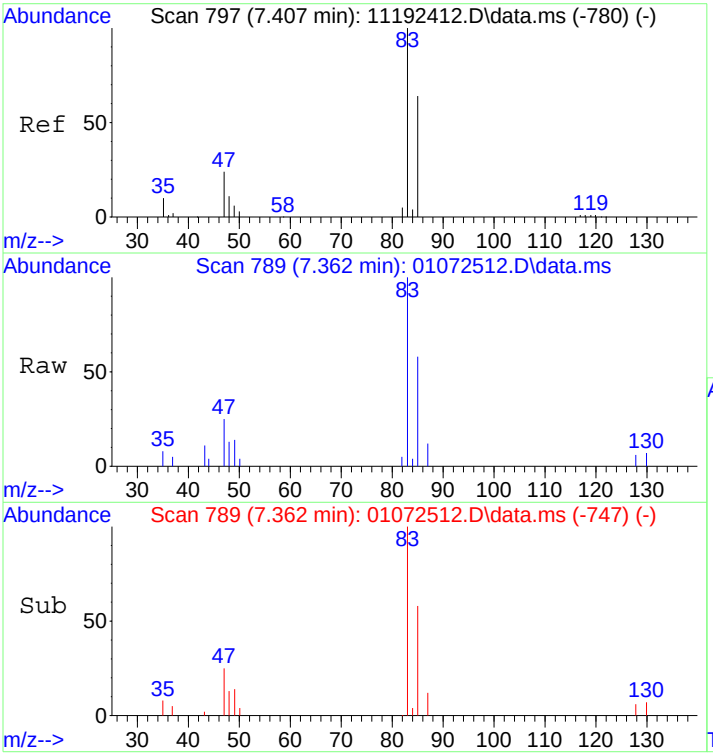


#31
n-Hexane
Concen: 0.39 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 57 Resp: 8216

Ion	Ratio	Lower	Upper
57	100		
56	59.4	43.4	65.0
86	11.4	10.9	16.3

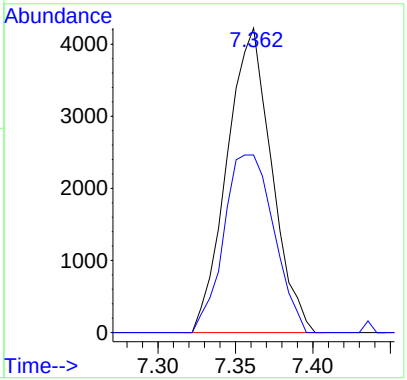


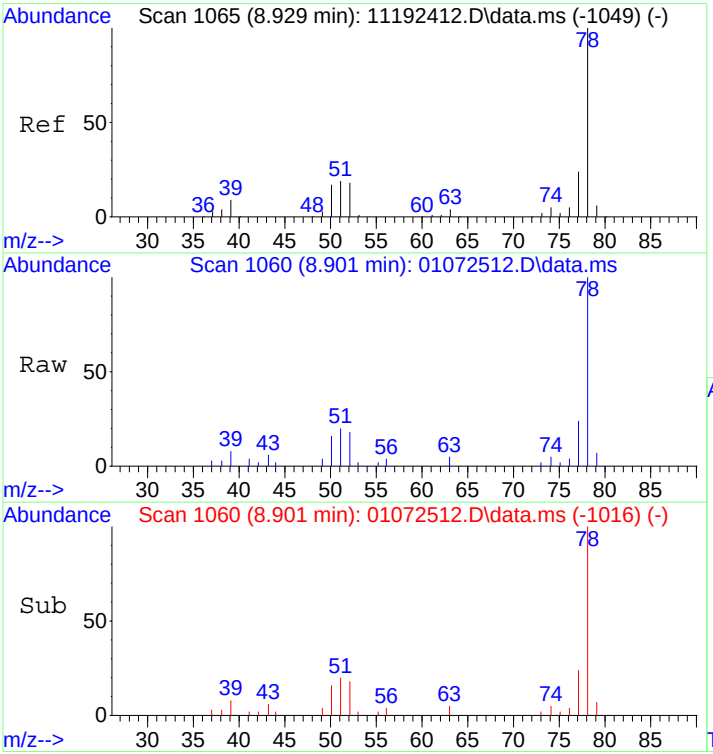


#32
Chloroform
Concen: 0.37 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 83 Resp: 8488

Ion	Ratio	Lower	Upper
83	100		
85	65.4	45.1	85.1

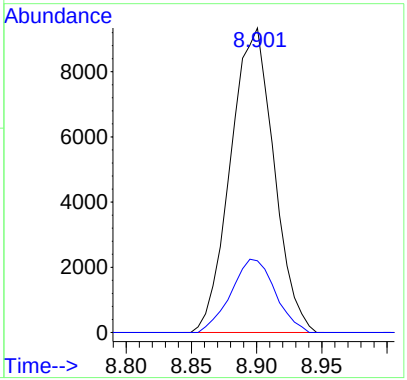


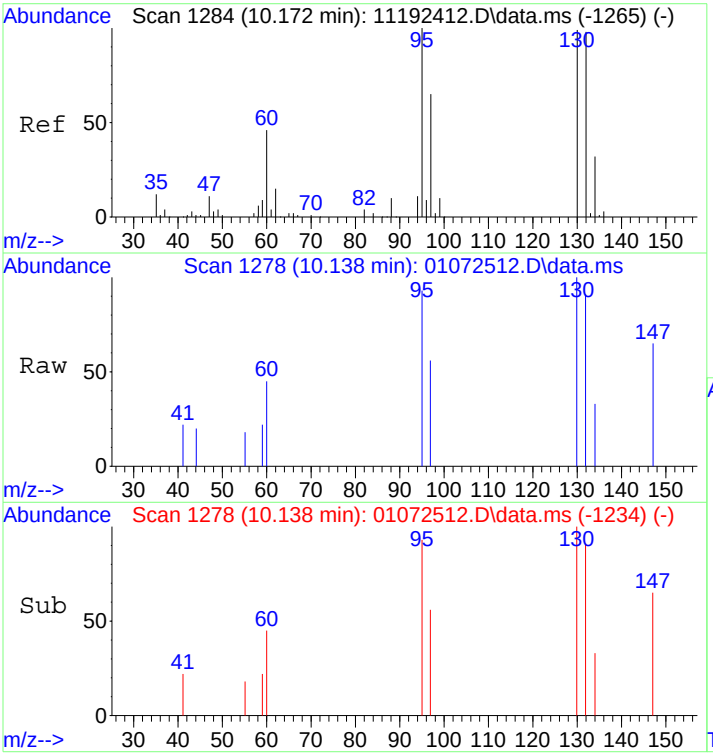


#41
Benzene
Concen: 0.46 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 78 Resp: 21625

Ion	Ratio	Lower	Upper
78	100		
77	24.5	3.7	43.7

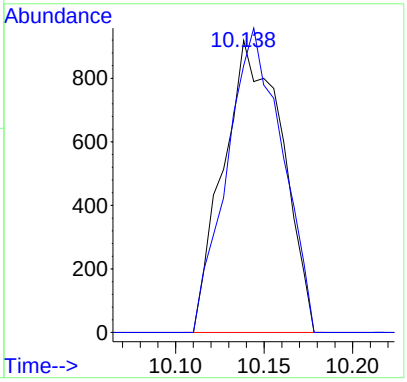


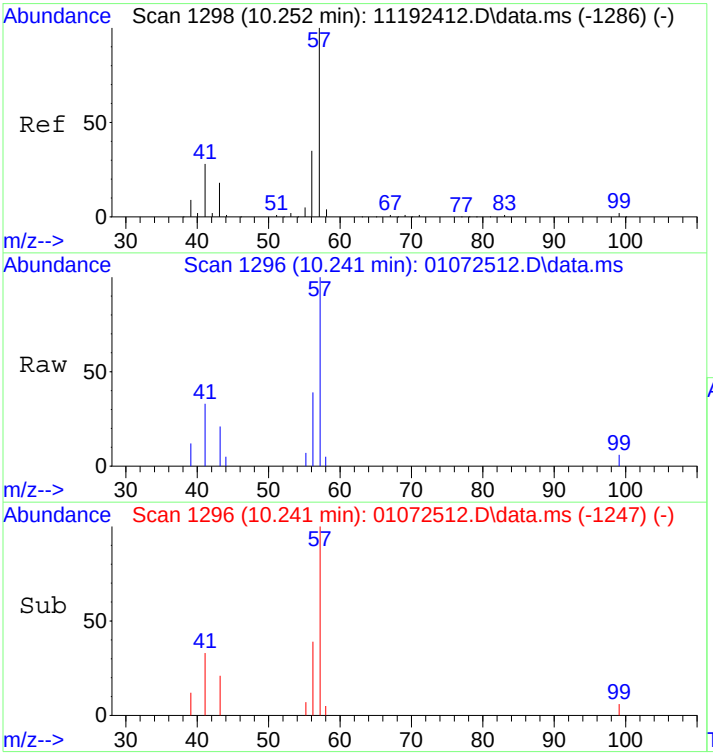


#47
Trichloroethene
Concen: 0.16 ng
RT: 10.14 min Scan# 1278
Delta R.T. -0.002 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion:130 Resp: 2122

Ion	Ratio	Lower	Upper
130	100		
132	97.7	79.3	119.3

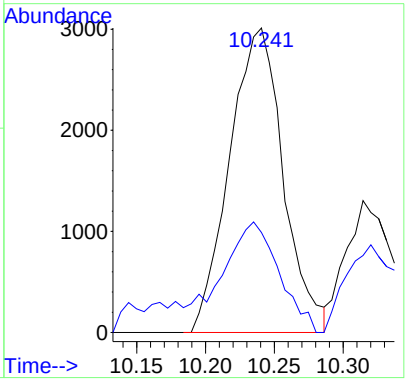


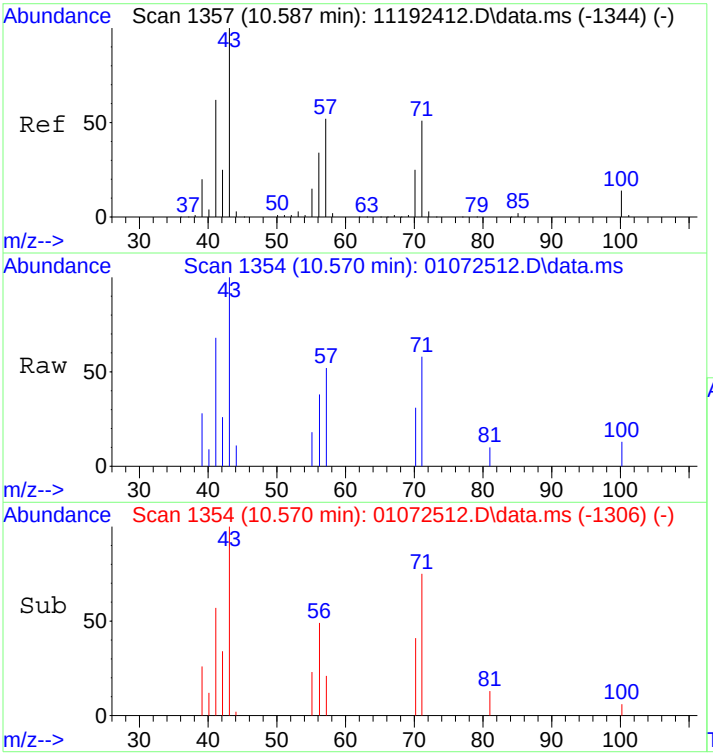


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.16 ng
RT: 10.24 min Scan# 1296
Delta R.T. 0.027 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 57 Resp: 8174

Ion	Ratio	Lower	Upper
57	100		
41	39.0	8.3	48.3

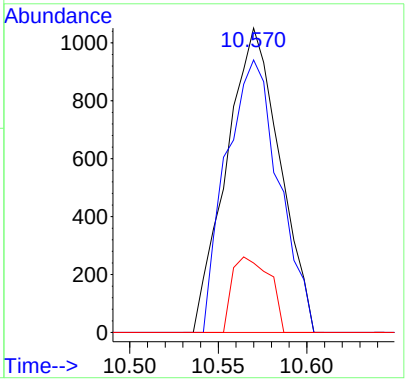


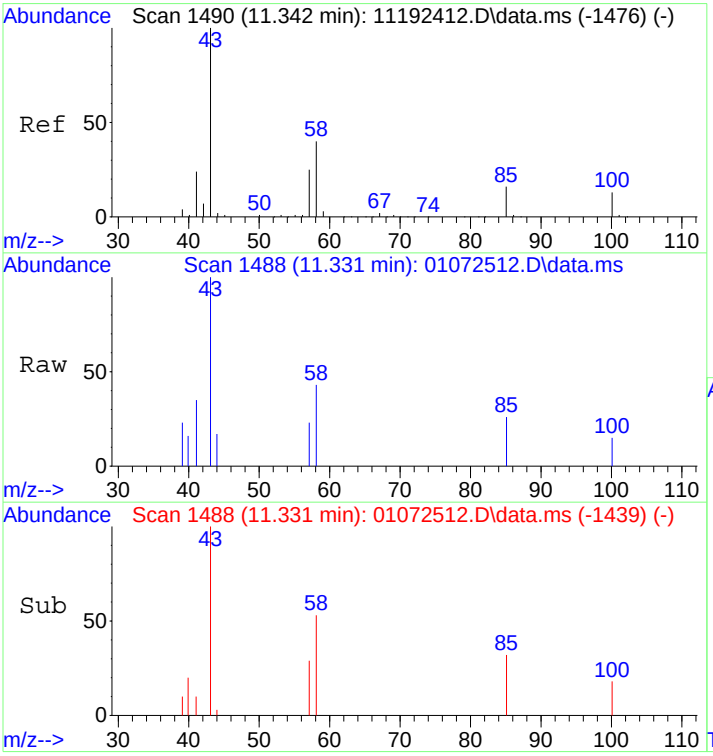


#51
n-Heptane
Concen: 0.21 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 71 Resp: 2199

Ion	Ratio	Lower	Upper
71	100		
57	88.8	83.3	123.3
100	17.5	8.7	48.7

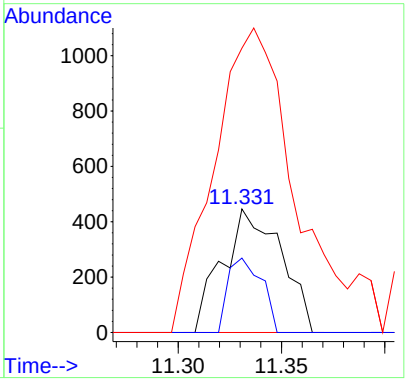


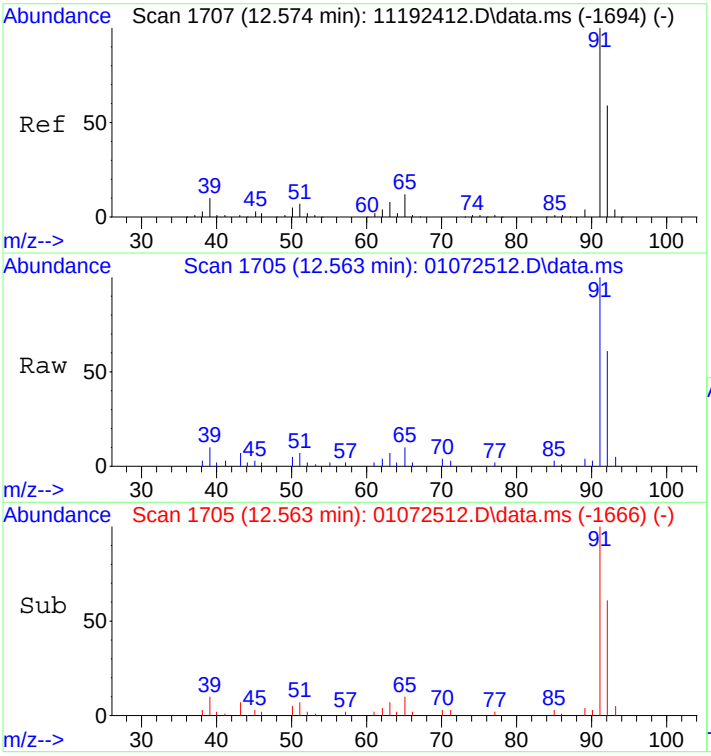


#53
4-Methyl-2-pentanone
Concen: 0.09 ng
RT: 11.33 min Scan# 1488
Delta R.T. 0.027 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 58 Resp: 884

Ion	Ratio	Lower	Upper
58	100		
85	34.5	33.8	50.6
43	348.5	199.5	299.3#

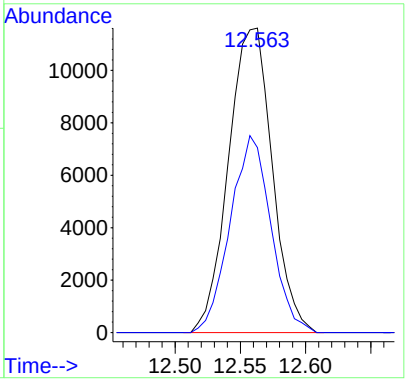


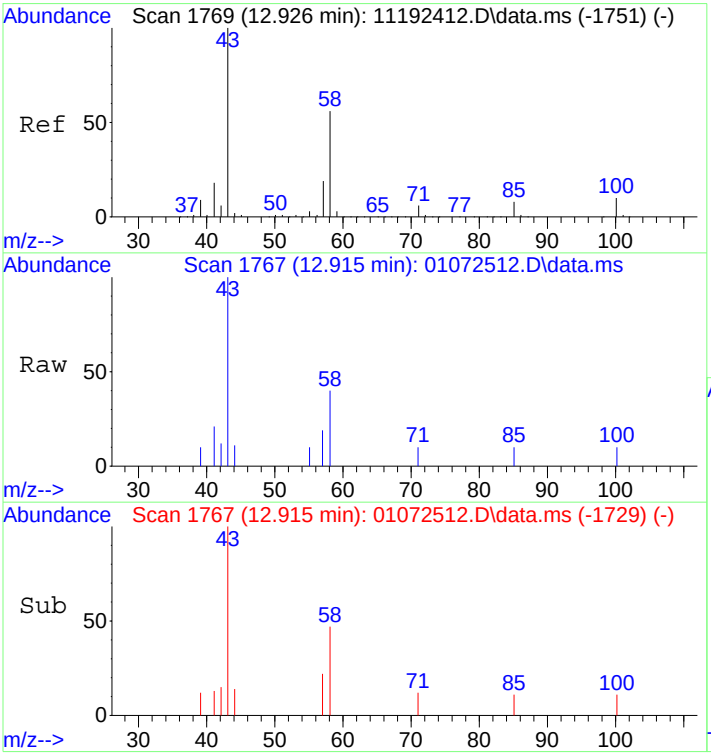


#58
Toluene
Concen: 0.58 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 91 Resp: 27102

Ion	Ratio	Lower	Upper
91	100		
92	60.2	39.2	79.2

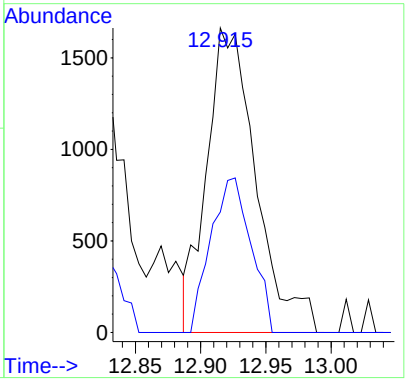


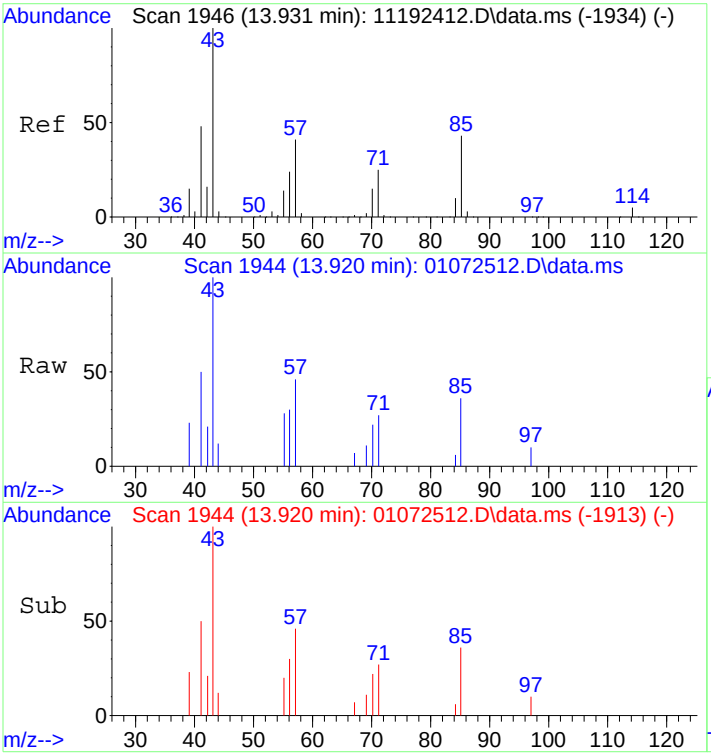


#59
2-Hexanone
Concen: 0.19 ng
RT: 12.92 min Scan# 1767
Delta R.T. -0.034 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 43 Resp: 4385

Ion	Ratio	Lower	Upper
43	100		
58	41.4	35.2	75.2

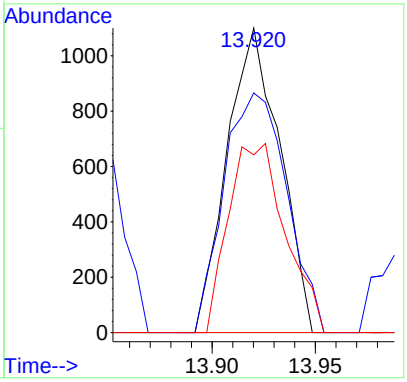


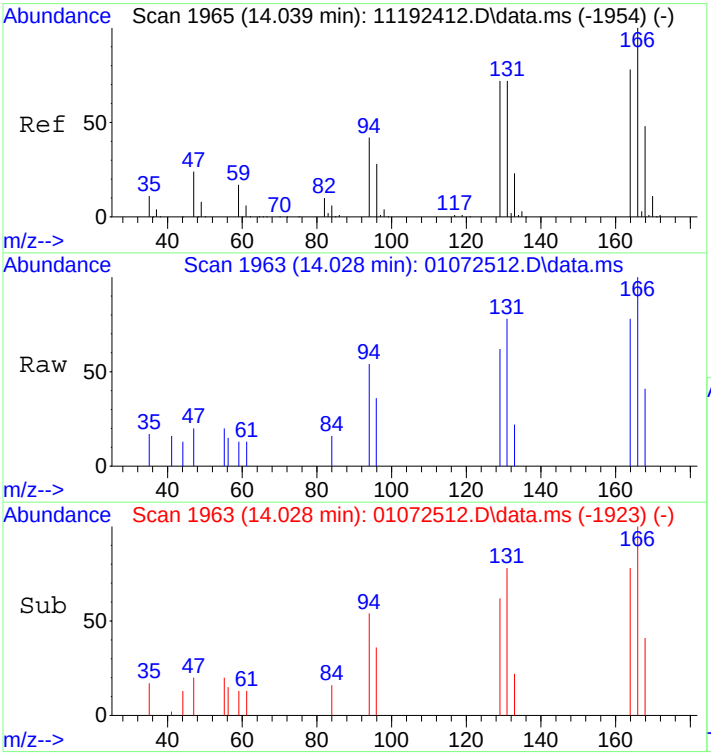


#63
n-Octane
Concen: 0.20 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 57 Resp: 1960

Ion	Ratio	Lower	Upper
57	100		
85	93.8	83.6	125.4
71	66.9	49.0	73.4

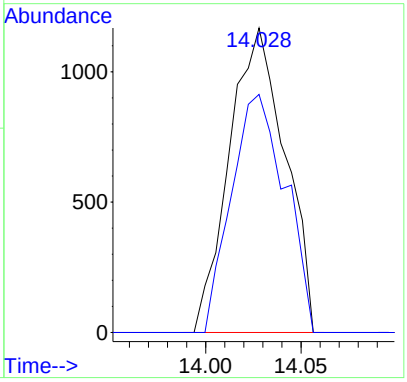


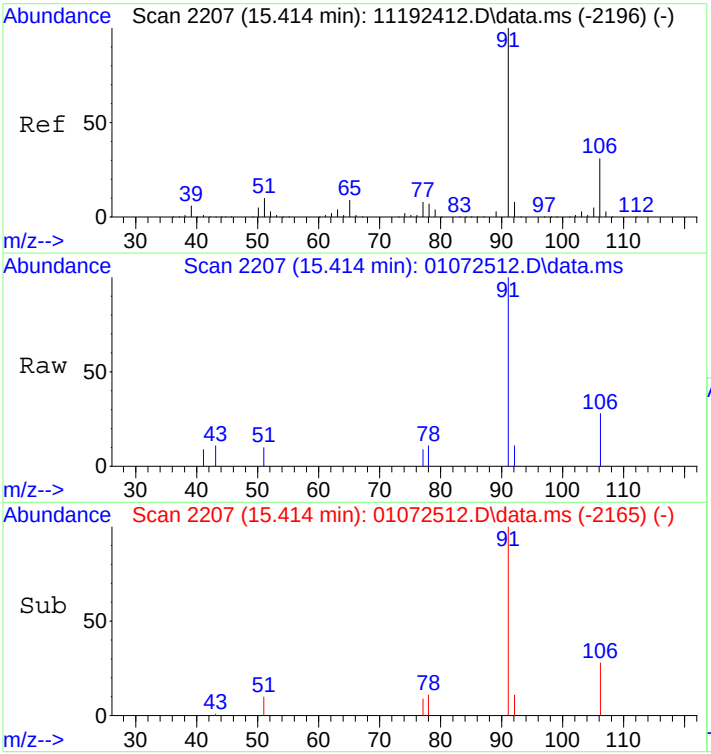


#64
Tetrachloroethene
Concen: 0.17 ng
RT: 14.03 min Scan# 1963
Delta R.T. -0.023 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion:166 Resp: 2374

Ion	Ratio	Lower	Upper
166	100		
164	75.7	58.7	98.7

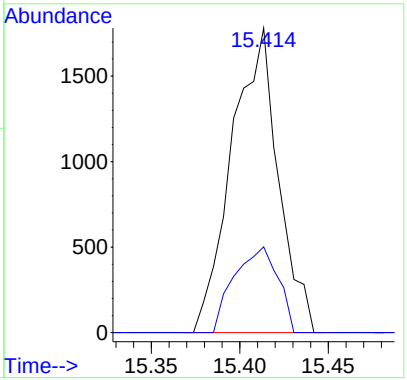


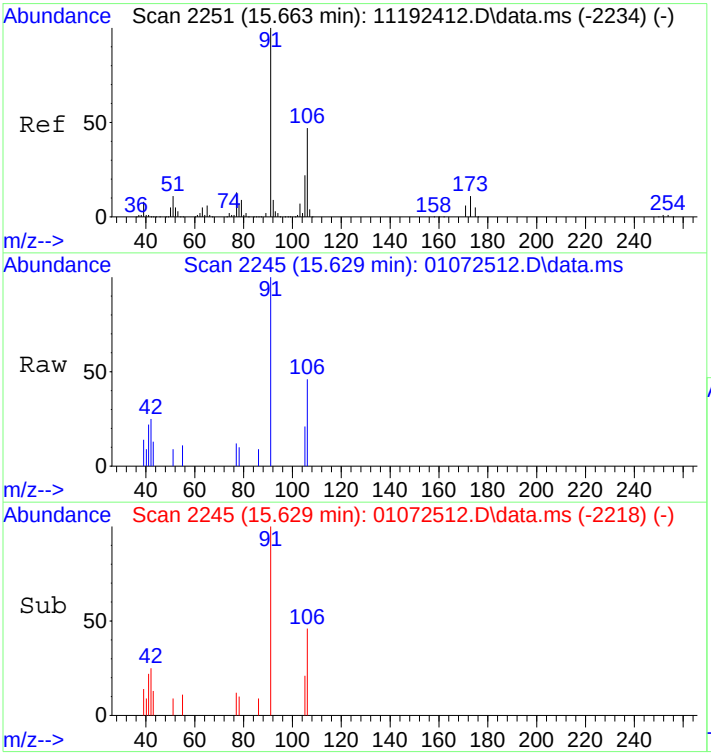


#66
Ethylbenzene
Concen: 0.06 ng
RT: 15.41 min Scan# 2207
Delta R.T. -0.011 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 91 Resp: 3251

Ion	Ratio	Lower	Upper
91	100		
106	26.5	10.7	50.7

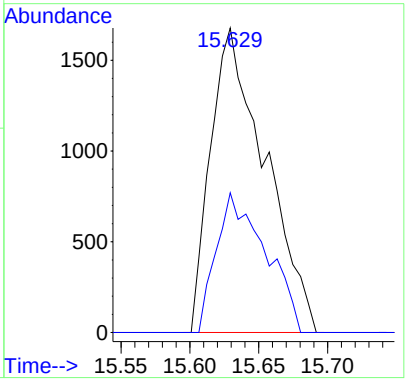


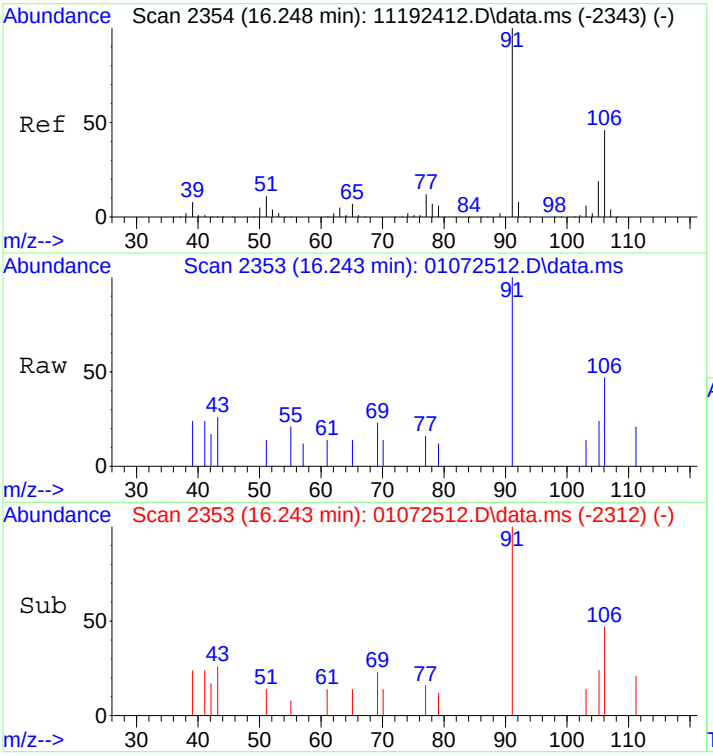


#67
m- & p-Xylenes
Concen: 0.11 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 91 Resp: 4618

Ion	Ratio	Lower	Upper
91	100		
106	41.4	27.1	67.1

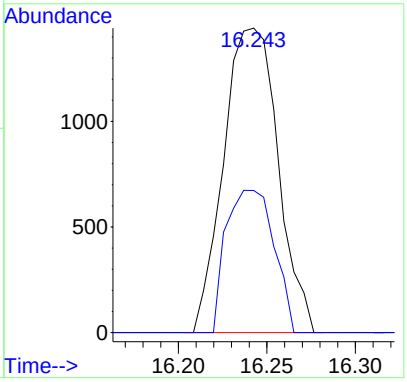


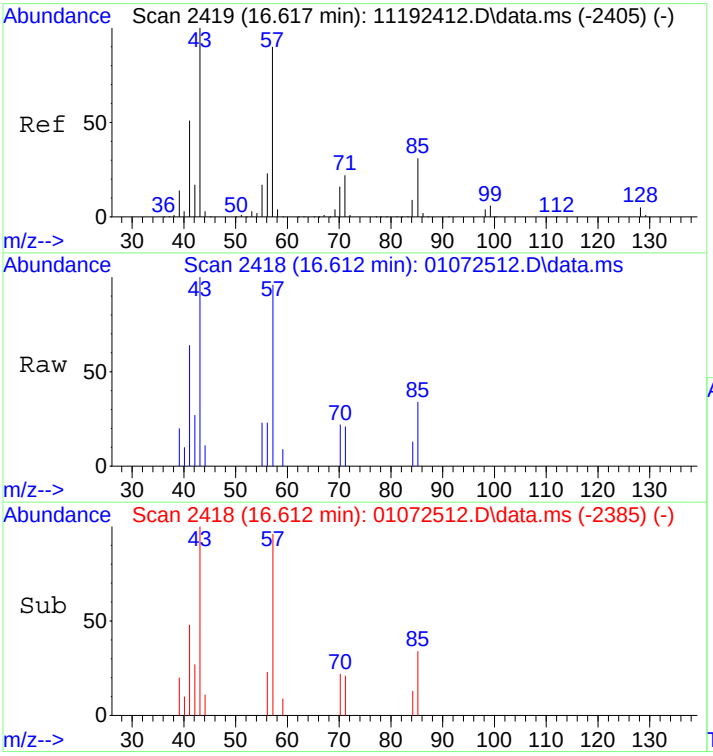


#70
o-Xylene
Concen: 0.07 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 91 Resp: 3086

Ion	Ratio	Lower	Upper
91	100		
106	41.1	25.8	65.8

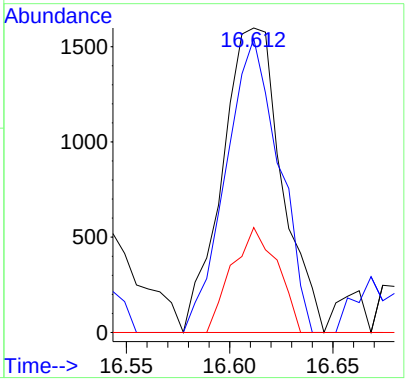


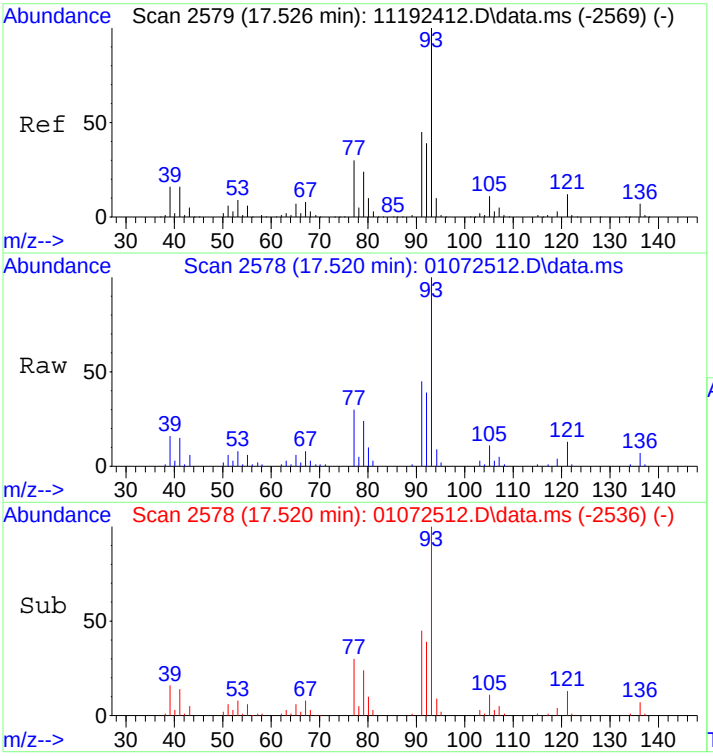


#71
n-Nonane
Concen: 0.14 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 43 Resp: 3203

Ion	Ratio	Lower	Upper
43	100		
57	86.3	69.4	109.4
85	26.4	10.5	50.5

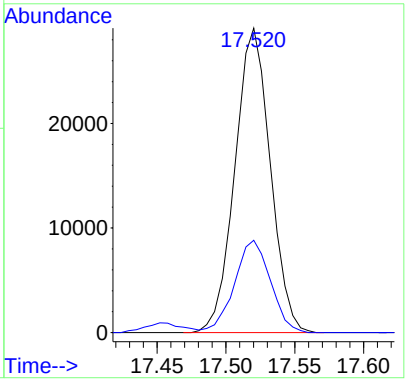


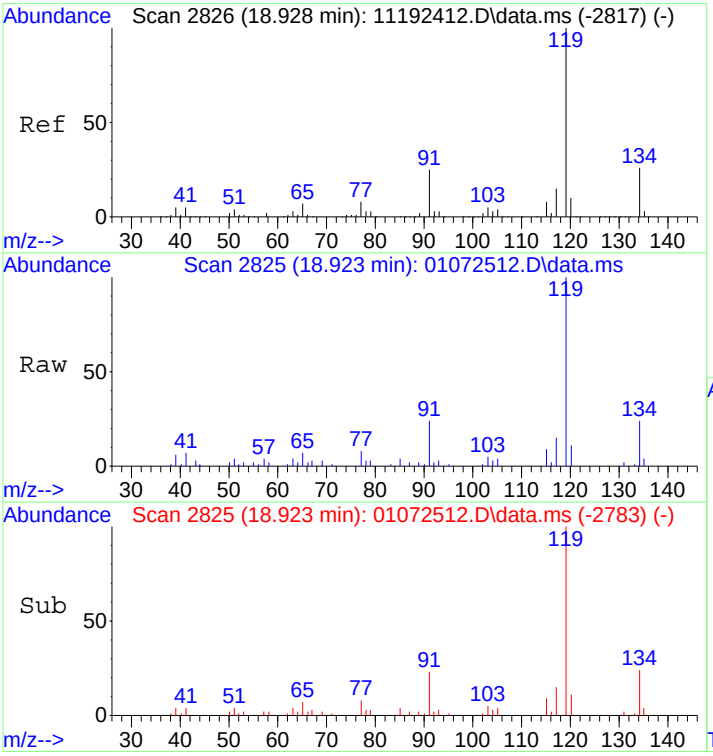


#75
alpha-Pinene
Concen: 2.03 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 93 Resp: 52010

Ion	Ratio	Lower	Upper
93	100		
77	30.9	10.1	50.1

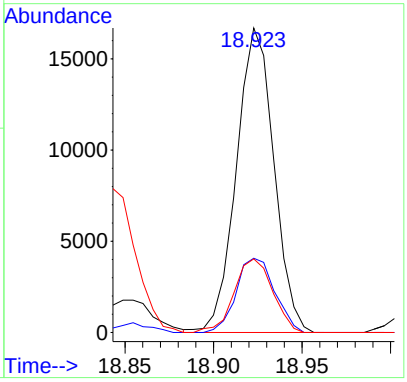


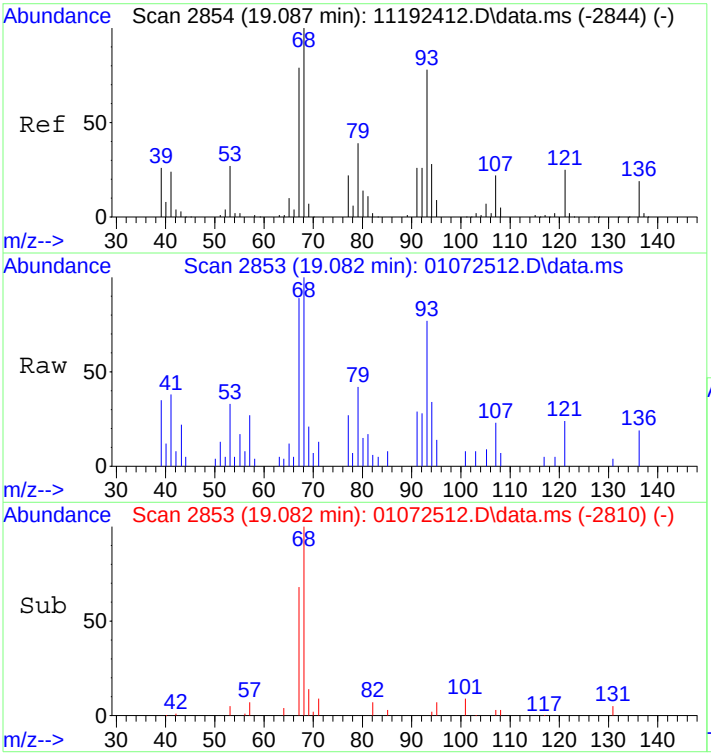


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.52 ng
RT: 18.92 min Scan# 2825
Delta R.T. -0.011 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion:119 Resp: 24624

Ion	Ratio	Lower	Upper
119	100		
134	25.0	5.8	45.8
91	24.8	4.6	44.6

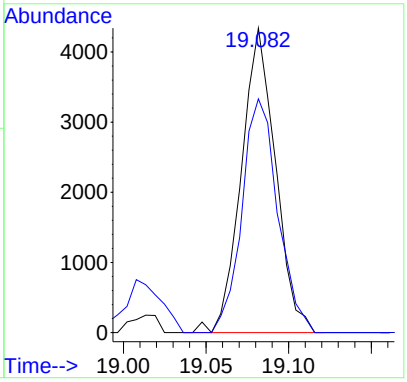




#91
d-Limonene
Concen: 0.45 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01072512.D
Acq: 7 Jan 2025 10:31

Tgt Ion: 68 Resp: 6251

Ion	Ratio	Lower	Upper
68	100		
93	80.5	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 13:30:48 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

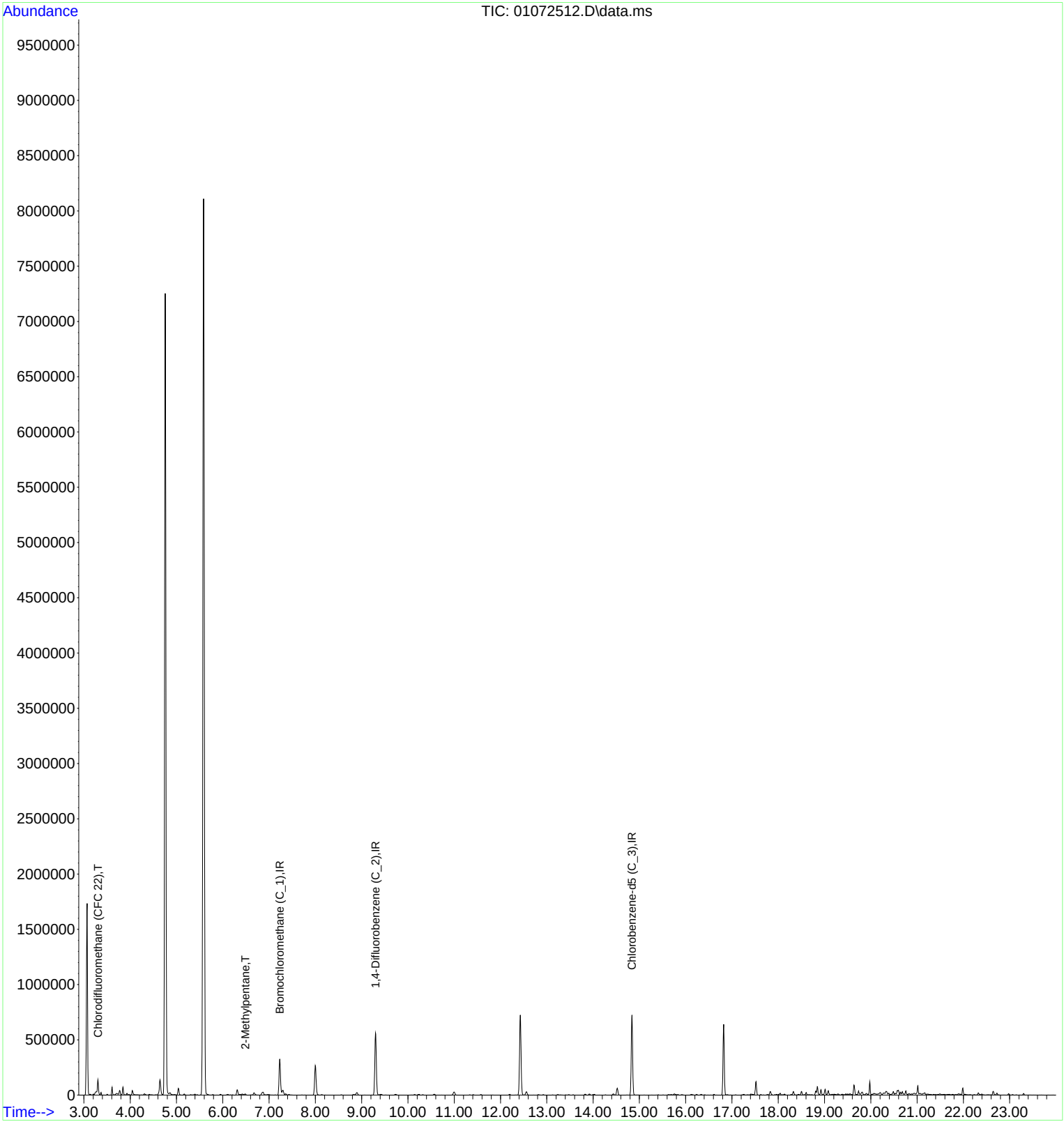
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	140795	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	592724	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	109000	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	73	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1144	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.31	67	434	0.111	ng		86
6) 1-Chloro-1,1-Difluoroe...	3.51	65	334	N.D.			
7) Dichlorofluoromethane ...	4.24	67	1013	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.58	83	334	N.D.			
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.34	43	1464	N.D.			
12) 2-Methylpentane	6.49	71	1844	0.159	ng	#	42
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	9.51	56	971	N.D.			
18) Dibromomethane	9.81	174	57	N.D.			
20) Methyl Cyclohexane	11.42	55	1775	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	1196	N.D.			
27) 4-Chlorotoluene	17.68	91	1196	N.D.			
28) Indane	19.10	117	984	N.D.			
29) Indene	19.11	115	134	N.D.			
30) 1,2,4,5-Tetramethylben...	20.22	119	876	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	876	N.D.			
32) 1,2,3,5-Tetramethylben...	20.60	119	547	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 13:30:48 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072516.D
Acq On : 7 Jan 2025 12:40
Operator : SC
Sample : P2405139-021Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 12:20:36 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	136165	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	579771	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	106413	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	229319	12.361	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.88%				
57) Toluene-d8 (SS2)	12.43	98	602239	12.758	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.08%				
73) Bromofluorobenzene (SS3)	16.82	174	236621	14.525	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.16%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	3.39	85	1225	N.D.			
4) Chloromethane	3.56	50	485	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.10	64	384	N.D.			
10) Ethanol	4.32	45	1100	0.109	ng	#	52
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.67	58	3309	0.361	ng	#	60
14) Trichlorofluoromethane	4.76	101	586211	23.484	ng		100
15) 2-Propanol (Isopropanol)	4.90	45	889	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	279158	24.787	ng		93
22) Carbon Disulfide	5.64	76	687	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.70	72	225	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	7.32	61	116	N.D.			
31) n-Hexane	7.31	57	555	N.D.			
32) Chloroform	7.35	83	661	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.87	56	195	No Calib		#	
41) Benzene	8.89	78	2087	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072516.D
Acq On : 7 Jan 2025 12:40
Operator : SC
Sample : P2405139-021Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

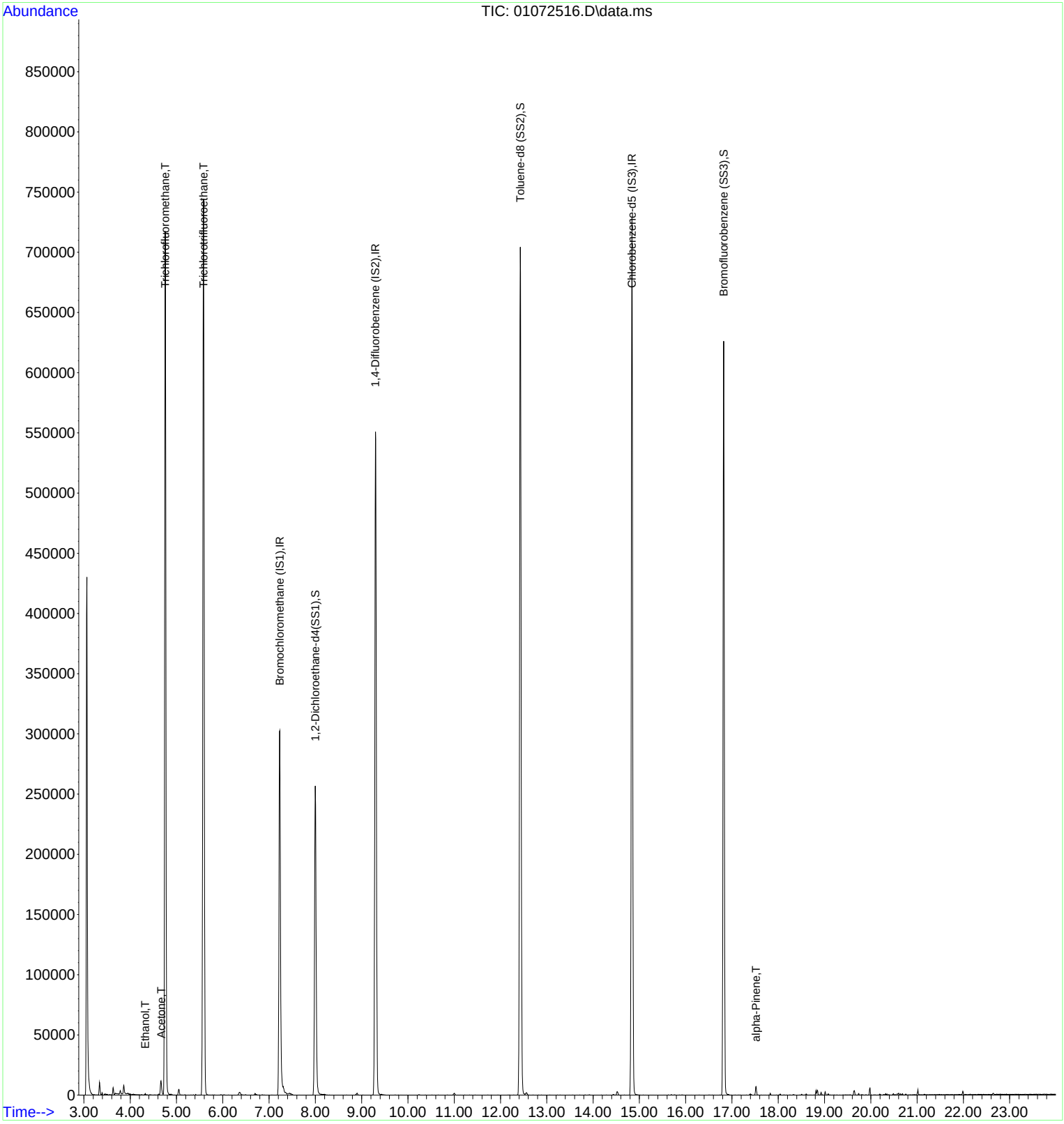
Quant Time: Jan 12 12:20:36 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	564	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	2240	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	17.52	93	3597	0.144	ng	99
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	1609	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.09	68	249	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072516.D
Acq On : 7 Jan 2025 12:40
Operator : SC
Sample : P2405139-021Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

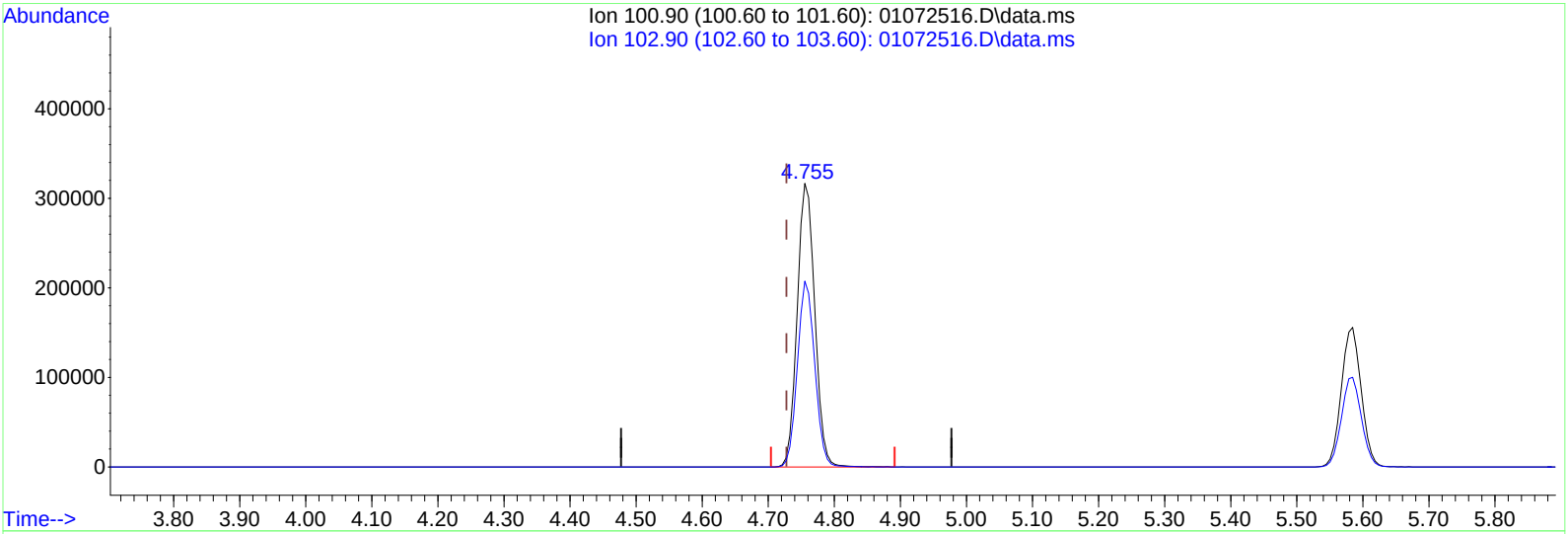
Quant Time: Jan 12 12:20:36 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

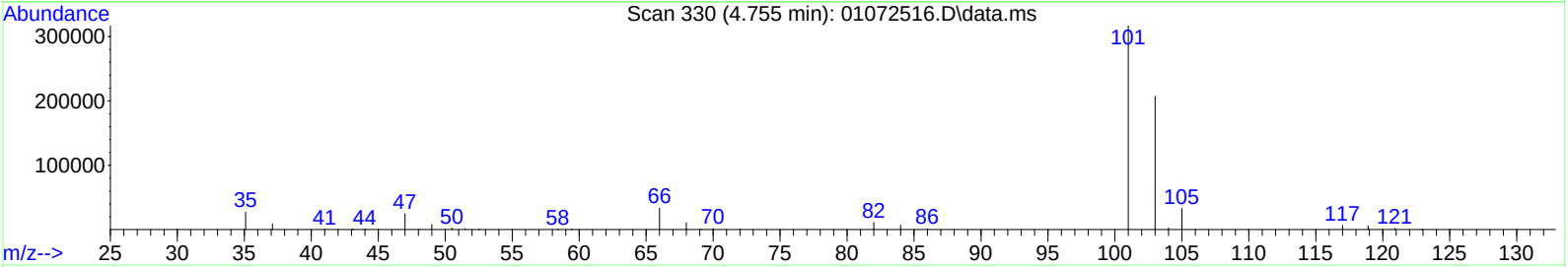


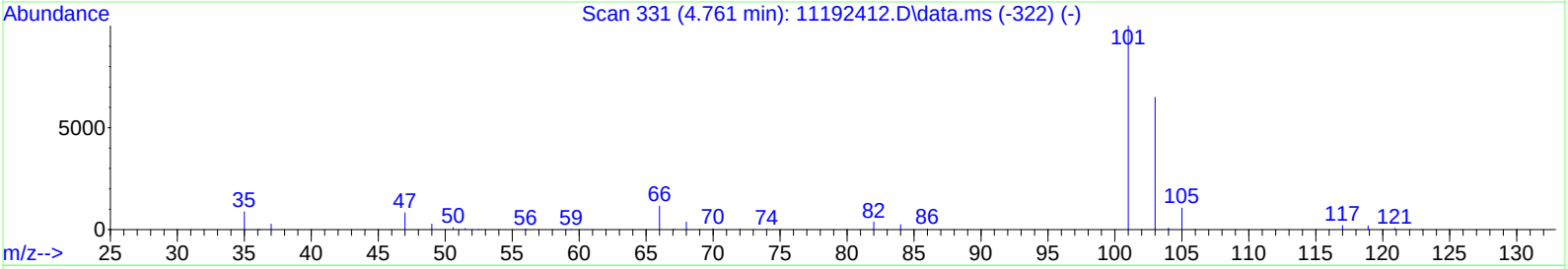
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072516.D
Acq On : 7 Jan 2025 12:40
Operator : SC
Sample : P2405139-021Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 10:46:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072516.D\data.ms

(14) Trichlorofluoromethane (T)

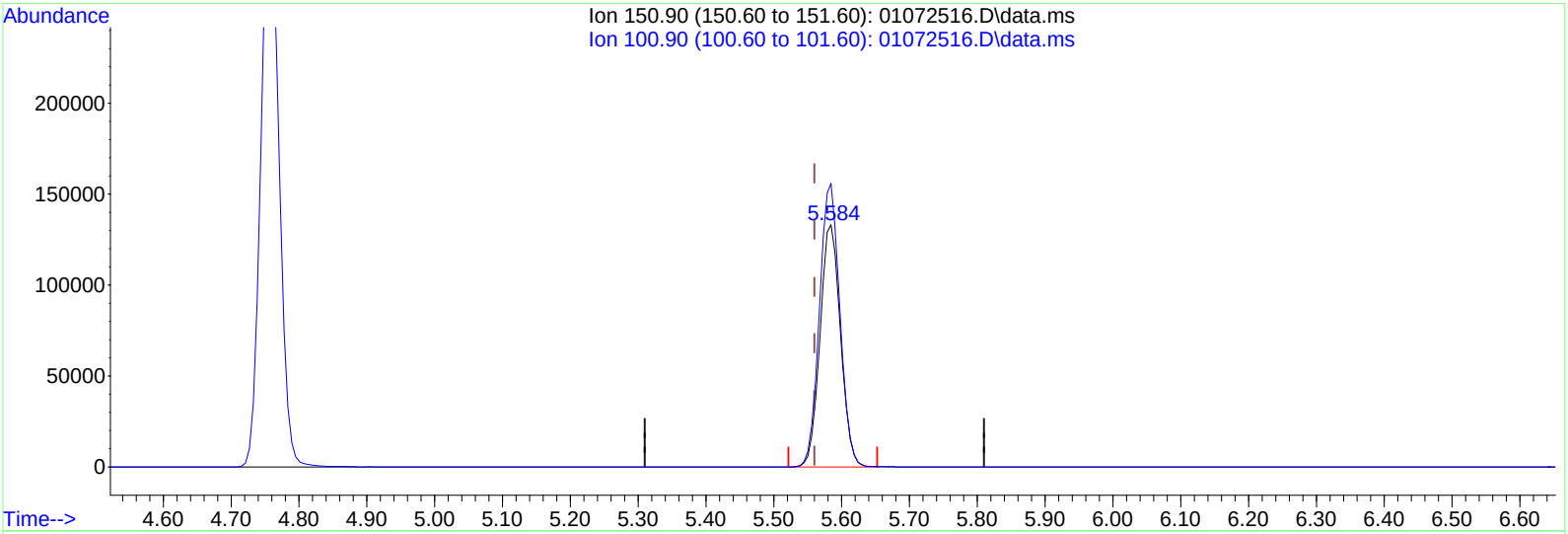
4.755min (+0.028) 23.48ng

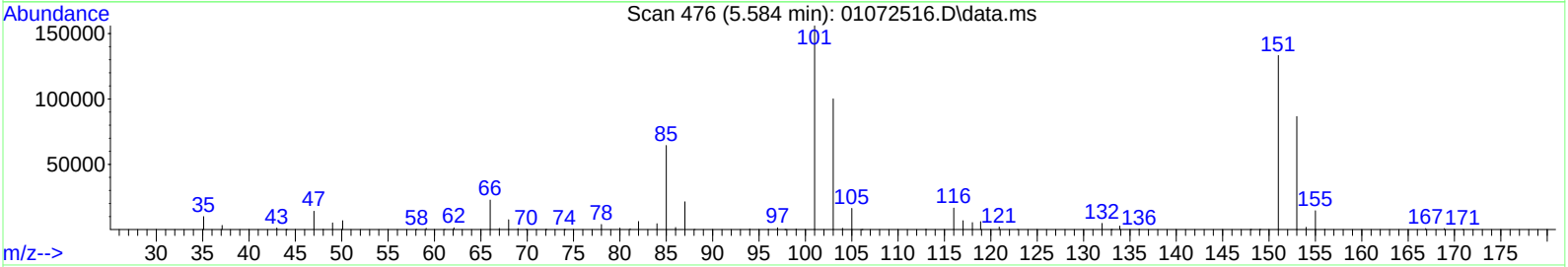
response 586211

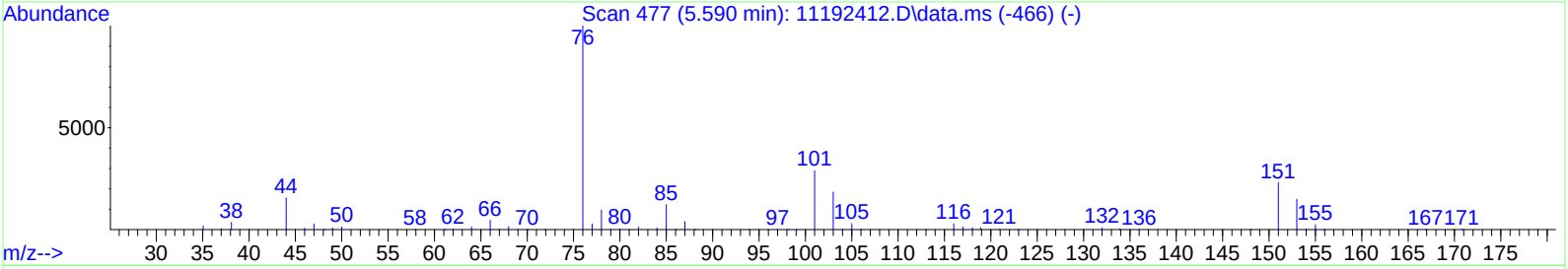
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.59
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072516.D
Acq On : 7 Jan 2025 12:40
Operator : SC
Sample : P2405139-021Dil (40mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 10:46:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072516.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.584min (+0.024) 24.79ng

response 279158

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	116.54
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072512.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.262	59	67	69	rBV	24220	55350	0.32%	0.129%
2	3.302	69	74	82	rVV3	137290	226339	1.30%	0.526%
3	3.370	82	86	91	rVB	24596	27137	0.16%	0.063%
4	3.501	105	109	121	rVB3	8667	11889	0.07%	0.028%
5	3.608	121	128	135	rBV	71104	90046	0.52%	0.209%
6	3.705	136	145	152	rVV4	13689	46557	0.27%	0.108%
7	3.773	152	157	164	rVV	40874	70247	0.40%	0.163%
8	3.841	164	169	180	rVB	71940	102296	0.59%	0.238%
9	3.926	180	184	189	rBV	14057	18515	0.11%	0.043%
10	4.046	200	205	222	rVB2	39649	66587	0.38%	0.155%
11	4.307	245	251	265	rVB	11073	23868	0.14%	0.055%
12	4.409	265	269	275	rBV	6357	10432	0.06%	0.024%
13	4.642	300	310	321	rBV2	137110	299026	1.71%	0.695%
14	4.755	321	330	343	rVV	7251513	13882814	79.57%	32.269%
15	4.858	344	348	360	rVB2	18552	41059	0.24%	0.095%
16	5.039	373	380	389	rVB	60860	104570	0.60%	0.243%
17	5.164	397	402	408	rBV2	9841	16404	0.09%	0.038%
18	5.397	438	443	448	rVB2	7650	11750	0.07%	0.027%
19	5.584	462	476	501	rBV	8110398	17447467	100.00%	40.555%
20	5.948	533	540	553	rBB2	7651	16403	0.09%	0.038%
21	6.107	559	568	574	rBV4	5390	13400	0.08%	0.031%
22	6.311	596	604	611	rBV	48799	100979	0.58%	0.235%
23	6.419	618	623	630	rVV5	6152	14353	0.08%	0.033%
24	6.482	630	634	643	rVB2	10363	20263	0.12%	0.047%
25	6.675	662	668	680	rVB	20178	44286	0.25%	0.103%
26	6.868	690	702	715	rBV3	26098	82692	0.47%	0.192%
27	7.231	756	766	773	rBV	326038	712671	4.08%	1.657%
28	7.299	773	778	785	rVV2	43516	103249	0.59%	0.240%
29	7.356	785	788	795	rVV2	10864	20405	0.12%	0.047%
30	7.436	795	802	808	rVV3	4846	10189	0.06%	0.024%
31	7.998	892	901	920	rBV	266427	611749	3.51%	1.422%
32	8.821	1040	1046	1051	rBV4	5255	14381	0.08%	0.033%
33	8.895	1051	1059	1069	rVB	22246	57319	0.33%	0.133%
34	9.298	1120	1130	1142	rBV	562377	1292187	7.41%	3.004%
35	9.412	1142	1150	1163	rVB4	6323	21749	0.12%	0.051%
36	9.735	1196	1207	1215	rBV3	6505	17648	0.10%	0.041%
37	10.144	1272	1279	1285	rVV3	4736	10466	0.06%	0.024%
38	10.241	1285	1296	1303	rVB2	6431	16962	0.10%	0.039%
39	10.570	1345	1354	1362	rBV3	8432	19107	0.11%	0.044%
40	10.996	1416	1429	1442	rBV3	28571	73685	0.42%	0.171%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	11.575	1524	1531	1538	rBV3	4713	10607	0.06%	0.025%
42	12.194	1634	1640	1650	rBB2	6834	15147	0.09%	0.035%
43	12.427	1670	1681	1696	rBV	723935	1651569	9.47%	3.839%
44	12.563	1696	1705	1716	rVB	30881	74325	0.43%	0.173%
45	13.233	1816	1823	1829	rBV3	4886	11968	0.07%	0.028%
46	13.829	1920	1928	1938	rVB4	8490	19724	0.11%	0.046%
47	13.920	1938	1944	1951	rBV3	10298	21599	0.12%	0.050%
48	14.028	1958	1963	1968	rVB4	7177	15721	0.09%	0.037%
49	14.437	2028	2035	2042	rVV2	11223	22685	0.13%	0.053%
50	14.522	2042	2050	2060	rVB	63461	136159	0.78%	0.316%
51	14.840	2096	2106	2121	rBV	725370	1511050	8.66%	3.512%
52	15.760	2261	2268	2278	rBV5	8978	25609	0.15%	0.060%
53	15.919	2287	2296	2306	rVB4	4153	12454	0.07%	0.029%
54	16.129	2326	2333	2342	rVB10	6093	19155	0.11%	0.045%
55	16.237	2342	2352	2359	rVB6	6111	13803	0.08%	0.032%
56	16.333	2359	2369	2378	rBV3	6605	16223	0.09%	0.038%
57	16.612	2412	2418	2424	rVB3	7605	13333	0.08%	0.031%
58	16.822	2445	2455	2464	rBV	639317	1218309	6.98%	2.832%
59	17.259	2525	2532	2538	rVB4	5468	12290	0.07%	0.029%
60	17.407	2552	2558	2570	rBV8	9060	31109	0.18%	0.072%
61	17.520	2570	2578	2586	rVB	121141	221329	1.27%	0.514%
62	17.770	2614	2622	2626	rBV5	4762	11999	0.07%	0.028%
63	17.827	2626	2632	2644	rVB3	32401	71570	0.41%	0.166%
64	18.043	2666	2670	2676	rVB	14997	24176	0.14%	0.056%
65	18.133	2682	2686	2693	rVB3	8565	14731	0.08%	0.034%
66	18.326	2715	2720	2728	rVB2	30905	53772	0.31%	0.125%
67	18.434	2734	2739	2746	rVB6	5737	11249	0.06%	0.026%
68	18.502	2746	2751	2757	rBV3	32321	50663	0.29%	0.118%
69	18.605	2764	2769	2773	rVB2	21724	28951	0.17%	0.067%
70	18.809	2798	2805	2808	rBV	36809	59955	0.34%	0.139%
71	18.843	2808	2811	2819	rVV	75838	121899	0.70%	0.283%
72	18.923	2819	2825	2832	rVV	47691	79016	0.45%	0.184%
73	19.014	2832	2841	2846	rVV3	51511	90539	0.52%	0.210%
74	19.082	2846	2853	2862	rVB4	36812	68754	0.39%	0.160%
75	19.292	2885	2890	2898	rVB5	9538	20863	0.12%	0.048%
76	19.383	2898	2906	2913	rBV7	6853	18450	0.11%	0.043%
77	19.462	2913	2920	2924	rVV4	8848	15183	0.09%	0.035%
78	19.508	2924	2928	2931	rVB2	8695	11720	0.07%	0.027%
79	19.547	2931	2935	2940	rBV2	10758	14856	0.09%	0.035%
80	19.638	2945	2951	2962	rVV2	87471	159922	0.92%	0.372%
81	19.735	2962	2968	2975	rVV	33728	52193	0.30%	0.121%
82	19.814	2975	2982	2992	rVB3	23882	53913	0.31%	0.125%
83	19.899	2992	2997	3006	rBV3	11576	25619	0.15%	0.060%
84	19.979	3006	3011	3017	rVB	115813	148971	0.85%	0.346%
85	20.070	3024	3027	3037	rVB5	8399	16734	0.10%	0.039%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

86	20.206	3045	3051	3058	rVB4	16901	37377	0.21%	0.087%
87	20.274	3058	3063	3069	rVV3	13669	36122	0.21%	0.084%
88	20.331	3069	3073	3079	rVV5	28583	67854	0.39%	0.158%
89	20.388	3079	3083	3087	rVB2	12772	17344	0.10%	0.040%
90	20.484	3094	3100	3104	rBV2	24942	35926	0.21%	0.084%
91	20.530	3104	3108	3111	rBV2	8233	10902	0.06%	0.025%
92	20.575	3111	3116	3118	rBV2	31201	47213	0.27%	0.110%
93	20.643	3124	3128	3131	rBV	20123	24381	0.14%	0.057%
94	20.683	3131	3135	3144	rVV	23944	35195	0.20%	0.082%
95	20.757	3144	3148	3155	rVB2	33639	49297	0.28%	0.115%
96	20.825	3155	3160	3165	rBV4	8859	16716	0.10%	0.039%
97	20.938	3173	3180	3186	rBV9	9726	27643	0.16%	0.064%
98	21.018	3186	3194	3198	rVV	78397	117354	0.67%	0.273%
99	21.058	3198	3201	3210	rVV6	10162	22109	0.13%	0.051%
100	21.137	3210	3215	3217	rVV3	8431	15533	0.09%	0.036%
101	21.166	3217	3220	3225	rVB2	14183	18643	0.11%	0.043%
102	21.495	3272	3278	3285	rVB4	7322	16133	0.09%	0.037%
103	21.892	3342	3348	3353	rBV5	9352	19451	0.11%	0.045%
104	21.989	3359	3365	3372	rBV	60373	92530	0.53%	0.215%
105	22.034	3372	3373	3385	rVB7	6223	11449	0.07%	0.027%
106	22.324	3418	3424	3430	rBV2	18512	32434	0.19%	0.075%
107	22.398	3430	3437	3442	rVB5	7685	16410	0.09%	0.038%
108	22.642	3475	3480	3487	rBV	32483	58217	0.33%	0.135%
109	22.721	3489	3494	3499	rVB2	16160	24771	0.14%	0.058%
110	22.977	3534	3539	3548	rVB	12211	21515	0.12%	0.050%
111	23.301	3590	3596	3603	rBV2	14938	22817	0.13%	0.053%

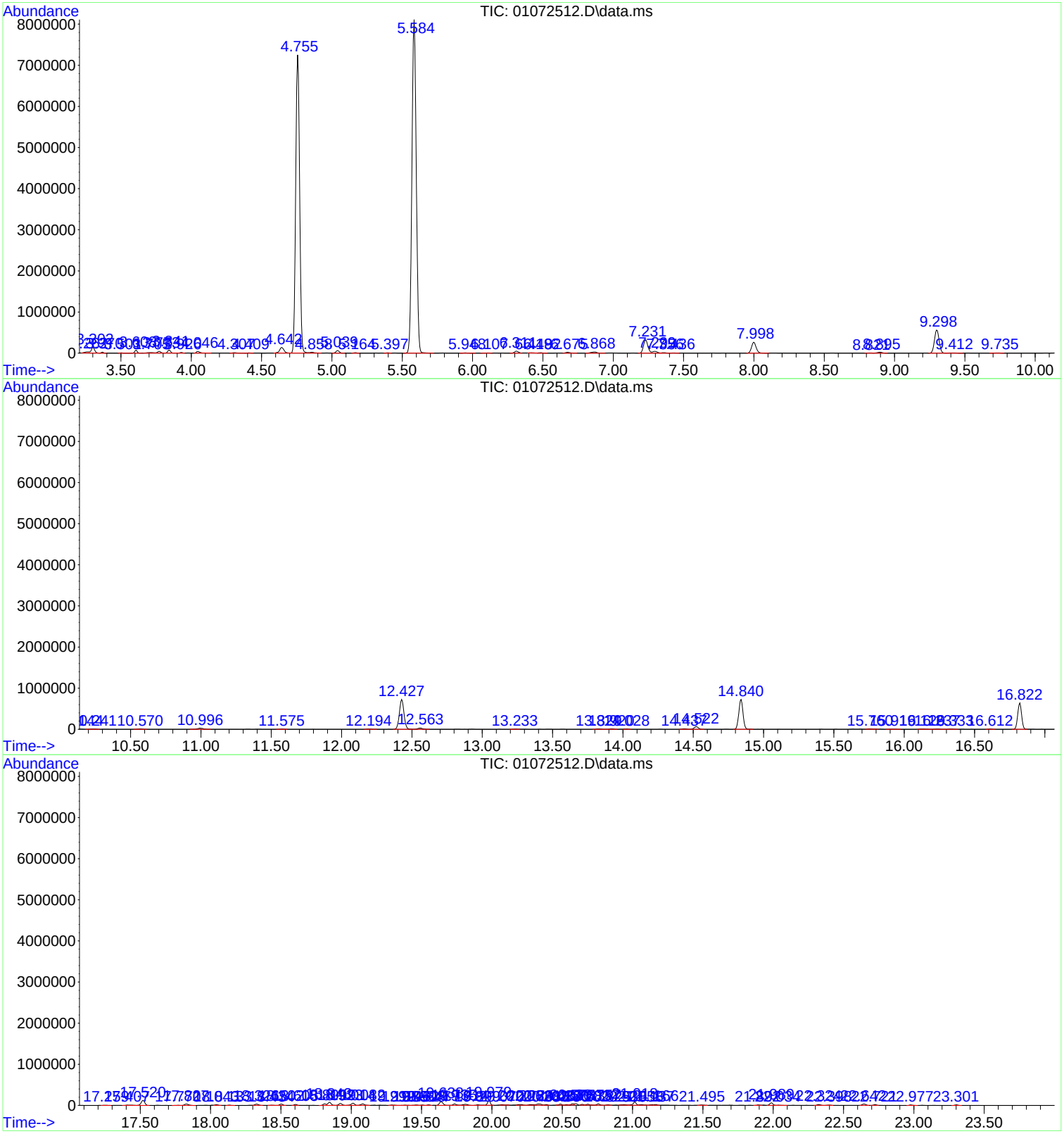
Sum of corrected areas: 43021698

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:31
Operator : SC
Sample : P2405139-021 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072512.D
Acq On : 7 Jan 2025 10:311
Operator : SCC
Sample : P2405139-021 (400mL))
Misc : S37-123124011
ALS Vial : 6 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

VOA 1/12/25

Quant Time: Jan 12 10:51:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	139131	12.500 ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	592997	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	108522	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.01	65	234122	12.351 ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%			
57) Toluene-d8 (SS2)	12.43	98	616503	12.806 ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.48%			
73) Bromofluorobenzene (SS3)	16.82	174	242555	14.600 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.80%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.37	85	9236	0.340 ng		98
4) Chloromethane	3.53	50	1993	0.099 ng		87
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	153	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	3.82	54	161	N.D.		
8) Bromomethane	4.04	94	182	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.32	45	153006	14.868 ng		96
11) Acetonitrile	4.46	41	1511	0.057 ng		80
12) Acrolein	4.55	56	2145	0.244 ng		83
13) Acetone	4.63	58	67761	7.233 ng	#	21
14) Trichlorofluoromethane	4.76	101	24035	0.942 ng		98
15) 2-Propanol (Isopropanol)	4.87	45	273161	8.143 ng		100
16) Acrylonitrile	0.00	53	0	N.D. d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d		
19) Methylene Chloride	5.36	84	5260	0.399 ng		97
20) 3-Chloro-1-propene (Al...	5.40	41	841	N.D.		
21) Trichlorotrifluoroethane	5.59	151	13215	1.148 ng		96
22) Carbon Disulfide	0.00	76	0	N.D. d		
23) trans-1,2-Dichloroethene	6.15	61	183	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D. d		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D. d		
26) Vinyl Acetate	6.45	86	2502	1.103 ng	#	6
27) 2-Butanone (MEK)	6.67	72	8058	1.071 ng	#	88
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	7.29	61	446308	96.074 ng		99
31) n-Hexane	7.30	57	10345	0.495 ng		91
32) Chloroform	7.37	83	601	N.D.		
34) Tetrahydrofuran (THF)	7.75	72	6490	0.914 ng		94
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.14	62	2466	0.129 ng		95
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	16956	No Calib	#	
41) Benzene	8.90	78	73503	1.544 ng		100
42) Carbon Tetrachloride	9.07	117	1194	0.063 ng		94
43) Cyclohexane	9.22	84	6843	0.412 ng		92
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	9.87	63	8155	0.702 ng		98
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.15	130	225	N.D.		
48) 1,4-Dioxane	10.14	88	409	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 10:51:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

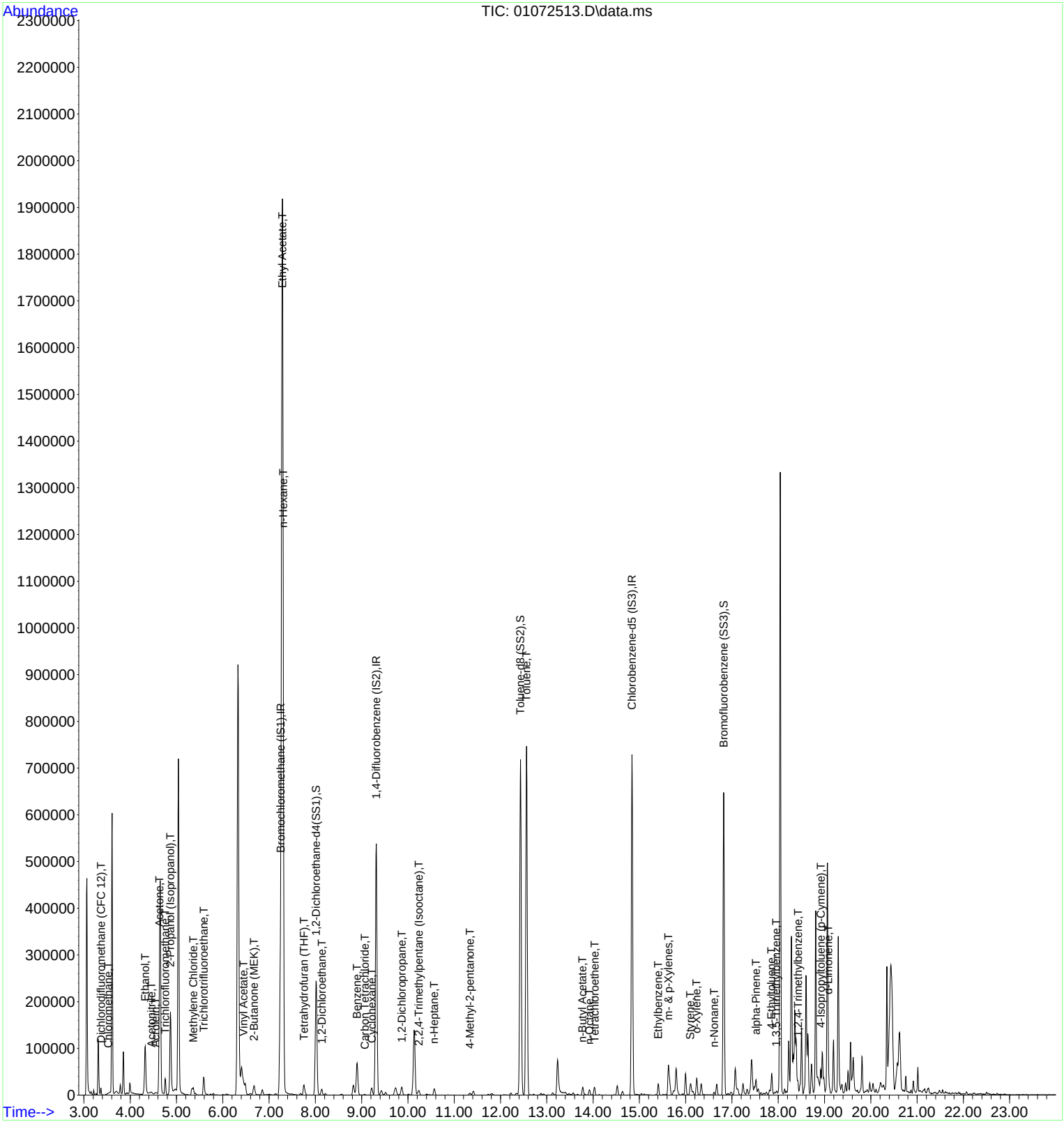
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	11628	0.233 ng		83
50) Methyl Methacrylate	10.41	100	131	N.D.		
51) n-Heptane	10.56	71	3628	0.342 ng		98
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.34	58	1470	0.144 ng	#	70
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	707926	15.283 ng		99
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.77	43	16692	0.658 ng		99
63) n-Octane	13.92	57	2298	0.239 ng		95
64) Tetrachloroethene	14.03	166	6124	0.444 ng		99
65) Chlorobenzene	14.90	112	1068	N.D.		
66) Ethylbenzene	15.41	91	21488	0.420 ng		99
67) m- & p-Xylenes	15.63	91	57798	1.379 ng		98
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	11271	0.385 ng		99
70) o-Xylene	16.24	91	23937	0.577 ng		100
71) n-Nonane	16.62	43	3075	0.140 ng		90
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	1722	N.D.		
75) alpha-Pinene	17.52	93	12111	0.476 ng		94
76) n-Propylbenzene	17.67	91	2666	N.D.		
77) 3-Ethyltoluene	17.03	105	1722	No Calib		
78) 4-Ethyltoluene	17.85	105	2766	0.057 ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	2493	0.059 ng		94
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	1722	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	8276	0.192 ng		87
83) n-Decane	17.07	58	1744	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	18.57	146	1032	N.D.		
86) 1,4-Dichlorobenzene	18.65	146	488	N.D.		
87) sec-Butylbenzene	18.74	105	477	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	7009	0.148 ng		94
89) 1,2,3-Trimethylbenzene	17.03	105	1722	No Calib		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	9076	0.661 ng		98
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	34081	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	382	N.D.		
95) Naphthalene	20.94	128	1361	N.D.		
96) n-Dodecane	18.92	58	317	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.25	55	105	No Calib	#	
99) tert-Butylbenzene	18.43	119	1184	N.D.		
100) n-Butylbenzene	19.38	91	1999	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 10:51:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 10:51:18 2025 1/12/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

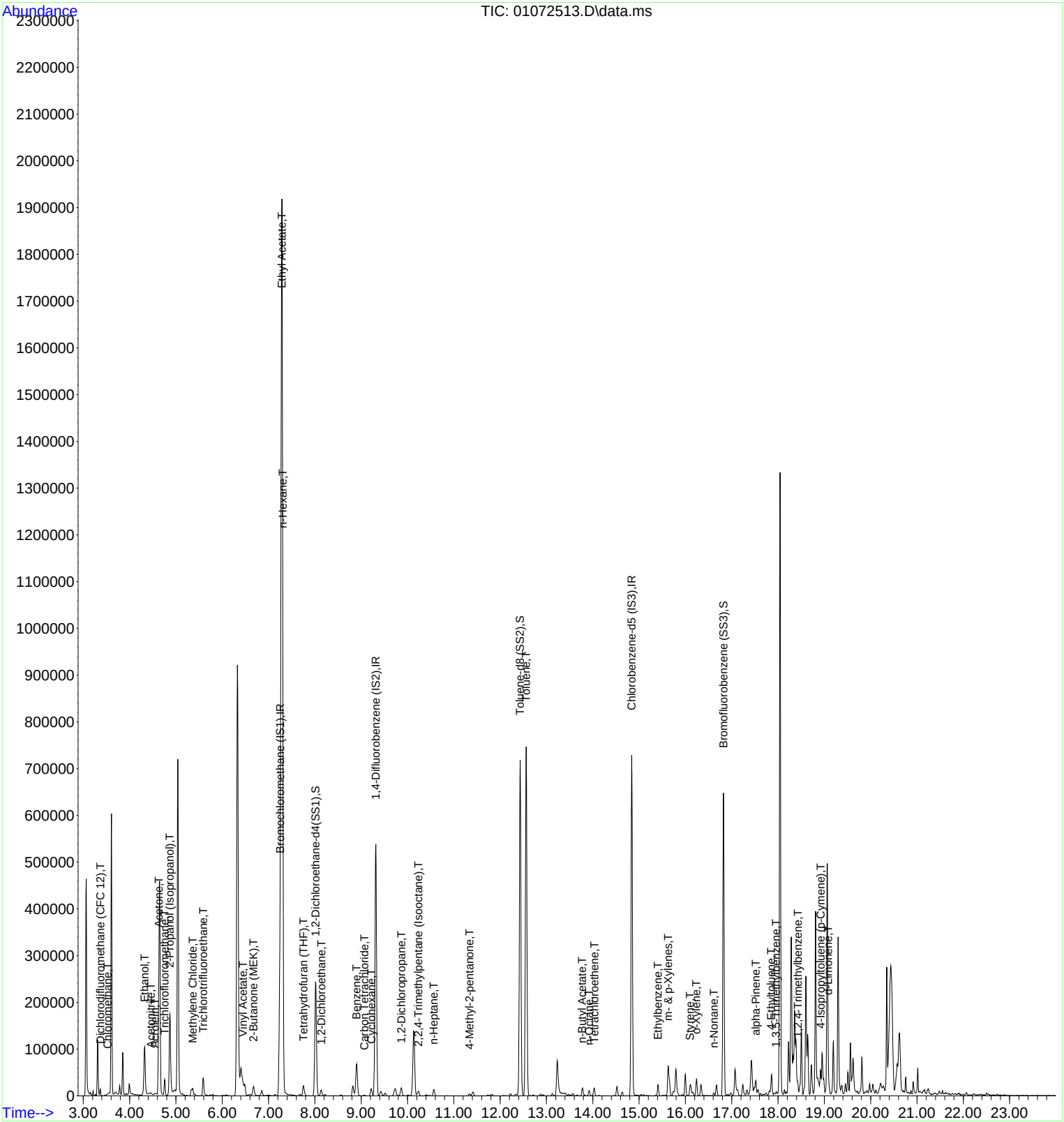
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	139131	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	592997	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	108522	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	234122	12.351	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%				
57) Toluene-d8 (SS2)	12.43	98	616503	12.806	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.48%				
73) Bromofluorobenzene (SS3)	16.82	174	242555	14.600	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.80%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.37	85	9236	0.340	ng		98
4) Chloromethane	3.53	50	1993	0.099	ng		87
10) Ethanol	4.32	45	153006	14.868	ng		96
11) Acetonitrile	4.46	41	1511	0.057	ng		80
12) Acrolein	4.55	56	2145	0.244	ng		83
13) Acetone	4.63	58	67761	7.233	ng	#	21
14) Trichlorofluoromethane	4.76	101	24035	0.942	ng		98
15) 2-Propanol (Isopropanol)	4.87	45	273161	8.143	ng		100
19) Methylene Chloride	5.36	84	5260	0.399	ng		97
21) Trichlorotrifluoroethane	5.59	151	13215	1.148	ng		96
26) Vinyl Acetate	6.45	86	2502	1.103	ng	#	6
27) 2-Butanone (MEK)	6.67	72	8058	1.071	ng	#	88
30) Ethyl Acetate	7.29	61	446308	96.074	ng		99
31) n-Hexane	7.30	57	10345	0.495	ng		91
34) Tetrahydrofuran (THF)	7.75	72	6490	0.914	ng		94
36) 1,2-Dichloroethane	8.14	62	2466	0.129	ng		95
41) Benzene	8.90	78	73503	1.544	ng		100
42) Carbon Tetrachloride	9.07	117	1194	0.063	ng		94
43) Cyclohexane	9.22	84	6843	0.412	ng		92
45) 1,2-Dichloropropane	9.87	63	8155	0.702	ng		98
49) 2,2,4-Trimethylpentane...	10.23	57	11628	0.233	ng		83
51) n-Heptane	10.56	71	3628	0.342	ng		98
53) 4-Methyl-2-pentanone	11.34	58	1470	0.144	ng	#	70
58) Toluene	12.56	91	707926	15.283	ng		99
62) n-Butyl Acetate	13.77	43	16692	0.658	ng		99
63) n-Octane	13.92	57	2298	0.239	ng		95
64) Tetrachloroethene	14.03	166	6124	0.444	ng		99
66) Ethylbenzene	15.41	91	21488	0.420	ng		99
67) m- & p-Xylenes	15.63	91	57798	1.379	ng		98
69) Styrene	16.10	104	11271	0.385	ng		99
70) o-Xylene	16.24	91	23937	0.577	ng		100
71) n-Nonane	16.62	43	3075	0.140	ng		90
75) alpha-Pinene	17.52	93	12111	0.476	ng		94
78) 4-Ethyltoluene	17.85	105	2766	0.057	ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	2493	0.059	ng		94
82) 1,2,4-Trimethylbenzene	18.43	105	8276	0.192	ng		87
88) 4-Isopropyltoluene (p-...	18.92	119	7009	0.148	ng		94
91) d-Limonene	19.08	68	9076	0.661	ng		98

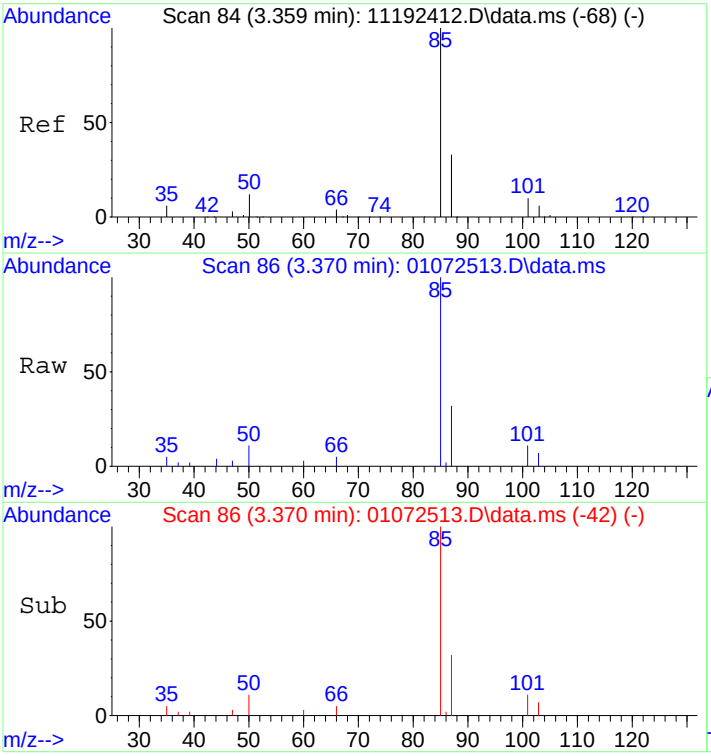
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 10:51:18 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

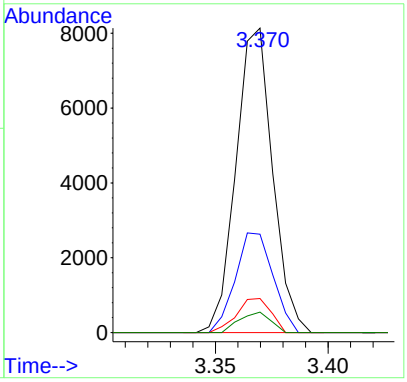


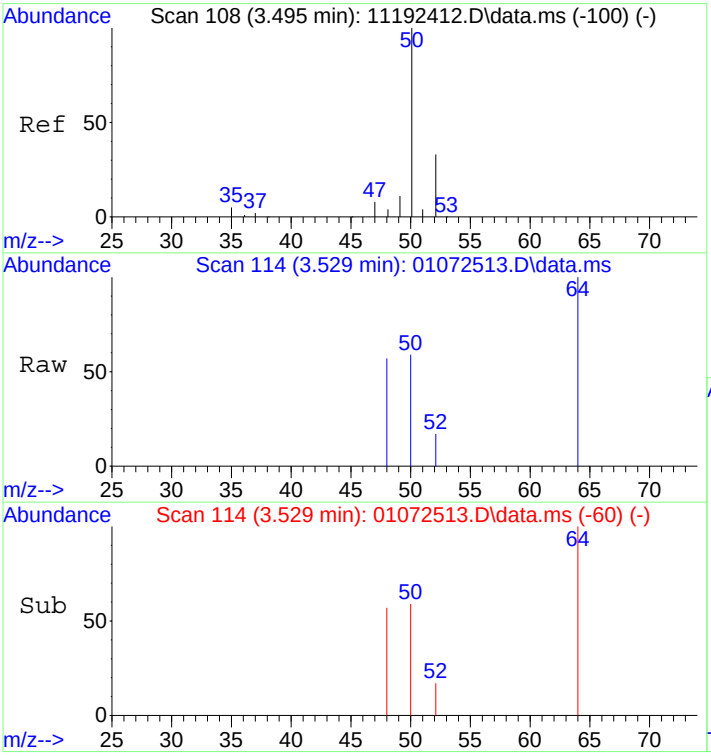


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.34 ng
RT: 3.37 min Scan# 86
Delta R.T. -0.002 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 85 Resp: 9236

Ion	Ratio	Lower	Upper
85	100		
87	33.7	12.6	52.6
101	10.5	0.0	29.6
103	5.7	0.0	26.2

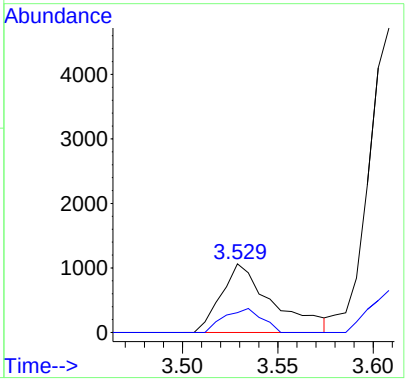


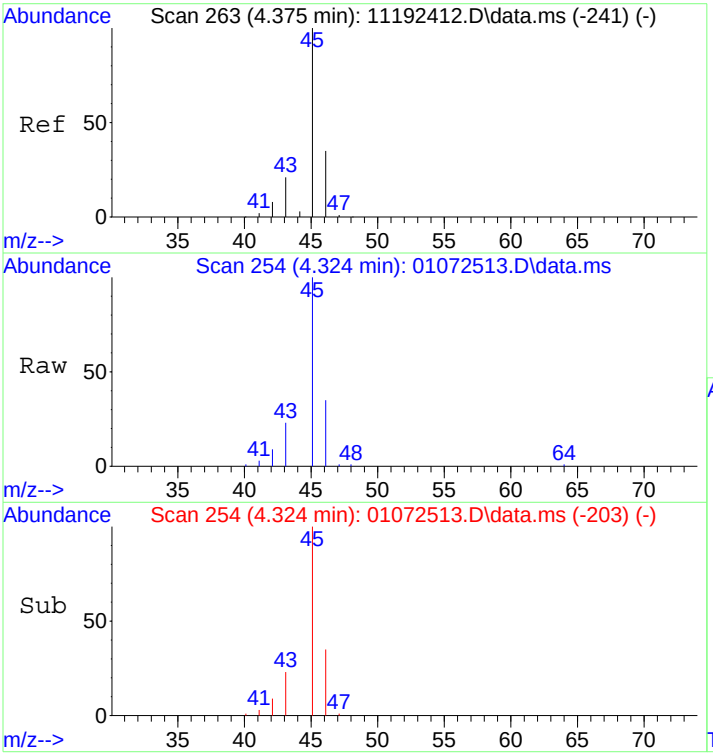


#4
Chloromethane
Concen: 0.10 ng
RT: 3.53 min Scan# 114
Delta R.T. 0.055 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 50 Resp: 1993

Ion	Ratio	Lower	Upper
50	100		
52	25.8	13.0	53.0

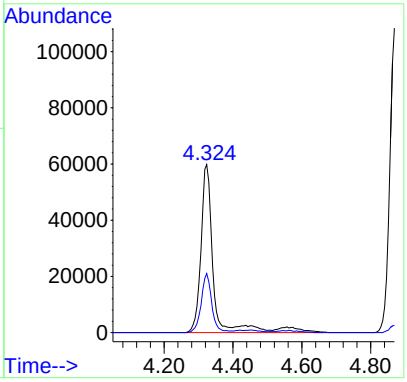


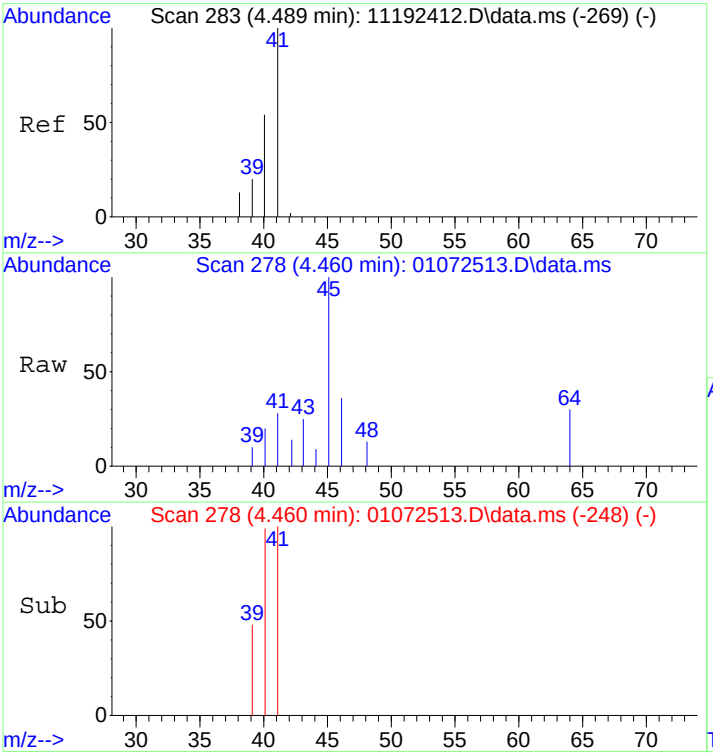


#10
Ethanol
Concen: 14.87 ng
RT: 4.32 min Scan# 254
Delta R.T. 0.039 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 45 Resp: 153006

Ion	Ratio	Lower	Upper
45	100		
46	34.3	11.8	51.8

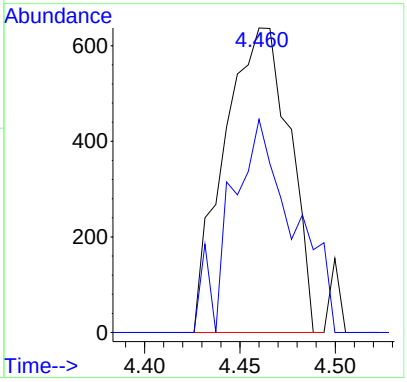


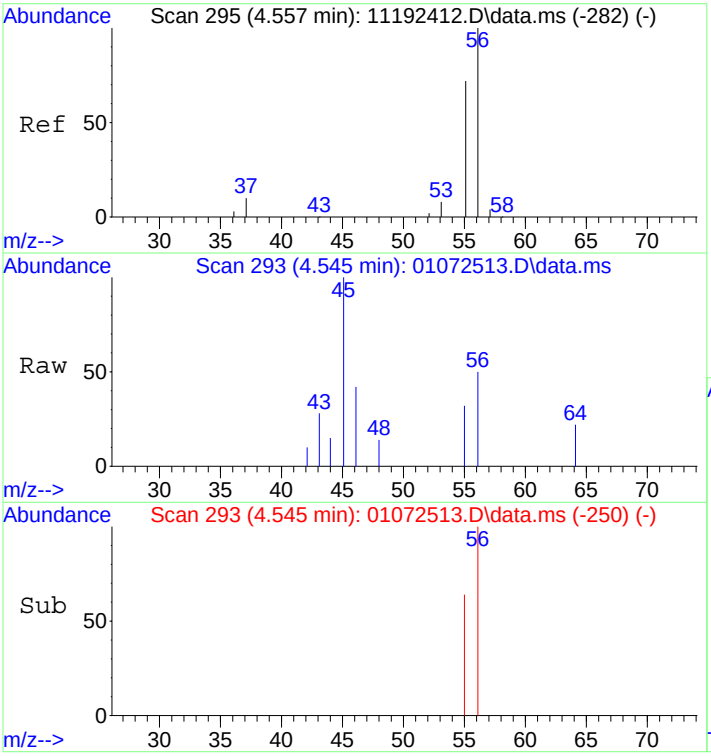


#11
Acetonitrile
Concen: 0.06 ng
RT: 4.46 min Scan# 278
Delta R.T. -0.032 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 41 Resp: 1511

Ion	Ratio	Lower	Upper
41	100		
40	67.8	33.8	73.8

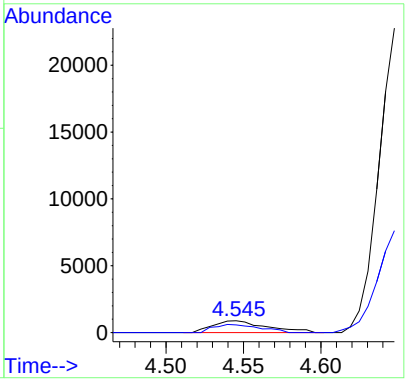


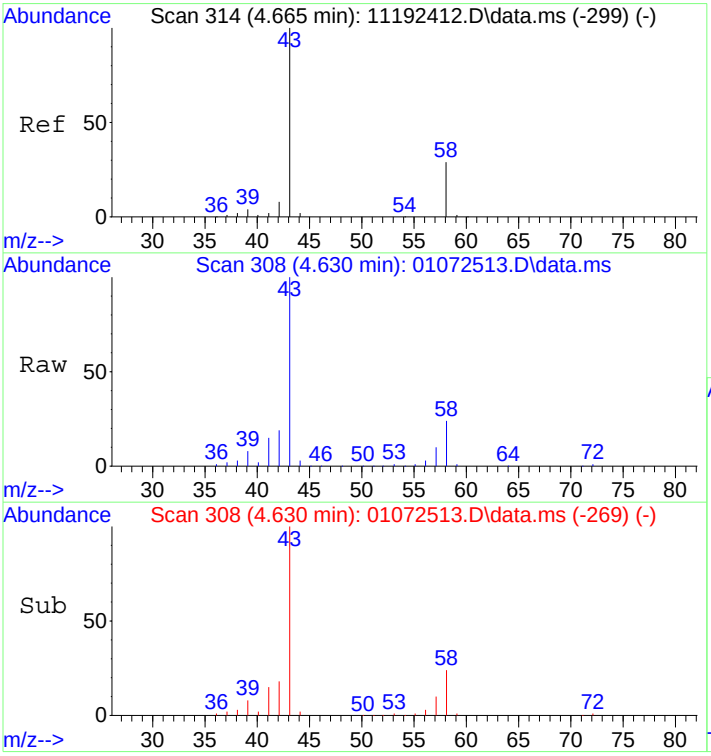


#12
Acrolein
Concen: 0.24 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 56 Resp: 2145

Ion	Ratio	Lower	Upper
56	100		
55	58.9	53.1	93.1

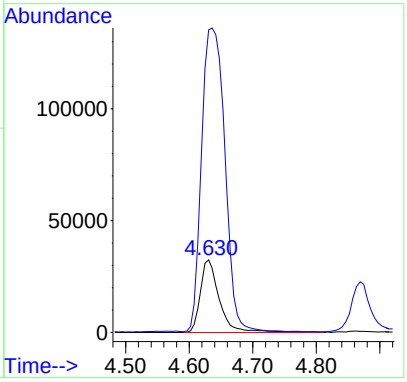


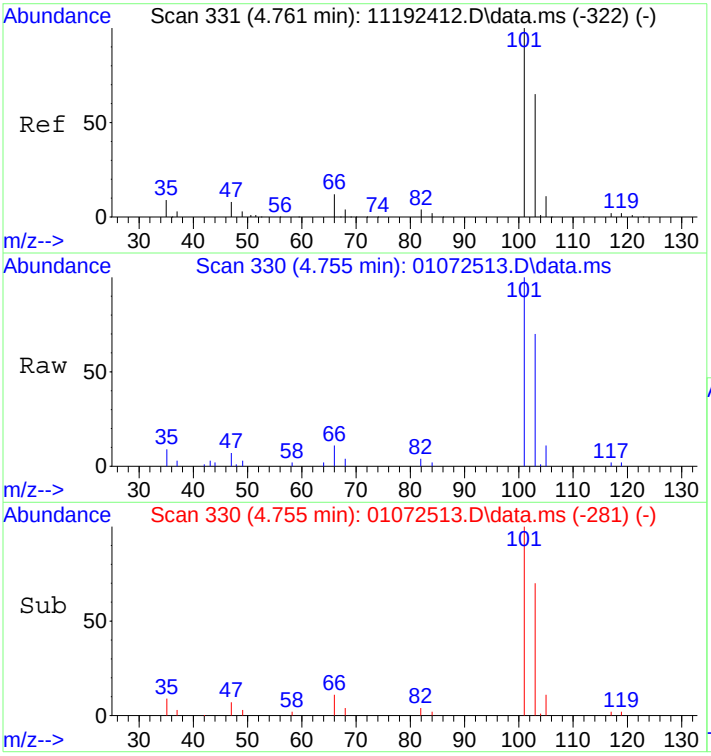


#13
Acetone
Concen: 7.23 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 58 Resp: 67761

Ion	Ratio	Lower	Upper
58	100		
43	512.2	312.5	372.5#

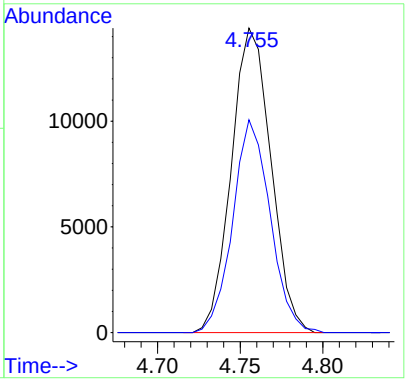


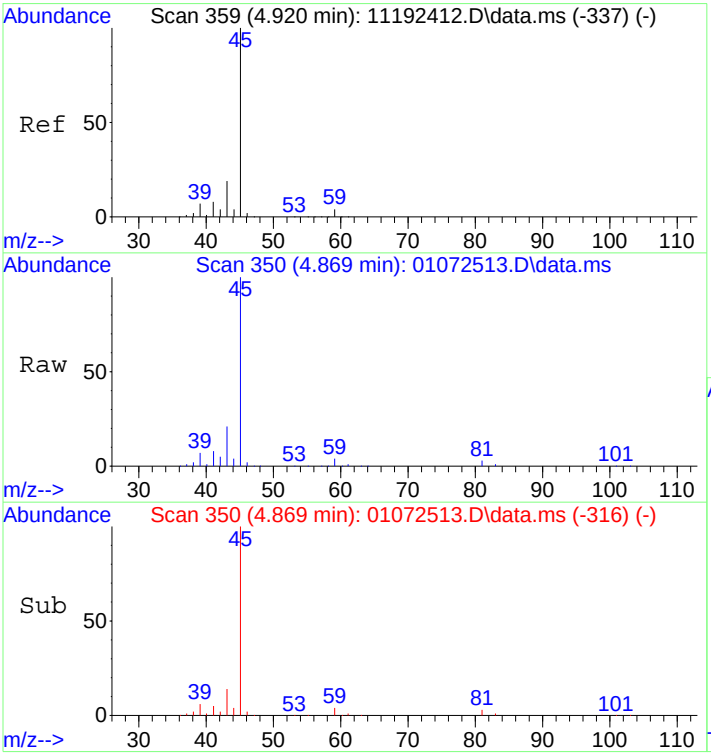


#14
Trichlorofluoromethane
Concen: 0.94 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:101 Resp: 24035

Ion	Ratio	Lower	Upper
101	100		
103	66.1	44.8	84.8

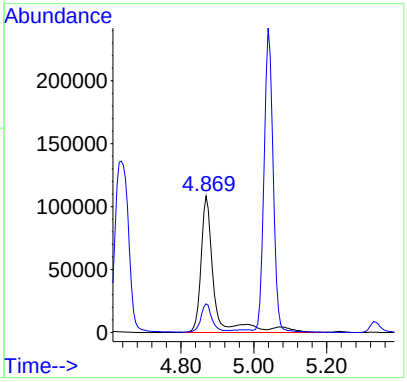


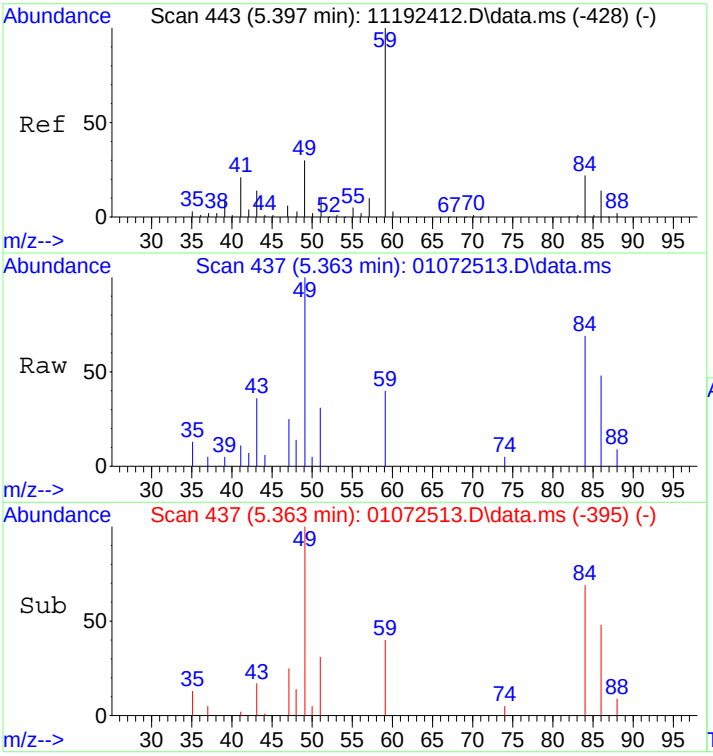


#15
2-Propanol (Isopropanol)
Concen: 8.14 ng
RT: 4.87 min Scan# 350
Delta R.T. -0.056 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 45 Resp: 273161

Ion	Ratio	Lower	Upper
45	100		
43	20.3	0.2	40.2

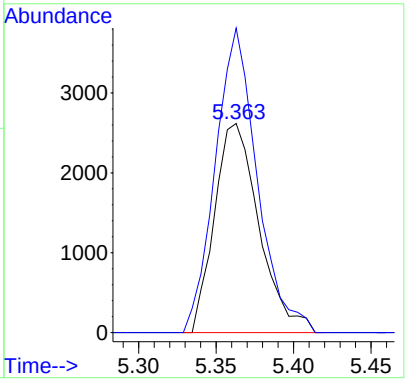


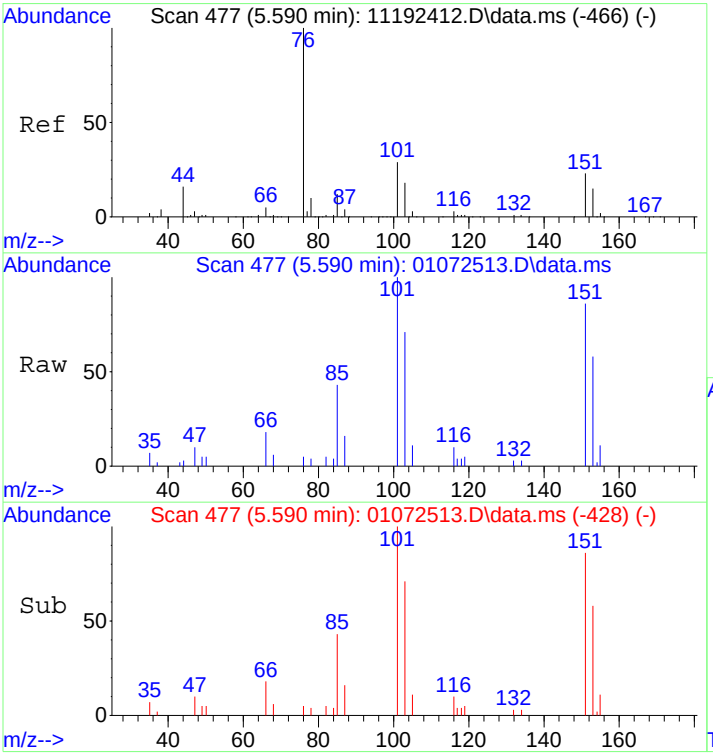


#19
Methylene Chloride
Concen: 0.40 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 84 Resp: 5260

Ion	Ratio	Lower	Upper
84	100		
49	136.8	116.0	166.0

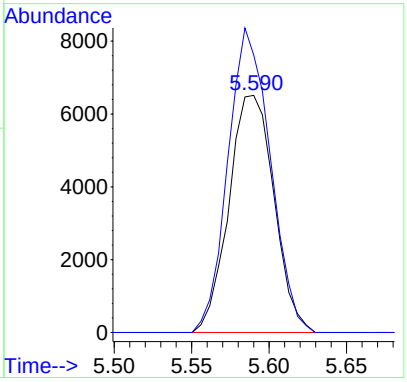


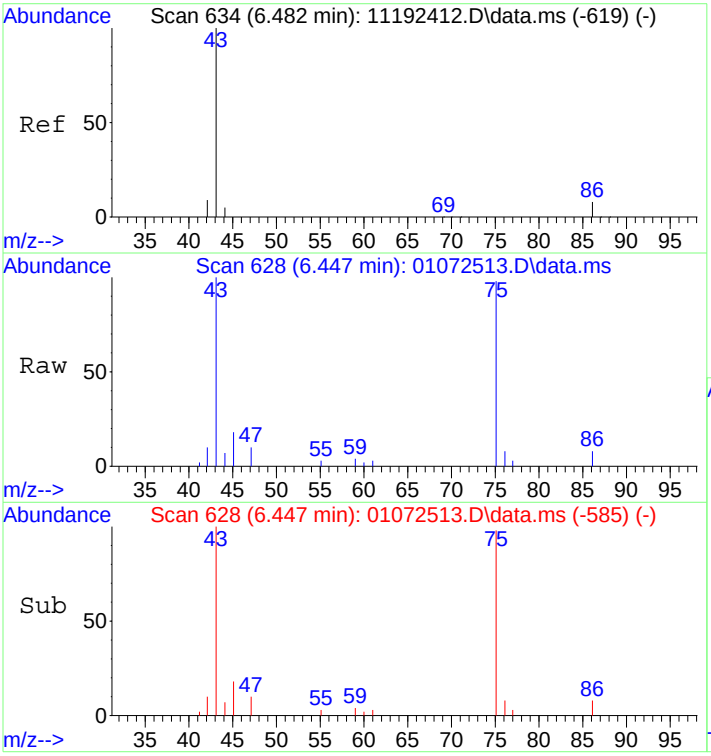


#21
Trichlorotrifluoroethane
Concen: 1.15 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:151 Resp: 13215

Ion	Ratio	Lower	Upper
151	100		
101	120.4	105.0	145.0

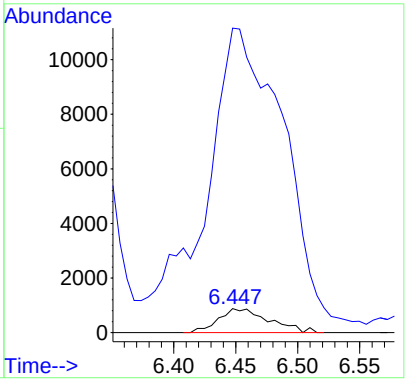


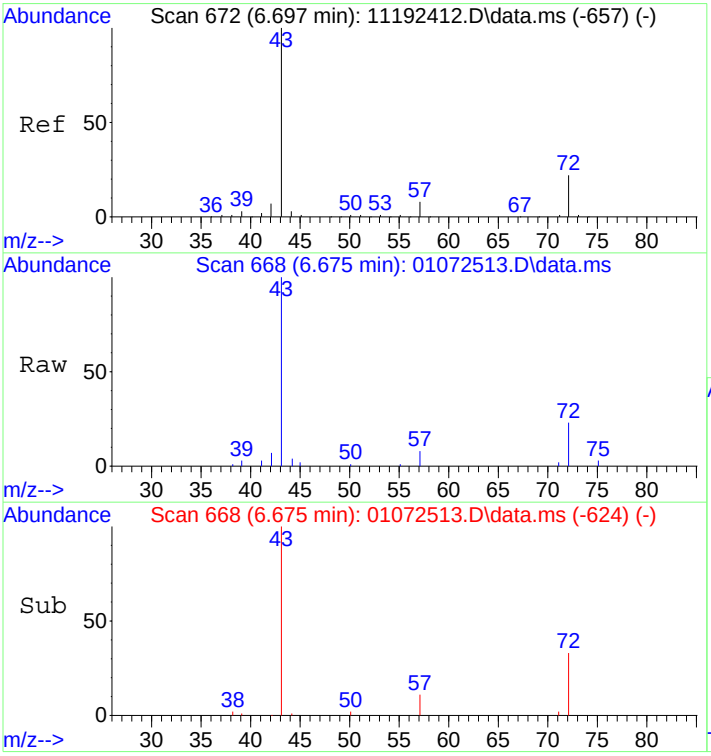


#26
Vinyl Acetate
Concen: 1.10 ng
RT: 6.45 min Scan# 628
Delta R.T. -0.007 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 86 Resp: 2502

Ion	Ratio	Lower	Upper
86	100		
43	1870.5	1331.6	1371.6#

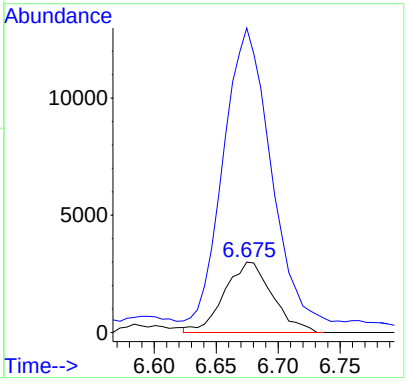


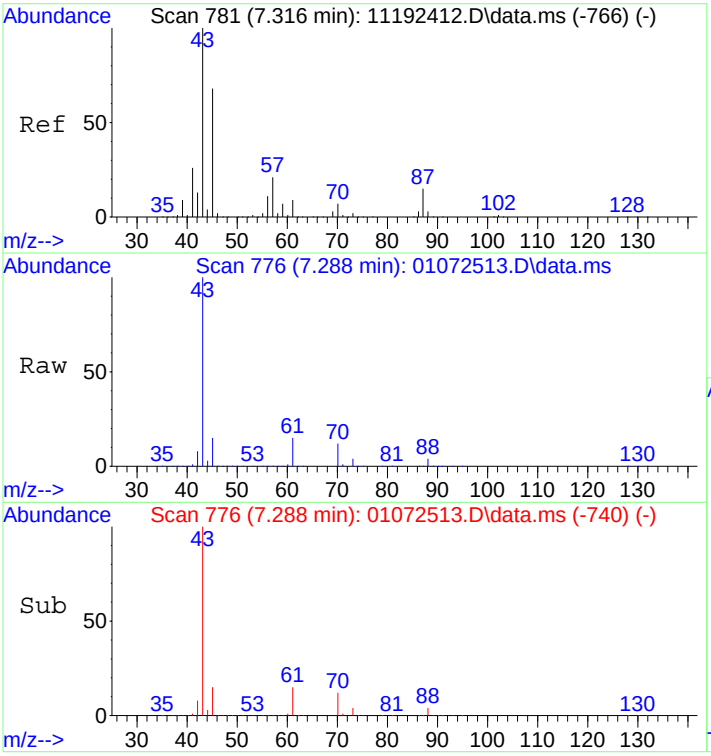


#27
2-Butanone (MEK)
Concen: 1.07 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.000 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 72 Resp: 8058

Ion	Ratio	Lower	Upper
72	100		
43	427.8	439.8	479.8#

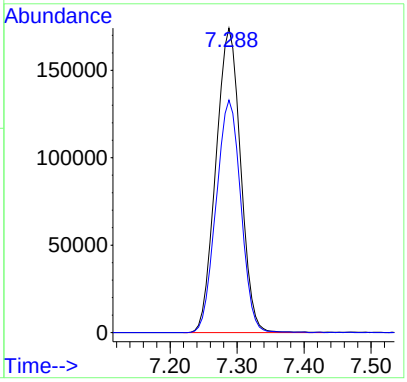


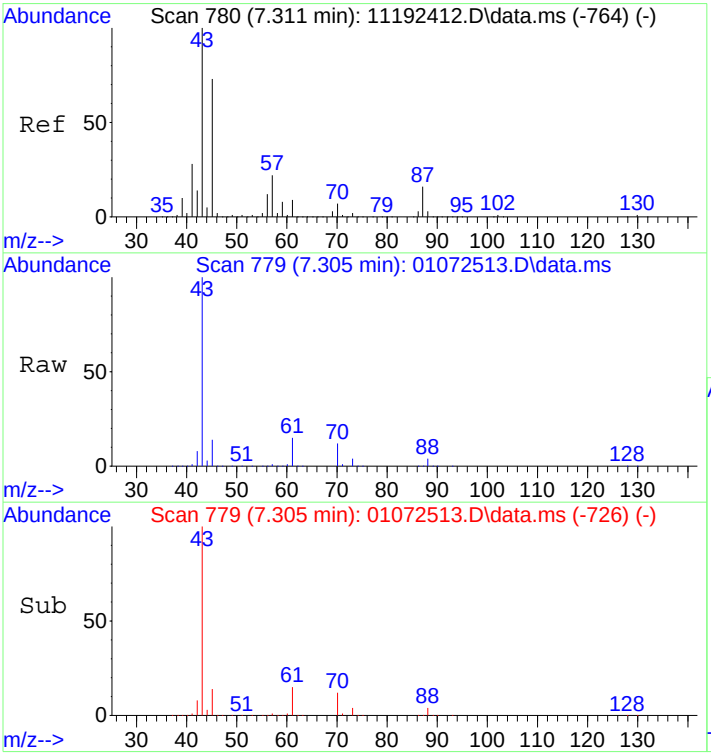


#30
Ethyl Acetate
Concen: 96.07 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 61 Resp: 446308

Ion	Ratio	Lower	Upper
61	100		
70	76.4	57.3	97.3

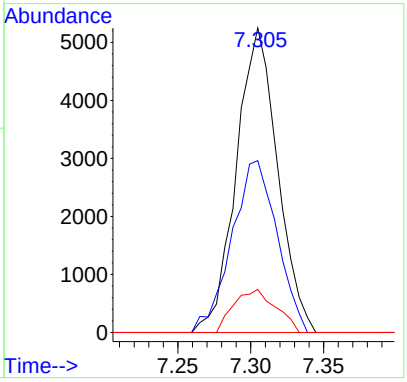


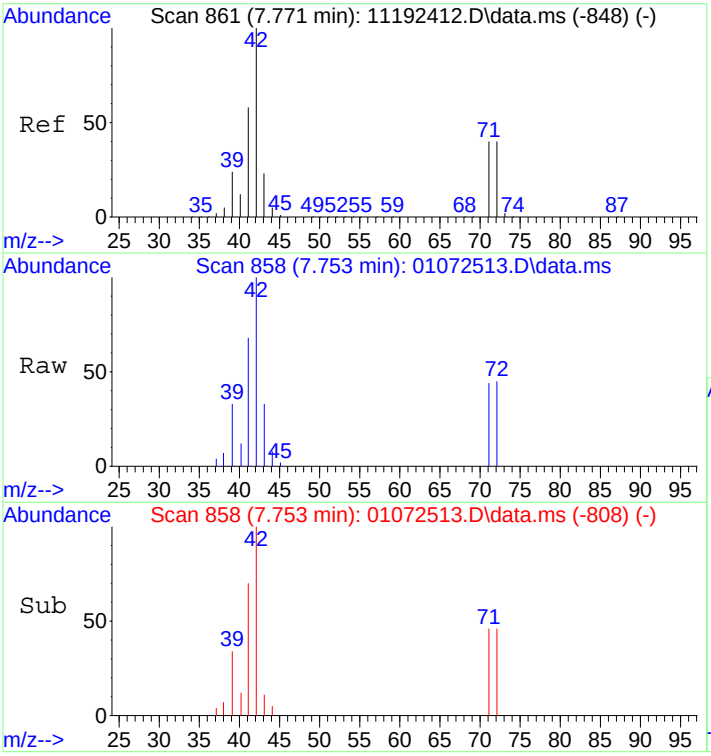


#31
n-Hexane
Concen: 0.49 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 57 Resp: 10345

Ion	Ratio	Lower	Upper
57	100		
56	61.8	43.4	65.0
86	14.4	10.9	16.3

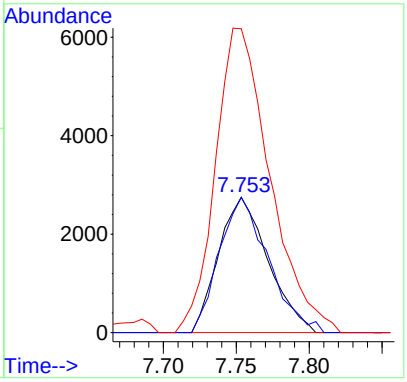


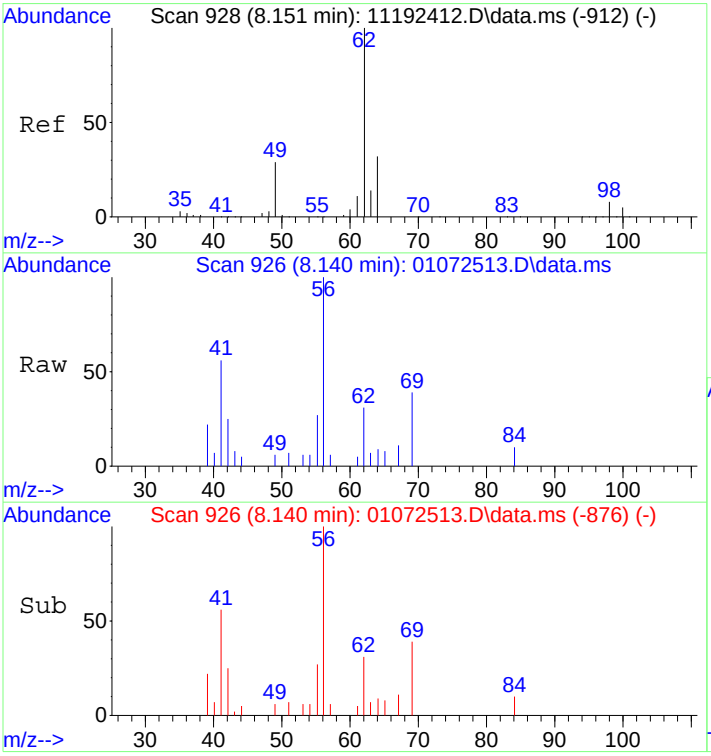


#34
Tetrahydrofuran (THF)
Concen: 0.91 ng
RT: 7.75 min Scan# 858
Delta R.T. 0.033 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 72 Resp: 6490

Ion	Ratio	Lower	Upper
72	100		
71	99.3	78.6	118.6
42	248.0	243.4	283.4

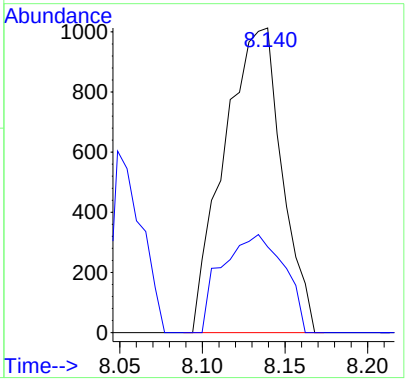


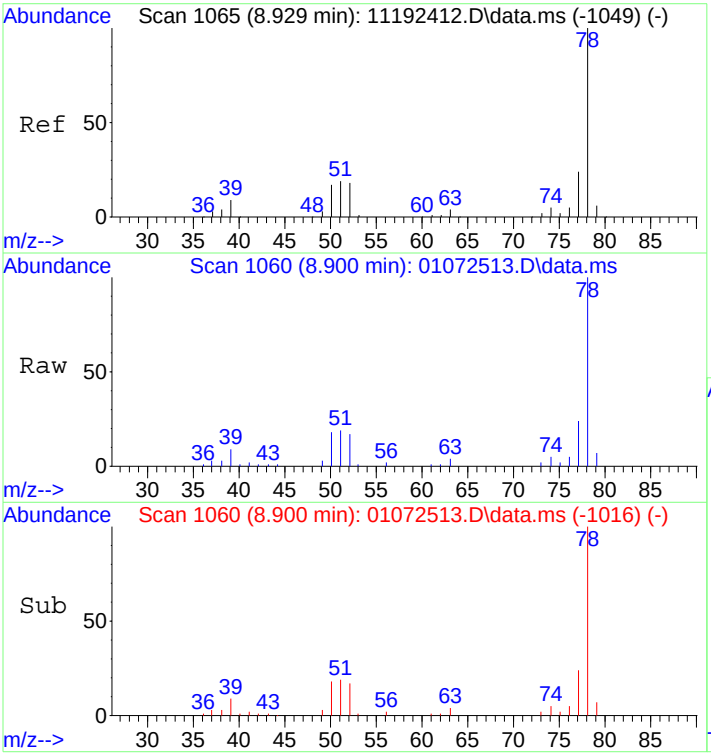


#36
1,2-Dichloroethane
Concen: 0.13 ng
RT: 8.14 min Scan# 926
Delta R.T. 0.037 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 62 Resp: 2466

Ion	Ratio	Lower	Upper
62	100		
64	34.5	12.0	52.0

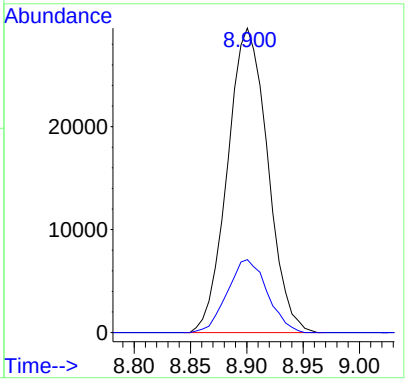


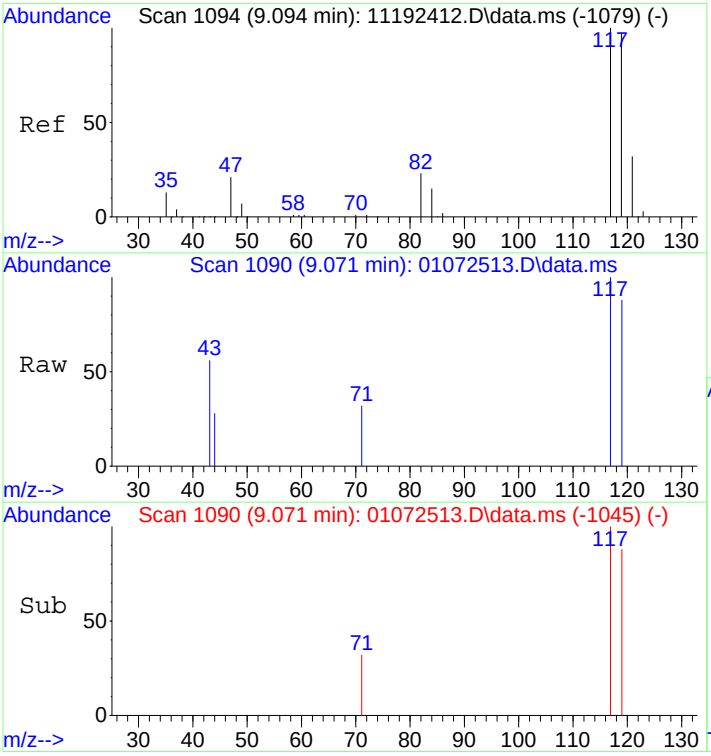


#41
Benzene
Concen: 1.54 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 78 Resp: 73503

Ion	Ratio	Lower	Upper
78	100		
77	23.8	3.7	43.7

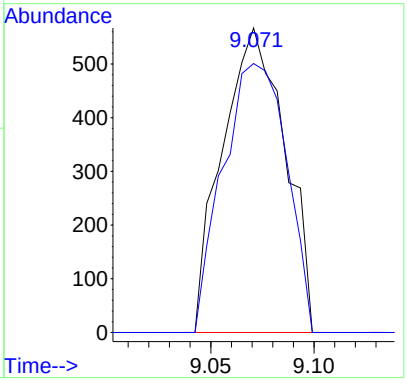


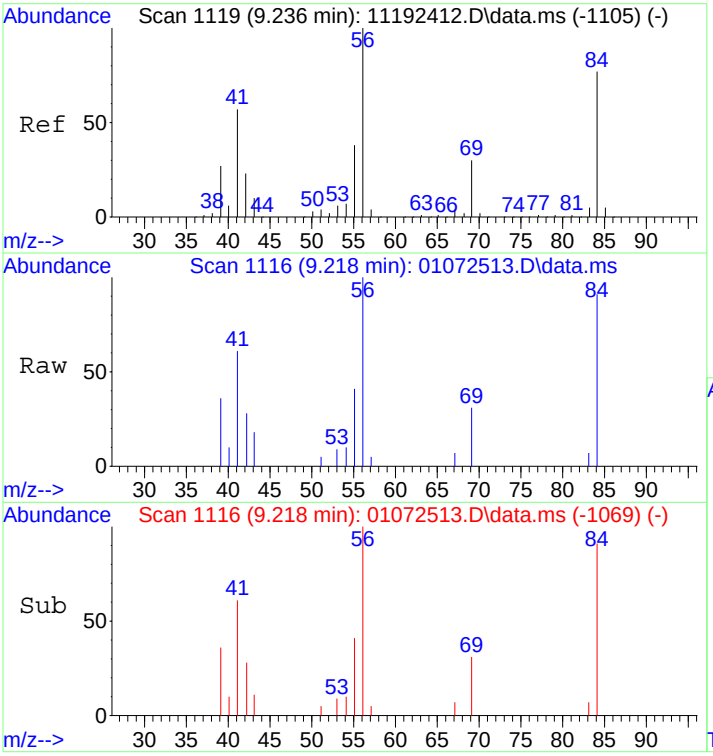


#42
Carbon Tetrachloride
Concen: 0.06 ng
RT: 9.07 min Scan# 1090
Delta R.T. 0.004 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:117 Resp: 1194

Ion	Ratio	Lower	Upper
117	100		
119	90.0	75.7	115.7

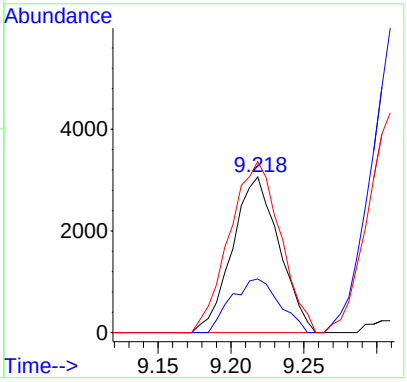


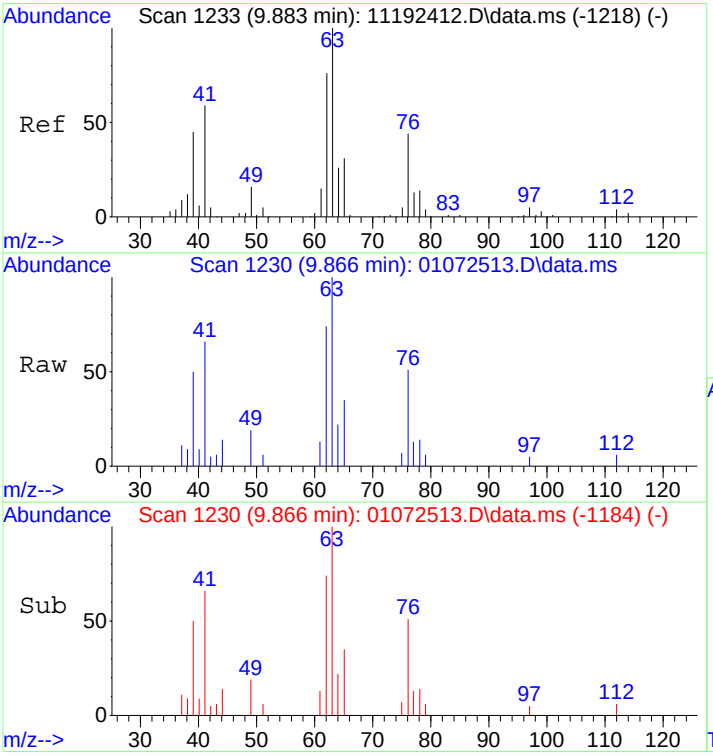


#43
Cyclohexane
Concen: 0.41 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 84 Resp: 6843

Ion	Ratio	Lower	Upper
84	100		
69	35.4	18.3	58.3
56	119.7	110.7	150.7

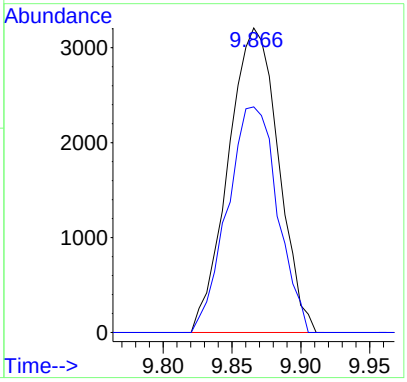


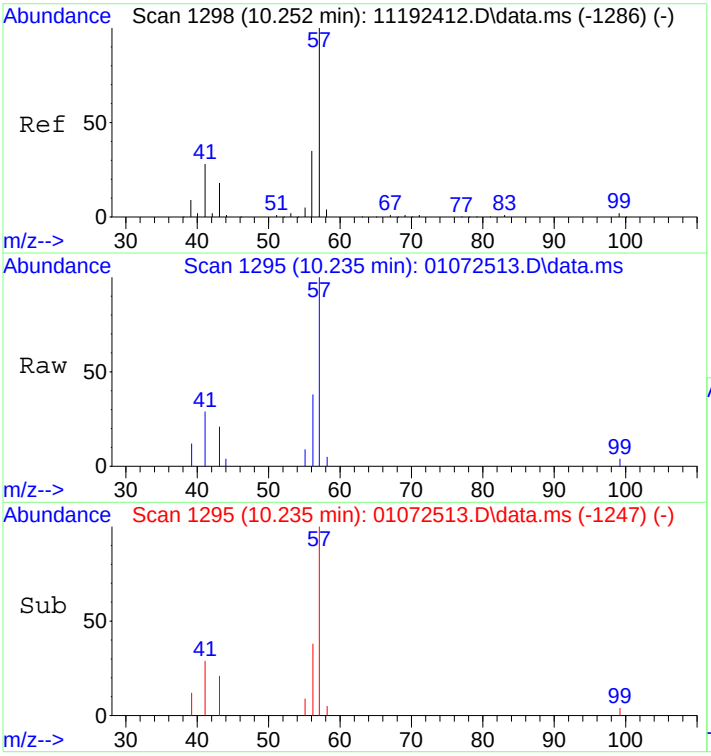


#45
1,2-Dichloropropane
Concen: 0.70 ng
RT: 9.87 min Scan# 1230
Delta R.T. 0.014 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 63 Resp: 8155

Ion	Ratio	Lower	Upper
63	100		
62	73.9	55.9	95.9

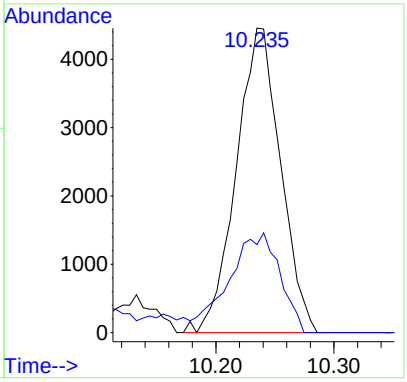


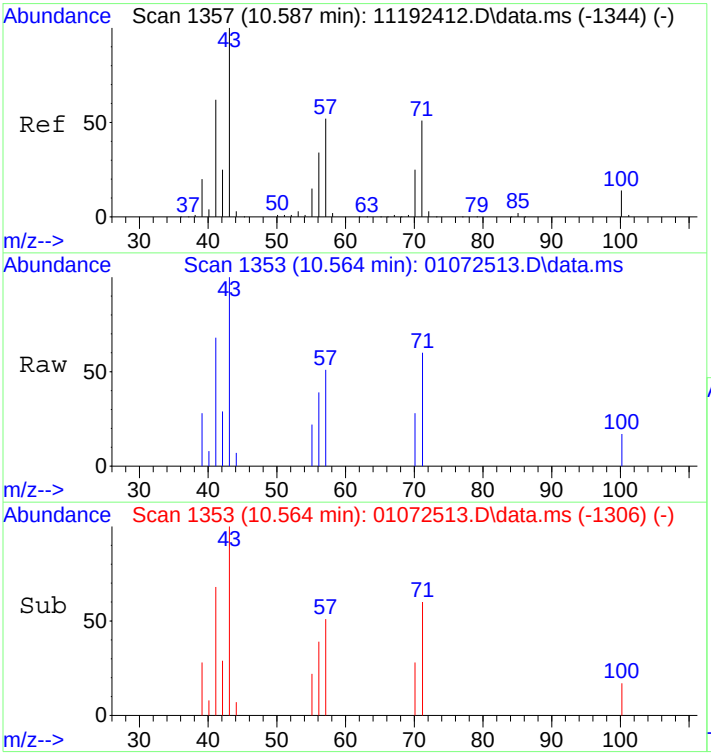


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.23 ng
RT: 10.23 min Scan# 1295
Delta R.T. 0.021 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 57 Resp: 11628

Ion	Ratio	Lower	Upper
57	100		
41	37.5	8.3	48.3

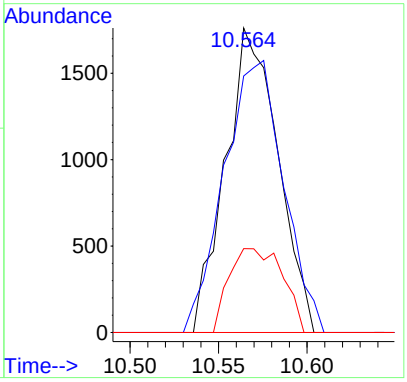


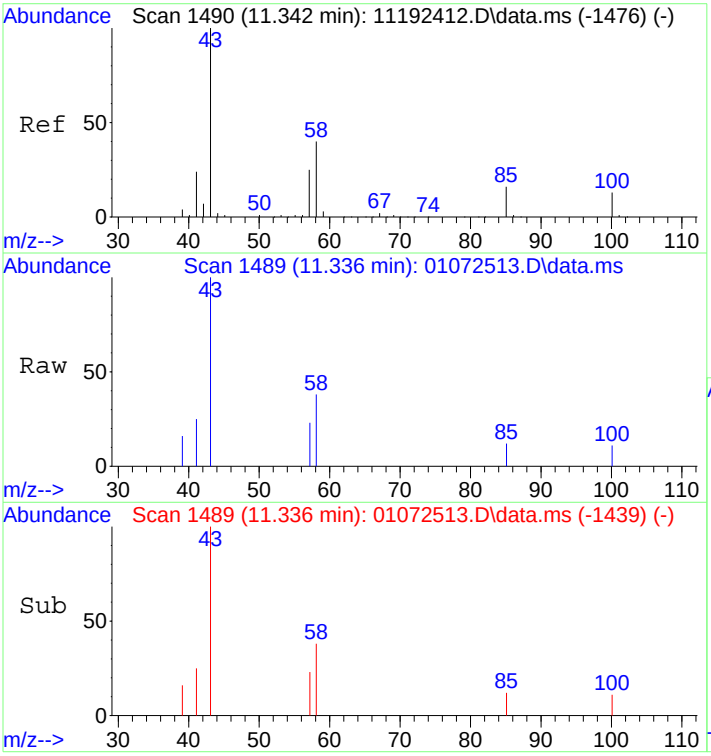


#51
n-Heptane
Concen: 0.34 ng
RT: 10.56 min Scan# 1353
Delta R.T. 0.017 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 71 Resp: 3628

Ion	Ratio	Lower	Upper
71	100		
57	101.3	83.3	123.3
100	28.2	8.7	48.7

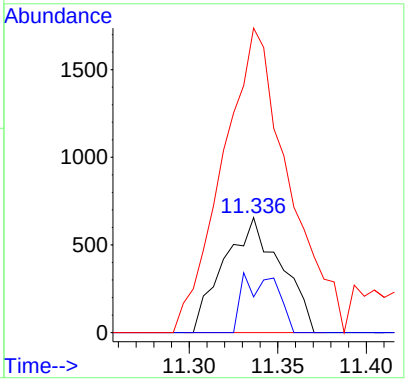


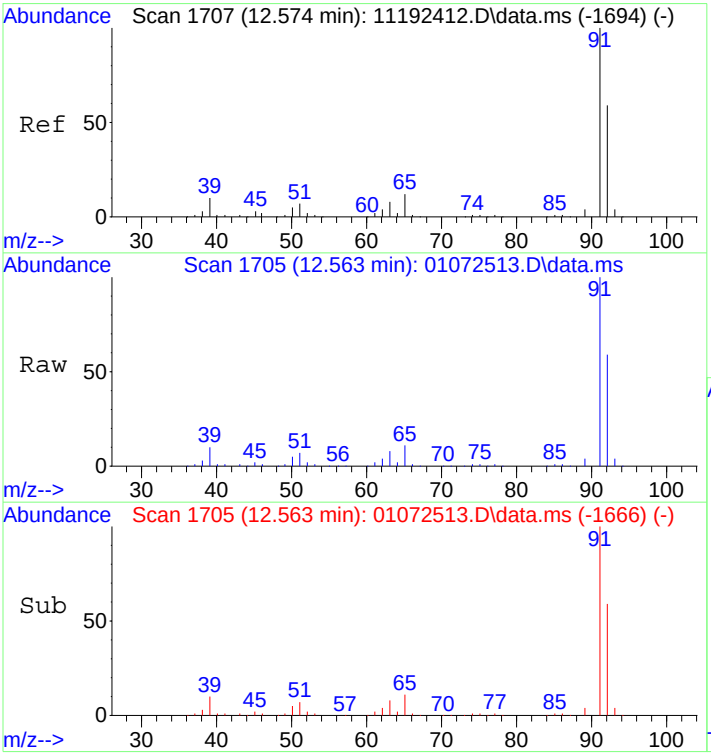


#53
4-Methyl-2-pentanone
Concen: 0.14 ng
RT: 11.34 min Scan# 1489
Delta R.T. 0.033 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 58 Resp: 1470

Ion	Ratio	Lower	Upper
58	100		
85	30.6	33.8	50.6#
43	305.5	199.5	299.3#

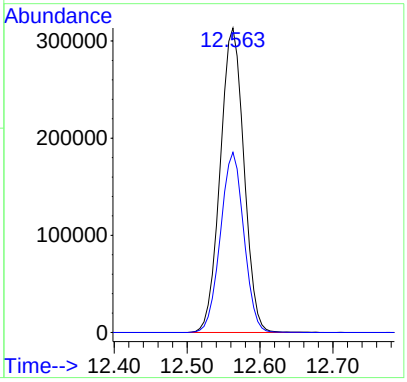


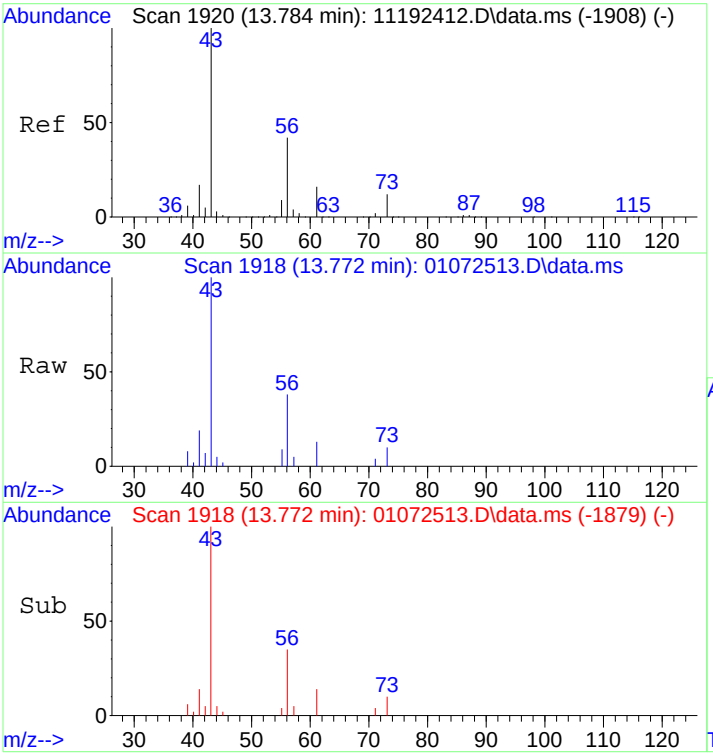


#58
Toluene
Concen: 15.28 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 91 Resp: 707926

Ion	Ratio	Lower	Upper
91	100		
92	58.3	39.2	79.2

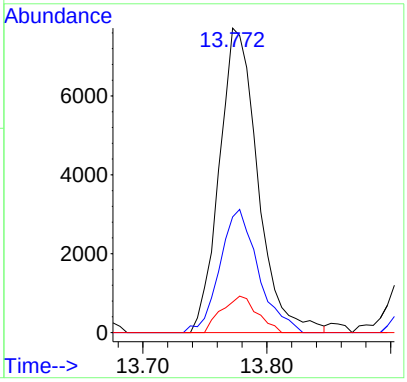


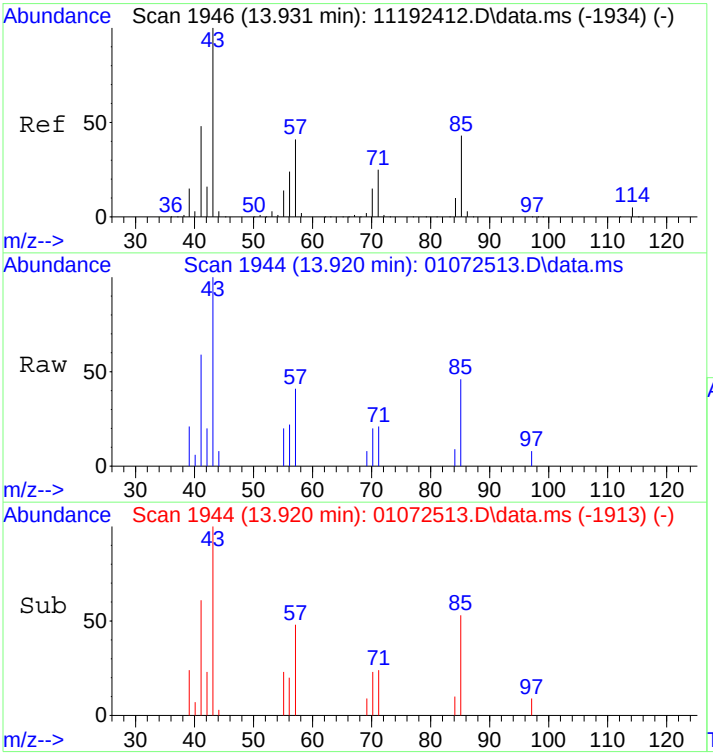


#62
n-Butyl Acetate
Concen: 0.66 ng
RT: 13.77 min Scan# 1918
Delta R.T. -0.028 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 43 Resp: 16692

Ion	Ratio	Lower	Upper
43	100		
56	40.4	20.9	60.9
73	11.1	0.0	32.0

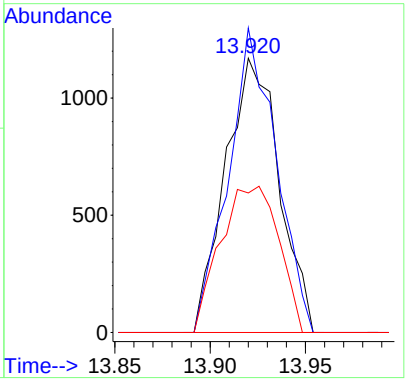


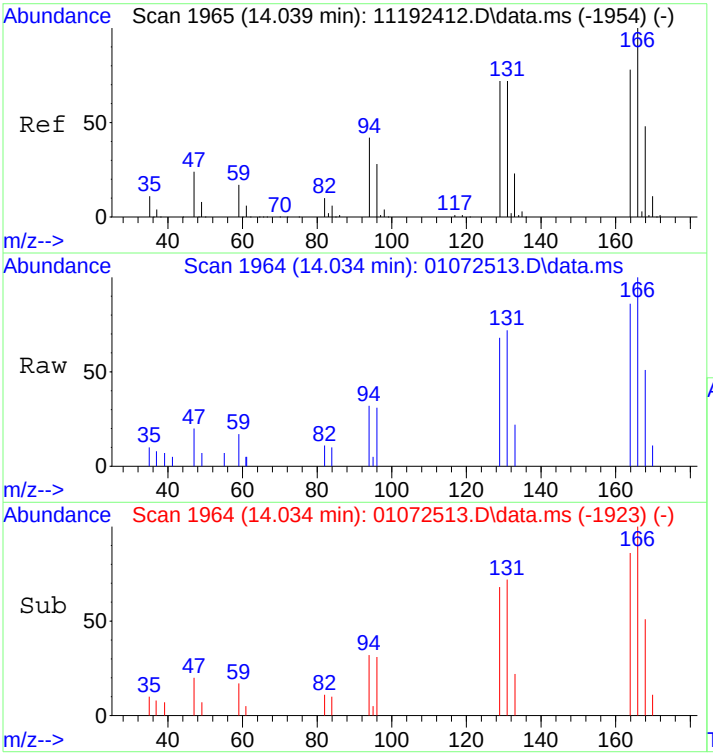


#63
n-Octane
Concen: 0.24 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 57 Resp: 2298

Ion	Ratio	Lower	Upper
57	100		
85	98.7	83.6	125.4
71	57.8	49.0	73.4

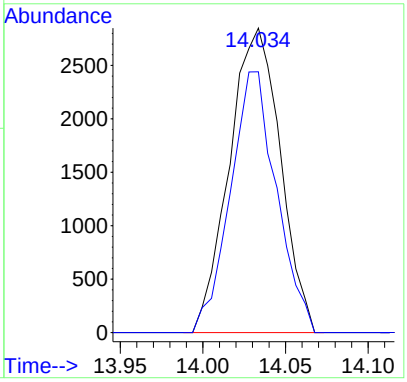


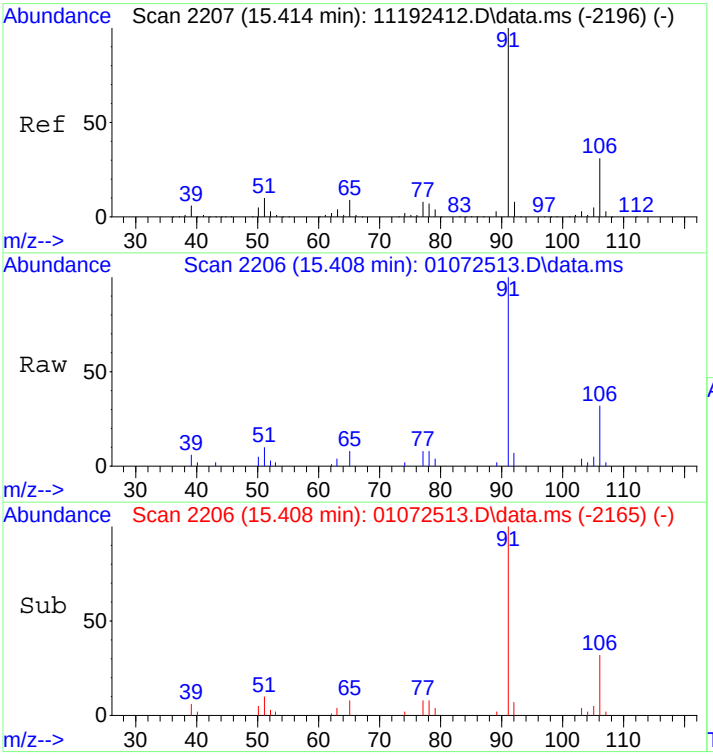


#64
Tetrachloroethene
Concen: 0.44 ng
RT: 14.03 min Scan# 1964
Delta R.T. -0.017 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:166 Resp: 6124

Ion	Ratio	Lower	Upper
166	100		
164	77.6	58.7	98.7

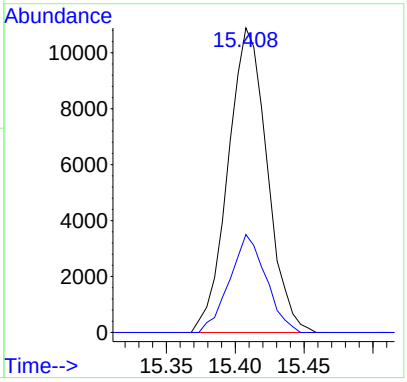


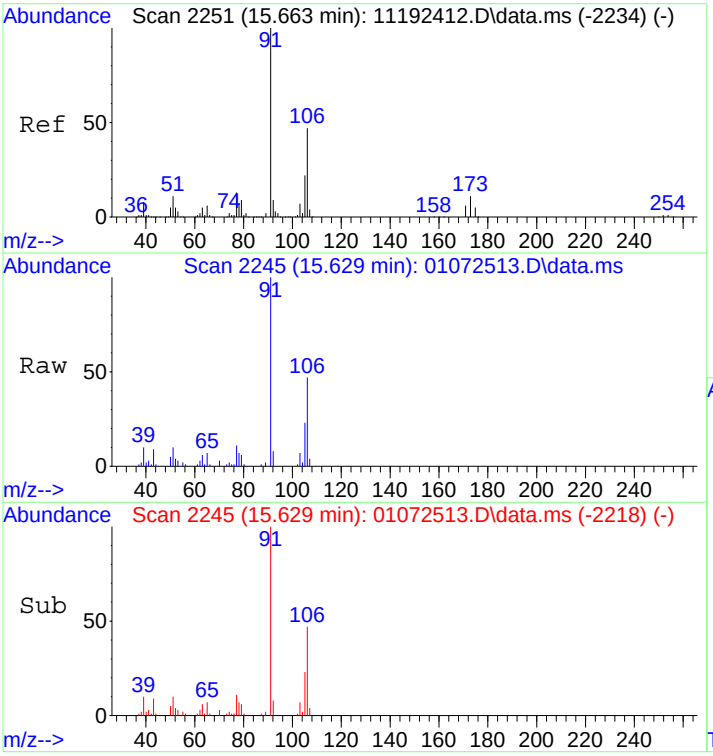


#66
Ethylbenzene
Concen: 0.42 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 91 Resp: 21488

Ion	Ratio	Lower	Upper
91	100		
106	29.9	10.7	50.7

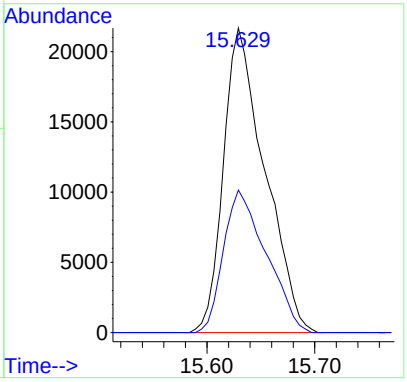


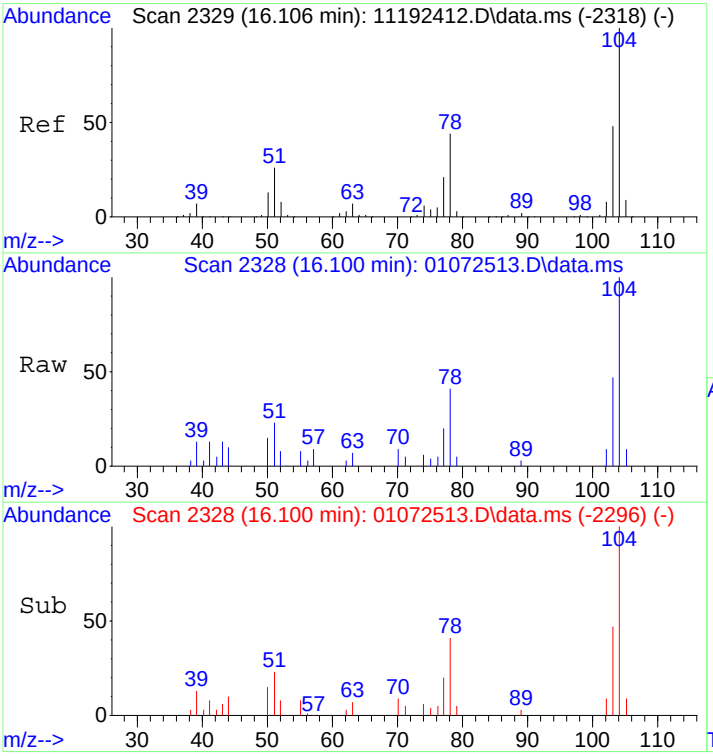


#67
m- & p-Xylenes
Concen: 1.38 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.046 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 91 Resp: 57798

Ion	Ratio	Lower	Upper
91	100		
106	48.3	27.1	67.1

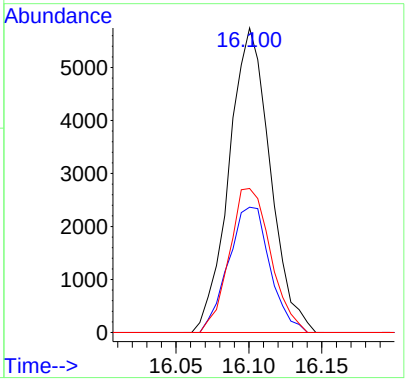


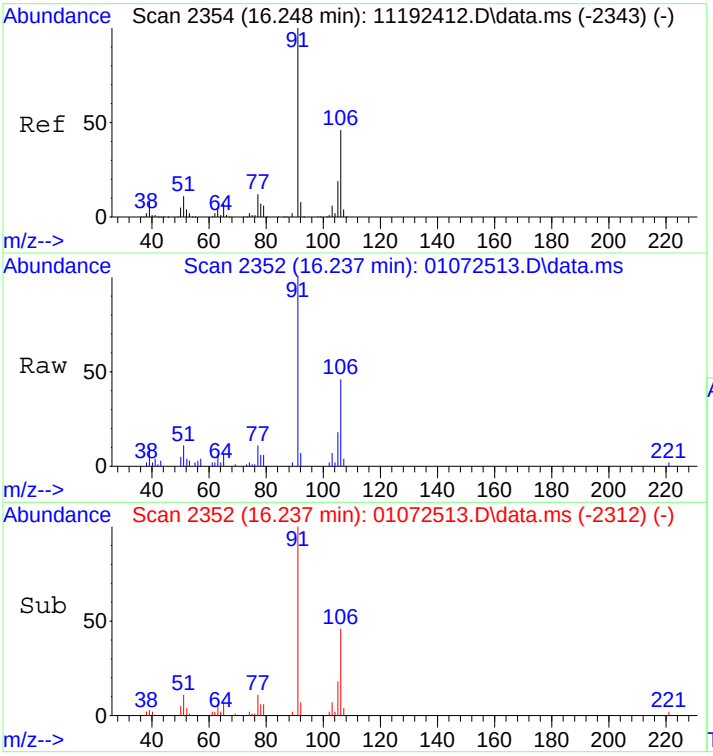


#69
Styrene
Concen: 0.38 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:104 Resp: 11271

Ion	Ratio	Lower	Upper
104	100		
78	41.7	23.0	63.0
103	47.5	27.5	67.5

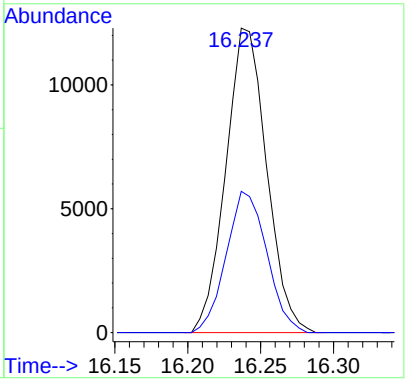


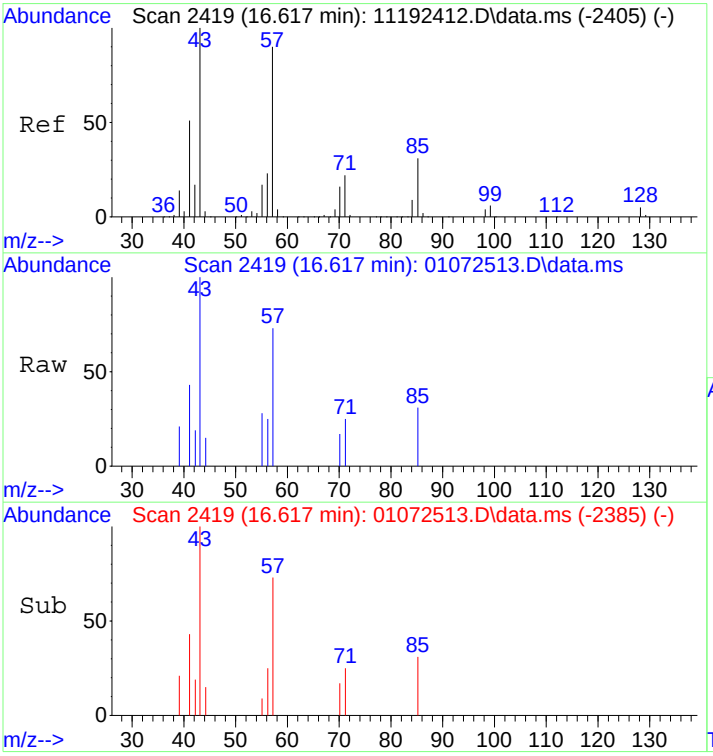


#70
o-Xylene
Concen: 0.58 ng
RT: 16.24 min Scan# 2352
Delta R.T. -0.023 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 91 Resp: 23937

Ion	Ratio	Lower	Upper
91	100		
106	46.1	25.8	65.8

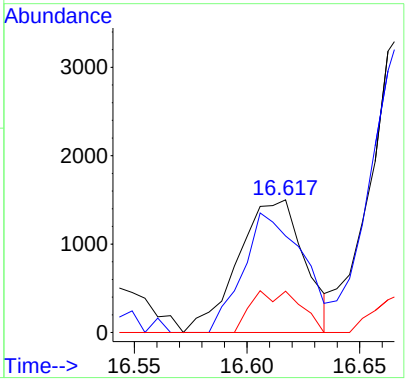


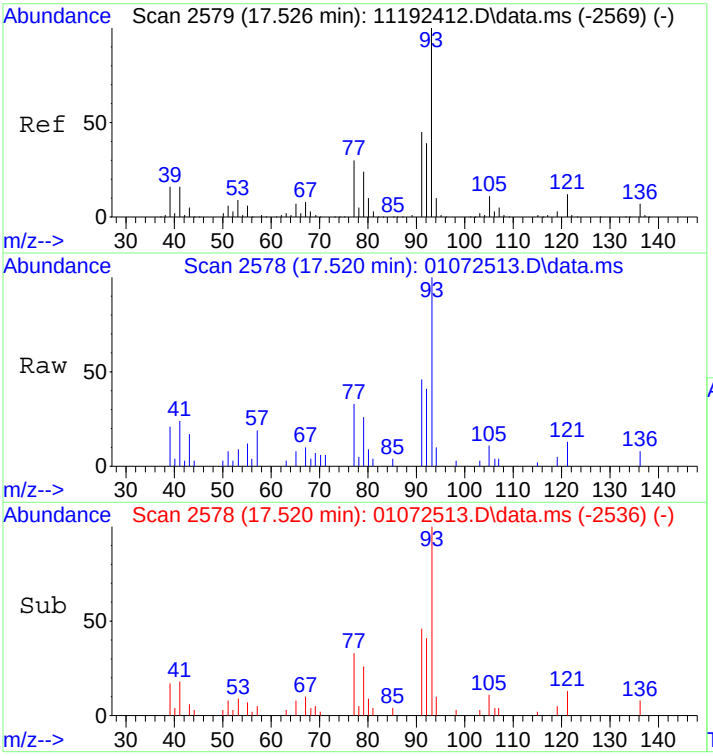


#71
n-Nonane
Concen: 0.14 ng
RT: 16.62 min Scan# 2419
Delta R.T. -0.006 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 43 Resp: 3075

Ion	Ratio	Lower	Upper
43	100		
57	80.9	69.4	109.4
85	23.2	10.5	50.5

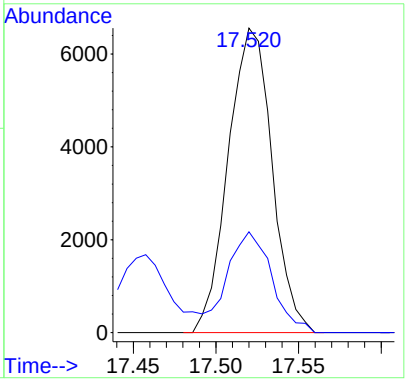


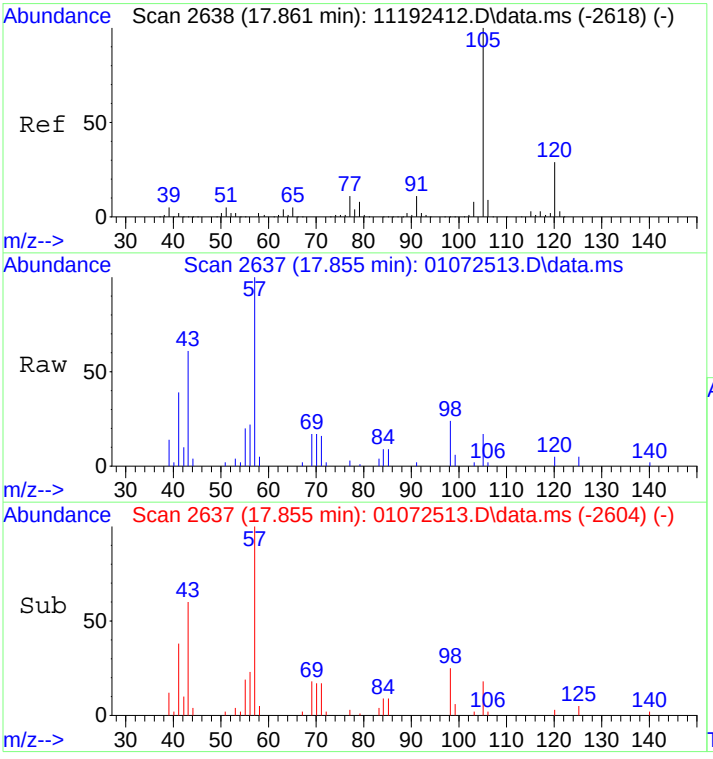


#75
alpha-Pinene
Concen: 0.48 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 93 Resp: 12111

Ion	Ratio	Lower	Upper
93	100		
77	33.5	10.1	50.1

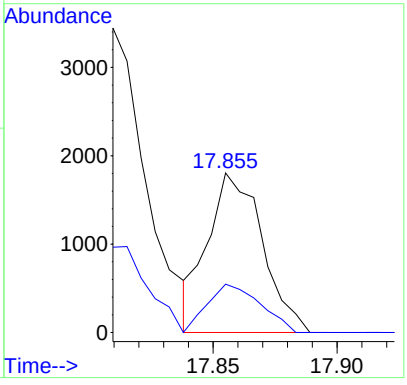


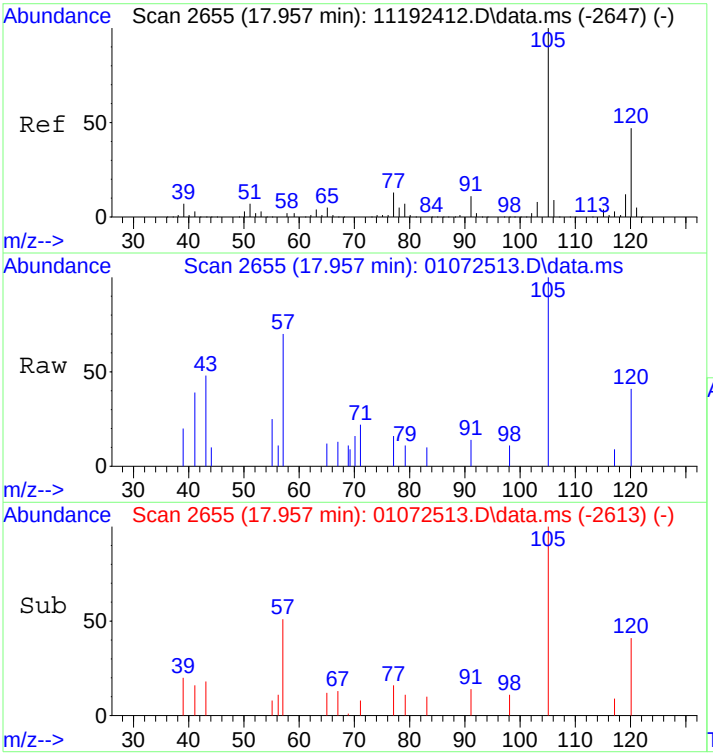


#78
4-Ethyltoluene
Concen: 0.06 ng
RT: 17.85 min Scan# 2637
Delta R.T. -0.011 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:105 Resp: 2766

Ion	Ratio	Lower	Upper
105	100		
120	29.5	8.9	48.9

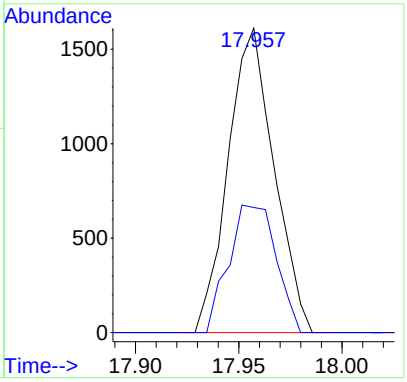


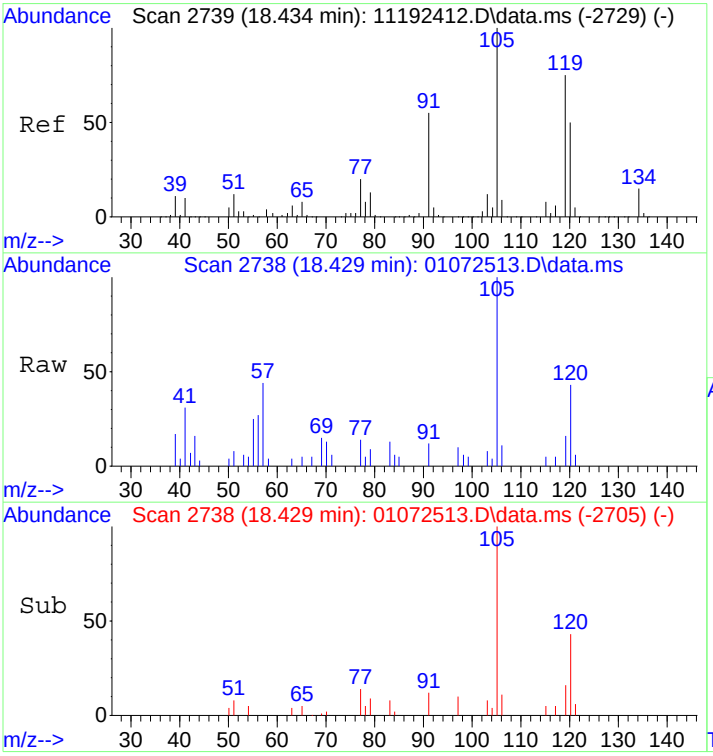


#79
1,3,5-Trimethylbenzene
Concen: 0.06 ng
RT: 17.96 min Scan# 2655
Delta R.T. -0.011 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:105 Resp: 2493

Ion	Ratio	Lower	Upper
105	100		
120	43.3	27.5	67.5

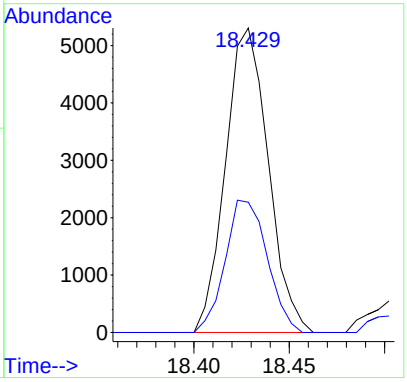


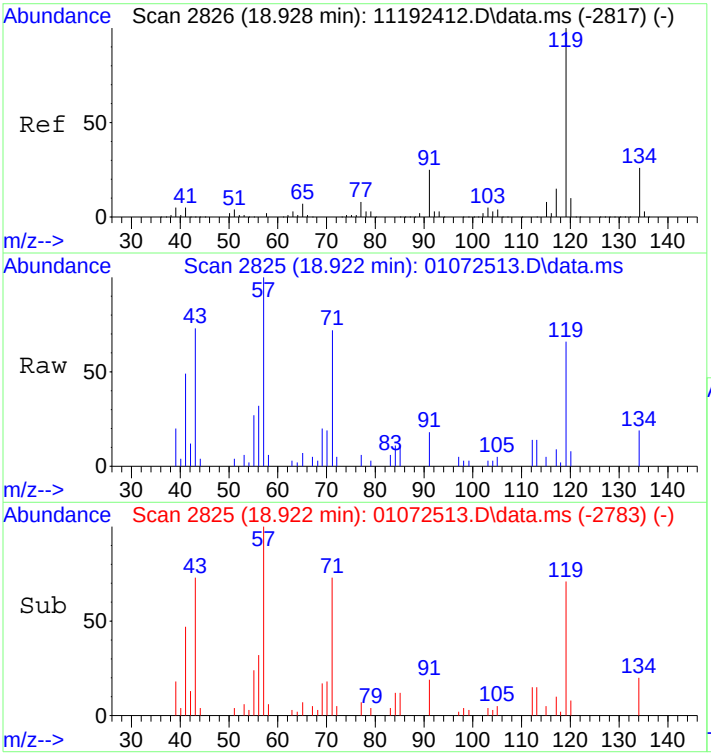


#82
1,2,4-Trimethylbenzene
Concen: 0.19 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:105 Resp: 8276

Ion	Ratio	Lower	Upper
105	100		
120	42.8	31.8	71.8

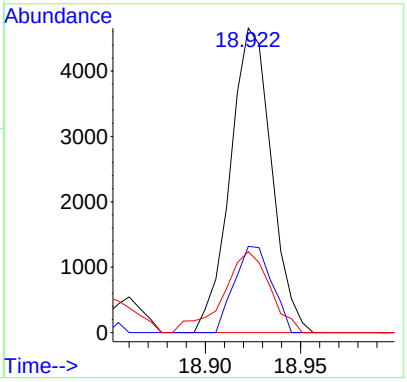


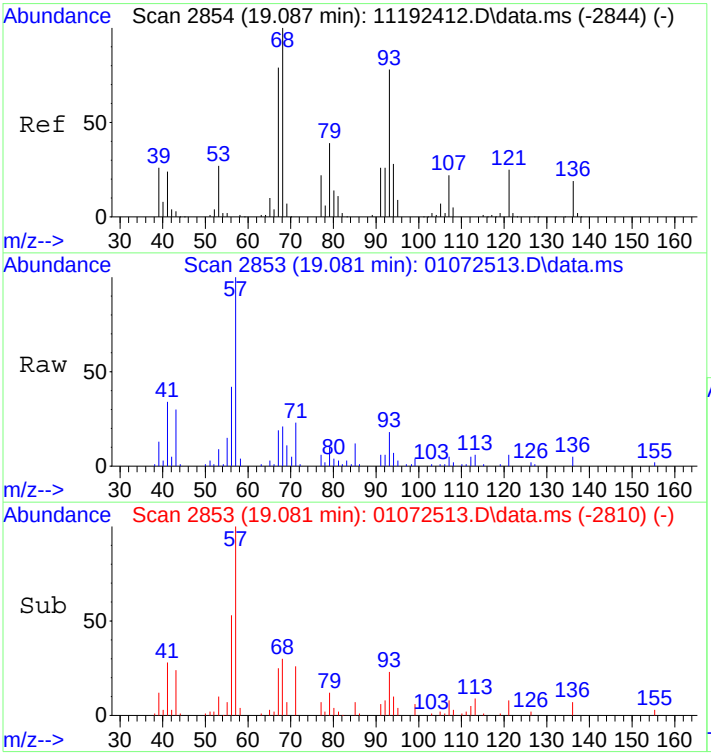


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.15 ng
RT: 18.92 min Scan# 2825
Delta R.T. -0.011 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion:119 Resp: 7009

Ion	Ratio	Lower	Upper
119	100		
134	25.6	5.8	45.8
91	30.0	4.6	44.6

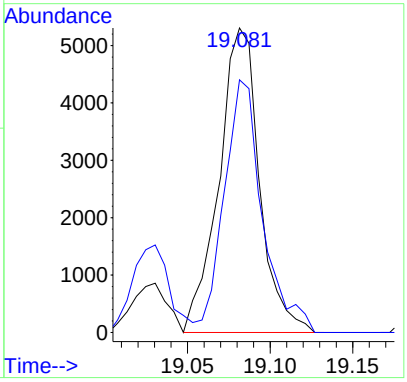




#91
d-Limonene
Concen: 0.66 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01072513.D
Acq: 7 Jan 2025 11:03

Tgt Ion: 68 Resp: 9076

Ion	Ratio	Lower	Upper
68	100		
93	77.9	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 13:32:20 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

MA 1/12/25

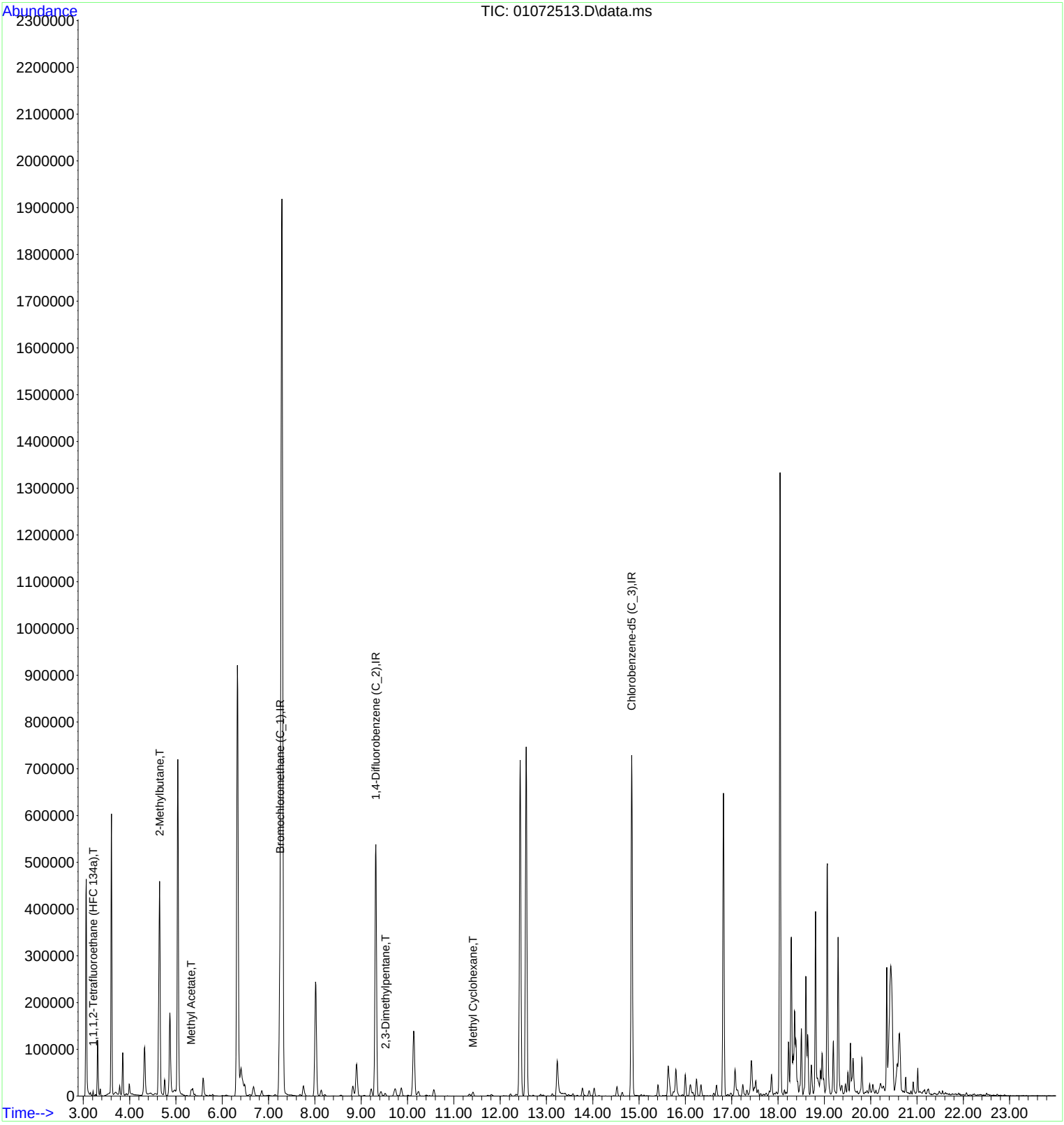
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (C_1)	7.25	130	139131	12.500 ng		0.00
16) 1,4-Difluorobenzene (C_2)	9.31	114	593404	12.500 ng		0.00
19) Chlorobenzene-d5 (C_3)	14.84	54	108522	12.500 ng		0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	4591	0.363 ng		99
4) 1,1-Difluoroethane	3.26	65	946	N.D.		
5) Chlorodifluoromethane ...	3.31	67	383	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.51	65	319	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.65	57	95989	7.149 ng		91
11) Methyl Acetate	5.33	43	18287	0.574 ng	#	91
12) 2-Methylpentane	0.00	71	0	N.D. d		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	9.53	56	3038	0.129 ng	#	85
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.42	55	4099	0.212 ng		88
21) 1,3-Dichloropropane	0.00	76	0	N.D. d		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D. d		
25) Bromobenzene	17.03	77	132	N.D.		
26) 2-Chlorotoluene	17.67	91	2666	N.D.		
27) 4-Chlorotoluene	17.67	91	2666	N.D.		
28) Indane	19.12	117	926	N.D.		
29) Indene	19.21	115	72	N.D.		
30) 1,2,4,5-Tetramethylben...	20.22	119	1010	N.D.		
31) 1,2,3,4-Tetramethylben...	20.22	119	1010	N.D.		
32) 1,2,3,5-Tetramethylben...	20.58	119	1055	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 13:32:20 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072513.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.307	70	75	82	rBV	119070	168961	2.97%	0.515%
2	3.370	82	86	91	rVB	15175	18657	0.33%	0.057%
3	3.569	107	121	122	rBV7	4998	13228	0.23%	0.040%
4	3.608	122	128	135	rVV	601761	806008	14.16%	2.458%
5	3.693	135	143	154	rVV2	6022	23277	0.41%	0.071%
6	3.784	154	159	164	rVV	20018	28074	0.49%	0.086%
7	3.852	164	171	178	rVB	90672	129313	2.27%	0.394%
8	3.989	189	195	206	rBV2	23307	40056	0.70%	0.122%
9	4.324	243	254	267	rBV	102585	223454	3.93%	0.681%
10	4.647	301	311	324	rVB3	456596	944137	16.58%	2.879%
11	4.755	324	330	340	rVB	33689	56773	1.00%	0.173%
12	4.869	340	350	361	rBV	177033	370395	6.51%	1.129%
13	4.971	361	368	373	rVV2	9492	32187	0.57%	0.098%
14	5.039	373	380	394	rVB	716591	1234224	21.68%	3.763%
15	5.340	424	433	434	rBV	13821	26779	0.47%	0.082%
16	5.363	434	437	443	rVB2	13593	21633	0.38%	0.066%
17	5.584	470	476	497	rVB2	38440	86482	1.52%	0.264%
18	6.328	595	607	616	rBV	921345	2181900	38.33%	6.653%
19	6.408	616	621	632	rVV2	59504	215501	3.79%	0.657%
20	6.481	632	634	644	rVB3	24114	43124	0.76%	0.131%
21	6.675	658	668	685	rVB	19541	52653	0.92%	0.161%
22	6.856	688	700	707	rBV	10990	24750	0.43%	0.075%
23	7.288	756	776	798	rBV	1918624	5692899	100.00%	17.358%
24	7.753	850	858	869	rVB	21669	53427	0.94%	0.163%
25	8.015	892	904	917	rBV	244465	613169	10.77%	1.870%
26	8.140	917	926	933	rVB2	12894	29084	0.51%	0.089%
27	8.821	1036	1046	1052	rBV	21324	51407	0.90%	0.157%
28	8.900	1052	1060	1071	rVB	68112	173848	3.05%	0.530%
29	9.218	1108	1116	1123	rBV	15455	37013	0.65%	0.113%
30	9.315	1123	1133	1144	rVV	538330	1296410	22.77%	3.953%
31	9.423	1144	1152	1160	rVV4	9515	26698	0.47%	0.081%
32	9.514	1162	1168	1177	rVB3	5801	13997	0.25%	0.043%
33	9.729	1196	1206	1218	rBV4	15570	48200	0.85%	0.147%
34	9.866	1221	1230	1238	rVB3	16961	41202	0.72%	0.126%
35	10.133	1265	1277	1288	rBV	138599	380949	6.69%	1.162%
36	10.235	1288	1295	1305	rVB2	9943	27414	0.48%	0.084%
37	10.570	1345	1354	1363	rBB2	13608	31314	0.55%	0.095%
38	11.331	1481	1488	1496	rBV3	4203	11742	0.21%	0.036%
39	11.410	1496	1502	1509	rVB4	8438	20712	0.36%	0.063%
40	12.228	1637	1646	1652	rBB	4608	10262	0.18%	0.031%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	12.432	1671	1682	1694	rVV	718043	1656970	29.11%	5.052%
42	12.563	1694	1705	1720	rVB	746450	1682507	29.55%	5.130%
43	13.125	1795	1804	1810	rBV3	5035	10815	0.19%	0.033%
44	13.233	1814	1823	1839	rBV2	75334	208428	3.66%	0.636%
45	13.778	1911	1919	1933	rBV	17178	38255	0.67%	0.117%
46	13.920	1935	1944	1951	rBV4	11448	23554	0.41%	0.072%
47	14.028	1956	1963	1970	rVB2	17140	36554	0.64%	0.111%
48	14.522	2042	2050	2059	rVB	20373	42515	0.75%	0.130%
49	14.635	2064	2070	2077	rBB3	7932	16263	0.29%	0.050%
50	14.840	2096	2106	2121	rBV	728877	1504808	26.43%	4.588%
51	15.408	2200	2206	2216	rVB	23897	45993	0.81%	0.140%
52	15.629	2238	2245	2258	rVB	64858	166574	2.93%	0.508%
53	15.737	2258	2264	2266	rVV2	9055	15175	0.27%	0.046%
54	15.794	2267	2274	2289	rVB	57306	138944	2.44%	0.424%
55	15.998	2303	2310	2318	rVB	45882	83739	1.47%	0.255%
56	16.106	2321	2329	2336	rVV3	24188	63770	1.12%	0.194%
57	16.157	2336	2338	2345	rVV3	7519	12708	0.22%	0.039%
58	16.237	2345	2352	2361	rVB	36136	70884	1.25%	0.216%
59	16.339	2361	2370	2380	rBV	24187	51078	0.90%	0.156%
60	16.611	2411	2418	2422	rBV3	6296	11854	0.21%	0.036%
61	16.674	2422	2429	2437	rVB	23190	46534	0.82%	0.142%
62	16.822	2446	2455	2466	rBV	647700	1226718	21.55%	3.740%
63	16.981	2477	2483	2489	rBV3	6163	14220	0.25%	0.043%
64	17.071	2489	2499	2508	rBV	56363	134116	2.36%	0.409%
65	17.242	2519	2529	2539	rBV	24535	53785	0.94%	0.164%
66	17.327	2539	2544	2550	rVV2	12252	25523	0.45%	0.078%
67	17.423	2550	2561	2568	rVV2	75617	191940	3.37%	0.585%
68	17.492	2568	2573	2574	rVV2	17726	31354	0.55%	0.096%
69	17.520	2574	2578	2583	rVV	31957	61856	1.09%	0.189%
70	17.571	2583	2587	2592	rVB2	12148	22318	0.39%	0.068%
71	17.747	2612	2618	2623	rVB4	5528	11786	0.21%	0.036%
72	17.810	2623	2629	2632	rBV	9974	17852	0.31%	0.054%
73	17.861	2632	2638	2645	rVB	43853	83622	1.47%	0.255%
74	18.042	2660	2670	2682	rVB	1330833	2192737	38.52%	6.686%
75	18.139	2682	2687	2690	rBV	10310	15085	0.26%	0.046%
76	18.224	2696	2702	2707	rBV	110063	189463	3.33%	0.578%
77	18.287	2707	2713	2718	rBV2	308958	552155	9.70%	1.684%
78	18.326	2718	2720	2722	rBV2	15141	13911	0.24%	0.042%
79	18.355	2722	2725	2729	rBV	104548	147537	2.59%	0.450%
80	18.502	2741	2751	2757	rVB2	141228	250866	4.41%	0.765%
81	18.599	2757	2768	2773	rBV2	252584	483153	8.49%	1.473%
82	18.639	2773	2775	2783	rVB2	128607	193540	3.40%	0.590%
83	18.718	2783	2789	2797	rBV2	63674	121978	2.14%	0.372%
84	18.809	2797	2805	2811	rBV	389645	579200	10.17%	1.766%
85	18.917	2820	2824	2827	rBV3	34044	49990	0.88%	0.152%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

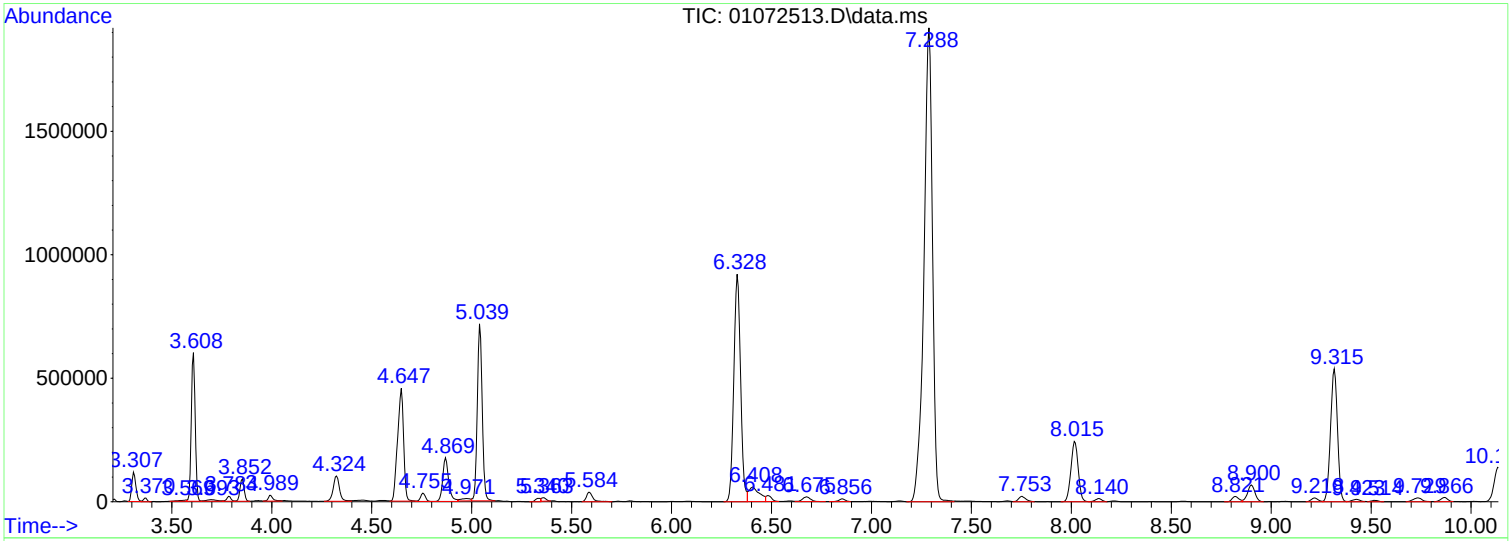
86	18.951	2827	2830	2841	rVB2	83970	178661	3.14%	0.545%
87	19.064	2841	2850	2863	rVB	493373	842969	14.81%	2.570%
88	19.195	2863	2873	2884	rBV	114735	194113	3.41%	0.592%
89	19.297	2884	2891	2900	rBV	333983	543699	9.55%	1.658%
90	19.371	2900	2904	2911	rVB4	18283	36217	0.64%	0.110%
91	19.456	2911	2919	2923	rBV2	20655	35552	0.62%	0.108%
92	19.507	2923	2928	2933	rBV2	41722	66367	1.17%	0.202%
93	19.564	2933	2938	2941	rVV	103070	150540	2.64%	0.459%
94	19.621	2941	2948	2962	rVB2	72676	167767	2.95%	0.512%
95	19.808	2968	2981	2989	rVB2	77300	132908	2.33%	0.405%
96	19.979	3006	3011	3016	rBV2	20001	30516	0.54%	0.093%
97	20.047	3018	3023	3030	rVB2	18435	35386	0.62%	0.108%
98	20.115	3030	3035	3039	rVB2	7477	10534	0.19%	0.032%
99	20.211	3040	3052	3059	rBV7	21633	71594	1.26%	0.218%
100	20.280	3060	3064	3069	rVV5	14060	29600	0.52%	0.090%
101	20.348	3069	3076	3080	rVV	267997	384529	6.75%	1.172%
102	20.433	3080	3091	3105	rVV3	270583	1256617	22.07%	3.832%
103	20.575	3105	3116	3118	rVV2	60361	155489	2.73%	0.474%
104	20.620	3118	3124	3138	rVB2	125356	365365	6.42%	1.114%
105	20.757	3144	3148	3157	rVB2	34203	42924	0.75%	0.131%
106	20.916	3172	3176	3185	rBV2	25991	44132	0.78%	0.135%
107	21.018	3185	3194	3198	rBV	54039	71981	1.26%	0.219%
108	21.165	3217	3220	3225	rVB3	8769	11864	0.21%	0.036%
109	21.245	3227	3234	3244	rVB5	12178	31046	0.55%	0.095%
110	21.483	3271	3276	3284	rBV4	6266	11917	0.21%	0.036%

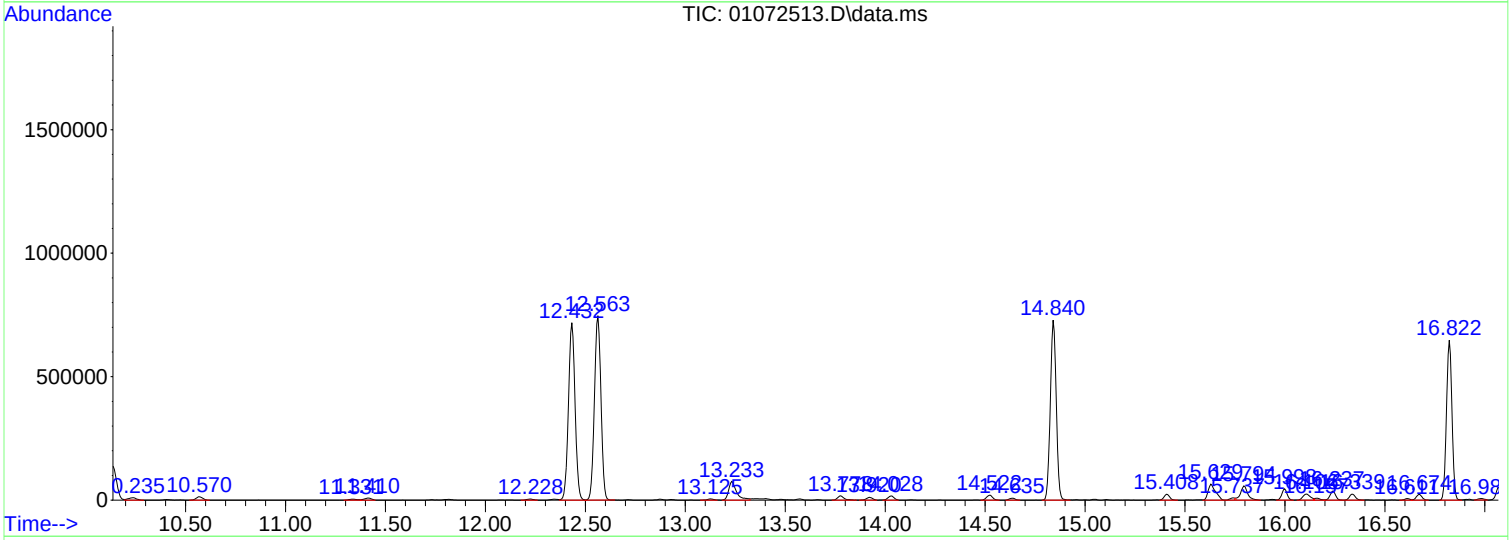
Sum of corrected areas: 32796227

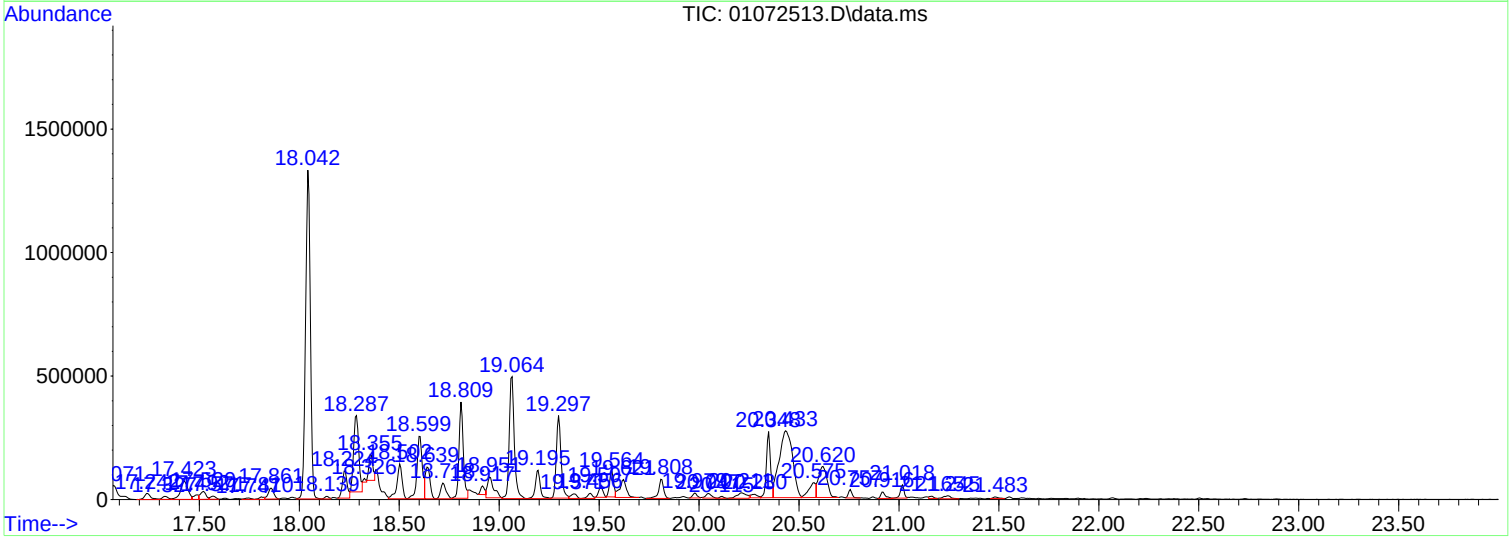
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:03
Operator : SC
Sample : P2405139-022 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072513.D
Acq On : 7 Jan 2025 11:033
Operator : SCC
Sample : P2405139-022 (400mL))
Misc : S37-123124011
ALS Vial : 7 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

WA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

VOA 1/12/25

Quant Time: Jan 12 10:52:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	138456	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	590763	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	107797	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	230693	12.230	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.84%				
57) Toluene-d8 (SS2)	12.43	98	616240	12.887	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.12%				
73) Bromofluorobenzene (SS3)	16.82	174	245065	14.850	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.80%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.38	85	16019	0.592	ng		99
4) Chloromethane	3.53	50	3244	0.161	ng		93
5) 1,2-Dichloro-1,1,2,2-t...	3.63	135	333	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	4.04	94	359	N.D.			
9) Chloroethane	0.00	64	0	N.D. d			
10) Ethanol	4.30	45	26115	2.550	ng		88
11) Acetonitrile	4.46	41	967	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.64	58	33686	3.613	ng		98
14) Trichlorofluoromethane	4.77	101	8064	0.318	ng		95
15) 2-Propanol (Isopropanol)	4.85	45	36046	1.080	ng		93
16) Acrylonitrile	5.06	53	288	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.35	59	950	N.D.			
19) Methylene Chloride	5.36	84	1139	0.087	ng		96
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.60	151	3185	0.278	ng		99
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.67	72	6560	0.876	ng		94
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.28	87	246	N.D.			
30) Ethyl Acetate	7.28	61	41489	8.975	ng		99
31) n-Hexane	7.31	57	1861	0.089	ng	#	93
32) Chloroform	7.36	83	140	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.11	62	180	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	2621	No Calib		#	
41) Benzene	8.89	78	10003	0.211	ng		100
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.21	84	783	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

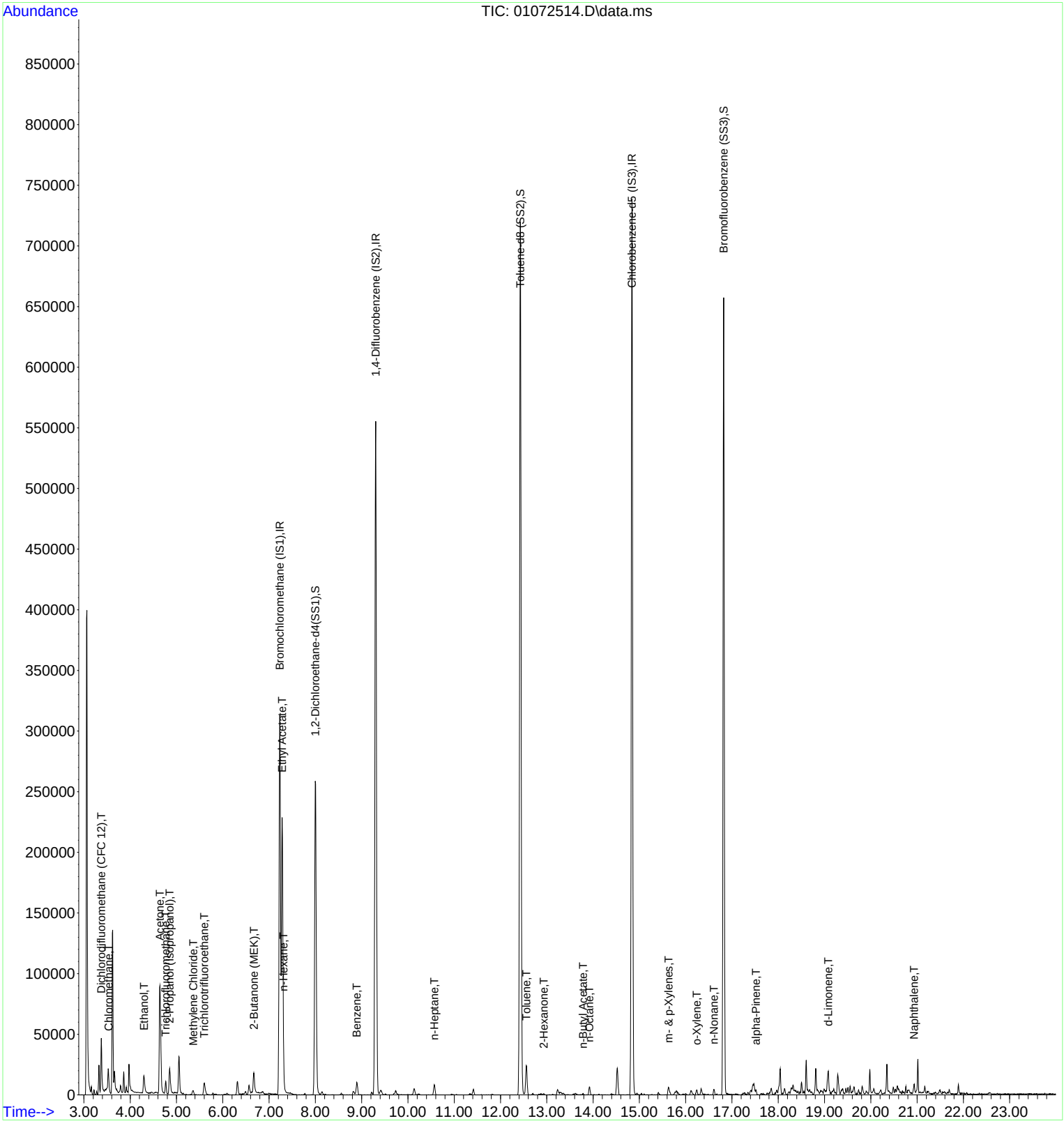
Quant Time: Jan 12 10:52:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	1282	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.57	71	2208	0.209 ng		92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	23203	0.504 ng		98
59) 2-Hexanone	12.94	43	1445	0.064 ng	#	56
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	1500	0.060 ng	#	62
63) n-Octane	13.92	57	1288	0.135 ng		93
64) Tetrachloroethene	14.02	166	176	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	2403	N.D.		
67) m- & p-Xylenes	15.63	91	7162	0.172 ng		98
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.11	104	782	N.D.		
70) o-Xylene	16.24	91	2805	0.068 ng		94
71) n-Nonane	16.61	43	2433	0.111 ng		90
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	312	N.D.		
75) alpha-Pinene	17.52	93	1852	0.073 ng		70
76) n-Propylbenzene	17.68	91	1084	N.D.		
77) 3-Ethyltoluene	17.03	105	312	No Calib	#	
78) 4-Ethyltoluene	17.86	105	589	N.D.		
79) 1,3,5-Trimethylbenzene	17.95	105	492	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	312	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.43	105	1355	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	18.74	105	329	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	1143	N.D.		
89) 1,2,3-Trimethylbenzene	17.03	105	312	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	3559	0.261 ng		96
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	474	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	269	N.D.		
95) Naphthalene	20.94	128	4446	0.078 ng		95
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	128	N.D.		
100) n-Butylbenzene	19.38	91	1890	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 10:52:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

NOA 1/12/25

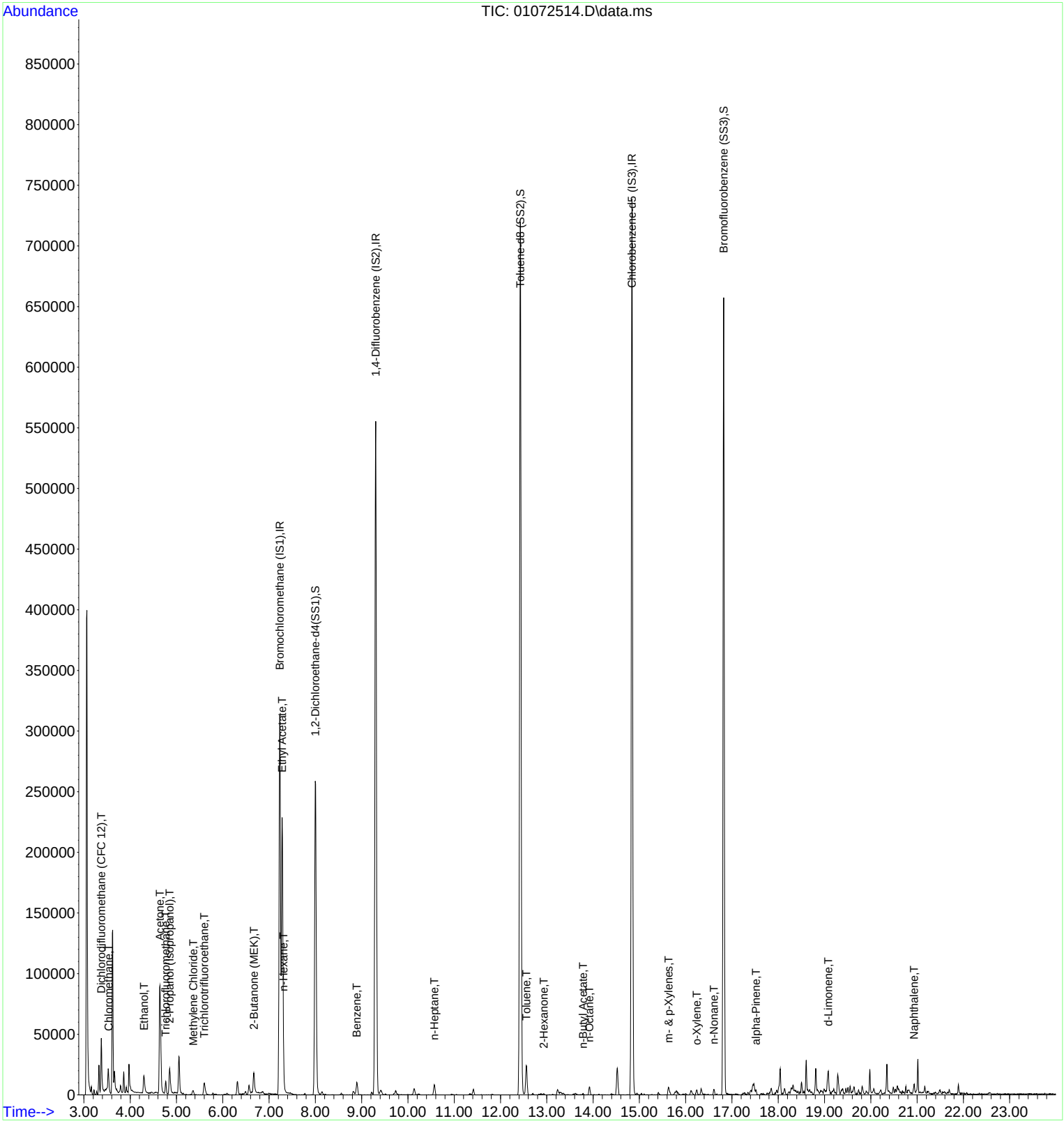
Quant Time: Jan 12 10:52:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

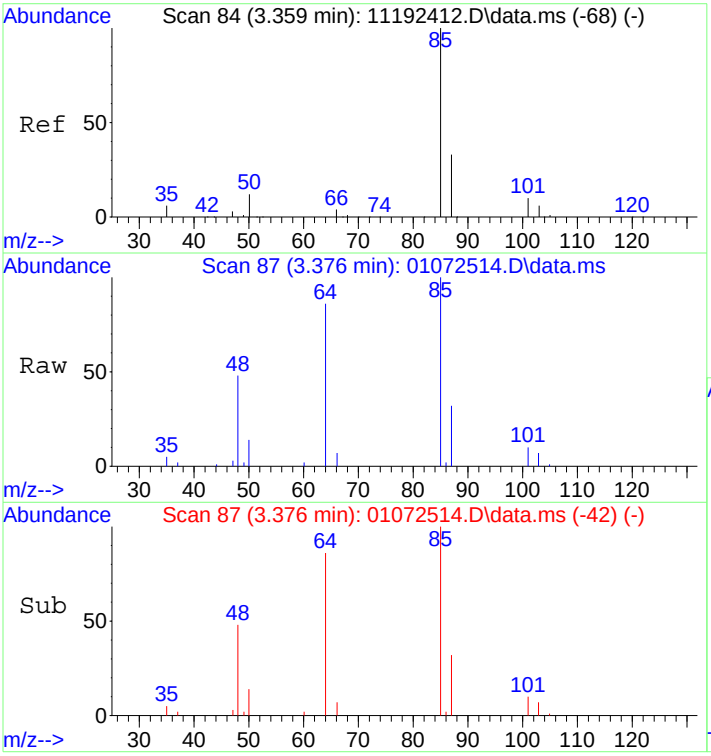
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	138456	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	590763	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	107797	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	230693	12.230	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.84%				
57) Toluene-d8 (SS2)	12.43	98	616240	12.887	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.12%				
73) Bromofluorobenzene (SS3)	16.82	174	245065	14.850	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.80%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16019	0.592	ng		99
4) Chloromethane	3.53	50	3244	0.161	ng		93
10) Ethanol	4.30	45	26115	2.550	ng		88
13) Acetone	4.64	58	33686	3.613	ng		98
14) Trichlorofluoromethane	4.77	101	8064	0.318	ng		95
15) 2-Propanol (Isopropanol)	4.85	45	36046	1.080	ng		93
19) Methylene Chloride	5.36	84	1139	0.087	ng		96
21) Trichlorotrifluoroethane	5.60	151	3185	0.278	ng		99
27) 2-Butanone (MEK)	6.67	72	6560	0.876	ng		94
30) Ethyl Acetate	7.28	61	41489	8.975	ng		99
31) n-Hexane	7.31	57	1861	0.089	ng	#	93
41) Benzene	8.89	78	10003	0.211	ng		100
51) n-Heptane	10.57	71	2208	0.209	ng		92
58) Toluene	12.56	91	23203	0.504	ng		98
59) 2-Hexanone	12.94	43	1445	0.064	ng	#	56
62) n-Butyl Acetate	13.78	43	1500	0.060	ng	#	62
63) n-Octane	13.92	57	1288	0.135	ng		93
67) m- & p-Xylenes	15.63	91	7162	0.172	ng		98
70) o-Xylene	16.24	91	2805	0.068	ng		94
71) n-Nonane	16.61	43	2433	0.111	ng		90
75) alpha-Pinene	17.52	93	1852	0.073	ng		70
91) d-Limonene	19.08	68	3559	0.261	ng		96
95) Naphthalene	20.94	128	4446	0.078	ng		95

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 10:52:49 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

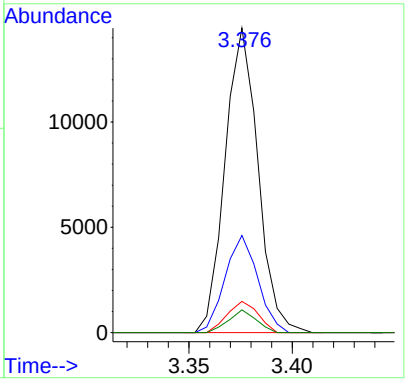


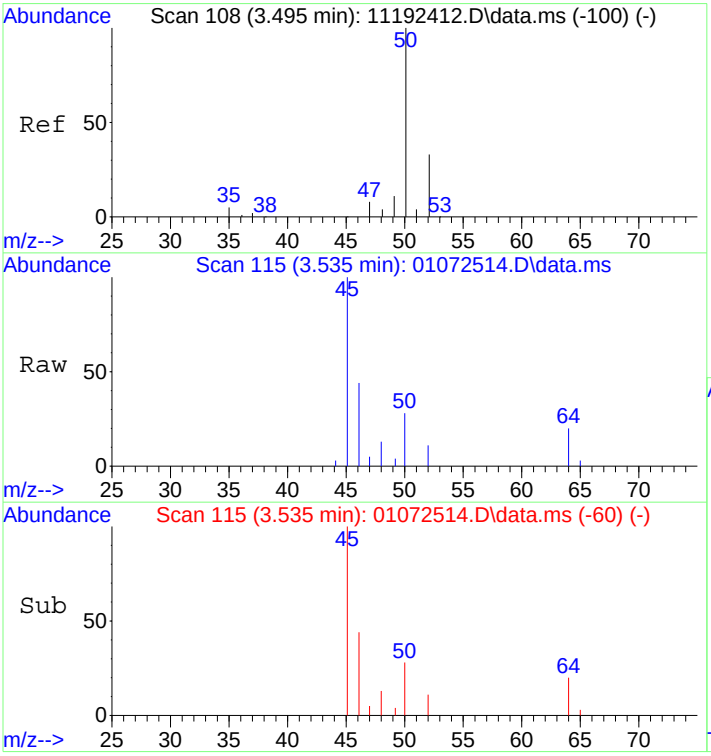


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.59 ng
RT: 3.38 min Scan# 87
Delta R.T. 0.004 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 85 Resp: 16019

Ion	Ratio	Lower	Upper
85	100		
87	31.6	12.6	52.6
101	9.6	0.0	29.6
103	6.2	0.0	26.2

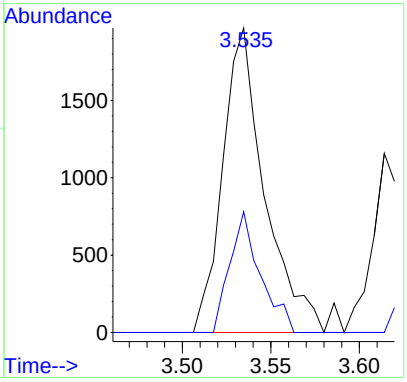


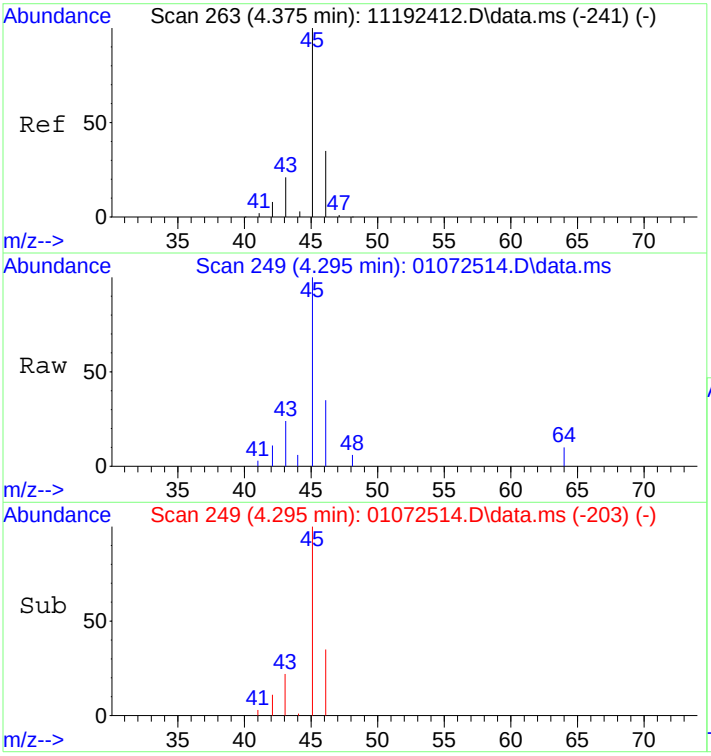


#4
Chloromethane
Concen: 0.16 ng
RT: 3.53 min Scan# 115
Delta R.T. 0.061 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 50 Resp: 3244

Ion	Ratio	Lower	Upper
50	100		
52	28.9	13.0	53.0

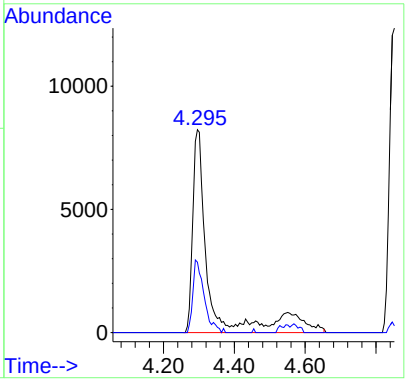


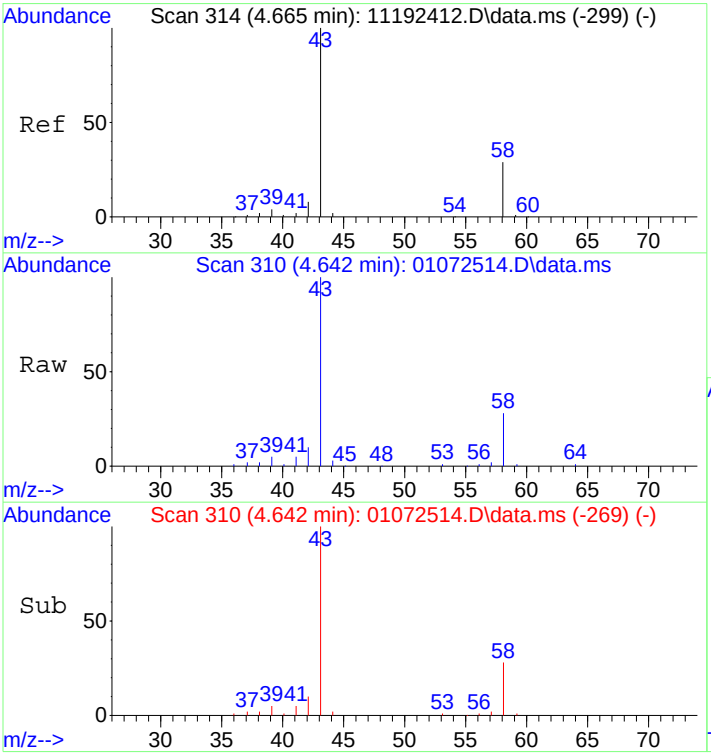


#10
Ethanol
Concen: 2.55 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 45 Resp: 26115

Ion	Ratio	Lower	Upper
45	100		
46	25.1	11.8	51.8

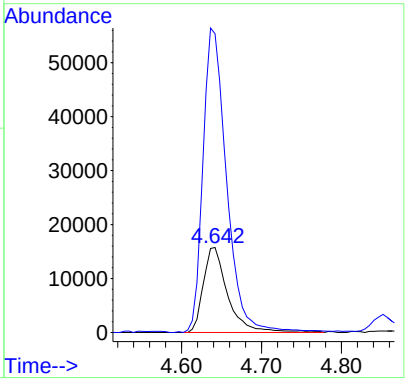


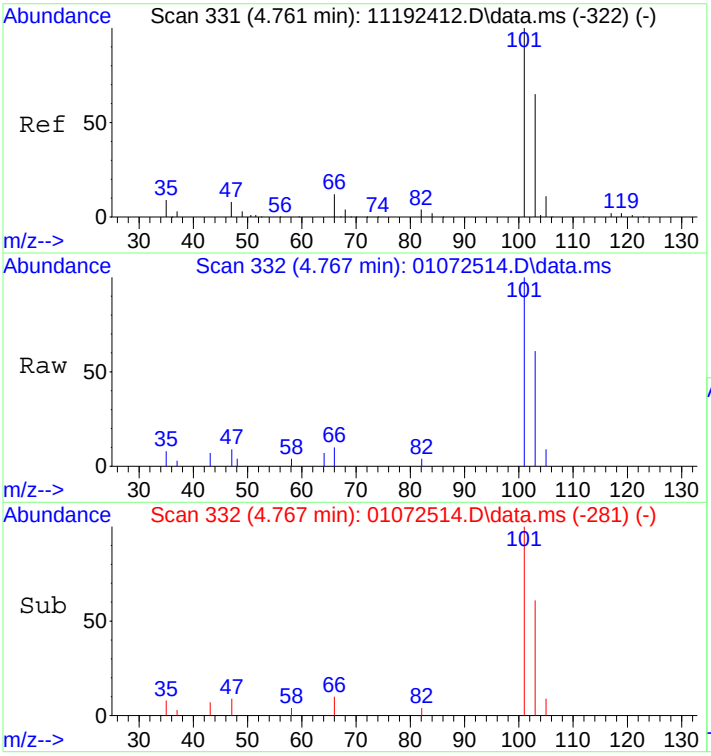


#13
Acetone
Concen: 3.61 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 58 Resp: 33686

Ion	Ratio	Lower	Upper
58	100		
43	347.1	312.5	372.5

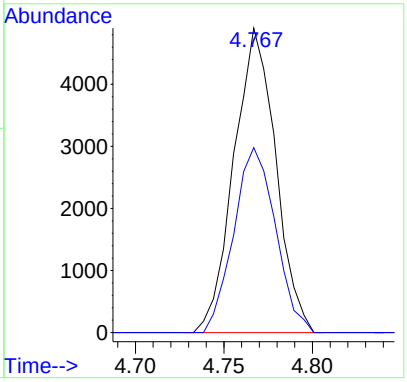


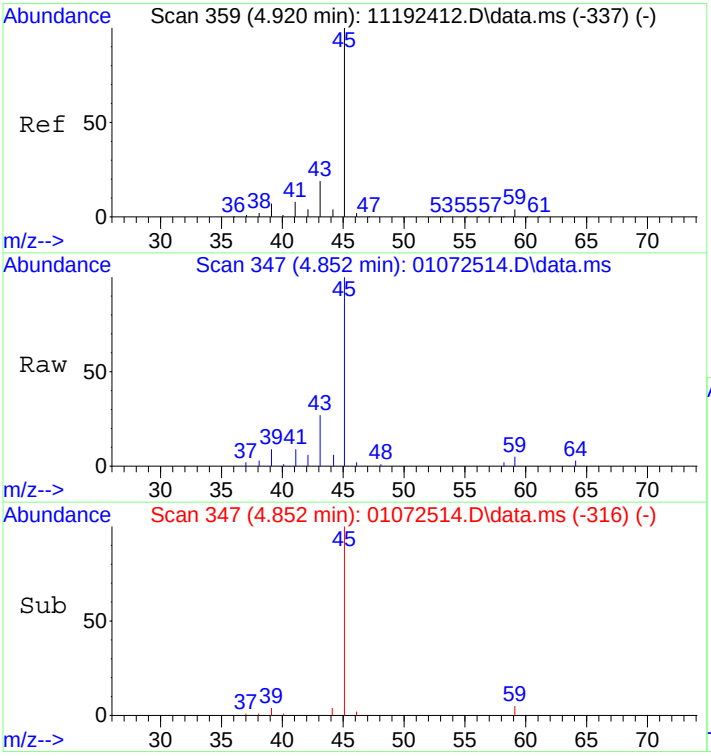


#14
Trichlorofluoromethane
Concen: 0.32 ng
RT: 4.77 min Scan# 332
Delta R.T. 0.039 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion:101 Resp: 8064

Ion	Ratio	Lower	Upper
101	100		
103	60.7	44.8	84.8

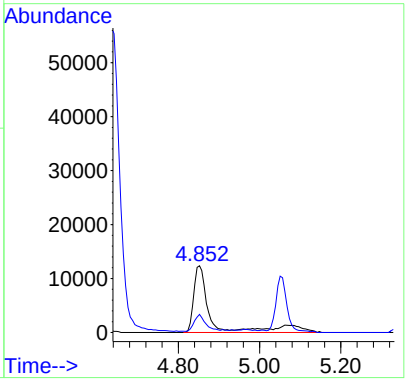


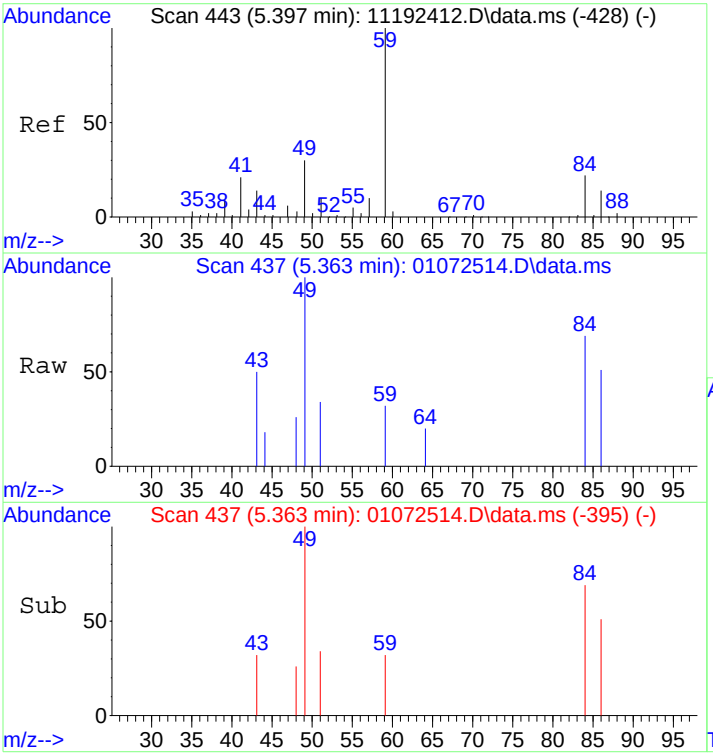


#15
2-Propanol (Isopropanol)
Concen: 1.08 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 45 Resp: 36046

Ion	Ratio	Lower	Upper
45	100		
43	23.3	0.2	40.2

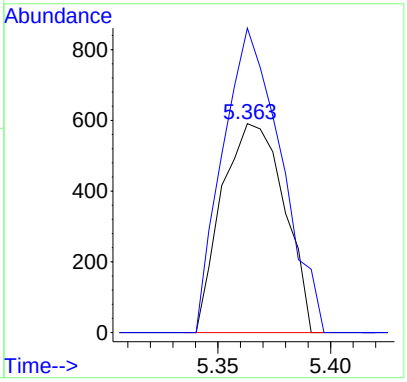


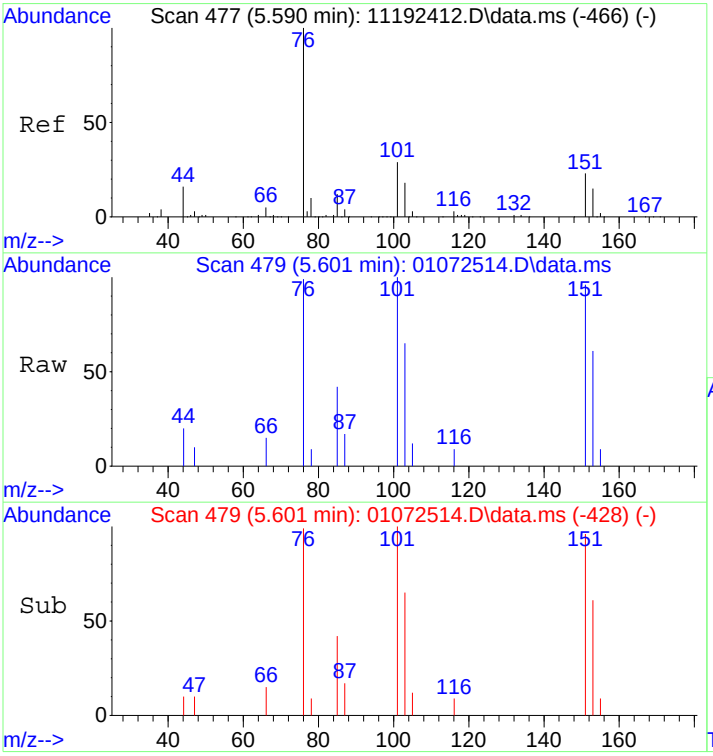


#19
Methylene Chloride
Concen: 0.09 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 84 Resp: 1139

Ion	Ratio	Lower	Upper
84	100		
49	136.0	116.0	166.0

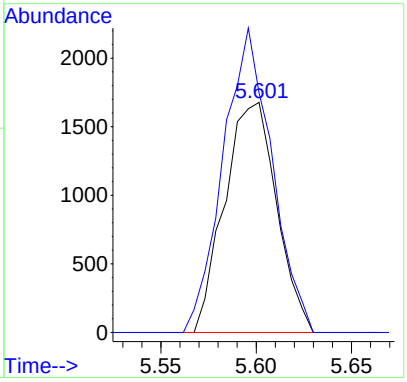


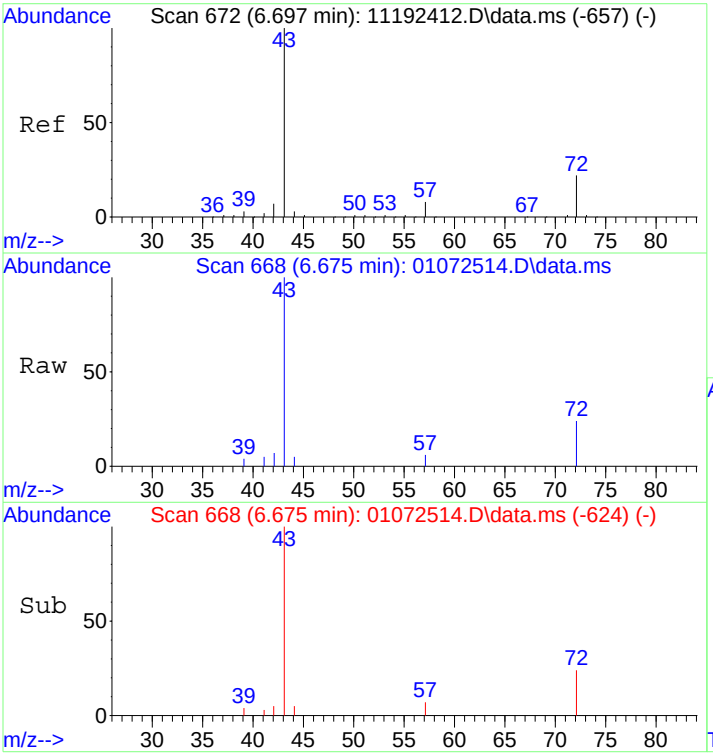


#21
Trichlorotrifluoroethane
Concen: 0.28 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.041 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion:151 Resp: 3185

Ion	Ratio	Lower	Upper
151	100		
101	124.2	105.0	145.0

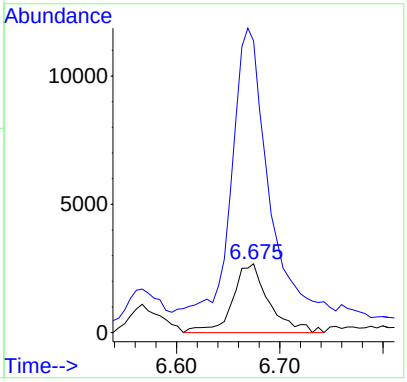


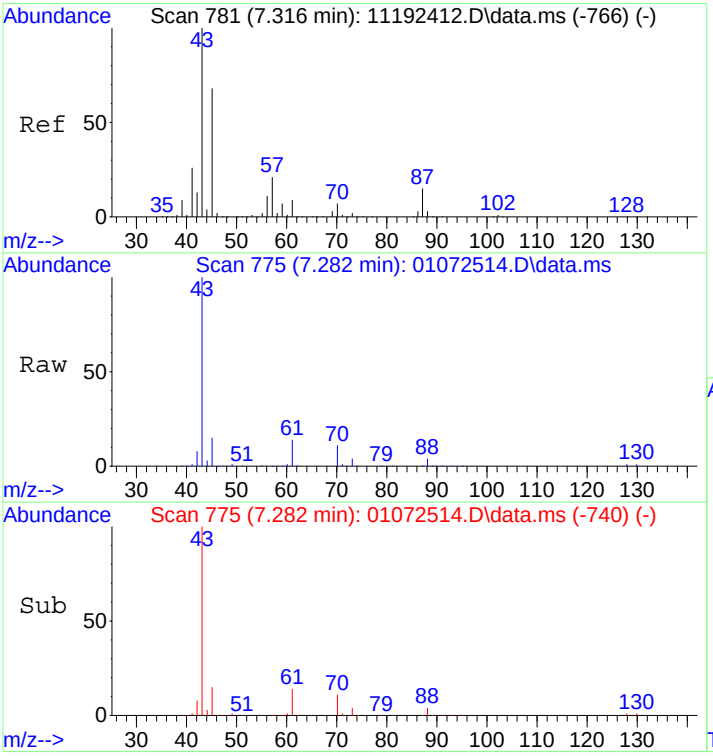


#27
2-Butanone (MEK)
Concen: 0.88 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 72 Resp: 6560

Ion	Ratio	Lower	Upper
72	100		
43	474.5	439.8	479.8

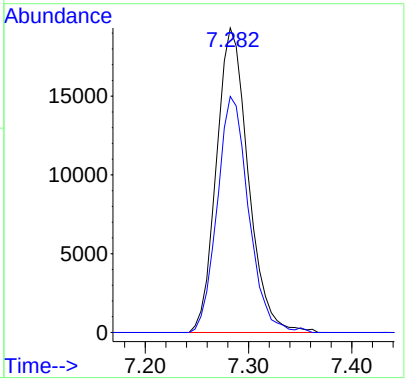


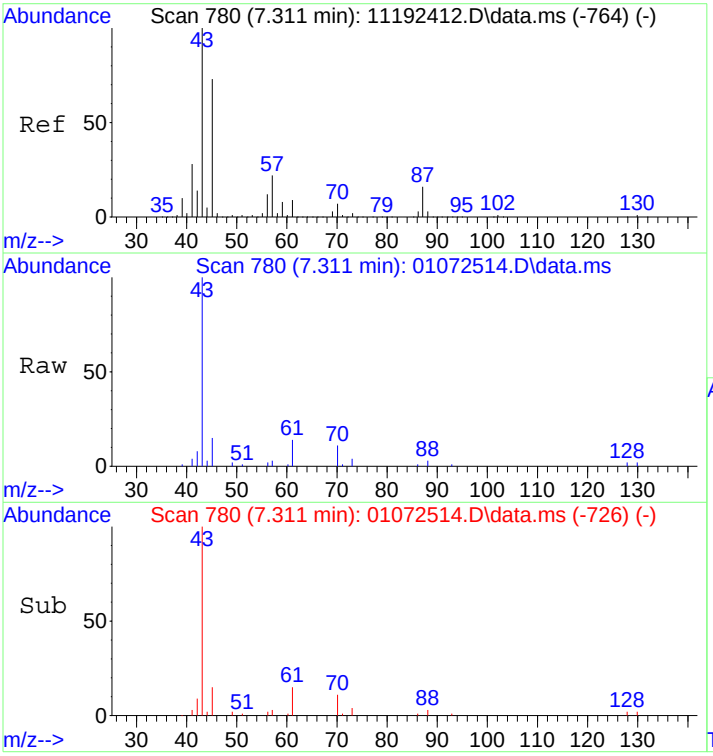


#30
Ethyl Acetate
Concen: 8.97 ng
RT: 7.28 min Scan# 775
Delta R.T. 0.001 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 61 Resp: 41489

Ion	Ratio	Lower	Upper
61	100		
70	76.5	57.3	97.3

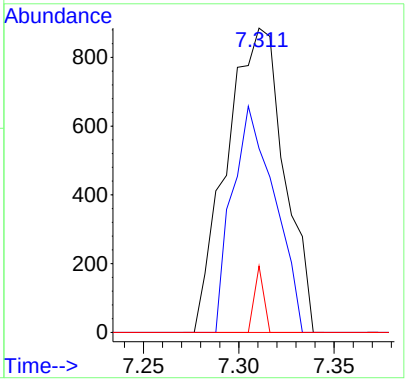


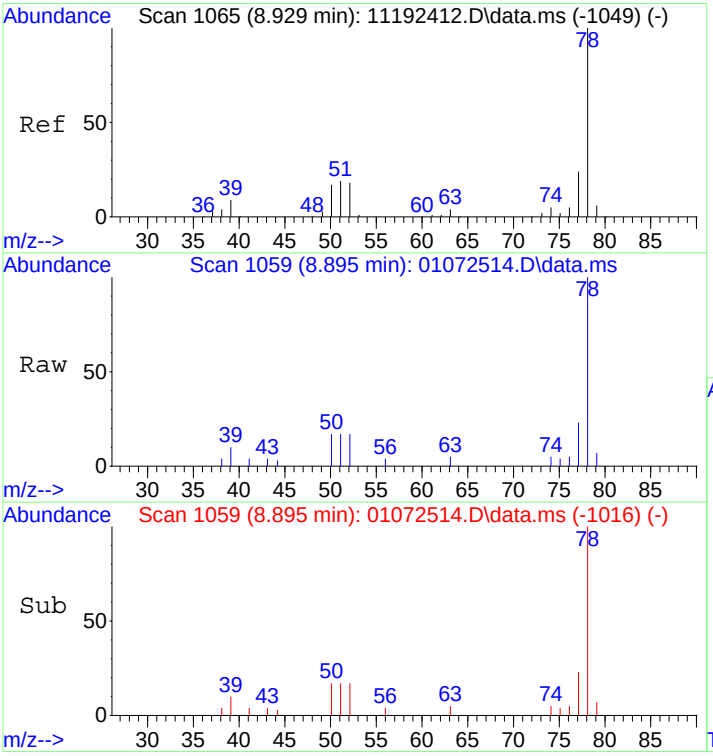


#31
n-Hexane
Concen: 0.09 ng
RT: 7.31 min Scan# 780
Delta R.T. 0.057 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 57 Resp: 1861

Ion	Ratio	Lower	Upper
57	100		
56	54.6	43.4	65.0
86	0.0	10.9	16.3#

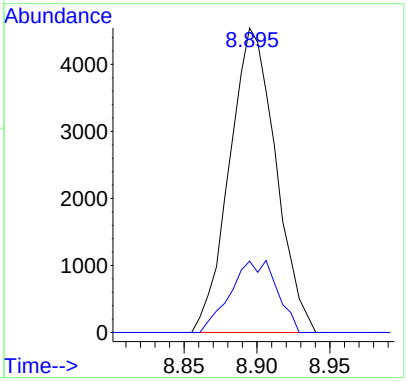


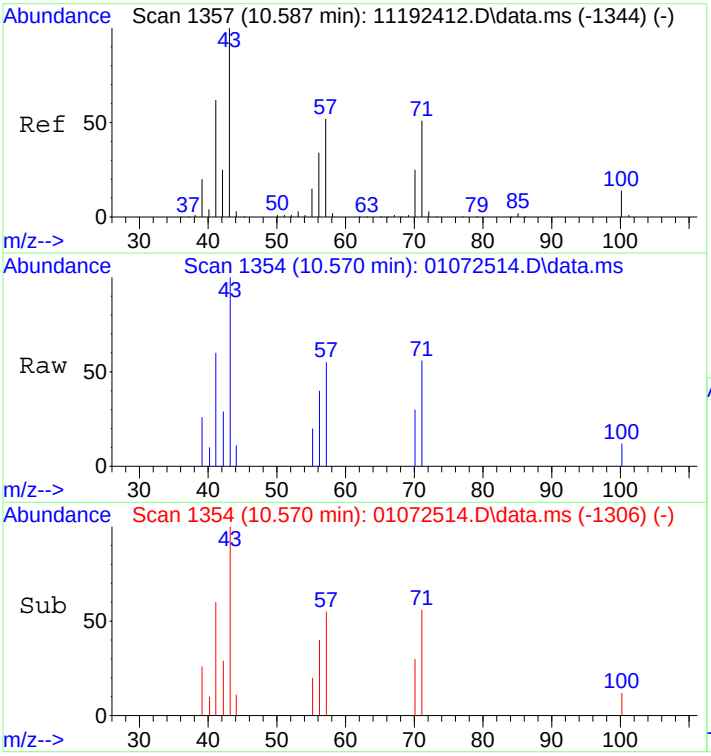


#41
Benzene
Concen: 0.21 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 78 Resp: 10003

Ion	Ratio	Lower	Upper
78	100		
77	23.8	3.7	43.7

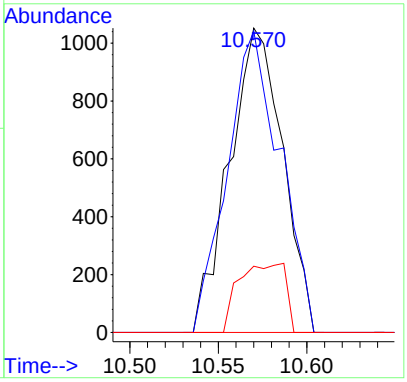


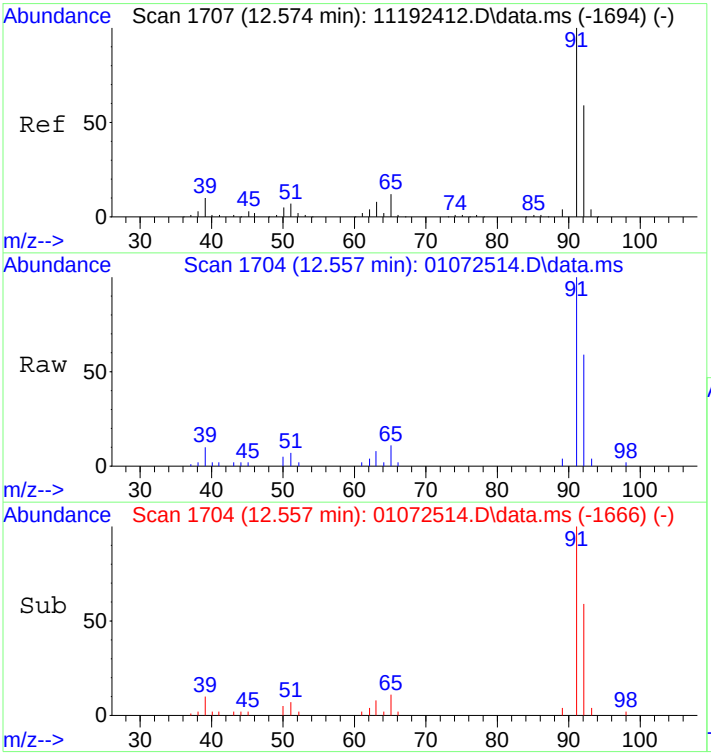


#51
n-Heptane
Concen: 0.21 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 71 Resp: 2208

Ion	Ratio	Lower	Upper
71	100		
57	97.8	83.3	123.3
100	19.8	8.7	48.7

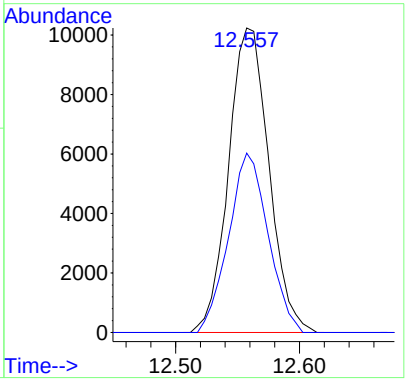


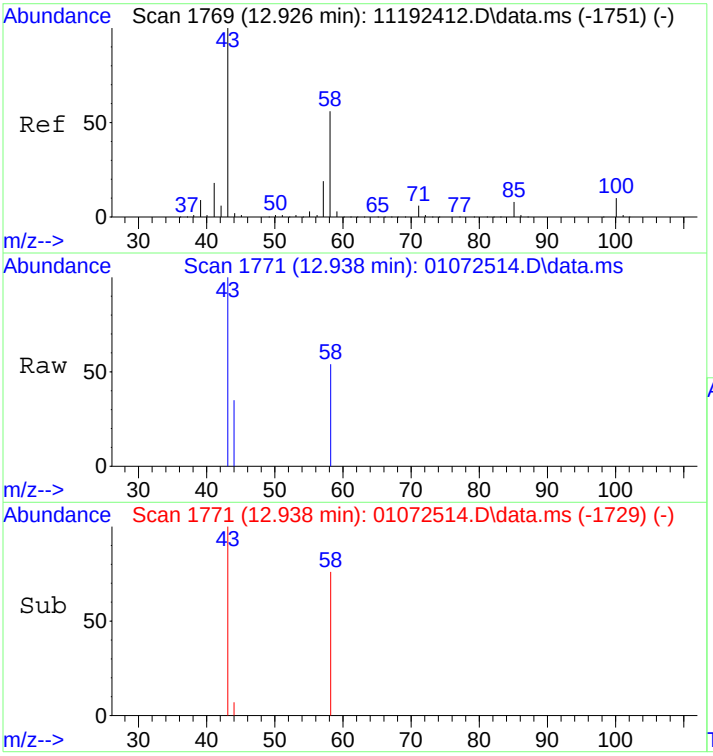


#58
Toluene
Concen: 0.50 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 91 Resp: 23203

Ion	Ratio	Lower	Upper
91	100		
92	57.6	39.2	79.2

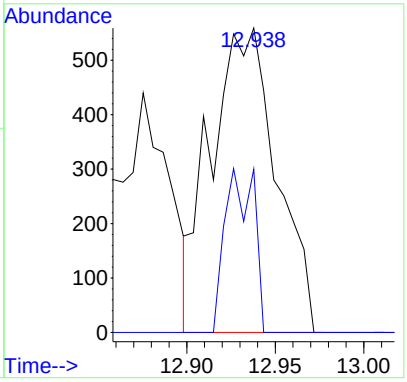


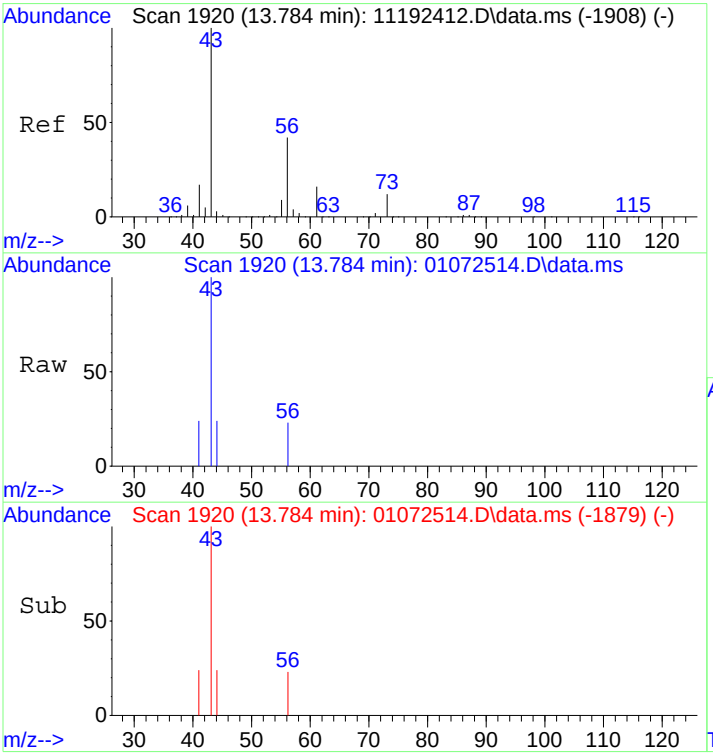


#59
2-Hexanone
Concen: 0.06 ng
RT: 12.94 min Scan# 1771
Delta R.T. -0.011 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 43 Resp: 1445

Ion	Ratio	Lower	Upper
43	100		
58	23.6	35.2	75.2#

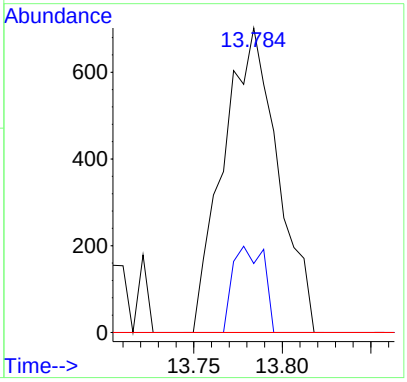


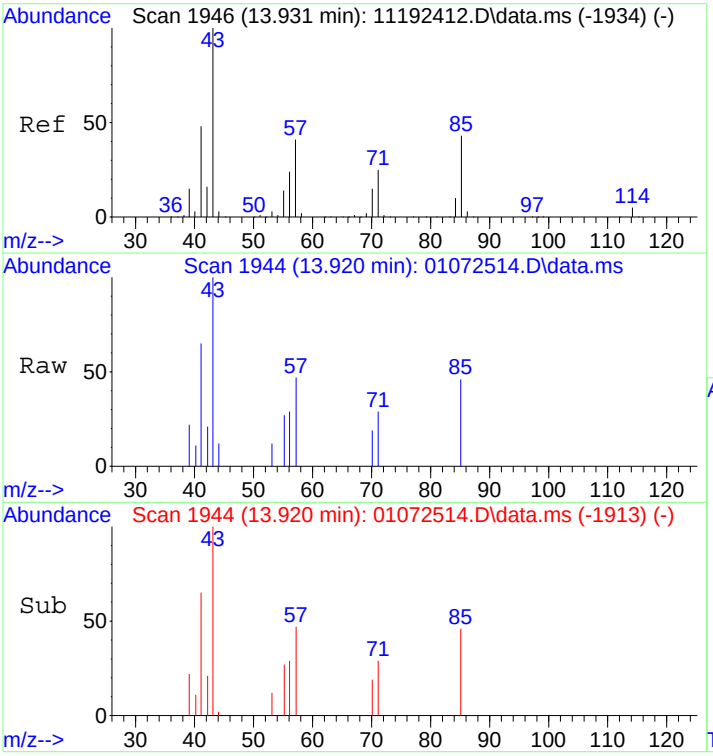


#62
n-Butyl Acetate
Concen: 0.06 ng
RT: 13.78 min Scan# 1920
Delta R.T. -0.017 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 43 Resp: 1500

Ion	Ratio	Lower	Upper
43	100		
56	16.2	20.9	60.9#
73	0.0	0.0	32.0

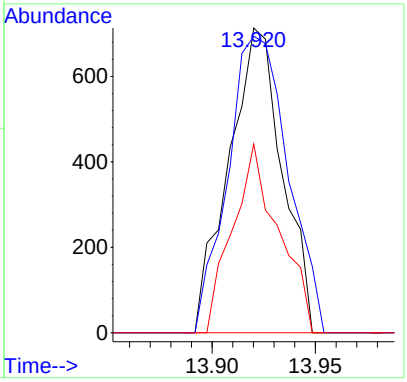


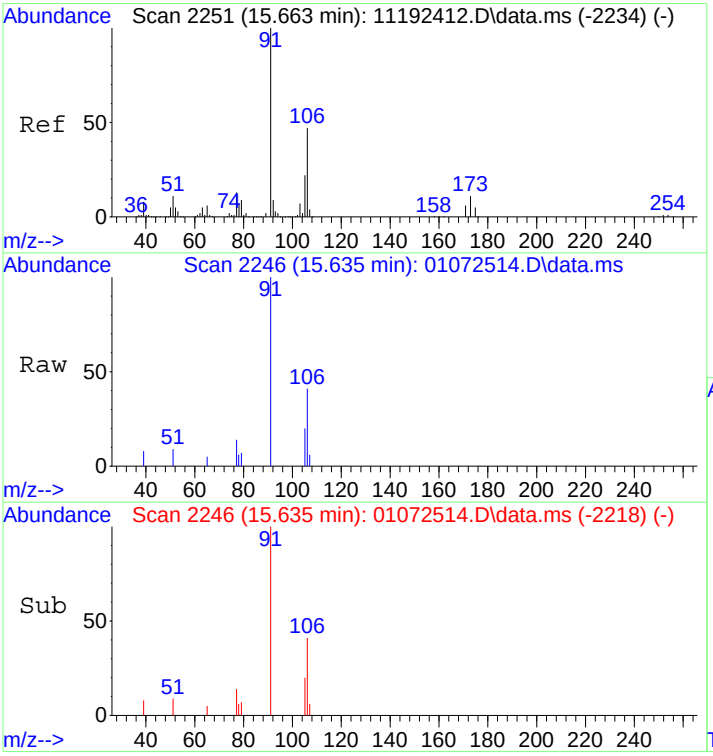


#63
n-Octane
Concen: 0.14 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 57 Resp: 1288

Ion	Ratio	Lower	Upper
57	100		
85	109.3	83.6	125.4
71	53.1	49.0	73.4

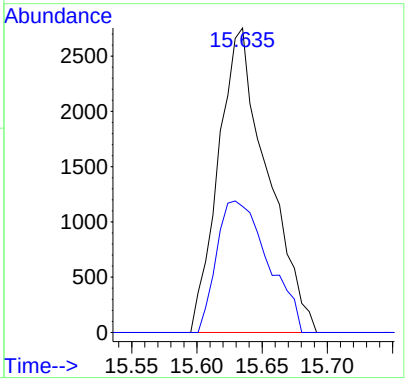


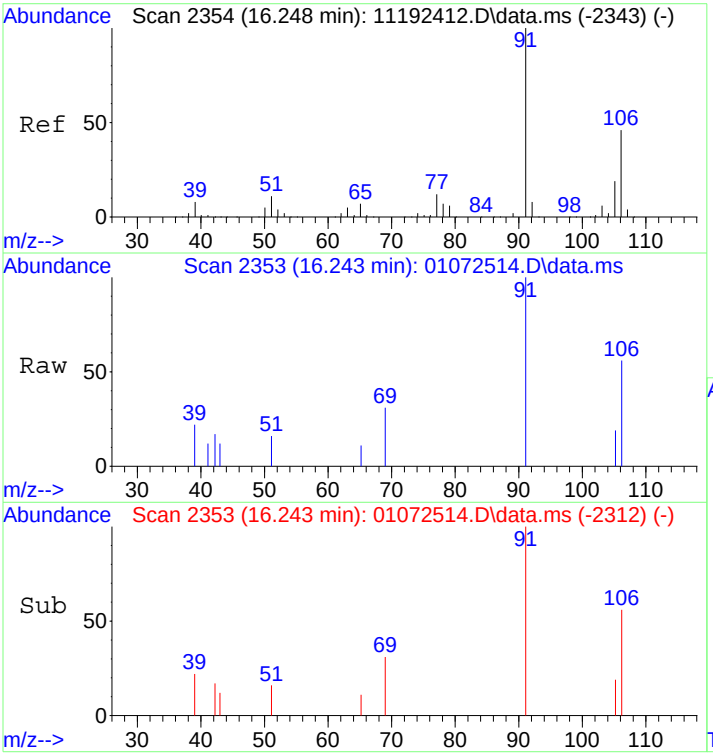


#67
m- & p-Xylenes
Concen: 0.17 ng
RT: 15.63 min Scan# 2246
Delta R.T. -0.040 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 91 Resp: 7162

Ion	Ratio	Lower	Upper
91	100		
106	45.5	27.1	67.1

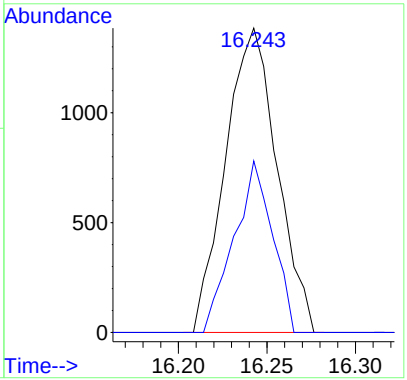


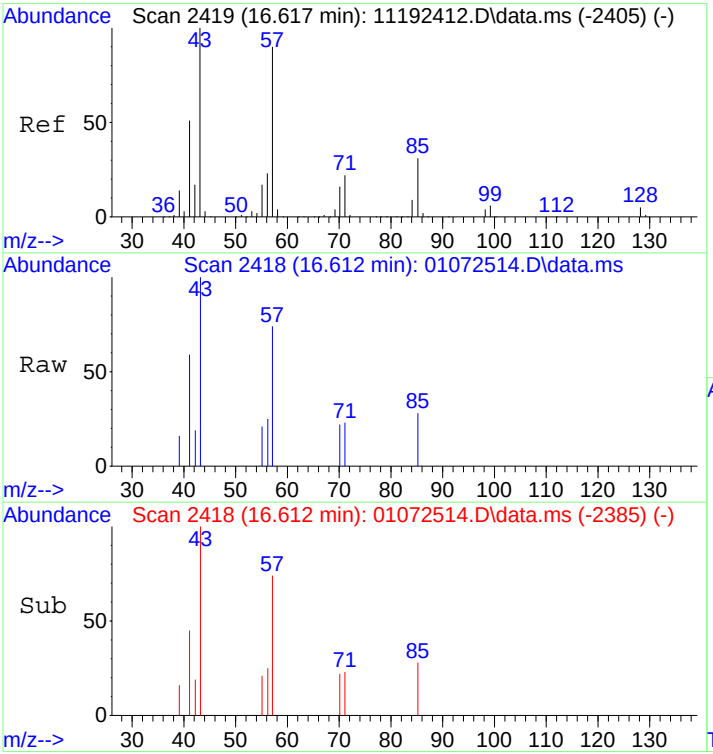


#70
o-Xylene
Concen: 0.07 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 91 Resp: 2805

Ion	Ratio	Lower	Upper
91	100		
106	42.1	25.8	65.8

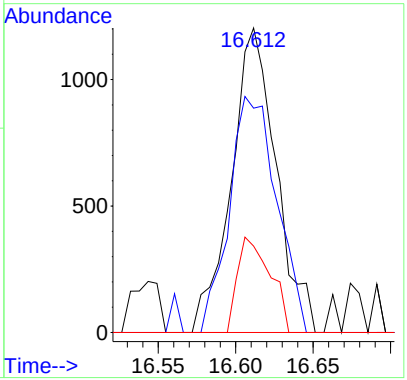


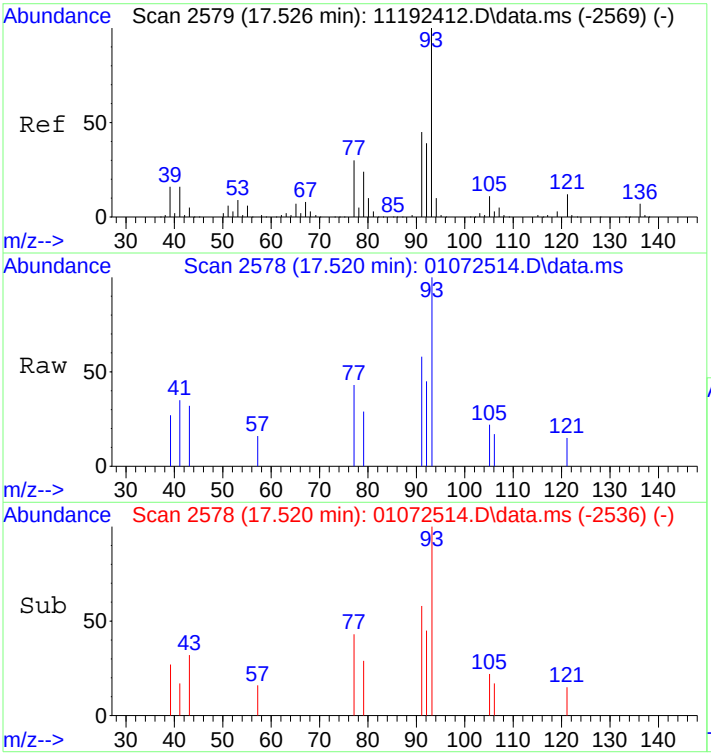


#71
n-Nonane
Concen: 0.11 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 43 Resp: 2433

Ion	Ratio	Lower	Upper
43	100		
57	81.9	69.4	109.4
85	22.8	10.5	50.5

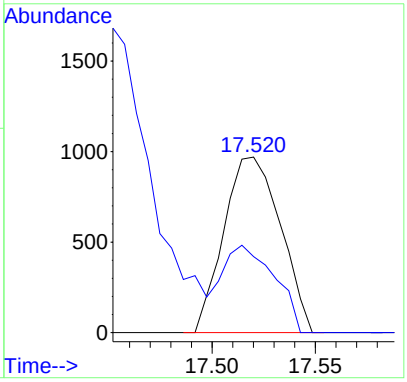


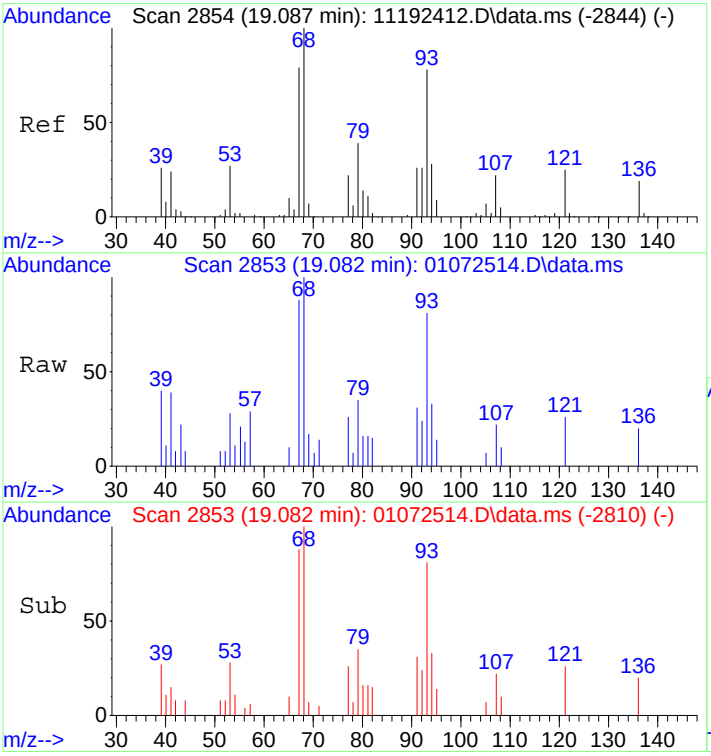


#75
alpha-Pinene
Concen: 0.07 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 93 Resp: 1852

Ion	Ratio	Lower	Upper
93	100		
77	46.3	10.1	50.1

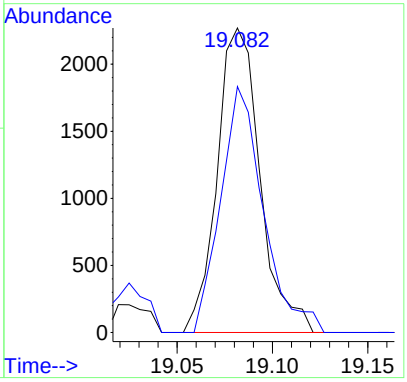


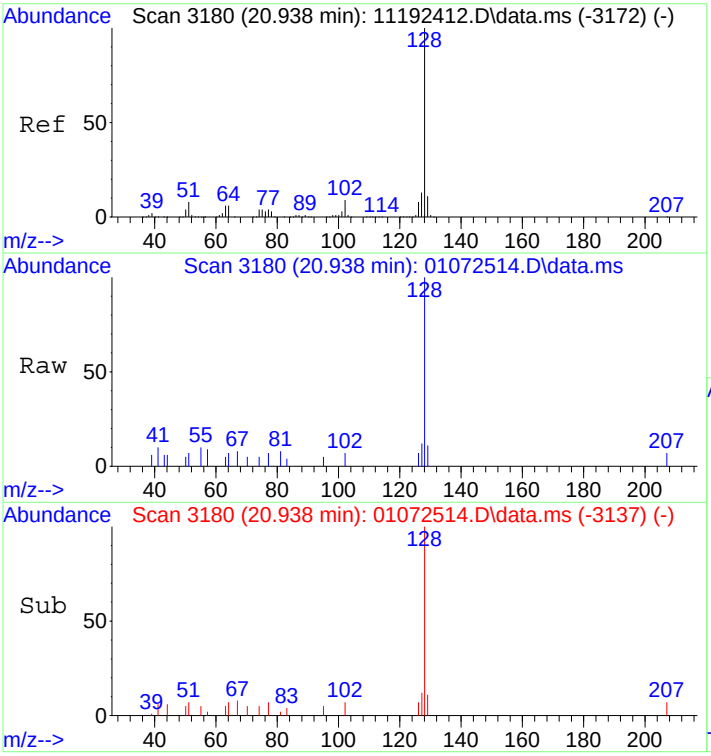


#91
d-Limonene
Concen: 0.26 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion: 68 Resp: 3559

Ion	Ratio	Lower	Upper
68	100		
93	80.2	56.6	96.6

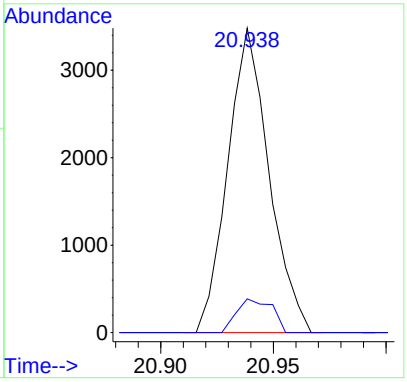




#95
Naphthalene
Concen: 0.08 ng
RT: 20.94 min Scan# 3180
Delta R.T. -0.006 min
Lab File: 01072514.D
Acq: 7 Jan 2025 11:35

Tgt Ion:128 Resp: 4446

Ion	Ratio	Lower	Upper
128	100		
129	9.5	0.0	31.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

NOA 1/12/25

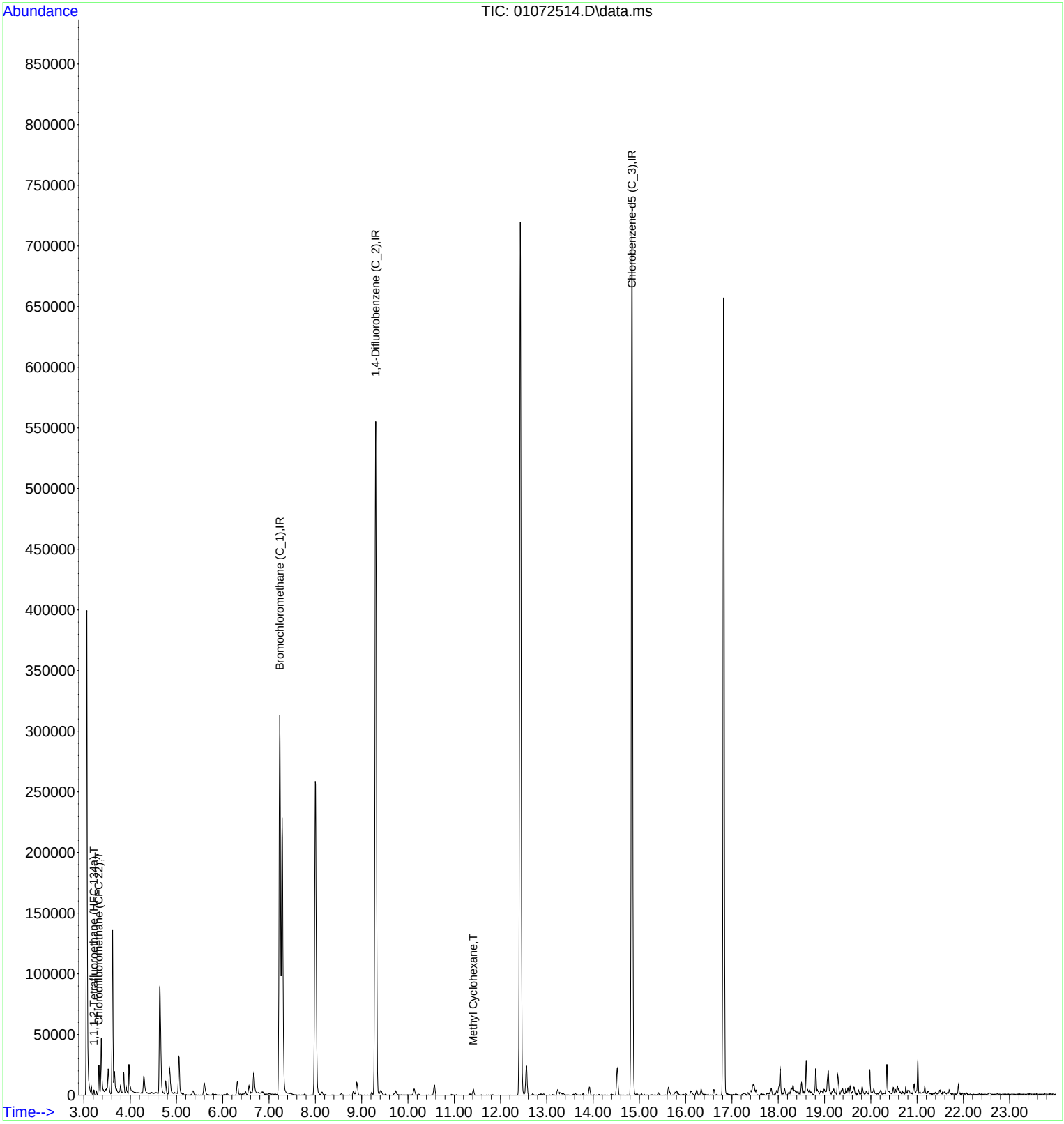
Quant Time: Jan 12 13:32:42 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	140356	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	592355	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	107797	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	54	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.22	83	2171	0.170	ng		92
4) 1,1-Difluoroethane	3.27	65	758	N.D.			
5) Chlorodifluoromethane ...	3.32	67	763	0.195	ng	#	81
6) 1-Chloro-1,1-Difluoroe...	3.52	65	410	N.D.			
7) Dichlorofluoromethane ...	0.00	67	0	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.			
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.35	43	2406	N.D.			
12) 2-Methylpentane	6.50	71	270	N.D.			
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	9.53	56	217	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.41	55	1967	0.102	ng		98
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	16.34	75	127	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	1084	N.D.			
27) 4-Chlorotoluene	17.68	91	1084	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	20.19	119	51	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	925	N.D.			
32) 1,2,3,5-Tetramethylben...	20.61	119	1000	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 13:32:42 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072514.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.325	73	78	82	rBV2	24659	33659	2.05%	0.379%
2	3.376	82	87	98	rVV	44776	68434	4.17%	0.771%
3	3.523	109	113	123	rVB3	20610	36798	2.24%	0.415%
4	3.620	123	130	134	rBV	134950	197290	12.02%	2.223%
5	3.660	134	137	144	rVB	15215	22288	1.36%	0.251%
6	3.858	167	172	177	rVB	17337	21795	1.33%	0.246%
7	3.972	189	192	201	rBV	23410	35572	2.17%	0.401%
8	4.295	243	249	265	rVB2	14537	32545	1.98%	0.367%
9	4.642	303	310	326	rBV	89053	199791	12.17%	2.251%
10	4.767	326	332	339	rVB	10280	17419	1.06%	0.196%
11	4.852	339	347	362	rBV	20997	46002	2.80%	0.518%
12	5.051	376	382	396	rVB	30756	58723	3.58%	0.662%
13	5.601	471	479	493	rBV4	9878	25744	1.57%	0.290%
14	6.317	598	605	613	rBV	10998	23295	1.42%	0.262%
15	6.567	642	649	656	rBV2	7597	16884	1.03%	0.190%
16	6.669	661	667	682	rVB2	16711	39095	2.38%	0.441%
17	7.231	756	766	771	rBV	312769	691657	42.14%	7.793%
18	7.282	771	775	798	rVB	227615	486938	29.67%	5.487%
19	7.998	892	901	919	rBV	258754	602489	36.71%	6.789%
20	8.895	1052	1059	1069	rVB2	10407	23421	1.43%	0.264%
21	9.304	1120	1131	1143	rBV	554723	1282416	78.14%	14.450%
22	10.133	1269	1277	1287	rVB	5156	12395	0.76%	0.140%
23	10.570	1347	1354	1362	rBB2	8475	17528	1.07%	0.197%
24	12.427	1671	1681	1696	rBV	719904	1641199	100.00%	18.492%
25	12.557	1696	1704	1714	rVB	24170	54116	3.30%	0.610%
26	13.233	1816	1823	1830	rBV2	4460	10582	0.64%	0.119%
27	13.920	1938	1944	1951	rBB	6655	12886	0.79%	0.145%
28	14.522	2042	2050	2059	rBB	22116	48222	2.94%	0.543%
29	14.840	2096	2106	2121	rBV	738968	1506957	91.82%	16.980%
30	15.629	2239	2245	2256	rBB	6327	15352	0.94%	0.173%
31	16.333	2363	2369	2380	rBV3	5283	11033	0.67%	0.124%
32	16.822	2446	2455	2467	rBV	657346	1229080	74.89%	13.849%
33	18.043	2660	2670	2676	rVB2	20924	44454	2.71%	0.501%
34	18.502	2747	2751	2756	rVB5	8938	13319	0.81%	0.150%
35	18.605	2764	2769	2774	rBV	27831	41416	2.52%	0.467%
36	18.809	2796	2805	2810	rBV	21703	37224	2.27%	0.419%
37	19.082	2846	2853	2857	rBV4	16537	33674	2.05%	0.379%
38	19.286	2884	2889	2898	rVB3	16230	33040	2.01%	0.372%
39	19.638	2946	2951	2957	rVB6	6056	11803	0.72%	0.133%
40	19.814	2978	2982	2990	rVB2	6316	11408	0.70%	0.129%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

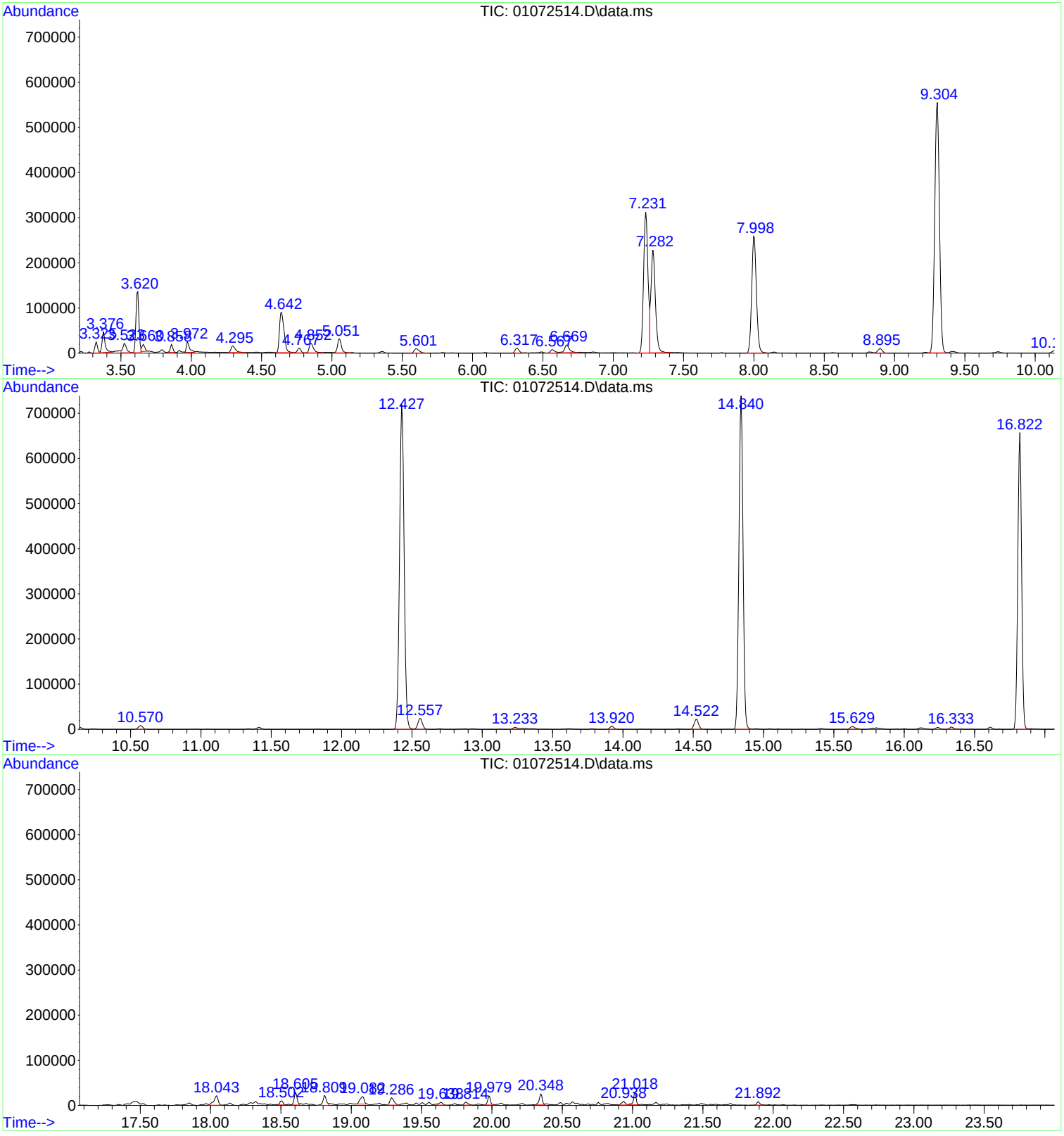
41	19.979	3005	3011	3019	rBV2	20180	27880	1.70%	0.314%
42	20.348	3069	3076	3081	rBV2	24155	36655	2.23%	0.413%
43	20.938	3173	3180	3186	rBV2	7992	14937	0.91%	0.168%
44	21.018	3186	3194	3198	rVB	27969	37123	2.26%	0.418%
45	21.892	3344	3348	3355	rVB2	7736	10523	0.64%	0.119%

Sum of corrected areas: 8875061

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:35
Operator : SC
Sample : P2405139-023 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072514.D
Acq On : 7 Jan 2025 11:355
Operator : SCC
Sample : P2405139-023 (400mL))
Misc : S37-123124011
ALS Vial : 8 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

MA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

MA 1/12/25

Quant Time: Jan 12 10:46:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	134822	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	564437	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	104086	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	223655	12.176	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.44%			
57) Toluene-d8 (SS2)	12.43	98	592615	12.834	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.64%			
73) Bromofluorobenzene (SS3)	16.82	174	231669	14.539	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.32%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	3.40	85	974	N.D.		
4) Chloromethane	3.39	50	885	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.34	45	498	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.68	58	1532	0.169	ng	94
14) Trichlorofluoromethane	4.76	101	2204400	89.188	ng	100
15) 2-Propanol (Isopropanol)	4.89	45	51	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.58	151	350222	31.406	ng	93
22) Carbon Disulfide	5.64	76	1661	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.36	83	1494	0.068	ng	97
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.90	78	205	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.29	84	576	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 10:46:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

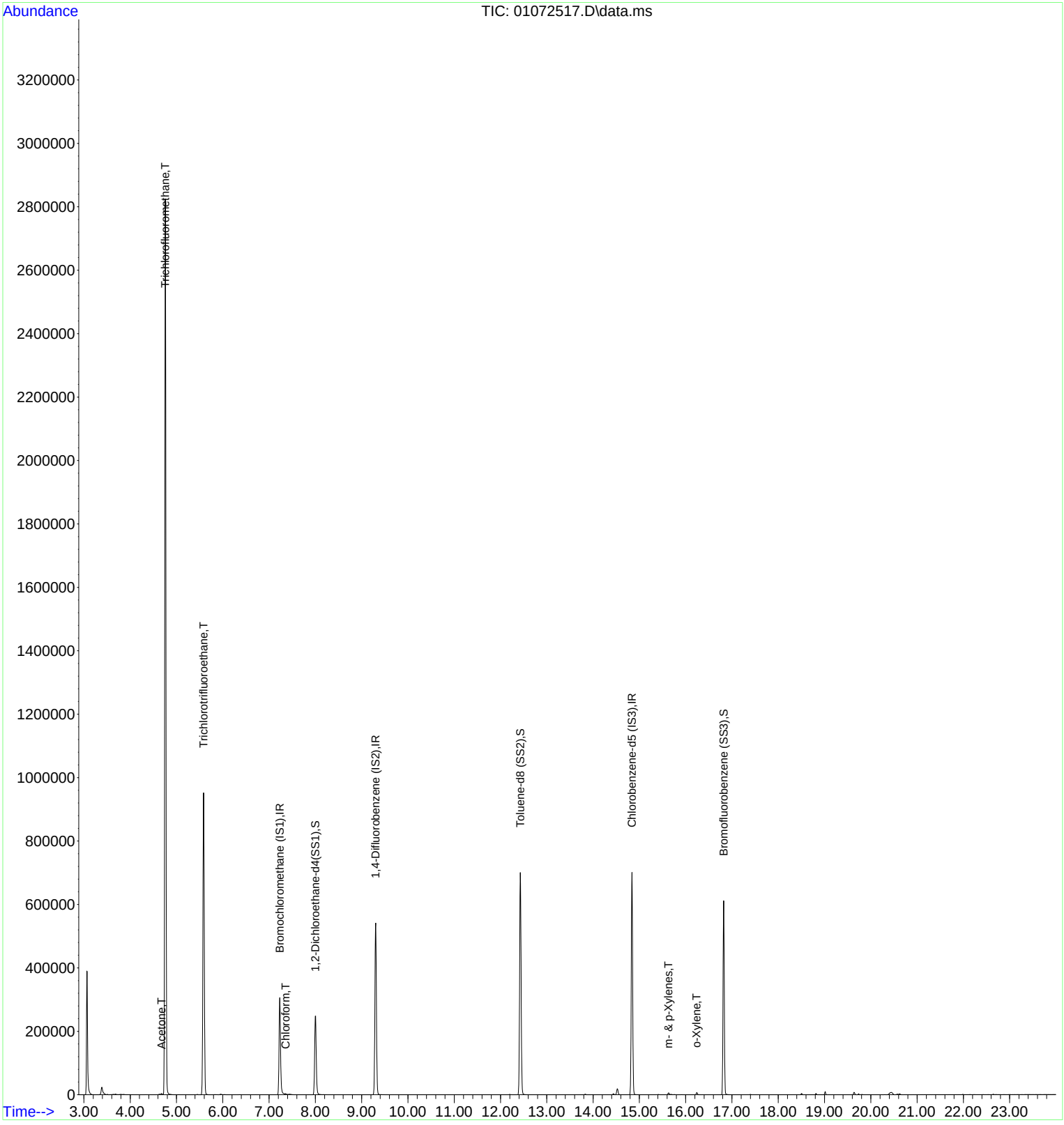
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	123	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	1405	N.D.	
67) m- & p-Xylenes	15.63	91	5639	0.140 ng	96
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	5723	0.144 ng	95
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	19.02	119	292	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 10:46:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 10:46:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

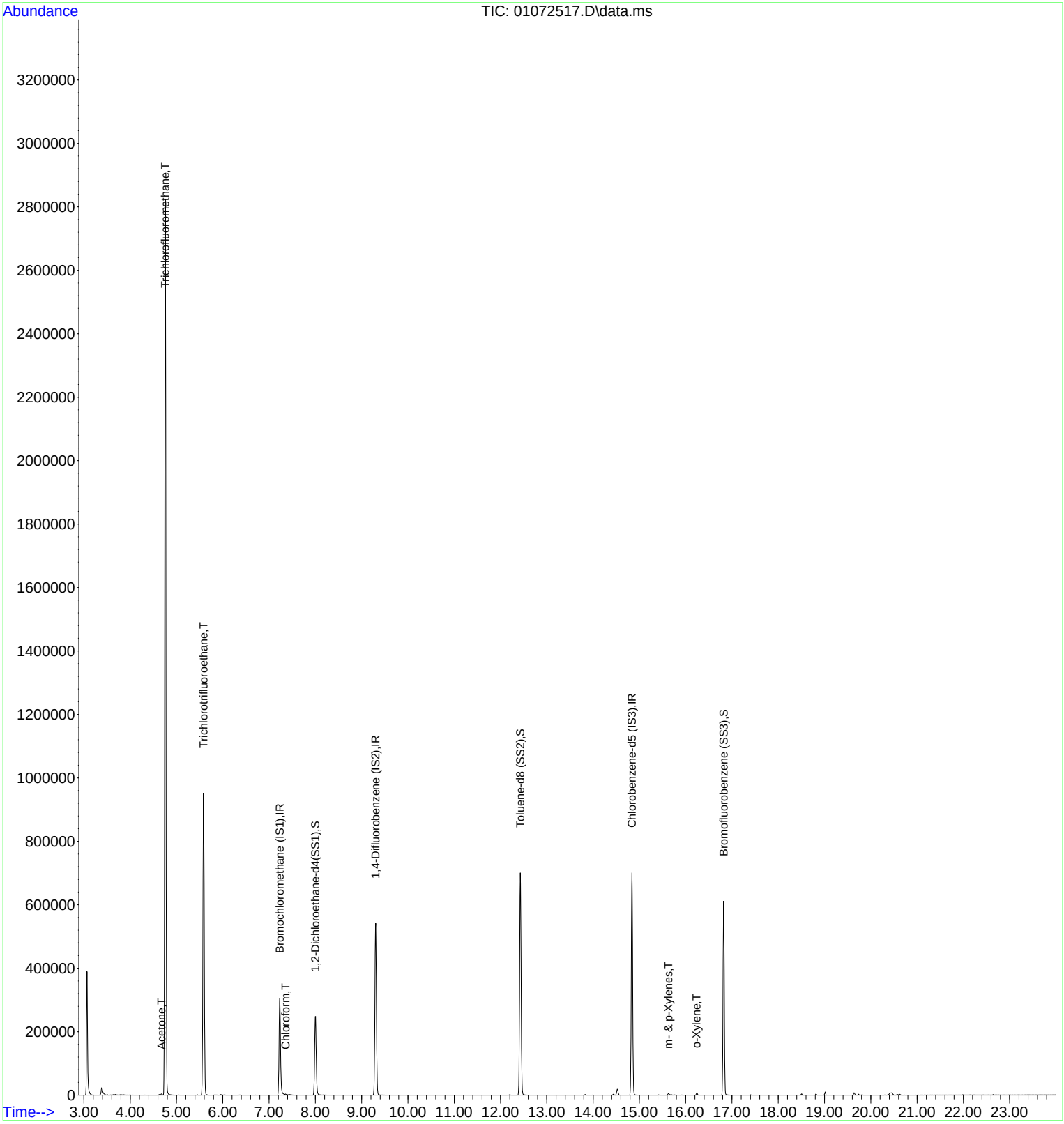
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	134822	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	564437	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	104086	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	223655	12.176	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.44%			
57) Toluene-d8 (SS2)	12.43	98	592615	12.834	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.64%			
73) Bromofluorobenzene (SS3)	16.82	174	231669	14.539	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.32%			
Target Compounds						Qvalue
13) Acetone	4.68	58	1532	0.169	ng	94
14) Trichlorofluoromethane	4.76	101	2204400	89.188	ng	100
21) Trichlorotrifluoroethane	5.58	151	350222	31.406	ng	93
32) Chloroform	7.36	83	1494	0.068	ng	97
67) m- & p-Xylenes	15.63	91	5639	0.140	ng	96
70) o-Xylene	16.24	91	5723	0.144	ng	95

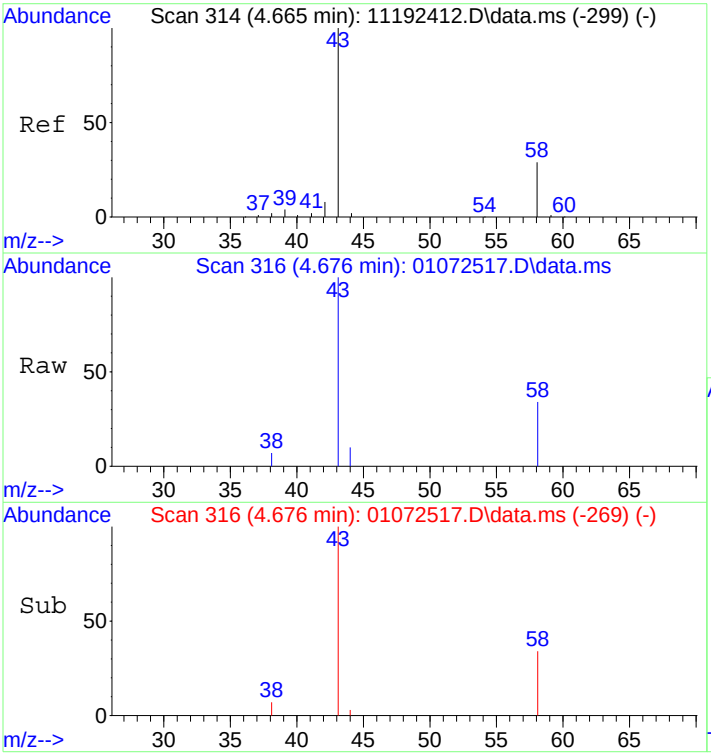
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 10:46:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

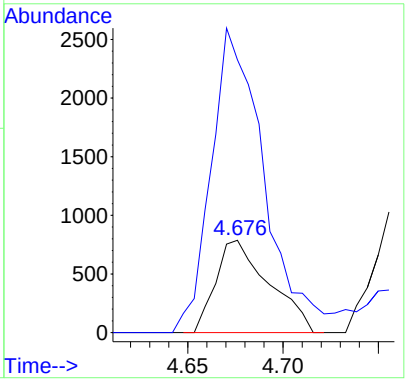


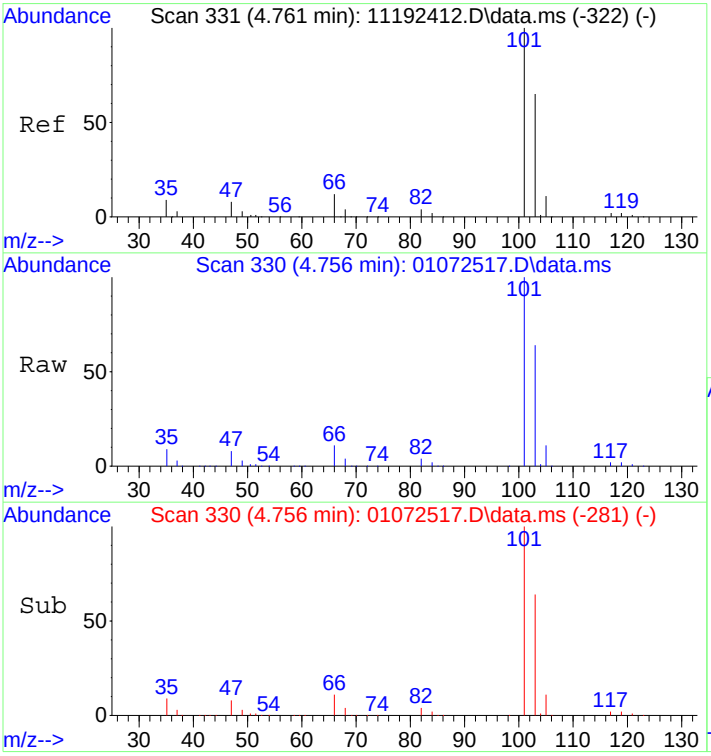


#13
Acetone
Concen: 0.17 ng
RT: 4.68 min Scan# 316
Delta R.T. 0.016 min
Lab File: 01072517.D
Acq: 7 Jan 2025 13:12

Tgt Ion: 58 Resp: 1532

Ion	Ratio	Lower	Upper
58	100		
43	328.8	312.5	372.5

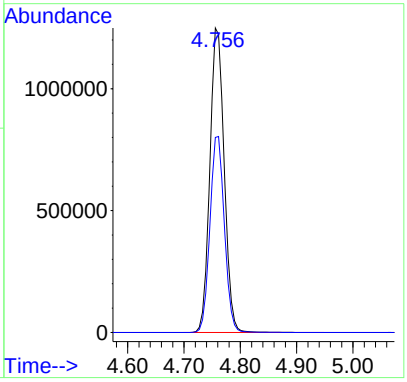


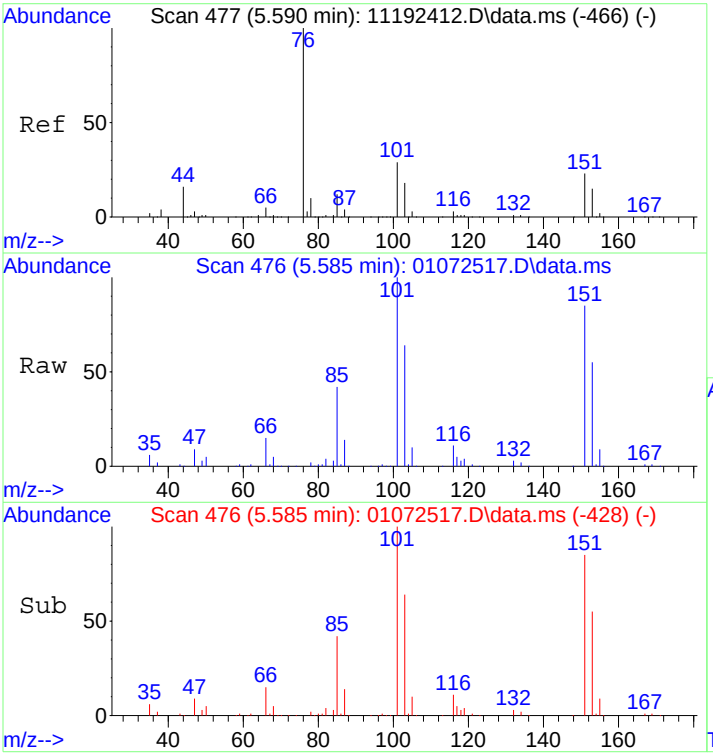


#14
Trichlorofluoromethane
Concen: 89.19 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072517.D
Acq: 7 Jan 2025 13:12

Tgt Ion:101 Resp: 2204400

Ion	Ratio	Lower	Upper
101	100		
103	65.0	44.8	84.8

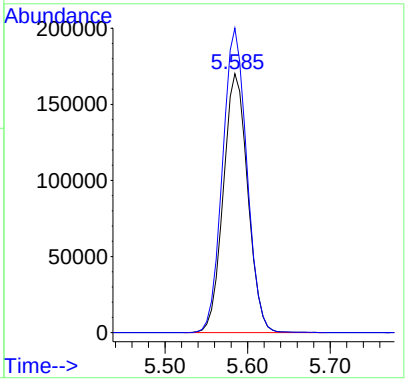


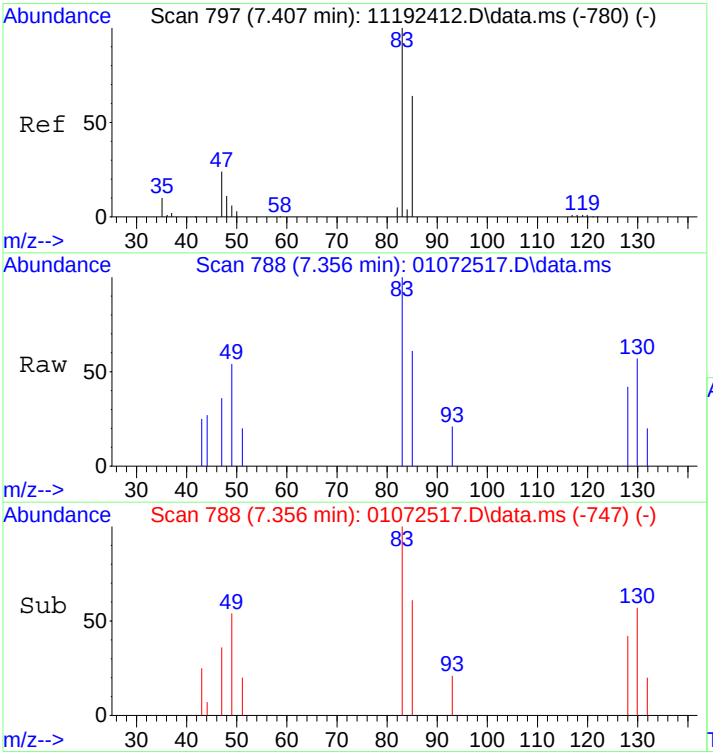


#21
Trichlorotrifluoroethane
Concen: 31.41 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01072517.D
Acq: 7 Jan 2025 13:12

Tgt Ion:151 Resp: 350222

Ion	Ratio	Lower	Upper
151	100		
101	116.5	105.0	145.0

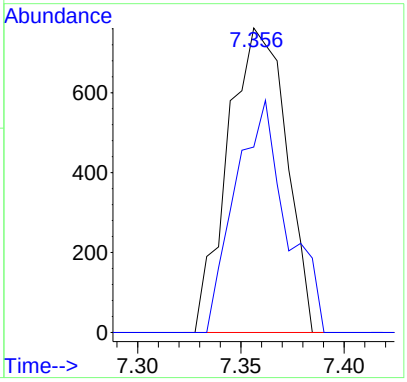


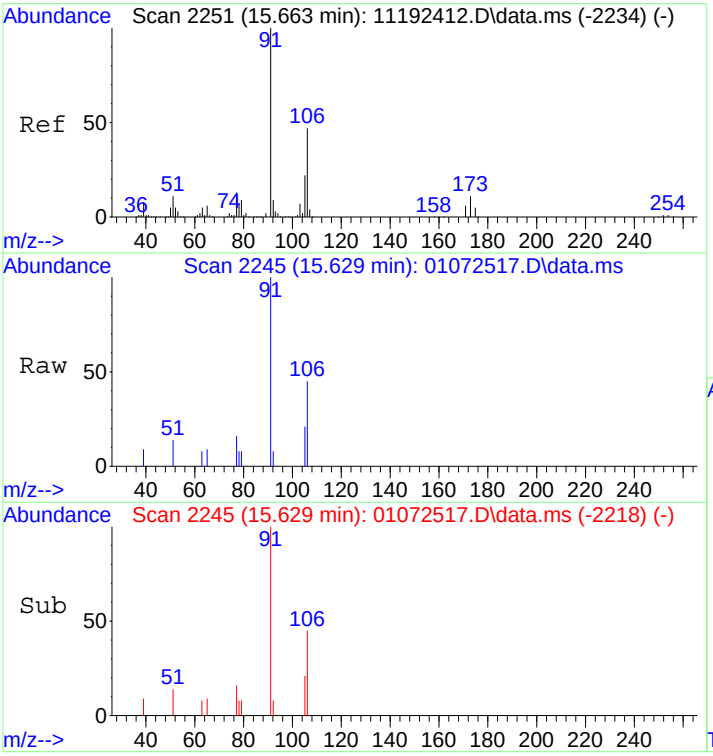


#32
Chloroform
Concen: 0.07 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01072517.D
Acq: 7 Jan 2025 13:12

Tgt Ion: 83 Resp: 1494

Ion	Ratio	Lower	Upper
83	100		
85	67.3	45.1	85.1

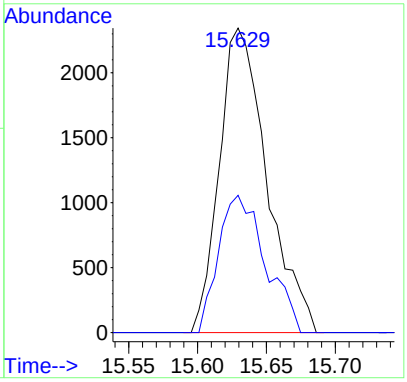


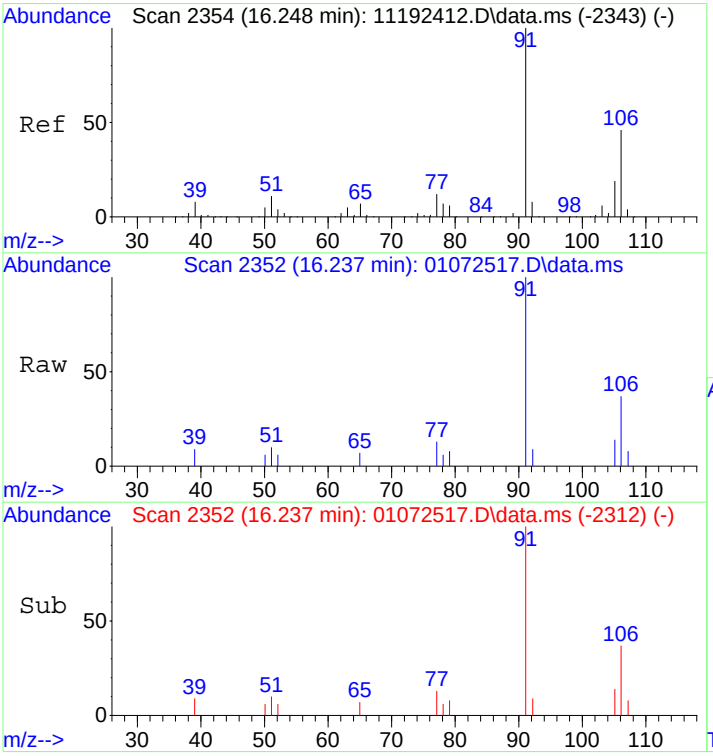


#67
m- & p-Xylenes
Concen: 0.14 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01072517.D
Acq: 7 Jan 2025 13:12

Tgt Ion: 91 Resp: 5639

Ion	Ratio	Lower	Upper
91	100		
106	44.4	27.1	67.1

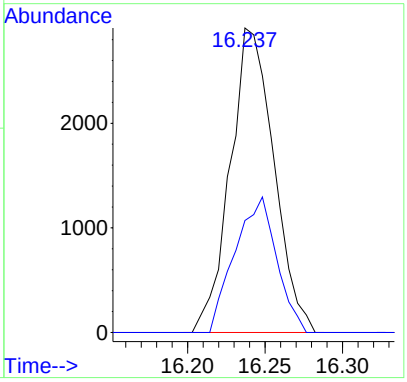




#70
o-Xylene
Concen: 0.14 ng
RT: 16.24 min Scan# 2352
Delta R.T. -0.023 min
Lab File: 01072517.D
Acq: 7 Jan 2025 13:12

Tgt Ion: 91 Resp: 5723

Ion	Ratio	Lower	Upper
91	100		
106	42.5	25.8	65.8



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 13:28:44 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

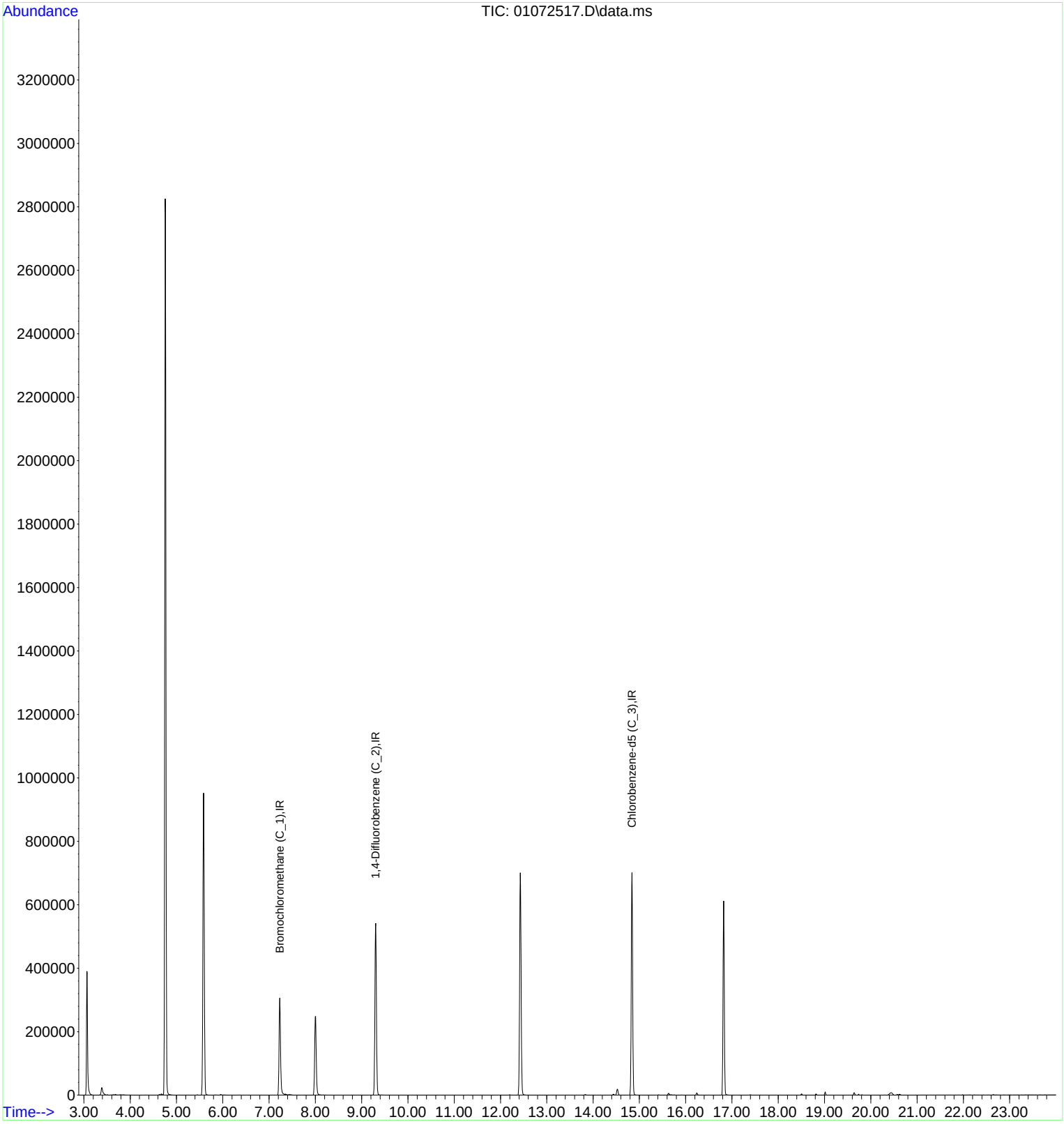
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	136076	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	566422	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	104086	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	19.01	117	951	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 13:28:44 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072517.D\data.ms

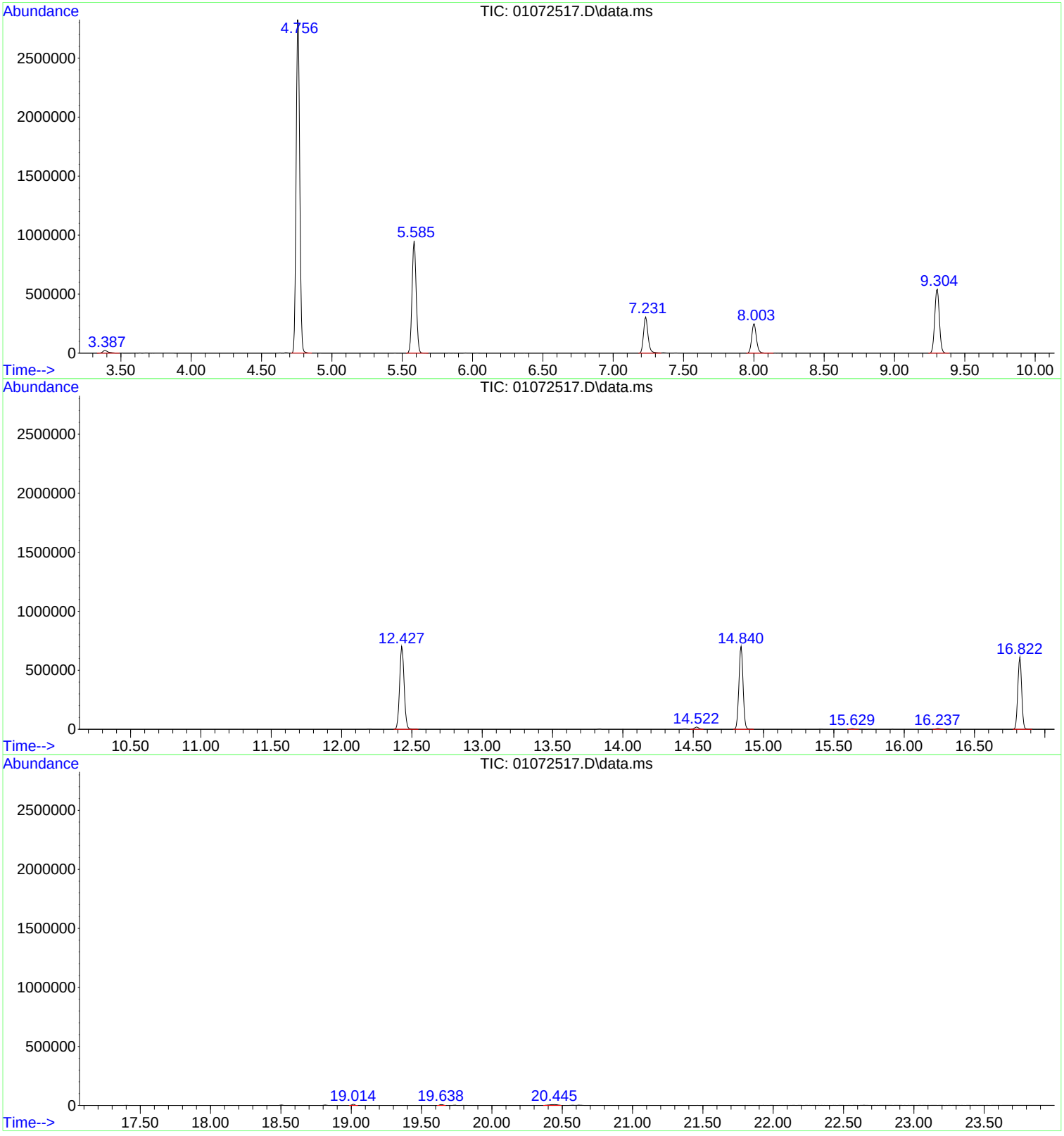
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.387	79	89	107	rBV	23755	65436	1.31%	0.474%
2	4.756	322	330	348	rBV	2825033	4984284	100.00%	36.091%
3	5.585	466	476	494	rBB	952538	1955441	39.23%	14.159%
4	7.231	757	766	785	rBV	306309	685720	13.76%	4.965%
5	8.003	892	902	926	rBV	248182	582506	11.69%	4.218%
6	9.304	1120	1131	1146	rBV	541380	1232241	24.72%	8.923%
7	12.427	1671	1681	1702	rBV	700809	1577093	31.64%	11.420%
8	14.522	2042	2050	2059	rBB	18828	41351	0.83%	0.299%
9	14.840	2096	2106	2122	rBV	701208	1444005	28.97%	10.456%
10	15.629	2239	2245	2253	rBV2	5767	11876	0.24%	0.086%
11	16.237	2346	2352	2360	rBB3	6790	11997	0.24%	0.087%
12	16.822	2446	2455	2470	rBV	611896	1160852	23.29%	8.406%
13	19.014	2836	2841	2847	rBB	9409	13068	0.26%	0.095%
14	19.638	2946	2951	2957	rBB4	7508	12423	0.25%	0.090%
15	20.445	3079	3093	3102	rBV7	7318	32004	0.64%	0.232%

Sum of corrected areas: 13810297

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:12
Operator : SC
Sample : P2405139-024 (30mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072517.D
Acq On : 7 Jan 2025 13:122
Operator : SCC
Sample : P2405139-024 (30mL))
Misc : S37-123124011
ALS Vial : 9 Sample Multiplier: 11

MOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

MOA 1/12/25

Quant Time: Jan 12 12:22:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	132344	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	561813	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	102197	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	221439	12.281	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
57) Toluene-d8 (SS2)	12.43	98	576213	12.710	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.68%				
73) Bromofluorobenzene (SS3)	16.82	174	224952	14.378	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.04%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	3.38	85	528	N.D.			
4) Chloromethane	0.00	50	0	N.D.	d		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	2210	0.226	ng		97
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	4615	0.518	ng	#	83
14) Trichlorofluoromethane	4.76	101	2376518	97.952	ng		100
15) 2-Propanol (Isopropanol)	4.89	45	2630	0.082	ng		89
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	498670	45.555	ng		93
22) Carbon Disulfide	5.64	76	741	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	7.31	61	1293	0.293	ng		85
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.91	78	459	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.29	84	545	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 12:22:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

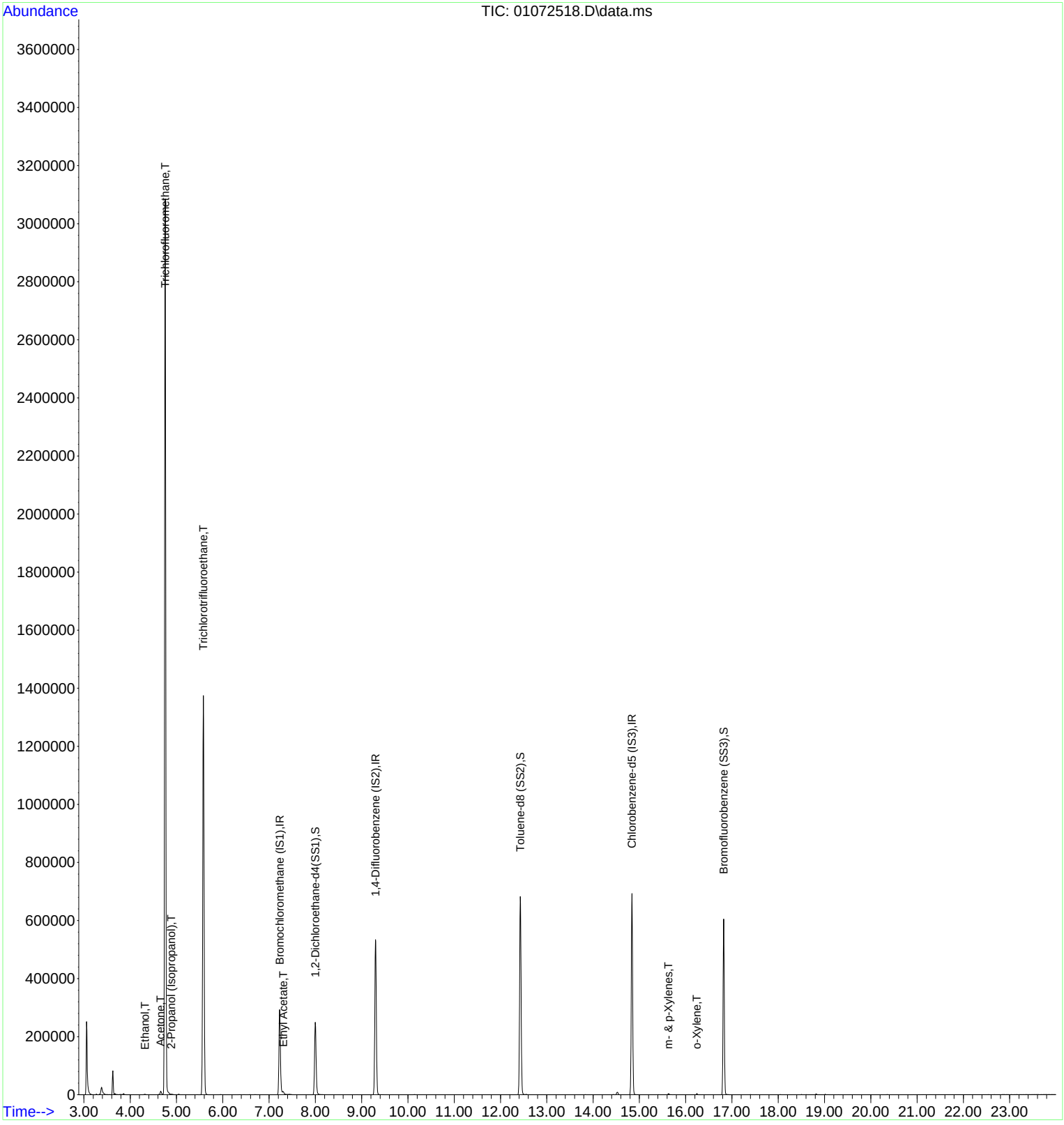
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.55	91	1595	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	840	N.D.	
67) m- & p-Xylenes	15.63	91	3908	0.099 ng	90
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	3150	0.081 ng	91
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.52	93	178	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.08	68	218	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 12:22:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

VOA 1/12/25

Quant Time: Jan 12 12:22:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

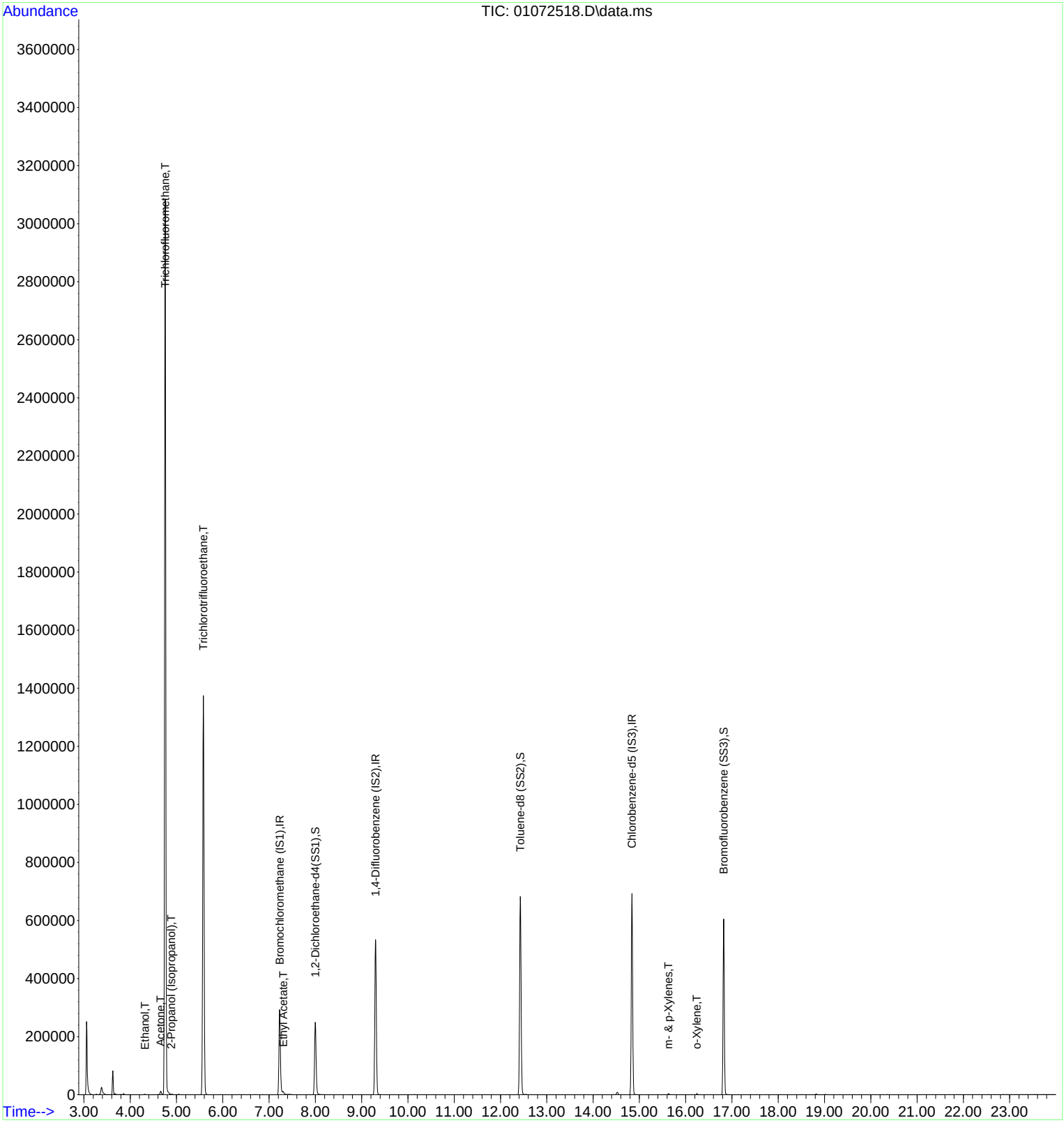
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	132344	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	561813	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	102197	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	221439	12.281	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
57) Toluene-d8 (SS2)	12.43	98	576213	12.710	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.68%				
73) Bromofluorobenzene (SS3)	16.82	174	224952	14.378	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.04%				
Target Compounds							Qvalue
10) Ethanol	4.32	45	2210	0.226	ng		97
13) Acetone	4.66	58	4615	0.518	ng	#	83
14) Trichlorofluoromethane	4.76	101	2376518	97.952	ng		100
15) 2-Propanol (Isopropanol)	4.89	45	2630	0.082	ng		89
21) Trichlorotrifluoroethane	5.58	151	498670	45.555	ng		93
30) Ethyl Acetate	7.31	61	1293	0.293	ng		85
67) m- & p-Xylenes	15.63	91	3908	0.099	ng		90
70) o-Xylene	16.24	91	3150	0.081	ng		91

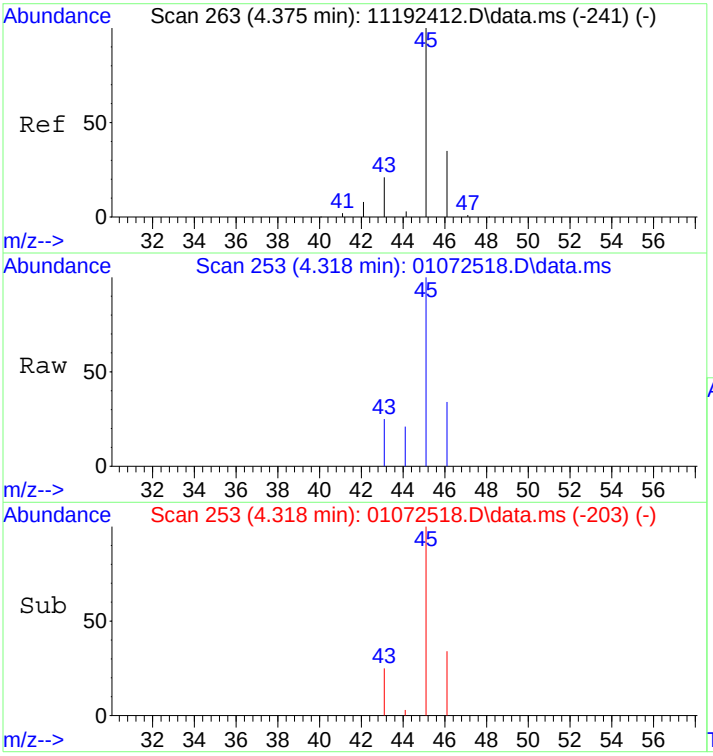
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 12:22:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

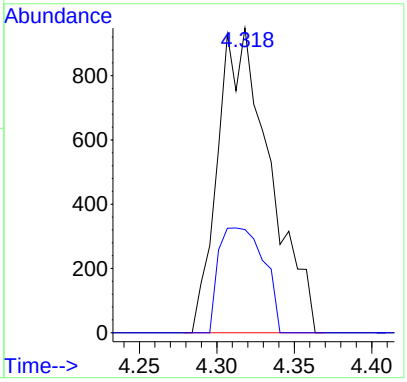


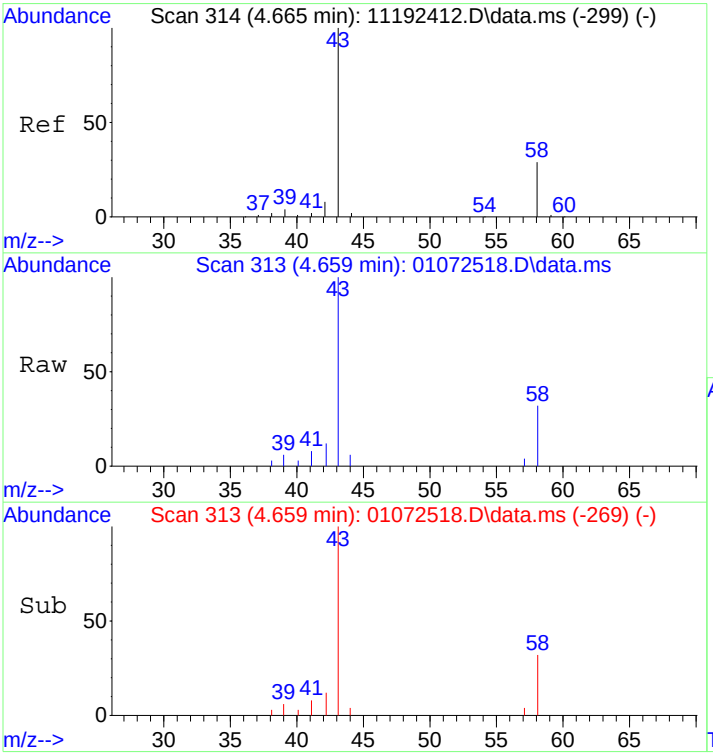


#10
Ethanol
Concen: 0.23 ng
RT: 4.32 min Scan# 253
Delta R.T. 0.034 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion: 45 Resp: 2210

Ion	Ratio	Lower	Upper
45	100		
46	30.0	11.8	51.8

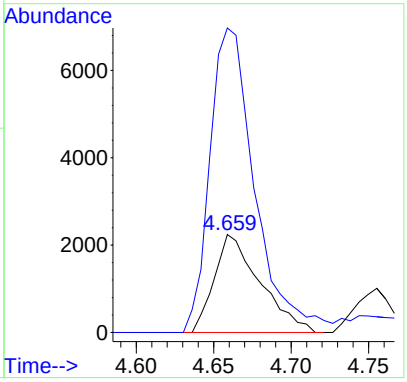


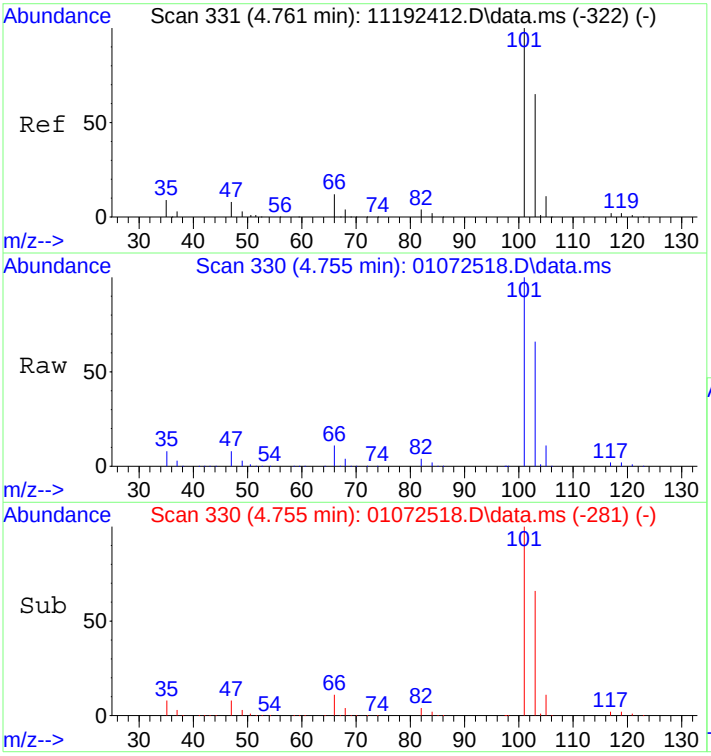


#13
Acetone
Concen: 0.52 ng
RT: 4.66 min Scan# 313
Delta R.T. -0.002 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion: 58 Resp: 4615

Ion	Ratio	Lower	Upper
58	100		
43	305.5	312.5	372.5#

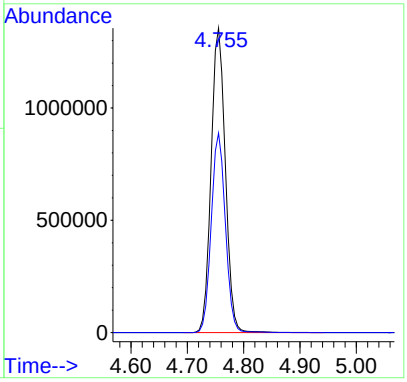


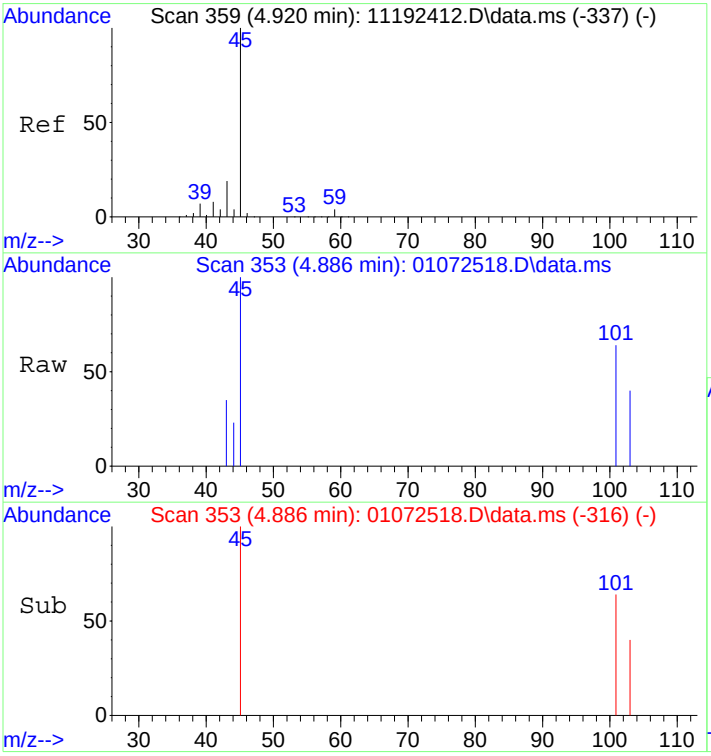


#14
Trichlorofluoromethane
Concen: 97.95 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion:101 Resp: 2376518

Ion	Ratio	Lower	Upper
101	100		
103	65.0	44.8	84.8

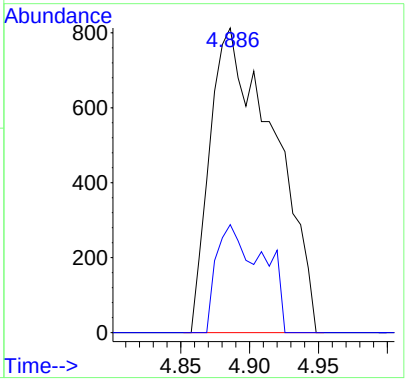


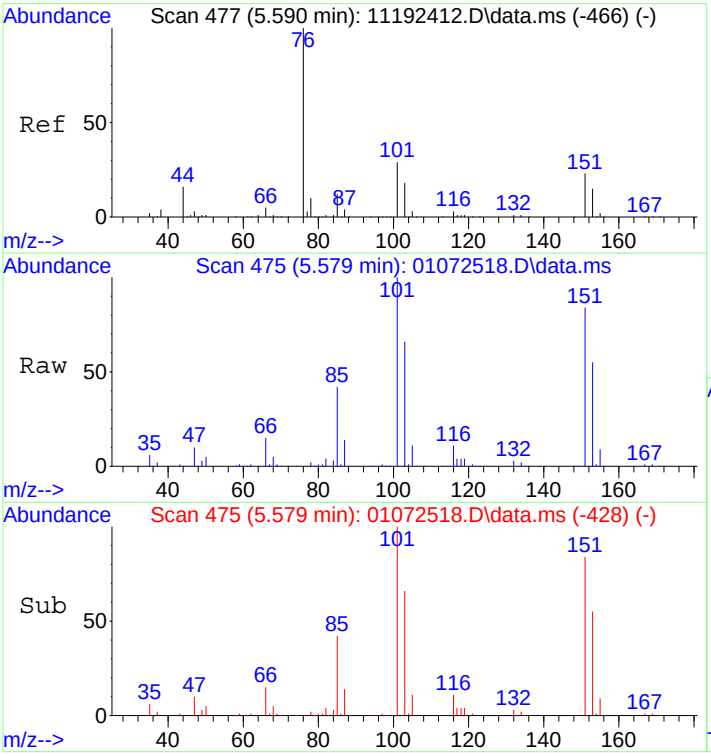


#15
2-Propanol (Isopropanol)
Concen: 0.08 ng
RT: 4.89 min Scan# 353
Delta R.T. -0.039 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion: 45 Resp: 2630

Ion	Ratio	Lower	Upper
45	100		
43	25.5	0.2	40.2

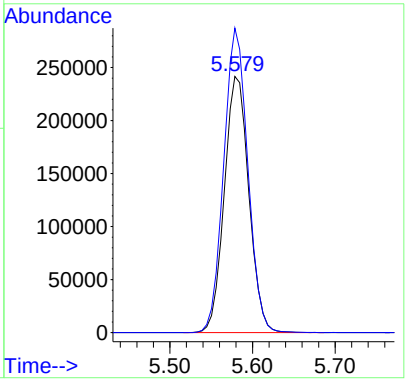


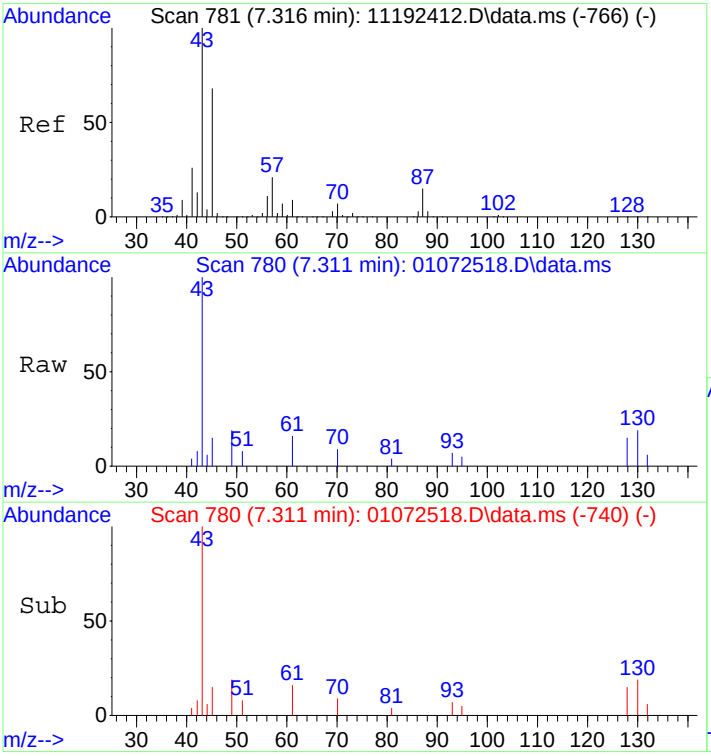


#21
Trichlorotrifluoroethane
Concen: 45.56 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion:151 Resp: 498670

Ion	Ratio	Lower	Upper
151	100		
101	116.5	105.0	145.0

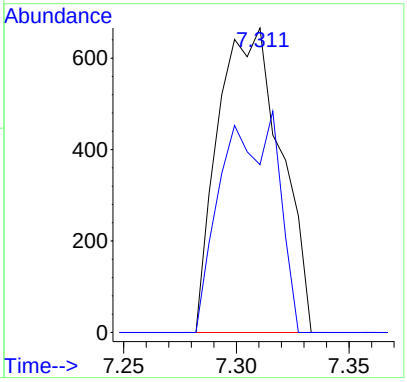


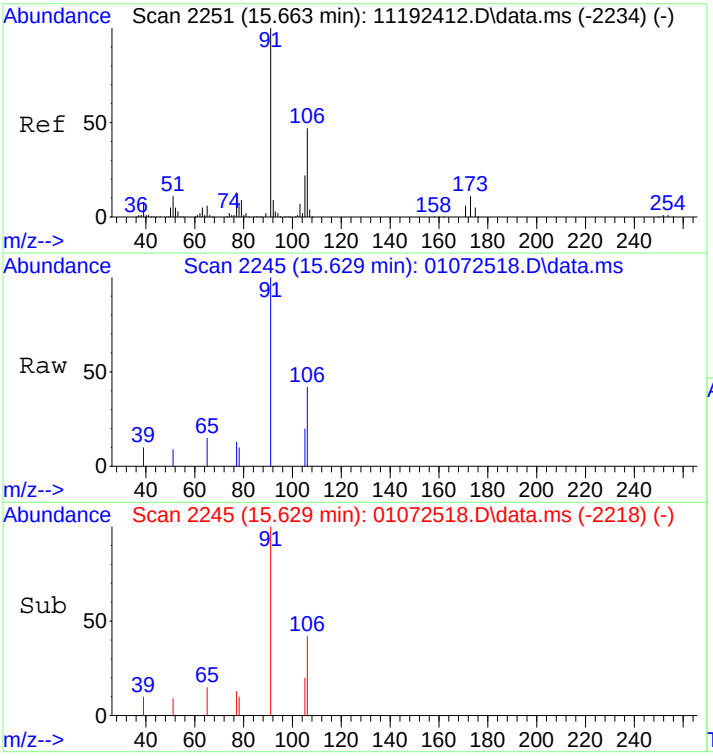


#30
Ethyl Acetate
Concen: 0.29 ng
RT: 7.31 min Scan# 780
Delta R.T. 0.029 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion: 61 Resp: 1293

Ion	Ratio	Lower	Upper
61	100		
70	64.6	57.3	97.3

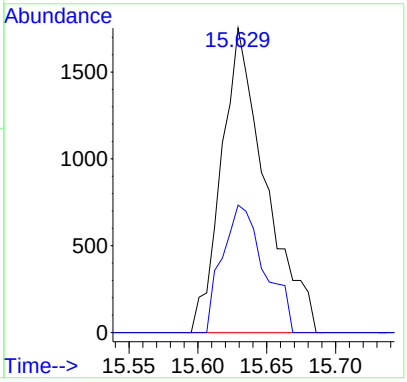


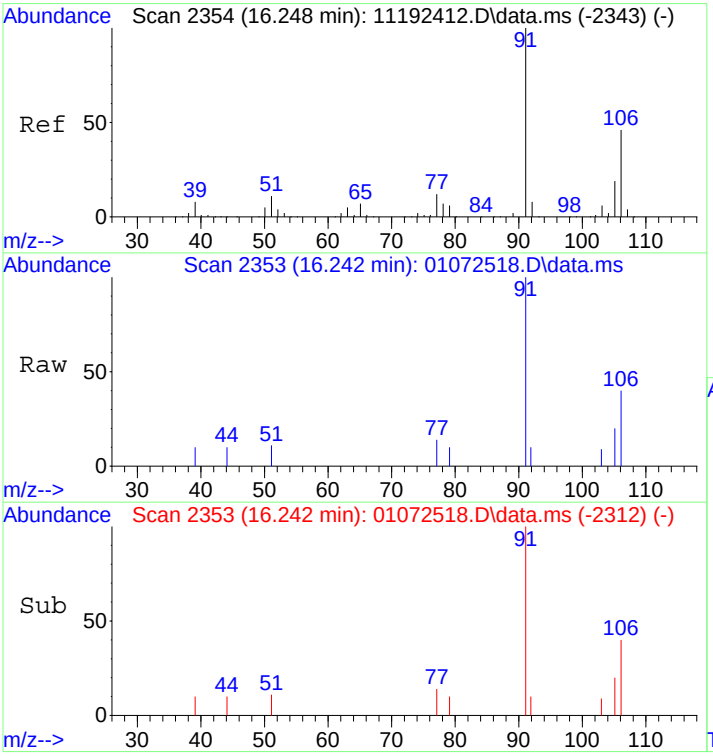


#67
m- & p-Xylenes
Concen: 0.10 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.046 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion: 91 Resp: 3908

Ion	Ratio	Lower	Upper
91	100		
106	40.1	27.1	67.1

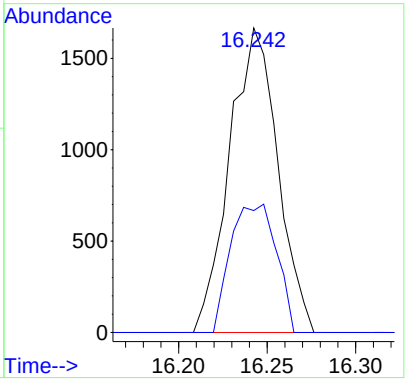




#70
o-Xylene
Concen: 0.08 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01072518.D
Acq: 7 Jan 2025 13:44

Tgt Ion: 91 Resp: 3150

Ion	Ratio	Lower	Upper
91	100		
106	40.1	25.8	65.8



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

MDA 1/12/25

Quant Time: Jan 12 13:28:45 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

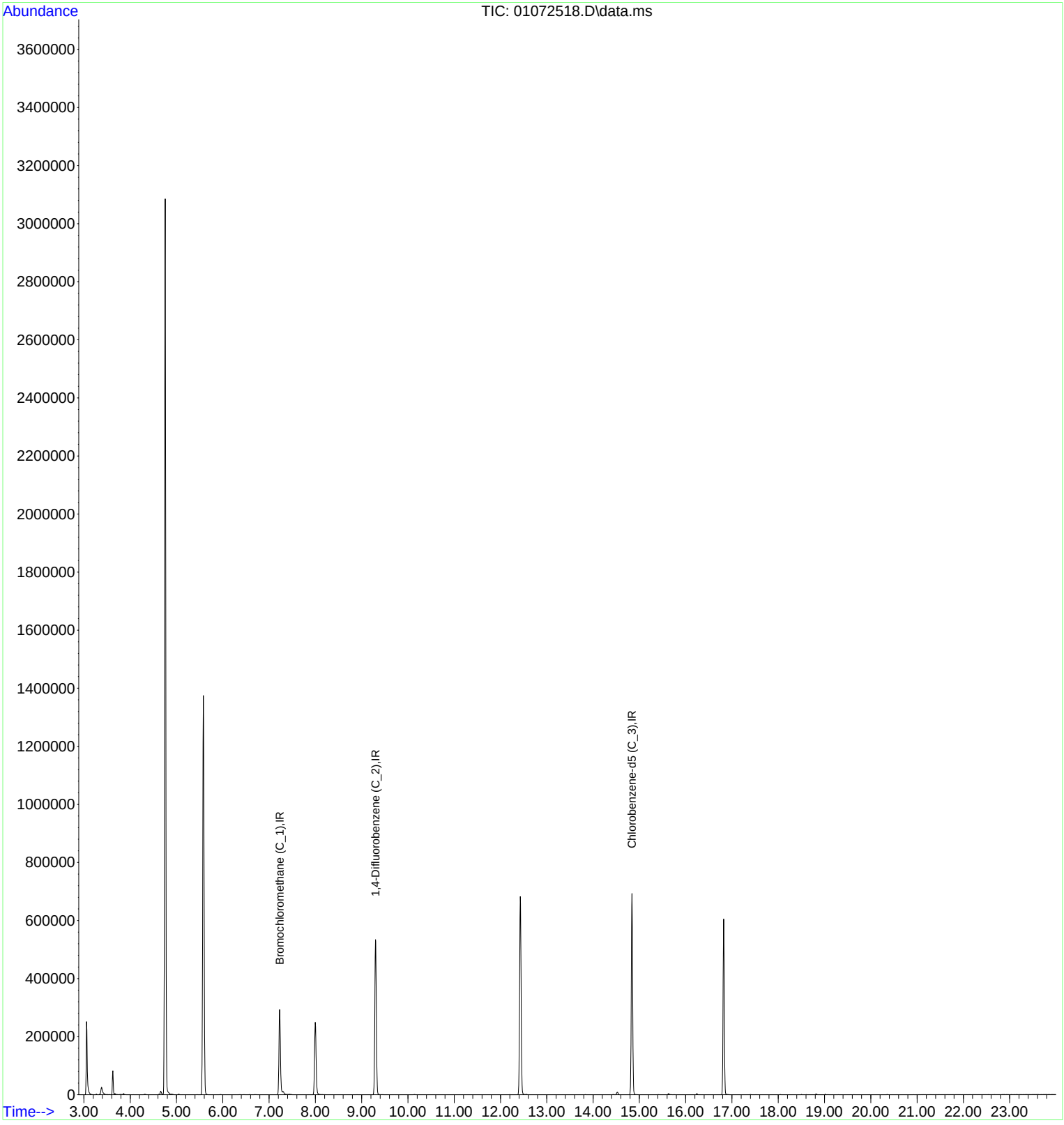
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	134178	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.30	114	562959	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	102197	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	3.27	65	666	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.65	57	493	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	19.01	117	127	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 13:28:45 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072518.D\data.ms

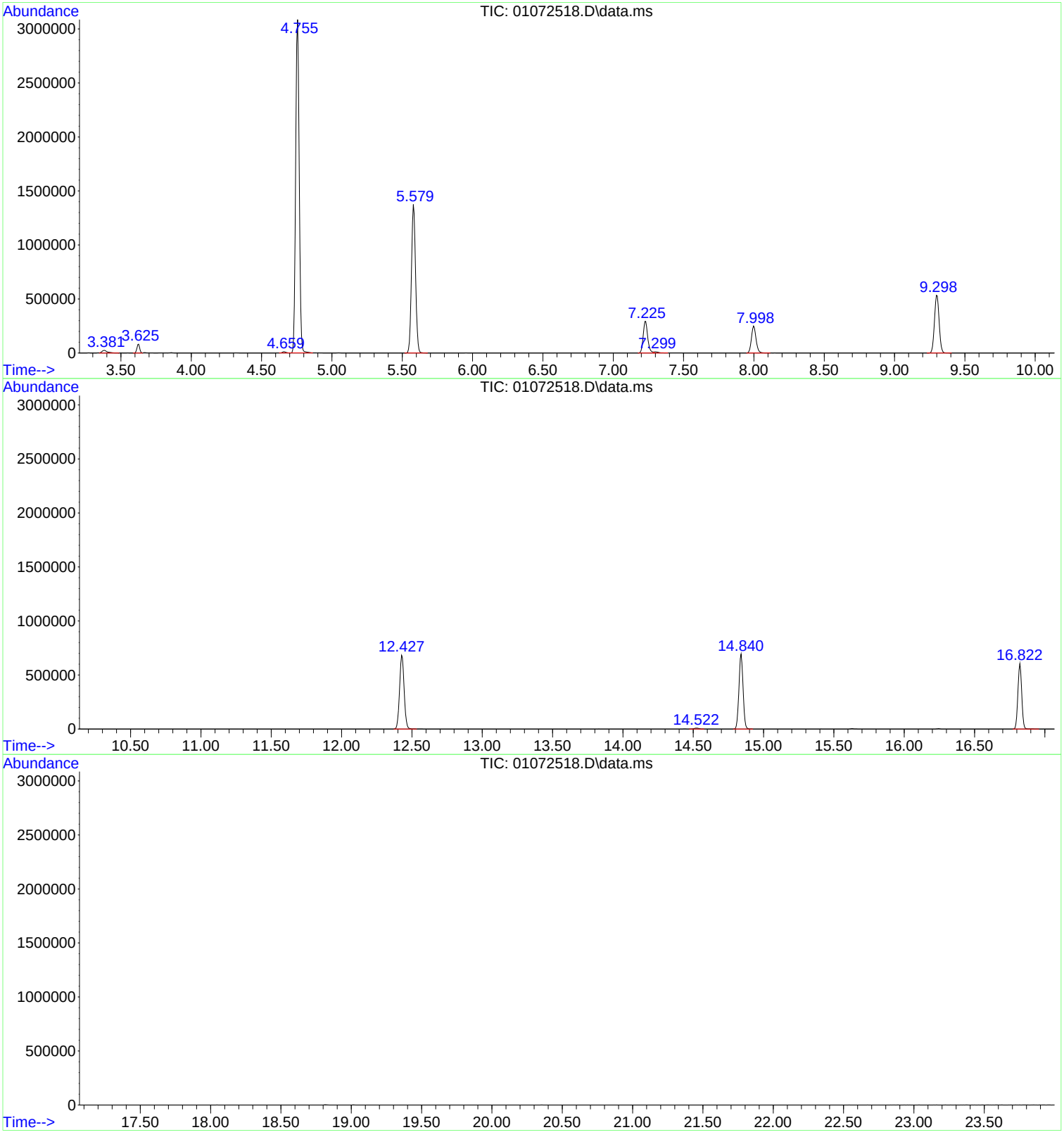
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.381	82	88	107	rVB	24917	64940	1.21%	0.434%
2	3.625	124	131	136	rBV	82594	111860	2.08%	0.748%
3	4.659	307	313	321	rVB	11122	19759	0.37%	0.132%
4	4.755	321	330	349	rBV	3085370	5379660	100.00%	35.971%
5	5.579	464	475	493	rBB	1375342	2790398	51.87%	18.658%
6	7.225	756	765	776	rBV	292989	660012	12.27%	4.413%
7	7.299	776	778	794	rVB2	10337	21996	0.41%	0.147%
8	7.998	892	901	922	rBV	249686	573239	10.66%	3.833%
9	9.298	1118	1130	1149	rBV	534757	1224816	22.77%	8.190%
10	12.427	1671	1681	1700	rBV	683109	1540946	28.64%	10.304%
11	14.522	2041	2050	2060	rBB2	8694	20094	0.37%	0.134%
12	14.840	2096	2106	2121	rBV	693563	1416409	26.33%	9.471%
13	16.822	2446	2455	2479	rBB	605524	1131276	21.03%	7.564%

Sum of corrected areas: 14955405

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:44
Operator : SC
Sample : P2405139-025 (15mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072518.D
Acq On : 7 Jan 2025 13:444
Operator : SCC
Sample : P2405139-025 (15mL))
Misc : S37-123124011
ALS Vial : 10 Sample Multiplier: 11

MA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 12:25:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	136776	12.500 ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	576913	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	107106	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	230514	12.370 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%			
57) Toluene-d8 (SS2)	12.43	98	599578	12.619 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%			
73) Bromofluorobenzene (SS3)	16.82	174	241334	14.718 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.76%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.37	85	15618	0.584 ng		98
4) Chloromethane	3.52	50	1189	0.060 ng		84
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	320	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D. d		
10) Ethanol	4.30	45	82937	8.198 ng		98
11) Acetonitrile	4.45	41	997	N.D.		
12) Acrolein	4.55	56	1110	0.128 ng		99
13) Acetone	4.64	58	43710	4.746 ng	#	84
14) Trichlorofluoromethane	4.76	101	2673624	106.627 ng		100
15) 2-Propanol (Isopropanol)	4.85	45	68917	2.090 ng		99
16) Acrylonitrile	0.00	53	0	N.D. d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d		
19) Methylene Chloride	5.37	84	785	0.061 ng		94
20) 3-Chloro-1-propene (Al...	5.35	41	237	N.D.		
21) Trichlorotrifluoroethane	5.58	151	839589	74.214 ng		92
22) Carbon Disulfide	5.60	76	29962	0.719 ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	3254	1.460 ng	#	32
27) 2-Butanone (MEK)	6.67	72	3009	0.407 ng	#	77
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	7.28	61	125183	27.411 ng		98
31) n-Hexane	0.00	57	0	N.D. d		
32) Chloroform	7.37	83	3958	0.178 ng		97
34) Tetrahydrofuran (THF)	7.75	72	1577	0.226 ng		98
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.81	56	16529	No Calib	#	
41) Benzene	8.89	78	22139	0.478 ng		98
42) Carbon Tetrachloride	9.07	117	980	0.053 ng		86
43) Cyclohexane	9.22	84	819	0.051 ng	#	73
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.15	130	459	N.D.		
48) 1,4-Dioxane	10.13	88	1307	0.163 ng		97

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 12 12:25:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

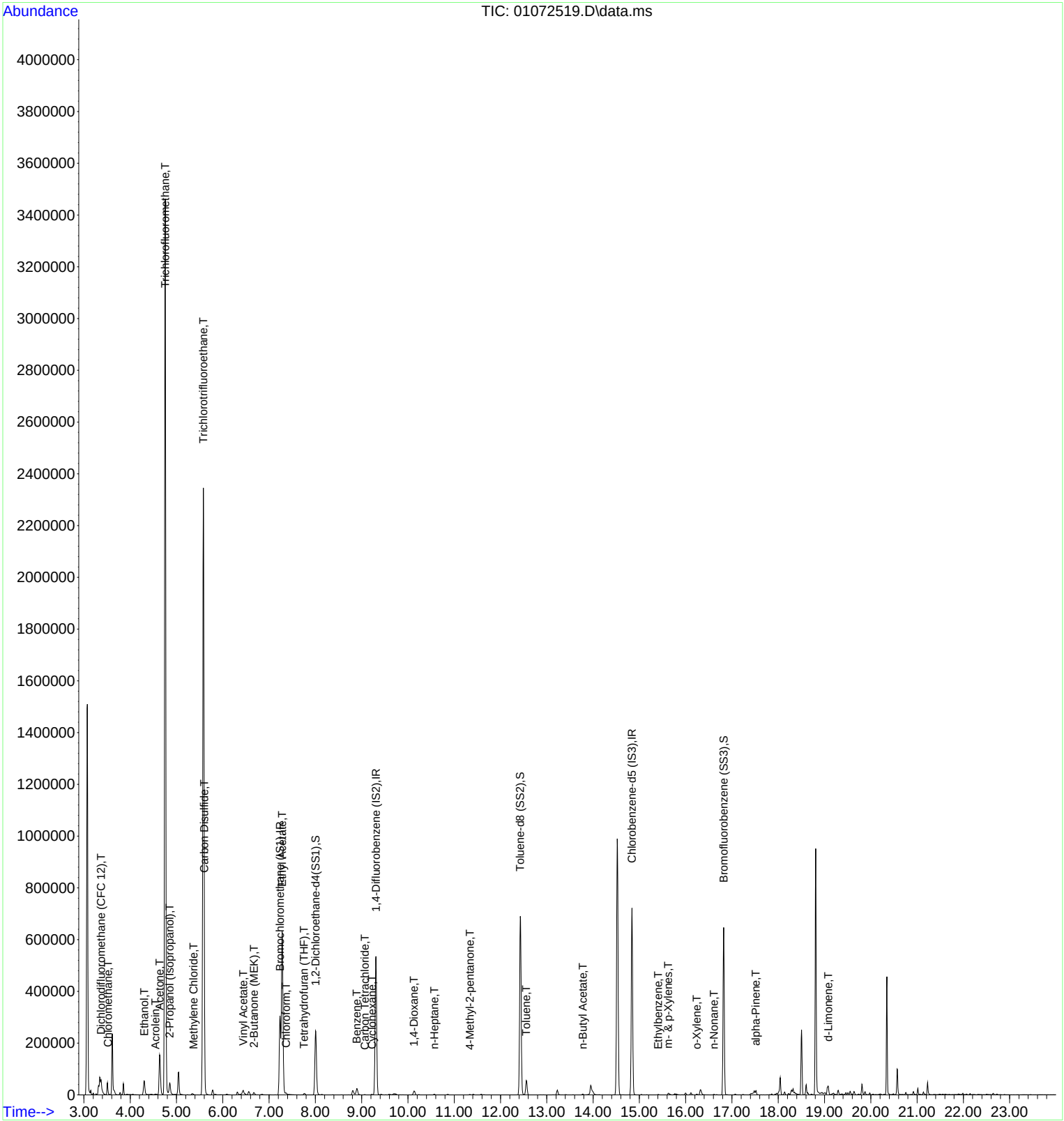
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	1399	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.57	71	604	0.058 ng	#	77
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.34	58	635	0.064 ng	#	56
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	51927	1.136 ng		98
59) 2-Hexanone	12.93	43	843	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	3360	0.134 ng		90
63) n-Octane	13.93	57	344	N.D.		
64) Tetrachloroethene	14.03	166	122	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	2909	0.058 ng		94
67) m- & p-Xylenes	15.62	91	6957	0.168 ng		99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	1035	N.D.		
70) o-Xylene	16.24	91	2646	0.065 ng		95
71) n-Nonane	16.61	43	1420	0.065 ng		88
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	17.51	93	7356	0.293 ng		97
76) n-Propylbenzene	17.67	91	342	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.86	105	378	N.D.		
79) 1,3,5-Trimethylbenzene	17.95	105	368	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.43	105	1451	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	1150	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	5404	0.399 ng		91
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	17.97	58	108	No Calib	#	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.94	128	314	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D. d		
100) n-Butylbenzene	19.38	91	617	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 12 12:25:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
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Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

MA 1/12/25

Quant Time: Jan 12 12:25:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	136776	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	576913	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	107106	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	230514	12.370	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%				
57) Toluene-d8 (SS2)	12.43	98	599578	12.619	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%				
73) Bromofluorobenzene (SS3)	16.82	174	241334	14.718	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.76%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.37	85	15618	0.584	ng		98
4) Chloromethane	3.52	50	1189	0.060	ng		84
10) Ethanol	4.30	45	82937	8.198	ng		98
12) Acrolein	4.55	56	1110	0.128	ng		99
13) Acetone	4.64	58	43710	4.746	ng	#	84
14) Trichlorofluoromethane	4.76	101	2673624	106.627	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	68917	2.090	ng		99
19) Methylene Chloride	5.37	84	785	0.061	ng		94
21) Trichlorotrifluoroethane	5.58	151	839589	74.214	ng		92
22) Carbon Disulfide	5.60	76	29962	0.719	ng	#	1
26) Vinyl Acetate	6.44	86	3254	1.460	ng	#	32
27) 2-Butanone (MEK)	6.67	72	3009	0.407	ng	#	77
30) Ethyl Acetate	7.28	61	125183	27.411	ng		98
32) Chloroform	7.37	83	3958	0.178	ng		97
34) Tetrahydrofuran (THF)	7.75	72	1577	0.226	ng		98
41) Benzene	8.89	78	22139	0.478	ng		98
42) Carbon Tetrachloride	9.07	117	980	0.053	ng		86
43) Cyclohexane	9.22	84	819	0.051	ng	#	73
48) 1,4-Dioxane	10.13	88	1307	0.163	ng		97
51) n-Heptane	10.57	71	604	0.058	ng	#	77
53) 4-Methyl-2-pentanone	11.34	58	635	0.064	ng	#	56
58) Toluene	12.56	91	51927	1.136	ng		98
62) n-Butyl Acetate	13.78	43	3360	0.134	ng		90
66) Ethylbenzene	15.41	91	2909	0.058	ng		94
67) m- & p-Xylenes	15.62	91	6957	0.168	ng		99
70) o-Xylene	16.24	91	2646	0.065	ng		95
71) n-Nonane	16.61	43	1420	0.065	ng		88
75) alpha-Pinene	17.51	93	7356	0.293	ng		97
91) d-Limonene	19.08	68	5404	0.399	ng		91

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

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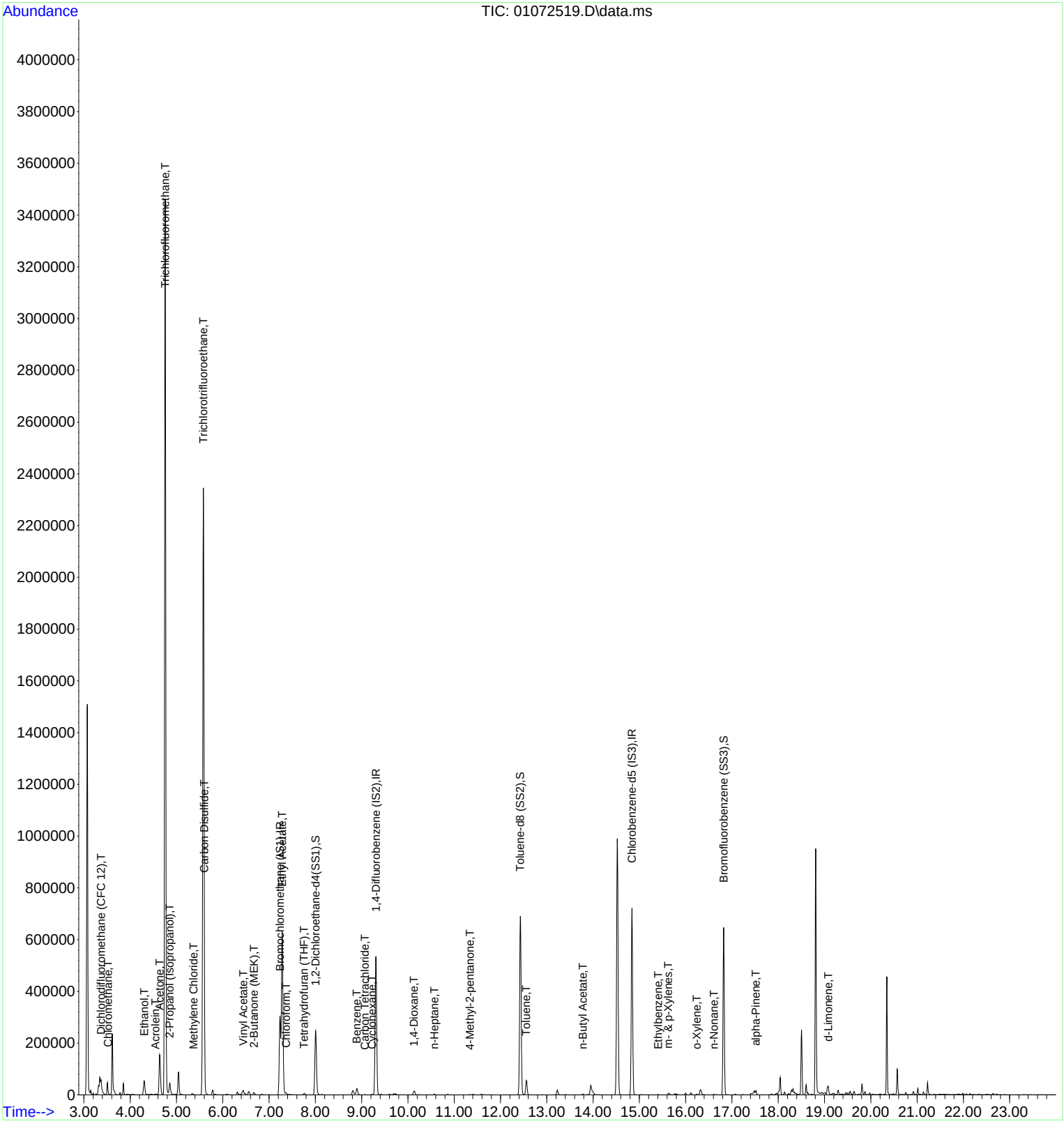
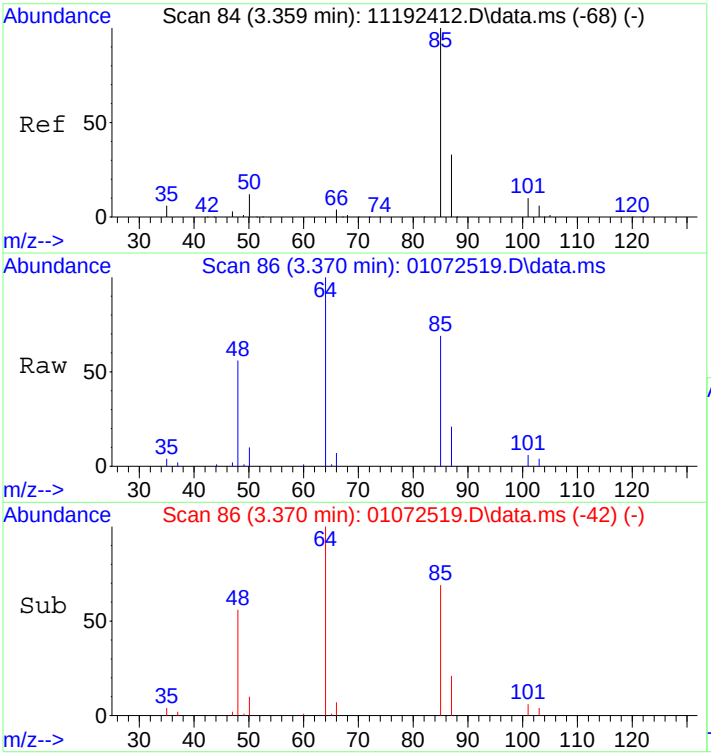
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 12 12:25:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

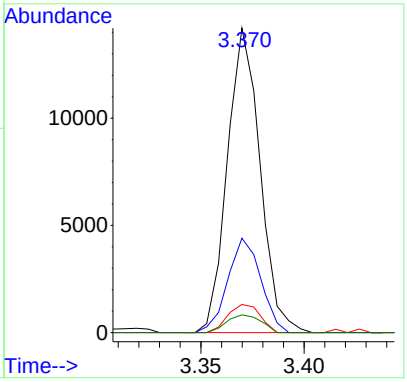


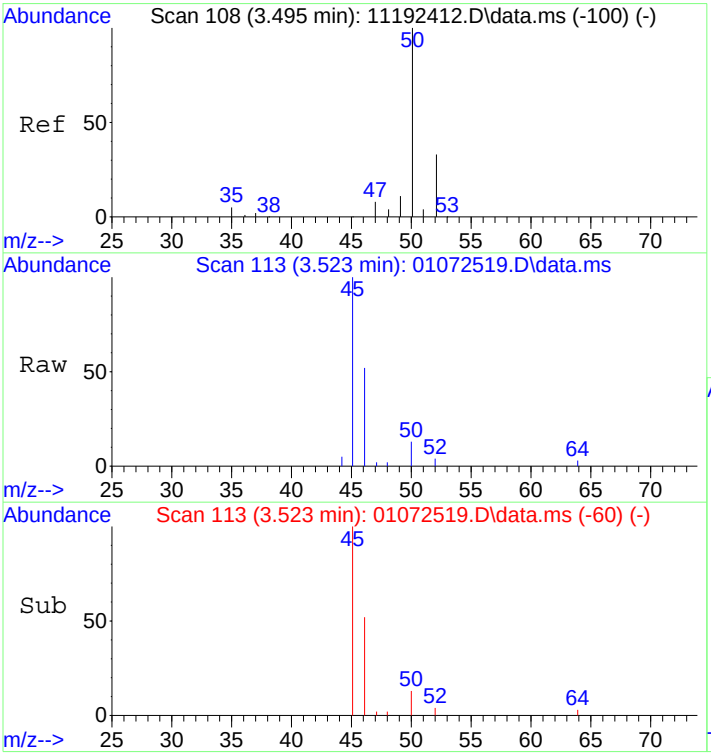


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.58 ng
RT: 3.37 min Scan# 86
Delta R.T. -0.002 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 85 Resp: 15618

Ion	Ratio	Lower	Upper
85	100		
87	31.3	12.6	52.6
101	9.1	0.0	29.6
103	6.1	0.0	26.2

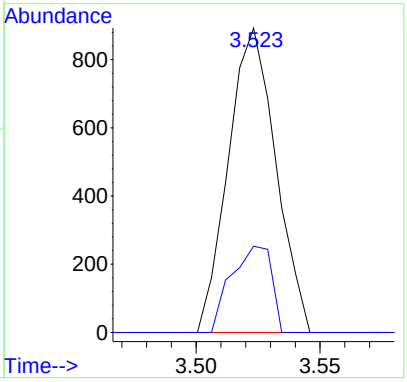


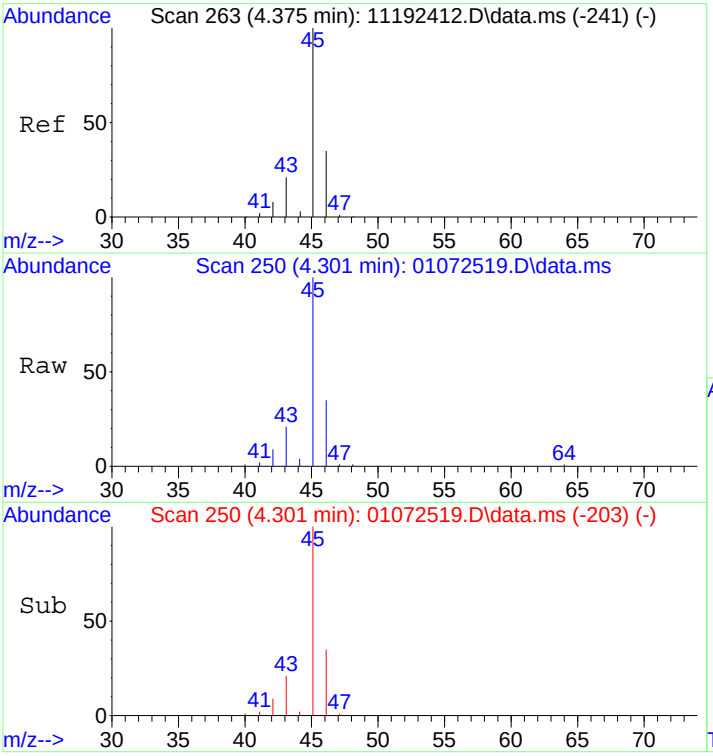


#4
Chloromethane
Concen: 0.06 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 50 Resp: 1189

Ion	Ratio	Lower	Upper
50	100		
52	24.1	13.0	53.0

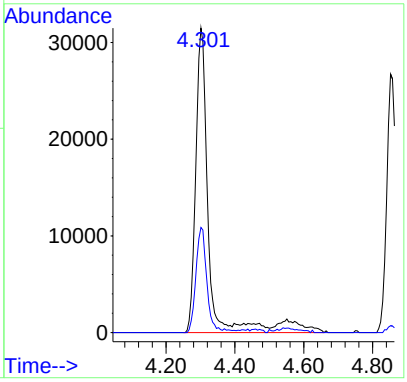


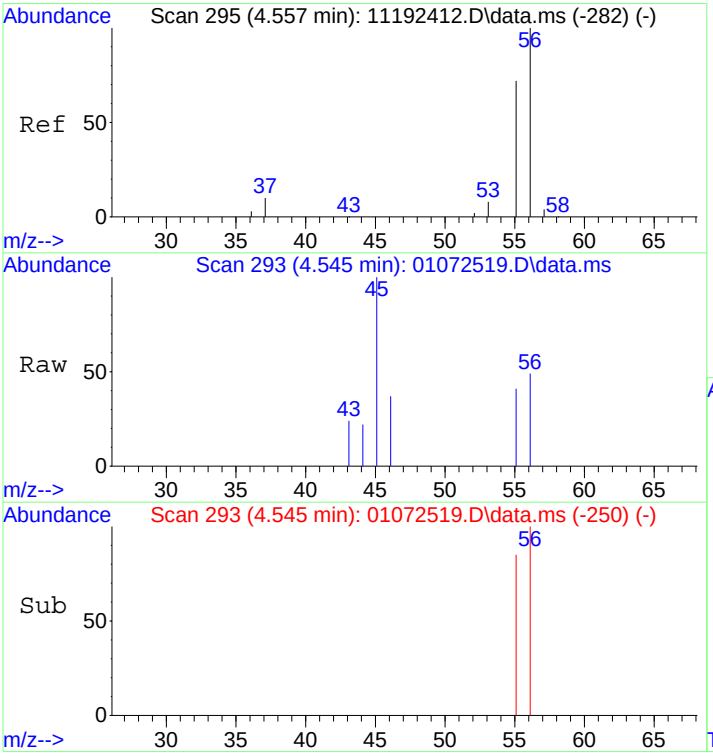


#10
Ethanol
Concen: 8.20 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 45 Resp: 82937

Ion	Ratio	Lower	Upper
45	100		
46	30.8	11.8	51.8

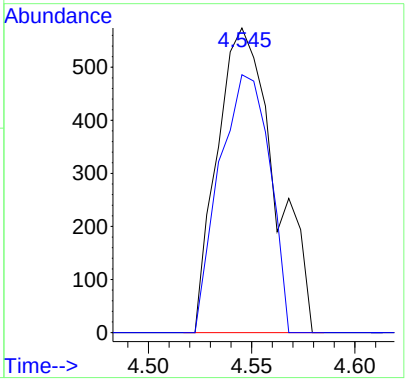


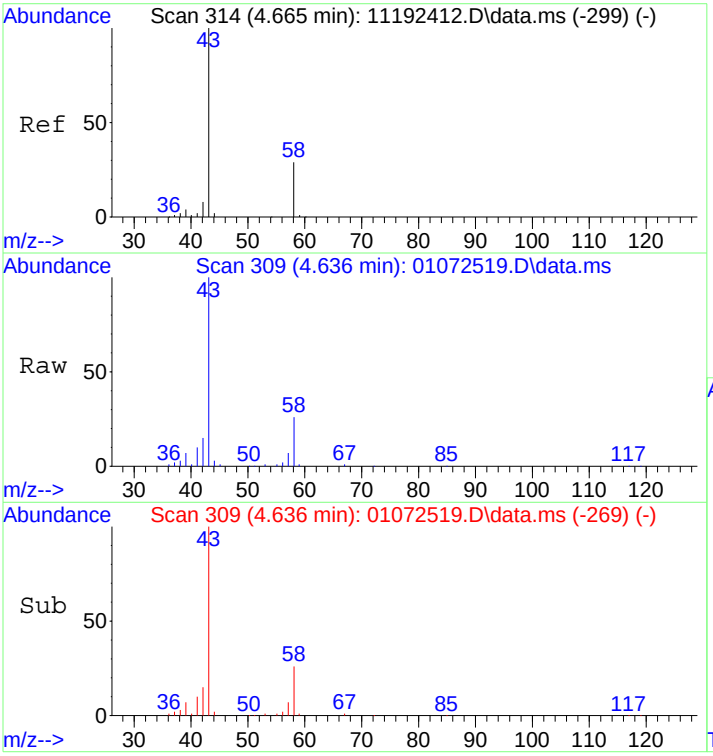


#12
Acrolein
Concen: 0.13 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 56 Resp: 1110

Ion	Ratio	Lower	Upper
56	100		
55	74.2	53.1	93.1

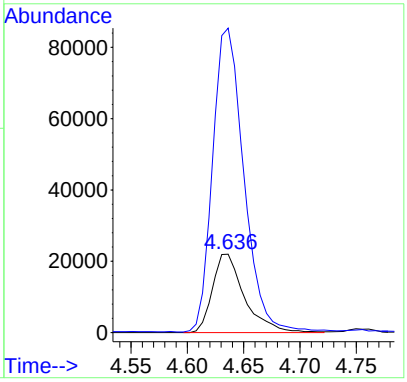


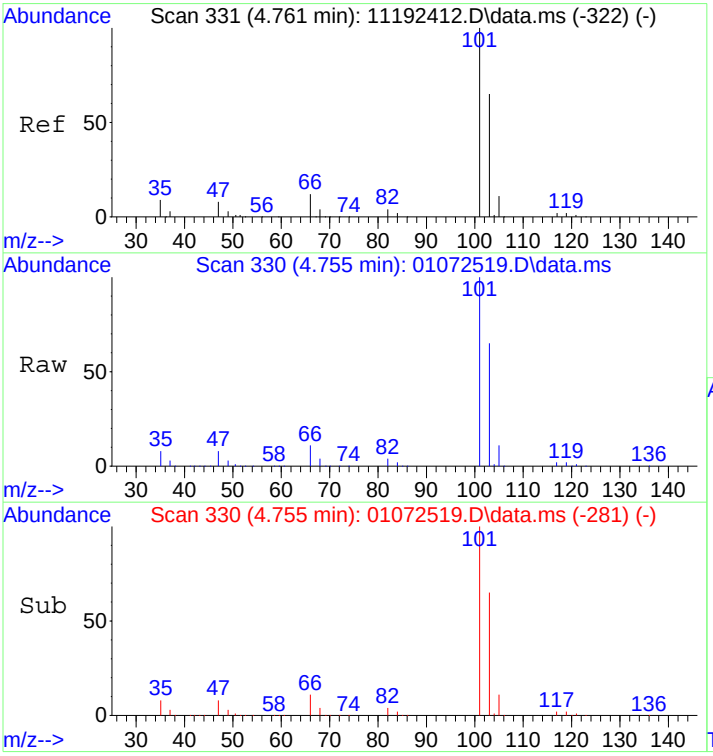


#13
Acetone
Concen: 4.75 ng
RT: 4.64 min Scan# 309
Delta R.T. -0.024 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 58 Resp: 43710

Ion	Ratio	Lower	Upper
58	100		
43	375.9	312.5	372.5#

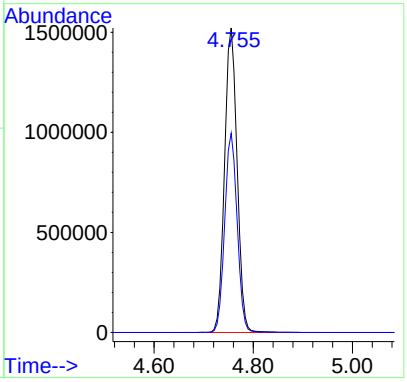


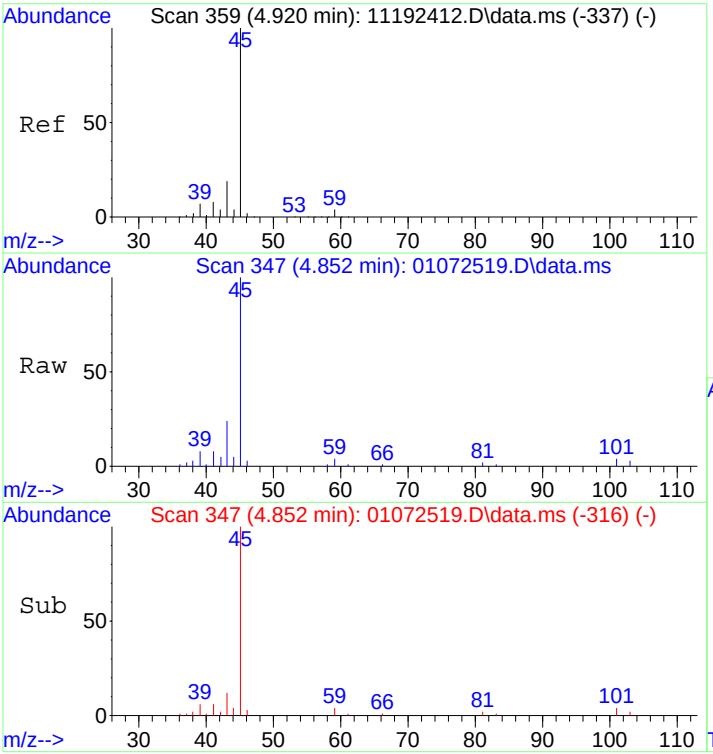


#14
Trichlorofluoromethane
Concen: 106.63 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion:101 Resp: 2673624

Ion	Ratio	Lower	Upper
101	100		
103	65.1	44.8	84.8

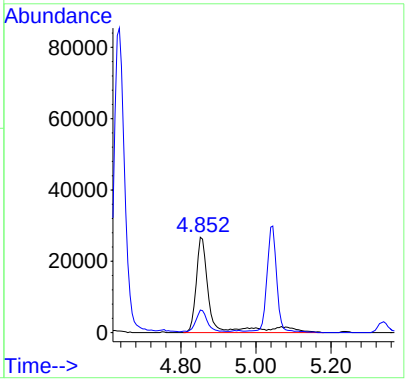


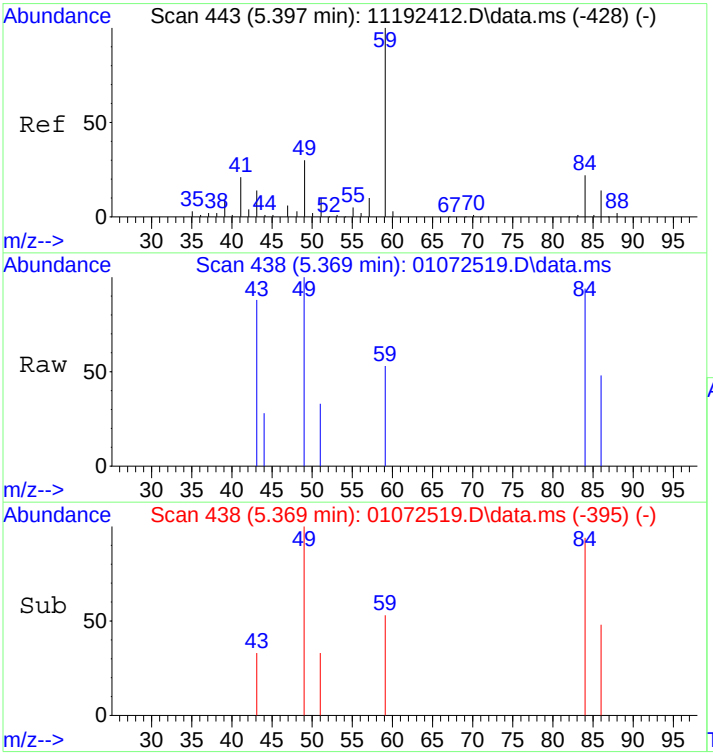


#15
2-Propanol (Isopropanol)
Concen: 2.09 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 45 Resp: 68917

Ion	Ratio	Lower	Upper
45	100		
43	20.7	0.2	40.2

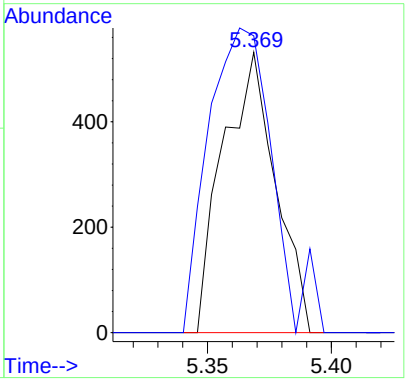


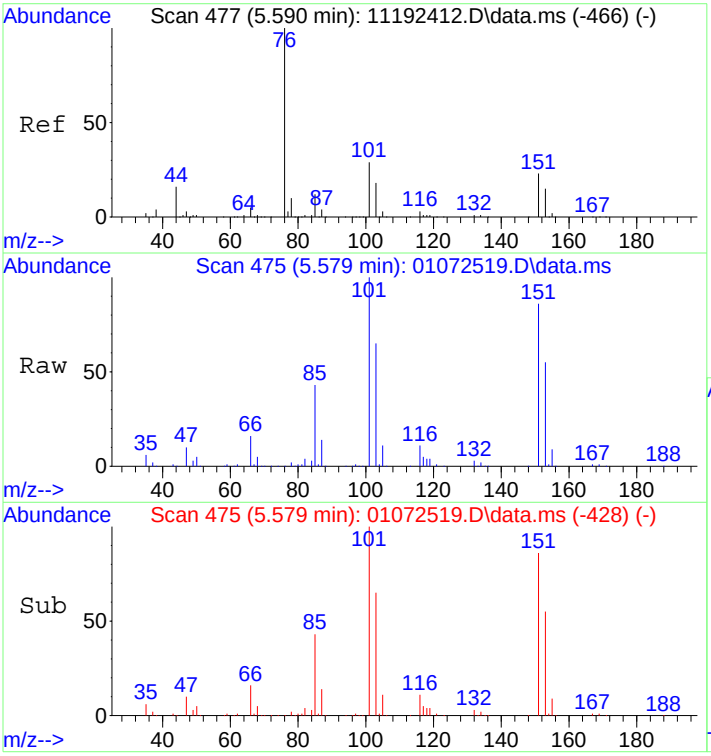


#19
Methylene Chloride
Concen: 0.06 ng
RT: 5.37 min Scan# 438
Delta R.T. -0.006 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 84 Resp: 785

Ion	Ratio	Lower	Upper
84	100		
49	133.5	116.0	166.0

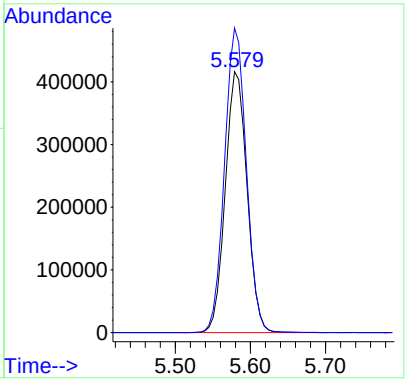


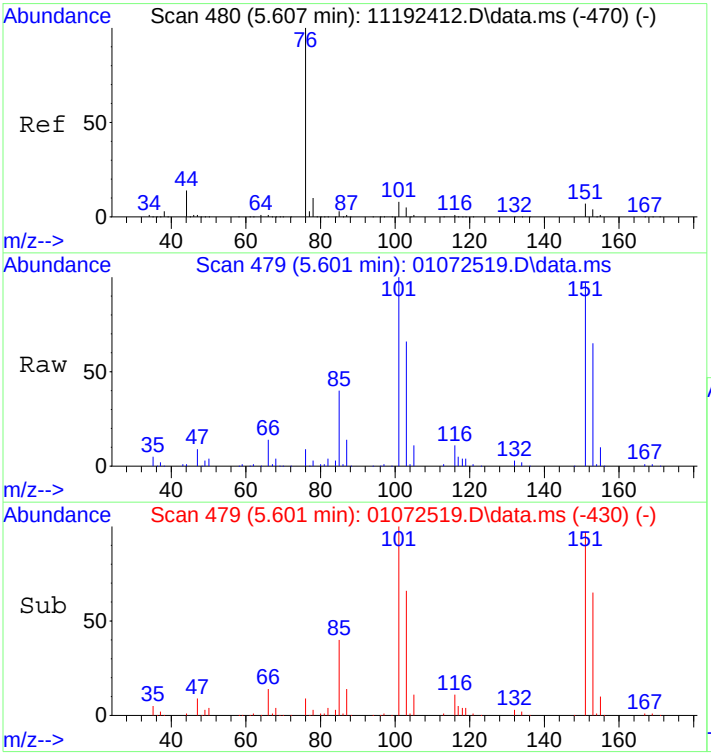


#21
Trichlorotrifluoroethane
Concen: 74.21 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion:151 Resp: 839589

Ion	Ratio	Lower	Upper
151	100		
101	116.4	105.0	145.0

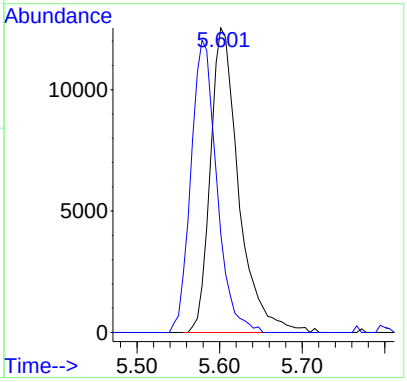


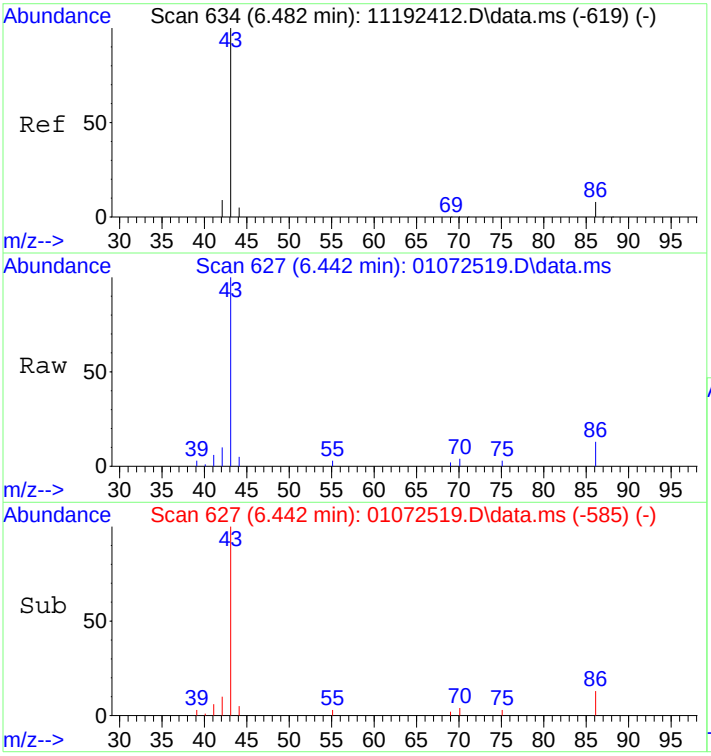


#22
Carbon Disulfide
Concen: 0.72 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 76 Resp: 29962

Ion	Ratio	Lower	Upper
76	100		
78	87.2	0.0	29.6#

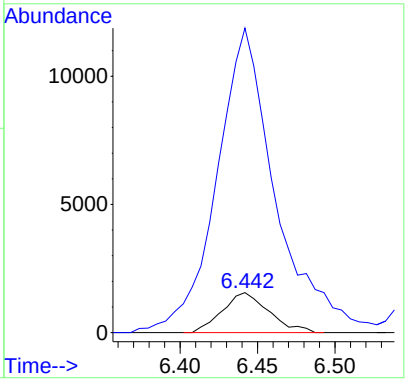


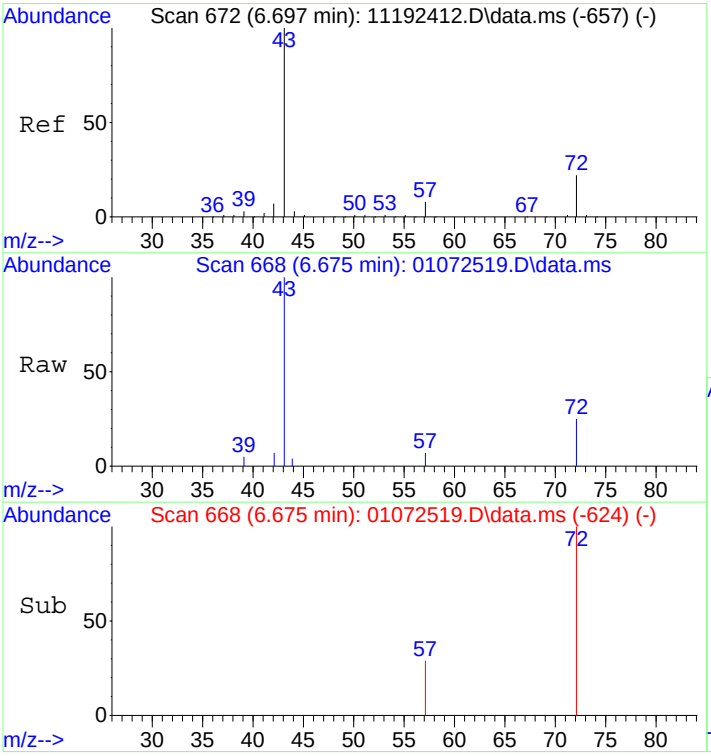


#26
Vinyl Acetate
Concen: 1.46 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 86 Resp: 3254

Ion	Ratio	Lower	Upper
86	100		
43	972.8	1331.6	1371.6#

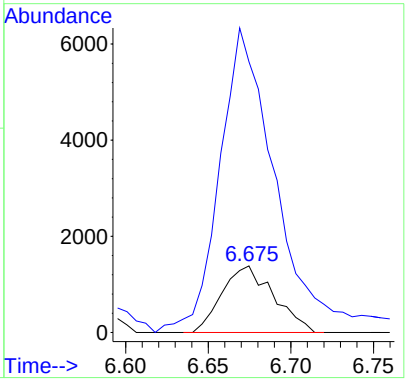


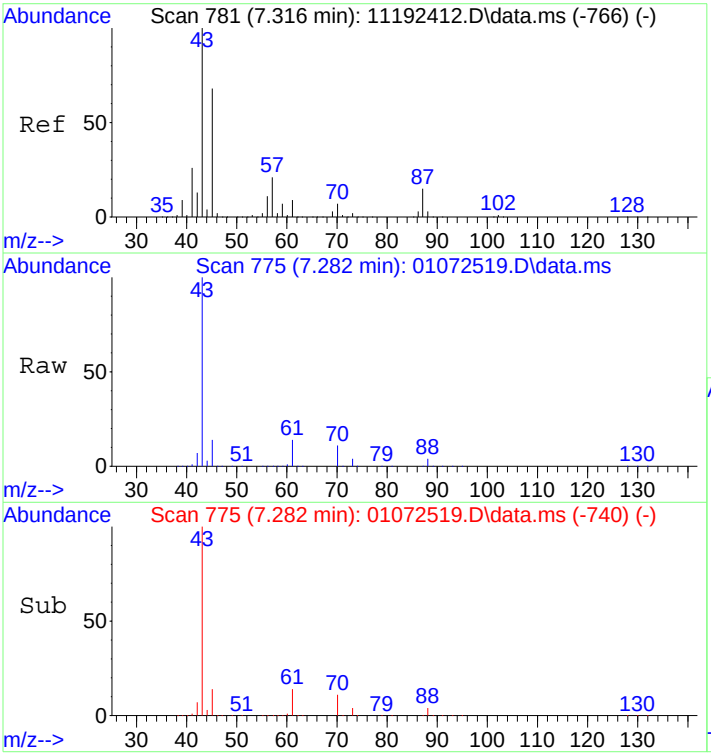


#27
2-Butanone (MEK)
Concen: 0.41 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 72 Resp: 3009

Ion	Ratio	Lower	Upper
72	100		
43	519.6	439.8	479.8#

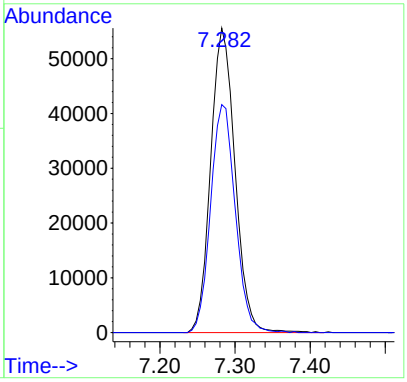


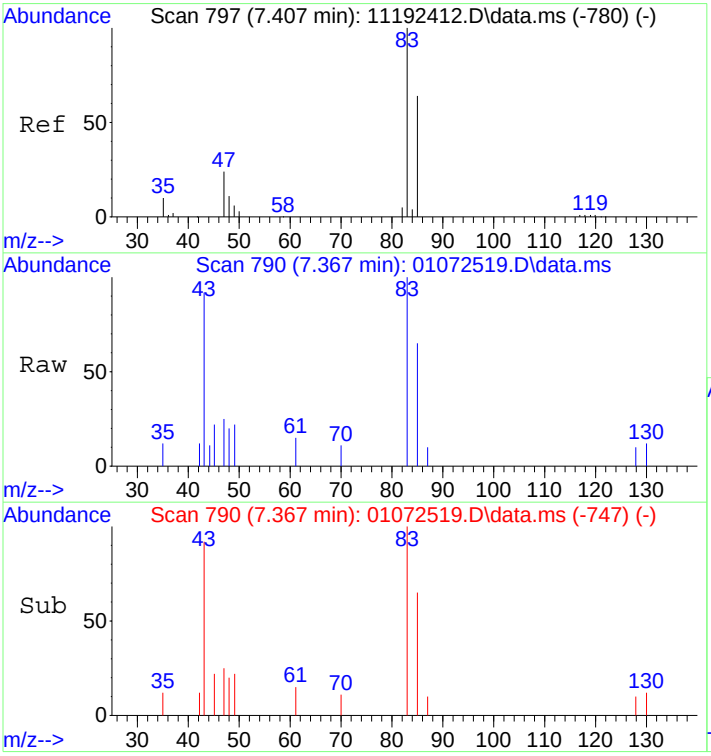


#30
Ethyl Acetate
Concen: 27.41 ng
RT: 7.28 min Scan# 775
Delta R.T. 0.001 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 61 Resp: 125183

Ion	Ratio	Lower	Upper
61	100		
70	75.9	57.3	97.3

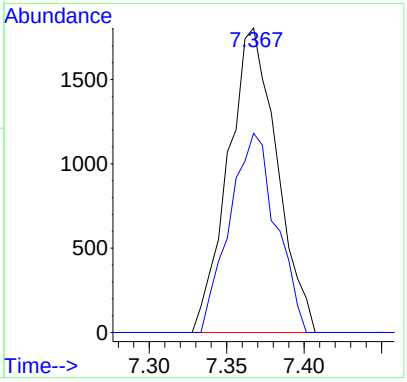


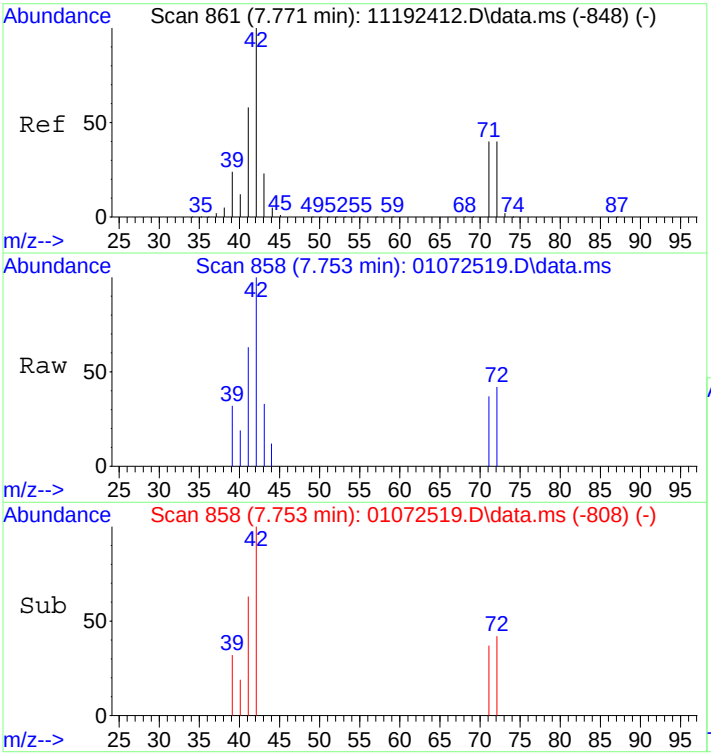


#32
Chloroform
Concen: 0.18 ng
RT: 7.37 min Scan# 790
Delta R.T. -0.004 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 83 Resp: 3958

Ion	Ratio	Lower	Upper
83	100		
85	62.7	45.1	85.1

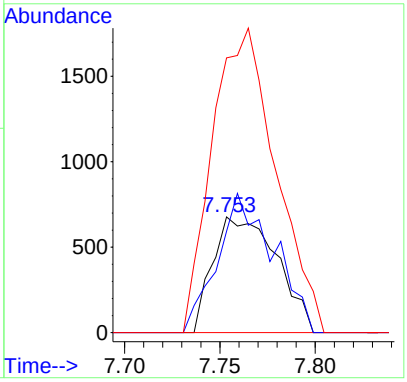


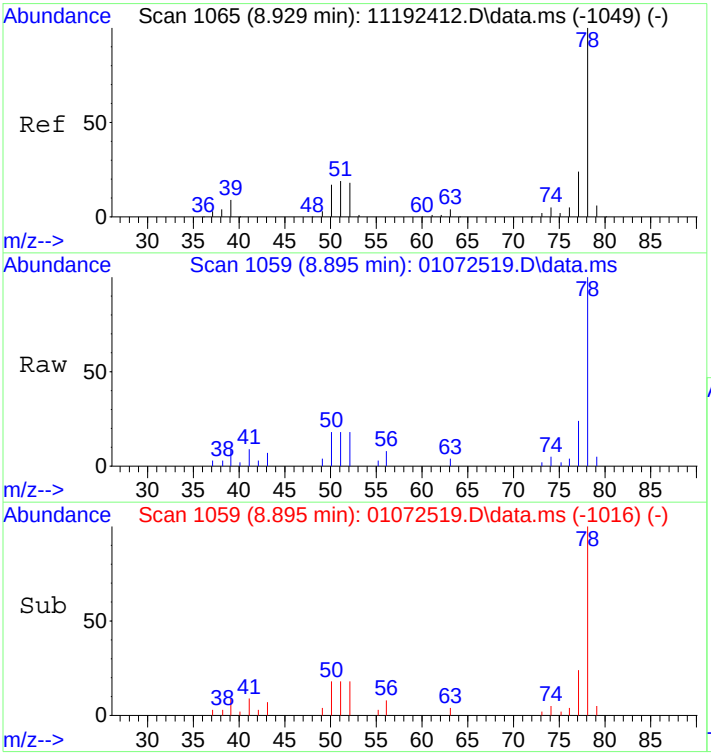


#34
Tetrahydrofuran (THF)
Concen: 0.23 ng
RT: 7.75 min Scan# 858
Delta R.T. 0.033 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 72 Resp: 1577

Ion	Ratio	Lower	Upper
72	100		
71	105.7	78.6	118.6
42	262.3	243.4	283.4

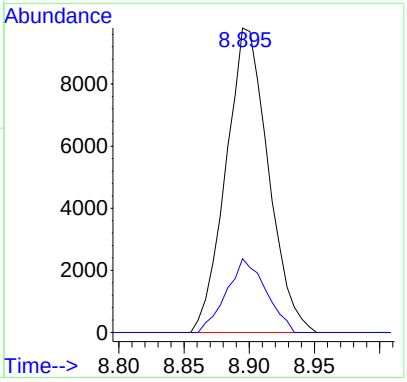


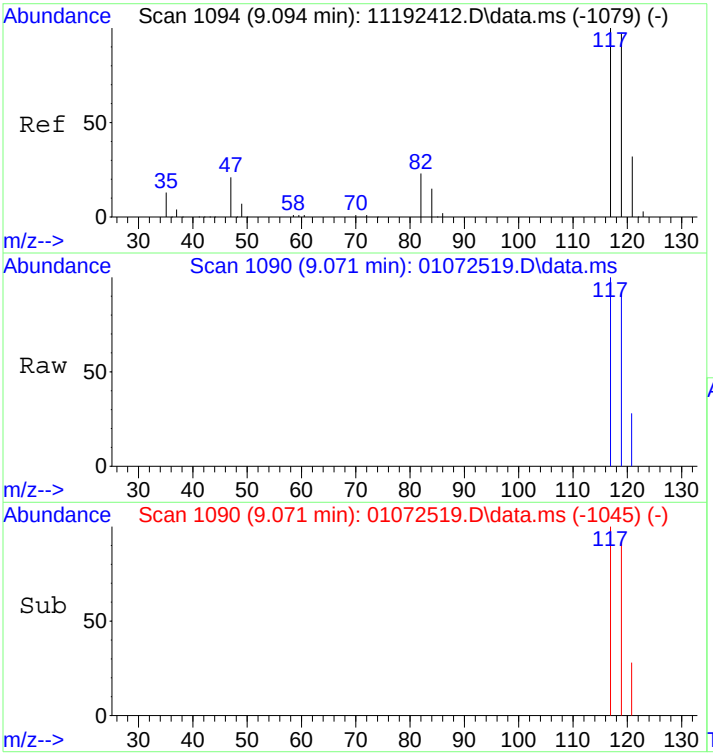


#41
Benzene
Concen: 0.48 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 78 Resp: 22139

Ion	Ratio	Lower	Upper
78	100		
77	22.5	3.7	43.7

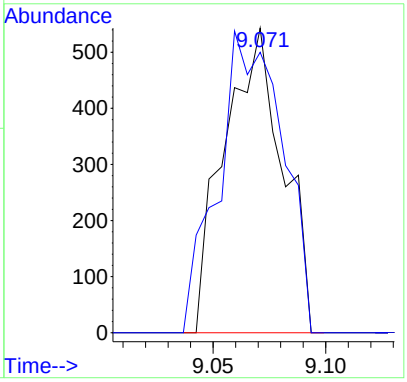


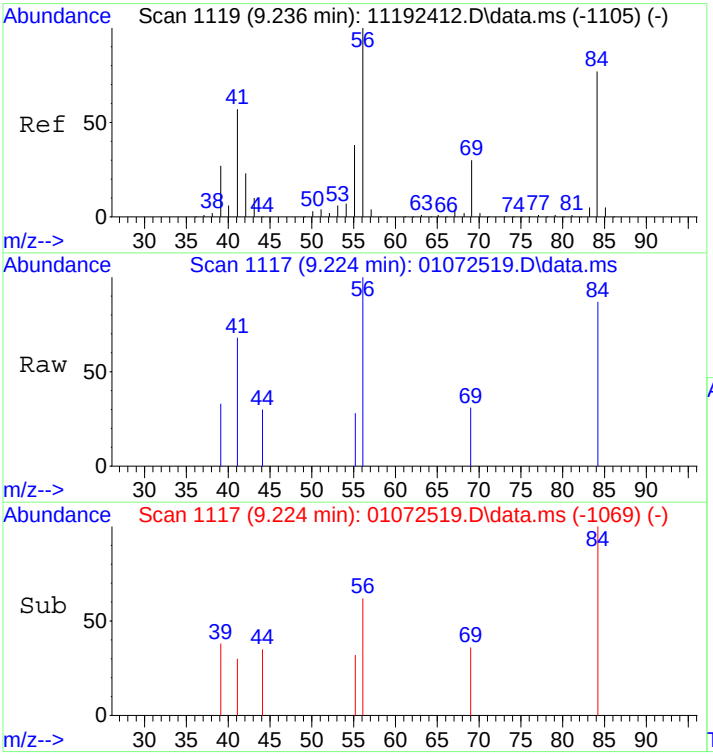


#42
Carbon Tetrachloride
Concen: 0.05 ng
RT: 9.07 min Scan# 1090
Delta R.T. 0.004 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion:117 Resp: 980

Ion	Ratio	Lower	Upper
117	100		
119	109.0	75.7	115.7

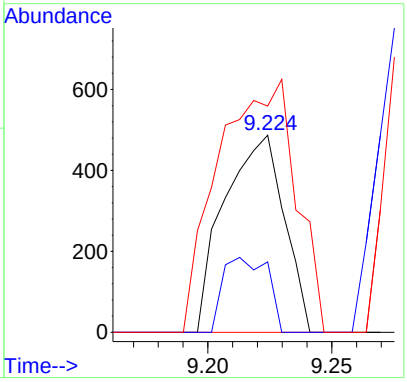


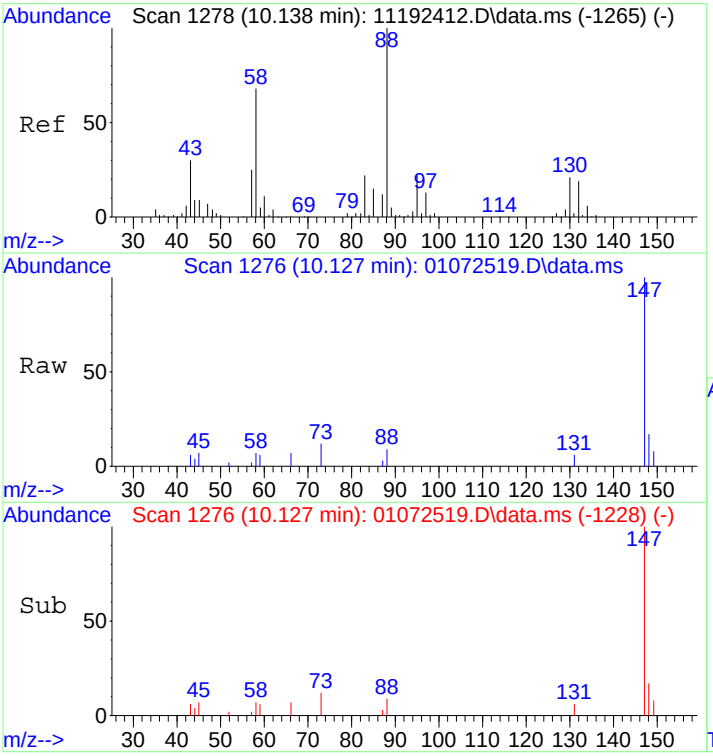


#43
Cyclohexane
Concen: 0.05 ng
RT: 9.22 min Scan# 1117
Delta R.T. 0.022 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 84 Resp: 819

Ion	Ratio	Lower	Upper
84	100		
69	28.3	18.3	58.3
56	165.6	110.7	150.7#

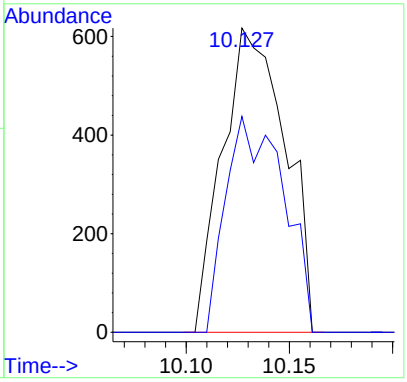


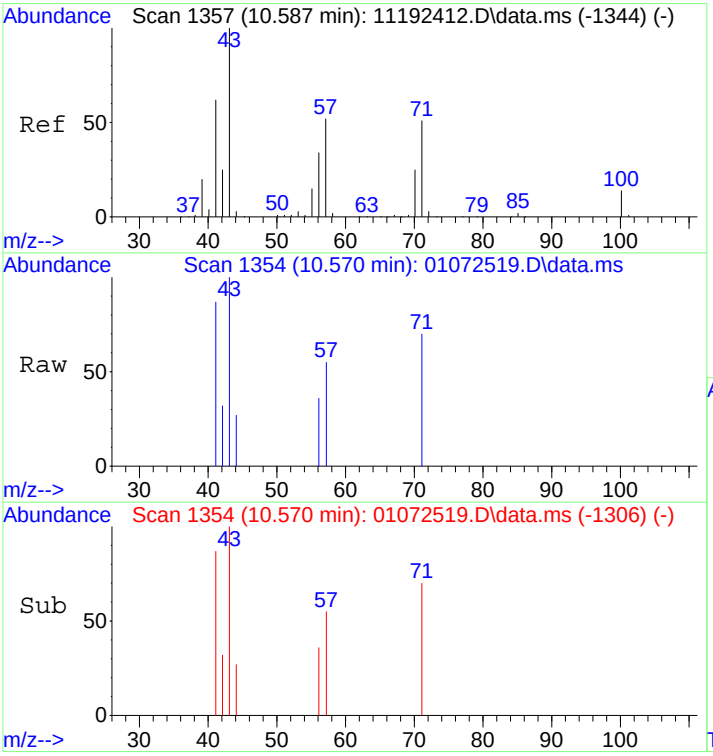


#48
1,4-Dioxane
Concen: 0.16 ng
RT: 10.13 min Scan# 1276
Delta R.T. 0.021 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 88 Resp: 1307

Ion	Ratio	Lower	Upper
88	100		
58	65.3	47.8	87.8

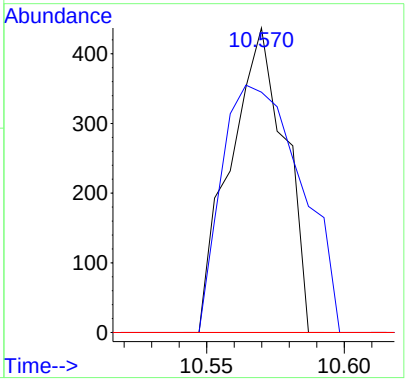


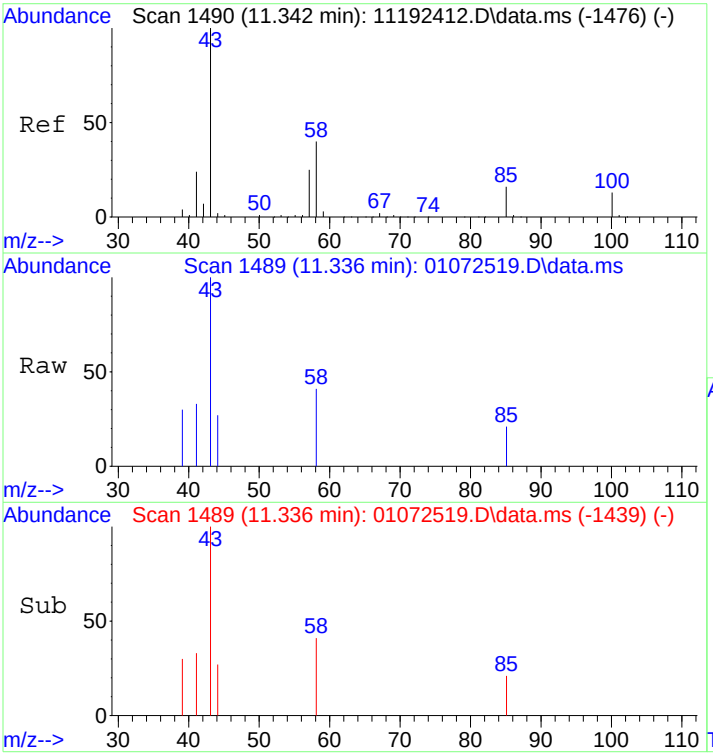


#51
n-Heptane
Concen: 0.06 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 71 Resp: 604

Ion	Ratio	Lower	Upper
71	100		
57	118.2	83.3	123.3
100	0.0	8.7	48.7#

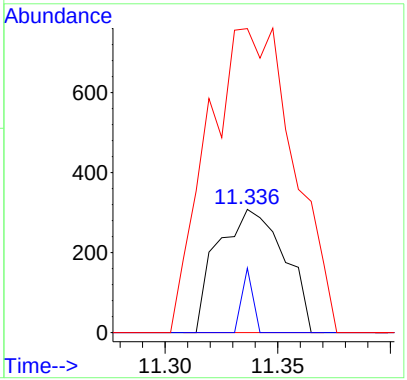


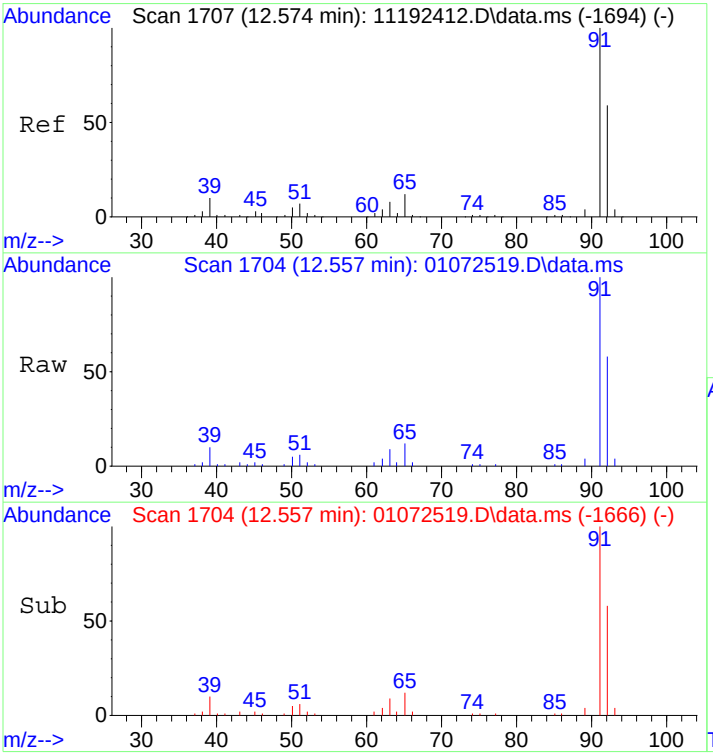


#53
4-Methyl-2-pentanone
Concen: 0.06 ng
RT: 11.34 min Scan# 1489
Delta R.T. 0.033 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 58 Resp: 635

Ion	Ratio	Lower	Upper
58	100		
85	0.0	33.8	50.6#
43	318.6	199.5	299.3#

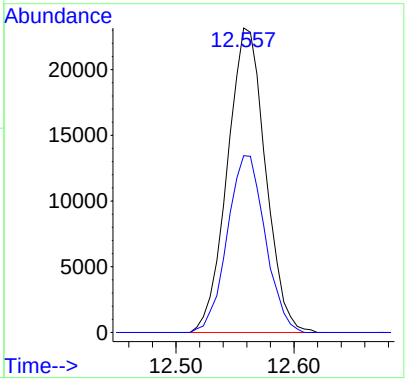


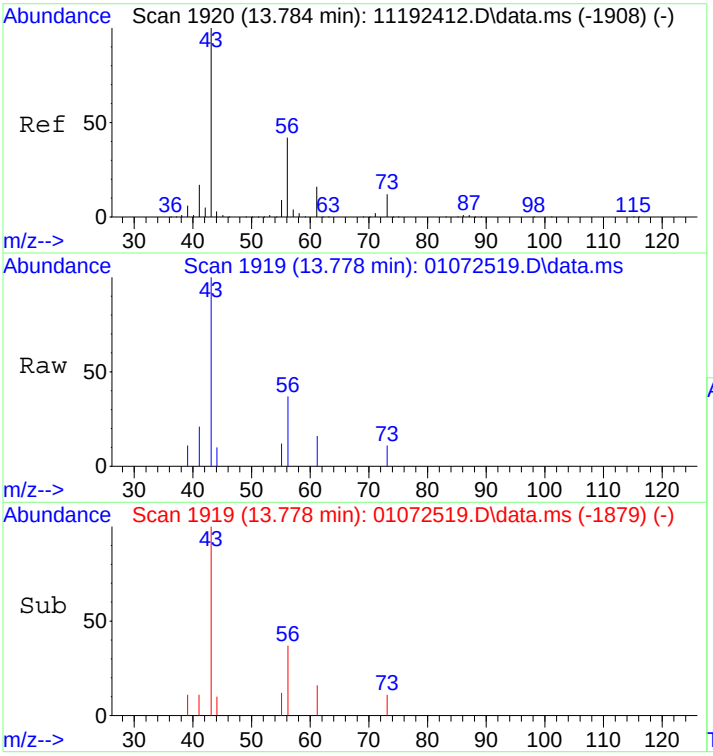


#58
Toluene
Concen: 1.14 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 91 Resp: 51927

Ion	Ratio	Lower	Upper
91	100		
92	57.8	39.2	79.2

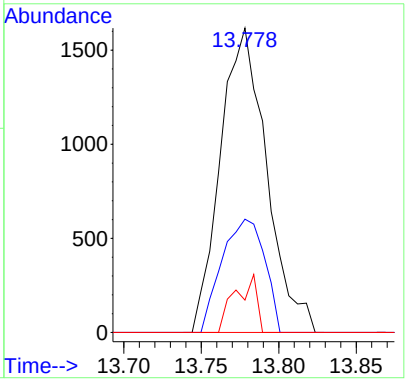


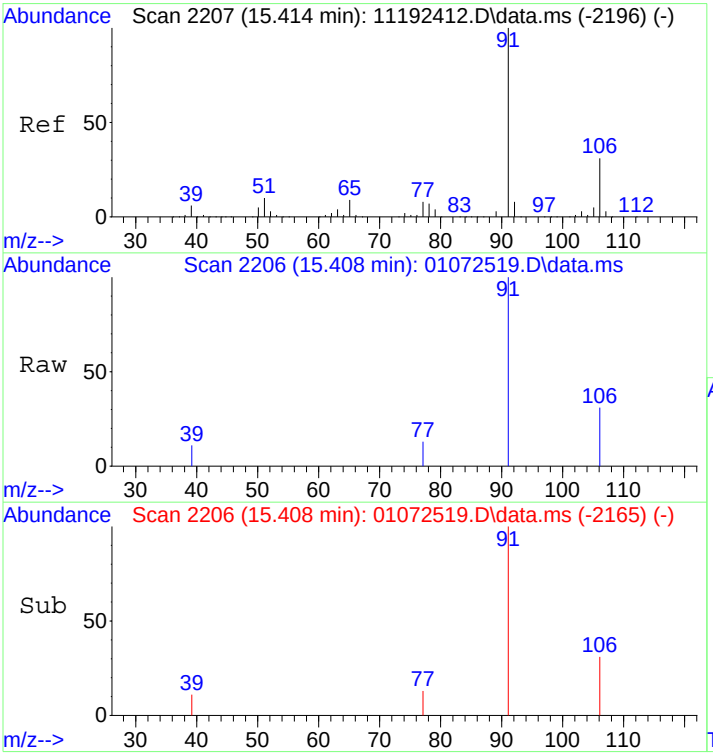


#62
n-Butyl Acetate
Concen: 0.13 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 43 Resp: 3360

Ion	Ratio	Lower	Upper
43	100		
56	34.4	20.9	60.9
73	9.0	0.0	32.0

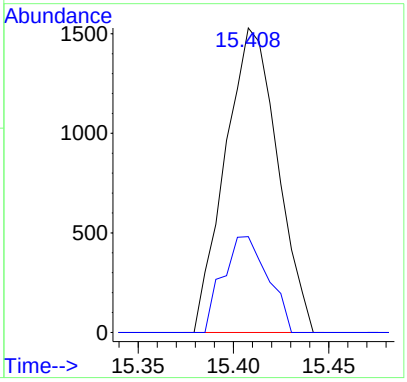


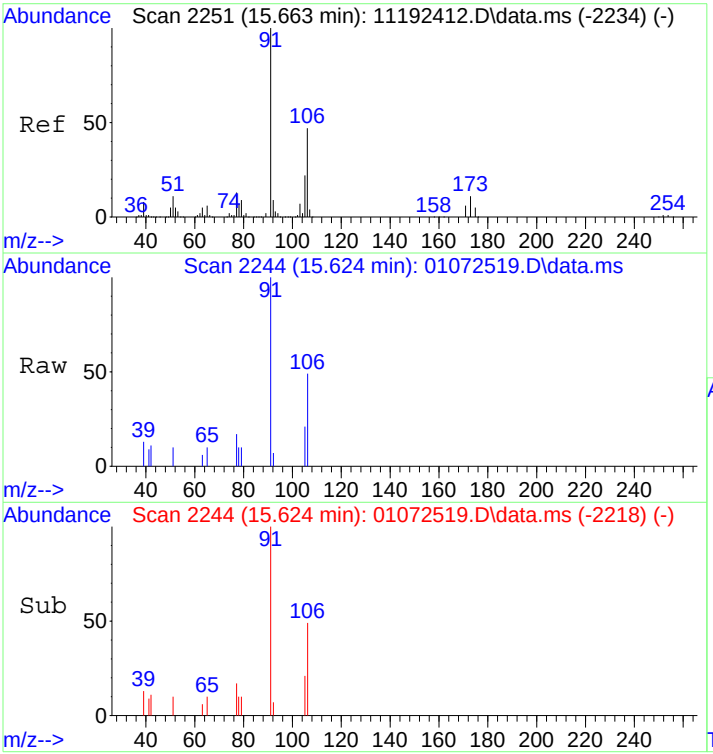


#66
Ethylbenzene
Concen: 0.06 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 91 Resp: 2909

Ion	Ratio	Lower	Upper
91	100		
106	27.2	10.7	50.7

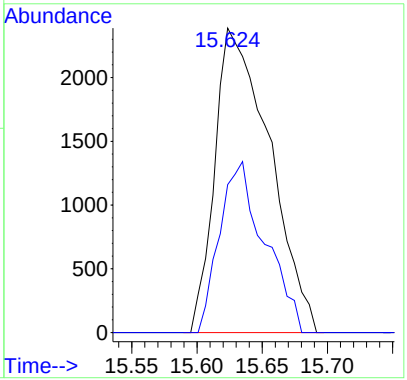


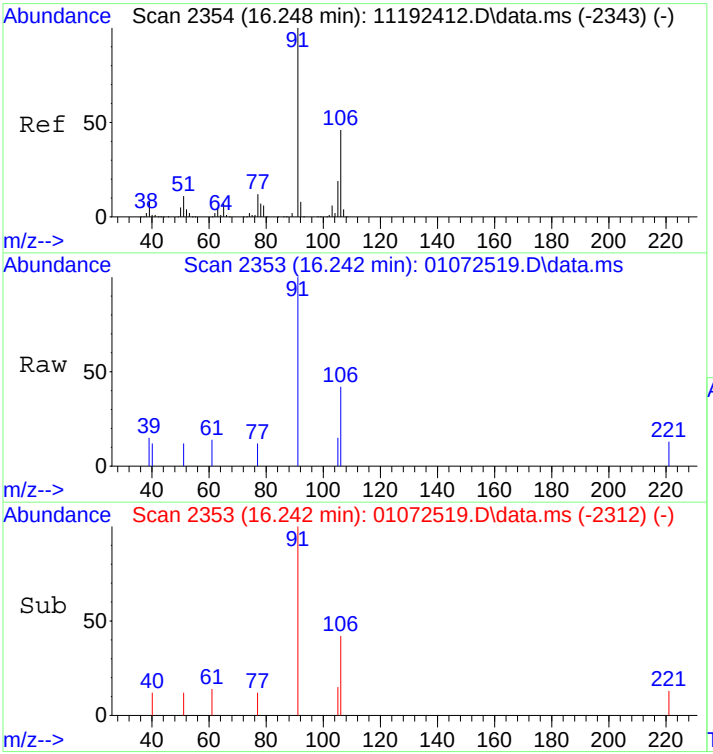


#67
m- & p-Xylenes
Concen: 0.17 ng
RT: 15.62 min Scan# 2244
Delta R.T. -0.051 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 91 Resp: 6957

Ion	Ratio	Lower	Upper
91	100		
106	46.3	27.1	67.1

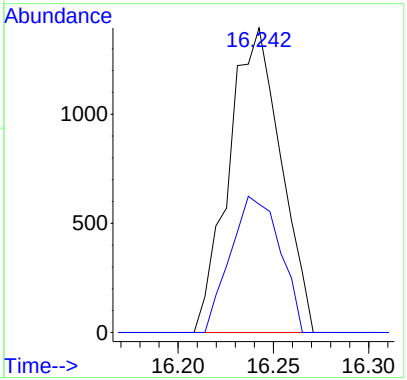


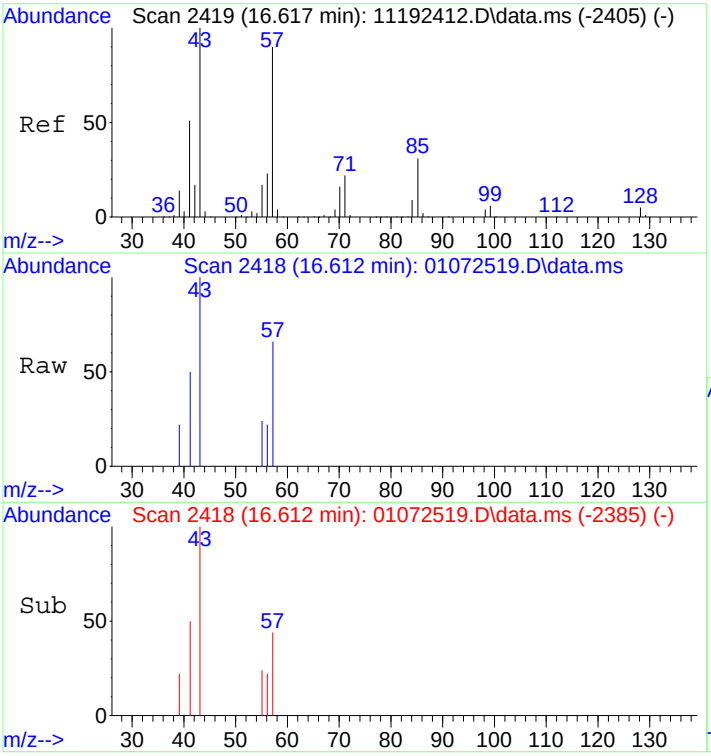


#70
o-Xylene
Concen: 0.06 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 91 Resp: 2646

Ion	Ratio	Lower	Upper
91	100		
106	42.7	25.8	65.8

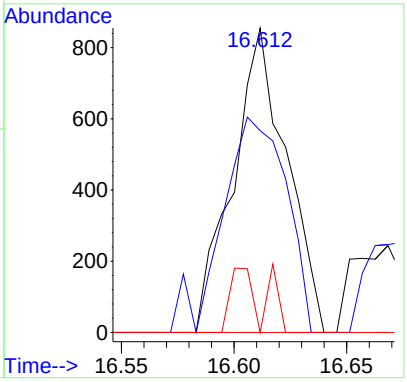


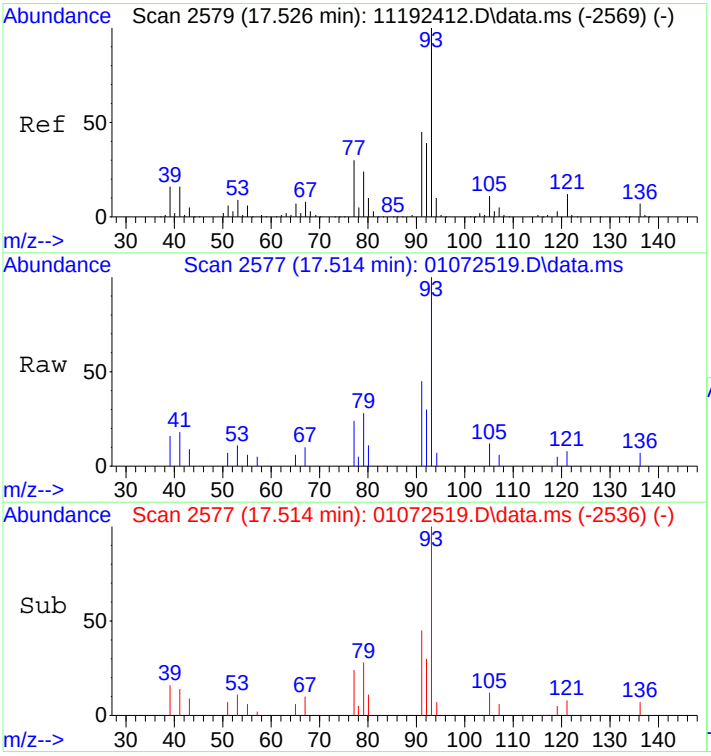


#71
n-Nonane
Concen: 0.07 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 43 Resp: 1420

Ion	Ratio	Lower	Upper
43	100		
57	84.5	69.4	109.4
85	13.2	10.5	50.5

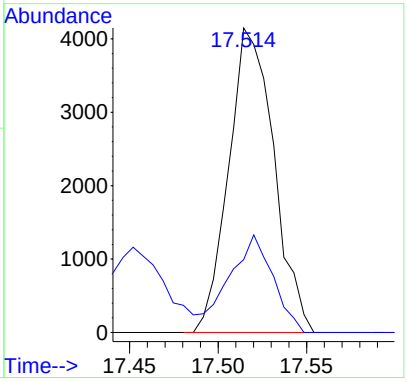


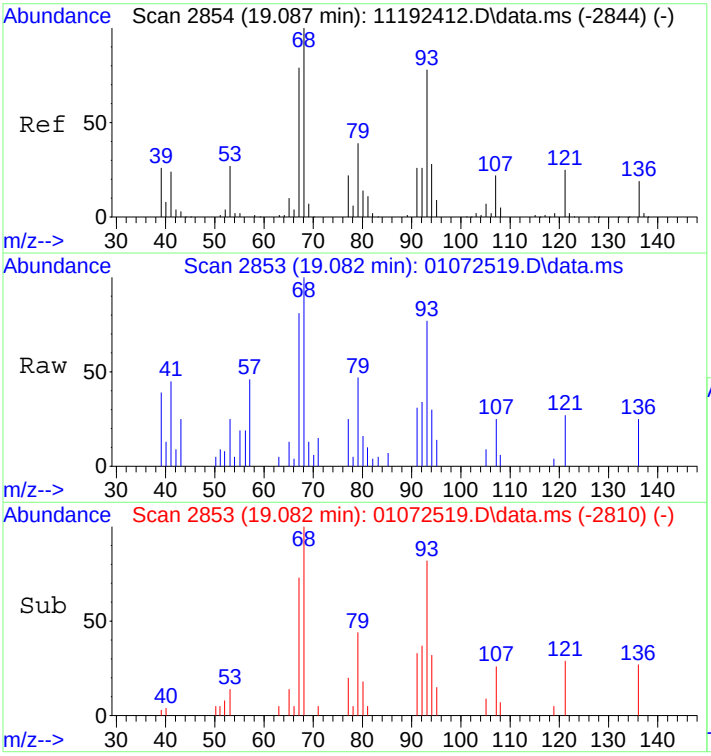


#75
alpha-Pinene
Concen: 0.29 ng
RT: 17.51 min Scan# 2577
Delta R.T. -0.017 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 93 Resp: 7356

Ion	Ratio	Lower	Upper
93	100		
77	31.5	10.1	50.1

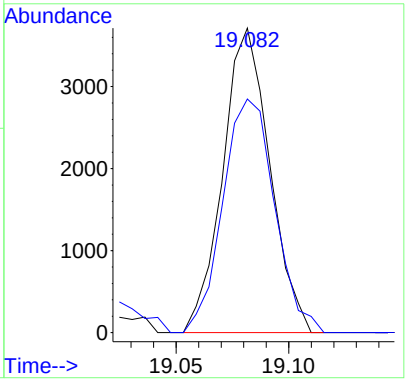




#91
d-Limonene
Concen: 0.40 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01072519.D
Acq: 7 Jan 2025 14:17

Tgt Ion: 68 Resp: 5404

Ion	Ratio	Lower	Upper
68	100		
93	84.3	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 13:34:07 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

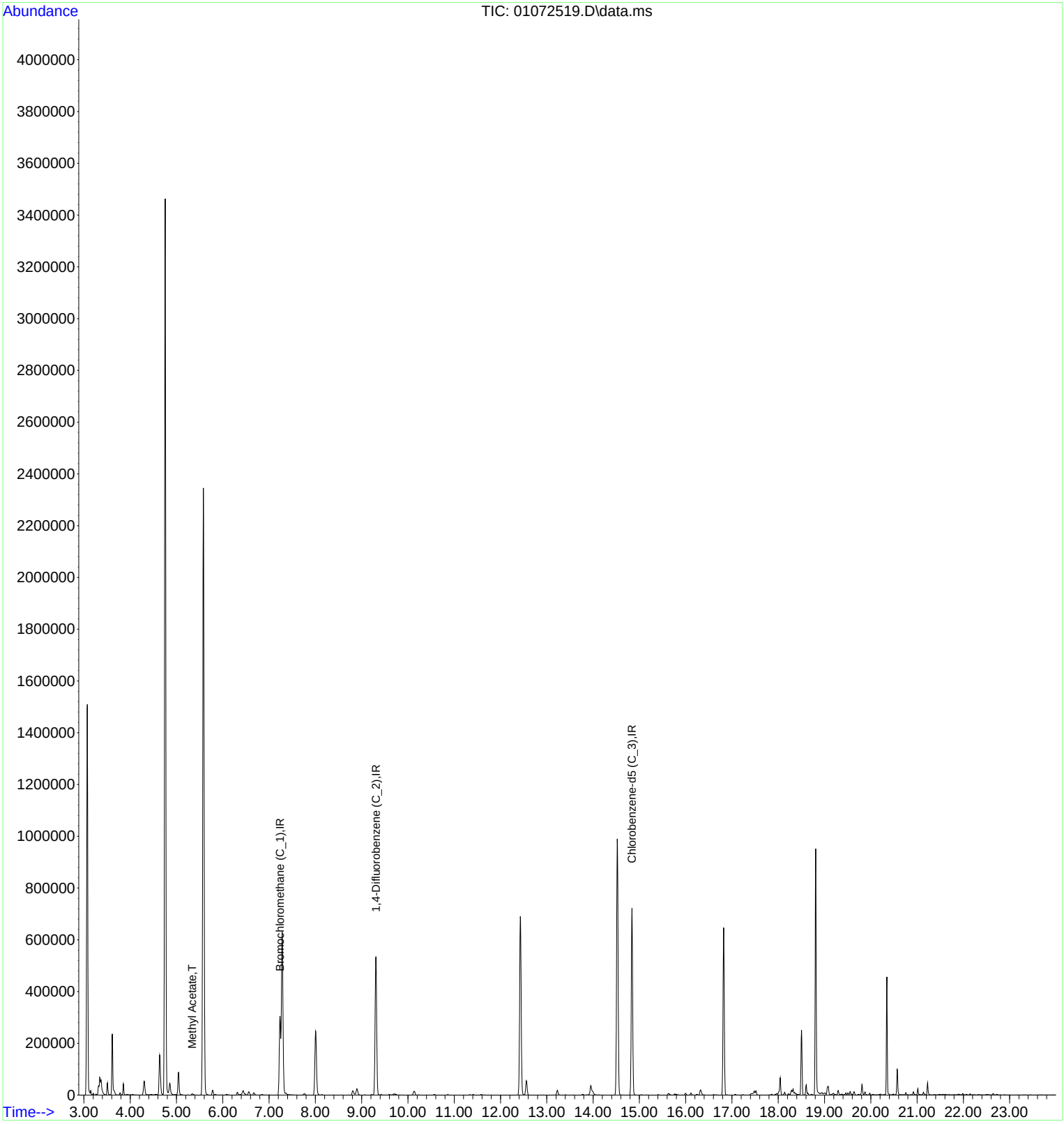
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.24	130	137000	12.500 ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.31	114	577502	12.500 ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	107106	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.15	85	130	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d	
4) 1,1-Difluoroethane	3.26	65	977	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D. d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	406	N.D.	
7) Dichlorofluoromethane ...	4.23	67	328	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.34	43	6006	0.191 ng #	75
12) 2-Methylpentane	6.48	71	641	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	9.51	56	375	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	11.40	55	1353	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	16.33	75	1568	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.67	91	342	N.D.	
27) 4-Chlorotoluene	17.67	91	342	N.D.	
28) Indane	19.11	117	170	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	20.22	119	135	N.D.	
31) 1,2,3,4-Tetramethylben...	20.22	119	135	N.D.	
32) 1,2,3,5-Tetramethylben...	20.57	119	361	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 12 13:34:07 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072523.D
Acq On : 7 Jan 2025 16:27
Operator : SC
Sample : P2405139-026Dil (40mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 12:31:29 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	128278	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	541111	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	101942	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	218883	12.524	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
57) Toluene-d8 (SS2)	12.43	98	564290	12.478	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
73) Bromofluorobenzene (SS3)	16.82	174	221075	14.166	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.36%				
Target Compounds							Qvalue
2) Propene	3.34	42	130	N.D.			
3) Dichlorodifluoromethan...	3.39	85	1345	0.054	ng	#	88
4) Chloromethane	3.54	50	120	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	6254	0.659	ng		99
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	4486	0.519	ng		90
14) Trichlorofluoromethane	4.76	101	263645	11.211	ng		99
15) 2-Propanol (Isopropanol)	4.86	45	4730	0.153	ng		84
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.59	151	81318	7.664	ng		93
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	7.29	61	10122	2.363	ng		94
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	243	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.84	56	916	No Calib		#	
41) Benzene	8.90	78	2135	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.29	84	527	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072523.D
Acq On : 7 Jan 2025 16:27
Operator : SC
Sample : P2405139-026Dil (40mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

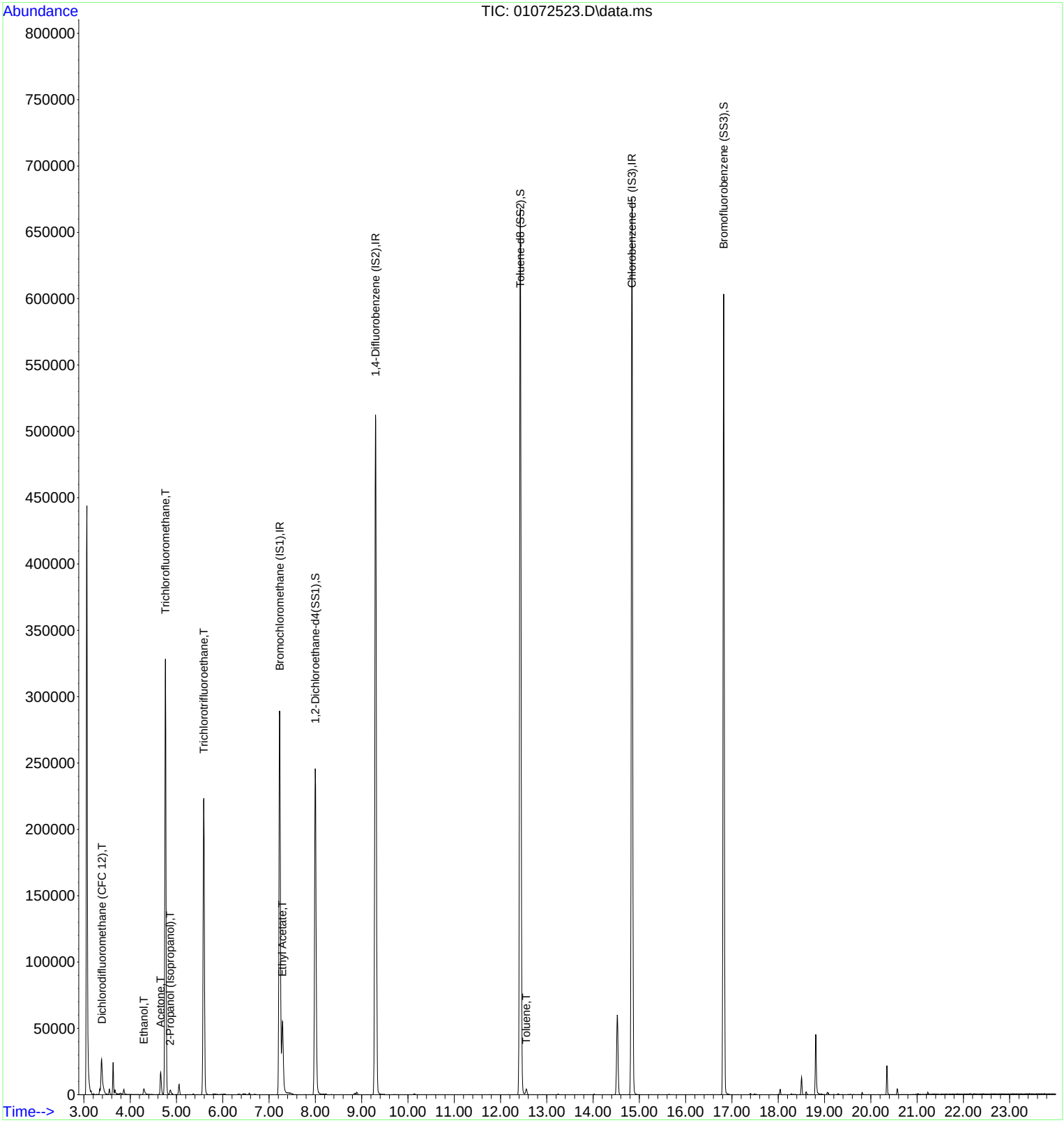
Quant Time: Jan 12 12:31:29 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	4962	0.114 ng	98
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	0.00	91	0	N.D.	
67) m- & p-Xylenes	15.63	91	596	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.51	93	396	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.08	68	306	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	196	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

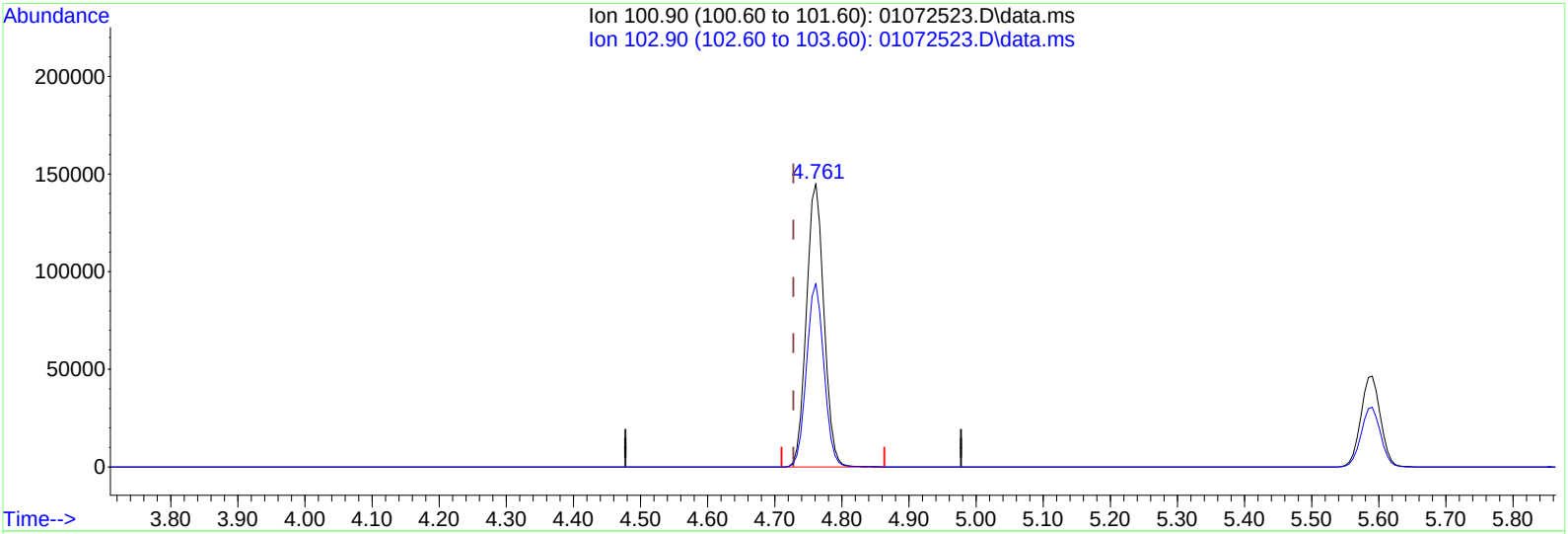
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072523.D
Acq On : 7 Jan 2025 16:27
Operator : SC
Sample : P2405139-026Dil (40mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

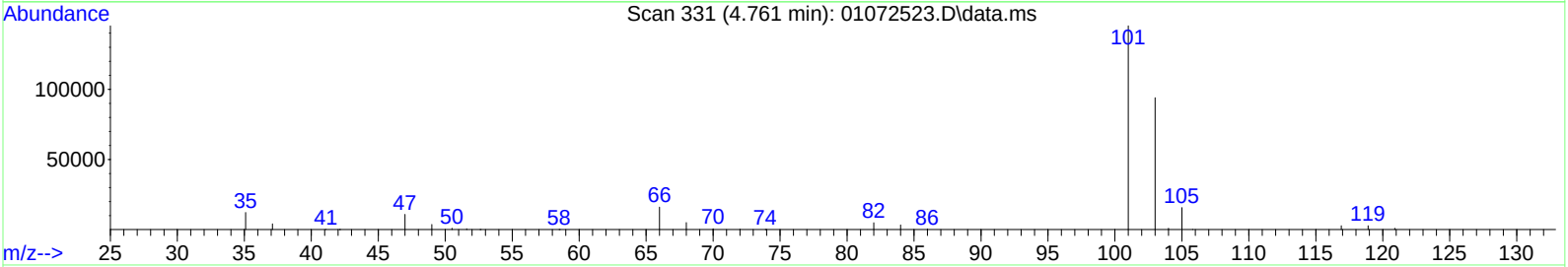
Quant Time: Jan 12 12:31:29 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

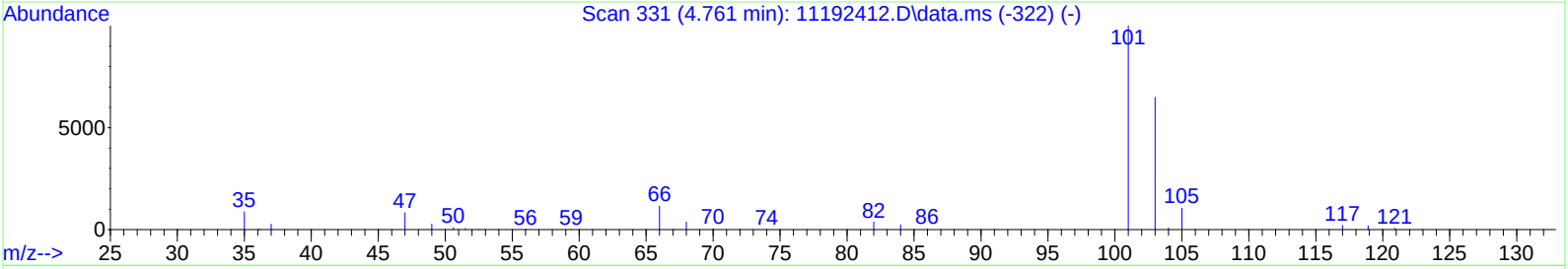


Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072523.D
Acq On : 7 Jan 2025 16:27
Operator : SC
Sample : P2405139-026Dil (40mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 12 10:46:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072523.D\data.ms

(14) Trichlorofluoromethane (T)

4.761min (+0.033) 11.21ng

response 263645

Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.33
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072519.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.313	70	76	78	rBV3	36130	53123	0.88%	0.199%
2	3.342	78	81	84	rVV	68497	114042	1.89%	0.427%
3	3.370	84	86	104	rVV	58473	107877	1.78%	0.404%
4	3.506	104	110	123	rVV	46364	68247	1.13%	0.255%
5	3.614	123	129	151	rVB	236093	371188	6.14%	1.389%
6	3.779	153	158	165	rBV	8585	10982	0.18%	0.041%
7	3.853	165	171	178	rBV	42930	53596	0.89%	0.201%
8	4.301	242	250	265	rBV	54194	120290	1.99%	0.450%
9	4.636	301	309	321	rBV2	153446	320164	5.30%	1.198%
10	4.755	321	330	341	rVV	3461638	6045813	100.00%	22.629%
11	4.852	341	347	362	rVB	45070	99386	1.64%	0.372%
12	5.045	373	381	402	rVB	87830	163352	2.70%	0.611%
13	5.340	427	433	441	rBV5	5321	13096	0.22%	0.049%
14	5.579	462	475	498	rBV	2345667	4737958	78.37%	17.734%
15	5.783	504	511	518	rBV	18820	37687	0.62%	0.141%
16	6.311	598	604	611	rBV	10693	20997	0.35%	0.079%
17	6.442	617	627	633	rBV	15648	37332	0.62%	0.140%
18	6.561	641	648	658	rVB2	12795	28820	0.48%	0.108%
19	6.669	660	667	676	rBV	8833	18620	0.31%	0.070%
20	7.237	757	767	770	rBV	304579	654673	10.83%	2.450%
21	7.282	770	775	787	rVV	630061	1445402	23.91%	5.410%
22	7.367	787	790	798	rVB2	6297	11675	0.19%	0.044%
23	7.765	853	860	869	rBB3	5887	14471	0.24%	0.054%
24	8.003	892	902	920	rBV	247675	603400	9.98%	2.259%
25	8.810	1037	1044	1052	rBV2	16978	43244	0.72%	0.162%
26	8.895	1052	1059	1072	rVB	24597	62665	1.04%	0.235%
27	9.309	1121	1132	1145	rBV	535041	1260837	20.85%	4.719%
28	9.701	1195	1201	1206	rBV3	4386	11551	0.19%	0.043%
29	10.133	1266	1277	1288	rBB	15322	39636	0.66%	0.148%
30	12.427	1670	1681	1696	rBV	689970	1603973	26.53%	6.004%
31	12.557	1696	1704	1715	rVB	55447	122532	2.03%	0.459%
32	13.227	1814	1822	1834	rBV	18796	38787	0.64%	0.145%
33	13.948	1938	1949	1972	rBV	36757	115977	1.92%	0.434%
34	14.522	2039	2050	2066	rBV	990066	2208495	36.53%	8.266%
35	14.840	2096	2106	2120	rBV	721951	1479096	24.46%	5.536%
36	15.629	2239	2245	2261	rBB4	6512	17385	0.29%	0.065%
37	15.765	2261	2269	2273	rBV4	4616	10114	0.17%	0.038%
38	15.998	2304	2310	2315	rBV	7234	13422	0.22%	0.050%
39	16.112	2323	2330	2339	rBV5	8182	16246	0.27%	0.061%
40	16.322	2358	2367	2379	rBV2	20336	53608	0.89%	0.201%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	16.822	2446	2455	2467	rBV	647269	1212765	20.06%	4.539%
42	17.424	2552	2561	2562	rBV5	5650	12019	0.20%	0.045%
43	17.480	2562	2571	2574	rVV3	15714	37242	0.62%	0.139%
44	17.520	2574	2578	2584	rVB2	16380	27595	0.46%	0.103%
45	18.042	2660	2670	2677	rVB	66169	121319	2.01%	0.454%
46	18.139	2680	2687	2695	rVB	11342	19082	0.32%	0.071%
47	18.224	2695	2702	2707	rBV2	5714	11345	0.19%	0.042%
48	18.287	2707	2713	2716	rBV3	17453	33054	0.55%	0.124%
49	18.321	2716	2719	2723	rVB4	15813	19458	0.32%	0.073%
50	18.502	2744	2751	2758	rVB	250692	402789	6.66%	1.508%
51	18.605	2763	2769	2774	rBV2	39210	62359	1.03%	0.233%
52	18.809	2798	2805	2821	rBV	951433	1391198	23.01%	5.207%
53	19.076	2845	2852	2862	rVB2	33534	83975	1.39%	0.314%
54	19.297	2885	2891	2898	rBV3	17462	29805	0.49%	0.112%
55	19.462	2914	2920	2924	rBV2	7004	10315	0.17%	0.039%
56	19.553	2932	2936	2941	rBV2	11442	16751	0.28%	0.063%
57	19.638	2945	2951	2958	rVB3	12592	22117	0.37%	0.083%
58	19.808	2972	2981	2989	rBV2	40479	63329	1.05%	0.237%
59	19.877	2989	2993	3004	rVB	11948	18909	0.31%	0.071%
60	20.348	3070	3076	3091	rVB	455538	580146	9.60%	2.171%
61	20.569	3109	3115	3124	rVB2	99077	145466	2.41%	0.544%
62	20.757	3143	3148	3156	rBV3	8559	12626	0.21%	0.047%
63	20.921	3172	3177	3186	rBV2	12182	19641	0.32%	0.074%
64	21.018	3186	3194	3199	rBV	24936	32977	0.55%	0.123%
65	21.137	3210	3215	3219	rBV2	10404	15277	0.25%	0.057%
66	21.228	3224	3231	3243	rVB	46710	65213	1.08%	0.244%

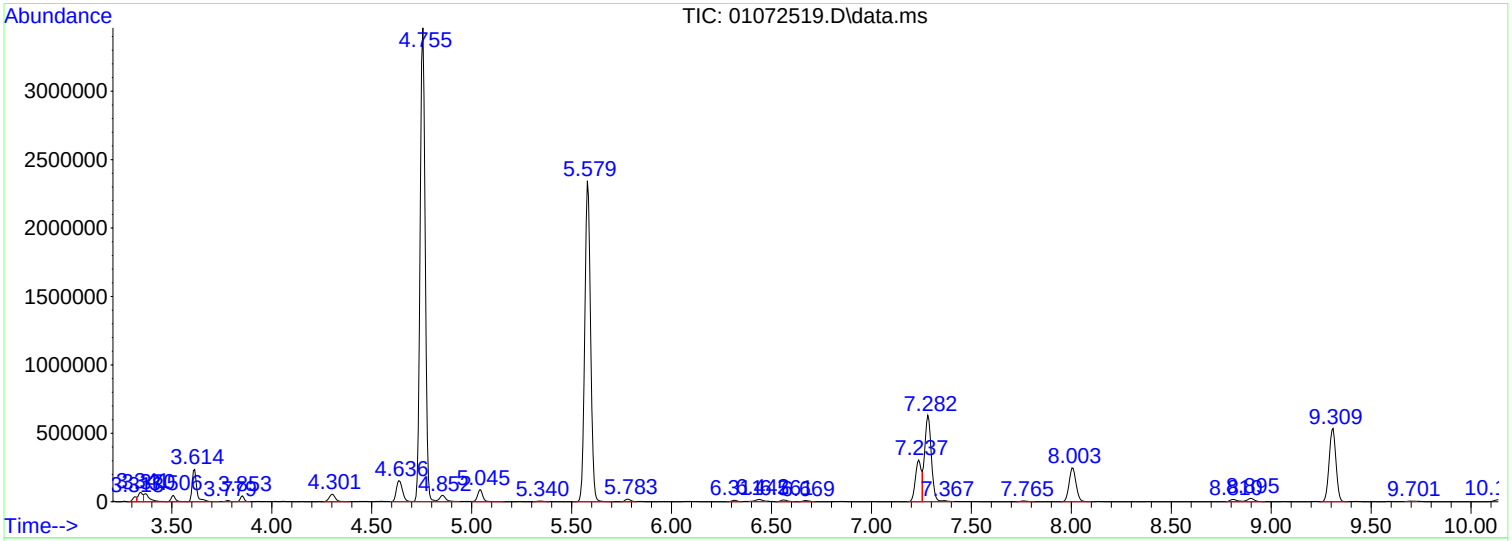
Sum of corrected areas: 26716531

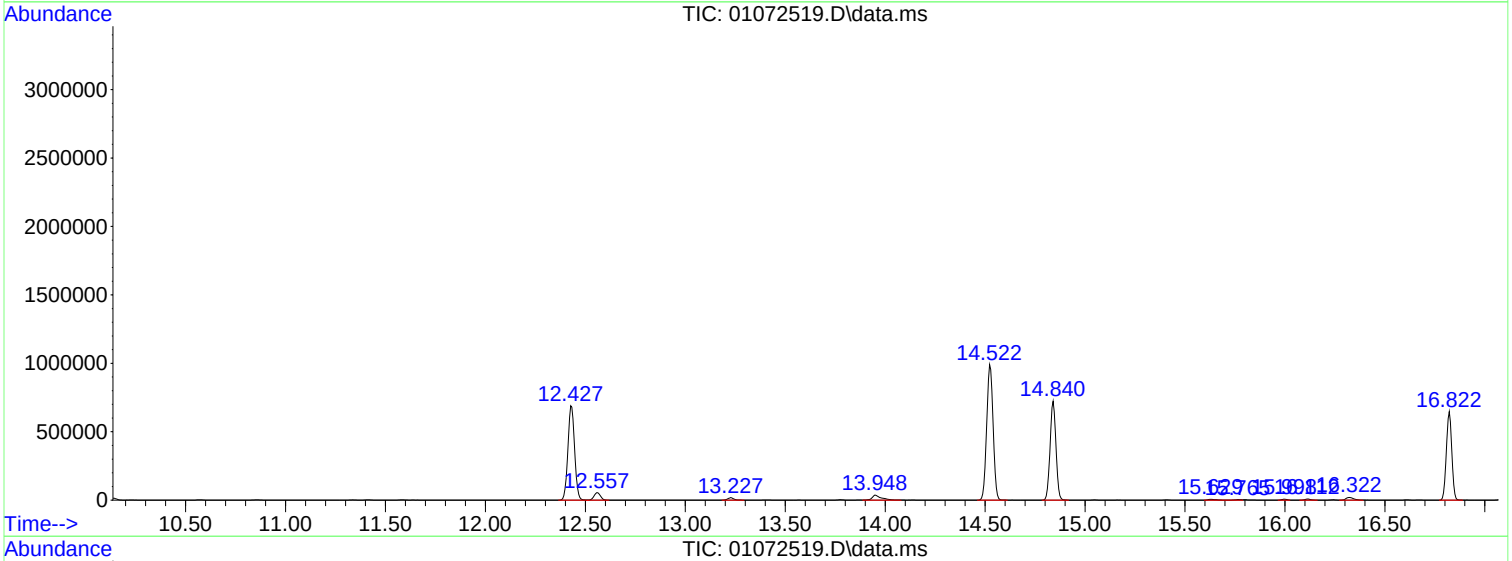
LSC Report - Integrated Chromatogram

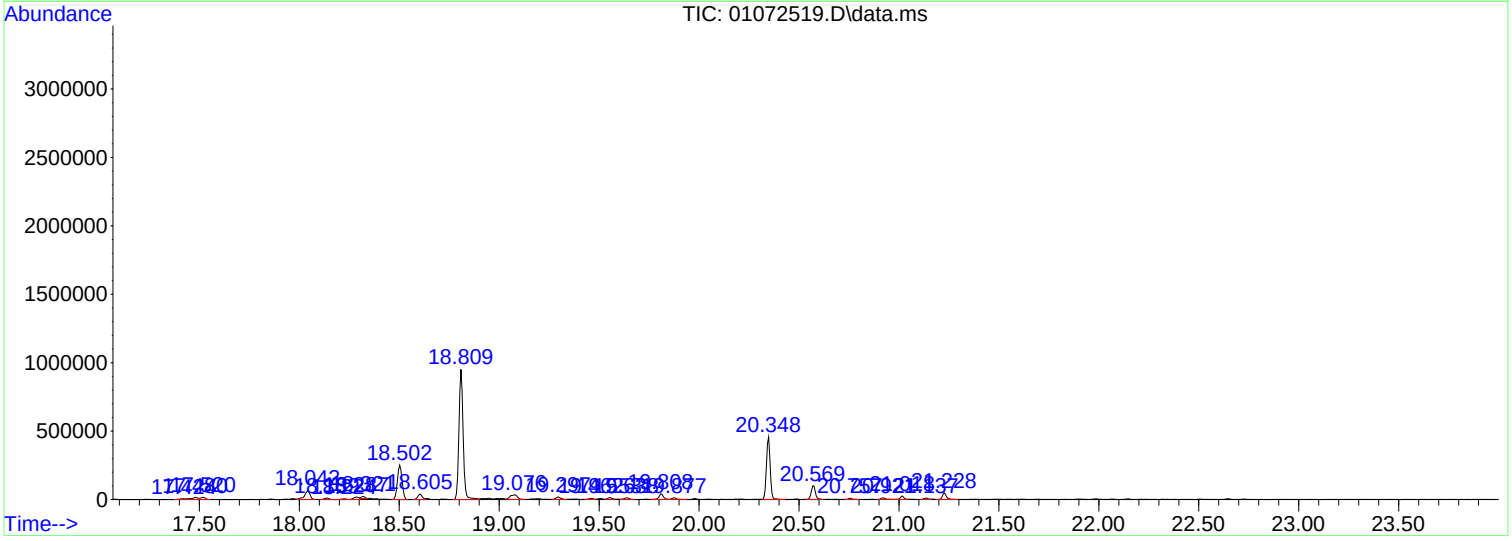
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:17
Operator : SC
Sample : P2405139-026 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072519.D
Acq On : 7 Jan 2025 14:177
Operator : SCC
Sample : P2405139-026 (400mL))
Misc : S37-123124011
ALS Vial : 11 Sample Multiplier: 11

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

MOA 1/12/25

Quant Time: Jan 12 12:35:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	128136	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	542858	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	100318	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	218273	12.503	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%				
57) Toluene-d8 (SS2)	12.43	98	563047	12.652	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.20%				
73) Bromofluorobenzene (SS3)	16.82	174	219507	14.293	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.32%				
Target Compounds							Qvalue
2) Propene	3.34	42	464	N.D.			
3) Dichlorodifluoromethan...	3.39	85	3615m	0.144	ng		
4) Chloromethane	0.00	50	0	N.D.	d		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	425	N.D.			
11) Acetonitrile	4.48	41	53	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	4648	0.539	ng		97
14) Trichlorofluoromethane	4.76	101	2387204	101.624	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	465	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.36	59	518	N.D.			
19) Methylene Chloride	5.36	84	106	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	1251508	118.085	ng		92
22) Carbon Disulfide	5.62	76	3218	0.082	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	7.31	61	253	0.059	ng	#	66
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	5584	0.268	ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	858	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.15	130	670	0.054	ng		96
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

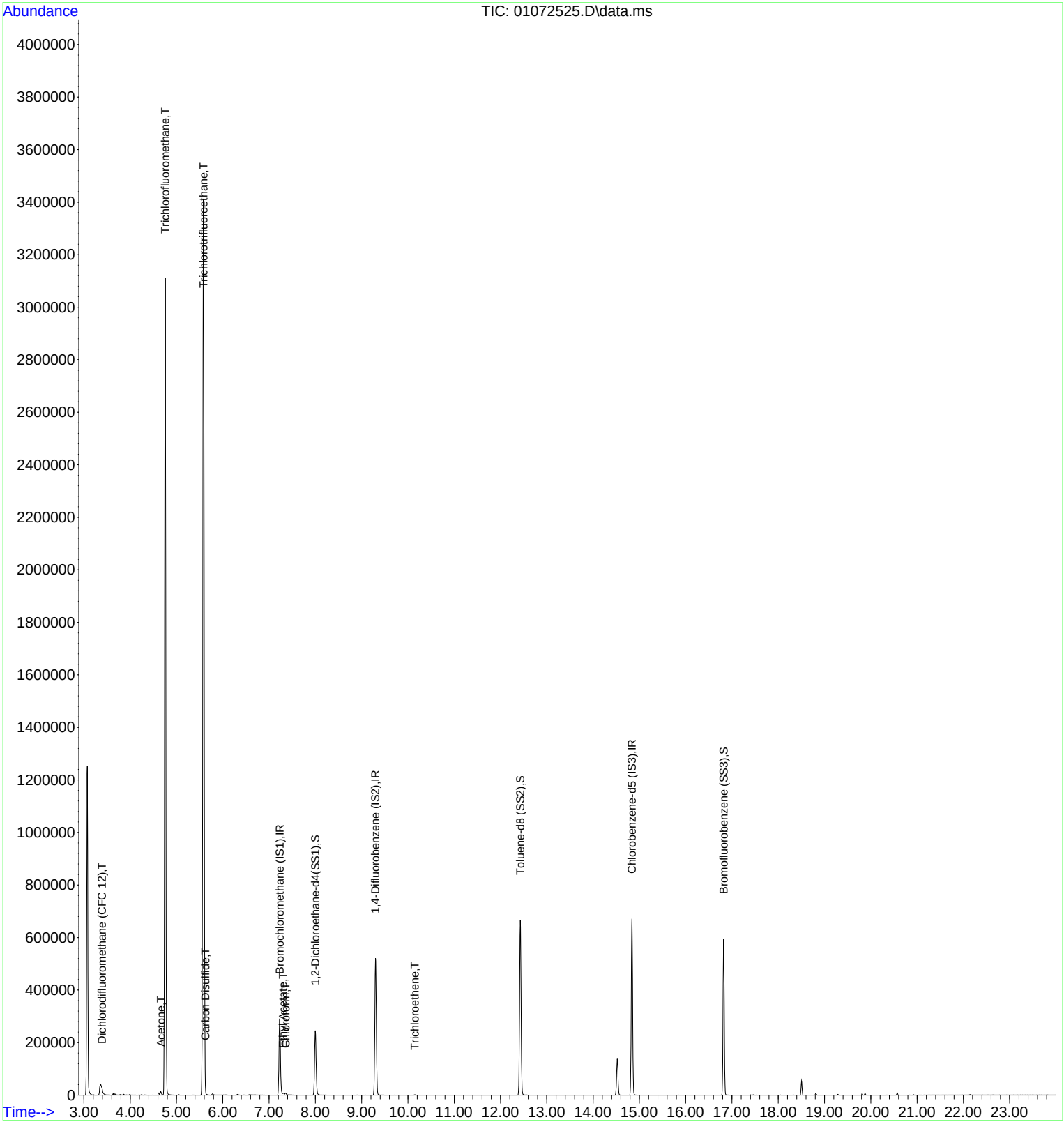
Quant Time: Jan 12 12:35:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	1073	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.50	105	184	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	201	N.D.		
95) Naphthalene	20.95	128	118	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	1029	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 12:35:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 12:35:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/12/25

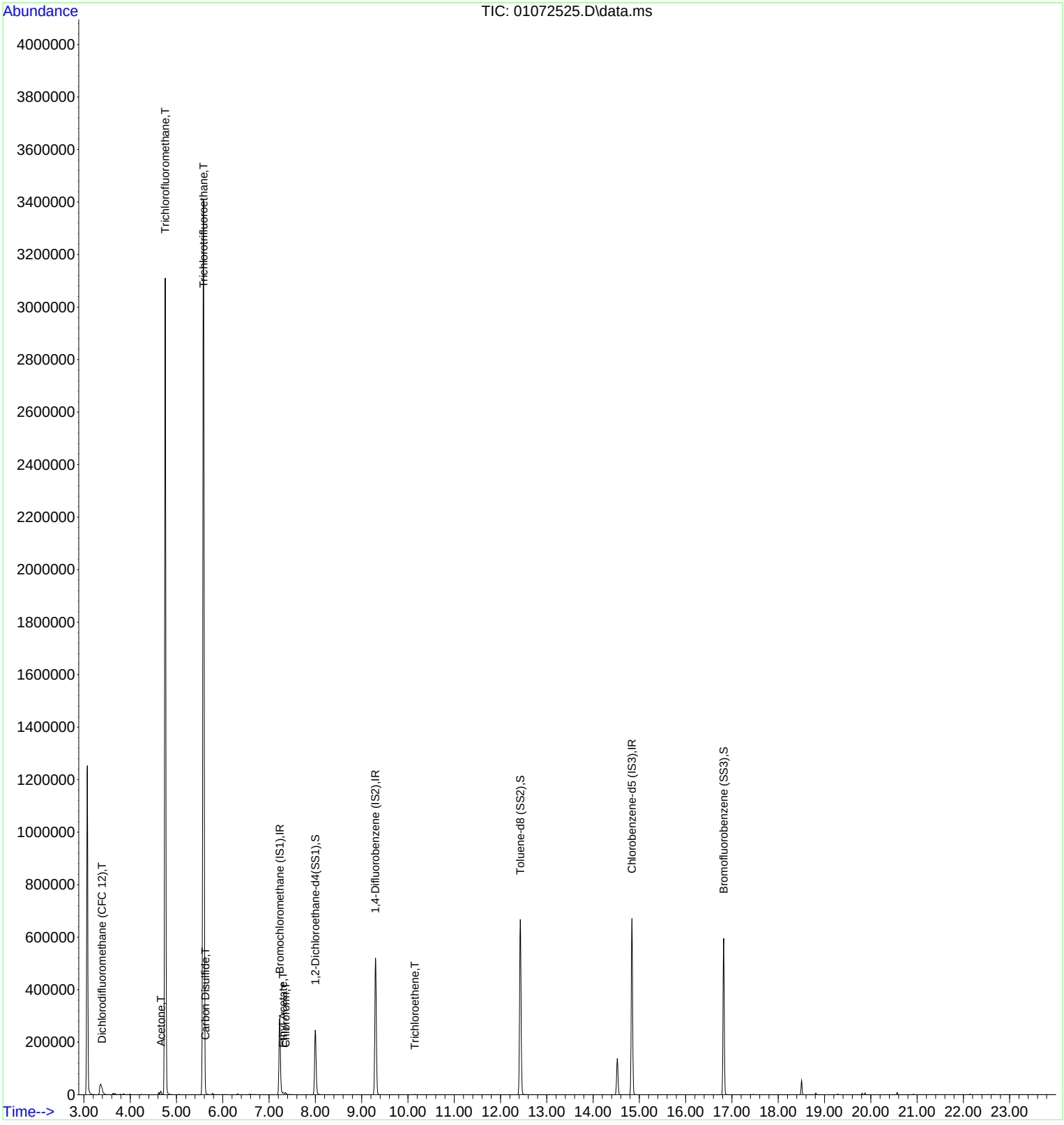
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	128136	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	542858	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	100318	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	218273	12.503	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%				
57) Toluene-d8 (SS2)	12.43	98	563047	12.652	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.20%				
73) Bromofluorobenzene (SS3)	16.82	174	219507	14.293	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.32%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	3615m	0.144	ng		
13) Acetone	4.66	58	4648	0.539	ng		97
14) Trichlorofluoromethane	4.76	101	2387204	101.624	ng		100
21) Trichlorotrifluoroethane	5.58	151	1251508	118.085	ng		92
22) Carbon Disulfide	5.62	76	3218	0.082	ng	#	1
30) Ethyl Acetate	7.31	61	253	0.059	ng	#	66
32) Chloroform	7.36	83	5584	0.268	ng		100
47) Trichloroethene	10.15	130	670	0.054	ng		96

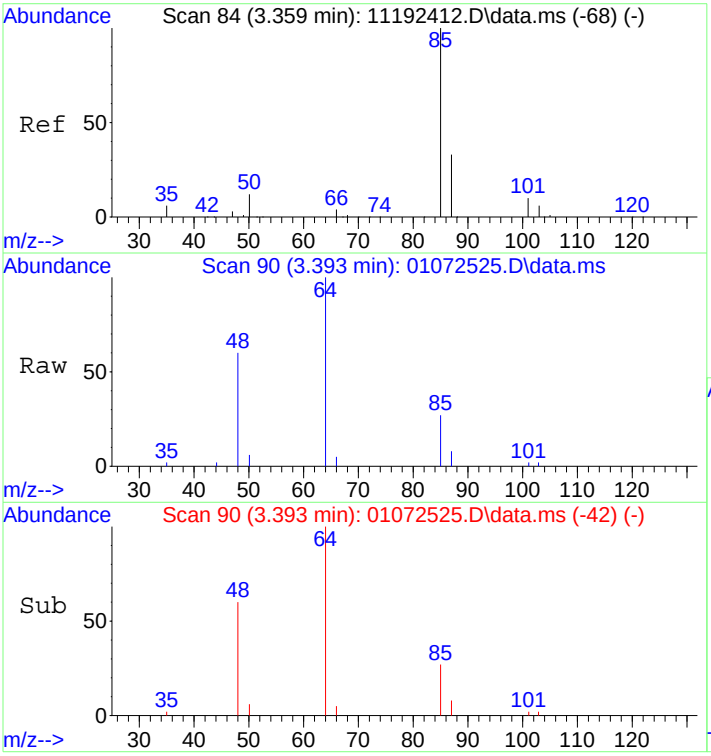
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 12:35:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

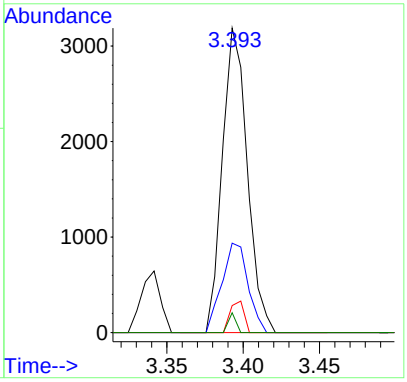


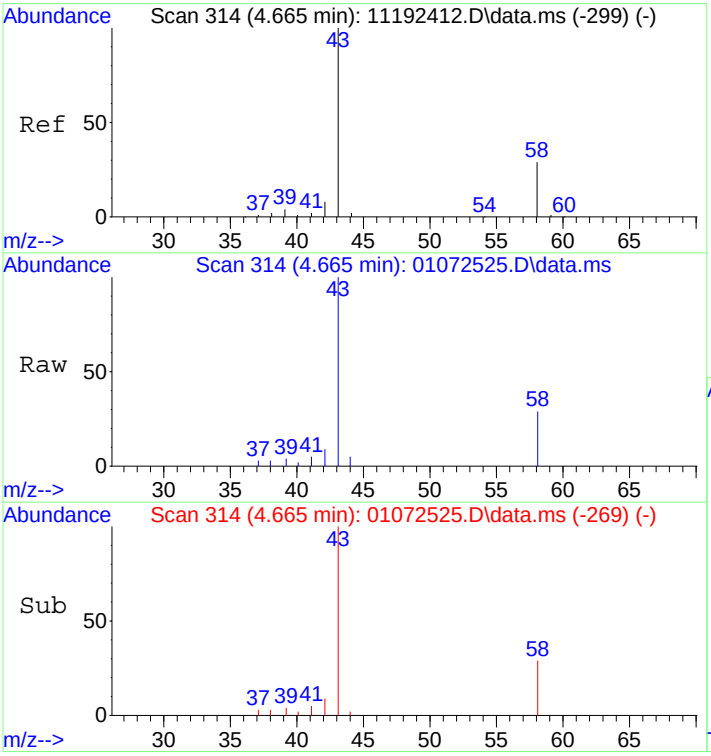


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.14 ng m
RT: 3.39 min Scan# 90
Delta R.T. 0.021 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion: 85 Resp: 3615

Ion	Ratio	Lower	Upper
85	100		
87	30.8	12.6	52.6
101	5.8	0.0	29.6
103	2.0	0.0	26.2

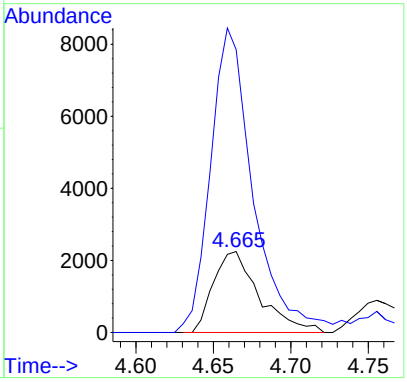


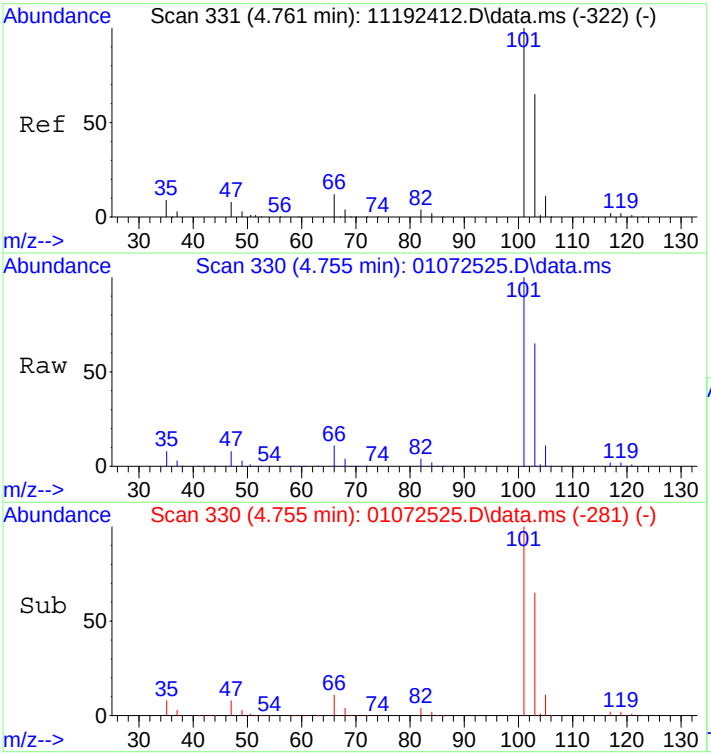


#13
Acetone
Concen: 0.54 ng
RT: 4.66 min Scan# 314
Delta R.T. 0.004 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion: 58 Resp: 4648

Ion	Ratio	Lower	Upper
58	100		
43	348.5	312.5	372.5

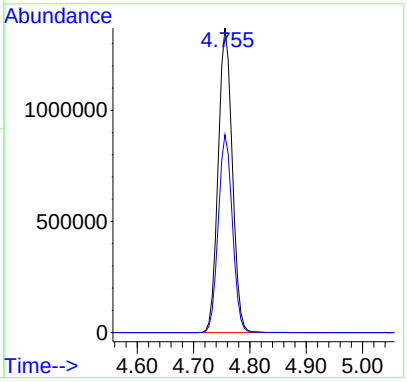


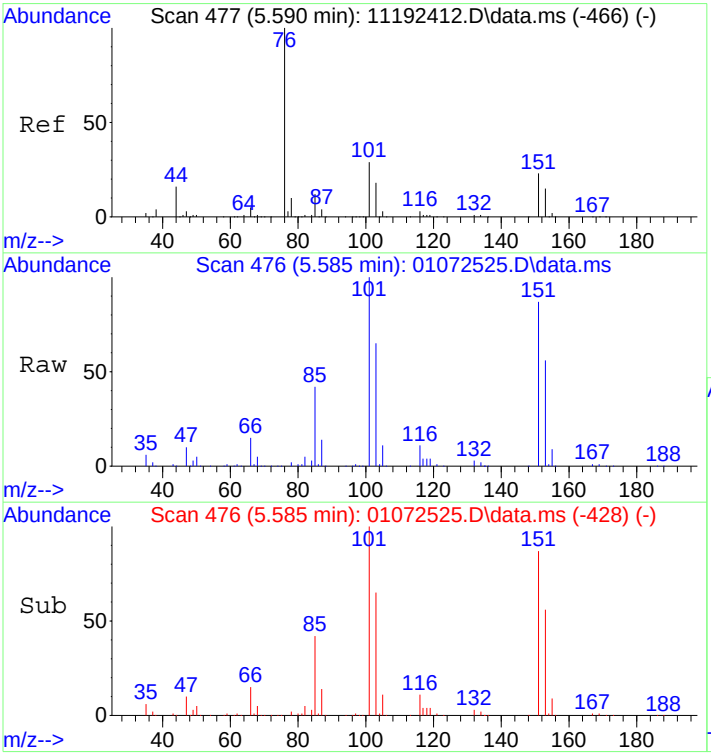


#14
Trichlorofluoromethane
Concen: 101.62 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion:101 Resp: 2387204

Ion	Ratio	Lower	Upper
101	100		
103	65.0	44.8	84.8

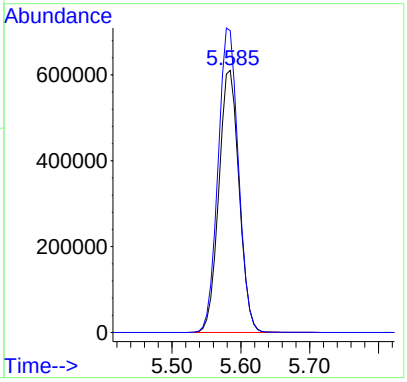


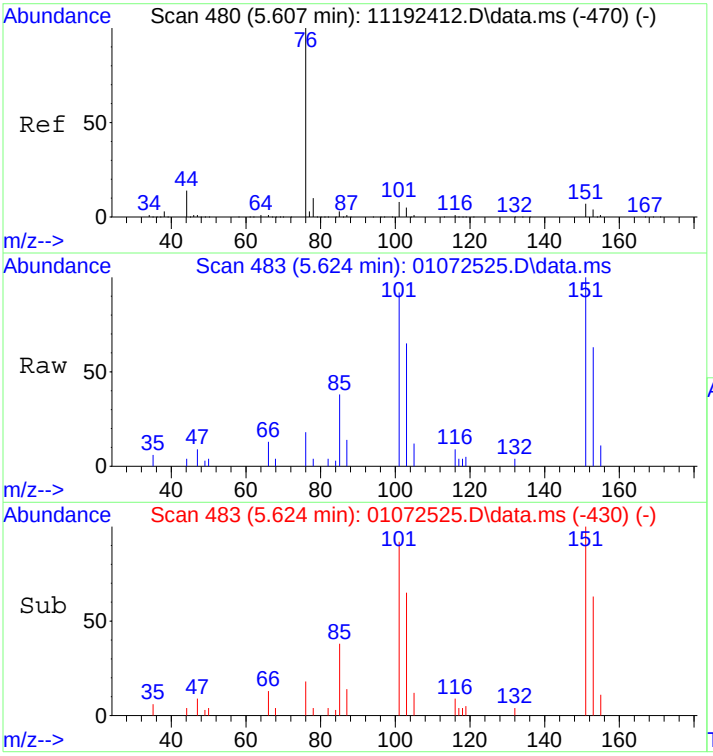


#21
Trichlorotrifluoroethane
Concen: 118.08 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion:151 Resp: 1251508

Ion	Ratio	Lower	Upper
151	100		
101	116.3	105.0	145.0

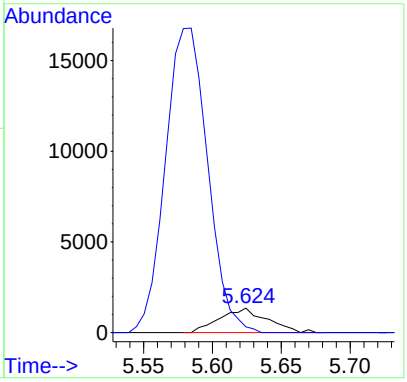


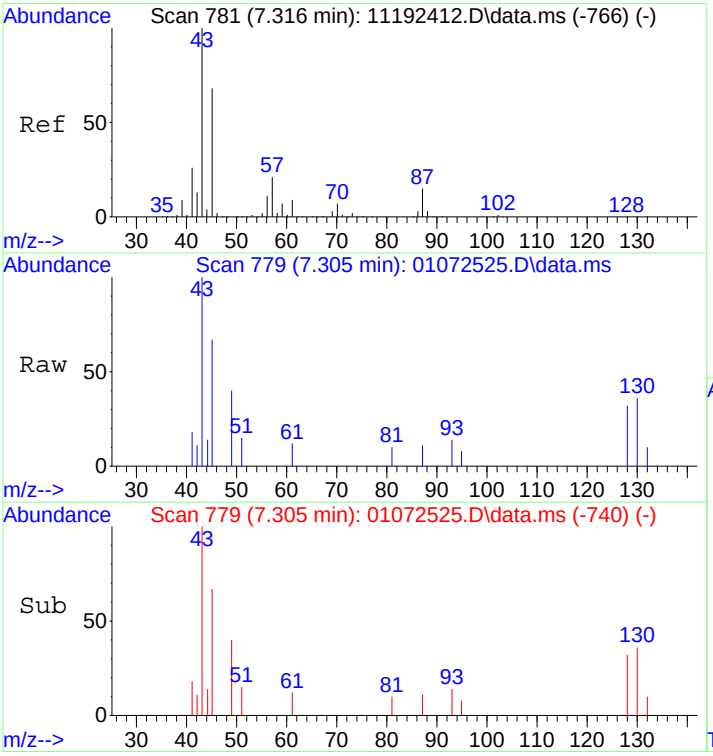


#22
Carbon Disulfide
Concen: 0.08 ng
RT: 5.62 min Scan# 483
Delta R.T. 0.053 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion: 76 Resp: 3218

Ion	Ratio	Lower	Upper
76	100		
78	1113.6	0.0	29.6#

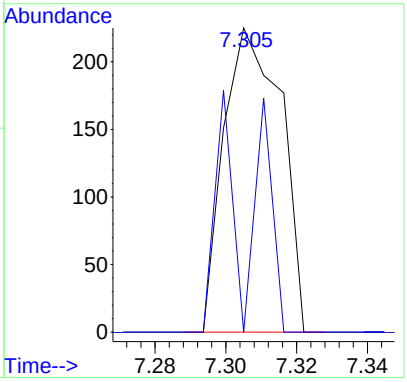


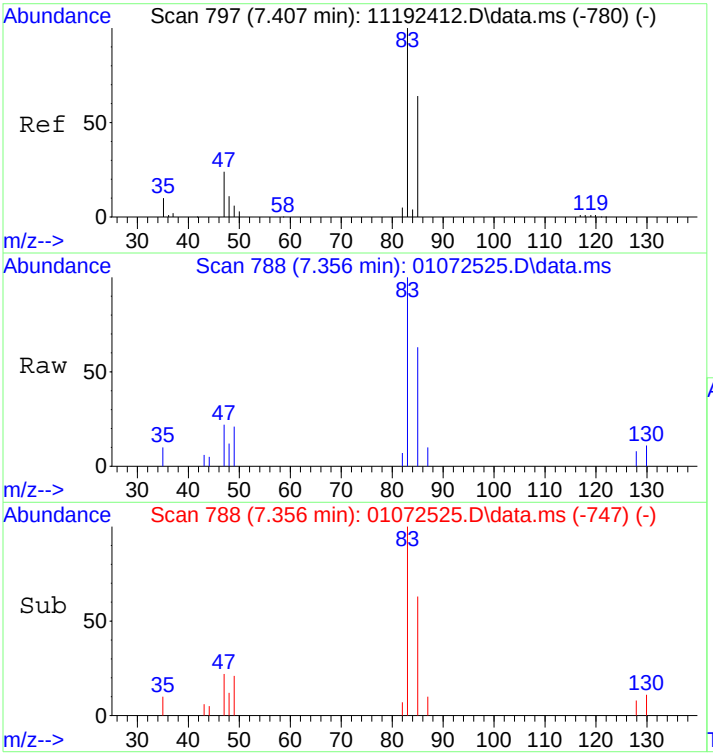


#30
Ethyl Acetate
Concen: 0.06 ng
RT: 7.31 min Scan# 779
Delta R.T. 0.023 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion: 61 Resp: 253

Ion	Ratio	Lower	Upper
61	100		
70	47.4	57.3	97.3#

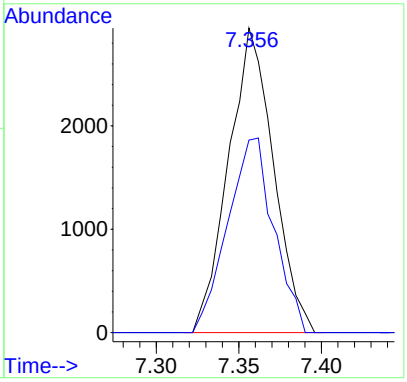


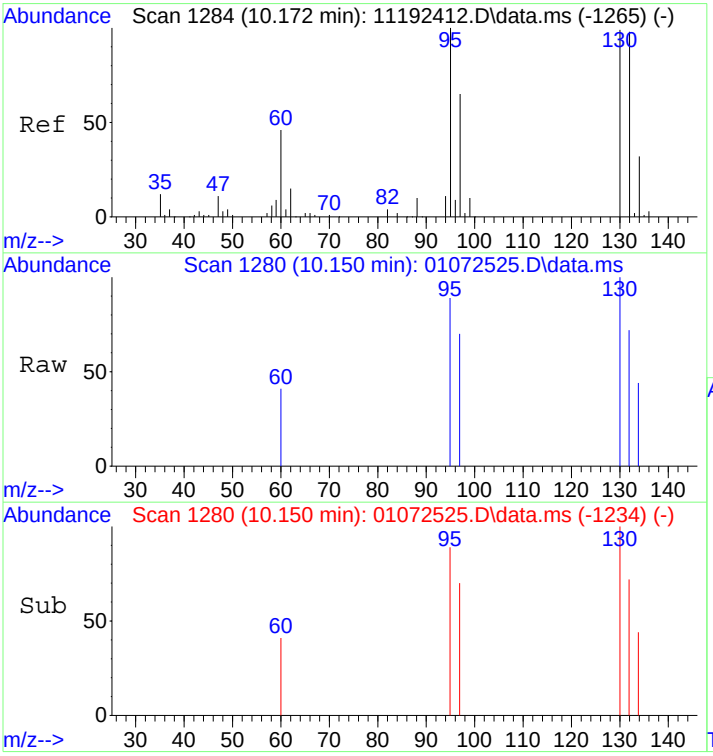


#32
Chloroform
Concen: 0.27 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion: 83 Resp: 5584

Ion	Ratio	Lower	Upper
83	100		
85	65.5	45.1	85.1

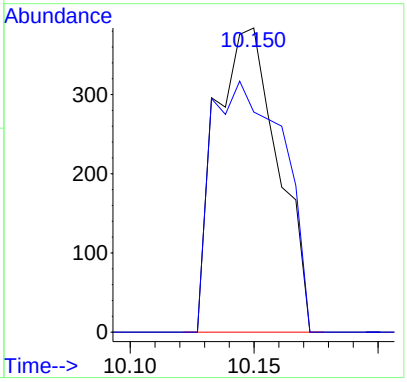




#47
Trichloroethene
Concen: 0.05 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01072525.D
Acq: 7 Jan 2025 17:38

Tgt Ion:130 Resp: 670

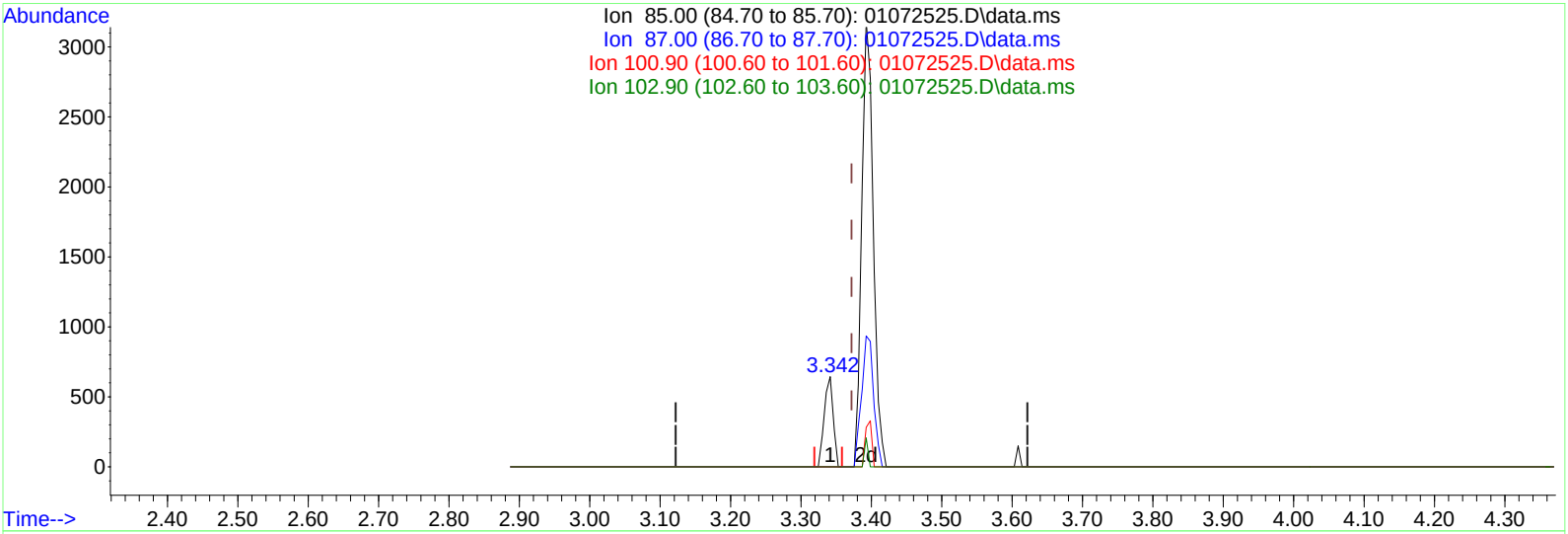
Ion	Ratio	Lower	Upper
130	100		
132	95.5	79.3	119.3

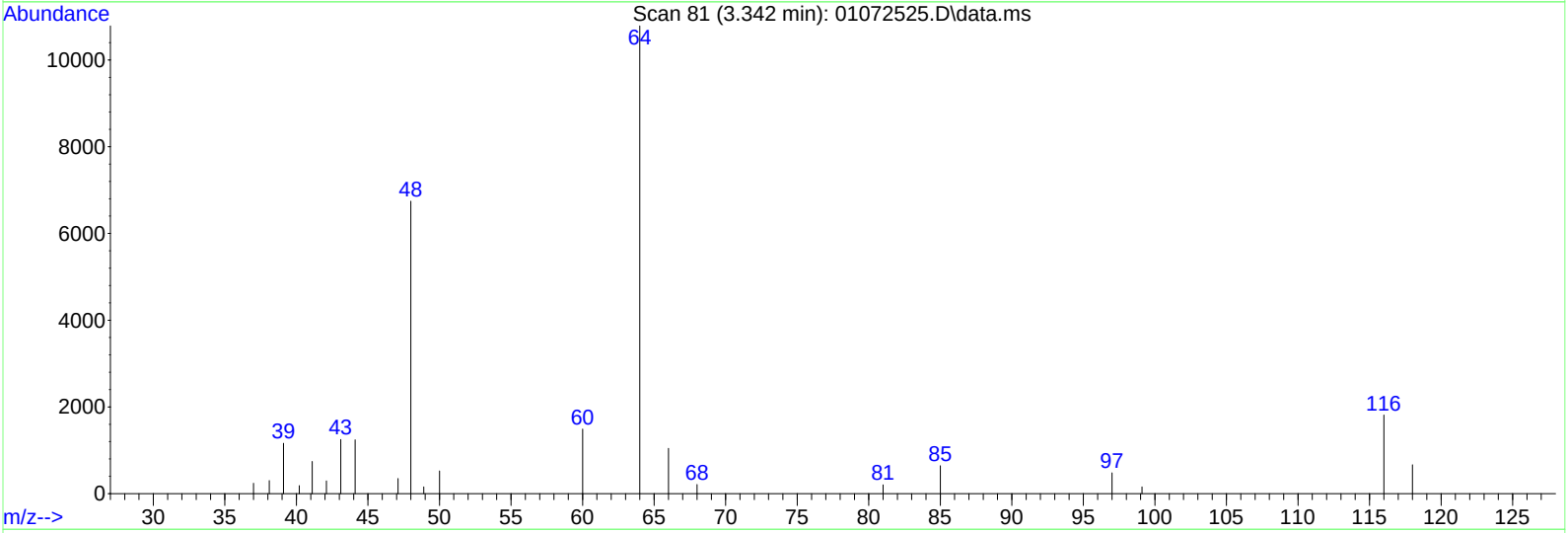


Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 12:32:52 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration





TIC: 01072525.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.342min (-0.030) 0.02ng

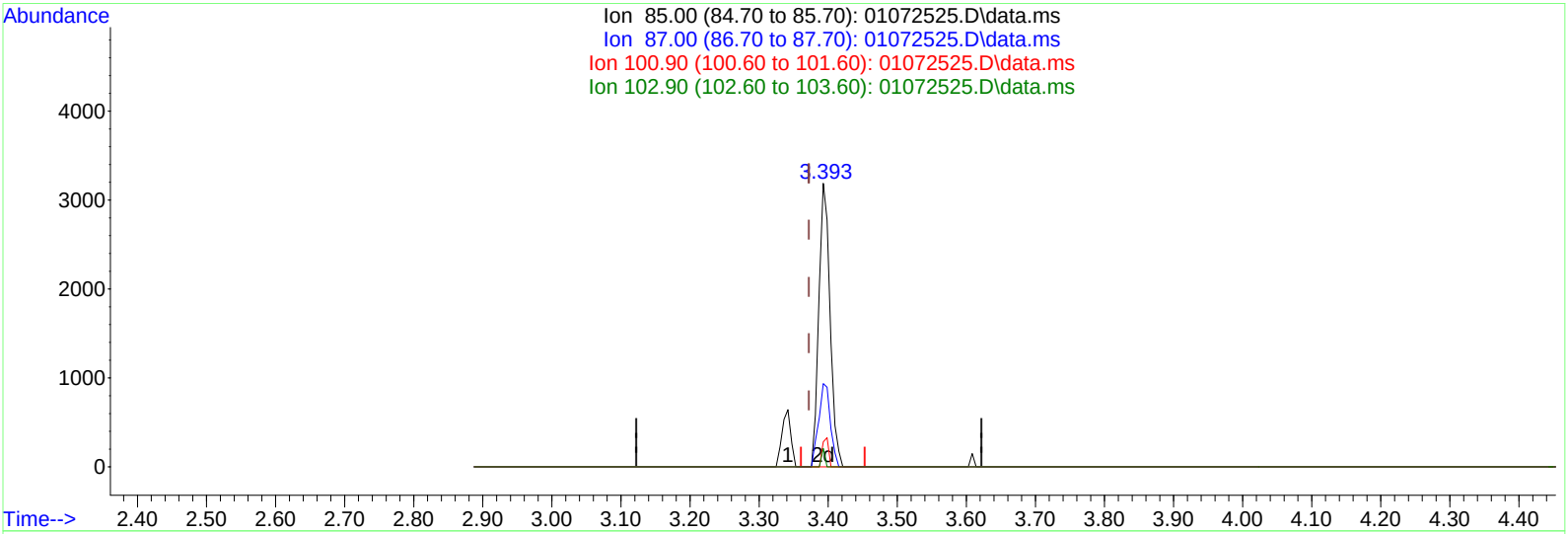
response 568

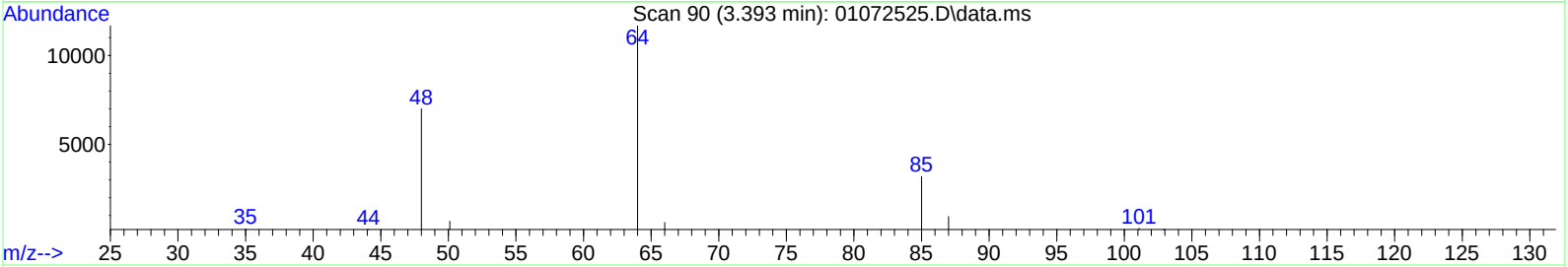
Ion	Exp%	Act%
85.00	100	100
87.00	32.60	0.00#
100.90	9.60	0.00
102.90	6.20	0.00

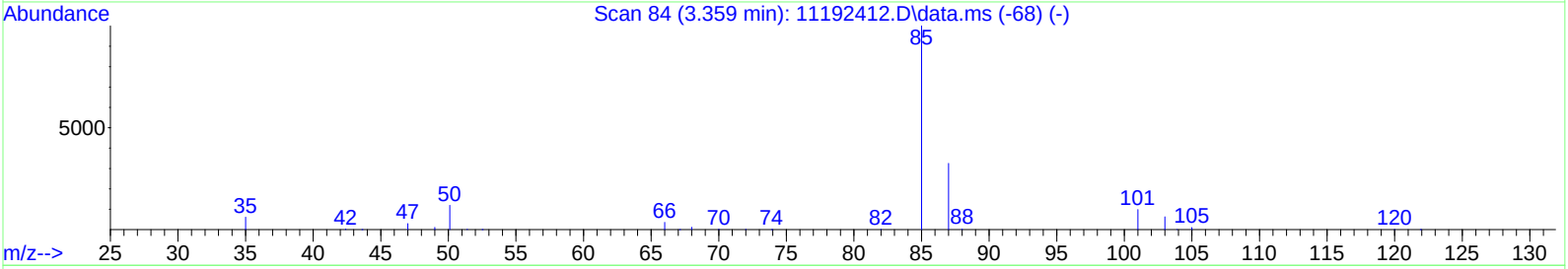
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 12:32:52 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072525.D\data.ms

(3) Dichlorodifluoromethane (CFC 12) (T)

3.393min (+0.021) 0.14ng m

response 3615

Ion	Exp%	Act%
85.00	100	100
87.00	32.60	30.76
100.90	9.60	5.78
102.90	6.20	1.96

MP

1/12/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 13:28:50 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

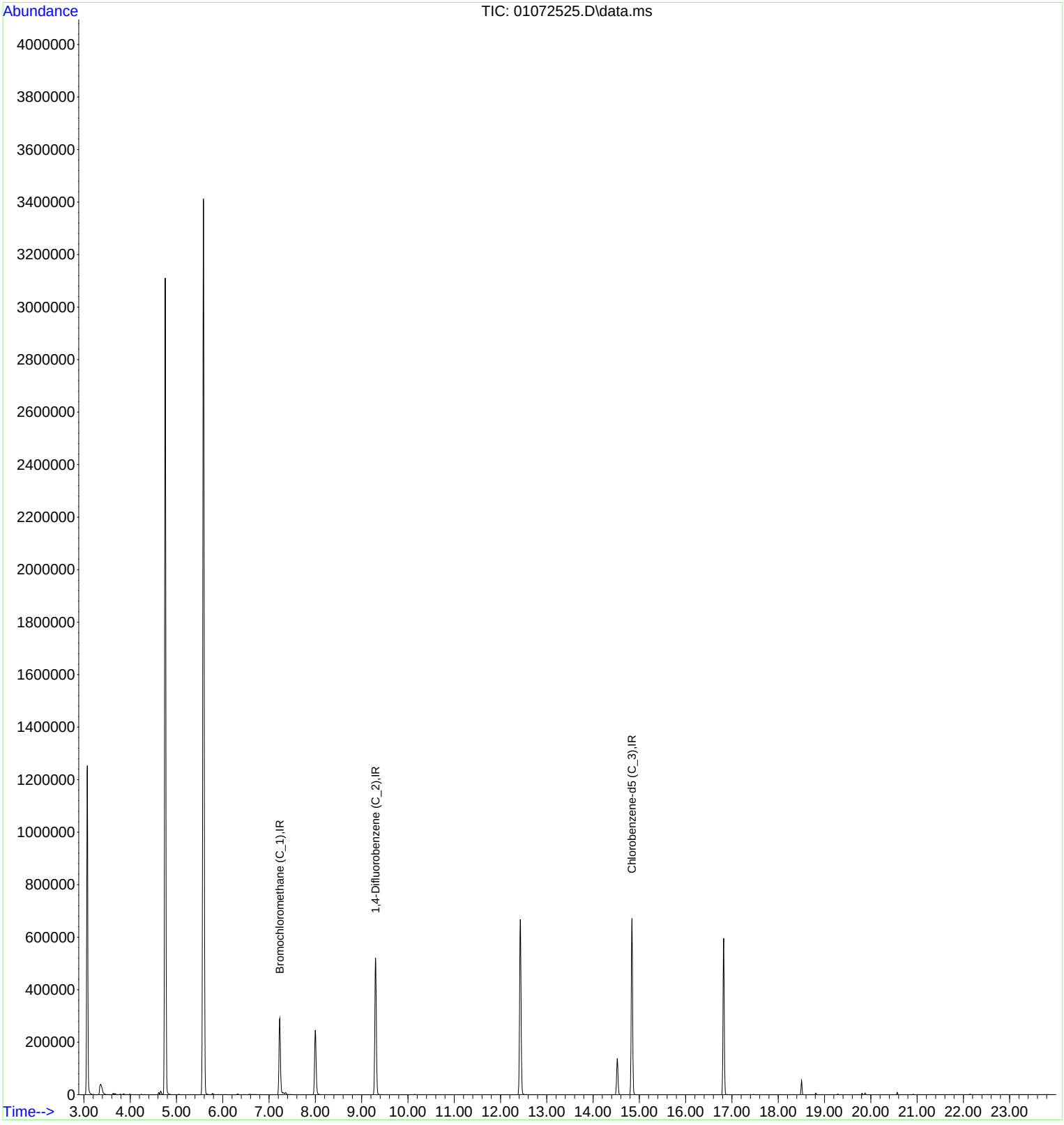
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	129146	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	543797	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	100318	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	252	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.24	67	1779	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.62	83	153	N.D.		
10) 2-Methylbutane	4.65	57	406	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 13:28:50 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072520.D
Acq On : 7 Jan 2025 14:49
Operator : SC
Sample : P2405139-027 Dil(40mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 10:46:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	134255	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	573981	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	106928	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	227560	12.441	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
57) Toluene-d8 (SS2)	12.43	98	596906	12.584	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
73) Bromofluorobenzene (SS3)	16.82	174	231814	14.161	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.28%				
Target Compounds							Qvalue
2) Propene	3.34	42	256	N.D.			
3) Dichlorodifluoromethan...	3.39	85	1385	0.053	ng	#	90
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	321	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	1950	0.216	ng	#	76
14) Trichlorofluoromethane	4.75	101	1040867	42.290	ng		100
15) 2-Propanol (Isopropanol)	4.89	45	61	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	539424	48.577	ng		93
22) Carbon Disulfide	5.63	76	1851	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.35	87	113	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.35	83	2384	0.109	ng		96
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.91	78	1115	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.16	130	188	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072520.D
Acq On : 7 Jan 2025 14:49
Operator : SC
Sample : P2405139-027 Dil(40mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

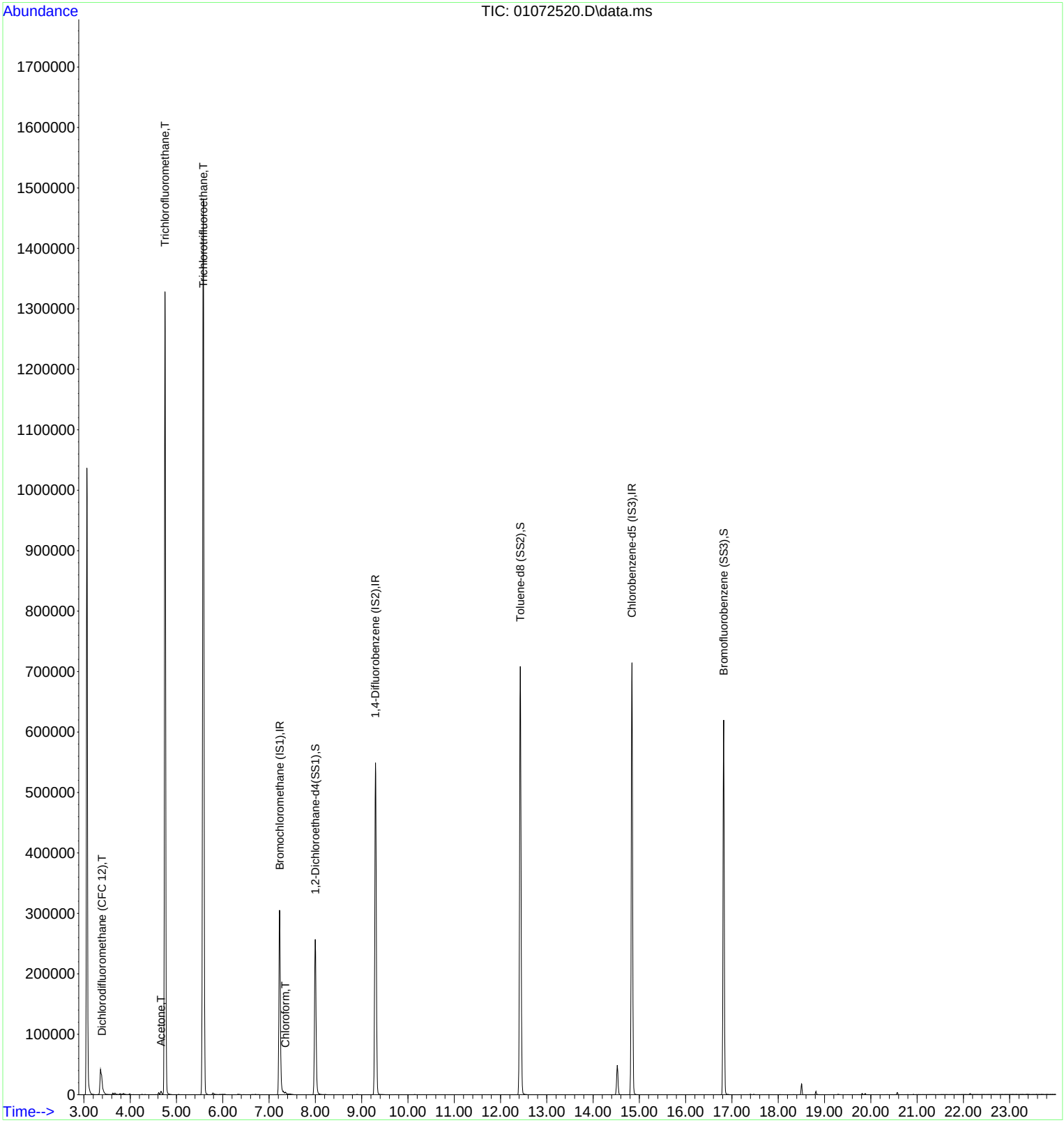
Quant Time: Jan 12 10:46:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	378	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.51	119	373	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

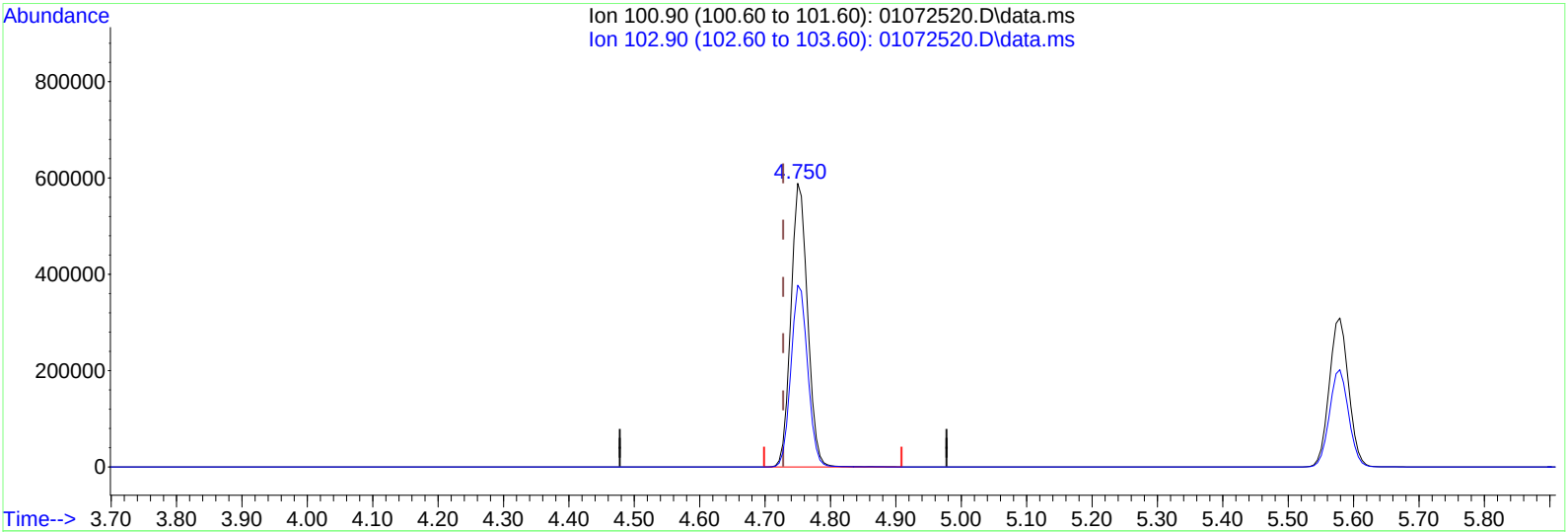
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072520.D
Acq On : 7 Jan 2025 14:49
Operator : SC
Sample : P2405139-027 Dil(40mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

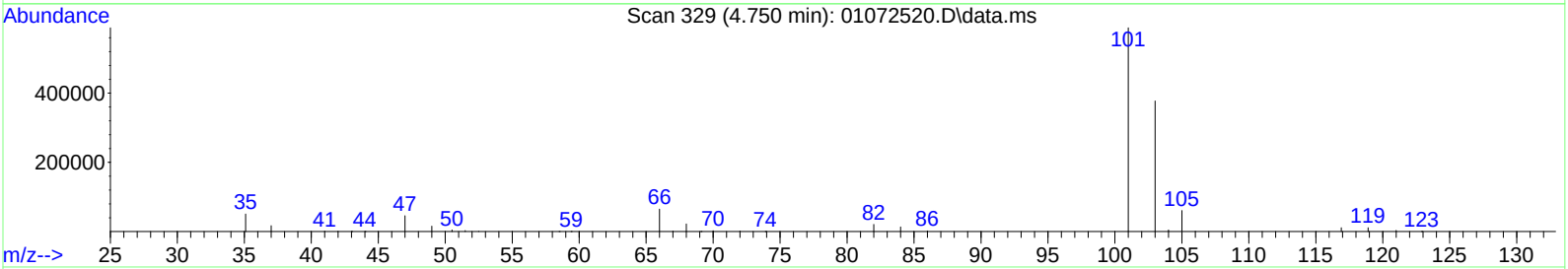
Quant Time: Jan 12 10:46:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

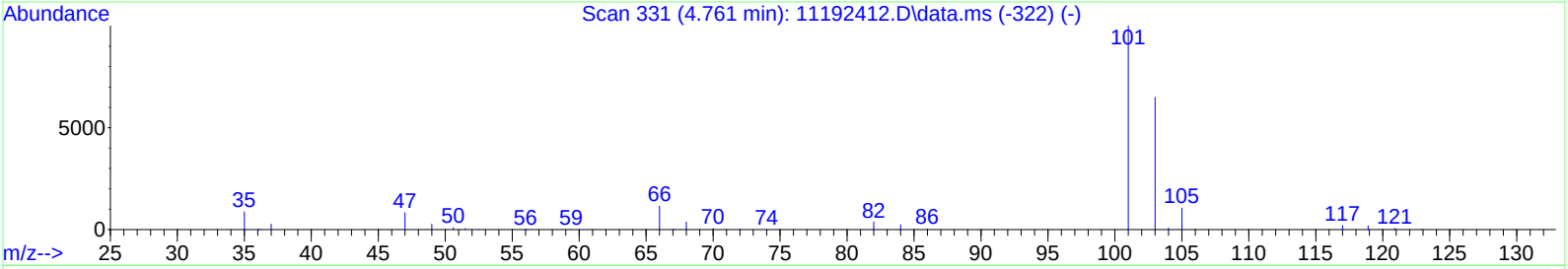


Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072520.D
Acq On : 7 Jan 2025 14:49
Operator : SC
Sample : P2405139-027 Dil(40mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 10:46:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072520.D\data.ms

(14) Trichlorofluoromethane (T)

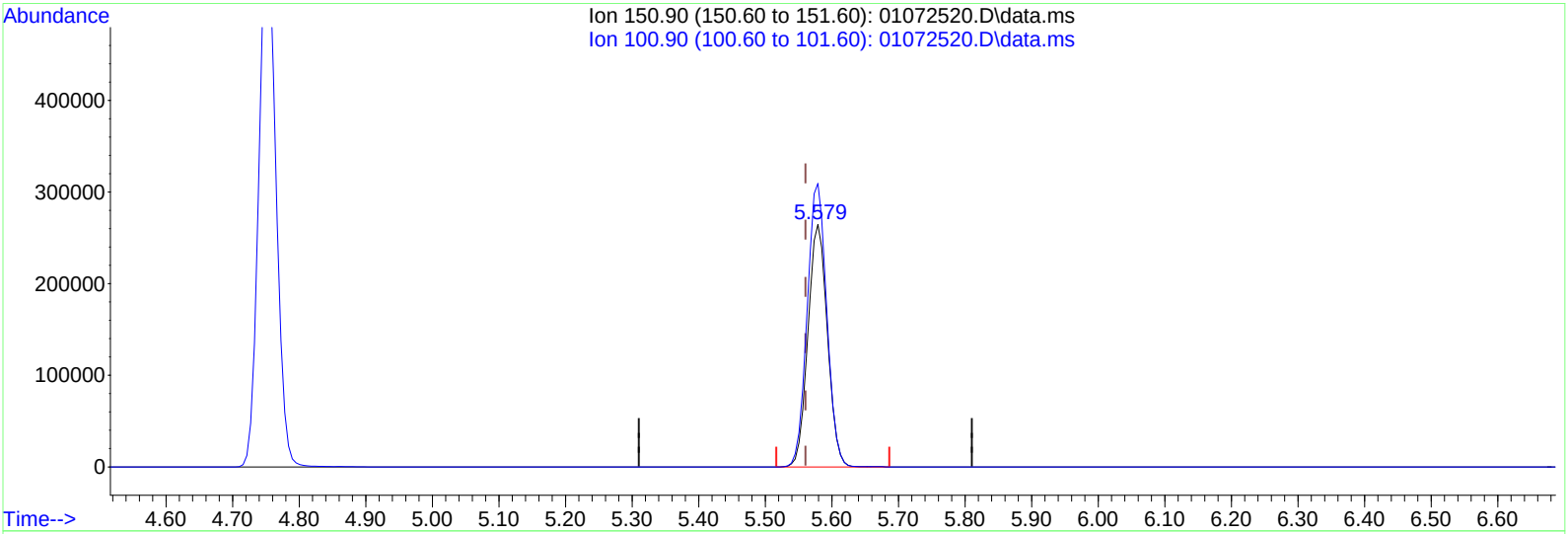
4.750min (+0.022) 42.29ng

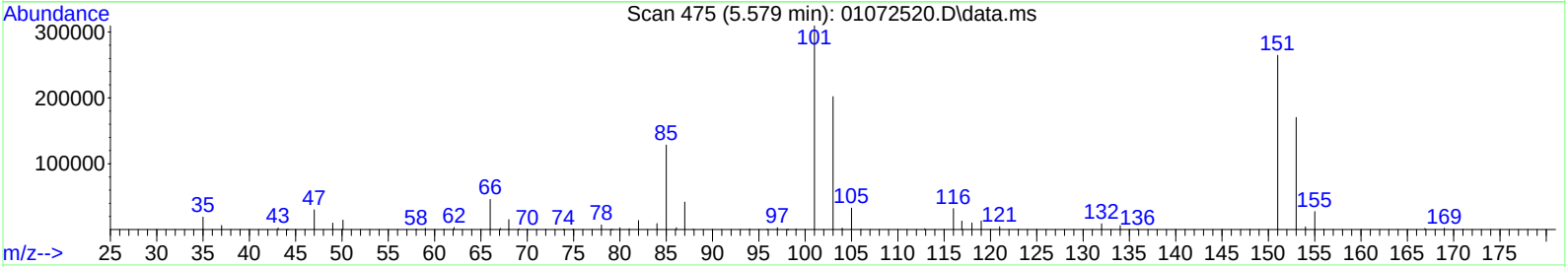
response 1040867

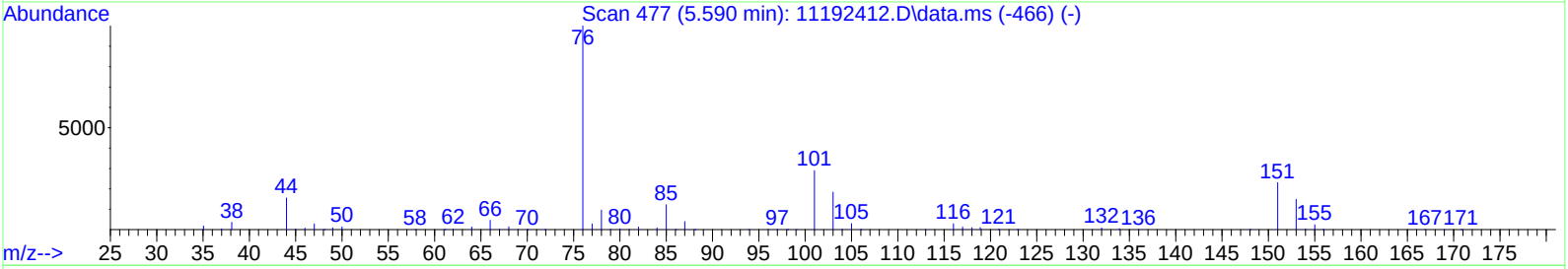
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.49
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072520.D
Acq On : 7 Jan 2025 14:49
Operator : SC
Sample : P2405139-027 Dil(40mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 10:46:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072520.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.019) 48.58ng

response 539424

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	117.40
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072525.D\data.ms

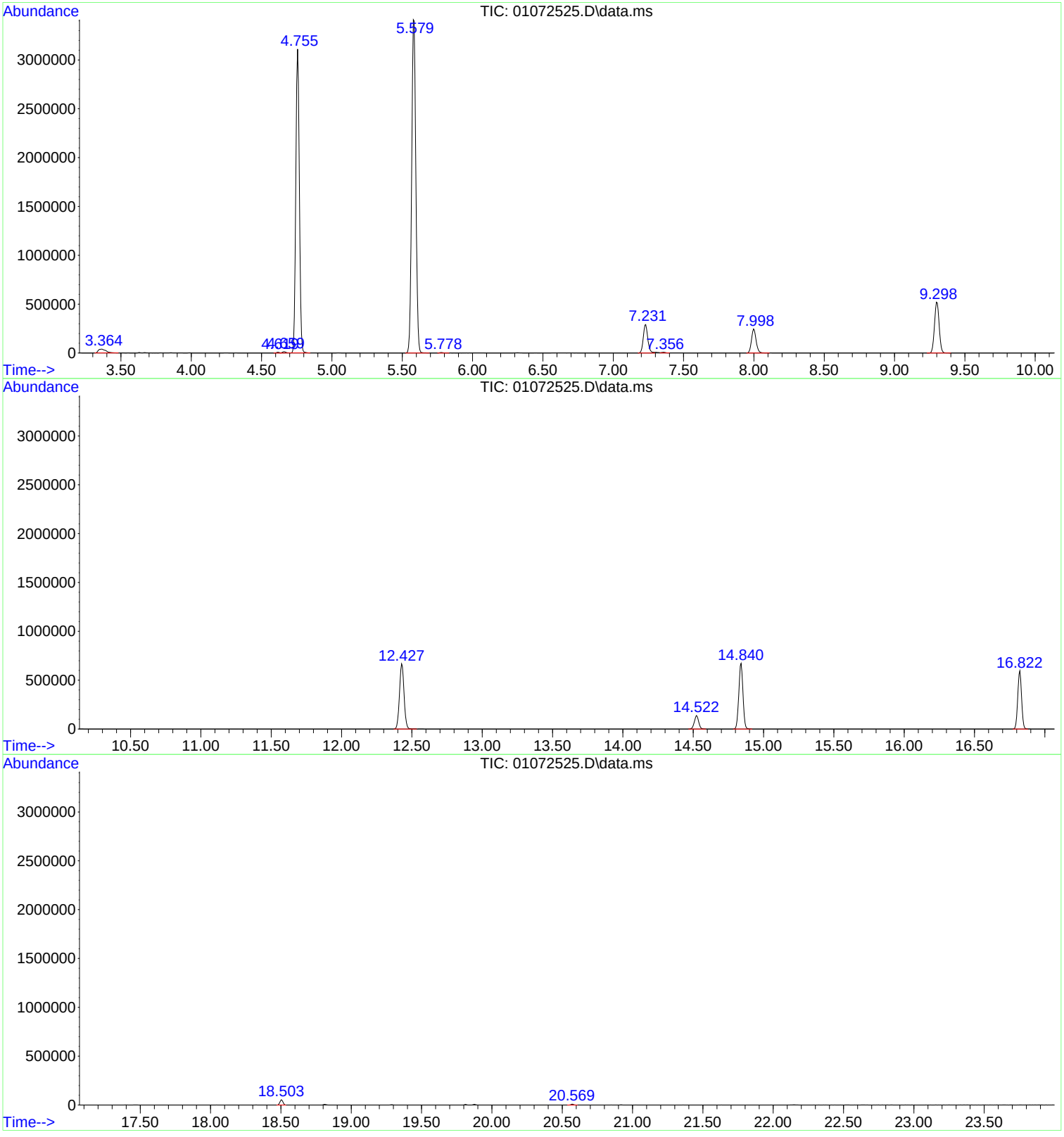
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.364	76	85	106	rVB2	39159	149004	2.12%	0.767%
2	4.619	300	306	309	rBV	8159	12101	0.17%	0.062%
3	4.659	309	313	322	rVV	13205	23816	0.34%	0.123%
4	4.755	322	330	346	rVV	3109722	5409703	77.06%	27.839%
5	5.579	465	475	495	rBV	3413219	7020004	100.00%	36.126%
6	5.778	505	510	520	rBV	5347	11430	0.16%	0.059%
7	7.231	756	766	777	rBV	291143	649168	9.25%	3.341%
8	7.356	784	788	796	rVB	7199	13887	0.20%	0.071%
9	7.998	892	901	921	rBV	246191	565021	8.05%	2.908%
10	9.298	1118	1130	1148	rBV	520895	1190502	16.96%	6.126%
11	12.427	1671	1681	1700	rBV	667903	1508920	21.49%	7.765%
12	14.522	2040	2050	2062	rBV	138083	293097	4.18%	1.508%
13	14.840	2096	2106	2120	rBV	671728	1381401	19.68%	7.109%
14	16.822	2446	2455	2465	rBV	595545	1111184	15.83%	5.718%
15	18.503	2745	2751	2757	rBB2	54396	80821	1.15%	0.416%
16	20.569	3109	3115	3122	rBB2	8753	12201	0.17%	0.063%

Sum of corrected areas: 19432260

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:38
Operator : SC
Sample : P2405139-027 (100mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072525.D
Acq On : 7 Jan 2025 17:388
Operator : SCC
Sample : P2405139-027 (100mL))
Misc : S37-123124011
ALS Vial : 12 Sample Multiplier: 11

MOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 10:46:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	127820	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	549408	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	102224	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	222484	12.776	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%			
57) Toluene-d8 (SS2)	12.43	98	569669	12.562	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%			
73) Bromofluorobenzene (SS3)	16.82	174	223073	14.254	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.00%			
Target Compounds						Qvalue
2) Propene	3.34	42	534	N.D.		
3) Dichlorodifluoromethan...	3.39	85	14803	0.592	ng	99
4) Chloromethane	3.53	50	2483	0.134	ng	90
5) 1,2-Dichloro-1,1,2,2-t...	3.64	135	269	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.31	45	1467	0.155	ng	93
11) Acetonitrile	4.47	41	443	N.D.		
12) Acrolein	4.56	56	176	N.D.		
13) Acetone	4.65	58	6464	0.751	ng	98
14) Trichlorofluoromethane	4.78	101	7546	0.322	ng	96
15) 2-Propanol (Isopropanol)	4.87	45	841	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.36	84	905	0.075	ng	94
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.60	151	1780	0.168	ng	90
22) Carbon Disulfide	5.63	76	1448	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.70	72	485	0.070	ng #	48
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.36	83	198	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.85	56	312	No Calib #		
41) Benzene	8.90	78	2598	0.059	ng	90
42) Carbon Tetrachloride	9.06	117	1992	0.113	ng	97
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 12 10:46:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

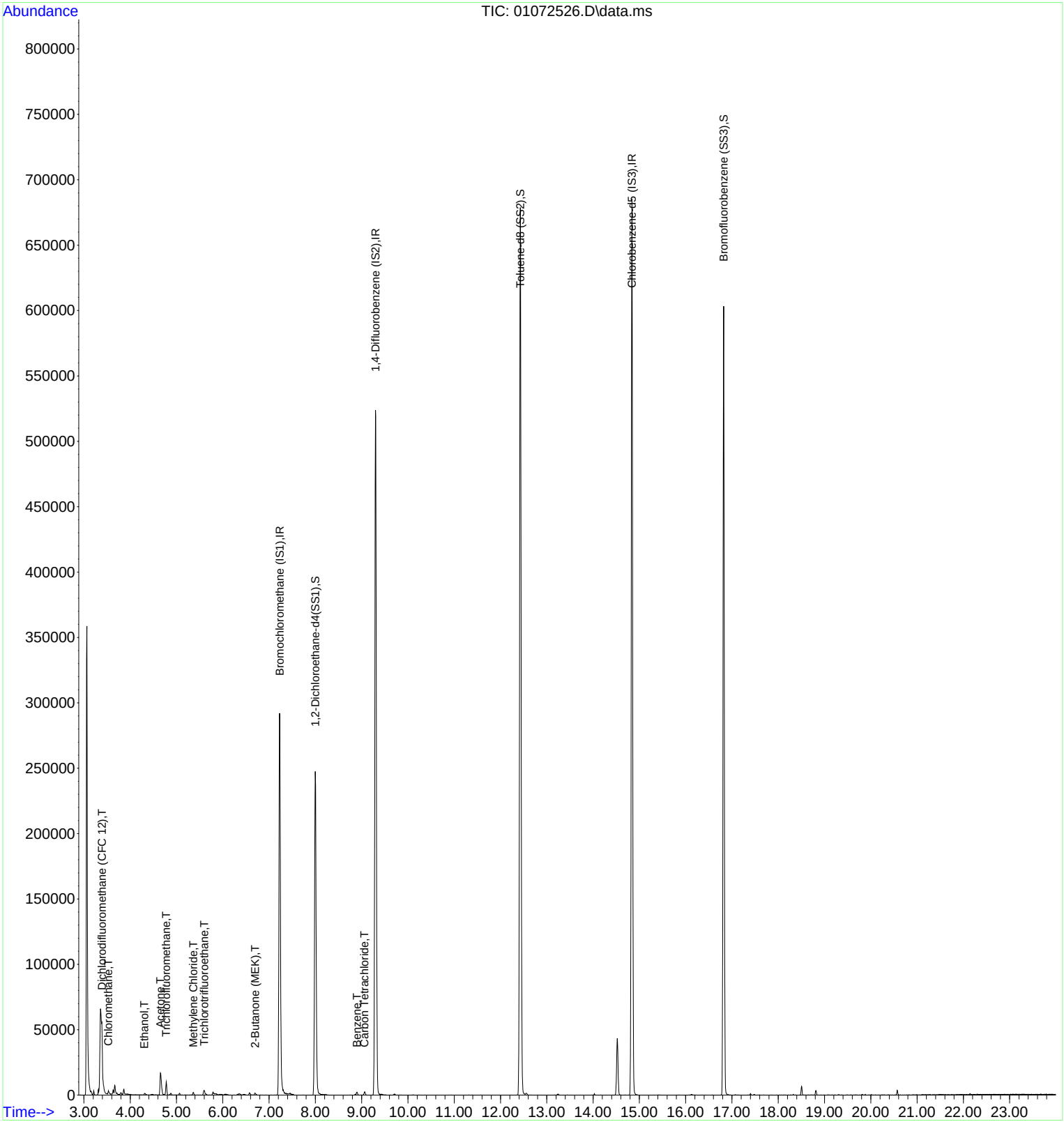
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0			N.D.
50) Methyl Methacrylate	0.00	100	0			N.D.
51) n-Heptane	0.00	71	0			N.D.
52) cis-1,3-Dichloropropene	0.00	75	0			N.D.
53) 4-Methyl-2-pentanone	0.00	58	0			N.D.
54) trans-1,3-Dichloropropene	0.00	75	0			N.D.
55) 1,1,2-Trichloroethane	0.00	97	0			N.D.
58) Toluene	12.56	91	1522			N.D.
59) 2-Hexanone	0.00	43	0			N.D.
60) Dibromochloromethane	0.00	129	0			N.D.
61) 1,2-Dibromoethane	0.00	107	0			N.D.
62) n-Butyl Acetate	0.00	43	0			N.D.
63) n-Octane	0.00	57	0			N.D.
64) Tetrachloroethene	14.03	166	373			N.D.
65) Chlorobenzene	0.00	112	0			N.D.
66) Ethylbenzene	0.00	91	0			N.D.
67) m- & p-Xylenes	0.00	91	0			N.D.
68) Bromoform	0.00	173	0			N.D.
69) Styrene	0.00	104	0			N.D.
70) o-Xylene	0.00	91	0			N.D.
71) n-Nonane	0.00	43	0			N.D.
72) 1,1,2,2-Tetrachloroethane	0.00	83	0			N.D.
74) Cumene	0.00	105	0			N.D.
75) alpha-Pinene	0.00	93	0			N.D.
76) n-Propylbenzene	0.00	91	0			N.D.
77) 3-Ethyltoluene	0.00	105	0			N.D.
78) 4-Ethyltoluene	0.00	105	0			N.D.
79) 1,3,5-Trimethylbenzene	0.00	105	0			N.D.
80) alpha-Methylstyrene	0.00	118	0			N.D.
81) 2-Ethyltoluene	0.00	105	0			N.D.
82) 1,2,4-Trimethylbenzene	0.00	105	0			N.D.
83) n-Decane	0.00	58	0			N.D.
84) Benzyl Chloride	0.00	91	0			N.D.
85) 1,3-Dichlorobenzene	0.00	146	0			N.D.
86) 1,4-Dichlorobenzene	0.00	146	0			N.D.
87) sec-Butylbenzene	0.00	105	0			N.D.
88) 4-Isopropyltoluene (p-...	0.00	119	0			N.D.
89) 1,2,3-Trimethylbenzene	0.00	105	0			N.D.
90) 1,2-Dichlorobenzene	0.00	146	0			N.D.
91) d-Limonene	0.00	68	0			N.D.
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0			N.D.
93) n-Undecane	0.00	58	0			N.D.
94) 1,2,4-Trichlorobenzene	0.00	180	0			N.D.
95) Naphthalene	0.00	128	0			N.D.
96) n-Dodecane	0.00	58	0			N.D.
97) Hexachlorobutadiene	0.00	225	0			N.D.
98) Cyclohexanone	0.00	55	0			N.D.
99) tert-Butylbenzene	0.00	119	0			N.D.
100) n-Butylbenzene	0.00	91	0			N.D.
101) 1,1,1,2-Tetrachloroethane	0.00	131	0			N.D.

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 12 10:46:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

VOA 1/12/25

Quant Time: Jan 12 10:46:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

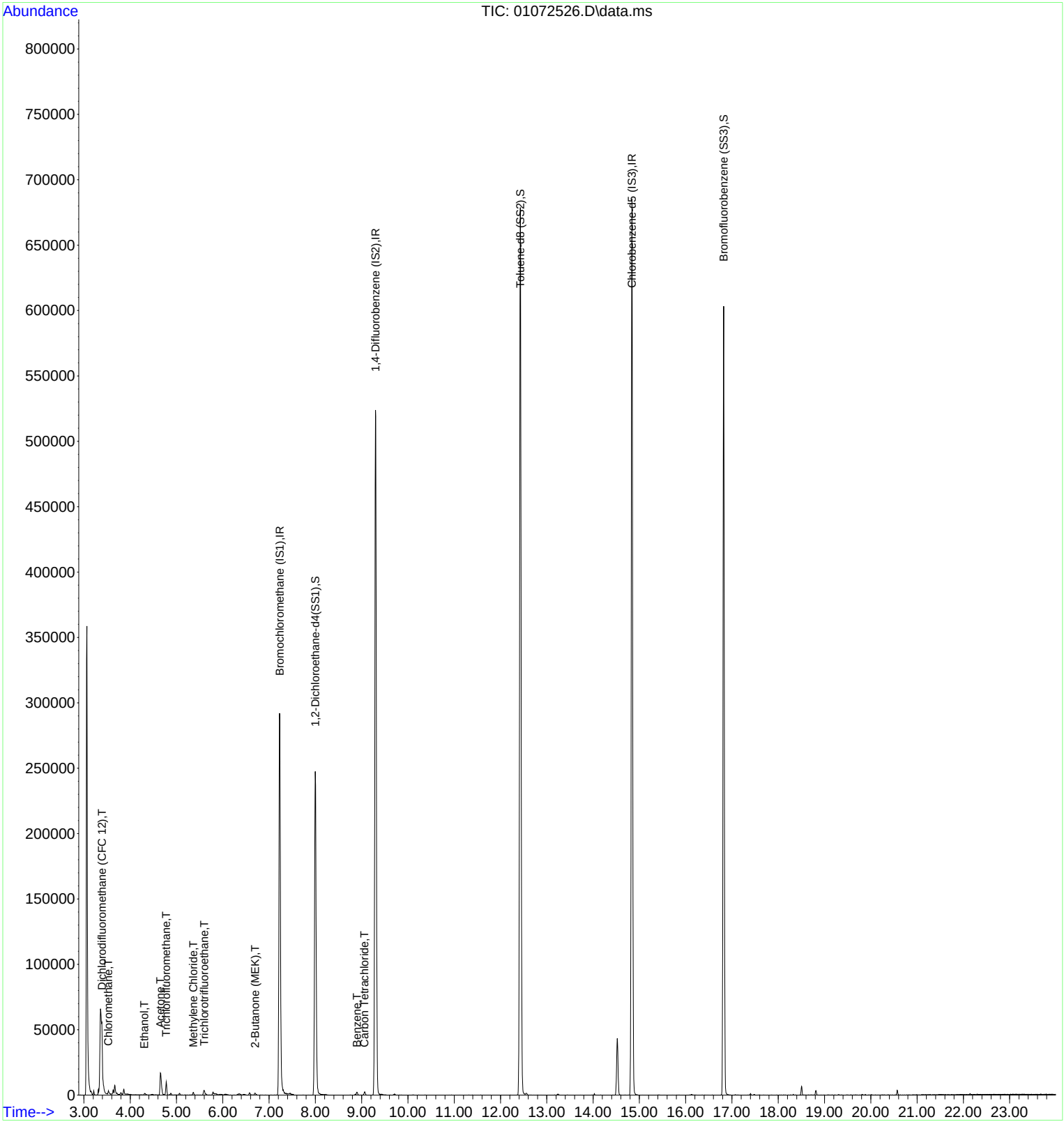
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	127820	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	549408	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	102224	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	222484	12.776	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%				
57) Toluene-d8 (SS2)	12.43	98	569669	12.562	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	16.82	174	223073	14.254	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.00%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	14803	0.592	ng		99
4) Chloromethane	3.53	50	2483	0.134	ng		90
10) Ethanol	4.31	45	1467	0.155	ng		93
13) Acetone	4.65	58	6464	0.751	ng		98
14) Trichlorofluoromethane	4.78	101	7546	0.322	ng		96
19) Methylene Chloride	5.36	84	905	0.075	ng		94
21) Trichlorotrifluoroethane	5.60	151	1780	0.168	ng		90
27) 2-Butanone (MEK)	6.70	72	485	0.070	ng	#	48
41) Benzene	8.90	78	2598	0.059	ng		90
42) Carbon Tetrachloride	9.06	117	1992	0.113	ng		97

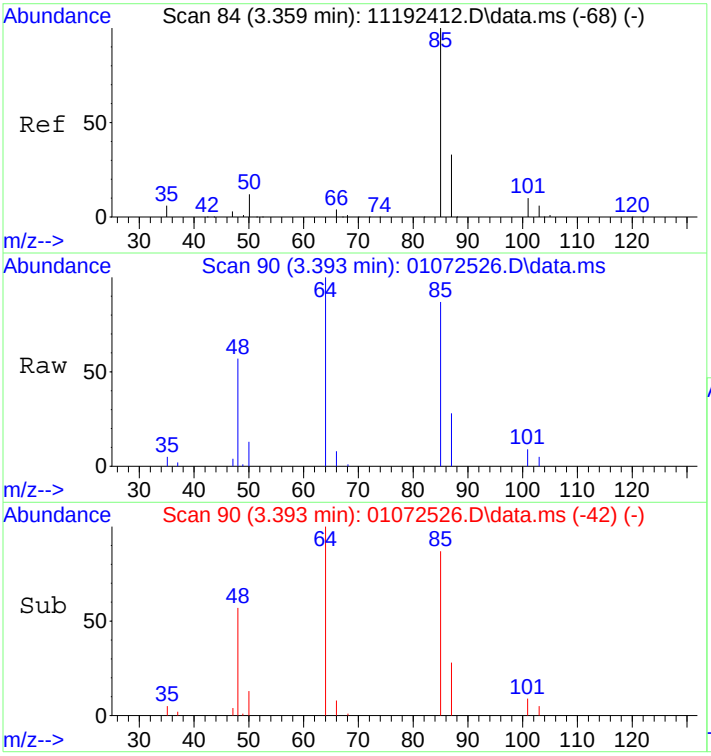
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 12 10:46:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

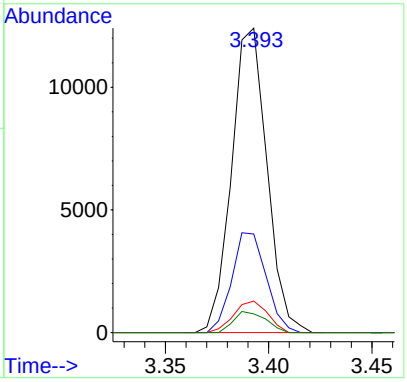


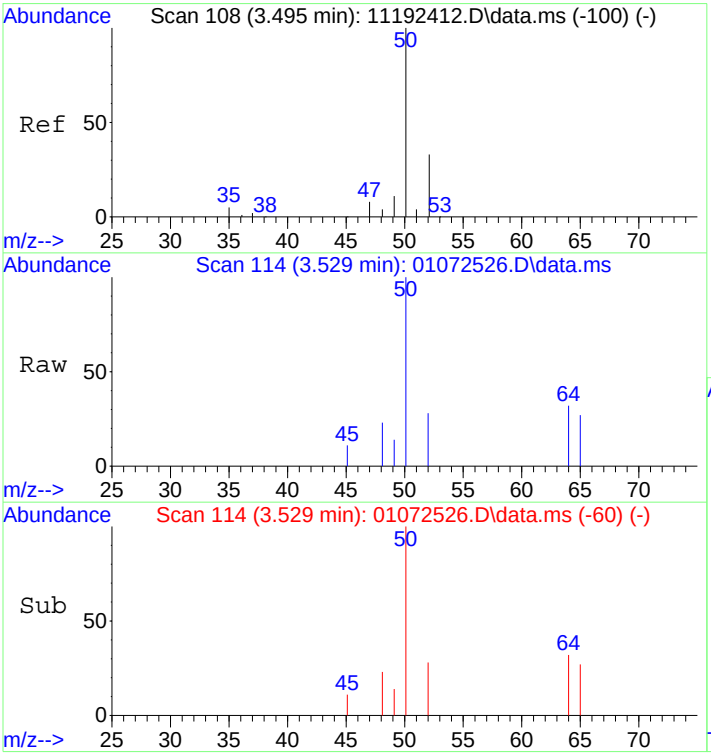


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.59 ng
RT: 3.39 min Scan# 90
Delta R.T. 0.021 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion: 85 Resp: 14803

Ion	Ratio	Lower	Upper
85	100		
87	31.8	12.6	52.6
101	10.0	0.0	29.6
103	6.3	0.0	26.2

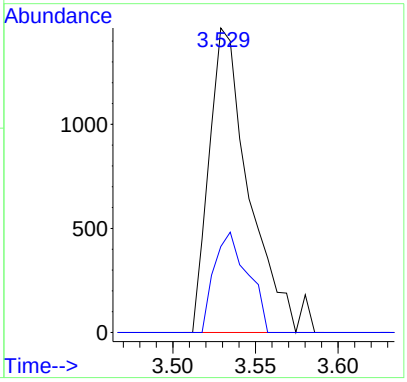


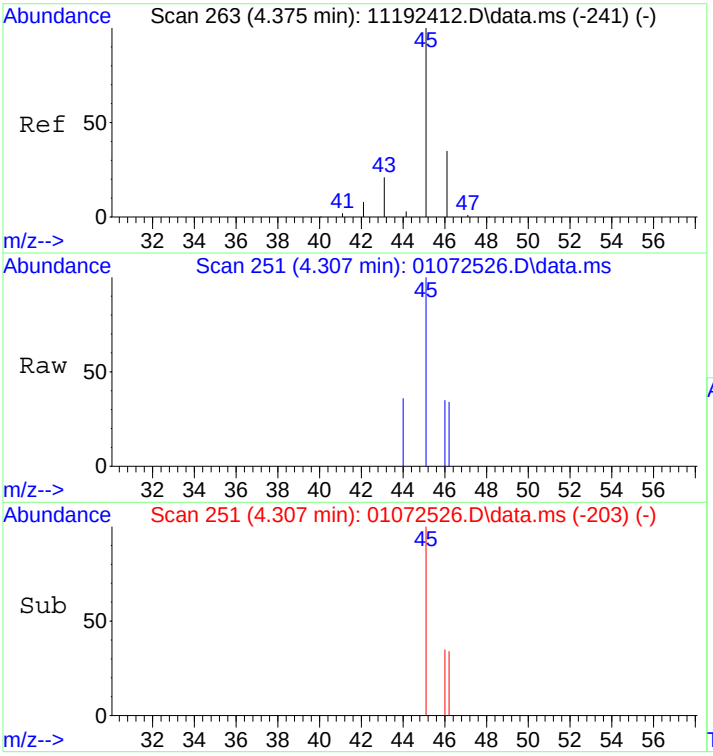


#4
Chloromethane
Concen: 0.13 ng
RT: 3.53 min Scan# 114
Delta R.T. 0.056 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion: 50 Resp: 2483

Ion	Ratio	Lower	Upper
50	100		
52	27.4	13.0	53.0

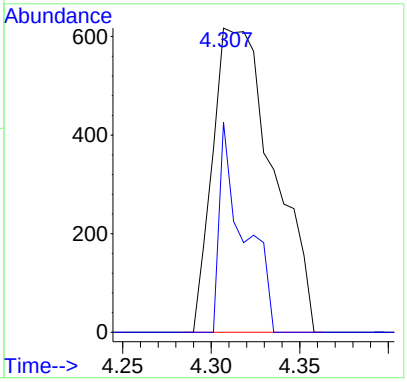


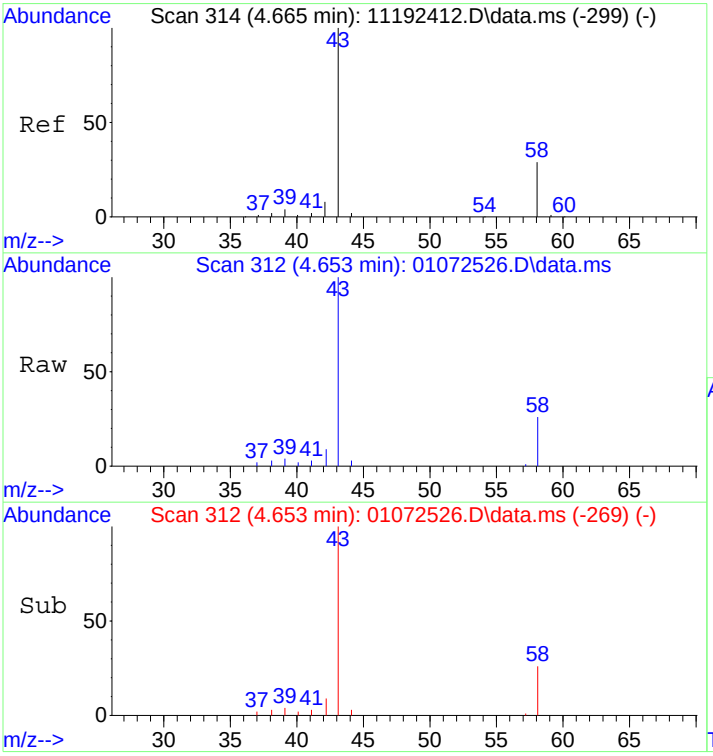


#10
Ethanol
Concen: 0.16 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion: 45 Resp: 1467

Ion	Ratio	Lower	Upper
45	100		
46	28.2	11.8	51.8

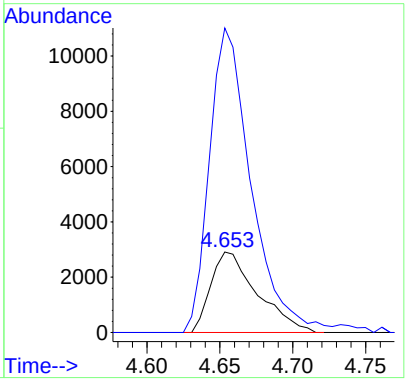


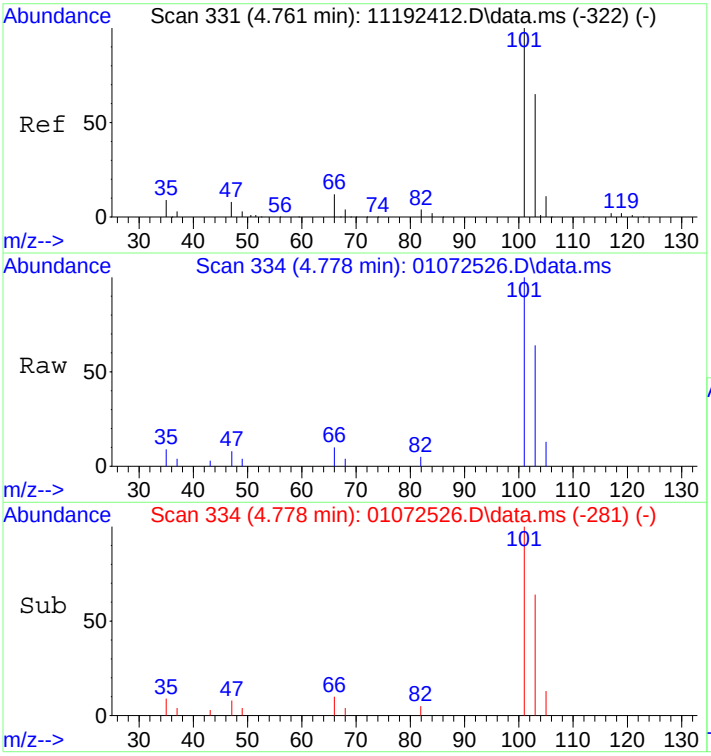


#13
Acetone
Concen: 0.75 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion: 58 Resp: 6464

Ion	Ratio	Lower	Upper
58	100		
43	346.0	312.5	372.5

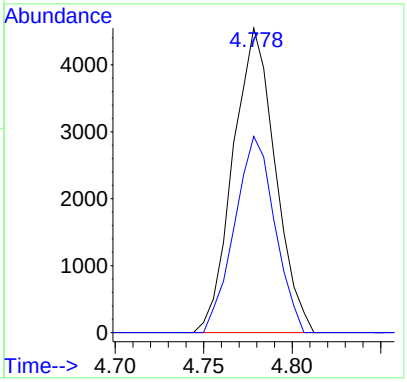


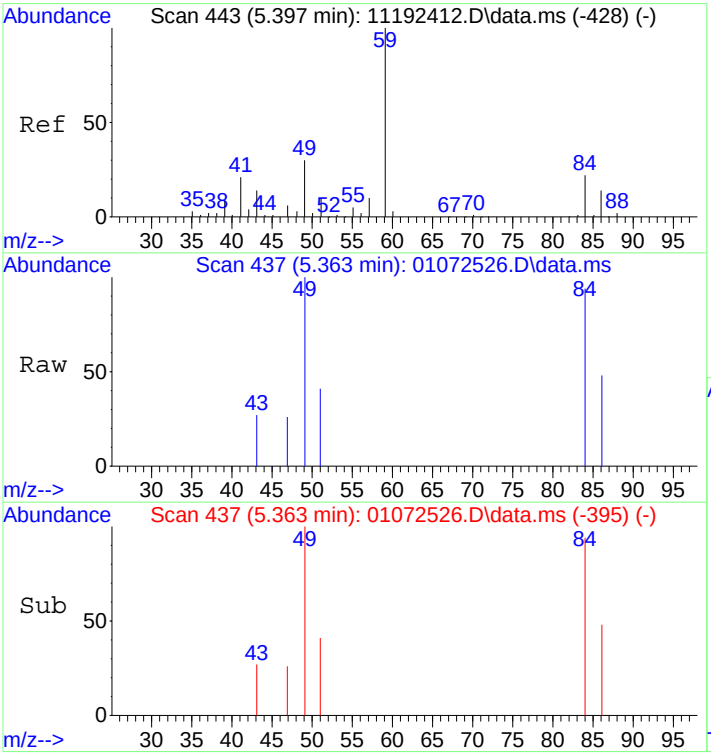


#14
Trichlorofluoromethane
Concen: 0.32 ng
RT: 4.78 min Scan# 334
Delta R.T. 0.050 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion:101 Resp: 7546

Ion	Ratio	Lower	Upper
101	100		
103	61.4	44.8	84.8

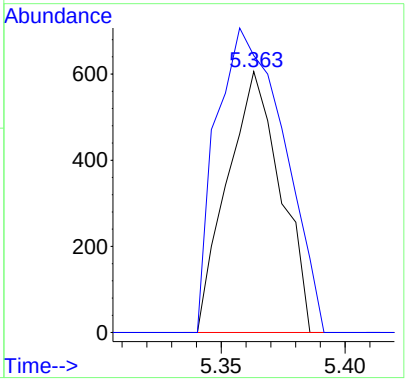


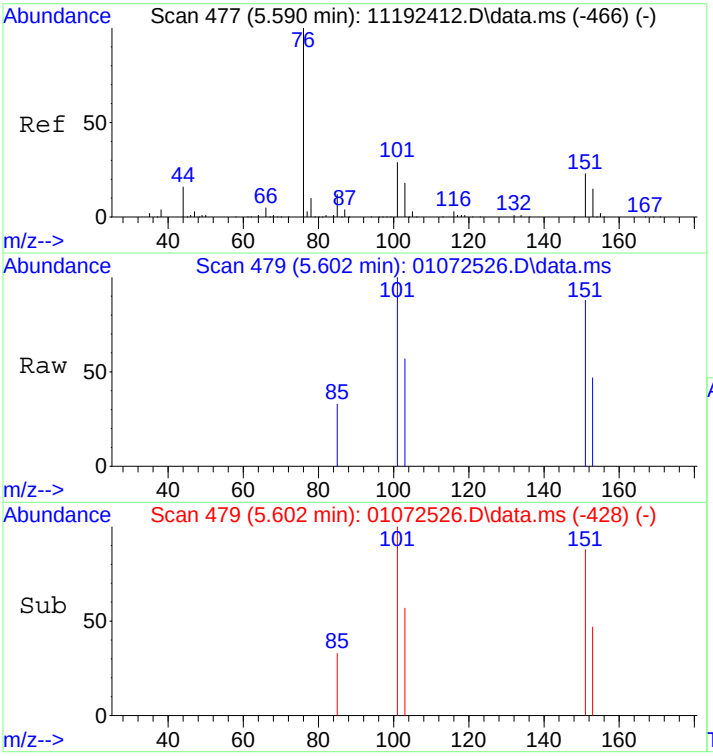


#19
Methylene Chloride
Concen: 0.07 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion: 84 Resp: 905

Ion	Ratio	Lower	Upper
84	100		
49	148.5	116.0	166.0

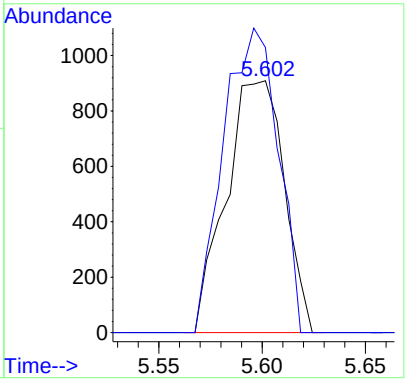


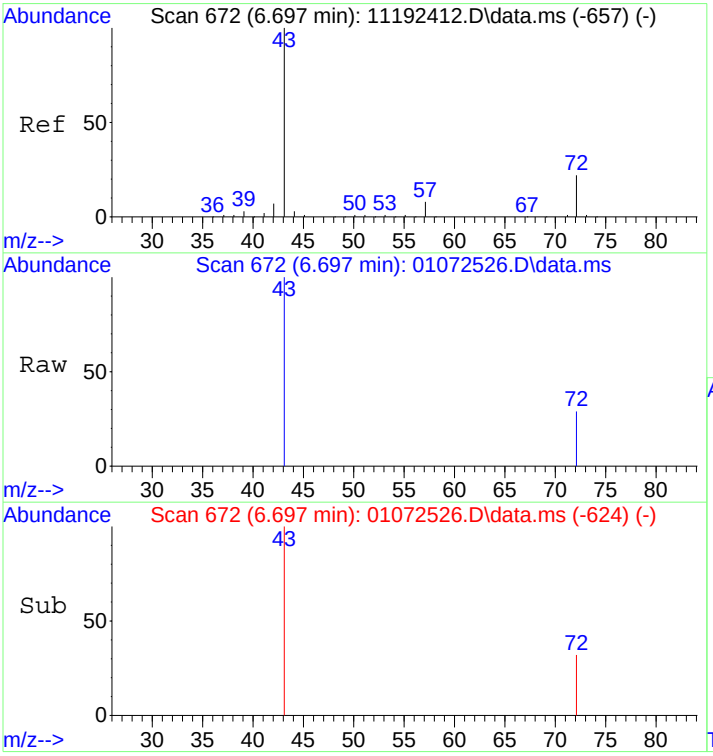


#21
Trichlorotrifluoroethane
Concen: 0.17 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.041 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion:151 Resp: 1780

Ion	Ratio	Lower	Upper
151	100		
101	113.8	105.0	145.0

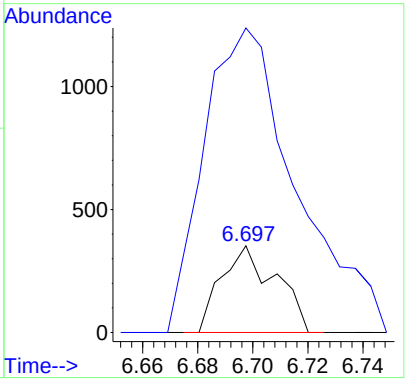


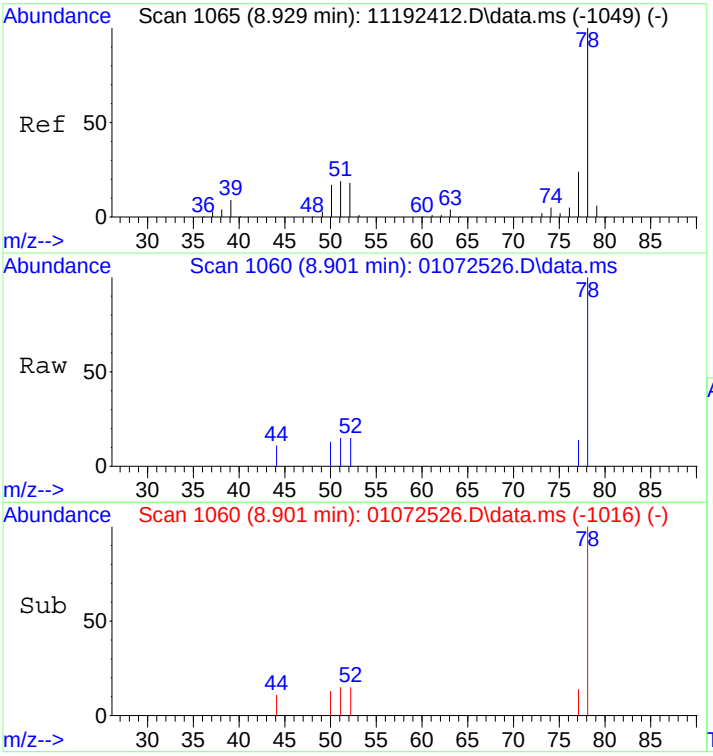


#27
2-Butanone (MEK)
Concen: 0.07 ng
RT: 6.70 min Scan# 672
Delta R.T. 0.023 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion: 72 Resp: 485

Ion	Ratio	Lower	Upper
72	100		
43	594.8	439.8	479.8#

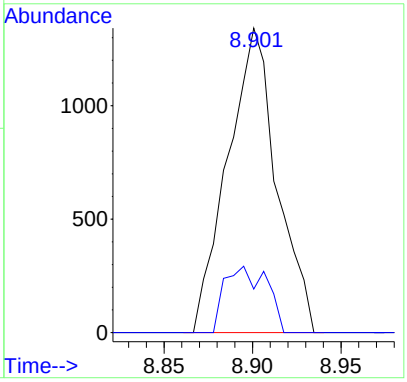


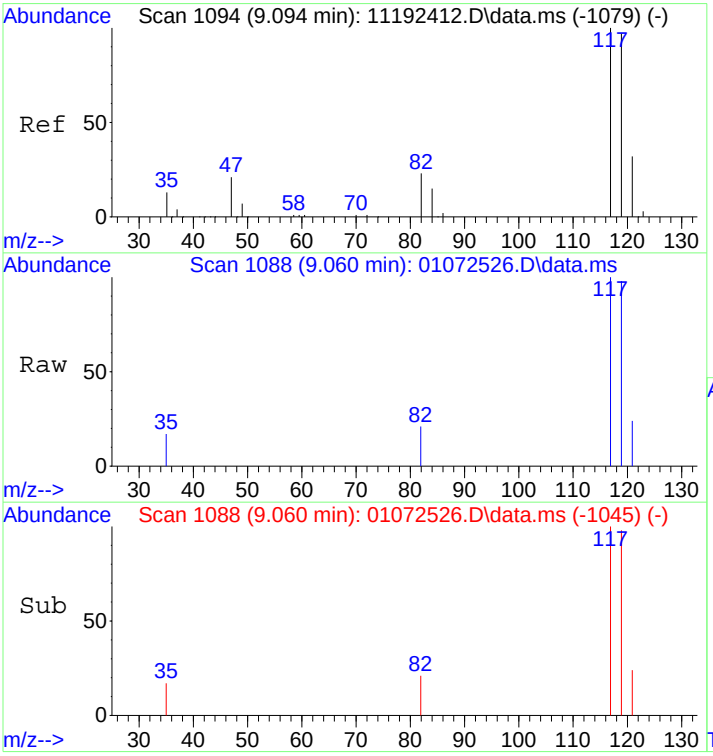


#41
Benzene
Concen: 0.06 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion: 78 Resp: 2598

Ion	Ratio	Lower	Upper
78	100		
77	18.6	3.7	43.7

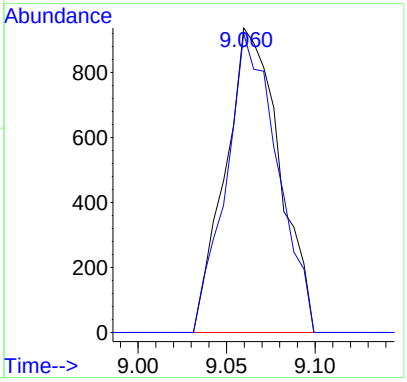




#42
Carbon Tetrachloride
Concen: 0.11 ng
RT: 9.06 min Scan# 1088
Delta R.T. -0.007 min
Lab File: 01072526.D
Acq: 7 Jan 2025 18:11

Tgt Ion:117 Resp: 1992

Ion	Ratio	Lower	Upper
117	100		
119	93.2	75.7	115.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

MA 1/12/25

Quant Time: Jan 12 13:35:54 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

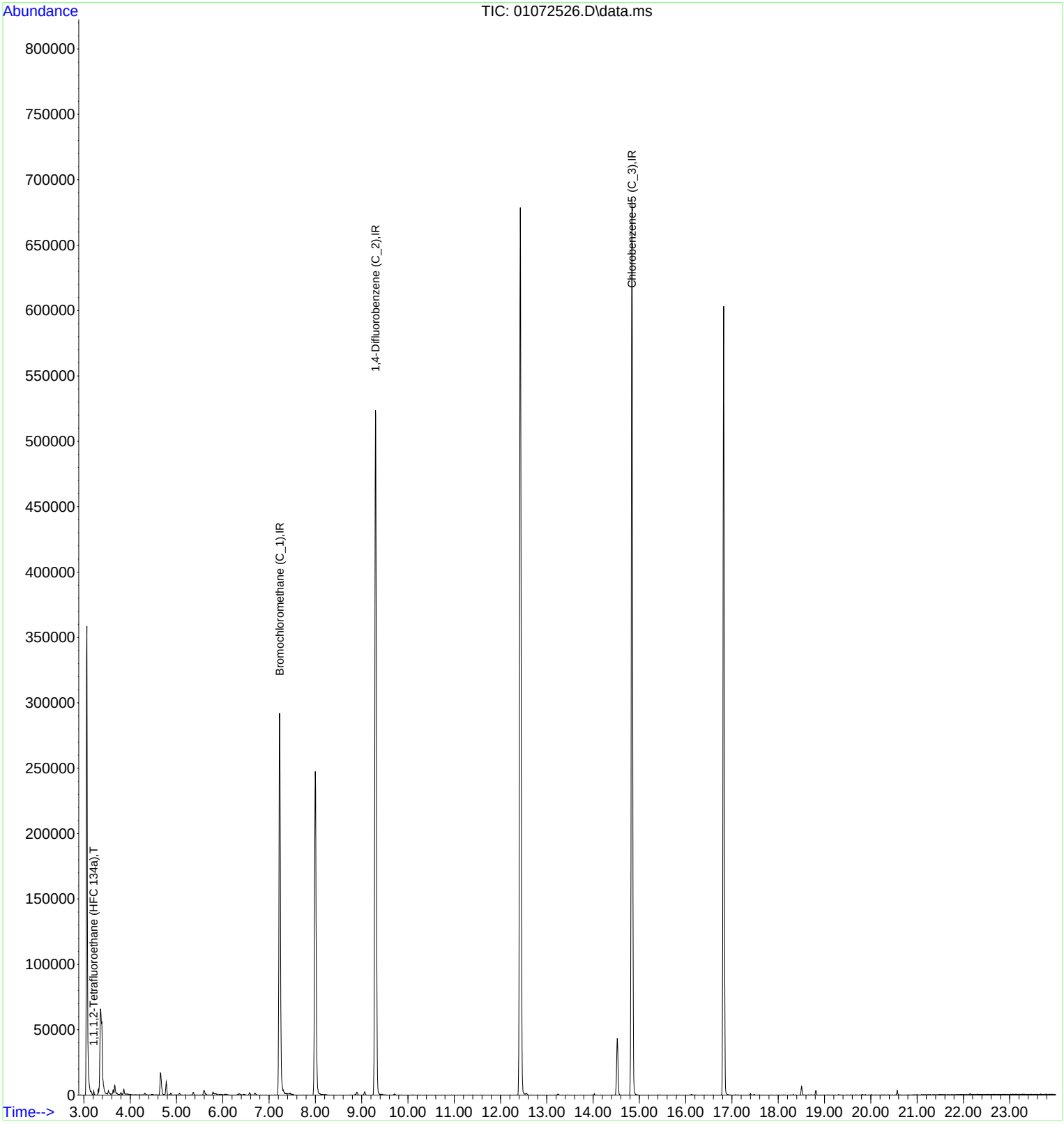
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	130560	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	550737	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	102224	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	159	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1429	0.120	ng	96
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d	
6) 1-Chloro-1,1-Difluoroe...	3.52	65	446	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.67	57	1037	N.D.		
11) Methyl Acetate	5.36	43	112	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	9.07	84	56	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 12 13:35:54 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072526.D\data.ms

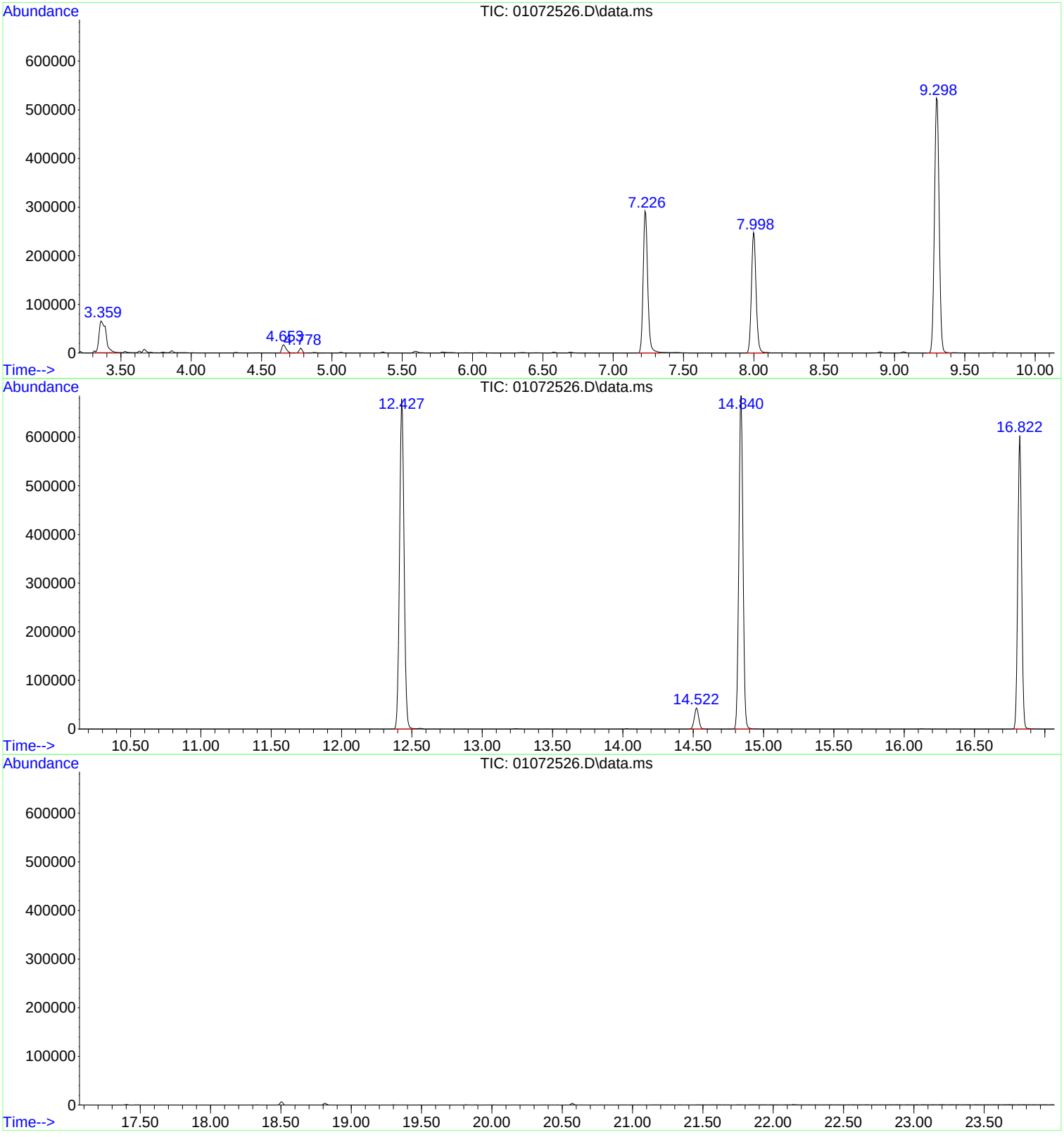
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.359	77	84	107	rVB2	65062	219925	14.46%	3.211%
2	4.653	307	312	324	rBV	17007	37140	2.44%	0.542%
3	4.778	327	334	340	rVB	9936	15191	1.00%	0.222%
4	7.226	756	765	783	rBV	292010	659282	43.36%	9.625%
5	7.998	892	901	916	rBV	247512	570246	37.50%	8.325%
6	9.298	1118	1130	1148	rBV	523892	1207375	79.41%	17.627%
7	12.427	1671	1681	1699	rBV	678823	1520505	100.00%	22.198%
8	14.522	2041	2050	2062	rBB	43360	93033	6.12%	1.358%
9	14.840	2096	2106	2123	rBV	685534	1397964	91.94%	20.409%
10	16.822	2446	2455	2471	rBV	603301	1129109	74.26%	16.484%

Sum of corrected areas: 6849770

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:11
Operator : SC
Sample : P2405139-028 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072526.D
Acq On : 7 Jan 2025 18:111
Operator : SCC
Sample : P2405139-028 (400mL))
Misc : S37-123124011
ALS Vial : 13 Sample Multiplier: 11

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 12:27:16 2025 VOA 1/12/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	135095	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	573765	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	105104	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	228917	12.437	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
57) Toluene-d8 (SS2)	12.43	98	593129	12.721	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
73) Bromofluorobenzene (SS3)	16.82	174	233612	14.519	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.16%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.39	85	571	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	9751	0.976	ng		81
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	4.56	56	52	N.D.			
13) Acetone	4.66	58	6630	0.729	ng		99
14) Trichlorofluoromethane	4.76	101	1326108	53.545	ng		100
15) 2-Propanol (Isopropanol)	4.88	45	961	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.37	84	279	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	799055	71.510	ng		93
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	667	0.091	ng	#	44
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	477	N.D.			
32) Chloroform	7.36	83	1132	0.051	ng		89
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.85	56	315	No Calib		#	
41) Benzene	8.90	78	1829	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	1221	0.093	ng		91
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 12:27:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

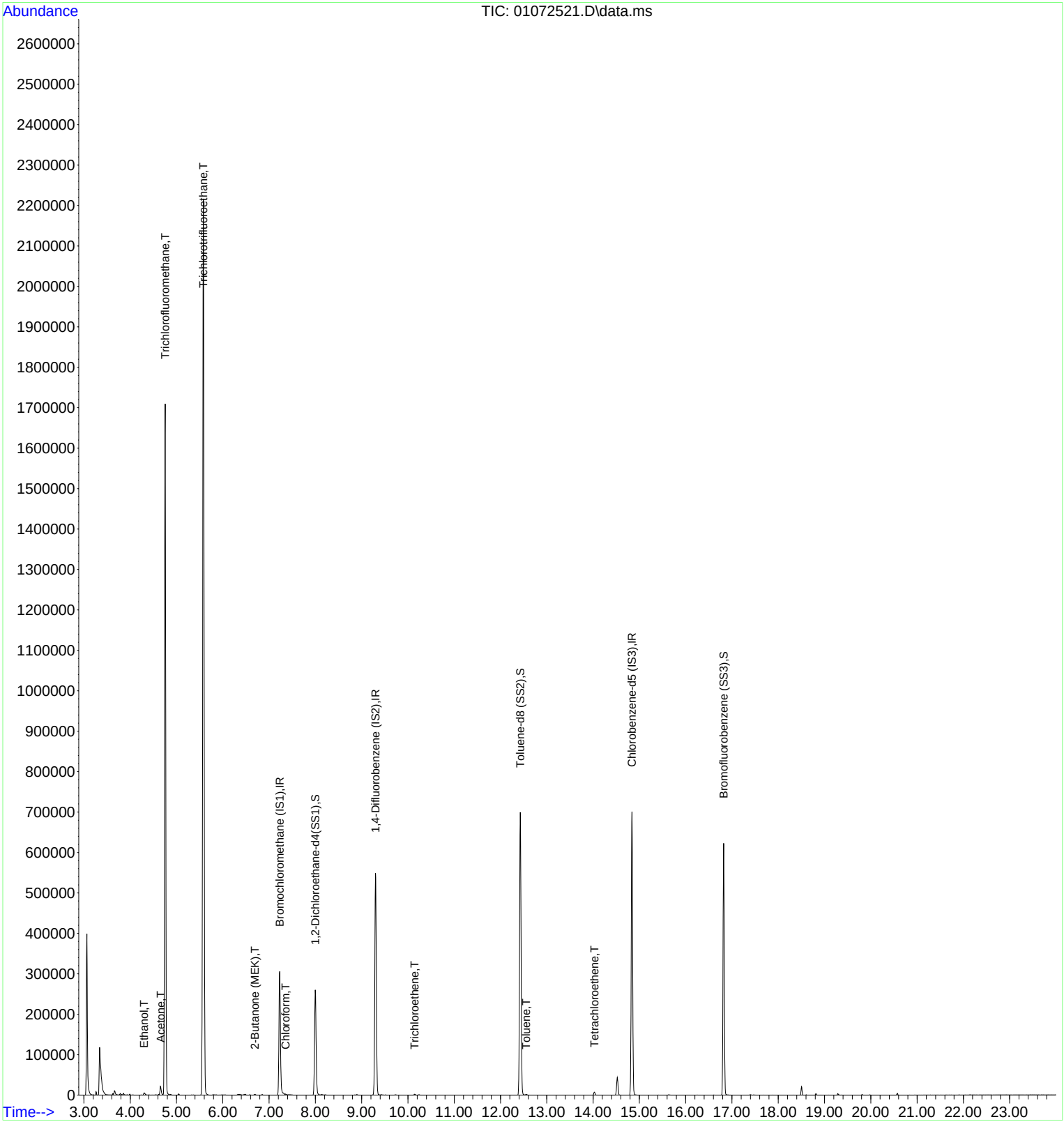
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	1309	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	2357	0.053 ng	94
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	3073	0.230 ng	98
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	485	N.D.	
67) m- & p-Xylenes	15.63	91	1355	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	471	N.D.	
71) n-Nonane	16.61	43	206	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.53	93	165	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	107	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	149	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	191	N.D.	
95) Naphthalene	20.94	128	424	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.51	119	289	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 12:27:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

VOA 1/12/25

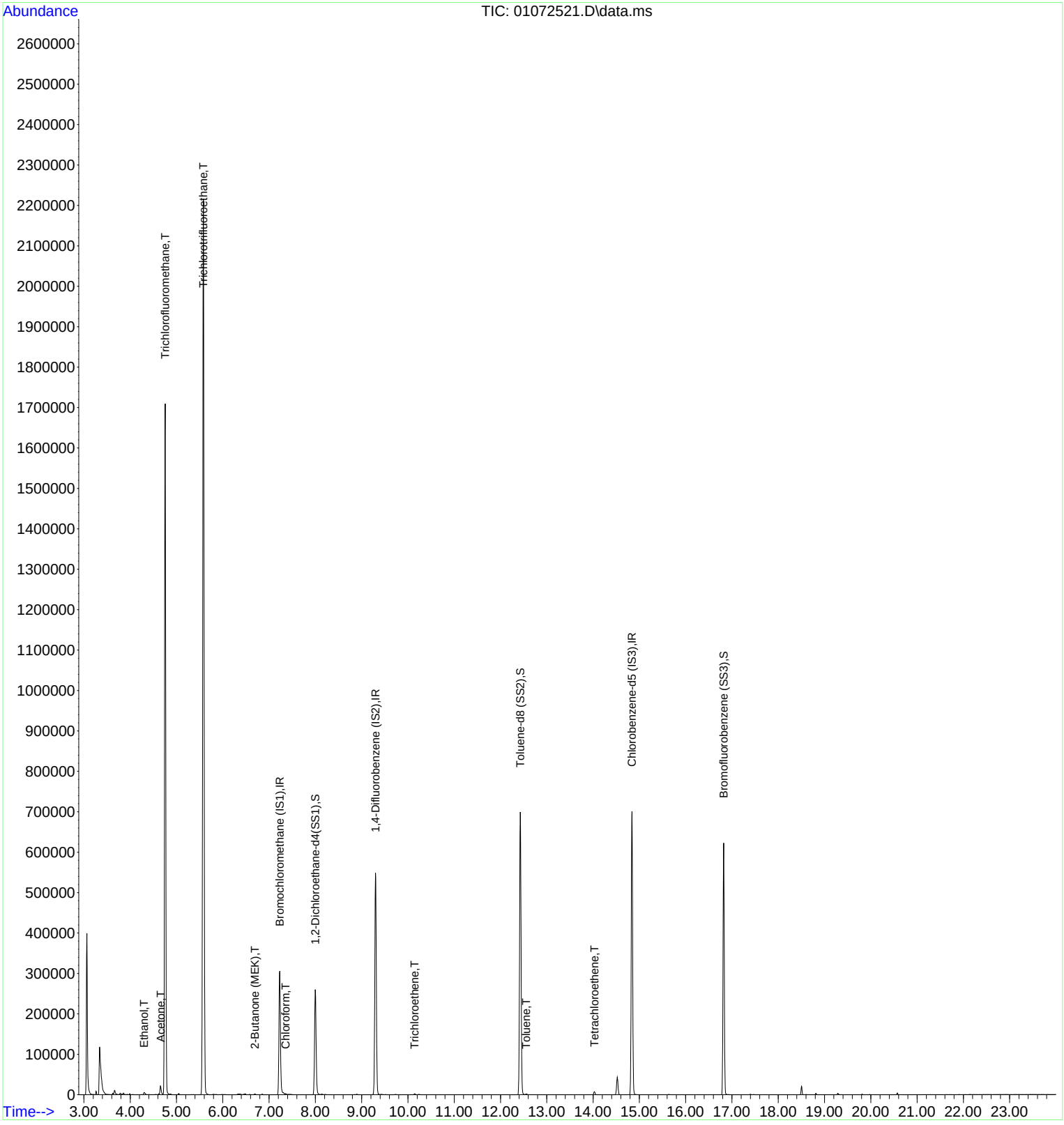
Quant Time: Jan 12 12:27:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

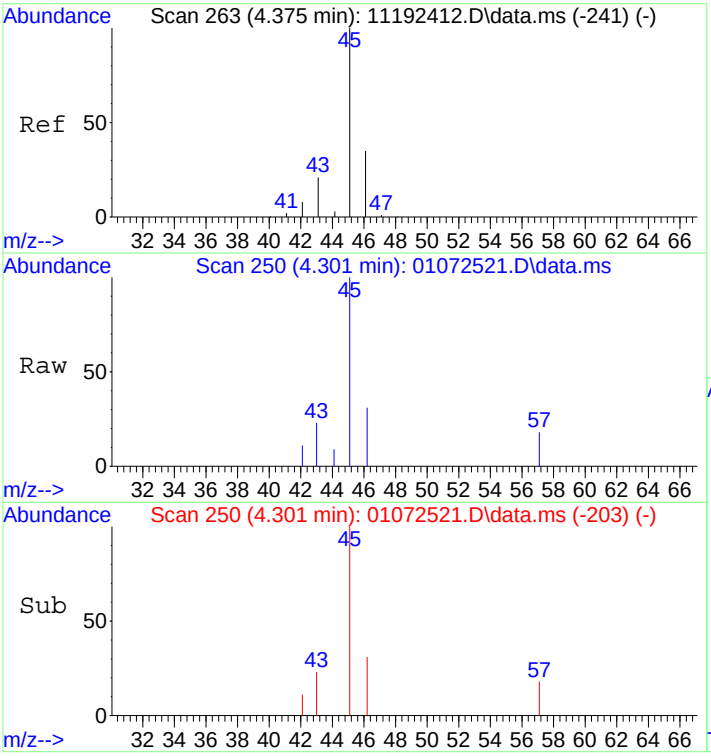
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	135095	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	573765	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	105104	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	228917	12.437	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
57) Toluene-d8 (SS2)	12.43	98	593129	12.721	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
73) Bromofluorobenzene (SS3)	16.82	174	233612	14.519	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.16%				
Target Compounds							Qvalue
10) Ethanol	4.30	45	9751	0.976	ng		81
13) Acetone	4.66	58	6630	0.729	ng		99
14) Trichlorofluoromethane	4.76	101	1326108	53.545	ng		100
21) Trichlorotrifluoroethane	5.58	151	799055	71.510	ng		93
27) 2-Butanone (MEK)	6.69	72	667	0.091	ng	#	44
32) Chloroform	7.36	83	1132	0.051	ng		89
47) Trichloroethene	10.14	130	1221	0.093	ng		91
58) Toluene	12.56	91	2357	0.053	ng		94
64) Tetrachloroethene	14.03	166	3073	0.230	ng		98

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 12:27:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

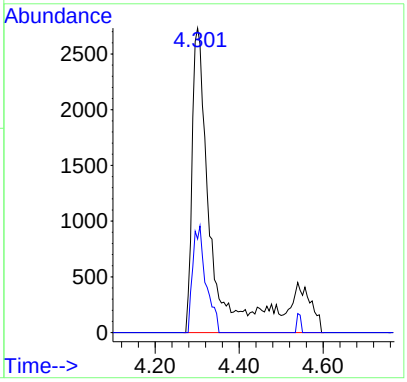


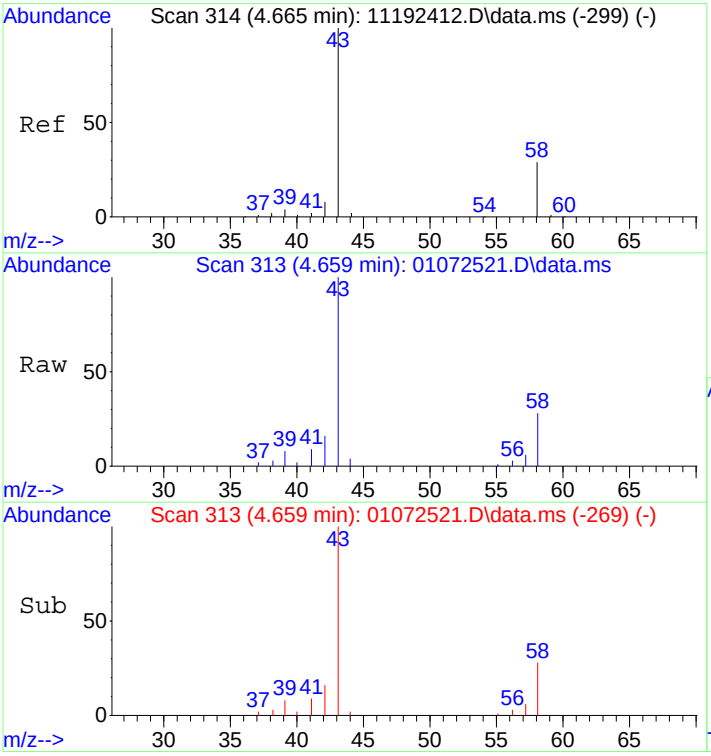


#10
Ethanol
Concen: 0.98 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion: 45 Resp: 9751

Ion	Ratio	Lower	Upper
45	100		
46	21.5	11.8	51.8

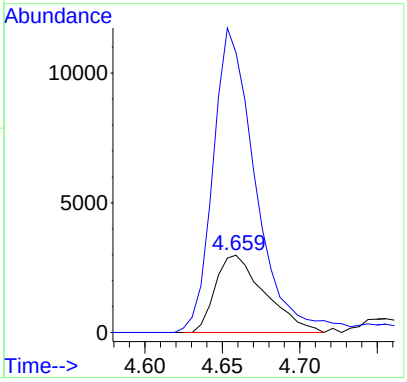


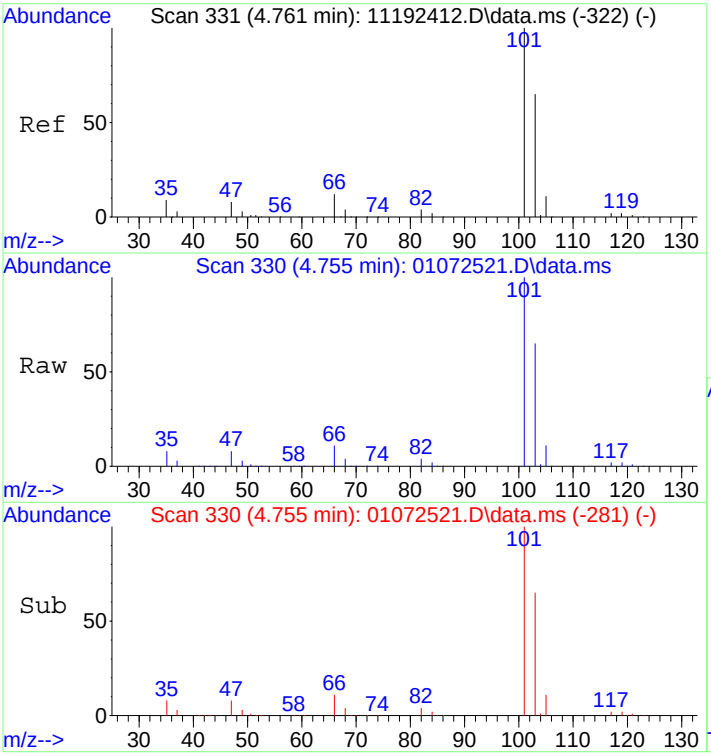


#13
Acetone
Concen: 0.73 ng
RT: 4.66 min Scan# 313
Delta R.T. -0.001 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion: 58 Resp: 6630

Ion	Ratio	Lower	Upper
58	100		
43	339.4	312.5	372.5

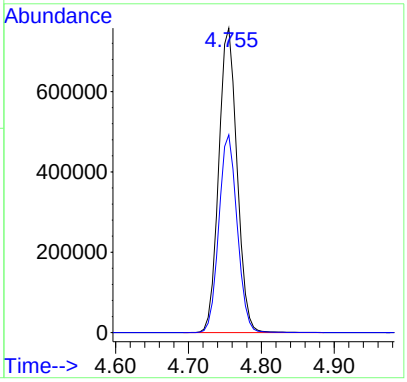


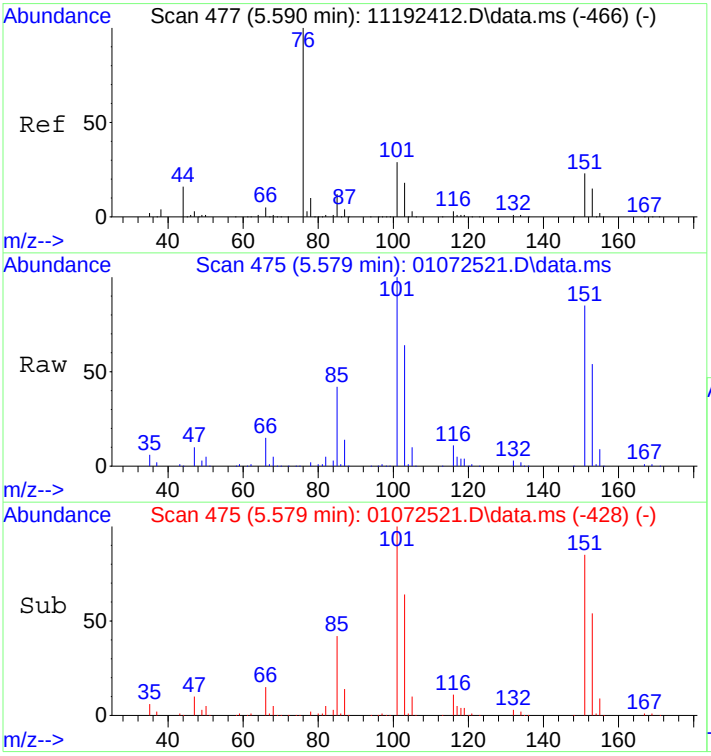


#14
Trichlorofluoromethane
Concen: 53.54 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion:101 Resp: 1326108

Ion	Ratio	Lower	Upper
101	100		
103	64.9	44.8	84.8

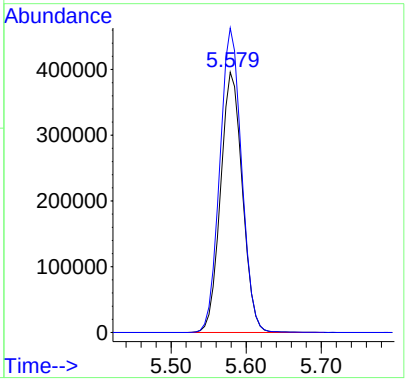


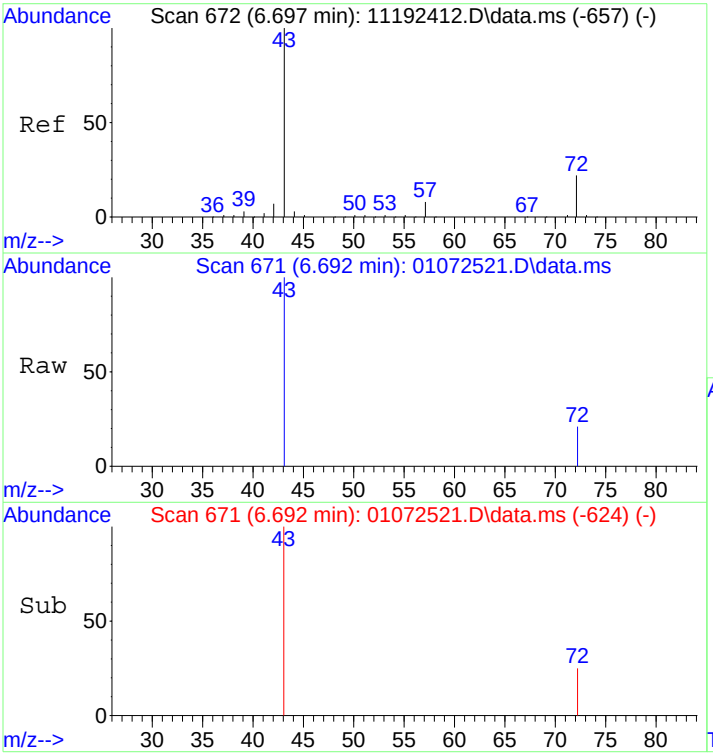


#21
Trichlorotrifluoroethane
Concen: 71.51 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion:151 Resp: 799055

Ion	Ratio	Lower	Upper
151	100		
101	116.8	105.0	145.0

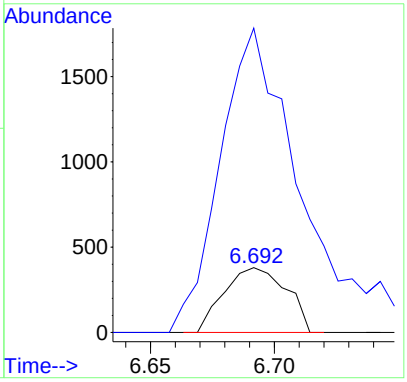


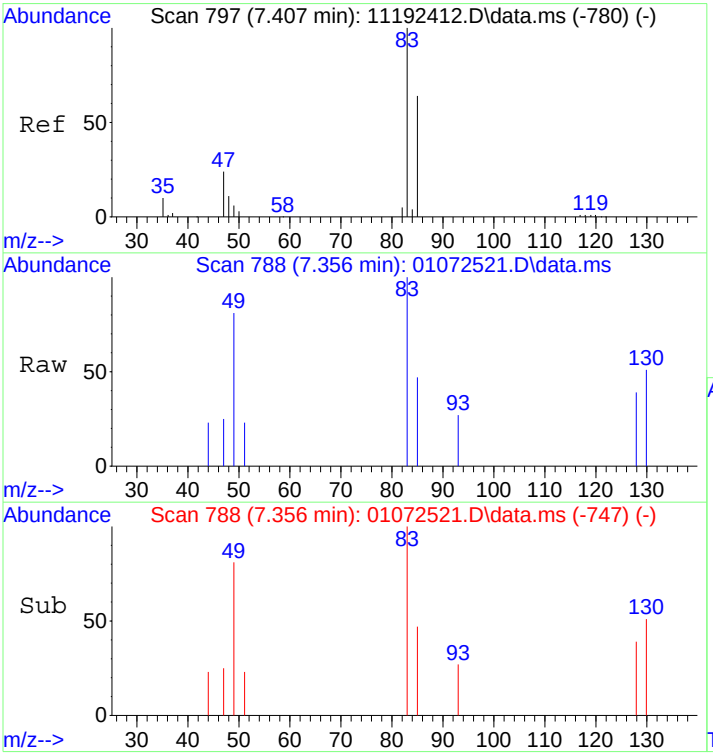


#27
2-Butanone (MEK)
Concen: 0.09 ng
RT: 6.69 min Scan# 671
Delta R.T. 0.018 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion: 72 Resp: 667

Ion	Ratio	Lower	Upper
72	100		
43	605.5	439.8	479.8#

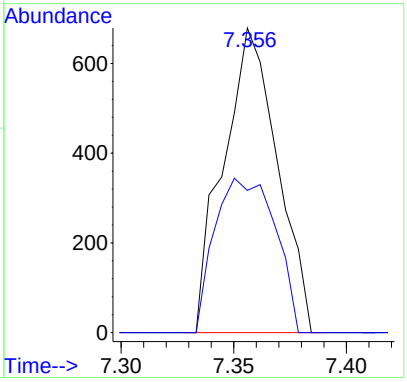


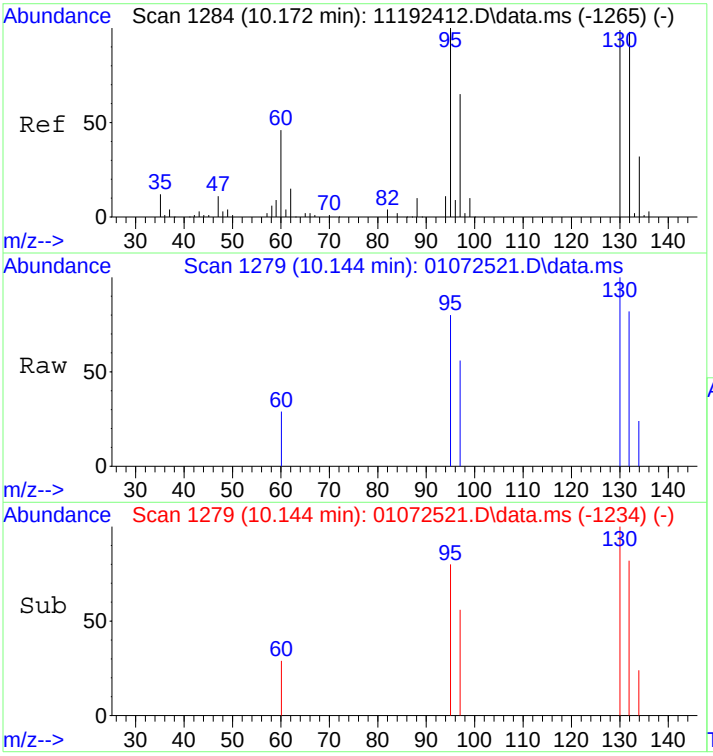


#32
Chloroform
Concen: 0.05 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion: 83 Resp: 1132

Ion	Ratio	Lower	Upper
83	100		
85	56.7	45.1	85.1

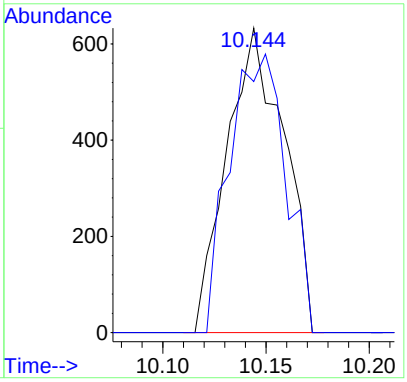


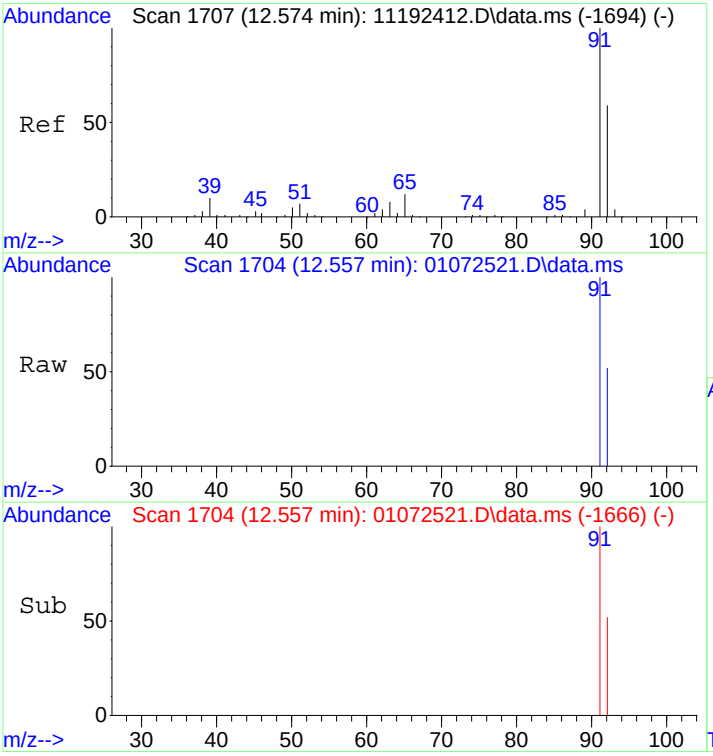


#47
Trichloroethene
Concen: 0.09 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion:130 Resp: 1221

Ion	Ratio	Lower	Upper
130	100		
132	90.7	79.3	119.3

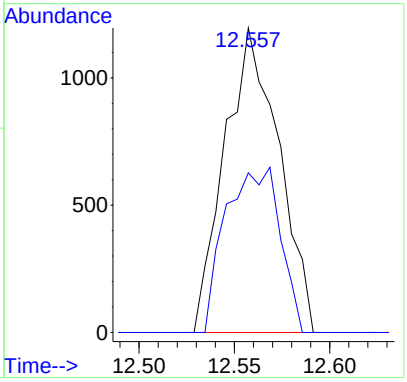


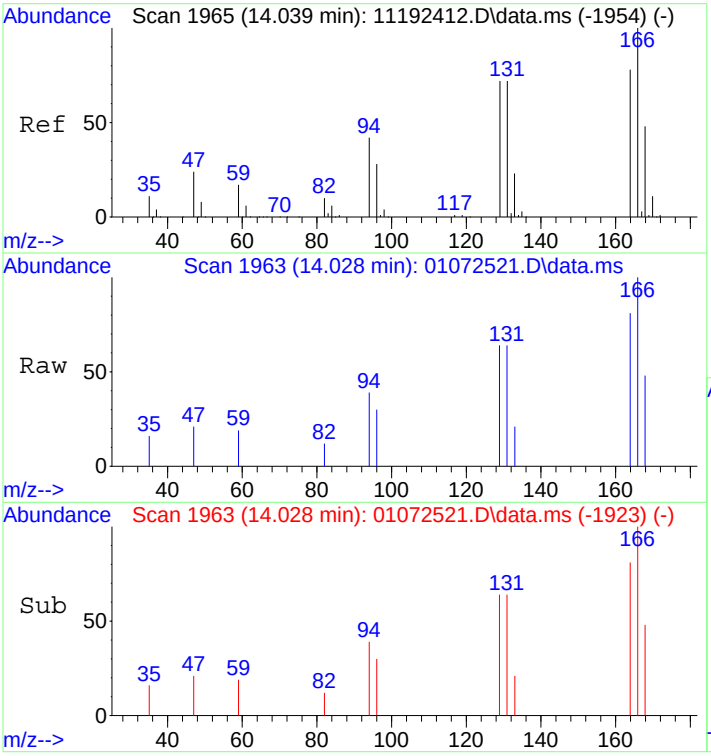


#58
Toluene
Concen: 0.05 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion: 91 Resp: 2357

Ion	Ratio	Lower	Upper
91	100		
92	54.6	39.2	79.2

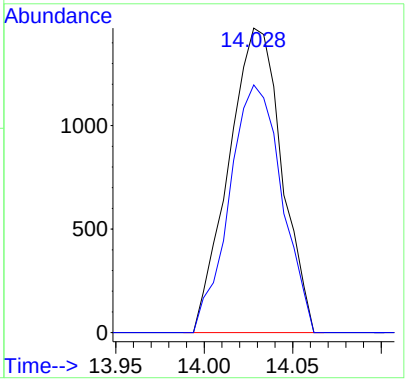




#64
Tetrachloroethene
Concen: 0.23 ng
RT: 14.03 min Scan# 1963
Delta R.T. -0.023 min
Lab File: 01072521.D
Acq: 7 Jan 2025 15:22

Tgt Ion:166 Resp: 3073

Ion	Ratio	Lower	Upper
166	100		
164	80.3	58.7	98.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

MA 1/12/25

Quant Time: Jan 12 13:34:30 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

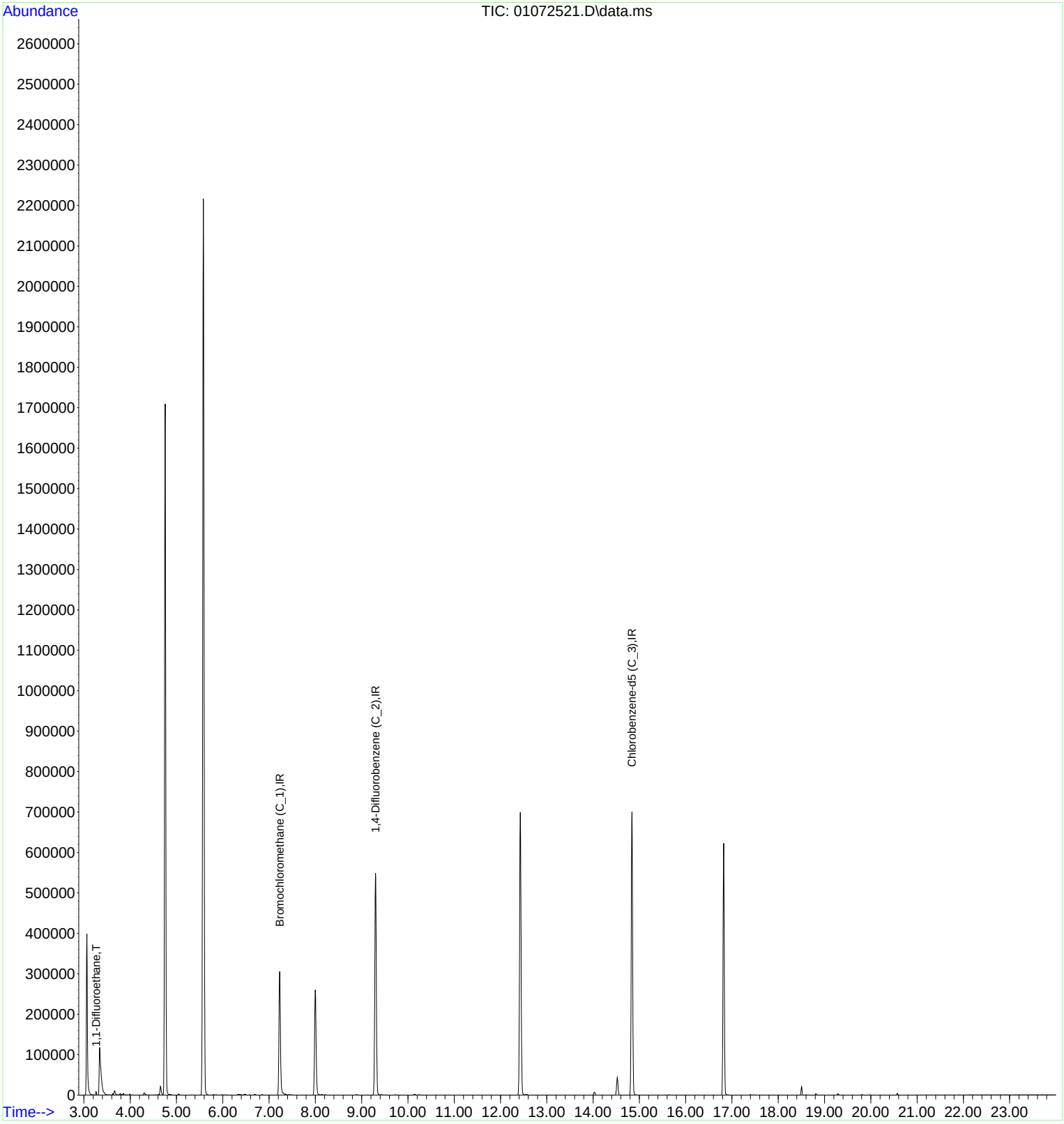
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	136686	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	575700	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	105104	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	279	N.D.		
4) 1,1-Difluoroethane	3.26	65	2152	0.194	ng	98
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.24	67	574	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D. d		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	6.48	71	407	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	9.52	56	473	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.40	55	62	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	51	N.D.		
27) 4-Chlorotoluene	17.68	91	51	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 13:34:30 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072521.D\data.ms

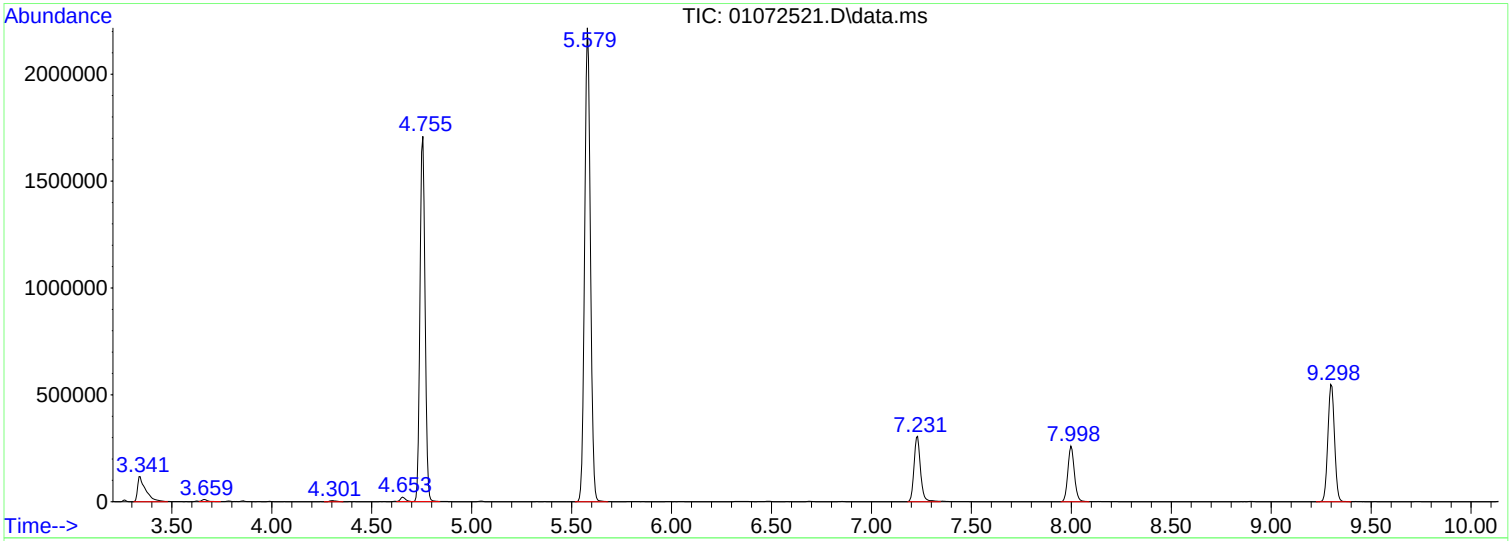
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.341	75	81	105	rBV	117242	332819	7.43%	2.251%
2	3.659	133	137	152	rVB	10195	19758	0.44%	0.134%
3	4.301	243	250	260	rBV2	5245	13023	0.29%	0.088%
4	4.653	307	312	321	rVB3	20728	36918	0.82%	0.250%
5	4.755	321	330	345	rBV	1708545	2990919	66.75%	20.233%
6	5.579	464	475	493	rBV	2216882	4480580	100.00%	30.310%
7	7.231	757	766	786	rBV	306135	693247	15.47%	4.690%
8	7.998	892	901	917	rBV	260269	592214	13.22%	4.006%
9	9.298	1117	1130	1148	rBV	548586	1257607	28.07%	8.508%
10	12.427	1671	1681	1699	rBV	699435	1584010	35.35%	10.716%
11	14.028	1957	1963	1969	rBB3	7589	14896	0.33%	0.101%
12	14.522	2041	2050	2059	rBV	43374	94253	2.10%	0.638%
13	14.840	2096	2106	2120	rBV	700727	1463010	32.65%	9.897%
14	16.822	2446	2455	2470	rBV	622921	1178105	26.29%	7.970%
15	18.502	2746	2751	2757	rBB2	21104	30919	0.69%	0.209%

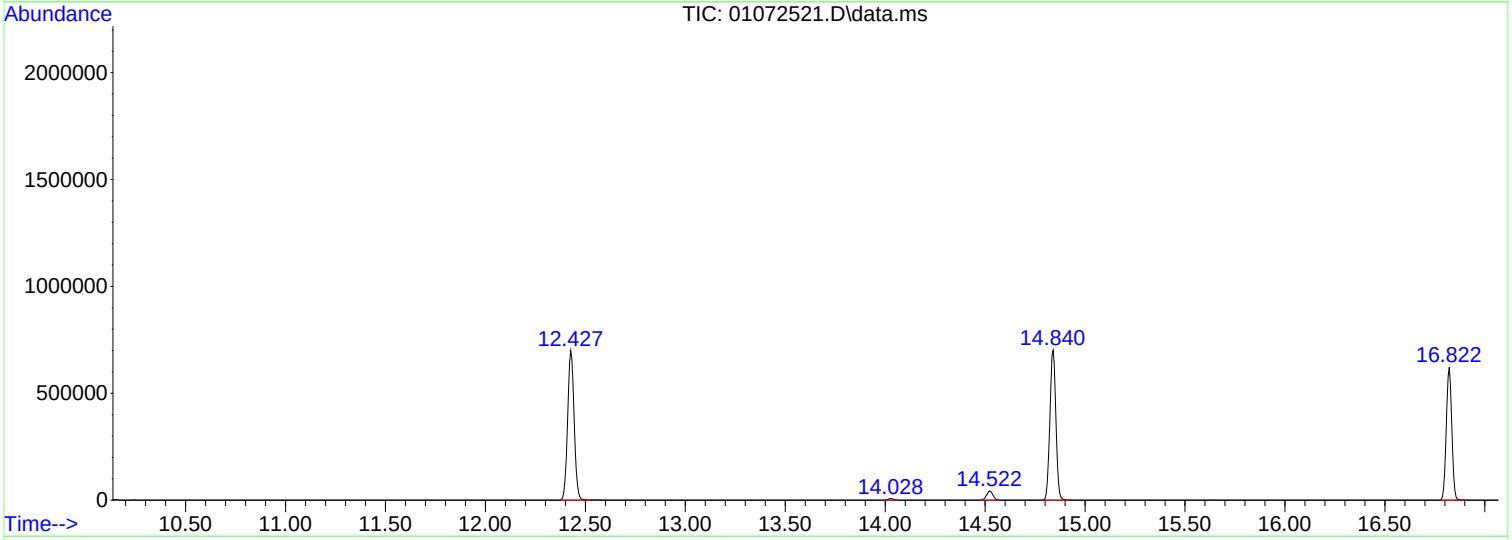
Sum of corrected areas: 14782278

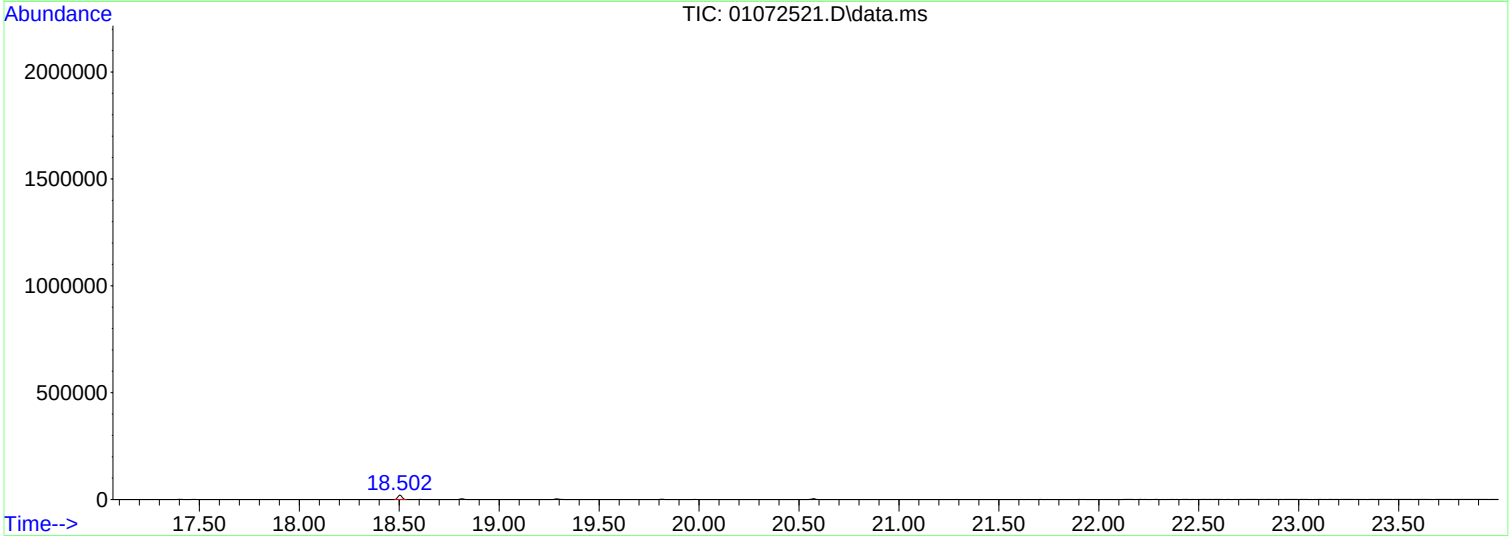
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:22
Operator : SC
Sample : P2405139-029 (6.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072521.D
Acq On : 7 Jan 2025 15:222
Operator : SCC
Sample : P2405139-029 (6.0mL))
Misc : S37-123124011
ALS Vial : 1 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)) VOA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 06:13:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	146712	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	641217	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	120803	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250219	12.518	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
57) Toluene-d8 (SS2)	12.43	98	670359	12.509	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
73) Bromofluorobenzene (SS3)	16.82	174	235982	12.760	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.08%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	3.38	50	709	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.31	45	2217	0.204	ng		89
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	4.56	56	69	N.D.			
13) Acetone	4.66	58	3826	0.387	ng	#	85
14) Trichlorofluoromethane	0.00	101	0	N.D.			
15) 2-Propanol (Isopropanol)	4.87	45	338	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.37	84	127	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	5.63	76	717	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	497	0.063	ng	#	22
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.85	56	374	No Calib		#	
41) Benzene	8.90	78	598	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

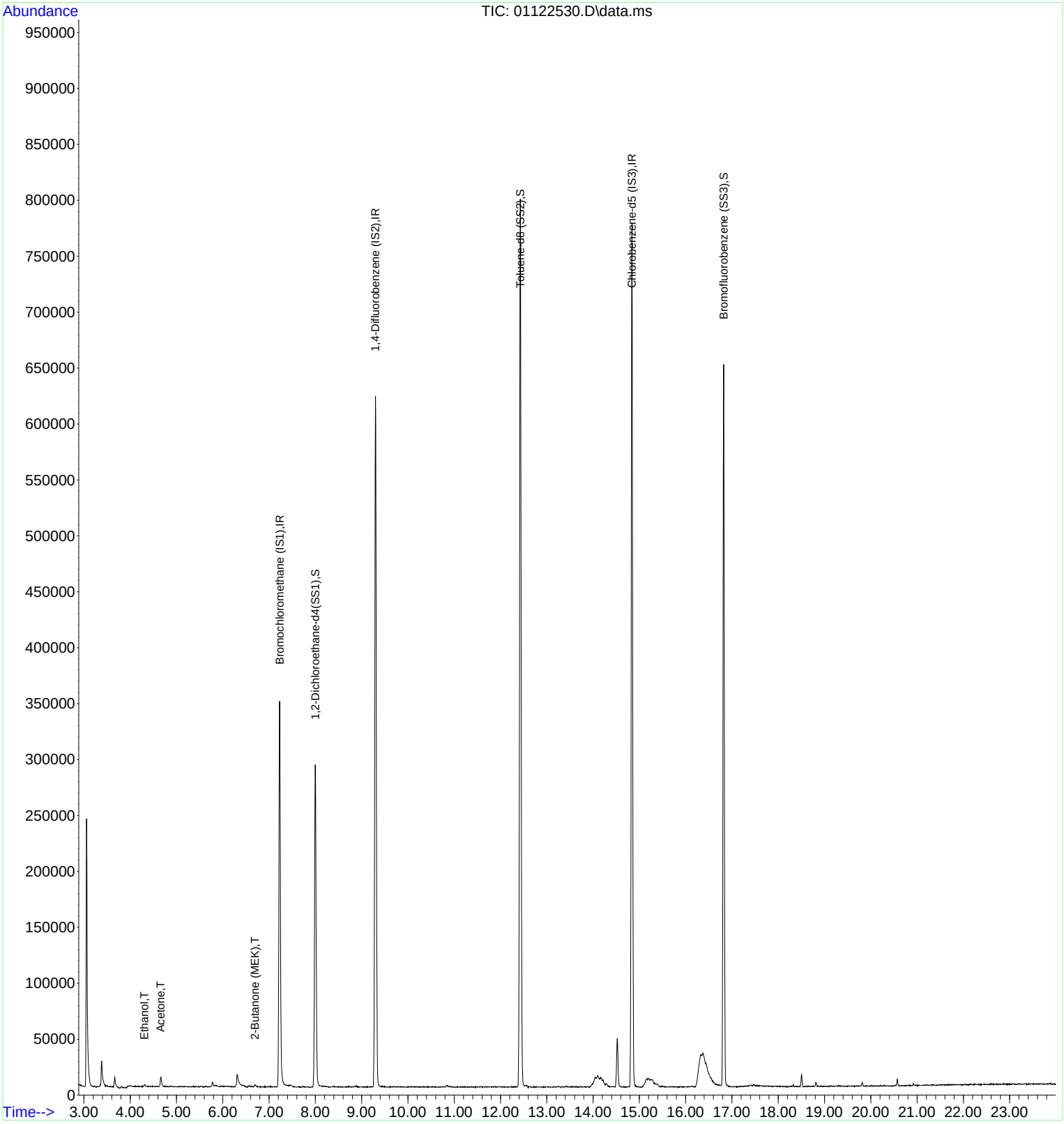
Quant Time: Jan 13 06:13:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	1610	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	162	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	295	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 13 06:13:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

1/13/25

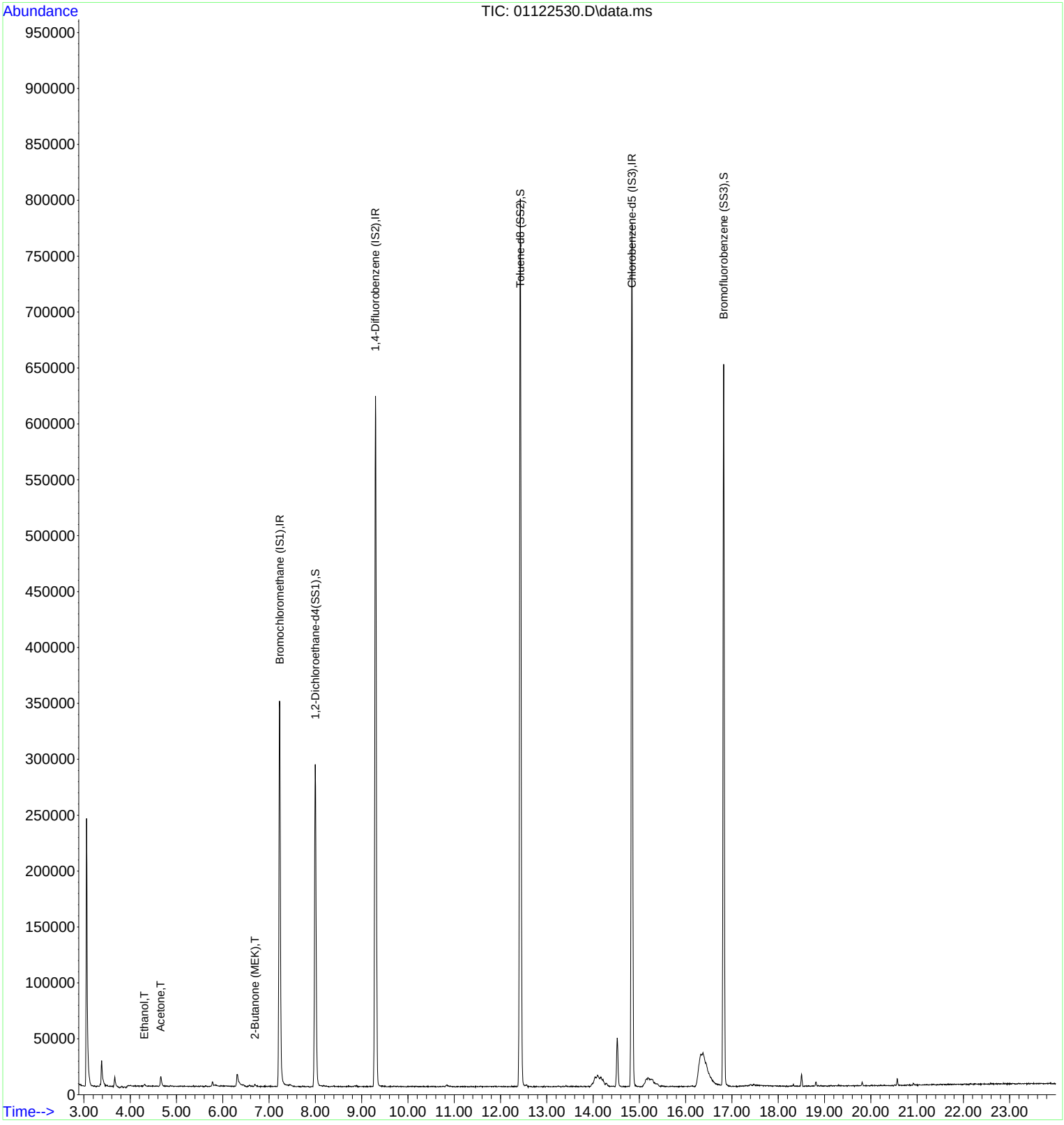
Quant Time: Jan 13 06:13:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

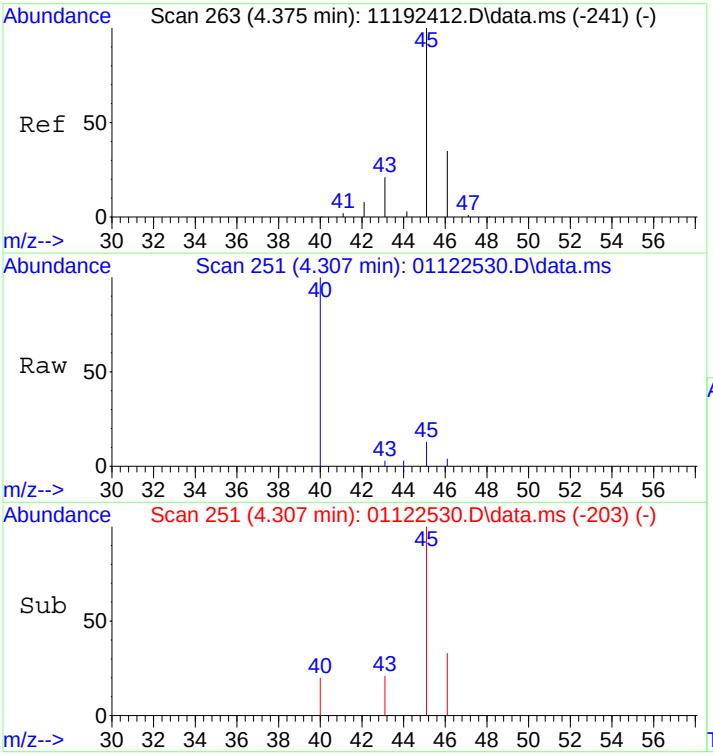
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	146712	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	641217	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	120803	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250219	12.518	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
57) Toluene-d8 (SS2)	12.43	98	670359	12.509	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
73) Bromofluorobenzene (SS3)	16.82	174	235982	12.760	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.08%				
Target Compounds							Qvalue
10) Ethanol	4.31	45	2217	0.204	ng		89
13) Acetone	4.66	58	3826	0.387	ng	#	85
27) 2-Butanone (MEK)	6.69	72	497	0.063	ng	#	22

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 13 06:13:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

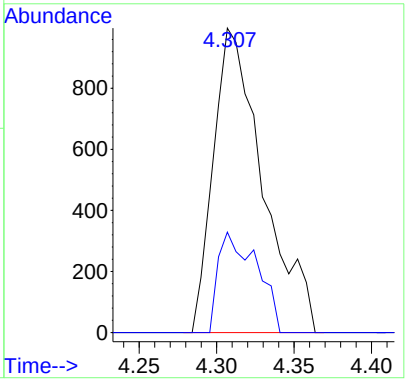


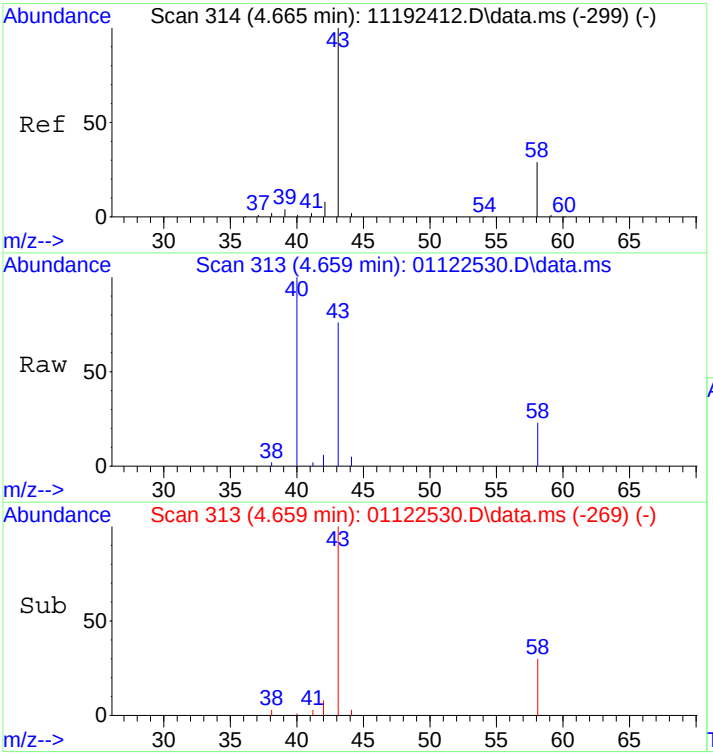


#10
Ethanol
Concen: 0.20 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01122530.D
Acq: 12 Jan 2025 21:20

Tgt Ion: 45 Resp: 2217

Ion	Ratio	Lower	Upper
45	100		
46	25.7	11.8	51.8

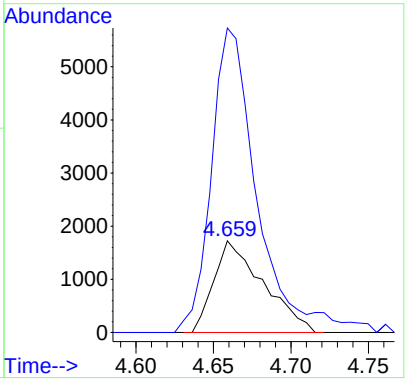


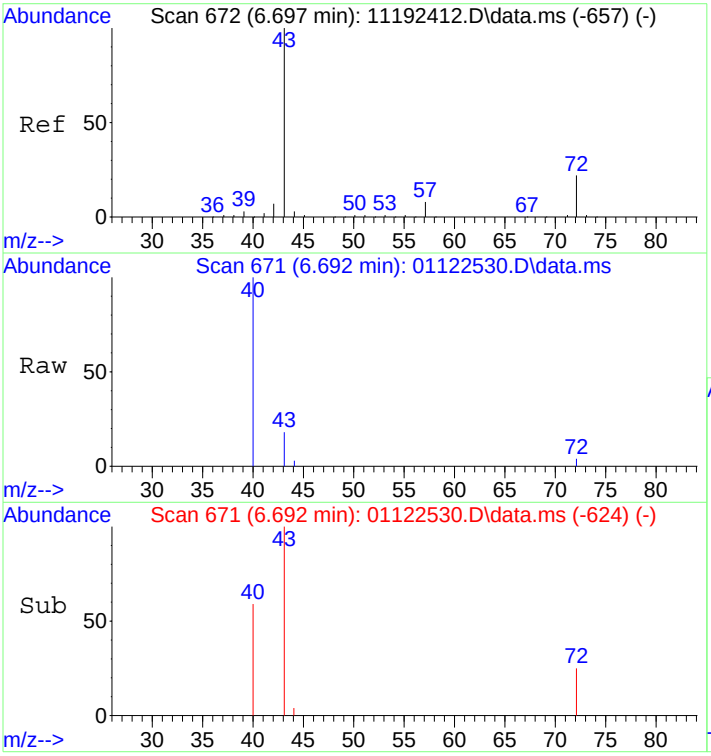


#13
Acetone
Concen: 0.39 ng
RT: 4.66 min Scan# 313
Delta R.T. -0.001 min
Lab File: 01122530.D
Acq: 12 Jan 2025 21:20

Tgt Ion: 58 Resp: 3826

Ion	Ratio	Lower	Upper
58	100		
43	310.0	312.5	372.5#

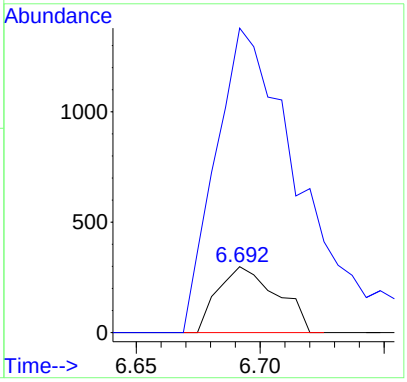




#27
2-Butanone (MEK)
Concen: 0.06 ng
RT: 6.69 min Scan# 671
Delta R.T. 0.018 min
Lab File: 01122530.D
Acq: 12 Jan 2025 21:20

Tgt Ion: 72 Resp: 497

Ion	Ratio	Lower	Upper
72	100		
43	662.0	439.8	479.8#



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

MOA 1/13/25

Quant Time: Jan 13 12:29:31 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

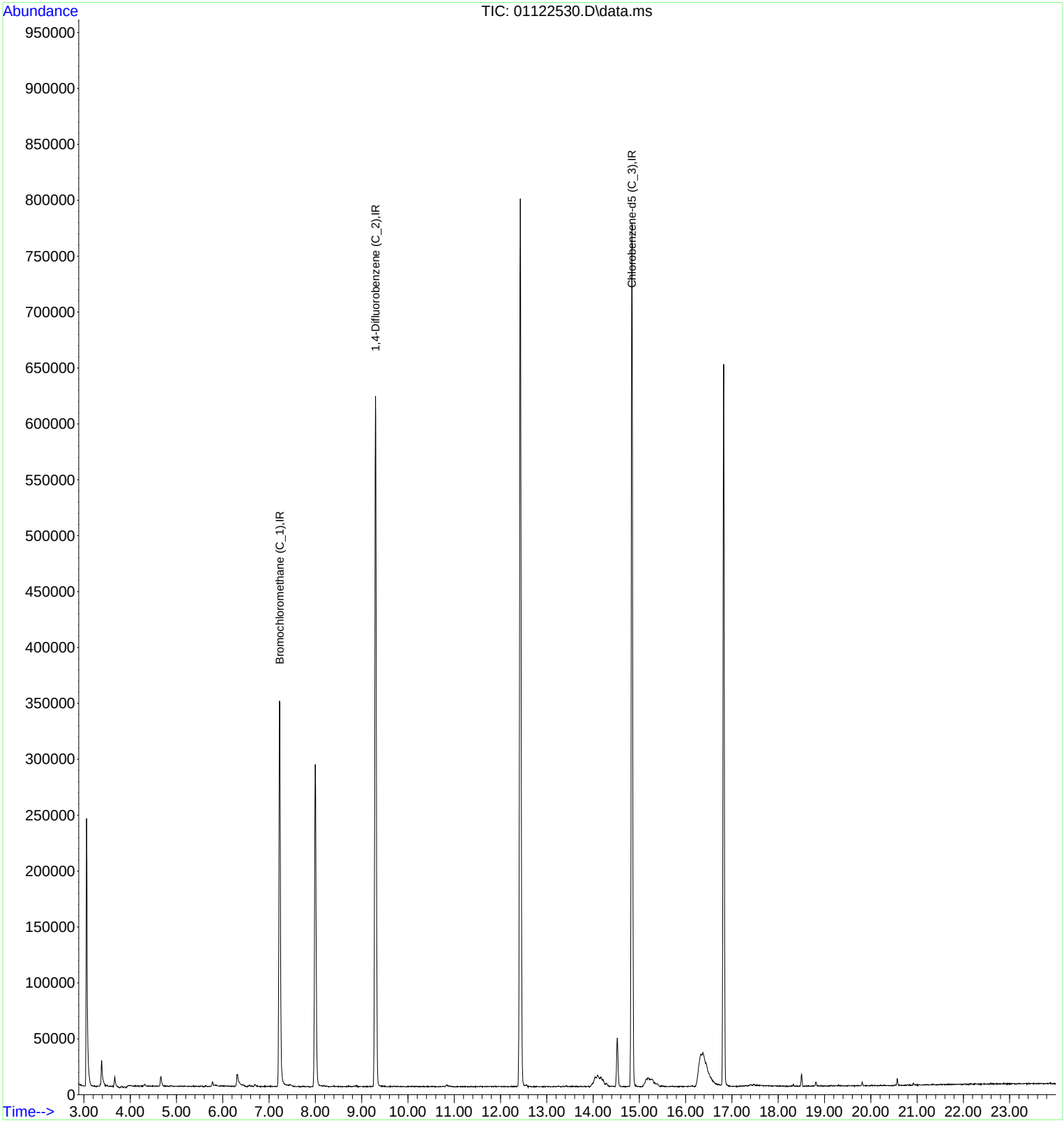
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	148282	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	641217	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	120803	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.69	57	196	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 13 12:29:31 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122530.D\data.ms

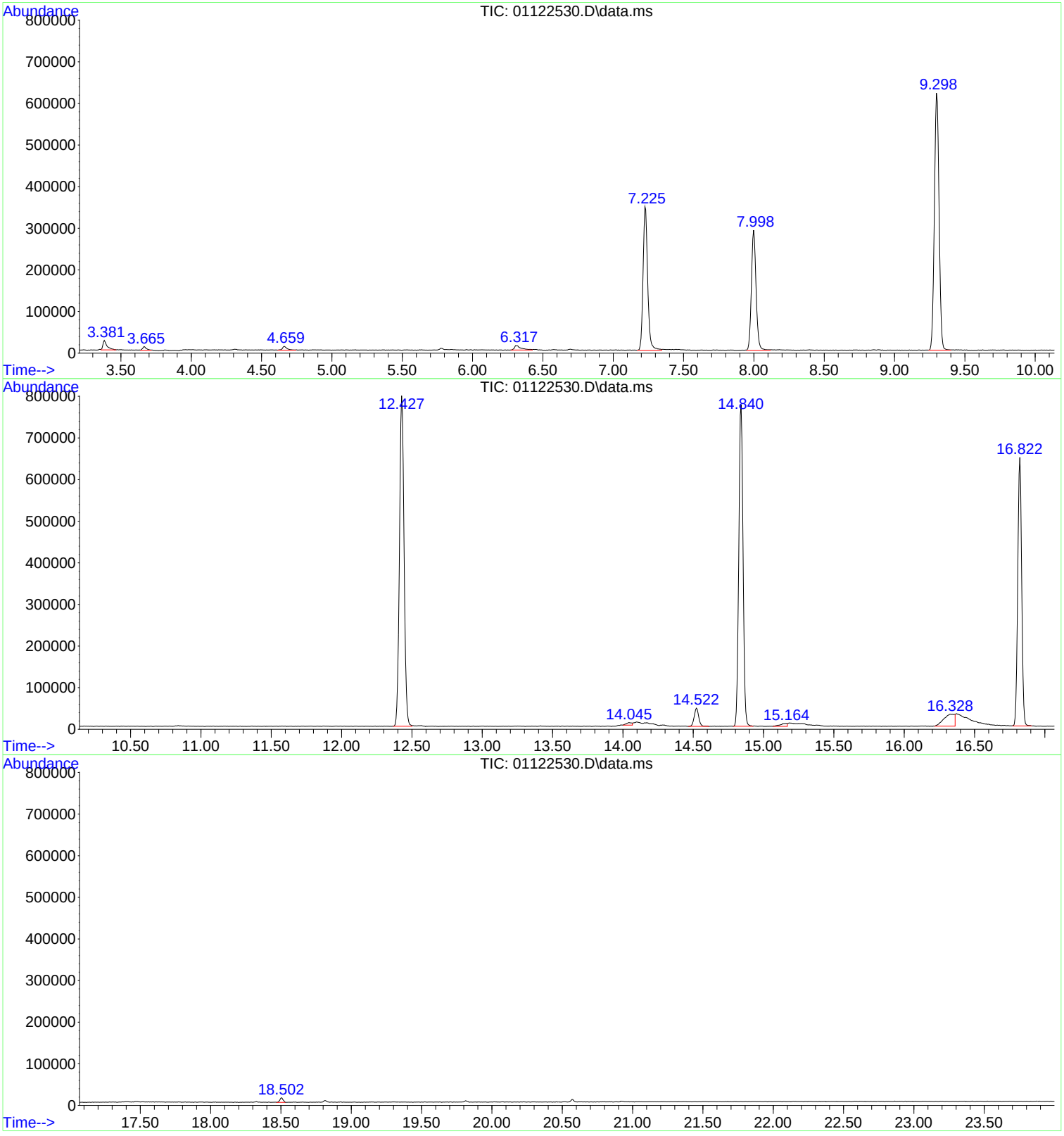
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.381	84	88	103	rVB	22713	46624	2.58%	0.586%
2	3.665	133	138	147	rBV2	8867	16161	0.89%	0.203%
3	4.659	305	313	328	rBV	8867	20496	1.13%	0.257%
4	6.317	597	605	624	rBV3	10551	36132	2.00%	0.454%
5	7.225	755	765	786	rBV	345123	782034	43.25%	9.823%
6	7.998	892	901	922	rBV	288253	664814	36.76%	8.351%
7	9.298	1120	1130	1148	rBV	617507	1415648	78.29%	17.782%
8	12.427	1670	1681	1694	rBV	794280	1808284	100.00%	22.713%
9	14.045	1958	1966	1970	rBV4	6057	16939	0.94%	0.213%
10	14.522	2040	2050	2066	rBV	43894	97913	5.41%	1.230%
11	14.840	2096	2106	2121	rBV	772478	1618227	89.49%	20.326%
12	15.164	2146	2163	2164	rBV4	7343	25662	1.42%	0.322%
13	16.328	2348	2368	2374	rBV3	28603	156731	8.67%	1.969%
14	16.822	2446	2455	2470	rVB	645203	1238266	68.48%	15.554%
15	18.502	2745	2751	2756	rVB4	11034	17385	0.96%	0.218%

Sum of corrected areas: 7961316

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:20
Operator : SC
Sample : P2405139-030 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122530.D
Acq On : 12 Jan 2025 21:200
Operator : SCC
Sample : P2405139-030 (400mL))
Misc : S37-123124011
ALS Vial : 14 Sample Multiplier: 11

VOA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 12:01:47 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144878	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	633767	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.83	54	119492	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	247119	12.520	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
57) Toluene-d8 (SS2)	12.43	98	661249	12.474	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
73) Bromofluorobenzene (SS3)	16.82	174	236271	12.916	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.36%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.36	85	21974	0.776	ng		99
4) Chloromethane	3.52	50	4305	0.205	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	409	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	4.03	94	226	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	91910	8.577	ng		99
11) Acetonitrile	0.00	41	0	N.D. d			
12) Acrolein	4.55	56	744	0.081	ng		93
13) Acetone	4.62	58	38995	3.997	ng	#	1
14) Trichlorofluoromethane	4.75	101	26617	1.002	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	128555	3.680	ng		99
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.35	84	35270	2.569	ng		99
20) 3-Chloro-1-propene (Al...	5.40	41	526	N.D.			
21) Trichlorotrifluoroethane	5.58	151	16315	1.361	ng		97
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	6.31	63	184	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D. d			
26) Vinyl Acetate	6.44	86	1099	0.465	ng		97
27) 2-Butanone (MEK)	6.67	72	3273	0.418	ng	#	83
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.28	61	75239	15.554	ng		96
31) n-Hexane	7.30	57	8367	0.384	ng		99
32) Chloroform	7.36	83	783	N.D.			
34) Tetrahydrofuran (THF)	7.76	72	1254	0.170	ng		90
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.11	62	1189	0.060	ng		69
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	5106	No Calib		#	
41) Benzene	8.89	78	18676	0.367	ng		99
42) Carbon Tetrachloride	9.06	117	2667	0.131	ng		90
43) Cyclohexane	9.21	84	6509	0.367	ng		99
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	9.86	63	2599	0.209	ng		90
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.15	130	742	0.051	ng	#	52
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

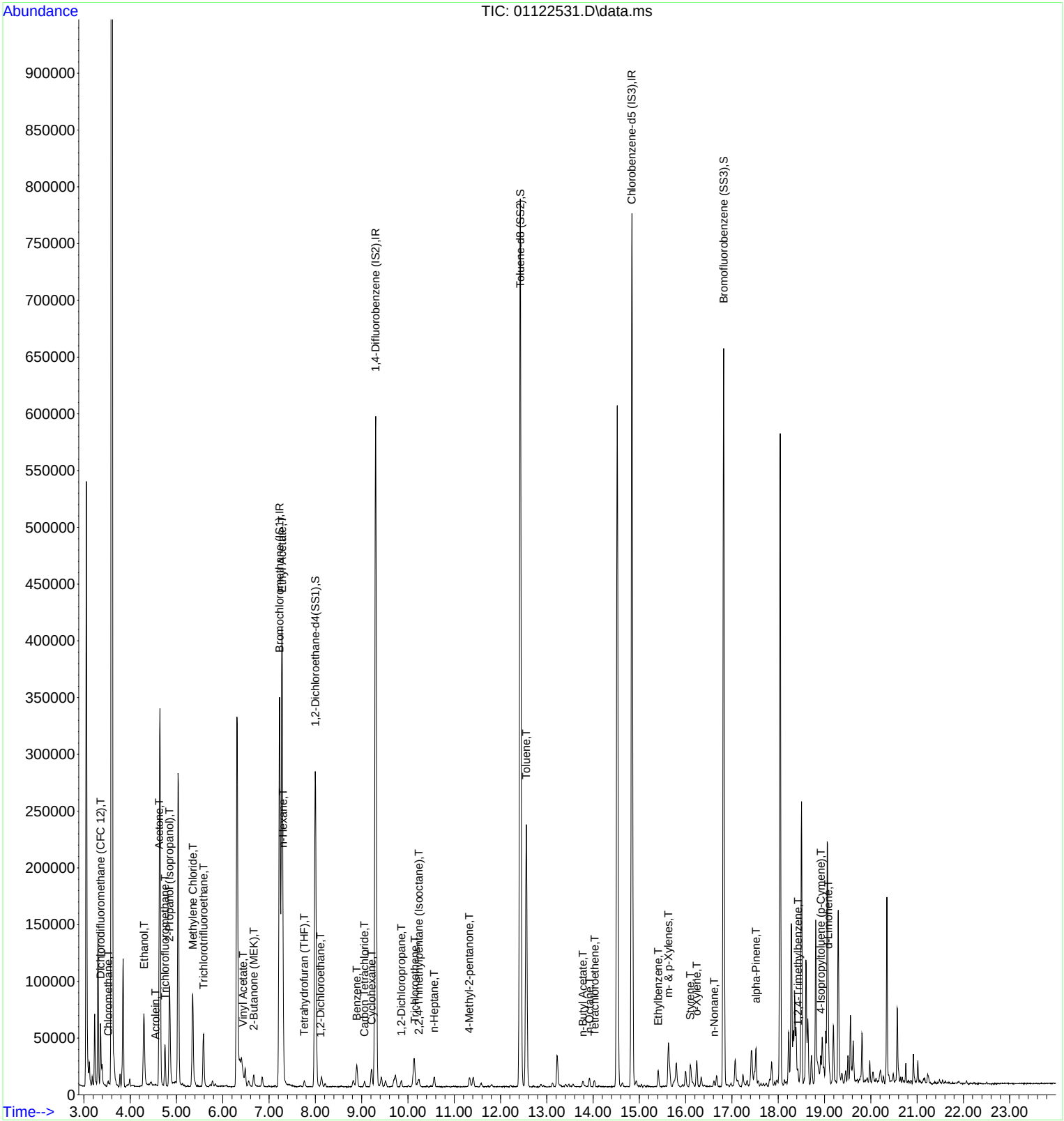
Quant Time: Jan 13 12:01:47 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	7333	0.138 ng		83
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.56	71	2199	0.194 ng		92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	2943	0.269 ng		80
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	214749	4.211 ng		99
59) 2-Hexanone	12.93	43	1112	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	5916	0.212 ng		96
63) n-Octane	13.92	57	1316	0.124 ng		99
64) Tetrachloroethene	14.03	166	2087	0.138 ng		99
65) Chlorobenzene	14.90	112	247	N.D.		
66) Ethylbenzene	15.41	91	13444	0.238 ng		98
67) m- & p-Xylenes	15.63	91	36139	0.783 ng		99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	9828	0.305 ng		97
70) o-Xylene	16.24	91	16264	0.356 ng		99
71) n-Nonane	16.62	43	2321	0.096 ng		93
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.04	105	1079	N.D.		
75) alpha-Pinene	17.52	93	13885	0.495 ng		94
76) n-Propylbenzene	17.68	91	2011	N.D.		
77) 3-Ethyltoluene	17.04	105	1079	No Calib	#	
78) 4-Ethyltoluene	17.86	105	1760	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	1516	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.04	105	1079	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.43	105	5069	0.107 ng		92
83) n-Decane	17.06	58	722	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	18.57	146	304	N.D.		
86) 1,4-Dichlorobenzene	18.65	146	254	N.D.		
87) sec-Butylbenzene	18.74	105	352	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	5172	0.099 ng		91
89) 1,2,3-Trimethylbenzene	17.04	105	1079	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	11447	0.757 ng		95
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	17.98	58	178	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	132	N.D.		
95) Naphthalene	20.94	128	1368	N.D.		
96) n-Dodecane	18.95	58	1613	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.42	119	685	N.D.		
100) n-Butylbenzene	19.38	91	1162	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 12:01:47 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

VOA 1/13/25

Quant Time: Jan 13 12:01:47 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

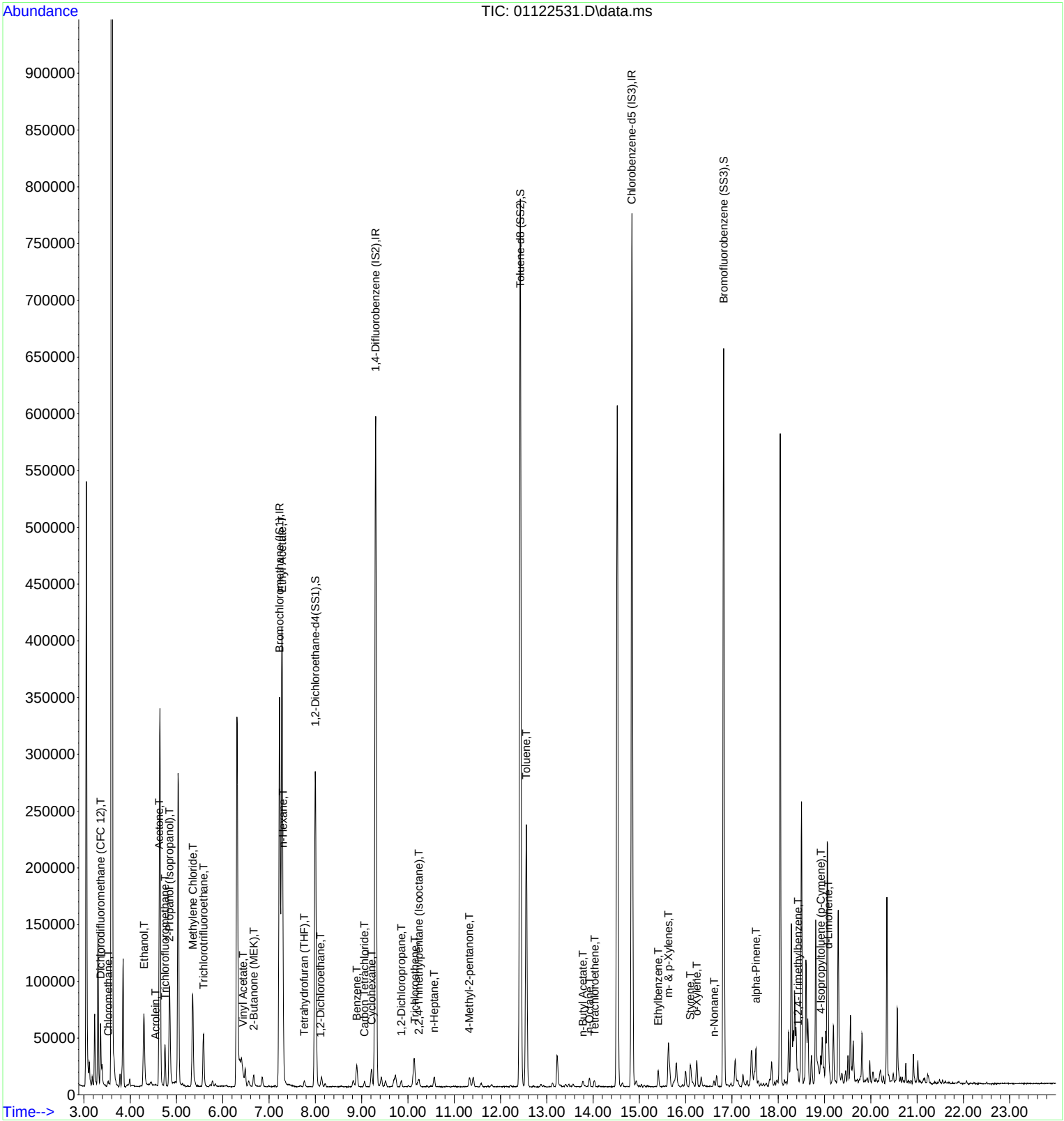
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144878	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	633767	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.83	54	119492	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	247119	12.520	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
57) Toluene-d8 (SS2)	12.43	98	661249	12.474	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
73) Bromofluorobenzene (SS3)	16.82	174	236271	12.916	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.36%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.36	85	21974	0.776	ng		99
4) Chloromethane	3.52	50	4305	0.205	ng		98
10) Ethanol	4.30	45	91910	8.577	ng		99
12) Acrolein	4.55	56	744	0.081	ng		93
13) Acetone	4.62	58	38995	3.997	ng	#	1
14) Trichlorofluoromethane	4.75	101	26617	1.002	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	128555	3.680	ng		99
19) Methylene Chloride	5.35	84	35270	2.569	ng		99
21) Trichlorotrifluoroethane	5.58	151	16315	1.361	ng		97
26) Vinyl Acetate	6.44	86	1099	0.465	ng		97
27) 2-Butanone (MEK)	6.67	72	3273	0.418	ng	#	83
30) Ethyl Acetate	7.28	61	75239	15.554	ng		96
31) n-Hexane	7.30	57	8367	0.384	ng		99
34) Tetrahydrofuran (THF)	7.76	72	1254	0.170	ng		90
36) 1,2-Dichloroethane	8.11	62	1189	0.060	ng		69
41) Benzene	8.89	78	18676	0.367	ng		99
42) Carbon Tetrachloride	9.06	117	2667	0.131	ng		90
43) Cyclohexane	9.21	84	6509	0.367	ng		99
45) 1,2-Dichloropropane	9.86	63	2599	0.209	ng		90
47) Trichloroethene	10.15	130	742	0.051	ng	#	52
49) 2,2,4-Trimethylpentane...	10.23	57	7333	0.138	ng		83
51) n-Heptane	10.56	71	2199	0.194	ng		92
53) 4-Methyl-2-pentanone	11.33	58	2943	0.269	ng		80
58) Toluene	12.56	91	214749	4.211	ng		99
62) n-Butyl Acetate	13.78	43	5916	0.212	ng		96
63) n-Octane	13.92	57	1316	0.124	ng		99
64) Tetrachloroethene	14.03	166	2087	0.138	ng		99
66) Ethylbenzene	15.41	91	13444	0.238	ng		98
67) m- & p-Xylenes	15.63	91	36139	0.783	ng		99
69) Styrene	16.10	104	9828	0.305	ng		97
70) o-Xylene	16.24	91	16264	0.356	ng		99
71) n-Nonane	16.62	43	2321	0.096	ng		93
75) alpha-Pinene	17.52	93	13885	0.495	ng		94
82) 1,2,4-Trimethylbenzene	18.43	105	5069	0.107	ng		92
88) 4-Isopropyltoluene (p-...	18.92	119	5172	0.099	ng		91
91) d-Limonene	19.08	68	11447	0.757	ng		95

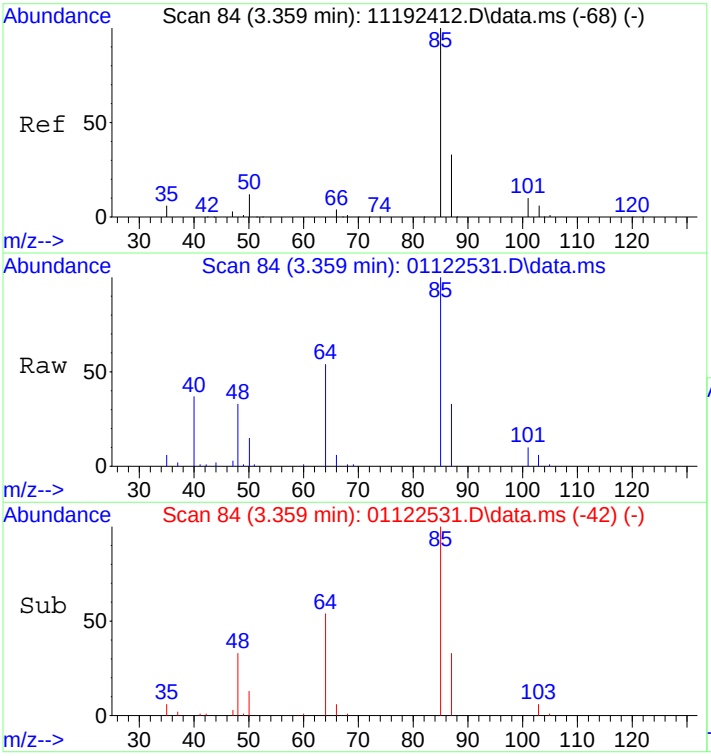
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 12:01:47 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

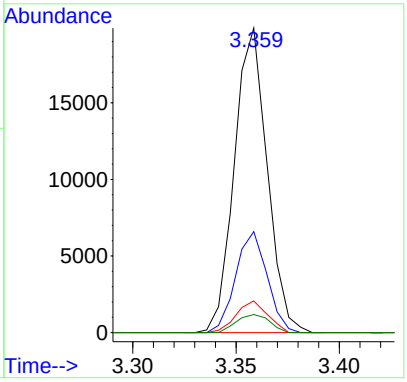


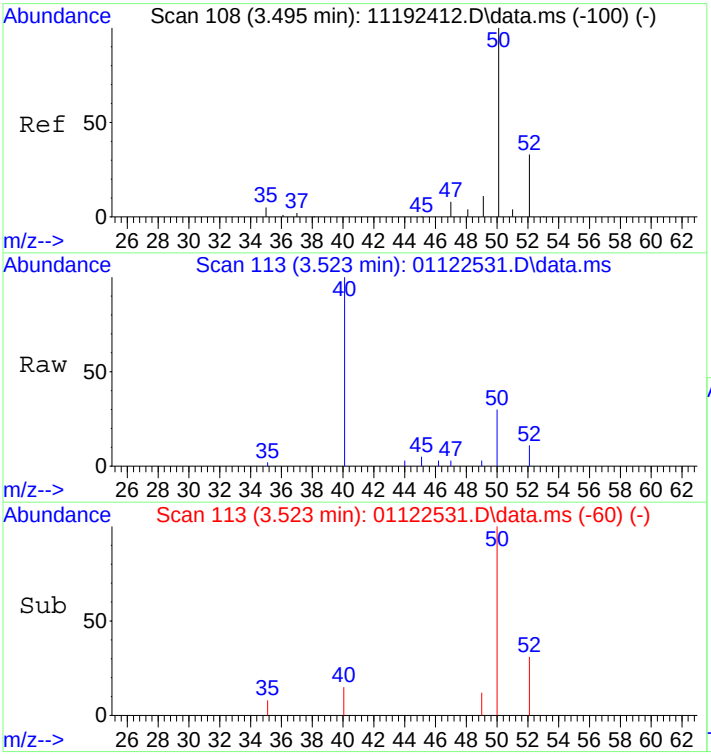


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.78 ng
RT: 3.36 min Scan# 84
Delta R.T. -0.013 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 85 Resp: 21974

Ion	Ratio	Lower	Upper
85	100		
87	31.8	12.6	52.6
101	10.0	0.0	29.6
103	6.0	0.0	26.2

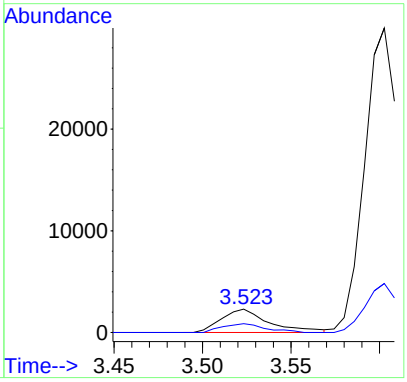


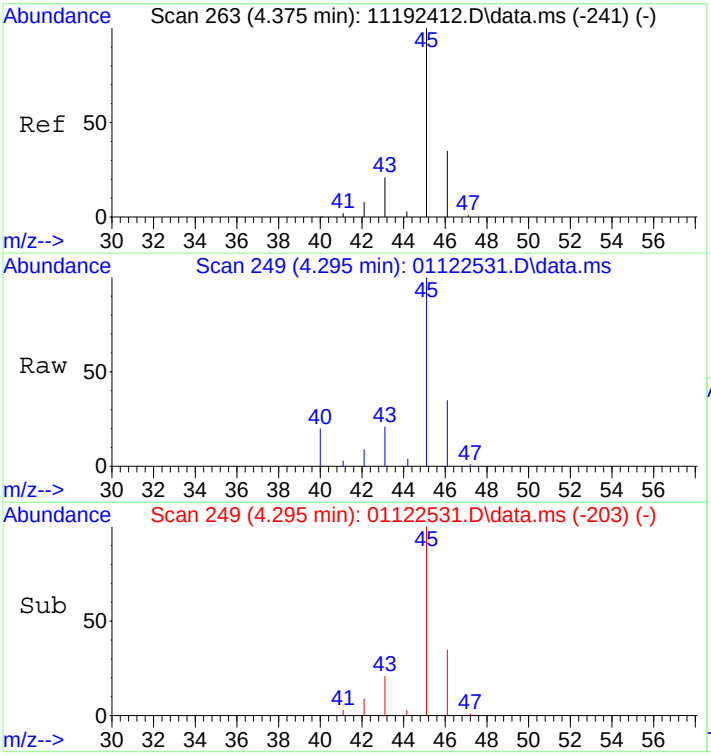


#4
Chloromethane
Concen: 0.20 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 50 Resp: 4305

Ion	Ratio	Lower	Upper
50	100		
52	34.0	13.0	53.0

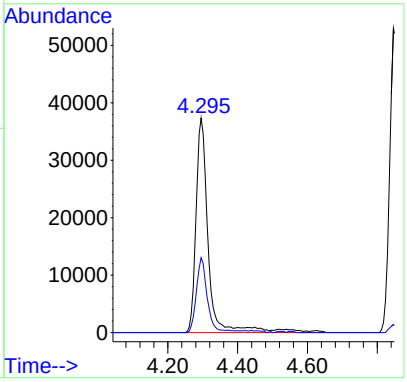


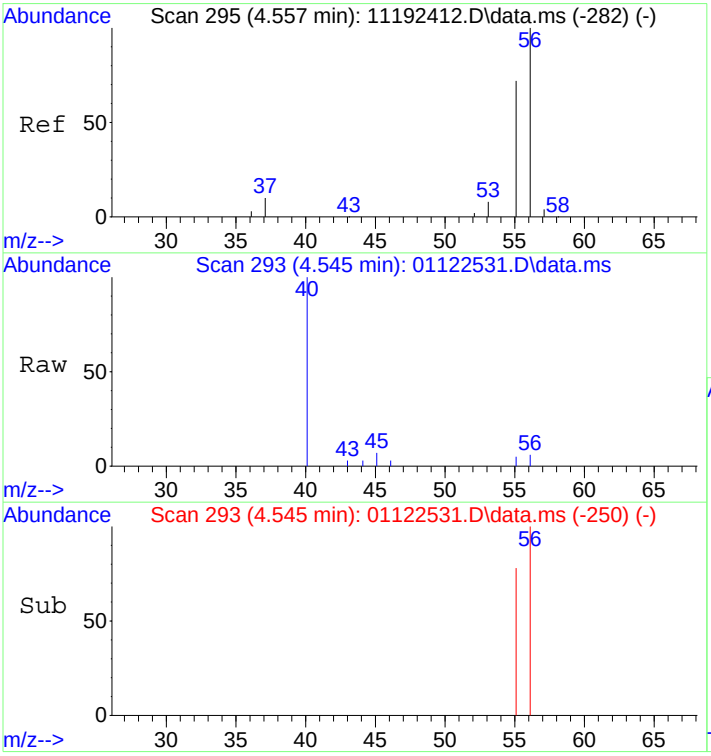


#10
Ethanol
Concen: 8.58 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 45 Resp: 91910

Ion	Ratio	Lower	Upper
45	100		
46	32.4	11.8	51.8

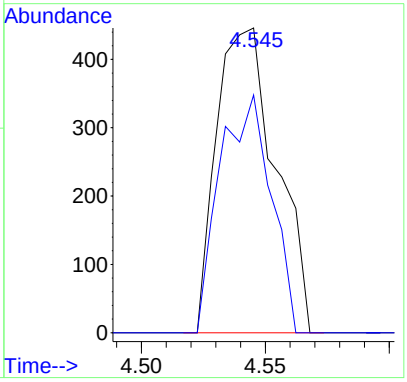


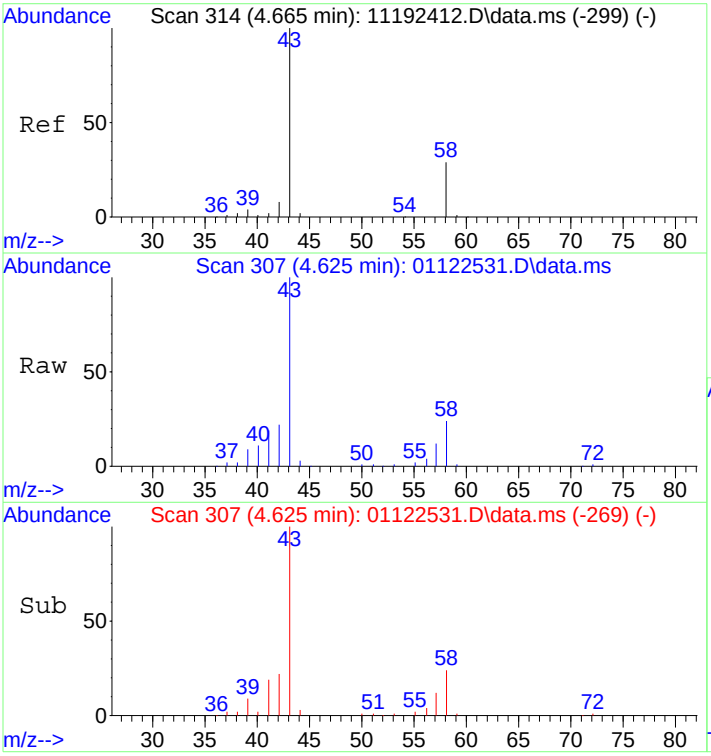


#12
Acrolein
Concen: 0.08 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 56 Resp: 744

Ion	Ratio	Lower	Upper
56	100		
55	66.9	53.1	93.1

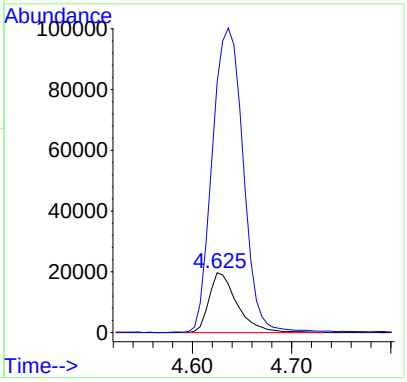


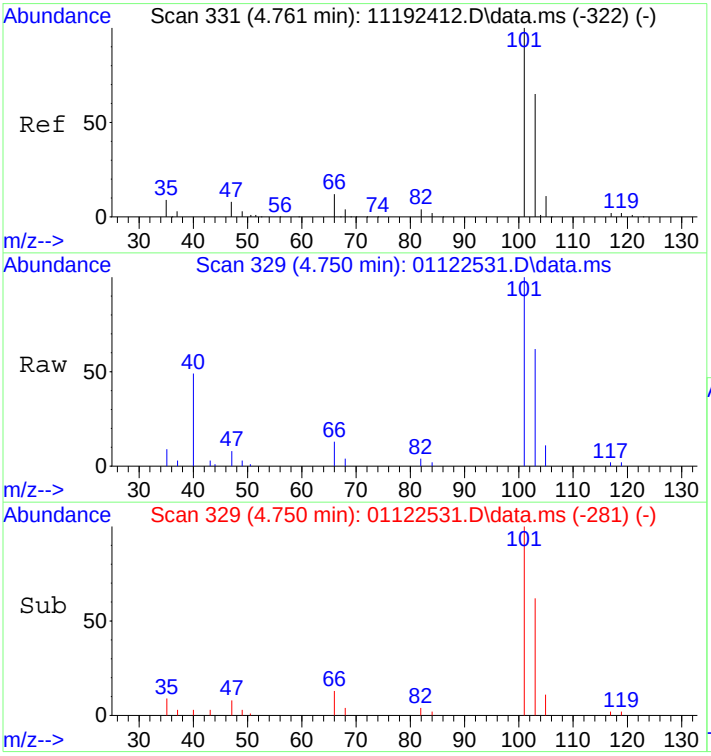


#13
Acetone
Concen: 4.00 ng
RT: 4.62 min Scan# 307
Delta R.T. -0.035 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 58 Resp: 38995

Ion	Ratio	Lower	Upper
58	100		
43	563.2	312.5	372.5#

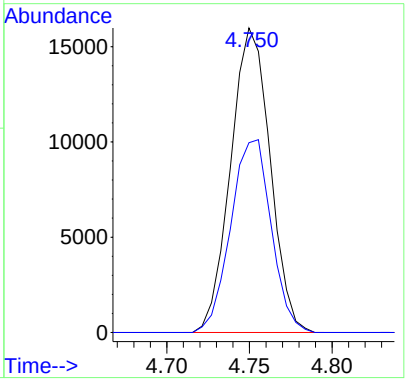


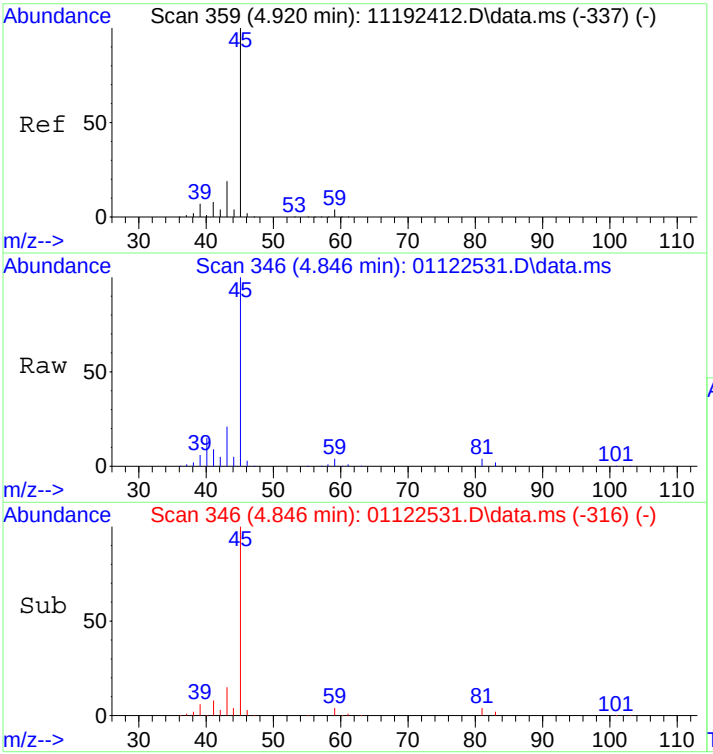


#14
Trichlorofluoromethane
Concen: 1.00 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:101 Resp: 26617

Ion	Ratio	Lower	Upper
101	100		
103	64.9	44.8	84.8

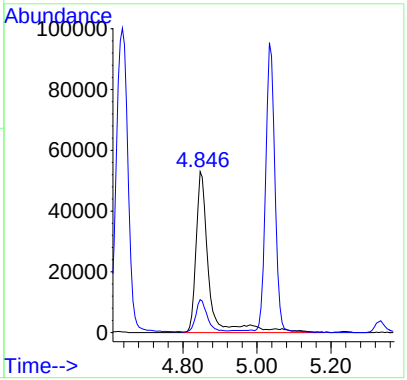


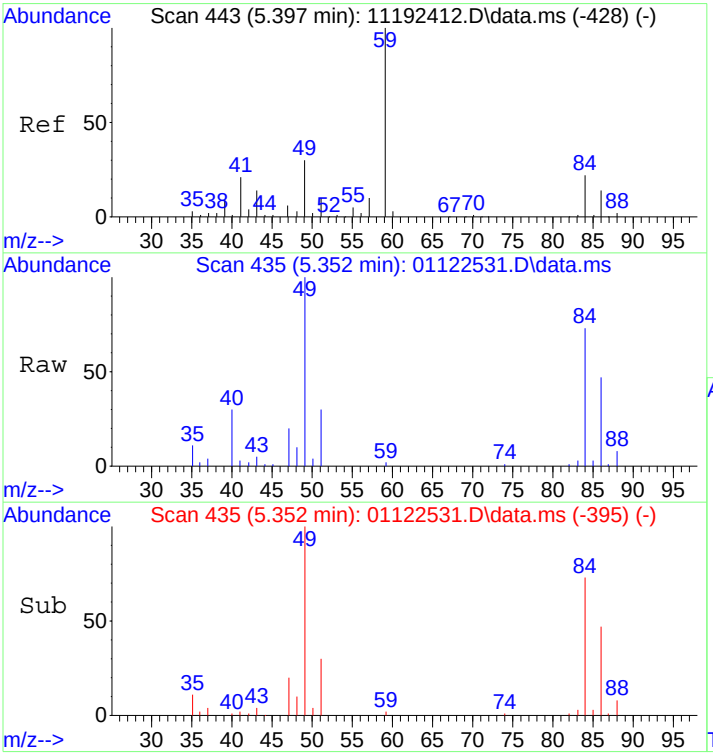


#15
2-Propanol (Isopropanol)
Concen: 3.68 ng
RT: 4.85 min Scan# 346
Delta R.T. -0.078 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 45 Resp: 128555

Ion	Ratio	Lower	Upper
45	100		
43	19.9	0.2	40.2

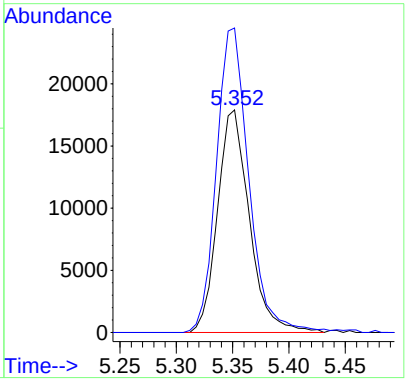


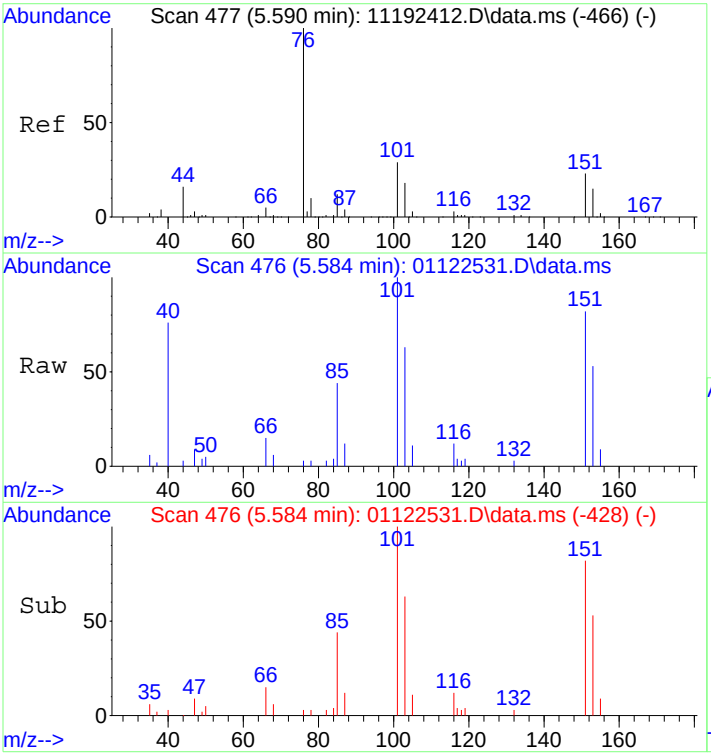


#19
Methylene Chloride
Concen: 2.57 ng
RT: 5.35 min Scan# 435
Delta R.T. -0.023 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 84 Resp: 35270

Ion	Ratio	Lower	Upper
84	100		
49	139.5	116.0	166.0

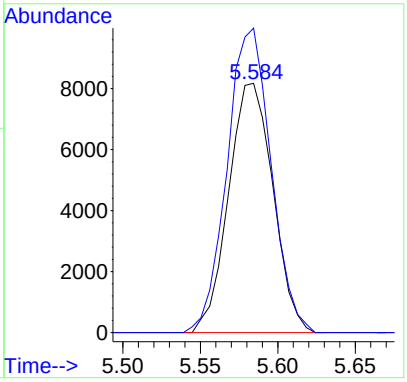


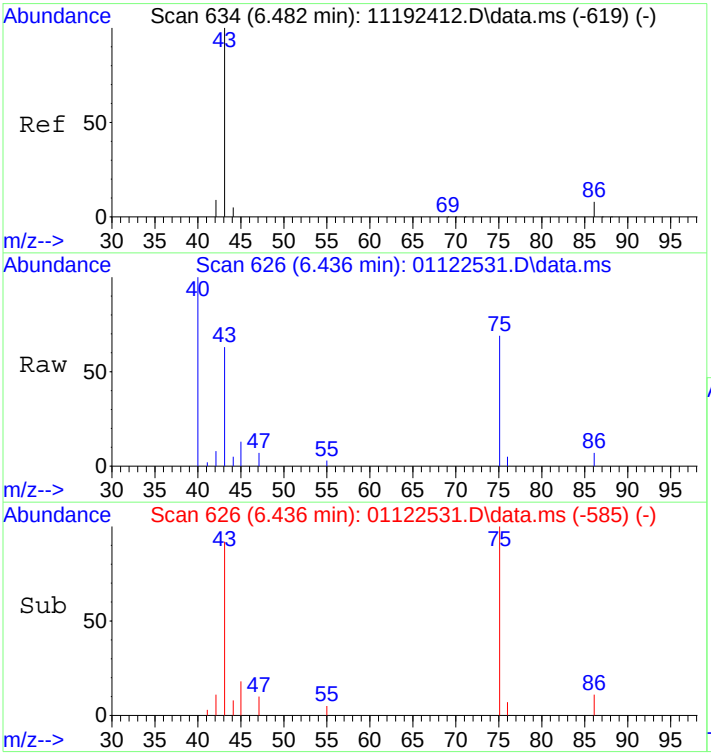


#21
Trichlorotrifluoroethane
Concen: 1.36 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:151 Resp: 16315

Ion	Ratio	Lower	Upper
151	100		
101	121.0	105.0	145.0

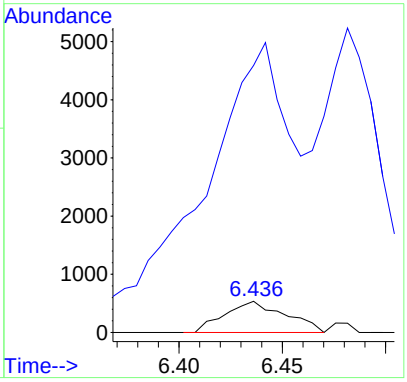


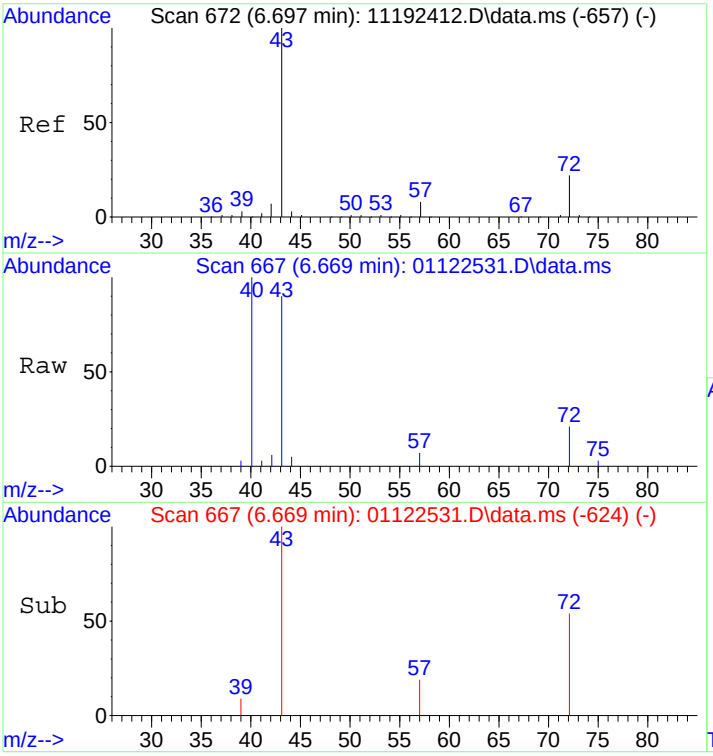


#26
Vinyl Acetate
Concen: 0.47 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 86 Resp: 1099

Ion	Ratio	Lower	Upper
86	100		
43	1367.2	1331.6	1371.6

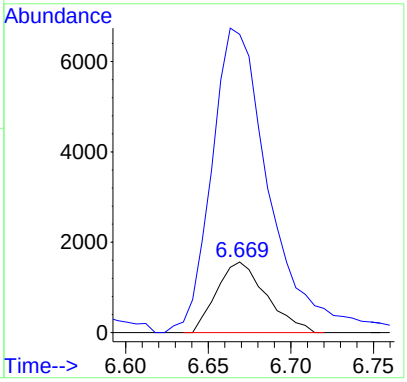


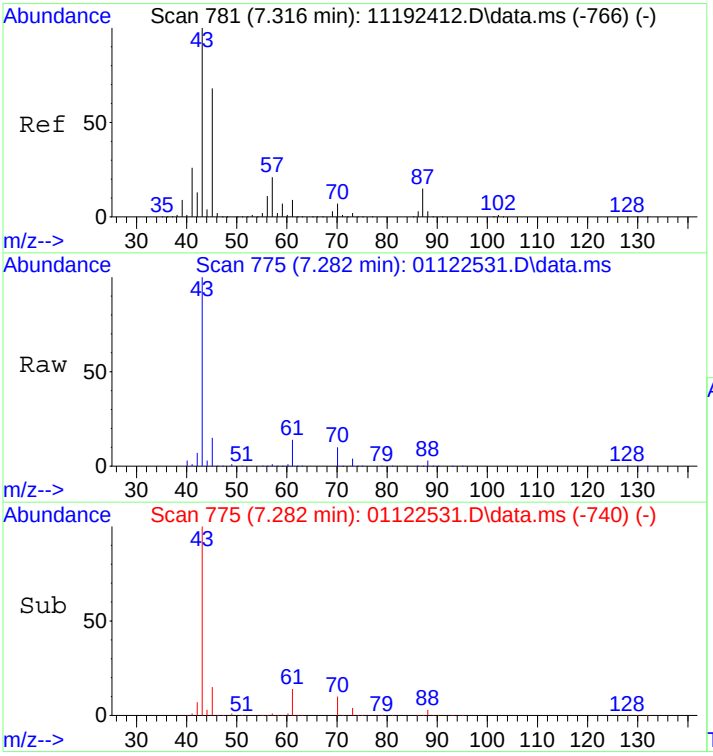


#27
2-Butanone (MEK)
Concen: 0.42 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 72 Resp: 3273

Ion	Ratio	Lower	Upper
72	100		
43	504.6	439.8	479.8#

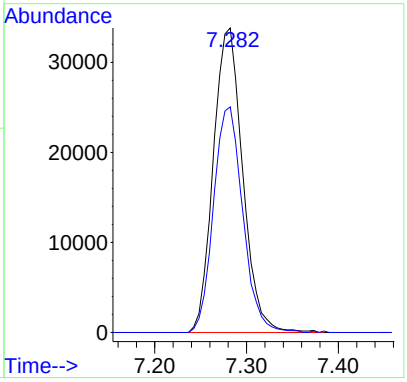


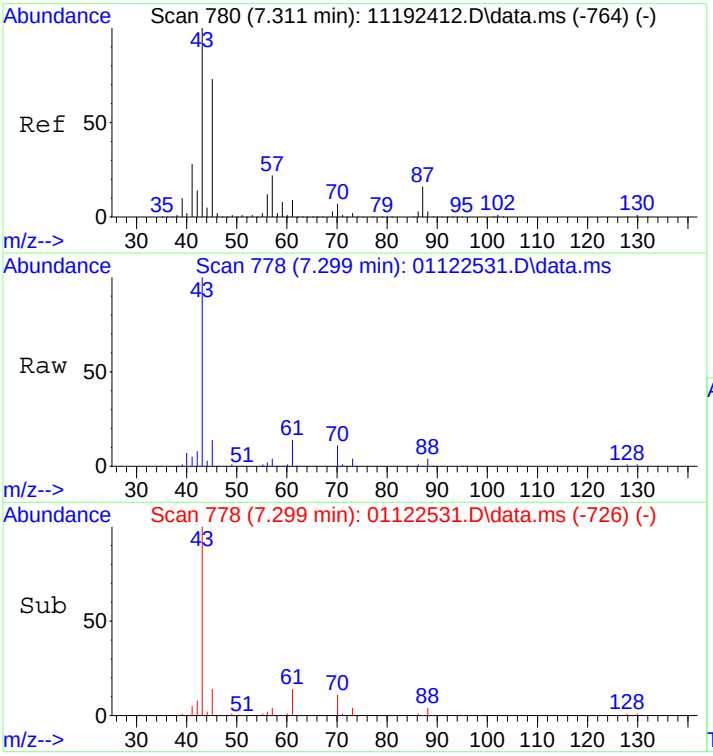


#30
Ethyl Acetate
Concen: 15.55 ng
RT: 7.28 min Scan# 775
Delta R.T. 0.001 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 61 Resp: 75239

Ion	Ratio	Lower	Upper
61	100		
70	73.7	57.3	97.3

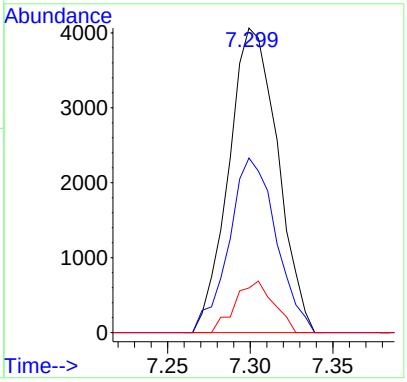


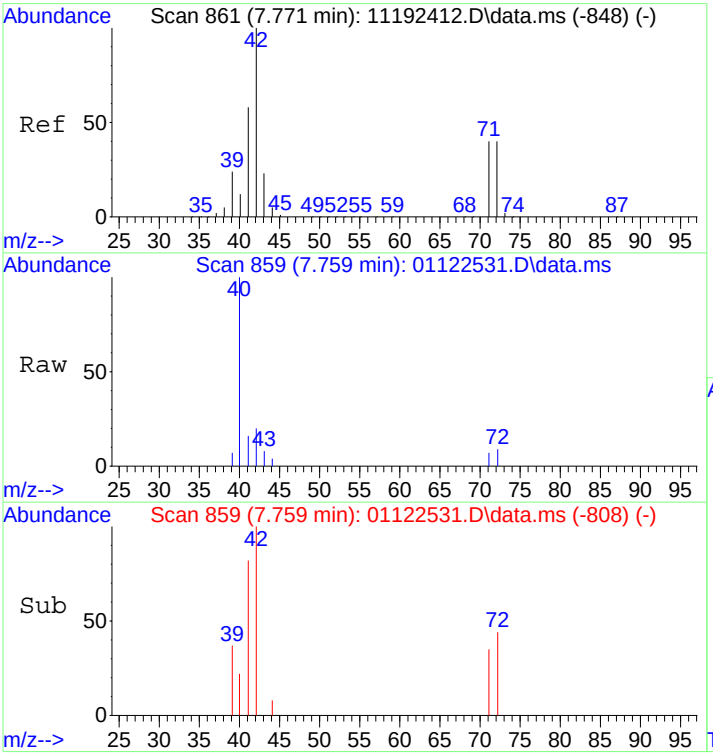


#31
n-Hexane
Concen: 0.38 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 57 Resp: 8367

Ion	Ratio	Lower	Upper
57	100		
56	55.2	43.4	65.0
86	13.3	10.9	16.3

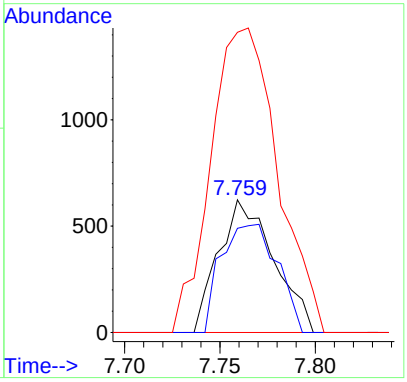


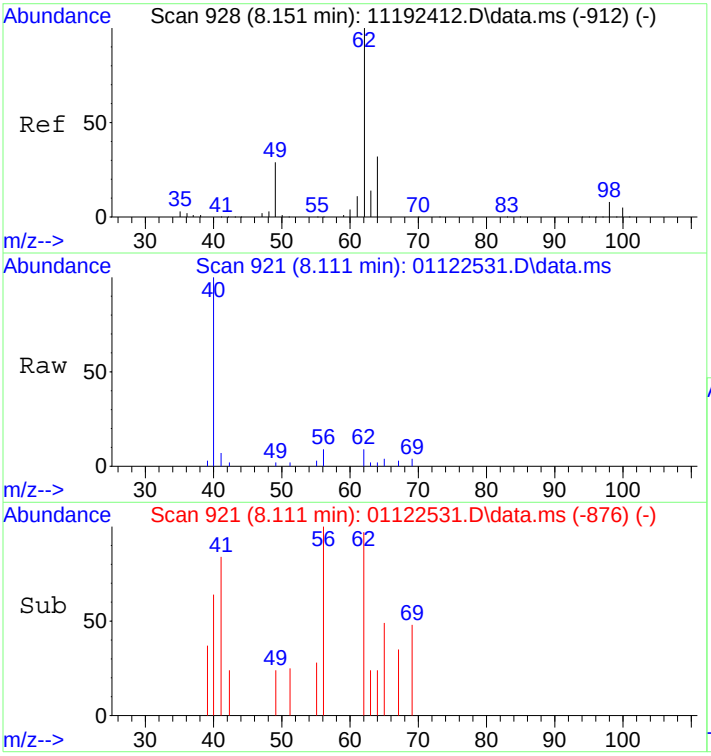


#34
Tetrahydrofuran (THF)
Concen: 0.17 ng
RT: 7.76 min Scan# 859
Delta R.T. 0.039 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 72 Resp: 1254

Ion	Ratio	Lower	Upper
72	100		
71	83.1	78.6	118.6
42	278.2	243.4	283.4

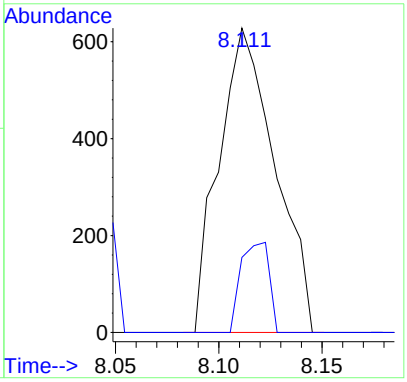


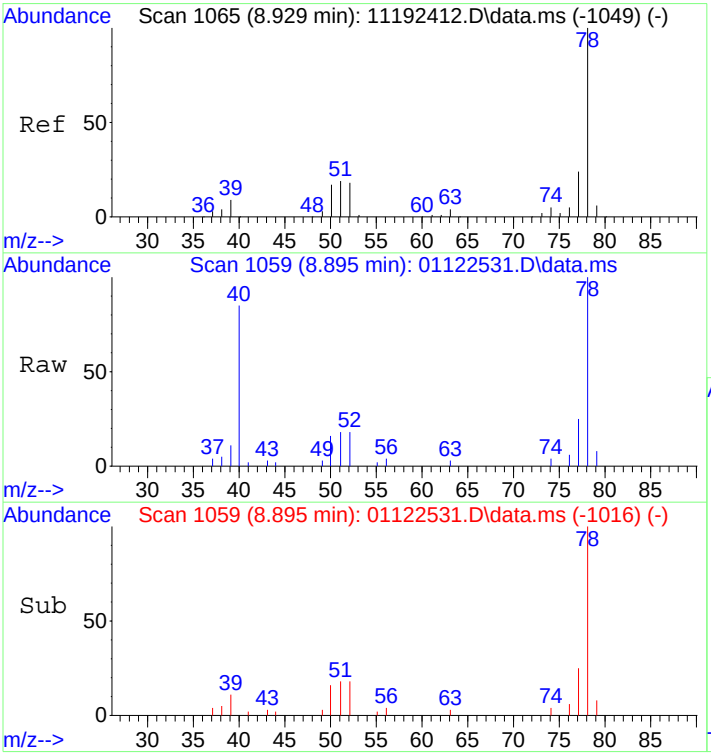


#36
1,2-Dichloroethane
Concen: 0.06 ng
RT: 8.11 min Scan# 921
Delta R.T. 0.008 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 62 Resp: 1189

Ion	Ratio	Lower	Upper
62	100		
64	14.9	12.0	52.0

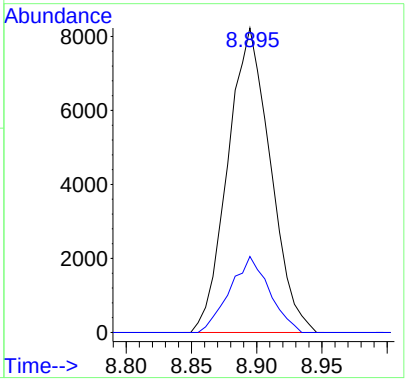


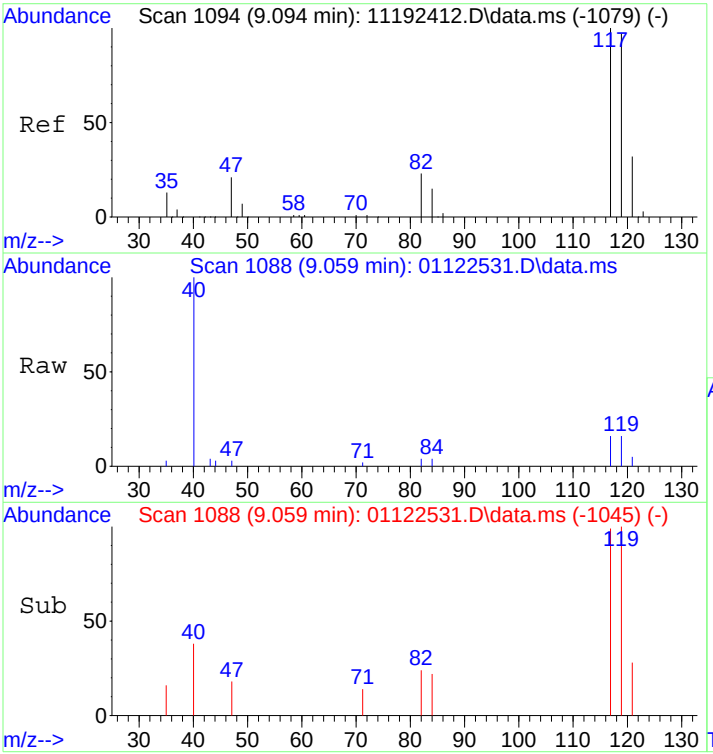


#41
Benzene
Concen: 0.37 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 78 Resp: 18676

Ion	Ratio	Lower	Upper
78	100		
77	23.2	3.7	43.7

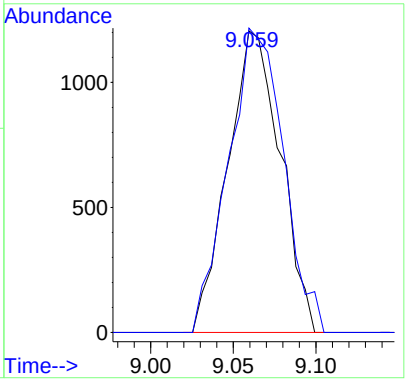


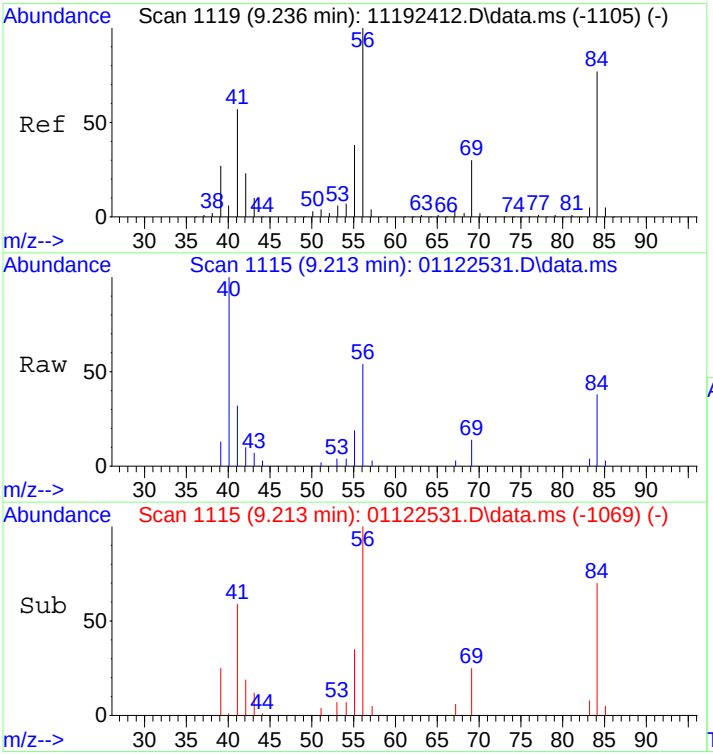


#42
Carbon Tetrachloride
Concen: 0.13 ng
RT: 9.06 min Scan# 1088
Delta R.T. -0.008 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:117 Resp: 2667

Ion	Ratio	Lower	Upper
117	100		
119	105.6	75.7	115.7

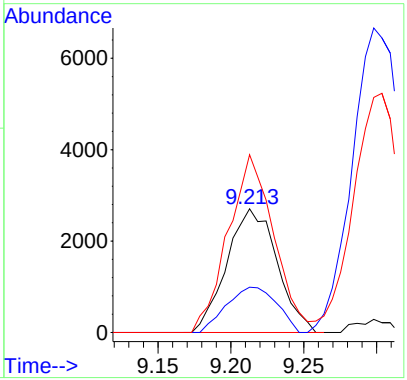


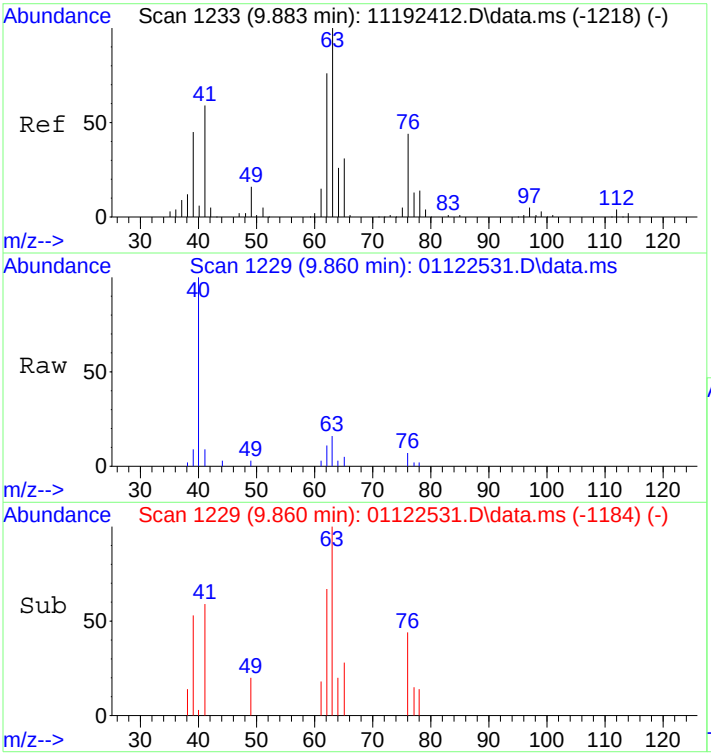


#43
Cyclohexane
Concen: 0.37 ng
RT: 9.21 min Scan# 1115
Delta R.T. 0.010 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 84 Resp: 6509

Ion	Ratio	Lower	Upper
84	100		
69	36.6	18.3	58.3
56	129.9	110.7	150.7

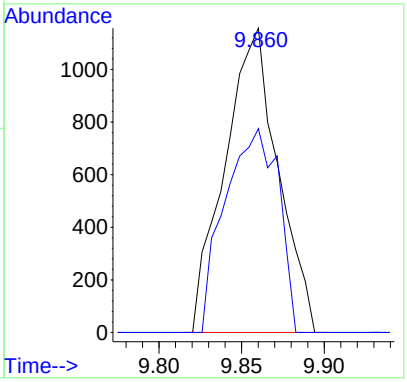


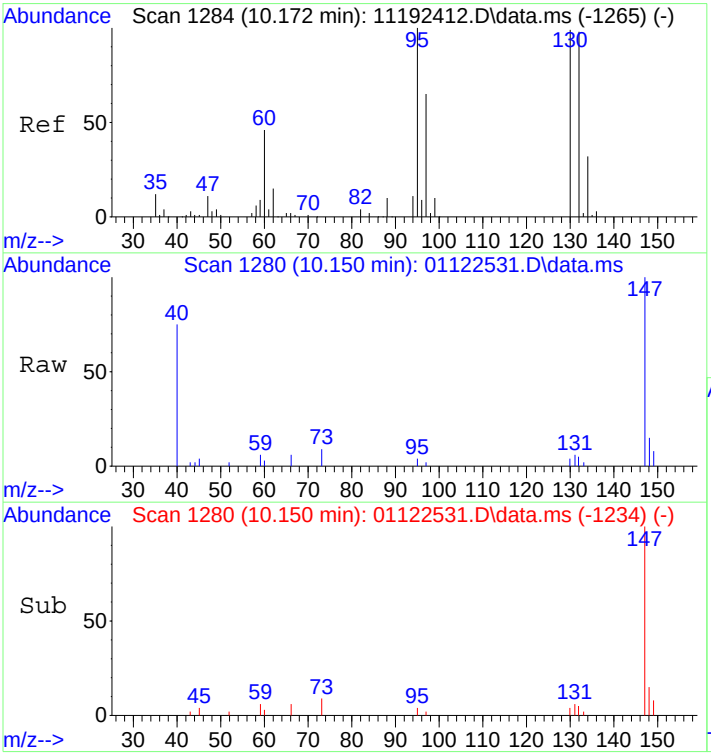


#45
1,2-Dichloropropane
Concen: 0.21 ng
RT: 9.86 min Scan# 1229
Delta R.T. 0.008 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 63 Resp: 2599

Ion	Ratio	Lower	Upper
63	100		
62	67.3	55.9	95.9

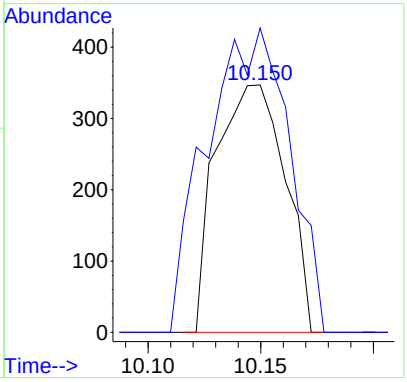


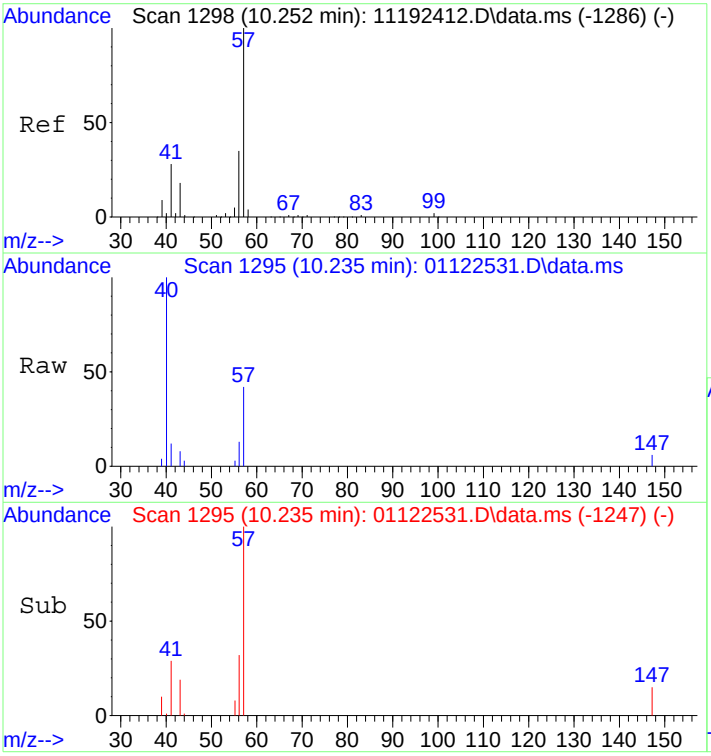


#47
Trichloroethene
Concen: 0.05 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:130 Resp: 742

Ion	Ratio	Lower	Upper
130	100		
132	147.2	79.3	119.3#

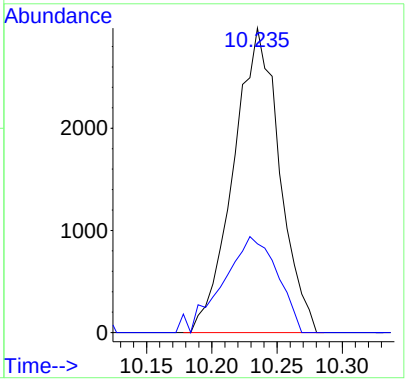


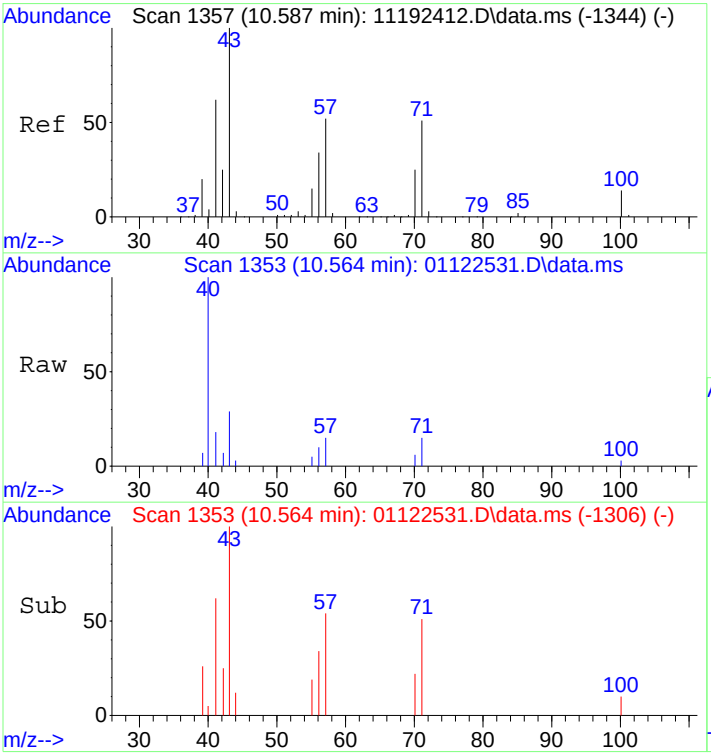


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.14 ng
RT: 10.23 min Scan# 1295
Delta R.T. 0.021 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 57 Resp: 7333

Ion	Ratio	Lower	Upper
57	100		
41	37.2	8.3	48.3

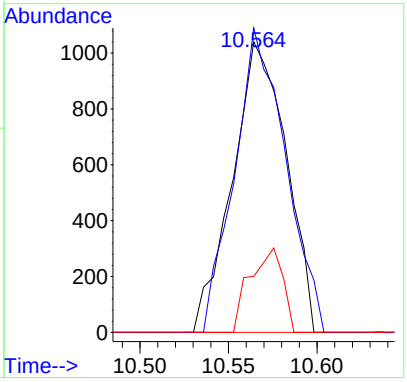


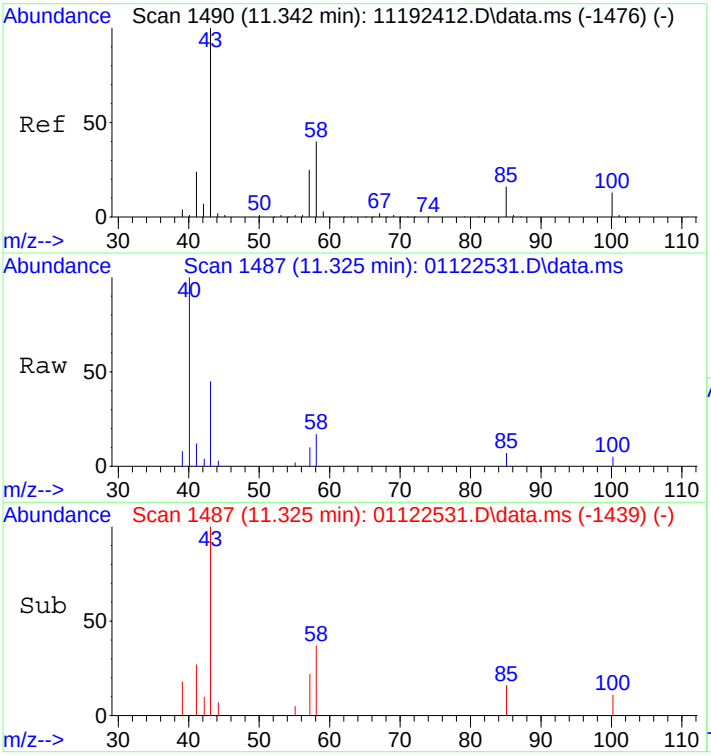


#51
n-Heptane
Concen: 0.19 ng
RT: 10.56 min Scan# 1353
Delta R.T. 0.017 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 71 Resp: 2199

Ion	Ratio	Lower	Upper
71	100		
57	99.3	83.3	123.3
100	17.6	8.7	48.7

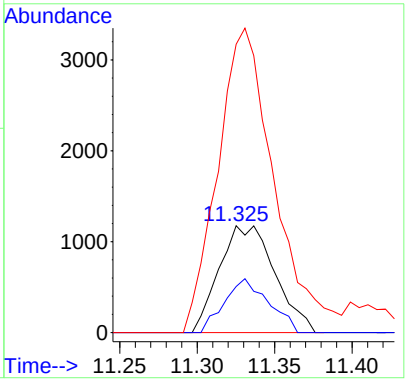


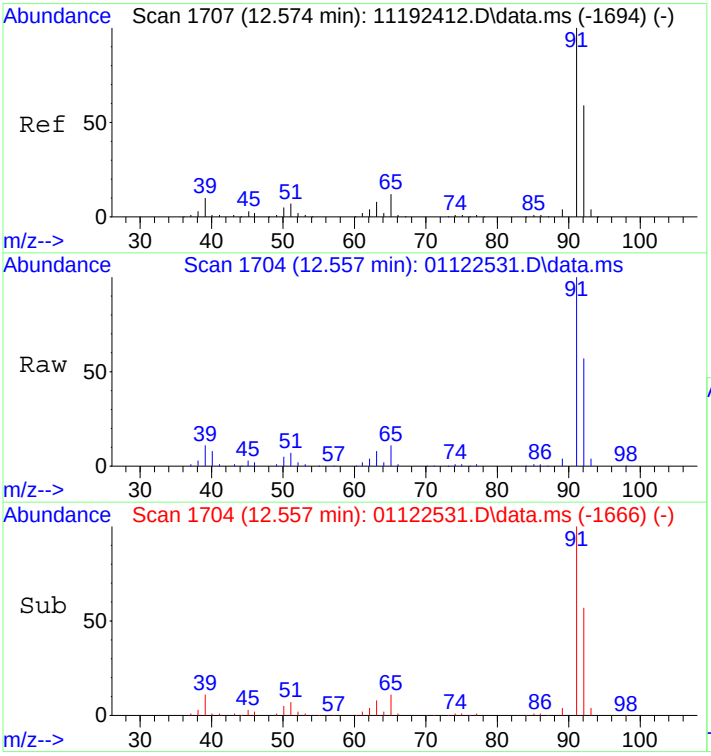


#53
4-Methyl-2-pentanone
Concen: 0.27 ng
RT: 11.33 min Scan# 1487
Delta R.T. 0.022 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 58 Resp: 2943

Ion	Ratio	Lower	Upper
58	100		
85	39.9	33.8	50.6
43	289.4	199.5	299.3

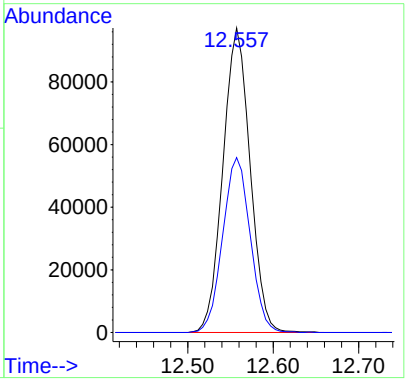


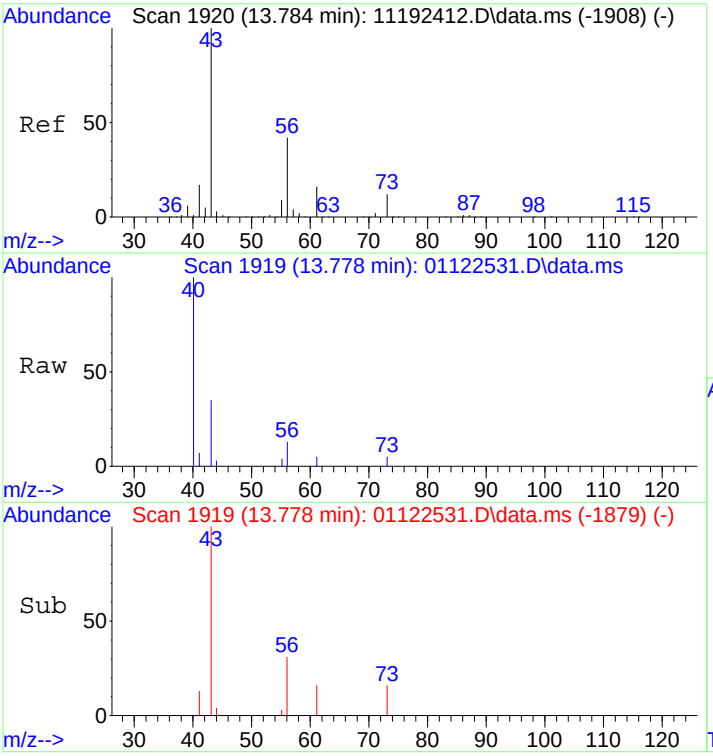


#58
Toluene
Concen: 4.21 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 91 Resp: 214749

Ion	Ratio	Lower	Upper
91	100		
92	58.3	39.2	79.2

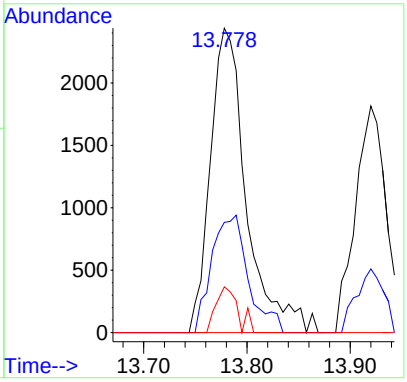


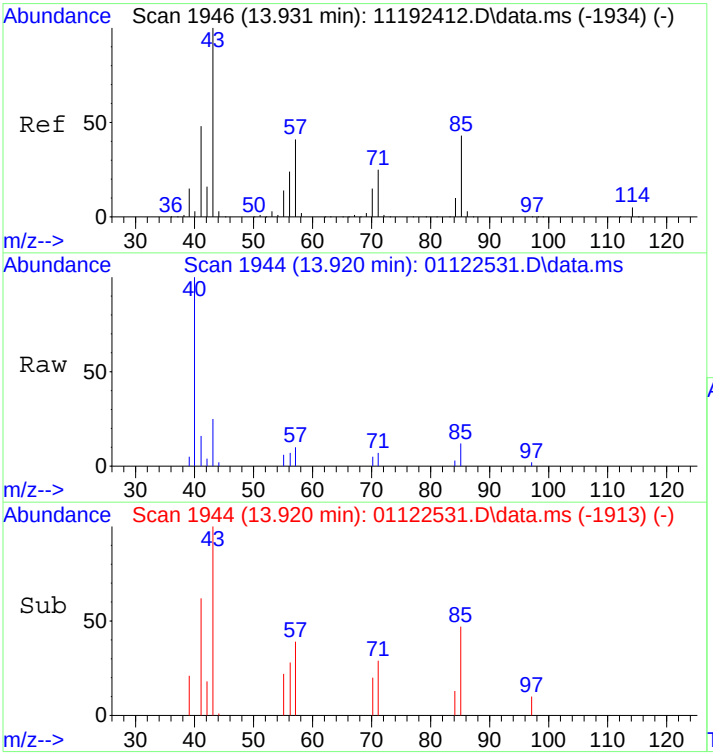


#62
n-Butyl Acetate
Concen: 0.21 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 43 Resp: 5916

Ion	Ratio	Lower	Upper
43	100		
56	39.0	20.9	60.9
73	9.1	0.0	32.0

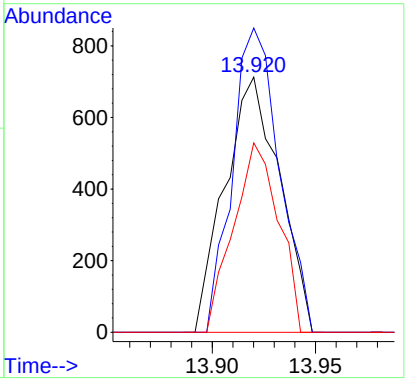


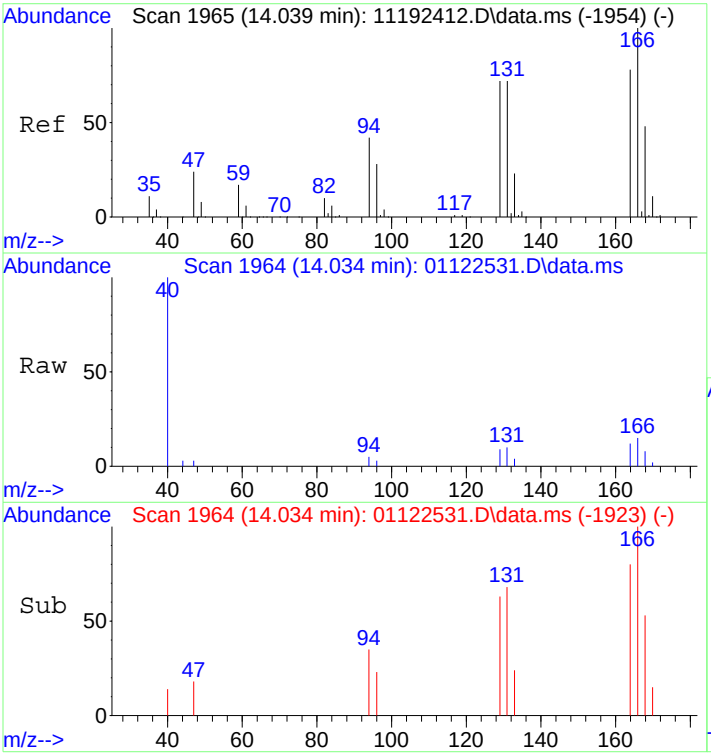


#63
n-Octane
Concen: 0.12 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 57 Resp: 1316

Ion	Ratio	Lower	Upper
57	100		
85	102.5	83.6	125.4
71	61.2	49.0	73.4

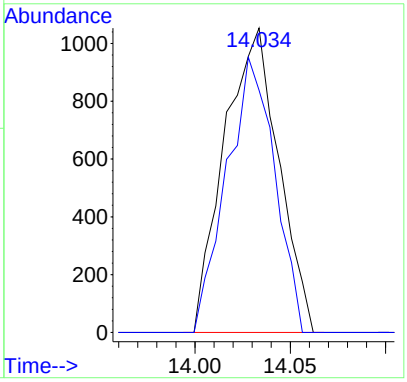


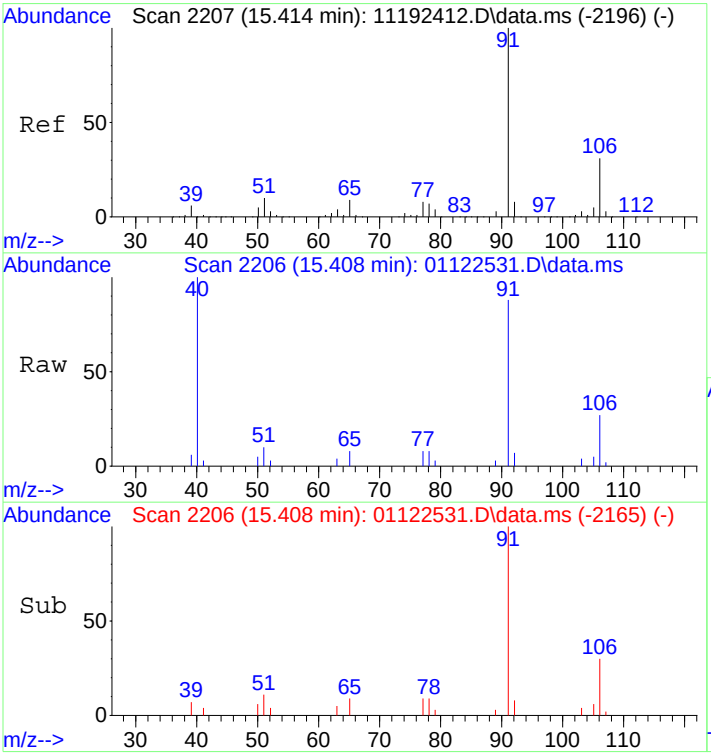


#64
Tetrachloroethene
Concen: 0.14 ng
RT: 14.03 min Scan# 1964
Delta R.T. -0.017 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:166 Resp: 2087

Ion	Ratio	Lower	Upper
166	100		
164	79.6	58.7	98.7

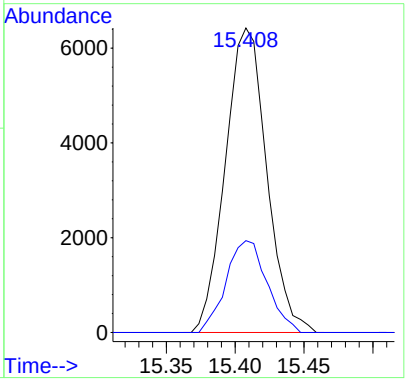


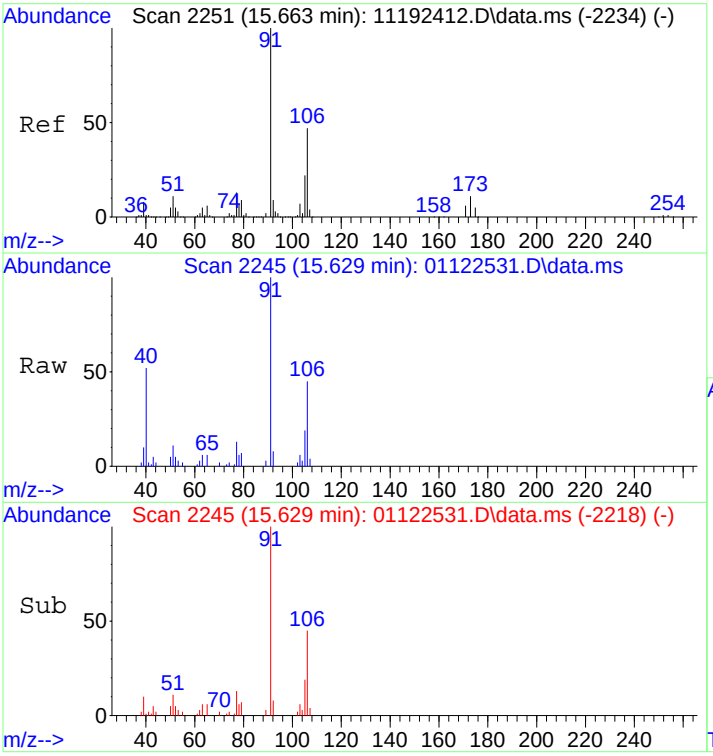


#66
Ethylbenzene
Concen: 0.24 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 91 Resp: 13444

Ion	Ratio	Lower	Upper
91	100		
106	29.8	10.7	50.7

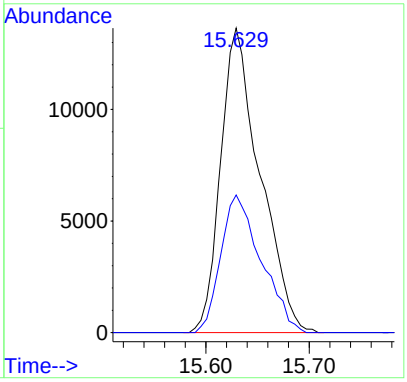


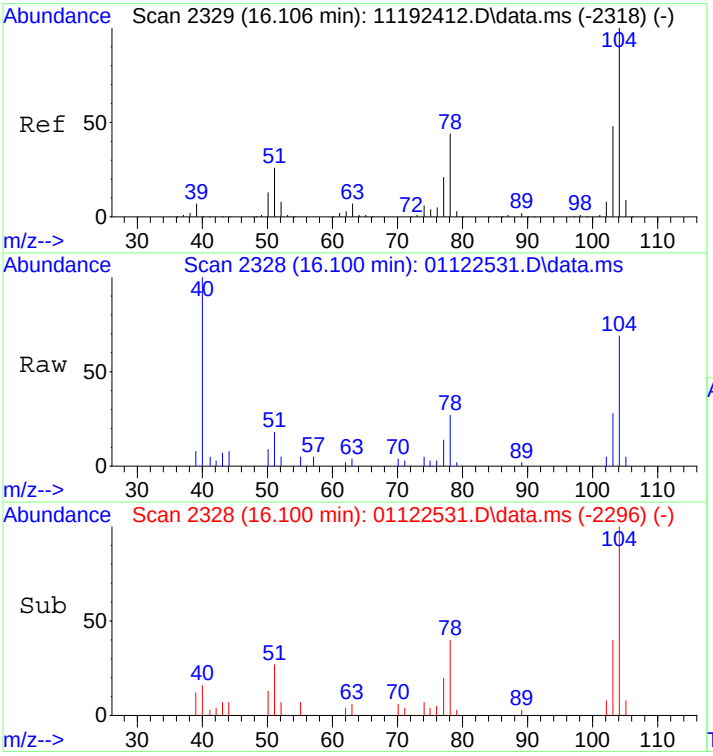


#67
m- & p-Xylenes
Concen: 0.78 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 91 Resp: 36139

Ion	Ratio	Lower	Upper
91	100		
106	46.3	27.1	67.1

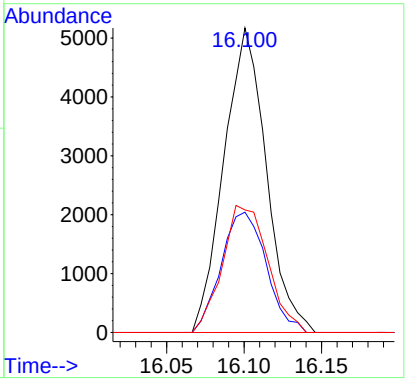


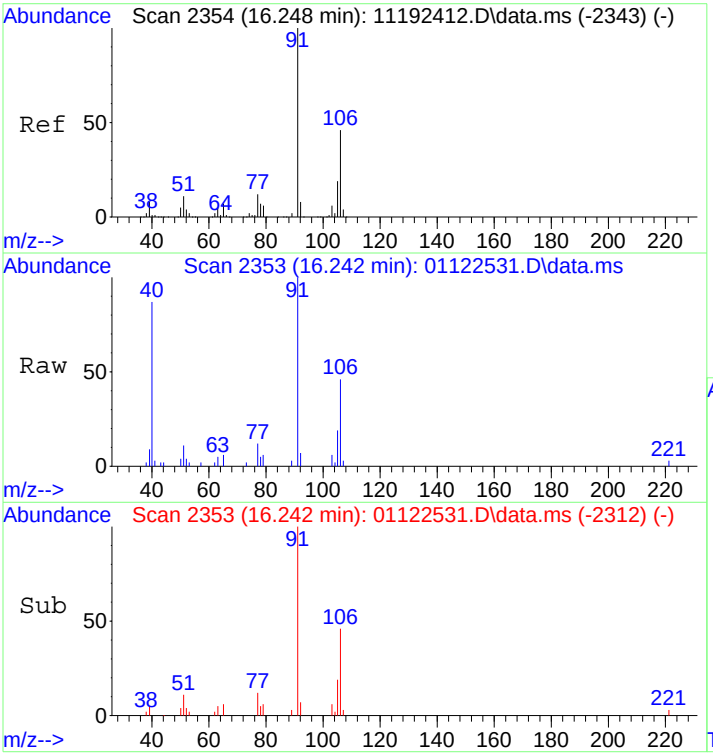


#69
Styrene
Concen: 0.30 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:104 Resp: 9828

Ion	Ratio	Lower	Upper
104	100		
78	42.1	23.0	63.0
103	44.8	27.5	67.5

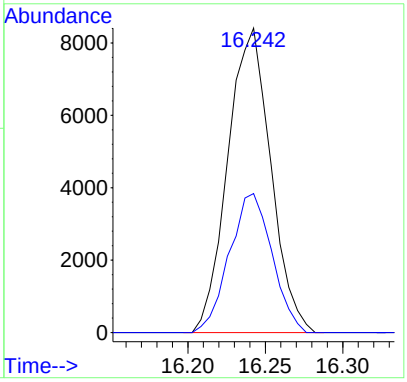


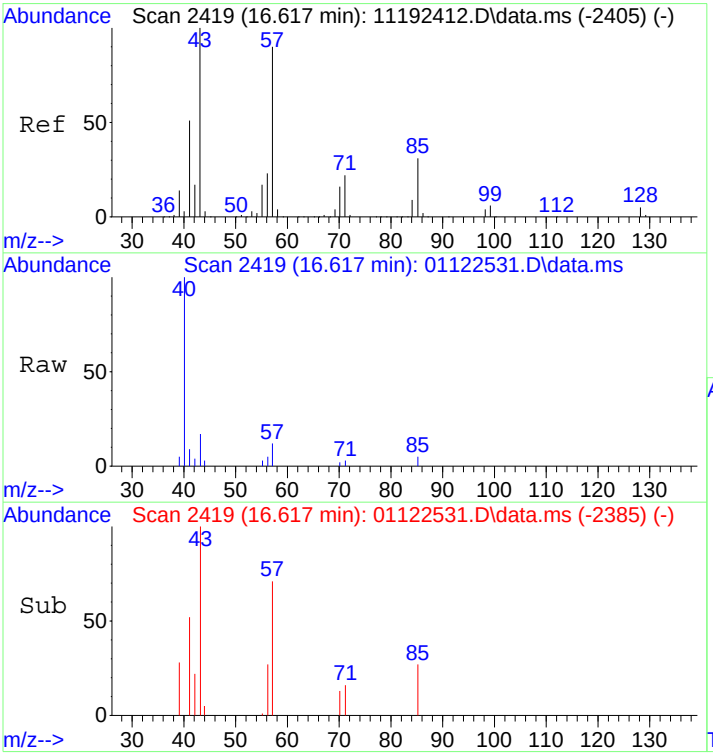


#70
o-Xylene
Concen: 0.36 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 91 Resp: 16264

Ion	Ratio	Lower	Upper
91	100		
106	45.3	25.8	65.8

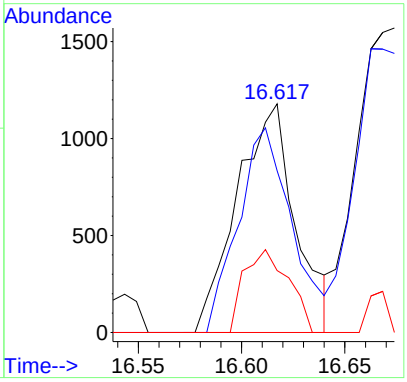


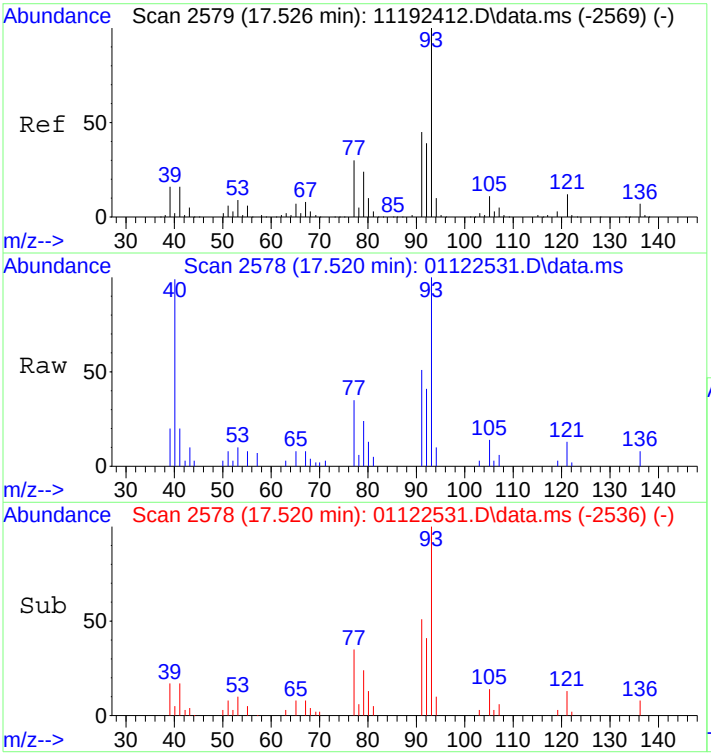


#71
n-Nonane
Concen: 0.10 ng
RT: 16.62 min Scan# 2419
Delta R.T. -0.006 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 43 Resp: 2321

Ion	Ratio	Lower	Upper
43	100		
57	82.3	69.4	109.4
85	27.6	10.5	50.5

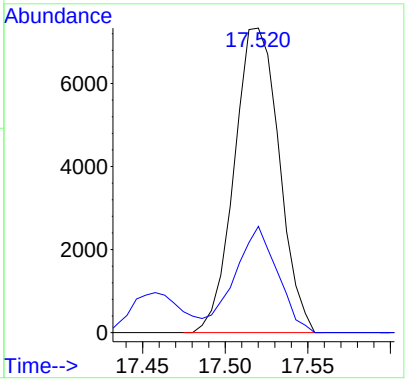


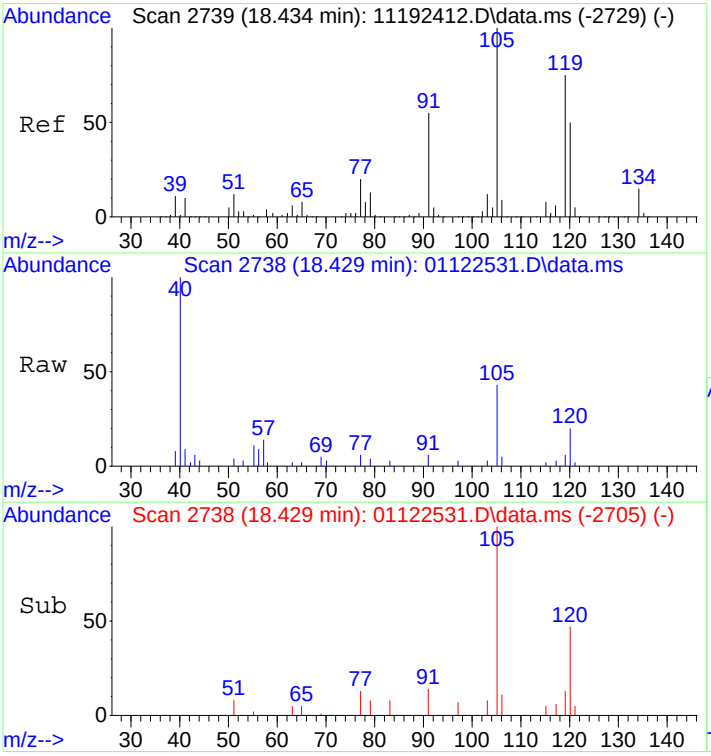


#75
alpha-Pinene
Concen: 0.50 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 93 Resp: 13885

Ion	Ratio	Lower	Upper
93	100		
77	33.3	10.1	50.1

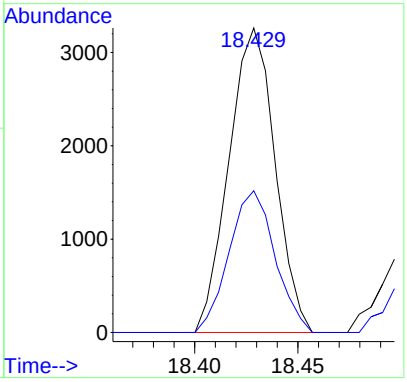


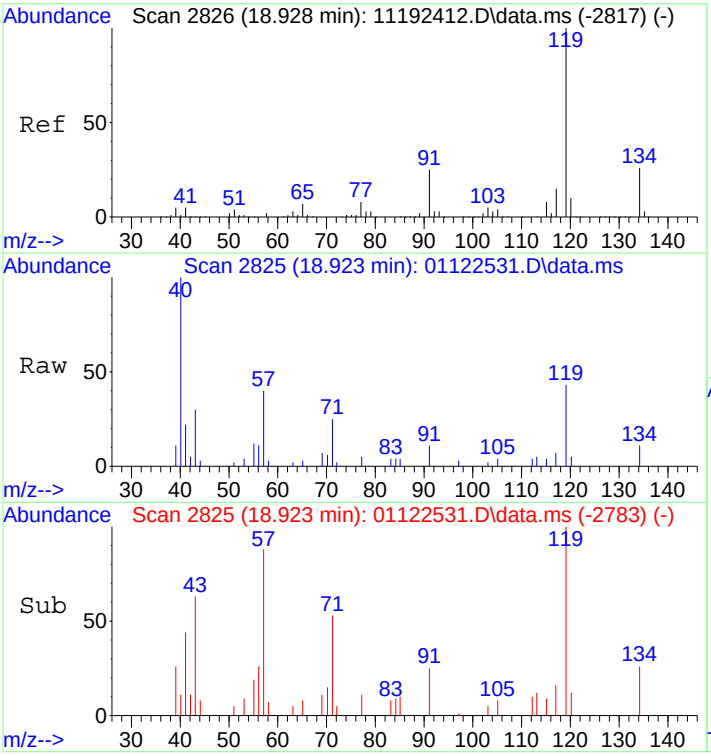


#82
1,2,4-Trimethylbenzene
Concen: 0.11 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:105 Resp: 5069

Ion	Ratio	Lower	Upper
105	100		
120	46.3	31.8	71.8

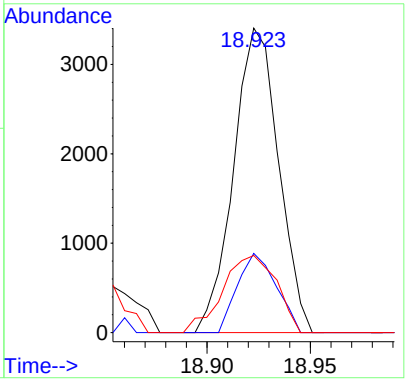


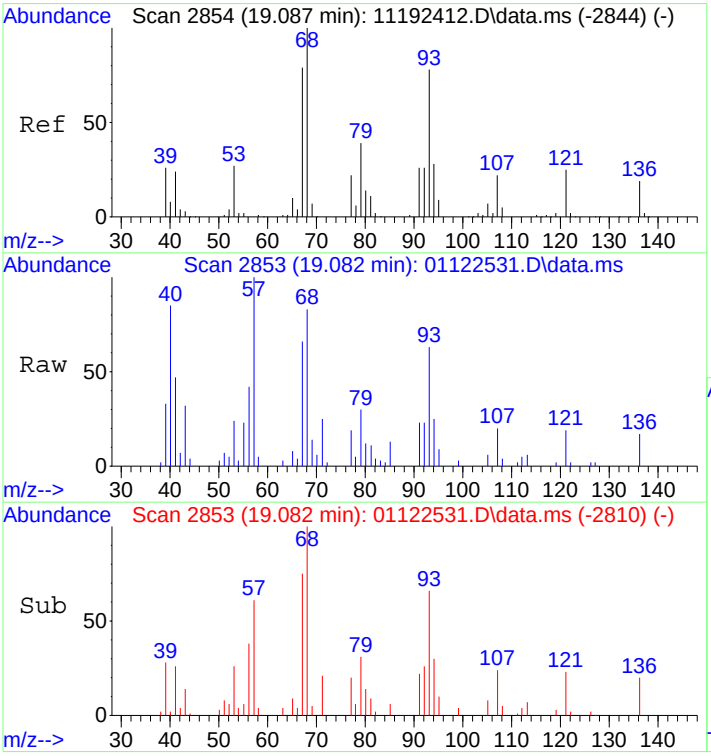


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.10 ng
RT: 18.92 min Scan# 2825
Delta R.T. -0.011 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion:119 Resp: 5172

Ion	Ratio	Lower	Upper
119	100		
134	22.4	5.8	45.8
91	30.2	4.6	44.6

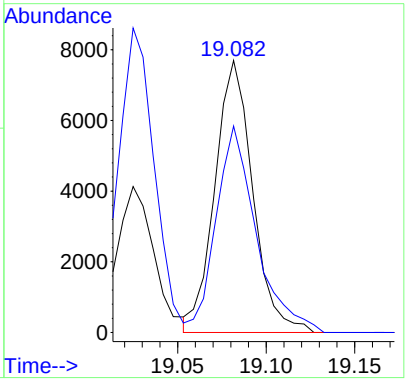




#91
d-Limonene
Concen: 0.76 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01122531.D
Acq: 12 Jan 2025 21:52

Tgt Ion: 68 Resp: 11447

Ion	Ratio	Lower	Upper
68	100		
93	80.6	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 12:39:38 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

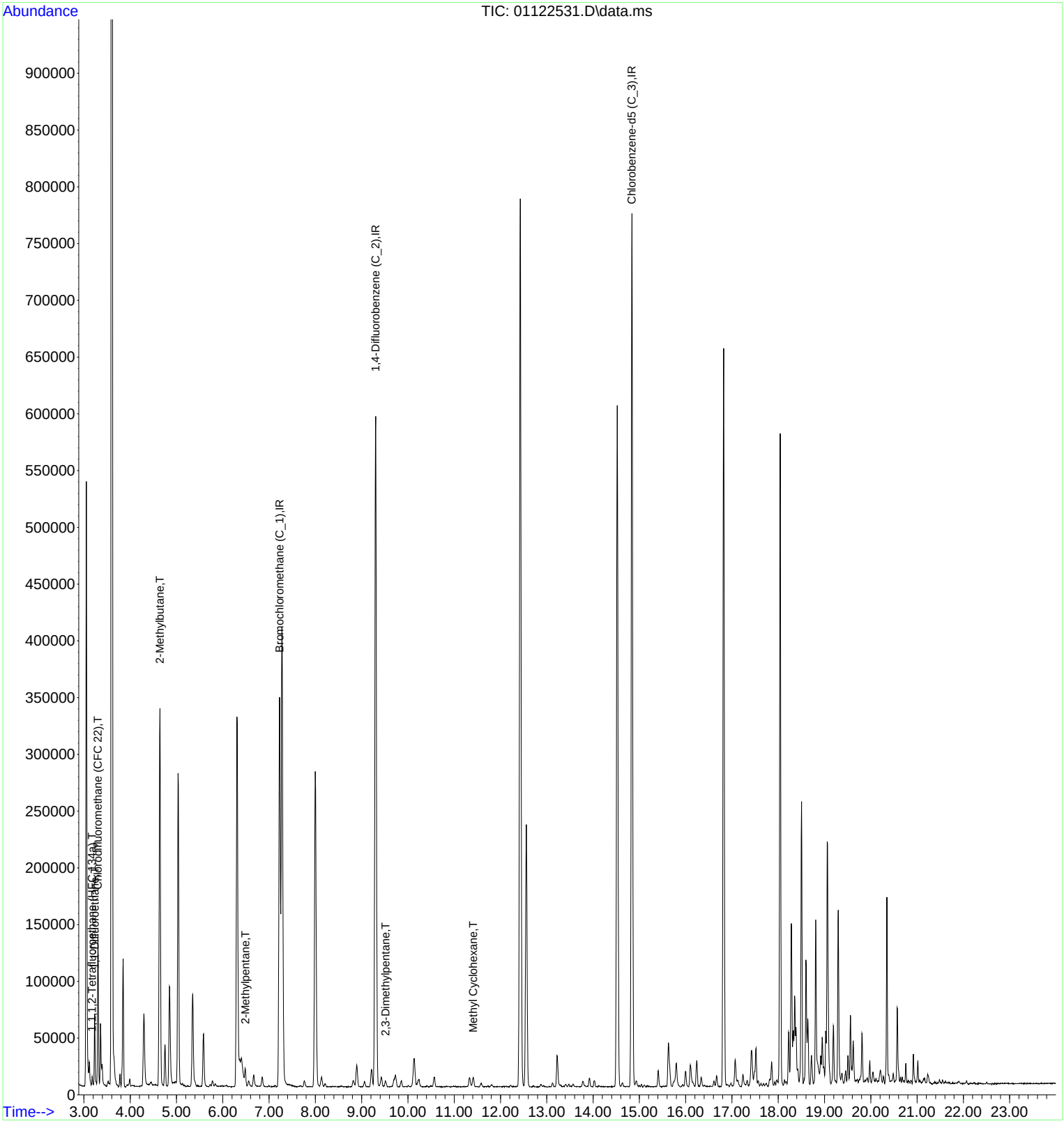
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	147412	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	633767	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	119492	12.500	ng		-0.01
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.14	85	258	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	4620	0.345	ng		84
4) 1,1-Difluoroethane	3.23	65	20107	1.685	ng		97
5) Chlorodifluoromethane ...	3.30	67	1093	0.266	ng		95
6) 1-Chloro-1,1-Difluoroe...	3.50	65	761	N.D.			
7) Dichlorofluoromethane ...	0.00	67	0	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	429	N.D.			
10) 2-Methylbutane	4.64	57	67455	4.742	ng		89
11) Methyl Acetate	0.00	43	0	N.D.	d		
12) 2-Methylpentane	6.49	71	3009	0.248	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	9.06	84	289	N.D.			
17) 2,3-Dimethylpentane	9.51	56	2701	0.107	ng		90
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.41	55	3735	0.175	ng		97
21) 1,3-Dichloropropane	12.56	76	827	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	16.34	75	604	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	2011	N.D.			
27) 4-Chlorotoluene	17.68	91	2011	N.D.			
28) Indane	19.12	117	1035	N.D.			
29) Indene	19.21	115	57	N.D.			
30) 1,2,4,5-Tetramethylben...	20.18	119	517	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	667	N.D.			
32) 1,2,3,5-Tetramethylben...	20.60	119	562	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 12:39:38 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122531.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.234	59	62	69	rVB	61671	72015	1.21%	0.293%
2	3.302	69	74	80	rVV	132174	179843	3.01%	0.733%
3	3.359	80	84	88	rVV2	53969	73719	1.23%	0.300%
4	3.393	88	90	99	rVB2	18661	24292	0.41%	0.099%
5	3.603	120	127	146	rVB	4179711	5972854	100.00%	24.336%
6	3.779	154	158	162	rBV2	10984	13135	0.22%	0.054%
7	3.847	162	170	176	rVB	112730	174834	2.93%	0.712%
8	4.295	242	249	263	rBV	63825	139597	2.34%	0.569%
9	4.642	301	310	321	rBV3	332459	627532	10.51%	2.557%
10	4.750	324	329	336	rVB	36164	58350	0.98%	0.238%
11	4.846	338	346	357	rBV	87872	185242	3.10%	0.755%
12	5.034	372	379	391	rVB	274268	477119	7.99%	1.944%
13	5.352	424	435	449	rBV2	81413	172862	2.89%	0.704%
14	5.584	468	476	485	rBV2	46315	92547	1.55%	0.377%
15	6.306	594	603	616	rBV2	325650	762379	12.76%	3.106%
16	6.482	630	634	641	rVB2	15715	30493	0.51%	0.124%
17	6.669	660	667	675	rBV	10220	22899	0.38%	0.093%
18	6.851	692	699	707	rVB2	8248	16624	0.28%	0.068%
19	7.225	757	765	770	rBV	342781	774812	12.97%	3.157%
20	7.277	770	774	790	rVB	402738	893400	14.96%	3.640%
21	7.759	851	859	870	rVB4	5319	12834	0.21%	0.052%
22	7.998	890	901	917	rBV	277970	662196	11.09%	2.698%
23	8.134	917	925	934	rVB4	8467	19912	0.33%	0.081%
24	8.815	1039	1045	1052	rBV3	5668	14519	0.24%	0.059%
25	8.895	1052	1059	1073	rVB	19244	46599	0.78%	0.190%
26	9.059	1080	1088	1096	rBV2	5075	11150	0.19%	0.045%
27	9.213	1108	1115	1121	rBV2	15237	35841	0.60%	0.146%
28	9.304	1121	1131	1144	rVV	590192	1397966	23.41%	5.696%
29	9.423	1144	1152	1158	rVV2	7709	16961	0.28%	0.069%
30	9.514	1163	1168	1176	rVB3	5316	11780	0.20%	0.048%
31	9.729	1201	1206	1216	rVB2	10585	27084	0.45%	0.110%
32	9.860	1221	1229	1237	rVV4	5641	11983	0.20%	0.049%
33	10.133	1265	1277	1285	rBV	24947	72170	1.21%	0.294%
34	10.235	1288	1295	1301	rVB3	5833	16135	0.27%	0.066%
35	10.576	1347	1355	1363	rVB2	8440	19514	0.33%	0.080%
36	11.331	1481	1488	1495	rBV2	7784	18829	0.32%	0.077%
37	11.410	1495	1502	1510	rVB4	8249	19816	0.33%	0.081%
38	12.427	1670	1681	1694	rBV	782124	1789380	29.96%	7.291%
39	12.557	1694	1704	1717	rVB	231233	520244	8.71%	2.120%
40	13.222	1814	1821	1831	rBV2	27501	60411	1.01%	0.246%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	13.778	1913	1919	1926	rBV2	4577	10235	0.17%	0.042%
42	13.920	1938	1944	1951	rVB2	7655	14889	0.25%	0.061%
43	14.028	1957	1963	1968	rBV4	5605	11663	0.20%	0.048%
44	14.522	2040	2050	2063	rBV	600109	1306600	21.88%	5.324%
45	14.840	2095	2106	2117	rBV	769532	1599638	26.78%	6.518%
46	14.931	2117	2122	2130	rVB5	5100	12164	0.20%	0.050%
47	15.408	2199	2206	2214	rBV	14228	27115	0.45%	0.110%
48	15.629	2237	2245	2259	rVB2	38657	97575	1.63%	0.398%
49	15.800	2266	2275	2289	rVB3	20736	56837	0.95%	0.232%
50	15.998	2303	2310	2322	rVB2	13702	28405	0.48%	0.116%
51	16.100	2322	2328	2346	rBV4	19176	54648	0.91%	0.223%
52	16.237	2346	2352	2360	rVB	22645	44431	0.74%	0.181%
53	16.333	2363	2369	2378	rBV2	8438	16534	0.28%	0.067%
54	16.668	2423	2428	2435	rVB3	9677	18525	0.31%	0.075%
55	16.822	2445	2455	2465	rBV	650555	1237145	20.71%	5.041%
56	17.071	2492	2499	2507	rBV	22979	51733	0.87%	0.211%
57	17.236	2522	2528	2537	rBV3	10852	24709	0.41%	0.101%
58	17.424	2552	2561	2568	rBV3	30613	78806	1.32%	0.321%
59	17.492	2568	2573	2574	rVV2	11042	18814	0.31%	0.077%
60	17.520	2574	2578	2584	rVB	30826	52506	0.88%	0.214%
61	17.855	2632	2637	2645	rVB	20714	40756	0.68%	0.166%
62	18.042	2662	2670	2681	rVB	574364	945433	15.83%	3.852%
63	18.224	2696	2702	2706	rBV	45713	77398	1.30%	0.315%
64	18.281	2706	2712	2717	rVV2	136871	251802	4.22%	1.026%
65	18.326	2717	2720	2722	rVV3	39558	58413	0.98%	0.238%
66	18.355	2722	2725	2728	rVV	68029	102049	1.71%	0.416%
67	18.383	2728	2730	2735	rVB2	38098	48336	0.81%	0.197%
68	18.502	2742	2751	2757	rVB	248400	402898	6.75%	1.642%
69	18.599	2757	2768	2772	rBV2	108999	188880	3.16%	0.770%
70	18.639	2772	2775	2783	rVB2	58076	95815	1.60%	0.390%
71	18.718	2783	2789	2796	rBV2	25715	48200	0.81%	0.196%
72	18.809	2796	2805	2819	rBV	144528	267242	4.47%	1.089%
73	18.917	2820	2824	2827	rBV3	16064	23357	0.39%	0.095%
74	18.951	2827	2830	2834	rVB	26835	35077	0.59%	0.143%
75	19.025	2839	2843	2845	rVV	45350	61013	1.02%	0.249%
76	19.059	2845	2849	2863	rVB	213648	417807	7.00%	1.702%
77	19.189	2863	2872	2884	rBV	51351	91716	1.54%	0.374%
78	19.297	2884	2891	2900	rBV	152337	252559	4.23%	1.029%
79	19.377	2900	2905	2910	rVB5	8865	17740	0.30%	0.072%
80	19.456	2913	2919	2923	rBV3	11010	17997	0.30%	0.073%
81	19.507	2923	2928	2932	rVV3	22938	34574	0.58%	0.141%
82	19.559	2932	2937	2942	rVV	58303	92296	1.55%	0.376%
83	19.621	2944	2948	2954	rVB	35685	59045	0.99%	0.241%
84	19.808	2977	2981	2987	rVB2	42945	66199	1.11%	0.270%
85	19.979	3005	3011	3017	rVB2	19635	26784	0.45%	0.109%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

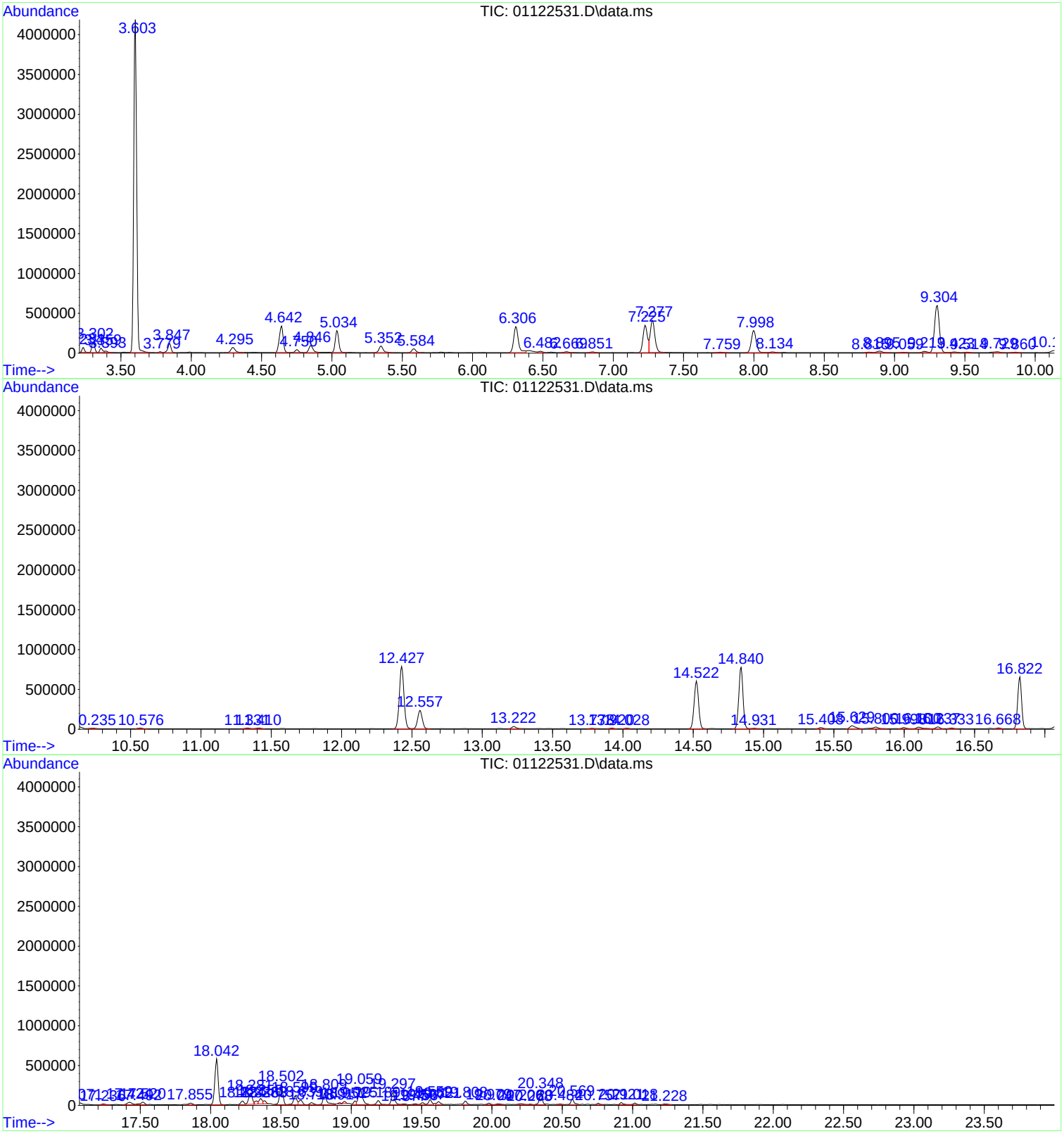
86	20.047	3017	3023	3031	rBV7	9322	20413	0.34%	0.083%
87	20.206	3045	3051	3059	rVB6	10888	26043	0.44%	0.106%
88	20.268	3059	3062	3068	rVB4	6777	10098	0.17%	0.041%
89	20.348	3068	3076	3082	rBV	164443	228218	3.82%	0.930%
90	20.484	3095	3100	3105	rVB6	7707	12041	0.20%	0.049%
91	20.569	3110	3115	3124	rVB2	64933	104537	1.75%	0.426%
92	20.757	3144	3148	3154	rVB2	16984	20373	0.34%	0.083%
93	20.921	3172	3177	3187	rBV3	26112	42143	0.71%	0.172%
94	21.018	3187	3194	3198	rVV2	19116	26202	0.44%	0.107%
95	21.228	3227	3231	3240	rVB5	7813	16490	0.28%	0.067%

Sum of corrected areas: 24542788

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:52
Operator : SC
Sample : P2405139-031 (400mL)PF2
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122531.D
Acq On : 12 Jan 2025 21:522
Operator : SCC
Sample : P2405139-031 (400mL)PF22
Misc : S37-123124011
ALS Vial : 15 Sample Multiplier: 11

VOA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 12:43:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	125606	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	533212	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	100456	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	219984	12.855	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
57) Toluene-d8 (SS2)	12.43	98	554543	12.444	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
73) Bromofluorobenzene (SS3)	16.82	174	215157	13.991	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.92%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.38	85	14411	0.587	ng		97
4) Chloromethane	0.00	50	0	N.D. d			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	244	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	4068	0.438	ng		95
11) Acetonitrile	4.47	41	51	N.D.			
12) Acrolein	4.55	56	433	0.055	ng	#	64
13) Acetone	4.64	58	13267	1.569	ng		88
14) Trichlorofluoromethane	4.75	101	879128	38.179	ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.34	59	581	N.D.			
19) Methylene Chloride	5.36	84	263	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.57	151	334650	32.212	ng		93
22) Carbon Disulfide	5.61	76	7354	0.192	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.68	72	1450	0.213	ng	#	37
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	169	N.D.			
32) Chloroform	7.35	83	21295	1.041	ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	1731	No Calib		#	
41) Benzene	8.89	78	2335	0.055	ng		86
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	179	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

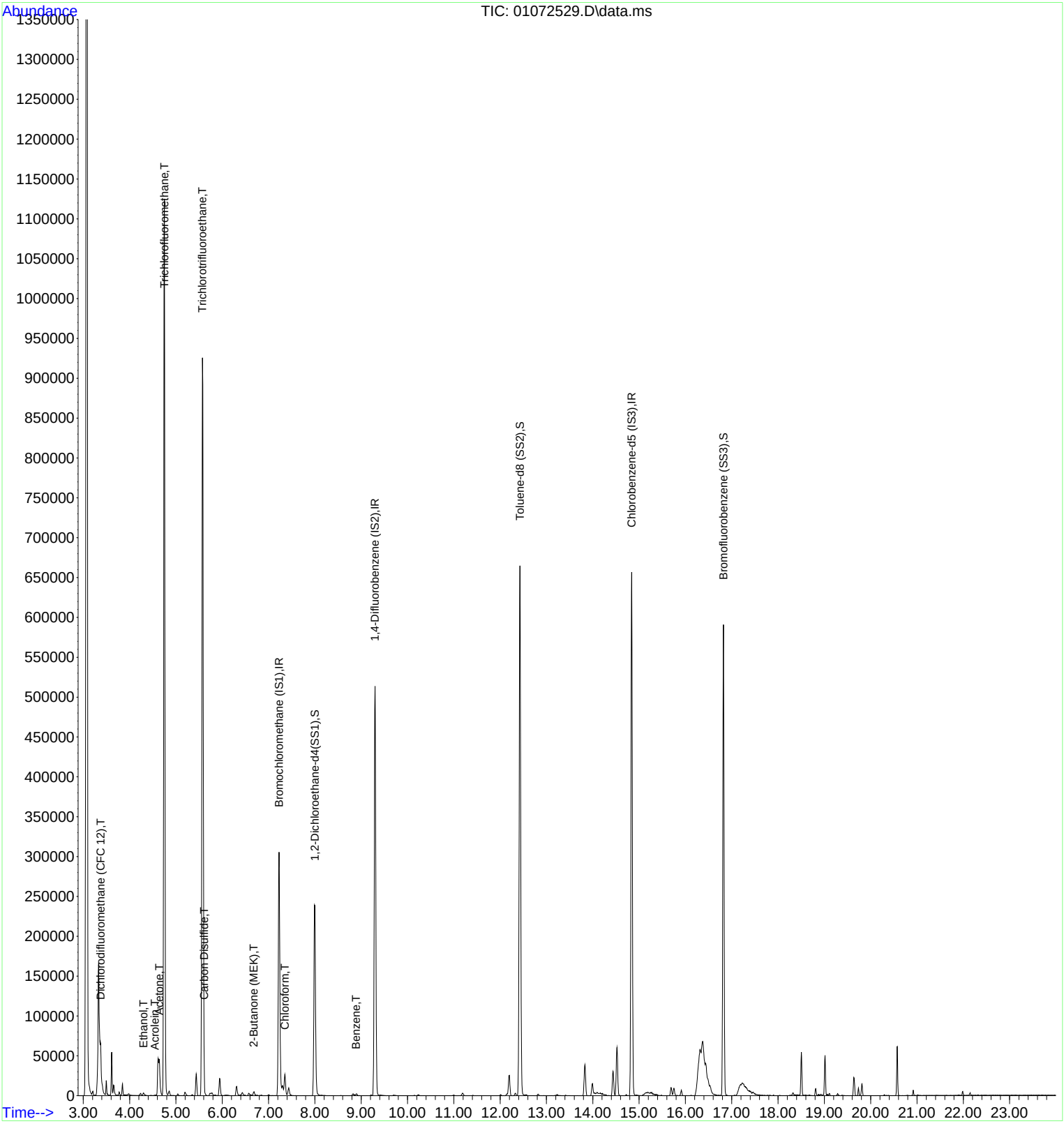
Quant Time: Jan 12 12:43:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	1543	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.55	91	1158	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	0.00	91	0	N.D.	
67) m- & p-Xylenes	0.00	91	0	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	167	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.97	119	124	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.01	68	187	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.95	128	105	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	579	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 12:43:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

VOA 1/12/25

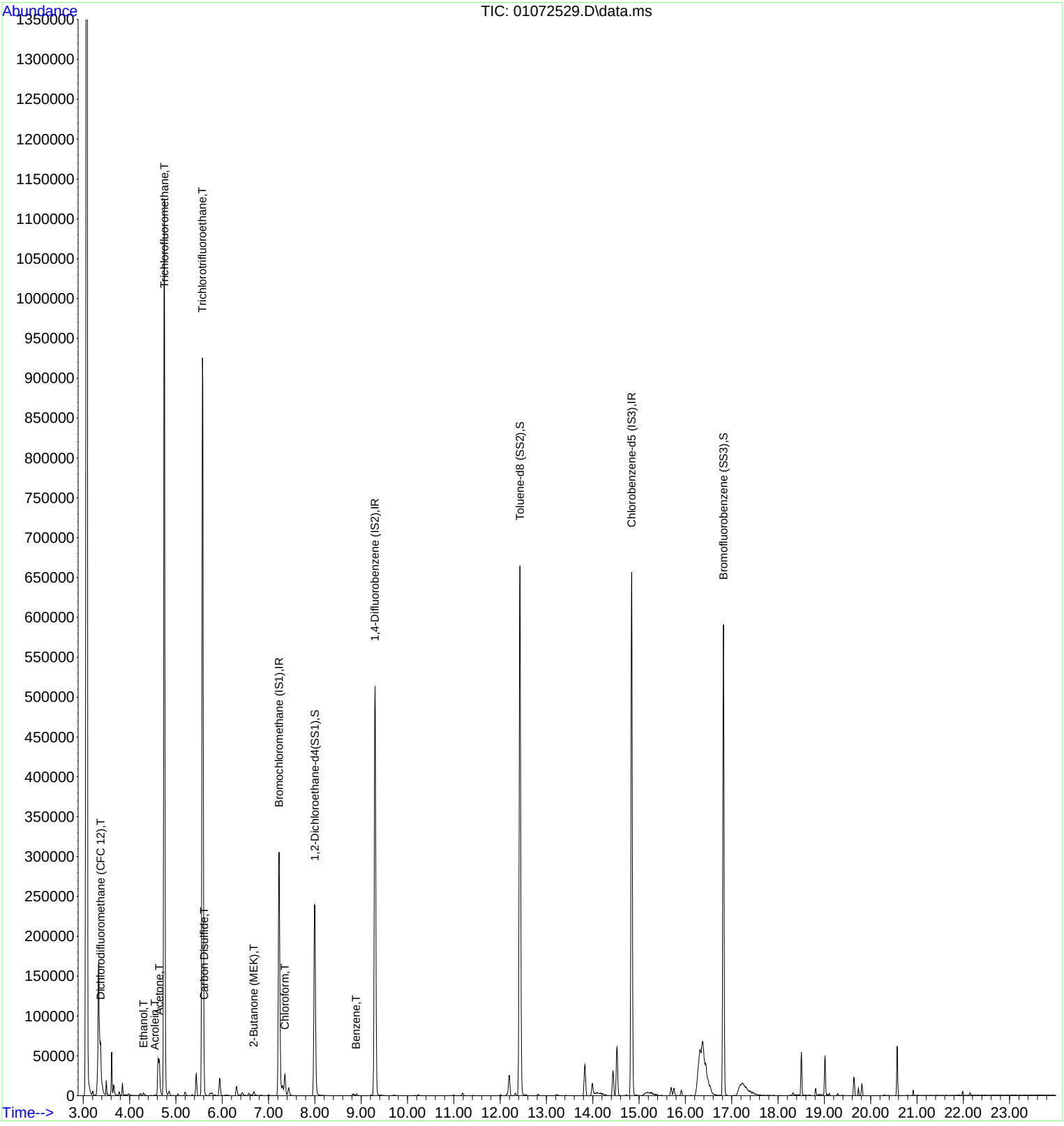
Quant Time: Jan 12 12:43:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

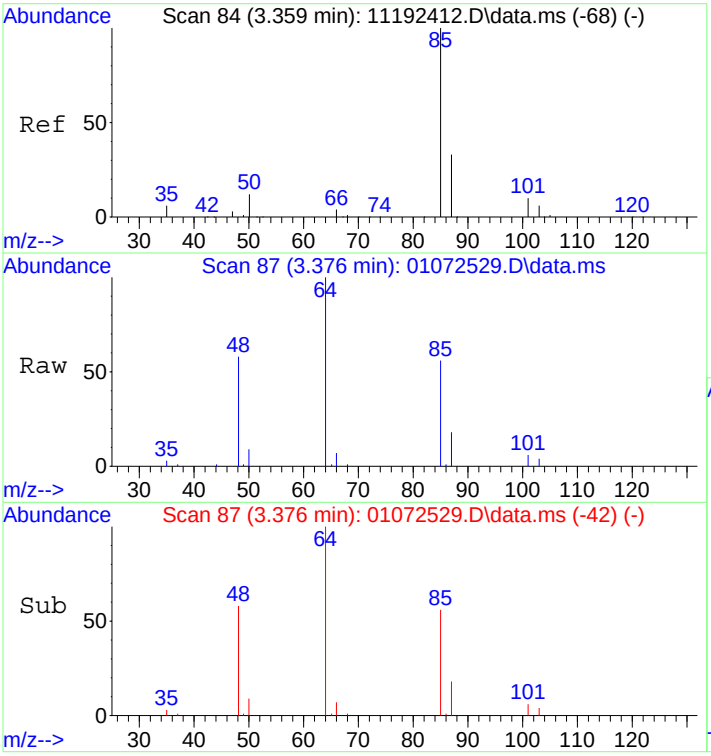
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	125606	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	533212	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	100456	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	219984	12.855	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
57) Toluene-d8 (SS2)	12.43	98	554543	12.444	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
73) Bromofluorobenzene (SS3)	16.82	174	215157	13.991	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.92%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	14411	0.587	ng		97
10) Ethanol	4.30	45	4068	0.438	ng		95
12) Acrolein	4.55	56	433	0.055	ng	#	64
13) Acetone	4.64	58	13267	1.569	ng		88
14) Trichlorofluoromethane	4.75	101	879128	38.179	ng		100
21) Trichlorotrifluoroethane	5.57	151	334650	32.212	ng		93
22) Carbon Disulfide	5.61	76	7354	0.192	ng	#	1
27) 2-Butanone (MEK)	6.68	72	1450	0.213	ng	#	37
32) Chloroform	7.35	83	21295	1.041	ng		99
41) Benzene	8.89	78	2335	0.055	ng		86

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 12:43:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

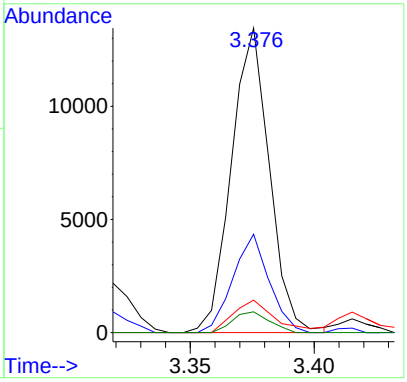


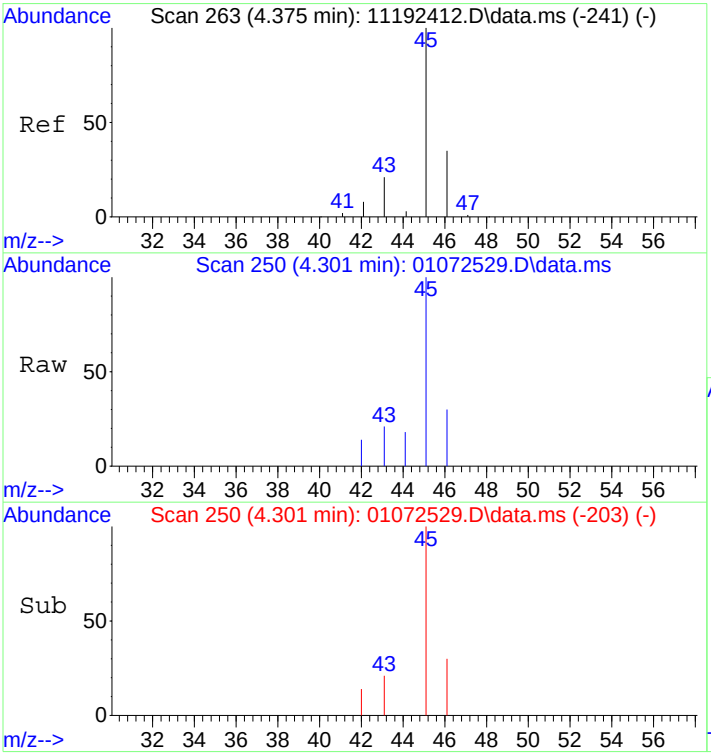


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.59 ng
RT: 3.38 min Scan# 87
Delta R.T. 0.004 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 85 Resp: 14411

Ion	Ratio	Lower	Upper
85	100		
87	30.8	12.6	52.6
101	11.4	0.0	29.6
103	6.6	0.0	26.2

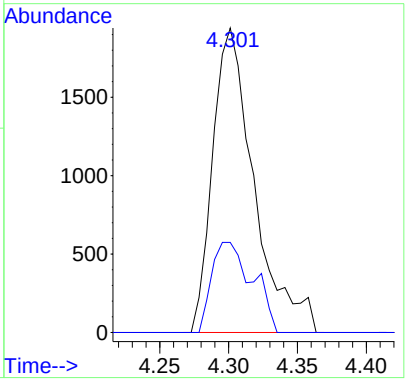


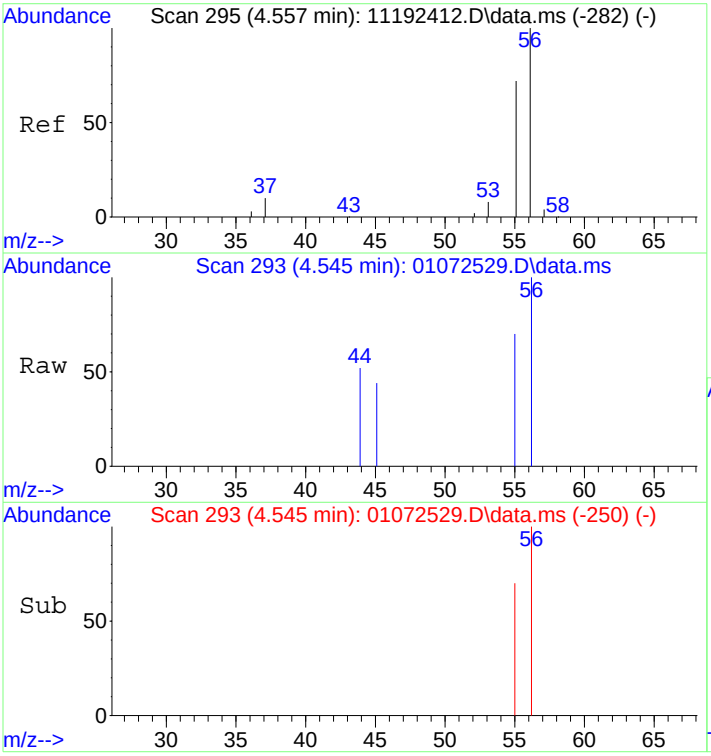


#10
Ethanol
Concen: 0.44 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 45 Resp: 4068

Ion	Ratio	Lower	Upper
45	100		
46	29.2	11.8	51.8

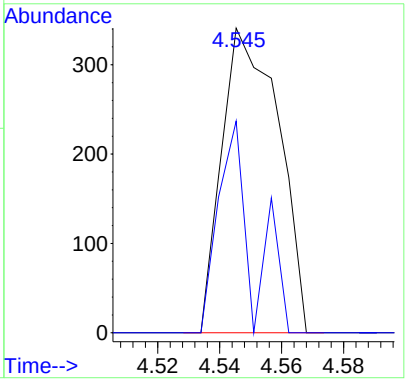


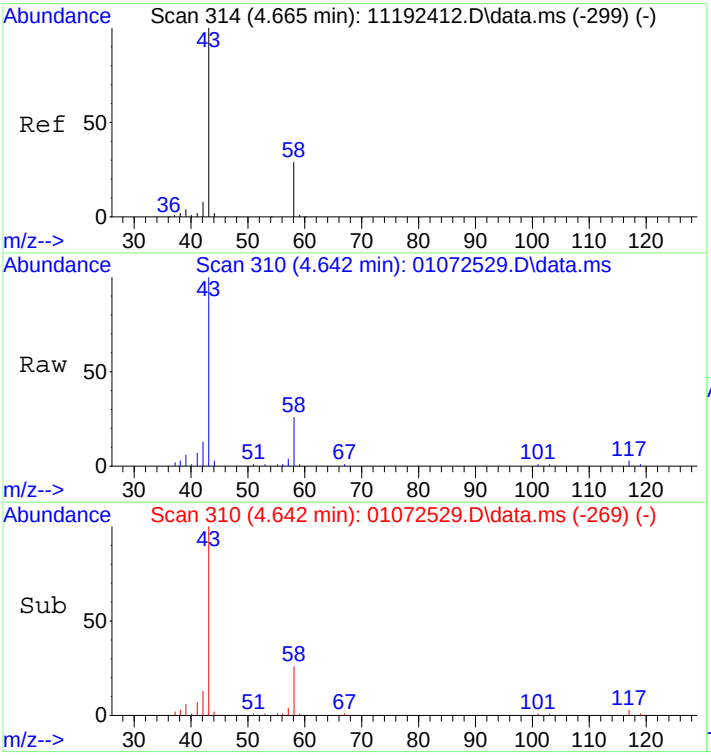


#12
Acrolein
Concen: 0.05 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 56 Resp: 433

Ion	Ratio	Lower	Upper
56	100		
55	42.5	53.1	93.1#

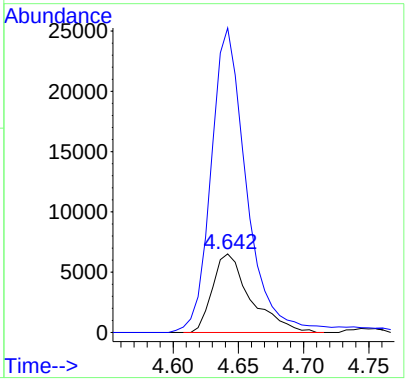


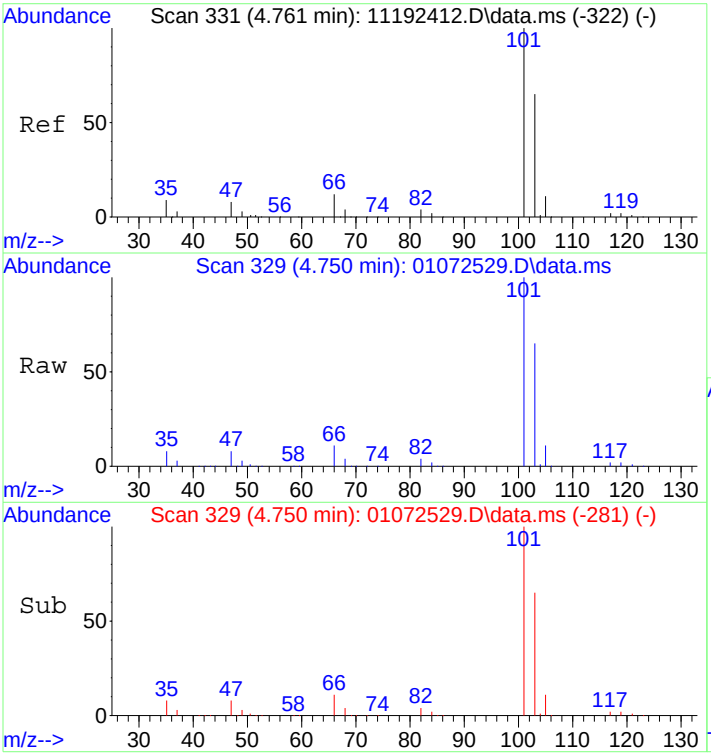


#13
Acetone
Concen: 1.57 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 58 Resp: 13267

Ion	Ratio	Lower	Upper
58	100		
43	368.3	312.5	372.5

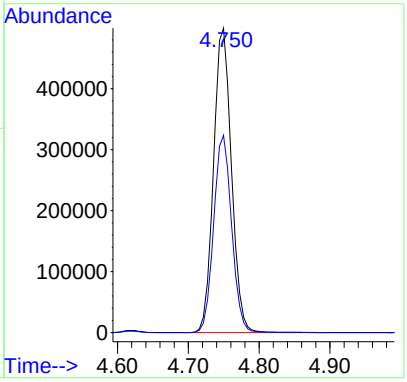


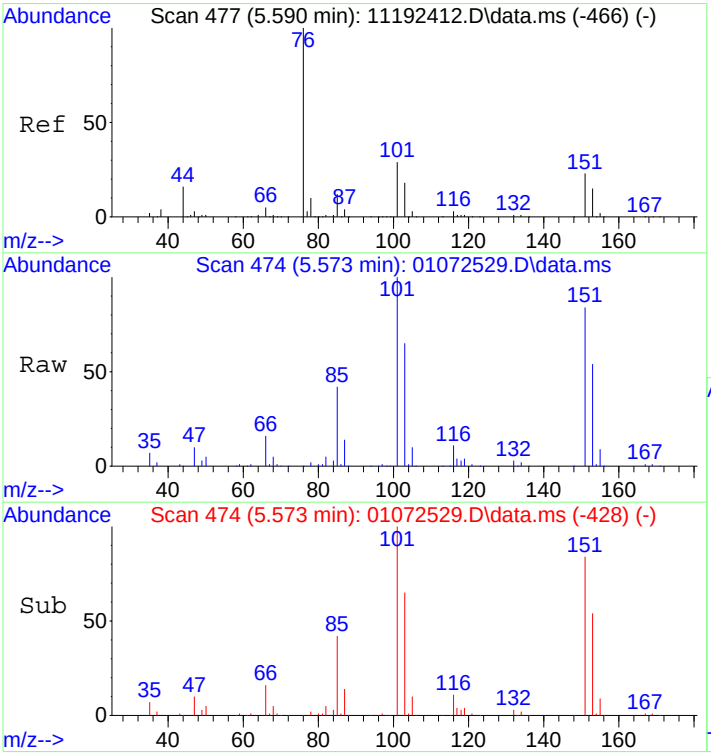


#14
Trichlorofluoromethane
Concen: 38.18 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion:101 Resp: 879128

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

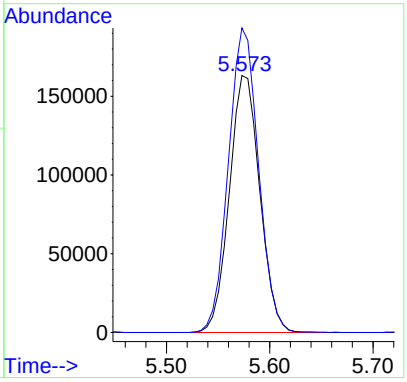


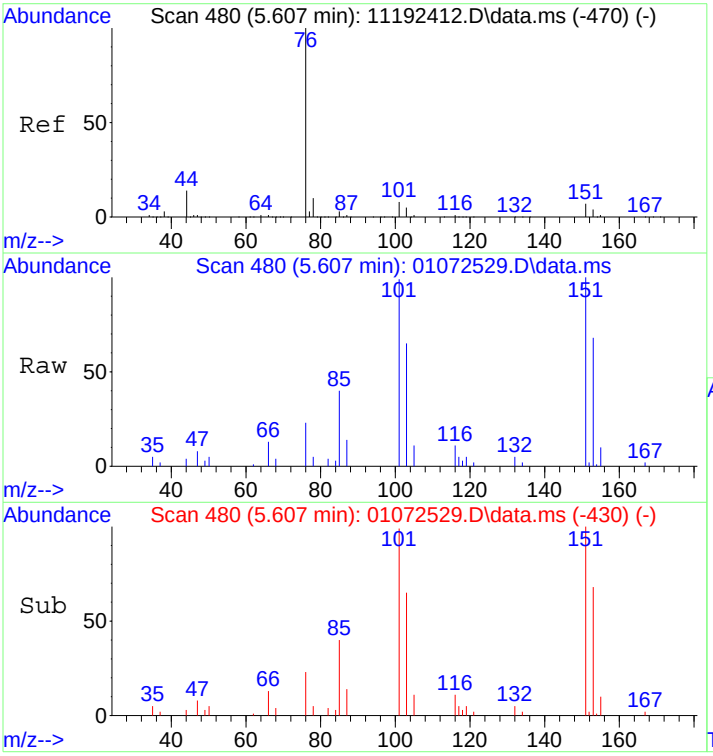


#21
Trichlorotrifluoroethane
Concen: 32.21 ng
RT: 5.57 min Scan# 474
Delta R.T. 0.013 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion:151 Resp: 334650

Ion	Ratio	Lower	Upper
151	100		
101	117.2	105.0	145.0

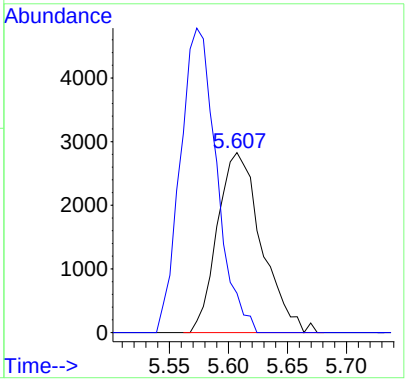


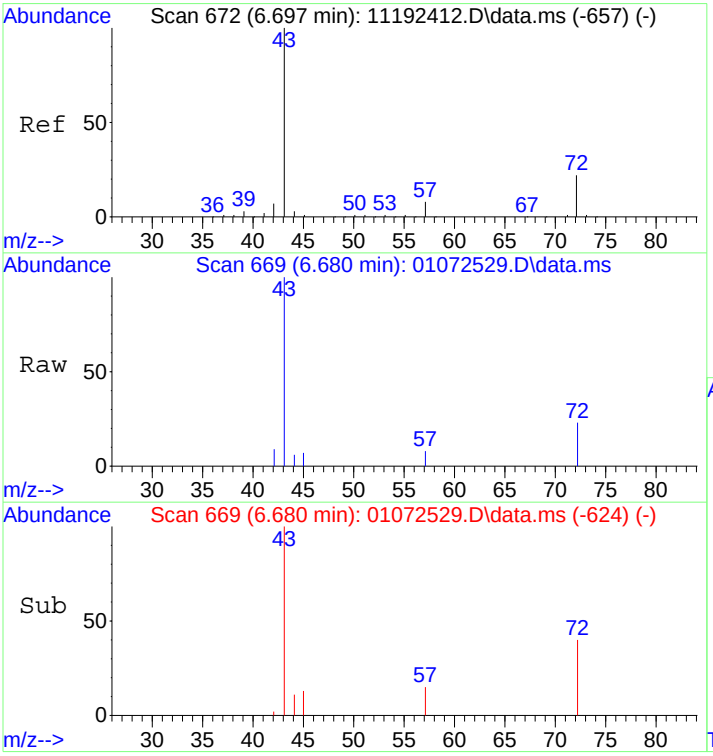


#22
Carbon Disulfide
Concen: 0.19 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.036 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 76 Resp: 7354

Ion	Ratio	Lower	Upper
76	100		
78	139.2	0.0	29.6#

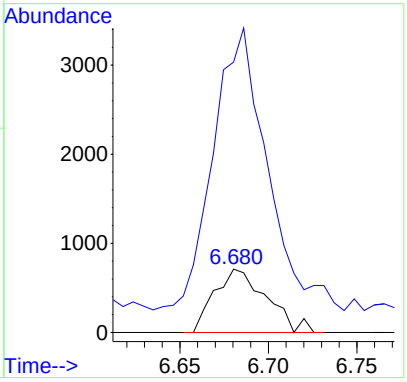


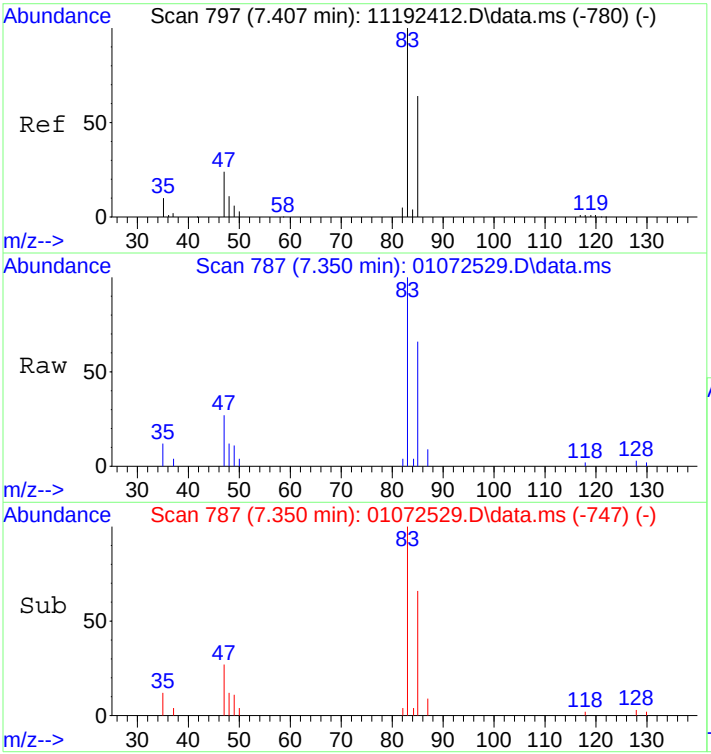


#27
2-Butanone (MEK)
Concen: 0.21 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 72 Resp: 1450

Ion	Ratio	Lower	Upper
72	100		
43	623.9	439.8	479.8#

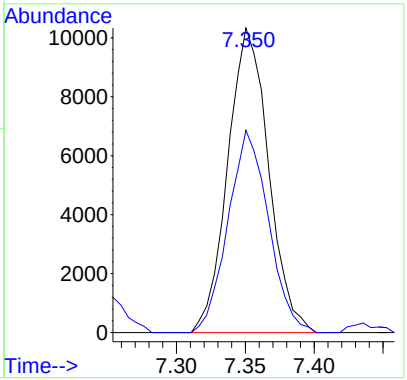


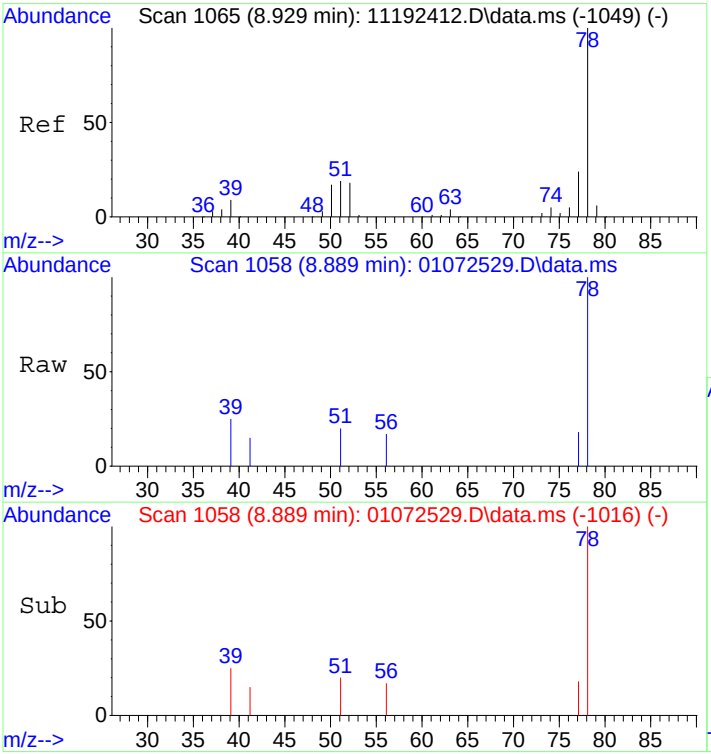


#32
Chloroform
Concen: 1.04 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 83 Resp: 21295

Ion	Ratio	Lower	Upper
83	100		
85	65.9	45.1	85.1

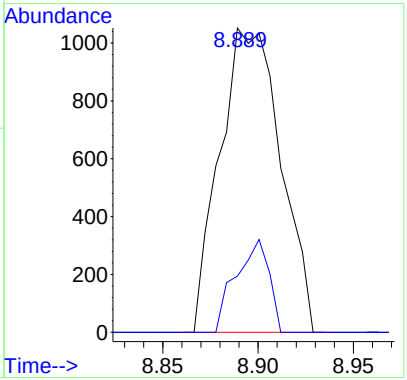




#41
Benzene
Concen: 0.05 ng
RT: 8.89 min Scan# 1058
Delta R.T. -0.014 min
Lab File: 01072529.D
Acq: 7 Jan 2025 19:47

Tgt Ion: 78 Resp: 2335

Ion	Ratio	Lower	Upper
78	100		
77	16.6	3.7	43.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 13:36:33 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

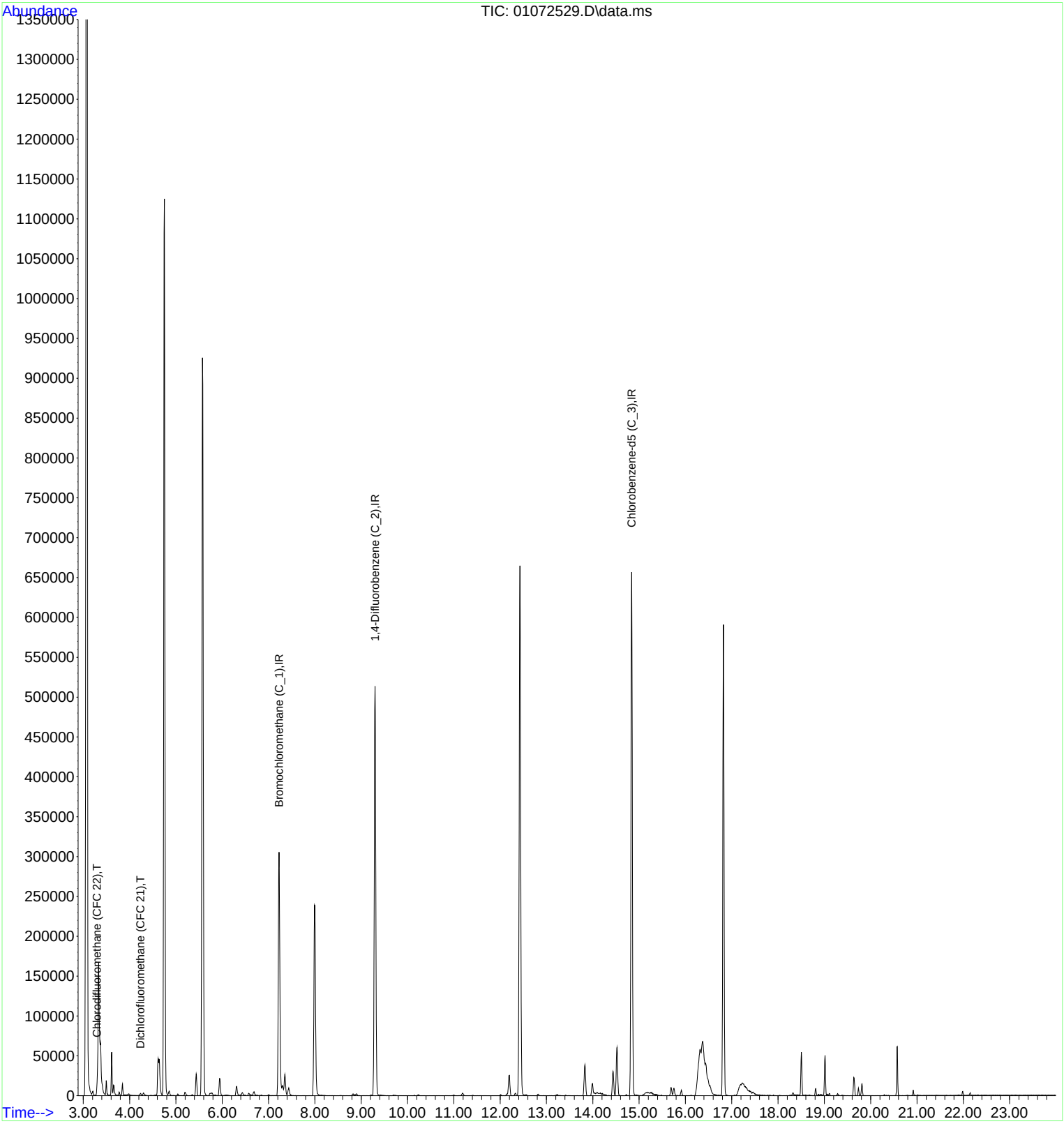
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	127966	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	534303	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	100456	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.16	85	147	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	1016	N.D.			
4) 1,1-Difluoroethane	3.25	65	119	N.D.			
5) Chlorodifluoromethane ...	3.30	67	653	0.183	ng	#	72
6) 1-Chloro-1,1-Difluoroe...	3.51	65	257	N.D.			
7) Dichlorofluoromethane ...	4.23	67	2711	0.105	ng		91
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	327	N.D.			
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.35	43	60	N.D.			
12) 2-Methylpentane	0.00	71	0	N.D.			
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	9.51	56	55	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.42	55	304	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	0.00	91	0	N.D.			
27) 4-Chlorotoluene	0.00	91	0	N.D.			
28) Indane	19.11	117	188	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	20.57	119	196	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

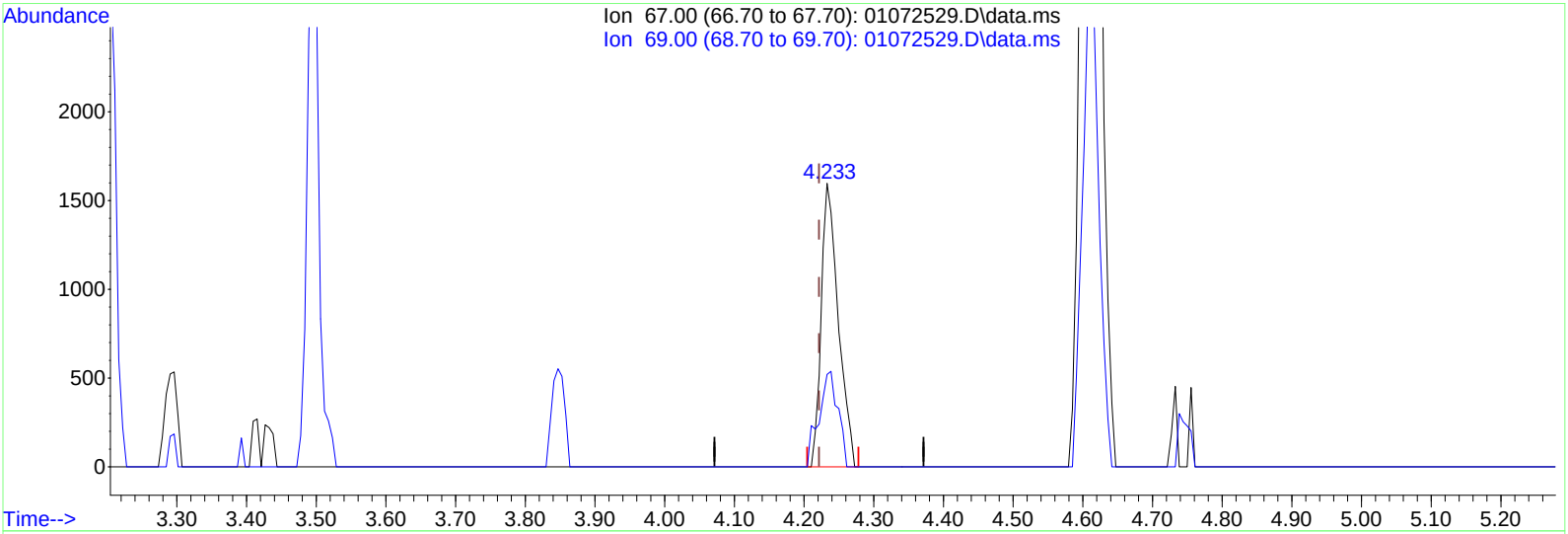
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

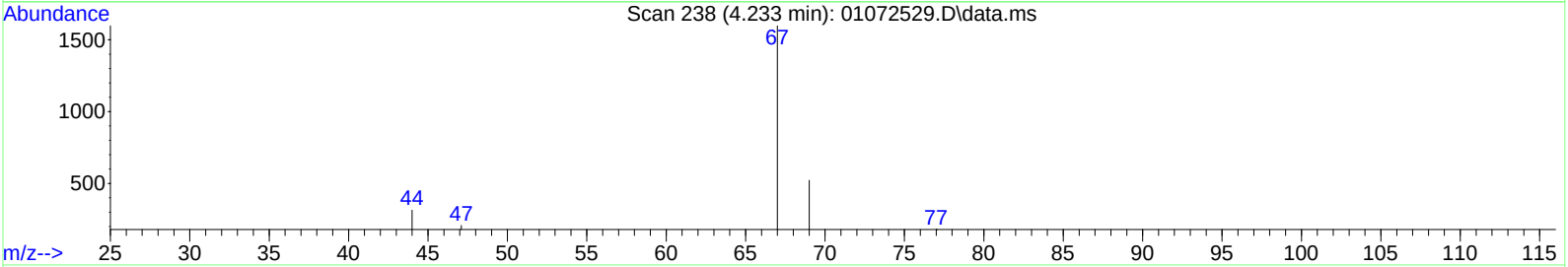
Quant Time: Jan 12 13:36:33 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

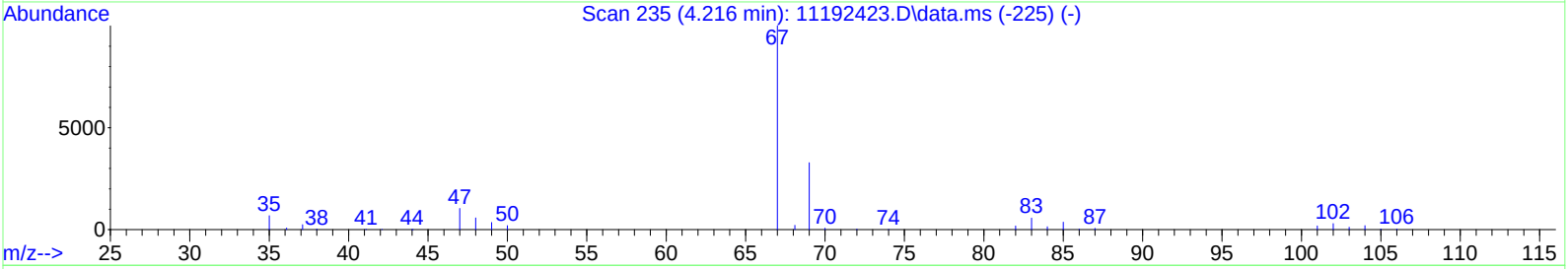


Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 13:28:52 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01072529.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.10ng

response 2711

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	37.92
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072529.D\data.ms

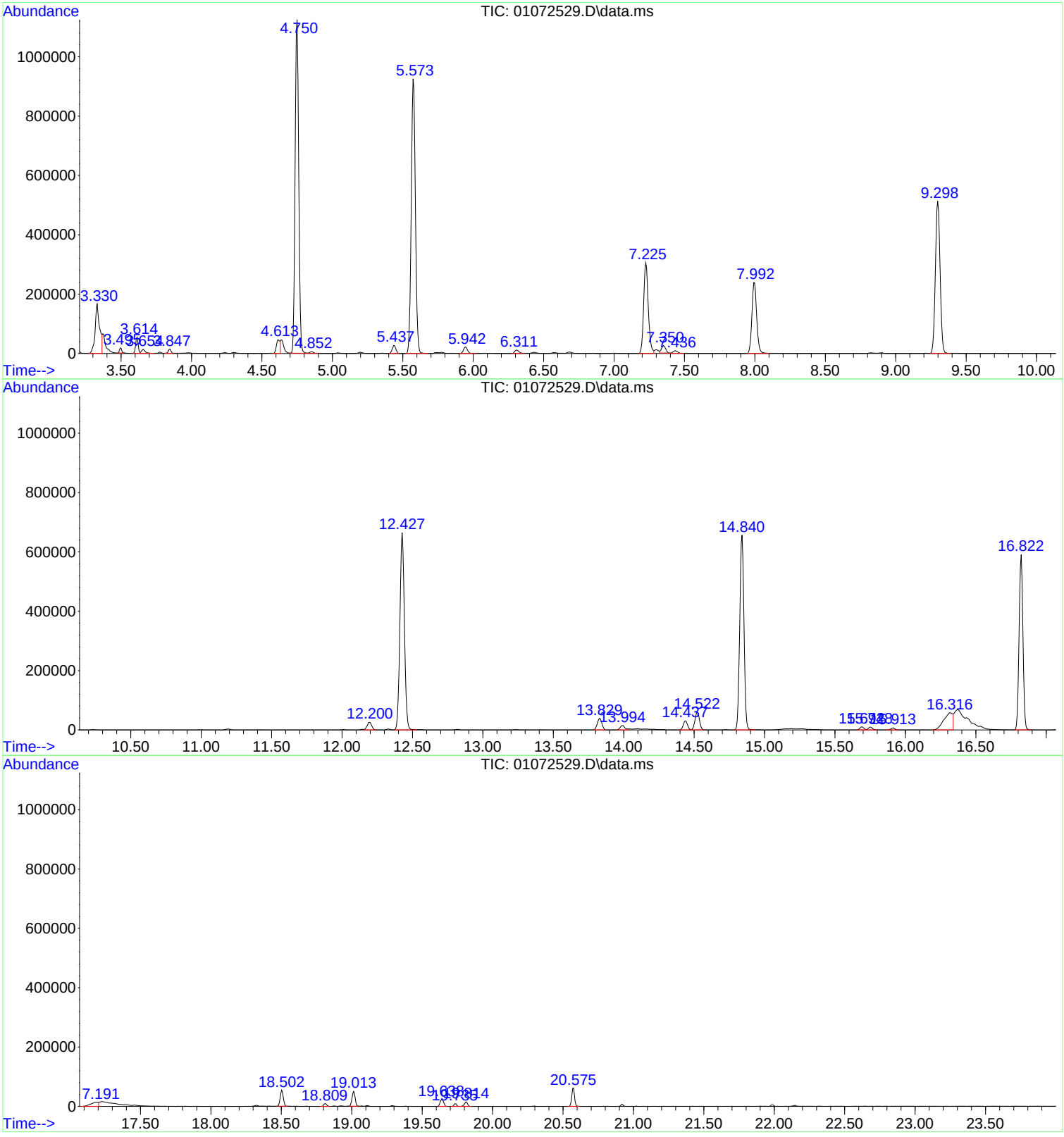
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.330	68	79	85	rBV	166418	378048	19.09%	3.112%
2	3.495	104	108	112	rBV	17662	18657	0.94%	0.154%
3	3.614	123	129	133	rBV	54096	66584	3.36%	0.548%
4	3.654	133	136	151	rVB	12857	23268	1.18%	0.192%
5	3.847	163	170	174	rBV	14179	18314	0.92%	0.151%
6	4.613	298	305	308	rBV3	45994	85746	4.33%	0.706%
7	4.750	320	329	341	rBV	1124180	1980186	100.00%	16.301%
8	4.852	342	347	355	rVB3	5633	10595	0.54%	0.087%
9	5.437	444	450	457	rBV2	27294	48475	2.45%	0.399%
10	5.573	464	474	493	rVB	925789	1896114	95.75%	15.609%
11	5.942	531	539	553	rBB	21720	43863	2.22%	0.361%
12	6.311	597	604	612	rBV2	11435	24485	1.24%	0.202%
13	7.225	756	765	775	rBV2	305573	701317	35.42%	5.773%
14	7.350	782	787	796	rVB	25300	51452	2.60%	0.424%
15	7.436	796	802	813	rVB	9327	20516	1.04%	0.169%
16	7.992	891	900	919	rBV	239412	565266	28.55%	4.653%
17	9.298	1120	1130	1146	rBV	513460	1175533	59.36%	9.677%
18	12.200	1633	1641	1648	rVB2	25636	58353	2.95%	0.480%
19	12.427	1671	1681	1700	rBV	664946	1488440	75.17%	12.253%
20	13.829	1920	1928	1936	rBB2	38993	88602	4.47%	0.729%
21	13.994	1949	1957	1964	rBV3	15300	36381	1.84%	0.299%
22	14.437	2027	2035	2042	rBV	30515	63629	3.21%	0.524%
23	14.522	2042	2050	2059	rVB2	60168	132634	6.70%	1.092%
24	14.840	2096	2106	2123	rBV	656833	1367165	69.04%	11.254%
25	15.692	2249	2256	2261	rBV	10483	20633	1.04%	0.170%
26	15.748	2261	2266	2275	rVB2	9285	19429	0.98%	0.160%
27	15.913	2286	2295	2302	rBB2	7043	12732	0.64%	0.105%
28	16.316	2344	2366	2370	rBV2	57979	261891	13.23%	2.156%
29	16.822	2446	2455	2467	rBV	590639	1102704	55.69%	9.077%
30	17.191	2500	2520	2522	rBV4	13944	52069	2.63%	0.429%
31	18.502	2745	2751	2759	rVB2	54036	81698	4.13%	0.673%
32	18.809	2799	2805	2811	rBB	9175	14483	0.73%	0.119%
33	19.013	2835	2841	2847	rVB	49741	75172	3.80%	0.619%
34	19.638	2946	2951	2958	rBV2	22669	41307	2.09%	0.340%
35	19.735	2963	2968	2973	rVV	9525	11901	0.60%	0.098%
36	19.814	2973	2982	2988	rVB4	15062	24697	1.25%	0.203%
37	20.575	3109	3116	3123	rBV2	61661	85554	4.32%	0.704%

Sum of corrected areas: 12147893

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:47
Operator : SC
Sample : P2405139-032 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072529.D
Acq On : 7 Jan 2025 19:477
Operator : SCC
Sample : P2405139-032 (400mL))
Misc : S37-123124011
ALS Vial : 16 Sample Multiplier: 11

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 12:47:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	127227	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	534568	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	101251	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	219688	12.674	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.36%				
57) Toluene-d8 (SS2)	12.43	98	561873	12.509	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
73) Bromofluorobenzene (SS3)	16.82	174	219651	14.171	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.36%				
Target Compounds							Qvalue
2) Propene	3.31	42	16033	1.180	ng	#	76
3) Dichlorodifluoromethan...	3.38	85	13853	0.557	ng		98
4) Chloromethane	3.52	50	4475	0.242	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	315	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.	d		
8) Bromomethane	4.02	94	938	0.105	ng		94
9) Chloroethane	4.16	64	1134	0.152	ng		83
10) Ethanol	4.30	45	24050	2.556	ng		91
11) Acetonitrile	4.45	41	4624	0.191	ng		90
12) Acrolein	4.55	56	5535	0.688	ng		99
13) Acetone	4.64	58	697603	81.434	ng		92
14) Trichlorofluoromethane	4.76	101	5285504	226.613	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	39134	1.276	ng	#	17
16) Acrylonitrile	4.96	53	66	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.33	59	3903	0.159	ng	#	38
19) Methylene Chloride	5.37	84	824	0.068	ng		92
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	5.58	151	2435050	231.398	ng		92
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.31	73	541	N.D.			
26) Vinyl Acetate	6.44	86	6248	3.013	ng	#	29
27) 2-Butanone (MEK)	6.66	72	120202	17.465	ng		93
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	4760	0.249	ng	#	89
32) Chloroform	7.37	83	22042	1.064	ng		97
34) Tetrahydrofuran (THF)	7.77	72	324	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.81	56	4843	No Calib		#	
41) Benzene	8.90	78	17214	0.401	ng		99
42) Carbon Tetrachloride	9.07	117	960	0.056	ng		96
43) Cyclohexane	9.22	84	3465	0.231	ng		93
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	336	N.D.			
47) Trichloroethene	10.15	130	2139	0.175	ng		90
48) 1,4-Dioxane	10.13	88	677	0.091	ng		99

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 12:47:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

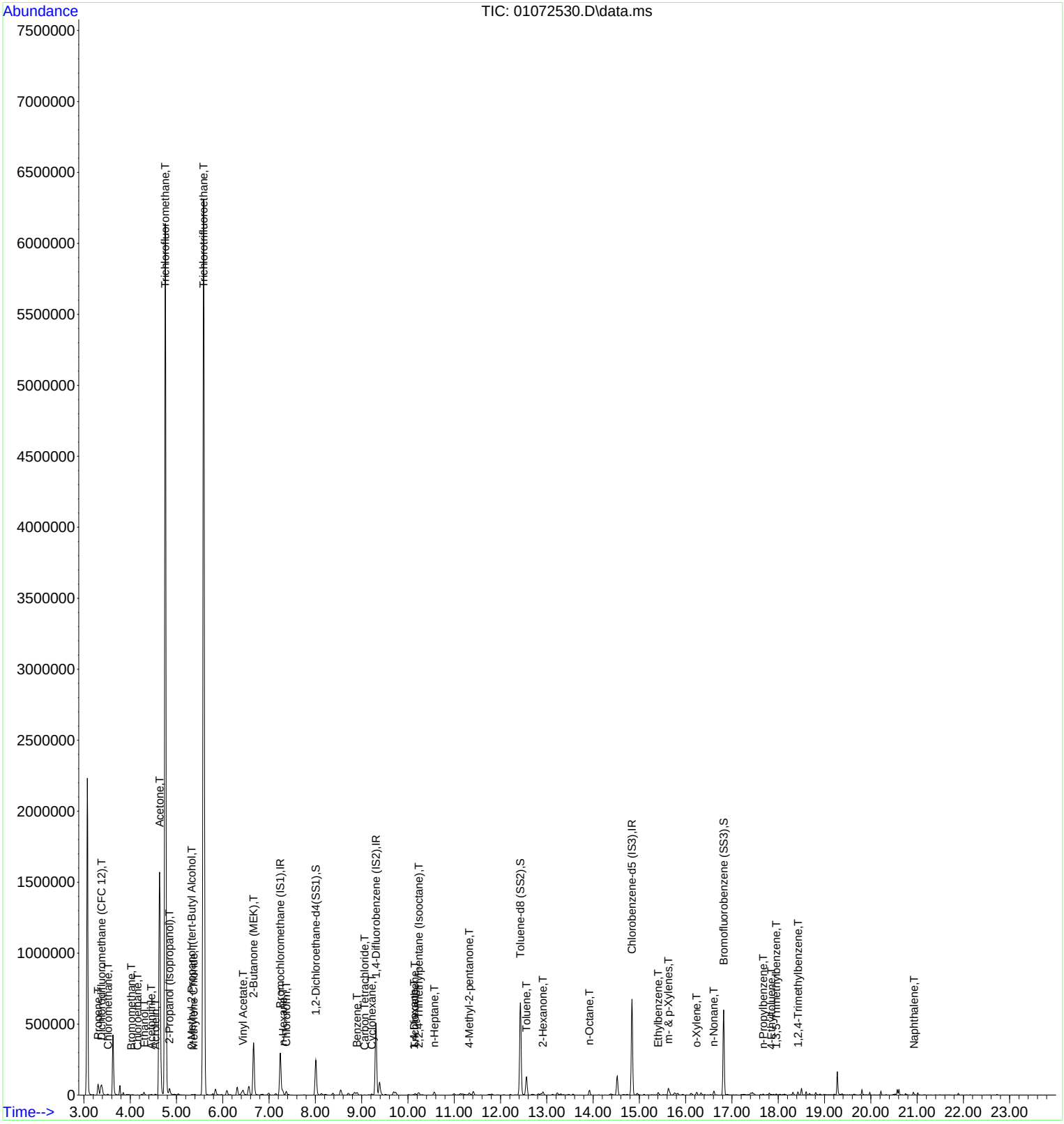
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	18906	0.421 ng	84
50) Methyl Methacrylate	0.00	100	0	N.D. d	
51) n-Heptane	10.57	71	6037	0.631 ng	96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.33	58	4979	0.539 ng	94
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	116867	2.704 ng	99
59) 2-Hexanone	12.92	43	18988m	0.902 ng	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	13.92	57	6036	0.674 ng	98
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	14.95	112	1199	N.D.	
66) Ethylbenzene	15.41	91	15811	0.331 ng	100
67) m- & p-Xylenes	15.63	91	41406	1.059 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.10	104	1122	N.D.	
70) o-Xylene	16.24	91	13626	0.352 ng	100
71) n-Nonane	16.61	43	11155	0.543 ng	96
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	2371	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	5980	0.105 ng	95
77) 3-Ethyltoluene	17.03	105	2371	No Calib	
78) 4-Ethyltoluene	17.86	105	2782	0.061 ng	94
79) 1,3,5-Trimethylbenzene	17.96	105	3324	0.084 ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	2371	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	9353	0.233 ng	86
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	1504	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	1598	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	2371	No Calib	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.94	128	3712	0.069 ng	91
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.27	55	432	No Calib #	
99) tert-Butylbenzene	18.42	119	1291	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D. d	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 12:47:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 12:47:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

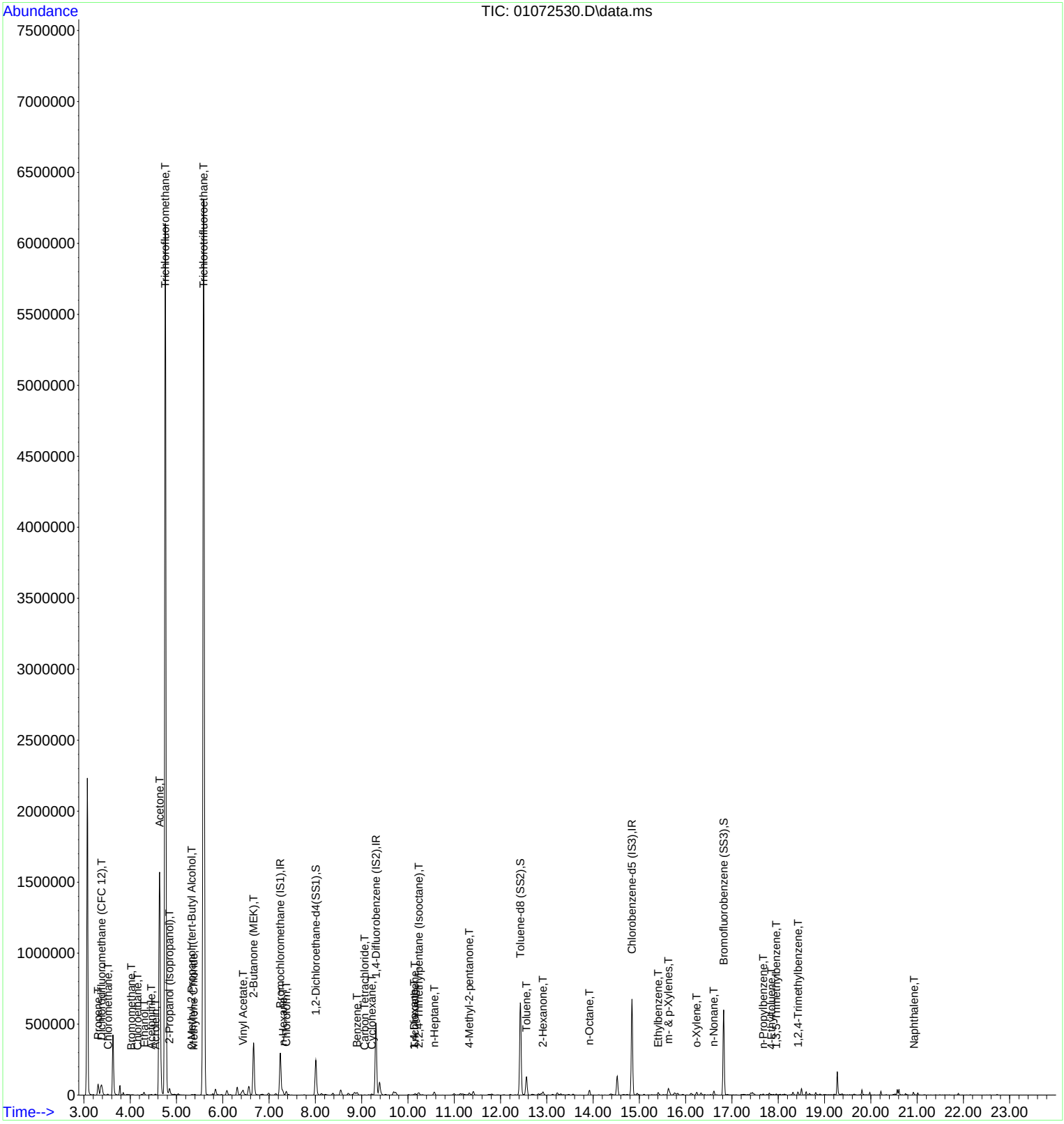
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	127227	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	534568	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	101251	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	219688	12.674	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.36%				
57) Toluene-d8 (SS2)	12.43	98	561873	12.509	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
73) Bromofluorobenzene (SS3)	16.82	174	219651	14.171	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.36%				
Target Compounds							Qvalue
2) Propene	3.31	42	16033	1.180	ng	#	76
3) Dichlorodifluoromethan...	3.38	85	13853	0.557	ng		98
4) Chloromethane	3.52	50	4475	0.242	ng		99
8) Bromomethane	4.02	94	938	0.105	ng		94
9) Chloroethane	4.16	64	1134	0.152	ng		83
10) Ethanol	4.30	45	24050	2.556	ng		91
11) Acetonitrile	4.45	41	4624	0.191	ng		90
12) Acrolein	4.55	56	5535	0.688	ng		99
13) Acetone	4.64	58	697603	81.434	ng		92
14) Trichlorofluoromethane	4.76	101	5285504	226.613	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	39134	1.276	ng	#	17
18) 2-Methyl-2-Propanol (t...	5.33	59	3903	0.159	ng	#	38
19) Methylene Chloride	5.37	84	824	0.068	ng		92
21) Trichlorotrifluoroethane	5.58	151	2435050	231.398	ng		92
26) Vinyl Acetate	6.44	86	6248	3.013	ng	#	29
27) 2-Butanone (MEK)	6.66	72	120202	17.465	ng		93
31) n-Hexane	7.30	57	4760	0.249	ng	#	89
32) Chloroform	7.37	83	22042	1.064	ng		97
41) Benzene	8.90	78	17214	0.401	ng		99
42) Carbon Tetrachloride	9.07	117	960	0.056	ng		96
43) Cyclohexane	9.22	84	3465	0.231	ng		93
47) Trichloroethene	10.15	130	2139	0.175	ng		90
48) 1,4-Dioxane	10.13	88	677	0.091	ng		99
49) 2,2,4-Trimethylpentane...	10.24	57	18906	0.421	ng		84
51) n-Heptane	10.57	71	6037	0.631	ng		96
53) 4-Methyl-2-pentanone	11.33	58	4979	0.539	ng		94
58) Toluene	12.56	91	116867	2.704	ng		99
59) 2-Hexanone	12.92	43	18988m	0.902	ng		
63) n-Octane	13.92	57	6036	0.674	ng		98
66) Ethylbenzene	15.41	91	15811	0.331	ng		100
67) m- & p-Xylenes	15.63	91	41406	1.059	ng		99
70) o-Xylene	16.24	91	13626	0.352	ng		100
71) n-Nonane	16.61	43	11155	0.543	ng		96
76) n-Propylbenzene	17.68	91	5980	0.105	ng		95
78) 4-Ethyltoluene	17.86	105	2782	0.061	ng		94
79) 1,3,5-Trimethylbenzene	17.96	105	3324	0.084	ng		98
82) 1,2,4-Trimethylbenzene	18.43	105	9353	0.233	ng		86
95) Naphthalene	20.94	128	3712	0.069	ng		91

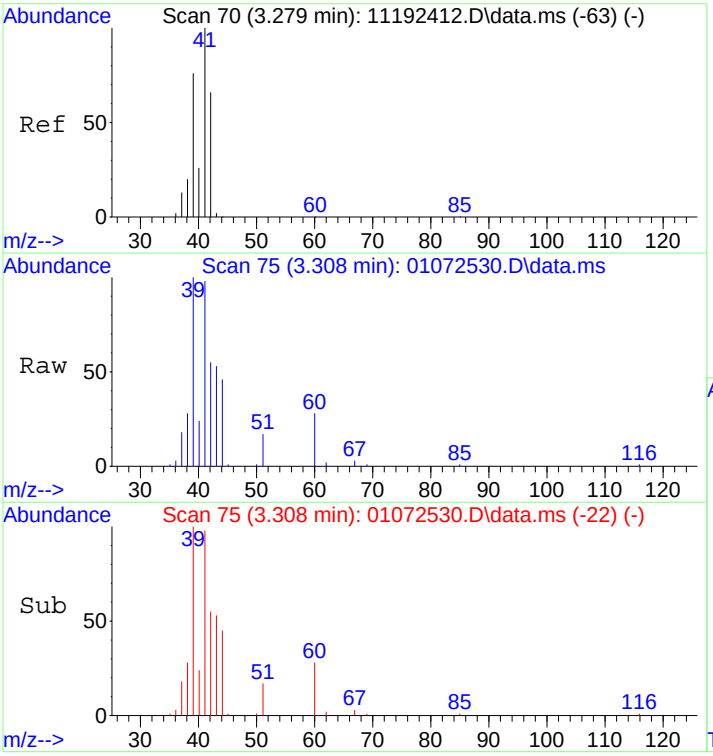
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 12:47:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

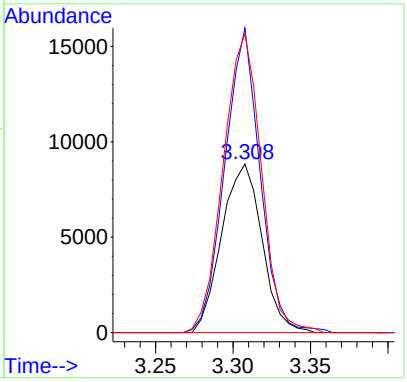


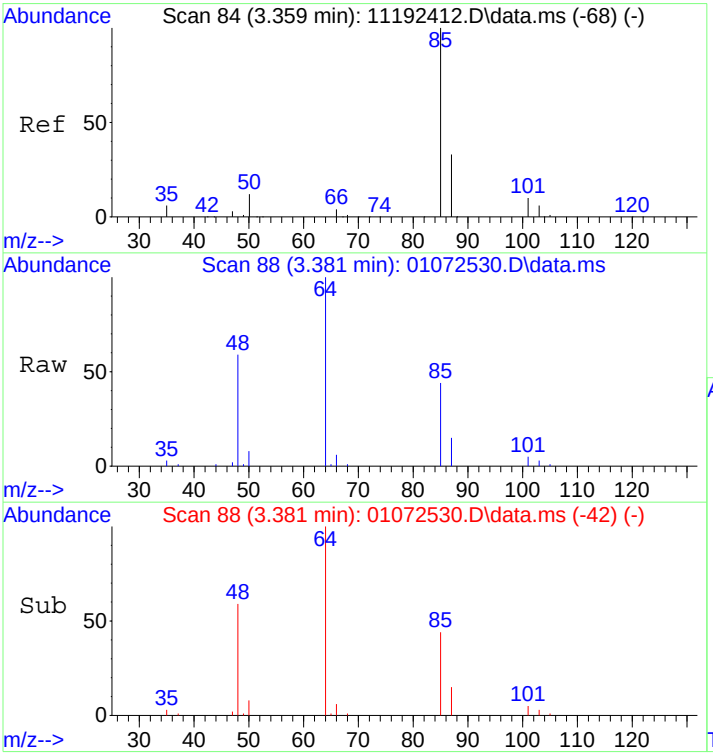


#2
Propene
Concen: 1.18 ng
RT: 3.31 min Scan# 75
Delta R.T. 0.054 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 42 Resp: 16033

Ion	Ratio	Lower	Upper
42	100		
39	157.7	95.4	135.4#
41	167.5	131.9	171.9

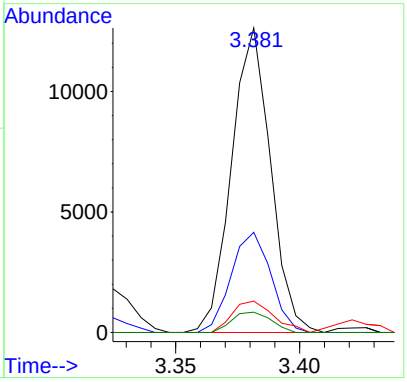


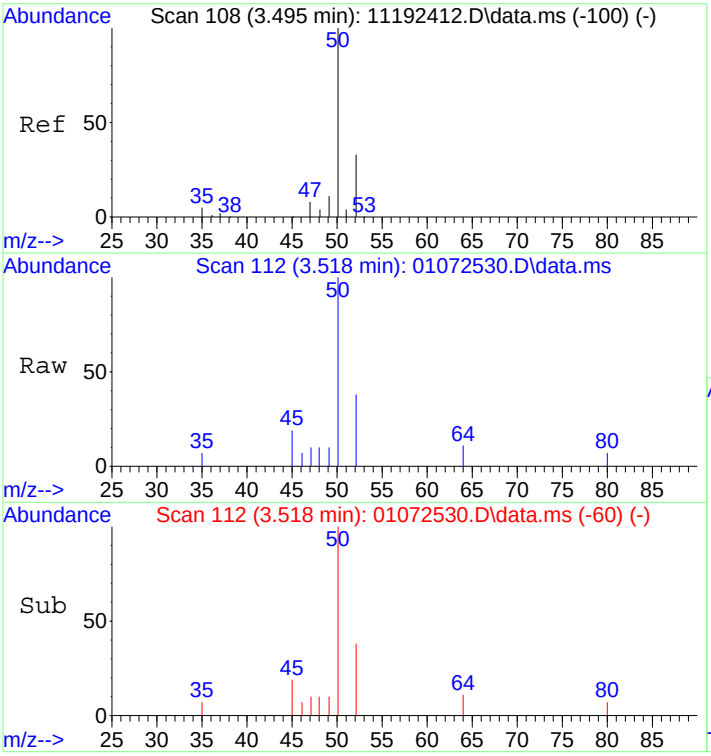


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.56 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.009 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 85 Resp: 13853

Ion	Ratio	Lower	Upper
85	100		
87	33.5	12.6	52.6
101	11.0	0.0	29.6
103	6.8	0.0	26.2

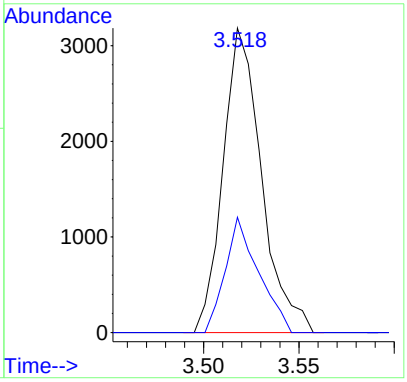


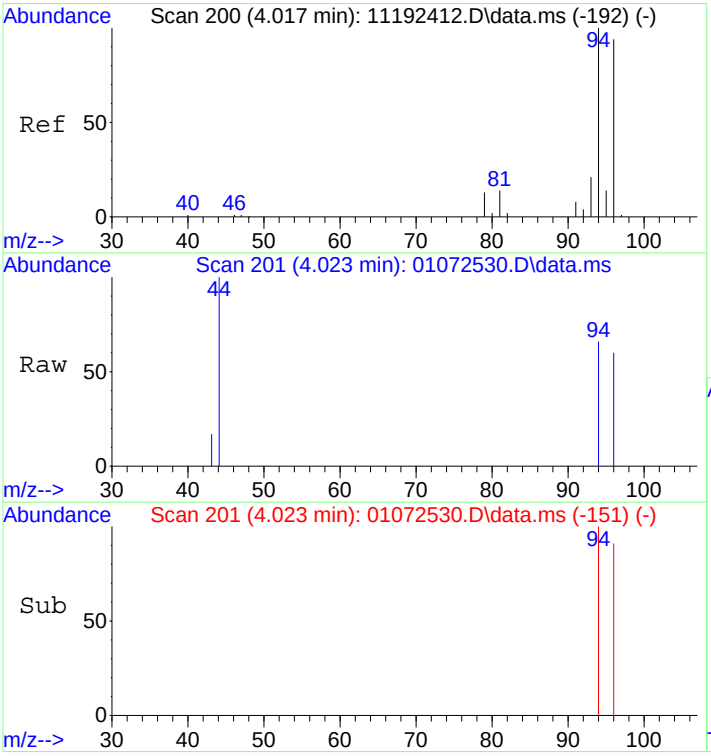


#4
Chloromethane
Concen: 0.24 ng
RT: 3.52 min Scan# 112
Delta R.T. 0.044 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 50 Resp: 4475

Ion	Ratio	Lower	Upper
50	100		
52	32.7	13.0	53.0

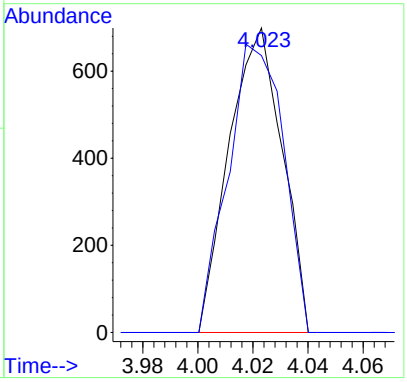


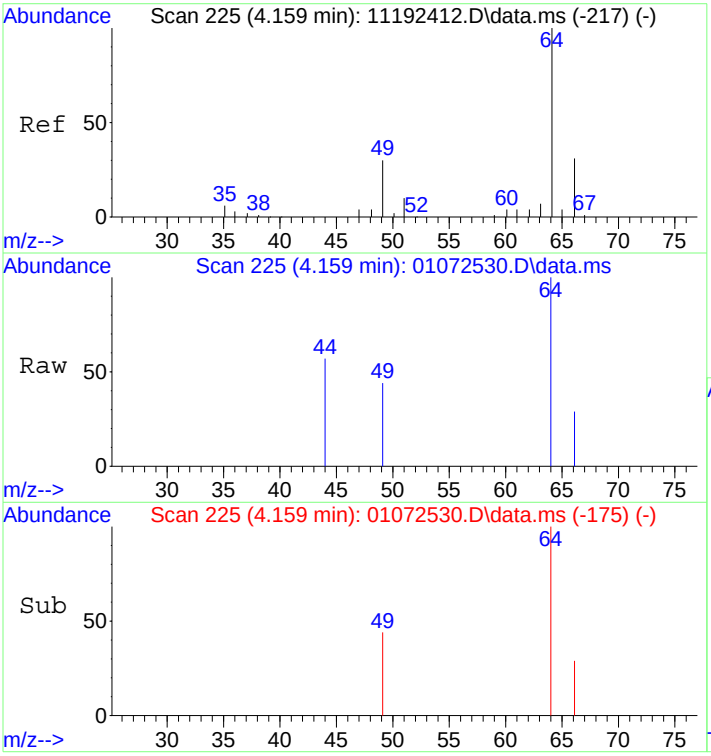


#8
Bromomethane
Concen: 0.10 ng
RT: 4.02 min Scan# 201
Delta R.T. 0.032 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 94 Resp: 938

Ion	Ratio	Lower	Upper
94	100		
96	98.8	73.5	113.5

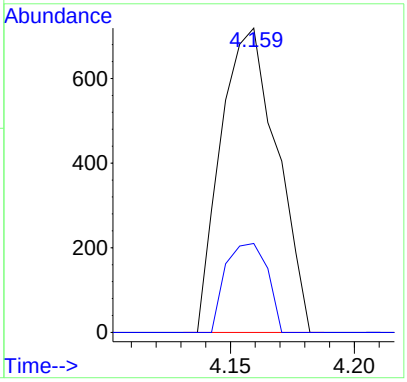


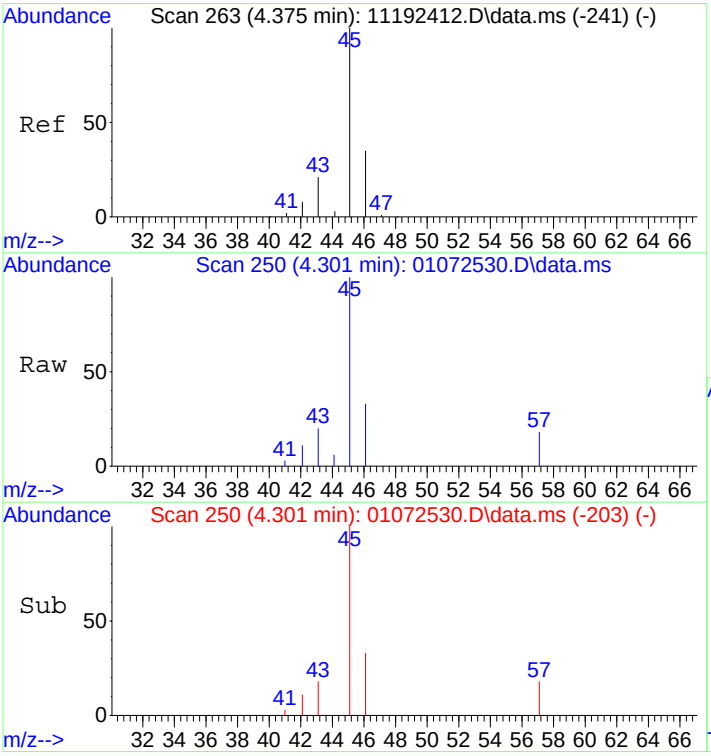


#9
Chloroethane
Concen: 0.15 ng
RT: 4.16 min Scan# 225
Delta R.T. 0.033 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 64 Resp: 1134

Ion	Ratio	Lower	Upper
64	100		
66	21.9	11.0	51.0

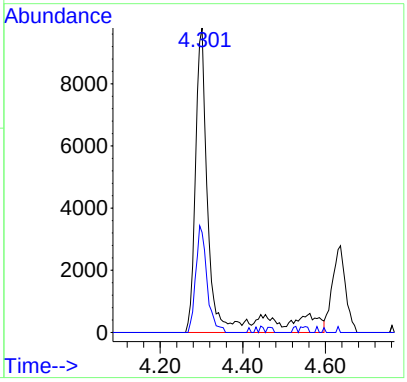


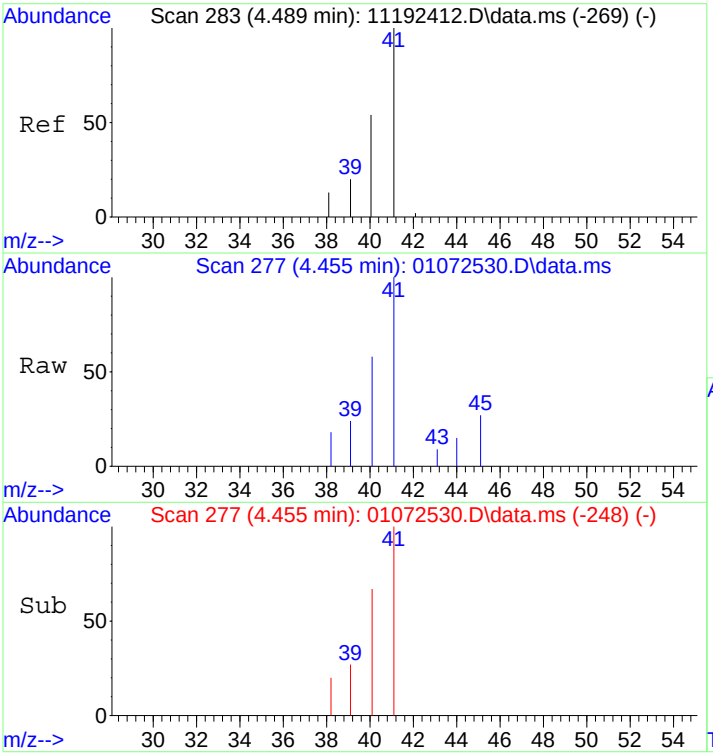


#10
Ethanol
Concen: 2.56 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 45 Resp: 24050

Ion	Ratio	Lower	Upper
45	100		
46	26.9	11.8	51.8

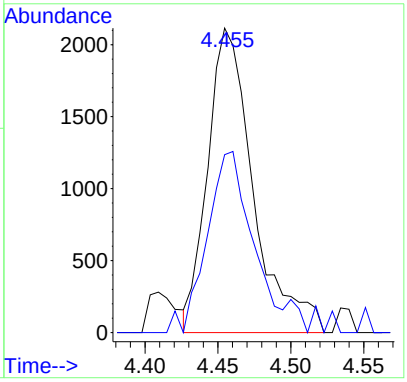


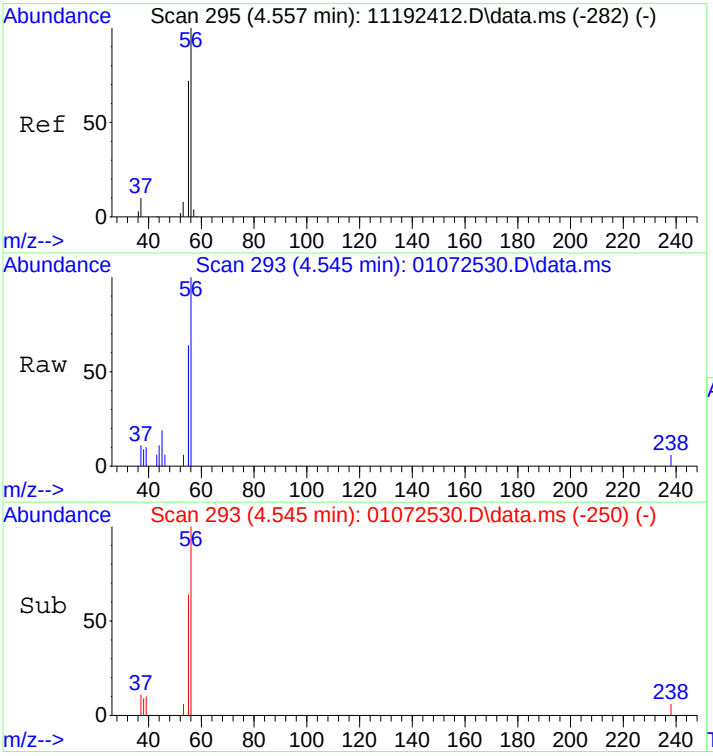


#11
Acetonitrile
Concen: 0.19 ng
RT: 4.45 min Scan# 277
Delta R.T. -0.037 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 41 Resp: 4624

Ion	Ratio	Lower	Upper
41	100		
40	61.2	33.8	73.8

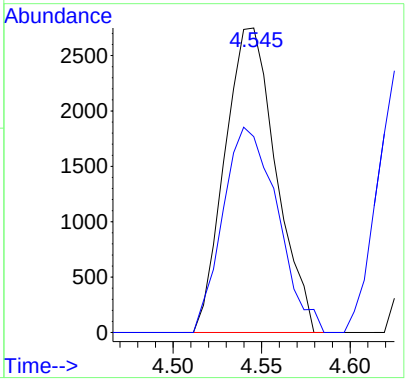


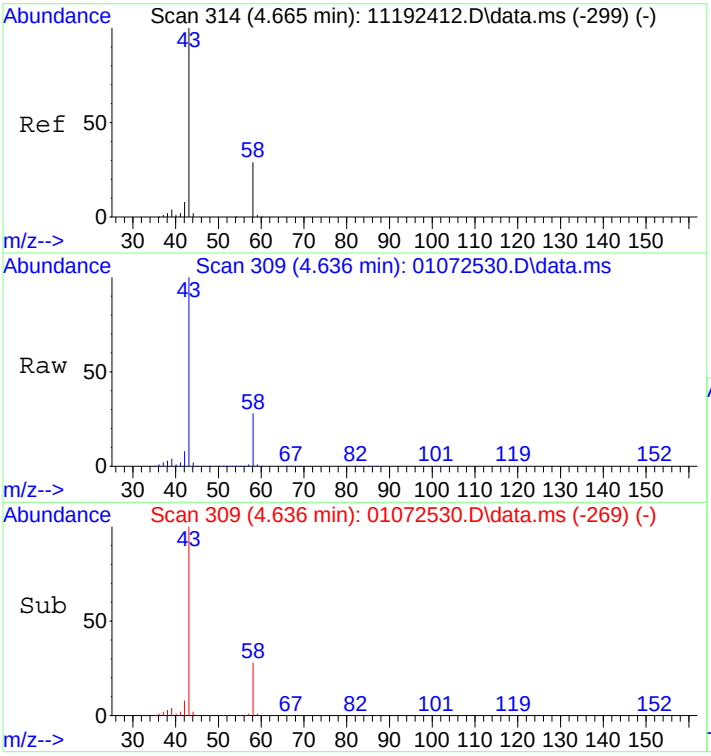


#12
Acrolein
Concen: 0.69 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 56 Resp: 5535

Ion	Ratio	Lower	Upper
56	100		
55	71.9	53.1	93.1

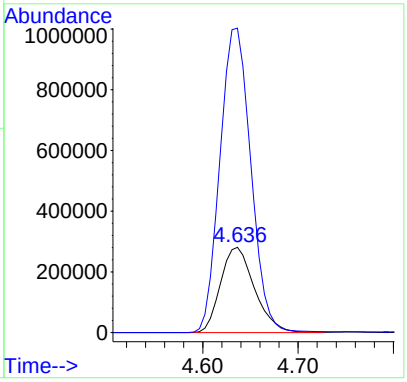


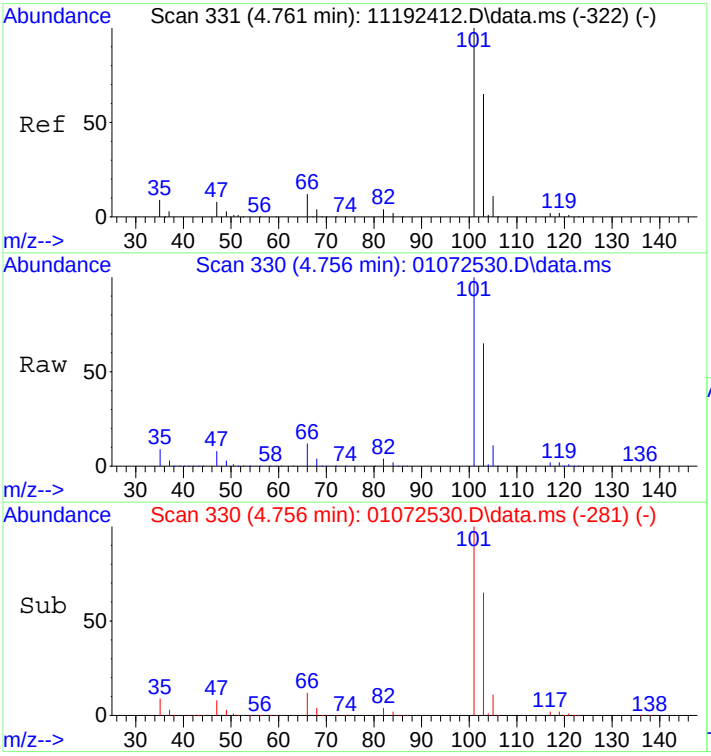


#13
Acetone
Concen: 81.43 ng
RT: 4.64 min Scan# 309
Delta R.T. -0.024 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 58 Resp: 697603

Ion	Ratio	Lower	Upper
58	100		
43	326.3	312.5	372.5

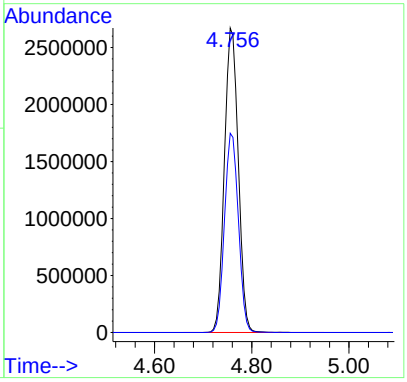


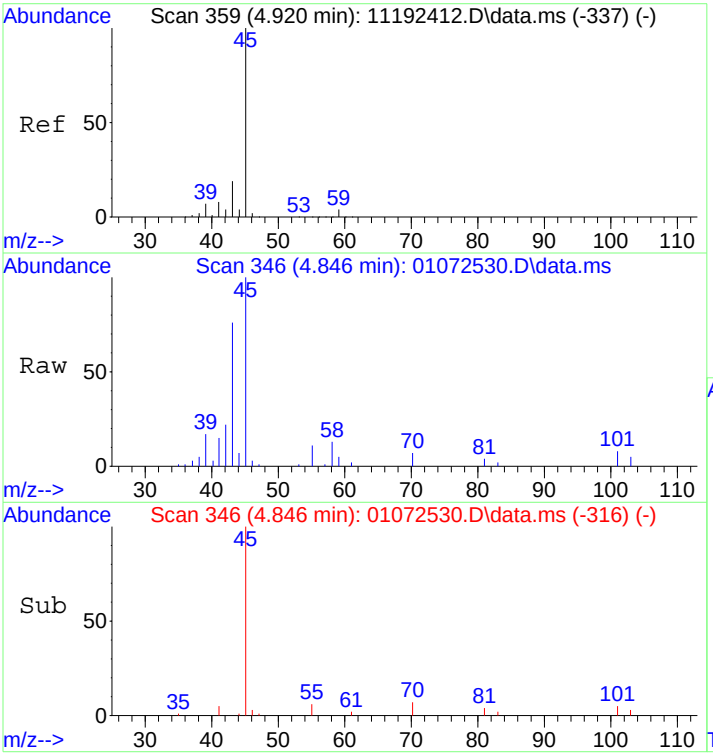


#14
Trichlorofluoromethane
Concen: 226.61 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion:101 Resp: 5285504

Ion	Ratio	Lower	Upper
101	100		
103	65.5	44.8	84.8

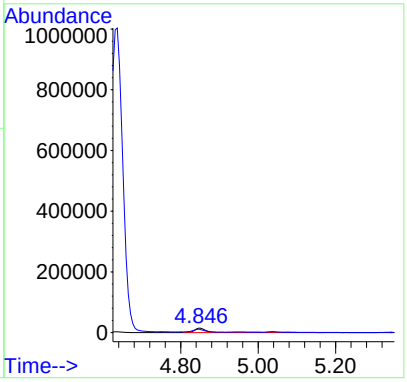


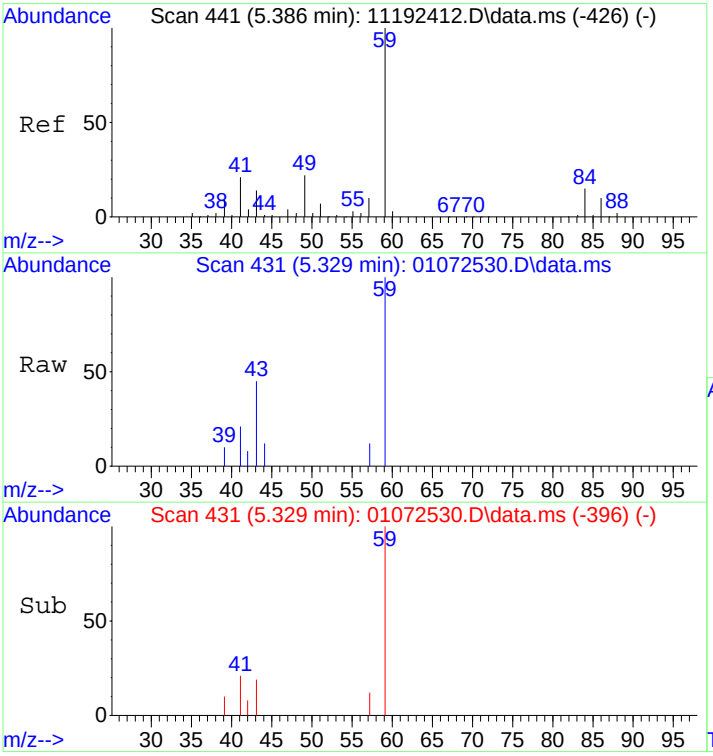


#15
2-Propanol (Isopropanol)
Concen: 1.28 ng
RT: 4.85 min Scan# 346
Delta R.T. -0.078 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 45 Resp: 39134

Ion	Ratio	Lower	Upper
45	100		
43	58.6	0.2	40.2#

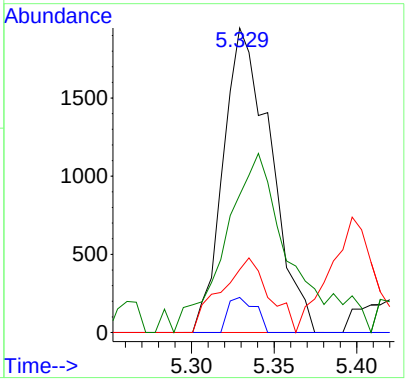


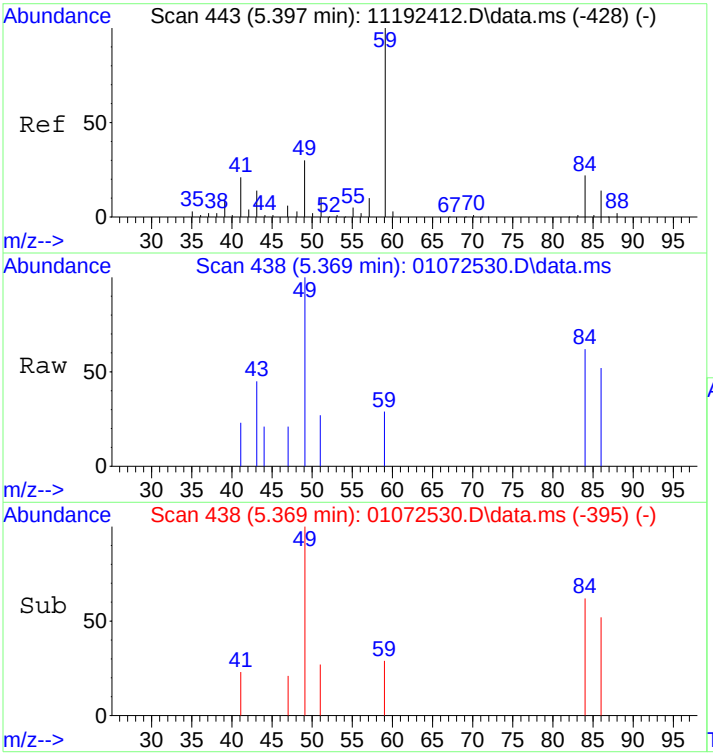


#18
2-Methyl-2-Propanol (tert-Butyl Alcohol
Concen: 0.16 ng
RT: 5.33 min Scan# 431
Delta R.T. -0.051 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 59 Resp: 3903

Ion	Ratio	Lower	Upper
59	100		
57	6.6	0.0	29.9
41	24.9	0.0	39.4
43	81.9	0.0	34.5#

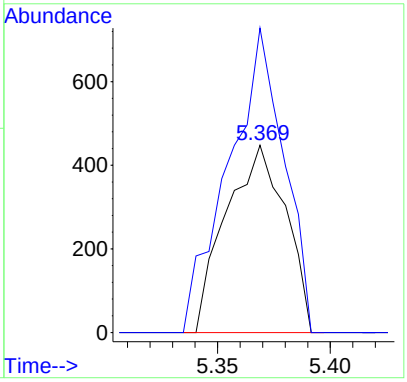


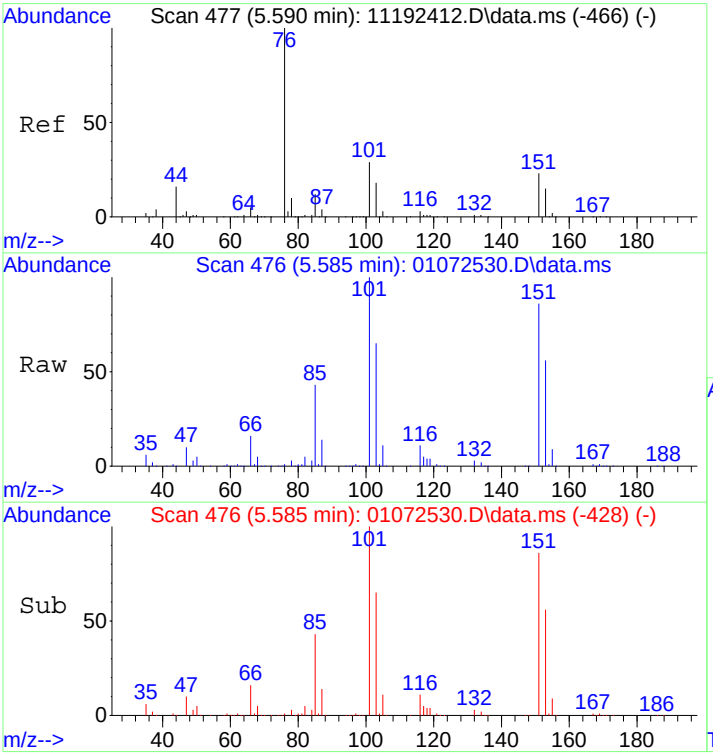


#19
Methylene Chloride
Concen: 0.07 ng
RT: 5.37 min Scan# 438
Delta R.T. -0.006 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 84 Resp: 824

Ion	Ratio	Lower	Upper
84	100		
49	150.8	116.0	166.0

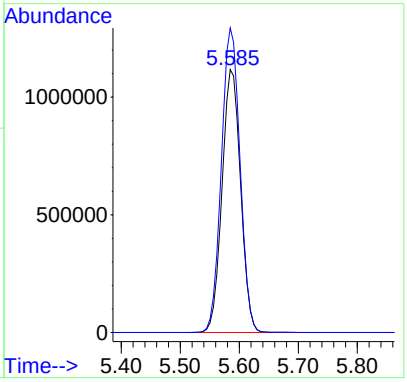


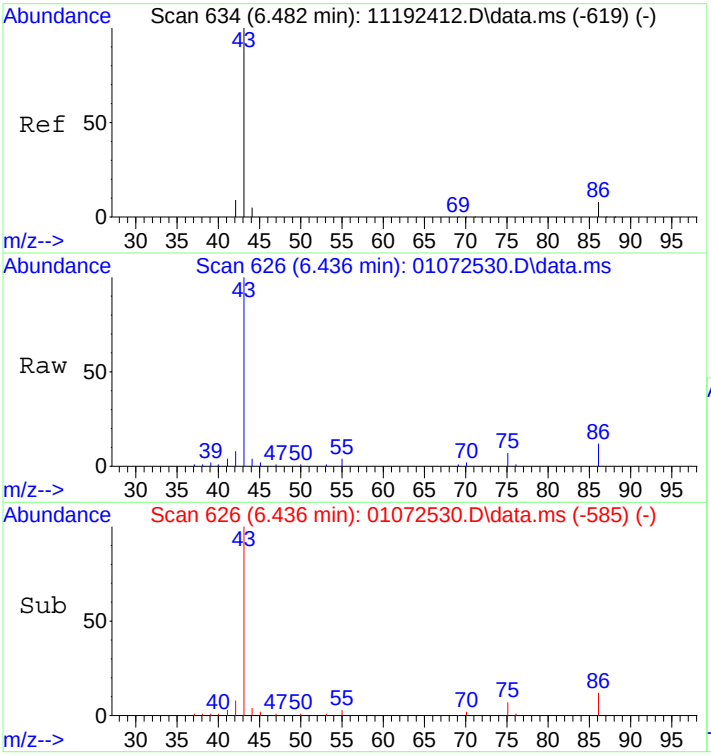


#21
Trichlorotrifluoroethane
Concen: 231.40 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion:151 Resp: 2435050

Ion	Ratio	Lower	Upper
151	100		
101	116.3	105.0	145.0

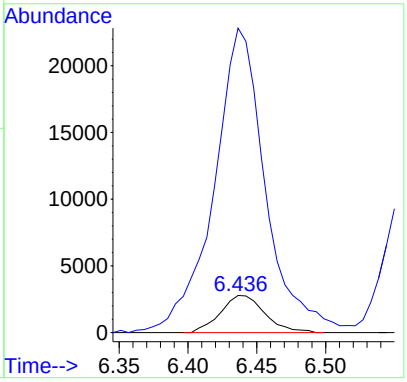


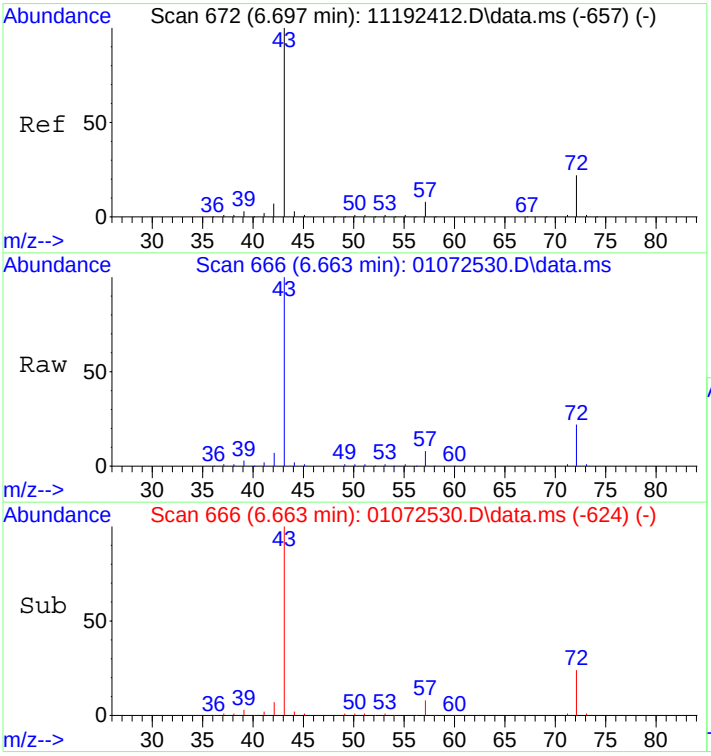


#26
Vinyl Acetate
Concen: 3.01 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.018 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 86 Resp: 6248

Ion	Ratio	Lower	Upper
86	100		
43	959.2	1331.6	1371.6#

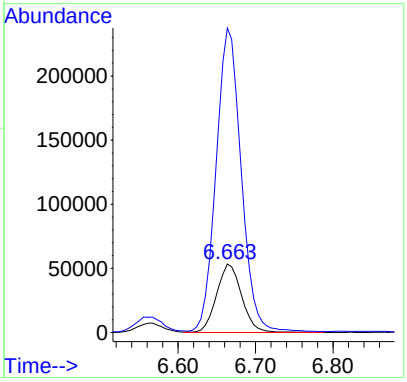


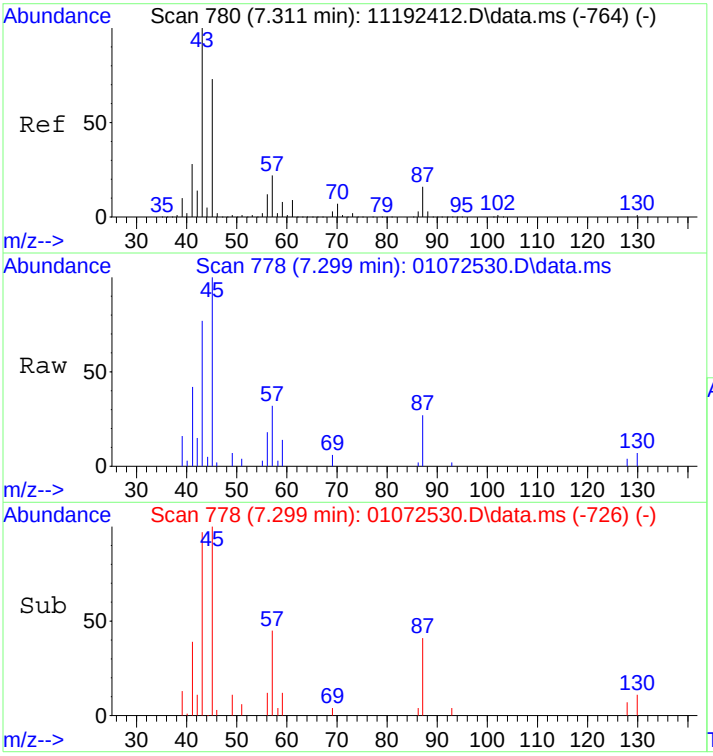


#27
2-Butanone (MEK)
Concen: 17.47 ng
RT: 6.66 min Scan# 666
Delta R.T. -0.011 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 72 Resp: 120202

Ion	Ratio	Lower	Upper
72	100		
43	442.7	439.8	479.8

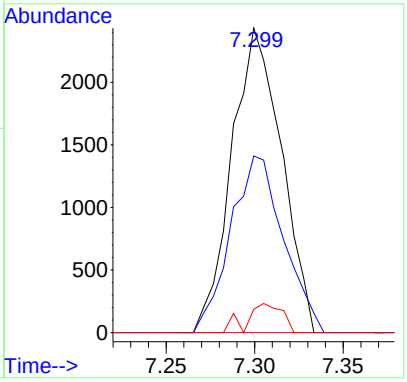


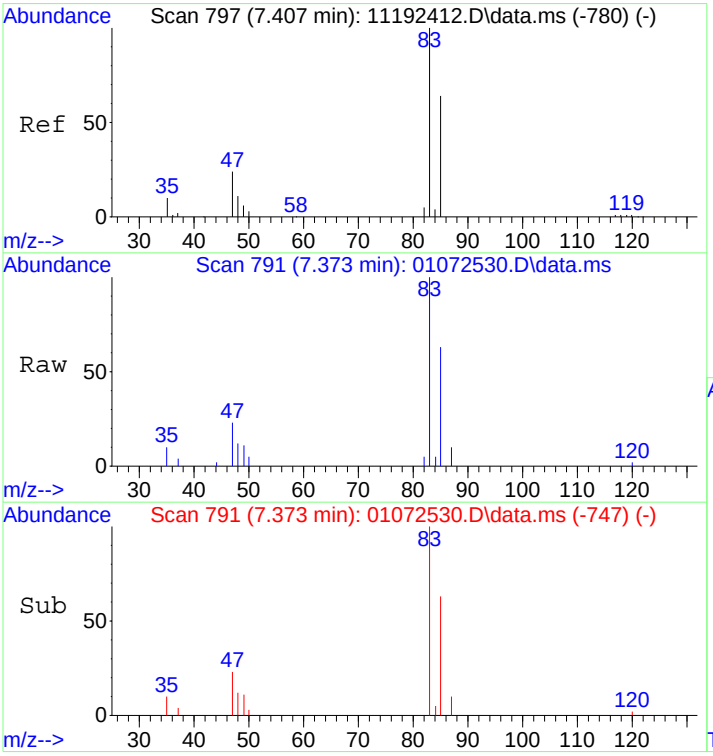


#31
n-Hexane
Concen: 0.25 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 57 Resp: 4760

Ion	Ratio	Lower	Upper
57	100		
56	61.4	43.4	65.0
86	6.8	10.9	16.3#

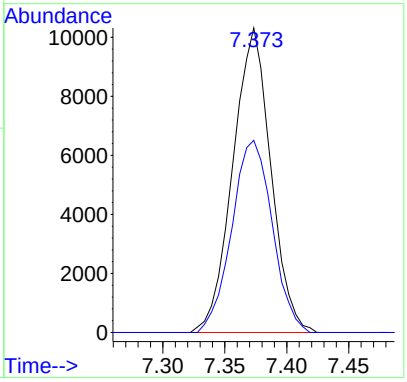


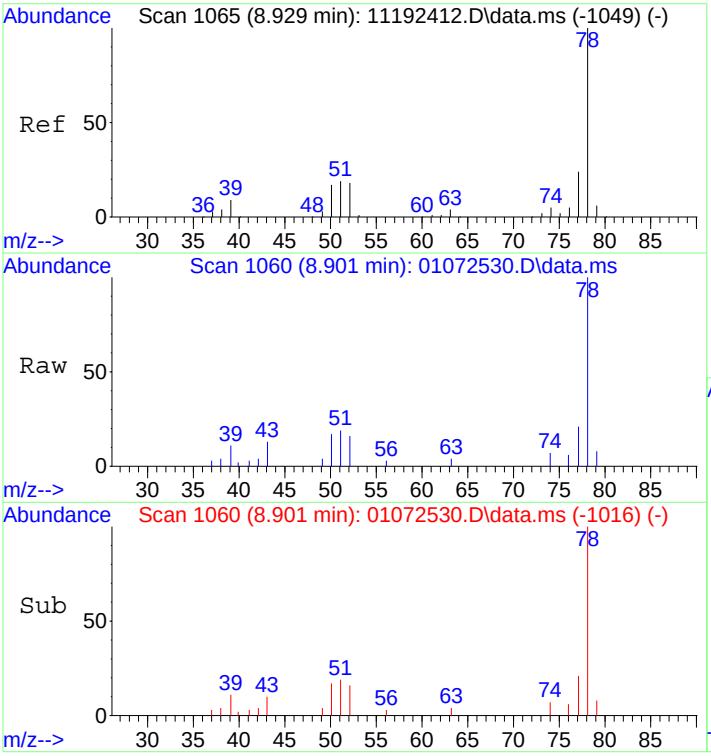


#32
Chloroform
Concen: 1.06 ng
RT: 7.37 min Scan# 791
Delta R.T. 0.002 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 83 Resp: 22042

Ion	Ratio	Lower	Upper
83	100		
85	67.2	45.1	85.1

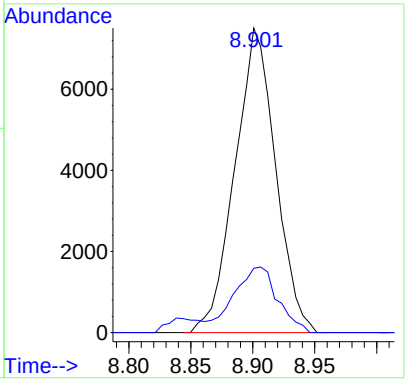


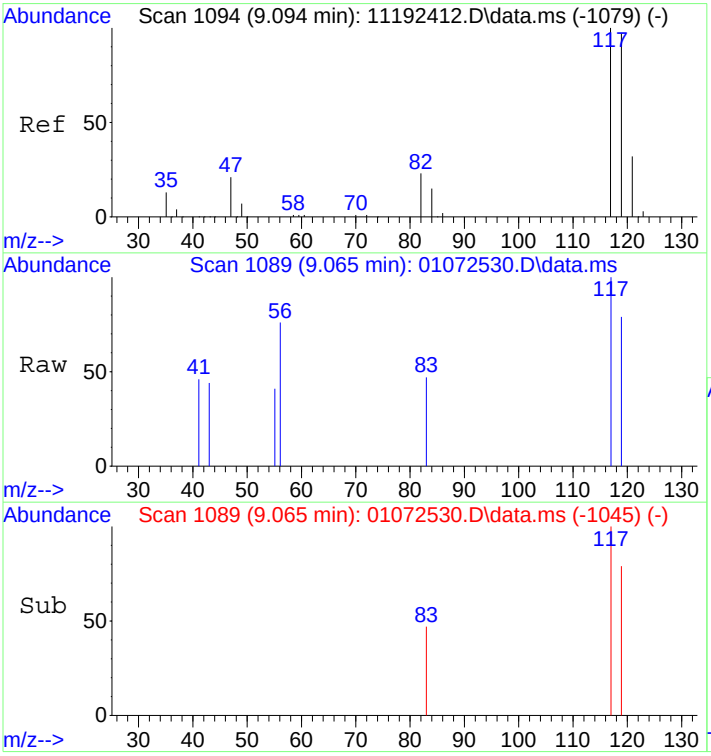


#41
Benzene
Concen: 0.40 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 78 Resp: 17214

Ion	Ratio	Lower	Upper
78	100		
77	23.3	3.7	43.7

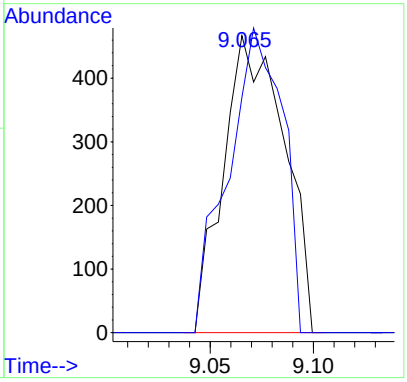


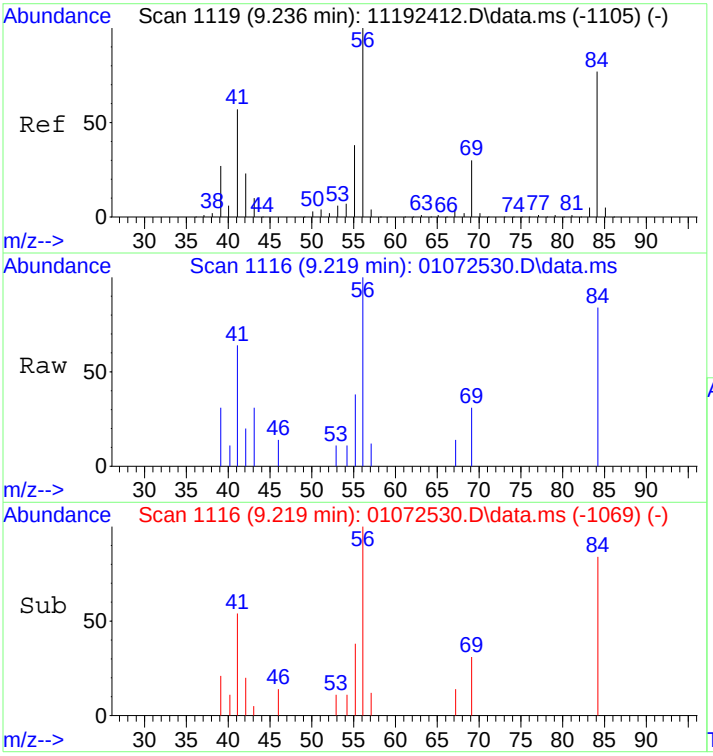


#42
Carbon Tetrachloride
Concen: 0.06 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion:117 Resp: 960

Ion	Ratio	Lower	Upper
117	100		
119	92.1	75.7	115.7

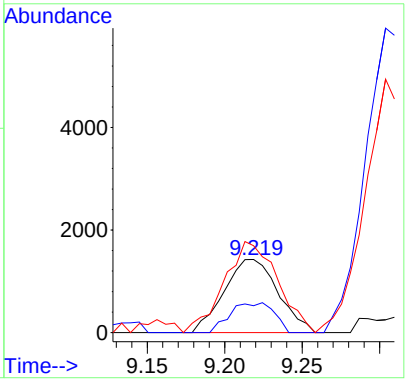


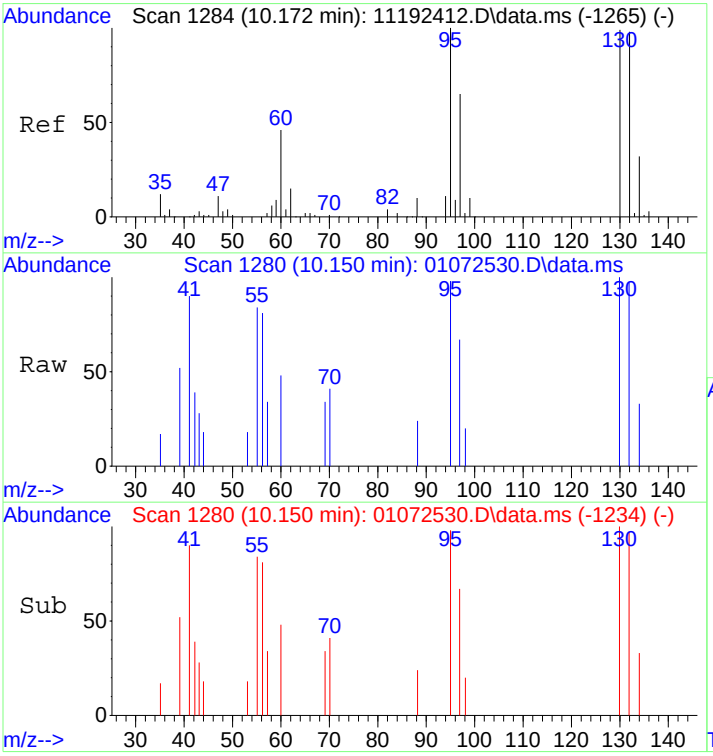


#43
Cyclohexane
Concen: 0.23 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 84 Resp: 3465

Ion	Ratio	Lower	Upper
84	100		
69	33.2	18.3	58.3
56	122.8	110.7	150.7

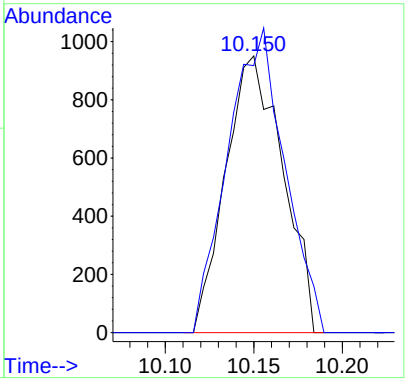


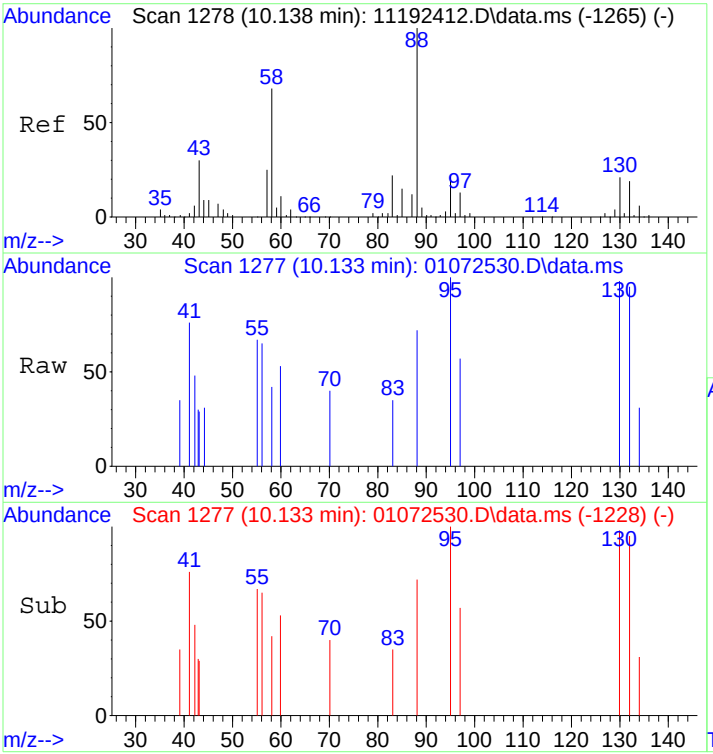


#47
Trichloroethene
Concen: 0.17 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion:130 Resp: 2139

Ion	Ratio	Lower	Upper
130	100		
132	109.5	79.3	119.3

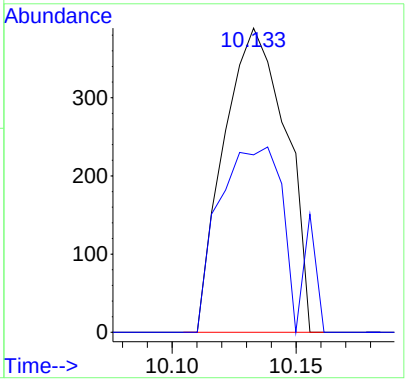


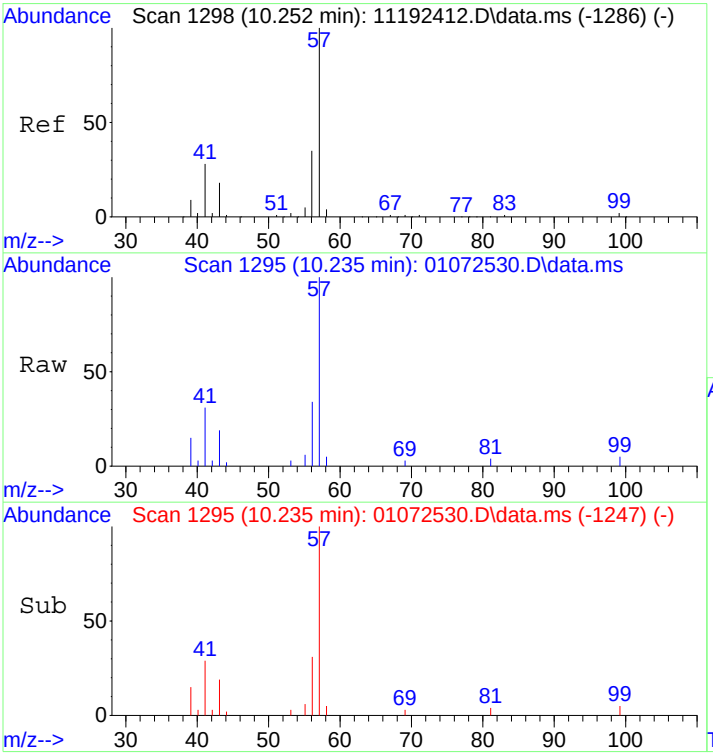


#48
1,4-Dioxane
Concen: 0.09 ng
RT: 10.13 min Scan# 1277
Delta R.T. 0.027 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 88 Resp: 677

Ion	Ratio	Lower	Upper
88	100		
58	68.8	47.8	87.8

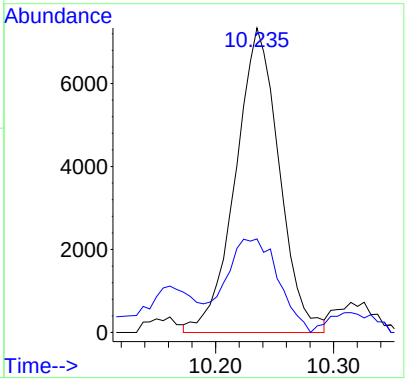


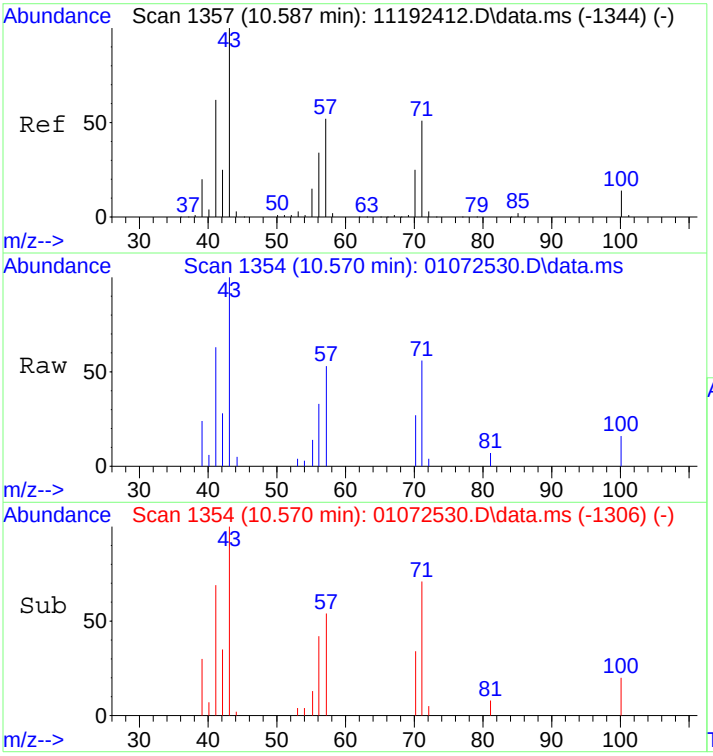


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.42 ng
RT: 10.24 min Scan# 1295
Delta R.T. 0.022 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 57 Resp: 18906

Ion	Ratio	Lower	Upper
57	100		
41	37.0	8.3	48.3

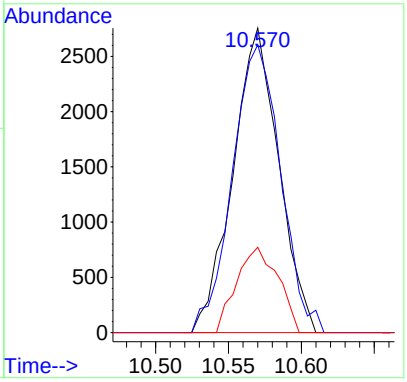


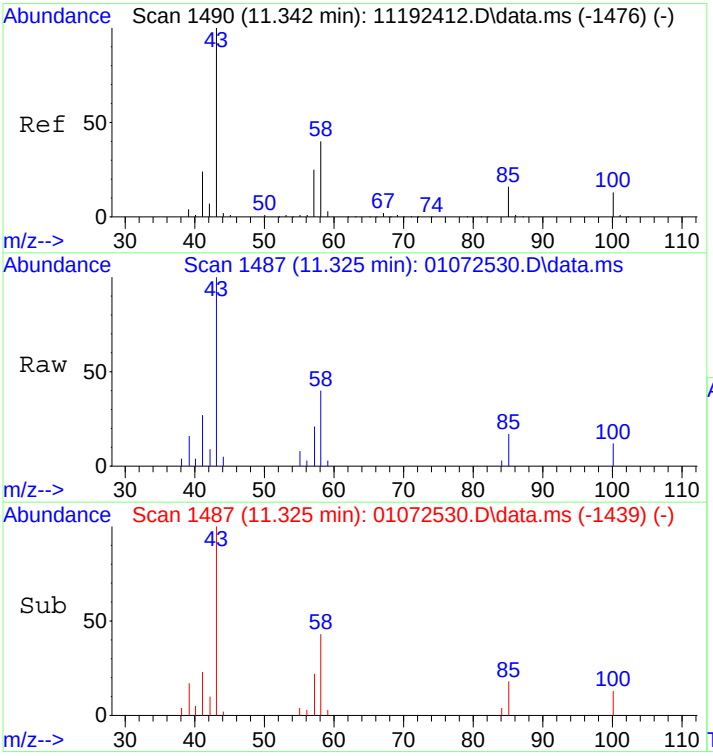


#51
n-Heptane
Concen: 0.63 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 71 Resp: 6037

Ion	Ratio	Lower	Upper
71	100		
57	99.3	83.3	123.3
100	25.3	8.7	48.7

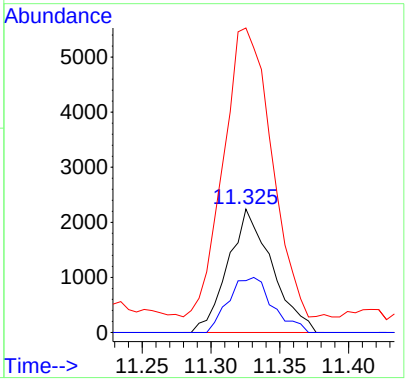


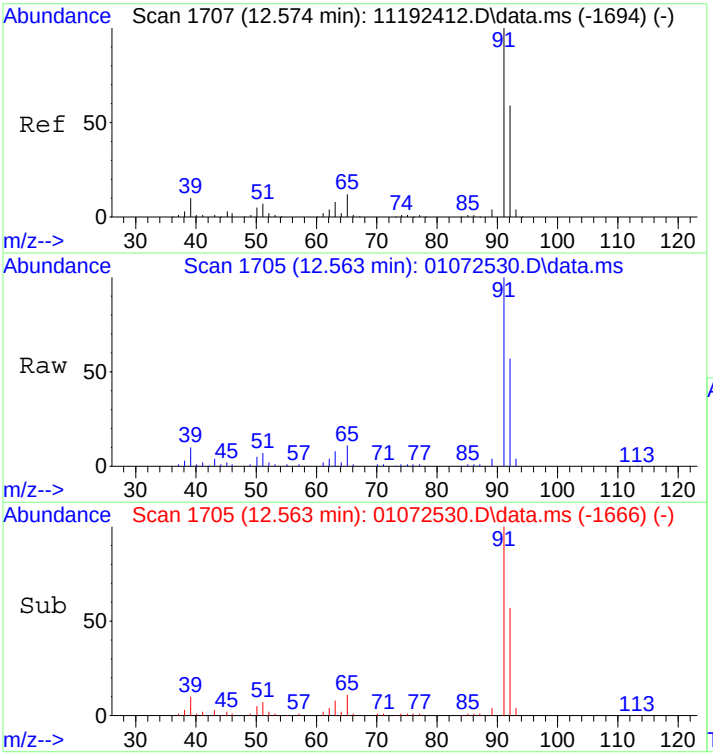


#53
4-Methyl-2-pentanone
Concen: 0.54 ng
RT: 11.33 min Scan# 1487
Delta R.T. 0.022 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 58 Resp: 4979

Ion	Ratio	Lower	Upper
58	100		
85	44.5	33.8	50.6
43	261.3	199.5	299.3

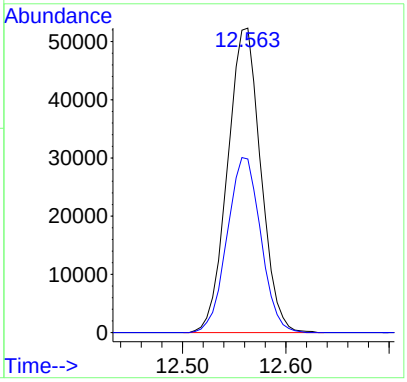


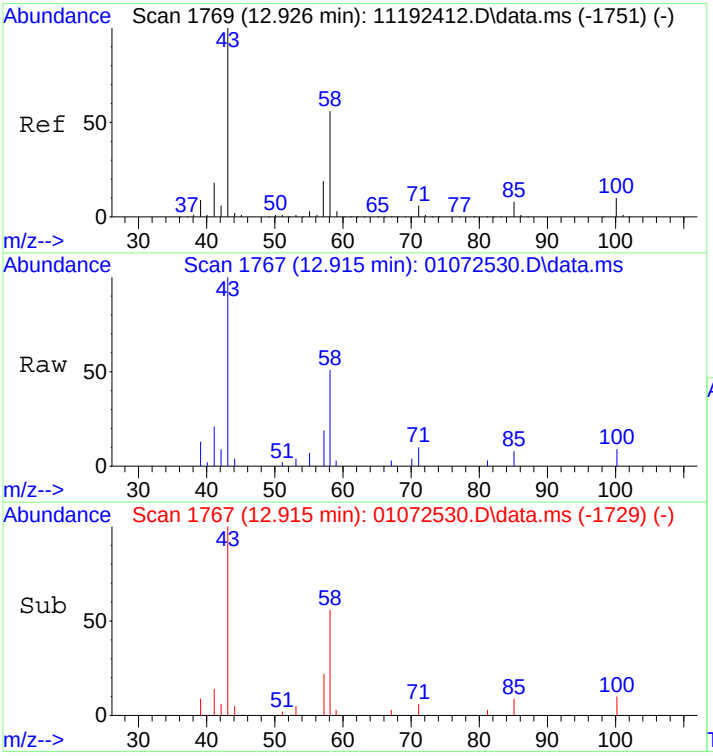


#58
Toluene
Concen: 2.70 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 91 Resp: 116867

Ion	Ratio	Lower	Upper
91	100		
92	58.3	39.2	79.2

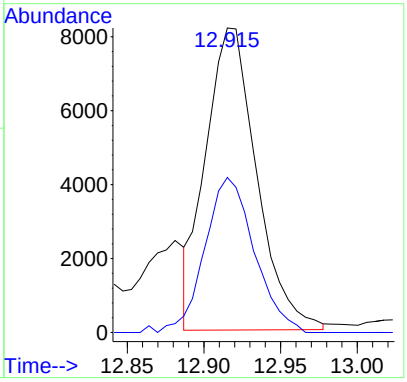


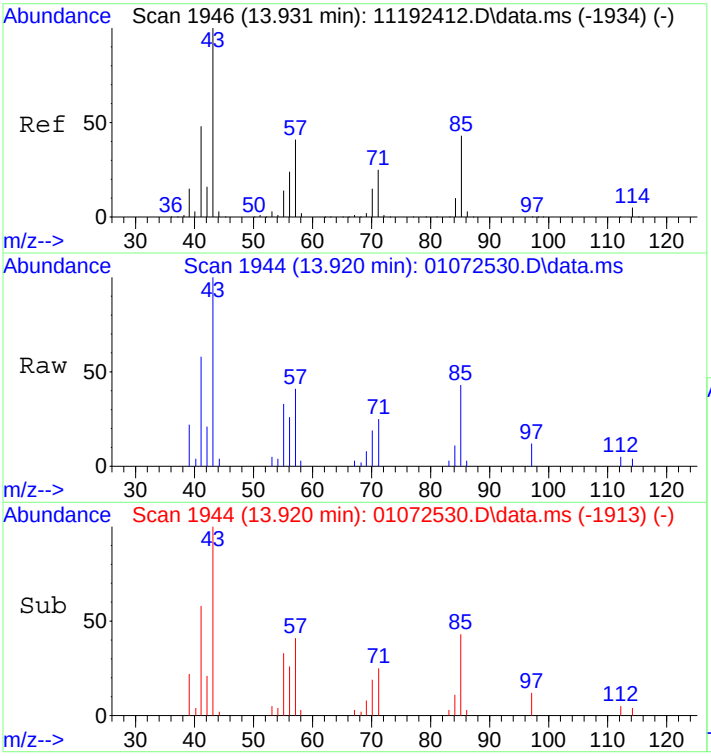


#59
2-Hexanone
Concen: 0.90 ng m
RT: 12.92 min Scan# 1767
Delta R.T. -0.034 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 43 Resp: 18988

Ion	Ratio	Lower	Upper
43	100		
58	49.9	35.2	75.2

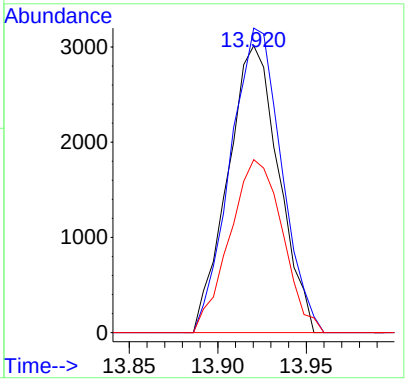


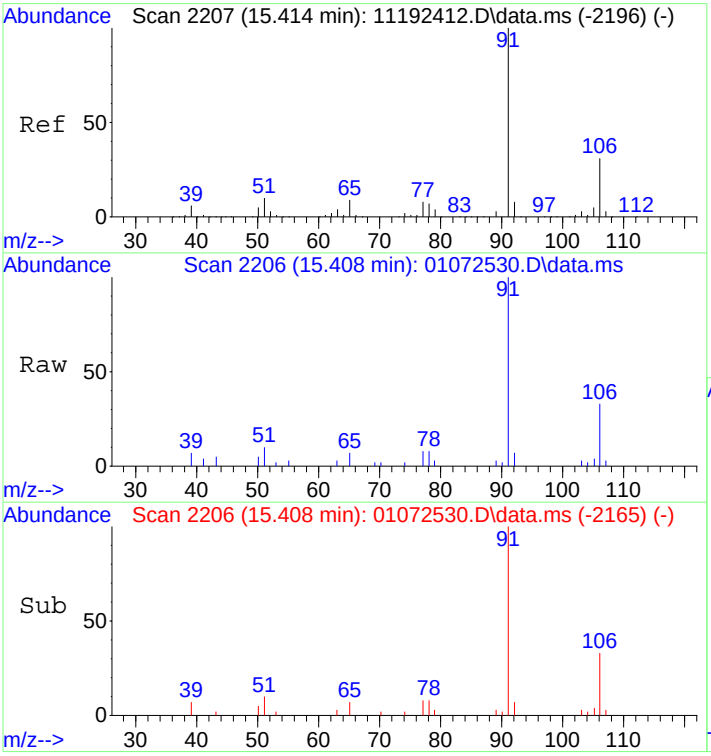


#63
n-Octane
Concen: 0.67 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 57 Resp: 6036

Ion	Ratio	Lower	Upper
57	100		
85	106.3	83.6	125.4
71	62.4	49.0	73.4

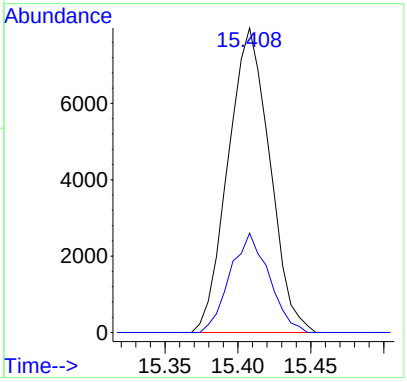


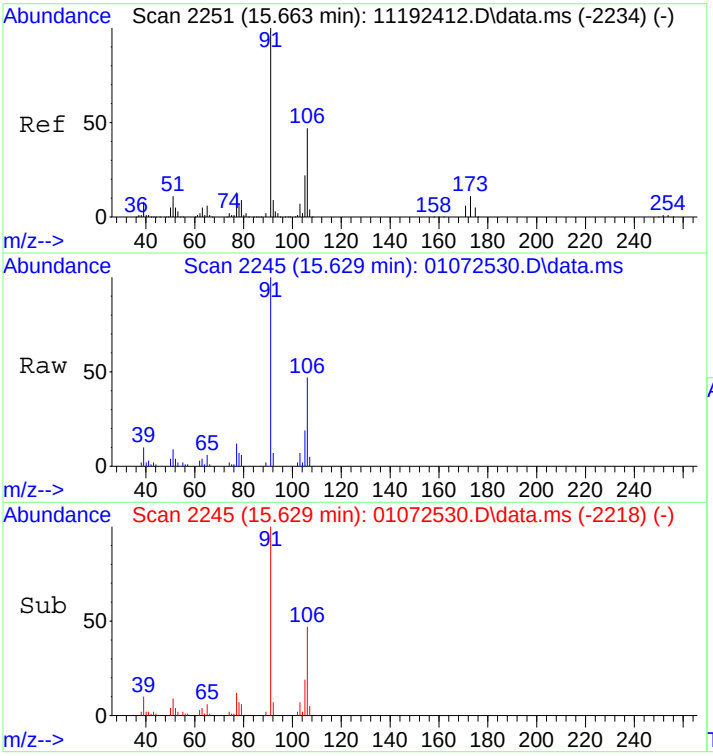


#66
Ethylbenzene
Concen: 0.33 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 91 Resp: 15811

Ion	Ratio	Lower	Upper
91	100		
106	30.6	10.7	50.7

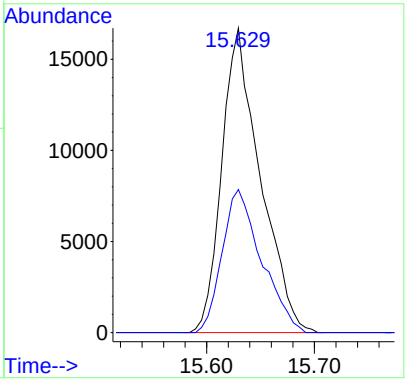


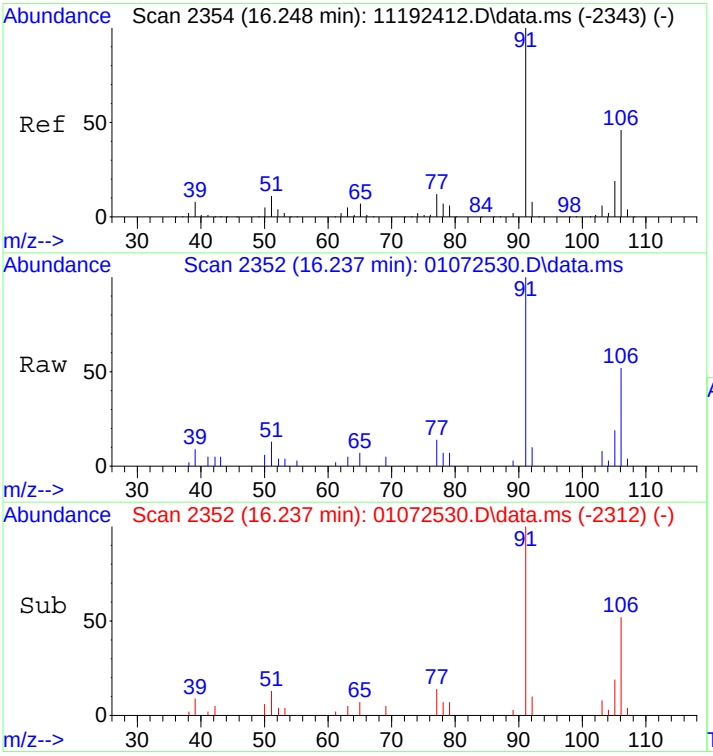


#67
m- & p-Xylenes
Concen: 1.06 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 91 Resp: 41406

Ion	Ratio	Lower	Upper
91	100		
106	48.0	27.1	67.1

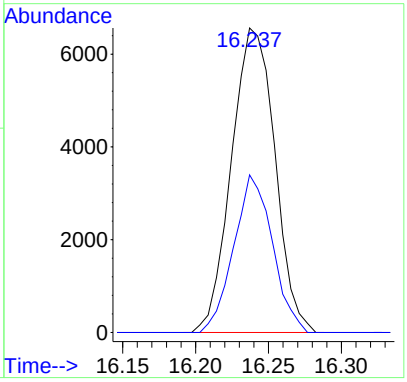


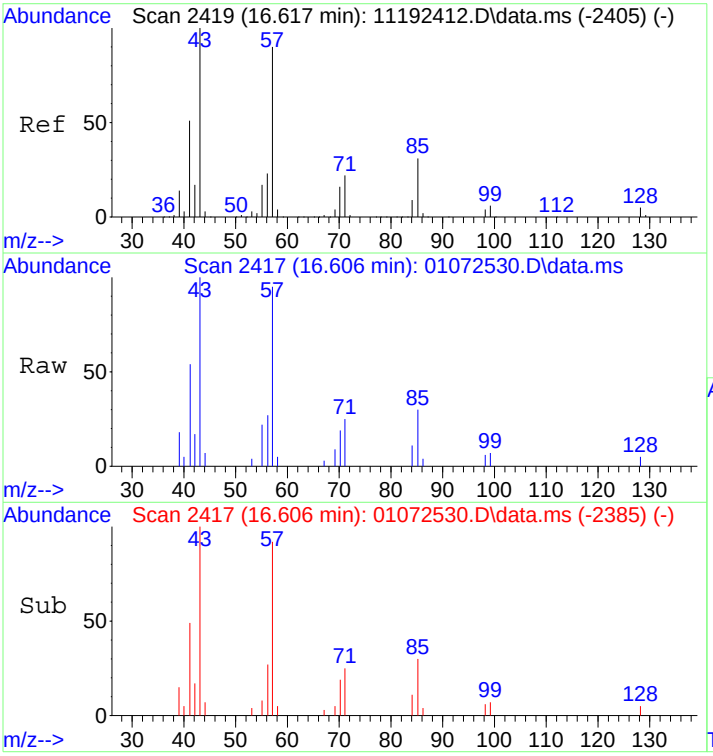


#70
o-Xylene
Concen: 0.35 ng
RT: 16.24 min Scan# 2352
Delta R.T. -0.023 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 91 Resp: 13626

Ion	Ratio	Lower	Upper
91	100		
106	46.0	25.8	65.8

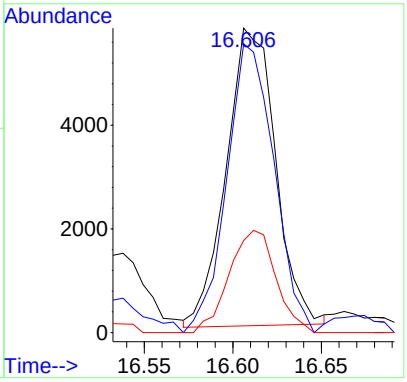


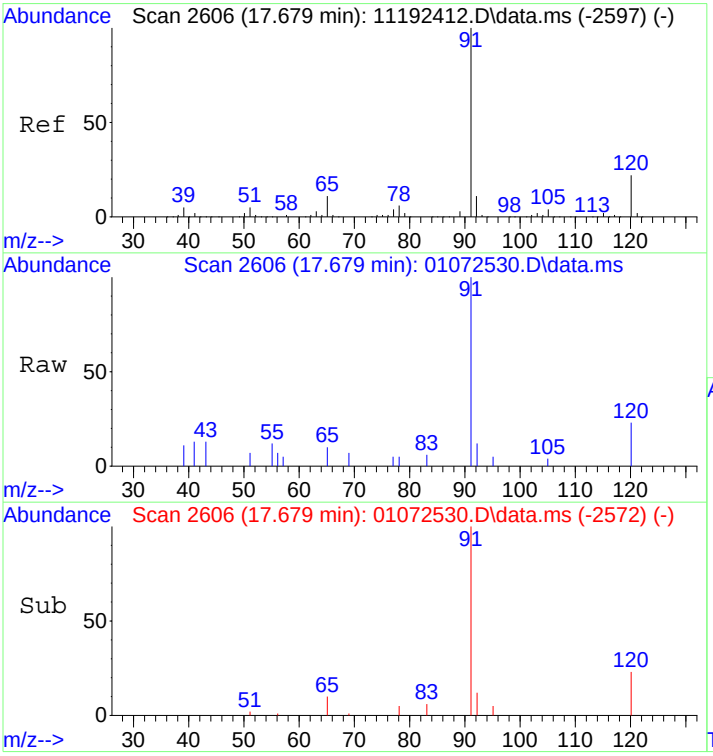


#71
n-Nonane
Concen: 0.54 ng
RT: 16.61 min Scan# 2417
Delta R.T. -0.017 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 43 Resp: 11155

Ion	Ratio	Lower	Upper
43	100		
57	92.8	69.4	109.4
85	32.5	10.5	50.5

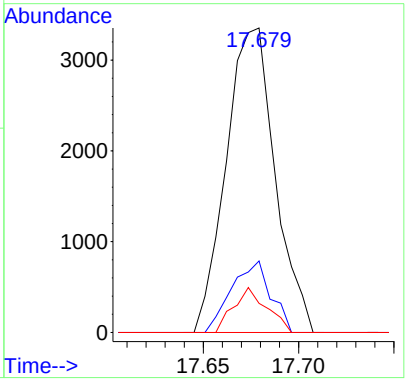


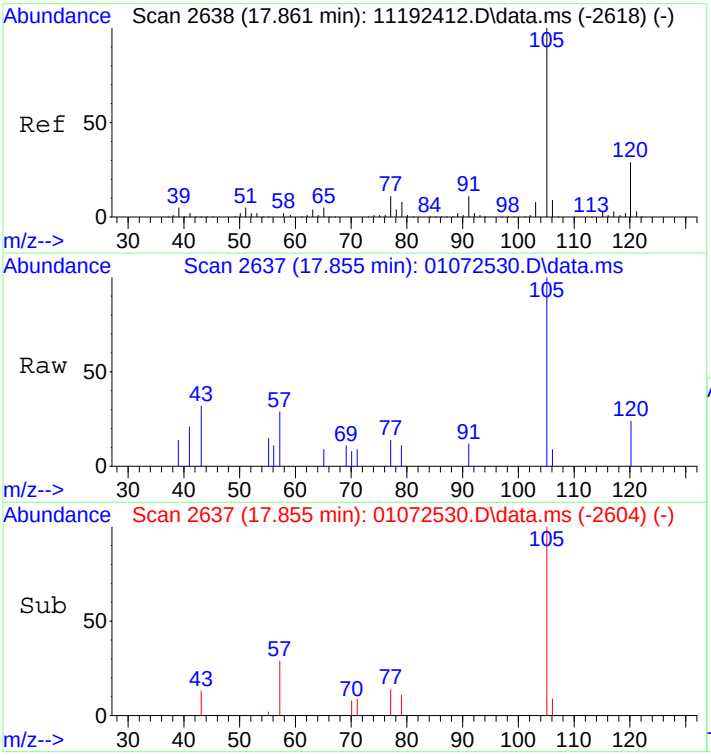


#76
n-Propylbenzene
Concen: 0.10 ng
RT: 17.68 min Scan# 2606
Delta R.T. -0.005 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion: 91 Resp: 5980

Ion	Ratio	Lower	Upper
91	100		
120	18.8	2.3	42.3
65	10.0	0.0	30.7

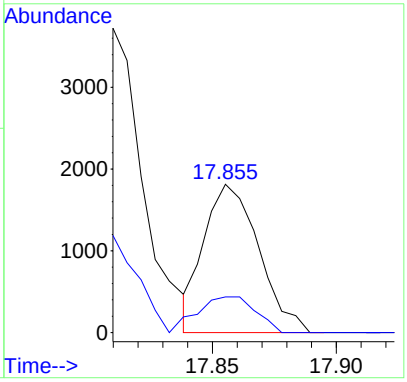


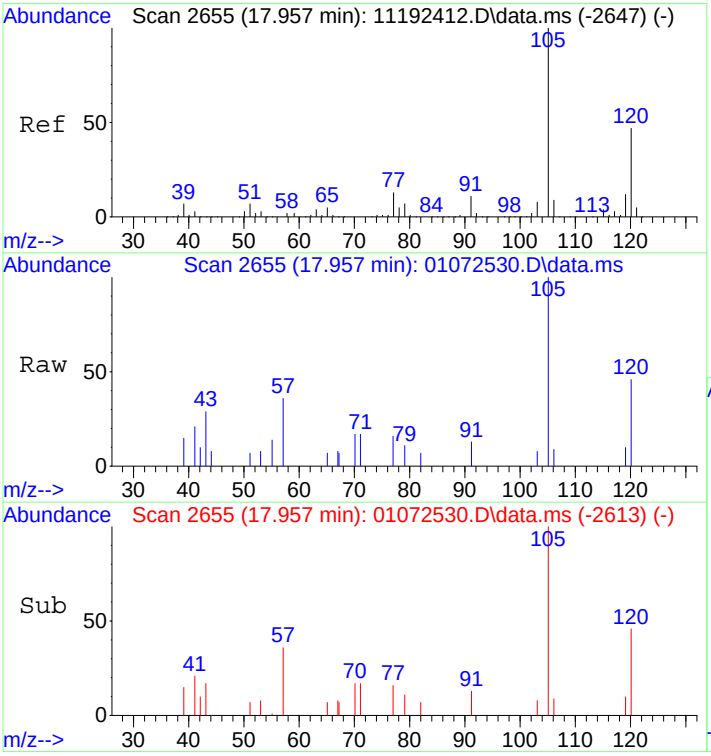


#78
4-Ethyltoluene
Concen: 0.06 ng
RT: 17.86 min Scan# 2637
Delta R.T. -0.011 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion:105 Resp: 2782

Ion	Ratio	Lower	Upper
105	100		
120	25.9	8.9	48.9

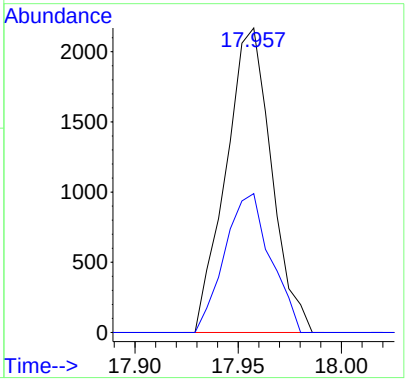


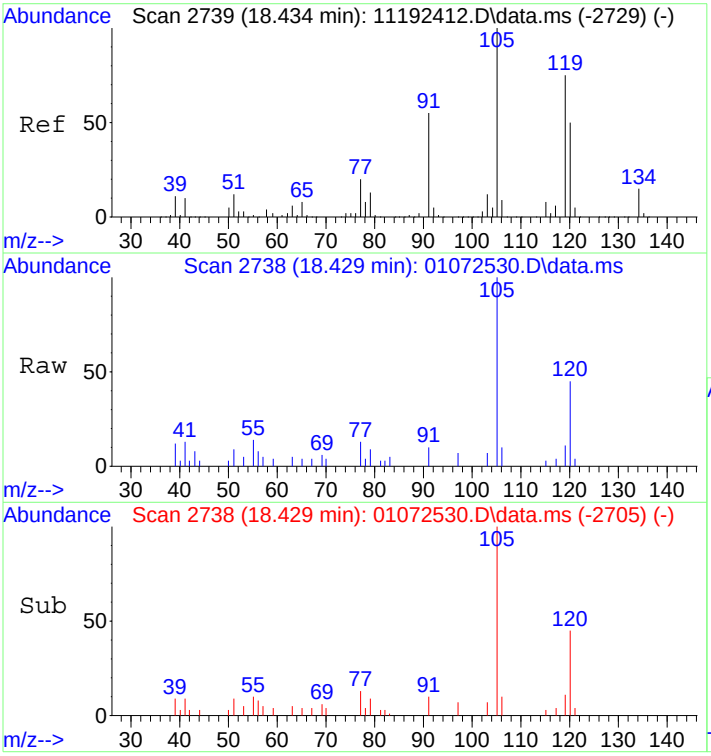


#79
1,3,5-Trimethylbenzene
Concen: 0.08 ng
RT: 17.96 min Scan# 2655
Delta R.T. -0.011 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion:105 Resp: 3324

Ion	Ratio	Lower	Upper
105	100		
120	46.2	27.5	67.5

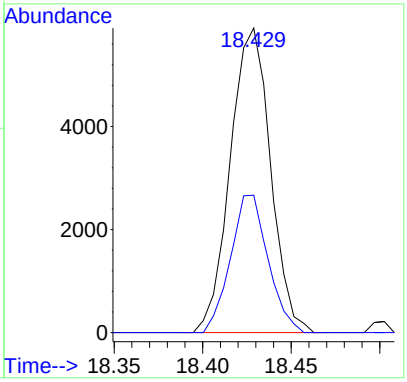


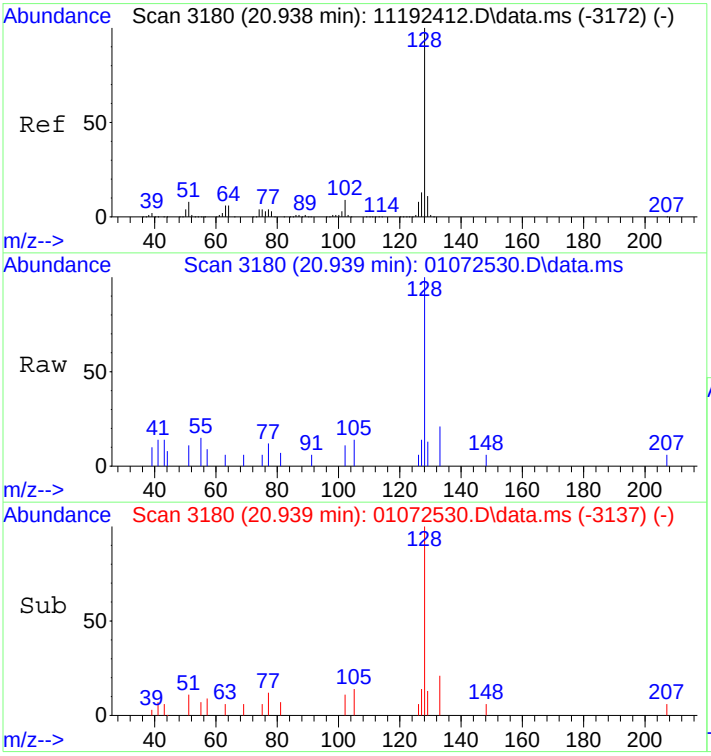


#82
1,2,4-Trimethylbenzene
Concen: 0.23 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

Tgt Ion:105 Resp: 9353

Ion	Ratio	Lower	Upper
105	100		
120	42.1	31.8	71.8

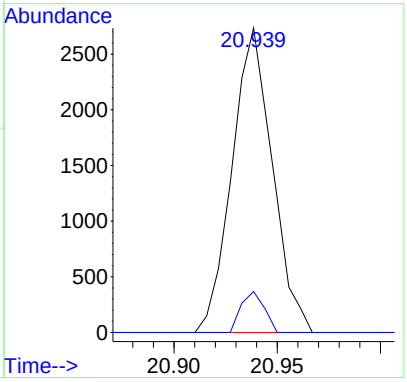




#95
Naphthalene
Concen: 0.07 ng
RT: 20.94 min Scan# 3180
Delta R.T. -0.005 min
Lab File: 01072530.D
Acq: 7 Jan 2025 20:20

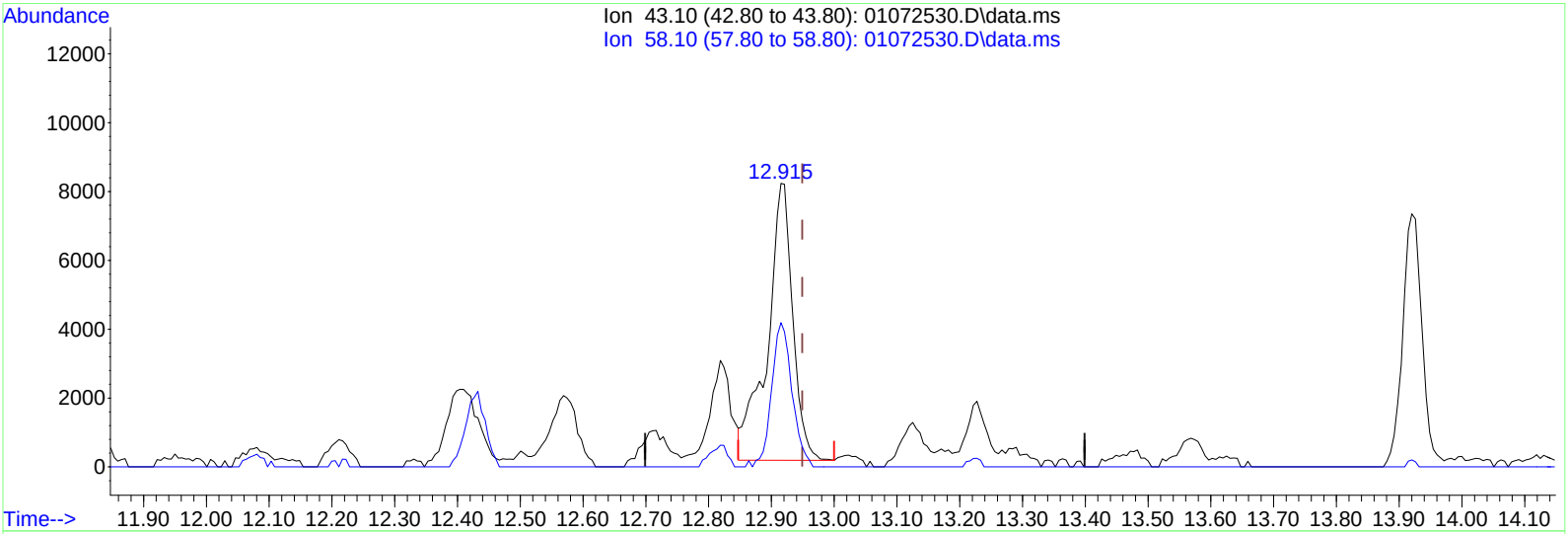
Tgt Ion:128 Resp: 3712

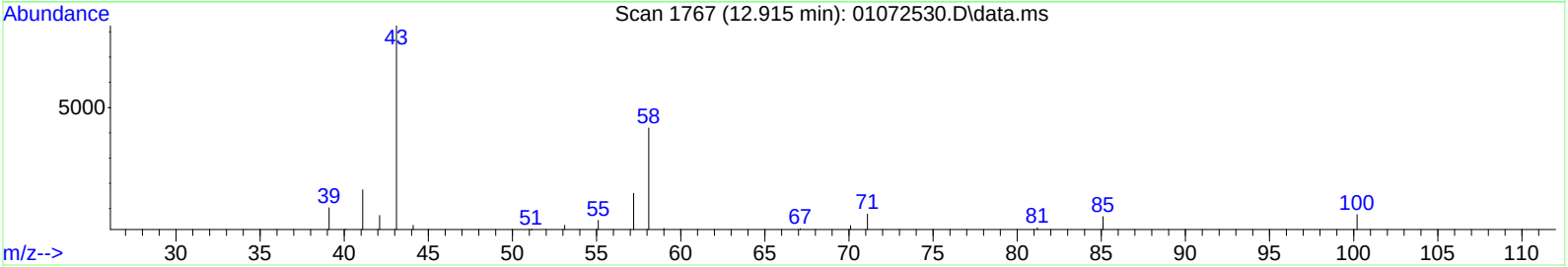
Ion	Ratio	Lower	Upper
128	100		
129	7.7	0.0	31.2

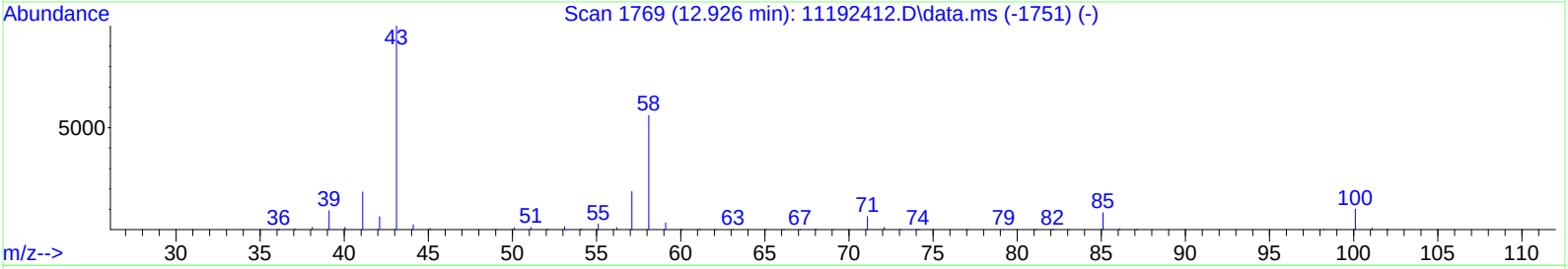


Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 10:46:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072530.D\data.ms

(59) 2-Hexanone (T)

12.915min (-0.034) 1.07ng

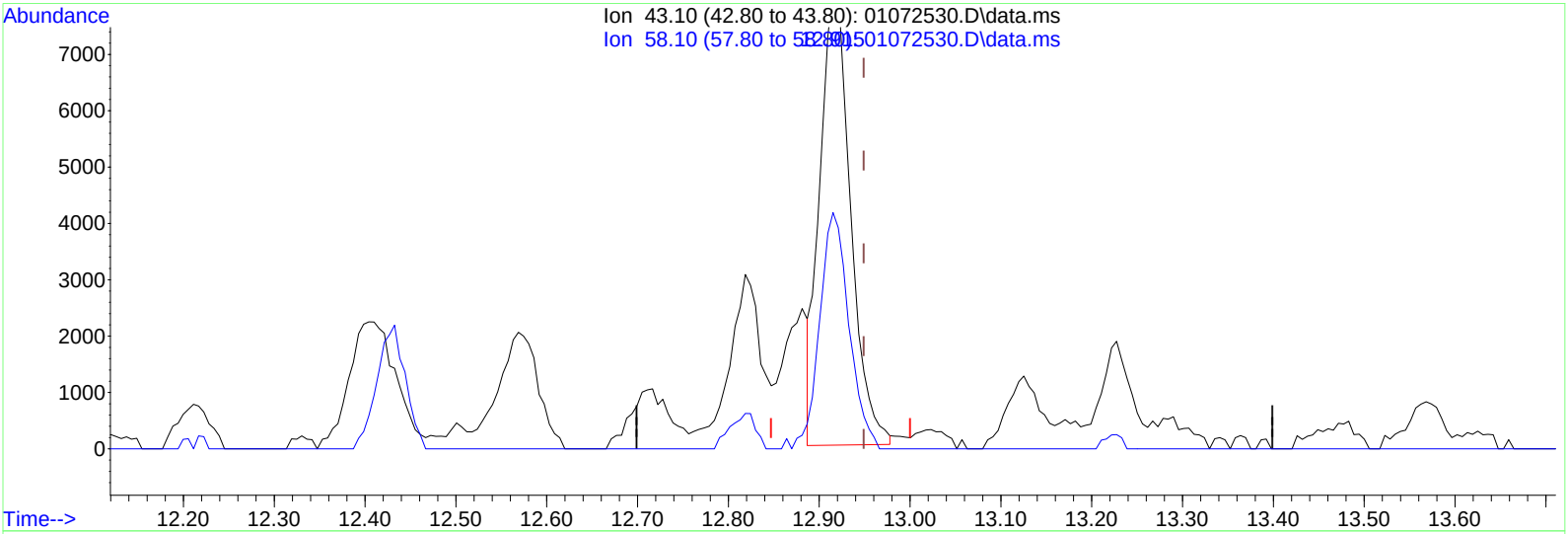
response 22554

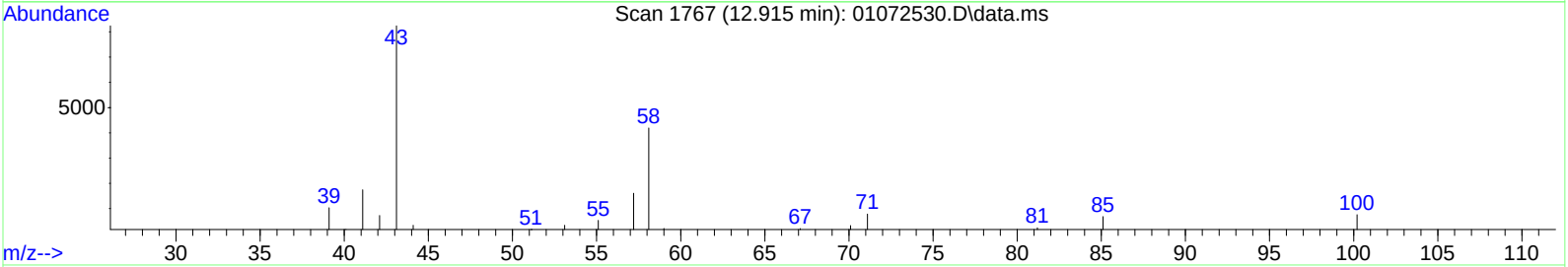
Ion	Exp%	Act%
43.10	100	100
58.10	55.20	42.00
0.00	0.00	0.00
0.00	0.00	0.00

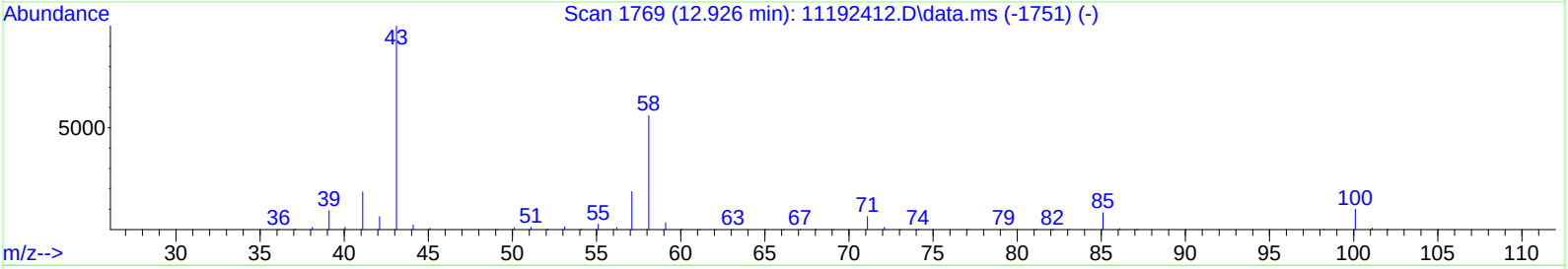
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 10:46:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072530.D\data.ms

(59) 2-Hexanone (T)

12.915min (-0.034) 0.90ng m

response 18988

IPC

1/12/25

Ion	Exp%	Act%
43.10	100	100
58.10	55.20	49.89
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 13:37:39 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

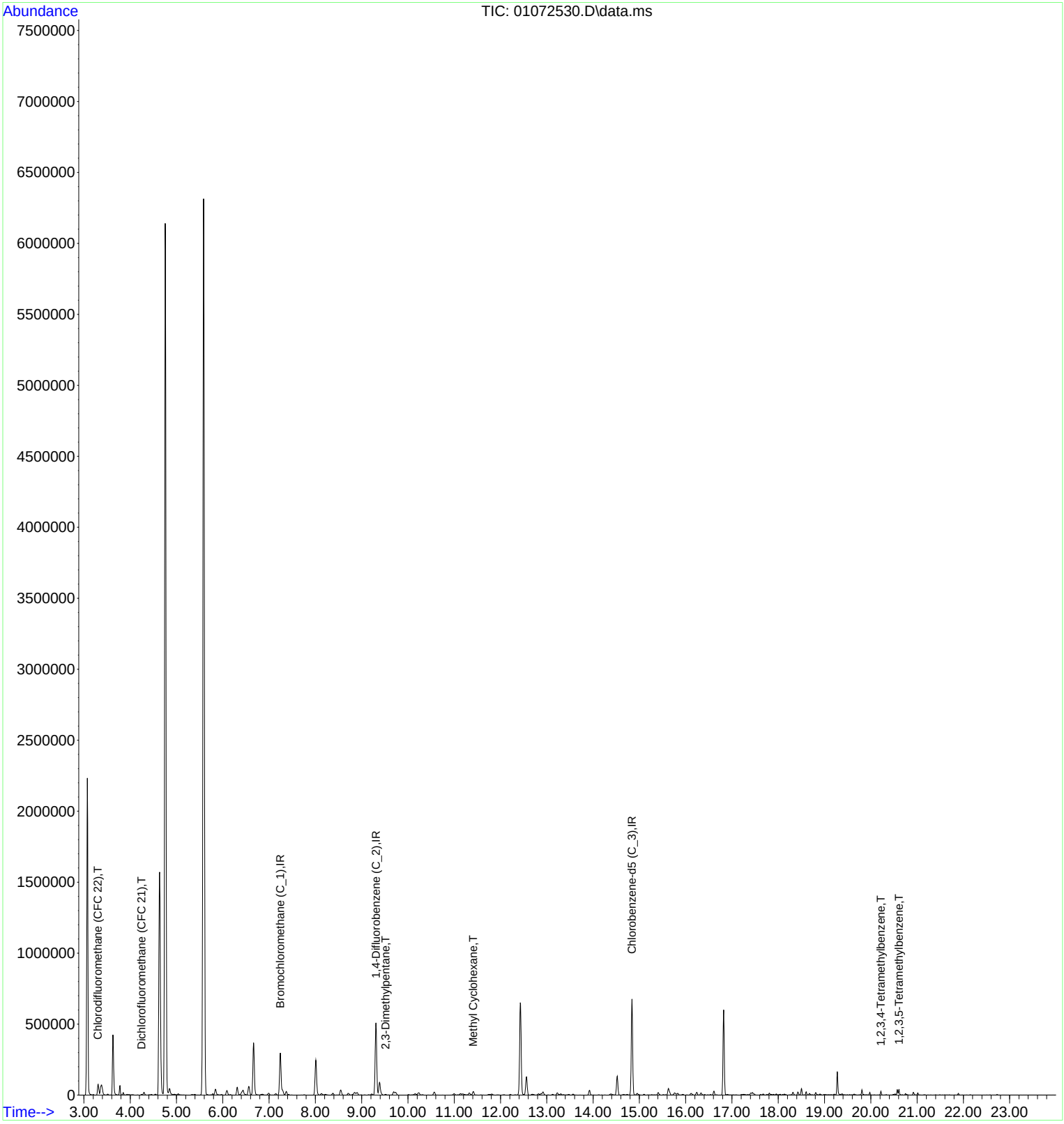
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.24	130	127227	12.500	ng		-0.01
16) 1,4-Difluorobenzene (C_2)	9.31	114	535291	12.500	ng		-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	101251	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.16	85	64	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1050	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	704	0.199	ng		90
6) 1-Chloro-1,1-Difluoroe...	3.51	65	305	N.D.			
7) Dichlorofluoromethane ...	4.24	67	5123	0.199	ng		99
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.59	83	581	N.D.			
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	0.00	43	0	N.D.	d		
12) 2-Methylpentane	6.49	71	854	N.D.			
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	8.99	84	393	N.D.			
17) 2,3-Dimethylpentane	9.51	56	3015	0.142	ng	#	89
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.41	55	10782	0.597	ng		99
21) 1,3-Dichloropropane	12.56	76	402	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	15.19	91	123	N.D.			
24) 1,2,3-Trichloropropane	16.33	75	108	N.D.			
25) Bromobenzene	17.03	77	262	N.D.			
26) 2-Chlorotoluene	0.00	91	0	N.D.	d		
27) 4-Chlorotoluene	0.00	91	0	N.D.	d		
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	d		
31) 1,2,3,4-Tetramethylben...	20.22	119	9333	0.212	ng		94
32) 1,2,3,5-Tetramethylben...	20.61	119	14404	0.344	ng	#	82
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

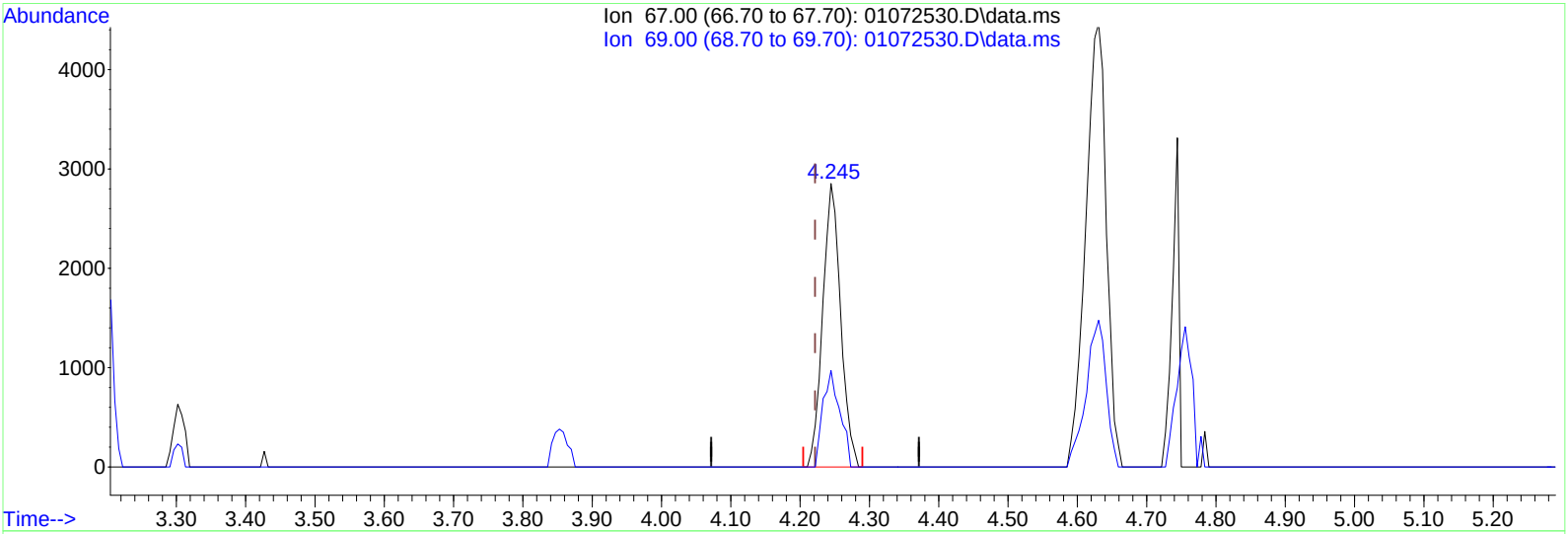
Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

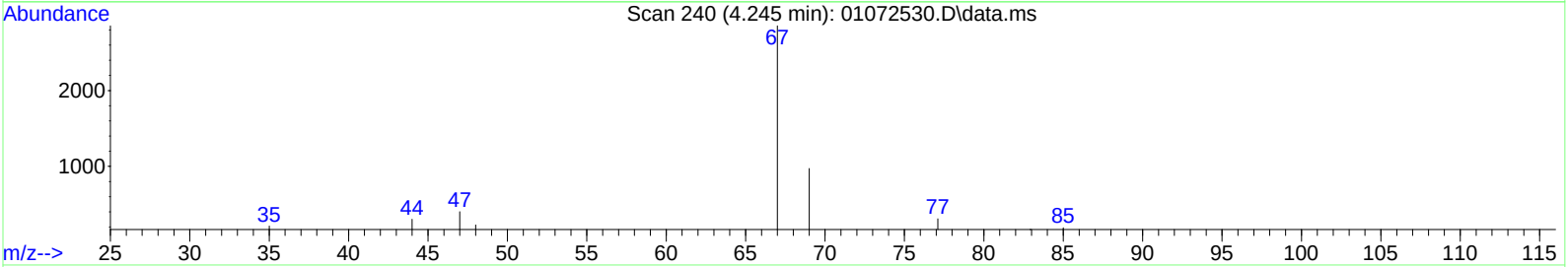
Quant Time: Jan 12 13:37:39 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

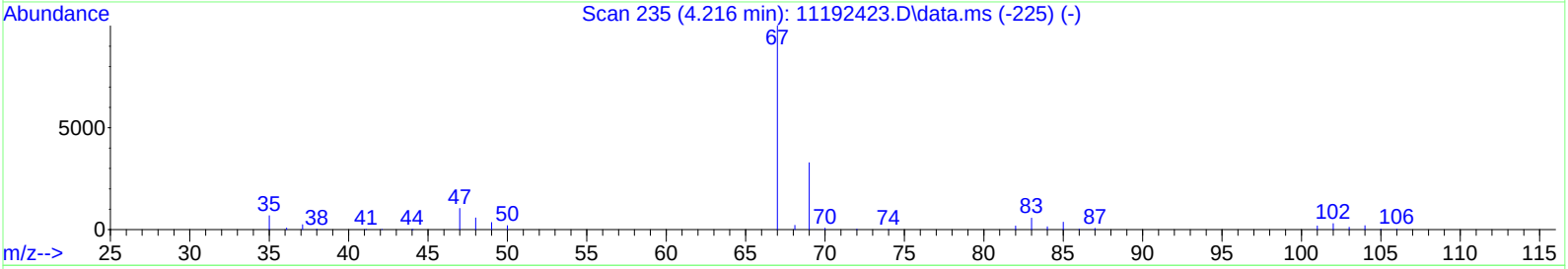


Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 13:28:54 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01072530.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.245min (+0.023) 0.20ng

response 5123

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.25
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122532.D
Acq On : 12 Jan 2025 22:24
Operator : SC
Sample : P2405139-033Dil (40mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 07:38:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144213	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	621856	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	116922	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	243284	12.382	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.04%				
57) Toluene-d8 (SS2)	12.43	98	647438	12.482	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
73) Bromofluorobenzene (SS3)	16.82	174	226340	12.645	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.20%				
Target Compounds							Qvalue
2) Propene	3.33	42	1693	0.110	ng	#	75
3) Dichlorodifluoromethan...	3.39	85	1422	0.050	ng	#	90
4) Chloromethane	3.53	50	829	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	2620	0.246	ng		88
11) Acetonitrile	4.47	41	106	N.D.			
12) Acrolein	4.55	56	303	N.D.			
13) Acetone	4.63	58	74716	7.695	ng		88
14) Trichlorofluoromethane	4.76	101	499903	18.909	ng		99
15) 2-Propanol (Isopropanol)	4.95	45	54	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.37	59	69	N.D.			
19) Methylene Chloride	5.36	84	1939	0.142	ng		100
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	217069	18.198	ng		98
22) Carbon Disulfide	5.61	76	5298	0.121	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.44	86	158	0.067	ng	#	1
27) 2-Butanone (MEK)	6.67	72	10869	1.393	ng	#	86
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.31	87	455	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.31	57	506	N.D.			
32) Chloroform	7.36	83	1985	0.085	ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	2360	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.22	84	274	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	166	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122532.D
Acq On : 12 Jan 2025 22:24
Operator : SC
Sample : P2405139-033Dil (40mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

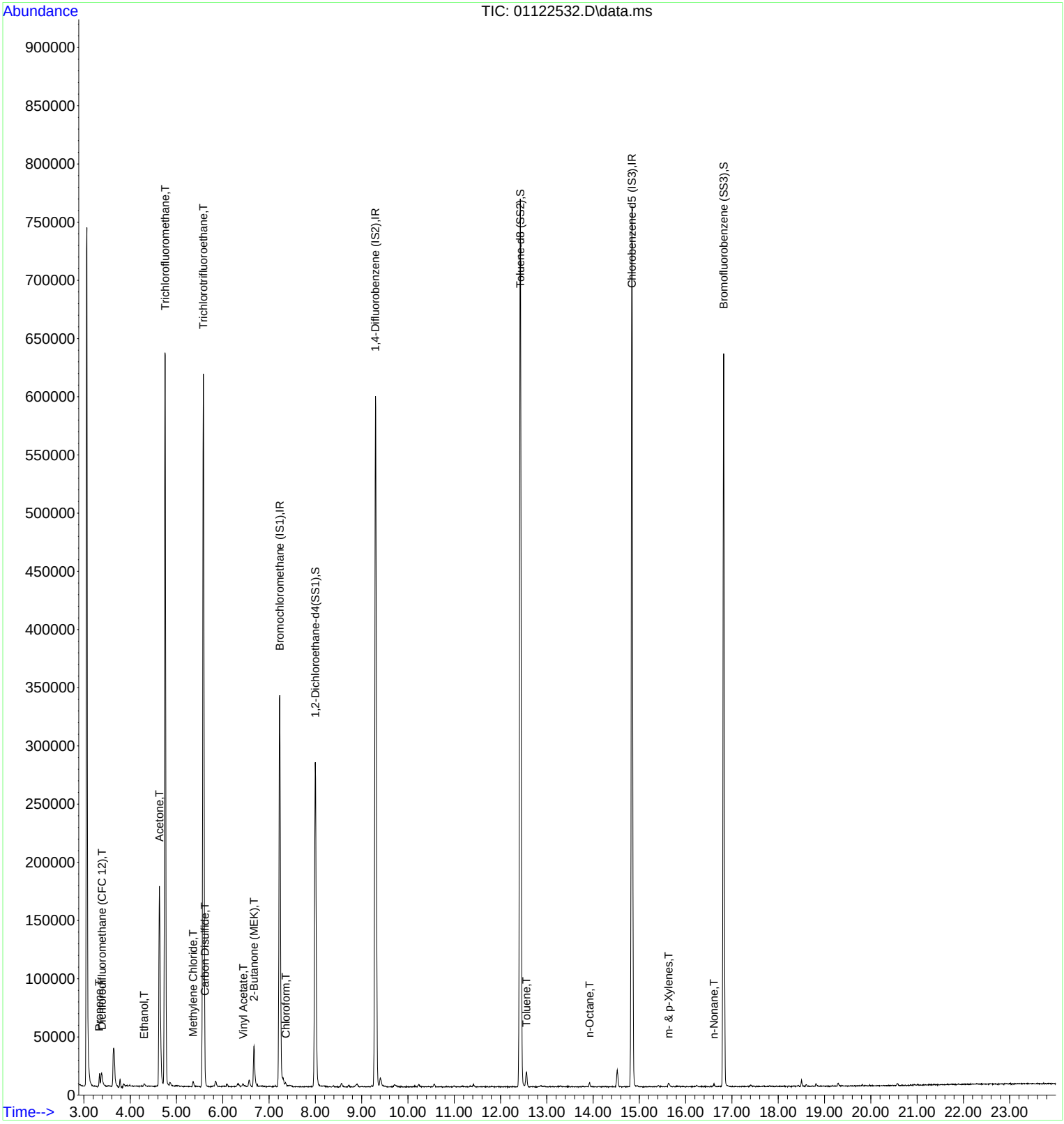
Quant Time: Jan 13 07:38:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	2213	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.58	71	521	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.34	58	116	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	12665	0.254 ng		98
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	13.93	57	559	0.054 ng	#	82
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	1443	N.D.		
67) m- & p-Xylenes	15.64	91	4113	0.091 ng		91
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	16.24	91	1329	N.D.		
71) n-Nonane	16.61	43	1324	0.056 ng		91
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.68	91	503	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.87	105	138	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	187	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.43	105	649	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	128	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.95	128	210	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	19.38	91	111	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

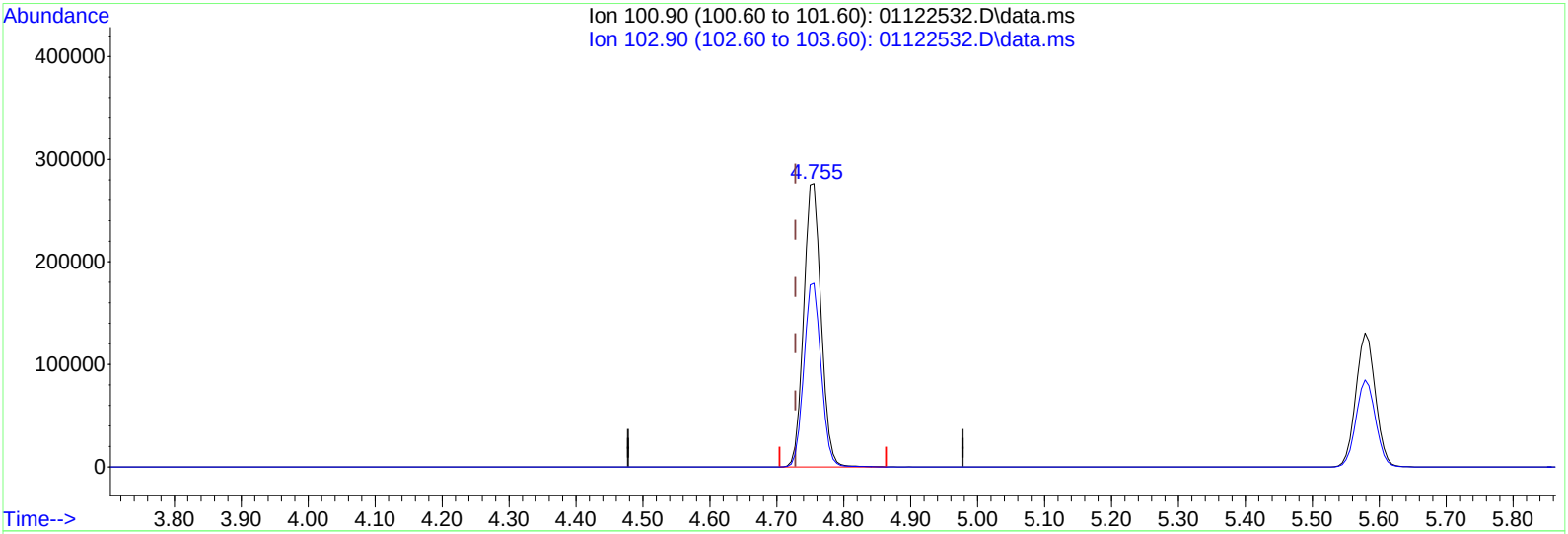
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122532.D
Acq On : 12 Jan 2025 22:24
Operator : SC
Sample : P2405139-033Dil (40mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

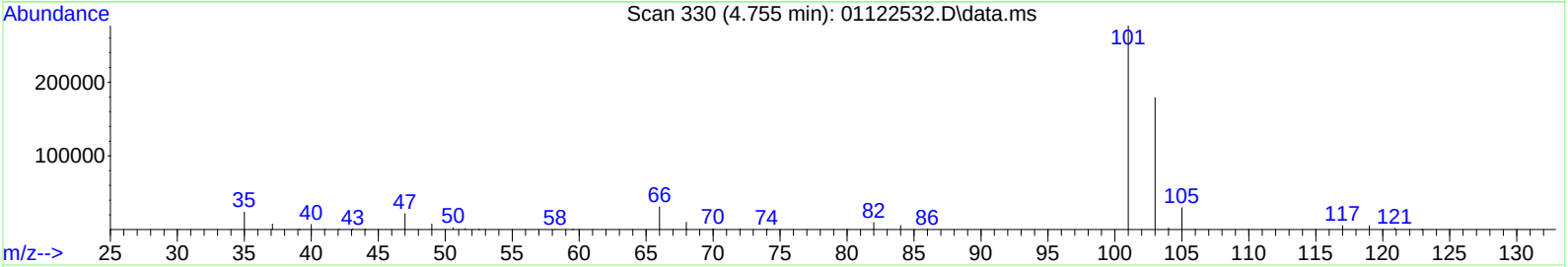
Quant Time: Jan 13 07:38:39 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

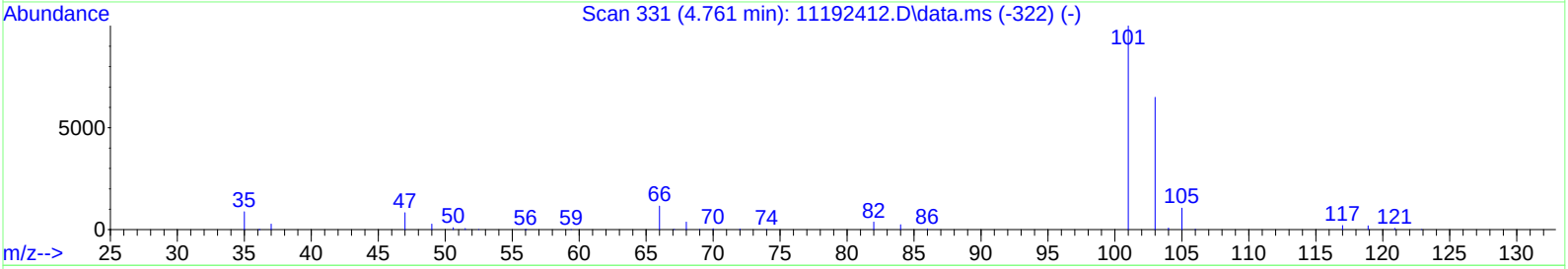


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122532.D
Acq On : 12 Jan 2025 22:24
Operator : SC
Sample : P2405139-033Dil (40mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 06:13:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122532.D\data.ms

(14) Trichlorofluoromethane (T)

4.755min (+0.028) 18.91ng

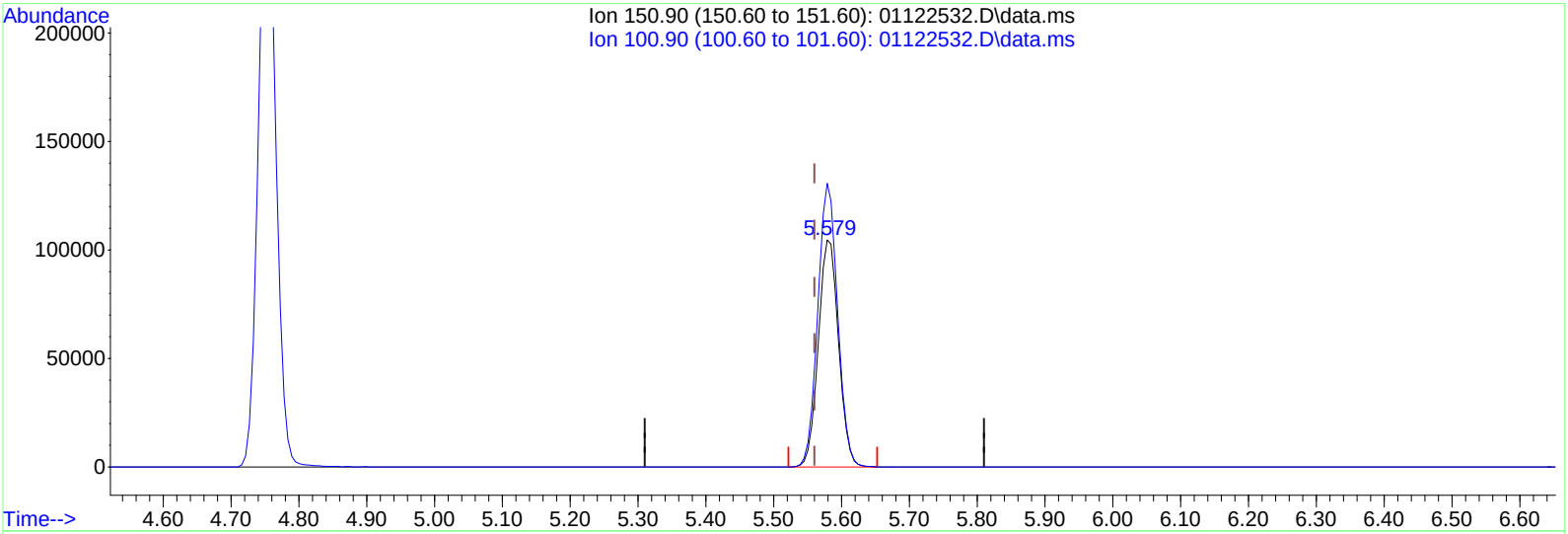
response 499903

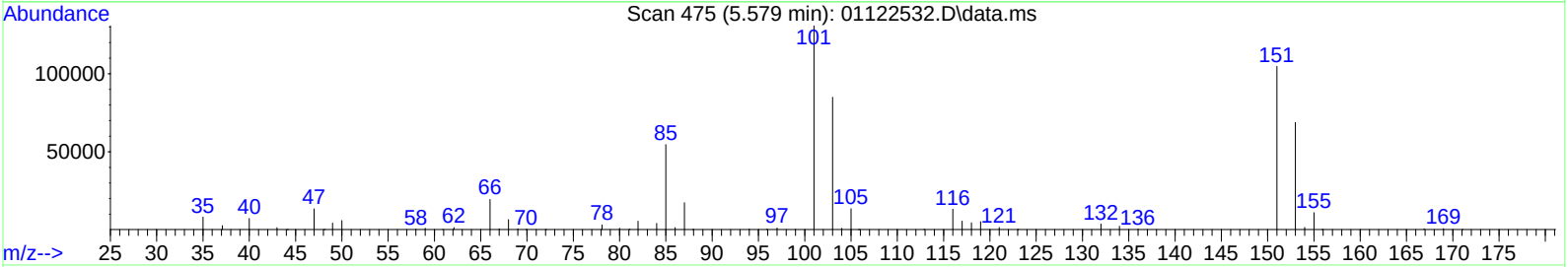
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.30
0.00	0.00	0.00
0.00	0.00	0.00

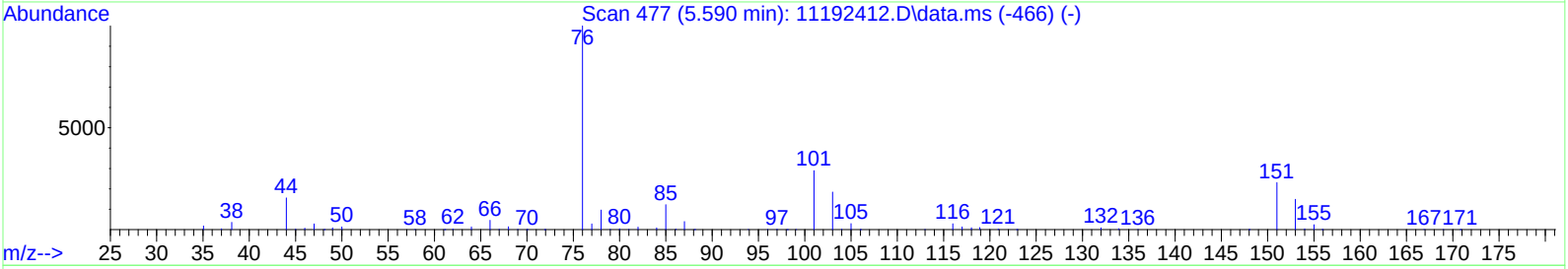
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122532.D
Acq On : 12 Jan 2025 22:24
Operator : SC
Sample : P2405139-033Dil (40mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 06:13:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122532.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.019) 18.20ng

response 217069

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	122.24
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072530.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.308	68	75	80	rBV3	76812	151693	1.10%	0.358%
2	3.376	80	87	105	rVV2	70850	229151	1.66%	0.541%
3	3.512	105	111	120	rVB3	6807	12730	0.09%	0.030%
4	3.626	124	131	152	rBV	424834	762482	5.53%	1.801%
5	3.779	152	158	165	rVV	65655	91090	0.66%	0.215%
6	3.847	165	170	176	rVB	17176	22334	0.16%	0.053%
7	4.296	243	249	263	rVB2	19229	39151	0.28%	0.092%
8	4.540	287	292	300	rBV	6365	12912	0.09%	0.030%
9	4.636	300	309	322	rVV	1569950	3645574	26.42%	8.611%
10	4.756	322	330	342	rVV	6140095	12122259	87.85%	28.632%
11	4.846	342	346	360	rVV2	45311	108039	0.78%	0.255%
12	4.960	360	366	373	rVV5	5298	14404	0.10%	0.034%
13	5.039	373	380	389	rVB2	7817	15588	0.11%	0.037%
14	5.329	423	431	437	rBV4	3899	10256	0.07%	0.024%
15	5.397	437	443	449	rVB3	5697	11678	0.08%	0.028%
16	5.585	461	476	496	rBV	6314610	13798734	100.00%	32.591%
17	5.783	506	511	515	rBV	8308	15252	0.11%	0.036%
18	5.840	515	521	529	rVB	39021	83394	0.60%	0.197%
19	6.090	552	565	575	rBV	32270	75527	0.55%	0.178%
20	6.311	595	604	612	rBV	55019	117312	0.85%	0.277%
21	6.436	612	626	640	rVV2	34609	121609	0.88%	0.287%
22	6.561	640	648	657	rVV2	61540	149042	1.08%	0.352%
23	6.663	657	666	687	rVV	368611	832222	6.03%	1.966%
24	6.857	687	700	710	rVB8	5755	22070	0.16%	0.052%
25	6.993	714	724	737	rBV3	12890	32651	0.24%	0.077%
26	7.146	744	751	759	rVB3	9824	21400	0.16%	0.051%
27	7.243	759	768	784	rVV2	297245	736689	5.34%	1.740%
28	7.373	784	791	807	rVB2	25551	65051	0.47%	0.154%
29	8.009	893	903	918	rBV2	246192	578907	4.20%	1.367%
30	8.134	918	925	932	rVV2	11018	26675	0.19%	0.063%
31	8.219	932	940	951	rVB4	5332	16020	0.12%	0.038%
32	8.378	959	968	978	rBV2	13363	31158	0.23%	0.074%
33	8.549	988	998	1009	rBV	35753	83627	0.61%	0.198%
34	8.708	1019	1026	1036	rBV2	12845	32581	0.24%	0.077%
35	8.844	1038	1050	1055	rVV2	18452	56554	0.41%	0.134%
36	8.901	1055	1060	1070	rVB	17686	42868	0.31%	0.101%
37	9.213	1109	1115	1121	rBV4	7554	16250	0.12%	0.038%
38	9.310	1121	1132	1140	rVV	508268	1185852	8.59%	2.801%
39	9.389	1140	1146	1161	rVV	89701	220779	1.60%	0.521%
40	9.514	1161	1168	1175	rVB3	5065	11545	0.08%	0.027%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	9.696	1190	1200	1203	rBV	22812	52614	0.38%	0.124%
42	9.730	1204	1206	1219	rVB3	19496	39750	0.29%	0.094%
43	10.150	1273	1280	1286	rBV6	7587	19187	0.14%	0.045%
44	10.235	1286	1295	1303	rVB	16037	45004	0.33%	0.106%
45	10.570	1344	1354	1363	rBV2	21358	50207	0.36%	0.119%
46	10.996	1414	1429	1437	rBV	10221	27474	0.20%	0.065%
47	11.138	1446	1454	1458	rBV2	8707	20894	0.15%	0.049%
48	11.178	1458	1461	1469	rVB6	5115	12791	0.09%	0.030%
49	11.325	1480	1487	1495	rBV3	13203	30585	0.22%	0.072%
50	11.410	1495	1502	1511	rVB2	25047	59840	0.43%	0.141%
51	11.757	1553	1563	1567	rBV3	5227	16166	0.12%	0.038%
52	11.814	1567	1573	1584	rVB3	8114	22157	0.16%	0.052%
53	12.211	1637	1643	1649	rBB3	5370	11908	0.09%	0.028%
54	12.427	1667	1681	1693	rBV	650909	1529208	11.08%	3.612%
55	12.563	1695	1705	1718	rVB	129157	303612	2.20%	0.717%
56	12.688	1719	1727	1738	rBV6	6364	23562	0.17%	0.056%
57	12.824	1743	1751	1755	rVV	9599	22276	0.16%	0.053%
58	12.875	1755	1760	1763	rVV3	10028	21946	0.16%	0.052%
59	12.915	1763	1767	1779	rVB	22119	49592	0.36%	0.117%
60	13.125	1796	1804	1811	rBV	6128	13858	0.10%	0.033%
61	13.228	1814	1822	1829	rBV5	15646	35432	0.26%	0.084%
62	13.307	1829	1836	1842	rVB4	7844	17195	0.12%	0.041%
63	13.568	1873	1882	1889	rBV4	7515	16053	0.12%	0.038%
64	13.920	1936	1944	1954	rBV2	33897	71943	0.52%	0.170%
65	14.522	2040	2050	2061	rVB	132484	288609	2.09%	0.682%
66	14.738	2081	2088	2094	rVB7	3688	10059	0.07%	0.024%
67	14.840	2094	2106	2118	rVV	676119	1395266	10.11%	3.296%
68	14.954	2118	2126	2141	rVB5	12412	34504	0.25%	0.081%
69	15.101	2146	2152	2159	rBV3	6016	11145	0.08%	0.026%
70	15.408	2199	2206	2220	rVB	18187	41761	0.30%	0.099%
71	15.629	2237	2245	2258	rVB	46425	120073	0.87%	0.284%
72	15.766	2258	2269	2276	rVV3	15341	48996	0.36%	0.116%
73	15.828	2277	2280	2288	rVV3	12136	23394	0.17%	0.055%
74	15.942	2288	2300	2310	rVB4	5396	14244	0.10%	0.034%
75	16.118	2323	2331	2343	rBV8	12518	35904	0.26%	0.085%
76	16.237	2343	2352	2360	rVV	19680	41125	0.30%	0.097%
77	16.334	2360	2369	2377	rVV3	15439	35072	0.25%	0.083%
78	16.612	2411	2418	2424	rVB	27487	51114	0.37%	0.121%
79	16.822	2446	2455	2464	rBV	600340	1136581	8.24%	2.685%
80	17.259	2525	2532	2542	rVB	4149	14192	0.10%	0.034%
81	17.412	2550	2559	2562	rBV4	13195	28830	0.21%	0.068%
82	17.446	2562	2565	2570	rVB2	10930	16805	0.12%	0.040%
83	17.622	2588	2596	2601	rBV4	5057	10587	0.08%	0.025%
84	17.679	2601	2606	2613	rVB	7332	13268	0.10%	0.031%
85	17.810	2624	2629	2634	rBV	12155	19120	0.14%	0.045%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

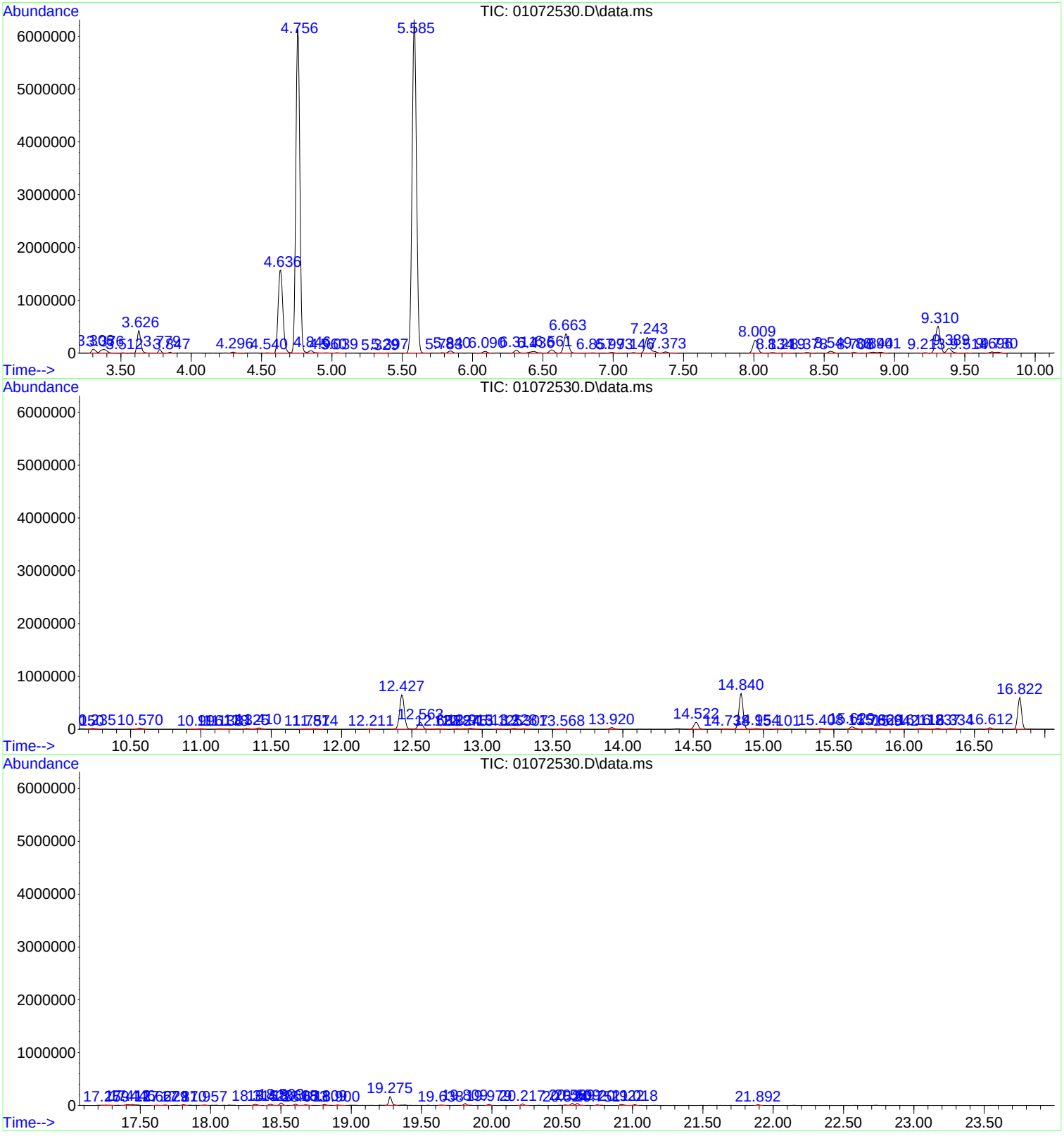
86	17.957	2649	2655	2660	rBV4	7561	11551	0.08%	0.027%
87	18.315	2713	2718	2726	rVB3	18932	34158	0.25%	0.081%
88	18.423	2729	2737	2745	rBV3	20927	36646	0.27%	0.087%
89	18.503	2745	2751	2758	rVB3	45227	69936	0.51%	0.165%
90	18.605	2762	2769	2774	rVB2	22571	33539	0.24%	0.079%
91	18.673	2774	2781	2789	rBV4	10391	19391	0.14%	0.046%
92	18.809	2799	2805	2811	rBV2	17211	29634	0.21%	0.070%
93	18.900	2817	2821	2832	rVB3	7700	14781	0.11%	0.035%
94	19.275	2881	2887	2897	rVB	163000	243667	1.77%	0.576%
95	19.638	2947	2951	2958	rBV7	5816	11196	0.08%	0.026%
96	19.809	2976	2981	2986	rBV	34548	44400	0.32%	0.105%
97	19.979	3006	3011	3016	rBV	18584	23781	0.17%	0.056%
98	20.217	3048	3053	3061	rVB	27314	36585	0.27%	0.086%
99	20.524	3103	3107	3111	rBV	6658	10078	0.07%	0.024%
100	20.569	3111	3115	3118	rVV2	36560	50531	0.37%	0.119%
101	20.609	3118	3122	3131	rVB2	38477	56248	0.41%	0.133%
102	20.751	3142	3147	3150	rBV	10579	14395	0.10%	0.034%
103	20.922	3172	3177	3186	rBV5	19380	33235	0.24%	0.078%
104	21.018	3186	3194	3199	rBV	15438	20634	0.15%	0.049%
105	21.893	3343	3348	3354	rVB	11848	17057	0.12%	0.040%

Sum of corrected areas: 42338456

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:20
Operator : SC
Sample : P2405139-033 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072530.D
Acq On : 7 Jan 2025 20:200
Operator : SCC
Sample : P2405139-033 (400mL))
Misc : S37-123124011
ALS Vial : 5 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 12:51:07 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	123921	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	526175	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	99272	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	216258	12.809	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.48%				
57) Toluene-d8 (SS2)	12.43	98	547991	12.443	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
73) Bromofluorobenzene (SS3)	16.82	174	211720	13.931	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.44%				
Target Compounds							Qvalue
2) Propene	3.32	42	361	N.D.			
3) Dichlorodifluoromethan...	3.38	85	14807	0.611	ng		99
4) Chloromethane	3.53	50	2542m	0.141	ng		
5) 1,2-Dichloro-1,1,2,2-t...	3.64	135	267	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.31	45	2235	0.244	ng		100
11) Acetonitrile	4.47	41	1040	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.65	58	5125	0.614	ng	#	73
14) Trichlorofluoromethane	4.78	101	7483	0.329	ng		99
15) 2-Propanol (Isopropanol)	4.87	45	1525	0.051	ng	#	1
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	929	0.079	ng		91
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.59	151	1687	0.165	ng		94
22) Carbon Disulfide	5.63	76	1877	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.31	73	301	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	675	0.101	ng	#	51
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.35	83	268	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	1150	No Calib		#	
41) Benzene	8.90	78	2418	0.057	ng		91
42) Carbon Tetrachloride	9.07	117	1966	0.116	ng		94
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

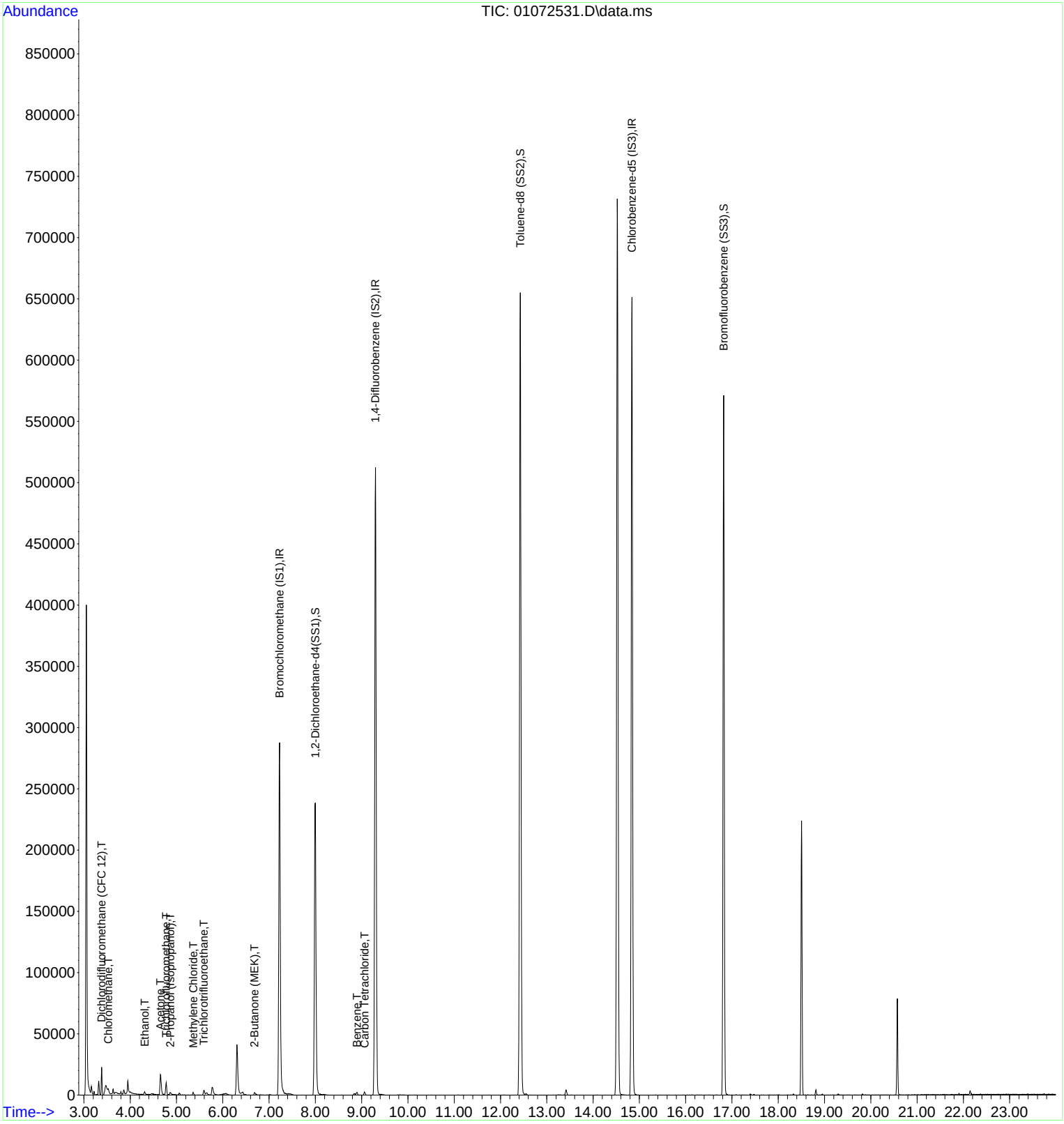
Quant Time: Jan 12 12:51:07 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.55	91	1051	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.50	105	1095	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 12:51:07 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

VOA 1/12/25

Quant Time: Jan 12 12:51:07 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

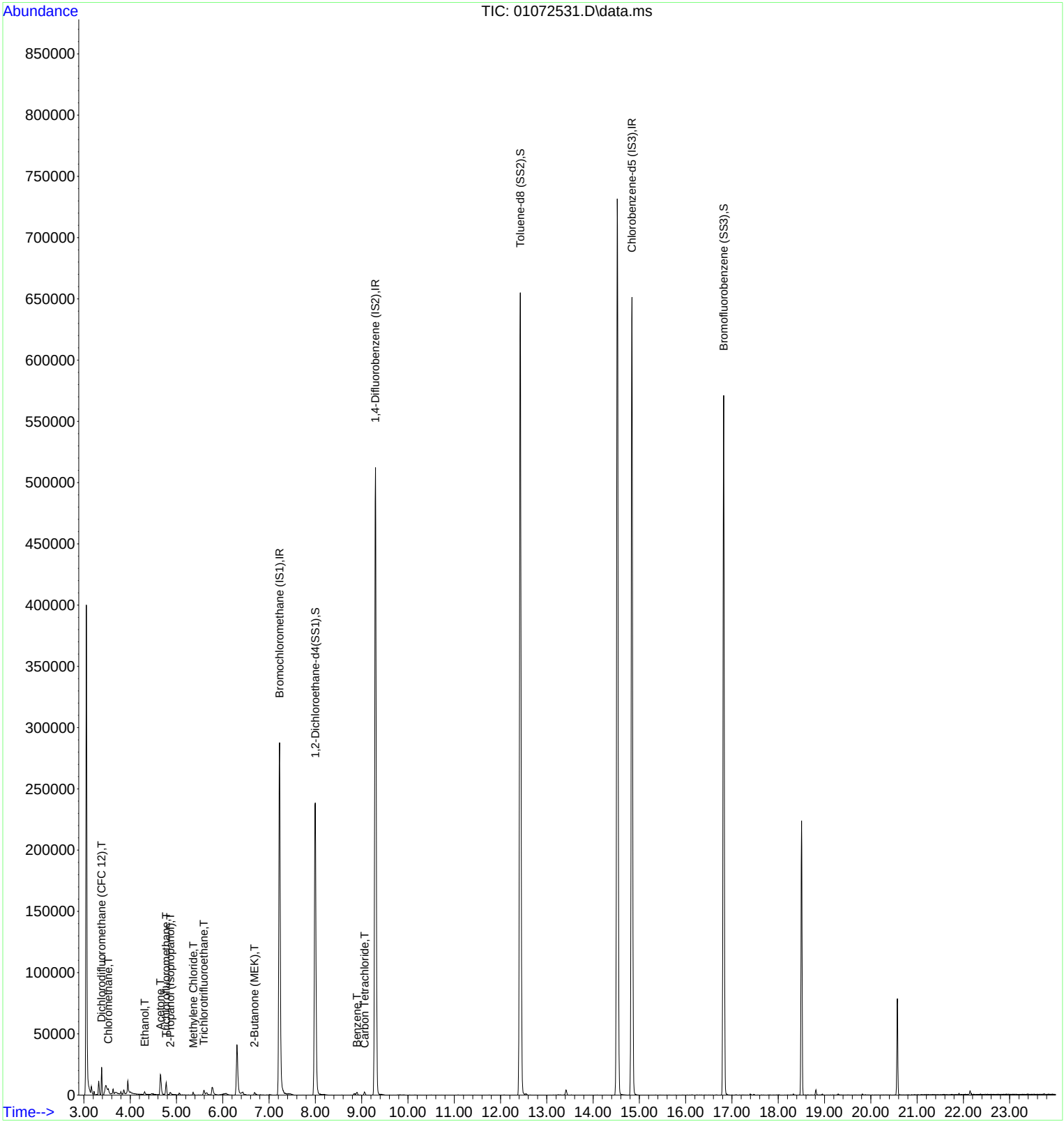
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	123921	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	526175	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	99272	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	216258	12.809	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.48%				
57) Toluene-d8 (SS2)	12.43	98	547991	12.443	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
73) Bromofluorobenzene (SS3)	16.82	174	211720	13.931	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.44%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	14807	0.611	ng		99
4) Chloromethane	3.53	50	2542m	0.141	ng		
10) Ethanol	4.31	45	2235	0.244	ng		100
13) Acetone	4.65	58	5125	0.614	ng	#	73
14) Trichlorofluoromethane	4.78	101	7483	0.329	ng		99
15) 2-Propanol (Isopropanol)	4.87	45	1525	0.051	ng	#	1
19) Methylene Chloride	5.36	84	929	0.079	ng		91
21) Trichlorotrifluoroethane	5.59	151	1687	0.165	ng		94
27) 2-Butanone (MEK)	6.69	72	675	0.101	ng	#	51
41) Benzene	8.90	78	2418	0.057	ng		91
42) Carbon Tetrachloride	9.07	117	1966	0.116	ng		94

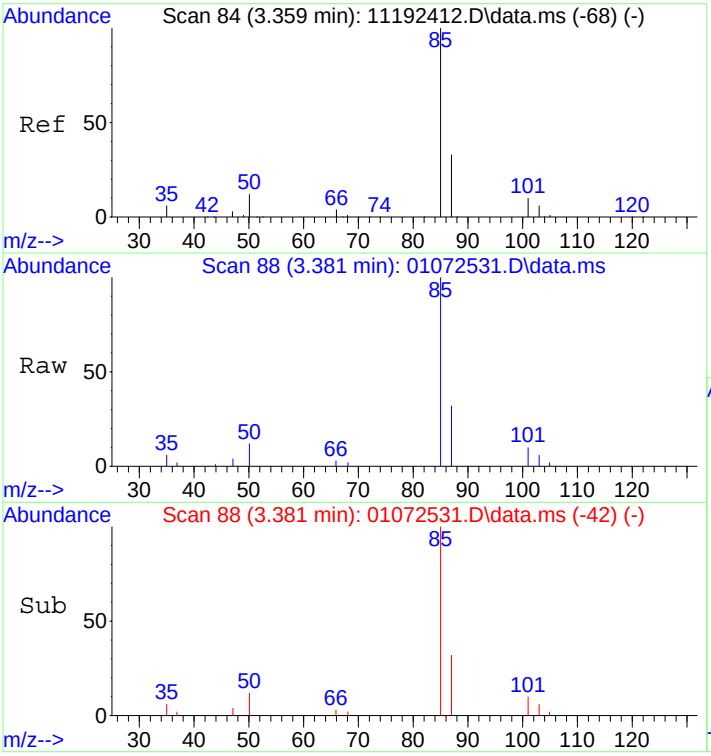
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 12:51:07 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

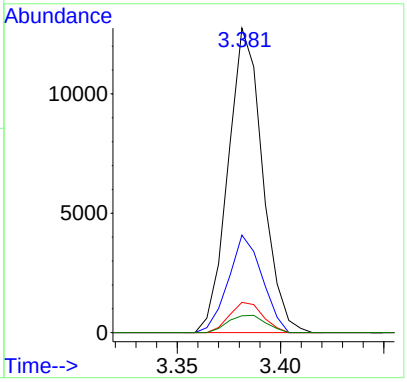


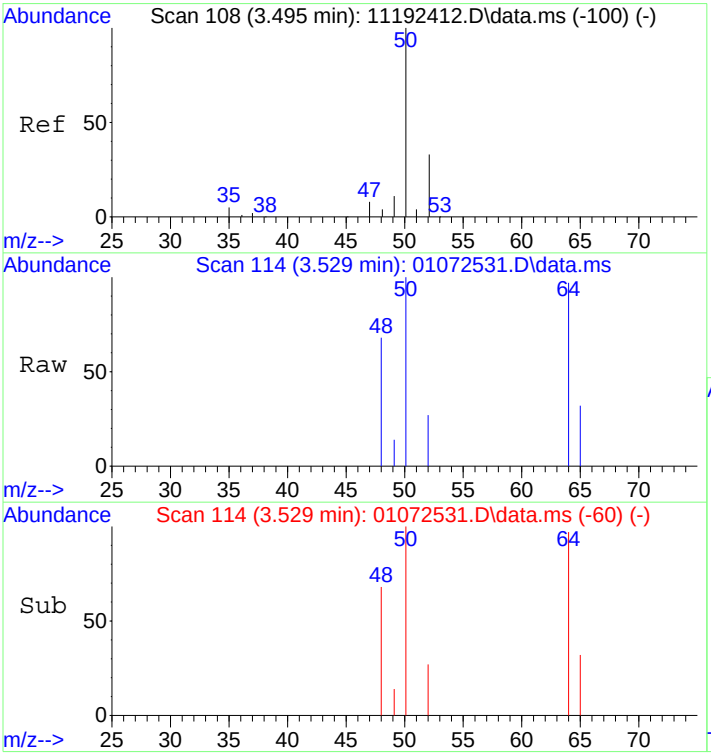


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.61 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.009 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 85 Resp: 14807

Ion	Ratio	Lower	Upper
85	100		
87	31.5	12.6	52.6
101	9.6	0.0	29.6
103	6.2	0.0	26.2

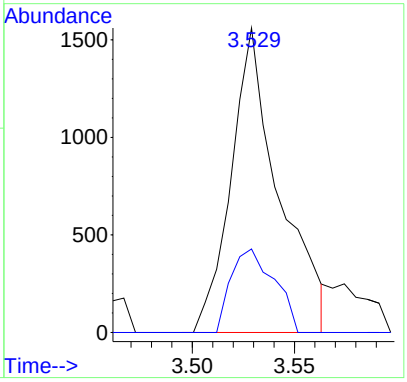


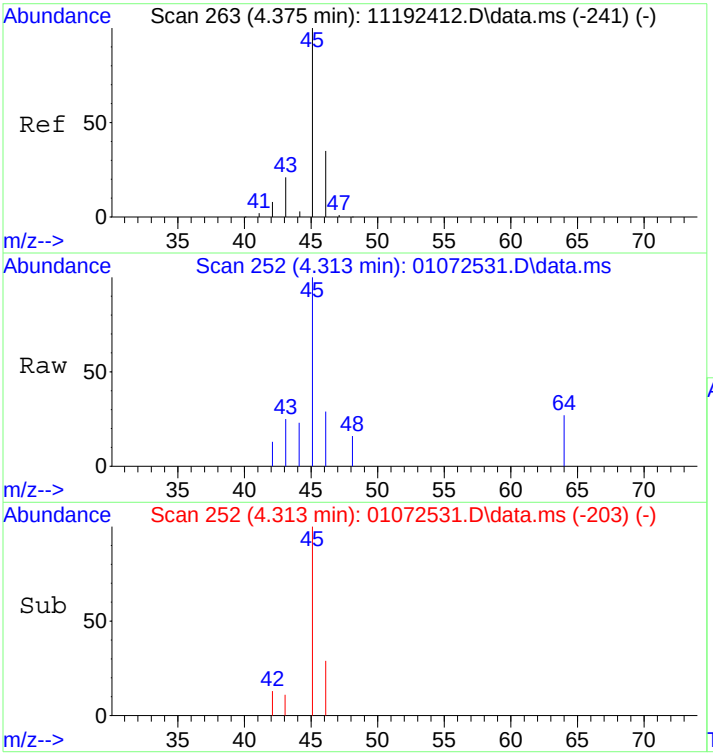


#4
Chloromethane
Concen: 0.14 ng m
RT: 3.53 min Scan# 114
Delta R.T. 0.056 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 50 Resp: 2542

Ion	Ratio	Lower	Upper
50	100		
52	24.9	13.0	53.0

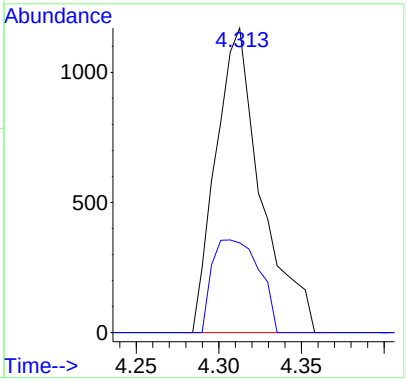


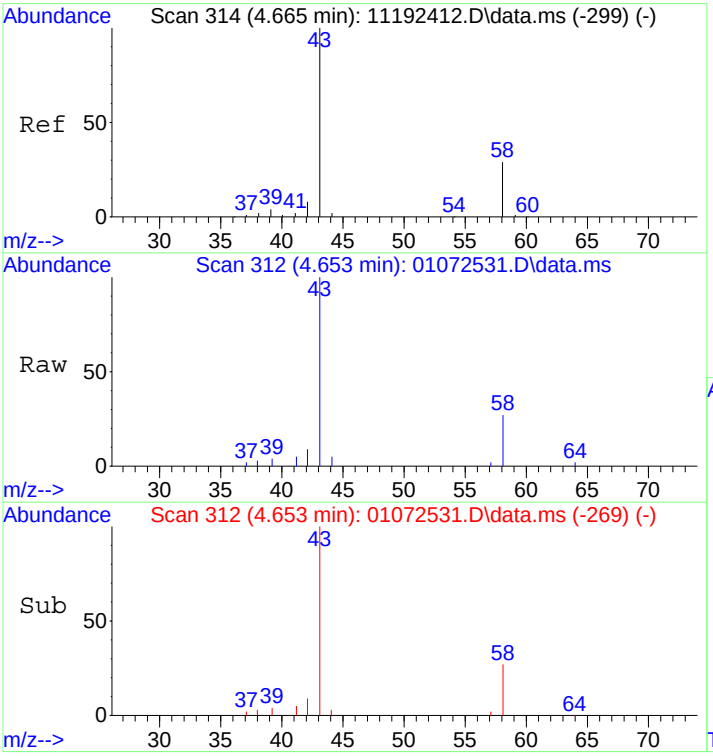


#10
Ethanol
Concen: 0.24 ng
RT: 4.31 min Scan# 252
Delta R.T. 0.028 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 45 Resp: 2235

Ion	Ratio	Lower	Upper
45	100		
46	31.6	11.8	51.8

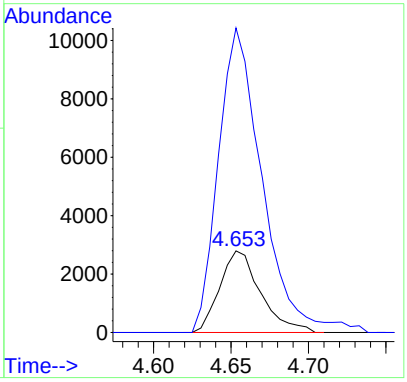


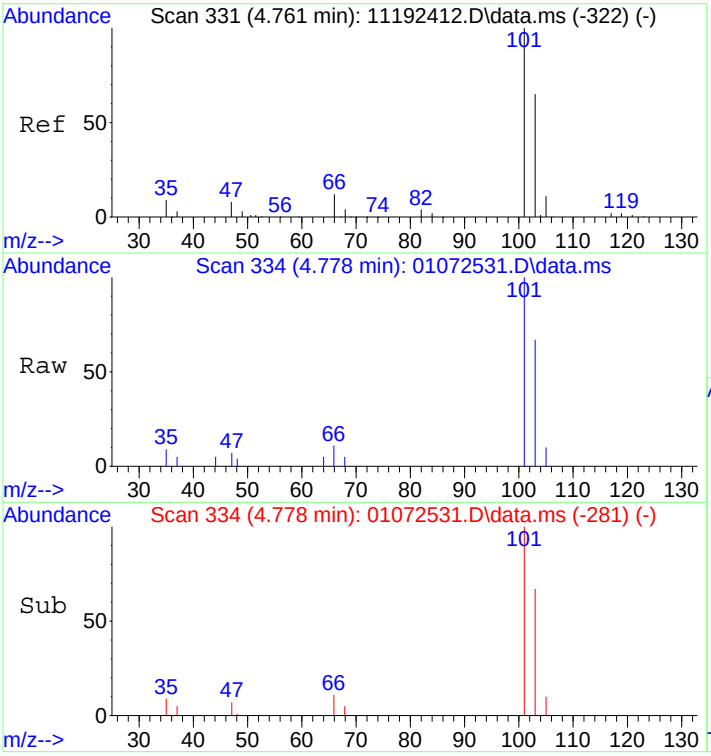


#13
Acetone
Concen: 0.61 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 58 Resp: 5125

Ion	Ratio	Lower	Upper
58	100		
43	400.2	312.5	372.5#

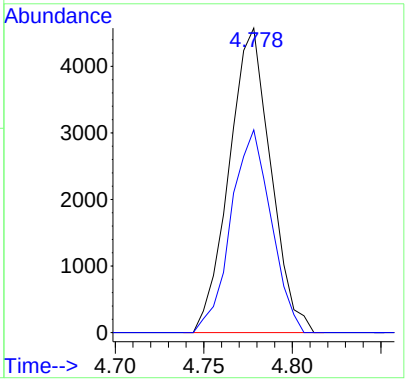


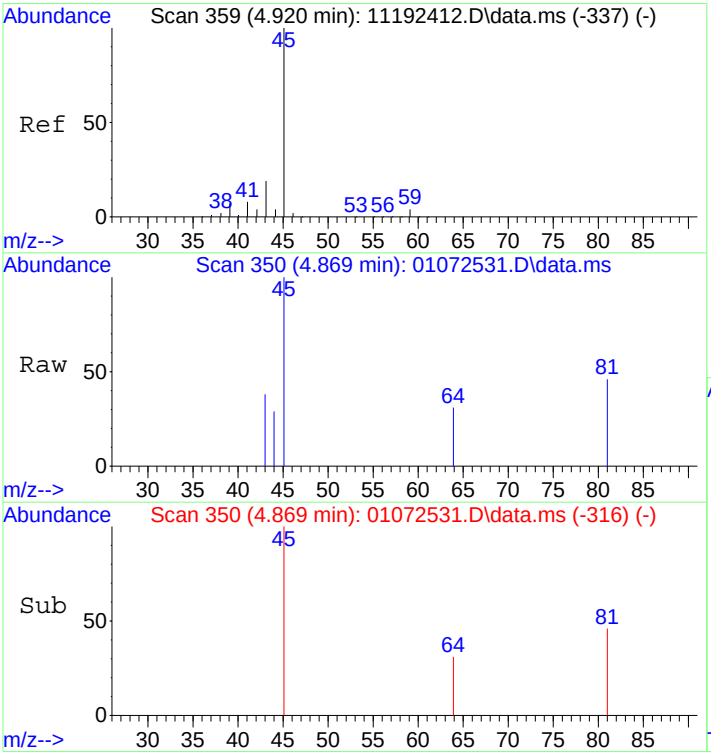


#14
Trichlorofluoromethane
Concen: 0.33 ng
RT: 4.78 min Scan# 334
Delta R.T. 0.050 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion:101 Resp: 7483

Ion	Ratio	Lower	Upper
101	100		
103	64.1	44.8	84.8

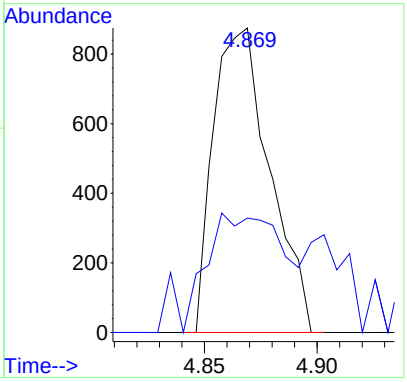


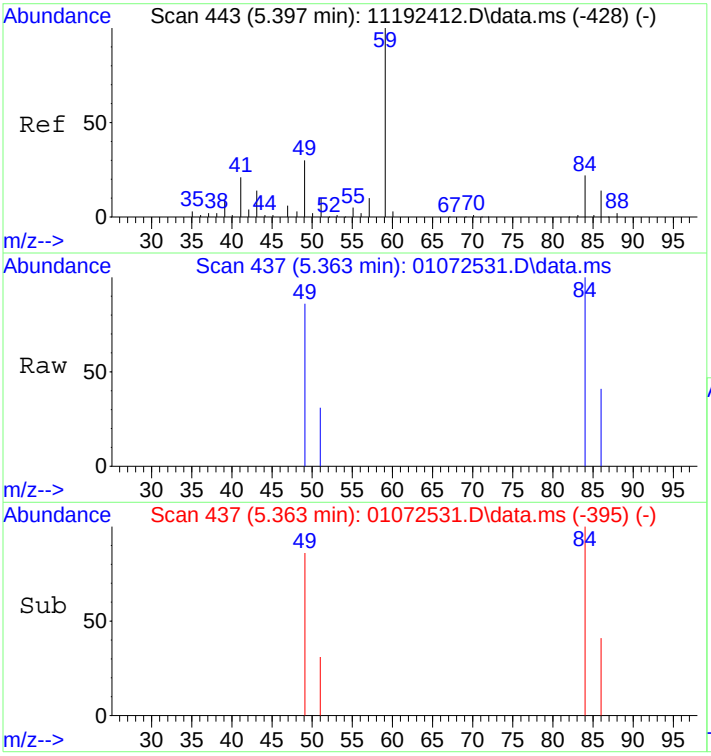


#15
2-Propanol (Isopropanol)
Concen: 0.05 ng
RT: 4.87 min Scan# 350
Delta R.T. -0.056 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 45 Resp: 1525

Ion	Ratio	Lower	Upper
45	100		
43	78.1	0.2	40.2#

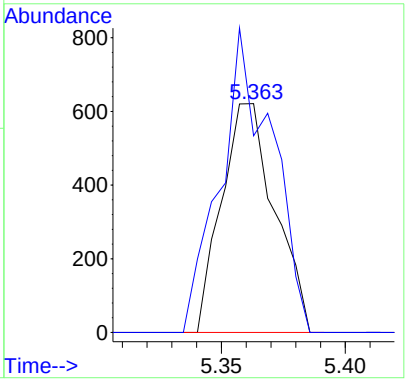


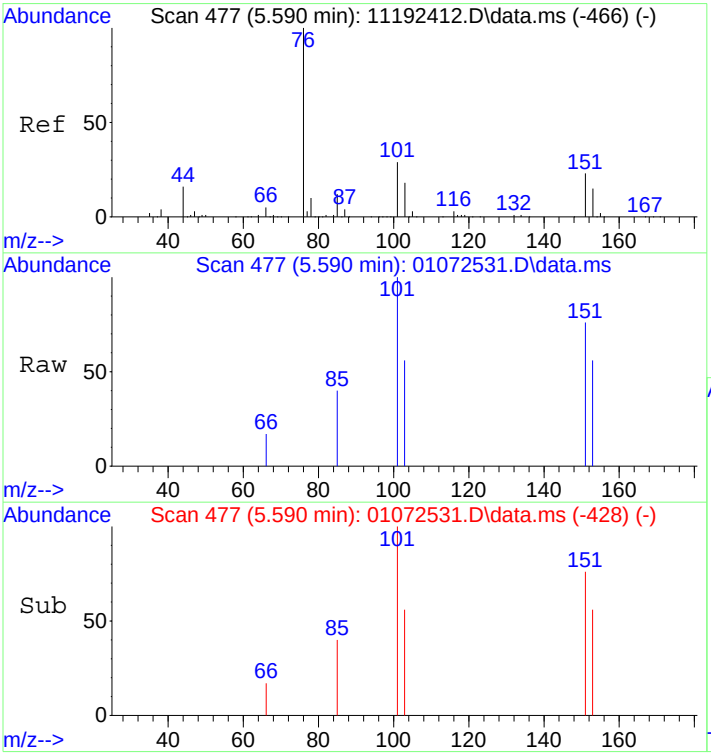


#19
Methylene Chloride
Concen: 0.08 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 84 Resp: 929

Ion	Ratio	Lower	Upper
84	100		
49	129.7	116.0	166.0

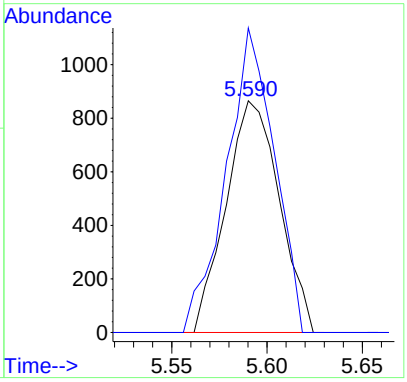


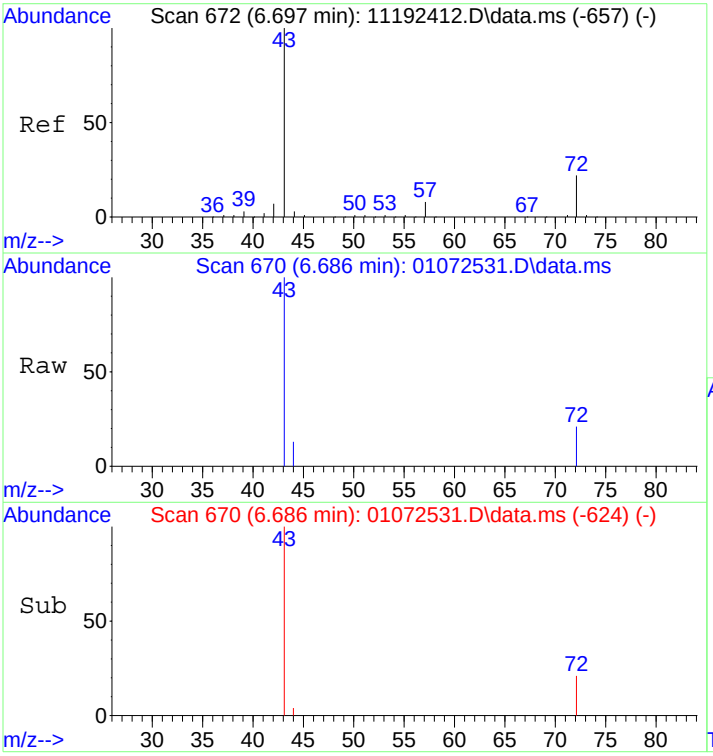


#21
Trichlorotrifluoroethane
Concen: 0.16 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion:151 Resp: 1687

Ion	Ratio	Lower	Upper
151	100		
101	118.0	105.0	145.0

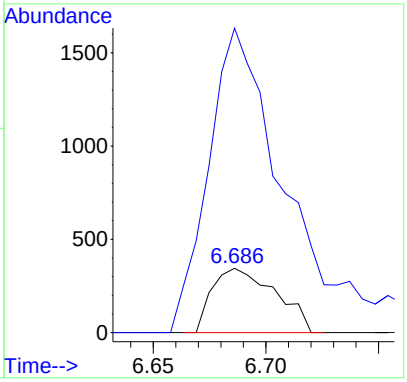


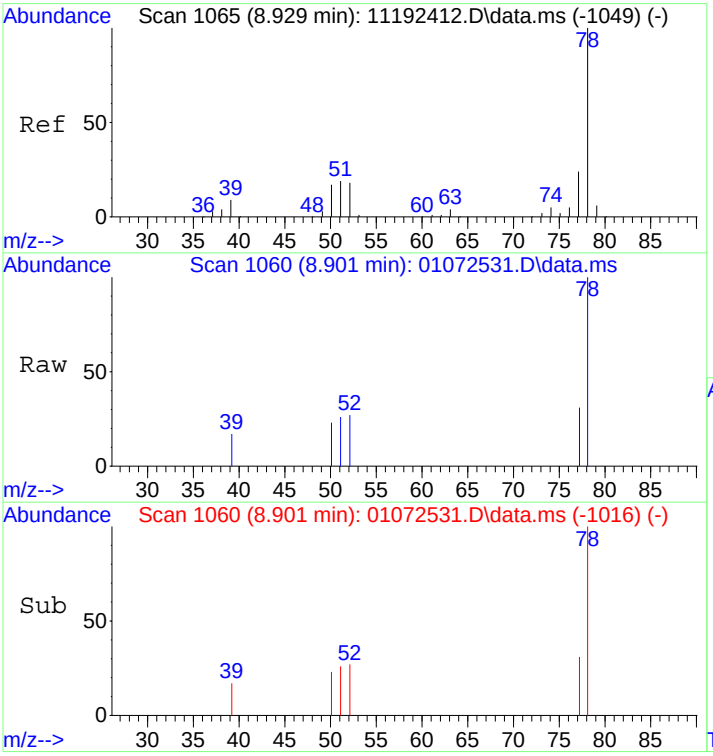


#27
2-Butanone (MEK)
Concen: 0.10 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 72 Resp: 675

Ion	Ratio	Lower	Upper
72	100		
43	586.5	439.8	479.8#

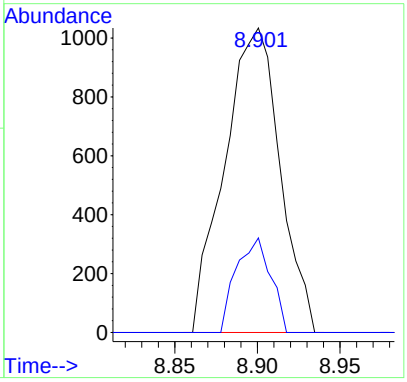


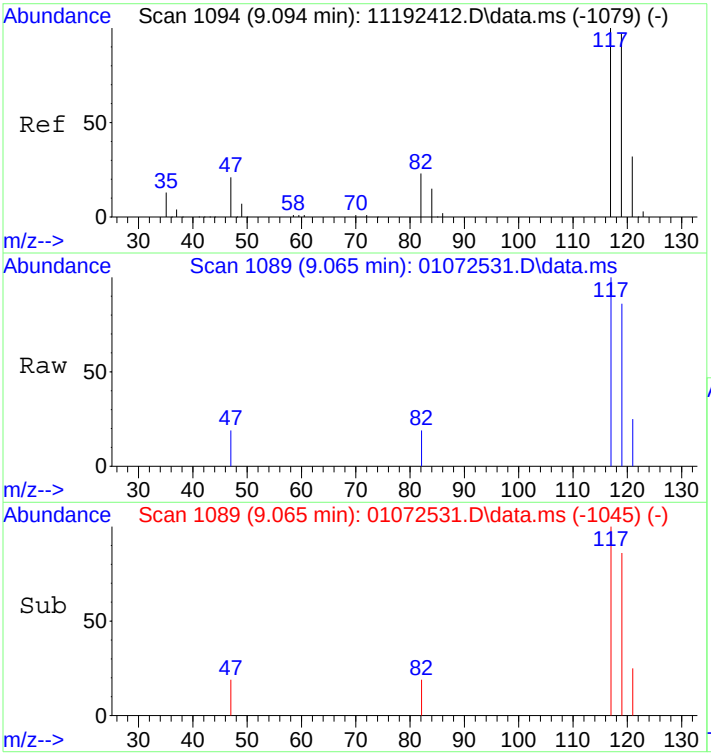


#41
Benzene
Concen: 0.06 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion: 78 Resp: 2418

Ion	Ratio	Lower	Upper
78	100		
77	19.2	3.7	43.7

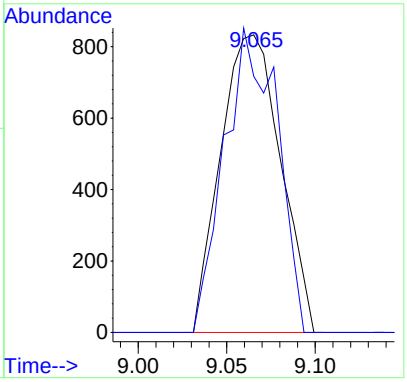




#42
Carbon Tetrachloride
Concen: 0.12 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01072531.D
Acq: 7 Jan 2025 20:52

Tgt Ion:117 Resp: 1966

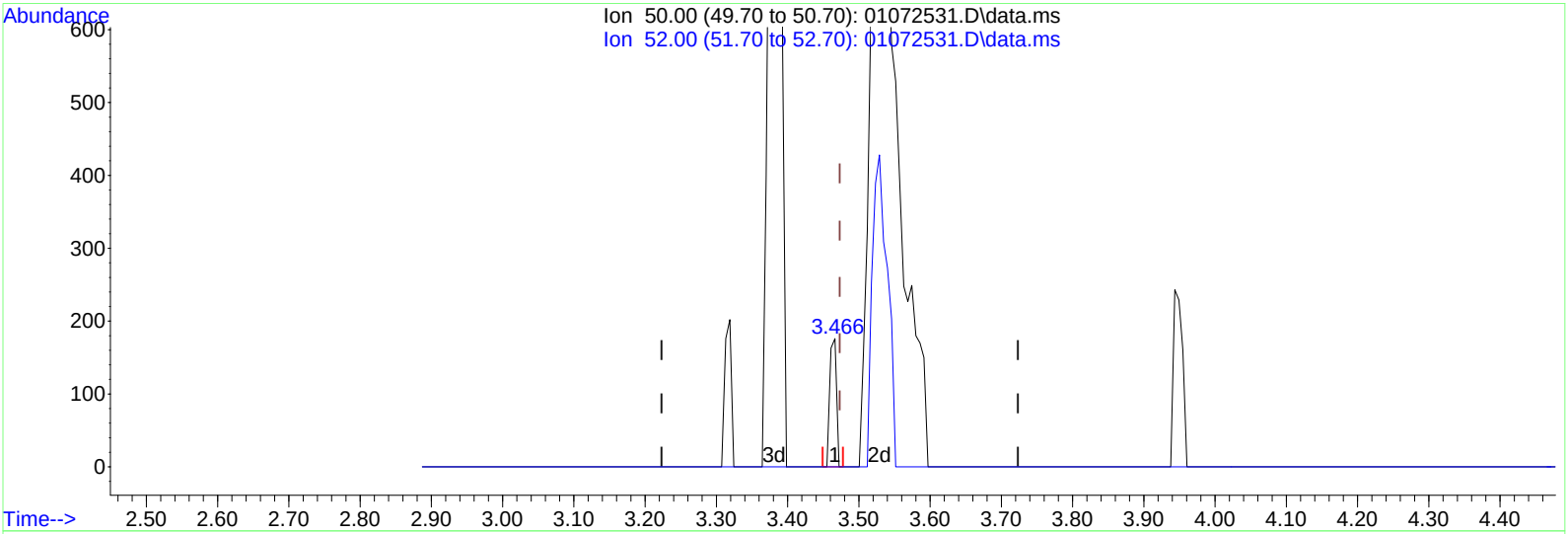
Ion	Ratio	Lower	Upper
117	100		
119	89.9	75.7	115.7

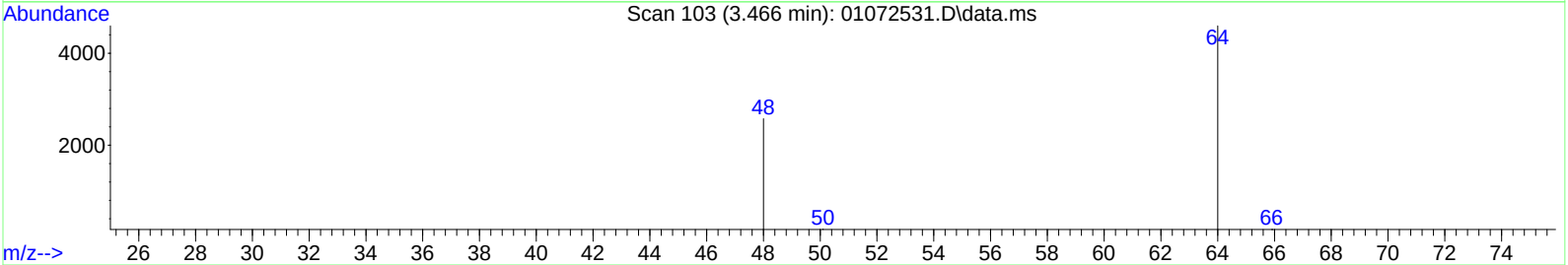


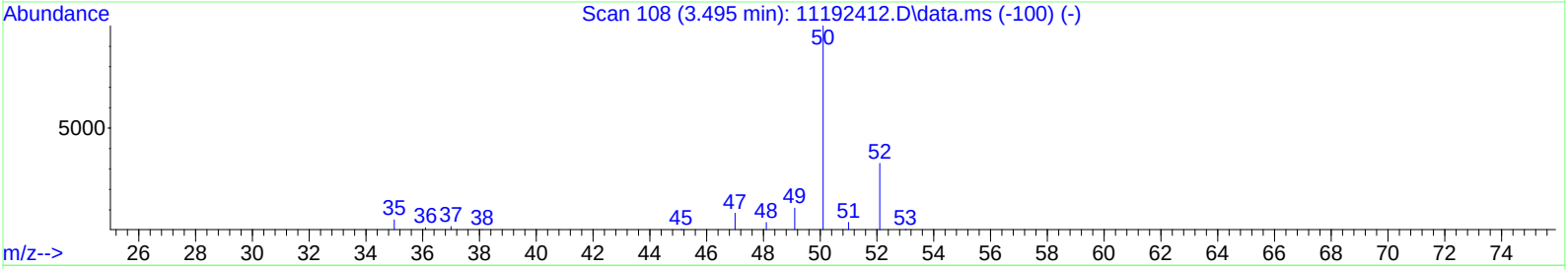
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 10:46:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072531.D\data.ms

(4) Chloromethane (T)

3.466min (-0.007) 0.01ng

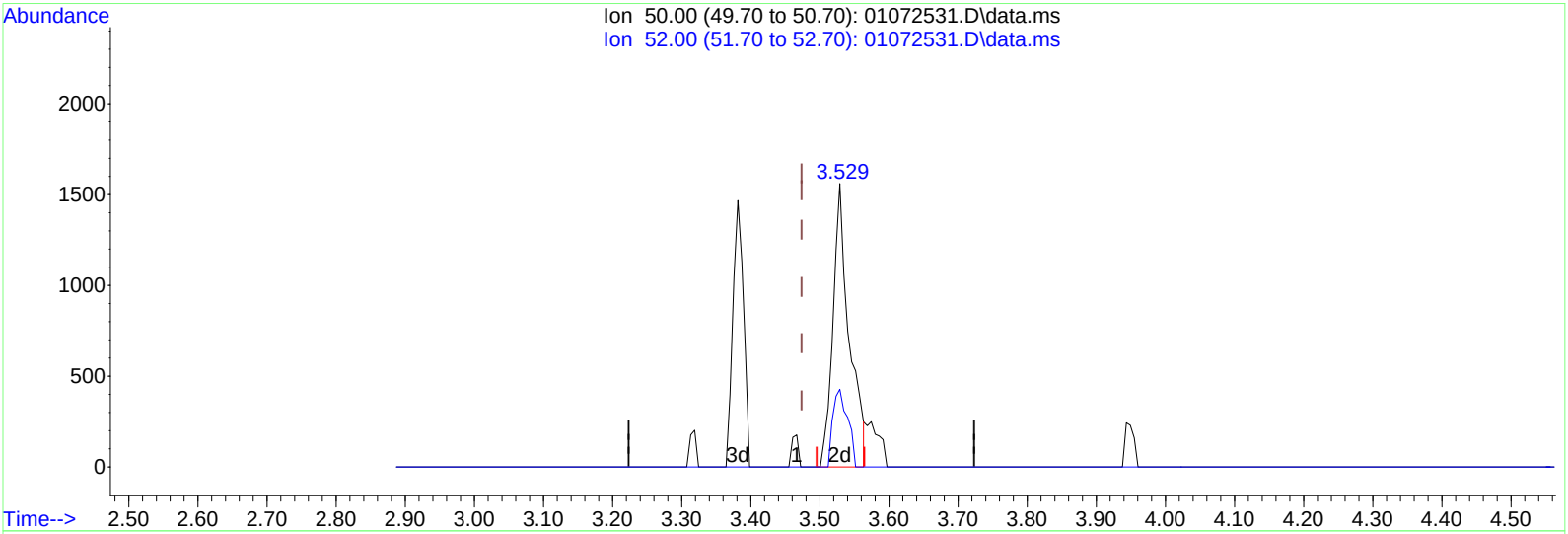
response 116

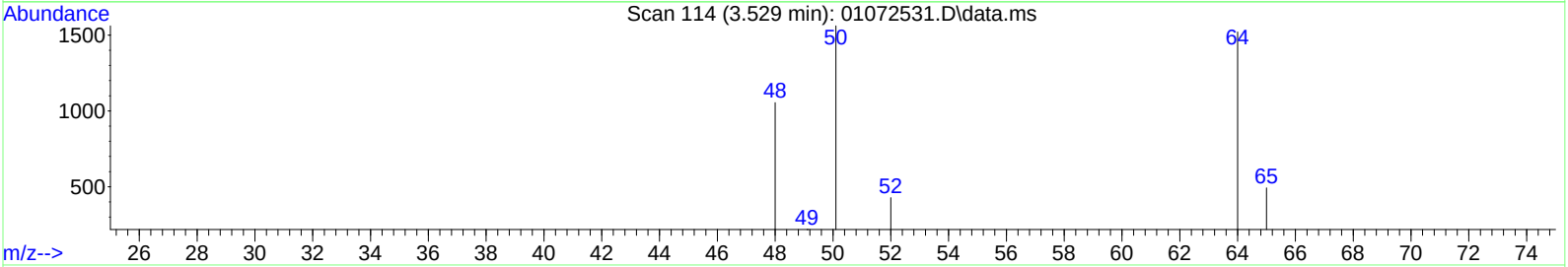
Ion	Exp%	Act%
50.00	100	100
52.00	33.00	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

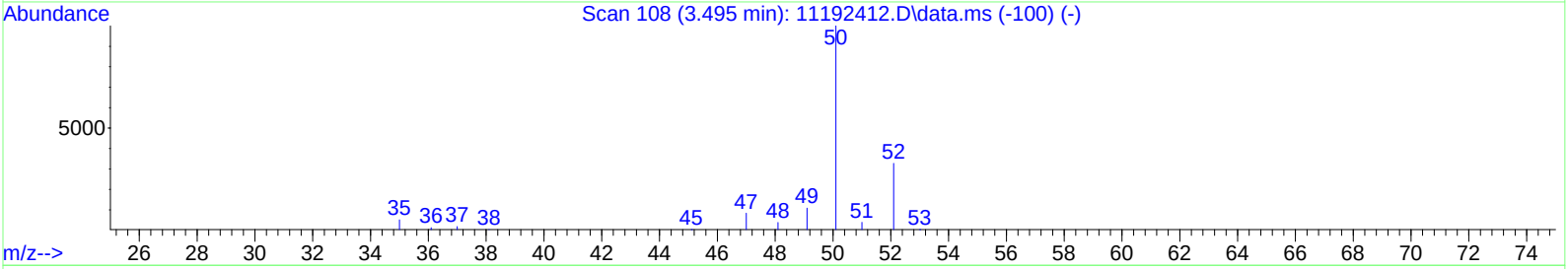
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 10:46:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01072531.D\data.ms

(4) Chloromethane (T)

3.529min (+0.056) 0.14ng m

response 2542

Ion	Exp%	Act%
50.00	100	100
52.00	33.00	24.86
0.00	0.00	0.00
0.00	0.00	0.00

MP

1/12/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 13:28:55 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

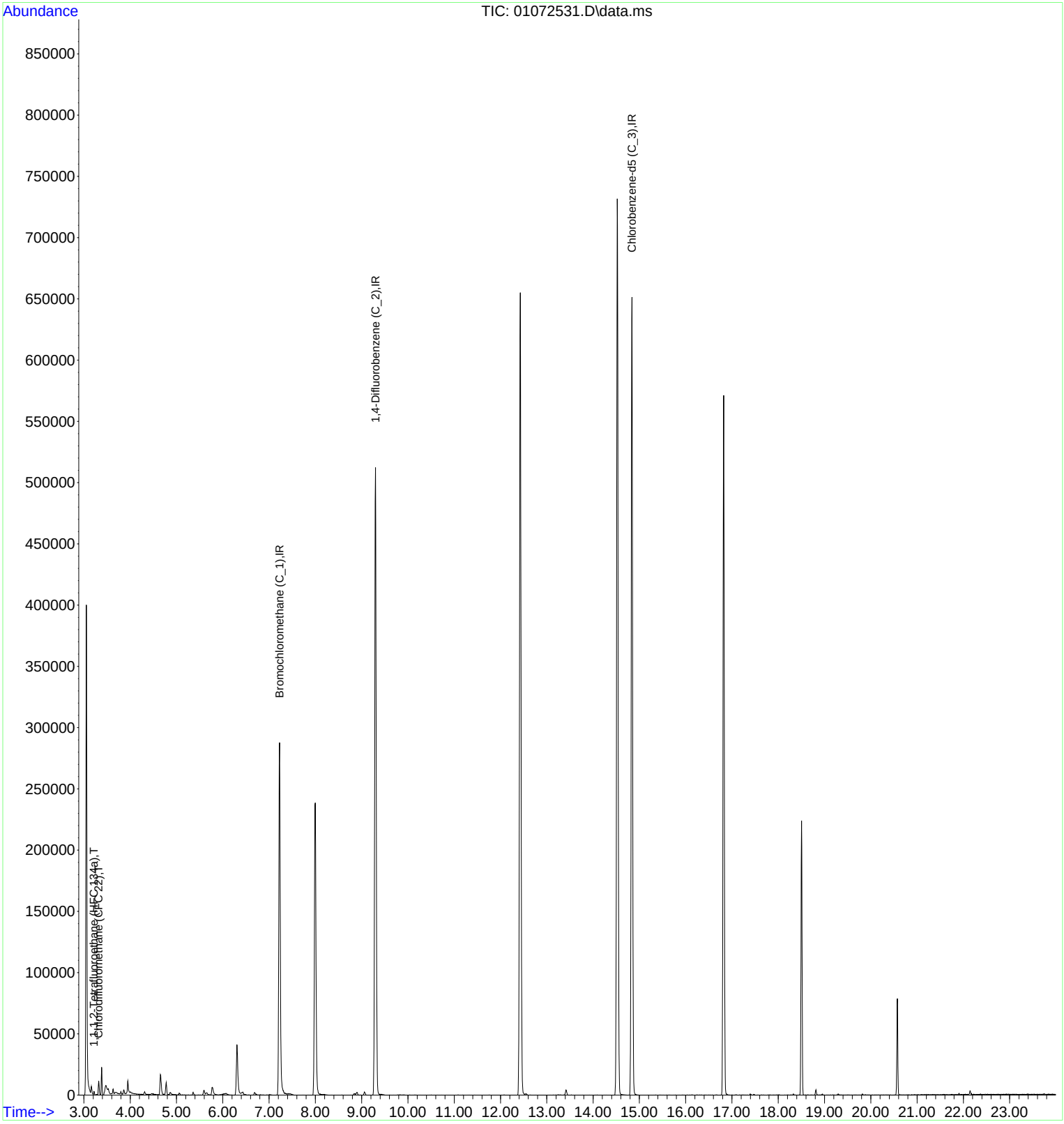
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	124745	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	527249	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	99272	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.16	85	136	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.22	83	1637	0.144	ng		86
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.31	67	669	0.193	ng	#	75
6) 1-Chloro-1,1-Difluoroe...	3.53	65	467	N.D.			
7) Dichlorofluoromethane ...	0.00	67	0	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.			
10) 2-Methylbutane	4.67	57	509	N.D.			
11) Methyl Acetate	5.35	43	64	N.D.			
12) 2-Methylpentane	0.00	71	0	N.D.			
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	9.06	84	51	N.D.			
17) 2,3-Dimethylpentane	0.00	56	0	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	0.00	55	0	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	0.00	91	0	N.D.			
27) 4-Chlorotoluene	0.00	91	0	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	20.57	119	265	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 13:28:55 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072531.D\data.ms

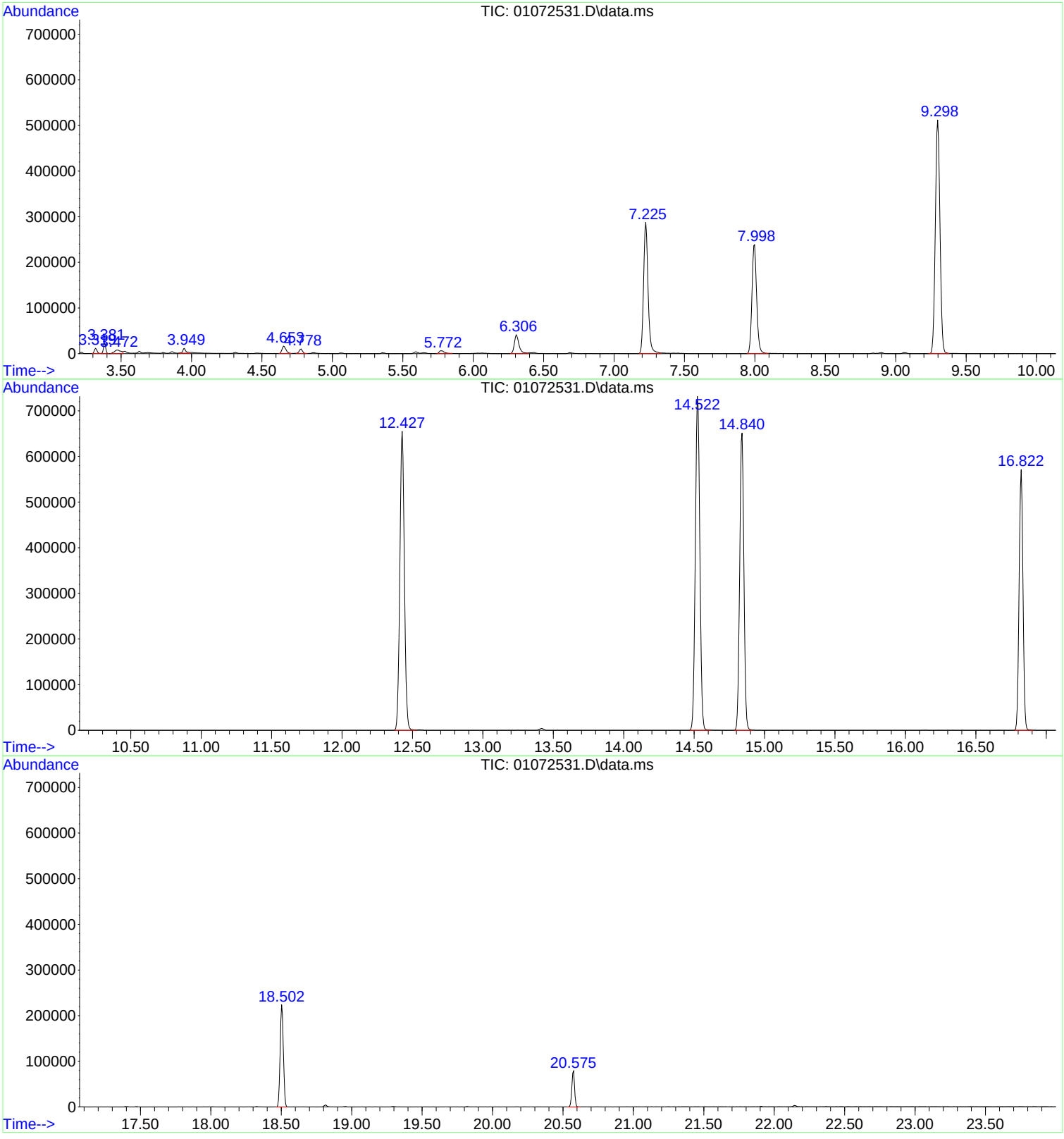
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.319	72	77	84	rBV2	11283	15221	0.94%	0.177%
2	3.381	84	88	94	rVB	22762	26008	1.60%	0.303%
3	3.472	95	104	111	rBV	7934	26789	1.65%	0.312%
4	3.949	181	188	195	rBV	10500	16734	1.03%	0.195%
5	4.653	306	312	322	rBV	16266	31673	1.95%	0.369%
6	4.778	328	334	342	rVB2	9941	16083	0.99%	0.187%
7	5.772	503	509	523	rBV	6430	17622	1.09%	0.205%
8	6.306	595	603	618	rBV	41197	95921	5.91%	1.118%
9	7.225	756	765	784	rBV	287780	637664	39.27%	7.429%
10	7.998	891	901	918	rBV	238631	554120	34.13%	6.456%
11	9.298	1118	1130	1144	rBV	512312	1161669	71.55%	13.534%
12	12.427	1671	1681	1699	rBV	655109	1470026	90.54%	17.127%
13	14.522	2040	2050	2067	rBV	731760	1623649	100.00%	18.916%
14	14.840	2096	2106	2119	rBV	651364	1351408	83.23%	15.745%
15	16.822	2446	2455	2470	rBV	571196	1079229	66.47%	12.574%
16	18.502	2744	2751	2758	rVB	224059	353074	21.75%	4.113%
17	20.575	3108	3116	3124	rBV2	78677	106417	6.55%	1.240%

Sum of corrected areas: 8583307

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:52
Operator : SC
Sample : P2405139-034 (400mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072531.D
Acq On : 7 Jan 2025 20:522
Operator : SCC
Sample : P2405139-034 (400mL))
Misc : S37-123124011
ALS Vial : 6 Sample Multiplier: 11

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 12:52:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	122692	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	521819	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	97989	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	213704	12.785 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%			
57) Toluene-d8 (SS2)	12.43	98	541210	12.450 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.60%			
73) Bromofluorobenzene (SS3)	16.82	174	211598	14.106 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.88%			
Target Compounds						Qvalue
2) Propene	3.32	42	480	N.D.		
3) Dichlorodifluoromethan...	3.38	85	14190	0.592 ng		99
4) Chloromethane	3.52	50	527	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	246	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D. d		
10) Ethanol	4.30	45	8132	0.896 ng		96
11) Acetonitrile	4.47	41	469	N.D.		
12) Acrolein	4.55	56	822	0.106 ng		89
13) Acetone	4.64	58	17763	2.150 ng		100
14) Trichlorofluoromethane	4.76	101	184093	8.185 ng		100
15) 2-Propanol (Isopropanol)	4.95	45	178	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.35	59	831	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.58	151	77715	7.658 ng		94
22) Carbon Disulfide	0.00	76	0	N.D. d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	640	0.320 ng	#	62
27) 2-Butanone (MEK)	6.69	72	1970	0.297 ng	#	90
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.36	83	11697	0.586 ng		96
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.83	56	1611	No Calib	#	
41) Benzene	8.89	78	5785	0.138 ng		98
42) Carbon Tetrachloride	9.07	117	150	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	10.15	88	301	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

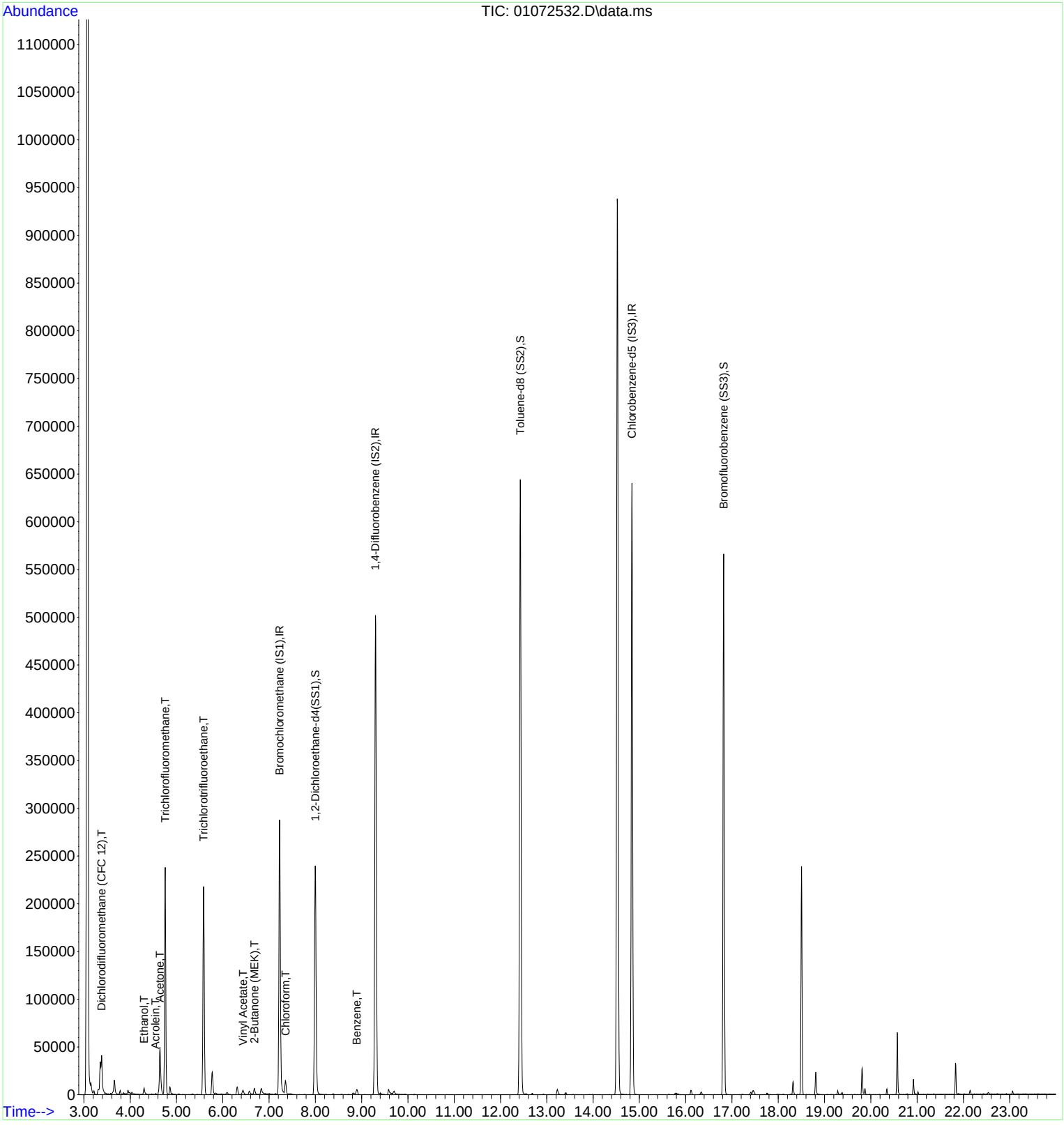
Quant Time: Jan 12 12:52:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	836	N.D.	
59) 2-Hexanone	12.93	43	607	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	0.00	91	0	N.D.	
67) m- & p-Xylenes	15.63	91	163	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	16.62	43	165	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.50	105	1192	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	18.50	146	120	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.94	128	218	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	d
100) n-Butylbenzene	19.38	91	311	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 12:52:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 12:52:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

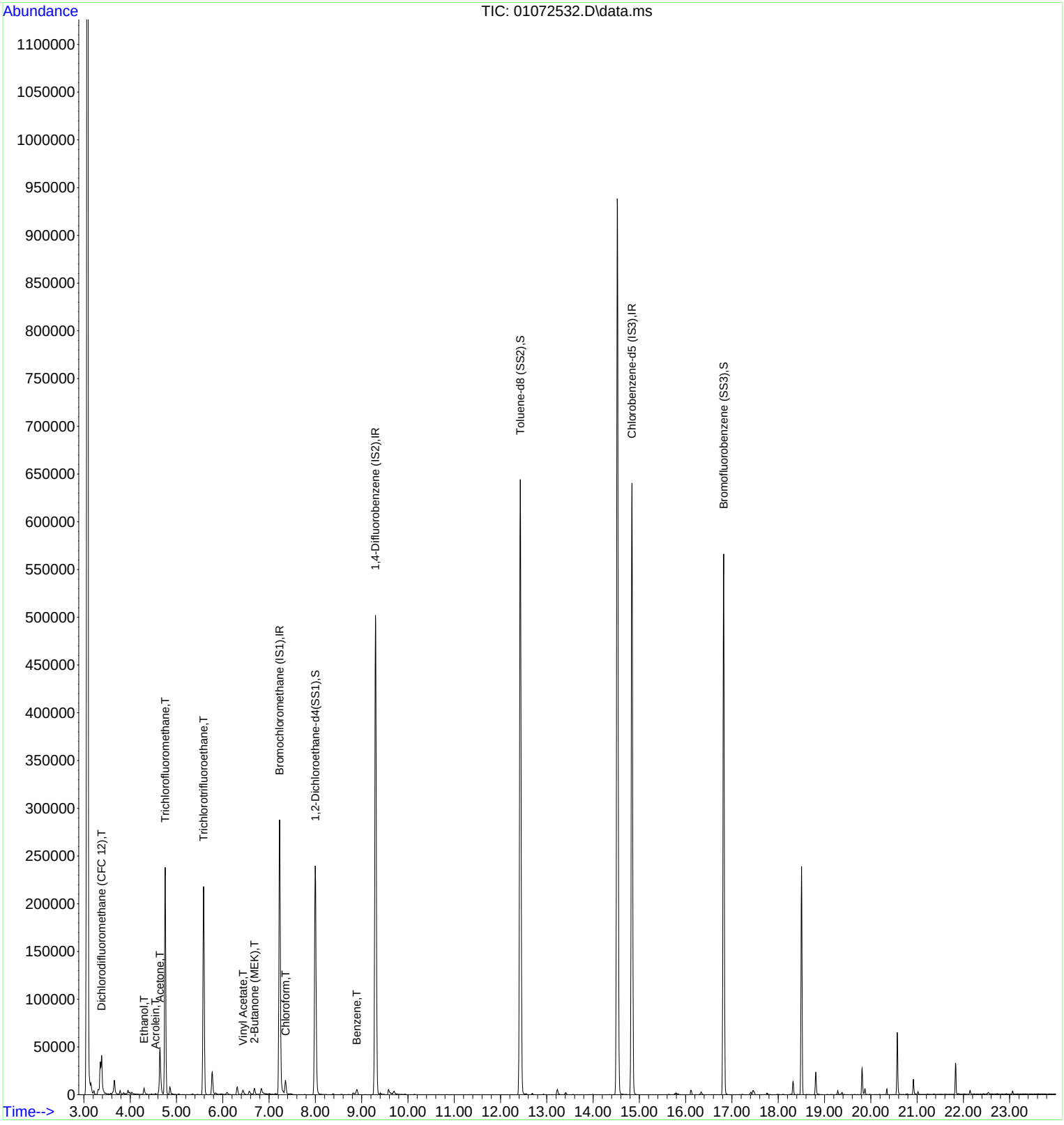
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	122692	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	521819	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	97989	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	213704	12.785	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%				
57) Toluene-d8 (SS2)	12.43	98	541210	12.450	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.60%				
73) Bromofluorobenzene (SS3)	16.82	174	211598	14.106	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.88%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	14190	0.592	ng		99
10) Ethanol	4.30	45	8132	0.896	ng		96
12) Acrolein	4.55	56	822	0.106	ng		89
13) Acetone	4.64	58	17763	2.150	ng		100
14) Trichlorofluoromethane	4.76	101	184093	8.185	ng		100
21) Trichlorotrifluoroethane	5.58	151	77715	7.658	ng		94
26) Vinyl Acetate	6.44	86	640	0.320	ng	#	62
27) 2-Butanone (MEK)	6.69	72	1970	0.297	ng	#	90
32) Chloroform	7.36	83	11697	0.586	ng		96
41) Benzene	8.89	78	5785	0.138	ng		98

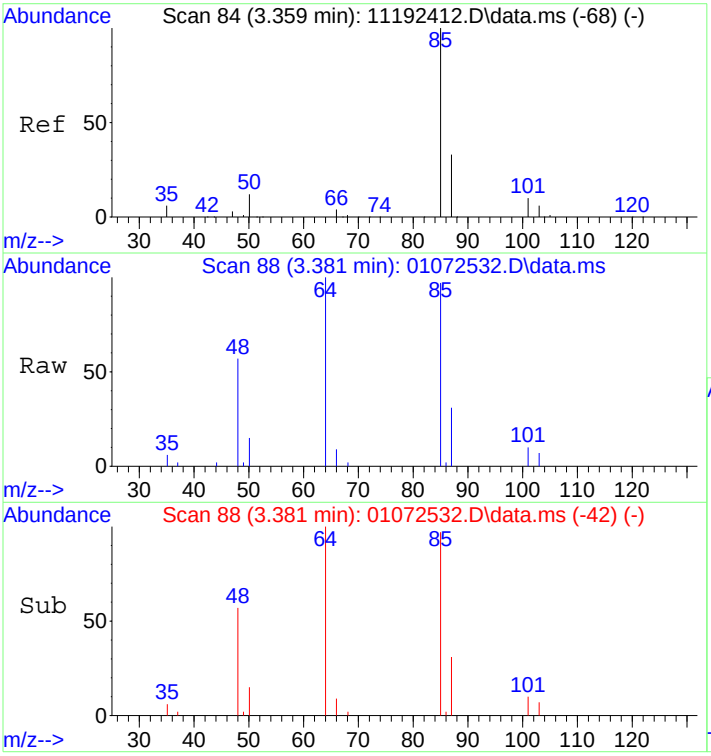
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 12:52:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

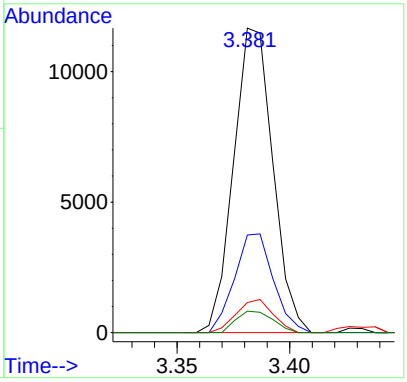


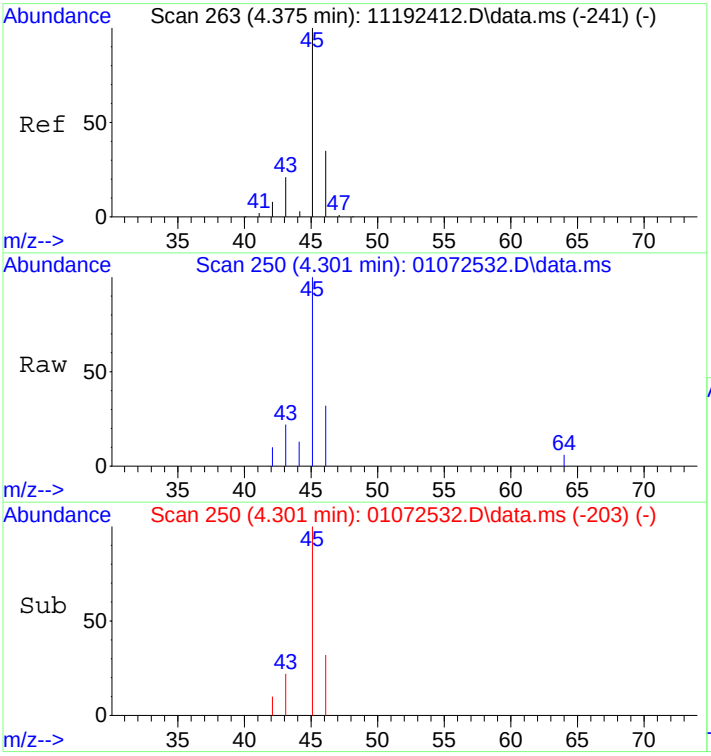


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.59 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.009 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 85 Resp: 14190

Ion	Ratio	Lower	Upper
85	100		
87	32.1	12.6	52.6
101	10.1	0.0	29.6
103	6.6	0.0	26.2

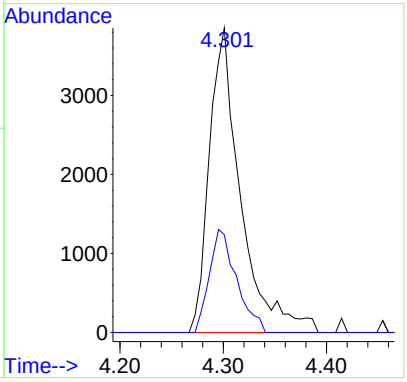


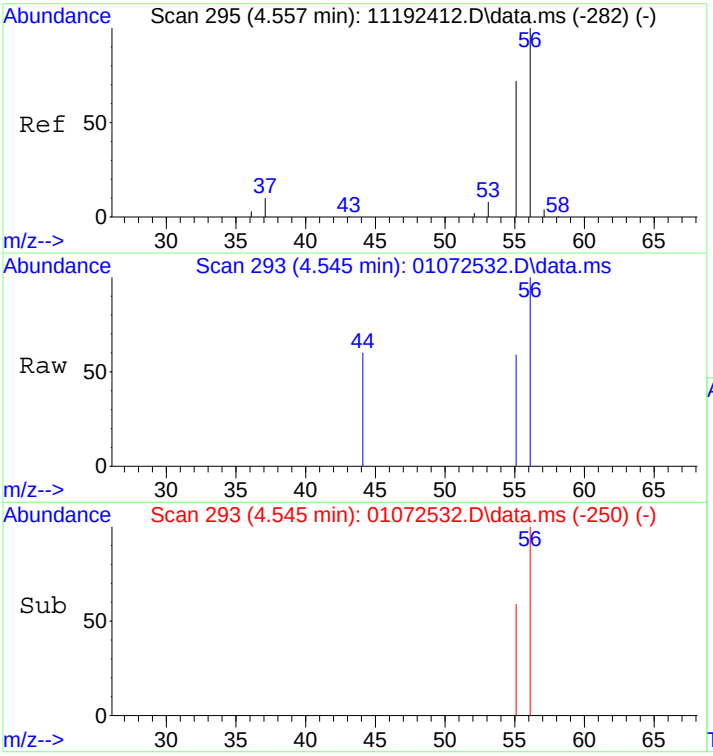


#10
Ethanol
Concen: 0.90 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 45 Resp: 8132

Ion	Ratio	Lower	Upper
45	100		
46	29.4	11.8	51.8

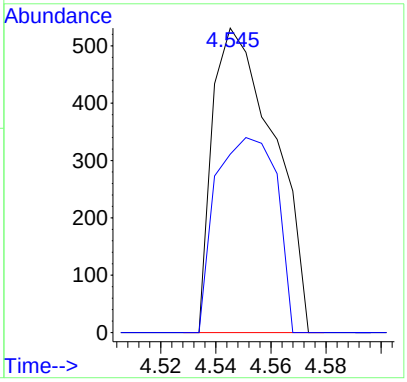


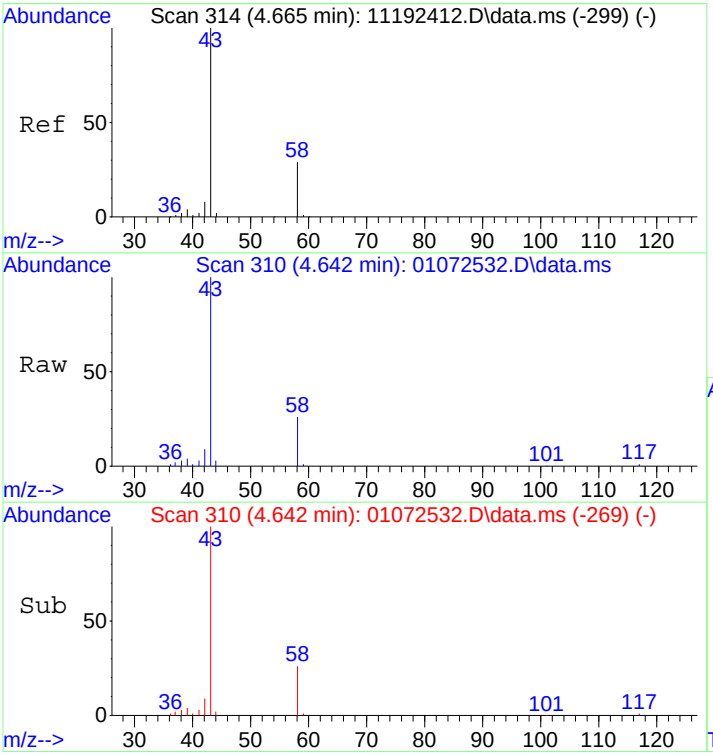


#12
Acrolein
Concen: 0.11 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 56 Resp: 822

Ion	Ratio	Lower	Upper
56	100		
55	63.5	53.1	93.1

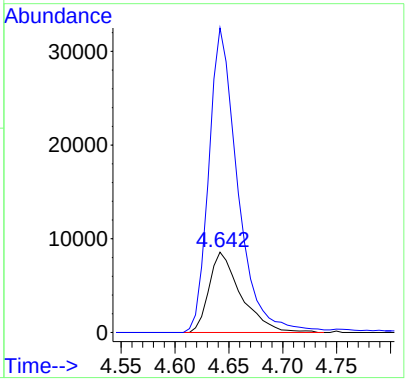


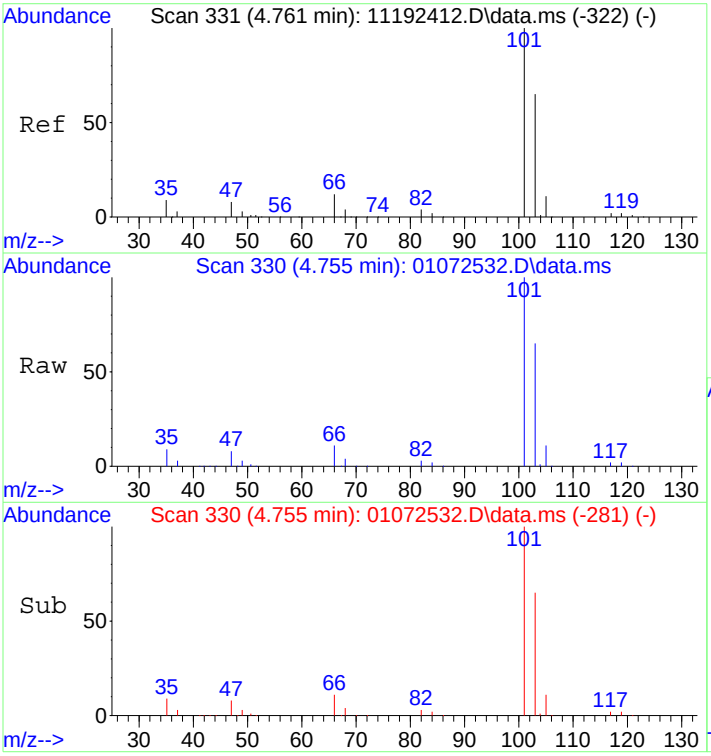


#13
Acetone
Concen: 2.15 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.019 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 58 Resp: 17763

Ion	Ratio	Lower	Upper
58	100		
43	342.9	312.5	372.5

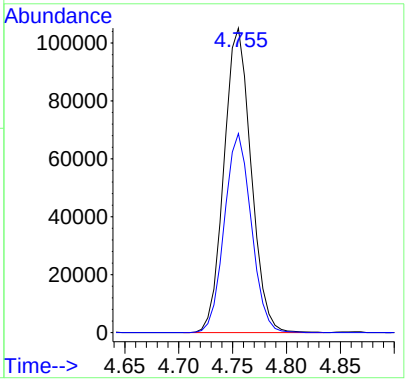


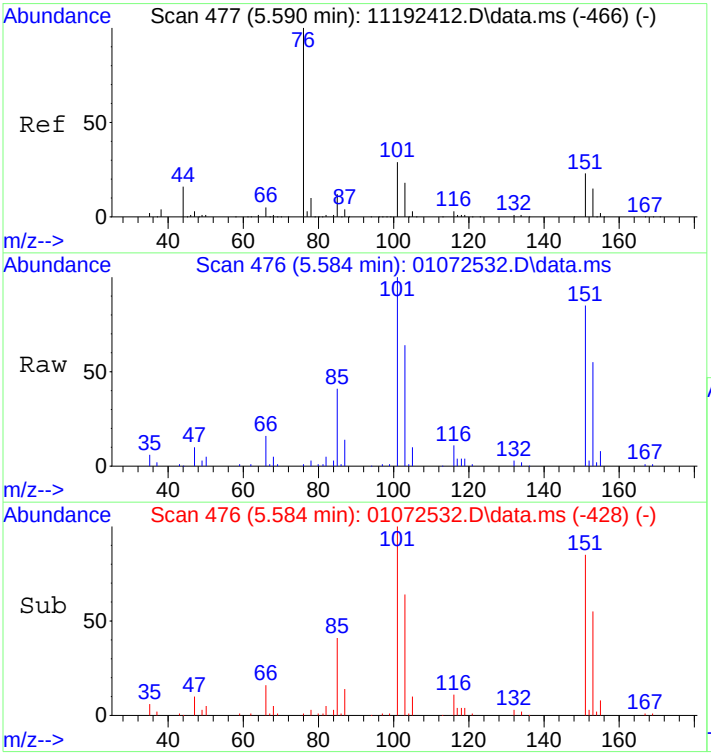


#14
Trichlorofluoromethane
Concen: 8.18 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion:101 Resp: 184093

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

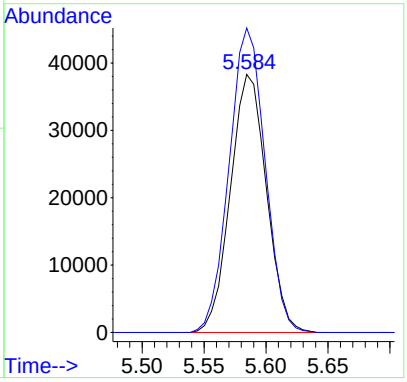


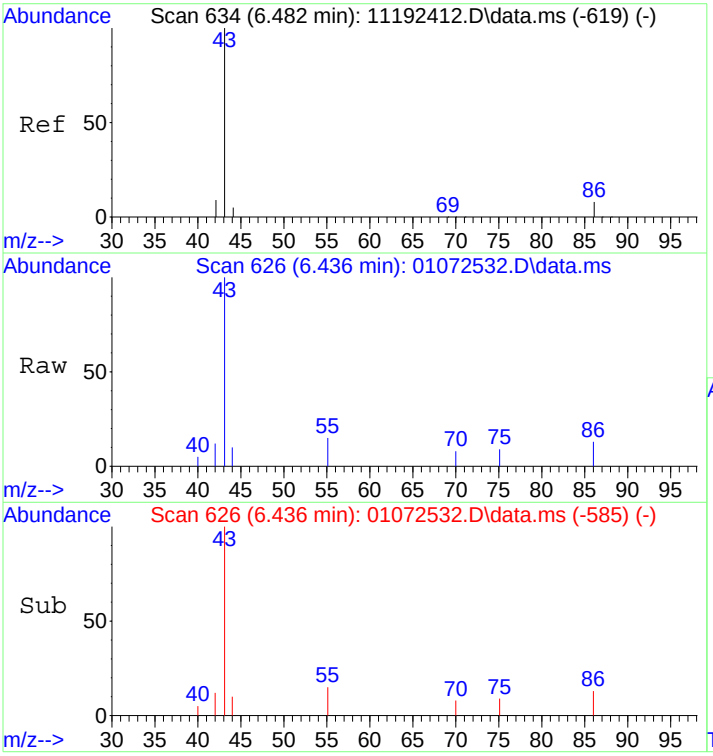


#21
Trichlorotrifluoroethane
Concen: 7.66 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion:151 Resp: 77715

Ion	Ratio	Lower	Upper
151	100		
101	117.8	105.0	145.0

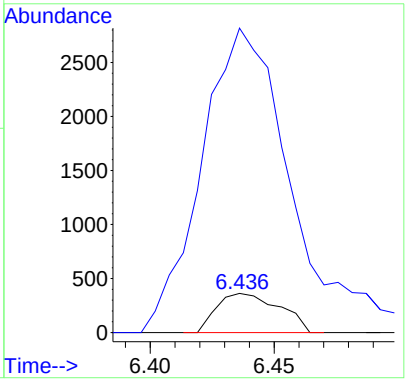


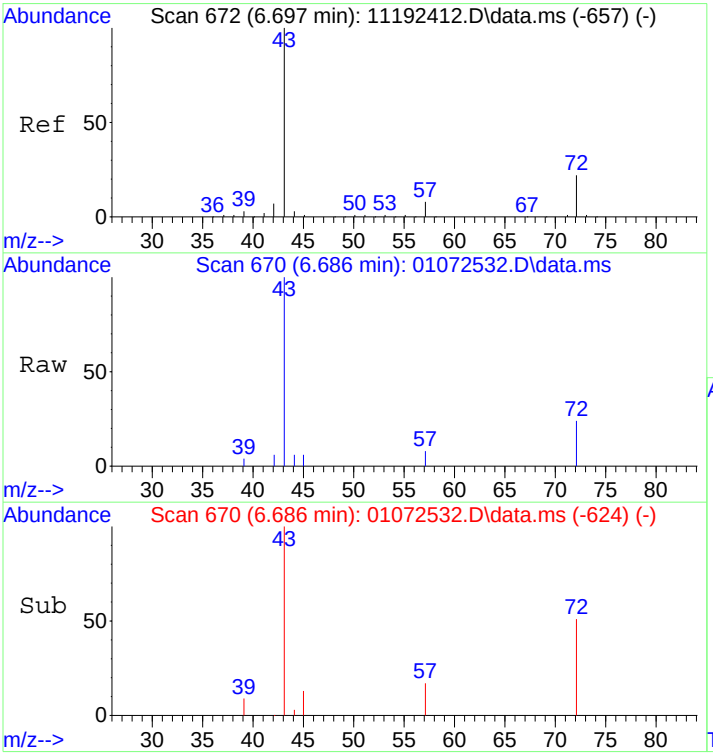


#26
Vinyl Acetate
Concen: 0.32 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 86 Resp: 640

Ion	Ratio	Lower	Upper
86	100		
43	1141.1	1331.6	1371.6#

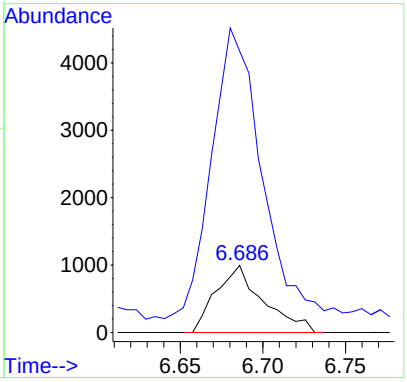


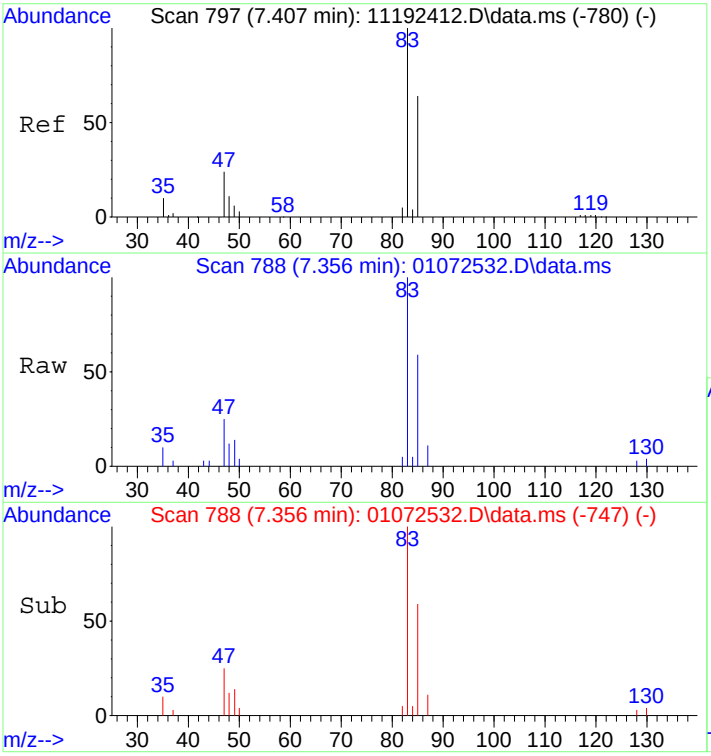


#27
2-Butanone (MEK)
Concen: 0.30 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 72 Resp: 1970

Ion	Ratio	Lower	Upper
72	100		
43	484.6	439.8	479.8#

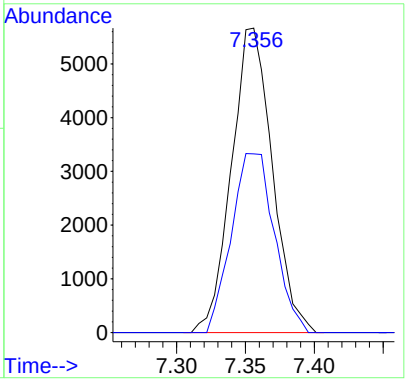


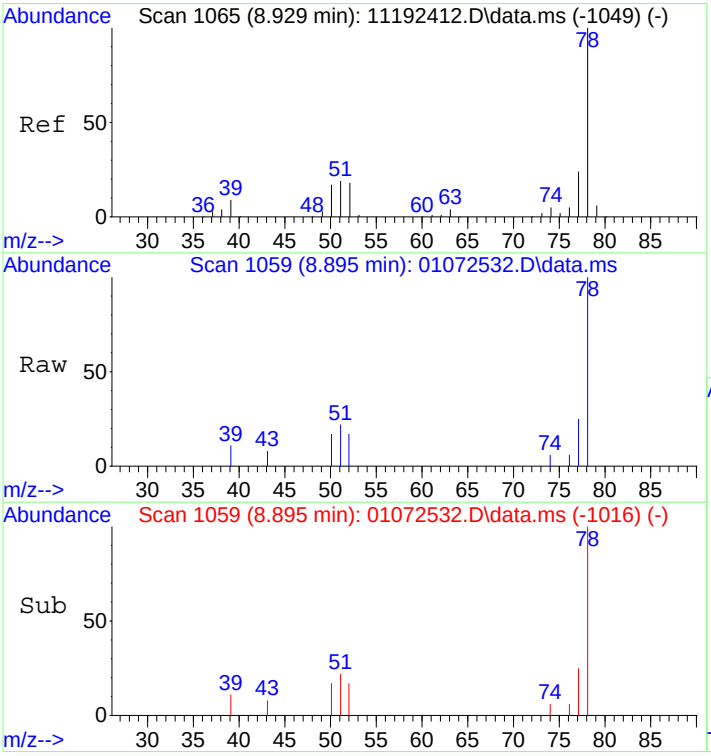


#32
Chloroform
Concen: 0.59 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 83 Resp: 11697

Ion	Ratio	Lower	Upper
83	100		
85	61.8	45.1	85.1

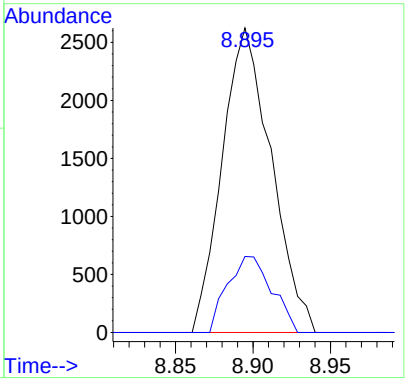




#41
Benzene
Concen: 0.14 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.009 min
Lab File: 01072532.D
Acq: 7 Jan 2025 21:24

Tgt Ion: 78 Resp: 5785

Ion	Ratio	Lower	Upper
78	100		
77	22.6	3.7	43.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 13:38:15 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

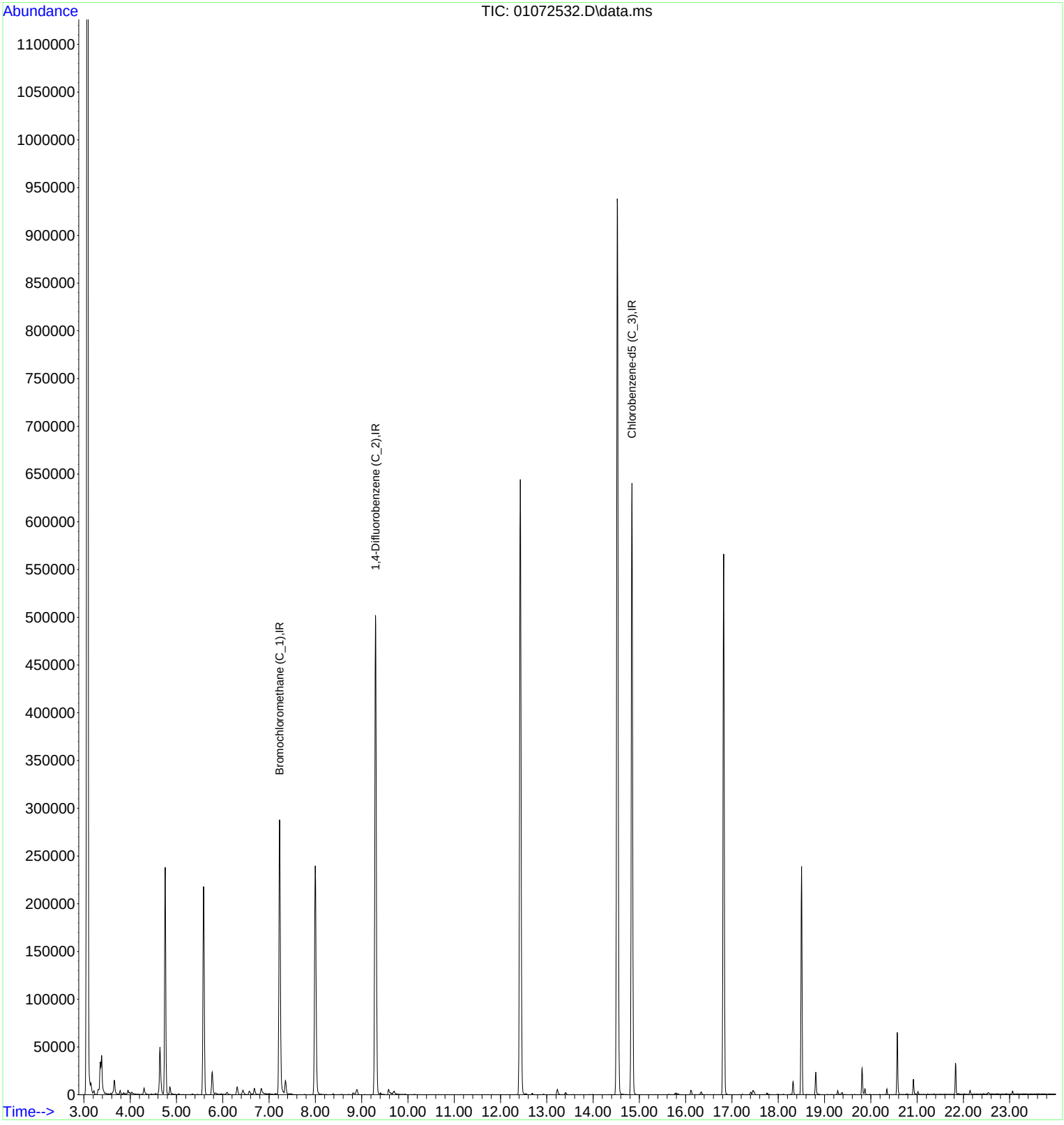
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	123919	12.500 ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	522683	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	97989	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.16	85	84	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1002	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D. d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	274	N.D.	
7) Dichlorofluoromethane ...	4.25	67	53	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	4.63	57	55	N.D.	
11) Methyl Acetate	5.35	43	264	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.68	91	51	N.D.	
27) 4-Chlorotoluene	17.68	91	51	N.D.	
28) Indane	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	20.56	119	157	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 13:38:15 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01072532.D\data.ms

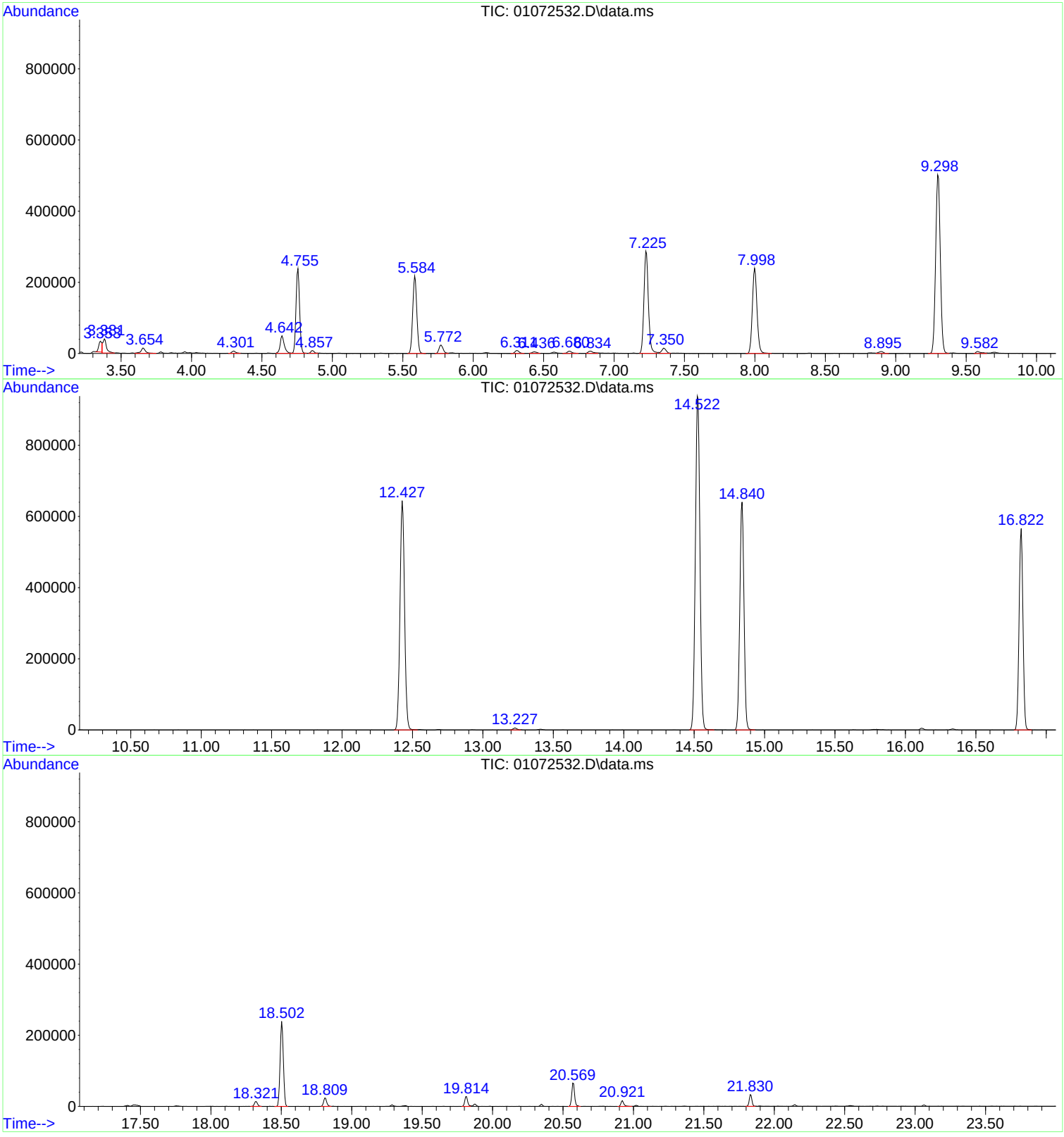
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.353	77	83	85	rBV	29742	47057	2.23%	0.460%
2	3.381	85	88	101	rVB	39843	70176	3.32%	0.685%
3	3.654	126	136	153	rVB	14631	32450	1.54%	0.317%
4	4.301	243	250	258	rBV	6714	12947	0.61%	0.126%
5	4.642	302	310	322	rBV	49645	100289	4.75%	0.979%
6	4.755	322	330	341	rVB	237636	414150	19.62%	4.044%
7	4.857	343	348	355	rBV2	7608	12289	0.58%	0.120%
8	5.584	467	476	490	rBB	218100	438207	20.76%	4.279%
9	5.772	501	509	518	rBV	23884	49044	2.32%	0.479%
10	6.311	596	604	613	rBV	8193	17608	0.83%	0.172%
11	6.436	619	626	633	rBV2	4588	10169	0.48%	0.099%
12	6.680	661	669	681	rVB	6431	14564	0.69%	0.142%
13	6.834	690	696	705	rBV3	6220	15878	0.75%	0.155%
14	7.225	757	765	779	rBV	287687	631444	29.92%	6.166%
15	7.350	782	787	796	rVB	14355	30003	1.42%	0.293%
16	7.998	890	901	922	rBV	239656	551908	26.15%	5.390%
17	8.895	1053	1059	1069	rVB	5560	13057	0.62%	0.128%
18	9.298	1118	1130	1144	rBV	502132	1149928	54.48%	11.230%
19	9.582	1175	1180	1191	rBV	5601	14582	0.69%	0.142%
20	12.427	1671	1681	1700	rBV	644376	1458095	69.08%	14.239%
21	13.227	1816	1822	1829	rBV2	5659	10681	0.51%	0.104%
22	14.522	2040	2050	2071	rBV	938496	2110642	100.00%	20.612%
23	14.840	2097	2106	2122	rBV	640494	1328102	62.92%	12.970%
24	16.822	2446	2455	2468	rBV	566384	1072616	50.82%	10.475%
25	18.321	2712	2719	2726	rVB2	13702	21366	1.01%	0.209%
26	18.502	2742	2751	2759	rBV	239194	377890	17.90%	3.690%
27	18.809	2800	2805	2813	rBV	23921	37137	1.76%	0.363%
28	19.814	2976	2982	2987	rBV	27646	40013	1.90%	0.391%
29	20.569	3109	3115	3125	rBV2	65313	91535	4.34%	0.894%
30	20.921	3171	3177	3189	rBV2	16076	23245	1.10%	0.227%
31	21.830	3331	3337	3343	rBV	32954	42890	2.03%	0.419%

Sum of corrected areas: 10239962

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:24
Operator : SC
Sample : P2405139-035 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\07\\
Data File : 01072532.D
Acq On : 7 Jan 2025 21:244
Operator : SCC
Sample : P2405139-035 (400mL))
Misc : S37-123124011
ALS Vial : 7 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

MA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 14:10:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/12/25

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	149095	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	640356	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	120446	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	262333	12.915 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.28%			
57) Toluene-d8 (SS2)	12.43	98	663284	12.414 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%			
73) Bromofluorobenzene (SS3)	16.82	174	232915	12.632 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.04%			
Target Compounds						Qvalue
2) Propene	3.33	42	451	N.D.		
3) Dichlorodifluoromethan...	3.39	85	7161	0.246 ng		97
4) Chloromethane	3.53	50	168	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.30	45	6081	0.551 ng		96
11) Acetonitrile	0.00	41	0	N.D. d		
12) Acrolein	4.55	56	556	0.059 ng		87
13) Acetone	4.65	58	8252	0.822 ng		99
14) Trichlorofluoromethane	4.77	101	31346	1.147 ng		99
15) 2-Propanol (Isopropanol)	4.86	45	2920	0.081 ng		79
16) Acrylonitrile	5.02	53	242	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.35	59	116	N.D.		
19) Methylene Chloride	5.35	84	632	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.60	151	13842	1.122 ng		97
22) Carbon Disulfide	5.61	76	33315	0.734 ng		99
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	451	0.186 ng	#	93
27) 2-Butanone (MEK)	6.68	72	969	0.120 ng	#	21
28) cis-1,2-Dichloroethene	7.08	61	197	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.35	83	5895	0.243 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.84	56	5501	No Calib	#	
41) Benzene	8.90	78	2827	0.055 ng		86
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.14	130	1810	0.124 ng		93
48) 1,4-Dioxane	10.14	88	270	N.D.		

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 14:10:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

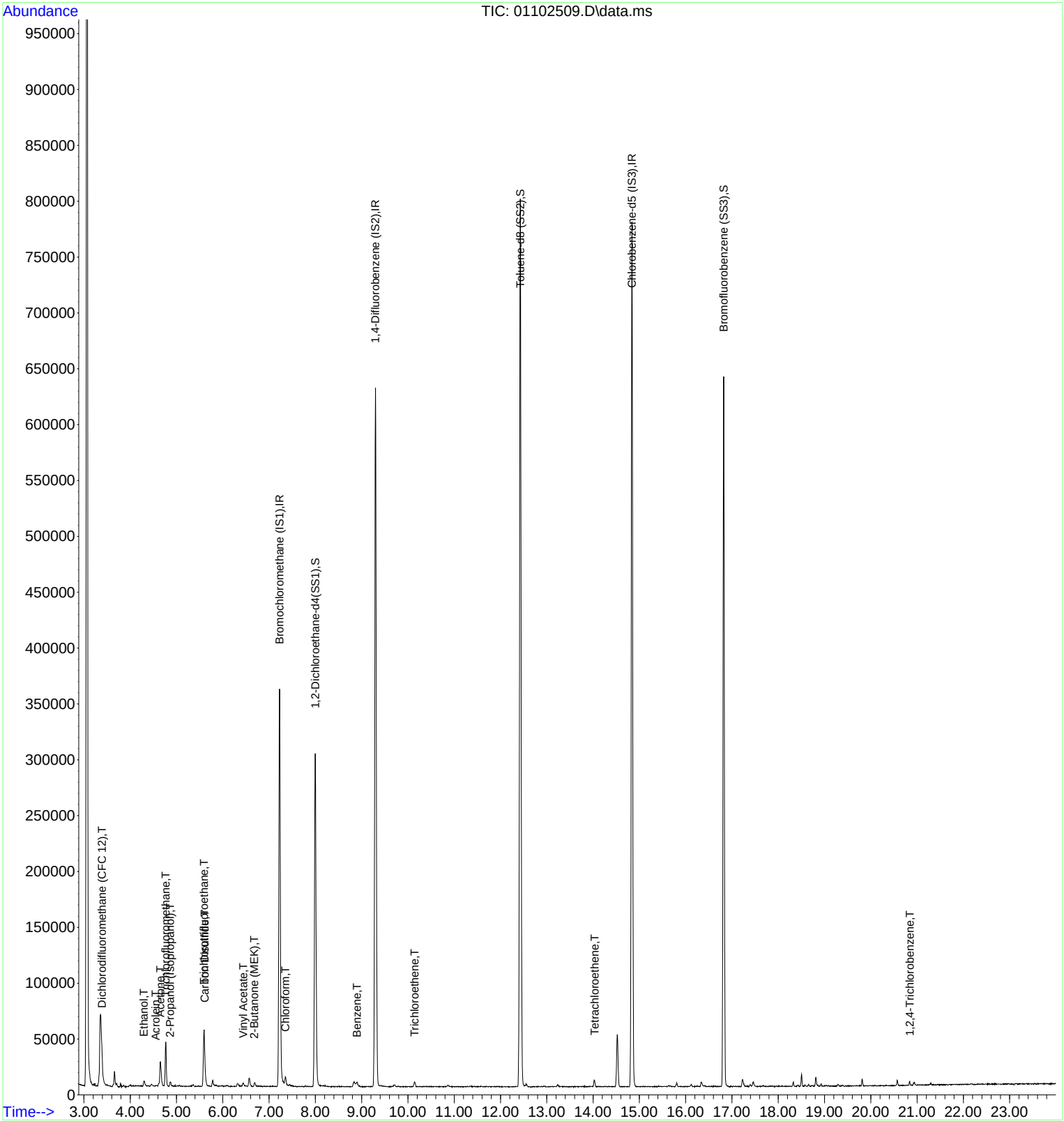
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	2522	N.D.	
59) 2-Hexanone	12.95	43	830	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.79	43	479	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	2005	0.131 ng	97
65) Chlorobenzene	14.90	112	190	N.D.	
66) Ethylbenzene	15.41	91	704	N.D.	
67) m- & p-Xylenes	15.63	91	1611	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.11	104	525	N.D.	
70) o-Xylene	16.25	91	474	N.D.	
71) n-Nonane	16.61	43	390	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	399	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	793	N.D.	
77) 3-Ethyltoluene	17.03	105	399	No Calib #	
78) 4-Ethyltoluene	17.86	105	475	N.D.	
79) 1,3,5-Trimethylbenzene	17.95	105	384	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	399	No Calib #	
82) 1,2,4-Trimethylbenzene	18.43	105	645	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.56	91	526	N.D.	
85) 1,3-Dichlorobenzene	18.58	146	628	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	807	N.D.	
87) sec-Butylbenzene	18.74	105	564	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	1692	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	399	No Calib #	
90) 1,2-Dichlorobenzene	19.04	146	526	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	1469	0.070 ng #	94
95) Naphthalene	20.94	128	2646	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.30	225	443	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.42	119	455	N.D.	
100) n-Butylbenzene	19.39	91	911	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 14:10:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 14:10:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

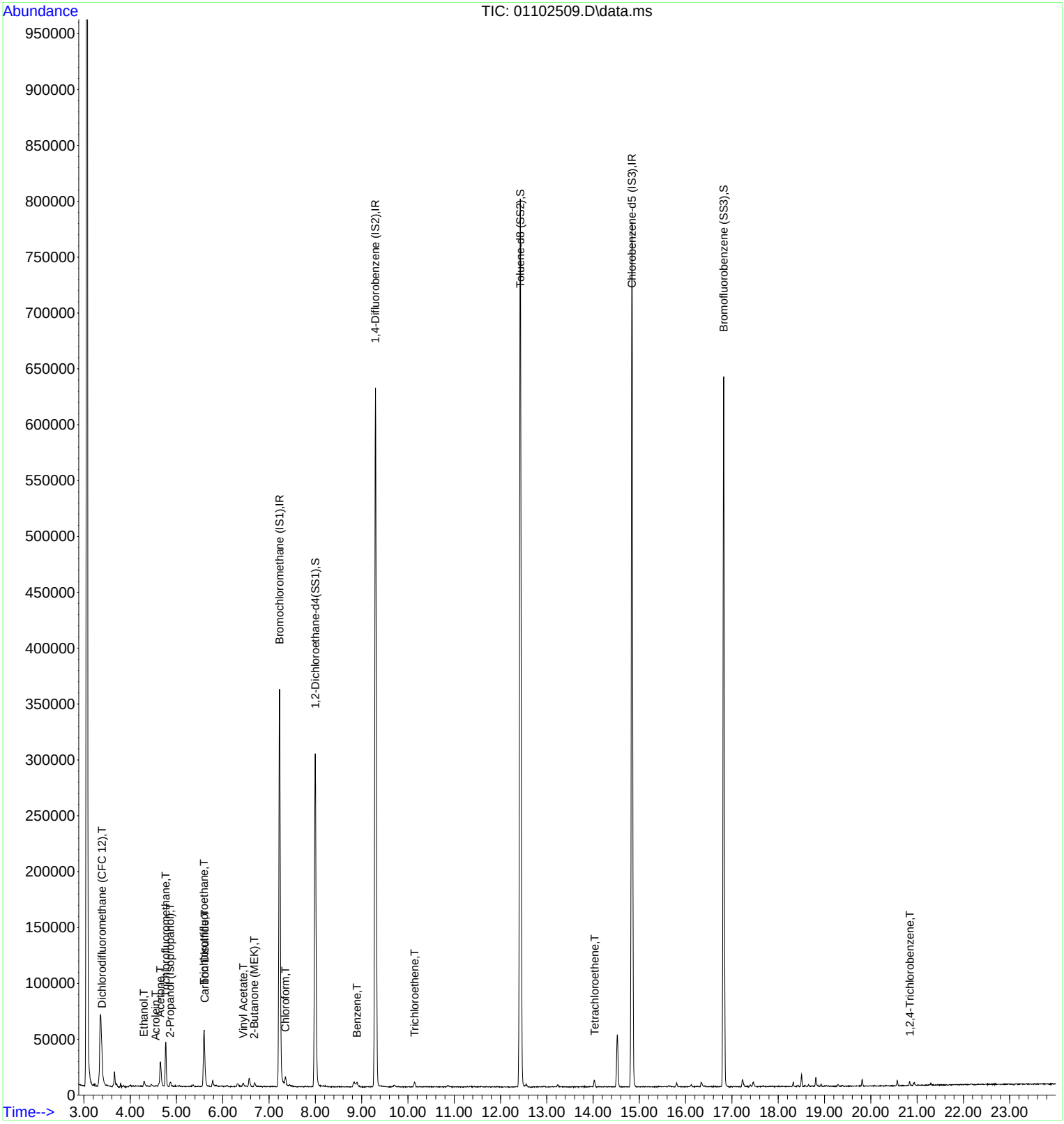
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	149095	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	640356	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	120446	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	262333	12.915	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.28%				
57) Toluene-d8 (SS2)	12.43	98	663284	12.414	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%				
73) Bromofluorobenzene (SS3)	16.82	174	232915	12.632	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.04%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	7161	0.246	ng		97
10) Ethanol	4.30	45	6081	0.551	ng		96
12) Acrolein	4.55	56	556	0.059	ng		87
13) Acetone	4.65	58	8252	0.822	ng		99
14) Trichlorofluoromethane	4.77	101	31346	1.147	ng		99
15) 2-Propanol (Isopropanol)	4.86	45	2920	0.081	ng		79
21) Trichlorotrifluoroethane	5.60	151	13842	1.122	ng		97
22) Carbon Disulfide	5.61	76	33315	0.734	ng		99
26) Vinyl Acetate	6.44	86	451	0.186	ng	#	93
27) 2-Butanone (MEK)	6.68	72	969	0.120	ng	#	21
32) Chloroform	7.35	83	5895	0.243	ng		99
41) Benzene	8.90	78	2827	0.055	ng		86
47) Trichloroethene	10.14	130	1810	0.124	ng		93
64) Tetrachloroethene	14.03	166	2005	0.131	ng		97
94) 1,2,4-Trichlorobenzene	20.84	180	1469	0.070	ng	#	94

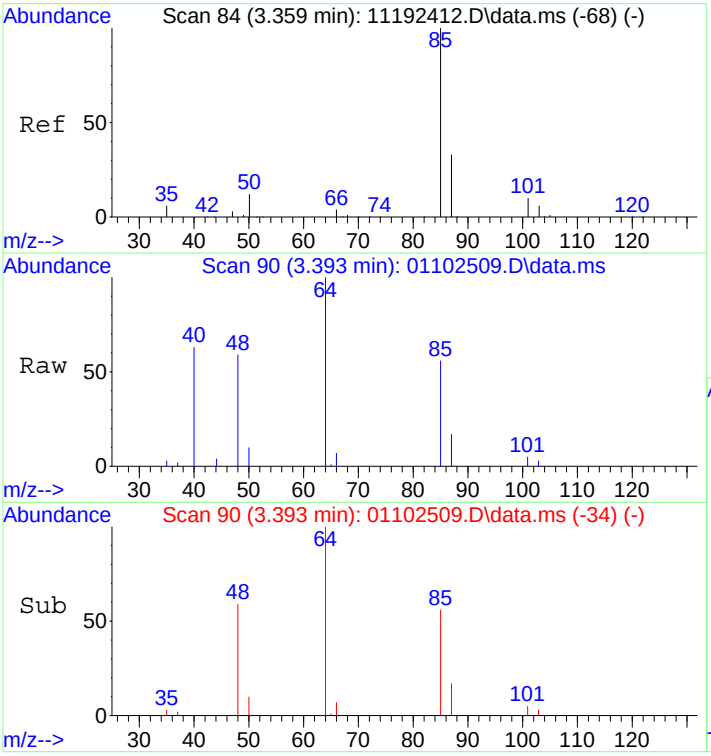
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 14:10:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

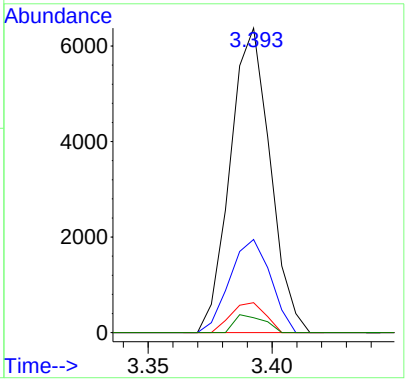


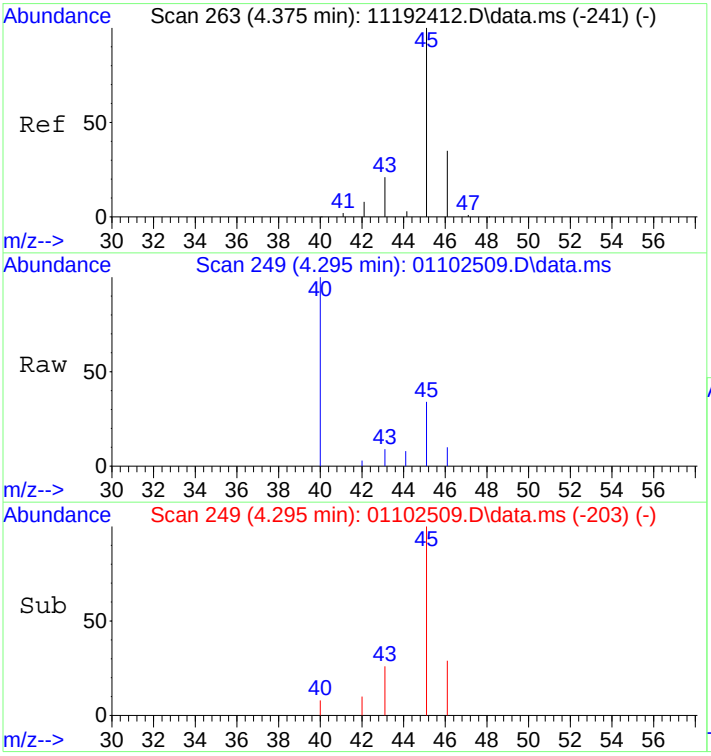


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.25 ng
RT: 3.39 min Scan# 90
Delta R.T. 0.065 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 85 Resp: 7161

Ion	Ratio	Lower	Upper
85	100		
87	31.3	12.6	52.6
101	8.5	0.0	29.6
103	4.3	0.0	26.2

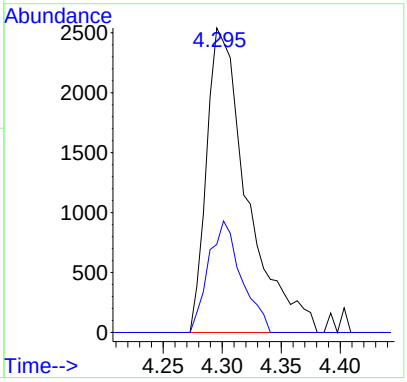


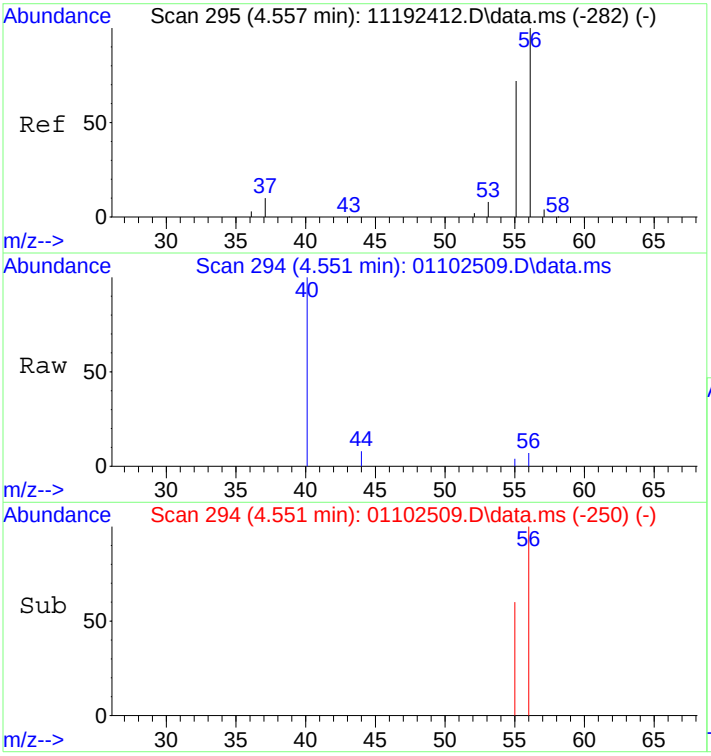


#10
Ethanol
Concen: 0.55 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 45 Resp: 6081

Ion	Ratio	Lower	Upper
45	100		
46	29.7	11.8	51.8

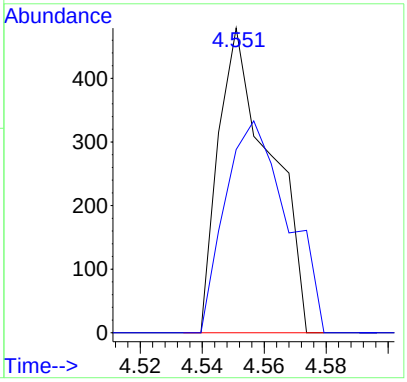


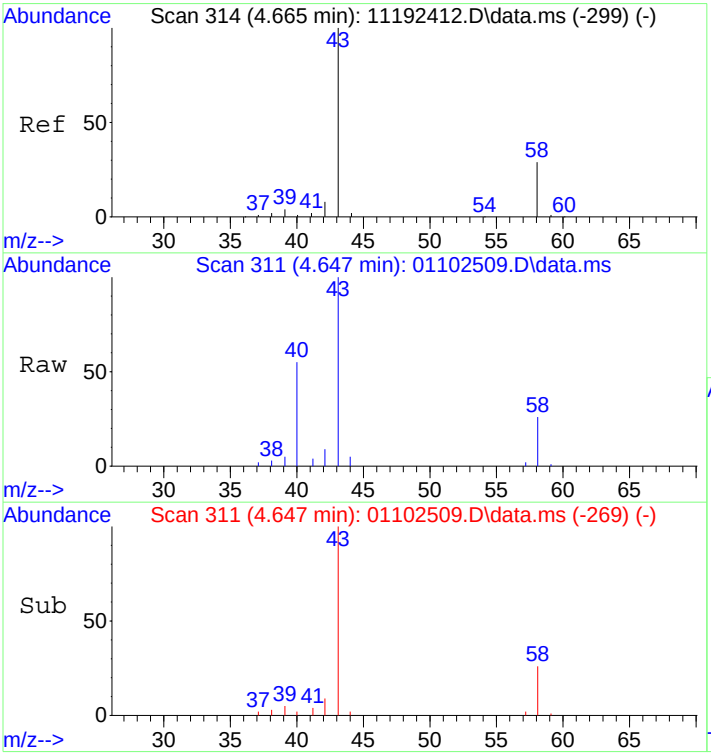


#12
Acrolein
Concen: 0.06 ng
RT: 4.55 min Scan# 294
Delta R.T. -0.002 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 56 Resp: 556

Ion	Ratio	Lower	Upper
56	100		
55	83.6	53.1	93.1

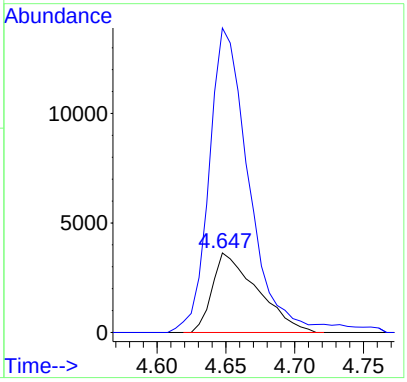


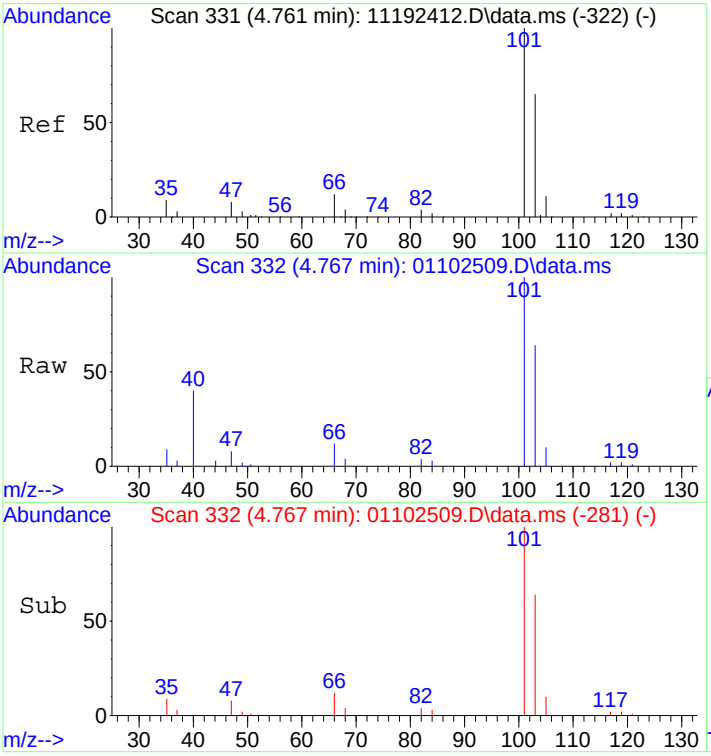


#13
Acetone
Concen: 0.82 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 58 Resp: 8252

Ion	Ratio	Lower	Upper
58	100		
43	344.8	312.5	372.5

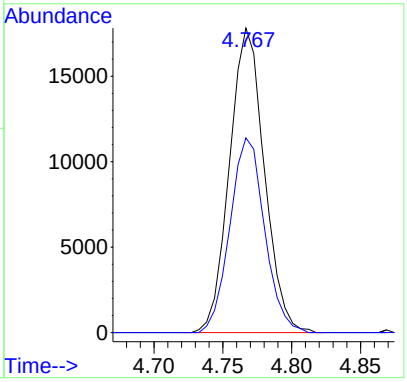


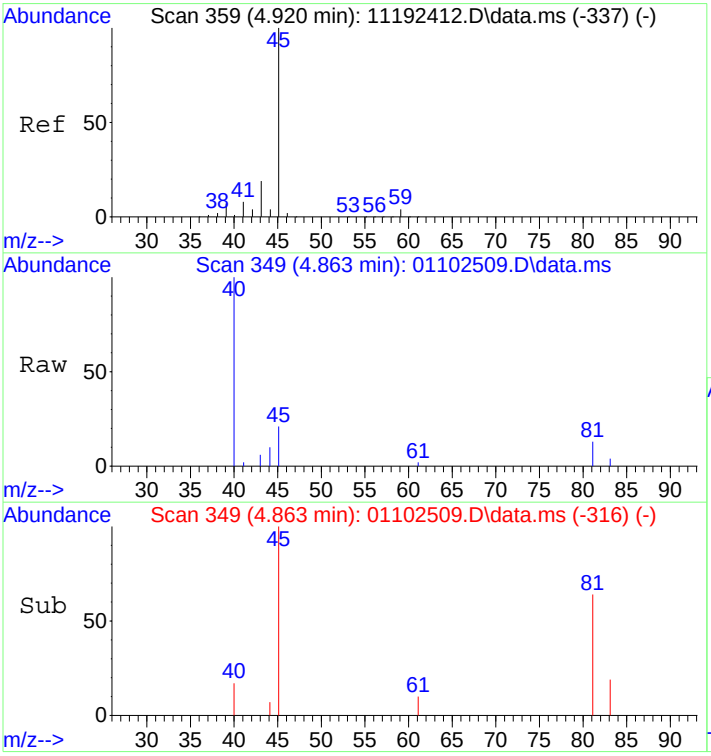


#14
Trichlorofluoromethane
Concen: 1.15 ng
RT: 4.77 min Scan# 332
Delta R.T. 0.039 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion:101 Resp: 31346

Ion	Ratio	Lower	Upper
101	100		
103	63.6	44.8	84.8

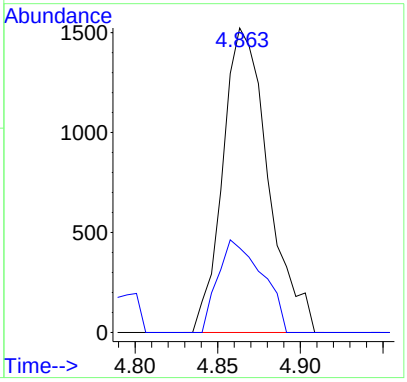


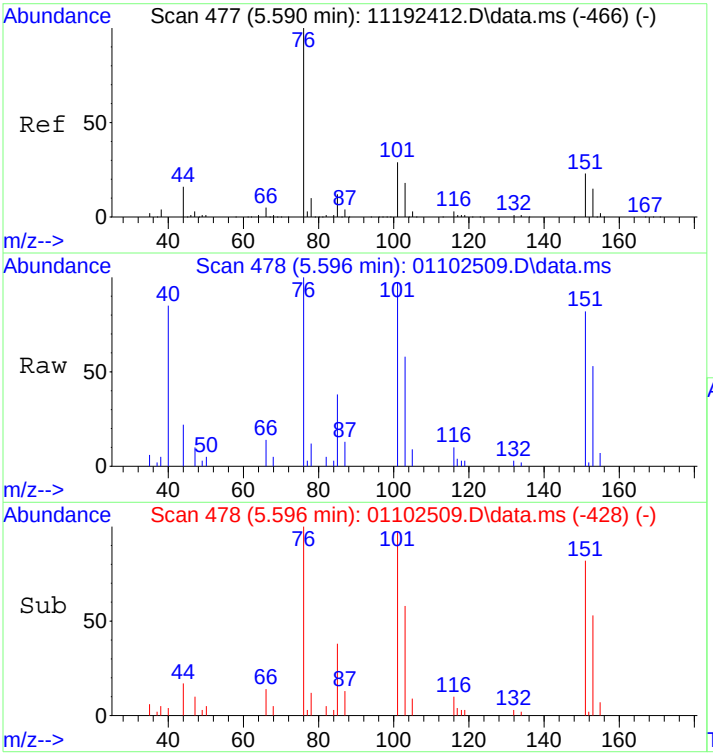


#15
2-Propanol (Isopropanol)
Concen: 0.08 ng
RT: 4.86 min Scan# 349
Delta R.T. -0.061 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 45 Resp: 2920

Ion	Ratio	Lower	Upper
45	100		
43	29.7	0.2	40.2

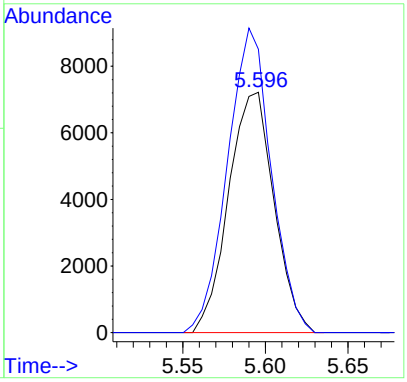


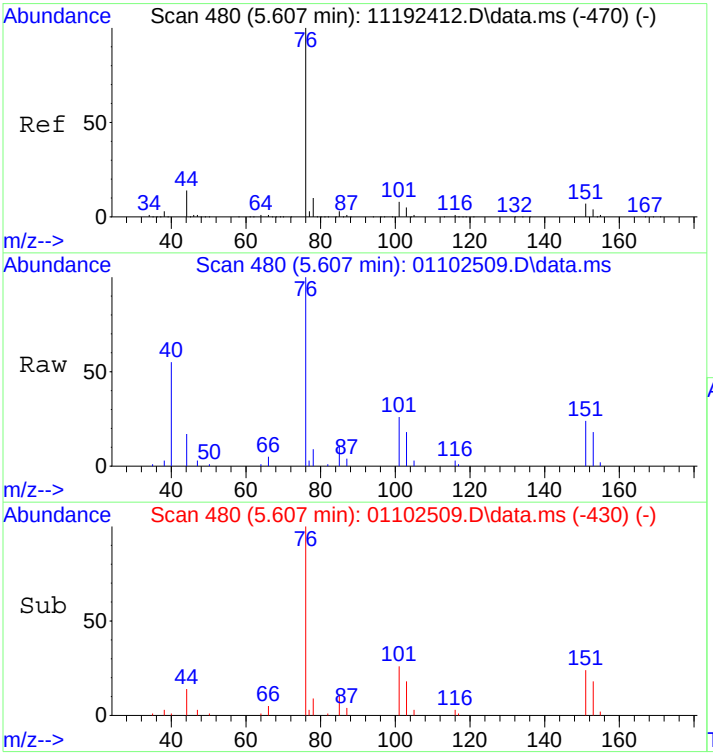


#21
Trichlorotrifluoroethane
Concen: 1.12 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.035 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion:151 Resp: 13842

Ion	Ratio	Lower	Upper
151	100		
101	121.9	105.0	145.0

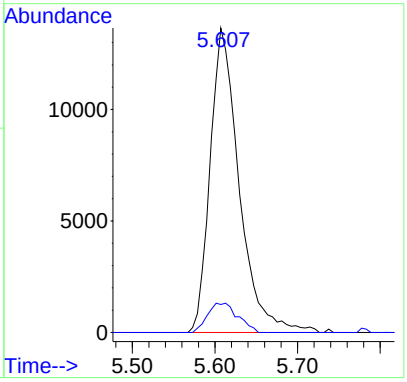


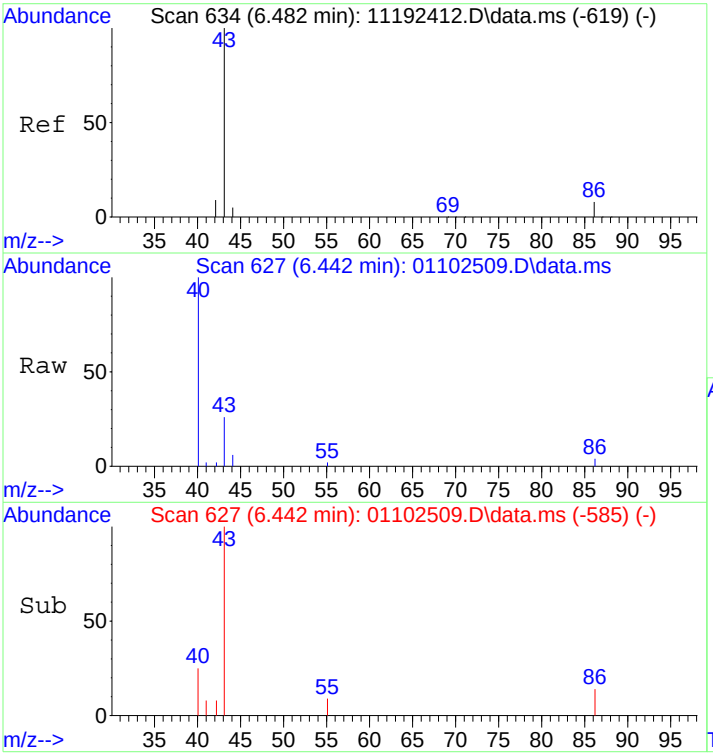


#22
Carbon Disulfide
Concen: 0.73 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.036 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 76 Resp: 33315

Ion	Ratio	Lower	Upper
76	100		
78	10.0	0.0	29.6

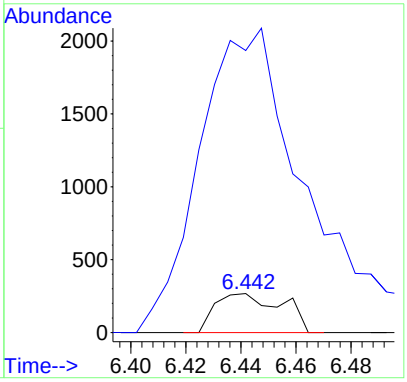


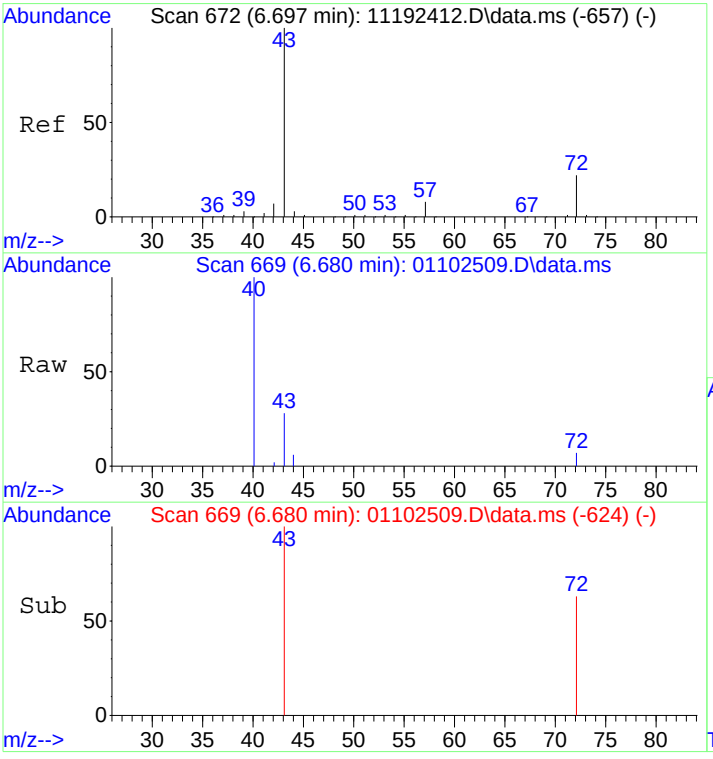


#26
Vinyl Acetate
Concen: 0.19 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 86 Resp: 451

Ion	Ratio	Lower	Upper
86	100		
43	1310.2	1331.6	1371.6#

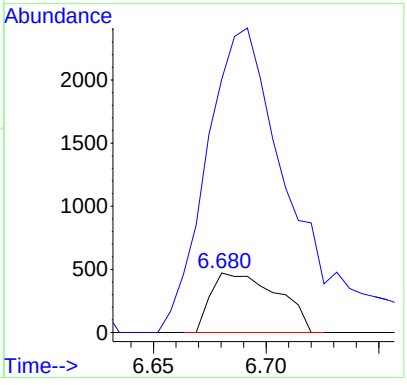


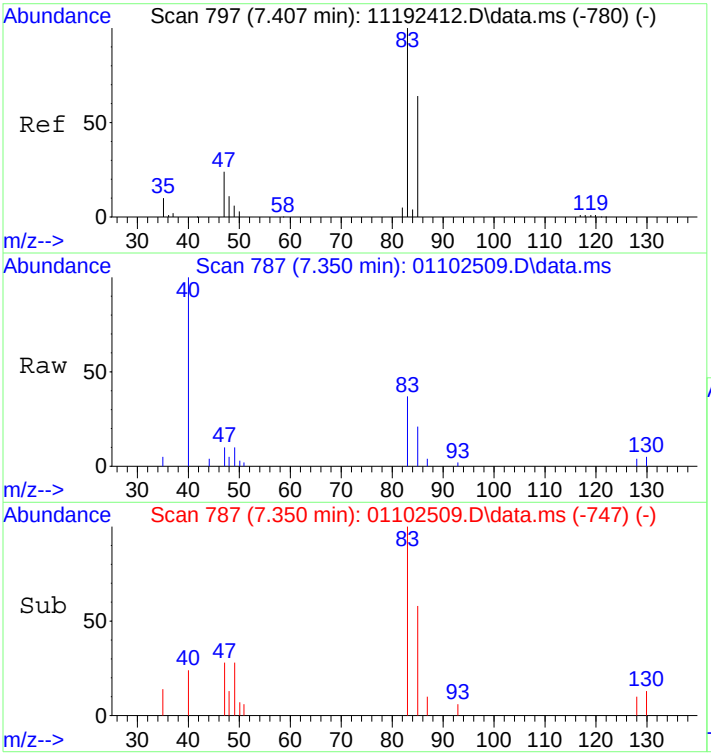


#27
2-Butanone (MEK)
Concen: 0.12 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 72 Resp: 969

Ion	Ratio	Lower	Upper
72	100		
43	665.0	439.8	479.8#

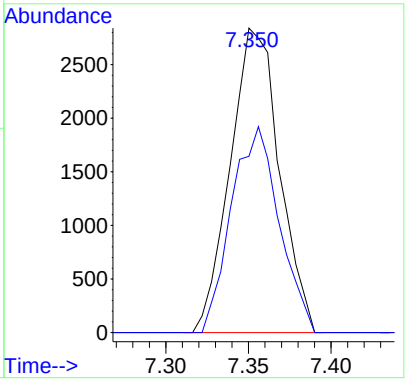


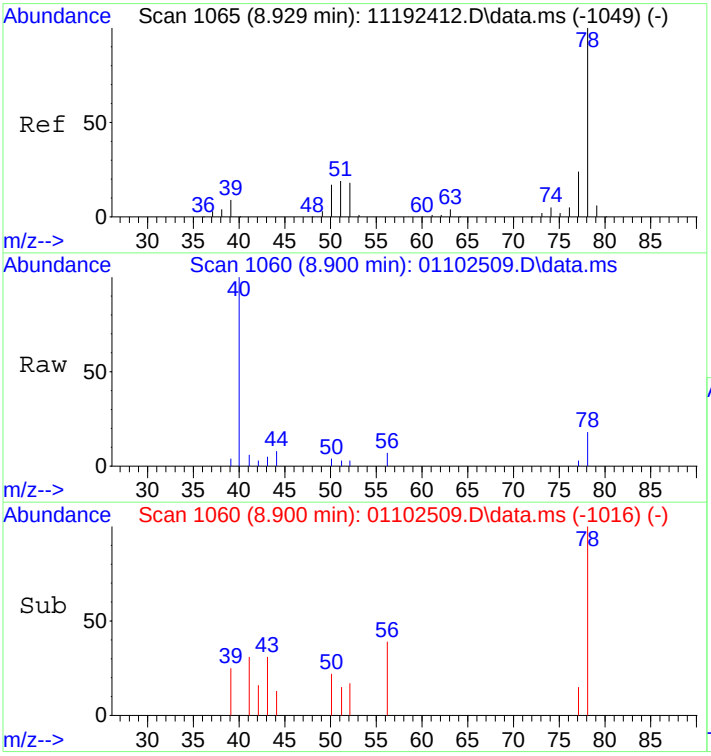


#32
Chloroform
Concen: 0.24 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 83 Resp: 5895

Ion	Ratio	Lower	Upper
83	100		
85	65.6	45.1	85.1

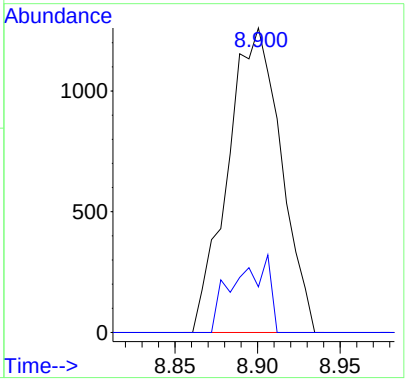


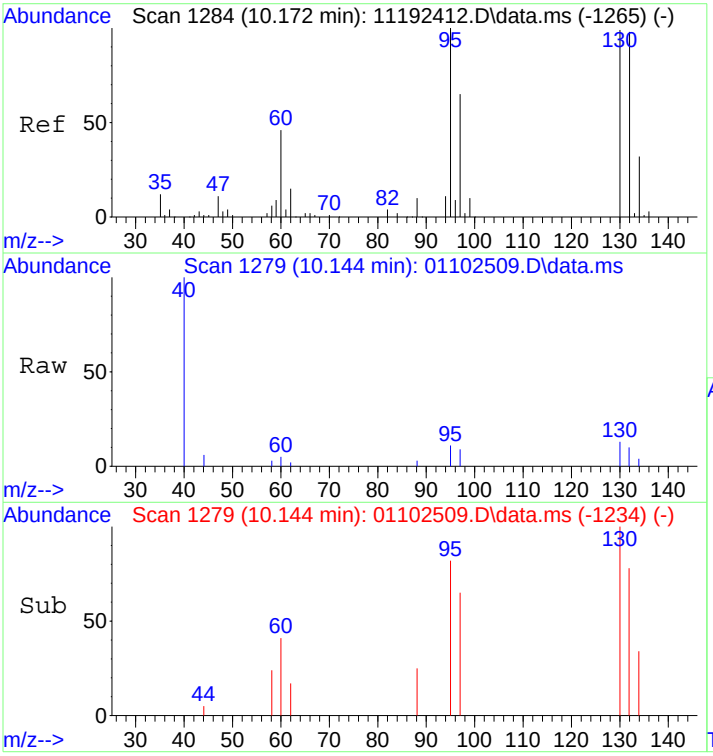


#41
Benzene
Concen: 0.05 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion: 78 Resp: 2827

Ion	Ratio	Lower	Upper
78	100		
77	16.8	3.7	43.7

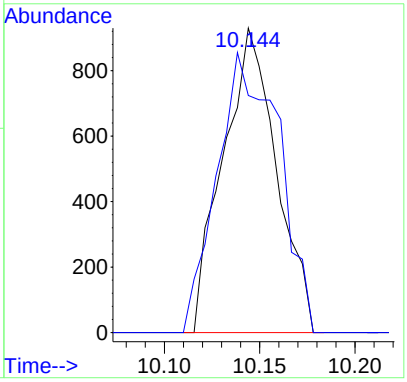


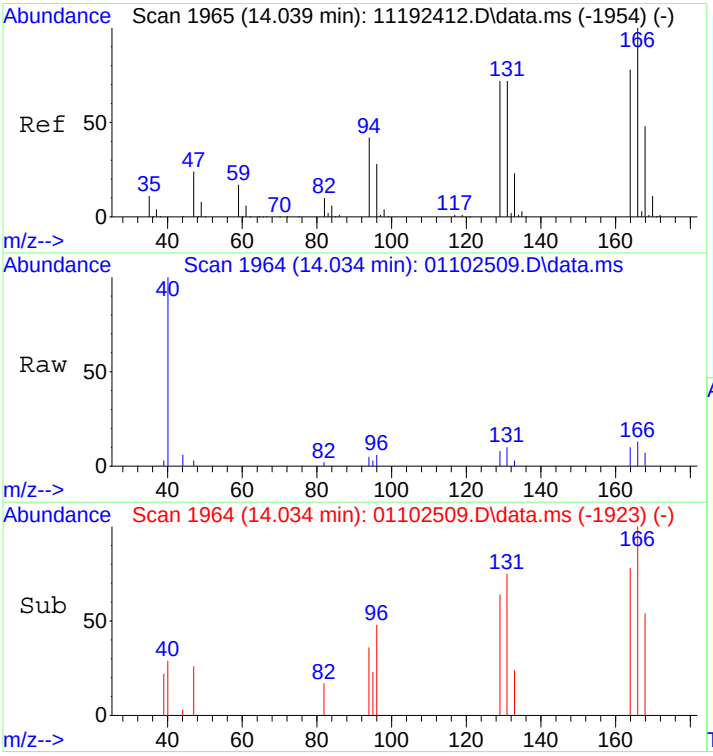


#47
Trichloroethene
Concen: 0.12 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion:130 Resp: 1810

Ion	Ratio	Lower	Upper
130	100		
132	106.2	79.3	119.3

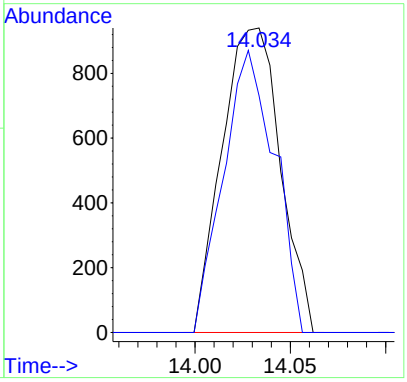


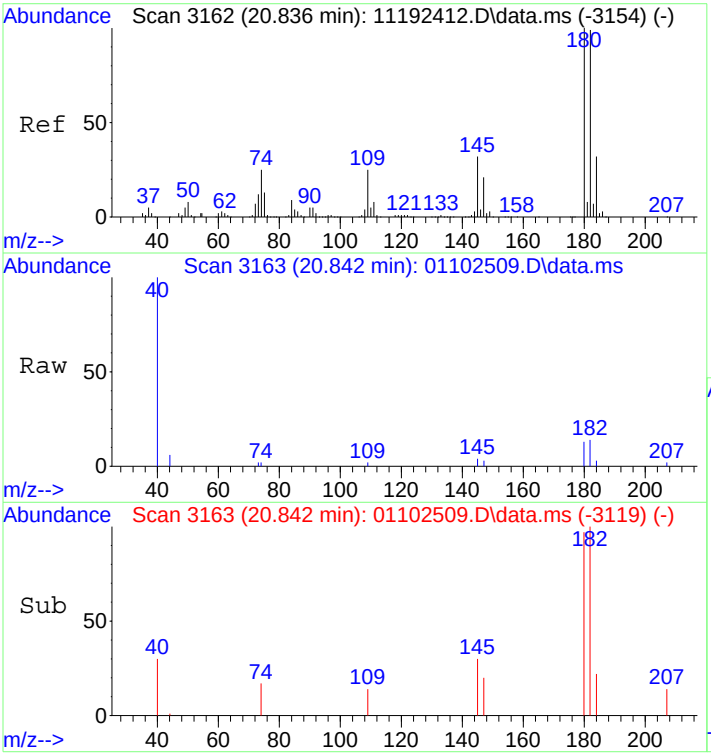


#64
Tetrachloroethene
Concen: 0.13 ng
RT: 14.03 min Scan# 1964
Delta R.T. -0.017 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion:166 Resp: 2005

Ion	Ratio	Lower	Upper
166	100		
164	81.1	58.7	98.7

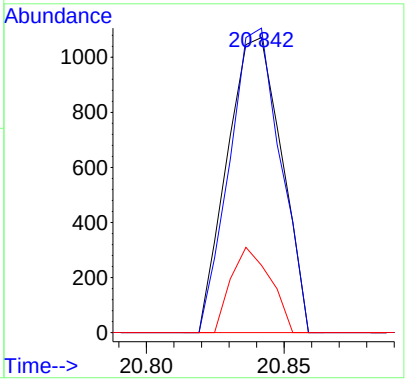




#94
1,2,4-Trichlorobenzene
Concen: 0.07 ng
RT: 20.84 min Scan# 3163
Delta R.T. -0.000 min
Lab File: 01102509.D
Acq: 10 Jan 2025 21:34

Tgt Ion:180 Resp: 1469

Ion	Ratio	Lower	Upper
180	100		
182	96.6	78.6	117.8
184	21.1	25.1	37.7#



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 17:50:21 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

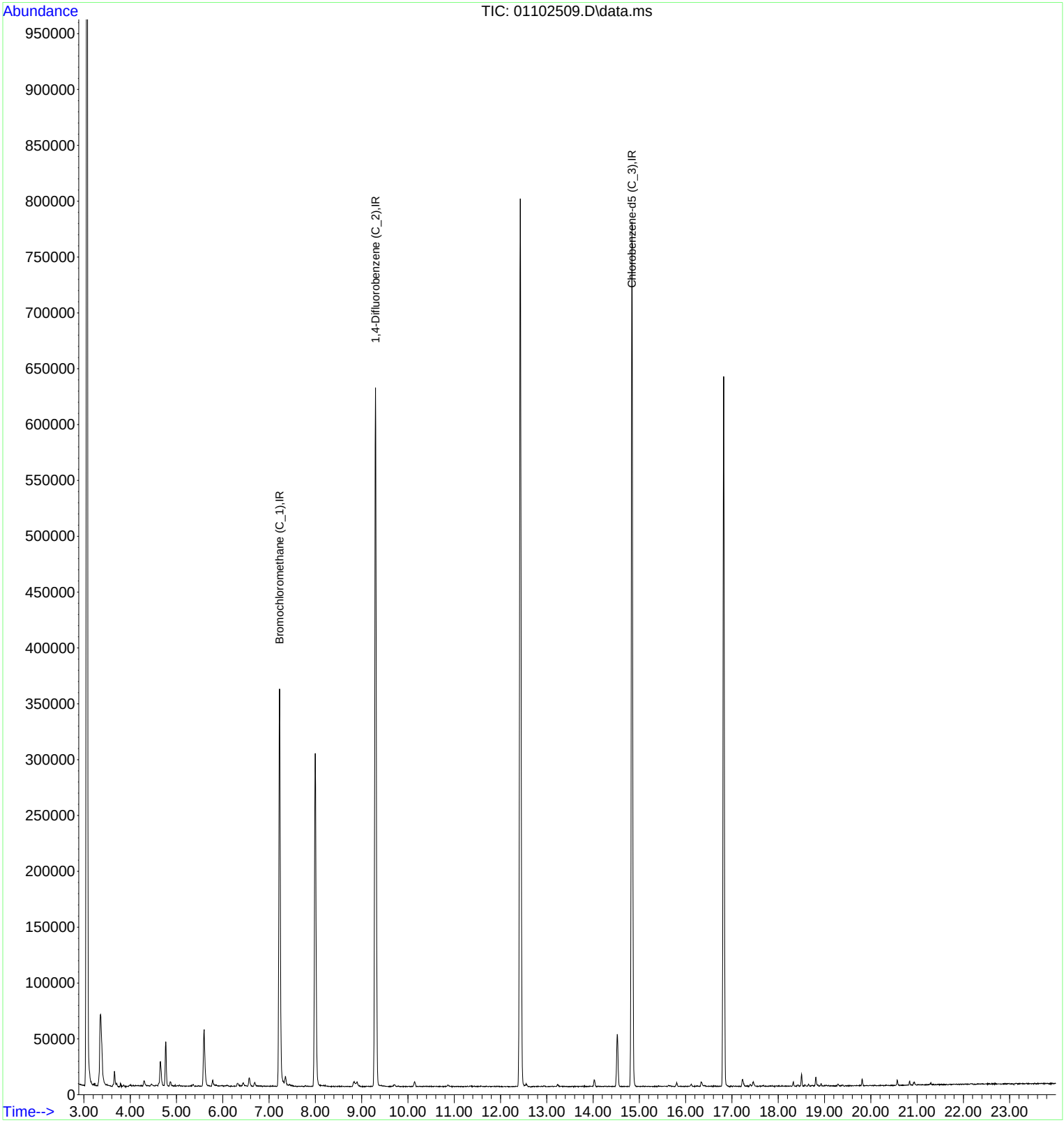
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	151434	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	642059	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	120446	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	52	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	640	N.D.		
4) 1,1-Difluoroethane	3.27	65	61	N.D.		
5) Chlorodifluoromethane ...	3.31	67	53	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.52	65	191	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.36	43	59	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.79	174	58	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	793	N.D.		
27) 4-Chlorotoluene	17.68	91	793	N.D.		
28) Indane	19.12	117	54	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 17:50:21 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102509.D\data.ms

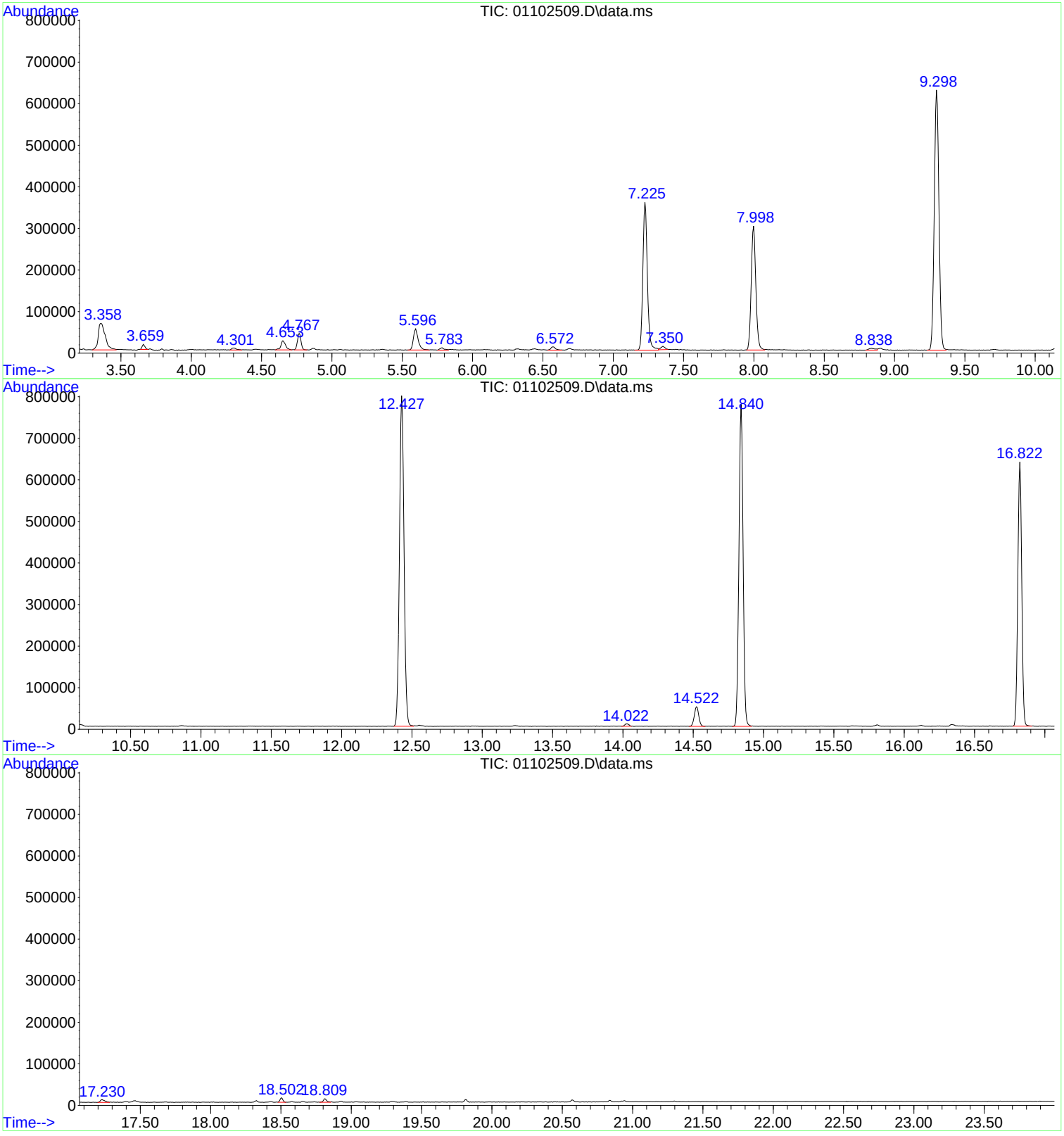
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.358	73	84	103	rBV3	63915	220292	12.26%	2.681%
2	3.659	133	137	143	rVB	12033	16262	0.91%	0.198%
3	4.301	245	250	260	rBV3	4790	11257	0.63%	0.137%
4	4.653	302	312	323	rBV	21844	51249	2.85%	0.624%
5	4.767	326	332	342	rVB	39677	69537	3.87%	0.846%
6	5.596	468	478	495	rBV2	50956	120722	6.72%	1.469%
7	5.783	505	511	519	rBV2	5741	12221	0.68%	0.149%
8	6.572	643	650	661	rBV3	7754	17821	0.99%	0.217%
9	7.225	752	765	782	rBV	356066	794481	44.22%	9.670%
10	7.350	782	787	794	rVB2	7783	16602	0.92%	0.202%
11	7.998	892	901	915	rBV	298059	680139	37.86%	8.278%
12	8.838	1041	1049	1056	rBV5	4574	14434	0.80%	0.176%
13	9.298	1118	1130	1142	rBV	625697	1428526	79.52%	17.387%
14	12.427	1671	1681	1696	rBV	794951	1796512	100.00%	21.866%
15	14.022	1956	1962	1969	rBV3	5868	11483	0.64%	0.140%
16	14.522	2041	2050	2061	rBV	46978	103724	5.77%	1.262%
17	14.840	2095	2106	2119	rBV	774599	1590322	88.52%	19.357%
18	16.822	2446	2455	2470	rBV	635408	1215256	67.65%	14.791%
19	17.230	2521	2527	2536	rBV4	6557	15396	0.86%	0.187%
20	18.502	2747	2751	2757	rVB4	10955	15359	0.85%	0.187%
21	18.809	2799	2805	2813	rBV2	8313	14314	0.80%	0.174%

Sum of corrected areas: 8215909

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:34
Operator : CG
Sample : P2405139-036 (400mL)pf2
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102509.D
Acq On : 10 Jan 2025 21:344
Operator : CGG
Sample : P2405139-036 (400mL)pf22
Misc : S37-123124011
ALS Vial : 5 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

MA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

						--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 14:12:06 2025 1/12/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	145845	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	623859	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	116888	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	257303	12.949 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.60%			
57) Toluene-d8 (SS2)	12.43	98	652606	12.586 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%			
73) Bromofluorobenzene (SS3)	16.82	174	227624	12.721 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.33	85	6194	0.217 ng	#	92
4) Chloromethane	3.52	50	1813	0.086 ng		79
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	216	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	4.03	94	170	N.D.		
9) Chloroethane	0.00	64	0	N.D. d		
10) Ethanol	4.30	45	11657	1.081 ng		98
11) Acetonitrile	0.00	41	0	N.D. d		
12) Acrolein	4.55	56	1146	0.124 ng		90
13) Acetone	4.65	58	24677	2.513 ng		99
14) Trichlorofluoromethane	4.75	101	614727	22.992 ng		100
15) 2-Propanol (Isopropanol)	4.94	45	237	N.D.		
16) Acrylonitrile	5.02	53	52	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d		
19) Methylene Chloride	5.36	84	6928	0.501 ng		95
20) 3-Chloro-1-propene (Al...	5.34	41	737	N.D.		
21) Trichlorotrifluoroethane	5.58	151	565680	46.893 ng		96
22) Carbon Disulfide	5.60	76	118451	2.666 ng		63
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	6.32	73	537	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.68	72	3543	0.449 ng		95
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.30	61	115	N.D.		
31) n-Hexane	7.31	57	367	N.D.		
32) Chloroform	7.36	83	7097	0.299 ng		98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	4381	No Calib	#	
41) Benzene	8.89	78	31789	0.635 ng		99
42) Carbon Tetrachloride	9.07	117	478	N.D.		
43) Cyclohexane	9.28	84	527	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.14	130	410	N.D.		
48) 1,4-Dioxane	10.12	88	1078	0.124 ng		99

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 14:12:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

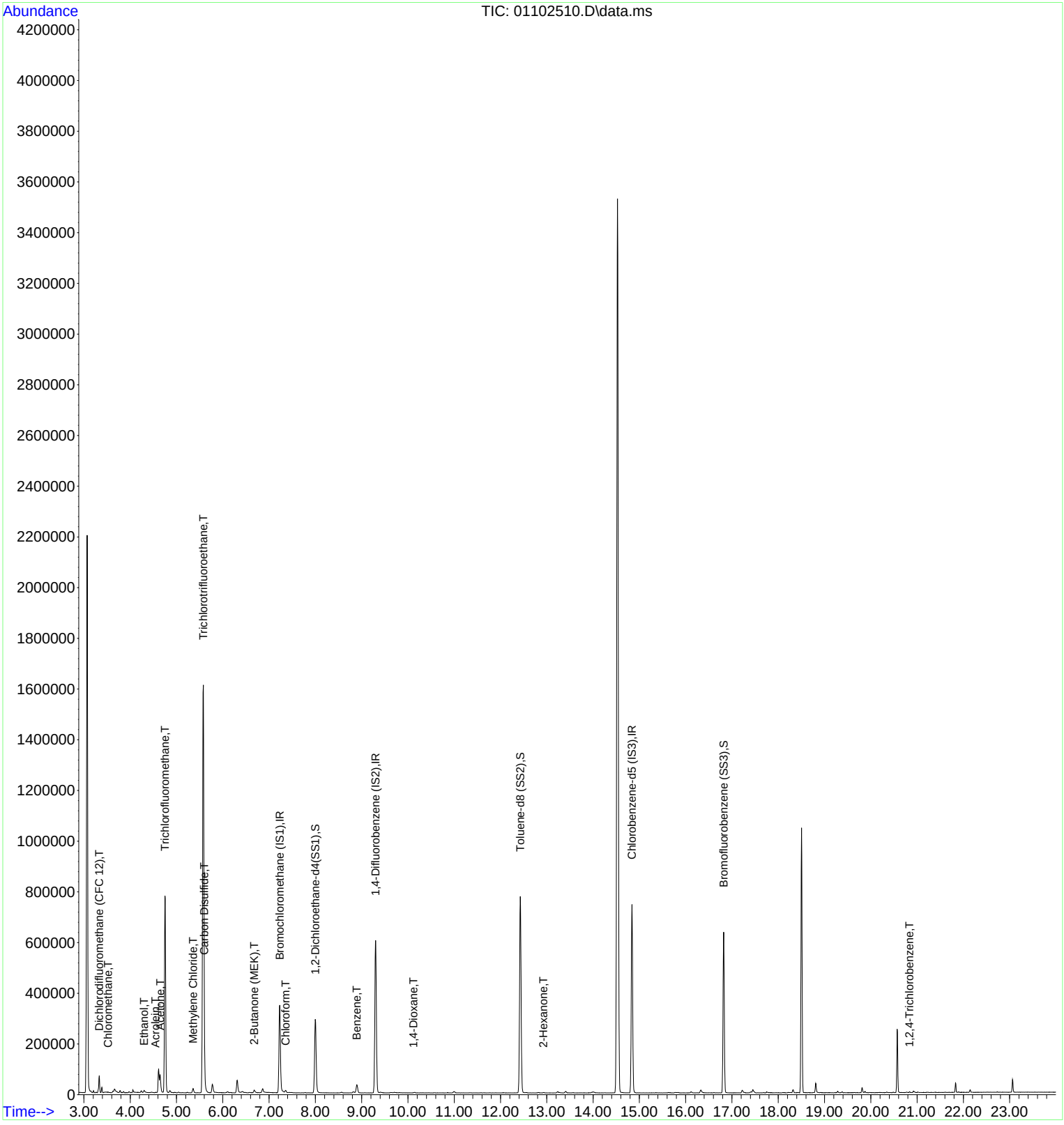
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	115	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	1823	N.D.		
59) 2-Hexanone	12.93	43	1962	0.081 ng	#	70
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.81	43	401	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	14.89	112	182	N.D.		
66) Ethylbenzene	15.41	91	170	N.D.		
67) m- & p-Xylenes	15.63	91	859	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.11	104	571	N.D.		
70) o-Xylene	16.24	91	293	N.D.		
71) n-Nonane	16.61	43	644	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.04	105	221	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.68	91	686	N.D.		
77) 3-Ethyltoluene	17.04	105	221	No Calib	#	
78) 4-Ethyltoluene	17.86	105	262	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	278	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.04	105	221	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.43	105	525	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.55	91	472	N.D.		
85) 1,3-Dichlorobenzene	18.58	146	388	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	455	N.D.		
87) sec-Butylbenzene	18.74	105	308	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	951	N.D.		
89) 1,2,3-Trimethylbenzene	17.04	105	221	No Calib	#	
90) 1,2-Dichlorobenzene	19.03	146	397	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	1209	0.059 ng		93
95) Naphthalene	20.94	128	2394	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.30	225	306	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.43	119	213	N.D.		
100) n-Butylbenzene	19.39	91	854	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 14:12:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

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Acq On : 10 Jan 2025 22:06
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MOA 1/12/25

Quant Time: Jan 12 14:12:06 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	145845	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	623859	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	116888	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	257303	12.949	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.60%				
57) Toluene-d8 (SS2)	12.43	98	652606	12.586	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%				
73) Bromofluorobenzene (SS3)	16.82	174	227624	12.721	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.33	85	6194	0.217	ng	#	92
4) Chloromethane	3.52	50	1813	0.086	ng		79
10) Ethanol	4.30	45	11657	1.081	ng		98
12) Acrolein	4.55	56	1146	0.124	ng		90
13) Acetone	4.65	58	24677	2.513	ng		99
14) Trichlorofluoromethane	4.75	101	614727	22.992	ng		100
19) Methylene Chloride	5.36	84	6928	0.501	ng		95
21) Trichlorotrifluoroethane	5.58	151	565680	46.893	ng		96
22) Carbon Disulfide	5.60	76	118451	2.666	ng		63
27) 2-Butanone (MEK)	6.68	72	3543	0.449	ng		95
32) Chloroform	7.36	83	7097	0.299	ng		98
41) Benzene	8.89	78	31789	0.635	ng		99
48) 1,4-Dioxane	10.12	88	1078	0.124	ng		99
59) 2-Hexanone	12.93	43	1962	0.081	ng	#	70
94) 1,2,4-Trichlorobenzene	20.84	180	1209	0.059	ng		93

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
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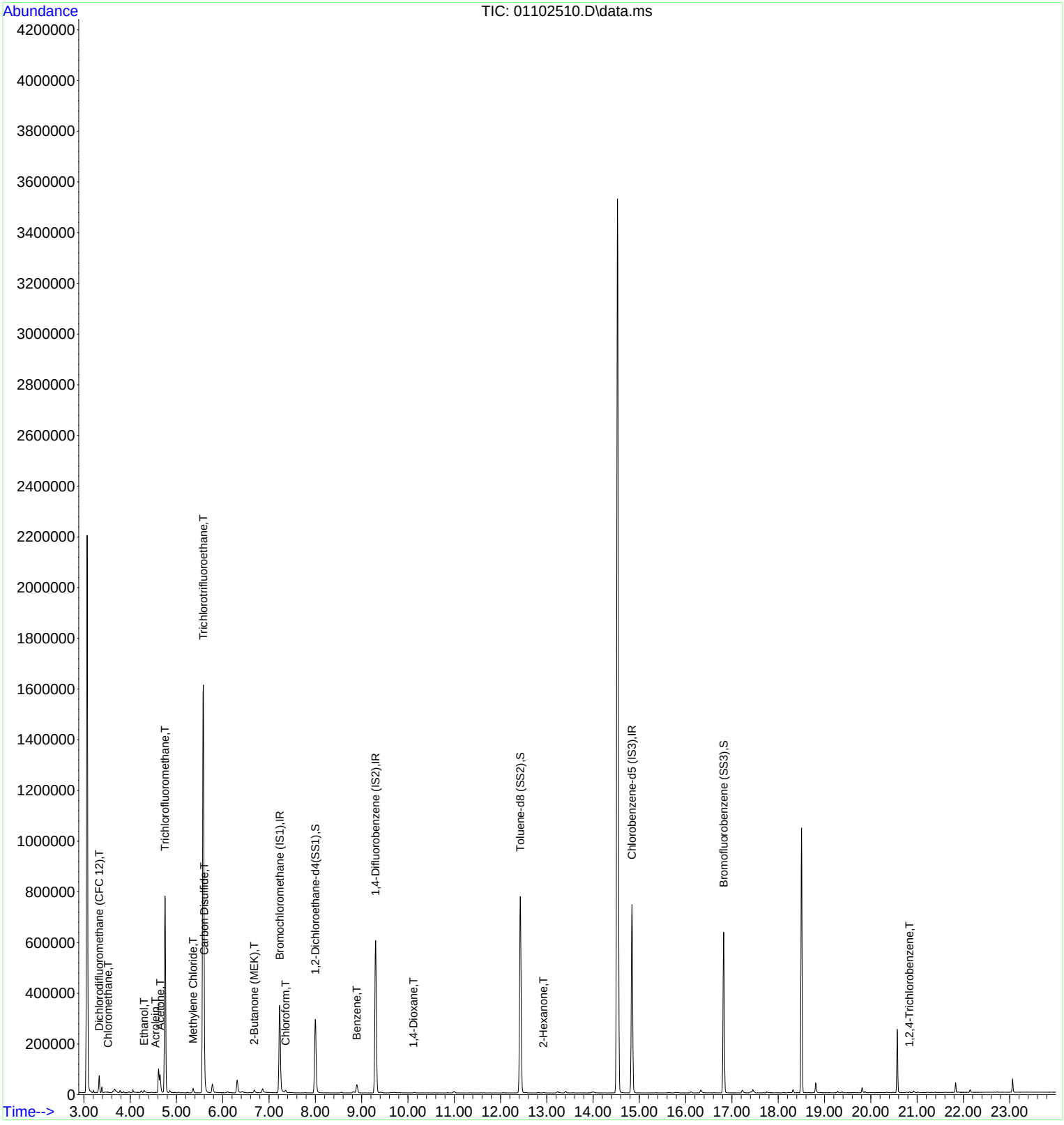
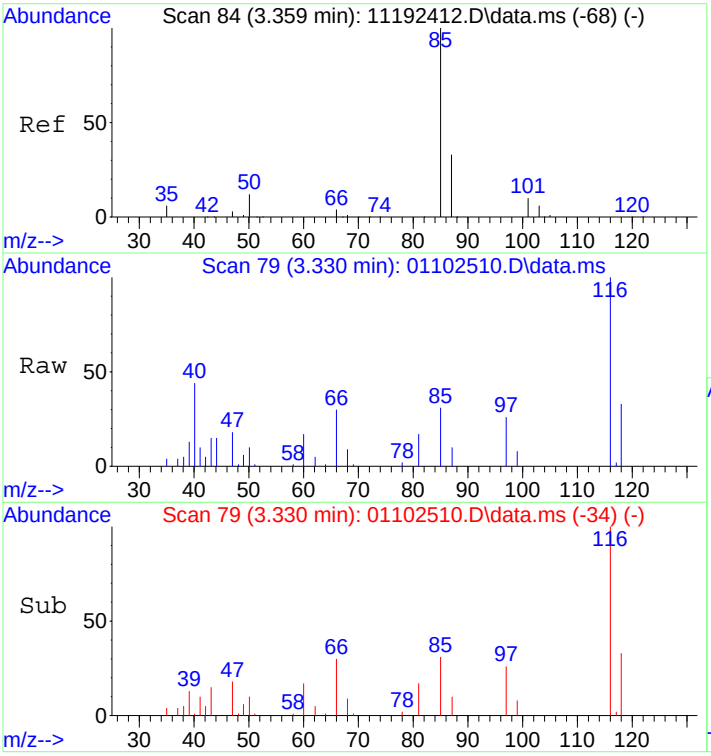
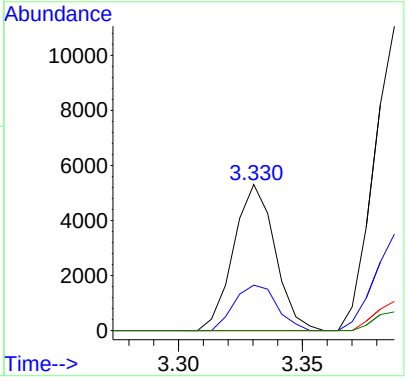


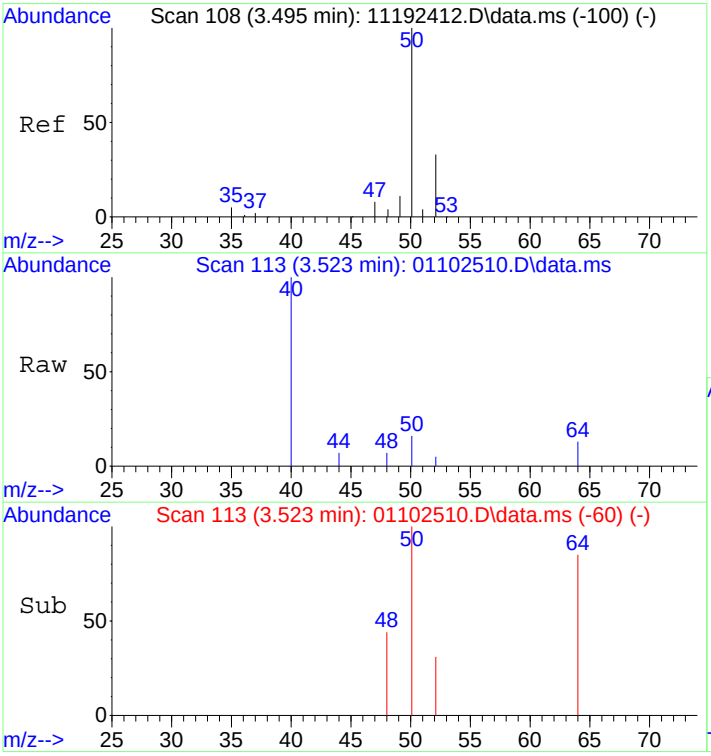


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.22 ng
RT: 3.33 min Scan# 79
Delta R.T. 0.003 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 85 Resp: 6194

Ion	Ratio	Lower	Upper
85	100		
87	32.0	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

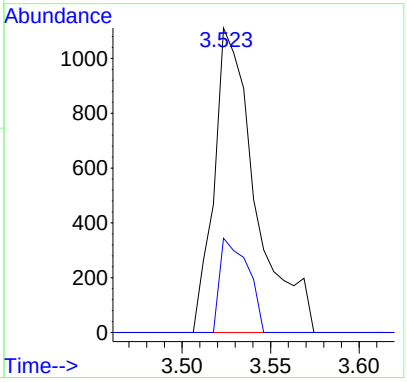


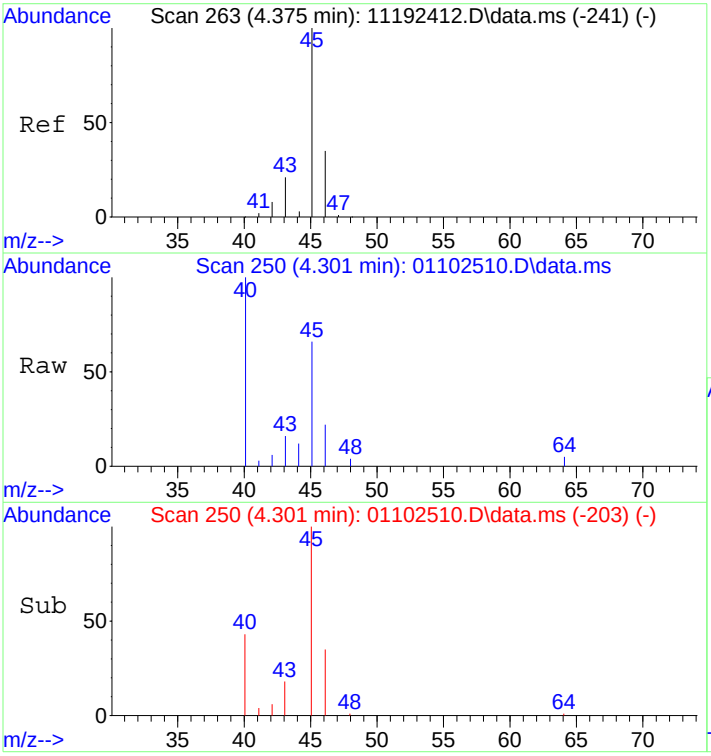


#4
Chloromethane
Concen: 0.09 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 50 Resp: 1813

Ion	Ratio	Lower	Upper
50	100		
52	20.9	13.0	53.0

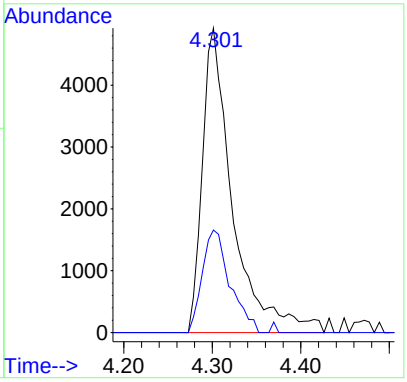


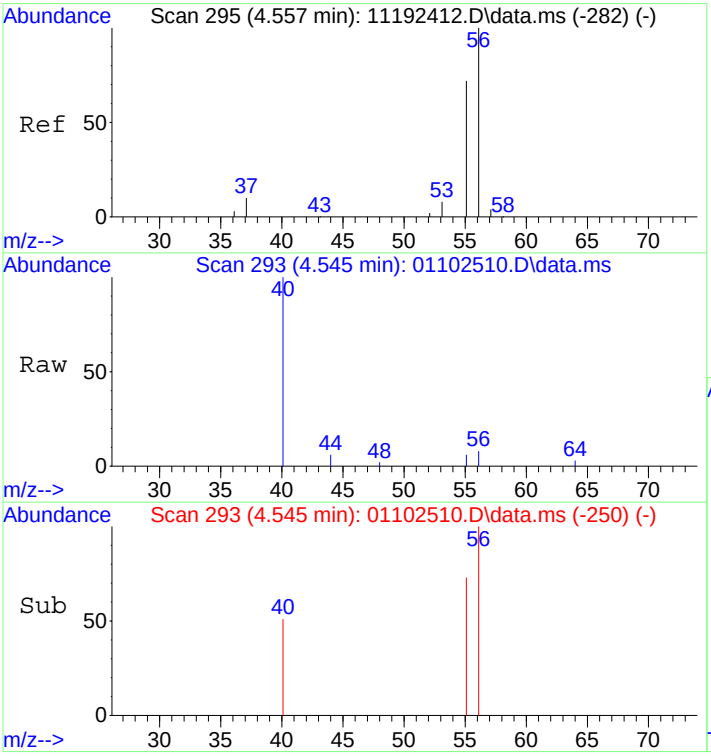


#10
Ethanol
Concen: 1.08 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 45 Resp: 11657

Ion	Ratio	Lower	Upper
45	100		
46	30.9	11.8	51.8

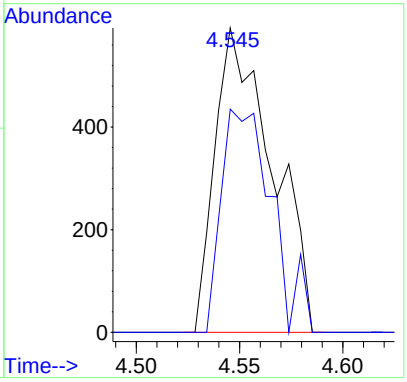


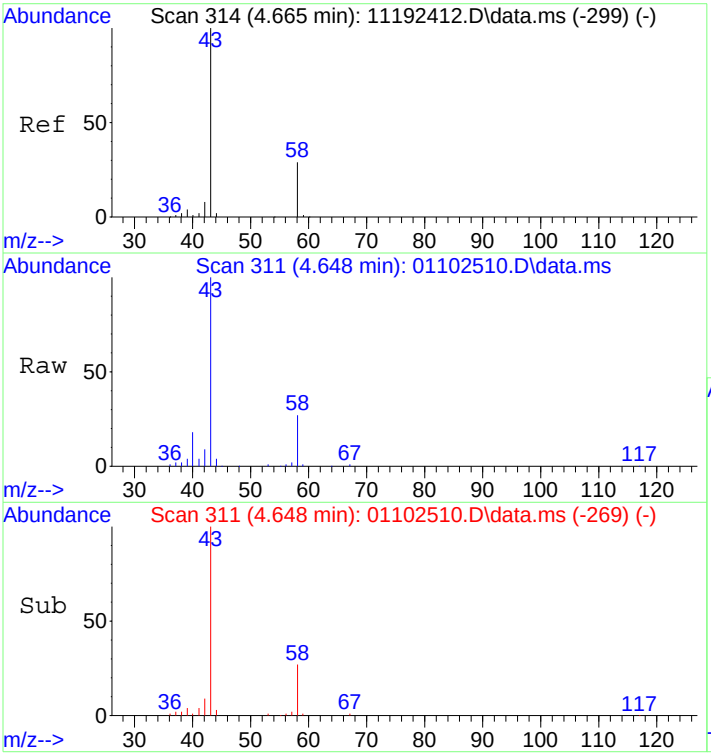


#12
Acrolein
Concen: 0.12 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 56 Resp: 1146

Ion	Ratio	Lower	Upper
56	100		
55	64.7	53.1	93.1

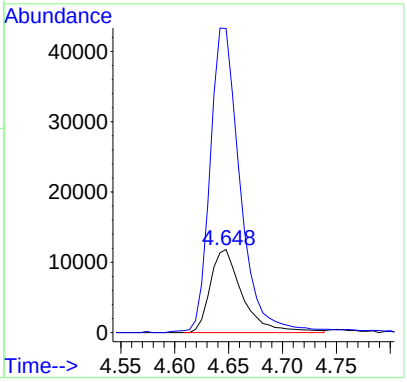


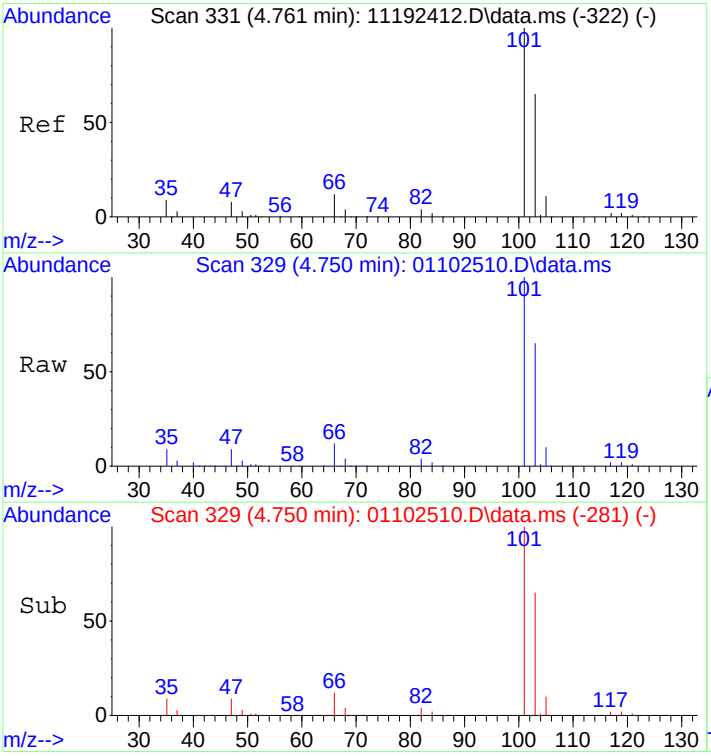


#13
Acetone
Concen: 2.51 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 58 Resp: 24677

Ion	Ratio	Lower	Upper
58	100		
43	345.6	312.5	372.5

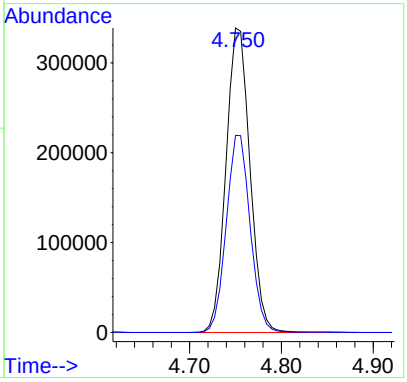


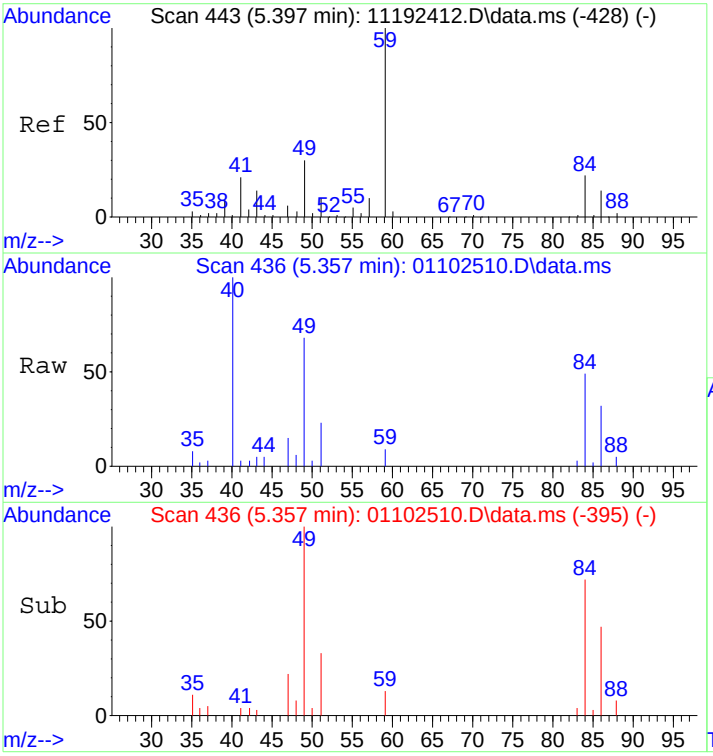


#14
Trichlorofluoromethane
Concen: 22.99 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion:101 Resp: 614727

Ion	Ratio	Lower	Upper
101	100		
103	64.6	44.8	84.8

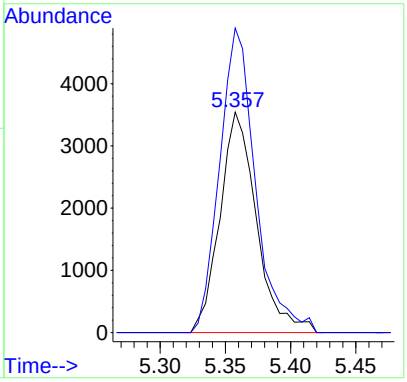


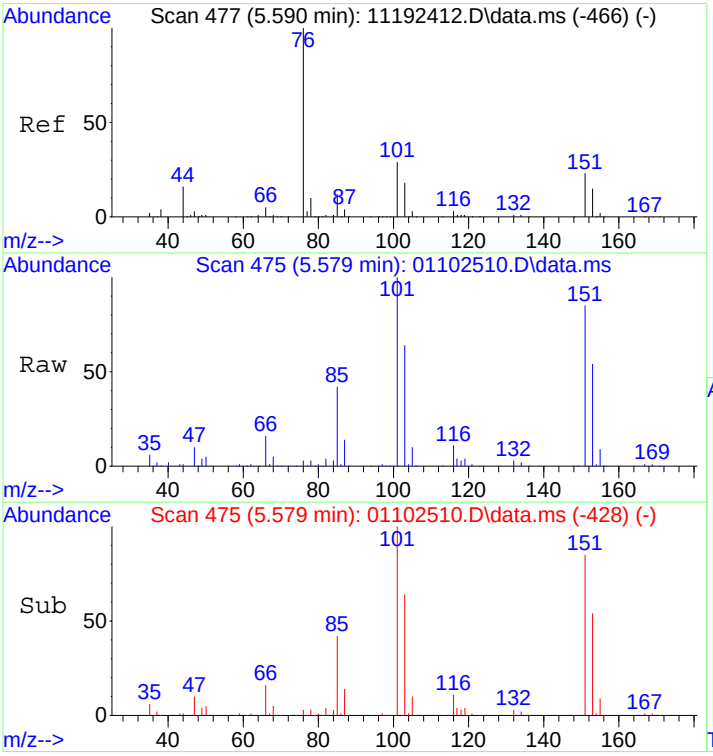


#19
Methylene Chloride
Concen: 0.50 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.017 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 84 Resp: 6928

Ion	Ratio	Lower	Upper
84	100		
49	135.3	116.0	166.0

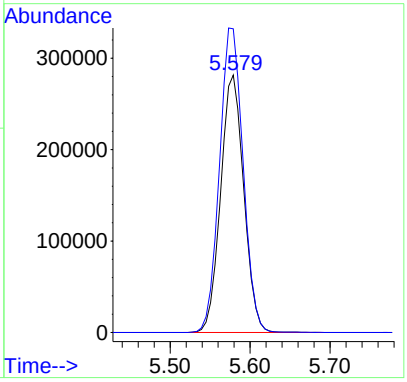


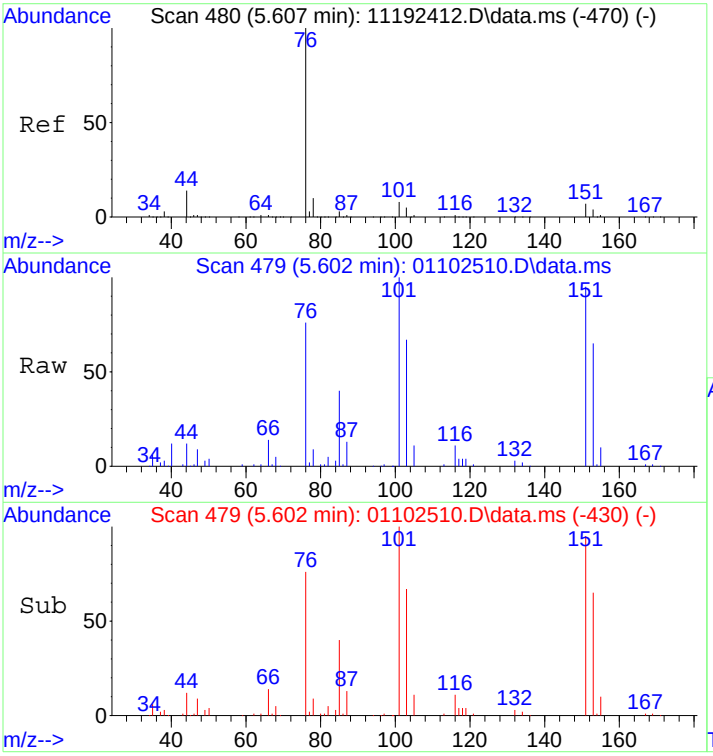


#21
Trichlorotrifluoroethane
Concen: 46.89 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion:151 Resp: 565680

Ion	Ratio	Lower	Upper
151	100		
101	120.6	105.0	145.0

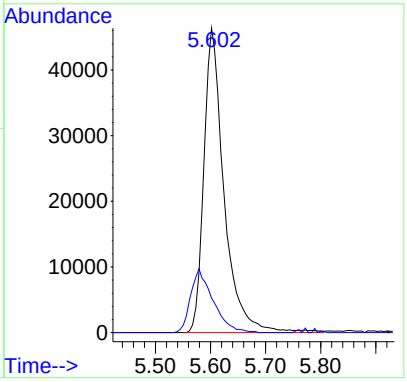


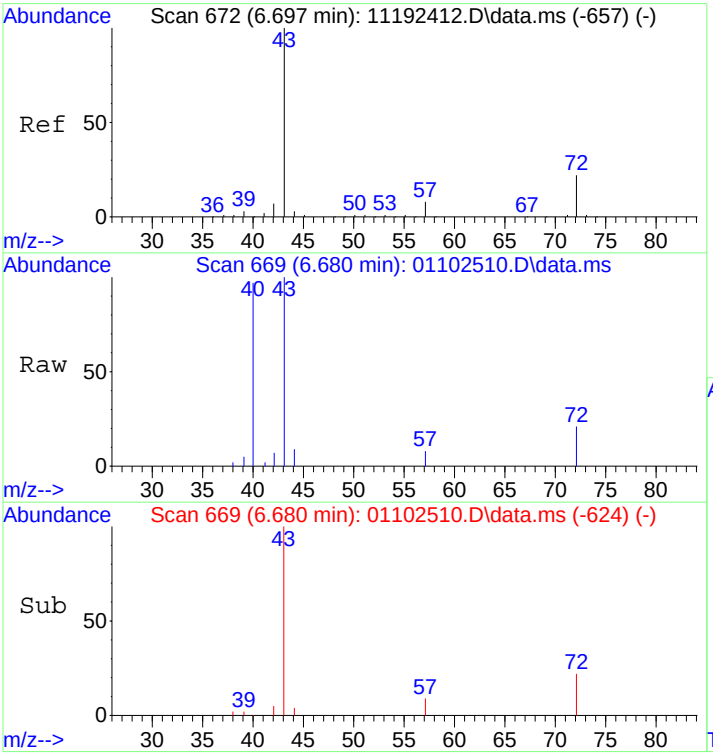


#22
Carbon Disulfide
Concen: 2.67 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 76 Resp: 118451

Ion	Ratio	Lower	Upper
76	100		
78	23.1	0.0	29.6

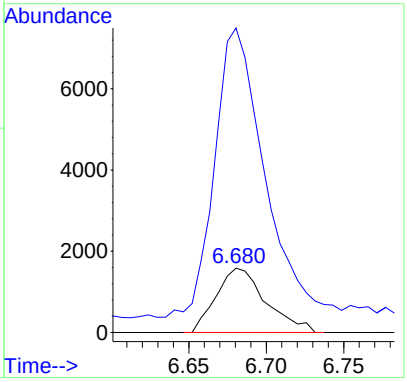


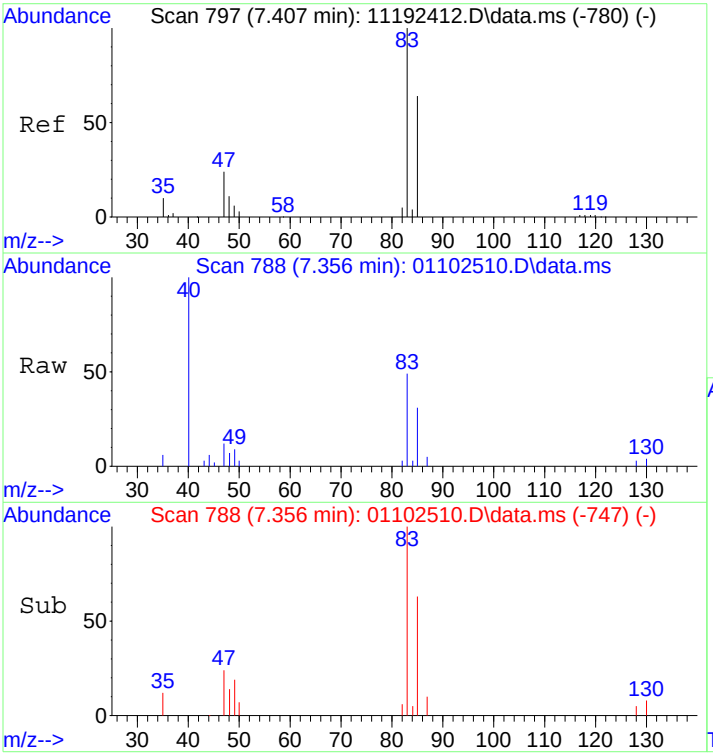


#27
2-Butanone (MEK)
Concen: 0.45 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 72 Resp: 3543

Ion	Ratio	Lower	Upper
72	100		
43	472.6	439.8	479.8

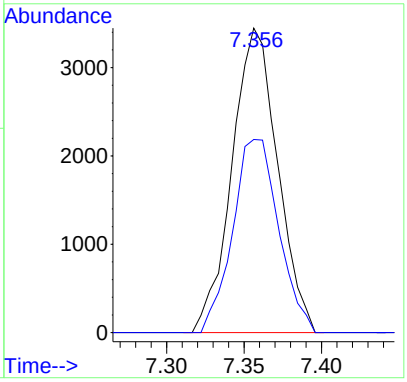


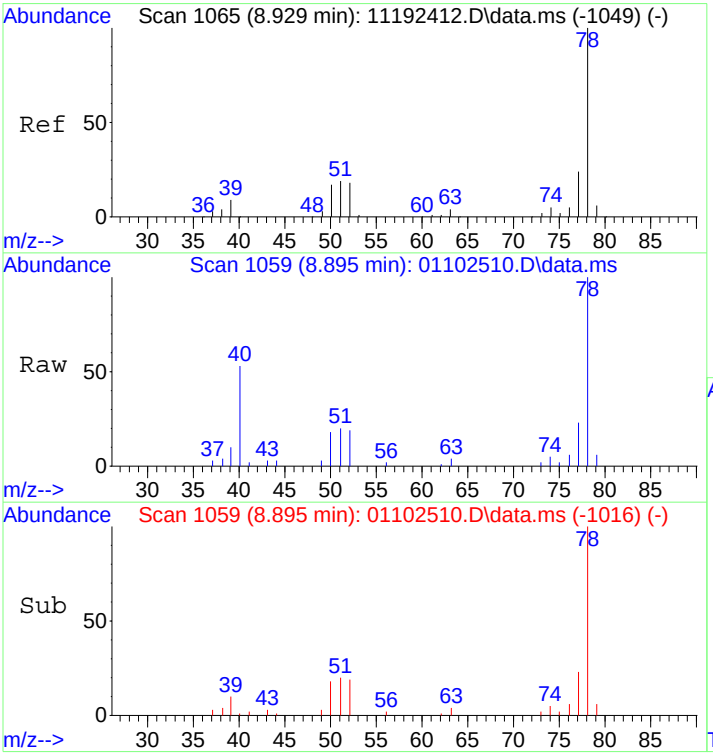


#32
Chloroform
Concen: 0.30 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 83 Resp: 7097

Ion	Ratio	Lower	Upper
83	100		
85	63.9	45.1	85.1

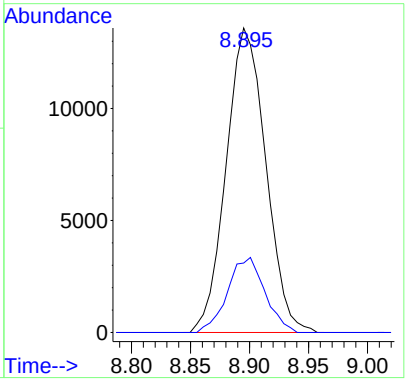


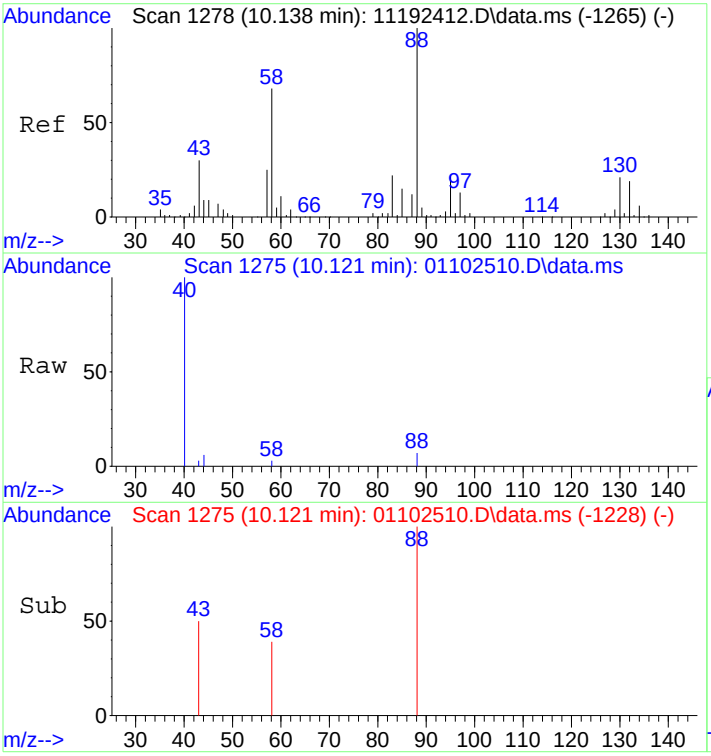


#41
Benzene
Concen: 0.63 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 78 Resp: 31789

Ion	Ratio	Lower	Upper
78	100		
77	23.2	3.7	43.7

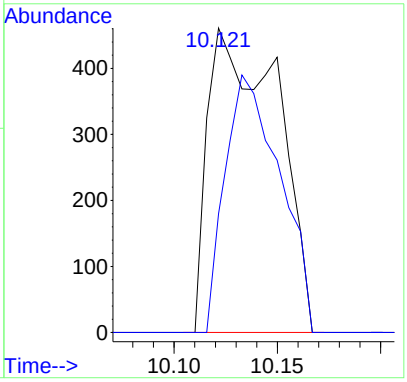


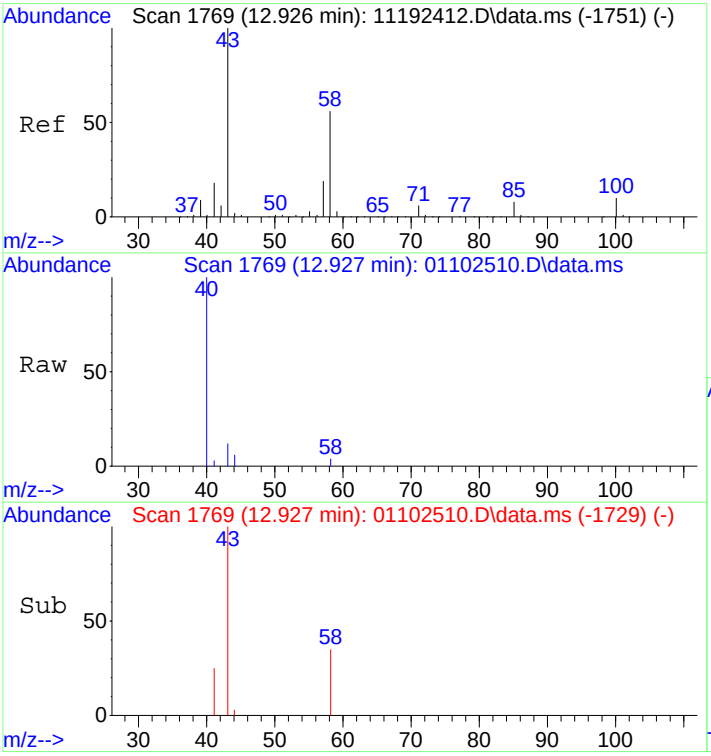


#48
1,4-Dioxane
Concen: 0.12 ng
RT: 10.12 min Scan# 1275
Delta R.T. 0.015 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 88 Resp: 1078

Ion	Ratio	Lower	Upper
88	100		
58	66.9	47.8	87.8

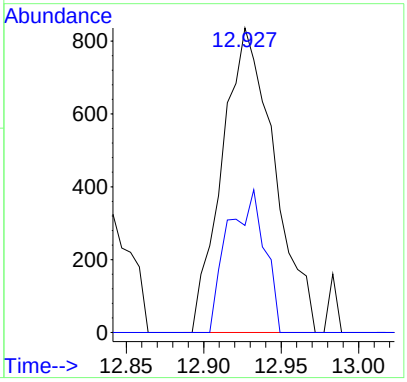


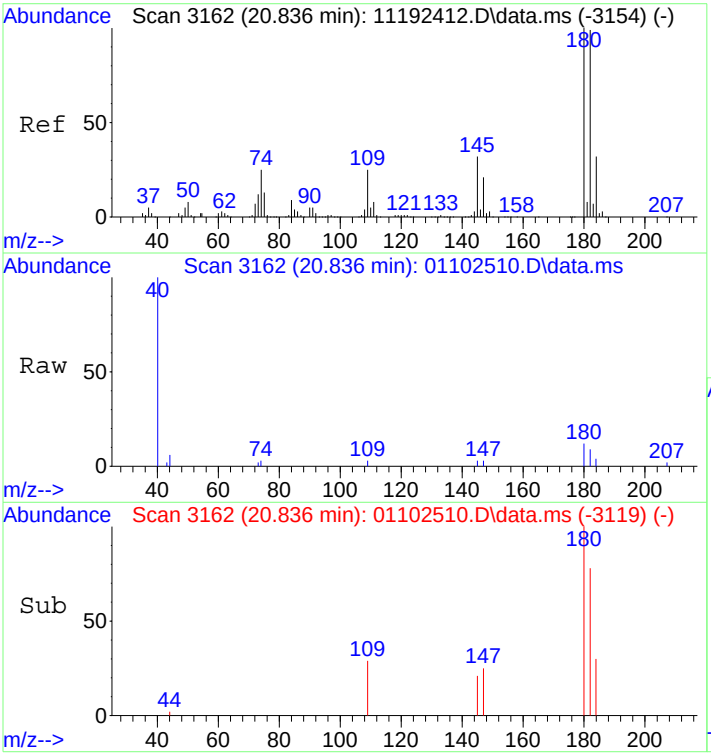


#59
2-Hexanone
Concen: 0.08 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion: 43 Resp: 1962

Ion	Ratio	Lower	Upper
43	100		
58	33.2	35.2	75.2#

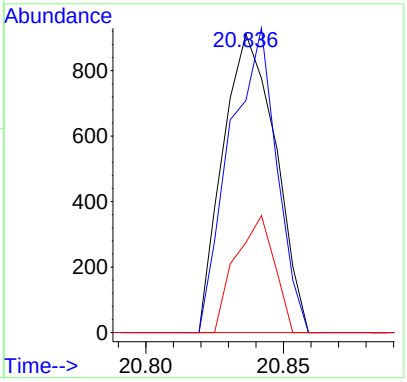




#94
1,2,4-Trichlorobenzene
Concen: 0.06 ng
RT: 20.84 min Scan# 3162
Delta R.T. -0.006 min
Lab File: 01102510.D
Acq: 10 Jan 2025 22:06

Tgt Ion:180 Resp: 1209

Ion	Ratio	Lower	Upper
180	100		
182	91.1	78.6	117.8
184	28.9	25.1	37.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 17:51:08 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

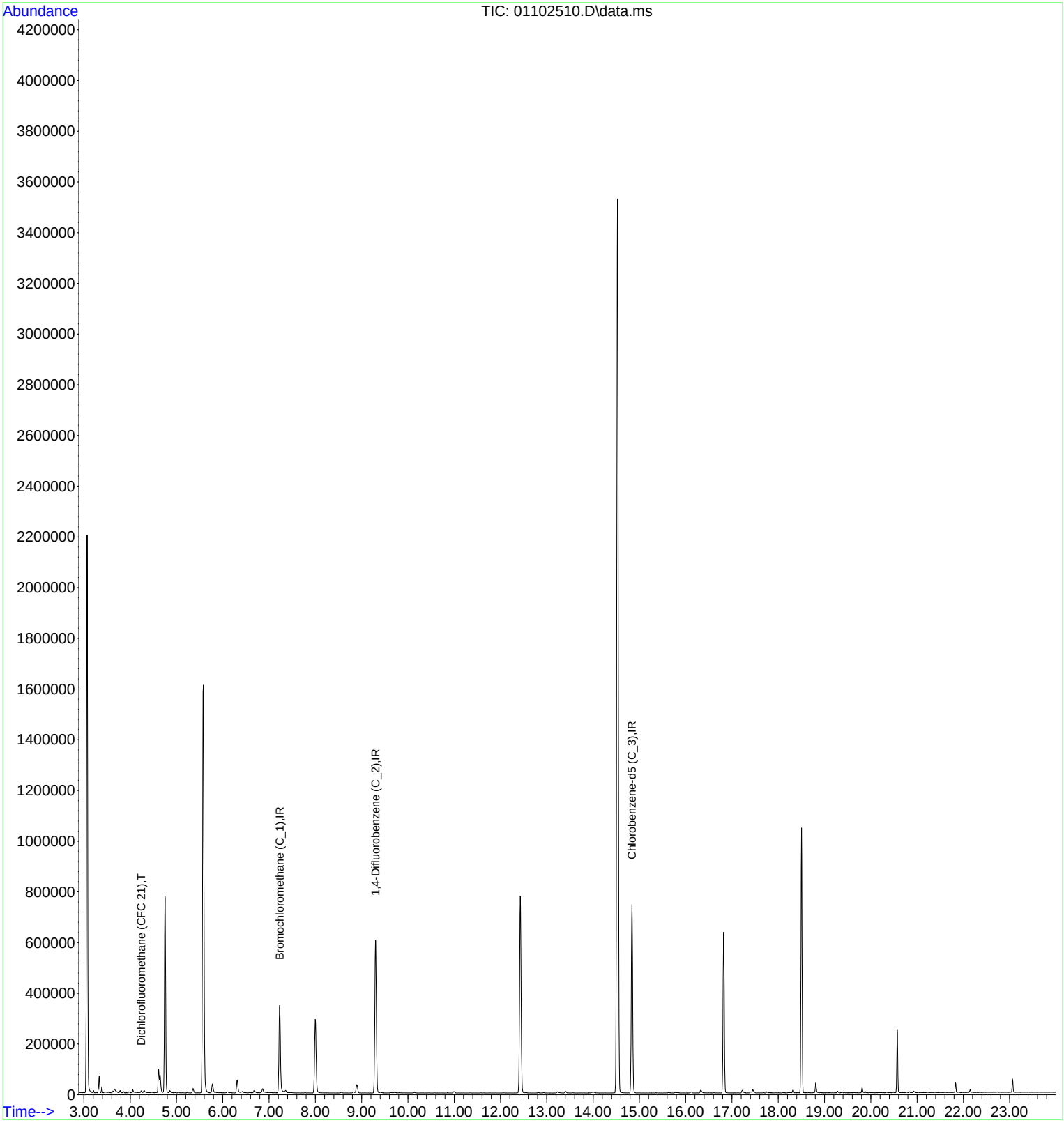
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	147225	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	626032	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	116888	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	135	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1265	N.D.		
4) 1,1-Difluoroethane	3.27	65	557	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	294	N.D.		
7) Dichlorofluoromethane ...	4.24	67	6848	0.230	ng	97
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	d	
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.35	43	696	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.80	174	52	N.D.		
20) Methyl Cyclohexane	11.57	55	393	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	16.32	75	336	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	686	N.D.		
27) 4-Chlorotoluene	17.68	91	686	N.D.		
28) Indane	19.12	117	52	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	20.57	119	953	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

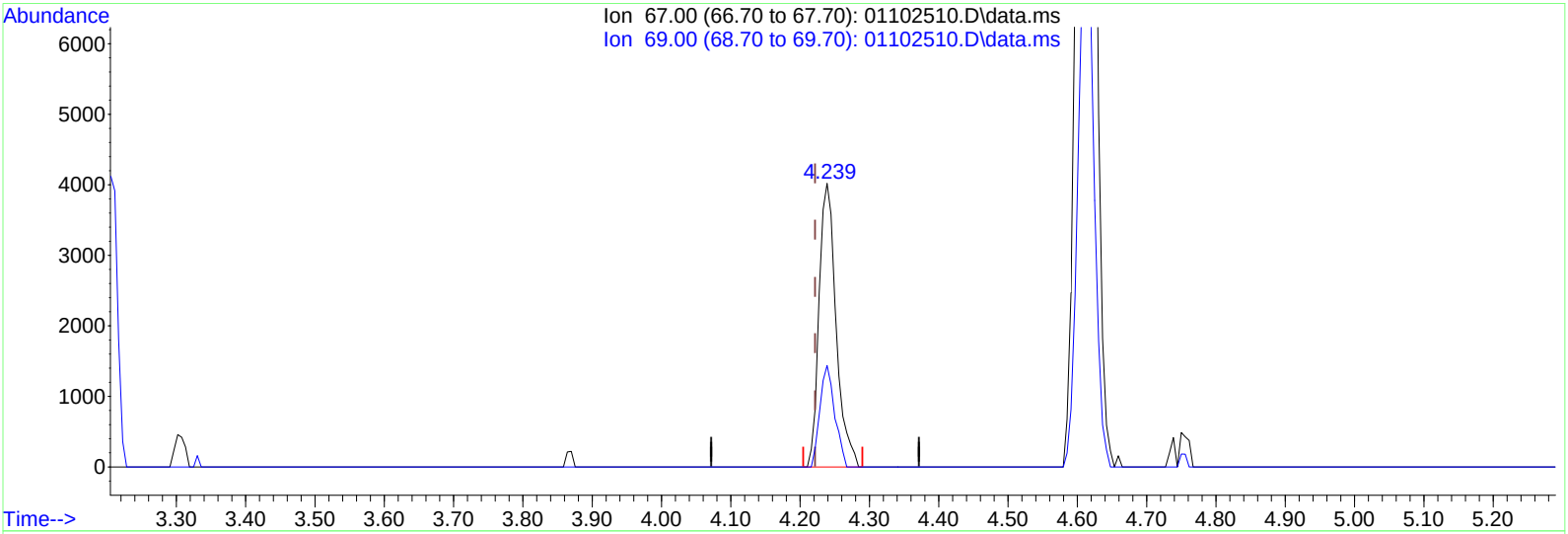
Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

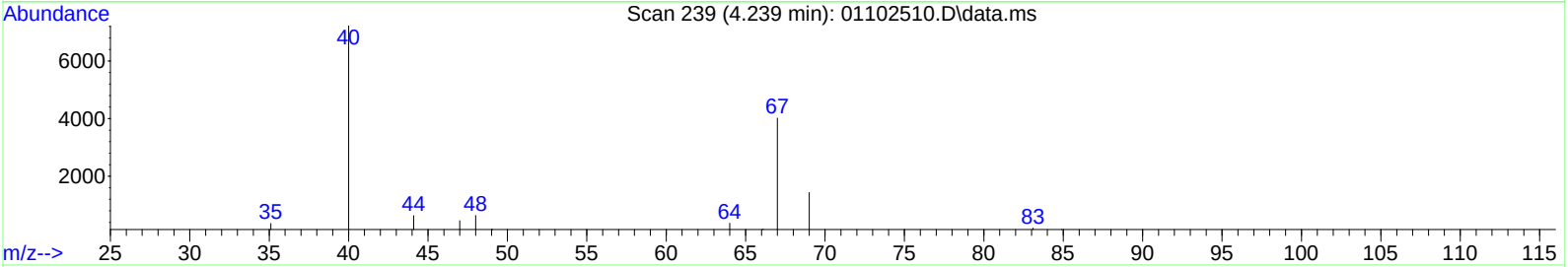
Quant Time: Jan 12 17:51:08 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

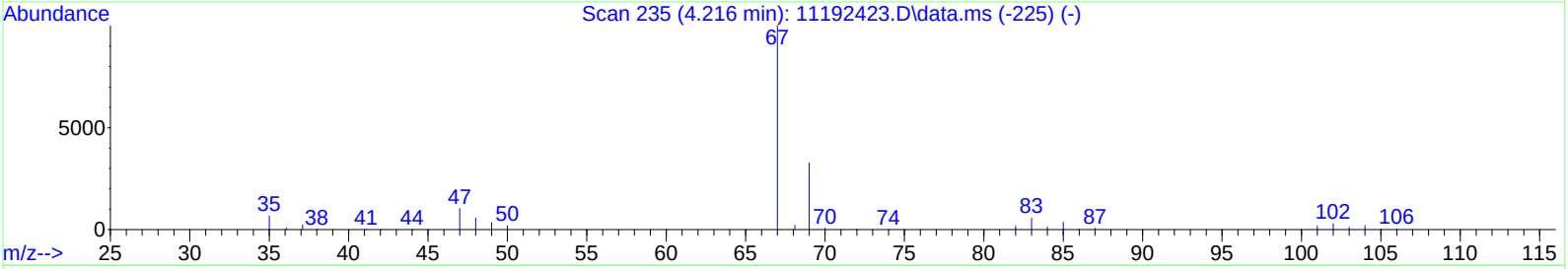


Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 17:48:40 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01102510.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.239min (+0.017) 0.23ng

response 6848

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.06
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102510.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.330	71	79	84	rBV4	67973	97562	1.21%	0.415%
2	3.387	84	89	95	rVB2	20809	25149	0.31%	0.107%
3	3.660	133	137	151	rVB3	13480	36203	0.45%	0.154%
4	3.779	154	158	164	rVB2	8578	11723	0.15%	0.050%
5	4.057	204	207	214	rBV2	11229	16290	0.20%	0.069%
6	4.239	233	239	244	rBV	7075	11094	0.14%	0.047%
7	4.301	244	250	263	rVB	9163	20554	0.25%	0.087%
8	4.614	298	305	308	rBV	92981	152253	1.89%	0.647%
9	4.642	308	310	321	rVV	69910	117684	1.46%	0.500%
10	4.750	321	329	342	rVB	775760	1398072	17.31%	5.946%
11	4.858	342	348	353	rBV4	7668	12376	0.15%	0.053%
12	5.357	427	436	447	rBV2	17315	34088	0.42%	0.145%
13	5.579	465	475	495	rBV2	1608234	3405653	42.17%	14.483%
14	5.772	503	509	519	rBV	33536	71682	0.89%	0.305%
15	6.311	596	604	612	rBV	50047	108112	1.34%	0.460%
16	6.425	616	624	631	rVB5	4639	12697	0.16%	0.054%
17	6.680	662	669	681	rVB	11232	24864	0.31%	0.106%
18	6.862	695	701	714	rBV2	15346	36646	0.45%	0.156%
19	7.231	756	766	783	rBV	346329	779842	9.66%	3.316%
20	7.356	783	788	795	rVB2	9105	19423	0.24%	0.083%
21	7.998	891	901	923	rBV	290261	677874	8.39%	2.883%
22	8.821	1040	1046	1052	rBV5	4650	12186	0.15%	0.052%
23	8.895	1052	1059	1069	rVB	32075	75689	0.94%	0.322%
24	9.304	1119	1131	1143	rBV	600554	1401508	17.36%	5.960%
25	12.427	1670	1681	1698	rBV	774488	1765538	21.86%	7.508%
26	13.239	1817	1824	1829	rBV3	5101	11490	0.14%	0.049%
27	13.409	1846	1854	1861	rVB4	6253	14565	0.18%	0.062%
28	14.528	2038	2051	2073	rBV	3527061	8075369	100.00%	34.343%
29	14.840	2096	2106	2122	rBV	743386	1540789	19.08%	6.553%
30	16.328	2362	2368	2378	rBV2	11191	25856	0.32%	0.110%
31	16.822	2446	2455	2467	rBV	634013	1197107	14.82%	5.091%
32	17.225	2520	2526	2537	rBV3	10607	24416	0.30%	0.104%
33	17.452	2561	2566	2580	rVB3	12640	28312	0.35%	0.120%
34	18.321	2714	2719	2725	rVB3	12330	20208	0.25%	0.086%
35	18.503	2744	2751	2761	rBV	1044715	1689076	20.92%	7.183%
36	18.809	2800	2805	2813	rBV	36776	55809	0.69%	0.237%
37	19.814	2977	2982	2989	rBV2	19703	30595	0.38%	0.130%
38	20.569	3109	3115	3125	rBV2	250629	344539	4.27%	1.465%
39	21.830	3333	3337	3342	rBV	37000	46620	0.58%	0.198%
40	22.148	3388	3393	3399	rBV	10094	15262	0.19%	0.065%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	23.062	3548	3554	3561	rVB2	49981	69275	0.86%	0.295%

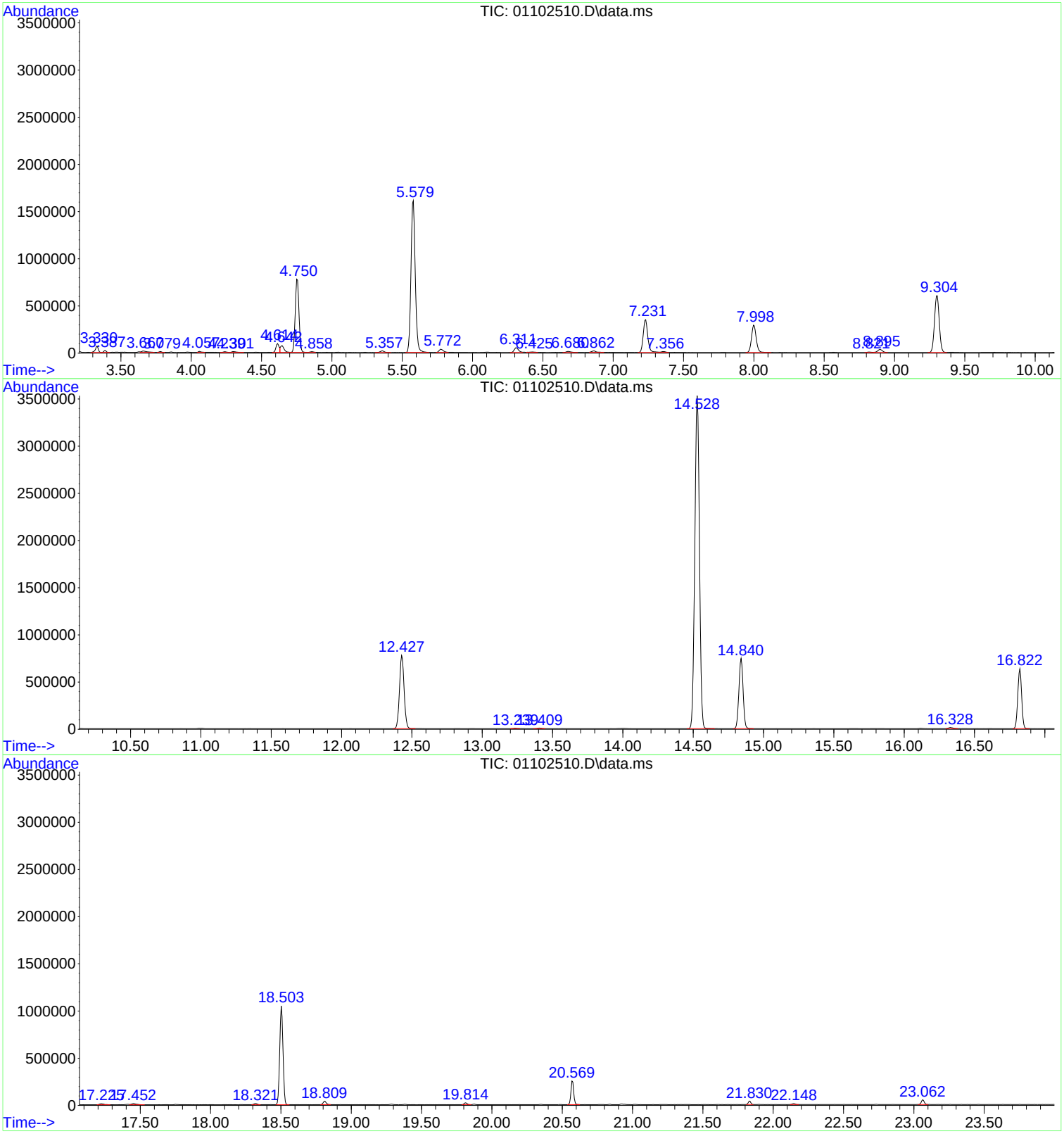
Sum of corrected areas: 23514050

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:06
Operator : CG
Sample : P2405139-037 (400mL)pf2
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102510.D
Acq On : 10 Jan 2025 22:066
Operator : CGG
Sample : P2405139-037 (400mL)pf22
Misc : S37-123124011
ALS Vial : 6 Sample Multiplier: 11

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

						Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected

****

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

1/12/25

Quant Time: Jan 11 11:04:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	151466	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	661958	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	122662	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	265495	12.866	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.96%				
57) Toluene-d8 (SS2)	12.43	98	689722	12.675	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.44%				
73) Bromofluorobenzene (SS3)	16.82	174	241504	12.861	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
Target Compounds							Qvalue
2) Propene	3.32	42	343	N.D.			
3) Dichlorodifluoromethan...	3.33	85	13620	0.460	ng	#	91
4) Chloromethane	3.38	50	1069	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.33	45	229	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.68	58	1886	0.185	ng	#	78
14) Trichlorofluoromethane	4.75	101	741753	26.713	ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	1152796	92.017	ng		95
22) Carbon Disulfide	5.63	76	142	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	113	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	1107	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	950	0.063	ng		92
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

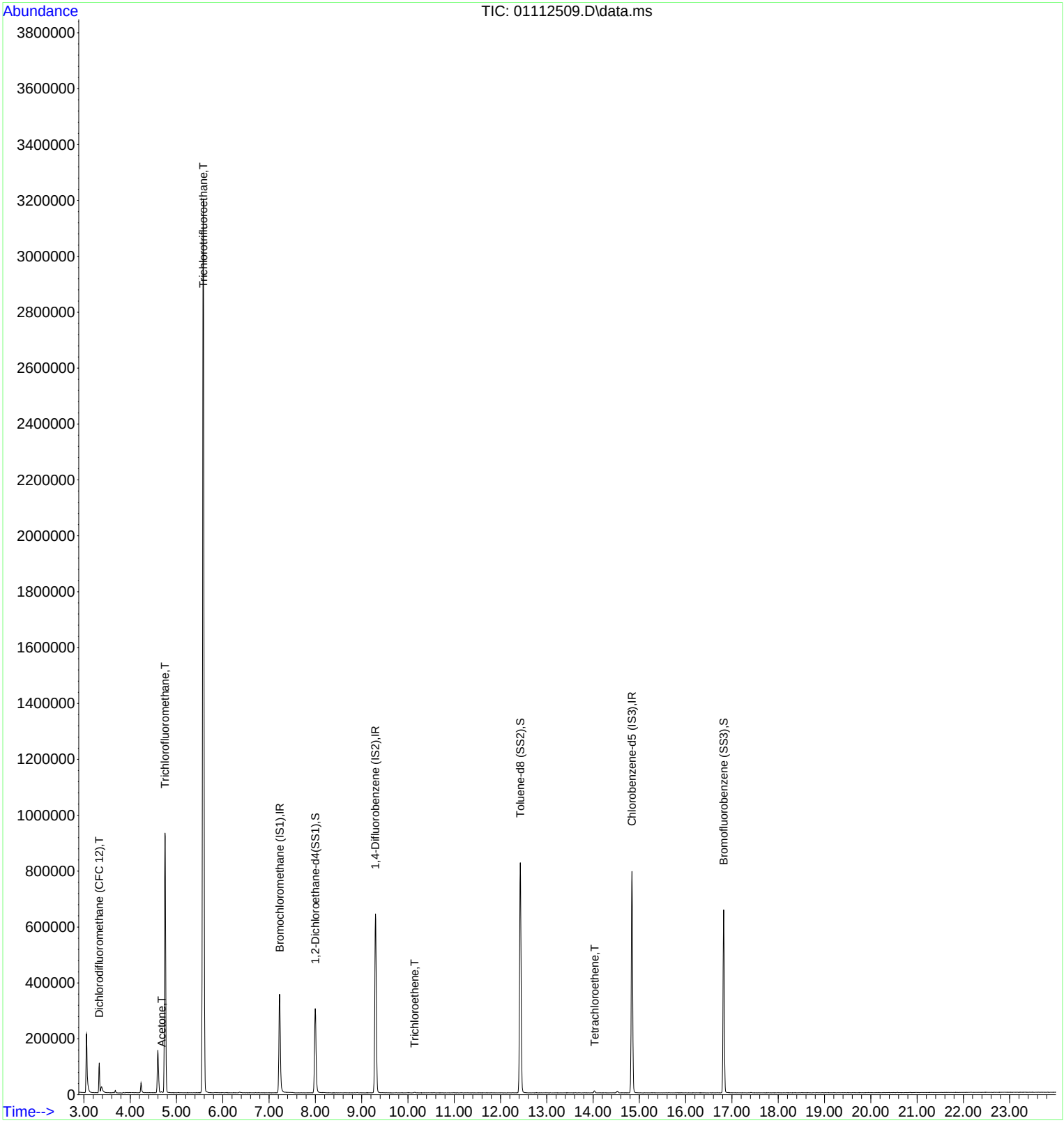
Quant Time: Jan 11 11:04:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	14.03	166	2827	0.182	ng	100
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	15.63	91	313	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.69	91	104	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	134	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.85	180	328	N.D.		
95) Naphthalene	20.96	128	186	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.30	225	197	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 11 11:04:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

1/12/25

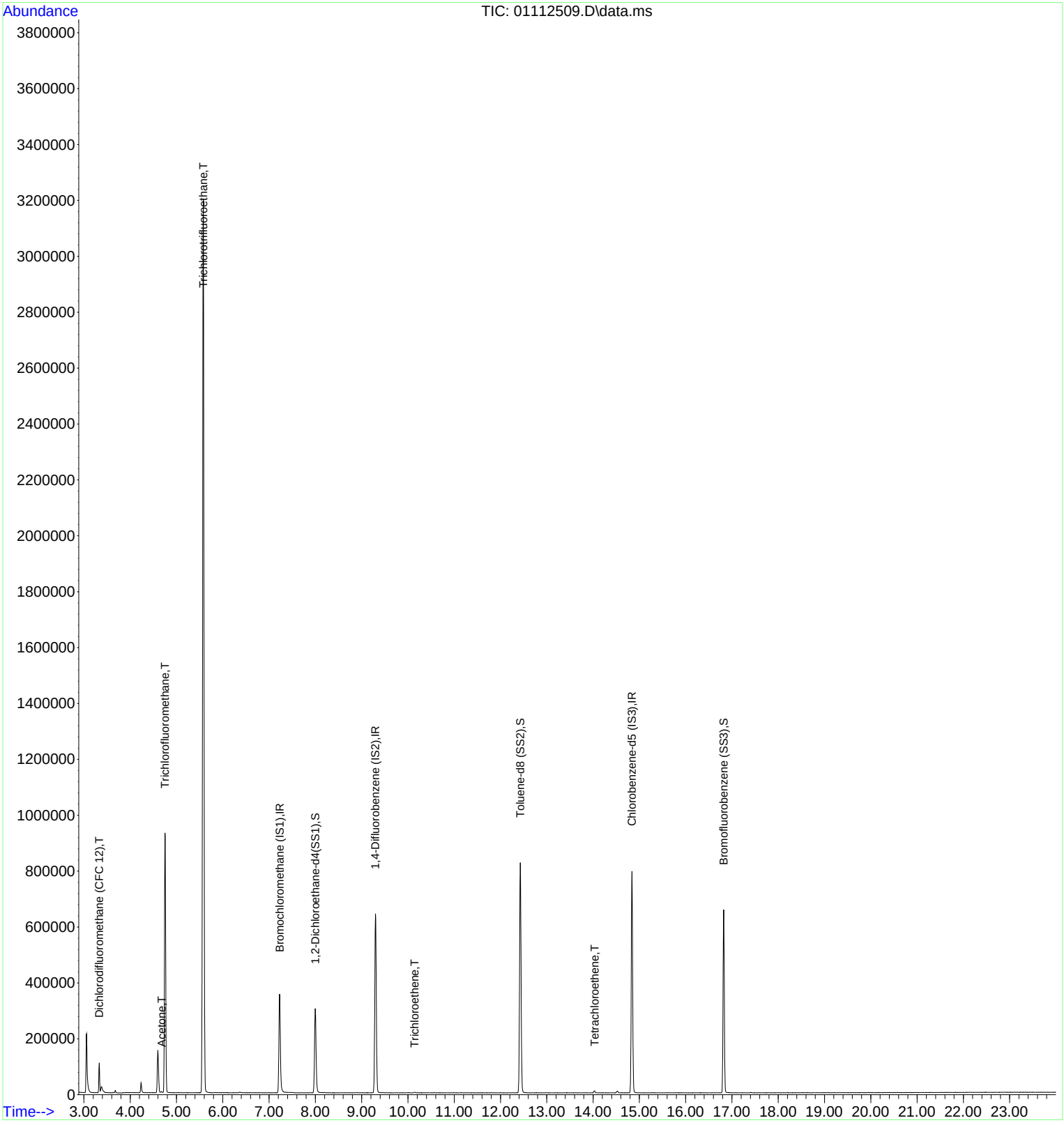
Quant Time: Jan 11 11:04:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

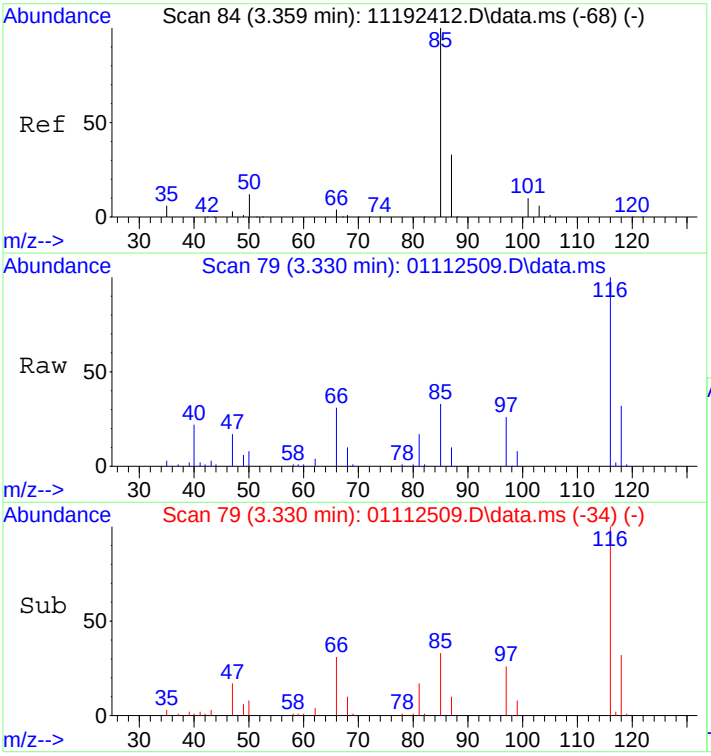
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	151466	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	661958	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	122662	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	265495	12.866	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.96%				
57) Toluene-d8 (SS2)	12.43	98	689722	12.675	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.44%				
73) Bromofluorobenzene (SS3)	16.82	174	241504	12.861	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.33	85	13620	0.460	ng	#	91
13) Acetone	4.68	58	1886	0.185	ng	#	78
14) Trichlorofluoromethane	4.75	101	741753	26.713	ng		100
21) Trichlorotrifluoroethane	5.58	151	1152796	92.017	ng		95
47) Trichloroethene	10.14	130	950	0.063	ng		92
64) Tetrachloroethene	14.03	166	2827	0.182	ng		100

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 11 11:04:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

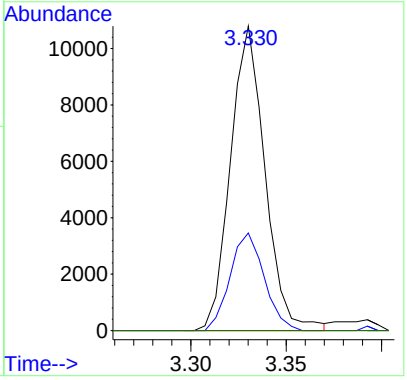


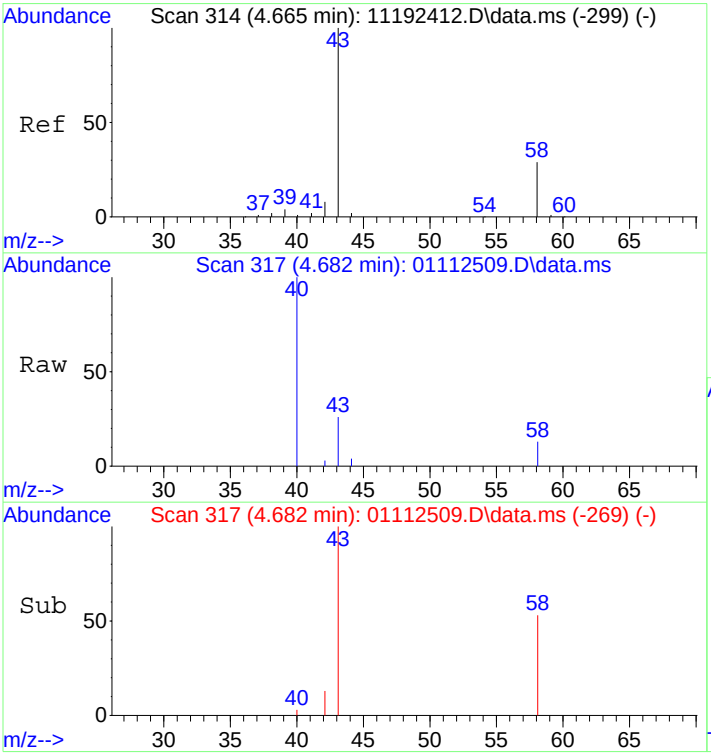


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.46 ng
RT: 3.33 min Scan# 79
Delta R.T. 0.003 min
Lab File: 01112509.D
Acq: 11 Jan 2025 10:40

Tgt Ion: 85 Resp: 13620

Ion	Ratio	Lower	Upper
85	100		
87	31.6	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

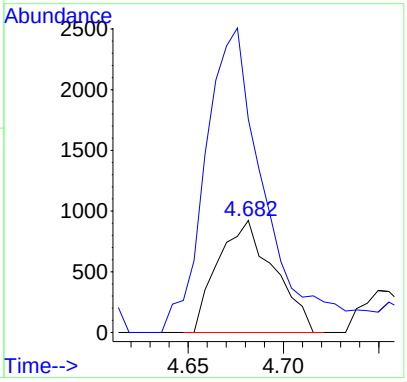


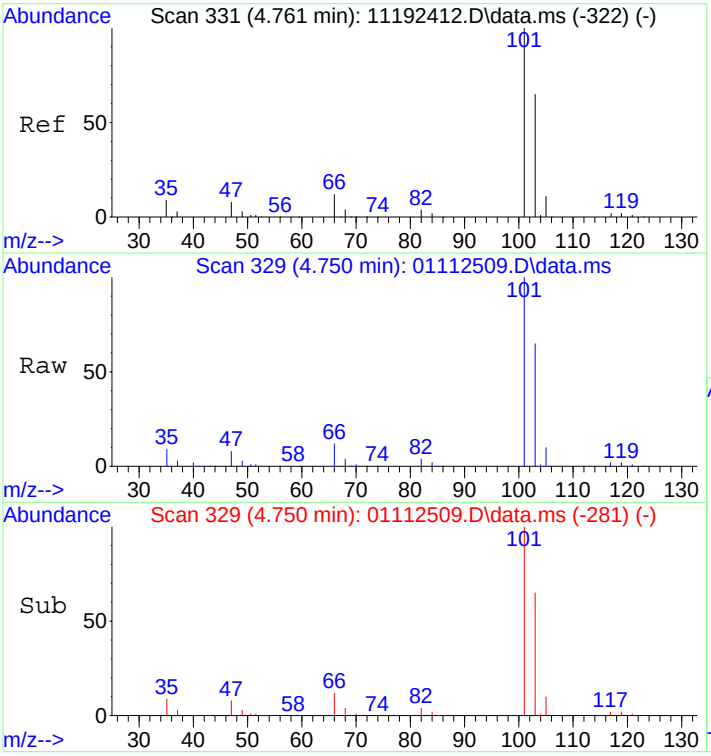


#13
Acetone
Concen: 0.18 ng
RT: 4.68 min Scan# 317
Delta R.T. 0.021 min
Lab File: 01112509.D
Acq: 11 Jan 2025 10:40

Tgt Ion: 58 Resp: 1886

Ion	Ratio	Lower	Upper
58	100		
43	294.9	312.5	372.5#

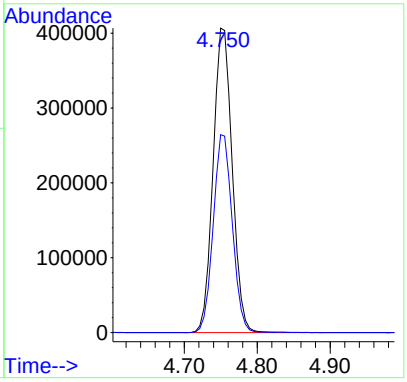


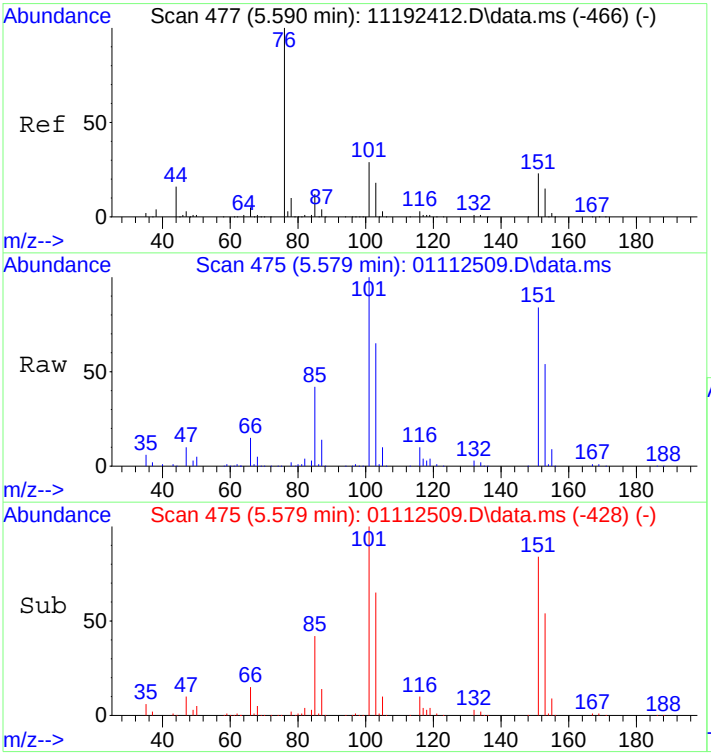


#14
Trichlorofluoromethane
Concen: 26.71 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01112509.D
Acq: 11 Jan 2025 10:40

Tgt Ion:101 Resp: 741753

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

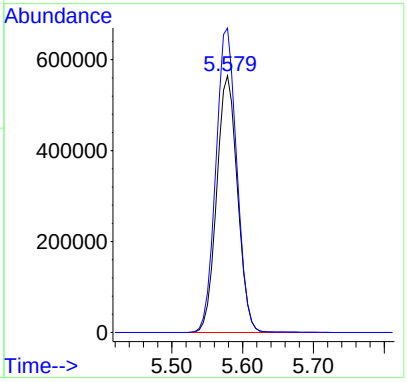


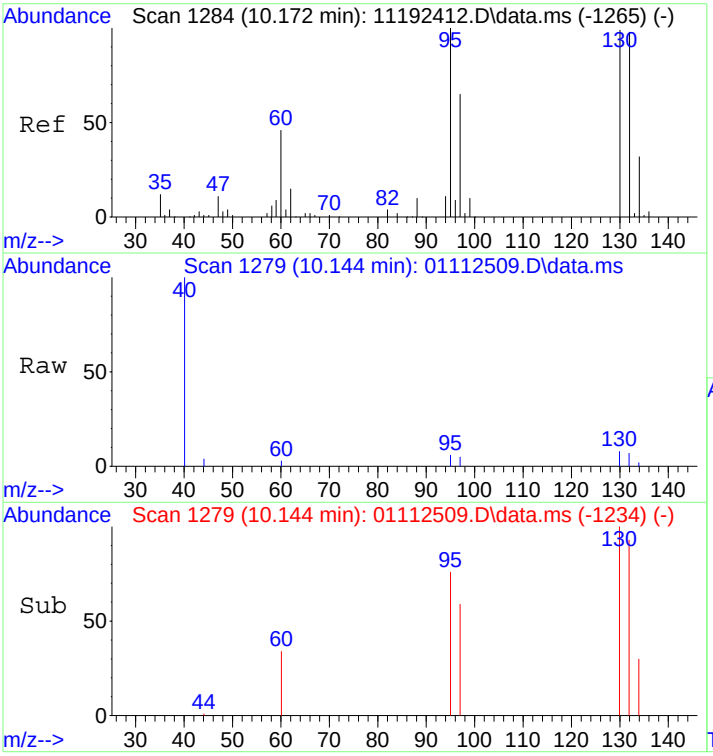


#21
Trichlorotrifluoroethane
Concen: 92.02 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01112509.D
Acq: 11 Jan 2025 10:40

Tgt Ion:151 Resp: 1152796

Ion	Ratio	Lower	Upper
151	100		
101	119.2	105.0	145.0

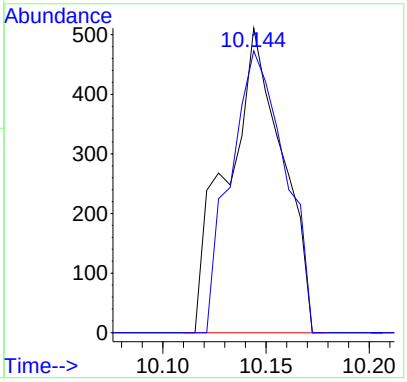


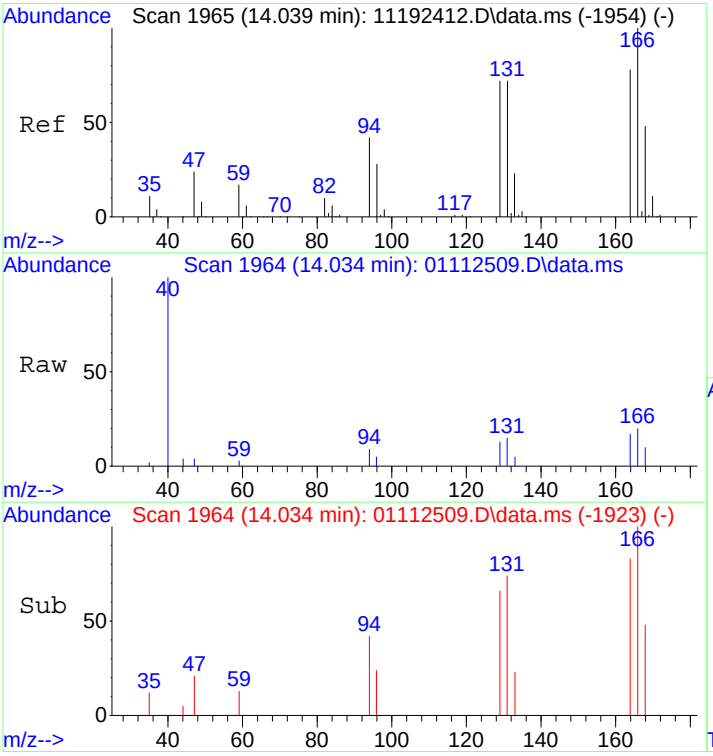


#47
Trichloroethene
Concen: 0.06 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01112509.D
Acq: 11 Jan 2025 10:40

Tgt Ion:130 Resp: 950

Ion	Ratio	Lower	Upper
130	100		
132	91.3	79.3	119.3

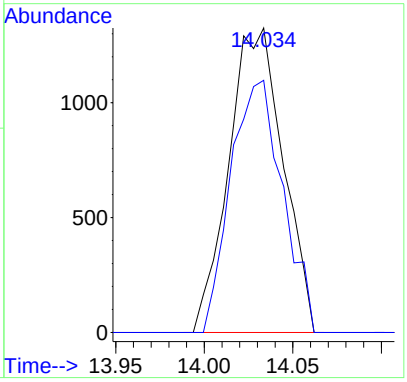




#64
Tetrachloroethene
Concen: 0.18 ng
RT: 14.03 min Scan# 1964
Delta R.T. -0.017 min
Lab File: 01112509.D
Acq: 11 Jan 2025 10:40

Tgt Ion:166 Resp: 2827

Ion	Ratio	Lower	Upper
166	100		
164	79.1	58.7	98.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 19:13:43 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

1/12/25

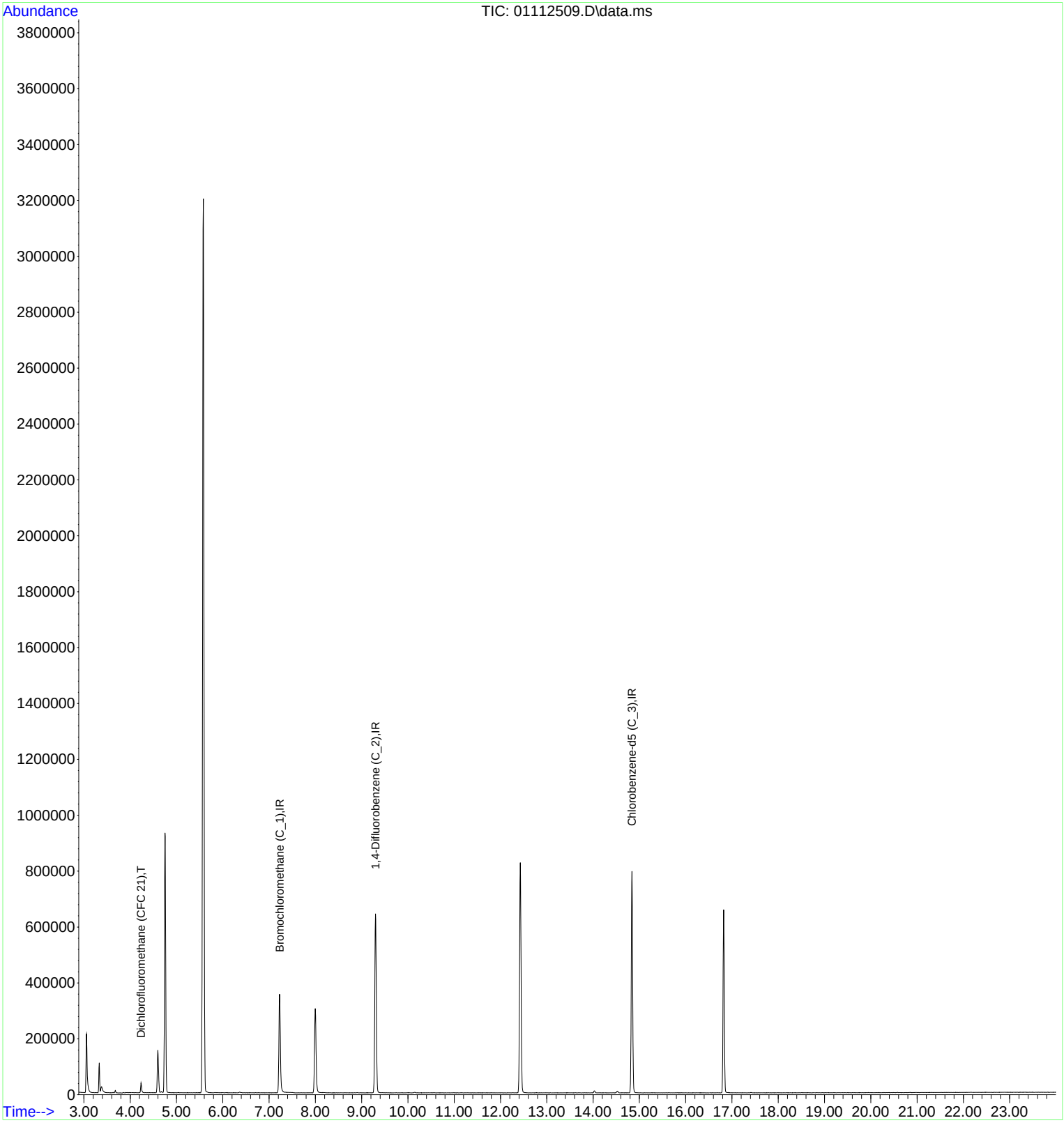
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	153549	12.500 ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	663729	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	122662	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	232	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	4.23	67	28681	0.922 ng	99
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D. d	
10) 2-Methylbutane	4.64	57	54	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.69	91	104	N.D.	
27) 4-Chlorotoluene	17.69	91	104	N.D.	
28) Indane	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

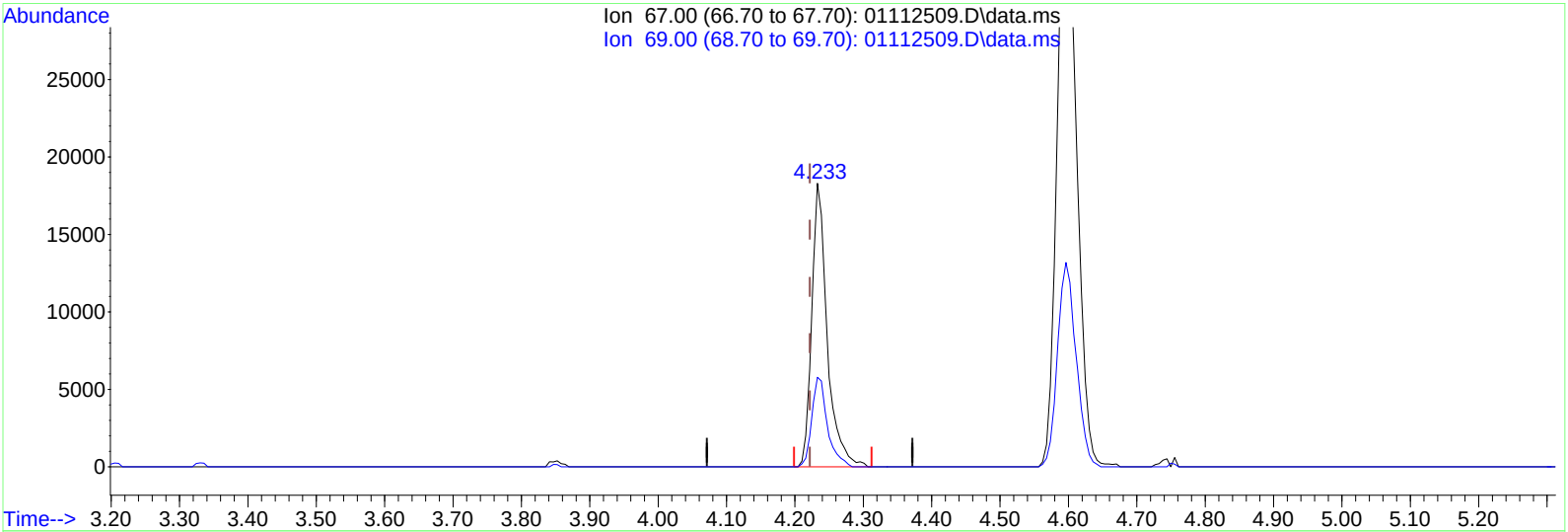
Quant Time: Jan 12 19:13:43 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

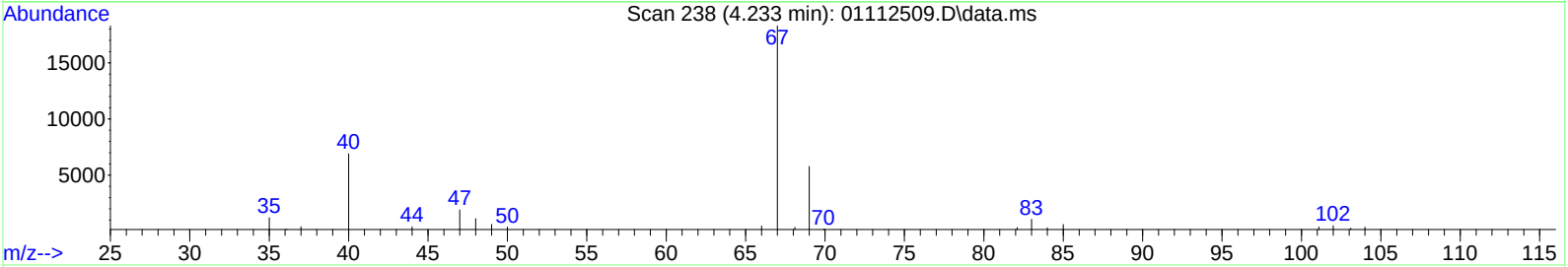


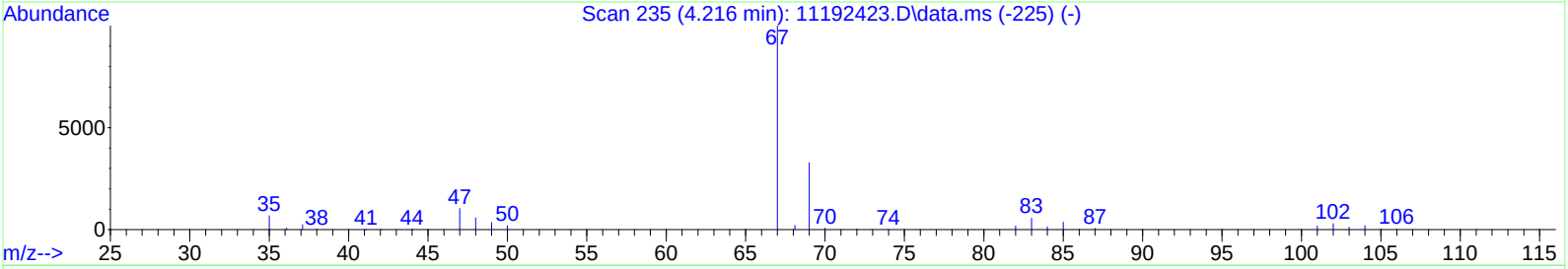
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 19:13:23 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112509.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.92ng

response 28681

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.07
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112508.D
Acq On : 11 Jan 2025 10:08
Operator : LS
Sample : P2405139-038dil (0.7mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

MOA 1/12/25

Quant Time: Jan 11 10:29:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	156870	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	674933	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	124567	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	265791	12.436	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
57) Toluene-d8 (SS2)	12.43	98	699934	12.666	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.36%				
73) Bromofluorobenzene (SS3)	16.82	174	244629	12.828	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.64%				
Target Compounds							Qvalue
2) Propene	3.34	42	524	N.D.			
3) Dichlorodifluoromethan...	3.34	85	6109	0.199	ng	#	91
4) Chloromethane	3.39	50	617	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.33	45	415	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.68	58	1499	0.142	ng		94
14) Trichlorofluoromethane	4.76	101	340925	11.855	ng		100
15) 2-Propanol (Isopropanol)	4.92	45	112	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	129	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	536004	41.310	ng		95
22) Carbon Disulfide	5.64	76	288	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	123	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.89	56	103	No Calib		#	
41) Benzene	8.89	78	1049	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.28	84	572	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.15	130	933	0.060	ng	#	79
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112508.D
Acq On : 11 Jan 2025 10:08
Operator : LS
Sample : P2405139-038dil (0.7mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 11 10:29:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

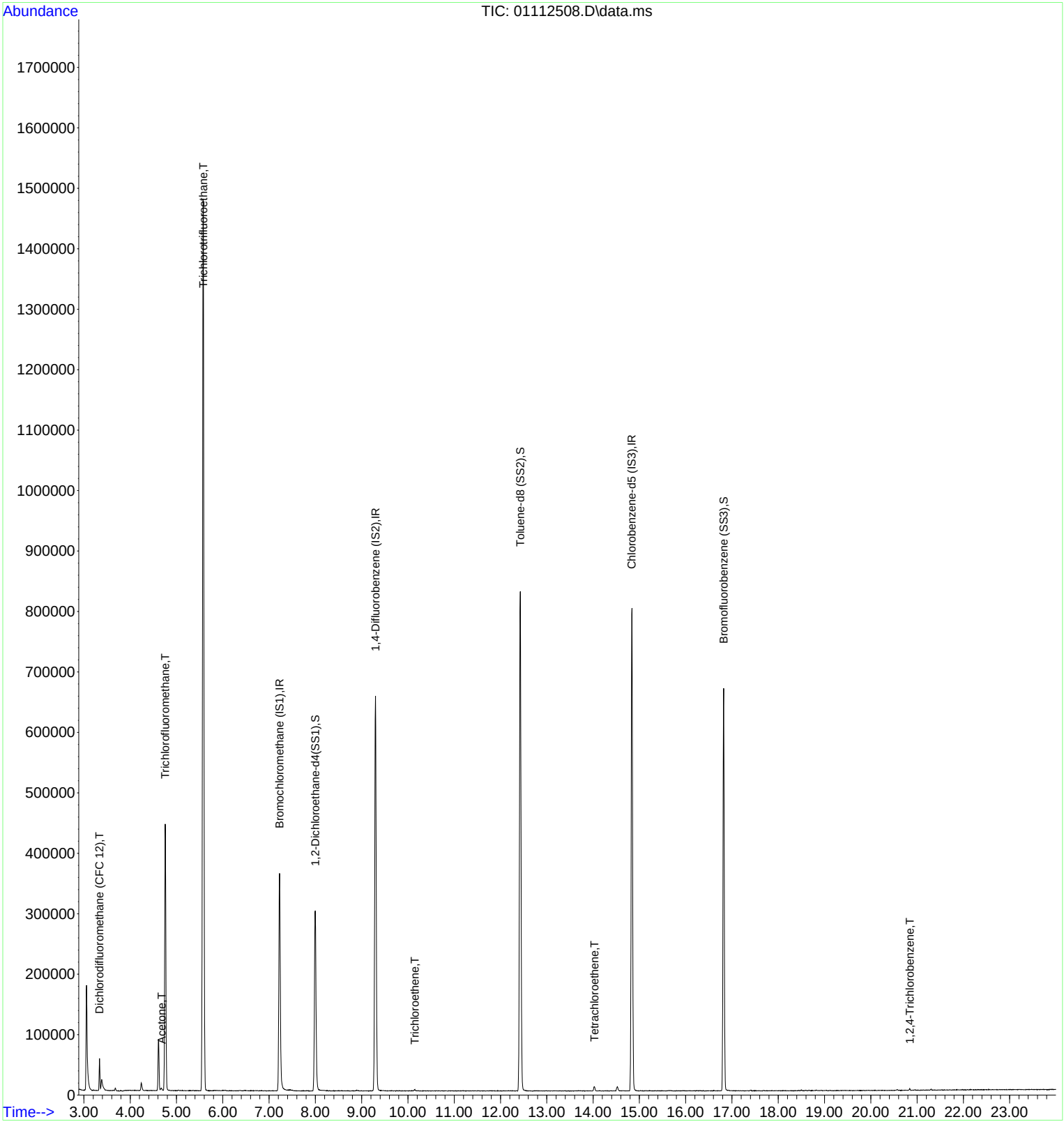
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			
51) n-Heptane	0.00	71	0	N.D.			
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.			
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.			
58) Toluene	12.55	91	421	N.D.			
59) 2-Hexanone	0.00	43	0	N.D.			
60) Dibromochloromethane	0.00	129	0	N.D.			
61) 1,2-Dibromoethane	0.00	107	0	N.D.			
62) n-Butyl Acetate	0.00	43	0	N.D.			
63) n-Octane	0.00	57	0	N.D.			
64) Tetrachloroethene	14.03	166	2891	0.183	ng		97
65) Chlorobenzene	0.00	112	0	N.D.			
66) Ethylbenzene	15.41	91	185	N.D.			
67) m- & p-Xylenes	15.63	91	866	N.D.			
68) Bromoform	0.00	173	0	N.D.			
69) Styrene	0.00	104	0	N.D.			
70) o-Xylene	16.25	91	425	N.D.			
71) n-Nonane	16.61	43	364	N.D.			
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.			
74) Cumene	17.03	105	301	N.D.			
75) alpha-Pinene	0.00	93	0	N.D.			
76) n-Propylbenzene	17.67	91	625	N.D.			
77) 3-Ethyltoluene	17.03	105	301	No Calib		#	
78) 4-Ethyltoluene	17.86	105	283	N.D.			
79) 1,3,5-Trimethylbenzene	17.96	105	199	N.D.			
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.03	105	301	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.44	105	274	N.D.			
83) n-Decane	0.00	58	0	N.D.			
84) Benzyl Chloride	0.00	91	0	N.D.			
85) 1,3-Dichlorobenzene	18.58	146	584	N.D.			
86) 1,4-Dichlorobenzene	18.66	146	516	N.D.			
87) sec-Butylbenzene	18.74	105	264	N.D.			
88) 4-Isopropyltoluene (p-...	18.93	119	552	N.D.			
89) 1,2,3-Trimethylbenzene	17.03	105	301	No Calib		#	
90) 1,2-Dichlorobenzene	19.04	146	464	N.D.			
91) d-Limonene	0.00	68	0	N.D.			
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.			
93) n-Undecane	0.00	58	0	N.D.			
94) 1,2,4-Trichlorobenzene	20.84	180	1269	0.058	ng	#	89
95) Naphthalene	20.94	128	1401	N.D.			
96) n-Dodecane	0.00	58	0	N.D.			
97) Hexachlorobutadiene	21.30	225	494	N.D.			
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.42	119	174	N.D.			
100) n-Butylbenzene	19.39	91	300	N.D.			
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			

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

Quantitation Report (QT Reviewed)

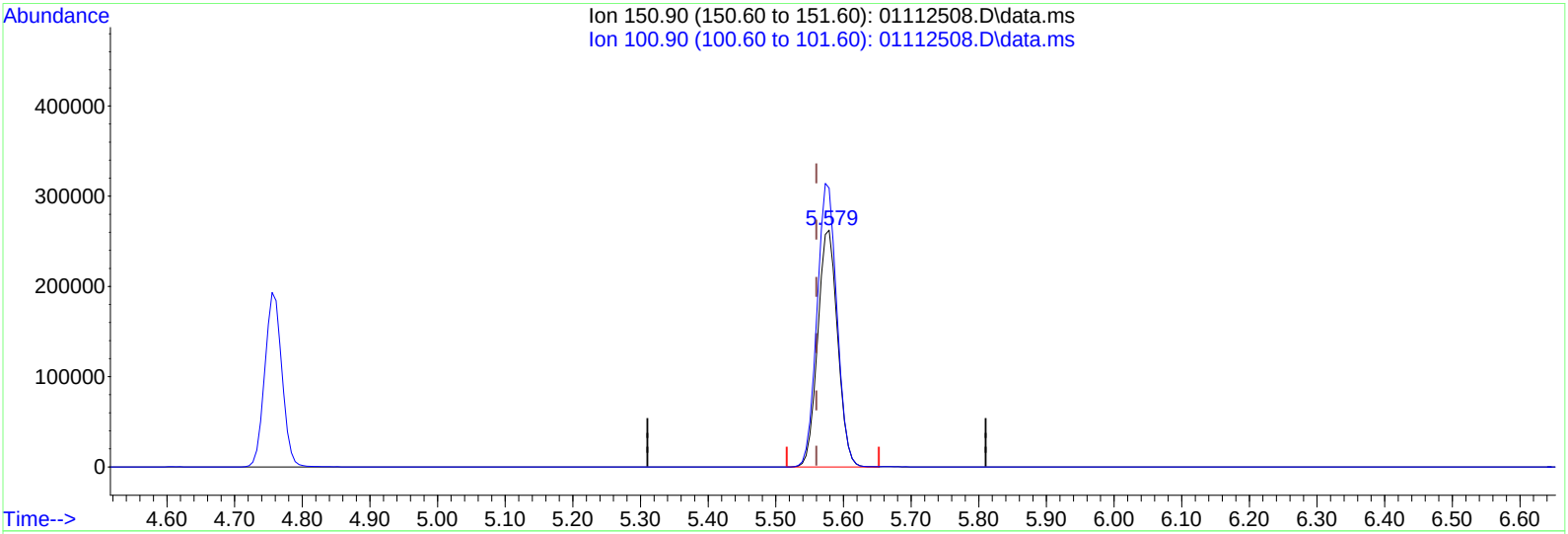
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112508.D
Acq On : 11 Jan 2025 10:08
Operator : LS
Sample : P2405139-038dil (0.7mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

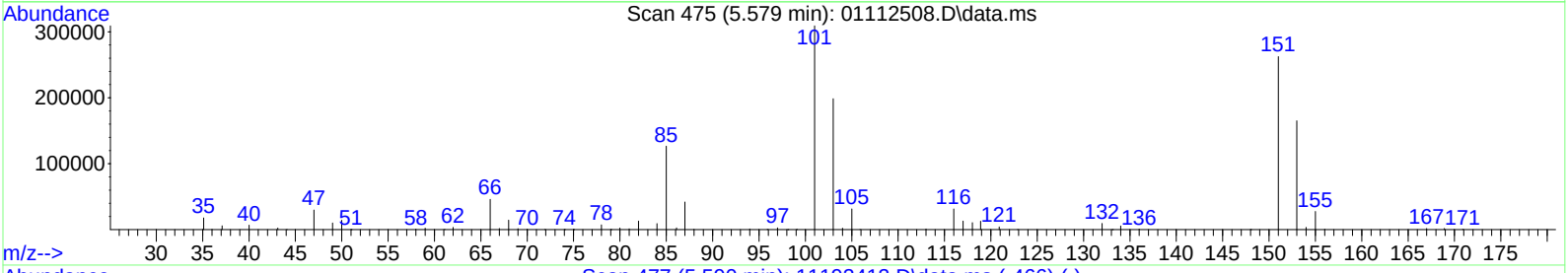
Quant Time: Jan 11 10:29:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

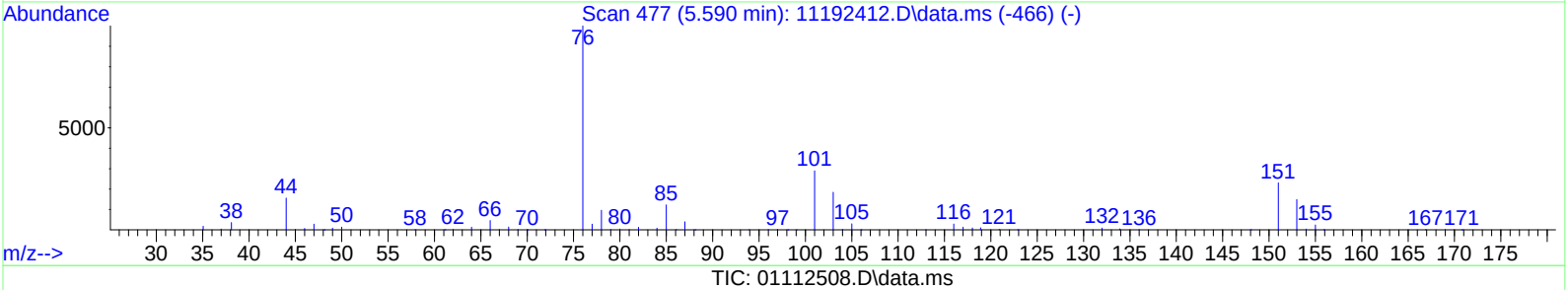


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112508.D
Acq On : 11 Jan 2025 10:08
Operator : LS
Sample : P2405139-038dil (0.7mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 11 10:29:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112508.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.019) 41.31ng

response 536004

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	119.51
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112509.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.330	74	79	83	rBV	107444	135958	2.07%	0.823%
2	3.381	83	88	103	rVB	21669	60684	0.92%	0.367%
3	3.676	135	140	147	rVB3	8961	12246	0.19%	0.074%
4	4.233	232	238	248	rBV	34893	53322	0.81%	0.323%
5	4.596	294	302	311	rBV	152246	290398	4.43%	1.757%
6	4.750	321	329	345	rVB	929428	1684038	25.66%	10.192%
7	5.579	465	475	497	rBV	3199566	6562284	100.00%	39.715%
8	7.225	755	765	787	rBV	353268	797364	12.15%	4.826%
9	7.998	890	901	921	rBV	302134	695156	10.59%	4.207%
10	9.298	1120	1130	1143	rBV	640665	1463036	22.29%	8.854%
11	12.427	1671	1681	1698	rBB	823315	1853033	28.24%	11.215%
12	14.028	1955	1963	1971	rBV4	7465	16984	0.26%	0.103%
13	14.522	2043	2050	2061	rVB2	6386	14256	0.22%	0.086%
14	14.840	2095	2106	2120	rBV	793535	1641499	25.01%	9.934%
15	16.822	2446	2455	2465	rBV	654806	1243152	18.94%	7.524%

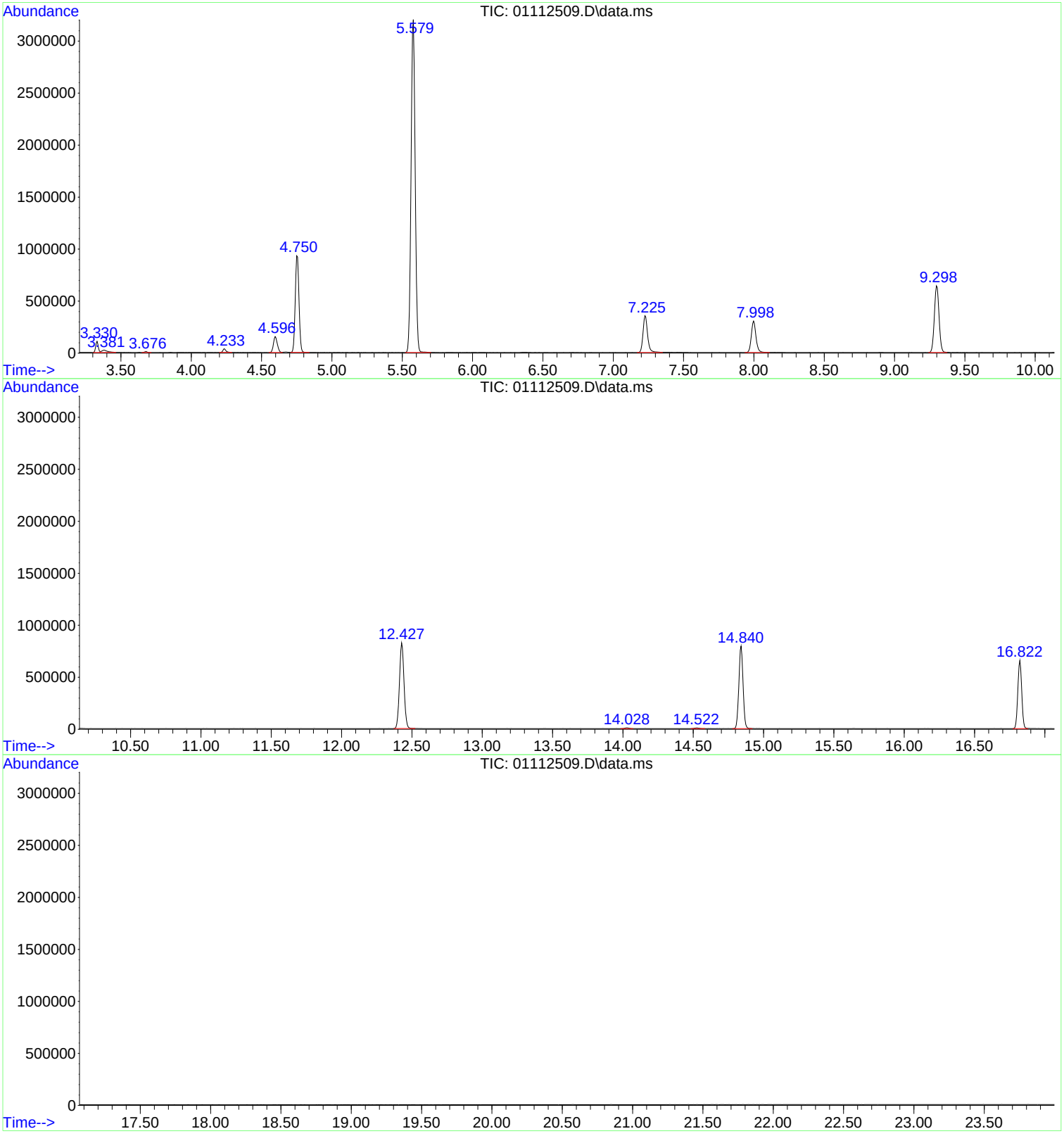
Sum of corrected areas: 16523410

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

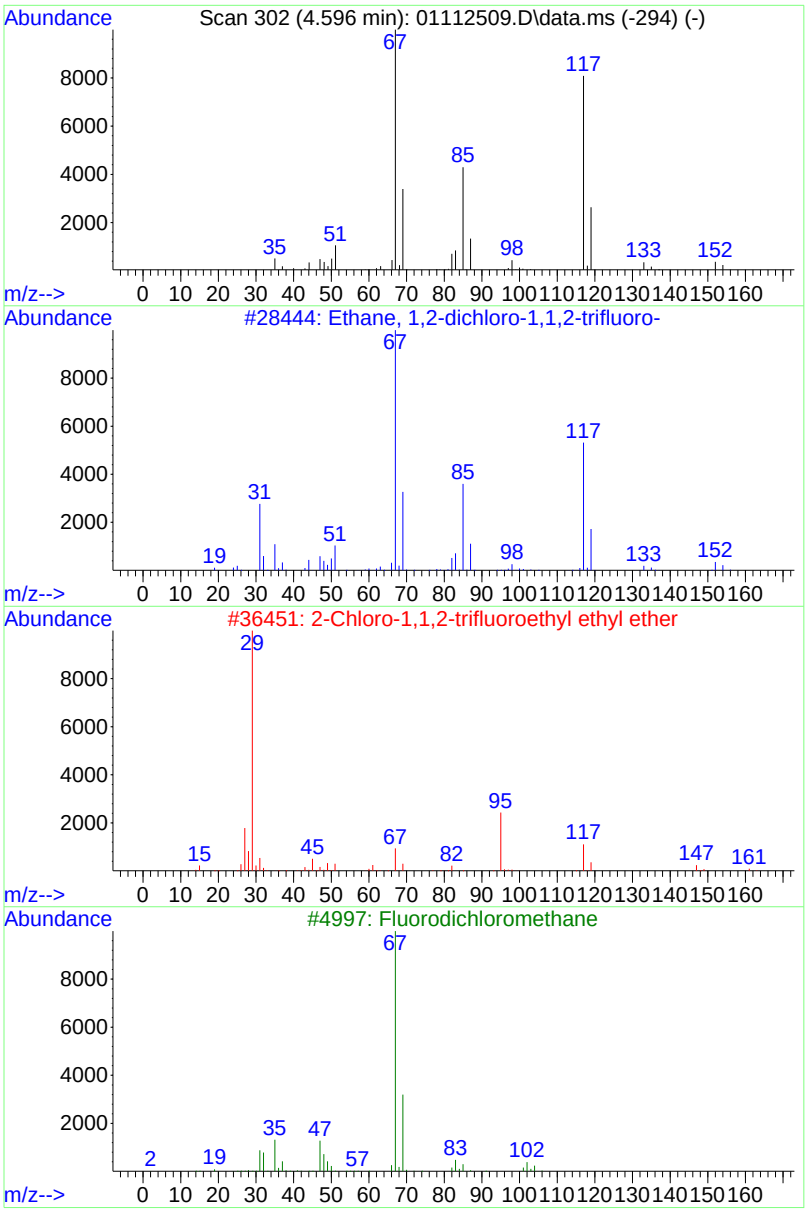
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

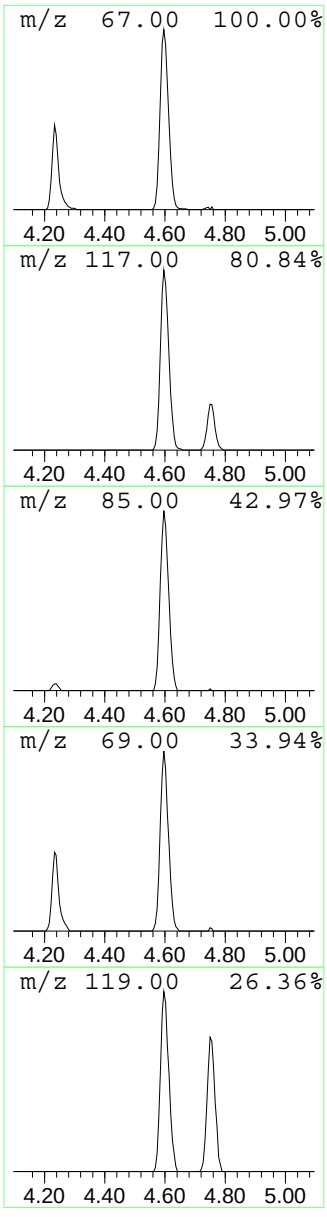
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 1 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.596	4.55 ng	290398	Bromochloromethane (IS1)	7.231

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	94
2	2-Chloro-1,1,2-trifluoroethyl et...	162	C4H6ClF3O	000310-71-4	36
3	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
4	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
5	Fluorodichloromethane	102	CHCl2F	000075-43-4	12





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112509.D
Acq On : 11 Jan 2025 10:40
Operator : LS
Sample : P2405139-038 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

VOA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.596	4.5	ng	290398	1	7.231	797364	12.5

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 08:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	150713	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	647495	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	126034	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	262364	12.777	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%				
57) Toluene-d8 (SS2)	12.43	98	685125	12.254	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.00%				
73) Bromofluorobenzene (SS3)	16.82	174	254548	13.193	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%				
Target Compounds							Qvalue
2) Propene	3.32	42	307	N.D.			
3) Dichlorodifluoromethan...	3.33	85	9216	0.313	ng	#	89
4) Chloromethane	3.38	50	740	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	58	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	2294	0.226	ng		94
14) Trichlorofluoromethane	4.76	101	608005	22.006	ng		100
15) 2-Propanol (Isopropanol)	4.89	45	174	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	856694	68.724	ng		95
22) Carbon Disulfide	5.63	76	1175	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	208	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.89	78	938	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	839	0.057	ng		81
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

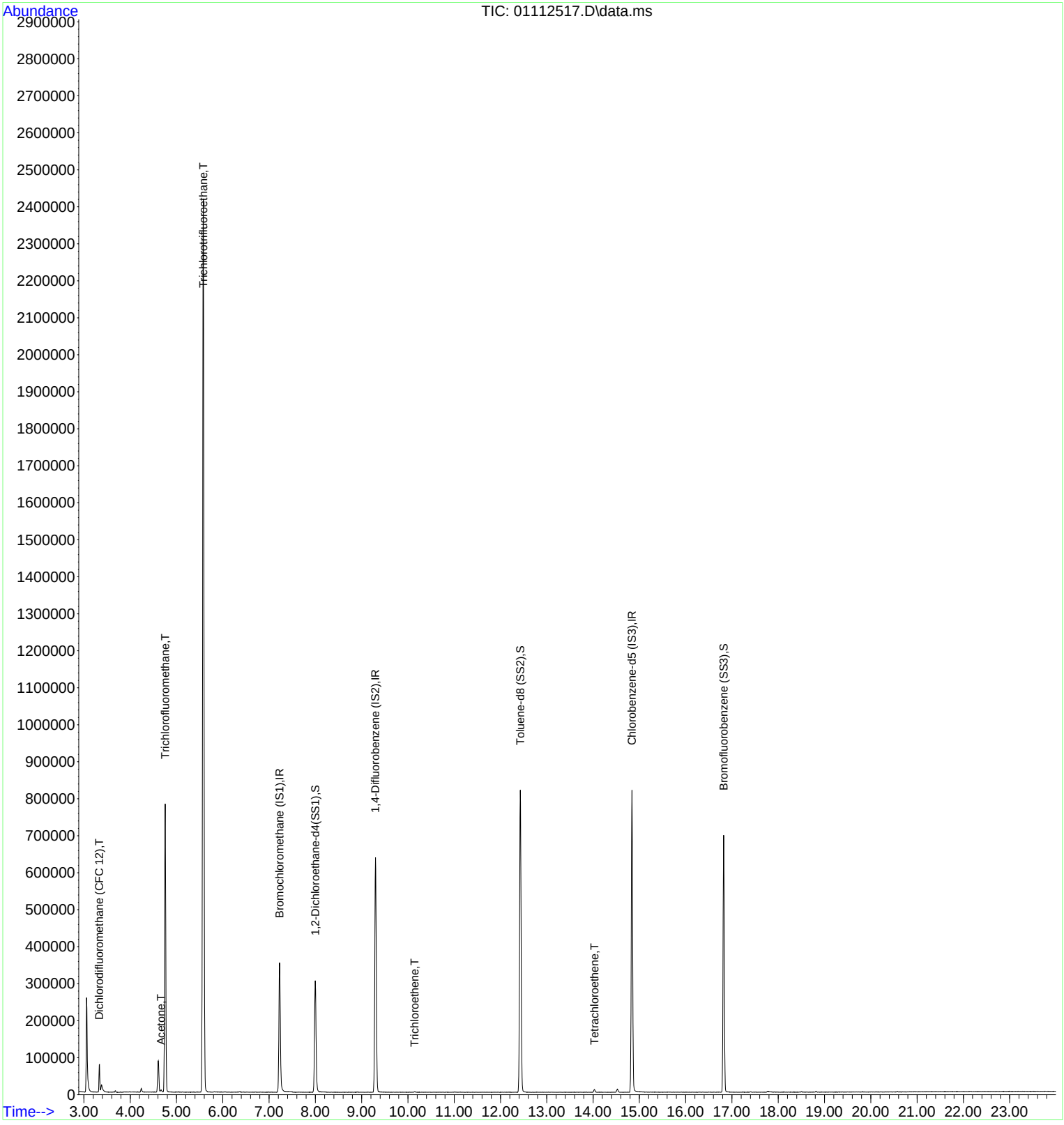
Quant Time: Jan 12 08:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	0.00	91	0	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	2734	0.171 ng	93
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.42	91	125	N.D.	
67) m- & p-Xylenes	15.63	91	541	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	16.61	43	107	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	117	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	229	N.D.	
95) Naphthalene	20.95	128	253	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 08:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

VOA 1/12/25

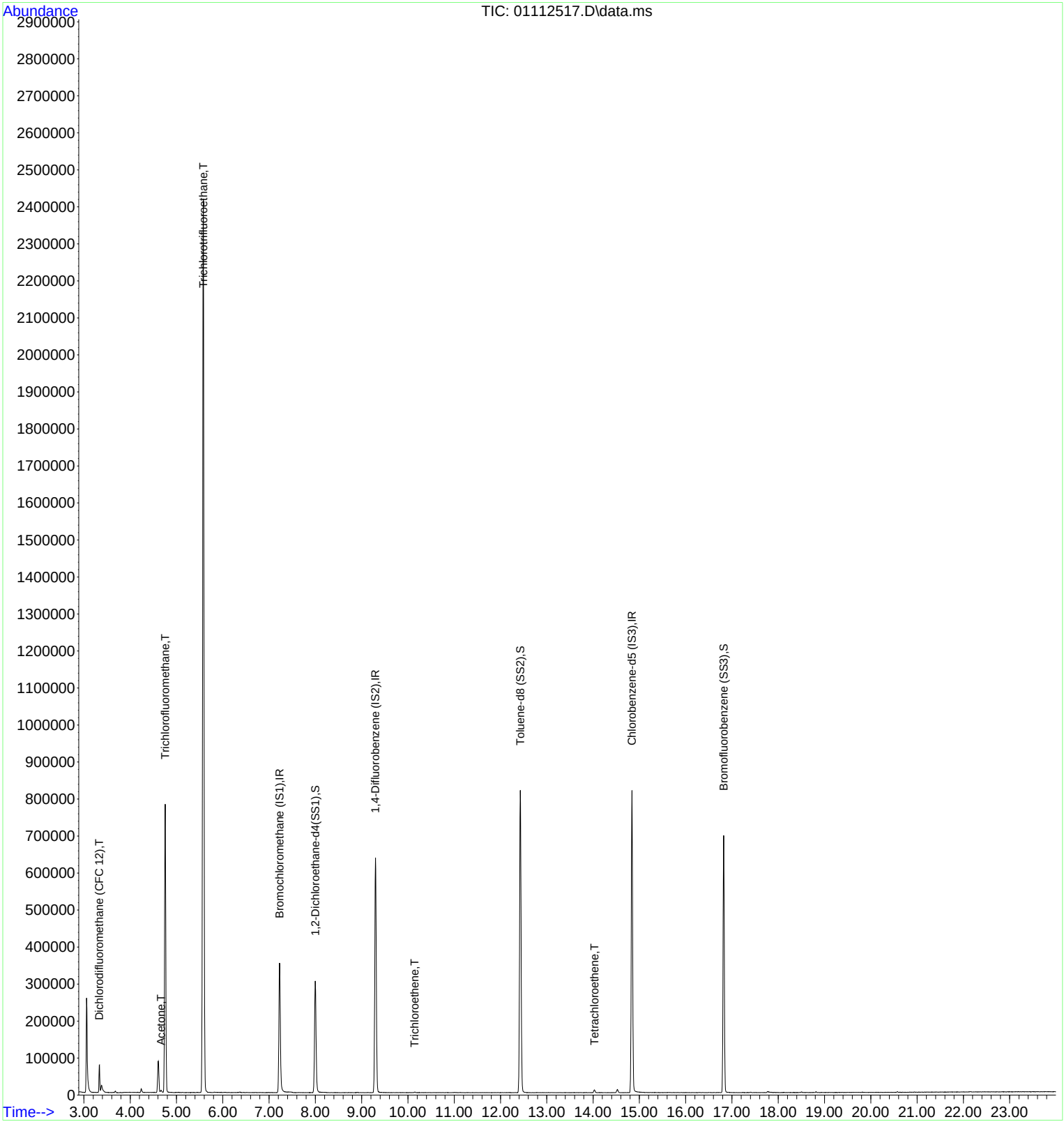
Quant Time: Jan 12 08:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

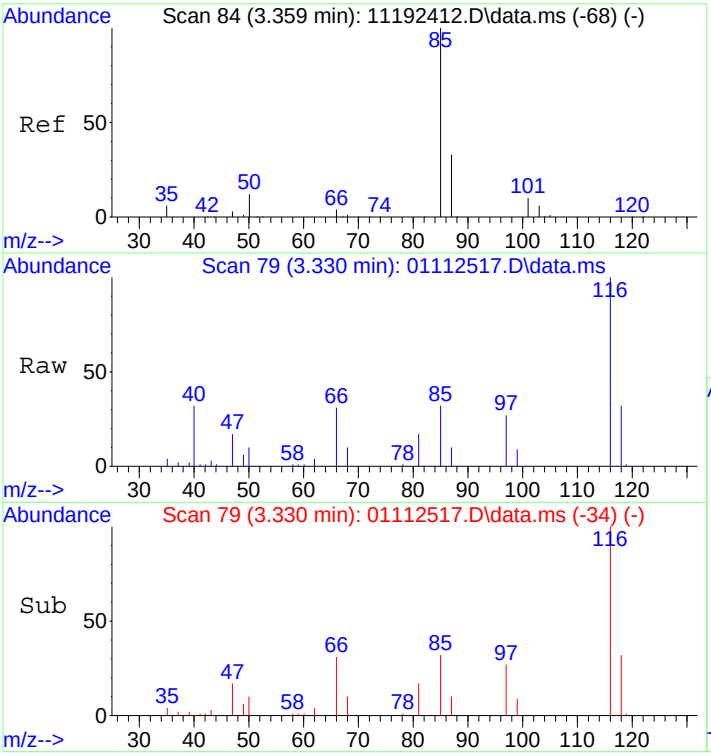
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	150713	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	647495	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	126034	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	262364	12.777	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%				
57) Toluene-d8 (SS2)	12.43	98	685125	12.254	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.00%				
73) Bromofluorobenzene (SS3)	16.82	174	254548	13.193	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.33	85	9216	0.313	ng	#	89
13) Acetone	4.66	58	2294	0.226	ng		94
14) Trichlorofluoromethane	4.76	101	608005	22.006	ng		100
21) Trichlorotrifluoroethane	5.58	151	856694	68.724	ng		95
47) Trichloroethene	10.14	130	839	0.057	ng		81
64) Tetrachloroethene	14.03	166	2734	0.171	ng		93

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 08:00:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

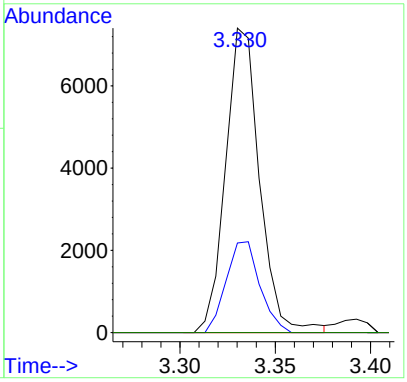


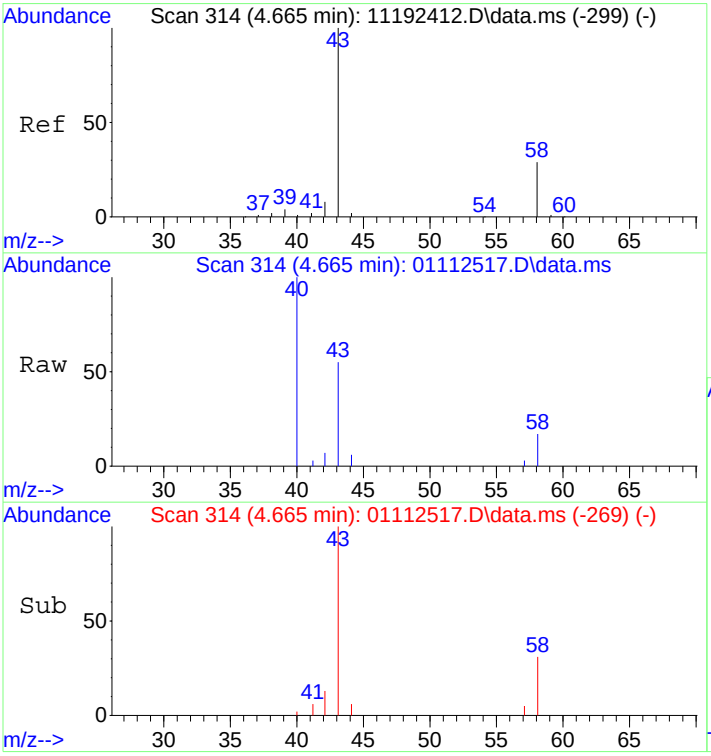


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.31 ng
RT: 3.33 min Scan# 79
Delta R.T. 0.003 min
Lab File: 01112517.D
Acq: 11 Jan 2025 15:06

Tgt Ion: 85 Resp: 9216

Ion	Ratio	Lower	Upper
85	100		
87	29.5	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

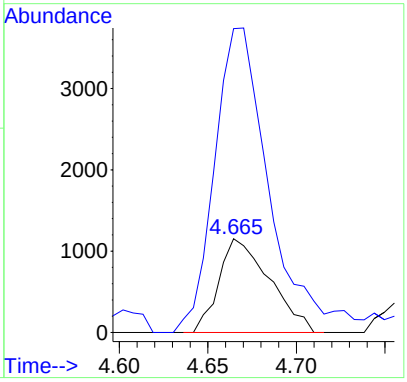


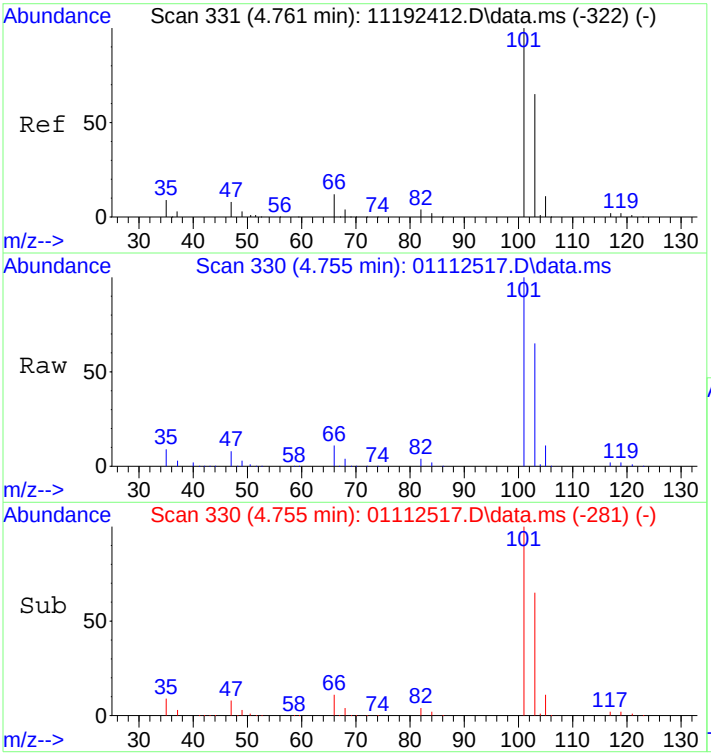


#13
Acetone
Concen: 0.23 ng
RT: 4.66 min Scan# 314
Delta R.T. 0.004 min
Lab File: 01112517.D
Acq: 11 Jan 2025 15:06

Tgt Ion: 58 Resp: 2294

Ion	Ratio	Lower	Upper
58	100		
43	354.4	312.5	372.5

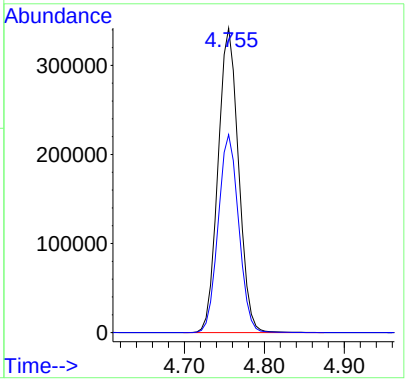


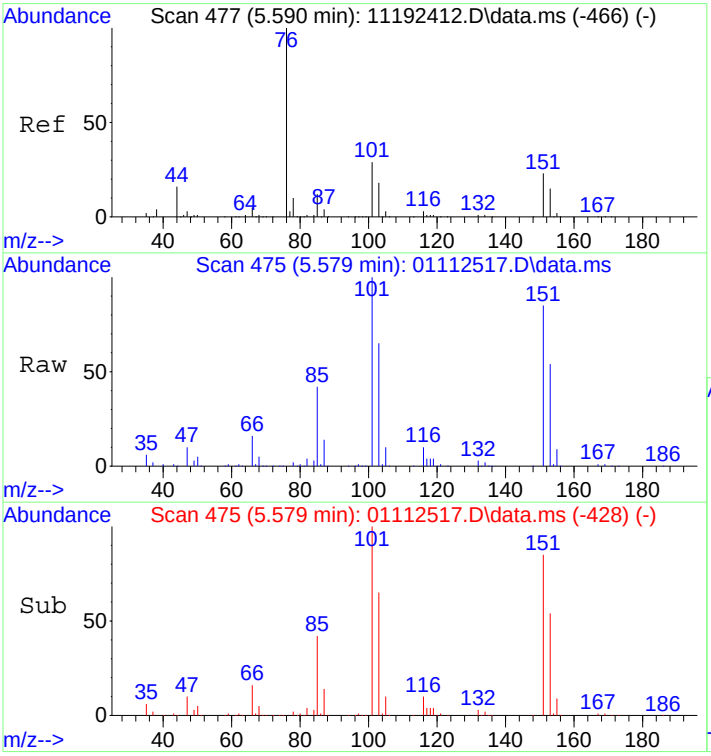


#14
Trichlorofluoromethane
Concen: 22.01 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01112517.D
Acq: 11 Jan 2025 15:06

Tgt Ion:101 Resp: 608005

Ion	Ratio	Lower	Upper
101	100		
103	65.0	44.8	84.8

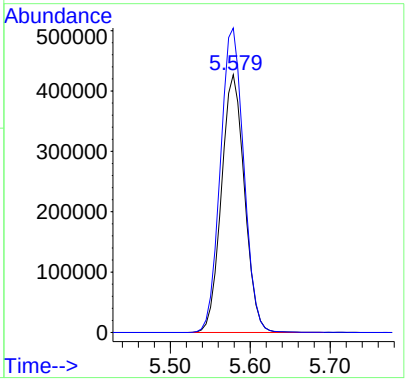


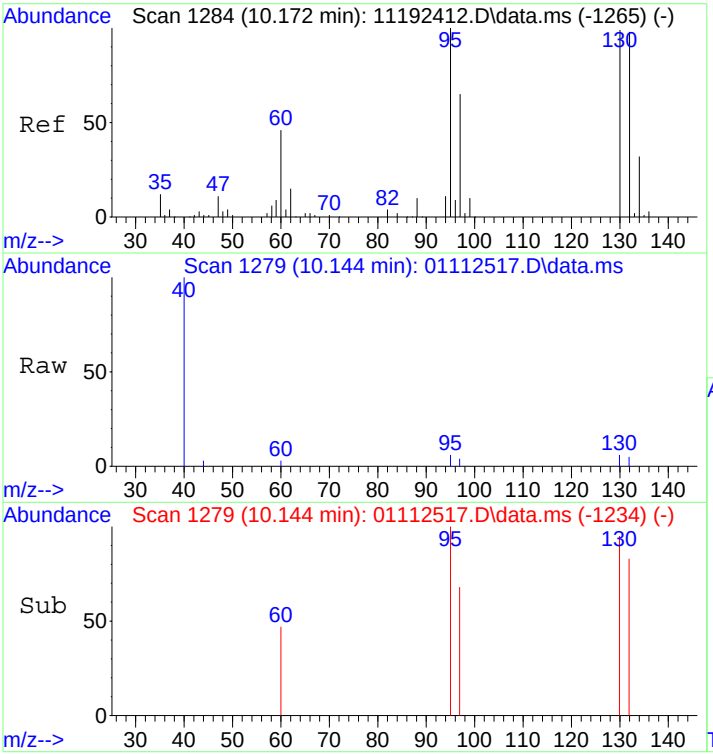


#21
Trichlorotrifluoroethane
Concen: 68.72 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01112517.D
Acq: 11 Jan 2025 15:06

Tgt Ion:151 Resp: 856694

Ion	Ratio	Lower	Upper
151	100		
101	119.8	105.0	145.0

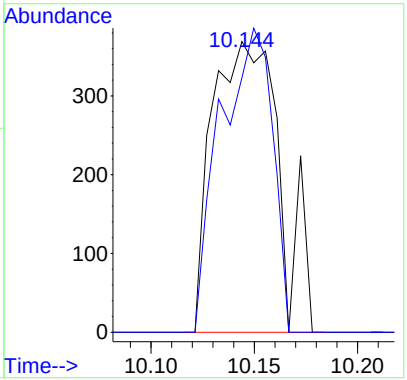


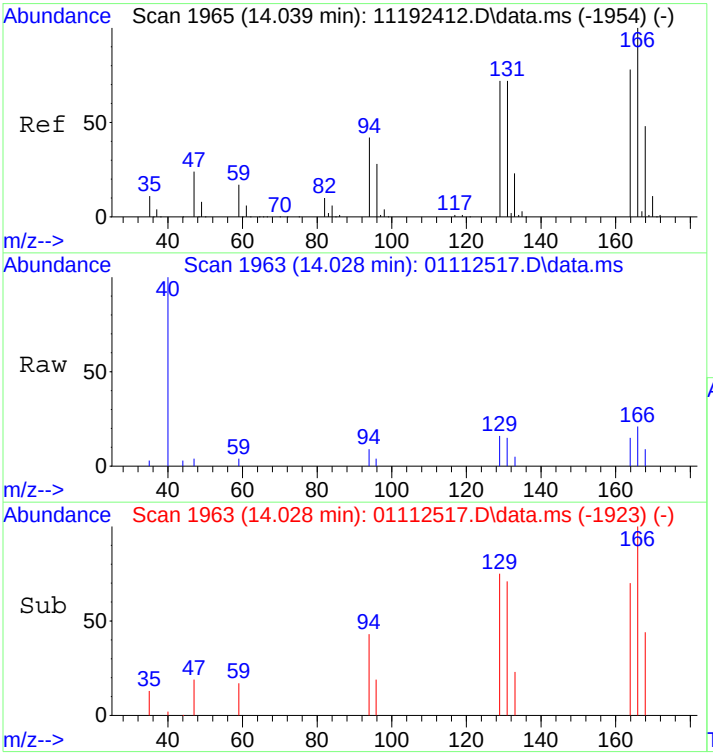


#47
Trichloroethene
Concen: 0.06 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01112517.D
Acq: 11 Jan 2025 15:06

Tgt Ion:130 Resp: 839

Ion	Ratio	Lower	Upper
130	100		
132	80.6	79.3	119.3

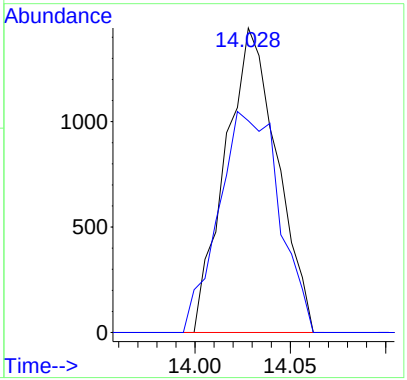




#64
Tetrachloroethene
Concen: 0.17 ng
RT: 14.03 min Scan# 1963
Delta R.T. -0.023 min
Lab File: 01112517.D
Acq: 11 Jan 2025 15:06

Tgt Ion:166 Resp: 2734

Ion	Ratio	Lower	Upper
166	100		
164	84.4	58.7	98.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 19:14:34 2025 NOA 1/12/25
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

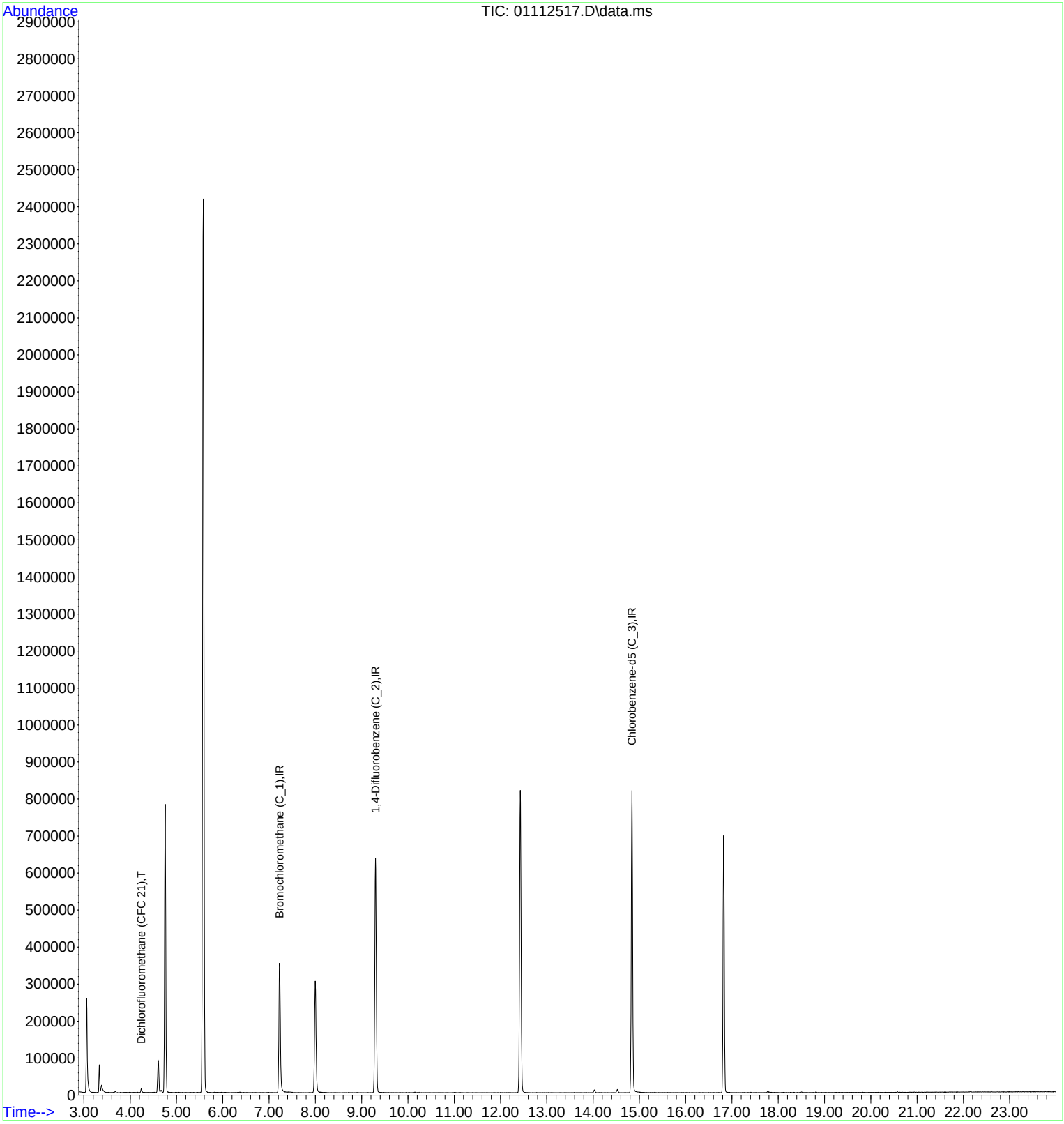
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	152988	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	648730	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	126034	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	145	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.24	67	9521	0.307	ng	97
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	d	
10) 2-Methylbutane	4.65	57	214	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

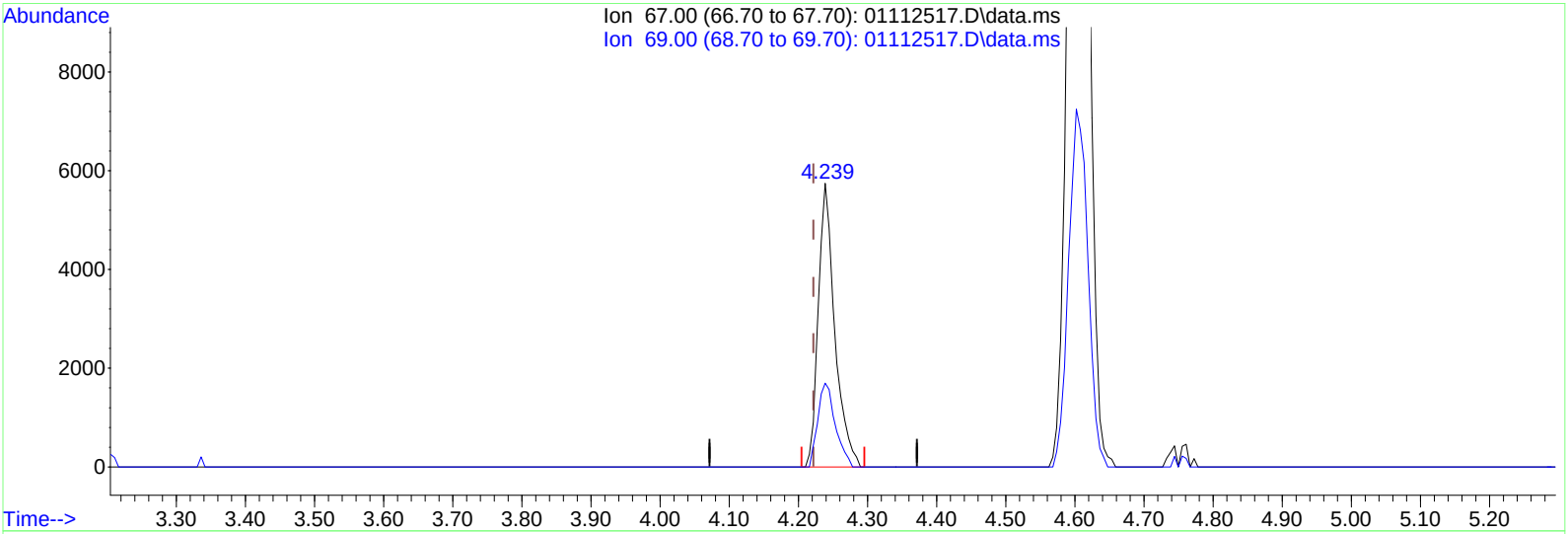
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

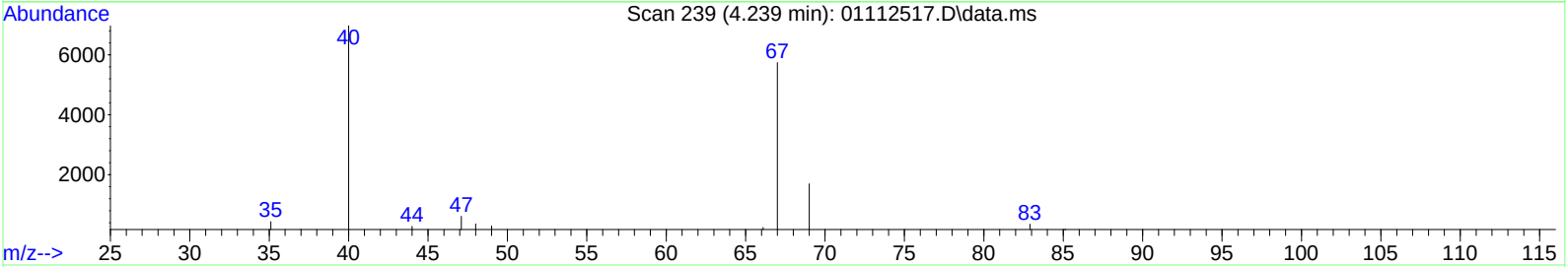
Quant Time: Jan 12 19:14:34 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

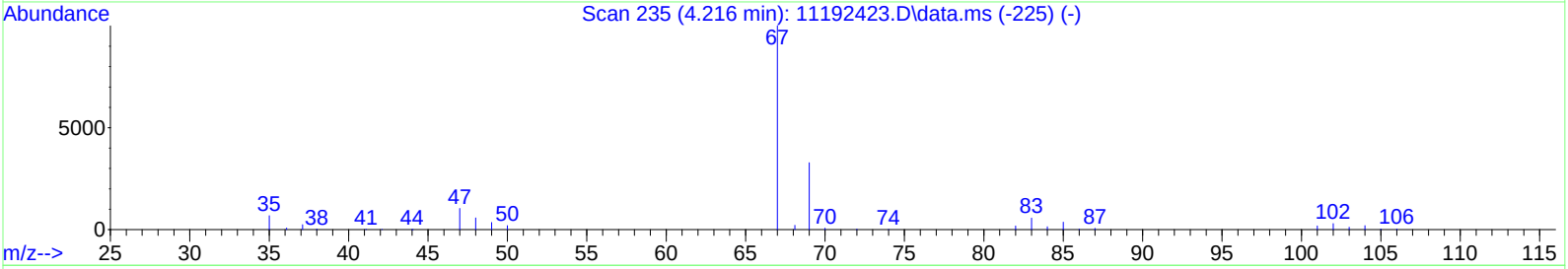


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 19:14:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112517.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.239min (+0.017) 0.31ng

response 9521

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.35
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112517.D\data.ms

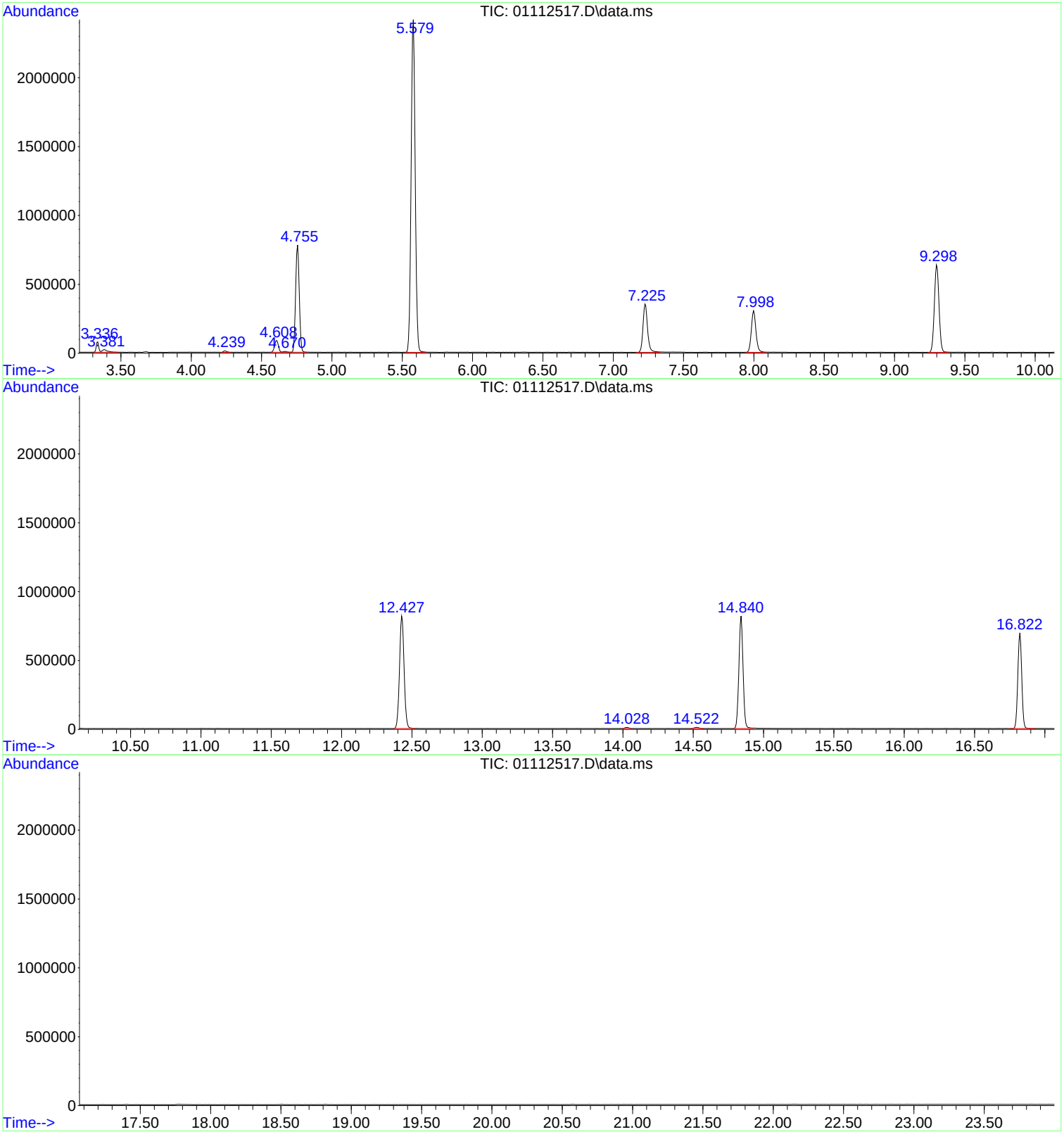
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.336	74	80	84	rBV	74707	95089	1.94%	0.659%
2	3.381	84	88	106	rVB	19467	49594	1.01%	0.344%
3	4.239	234	239	246	rBV2	10638	17981	0.37%	0.125%
4	4.608	296	304	311	rBV	84872	162916	3.33%	1.129%
5	4.670	311	315	322	rVV	5776	10869	0.22%	0.075%
6	4.755	322	330	342	rVB	778742	1383814	28.29%	9.593%
7	5.579	465	475	491	rBV	2415090	4890923	100.00%	33.904%
8	7.225	754	765	784	rBV	350556	792303	16.20%	5.492%
9	7.998	891	901	916	rBV	302153	689883	14.11%	4.782%
10	9.298	1120	1130	1145	rBV	634525	1438889	29.42%	9.974%
11	12.427	1671	1681	1697	rBV	817265	1851915	37.86%	12.837%
12	14.028	1957	1963	1969	rBV2	7497	15313	0.31%	0.106%
13	14.522	2042	2050	2060	rBV2	8447	19392	0.40%	0.134%
14	14.840	2096	2106	2121	rBV	816612	1676792	34.28%	11.624%
15	16.822	2443	2455	2474	rBV	694996	1330180	27.20%	9.221%

Sum of corrected areas: 14425853

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

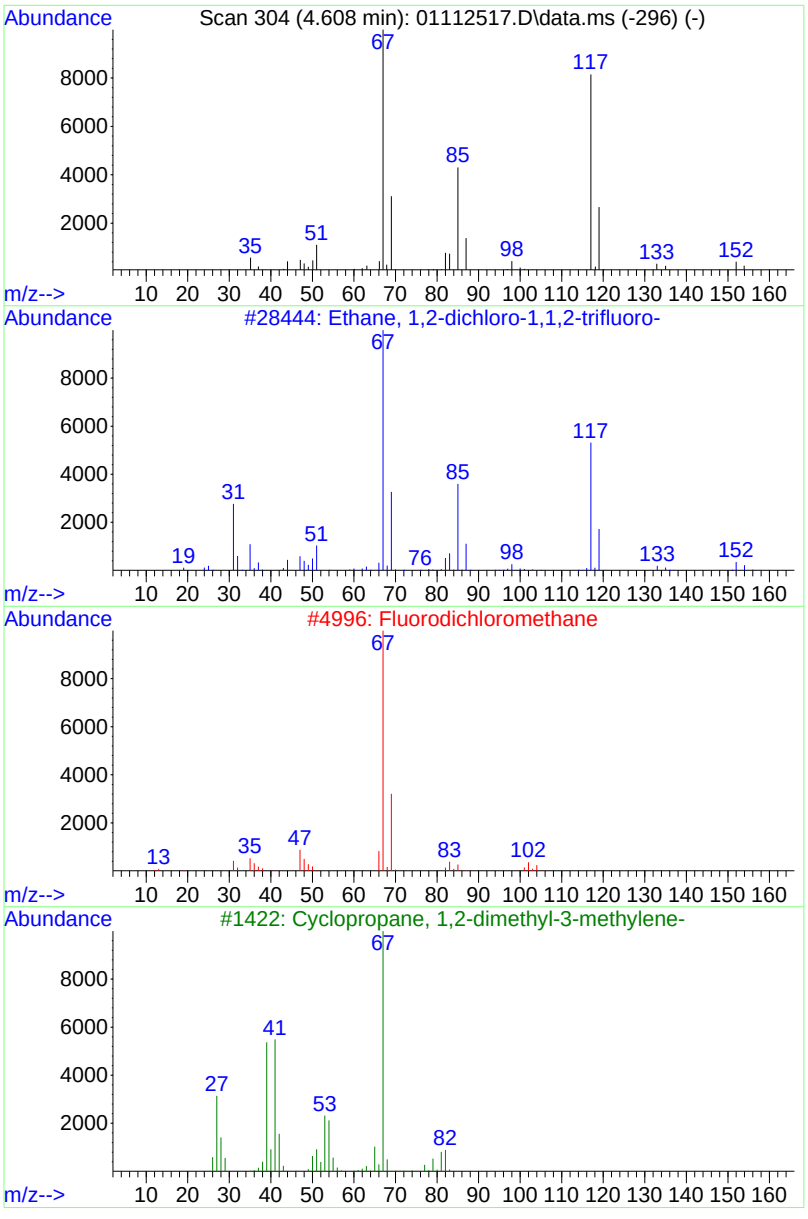
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

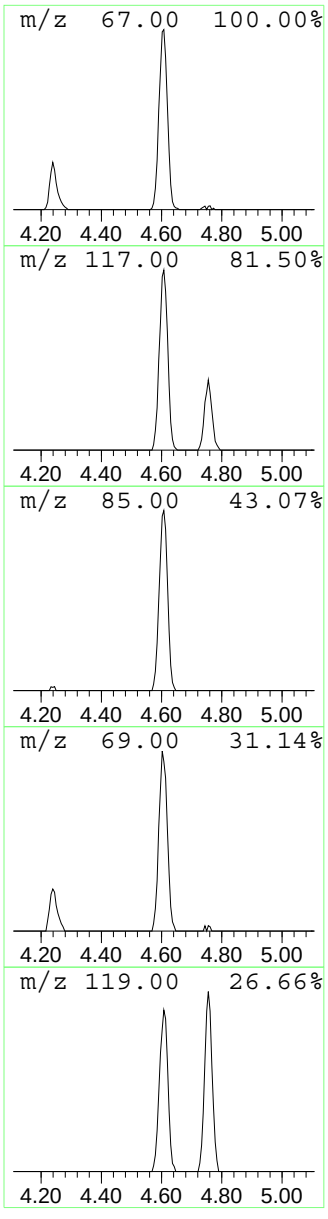
****

Peak Number 1 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.608	2.57 ng	162916	Bromochloromethane (IS1)	7.225

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	94
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
3	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	9
4	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	9
5	Cyclopentene, 3-methyl-	82	C6H10	001120-62-3	9





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112517.D
Acq On : 11 Jan 2025 15:06
Operator : LS
Sample : P2405139-039 (4.0mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.608	2.6	ng	162916	1	7.225	792303	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 14:13:31 2025 NOA 1/12/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143170	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	614444	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	115282	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	253913	13.017	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.16%				
57) Toluene-d8 (SS2)	12.43	98	638530	12.486	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.92%				
73) Bromofluorobenzene (SS3)	16.82	174	219832	12.456	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.68%				
Target Compounds							Qvalue
2) Propene	3.31	42	183	N.D.			
3) Dichlorodifluoromethan...	3.32	85	8677	0.310	ng	#	90
4) Chloromethane	3.53	50	233	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	211	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.14	64	120	N.D.			
10) Ethanol	4.31	45	1823	0.172	ng		95
11) Acetonitrile	4.47	41	374	N.D.			
12) Acrolein	4.56	56	351	N.D.			
13) Acetone	4.66	58	4782	0.496	ng	#	74
14) Trichlorofluoromethane	4.75	101	713942	27.201	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	2248	0.065	ng		81
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.35	59	53	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	841465	71.058	ng		96
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	325	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.35	83	1368	0.059	ng		90
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.84	56	641	No Calib		#	
41) Benzene	8.90	78	1625	N.D.			
42) Carbon Tetrachloride	9.07	117	181	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	682	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

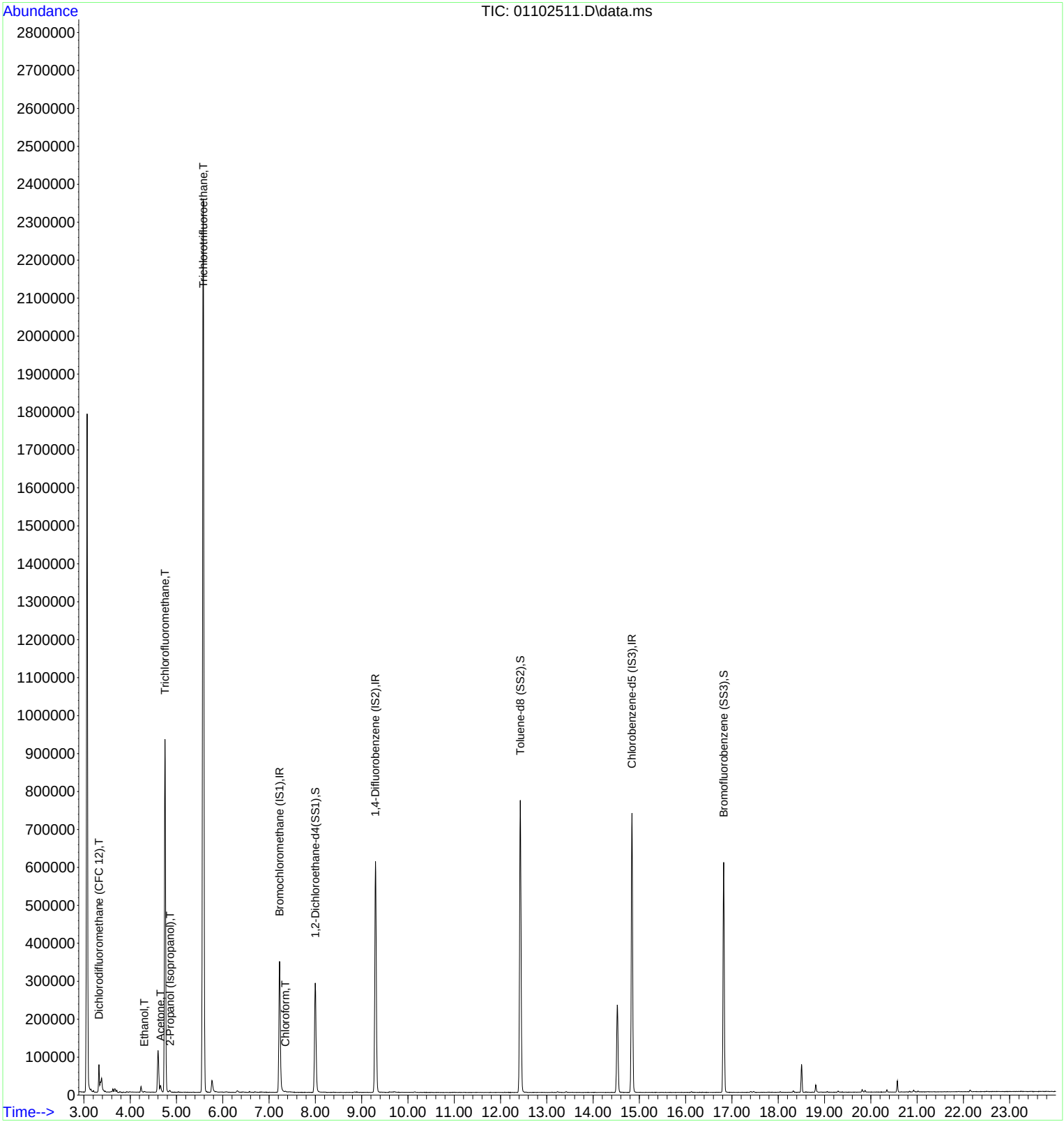
Quant Time: Jan 12 14:13:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	532	N.D.		
59) 2-Hexanone	12.95	43	111	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	15.63	91	169	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.67	91	308	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.43	105	261	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.56	91	170	N.D.		
85) 1,3-Dichlorobenzene	18.58	146	278	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	198	N.D.		
87) sec-Butylbenzene	18.74	105	166	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	396	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.03	146	278	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	728	N.D.		
95) Naphthalene	20.94	128	1111	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.30	225	133	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	1426	N.D.		
100) n-Butylbenzene	19.39	91	312	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 14:13:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

VOA 1/12/25

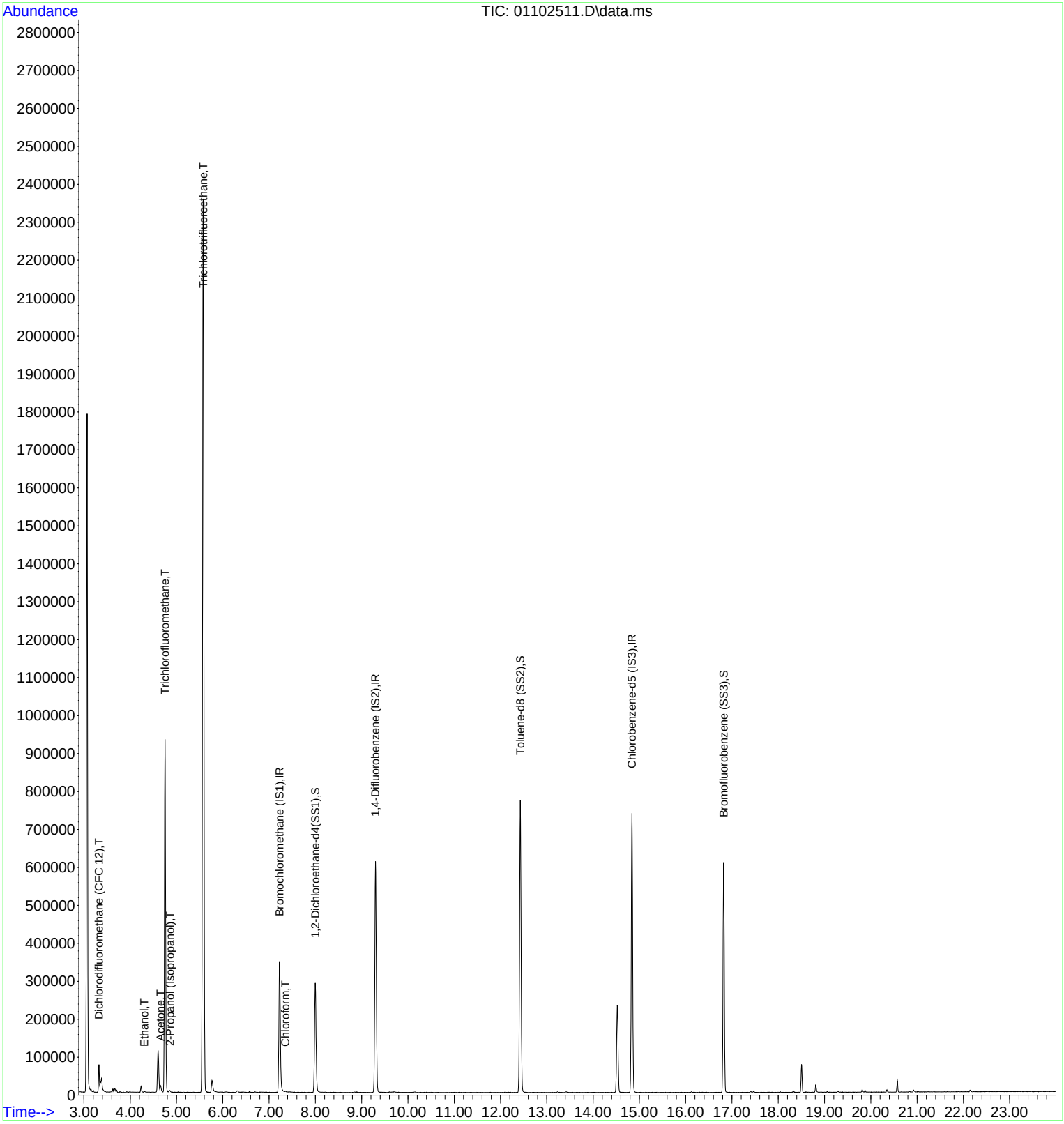
Quant Time: Jan 12 14:13:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

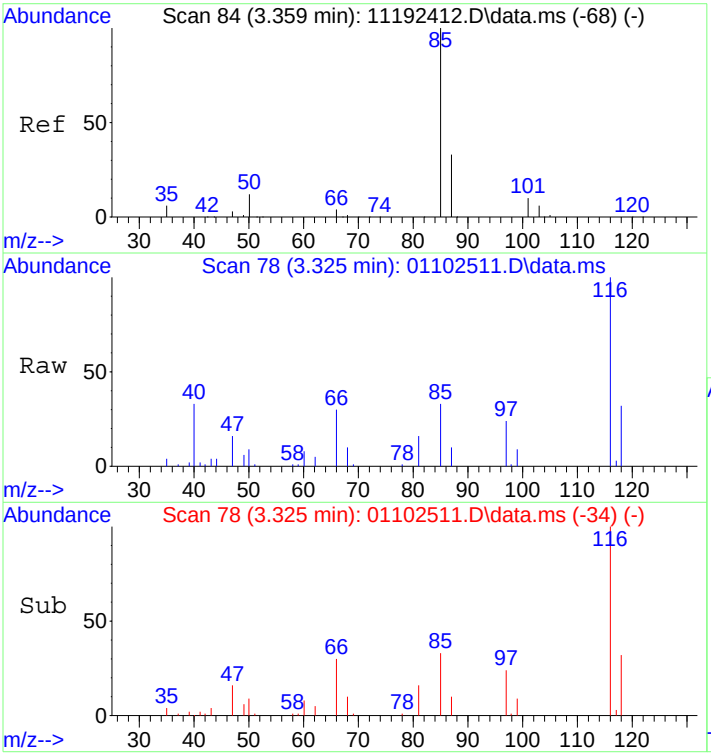
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143170	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	614444	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	115282	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	253913	13.017	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.16%				
57) Toluene-d8 (SS2)	12.43	98	638530	12.486	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.92%				
73) Bromofluorobenzene (SS3)	16.82	174	219832	12.456	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.68%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.32	85	8677	0.310	ng	#	90
10) Ethanol	4.31	45	1823	0.172	ng		95
13) Acetone	4.66	58	4782	0.496	ng	#	74
14) Trichlorofluoromethane	4.75	101	713942	27.201	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	2248	0.065	ng		81
21) Trichlorotrifluoroethane	5.58	151	841465	71.058	ng		96
32) Chloroform	7.35	83	1368	0.059	ng		90

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 14:13:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

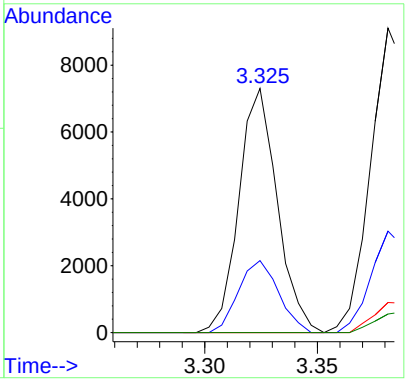


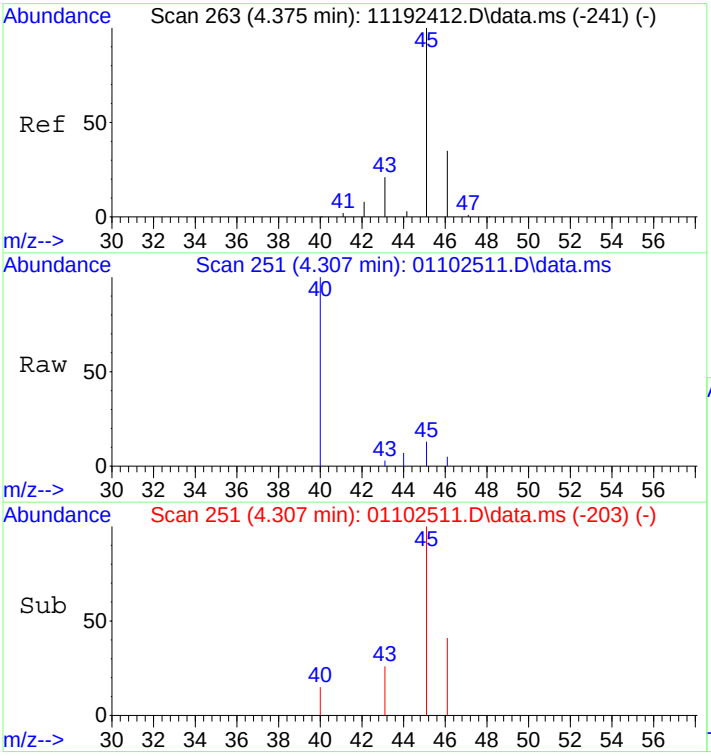


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.31 ng
RT: 3.32 min Scan# 78
Delta R.T. -0.003 min
Lab File: 01102511.D
Acq: 10 Jan 2025 22:38

Tgt Ion: 85 Resp: 8677

Ion	Ratio	Lower	Upper
85	100		
87	30.7	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

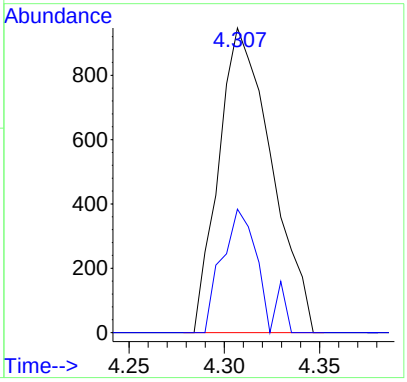


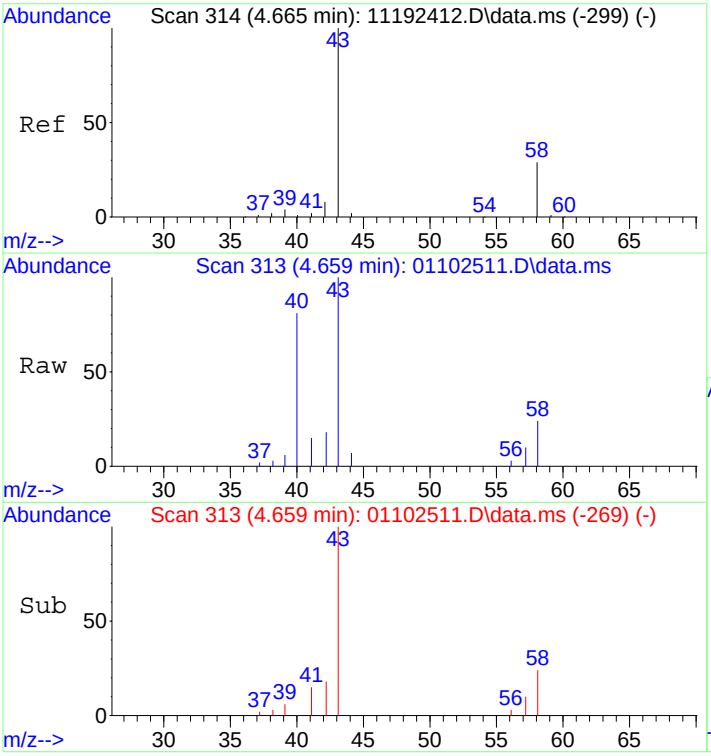


#10
Ethanol
Concen: 0.17 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01102511.D
Acq: 10 Jan 2025 22:38

Tgt Ion: 45 Resp: 1823

Ion	Ratio	Lower	Upper
45	100		
46	28.9	11.8	51.8

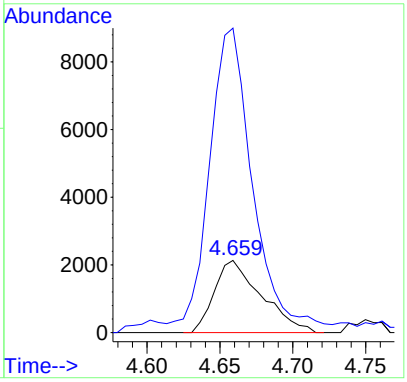


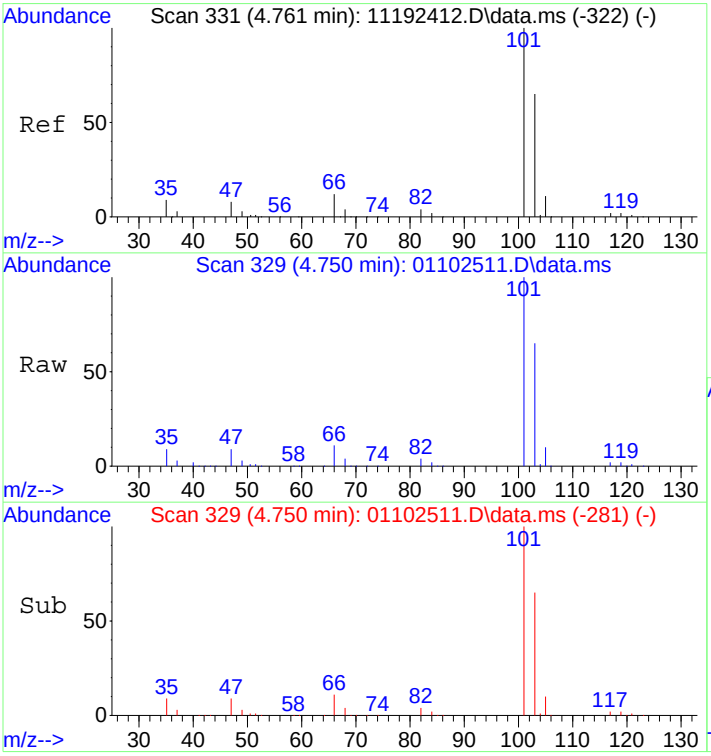


#13
Acetone
Concen: 0.50 ng
RT: 4.66 min Scan# 313
Delta R.T. -0.001 min
Lab File: 01102511.D
Acq: 10 Jan 2025 22:38

Tgt Ion: 58 Resp: 4782

Ion	Ratio	Lower	Upper
58	100		
43	398.2	312.5	372.5#

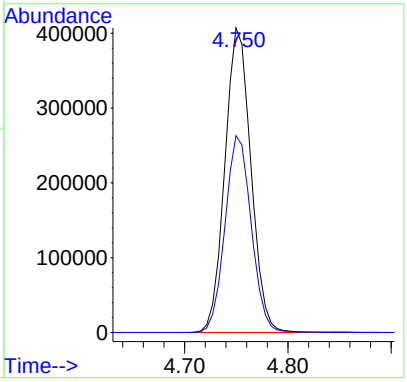


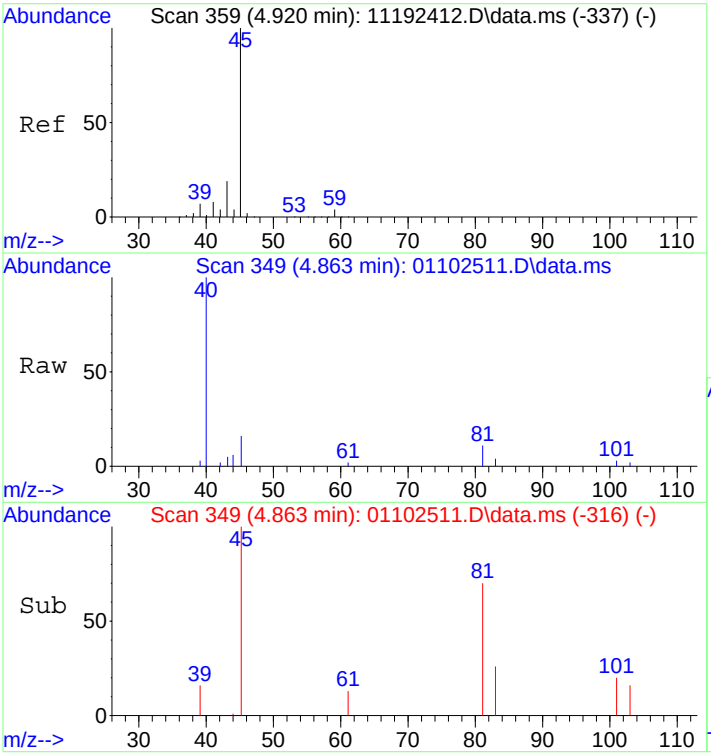


#14
Trichlorofluoromethane
Concen: 27.20 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01102511.D
Acq: 10 Jan 2025 22:38

Tgt Ion:101 Resp: 713942

Ion	Ratio	Lower	Upper
101	100		
103	65.1	44.8	84.8

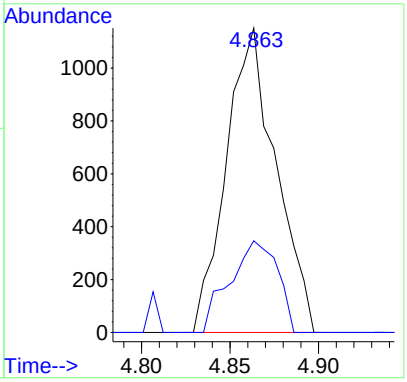


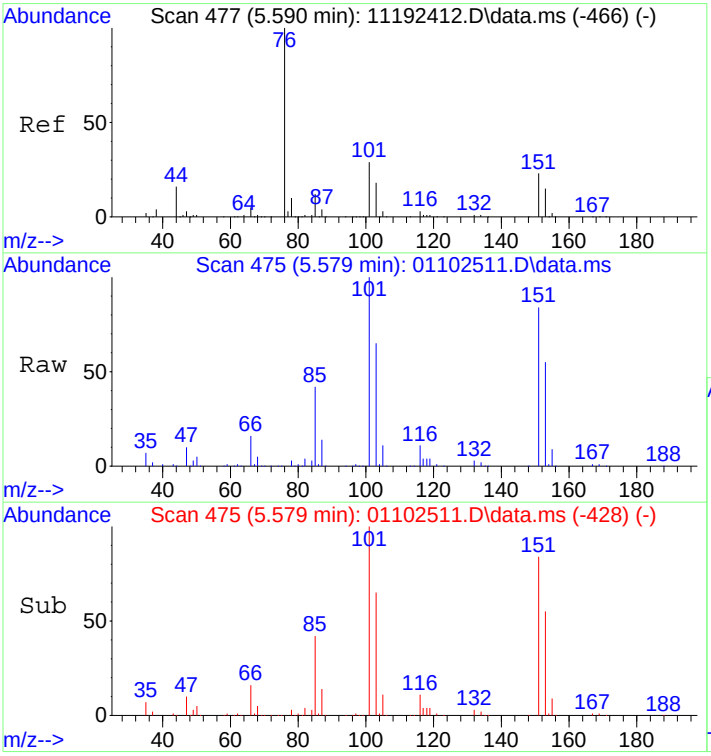


#15
2-Propanol (Isopropanol)
Concen: 0.07 ng
RT: 4.86 min Scan# 349
Delta R.T. -0.061 min
Lab File: 01102511.D
Acq: 10 Jan 2025 22:38

Tgt Ion: 45 Resp: 2248

Ion	Ratio	Lower	Upper
45	100		
43	29.0	0.2	40.2

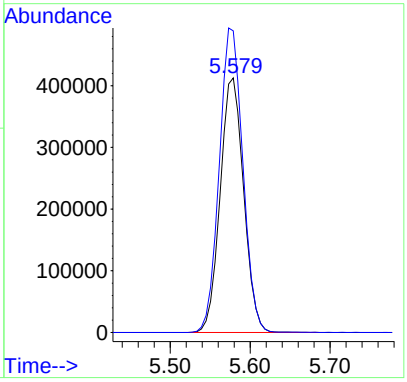


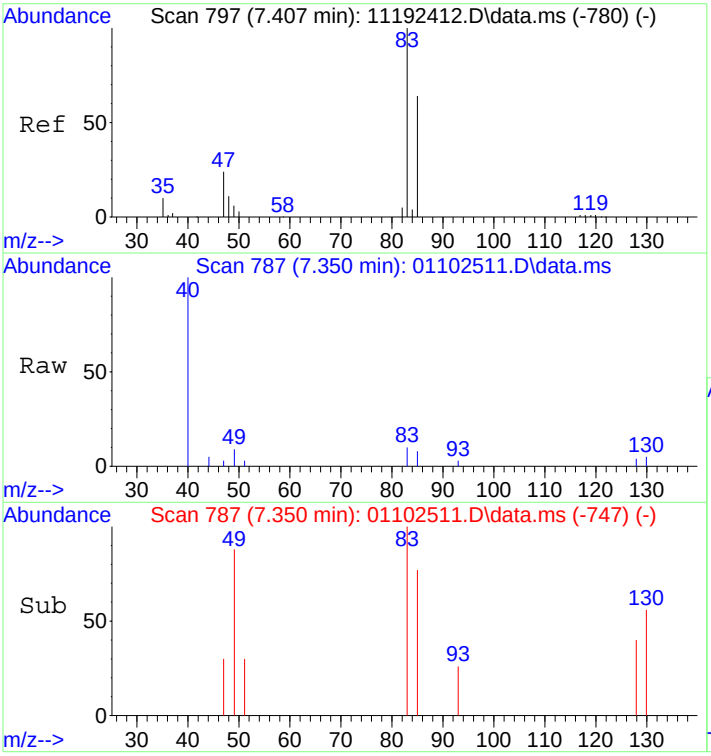


#21
Trichlorotrifluoroethane
Concen: 71.06 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01102511.D
Acq: 10 Jan 2025 22:38

Tgt Ion:151 Resp: 841465

Ion	Ratio	Lower	Upper
151	100		
101	120.1	105.0	145.0

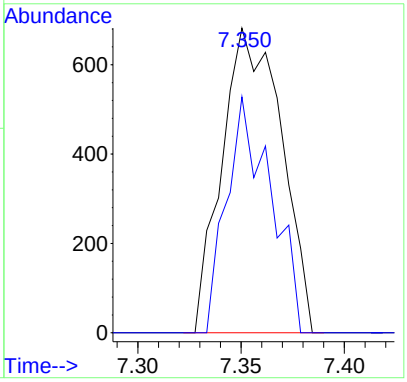




#32
Chloroform
Concen: 0.06 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01102511.D
Acq: 10 Jan 2025 22:38

Tgt Ion: 83 Resp: 1368

Ion	Ratio	Lower	Upper
83	100		
85	57.4	45.1	85.1



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 17:51:45 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

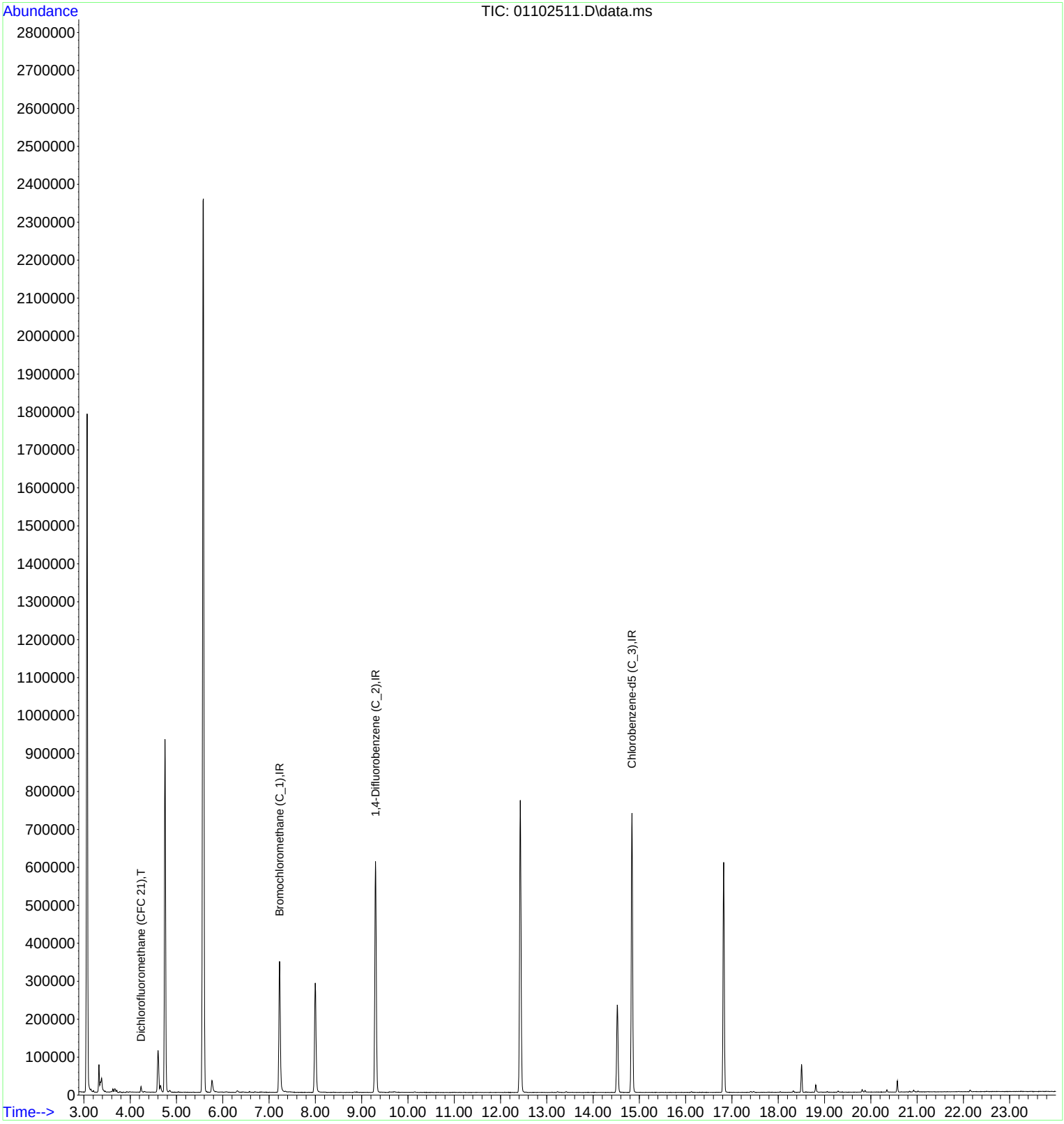
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	144614	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	615246	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	115282	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	119	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	906	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	3.30	67	304	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.51	65	243	N.D.		
7) Dichlorofluoromethane ...	4.23	67	12044	0.411	ng	99
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	d	
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.80	174	57	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.67	91	308	N.D.		
27) 4-Chlorotoluene	17.67	91	308	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

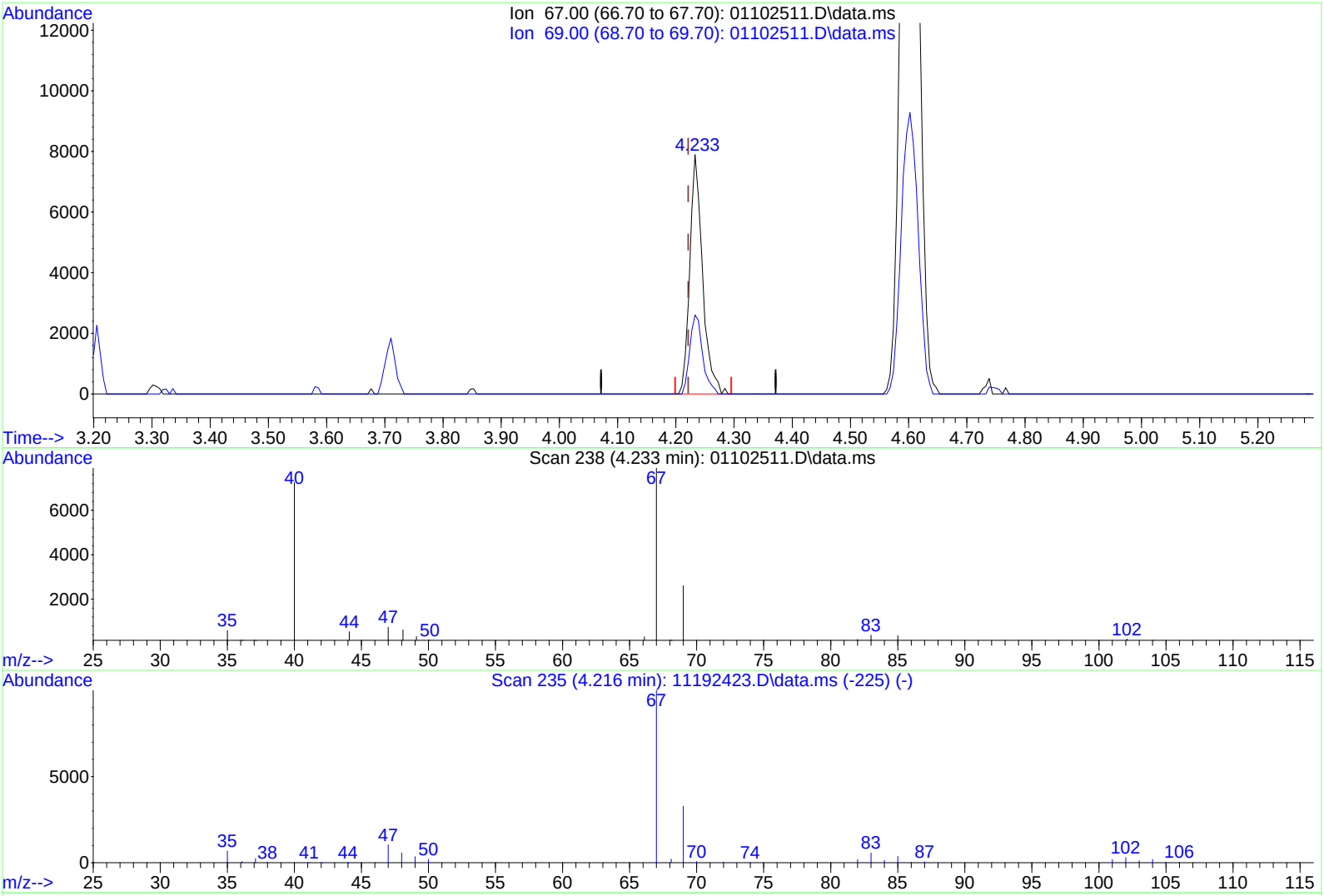
Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 17:51:45 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 17:48:42 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



TIC: 01102511.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.41ng

response 12044

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.10
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102511.D\data.ms

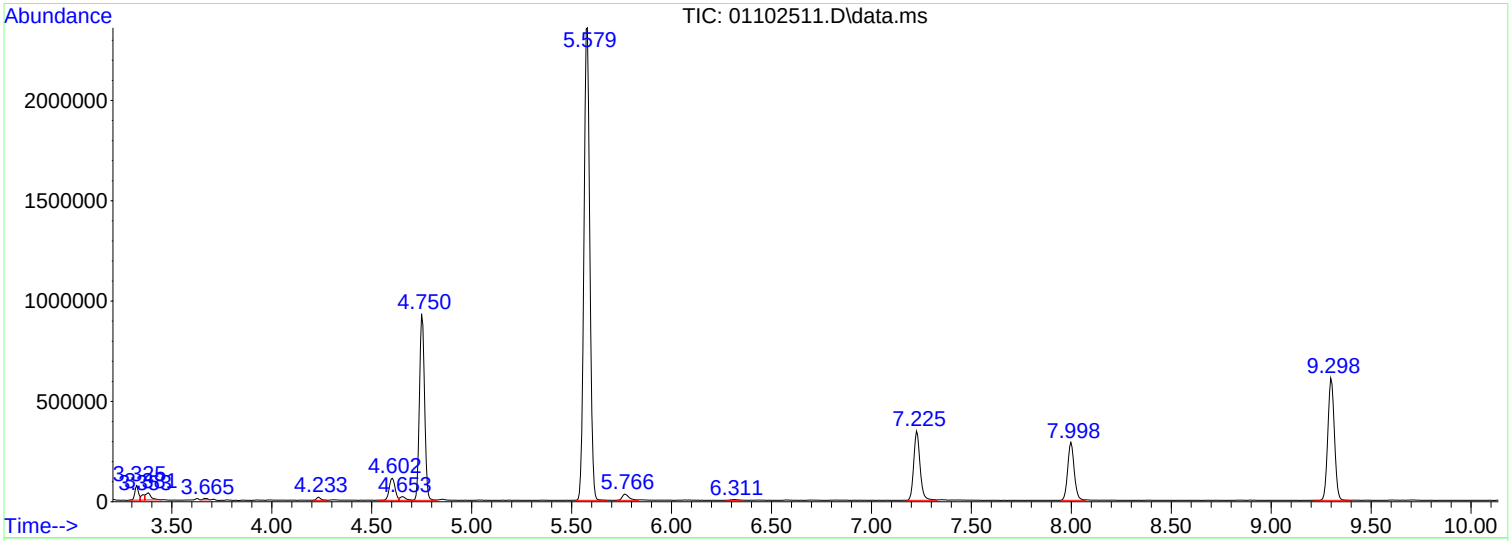
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.325	71	78	81	rBV	72845	95134	1.96%	0.636%
2	3.353	81	83	85	rVV	26486	33754	0.70%	0.226%
3	3.381	85	88	100	rVB	35946	65604	1.35%	0.439%
4	3.665	134	138	143	rBV3	7363	11758	0.24%	0.079%
5	4.233	233	238	246	rBV	15398	22949	0.47%	0.153%
6	4.602	291	303	309	rBV	110092	224980	4.65%	1.505%
7	4.653	309	312	321	rVV3	17950	34234	0.71%	0.229%
8	4.750	321	329	342	rVV	929894	1630475	33.66%	10.904%
9	5.579	465	475	492	rVB	2354756	4843385	100.00%	32.391%
10	5.766	500	508	520	rBV	31453	73741	1.52%	0.493%
11	6.311	597	604	611	rBV2	4384	10521	0.22%	0.070%
12	7.225	756	765	783	rBV	345012	759896	15.69%	5.082%
13	7.998	892	901	914	rBV	288617	656913	13.56%	4.393%
14	9.298	1115	1130	1148	rBV	608584	1375342	28.40%	9.198%
15	12.427	1669	1681	1695	rBV	770423	1728963	35.70%	11.563%
16	14.522	2041	2050	2061	rBV	230872	508797	10.50%	3.403%
17	14.840	2096	2106	2121	rBV	736039	1525447	31.50%	10.202%
18	16.822	2444	2455	2475	rBV	606453	1154374	23.83%	7.720%
19	18.502	2745	2751	2758	rVB2	73761	115828	2.39%	0.775%
20	18.809	2801	2805	2818	rBV	19518	30530	0.63%	0.204%
21	19.814	2977	2982	2989	rVB3	7036	10195	0.21%	0.068%
22	20.575	3110	3116	3124	rVB	29919	40080	0.83%	0.268%

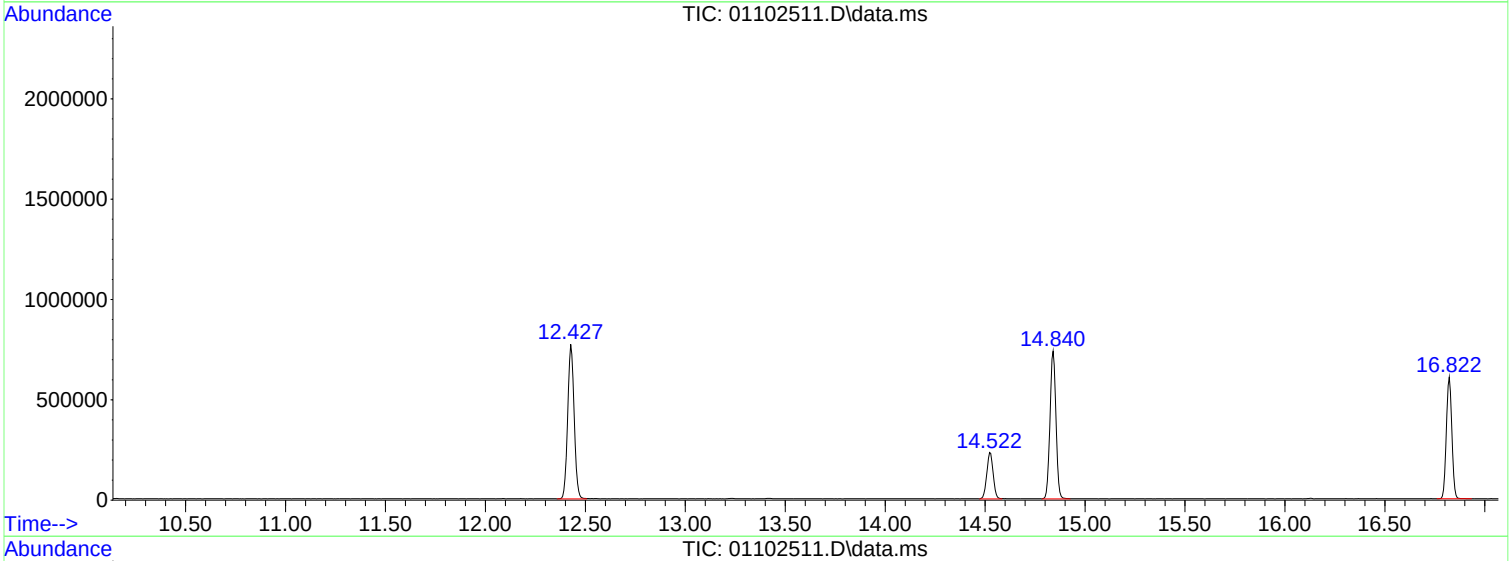
Sum of corrected areas: 14952900

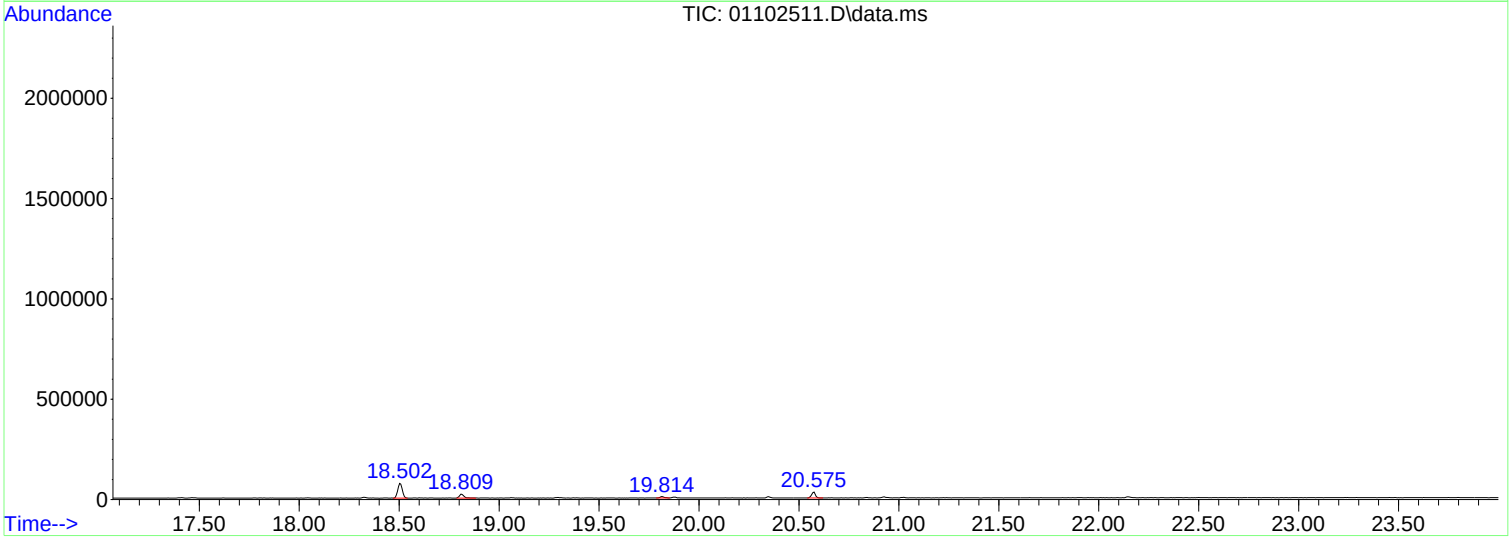
Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

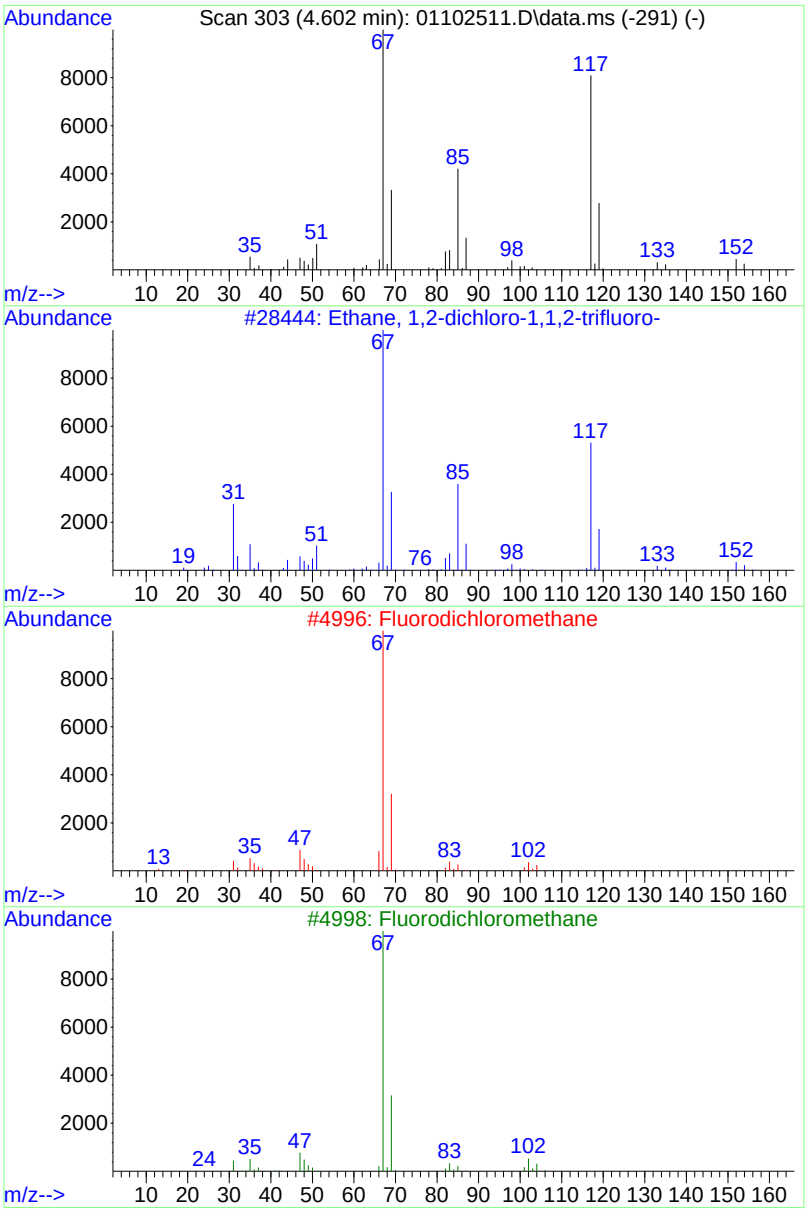
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

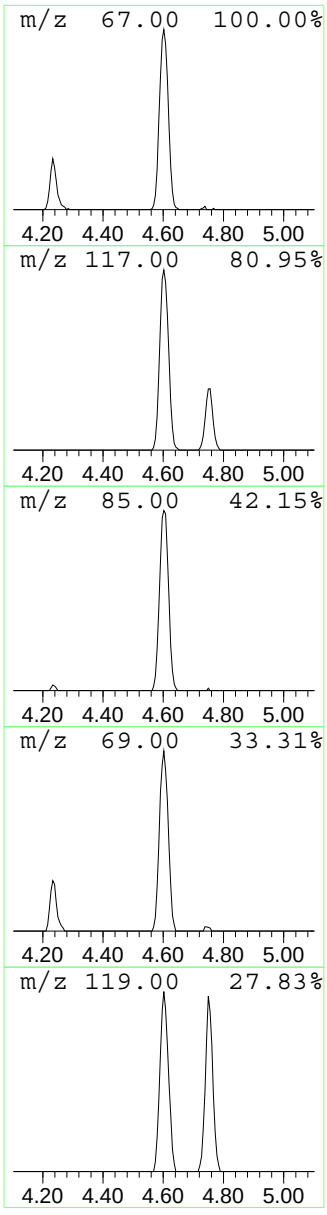
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 1 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.602	3.70 ng	224980	Bromochloromethane (IS1)	7.225

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	94
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
3	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
4	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	10
5	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	9





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\10\
Data File : 01102511.D
Acq On : 10 Jan 2025 22:38
Operator : CG
Sample : P2405139-040 (400mL)pf2
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

NOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.602	3.7	ng	224980	1	7.225	759896	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 14:16:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140374	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	610197	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	113840	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	253331	13.246	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%				
57) Toluene-d8 (SS2)	12.43	98	634084	12.556	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	16.82	174	216494	12.422	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.39	85	16455	0.600	ng		100
4) Chloromethane	3.52	50	2366	0.116	ng		92
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	339	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.10	64	159	N.D.			
10) Ethanol	4.29	45	24156	2.326	ng		98
11) Acetonitrile	4.45	41	552	N.D.			
12) Acrolein	4.55	56	806	0.091	ng		90
13) Acetone	4.64	58	21472	2.272	ng		88
14) Trichlorofluoromethane	4.76	101	71801	2.790	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	26457	0.782	ng		98
16) Acrylonitrile	5.04	53	393	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	729	0.055	ng		84
20) 3-Chloro-1-propene (Al...	5.44	41	110	N.D.			
21) Trichlorotrifluoroethane	5.58	151	50430	4.343	ng		95
22) Carbon Disulfide	5.61	76	1407	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.43	86	457	0.200	ng	#	30
27) 2-Butanone (MEK)	6.67	72	3277	0.432	ng	#	83
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	7.29	61	9963	2.126	ng		99
31) n-Hexane	7.30	57	709	N.D.			
32) Chloroform	7.36	83	816	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	6634	No Calib		#	
41) Benzene	8.90	78	4216	0.086	ng		97
42) Carbon Tetrachloride	9.07	117	1467	0.075	ng		95
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 14:16:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

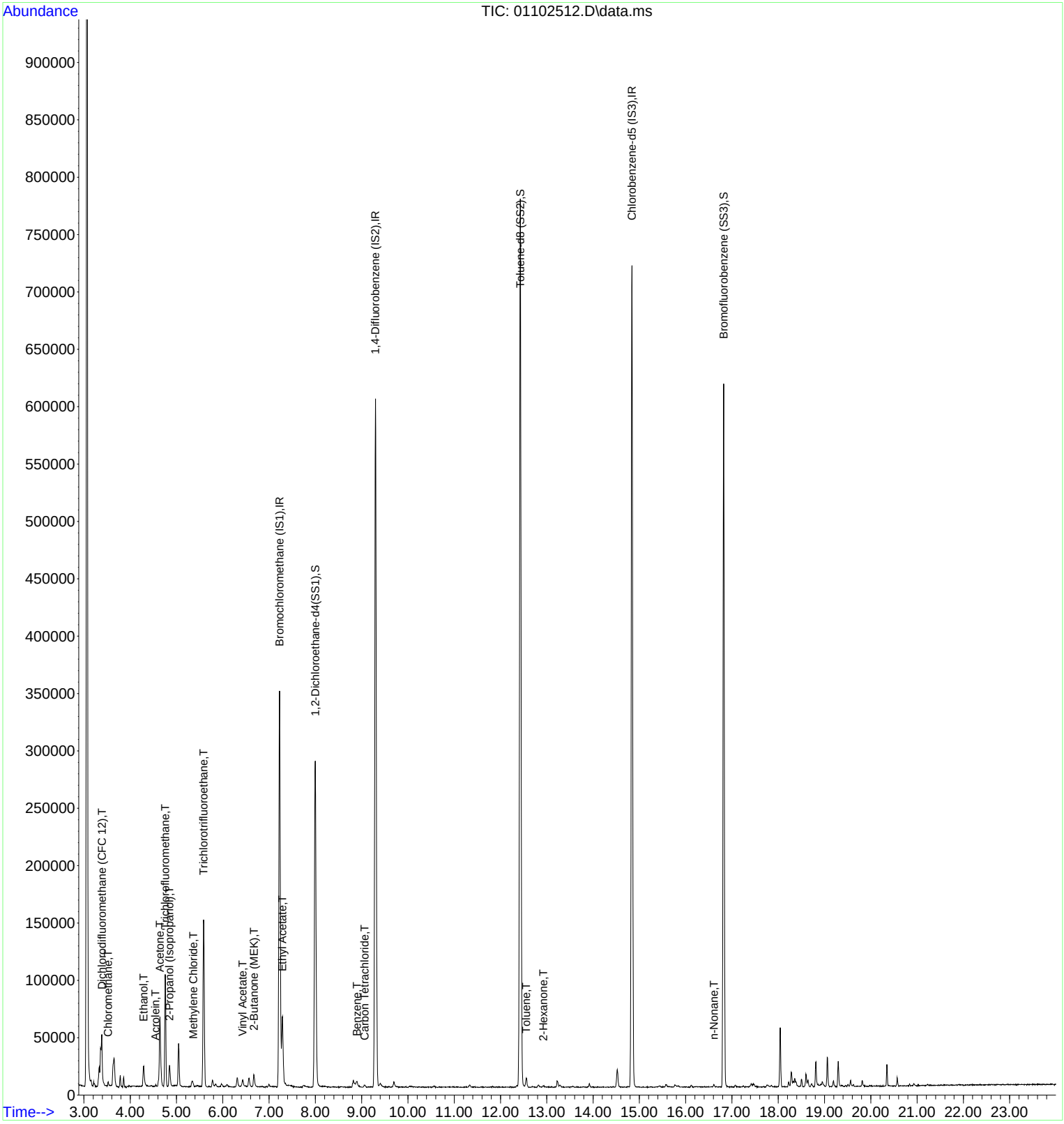
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	170	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D. d		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	7788	0.160 ng		97
59) 2-Hexanone	12.93	43	1749	0.074 ng	#	68
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	13.92	57	472	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.42	91	652	N.D.		
67) m- & p-Xylenes	15.63	91	1028	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.11	104	187	N.D.		
70) o-Xylene	16.24	91	371	N.D.		
71) n-Nonane	16.61	43	1237	0.054 ng	#	71
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	17.52	93	521	N.D.		
76) n-Propylbenzene	17.68	91	421	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.43	105	335	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	18.58	146	248	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	283	N.D.		
87) sec-Butylbenzene	18.75	105	202	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	475	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.03	146	248	N.D.		
91) d-Limonene	19.08	68	124	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.05	58	1173	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	682	N.D.		
95) Naphthalene	20.94	128	985	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	166	N.D.		
100) n-Butylbenzene	19.38	91	352	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 14:16:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 14:16:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

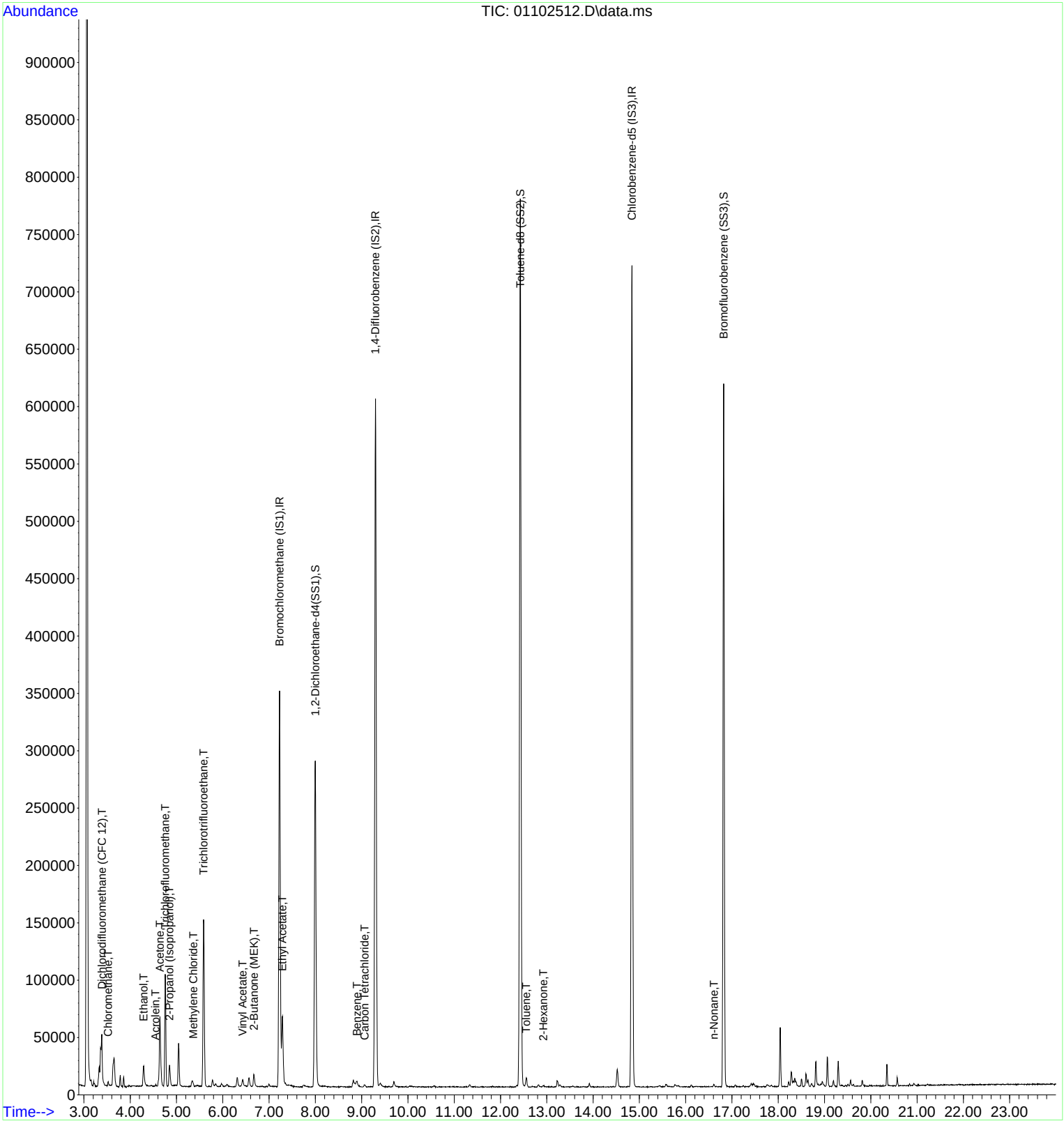
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140374	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	610197	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	113840	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	253331	13.246	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%				
57) Toluene-d8 (SS2)	12.43	98	634084	12.556	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	16.82	174	216494	12.422	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	16455	0.600	ng		100
4) Chloromethane	3.52	50	2366	0.116	ng		92
10) Ethanol	4.29	45	24156	2.326	ng		98
12) Acrolein	4.55	56	806	0.091	ng		90
13) Acetone	4.64	58	21472	2.272	ng		88
14) Trichlorofluoromethane	4.76	101	71801	2.790	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	26457	0.782	ng		98
19) Methylene Chloride	5.36	84	729	0.055	ng		84
21) Trichlorotrifluoroethane	5.58	151	50430	4.343	ng		95
26) Vinyl Acetate	6.43	86	457	0.200	ng	#	30
27) 2-Butanone (MEK)	6.67	72	3277	0.432	ng	#	83
30) Ethyl Acetate	7.29	61	9963	2.126	ng		99
41) Benzene	8.90	78	4216	0.086	ng		97
42) Carbon Tetrachloride	9.07	117	1467	0.075	ng		95
58) Toluene	12.56	91	7788	0.160	ng		97
59) 2-Hexanone	12.93	43	1749	0.074	ng	#	68
71) n-Nonane	16.61	43	1237	0.054	ng	#	71

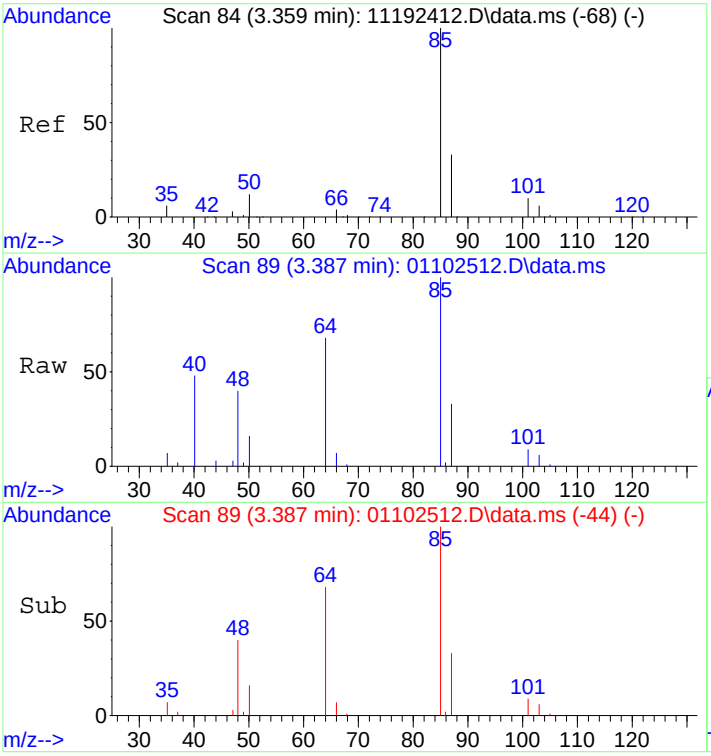
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 14:16:13 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

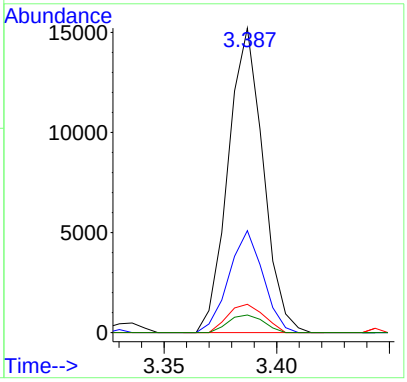


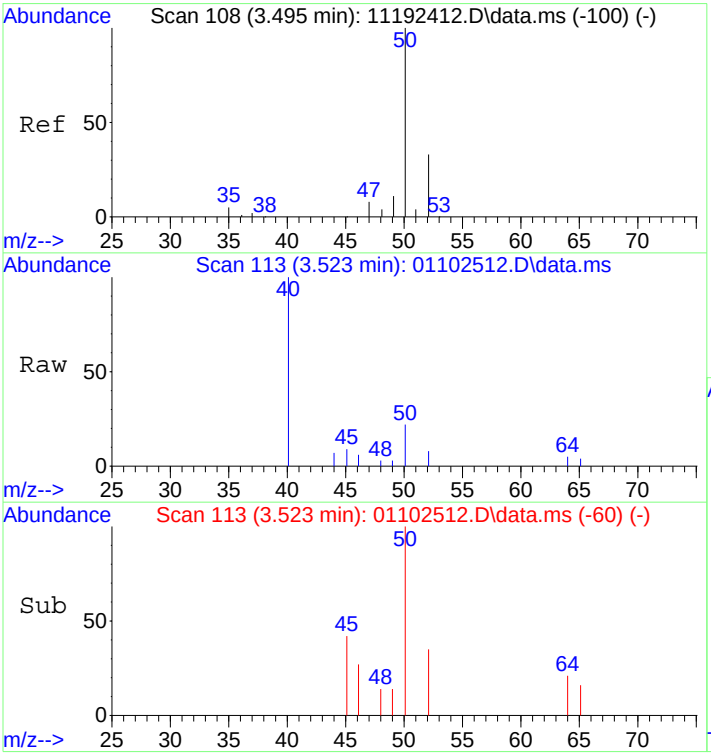


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.60 ng
RT: 3.39 min Scan# 89
Delta R.T. 0.008 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 85 Resp: 16455

Ion	Ratio	Lower	Upper
85	100		
87	32.8	12.6	52.6
101	9.6	0.0	29.6
103	5.8	0.0	26.2

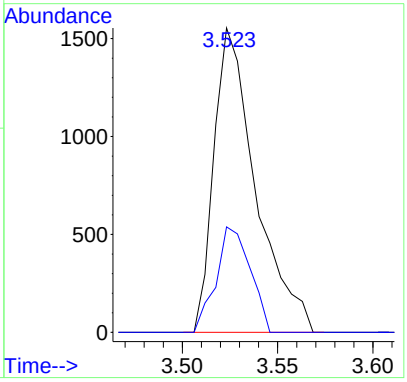


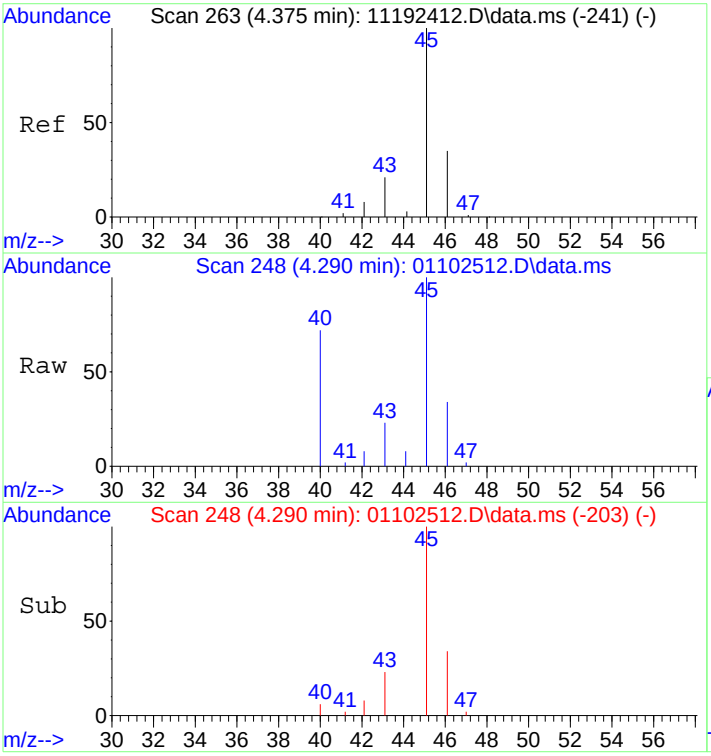


#4
Chloromethane
Concen: 0.12 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 50 Resp: 2366

Ion	Ratio	Lower	Upper
50	100		
52	28.4	13.0	53.0

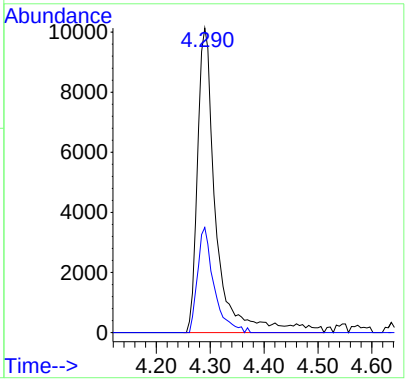


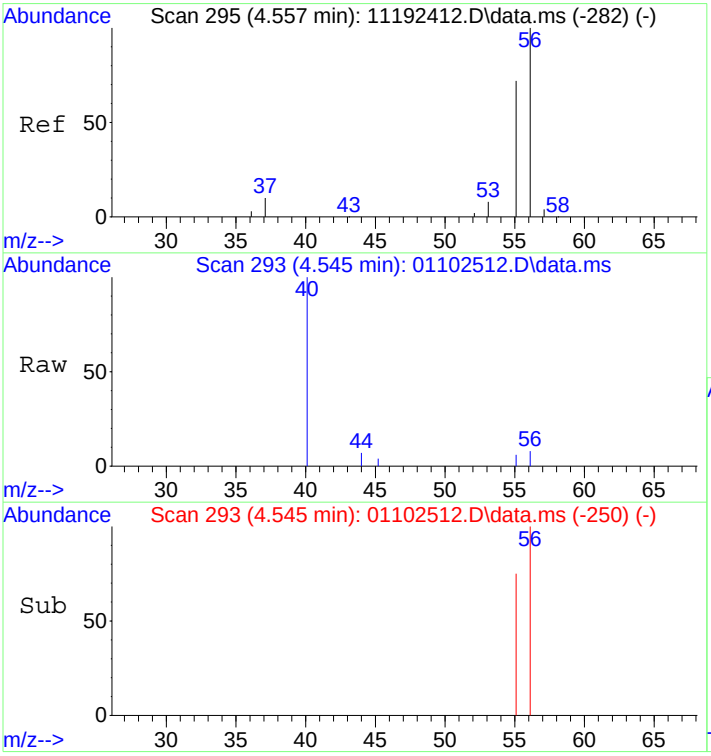


#10
Ethanol
Concen: 2.33 ng
RT: 4.29 min Scan# 248
Delta R.T. 0.006 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 45 Resp: 24156

Ion	Ratio	Lower	Upper
45	100		
46	30.5	11.8	51.8

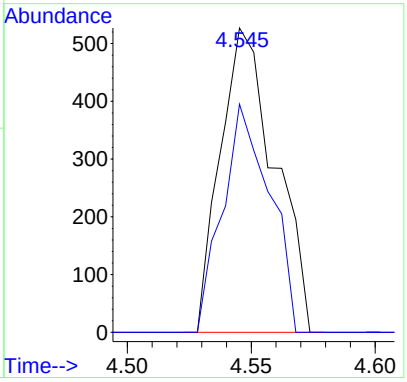


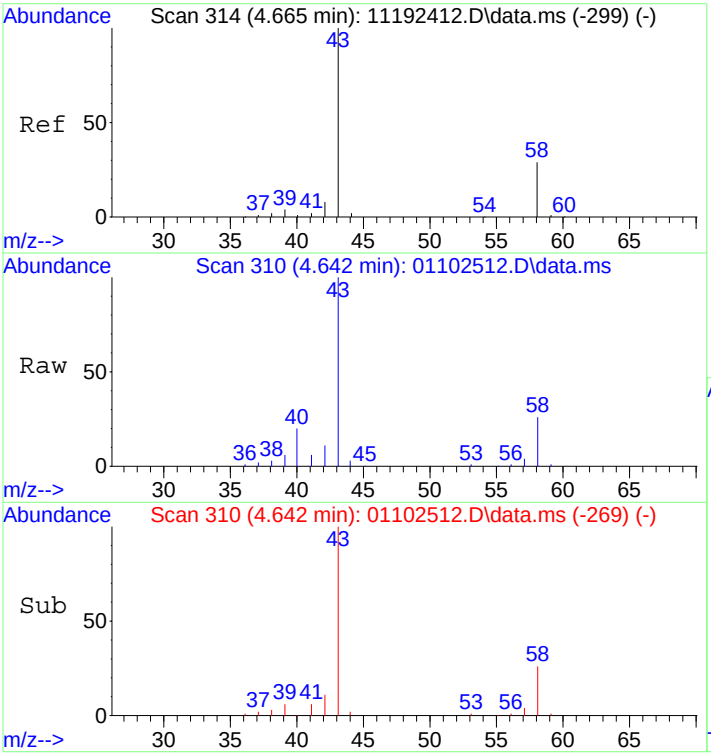


#12
Acrolein
Concen: 0.09 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 56 Resp: 806

Ion	Ratio	Lower	Upper
56	100		
55	64.9	53.1	93.1

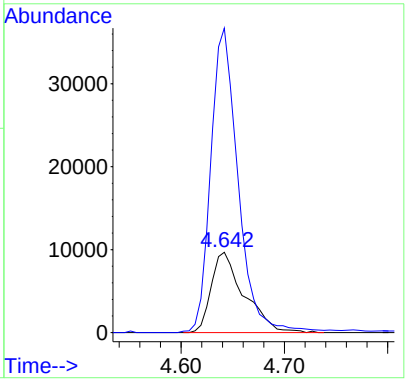


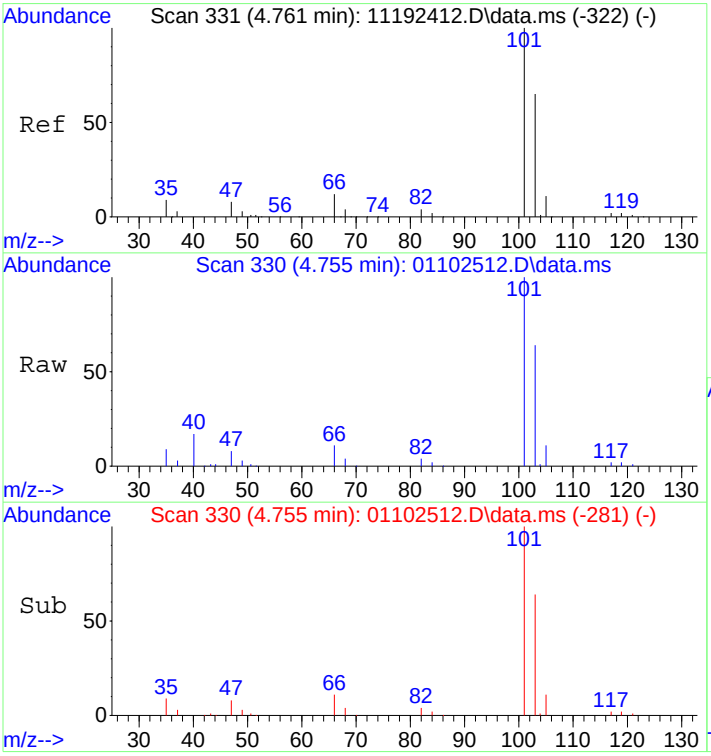


#13
Acetone
Concen: 2.27 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 58 Resp: 21472

Ion	Ratio	Lower	Upper
58	100		
43	316.0	312.5	372.5

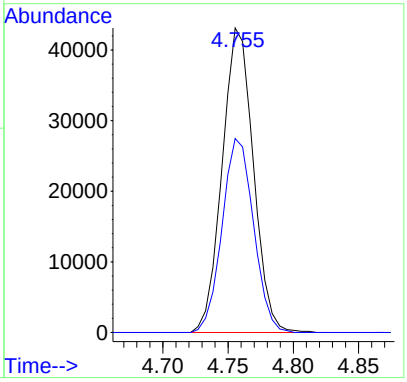


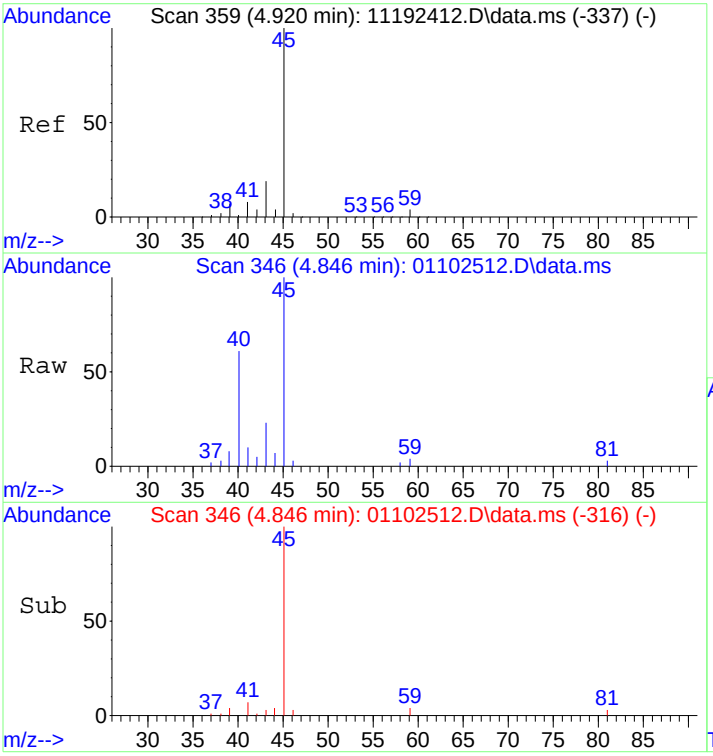


#14
Trichlorofluoromethane
Concen: 2.79 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion:101 Resp: 71801

Ion	Ratio	Lower	Upper
101	100		
103	64.2	44.8	84.8

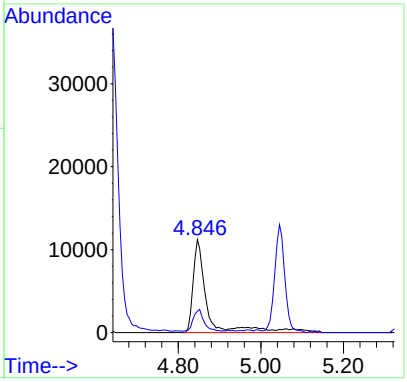


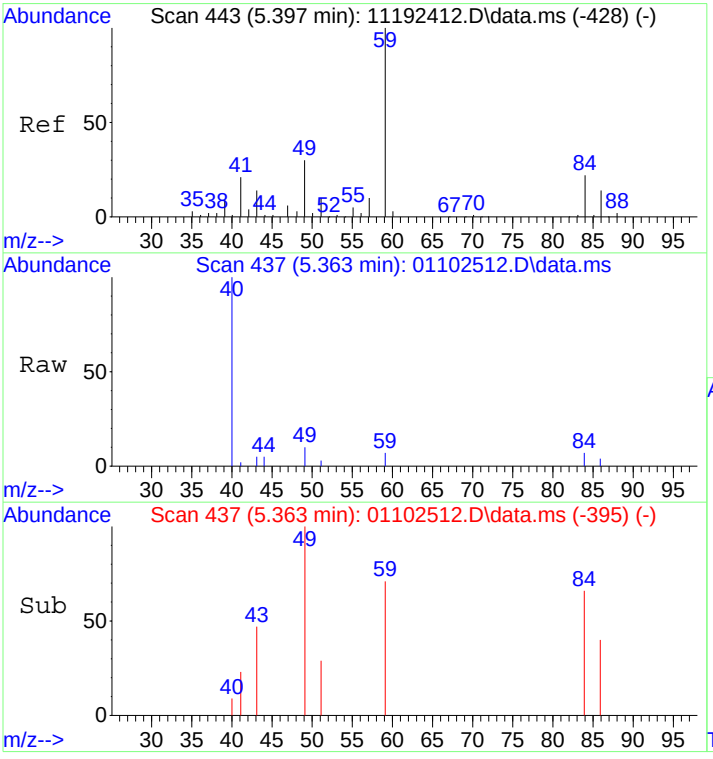


#15
2-Propanol (Isopropanol)
Concen: 0.78 ng
RT: 4.85 min Scan# 346
Delta R.T. -0.078 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 45 Resp: 26457

Ion	Ratio	Lower	Upper
45	100		
43	21.3	0.2	40.2

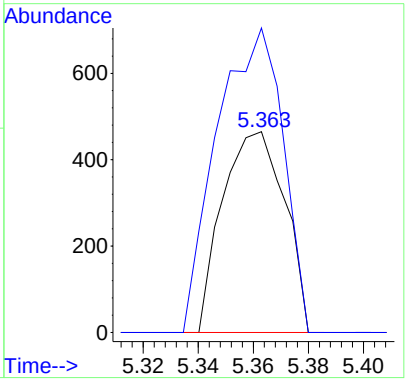


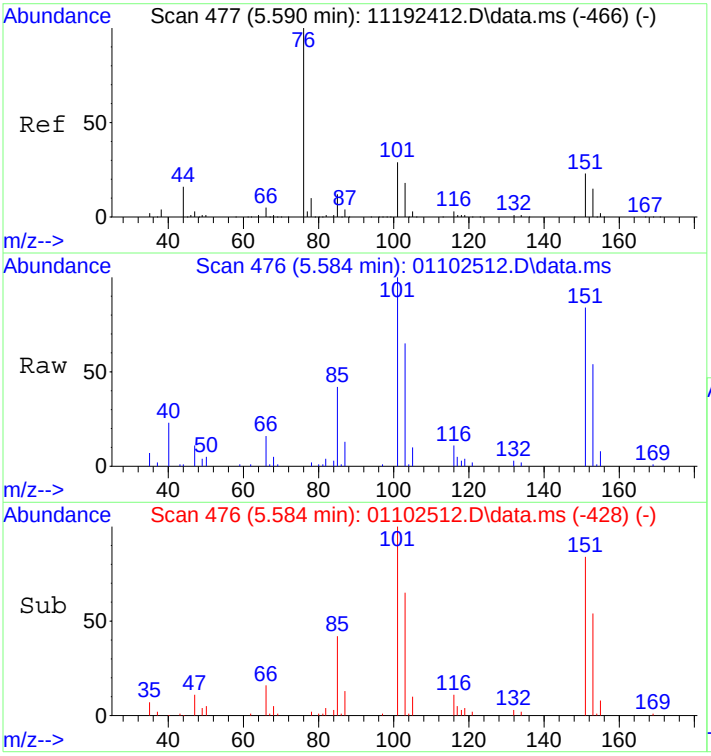


#19
Methylene Chloride
Concen: 0.05 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 84 Resp: 729

Ion	Ratio	Lower	Upper
84	100		
49	160.8	116.0	166.0

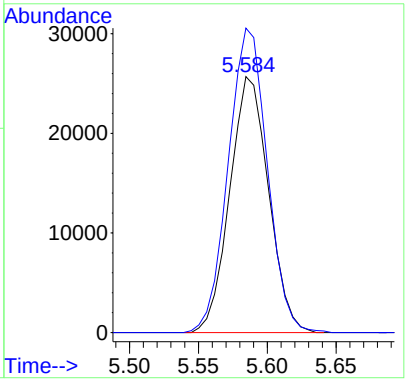


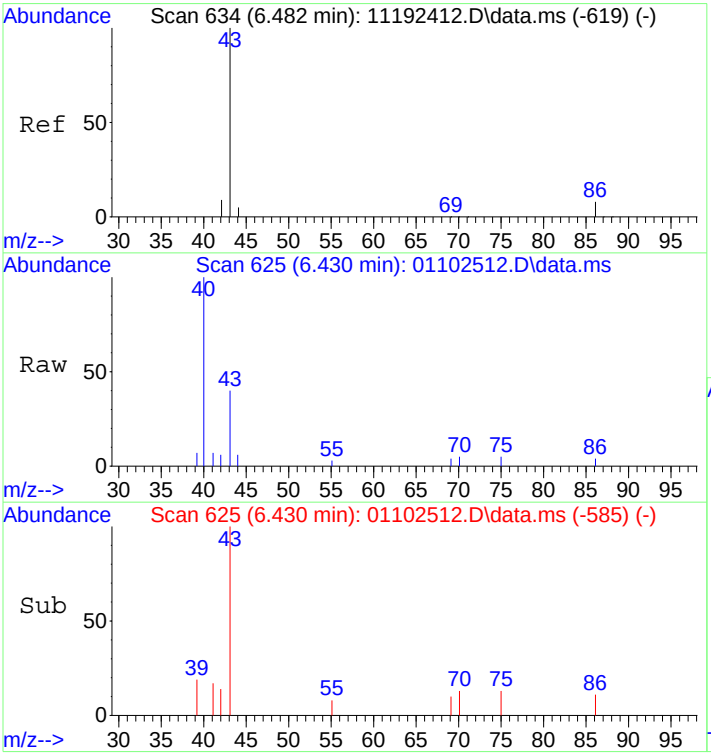


#21
Trichlorotrifluoroethane
Concen: 4.34 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion:151 Resp: 50430

Ion	Ratio	Lower	Upper
151	100		
101	119.6	105.0	145.0

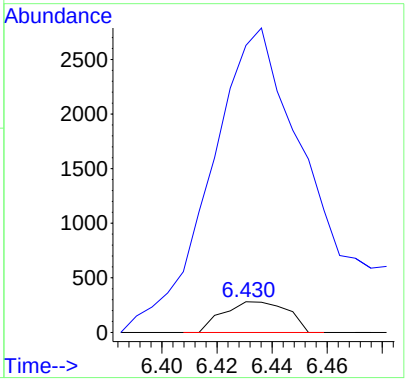


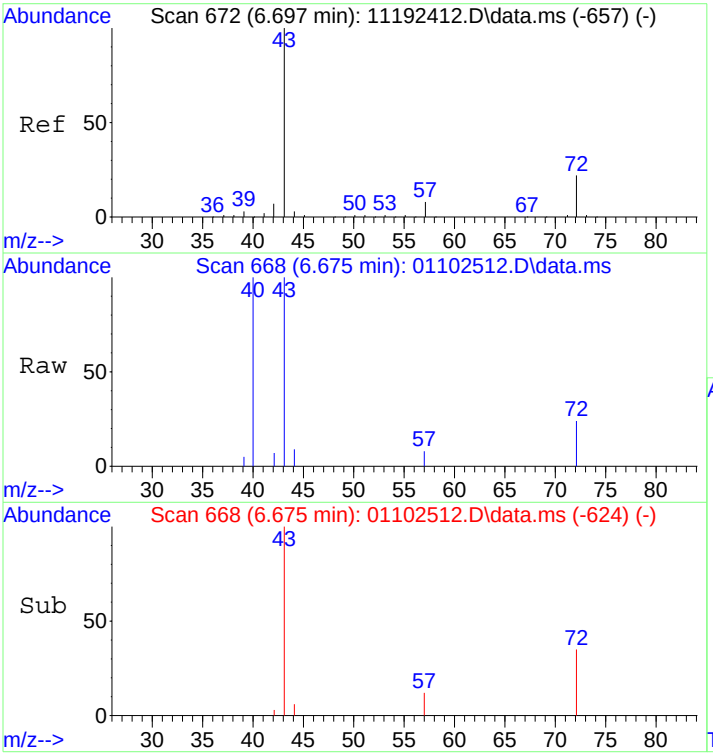


#26
Vinyl Acetate
Concen: 0.20 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 86 Resp: 457

Ion	Ratio	Lower	Upper
86	100		
43	1737.9	1331.6	1371.6#

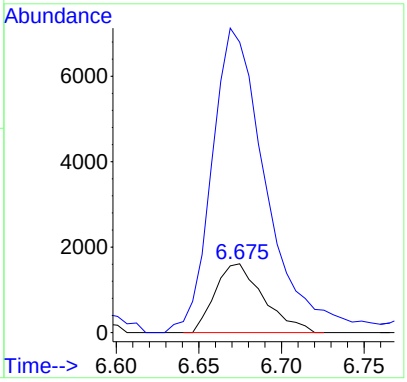


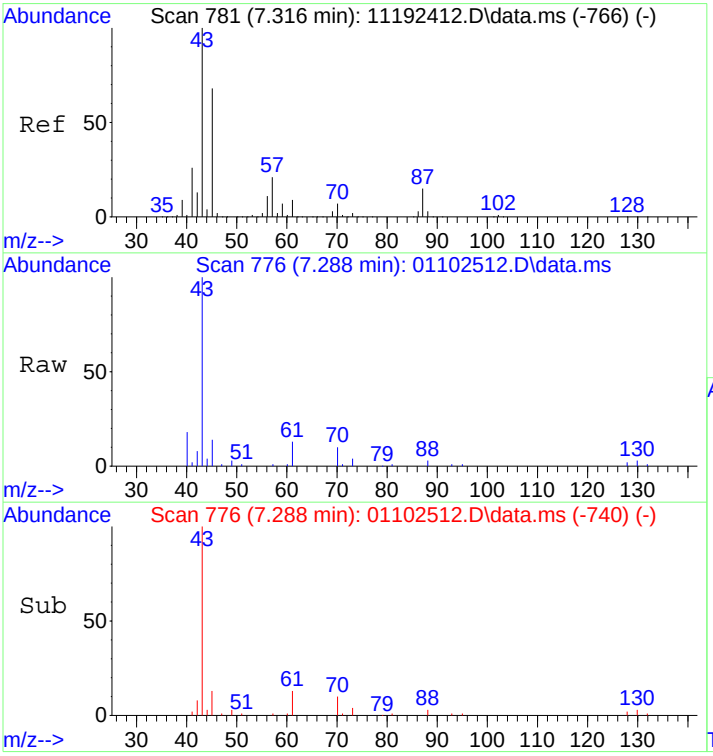


#27
2-Butanone (MEK)
Concen: 0.43 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 72 Resp: 3277

Ion	Ratio	Lower	Upper
72	100		
43	503.1	439.8	479.8#

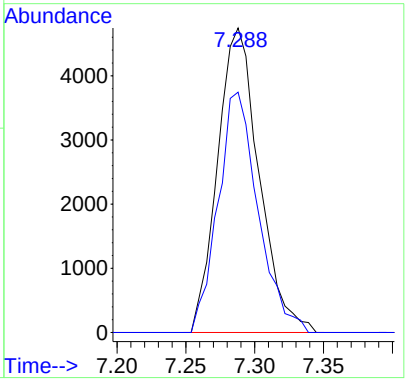


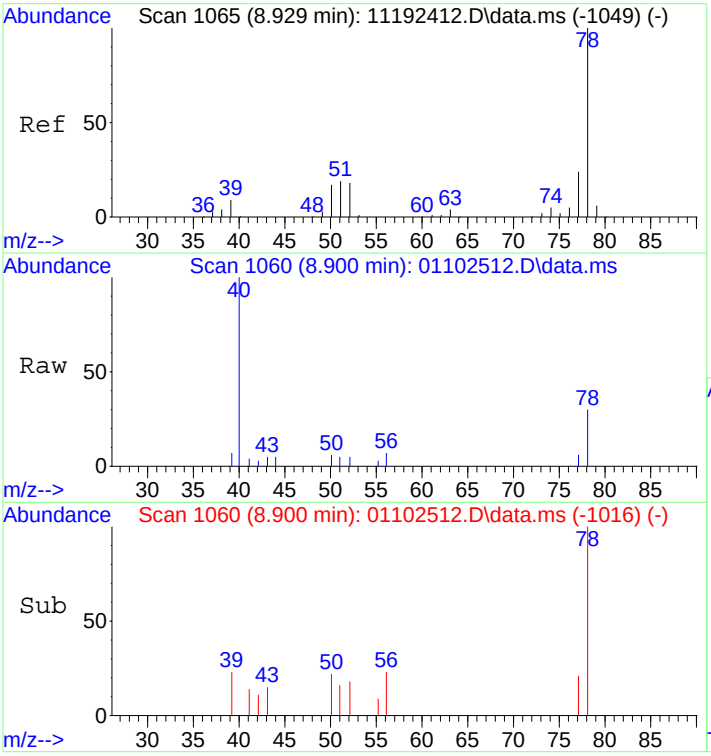


#30
Ethyl Acetate
Concen: 2.13 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 61 Resp: 9963

Ion	Ratio	Lower	Upper
61	100		
70	76.0	57.3	97.3

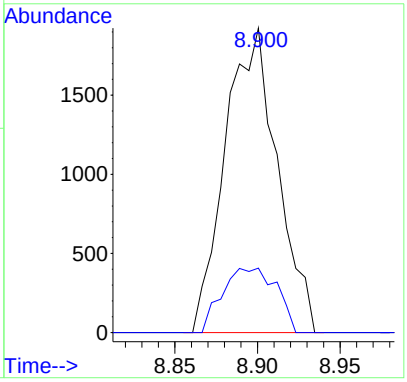


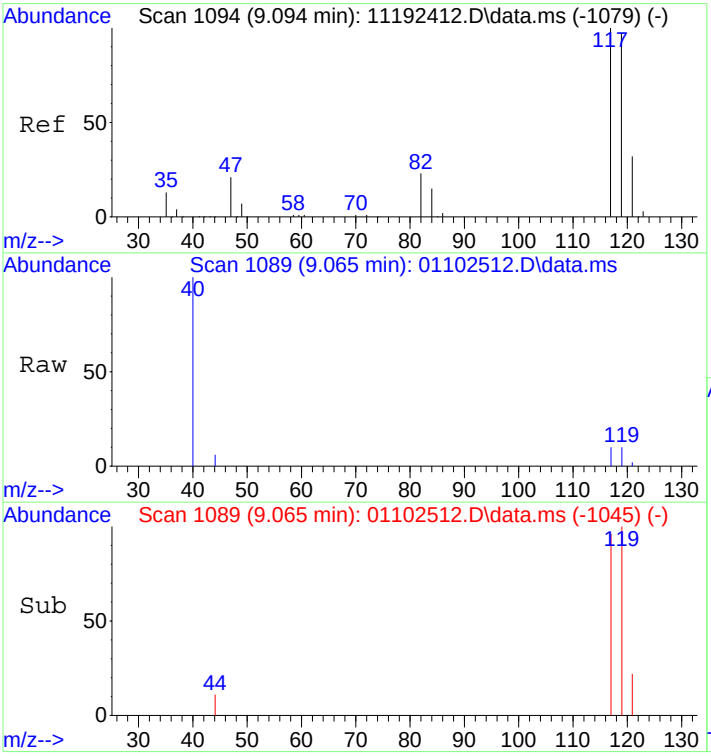


#41
Benzene
Concen: 0.09 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 78 Resp: 4216

Ion	Ratio	Lower	Upper
78	100		
77	22.0	3.7	43.7

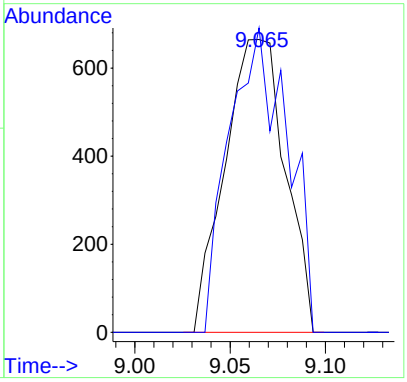


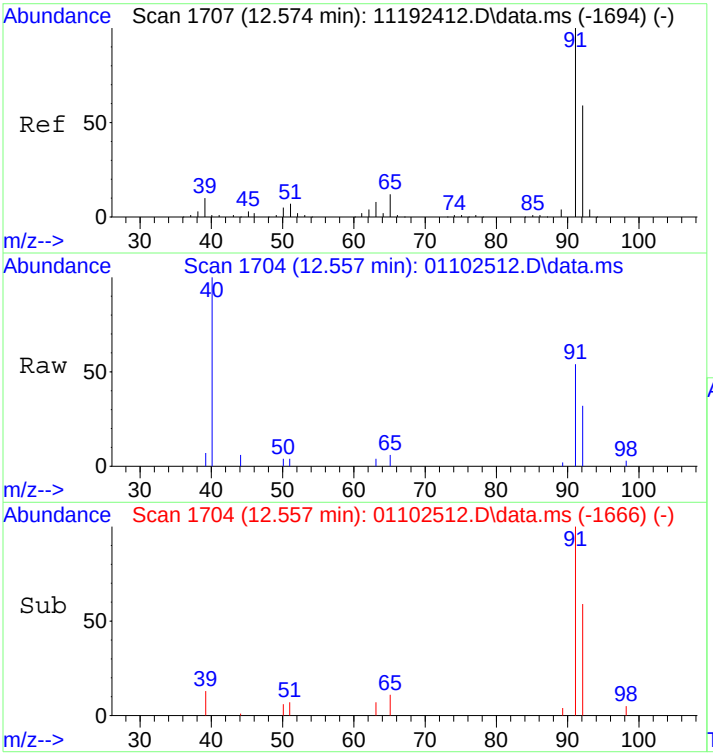


#42
Carbon Tetrachloride
Concen: 0.07 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion:117 Resp: 1467

Ion	Ratio	Lower	Upper
117	100		
119	100.3	75.7	115.7

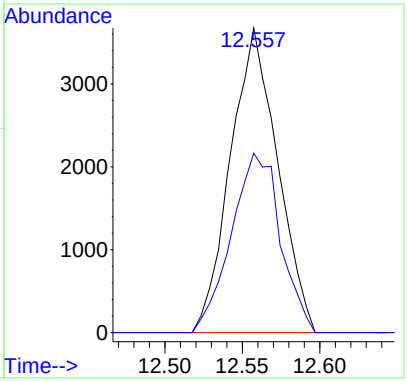


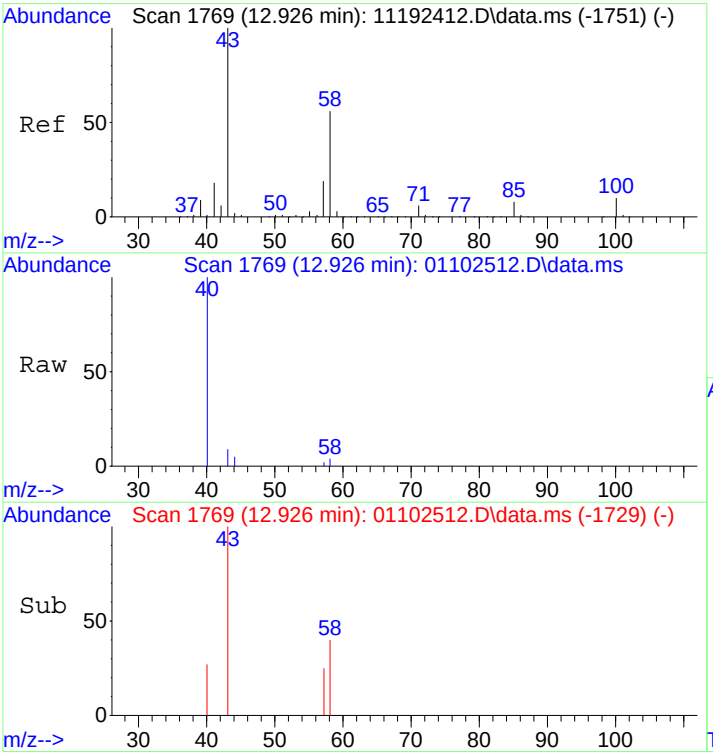


#58
Toluene
Concen: 0.16 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 91 Resp: 7788

Ion	Ratio	Lower	Upper
91	100		
92	61.2	39.2	79.2

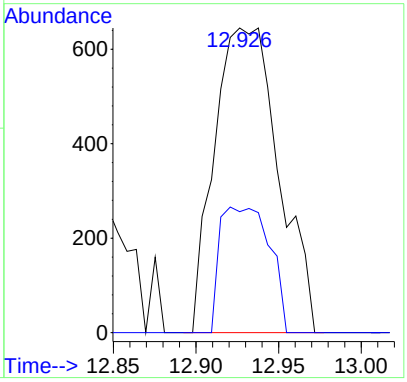


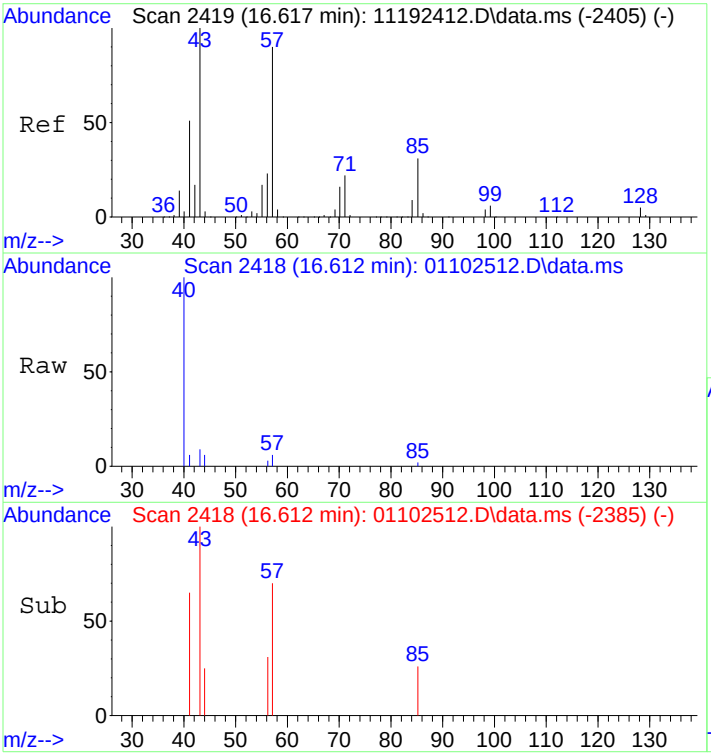


#59
2-Hexanone
Concen: 0.07 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 43 Resp: 1749

Ion	Ratio	Lower	Upper
43	100		
58	31.8	35.2	75.2#

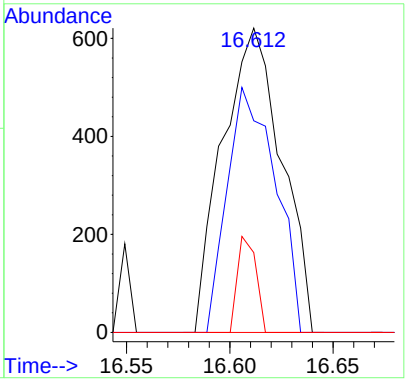




#71
n-Nonane
Concen: 0.05 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01102512.D
Acq: 10 Jan 2025 23:10

Tgt Ion: 43 Resp: 1237

Ion	Ratio	Lower	Upper
43	100		
57	65.6	69.4	109.4#
85	9.9	10.5	50.5#



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 17:52:23 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

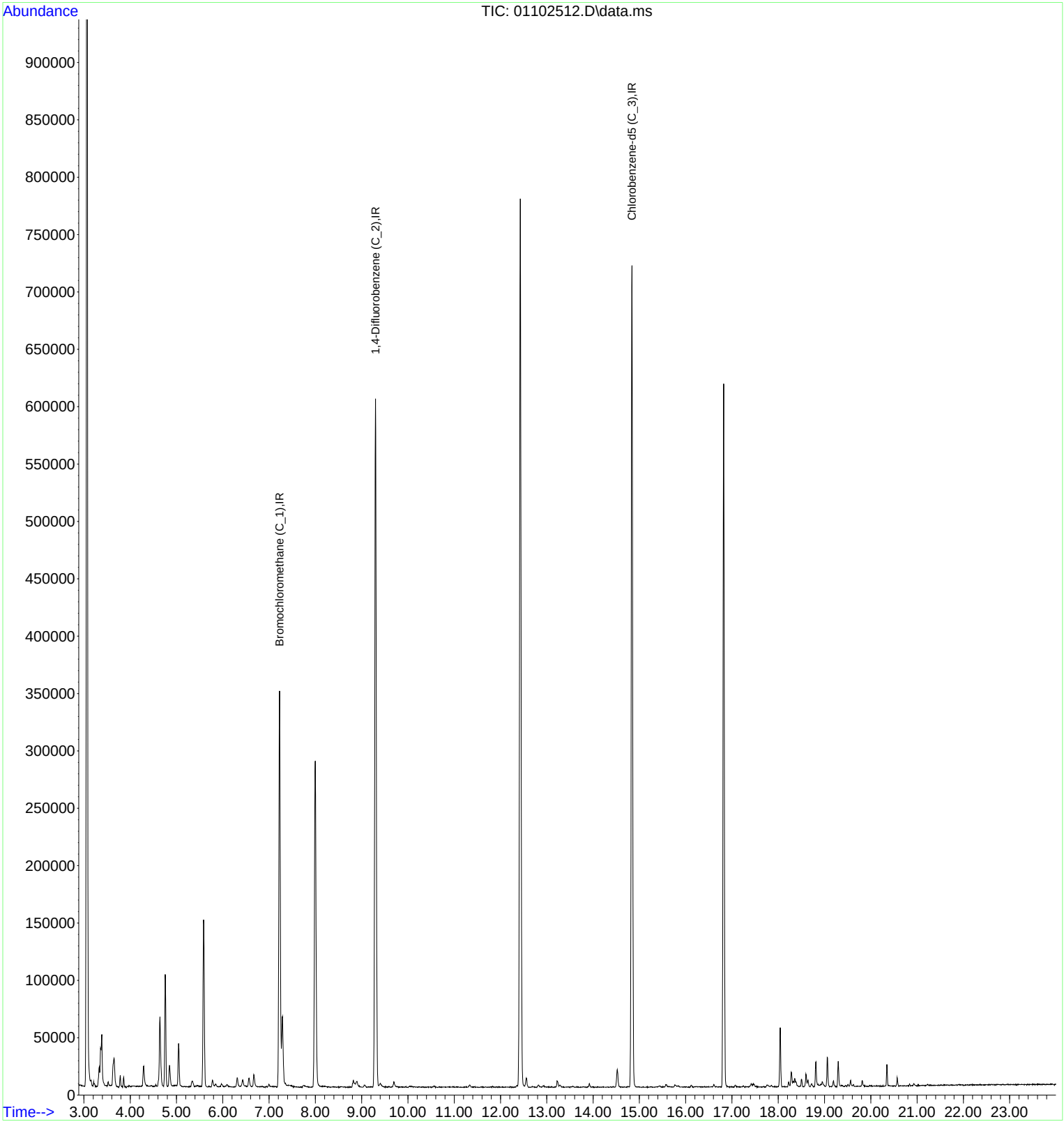
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	141325	12.500 ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	611400	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	113840	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.17	85	148	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D. d	
6) 1-Chloro-1,1-Difluoroe...	3.52	65	390	N.D.	
7) Dichlorofluoromethane ...	4.26	67	427	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	4.62	83	65	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.34	43	2081	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	9.80	174	63	N.D.	
20) Methyl Cyclohexane	11.41	55	63	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.68	91	421	N.D.	
27) 4-Chlorotoluene	17.68	91	421	N.D.	
28) Indane	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 17:52:23 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102512.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.330	71	79	81	rBV3	17165	30021	1.75%	0.346%
2	3.359	81	84	86	rVV	32875	47626	2.78%	0.548%
3	3.387	86	89	100	rVB	44544	66942	3.90%	0.771%
4	3.648	127	135	145	rVB2	24658	69523	4.06%	0.800%
5	3.784	153	159	164	rBV	10665	14721	0.86%	0.169%
6	3.858	168	172	176	rBV	8894	11639	0.68%	0.134%
7	4.290	240	248	261	rBV	17718	38505	2.25%	0.443%
8	4.642	300	310	324	rBV	60531	126992	7.41%	1.462%
9	4.755	324	330	340	rVB	97769	162636	9.49%	1.872%
10	4.846	340	346	356	rBV	18370	36719	2.14%	0.423%
11	5.045	374	381	392	rVB	37512	64155	3.74%	0.739%
12	5.346	427	434	442	rVB5	5078	13371	0.78%	0.154%
13	5.584	469	476	492	rVB	145853	287303	16.76%	3.308%
14	5.777	505	510	517	rBV2	5911	12020	0.70%	0.138%
15	6.311	596	604	613	rBV2	8163	17041	0.99%	0.196%
16	6.436	617	626	632	rBV4	5416	12343	0.72%	0.142%
17	6.567	641	649	659	rBV3	7735	16933	0.99%	0.195%
18	6.669	659	667	678	rBV	10575	22674	1.32%	0.261%
19	7.225	756	765	772	rBV	345422	740798	43.21%	8.529%
20	7.288	772	776	787	rVB2	59309	124242	7.25%	1.430%
21	7.998	891	901	915	rBV	284137	658874	38.43%	7.586%
22	8.821	1039	1046	1054	rBV2	6077	17312	1.01%	0.199%
23	8.901	1054	1060	1068	rVB4	4652	12252	0.71%	0.141%
24	9.298	1120	1130	1142	rBV	599963	1370688	79.95%	15.781%
25	9.695	1190	1200	1206	rBV2	4863	10234	0.60%	0.118%
26	12.427	1671	1681	1697	rVV	773661	1714411	100.00%	19.738%
27	12.557	1697	1704	1713	rVB3	8271	18237	1.06%	0.210%
28	13.222	1817	1821	1828	rBV3	5479	10551	0.62%	0.121%
29	14.522	2041	2050	2058	rBV2	15454	34303	2.00%	0.395%
30	14.840	2096	2106	2121	rBV	716019	1498243	87.39%	17.249%
31	16.822	2445	2455	2467	rBV	613223	1140297	66.51%	13.128%
32	18.042	2663	2670	2677	rVB	51697	84289	4.92%	0.970%
33	18.281	2707	2712	2717	rBV2	11845	20694	1.21%	0.238%
34	18.502	2747	2751	2756	rVB5	6657	10196	0.59%	0.117%
35	18.599	2760	2768	2772	rBV2	11289	19461	1.14%	0.224%
36	18.815	2800	2806	2812	rBV	21896	36351	2.12%	0.419%
37	19.059	2843	2849	2858	rVB	25846	41625	2.43%	0.479%
38	19.297	2885	2891	2899	rBV3	22632	37329	2.18%	0.430%
39	20.348	3071	3076	3081	rBV2	18735	23462	1.37%	0.270%
40	20.569	3109	3115	3121	rBV3	7662	10898	0.64%	0.125%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

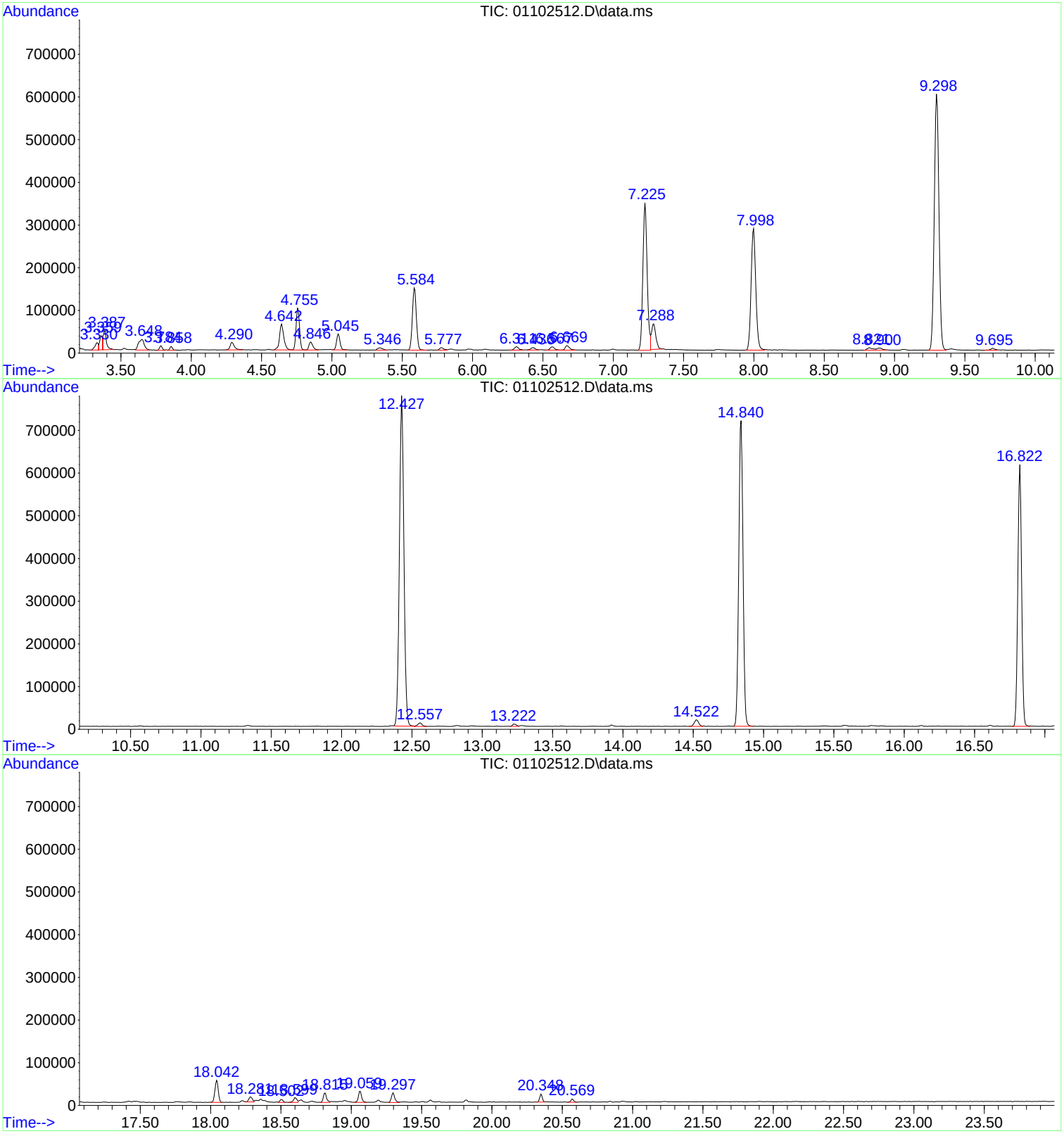
Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Sum of corrected areas: 8685911

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:10
Operator : CG
Sample : P2405139-041 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102512.D
Acq On : 10 Jan 2025 23:100
Operator : CGG
Sample : P2405139-041 (400mL))
Misc : S37-123124011
ALS Vial : 8 Sample Multiplier: 11

WA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

MOA 1/12/25

Quant Time: Jan 12 14:19:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	138292	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	602443	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111888	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	249928	13.265	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.16%				
57) Toluene-d8 (SS2)	12.43	98	623618	12.564	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	16.82	174	212256	12.392	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.12%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.39	85	16228	0.600	ng		99
4) Chloromethane	3.52	50	388	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	301	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	18192	1.778	ng		96
11) Acetonitrile	4.45	41	691	N.D.			
12) Acrolein	4.55	56	1071	0.122	ng		94
13) Acetone	4.65	58	16102	1.729	ng		100
14) Trichlorofluoromethane	4.75	101	245110	9.668	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	31189	0.935	ng		97
16) Acrylonitrile	5.04	53	296	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	107	N.D.			
20) 3-Chloro-1-propene (Al...	5.33	41	668	N.D.			
21) Trichlorotrifluoroethane	5.59	151	34072	2.979	ng		96
22) Carbon Disulfide	5.60	76	4857	0.115	ng		48
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.43	86	687	0.305	ng	#	75
27) 2-Butanone (MEK)	6.67	72	3894	0.521	ng	#	78
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	3663	0.176	ng	#	93
32) Chloroform	7.35	83	1238	0.055	ng		94
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	10690	No Calib		#	
41) Benzene	8.89	78	4895	0.101	ng		95
42) Carbon Tetrachloride	9.07	117	1326	0.069	ng		98
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

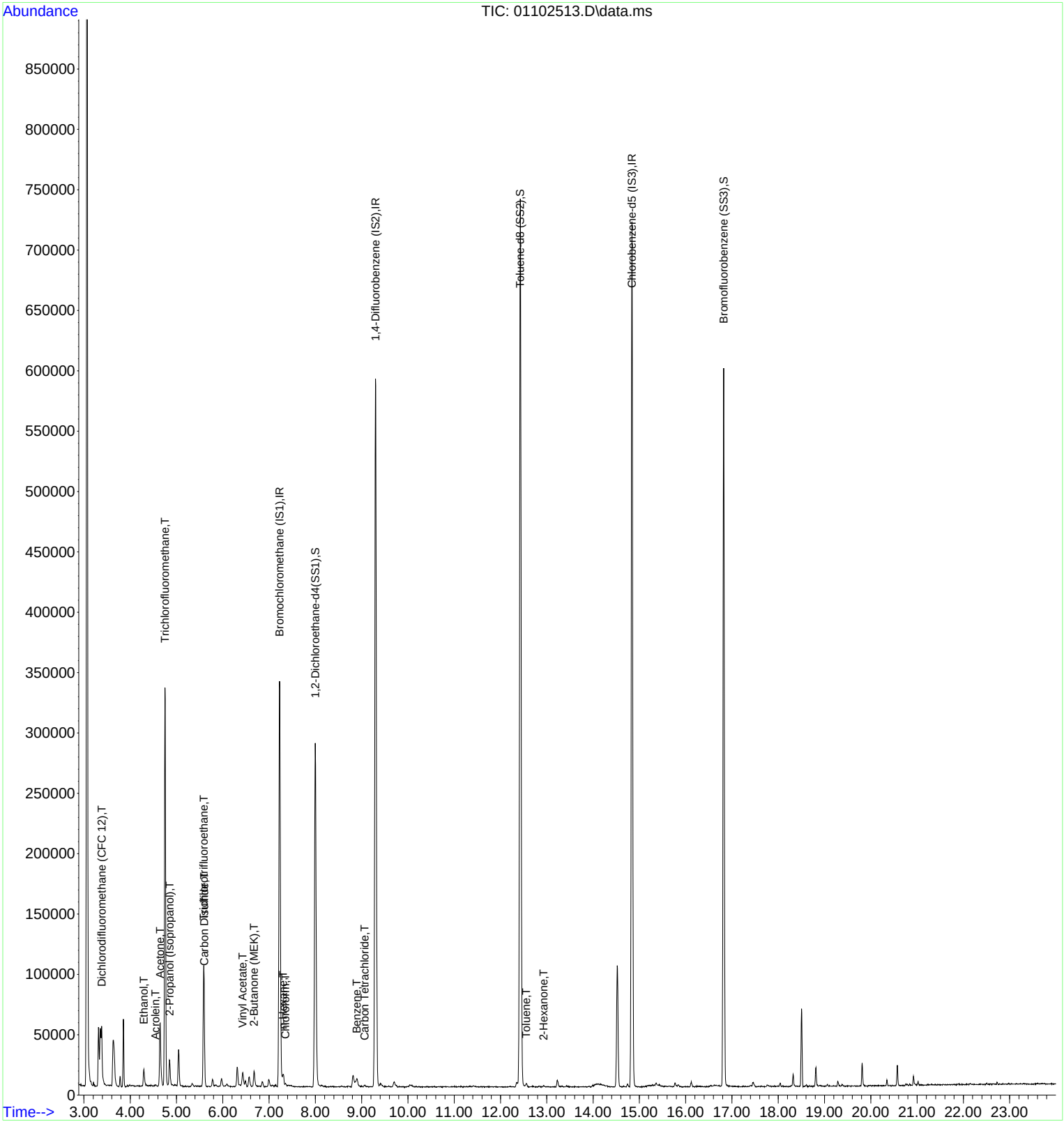
Quant Time: Jan 12 14:19:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	2987	0.063 ng	100
59) 2-Hexanone	12.93	43	1594	0.068 ng	73
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	440	N.D.	
67) m- & p-Xylenes	15.66	91	143	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.25	91	136	N.D.	
71) n-Nonane	16.61	43	279	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	345	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.42	105	182	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	18.58	146	141	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	184	N.D.	
87) sec-Butylbenzene	18.74	105	163	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	253	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	19.03	146	191	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	632	N.D.	
95) Naphthalene	20.94	128	1212	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.30	225	121	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	1406	N.D.	
100) n-Butylbenzene	19.39	91	446	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 14:19:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

VOA 1/12/25

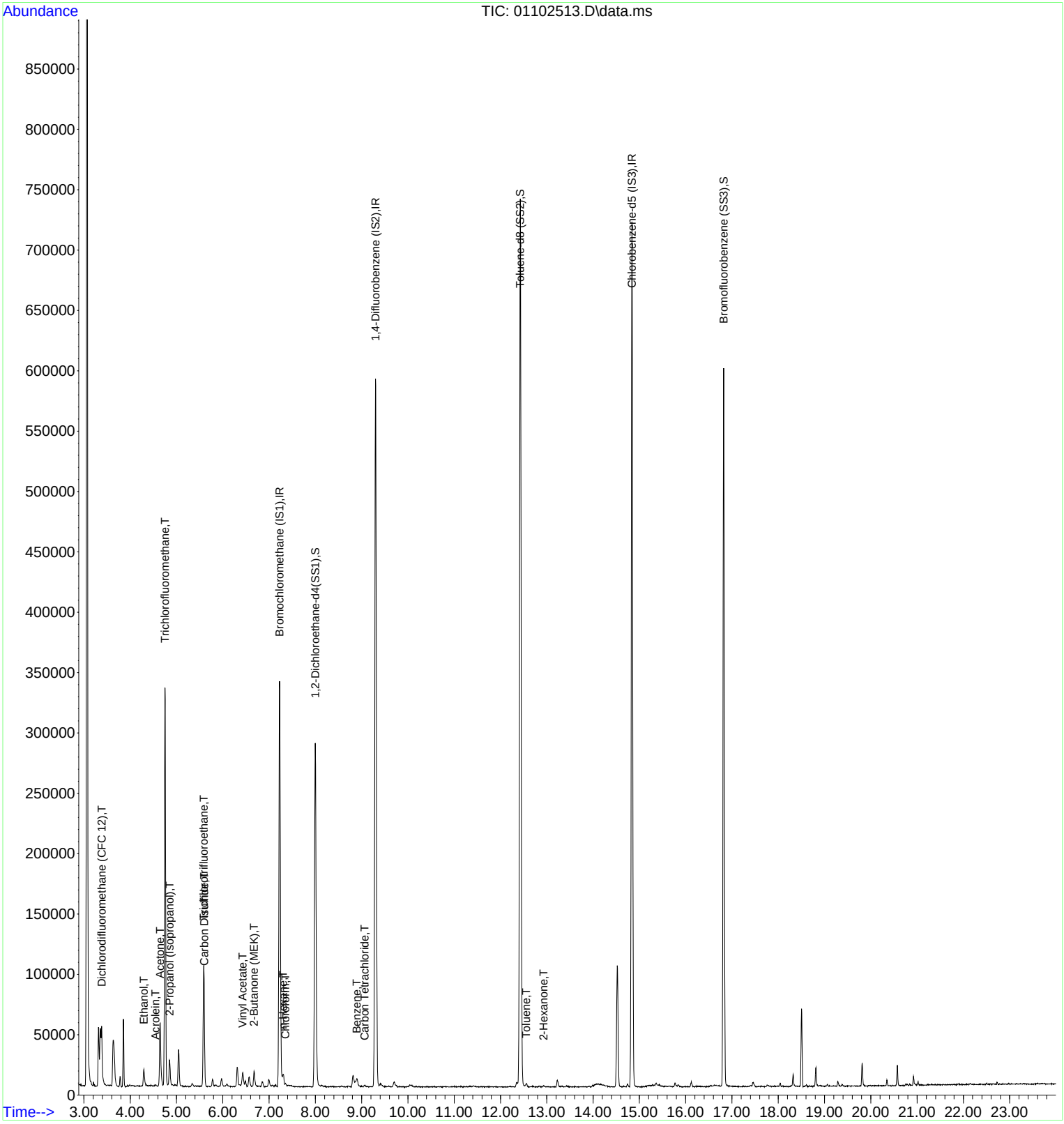
Quant Time: Jan 12 14:19:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

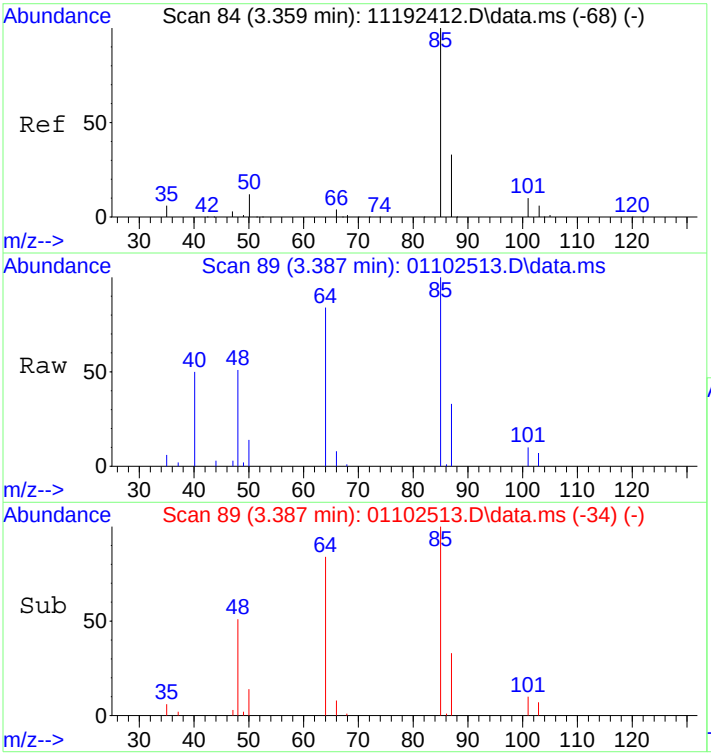
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	138292	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	602443	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111888	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	249928	13.265	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.16%				
57) Toluene-d8 (SS2)	12.43	98	623618	12.564	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	16.82	174	212256	12.392	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.12%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	16228	0.600	ng		99
10) Ethanol	4.30	45	18192	1.778	ng		96
12) Acrolein	4.55	56	1071	0.122	ng		94
13) Acetone	4.65	58	16102	1.729	ng		100
14) Trichlorofluoromethane	4.75	101	245110	9.668	ng		99
15) 2-Propanol (Isopropanol)	4.85	45	31189	0.935	ng		97
21) Trichlorotrifluoroethane	5.59	151	34072	2.979	ng		96
22) Carbon Disulfide	5.60	76	4857	0.115	ng		48
26) Vinyl Acetate	6.43	86	687	0.305	ng	#	75
27) 2-Butanone (MEK)	6.67	72	3894	0.521	ng	#	78
31) n-Hexane	7.30	57	3663	0.176	ng	#	93
32) Chloroform	7.35	83	1238	0.055	ng		94
41) Benzene	8.89	78	4895	0.101	ng		95
42) Carbon Tetrachloride	9.07	117	1326	0.069	ng		98
58) Toluene	12.56	91	2987	0.063	ng		100
59) 2-Hexanone	12.93	43	1594	0.068	ng		73

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 14:19:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

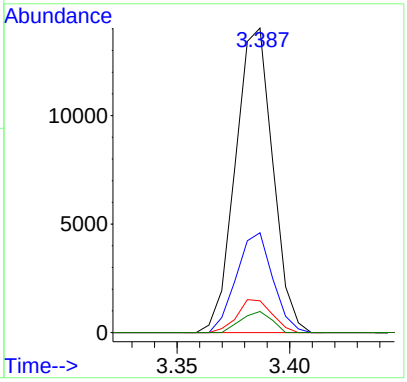


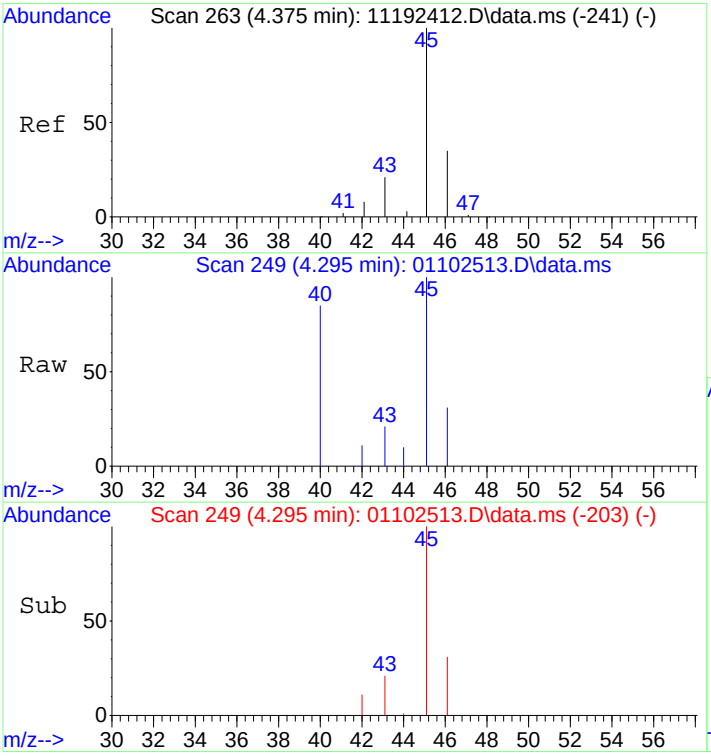


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.60 ng
RT: 3.39 min Scan# 89
Delta R.T. 0.060 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 85 Resp: 16228

Ion	Ratio	Lower	Upper
85	100		
87	32.0	12.6	52.6
101	10.1	0.0	29.6
103	5.6	0.0	26.2

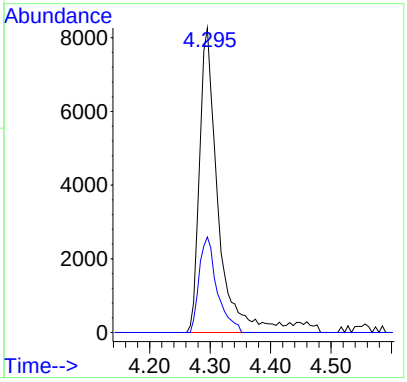


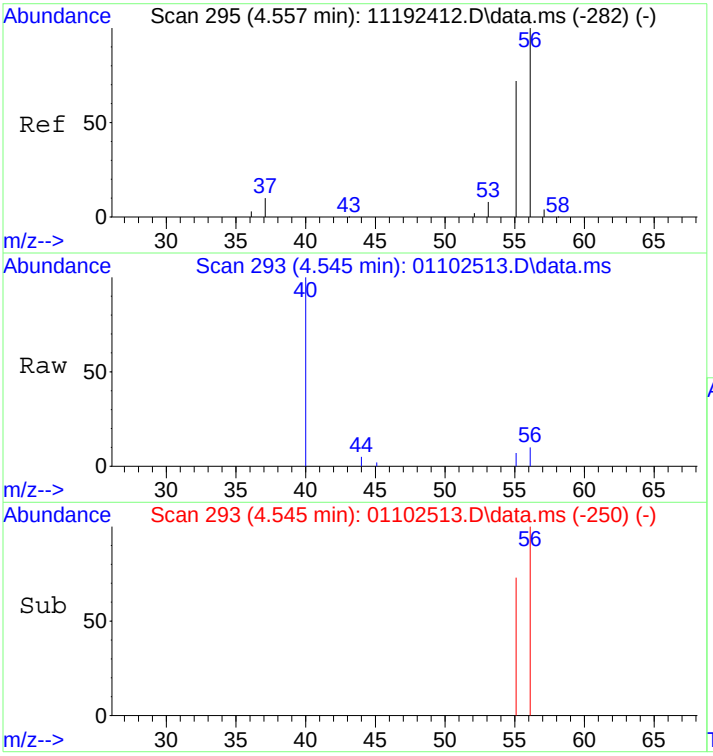


#10
Ethanol
Concen: 1.78 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 45 Resp: 18192

Ion	Ratio	Lower	Upper
45	100		
46	29.3	11.8	51.8

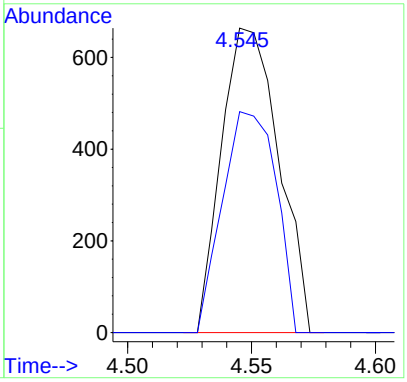


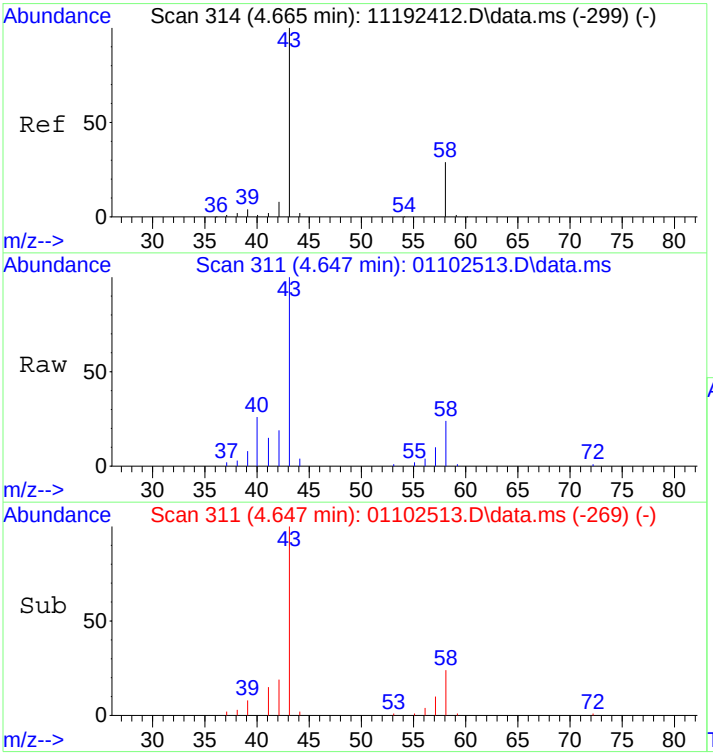


#12
Acrolein
Concen: 0.12 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 56 Resp: 1071

Ion	Ratio	Lower	Upper
56	100		
55	67.9	53.1	93.1

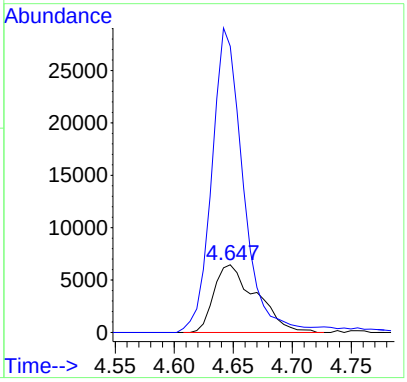


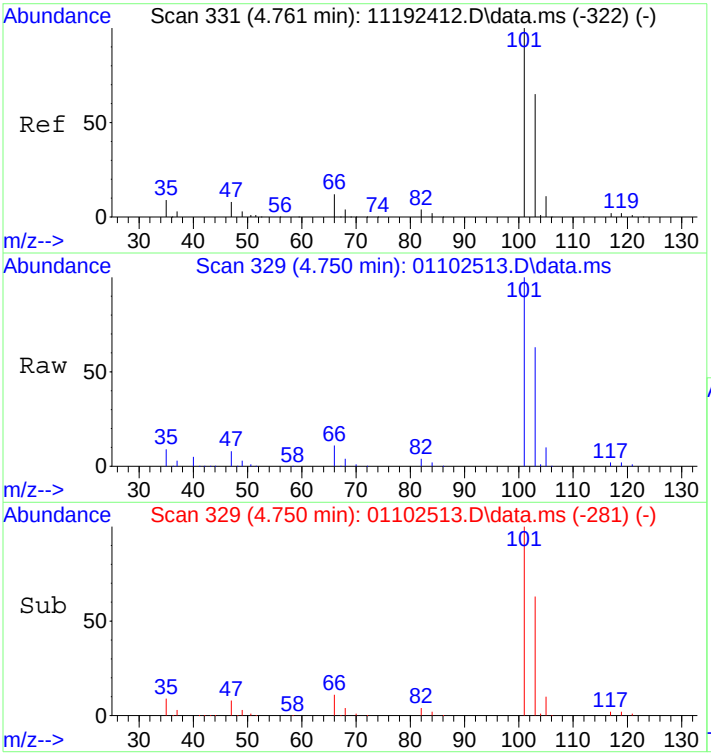


#13
Acetone
Concen: 1.73 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 58 Resp: 16102

Ion	Ratio	Lower	Upper
58	100		
43	343.4	312.5	372.5

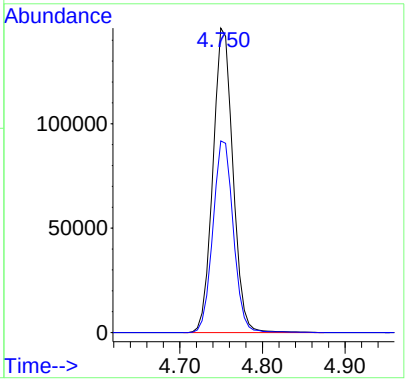


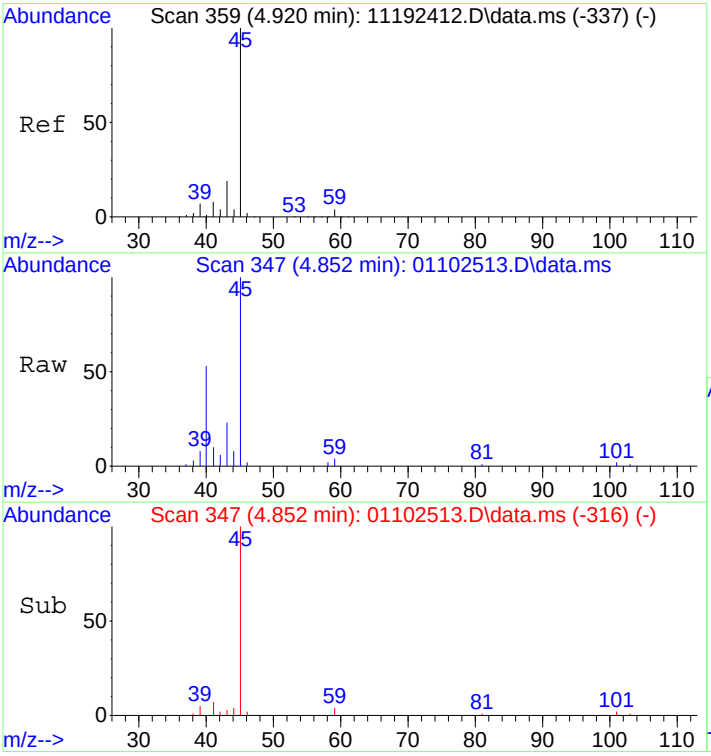


#14
Trichlorofluoromethane
Concen: 9.67 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion:101 Resp: 245110

Ion	Ratio	Lower	Upper
101	100		
103	64.3	44.8	84.8

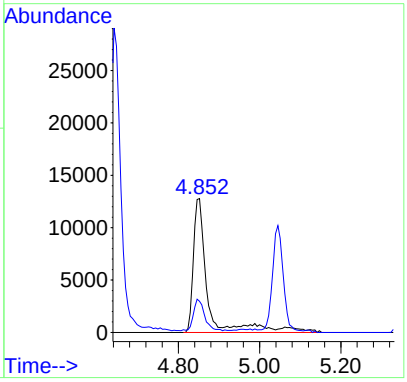


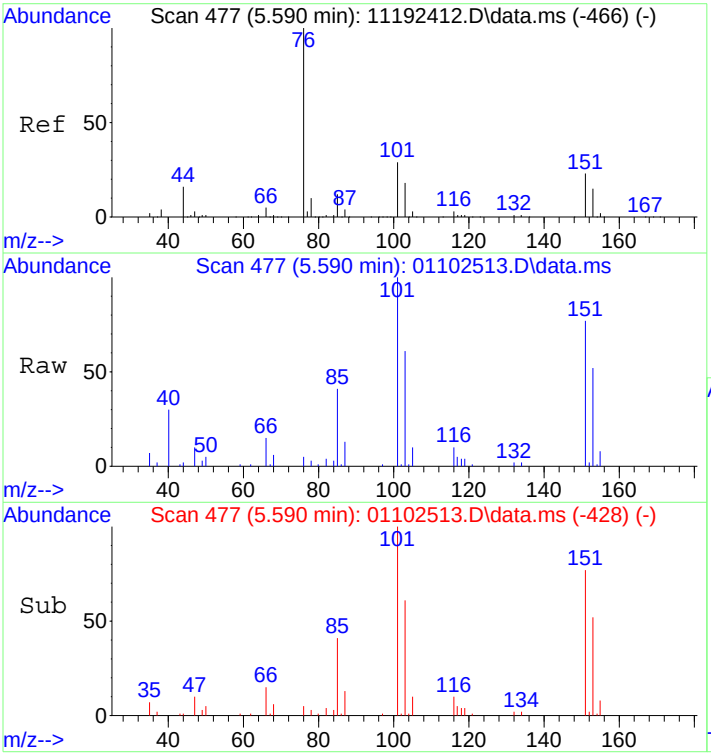


#15
2-Propanol (Isopropanol)
Concen: 0.94 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 45 Resp: 31189

Ion	Ratio	Lower	Upper
45	100		
43	21.6	0.2	40.2

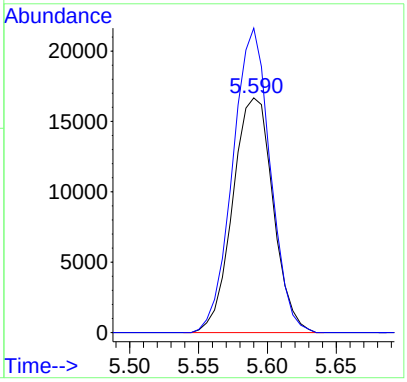


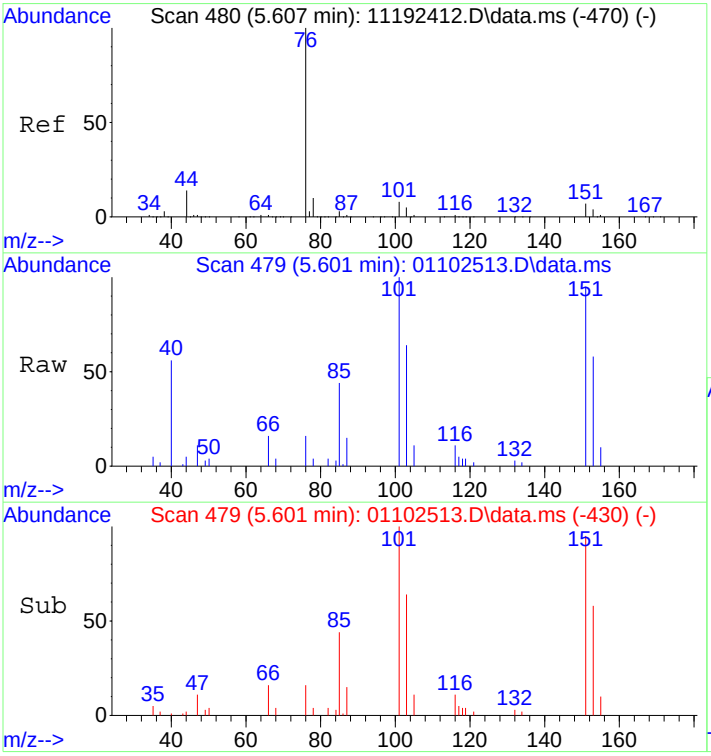


#21
Trichlorotrifluoroethane
Concen: 2.98 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion:151 Resp: 34072

Ion	Ratio	Lower	Upper
151	100		
101	120.7	105.0	145.0

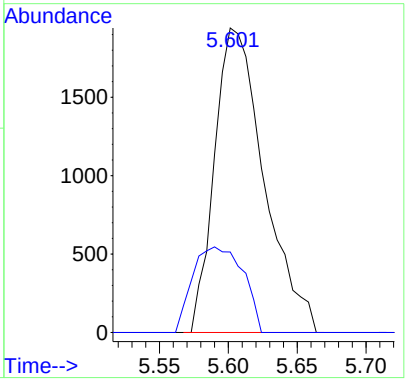


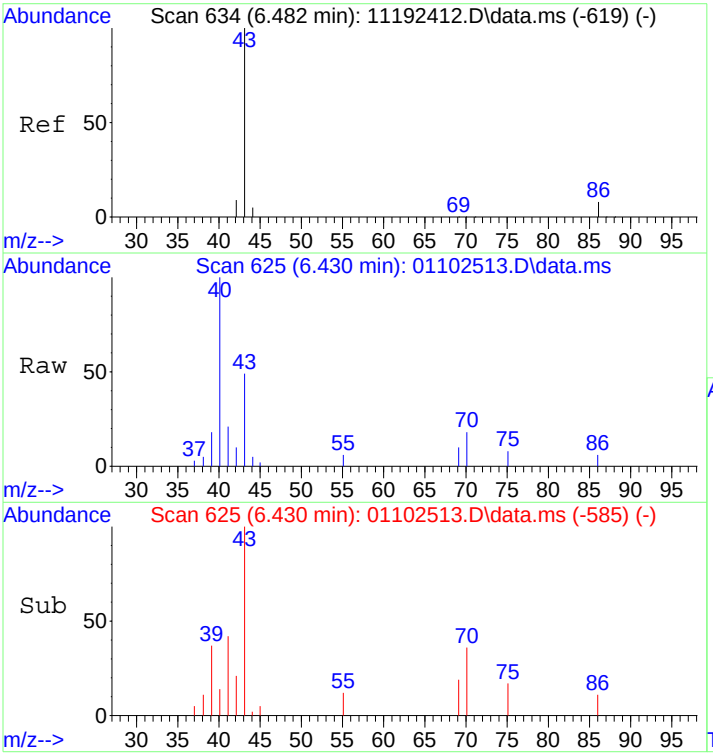


#22
Carbon Disulfide
Concen: 0.12 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 76 Resp: 4857

Ion	Ratio	Lower	Upper
76	100		
78	28.7	0.0	29.6

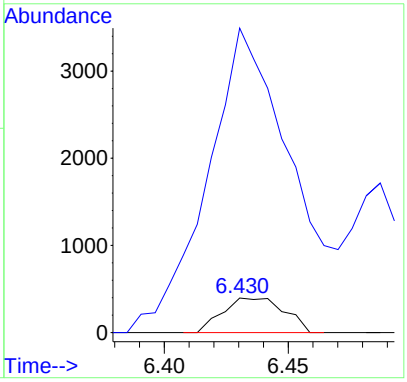


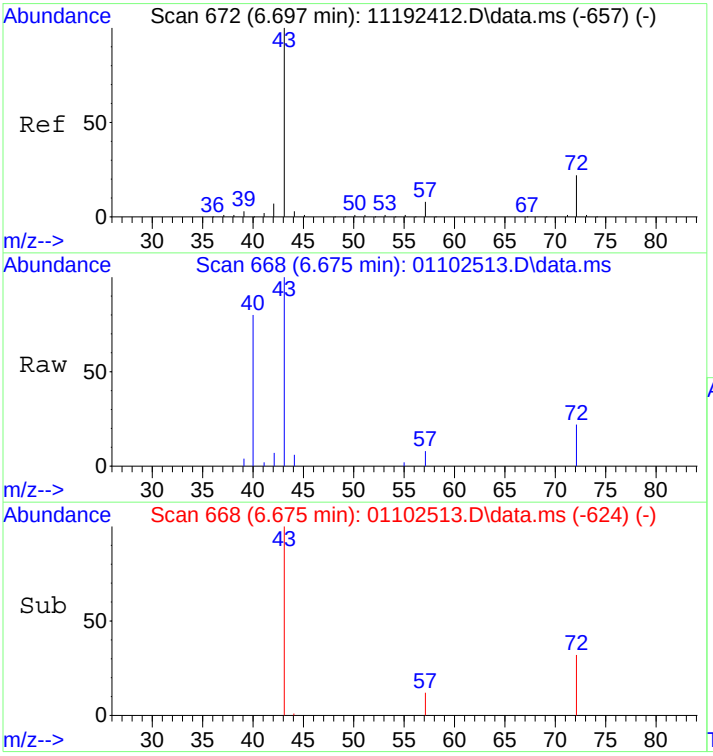


#26
Vinyl Acetate
Concen: 0.30 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 86 Resp: 687

Ion	Ratio	Lower	Upper
86	100		
43	1215.9	1331.6	1371.6#

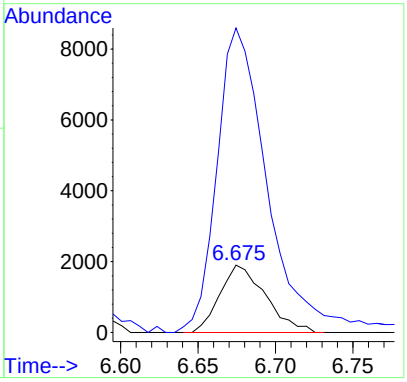


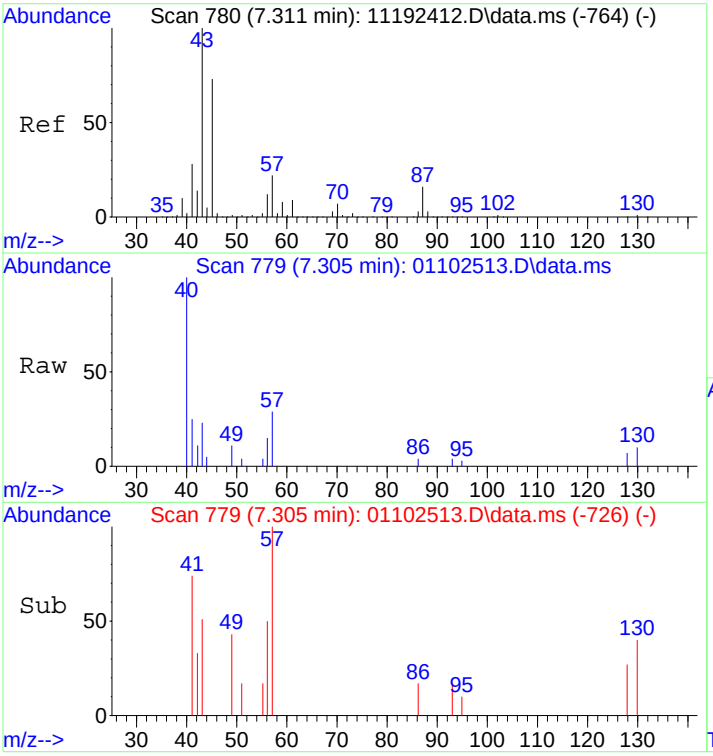


#27
2-Butanone (MEK)
Concen: 0.52 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.000 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 72 Resp: 3894

Ion	Ratio	Lower	Upper
72	100		
43	517.5	439.8	479.8#

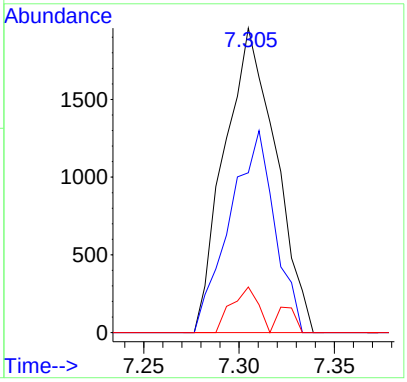


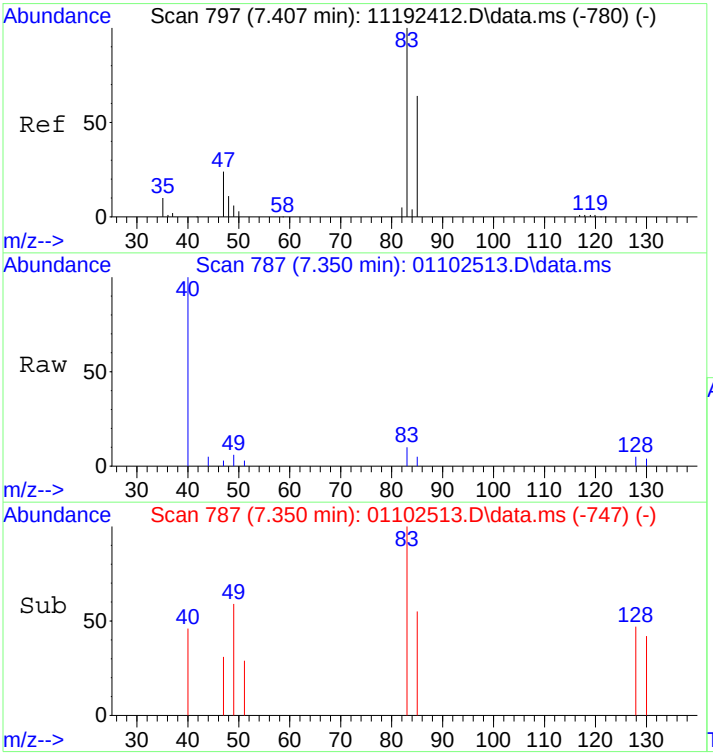


#31
n-Hexane
Concen: 0.18 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 57 Resp: 3663

Ion	Ratio	Lower	Upper
57	100		
56	58.2	43.4	65.0
86	7.9	10.9	16.3#

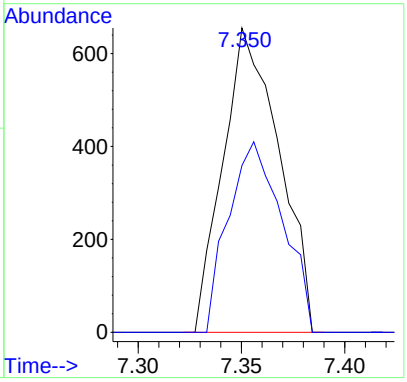


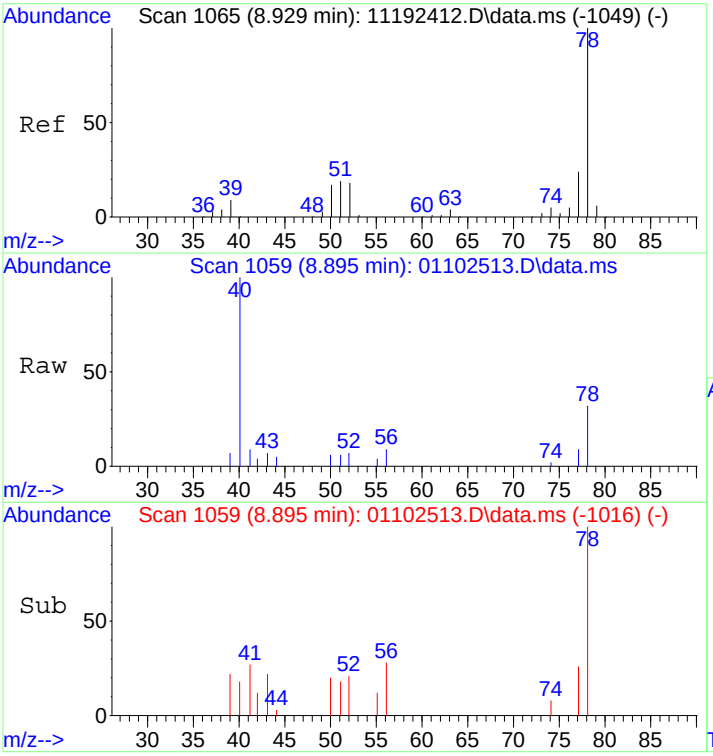


#32
Chloroform
Concen: 0.05 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 83 Resp: 1238

Ion	Ratio	Lower	Upper
83	100		
85	60.3	45.1	85.1

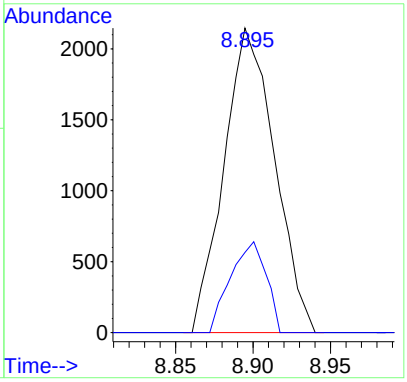


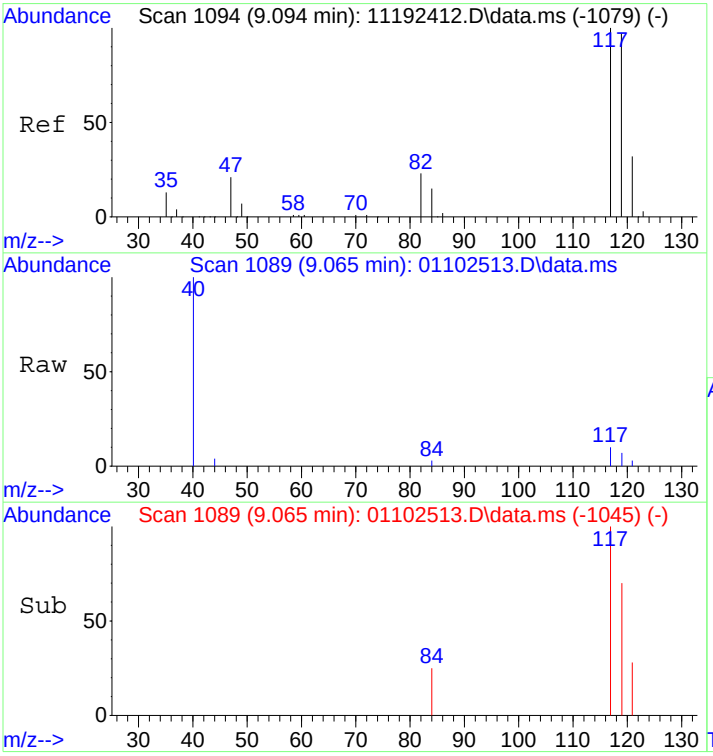


#41
Benzene
Concen: 0.10 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.009 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 78 Resp: 4895

Ion	Ratio	Lower	Upper
78	100		
77	21.0	3.7	43.7

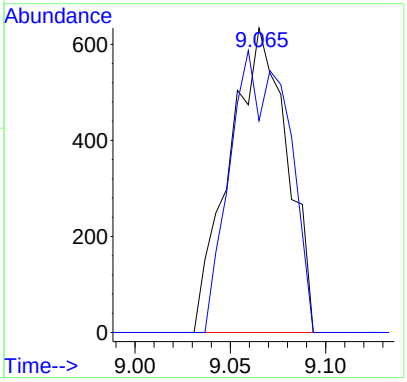


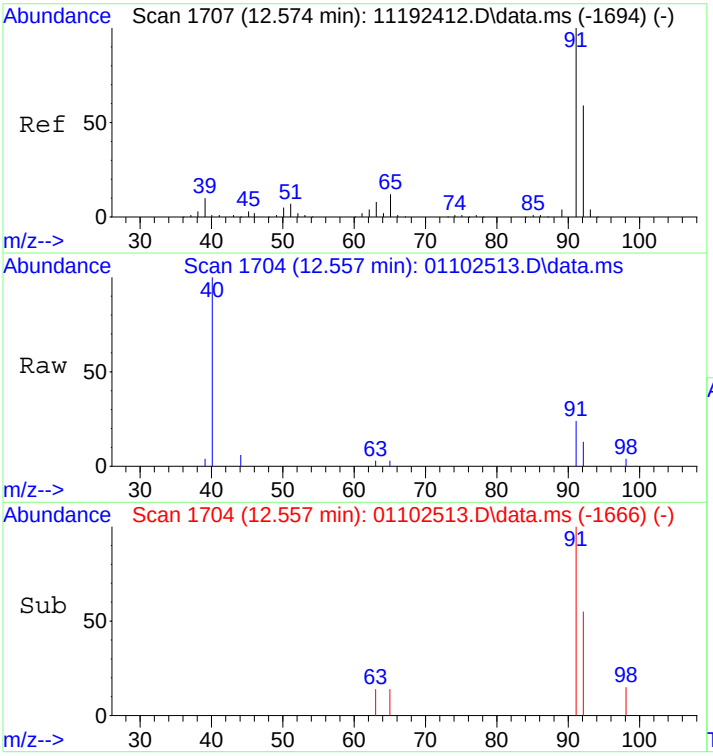


#42
Carbon Tetrachloride
Concen: 0.07 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion:117 Resp: 1326

Ion	Ratio	Lower	Upper
117	100		
119	93.5	75.7	115.7

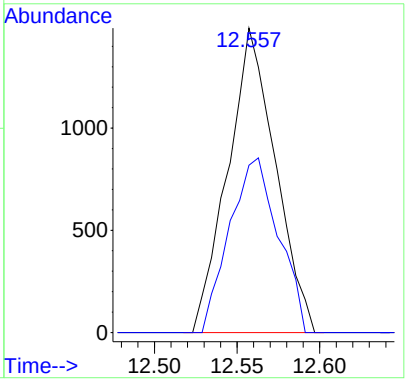


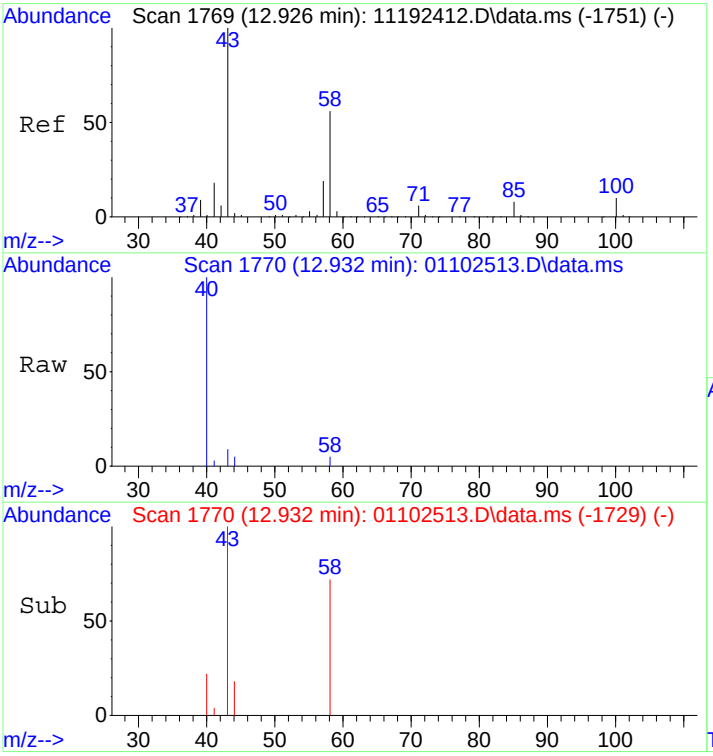


#58
Toluene
Concen: 0.06 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 91 Resp: 2987

Ion	Ratio	Lower	Upper
91	100		
92	58.9	39.2	79.2

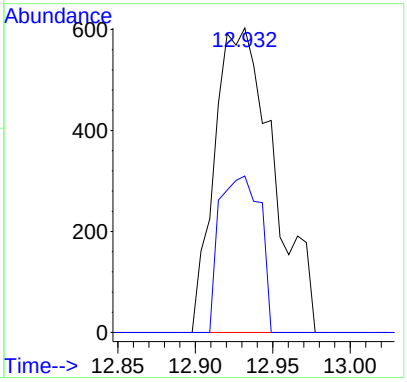




#59
2-Hexanone
Concen: 0.07 ng
RT: 12.93 min Scan# 1770
Delta R.T. -0.017 min
Lab File: 01102513.D
Acq: 10 Jan 2025 23:42

Tgt Ion: 43 Resp: 1594

Ion	Ratio	Lower	Upper
43	100		
58	35.8	35.2	75.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

MA 1/12/25

Quant Time: Jan 12 17:52:54 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

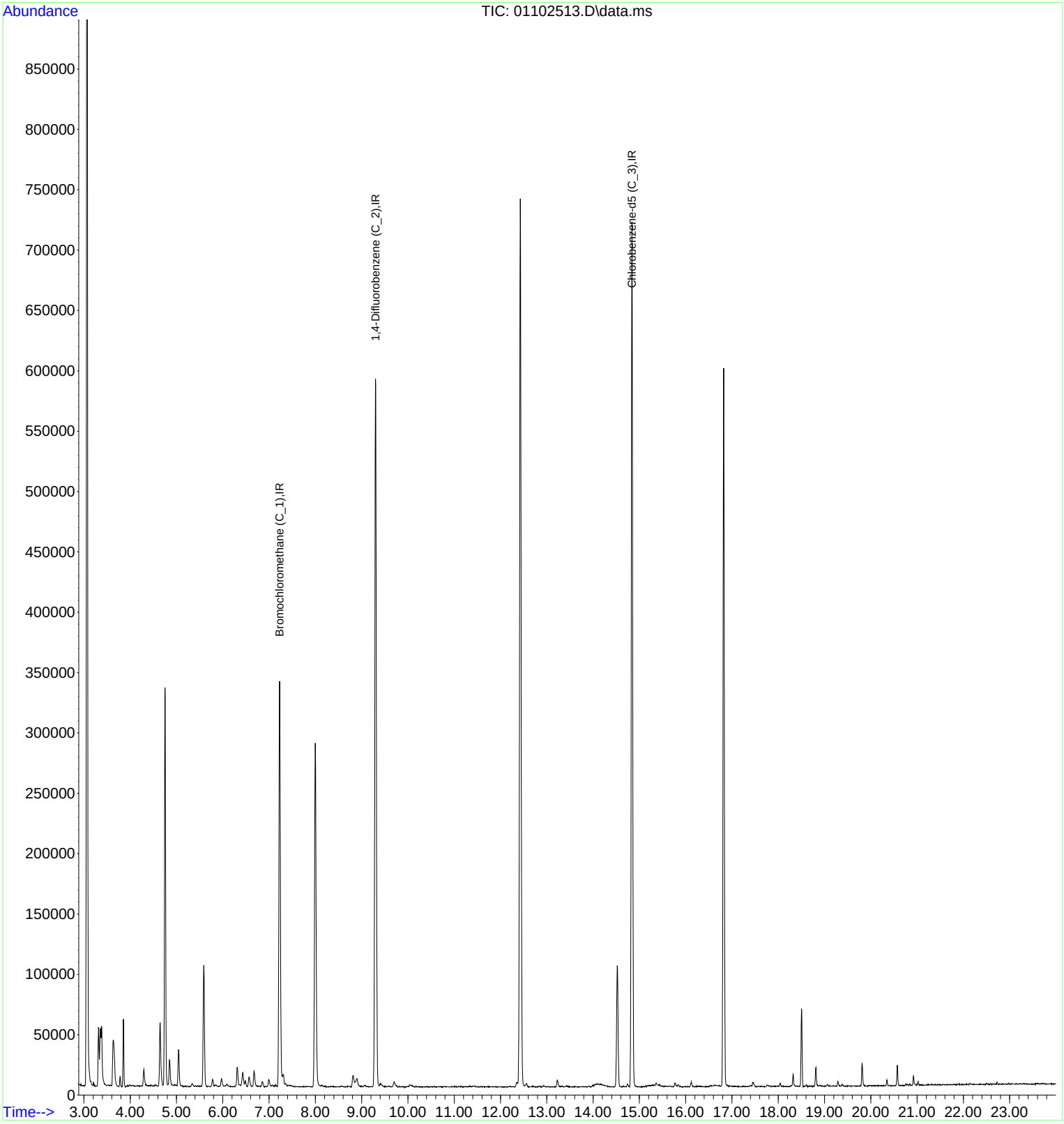
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	140933	12.500 ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	604154	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	111888	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.16	85	146	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D. d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	433	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.34	43	574	N.D.	
12) 2-Methylpentane	6.49	71	856	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	9.07	84	54	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	11.42	55	53	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.68	91	345	N.D.	
27) 4-Chlorotoluene	17.68	91	345	N.D.	
28) Indane	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 17:52:54 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102513.D\data.ms

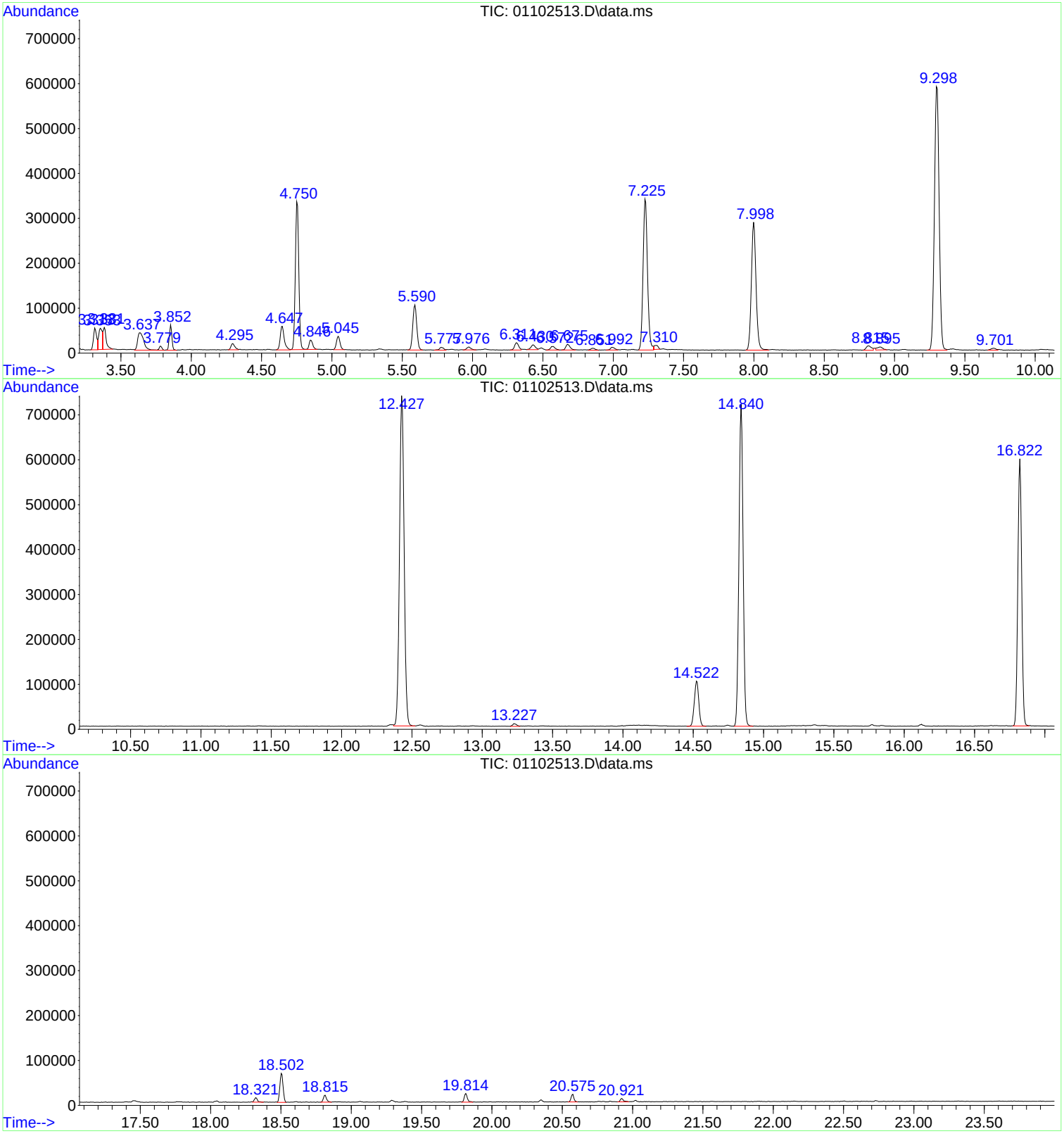
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.313	71	76	80	rBV3	48789	80014	4.76%	0.880%
2	3.353	80	83	86	rVV	47279	83785	4.99%	0.922%
3	3.381	86	88	99	rVB	48426	70338	4.19%	0.774%
4	3.637	126	133	154	rVB3	38608	115361	6.87%	1.269%
5	3.779	154	158	164	rVB2	8823	12135	0.72%	0.134%
6	3.852	166	171	179	rVB	56368	70409	4.19%	0.775%
7	4.295	243	249	256	rBV	13769	26201	1.56%	0.288%
8	4.647	303	311	321	rBV	52312	102728	6.11%	1.130%
9	4.750	322	329	339	rVV	329431	551416	32.82%	6.067%
10	4.846	340	346	355	rVB	20704	37885	2.25%	0.417%
11	5.045	375	381	389	rBV	29963	52930	3.15%	0.582%
12	5.590	468	477	487	rVB	100460	197101	11.73%	2.169%
13	5.777	501	510	516	rBV3	6187	12599	0.75%	0.139%
14	5.976	537	545	554	rBV2	6485	13592	0.81%	0.150%
15	6.311	596	604	610	rBV	16267	33310	1.98%	0.366%
16	6.430	617	625	631	rBV4	10666	23360	1.39%	0.257%
17	6.572	641	650	658	rBV2	8091	18764	1.12%	0.206%
18	6.675	660	668	678	rBV	12780	26940	1.60%	0.296%
19	6.851	694	699	707	rVB2	4466	10177	0.61%	0.112%
20	6.993	716	724	731	rBV3	6034	13245	0.79%	0.146%
21	7.225	757	765	776	rBV	335777	739491	44.01%	8.136%
22	7.310	776	780	784	rVB4	8432	15944	0.95%	0.175%
23	7.998	891	901	920	rBV	284746	654993	38.98%	7.206%
24	8.815	1038	1045	1051	rBV3	9670	25576	1.52%	0.281%
25	8.895	1054	1059	1068	rVB3	6343	17172	1.02%	0.189%
26	9.298	1118	1130	1143	rBV	586471	1356726	80.75%	14.927%
27	9.701	1194	1201	1207	rBV4	4150	10372	0.62%	0.114%
28	12.427	1671	1681	1698	rVB	735004	1680174	100.00%	18.485%
29	13.227	1817	1822	1829	rBV2	5836	12063	0.72%	0.133%
30	14.522	2038	2050	2062	rBV	100634	223220	13.29%	2.456%
31	14.840	2097	2106	2121	rBV	716750	1475014	87.79%	16.228%
32	16.822	2446	2455	2467	rBV	594611	1119147	66.61%	12.313%
33	18.321	2715	2719	2729	rVB2	9956	15233	0.91%	0.168%
34	18.502	2746	2751	2757	rVB2	64739	101880	6.06%	1.121%
35	18.815	2800	2806	2814	rBV3	15554	24397	1.45%	0.268%
36	19.814	2977	2982	2991	rVB3	19133	29420	1.75%	0.324%
37	20.575	3110	3116	3122	rBV2	16949	23585	1.40%	0.259%
38	20.921	3172	3177	3186	rBV6	7626	12465	0.74%	0.137%

Sum of corrected areas: 9089162

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:42
Operator : CG
Sample : P2405139-042 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102513.D
Acq On : 10 Jan 2025 23:422
Operator : CGG
Sample : P2405139-042 (400mL))
Misc : S37-123124011
ALS Vial : 9 Sample Multiplier: 11

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

MA 1/12/25

Quant Time: Jan 12 14:20:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	136544	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	597933	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111024	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	247502	13.304	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.40%				
57) Toluene-d8 (SS2)	12.43	98	613770	12.462	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.68%				
73) Bromofluorobenzene (SS3)	16.82	174	208715	12.280	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.39	85	15475	0.580	ng		99
4) Chloromethane	3.53	50	397	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	334	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.31	45	4658	0.461	ng		97
11) Acetonitrile	4.48	41	201	N.D.			
12) Acrolein	4.56	56	464	0.054	ng		83
13) Acetone	4.66	58	8170	0.889	ng		91
14) Trichlorofluoromethane	4.76	101	225546	9.010	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	2055	0.062	ng		61
16) Acrylonitrile	5.06	53	372	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.35	59	120	N.D.			
19) Methylene Chloride	5.37	84	138	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.60	151	29175	2.583	ng		94
22) Carbon Disulfide	5.61	76	13782	0.331	ng		88
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.45	86	314	0.141	ng	#	87
27) 2-Butanone (MEK)	6.69	72	1438	0.195	ng	#	88
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.31	57	2913	0.142	ng	#	94
32) Chloroform	7.36	83	1152	0.052	ng		85
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	3080	No Calib			
41) Benzene	8.90	78	2175	N.D.			
42) Carbon Tetrachloride	9.07	117	1244	0.065	ng		99
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 14:20:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

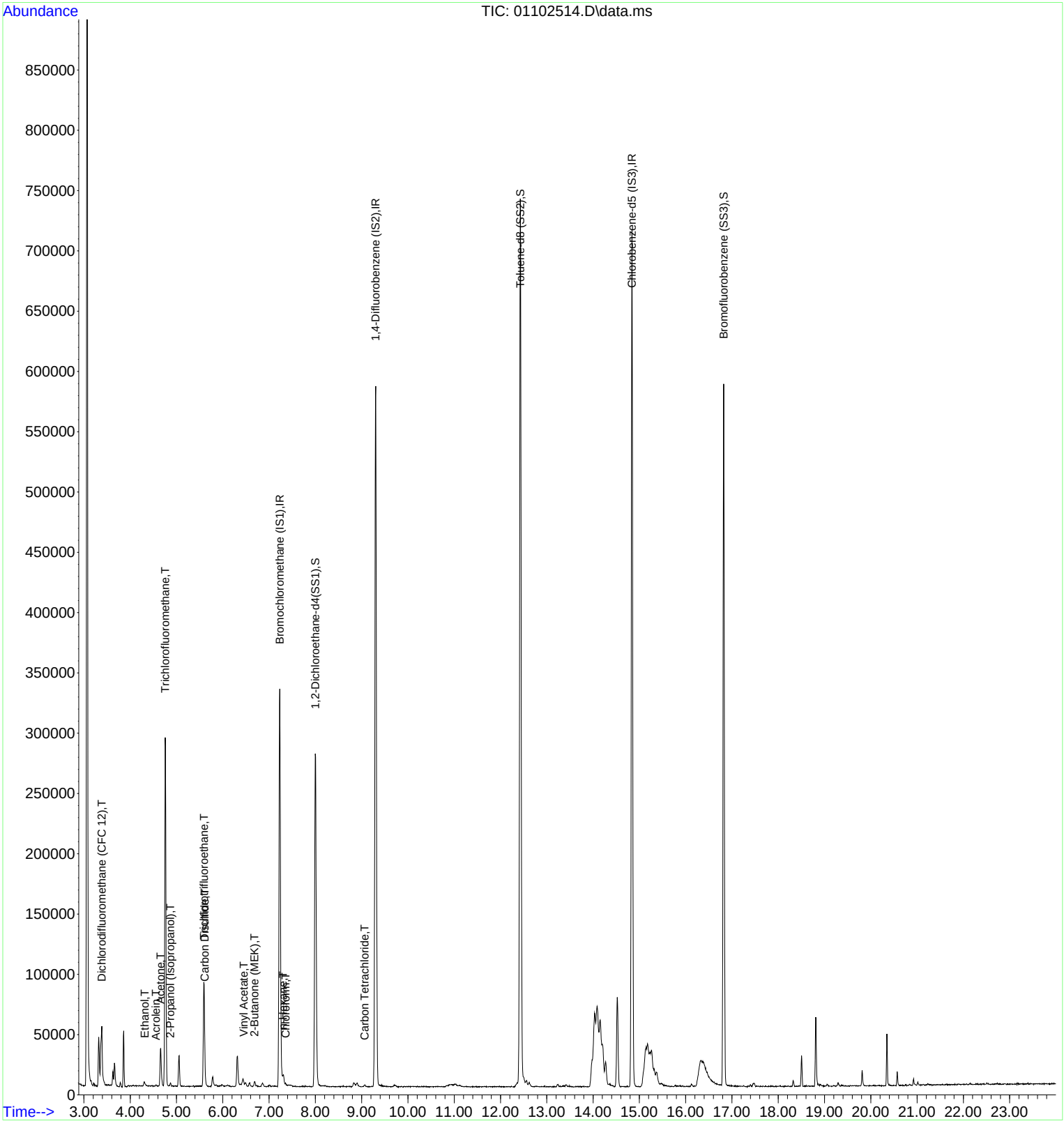
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.57	91	1697	N.D.		
59) 2-Hexanone	12.93	43	511	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	442	N.D.		
67) m- & p-Xylenes	15.64	91	627	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	16.25	91	111	N.D.		
71) n-Nonane	16.61	43	264	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.68	91	208	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.43	105	121	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	18.66	146	241	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	241	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	449	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	488	N.D.		
95) Naphthalene	20.94	128	722	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	597	N.D.		
100) n-Butylbenzene	19.38	91	316	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 14:20:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

VOA 1/12/25

Quant Time: Jan 12 14:20:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

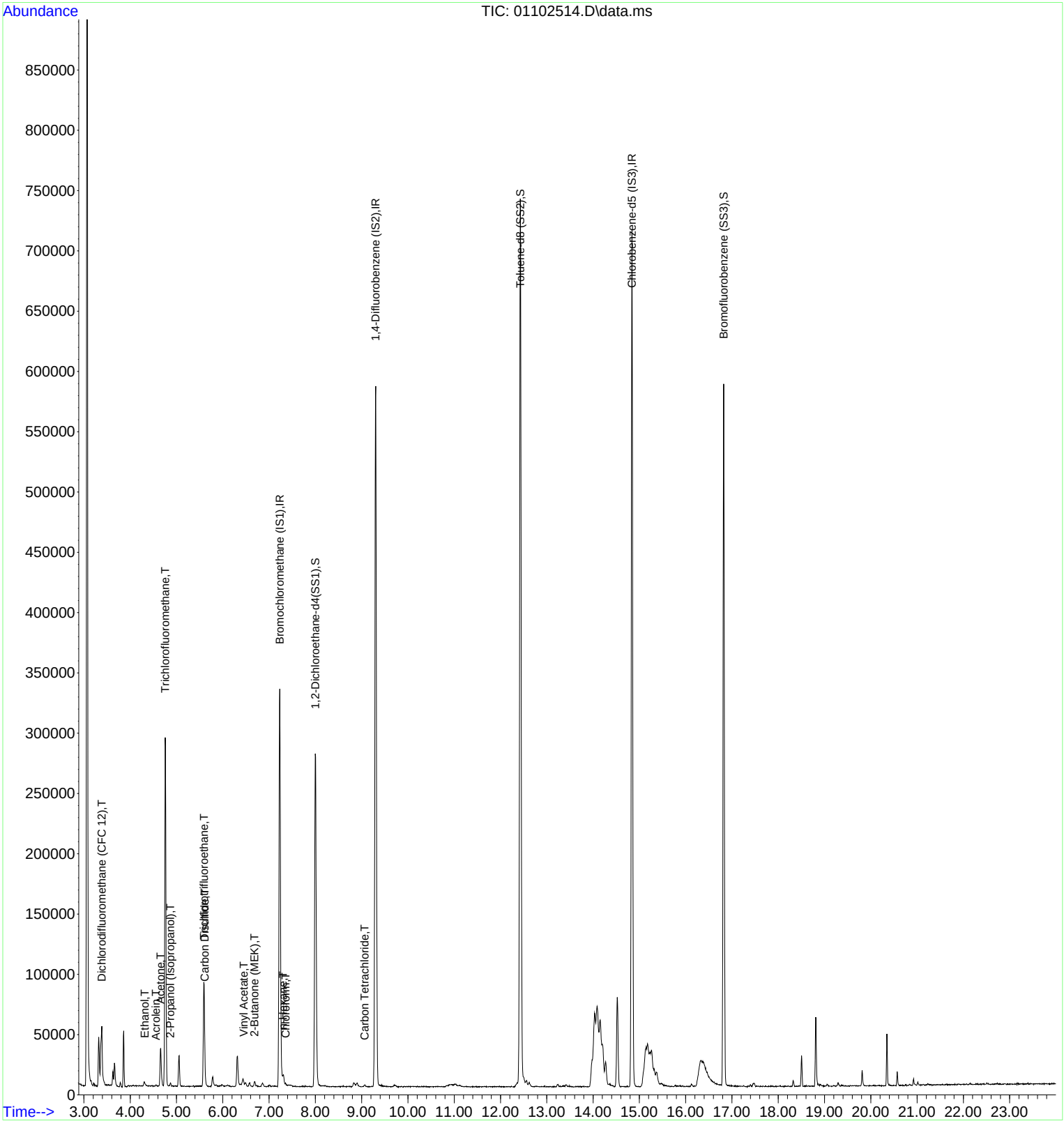
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	136544	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	597933	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111024	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	247502	13.304	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.40%				
57) Toluene-d8 (SS2)	12.43	98	613770	12.462	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.68%				
73) Bromofluorobenzene (SS3)	16.82	174	208715	12.280	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	15475	0.580	ng		99
10) Ethanol	4.31	45	4658	0.461	ng		97
12) Acrolein	4.56	56	464	0.054	ng		83
13) Acetone	4.66	58	8170	0.889	ng		91
14) Trichlorofluoromethane	4.76	101	225546	9.010	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	2055	0.062	ng		61
21) Trichlorotrifluoroethane	5.60	151	29175	2.583	ng		94
22) Carbon Disulfide	5.61	76	13782	0.331	ng		88
26) Vinyl Acetate	6.45	86	314	0.141	ng	#	87
27) 2-Butanone (MEK)	6.69	72	1438	0.195	ng	#	88
31) n-Hexane	7.31	57	2913	0.142	ng	#	94
32) Chloroform	7.36	83	1152	0.052	ng		85
42) Carbon Tetrachloride	9.07	117	1244	0.065	ng		99

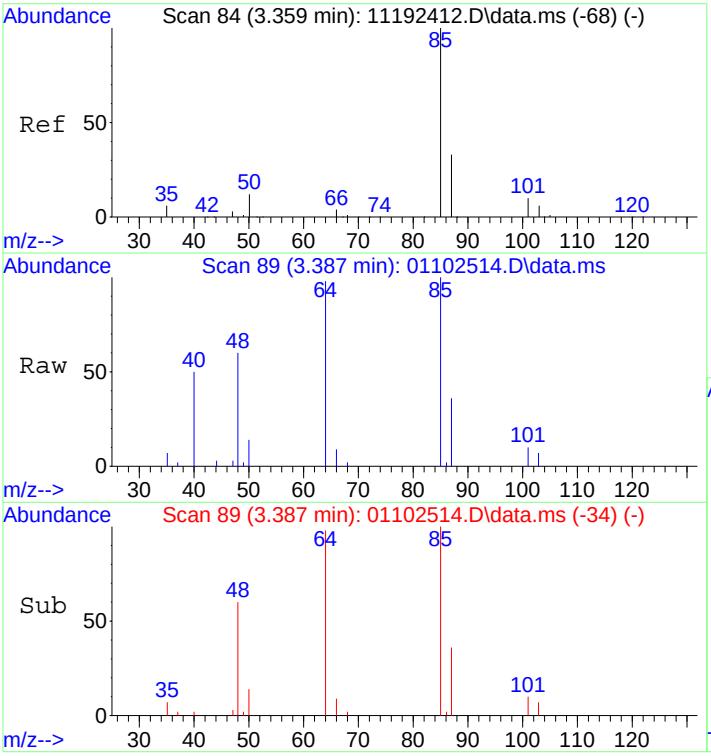
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 14:20:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

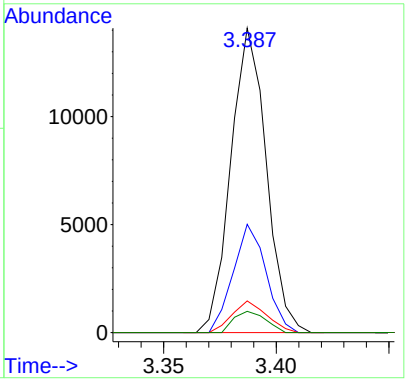


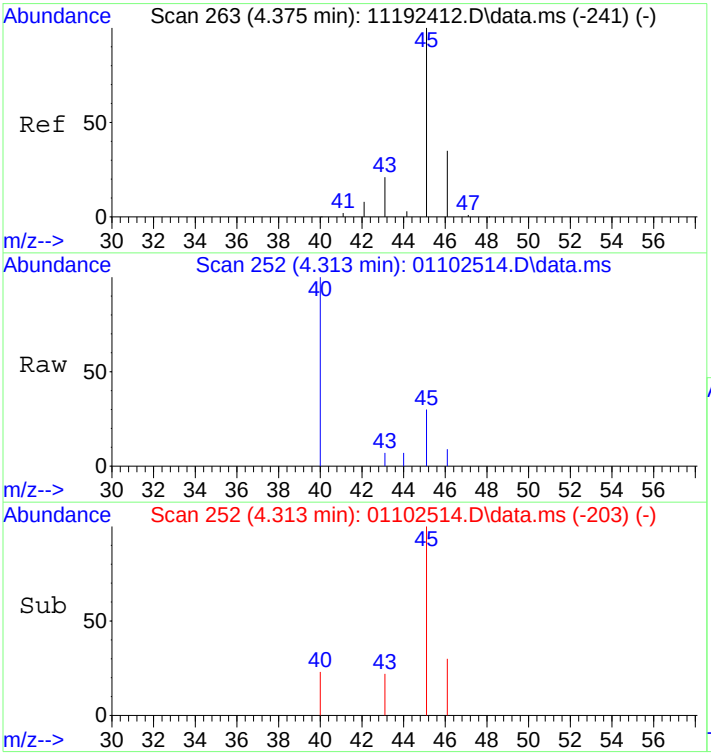


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.58 ng
RT: 3.39 min Scan# 89
Delta R.T. 0.060 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 85 Resp: 15475

Ion	Ratio	Lower	Upper
85	100		
87	33.0	12.6	52.6
101	10.1	0.0	29.6
103	6.3	0.0	26.2

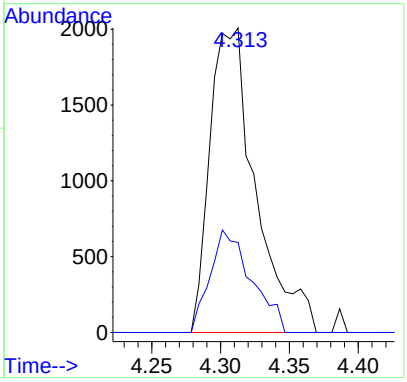


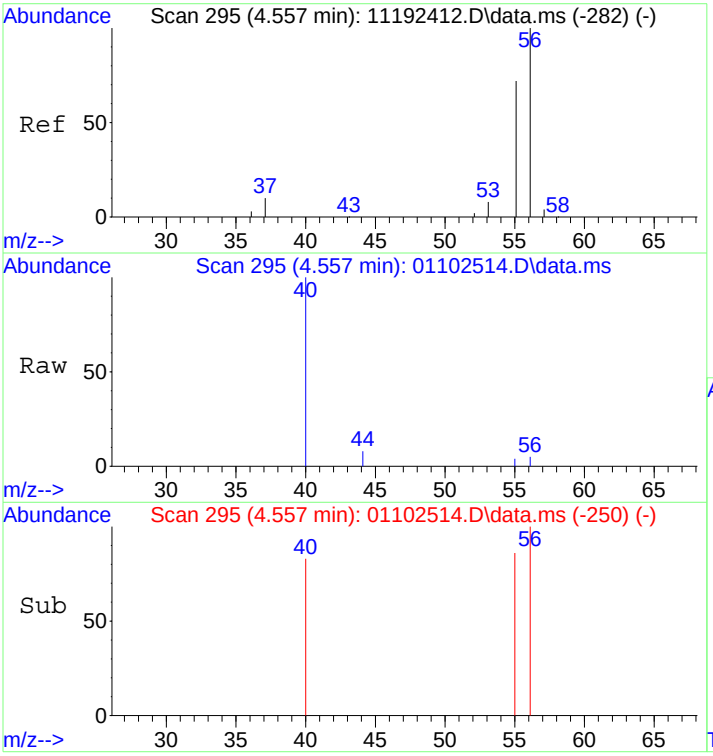


#10
Ethanol
Concen: 0.46 ng
RT: 4.31 min Scan# 252
Delta R.T. 0.028 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 45 Resp: 4658

Ion	Ratio	Lower	Upper
45	100		
46	30.4	11.8	51.8

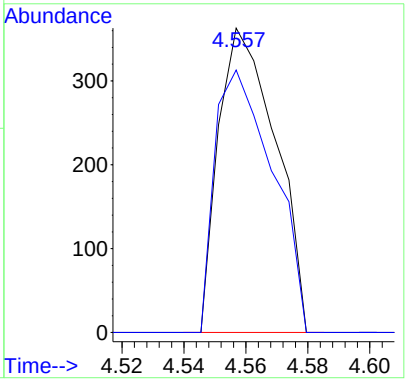


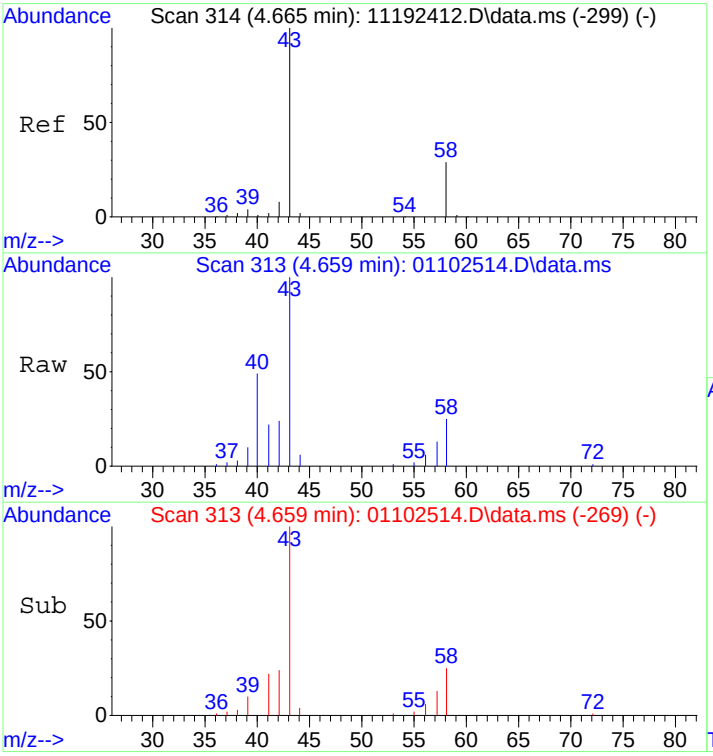


#12
Acrolein
Concen: 0.05 ng
RT: 4.56 min Scan# 295
Delta R.T. 0.003 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 56 Resp: 464

Ion	Ratio	Lower	Upper
56	100		
55	87.7	53.1	93.1

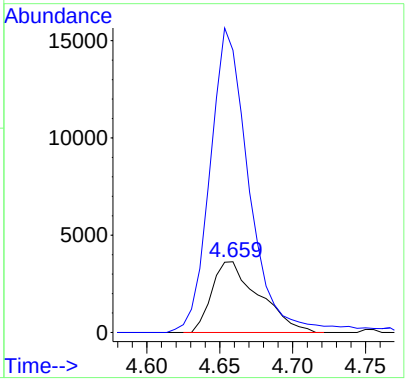


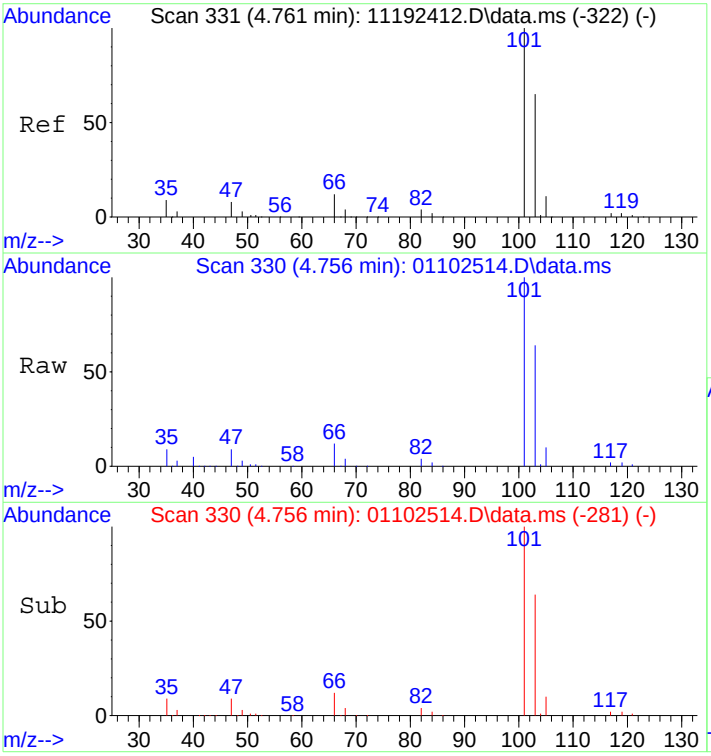


#13
Acetone
Concen: 0.89 ng
RT: 4.66 min Scan# 313
Delta R.T. -0.001 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 58 Resp: 8170

Ion	Ratio	Lower	Upper
58	100		
43	361.8	312.5	372.5

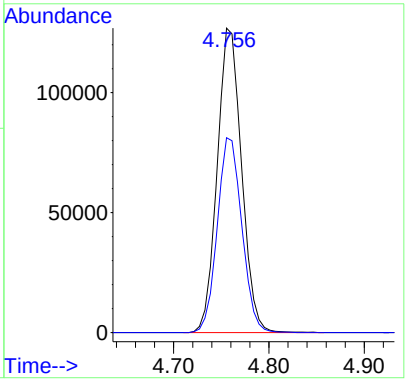


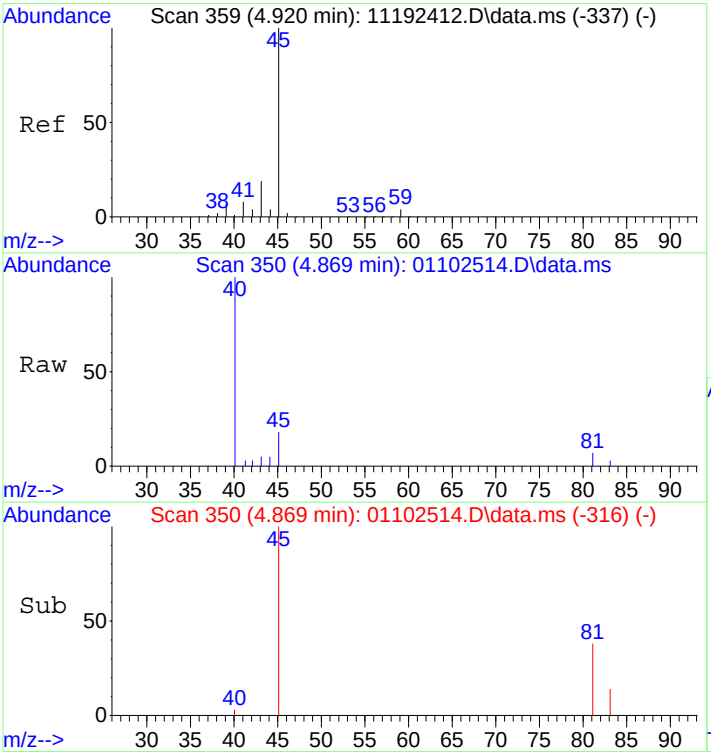


#14
Trichlorofluoromethane
Concen: 9.01 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion:101 Resp: 225546

Ion	Ratio	Lower	Upper
101	100		
103	64.4	44.8	84.8

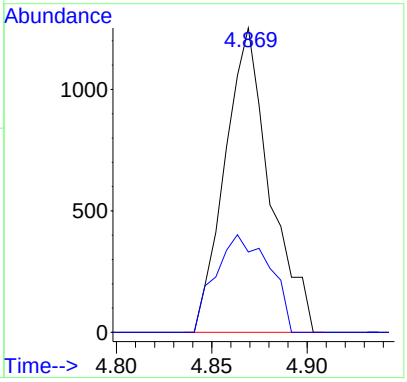


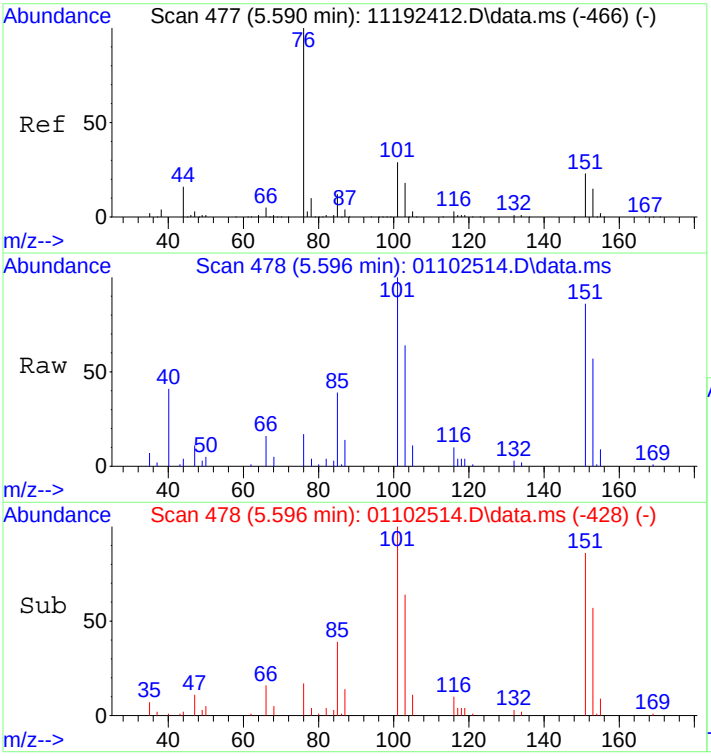


#15
2-Propanol (Isopropanol)
Concen: 0.06 ng
RT: 4.87 min Scan# 350
Delta R.T. -0.056 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 45 Resp: 2055

Ion	Ratio	Lower	Upper
45	100		
43	38.4	0.2	40.2

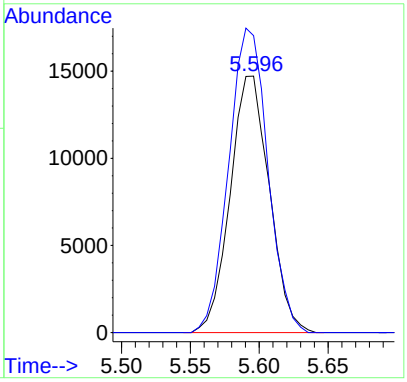


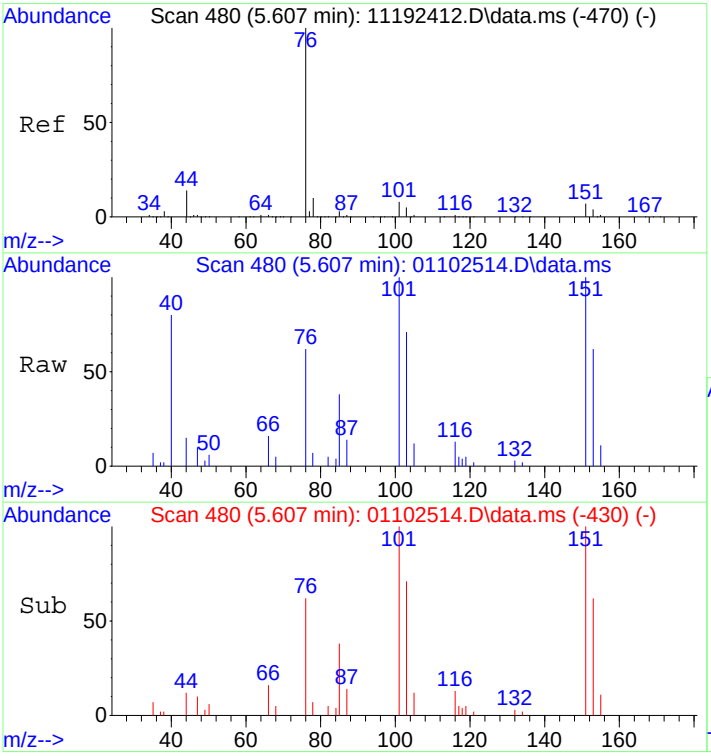


#21
Trichlorotrifluoroethane
Concen: 2.58 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.036 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion:151 Resp: 29175

Ion	Ratio	Lower	Upper
151	100		
101	118.3	105.0	145.0

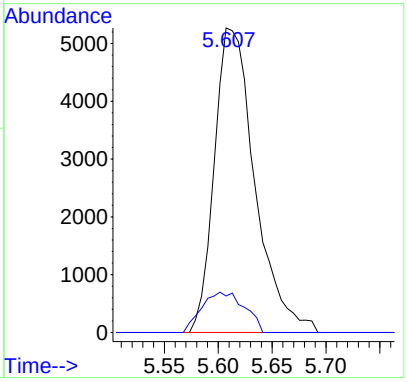


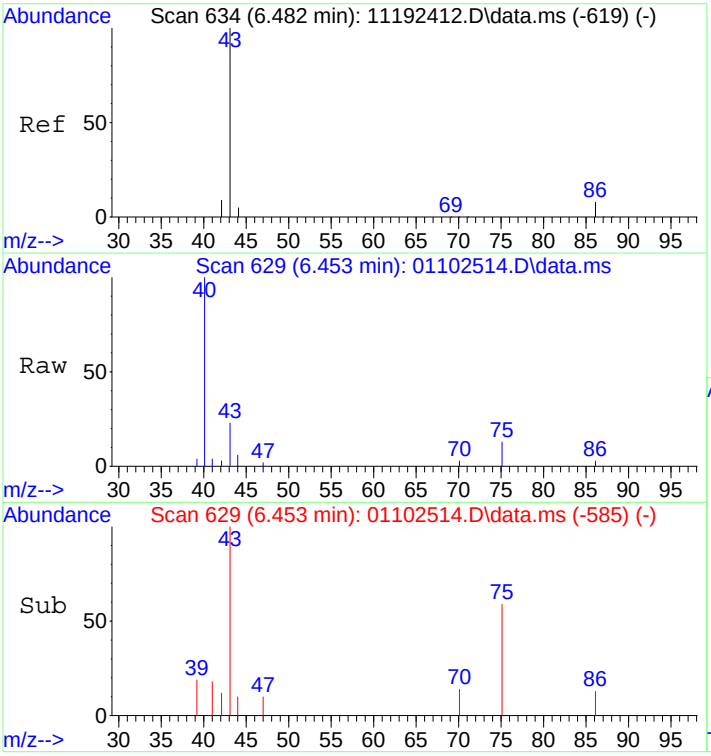


#22
Carbon Disulfide
Concen: 0.33 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.036 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 76 Resp: 13782

Ion	Ratio	Lower	Upper
76	100		
78	14.0	0.0	29.6

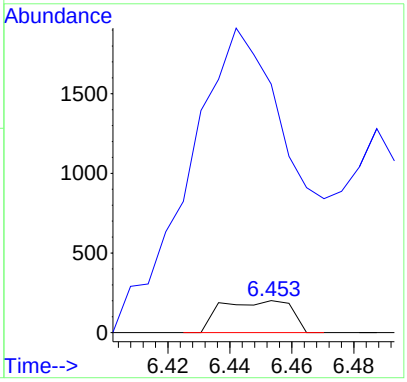


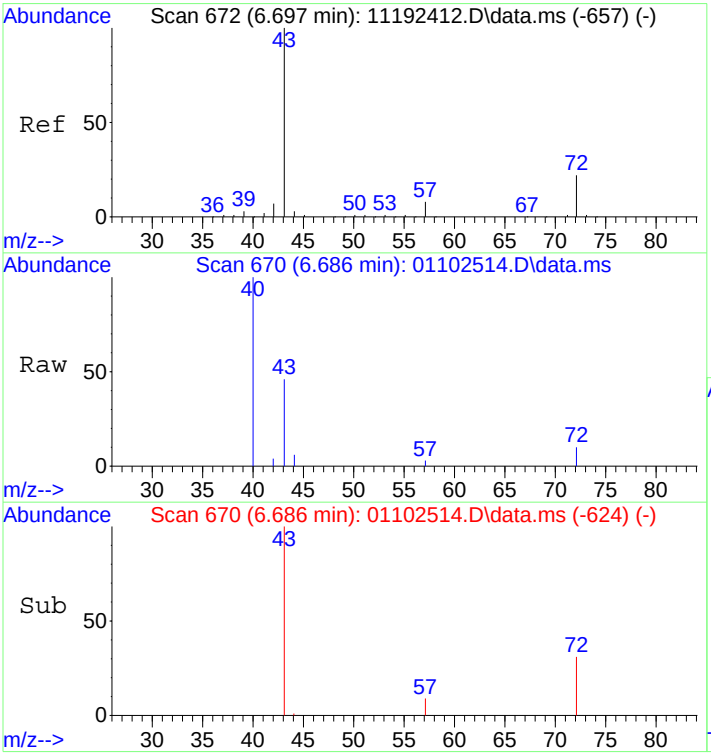


#26
Vinyl Acetate
Concen: 0.14 ng
RT: 6.45 min Scan# 629
Delta R.T. -0.001 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 86 Resp: 314

Ion	Ratio	Lower	Upper
86	100		
43	1423.2	1331.6	1371.6#

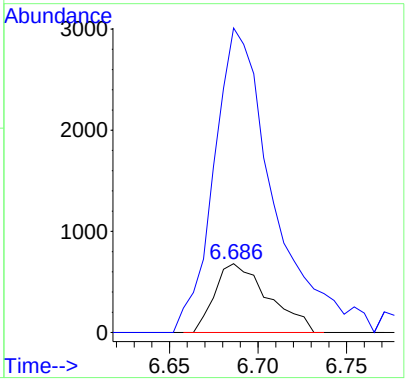


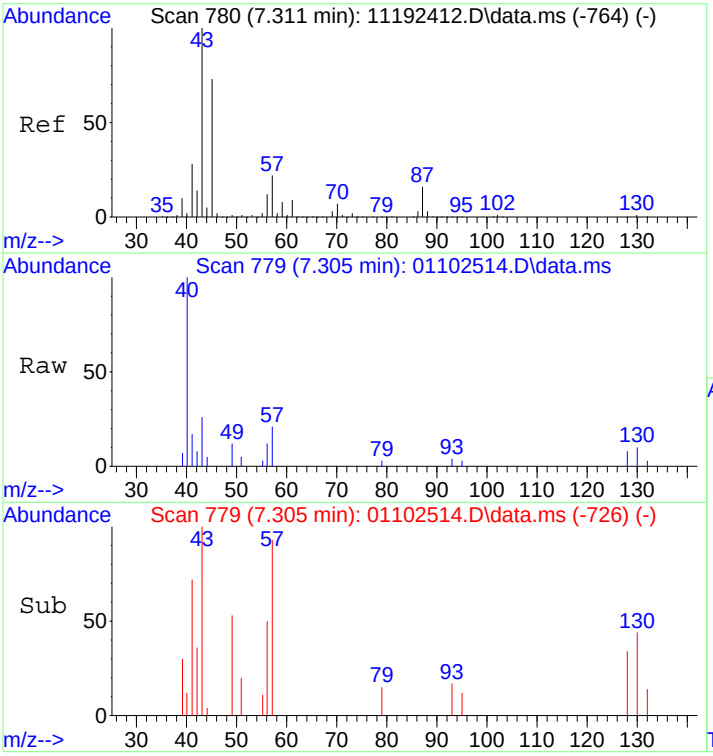


#27
2-Butanone (MEK)
Concen: 0.19 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 72 Resp: 1438

Ion	Ratio	Lower	Upper
72	100		
43	491.3	439.8	479.8#

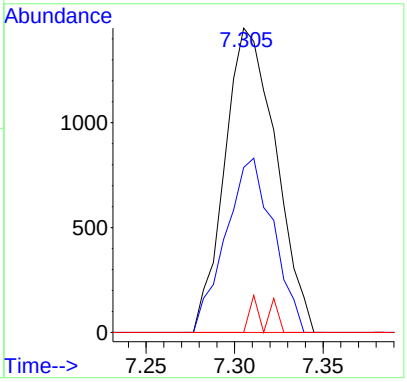


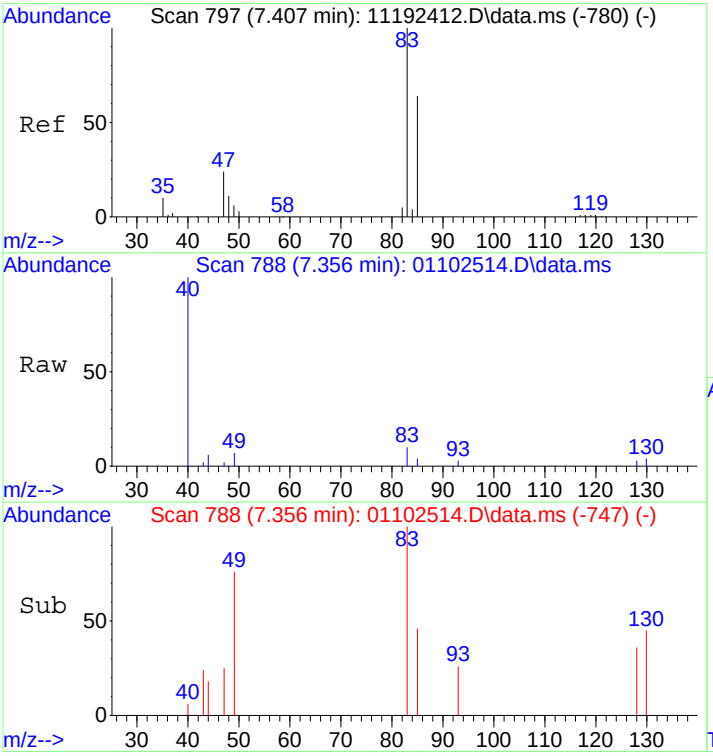


#31
n-Hexane
Concen: 0.14 ng
RT: 7.31 min Scan# 779
Delta R.T. 0.052 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 57 Resp: 2913

Ion	Ratio	Lower	Upper
57	100		
56	53.5	43.4	65.0
86	4.0	10.9	16.3#

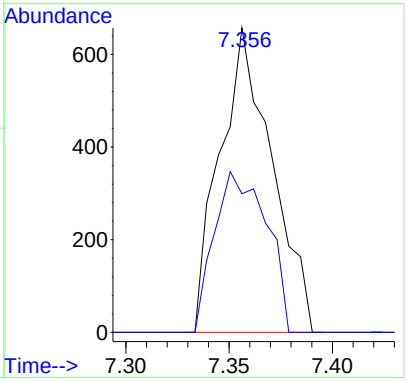


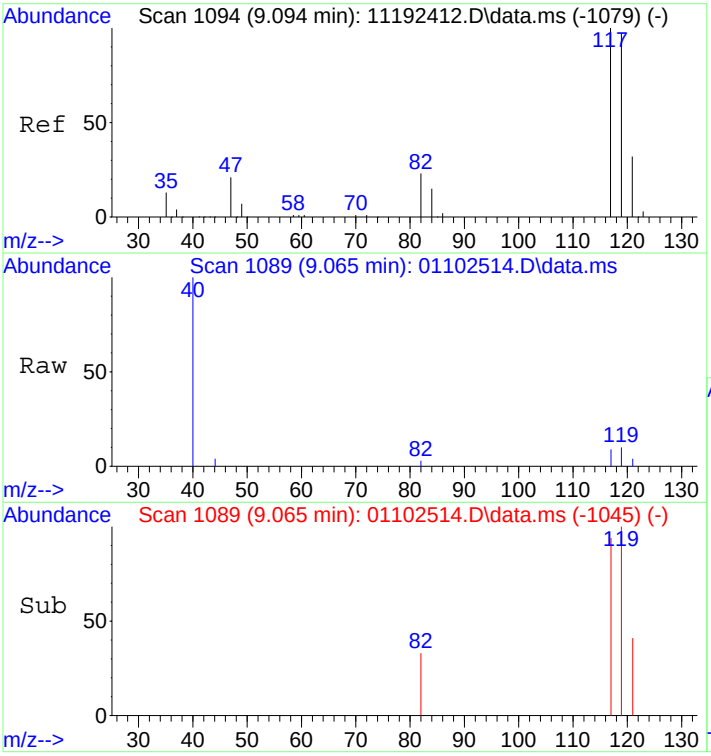


#32
Chloroform
Concen: 0.05 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion: 83 Resp: 1152

Ion	Ratio	Lower	Upper
83	100		
85	53.0	45.1	85.1

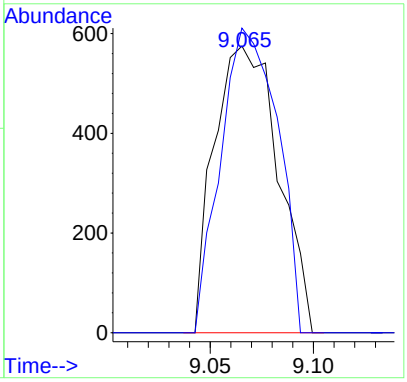




#42
Carbon Tetrachloride
Concen: 0.06 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01102514.D
Acq: 11 Jan 2025 00:14

Tgt Ion:117 Resp: 1244

Ion	Ratio	Lower	Upper
117	100		
119	94.3	75.7	115.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 17:53:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

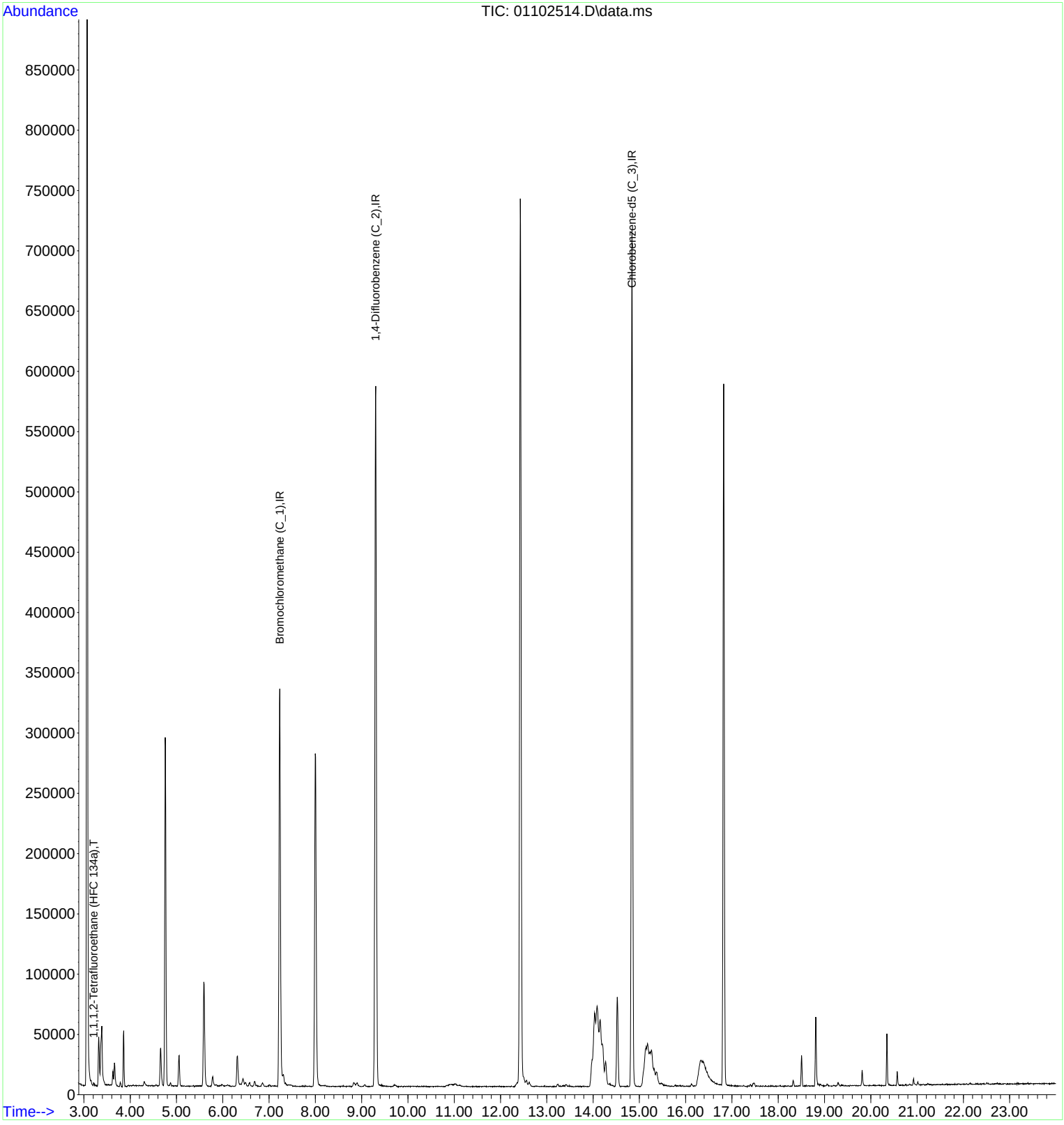
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	138586	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	597933	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	111024	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	130	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1377	0.109	ng	99
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	440	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	6.49	71	514	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	208	N.D.		
27) 4-Chlorotoluene	17.68	91	208	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 17:53:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102514.D\data.ms

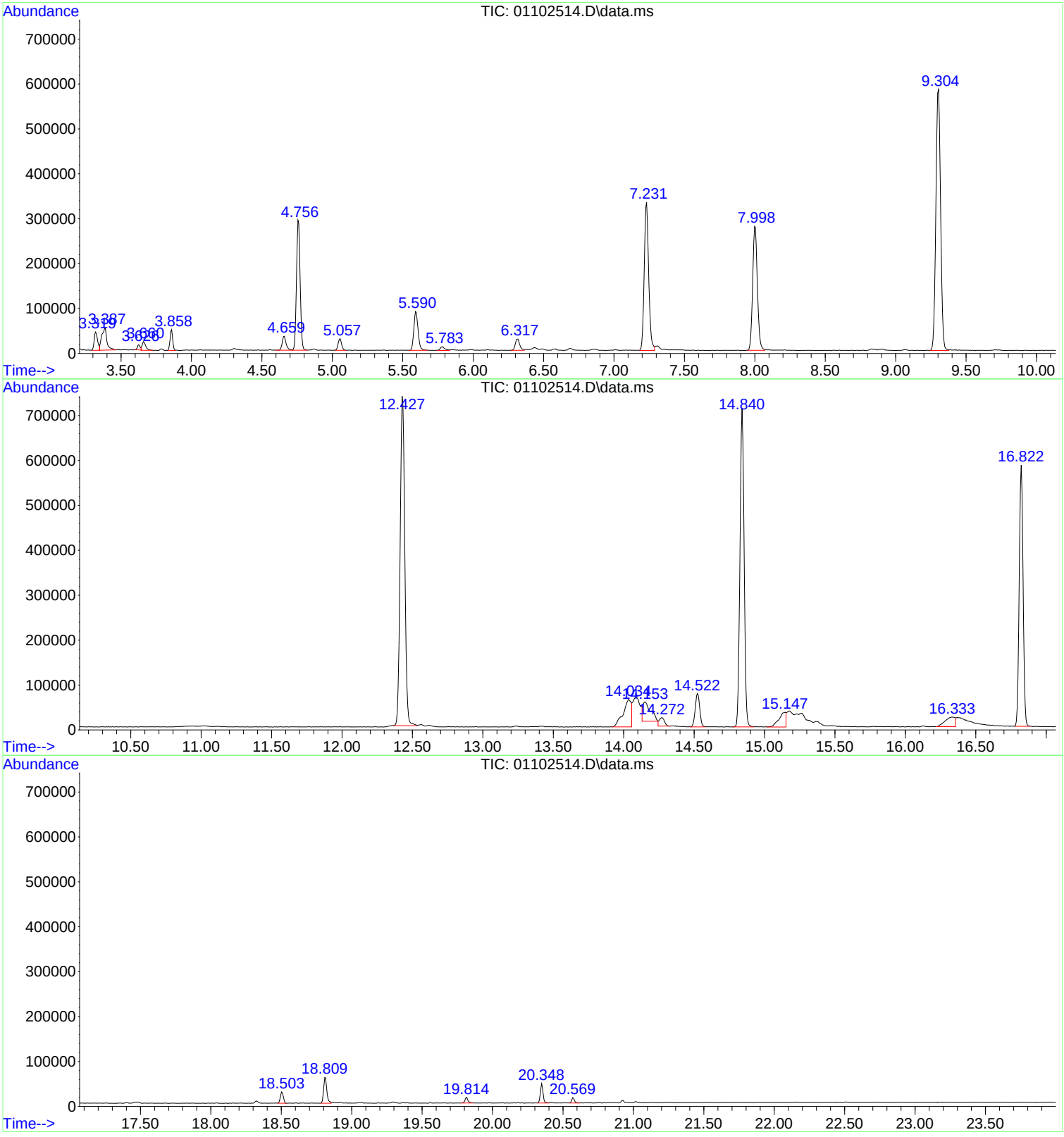
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.319	72	77	82	rBV4	40827	70537	4.19%	0.768%
2	3.387	82	89	103	rVB2	49288	122047	7.24%	1.328%
3	3.626	126	131	134	rBV3	11211	16101	0.96%	0.175%
4	3.660	134	137	149	rVB	19462	33278	1.98%	0.362%
5	3.858	167	172	177	rBV	46523	60384	3.58%	0.657%
6	4.659	302	313	323	rBV	31290	60785	3.61%	0.661%
7	4.756	323	330	342	rVB	289048	511435	30.36%	5.565%
8	5.057	376	383	390	rBV	25438	44646	2.65%	0.486%
9	5.590	469	477	492	rBV2	86463	179272	10.64%	1.951%
10	5.783	504	511	520	rBV2	8249	18795	1.12%	0.205%
11	6.317	596	605	613	rBV	25036	56040	3.33%	0.610%
12	7.231	757	766	776	rBV	330037	726667	43.13%	7.907%
13	7.998	892	901	914	rBV	275865	640988	38.05%	6.975%
14	9.304	1120	1131	1144	rBV	580963	1336153	79.31%	14.539%
15	12.427	1670	1681	1699	rBV	733699	1684684	100.00%	18.332%
16	14.034	1943	1964	1968	rBV2	61075	249190	14.79%	2.712%
17	14.153	1981	1985	2001	rVB	42907	164493	9.76%	1.790%
18	14.272	2001	2006	2016	rVB2	18926	46841	2.78%	0.510%
19	14.522	2041	2050	2060	rBV	74191	165998	9.85%	1.806%
20	14.840	2094	2106	2121	rBV	710373	1457523	86.52%	15.860%
21	15.147	2137	2160	2161	rBV2	33083	116571	6.92%	1.268%
22	16.333	2348	2369	2373	rBV3	21539	108660	6.45%	1.182%
23	16.822	2447	2455	2466	rBV	581622	1097978	65.17%	11.948%
24	18.503	2746	2751	2757	rVB3	25550	37634	2.23%	0.410%
25	18.809	2800	2805	2813	rBV	57382	90827	5.39%	0.988%
26	19.814	2975	2982	2990	rBV3	12811	19141	1.14%	0.208%
27	20.348	3071	3076	3085	rBV	43071	56854	3.37%	0.619%
28	20.569	3111	3115	3124	rBV2	11792	16297	0.97%	0.177%

Sum of corrected areas: 9189819

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:14
Operator : CG
Sample : P2405139-043 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102514.D
Acq On : 11 Jan 2025 00:144
Operator : CGG
Sample : P2405139-043 (400mL))
Misc : S37-123124011
ALS Vial : 10 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 14:21:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/12/25

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	137967	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	595889	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	112642	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	248801	13.236 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.92%			
57) Toluene-d8 (SS2)	12.43	98	618082	12.369 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%			
73) Bromofluorobenzene (SS3)	16.82	174	212463	12.321 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.56%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.39	85	15885	0.589 ng		99
4) Chloromethane	3.52	50	1205	0.060 ng		84
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	305	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D. d		
10) Ethanol	4.31	45	6734	0.660 ng		99
11) Acetonitrile	4.45	41	845	N.D.		
12) Acrolein	4.55	56	2591	0.297 ng		96
13) Acetone	4.65	58	17288	1.861 ng		95
14) Trichlorofluoromethane	4.76	101	242797	9.599 ng		99
15) 2-Propanol (Isopropanol)	4.87	45	2658	0.080 ng	#	43
16) Acrylonitrile	5.06	53	131	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.36	59	450	N.D.		
19) Methylene Chloride	5.36	84	292	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.59	151	29917	2.622 ng		98
22) Carbon Disulfide	5.61	76	3760	0.089 ng		47
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	1686	0.750 ng	#	24
27) 2-Butanone (MEK)	6.69	72	2983	0.400 ng	#	85
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.32	57	2726	0.132 ng	#	95
32) Chloroform	7.36	83	1115	N.D.		
34) Tetrahydrofuran (THF)	7.78	72	397	0.056 ng	#	9
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	7710	No Calib	#	
41) Benzene	8.90	78	2616	0.055 ng		91
42) Carbon Tetrachloride	9.07	117	1319	0.069 ng		97
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.16	130	363	N.D.		
48) 1,4-Dioxane	10.14	88	206	N.D.		

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

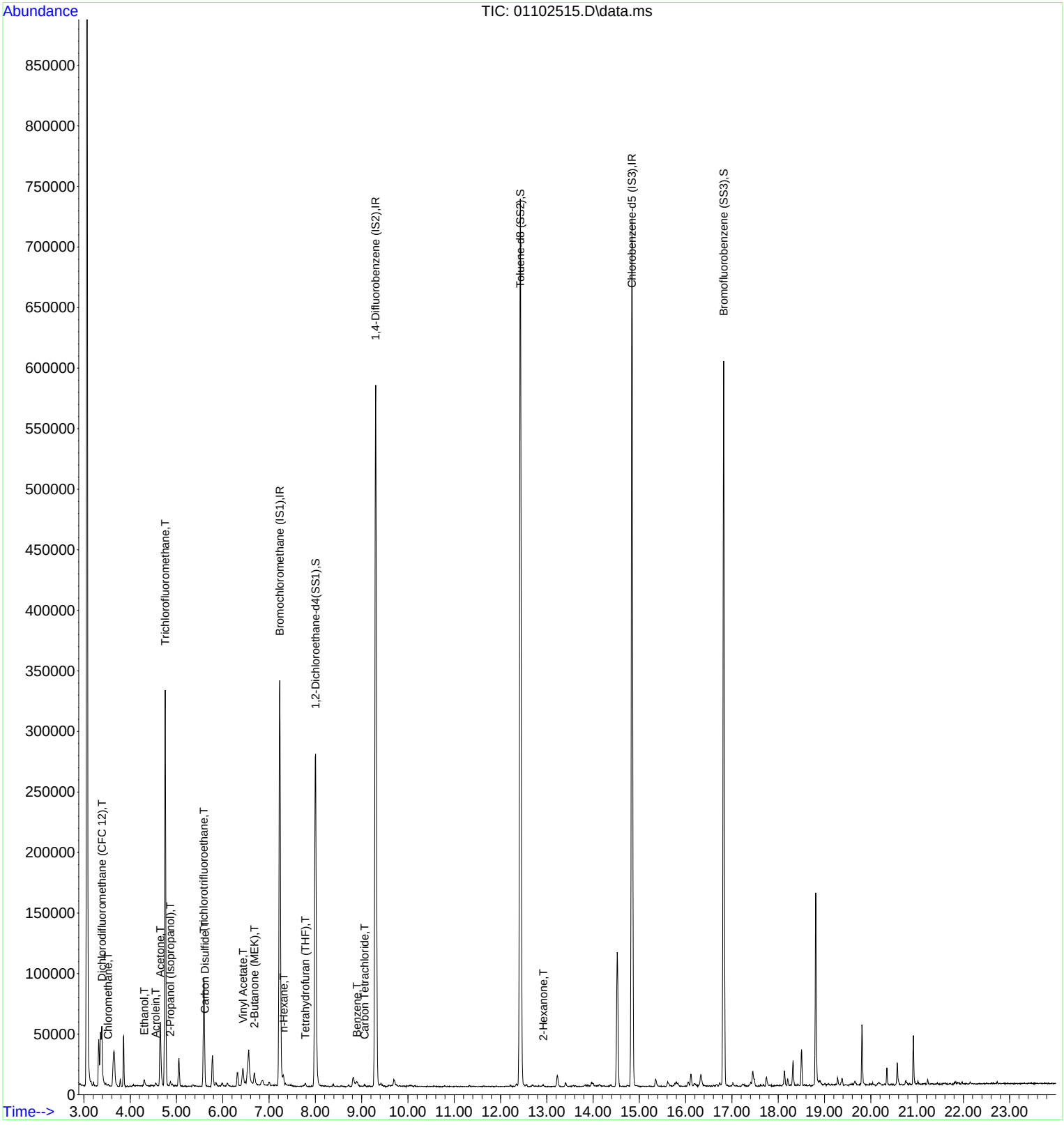
Quant Time: Jan 12 14:21:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	1928	N.D.	
59) 2-Hexanone	12.93	43	2231	0.095 ng #	61
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.78	43	561	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	14.90	112	127	N.D.	
66) Ethylbenzene	15.40	91	270	N.D.	
67) m- & p-Xylenes	15.63	91	800	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.25	91	226	N.D.	
71) n-Nonane	16.60	43	608	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	566	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.87	105	183	N.D.	
79) 1,3,5-Trimethylbenzene	17.96	105	201	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	420	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.56	91	416	N.D.	
85) 1,3-Dichlorobenzene	18.58	146	139	N.D.	
86) 1,4-Dichlorobenzene	18.58	146	139	N.D.	
87) sec-Butylbenzene	18.74	105	133	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	1174	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	19.03	146	126	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	458	N.D.	
95) Naphthalene	20.94	128	1202	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.36	55	2059	No Calib #	
99) tert-Butylbenzene	18.50	119	645	N.D.	
100) n-Butylbenzene	19.38	91	1386	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 14:21:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

MOA 1/12/25

Quant Time: Jan 12 14:21:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

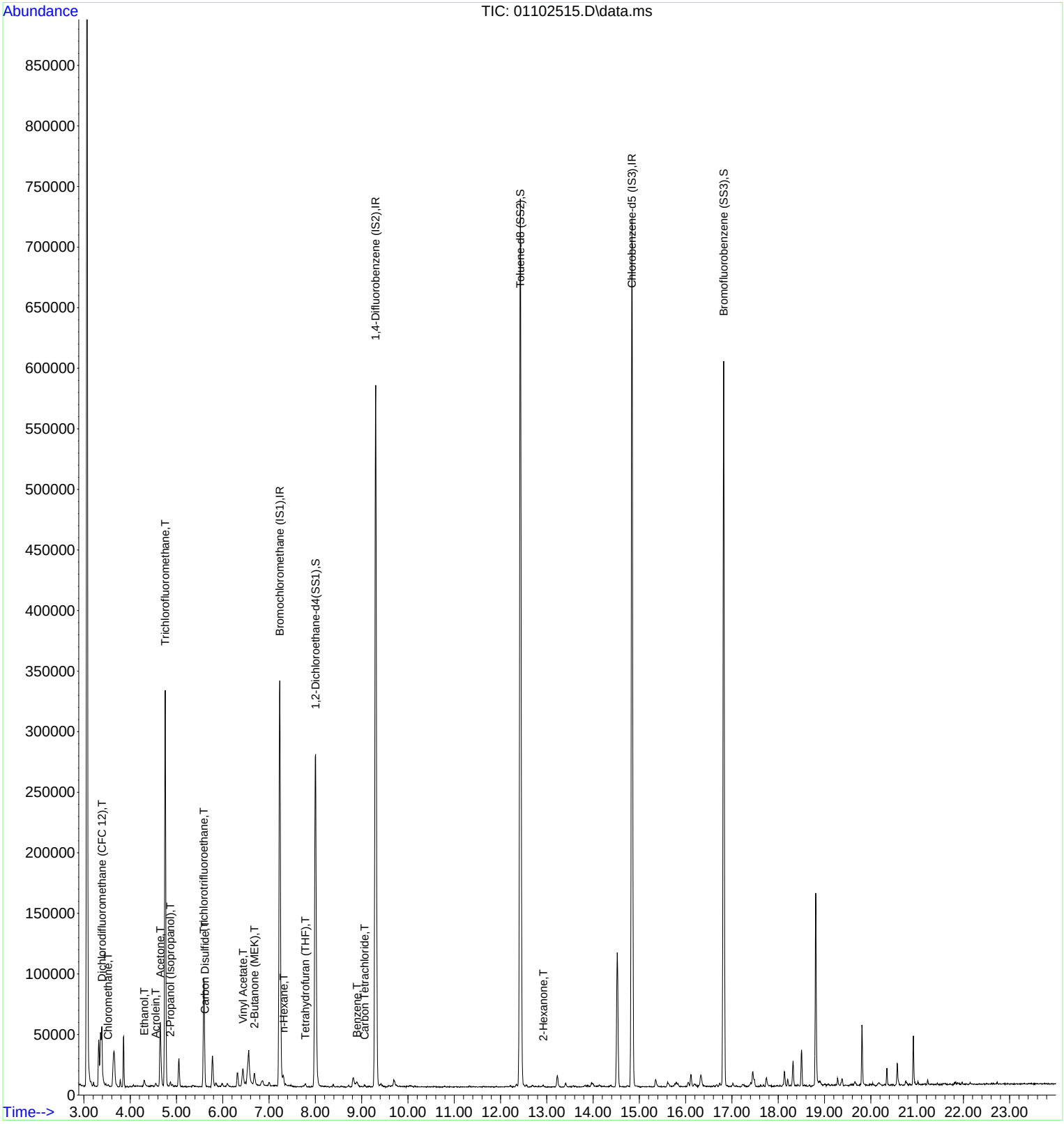
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	137967	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	595889	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	112642	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	248801	13.236	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.92%				
57) Toluene-d8 (SS2)	12.43	98	618082	12.369	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%				
73) Bromofluorobenzene (SS3)	16.82	174	212463	12.321	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.56%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	15885	0.589	ng		99
4) Chloromethane	3.52	50	1205	0.060	ng		84
10) Ethanol	4.31	45	6734	0.660	ng		99
12) Acrolein	4.55	56	2591	0.297	ng		96
13) Acetone	4.65	58	17288	1.861	ng		95
14) Trichlorofluoromethane	4.76	101	242797	9.599	ng		99
15) 2-Propanol (Isopropanol)	4.87	45	2658	0.080	ng	#	43
21) Trichlorotrifluoroethane	5.59	151	29917	2.622	ng		98
22) Carbon Disulfide	5.61	76	3760	0.089	ng		47
26) Vinyl Acetate	6.44	86	1686	0.750	ng	#	24
27) 2-Butanone (MEK)	6.69	72	2983	0.400	ng	#	85
31) n-Hexane	7.32	57	2726	0.132	ng	#	95
34) Tetrahydrofuran (THF)	7.78	72	397	0.056	ng	#	9
41) Benzene	8.90	78	2616	0.055	ng		91
42) Carbon Tetrachloride	9.07	117	1319	0.069	ng		97
59) 2-Hexanone	12.93	43	2231	0.095	ng	#	61

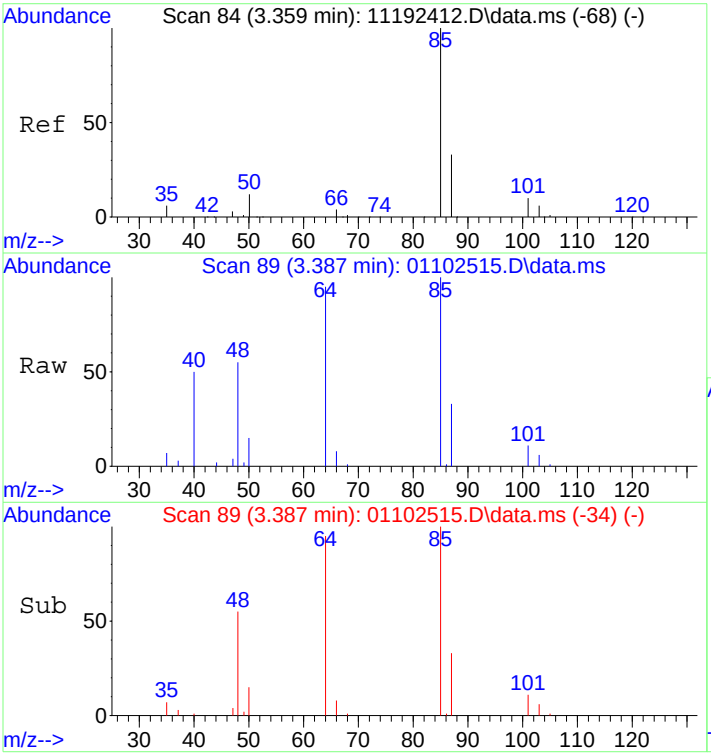
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 14:21:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

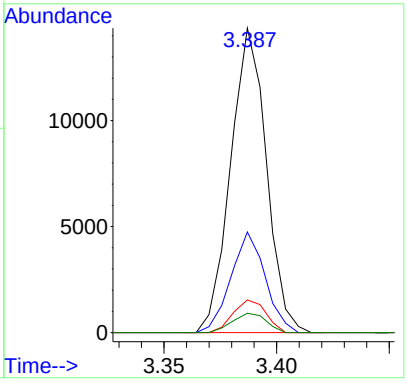


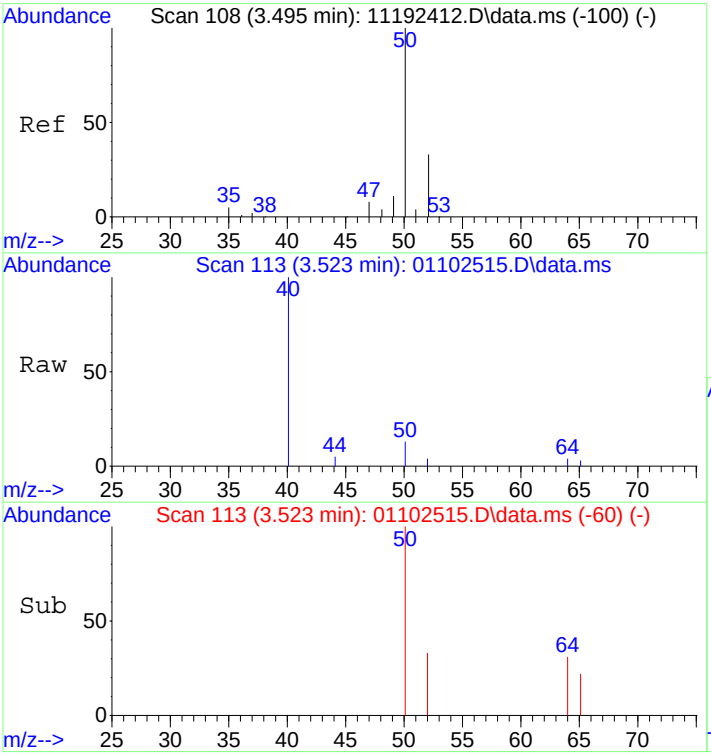


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.59 ng
RT: 3.39 min Scan# 89
Delta R.T. 0.060 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 85 Resp: 15885

Ion	Ratio	Lower	Upper
85	100		
87	31.8	12.6	52.6
101	9.8	0.0	29.6
103	6.0	0.0	26.2

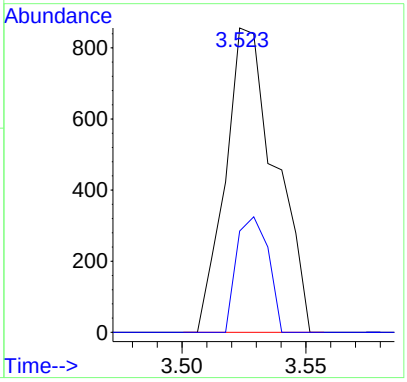


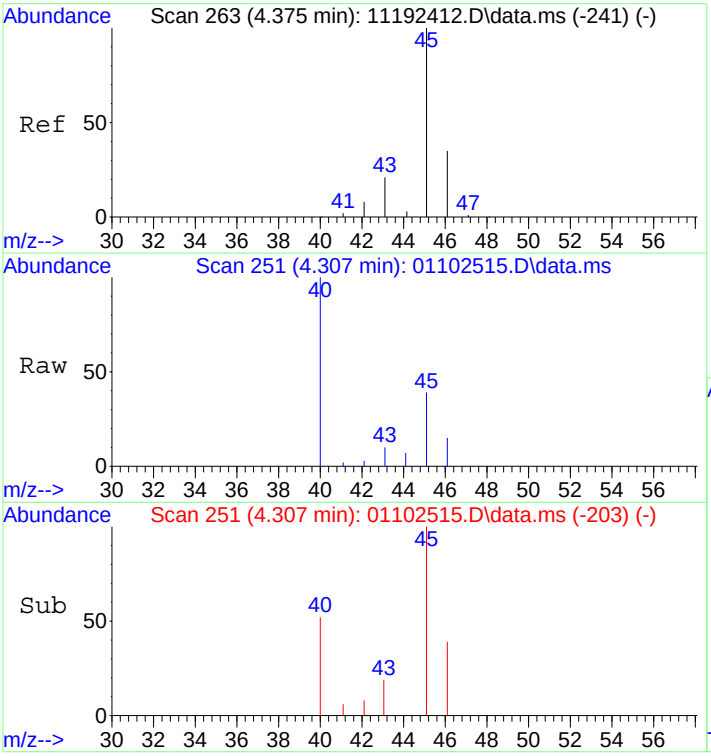


#4
Chloromethane
Concen: 0.06 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 50 Resp: 1205

Ion	Ratio	Lower	Upper
50	100		
52	24.1	13.0	53.0

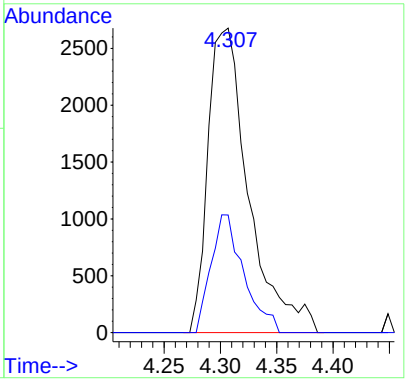


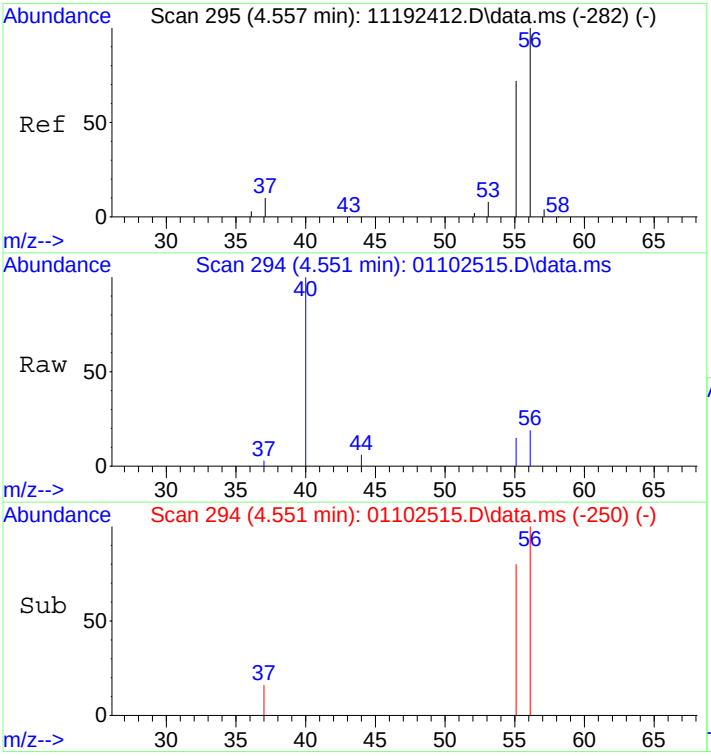


#10
Ethanol
Concen: 0.66 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 45 Resp: 6734

Ion	Ratio	Lower	Upper
45	100		
46	31.1	11.8	51.8

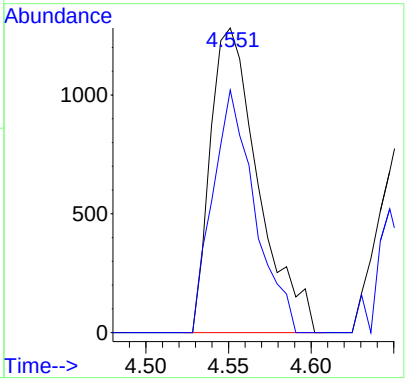


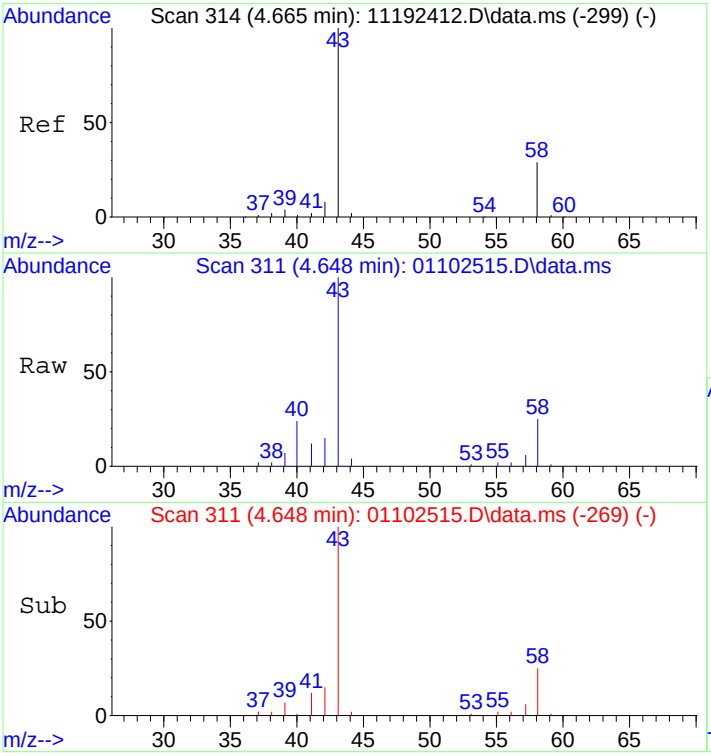


#12
Acrolein
Concen: 0.30 ng
RT: 4.55 min Scan# 294
Delta R.T. -0.002 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 56 Resp: 2591

Ion	Ratio	Lower	Upper
56	100		
55	69.5	53.1	93.1

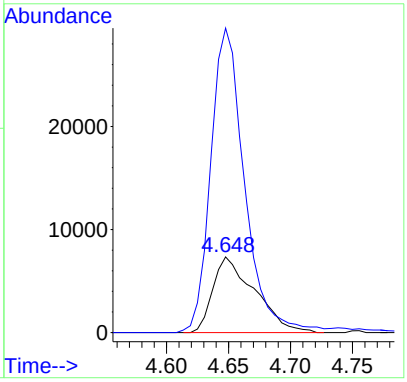


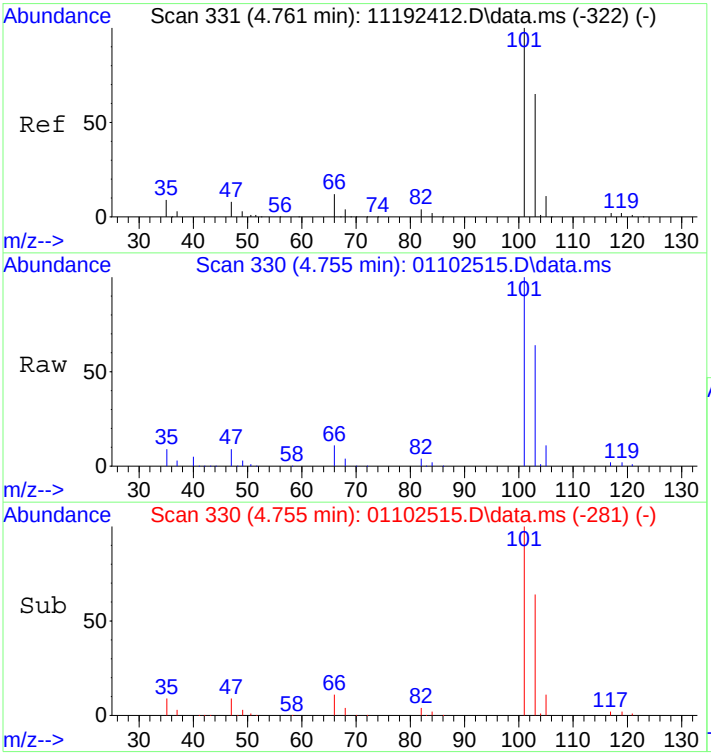


#13
Acetone
Concen: 1.86 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 58 Resp: 17288

Ion	Ratio	Lower	Upper
58	100		
43	331.3	312.5	372.5

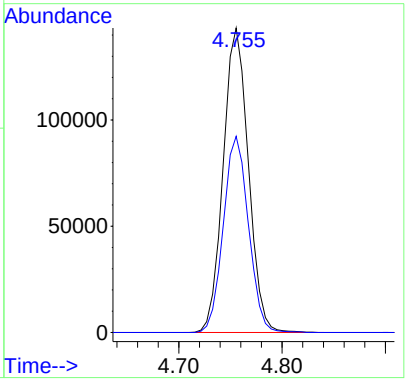


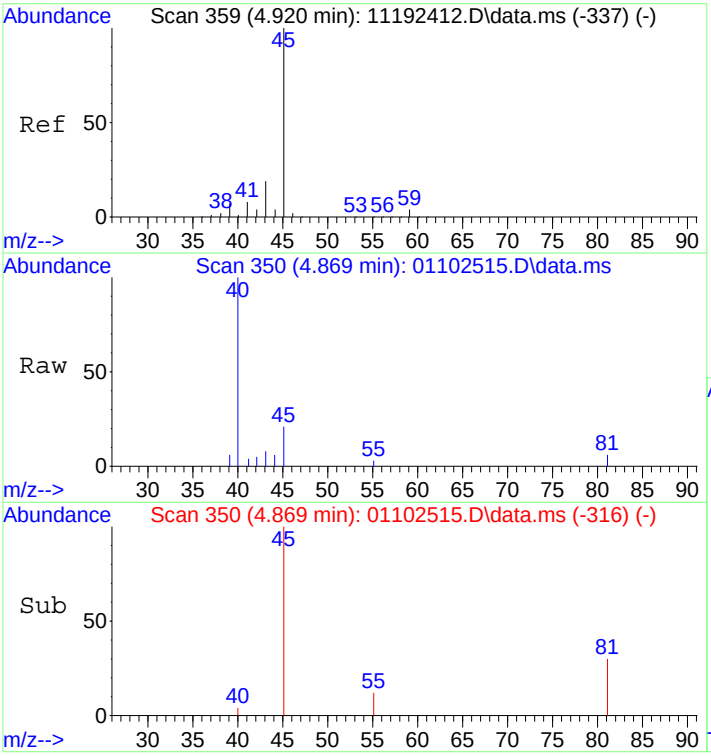


#14
Trichlorofluoromethane
Concen: 9.60 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion:101 Resp: 242797

Ion	Ratio	Lower	Upper
101	100		
103	64.3	44.8	84.8

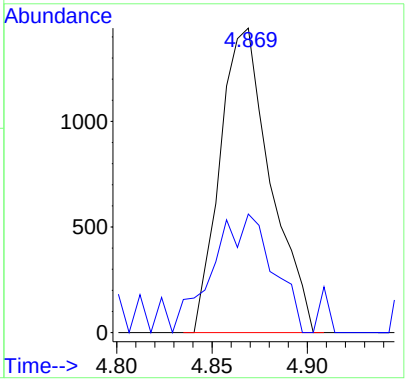


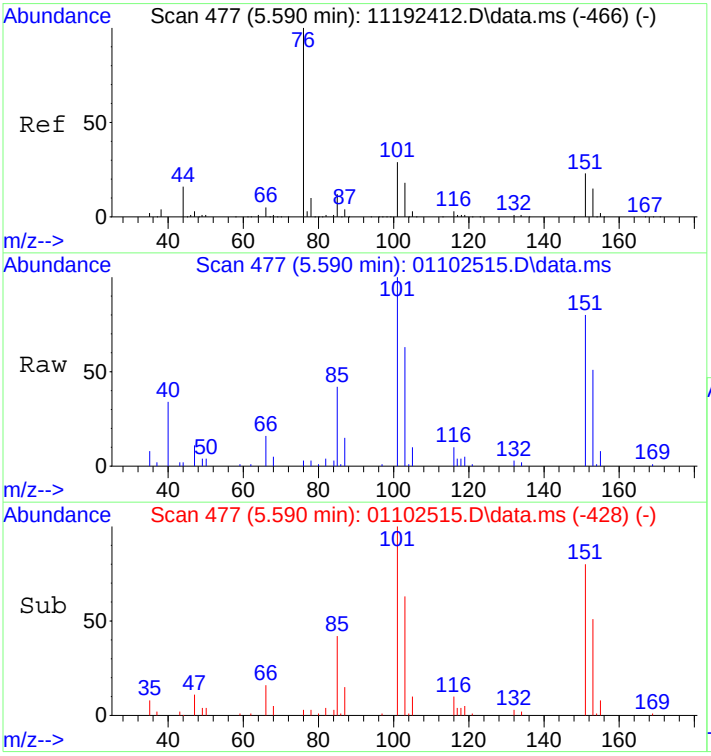


#15
2-Propanol (Isopropanol)
Concen: 0.08 ng
RT: 4.87 min Scan# 350
Delta R.T. -0.056 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 45 Resp: 2658

Ion	Ratio	Lower	Upper
45	100		
43	46.7	0.2	40.2#

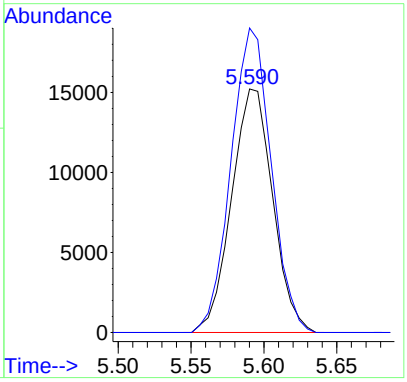


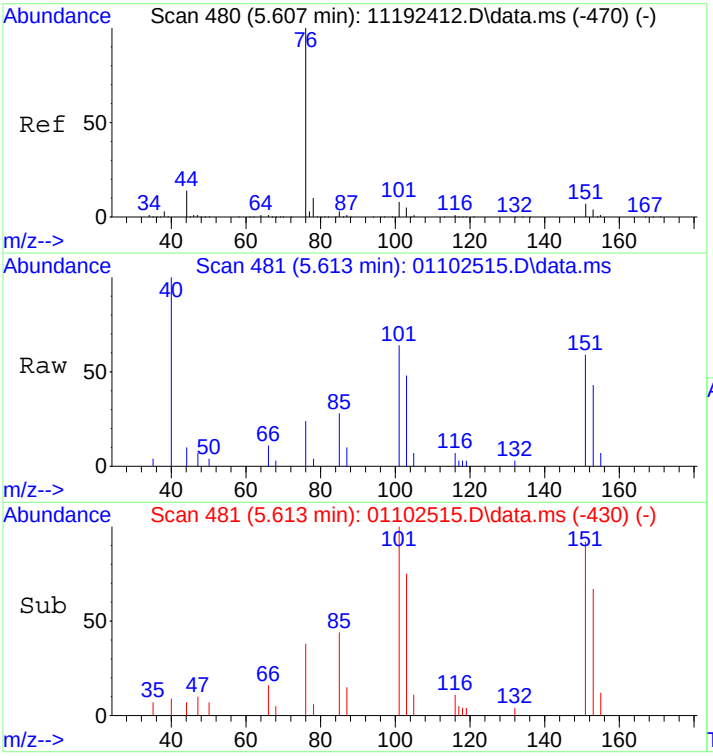


#21
Trichlorotrifluoroethane
Concen: 2.62 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion:151 Resp: 29917

Ion	Ratio	Lower	Upper
151	100		
101	122.2	105.0	145.0

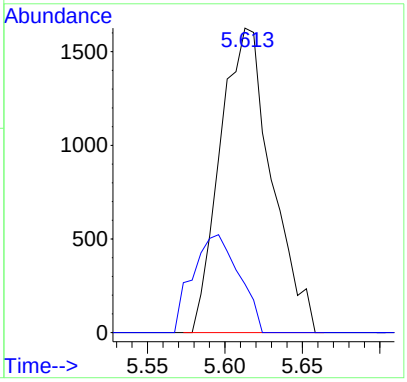


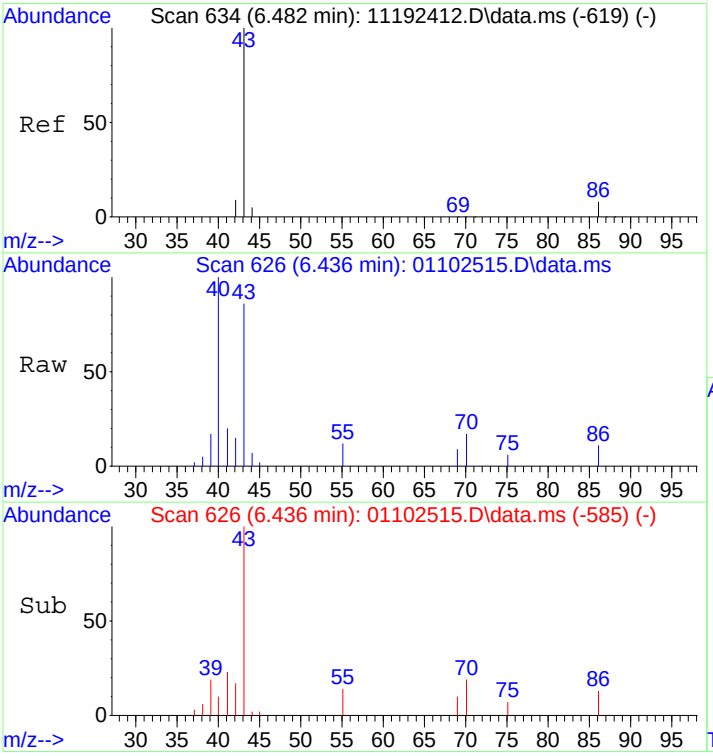


#22
Carbon Disulfide
Concen: 0.09 ng
RT: 5.61 min Scan# 481
Delta R.T. 0.041 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 76 Resp: 3760

Ion	Ratio	Lower	Upper
76	100		
78	29.0	0.0	29.6

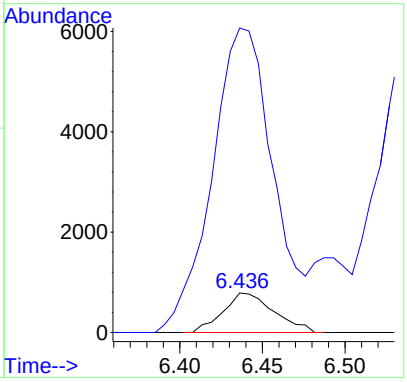


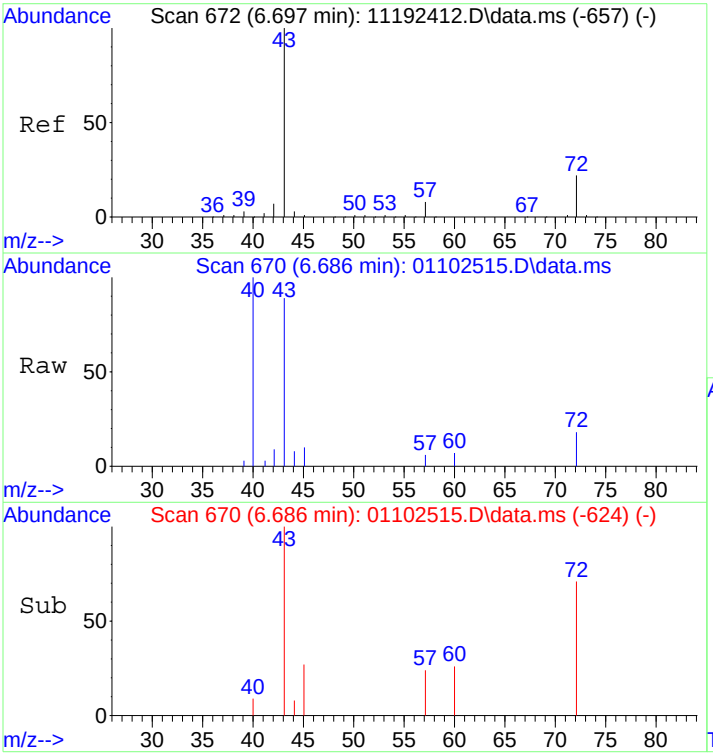


#26
Vinyl Acetate
Concen: 0.75 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 86 Resp: 1686

Ion	Ratio	Lower	Upper
86	100		
43	928.5	1331.6	1371.6#

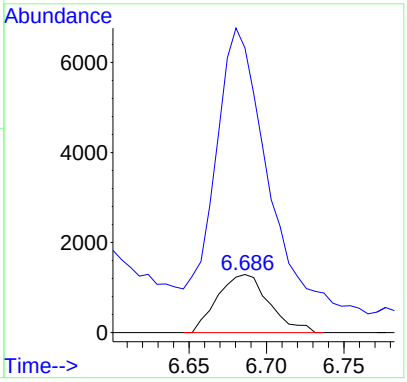


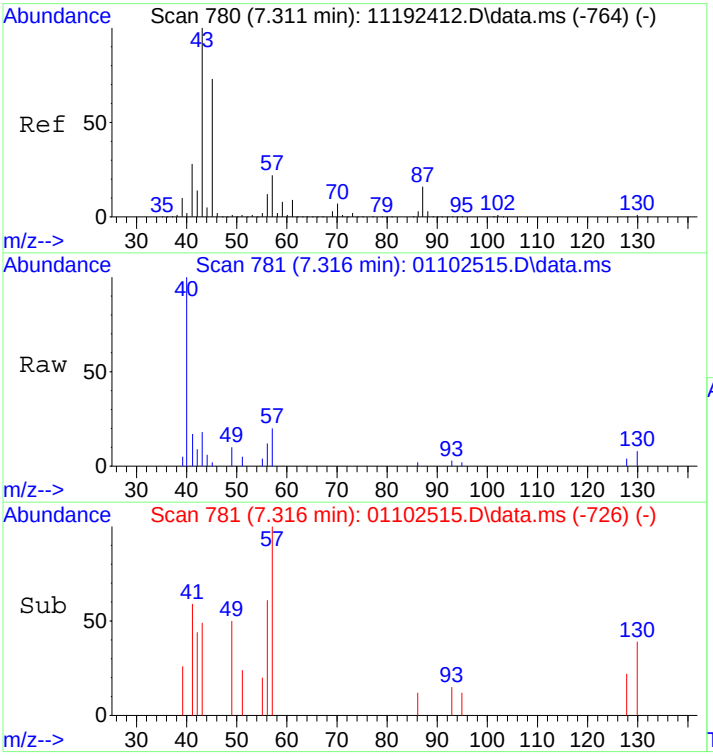


#27
2-Butanone (MEK)
Concen: 0.40 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 72 Resp: 2983

Ion	Ratio	Lower	Upper
72	100		
43	499.1	439.8	479.8#

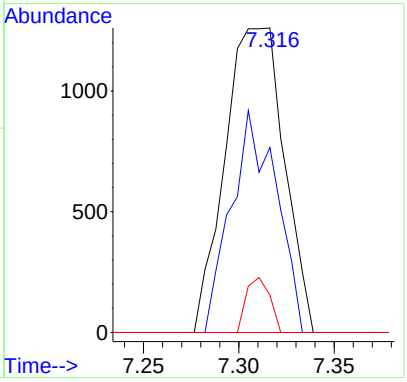


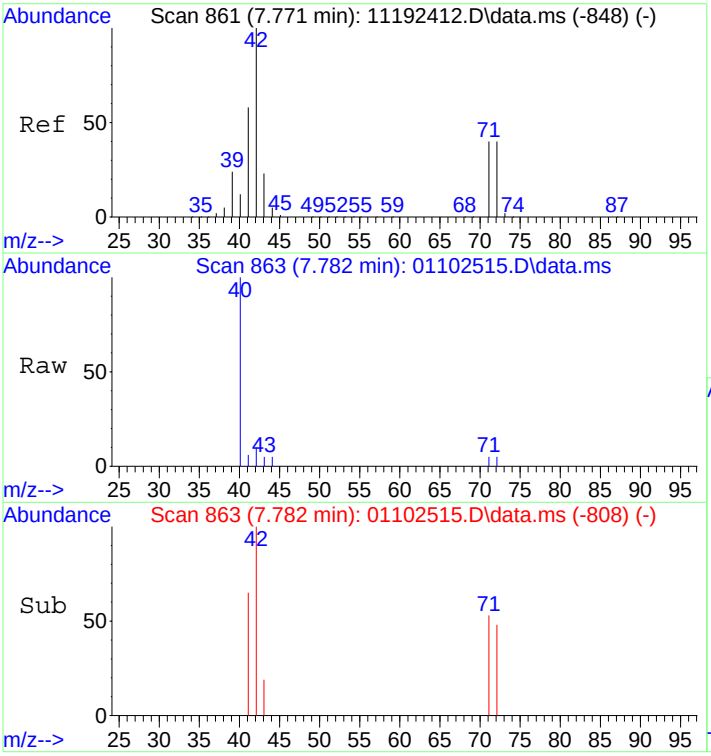


#31
n-Hexane
Concen: 0.13 ng
RT: 7.32 min Scan# 781
Delta R.T. 0.063 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 57 Resp: 2726

Ion	Ratio	Lower	Upper
57	100		
56	55.7	43.4	65.0
86	7.2	10.9	16.3#

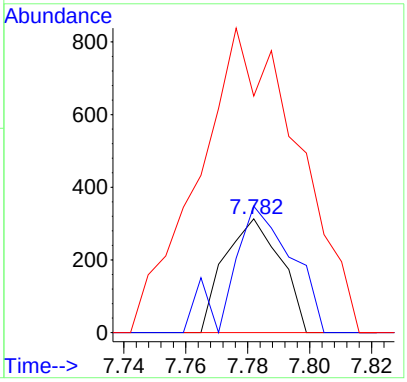


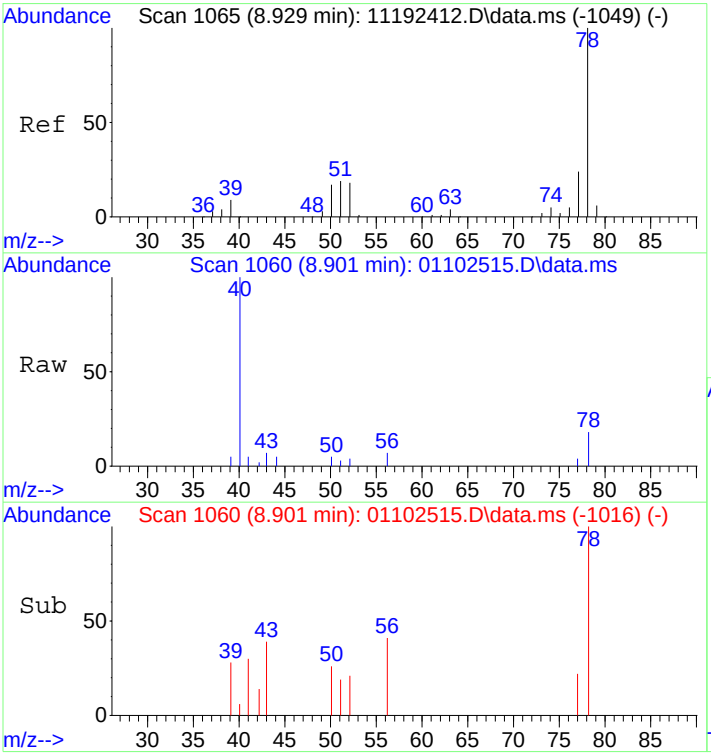


#34
Tetrahydrofuran (THF)
Concen: 0.06 ng
RT: 7.78 min Scan# 863
Delta R.T. 0.062 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 72 Resp: 397

Ion	Ratio	Lower	Upper
72	100		
71	118.9	78.6	118.6#
42	474.6	243.4	283.4#

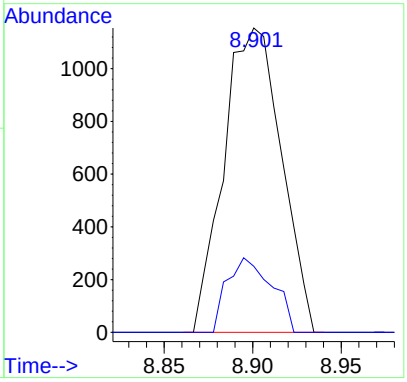


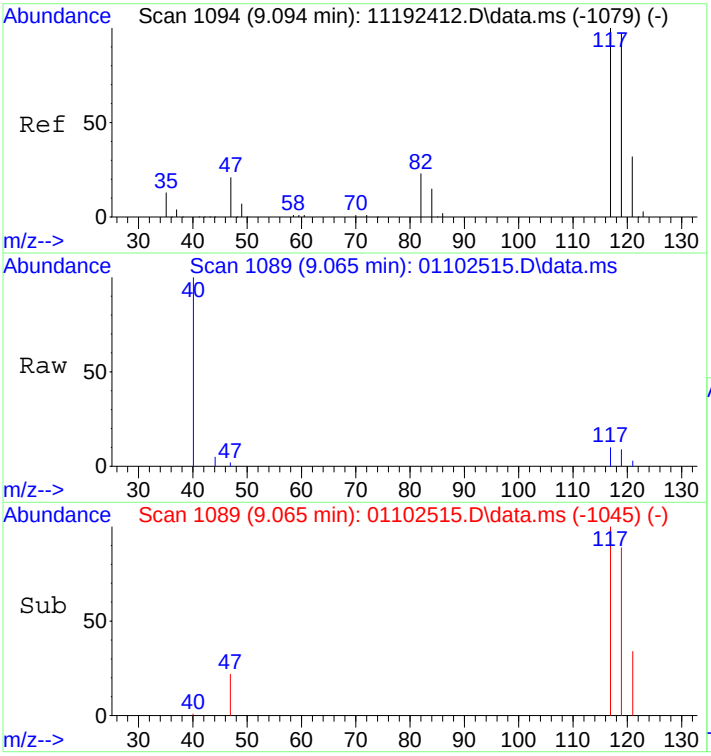


#41
Benzene
Concen: 0.05 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 78 Resp: 2616

Ion	Ratio	Lower	Upper
78	100		
77	19.0	3.7	43.7

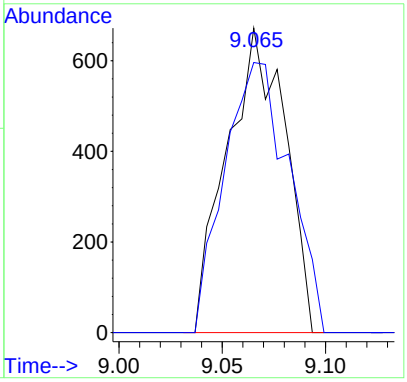


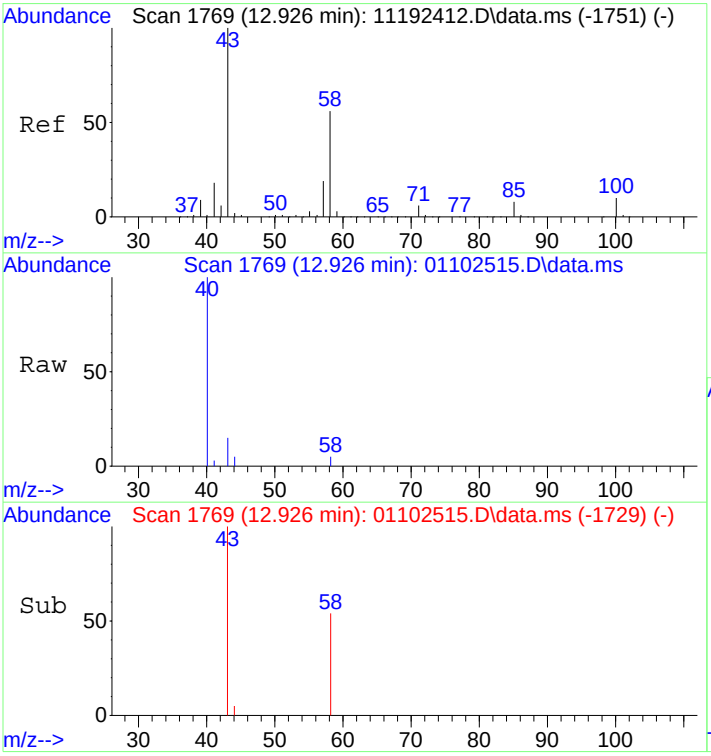


#42
Carbon Tetrachloride
Concen: 0.07 ng
RT: 9.07 min Scan# 1089
Delta R.T. -0.002 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion:117 Resp: 1319

Ion	Ratio	Lower	Upper
117	100		
119	98.3	75.7	115.7

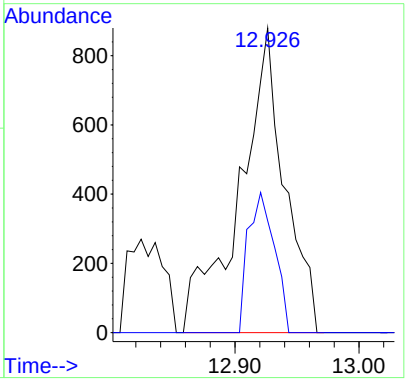




#59
2-Hexanone
Concen: 0.10 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01102515.D
Acq: 11 Jan 2025 00:46

Tgt Ion: 43 Resp: 2231

Ion	Ratio	Lower	Upper
43	100		
58	26.8	35.2	75.2#



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

MOA 1/12/25

Quant Time: Jan 12 17:54:00 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

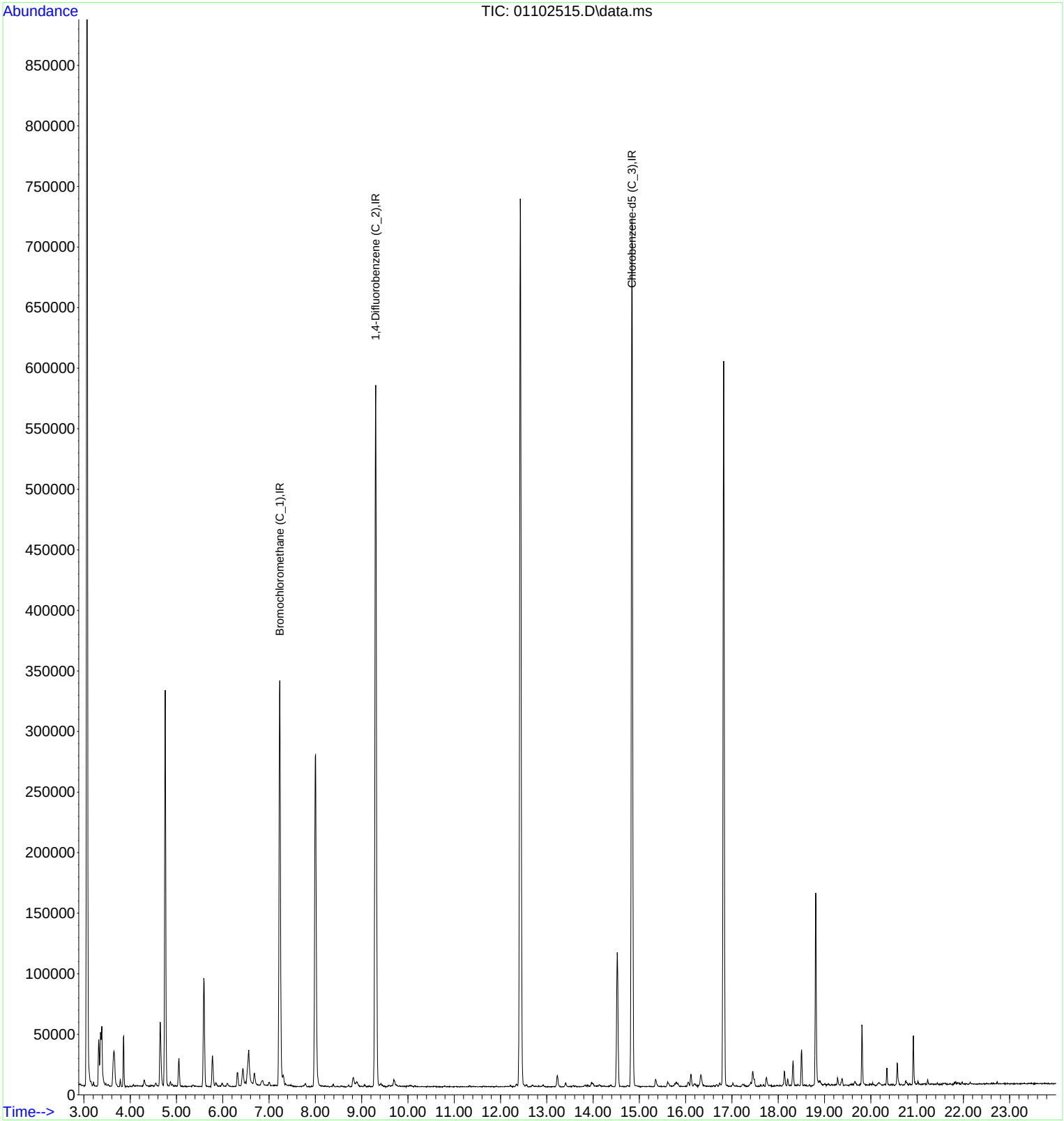
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	138838	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	597110	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	112642	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	110	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	d	
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	476	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.35	43	1055	N.D.		
12) 2-Methylpentane	6.49	71	480	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.59	55	54	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	16.33	75	506	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	566	N.D.		
27) 4-Chlorotoluene	17.68	91	566	N.D.		
28) Indane	19.10	117	62	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 12 17:54:00 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102515.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.319	72	77	80	rBV2	38411	60319	3.59%	0.640%
2	3.359	80	84	86	rVV	44103	69499	4.14%	0.738%
3	3.387	86	89	101	rVB	48612	79065	4.71%	0.839%
4	3.648	125	135	150	rVB2	29408	86953	5.18%	0.923%
5	3.858	165	172	178	rVB	42115	55514	3.31%	0.589%
6	4.301	244	250	259	rBV3	5215	11744	0.70%	0.125%
7	4.648	304	311	321	rBV2	52942	103872	6.19%	1.103%
8	4.755	323	330	339	rVB	326297	547590	32.63%	5.813%
9	5.051	375	382	390	rVB	23395	39931	2.38%	0.424%
10	5.590	470	477	489	rBV	89605	175207	10.44%	1.860%
11	5.777	503	510	517	rBV	25872	52346	3.12%	0.556%
12	6.311	599	604	611	rBV	11107	23045	1.37%	0.245%
13	6.436	617	626	632	rBV3	14188	34158	2.04%	0.363%
14	6.561	638	648	663	rVV2	27946	81005	4.83%	0.860%
15	6.680	663	669	680	rVB2	9577	22330	1.33%	0.237%
16	6.862	692	701	711	rVB5	3943	12146	0.72%	0.129%
17	7.231	756	766	776	rBV	334612	734540	43.77%	7.797%
18	7.305	777	779	785	rVB3	8130	12580	0.75%	0.134%
19	8.003	891	902	919	rBV	274548	650522	38.76%	6.905%
20	8.821	1037	1046	1051	rBV4	7752	20051	1.19%	0.213%
21	9.304	1119	1131	1144	rBV	579220	1340653	79.88%	14.231%
22	9.695	1195	1200	1206	rBV5	5169	11574	0.69%	0.123%
23	12.427	1671	1681	1699	rVB	732818	1678250	100.00%	17.815%
24	13.227	1814	1822	1831	rBV3	9432	20269	1.21%	0.215%
25	14.522	2041	2050	2059	rBV	110993	241794	14.41%	2.567%
26	14.840	2097	2106	2120	rBV	716542	1472475	87.74%	15.631%
27	15.351	2191	2196	2207	rBV3	5875	13124	0.78%	0.139%
28	15.612	2235	2242	2250	rBV4	4217	10826	0.65%	0.115%
29	16.112	2325	2330	2338	rVB2	9721	18522	1.10%	0.197%
30	16.328	2357	2368	2378	rBV5	9718	28144	1.68%	0.299%
31	16.822	2446	2455	2468	rVB	598438	1130940	67.39%	12.005%
32	17.452	2560	2566	2578	rVB3	12237	32616	1.94%	0.346%
33	17.747	2613	2618	2627	rBV5	7413	16128	0.96%	0.171%
34	18.133	2681	2686	2694	rVB3	11945	20310	1.21%	0.216%
35	18.321	2711	2719	2726	rBV4	20771	34532	2.06%	0.367%
36	18.502	2745	2751	2757	rVB2	29850	46376	2.76%	0.492%
37	18.809	2799	2805	2815	rBV	158330	241680	14.40%	2.565%
38	19.377	2898	2905	2910	rVB5	5790	12404	0.74%	0.132%
39	19.808	2976	2981	2996	rVB	50076	73744	4.39%	0.783%
40	20.348	3071	3076	3080	rBV2	14196	18322	1.09%	0.194%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

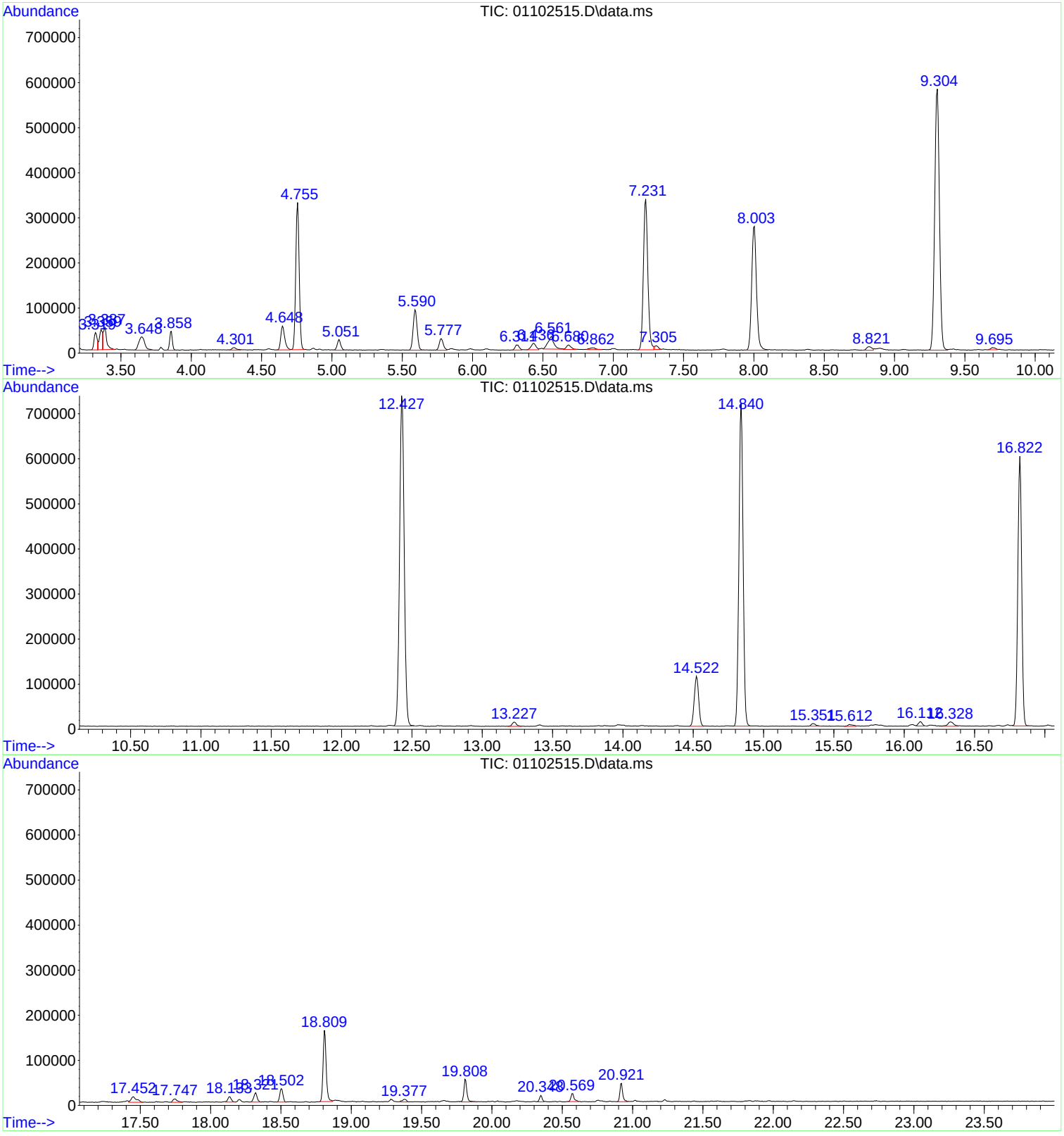
41	20.569	3110	3115	3123	rVB2	17642	27932	1.66%	0.297%
42	20.921	3171	3177	3185	rBV3	40736	57485	3.43%	0.610%

Sum of corrected areas: 9420517

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:46
Operator : CG
Sample : P2405139-044 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102515.D
Acq On : 11 Jan 2025 00:466
Operator : CGG
Sample : P2405139-044 (400mL))
Misc : S37-123124011
ALS Vial : 12 Sample Multiplier: 11

1/12/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected

****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 12 19:55:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	151032	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	648009	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.83	54	126238	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	264230	12.841 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.72%			
57) Toluene-d8 (SS2)	12.43	98	681590	12.171 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.36%			
73) Bromofluorobenzene (SS3)	16.82	174	254170	13.152 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.20%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.36	85	1546	0.052 ng	#	88
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	178	N.D.		
6) Vinyl Chloride	3.69	62	130	N.D.		
7) 1,3-Butadiene	3.77	54	260	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.28	45	2458	0.220 ng		95
11) Acetonitrile	4.47	41	402	N.D.		
12) Acrolein	4.55	56	495	0.052 ng	#	64
13) Acetone	4.63	58	7265	0.714 ng	#	16
14) Trichlorofluoromethane	4.76	101	11069676	399.800 ng		98
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d		
16) Acrylonitrile	0.00	53	0	N.D. d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.36	84	1102	0.077 ng		86
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d		
21) Trichlorotrifluoroethane	5.58	151	983454	78.726 ng		95
22) Carbon Disulfide	0.00	76	0	N.D. d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	6.32	63	118	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.48	86	460	0.187 ng	#	1
27) 2-Butanone (MEK)	6.65	72	334159	40.900 ng		97
28) cis-1,2-Dichloroethene	7.07	61	246	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.30	57	44101	1.944 ng		96
32) Chloroform	7.37	83	1032	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.83	56	429	No Calib	#	
41) Benzene	8.89	78	3739	0.072 ng		94
42) Carbon Tetrachloride	9.07	117	208	N.D.		
43) Cyclohexane	9.21	84	7736	0.426 ng		99
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.09	83	299	N.D.		
47) Trichloroethene	10.14	130	2196	0.148 ng		97
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 19:55:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

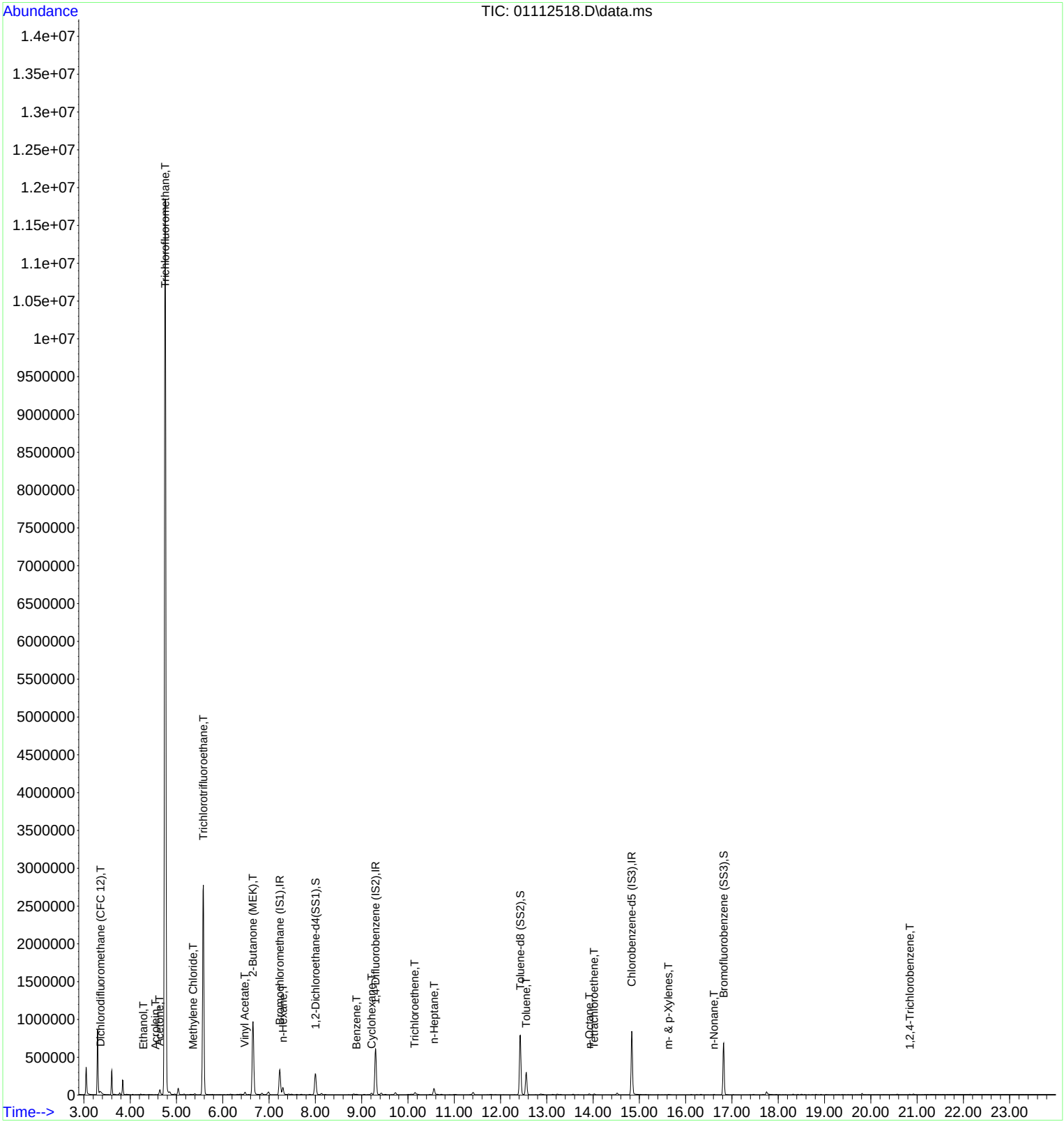
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	1708	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.56	71	21315	1.838 ng		99
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	274976	5.103 ng		99
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.79	43	490	N.D.		
63) n-Octane	13.92	57	1993	0.178 ng		98
64) Tetrachloroethene	14.02	166	3574	0.223 ng		100
65) Chlorobenzene	14.90	112	607	N.D.		
66) Ethylbenzene	15.41	91	1545	N.D.		
67) m- & p-Xylenes	15.63	91	3209	0.066 ng		92
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	444	N.D.		
70) o-Xylene	16.24	91	1454	N.D.		
71) n-Nonane	16.61	43	1407	0.055 ng	#	79
72) 1,1,2,2-Tetrachloroethane	16.21	83	245	N.D.		
74) Cumene	17.03	105	1477	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.67	91	1893	N.D.		
77) 3-Ethyltoluene	17.03	105	1477	No Calib		
78) 4-Ethyltoluene	17.85	105	1194	N.D.		
79) 1,3,5-Trimethylbenzene	17.95	105	1048	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	1477	No Calib		
82) 1,2,4-Trimethylbenzene	18.42	105	1239	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	18.57	146	890	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	762	N.D.		
87) sec-Butylbenzene	18.74	105	1472	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	1901	N.D.		
89) 1,2,3-Trimethylbenzene	17.03	105	1477	No Calib		
90) 1,2-Dichlorobenzene	19.04	146	1057	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	19.51	157	225	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	1465	0.067 ng		95
95) Naphthalene	20.94	128	1889	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.30	225	750	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.43	119	1091	N.D.		
100) n-Butylbenzene	19.39	91	1330	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 19:55:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 19:55:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

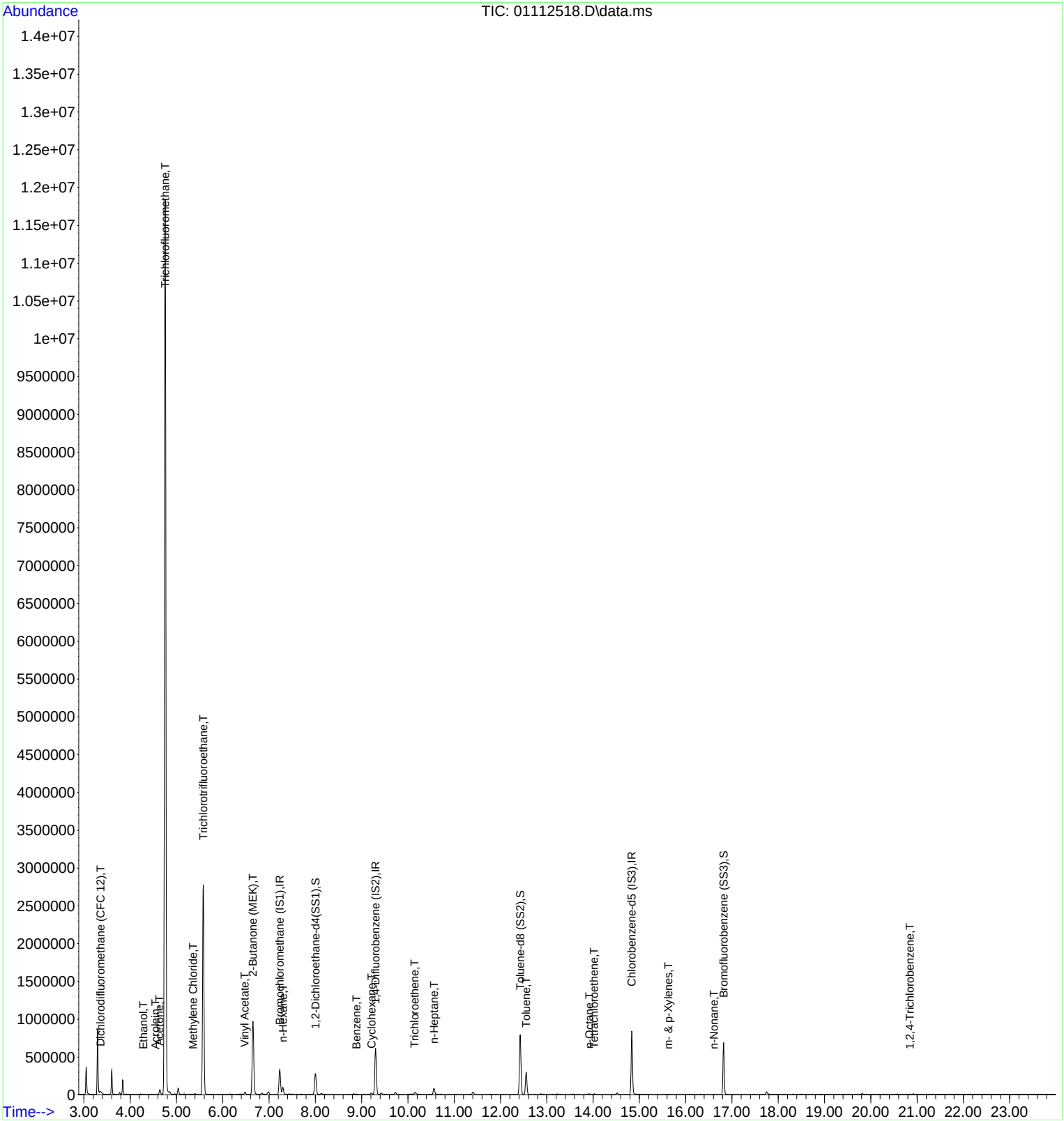
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	151032	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	648009	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.83	54	126238	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	264230	12.841	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.72%				
57) Toluene-d8 (SS2)	12.43	98	681590	12.171	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.36%				
73) Bromofluorobenzene (SS3)	16.82	174	254170	13.152	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.20%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.36	85	1546	0.052	ng	#	88
10) Ethanol	4.28	45	2458	0.220	ng		95
12) Acrolein	4.55	56	495	0.052	ng	#	64
13) Acetone	4.63	58	7265	0.714	ng	#	16
14) Trichlorofluoromethane	4.76	101	11069676	399.800	ng		98
19) Methylene Chloride	5.36	84	1102	0.077	ng		86
21) Trichlorotrifluoroethane	5.58	151	983454	78.726	ng		95
26) Vinyl Acetate	6.48	86	460	0.187	ng	#	1
27) 2-Butanone (MEK)	6.65	72	334159	40.900	ng		97
31) n-Hexane	7.30	57	44101	1.944	ng		96
41) Benzene	8.89	78	3739	0.072	ng		94
43) Cyclohexane	9.21	84	7736	0.426	ng		99
47) Trichloroethene	10.14	130	2196	0.148	ng		97
51) n-Heptane	10.56	71	21315	1.838	ng		99
58) Toluene	12.56	91	274976	5.103	ng		99
63) n-Octane	13.92	57	1993	0.178	ng		98
64) Tetrachloroethene	14.02	166	3574	0.223	ng		100
67) m- & p-Xylenes	15.63	91	3209	0.066	ng		92
71) n-Nonane	16.61	43	1407	0.055	ng	#	79
94) 1,2,4-Trichlorobenzene	20.84	180	1465	0.067	ng		95

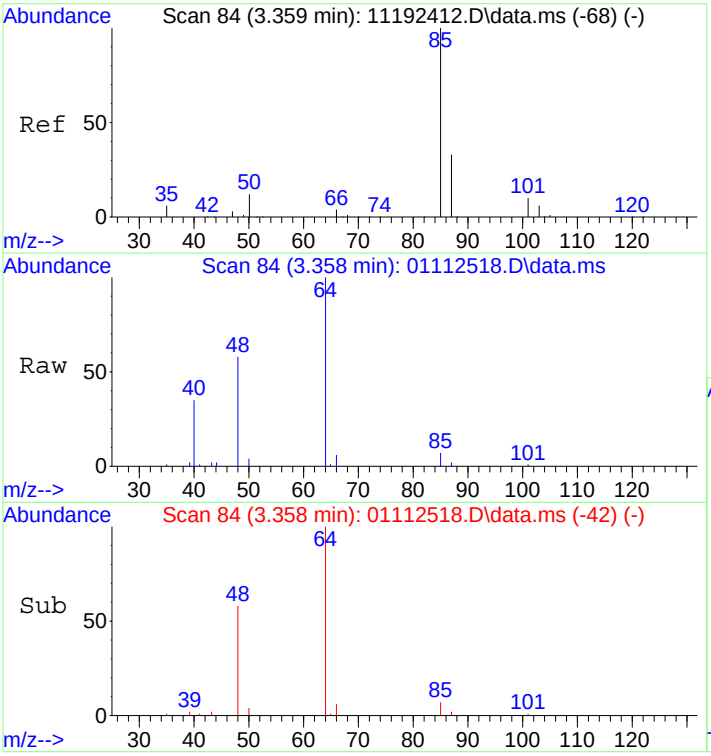
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 19:55:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

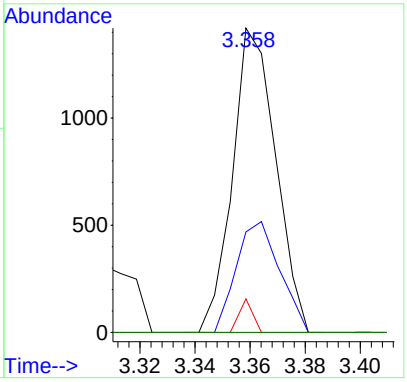


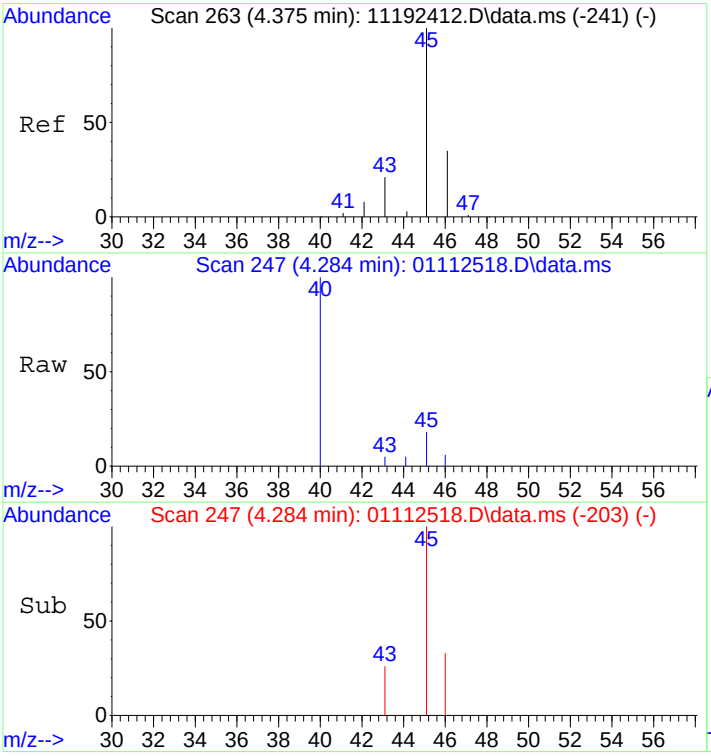


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.05 ng
RT: 3.36 min Scan# 84
Delta R.T. -0.014 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 85 Resp: 1546

Ion	Ratio	Lower	Upper
85	100		
87	36.7	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

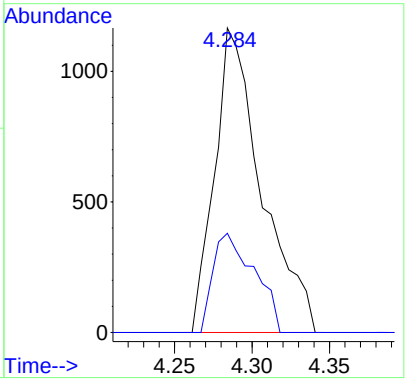


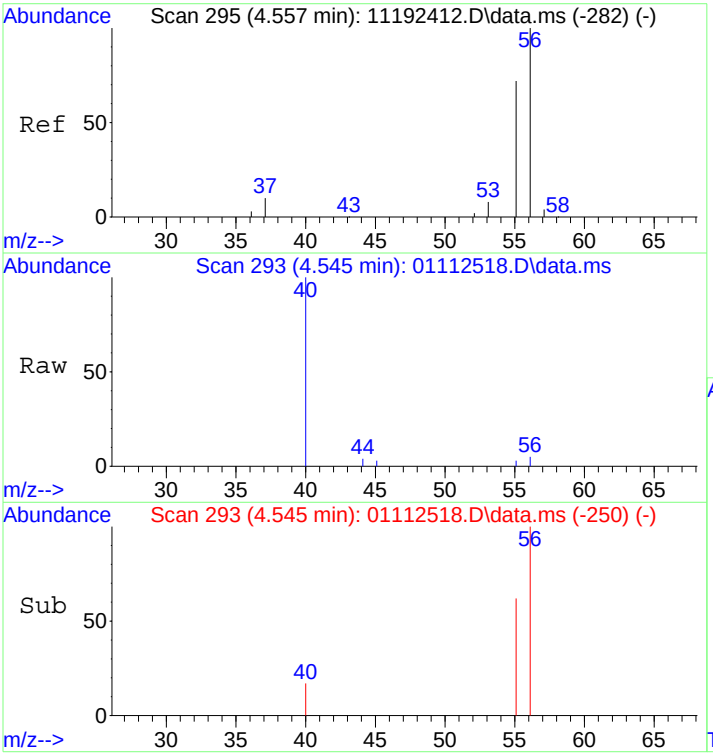


#10
Ethanol
Concen: 0.22 ng
RT: 4.28 min Scan# 247
Delta R.T. -0.000 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 45 Resp: 2458

Ion	Ratio	Lower	Upper
45	100		
46	28.8	11.8	51.8

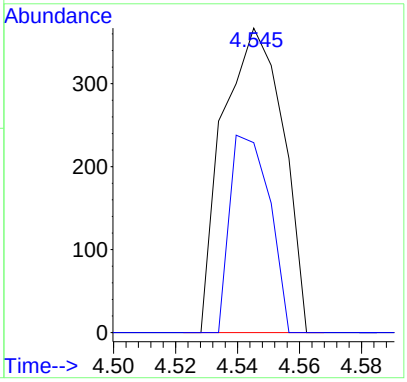


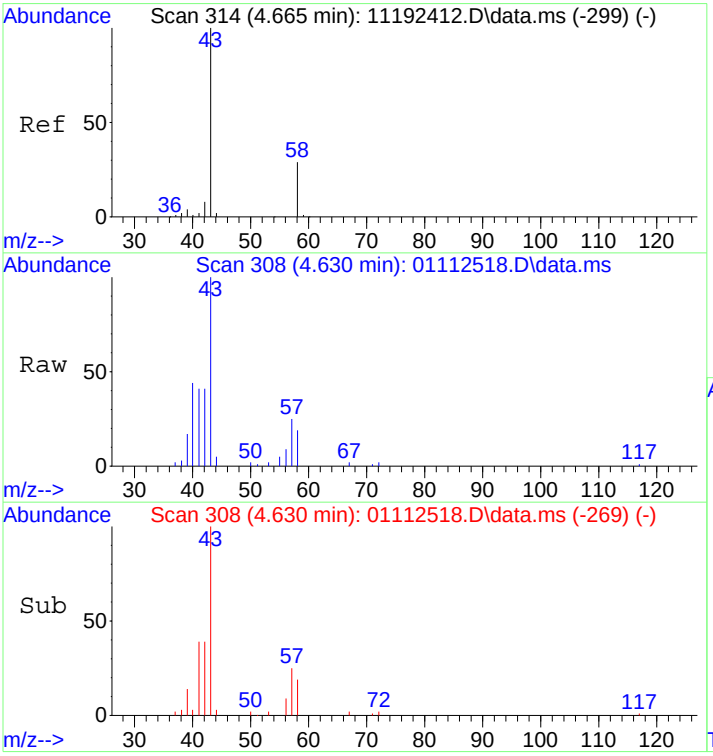


#12
Acrolein
Concen: 0.05 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 56 Resp: 495

Ion	Ratio	Lower	Upper
56	100		
55	42.8	53.1	93.1#

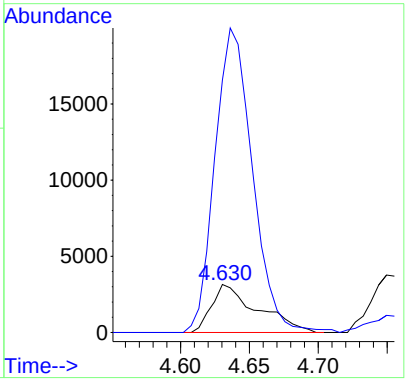


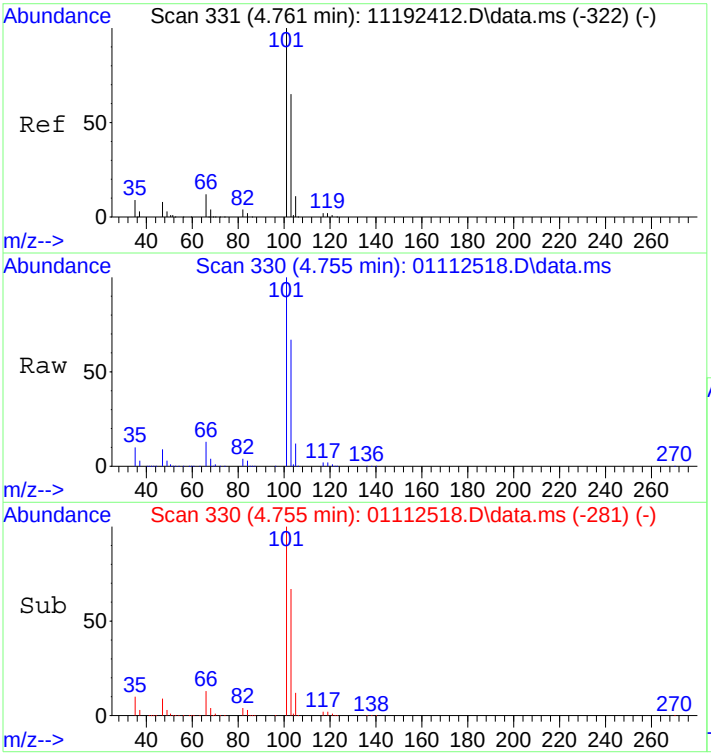


#13
Acetone
Concen: 0.71 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 58 Resp: 7265

Ion	Ratio	Lower	Upper
58	100		
43	522.7	312.5	372.5#

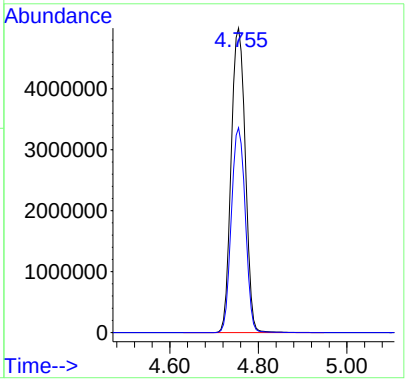


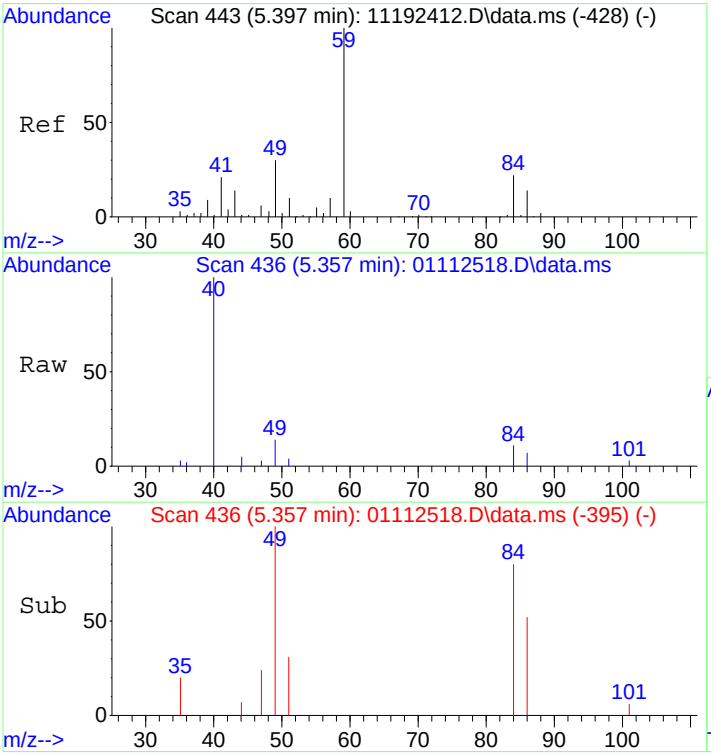


#14
Trichlorofluoromethane
Concen: 399.80 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion:101 Resp:11069676

Ion	Ratio	Lower	Upper
101	100		
103	66.4	44.8	84.8

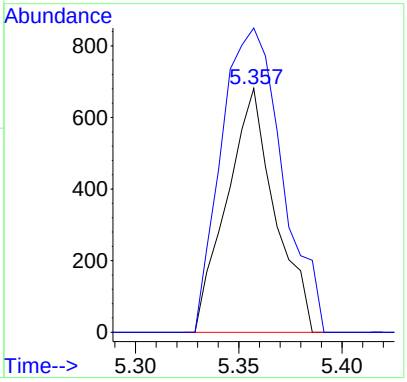


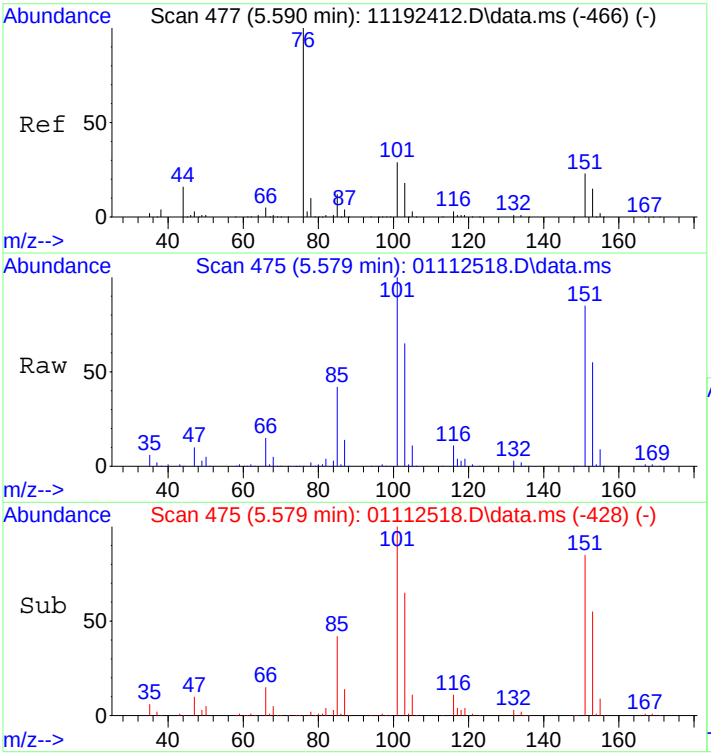


#19
Methylene Chloride
Concen: 0.08 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.017 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 84 Resp: 1102

Ion	Ratio	Lower	Upper
84	100		
49	158.3	116.0	166.0

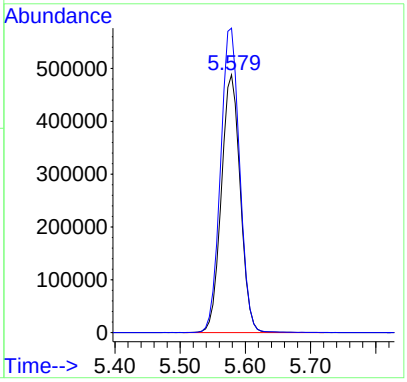


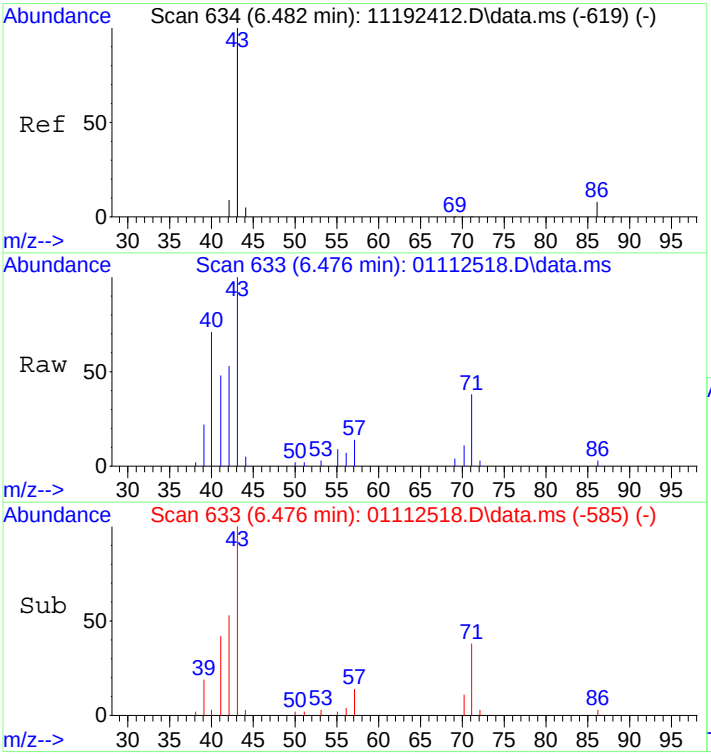


#21
Trichlorotrifluoroethane
Concen: 78.73 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion:151 Resp: 983454

Ion	Ratio	Lower	Upper
151	100		
101	119.3	105.0	145.0

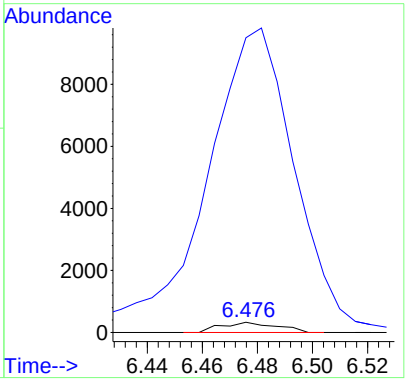


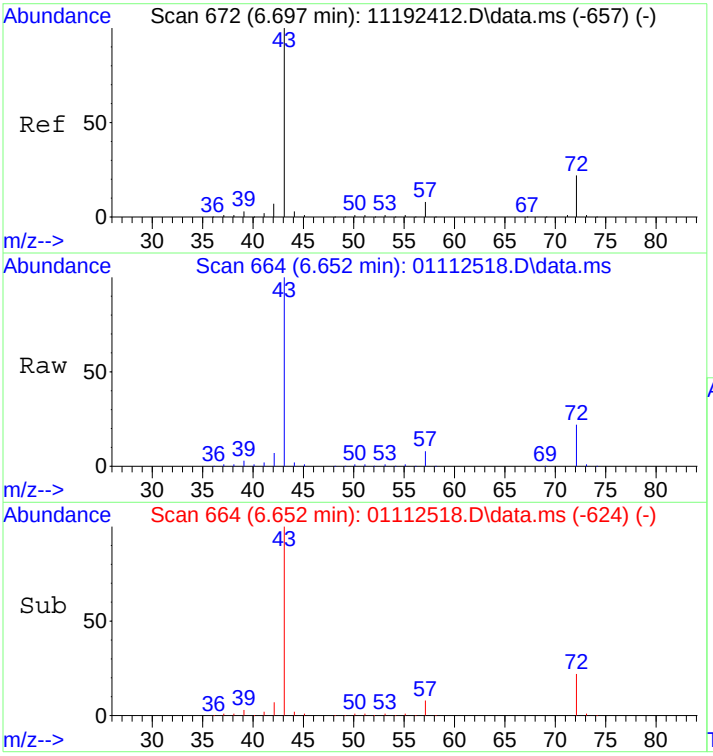


#26
Vinyl Acetate
Concen: 0.19 ng
RT: 6.48 min Scan# 633
Delta R.T. 0.021 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 86 Resp: 460

Ion	Ratio	Lower	Upper
86	100		
43	4520.2	1331.6	1371.6#

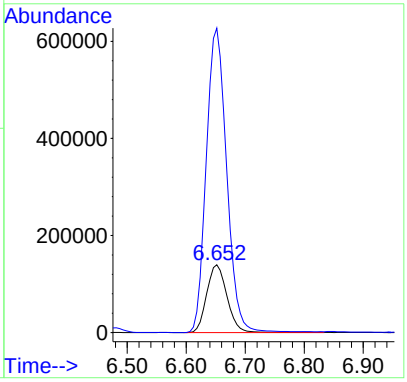


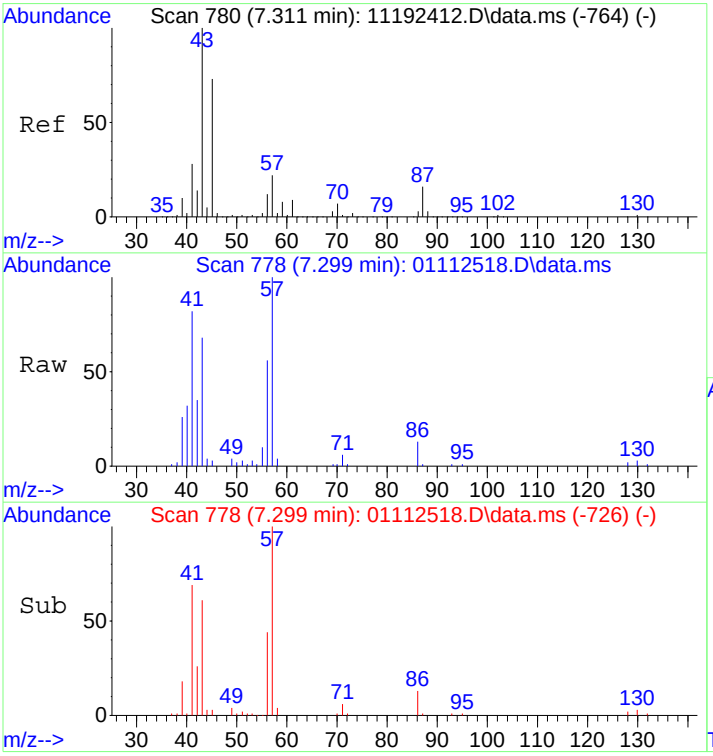


#27
2-Butanone (MEK)
Concen: 40.90 ng
RT: 6.65 min Scan# 664
Delta R.T. -0.022 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 72 Resp: 334159

Ion	Ratio	Lower	Upper
72	100		
43	452.4	439.8	479.8

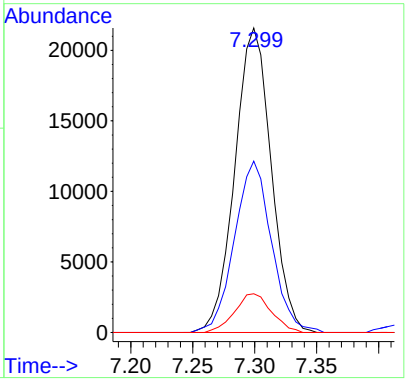


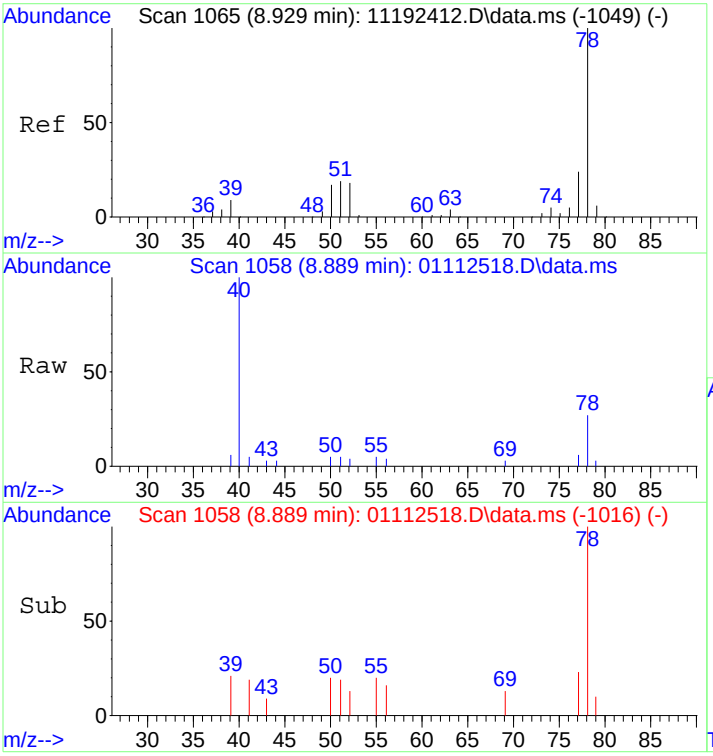


#31
n-Hexane
Concen: 1.94 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 57 Resp: 44101

Ion	Ratio	Lower	Upper
57	100		
56	57.3	43.4	65.0
86	12.9	10.9	16.3

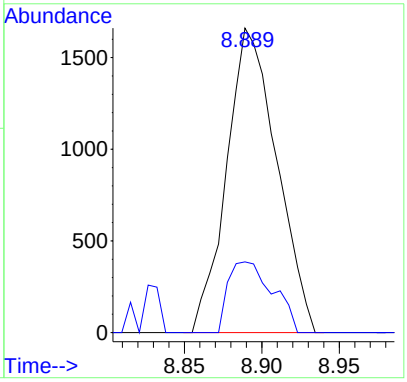


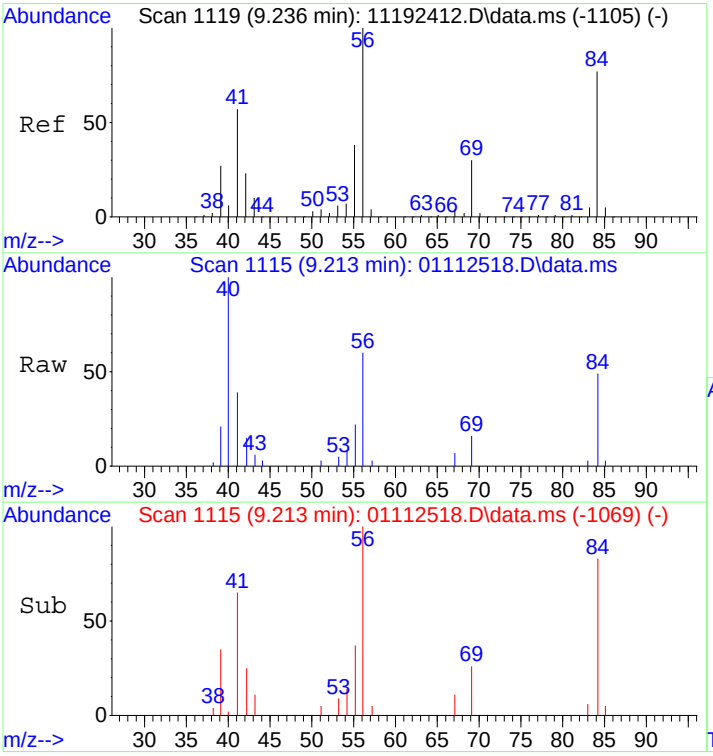


#41
Benzene
Concen: 0.07 ng
RT: 8.89 min Scan# 1058
Delta R.T. -0.014 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 78 Resp: 3739

Ion	Ratio	Lower	Upper
78	100		
77	20.7	3.7	43.7

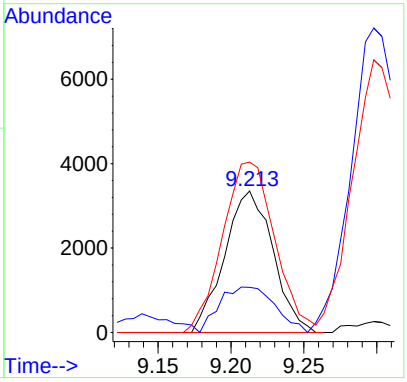


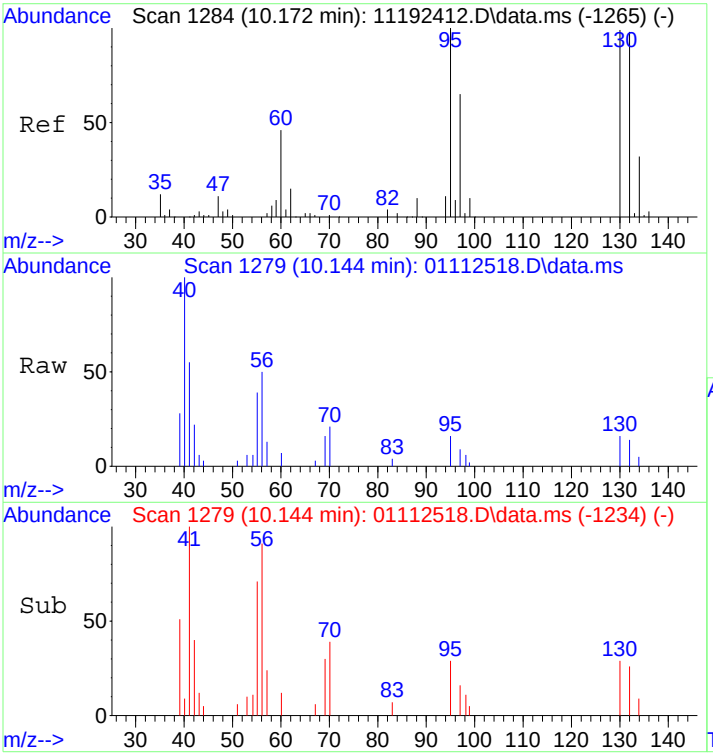


#43
Cyclohexane
Concen: 0.43 ng
RT: 9.21 min Scan# 1115
Delta R.T. 0.010 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 84 Resp: 7736

Ion	Ratio	Lower	Upper
84	100		
69	36.7	18.3	58.3
56	130.5	110.7	150.7

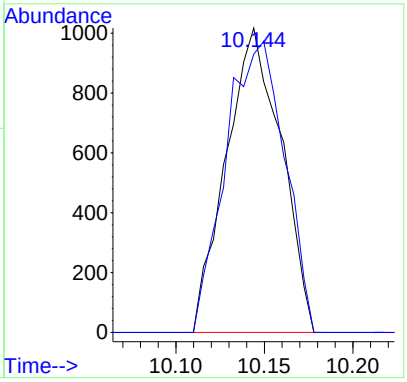


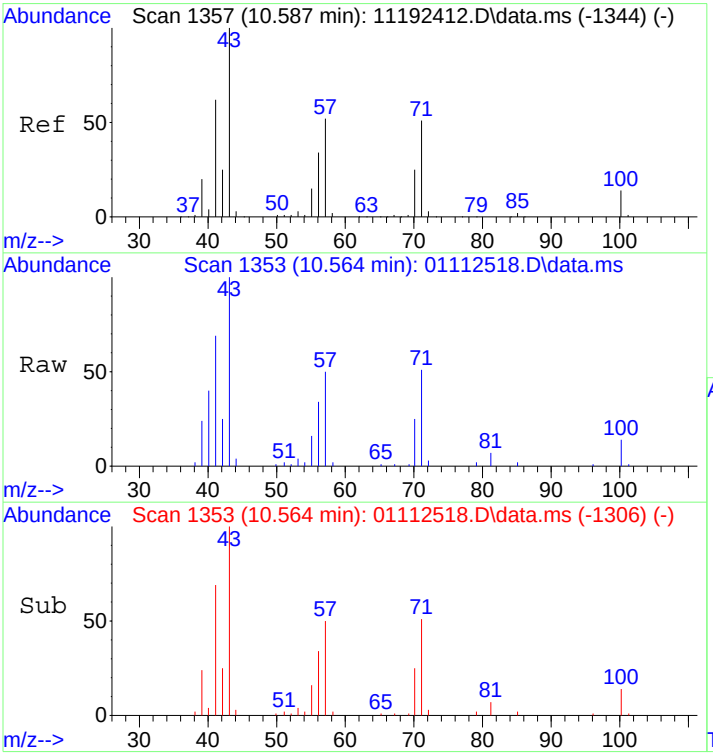


#47
Trichloroethene
Concen: 0.15 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion:130 Resp: 2196

Ion	Ratio	Lower	Upper
130	100		
132	102.7	79.3	119.3

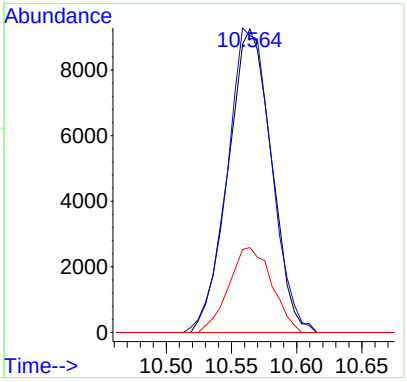


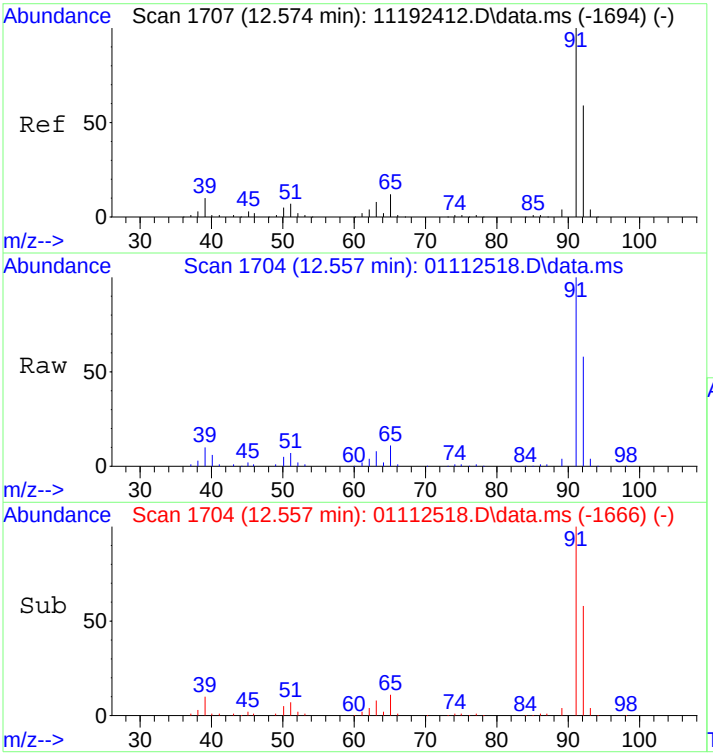


#51
n-Heptane
Concen: 1.84 ng
RT: 10.56 min Scan# 1353
Delta R.T. 0.017 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 71 Resp: 21315

Ion	Ratio	Lower	Upper
71	100		
57	102.5	83.3	123.3
100	27.9	8.7	48.7

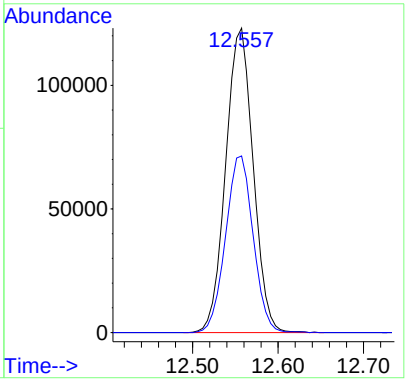


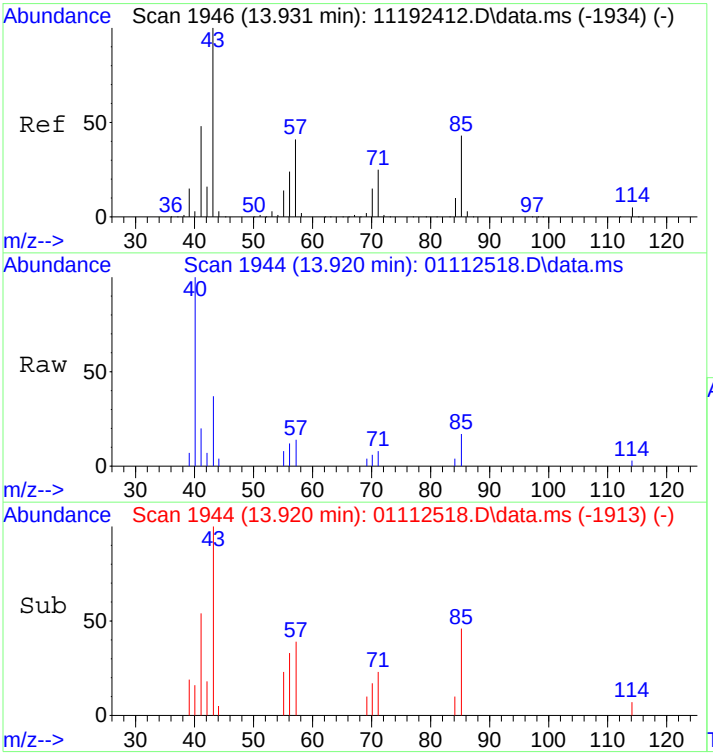


#58
Toluene
Concen: 5.10 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 91 Resp: 274976

Ion	Ratio	Lower	Upper
91	100		
92	58.3	39.2	79.2

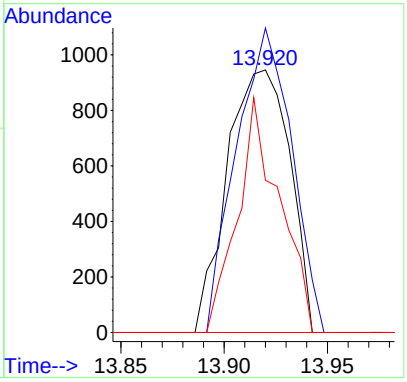


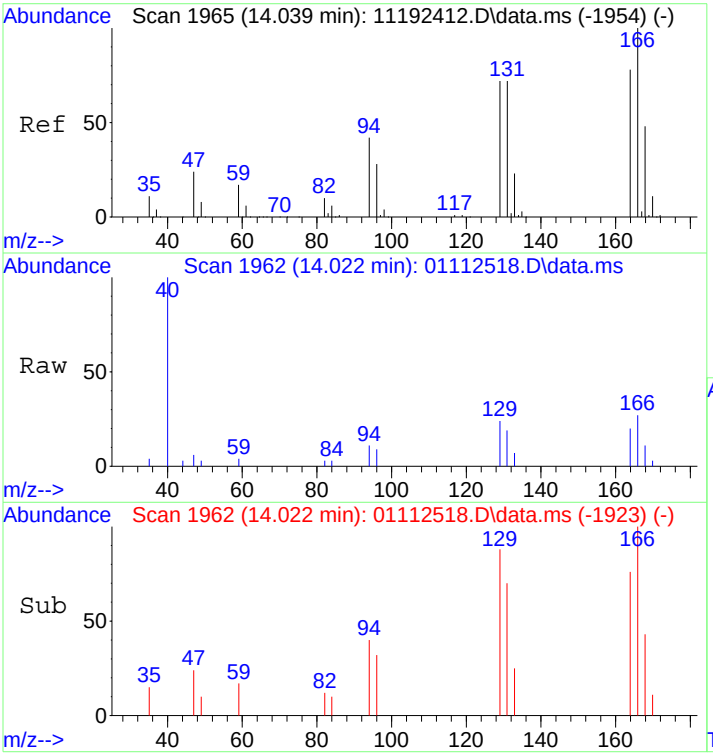


#63
n-Octane
Concen: 0.18 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 57 Resp: 1993

Ion	Ratio	Lower	Upper
57	100		
85	102.7	83.6	125.4
71	60.0	49.0	73.4

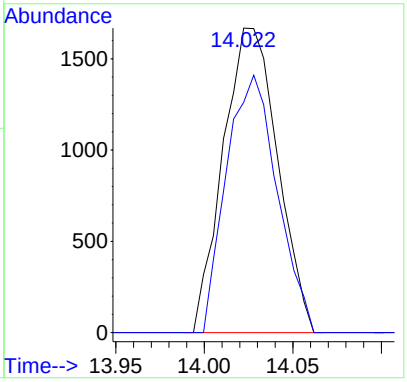


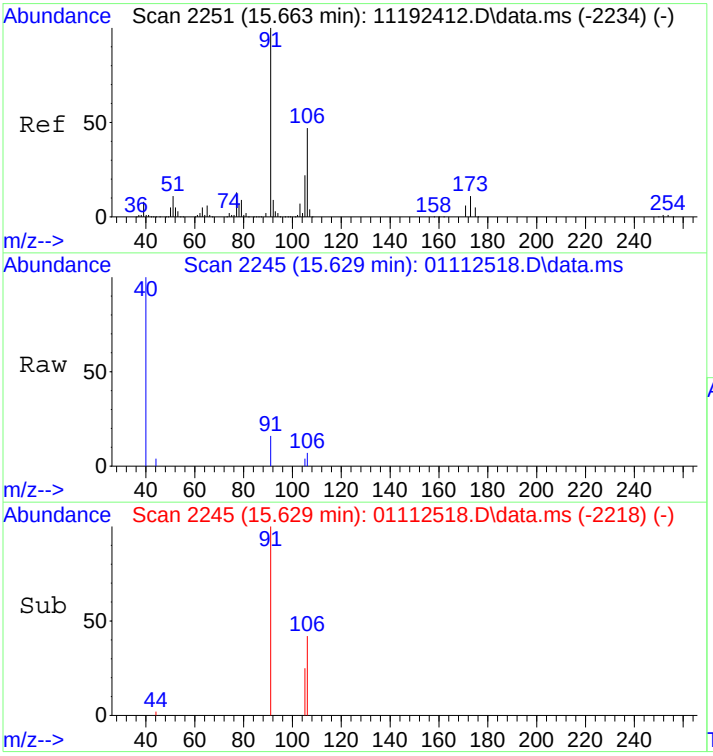


#64
Tetrachloroethene
Concen: 0.22 ng
RT: 14.02 min Scan# 1962
Delta R.T. -0.029 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion:166 Resp: 3574

Ion	Ratio	Lower	Upper
166	100		
164	78.8	58.7	98.7

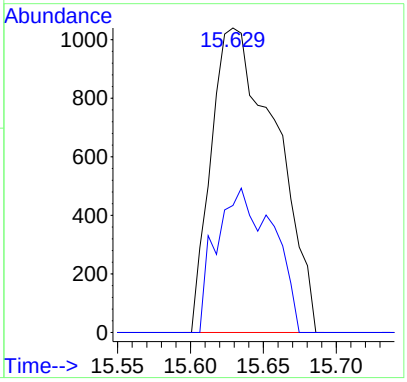


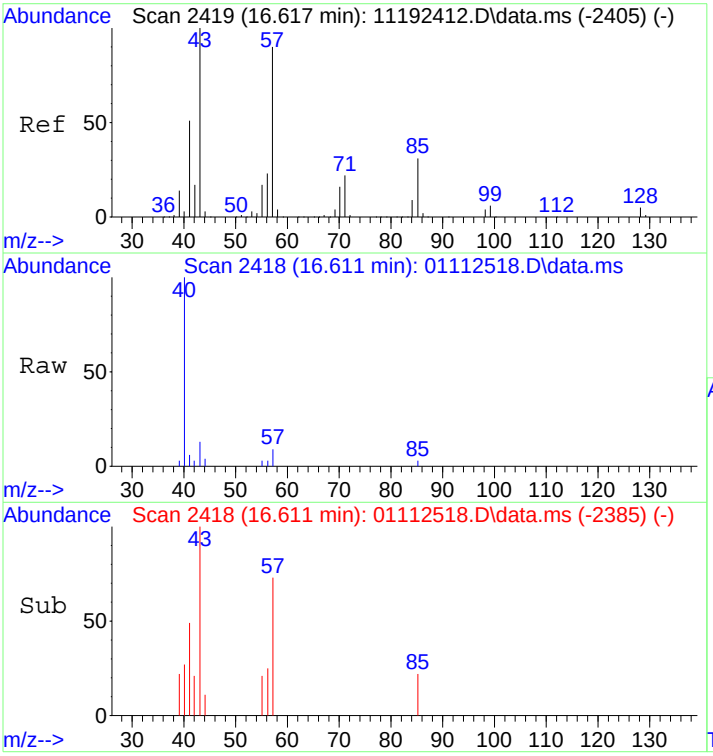


#67
m- & p-Xylenes
Concen: 0.07 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.046 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 91 Resp: 3209

Ion	Ratio	Lower	Upper
91	100		
106	41.6	27.1	67.1

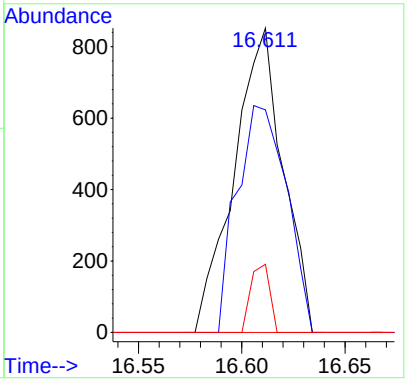


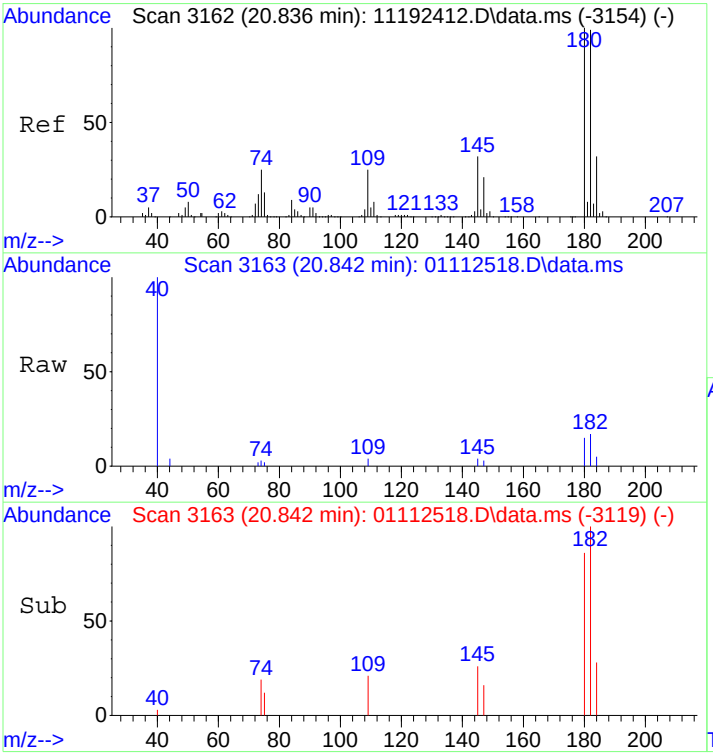


#71
n-Nonane
Concen: 0.05 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion: 43 Resp: 1407

Ion	Ratio	Lower	Upper
43	100		
57	75.5	69.4	109.4
85	8.7	10.5	50.5#

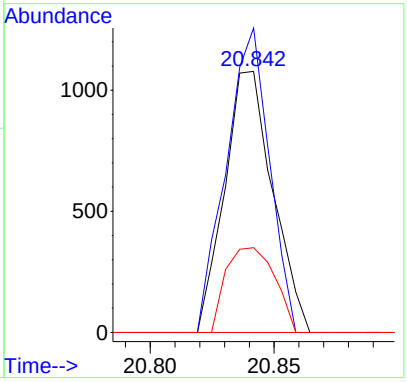




#94
1,2,4-Trichlorobenzene
Concen: 0.07 ng
RT: 20.84 min Scan# 3163
Delta R.T. -0.000 min
Lab File: 01112518.D
Acq: 11 Jan 2025 16:10

Tgt Ion:180 Resp: 1465

Ion	Ratio	Lower	Upper
180	100		
182	104.0	78.6	117.8
184	32.8	25.1	37.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 10:40:27 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

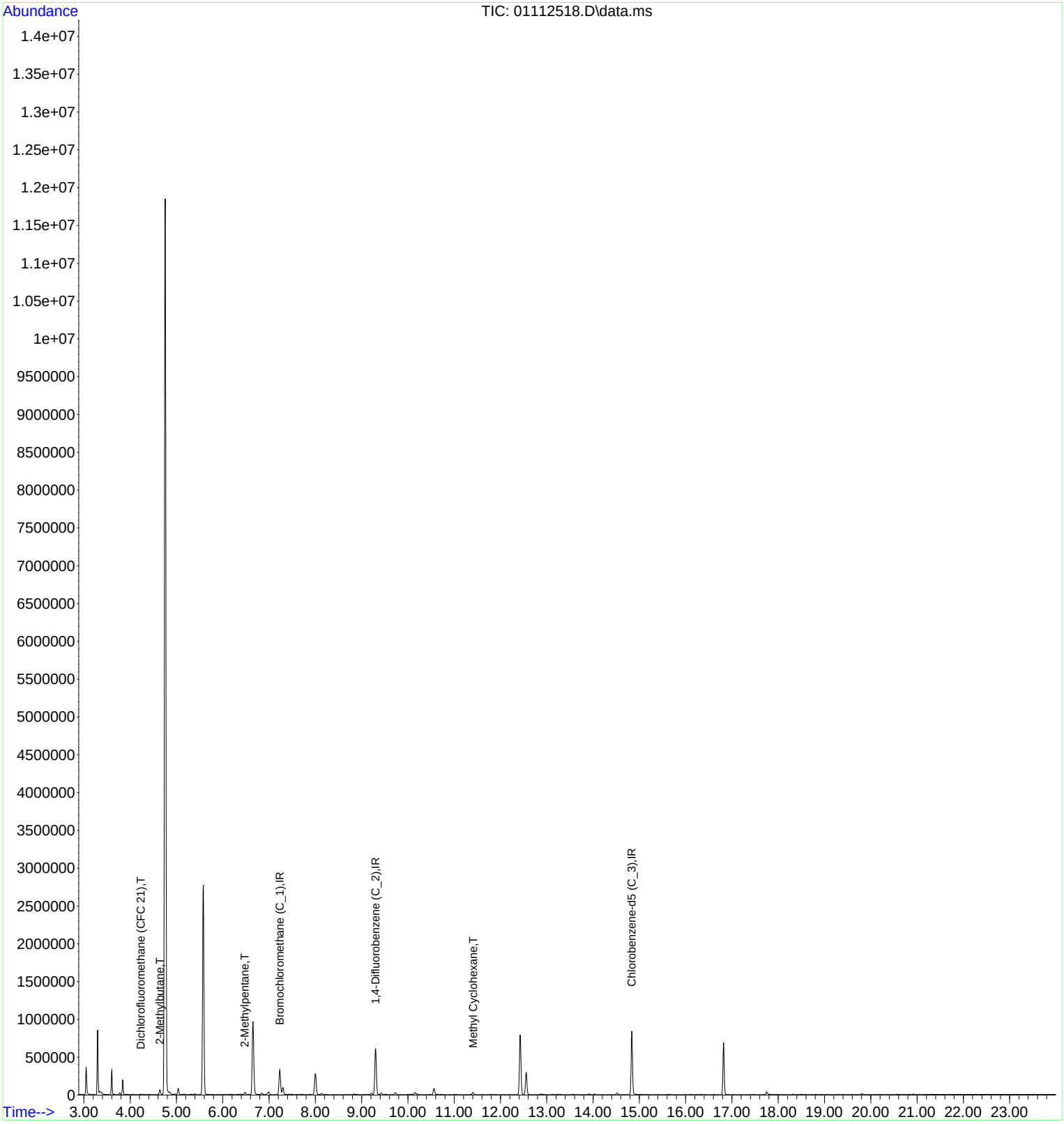
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	153218	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	649038	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	126238	12.500	ng	-0.01
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	238	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.23	67	7108	0.229	ng	98
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.64	57	14239	0.963	ng	92
11) Methyl Acetate	5.40	43	118	N.D.		
12) 2-Methylpentane	6.48	71	6748	0.535	ng	87
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	9.51	56	2219	N.D.		
18) Dibromomethane	9.80	174	51	N.D.		
20) Methyl Cyclohexane	11.41	55	13509	0.600	ng	95
21) 1,3-Dichloropropane	12.55	76	1129	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.67	91	1893	N.D.		
27) 4-Chlorotoluene	17.67	91	1893	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

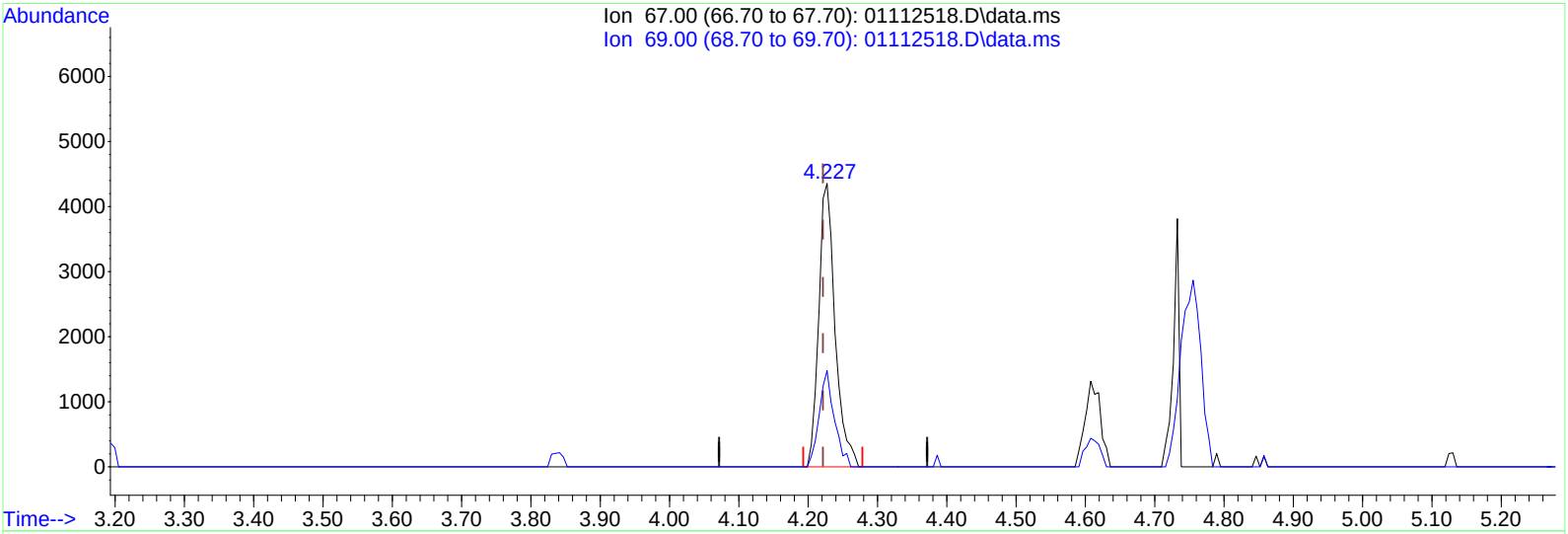
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

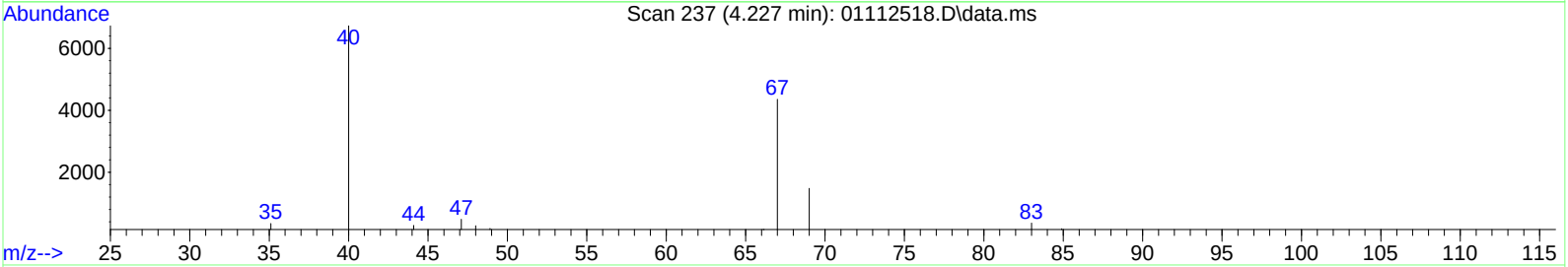
Quant Time: Jan 13 10:40:27 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

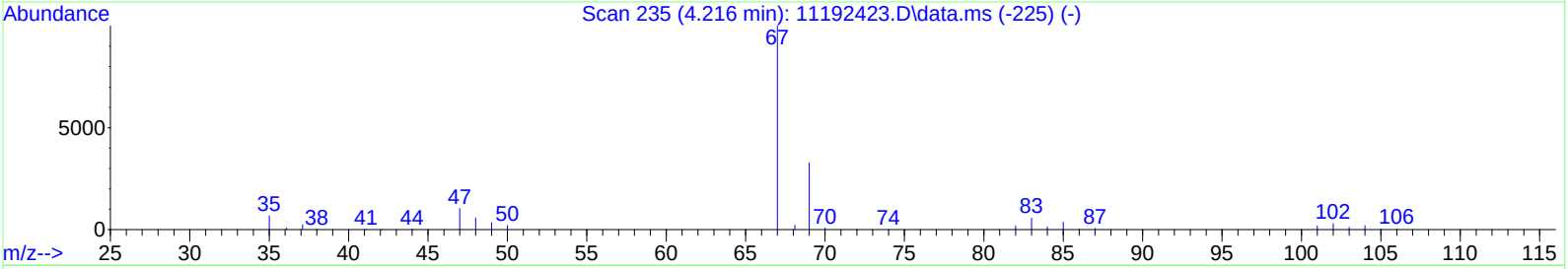


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 10:40:27 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112518.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.227min (+0.006) 0.23ng

response 7108

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.70
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122508.D
Acq On : 12 Jan 2025 8:51
Operator : SC
Sample : P2405139-045Dil (0.15mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 11:00:14 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	154244	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	661253	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	118247	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	254843	12.127	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.04%				
57) Toluene-d8 (SS2)	12.43	98	683268	13.026	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%				
73) Bromofluorobenzene (SS3)	16.82	174	235074	12.986	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.92%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	3.39	50	523	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.33	45	52	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	1186	0.114	ng	#	15
14) Trichlorofluoromethane	4.75	101	1056053	37.347	ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.59	151	43500	3.410	ng		95
22) Carbon Disulfide	5.64	76	173	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.66	72	36787	4.409	ng		97
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	4141	0.179	ng	#	94
32) Chloroform	7.35	83	113	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.88	56	226	No Calib		#	
41) Benzene	8.89	78	1156	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.21	84	730	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	978	0.065	ng	#	77
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122508.D
Acq On : 12 Jan 2025 8:51
Operator : SC
Sample : P2405139-045Dil (0.15mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

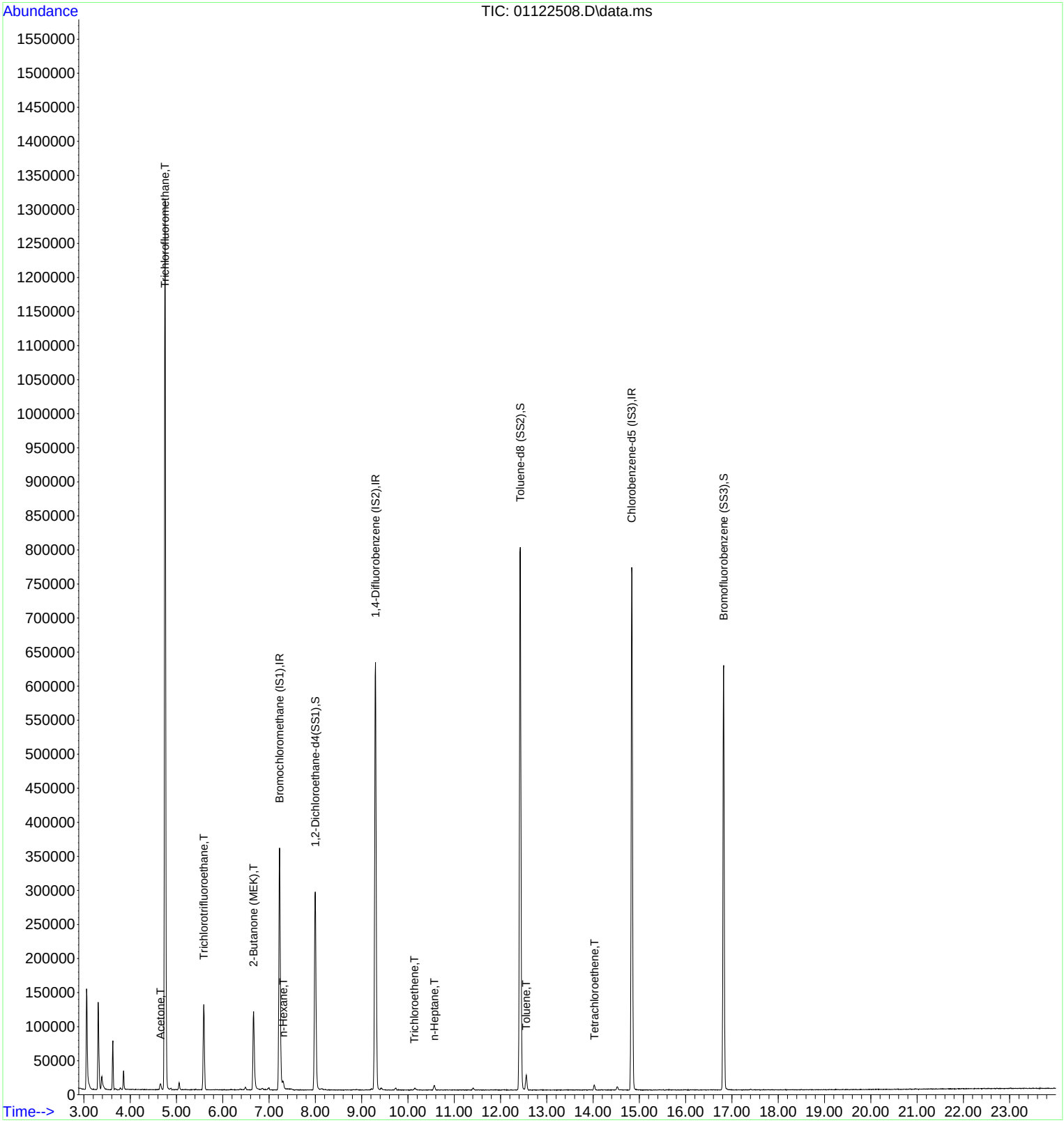
Quant Time: Jan 13 11:00:14 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.57	71	1705	0.144 ng	92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	21219	0.420 ng	97
59) 2-Hexanone	12.88	43	397	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	3116	0.208 ng	93
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	0.00	91	0	N.D.	
67) m- & p-Xylenes	15.66	91	186	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	107	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	276	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	336	N.D.	
95) Naphthalene	20.96	128	435	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	19.39	91	134	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

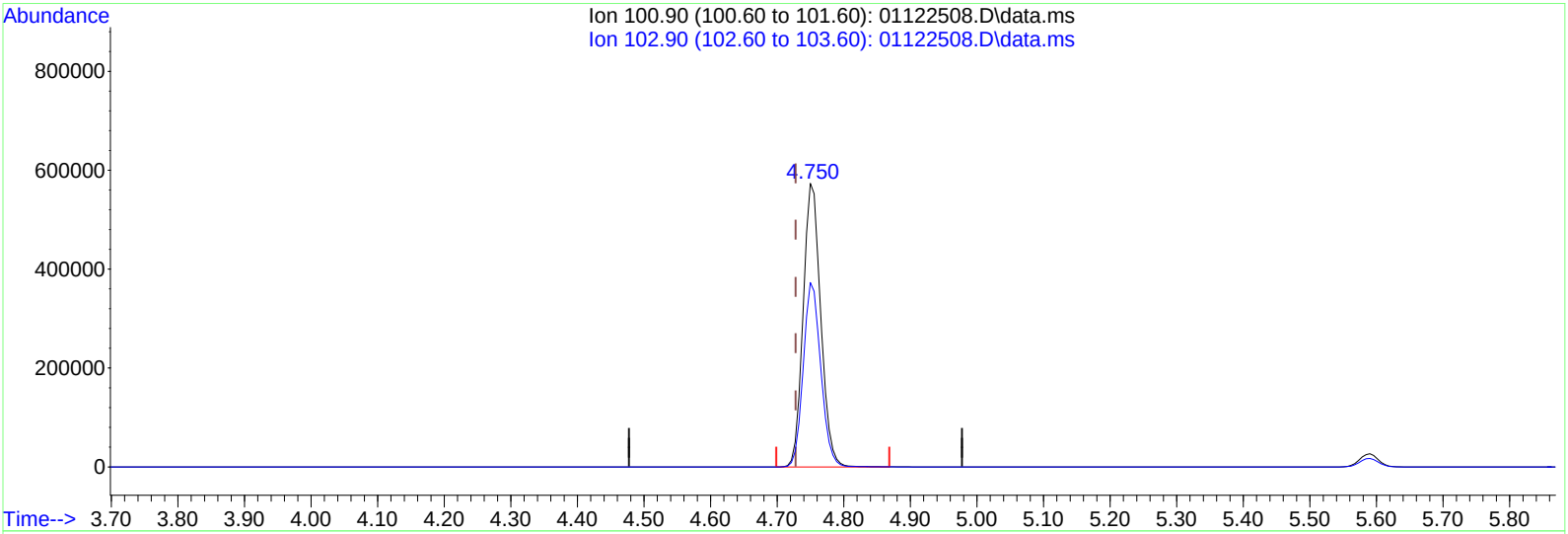
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122508.D
Acq On : 12 Jan 2025 8:51
Operator : SC
Sample : P2405139-045Dil (0.15mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

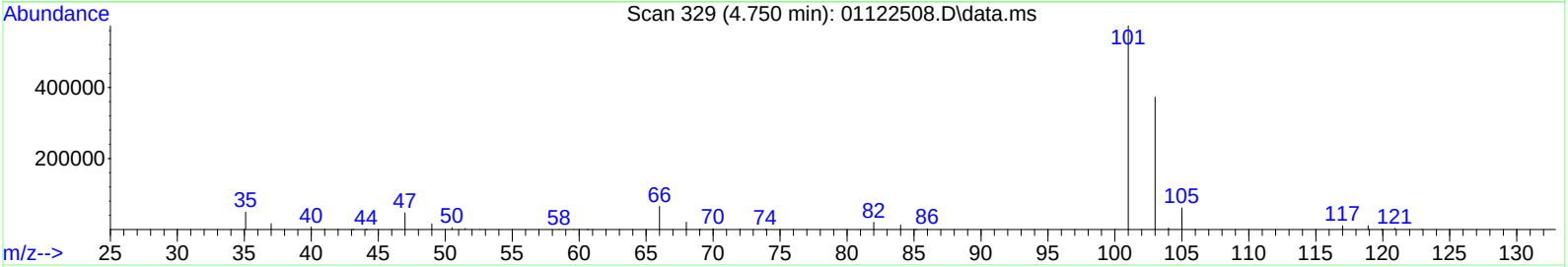
Quant Time: Jan 13 11:00:14 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

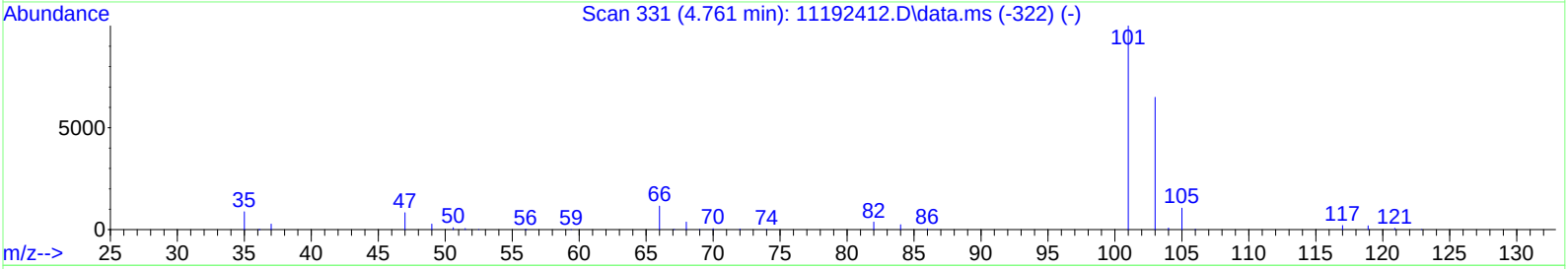


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122508.D
Acq On : 12 Jan 2025 8:51
Operator : SC
Sample : P2405139-045Dil (0.15mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 09:12:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122508.D\data.ms

(14) Trichlorofluoromethane (T)

4.750min (+0.022) 37.35ng

response 1056053

Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.63
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112518.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.296	67	73	79	rBV	854668	1137280	4.40%	2.469%
2	3.347	79	82	106	rVB	41996	137942	0.53%	0.300%
3	3.603	121	127	133	rBV	321998	409086	1.58%	0.888%
4	3.659	133	137	146	rVB2	6095	10924	0.04%	0.024%
5	3.773	150	157	161	rBV	24423	33482	0.13%	0.073%
6	3.835	161	168	175	rBV	191252	265065	1.02%	0.576%
7	4.227	231	237	243	rBV	7778	11216	0.04%	0.024%
8	4.642	297	310	320	rBV3	64785	136768	0.53%	0.297%
9	4.755	320	330	343	rVV	11846530	25861642	100.00%	56.155%
10	4.852	344	347	361	rVV	36300	78328	0.30%	0.170%
11	4.965	361	367	372	rVV	7924	14538	0.06%	0.032%
12	5.039	372	380	388	rVB	82629	150318	0.58%	0.326%
13	5.164	396	402	408	rVB	8164	15218	0.06%	0.033%
14	5.397	438	443	450	rVB	12101	21256	0.08%	0.046%
15	5.579	463	475	498	rBV	2770178	5613547	21.71%	12.189%
16	6.164	572	578	583	rBV2	7122	14078	0.05%	0.031%
17	6.481	626	634	643	rVB	31165	65636	0.25%	0.143%
18	6.652	653	664	683	rBV	965215	2315744	8.95%	5.028%
19	6.845	692	698	706	rVB3	17225	35999	0.14%	0.078%
20	6.987	712	723	733	rVB	34809	89478	0.35%	0.194%
21	7.231	757	766	773	rBV	328701	793188	3.07%	1.722%
22	7.299	773	778	788	rVB	92258	191682	0.74%	0.416%
23	7.424	793	800	806	rVV3	9366	22564	0.09%	0.049%
24	7.487	806	811	817	rVB3	6755	14092	0.05%	0.031%
25	7.998	891	901	914	rBV	275753	692074	2.68%	1.503%
26	8.134	916	925	933	rVB3	15116	35188	0.14%	0.076%
27	8.827	1040	1047	1053	rBV2	9705	22872	0.09%	0.050%
28	8.883	1053	1057	1066	rVB6	5161	12754	0.05%	0.028%
29	9.213	1107	1115	1121	rBV3	17499	39353	0.15%	0.085%
30	9.298	1121	1130	1142	rVV	605579	1458428	5.64%	3.167%
31	9.423	1142	1152	1161	rVV	20277	50992	0.20%	0.111%
32	9.508	1161	1167	1174	rVB5	4545	10845	0.04%	0.024%
33	9.729	1197	1206	1214	rVB5	26202	64409	0.25%	0.140%
34	10.076	1259	1267	1273	rBV5	5150	17239	0.07%	0.037%
35	10.155	1273	1281	1299	rVB4	27426	85309	0.33%	0.185%
36	10.564	1343	1353	1360	rBV	80942	191047	0.74%	0.415%
37	11.405	1492	1501	1511	rVB4	30070	74910	0.29%	0.163%
38	12.427	1669	1681	1694	rBV	786774	1849985	7.15%	4.017%
39	12.557	1694	1704	1715	rVB	291738	657773	2.54%	1.428%
40	12.875	1752	1760	1766	rBV3	8338	21587	0.08%	0.047%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

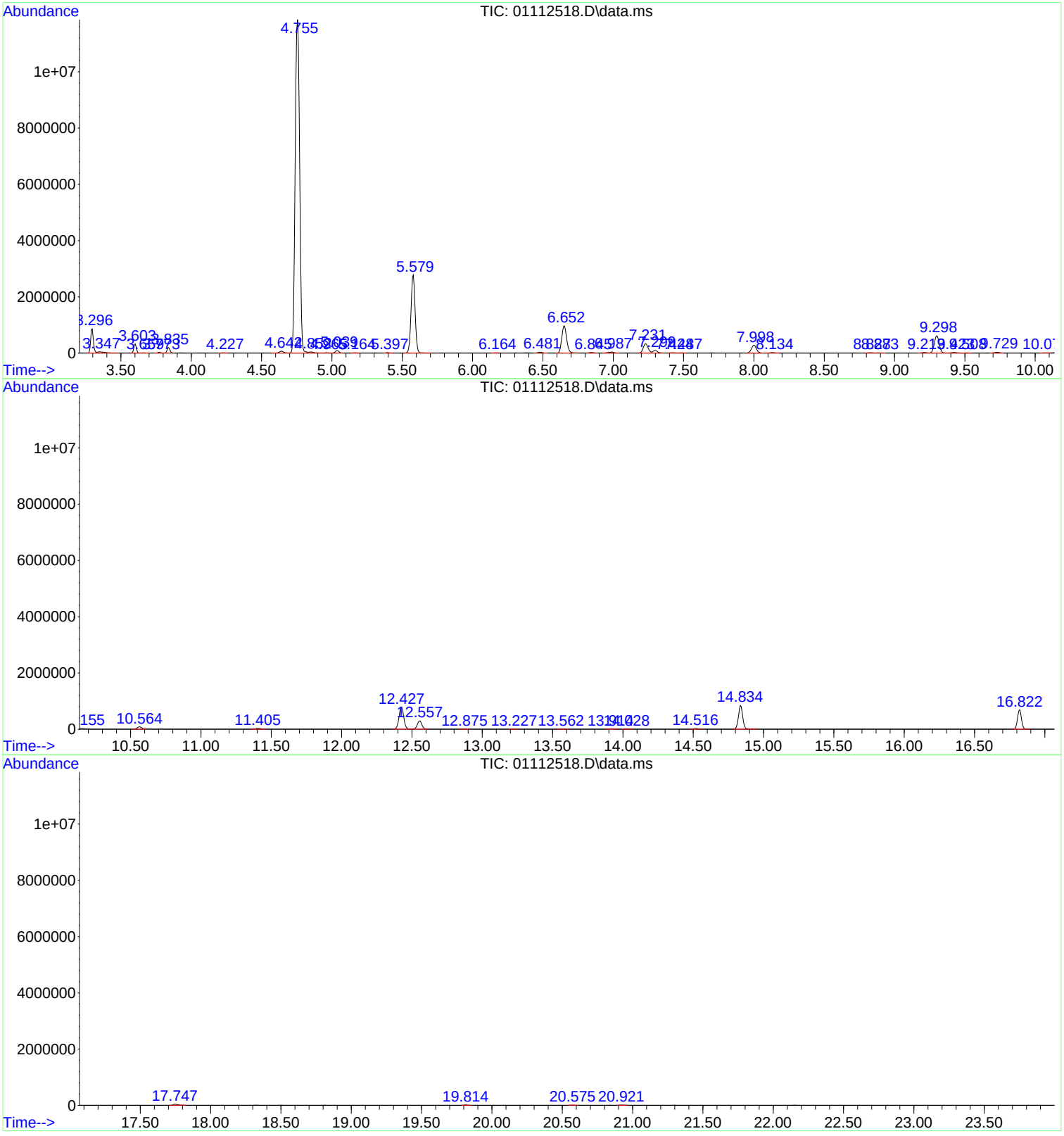
41	13.227	1815	1822	1828	rBV4	7754	16015	0.06%	0.035%
42	13.562	1875	1881	1890	rVB3	6194	12209	0.05%	0.027%
43	13.914	1936	1943	1951	rVB3	10431	20695	0.08%	0.045%
44	14.028	1957	1963	1971	rVB3	10007	20559	0.08%	0.045%
45	14.516	2042	2049	2058	rBV2	21040	45641	0.18%	0.099%
46	14.834	2096	2105	2128	rBV	838915	1768160	6.84%	3.839%
47	16.822	2445	2455	2468	rBV	682898	1316057	5.09%	2.858%
48	17.747	2611	2618	2631	rBV	36134	86385	0.33%	0.188%
49	19.814	2977	2982	2989	rVB	15314	20712	0.08%	0.045%
50	20.575	3110	3116	3123	rBV3	6590	10021	0.04%	0.022%
51	20.921	3172	3177	3184	rBV4	8698	14130	0.05%	0.031%

Sum of corrected areas: 46054420

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:10
Operator : LS
Sample : P2405139-045 (1.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\11\\
Data File : 01112518.D
Acq On : 11 Jan 2025 16:100
Operator : LSS
Sample : P2405139-045 (1.5mL))
Misc : S37-123124011
ALS Vial : 1 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:18
Operator : CG
Sample : P2405139-046 (150mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 14:23:41 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	137685	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	599904	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111611	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250236	13.340	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%				
57) Toluene-d8 (SS2)	12.43	98	615505	12.431	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%				
73) Bromofluorobenzene (SS3)	16.82	174	209651	12.270	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.16%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.39	85	6679	0.248	ng		98
4) Chloromethane	3.52	50	1185	0.059	ng		75
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	245	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	14895	1.463	ng		97
11) Acetonitrile	4.46	41	392	N.D.			
12) Acrolein	4.55	56	1159	0.133	ng		98
13) Acetone	4.64	58	41896	4.519	ng		89
14) Trichlorofluoromethane	4.77	101	20301706	804.309	ng		96
15) 2-Propanol (Isopropanol)	4.93	45	181	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.33	59	11994	0.451	ng		92
19) Methylene Chloride	5.36	84	285	N.D.			
20) 3-Chloro-1-propene (Al...	5.44	41	130	N.D.			
21) Trichlorotrifluoroethane	5.60	151	1599633	140.464	ng		96
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.31	73	272	N.D.			
26) Vinyl Acetate	6.44	86	1048	0.467	ng	#	57
27) 2-Butanone (MEK)	6.68	72	6530	0.877	ng	#	81
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	1274	0.057	ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	5685	No Calib		#	
41) Benzene	8.91	78	1368	N.D.			
42) Carbon Tetrachloride	9.06	117	230	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.15	130	1961	0.143	ng		97
48) 1,4-Dioxane	0.00	88	0	N.D.			

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QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	344	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			
51) n-Heptane	0.00	71	0	N.D.			
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	11.33	58	919	0.089	ng	#	52
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.			
58) Toluene	12.56	91	660	N.D.			
59) 2-Hexanone	12.93	43	4930	0.212	ng		84
60) Dibromochloromethane	0.00	129	0	N.D.			
61) 1,2-Dibromoethane	0.00	107	0	N.D.			
62) n-Butyl Acetate	0.00	43	0	N.D.			
63) n-Octane	0.00	57	0	N.D.			
64) Tetrachloroethene	0.00	166	0	N.D.			
65) Chlorobenzene	0.00	112	0	N.D.			
66) Ethylbenzene	0.00	91	0	N.D.			
67) m- & p-Xylenes	0.00	91	0	N.D.			
68) Bromoform	0.00	173	0	N.D.			
69) Styrene	0.00	104	0	N.D.			
70) o-Xylene	0.00	91	0	N.D.			
71) n-Nonane	16.61	43	299	N.D.			
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.			
74) Cumene	0.00	105	0	N.D.			
75) alpha-Pinene	0.00	93	0	N.D.			
76) n-Propylbenzene	17.68	91	172	N.D.			
77) 3-Ethyltoluene	0.00	105	0	N.D.			
78) 4-Ethyltoluene	0.00	105	0	N.D.			
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.			
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	0.00	105	0	N.D.			
82) 1,2,4-Trimethylbenzene	18.50	105	1357	N.D.			
83) n-Decane	0.00	58	0	N.D.			
84) Benzyl Chloride	0.00	91	0	N.D.			
85) 1,3-Dichlorobenzene	18.51	146	230	N.D.			
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.			
87) sec-Butylbenzene	0.00	105	0	N.D.			
88) 4-Isopropyltoluene (p-...	18.92	119	262	N.D.			
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.			
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.			
91) d-Limonene	0.00	68	0	N.D.			
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.			
93) n-Undecane	0.00	58	0	N.D.			
94) 1,2,4-Trichlorobenzene	20.84	180	374	N.D.			
95) Naphthalene	20.95	128	583	N.D.			
96) n-Dodecane	0.00	58	0	N.D.			
97) Hexachlorobutadiene	0.00	225	0	N.D.			
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	0.00	119	0	N.D.	d		
100) n-Butylbenzene	19.38	91	288	N.D.			
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			

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

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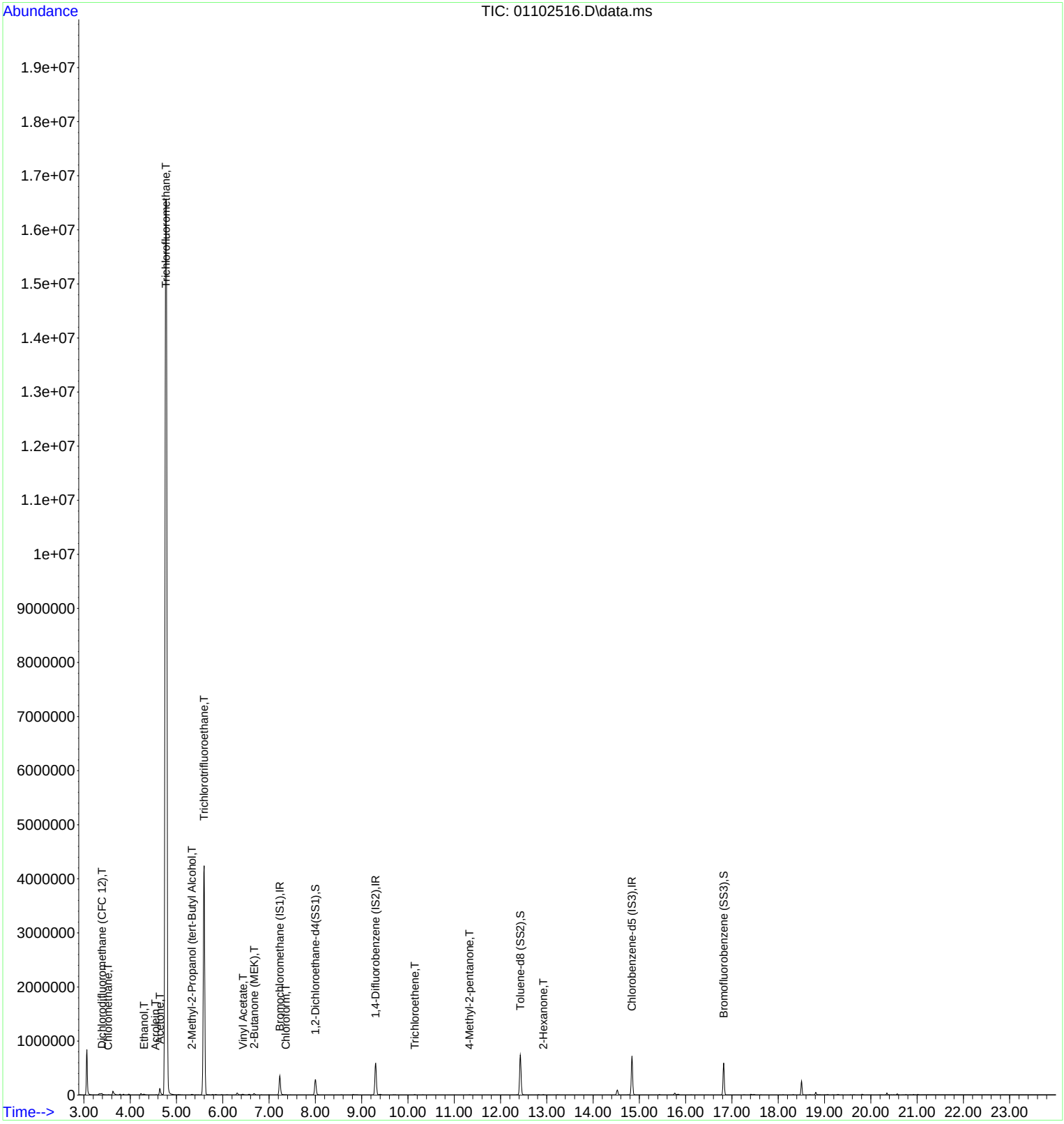

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56) Chlorobenzene-d5 (IS3)	14.84	54	111611	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250236	13.340	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%				
57) Toluene-d8 (SS2)	12.43	98	615505	12.431	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%				
73) Bromofluorobenzene (SS3)	16.82	174	209651	12.270	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.16%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.39	85	6679	0.248	ng		98
4) Chloromethane	3.52	50	1185	0.059	ng		75
10) Ethanol	4.30	45	14895	1.463	ng		97
12) Acrolein	4.55	56	1159	0.133	ng		98
13) Acetone	4.64	58	41896	4.519	ng		89
14) Trichlorofluoromethane	4.77	101	20301706	804.309	ng		96
18) 2-Methyl-2-Propanol (t...	5.33	59	11994	0.451	ng		92
21) Trichlorotrifluoroethane	5.60	151	1599633	140.464	ng		96
26) Vinyl Acetate	6.44	86	1048	0.467	ng	#	57
27) 2-Butanone (MEK)	6.68	72	6530	0.877	ng	#	81
32) Chloroform	7.36	83	1274	0.057	ng		99
47) Trichloroethene	10.15	130	1961	0.143	ng		97
53) 4-Methyl-2-pentanone	11.33	58	919	0.089	ng	#	52
59) 2-Hexanone	12.93	43	4930	0.212	ng		84

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

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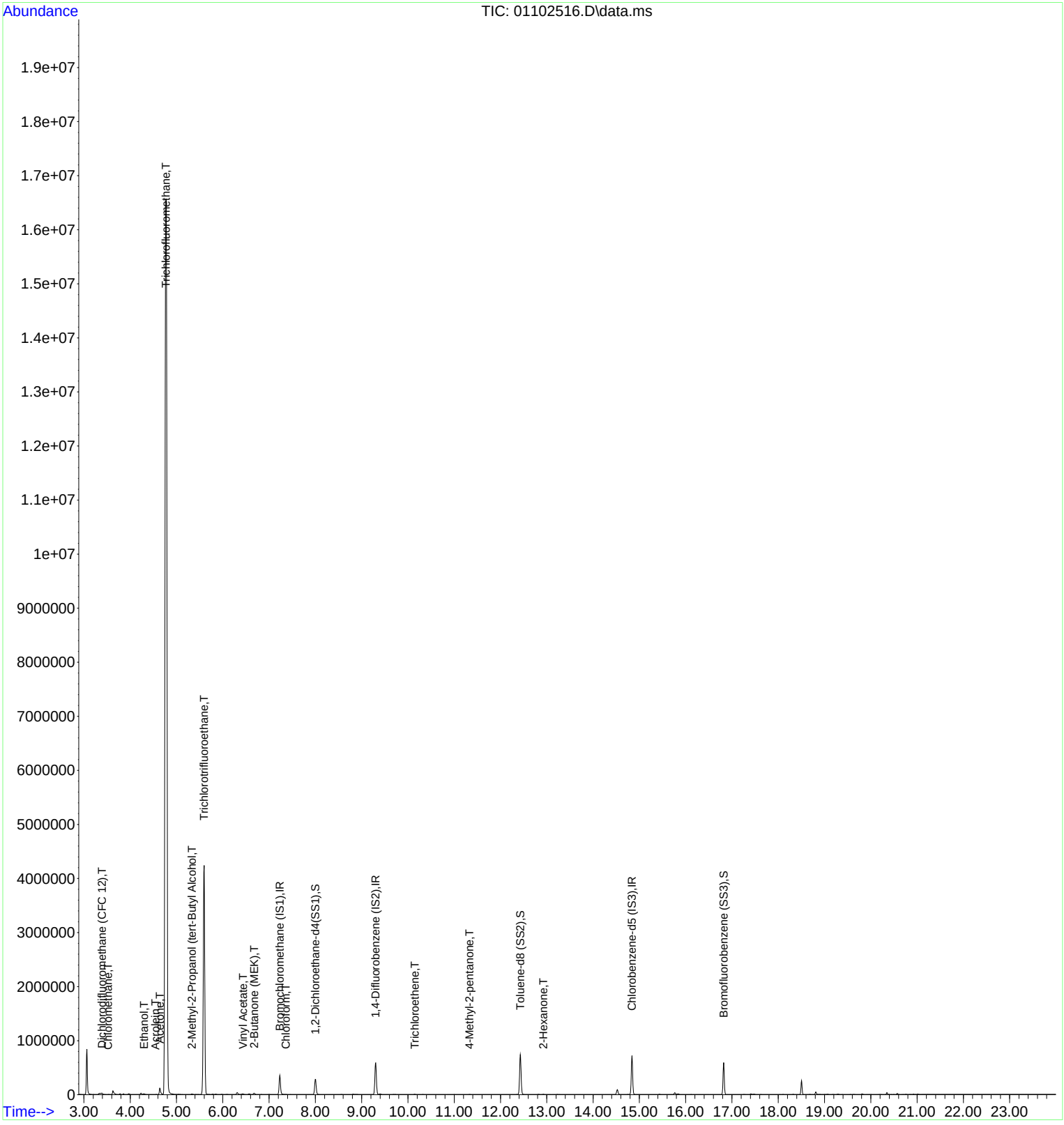
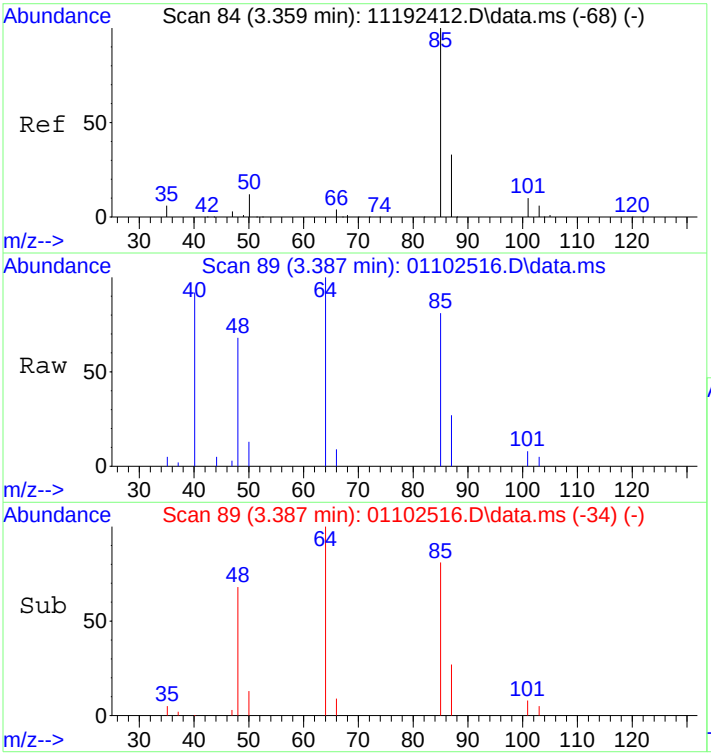
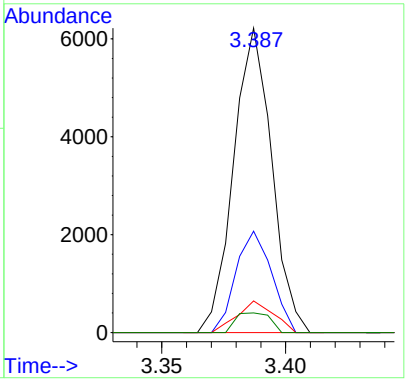


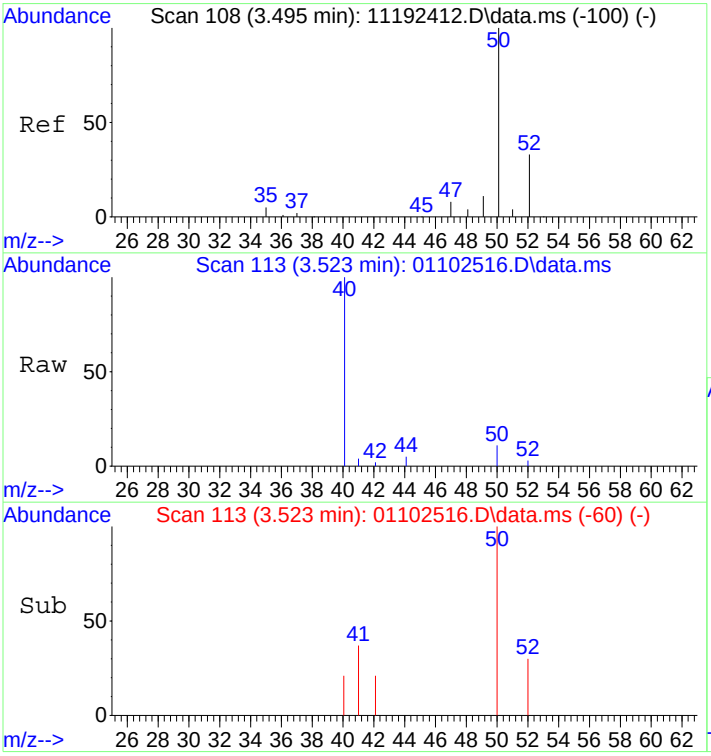


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.25 ng
RT: 3.39 min Scan# 89
Delta R.T. 0.060 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 85 Resp: 6679

Ion	Ratio	Lower	Upper
85	100		
87	31.1	12.6	52.6
101	9.8	0.0	29.6
103	5.8	0.0	26.2

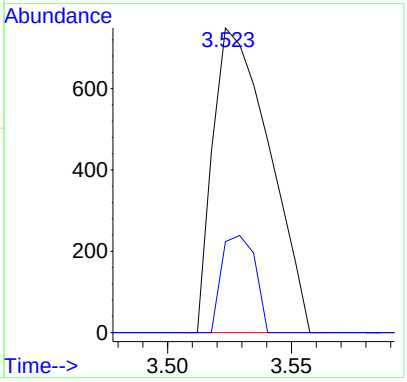


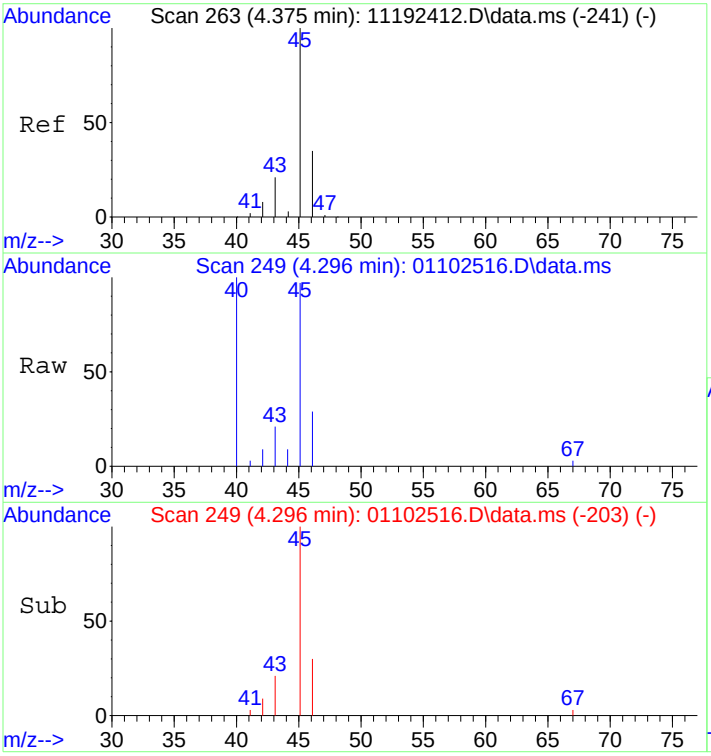


#4
Chloromethane
Concen: 0.06 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 50 Resp: 1185

Ion	Ratio	Lower	Upper
50	100		
52	18.9	13.0	53.0

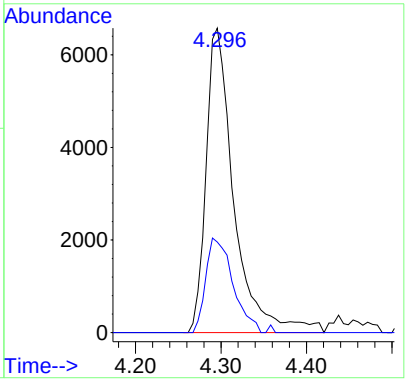


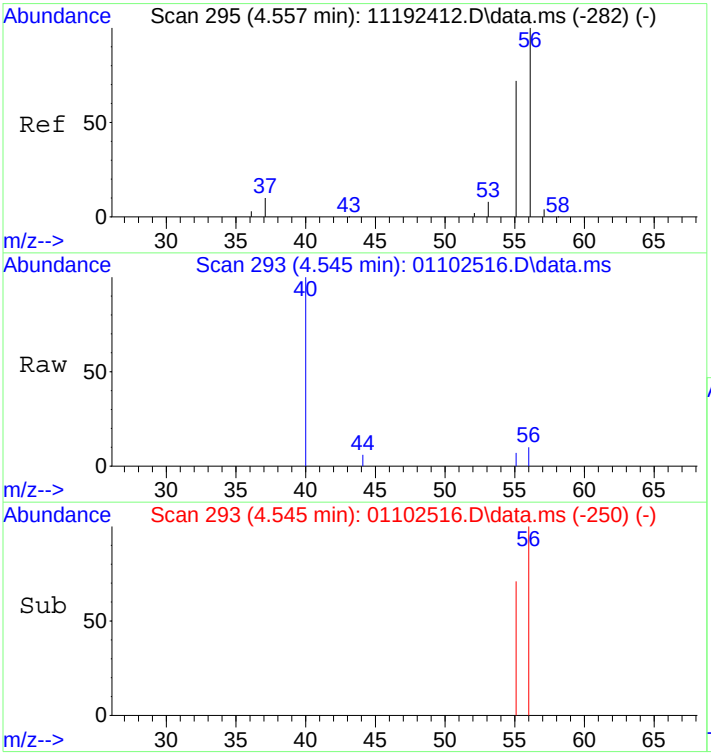


#10
Ethanol
Concen: 1.46 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 45 Resp: 14895

Ion	Ratio	Lower	Upper
45	100		
46	30.3	11.8	51.8

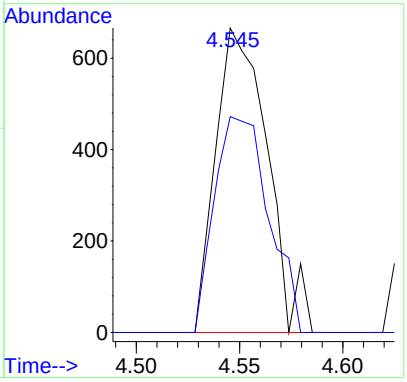


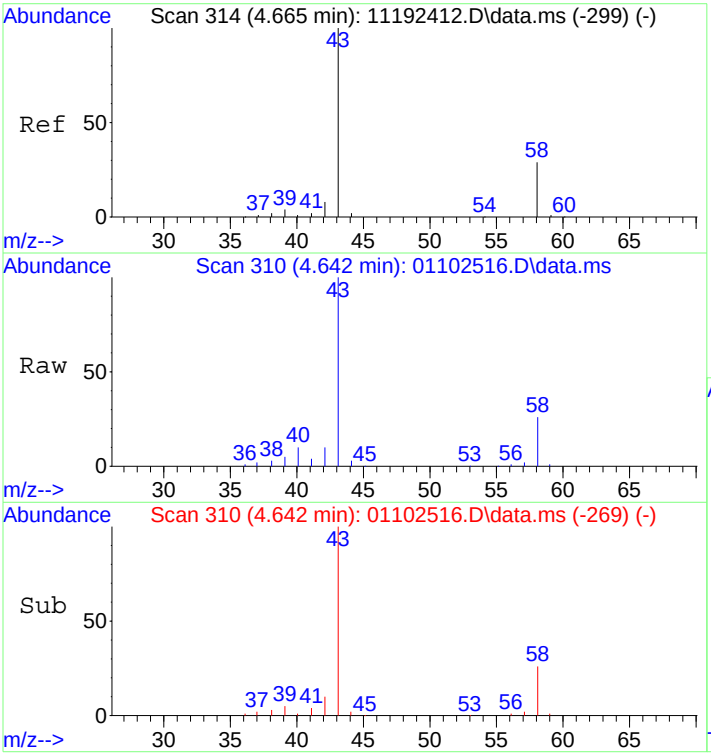


#12
Acrolein
Concen: 0.13 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 56 Resp: 1159

Ion	Ratio	Lower	Upper
56	100		
55	74.7	53.1	93.1

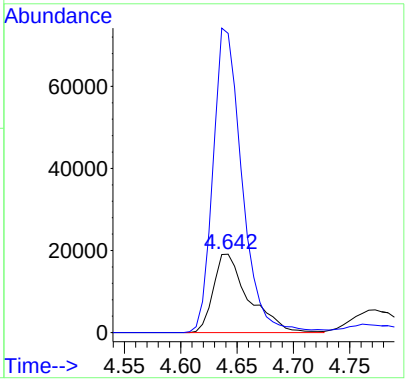


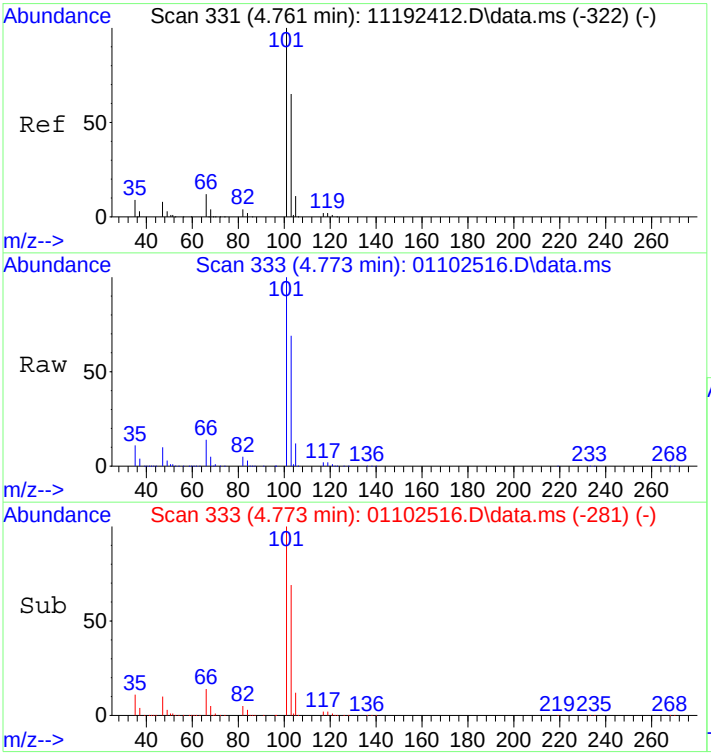


#13
Acetone
Concen: 4.52 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 58 Resp: 41896

Ion	Ratio	Lower	Upper
58	100		
43	317.9	312.5	372.5

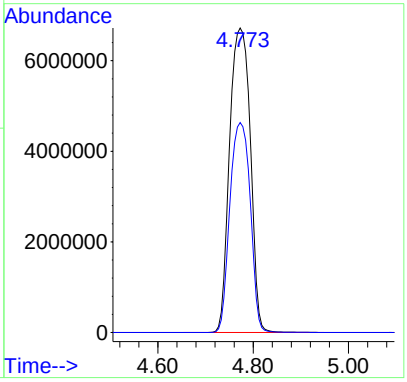


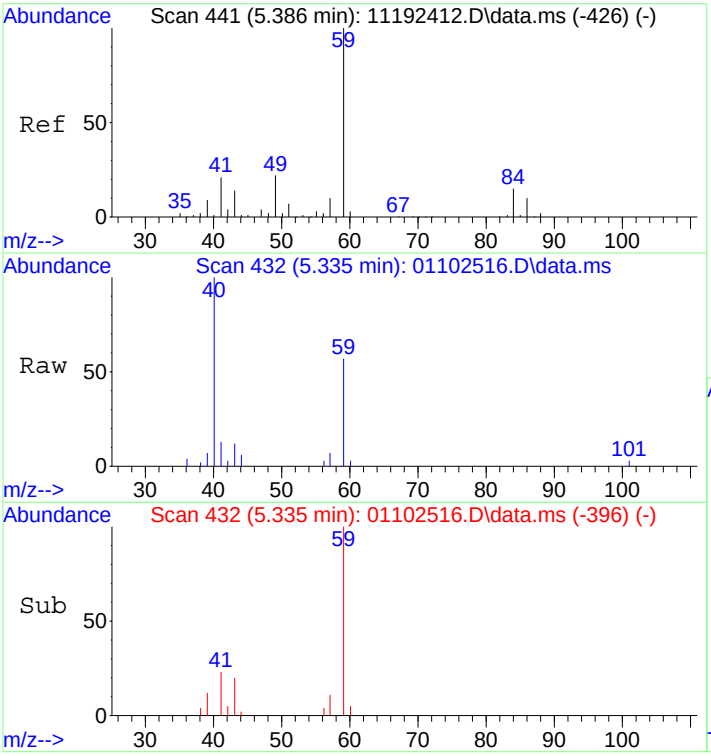


#14
Trichlorofluoromethane
Concen: 804.31 ng
RT: 4.77 min Scan# 333
Delta R.T. 0.045 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion:101 Resp:20301706

Ion	Ratio	Lower	Upper
101	100		
103	67.6	44.8	84.8

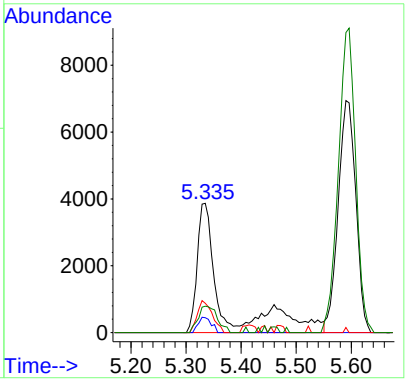


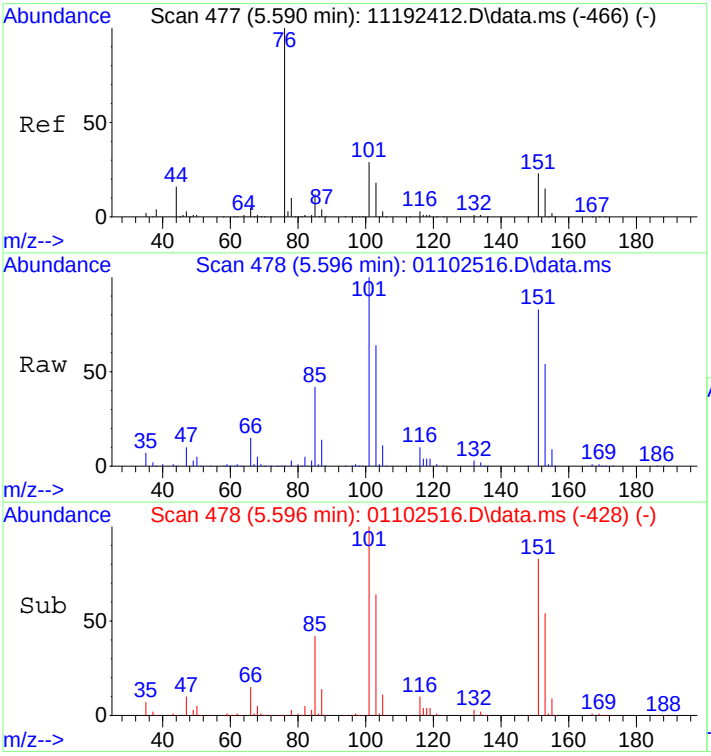


#18
2-Methyl-2-Propanol (tert-Butyl Alcohol
Concen: 0.45 ng
RT: 5.33 min Scan# 432
Delta R.T. -0.046 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 59 Resp: 11994

Ion	Ratio	Lower	Upper
59	100		
57	6.3	0.0	29.9
41	14.9	0.0	39.4
43	15.9	0.0	34.5

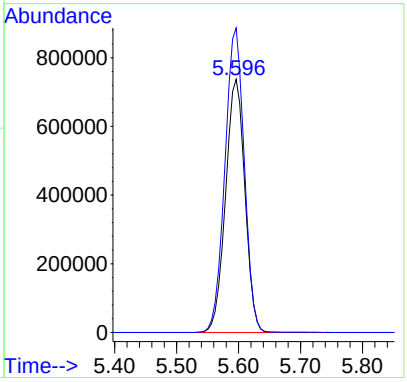


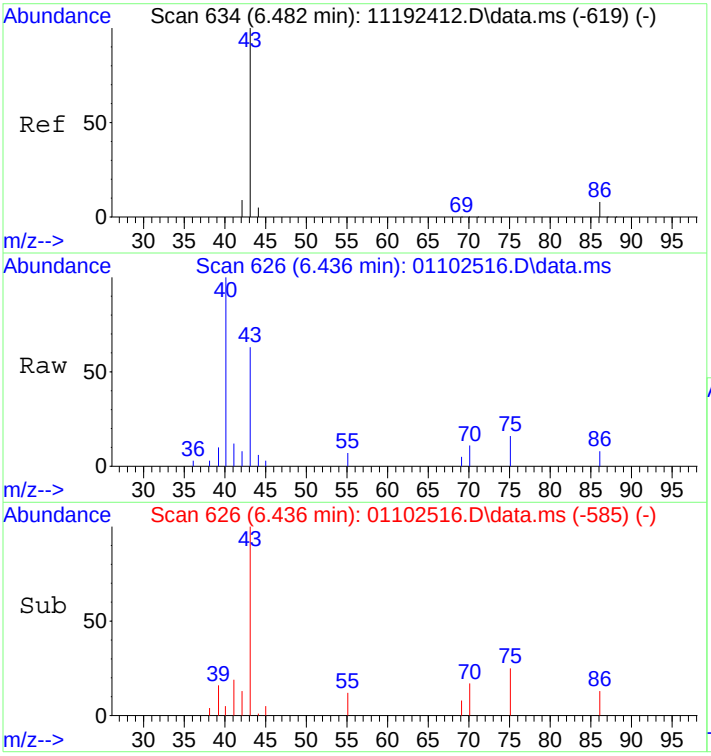


#21
Trichlorotrifluoroethane
Concen: 140.46 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.036 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion:151 Resp: 1599633

Ion	Ratio	Lower	Upper
151	100		
101	120.2	105.0	145.0

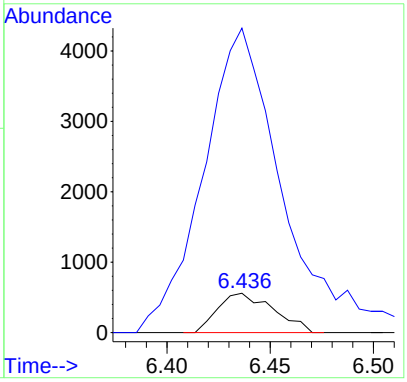


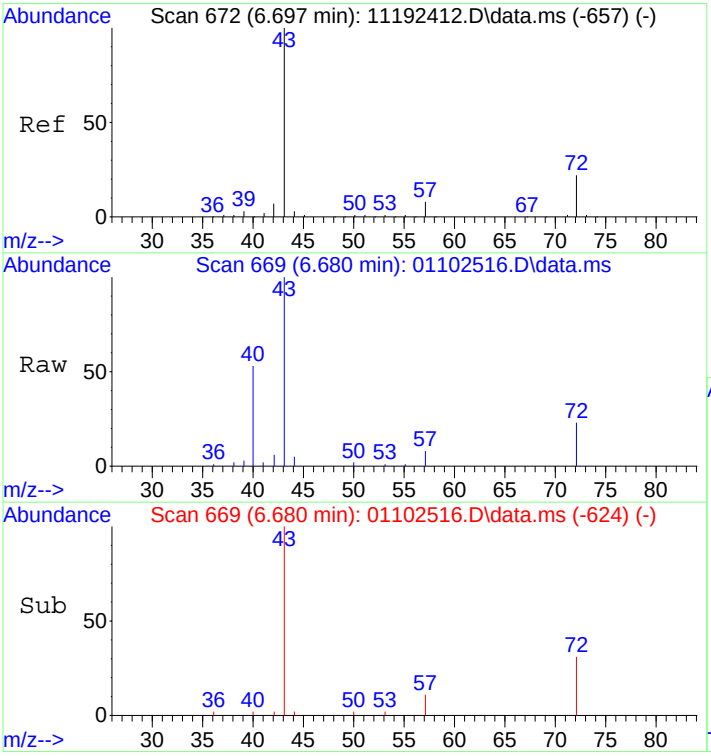


#26
Vinyl Acetate
Concen: 0.47 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.018 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 86 Resp: 1048

Ion	Ratio	Lower	Upper
86	100		
43	1112.0	1331.6	1371.6#

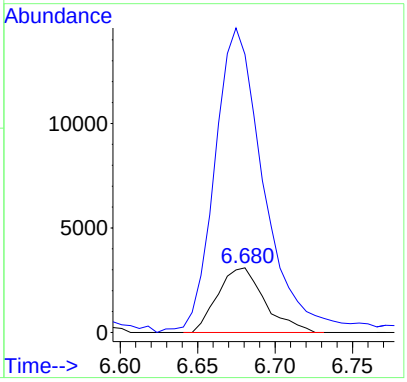


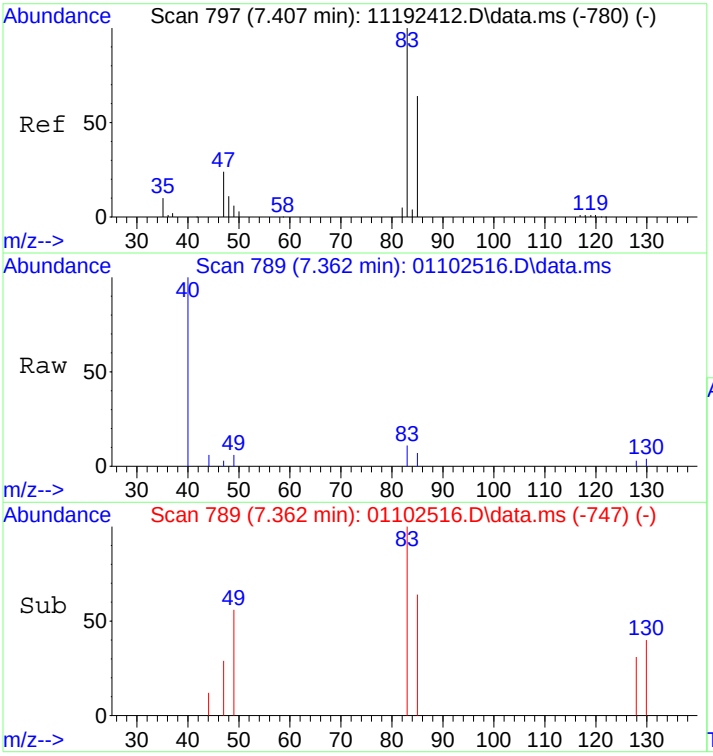


#27
2-Butanone (MEK)
Concen: 0.88 ng
RT: 6.68 min Scan# 669
Delta R.T. 0.006 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 72 Resp: 6530

Ion	Ratio	Lower	Upper
72	100		
43	510.5	439.8	479.8#

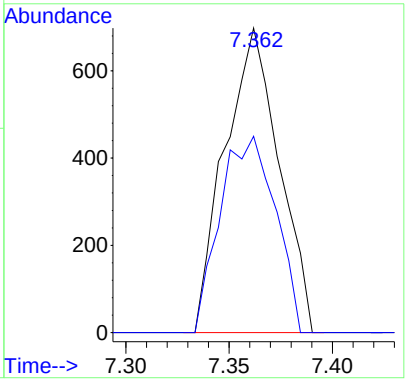


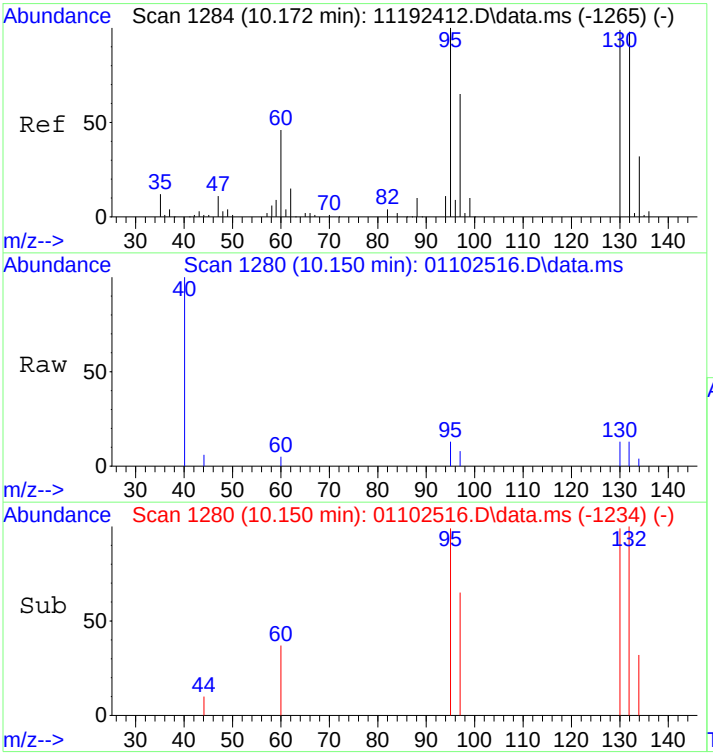


#32
Chloroform
Concen: 0.06 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 83 Resp: 1274

Ion	Ratio	Lower	Upper
83	100		
85	65.6	45.1	85.1

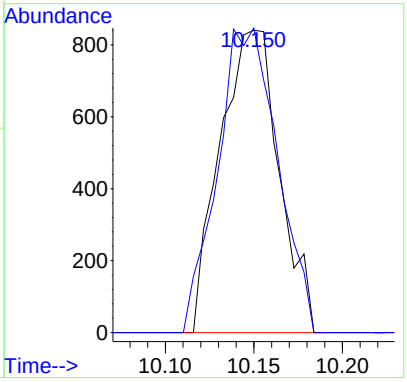


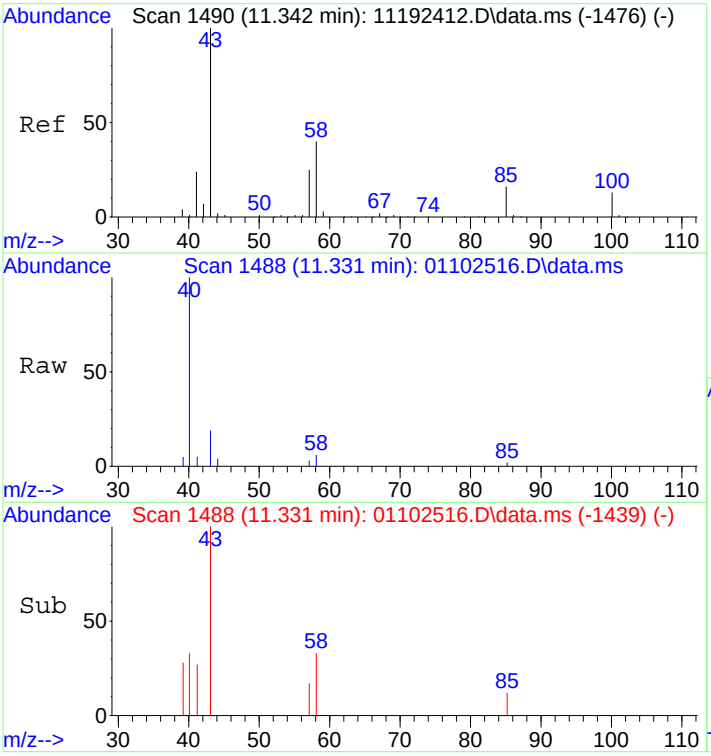


#47
Trichloroethene
Concen: 0.14 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion:130 Resp: 1961

Ion	Ratio	Lower	Upper
130	100		
132	102.1	79.3	119.3

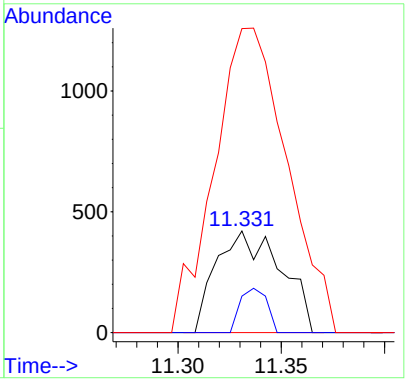


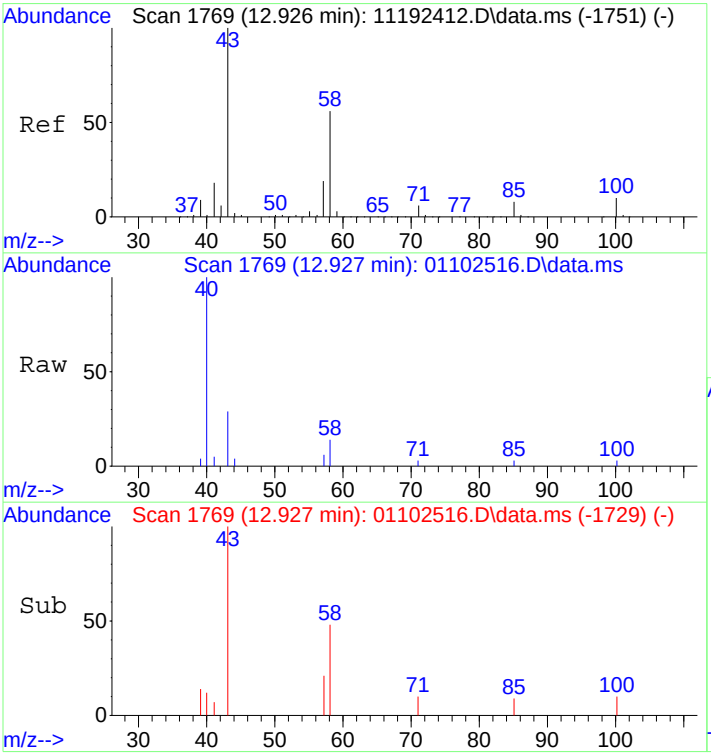


#53
4-Methyl-2-pentanone
Concen: 0.09 ng
RT: 11.33 min Scan# 1488
Delta R.T. 0.027 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 58 Resp: 919

Ion	Ratio	Lower	Upper
58	100		
85	18.0	33.8	50.6#
43	336.3	199.5	299.3#

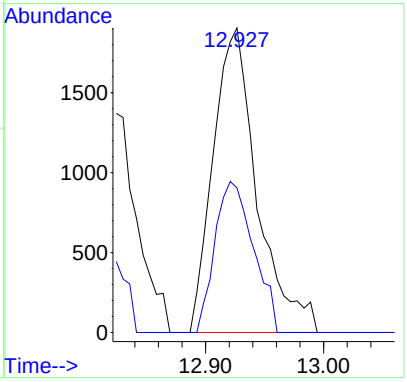




#59
2-Hexanone
Concen: 0.21 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01102516.D
Acq: 11 Jan 2025 1:18

Tgt Ion: 43 Resp: 4930

Ion	Ratio	Lower	Upper
43	100		
58	43.5	35.2	75.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:18
Operator : CG
Sample : P2405139-046 (150mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

MA 1/12/25

Quant Time: Jan 12 17:54:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

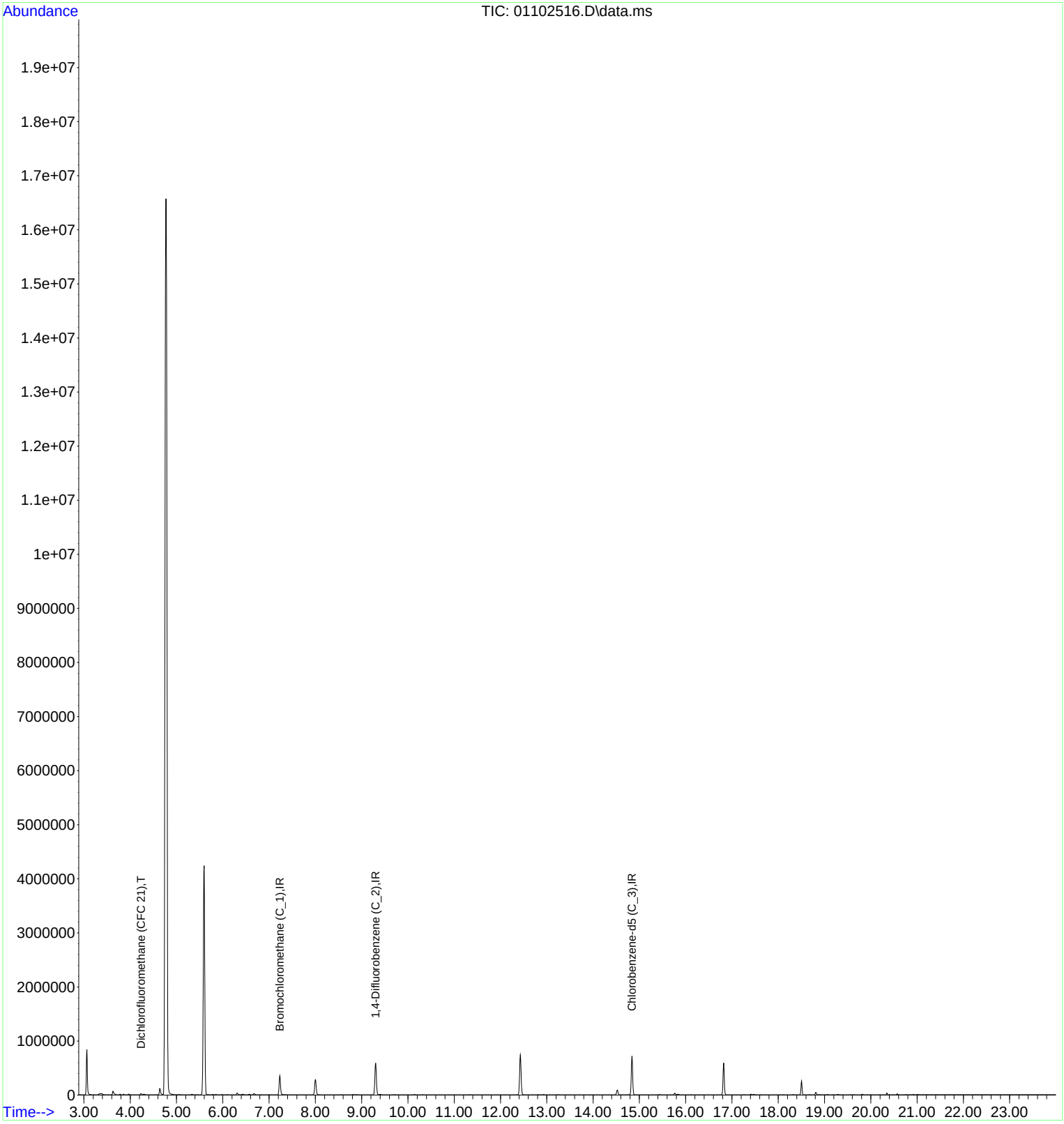
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	139481	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	600668	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	111611	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	643	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	3.31	67	152	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.23	67	19867	0.703	ng	99
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.58	83	282	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D. d		
11) Methyl Acetate	5.33	43	1910	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	172	N.D.		
27) 4-Chlorotoluene	17.68	91	172	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

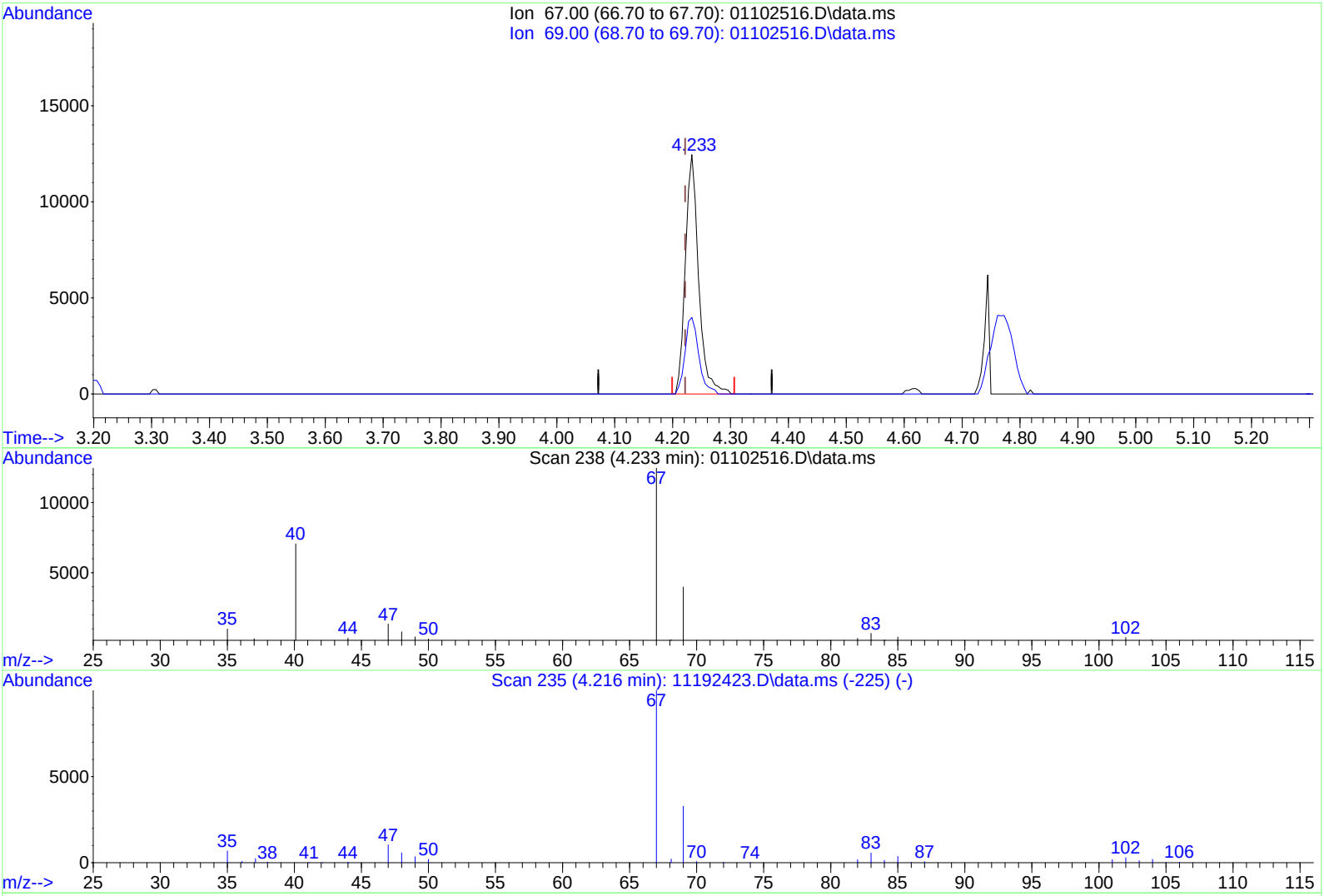
Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:18
Operator : CG
Sample : P2405139-046 (150mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 12 17:54:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:18
Operator : CG
Sample : P2405139-046 (150mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 12 17:48:47 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



TIC: 01102516.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.70ng

response 19867

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.17
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112507.D
Acq On : 11 Jan 2025 9:25
Operator : CG
Sample : P2405139-046dil (15mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

1/12/25

Quant Time: Jan 11 10:05:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	164208	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	714313	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	129221	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	284528	12.718	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%			
57) Toluene-d8 (SS2)	12.43	98	738309	12.879	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.04%			
73) Bromofluorobenzene (SS3)	16.82	174	254828	12.882	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.04%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	3.39	85	429	N.D.		
4) Chloromethane	3.39	50	401	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.32	45	1166	0.096	ng	80
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.66	58	3164	0.286	ng	92
14) Trichlorofluoromethane	4.75	101	2471252	82.092	ng	100
15) 2-Propanol (Isopropanol)	4.89	45	182	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.40	59	365	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.58	151	126518	9.315	ng	95
22) Carbon Disulfide	5.64	76	1589	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.70	72	259	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.90	78	2643	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112507.D
Acq On : 11 Jan 2025 9:25
Operator : CG
Sample : P2405139-046dil (15mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 11 10:05:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

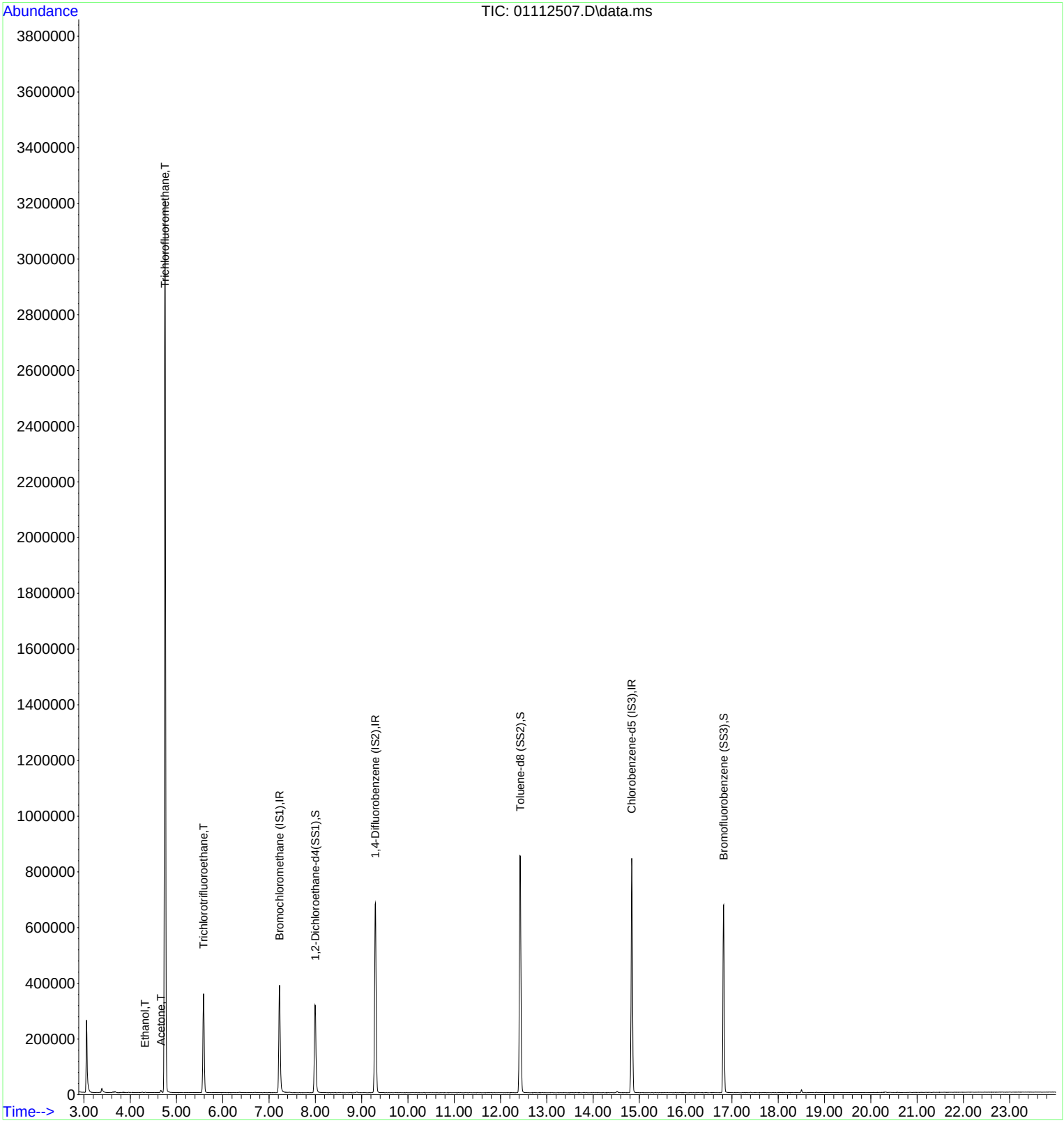
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	369	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.85	180	438	N.D.		
95) Naphthalene	20.95	128	692	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	199	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

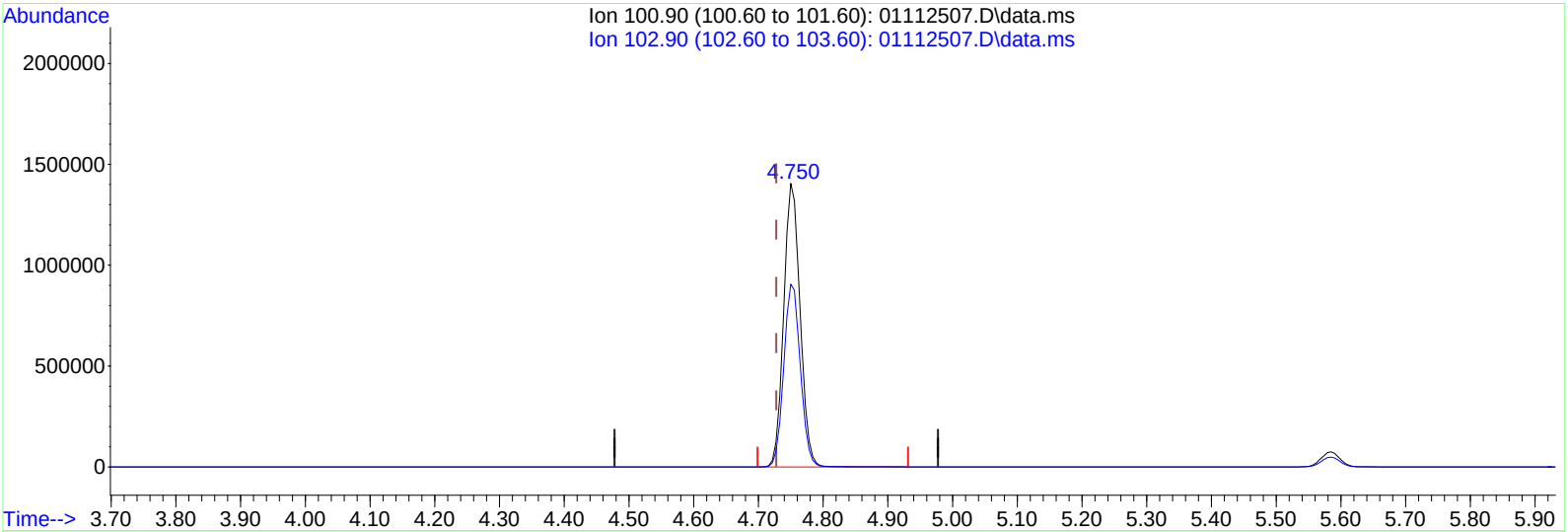
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112507.D
Acq On : 11 Jan 2025 9:25
Operator : CG
Sample : P2405139-046dil (15mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

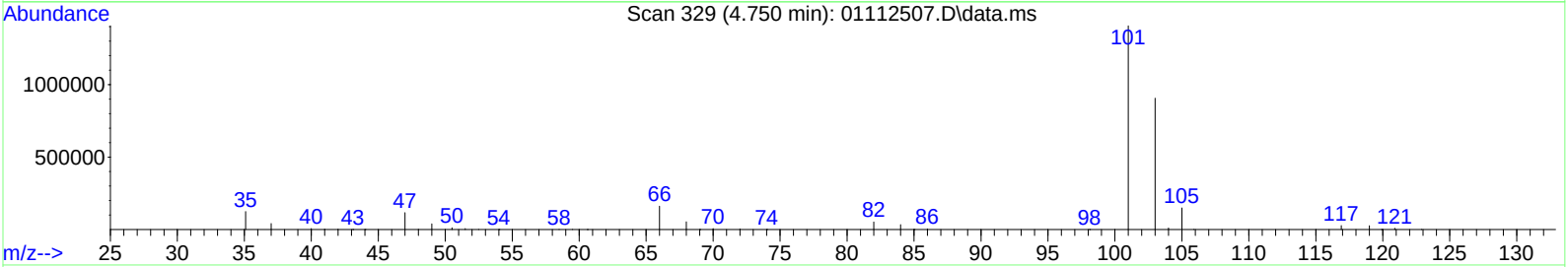
Quant Time: Jan 11 10:05:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

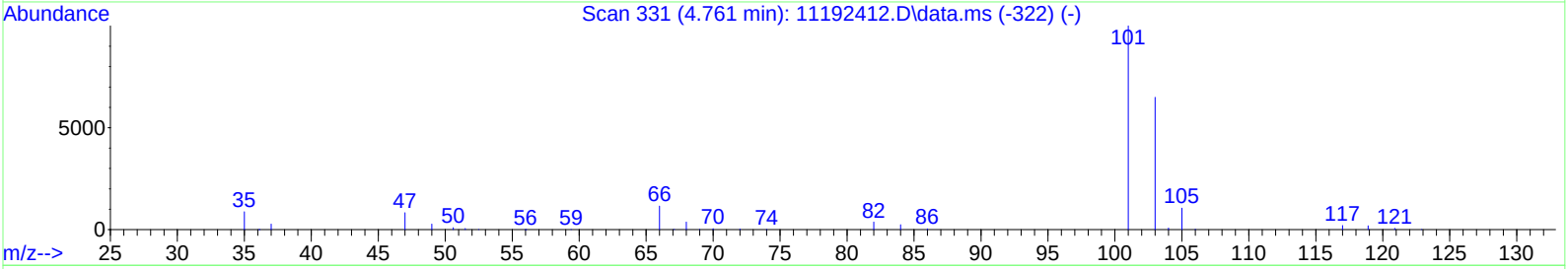


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112507.D
Acq On : 11 Jan 2025 9:25
Operator : CG
Sample : P2405139-046dil (15mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 11 10:05:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112507.D\data.ms

(14) Trichlorofluoromethane (T)

4.750min (+0.022) 82.09ng

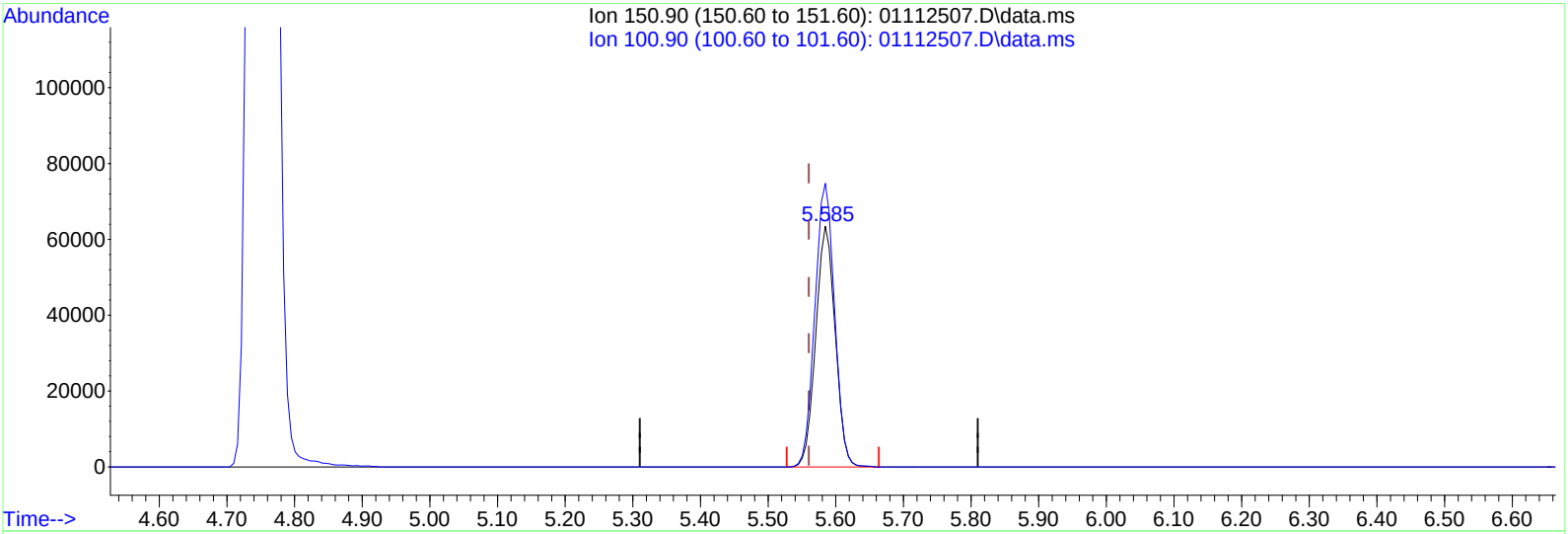
response 2471252

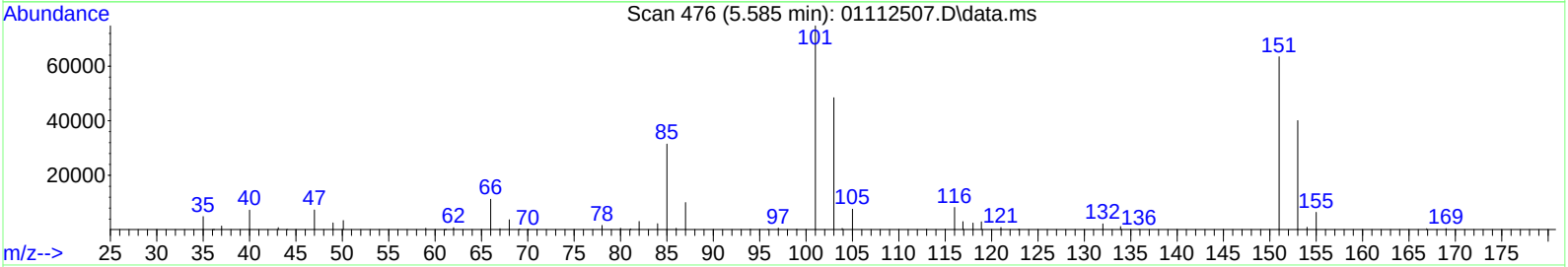
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	65.17
0.00	0.00	0.00
0.00	0.00	0.00

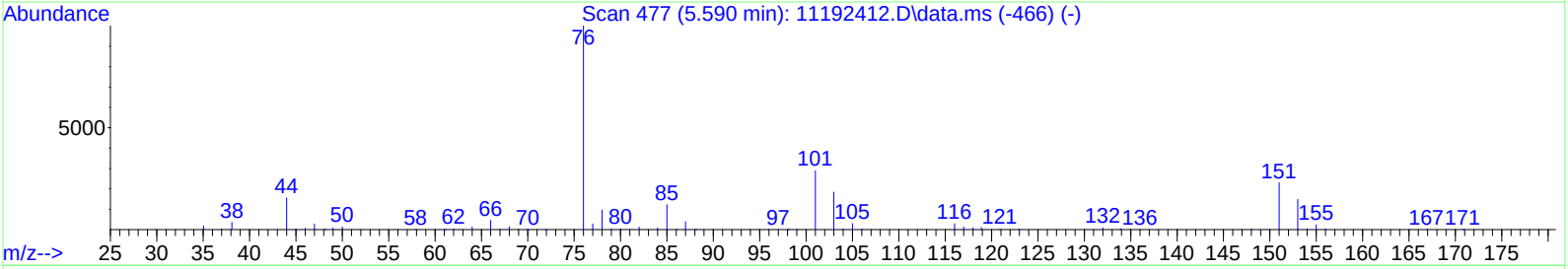
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112507.D
Acq On : 11 Jan 2025 9:25
Operator : CG
Sample : P2405139-046dil (15mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 11 10:05:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112507.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.585min (+0.024) 9.32ng

response 126518

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	119.34
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:18
Operator : CG
Sample : P2405139-046 (150mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102516.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.330	71	79	80	rBV3	18062	23405	0.05%	0.035%
2	3.387	86	89	100	rVB2	24233	41162	0.08%	0.062%
3	3.626	126	131	148	rVB2	65485	136009	0.28%	0.204%
4	3.779	154	158	165	rVB2	11958	16224	0.03%	0.024%
5	3.853	167	171	179	rVB	10615	13742	0.03%	0.021%
6	3.972	187	192	197	rBV2	12649	19693	0.04%	0.030%
7	4.233	231	238	243	rBV	23632	36234	0.07%	0.054%
8	4.290	243	248	258	rVB	11127	23950	0.05%	0.036%
9	4.642	302	310	321	rBV	115492	227857	0.47%	0.342%
10	4.773	321	333	368	rVB	16566819	48745670	100.00%	73.175%
11	5.335	426	432	442	rBV2	7444	15550	0.03%	0.023%
12	5.596	464	478	497	rBV	4234806	9223314	18.92%	13.846%
13	5.778	505	510	517	rBV2	5650	11063	0.02%	0.017%
14	5.846	517	522	532	rVB4	5464	11499	0.02%	0.017%
15	6.311	596	604	613	rBV	33474	68754	0.14%	0.103%
16	6.431	616	625	637	rVB4	10921	30978	0.06%	0.047%
17	6.567	642	649	659	rVB3	9672	22078	0.05%	0.033%
18	6.675	659	668	678	rBV2	21852	47192	0.10%	0.071%
19	7.231	755	766	784	rBV	350121	747768	1.53%	1.123%
20	7.998	890	901	915	rBV	279218	646103	1.33%	0.970%
21	8.821	1039	1046	1053	rBV3	5571	14869	0.03%	0.022%
22	9.304	1120	1131	1142	rBV	583808	1344352	2.76%	2.018%
23	9.400	1142	1148	1156	rVB3	7602	17776	0.04%	0.027%
24	10.144	1273	1279	1288	rVB4	4438	10121	0.02%	0.015%
25	12.427	1671	1681	1694	rBV	735134	1661670	3.41%	2.494%
26	12.927	1760	1769	1776	rBV4	4808	11399	0.02%	0.017%
27	14.522	2042	2050	2065	rVB	88057	190282	0.39%	0.286%
28	14.840	2097	2106	2123	rBV	715206	1468629	3.01%	2.205%
29	15.766	2261	2269	2276	rBV	31531	61809	0.13%	0.093%
30	15.834	2276	2281	2293	rVB	11090	24253	0.05%	0.036%
31	16.822	2446	2455	2464	rBV	587879	1102268	2.26%	1.655%
32	17.412	2552	2559	2564	rBV4	10199	20264	0.04%	0.030%
33	18.503	2744	2751	2758	rBV	253592	401228	0.82%	0.602%
34	18.809	2799	2805	2817	rBV	44778	73501	0.15%	0.110%
35	19.292	2886	2890	2899	rVB5	6890	12416	0.03%	0.019%
36	19.814	2977	2982	2989	rVB3	10146	15438	0.03%	0.023%
37	20.348	3071	3076	3084	rVB	32248	40850	0.08%	0.061%
38	20.569	3109	3115	3121	rBV2	17043	23642	0.05%	0.035%
39	20.921	3172	3177	3189	rBV2	6425	11789	0.02%	0.018%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:18
Operator : CG
Sample : P2405139-046 (150mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

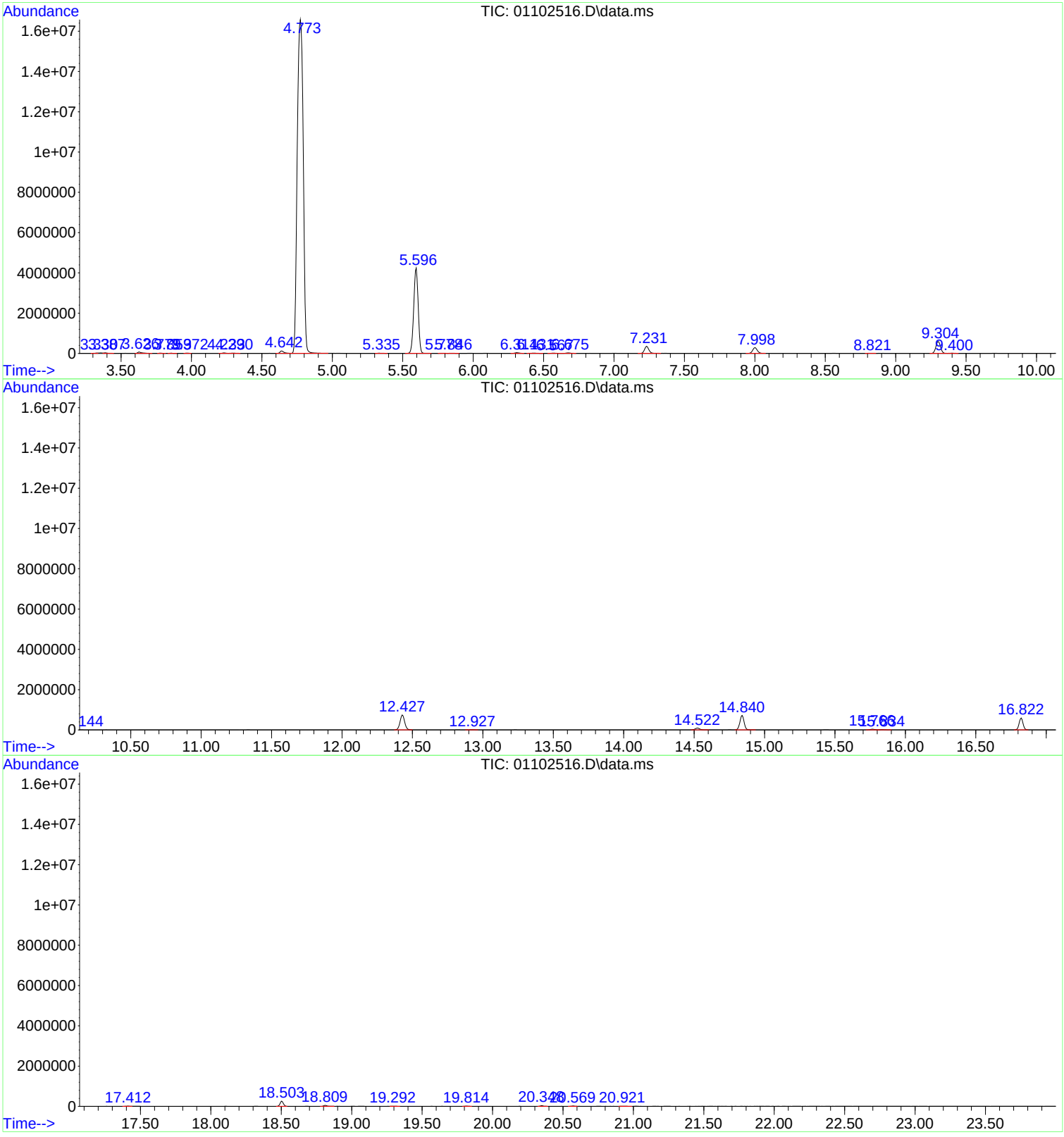
Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Sum of corrected areas: 66614801

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:18
Operator : CG
Sample : P2405139-046 (150mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102516.D
Acq On : 11 Jan 2025 1:188
Operator : CGG
Sample : P2405139-046 (150mL))
Misc : S37-123124011
ALS Vial : 13 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 14:25:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140283	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	609346	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113566	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	254080	13.294 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.32%			
57) Toluene-d8 (SS2)	12.43	98	631691	12.539 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%			
73) Bromofluorobenzene (SS3)	16.82	174	216734	12.466 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.30	85	23468	0.856 ng	#	91
4) Chloromethane	3.52	50	3309	0.162 ng		95
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	368	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	3.77	54	269	N.D.		
8) Bromomethane	4.02	94	5487	0.555 ng		97
9) Chloroethane	0.00	64	0	N.D. d		
10) Ethanol	4.30	45	17041	1.642 ng		97
11) Acetonitrile	4.44	41	6066	0.227 ng		92
12) Acrolein	4.54	56	3082	0.347 ng		98
13) Acetone	4.62	58	114567	12.129 ng		93
14) Trichlorofluoromethane	4.75	101	583557	22.691 ng		100
15) 2-Propanol (Isopropanol)	4.85	45	47369	1.400 ng		95
16) Acrylonitrile	0.00	53	0	N.D. d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.40	59	52	N.D.		
19) Methylene Chloride	5.35	84	472	N.D.		
20) 3-Chloro-1-propene (Al...	5.46	41	108	N.D.		
21) Trichlorotrifluoroethane	5.57	151	487557	42.020 ng		96
22) Carbon Disulfide	0.00	76	0	N.D. d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	6.32	73	176	N.D.		
26) Vinyl Acetate	6.44	86	15924	6.965 ng	#	23
27) 2-Butanone (MEK)	6.67	72	22756	2.999 ng	#	89
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.29	61	14244	3.041 ng		97
31) n-Hexane	7.30	57	2144	0.102 ng	#	87
32) Chloroform	7.36	83	10595	0.464 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D. d		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.81	56	19828	No Calib	#	
41) Benzene	8.89	78	10465	0.214 ng		98
42) Carbon Tetrachloride	9.07	117	369	N.D.		
43) Cyclohexane	9.21	84	1374	0.081 ng	#	83
44) tert-Amyl Methyl Ether	0.00	73	0	N.D. d		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

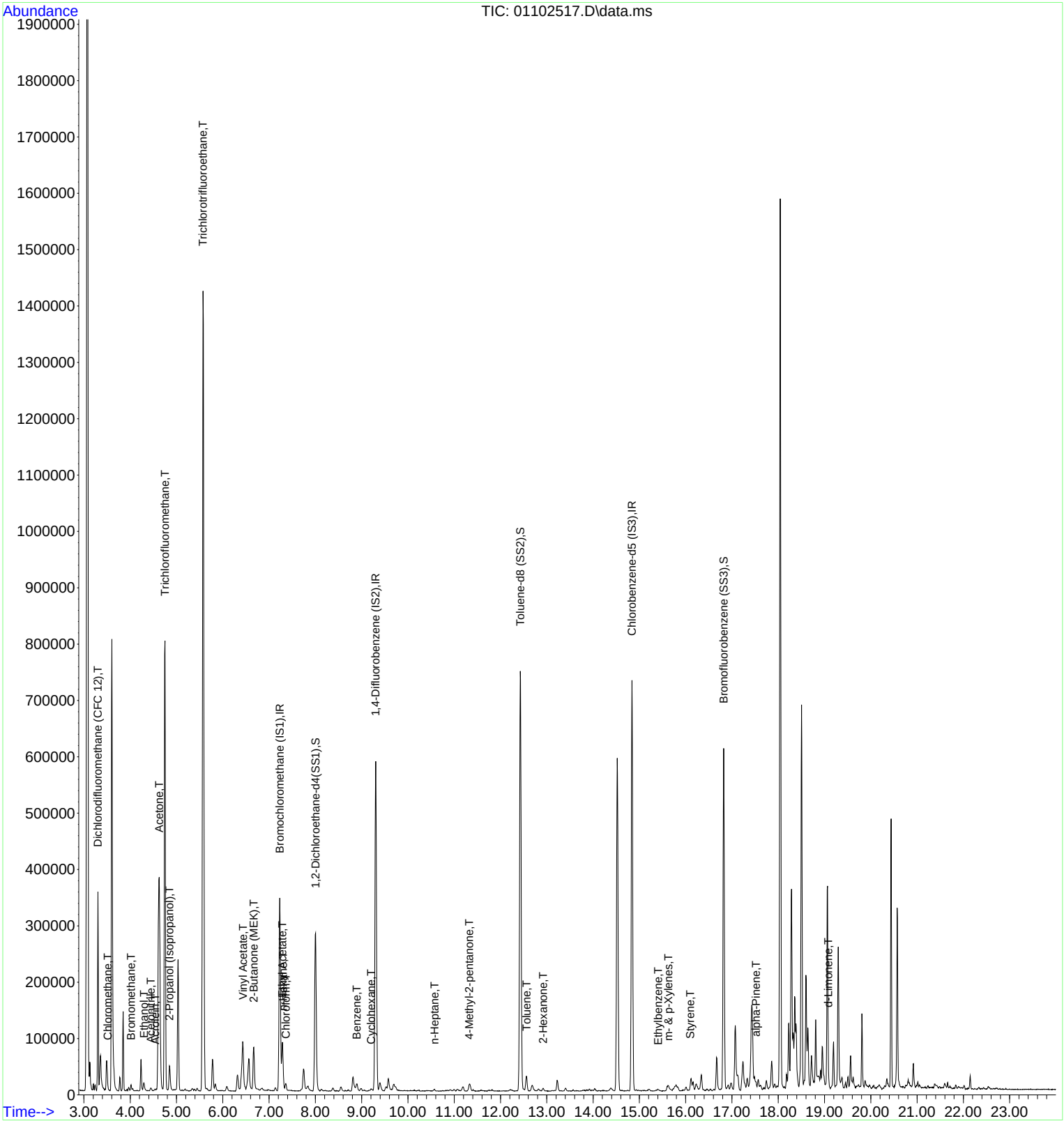
Quant Time: Jan 12 14:25:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	1614	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			
51) n-Heptane	10.58	71	679	0.062	ng	#	84
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	11.33	58	2867	0.273	ng	#	12
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.			
58) Toluene	12.56	91	25051	0.517	ng		97
59) 2-Hexanone	12.92	43	5449	0.231	ng	#	72
60) Dibromochloromethane	0.00	129	0	N.D.			
61) 1,2-Dibromoethane	0.00	107	0	N.D.			
62) n-Butyl Acetate	0.00	43	0	N.D.	d		
63) n-Octane	13.92	57	453	N.D.			
64) Tetrachloroethene	14.03	166	537	N.D.			
65) Chlorobenzene	0.00	112	0	N.D.			
66) Ethylbenzene	15.41	91	2768	0.052	ng		93
67) m- & p-Xylenes	15.63	91	5050	0.115	ng		91
68) Bromoform	0.00	173	0	N.D.			
69) Styrene	16.10	104	2450	0.080	ng		99
70) o-Xylene	16.24	91	2092	N.D.			
71) n-Nonane	16.61	43	938	N.D.			
72) 1,1,2,2-Tetrachloroethane	16.13	83	129	N.D.			
74) Cumene	17.02	105	212	N.D.			
75) alpha-Pinene	17.52	93	3532	0.133	ng		77
76) n-Propylbenzene	17.68	91	1626	N.D.			
77) 3-Ethyltoluene	17.02	105	212	No Calib		#	
78) 4-Ethyltoluene	17.86	105	693	N.D.			
79) 1,3,5-Trimethylbenzene	17.96	105	626	N.D.			
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.02	105	212	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.43	105	1418	N.D.			
83) n-Decane	17.07	58	4501	No Calib		#	
84) Benzyl Chloride	18.56	91	949	N.D.			
85) 1,3-Dichlorobenzene	18.65	146	250	N.D.			
86) 1,4-Dichlorobenzene	18.65	146	250	N.D.			
87) sec-Butylbenzene	18.75	105	719	N.D.			
88) 4-Isopropyltoluene (p-...	18.92	119	1097	N.D.			
89) 1,2,3-Trimethylbenzene	17.02	105	212	No Calib		#	
90) 1,2-Dichlorobenzene	19.03	146	253	N.D.			
91) d-Limonene	19.08	68	2585	0.180	ng		88
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.			
93) n-Undecane	17.99	58	262	No Calib		#	
94) 1,2,4-Trichlorobenzene	20.84	180	623	N.D.			
95) Naphthalene	20.94	128	1793	N.D.			
96) n-Dodecane	18.95	58	2596	No Calib		#	
97) Hexachlorobutadiene	21.30	225	132	N.D.			
98) Cyclohexanone	15.36	55	430	No Calib		#	
99) tert-Butylbenzene	18.43	119	296	N.D.			
100) n-Butylbenzene	19.46	91	117	N.D.			
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 12 14:25:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 14:25:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

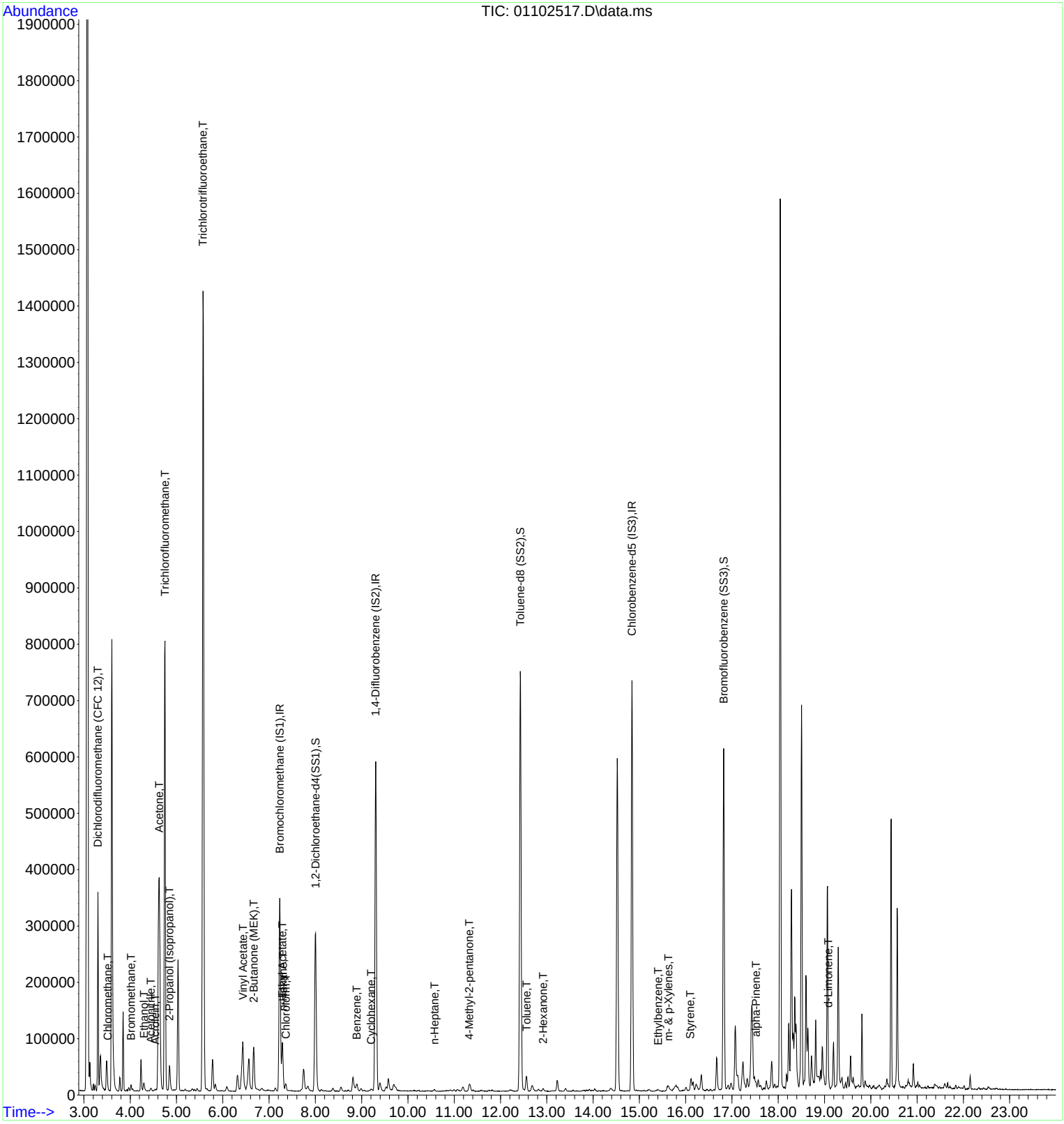
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140283	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	609346	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113566	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	254080	13.294	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.32%				
57) Toluene-d8 (SS2)	12.43	98	631691	12.539	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%				
73) Bromofluorobenzene (SS3)	16.82	174	216734	12.466	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.30	85	23468	0.856	ng	#	91
4) Chloromethane	3.52	50	3309	0.162	ng		95
8) Bromomethane	4.02	94	5487	0.555	ng		97
10) Ethanol	4.30	45	17041	1.642	ng		97
11) Acetonitrile	4.44	41	6066	0.227	ng		92
12) Acrolein	4.54	56	3082	0.347	ng		98
13) Acetone	4.62	58	114567	12.129	ng		93
14) Trichlorofluoromethane	4.75	101	583557	22.691	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	47369	1.400	ng		95
21) Trichlorotrifluoroethane	5.57	151	487557	42.020	ng		96
26) Vinyl Acetate	6.44	86	15924	6.965	ng	#	23
27) 2-Butanone (MEK)	6.67	72	22756	2.999	ng	#	89
30) Ethyl Acetate	7.29	61	14244	3.041	ng		97
31) n-Hexane	7.30	57	2144	0.102	ng	#	87
32) Chloroform	7.36	83	10595	0.464	ng		99
41) Benzene	8.89	78	10465	0.214	ng		98
43) Cyclohexane	9.21	84	1374	0.081	ng	#	83
51) n-Heptane	10.58	71	679	0.062	ng	#	84
53) 4-Methyl-2-pentanone	11.33	58	2867	0.273	ng	#	12
58) Toluene	12.56	91	25051	0.517	ng		97
59) 2-Hexanone	12.92	43	5449	0.231	ng	#	72
66) Ethylbenzene	15.41	91	2768	0.052	ng		93
67) m- & p-Xylenes	15.63	91	5050	0.115	ng		91
69) Styrene	16.10	104	2450	0.080	ng		99
75) alpha-Pinene	17.52	93	3532	0.133	ng		77
91) d-Limonene	19.08	68	2585	0.180	ng		88

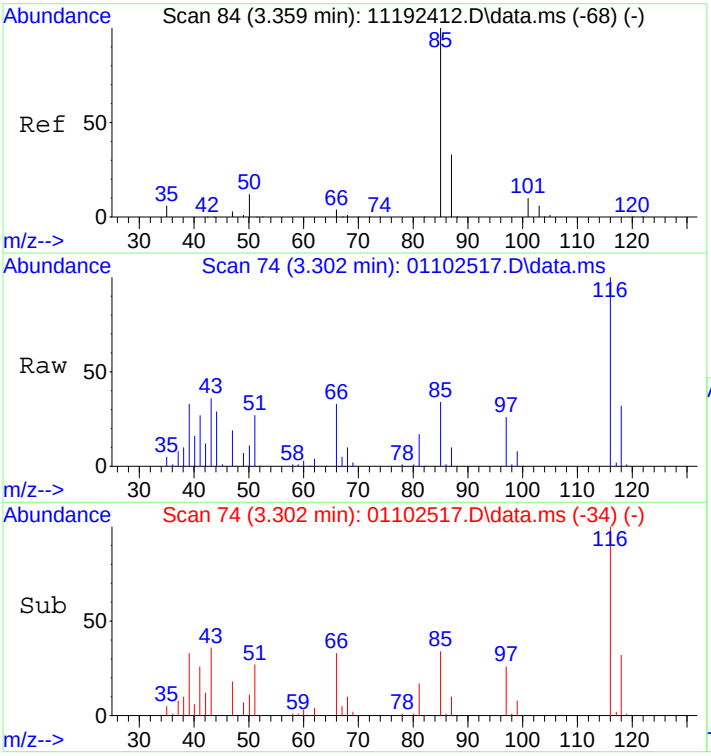
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 12 14:25:40 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

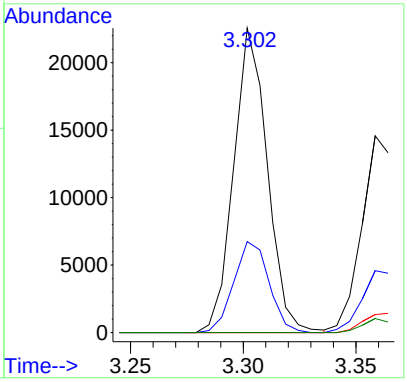


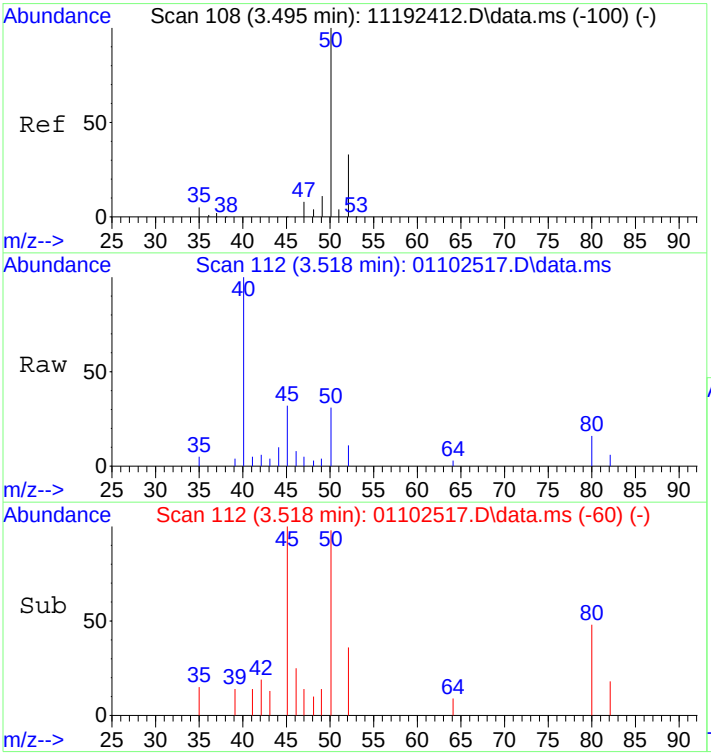


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.86 ng
RT: 3.30 min Scan# 74
Delta R.T. -0.025 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 85 Resp: 23468

Ion	Ratio	Lower	Upper
85	100		
87	31.4	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

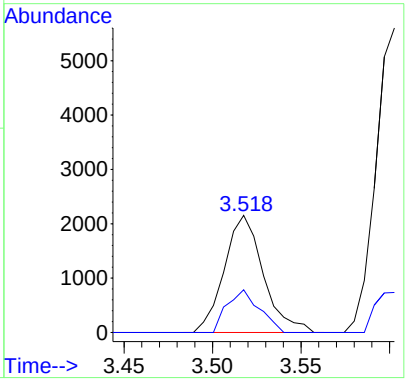


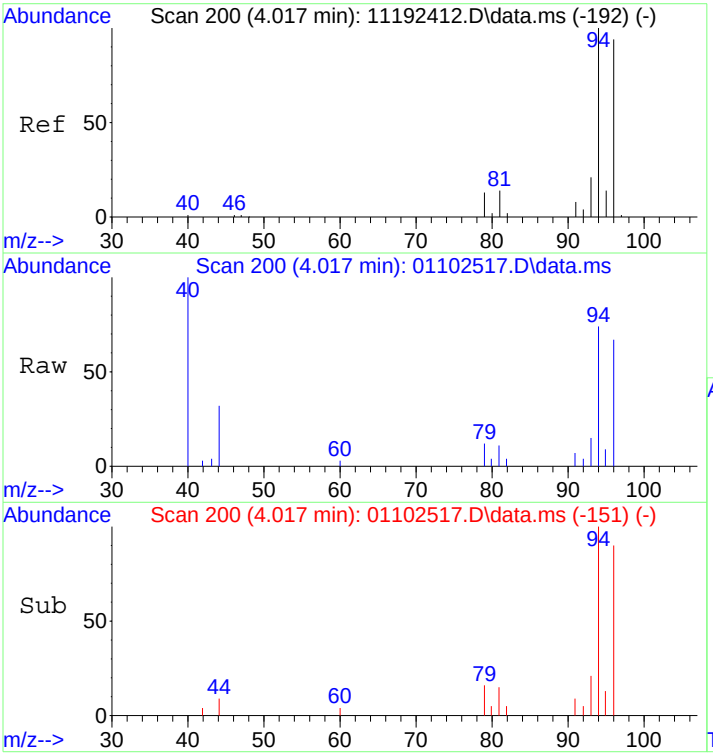


#4
Chloromethane
Concen: 0.16 ng
RT: 3.52 min Scan# 112
Delta R.T. 0.044 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 50 Resp: 3309

Ion	Ratio	Lower	Upper
50	100		
52	30.1	13.0	53.0

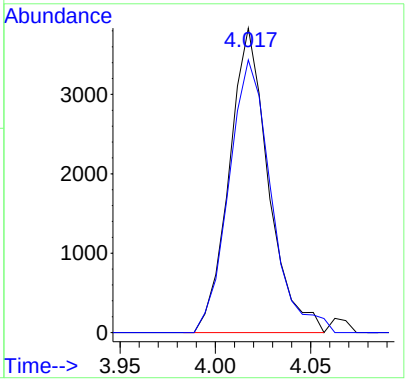


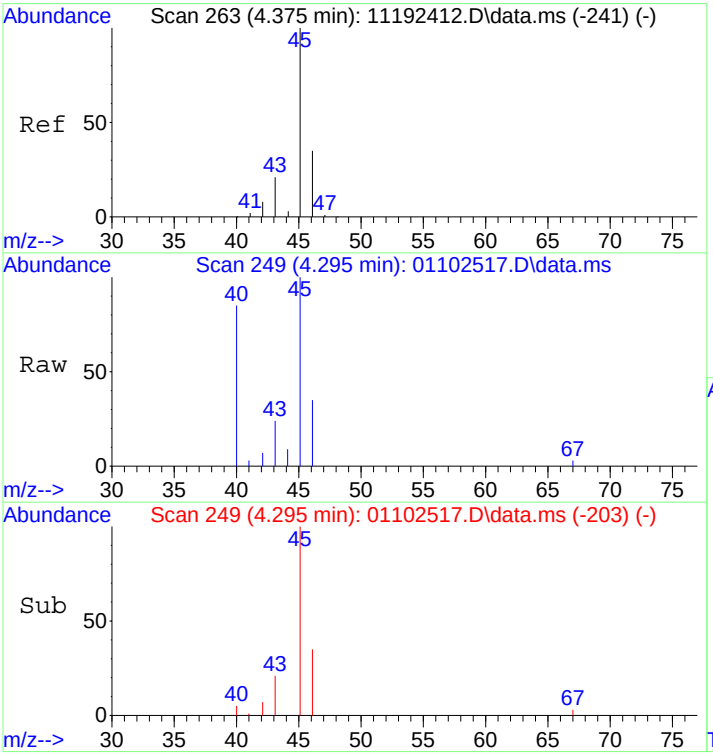


#8
Bromomethane
Concen: 0.56 ng
RT: 4.02 min Scan# 200
Delta R.T. 0.026 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 94 Resp: 5487

Ion	Ratio	Lower	Upper
94	100		
96	96.5	73.5	113.5

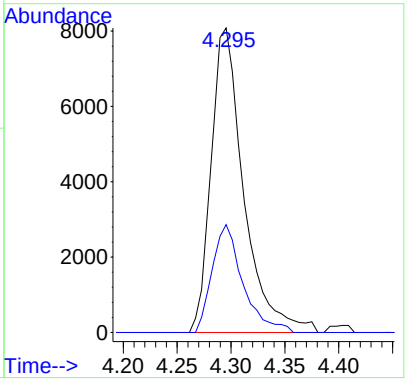


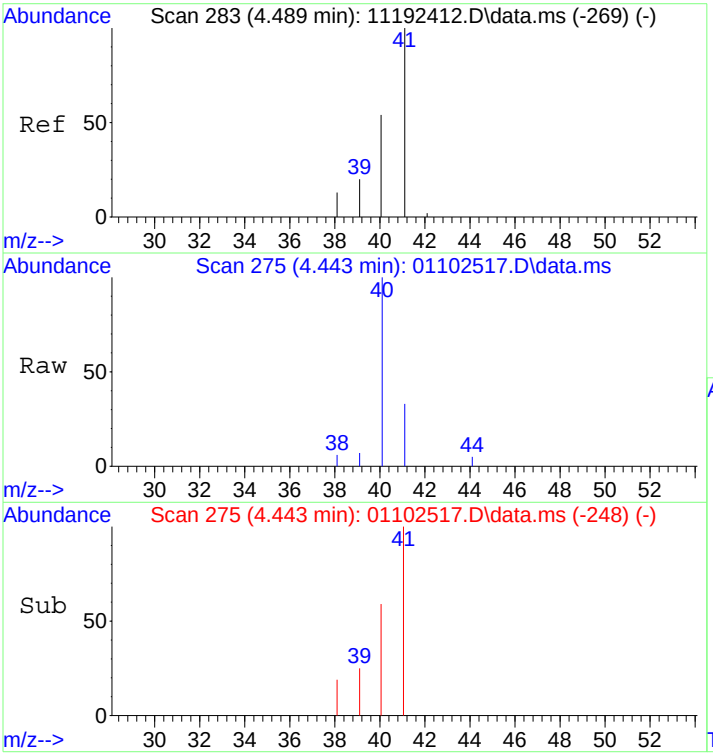


#10
Ethanol
Concen: 1.64 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 45 Resp: 17041

Ion	Ratio	Lower	Upper
45	100		
46	33.3	11.8	51.8

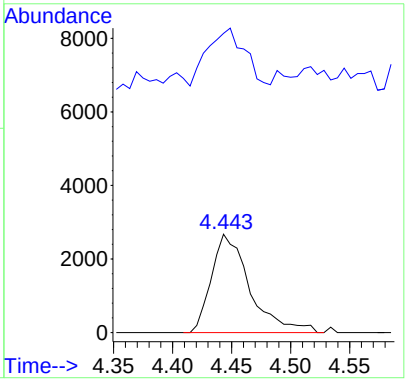


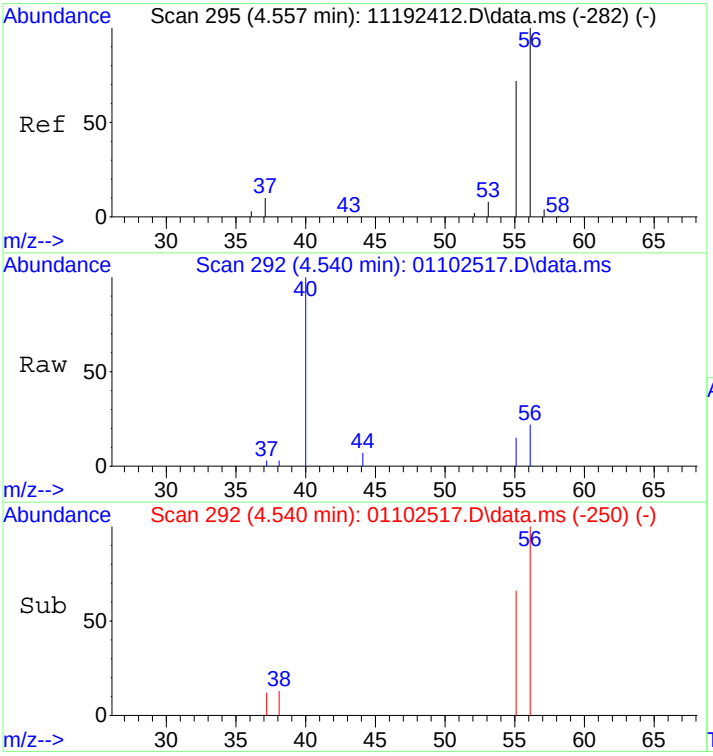


#11
Acetonitrile
Concen: 0.23 ng
RT: 4.44 min Scan# 275
Delta R.T. -0.048 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 41 Resp: 6066

Ion	Ratio	Lower	Upper
41	100		
40	59.3	33.8	73.8

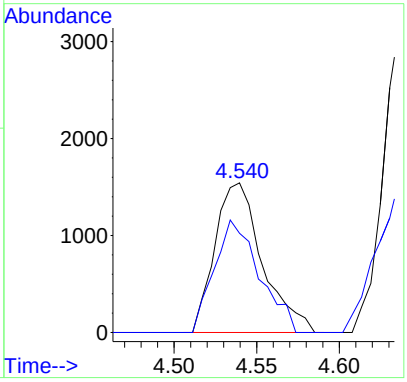


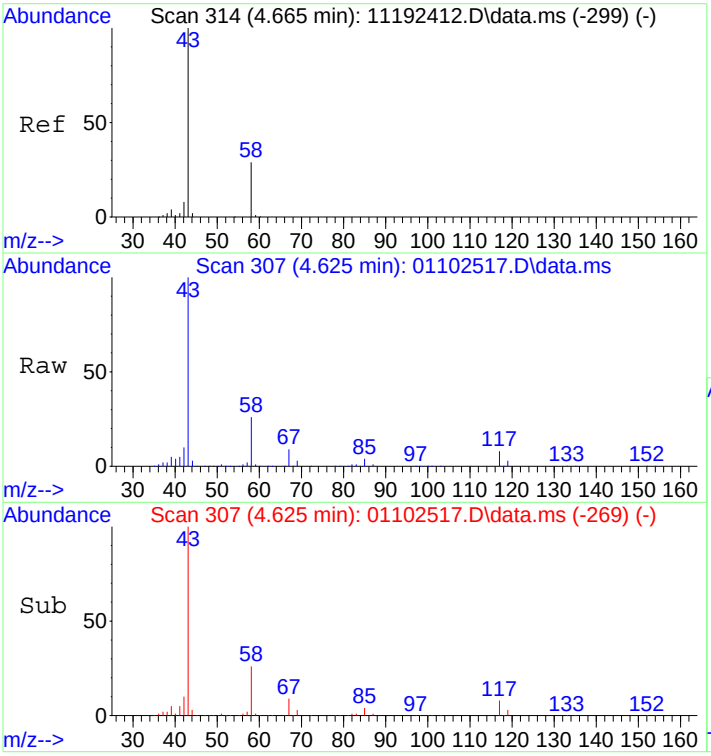


#12
Acrolein
Concen: 0.35 ng
RT: 4.54 min Scan# 292
Delta R.T. -0.014 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 56 Resp: 3082

Ion	Ratio	Lower	Upper
56	100		
55	71.6	53.1	93.1

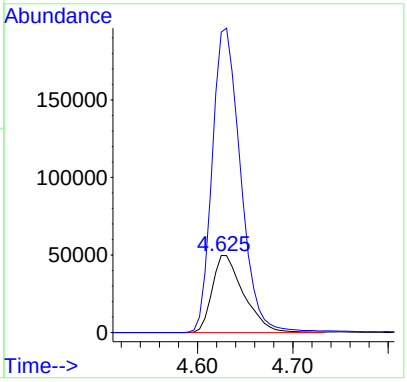


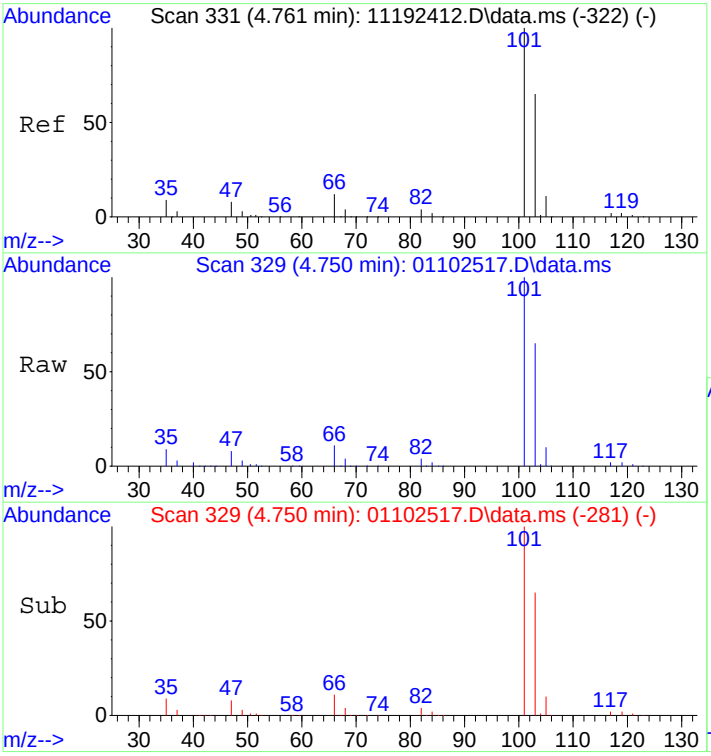


#13
Acetone
Concen: 12.13 ng
RT: 4.62 min Scan# 307
Delta R.T. -0.035 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 58 Resp: 114567

Ion	Ratio	Lower	Upper
58	100		
43	358.5	312.5	372.5

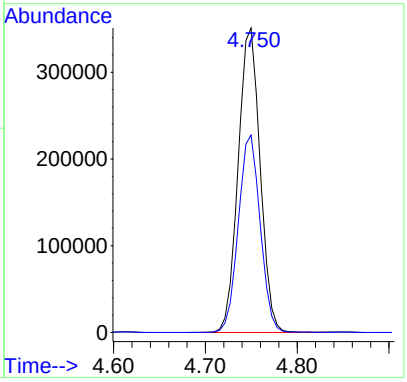


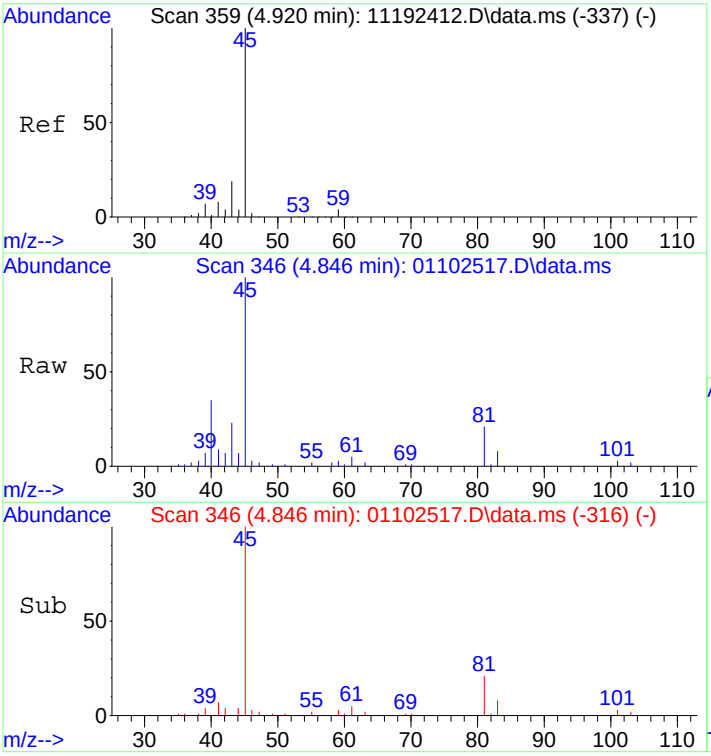


#14
Trichlorofluoromethane
Concen: 22.69 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion:101 Resp: 583557

Ion	Ratio	Lower	Upper
101	100		
103	64.5	44.8	84.8

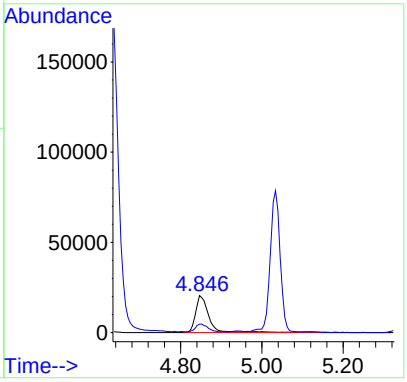


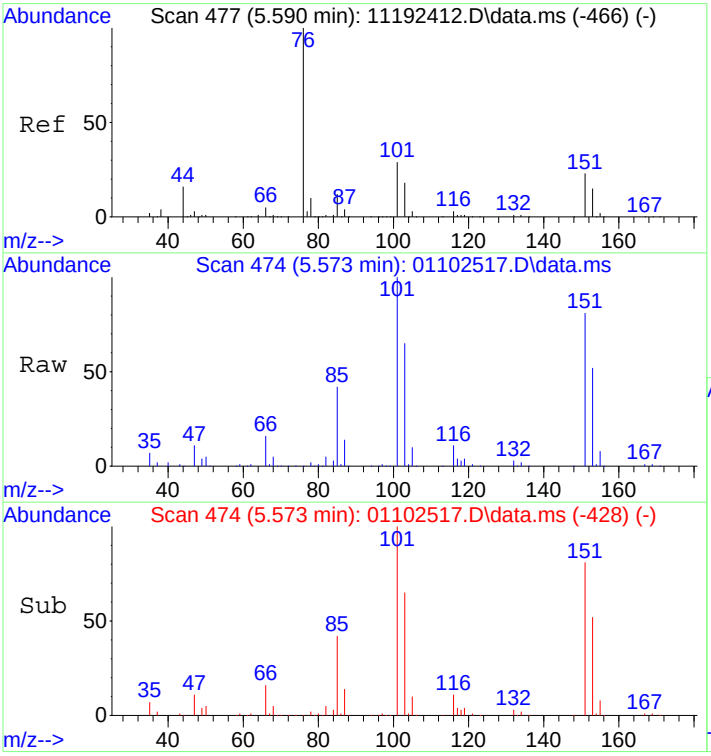


#15
2-Propanol (Isopropanol)
Concen: 1.40 ng
RT: 4.85 min Scan# 346
Delta R.T. -0.078 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 45 Resp: 47369

Ion	Ratio	Lower	Upper
45	100		
43	22.5	0.2	40.2

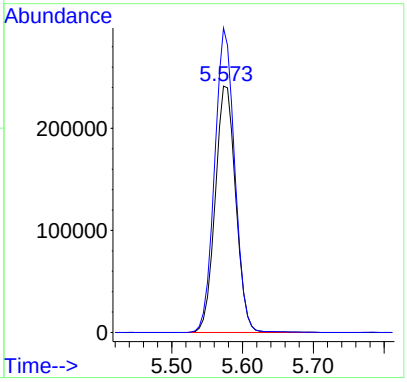


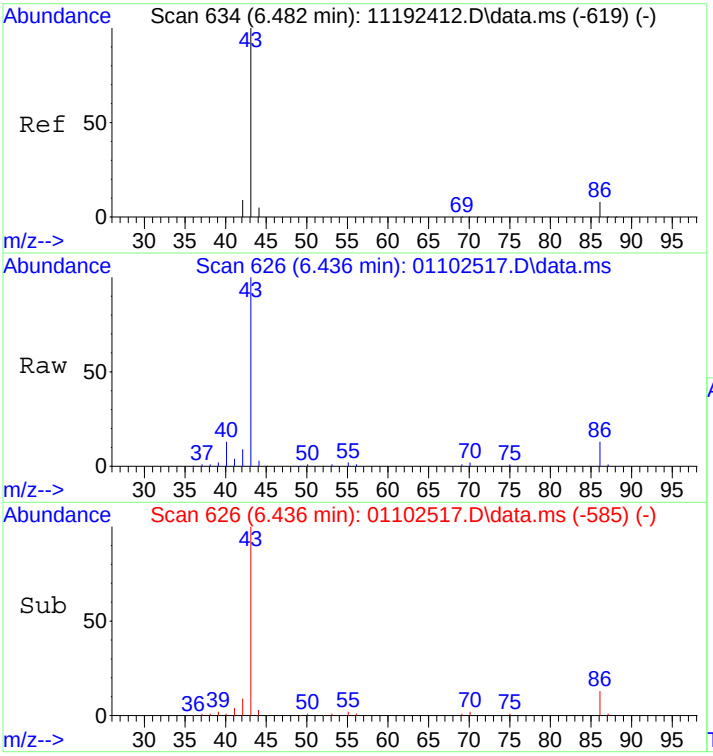


#21
Trichlorotrifluoroethane
Concen: 42.02 ng
RT: 5.57 min Scan# 474
Delta R.T. 0.013 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion:151 Resp: 487557

Ion	Ratio	Lower	Upper
151	100		
101	120.6	105.0	145.0

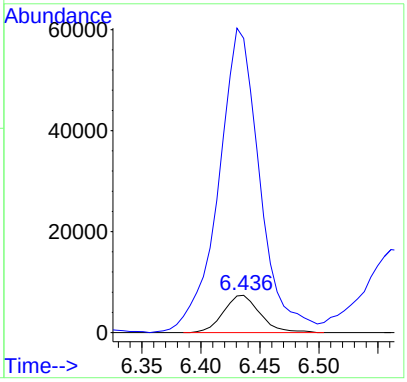


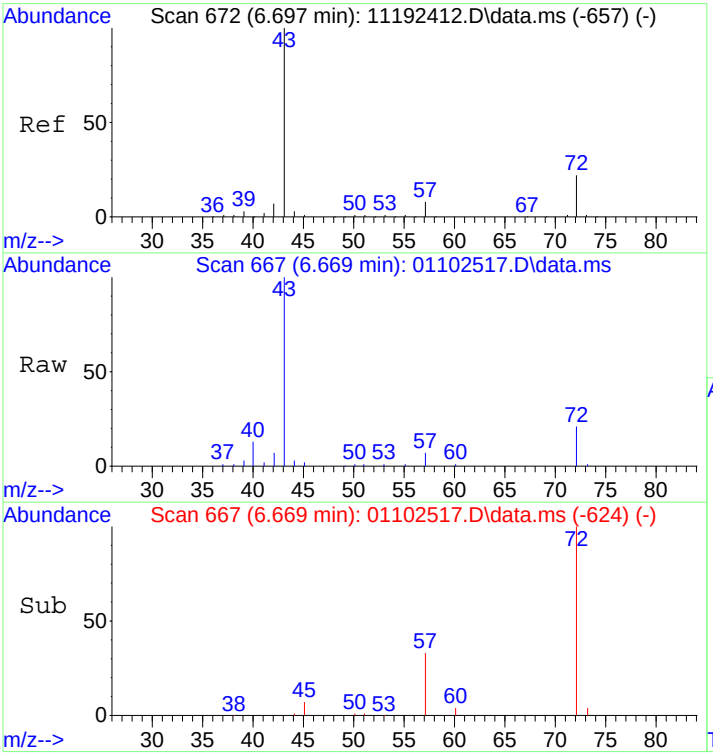


#26
Vinyl Acetate
Concen: 6.97 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 86 Resp: 15924

Ion	Ratio	Lower	Upper
86	100		
43	922.4	1331.6	1371.6#

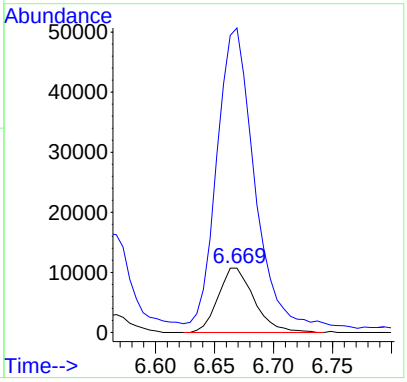


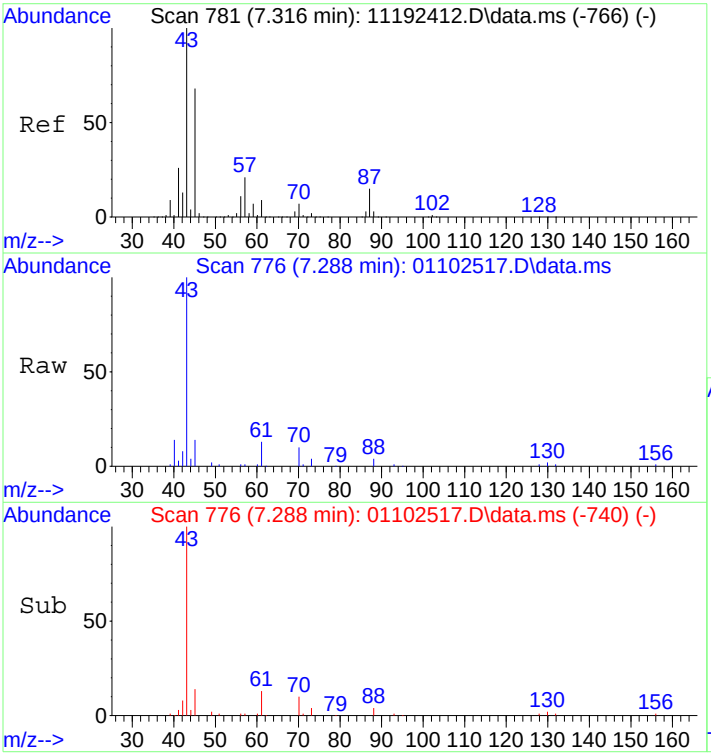


#27
2-Butanone (MEK)
Concen: 3.00 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 72 Resp: 22756

Ion	Ratio	Lower	Upper
72	100		
43	488.6	439.8	479.8#

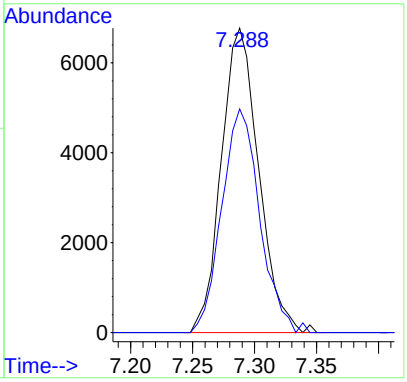


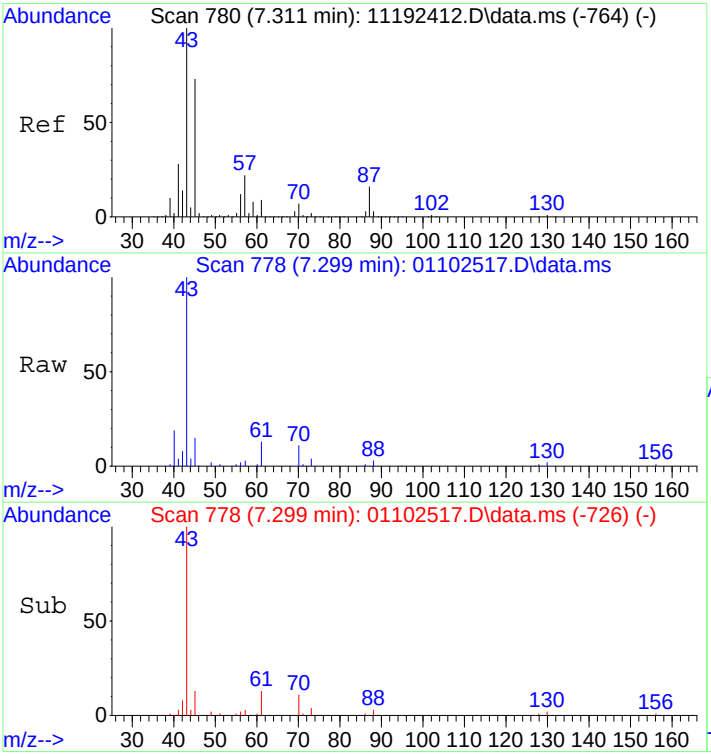


#30
Ethyl Acetate
Concen: 3.04 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 61 Resp: 14244

Ion	Ratio	Lower	Upper
61	100		
70	74.5	57.3	97.3

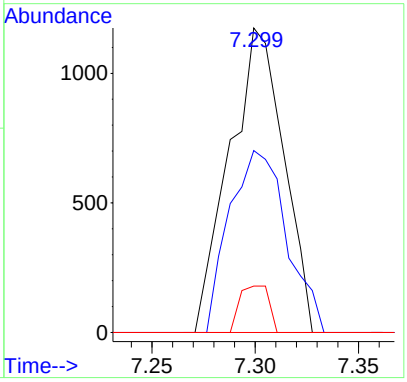


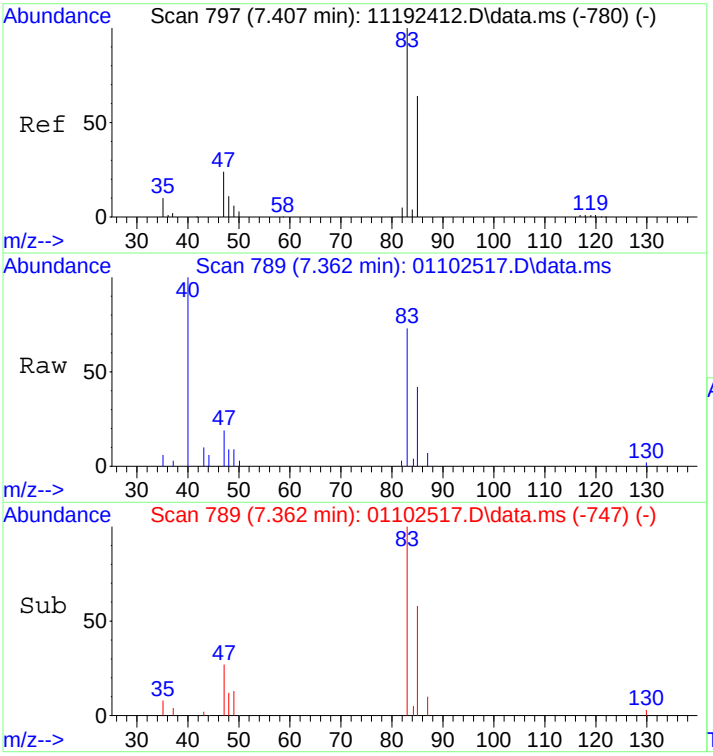


#31
n-Hexane
Concen: 0.10 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 57 Resp: 2144

Ion	Ratio	Lower	Upper
57	100		
56	63.3	43.4	65.0
86	8.3	10.9	16.3#

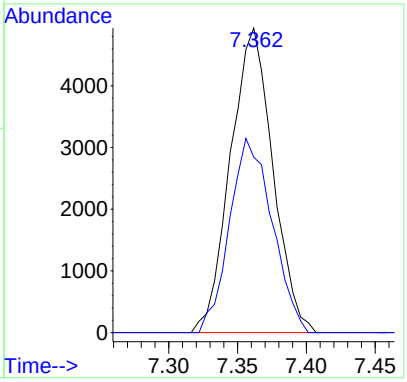


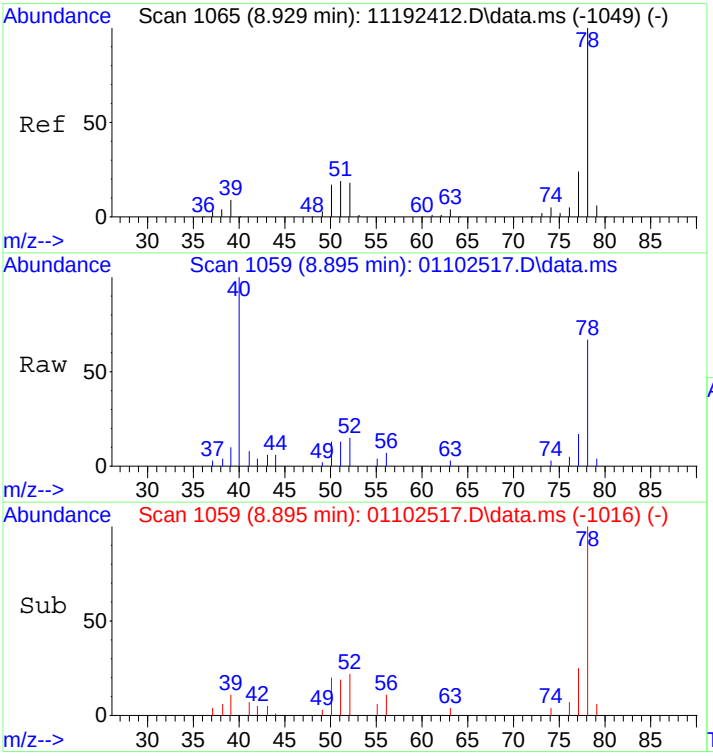


#32
Chloroform
Concen: 0.46 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 83 Resp: 10595

Ion	Ratio	Lower	Upper
83	100		
85	64.1	45.1	85.1

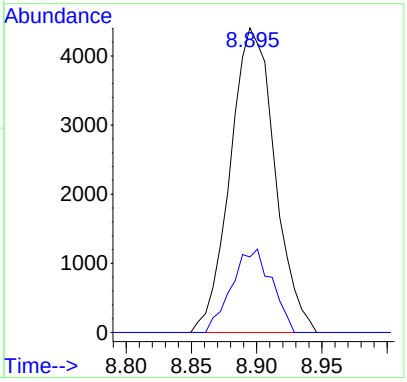


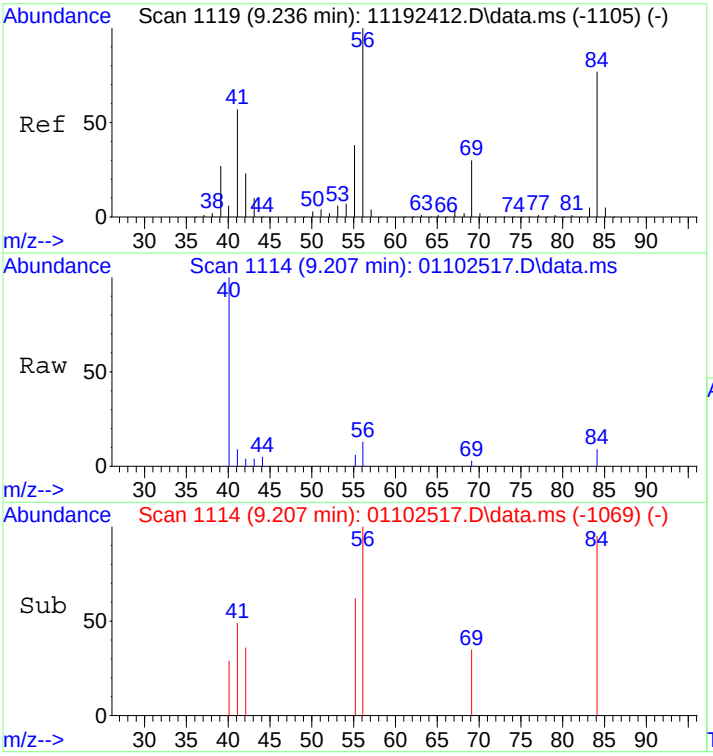


#41
Benzene
Concen: 0.21 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 78 Resp: 10465

Ion	Ratio	Lower	Upper
78	100		
77	24.6	3.7	43.7

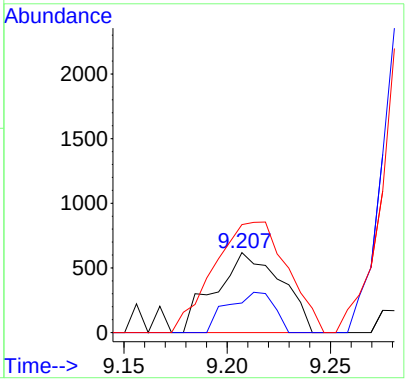


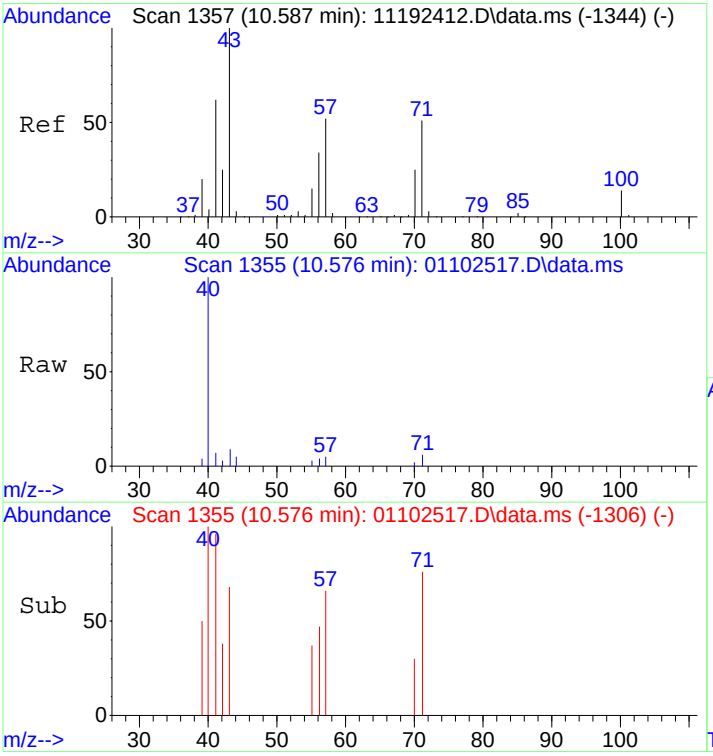


#43
Cyclohexane
Concen: 0.08 ng
RT: 9.21 min Scan# 1114
Delta R.T. 0.005 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 84 Resp: 1374

Ion	Ratio	Lower	Upper
84	100		
69	35.6	18.3	58.3
56	154.2	110.7	150.7#

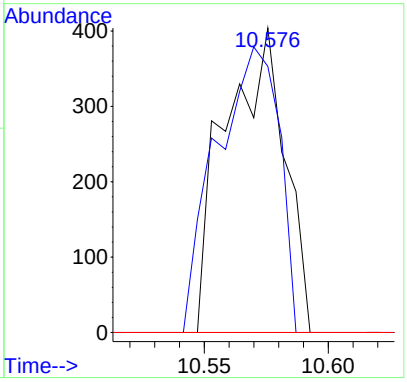


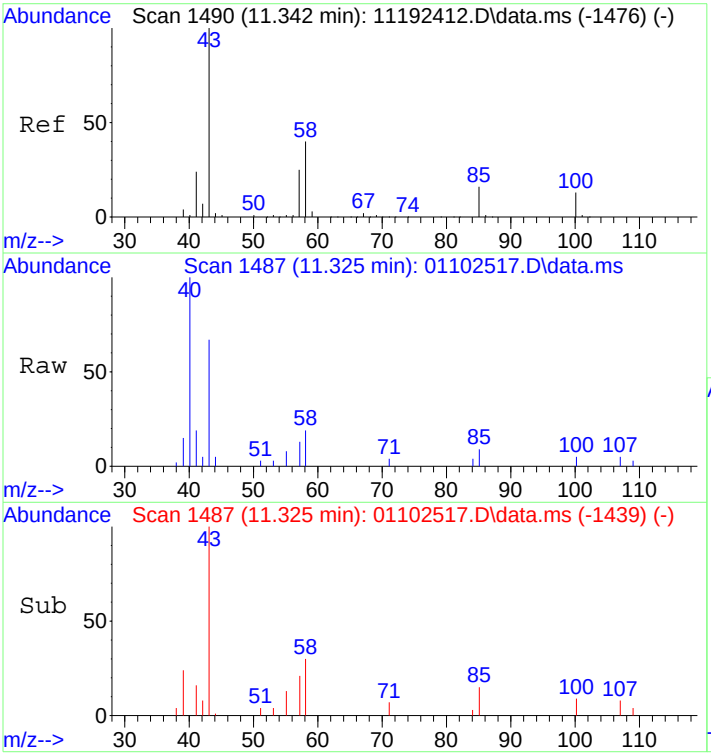


#51
n-Heptane
Concen: 0.06 ng
RT: 10.58 min Scan# 1355
Delta R.T. 0.029 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 71 Resp: 679

Ion	Ratio	Lower	Upper
71	100		
57	98.4	83.3	123.3
100	0.0	8.7	48.7#

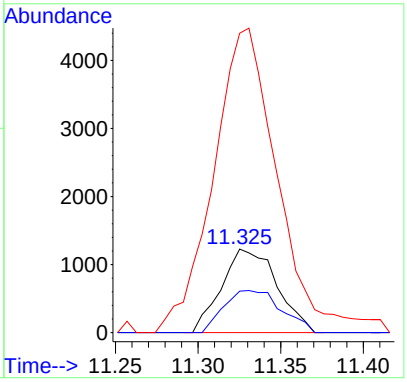


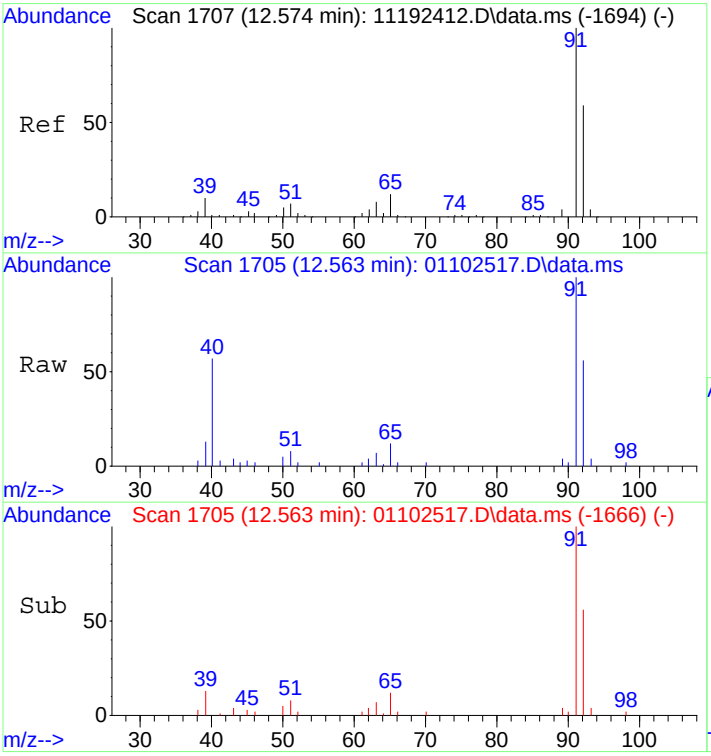


#53
4-Methyl-2-pentanone
Concen: 0.27 ng
RT: 11.33 min Scan# 1487
Delta R.T. 0.022 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 58 Resp: 2867

Ion	Ratio	Lower	Upper
58	100		
85	52.3	33.8	50.6#
43	423.0	199.5	299.3#

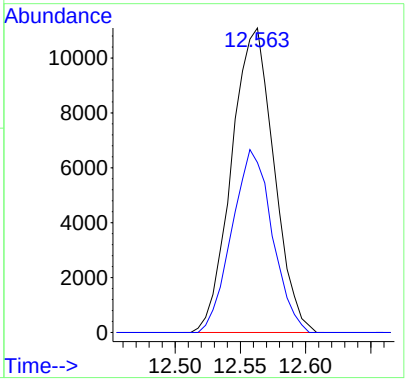


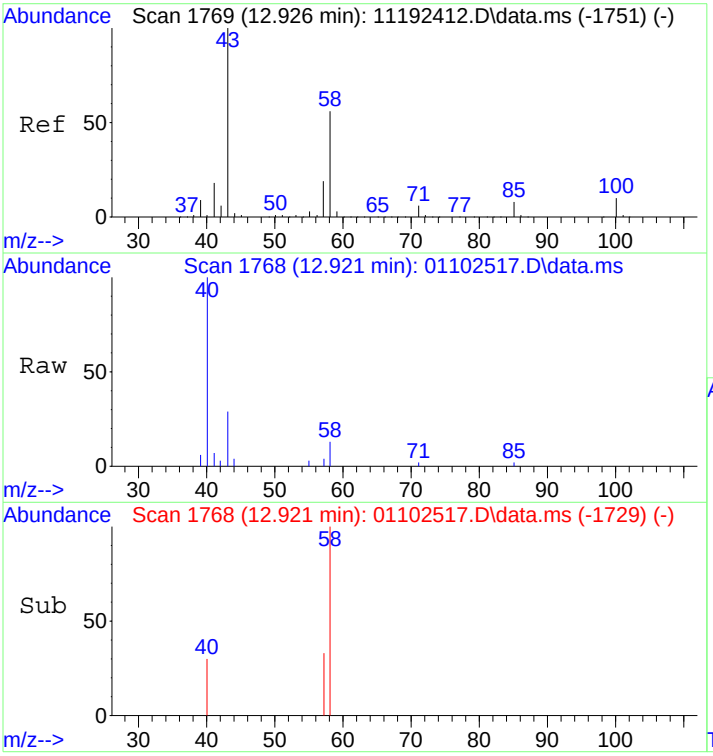


#58
Toluene
Concen: 0.52 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 91 Resp: 25051

Ion	Ratio	Lower	Upper
91	100		
92	57.3	39.2	79.2

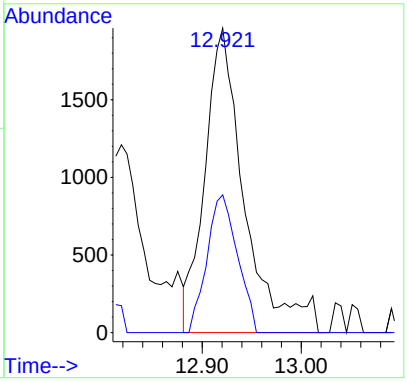


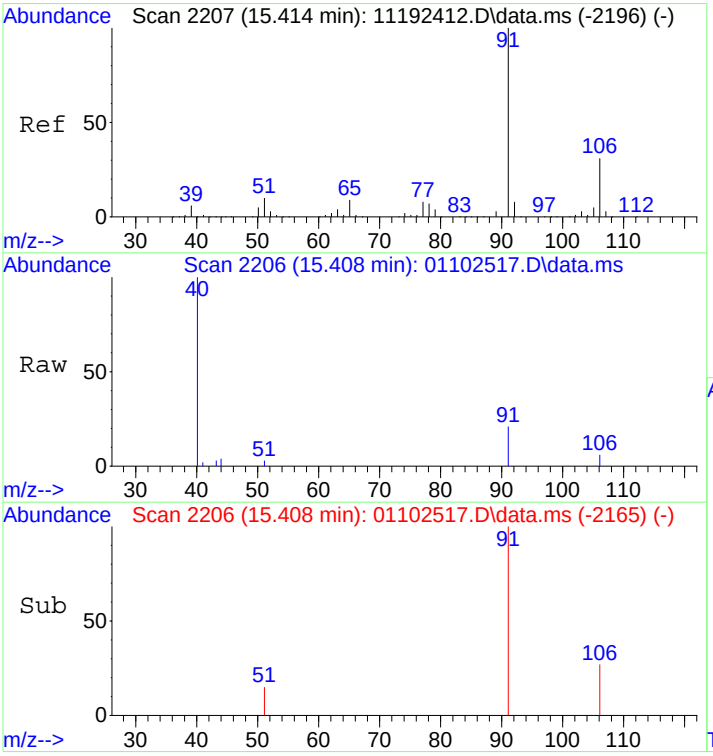


#59
2-Hexanone
Concen: 0.23 ng
RT: 12.92 min Scan# 1768
Delta R.T. -0.028 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 43 Resp: 5449

Ion	Ratio	Lower	Upper
43	100		
58	34.8	35.2	75.2#

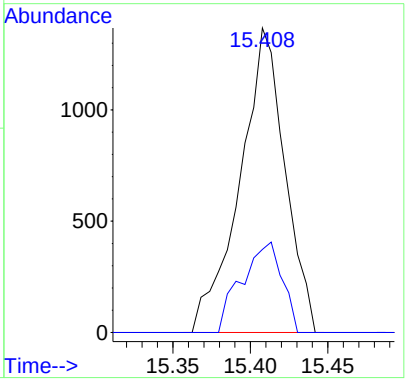


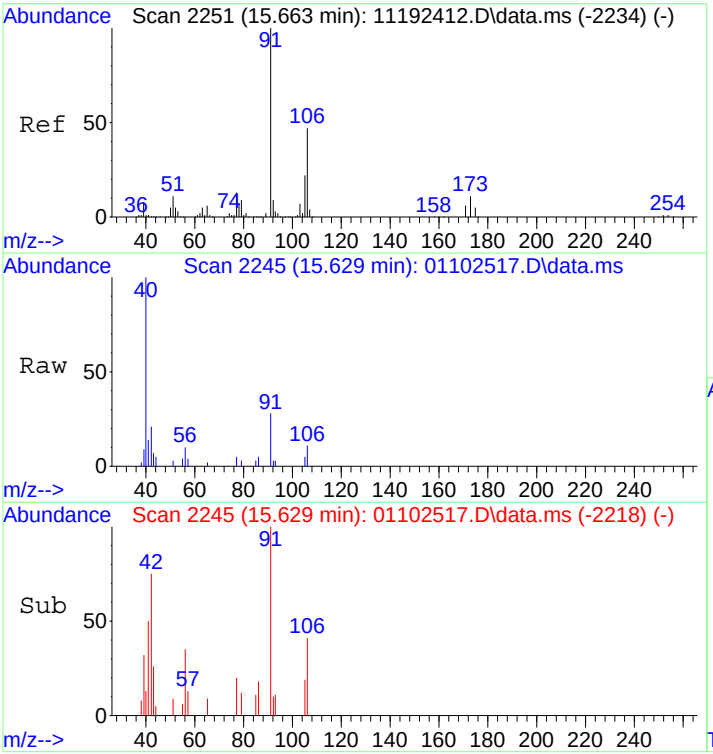


#66
Ethylbenzene
Concen: 0.05 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 91 Resp: 2768

Ion	Ratio	Lower	Upper
91	100		
106	26.7	10.7	50.7

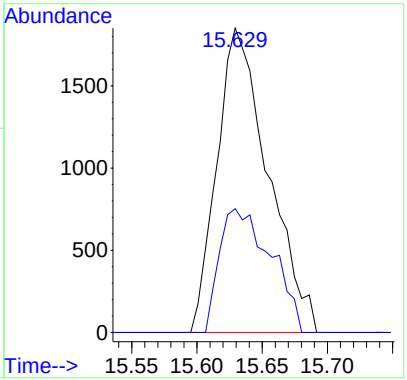


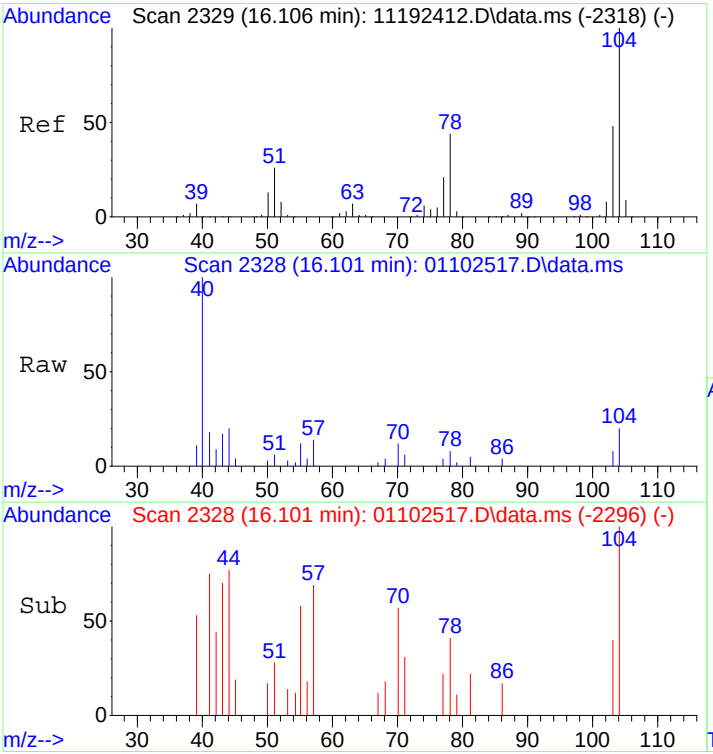


#67
m- & p-Xylenes
Concen: 0.12 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 91 Resp: 5050

Ion	Ratio	Lower	Upper
91	100		
106	40.8	27.1	67.1

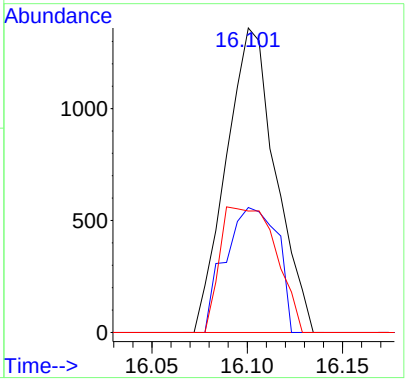


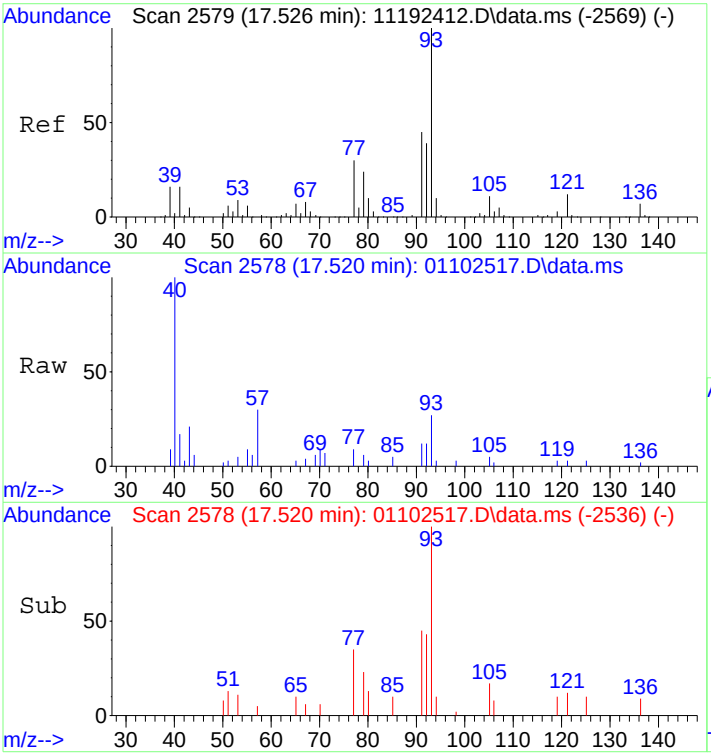


#69
Styrene
Concen: 0.08 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion:104 Resp: 2450

Ion	Ratio	Lower	Upper
104	100		
78	43.4	23.0	63.0
103	46.5	27.5	67.5

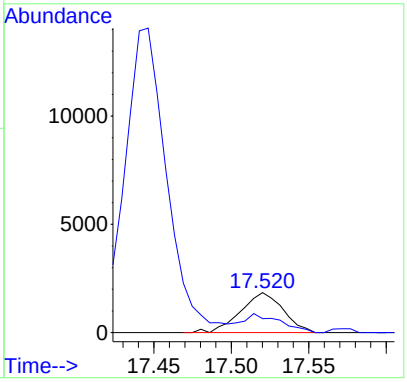


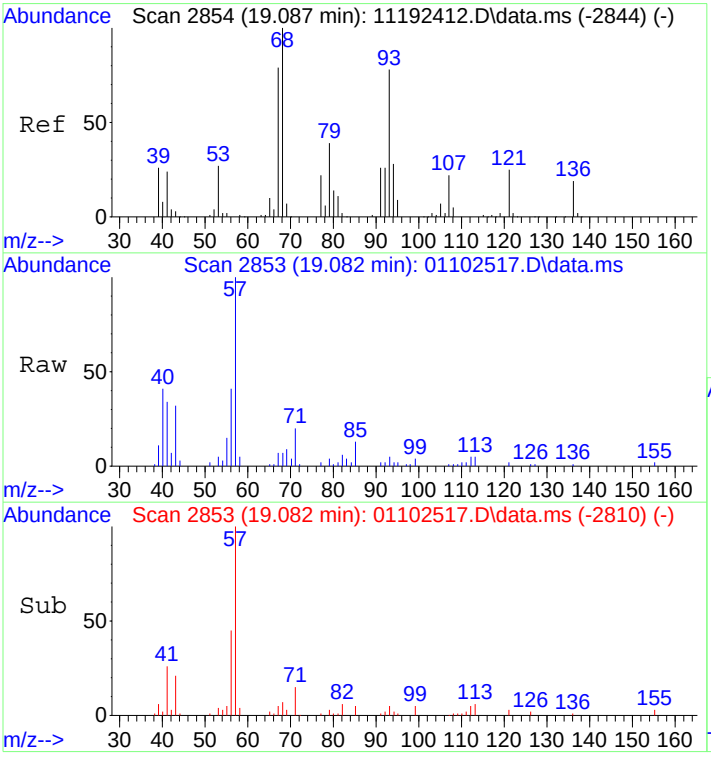


#75
alpha-Pinene
Concen: 0.13 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 93 Resp: 3532

Ion	Ratio	Lower	Upper
93	100		
77	42.7	10.1	50.1

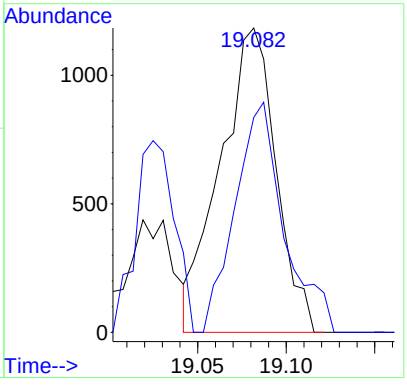




#91
d-Limonene
Concen: 0.18 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01102517.D
Acq: 11 Jan 2025 1:50

Tgt Ion: 68 Resp: 2585

Ion	Ratio	Lower	Upper
68	100		
93	66.6	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 17:55:41 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

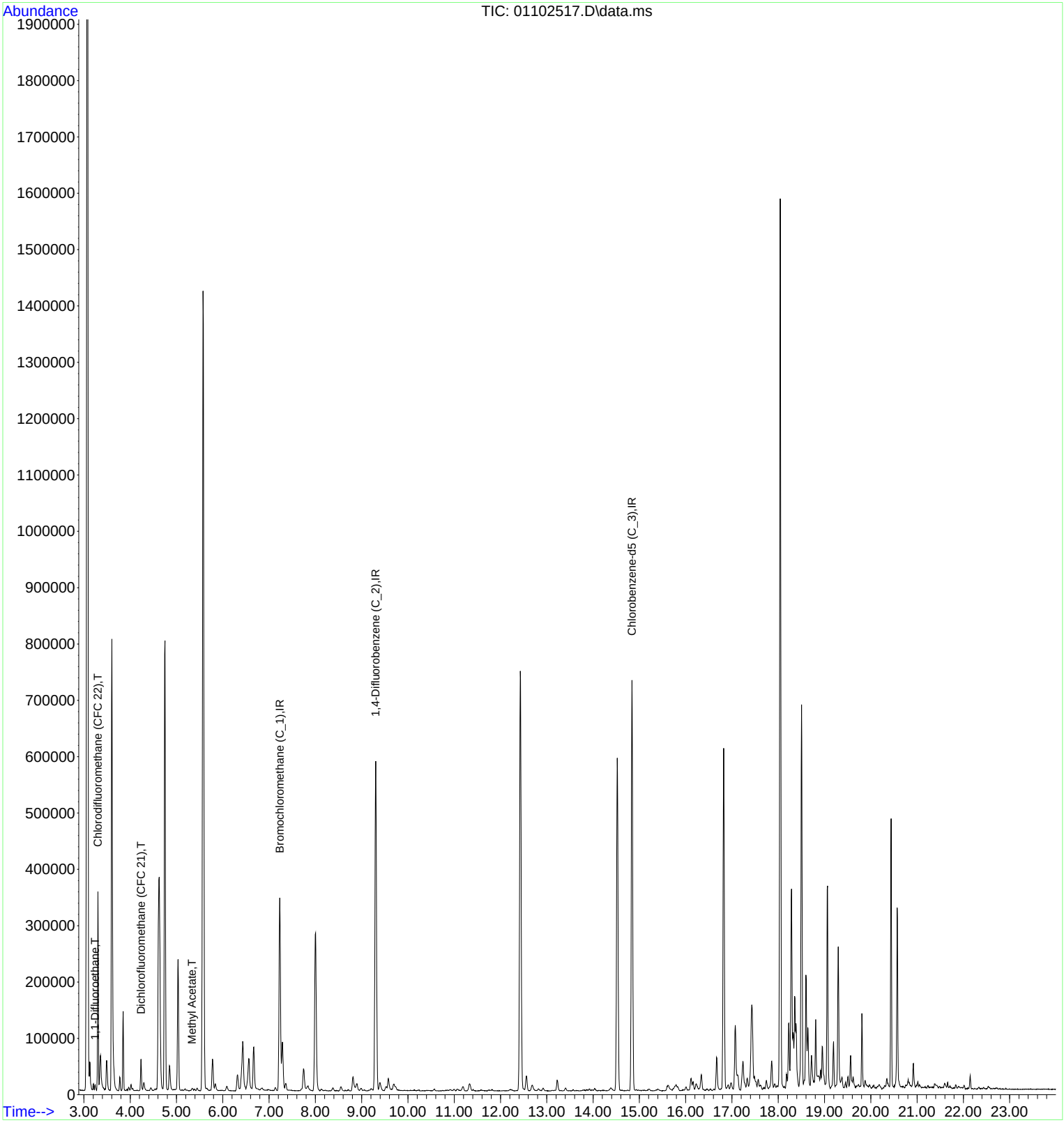
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	140283	12.500 ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	609346	12.500 ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	113566	12.500 ng		0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.14	85	160	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d		
4) 1,1-Difluoroethane	3.24	65	3609	0.318 ng		99
5) Chlorodifluoromethane ...	3.30	67	4315	1.105 ng		86
6) 1-Chloro-1,1-Difluoroe...	3.51	65	467	N.D.		
7) Dichlorofluoromethane ...	4.23	67	43336	1.525 ng		99
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D. d		
10) 2-Methylbutane	0.00	57	0	N.D. d		
11) Methyl Acetate	5.33	43	3817	0.119 ng	#	28
12) 2-Methylpentane	6.48	71	943	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	8.99	84	1075	N.D.		
17) 2,3-Dimethylpentane	9.52	56	1232	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.41	55	1007	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	15.19	91	51	N.D.		
24) 1,2,3-Trichloropropane	16.33	75	530	N.D.		
25) Bromobenzene	17.11	77	59	N.D.		
26) 2-Chlorotoluene	17.61	91	55	N.D.		
27) 4-Chlorotoluene	17.68	91	1626	N.D.		
28) Indane	19.11	117	298	N.D.		
29) Indene	19.21	115	1492	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	107	N.D.		
31) 1,2,3,4-Tetramethylben...	20.22	119	518	N.D.		
32) 1,2,3,5-Tetramethylben...	20.61	119	1315	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

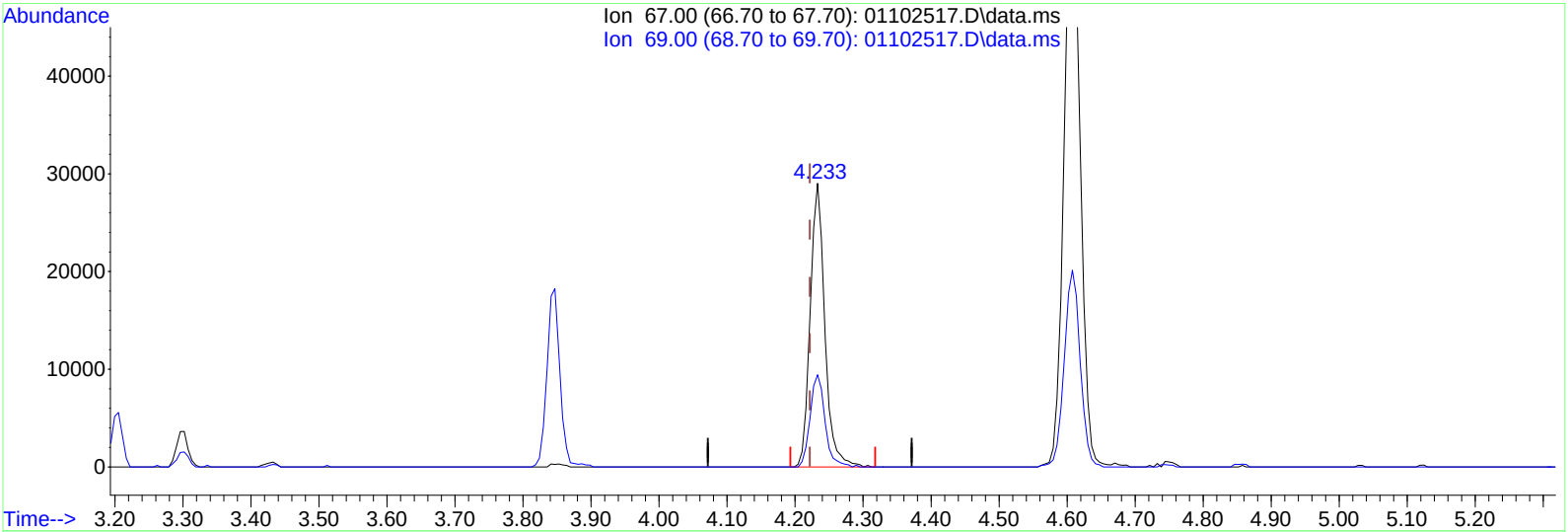
Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

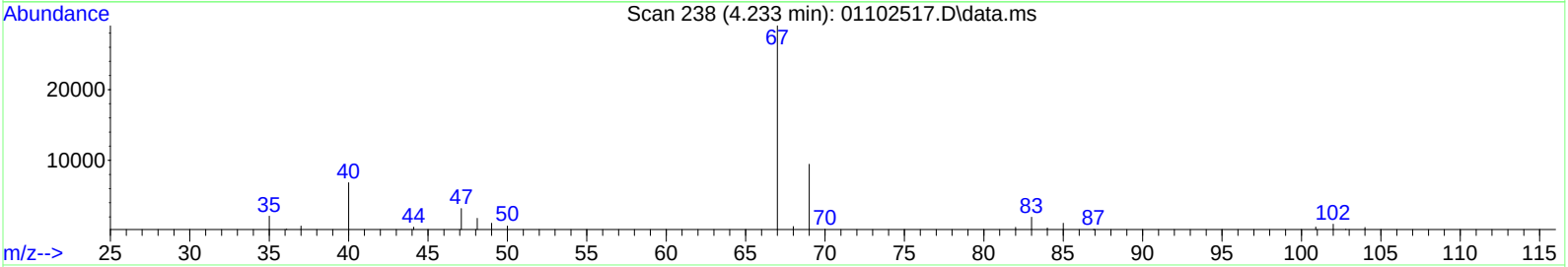
Quant Time: Jan 12 17:55:41 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

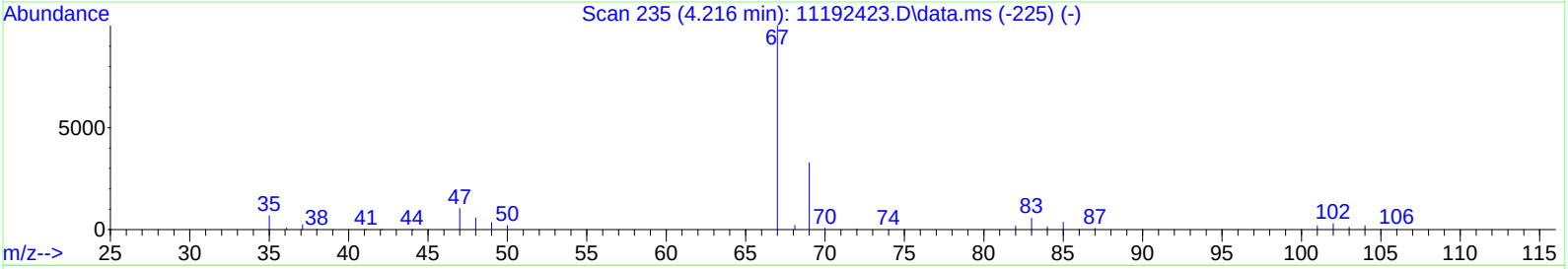


Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 12 17:48:49 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01102517.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 1.52ng

response 43336

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.12
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102517.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.239	60	63	69	rVB2	9955	14583	0.52%	0.050%
2	3.302	69	74	78	rBV	352615	402046	14.25%	1.387%
3	3.359	78	84	99	rVV2	61928	150552	5.34%	0.520%
4	3.489	102	107	117	rVV3	53226	99681	3.53%	0.344%
5	3.603	121	127	152	rVB2	801825	1312701	46.53%	4.530%
6	3.773	152	157	163	rBV	24511	32298	1.14%	0.111%
7	3.847	163	170	176	rBV	140987	181043	6.42%	0.625%
8	4.017	195	200	204	rBV2	9925	13454	0.48%	0.046%
9	4.233	230	238	244	rBV	55987	81701	2.90%	0.282%
10	4.295	244	249	261	rVB	14257	30473	1.08%	0.105%
11	4.449	270	276	282	rBV	4973	10185	0.36%	0.035%
12	4.625	298	307	321	rBV2	375862	1062681	37.67%	3.667%
13	4.750	321	329	340	rVB	797345	1325767	46.99%	4.575%
14	4.846	340	346	359	rVB	43313	84787	3.01%	0.293%
15	5.034	369	379	391	rVB	232604	392662	13.92%	1.355%
16	5.573	463	474	486	rBV	1419886	2821155	100.00%	9.735%
17	5.777	504	510	517	rBV	55304	112707	4.00%	0.389%
18	5.840	517	521	531	rVB3	12025	24895	0.88%	0.086%
19	6.084	558	564	573	rBV3	7618	16583	0.59%	0.057%
20	6.317	597	605	614	rBV	29100	72030	2.55%	0.249%
21	6.430	614	625	637	rVV2	87692	245160	8.69%	0.846%
22	6.561	637	648	660	rVV	56348	160283	5.68%	0.553%
23	6.669	660	667	687	rVB	76154	176313	6.25%	0.608%
24	7.135	743	749	757	rBV5	5519	10929	0.39%	0.038%
25	7.231	757	766	772	rBV	342365	753615	26.71%	2.601%
26	7.288	772	776	784	rVV	85900	181880	6.45%	0.628%
27	7.362	784	789	798	rVB	12312	27081	0.96%	0.093%
28	7.742	850	856	867	rBV	35748	83820	2.97%	0.289%
29	7.844	867	874	880	rVB5	7058	17613	0.62%	0.061%
30	8.003	891	902	916	rBV	280405	678731	24.06%	2.342%
31	8.378	960	968	974	rBV2	5510	12426	0.44%	0.043%
32	8.554	990	999	1013	rBV2	7748	21158	0.75%	0.073%
33	8.815	1037	1045	1053	rBV	24997	65039	2.31%	0.224%
34	8.901	1053	1060	1069	rVB	11986	32794	1.16%	0.113%
35	9.304	1121	1131	1141	rBV	584127	1363524	48.33%	4.705%
36	9.395	1141	1147	1159	rVB	14174	37927	1.34%	0.131%
37	9.531	1164	1171	1174	rBV4	7070	16414	0.58%	0.057%
38	9.576	1174	1179	1191	rVV	20416	46664	1.65%	0.161%
39	9.701	1193	1201	1212	rVB5	10463	36916	1.31%	0.127%
40	11.189	1454	1463	1472	rVB3	7688	21528	0.76%	0.074%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	11.331	1478	1488	1498	rBV3	12668	37685	1.34%	0.130%
42	12.427	1671	1681	1698	rBV	744818	1722289	61.05%	5.943%
43	12.563	1698	1705	1713	rVB	26209	58525	2.07%	0.202%
44	12.682	1718	1726	1732	rBV4	9795	26227	0.93%	0.091%
45	12.921	1761	1768	1775	rBV3	4666	10451	0.37%	0.036%
46	13.222	1814	1821	1830	rVB3	18913	40502	1.44%	0.140%
47	13.403	1845	1853	1863	rVB2	5204	11974	0.42%	0.041%
48	14.034	1959	1964	1974	rVB7	4514	10492	0.37%	0.036%
49	14.380	2012	2025	2039	rBV6	5292	20449	0.72%	0.071%
50	14.522	2039	2050	2060	rBV	590363	1307223	46.34%	4.511%
51	14.840	2095	2106	2119	rBV	728802	1500139	53.17%	5.177%
52	15.618	2233	2243	2259	rBV4	9614	37422	1.33%	0.129%
53	16.010	2305	2312	2317	rBV6	5695	10882	0.39%	0.038%
54	16.118	2322	2331	2335	rBV7	21005	46699	1.66%	0.161%
55	16.163	2335	2339	2344	rVV	14225	25418	0.90%	0.088%
56	16.231	2344	2351	2361	rVV8	10125	28525	1.01%	0.098%
57	16.339	2361	2370	2376	rVB2	26078	55327	1.96%	0.191%
58	16.668	2421	2428	2438	rBV	57933	115267	4.09%	0.398%
59	16.822	2446	2455	2465	rBV	604563	1145243	40.59%	3.952%
60	16.918	2465	2472	2477	rVV5	7004	14530	0.52%	0.050%
61	16.981	2477	2483	2492	rVB5	11213	26387	0.94%	0.091%
62	17.072	2492	2499	2519	rVB	115406	309947	10.99%	1.070%
63	17.236	2519	2528	2539	rBV3	51047	147397	5.22%	0.509%
64	17.333	2539	2545	2550	rVV6	19653	42754	1.52%	0.148%
65	17.429	2550	2562	2570	rVV3	149796	449800	15.94%	1.552%
66	17.486	2570	2572	2582	rVV9	22624	57502	2.04%	0.198%
67	17.566	2582	2586	2592	rVV2	17692	37967	1.35%	0.131%
68	17.611	2592	2594	2602	rVB7	7520	15253	0.54%	0.053%
69	17.747	2612	2618	2626	rBV4	14821	27413	0.97%	0.095%
70	17.861	2630	2638	2644	rVV2	47631	96919	3.44%	0.334%
71	17.923	2644	2649	2654	rVB5	6543	11853	0.42%	0.041%
72	18.042	2661	2670	2684	rVB	1577920	2619089	92.84%	9.038%
73	18.179	2689	2694	2697	rBV2	25290	38808	1.38%	0.134%
74	18.230	2697	2703	2707	rVV	111885	200788	7.12%	0.693%
75	18.287	2707	2713	2717	rVV	349484	646567	22.92%	2.231%
76	18.321	2717	2719	2722	rVV2	94307	140054	4.96%	0.483%
77	18.355	2722	2725	2729	rVV	158012	283564	10.05%	0.979%
78	18.383	2729	2730	2741	rVB2	111344	149485	5.30%	0.516%
79	18.502	2741	2751	2758	rBV	677618	1137107	40.31%	3.924%
80	18.599	2763	2768	2772	rVV	199180	336881	11.94%	1.163%
81	18.639	2772	2775	2784	rVV	105928	186548	6.61%	0.644%
82	18.718	2784	2789	2798	rVV2	56402	120674	4.28%	0.416%
83	18.809	2798	2805	2820	rVV	119777	256140	9.08%	0.884%
84	18.917	2820	2824	2826	rVV2	29604	44548	1.58%	0.154%
85	18.951	2826	2830	2841	rVV	71738	156934	5.56%	0.542%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

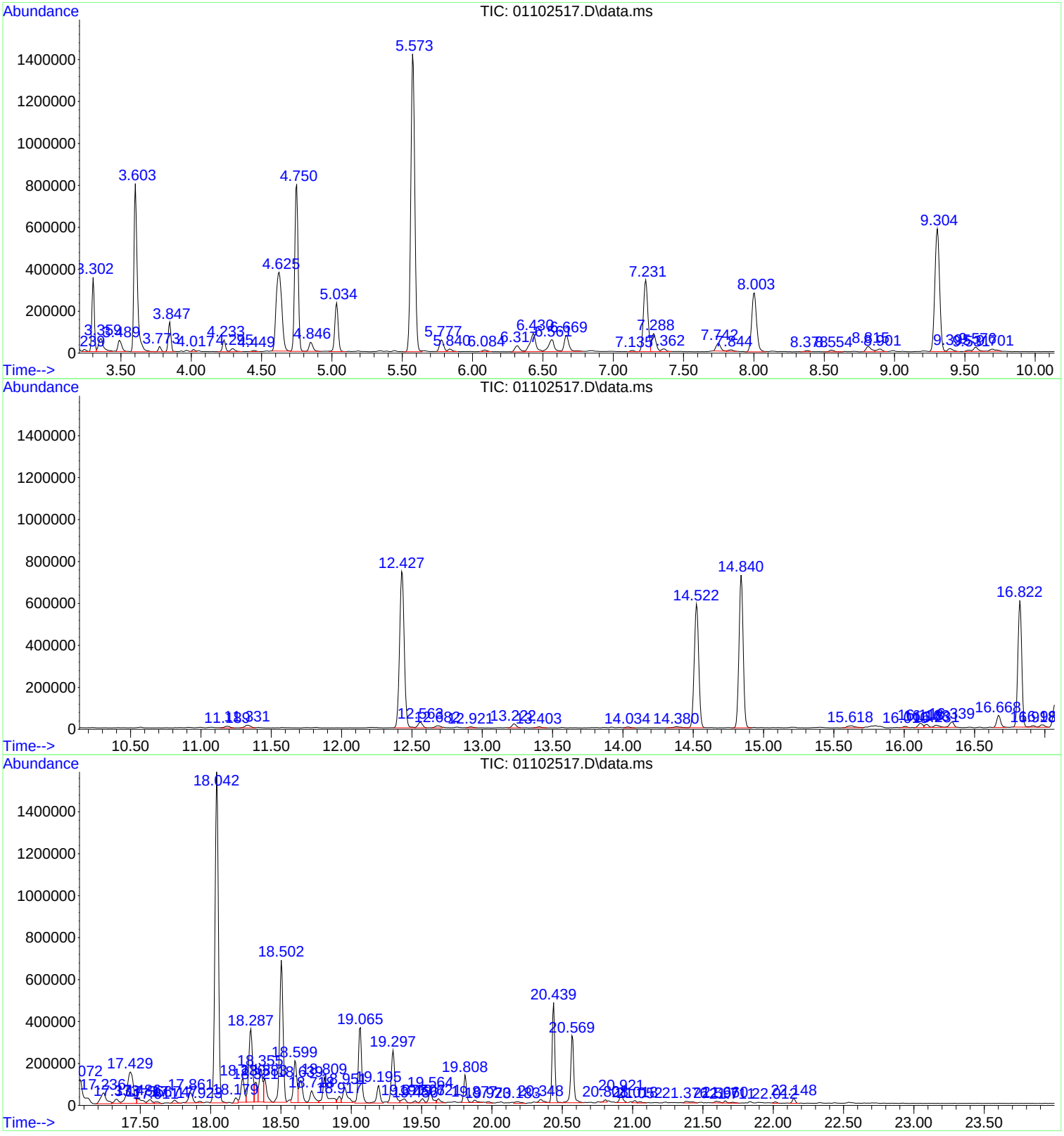
86	19.065	2843	2850	2861	rVB	359637	581040	20.60%	2.005%
87	19.195	2861	2873	2879	rBV	83661	141322	5.01%	0.488%
88	19.297	2884	2891	2899	rVV	250249	434842	15.41%	1.501%
89	19.377	2900	2905	2914	rVB6	18908	39664	1.41%	0.137%
90	19.456	2914	2919	2923	rBV4	9814	13980	0.50%	0.048%
91	19.507	2923	2928	2932	rVV4	19777	32639	1.16%	0.113%
92	19.564	2932	2938	2945	rVV	57418	103684	3.68%	0.358%
93	19.621	2945	2948	2957	rVB2	19143	33205	1.18%	0.115%
94	19.808	2976	2981	2989	rVB	130250	172024	6.10%	0.594%
95	19.877	2989	2993	3003	rBV4	11190	22143	0.78%	0.076%
96	19.973	3008	3010	3016	rVB5	6384	10142	0.36%	0.035%
97	20.183	3042	3047	3057	rVB7	8081	24001	0.85%	0.083%
98	20.348	3071	3076	3086	rVB4	14392	29199	1.04%	0.101%
99	20.439	3086	3092	3103	rVB2	477468	628347	22.27%	2.168%
100	20.569	3103	3115	3130	rBV2	319094	489140	17.34%	1.688%
101	20.808	3150	3157	3159	rBV5	11408	15728	0.56%	0.054%
102	20.921	3170	3177	3186	rVV2	42042	69748	2.47%	0.241%
103	21.018	3190	3194	3197	rVV3	10759	15746	0.56%	0.054%
104	21.052	3197	3200	3208	rVB8	5726	10998	0.39%	0.038%
105	21.376	3254	3257	3272	rVB8	7215	25213	0.89%	0.087%
106	21.597	3290	3296	3303	rBV4	7939	18795	0.67%	0.065%
107	21.660	3303	3307	3311	rVV2	10633	14014	0.50%	0.048%
108	21.711	3311	3316	3324	rVB9	5076	10570	0.37%	0.036%
109	22.012	3366	3369	3374	rVB6	6878	11230	0.40%	0.039%
110	22.148	3387	3393	3399	rVB	23930	33726	1.20%	0.116%

Sum of corrected areas: 28978587

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:50
Operator : CG
Sample : P2405139-047 (400mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102517.D
Acq On : 11 Jan 2025 1:500
Operator : CGG
Sample : P2405139-047 (400mL))
Misc : S37-123124011
ALS Vial : 14 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

MA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 14:27:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143067	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	620695	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	115280	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	260086	13.343	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%				
57) Toluene-d8 (SS2)	12.43	98	645049	12.613	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.88%				
73) Bromofluorobenzene (SS3)	16.82	174	217410	12.319	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.56%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.31	85	12436	0.445	ng	#	91
4) Chloromethane	3.52	50	1945	0.094	ng		94
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	349	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.77	54	247	N.D.			
8) Bromomethane	4.02	94	608	0.060	ng	#	76
9) Chloroethane	0.00	64	0	N.D. d			
10) Ethanol	4.29	45	18879	1.784	ng		98
11) Acetonitrile	4.45	41	2675	0.098	ng	#	1
12) Acrolein	4.54	56	1748	0.193	ng		98
13) Acetone	4.63	58	54513	5.659	ng		92
14) Trichlorofluoromethane	4.75	101	1619012	61.729	ng		100
15) 2-Propanol (Isopropanol)	4.95	45	296	N.D.			
16) Acrylonitrile	5.03	53	568	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.35	84	872	0.064	ng		93
20) 3-Chloro-1-propene (Al...	5.39	41	850	N.D.			
21) Trichlorotrifluoroethane	5.58	151	899346	76.001	ng		96
22) Carbon Disulfide	5.59	76	182072	4.178	ng		62
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.44	86	3112	1.335	ng	#	65
27) 2-Butanone (MEK)	6.67	72	5128	0.663	ng	#	73
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.29	87	407	N.D.			
30) Ethyl Acetate	7.29	61	6624	1.387	ng		95
31) n-Hexane	7.30	57	5036	0.234	ng		97
32) Chloroform	7.36	83	21253	0.913	ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.81	56	10656	No Calib		#	
41) Benzene	8.90	78	6320	0.127	ng		99
42) Carbon Tetrachloride	9.07	117	407	N.D.			
43) Cyclohexane	9.22	84	408	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	438	N.D.			
47) Trichloroethene	10.14	130	663	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

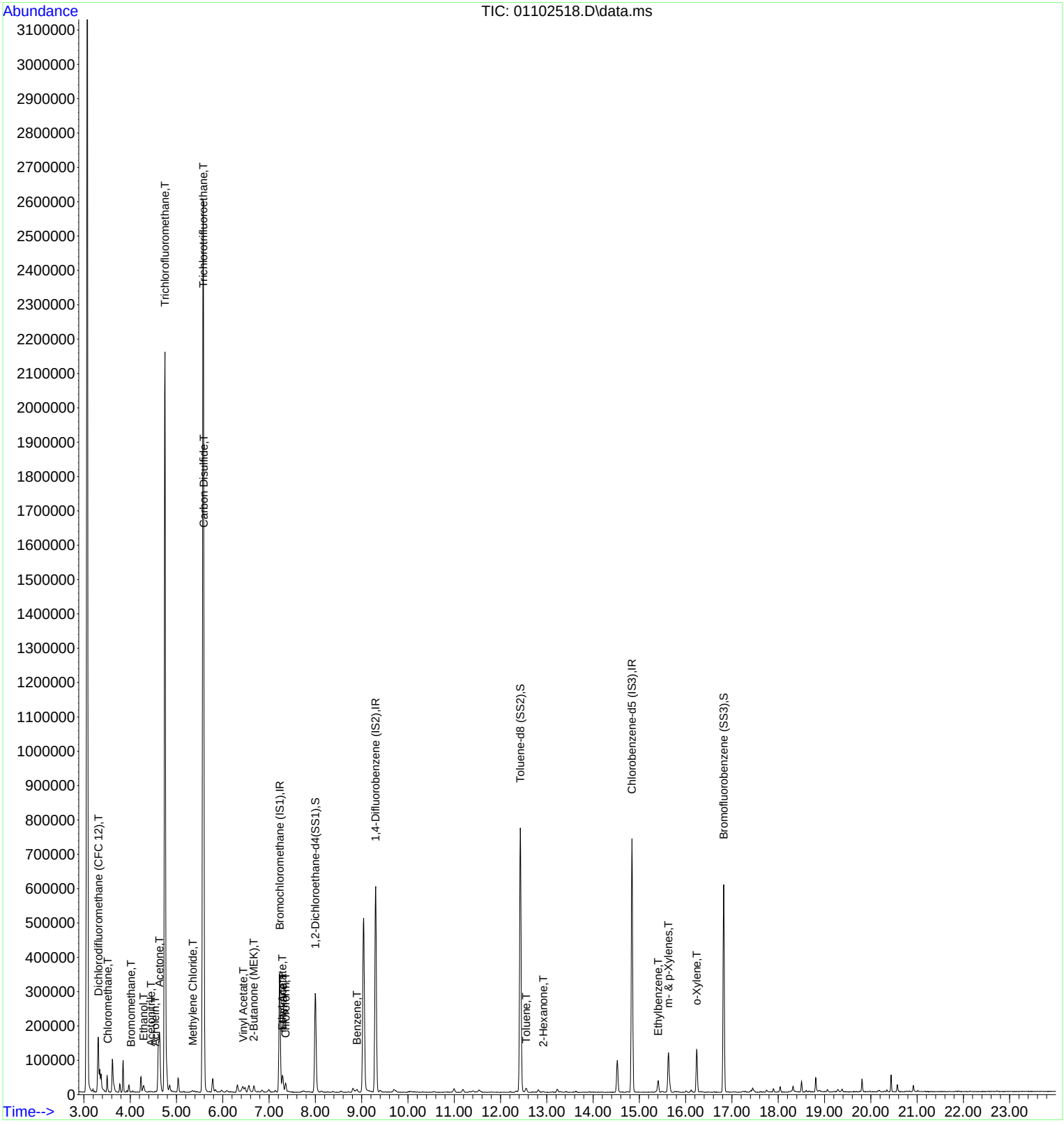
Quant Time: Jan 12 14:27:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.22	57	350	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.56	71	478	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.34	58	341	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	7000	0.142 ng		97
59) 2-Hexanone	12.93	43	3010	0.126 ng	#	71
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.79	43	426	N.D.		
63) n-Octane	13.91	57	248	N.D.		
64) Tetrachloroethene	14.03	166	381	N.D.		
65) Chlorobenzene	14.89	112	184	N.D.		
66) Ethylbenzene	15.41	91	25950	0.477 ng		99
67) m- & p-Xylenes	15.63	91	92982	2.088 ng		100
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	16.24	91	87710	1.990 ng		98
71) n-Nonane	16.62	43	1062	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	1714	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.67	91	626	N.D.		
77) 3-Ethyltoluene	17.03	105	1714	No Calib		
78) 4-Ethyltoluene	17.86	105	237	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	1714	No Calib		
82) 1,2,4-Trimethylbenzene	18.42	105	516	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.56	91	184	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	18.74	105	137	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	579	N.D.		
89) 1,2,3-Trimethylbenzene	17.03	105	1714	No Calib		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	321	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	530	N.D.		
95) Naphthalene	20.94	128	1028	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.30	225	109	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	571	N.D.		
100) n-Butylbenzene	19.37	91	667	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 12 14:27:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

MOA 1/12/25

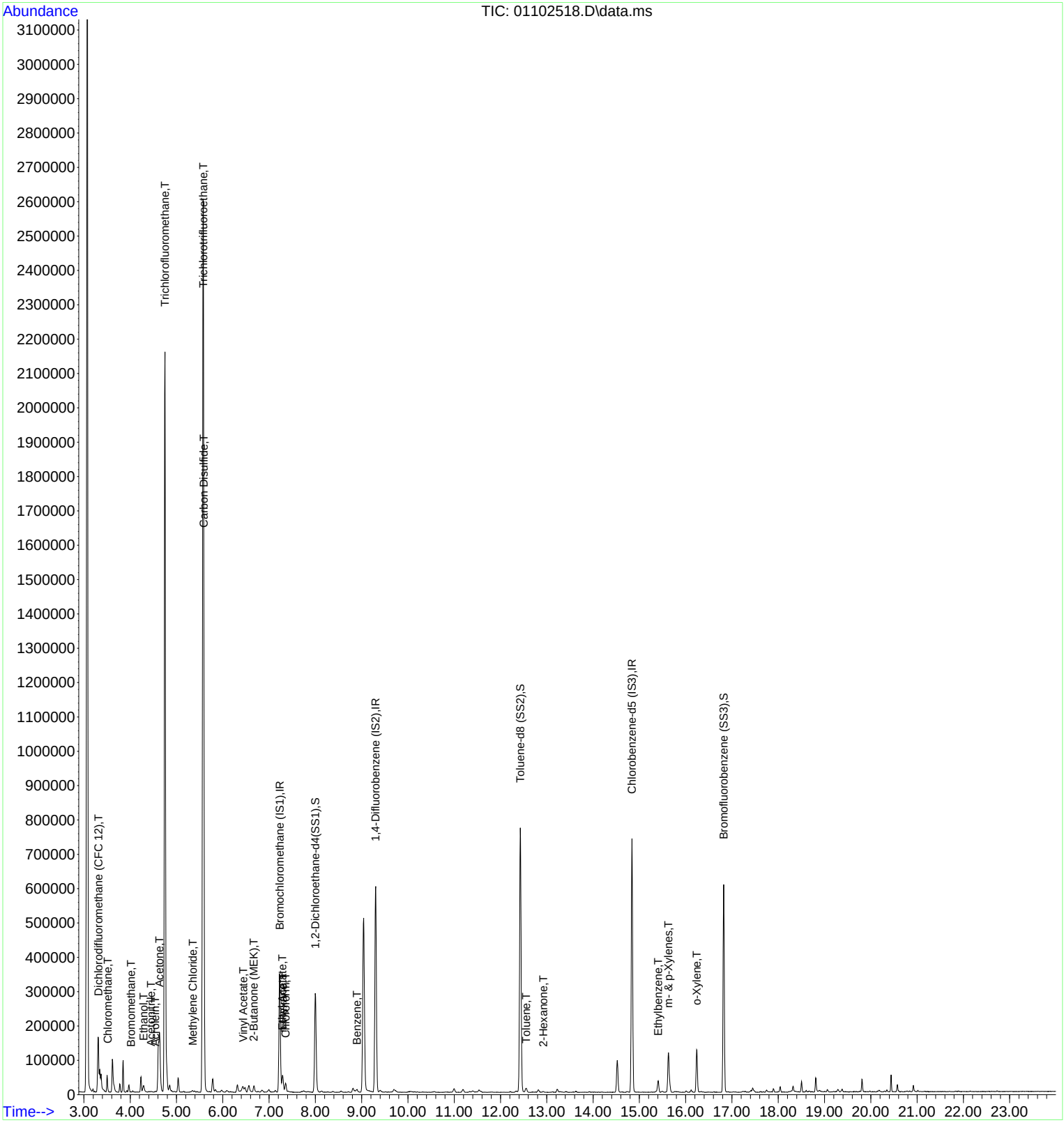
Quant Time: Jan 12 14:27:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

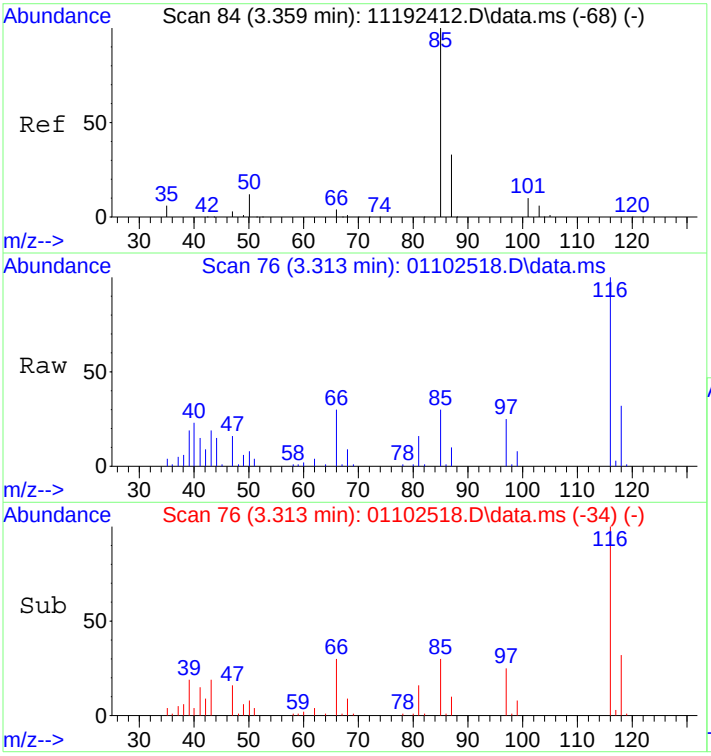
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143067	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	620695	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	115280	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	260086	13.343	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%				
57) Toluene-d8 (SS2)	12.43	98	645049	12.613	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.88%				
73) Bromofluorobenzene (SS3)	16.82	174	217410	12.319	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.56%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.31	85	12436	0.445	ng	#	91
4) Chloromethane	3.52	50	1945	0.094	ng		94
8) Bromomethane	4.02	94	608	0.060	ng	#	76
10) Ethanol	4.29	45	18879	1.784	ng		98
11) Acetonitrile	4.45	41	2675	0.098	ng	#	1
12) Acrolein	4.54	56	1748	0.193	ng		98
13) Acetone	4.63	58	54513	5.659	ng		92
14) Trichlorofluoromethane	4.75	101	1619012	61.729	ng		100
19) Methylene Chloride	5.35	84	872	0.064	ng		93
21) Trichlorotrifluoroethane	5.58	151	899346	76.001	ng		96
22) Carbon Disulfide	5.59	76	182072	4.178	ng		62
26) Vinyl Acetate	6.44	86	3112	1.335	ng	#	65
27) 2-Butanone (MEK)	6.67	72	5128	0.663	ng	#	73
30) Ethyl Acetate	7.29	61	6624	1.387	ng		95
31) n-Hexane	7.30	57	5036	0.234	ng		97
32) Chloroform	7.36	83	21253	0.913	ng		99
41) Benzene	8.90	78	6320	0.127	ng		99
58) Toluene	12.56	91	7000	0.142	ng		97
59) 2-Hexanone	12.93	43	3010	0.126	ng	#	71
66) Ethylbenzene	15.41	91	25950	0.477	ng		99
67) m- & p-Xylenes	15.63	91	92982	2.088	ng		100
70) o-Xylene	16.24	91	87710	1.990	ng		98

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

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 12 14:27:21 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

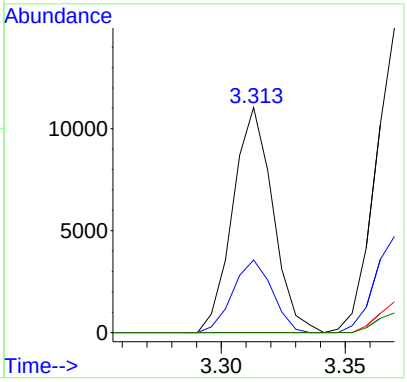


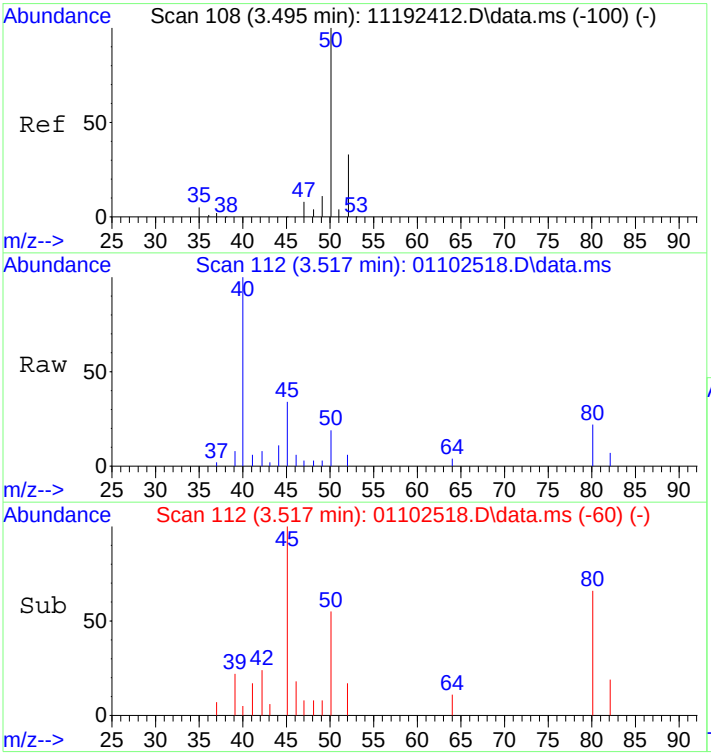


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.44 ng
RT: 3.31 min Scan# 76
Delta R.T. -0.014 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 85 Resp: 12436

Ion	Ratio	Lower	Upper
85	100		
87	31.7	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

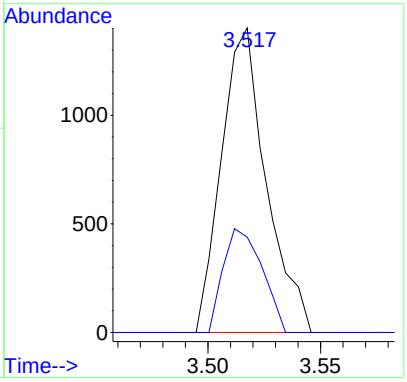


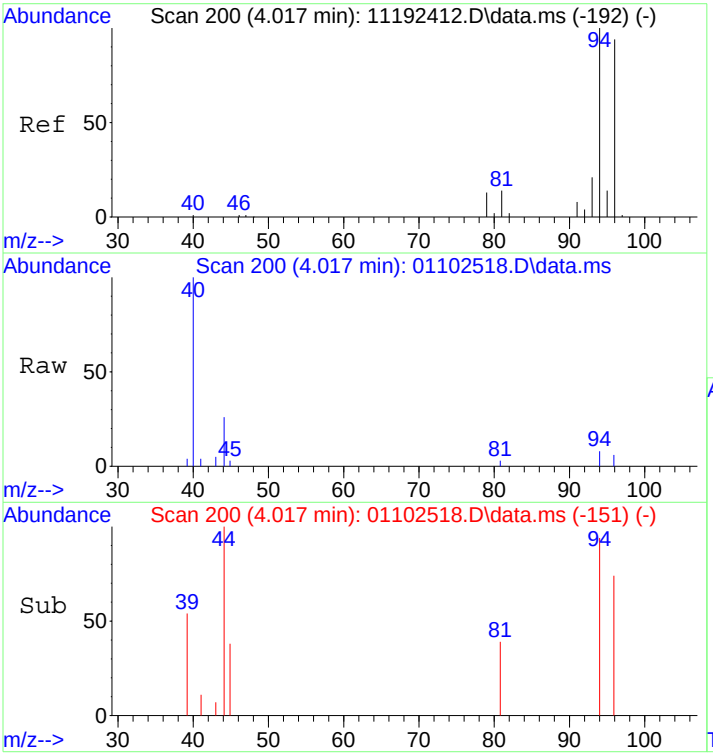


#4
Chloromethane
Concen: 0.09 ng
RT: 3.52 min Scan# 112
Delta R.T. 0.044 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 50 Resp: 1945

Ion	Ratio	Lower	Upper
50	100		
52	29.6	13.0	53.0

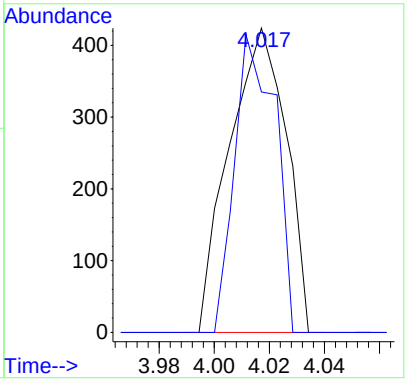


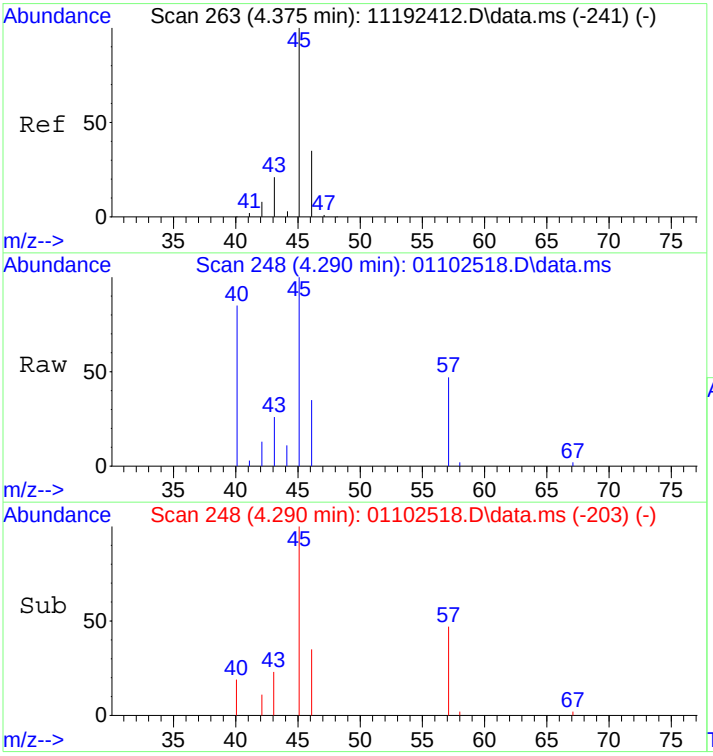


#8
Bromomethane
Concen: 0.06 ng
RT: 4.02 min Scan# 200
Delta R.T. 0.026 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 94 Resp: 608

Ion	Ratio	Lower	Upper
94	100		
96	70.1	73.5	113.5#

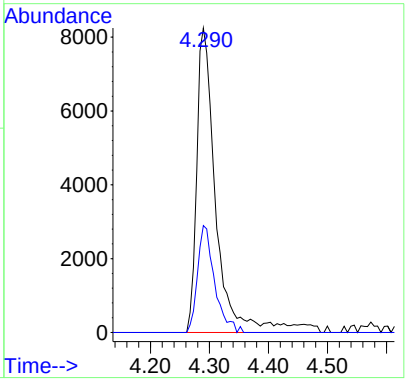


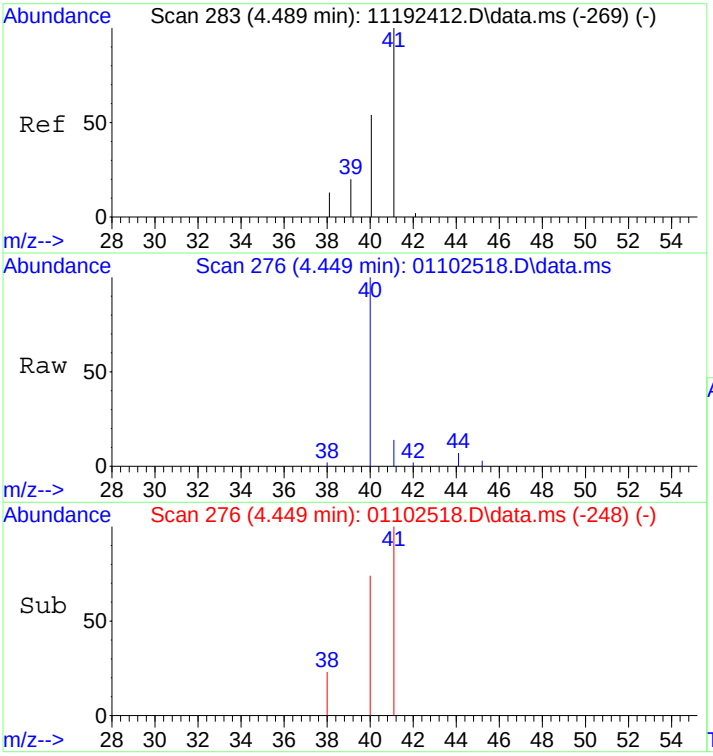


#10
Ethanol
Concen: 1.78 ng
RT: 4.29 min Scan# 248
Delta R.T. 0.005 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 45 Resp: 18879

Ion	Ratio	Lower	Upper
45	100		
46	30.8	11.8	51.8

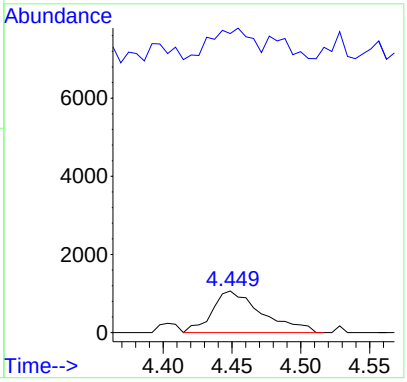


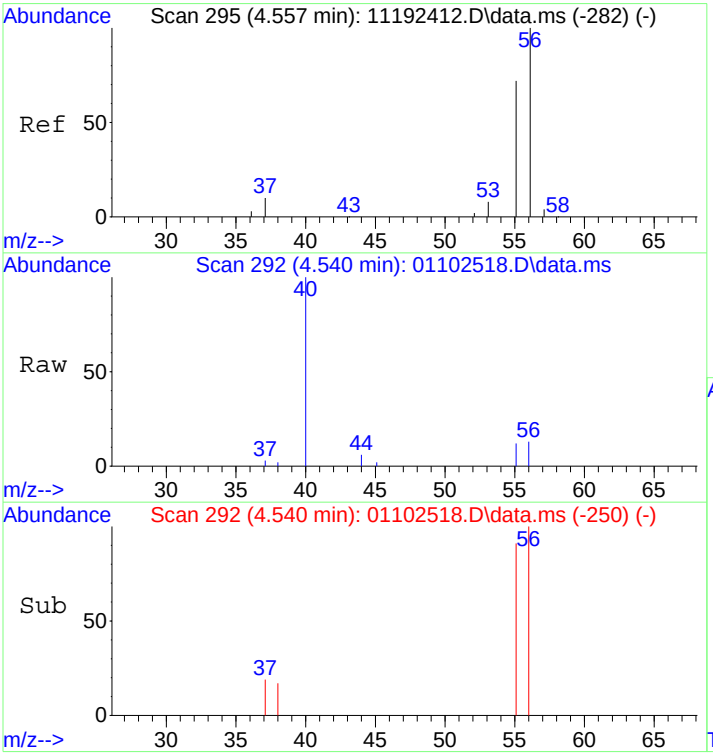


#11
Acetonitrile
Concen: 0.10 ng
RT: 4.45 min Scan# 276
Delta R.T. -0.043 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 41 Resp: 2675

Ion	Ratio	Lower	Upper
41	100		
40	140.4	33.8	73.8#

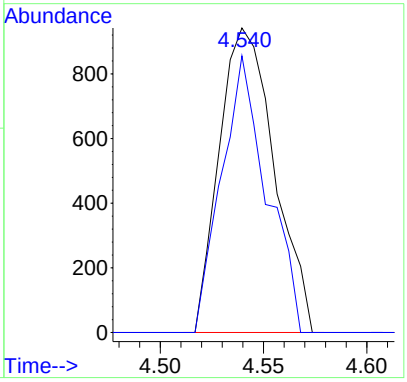


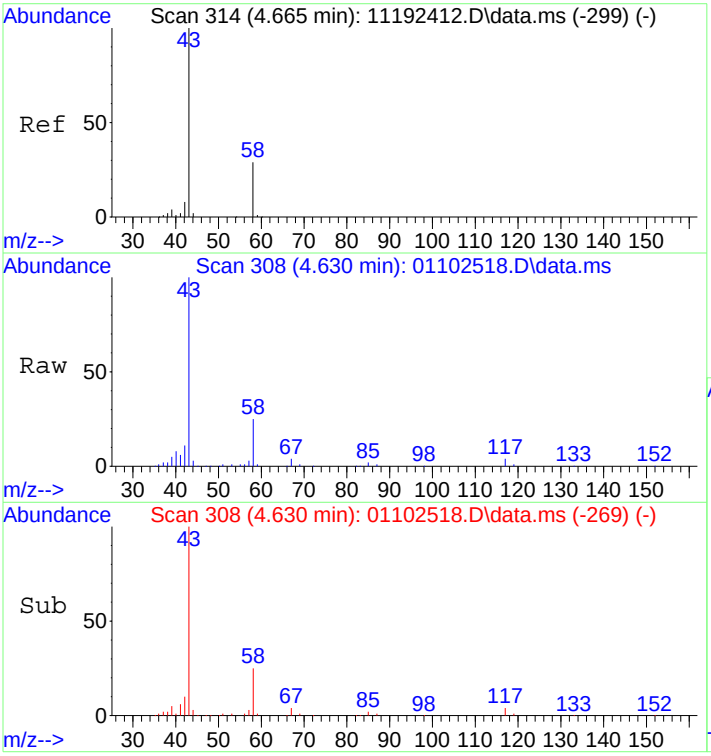


#12
Acrolein
Concen: 0.19 ng
RT: 4.54 min Scan# 292
Delta R.T. -0.014 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 56 Resp: 1748

Ion	Ratio	Lower	Upper
56	100		
55	74.5	53.1	93.1

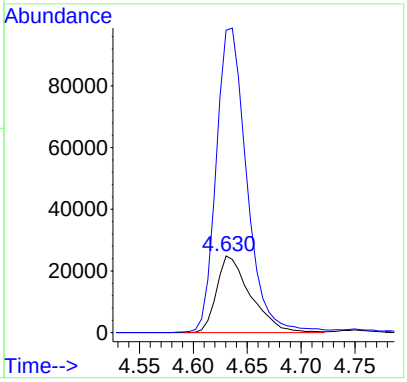


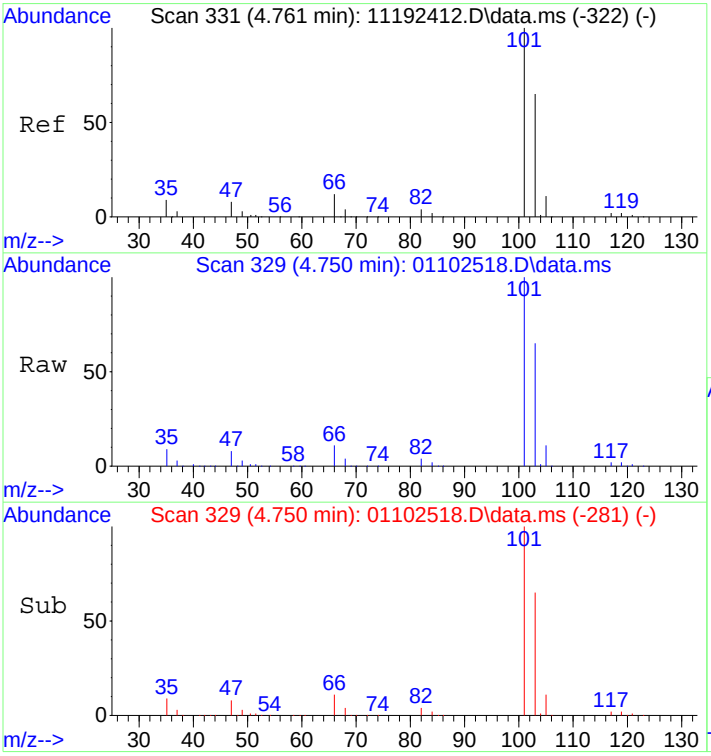


#13
Acetone
Concen: 5.66 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 58 Resp: 54513

Ion	Ratio	Lower	Upper
58	100		
43	359.6	312.5	372.5

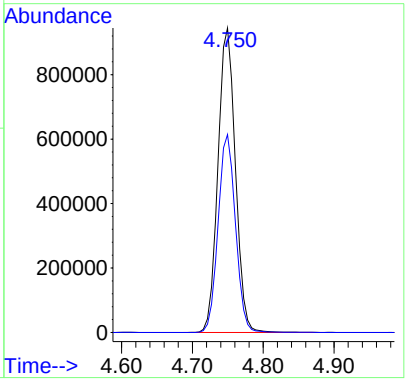


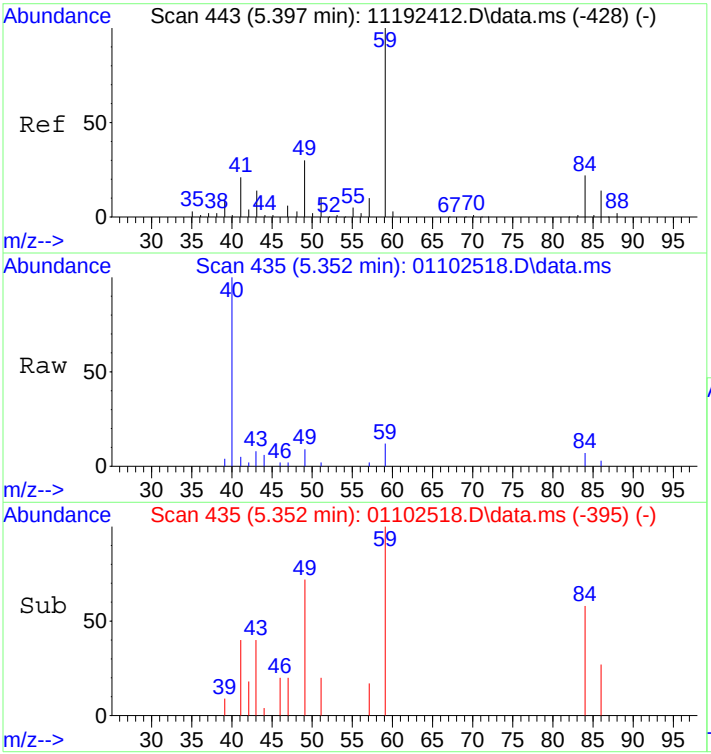


#14
Trichlorofluoromethane
Concen: 61.73 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion:101 Resp: 1619012

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.8	84.8

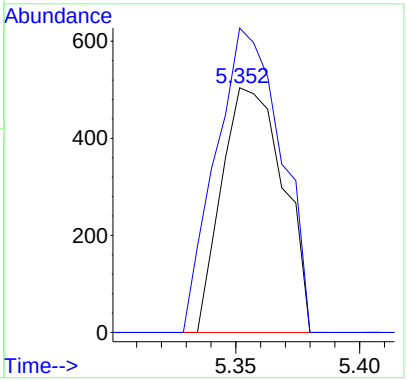


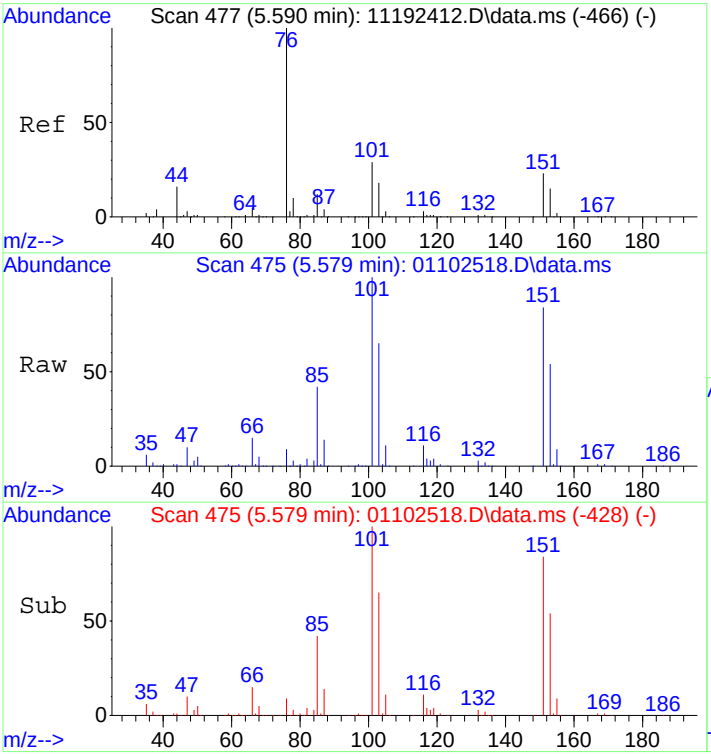


#19
Methylene Chloride
Concen: 0.06 ng
RT: 5.35 min Scan# 435
Delta R.T. -0.023 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 84 Resp: 872

Ion	Ratio	Lower	Upper
84	100		
49	131.9	116.0	166.0

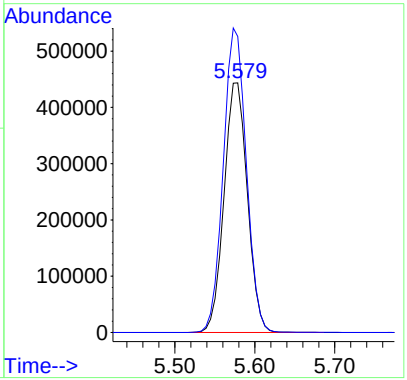


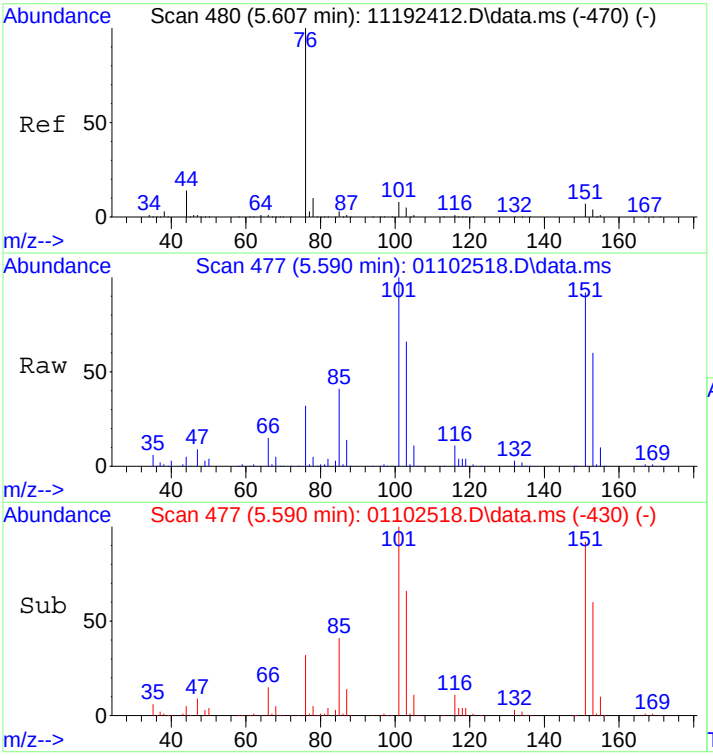


#21
Trichlorotrifluoroethane
Concen: 76.00 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion:151 Resp: 899346

Ion	Ratio	Lower	Upper
151	100		
101	120.5	105.0	145.0

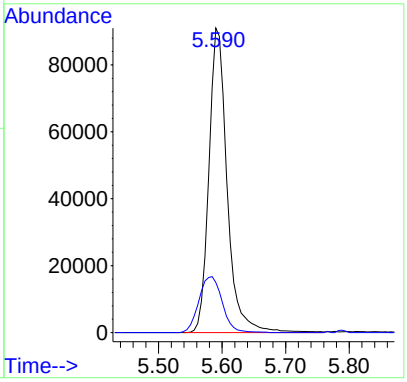


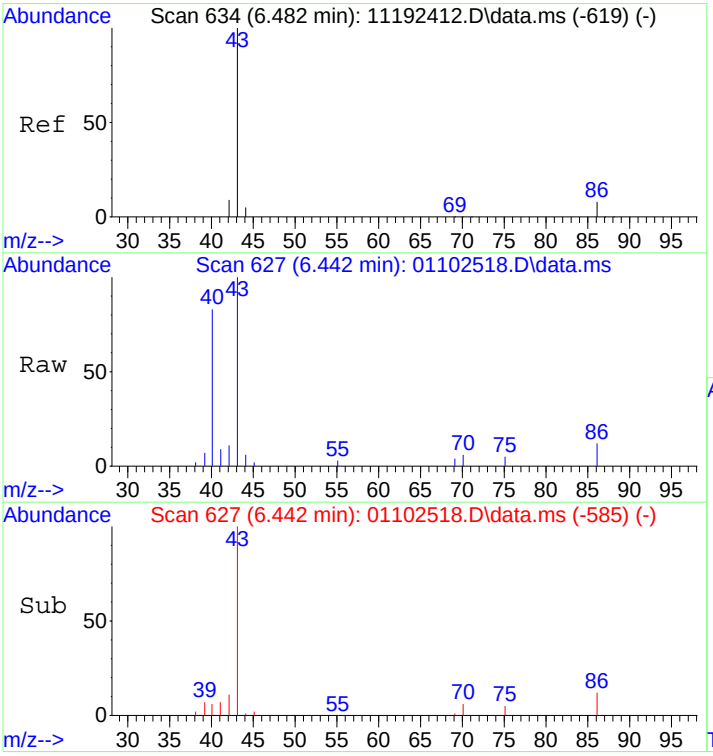


#22
Carbon Disulfide
Concen: 4.18 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.018 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 76 Resp: 182072

Ion	Ratio	Lower	Upper
76	100		
78	23.4	0.0	29.6

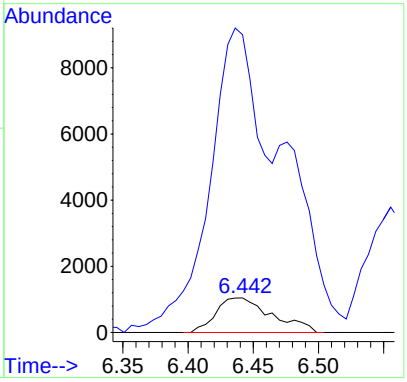


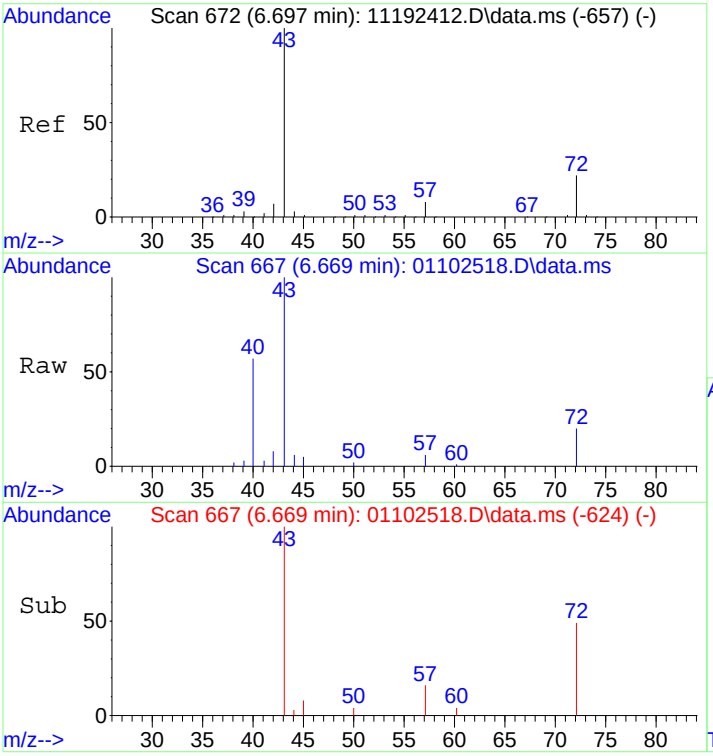


#26
Vinyl Acetate
Concen: 1.33 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 86 Resp: 3112

Ion	Ratio	Lower	Upper
86	100		
43	1160.3	1331.6	1371.6#

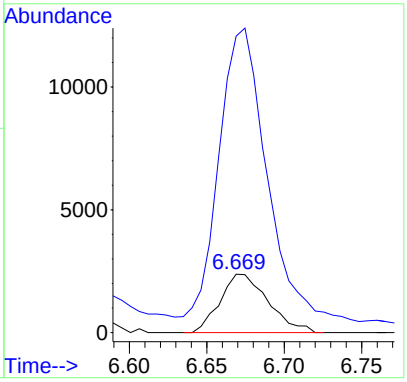


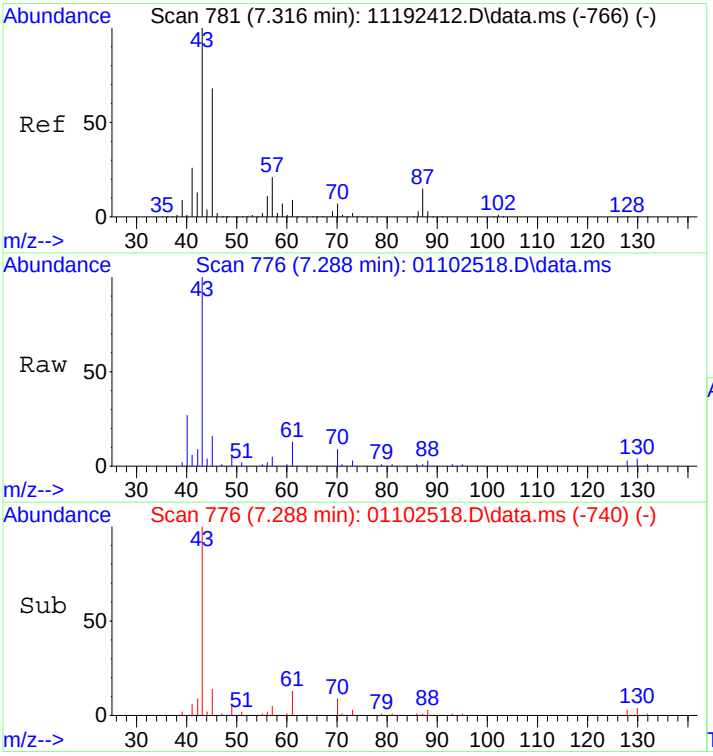


#27
2-Butanone (MEK)
Concen: 0.66 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 72 Resp: 5128

Ion	Ratio	Lower	Upper
72	100		
43	530.1	439.8	479.8#

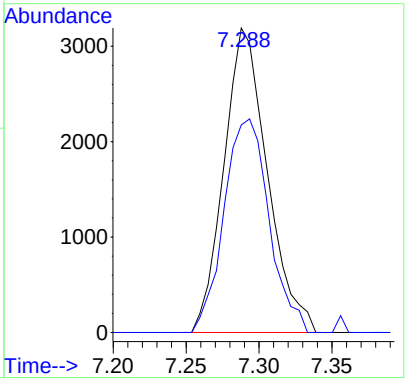


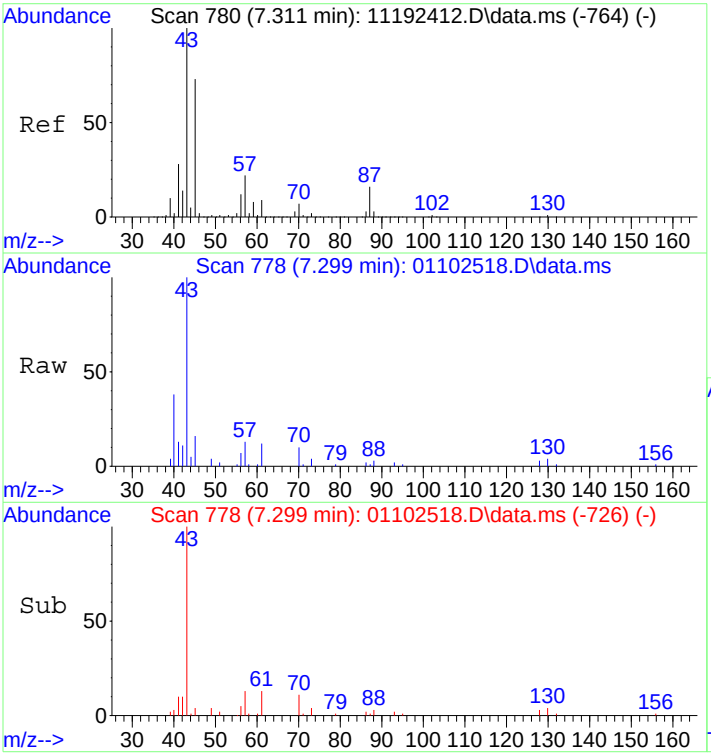


#30
Ethyl Acetate
Concen: 1.39 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 61 Resp: 6624

Ion	Ratio	Lower	Upper
61	100		
70	72.6	57.3	97.3

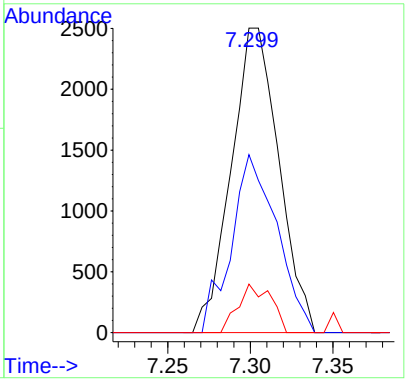


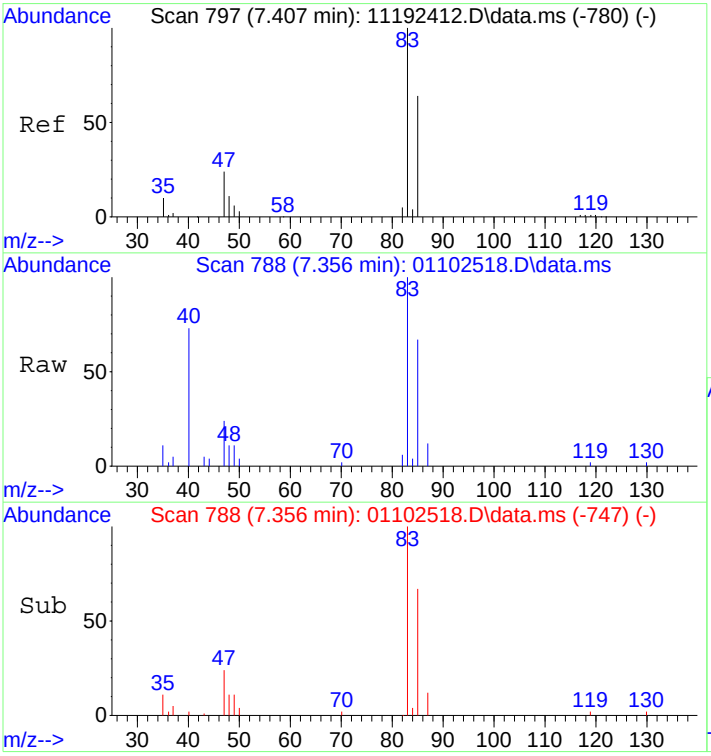


#31
n-Hexane
Concen: 0.23 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 57 Resp: 5036

Ion	Ratio	Lower	Upper
57	100		
56	55.8	43.4	65.0
86	10.9	10.9	16.3

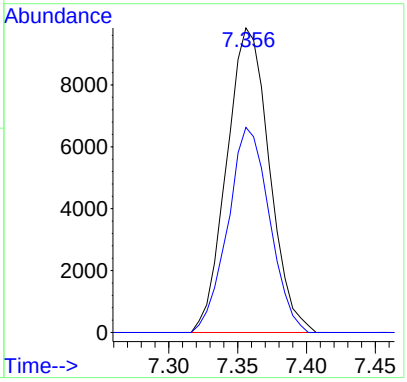


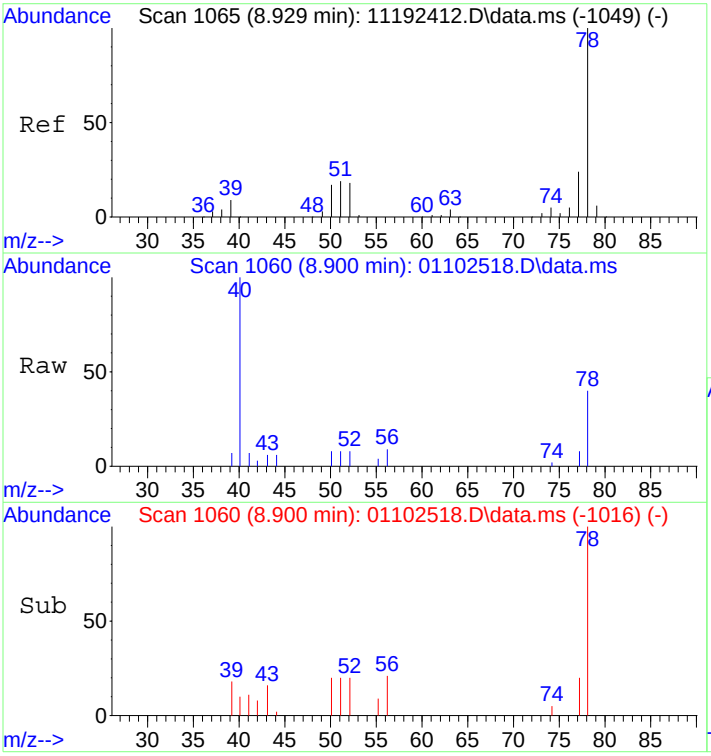


#32
Chloroform
Concen: 0.91 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 83 Resp: 21253

Ion	Ratio	Lower	Upper
83	100		
85	65.7	45.1	85.1

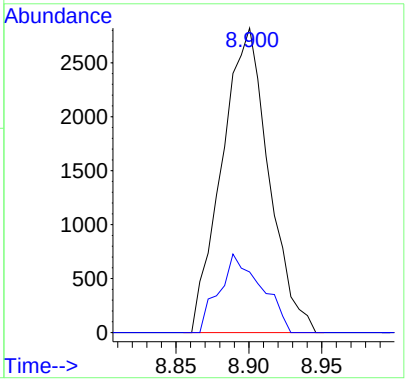


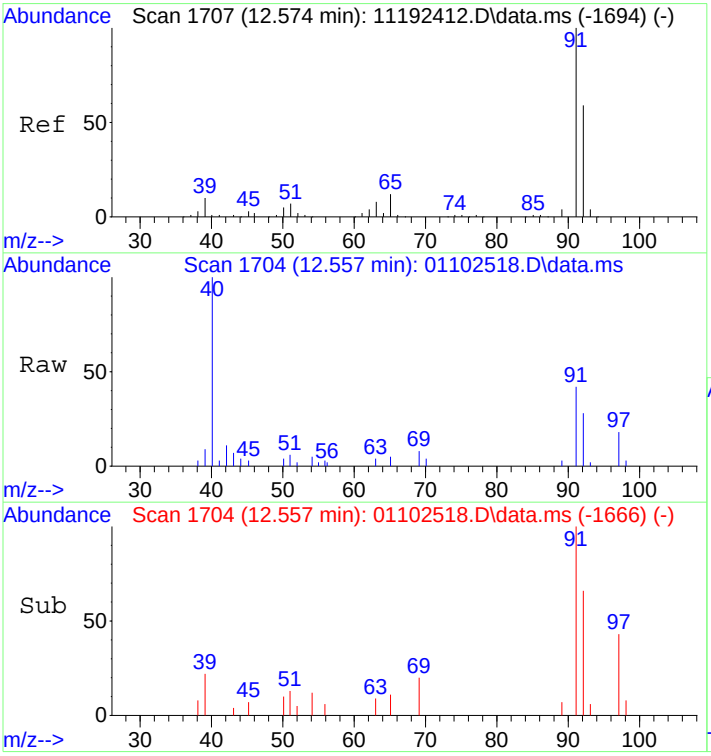


#41
Benzene
Concen: 0.13 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 78 Resp: 6320

Ion	Ratio	Lower	Upper
78	100		
77	23.1	3.7	43.7

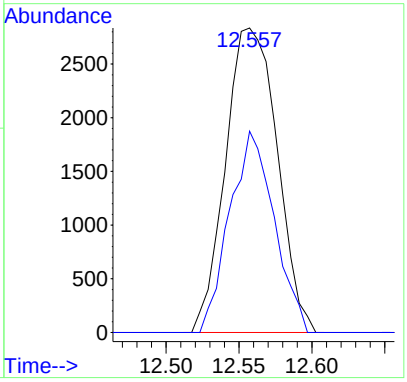


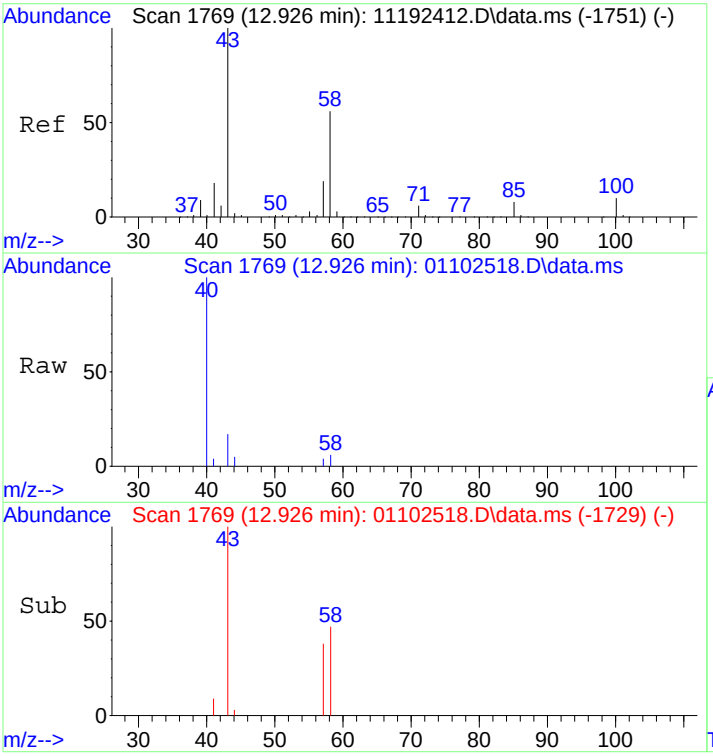


#58
Toluene
Concen: 0.14 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 91 Resp: 7000

Ion	Ratio	Lower	Upper
91	100		
92	56.8	39.2	79.2

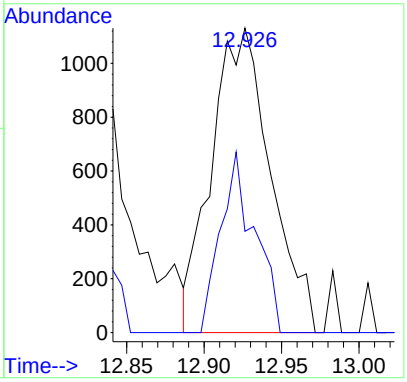


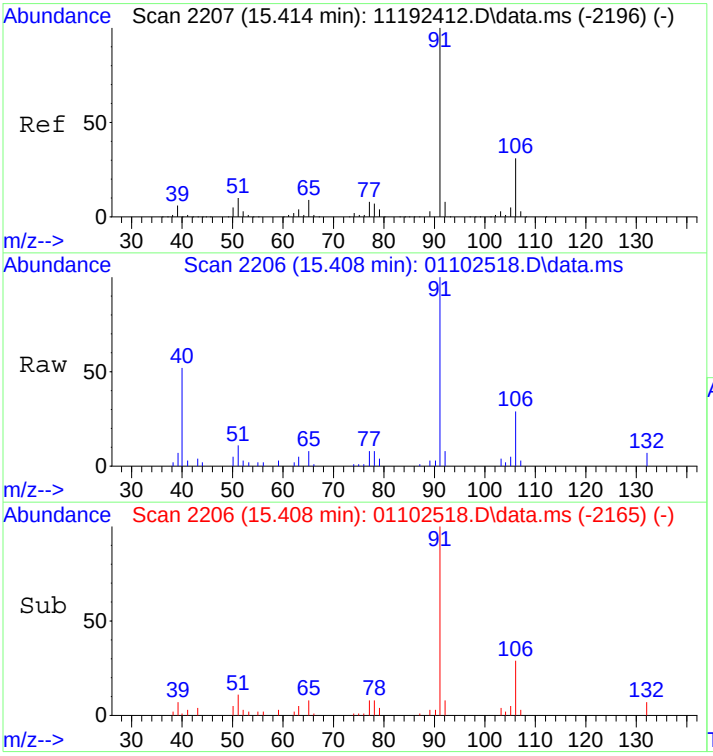


#59
2-Hexanone
Concen: 0.13 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 43 Resp: 3010

Ion	Ratio	Lower	Upper
43	100		
58	34.2	35.2	75.2#

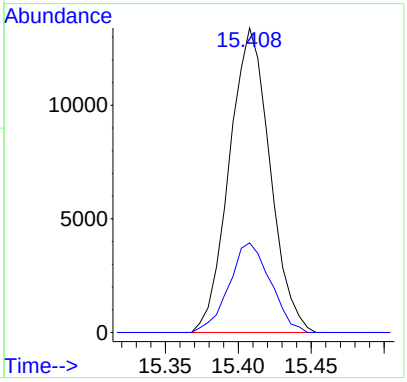


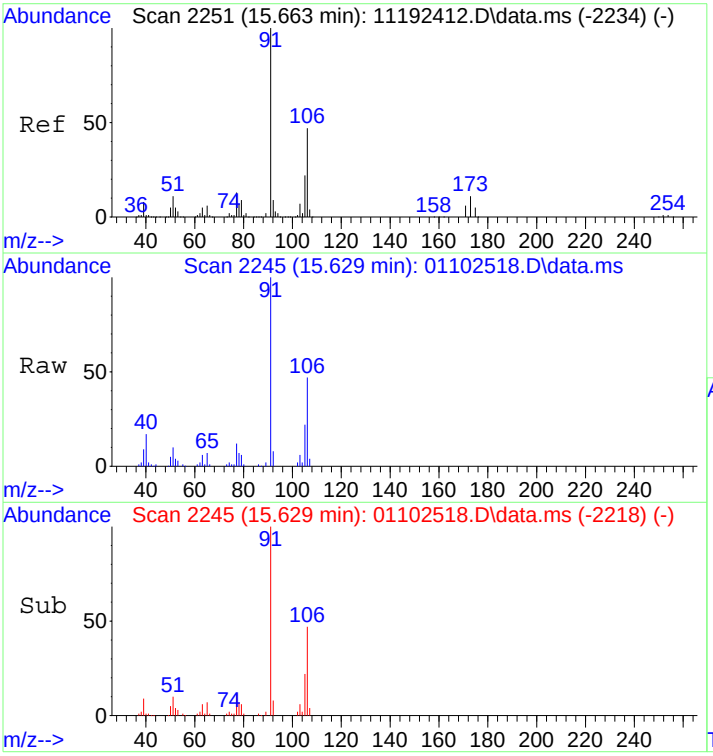


#66
Ethylbenzene
Concen: 0.48 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 91 Resp: 25950

Ion	Ratio	Lower	Upper
91	100		
106	30.0	10.7	50.7

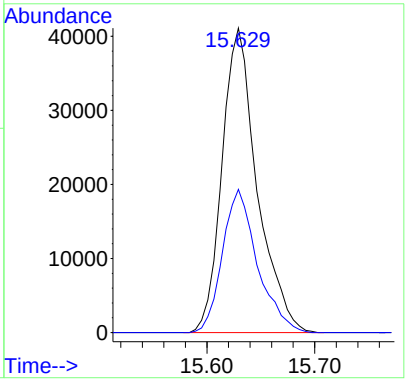


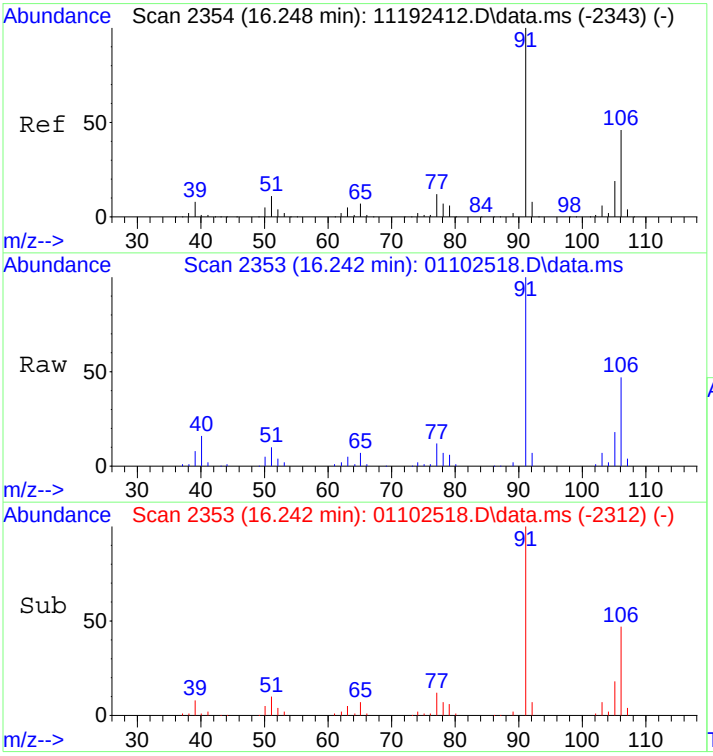


#67
m- & p-Xylenes
Concen: 2.09 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 91 Resp: 92982

Ion	Ratio	Lower	Upper
91	100		
106	46.8	27.1	67.1

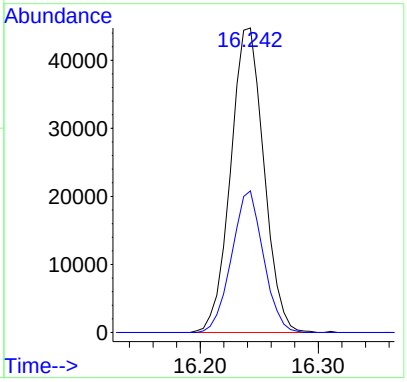




#70
o-Xylene
Concen: 1.99 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01102518.D
Acq: 11 Jan 2025 2:21

Tgt Ion: 91 Resp: 87710

Ion	Ratio	Lower	Upper
91	100		
106	44.4	25.8	65.8



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 12 17:57:21 2025 1/12/25
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

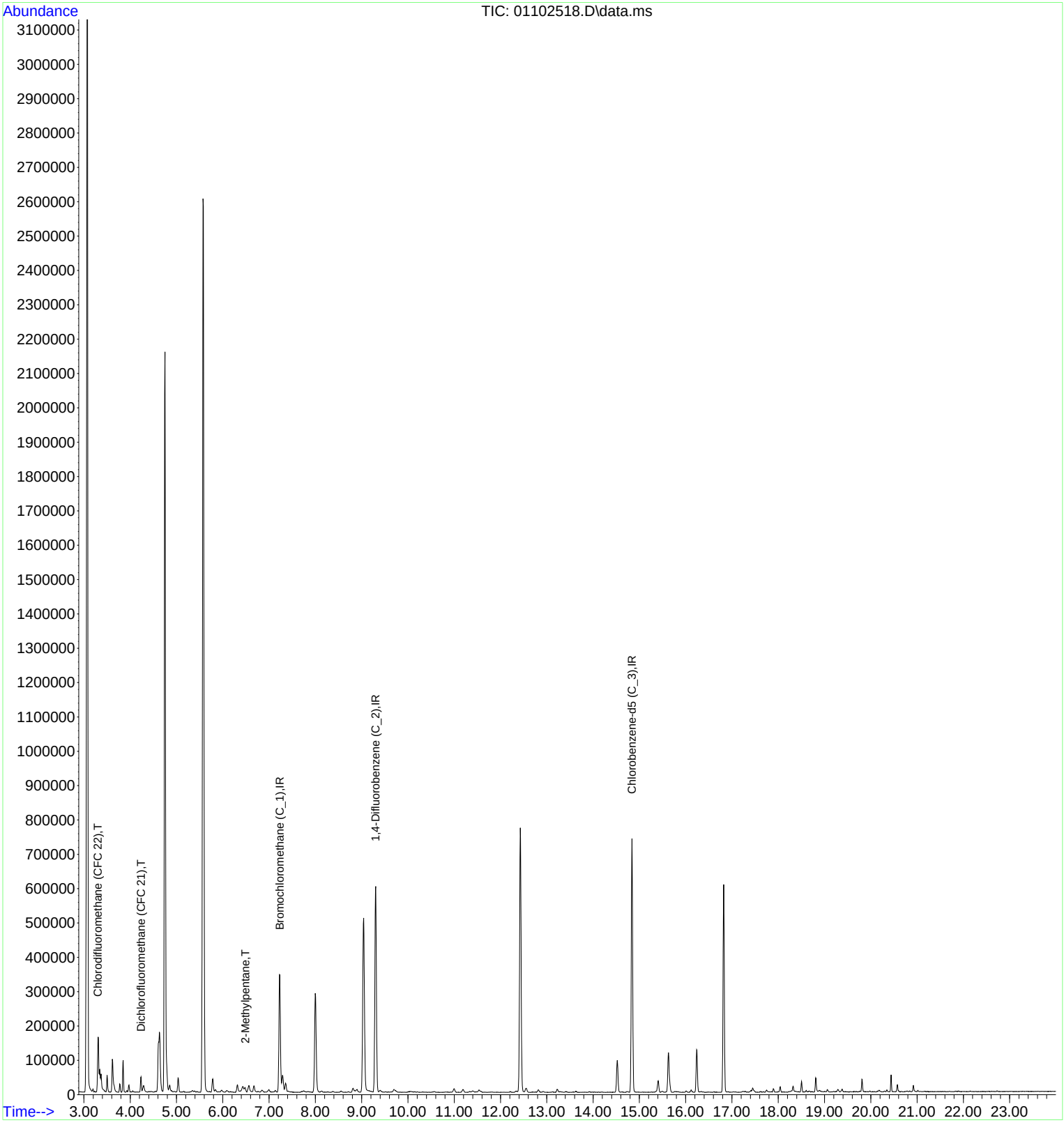
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	144627	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	621036	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	115280	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	163	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	1299	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	2066	0.513	ng		88
6) 1-Chloro-1,1-Difluoroe...	3.51	65	491	N.D.			
7) Dichlorofluoromethane ...	4.23	67	36053	1.230	ng		97
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	d		
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.34	43	1870	N.D.			
12) 2-Methylpentane	6.49	71	2436	0.205	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.	d		
17) 2,3-Dimethylpentane	9.51	56	805	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.41	55	1069	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	17.03	77	181	N.D.			
26) 2-Chlorotoluene	17.67	91	626	N.D.			
27) 4-Chlorotoluene	17.67	91	626	N.D.			
28) Indane	19.11	117	53	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

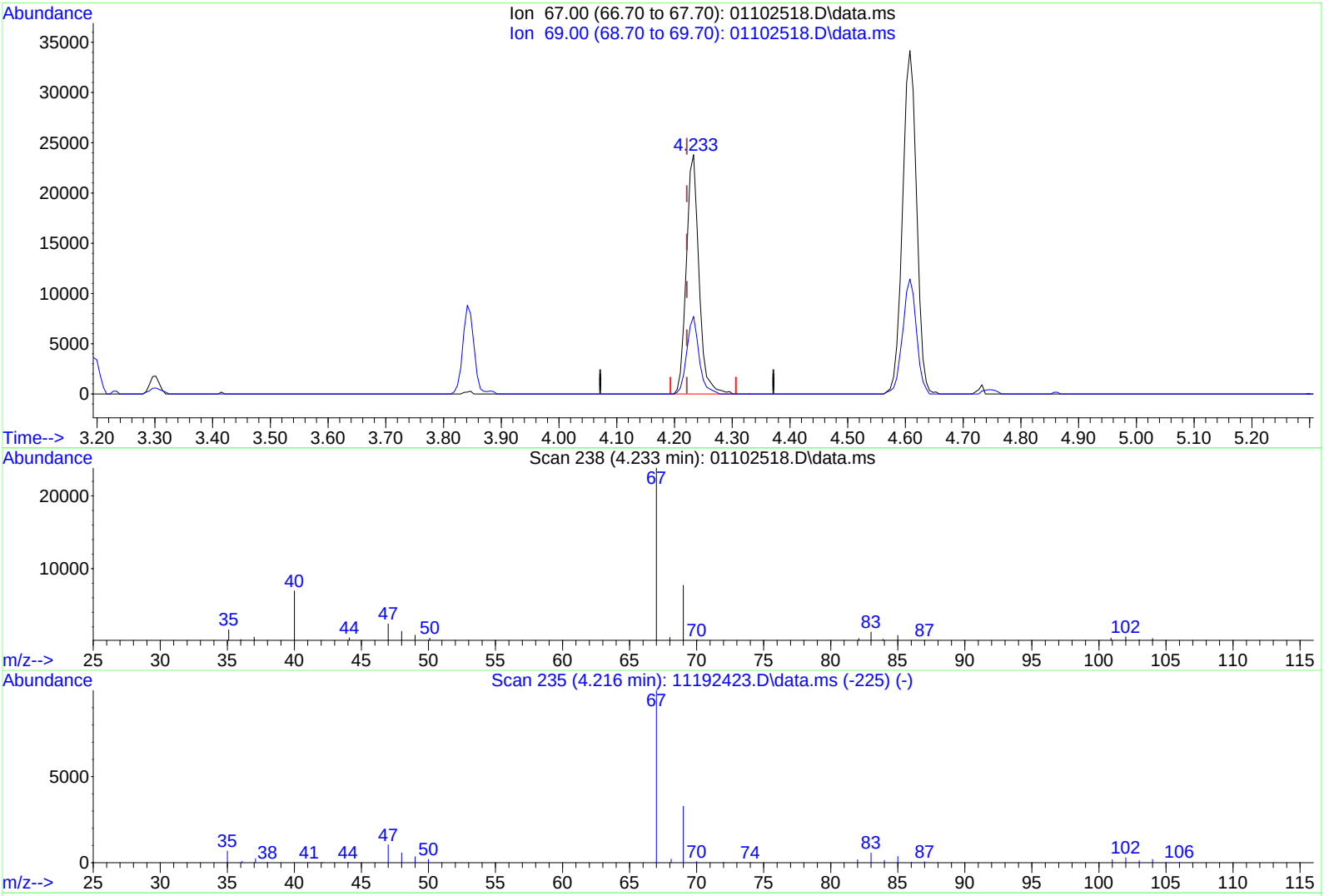
Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 12 17:57:21 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 12 17:48:50 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



TIC: 01102518.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 1.23ng

response 36053

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.39
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102518.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.307	67	75	79	rBV3	160462	296831	5.49%	1.388%
2	3.341	79	81	84	rVV	64887	90242	1.67%	0.422%
3	3.370	84	86	99	rVB	50905	80356	1.49%	0.376%
4	3.500	104	109	117	rVB	48985	63965	1.18%	0.299%
5	3.614	124	129	147	rVB2	95779	189267	3.50%	0.885%
6	3.773	151	157	164	rBV	24172	33342	0.62%	0.156%
7	3.847	164	170	175	rBV2	93206	123324	2.28%	0.576%
8	3.972	187	192	197	rVB	20606	29952	0.55%	0.140%
9	4.233	232	238	242	rBV	44430	65930	1.22%	0.308%
10	4.290	242	248	258	rVB2	18525	44520	0.82%	0.208%
11	4.613	296	305	306	rBV	144551	235690	4.36%	1.102%
12	4.630	306	308	320	rVB2	173069	311045	5.75%	1.454%
13	4.750	320	329	342	rBV	2153414	3780307	69.87%	17.671%
14	4.852	342	347	353	rVB2	16769	30014	0.55%	0.140%
15	5.034	373	379	386	rVB	40593	67876	1.25%	0.317%
16	5.573	464	474	493	rBV2	2601944	5410392	100.00%	25.292%
17	5.783	504	511	517	rBV	38628	78066	1.44%	0.365%
18	5.840	517	521	527	rVB3	5863	11468	0.21%	0.054%
19	5.976	538	545	556	rVB5	6055	14600	0.27%	0.068%
20	6.078	556	563	573	rBV4	4535	12502	0.23%	0.058%
21	6.317	597	605	611	rBV	21717	47947	0.89%	0.224%
22	6.430	617	625	630	rBV4	13714	36340	0.67%	0.170%
23	6.482	630	634	641	rVB3	13341	26603	0.49%	0.124%
24	6.561	641	648	659	rBV4	18911	50491	0.93%	0.236%
25	6.675	661	668	679	rVB	17934	39262	0.73%	0.184%
26	6.845	690	698	706	rVB4	5662	13667	0.25%	0.064%
27	6.993	716	724	734	rBV5	7246	17539	0.32%	0.082%
28	7.225	757	765	773	rBV	341887	763689	14.12%	3.570%
29	7.288	773	776	783	rVV	47679	101841	1.88%	0.476%
30	7.356	783	788	796	rVB	24331	50923	0.94%	0.238%
31	7.998	891	901	915	rBV	288104	675838	12.49%	3.159%
32	8.815	1037	1045	1053	rBV3	11626	31896	0.59%	0.149%
33	8.900	1053	1060	1071	rVB4	7991	22544	0.42%	0.105%
34	9.042	1071	1085	1103	rBV	507463	1309711	24.21%	6.122%
35	9.304	1121	1131	1142	rBV	598567	1389240	25.68%	6.494%
36	9.400	1142	1148	1158	rVB3	4998	13525	0.25%	0.063%
37	9.695	1192	1200	1216	rVB8	8155	30012	0.55%	0.140%
38	10.996	1420	1429	1439	rVB2	10851	27522	0.51%	0.129%
39	11.183	1451	1462	1473	rVB4	8371	22731	0.42%	0.106%
40	11.535	1517	1524	1531	rBV3	5865	14281	0.26%	0.067%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

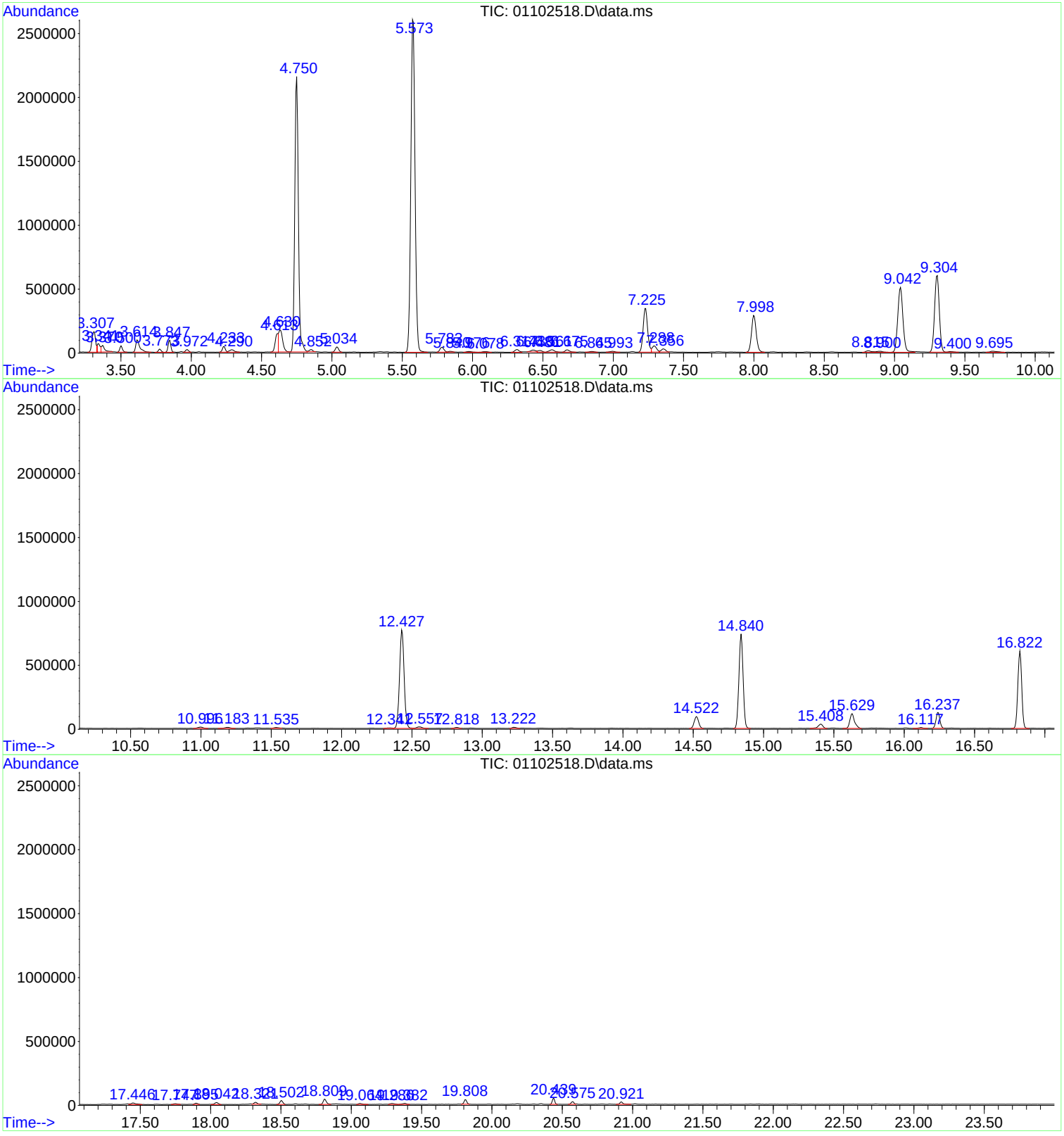
41	12.341	1658	1666	1671	rBV5	3461	10674	0.20%	0.050%
42	12.427	1671	1681	1695	rVV	770107	1755321	32.44%	8.205%
43	12.557	1695	1704	1715	rVB4	12067	32972	0.61%	0.154%
44	12.818	1743	1750	1756	rBV3	7173	16131	0.30%	0.075%
45	13.222	1816	1821	1829	rBV4	8324	18499	0.34%	0.086%
46	14.522	2041	2050	2059	rBV	93018	202684	3.75%	0.947%
47	14.840	2096	2106	2118	rBV	738709	1516173	28.02%	7.088%
48	15.408	2192	2206	2214	rVB2	33739	79932	1.48%	0.374%
49	15.629	2233	2245	2257	rVB	115486	266276	4.92%	1.245%
50	16.117	2321	2331	2340	rBV4	7133	15429	0.29%	0.072%
51	16.237	2345	2352	2360	rBV	123485	238112	4.40%	1.113%
52	16.822	2444	2455	2467	rBV	604991	1152075	21.29%	5.386%
53	17.446	2560	2565	2577	rVB4	12202	29721	0.55%	0.139%
54	17.747	2613	2618	2625	rBV3	6044	11743	0.22%	0.055%
55	17.895	2640	2644	2649	rVB2	9887	14786	0.27%	0.069%
56	18.042	2663	2670	2676	rVB	16007	27568	0.51%	0.129%
57	18.321	2714	2719	2726	rVB2	14884	23119	0.43%	0.108%
58	18.502	2745	2751	2756	rBV2	30813	44376	0.82%	0.207%
59	18.809	2798	2805	2813	rBV	41335	68017	1.26%	0.318%
60	19.064	2845	2850	2860	rVB2	7309	13682	0.25%	0.064%
61	19.286	2885	2889	2897	rVB7	7353	15583	0.29%	0.073%
62	19.382	2897	2906	2912	rBV6	8293	16368	0.30%	0.077%
63	19.808	2976	2981	2987	rVB2	35878	49706	0.92%	0.232%
64	20.439	3087	3092	3097	rBV	49381	58592	1.08%	0.274%
65	20.575	3110	3116	3120	rBV	20507	30573	0.57%	0.143%
66	20.921	3170	3177	3189	rBV4	18217	28721	0.53%	0.134%

Sum of corrected areas: 21392124

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:21
Operator : CG
Sample : P2405139-048 (400mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\10\\
Data File : 01102518.D
Acq On : 11 Jan 2025 2:211
Operator : CGG
Sample : P2405139-048 (400mL))
Misc : S37-123124011
ALS Vial : 15 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)) VOA 1/12/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					|--Internal Standard---|		
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

1/12/25

Quant Time: Jan 12 14:29:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141092	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	608760	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	113703	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	253598	13.193 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%			
57) Toluene-d8 (SS2)	12.43	98	633938	12.568 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%			
73) Bromofluorobenzene (SS3)	16.82	174	216196	12.420 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.31	85	13210	0.479 ng	#	92
4) Chloromethane	3.51	50	979	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	280	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	4.01	94	109	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.29	45	15669	1.501 ng		97
11) Acetonitrile	4.46	41	807	N.D.		
12) Acrolein	4.55	56	1473	0.165 ng		99
13) Acetone	4.64	58	25766	2.712 ng		96
14) Trichlorofluoromethane	4.74	101	1666022	64.410 ng		100
15) 2-Propanol (Isopropanol)	4.85	45	41912	1.232 ng		97
16) Acrylonitrile	5.02	53	363	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.33	59	493	N.D.		
19) Methylene Chloride	5.36	84	660	N.D.		
20) 3-Chloro-1-propene (Al...	5.40	41	276	N.D.		
21) Trichlorotrifluoroethane	5.57	151	923101	79.100 ng		96
22) Carbon Disulfide	0.00	76	0	N.D. d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.43	86	3467	1.508 ng	#	54
27) 2-Butanone (MEK)	6.67	72	4808	0.630 ng	#	76
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	7.30	87	226	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.30	57	4420	0.209 ng		95
32) Chloroform	7.36	83	21759	0.947 ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.81	56	10447	No Calib	#	
41) Benzene	8.89	78	5473	0.112 ng		99
42) Carbon Tetrachloride	9.07	117	332	N.D.		
43) Cyclohexane	9.18	84	131	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.08	83	455	N.D.		
47) Trichloroethene	10.16	130	583	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 14:29:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

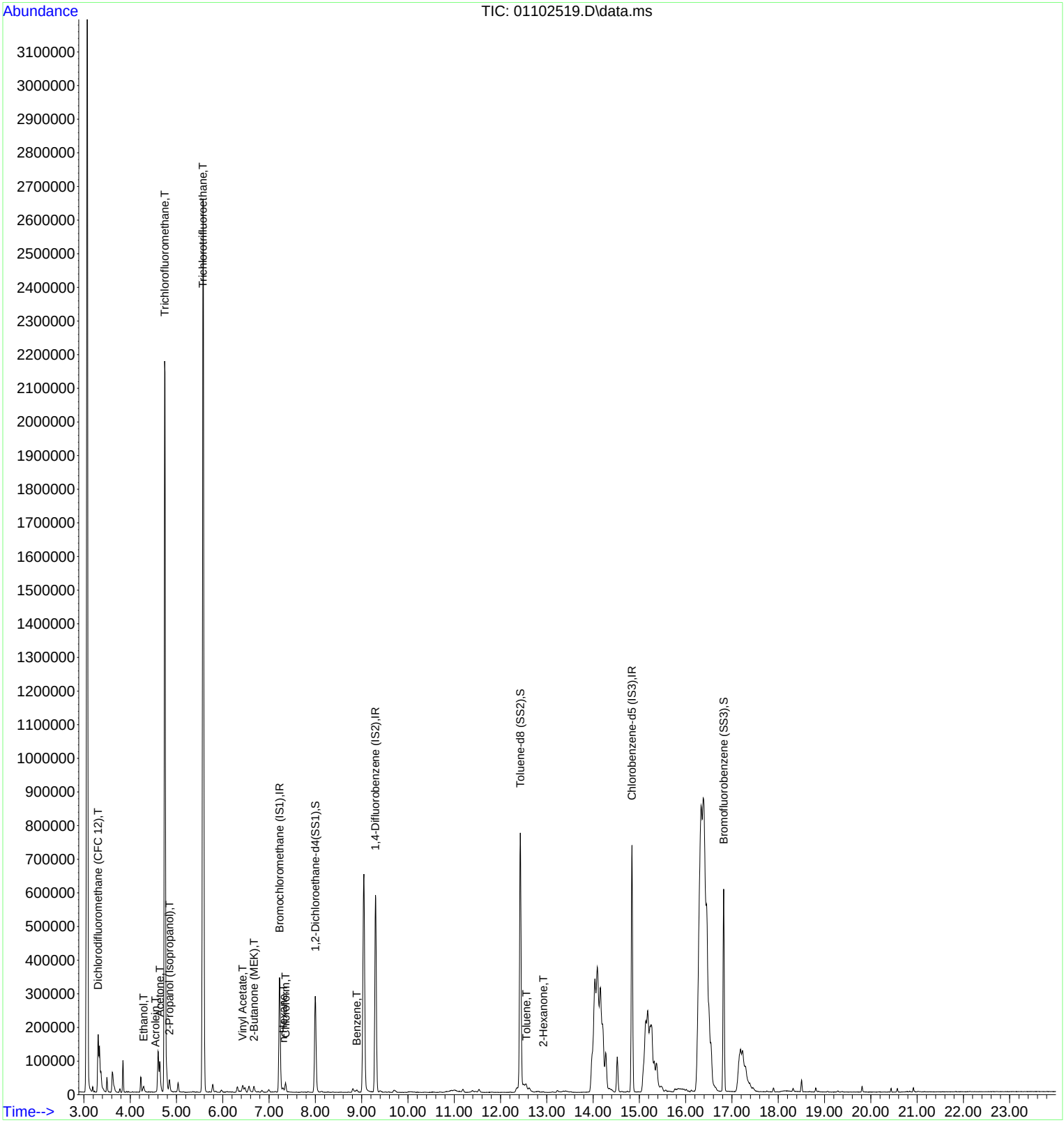
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	3349	0.069 ng	100
59) 2-Hexanone	12.93	43	2204	0.093 ng	82
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.79	43	163	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	350	N.D.	
65) Chlorobenzene	14.89	112	185	N.D.	
66) Ethylbenzene	15.41	91	1116	N.D.	
67) m- & p-Xylenes	15.62	91	957	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	975	N.D.	
71) n-Nonane	16.62	43	193	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	315	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.86	105	121	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	112	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	18.66	146	174	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	174	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	337	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	388	N.D.	
95) Naphthalene	20.94	128	622	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.42	119	340	N.D.	
100) n-Butylbenzene	19.39	91	232	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 14:29:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 14:29:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/12/25

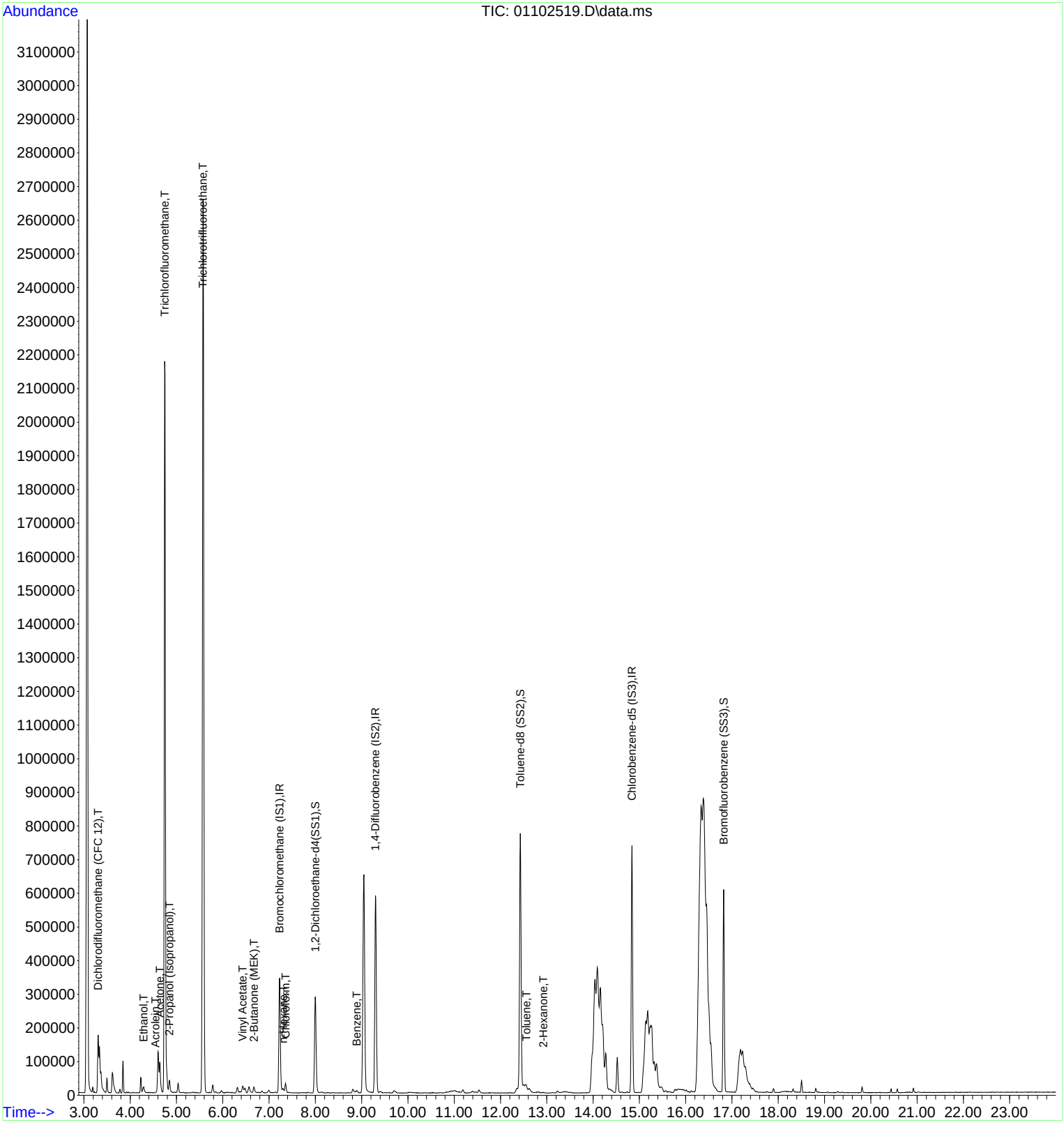
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141092	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	608760	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	113703	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	253598	13.193	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%				
57) Toluene-d8 (SS2)	12.43	98	633938	12.568	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%				
73) Bromofluorobenzene (SS3)	16.82	174	216196	12.420	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.31	85	13210	0.479	ng	#	92
10) Ethanol	4.29	45	15669	1.501	ng		97
12) Acrolein	4.55	56	1473	0.165	ng		99
13) Acetone	4.64	58	25766	2.712	ng		96
14) Trichlorofluoromethane	4.74	101	1666022	64.410	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	41912	1.232	ng		97
21) Trichlorotrifluoroethane	5.57	151	923101	79.100	ng		96
26) Vinyl Acetate	6.43	86	3467	1.508	ng	#	54
27) 2-Butanone (MEK)	6.67	72	4808	0.630	ng	#	76
31) n-Hexane	7.30	57	4420	0.209	ng		95
32) Chloroform	7.36	83	21759	0.947	ng		100
41) Benzene	8.89	78	5473	0.112	ng		99
58) Toluene	12.56	91	3349	0.069	ng		100
59) 2-Hexanone	12.93	43	2204	0.093	ng		82

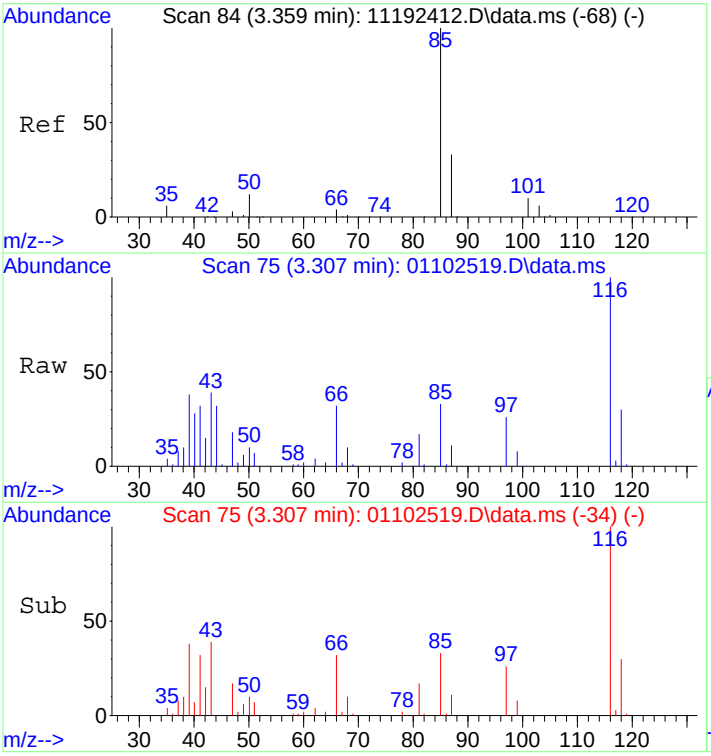
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 14:29:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

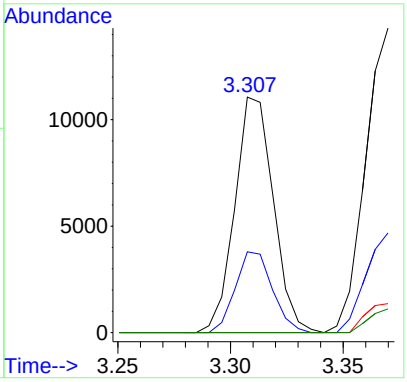


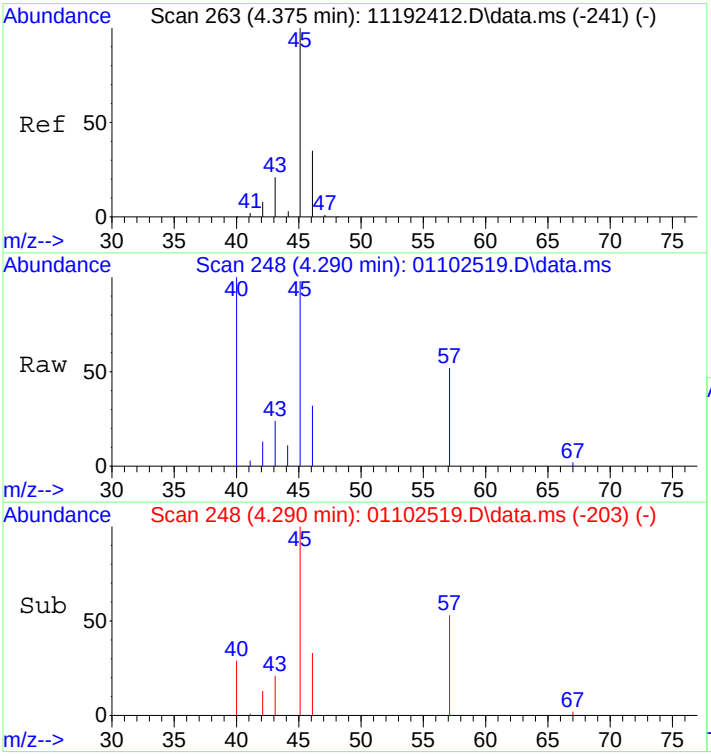


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.48 ng
RT: 3.31 min Scan# 75
Delta R.T. -0.020 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 85 Resp: 13210

Ion	Ratio	Lower	Upper
85	100		
87	32.9	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

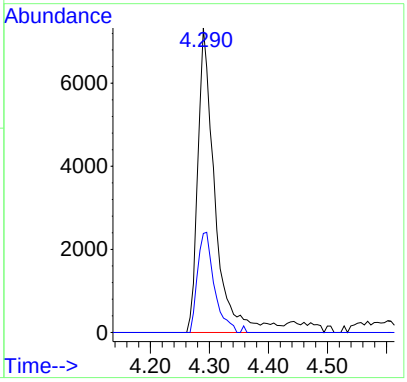


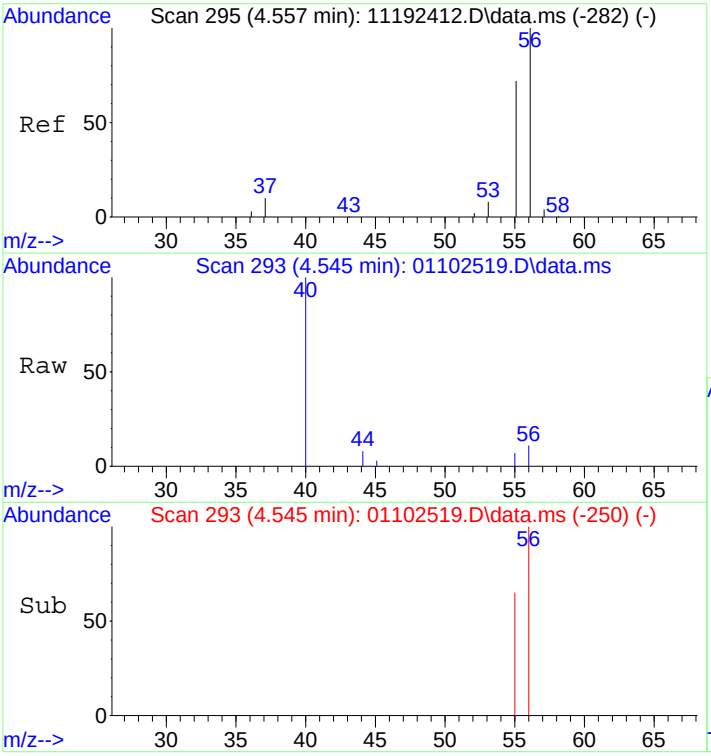


#10
Ethanol
Concen: 1.50 ng
RT: 4.29 min Scan# 248
Delta R.T. 0.006 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 45 Resp: 15669

Ion	Ratio	Lower	Upper
45	100		
46	30.3	11.8	51.8

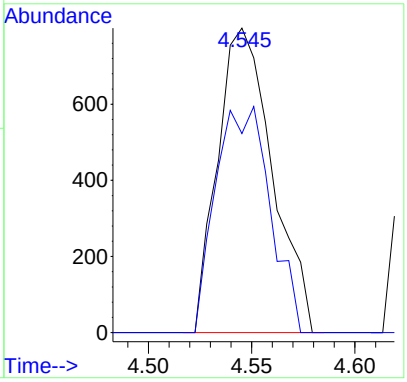


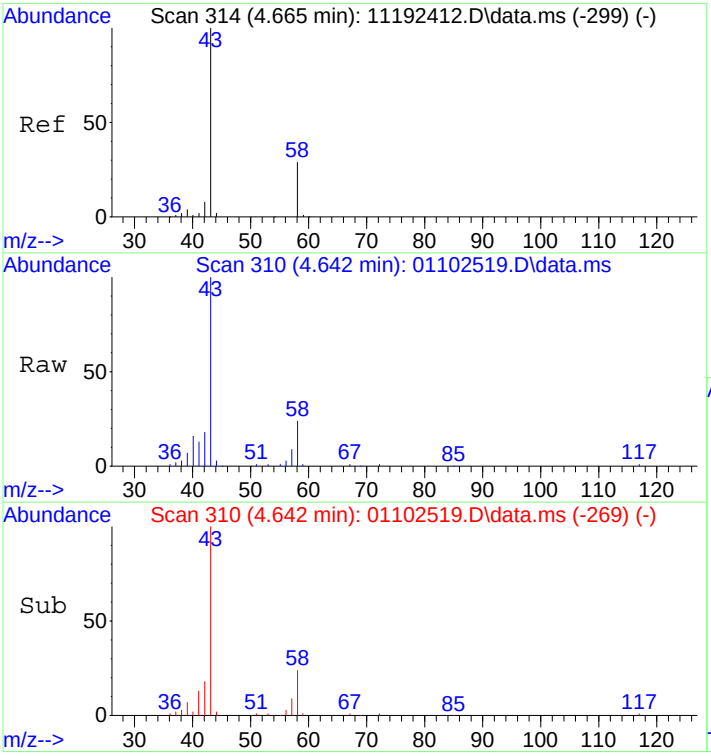


#12
Acrolein
Concen: 0.17 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 56 Resp: 1473

Ion	Ratio	Lower	Upper
56	100		
55	73.7	53.1	93.1

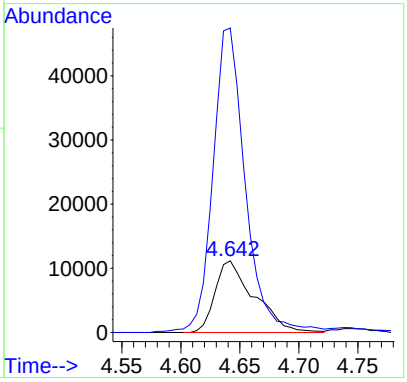


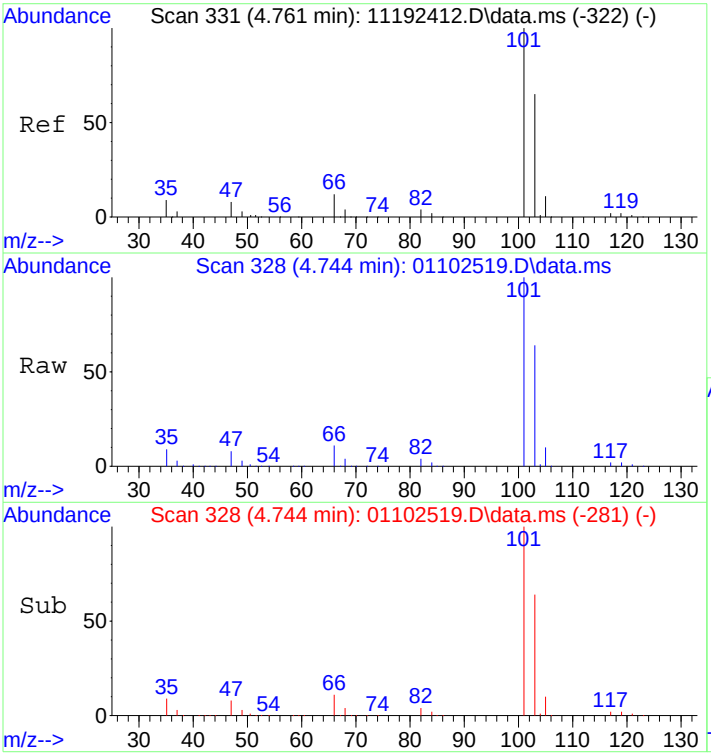


#13
Acetone
Concen: 2.71 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 58 Resp: 25766

Ion	Ratio	Lower	Upper
58	100		
43	351.2	312.5	372.5

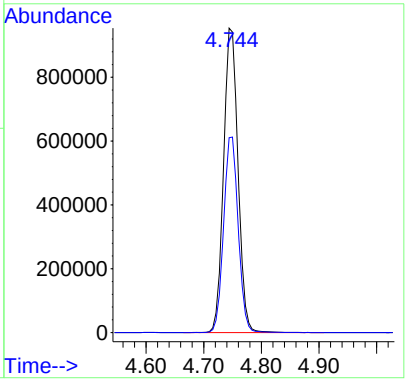


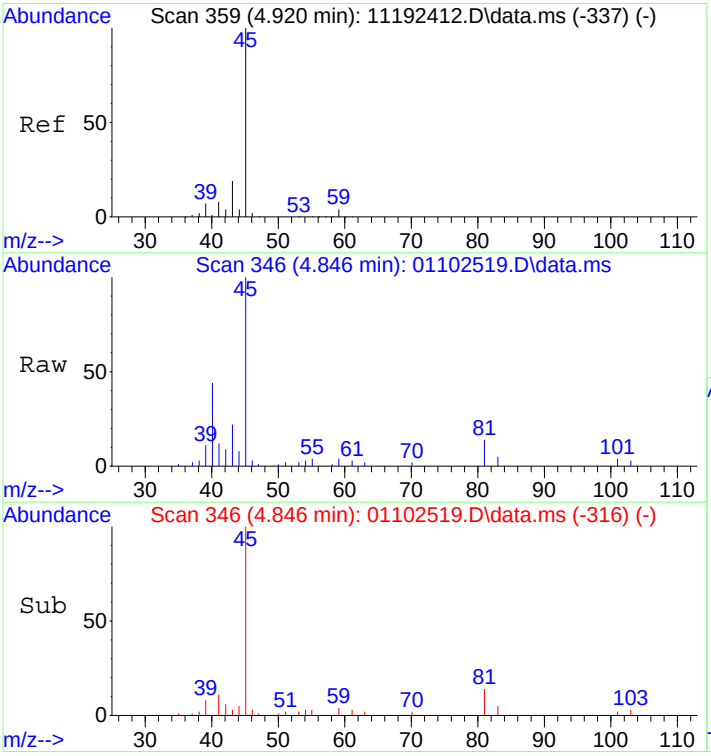


#14
Trichlorofluoromethane
Concen: 64.41 ng
RT: 4.74 min Scan# 328
Delta R.T. 0.016 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion:101 Resp: 1666022

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

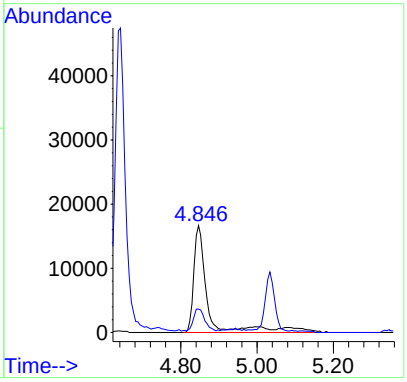


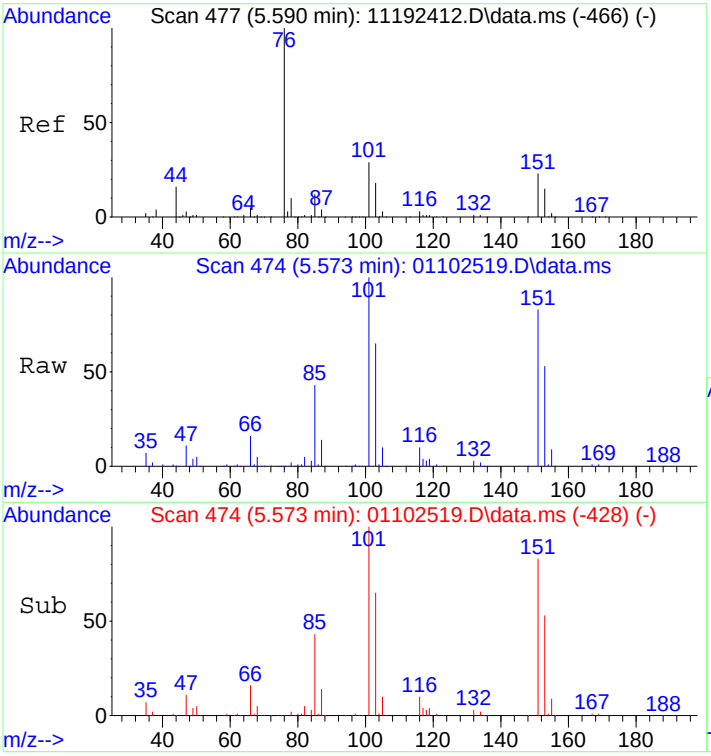


#15
2-Propanol (Isopropanol)
Concen: 1.23 ng
RT: 4.85 min Scan# 346
Delta R.T. -0.078 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 45 Resp: 41912

Ion	Ratio	Lower	Upper
45	100		
43	21.5	0.2	40.2

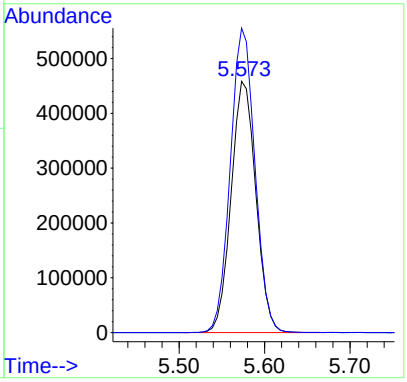


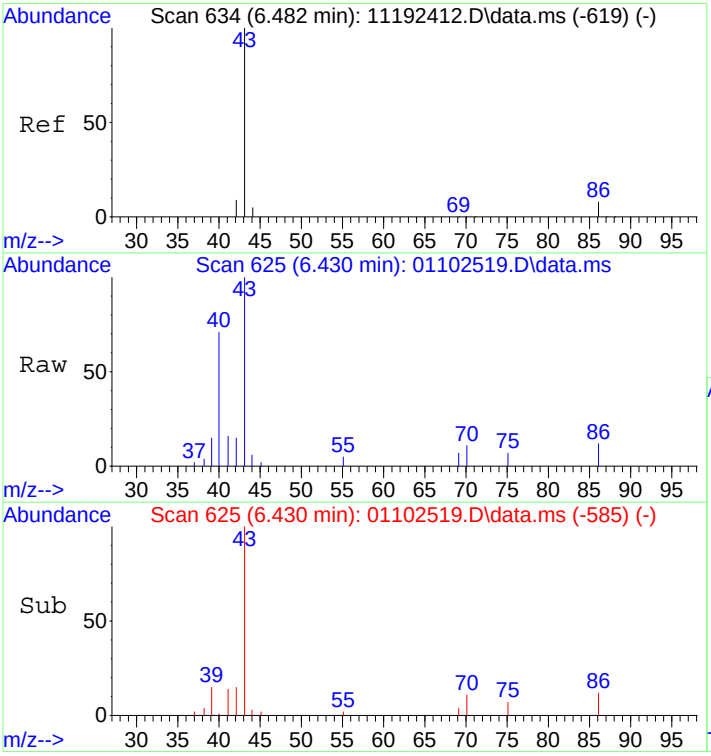


#21
Trichlorotrifluoroethane
Concen: 79.10 ng
RT: 5.57 min Scan# 474
Delta R.T. 0.013 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion:151 Resp: 923101

Ion	Ratio	Lower	Upper
151	100		
101	120.5	105.0	145.0

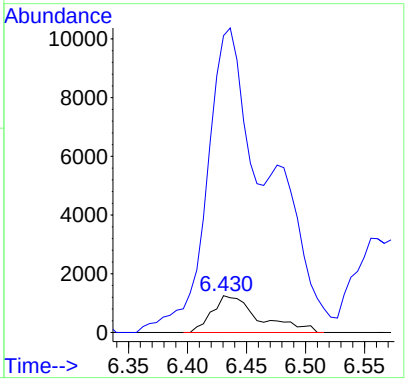


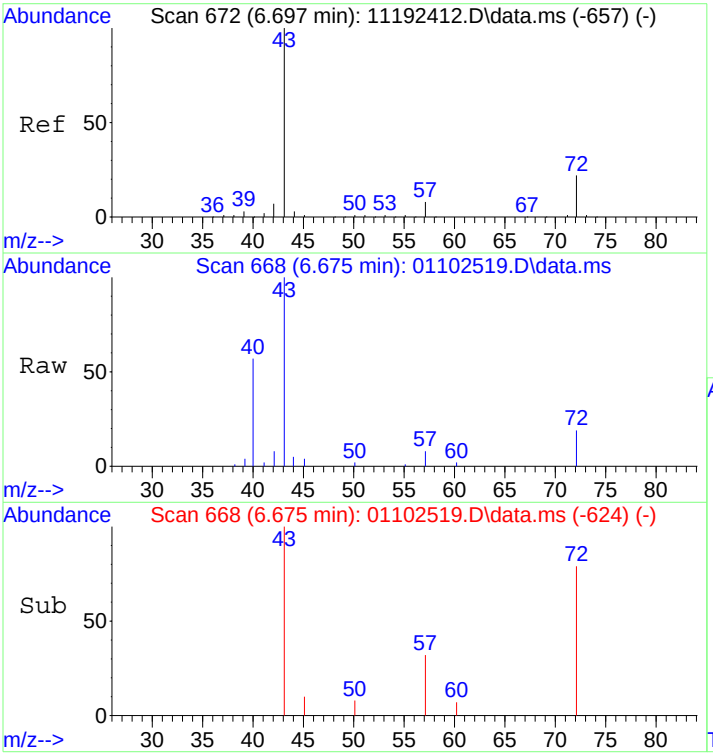


#26
Vinyl Acetate
Concen: 1.51 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 86 Resp: 3467

Ion	Ratio	Lower	Upper
86	100		
43	1096.0	1331.6	1371.6#

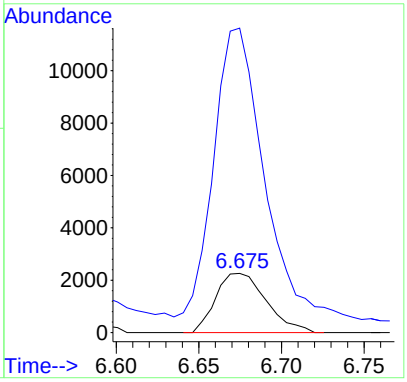


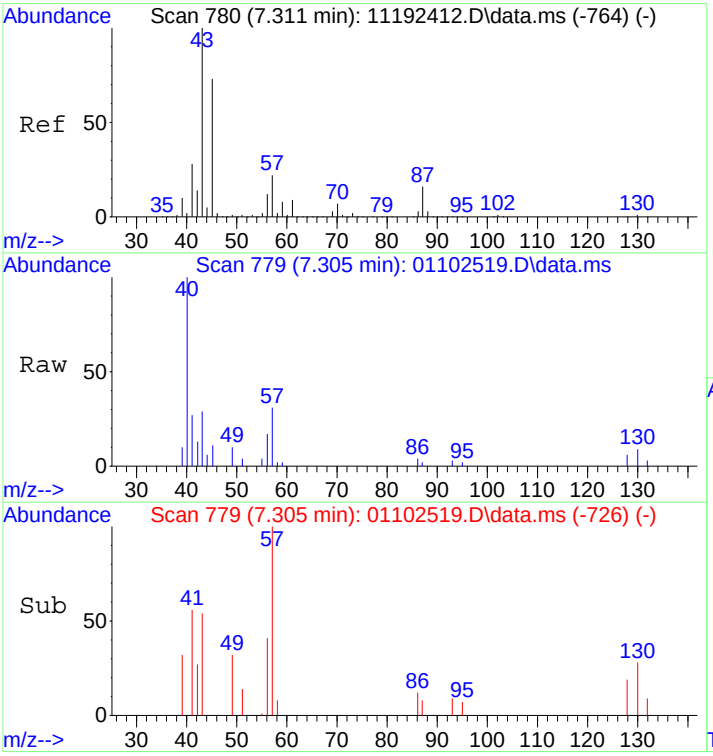


#27
2-Butanone (MEK)
Concen: 0.63 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 72 Resp: 4808

Ion	Ratio	Lower	Upper
72	100		
43	523.3	439.8	479.8#

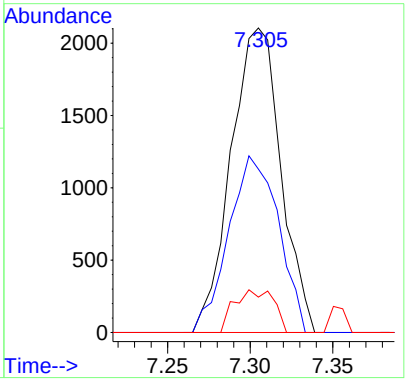


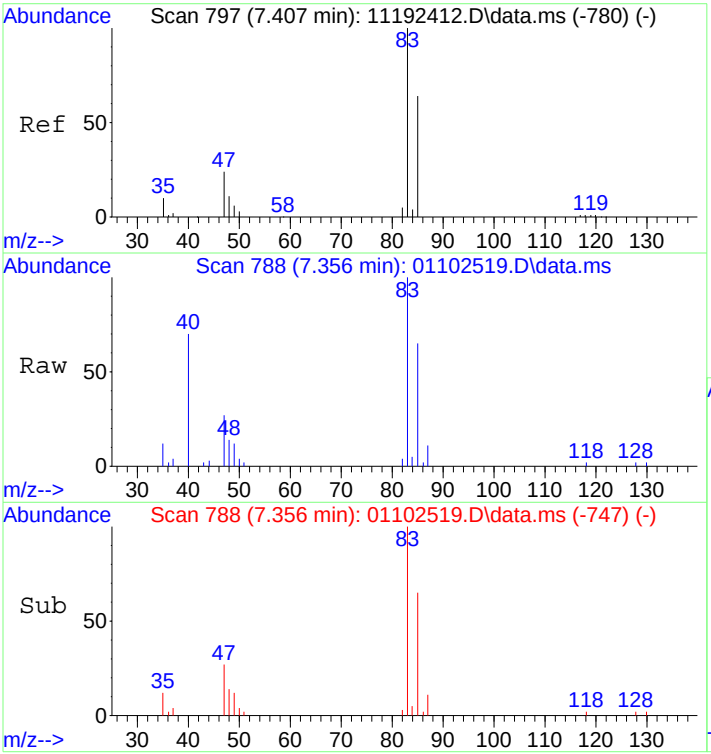


#31
n-Hexane
Concen: 0.21 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 57 Resp: 4420

Ion	Ratio	Lower	Upper
57	100		
56	58.0	43.4	65.0
86	11.1	10.9	16.3

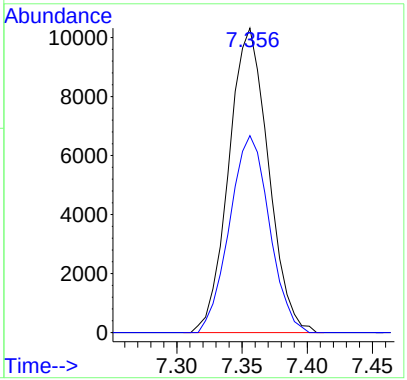


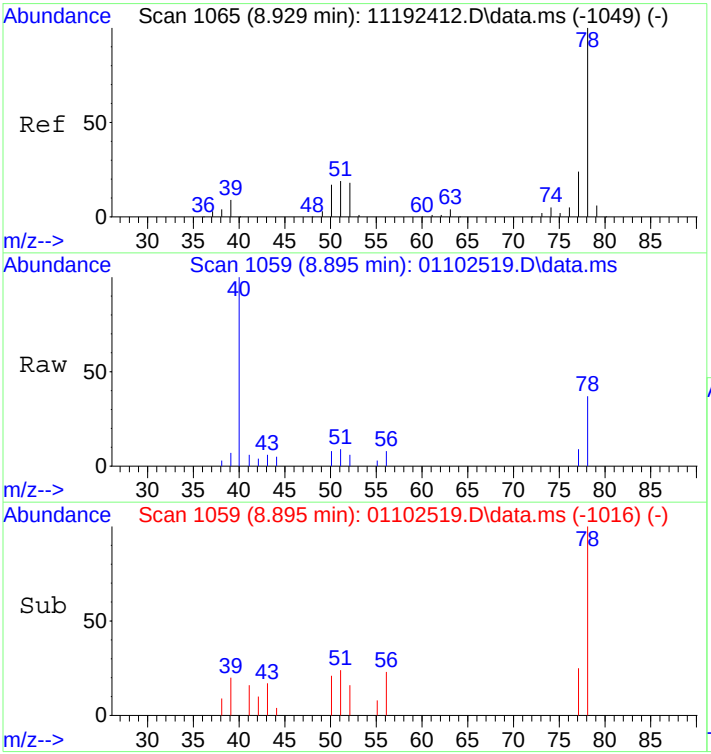


#32
Chloroform
Concen: 0.95 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 83 Resp: 21759

Ion	Ratio	Lower	Upper
83	100		
85	65.2	45.1	85.1

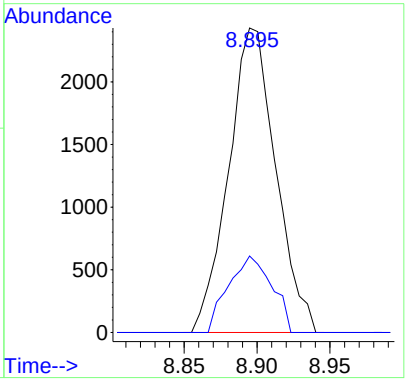


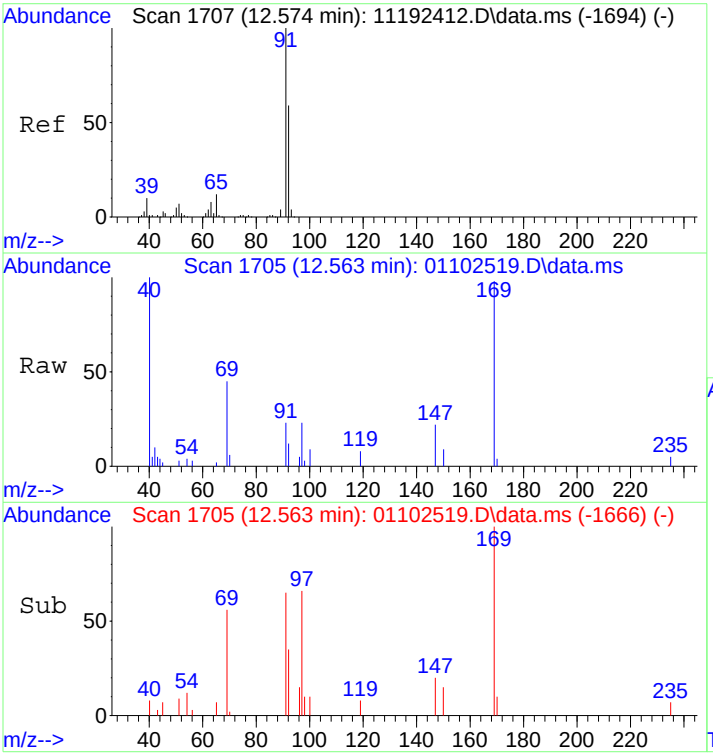


#41
Benzene
Concen: 0.11 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 78 Resp: 5473

Ion	Ratio	Lower	Upper
78	100		
77	23.2	3.7	43.7

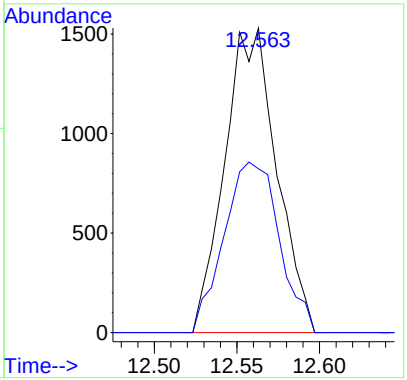


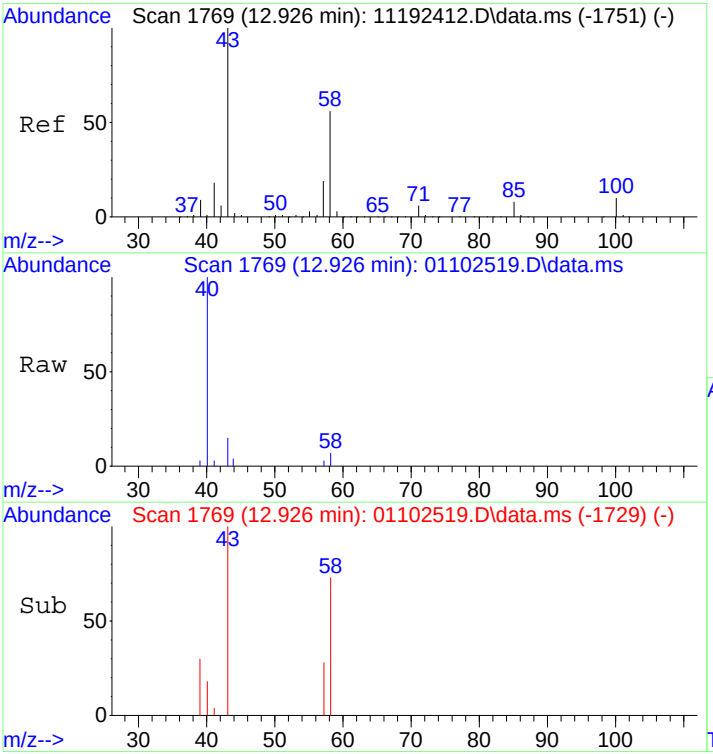


#58
Toluene
Concen: 0.07 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 91 Resp: 3349

Ion	Ratio	Lower	Upper
91	100		
92	59.5	39.2	79.2

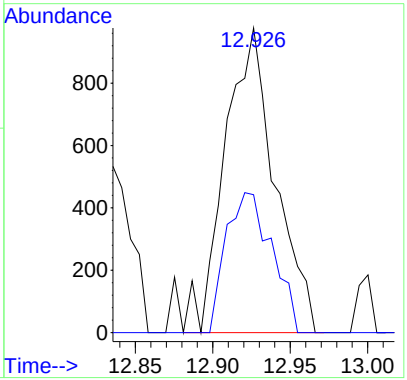




#59
2-Hexanone
Concen: 0.09 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01102519.D
Acq: 11 Jan 2025 2:53

Tgt Ion: 43 Resp: 2204

Ion	Ratio	Lower	Upper
43	100		
58	41.9	35.2	75.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 18:03:37 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

NOA 1/12/25

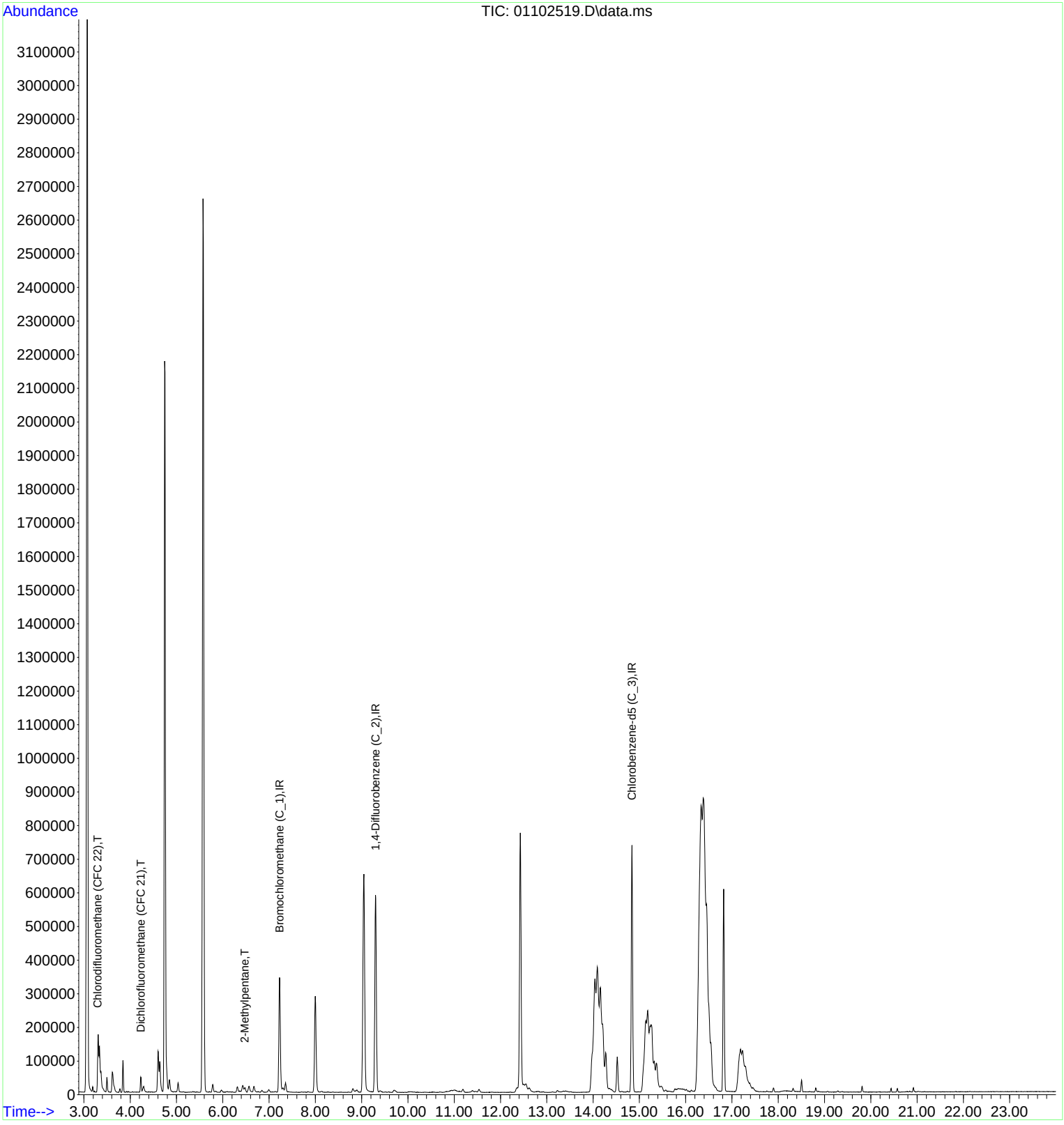
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	142859	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	608786	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	113703	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.14	85	201	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	1214	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	2152	0.541	ng		84
6) 1-Chloro-1,1-Difluoroe...	3.50	65	433	N.D.			
7) Dichlorofluoromethane ...	4.23	67	35612	1.230	ng		98
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	d		
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.35	43	658	N.D.			
12) 2-Methylpentane	6.48	71	2215	0.188	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.	d		
17) 2,3-Dimethylpentane	9.53	56	875	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.40	55	1467	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	16.40	75	779	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.67	91	315	N.D.			
27) 4-Chlorotoluene	17.67	91	315	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	20.18	119	58	N.D.			
31) 1,2,3,4-Tetramethylben...	20.18	119	58	N.D.			
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

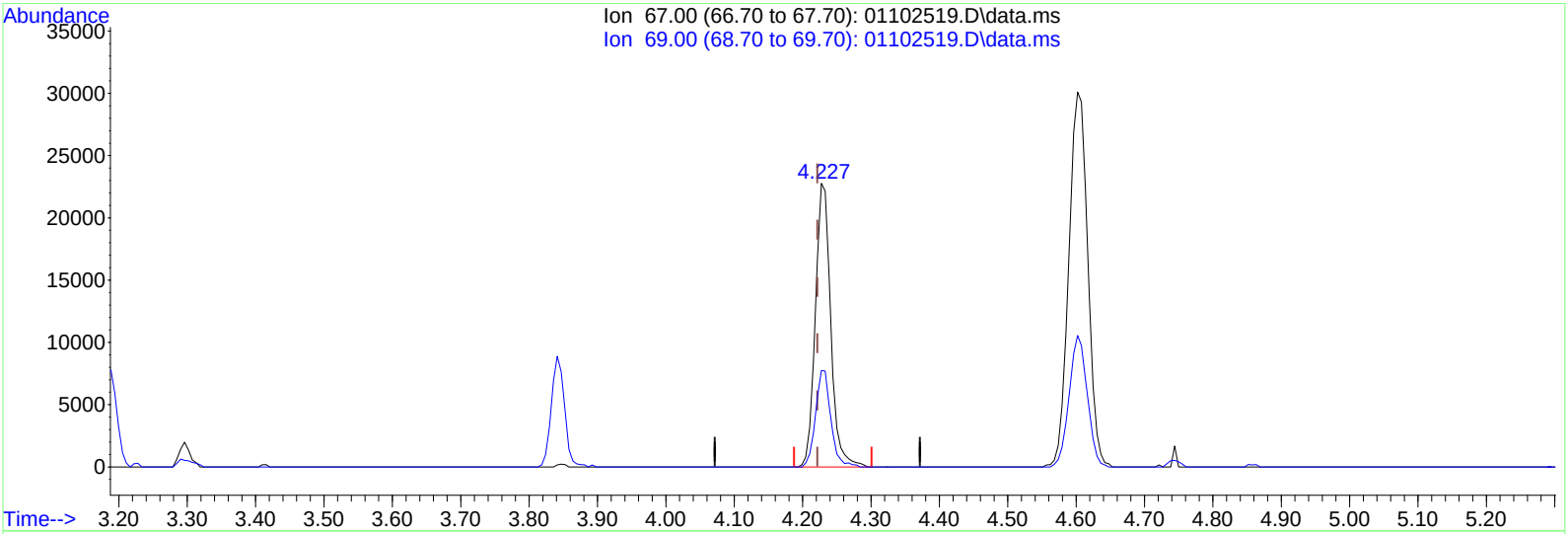
Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

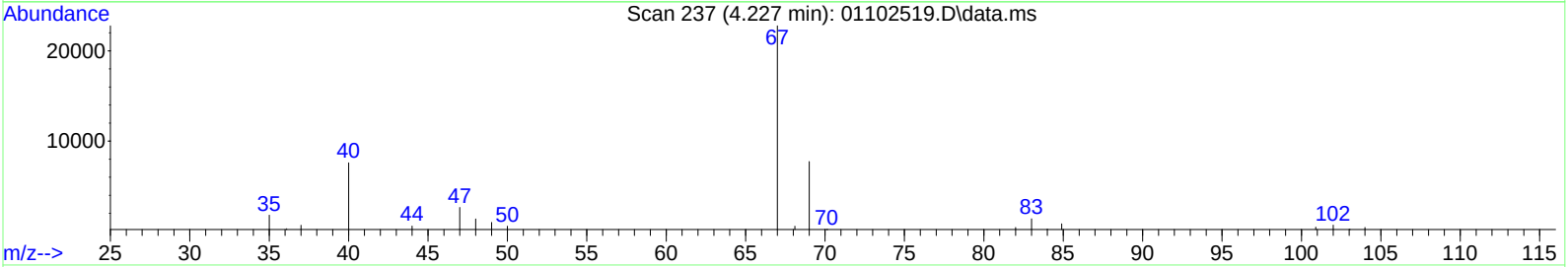
Quant Time: Jan 12 18:03:37 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

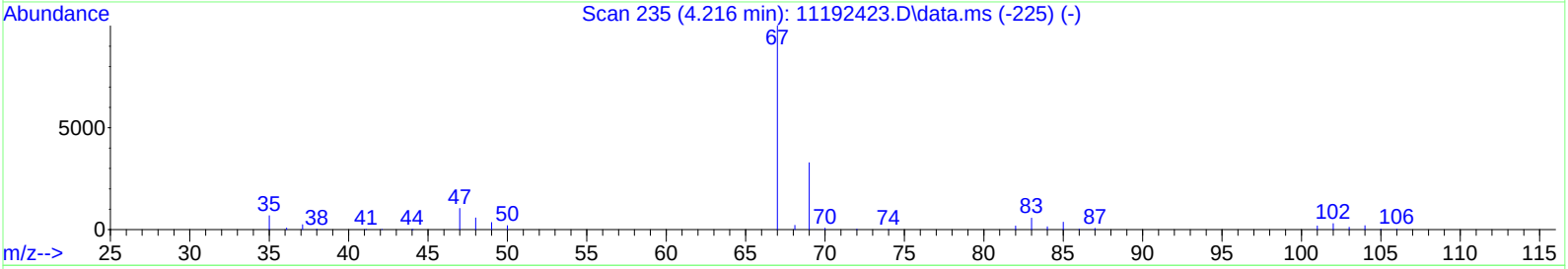


Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 12 17:48:52 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01102519.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.227min (+0.006) 1.23ng

response 35612

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.86
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01102519.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.307	68	75	78	rBV2	171342	305076	5.72%	1.073%
2	3.336	78	80	84	rVB	83125	103417	1.94%	0.364%
3	3.495	104	108	115	rVB	43558	57268	1.07%	0.201%
4	3.614	123	129	147	rVB3	59937	152913	2.87%	0.538%
5	3.779	151	158	162	rBV	10697	15040	0.28%	0.053%
6	3.841	164	169	176	rBV	94630	122467	2.30%	0.431%
7	4.227	231	237	242	rBV	44935	66691	1.25%	0.235%
8	4.290	242	248	256	rVB3	16344	35905	0.67%	0.126%
9	4.602	288	303	307	rBV	121947	246663	4.62%	0.868%
10	4.636	307	309	320	rVV	90537	156808	2.94%	0.552%
11	4.744	320	328	342	rVV	2172700	3884719	72.81%	13.667%
12	4.846	342	346	358	rVB	35462	70986	1.33%	0.250%
13	5.034	373	379	385	rBV	26960	43845	0.82%	0.154%
14	5.573	463	474	491	rBV	2656683	5335557	100.00%	18.771%
15	5.783	504	511	518	rBV	23155	45143	0.85%	0.159%
16	5.971	539	544	552	rVB3	7002	14570	0.27%	0.051%
17	6.317	594	605	612	rBV	16622	37567	0.70%	0.132%
18	6.430	617	625	630	rVV2	20190	50692	0.95%	0.178%
19	6.476	630	633	641	rVB3	13671	26663	0.50%	0.094%
20	6.567	641	649	661	rBV4	17681	46549	0.87%	0.164%
21	6.675	661	668	678	rVB	16599	35403	0.66%	0.125%
22	6.845	693	698	704	rVB3	5397	10281	0.19%	0.036%
23	6.993	713	724	732	rBV4	7938	19293	0.36%	0.068%
24	7.225	756	765	775	rBV	340633	752662	14.11%	2.648%
25	7.299	775	778	782	rVV3	12319	24312	0.46%	0.086%
26	7.356	782	788	796	rVB	26917	54696	1.03%	0.192%
27	7.998	891	901	916	rBV	285769	670414	12.57%	2.359%
28	8.810	1036	1044	1051	rBV3	10908	27023	0.51%	0.095%
29	8.895	1055	1059	1071	rVB2	6544	15904	0.30%	0.056%
30	9.048	1074	1086	1113	rBV	648407	1727132	32.37%	6.076%
31	9.298	1120	1130	1143	rBV	585203	1360634	25.50%	4.787%
32	9.395	1143	1147	1156	rVB3	4136	10411	0.20%	0.037%
33	9.701	1192	1201	1217	rBV8	6733	24279	0.46%	0.085%
34	11.189	1456	1463	1471	rVB3	9327	22618	0.42%	0.080%
35	11.388	1488	1498	1506	rBV5	4557	14036	0.26%	0.049%
36	11.535	1517	1524	1536	rVB3	9110	23360	0.44%	0.082%
37	12.353	1657	1668	1670	rBV6	13782	32274	0.60%	0.114%
38	12.427	1672	1681	1691	rVV	758679	1747025	32.74%	6.146%
39	12.620	1711	1715	1726	rVB3	10388	28128	0.53%	0.099%
40	13.227	1816	1822	1827	rBV4	5447	11797	0.22%	0.042%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

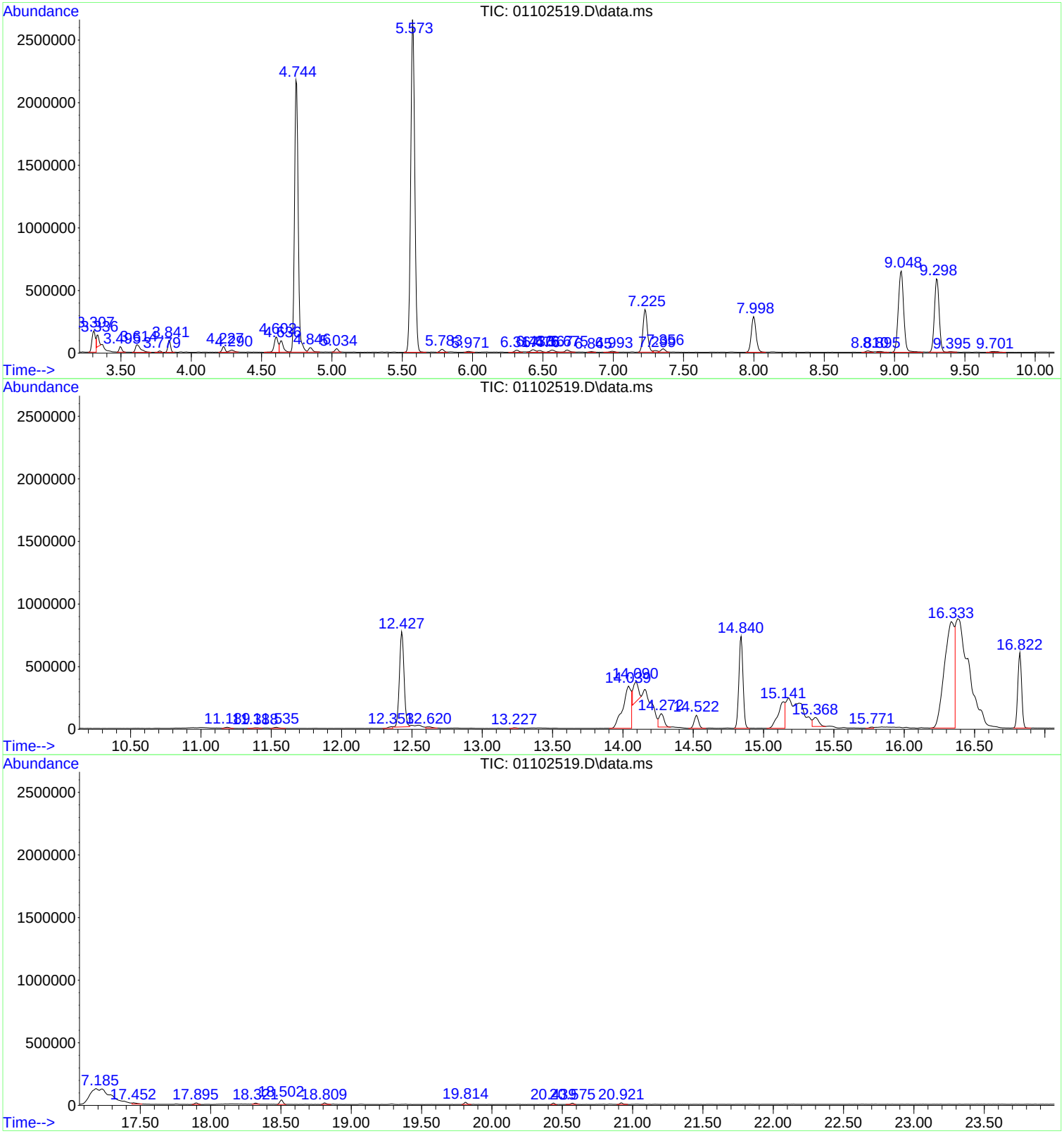
41	14.039	1941	1965	1969	rBV	337217	1407771	26.38%	4.953%
42	14.090	1970	1974	1981	rVB2	129435	382885	7.18%	1.347%
43	14.272	2002	2006	2018	rVB	107142	253551	4.75%	0.892%
44	14.522	2040	2050	2062	rBV	104567	223900	4.20%	0.788%
45	14.840	2097	2106	2117	rBV	733312	1494451	28.01%	5.258%
46	15.141	2138	2159	2161	rBV	212691	733384	13.75%	2.580%
47	15.368	2195	2199	2212	rVB2	71011	197166	3.70%	0.694%
48	15.771	2262	2270	2272	rBV4	9283	17782	0.33%	0.063%
49	16.333	2343	2369	2374	rBV2	849896	4378993	82.07%	15.406%
50	16.822	2447	2455	2469	rVB	601670	1135939	21.29%	3.996%
51	17.185	2497	2519	2523	rBV2	126100	562725	10.55%	1.980%
52	17.452	2564	2566	2577	rVB5	10821	23492	0.44%	0.083%
53	17.895	2639	2644	2650	rVB3	11812	20251	0.38%	0.071%
54	18.321	2714	2719	2724	rBV4	8985	13704	0.26%	0.048%
55	18.502	2746	2751	2757	rVB2	35264	55737	1.04%	0.196%
56	18.809	2801	2805	2813	rBV2	12134	19131	0.36%	0.067%
57	19.814	2977	2982	2989	rBV	16864	24264	0.45%	0.085%
58	20.439	3088	3092	3096	rVB2	11228	13328	0.25%	0.047%
59	20.575	3107	3116	3120	rBV2	10747	15339	0.29%	0.054%
60	20.921	3171	3177	3185	rBV4	12940	20311	0.38%	0.071%

Sum of corrected areas: 28424325

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

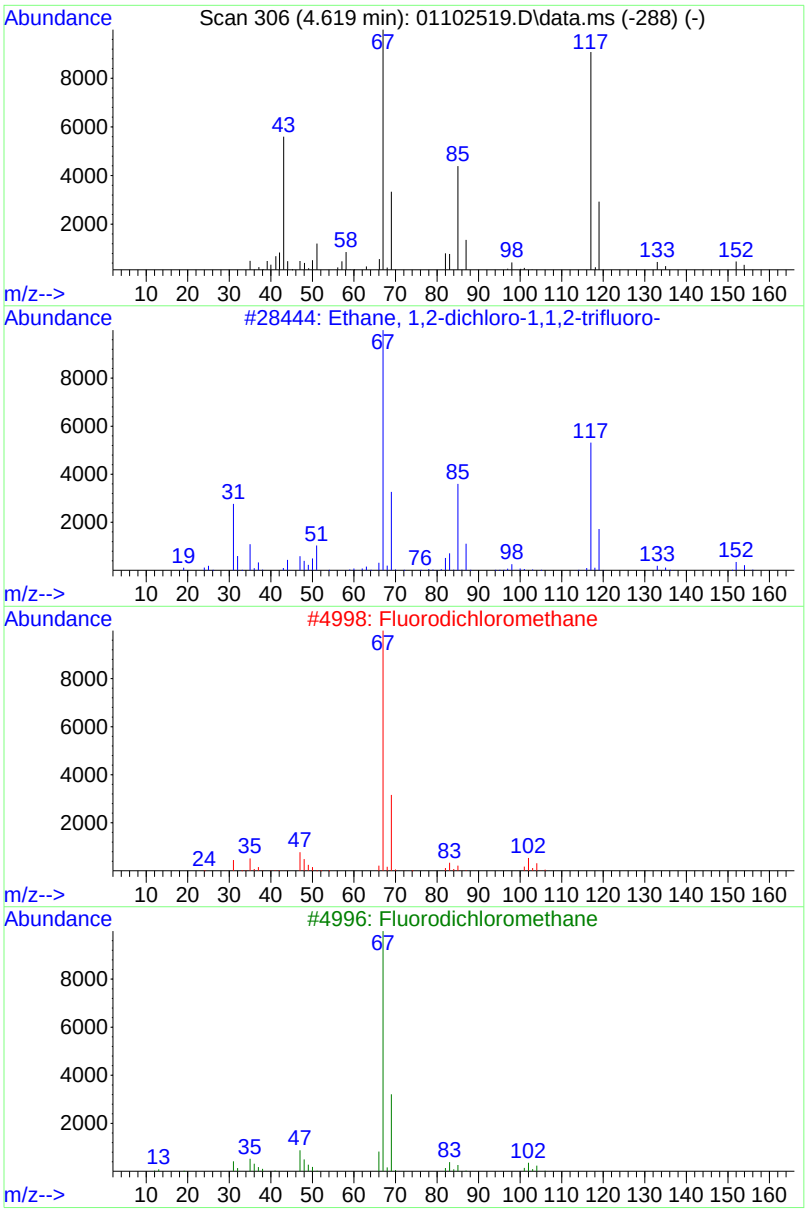
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

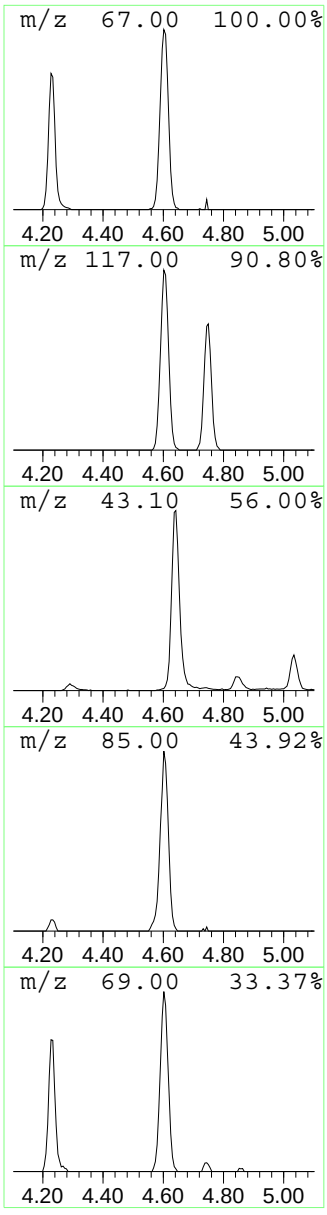
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 10 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.602	4.10 ng	246663	Bromochloromethane (IS1)	7.225

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	94
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
3	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
4	2-Chloro-1,1,2-trifluoroethyl et...	162	C4H6ClF3O	000310-71-4	12
5	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	10





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\10\
Data File : 01102519.D
Acq On : 11 Jan 2025 2:53
Operator : CG
Sample : P2405139-049 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

VOA 1/12/25

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.602	4.1	ng	246663	1	7.225	752662	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 11:19:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	147627	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	635750	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	115077	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	249993	12.430 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%			
57) Toluene-d8 (SS2)	12.43	98	669702	13.119 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.96%			
73) Bromofluorobenzene (SS3)	16.82	174	233013	13.227 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.37	85	14747	0.511 ng		98
4) Chloromethane	3.52	50	265	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	363	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.29	45	14826	1.358 ng		97
11) Acetonitrile	4.45	41	565	N.D.		
12) Acrolein	4.55	56	1071	0.115 ng		95
13) Acetone	4.64	58	14937	1.503 ng		94
14) Trichlorofluoromethane	4.74	101	1648554	60.914 ng		100
15) 2-Propanol (Isopropanol)	4.85	45	55191	1.550 ng		97
16) Acrylonitrile	5.03	53	202	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.35	84	632	N.D.		
20) 3-Chloro-1-propene (Al...	5.39	41	562	N.D.		
21) Trichlorotrifluoroethane	5.57	151	946040	77.477 ng		98
22) Carbon Disulfide	5.60	76	8406	0.187 ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	2355	0.979 ng	#	1
27) 2-Butanone (MEK)	6.67	72	3536	0.443 ng	#	81
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	7.31	87	268	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.31	57	4805	0.217 ng	#	95
32) Chloroform	7.35	83	21687	0.902 ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.81	56	9312	No Calib	#	
41) Benzene	8.90	78	5540	0.109 ng		97
42) Carbon Tetrachloride	9.07	117	121	N.D.		
43) Cyclohexane	9.18	84	120	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.08	83	633	N.D.		
47) Trichloroethene	10.13	130	701	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

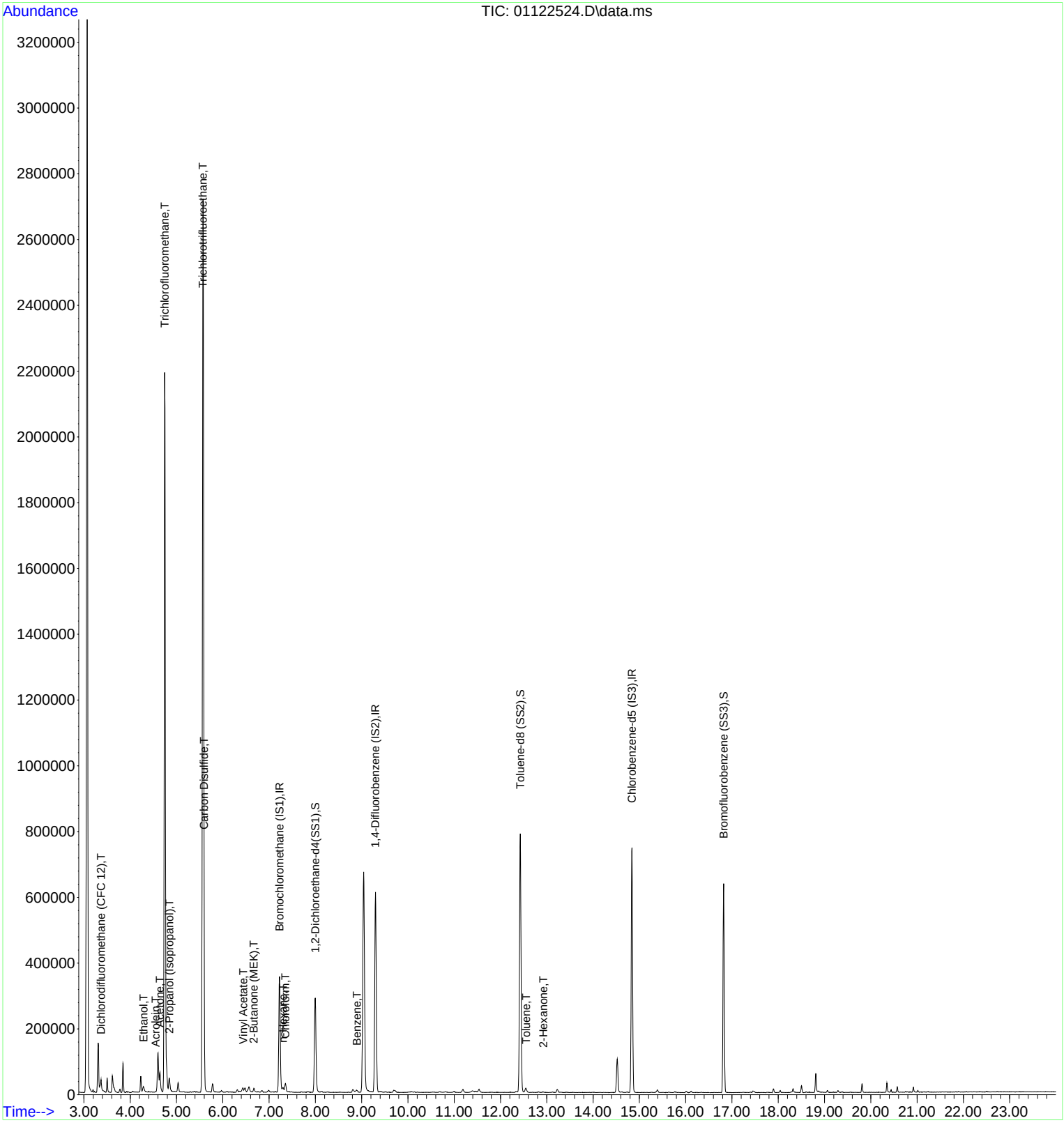
Quant Time: Jan 13 11:19:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	3567	0.073 ng		93
59) 2-Hexanone	12.93	43	1908	0.080 ng	#	71
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	242	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	14.03	166	145	N.D.		
65) Chlorobenzene	14.88	112	172	N.D.		
66) Ethylbenzene	15.40	91	1033	N.D.		
67) m- & p-Xylenes	15.64	91	775	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	103	N.D.		
70) o-Xylene	16.24	91	526	N.D.		
71) n-Nonane	16.61	43	237	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.43	105	112	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	150	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.85	180	128	N.D.		
95) Naphthalene	20.94	128	345	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	466	N.D.		
100) n-Butylbenzene	19.38	91	254	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 13 11:19:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
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VOA 1/13/25

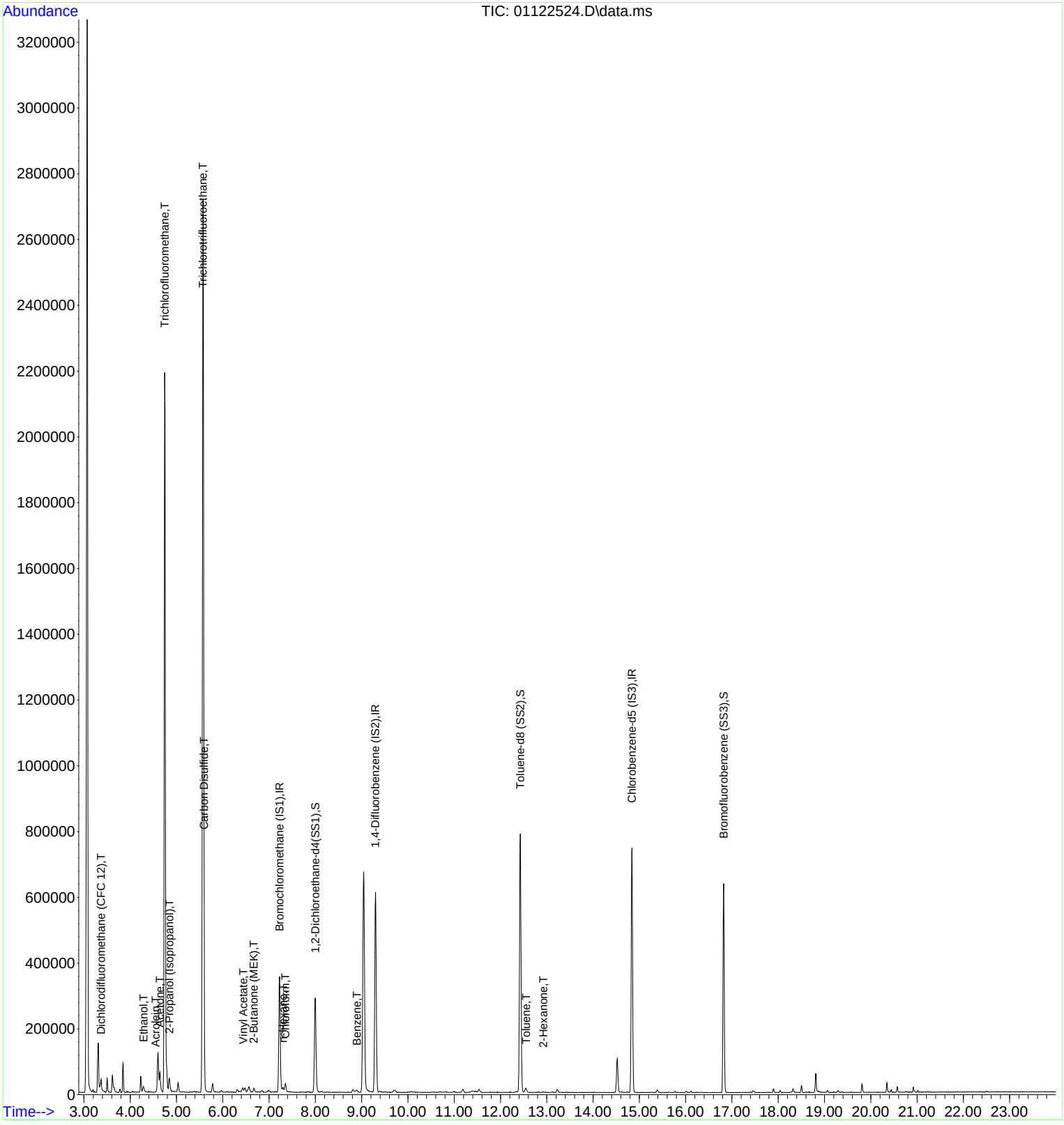
Quant Time: Jan 13 11:19:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

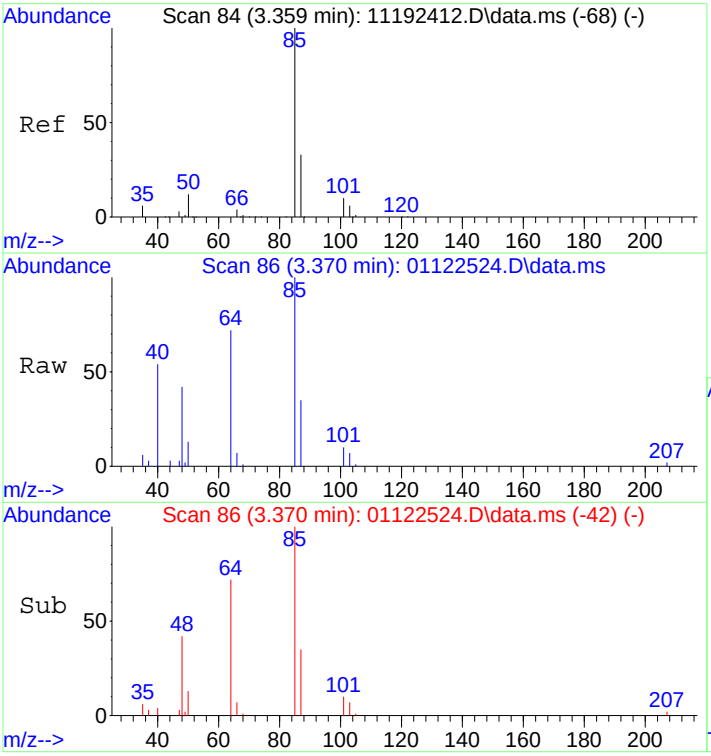
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	147627	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	635750	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	115077	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	249993	12.430	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%				
57) Toluene-d8 (SS2)	12.43	98	669702	13.119	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.96%				
73) Bromofluorobenzene (SS3)	16.82	174	233013	13.227	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.37	85	14747	0.511	ng		98
10) Ethanol	4.29	45	14826	1.358	ng		97
12) Acrolein	4.55	56	1071	0.115	ng		95
13) Acetone	4.64	58	14937	1.503	ng		94
14) Trichlorofluoromethane	4.74	101	1648554	60.914	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	55191	1.550	ng		97
21) Trichlorotrifluoroethane	5.57	151	946040	77.477	ng		98
22) Carbon Disulfide	5.60	76	8406	0.187	ng	#	1
26) Vinyl Acetate	6.44	86	2355	0.979	ng	#	1
27) 2-Butanone (MEK)	6.67	72	3536	0.443	ng	#	81
31) n-Hexane	7.31	57	4805	0.217	ng	#	95
32) Chloroform	7.35	83	21687	0.902	ng		100
41) Benzene	8.90	78	5540	0.109	ng		97
58) Toluene	12.56	91	3567	0.073	ng		93
59) 2-Hexanone	12.93	43	1908	0.080	ng	#	71

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 13 11:19:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

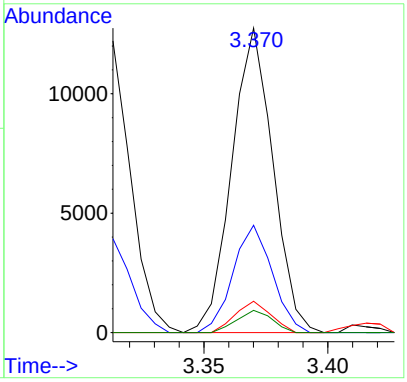


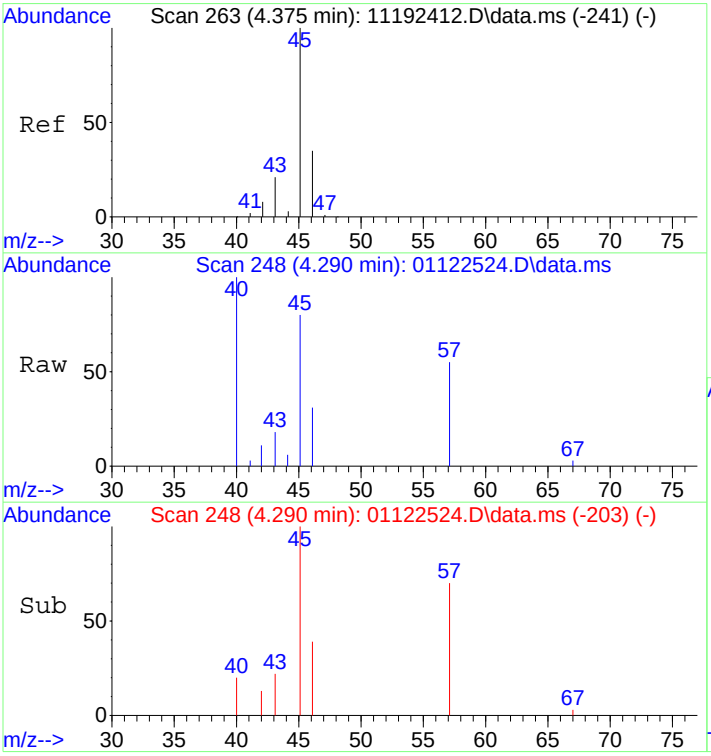


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.51 ng
RT: 3.37 min Scan# 86
Delta R.T. -0.002 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 85 Resp: 14747

Ion	Ratio	Lower	Upper
85	100		
87	33.6	12.6	52.6
101	8.8	0.0	29.6
103	6.3	0.0	26.2

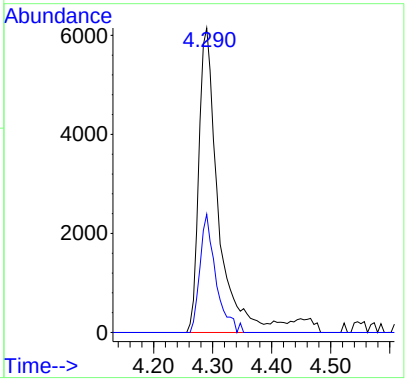


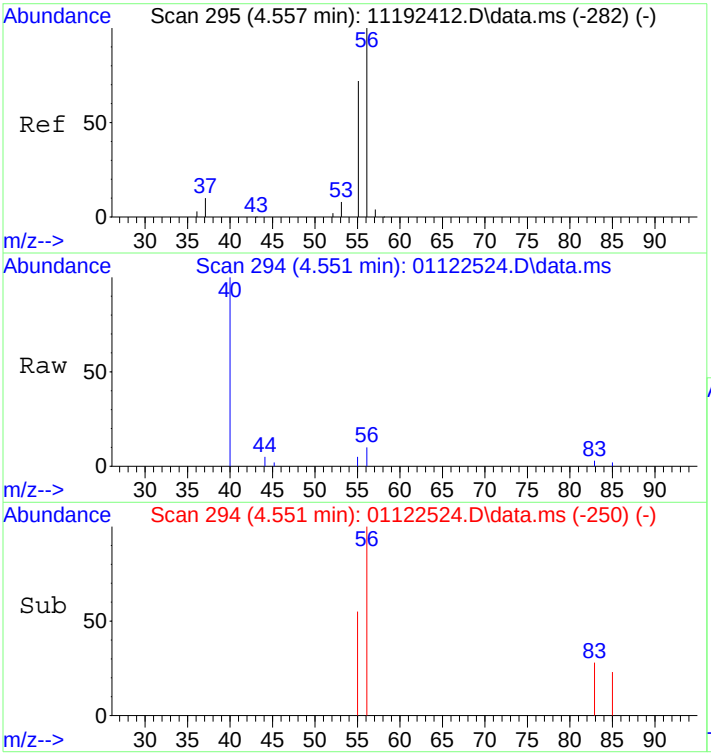


#10
Ethanol
Concen: 1.36 ng
RT: 4.29 min Scan# 248
Delta R.T. 0.006 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 45 Resp: 14826

Ion	Ratio	Lower	Upper
45	100		
46	30.2	11.8	51.8

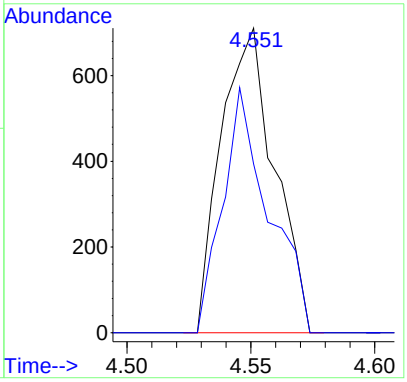


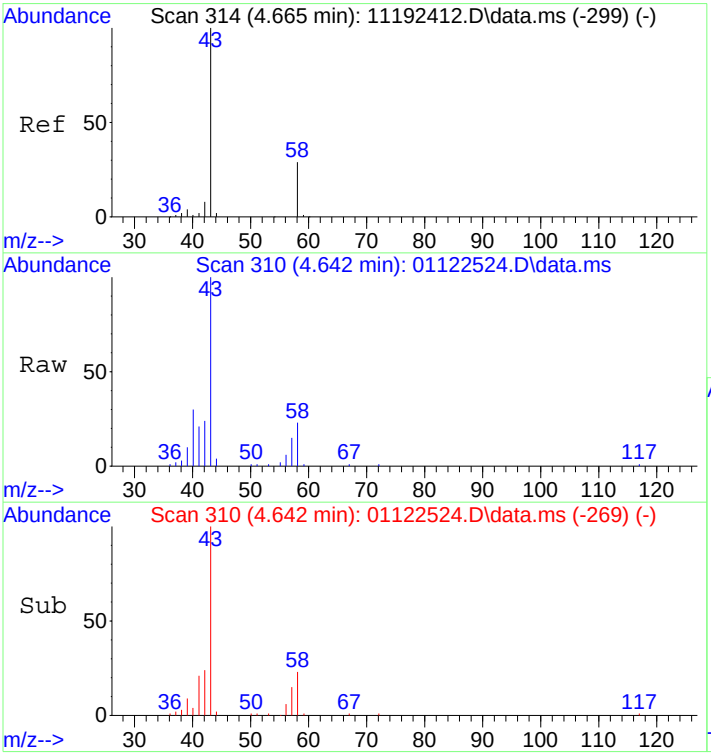


#12
Acrolein
Concen: 0.11 ng
RT: 4.55 min Scan# 294
Delta R.T. -0.002 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 56 Resp: 1071

Ion	Ratio	Lower	Upper
56	100		
55	69.2	53.1	93.1

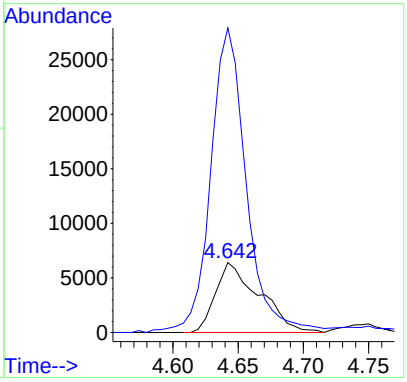


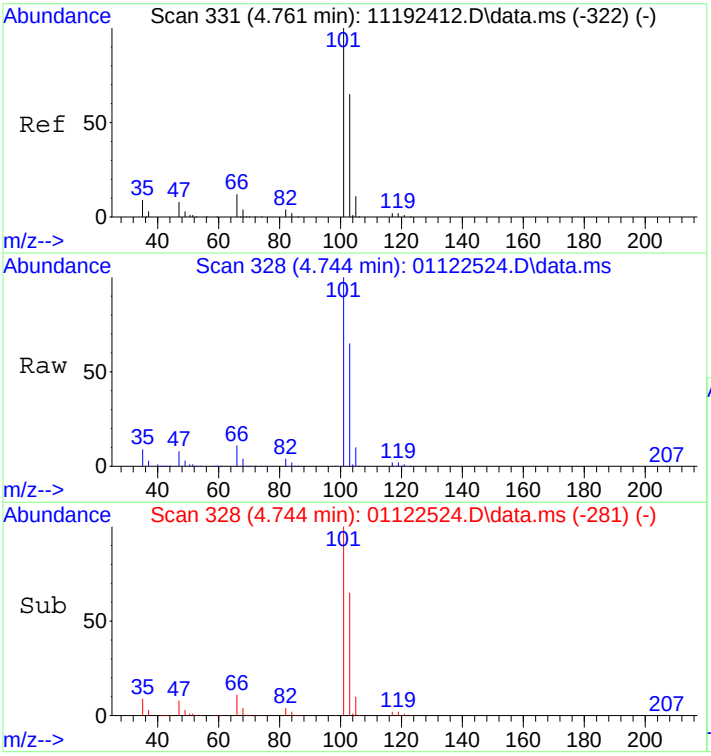


#13
Acetone
Concen: 1.50 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 58 Resp: 14937

Ion	Ratio	Lower	Upper
58	100		
43	355.7	312.5	372.5

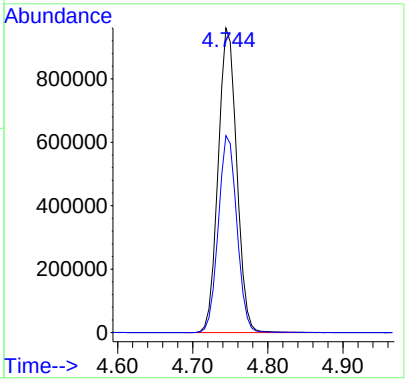


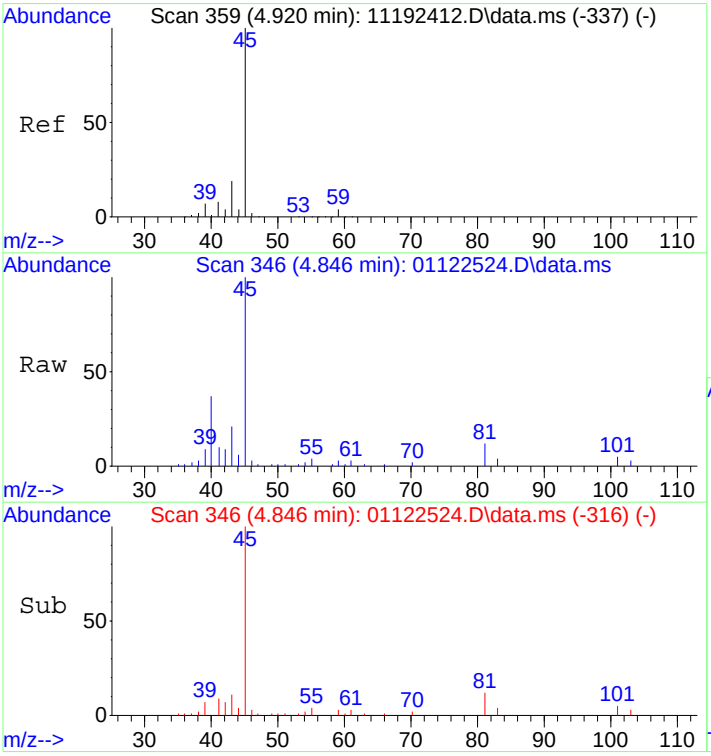


#14
Trichlorofluoromethane
Concen: 60.91 ng
RT: 4.74 min Scan# 328
Delta R.T. 0.016 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion:101 Resp: 1648554

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.8	84.8

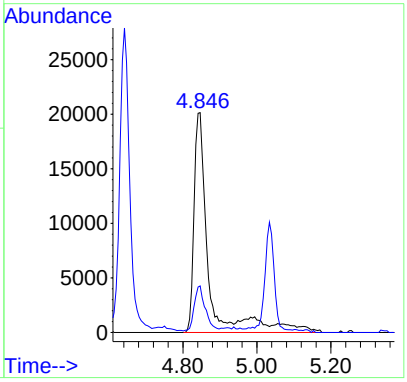


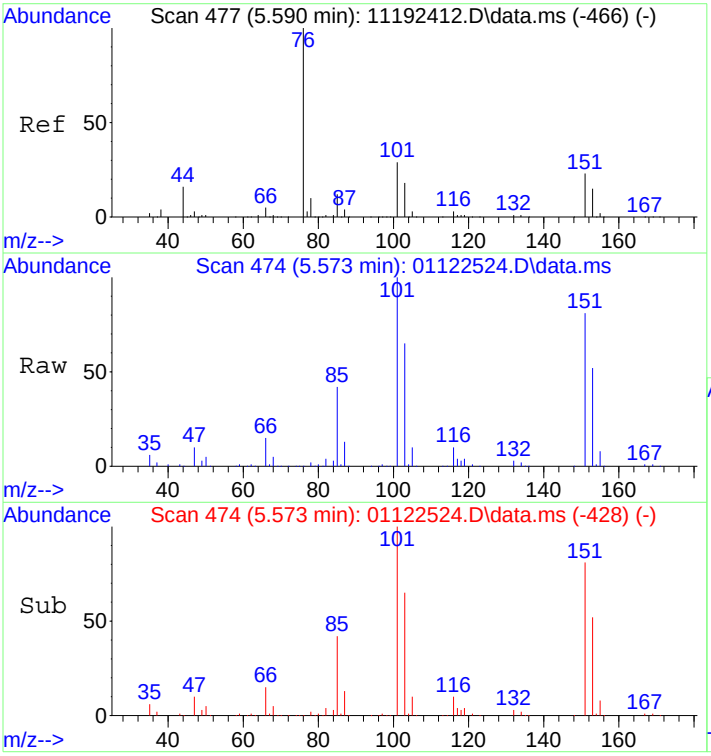


#15
2-Propanol (Isopropanol)
Concen: 1.55 ng
RT: 4.85 min Scan# 346
Delta R.T. -0.078 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 45 Resp: 55191

Ion	Ratio	Lower	Upper
45	100		
43	18.7	0.2	40.2

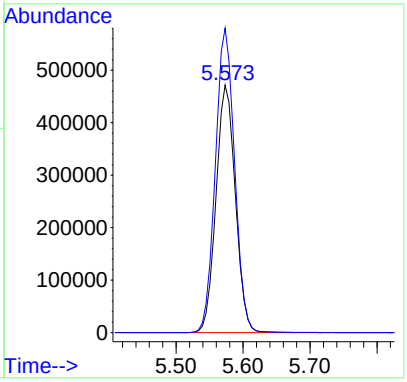


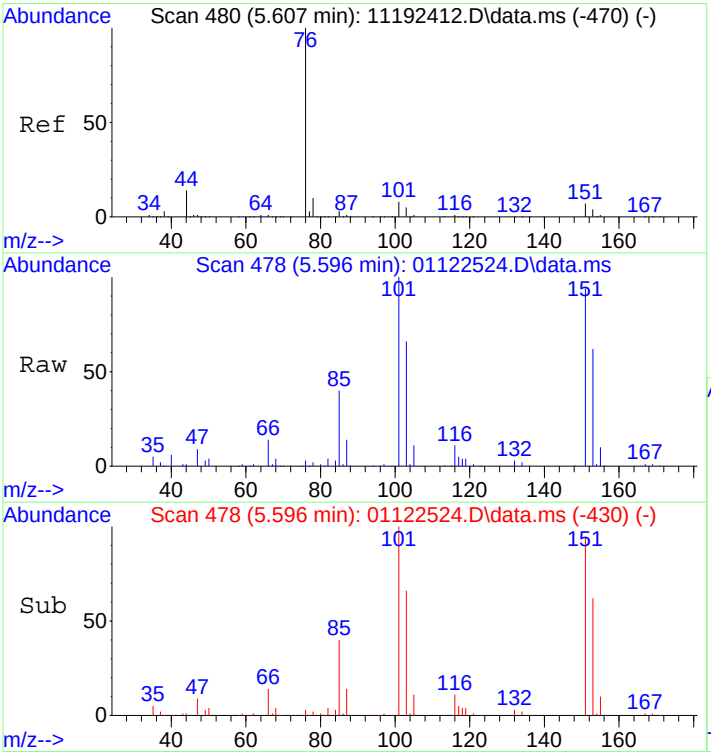


#21
Trichlorotrifluoroethane
Concen: 77.48 ng
RT: 5.57 min Scan# 474
Delta R.T. 0.013 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion:151 Resp: 946040

Ion	Ratio	Lower	Upper
151	100		
101	122.4	105.0	145.0

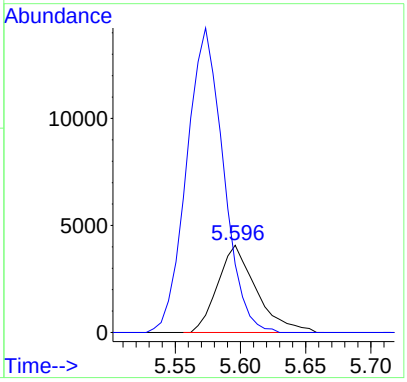


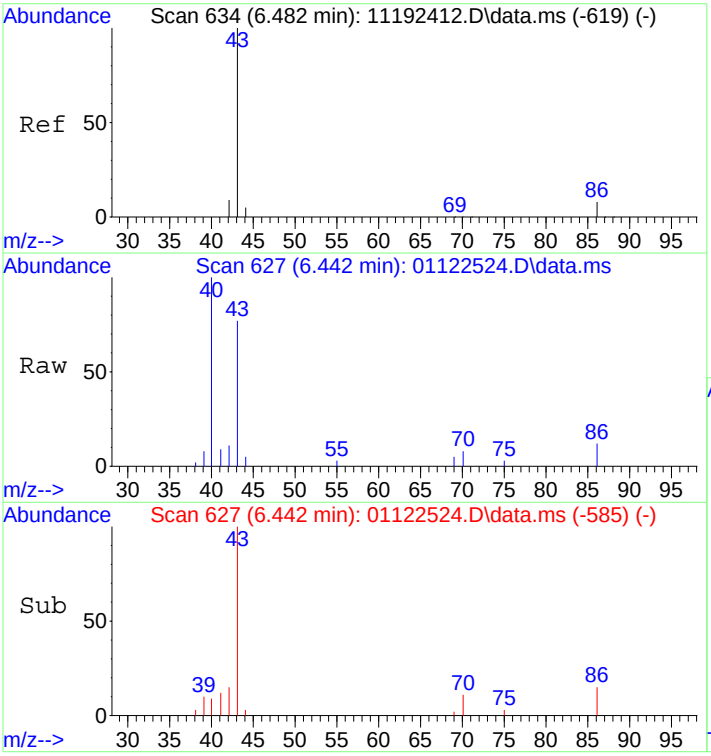


#22
Carbon Disulfide
Concen: 0.19 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.024 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 76 Resp: 8406

Ion	Ratio	Lower	Upper
76	100		
78	332.9	0.0	29.6#

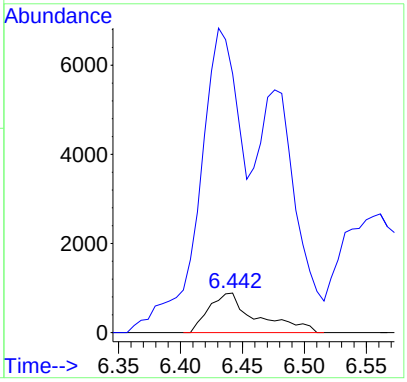


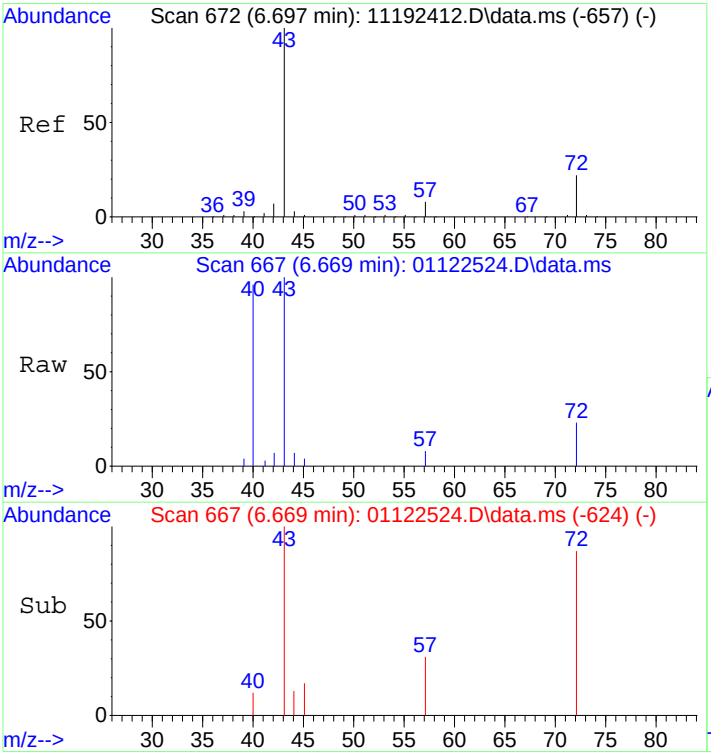


#26
Vinyl Acetate
Concen: 0.98 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 86 Resp: 2355

Ion	Ratio	Lower	Upper
86	100		
43	723.8	1331.6	1371.6#

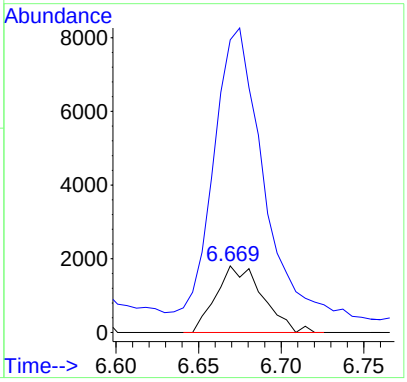


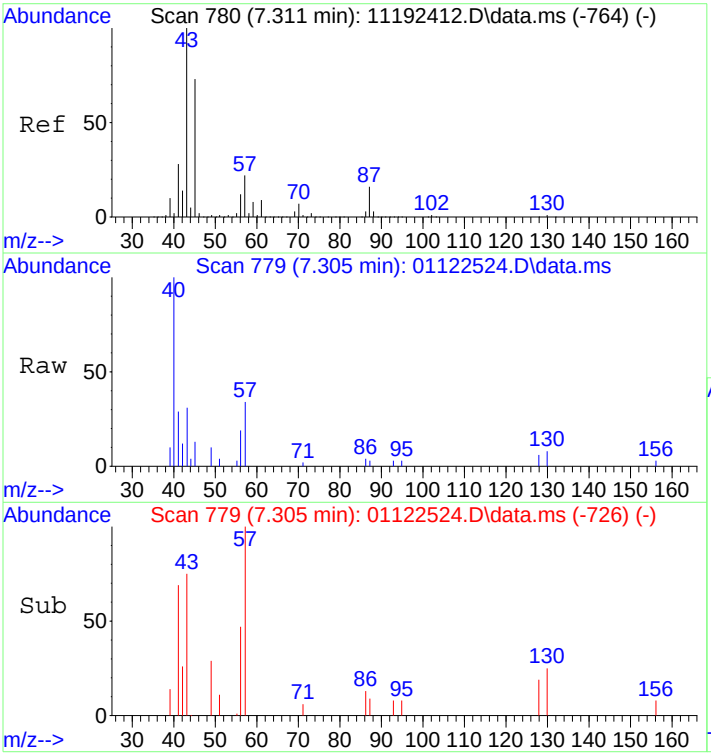


#27
2-Butanone (MEK)
Concen: 0.44 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 72 Resp: 3536

Ion	Ratio	Lower	Upper
72	100		
43	509.4	439.8	479.8#

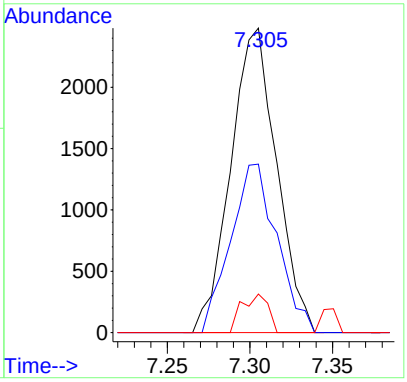


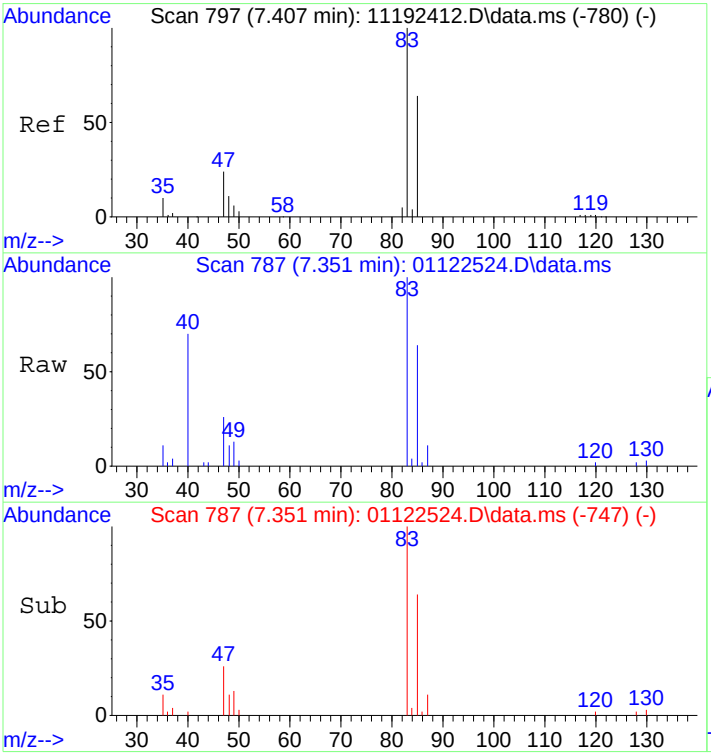


#31
n-Hexane
Concen: 0.22 ng
RT: 7.31 min Scan# 779
Delta R.T. 0.052 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 57 Resp: 4805

Ion	Ratio	Lower	Upper
57	100		
56	55.8	43.4	65.0
86	7.3	10.9	16.3#

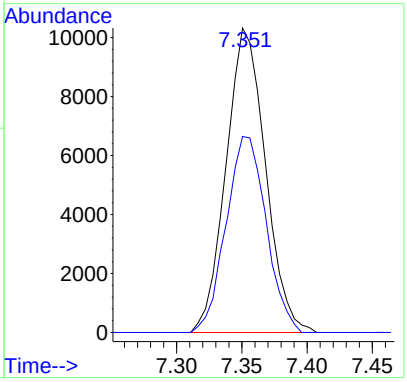


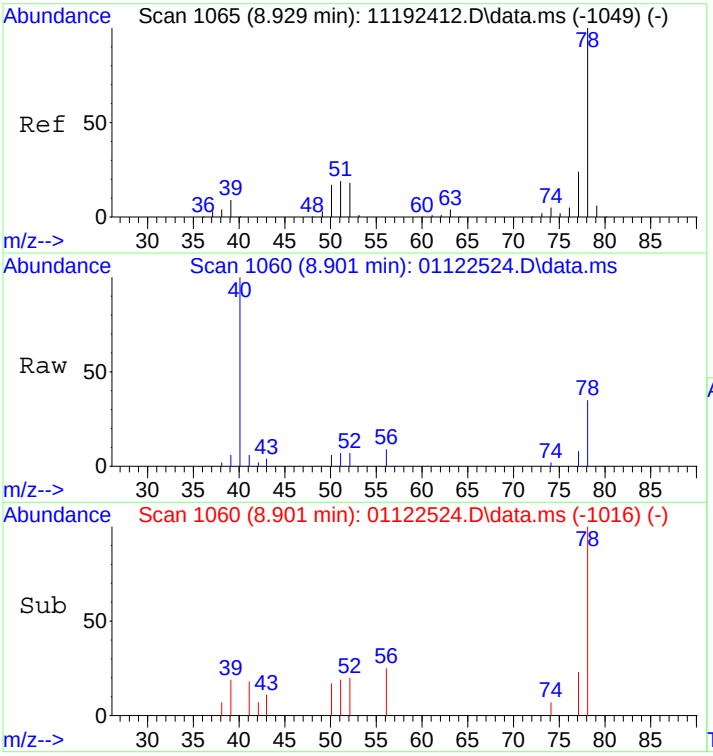


#32
Chloroform
Concen: 0.90 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 83 Resp: 21687

Ion	Ratio	Lower	Upper
83	100		
85	65.5	45.1	85.1

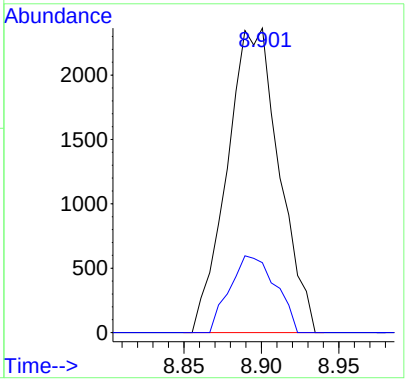


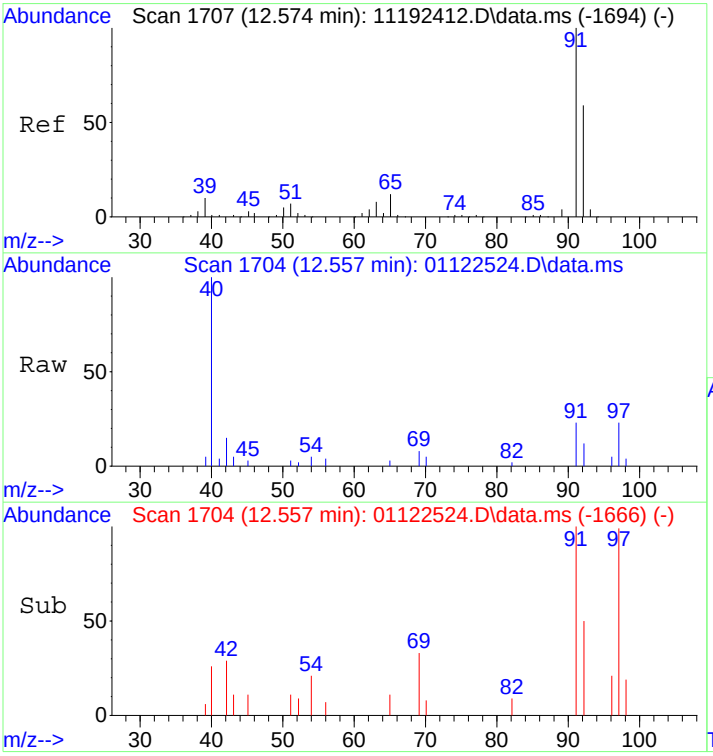


#41
Benzene
Concen: 0.11 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 78 Resp: 5540

Ion	Ratio	Lower	Upper
78	100		
77	22.2	3.7	43.7

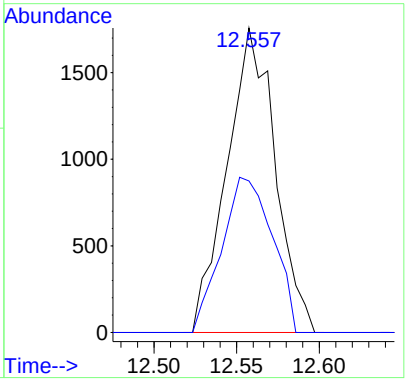


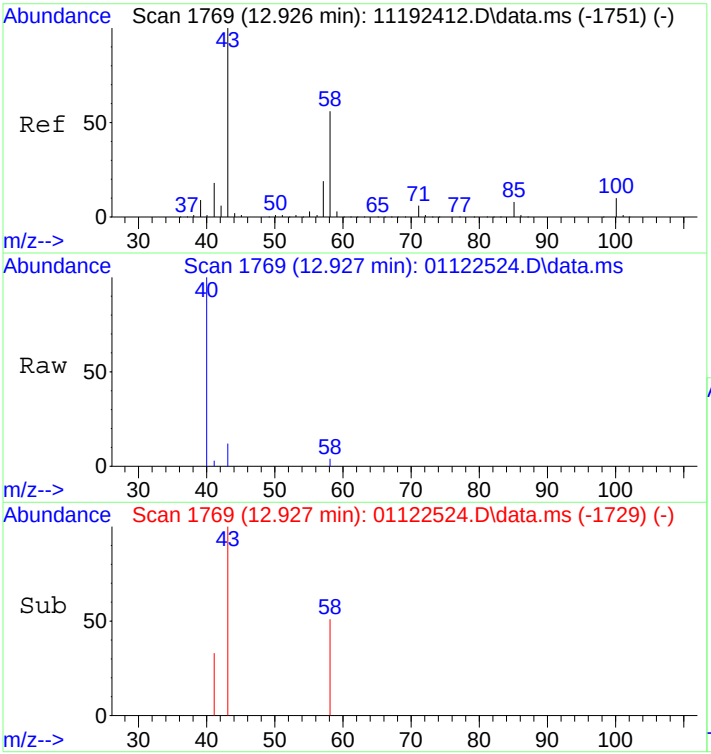


#58
Toluene
Concen: 0.07 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 91 Resp: 3567

Ion	Ratio	Lower	Upper
91	100		
92	53.7	39.2	79.2

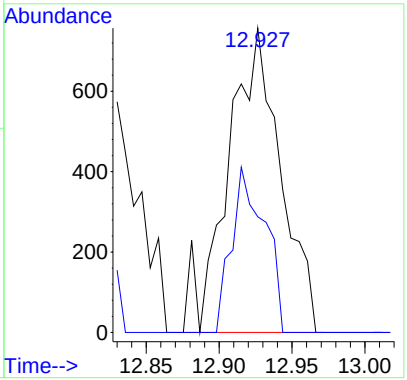




#59
2-Hexanone
Concen: 0.08 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01122524.D
Acq: 12 Jan 2025 18:08

Tgt Ion: 43 Resp: 1908

Ion	Ratio	Lower	Upper
43	100		
58	34.1	35.2	75.2#



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

NOA 1/13/25

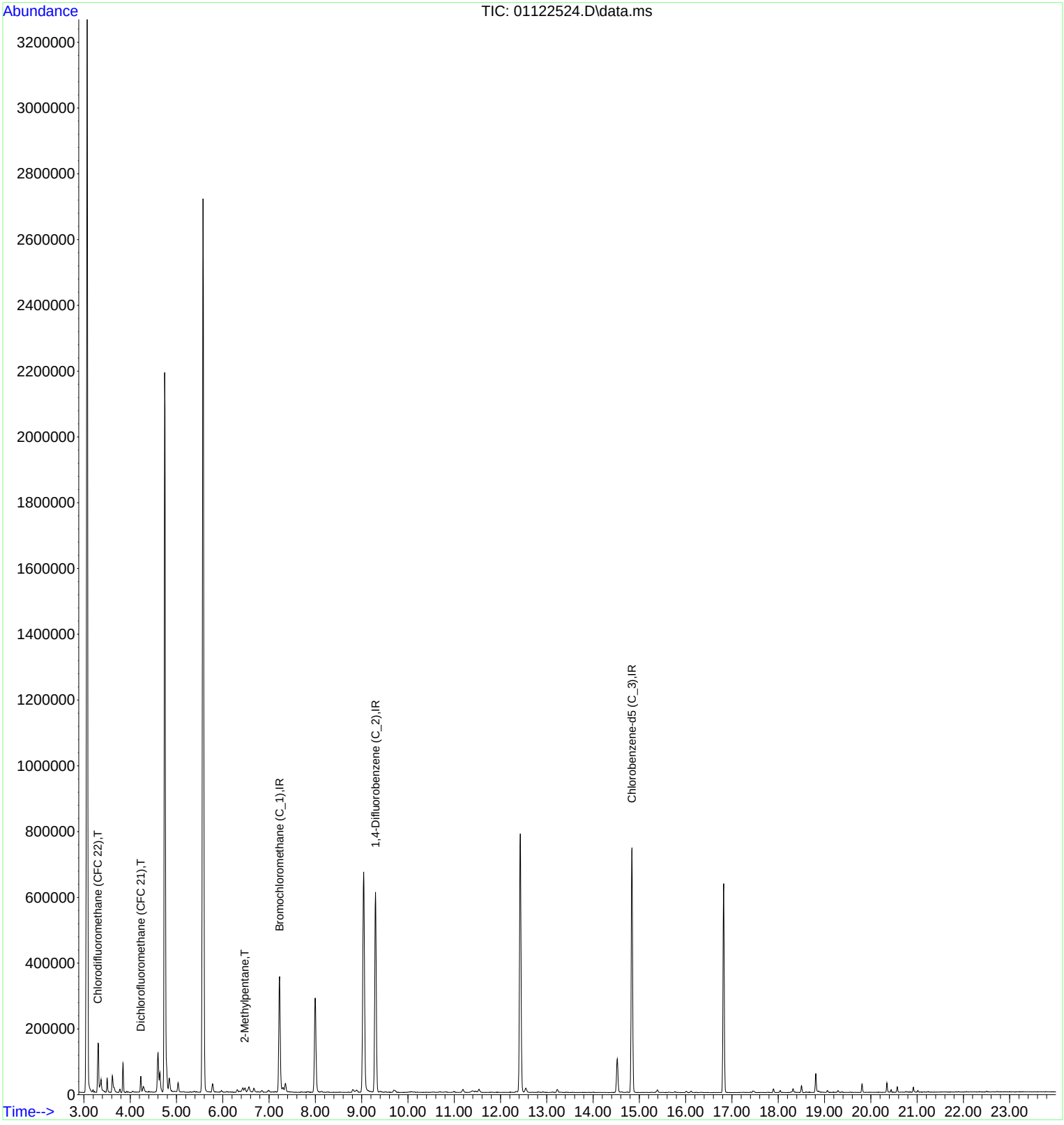
Quant Time: Jan 13 12:36:13 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	149406	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	636054	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	115077	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.14	85	125	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	1221	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	1920	0.461	ng		88
6) 1-Chloro-1,1-Difluoroe...	3.50	65	397	N.D.			
7) Dichlorofluoromethane ...	4.23	67	37128	1.227	ng		100
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	d		
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.33	43	240	N.D.			
12) 2-Methylpentane	6.48	71	2560	0.208	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.	d		
17) 2,3-Dimethylpentane	9.52	56	1014	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.40	55	1294	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	66	N.D.			
27) 4-Chlorotoluene	17.68	91	66	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

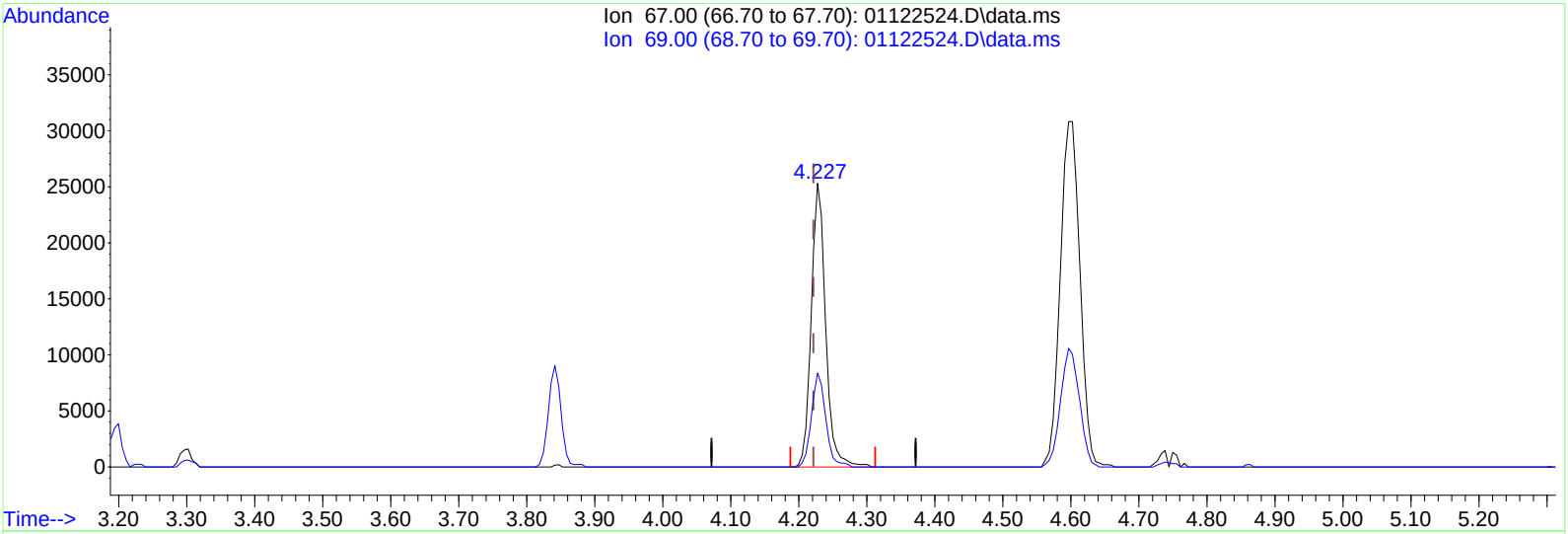
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

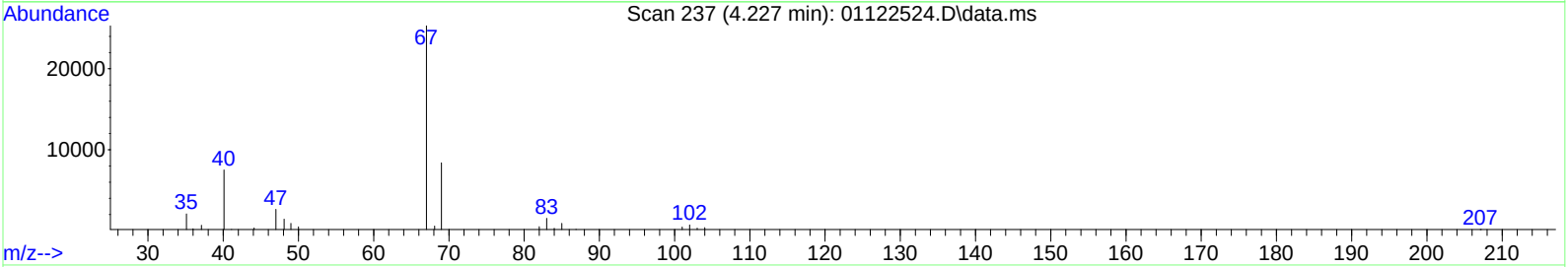
Quant Time: Jan 13 12:36:13 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

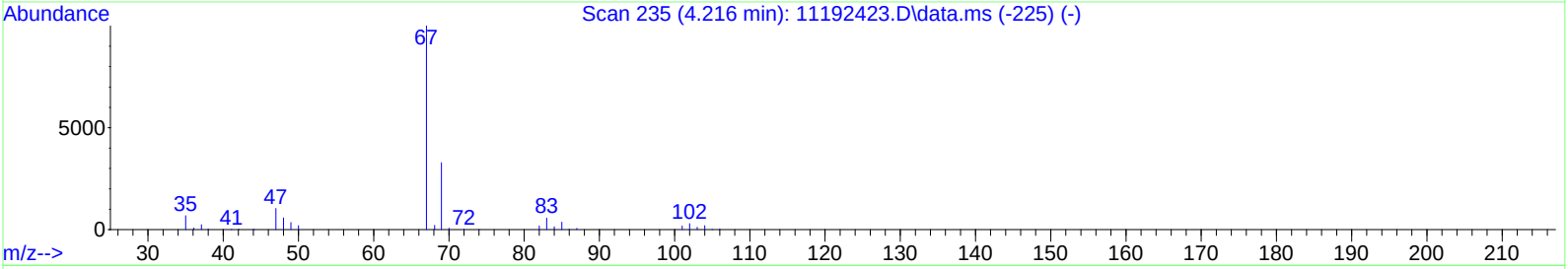


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 13 12:29:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01122524.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.227min (+0.006) 1.23ng

response 37128

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.92
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122524.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.308	68	75	80	rBV2	150171	265115	4.87%	1.278%
2	3.370	80	86	104	rVB2	38925	94124	1.73%	0.454%
3	3.501	104	109	118	rBV	44439	56486	1.04%	0.272%
4	3.614	124	129	149	rVB2	50441	114429	2.10%	0.552%
5	3.779	153	158	163	rVB	10314	14654	0.27%	0.071%
6	3.841	163	169	175	rBV2	89291	121494	2.23%	0.586%
7	4.227	232	237	242	rBV	48064	66692	1.23%	0.321%
8	4.284	242	247	257	rVB3	16479	37179	0.68%	0.179%
9	4.602	295	303	307	rBV	118243	239672	4.40%	1.155%
10	4.642	307	310	320	rVB2	60093	100600	1.85%	0.485%
11	4.744	320	328	341	rBV	2186910	3859833	70.91%	18.606%
12	4.841	341	345	359	rVB	41139	87365	1.61%	0.421%
13	5.034	374	379	388	rVB	28388	47187	0.87%	0.227%
14	5.573	464	474	491	rBV	2716917	5443139	100.00%	26.238%
15	5.778	504	510	519	rBV	25668	51465	0.95%	0.248%
16	5.971	537	544	552	rVB4	5403	11220	0.21%	0.054%
17	6.311	598	604	610	rBV	7845	16037	0.29%	0.077%
18	6.431	618	625	629	rBV3	11269	24469	0.45%	0.118%
19	6.476	629	633	640	rVB	11719	23536	0.43%	0.113%
20	6.567	640	649	659	rVV4	15541	39526	0.73%	0.191%
21	6.669	661	667	680	rVB	12157	26458	0.49%	0.128%
22	6.845	692	698	704	rVB3	5452	12848	0.24%	0.062%
23	6.987	716	723	732	rVB4	5711	13717	0.25%	0.066%
24	7.226	754	765	774	rBV	351853	775498	14.25%	3.738%
25	7.299	775	778	782	rVV2	13810	25736	0.47%	0.124%
26	7.351	782	787	797	rVB	25265	53683	0.99%	0.259%
27	7.998	890	901	918	rBV	286987	669716	12.30%	3.228%
28	8.810	1036	1044	1050	rBV3	8721	21814	0.40%	0.105%
29	8.889	1053	1058	1068	rVB4	6872	17327	0.32%	0.084%
30	9.043	1072	1085	1110	rBV	670197	1759297	32.32%	8.481%
31	9.298	1120	1130	1143	rVB	607864	1398039	25.68%	6.739%
32	9.696	1193	1200	1211	rBV8	6907	22112	0.41%	0.107%
33	11.189	1454	1463	1474	rVB2	9406	23279	0.43%	0.112%
34	11.399	1486	1500	1507	rBV5	4915	18490	0.34%	0.089%
35	11.535	1518	1524	1535	rVB2	9596	23972	0.44%	0.116%
36	12.427	1670	1681	1695	rVV	785611	1797320	33.02%	8.664%
37	12.546	1695	1702	1716	rVB4	13155	34587	0.64%	0.167%
38	13.227	1812	1822	1829	rBV3	9267	21170	0.39%	0.102%
39	14.522	2040	2050	2062	rBV	102280	230422	4.23%	1.111%
40	14.840	2096	2106	2122	rBV	744169	1557688	28.62%	7.509%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

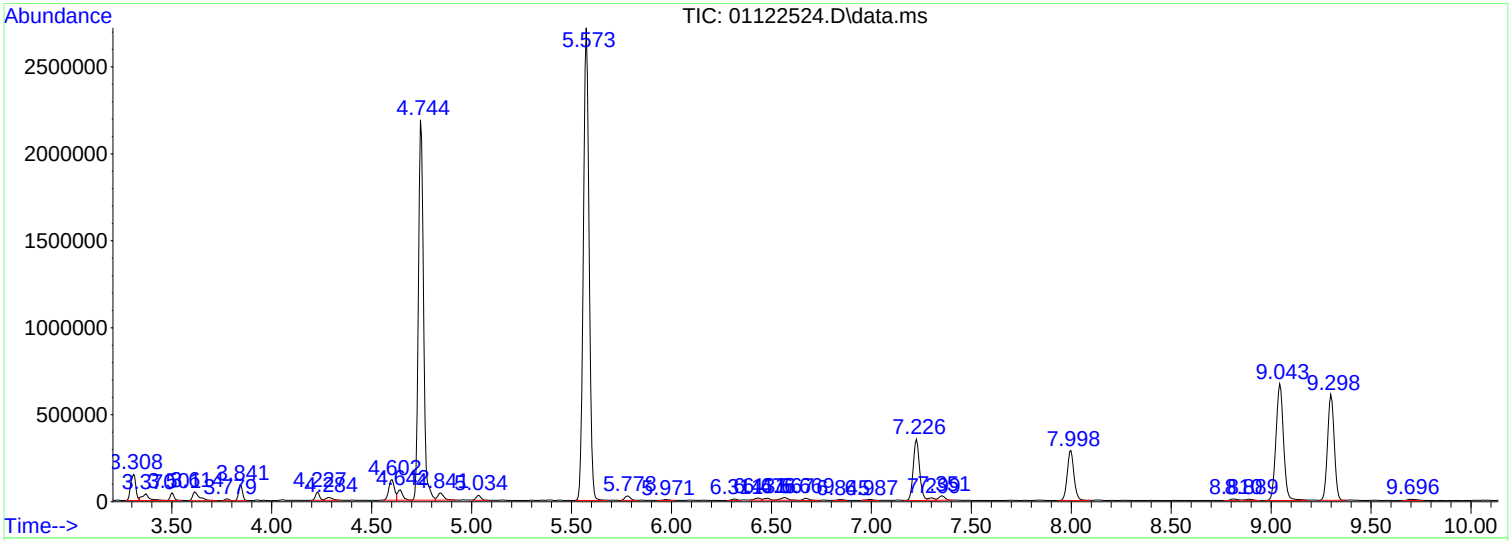
41	15.385	2192	2202	2212	rBV7	7828	19282	0.35%	0.093%
42	16.822	2446	2455	2465	rBV	635751	1196728	21.99%	5.769%
43	17.452	2562	2566	2581	rVB5	5025	14060	0.26%	0.068%
44	17.901	2639	2645	2650	rBV	11376	19772	0.36%	0.095%
45	18.321	2714	2719	2724	rVB3	10509	15199	0.28%	0.073%
46	18.503	2745	2751	2759	rVB3	21108	32938	0.61%	0.159%
47	18.809	2799	2805	2813	rBV	57203	93438	1.72%	0.450%
48	19.292	2884	2890	2896	rBV4	6017	11437	0.21%	0.055%
49	19.814	2976	2982	2988	rBV2	26674	39223	0.72%	0.189%
50	20.348	3071	3076	3086	rBV	27922	39025	0.72%	0.188%
51	20.569	3110	3115	3123	rVB	16961	24281	0.45%	0.117%
52	20.921	3172	3177	3186	rVB3	15147	22122	0.41%	0.107%

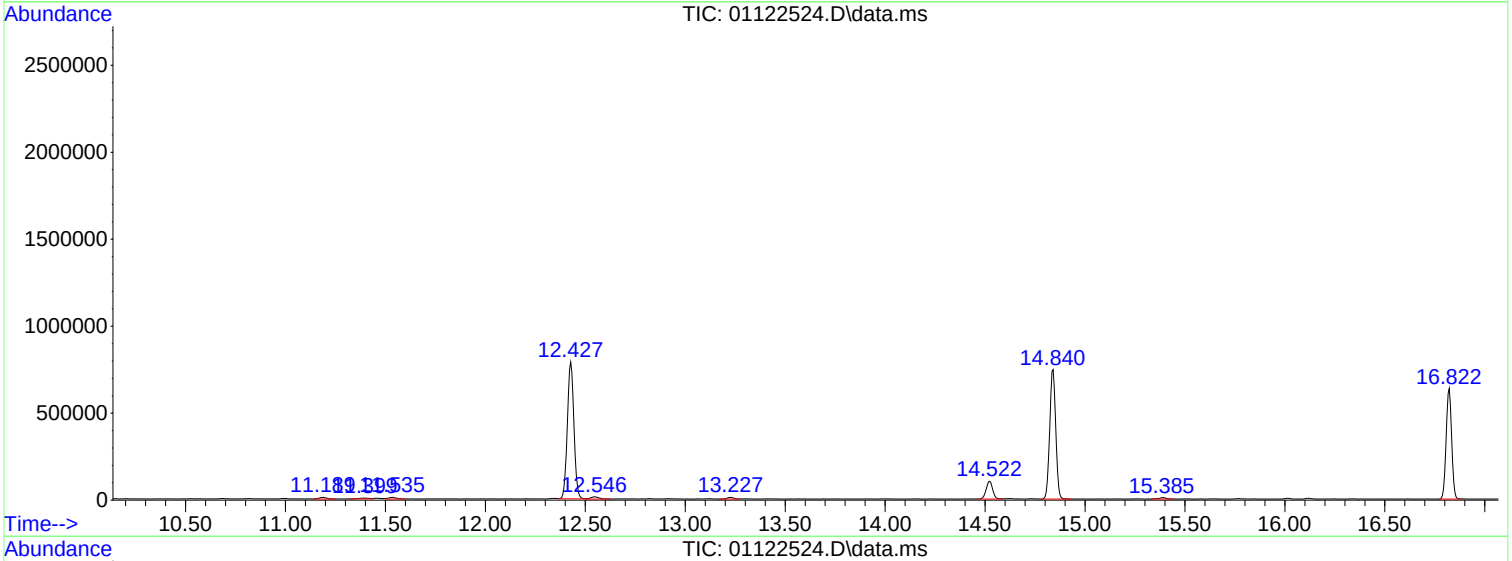
Sum of corrected areas: 20744900

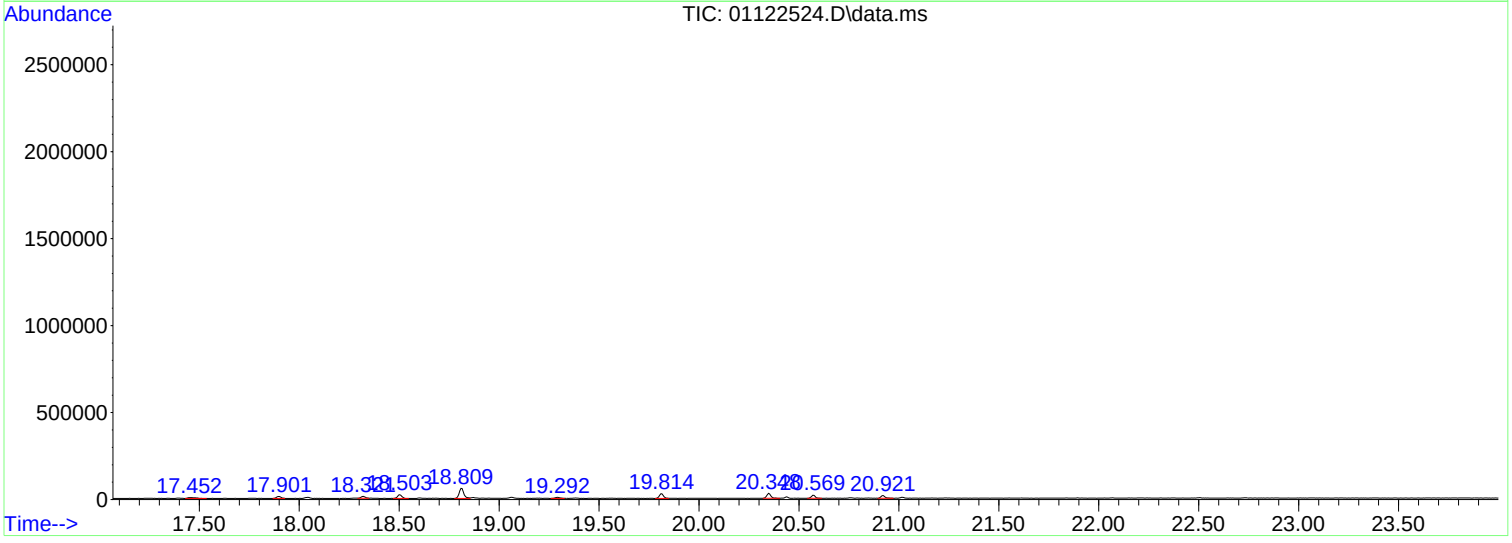
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

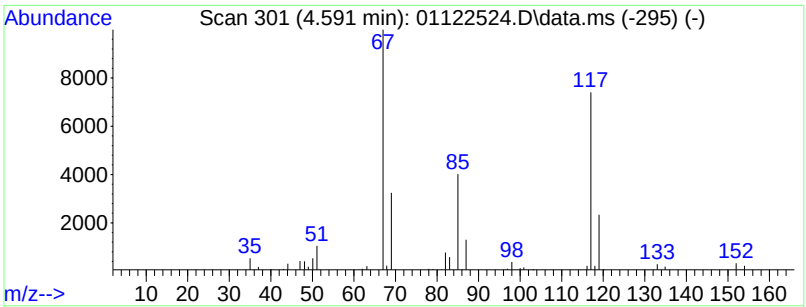
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

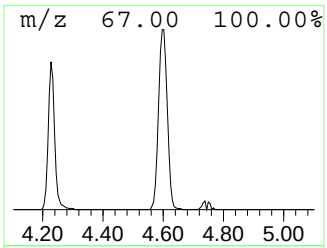
****

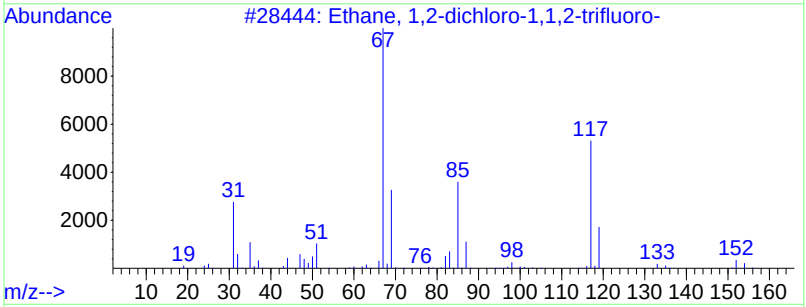
Peak Number 4 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 4

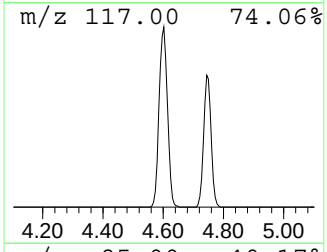
R.T.	EstConc	Area	Relative to ISTD	R.T.
4.602	3.86 ng	239672	Bromochloromethane (IS1)	7.226

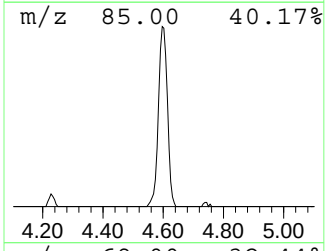
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	91
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
3	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	12
4	Fluorodichloromethane	102	CHCl2F	000075-43-4	10
5	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	9

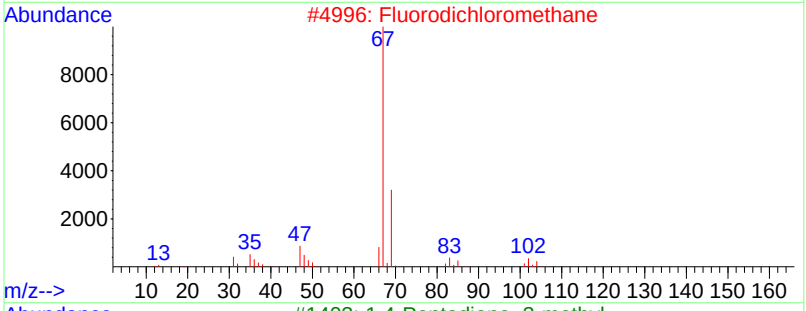


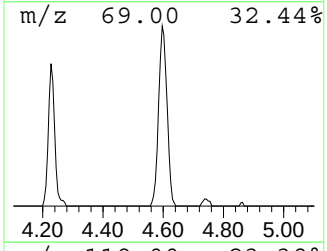


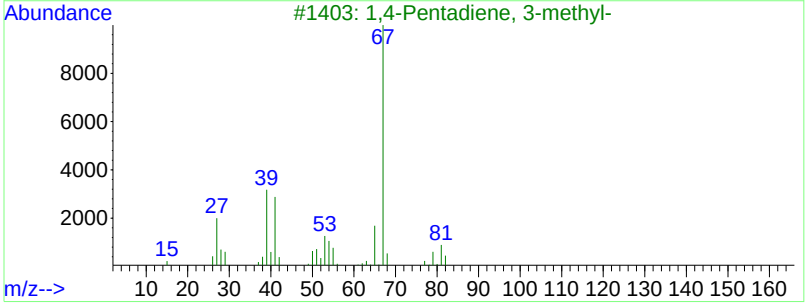


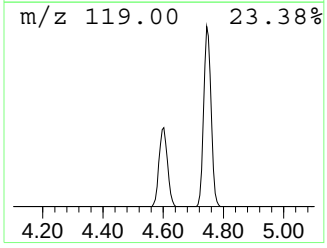












Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\12\
Data File : 01122524.D
Acq On : 12 Jan 2025 18:08
Operator : SC
Sample : P2405139-050 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

MOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.602	3.9	ng	239672	1	7.226	775498	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 11:22:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	139104	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.30	114	595168	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113050	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	233158	12.303	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.40%				
57) Toluene-d8 (SS2)	12.43	98	631559	12.593	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%				
73) Bromofluorobenzene (SS3)	16.82	174	231099	13.353	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.80%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.38	85	15052	0.554	ng		99
4) Chloromethane	3.51	50	8464	0.419	ng		90
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	318	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	4.02	94	2813	0.287	ng		100
9) Chloroethane	4.15	64	2141	0.262	ng		96
10) Ethanol	4.30	45	31999	3.110	ng		98
11) Acetonitrile	4.45	41	11847	0.448	ng	#	67
12) Acrolein	4.54	56	3216	0.366	ng		94
13) Acetone	4.63	58	502987	53.702	ng		96
14) Trichlorofluoromethane	4.75	101	1566638	61.434	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	18825	0.561	ng	#	8
16) Acrylonitrile	5.03	53	94	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	1426	0.108	ng		93
20) 3-Chloro-1-propene (Al...	5.46	41	184	N.D.			
21) Trichlorotrifluoroethane	5.58	151	858176	74.588	ng		95
22) Carbon Disulfide	5.60	76	12835	0.303	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.44	86	9157	4.039	ng	#	21
27) 2-Butanone (MEK)	6.67	72	41573	5.525	ng		98
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.30	61	1572	0.338	ng		96
31) n-Hexane	7.30	57	3985	0.191	ng		98
32) Chloroform	7.37	83	22488	0.993	ng		98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.81	56	15043	No Calib		#	
41) Benzene	8.90	78	16561	0.347	ng		98
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.22	84	572	N.D.			
44) tert-Amyl Methyl Ether	9.54	73	692	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	524	N.D.			
47) Trichloroethene	10.14	130	803	0.059	ng		97
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

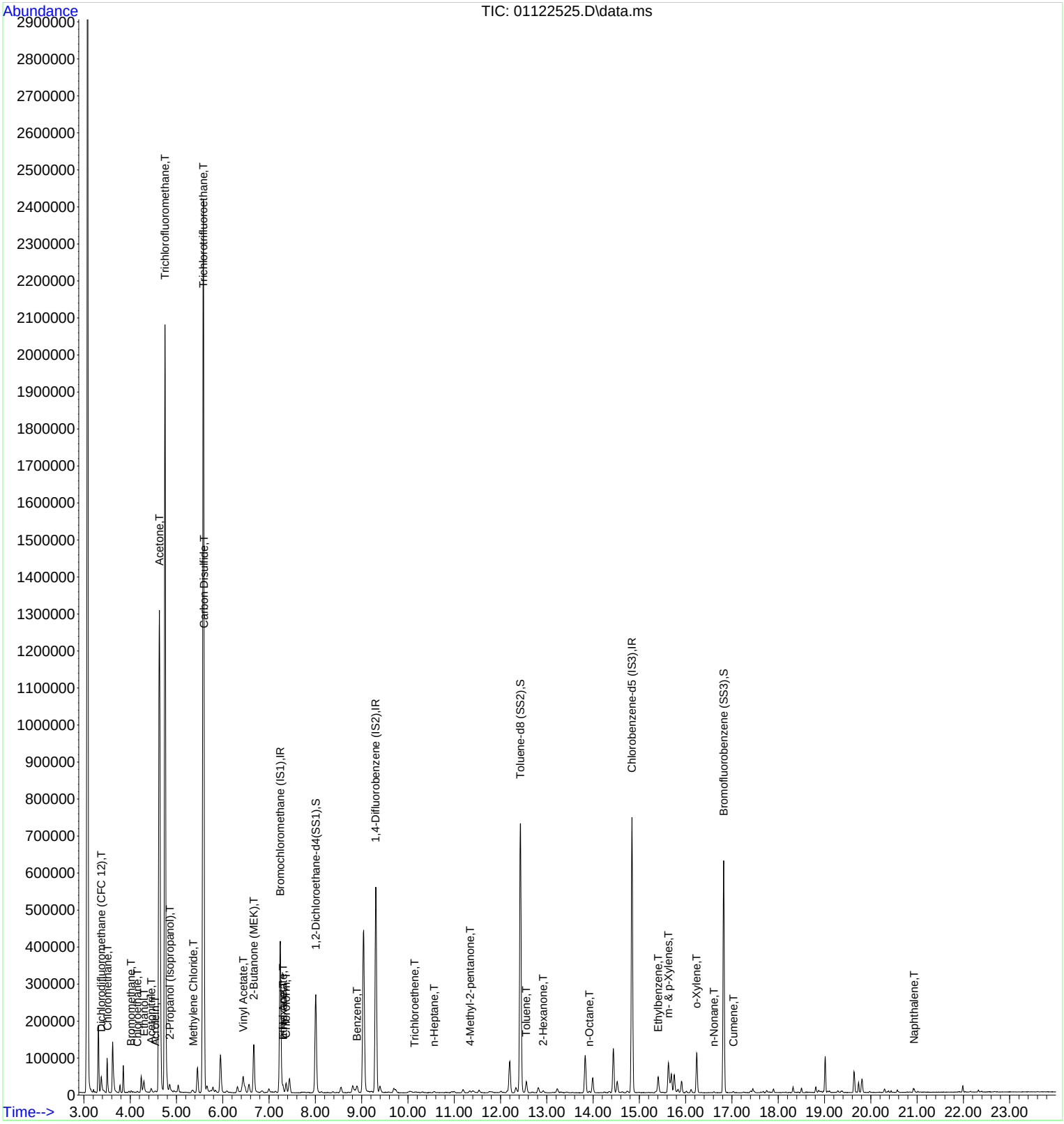
Quant Time: Jan 13 11:22:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	1135	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.56	71	970	0.091 ng	#	83
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.34	58	1530	0.149 ng	#	15
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	12.19	97	131	N.D.		
58) Toluene	12.56	91	22046	0.457 ng		99
59) 2-Hexanone	12.92	43	6346	0.270 ng		80
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	355	N.D.		
63) n-Octane	13.92	57	735	0.073 ng	#	90
64) Tetrachloroethene	14.03	166	215	N.D.		
65) Chlorobenzene	14.89	112	240	N.D.		
66) Ethylbenzene	15.41	91	34373	0.644 ng		99
67) m- & p-Xylenes	15.63	91	71660	1.641 ng		99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	16.24	91	75976	1.758 ng		98
71) n-Nonane	16.61	43	1293	0.056 ng	#	75
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	3350	0.062 ng		94
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.67	91	3114	N.D.		
77) 3-Ethyltoluene	17.03	105	3350	No Calib		
78) 4-Ethyltoluene	17.86	105	1134	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	201	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	3350	No Calib		
82) 1,2,4-Trimethylbenzene	18.42	105	788	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	18.74	105	1035	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	581	N.D.		
89) 1,2,3-Trimethylbenzene	17.03	105	3350	No Calib		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.01	68	433	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.94	128	5328	0.089 ng		96
96) n-Dodecane	18.81	58	147	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.21	55	188	No Calib	#	
99) tert-Butylbenzene	18.50	119	234	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D. d		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 11:22:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

NOA 1/13/25

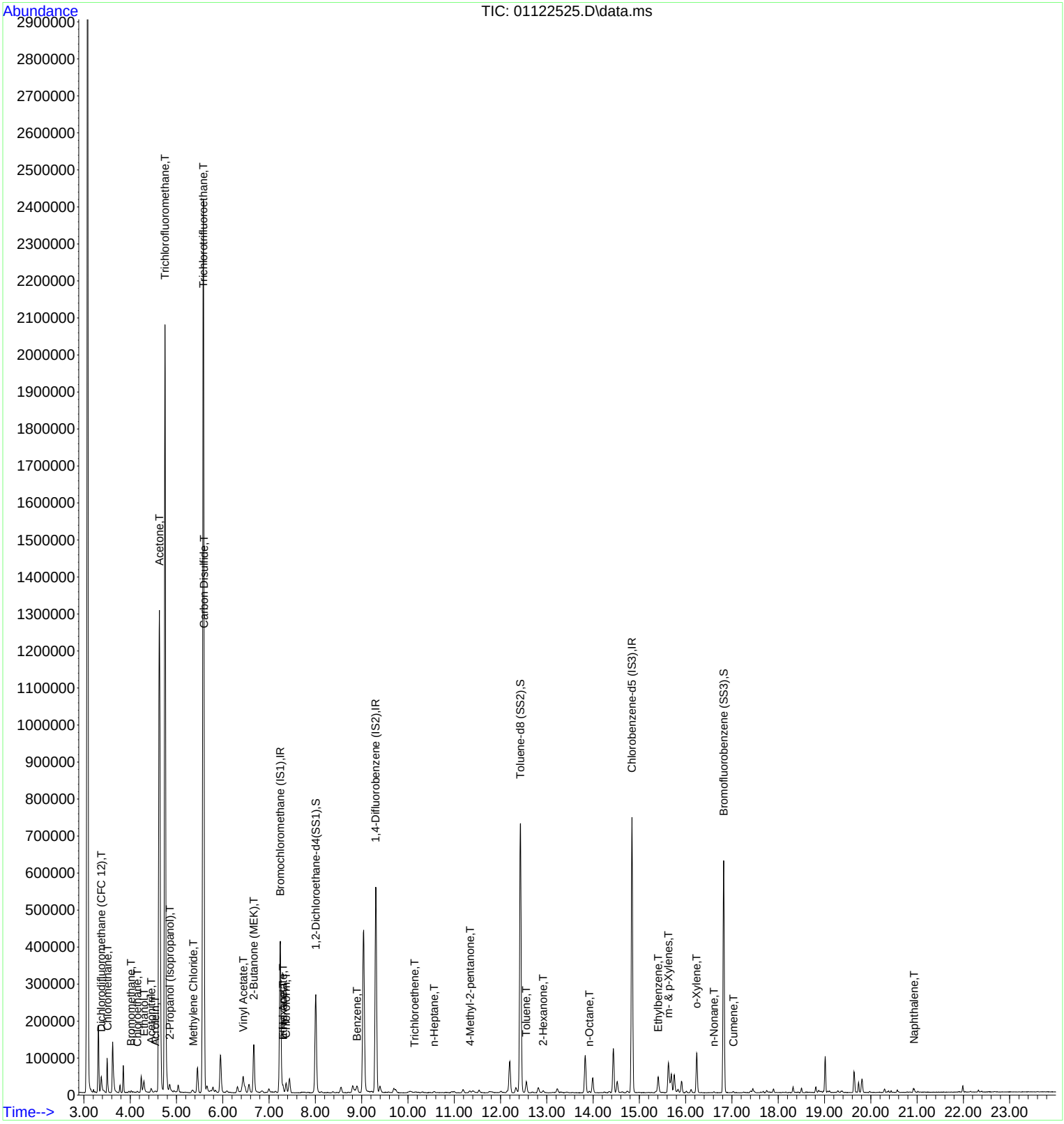
Quant Time: Jan 13 11:22:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

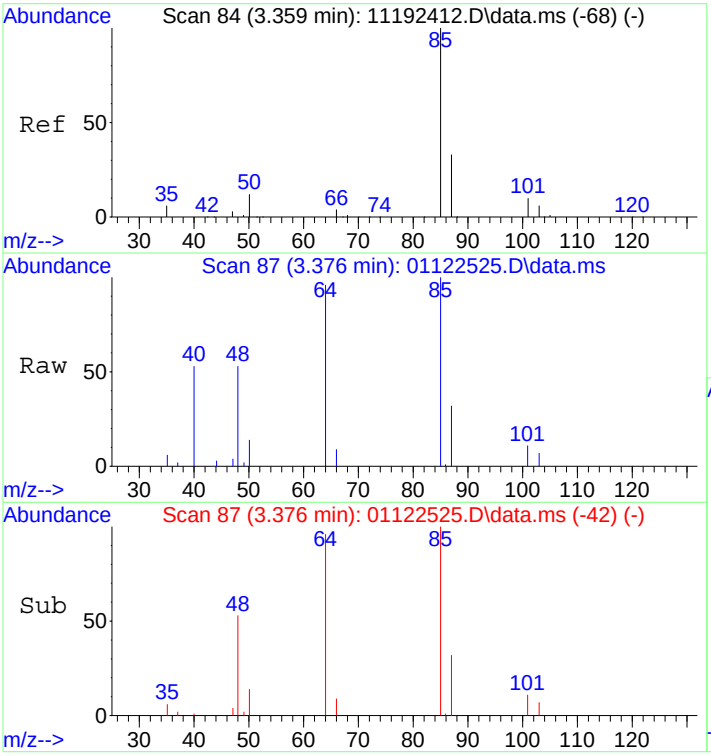
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	139104	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.30	114	595168	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113050	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	233158	12.303	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.40%				
57) Toluene-d8 (SS2)	12.43	98	631559	12.593	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%				
73) Bromofluorobenzene (SS3)	16.82	174	231099	13.353	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.80%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	15052	0.554	ng		99
4) Chloromethane	3.51	50	8464	0.419	ng		90
8) Bromomethane	4.02	94	2813	0.287	ng		100
9) Chloroethane	4.15	64	2141	0.262	ng		96
10) Ethanol	4.30	45	31999	3.110	ng		98
11) Acetonitrile	4.45	41	11847	0.448	ng	#	67
12) Acrolein	4.54	56	3216	0.366	ng		94
13) Acetone	4.63	58	502987	53.702	ng		96
14) Trichlorofluoromethane	4.75	101	1566638	61.434	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	18825	0.561	ng	#	8
19) Methylene Chloride	5.36	84	1426	0.108	ng		93
21) Trichlorotrifluoroethane	5.58	151	858176	74.588	ng		95
22) Carbon Disulfide	5.60	76	12835	0.303	ng	#	1
26) Vinyl Acetate	6.44	86	9157	4.039	ng	#	21
27) 2-Butanone (MEK)	6.67	72	41573	5.525	ng		98
30) Ethyl Acetate	7.30	61	1572	0.338	ng		96
31) n-Hexane	7.30	57	3985	0.191	ng		98
32) Chloroform	7.37	83	22488	0.993	ng		98
41) Benzene	8.90	78	16561	0.347	ng		98
47) Trichloroethene	10.14	130	803	0.059	ng		97
51) n-Heptane	10.56	71	970	0.091	ng	#	83
53) 4-Methyl-2-pentanone	11.34	58	1530	0.149	ng	#	15
58) Toluene	12.56	91	22046	0.457	ng		99
59) 2-Hexanone	12.92	43	6346	0.270	ng		80
63) n-Octane	13.92	57	735	0.073	ng	#	90
66) Ethylbenzene	15.41	91	34373	0.644	ng		99
67) m- & p-Xylenes	15.63	91	71660	1.641	ng		99
70) o-Xylene	16.24	91	75976	1.758	ng		98
71) n-Nonane	16.61	43	1293	0.056	ng	#	75
74) Cumene	17.03	105	3350	0.062	ng		94
95) Naphthalene	20.94	128	5328	0.089	ng		96

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 11:22:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

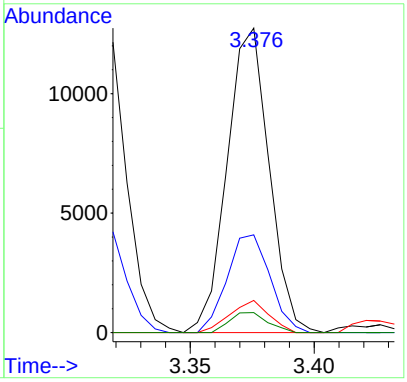


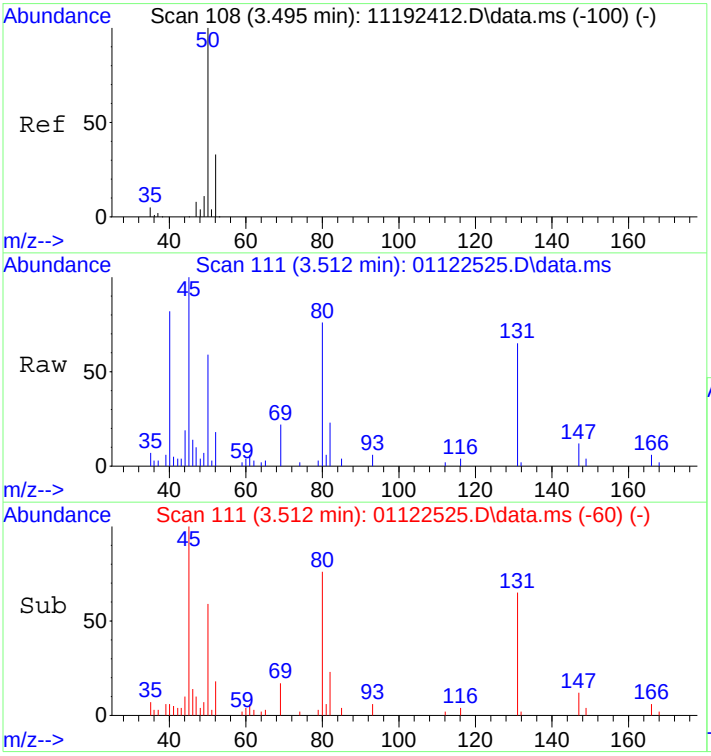


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.55 ng
RT: 3.38 min Scan# 87
Delta R.T. 0.004 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 85 Resp: 15052

Ion	Ratio	Lower	Upper
85	100		
87	32.9	12.6	52.6
101	9.8	0.0	29.6
103	6.0	0.0	26.2

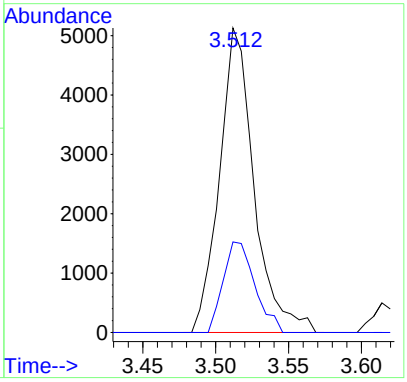


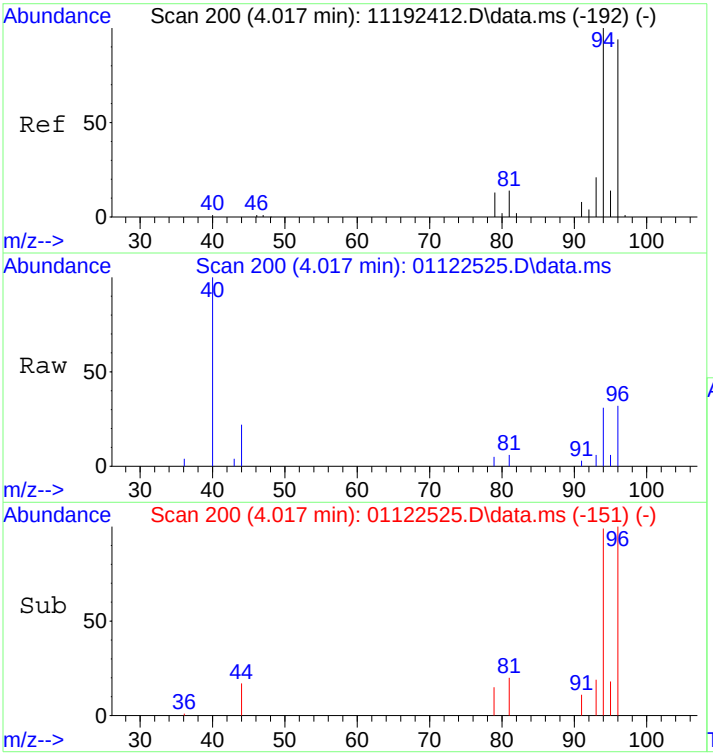


#4
Chloromethane
Concen: 0.42 ng
RT: 3.51 min Scan# 111
Delta R.T. 0.038 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 50 Resp: 8464

Ion	Ratio	Lower	Upper
50	100		
52	27.2	13.0	53.0

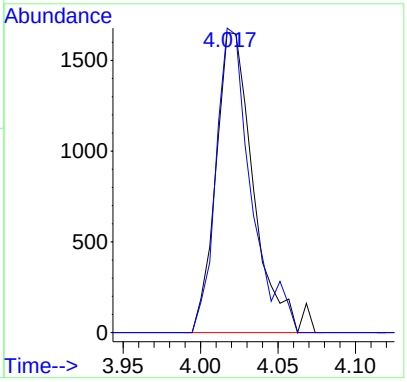


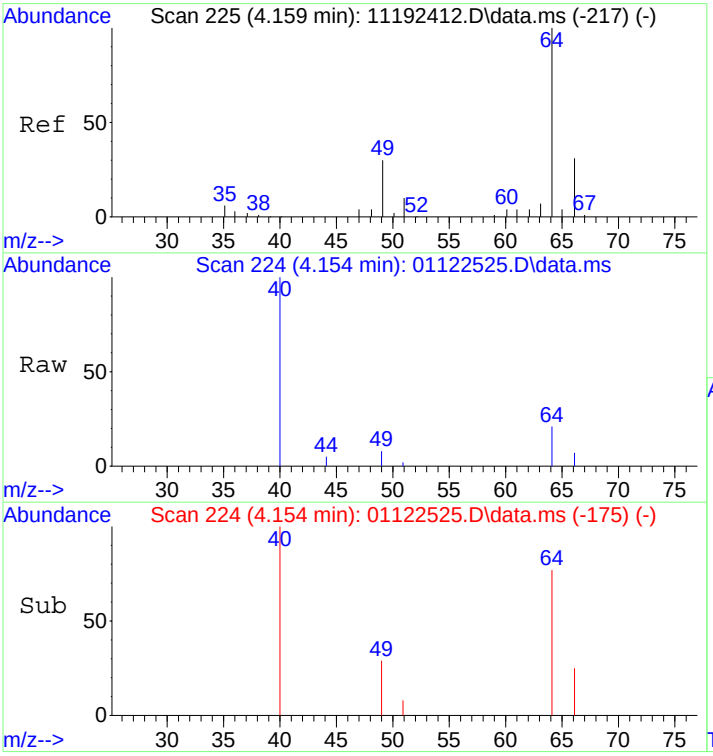


#8
Bromomethane
Concen: 0.29 ng
RT: 4.02 min Scan# 200
Delta R.T. 0.026 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 94 Resp: 2813

Ion	Ratio	Lower	Upper
94	100		
96	93.8	73.5	113.5

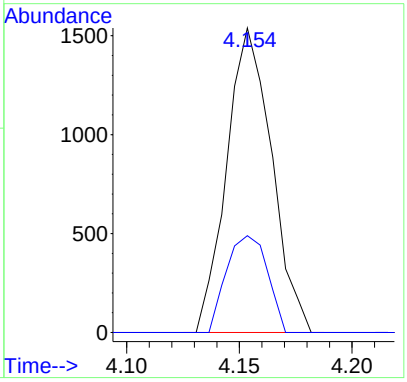


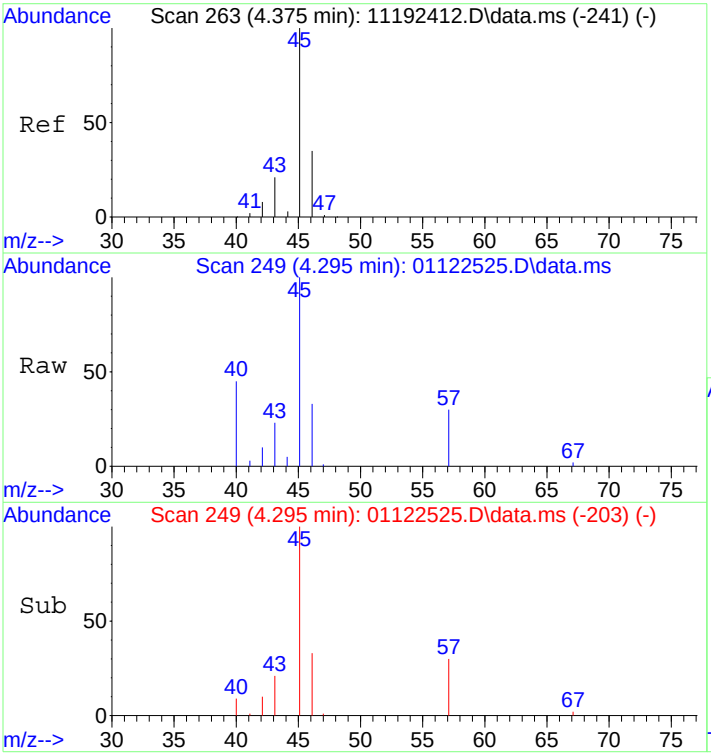


#9
Chloroethane
Concen: 0.26 ng
RT: 4.15 min Scan# 224
Delta R.T. 0.028 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 64 Resp: 2141

Ion	Ratio	Lower	Upper
64	100		
66	29.0	11.0	51.0

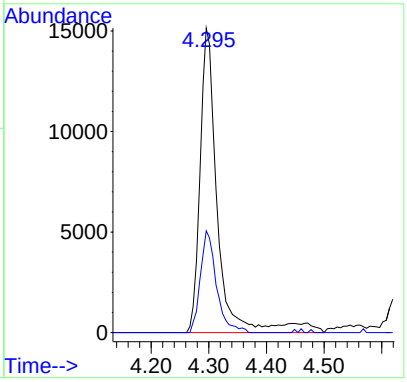


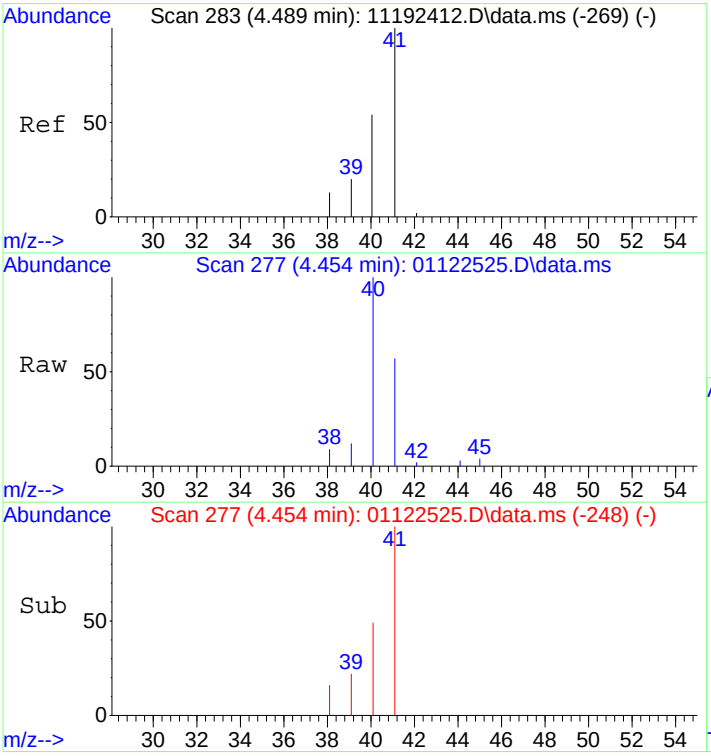


#10
Ethanol
Concen: 3.11 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 45 Resp: 31999

Ion	Ratio	Lower	Upper
45	100		
46	30.7	11.8	51.8

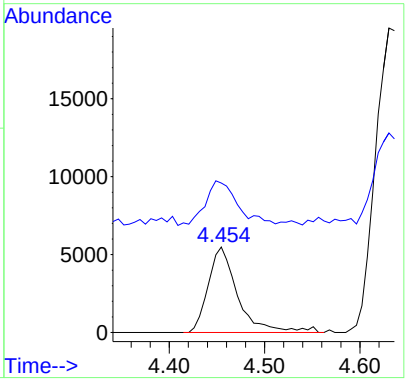


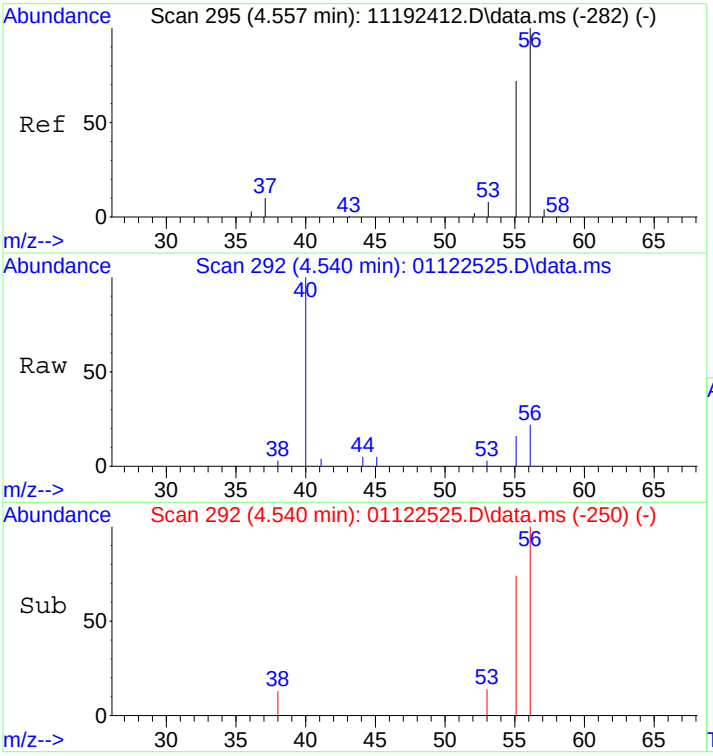


#11
Acetonitrile
Concen: 0.45 ng
RT: 4.45 min Scan# 277
Delta R.T. -0.037 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 41 Resp: 11847

Ion	Ratio	Lower	Upper
41	100		
40	77.0	33.8	73.8#

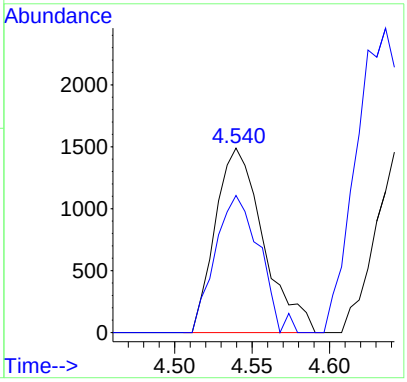


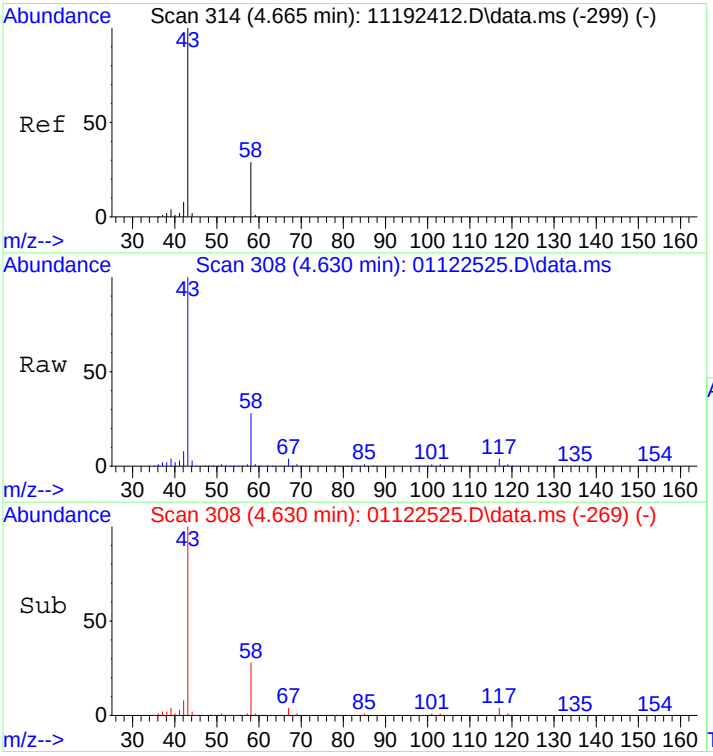


#12
Acrolein
Concen: 0.37 ng
RT: 4.54 min Scan# 292
Delta R.T. -0.014 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 56 Resp: 3216

Ion	Ratio	Lower	Upper
56	100		
55	68.4	53.1	93.1

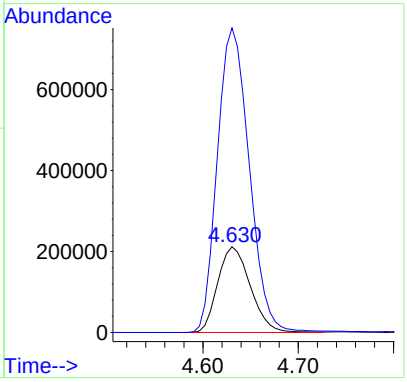


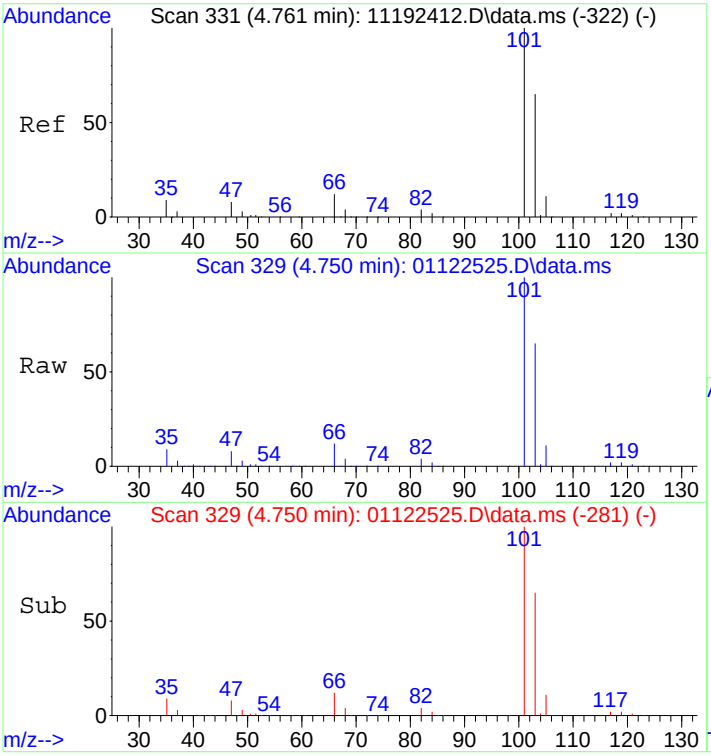


#13
Acetone
Concen: 53.70 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 58 Resp: 502987

Ion	Ratio	Lower	Upper
58	100		
43	350.8	312.5	372.5

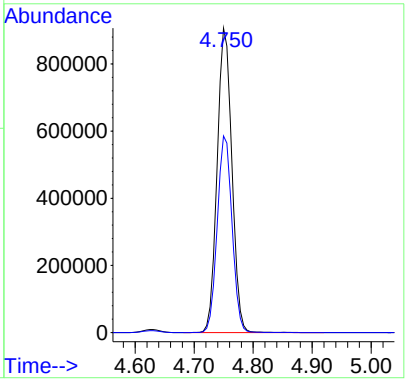


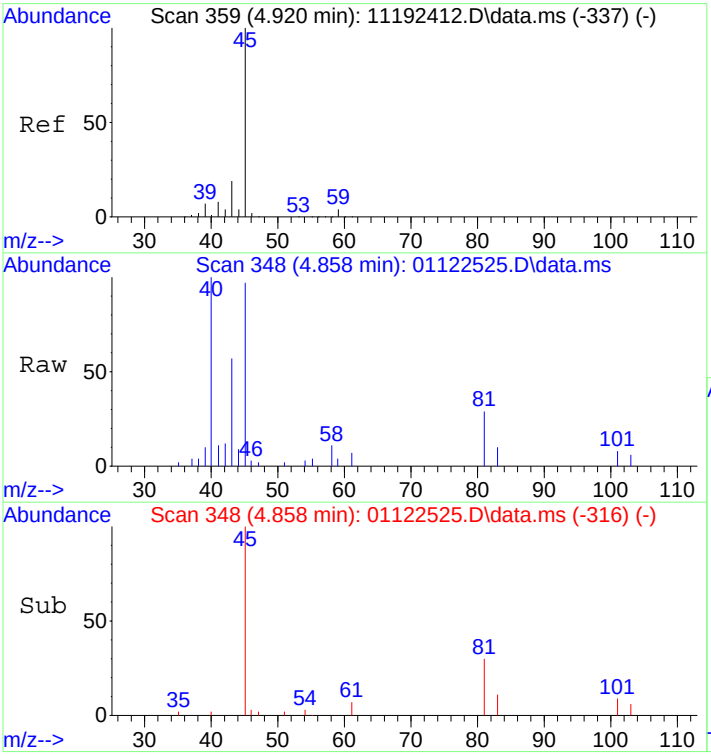


#14
Trichlorofluoromethane
Concen: 61.43 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion:101 Resp: 1566638

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

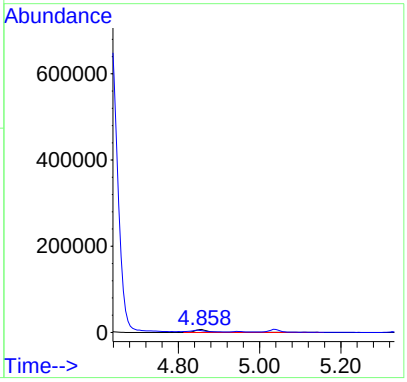


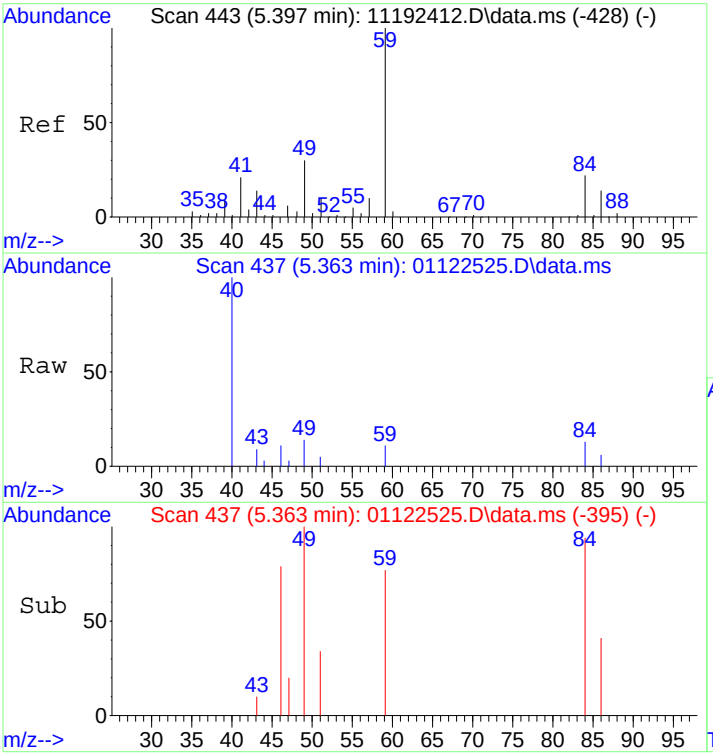


#15
2-Propanol (Isopropanol)
Concen: 0.56 ng
RT: 4.86 min Scan# 348
Delta R.T. -0.067 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 45 Resp: 18825

Ion	Ratio	Lower	Upper
45	100		
43	62.7	0.2	40.2#

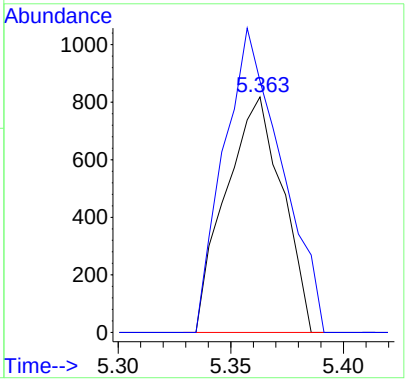


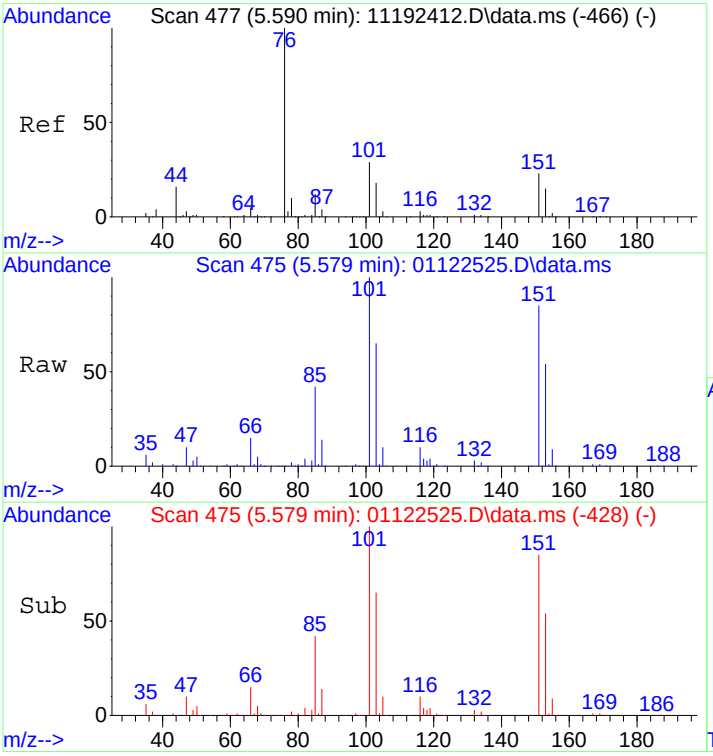


#19
Methylene Chloride
Concen: 0.11 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 84 Resp: 1426

Ion	Ratio	Lower	Upper
84	100		
49	131.8	116.0	166.0

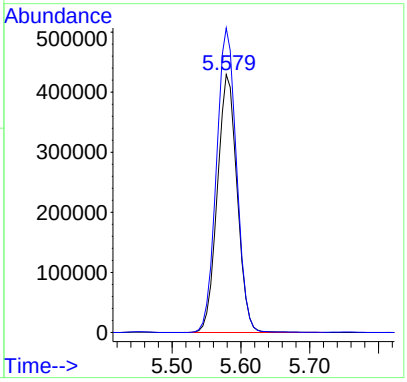


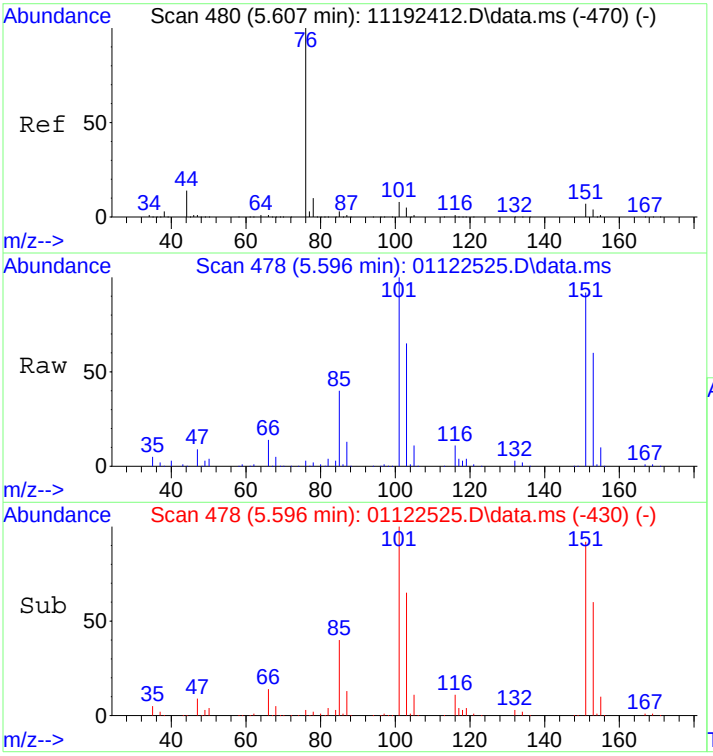


#21
Trichlorotrifluoroethane
Concen: 74.59 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion:151 Resp: 858176

Ion	Ratio	Lower	Upper
151	100		
101	119.3	105.0	145.0

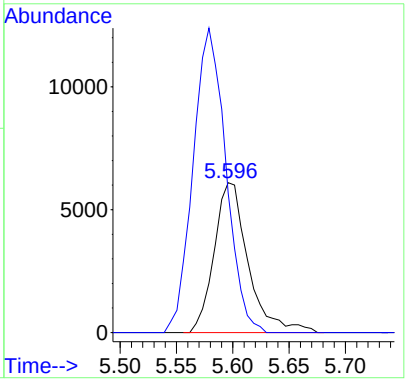


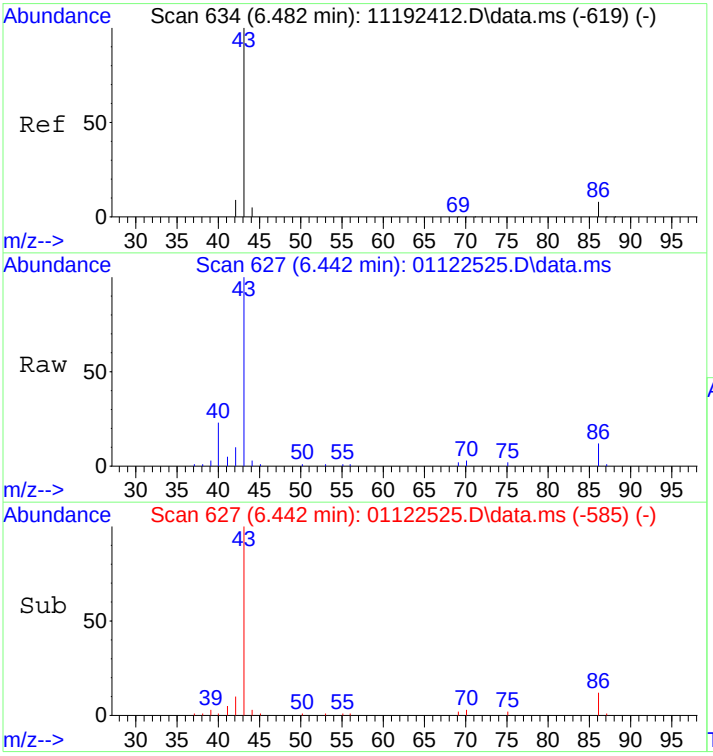


#22
Carbon Disulfide
Concen: 0.30 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.024 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 76 Resp: 12835

Ion	Ratio	Lower	Upper
76	100		
78	195.3	0.0	29.6#

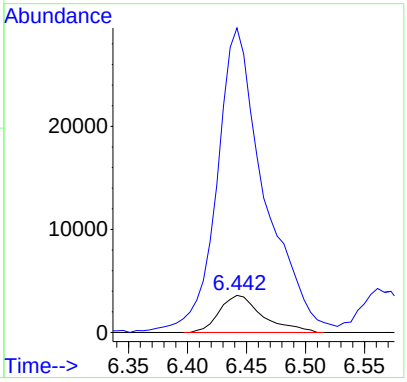


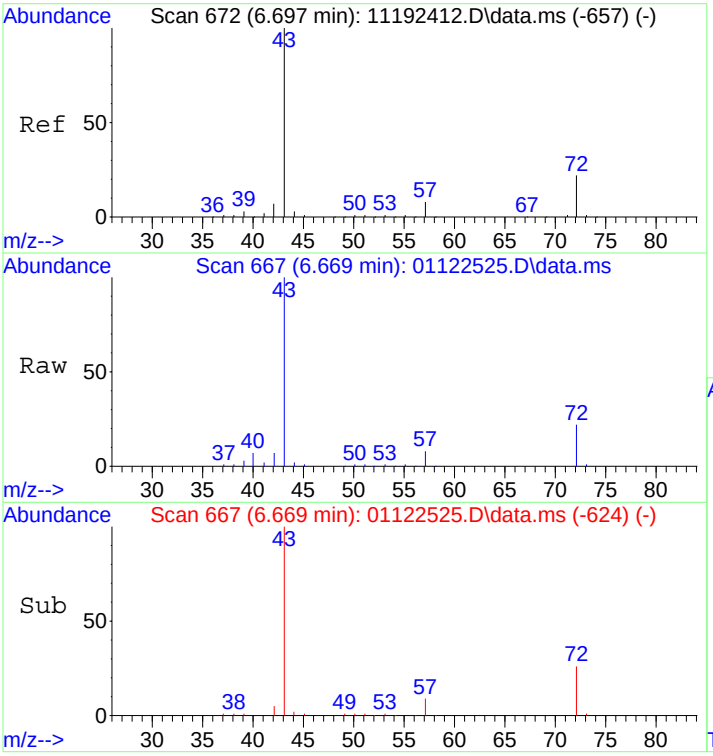


#26
Vinyl Acetate
Concen: 4.04 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 86 Resp: 9157

Ion	Ratio	Lower	Upper
86	100		
43	912.0	1331.6	1371.6#

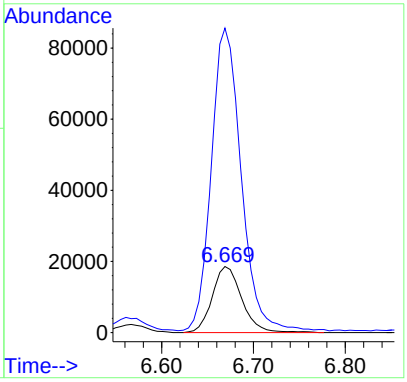


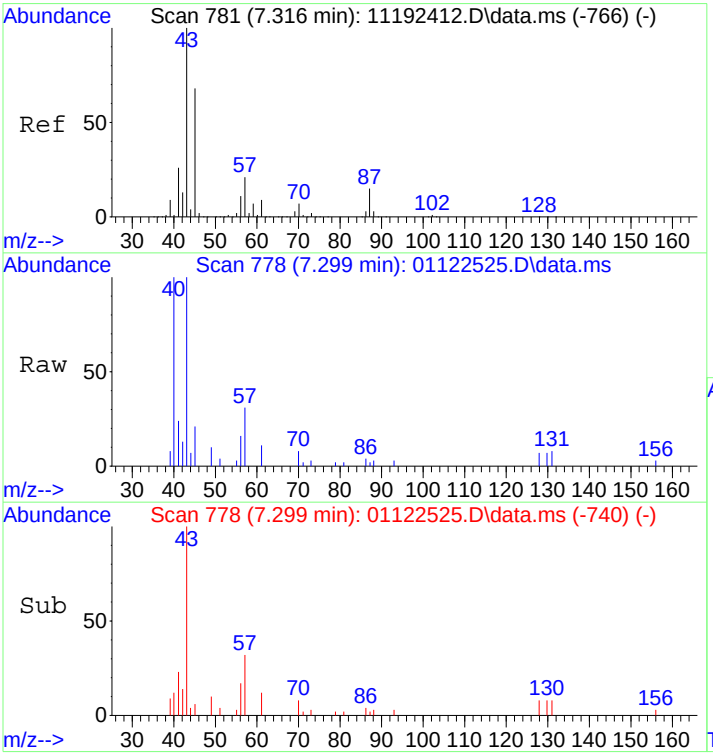


#27
2-Butanone (MEK)
Concen: 5.52 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 72 Resp: 41573

Ion	Ratio	Lower	Upper
72	100		
43	464.4	439.8	479.8

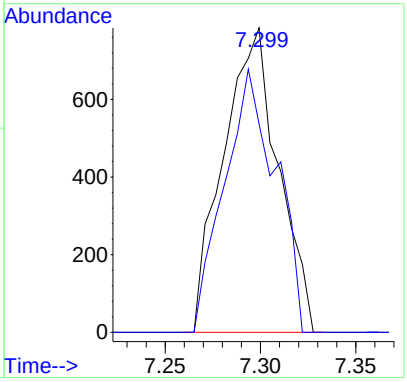


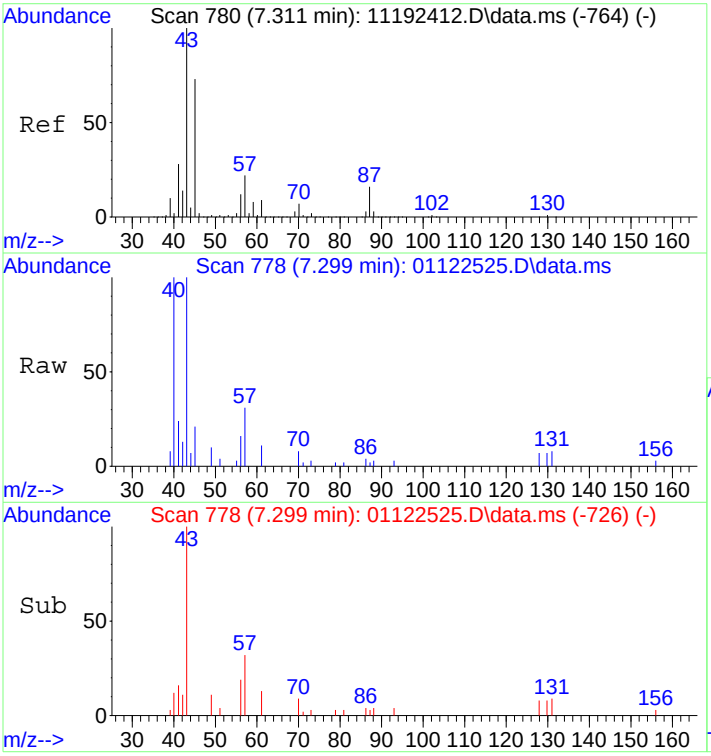


#30
Ethyl Acetate
Concen: 0.34 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.018 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 61 Resp: 1572

Ion	Ratio	Lower	Upper
61	100		
70	80.9	57.3	97.3

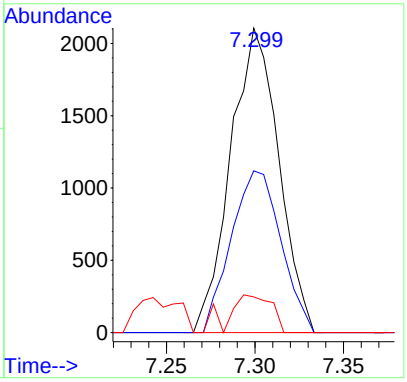


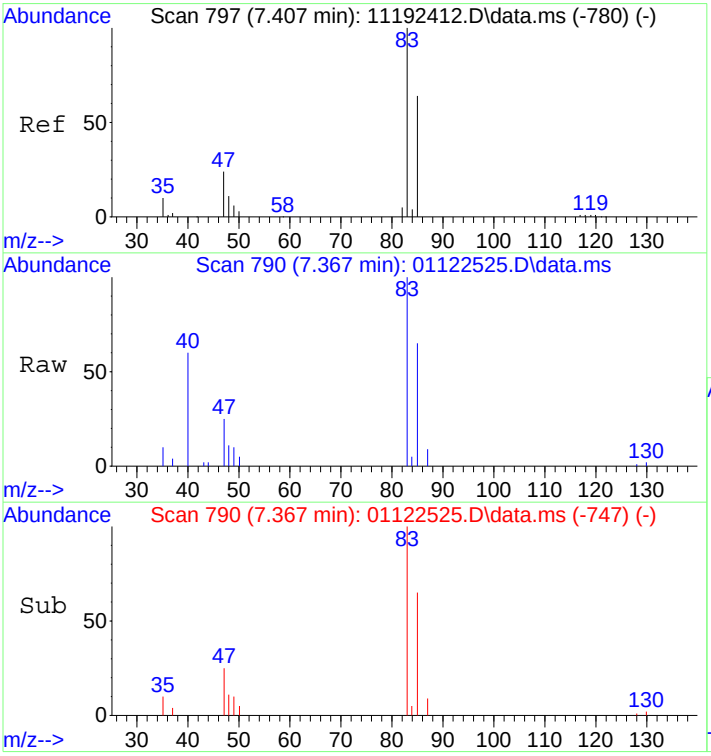


#31
n-Hexane
Concen: 0.19 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 57 Resp: 3985

Ion	Ratio	Lower	Upper
57	100		
56	54.9	43.4	65.0
86	11.1	10.9	16.3

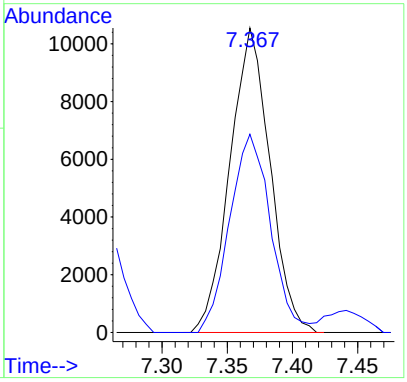


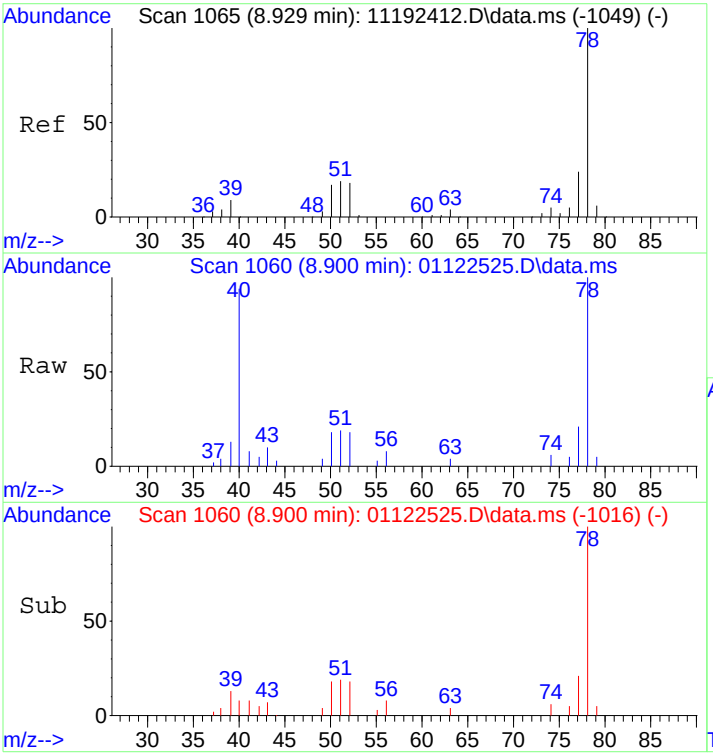


#32
Chloroform
Concen: 0.99 ng
RT: 7.37 min Scan# 790
Delta R.T. -0.004 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 83 Resp: 22488

Ion	Ratio	Lower	Upper
83	100		
85	66.6	45.1	85.1

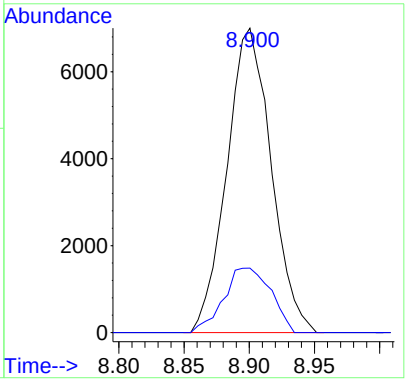


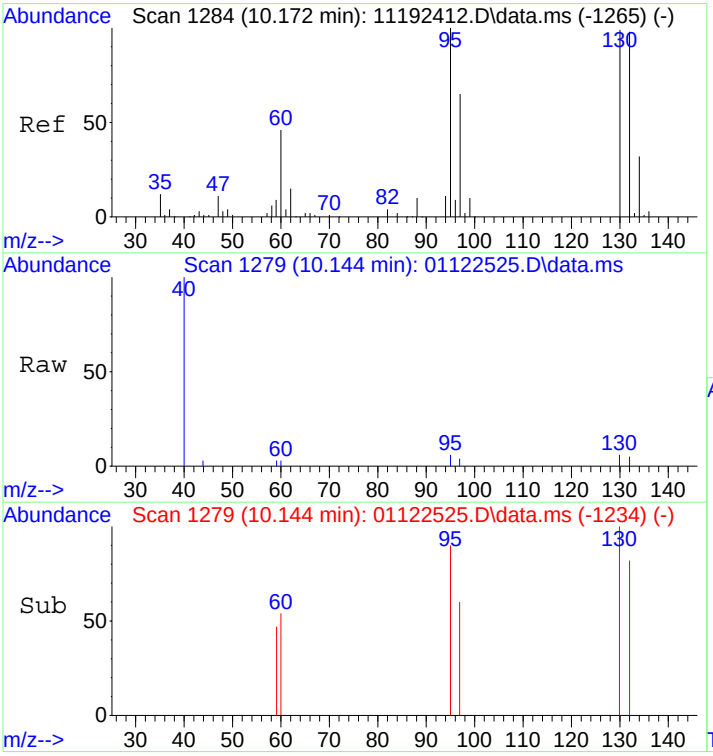


#41
Benzene
Concen: 0.35 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 78 Resp: 16561

Ion	Ratio	Lower	Upper
78	100		
77	22.6	3.7	43.7

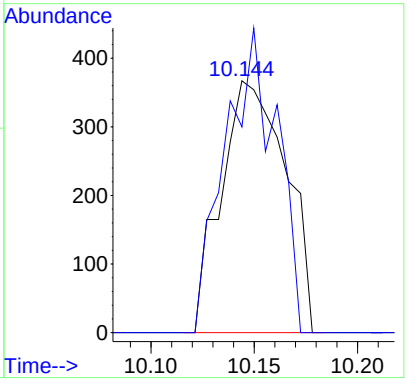


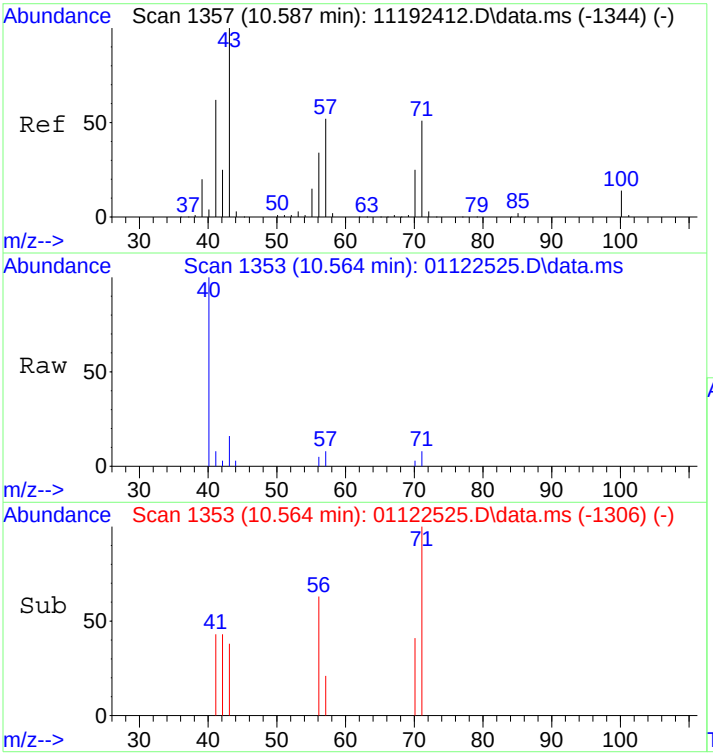


#47
Trichloroethene
Concen: 0.06 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion:130 Resp: 803

Ion	Ratio	Lower	Upper
130	100		
132	96.0	79.3	119.3

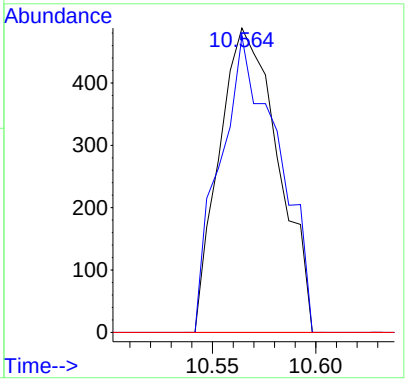


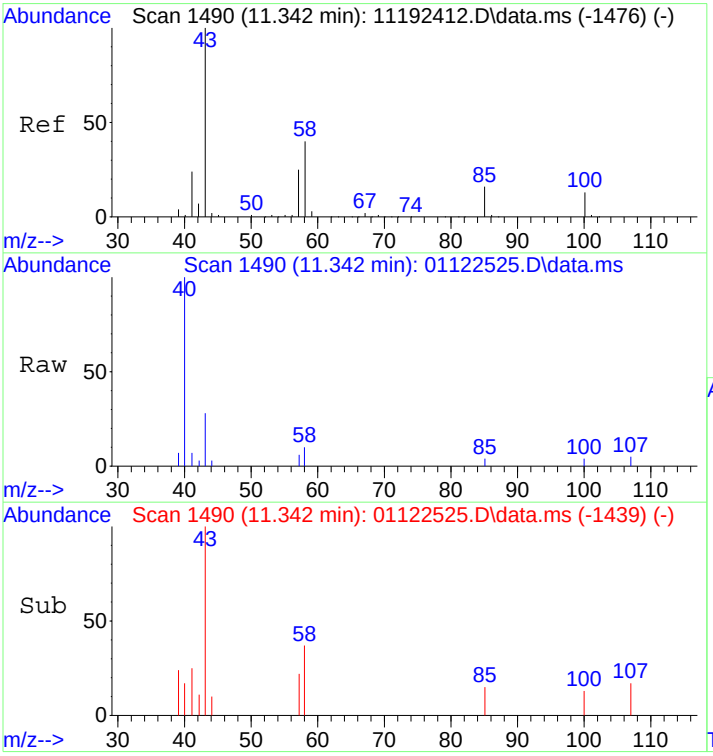


#51
n-Heptane
Concen: 0.09 ng
RT: 10.56 min Scan# 1353
Delta R.T. 0.018 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 71 Resp: 970

Ion	Ratio	Lower	Upper
71	100		
57	96.6	83.3	123.3
100	0.0	8.7	48.7#

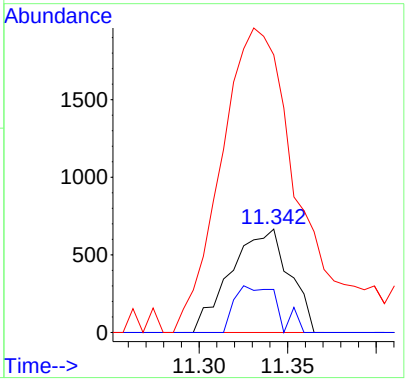


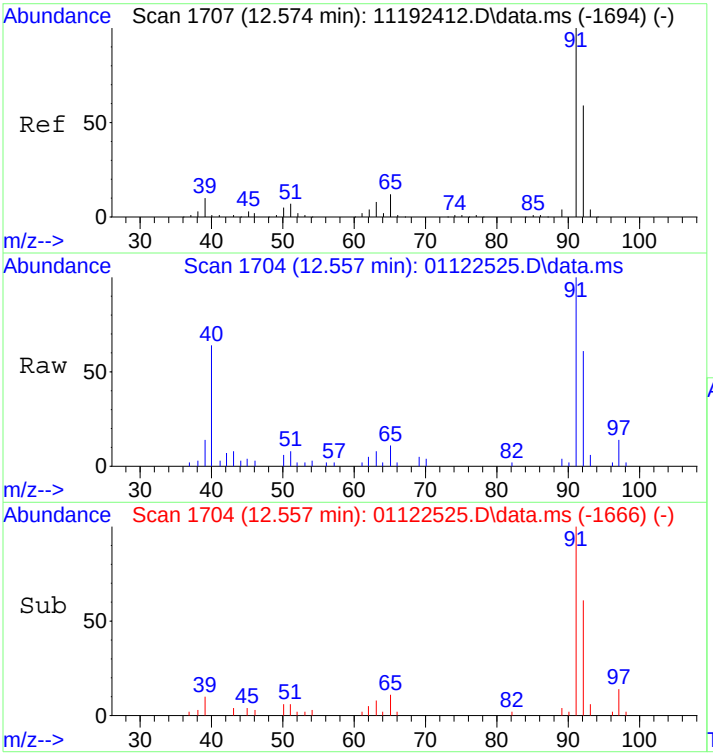


#53
4-Methyl-2-pentanone
Concen: 0.15 ng
RT: 11.34 min Scan# 1490
Delta R.T. 0.039 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 58 Resp: 1530

Ion	Ratio	Lower	Upper
58	100		
85	33.3	33.8	50.6#
43	418.7	199.5	299.3#

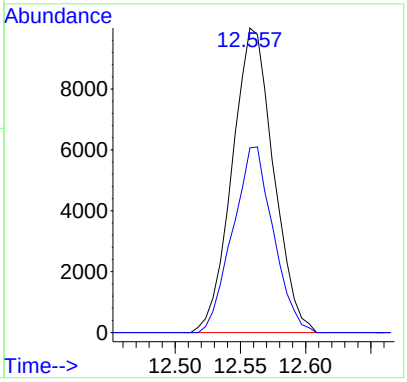


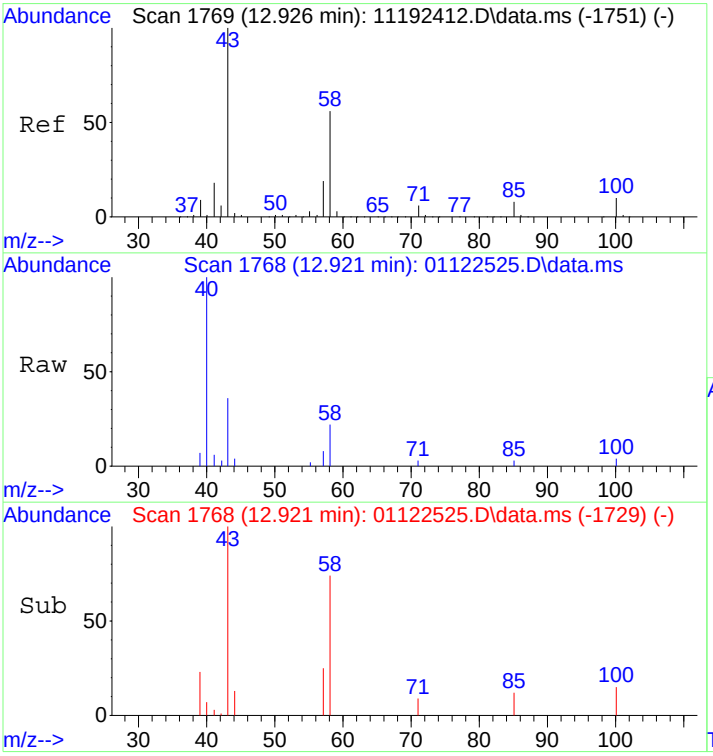


#58
Toluene
Concen: 0.46 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 91 Resp: 22046

Ion	Ratio	Lower	Upper
91	100		
92	59.9	39.2	79.2

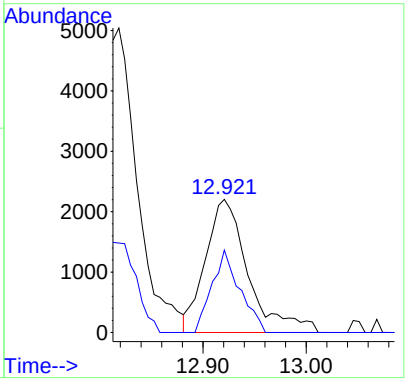


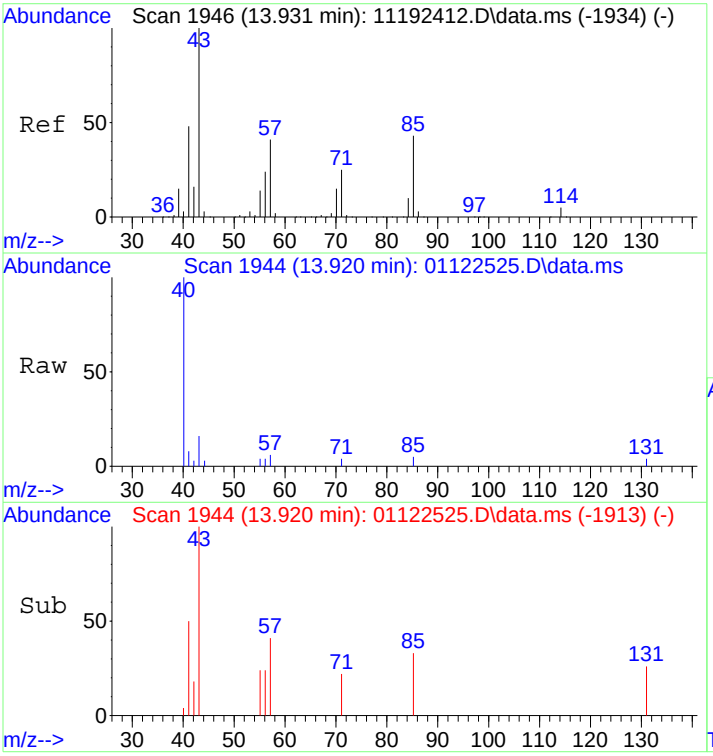


#59
2-Hexanone
Concen: 0.27 ng
RT: 12.92 min Scan# 1768
Delta R.T. -0.028 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 43 Resp: 6346

Ion	Ratio	Lower	Upper
43	100		
58	40.5	35.2	75.2

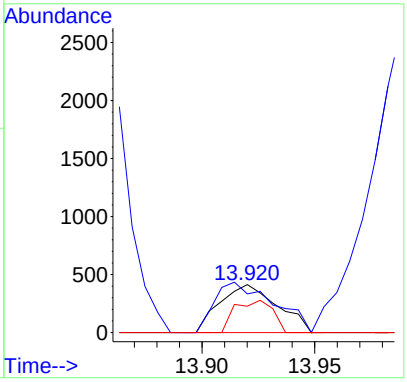


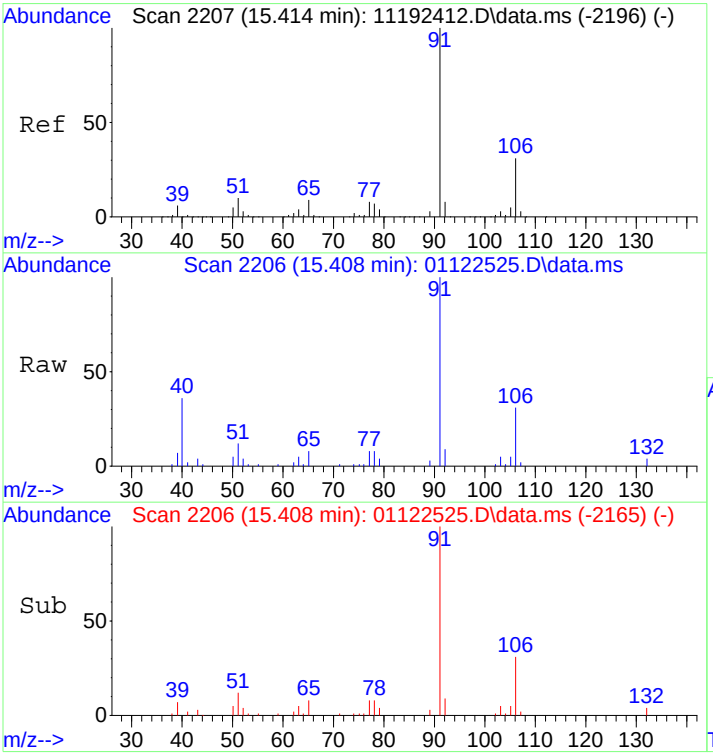


#63
n-Octane
Concen: 0.07 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 57 Resp: 735

Ion	Ratio	Lower	Upper
57	100		
85	108.0	83.6	125.4
71	44.2	49.0	73.4#

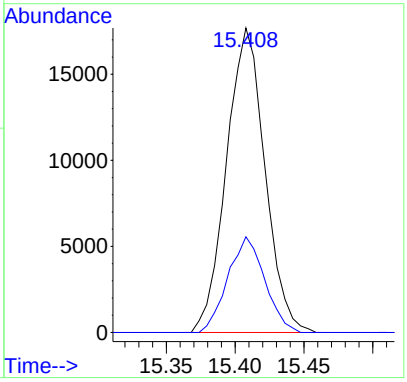


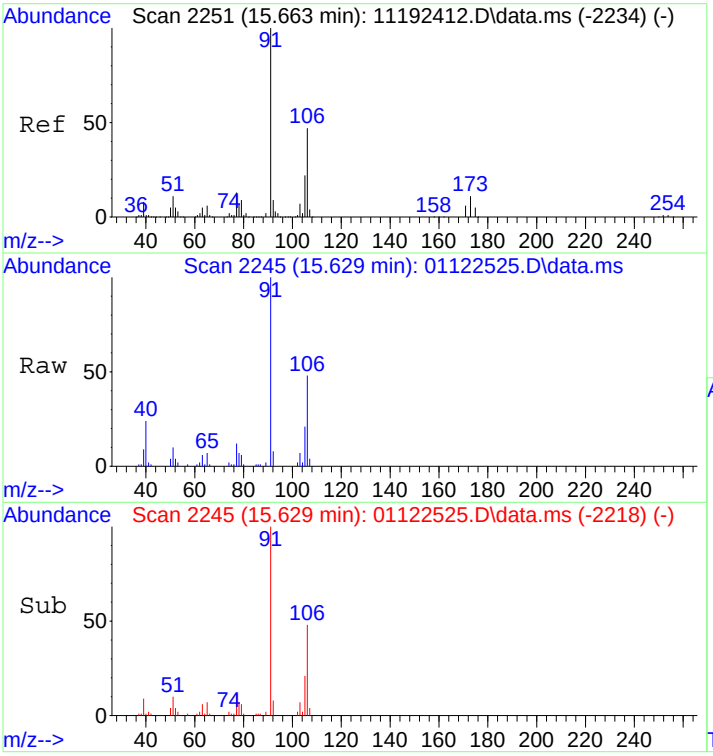


#66
Ethylbenzene
Concen: 0.64 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 91 Resp: 34373

Ion	Ratio	Lower	Upper
91	100		
106	30.1	10.7	50.7

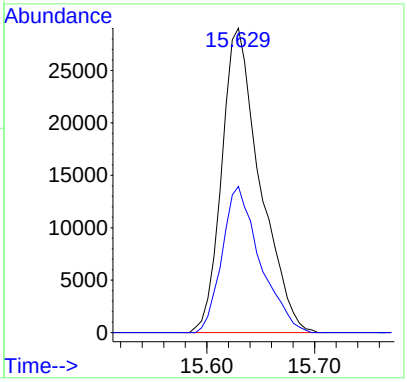


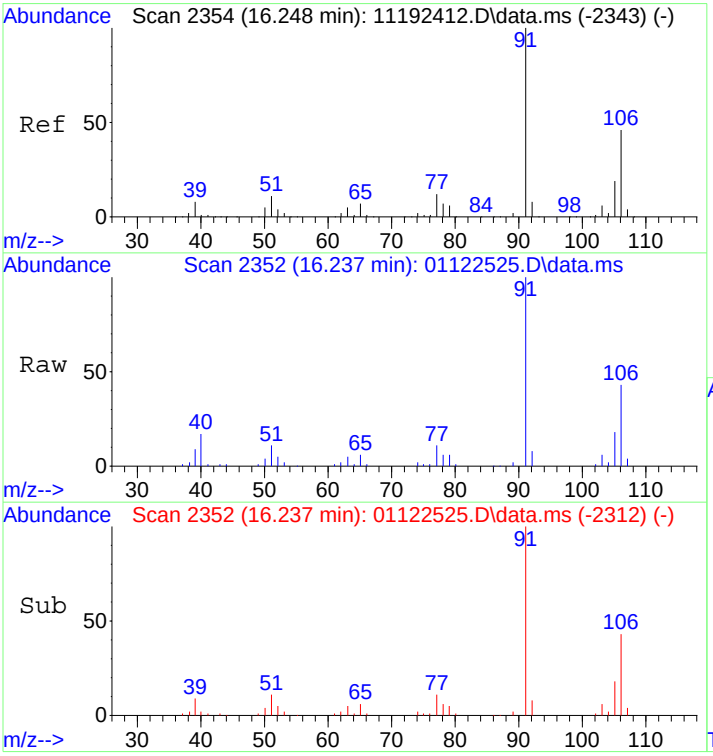


#67
m- & p-Xylenes
Concen: 1.64 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 91 Resp: 71660

Ion	Ratio	Lower	Upper
91	100		
106	47.5	27.1	67.1

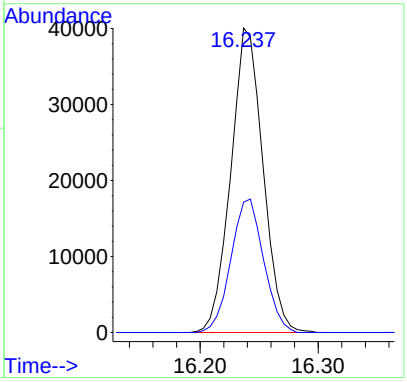


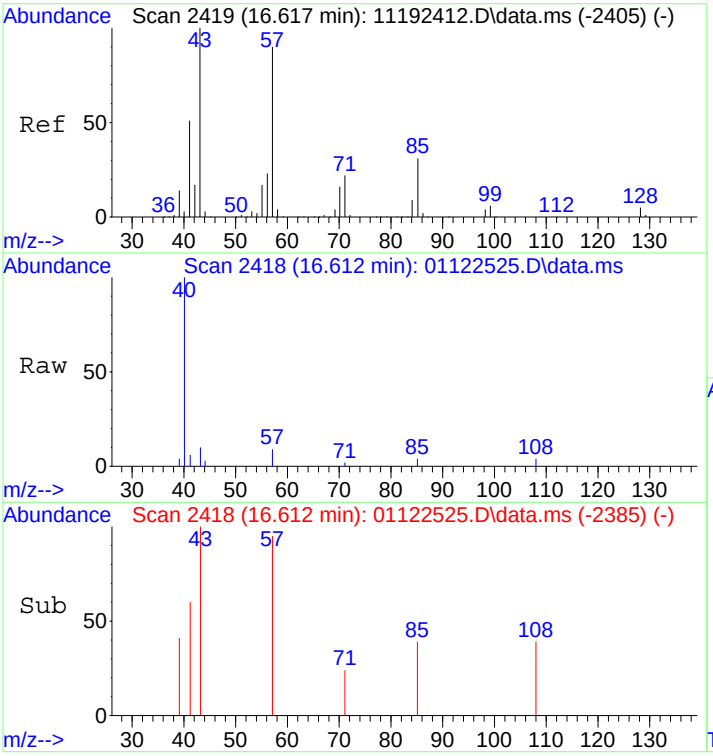


#70
o-Xylene
Concen: 1.76 ng
RT: 16.24 min Scan# 2352
Delta R.T. -0.023 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 91 Resp: 75976

Ion	Ratio	Lower	Upper
91	100		
106	44.5	25.8	65.8

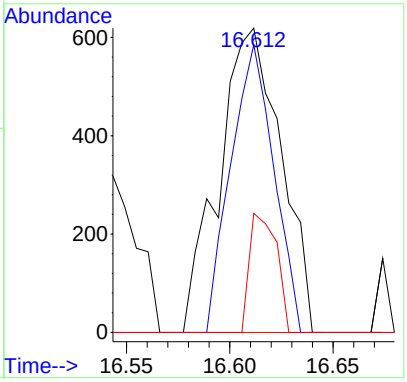


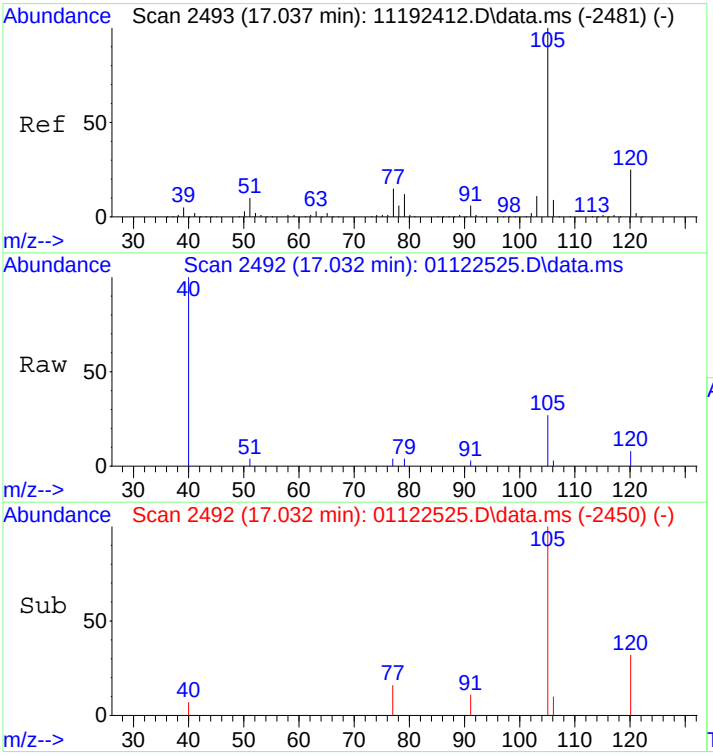


#71
n-Nonane
Concen: 0.06 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion: 43 Resp: 1293

Ion	Ratio	Lower	Upper
43	100		
57	65.6	69.4	109.4#
85	17.0	10.5	50.5

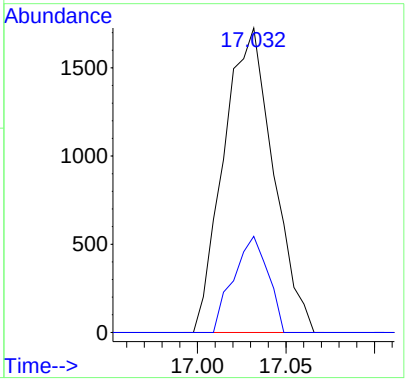


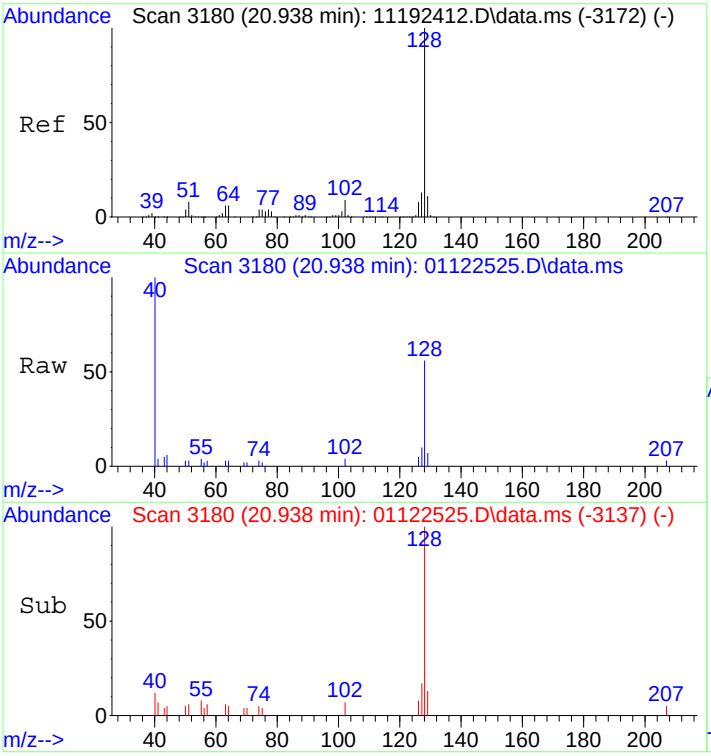


#74
Cumene
Concen: 0.06 ng
RT: 17.03 min Scan# 2492
Delta R.T. -0.011 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion:105 Resp: 3350

Ion	Ratio	Lower	Upper
105	100		
120	22.1	5.3	45.3

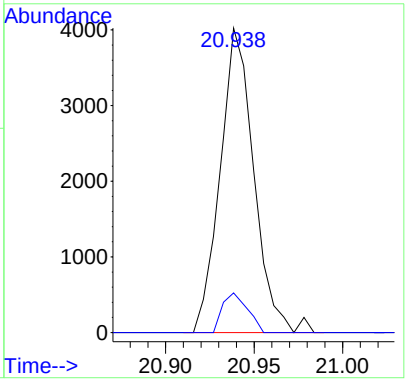




#95
Naphthalene
Concen: 0.09 ng
RT: 20.94 min Scan# 3180
Delta R.T. -0.006 min
Lab File: 01122525.D
Acq: 12 Jan 2025 18:40

Tgt Ion:128 Resp: 5328

Ion	Ratio	Lower	Upper
128	100		
129	9.6	0.0	31.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 12:37:26 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

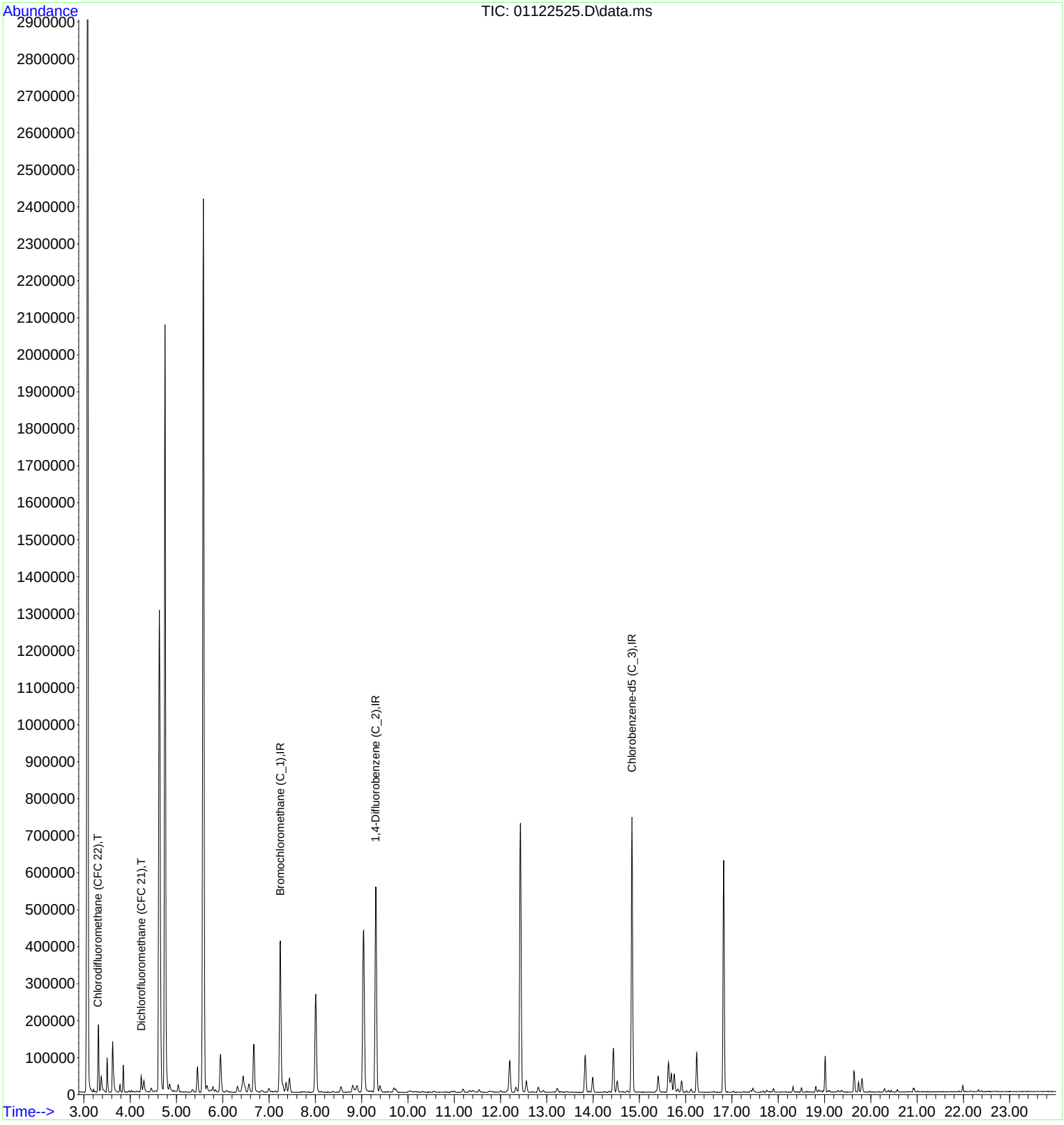
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.24	130	139104	12.500 ng	-0.01
16) 1,4-Difluorobenzene (C_2)	9.30	114	595168	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	113050	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.15	85	81	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1049	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	3.30	67	2000	0.516 ng	88
6) 1-Chloro-1,1-Difluoroe...	3.51	65	335	N.D.	
7) Dichlorofluoromethane ...	4.24	67	35917	1.274 ng	99
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D. d	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	0.00	43	0	N.D. d	
12) 2-Methylpentane	0.00	71	0	N.D. d	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D. d	
17) 2,3-Dimethylpentane	9.52	56	571	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	11.40	55	1369	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	17.03	77	446	N.D.	
26) 2-Chlorotoluene	17.67	91	3114	N.D.	
27) 4-Chlorotoluene	17.67	91	3114	N.D.	
28) Indane	19.11	117	383	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

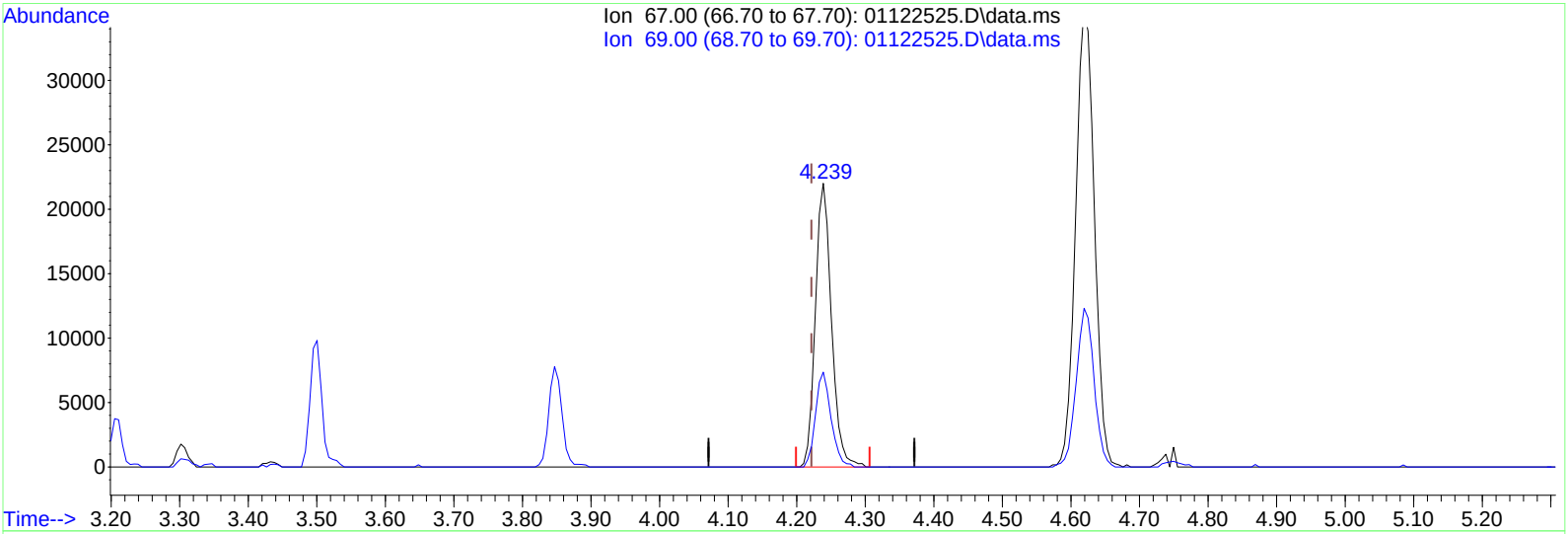
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

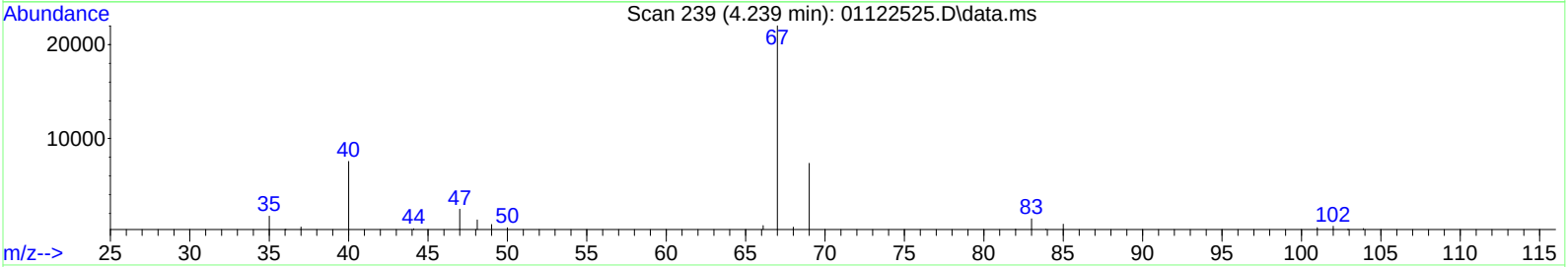
Quant Time: Jan 13 12:37:26 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

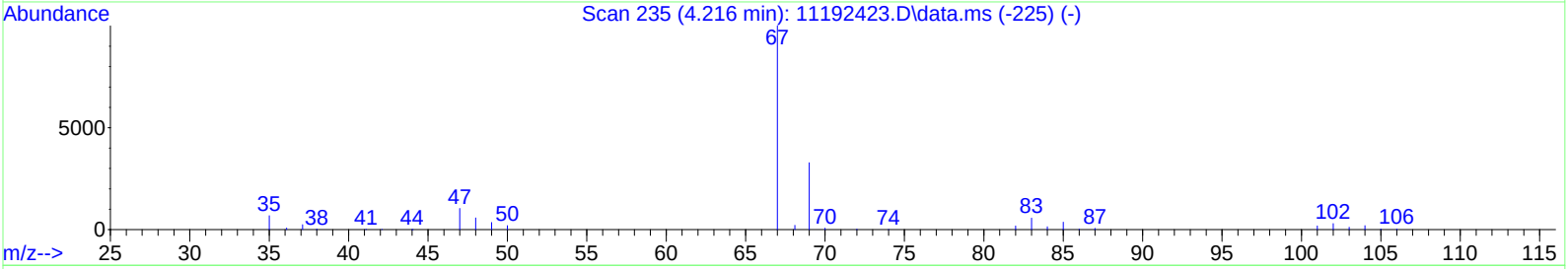


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 12:29:26 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01122525.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.239min (+0.017) 1.27ng

response 35917

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.35
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122525.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.313	69	76	81	rBV4	182872	268025	5.51%	1.075%
2	3.376	81	87	105	rVB2	42751	96702	1.99%	0.388%
3	3.501	105	109	122	rVB2	92879	124345	2.55%	0.499%
4	3.620	124	130	147	rBV2	136968	253784	5.21%	1.018%
5	3.779	152	158	165	rBV	19963	25620	0.53%	0.103%
6	3.847	165	170	176	rBV	72977	98951	2.03%	0.397%
7	4.239	234	239	243	rBV	43346	66232	1.36%	0.266%
8	4.295	243	249	259	rVB2	29847	63228	1.30%	0.254%
9	4.454	271	277	285	rBV	10290	21388	0.44%	0.086%
10	4.630	296	308	322	rBV	1301857	3044937	62.54%	12.210%
11	4.750	322	329	342	rVV	2072969	3645520	74.88%	14.619%
12	4.852	342	347	360	rVB4	20113	48884	1.00%	0.196%
13	5.034	374	379	387	rVB	19323	33778	0.69%	0.135%
14	5.346	426	434	442	rBV3	6977	19544	0.40%	0.078%
15	5.454	445	453	461	rVB2	67393	131182	2.69%	0.526%
16	5.579	464	475	485	rBV	2415755	4868588	100.00%	19.523%
17	5.653	485	488	498	rVB	15152	32740	0.67%	0.131%
18	5.789	506	512	518	rVB3	12023	22117	0.45%	0.089%
19	5.840	518	521	528	rVB2	5898	10587	0.22%	0.042%
20	5.948	531	540	554	rBV	100611	227601	4.67%	0.913%
21	6.317	597	605	612	rBV	16654	37916	0.78%	0.152%
22	6.442	617	627	641	rVV	43579	143401	2.95%	0.575%
23	6.567	641	649	659	rVV3	21369	49108	1.01%	0.197%
24	6.669	659	667	681	rVV	128794	285633	5.87%	1.145%
25	6.845	689	698	707	rVB5	4654	14627	0.30%	0.059%
26	6.993	718	724	731	rBV2	9503	20533	0.42%	0.082%
27	7.242	757	768	783	rBV2	409310	987680	20.29%	3.961%
28	7.367	783	790	796	rVV	26282	57758	1.19%	0.232%
29	7.441	796	803	812	rVB	38056	86757	1.78%	0.348%
30	8.009	889	903	916	rBV	265450	632579	12.99%	2.537%
31	8.554	990	999	1009	rBV2	15229	37655	0.77%	0.151%
32	8.804	1033	1043	1052	rBV3	18383	54068	1.11%	0.217%
33	8.901	1054	1060	1070	rVB	17378	44221	0.91%	0.177%
34	9.042	1074	1085	1100	rBV	438925	1141076	23.44%	4.576%
35	9.304	1121	1131	1142	rBV	554681	1305196	26.81%	5.234%
36	9.395	1142	1147	1160	rVB2	16944	39566	0.81%	0.159%
37	9.695	1193	1200	1205	rBV3	11732	30310	0.62%	0.122%
38	9.735	1205	1207	1214	rVB2	7991	13092	0.27%	0.052%
39	10.048	1256	1262	1276	rVB7	3390	10819	0.22%	0.043%
40	11.189	1454	1463	1472	rVB3	8886	22182	0.46%	0.089%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

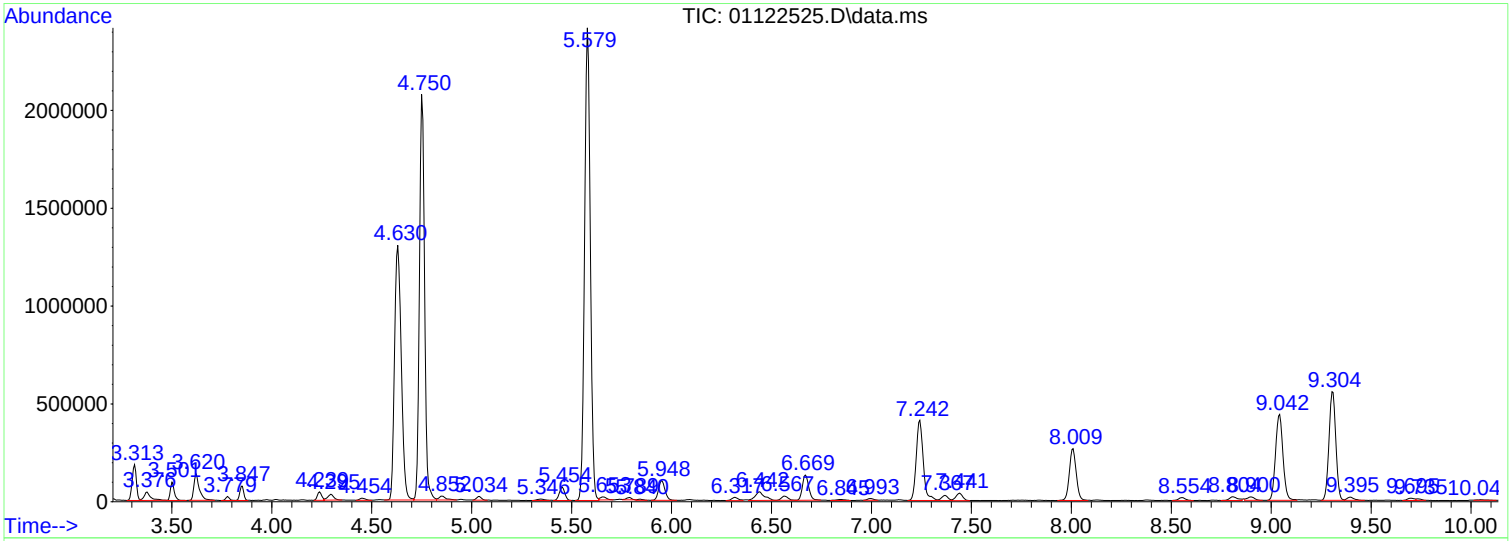
41	11.342	1480	1490	1494	rBV5	4893	12381	0.25%	0.050%
42	11.535	1518	1524	1532	rBV2	6420	13517	0.28%	0.054%
43	12.200	1626	1641	1653	rVB2	84756	210115	4.32%	0.843%
44	12.330	1655	1664	1671	rVV5	13752	33758	0.69%	0.135%
45	12.432	1671	1682	1696	rVV	727279	1700750	34.93%	6.820%
46	12.557	1696	1704	1715	rVB2	30046	69194	1.42%	0.277%
47	12.818	1743	1750	1762	rBV3	14020	35810	0.74%	0.144%
48	12.921	1762	1768	1775	rVV4	5238	11151	0.23%	0.045%
49	13.222	1815	1821	1830	rVB5	9929	23224	0.48%	0.093%
50	13.829	1918	1928	1939	rBV2	101292	233084	4.79%	0.935%
51	13.994	1949	1957	1966	rVB	40154	84694	1.74%	0.340%
52	14.437	2026	2035	2043	rBV	119150	247548	5.08%	0.993%
53	14.522	2043	2050	2059	rVB	29719	64311	1.32%	0.258%
54	14.840	2097	2106	2119	rVB	744192	1522385	31.27%	6.105%
55	15.408	2198	2206	2217	rVB	42179	96074	1.97%	0.385%
56	15.629	2233	2245	2251	rBV	80977	190749	3.92%	0.765%
57	15.692	2251	2256	2261	rVV	50482	106403	2.19%	0.427%
58	15.754	2261	2267	2277	rVV2	48378	108852	2.24%	0.437%
59	15.834	2277	2281	2287	rVV2	9344	18262	0.38%	0.073%
60	15.913	2287	2295	2303	rVB	31338	65277	1.34%	0.262%
61	16.118	2325	2331	2338	rBV4	8591	16948	0.35%	0.068%
62	16.237	2345	2352	2365	rVB	107105	204865	4.21%	0.822%
63	16.822	2446	2455	2468	rBV	627165	1193927	24.52%	4.788%
64	17.407	2552	2558	2562	rBV6	4705	10458	0.21%	0.042%
65	17.452	2562	2566	2580	rVB4	11072	23860	0.49%	0.096%
66	17.747	2611	2618	2624	rBV4	5907	11589	0.24%	0.046%
67	17.901	2639	2645	2651	rVB2	9708	16456	0.34%	0.066%
68	18.321	2712	2719	2726	rBV2	15905	25348	0.52%	0.102%
69	18.502	2743	2751	2757	rBV4	12922	20405	0.42%	0.082%
70	18.815	2800	2806	2812	rBV	15383	25379	0.52%	0.102%
71	19.013	2835	2841	2847	rVB	97286	149468	3.07%	0.599%
72	19.638	2943	2951	2958	rBV2	56455	103106	2.12%	0.413%
73	19.735	2963	2968	2974	rVV2	27827	39061	0.80%	0.157%
74	19.808	2974	2981	2993	rVB2	36349	75469	1.55%	0.303%
75	20.297	3061	3067	3072	rBV	9456	16585	0.34%	0.067%
76	20.921	3173	3177	3179	rBV2	10348	14640	0.30%	0.059%
77	21.989	3359	3365	3370	rVB3	17187	24189	0.50%	0.097%

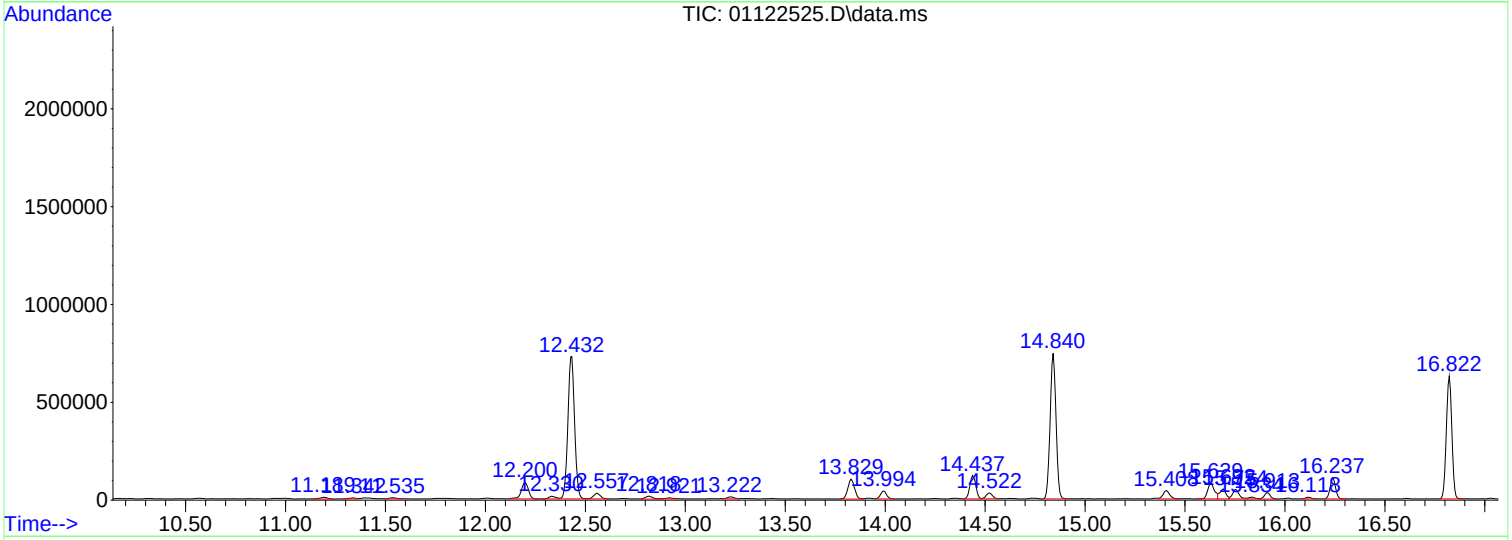
Sum of corrected areas: 24937222

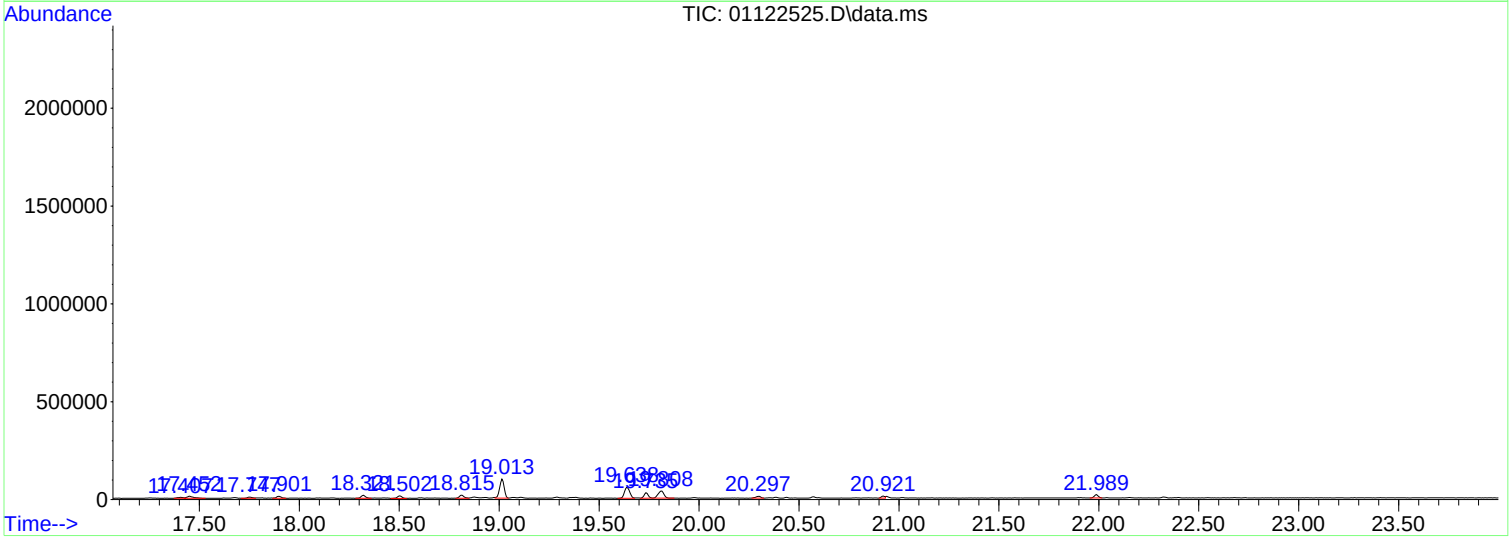
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:40
Operator : SC
Sample : P2405139-051 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122525.D
Acq On : 12 Jan 2025 18:400
Operator : SCC
Sample : P2405139-051 (400mL))
Misc : S37-123124011
ALS Vial : 10 Sample Multiplier: 11

VOA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 06:12:55 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140450	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	588472	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	109385	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	235847	12.325 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.64%			
57) Toluene-d8 (SS2)	12.43	98	616502	12.705 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.60%			
73) Bromofluorobenzene (SS3)	16.82	174	224548	13.409 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.28%			
Target Compounds						Qvalue
2) Propene	3.32	42	312	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.31	45	4391	0.423 ng		99
11) Acetonitrile	4.47	41	161	N.D.		
12) Acrolein	4.56	56	407	N.D.		
13) Acetone	4.65	58	9330	0.987 ng		87
14) Trichlorofluoromethane	4.78	101	468	N.D.		
15) 2-Propanol (Isopropanol)	4.87	45	2120	0.063 ng		65
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.36	59	56	N.D.		
19) Methylene Chloride	5.37	84	212	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.60	151	223	N.D.		
22) Carbon Disulfide	5.61	76	25819	0.603 ng		95
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.44	86	246	0.107 ng	#	26
27) 2-Butanone (MEK)	6.69	72	1357	0.179 ng	#	78
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.85	56	1755	No Calib		
41) Benzene	8.90	78	1572	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.28	84	190	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	10.13	88	361	N.D.		

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 06:12:55 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

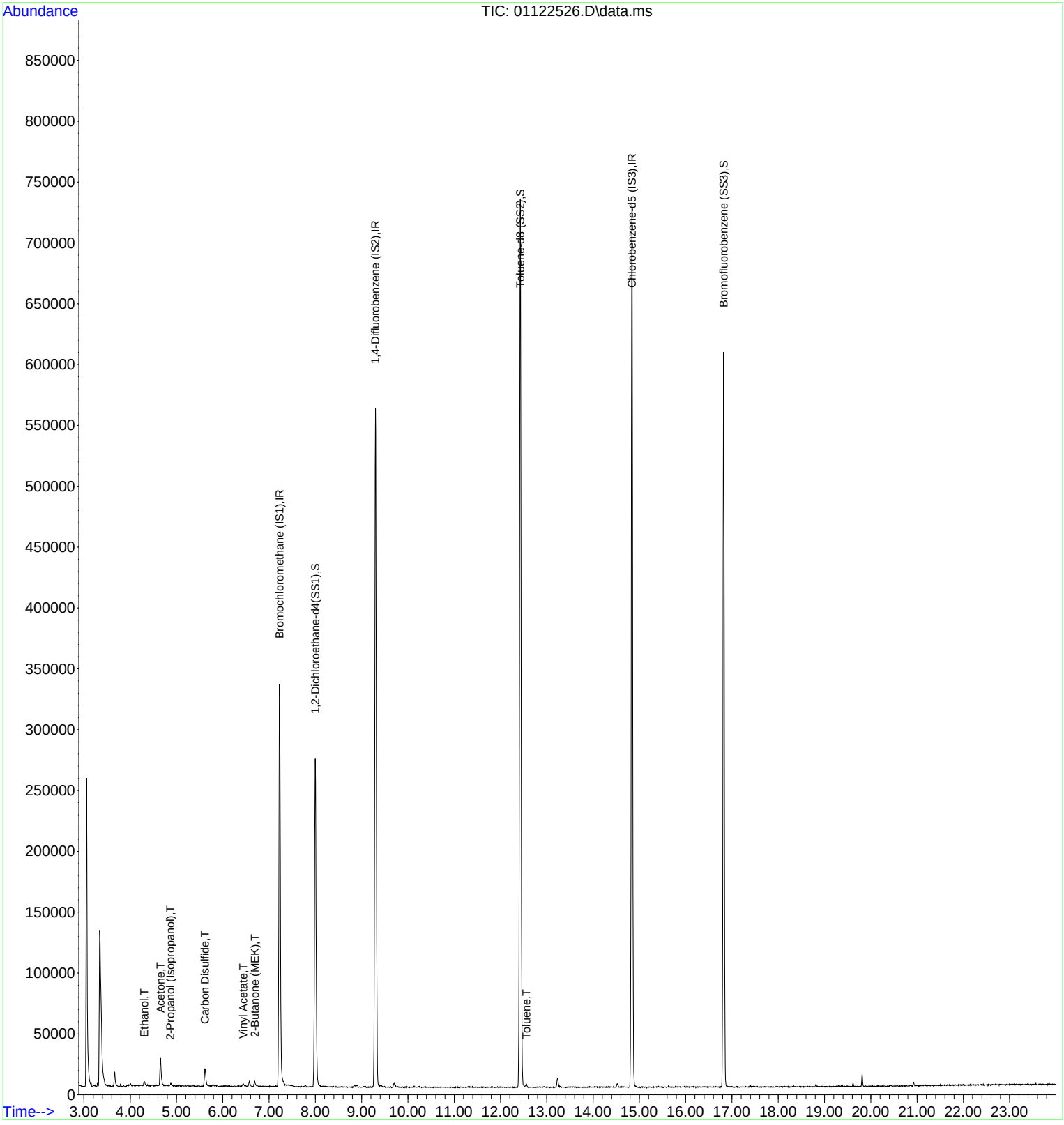
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	987	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	2487	0.053 ng	98
59) 2-Hexanone	12.94	43	811	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	966	N.D.	
67) m- & p-Xylenes	15.62	91	469	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.53	93	270	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 06:12:55 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 06:12:55 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

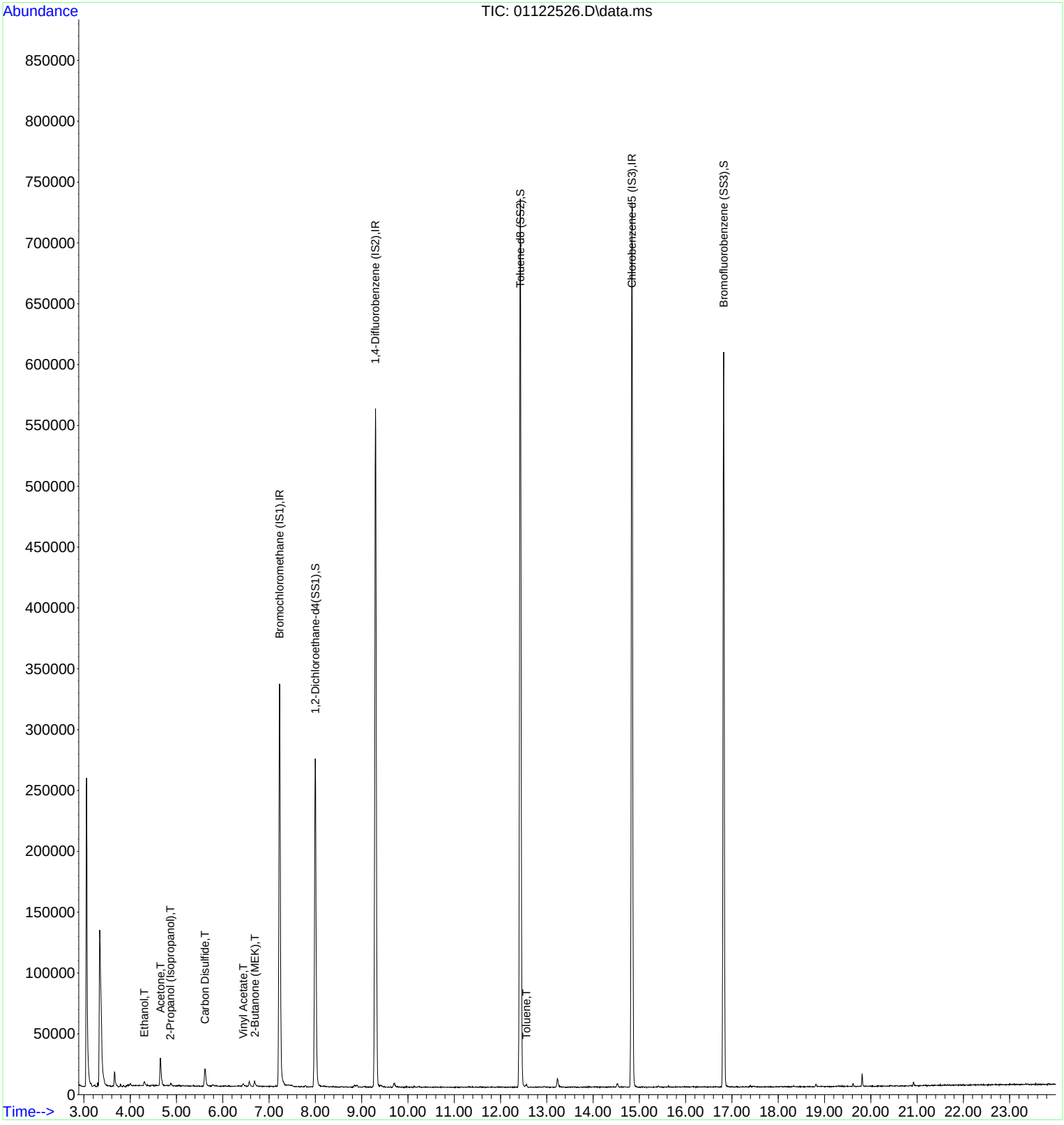
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140450	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	588472	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	109385	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	235847	12.325	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.64%				
57) Toluene-d8 (SS2)	12.43	98	616502	12.705	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.60%				
73) Bromofluorobenzene (SS3)	16.82	174	224548	13.409	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.28%				
Target Compounds							Qvalue
10) Ethanol	4.31	45	4391	0.423	ng		99
13) Acetone	4.65	58	9330	0.987	ng		87
15) 2-Propanol (Isopropanol)	4.87	45	2120	0.063	ng		65
22) Carbon Disulfide	5.61	76	25819	0.603	ng		95
26) Vinyl Acetate	6.44	86	246	0.107	ng	#	26
27) 2-Butanone (MEK)	6.69	72	1357	0.179	ng	#	78
58) Toluene	12.56	91	2487	0.053	ng		98

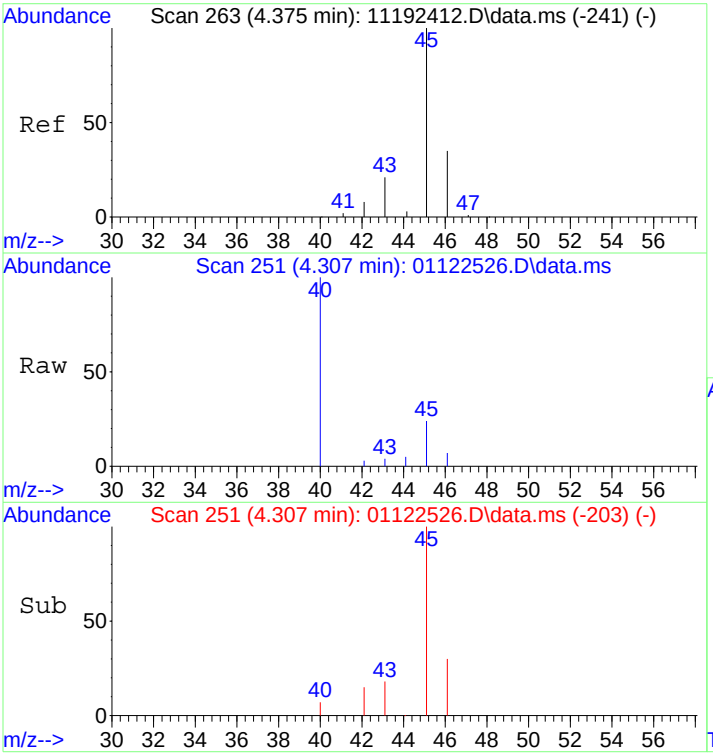
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 06:12:55 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

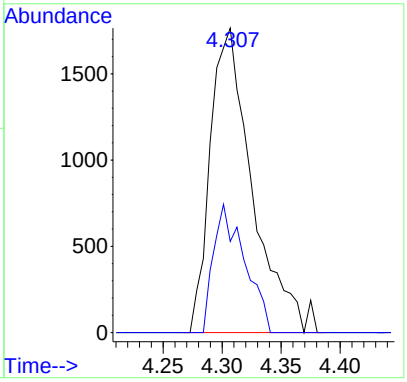


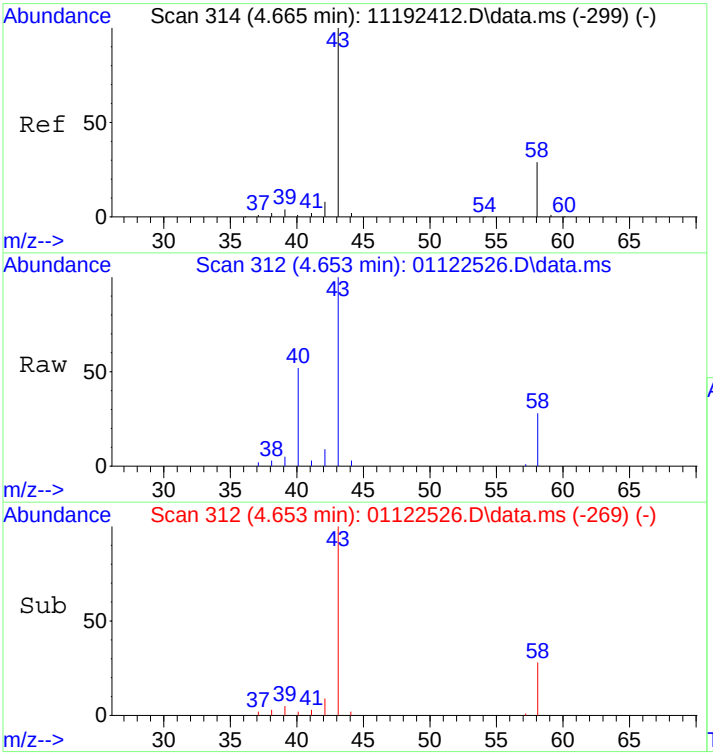


#10
Ethanol
Concen: 0.42 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.023 min
Lab File: 01122526.D
Acq: 12 Jan 2025 19:12

Tgt Ion: 45 Resp: 4391

Ion	Ratio	Lower	Upper
45	100		
46	31.0	11.8	51.8

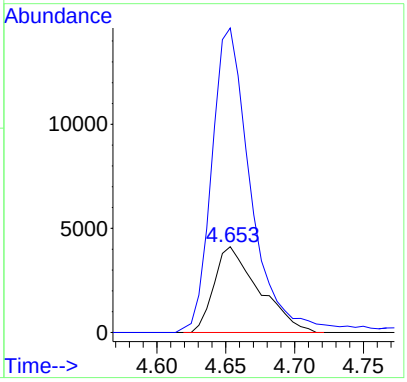


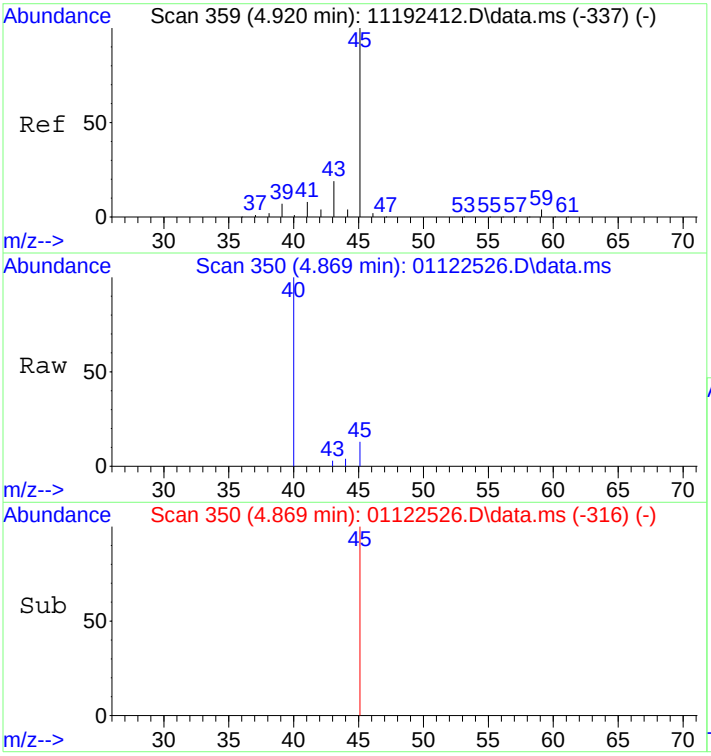


#13
Acetone
Concen: 0.99 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01122526.D
Acq: 12 Jan 2025 19:12

Tgt Ion: 58 Resp: 9330

Ion	Ratio	Lower	Upper
58	100		
43	314.3	312.5	372.5

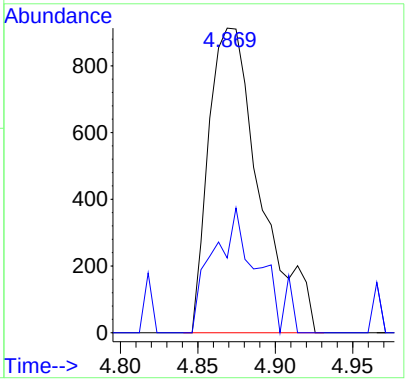


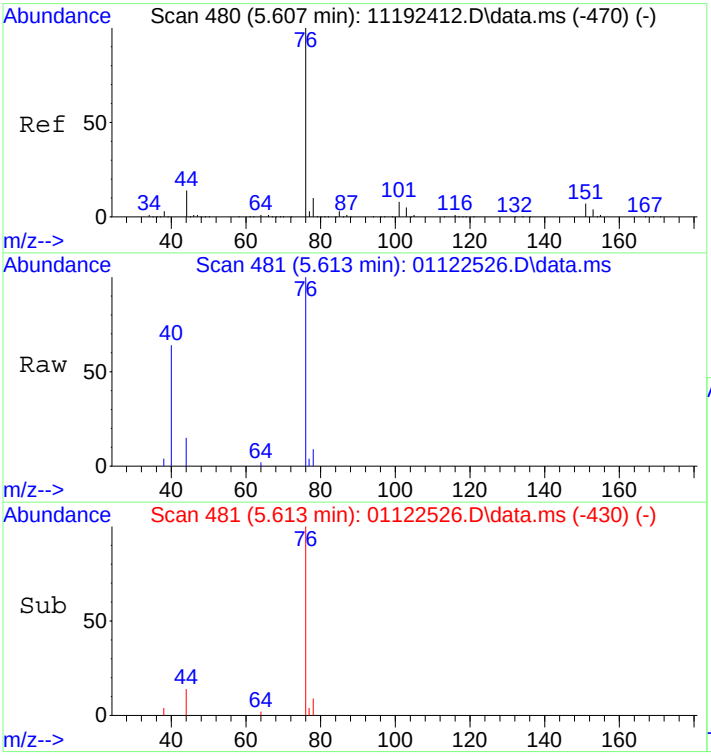


#15
2-Propanol (Isopropanol)
Concen: 0.06 ng
RT: 4.87 min Scan# 350
Delta R.T. -0.056 min
Lab File: 01122526.D
Acq: 12 Jan 2025 19:12

Tgt Ion: 45 Resp: 2120

Ion	Ratio	Lower	Upper
45	100		
43	36.5	0.2	40.2

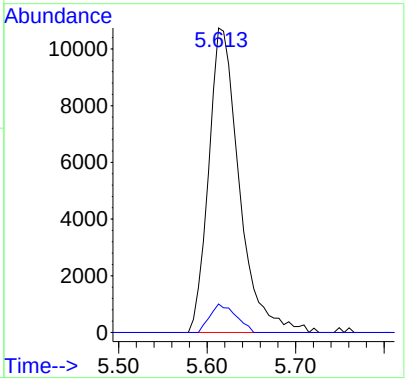


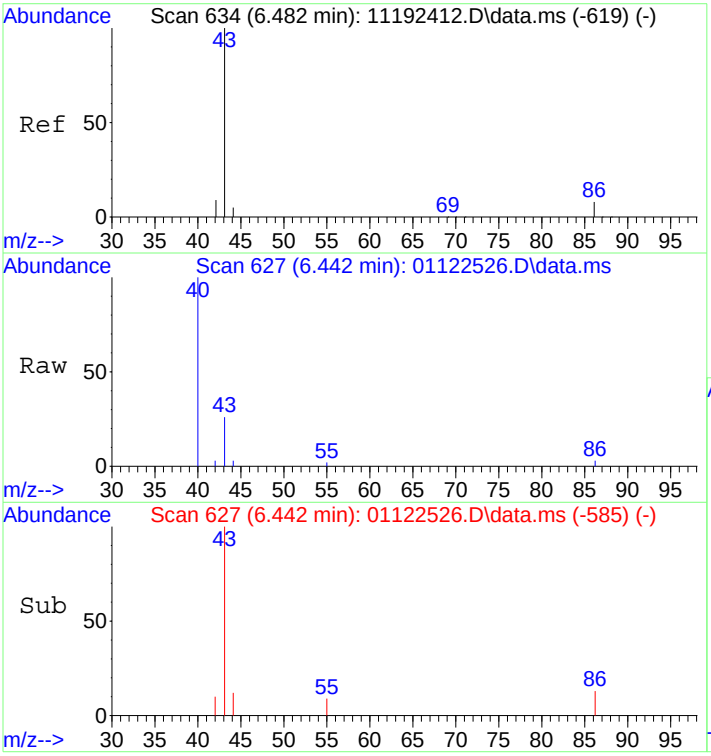


#22
Carbon Disulfide
Concen: 0.60 ng
RT: 5.61 min Scan# 481
Delta R.T. 0.041 min
Lab File: 01122526.D
Acq: 12 Jan 2025 19:12

Tgt Ion: 76 Resp: 25819

Ion	Ratio	Lower	Upper
76	100		
78	7.9	0.0	29.6

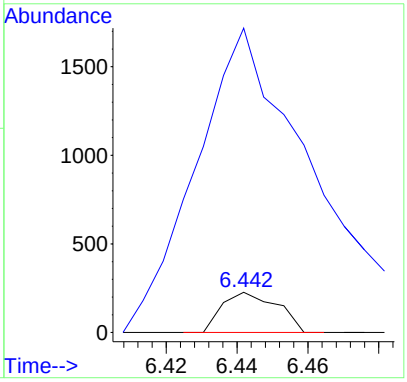


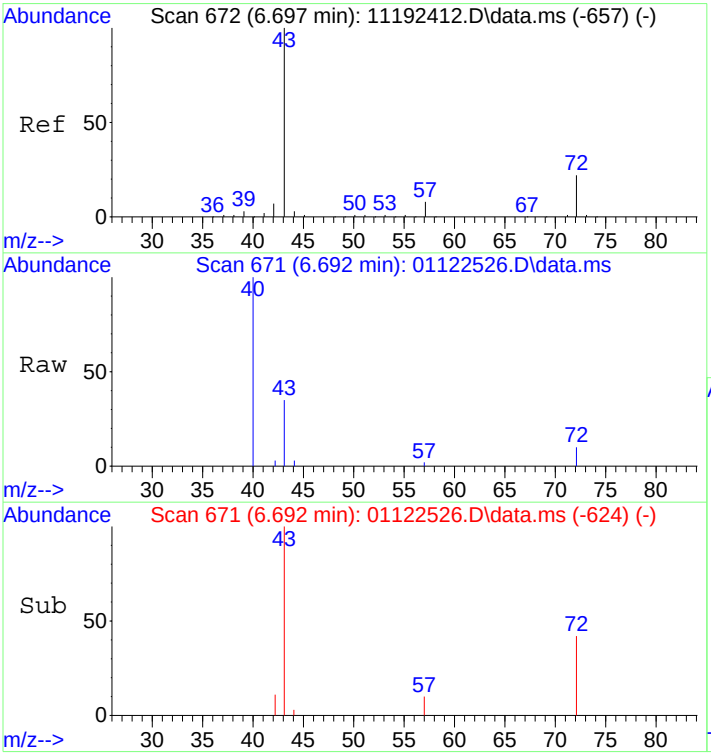


#26
Vinyl Acetate
Concen: 0.11 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01122526.D
Acq: 12 Jan 2025 19:12

Tgt Ion: 86 Resp: 246

Ion	Ratio	Lower	Upper
86	100		
43	1762.6	1331.6	1371.6#

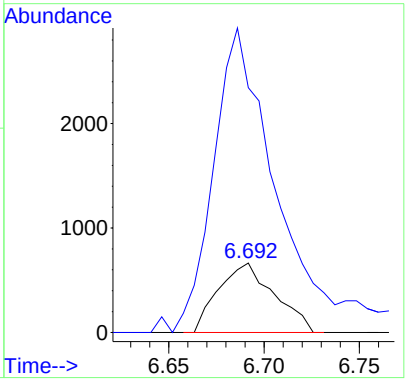


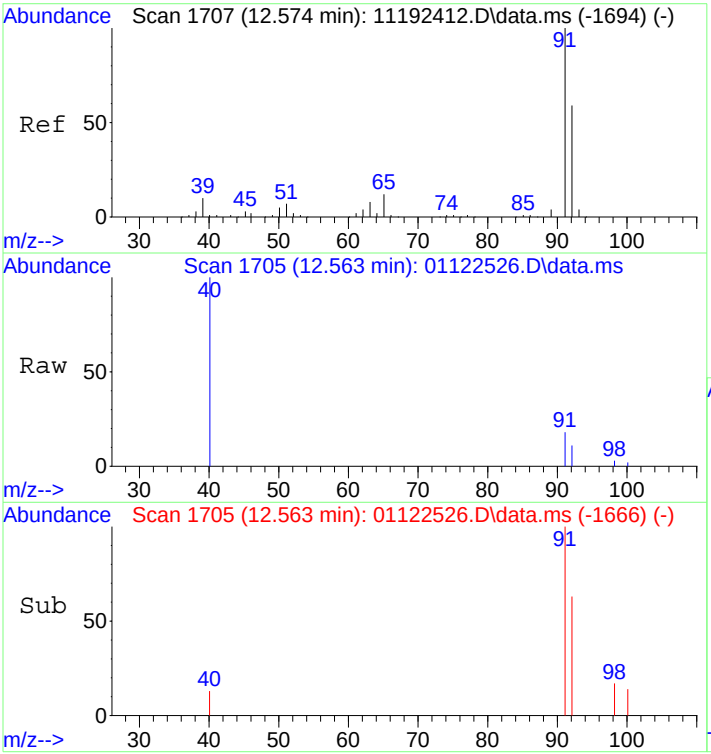


#27
2-Butanone (MEK)
Concen: 0.18 ng
RT: 6.69 min Scan# 671
Delta R.T. 0.018 min
Lab File: 01122526.D
Acq: 12 Jan 2025 19:12

Tgt Ion: 72 Resp: 1357

Ion	Ratio	Lower	Upper
72	100		
43	516.3	439.8	479.8#

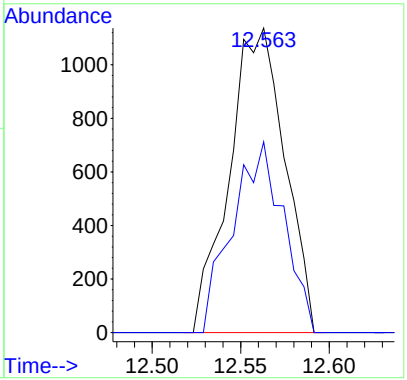




#58
Toluene
Concen: 0.05 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01122526.D
Acq: 12 Jan 2025 19:12

Tgt Ion: 91 Resp: 2487

Ion	Ratio	Lower	Upper
91	100		
92	57.4	39.2	79.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

MOA 1/13/25

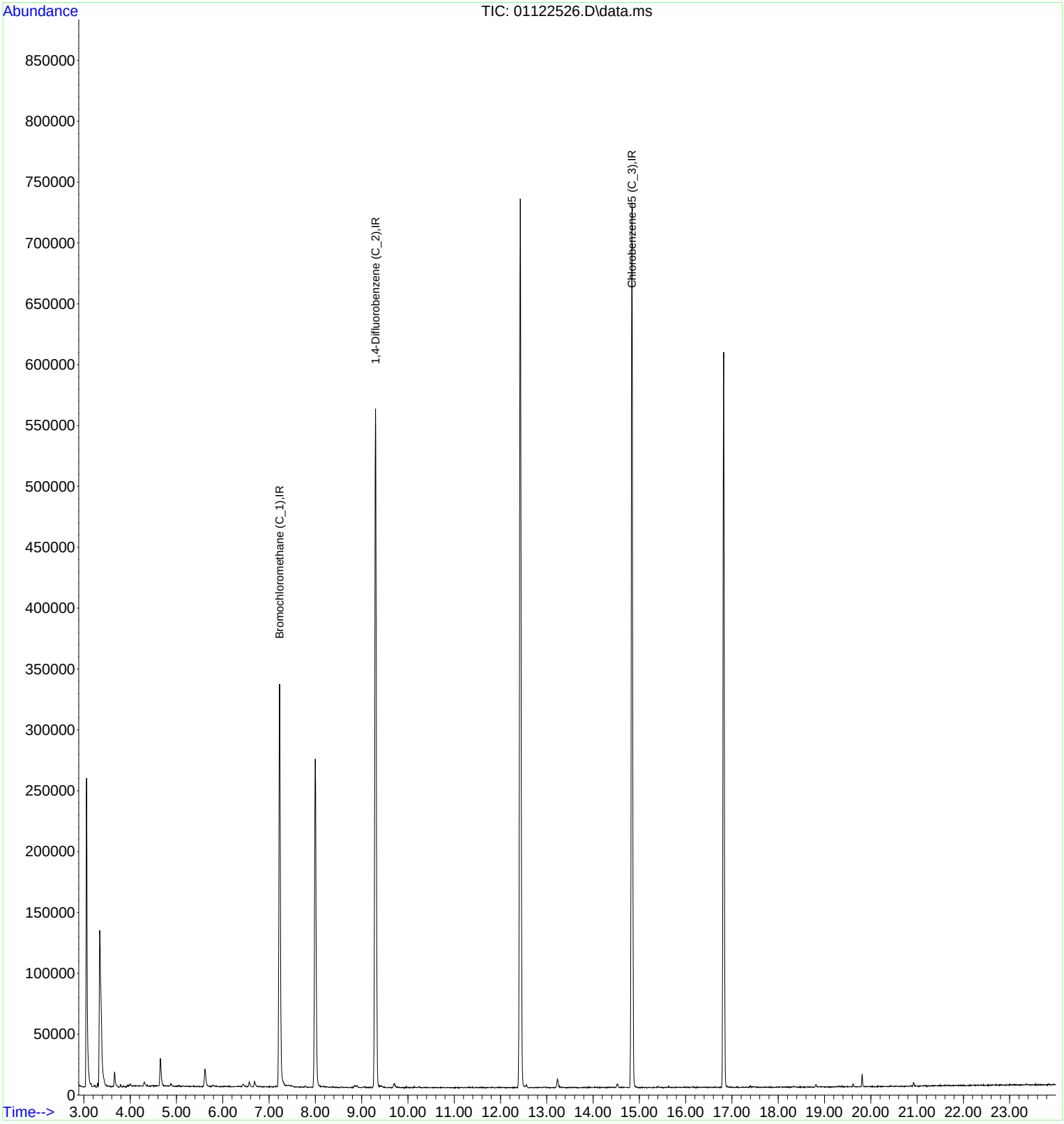
Quant Time: Jan 13 12:29:27 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	142557	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	588472	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	109385	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.68	57	824	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 12:29:27 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122526.D\data.ms

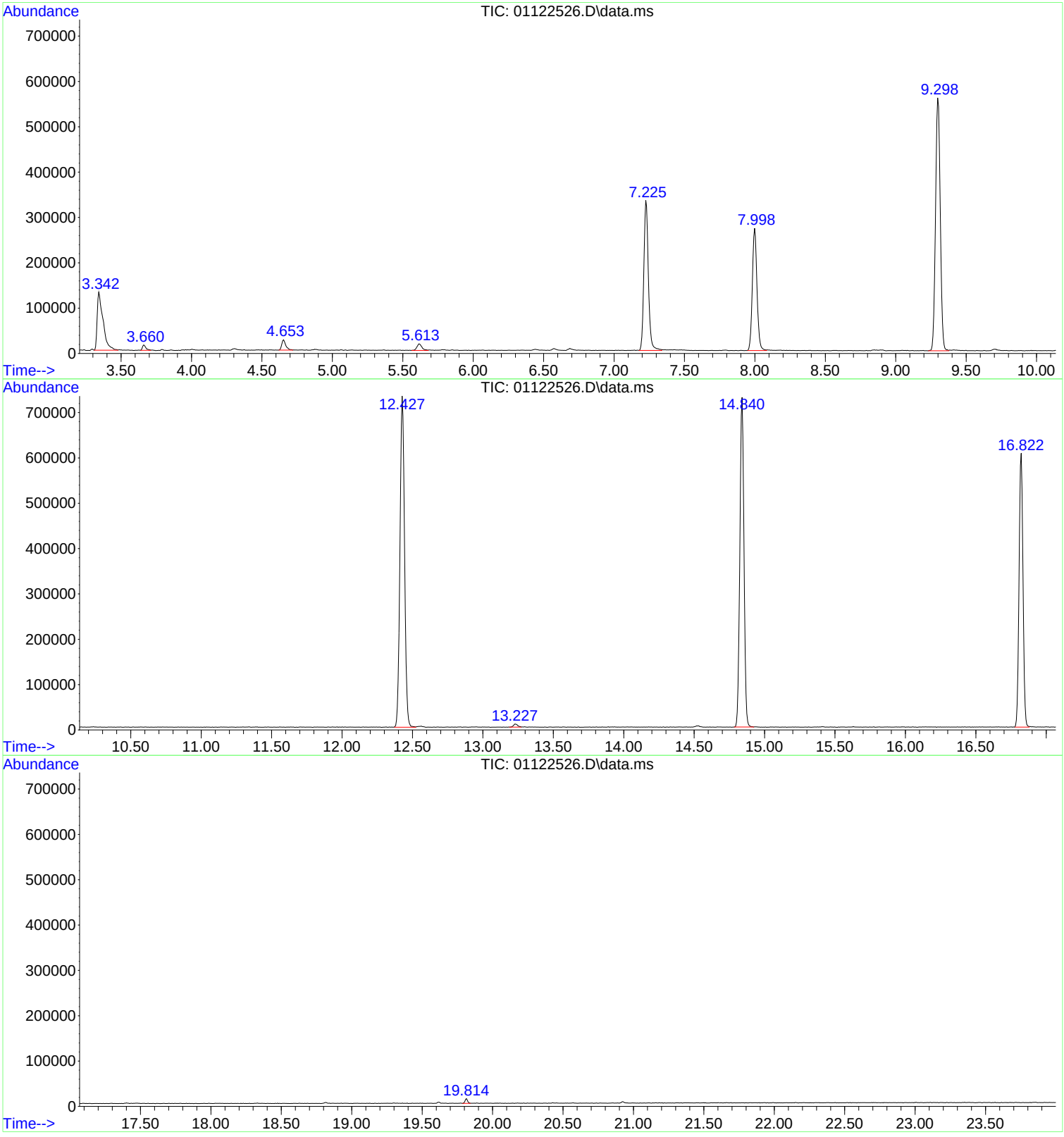
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.342	75	81	105	rBV	128184	369286	22.29%	4.964%
2	3.660	133	137	146	rBV	11680	20041	1.21%	0.269%
3	4.653	306	312	324	rVB	22720	44835	2.71%	0.603%
4	5.613	472	481	493	rBV	14575	36427	2.20%	0.490%
5	7.225	756	765	785	rBV	330995	739303	44.63%	9.937%
6	7.998	892	901	916	rBV	269721	619162	37.38%	8.322%
7	9.298	1118	1130	1144	rBV	557856	1290587	77.92%	17.347%
8	12.427	1671	1681	1698	rBV	730330	1656371	100.00%	22.264%
9	13.227	1815	1822	1830	rBV4	7006	14527	0.88%	0.195%
10	14.840	2096	2106	2121	rBV	727120	1481415	89.44%	19.912%
11	16.822	2447	2455	2465	rBV	603992	1154576	69.71%	15.519%
12	19.814	2977	2982	2987	rBV2	10573	13200	0.80%	0.177%

Sum of corrected areas: 7439730

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:12
Operator : SC
Sample : P2405139-052 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122526.D
Acq On : 12 Jan 2025 19:122
Operator : SCC
Sample : P2405139-052 (400mL))
Misc : S37-123124011
ALS Vial : 11 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

MOA 1/13/25

Quant Time: Jan 13 11:55:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	145222	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	627003	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	119788	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	246001	12.434 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%			
57) Toluene-d8 (SS2)	12.43	98	667747	12.566 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%			
73) Bromofluorobenzene (SS3)	16.82	174	236408	12.892 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.12%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	14637	0.516 ng		98
4) Chloromethane	3.52	50	240	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	282	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.30	45	3931	0.366 ng		97
11) Acetonitrile	4.50	41	56	N.D.		
12) Acrolein	4.55	56	1526	0.166 ng		91
13) Acetone	4.64	58	33833	3.460 ng		97
14) Trichlorofluoromethane	4.76	101	208824	7.844 ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.35	59	58	N.D.		
19) Methylene Chloride	5.36	84	353	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.58	151	127330	10.601 ng		98
22) Carbon Disulfide	5.60	76	77761	1.758 ng		89
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.43	86	2117	0.894 ng	#	30
27) 2-Butanone (MEK)	6.69	72	1828	0.233 ng	#	56
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	7.31	57	1857	0.085 ng	#	87
32) Chloroform	7.36	83	14131	0.598 ng		98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	2805	No Calib	#	
41) Benzene	8.90	78	3666	0.073 ng		94
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	10.13	88	639	0.073 ng		86

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

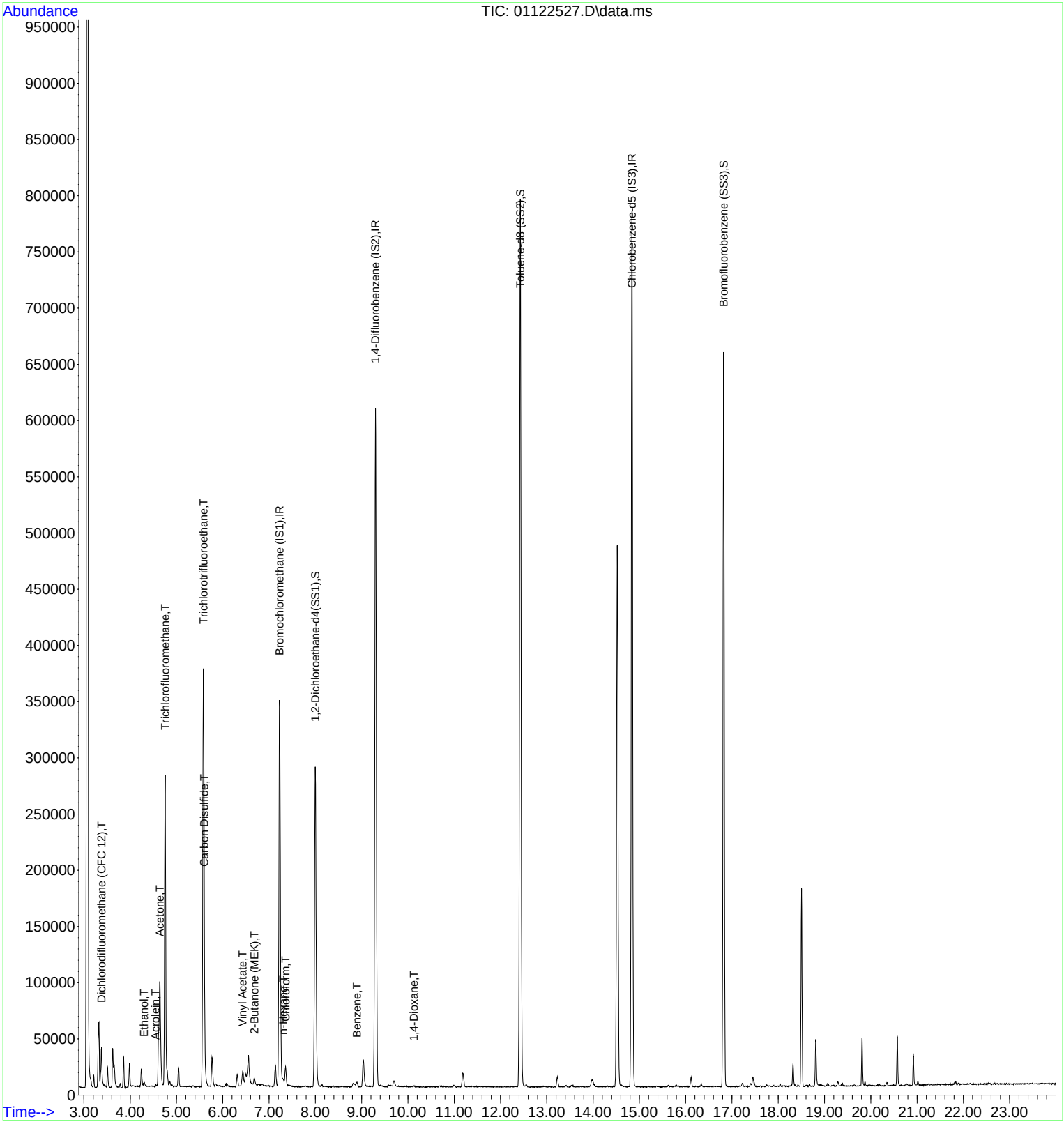
Quant Time: Jan 13 11:55:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	1544	N.D.		
59) 2-Hexanone	12.92	43	838	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	14.03	166	250	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	328	N.D.		
67) m- & p-Xylenes	15.63	91	1054	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	266	N.D.		
70) o-Xylene	16.24	91	585	N.D.		
71) n-Nonane	16.61	43	352	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.68	91	255	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.81	105	421	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.42	105	626	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	714	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	347	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.83	180	121	N.D.		
95) Naphthalene	20.95	128	447	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		d
100) n-Butylbenzene	19.38	91	448	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 11:55:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

1/13/25

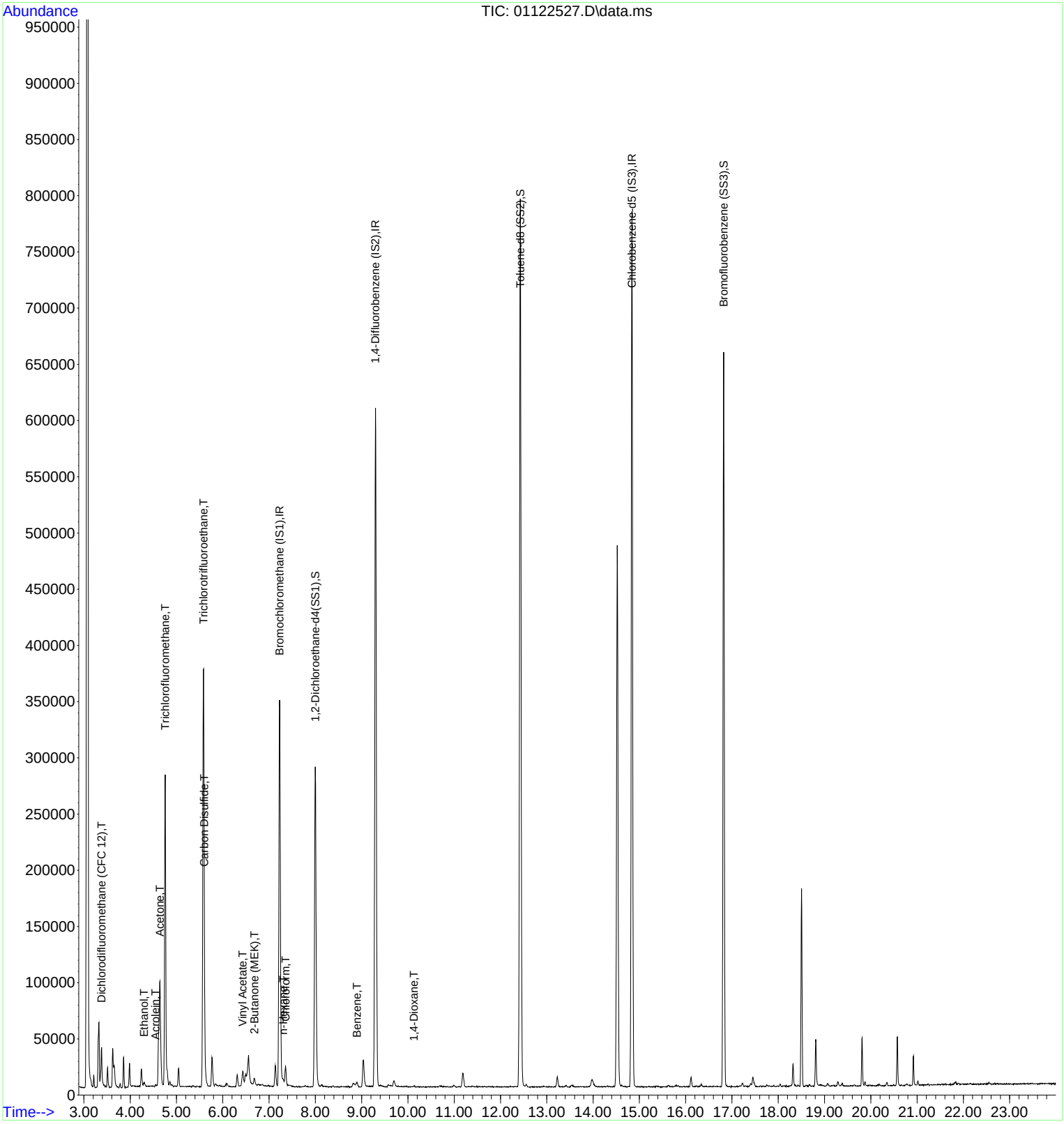
Quant Time: Jan 13 11:55:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

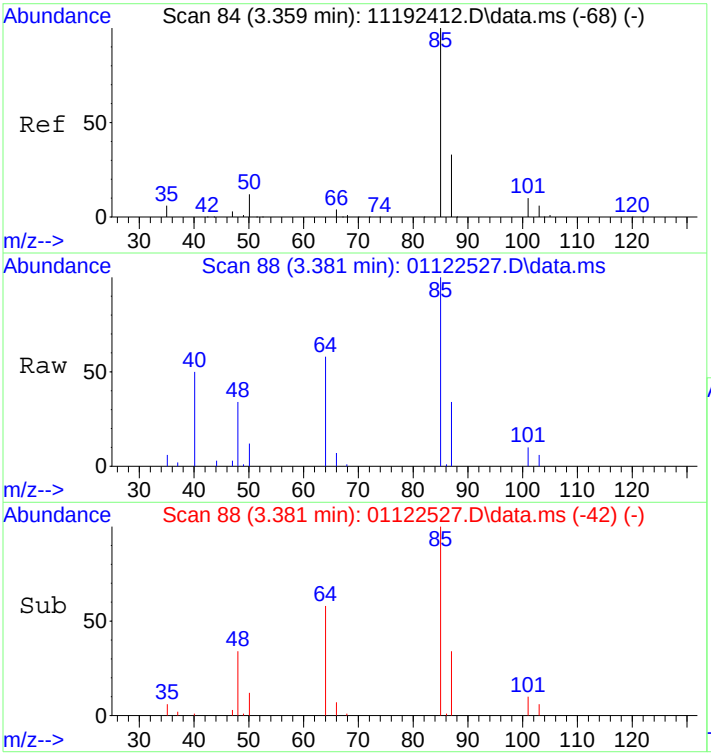
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	145222	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	627003	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	119788	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	246001	12.434	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%				
57) Toluene-d8 (SS2)	12.43	98	667747	12.566	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%				
73) Bromofluorobenzene (SS3)	16.82	174	236408	12.892	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.12%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	14637	0.516	ng		98
10) Ethanol	4.30	45	3931	0.366	ng		97
12) Acrolein	4.55	56	1526	0.166	ng		91
13) Acetone	4.64	58	33833	3.460	ng		97
14) Trichlorofluoromethane	4.76	101	208824	7.844	ng		100
21) Trichlorotrifluoroethane	5.58	151	127330	10.601	ng		98
22) Carbon Disulfide	5.60	76	77761	1.758	ng		89
26) Vinyl Acetate	6.43	86	2117	0.894	ng	#	30
27) 2-Butanone (MEK)	6.69	72	1828	0.233	ng	#	56
31) n-Hexane	7.31	57	1857	0.085	ng	#	87
32) Chloroform	7.36	83	14131	0.598	ng		98
41) Benzene	8.90	78	3666	0.073	ng		94
48) 1,4-Dioxane	10.13	88	639	0.073	ng		86

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 11:55:30 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

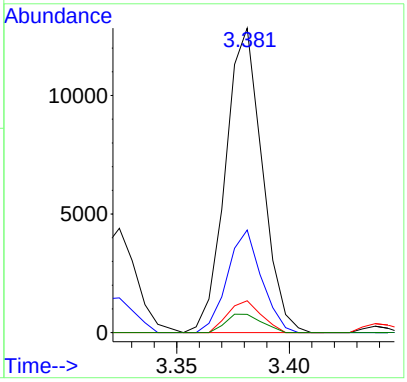


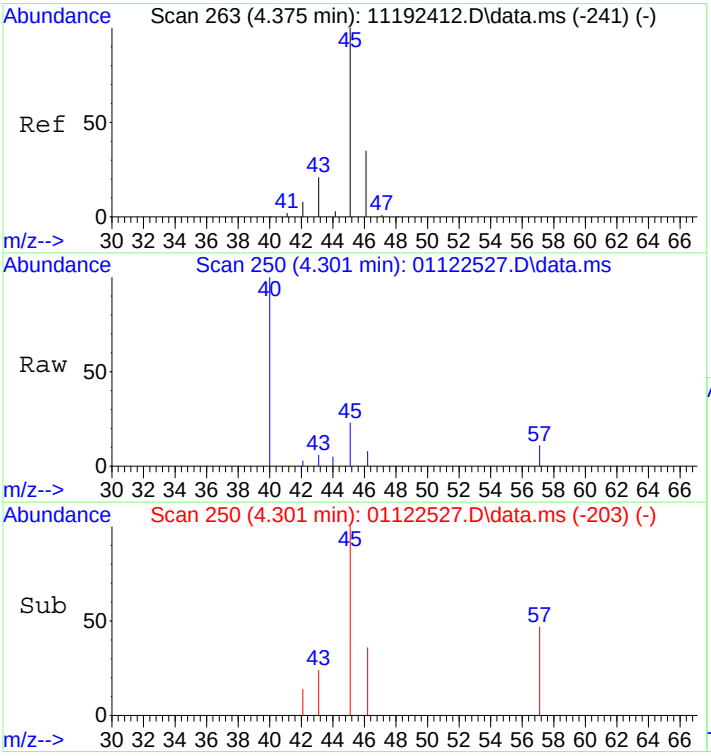


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.52 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.009 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 85 Resp: 14637

Ion	Ratio	Lower	Upper
85	100		
87	31.4	12.6	52.6
101	9.5	0.0	29.6
103	5.9	0.0	26.2

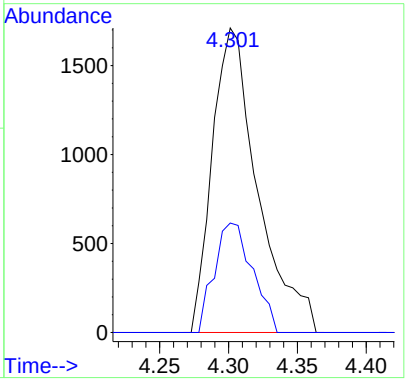


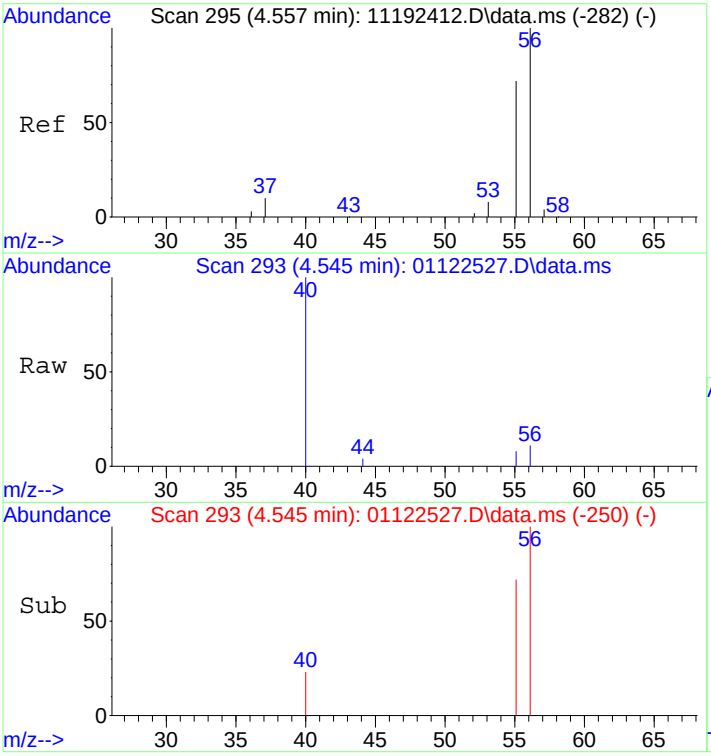


#10
Ethanol
Concen: 0.37 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 45 Resp: 3931

Ion	Ratio	Lower	Upper
45	100		
46	30.2	11.8	51.8

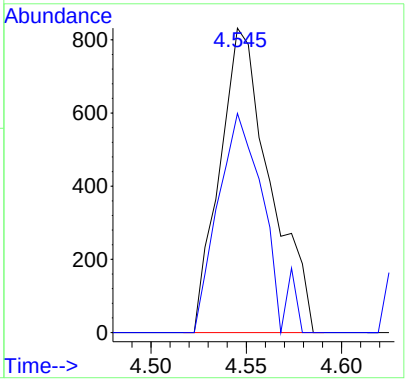


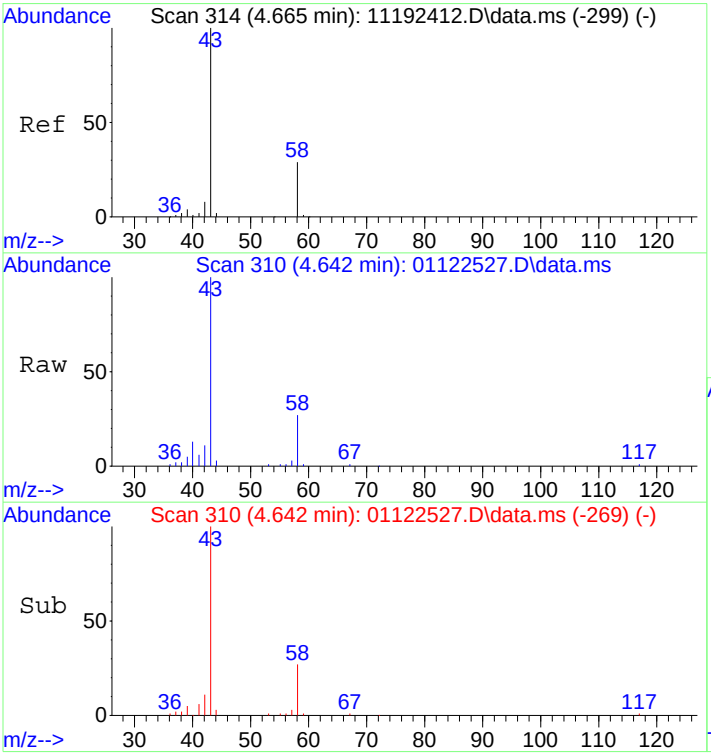


#12
Acrolein
Concen: 0.17 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 56 Resp: 1526

Ion	Ratio	Lower	Upper
56	100		
55	65.8	53.1	93.1

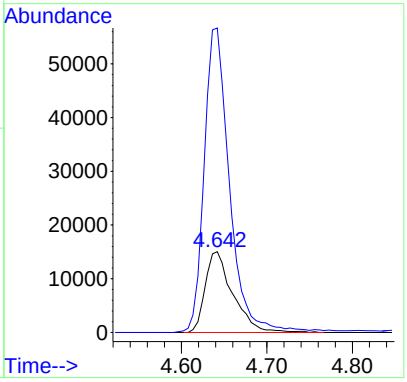


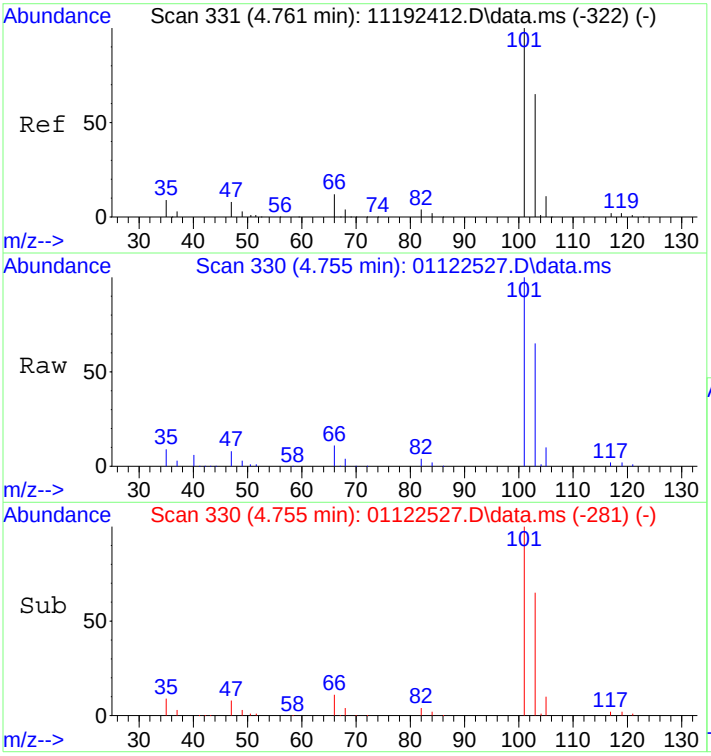


#13
Acetone
Concen: 3.46 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 58 Resp: 33833

Ion	Ratio	Lower	Upper
58	100		
43	349.5	312.5	372.5

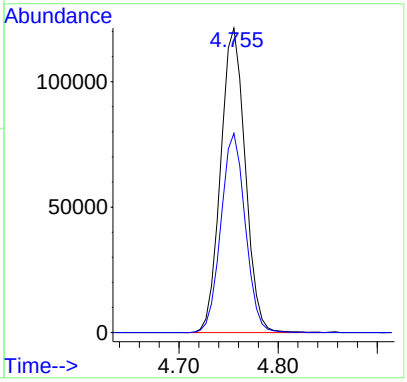


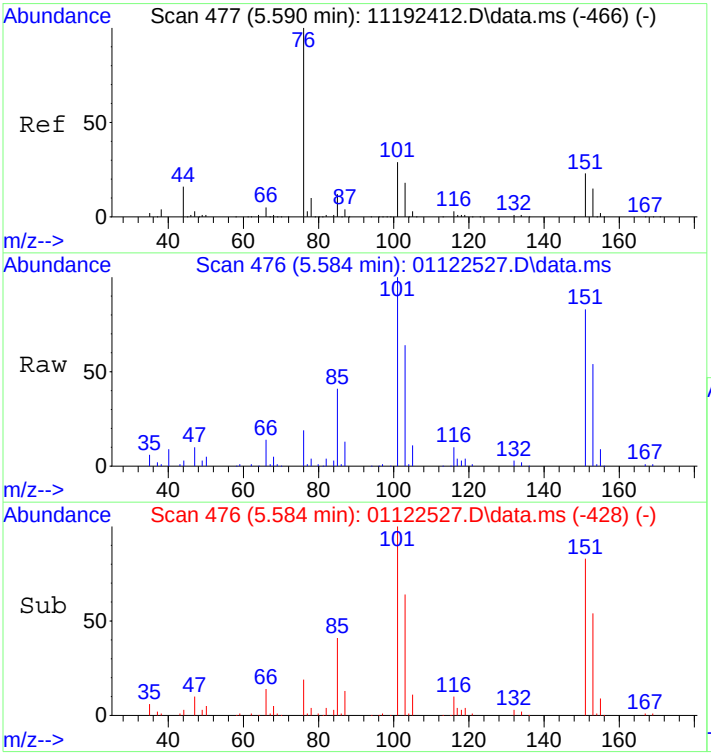


#14
Trichlorofluoromethane
Concen: 7.84 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion:101 Resp: 208824

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

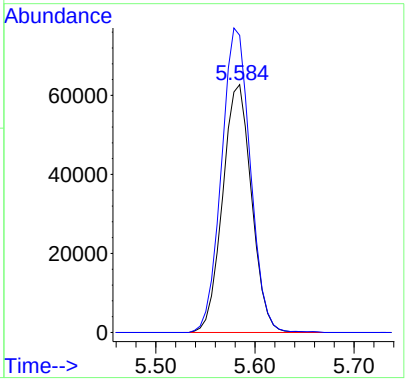


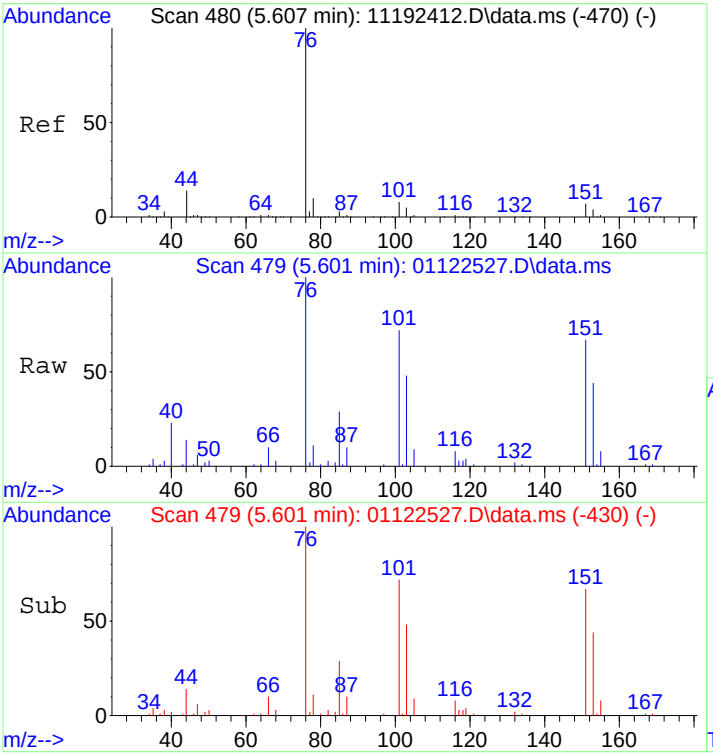


#21
Trichlorotrifluoroethane
Concen: 10.60 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion:151 Resp: 127330

Ion	Ratio	Lower	Upper
151	100		
101	122.6	105.0	145.0

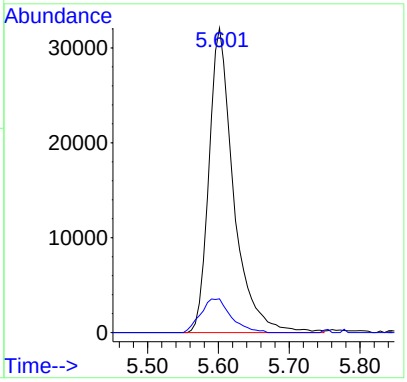


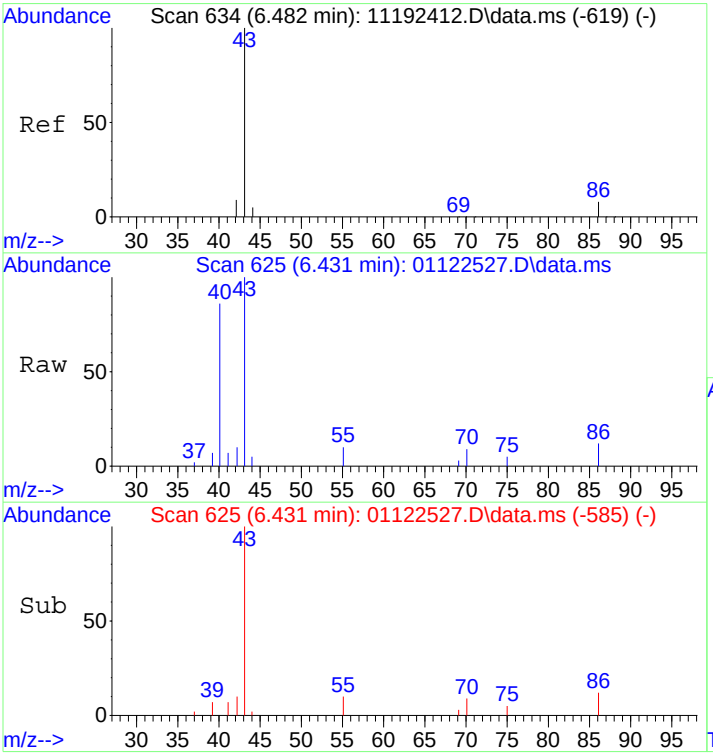


#22
Carbon Disulfide
Concen: 1.76 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 76 Resp: 77761

Ion	Ratio	Lower	Upper
76	100		
78	13.6	0.0	29.6

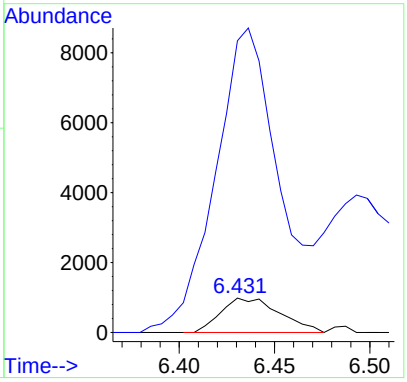


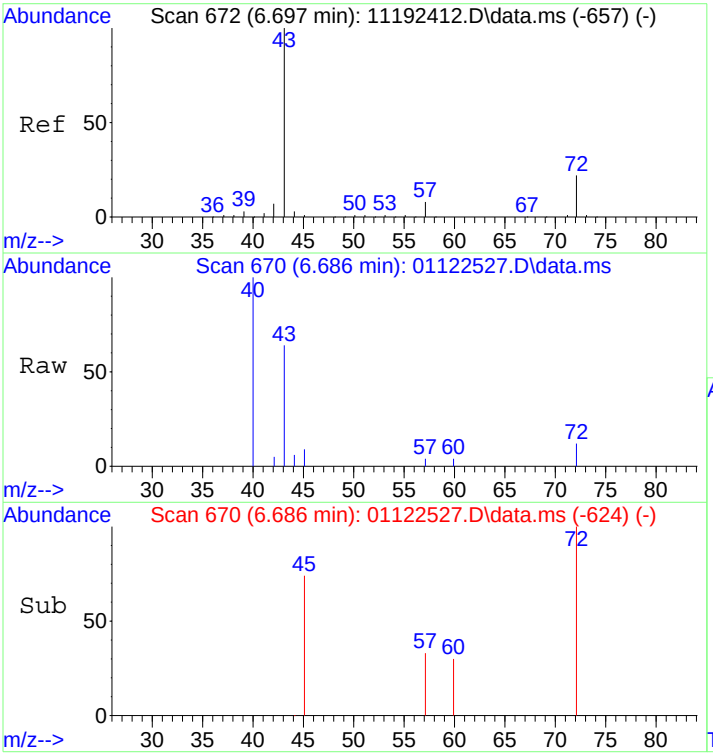


#26
Vinyl Acetate
Concen: 0.89 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 86 Resp: 2117

Ion	Ratio	Lower	Upper
86	100		
43	963.7	1331.6	1371.6#

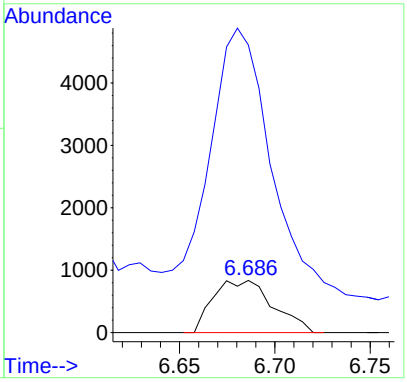


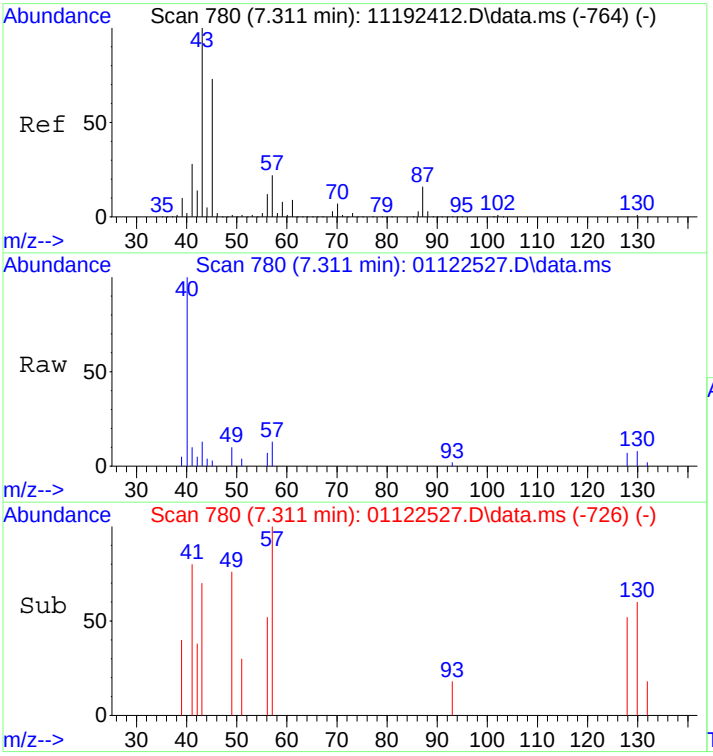


#27
2-Butanone (MEK)
Concen: 0.23 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 72 Resp: 1828

Ion	Ratio	Lower	Upper
72	100		
43	575.2	439.8	479.8#

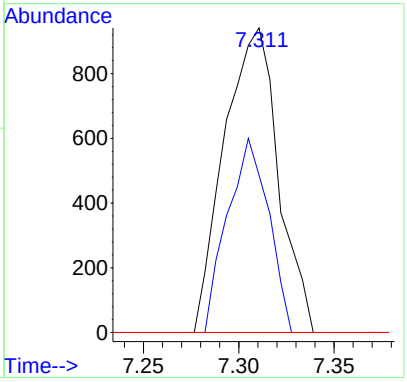


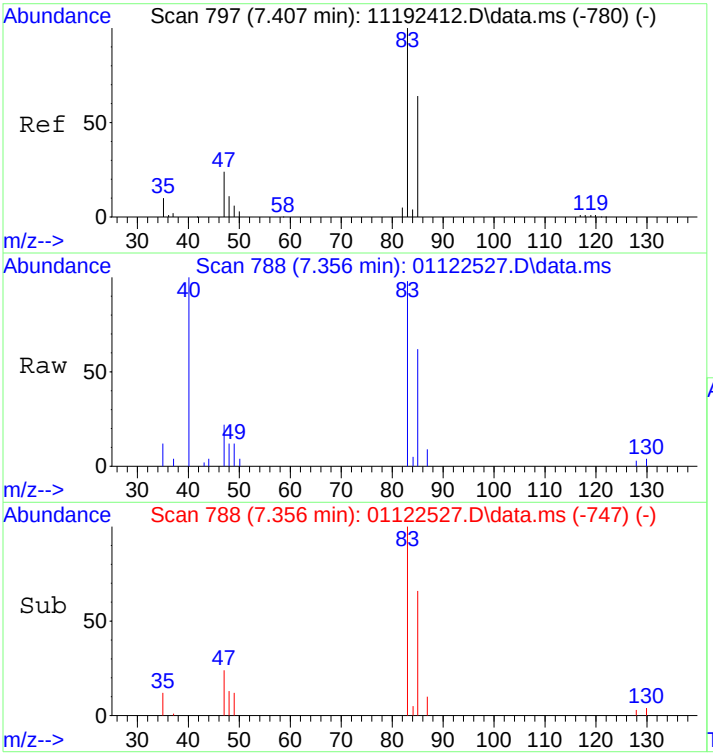


#31
n-Hexane
Concen: 0.09 ng
RT: 7.31 min Scan# 780
Delta R.T. 0.057 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 57 Resp: 1857

Ion	Ratio	Lower	Upper
57	100		
56	48.5	43.4	65.0
86	0.0	10.9	16.3#

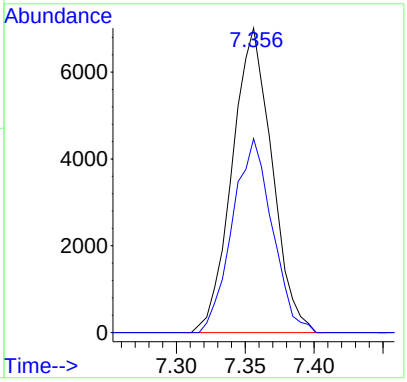


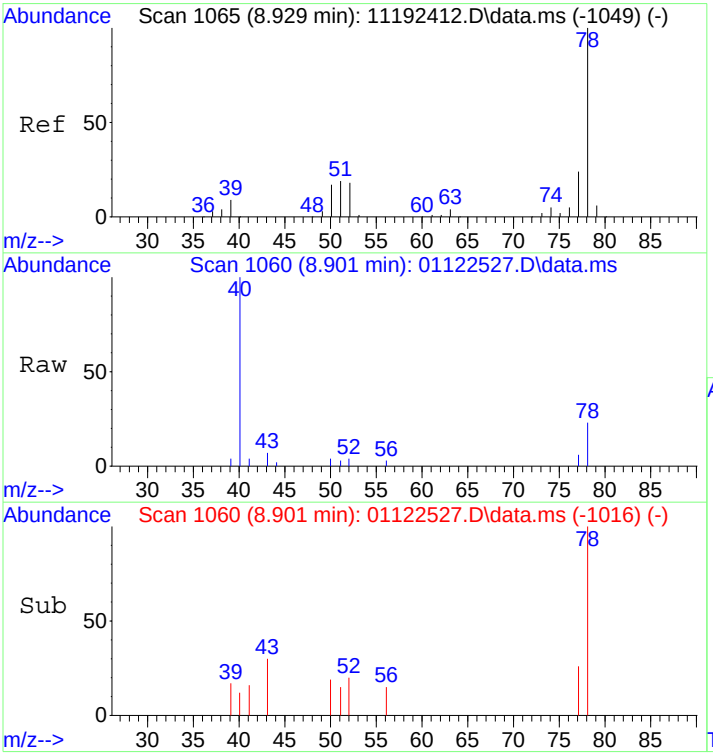


#32
Chloroform
Concen: 0.60 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 83 Resp: 14131

Ion	Ratio	Lower	Upper
83	100		
85	63.7	45.1	85.1

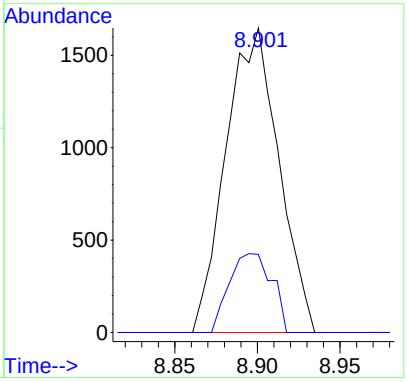


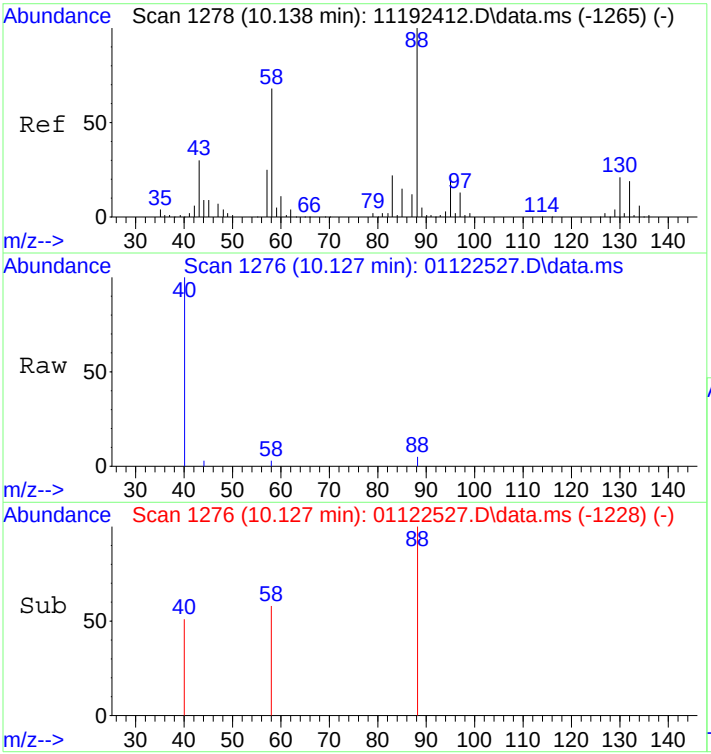


#41
Benzene
Concen: 0.07 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 78 Resp: 3666

Ion	Ratio	Lower	Upper
78	100		
77	20.9	3.7	43.7

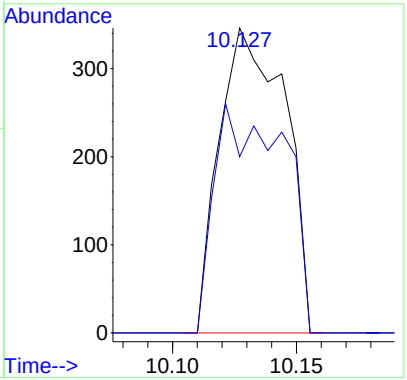




#48
1,4-Dioxane
Concen: 0.07 ng
RT: 10.13 min Scan# 1276
Delta R.T. 0.021 min
Lab File: 01122527.D
Acq: 12 Jan 2025 19:44

Tgt Ion: 88 Resp: 639

Ion	Ratio	Lower	Upper
88	100		
58	79.0	47.8	87.8



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 12:29:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

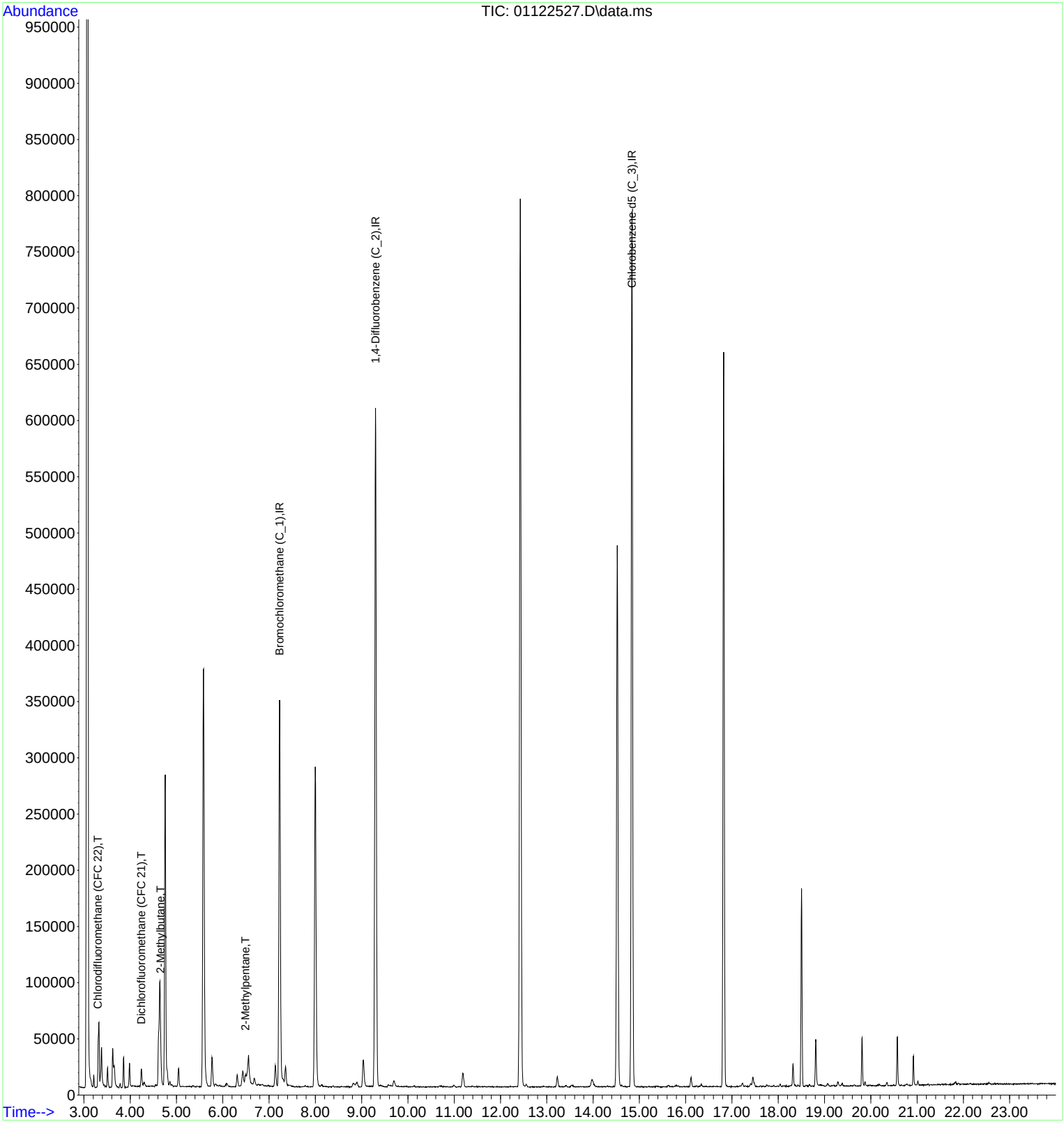
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	146939	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	629291	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	119788	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	123	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1012	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	820	0.200	ng		99
6) 1-Chloro-1,1-Difluoroe...	3.51	65	408	N.D.			
7) Dichlorofluoromethane ...	4.24	67	15027	0.505	ng		99
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	689	N.D.			
10) 2-Methylbutane	4.65	57	5126	0.361	ng	#	46
11) Methyl Acetate	5.35	43	217	N.D.			
12) 2-Methylpentane	6.49	71	2039	0.169	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	9.04	84	1389	N.D.			
17) 2,3-Dimethylpentane	9.51	56	111	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	0.00	55	0	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	255	N.D.			
27) 4-Chlorotoluene	17.68	91	255	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

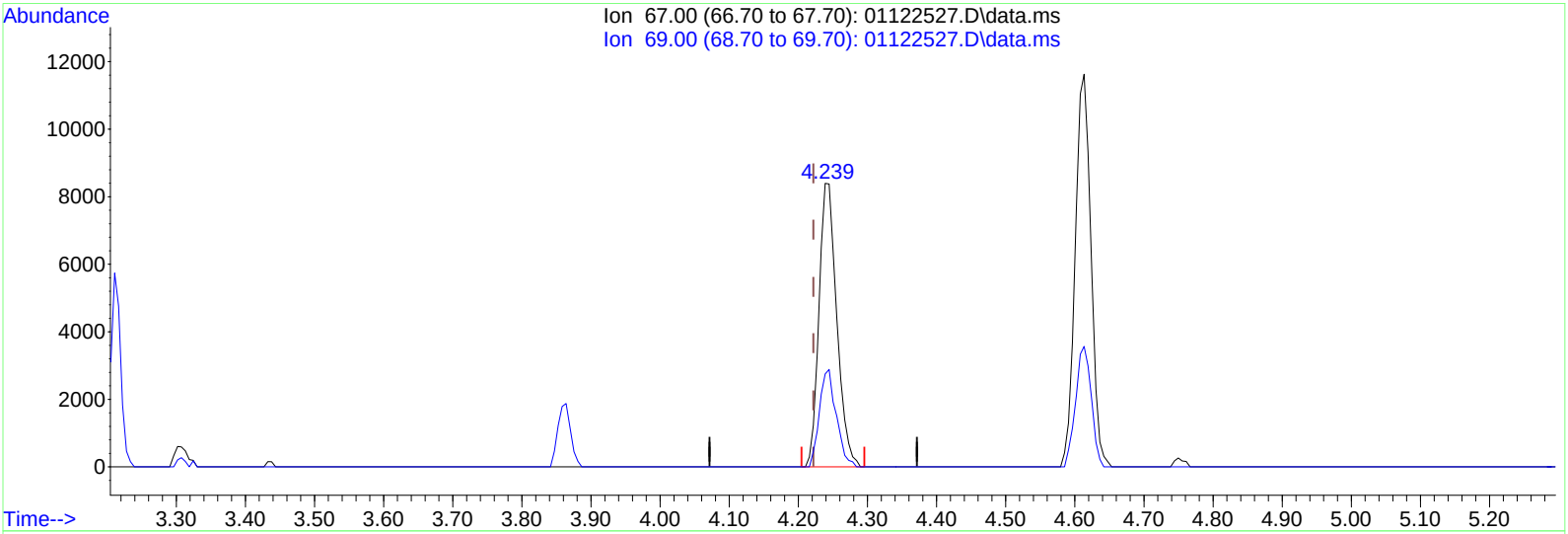
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

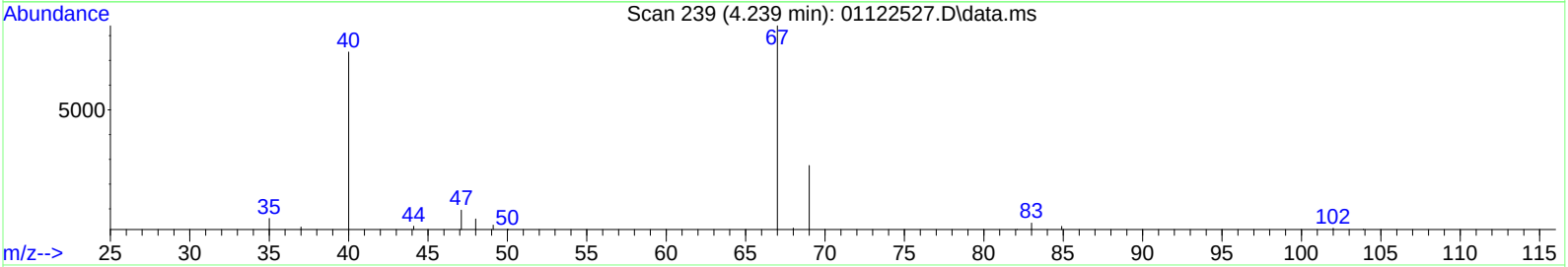
Quant Time: Jan 13 12:29:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

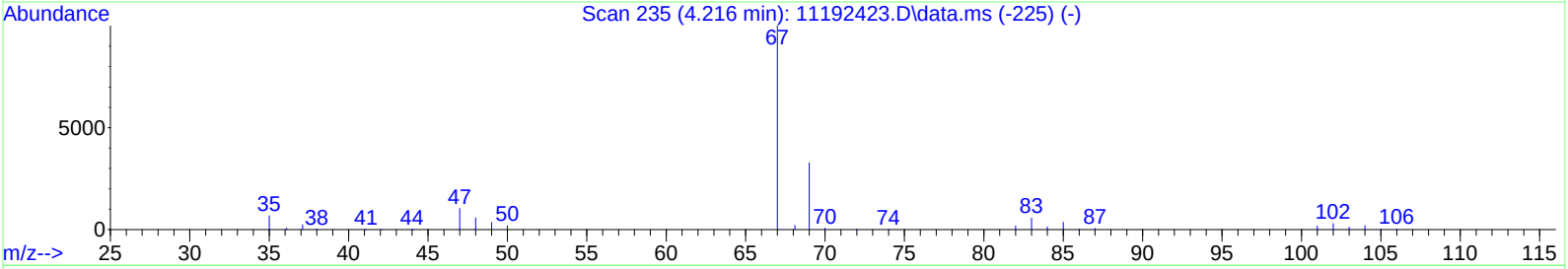


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 12:29:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01122527.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.239min (+0.017) 0.50ng

response 15027

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.47
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122527.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.325	69	78	81	rBV3	57812	107877	6.02%	0.939%
2	3.381	81	88	96	rVB2	33960	59976	3.35%	0.522%
3	3.512	106	111	120	rVB	17886	25204	1.41%	0.219%
4	3.620	125	130	134	rBV	34541	55550	3.10%	0.484%
5	3.858	164	172	177	rVB2	27383	37663	2.10%	0.328%
6	3.983	188	194	201	rBV2	21452	30299	1.69%	0.264%
7	4.239	234	239	246	rBV	15680	26890	1.50%	0.234%
8	4.642	300	310	322	rBV2	92632	253113	14.13%	2.203%
9	4.755	322	330	344	rVB	276085	493380	27.55%	4.295%
10	5.045	374	381	387	rVB	16101	26222	1.46%	0.228%
11	5.584	466	476	494	rBV2	371819	832893	46.51%	7.250%
12	5.766	502	508	517	rBV	25813	51483	2.87%	0.448%
13	6.311	598	604	611	rBV	10512	20629	1.15%	0.180%
14	6.431	618	625	631	rBV2	13020	30910	1.73%	0.269%
15	6.499	631	637	639	rVV4	10327	22264	1.24%	0.194%
16	6.555	639	647	659	rVV3	26962	76740	4.28%	0.668%
17	6.680	663	669	681	rVB2	6415	15312	0.85%	0.133%
18	7.135	743	749	756	rBV	18585	35937	2.01%	0.313%
19	7.225	756	765	782	rVV	343330	775337	43.29%	6.749%
20	7.356	782	788	796	rVB2	16984	35715	1.99%	0.311%
21	7.998	891	901	915	rBV	284775	657067	36.69%	5.720%
22	8.821	1040	1046	1053	rBV5	3228	10098	0.56%	0.088%
23	8.901	1053	1060	1067	rVB3	4475	12098	0.68%	0.105%
24	9.037	1074	1084	1096	rBV	23956	58692	3.28%	0.511%
25	9.298	1120	1130	1144	rBV	603589	1390535	77.64%	12.104%
26	9.696	1195	1200	1211	rVB3	4822	11999	0.67%	0.104%
27	11.183	1454	1462	1472	rBV2	12691	31653	1.77%	0.276%
28	12.427	1671	1681	1698	rBV	789885	1790946	100.00%	15.590%
29	13.227	1815	1822	1829	rVB4	9267	18742	1.05%	0.163%
30	13.977	1946	1954	1960	rBV7	6043	17315	0.97%	0.151%
31	14.522	2040	2050	2065	rBV	481646	1063781	59.40%	9.260%
32	14.840	2097	2106	2124	rVB	779023	1606171	89.68%	13.981%
33	16.118	2325	2331	2342	rBV4	8459	16365	0.91%	0.142%
34	16.822	2446	2455	2470	rVB	653539	1238950	69.18%	10.785%
35	17.452	2561	2566	2576	rVB2	8397	20437	1.14%	0.178%
36	18.321	2714	2719	2726	rVB2	20084	30135	1.68%	0.262%
37	18.502	2745	2751	2759	rVB	176030	274295	15.32%	2.388%
38	18.809	2799	2805	2813	rBV	41919	67371	3.76%	0.586%
39	19.814	2976	2982	2989	rBV	43008	60909	3.40%	0.530%
40	20.575	3110	3116	3126	rVB2	43475	62733	3.50%	0.546%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

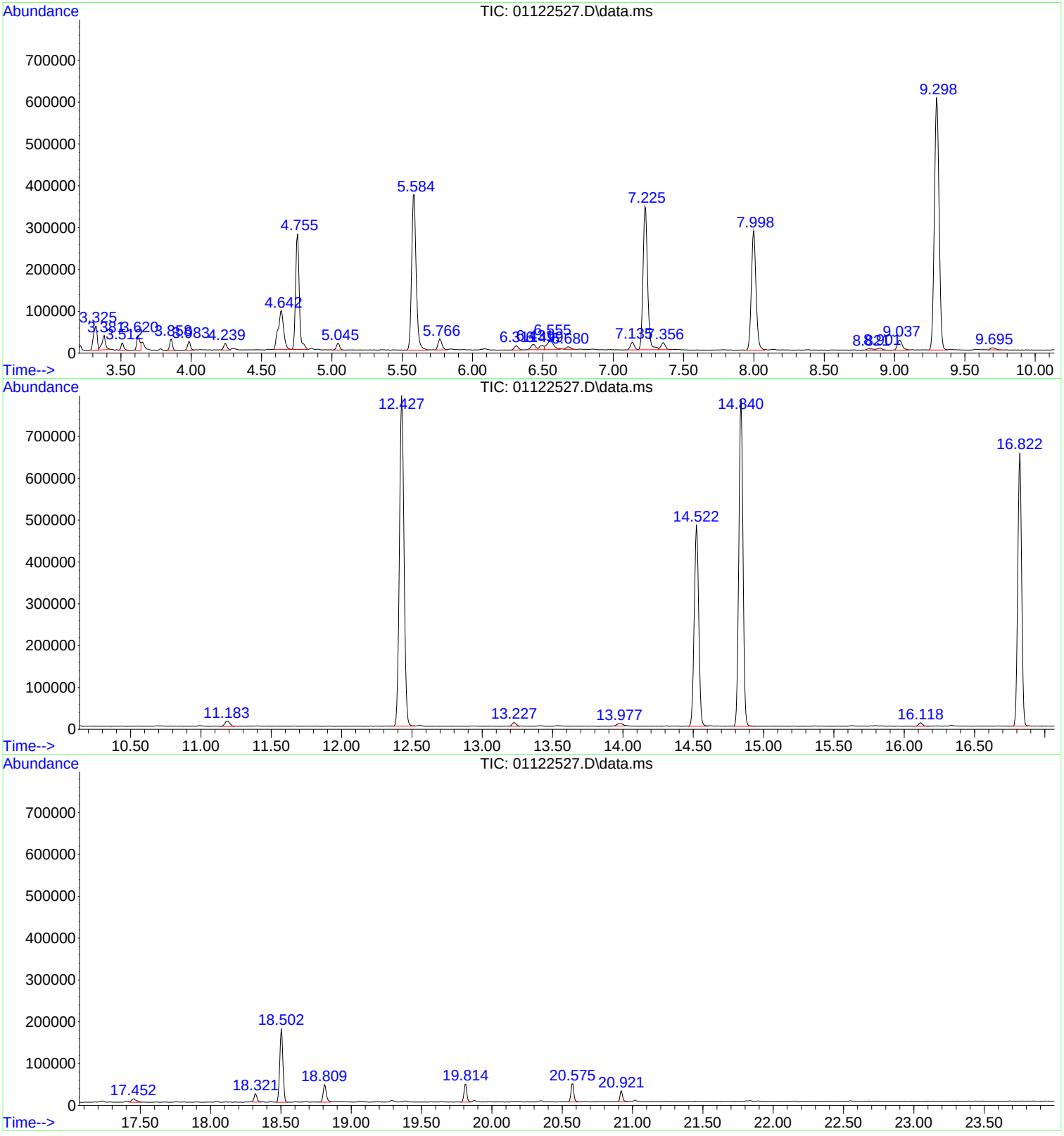
41	20.921	3172	3177	3186	rBV	25845	34438	1.92%	0.300%

Sum of corrected areas: 11488124

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:44
Operator : SC
Sample : P2405139-053 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122527.D
Acq On : 12 Jan 2025 19:444
Operator : SCC
Sample : P2405139-053 (400mL))
Misc : S37-123124011
ALS Vial : 12 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 14:08:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	145423	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.30	114	634811	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111849	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	242068	12.218	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.76%				
57) Toluene-d8 (SS2)	12.43	98	652987	13.160	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.28%				
73) Bromofluorobenzene (SS3)	16.82	174	232626	13.586	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.72%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.36	85	12576	0.442	ng		97
4) Chloromethane	3.52	50	9053	0.429	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	212	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	4.02	94	3630	0.354	ng		93
9) Chloroethane	4.16	64	1037	0.121	ng		86
10) Ethanol	4.31	45	89934	8.361	ng		98
11) Acetonitrile	4.46	41	7349	0.266	ng	#	54
12) Acrolein	4.55	56	765	0.083	ng		97
13) Acetone	4.64	58	86606	8.845	ng		87
14) Trichlorofluoromethane	4.76	101	278546	10.448	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	99227	2.830	ng		99
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	11396	0.827	ng		98
20) 3-Chloro-1-propene (Al...	5.41	41	428	N.D.			
21) Trichlorotrifluoroethane	5.58	151	123197	10.242	ng		97
22) Carbon Disulfide	5.60	76	22223	0.502	ng		61
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.44	86	1120	0.473	ng	#	63
27) 2-Butanone (MEK)	6.67	72	10428	1.326	ng	#	91
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.29	87	434	N.D.			
30) Ethyl Acetate	7.29	61	18028	3.713	ng		97
31) n-Hexane	7.30	57	5116	0.234	ng		98
32) Chloroform	7.36	83	11993	0.507	ng		97
34) Tetrahydrofuran (THF)	0.00	72	0	N.D. d			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	4820	No Calib		#	
41) Benzene	8.90	78	9707	0.190	ng		99
42) Carbon Tetrachloride	9.07	117	937	N.D.			
43) Cyclohexane	9.22	84	4561	0.257	ng		99
44) tert-Amyl Methyl Ether	9.55	73	115	N.D.			
45) 1,2-Dichloropropane	9.86	63	180	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	702	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

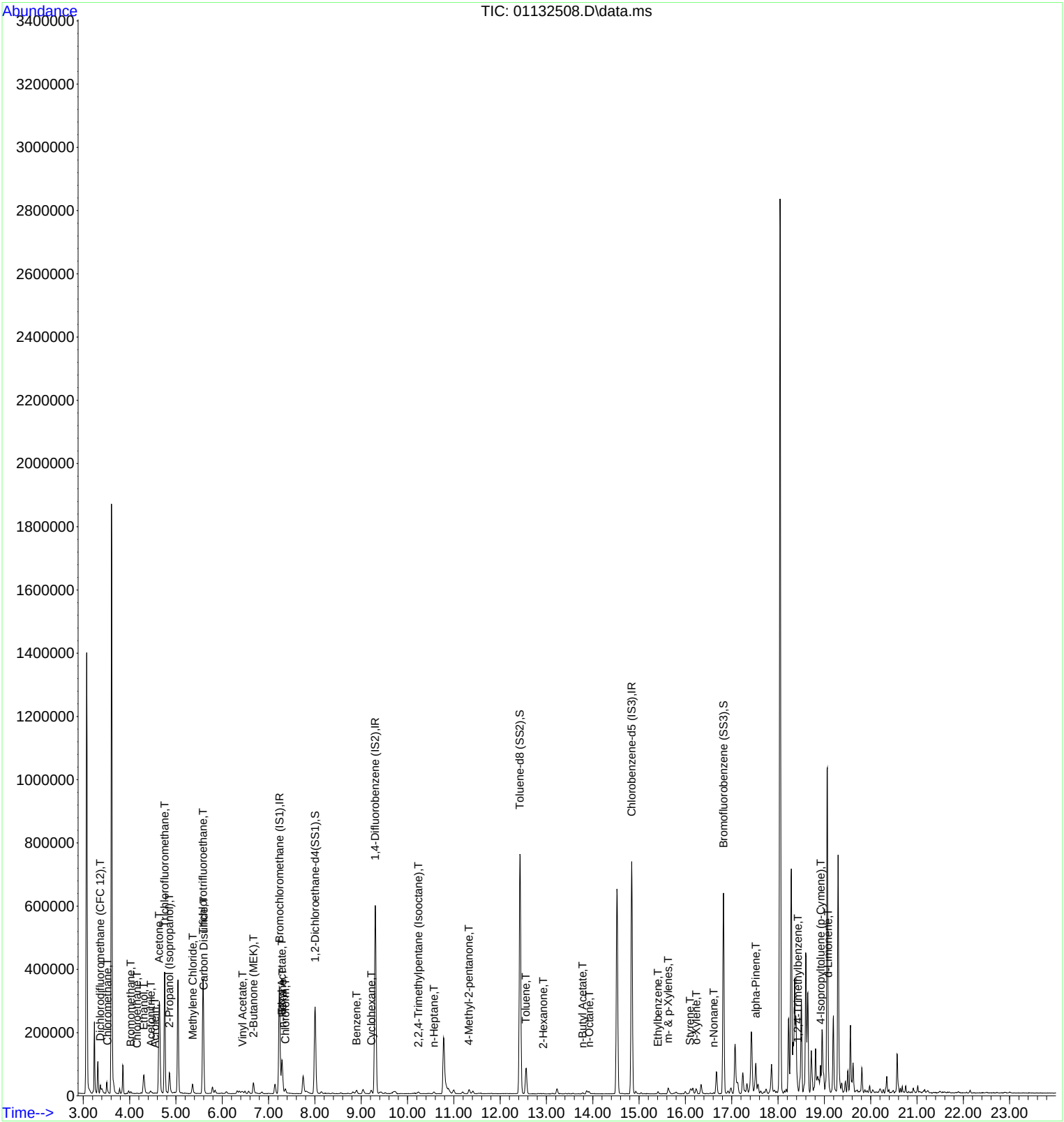
Quant Time: Jan 13 14:08:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	5994	0.112 ng		82
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.57	71	1496	0.132 ng		91
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	4778	0.436 ng		76
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	73914	1.548 ng		100
59) 2-Hexanone	12.93	43	1586	0.068 ng	#	59
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	3282	0.126 ng		91
63) n-Octane	13.93	57	963	0.097 ng	#	88
64) Tetrachloroethene	14.03	166	384	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	6854	0.130 ng		100
67) m- & p-Xylenes	15.63	91	17120	0.396 ng		99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	5121	0.170 ng		98
70) o-Xylene	16.24	91	7769	0.182 ng		99
71) n-Nonane	16.61	43	1725	0.076 ng		90
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	613	N.D.		
75) alpha-Pinene	17.52	93	37127	1.415 ng		98
76) n-Propylbenzene	17.68	91	1362	N.D.		
77) 3-Ethyltoluene	17.03	105	613	No Calib	#	
78) 4-Ethyltoluene	17.86	105	1187	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	1060	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	613	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.43	105	3299	0.074 ng		93
83) n-Decane	17.07	58	5083	No Calib	#	
84) Benzyl Chloride	18.56	91	181	N.D.		
85) 1,3-Dichlorobenzene	18.66	146	193	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	193	N.D.		
87) sec-Butylbenzene	18.74	105	321	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	5863	0.120 ng		89
89) 1,2,3-Trimethylbenzene	17.03	105	613	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	14614	1.032 ng		97
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	75272	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.84	180	230	N.D.		
95) Naphthalene	20.94	128	1493	N.D.		
96) n-Dodecane	18.96	58	7670	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.19	55	176	No Calib	#	
99) tert-Butylbenzene	18.43	119	472	N.D.		
100) n-Butylbenzene	19.39	91	1148	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 13 14:08:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

MOA 1/13/25

Quant Time: Jan 13 14:08:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

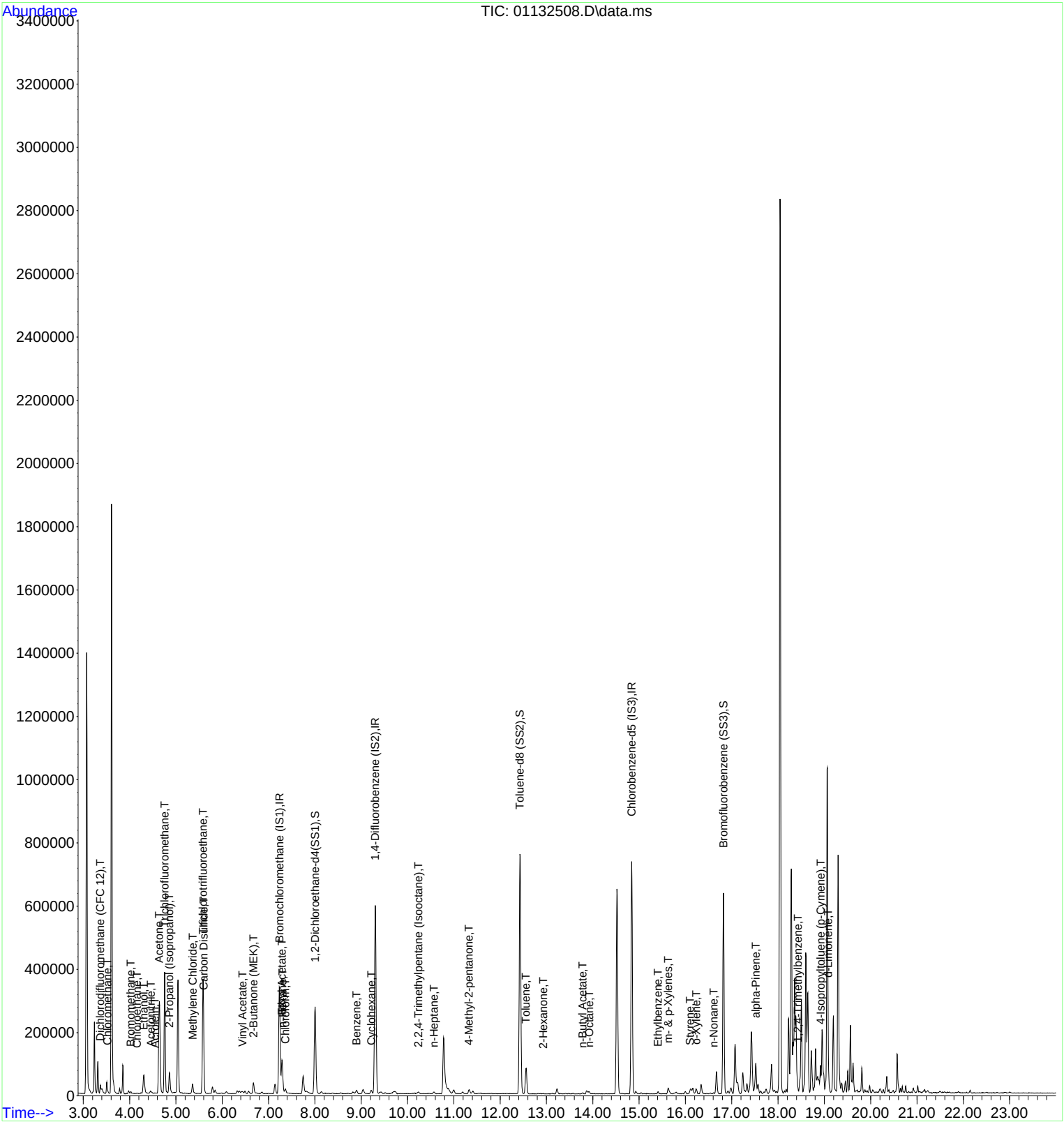
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	145423	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.30	114	634811	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	111849	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	242068	12.218	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.76%				
57) Toluene-d8 (SS2)	12.43	98	652987	13.160	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.28%				
73) Bromofluorobenzene (SS3)	16.82	174	232626	13.586	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.72%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.36	85	12576	0.442	ng		97
4) Chloromethane	3.52	50	9053	0.429	ng		100
8) Bromomethane	4.02	94	3630	0.354	ng		93
9) Chloroethane	4.16	64	1037	0.121	ng		86
10) Ethanol	4.31	45	89934	8.361	ng		98
11) Acetonitrile	4.46	41	7349	0.266	ng	#	54
12) Acrolein	4.55	56	765	0.083	ng		97
13) Acetone	4.64	58	86606	8.845	ng		87
14) Trichlorofluoromethane	4.76	101	278546	10.448	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	99227	2.830	ng		99
19) Methylene Chloride	5.36	84	11396	0.827	ng		98
21) Trichlorotrifluoroethane	5.58	151	123197	10.242	ng		97
22) Carbon Disulfide	5.60	76	22223	0.502	ng		61
26) Vinyl Acetate	6.44	86	1120	0.473	ng	#	63
27) 2-Butanone (MEK)	6.67	72	10428	1.326	ng	#	91
30) Ethyl Acetate	7.29	61	18028	3.713	ng		97
31) n-Hexane	7.30	57	5116	0.234	ng		98
32) Chloroform	7.36	83	11993	0.507	ng		97
41) Benzene	8.90	78	9707	0.190	ng		99
43) Cyclohexane	9.22	84	4561	0.257	ng		99
49) 2,2,4-Trimethylpentane...	10.23	57	5994	0.112	ng		82
51) n-Heptane	10.57	71	1496	0.132	ng		91
53) 4-Methyl-2-pentanone	11.33	58	4778	0.436	ng		76
58) Toluene	12.56	91	73914	1.548	ng		100
59) 2-Hexanone	12.93	43	1586	0.068	ng	#	59
62) n-Butyl Acetate	13.78	43	3282	0.126	ng		91
63) n-Octane	13.93	57	963	0.097	ng	#	88
66) Ethylbenzene	15.41	91	6854	0.130	ng		100
67) m- & p-Xylenes	15.63	91	17120	0.396	ng		99
69) Styrene	16.10	104	5121	0.170	ng		98
70) o-Xylene	16.24	91	7769	0.182	ng		99
71) n-Nonane	16.61	43	1725	0.076	ng		90
75) alpha-Pinene	17.52	93	37127	1.415	ng		98
82) 1,2,4-Trimethylbenzene	18.43	105	3299	0.074	ng		93
88) 4-Isopropyltoluene (p-...	18.92	119	5863	0.120	ng		89
91) d-Limonene	19.08	68	14614	1.032	ng		97

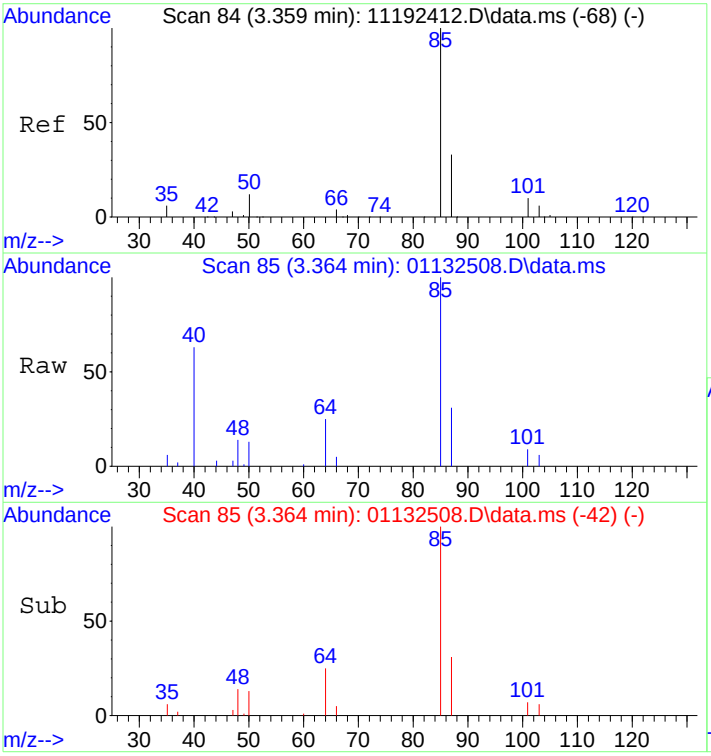
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 13 14:08:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

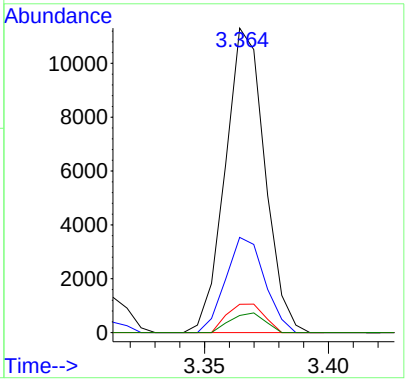


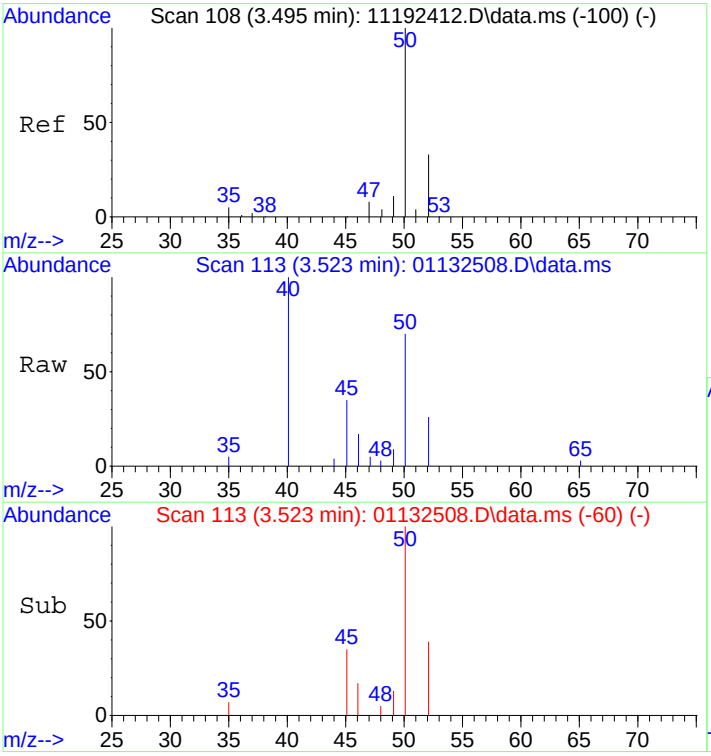


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.44 ng
RT: 3.36 min Scan# 85
Delta R.T. -0.008 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 85 Resp: 12576

Ion	Ratio	Lower	Upper
85	100		
87	30.9	12.6	52.6
101	8.8	0.0	29.6
103	5.6	0.0	26.2

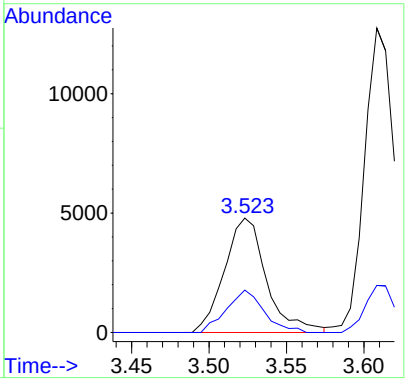


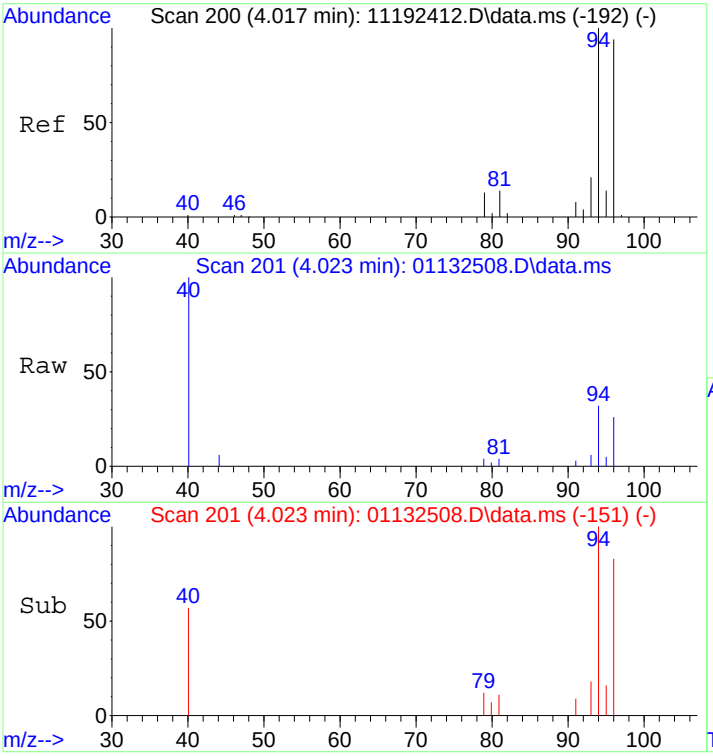


#4
Chloromethane
Concen: 0.43 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 50 Resp: 9053

Ion	Ratio	Lower	Upper
50	100		
52	33.1	13.0	53.0

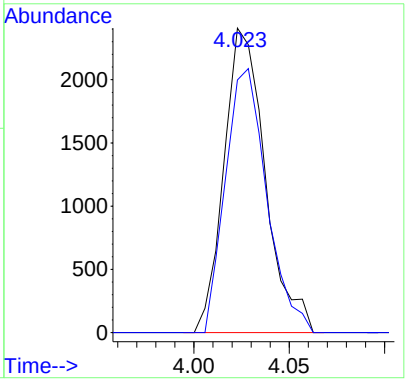


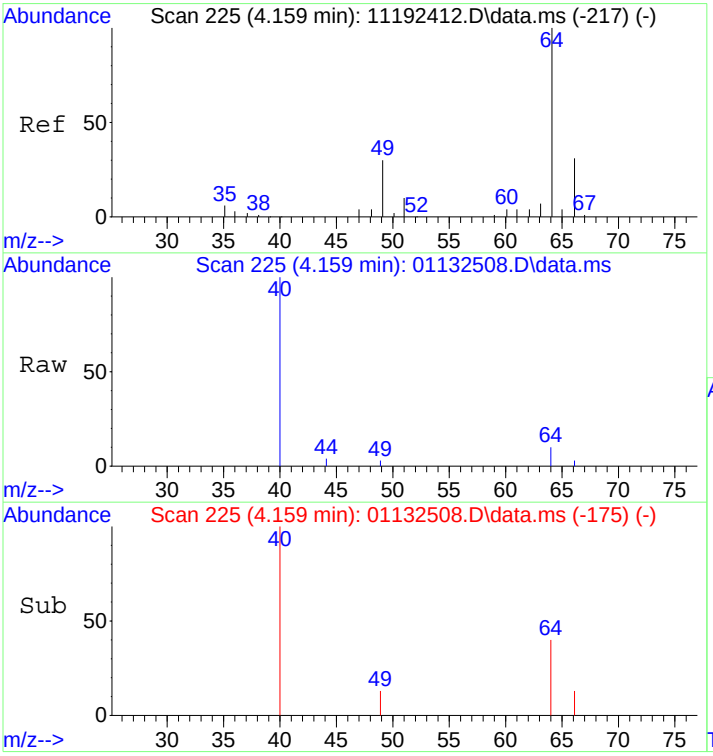


#8
Bromomethane
Concen: 0.35 ng
RT: 4.02 min Scan# 201
Delta R.T. 0.032 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 94 Resp: 3630

Ion	Ratio	Lower	Upper
94	100		
96	86.6	73.5	113.5

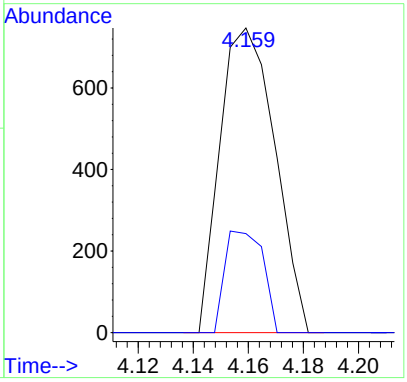


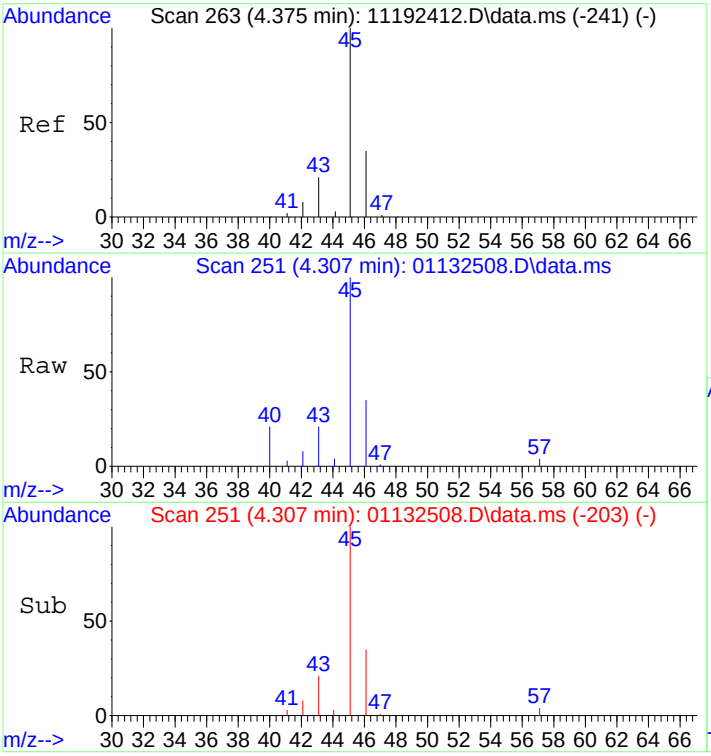


#9
Chloroethane
Concen: 0.12 ng
RT: 4.16 min Scan# 225
Delta R.T. 0.033 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 64 Resp: 1037

Ion	Ratio	Lower	Upper
64	100		
66	23.0	11.0	51.0

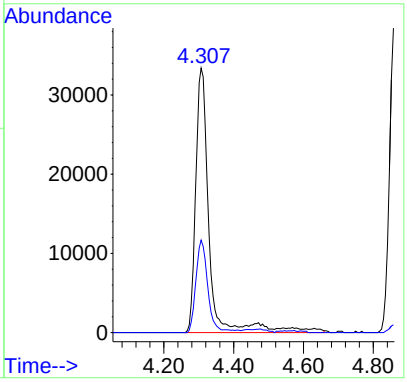


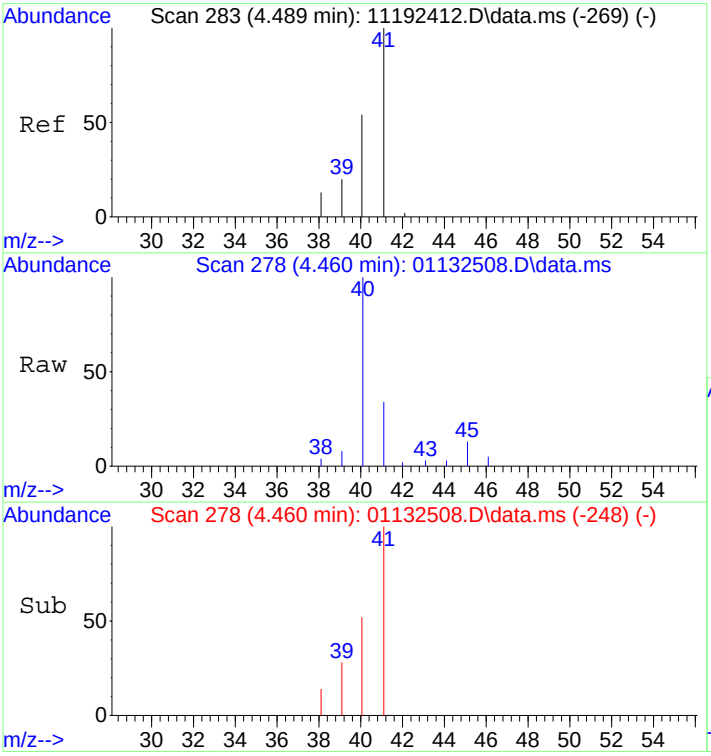


#10
Ethanol
Concen: 8.36 ng
RT: 4.31 min Scan# 251
Delta R.T. 0.022 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 45 Resp: 89934

Ion	Ratio	Lower	Upper
45	100		
46	33.2	11.8	51.8

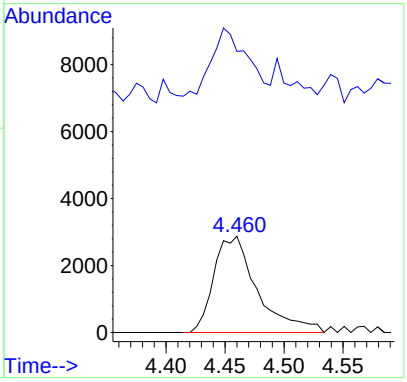


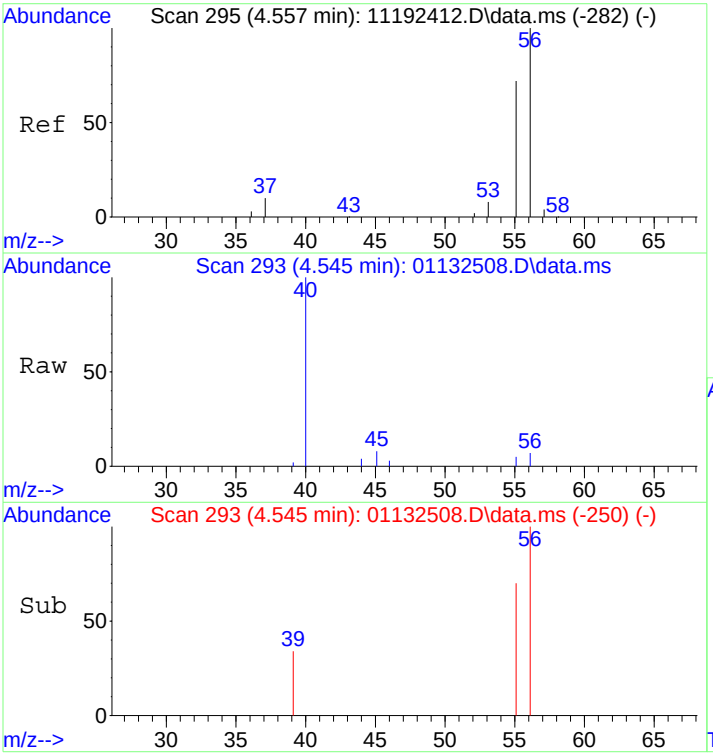


#11
Acetonitrile
Concen: 0.27 ng
RT: 4.46 min Scan# 278
Delta R.T. -0.032 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 41 Resp: 7349

Ion	Ratio	Lower	Upper
41	100		
40	87.0	33.8	73.8#

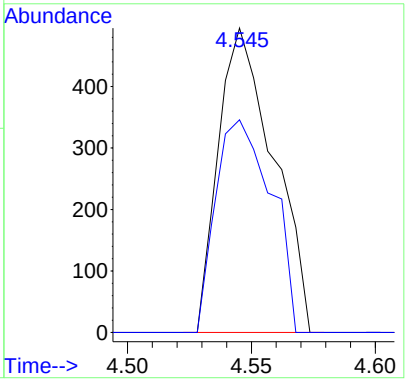


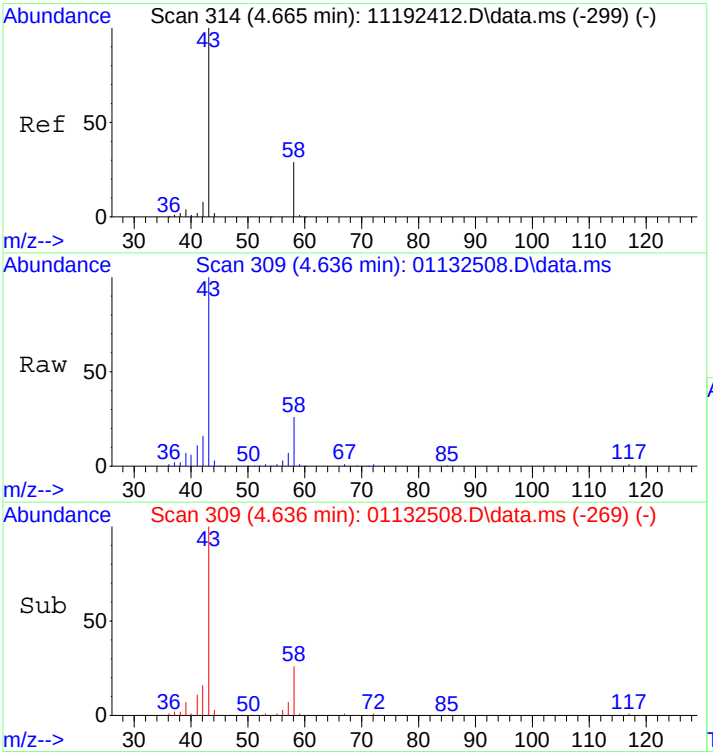


#12
Acrolein
Concen: 0.08 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 56 Resp: 765

Ion	Ratio	Lower	Upper
56	100		
55	70.6	53.1	93.1

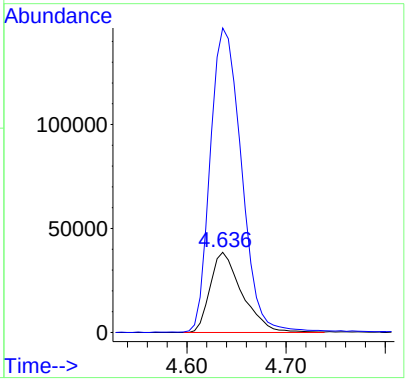


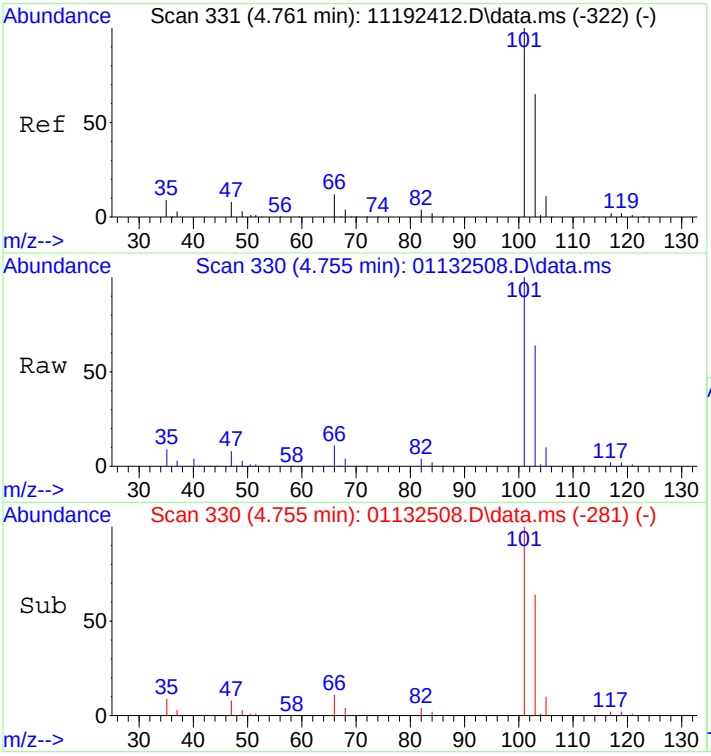


#13
Acetone
Concen: 8.84 ng
RT: 4.64 min Scan# 309
Delta R.T. -0.024 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 58 Resp: 86606

Ion	Ratio	Lower	Upper
58	100		
43	370.1	312.5	372.5

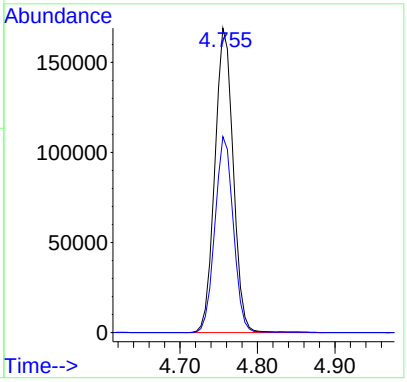


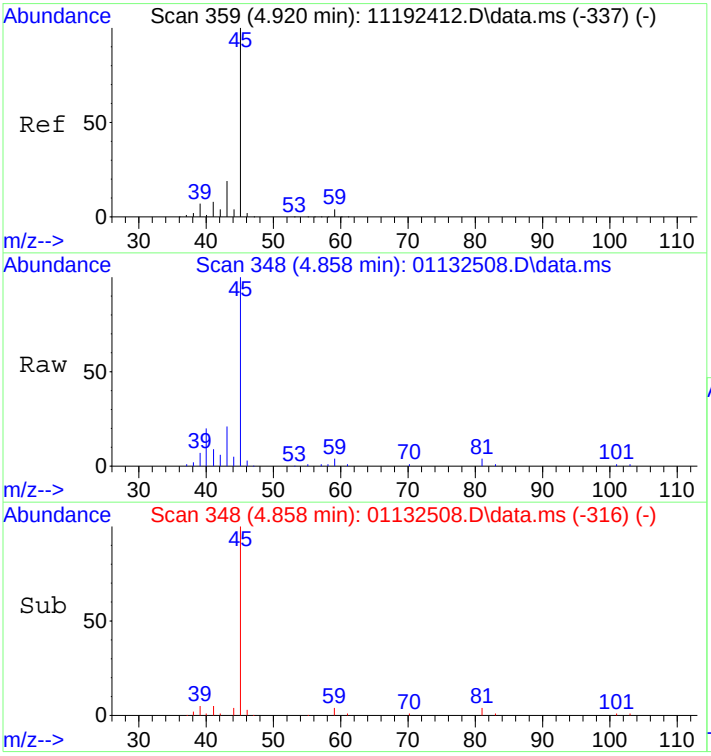


#14
Trichlorofluoromethane
Concen: 10.45 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion:101 Resp: 278546

Ion	Ratio	Lower	Upper
101	100		
103	64.6	44.8	84.8

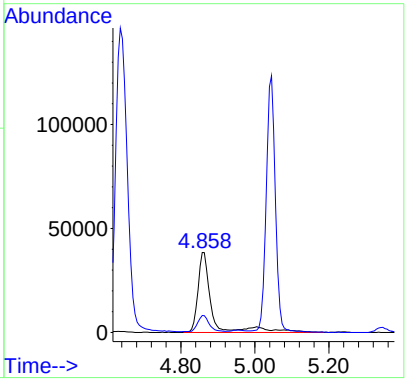


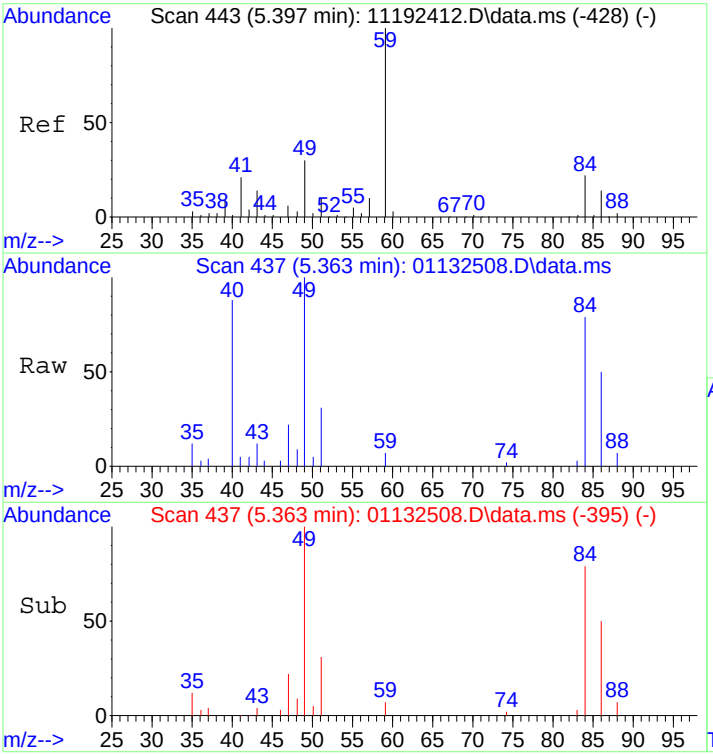


#15
2-Propanol (Isopropanol)
Concen: 2.83 ng
RT: 4.86 min Scan# 348
Delta R.T. -0.067 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 45 Resp: 99227

Ion	Ratio	Lower	Upper
45	100		
43	19.8	0.2	40.2

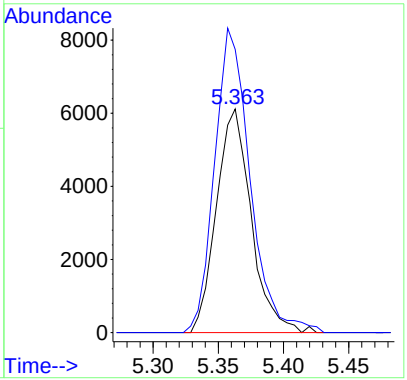


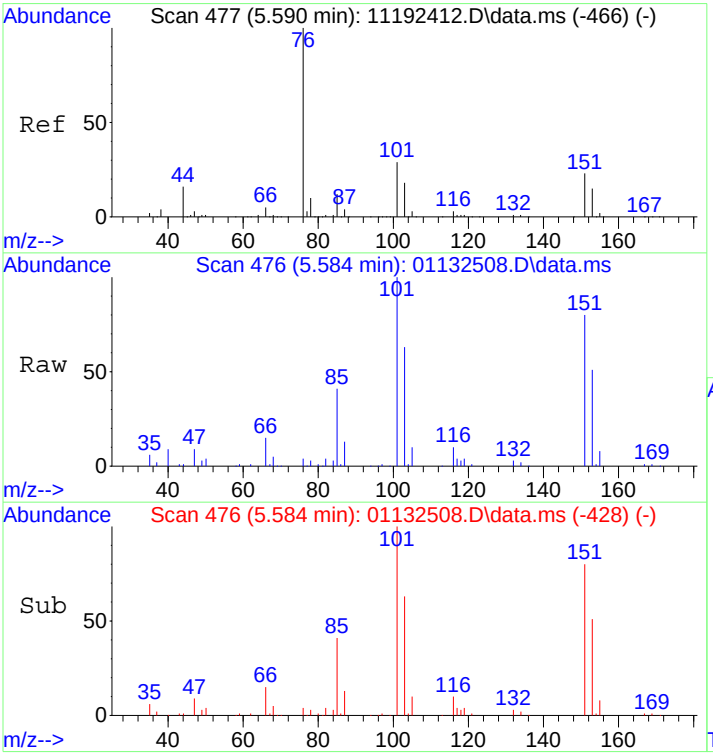


#19
Methylene Chloride
Concen: 0.83 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 84 Resp: 11396

Ion	Ratio	Lower	Upper
84	100		
49	138.5	116.0	166.0

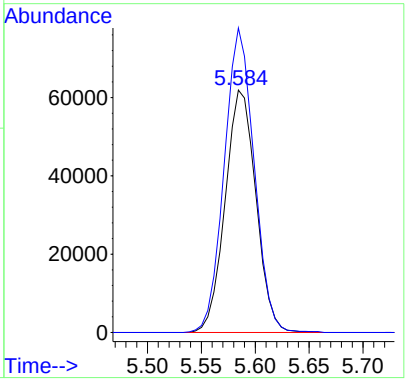


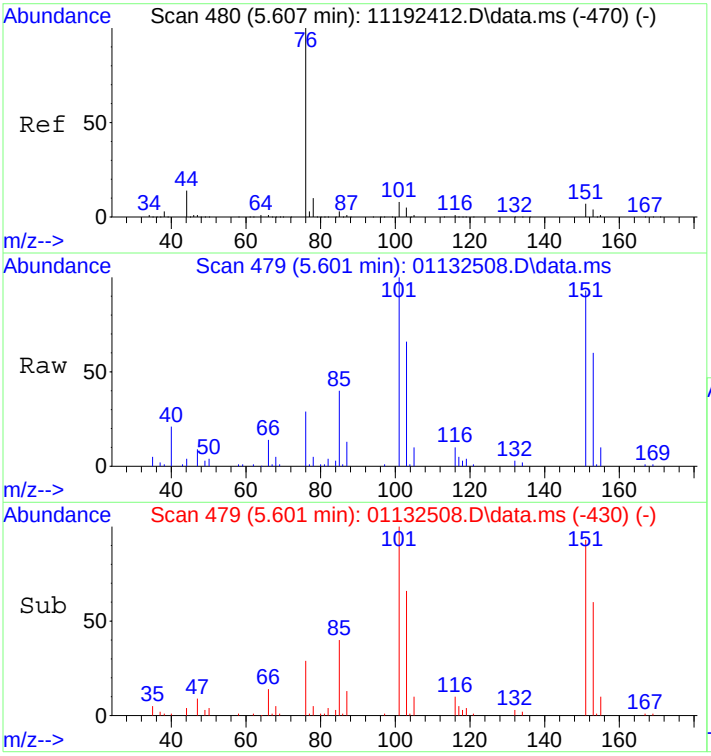


#21
Trichlorotrifluoroethane
Concen: 10.24 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion:151 Resp: 123197

Ion	Ratio	Lower	Upper
151	100		
101	122.0	105.0	145.0

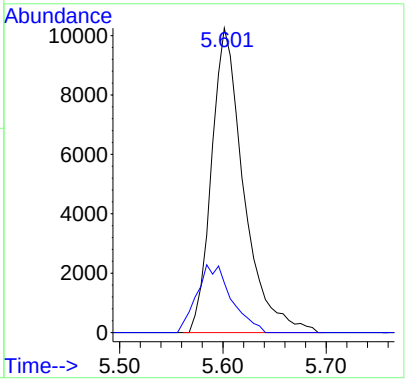


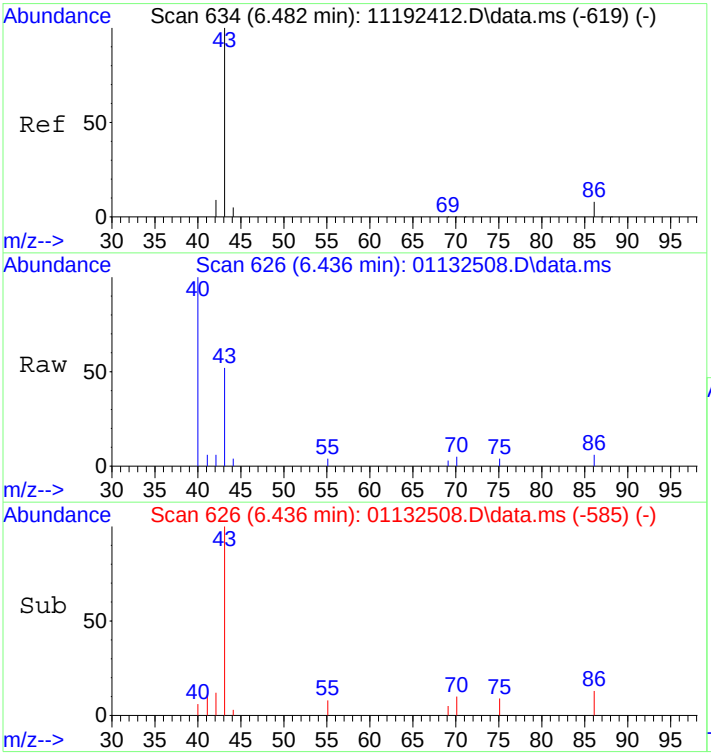


#22
Carbon Disulfide
Concen: 0.50 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 76 Resp: 22223

Ion	Ratio	Lower	Upper
76	100		
78	24.0	0.0	29.6

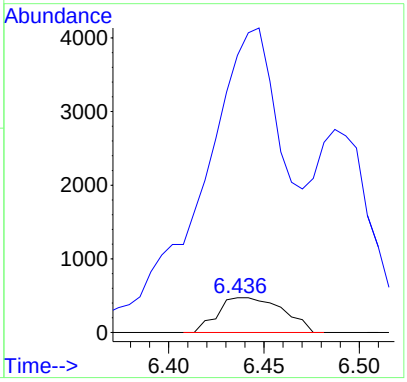


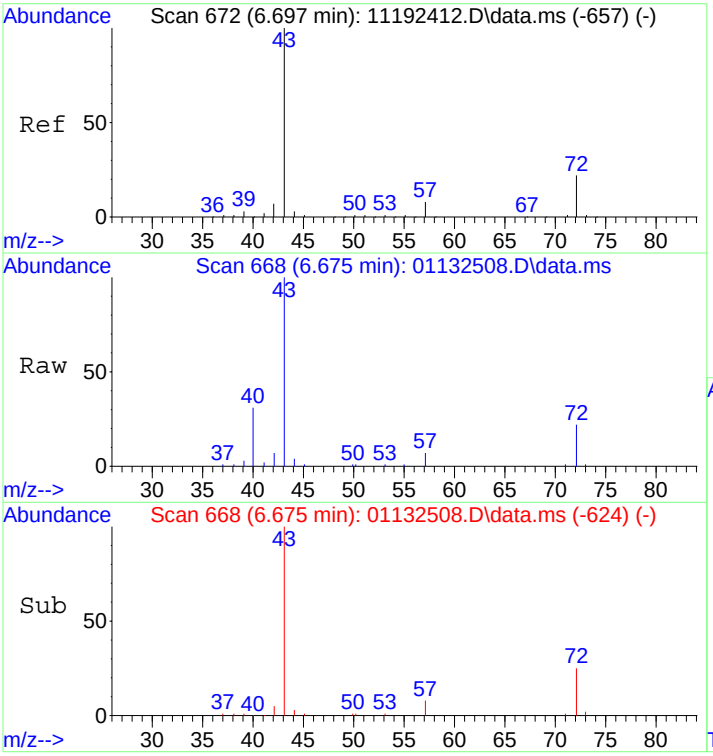


#26
Vinyl Acetate
Concen: 0.47 ng
RT: 6.44 min Scan# 626
Delta R.T. -0.019 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 86 Resp: 1120

Ion	Ratio	Lower	Upper
86	100		
43	1148.2	1331.6	1371.6#

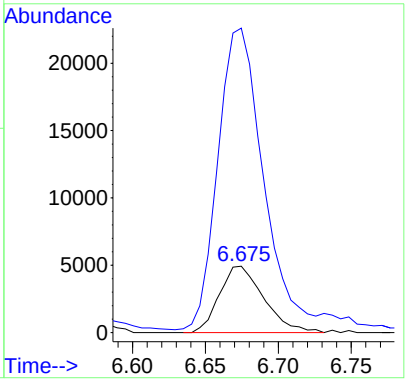


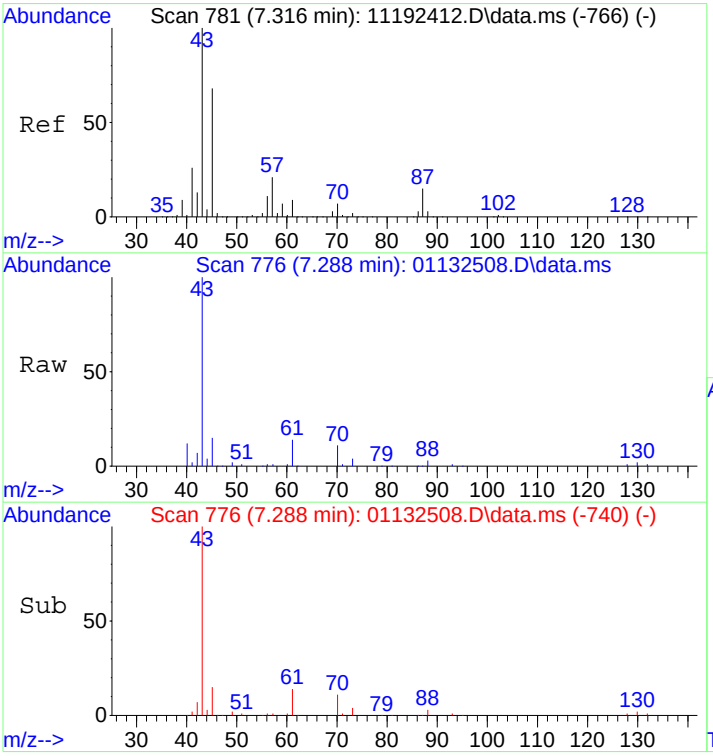


#27
2-Butanone (MEK)
Concen: 1.33 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.000 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 72 Resp: 10428

Ion	Ratio	Lower	Upper
72	100		
43	483.9	439.8	479.8#

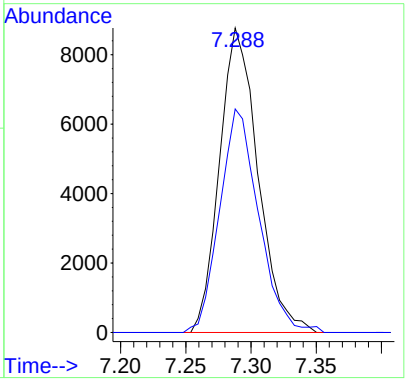


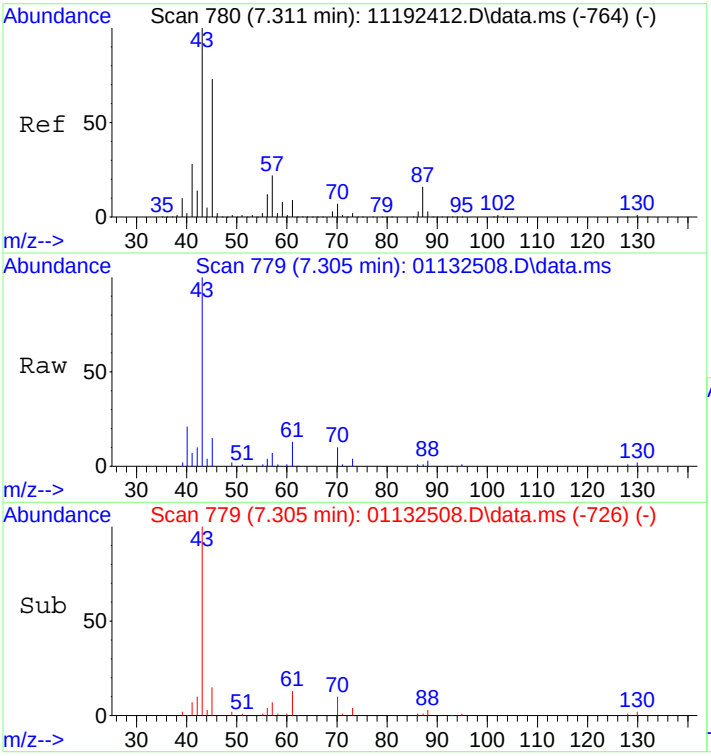


#30
Ethyl Acetate
Concen: 3.71 ng
RT: 7.29 min Scan# 776
Delta R.T. 0.006 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 61 Resp: 18028

Ion	Ratio	Lower	Upper
61	100		
70	74.4	57.3	97.3

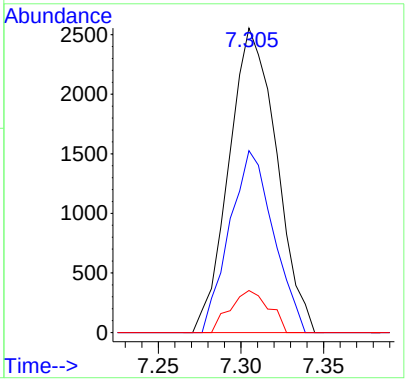


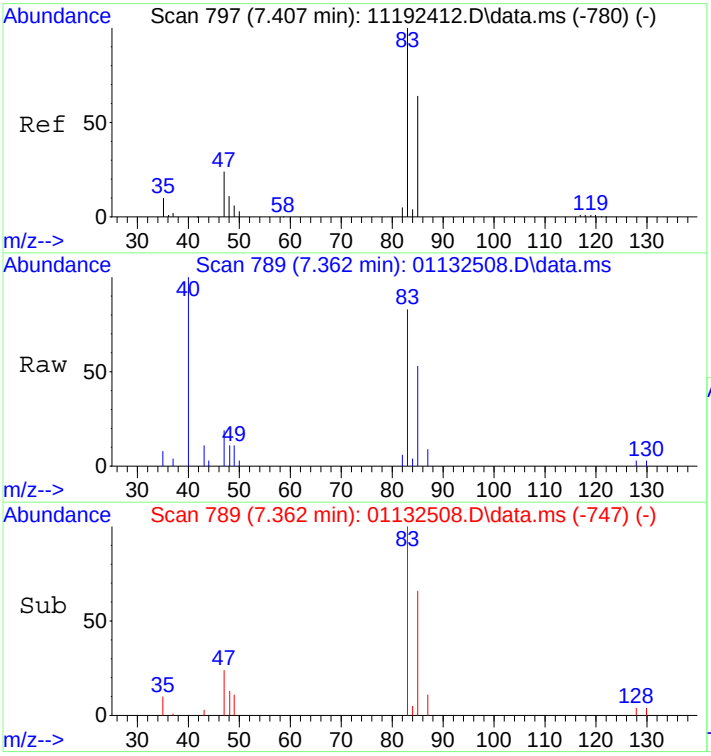


#31
n-Hexane
Concen: 0.23 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 57 Resp: 5116

Ion	Ratio	Lower	Upper
57	100		
56	55.2	43.4	65.0
86	11.3	10.9	16.3

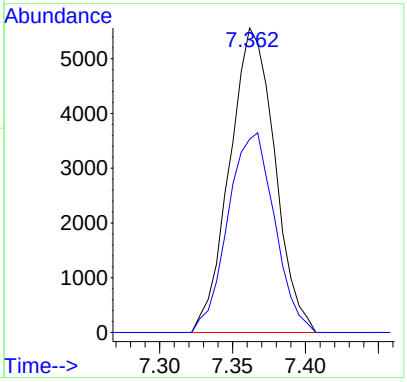


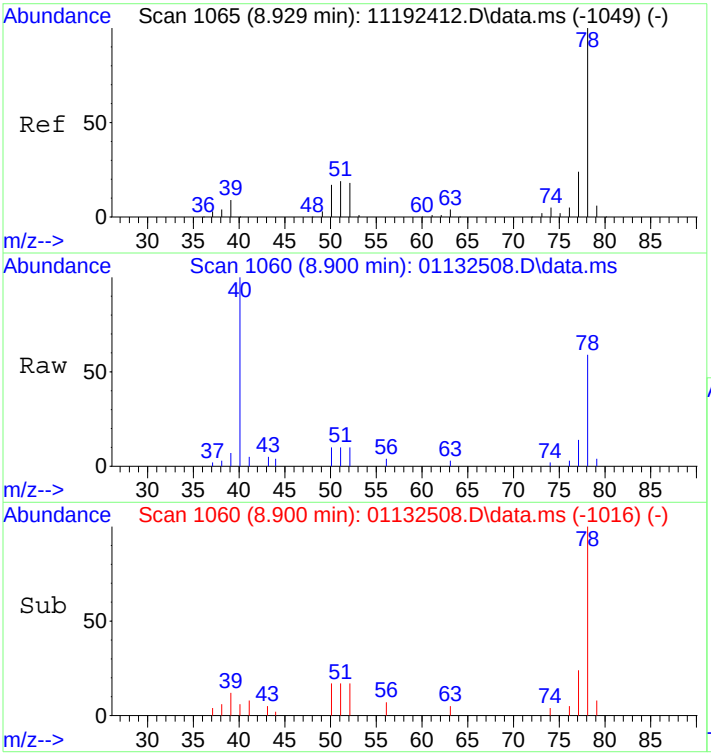


#32
Chloroform
Concen: 0.51 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 83 Resp: 11993

Ion	Ratio	Lower	Upper
83	100		
85	67.7	45.1	85.1

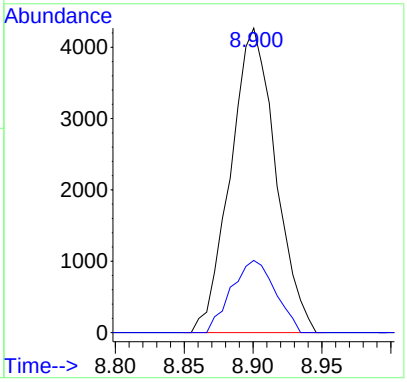


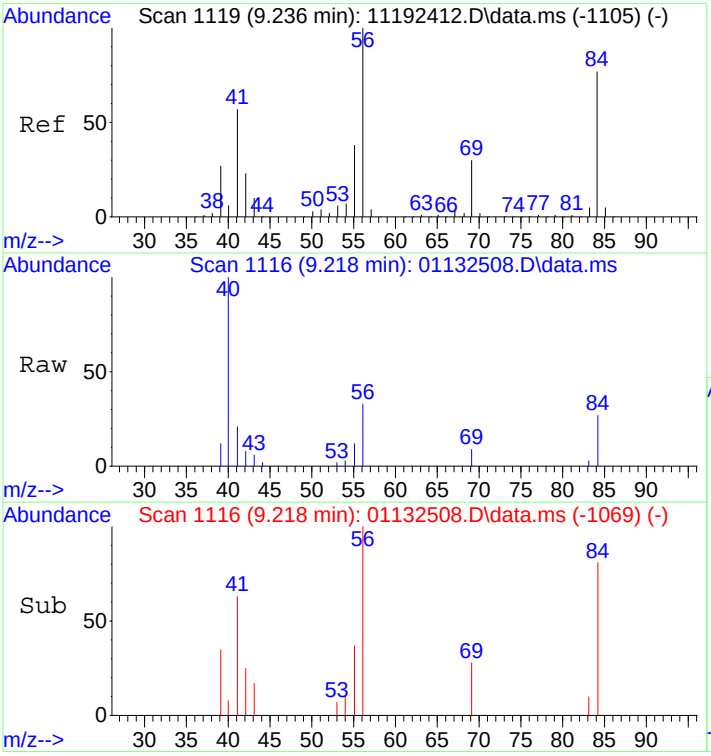


#41
Benzene
Concen: 0.19 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 78 Resp: 9707

Ion	Ratio	Lower	Upper
78	100		
77	23.1	3.7	43.7

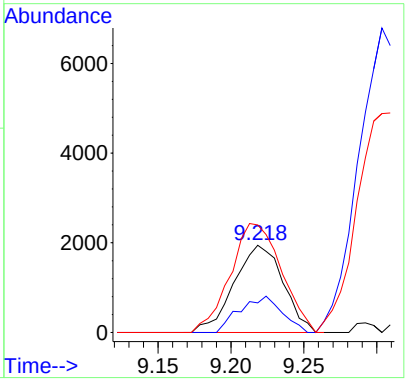


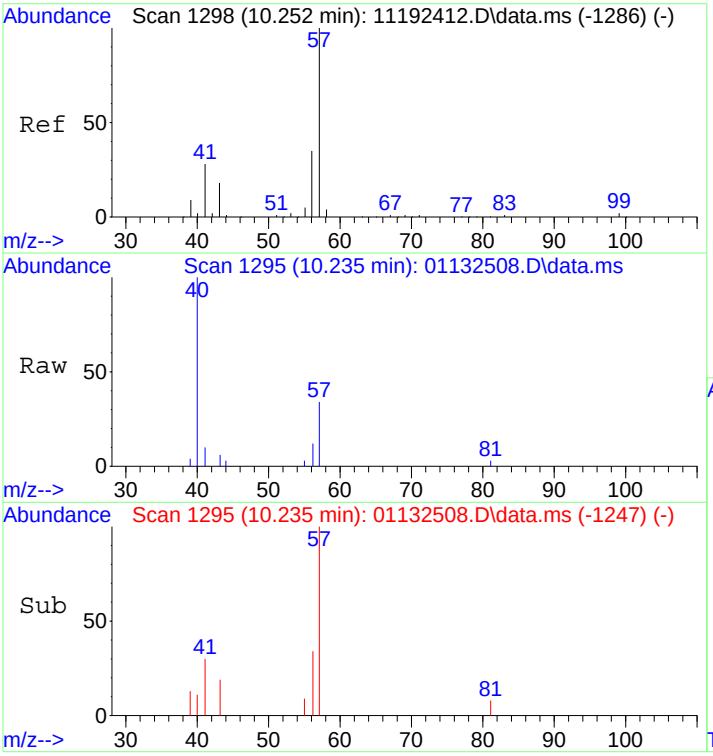


#43
Cyclohexane
Concen: 0.26 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 84 Resp: 4561

Ion	Ratio	Lower	Upper
84	100		
69	35.7	18.3	58.3
56	130.0	110.7	150.7

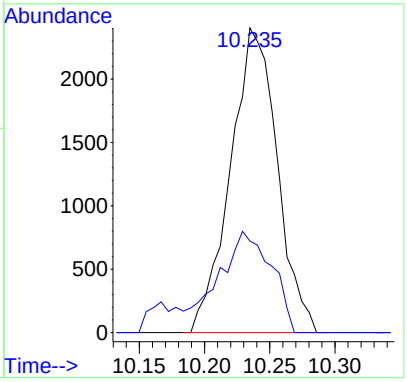


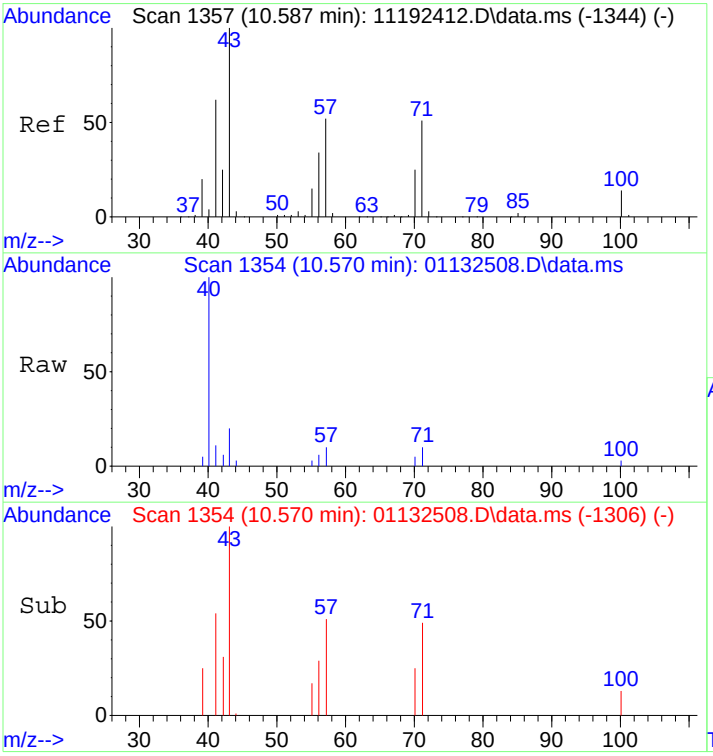


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.11 ng
RT: 10.23 min Scan# 1295
Delta R.T. 0.021 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 57 Resp: 5994

Ion	Ratio	Lower	Upper
57	100		
41	37.9	8.3	48.3

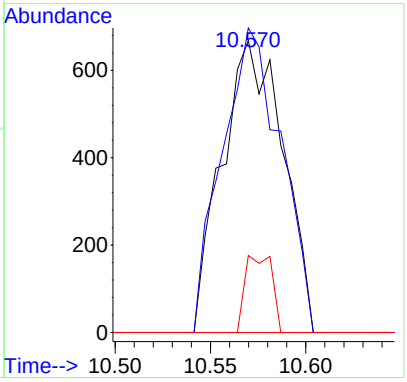


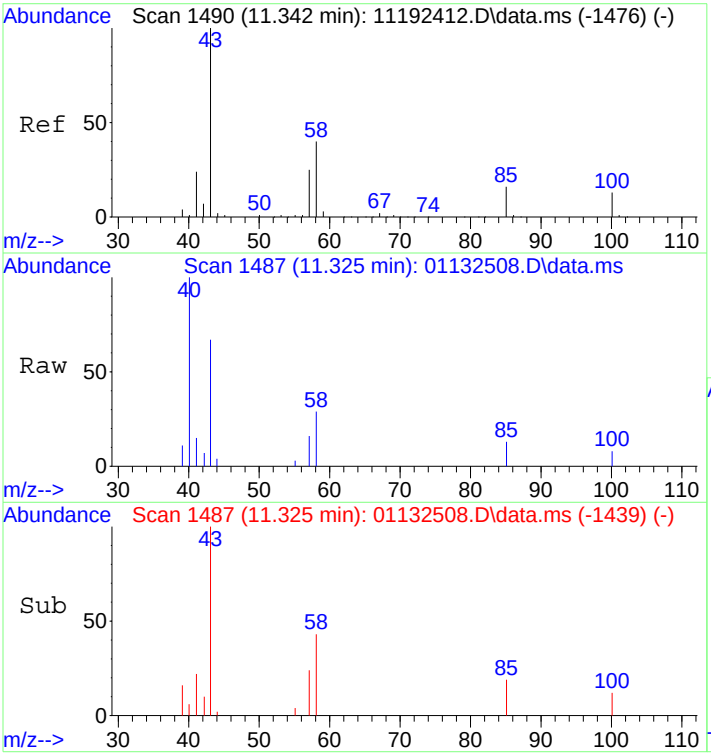


#51
n-Heptane
Concen: 0.13 ng
RT: 10.57 min Scan# 1354
Delta R.T. 0.023 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 71 Resp: 1496

Ion	Ratio	Lower	Upper
71	100		
57	100.2	83.3	123.3
100	11.6	8.7	48.7

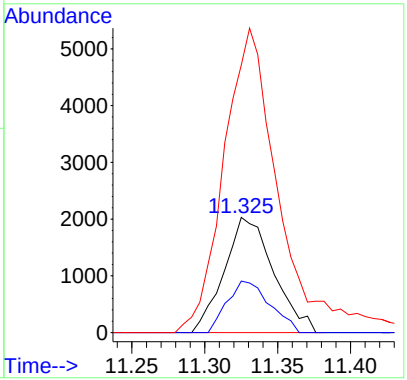


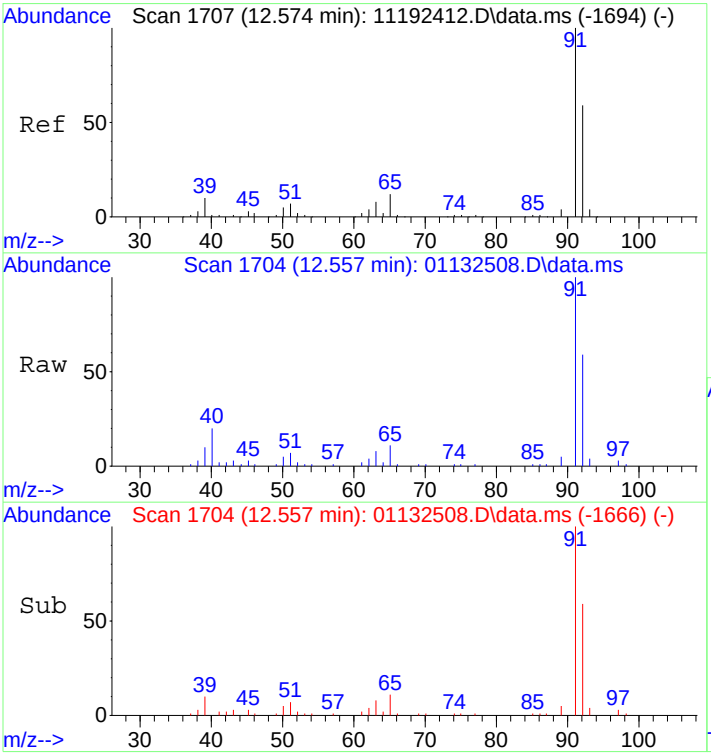


#53
4-Methyl-2-pentanone
Concen: 0.44 ng
RT: 11.33 min Scan# 1487
Delta R.T. 0.021 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 58 Resp: 4778

Ion	Ratio	Lower	Upper
58	100		
85	38.7	33.8	50.6
43	296.0	199.5	299.3

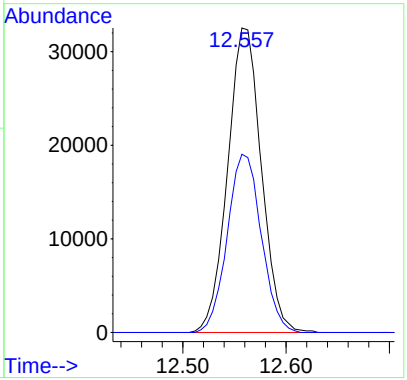


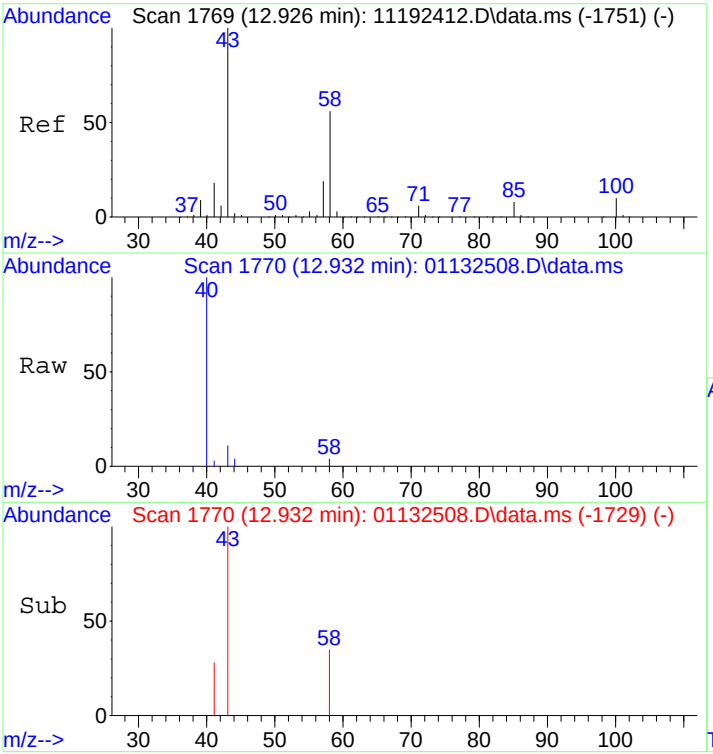


#58
Toluene
Concen: 1.55 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 91 Resp: 73914

Ion	Ratio	Lower	Upper
91	100		
92	58.9	39.2	79.2

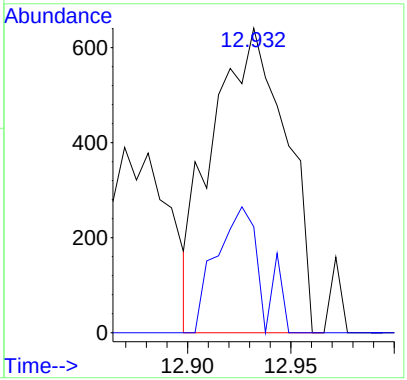


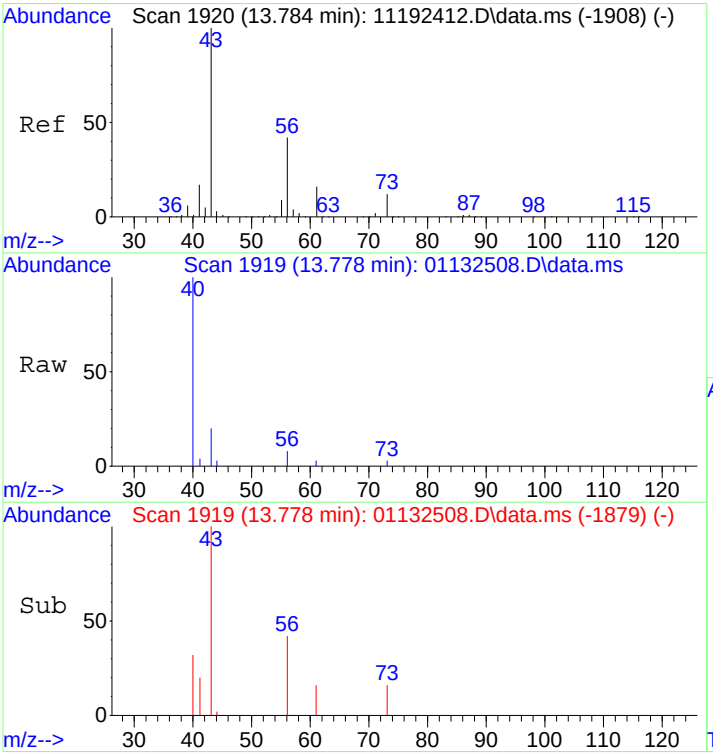


#59
2-Hexanone
Concen: 0.07 ng
RT: 12.93 min Scan# 1770
Delta R.T. -0.017 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 43 Resp: 1586

Ion	Ratio	Lower	Upper
43	100		
58	25.5	35.2	75.2#

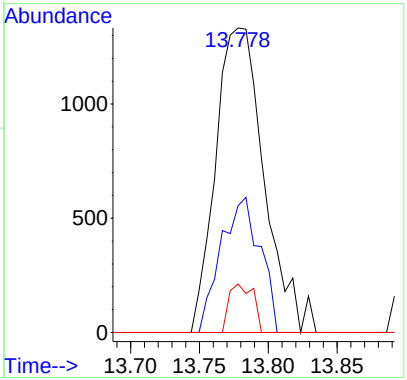


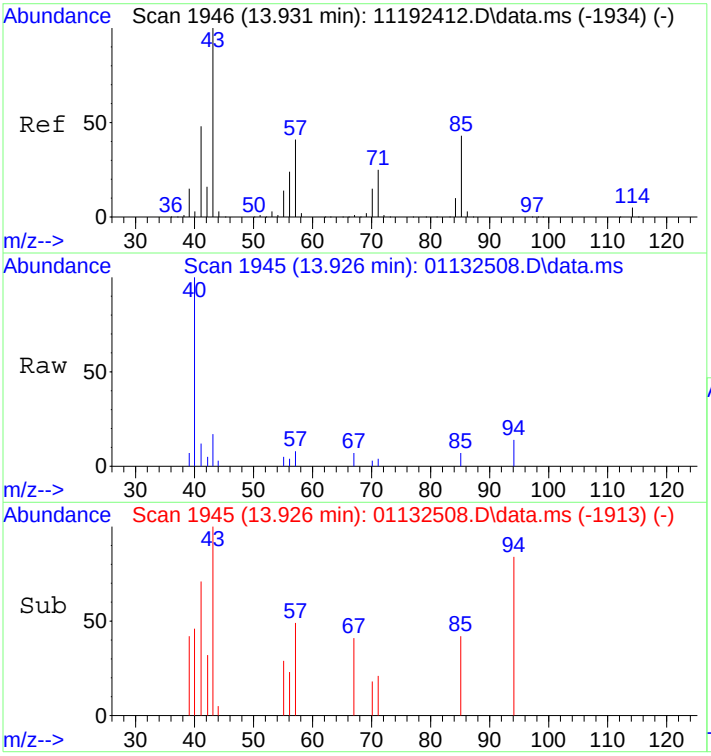


#62
n-Butyl Acetate
Concen: 0.13 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 43 Resp: 3282

Ion	Ratio	Lower	Upper
43	100		
56	35.6	20.9	60.9
73	7.9	0.0	32.0

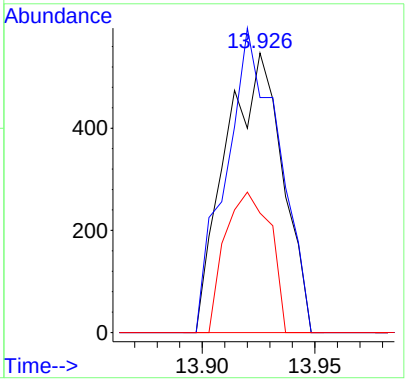


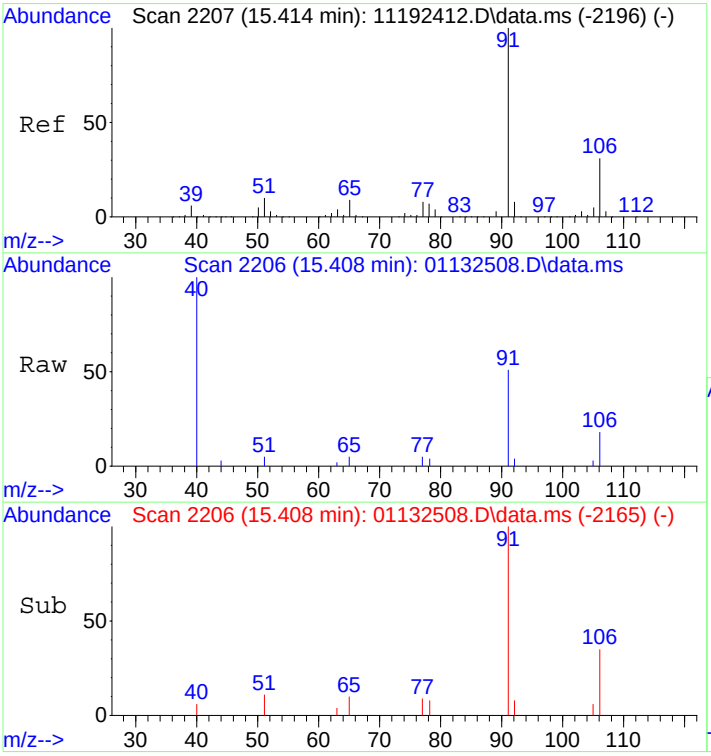


#63
n-Octane
Concen: 0.10 ng
RT: 13.93 min Scan# 1945
Delta R.T. -0.017 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 57 Resp: 963

Ion	Ratio	Lower	Upper
57	100		
85	101.2	83.6	125.4
71	40.1	49.0	73.4#

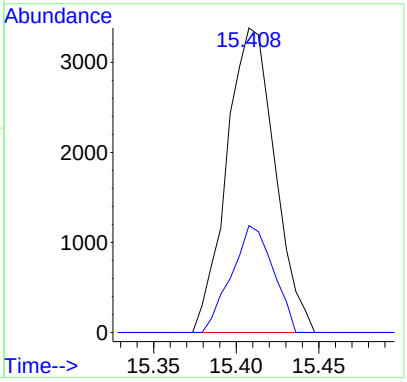


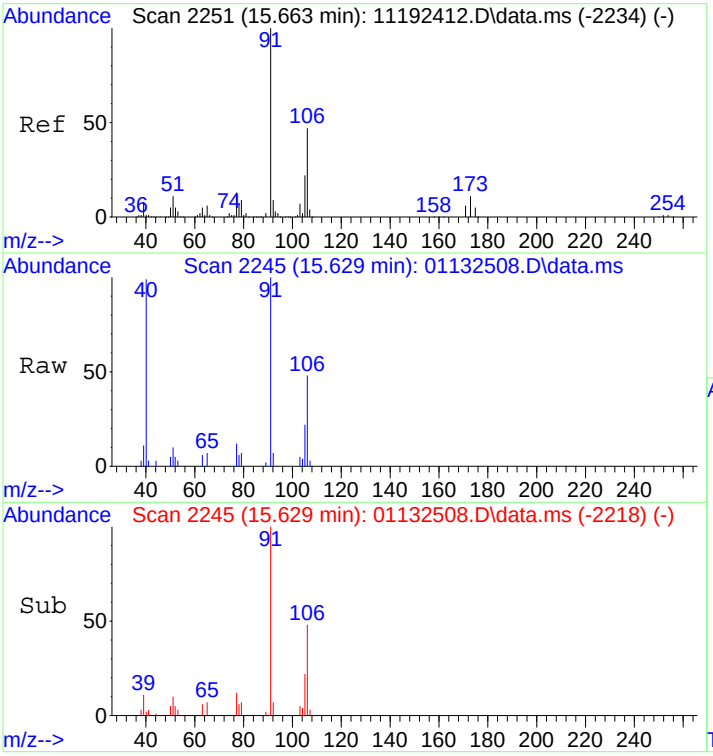


#66
Ethylbenzene
Concen: 0.13 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 91 Resp: 6854

Ion	Ratio	Lower	Upper
91	100		
106	30.5	10.7	50.7

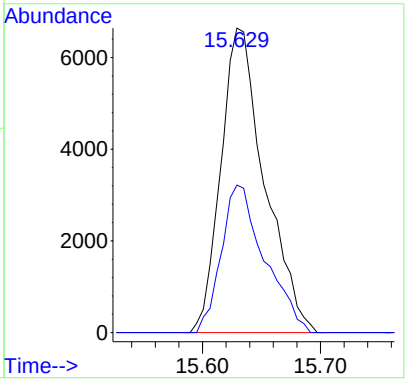


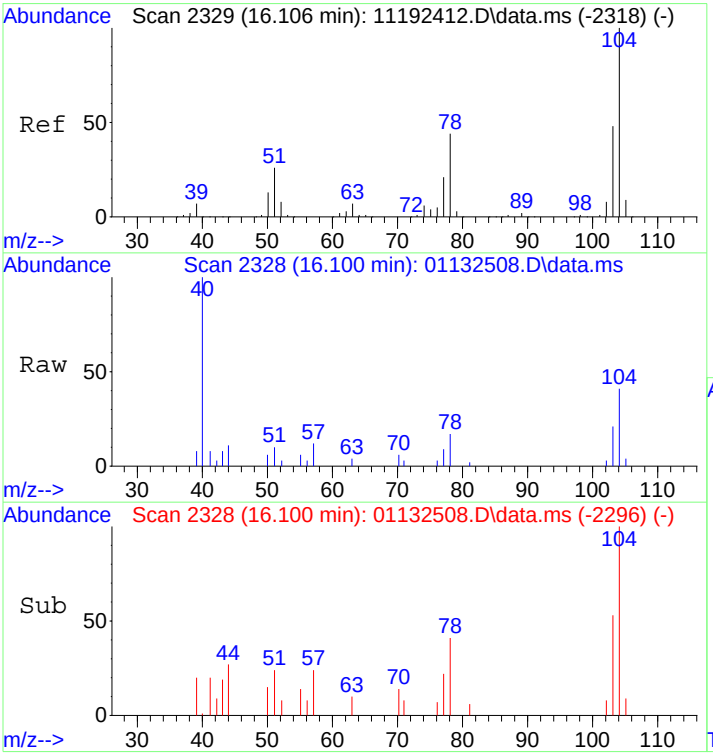


#67
m- & p-Xylenes
Concen: 0.40 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 91 Resp: 17120

Ion	Ratio	Lower	Upper
91	100		
106	47.9	27.1	67.1

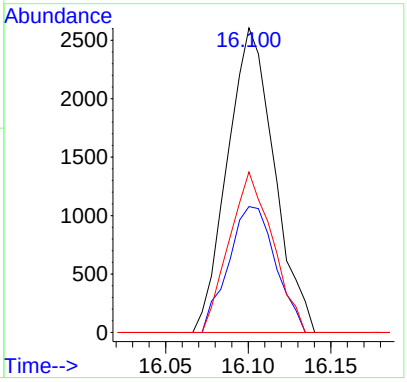


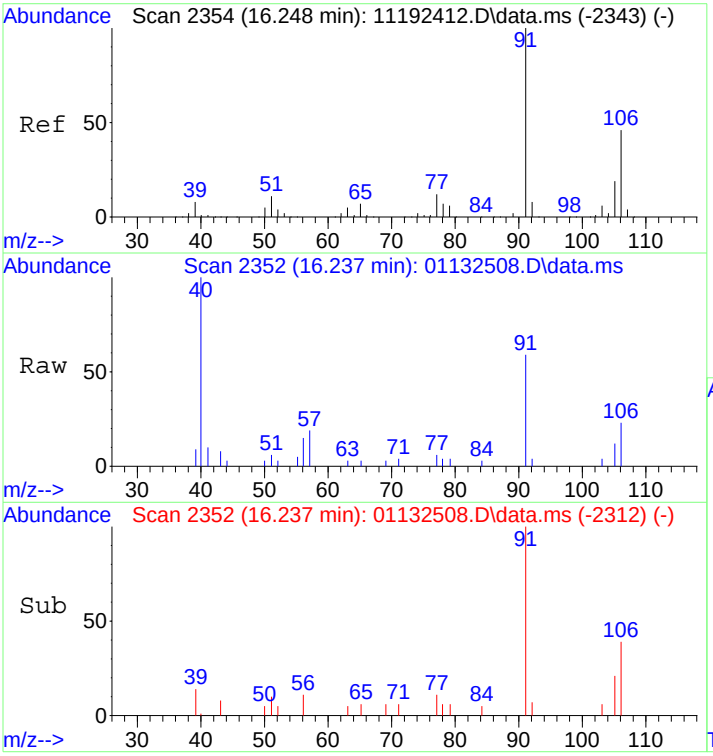


#69
Styrene
Concen: 0.17 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion:104 Resp: 5121

Ion	Ratio	Lower	Upper
104	100		
78	41.7	23.0	63.0
103	48.9	27.5	67.5

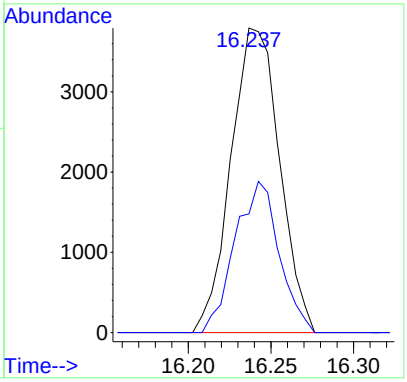


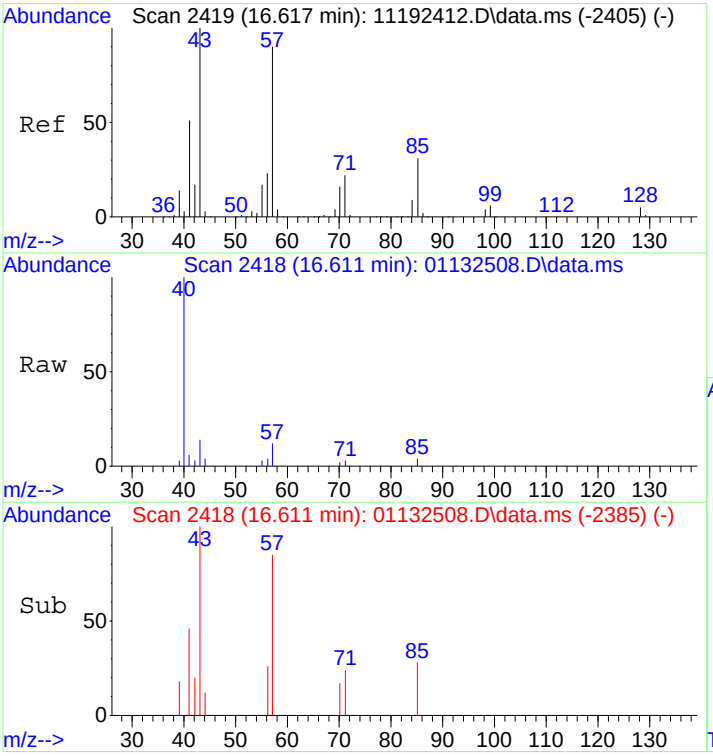


#70
o-Xylene
Concen: 0.18 ng
RT: 16.24 min Scan# 2352
Delta R.T. -0.023 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 91 Resp: 7769

Ion	Ratio	Lower	Upper
91	100		
106	45.0	25.8	65.8

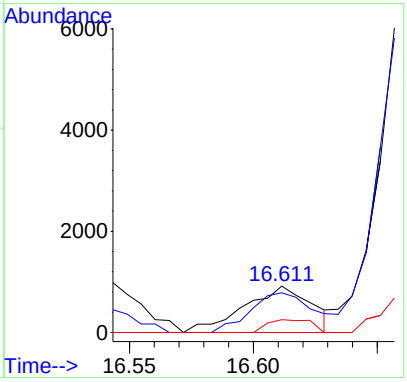


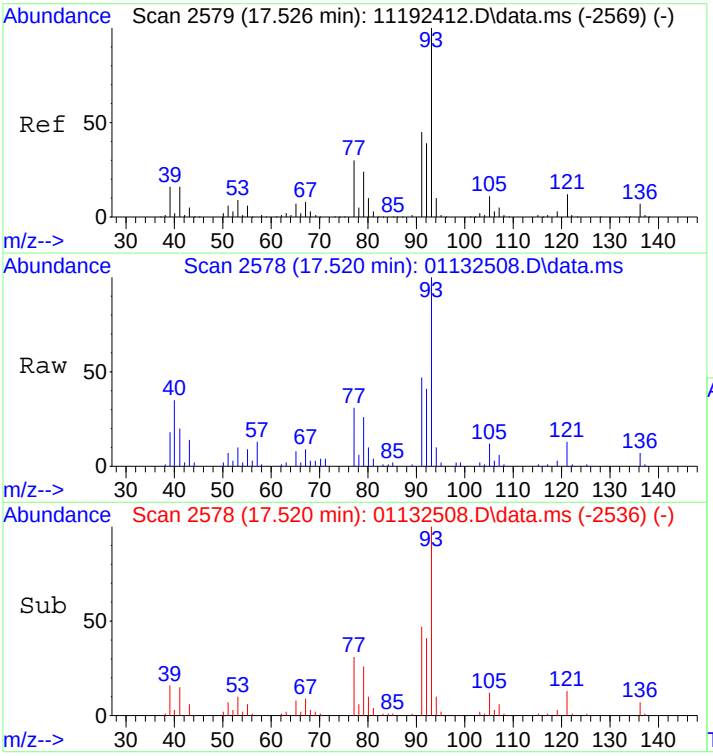


#71
n-Nonane
Concen: 0.08 ng
RT: 16.61 min Scan# 2418
Delta R.T. -0.011 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 43 Resp: 1725

Ion	Ratio	Lower	Upper
43	100		
57	84.5	69.4	109.4
85	18.0	10.5	50.5

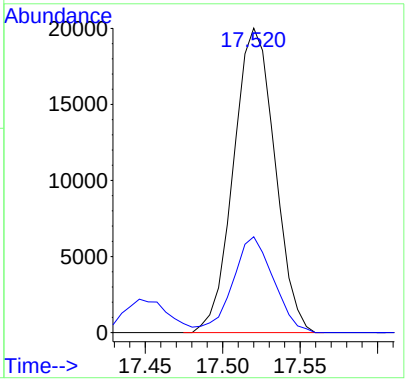


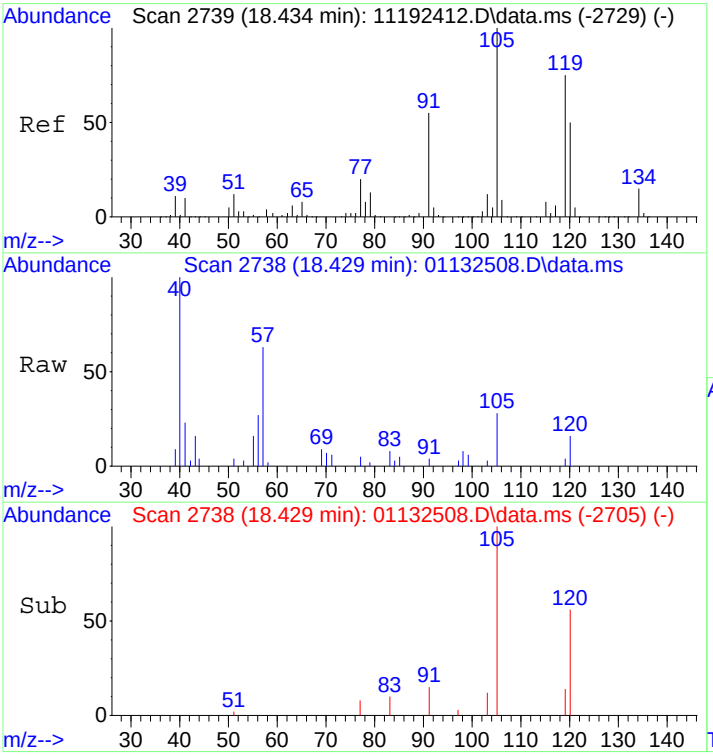


#75
alpha-Pinene
Concen: 1.41 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 93 Resp: 37127

Ion	Ratio	Lower	Upper
93	100		
77	31.2	10.1	50.1

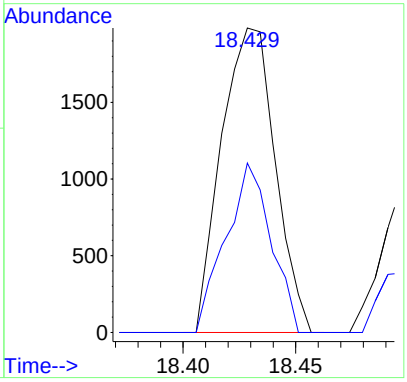


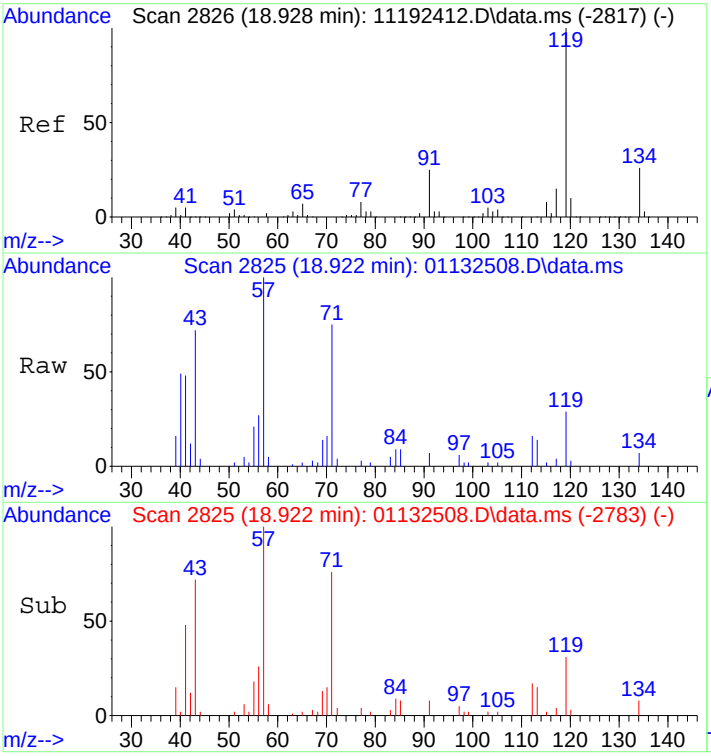


#82
1,2,4-Trimethylbenzene
Concen: 0.07 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion:105 Resp: 3299

Ion	Ratio	Lower	Upper
105	100		
120	46.8	31.8	71.8

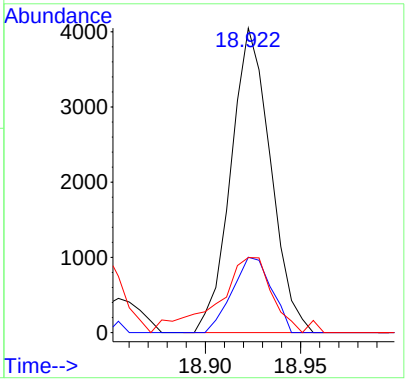


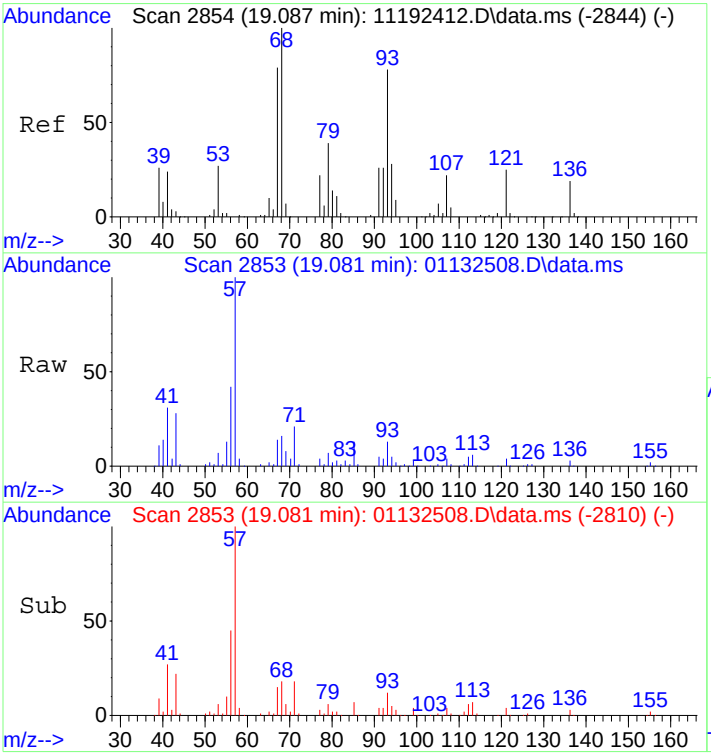


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.12 ng
RT: 18.92 min Scan# 2825
Delta R.T. -0.011 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion:119 Resp: 5863

Ion	Ratio	Lower	Upper
119	100		
134	24.4	5.8	45.8
91	34.5	4.6	44.6

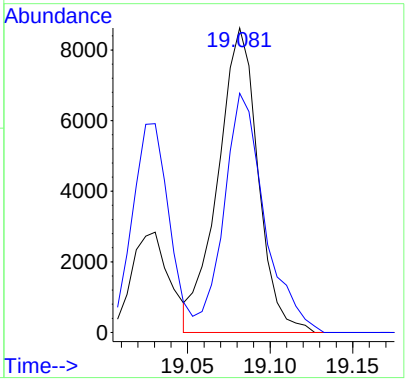




#91
d-Limonene
Concen: 1.03 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01132508.D
Acq: 13 Jan 2025 9:30

Tgt Ion: 68 Resp: 14614

Ion	Ratio	Lower	Upper
68	100		
93	79.1	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

1/13/25

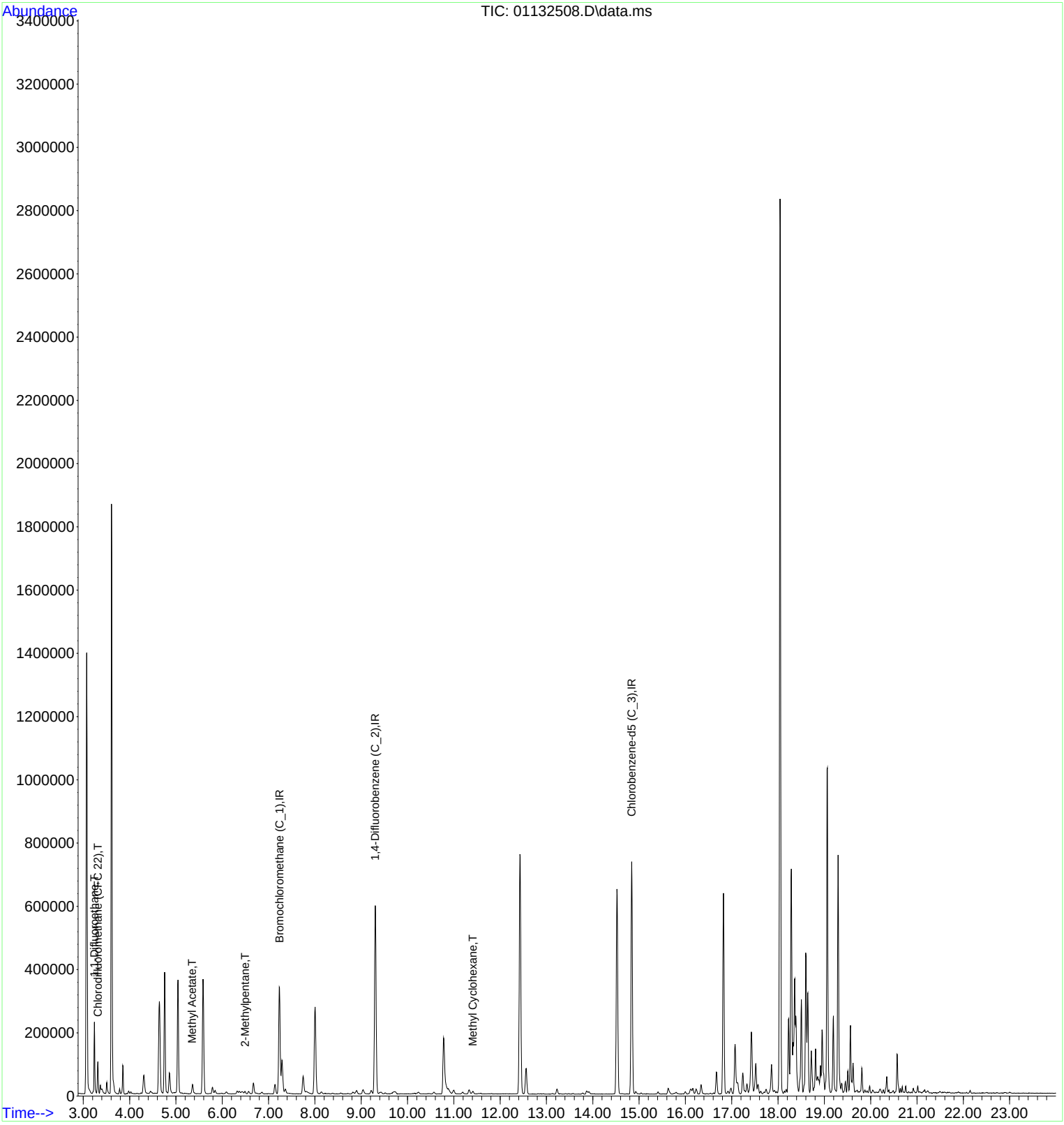
Quant Time: Jan 13 14:16:49 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (C_1)	7.24	130	146632	12.500 ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	634811	12.500 ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	111849	12.500 ng		0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	134	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d		
4) 1,1-Difluoroethane	3.24	65	62042	5.226 ng		100
5) Chlorodifluoromethane ...	3.31	67	580	0.142 ng		99
6) 1-Chloro-1,1-Difluoroe...	3.52	65	366	N.D.		
7) Dichlorofluoromethane ...	4.25	67	2356	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	278	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D. d		
11) Methyl Acetate	5.35	43	5645	0.168 ng	#	69
12) 2-Methylpentane	6.49	71	1480	0.123 ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	9.04	84	694	N.D.		
17) 2,3-Dimethylpentane	9.52	56	1524	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	11.41	55	3465	0.174 ng		94
21) 1,3-Dichloropropane	12.57	76	79	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	16.33	75	596	N.D.		
25) Bromobenzene	17.08	77	217	N.D.		
26) 2-Chlorotoluene	17.68	91	1362	N.D.		
27) 4-Chlorotoluene	17.68	91	1362	N.D.		
28) Indane	19.11	117	849	N.D.		
29) Indene	19.12	115	301	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	445	N.D.		
31) 1,2,3,4-Tetramethylben...	20.22	119	574	N.D.		
32) 1,2,3,5-Tetramethylben...	20.57	119	704	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 13 14:16:49 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01132508.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.239	59	63	71	rVB	224462	255894	5.29%	0.744%
2	3.313	71	76	82	rVB2	99859	136335	2.82%	0.396%
3	3.370	82	86	89	rBV2	25576	36050	0.75%	0.105%
4	3.404	89	92	101	rVB	14370	27698	0.57%	0.081%
5	3.506	105	110	122	rBV2	35415	54338	1.12%	0.158%
6	3.608	122	128	147	rVB	1864296	2587210	53.50%	7.522%
7	3.784	154	159	164	rBV	16694	21591	0.45%	0.063%
8	3.852	164	171	179	rVB	91146	126735	2.62%	0.368%
9	3.977	188	193	198	rBV4	8544	13364	0.28%	0.039%
10	4.307	244	251	262	rBV	57318	131930	2.73%	0.384%
11	4.449	271	276	283	rBV3	6487	14311	0.30%	0.042%
12	4.642	302	310	323	rBV2	290816	669650	13.85%	1.947%
13	4.755	323	330	342	rVV	383022	631150	13.05%	1.835%
14	4.858	342	348	360	rVB	64629	130422	2.70%	0.379%
15	5.045	371	381	390	rVB	357667	603678	12.48%	1.755%
16	5.357	424	436	450	rBV2	29536	63525	1.31%	0.185%
17	5.584	468	476	495	rVB2	362176	727649	15.05%	2.116%
18	5.789	506	512	517	rBV	20121	39197	0.81%	0.114%
19	5.846	518	522	533	rVB	10165	19263	0.40%	0.056%
20	6.084	557	564	575	rVB3	5888	14202	0.29%	0.041%
21	6.323	599	606	611	rBV2	8476	19178	0.40%	0.056%
22	6.487	631	635	642	rVB3	7852	15160	0.31%	0.044%
23	6.572	642	650	658	rBV3	7377	16087	0.33%	0.047%
24	6.675	661	668	676	rBV	33670	69419	1.44%	0.202%
25	6.856	693	700	709	rVB2	5500	11997	0.25%	0.035%
26	7.140	742	750	757	rBV	29919	63390	1.31%	0.184%
27	7.231	757	766	773	rVV	337349	768020	15.88%	2.233%
28	7.288	773	776	784	rVV	105099	215784	4.46%	0.627%
29	7.362	784	789	797	rVB	13075	28800	0.60%	0.084%
30	7.748	847	857	865	rBV	56634	137829	2.85%	0.401%
31	8.003	892	902	917	rBV	274767	647441	13.39%	1.882%
32	8.140	921	926	935	rVB3	6125	14189	0.29%	0.041%
33	8.821	1039	1046	1053	rBV3	5835	14950	0.31%	0.043%
34	8.900	1053	1060	1071	rVB3	11075	27767	0.57%	0.081%
35	9.042	1074	1085	1096	rBV	13367	35098	0.73%	0.102%
36	9.213	1108	1115	1122	rBV3	10444	23572	0.49%	0.069%
37	9.304	1122	1131	1143	rVB	594265	1384507	28.63%	4.025%
38	9.428	1149	1153	1161	rVB4	4983	11255	0.23%	0.033%
39	10.235	1291	1295	1305	rVB3	5500	12324	0.25%	0.036%
40	10.570	1348	1354	1364	rVB4	5967	14890	0.31%	0.043%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	10.780	1382	1391	1407	rBV	177741	519077	10.73%	1.509%
42	11.001	1421	1430	1438	rVB	11849	31474	0.65%	0.092%
43	11.189	1455	1463	1467	rBV2	5585	12352	0.26%	0.036%
44	11.331	1480	1488	1495	rBV	12831	31923	0.66%	0.093%
45	11.410	1495	1502	1510	rVB4	8441	20173	0.42%	0.059%
46	12.427	1671	1681	1694	rBV	757630	1747871	36.14%	5.082%
47	12.563	1696	1705	1717	rVB	81363	188773	3.90%	0.549%
48	13.227	1814	1822	1829	rBV2	16171	35511	0.73%	0.103%
49	13.863	1928	1934	1941	rBV3	9833	25808	0.53%	0.075%
50	13.914	1941	1943	1952	rVB4	7266	13179	0.27%	0.038%
51	14.522	2039	2050	2066	rBV	647859	1435400	29.68%	4.173%
52	14.840	2097	2106	2117	rBV	734543	1513410	31.29%	4.400%
53	14.931	2117	2122	2129	rVB2	7731	14340	0.30%	0.042%
54	15.413	2200	2207	2212	rBV	6458	11468	0.24%	0.033%
55	15.629	2238	2245	2257	rBV2	18372	47184	0.98%	0.137%
56	15.799	2269	2275	2282	rVB4	4722	11017	0.23%	0.032%
57	15.998	2303	2310	2318	rVB3	7578	14729	0.30%	0.043%
58	16.117	2322	2331	2335	rVV5	15699	43768	0.90%	0.127%
59	16.157	2335	2338	2345	rVV2	17777	34696	0.72%	0.101%
60	16.231	2345	2351	2359	rVB3	15568	34320	0.71%	0.100%
61	16.339	2363	2370	2381	rVV	28761	59670	1.23%	0.173%
62	16.668	2421	2428	2440	rVB2	69830	140315	2.90%	0.408%
63	16.822	2446	2455	2465	rBV	634544	1196366	24.74%	3.478%
64	16.918	2465	2472	2477	rVV5	8111	16021	0.33%	0.047%
65	16.986	2477	2484	2491	rVB3	17671	40681	0.84%	0.118%
66	17.071	2491	2499	2521	rVB	157280	424468	8.78%	1.234%
67	17.242	2521	2529	2539	rBV	65842	148123	3.06%	0.431%
68	17.327	2539	2544	2550	rVV3	29904	58482	1.21%	0.170%
69	17.423	2550	2561	2569	rVV2	193941	460837	9.53%	1.340%
70	17.520	2569	2578	2583	rVV	94007	200367	4.14%	0.583%
71	17.565	2583	2586	2592	rVB2	27593	50239	1.04%	0.146%
72	17.622	2592	2596	2603	rVB4	8250	14929	0.31%	0.043%
73	17.702	2603	2610	2612	rBV3	5696	10750	0.22%	0.031%
74	17.741	2612	2617	2625	rVB3	14107	29195	0.60%	0.085%
75	17.861	2625	2638	2645	rBV2	92362	198373	4.10%	0.577%
76	17.923	2645	2649	2654	rVB6	7609	13363	0.28%	0.039%
77	18.042	2660	2670	2682	rVB	2828511	4836358	100.00%	14.062%
78	18.173	2689	2693	2697	rVV2	12230	20469	0.42%	0.060%
79	18.230	2697	2703	2707	rVV	235418	412882	8.54%	1.200%
80	18.287	2707	2713	2718	rVV2	709163	1348479	27.88%	3.921%
81	18.326	2718	2720	2722	rVV	160730	207345	4.29%	0.603%
82	18.360	2722	2726	2729	rVV	361879	650804	13.46%	1.892%
83	18.383	2729	2730	2741	rVV	243890	340427	7.04%	0.990%
84	18.502	2741	2751	2757	rVV2	295606	538893	11.14%	1.567%
85	18.599	2757	2768	2772	rVV2	442966	806238	16.67%	2.344%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

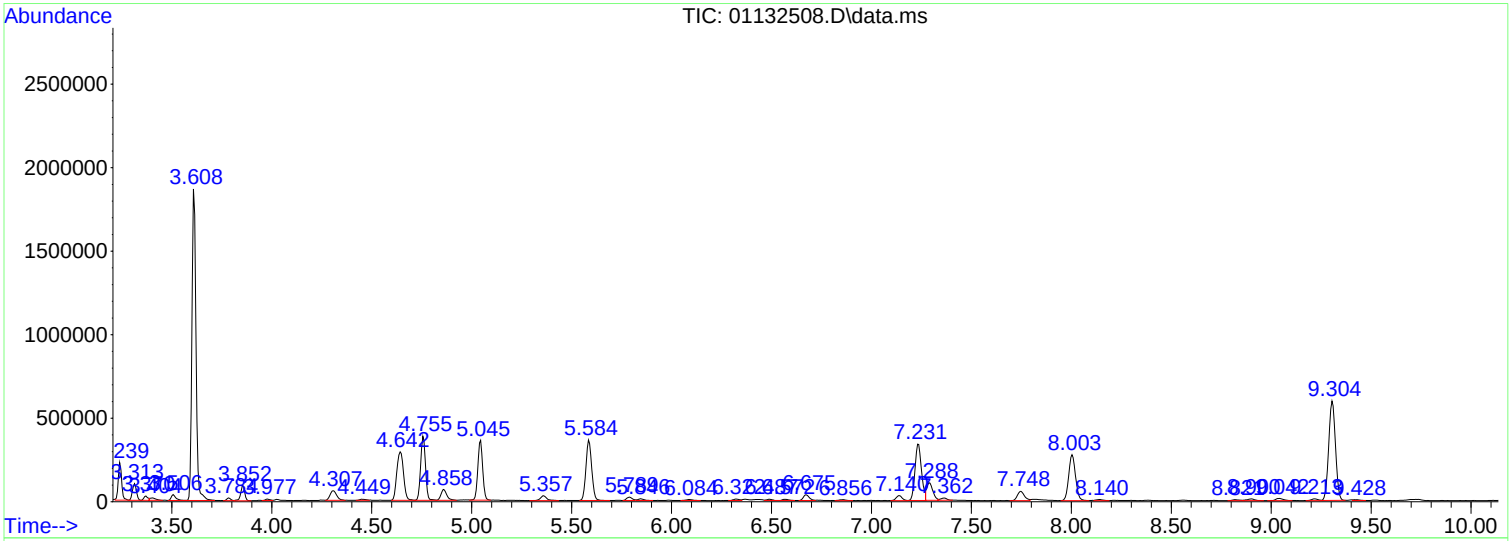
86	18.644	2772	2776	2783	rVV	316216	537616	11.12%	1.563%
87	18.718	2783	2789	2797	rVV2	132890	254108	5.25%	0.739%
88	18.809	2800	2805	2810	rVV	139096	234529	4.85%	0.682%
89	18.854	2810	2813	2820	rVV6	50713	143443	2.97%	0.417%
90	18.917	2820	2824	2826	rVV2	86160	128902	2.67%	0.375%
91	18.951	2826	2830	2840	rVV	198905	423963	8.77%	1.233%
92	19.064	2840	2850	2863	rVB	1026719	1740880	36.00%	5.062%
93	19.195	2863	2873	2884	rBV	242424	406919	8.41%	1.183%
94	19.297	2884	2891	2901	rVV	750652	1221496	25.26%	3.551%
95	19.371	2901	2904	2910	rVB2	29357	50119	1.04%	0.146%
96	19.456	2910	2919	2923	rBV	34720	59357	1.23%	0.173%
97	19.507	2923	2928	2932	rVV	67513	102808	2.13%	0.299%
98	19.564	2932	2938	2944	rVV	211152	348713	7.21%	1.014%
99	19.621	2944	2948	2955	rVB	92444	147046	3.04%	0.428%
100	19.808	2973	2981	2988	rVB2	78179	127164	2.63%	0.370%
101	19.876	2988	2993	2997	rBV2	9286	14565	0.30%	0.042%
102	19.979	3005	3011	3016	rVB	22872	34415	0.71%	0.100%
103	20.041	3016	3022	3031	rBV5	9748	22551	0.47%	0.066%
104	20.206	3044	3051	3058	rVB5	12689	31299	0.65%	0.091%
105	20.274	3058	3063	3067	rVB3	11174	16575	0.34%	0.048%
106	20.348	3067	3076	3081	rBV2	52958	93476	1.93%	0.272%
107	20.393	3081	3084	3088	rVB2	9859	11886	0.25%	0.035%
108	20.484	3094	3100	3104	rVB4	7785	14827	0.31%	0.043%
109	20.569	3109	3115	3124	rVB2	122038	205018	4.24%	0.596%
110	20.643	3124	3128	3131	rBV2	13163	15204	0.31%	0.044%
111	20.683	3131	3135	3139	rVB	18330	20032	0.41%	0.058%
112	20.757	3144	3148	3156	rVB	21729	28764	0.59%	0.084%
113	20.921	3172	3177	3185	rBV4	14533	25382	0.52%	0.074%
114	21.018	3185	3194	3198	rBV	21471	31641	0.65%	0.092%
115	21.165	3217	3220	3224	rVB3	8484	10767	0.22%	0.031%
116	21.234	3224	3232	3238	rVB7	6999	17581	0.36%	0.051%
117	21.495	3272	3278	3286	rVB4	4640	10477	0.22%	0.030%
118	22.148	3388	3393	3400	rVB2	9672	16190	0.33%	0.047%

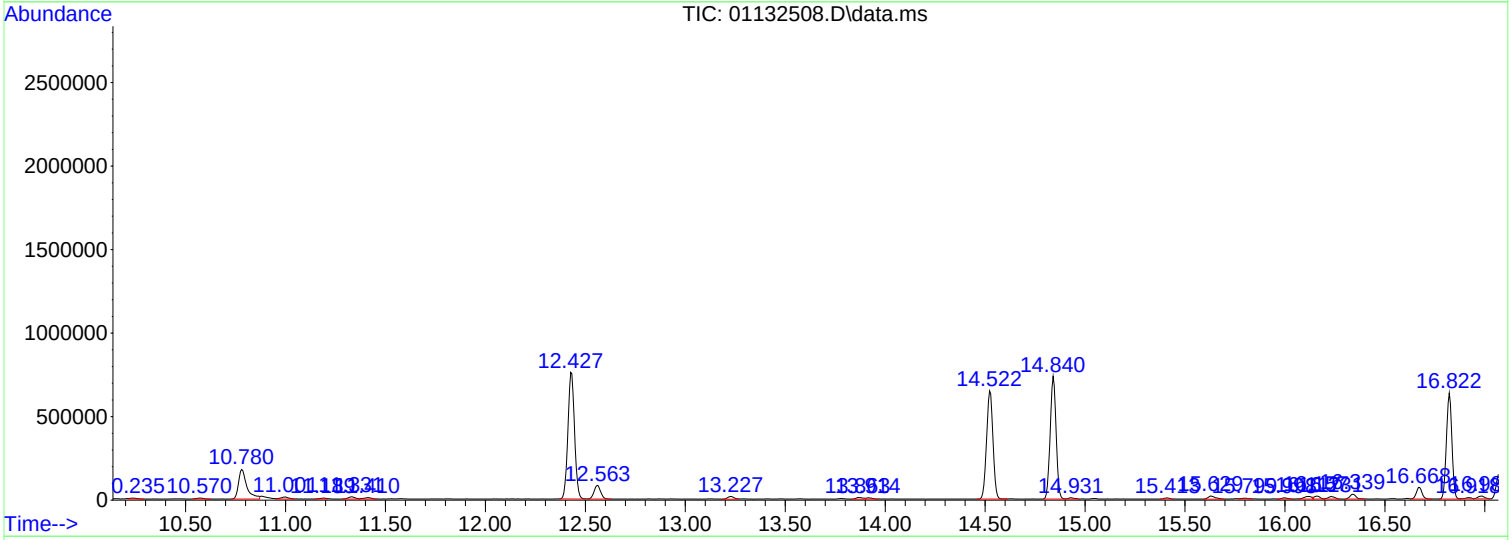
Sum of corrected areas: 34394109

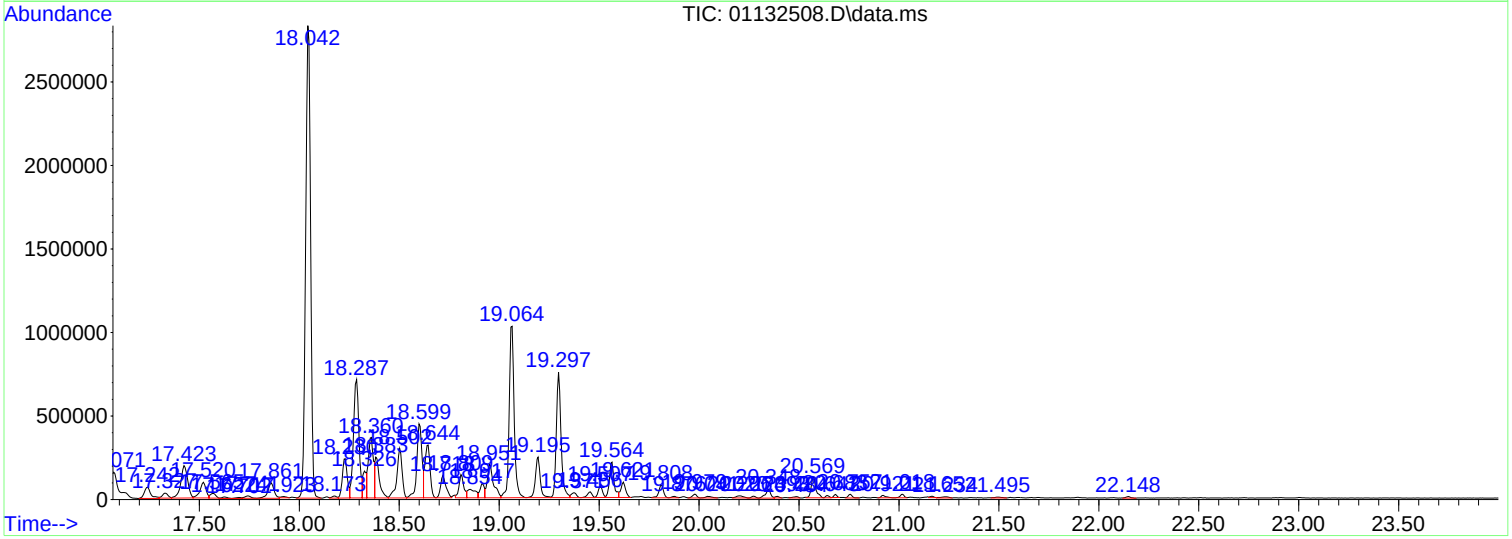
Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:30
Operator : SC
Sample : P2405139-054 (400mL)PF2
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\13\\
Data File : 01132508.D
Acq On : 13 Jan 2025 9:300
Operator : SCC
Sample : P2405139-054 (400mL)PF22
Misc : S37-123124011
ALS Vial : 13 Sample Multiplier: 11

1/13/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected

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Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

1/13/25

Quant Time: Jan 12 19:58:09 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	142184	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	617655	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	123607	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250640	12.939	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.52%				
57) Toluene-d8 (SS2)	12.43	98	652728	11.904	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.20%				
73) Bromofluorobenzene (SS3)	16.82	174	245809	12.990	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.92%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	3.38	85	16279	0.586	ng		98
4) Chloromethane	3.52	50	570	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	507	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	3.94	94	176	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.29	45	7019	0.667	ng		99
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	4.53	56	1153	0.128	ng		98
13) Acetone	4.64	58	51000	5.327	ng	#	79
14) Trichlorofluoromethane	4.76	101	9849659	377.875	ng		99
15) 2-Propanol (Isopropanol)	4.94	45	53	N.D.			
16) Acrylonitrile	5.03	53	174	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	5.36	84	4052	0.301	ng		100
20) 3-Chloro-1-propene (Al...	5.40	41	250	N.D.			
21) Trichlorotrifluoroethane	5.59	151	4736909	402.788	ng		93
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.31	73	669	N.D.			
26) Vinyl Acetate	6.43	86	1105	0.477	ng		99
27) 2-Butanone (MEK)	6.67	72	7881	1.025	ng		95
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	7.29	61	164	N.D.			
31) n-Hexane	7.30	57	2212	0.104	ng	#	94
32) Chloroform	7.36	83	40629	1.755	ng		99
34) Tetrahydrofuran (THF)	7.77	72	118	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.82	56	3111	No Calib			
41) Benzene	8.89	78	5975	0.121	ng		95
42) Carbon Tetrachloride	9.07	117	706	N.D.			
43) Cyclohexane	9.22	84	1561	0.090	ng	#	83
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	662	N.D.			
47) Trichloroethene	10.15	130	5394	0.382	ng		97
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

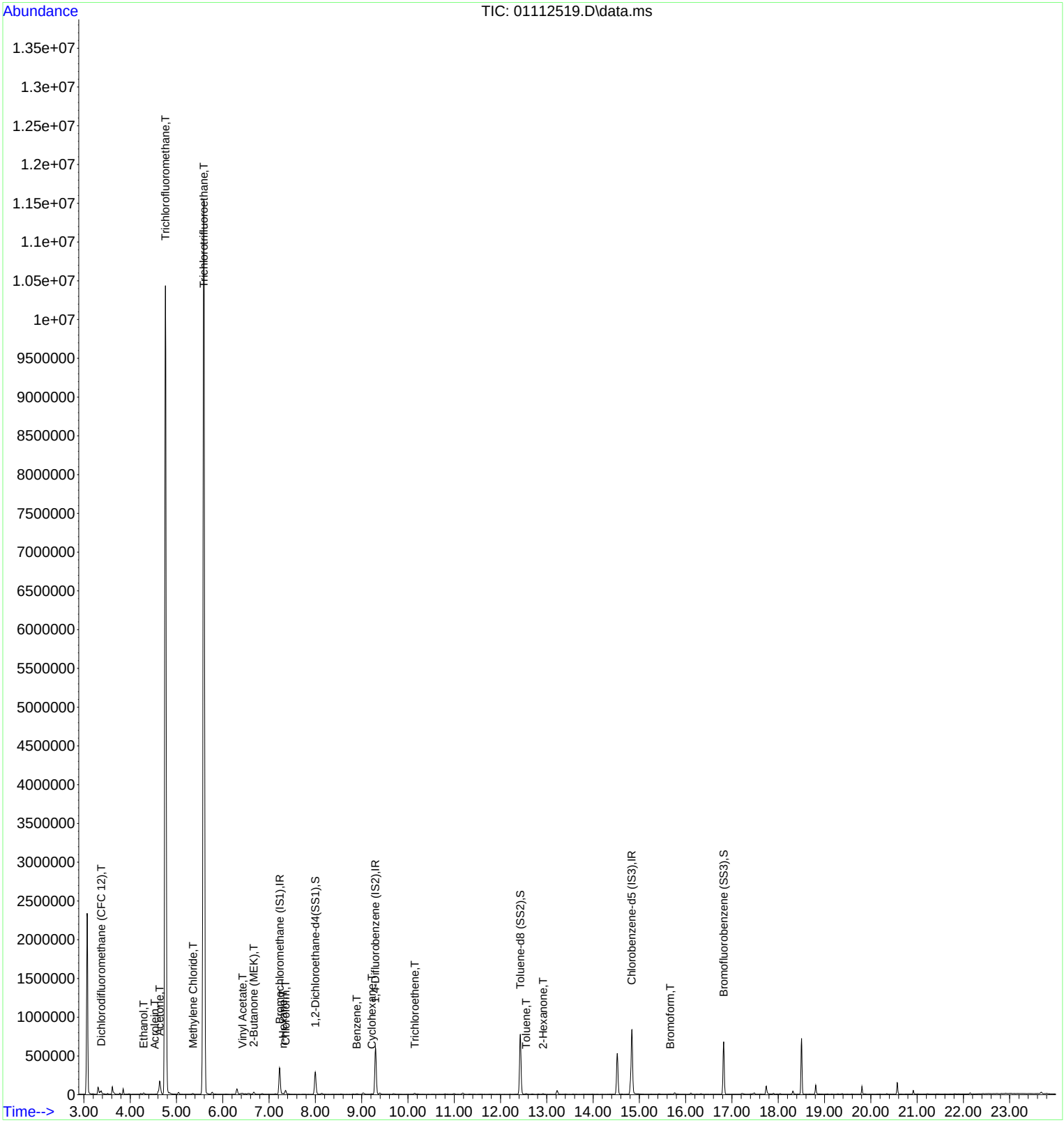
Quant Time: Jan 12 19:58:09 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.22	57	476	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D. d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	5329	0.101 ng	98
59) 2-Hexanone	12.92	43	7461	0.290 ng	91
60) Dibromochloromethane	13.07	129	178	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.80	43	1027	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	1757	N.D.	
67) m- & p-Xylenes	15.62	91	1694	N.D.	
68) Bromoform	15.67	173	1533	0.123 ng	85
69) Styrene	16.10	104	665	N.D.	
70) o-Xylene	16.24	91	1212	N.D.	
71) n-Nonane	16.61	43	728	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	659	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.86	105	203	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	417	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.50	91	258	N.D.	
85) 1,3-Dichlorobenzene	18.50	146	549	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.73	105	384	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	868	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	19.03	146	113	N.D.	
91) d-Limonene	19.08	68	123	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	376	N.D.	
95) Naphthalene	20.94	128	846	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.42	119	120	N.D.	
100) n-Butylbenzene	19.38	91	853	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 19:58:09 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

NOA 1/12/25

Quant Time: Jan 12 19:58:09 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

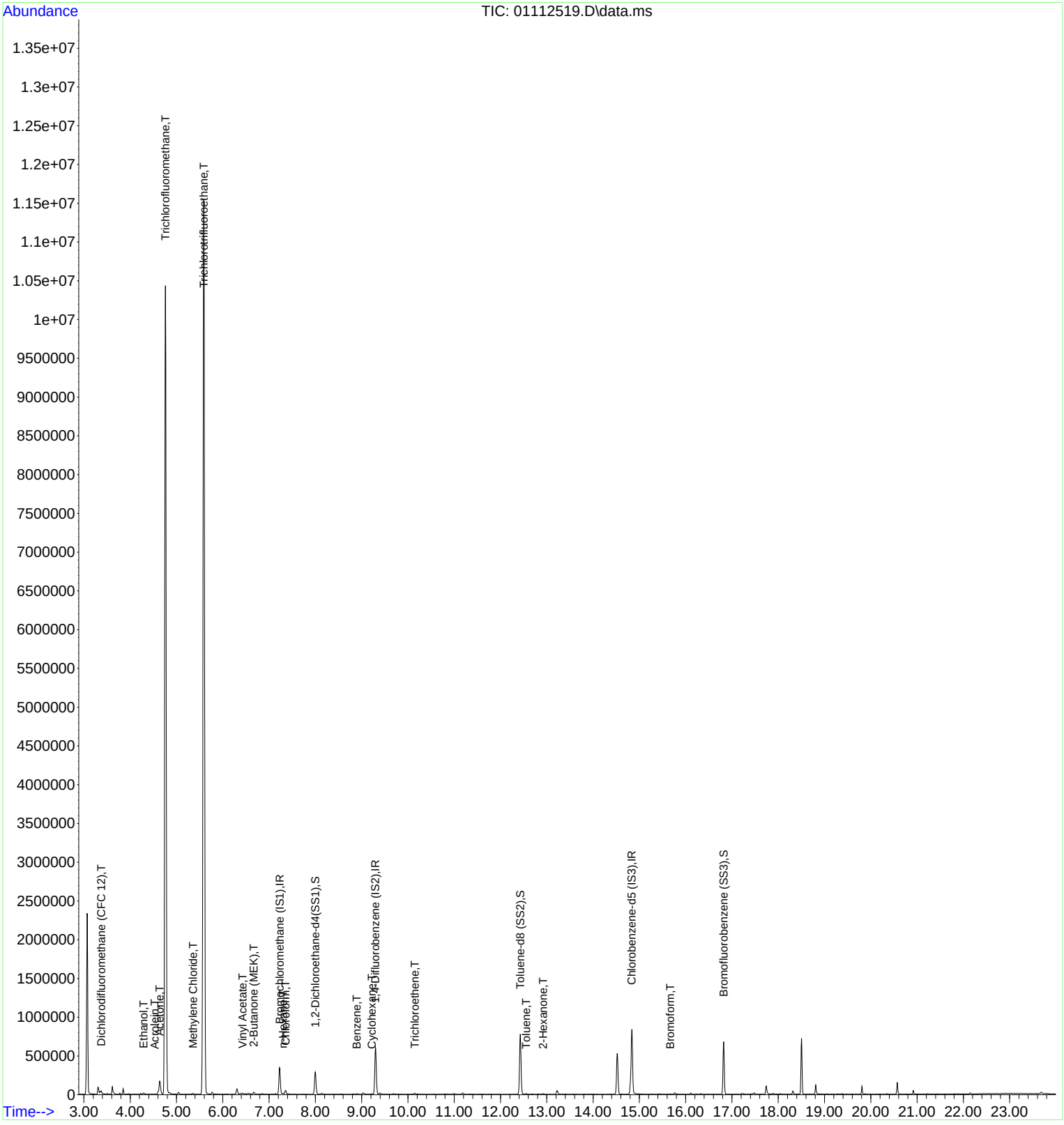
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	142184	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	617655	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	123607	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	250640	12.939	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.52%				
57) Toluene-d8 (SS2)	12.43	98	652728	11.904	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.20%				
73) Bromofluorobenzene (SS3)	16.82	174	245809	12.990	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.92%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16279	0.586	ng		98
10) Ethanol	4.29	45	7019	0.667	ng		99
12) Acrolein	4.53	56	1153	0.128	ng		98
13) Acetone	4.64	58	51000	5.327	ng	#	79
14) Trichlorofluoromethane	4.76	101	9849659	377.875	ng		99
19) Methylene Chloride	5.36	84	4052	0.301	ng		100
21) Trichlorotrifluoroethane	5.59	151	4736909	402.788	ng		93
26) Vinyl Acetate	6.43	86	1105	0.477	ng		99
27) 2-Butanone (MEK)	6.67	72	7881	1.025	ng		95
31) n-Hexane	7.30	57	2212	0.104	ng	#	94
32) Chloroform	7.36	83	40629	1.755	ng		99
41) Benzene	8.89	78	5975	0.121	ng		95
43) Cyclohexane	9.22	84	1561	0.090	ng	#	83
47) Trichloroethene	10.15	130	5394	0.382	ng		97
58) Toluene	12.56	91	5329	0.101	ng		98
59) 2-Hexanone	12.92	43	7461	0.290	ng		91
68) Bromoform	15.67	173	1533	0.123	ng		85

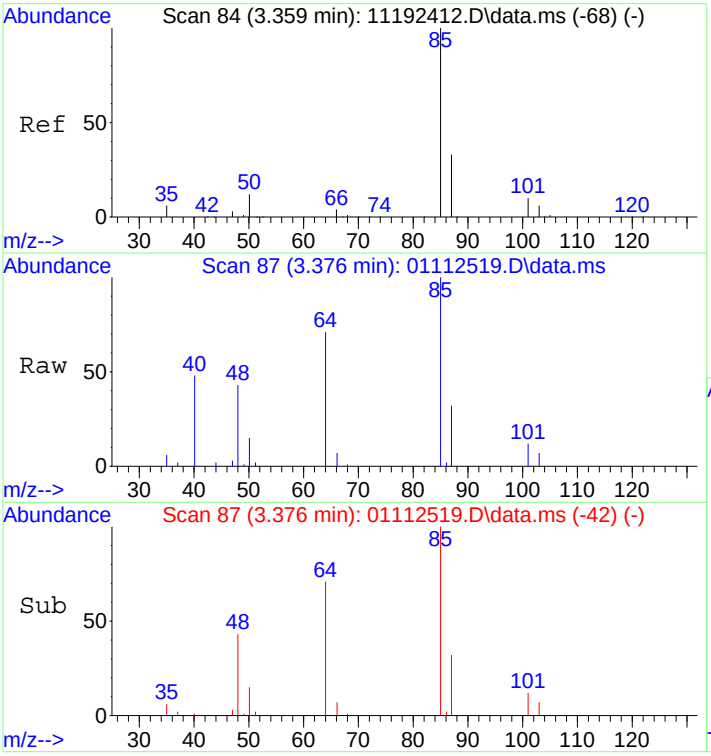
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 19:58:09 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

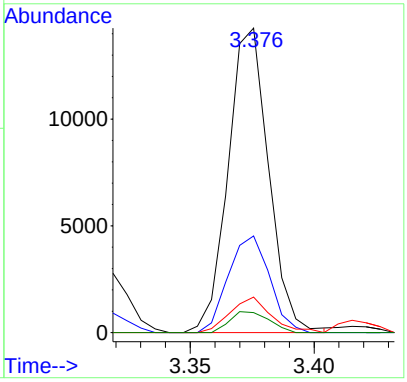


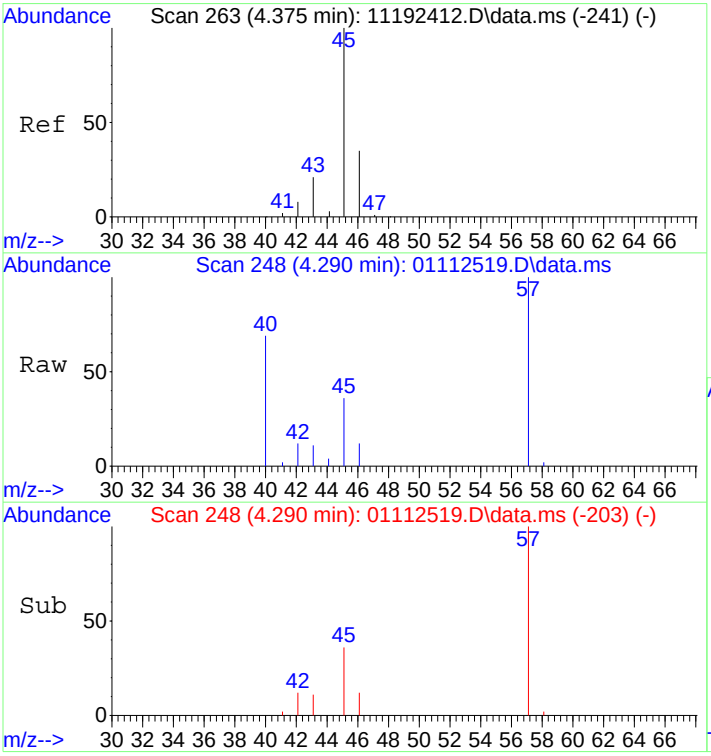


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.59 ng
RT: 3.38 min Scan# 87
Delta R.T. 0.004 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 85 Resp: 16279

Ion	Ratio	Lower	Upper
85	100		
87	32.3	12.6	52.6
101	11.7	0.0	29.6
103	6.7	0.0	26.2

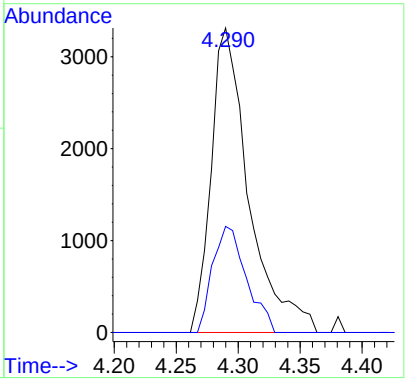


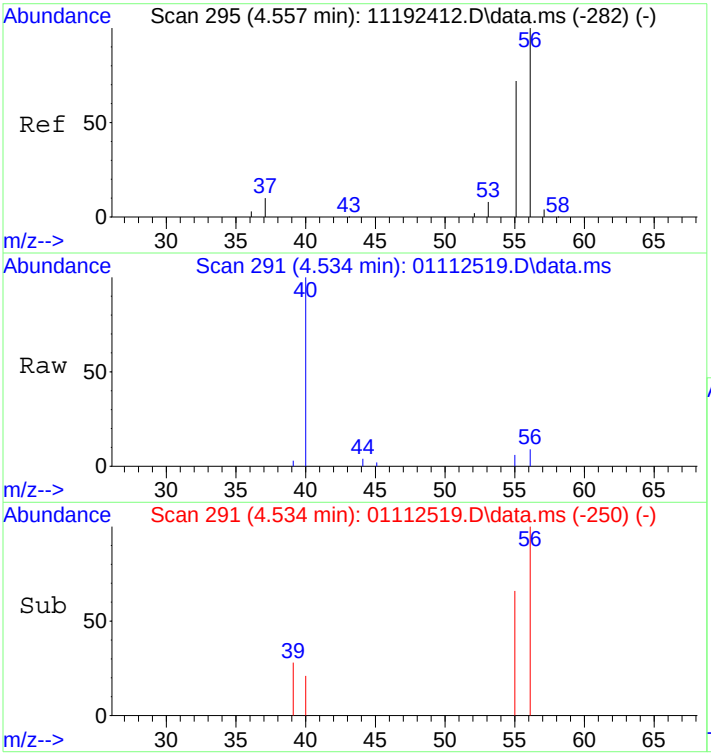


#10
Ethanol
Concen: 0.67 ng
RT: 4.29 min Scan# 248
Delta R.T. 0.006 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 45 Resp: 7019

Ion	Ratio	Lower	Upper
45	100		
46	31.2	11.8	51.8

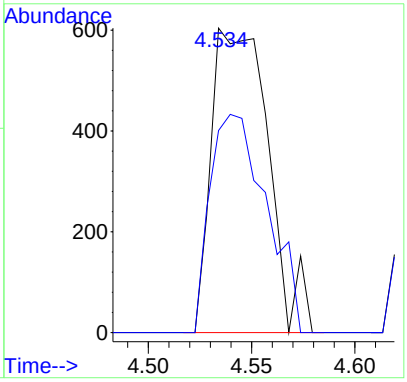


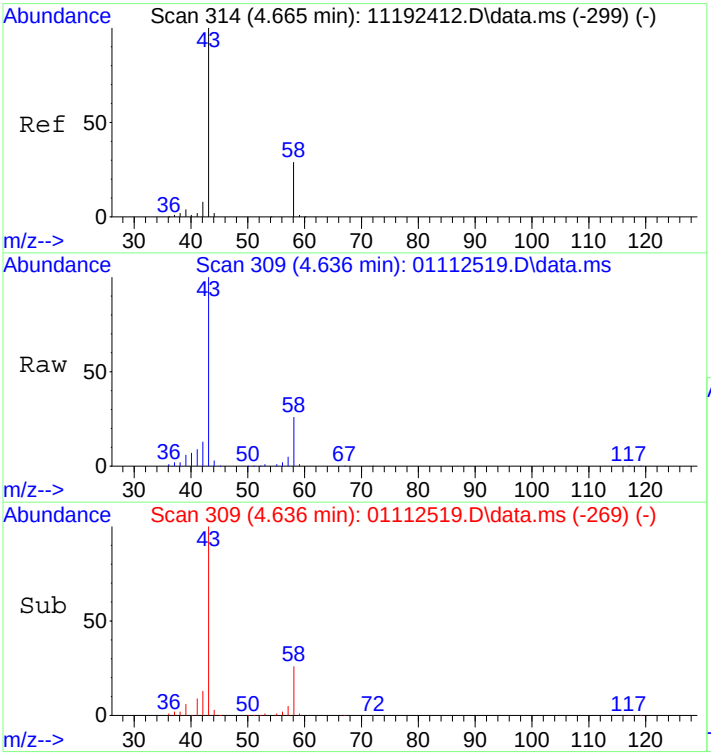


#12
Acrolein
Concen: 0.13 ng
RT: 4.53 min Scan# 291
Delta R.T. -0.019 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 56 Resp: 1153

Ion	Ratio	Lower	Upper
56	100		
55	71.6	53.1	93.1

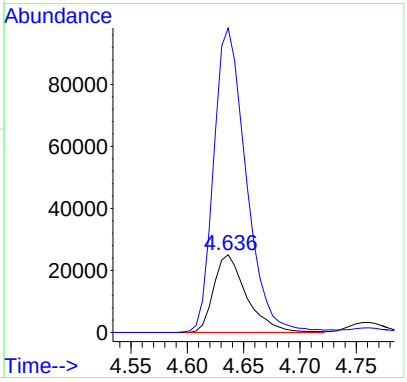


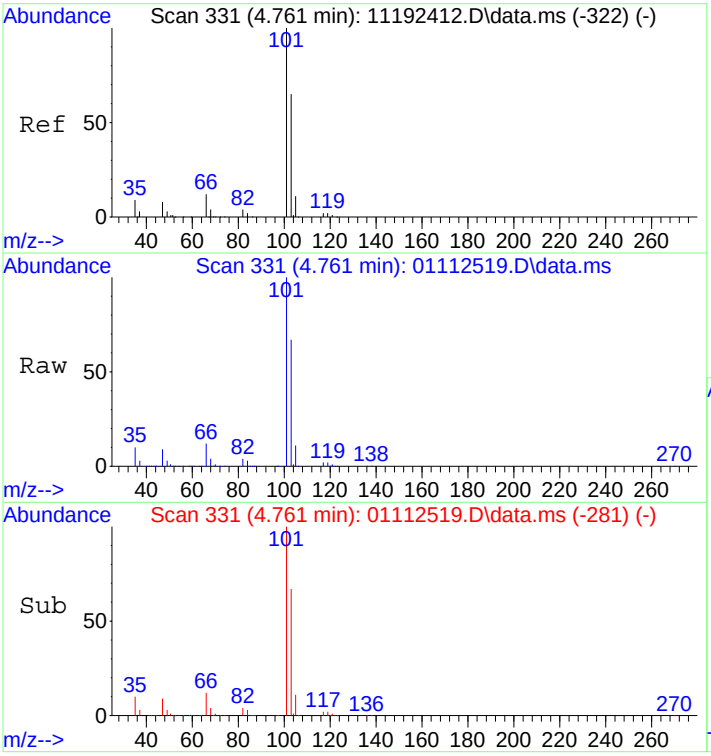


#13
Acetone
Concen: 5.33 ng
RT: 4.64 min Scan# 309
Delta R.T. -0.024 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 58 Resp: 51000

Ion	Ratio	Lower	Upper
58	100		
43	387.6	312.5	372.5#

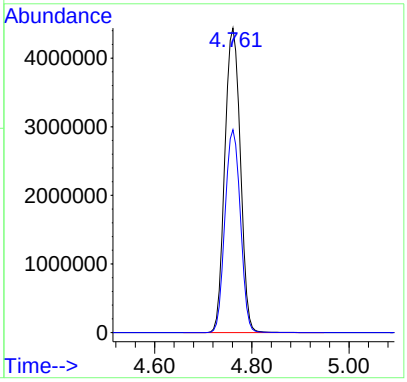


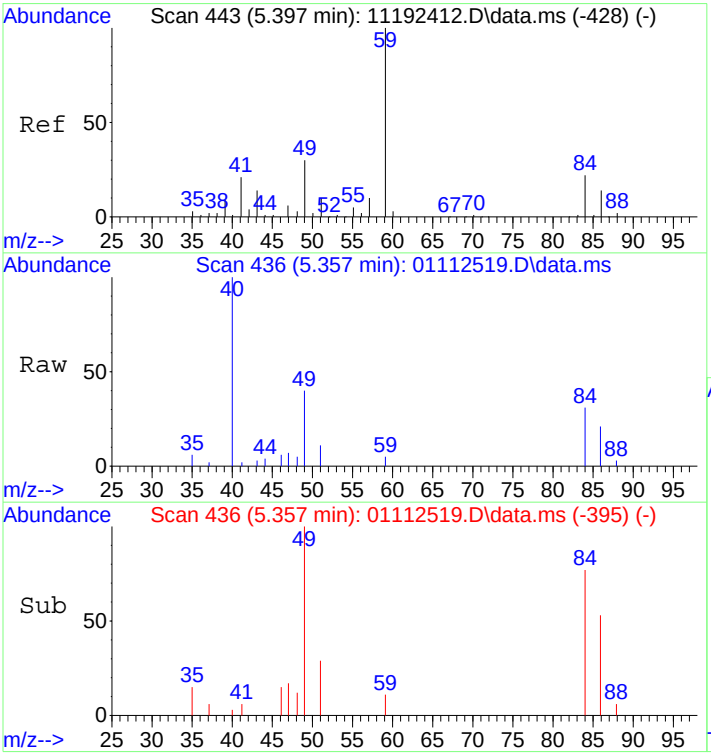


#14
Trichlorofluoromethane
Concen: 377.87 ng
RT: 4.76 min Scan# 331
Delta R.T. 0.033 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion:101 Resp: 9849659

Ion	Ratio	Lower	Upper
101	100		
103	65.9	44.8	84.8

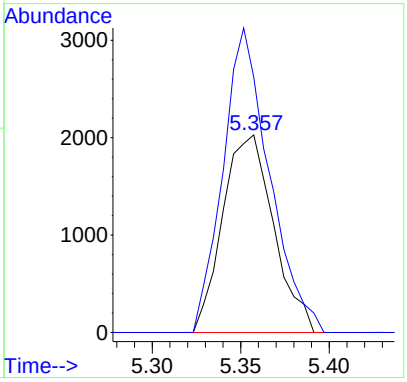


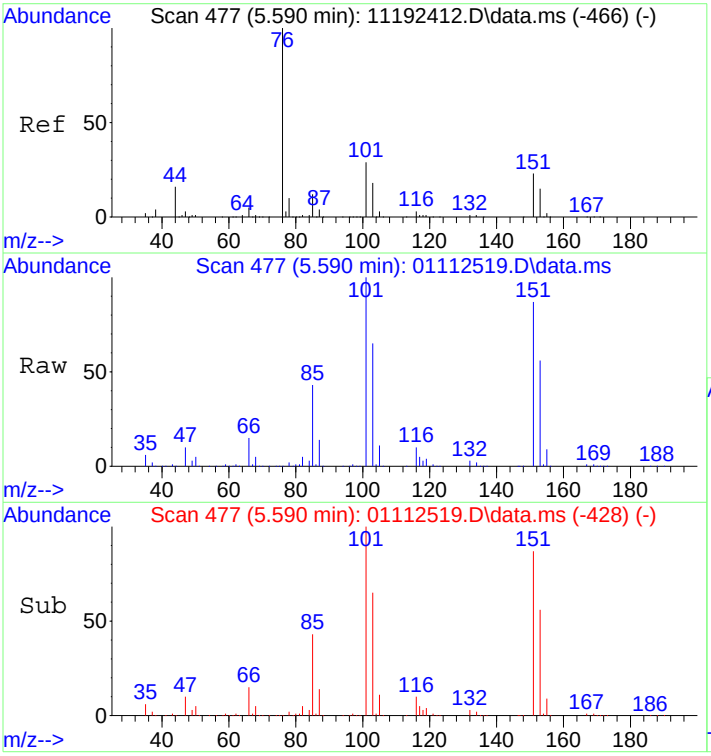


#19
Methylene Chloride
Concen: 0.30 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.017 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 84 Resp: 4052

Ion	Ratio	Lower	Upper
84	100		
49	141.0	116.0	166.0

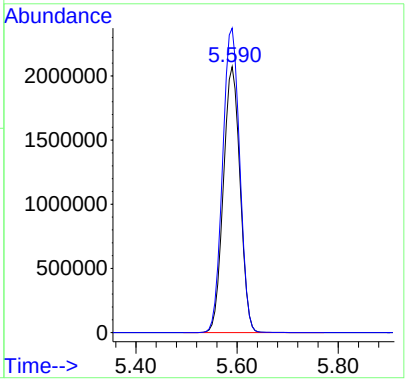


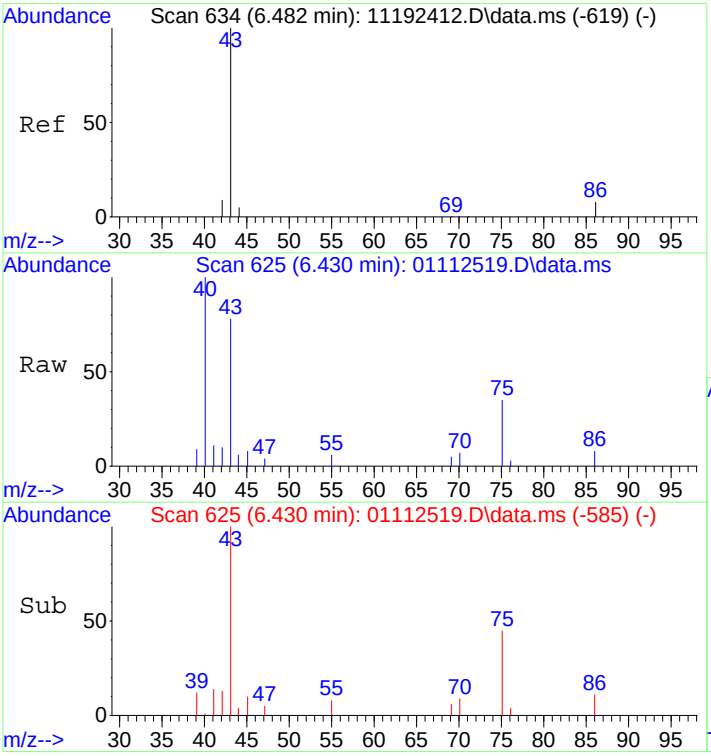


#21
Trichlorotrifluoroethane
Concen: 402.79 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion:151 Resp: 4736909

Ion	Ratio	Lower	Upper
151	100		
101	116.9	105.0	145.0

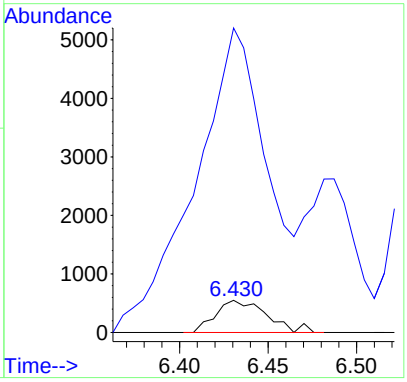


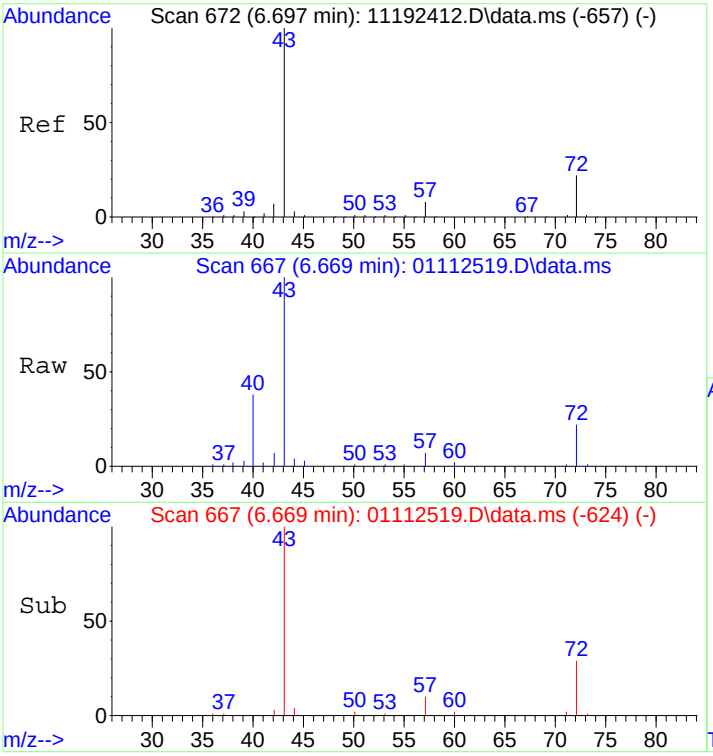


#26
Vinyl Acetate
Concen: 0.48 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 86 Resp: 1105

Ion	Ratio	Lower	Upper
86	100		
43	1343.6	1331.6	1371.6

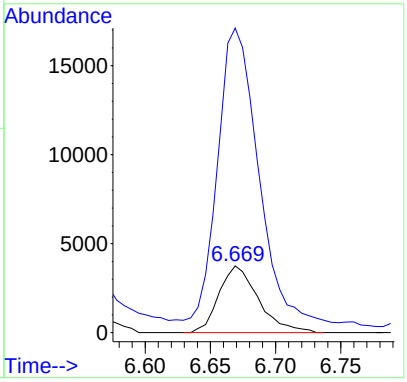


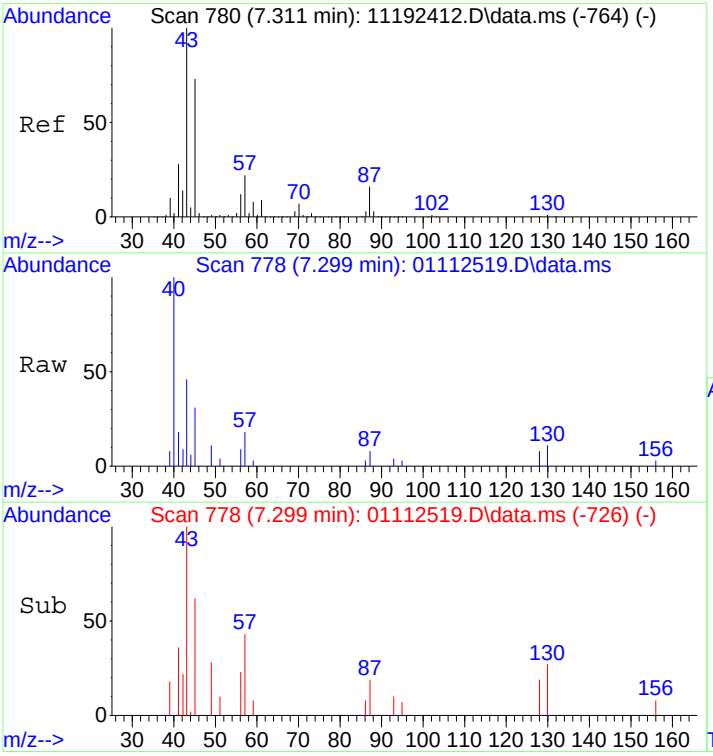


#27
2-Butanone (MEK)
Concen: 1.02 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 72 Resp: 7881

Ion	Ratio	Lower	Upper
72	100		
43	473.1	439.8	479.8

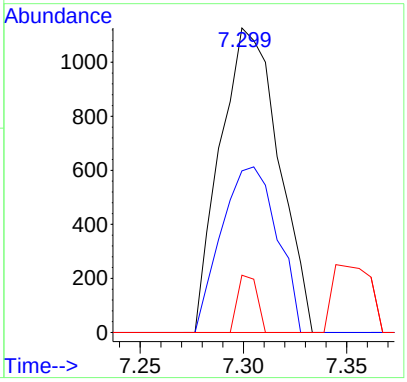


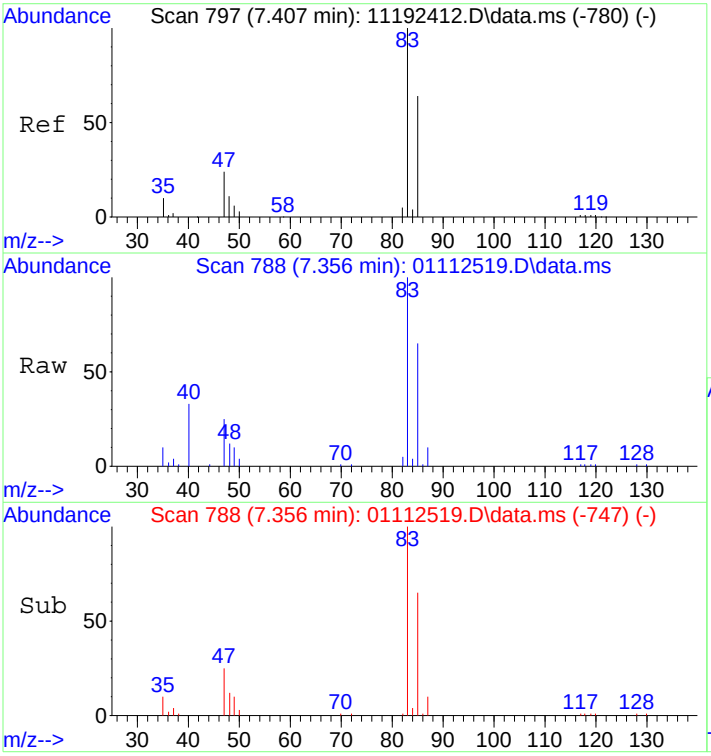


#31
n-Hexane
Concen: 0.10 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 57 Resp: 2212

Ion	Ratio	Lower	Upper
57	100		
56	52.0	43.4	65.0
86	6.3	10.9	16.3#

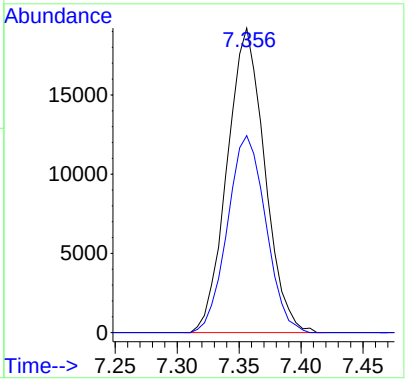


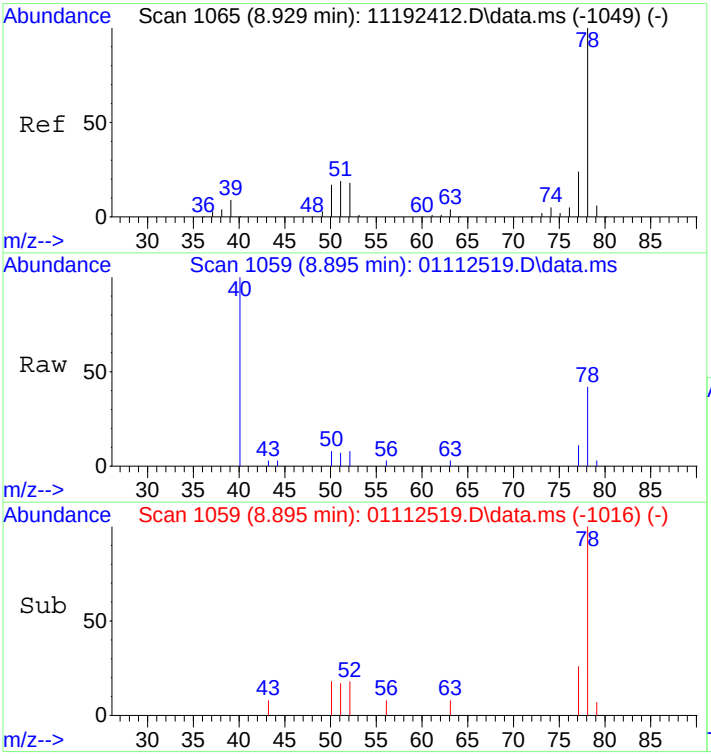


#32
Chloroform
Concen: 1.76 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 83 Resp: 40629

Ion	Ratio	Lower	Upper
83	100		
85	65.9	45.1	85.1

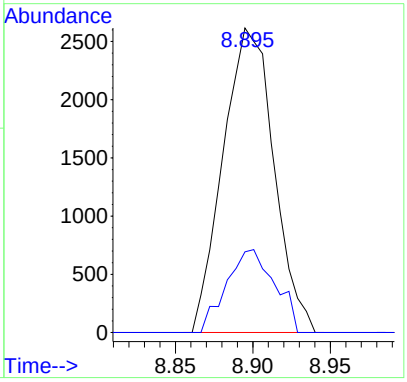


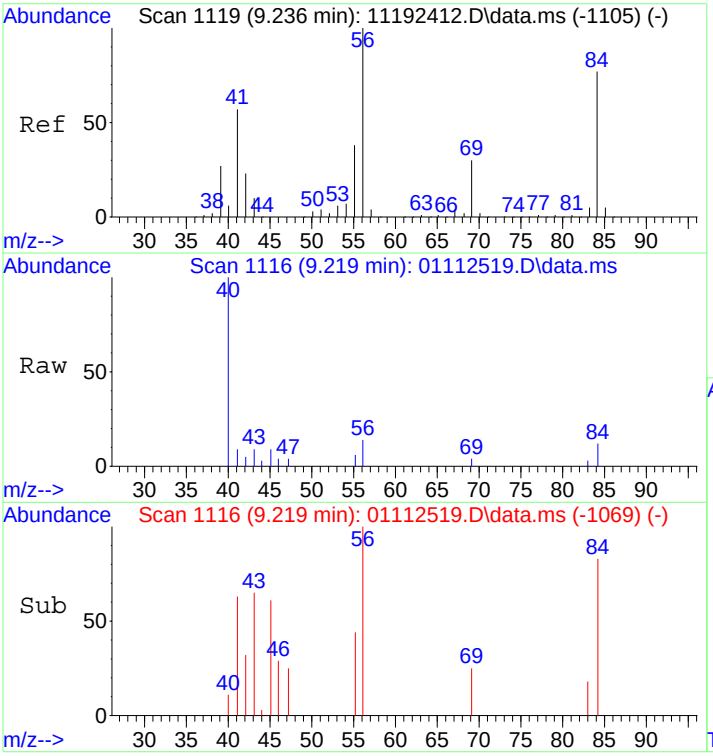


#41
Benzene
Concen: 0.12 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 78 Resp: 5975

Ion	Ratio	Lower	Upper
78	100		
77	26.0	3.7	43.7

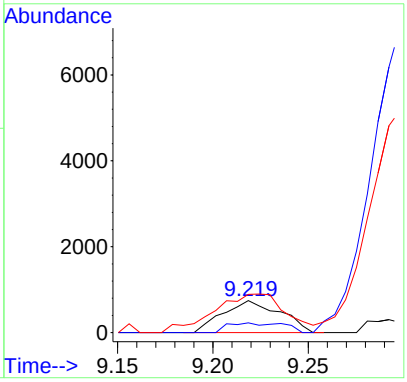


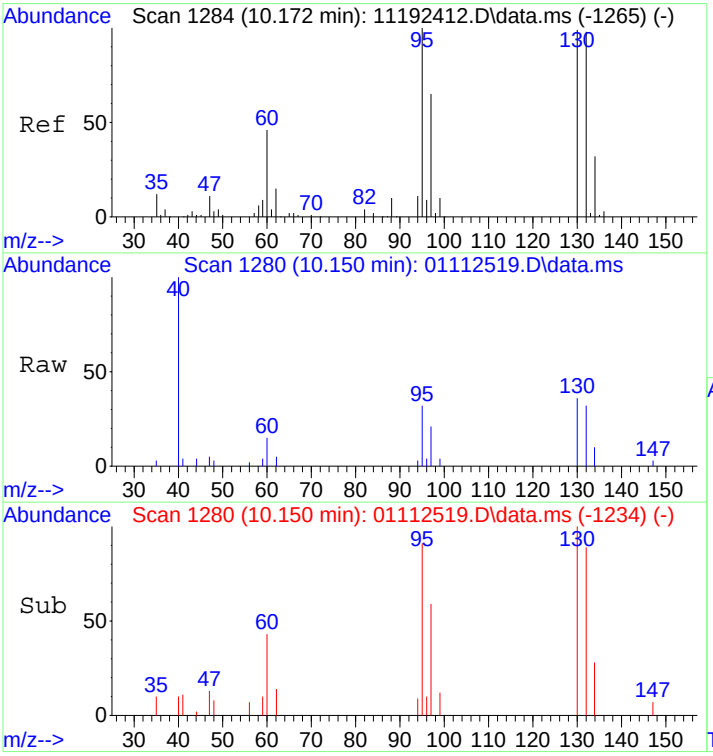


#43
Cyclohexane
Concen: 0.09 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 84 Resp: 1561

Ion	Ratio	Lower	Upper
84	100		
69	29.8	18.3	58.3
56	150.9	110.7	150.7#

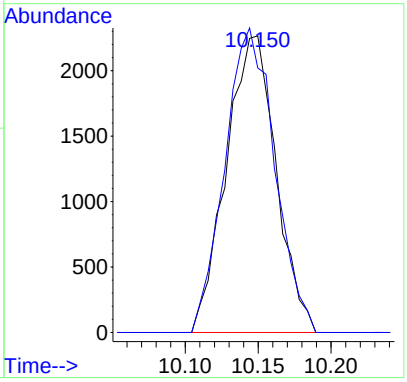


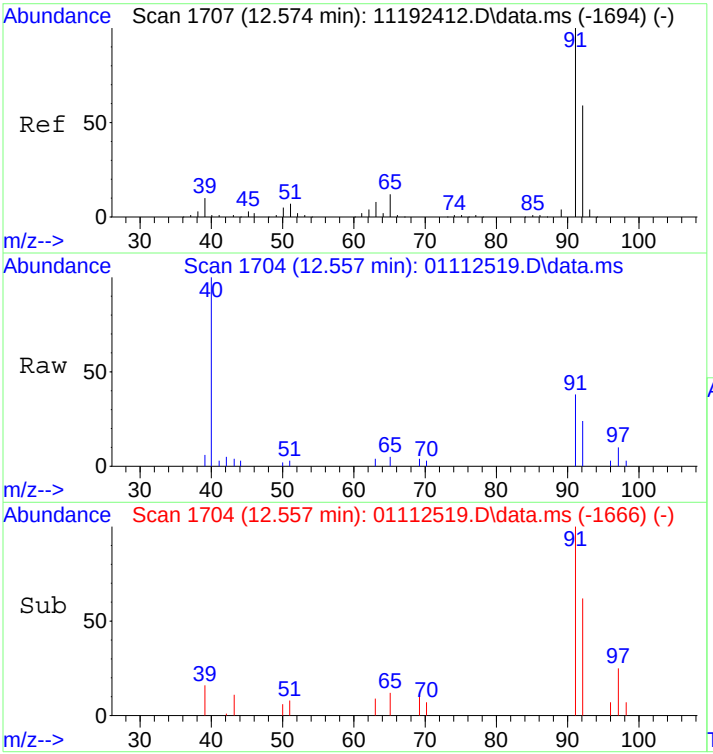


#47
Trichloroethene
Concen: 0.38 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion:130 Resp: 5394

Ion	Ratio	Lower	Upper
130	100		
132	102.6	79.3	119.3

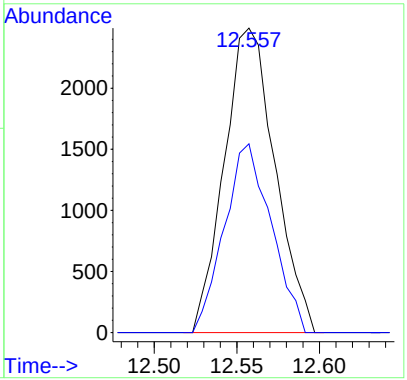


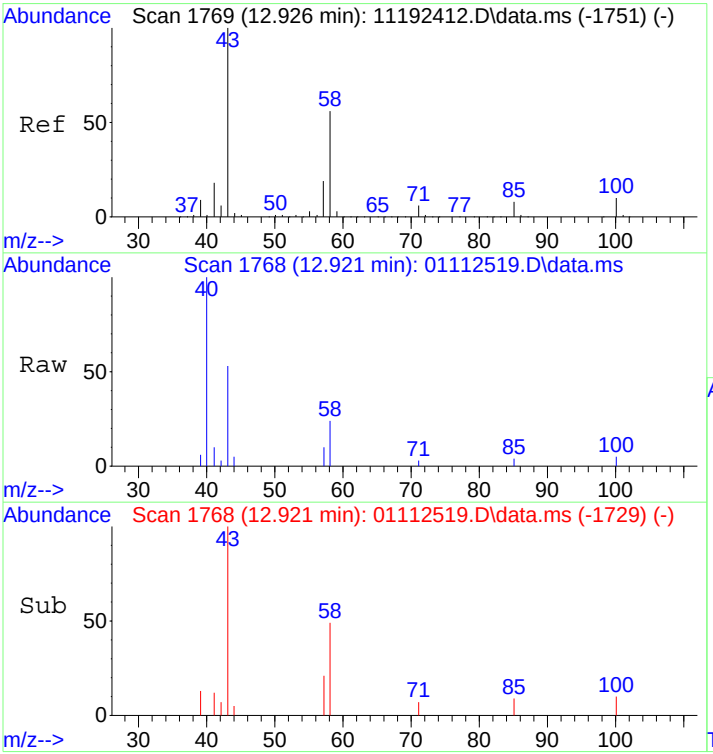


#58
Toluene
Concen: 0.10 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 91 Resp: 5329

Ion	Ratio	Lower	Upper
91	100		
92	57.3	39.2	79.2

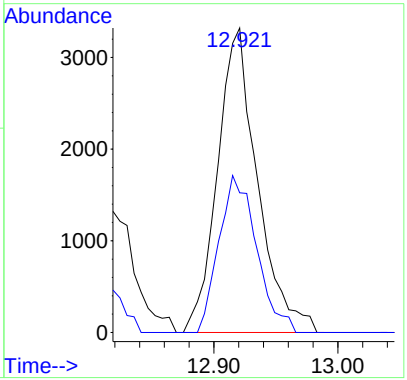


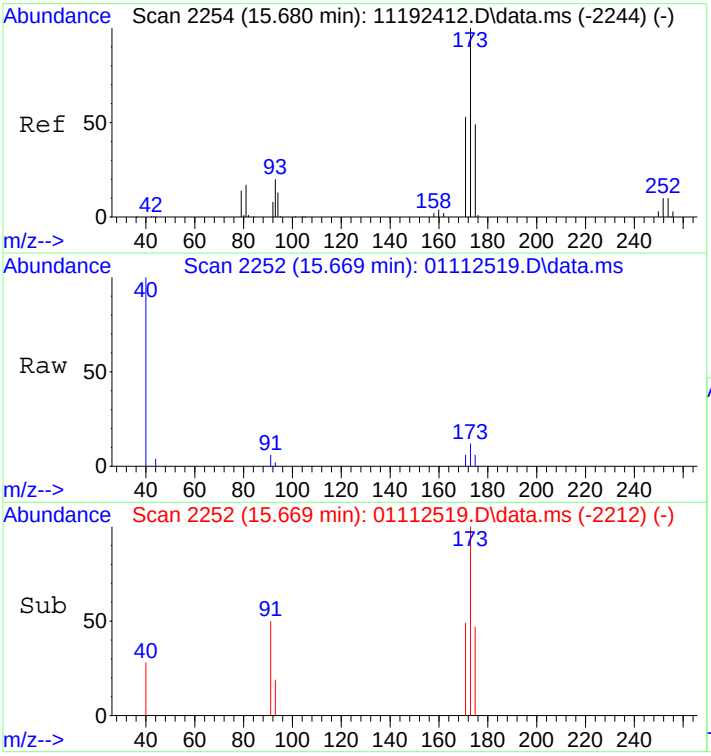


#59
2-Hexanone
Concen: 0.29 ng
RT: 12.92 min Scan# 1768
Delta R.T. -0.028 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion: 43 Resp: 7461

Ion	Ratio	Lower	Upper
43	100		
58	48.5	35.2	75.2

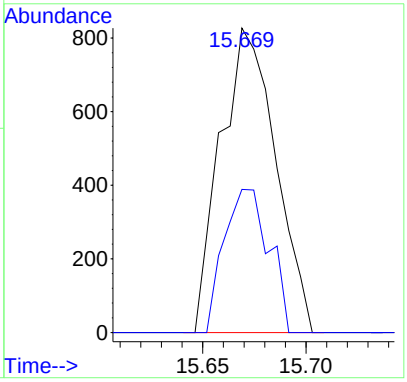




#68
Bromoform
Concen: 0.12 ng
RT: 15.67 min Scan# 2252
Delta R.T. -0.023 min
Lab File: 01112519.D
Acq: 11 Jan 2025 16:42

Tgt Ion:173 Resp: 1533

Ion	Ratio	Lower	Upper
173	100		
175	38.6	28.7	68.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 10:42:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

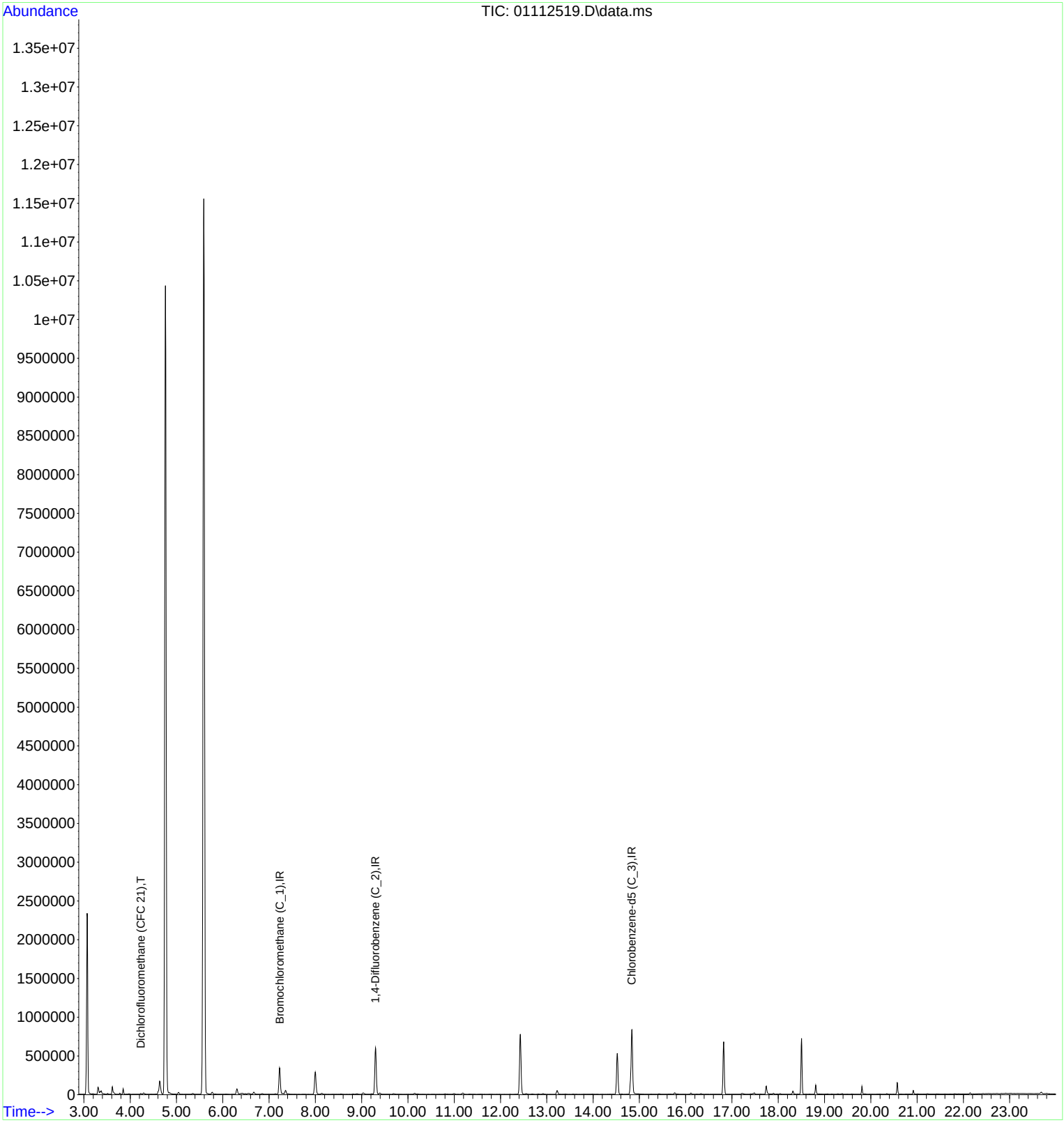
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	143986	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	619000	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	123607	12.500	ng	-0.01
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	160	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	1199	N.D.		
4) 1,1-Difluoroethane	3.26	65	55	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d	
6) 1-Chloro-1,1-Difluoroe...	3.51	65	372	N.D.		
7) Dichlorofluoromethane ...	4.23	67	8030	0.275	ng	99
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	900	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D.	d	
11) Methyl Acetate	5.33	43	733	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.	d	
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	9.03	84	963	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.80	174	110	N.D.		
20) Methyl Cyclohexane	11.40	55	769	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	659	N.D.		
27) 4-Chlorotoluene	17.68	91	659	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	20.57	119	481	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

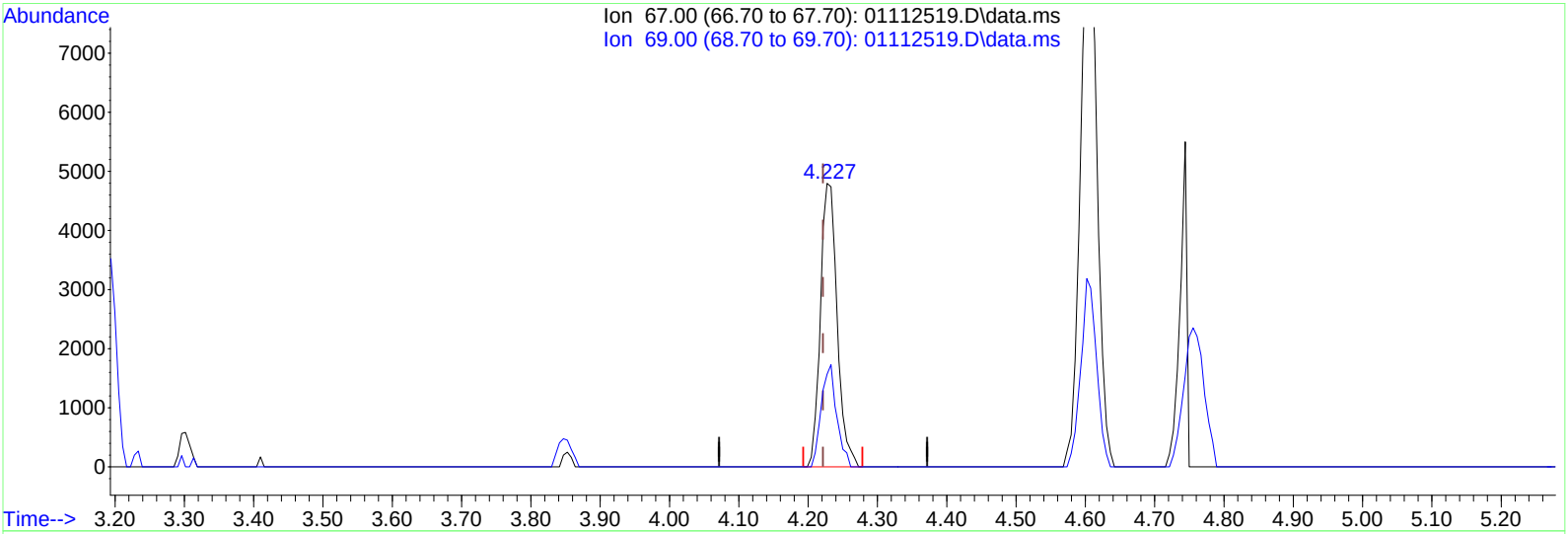
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

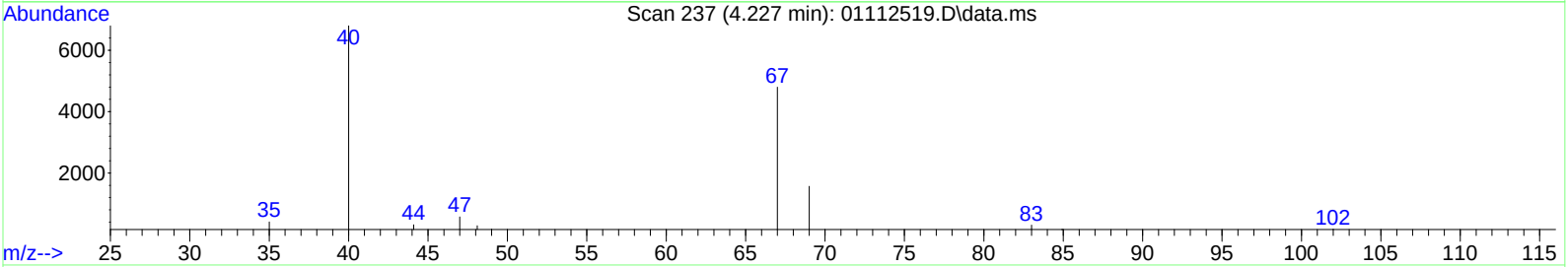
Quant Time: Jan 13 10:42:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

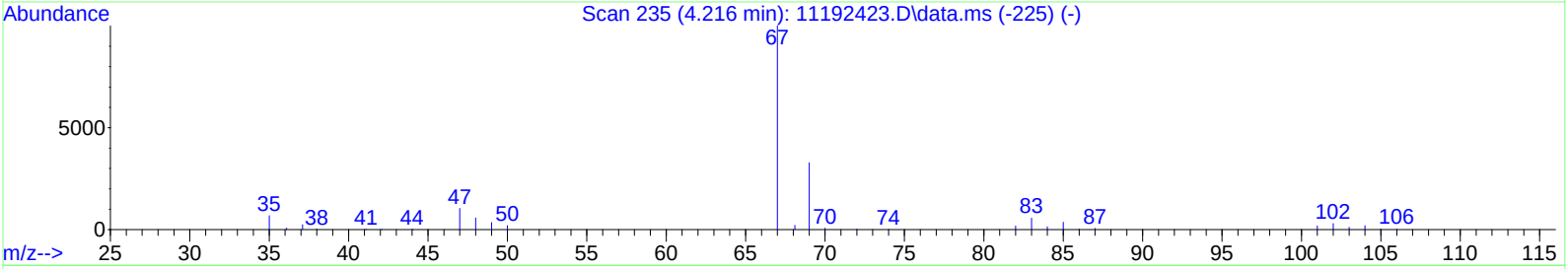


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 13 10:40:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112519.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.227min (+0.006) 0.28ng

response 8030

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.09
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122509.D
Acq On : 12 Jan 2025 9:23
Operator : SC
Sample : P2405139-055Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

VOA 1/13/25

Quant Time: Jan 12 09:49:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144420	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	632179	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	113537	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	243417	12.371	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%				
57) Toluene-d8 (SS2)	12.43	98	654468	12.994	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.92%				
73) Bromofluorobenzene (SS3)	16.82	174	226695	13.043	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.32%				
Target Compounds							Qvalue
2) Propene	3.33	42	716	N.D.			
3) Dichlorodifluoromethan...	3.34	85	127	N.D.			
4) Chloromethane	3.39	50	369	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	1263	0.118	ng		69
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	4370	0.449	ng	#	83
14) Trichlorofluoromethane	4.76	101	754825	28.510	ng		99
15) 2-Propanol (Isopropanol)	4.89	45	362	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	849	0.062	ng		97
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	332618	27.845	ng		95
22) Carbon Disulfide	5.64	76	1405	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	265	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.35	83	2420	0.103	ng		96
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	974	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122509.D
Acq On : 12 Jan 2025 9:23
Operator : SC
Sample : P2405139-055Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 09:49:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

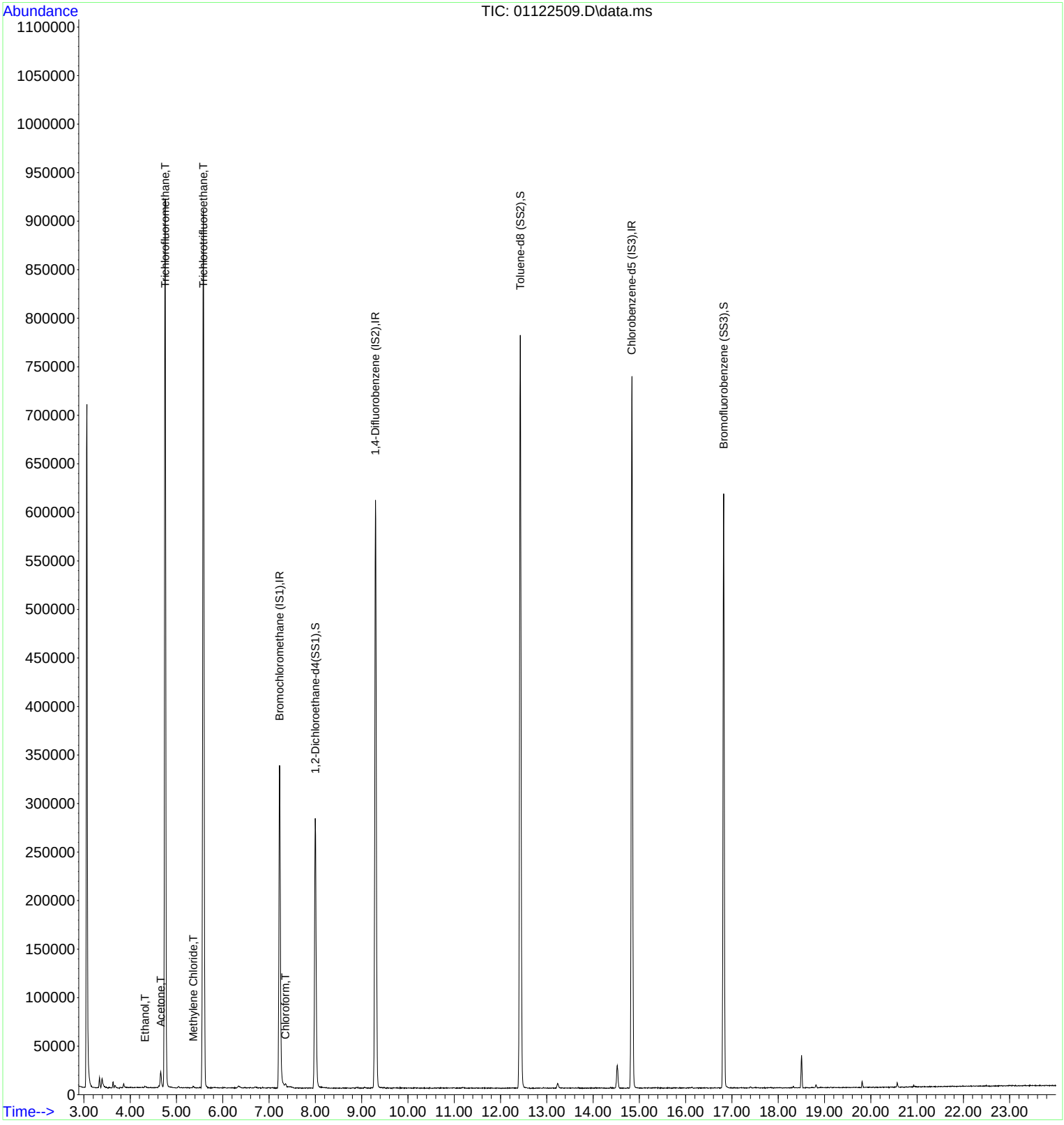
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	604	N.D.		
59) 2-Hexanone	12.96	43	106	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	117	N.D.		
67) m- & p-Xylenes	15.63	91	119	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.92	119	110	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.94	128	146	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	735	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122509.D
Acq On : 12 Jan 2025 9:23
Operator : SC
Sample : P2405139-055Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 09:49:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122509.D
Acq On : 12 Jan 2025 9:23
Operator : SC
Sample : P2405139-055Dil (40mL)
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Quant Time: Jan 12 09:49:35 2025
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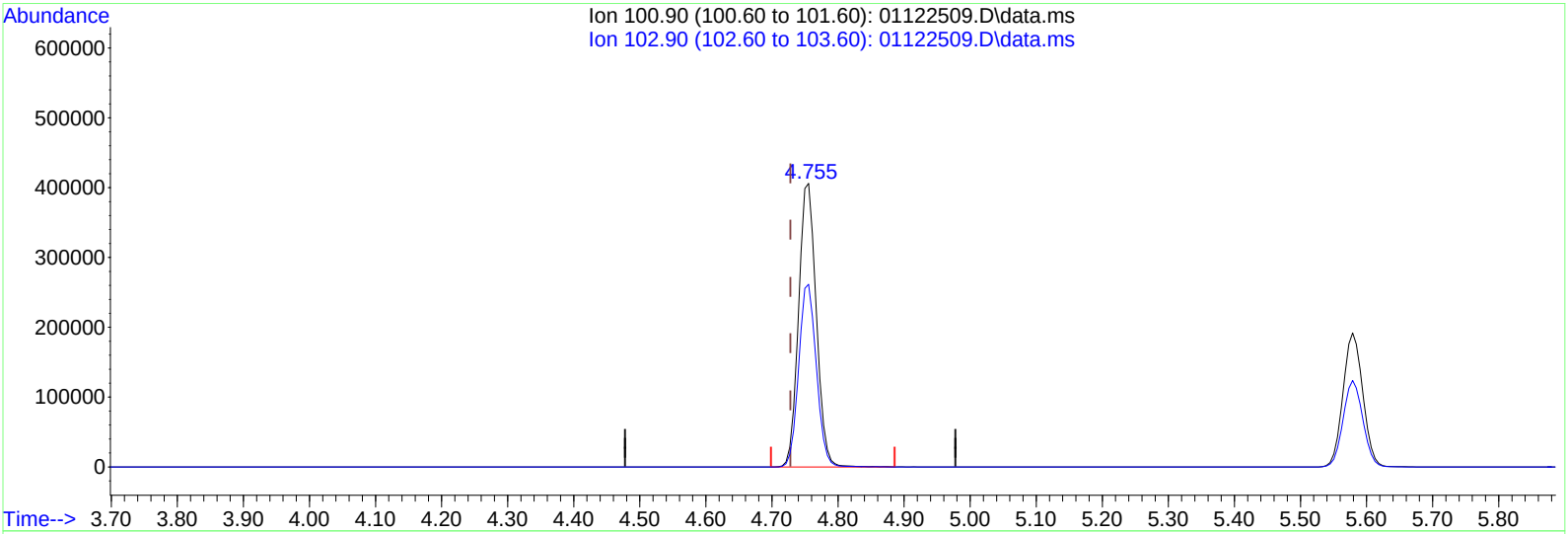
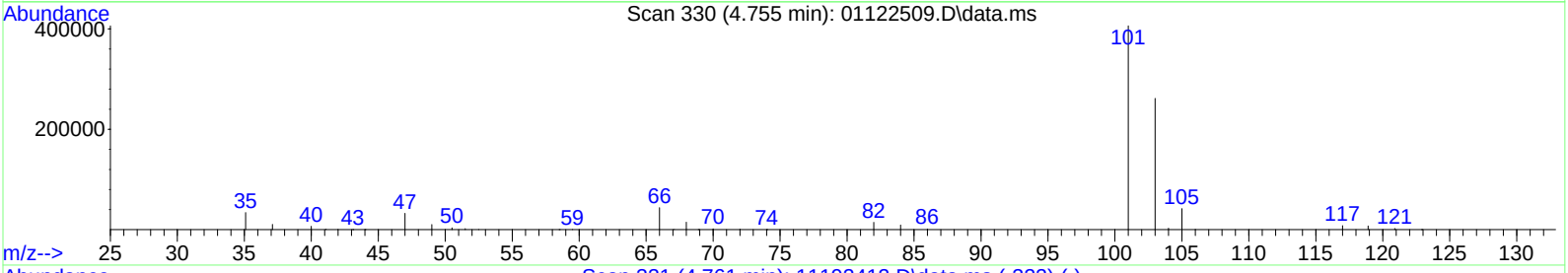
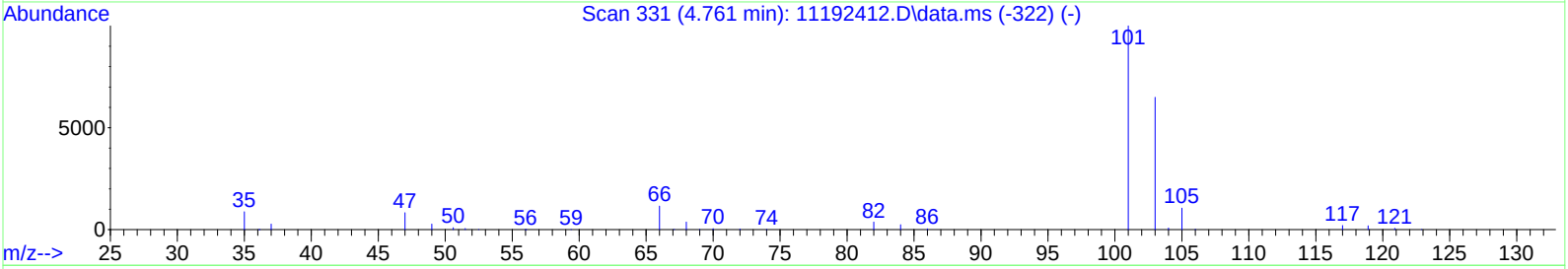
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122509.D\data.ms

(14) Trichlorofluoromethane (T)

4.755min (+0.028) 28.51ng

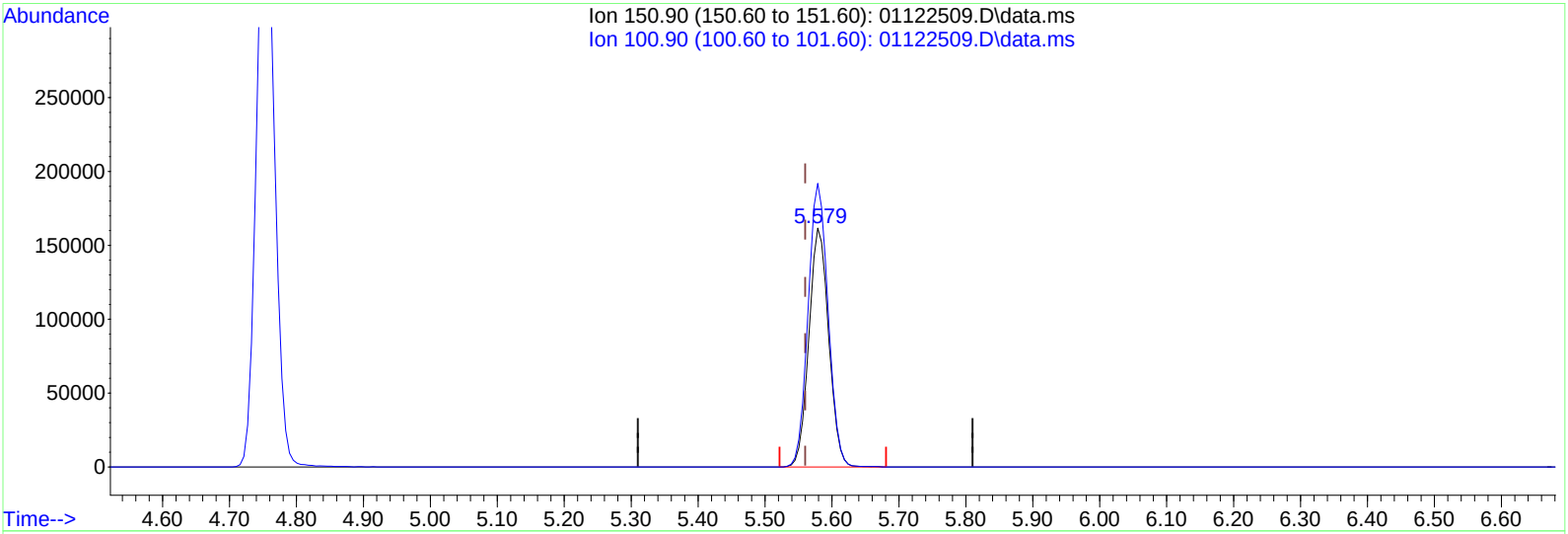
response 754825

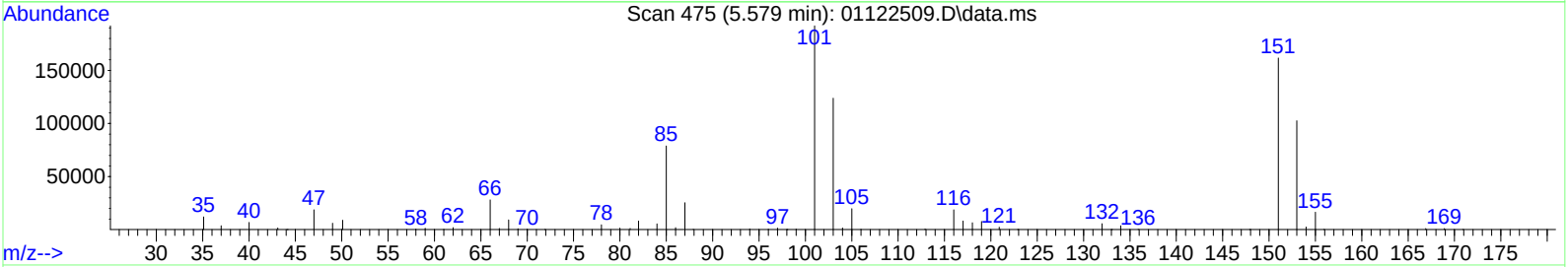
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.37
0.00	0.00	0.00
0.00	0.00	0.00

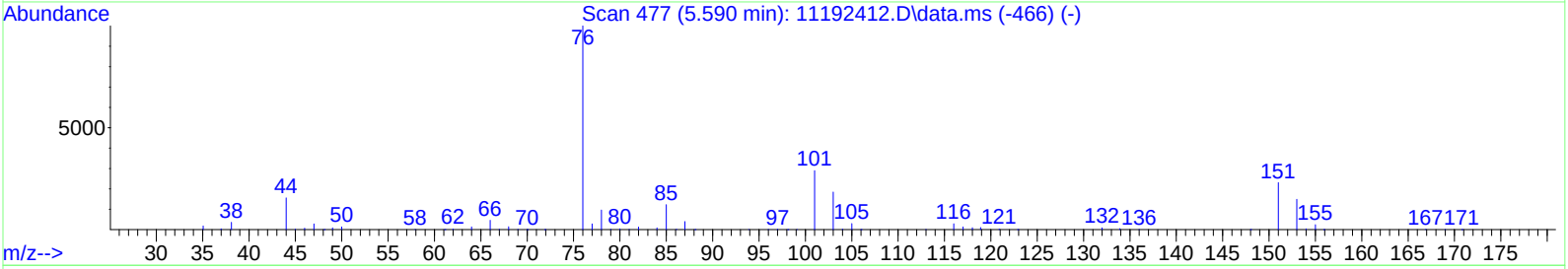
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122509.D
Acq On : 12 Jan 2025 9:23
Operator : SC
Sample : P2405139-055Dil (40mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 09:49:35 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122509.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.018) 27.85ng

response 332618

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	119.80
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112519.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.302	69	74	80	rBV2	93172	170549	0.64%	0.271%
2	3.347	80	82	84	rVV	29787	36387	0.14%	0.058%
3	3.376	84	87	94	rVB	37778	54889	0.20%	0.087%
4	3.512	107	111	120	rVB	10587	14949	0.06%	0.024%
5	3.614	123	129	143	rBV2	96176	172116	0.64%	0.273%
6	3.773	154	157	164	rVB	13908	17555	0.07%	0.028%
7	3.847	164	170	175	rBV	71877	91067	0.34%	0.145%
8	4.233	231	238	242	rBV	9620	14828	0.06%	0.024%
9	4.290	242	248	258	rVV	15525	32302	0.12%	0.051%
10	4.636	298	309	321	rBV3	169836	432309	1.61%	0.686%
11	4.761	321	331	344	rBV	10428301	22882458	85.32%	36.323%
12	5.045	374	381	391	rVB	24019	43651	0.16%	0.069%
13	5.352	428	435	440	rBV3	10216	19789	0.07%	0.031%
14	5.590	460	477	501	rBV	11553290	26820197	100.00%	42.573%
15	5.772	501	509	517	rVB	23825	50067	0.19%	0.079%
16	6.306	594	603	610	rBV	70583	151870	0.57%	0.241%
17	6.413	610	622	623	rBV5	8642	20312	0.08%	0.032%
18	6.482	631	634	639	rVB3	6941	10909	0.04%	0.017%
19	6.555	639	647	648	rBV3	9499	21085	0.08%	0.033%
20	6.669	660	667	677	rVB	26037	53337	0.20%	0.085%
21	6.851	688	699	705	rVB3	7327	16561	0.06%	0.026%
22	7.135	743	749	756	rVB5	6441	12580	0.05%	0.020%
23	7.225	756	765	774	rBV	339839	749252	2.79%	1.189%
24	7.356	782	788	795	rVV	46568	91906	0.34%	0.146%
25	7.419	795	799	805	rVB3	5162	11018	0.04%	0.017%
26	7.998	890	901	913	rBV	286116	654620	2.44%	1.039%
27	8.140	919	926	936	rVB2	11964	28229	0.11%	0.045%
28	8.901	1053	1060	1069	rVB2	6207	15301	0.06%	0.024%
29	9.031	1076	1083	1098	rBV2	17389	46103	0.17%	0.073%
30	9.298	1121	1130	1141	rBV	597888	1368624	5.10%	2.172%
31	9.389	1141	1146	1157	rVB	14658	33098	0.12%	0.053%
32	9.690	1192	1199	1211	rBV4	7806	22023	0.08%	0.035%
33	10.144	1272	1279	1286	rBV3	12626	30218	0.11%	0.048%
34	10.803	1385	1395	1403	rBV3	5409	16399	0.06%	0.026%
35	10.990	1421	1428	1439	rVB3	8973	23095	0.09%	0.037%
36	11.183	1454	1462	1473	rVB2	15610	39869	0.15%	0.063%
37	12.427	1670	1681	1697	rBV	775113	1766963	6.59%	2.805%
38	12.557	1697	1704	1711	rVB5	8025	18659	0.07%	0.030%
39	12.915	1760	1767	1776	rBV3	7916	17385	0.06%	0.028%
40	13.222	1814	1821	1830	rBV	47038	99143	0.37%	0.157%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

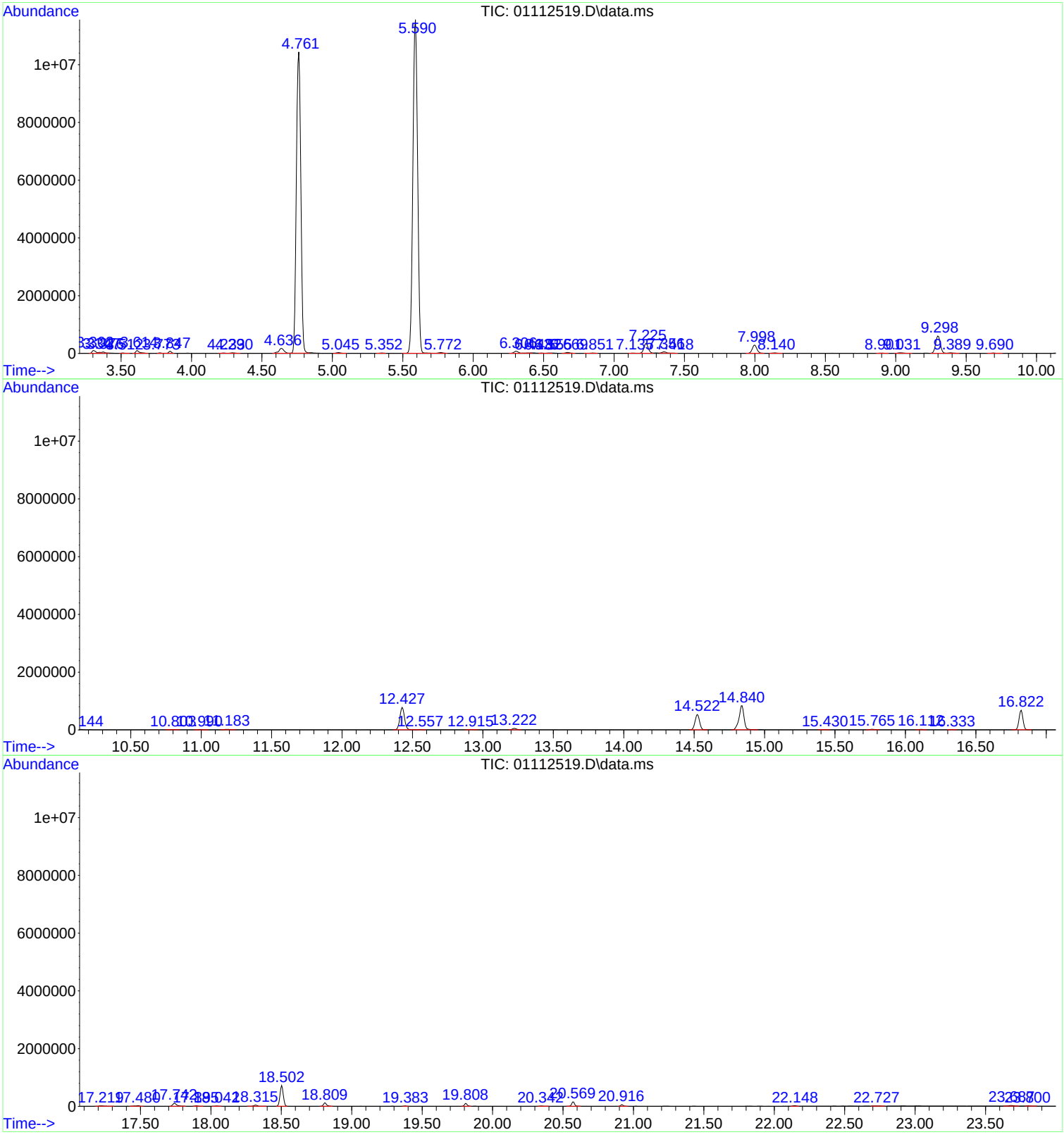
41	14.522	2040	2050	2063	rBV	528518	1166785	4.35%	1.852%
42	14.840	2093	2106	2126	rBV2	832641	2043667	7.62%	3.244%
43	15.430	2201	2210	2216	rBV7	5371	13468	0.05%	0.021%
44	15.766	2261	2269	2278	rBV	18282	41127	0.15%	0.065%
45	16.112	2323	2330	2337	rBV3	14713	28922	0.11%	0.046%
46	16.333	2362	2369	2375	rBV4	7307	14437	0.05%	0.023%
47	16.822	2443	2455	2468	rBV	677798	1288337	4.80%	2.045%
48	17.219	2518	2525	2541	rBV3	11667	35659	0.13%	0.057%
49	17.480	2561	2571	2578	rVB3	16580	42139	0.16%	0.067%
50	17.742	2611	2617	2631	rBV	104836	202097	0.75%	0.321%
51	17.895	2640	2644	2653	rVB2	11613	19756	0.07%	0.031%
52	18.042	2664	2670	2676	rVB2	7909	12570	0.05%	0.020%
53	18.315	2708	2718	2732	rBV2	40498	70124	0.26%	0.111%
54	18.502	2744	2751	2758	rBV	719920	1149403	4.29%	1.825%
55	18.809	2799	2805	2815	rBV	115441	170836	0.64%	0.271%
56	19.383	2902	2906	2910	rVB2	7158	10116	0.04%	0.016%
57	19.808	2976	2981	2988	rBV	97984	125804	0.47%	0.200%
58	20.342	3071	3075	3085	rVB3	7444	11441	0.04%	0.018%
59	20.569	3107	3115	3125	rBV2	149664	216093	0.81%	0.343%
60	20.916	3172	3176	3184	rBV	49183	65893	0.25%	0.105%
61	22.148	3387	3393	3398	rVB	15254	22417	0.08%	0.036%
62	22.727	3488	3495	3505	rVB10	4394	11798	0.04%	0.019%
63	23.687	3654	3664	3673	rVB	19570	46866	0.17%	0.074%
64	23.800	3681	3684	3695	rVB7	7915	16539	0.06%	0.026%

Sum of corrected areas: 62997966

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:42
Operator : LS
Sample : P2405139-055 (400mL)
Misc : S37-12312401
ALS Vial : 5 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\11\\
Data File : 01112519.D
Acq On : 11 Jan 2025 16:422
Operator : LSS
Sample : P2405139-055 (400mL))
Misc : S37-123124011
ALS Vial : 5 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 14:12:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	149550	12.500 ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	642318	12.500 ng		0.00
56) Chlorobenzene-d5 (IS3)	14.83	54	118026	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	247870	12.165 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.36%			
57) Toluene-d8 (SS2)	12.43	98	668843	12.774 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.16%			
73) Bromofluorobenzene (SS3)	16.82	174	246467	13.641 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.12%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	17711	0.606 ng		99
4) Chloromethane	3.52	50	3374	0.155 ng		84
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	390	N.D.		
6) Vinyl Chloride	3.71	62	899	0.054 ng		80
7) 1,3-Butadiene	3.78	54	226	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	4.16	64	433	N.D.		
10) Ethanol	4.30	45	14712	1.330 ng		100
11) Acetonitrile	4.51	41	68	N.D.		
12) Acrolein	4.55	56	636	0.067 ng		90
13) Acetone	4.64	58	19620	1.948 ng		90
14) Trichlorofluoromethane	4.75	101	274804	10.023 ng		100
15) 2-Propanol (Isopropanol)	4.86	45	3975	0.110 ng	#	44
16) Acrylonitrile	5.04	53	652	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.36	84	7754	0.547 ng		94
20) 3-Chloro-1-propene (Al...	5.40	41	649	N.D.		
21) Trichlorotrifluoroethane	5.58	151	130276	10.532 ng		96
22) Carbon Disulfide	5.60	76	4504	0.099 ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.66	72	178356	22.046 ng		98
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.29	61	785	0.157 ng		89
31) n-Hexane	7.30	57	10105	0.450 ng		95
32) Chloroform	7.36	83	2503	0.103 ng		96
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.11	62	366	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.83	56	1534	No Calib	#	
41) Benzene	8.89	78	3897	0.076 ng		92
42) Carbon Tetrachloride	9.07	117	2854	0.138 ng		90
43) Cyclohexane	9.22	84	2652	0.147 ng		98
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.15	130	270	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

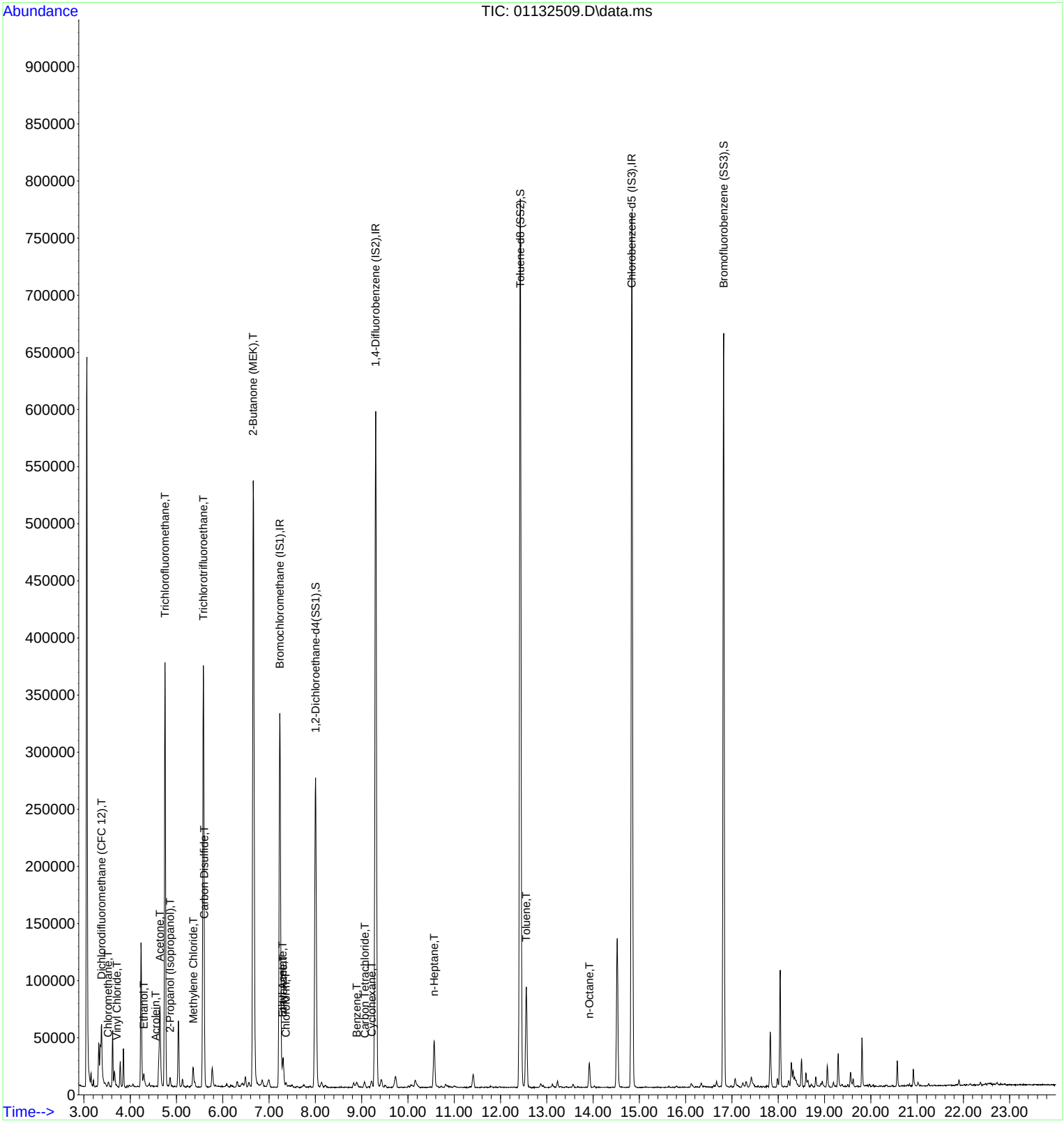
Quant Time: Jan 13 14:12:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.22	57	849	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.56	71	10924	0.950 ng	98
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	83750	1.662 ng	98
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	13.92	57	4469	0.428 ng	97
64) Tetrachloroethene	14.03	166	482	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.42	91	385	N.D.	
67) m- & p-Xylenes	15.64	91	683	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.11	104	126	N.D.	
70) o-Xylene	16.24	91	191	N.D.	
71) n-Nonane	16.61	43	1020	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	181	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	385	N.D.	
77) 3-Ethyltoluene	17.03	105	181	No Calib	#
78) 4-Ethyltoluene	17.83	105	1442	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	181	No Calib	#
82) 1,2,4-Trimethylbenzene	18.43	105	213	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	113	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	1542	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	181	No Calib	#
90) 1,2-Dichlorobenzene	19.03	146	193	N.D.	
91) d-Limonene	19.08	68	221	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.98	58	473	No Calib	#
94) 1,2,4-Trichlorobenzene	20.84	180	671	N.D.	
95) Naphthalene	20.94	128	1877	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	544	N.D.	
100) n-Butylbenzene	19.39	91	658	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 14:12:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 14:12:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
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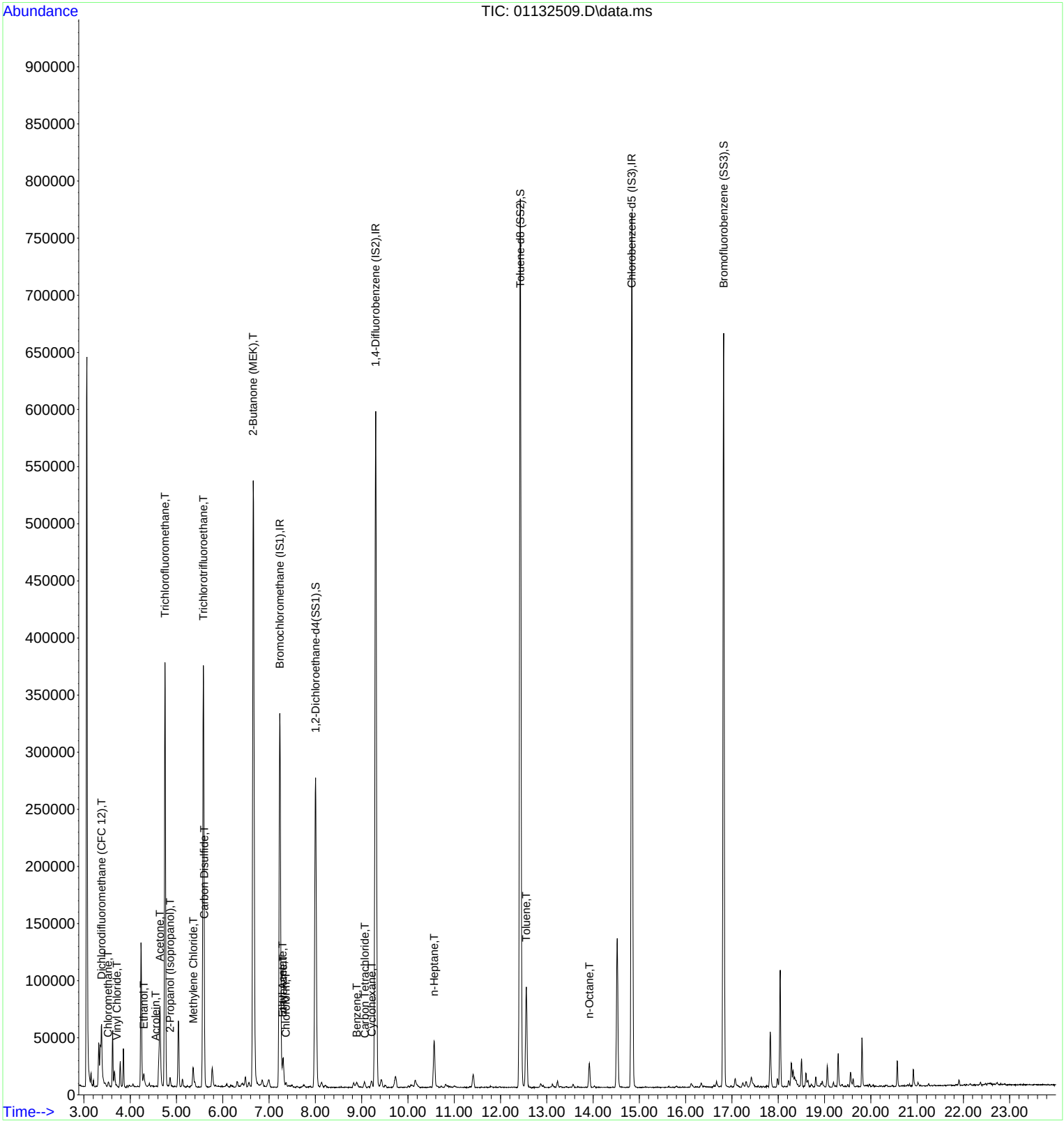
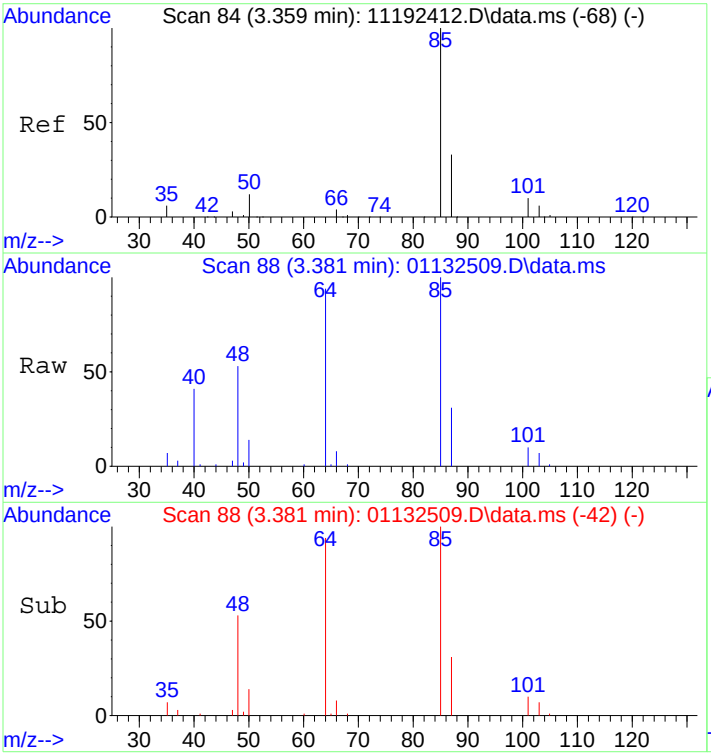
1) Bromochloromethane (IS1)	7.23	130	149550	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	642318	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.83	54	118026	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	247870	12.165	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.36%				
57) Toluene-d8 (SS2)	12.43	98	668843	12.774	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.16%				
73) Bromofluorobenzene (SS3)	16.82	174	246467	13.641	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.12%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	17711	0.606	ng		99
4) Chloromethane	3.52	50	3374	0.155	ng		84
6) Vinyl Chloride	3.71	62	899	0.054	ng		80
10) Ethanol	4.30	45	14712	1.330	ng		100
12) Acrolein	4.55	56	636	0.067	ng		90
13) Acetone	4.64	58	19620	1.948	ng		90
14) Trichlorofluoromethane	4.75	101	274804	10.023	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	3975	0.110	ng	#	44
19) Methylene Chloride	5.36	84	7754	0.547	ng		94
21) Trichlorotrifluoroethane	5.58	151	130276	10.532	ng		96
22) Carbon Disulfide	5.60	76	4504	0.099	ng	#	1
27) 2-Butanone (MEK)	6.66	72	178356	22.046	ng		98
30) Ethyl Acetate	7.29	61	785	0.157	ng		89
31) n-Hexane	7.30	57	10105	0.450	ng		95
32) Chloroform	7.36	83	2503	0.103	ng		96
41) Benzene	8.89	78	3897	0.076	ng		92
42) Carbon Tetrachloride	9.07	117	2854	0.138	ng		90
43) Cyclohexane	9.22	84	2652	0.147	ng		98
51) n-Heptane	10.56	71	10924	0.950	ng		98
58) Toluene	12.56	91	83750	1.662	ng		98
63) n-Octane	13.92	57	4469	0.428	ng		97

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

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 14:12:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

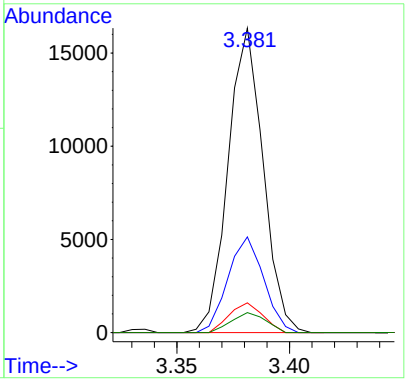


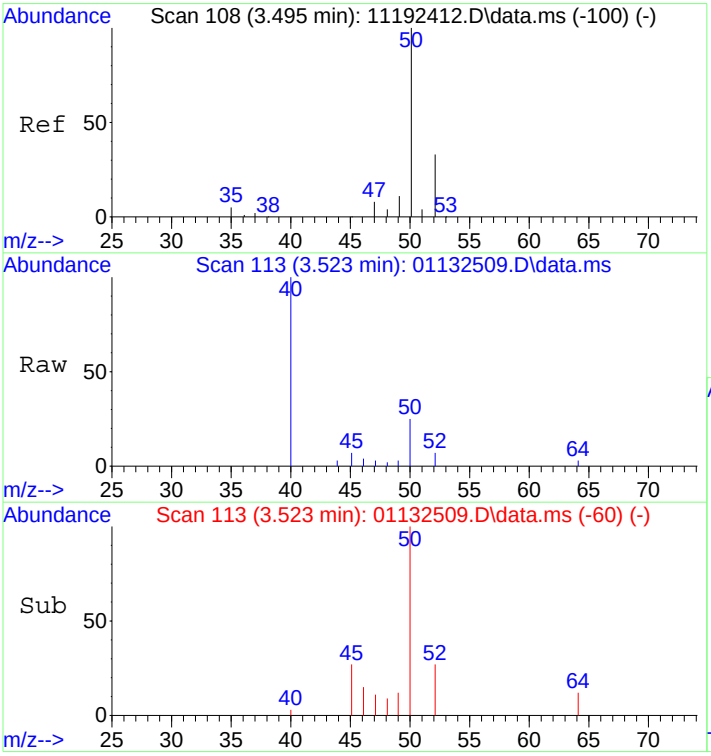


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.61 ng
RT: 3.38 min Scan# 88
Delta R.T. 0.009 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 85 Resp: 17711

Ion	Ratio	Lower	Upper
85	100		
87	32.1	12.6	52.6
101	9.4	0.0	29.6
103	6.4	0.0	26.2

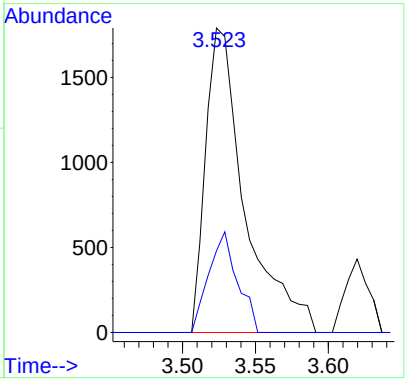


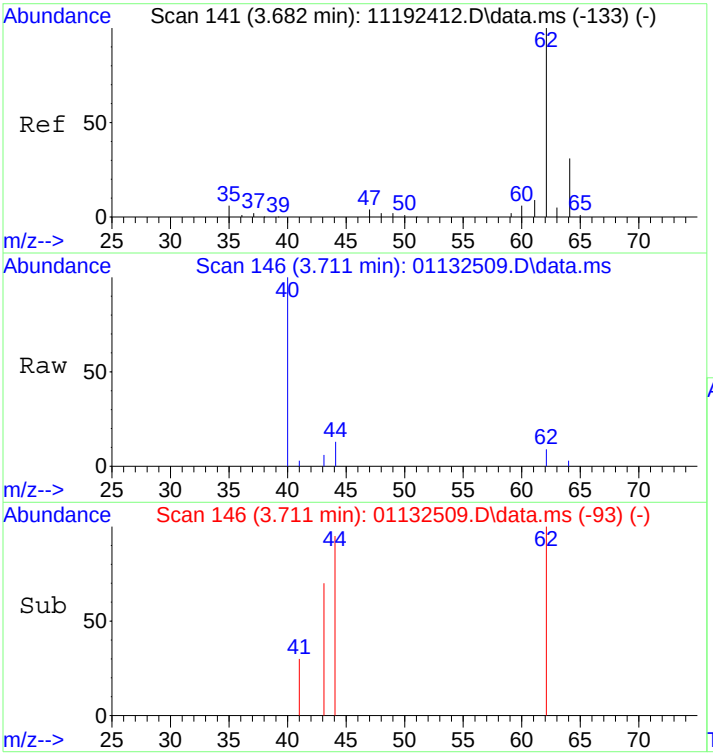


#4
Chloromethane
Concen: 0.16 ng
RT: 3.52 min Scan# 113
Delta R.T. 0.050 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 50 Resp: 3374

Ion	Ratio	Lower	Upper
50	100		
52	24.1	13.0	53.0

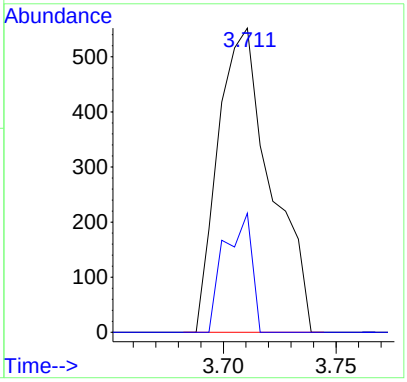


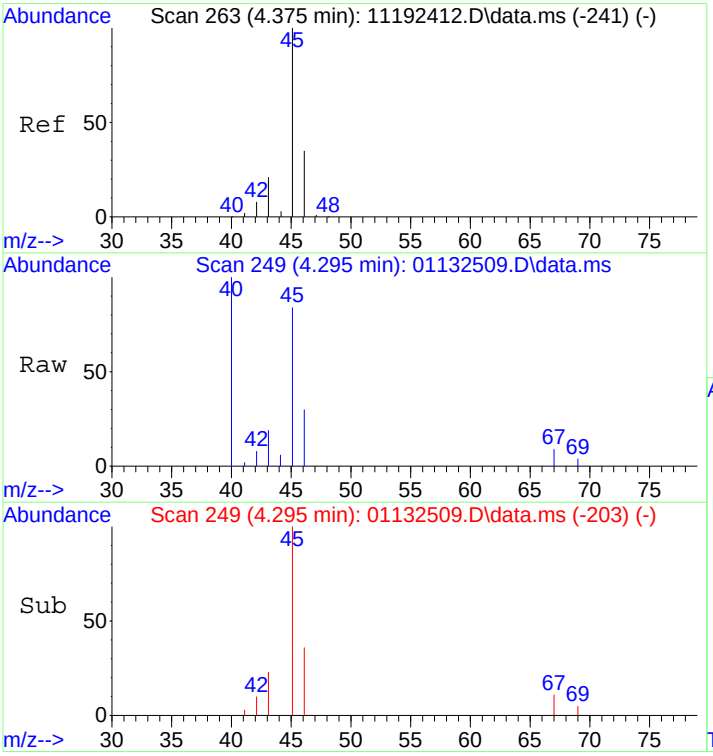


#6
Vinyl Chloride
Concen: 0.05 ng
RT: 3.71 min Scan# 146
Delta R.T. 0.052 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 62 Resp: 899

Ion	Ratio	Lower	Upper
62	100		
64	20.4	11.2	51.2

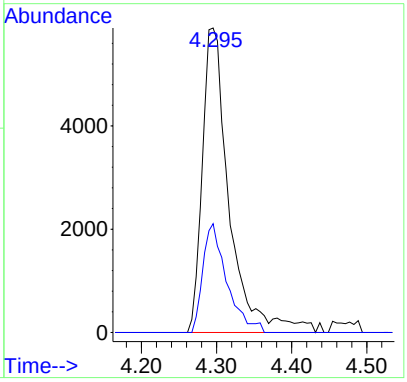


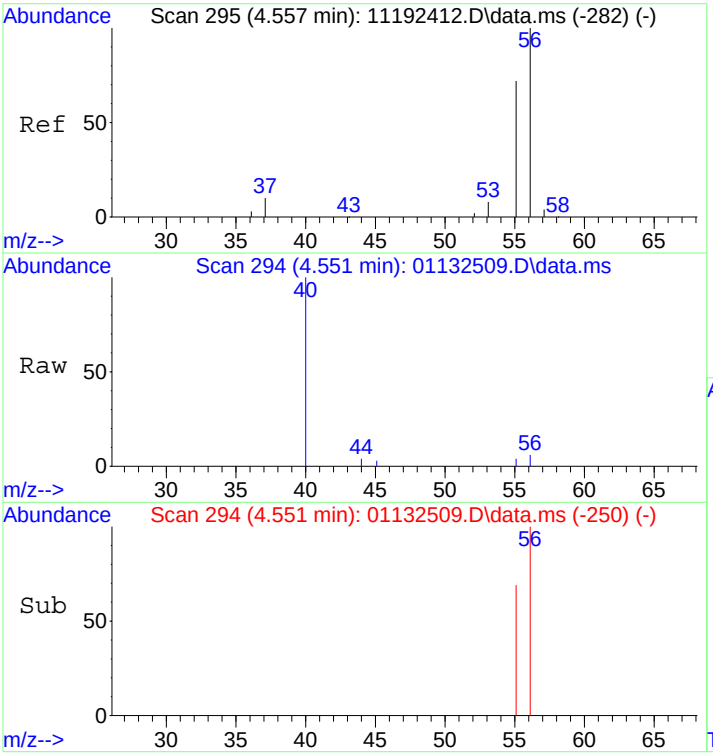


#10
Ethanol
Concen: 1.33 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 45 Resp: 14712

Ion	Ratio	Lower	Upper
45	100		
46	31.7	11.8	51.8

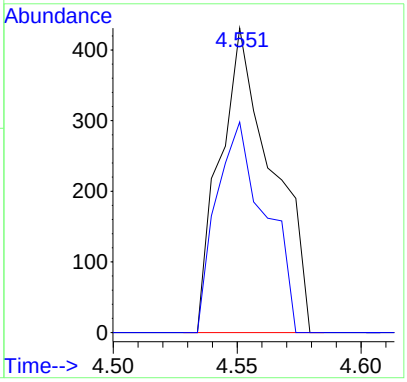


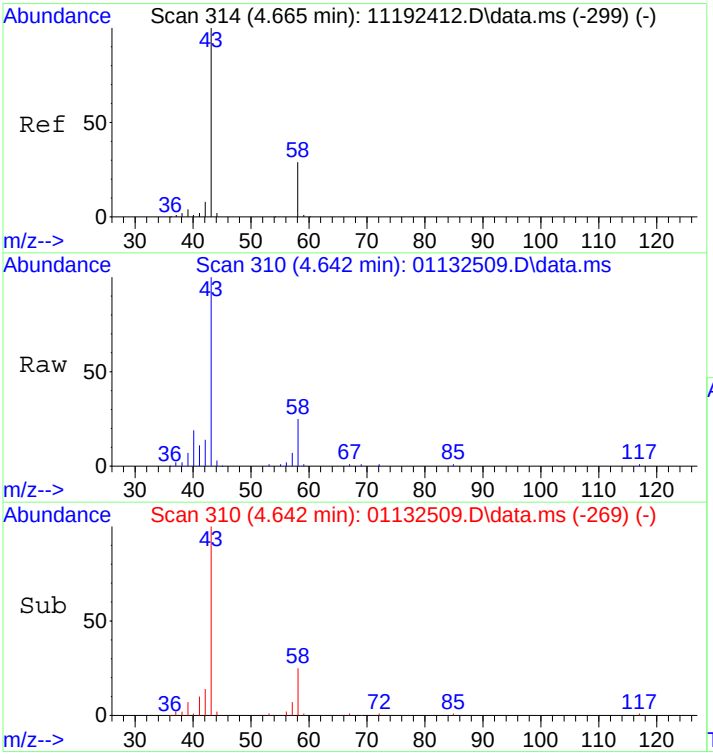


#12
Acrolein
Concen: 0.07 ng
RT: 4.55 min Scan# 294
Delta R.T. -0.002 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 56 Resp: 636

Ion	Ratio	Lower	Upper
56	100		
55	64.8	53.1	93.1

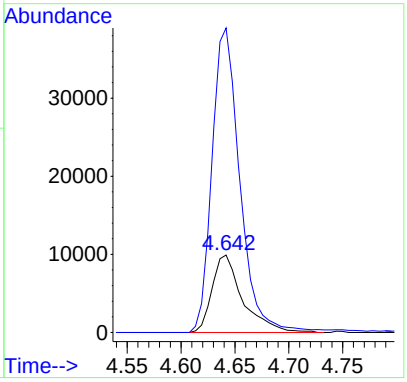


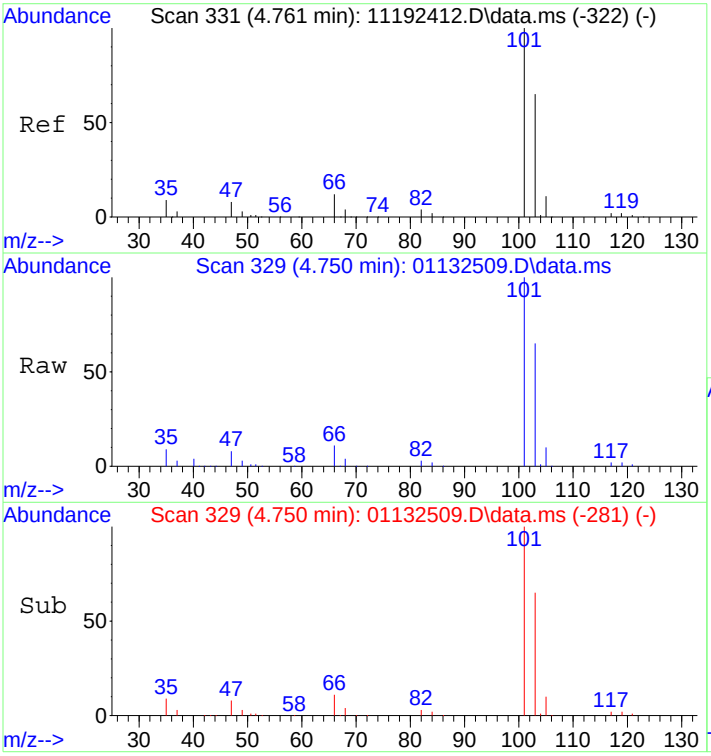


#13
Acetone
Concen: 1.95 ng
RT: 4.64 min Scan# 310
Delta R.T. -0.018 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 58 Resp: 19620

Ion	Ratio	Lower	Upper
58	100		
43	363.0	312.5	372.5

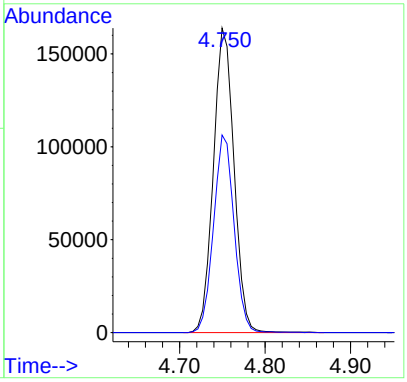


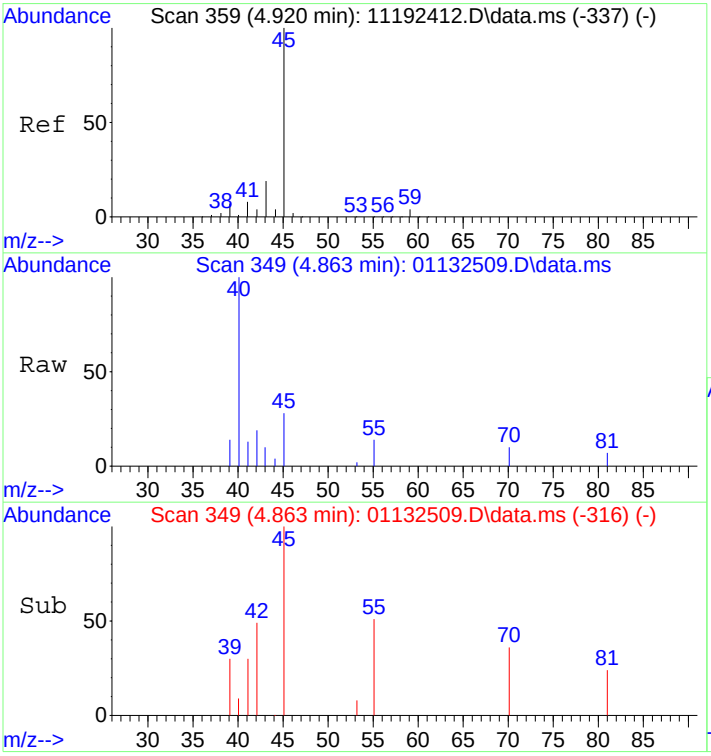


#14
Trichlorofluoromethane
Concen: 10.02 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion:101 Resp: 274804

Ion	Ratio	Lower	Upper
101	100		
103	64.6	44.8	84.8

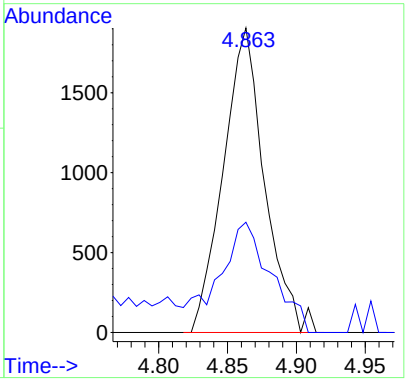


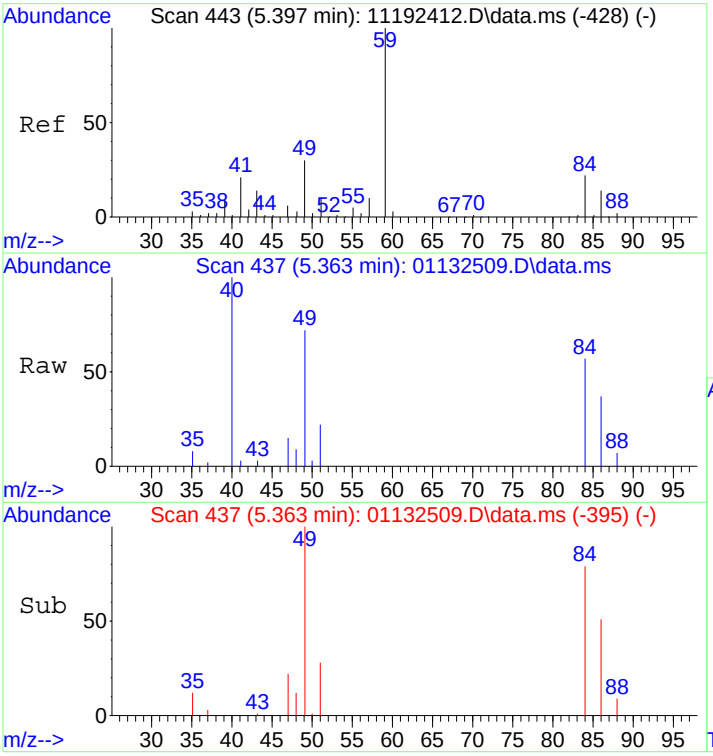


#15
2-Propanol (Isopropanol)
Concen: 0.11 ng
RT: 4.86 min Scan# 349
Delta R.T. -0.061 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 45 Resp: 3975

Ion	Ratio	Lower	Upper
45	100		
43	46.0	0.2	40.2#

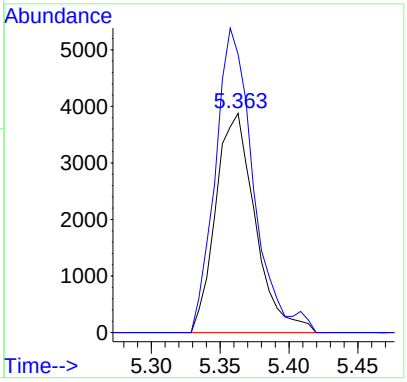


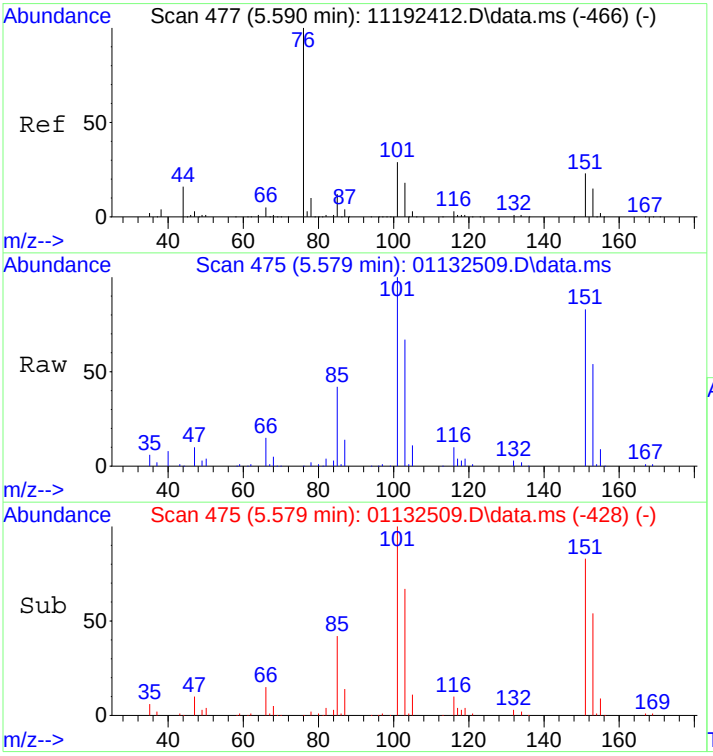


#19
Methylene Chloride
Concen: 0.55 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 84 Resp: 7754

Ion	Ratio	Lower	Upper
84	100		
49	133.7	116.0	166.0

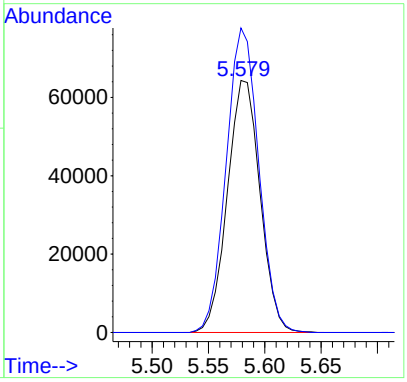


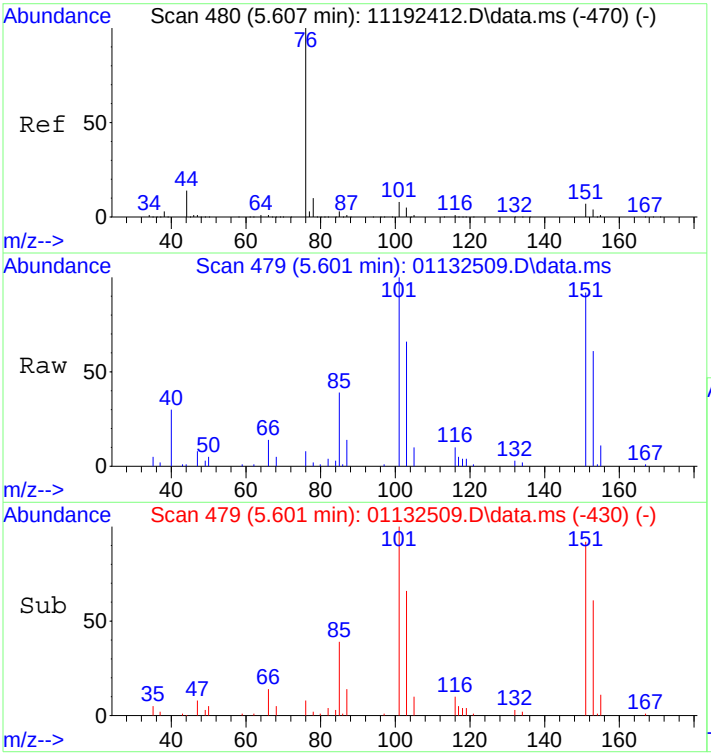


#21
Trichlorotrifluoroethane
Concen: 10.53 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion:151 Resp: 130276

Ion	Ratio	Lower	Upper
151	100		
101	120.3	105.0	145.0

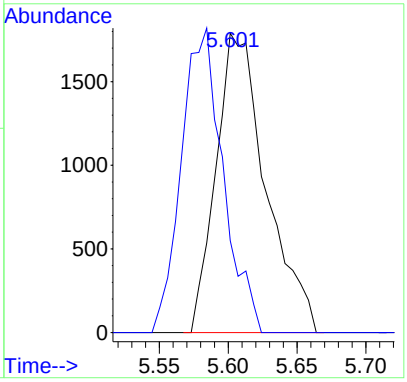


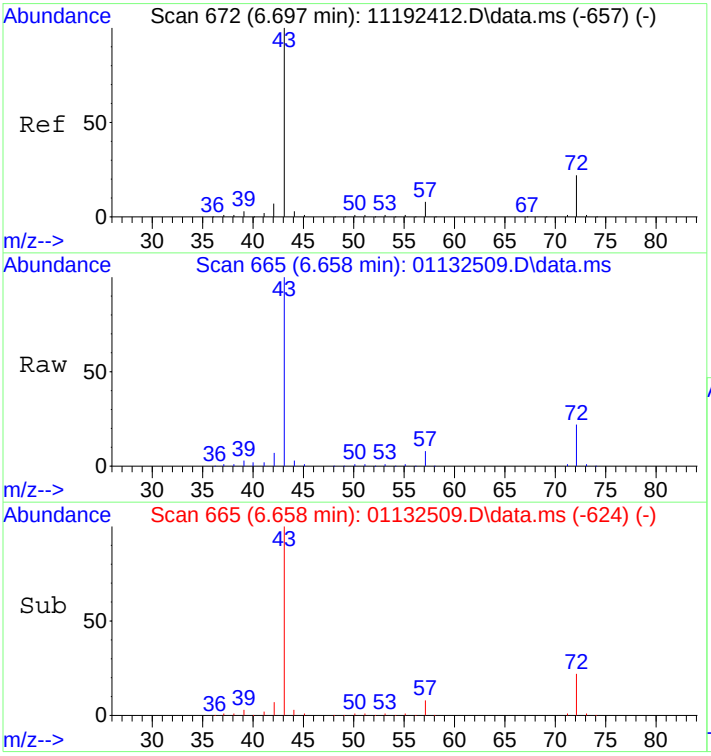


#22
Carbon Disulfide
Concen: 0.10 ng
RT: 5.60 min Scan# 479
Delta R.T. 0.030 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 76 Resp: 4504

Ion	Ratio	Lower	Upper
76	100		
78	84.9	0.0	29.6#

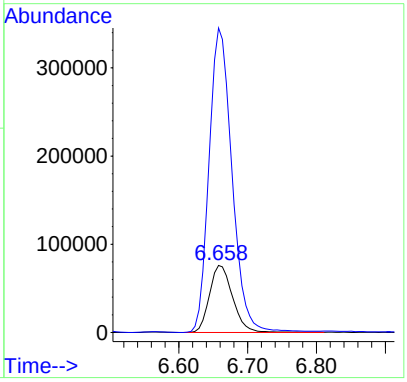


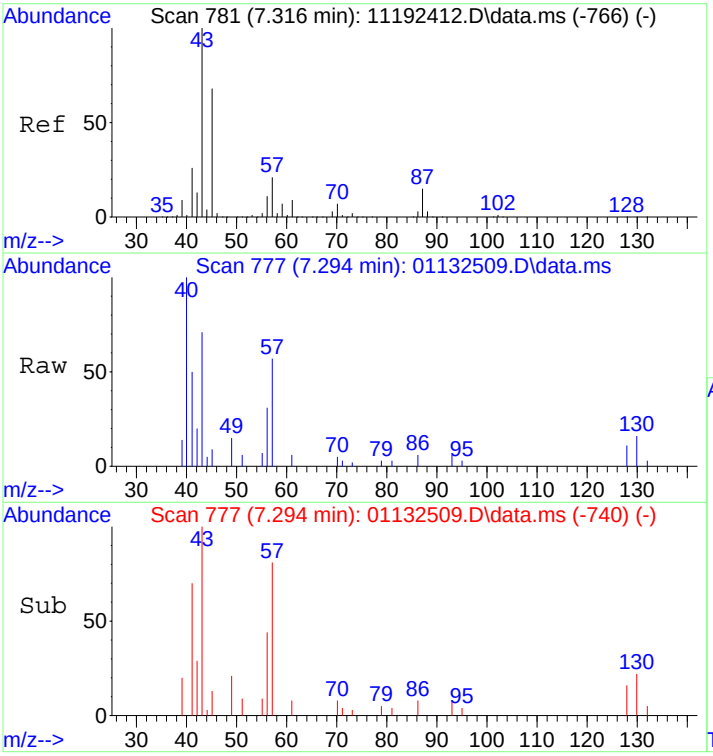


#27
2-Butanone (MEK)
Concen: 22.05 ng
RT: 6.66 min Scan# 665
Delta R.T. -0.016 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 72 Resp: 178356

Ion	Ratio	Lower	Upper
72	100		
43	453.8	439.8	479.8

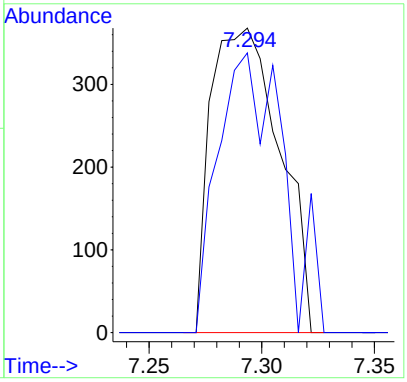


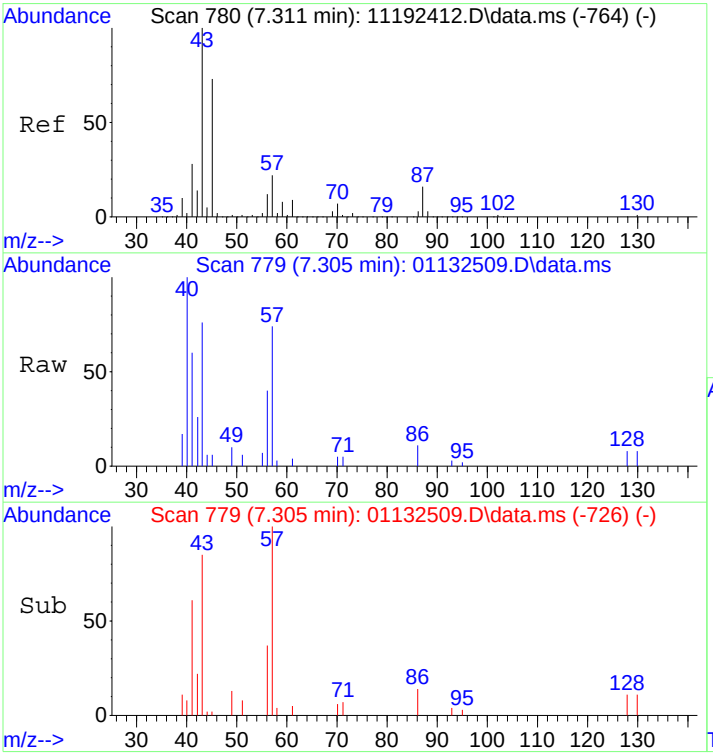


#30
Ethyl Acetate
Concen: 0.16 ng
RT: 7.29 min Scan# 777
Delta R.T. 0.012 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 61 Resp: 785

Ion	Ratio	Lower	Upper
61	100		
70	86.6	57.3	97.3

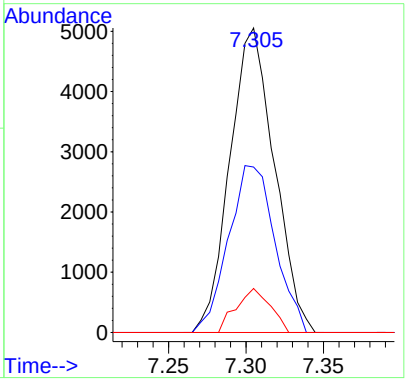


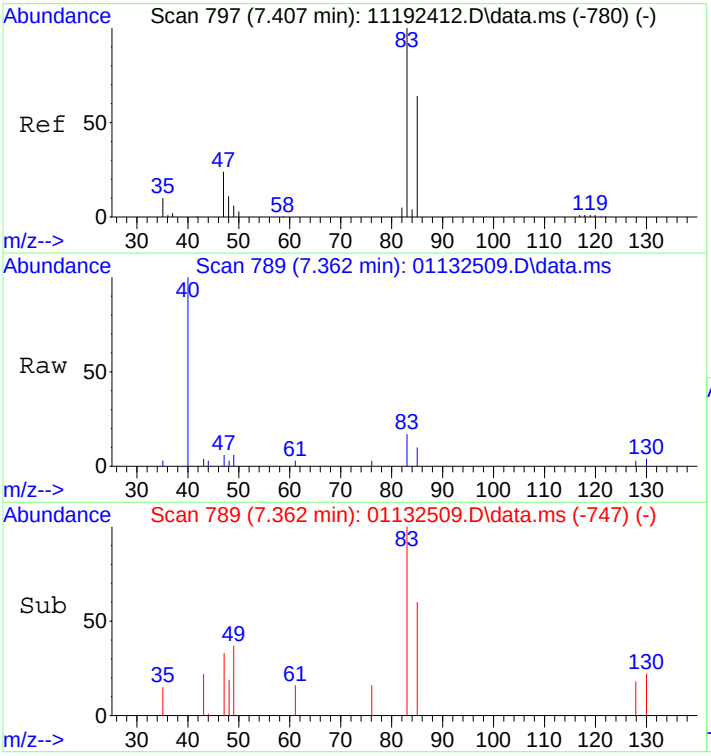


#31
n-Hexane
Concen: 0.45 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 57 Resp: 10105

Ion	Ratio	Lower	Upper
57	100		
56	57.3	43.4	65.0
86	11.1	10.9	16.3

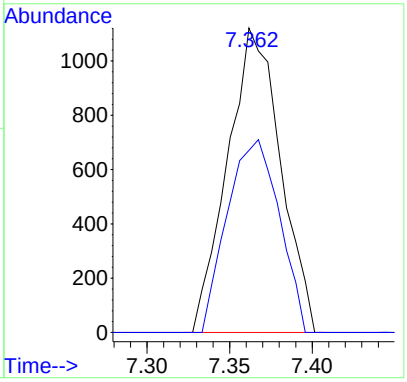


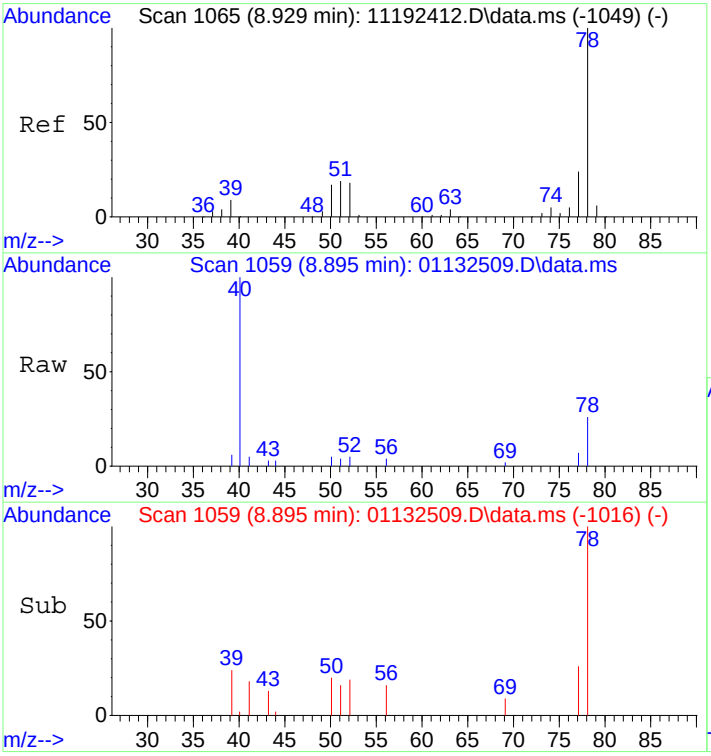


#32
Chloroform
Concen: 0.10 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 83 Resp: 2503

Ion	Ratio	Lower	Upper
83	100		
85	62.2	45.1	85.1

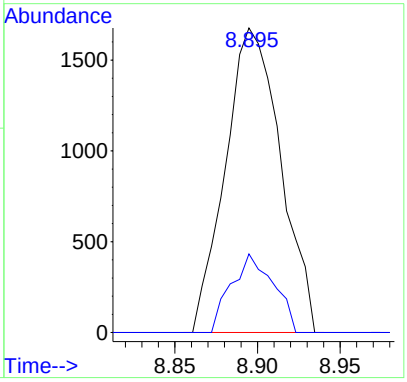


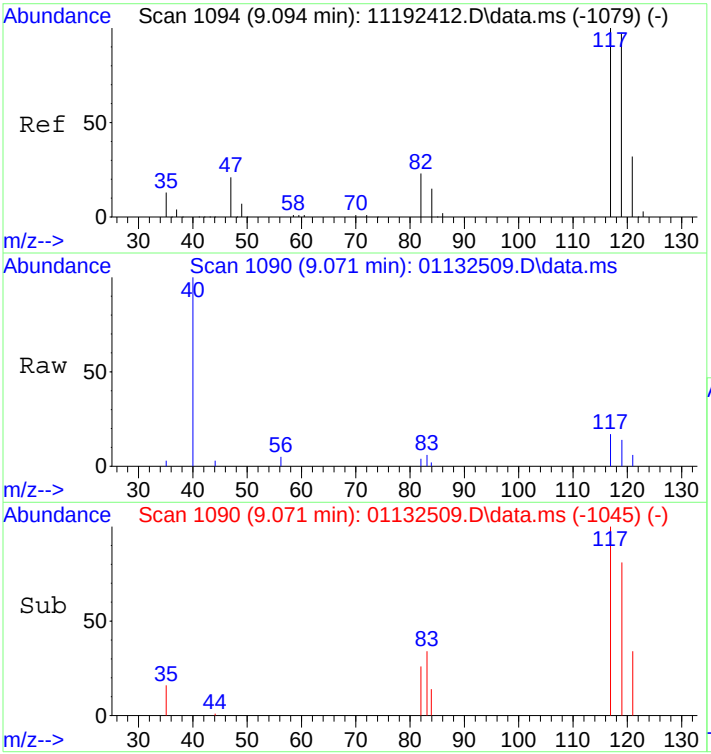


#41
Benzene
Concen: 0.08 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 78 Resp: 3897

Ion	Ratio	Lower	Upper
78	100		
77	19.8	3.7	43.7

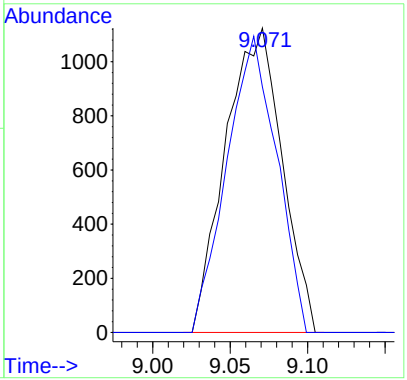


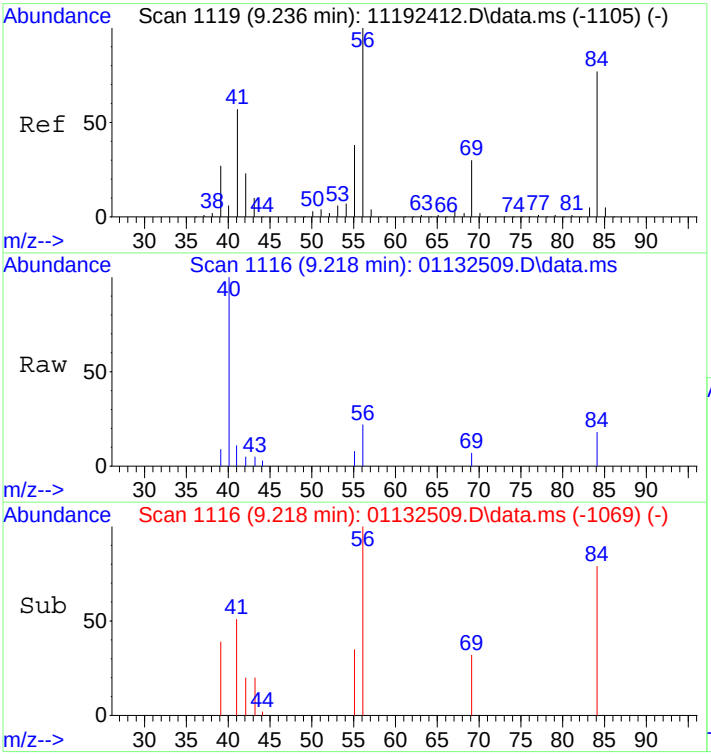


#42
Carbon Tetrachloride
Concen: 0.14 ng
RT: 9.07 min Scan# 1090
Delta R.T. 0.004 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion:117 Resp: 2854

Ion	Ratio	Lower	Upper
117	100		
119	86.1	75.7	115.7

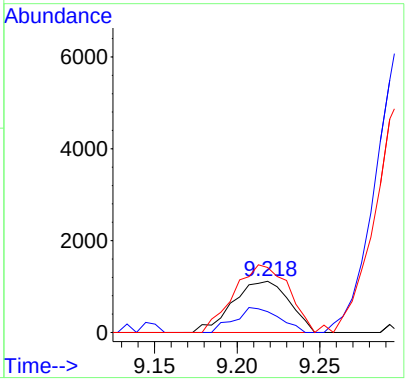


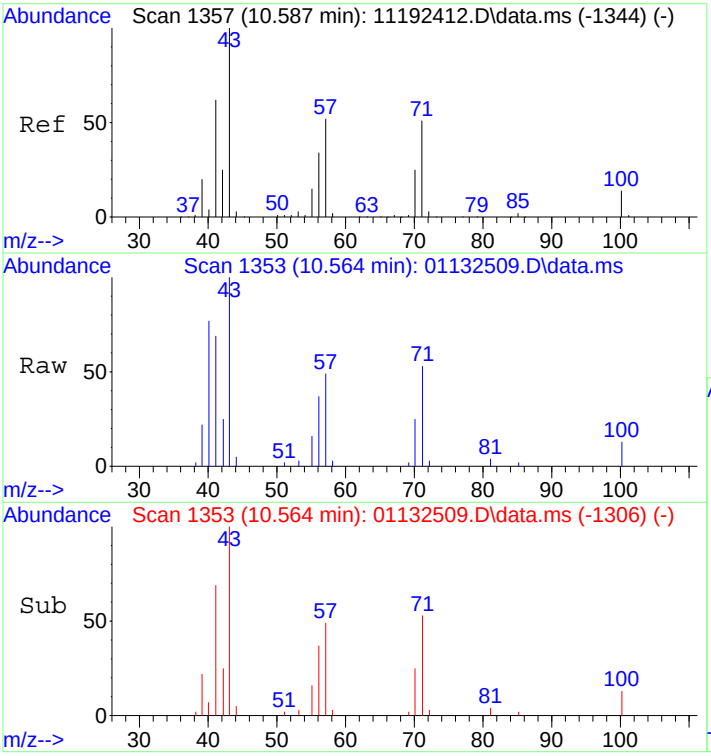


#43
Cyclohexane
Concen: 0.15 ng
RT: 9.22 min Scan# 1116
Delta R.T. 0.016 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 84 Resp: 2652

Ion	Ratio	Lower	Upper
84	100		
69	38.1	18.3	58.3
56	127.8	110.7	150.7

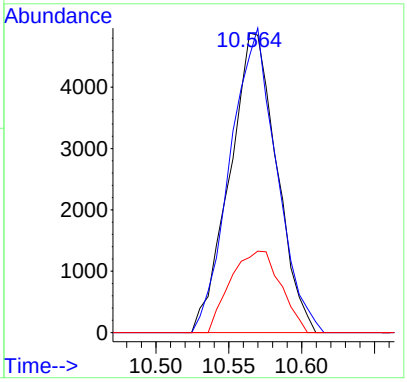


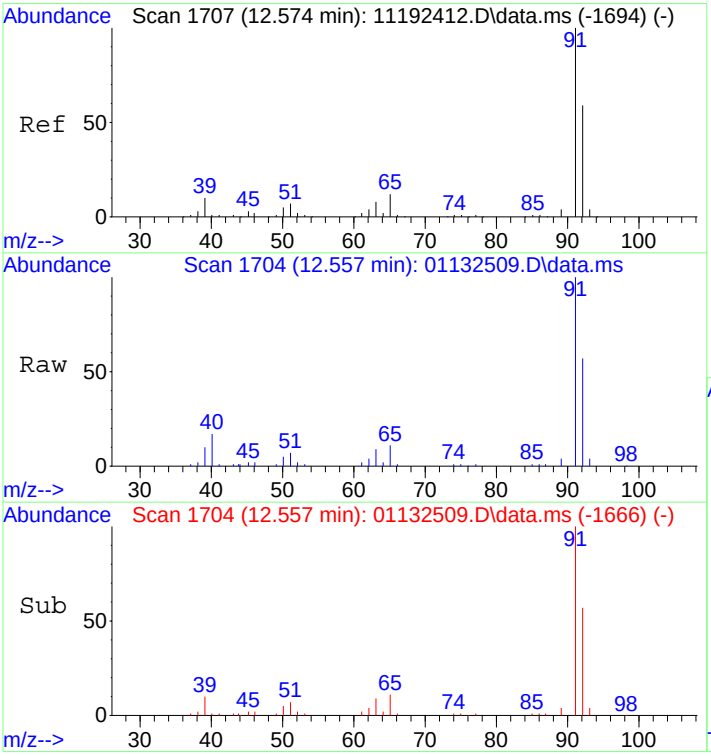


#51
n-Heptane
Concen: 0.95 ng
RT: 10.56 min Scan# 1353
Delta R.T. 0.017 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 71 Resp: 10924

Ion	Ratio	Lower	Upper
71	100		
57	100.6	83.3	123.3
100	29.0	8.7	48.7

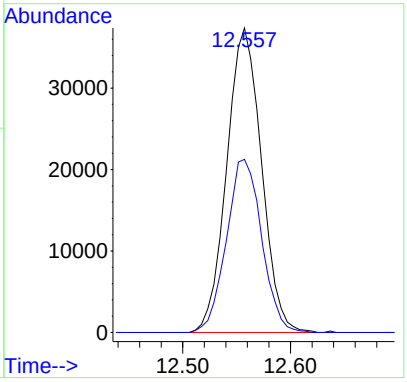


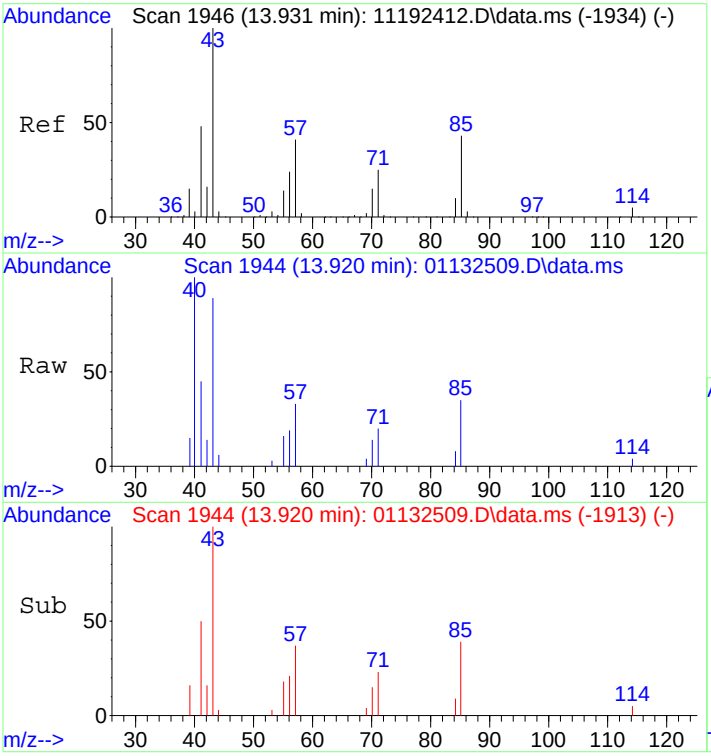


#58
Toluene
Concen: 1.66 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 91 Resp: 83750

Ion	Ratio	Lower	Upper
91	100		
92	57.7	39.2	79.2

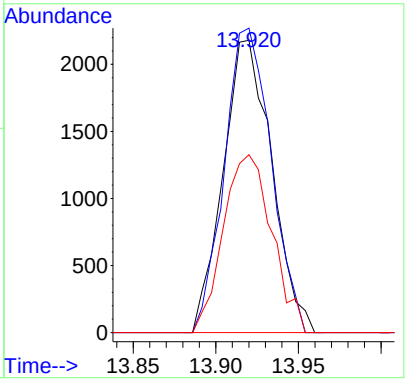




#63
n-Octane
Concen: 0.43 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01132509.D
Acq: 13 Jan 2025 10:21

Tgt Ion: 57 Resp: 4469

Ion	Ratio	Lower	Upper
57	100		
85	100.0	83.6	125.4
71	60.7	49.0	73.4



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 14:15:57 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

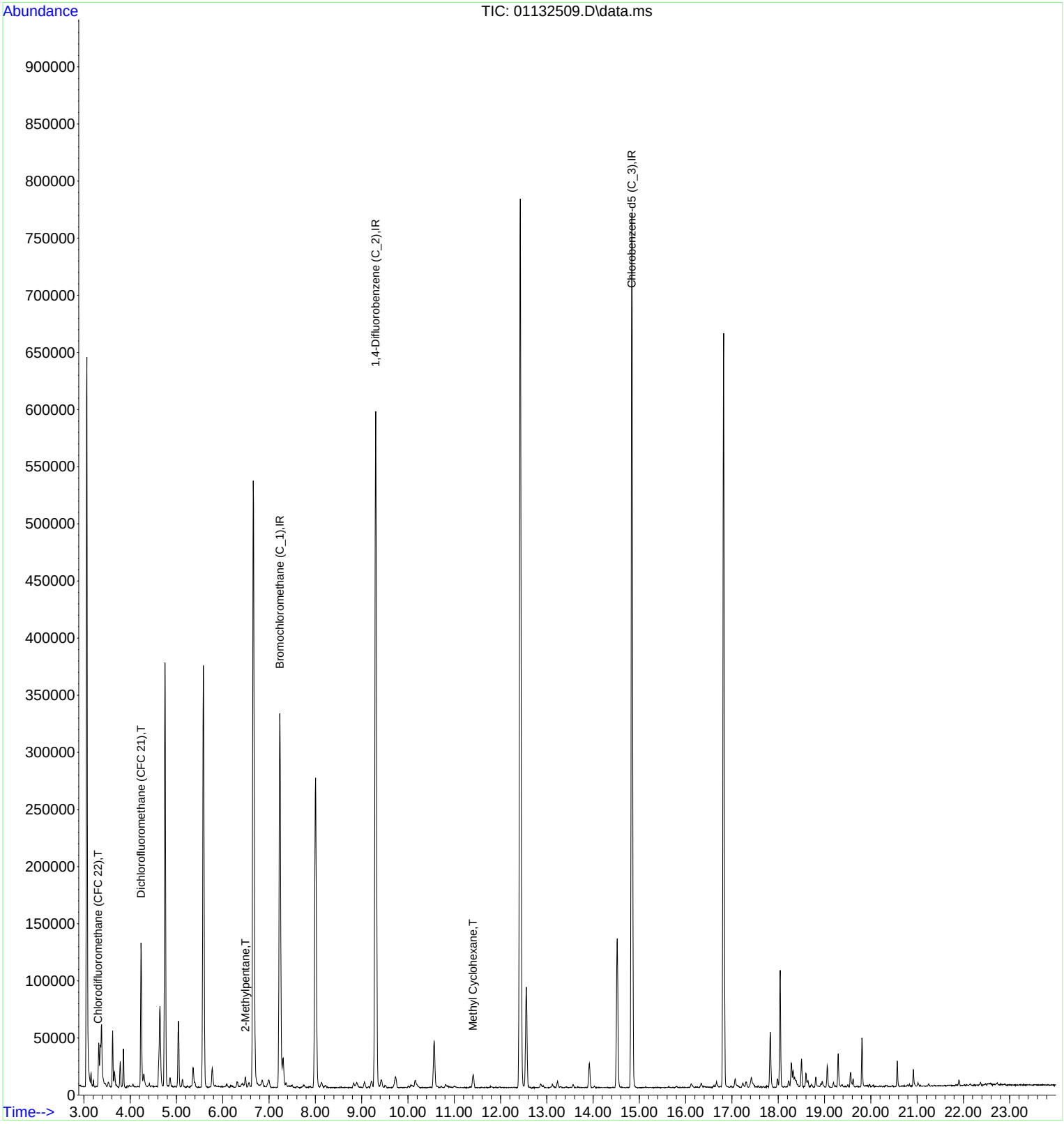
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	151386	12.500 ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	644091	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	118026	12.500 ng	-0.01
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.16	85	356	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d	
4) 1,1-Difluoroethane	3.27	65	281	N.D.	
5) Chlorodifluoromethane ...	3.31	67	680	0.161 ng	93
6) 1-Chloro-1,1-Difluoroe...	3.51	65	524	N.D.	
7) Dichlorofluoromethane ...	4.23	67	107122	3.492 ng	100
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	56	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.34	43	552	N.D.	
12) 2-Methylpentane	6.49	71	1847	0.148 ng	86
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	9.06	84	346	N.D.	
17) 2,3-Dimethylpentane	9.52	56	1018	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	11.40	55	5142	0.244 ng	100
21) 1,3-Dichloropropane	12.55	76	115	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	0.00	91	0	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.67	91	385	N.D.	
27) 4-Chlorotoluene	17.67	91	385	N.D.	
28) Indane	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

Quantitation Report (QT Reviewed)

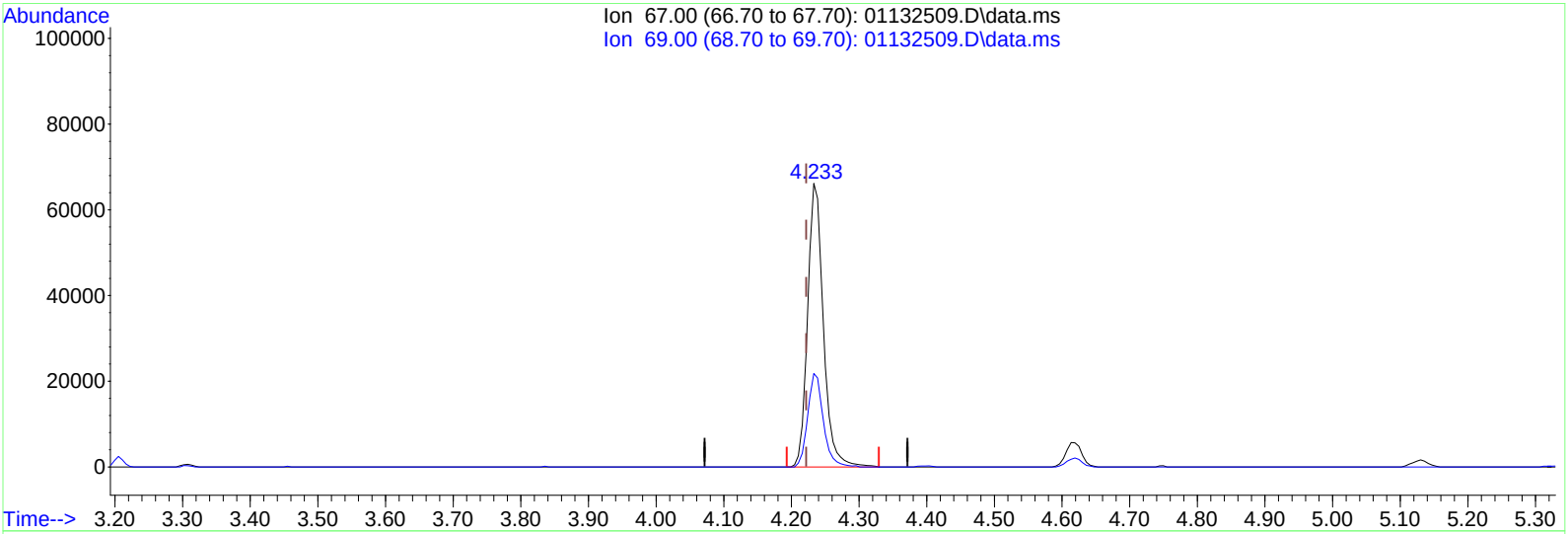
Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

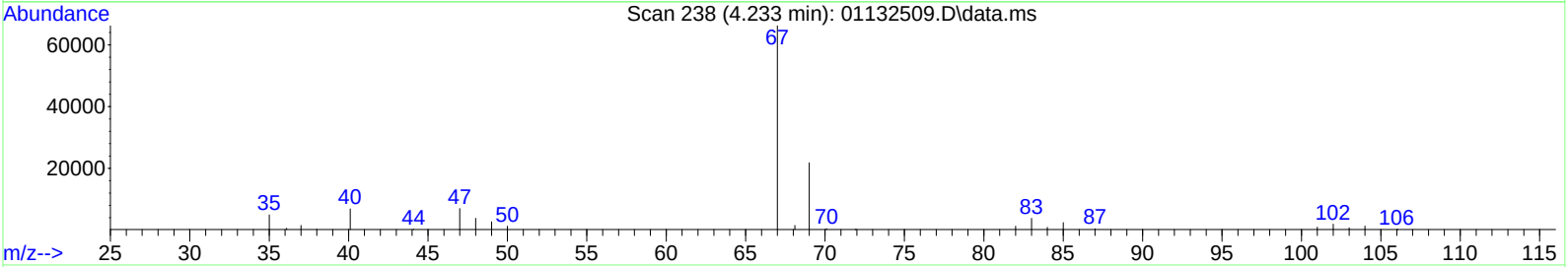
Quant Time: Jan 13 14:15:57 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

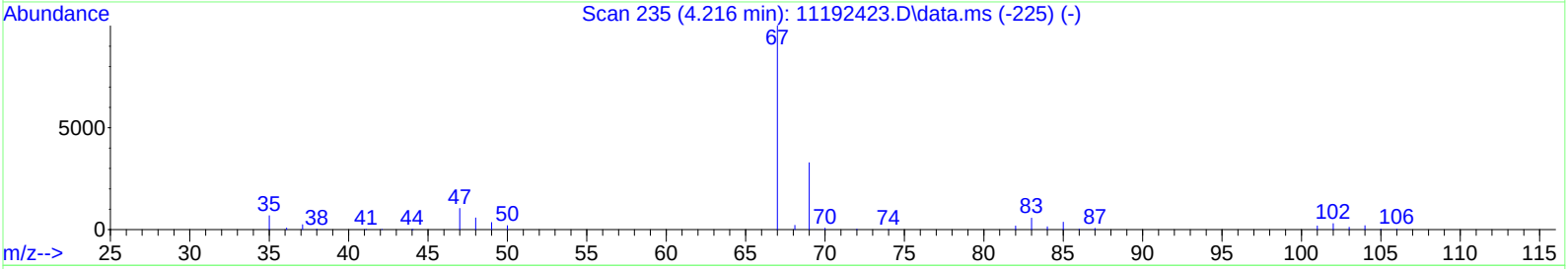


Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 14:15:22 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01132509.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 3.49ng

response 107122

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.65
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01132509.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.319	71	77	80	rBV3	38390	58884	3.28%	0.470%
2	3.353	80	83	85	rVV	35194	52239	2.91%	0.417%
3	3.381	85	88	100	rVB	52218	84380	4.71%	0.674%
4	3.620	124	130	134	rBV	49456	61466	3.43%	0.491%
5	3.659	134	137	142	rVB2	11759	18871	1.05%	0.151%
6	3.784	154	159	164	rBV	22594	30920	1.72%	0.247%
7	3.853	164	171	177	rVB	33652	42640	2.38%	0.341%
8	4.233	231	238	245	rBV	126356	200729	11.19%	1.603%
9	4.295	245	249	262	rVB	11248	25377	1.42%	0.203%
10	4.642	301	310	322	rBV3	70714	161097	8.98%	1.286%
11	4.750	322	329	342	rVV	371113	619903	34.57%	4.950%
12	4.858	342	348	354	rVV2	7584	13157	0.73%	0.105%
13	5.039	374	380	389	rBV	57764	95035	5.30%	0.759%
14	5.130	389	396	400	rBV3	6565	10461	0.58%	0.084%
15	5.357	430	436	441	rBV	15834	28765	1.60%	0.230%
16	5.579	467	475	491	rVB	369410	743181	41.45%	5.935%
17	5.772	502	509	519	rBV	16680	33760	1.88%	0.270%
18	6.311	597	604	611	rBV2	4896	10716	0.60%	0.086%
19	6.487	629	635	641	rVB2	8806	17483	0.98%	0.140%
20	6.658	657	665	686	rBV	530235	1220092	68.05%	9.743%
21	6.851	694	699	706	rVB3	5670	12090	0.67%	0.097%
22	6.993	714	724	732	rVB5	6599	19454	1.08%	0.155%
23	7.231	756	766	775	rBV	327205	771793	43.04%	6.163%
24	7.305	775	779	786	rVB2	23753	46818	2.61%	0.374%
25	8.003	891	902	918	rBV	270969	659372	36.77%	5.266%
26	8.895	1052	1059	1070	rVB6	4324	11957	0.67%	0.095%
27	9.059	1080	1088	1097	rVB5	5311	12540	0.70%	0.100%
28	9.207	1107	1114	1121	rBV5	5607	13916	0.78%	0.111%
29	9.304	1121	1131	1144	rVV	591782	1414719	78.90%	11.298%
30	9.423	1146	1152	1160	rVB5	6522	16356	0.91%	0.131%
31	9.735	1197	1207	1213	rVB7	9341	25274	1.41%	0.202%
32	10.161	1276	1282	1293	rVB6	5627	15195	0.85%	0.121%
33	10.564	1345	1353	1363	rBV2	40790	95163	5.31%	0.760%
34	11.410	1494	1502	1509	rVB4	11561	27655	1.54%	0.221%
35	12.427	1670	1681	1695	rBV	778178	1793036	100.00%	14.319%
36	12.557	1695	1704	1713	rVB	87744	195722	10.92%	1.563%
37	13.233	1816	1823	1829	rBV2	5820	11123	0.62%	0.089%
38	13.920	1934	1944	1953	rBV	21393	44404	2.48%	0.355%
39	14.522	2040	2050	2062	rBV	130501	286124	15.96%	2.285%
40	14.834	2096	2105	2122	rBV	764923	1604467	89.48%	12.813%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

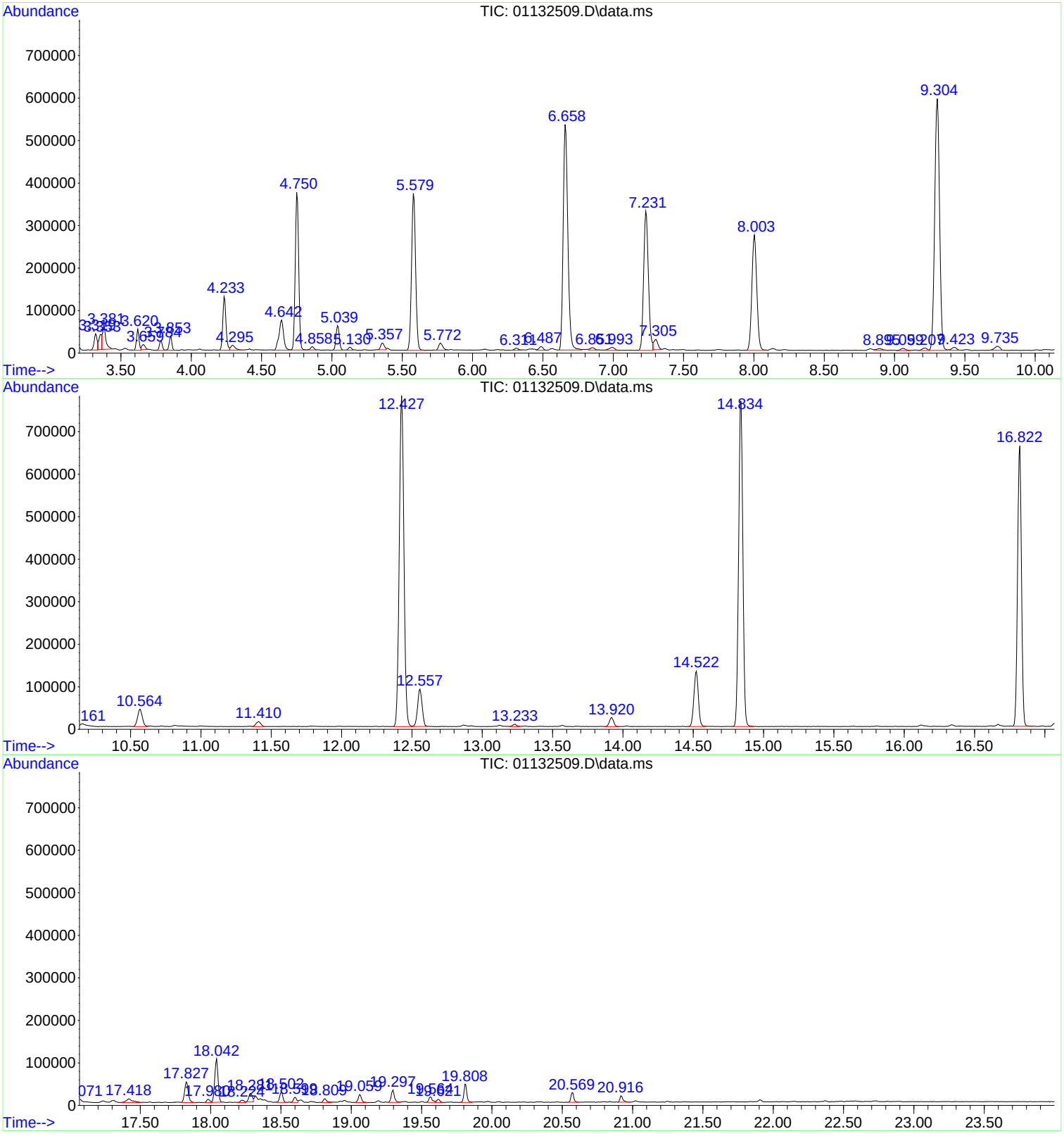
41	16.822	2446	2455	2471	rVB	659678	1256735	70.09%	10.036%
42	17.071	2492	2499	2506	rBV3	7400	15955	0.89%	0.127%
43	17.418	2549	2560	2574	rBV6	8681	27795	1.55%	0.222%
44	17.827	2626	2632	2644	rVB	48709	89916	5.01%	0.718%
45	17.980	2654	2659	2664	rBV2	7452	12867	0.72%	0.103%
46	18.042	2664	2670	2676	rVB	101819	163802	9.14%	1.308%
47	18.224	2695	2702	2707	rBV3	5481	10814	0.60%	0.086%
48	18.281	2707	2712	2716	rBV	19779	35132	1.96%	0.281%
49	18.502	2745	2751	2757	rVB5	24502	37545	2.09%	0.300%
50	18.599	2762	2768	2772	rVV	11909	19947	1.11%	0.159%
51	18.809	2801	2805	2814	rBV3	8904	15971	0.89%	0.128%
52	19.059	2843	2849	2859	rVB	18915	31059	1.73%	0.248%
53	19.297	2885	2891	2900	rBV3	29162	46474	2.59%	0.371%
54	19.564	2933	2938	2944	rBV	12634	23338	1.30%	0.186%
55	19.621	2944	2948	2954	rVB2	7193	11146	0.62%	0.089%
56	19.808	2975	2981	2990	rBV	42781	62078	3.46%	0.496%
57	20.569	3110	3115	3123	rBV2	22456	32591	1.82%	0.260%
58	20.916	3172	3176	3188	rBV2	14756	22695	1.27%	0.181%

Sum of corrected areas: 12522194

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:21
Operator : SC
Sample : P2405139-056 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\13\\
Data File : 01132509.D
Acq On : 13 Jan 2025 10:211
Operator : SCC
Sample : P2405139-056 (400mL))
Misc : S37-123124011
ALS Vial : 16 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 13 11:02:32 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	144525	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	627343	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113534	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	237518	12.063	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.48%				
57) Toluene-d8 (SS2)	12.43	98	649991	12.906	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.28%				
73) Bromofluorobenzene (SS3)	16.82	174	227330	13.079	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.32	85	9193	0.325	ng	#	90
4) Chloromethane	3.38	50	620	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	1346	0.101	ng		96
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.85	54	110	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.34	45	268	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	0.00	58	0	N.D. d			
14) Trichlorofluoromethane	4.78	101	20609471	777.859	ng		97
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d			
16) Acrylonitrile	5.06	53	833	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.37	84	570	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.61	151	19157730	1602.629	ng		92
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.32	57	663	N.D.			
32) Chloroform	7.36	83	19050	0.810	ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.92	78	2495	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.24	84	1132	0.064	ng		90
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.16	130	2680	0.187	ng		100
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 13 11:02:32 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

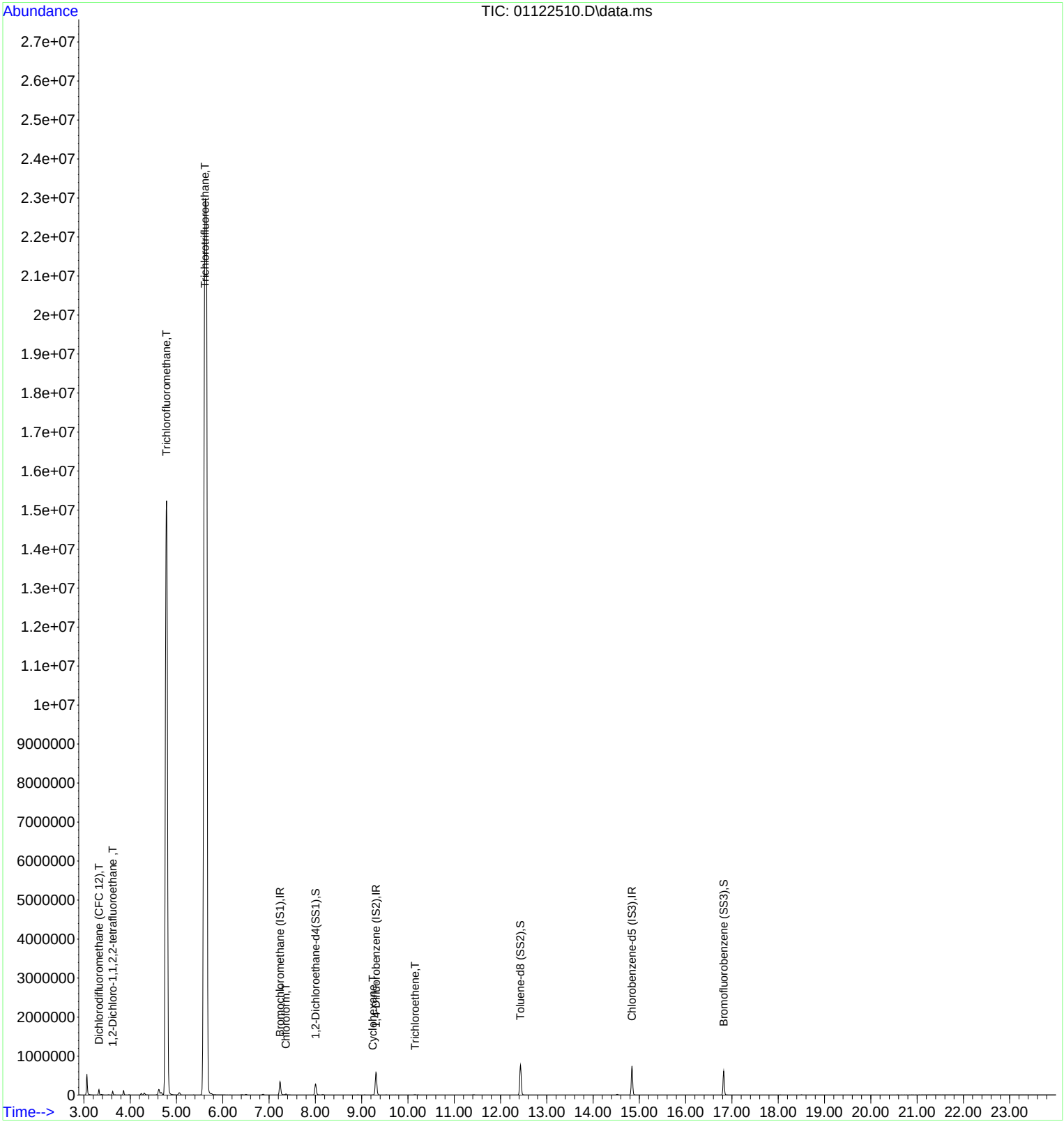
Internal Standards	R.T.	QIon	Response	Conc Units Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.
50) Methyl Methacrylate	0.00	100	0	N.D.
51) n-Heptane	0.00	71	0	N.D.
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.
58) Toluene	0.00	91	0	N.D.
59) 2-Hexanone	0.00	43	0	N.D.
60) Dibromochloromethane	0.00	129	0	N.D.
61) 1,2-Dibromoethane	0.00	107	0	N.D.
62) n-Butyl Acetate	0.00	43	0	N.D.
63) n-Octane	0.00	57	0	N.D.
64) Tetrachloroethene	0.00	166	0	N.D.
65) Chlorobenzene	0.00	112	0	N.D.
66) Ethylbenzene	0.00	91	0	N.D.
67) m- & p-Xylenes	0.00	91	0	N.D.
68) Bromoform	0.00	173	0	N.D.
69) Styrene	0.00	104	0	N.D.
70) o-Xylene	0.00	91	0	N.D.
71) n-Nonane	0.00	43	0	N.D.
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.
74) Cumene	0.00	105	0	N.D.
75) alpha-Pinene	0.00	93	0	N.D.
76) n-Propylbenzene	0.00	91	0	N.D.
77) 3-Ethyltoluene	0.00	105	0	N.D.
78) 4-Ethyltoluene	0.00	105	0	N.D.
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.
80) alpha-Methylstyrene	0.00	118	0	N.D.
81) 2-Ethyltoluene	0.00	105	0	N.D.
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.
83) n-Decane	0.00	58	0	N.D.
84) Benzyl Chloride	0.00	91	0	N.D.
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.
87) sec-Butylbenzene	0.00	105	0	N.D.
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.
91) d-Limonene	0.00	68	0	N.D.
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.
93) n-Undecane	0.00	58	0	N.D.
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.
95) Naphthalene	0.00	128	0	N.D.
96) n-Dodecane	0.00	58	0	N.D.
97) Hexachlorobutadiene	0.00	225	0	N.D.
98) Cyclohexanone	0.00	55	0	N.D.
99) tert-Butylbenzene	0.00	119	0	N.D.
100) n-Butylbenzene	0.00	91	0	N.D.
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 13 11:02:32 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

VOA 1/13/25

Quant Time: Jan 13 11:02:32 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

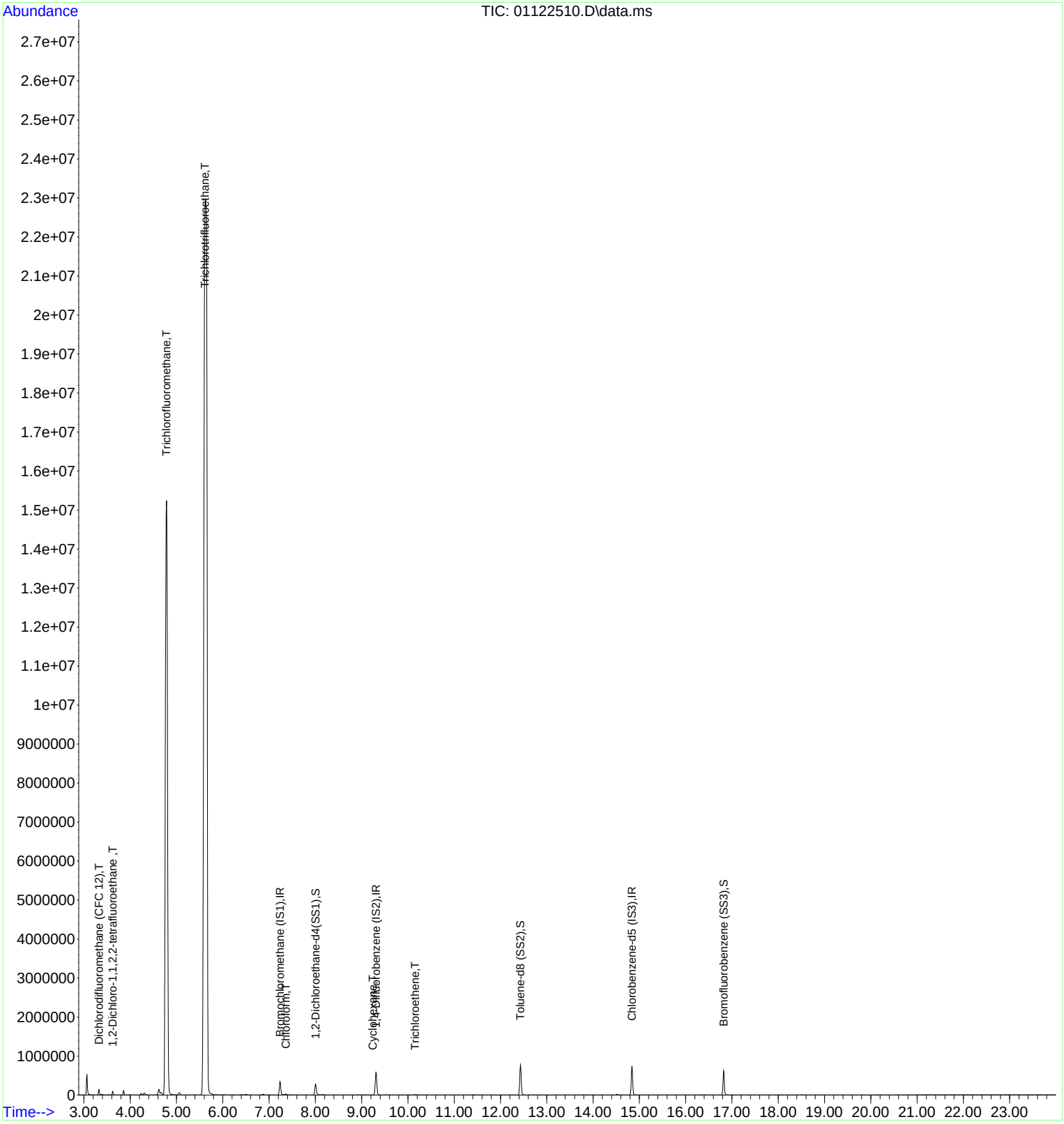
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	144525	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.31	114	627343	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	113534	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	237518	12.063	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.48%				
57) Toluene-d8 (SS2)	12.43	98	649991	12.906	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.28%				
73) Bromofluorobenzene (SS3)	16.82	174	227330	13.079	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.32	85	9193	0.325	ng	#	90
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	1346	0.101	ng		96
14) Trichlorofluoromethane	4.78	101	20609471	777.859	ng		97
21) Trichlorotrifluoroethane	5.61	151	19157730	1602.629	ng		92
32) Chloroform	7.36	83	19050	0.810	ng		100
43) Cyclohexane	9.24	84	1132	0.064	ng		90
47) Trichloroethene	10.16	130	2680	0.187	ng		100

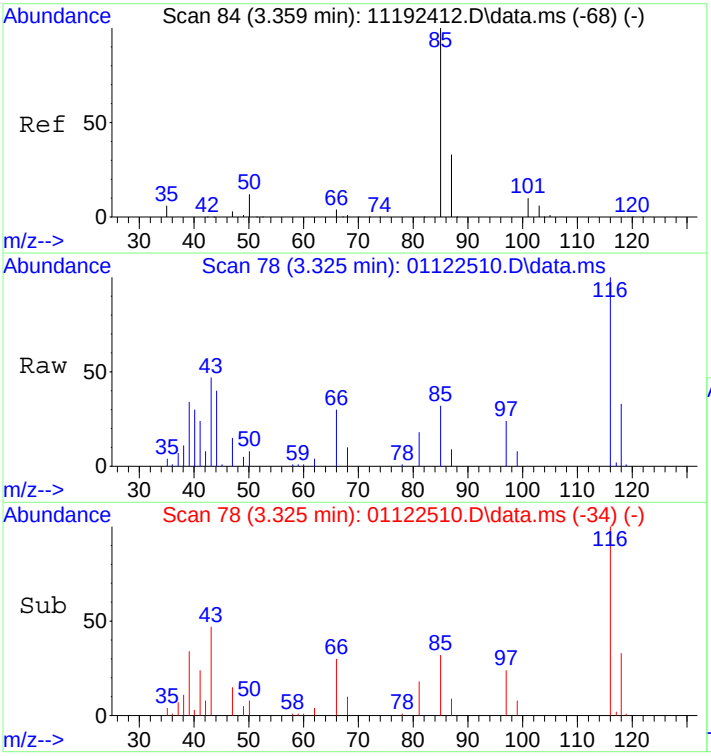
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 13 11:02:32 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

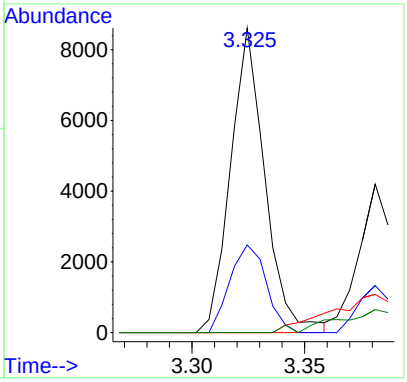


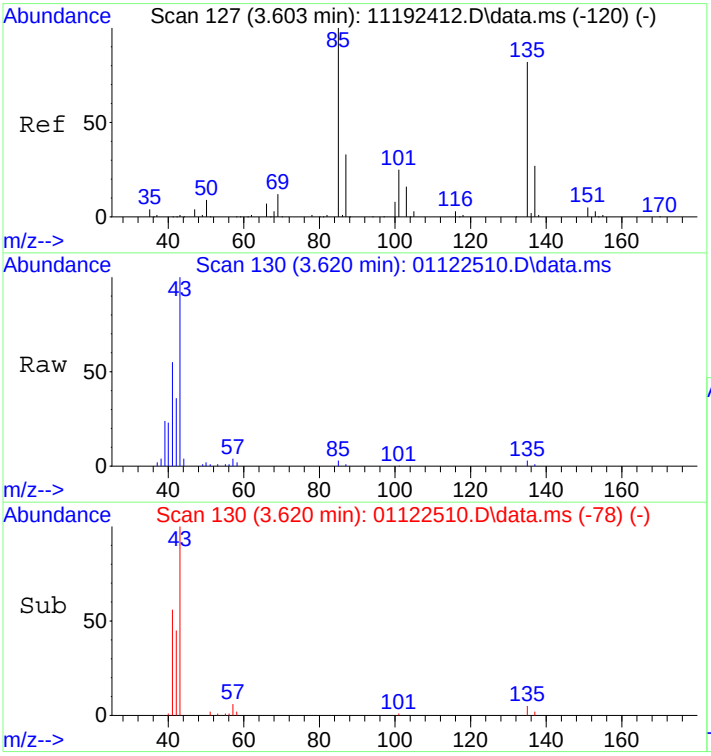


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.33 ng
RT: 3.32 min Scan# 78
Delta R.T. -0.003 min
Lab File: 01122510.D
Acq: 12 Jan 2025 9:55

Tgt Ion: 85 Resp: 9193

Ion	Ratio	Lower	Upper
85	100		
87	30.3	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

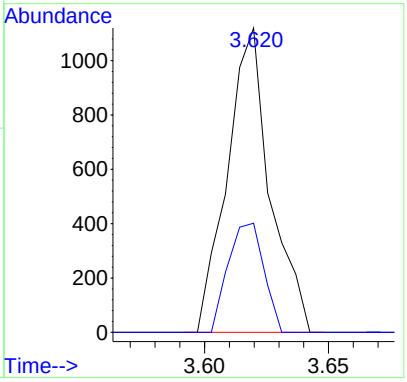


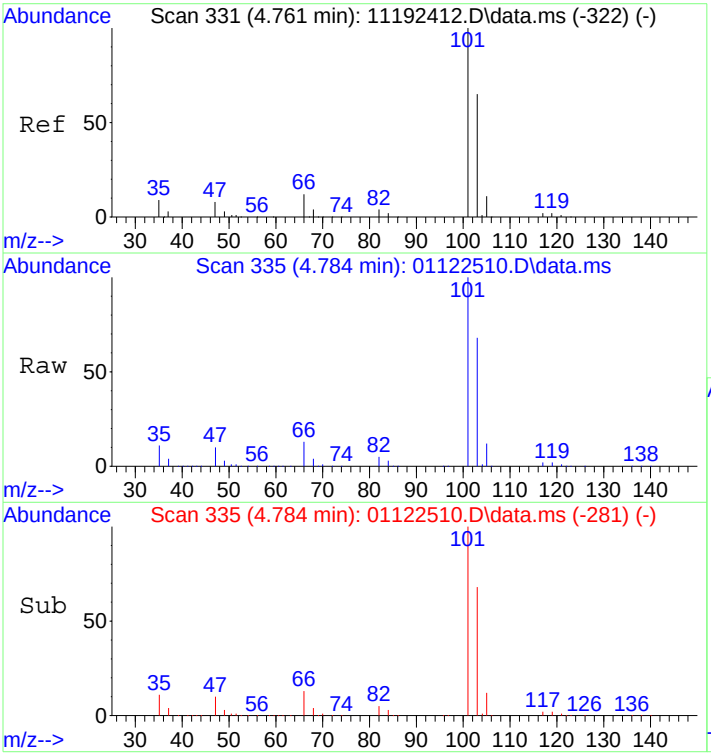


#5
1,2-Dichloro-1,1,2,2-tetrafluoroethane
Concen: 0.10 ng
RT: 3.62 min Scan# 130
Delta R.T. 0.045 min
Lab File: 01122510.D
Acq: 12 Jan 2025 9:55

Tgt Ion:135 Resp: 1346

Ion	Ratio	Lower	Upper
135	100		
137	29.9	12.2	52.2

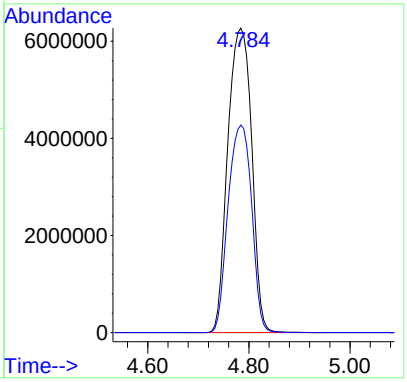


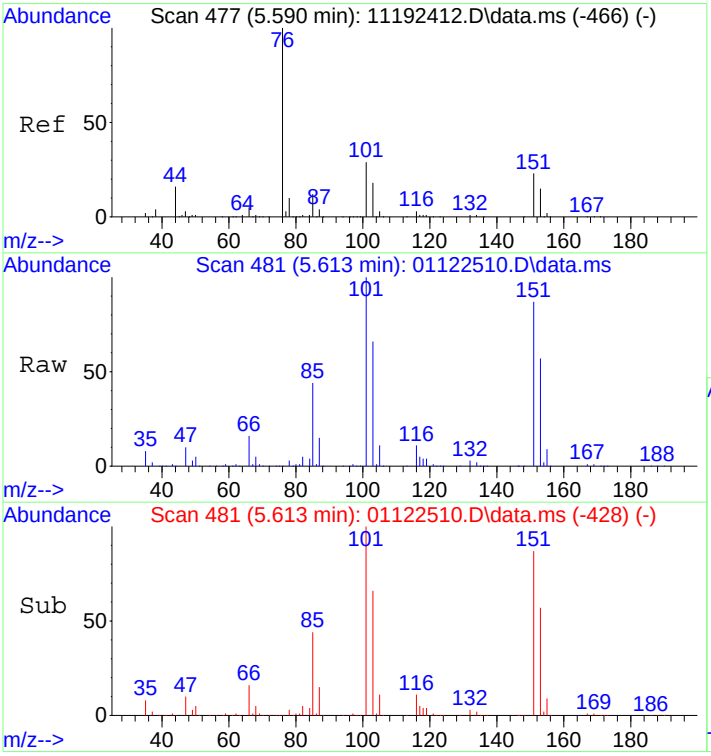


#14
Trichlorofluoromethane
Concen: 777.86 ng
RT: 4.78 min Scan# 335
Delta R.T. 0.056 min
Lab File: 01122510.D
Acq: 12 Jan 2025 9:55

Tgt Ion:101 Resp:20609471

Ion	Ratio	Lower	Upper
101	100		
103	67.2	44.8	84.8

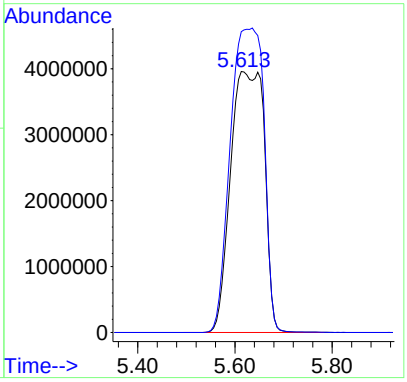


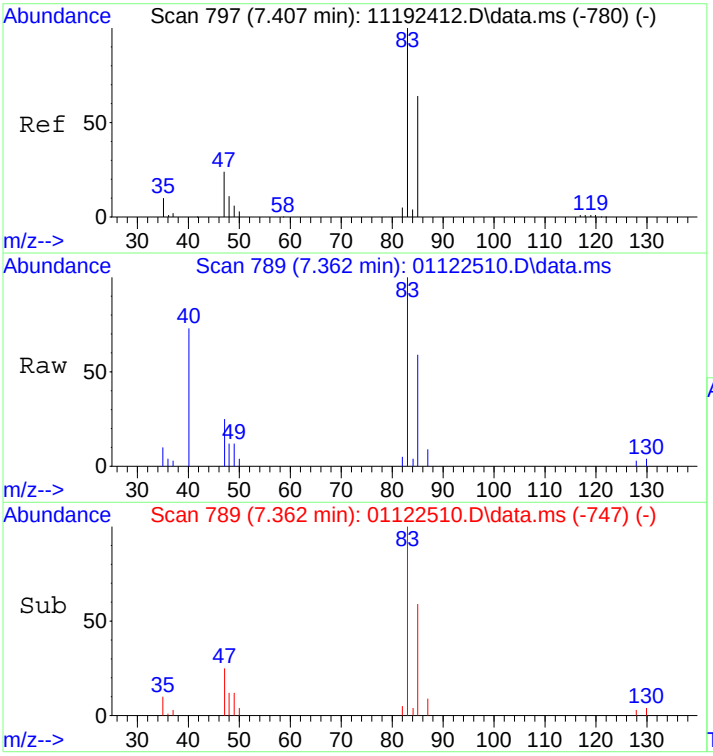


#21
Trichlorotrifluoroethane
Concen: 1602.63 ng
RT: 5.61 min Scan# 481
Delta R.T. 0.053 min
Lab File: 01122510.D
Acq: 12 Jan 2025 9:55

Tgt Ion:151 Resp:19157730

Ion	Ratio	Lower	Upper
151	100		
101	115.9	105.0	145.0

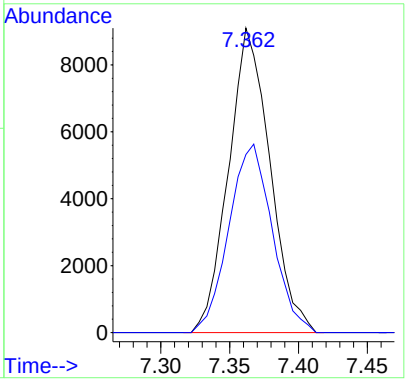


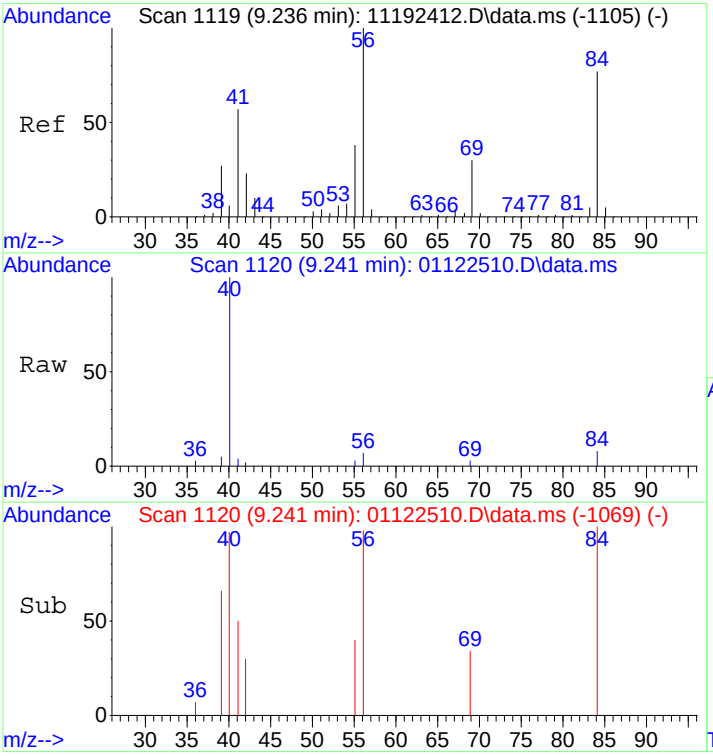


#32
Chloroform
Concen: 0.81 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01122510.D
Acq: 12 Jan 2025 9:55

Tgt Ion: 83 Resp: 19050

Ion	Ratio	Lower	Upper
83	100		
85	64.8	45.1	85.1

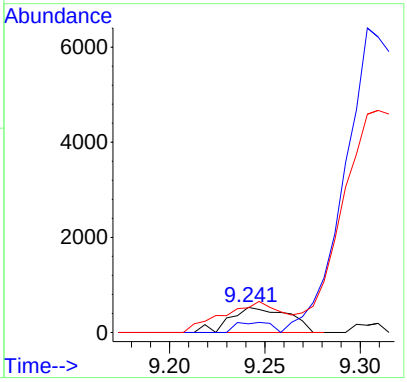


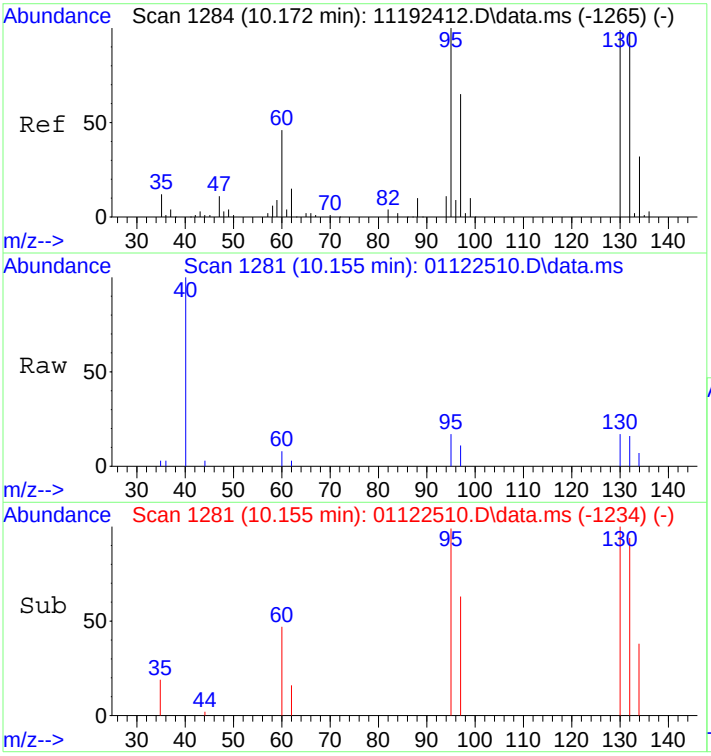


#43
Cyclohexane
Concen: 0.06 ng
RT: 9.24 min Scan# 1120
Delta R.T. 0.039 min
Lab File: 01122510.D
Acq: 12 Jan 2025 9:55

Tgt Ion: 84 Resp: 1132

Ion	Ratio	Lower	Upper
84	100		
69	23.9	18.3	58.3
56	124.3	110.7	150.7

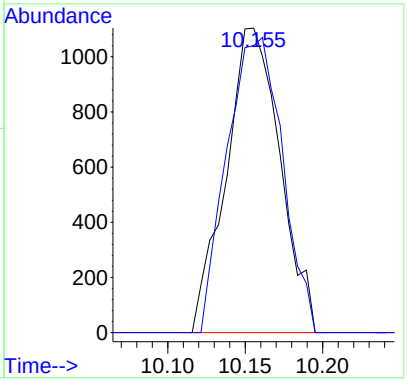




#47
Trichloroethene
Concen: 0.19 ng
RT: 10.16 min Scan# 1281
Delta R.T. 0.015 min
Lab File: 01122510.D
Acq: 12 Jan 2025 9:55

Tgt Ion:130 Resp: 2680

Ion	Ratio	Lower	Upper
130	100		
132	99.6	79.3	119.3



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 13 12:29:19 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

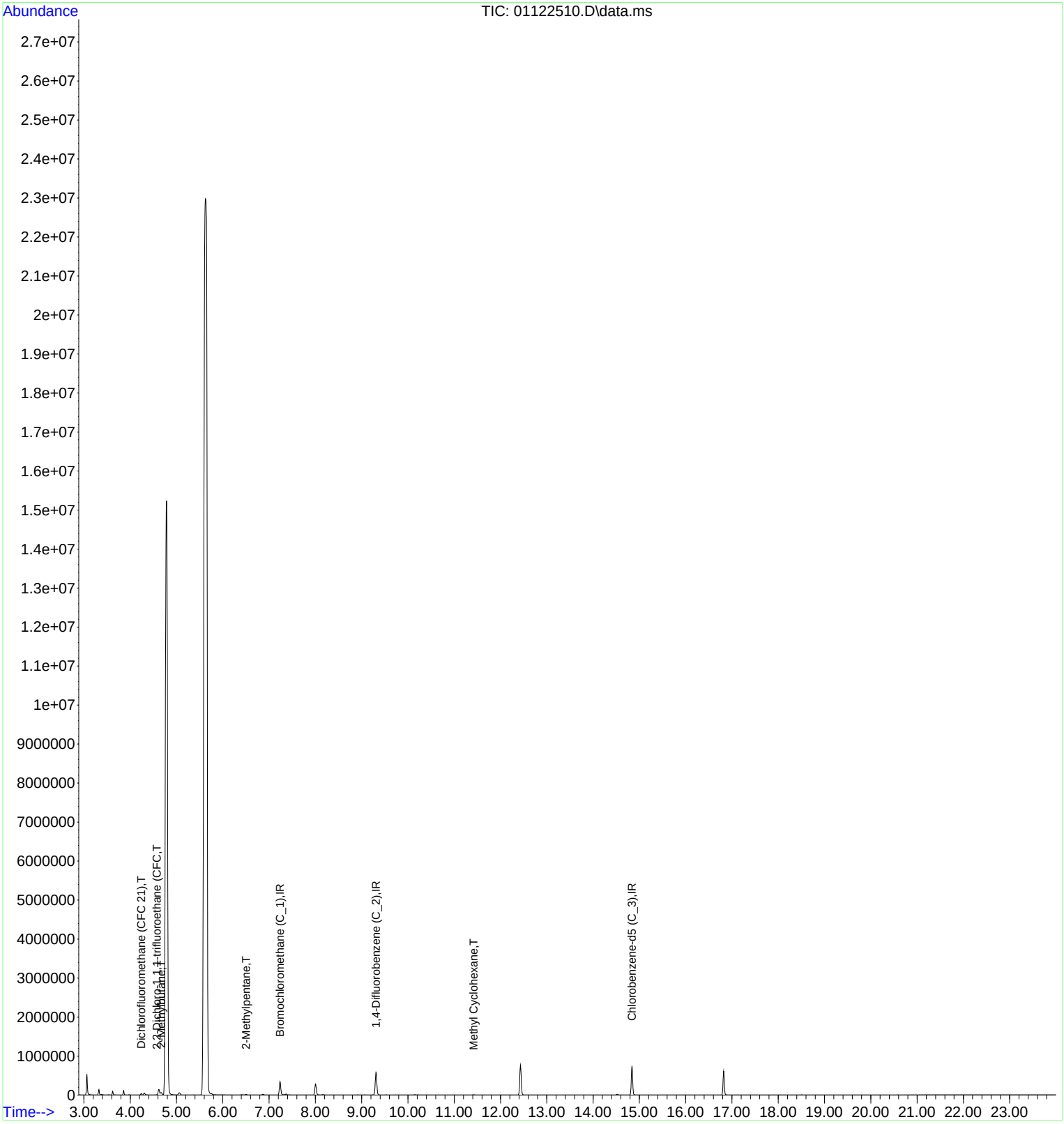
1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.24	130	146540	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.31	114	628520	12.500	ng		-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	113534	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	0.00	67	0	N.D.			
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.			
7) Dichlorofluoromethane ...	4.24	67	30222	1.018	ng		98
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	5468	0.270	ng	#	17
10) 2-Methylbutane	4.67	57	21063	1.489	ng		93
11) Methyl Acetate	0.00	43	0	N.D.			
12) 2-Methylpentane	6.50	71	3190	0.265	ng		92
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.			
17) 2,3-Dimethylpentane	9.53	56	1391	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.42	55	2837	0.140	ng		84
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	0.00	91	0	N.D.			
27) 4-Chlorotoluene	0.00	91	0	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

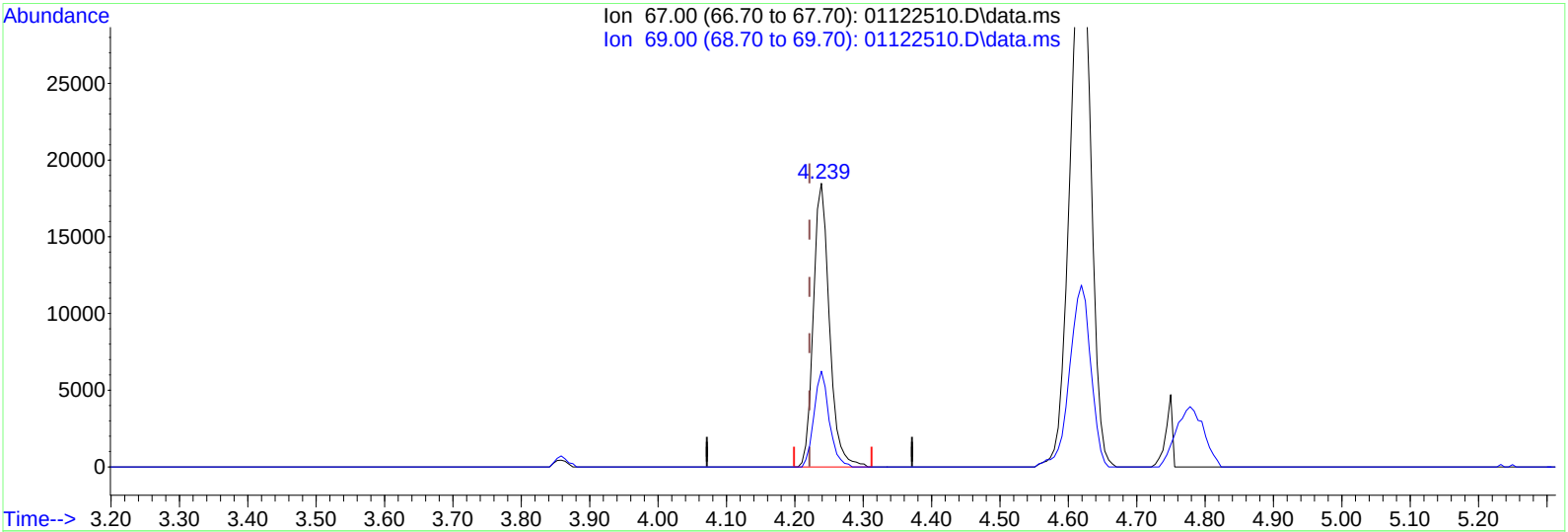
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

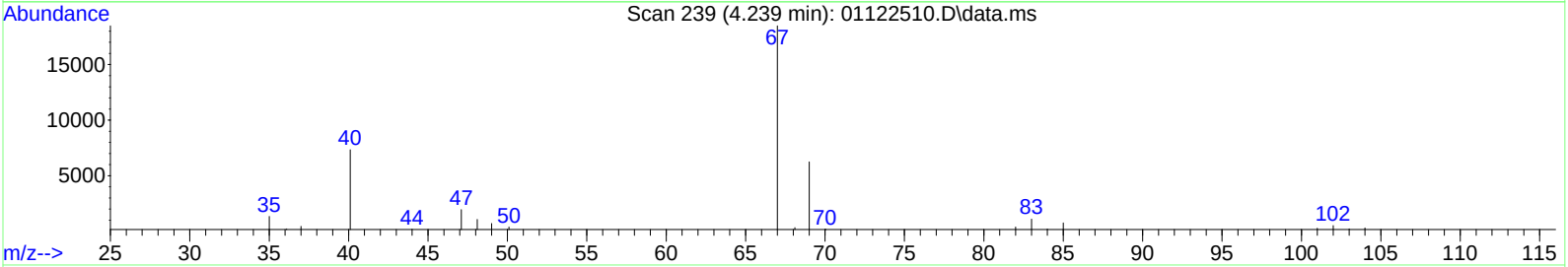
Quant Time: Jan 13 12:29:19 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

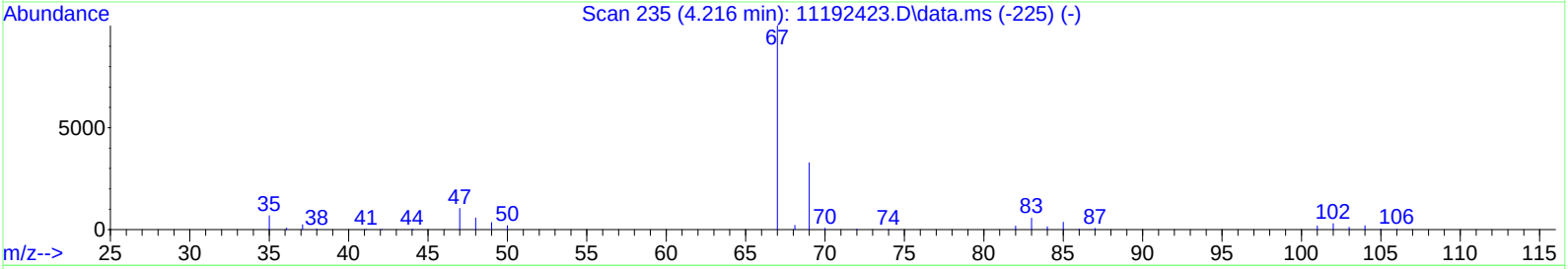


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 13 12:29:19 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01122510.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.239min (+0.017) 1.02ng

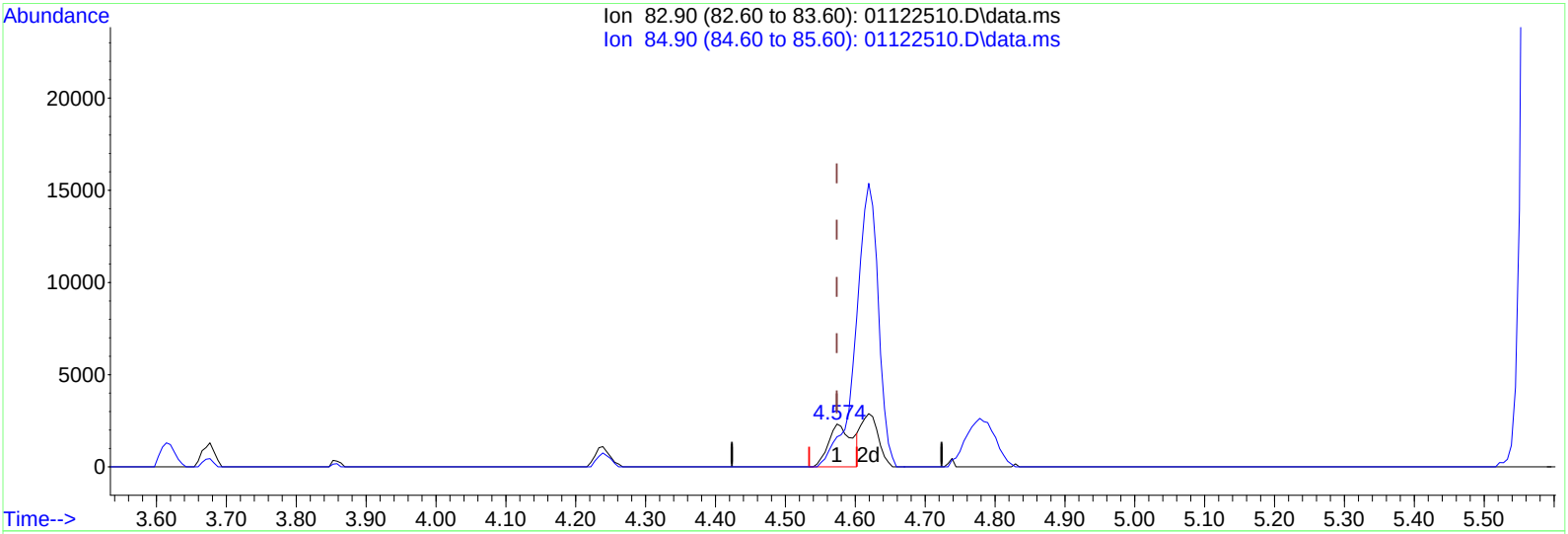
response 30222

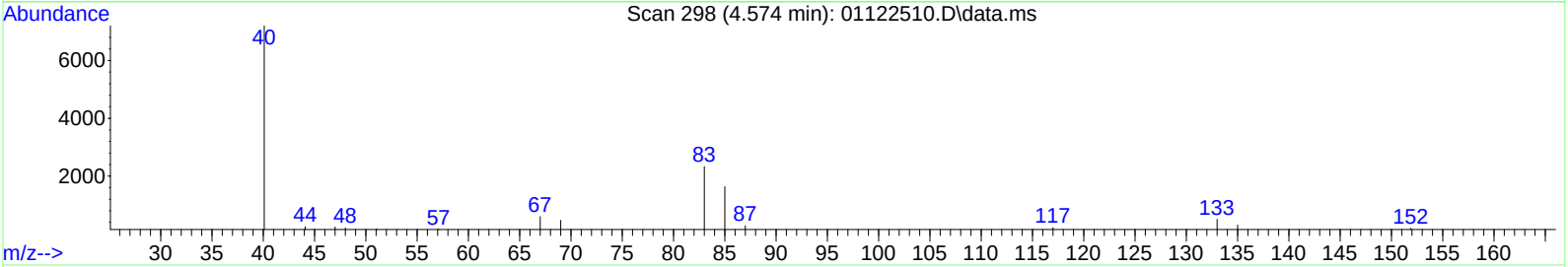
Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.95
0.00	0.00	0.00
0.00	0.00	0.00

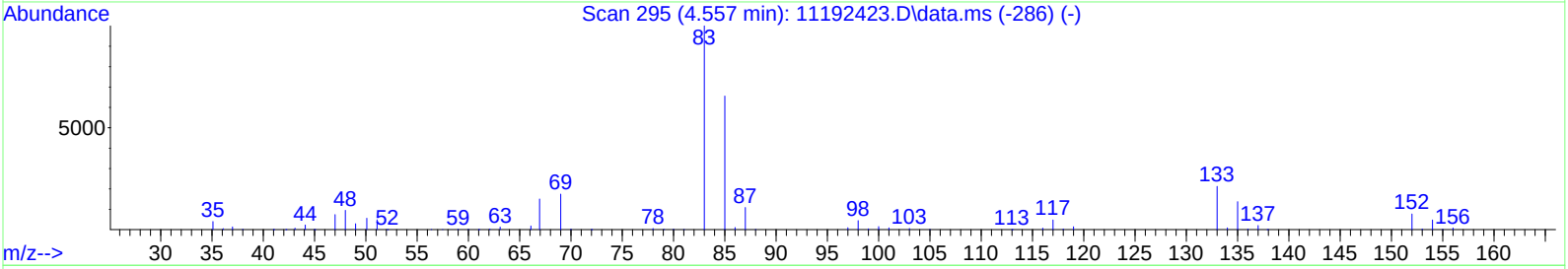
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 13 12:29:19 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01122510.D\data.ms

(9) 2,2-Dichloro-1,1,1-trifluoroethane (CFC (T)

4.574min (+0.000) 0.27ng

response 5468

Ion	Exp%	Act%
82.90	100	100
84.90	66.20	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122515.D
Acq On : 12 Jan 2025 12:53
Operator : SC
Sample : P2405139-057Dil (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 11:17:38 2025 1/13/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143693	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	618898	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	114678	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	243763	12.452	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.60%				
57) Toluene-d8 (SS2)	12.43	98	643988	12.659	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.28%				
73) Bromofluorobenzene (SS3)	16.82	174	234208	13.341	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	3.39	85	506	N.D.			
4) Chloromethane	3.39	50	534	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	0.00	45	0	N.D.	d		
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	4.57	56	51	N.D.			
13) Acetone	4.65	58	2360	0.244	ng	#	56
14) Trichlorofluoromethane	4.76	101	907342	34.444	ng		100
15) 2-Propanol (Isopropanol)	4.92	45	125	N.D.			
16) Acrylonitrile	5.04	53	53	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	239	N.D.			
20) 3-Chloro-1-propene (Al...	5.40	41	176	N.D.			
21) Trichlorotrifluoroethane	5.58	151	955428	80.389	ng		96
22) Carbon Disulfide	5.64	76	810	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.66	72	97896	12.594	ng		99
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	6866	0.318	ng		98
32) Chloroform	7.36	83	744	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.88	56	226	No Calib		#	
41) Benzene	8.90	78	1503	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.22	84	1962	0.113	ng		93
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	990	0.070	ng		91
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122515.D
Acq On : 12 Jan 2025 12:53
Operator : SC
Sample : P2405139-057Dil (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

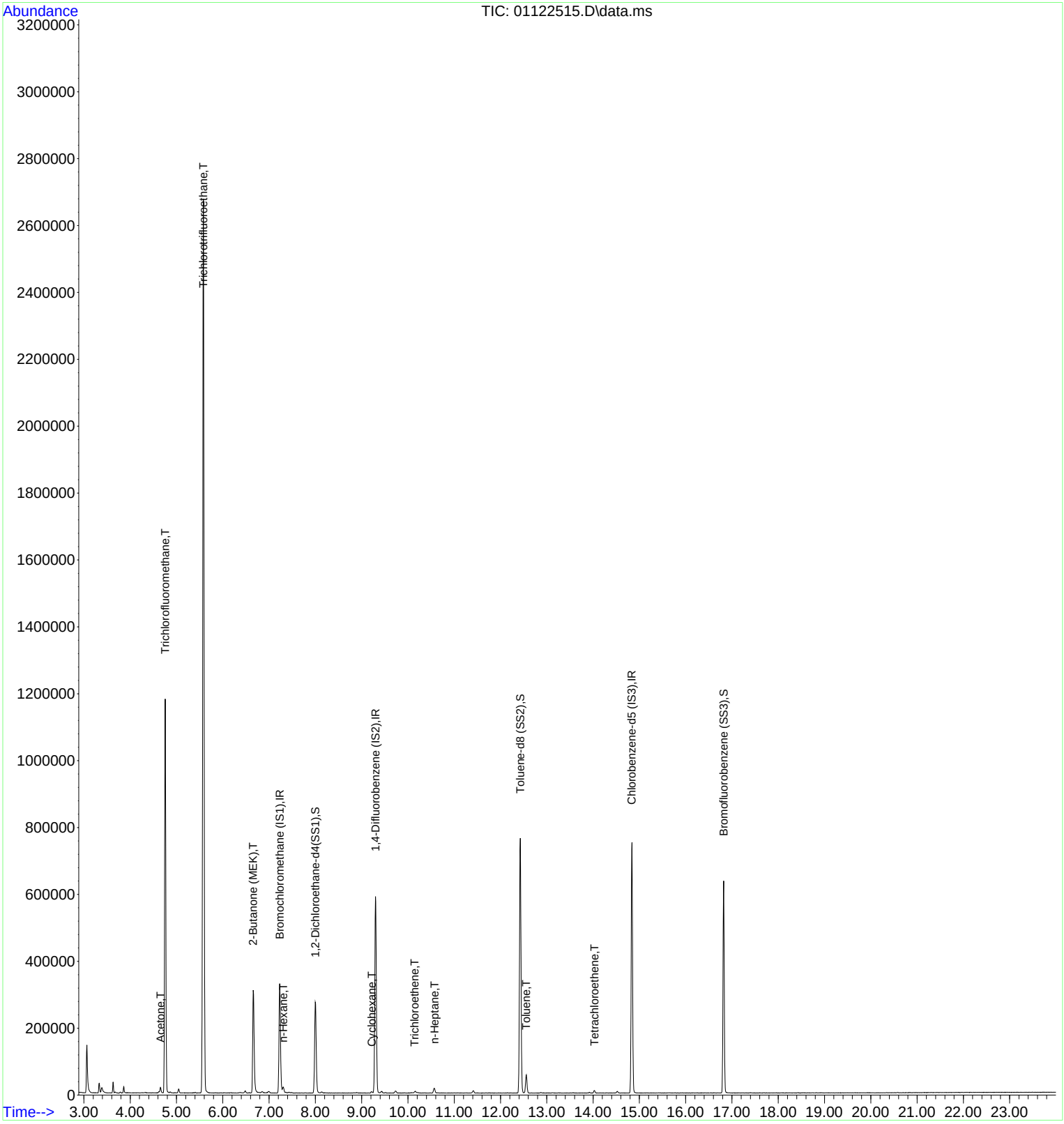
Quant Time: Jan 13 11:17:38 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	531	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.58	71	3701	0.334 ng	93
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	51073	1.043 ng	100
59) 2-Hexanone	12.91	43	262	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	13.92	57	285	N.D.	
64) Tetrachloroethene	14.03	166	3155	0.217 ng	97
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	517	N.D.	
67) m- & p-Xylenes	15.63	91	1241	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	643	N.D.	
71) n-Nonane	16.61	43	356	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	494	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	581	N.D.	
77) 3-Ethyltoluene	17.03	105	494	No Calib	#
78) 4-Ethyltoluene	17.87	105	373	N.D.	
79) 1,3,5-Trimethylbenzene	17.96	105	347	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	494	No Calib	#
82) 1,2,4-Trimethylbenzene	18.44	105	250	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	556	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	798	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	494	No Calib	#
90) 1,2-Dichlorobenzene	19.04	146	290	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	395	N.D.	
95) Naphthalene	20.96	128	374	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.30	225	158	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.42	119	339	N.D.	
100) n-Butylbenzene	19.39	91	355	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

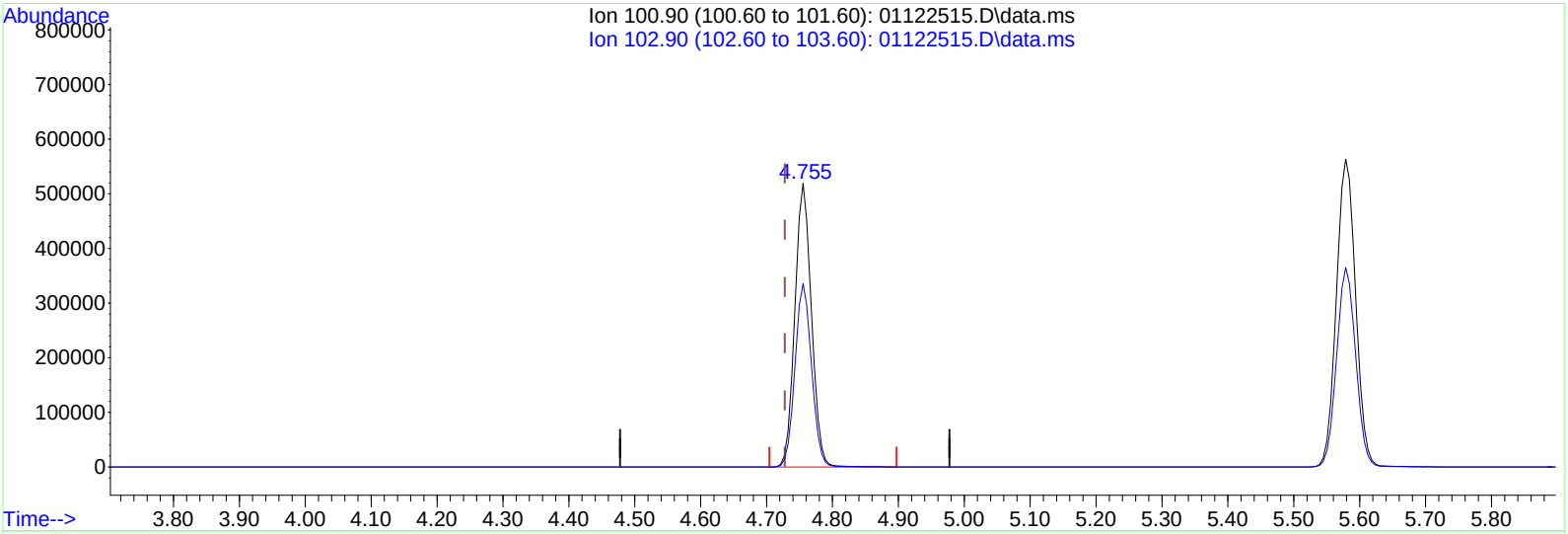
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122515.D
Acq On : 12 Jan 2025 12:53
Operator : SC
Sample : P2405139-057Dil (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

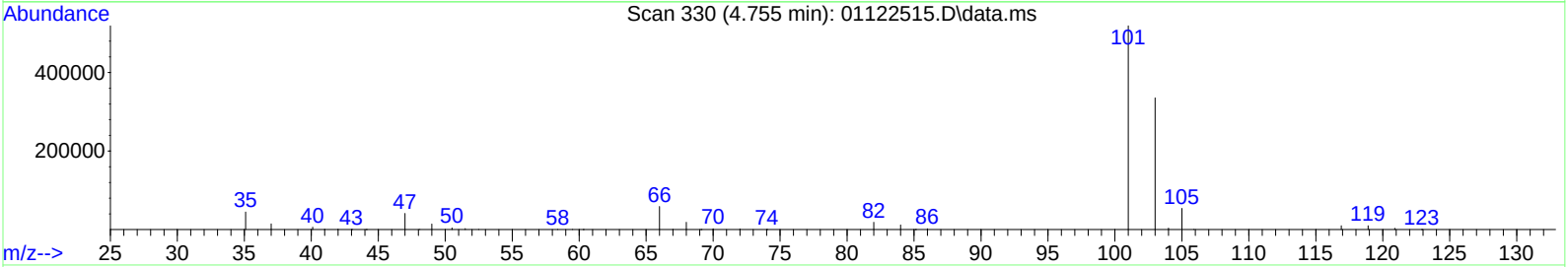
Quant Time: Jan 13 11:17:38 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

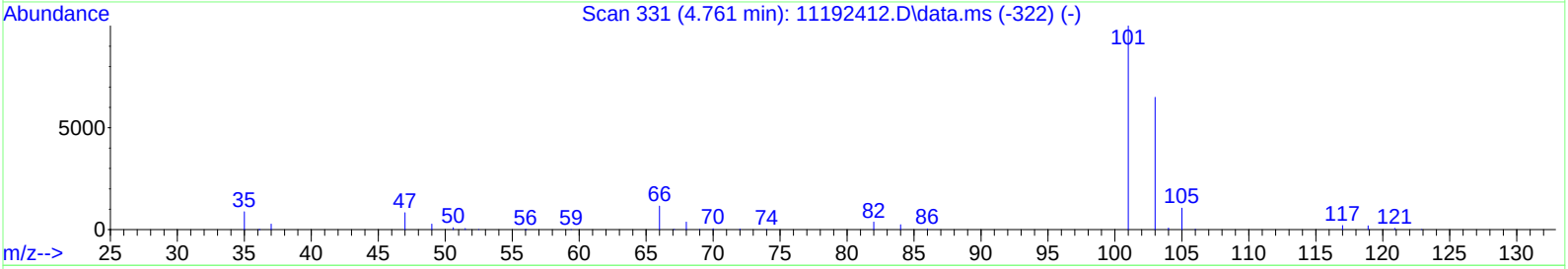


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122515.D
Acq On : 12 Jan 2025 12:53
Operator : SC
Sample : P2405139-057Dil (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 14:00:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122515.D\data.ms

(14) Trichlorofluoromethane (T)

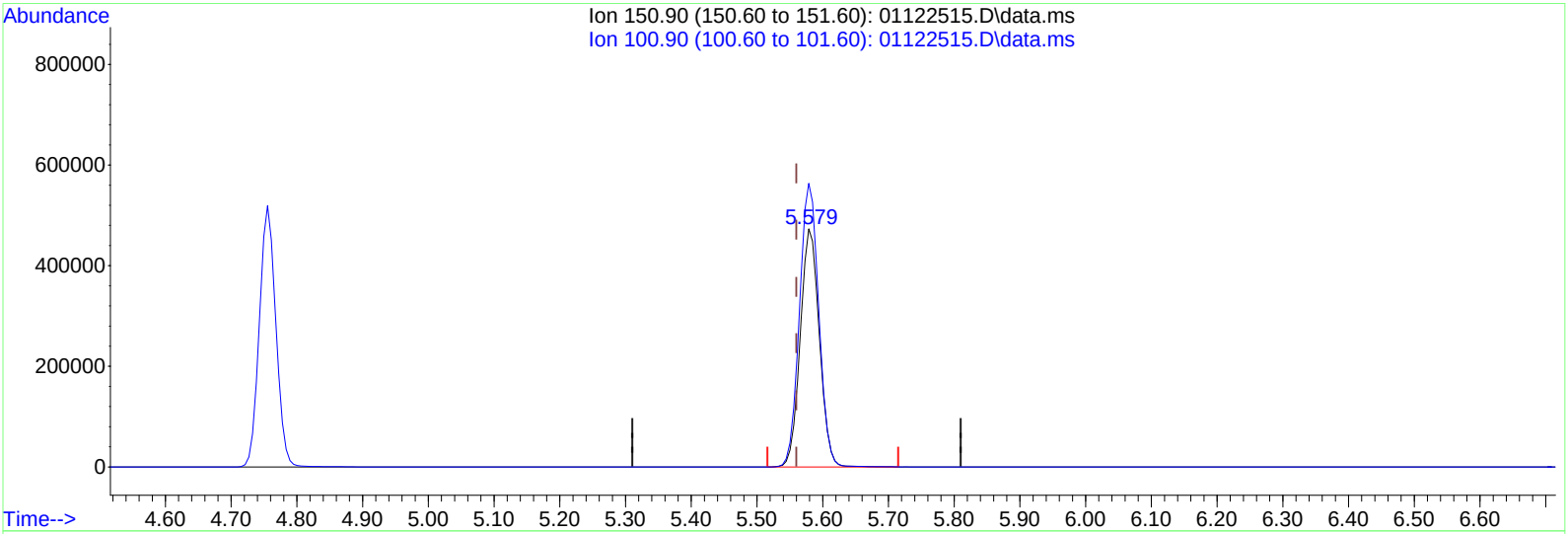
4.755min (+0.028) 34.44ng

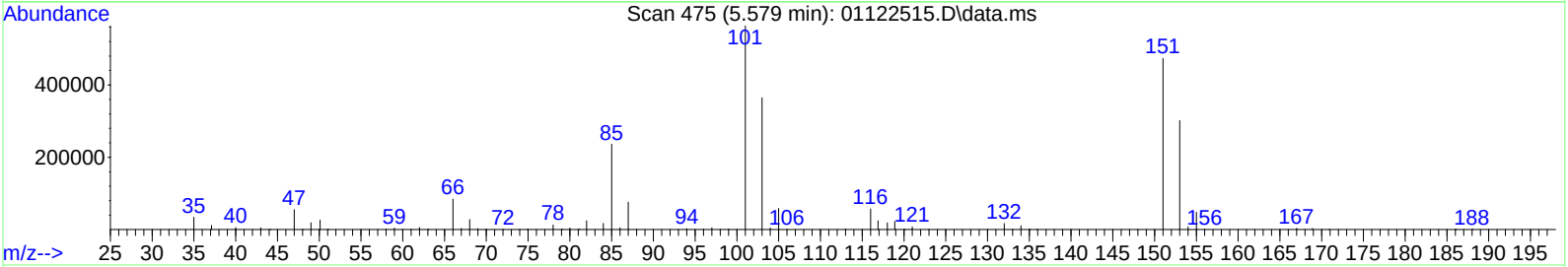
response 907342

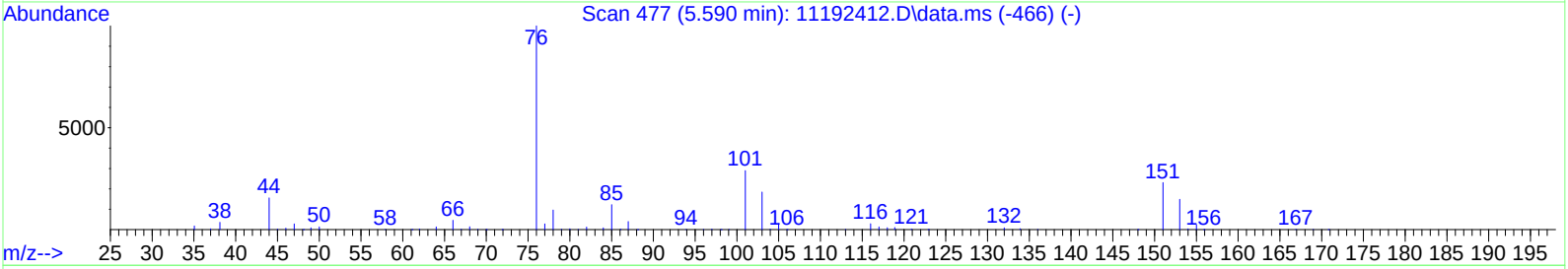
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.80
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122515.D
Acq On : 12 Jan 2025 12:53
Operator : SC
Sample : P2405139-057Dil (0.5mL)
Misc : S37-12312401
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 12 14:00:05 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122515.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.018) 80.39ng

response 955428

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	119.95
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122510.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.325	71	78	83	rBV2	132605	178842	0.16%	0.107%
2	3.381	83	88	102	rVB2	13542	27187	0.02%	0.016%
3	3.620	125	130	136	rBV	91615	110106	0.10%	0.066%
4	3.858	166	172	180	rBV	111056	152061	0.14%	0.091%
5	4.239	234	239	245	rBV	35444	55450	0.05%	0.033%
6	4.301	245	250	262	rVB	43752	91428	0.08%	0.055%
7	4.619	291	306	311	rBV	140110	319196	0.29%	0.191%
8	4.665	311	314	322	rVV	58630	128904	0.12%	0.077%
9	4.784	322	335	361	rVB	15229434	48931154	44.72%	29.313%
10	5.056	375	383	397	rVB	52698	135409	0.12%	0.081%
11	5.624	461	483	514	rBV2	22975366	109420114	100.00%	65.550%
12	6.413	615	622	631	rBV8	4905	13586	0.01%	0.008%
13	6.504	631	638	646	rVB	13291	29134	0.03%	0.017%
14	6.868	693	702	710	rVB	16480	36244	0.03%	0.022%
15	7.237	758	767	780	rBV	342558	745895	0.68%	0.447%
16	7.362	783	789	800	rVB	21711	50099	0.05%	0.030%
17	8.003	893	902	917	rBV	277394	634352	0.58%	0.380%
18	8.157	921	929	939	rVB3	7366	20001	0.02%	0.012%
19	9.309	1122	1132	1144	rVB	572962	1368868	1.25%	0.820%
20	10.155	1273	1281	1287	rBV5	4367	10071	0.01%	0.006%
21	11.422	1500	1504	1511	rVB5	5106	10201	0.01%	0.006%
22	12.432	1669	1682	1697	rBV	763378	1741379	1.59%	1.043%
23	14.522	2043	2050	2057	rBV	14380	31853	0.03%	0.019%
24	14.840	2095	2106	2119	rBV	739993	1530069	1.40%	0.917%
25	16.822	2446	2455	2467	rBV	605616	1154331	1.05%	0.692%

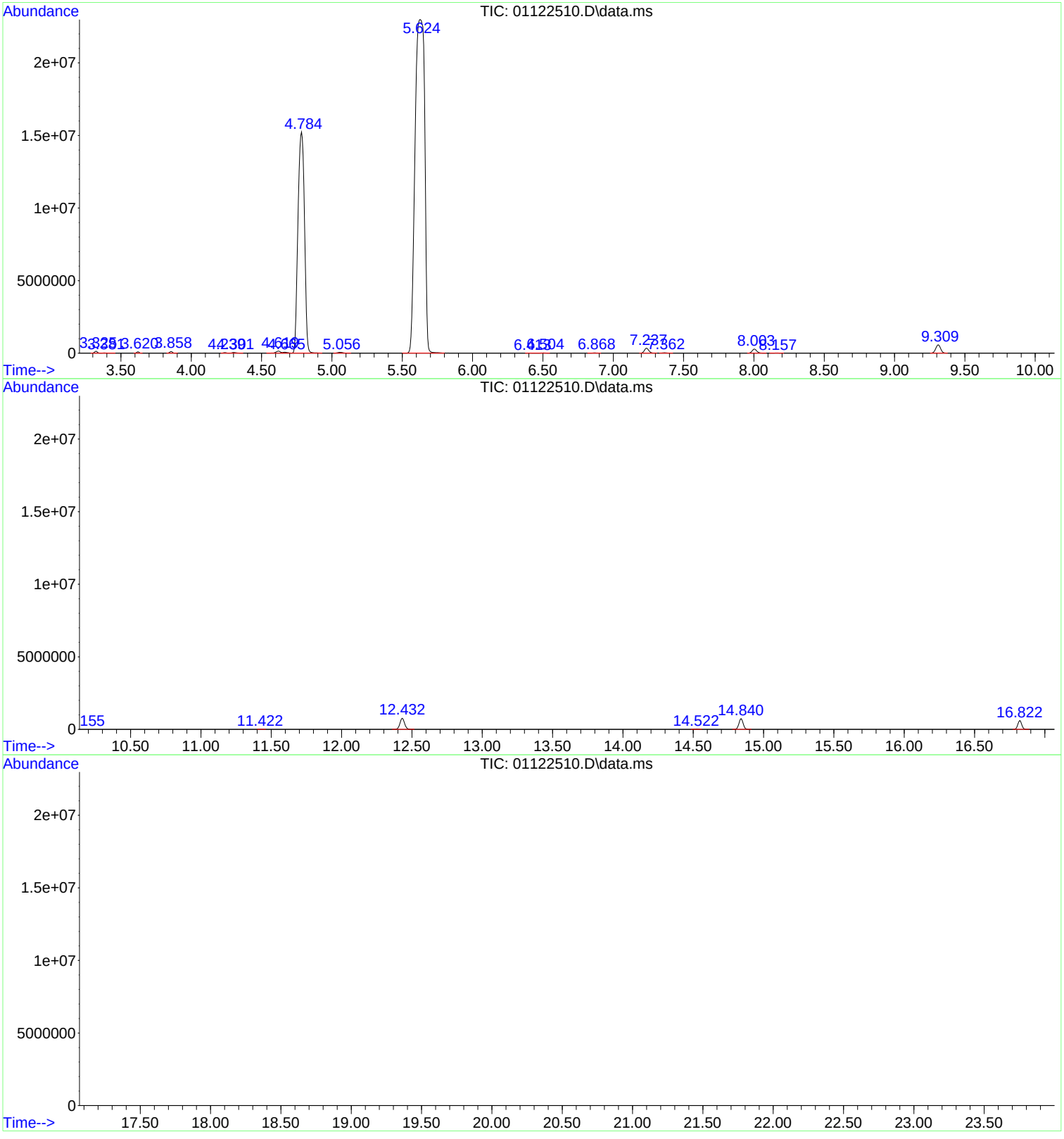
Sum of corrected areas: 166925934

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

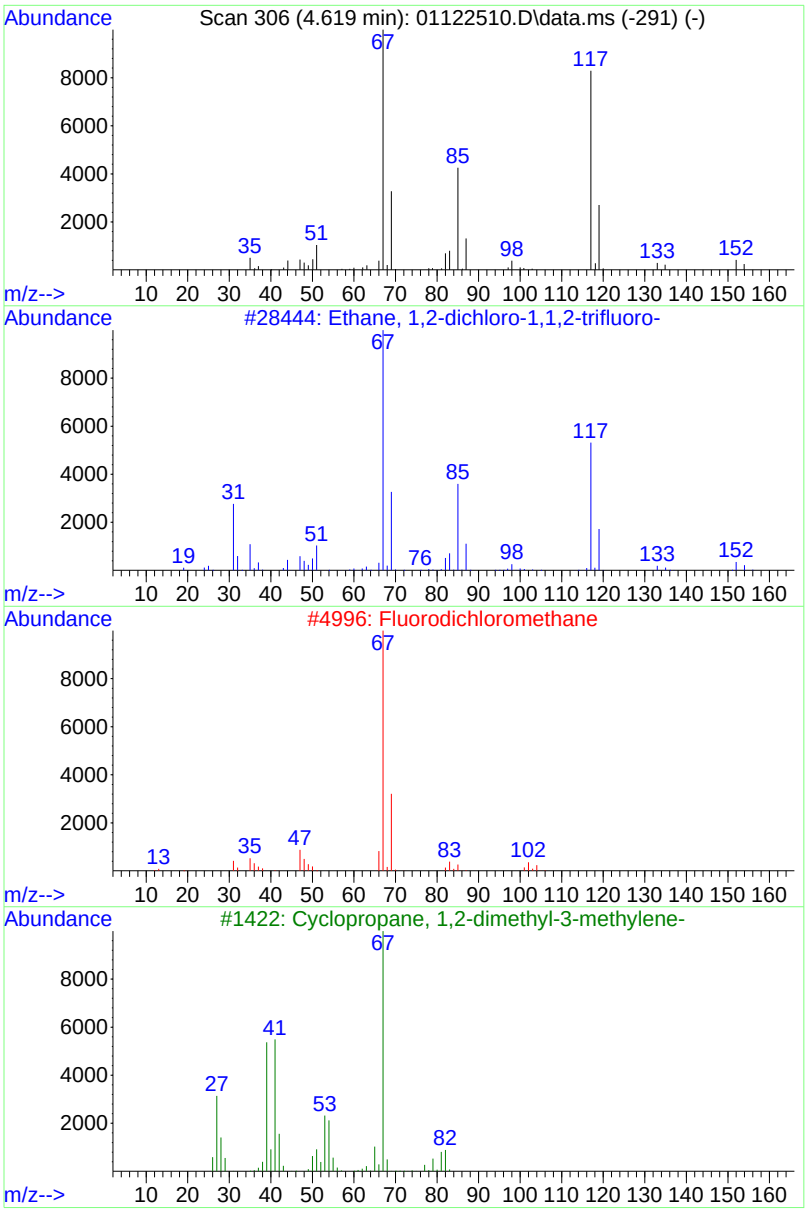
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

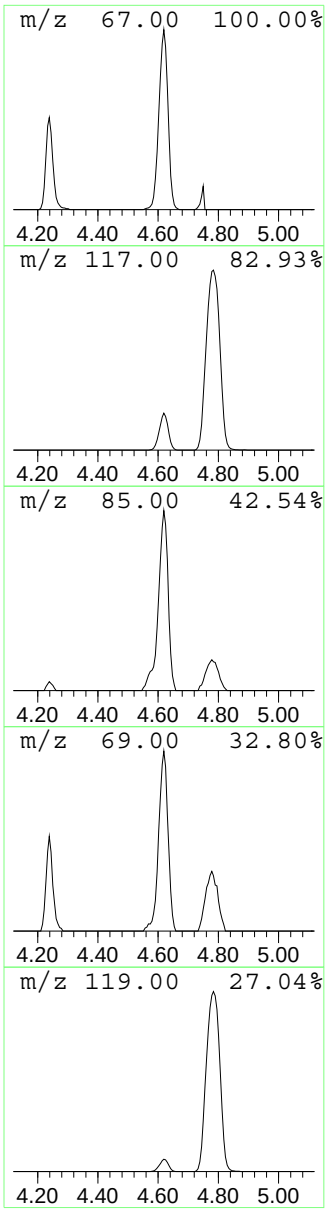
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 2 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.619	5.35 ng	319196	Bromochloromethane (IS1)	7.237

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	94
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
3	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	10
4	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	9
5	Benzene, (2-chlorocyclopropyl)-	152	C9H9Cl	1000327-31-4	9





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\12\
Data File : 01122510.D
Acq On : 12 Jan 2025 9:55
Operator : SC
Sample : P2405139-057 (20mL)
Misc : S37-12312401
ALS Vial : 6 Sample Multiplier: 1

MDA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.619	5.3	ng	319196	1	7.237	745895	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 05:29:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	146686	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	639629	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	120820	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	242249	12.122	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.96%				
57) Toluene-d8 (SS2)	12.43	98	674279	12.580	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
73) Bromofluorobenzene (SS3)	16.82	174	250269	13.531	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.24%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.30	85	32654	1.139	ng	#	92
4) Chloromethane	0.00	50	0	N.D. d			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	277	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	3.77	54	120	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.15	64	314	N.D.			
10) Ethanol	4.30	45	87707	8.084	ng		98
11) Acetonitrile	4.44	41	4231	0.152	ng	#	1
12) Acrolein	4.53	56	2974	0.321	ng		83
13) Acetone	4.63	58	68811	6.967	ng	#	67
14) Trichlorofluoromethane	4.76	101	346855	12.898	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	184631	5.220	ng		97
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.35	84	991	0.071	ng		99
20) 3-Chloro-1-propene (Al...	5.40	41	1129	N.D.			
21) Trichlorotrifluoroethane	5.58	151	989253	81.536	ng		95
22) Carbon Disulfide	5.60	76	501733	11.229	ng		87
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.32	73	752	N.D.			
26) Vinyl Acetate	6.44	86	7191	3.008	ng	#	48
27) 2-Butanone (MEK)	6.67	72	8068	1.017	ng		97
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.28	61	106034	21.650	ng		95
31) n-Hexane	7.30	57	13131	0.596	ng		99
32) Chloroform	7.36	83	10548	0.442	ng		100
34) Tetrahydrofuran (THF)	7.77	72	1598	0.214	ng	#	1
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.81	56	14621	No Calib		#	
41) Benzene	8.89	78	17501	0.341	ng		97
42) Carbon Tetrachloride	9.07	117	659	N.D.			
43) Cyclohexane	9.21	84	6036	0.337	ng		93
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	9.87	63	194	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.15	130	710	N.D.			
48) 1,4-Dioxane	10.12	88	3802	0.428	ng		96

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

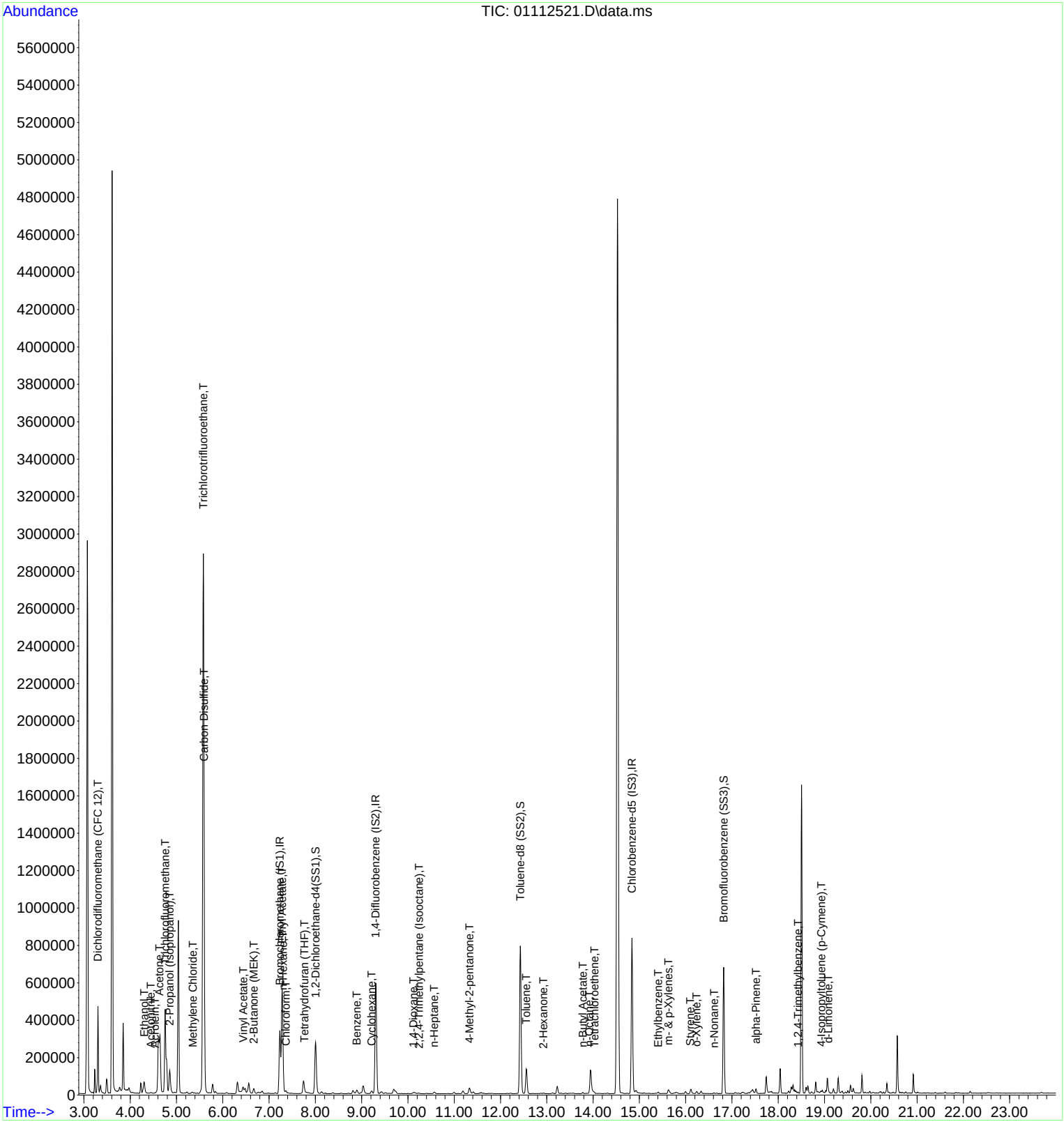
Quant Time: Jan 13 05:29:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	3350	0.062 ng	#	58
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.56	71	2209	0.193 ng		98
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	10611	0.961 ng		84
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	119966	2.326 ng		98
59) 2-Hexanone	12.93	43	2658	0.106 ng	#	55
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	6176	0.219 ng		92
63) n-Octane	13.91	57	1316	0.123 ng		95
64) Tetrachloroethene	14.03	166	774	0.050 ng		96
65) Chlorobenzene	14.89	112	119	N.D.		
66) Ethylbenzene	15.41	91	7330	0.129 ng		95
67) m- & p-Xylenes	15.63	91	18138	0.389 ng		98
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.10	104	2334	0.072 ng		98
70) o-Xylene	16.24	91	7834	0.170 ng		97
71) n-Nonane	16.62	43	2410	0.098 ng	#	72
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.04	105	788	N.D.		
75) alpha-Pinene	17.52	93	10710	0.378 ng		97
76) n-Propylbenzene	17.67	91	1676	N.D.		
77) 3-Ethyltoluene	17.04	105	788	No Calib	#	
78) 4-Ethyltoluene	17.86	105	1196	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	964	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.04	105	788	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.43	105	3115	0.065 ng		89
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.50	91	769	N.D.		
85) 1,3-Dichlorobenzene	18.66	146	204	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	204	N.D.		
87) sec-Butylbenzene	18.74	105	401	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	4785	0.091 ng		95
89) 1,2,3-Trimethylbenzene	17.04	105	788	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	3375	0.221 ng		89
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	3430	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.83	180	356	N.D.		
95) Naphthalene	20.94	128	1395	N.D.		
96) n-Dodecane	18.95	58	432	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.32	55	112	No Calib	#	
99) tert-Butylbenzene	18.43	119	540	N.D.		
100) n-Butylbenzene	19.38	91	1612	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 13 05:29:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 13 05:29:04 2025 VOA 1/13/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

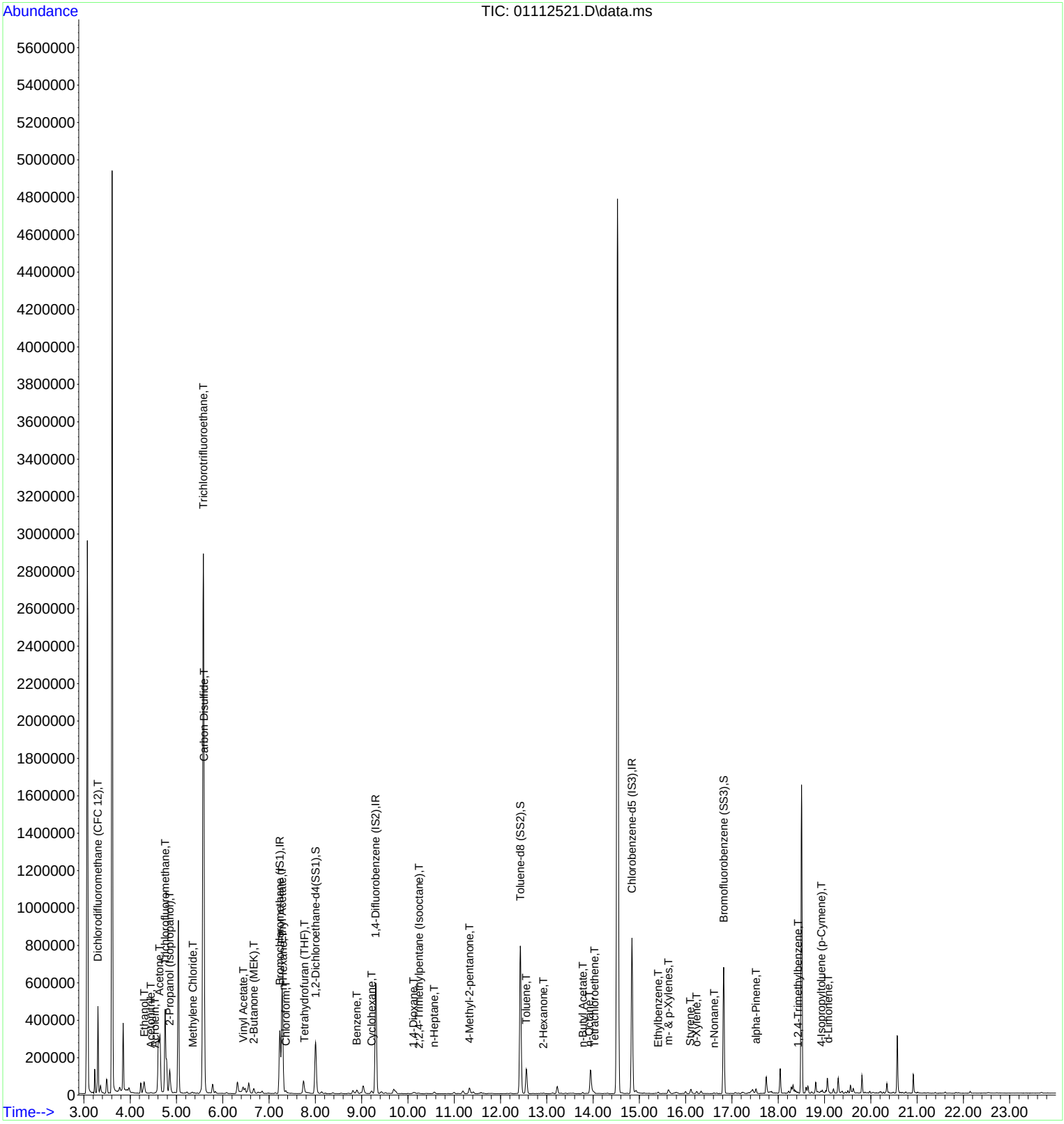
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	146686	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	639629	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	120820	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	242249	12.122	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.96%				
57) Toluene-d8 (SS2)	12.43	98	674279	12.580	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
73) Bromofluorobenzene (SS3)	16.82	174	250269	13.531	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.24%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.30	85	32654	1.139	ng	#	92
10) Ethanol	4.30	45	87707	8.084	ng		98
11) Acetonitrile	4.44	41	4231	0.152	ng	#	1
12) Acrolein	4.53	56	2974	0.321	ng		83
13) Acetone	4.63	58	68811	6.967	ng	#	67
14) Trichlorofluoromethane	4.76	101	346855	12.898	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	184631	5.220	ng		97
19) Methylene Chloride	5.35	84	991	0.071	ng		99
21) Trichlorotrifluoroethane	5.58	151	989253	81.536	ng		95
22) Carbon Disulfide	5.60	76	501733	11.229	ng		87
26) Vinyl Acetate	6.44	86	7191	3.008	ng	#	48
27) 2-Butanone (MEK)	6.67	72	8068	1.017	ng		97
30) Ethyl Acetate	7.28	61	106034	21.650	ng		95
31) n-Hexane	7.30	57	13131	0.596	ng		99
32) Chloroform	7.36	83	10548	0.442	ng		100
34) Tetrahydrofuran (THF)	7.77	72	1598	0.214	ng	#	1
41) Benzene	8.89	78	17501	0.341	ng		97
43) Cyclohexane	9.21	84	6036	0.337	ng		93
48) 1,4-Dioxane	10.12	88	3802	0.428	ng		96
49) 2,2,4-Trimethylpentane...	10.24	57	3350	0.062	ng	#	58
51) n-Heptane	10.56	71	2209	0.193	ng		98
53) 4-Methyl-2-pentanone	11.33	58	10611	0.961	ng		84
58) Toluene	12.56	91	119966	2.326	ng		98
59) 2-Hexanone	12.93	43	2658	0.106	ng	#	55
62) n-Butyl Acetate	13.78	43	6176	0.219	ng		92
63) n-Octane	13.91	57	1316	0.123	ng		95
64) Tetrachloroethene	14.03	166	774	0.050	ng		96
66) Ethylbenzene	15.41	91	7330	0.129	ng		95
67) m- & p-Xylenes	15.63	91	18138	0.389	ng		98
69) Styrene	16.10	104	2334	0.072	ng		98
70) o-Xylene	16.24	91	7834	0.170	ng		97
71) n-Nonane	16.62	43	2410	0.098	ng	#	72
75) alpha-Pinene	17.52	93	10710	0.378	ng		97
82) 1,2,4-Trimethylbenzene	18.43	105	3115	0.065	ng		89
88) 4-Isopropyltoluene (p-...	18.93	119	4785	0.091	ng		95
91) d-Limonene	19.08	68	3375	0.221	ng		89

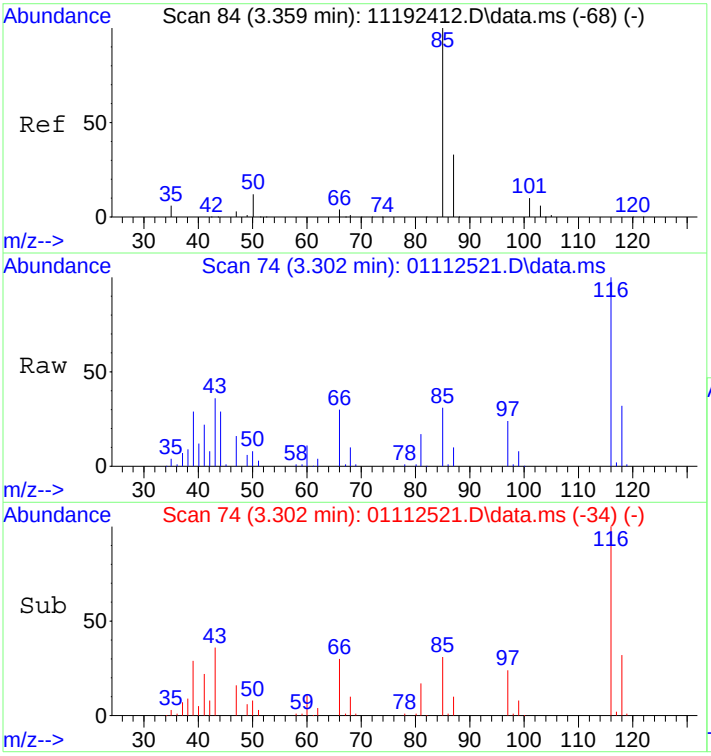
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 13 05:29:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

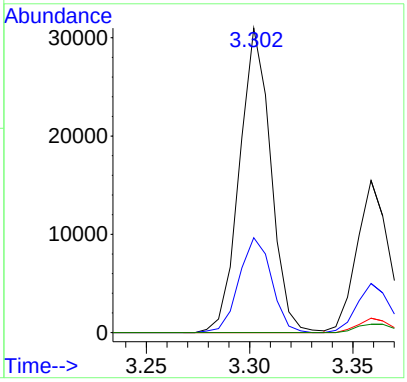


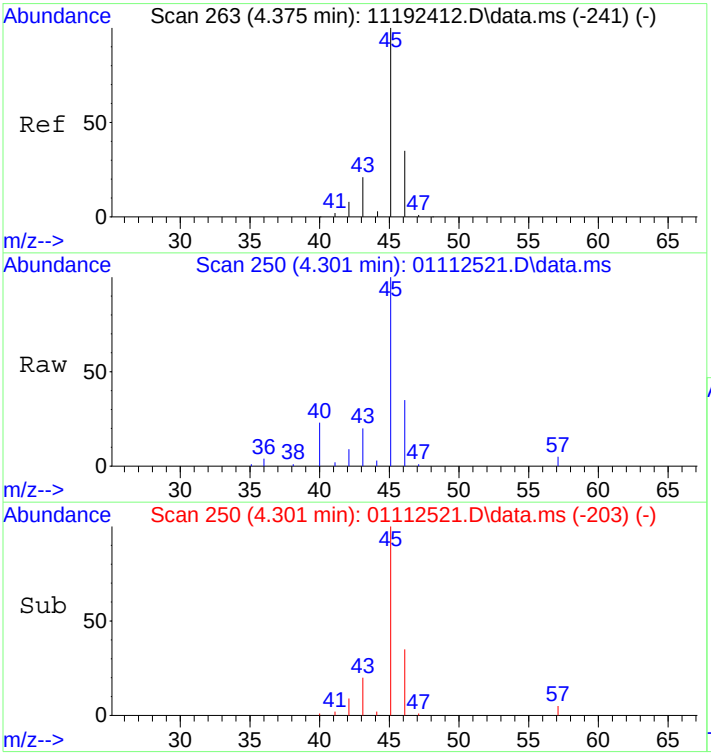


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.14 ng
RT: 3.30 min Scan# 74
Delta R.T. -0.025 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 85 Resp: 32654

Ion	Ratio	Lower	Upper
85	100		
87	32.4	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

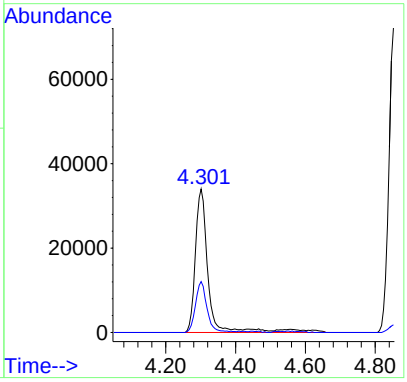


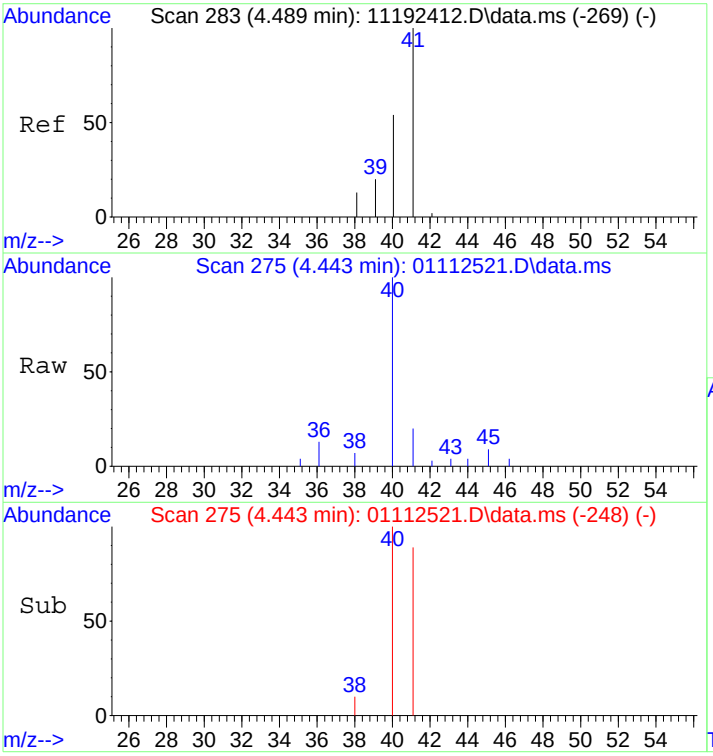


#10
Ethanol
Concen: 8.08 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 45 Resp: 87707

Ion	Ratio	Lower	Upper
45	100		
46	32.7	11.8	51.8

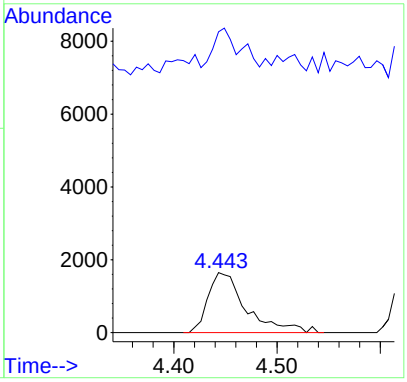


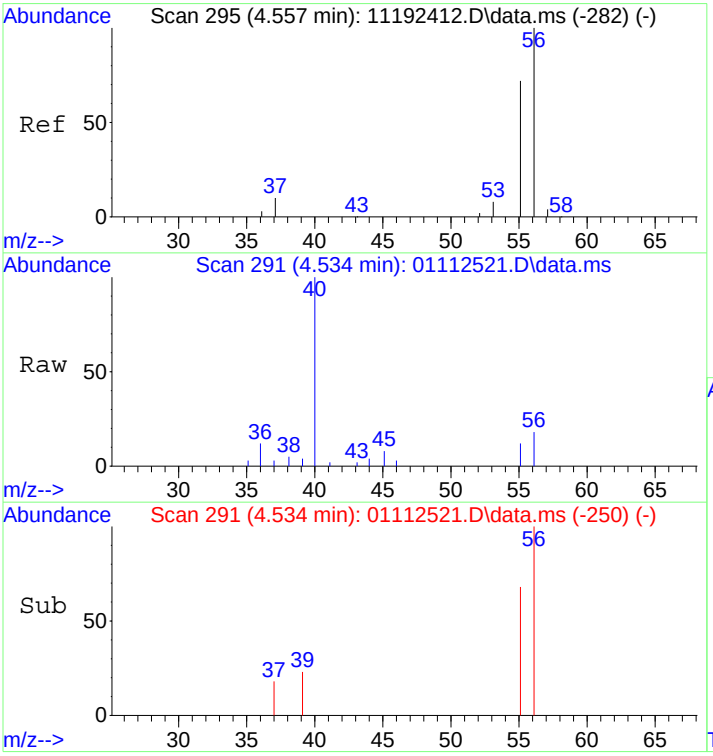


#11
Acetonitrile
Concen: 0.15 ng
RT: 4.44 min Scan# 275
Delta R.T. -0.048 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 41 Resp: 4231

Ion	Ratio	Lower	Upper
41	100		
40	132.4	33.8	73.8#

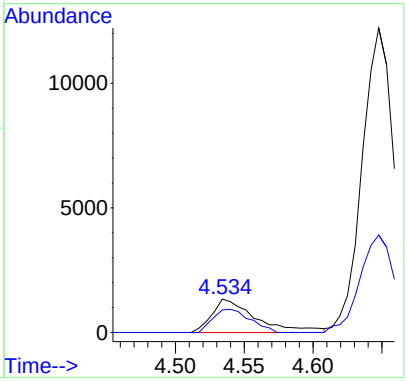


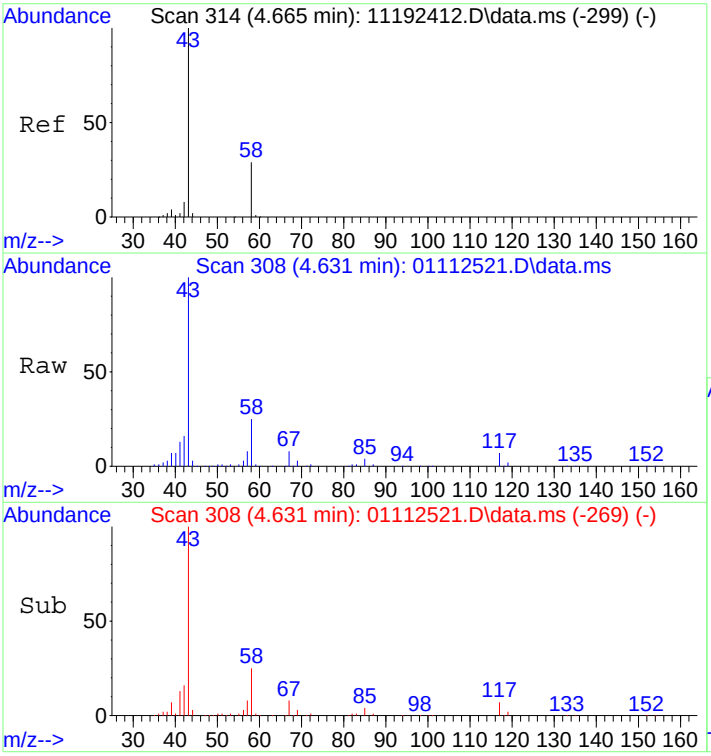


#12
Acrolein
Concen: 0.32 ng
RT: 4.53 min Scan# 291
Delta R.T. -0.019 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 56 Resp: 2974

Ion	Ratio	Lower	Upper
56	100		
55	58.7	53.1	93.1

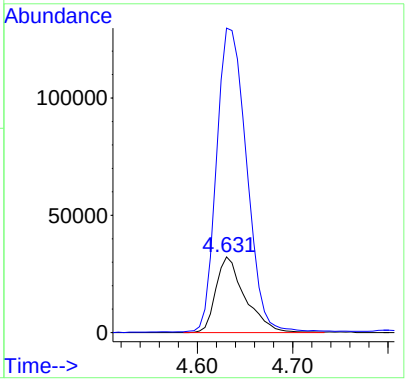


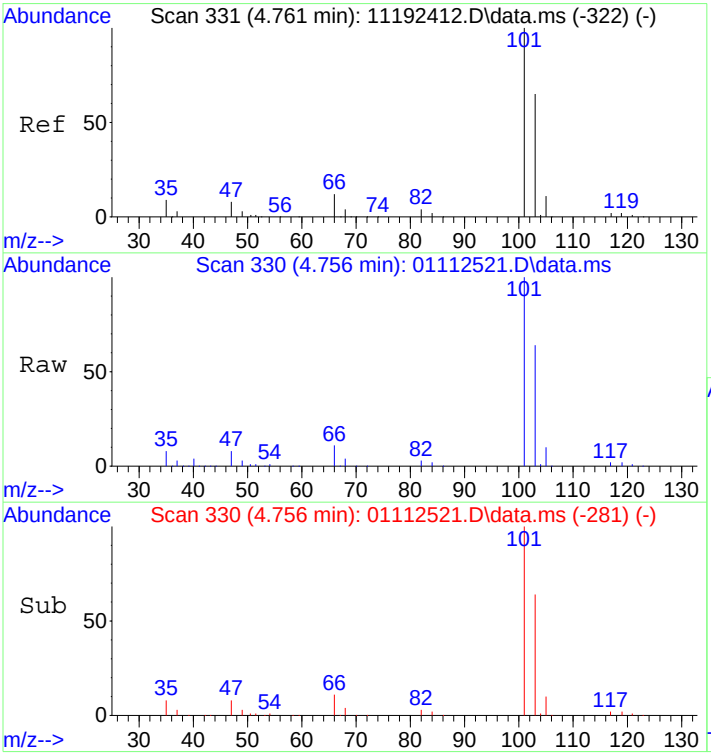


#13
Acetone
Concen: 6.97 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 58 Resp: 68811

Ion	Ratio	Lower	Upper
58	100		
43	413.1	312.5	372.5#

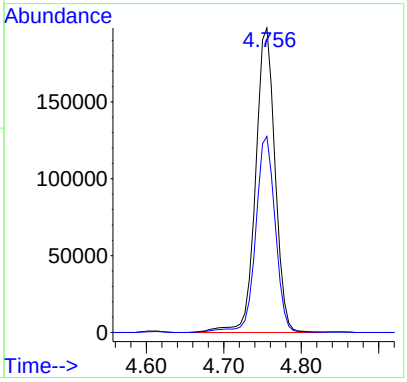


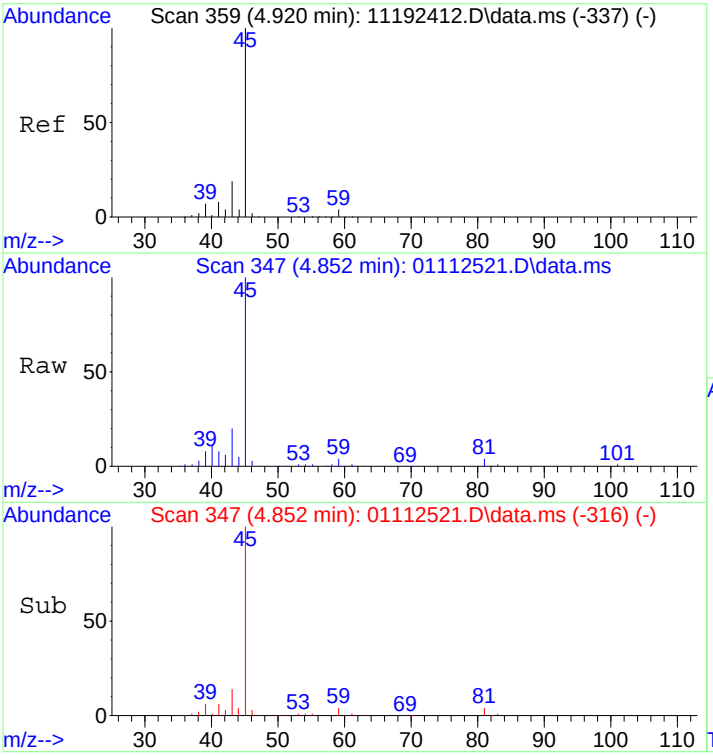


#14
Trichlorofluoromethane
Concen: 12.90 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion:101 Resp: 346855

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.8	84.8

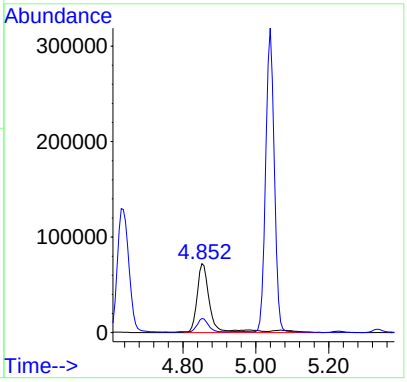


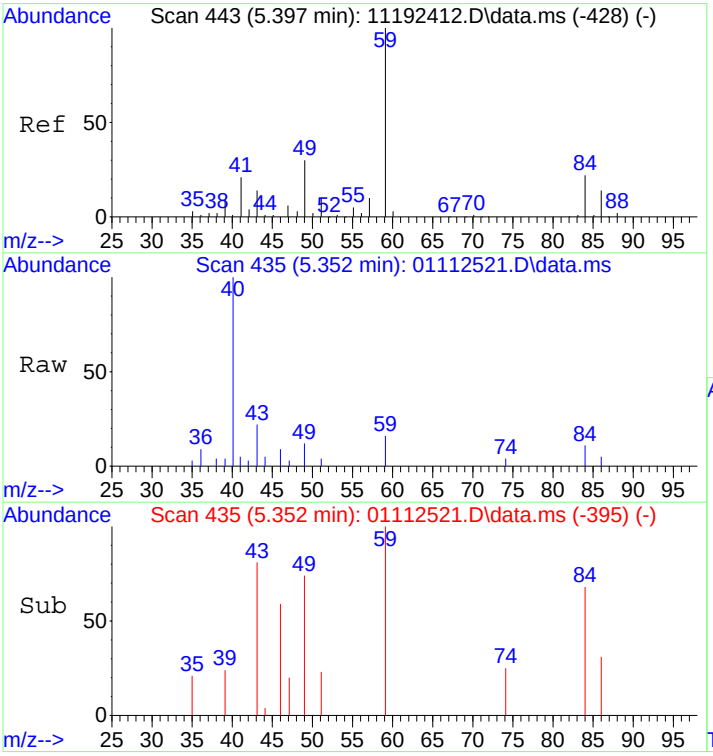


#15
2-Propanol (Isopropanol)
Concen: 5.22 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 45 Resp: 184631

Ion	Ratio	Lower	Upper
45	100		
43	18.6	0.2	40.2

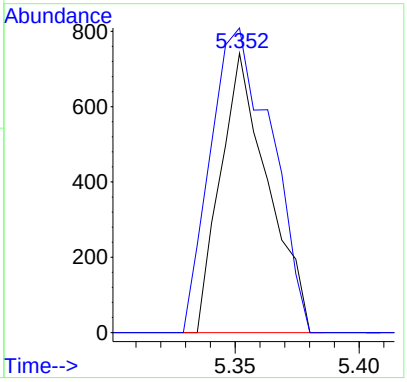


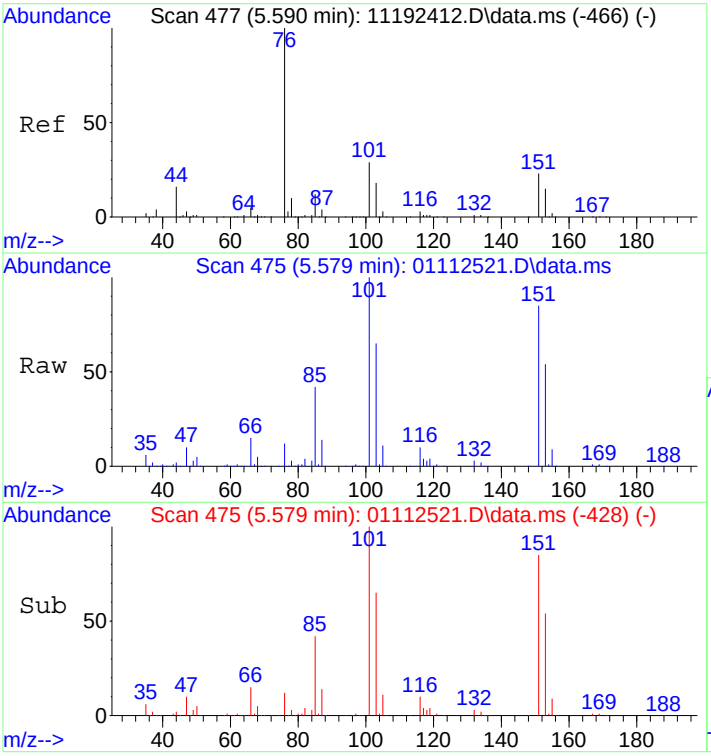


#19
Methylene Chloride
Concen: 0.07 ng
RT: 5.35 min Scan# 435
Delta R.T. -0.023 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 84 Resp: 991

Ion	Ratio	Lower	Upper
84	100		
49	139.9	116.0	166.0

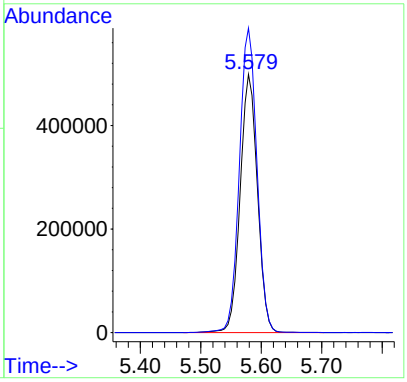


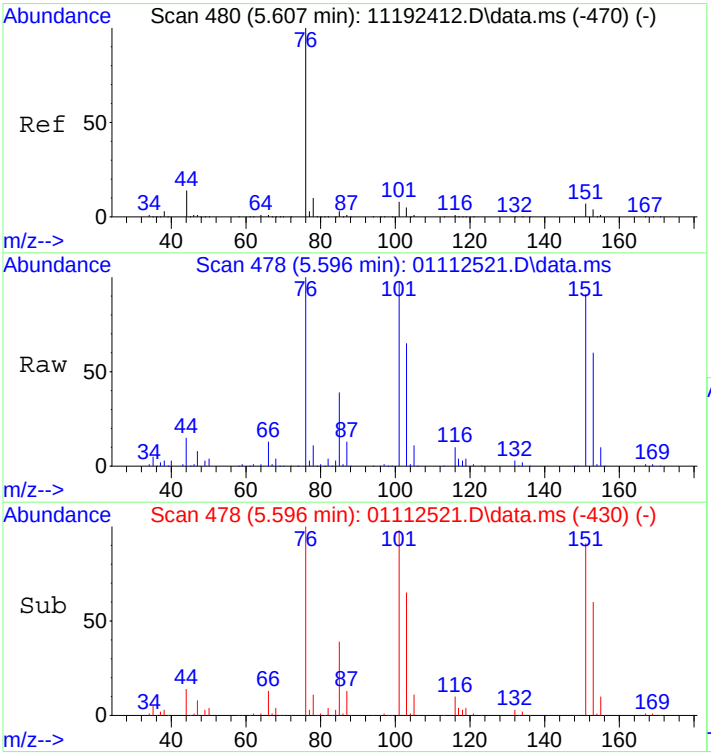


#21
Trichlorotrifluoroethane
Concen: 81.54 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.019 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion:151 Resp: 989253

Ion	Ratio	Lower	Upper
151	100		
101	119.9	105.0	145.0

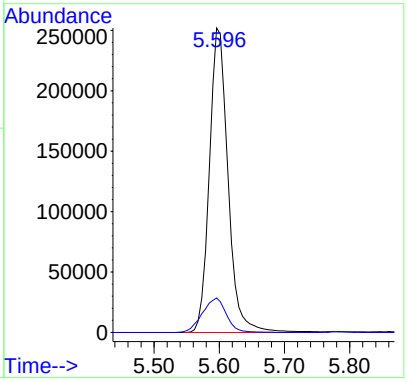


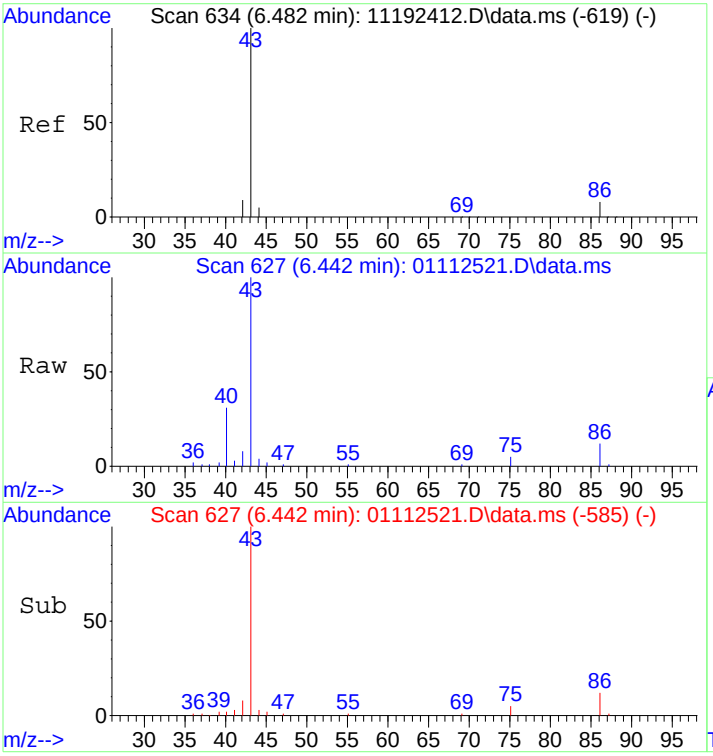


#22
Carbon Disulfide
Concen: 11.23 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.024 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 76 Resp: 501733

Ion	Ratio	Lower	Upper
76	100		
78	14.5	0.0	29.6

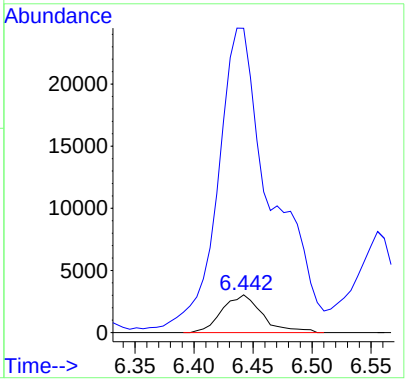


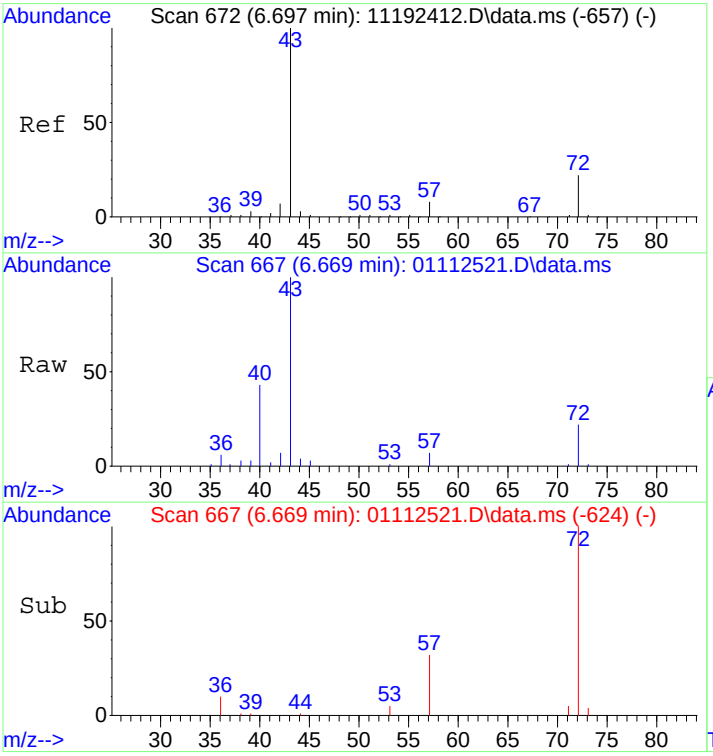


#26
Vinyl Acetate
Concen: 3.01 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 86 Resp: 7191

Ion	Ratio	Lower	Upper
86	100		
43	1063.5	1331.6	1371.6#

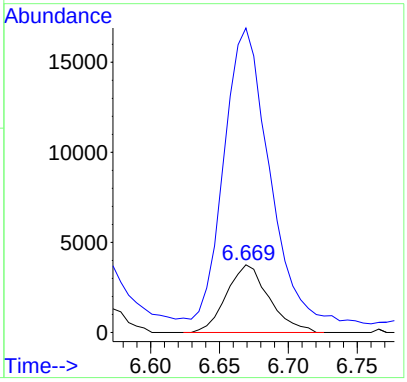


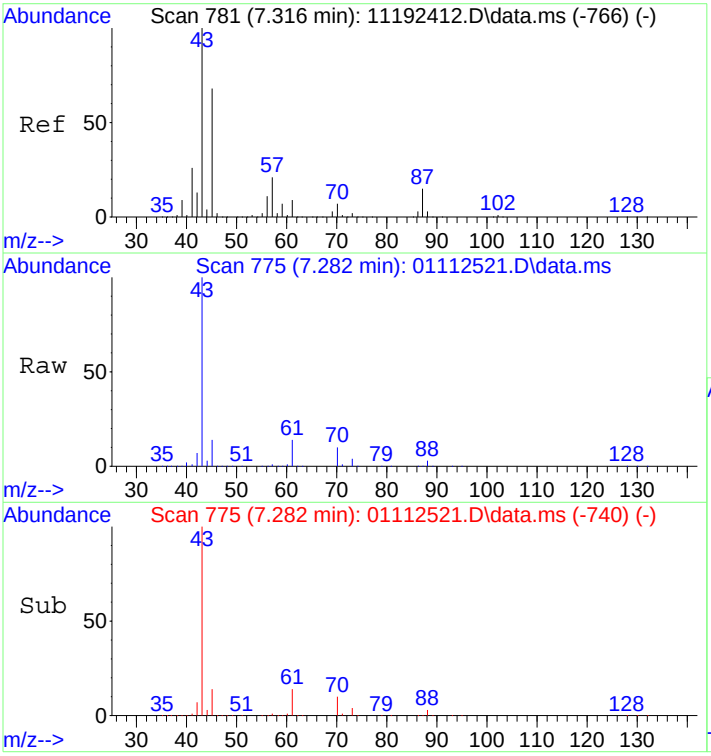


#27
2-Butanone (MEK)
Concen: 1.02 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 72 Resp: 8068

Ion	Ratio	Lower	Upper
72	100		
43	466.8	439.8	479.8

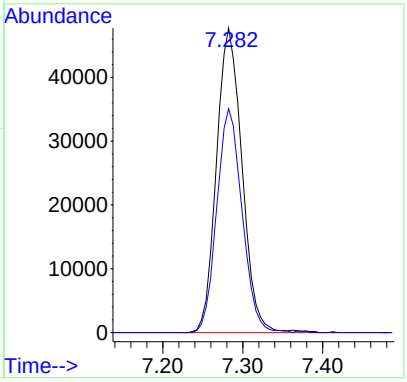


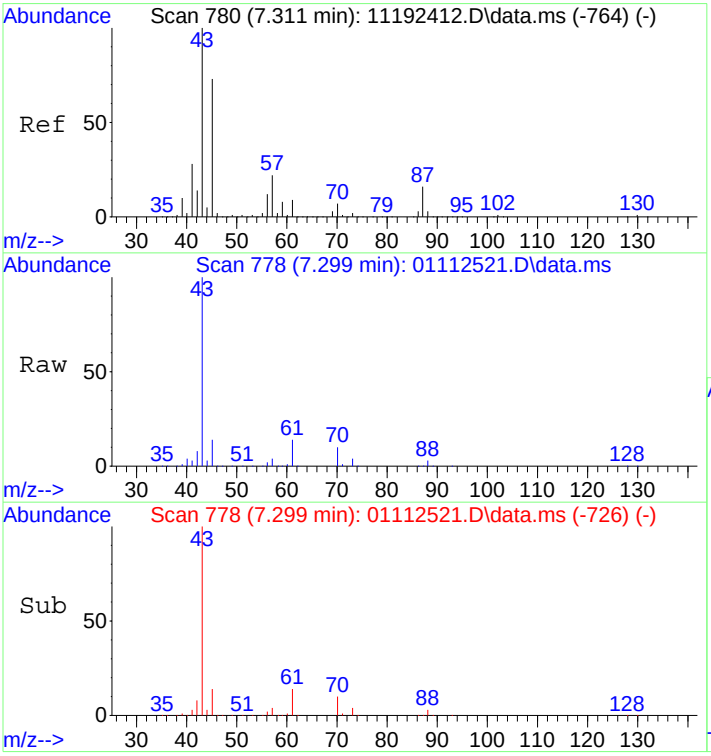


#30
Ethyl Acetate
Concen: 21.65 ng
RT: 7.28 min Scan# 775
Delta R.T. 0.001 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 61 Resp: 106034

Ion	Ratio	Lower	Upper
61	100		
70	72.7	57.3	97.3

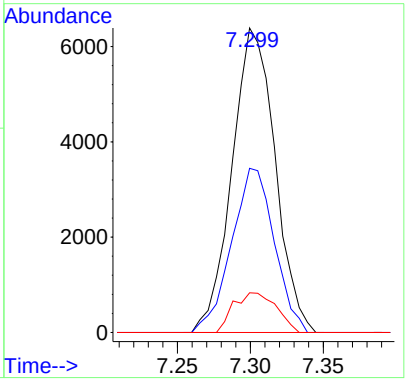


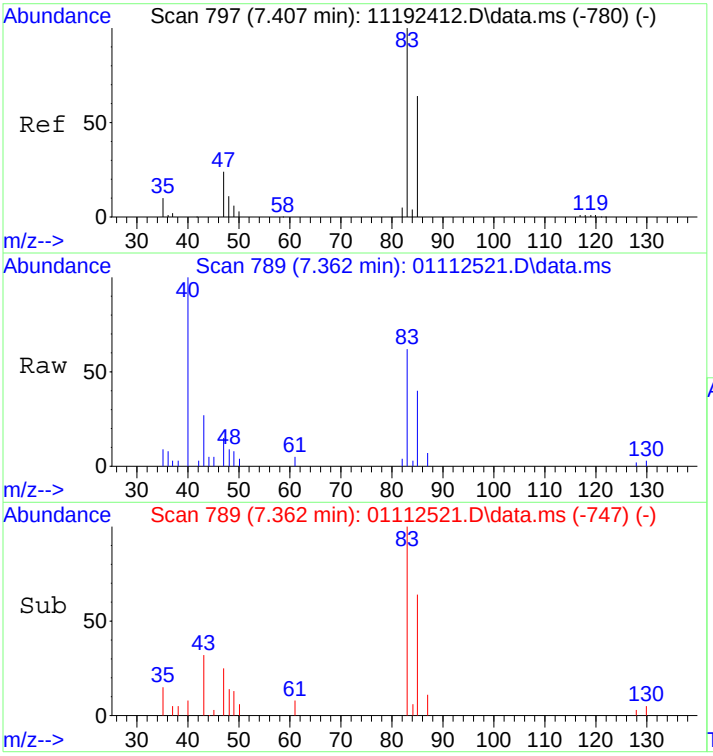


#31
n-Hexane
Concen: 0.60 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 57 Resp: 13131

Ion	Ratio	Lower	Upper
57	100		
56	53.5	43.4	65.0
86	13.0	10.9	16.3

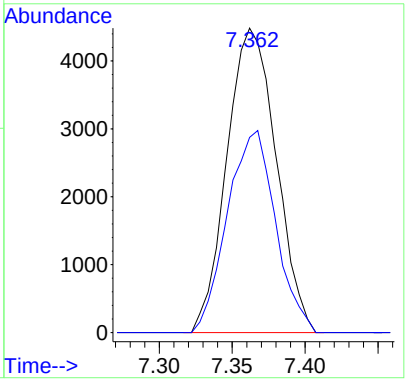


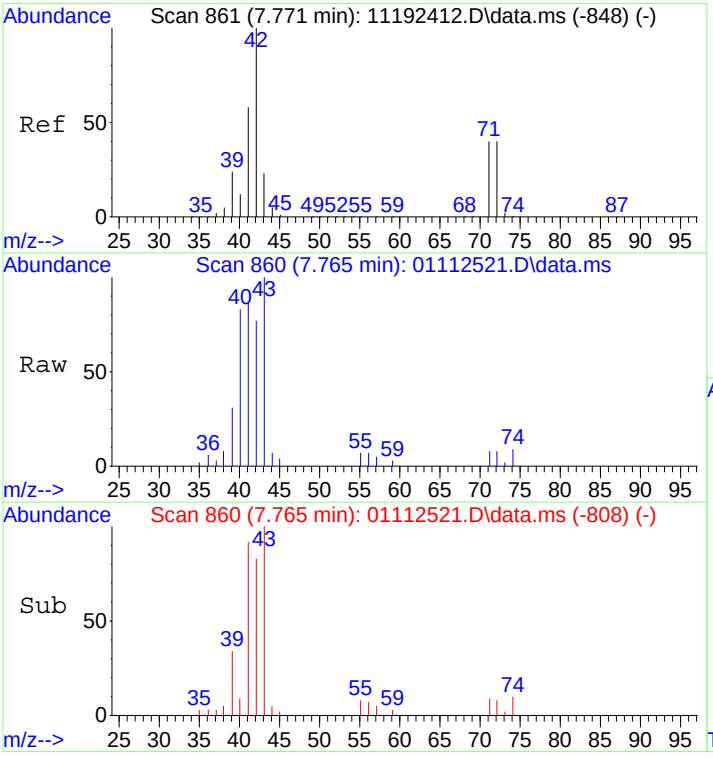


#32
Chloroform
Concen: 0.44 ng
RT: 7.36 min Scan# 789
Delta R.T. -0.010 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 83 Resp: 10548

Ion	Ratio	Lower	Upper
83	100		
85	64.8	45.1	85.1

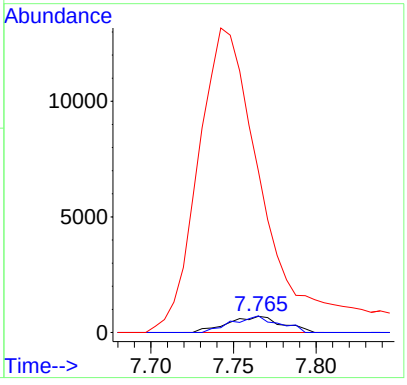


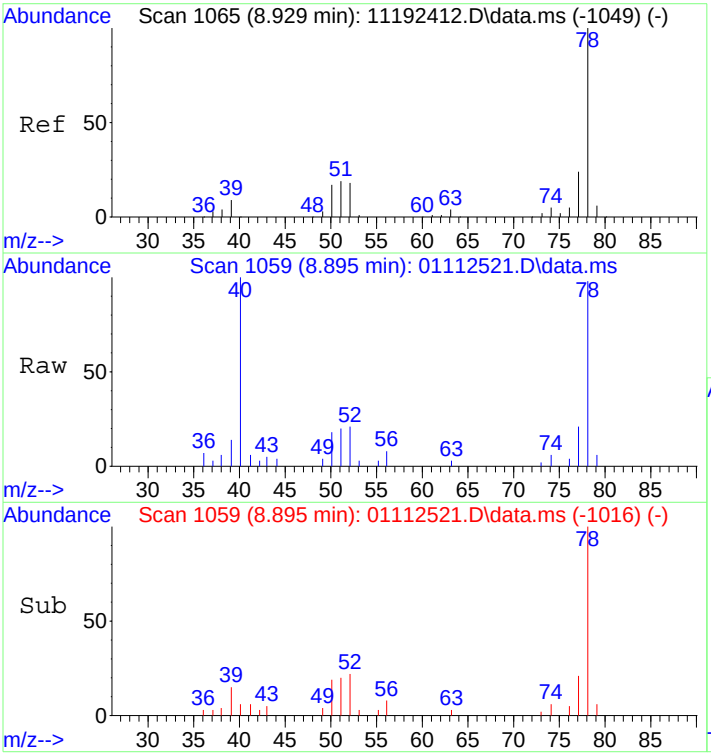


#34
Tetrahydrofuran (THF)
Concen: 0.21 ng
RT: 7.77 min Scan# 860
Delta R.T. 0.045 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 72 Resp: 1598

Ion	Ratio	Lower	Upper
72	100		
71	87.2	78.6	118.6
42	2429.6	243.4	283.4#

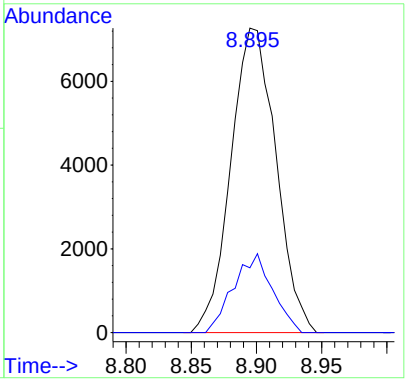


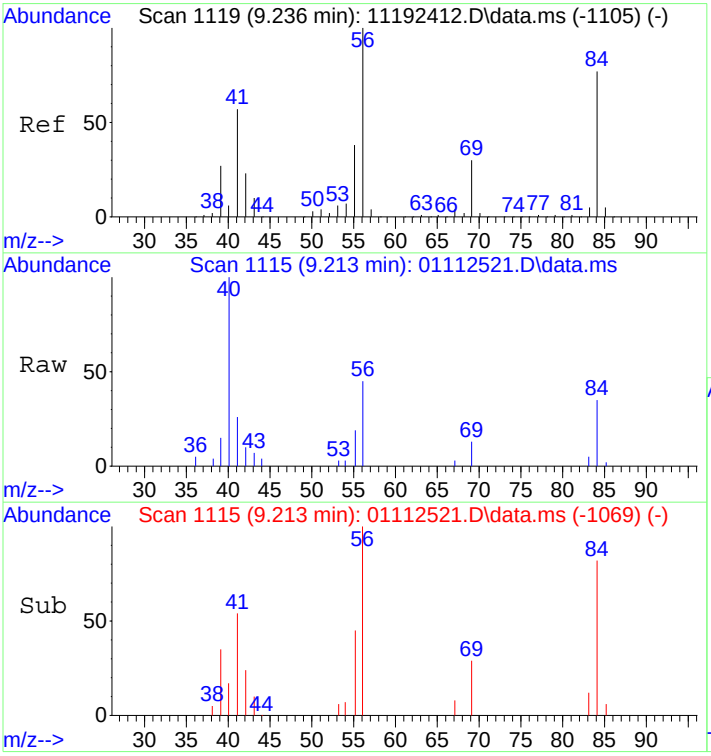


#41
Benzene
Concen: 0.34 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 78 Resp: 17501

Ion	Ratio	Lower	Upper
78	100		
77	22.4	3.7	43.7

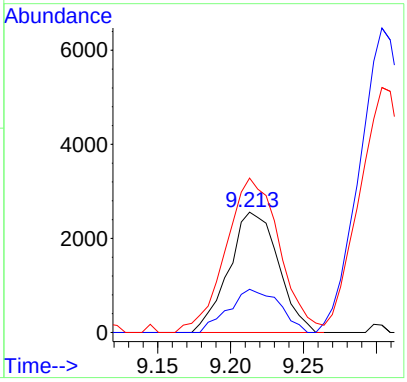


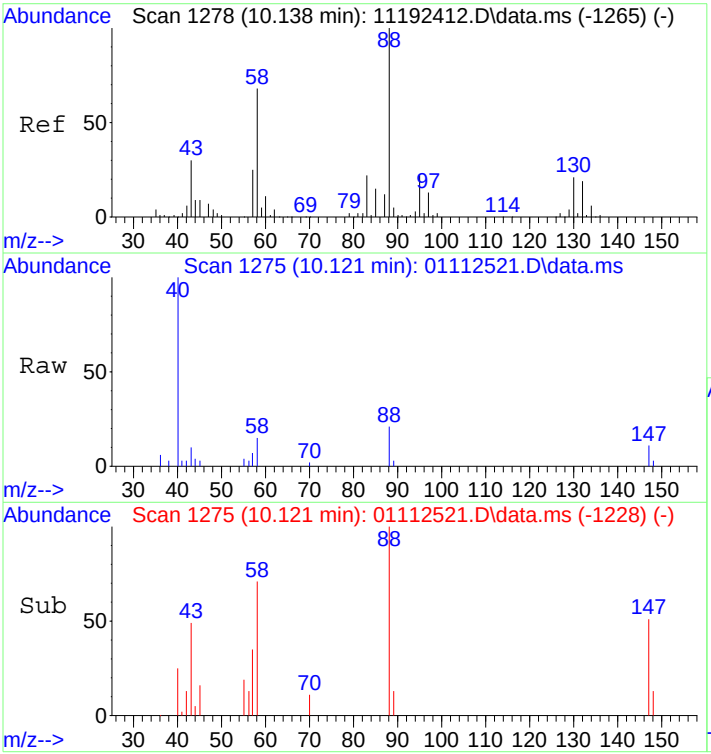


#43
Cyclohexane
Concen: 0.34 ng
RT: 9.21 min Scan# 1115
Delta R.T. 0.010 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 84 Resp: 6036

Ion	Ratio	Lower	Upper
84	100		
69	36.8	18.3	58.3
56	139.9	110.7	150.7

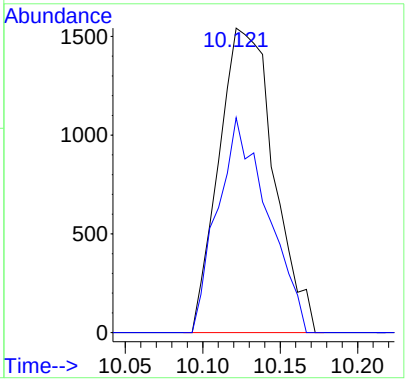


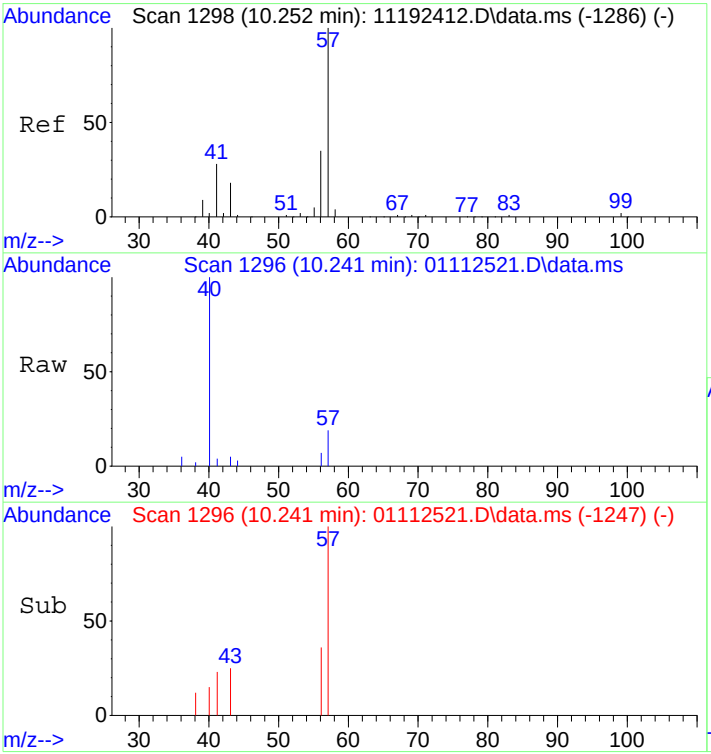


#48
1,4-Dioxane
Concen: 0.43 ng
RT: 10.12 min Scan# 1275
Delta R.T. 0.015 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 88 Resp: 3802

Ion	Ratio	Lower	Upper
88	100		
58	64.5	47.8	87.8

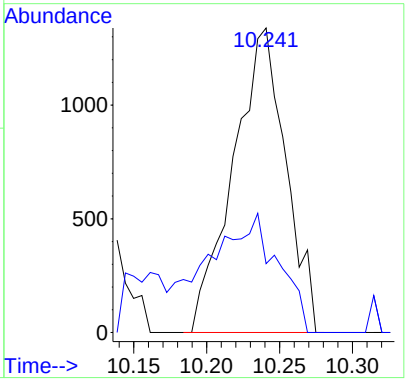


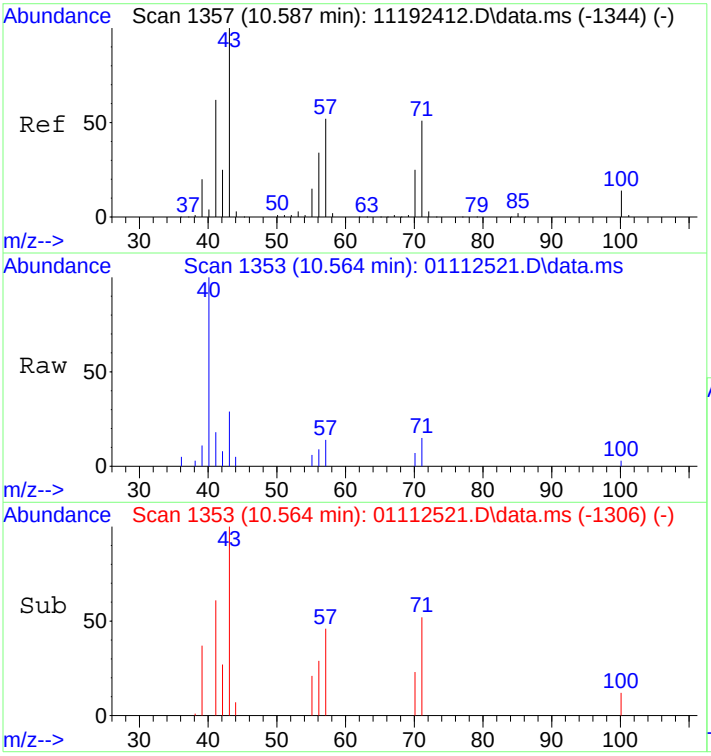


#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 0.06 ng
RT: 10.24 min Scan# 1296
Delta R.T. 0.027 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 57 Resp: 3350

Ion	Ratio	Lower	Upper
57	100		
41	50.4	8.3	48.3#

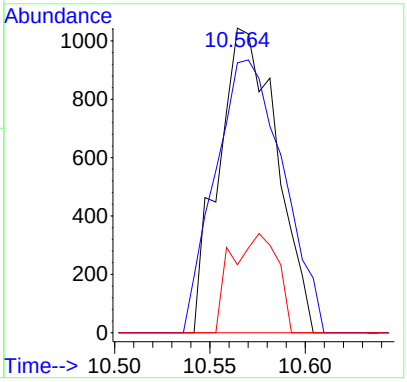


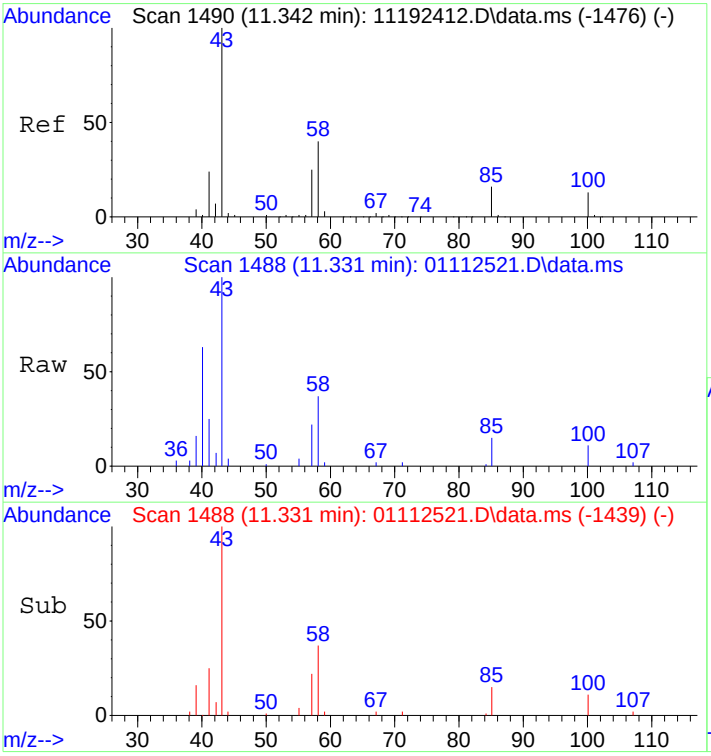


#51
n-Heptane
Concen: 0.19 ng
RT: 10.56 min Scan# 1353
Delta R.T. 0.018 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 71 Resp: 2209

Ion	Ratio	Lower	Upper
71	100		
57	104.8	83.3	123.3
100	26.0	8.7	48.7

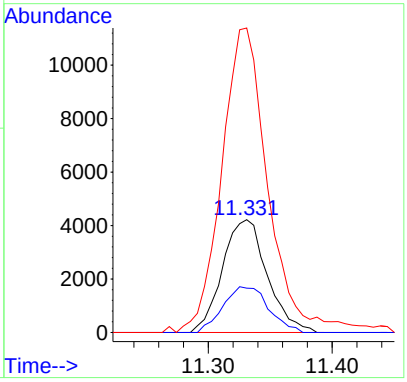


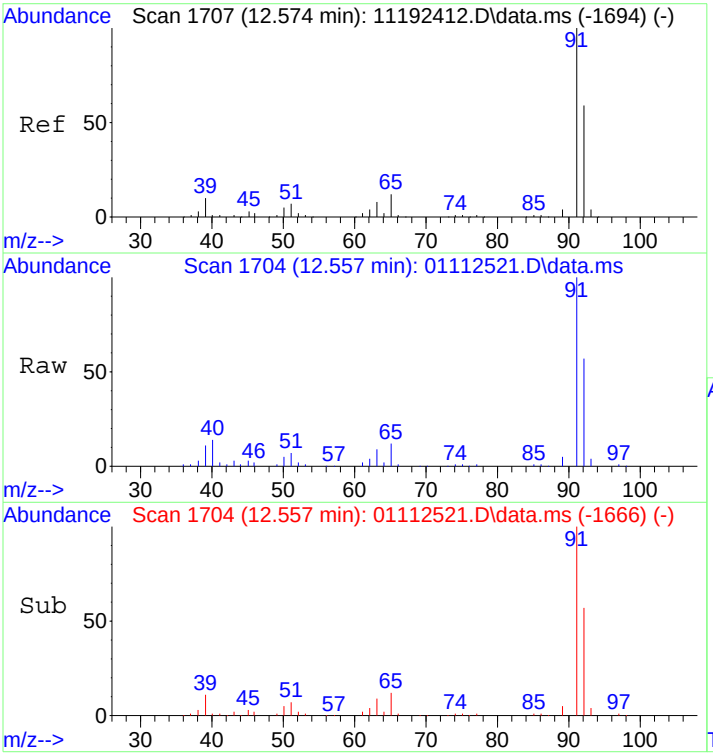


#53
4-Methyl-2-pentanone
Concen: 0.96 ng
RT: 11.33 min Scan# 1488
Delta R.T. 0.027 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 58 Resp: 10611

Ion	Ratio	Lower	Upper
58	100		
85	41.1	33.8	50.6
43	282.2	199.5	299.3

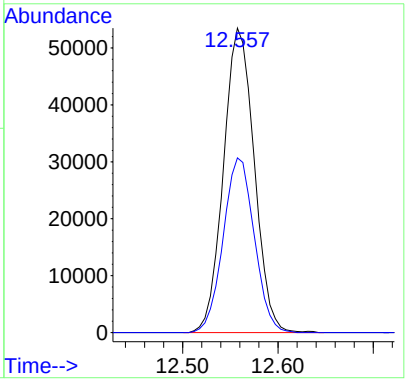


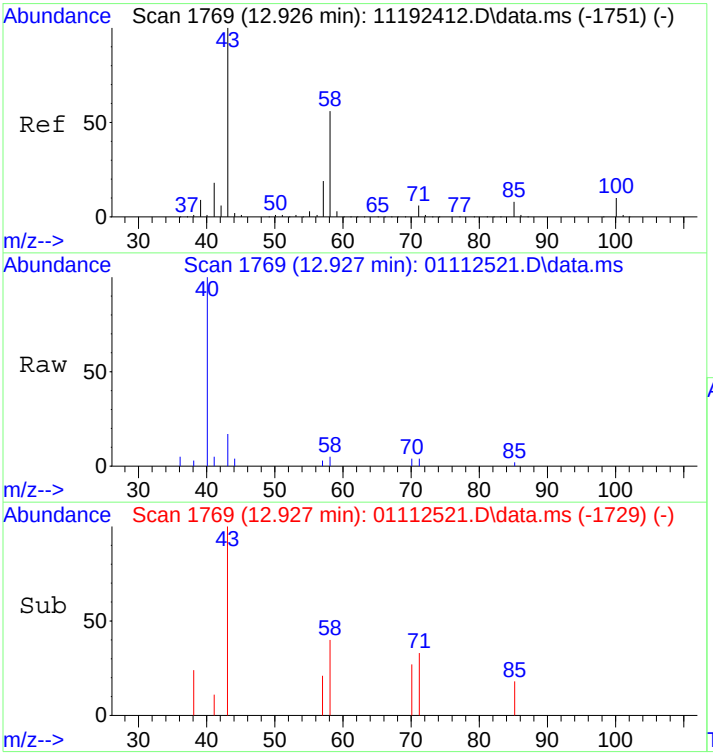


#58
Toluene
Concen: 2.33 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 91 Resp: 119966

Ion	Ratio	Lower	Upper
91	100		
92	57.9	39.2	79.2

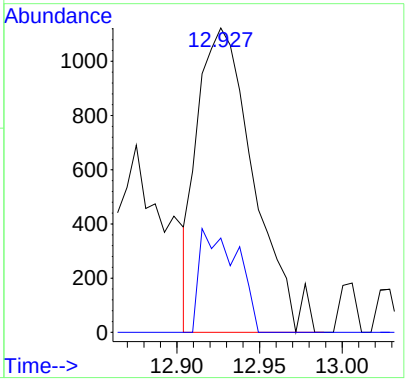


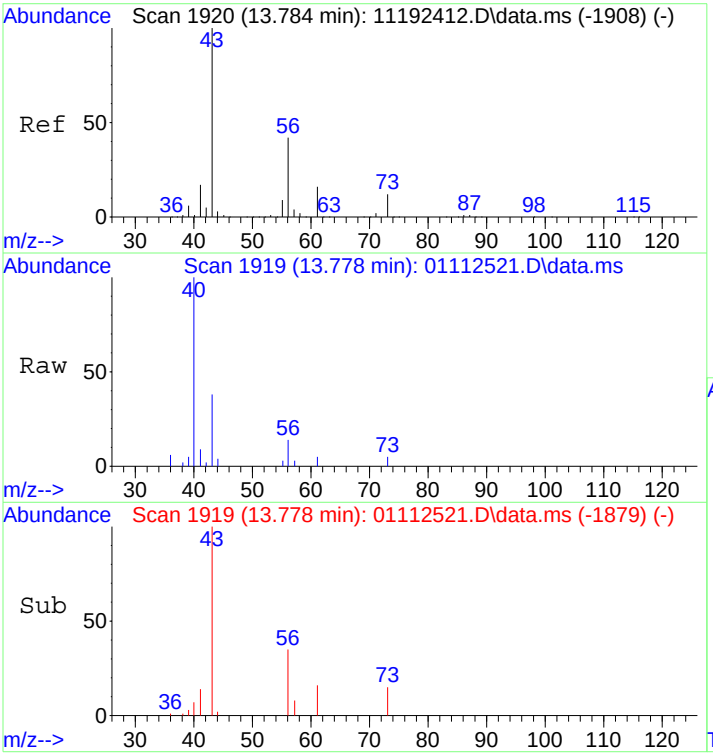


#59
2-Hexanone
Concen: 0.11 ng
RT: 12.93 min Scan# 1769
Delta R.T. -0.023 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 43 Resp: 2658

Ion	Ratio	Lower	Upper
43	100		
58	22.7	35.2	75.2#

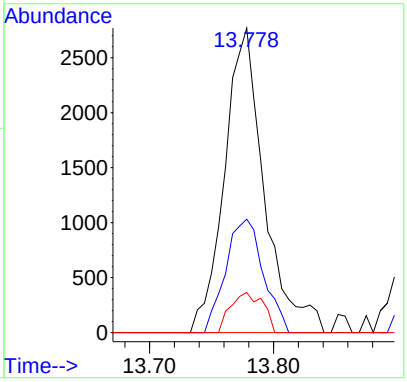


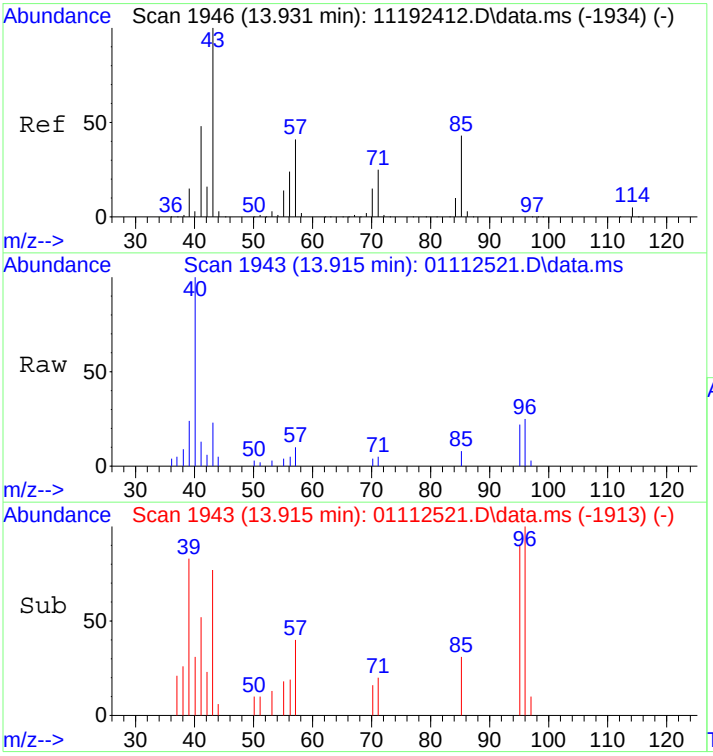


#62
n-Butyl Acetate
Concen: 0.22 ng
RT: 13.78 min Scan# 1919
Delta R.T. -0.023 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 43 Resp: 6176

Ion	Ratio	Lower	Upper
43	100		
56	35.2	20.9	60.9
73	10.7	0.0	32.0

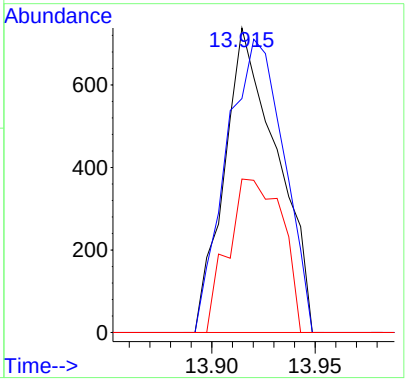


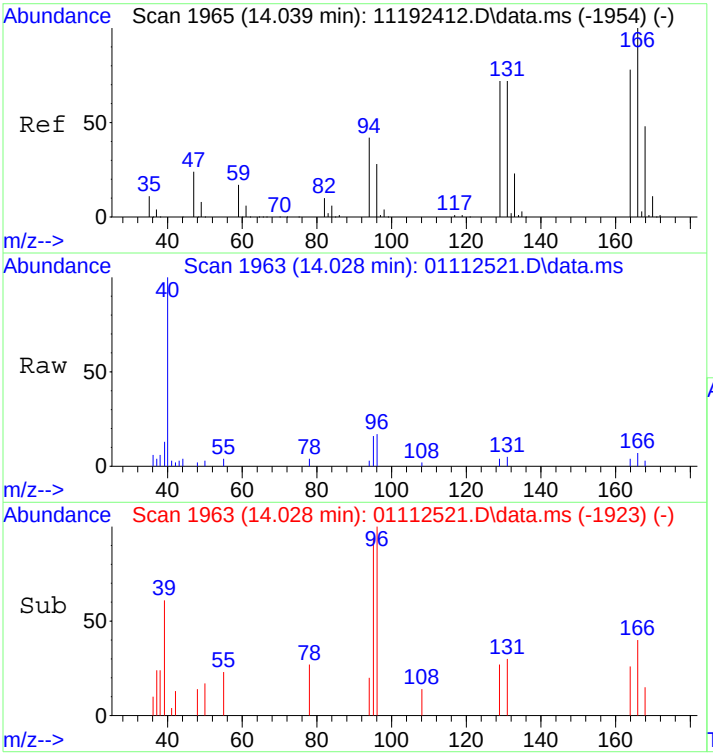


#63
n-Octane
Concen: 0.12 ng
RT: 13.91 min Scan# 1943
Delta R.T. -0.028 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 57 Resp: 1316

Ion	Ratio	Lower	Upper
57	100		
85	104.4	83.6	125.4
71	51.5	49.0	73.4

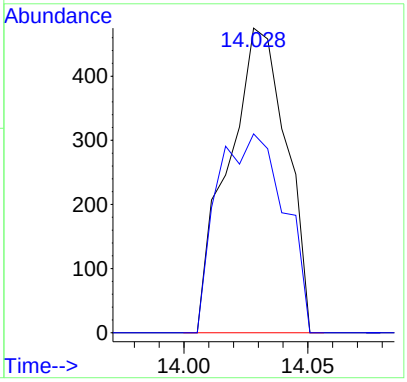


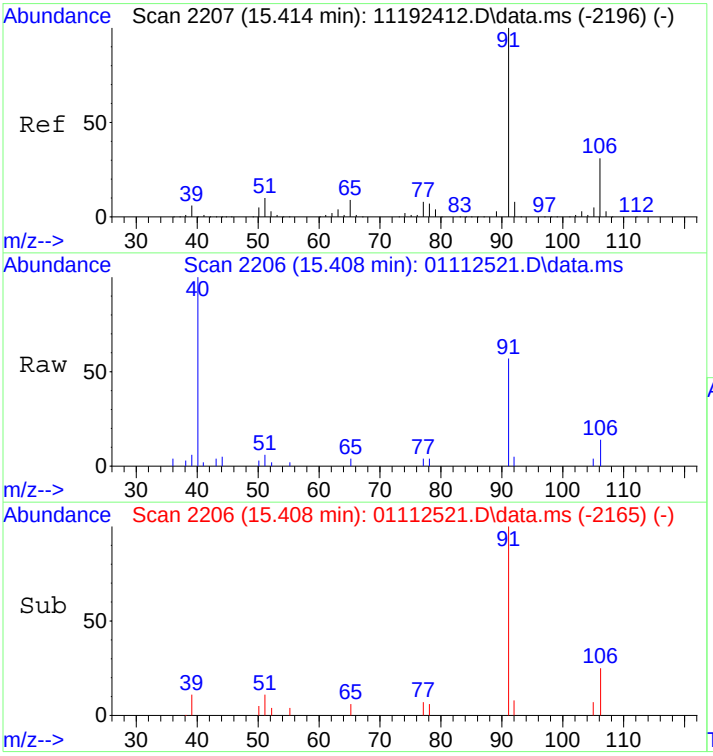


#64
Tetrachloroethene
Concen: 0.05 ng
RT: 14.03 min Scan# 1963
Delta R.T. -0.023 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion:166 Resp: 774

Ion	Ratio	Lower	Upper
166	100		
164	75.6	58.7	98.7

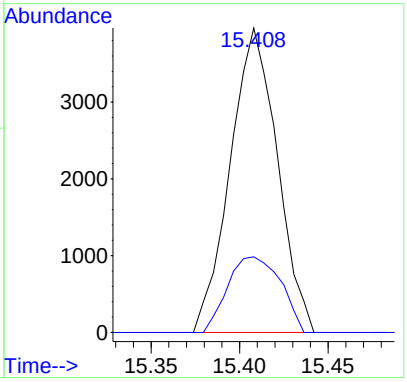


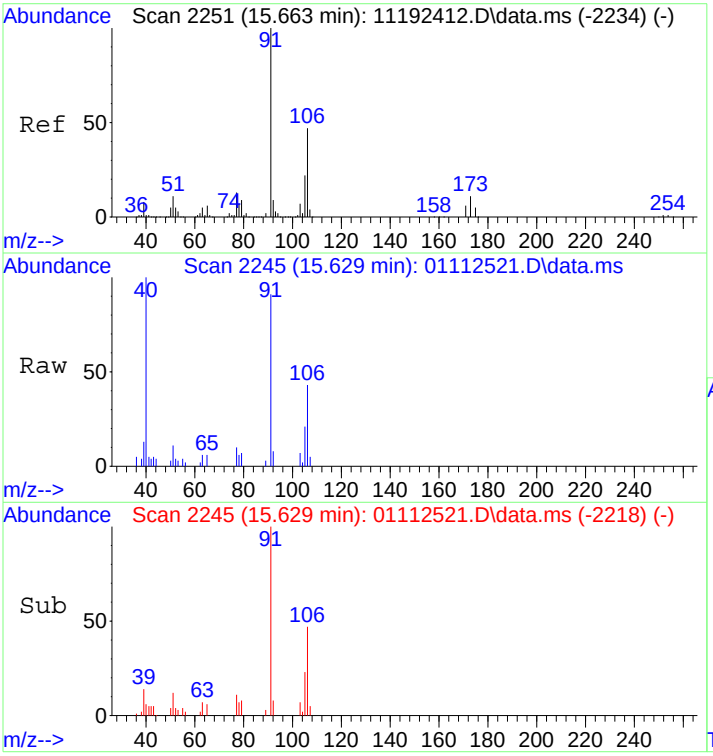


#66
Ethylbenzene
Concen: 0.13 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 91 Resp: 7330

Ion	Ratio	Lower	Upper
91	100		
106	28.0	10.7	50.7

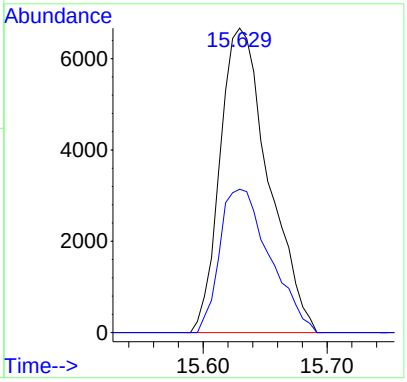


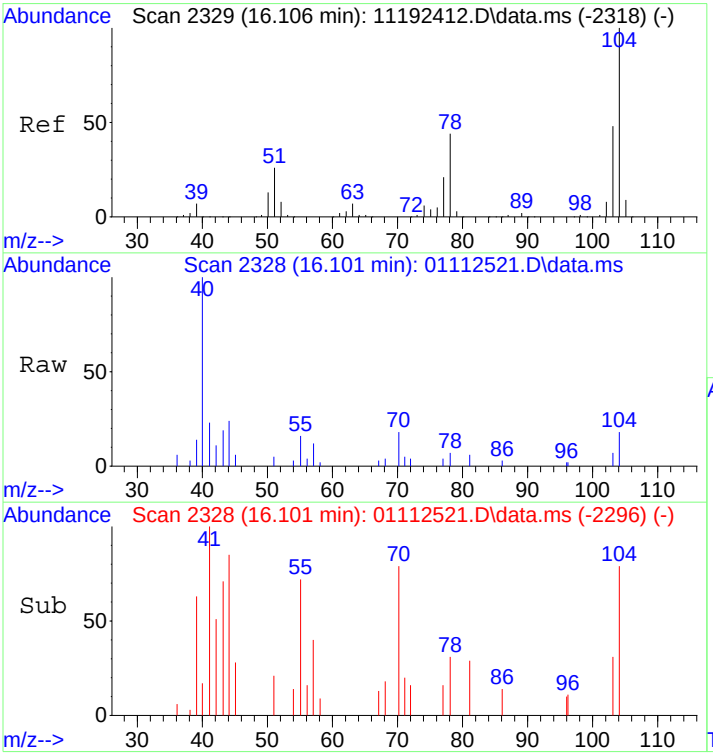


#67
m- & p-Xylenes
Concen: 0.39 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 91 Resp: 18138

Ion	Ratio	Lower	Upper
91	100		
106	48.7	27.1	67.1

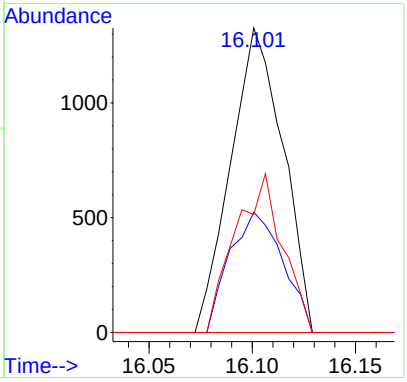


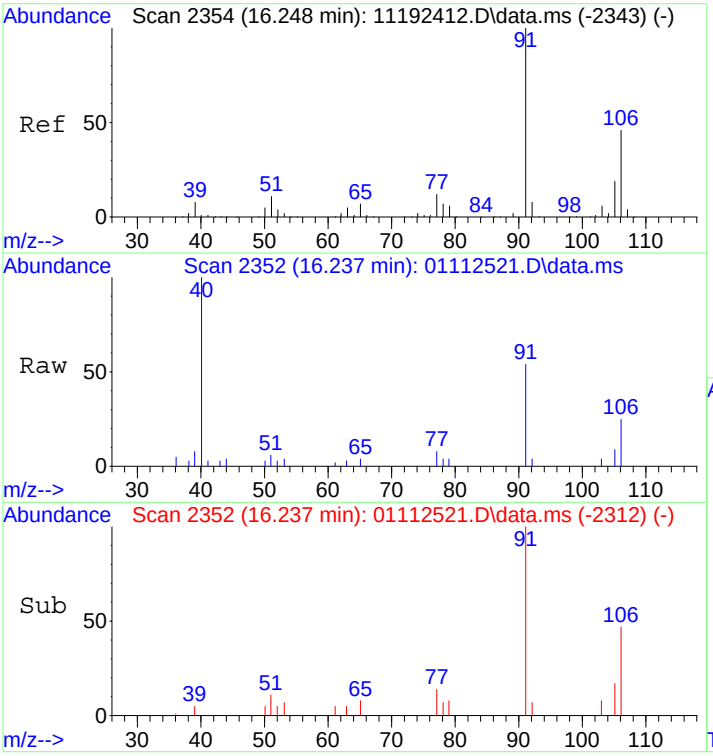


#69
Styrene
Concen: 0.07 ng
RT: 16.10 min Scan# 2328
Delta R.T. -0.017 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion:104 Resp: 2334

Ion	Ratio	Lower	Upper
104	100		
78	40.2	23.0	63.0
103	47.3	27.5	67.5

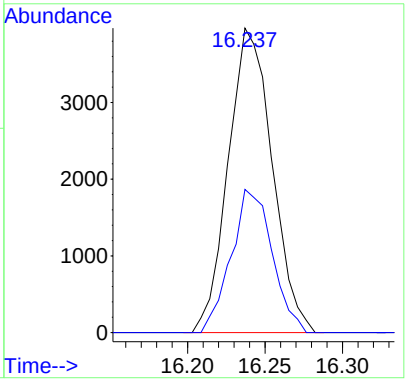


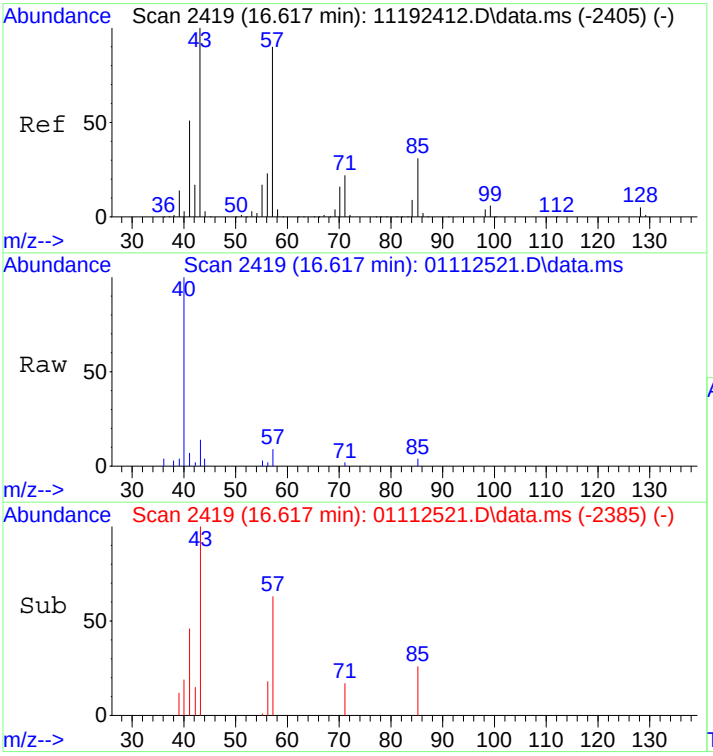


#70
o-Xylene
Concen: 0.17 ng
RT: 16.24 min Scan# 2352
Delta R.T. -0.023 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 91 Resp: 7834

Ion	Ratio	Lower	Upper
91	100		
106	44.0	25.8	65.8

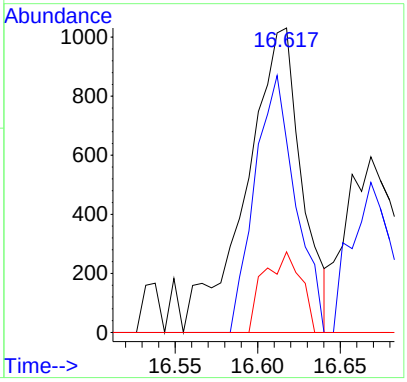


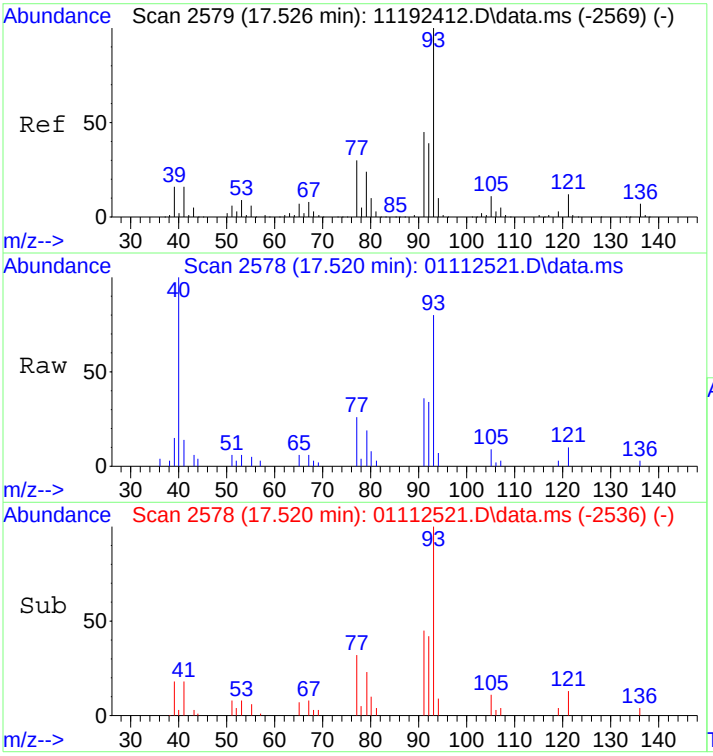


#71
n-Nonane
Concen: 0.10 ng
RT: 16.62 min Scan# 2419
Delta R.T. -0.006 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 43 Resp: 2410

Ion	Ratio	Lower	Upper
43	100		
57	61.8	69.4	109.4#
85	17.6	10.5	50.5

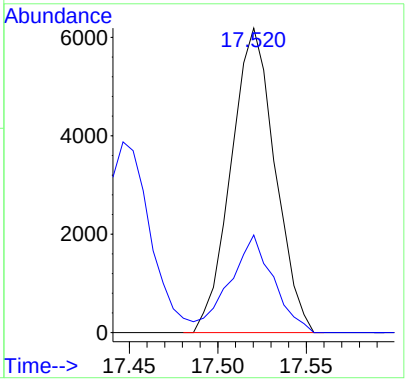


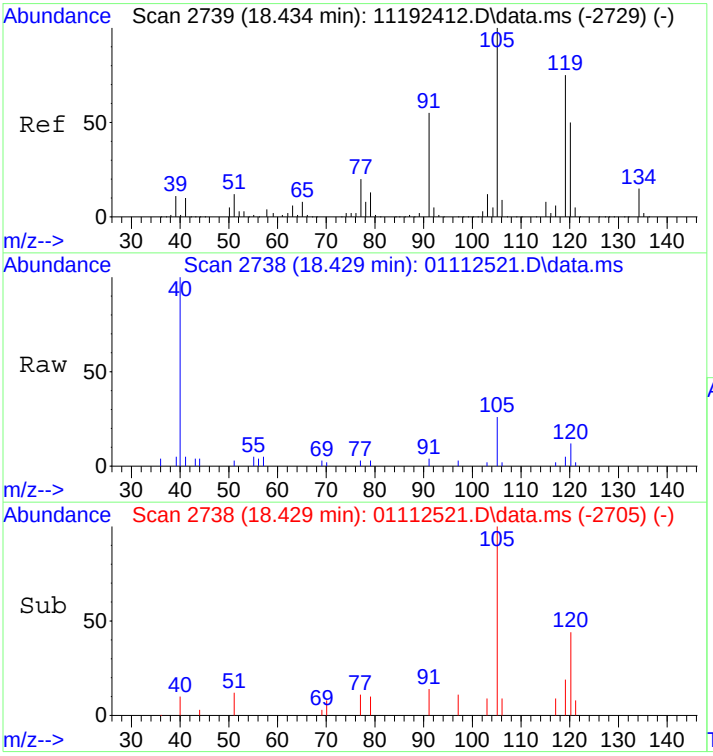


#75
alpha-Pinene
Concen: 0.38 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 93 Resp: 10710

Ion	Ratio	Lower	Upper
93	100		
77	31.7	10.1	50.1

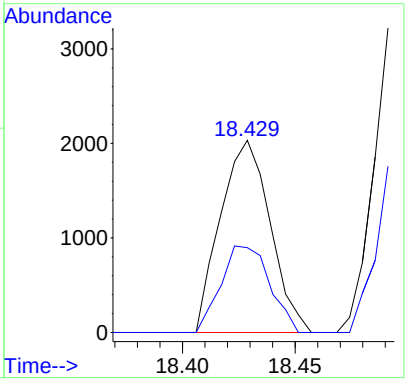


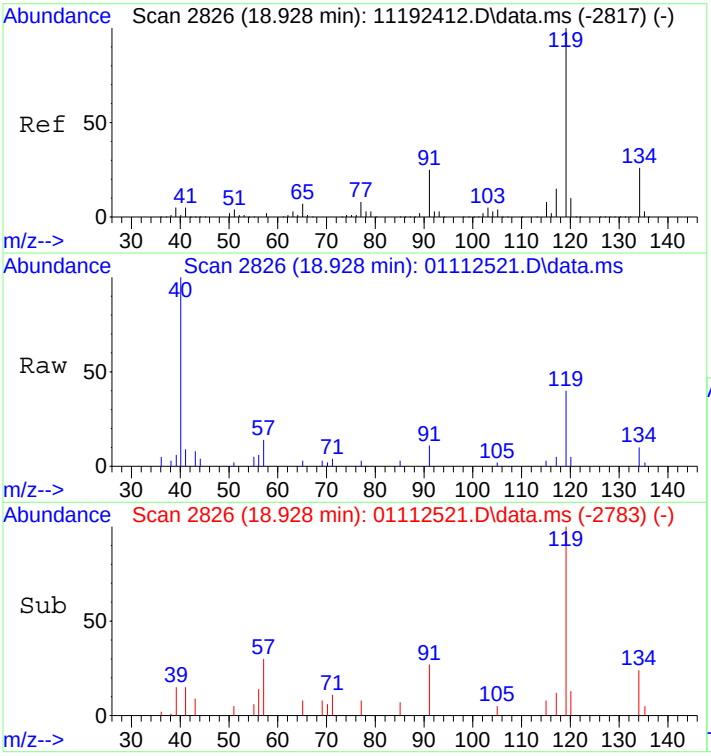


#82
1,2,4-Trimethylbenzene
Concen: 0.07 ng
RT: 18.43 min Scan# 2738
Delta R.T. -0.011 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion:105 Resp: 3115

Ion	Ratio	Lower	Upper
105	100		
120	44.1	31.8	71.8

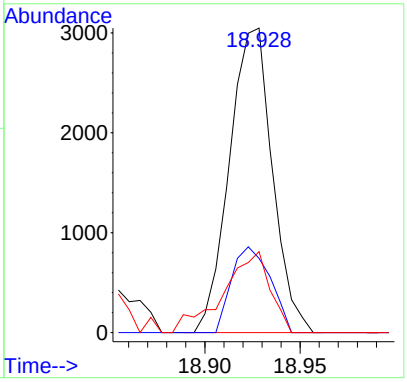


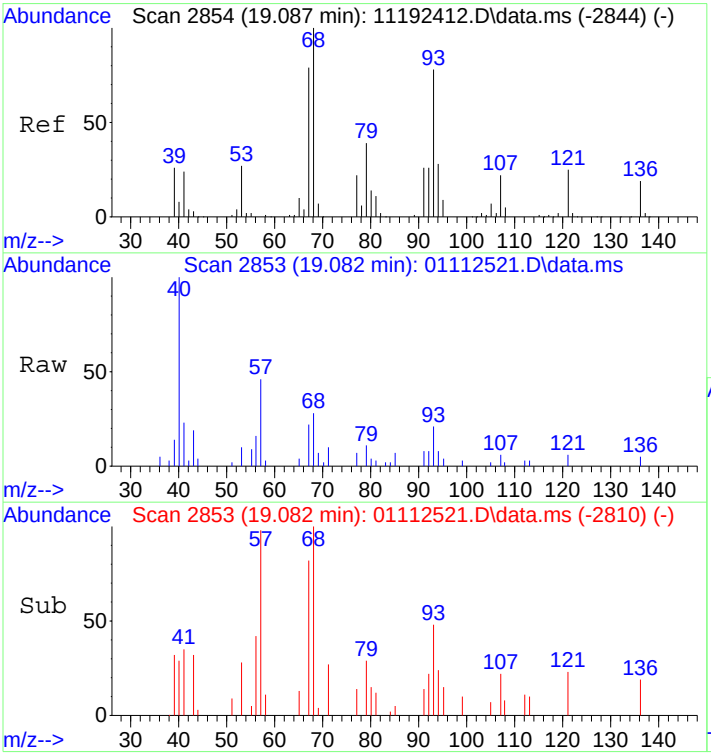


#88
4-Isopropyltoluene (p-Cymene)
Concen: 0.09 ng
RT: 18.93 min Scan# 2826
Delta R.T. -0.006 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion:119 Resp: 4785

Ion	Ratio	Lower	Upper
119	100		
134	25.4	5.8	45.8
91	28.9	4.6	44.6

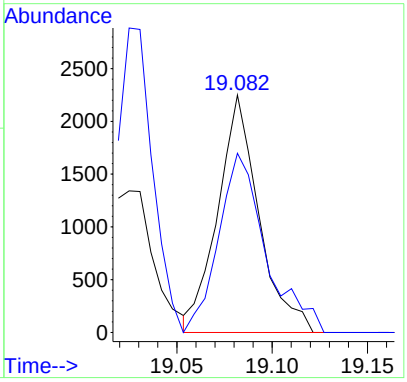




#91
d-Limonene
Concen: 0.22 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01112521.D
Acq: 11 Jan 2025 17:46

Tgt Ion: 68 Resp: 3375

Ion	Ratio	Lower	Upper
68	100		
93	86.2	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

MA 1/13/25

Quant Time: Jan 13 10:45:32 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

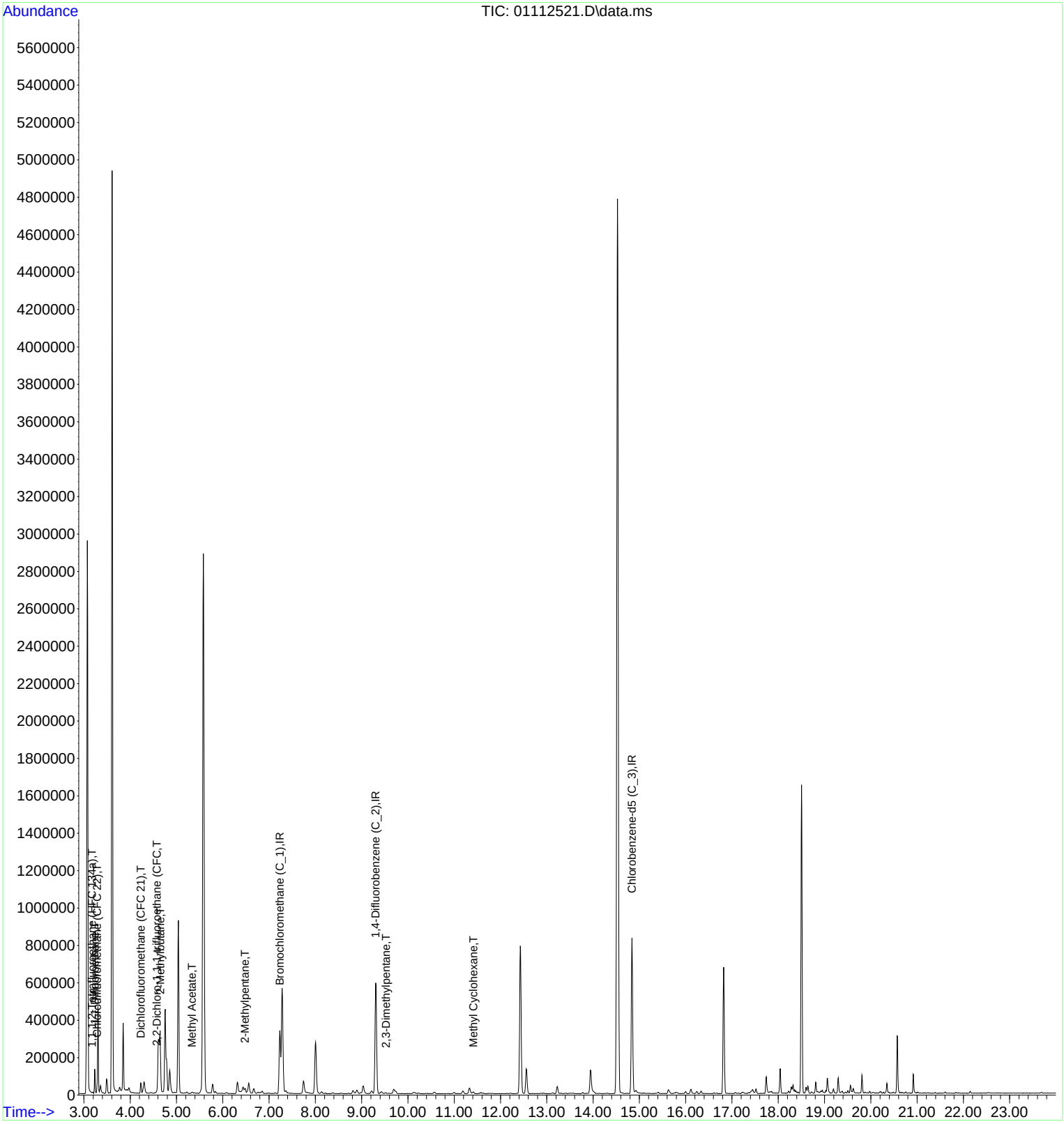
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	147070	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	639888	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	120820	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.14	85	255	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	2109	0.158	ng	#	5
4) 1,1-Difluoroethane	3.23	65	32573	2.735	ng		99
5) Chlorodifluoromethane ...	3.28	67	4169	1.018	ng	#	83
6) 1-Chloro-1,1-Difluoroe...	3.49	65	413	N.D.			
7) Dichlorofluoromethane ...	4.23	67	44777	1.503	ng		100
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	6326m	0.311	ng		
10) 2-Methylbutane	4.65	57	56083	3.951	ng		86
11) Methyl Acetate	5.33	43	7697	0.228	ng	#	69
12) 2-Methylpentane	6.48	71	5702	0.471	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.	d		
17) 2,3-Dimethylpentane	9.53	56	2959	0.116	ng	#	88
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.42	55	4198	0.195	ng		92
21) 1,3-Dichloropropane	12.55	76	432	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	16.33	75	663	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.67	91	1676	N.D.			
27) 4-Chlorotoluene	17.67	91	1676	N.D.			
28) Indane	19.12	117	600	N.D.			
29) Indene	19.10	115	182	N.D.			
30) 1,2,4,5-Tetramethylben...	20.18	119	240	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	325	N.D.			
32) 1,2,3,5-Tetramethylben...	20.57	119	1325	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

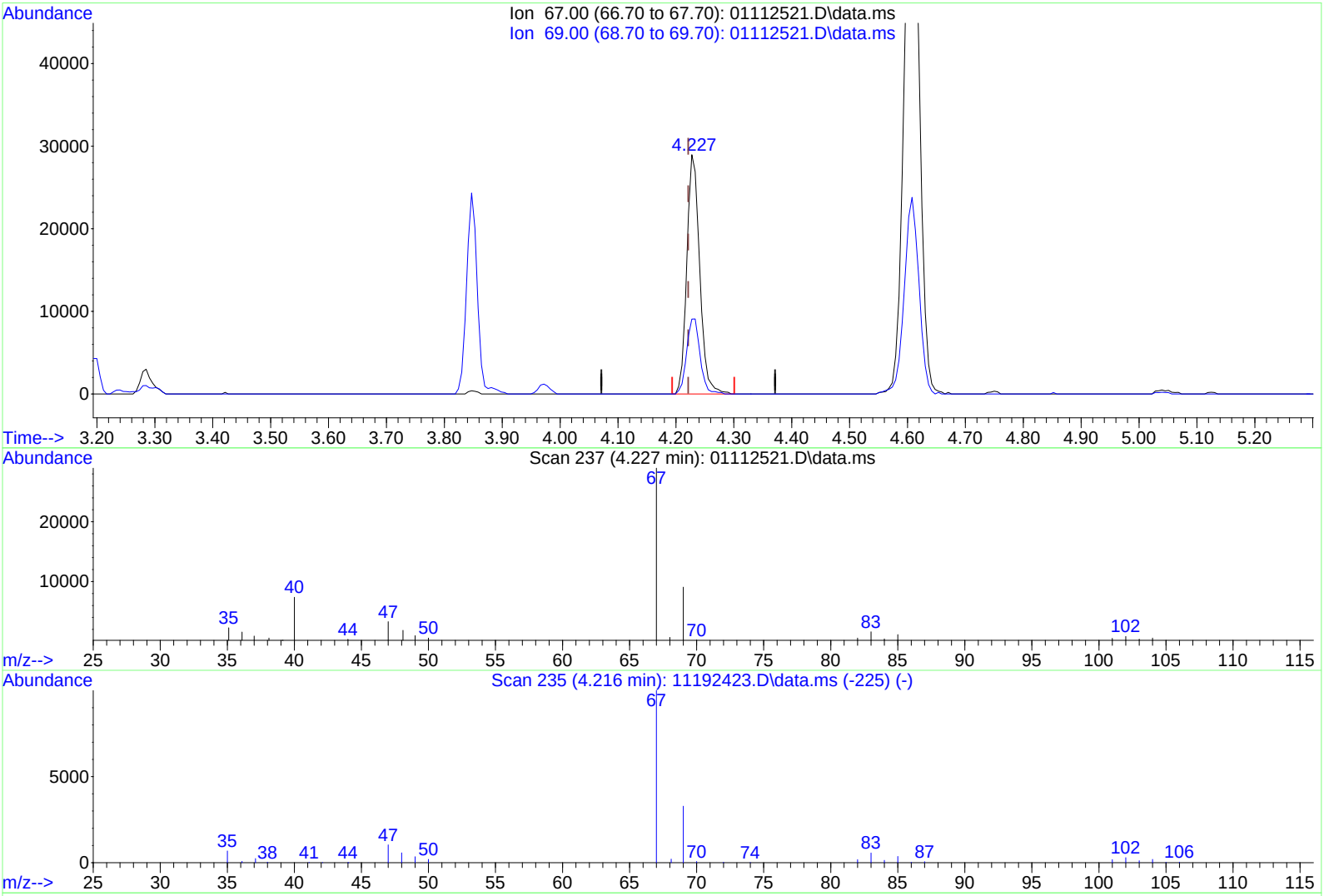
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 13 10:45:32 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 13 10:40:30 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



TIC: 01112521.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

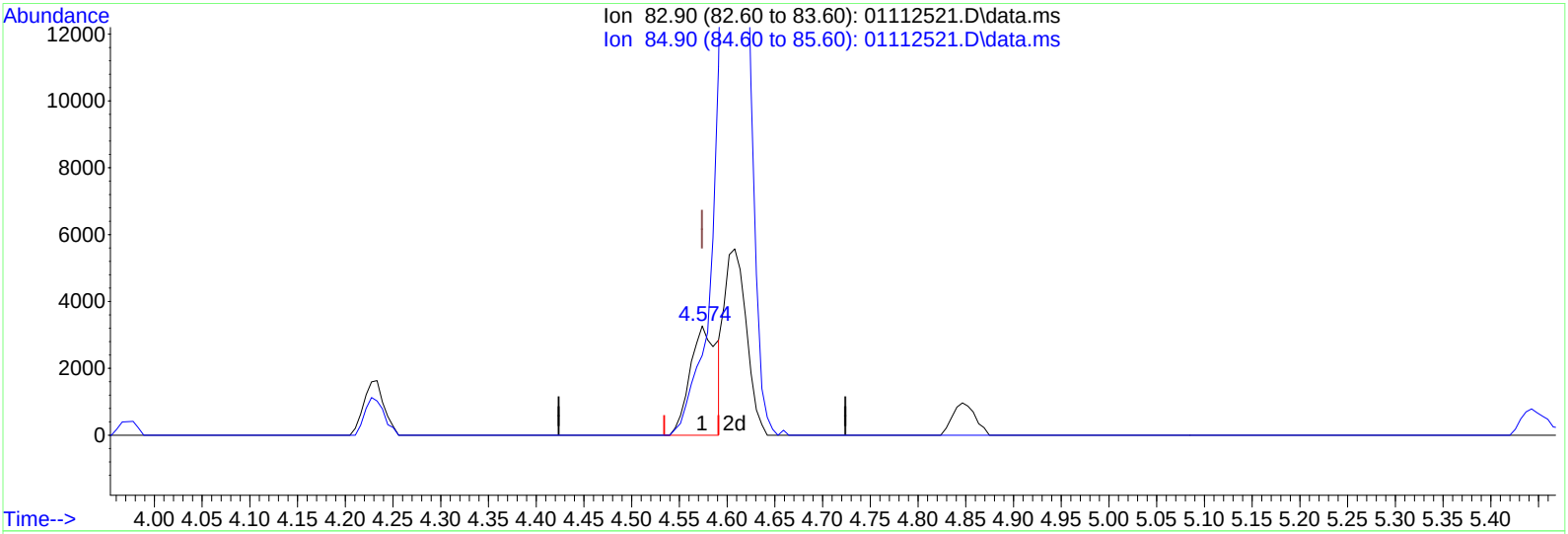
4.227min (+0.006) 1.50ng

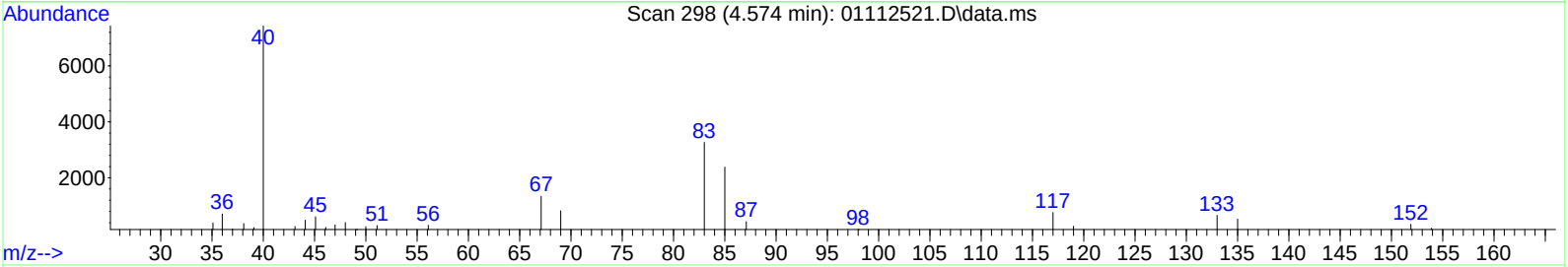
response 44777

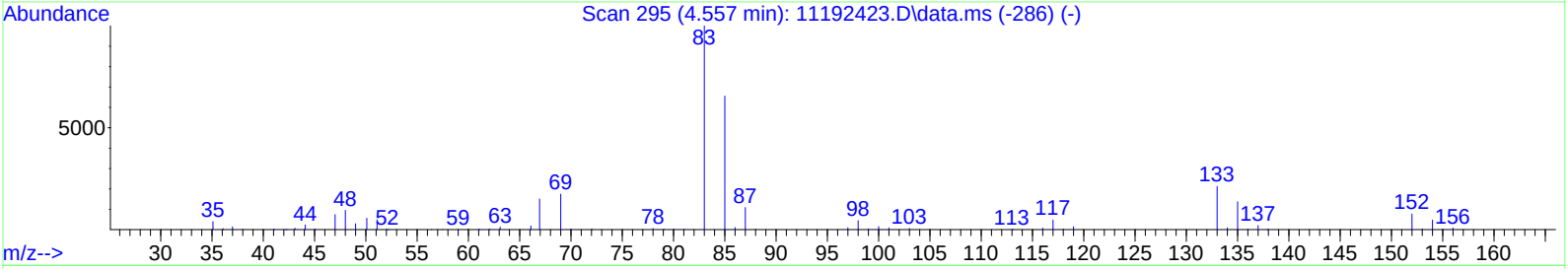
Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.71
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 13 10:40:30 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112521.D\data.ms

(9) 2,2-Dichloro-1,1,1-trifluoroethane (CFC (T)

4.574min (+0.000) 0.31ng m

response 6326

Ion	Exp%	Act%
82.90	100	100
84.90	66.20	56.29
0.00	0.00	0.00
0.00	0.00	0.00

MP 2nd-ion

1/13/25

1/15/25

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112521.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.234	59	62	67	rVB	126637	128795	1.17%	0.281%
2	3.302	67	74	79	rVV3	463327	553817	5.01%	1.208%
3	3.359	79	84	93	rVB2	38546	67445	0.61%	0.147%
4	3.489	99	107	114	rBV3	75996	140070	1.27%	0.305%
5	3.609	121	128	145	rBV	4931913	7057571	63.89%	15.388%
6	3.773	151	157	163	rBV2	20714	37369	0.34%	0.081%
7	3.847	164	170	181	rVV	359950	481979	4.36%	1.051%
8	3.972	188	192	200	rVB4	25873	50811	0.46%	0.111%
9	4.227	231	237	242	rBV	54909	83825	0.76%	0.183%
10	4.301	242	250	261	rVB2	59390	145507	1.32%	0.317%
11	4.614	294	305	307	rBV	284674	586274	5.31%	1.278%
12	4.756	322	330	341	rBV2	441497	1022800	9.26%	2.230%
13	4.852	341	347	359	rVB	120972	262896	2.38%	0.573%
14	5.039	372	380	392	rVB	922967	1506627	13.64%	3.285%
15	5.227	408	413	419	rVB2	8385	17199	0.16%	0.037%
16	5.340	425	433	440	rBV2	6476	17512	0.16%	0.038%
17	5.579	456	475	494	rBV2	2887226	6261263	56.68%	13.652%
18	5.778	504	510	517	rBV2	46472	92084	0.83%	0.201%
19	5.840	517	521	528	rVB2	10458	18393	0.17%	0.040%
20	6.079	558	563	570	rVB3	5381	10786	0.10%	0.024%
21	6.317	592	605	612	rBV	61557	146734	1.33%	0.320%
22	6.442	619	627	630	rBV	24189	51190	0.46%	0.112%
23	6.482	630	634	639	rVB2	21523	38058	0.34%	0.083%
24	6.561	639	648	660	rVB4	53383	126811	1.15%	0.276%
25	6.669	660	667	677	rVB	24735	54601	0.49%	0.119%
26	6.766	677	684	687	rBV4	6075	11848	0.11%	0.026%
27	6.851	692	699	706	rVB3	12153	27880	0.25%	0.061%
28	7.231	755	766	770	rBV	337542	748071	6.77%	1.631%
29	7.282	770	775	785	rVV	562677	1294991	11.72%	2.824%
30	7.362	786	789	803	rVB3	13747	33360	0.30%	0.073%
31	7.742	842	856	872	rBV	67699	186720	1.69%	0.407%
32	8.004	893	902	918	rBV	273171	671270	6.08%	1.464%
33	8.134	918	925	932	rVB3	9115	20280	0.18%	0.044%
34	8.378	961	968	976	rBV4	4893	10680	0.10%	0.023%
35	8.810	1038	1044	1053	rBV	16576	43210	0.39%	0.094%
36	8.895	1053	1059	1069	rVB	19032	46901	0.42%	0.102%
37	9.037	1077	1084	1097	rVB	40437	102993	0.93%	0.225%
38	9.213	1107	1115	1122	rBV4	13244	33132	0.30%	0.072%
39	9.304	1122	1131	1144	rVV	591663	1398299	12.66%	3.049%
40	9.429	1144	1153	1162	rVV3	9379	26455	0.24%	0.058%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

41	9.520	1162	1169	1176	rVB7	4258	10038	0.09%	0.022%
42	9.696	1193	1200	1216	rVB4	23508	82498	0.75%	0.180%
43	10.122	1267	1275	1276	rBV5	6413	10302	0.09%	0.022%
44	10.570	1348	1354	1363	rVB7	8803	21853	0.20%	0.048%
45	11.189	1453	1463	1471	rBV2	14421	36145	0.33%	0.079%
46	11.325	1478	1487	1496	rBV2	29332	76135	0.69%	0.166%
47	11.410	1496	1502	1510	rVB3	9337	22302	0.20%	0.049%
48	12.427	1671	1681	1695	rBV	789097	1813376	16.42%	3.954%
49	12.557	1695	1704	1715	rVB	130515	296667	2.69%	0.647%
50	13.227	1813	1822	1830	rBV2	38495	82430	0.75%	0.180%
51	13.778	1912	1919	1924	rBV2	6160	11081	0.10%	0.024%
52	13.943	1939	1948	1969	rBV	125122	327645	2.97%	0.714%
53	14.528	2039	2051	2065	rBV	4784336	11047042	100.00%	24.086%
54	14.840	2096	2106	2116	rBV	832338	1730656	15.67%	3.773%
55	14.925	2117	2121	2138	rVB7	15252	45293	0.41%	0.099%
56	15.408	2199	2206	2212	rVB2	7407	15471	0.14%	0.034%
57	15.624	2237	2244	2258	rBV2	20325	55507	0.50%	0.121%
58	15.998	2304	2310	2317	rVB2	11365	22263	0.20%	0.049%
59	16.118	2321	2331	2341	rBV5	23696	55242	0.50%	0.120%
60	16.243	2345	2353	2360	rVB2	11155	23145	0.21%	0.050%
61	16.333	2363	2369	2380	rVB4	12987	26231	0.24%	0.057%
62	16.822	2447	2455	2465	rBV	675217	1290528	11.68%	2.814%
63	17.066	2492	2498	2508	rBV5	5614	14781	0.13%	0.032%
64	17.231	2517	2527	2536	rBV9	7555	25438	0.23%	0.055%
65	17.446	2553	2565	2573	rBV7	18958	58696	0.53%	0.128%
66	17.520	2573	2578	2584	rVB	24525	44417	0.40%	0.097%
67	17.742	2610	2617	2626	rBV	88332	166107	1.50%	0.362%
68	17.827	2626	2632	2636	rVV7	4030	10134	0.09%	0.022%
69	18.043	2662	2670	2678	rVB	131971	213829	1.94%	0.466%
70	18.224	2695	2702	2706	rBV3	12003	19787	0.18%	0.043%
71	18.281	2706	2712	2715	rBV2	31734	53598	0.49%	0.117%
72	18.321	2715	2719	2723	rVB2	33919	49746	0.45%	0.108%
73	18.383	2728	2730	2734	rVV2	11244	15763	0.14%	0.034%
74	18.423	2734	2737	2743	rVB2	7311	11083	0.10%	0.024%
75	18.503	2743	2751	2759	rBV	1649464	2757760	24.96%	6.013%
76	18.599	2763	2768	2772	rVV	31278	55459	0.50%	0.121%
77	18.639	2772	2775	2784	rVB	39197	63171	0.57%	0.138%
78	18.718	2784	2789	2796	rBV5	7822	15421	0.14%	0.034%
79	18.809	2796	2805	2810	rBV	59025	94969	0.86%	0.207%
80	18.849	2810	2812	2819	rVV8	7870	18012	0.16%	0.039%
81	18.917	2820	2824	2827	rVV4	10557	18297	0.17%	0.040%
82	18.951	2827	2830	2839	rVV2	15669	28550	0.26%	0.062%
83	19.025	2839	2843	2845	rVV2	14125	18546	0.17%	0.040%
84	19.059	2845	2849	2861	rVB	80820	151050	1.37%	0.329%
85	19.195	2861	2873	2878	rBV	23768	43953	0.40%	0.096%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

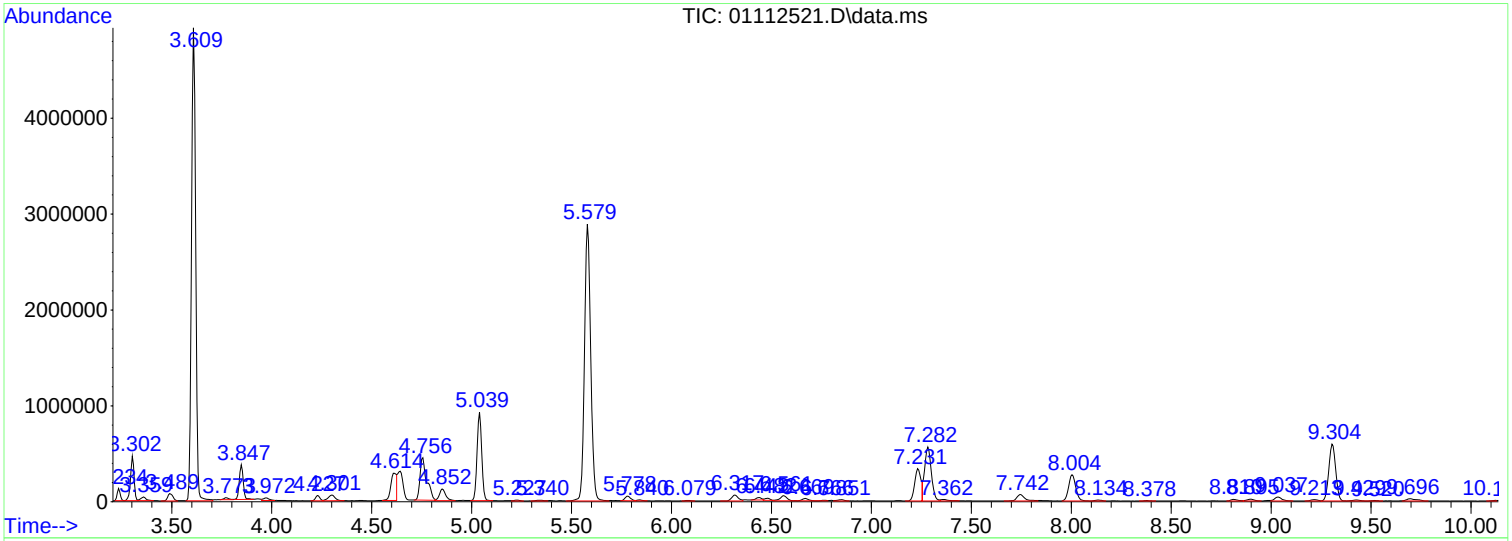
86	19.298	2884	2891	2898	rBV	81906	135437	1.23%	0.295%
87	19.383	2898	2906	2911	rVB6	11865	26241	0.24%	0.057%
88	19.451	2913	2918	2923	rBV4	6188	10499	0.10%	0.023%
89	19.502	2923	2927	2932	rBV3	13272	19885	0.18%	0.043%
90	19.559	2932	2937	2942	rVV	41285	66718	0.60%	0.145%
91	19.621	2945	2948	2958	rVB2	25292	40113	0.36%	0.087%
92	19.809	2974	2981	2989	rVB	94799	133027	1.20%	0.290%
93	19.979	3005	3011	3015	rVB2	10000	15501	0.14%	0.034%
94	20.047	3015	3023	3032	rBV7	4743	12469	0.11%	0.027%
95	20.212	3045	3052	3059	rVB6	8242	22348	0.20%	0.049%
96	20.348	3068	3076	3082	rBV	51951	82224	0.74%	0.179%
97	20.569	3110	3115	3125	rBV2	305921	455758	4.13%	0.994%
98	20.757	3143	3148	3155	rVB2	6959	10508	0.10%	0.023%
99	20.916	3172	3176	3189	rBV	100822	139585	1.26%	0.304%
100	21.609	3293	3298	3304	rVB	6942	11436	0.10%	0.025%
101	22.148	3387	3393	3398	rBV2	10368	15800	0.14%	0.034%

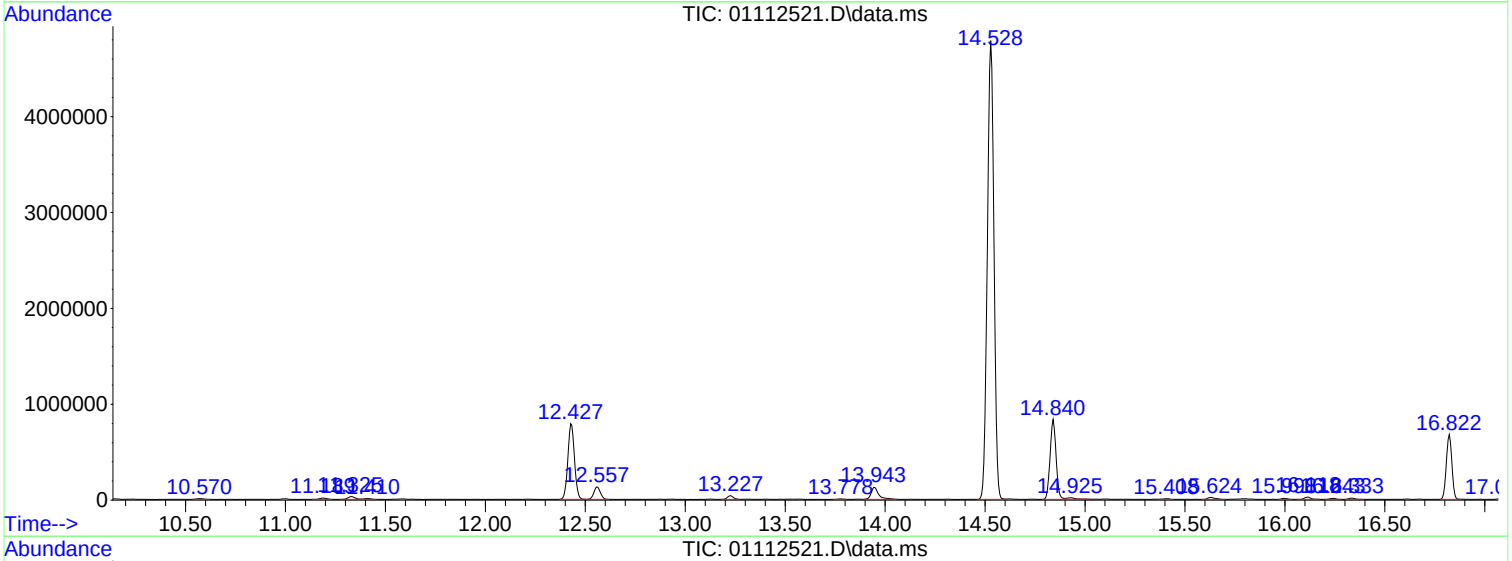
Sum of corrected areas: 45864473

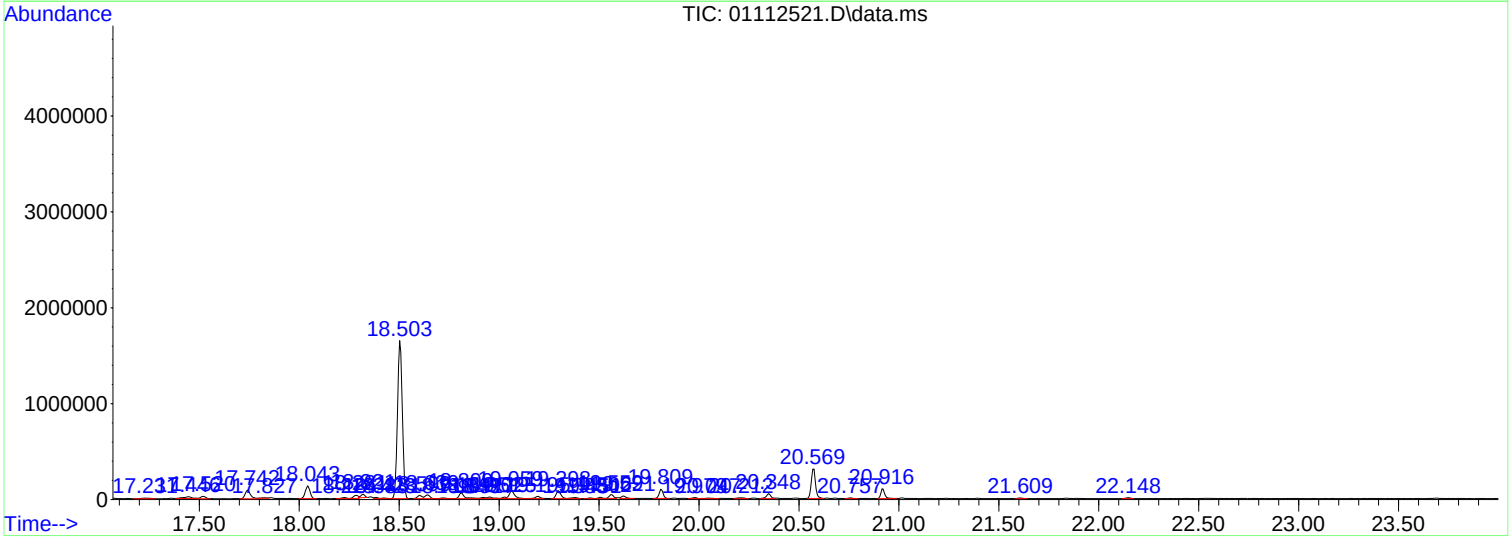
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P







Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

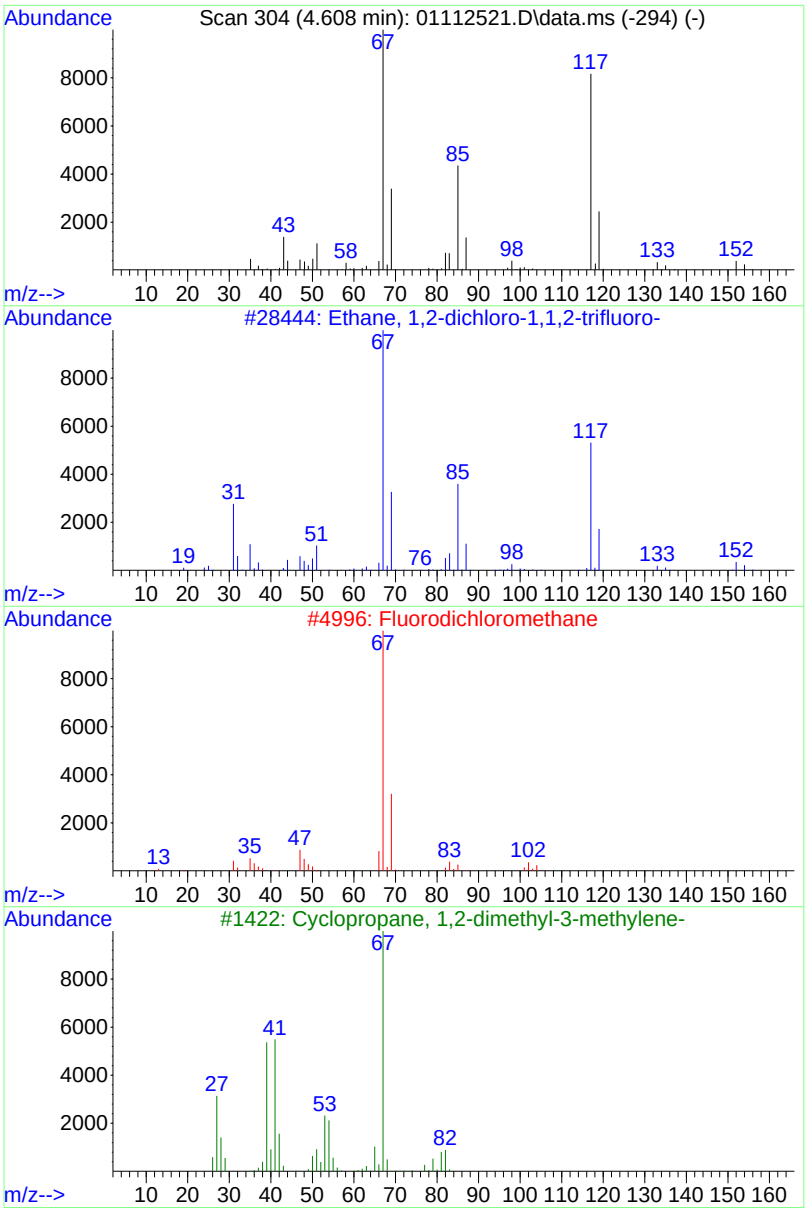
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

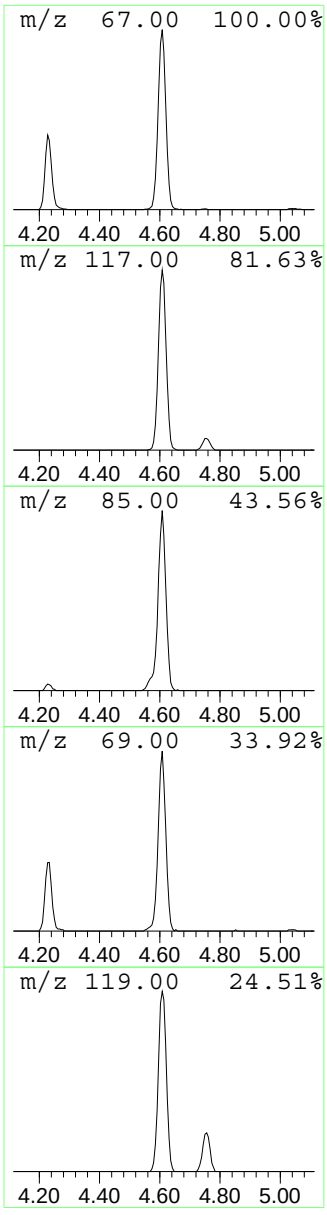
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 11 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.614	9.80 ng	586274	Bromochloromethane (IS1)	7.231

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	94
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
3	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	10
4	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	9
5	Methyl 2-butynoate	98	C5H6O2	023326-27-4	9





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112521.D
Acq On : 11 Jan 2025 17:46
Operator : LS
Sample : P2405139-058 (400mL)
Misc : S37-12312401
ALS Vial : 7 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

NOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc
Ethane, 1,2-dic...	4.614	9.8	ng	586274	1	7.231	748071	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 05:34:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.22	130	153212	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	664975	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	126171	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.99	65	255900	12.259 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.08%			
57) Toluene-d8 (SS2)	12.43	98	704127	12.580 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%			
73) Bromofluorobenzene (SS3)	16.82	174	255874	13.247 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.30	85	35376	1.181 ng	#	91
4) Chloromethane	3.51	50	888	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	374	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	4.14	64	171	N.D.		
10) Ethanol	4.28	45	10583	0.934 ng		98
11) Acetonitrile	0.00	41	0	N.D. d		
12) Acrolein	4.53	56	1539	0.159 ng	#	72
13) Acetone	4.63	58	28070	2.721 ng	#	82
14) Trichlorofluoromethane	4.74	101	395693	14.088 ng		100
15) 2-Propanol (Isopropanol)	4.84	45	20226	0.548 ng		98
16) Acrylonitrile	5.03	53	269	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.33	59	341	N.D.		
19) Methylene Chloride	5.34	84	11761	0.810 ng		99
20) 3-Chloro-1-propene (Al...	5.39	41	650	N.D.		
21) Trichlorotrifluoroethane	5.57	151	882333	69.626 ng		97
22) Carbon Disulfide	0.00	76	0	N.D. d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.43	86	2631	1.054 ng	#	1
27) 2-Butanone (MEK)	6.67	72	2399	0.289 ng		98
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	7.30	61	411	0.080 ng		81
31) n-Hexane	7.30	57	4052	0.176 ng	#	96
32) Chloroform	7.35	83	11077	0.444 ng		99
34) Tetrahydrofuran (THF)	7.78	72	182	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.82	56	2563	No Calib		
41) Benzene	8.89	78	6108	0.114 ng		91
42) Carbon Tetrachloride	9.06	117	679	N.D.		
43) Cyclohexane	9.22	84	410	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.14	130	1393	0.092 ng		97
48) 1,4-Dioxane	10.13	88	1151	0.125 ng		95

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

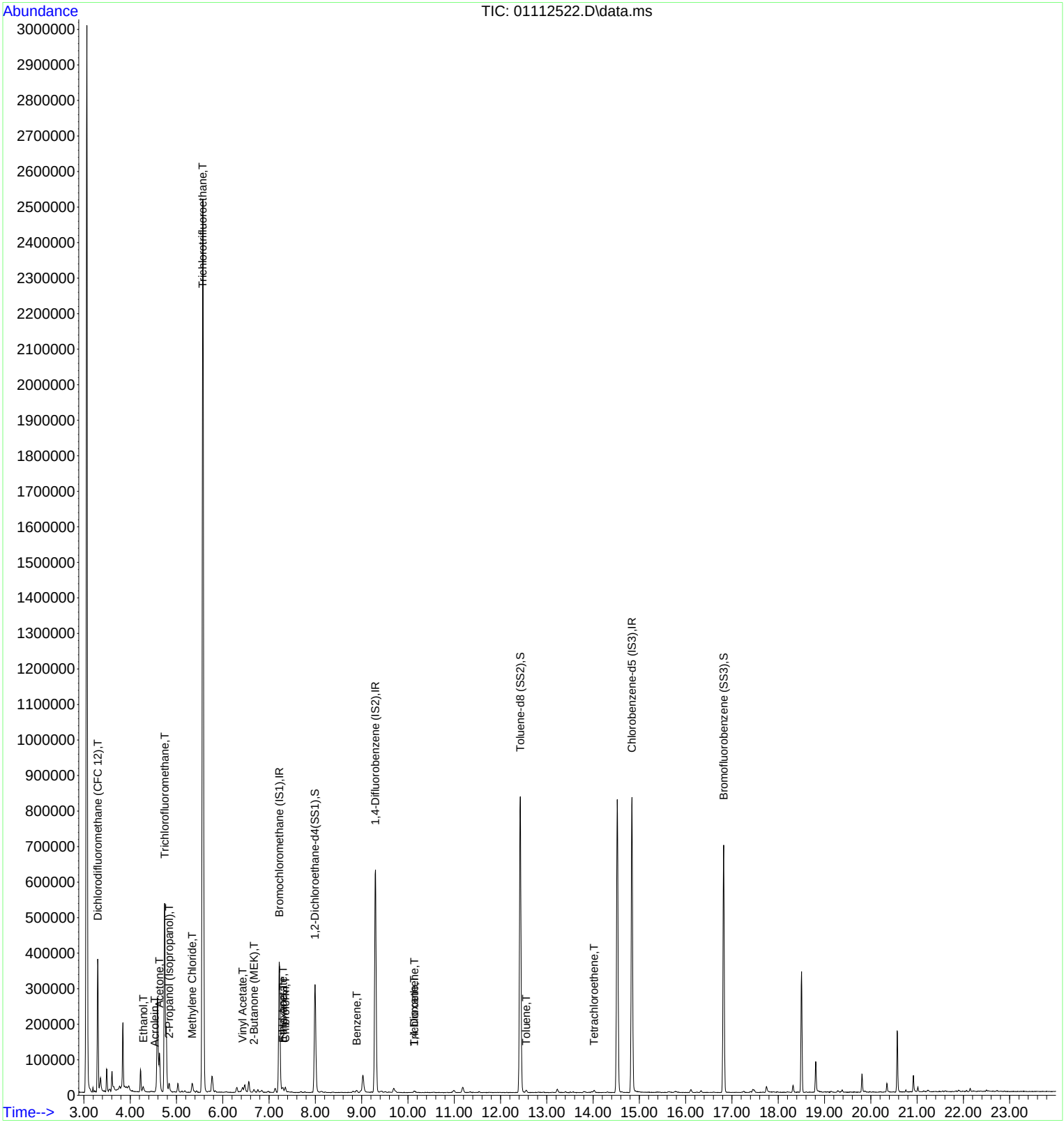
Quant Time: Jan 13 05:34:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	190	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	5049	0.094 ng	100
59) 2-Hexanone	12.93	43	1293	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D. d	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.02	166	1669	0.104 ng	98
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	1201	N.D.	
67) m- & p-Xylenes	15.63	91	2133	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.10	104	1269	N.D.	
70) o-Xylene	16.25	91	774	N.D.	
71) n-Nonane	16.61	43	722	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	479	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.86	105	214	N.D.	
79) 1,3,5-Trimethylbenzene	17.95	105	107	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	402	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	18.66	146	119	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	119	N.D.	
87) sec-Butylbenzene	18.74	105	181	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	838	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.09	68	133	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	313	N.D.	
95) Naphthalene	20.94	128	1096	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	19.38	91	790	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 13 05:34:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

MOA 1/13/25

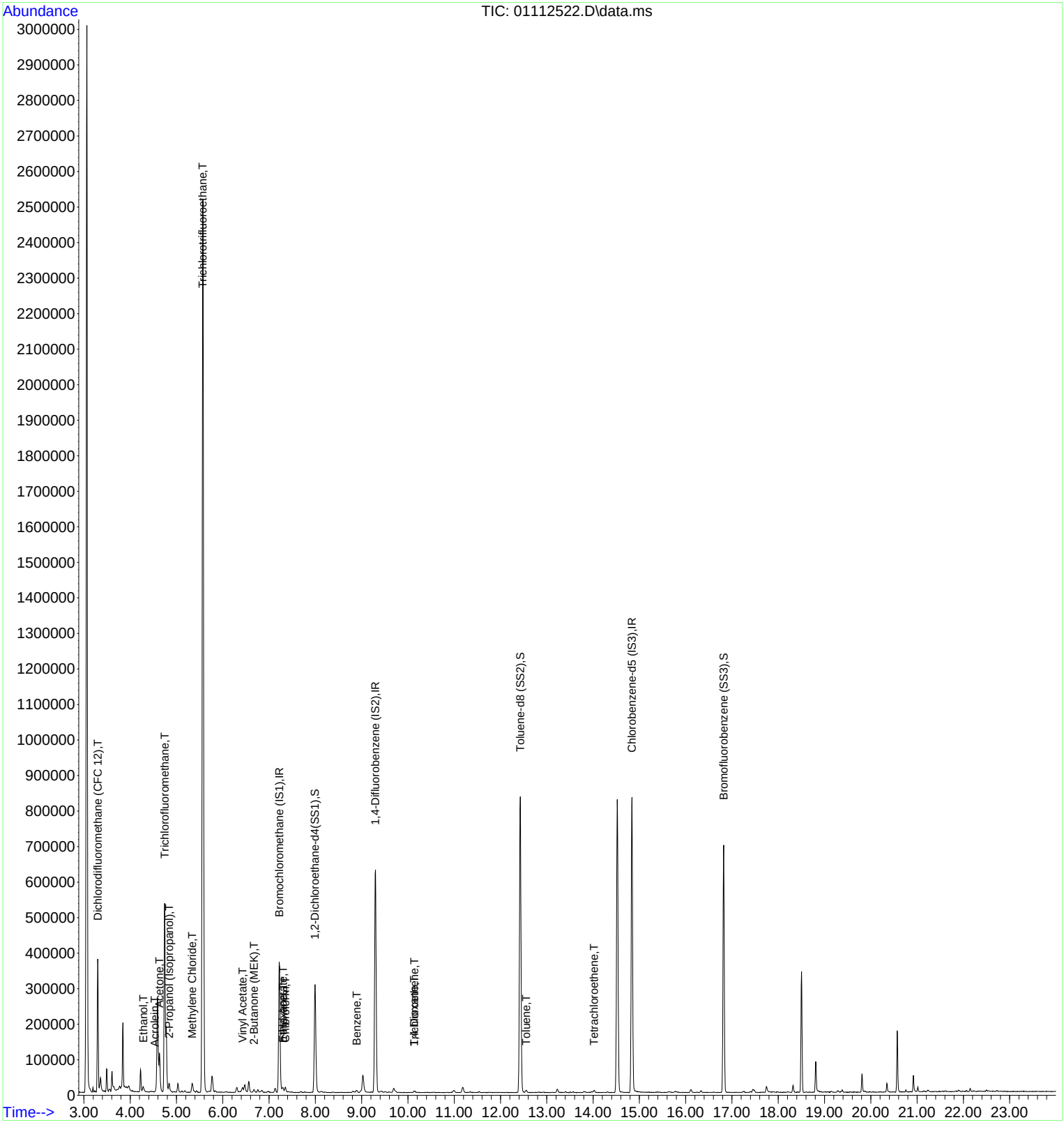
Quant Time: Jan 13 05:34:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

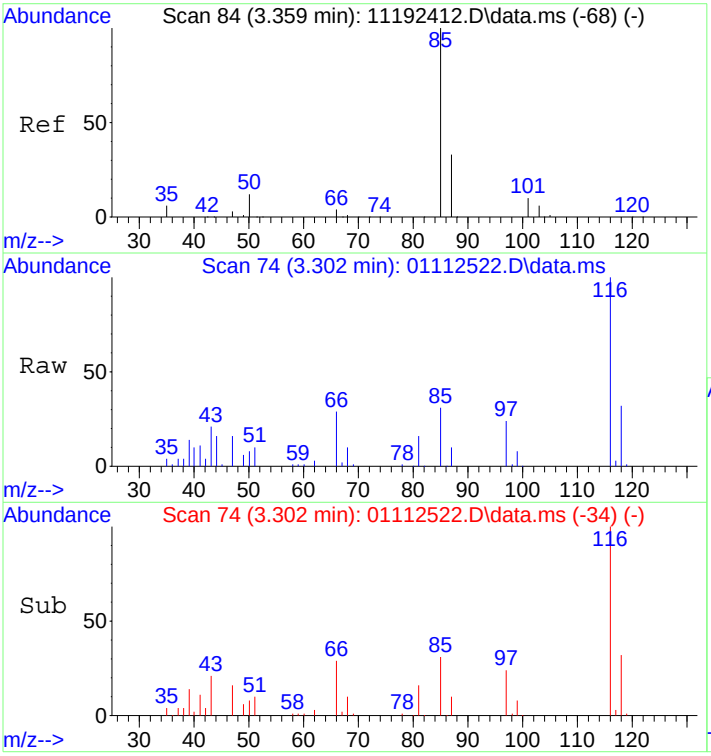
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.22	130	153212	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	664975	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	126171	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.99	65	255900	12.259	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.08%				
57) Toluene-d8 (SS2)	12.43	98	704127	12.580	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
73) Bromofluorobenzene (SS3)	16.82	174	255874	13.247	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.30	85	35376	1.181	ng	#	91
10) Ethanol	4.28	45	10583	0.934	ng		98
12) Acrolein	4.53	56	1539	0.159	ng	#	72
13) Acetone	4.63	58	28070	2.721	ng	#	82
14) Trichlorofluoromethane	4.74	101	395693	14.088	ng		100
15) 2-Propanol (Isopropanol)	4.84	45	20226	0.548	ng		98
19) Methylene Chloride	5.34	84	11761	0.810	ng		99
21) Trichlorotrifluoroethane	5.57	151	882333	69.626	ng		97
26) Vinyl Acetate	6.43	86	2631	1.054	ng	#	1
27) 2-Butanone (MEK)	6.67	72	2399	0.289	ng		98
30) Ethyl Acetate	7.30	61	411	0.080	ng		81
31) n-Hexane	7.30	57	4052	0.176	ng	#	96
32) Chloroform	7.35	83	11077	0.444	ng		99
41) Benzene	8.89	78	6108	0.114	ng		91
47) Trichloroethene	10.14	130	1393	0.092	ng		97
48) 1,4-Dioxane	10.13	88	1151	0.125	ng		95
58) Toluene	12.56	91	5049	0.094	ng		100
64) Tetrachloroethene	14.02	166	1669	0.104	ng		98

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 13 05:34:34 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

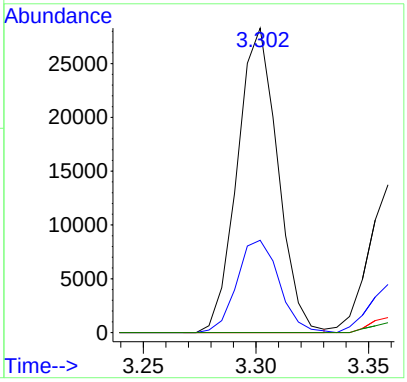


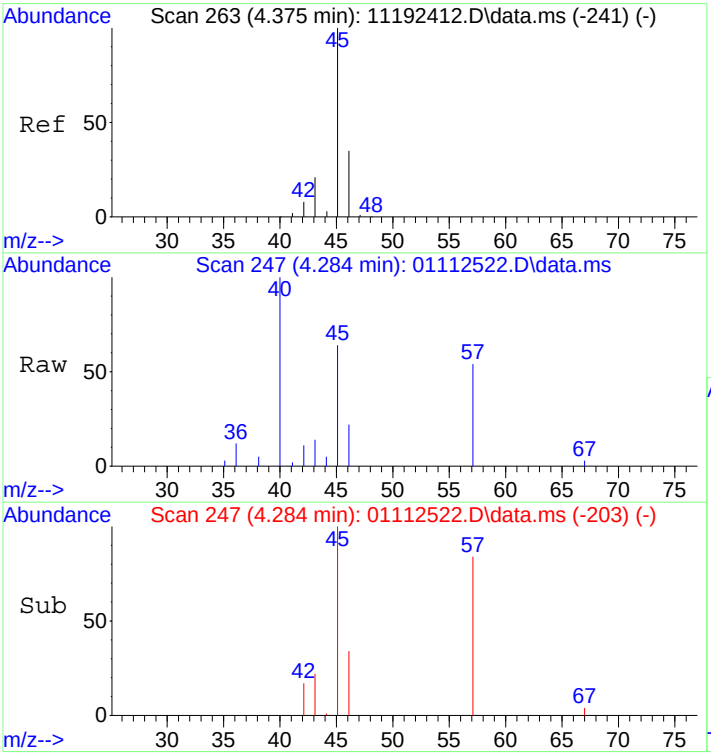


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.18 ng
RT: 3.30 min Scan# 74
Delta R.T. -0.025 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 85 Resp: 35376

Ion	Ratio	Lower	Upper
85	100		
87	31.7	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

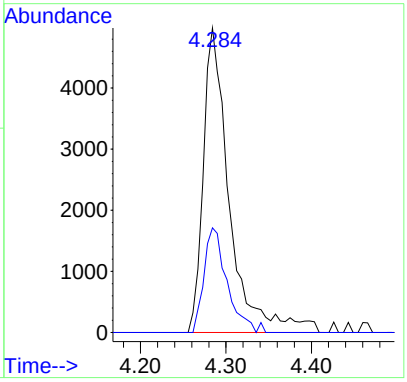


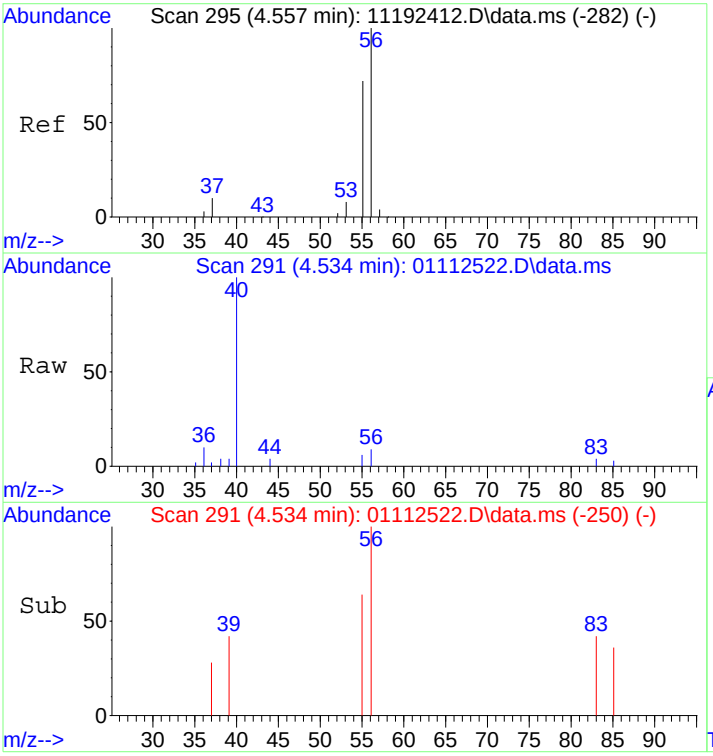


#10
Ethanol
Concen: 0.93 ng
RT: 4.28 min Scan# 247
Delta R.T. -0.000 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 45 Resp: 10583

Ion	Ratio	Lower	Upper
45	100		
46	30.4	11.8	51.8

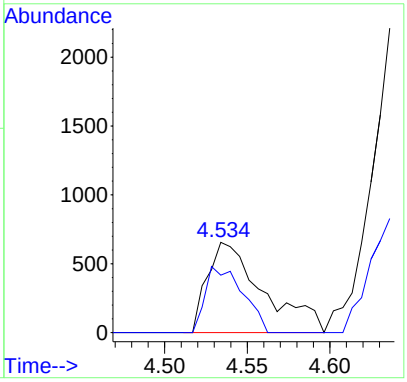


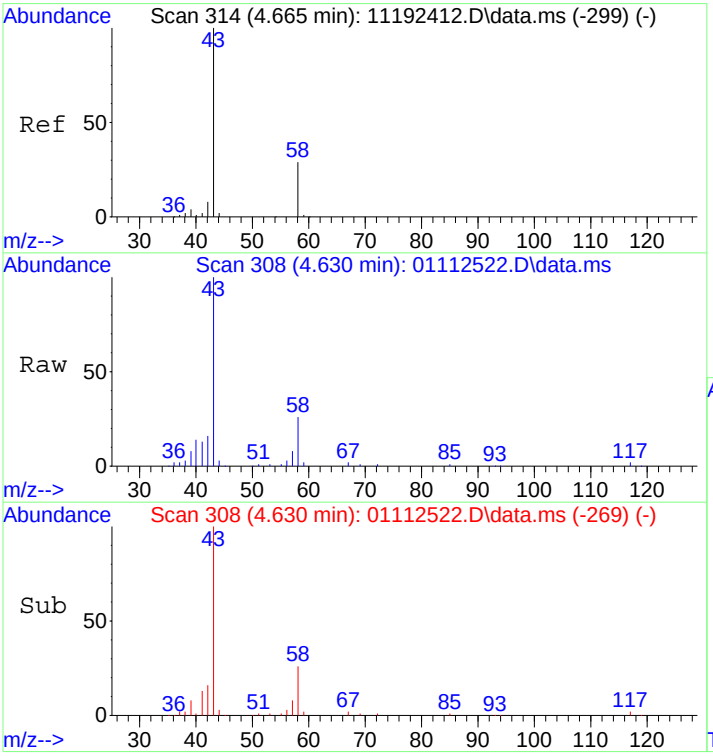


#12
Acrolein
Concen: 0.16 ng
RT: 4.53 min Scan# 291
Delta R.T. -0.019 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 56 Resp: 1539

Ion	Ratio	Lower	Upper
56	100		
55	49.3	53.1	93.1#

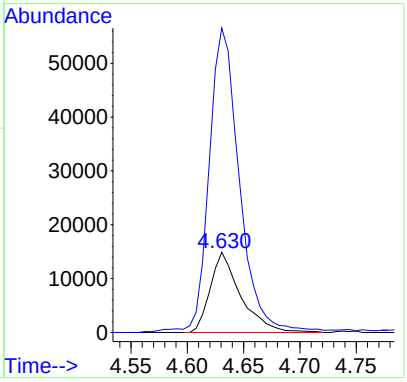


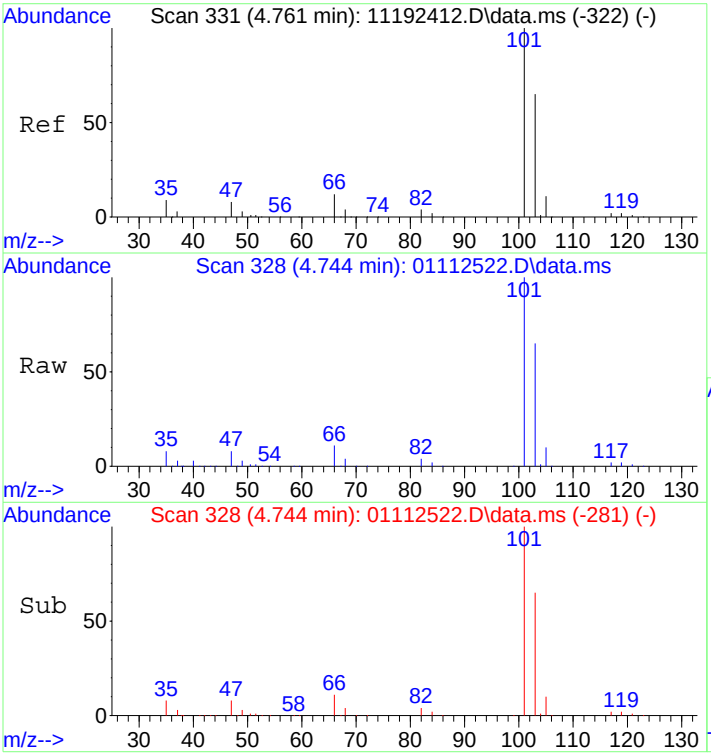


#13
Acetone
Concen: 2.72 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 58 Resp: 28070

Ion	Ratio	Lower	Upper
58	100		
43	381.8	312.5	372.5#

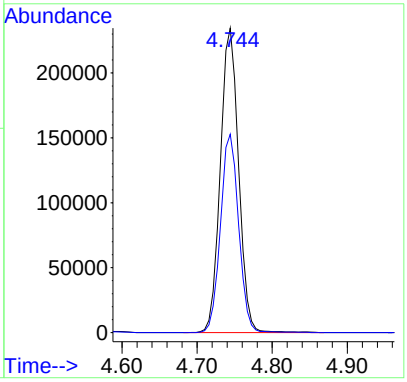


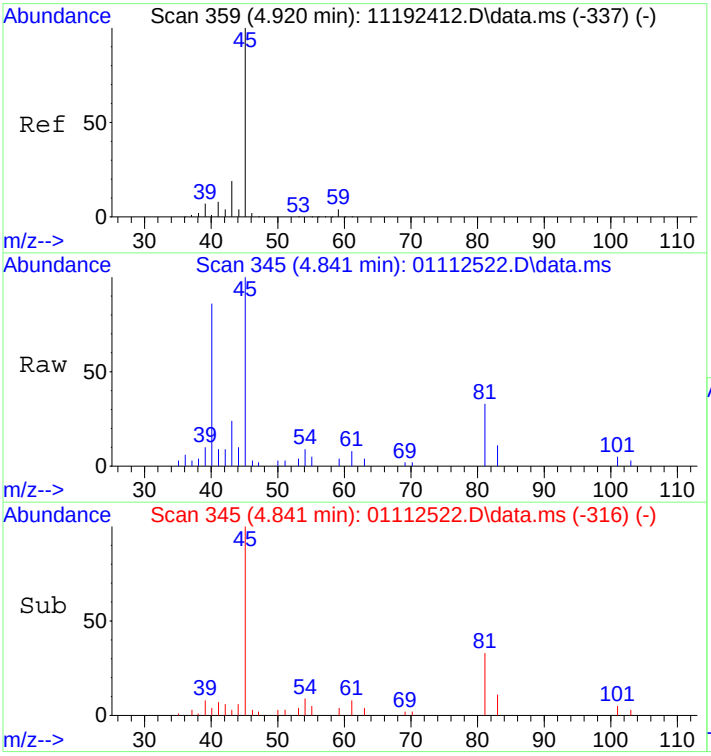


#14
Trichlorofluoromethane
Concen: 14.09 ng
RT: 4.74 min Scan# 328
Delta R.T. 0.016 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion:101 Resp: 395693

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

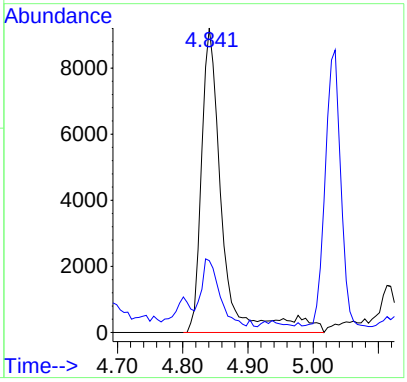


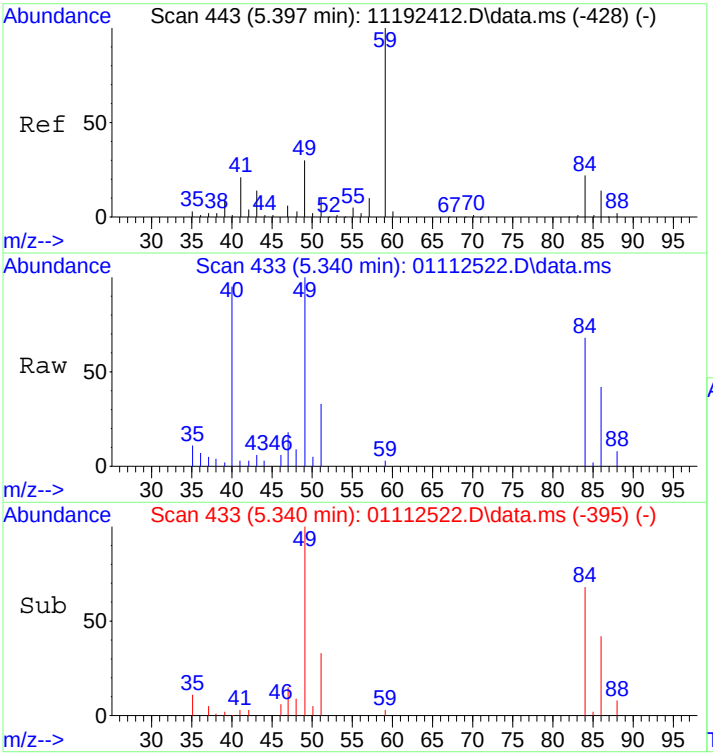


#15
2-Propanol (Isopropanol)
Concen: 0.55 ng
RT: 4.84 min Scan# 345
Delta R.T. -0.084 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 45 Resp: 20226

Ion	Ratio	Lower	Upper
45	100		
43	21.2	0.2	40.2

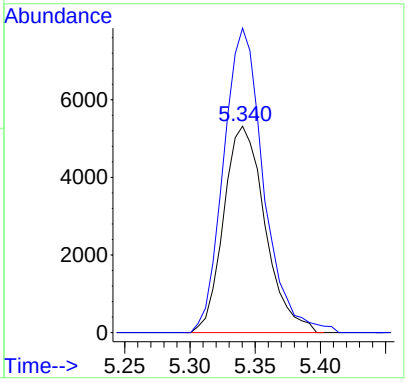


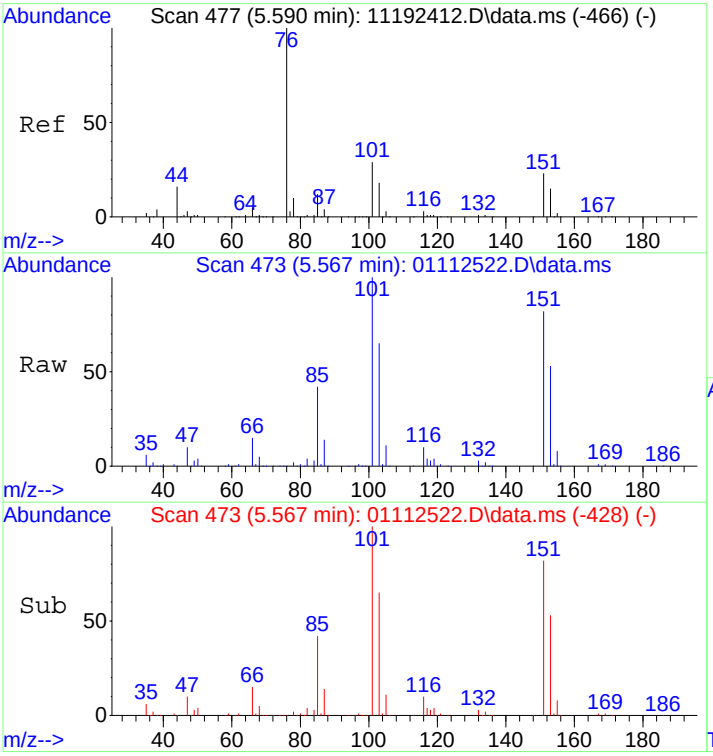


#19
Methylene Chloride
Concen: 0.81 ng
RT: 5.34 min Scan# 433
Delta R.T. -0.034 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 84 Resp: 11761

Ion	Ratio	Lower	Upper
84	100		
49	142.6	116.0	166.0

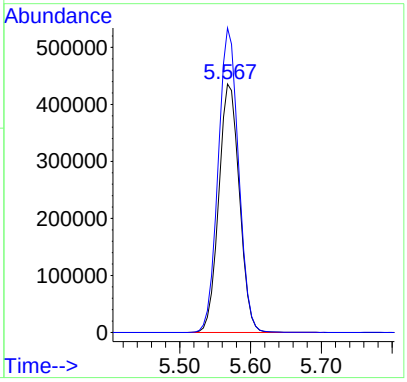


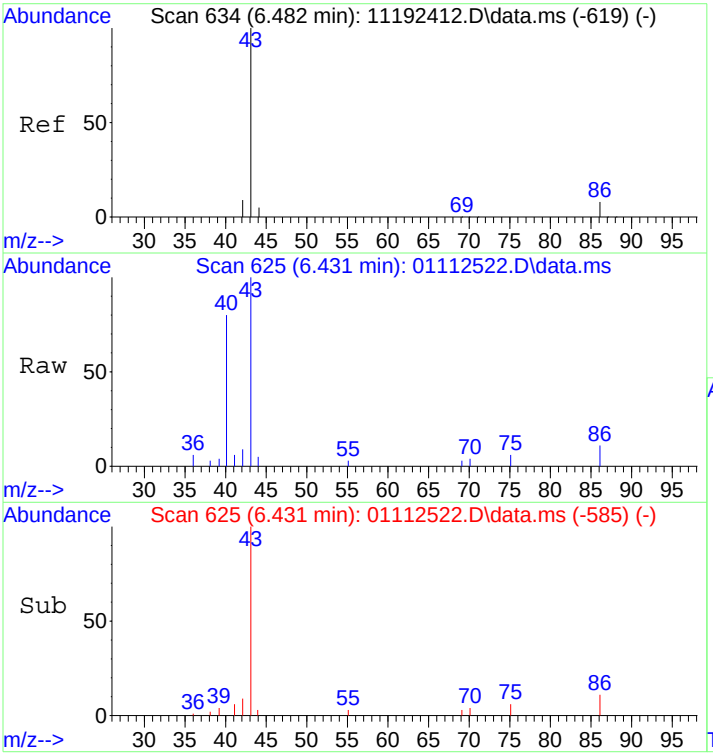


#21
Trichlorotrifluoroethane
Concen: 69.63 ng
RT: 5.57 min Scan# 473
Delta R.T. 0.007 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion:151 Resp: 882333

Ion	Ratio	Lower	Upper
151	100		
101	121.0	105.0	145.0

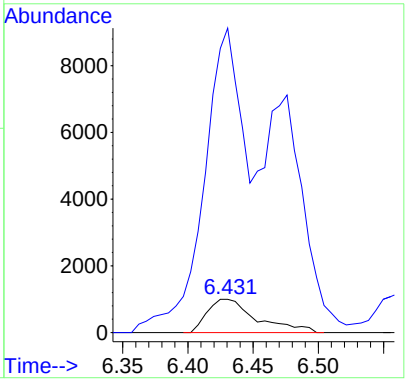


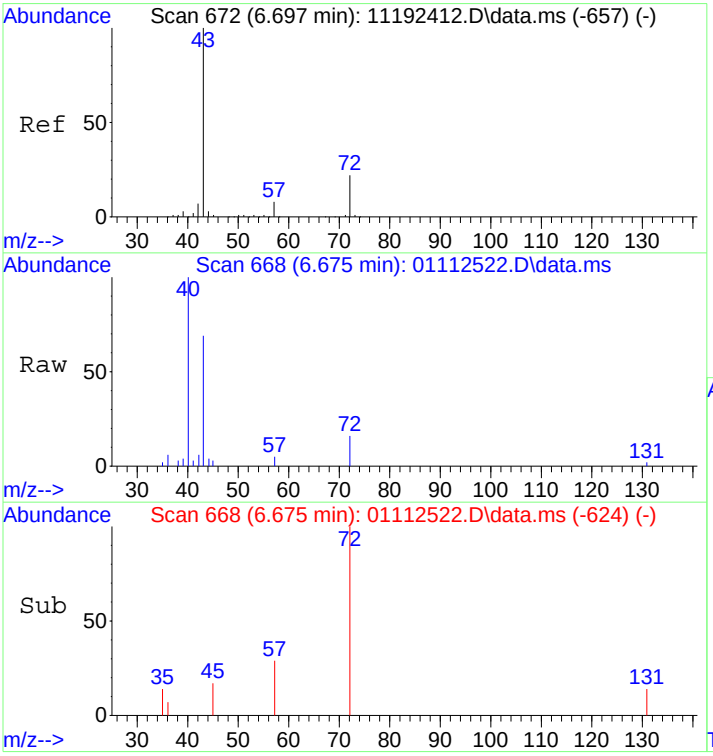


#26
Vinyl Acetate
Concen: 1.05 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 86 Resp: 2631

Ion	Ratio	Lower	Upper
86	100		
43	796.4	1331.6	1371.6#

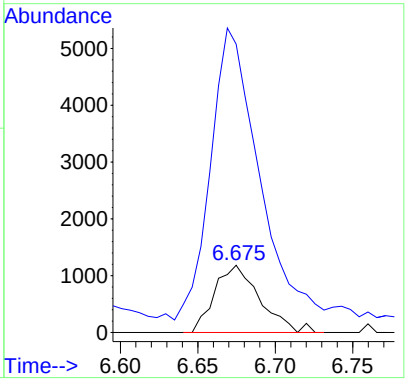


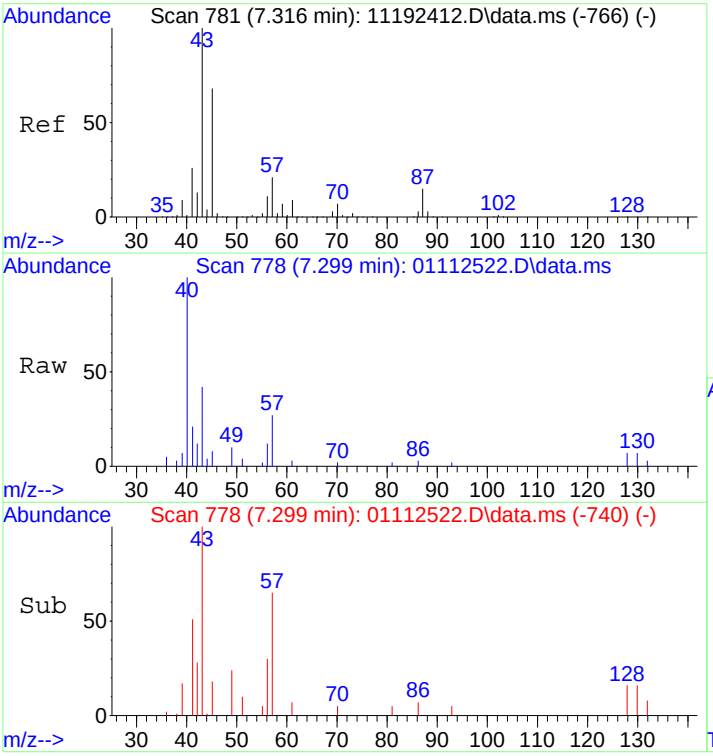


#27
2-Butanone (MEK)
Concen: 0.29 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 72 Resp: 2399

Ion	Ratio	Lower	Upper
72	100		
43	464.9	439.8	479.8

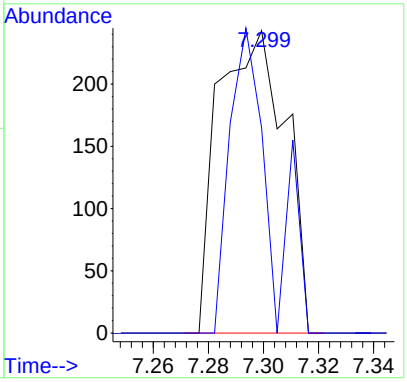


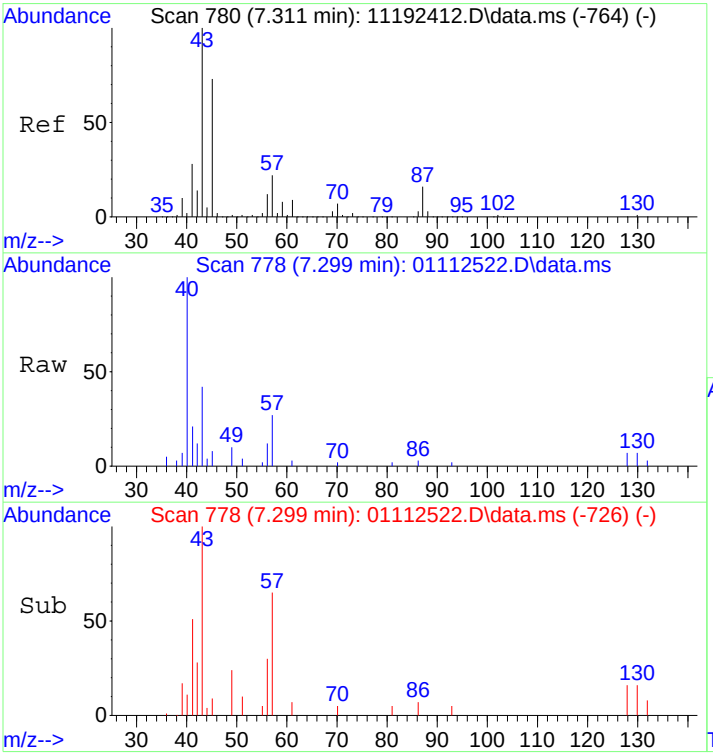


#30
Ethyl Acetate
Concen: 0.08 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.018 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 61 Resp: 411

Ion	Ratio	Lower	Upper
61	100		
70	60.8	57.3	97.3

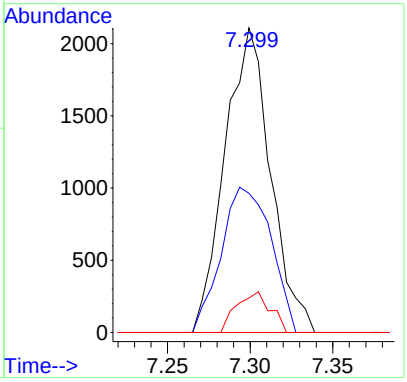


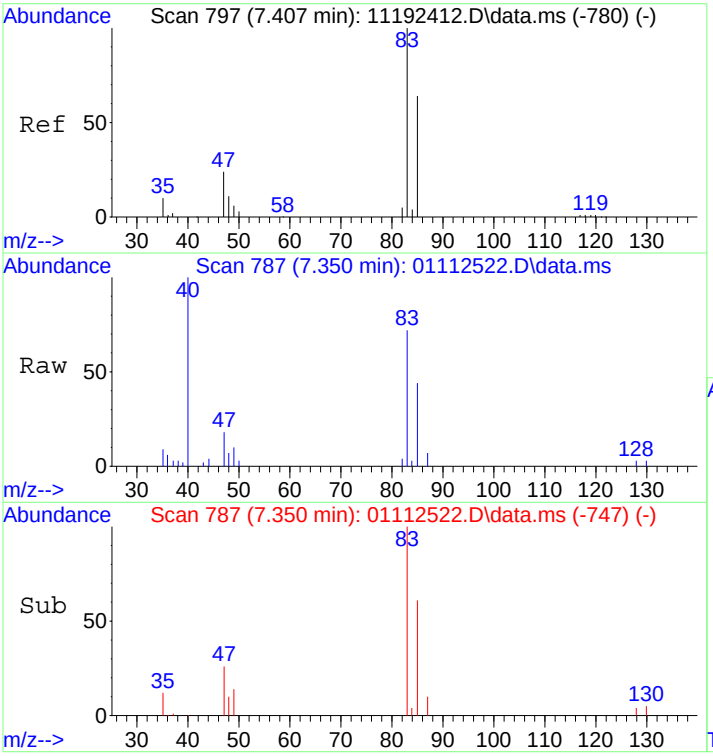


#31
n-Hexane
Concen: 0.18 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 57 Resp: 4052

Ion	Ratio	Lower	Upper
57	100		
56	52.1	43.4	65.0
86	9.9	10.9	16.3#

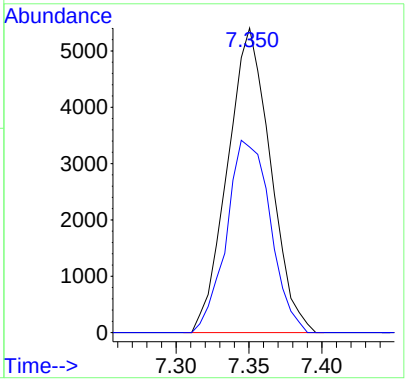


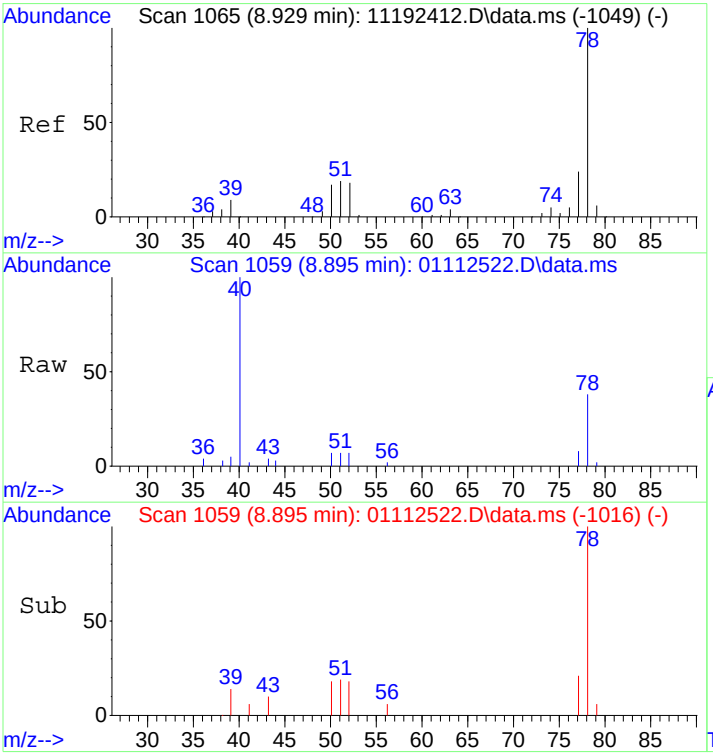


#32
Chloroform
Concen: 0.44 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 83 Resp: 11077

Ion	Ratio	Lower	Upper
83	100		
85	64.5	45.1	85.1

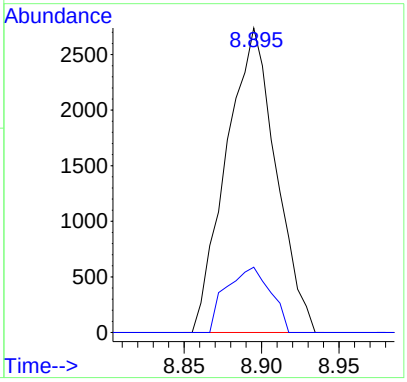


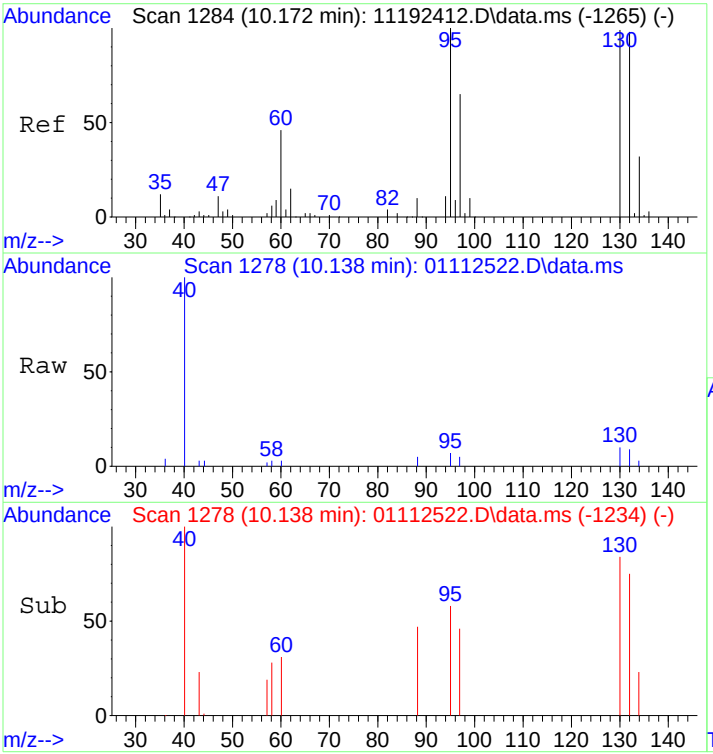


#41
Benzene
Concen: 0.11 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 78 Resp: 6108

Ion	Ratio	Lower	Upper
78	100		
77	19.3	3.7	43.7

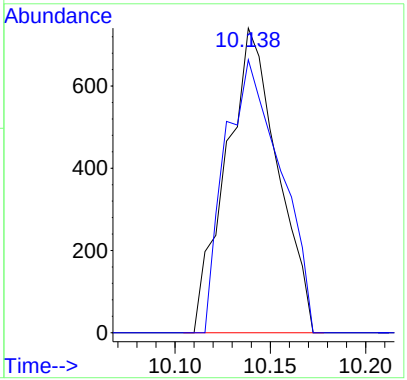


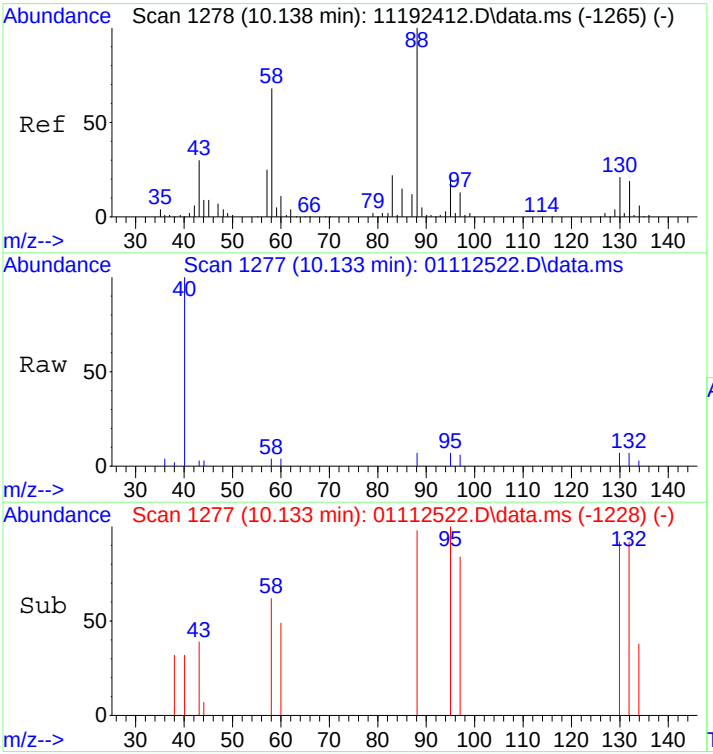


#47
Trichloroethene
Concen: 0.09 ng
RT: 10.14 min Scan# 1278
Delta R.T. -0.002 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion:130 Resp: 1393

Ion	Ratio	Lower	Upper
130	100		
132	96.7	79.3	119.3

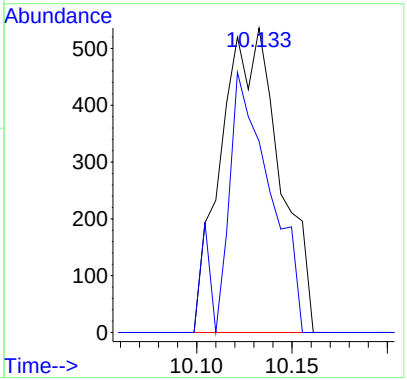


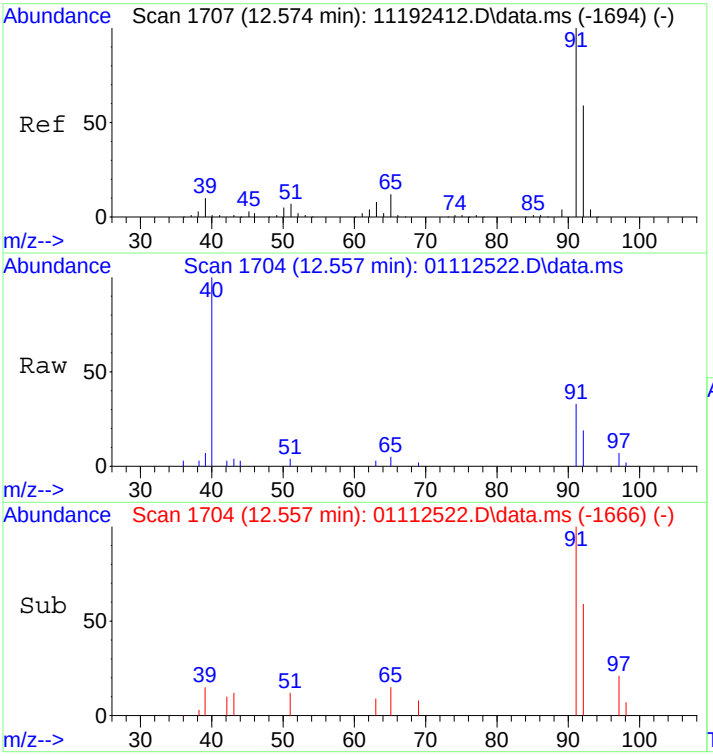


#48
1,4-Dioxane
Concen: 0.12 ng
RT: 10.13 min Scan# 1277
Delta R.T. 0.026 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 88 Resp: 1151

Ion	Ratio	Lower	Upper
88	100		
58	63.9	47.8	87.8

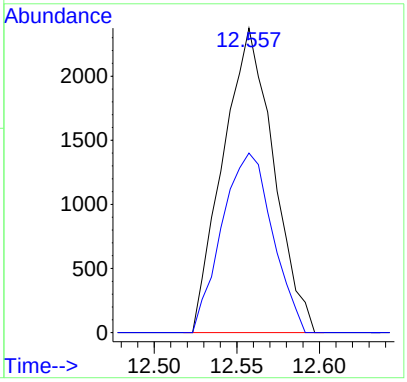


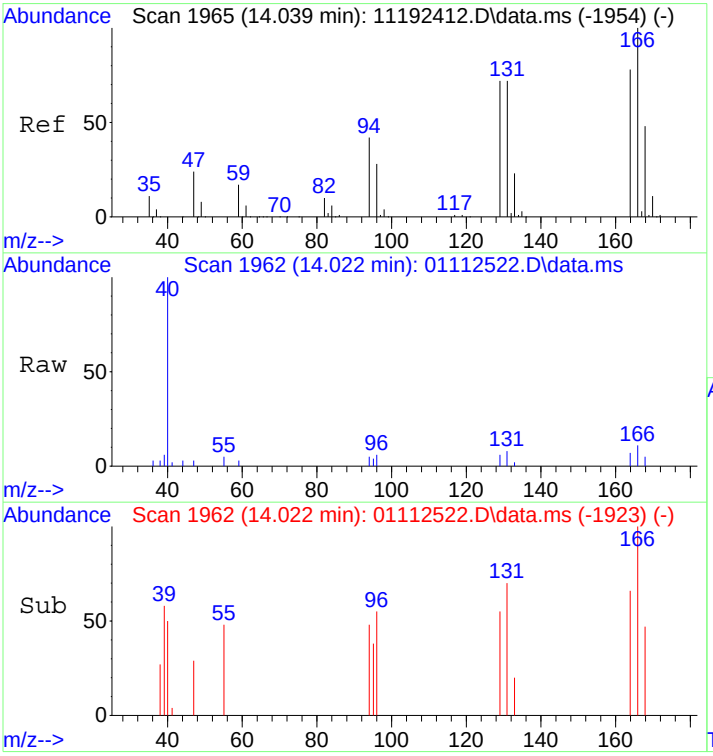


#58
Toluene
Concen: 0.09 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion: 91 Resp: 5049

Ion	Ratio	Lower	Upper
91	100		
92	59.0	39.2	79.2

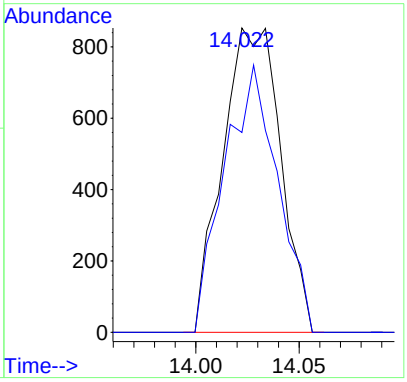




#64
Tetrachloroethene
Concen: 0.10 ng
RT: 14.02 min Scan# 1962
Delta R.T. -0.029 min
Lab File: 01112522.D
Acq: 11 Jan 2025 18:18

Tgt Ion:166 Resp: 1669

Ion	Ratio	Lower	Upper
166	100		
164	80.8	58.7	98.7



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 10:47:22 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

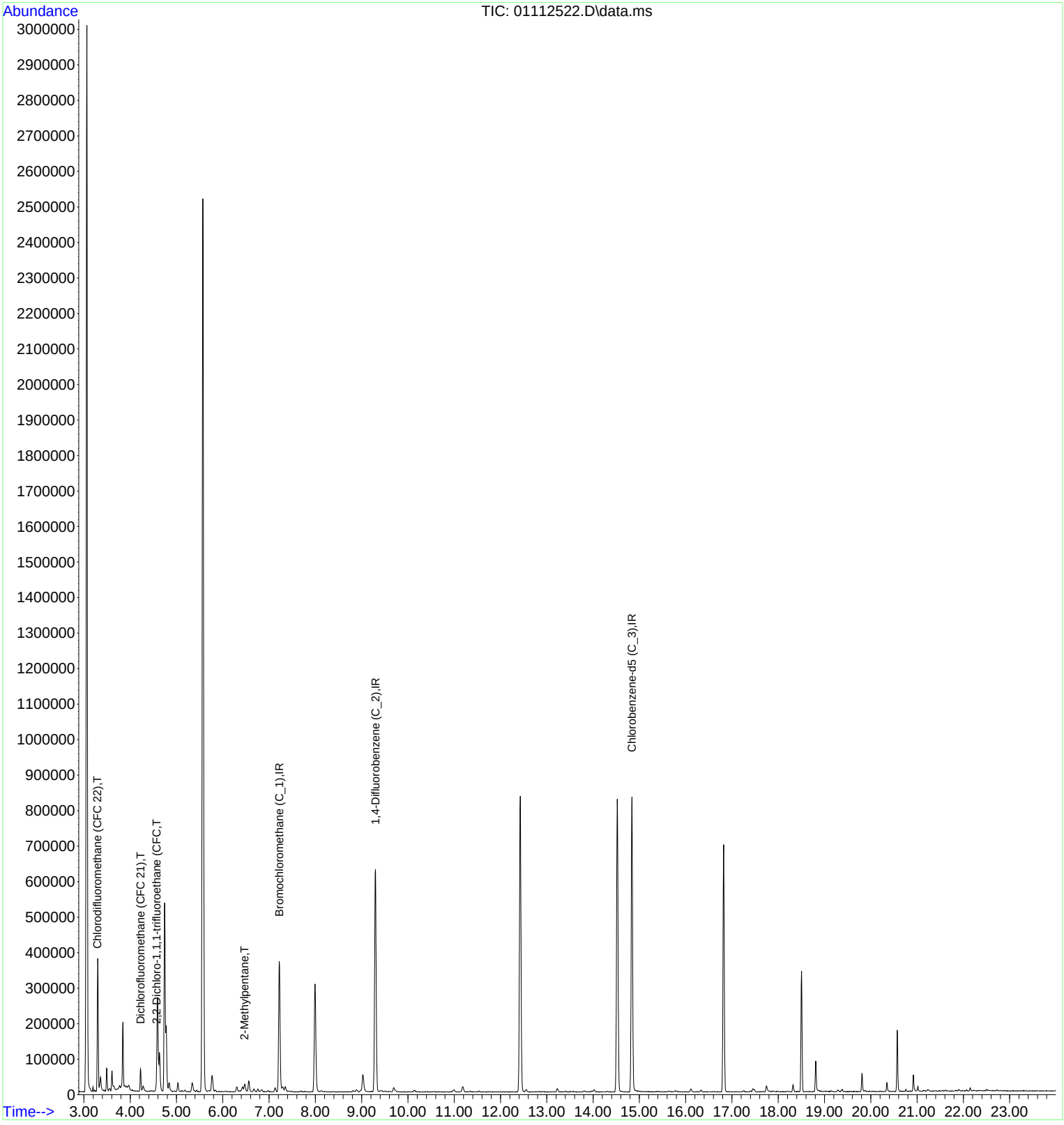
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.22	130	155897	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	664891	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	126171	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.13	85	217	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	d		
4) 1,1-Difluoroethane	3.25	65	1090	N.D.			
5) Chlorodifluoromethane ...	3.29	67	4136	0.953	ng	#	19
6) 1-Chloro-1,1-Difluoroe...	3.49	65	443	N.D.			
7) Dichlorofluoromethane ...	4.22	67	48240	1.527	ng		100
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	5546m	0.257	ng		
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.34	43	815	N.D.			
12) 2-Methylpentane	6.47	71	4600	0.359	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	9.03	84	2837	N.D.			
17) 2,3-Dimethylpentane	9.51	56	1166	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.42	55	287	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.67	91	479	N.D.			
27) 4-Chlorotoluene	17.67	91	479	N.D.			
28) Indane	19.02	117	51	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	20.57	119	596	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

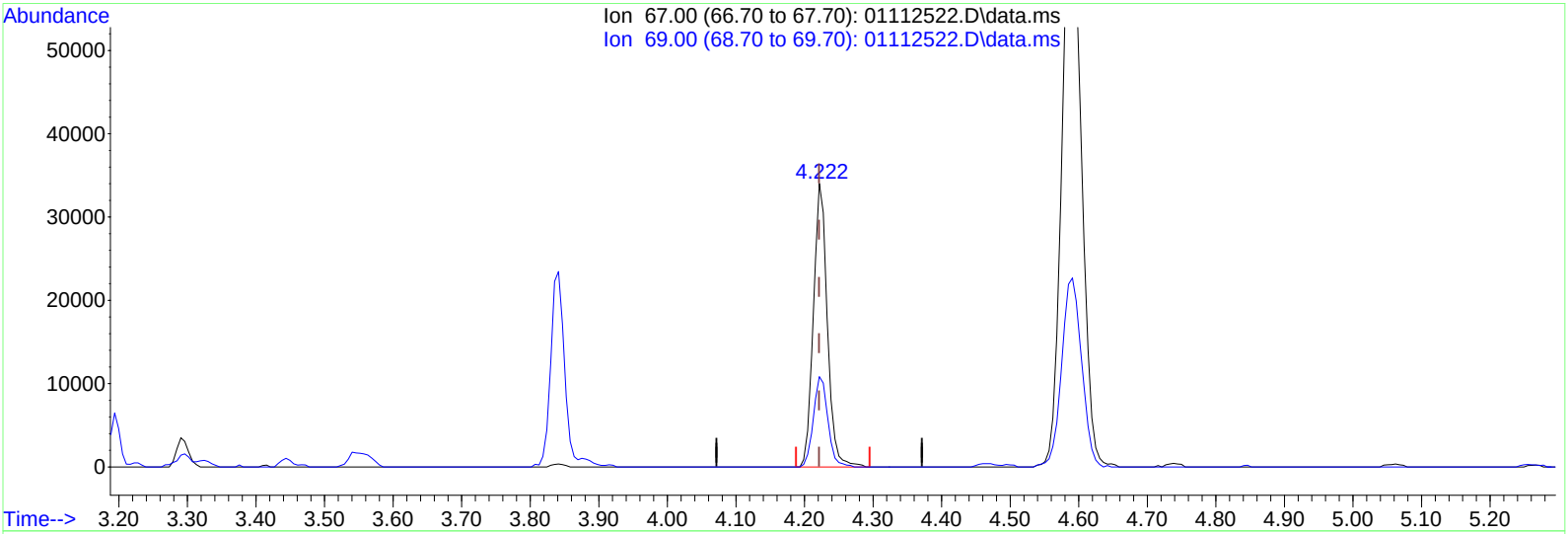
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

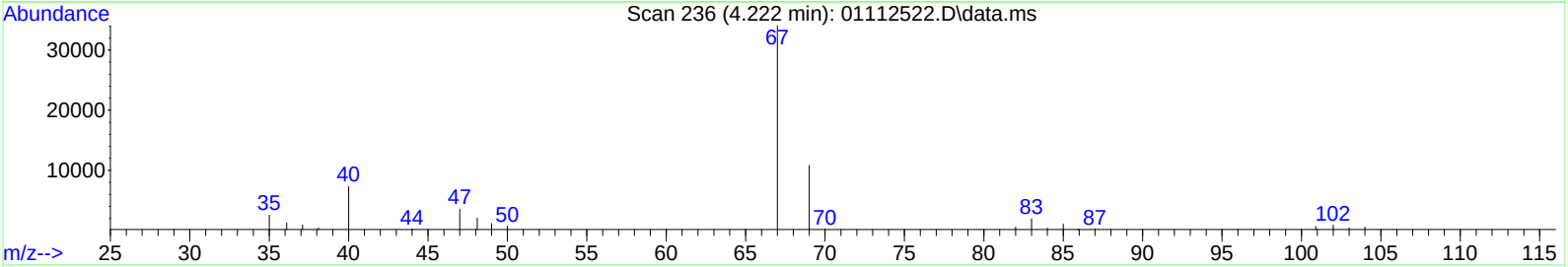
Quant Time: Jan 13 10:47:22 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

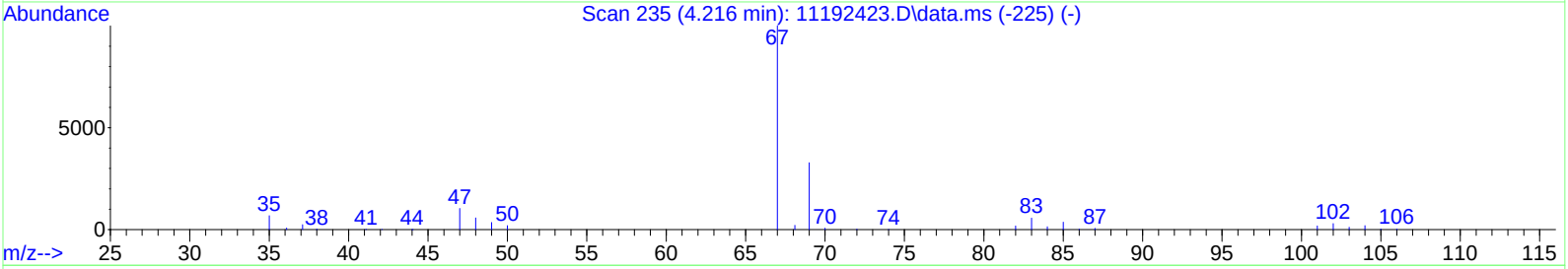


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 13 10:40:31 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112522.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.222min (+0.000) 1.53ng

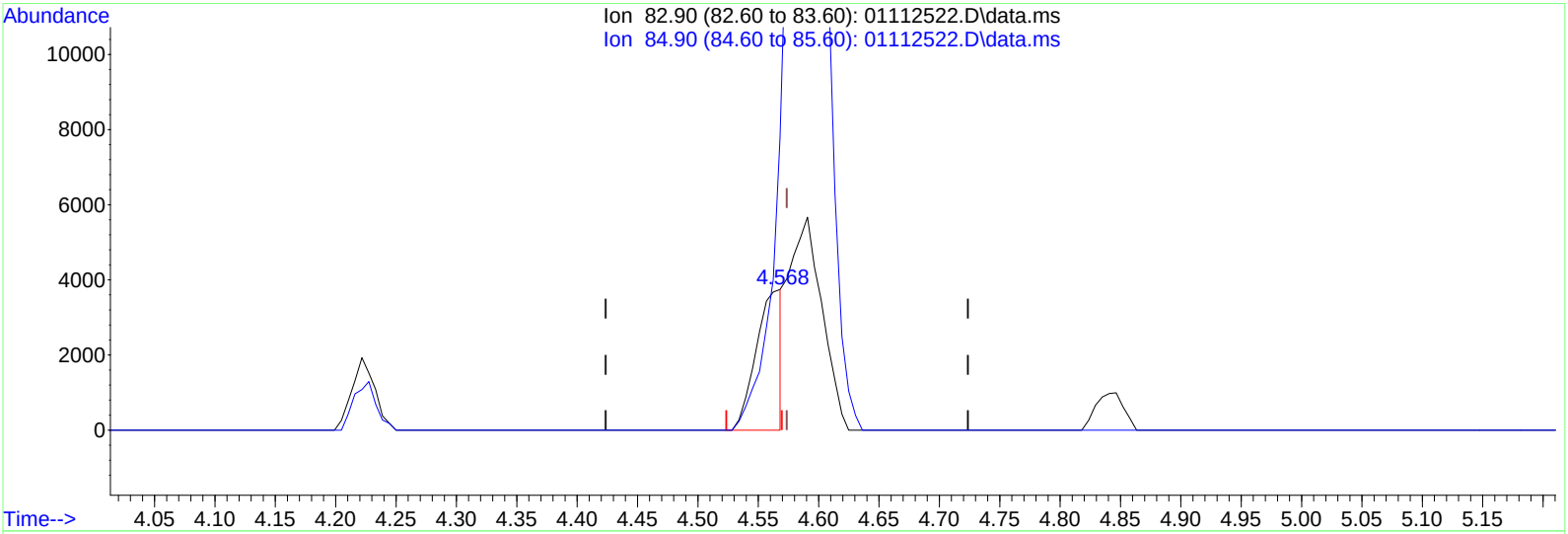
response 48240

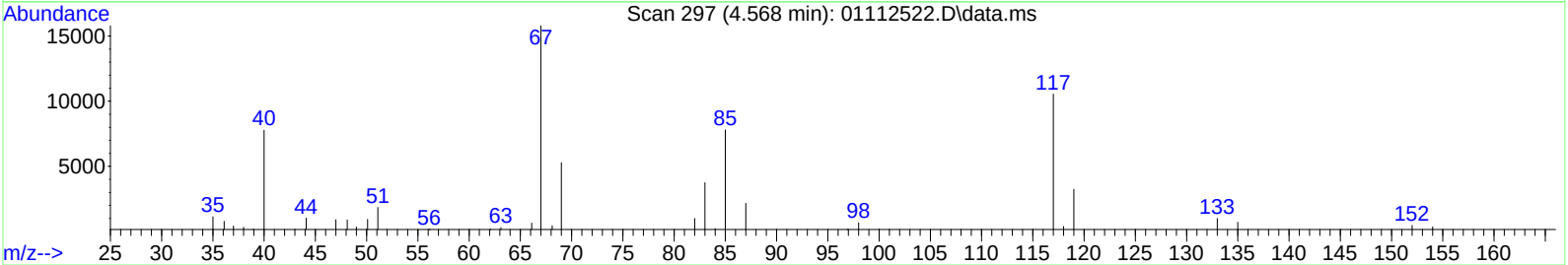
Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.01
0.00	0.00	0.00
0.00	0.00	0.00

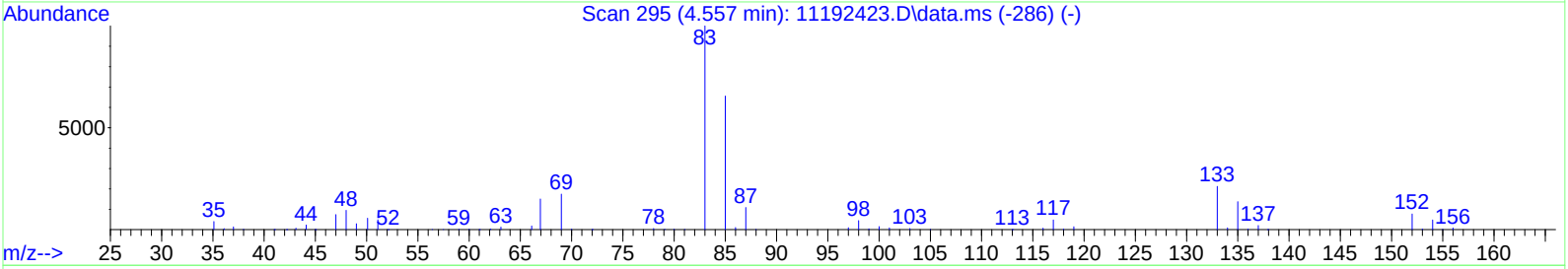
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 13 10:40:31 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112522.D\data.ms

(9) 2,2-Dichloro-1,1,1-trifluoroethane (CFC (T)

4.568min (-0.006) 0.26ng m

response 5546

Ion	Exp%	Act%
82.90	100	100
84.90	66.20	63.34
0.00	0.00	0.00
0.00	0.00	0.00

IPC

MA 1/13/25

TZ 1/15/25

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112522.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.296	67	73	79	rBV2	374423	547766	10.83%	2.724%
2	3.359	79	84	93	rVB2	37171	73520	1.45%	0.366%
3	3.489	103	107	114	rBV	64479	89748	1.77%	0.446%
4	3.603	123	127	143	rBV2	55859	109571	2.17%	0.545%
5	3.767	143	156	160	rBV4	11660	27478	0.54%	0.137%
6	3.841	160	169	174	rBV	184903	251590	4.97%	1.251%
7	3.966	188	191	204	rVB4	14820	32622	0.65%	0.162%
8	4.222	231	236	241	rBV	62588	89537	1.77%	0.445%
9	4.278	241	246	259	rVB2	14826	35133	0.69%	0.175%
10	4.591	289	301	306	rBV	264356	561550	11.10%	2.792%
11	4.631	306	308	321	rVV2	109994	177300	3.51%	0.882%
12	4.744	321	328	332	rVV	531408	944520	18.68%	4.697%
13	4.772	332	333	341	rVV	185426	253751	5.02%	1.262%
14	4.841	341	345	357	rVB	24530	51240	1.01%	0.255%
15	5.028	371	378	387	rBV	24582	42233	0.84%	0.210%
16	5.340	424	433	439	rBV2	25326	56075	1.11%	0.279%
17	5.567	462	473	490	rBV	2515173	5057284	100.00%	25.147%
18	5.766	500	508	517	rVB3	43788	96982	1.92%	0.482%
19	6.306	593	603	609	rBV	14325	31654	0.63%	0.157%
20	6.425	616	624	628	rBV	11412	24677	0.49%	0.123%
21	6.476	628	633	642	rVB2	19685	41510	0.82%	0.206%
22	6.561	642	648	660	rVB3	29935	59464	1.18%	0.296%
23	6.675	660	668	677	rVB2	7742	16367	0.32%	0.081%
24	6.760	677	683	688	rBV4	7203	12219	0.24%	0.061%
25	6.845	688	698	704	rVB4	5764	15179	0.30%	0.075%
26	7.129	742	748	756	rBV3	11316	22065	0.44%	0.110%
27	7.220	756	764	774	rBV	367565	806687	15.95%	4.011%
28	7.299	774	778	782	rVV4	12929	26119	0.52%	0.130%
29	7.350	782	787	795	rVB	13071	26242	0.52%	0.130%
30	7.992	891	900	919	rBV	303581	699441	13.83%	3.478%
31	8.895	1053	1059	1068	rVB3	6026	14471	0.29%	0.072%
32	9.025	1076	1082	1094	rVB	46895	113433	2.24%	0.564%
33	9.298	1118	1130	1144	rBV	626744	1458706	28.84%	7.253%
34	9.696	1192	1200	1215	rVB5	11930	35001	0.69%	0.174%
35	10.990	1420	1428	1437	rVB4	5832	15472	0.31%	0.077%
36	11.183	1453	1462	1472	rVB3	14824	37203	0.74%	0.185%
37	12.427	1670	1681	1694	rBV	832830	1899342	37.56%	9.444%
38	12.557	1698	1704	1712	rVB3	6674	14959	0.30%	0.074%
39	13.227	1815	1822	1828	rBV3	9514	19883	0.39%	0.099%
40	14.022	1955	1962	1970	rVB5	6381	14881	0.29%	0.074%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

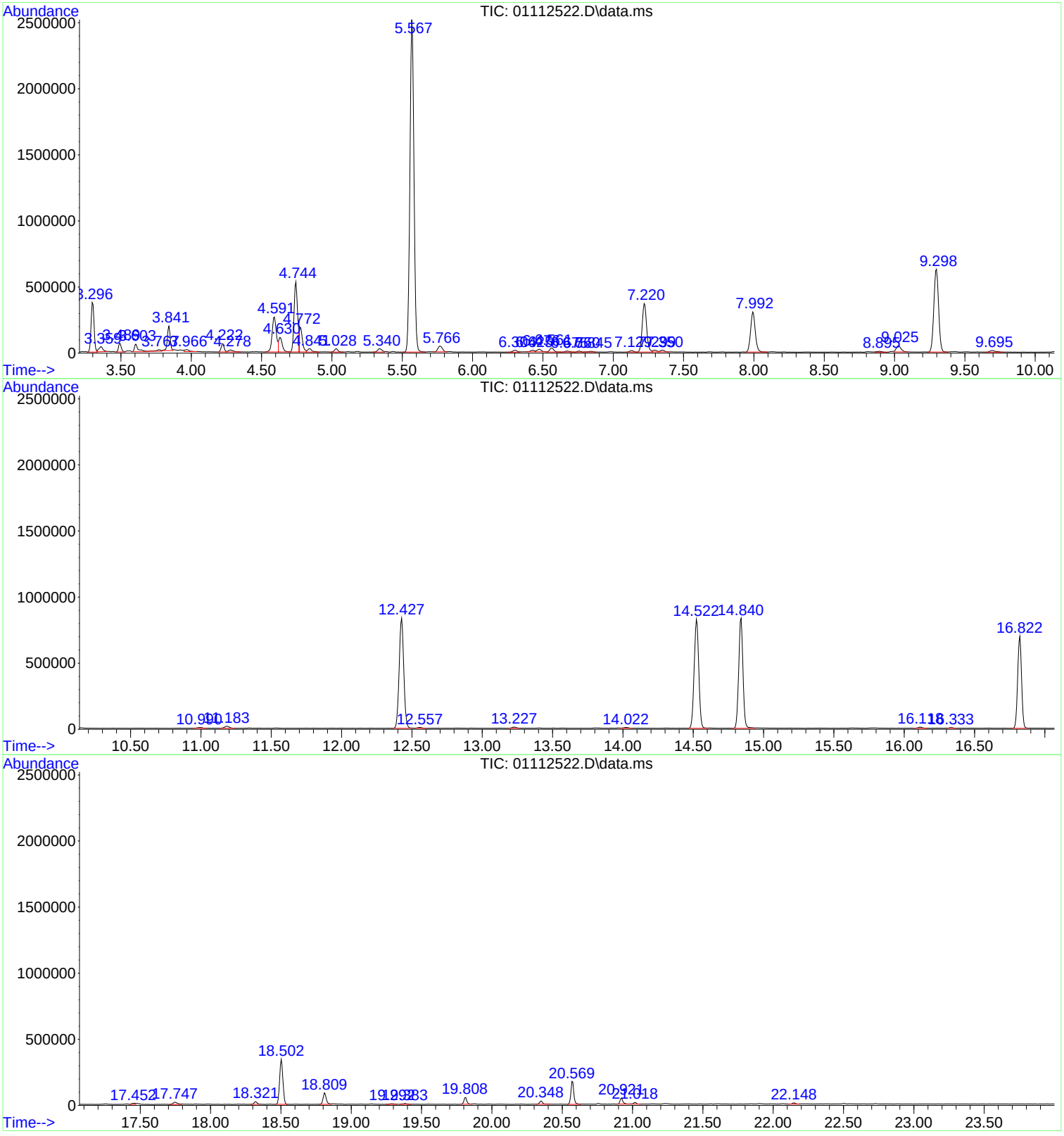
41	14.522	2040	2050	2065	rBV	824828	1859122	36.76%	9.244%
42	14.840	2095	2106	2124	rBV	831213	1746704	34.54%	8.685%
43	16.118	2323	2331	2339	rBV3	8389	18824	0.37%	0.094%
44	16.333	2364	2369	2377	rVB3	5460	10478	0.21%	0.052%
45	16.822	2445	2455	2465	rBV	696546	1323223	26.16%	6.580%
46	17.452	2561	2566	2569	rBV4	8032	15587	0.31%	0.078%
47	17.747	2611	2618	2626	rBV2	16752	36152	0.71%	0.180%
48	18.321	2713	2719	2724	rBV2	19874	31231	0.62%	0.155%
49	18.502	2744	2751	2759	rVB	340419	550780	10.89%	2.739%
50	18.809	2798	2805	2814	rBV	86455	136209	2.69%	0.677%
51	19.292	2882	2890	2896	rBV4	4653	10334	0.20%	0.051%
52	19.383	2899	2906	2914	rVB4	6836	12917	0.26%	0.064%
53	19.808	2976	2981	2989	rBV2	50830	74019	1.46%	0.368%
54	20.348	3070	3076	3087	rBV2	24364	37558	0.74%	0.187%
55	20.569	3109	3115	3126	rBV2	173406	247044	4.88%	1.228%
56	20.921	3172	3177	3187	rBV2	46188	66056	1.31%	0.328%
57	21.018	3190	3194	3201	rVB2	13268	17531	0.35%	0.087%
58	22.148	3386	3393	3399	rBV	9225	14318	0.28%	0.071%

Sum of corrected areas: 20110962

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

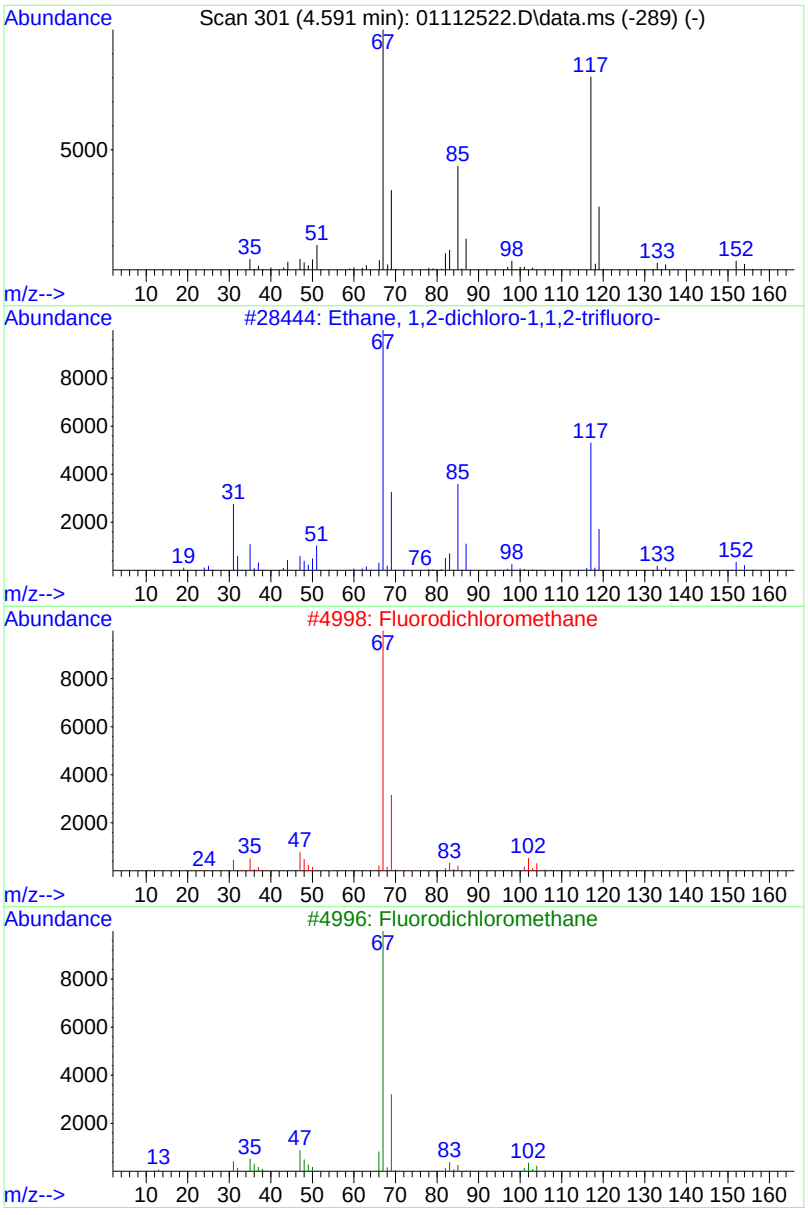
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

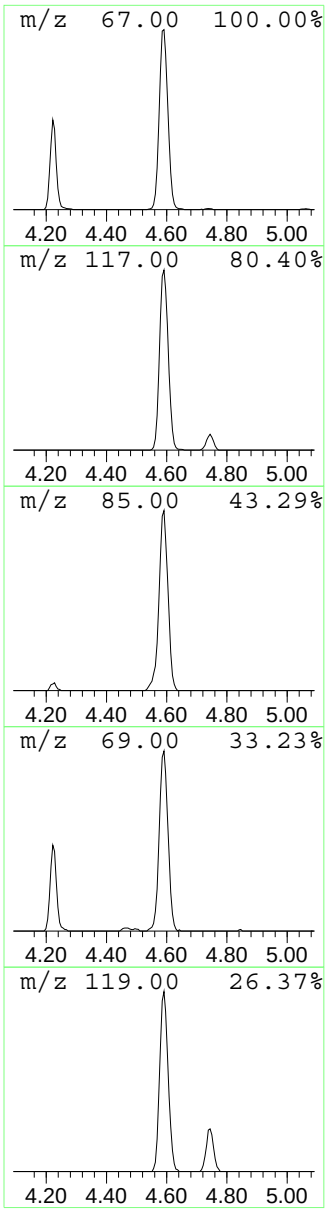
****

Peak Number 4 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.591	8.70 ng	561550	Bromochloromethane (IS1)	7.220

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	94
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	22
3	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
4	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	10
5	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	9





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112522.D
Acq On : 11 Jan 2025 18:18
Operator : LS
Sample : P2405139-059 (400mL)
Misc : S37-12312401
ALS Vial : 8 Sample Multiplier: 1

VOA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.591	8.7	ng	561550	1	7.220	806687	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 05:44:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	150473	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	665498	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	125473	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	251915	12.288	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.32%				
57) Toluene-d8 (SS2)	12.43	98	699641	12.570	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%				
73) Bromofluorobenzene (SS3)	16.82	174	253396	13.192	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.32	85	16720	0.568	ng	#	92
4) Chloromethane	3.52	50	538	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	314	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	4.02	94	247	N.D.			
9) Chloroethane	4.16	64	162	N.D.			
10) Ethanol	4.29	45	4893	0.440	ng		92
11) Acetonitrile	0.00	41	0	N.D. d			
12) Acrolein	4.55	56	5091	0.535	ng		95
13) Acetone	4.65	58	11551	1.140	ng	#	68
14) Trichlorofluoromethane	4.75	101	771570	27.970	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	9984m	0.275	ng		
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	693	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	5.58	151	613059	49.258	ng		97
22) Carbon Disulfide	5.60	76	136585	2.980	ng		67
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.31	73	948	N.D.			
26) Vinyl Acetate	6.43	86	2744	1.119	ng	#	10
27) 2-Butanone (MEK)	6.67	72	1120	0.138	ng	#	25
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.29	61	4503	0.896	ng		97
31) n-Hexane	7.30	57	4872	0.216	ng	#	96
32) Chloroform	7.36	83	22392	0.914	ng		99
34) Tetrahydrofuran (THF)	7.78	72	118	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.81	56	7514	No Calib		#	
41) Benzene	8.89	78	7177	0.134	ng		93
42) Carbon Tetrachloride	9.07	117	356	N.D.			
43) Cyclohexane	9.21	84	423	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.08	83	197	N.D.			
47) Trichloroethene	10.15	130	405	N.D.			
48) 1,4-Dioxane	10.13	88	6042	0.653	ng		93

Data Path : I:\MS09\DATA\2025 01\11\
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Operator : LS
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Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 13 05:44:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.22	57	924	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.34	58	390	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	5950	0.111 ng	100
59) 2-Hexanone	12.94	43	930	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.78	43	245	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.02	166	374	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.40	91	1692	N.D.	
67) m- & p-Xylenes	15.63	91	1206	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.10	104	112	N.D.	
70) o-Xylene	16.24	91	479	N.D.	
71) n-Nonane	16.61	43	345	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	497	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.68	91	382	N.D.	
77) 3-Ethyltoluene	17.03	105	497	No Calib	#
78) 4-Ethyltoluene	17.86	105	181	N.D.	
79) 1,3,5-Trimethylbenzene	17.96	105	193	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	497	No Calib	#
82) 1,2,4-Trimethylbenzene	18.43	105	543	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.50	91	1186	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D. d	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	209	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	910	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	497	No Calib	#
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.83	180	303	N.D.	
95) Naphthalene	20.94	128	548	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.31	55	126	No Calib	#
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	19.38	91	479	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

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ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 13 05:44:42 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
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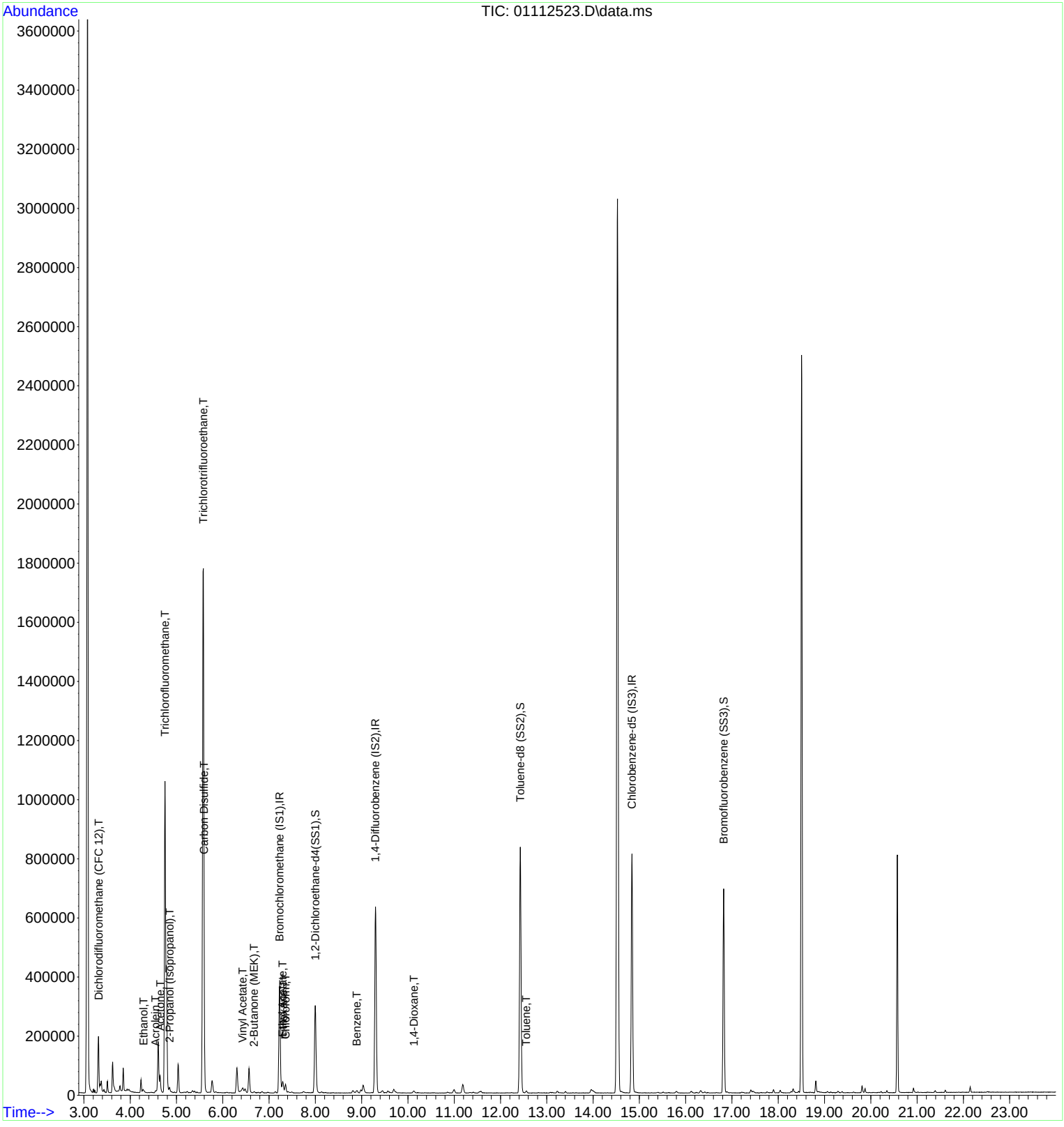

Quantitation Report (QT Reviewed)

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1/13/25

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37) 1,4-Difluorobenzene (IS2)	9.30	114	665498	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	125473	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	251915	12.288	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.32%				
57) Toluene-d8 (SS2)	12.43	98	699641	12.570	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%				
73) Bromofluorobenzene (SS3)	16.82	174	253396	13.192	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.32	85	16720	0.568	ng	#	92
10) Ethanol	4.29	45	4893	0.440	ng		92
12) Acrolein	4.55	56	5091	0.535	ng		95
13) Acetone	4.65	58	11551	1.140	ng	#	68
14) Trichlorofluoromethane	4.75	101	771570	27.970	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	9984m	0.275	ng		
21) Trichlorotrifluoroethane	5.58	151	613059	49.258	ng		97
22) Carbon Disulfide	5.60	76	136585	2.980	ng		67
26) Vinyl Acetate	6.43	86	2744	1.119	ng	#	10
27) 2-Butanone (MEK)	6.67	72	1120	0.138	ng	#	25
30) Ethyl Acetate	7.29	61	4503	0.896	ng		97
31) n-Hexane	7.30	57	4872	0.216	ng	#	96
32) Chloroform	7.36	83	22392	0.914	ng		99
41) Benzene	8.89	78	7177	0.134	ng		93
48) 1,4-Dioxane	10.13	88	6042	0.653	ng		93
58) Toluene	12.56	91	5950	0.111	ng		100

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

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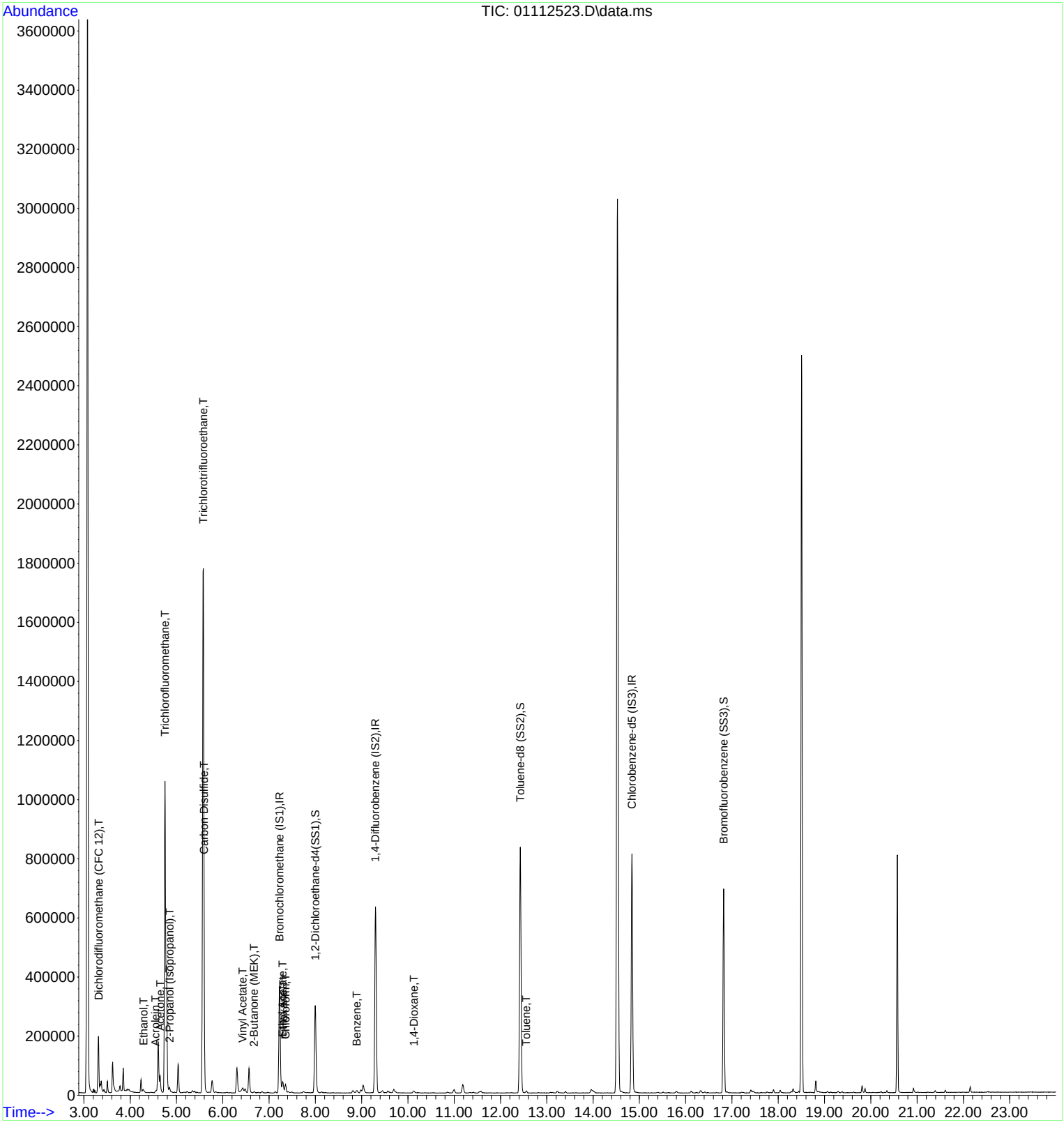
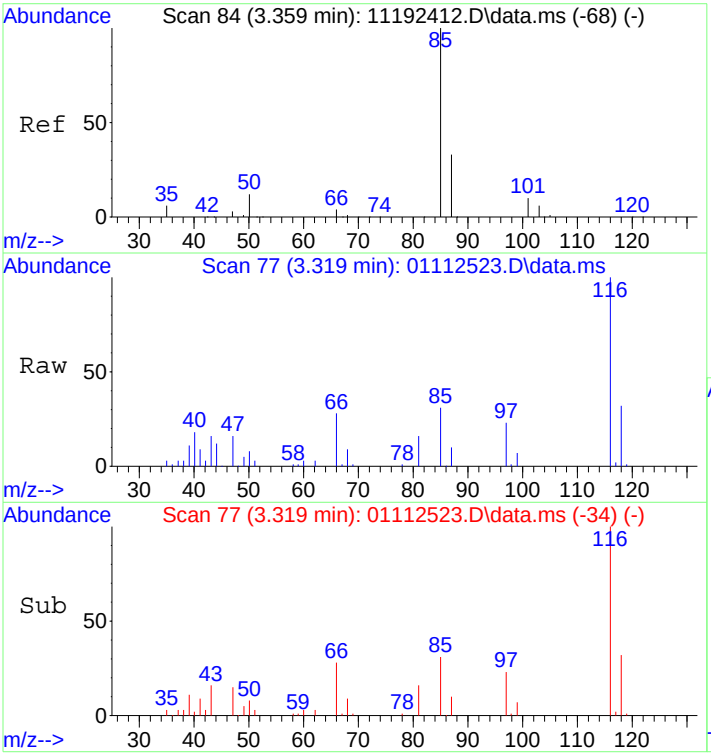
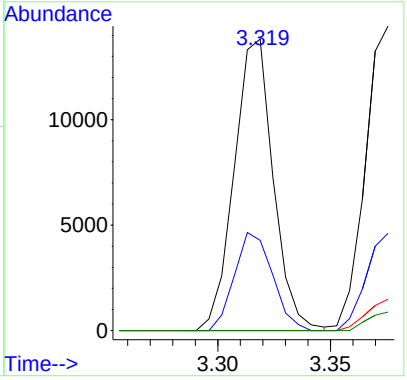


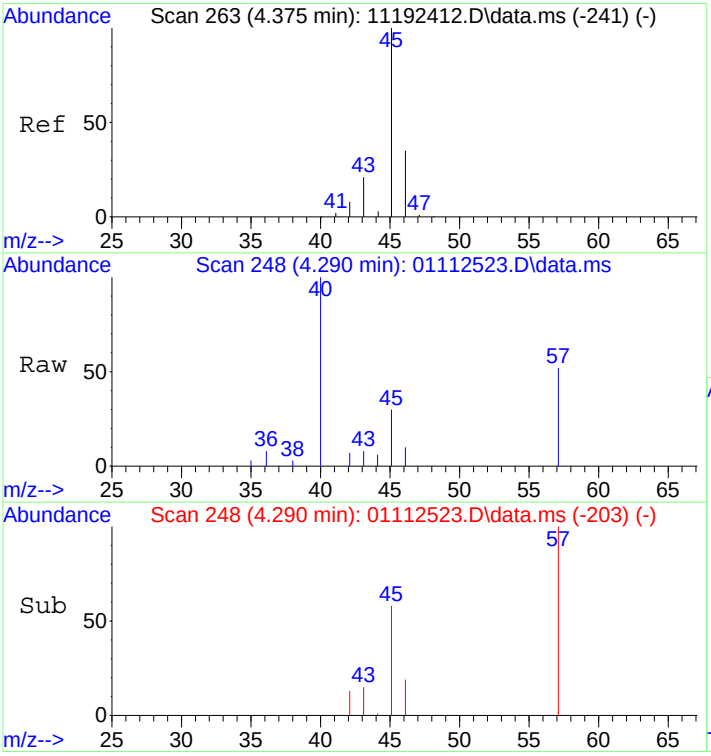


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.57 ng
RT: 3.32 min Scan# 77
Delta R.T. -0.008 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 85 Resp: 16720

Ion	Ratio	Lower	Upper
85	100		
87	32.7	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

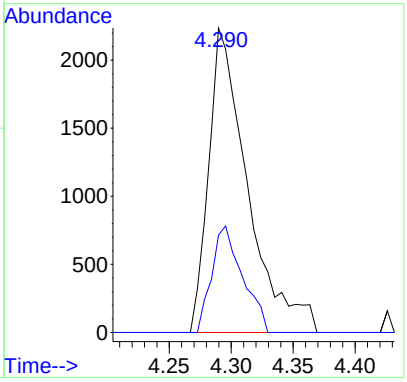


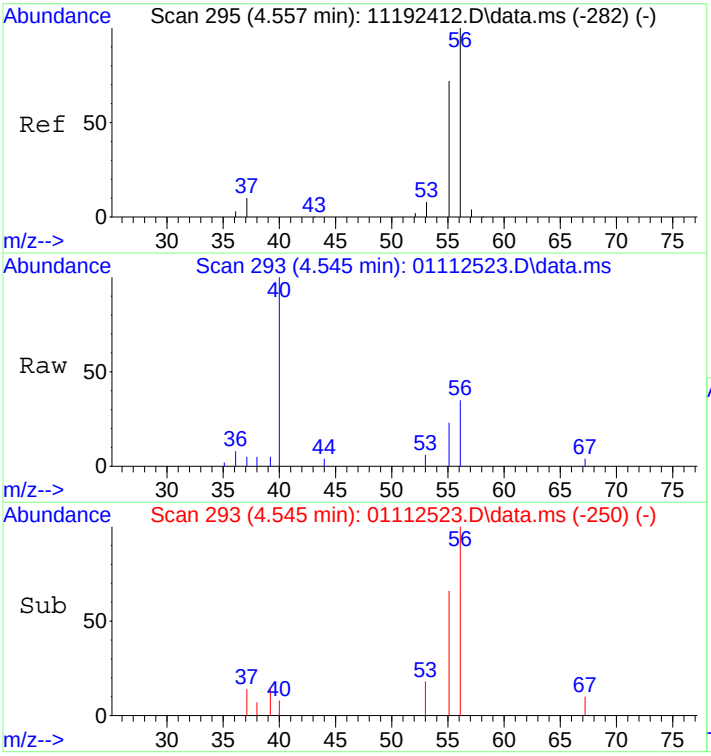


#10
Ethanol
Concen: 0.44 ng
RT: 4.29 min Scan# 248
Delta R.T. 0.005 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 45 Resp: 4893

Ion	Ratio	Lower	Upper
45	100		
46	27.6	11.8	51.8

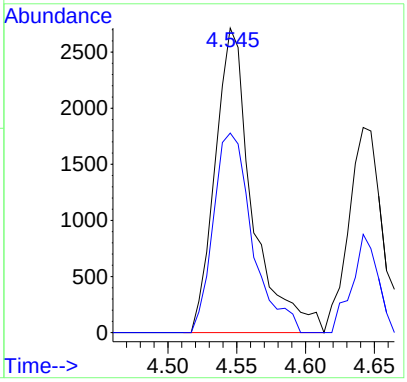


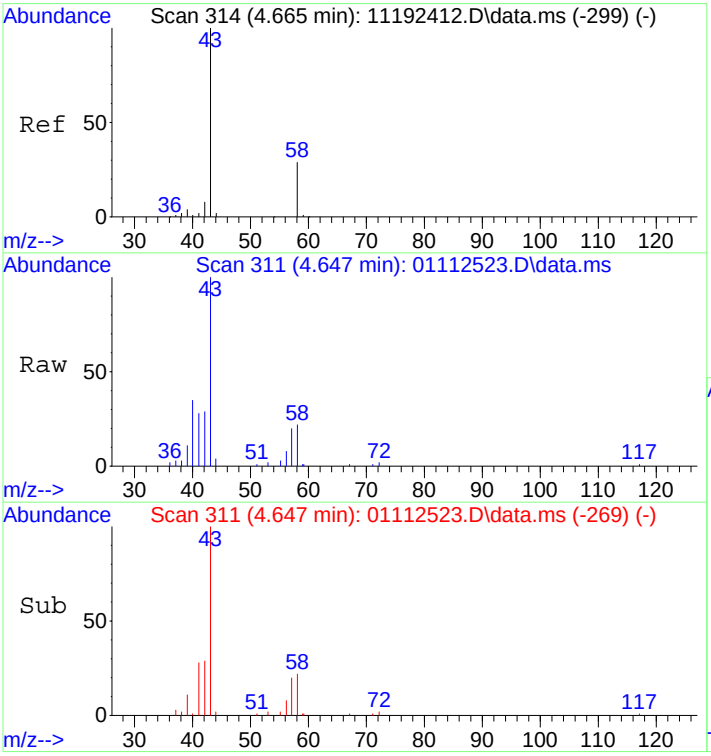


#12
Acrolein
Concen: 0.54 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 56 Resp: 5091

Ion	Ratio	Lower	Upper
56	100		
55	68.5	53.1	93.1

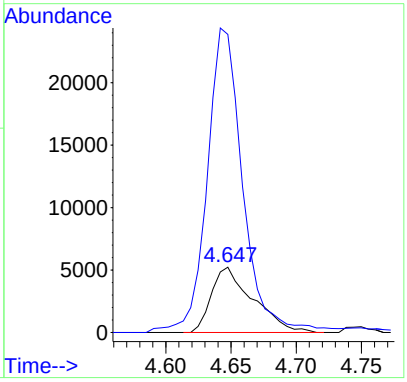


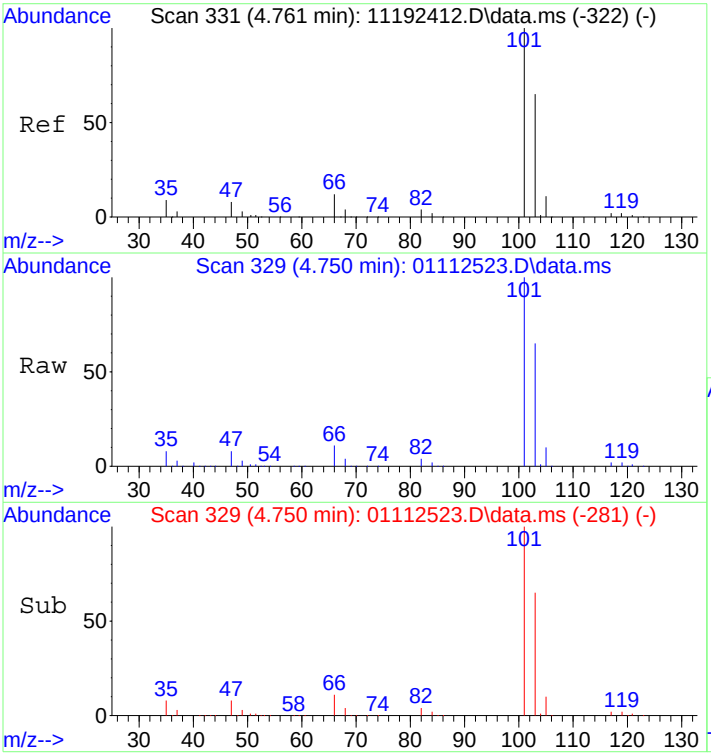


#13
Acetone
Concen: 1.14 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 58 Resp: 11551

Ion	Ratio	Lower	Upper
58	100		
43	410.8	312.5	372.5#

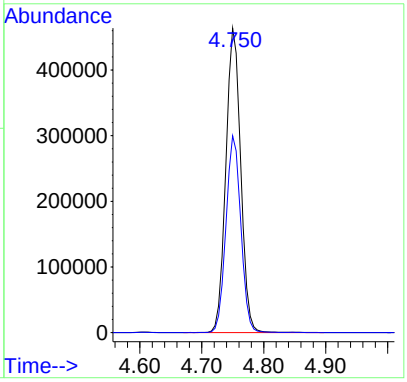


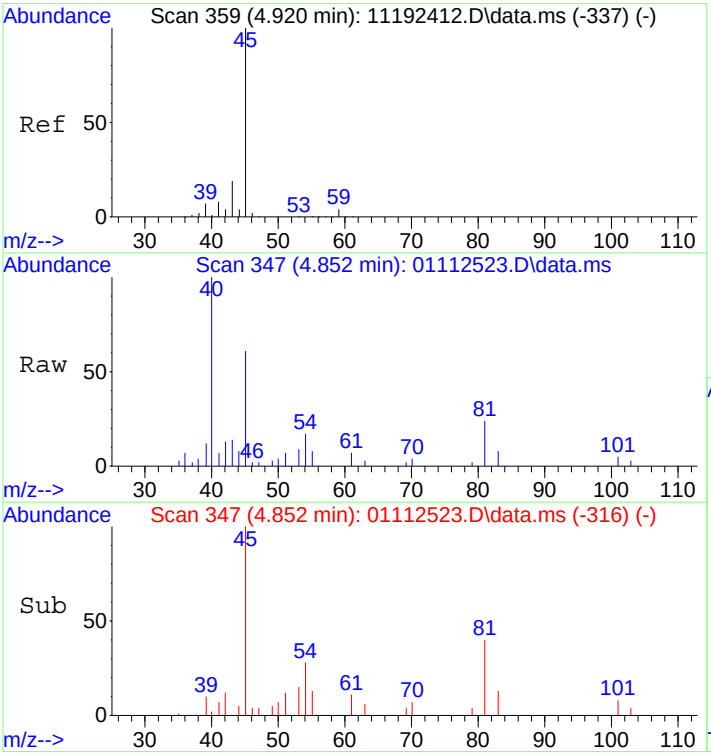


#14
Trichlorofluoromethane
Concen: 27.97 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion:101 Resp: 771570

Ion	Ratio	Lower	Upper
101	100		
103	64.6	44.8	84.8

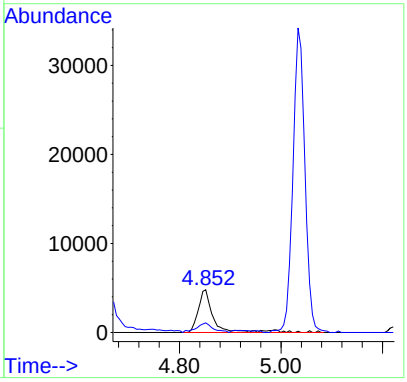


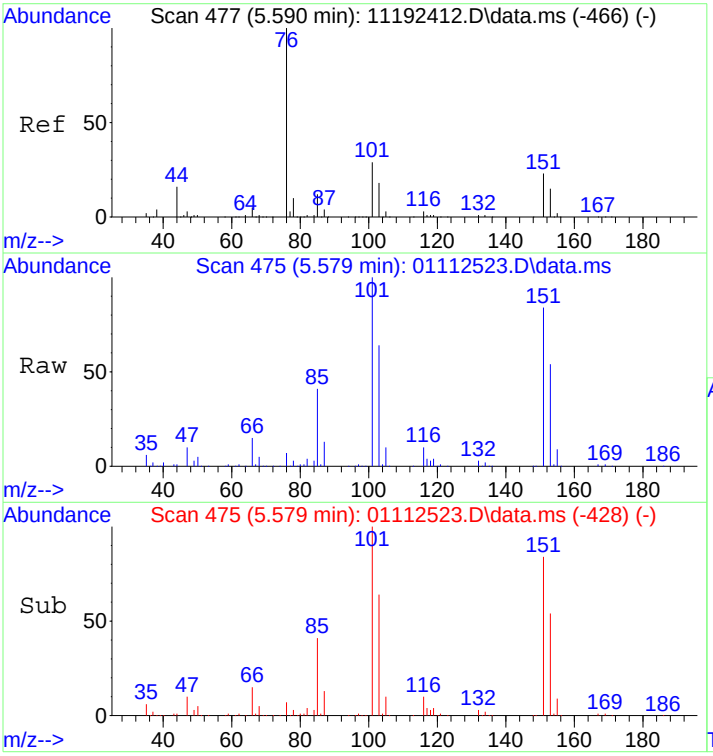


#15
2-Propanol (Isopropanol)
Concen: 0.28 ng m
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 45 Resp: 9984

Ion	Ratio	Lower	Upper
45	100		
43	28.3	0.2	40.2

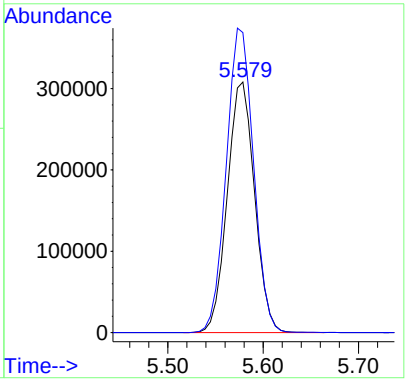


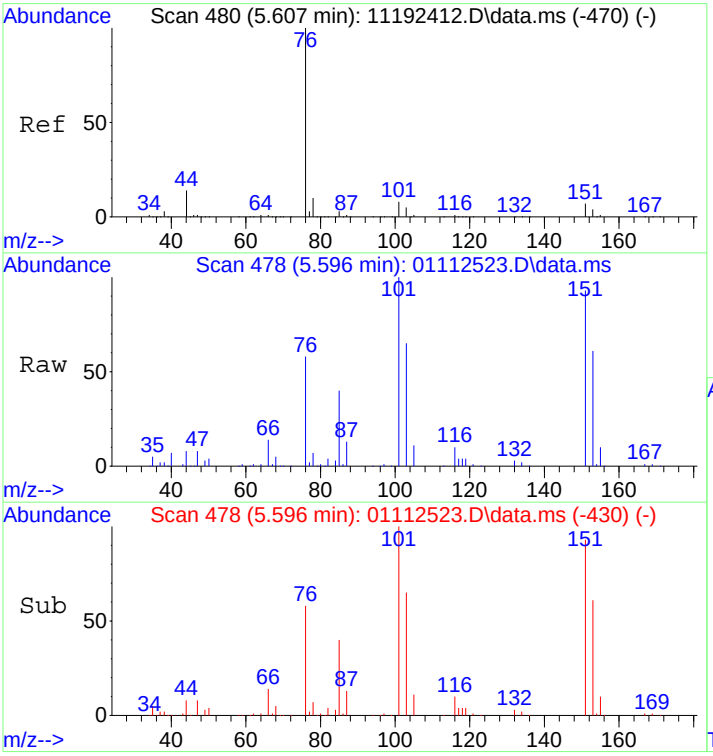


#21
Trichlorotrifluoroethane
Concen: 49.26 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.018 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion:151 Resp: 613059

Ion	Ratio	Lower	Upper
151	100		
101	121.5	105.0	145.0

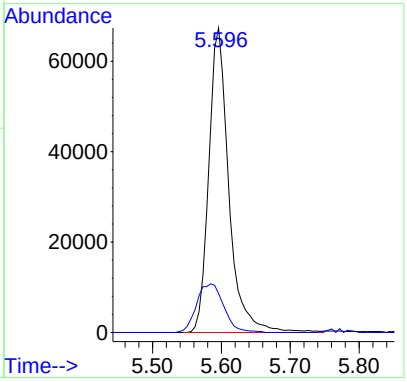


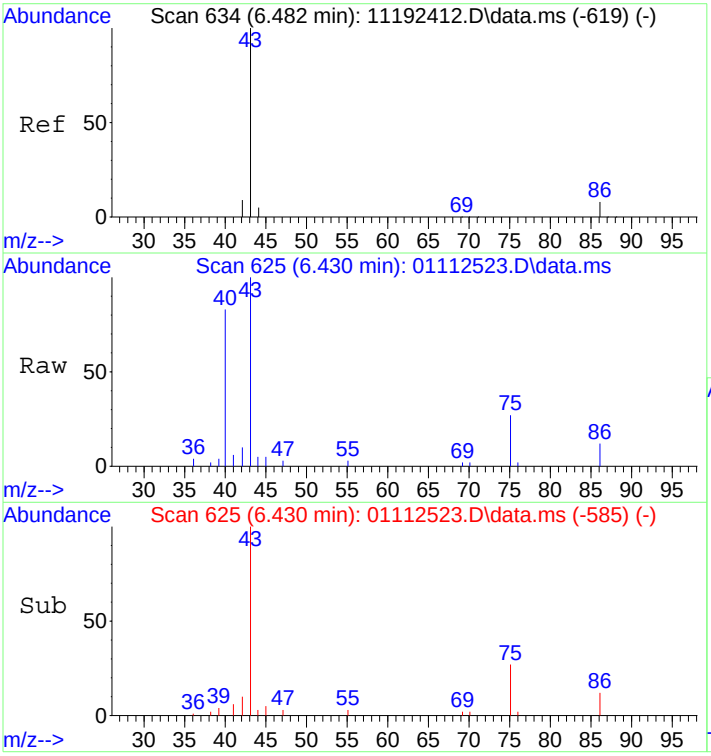


#22
Carbon Disulfide
Concen: 2.98 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.024 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 76 Resp: 136585

Ion	Ratio	Lower	Upper
76	100		
78	21.6	0.0	29.6

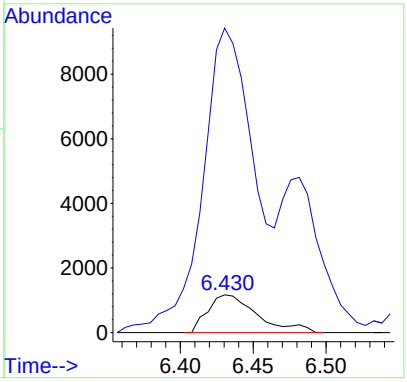


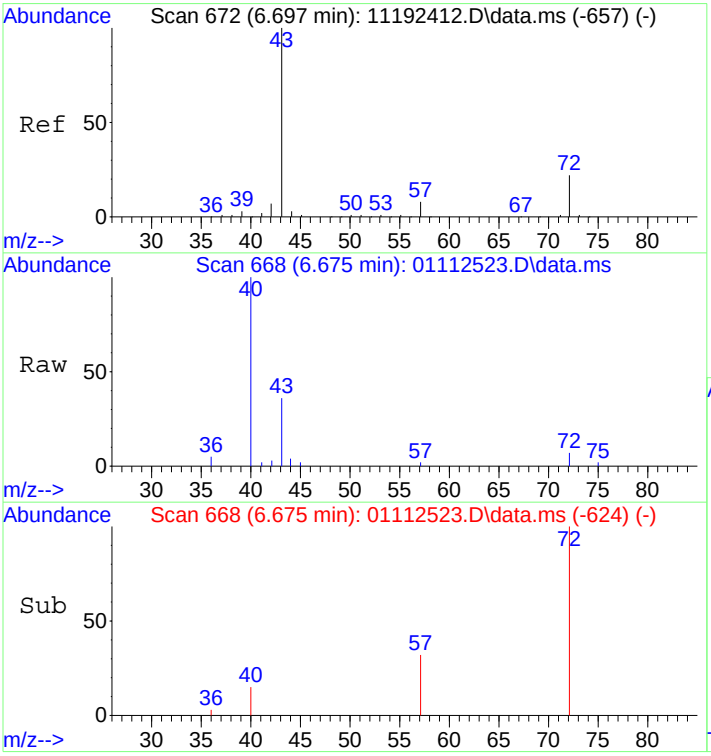


#26
Vinyl Acetate
Concen: 1.12 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 86 Resp: 2744

Ion	Ratio	Lower	Upper
86	100		
43	851.9	1331.6	1371.6#

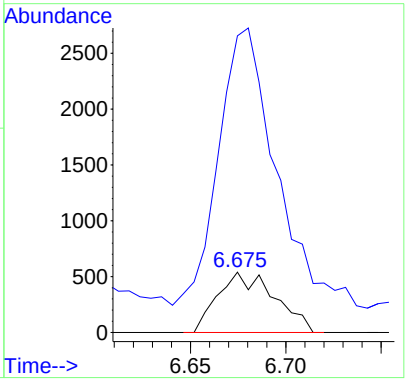


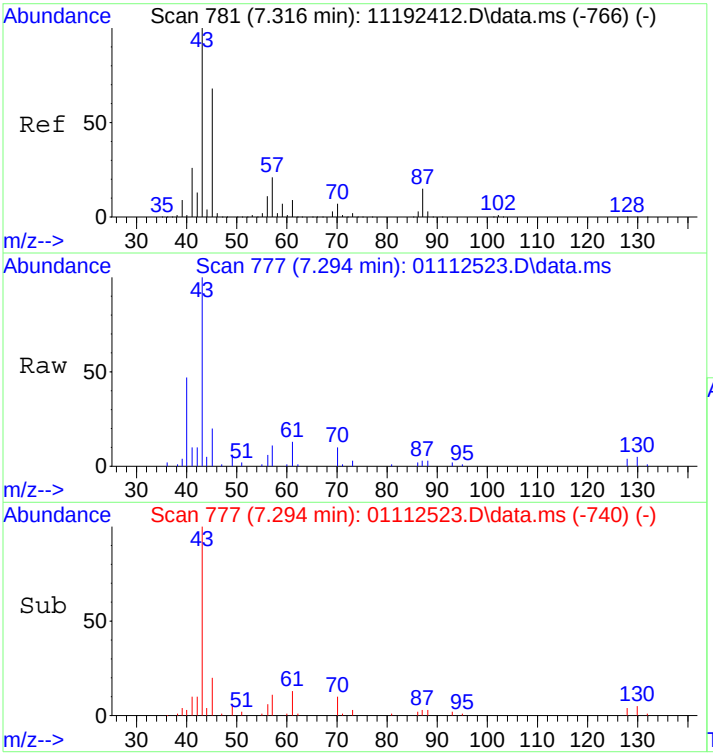


#27
2-Butanone (MEK)
Concen: 0.14 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 72 Resp: 1120

Ion	Ratio	Lower	Upper
72	100		
43	656.3	439.8	479.8#

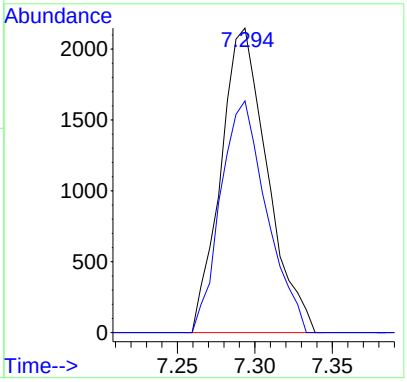


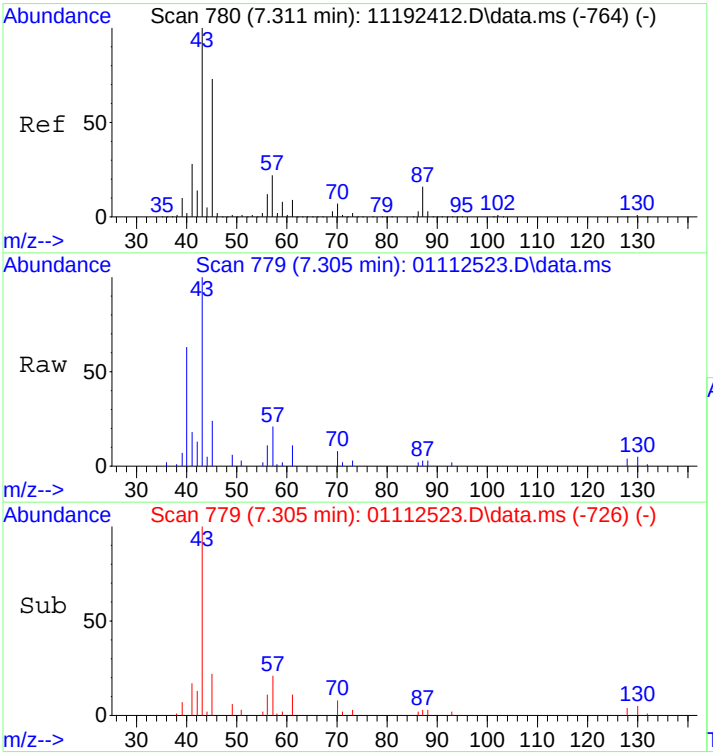


#30
Ethyl Acetate
Concen: 0.90 ng
RT: 7.29 min Scan# 777
Delta R.T. 0.012 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 61 Resp: 4503

Ion	Ratio	Lower	Upper
61	100		
70	75.1	57.3	97.3

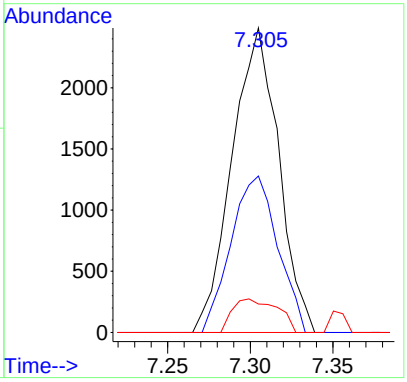


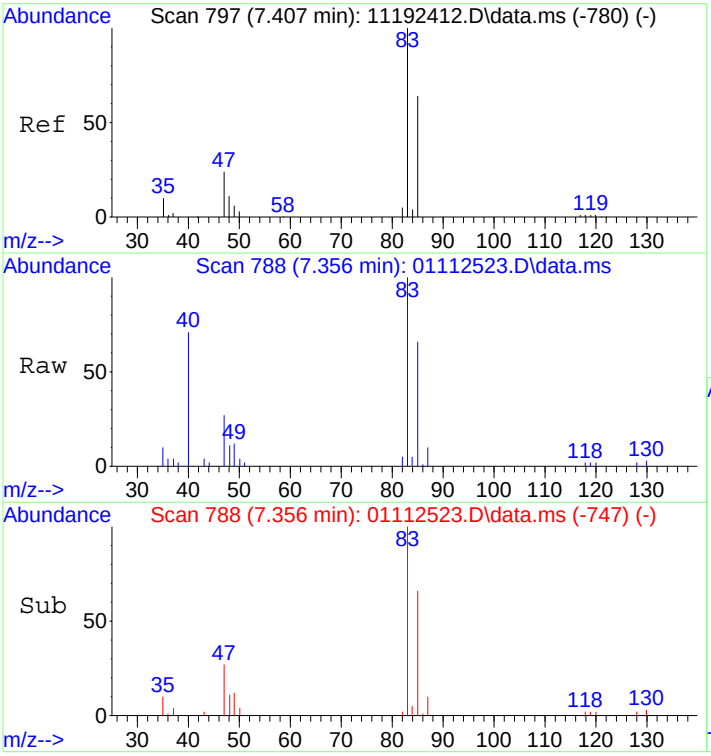


#31
n-Hexane
Concen: 0.22 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 57 Resp: 4872

Ion	Ratio	Lower	Upper
57	100		
56	51.7	43.4	65.0
86	10.7	10.9	16.3#

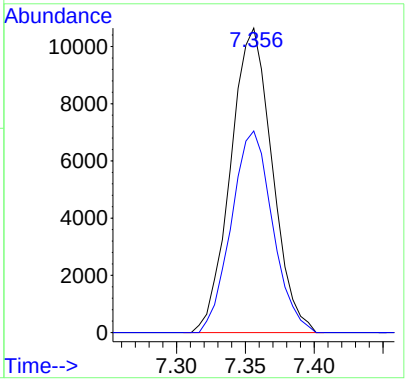


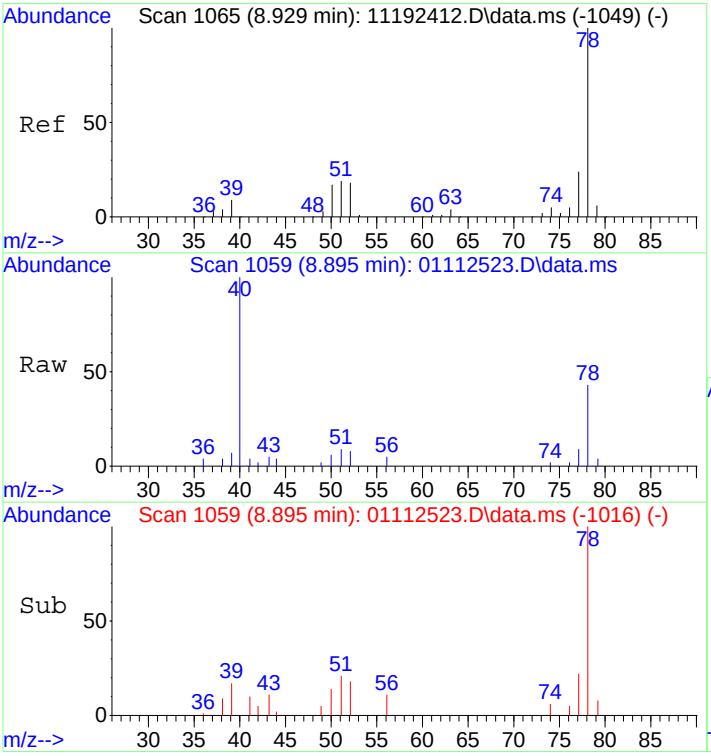


#32
Chloroform
Concen: 0.91 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 83 Resp: 22392

Ion	Ratio	Lower	Upper
83	100		
85	65.6	45.1	85.1

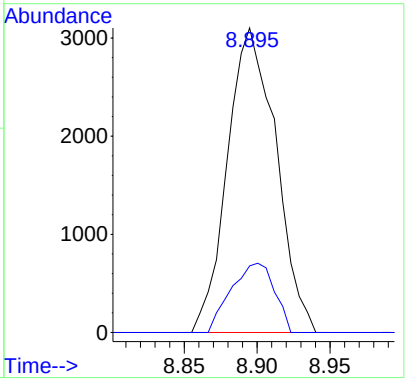


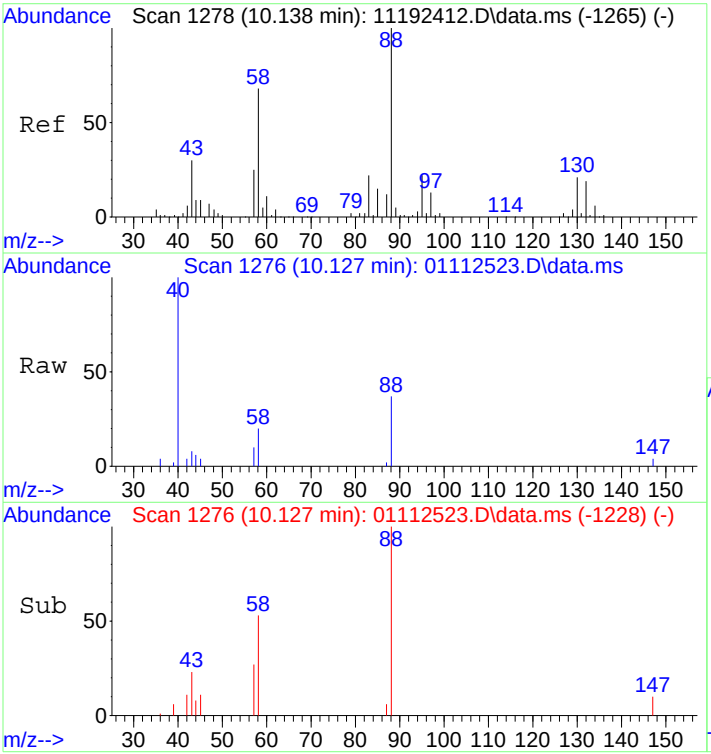


#41
Benzene
Concen: 0.13 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 78 Resp: 7177

Ion	Ratio	Lower	Upper
78	100		
77	20.3	3.7	43.7

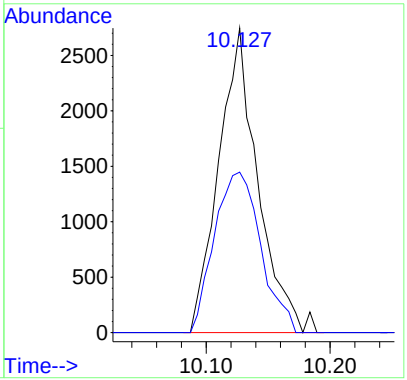


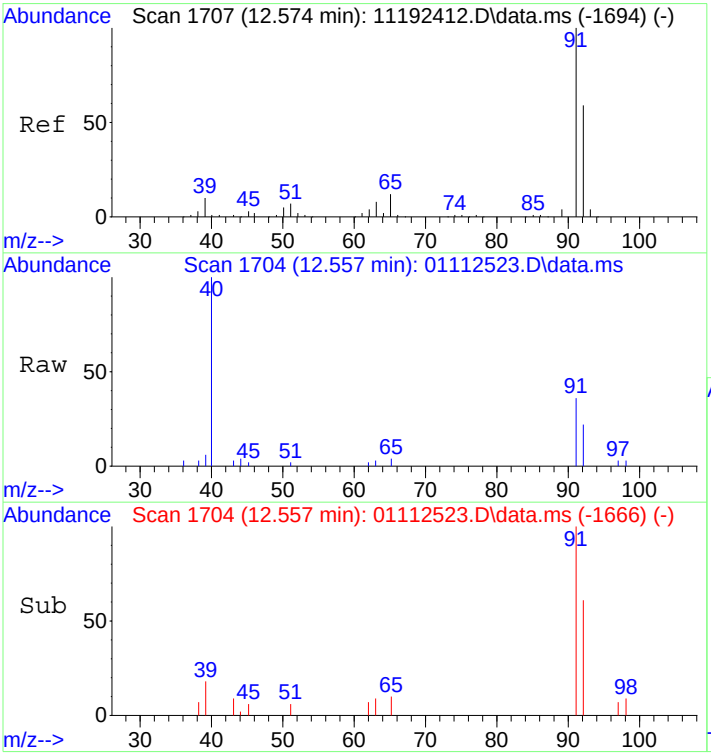


#48
1,4-Dioxane
Concen: 0.65 ng
RT: 10.13 min Scan# 1276
Delta R.T. 0.021 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

Tgt Ion: 88 Resp: 6042

Ion	Ratio	Lower	Upper
88	100		
58	62.2	47.8	87.8

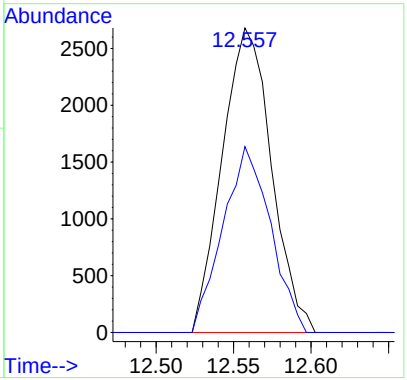




#58
Toluene
Concen: 0.11 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01112523.D
Acq: 11 Jan 2025 18:50

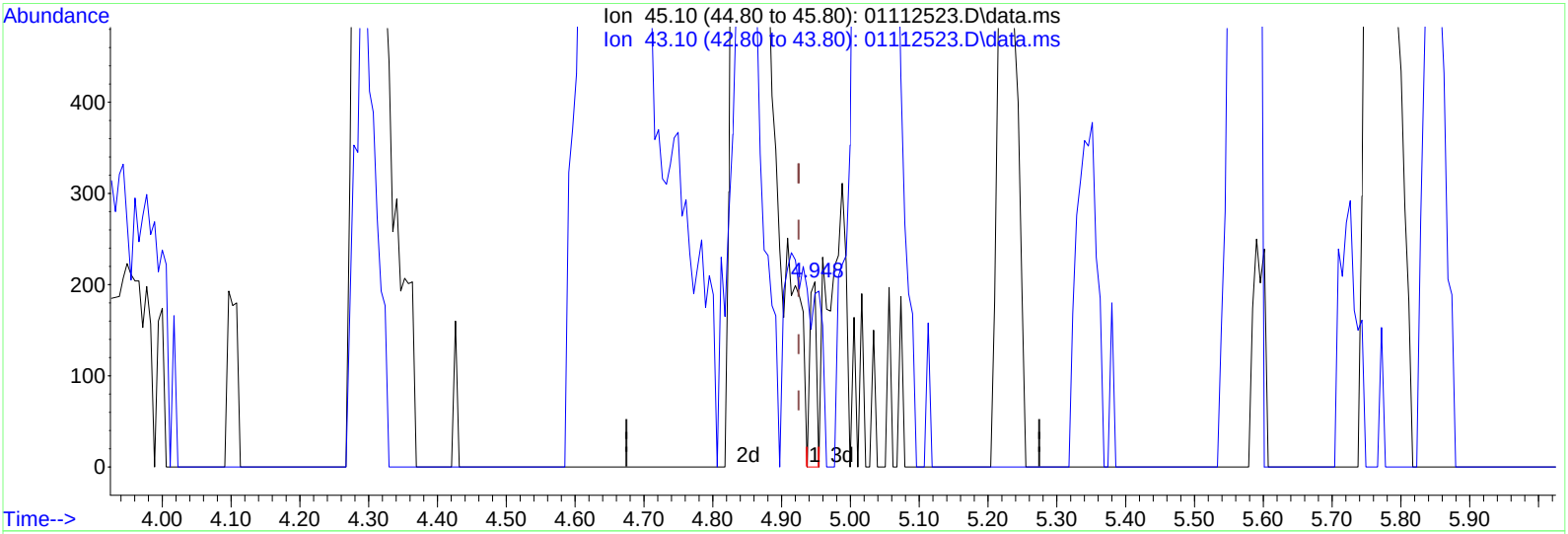
Tgt Ion: 91 Resp: 5950

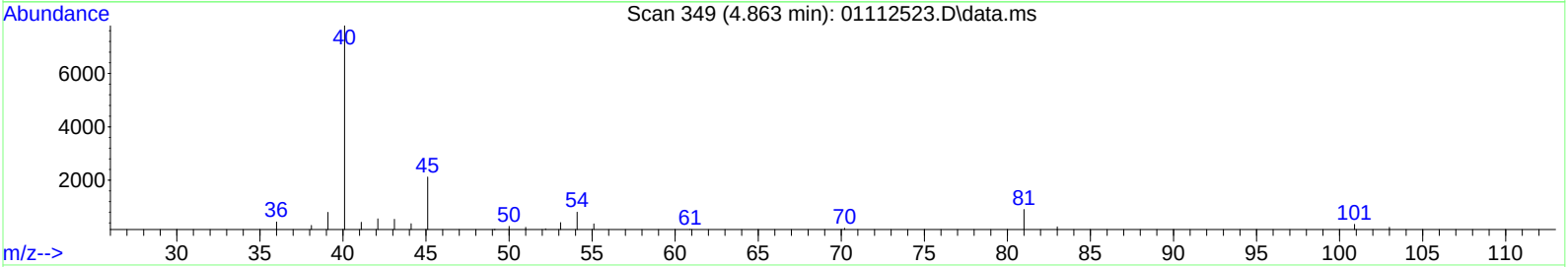
Ion	Ratio	Lower	Upper
91	100		
92	58.8	39.2	79.2

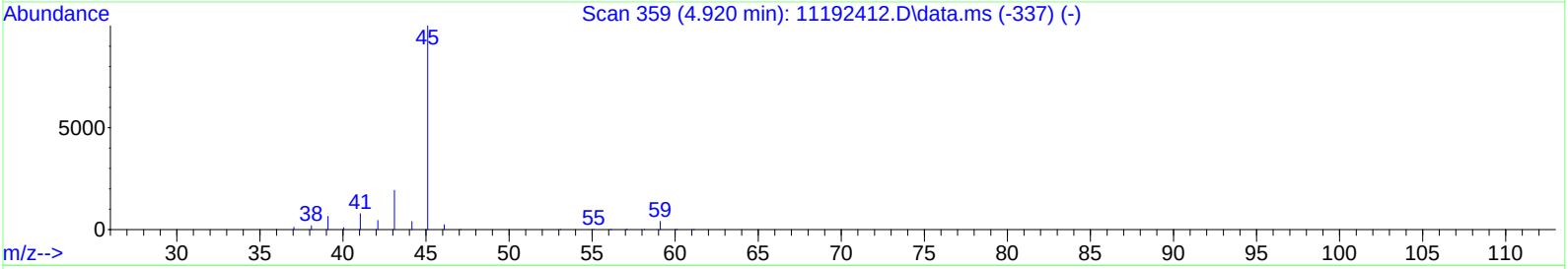


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 07:52:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112523.D\data.ms

(15) 2-Propanol (Isopropanol) (T)

4.948min (+0.024) 0.00ng

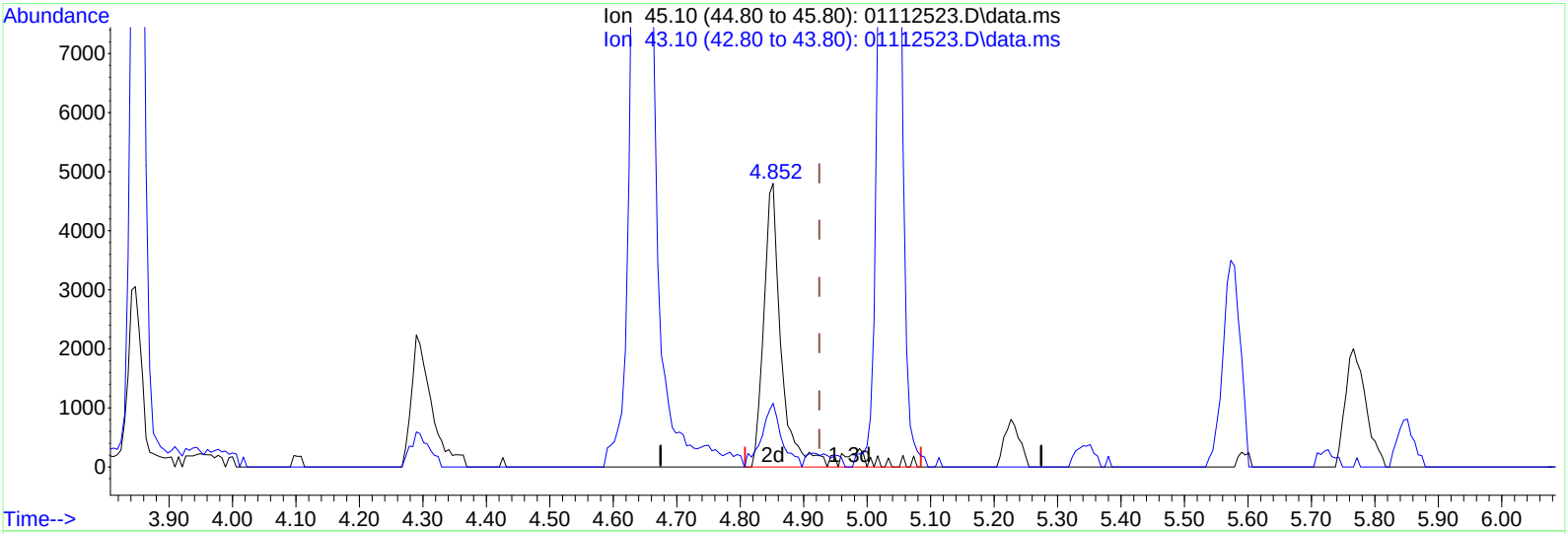
response 134

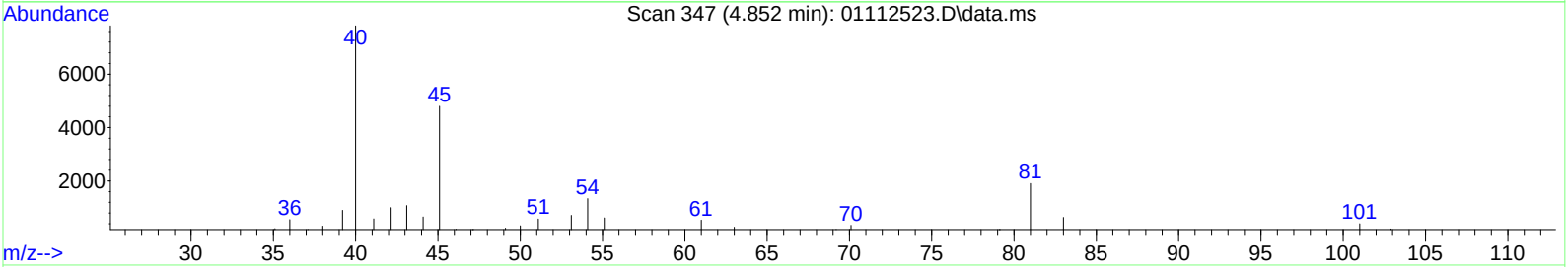
Ion	Exp%	Act%
45.10	100	100
43.10	20.20	552.24#
0.00	0.00	0.00
0.00	0.00	0.00

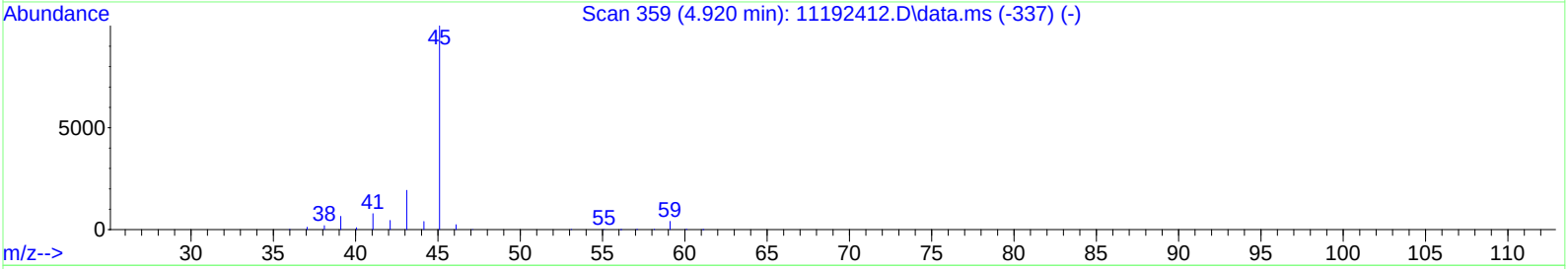
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 07:52:43 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112523.D\data.ms

(15) 2-Propanol (Isopropanol) (T)

4.852min (-0.073) 0.28ng m

response 9984

Ion	Exp%	Act%
45.10	100	100
43.10	20.20	28.28
0.00	0.00	0.00
0.00	0.00	0.00

MP

1/13/25

1/15/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

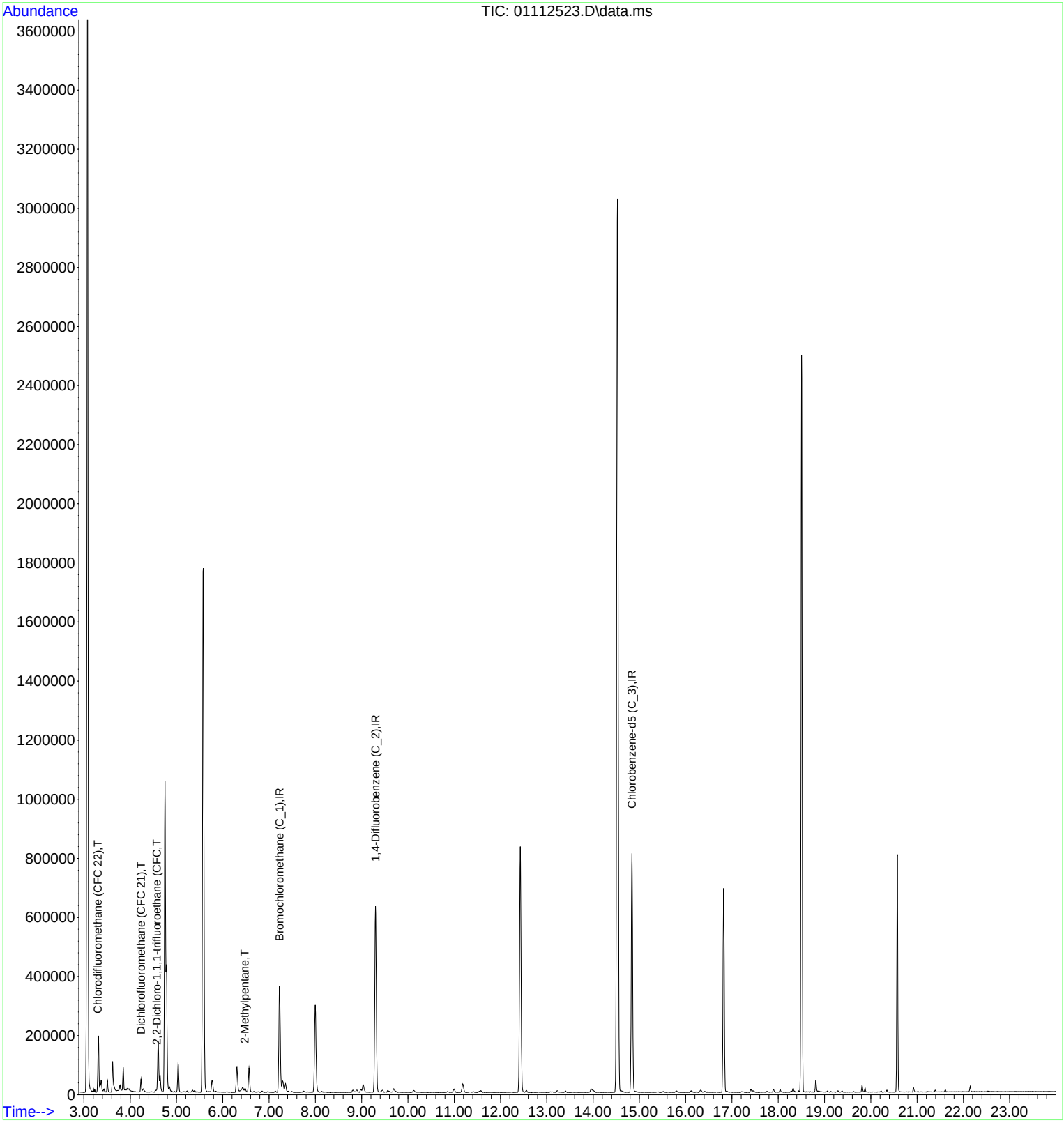
Quant Time: Jan 13 10:48:48 2025 1/13/25
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	152693	12.500	ng		-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	666281	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	125473	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	80	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	1186	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	3.30	67	2410	0.567	ng	#	79
6) 1-Chloro-1,1-Difluoroe...	3.51	65	500	N.D.			
7) Dichlorofluoromethane ...	4.23	67	32291	1.044	ng		99
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	2331	0.110	ng	#	17
10) 2-Methylbutane	0.00	57	0	N.D.	d		
11) Methyl Acetate	5.35	43	771	N.D.			
12) 2-Methylpentane	6.48	71	2668	0.212	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	9.04	84	1536	N.D.			
17) 2,3-Dimethylpentane	9.52	56	894	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.40	55	1380	N.D.			
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	16.36	75	64	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	382	N.D.			
27) 4-Chlorotoluene	17.68	91	382	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	20.22	119	115	N.D.			
31) 1,2,3,4-Tetramethylben...	20.22	119	115	N.D.			
32) 1,2,3,5-Tetramethylben...	20.57	119	2914	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

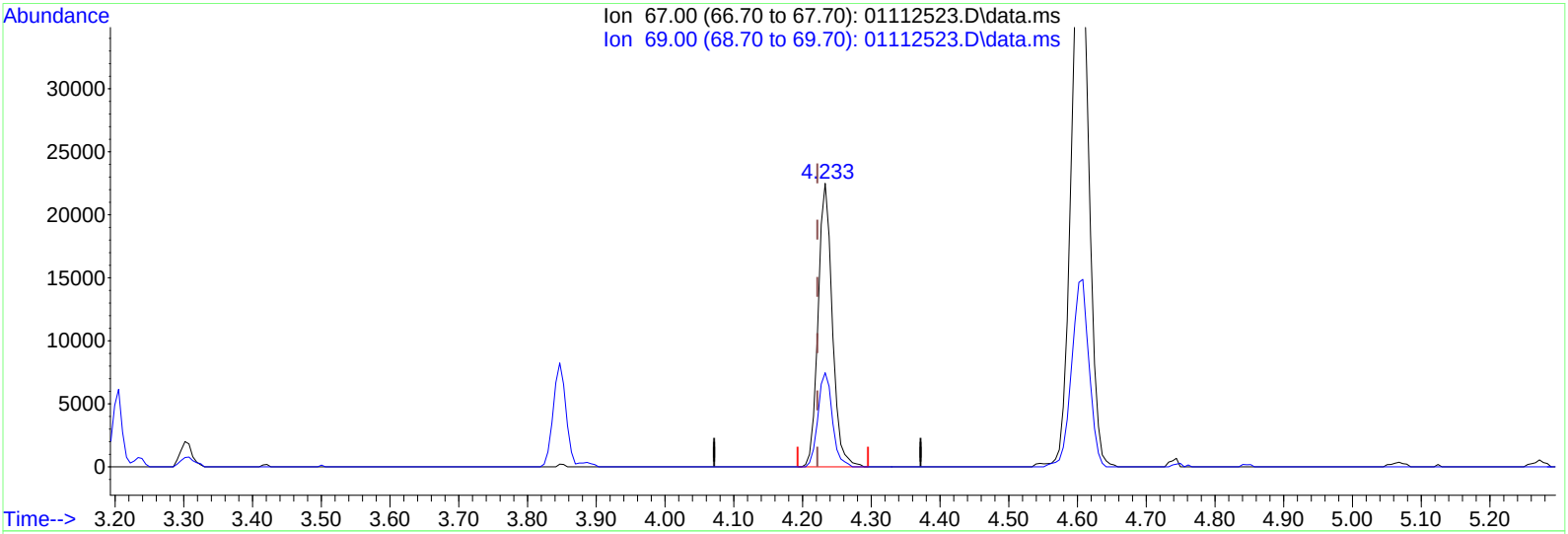
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

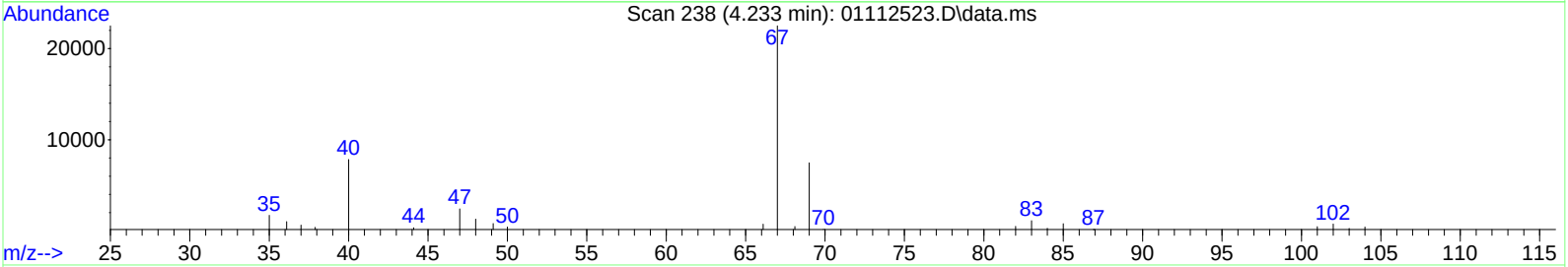
Quant Time: Jan 13 10:48:48 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

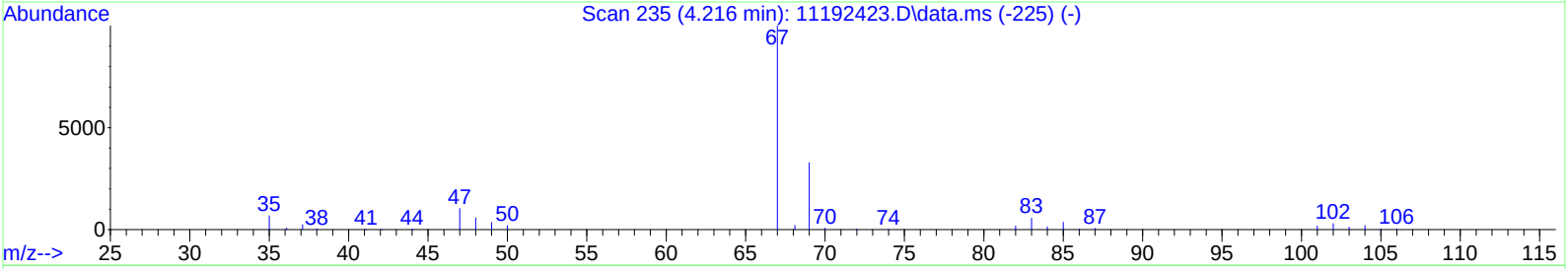


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 13 10:40:32 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112523.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 1.04ng

response 32291

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	33.57
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112523.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.313	68	76	80	rBV4	191483	300850	4.35%	1.058%
2	3.376	84	87	93	rVV	38099	55917	0.81%	0.197%
3	3.432	93	97	100	rVB3	8244	10518	0.15%	0.037%
4	3.506	105	110	120	rBV	38787	51576	0.75%	0.181%
5	3.620	124	130	145	rBV2	104158	196814	2.84%	0.692%
6	3.779	153	158	165	rBV	16951	22019	0.32%	0.077%
7	3.847	165	170	175	rBV2	77550	100230	1.45%	0.353%
8	3.972	188	192	205	rVB8	9238	23023	0.33%	0.081%
9	4.233	230	238	242	rBV	43823	61573	0.89%	0.217%
10	4.278	242	246	261	rVB2	11307	30160	0.44%	0.106%
11	4.551	288	294	295	rBV2	6607	10095	0.15%	0.036%
12	4.602	295	303	308	rBV	166869	297656	4.30%	1.047%
13	4.642	308	310	320	rVB	57608	87874	1.27%	0.309%
14	4.750	321	329	333	rBV	1052437	1858675	26.85%	6.538%
15	4.846	343	346	352	rVB	14733	23181	0.33%	0.082%
16	5.034	372	379	392	rVB	96839	163282	2.36%	0.574%
17	5.346	428	434	439	rBV4	6757	13260	0.19%	0.047%
18	5.579	464	475	491	rBV2	1773886	3675192	53.09%	12.928%
19	5.772	502	509	517	rVB	39378	85759	1.24%	0.302%
20	6.306	594	603	612	rBV	84575	188082	2.72%	0.662%
21	6.430	612	625	630	rVV2	17109	59116	0.85%	0.208%
22	6.482	630	634	641	rVV	13176	27992	0.40%	0.098%
23	6.567	641	649	662	rVB	81858	154989	2.24%	0.545%
24	6.851	692	699	706	rVB4	4819	11567	0.17%	0.041%
25	7.225	756	765	773	rBV	360674	792333	11.45%	2.787%
26	7.294	773	777	783	rVV3	36821	82138	1.19%	0.289%
27	7.356	783	788	796	rVB	26491	53030	0.77%	0.187%
28	7.998	892	901	917	rBV	295056	674994	9.75%	2.374%
29	8.810	1038	1044	1051	rBV4	8072	20171	0.29%	0.071%
30	8.900	1053	1060	1069	rVB4	7806	19211	0.28%	0.068%
31	8.986	1069	1075	1078	rBV3	10000	19971	0.29%	0.070%
32	9.031	1078	1083	1093	rVB2	25206	60199	0.87%	0.212%
33	9.298	1120	1130	1143	rBV	629400	1457696	21.06%	5.128%
34	9.446	1151	1156	1163	rVB7	7076	16759	0.24%	0.059%
35	9.565	1173	1177	1182	rBV2	6047	12200	0.18%	0.043%
36	9.695	1191	1200	1205	rBV3	11654	25598	0.37%	0.090%
37	10.127	1269	1276	1286	rBV4	6756	17887	0.26%	0.063%
38	10.996	1421	1429	1438	rVB2	11284	26825	0.39%	0.094%
39	11.183	1452	1462	1473	rVB2	28838	71829	1.04%	0.253%
40	11.558	1518	1528	1529	rBV4	5104	11330	0.16%	0.040%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

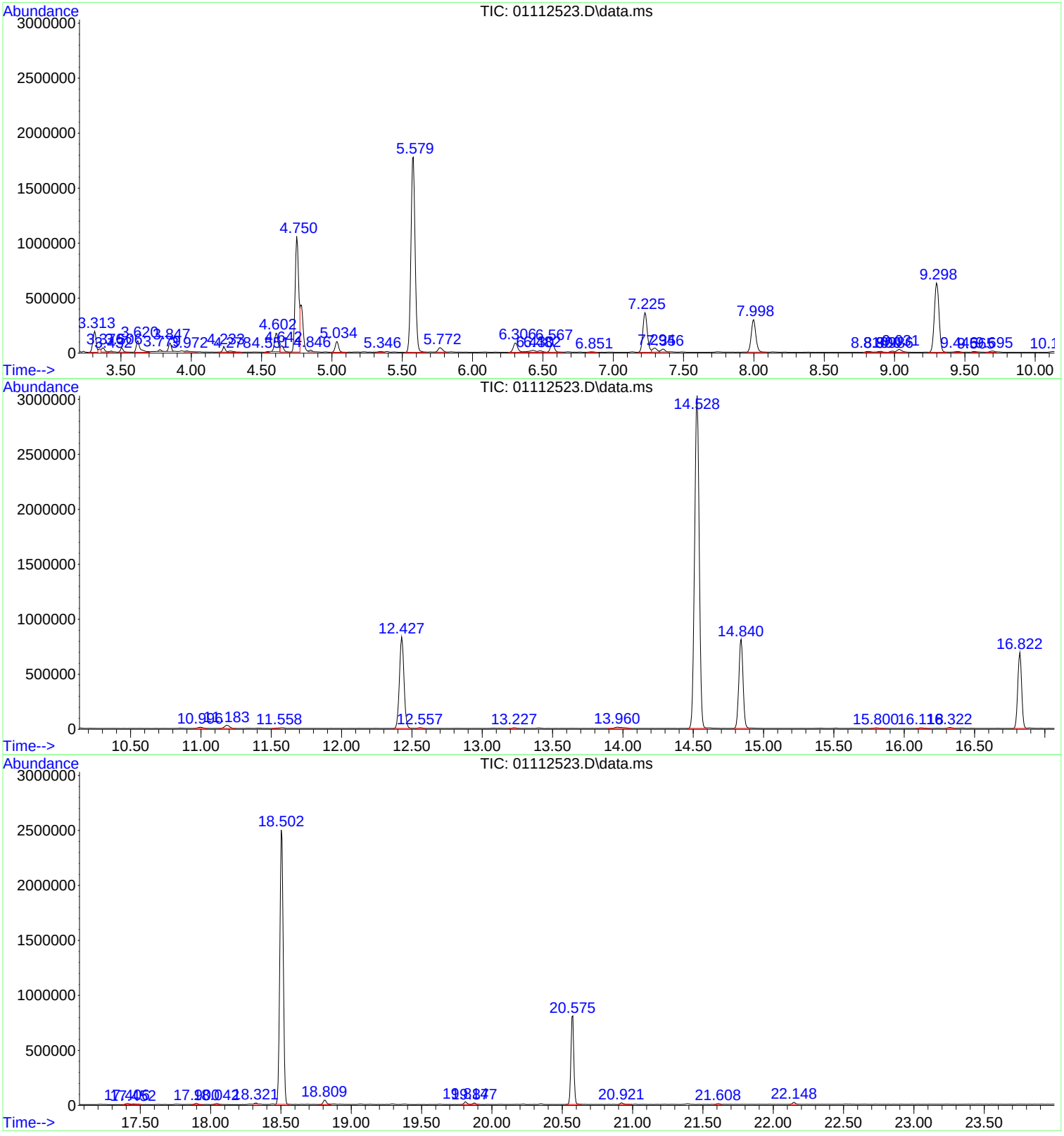
41	12.427	1670	1681	1693	rBV	831776	1885385	27.24%	6.632%
42	12.557	1698	1704	1710	rVB3	6628	14082	0.20%	0.050%
43	13.227	1815	1822	1826	rBV5	5867	12005	0.17%	0.042%
44	13.960	1939	1951	1968	rBV5	11857	50744	0.73%	0.178%
45	14.528	2038	2051	2064	rBV	3024913	6922448	100.00%	24.351%
46	14.840	2096	2106	2117	rBV	808696	1688132	24.39%	5.938%
47	15.800	2268	2275	2287	rBV5	5018	12633	0.18%	0.044%
48	16.118	2325	2331	2343	rVB6	5980	15374	0.22%	0.054%
49	16.322	2361	2367	2375	rBV6	7896	18463	0.27%	0.065%
50	16.822	2446	2455	2464	rBV	690293	1312627	18.96%	4.617%
51	17.406	2552	2558	2563	rBV5	10440	21034	0.30%	0.074%
52	17.452	2563	2566	2576	rVB7	5473	13833	0.20%	0.049%
53	17.900	2638	2645	2653	rVB	10493	17809	0.26%	0.063%
54	18.042	2665	2670	2675	rBV3	8309	14365	0.21%	0.051%
55	18.321	2715	2719	2723	rBV6	11111	16564	0.24%	0.058%
56	18.502	2743	2751	2761	rVB	2494250	4198987	60.66%	14.770%
57	18.809	2798	2805	2813	rBV	40421	71109	1.03%	0.250%
58	19.814	2977	2982	2988	rBV	22495	32743	0.47%	0.115%
59	19.877	2988	2993	2998	rVB	13333	16871	0.24%	0.059%
60	20.575	3107	3116	3127	rBV2	804614	1159341	16.75%	4.078%
61	20.921	3173	3177	3190	rBV3	14765	25042	0.36%	0.088%
62	21.608	3293	3298	3303	rVB2	7726	10939	0.16%	0.038%
63	22.148	3387	3393	3398	rBV	18593	26182	0.38%	0.092%

Sum of corrected areas: 28428283

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

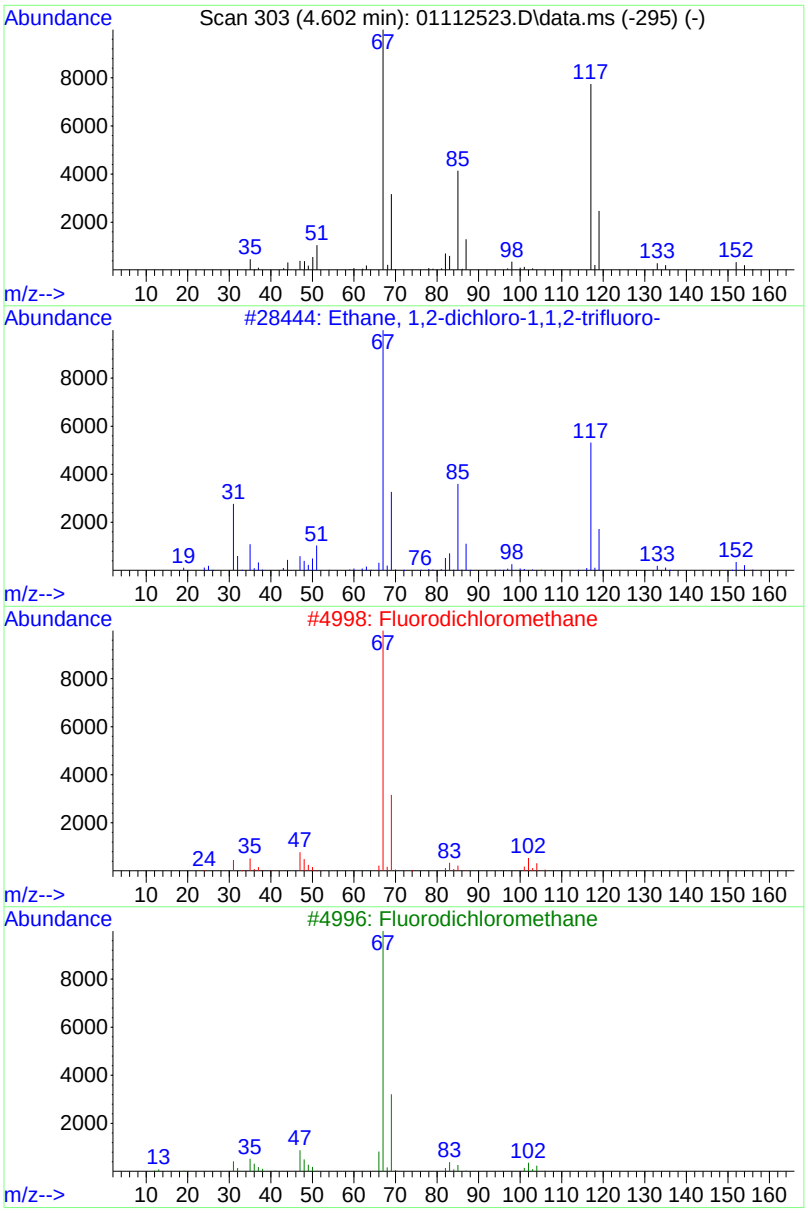
TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

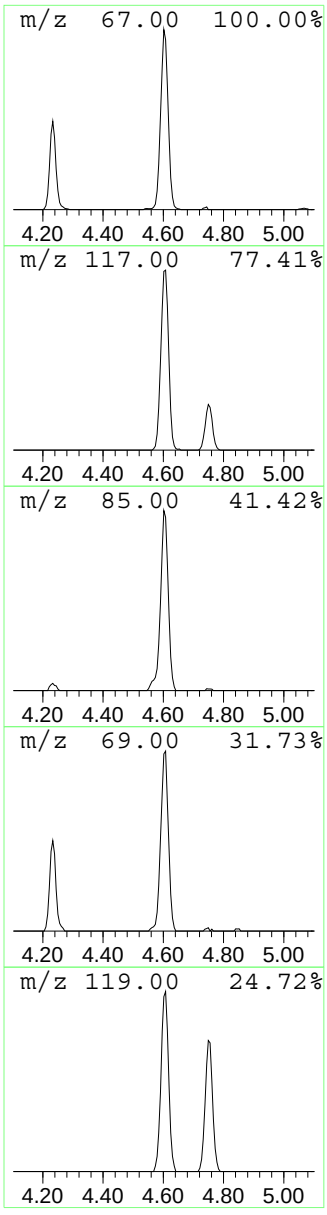
****

Peak Number 8 Ethane, 1,2-dichloro-1,1,2-... Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.602	4.70 ng	297656	Bromochloromethane (IS1)	7.225

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,2-dichloro-1,1,2-trifl...	152	C2HCl2F3	000354-23-4	91
2	Fluorodichloromethane	102	CHCl2F	000075-43-4	22
3	Fluorodichloromethane	102	CHCl2F	000075-43-4	12
4	1,4-Pentadiene, 3-methyl-	82	C6H10	001115-08-8	10
5	Cyclopropane, 1,2-dimethyl-3-met...	82	C6H10	062338-02-7	9





Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112523.D
Acq On : 11 Jan 2025 18:50
Operator : LS
Sample : P2405139-060 (400mL)
Misc : S37-12312401
ALS Vial : 9 Sample Multiplier: 1

VOA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Ethane, 1,2-dic...	4.602	4.7	ng	297656	1	7.225	792333	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

NA 1/13/25

Quant Time: Jan 13 05:49:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	152827	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	664146	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	125146	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	256005	12.295	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.40%				
57) Toluene-d8 (SS2)	12.43	98	701562	12.637	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
73) Bromofluorobenzene (SS3)	16.82	174	249679	13.032	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%				
Target Compounds							Qvalue
2) Propene	3.30	42	12009	0.736	ng	#	48
3) Dichlorodifluoromethan...	3.31	85	10008	0.335	ng	#	90
4) Chloromethane	3.51	50	1797	0.081	ng		90
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	574	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.	d		
8) Bromomethane	4.02	94	1896	0.176	ng		97
9) Chloroethane	4.16	64	1609	0.179	ng		94
10) Ethanol	4.28	45	20651	1.827	ng		94
11) Acetonitrile	4.44	41	17286	0.595	ng	#	1
12) Acrolein	4.55	56	814	0.084	ng		96
13) Acetone	4.63	58	107700	10.466	ng	#	69
14) Trichlorofluoromethane	4.76	101	10208731	364.375	ng		99
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	d		
16) Acrylonitrile	4.99	53	7191m	0.392	ng		
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	5.35	84	2294	0.158	ng		91
20) 3-Chloro-1-propene (Al...	5.45	41	144	N.D.			
21) Trichlorotrifluoroethane	5.59	151	5046818	399.254	ng		95
22) Carbon Disulfide	5.61	76	302190	6.491	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	6.67	72	3647	0.441	ng	#	82
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	0.00	61	0	N.D.	d		
31) n-Hexane	7.30	57	52902	2.304	ng		97
32) Chloroform	7.36	83	59720	2.401	ng		99
34) Tetrahydrofuran (THF)	7.79	72	231	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.86	56	851	No Calib		#	
41) Benzene	8.90	78	27584	0.517	ng		99
42) Carbon Tetrachloride	9.07	117	24090	1.130	ng		98
43) Cyclohexane	9.22	84	35512	1.909	ng		97
44) tert-Amyl Methyl Ether	9.56	73	216	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	10.15	130	791	0.052	ng		95
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

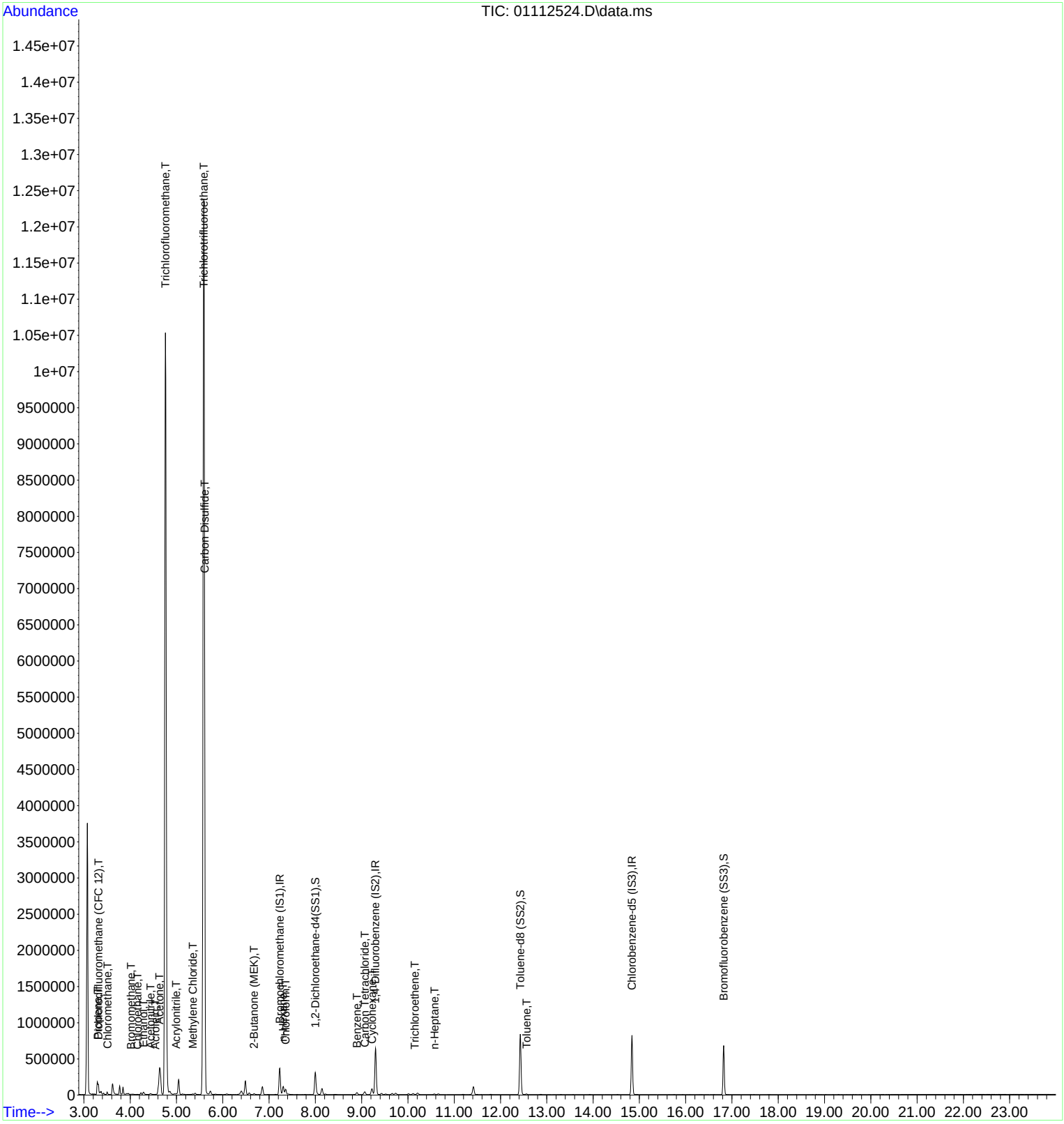
Quant Time: Jan 13 05:49:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	10.58	71	2118	0.178 ng	93
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	8595	0.161 ng	98
59) 2-Hexanone	12.88	43	633	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	268	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	179	N.D.	
67) m- & p-Xylenes	15.63	91	1032	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	158	N.D.	
71) n-Nonane	16.62	43	664	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.87	105	157	N.D.	
79) 1,3,5-Trimethylbenzene	17.95	105	114	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	299	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	187	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	264	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 05:49:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 05:49:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

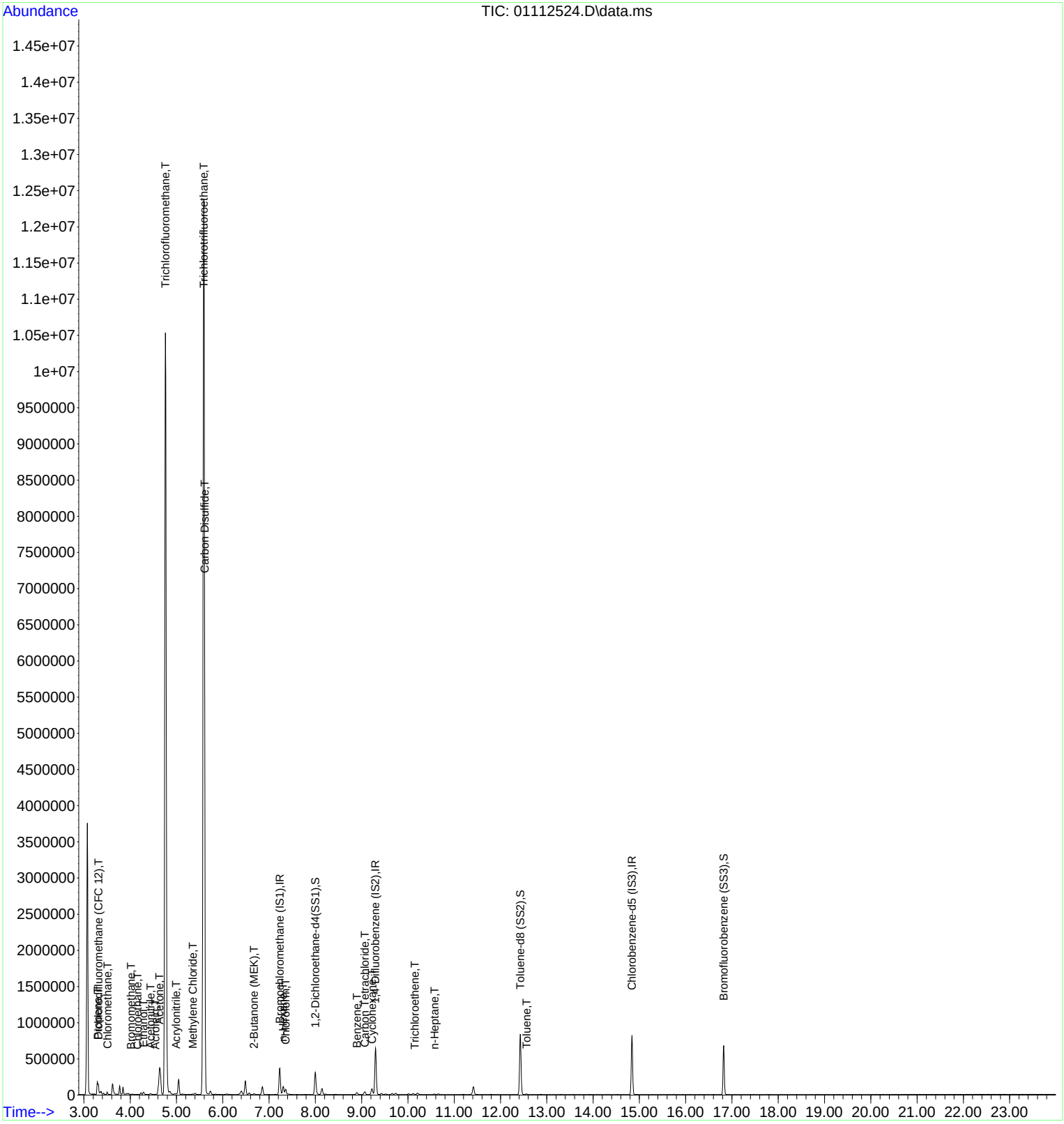
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	152827	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	664146	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	125146	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	256005	12.295	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.40%				
57) Toluene-d8 (SS2)	12.43	98	701562	12.637	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
73) Bromofluorobenzene (SS3)	16.82	174	249679	13.032	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%				
Target Compounds							Qvalue
2) Propene	3.30	42	12009	0.736	ng	#	48
3) Dichlorodifluoromethan...	3.31	85	10008	0.335	ng	#	90
4) Chloromethane	3.51	50	1797	0.081	ng		90
8) Bromomethane	4.02	94	1896	0.176	ng		97
9) Chloroethane	4.16	64	1609	0.179	ng		94
10) Ethanol	4.28	45	20651	1.827	ng		94
11) Acetonitrile	4.44	41	17286	0.595	ng	#	1
12) Acrolein	4.55	56	814	0.084	ng		96
13) Acetone	4.63	58	107700	10.466	ng	#	69
14) Trichlorofluoromethane	4.76	101	10208731	364.375	ng		99
16) Acrylonitrile	4.99	53	7191m	0.392	ng		
19) Methylene Chloride	5.35	84	2294	0.158	ng		91
21) Trichlorotrifluoroethane	5.59	151	5046818	399.254	ng		95
22) Carbon Disulfide	5.61	76	302190	6.491	ng	#	1
27) 2-Butanone (MEK)	6.67	72	3647	0.441	ng	#	82
31) n-Hexane	7.30	57	52902	2.304	ng		97
32) Chloroform	7.36	83	59720	2.401	ng		99
41) Benzene	8.90	78	27584	0.517	ng		99
42) Carbon Tetrachloride	9.07	117	24090	1.130	ng		98
43) Cyclohexane	9.22	84	35512	1.909	ng		97
47) Trichloroethene	10.15	130	791	0.052	ng		95
51) n-Heptane	10.58	71	2118	0.178	ng		93
58) Toluene	12.56	91	8595	0.161	ng		98

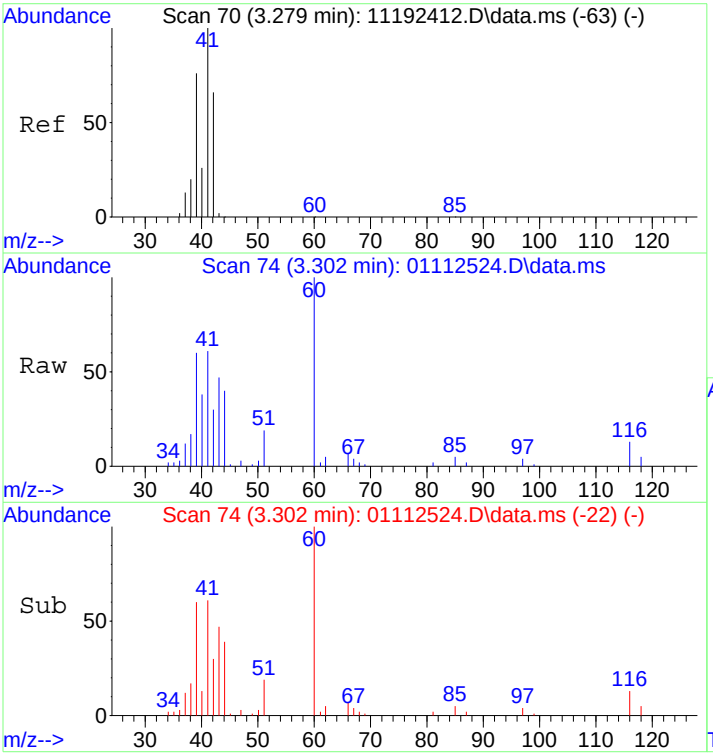
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 05:49:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

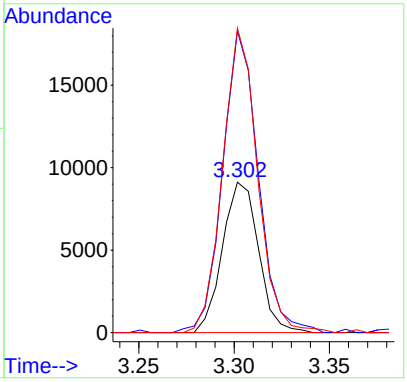


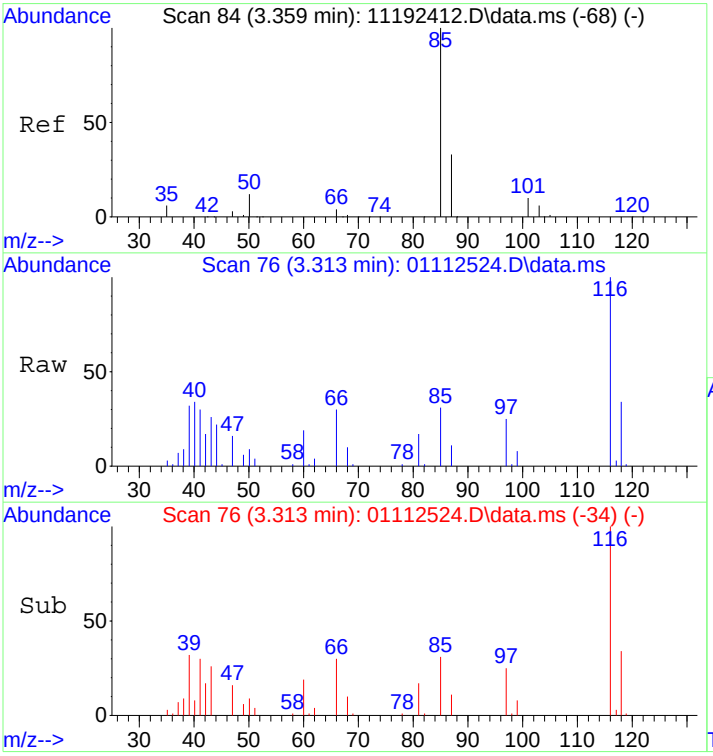


#2
Propene
Concen: 0.74 ng
RT: 3.30 min Scan# 74
Delta R.T. 0.048 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 42 Resp: 12009

Ion	Ratio	Lower	Upper
42	100		
39	197.5	95.4	135.4#
41	195.6	131.9	171.9#

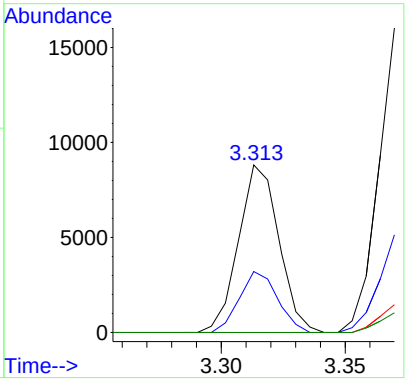


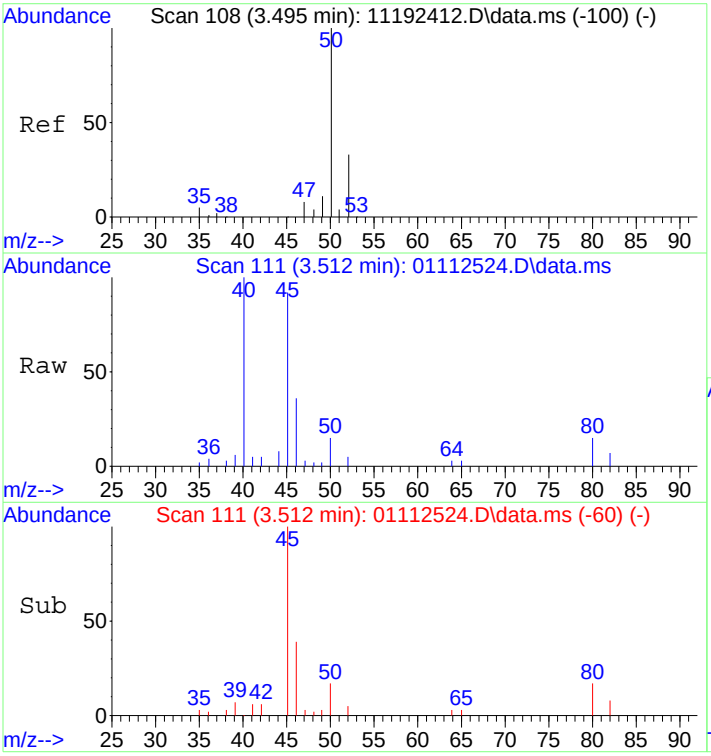


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.33 ng
RT: 3.31 min Scan# 76
Delta R.T. -0.014 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 85 Resp: 10008

Ion	Ratio	Lower	Upper
85	100		
87	34.5	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

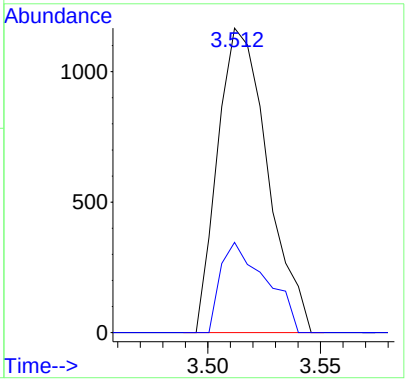


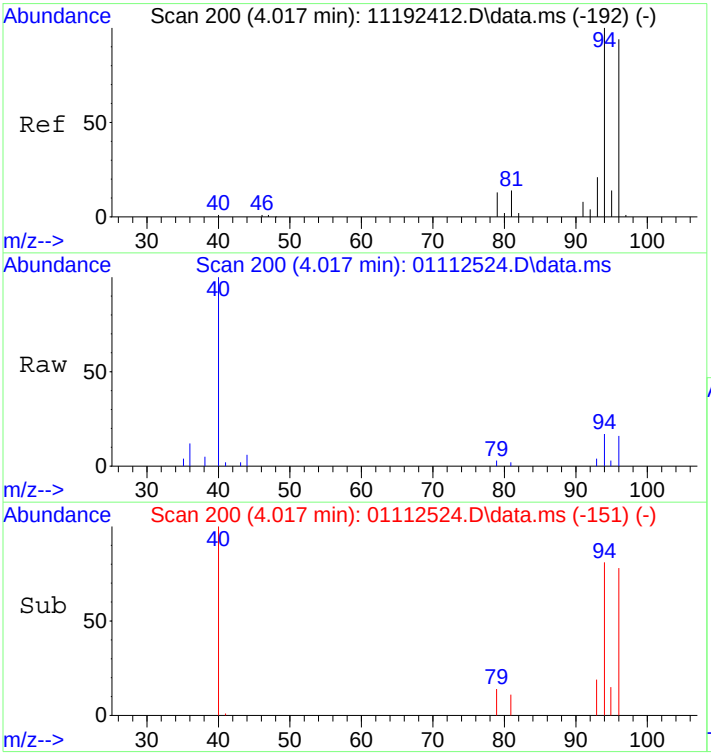


#4
Chloromethane
Concen: 0.08 ng
RT: 3.51 min Scan# 111
Delta R.T. 0.038 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 50 Resp: 1797

Ion	Ratio	Lower	Upper
50	100		
52	27.2	13.0	53.0

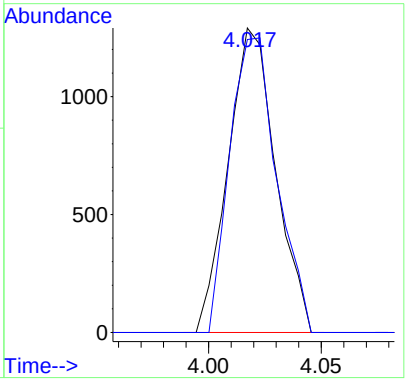


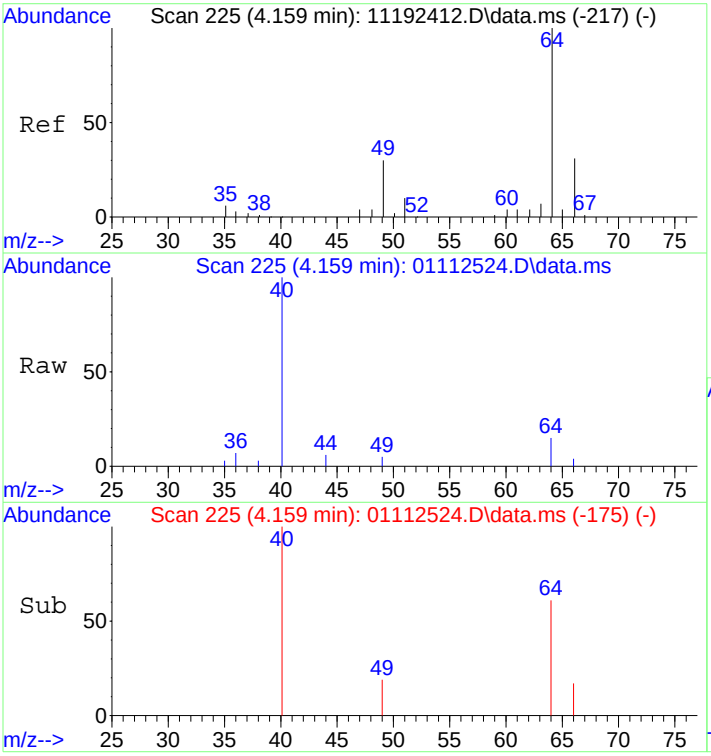


#8
Bromomethane
Concen: 0.18 ng
RT: 4.02 min Scan# 200
Delta R.T. 0.026 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 94 Resp: 1896

Ion	Ratio	Lower	Upper
94	100		
96	96.0	73.5	113.5

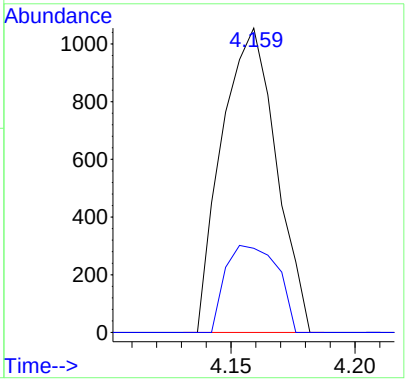


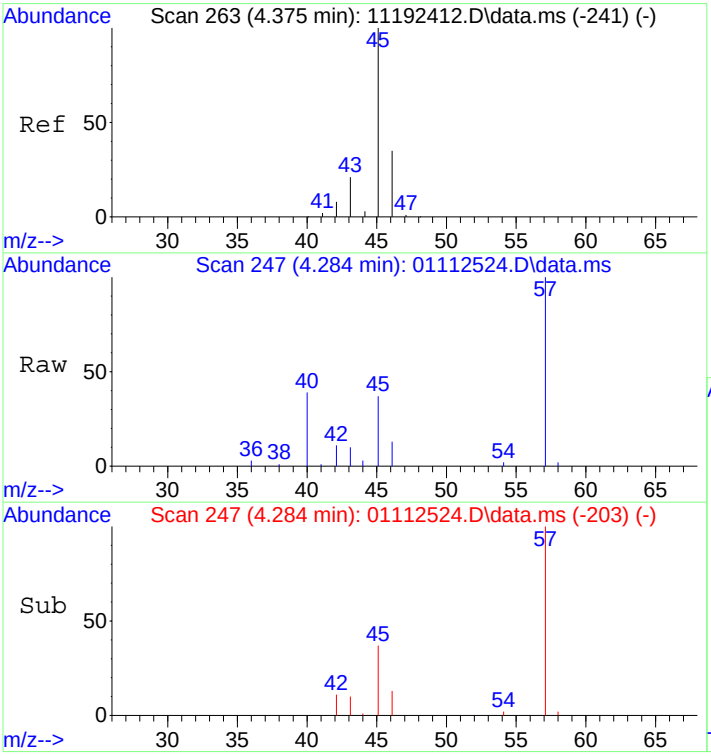


#9
Chloroethane
Concen: 0.18 ng
RT: 4.16 min Scan# 225
Delta R.T. 0.033 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 64 Resp: 1609

Ion	Ratio	Lower	Upper
64	100		
66	27.5	11.0	51.0

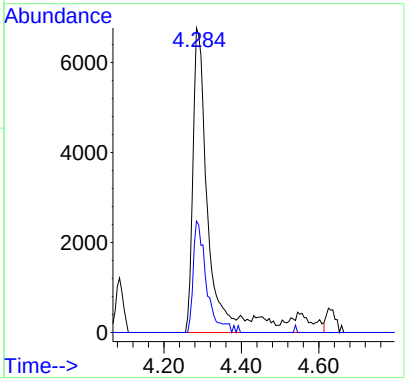


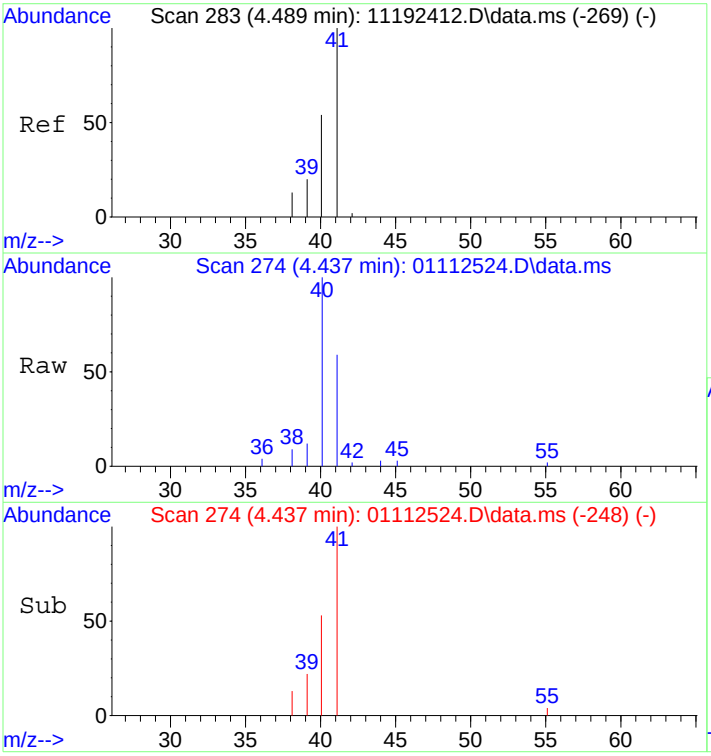


#10
Ethanol
Concen: 1.83 ng
RT: 4.28 min Scan# 247
Delta R.T. -0.000 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 45 Resp: 20651

Ion	Ratio	Lower	Upper
45	100		
46	28.2	11.8	51.8

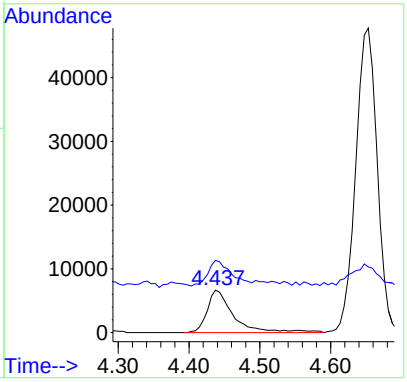


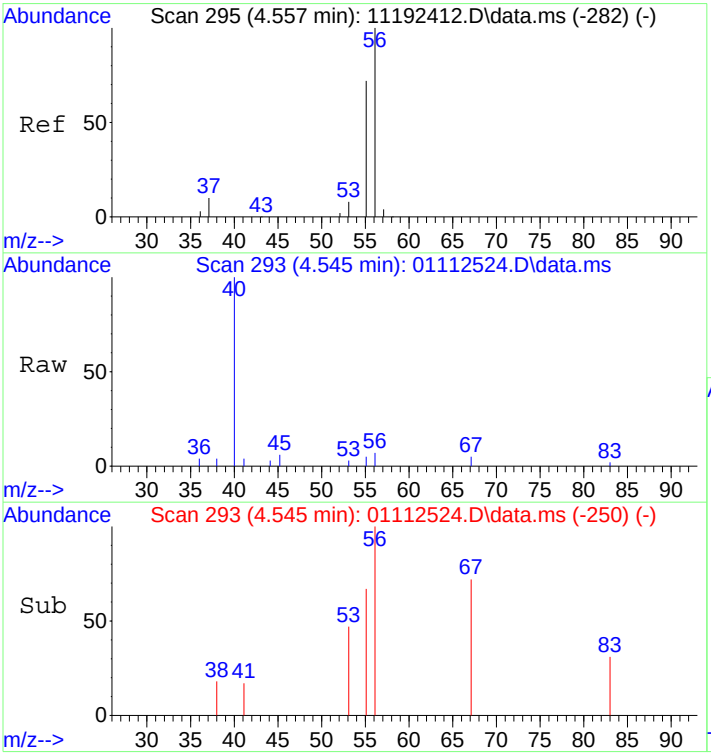


#11
Acetonitrile
Concen: 0.59 ng
RT: 4.44 min Scan# 274
Delta R.T. -0.054 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 41 Resp: 17286

Ion	Ratio	Lower	Upper
41	100		
40	433.5	33.8	73.8#

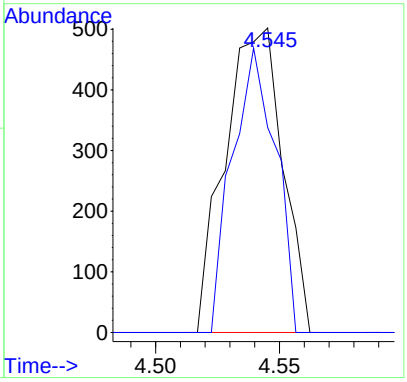


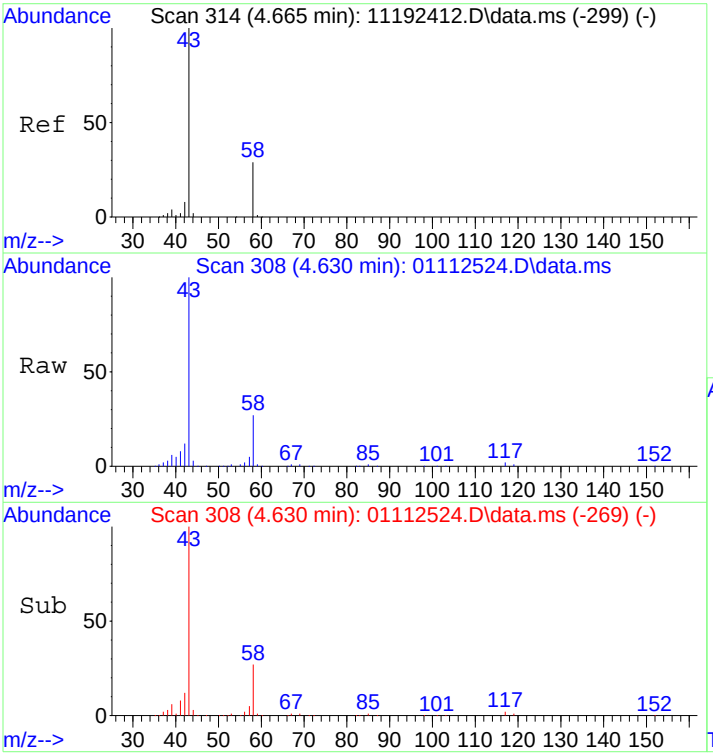


#12
Acrolein
Concen: 0.08 ng
RT: 4.55 min Scan# 293
Delta R.T. -0.008 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 56 Resp: 814

Ion	Ratio	Lower	Upper
56	100		
55	70.1	53.1	93.1

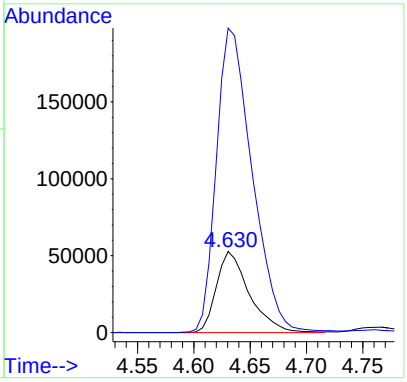


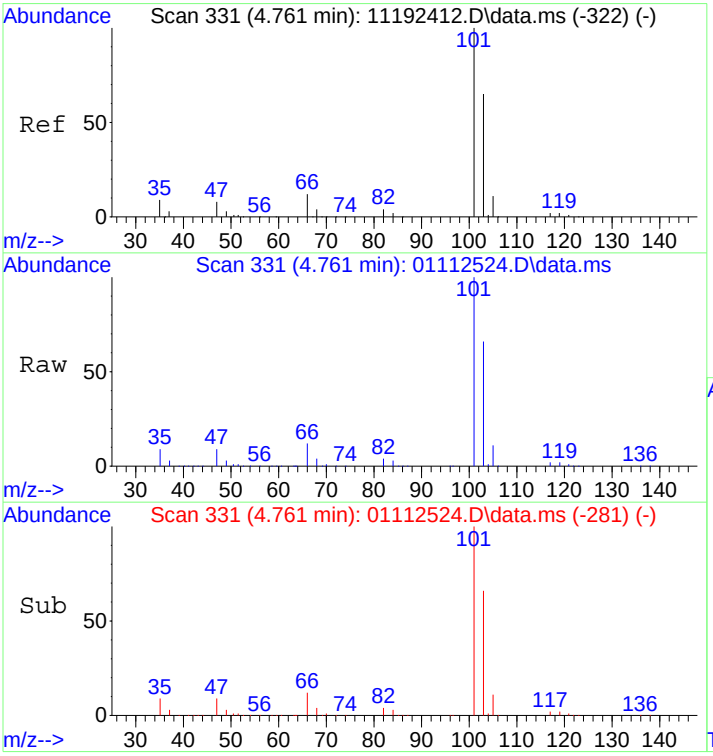


#13
Acetone
Concen: 10.47 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 58 Resp: 107700

Ion	Ratio	Lower	Upper
58	100		
43	407.8	312.5	372.5#

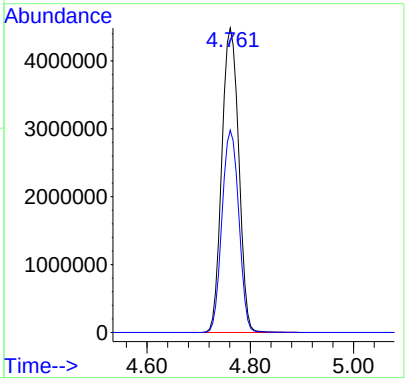


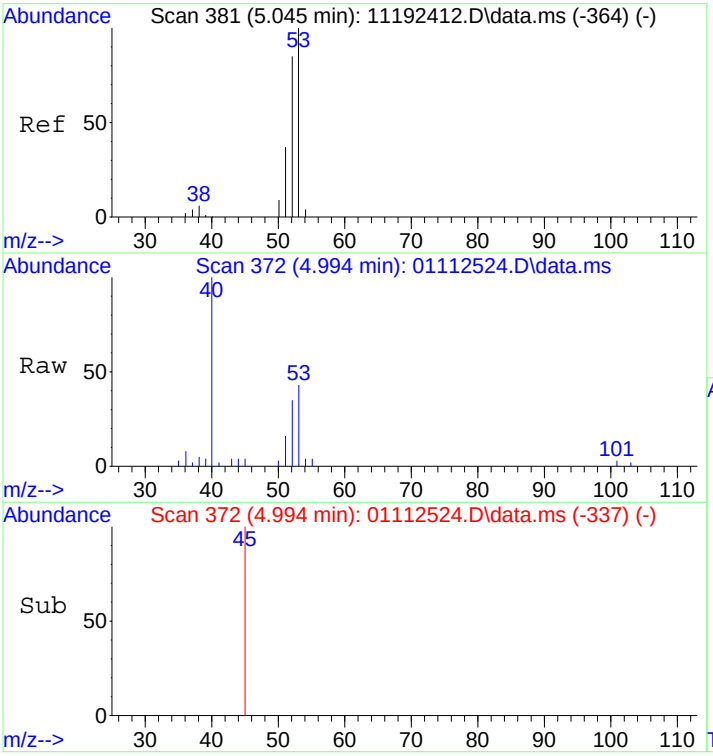


#14
Trichlorofluoromethane
Concen: 364.38 ng
RT: 4.76 min Scan# 331
Delta R.T. 0.033 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion:101 Resp:10208731

Ion	Ratio	Lower	Upper
101	100		
103	65.9	44.8	84.8

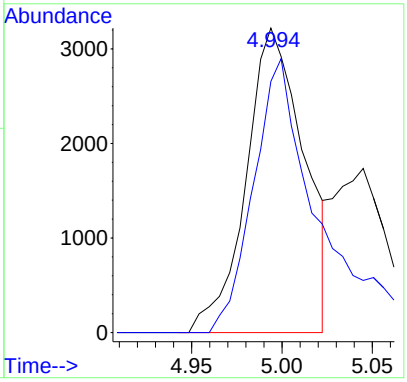


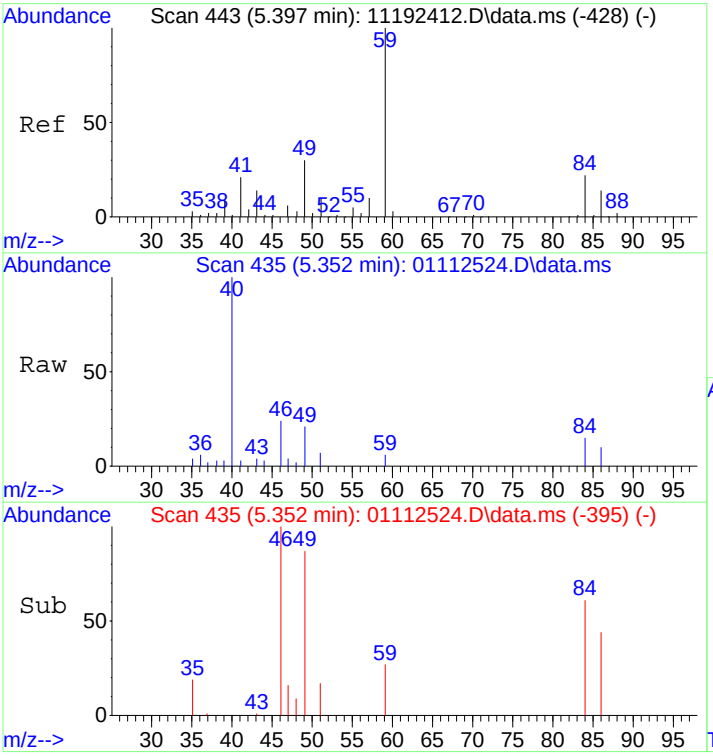


#16
Acrylonitrile
Concen: 0.39 ng m
RT: 4.99 min Scan# 372
Delta R.T. -0.049 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 53 Resp: 7191

Ion	Ratio	Lower	Upper
53	100		
52	100.5	65.7	105.7

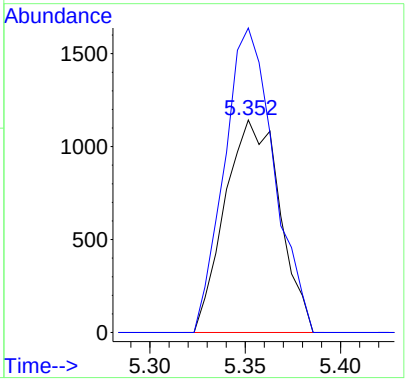


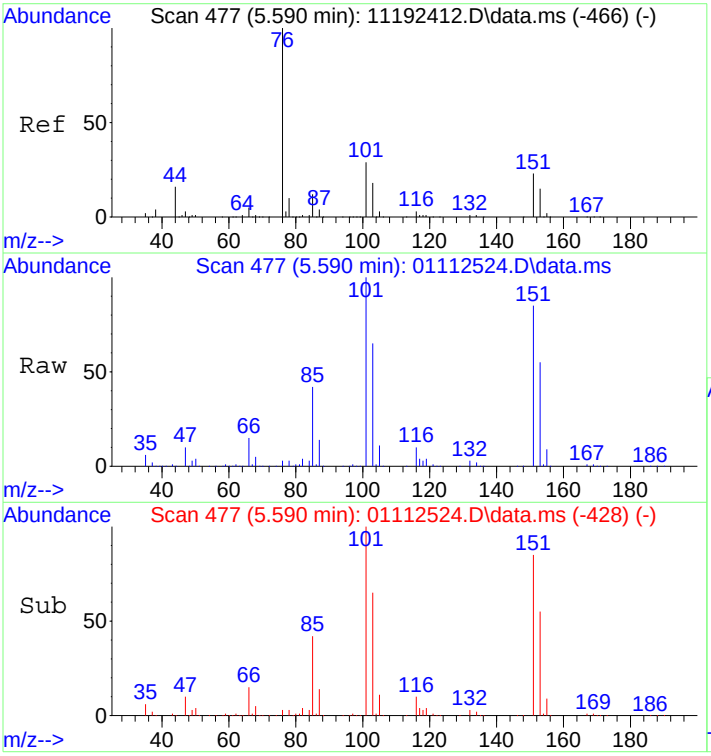


#19
Methylene Chloride
Concen: 0.16 ng
RT: 5.35 min Scan# 435
Delta R.T. -0.023 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 84 Resp: 2294

Ion	Ratio	Lower	Upper
84	100		
49	129.8	116.0	166.0

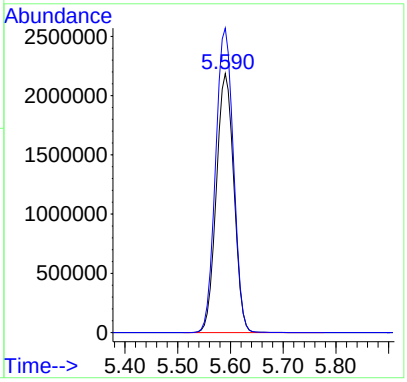


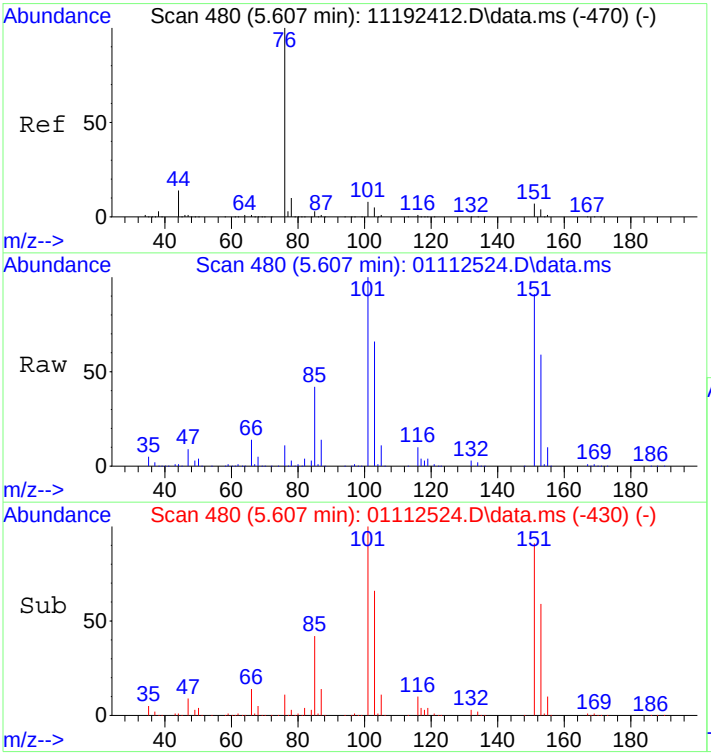


#21
Trichlorotrifluoroethane
Concen: 399.25 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion:151 Resp: 5046818

Ion	Ratio	Lower	Upper
151	100		
101	119.3	105.0	145.0

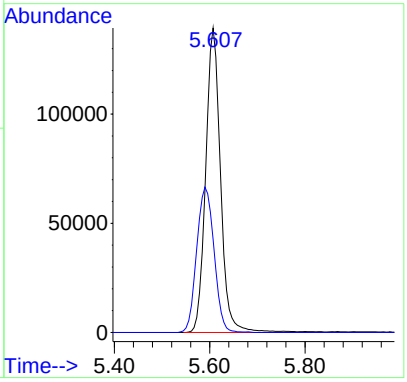


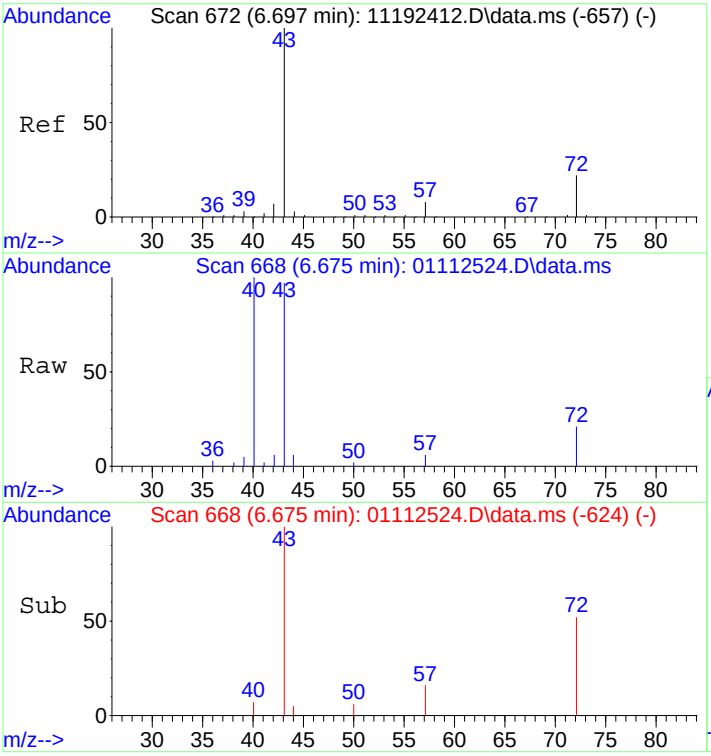


#22
Carbon Disulfide
Concen: 6.49 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.036 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 76 Resp: 302190

Ion	Ratio	Lower	Upper
76	100		
78	55.5	0.0	29.6#

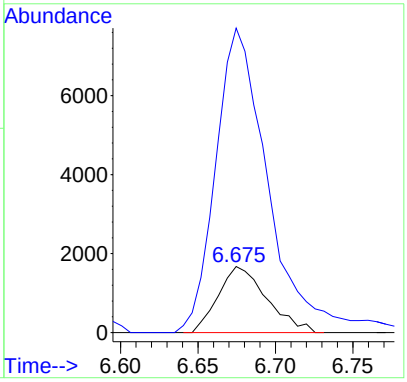


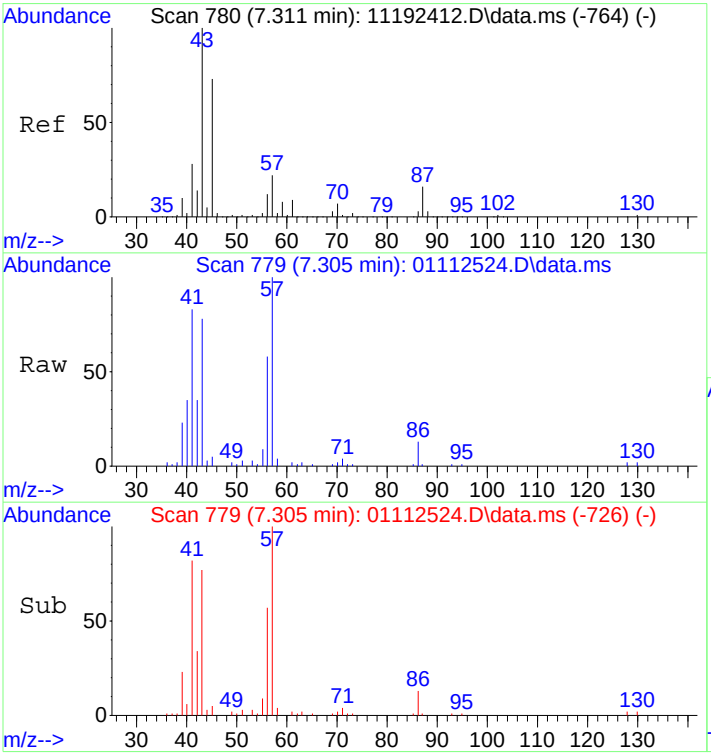


#27
2-Butanone (MEK)
Concen: 0.44 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.001 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 72 Resp: 3647

Ion	Ratio	Lower	Upper
72	100		
43	507.6	439.8	479.8#

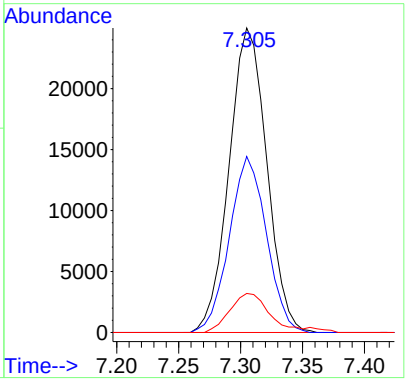


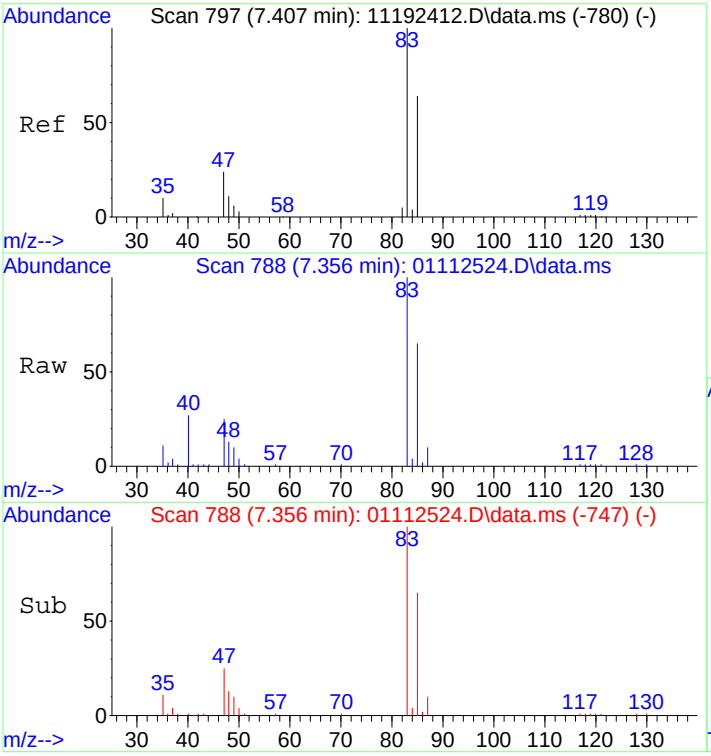


#31
n-Hexane
Concen: 2.30 ng
RT: 7.30 min Scan# 779
Delta R.T. 0.051 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 57 Resp: 52902

Ion	Ratio	Lower	Upper
57	100		
56	56.9	43.4	65.0
86	14.1	10.9	16.3

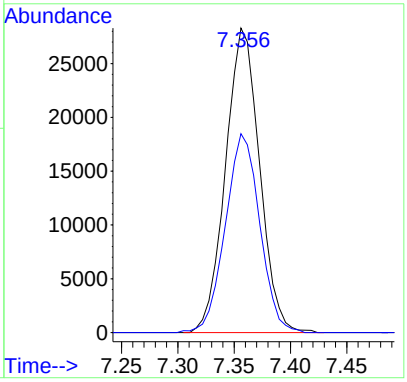


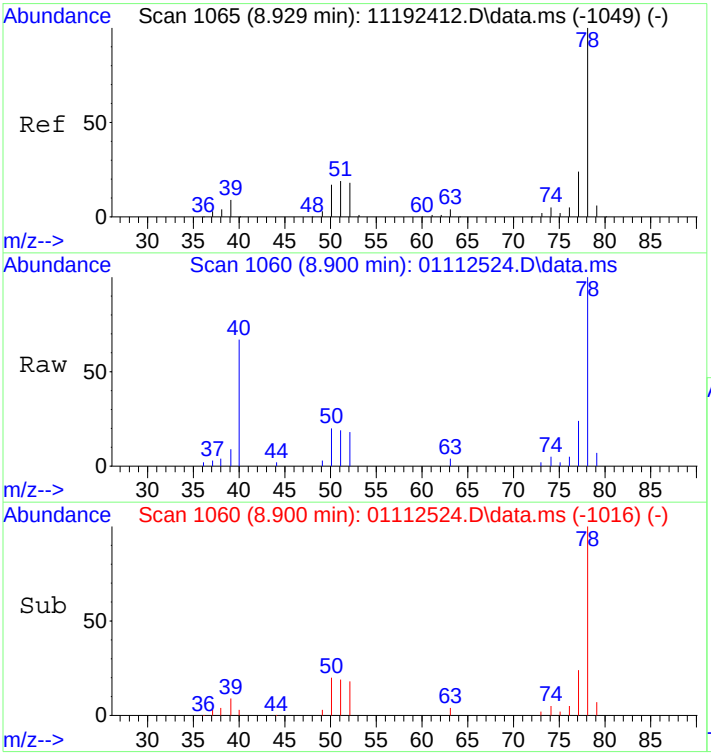


#32
Chloroform
Concen: 2.40 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 83 Resp: 59720

Ion	Ratio	Lower	Upper
83	100		
85	65.9	45.1	85.1

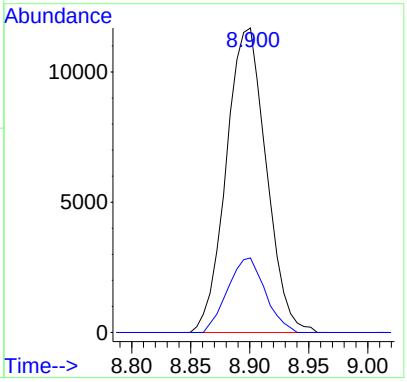


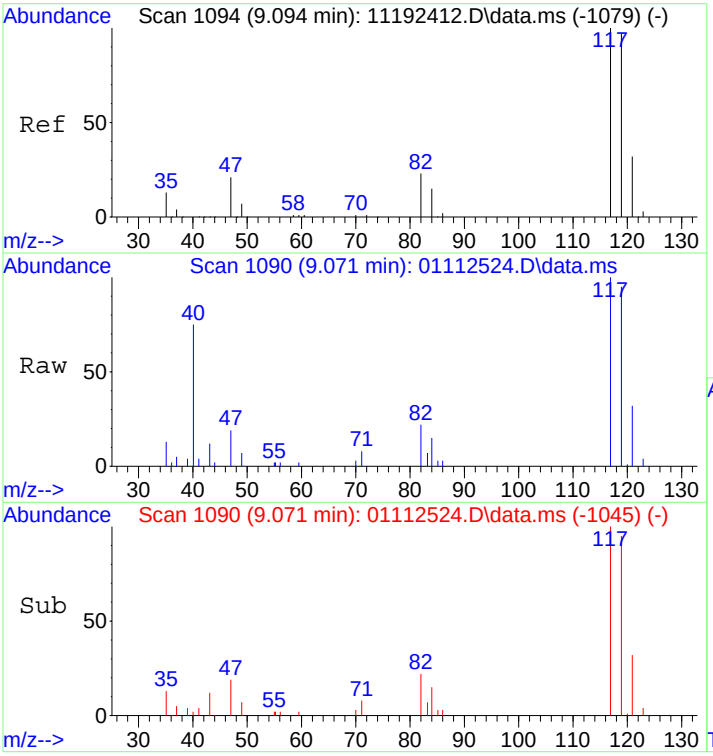


#41
Benzene
Concen: 0.52 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 78 Resp: 27584

Ion	Ratio	Lower	Upper
78	100		
77	23.0	3.7	43.7

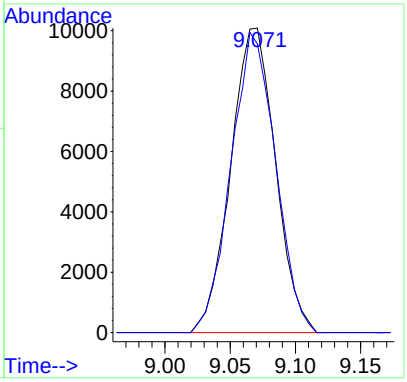


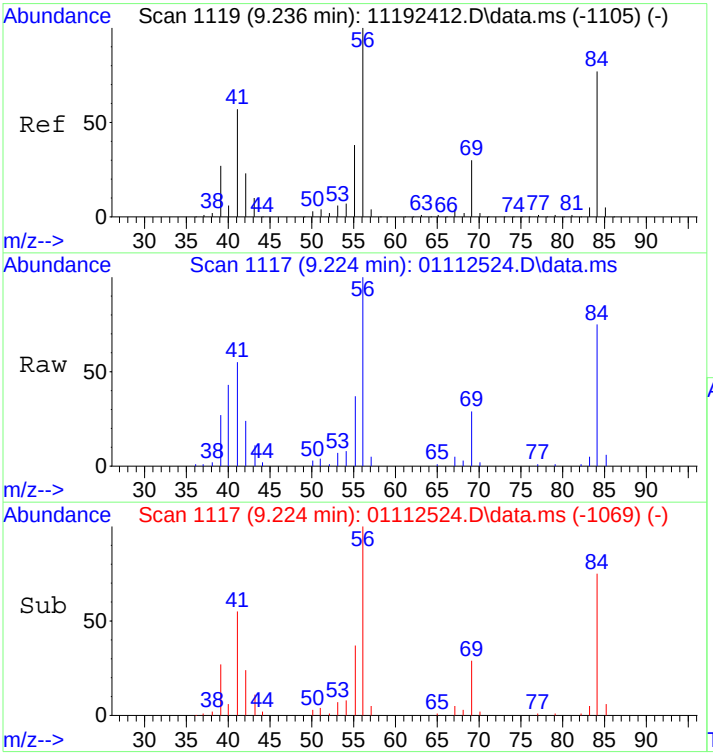


#42
Carbon Tetrachloride
Concen: 1.13 ng
RT: 9.07 min Scan# 1090
Delta R.T. 0.004 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion:117 Resp: 24090

Ion	Ratio	Lower	Upper
117	100		
119	98.0	75.7	115.7

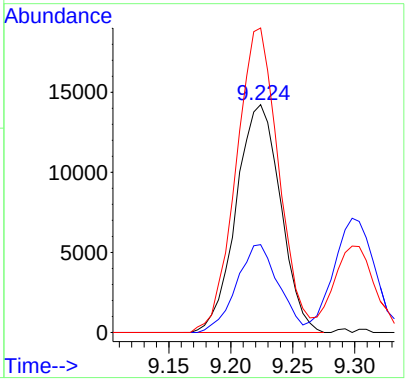


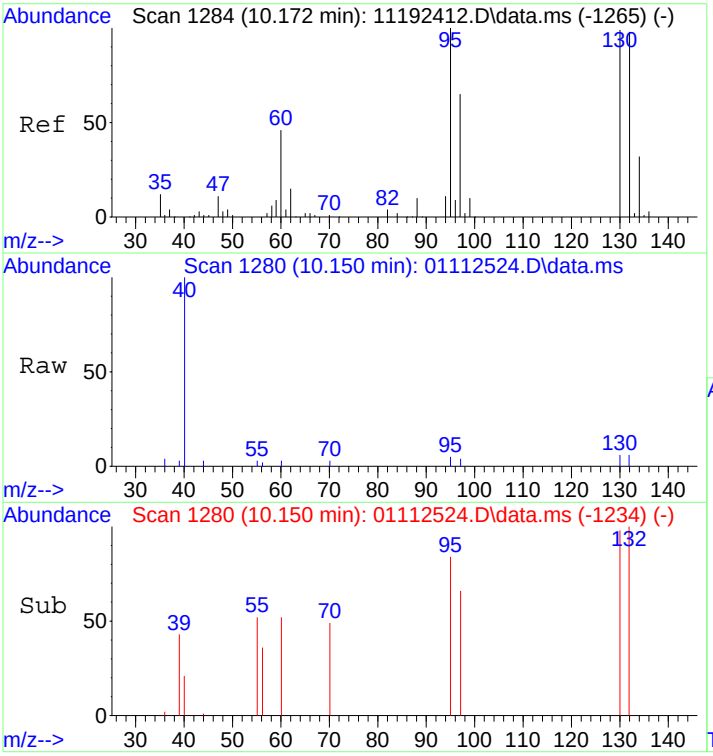


#43
Cyclohexane
Concen: 1.91 ng
RT: 9.22 min Scan# 1117
Delta R.T. 0.021 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 84 Resp: 35512

Ion	Ratio	Lower	Upper
84	100		
69	36.7	18.3	58.3
56	127.6	110.7	150.7

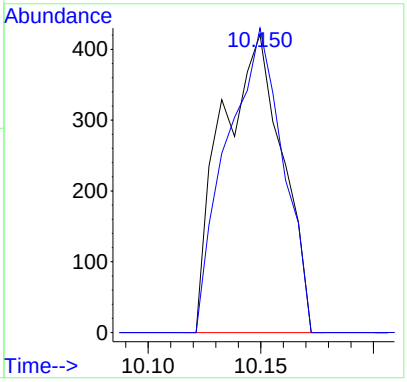


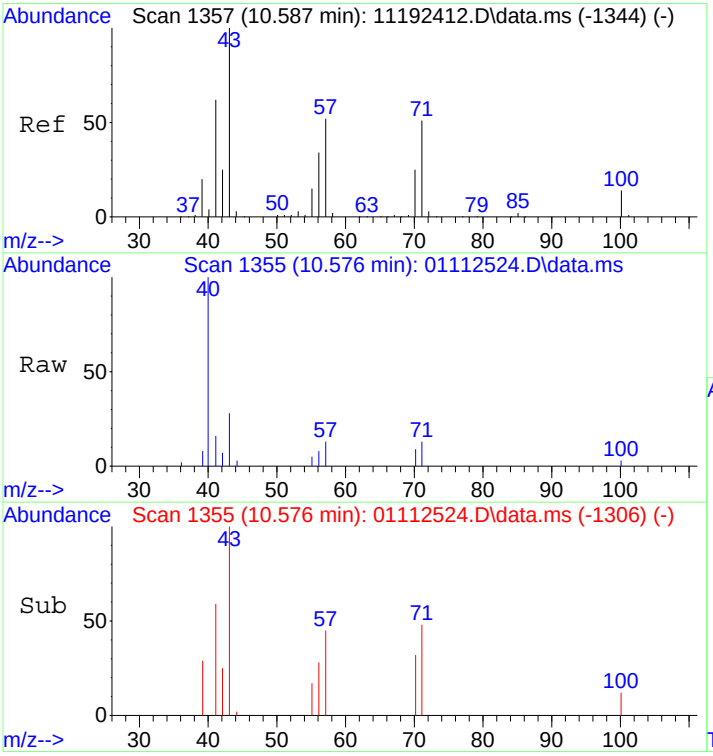


#47
Trichloroethene
Concen: 0.05 ng
RT: 10.15 min Scan# 1280
Delta R.T. 0.010 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion:130 Resp: 791

Ion	Ratio	Lower	Upper
130	100		
132	94.3	79.3	119.3

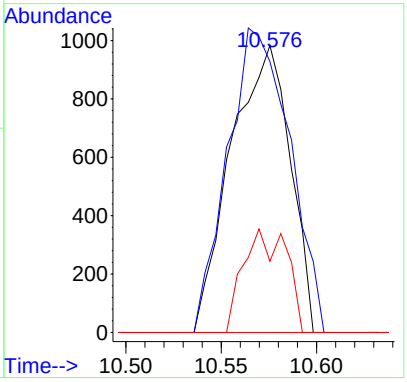


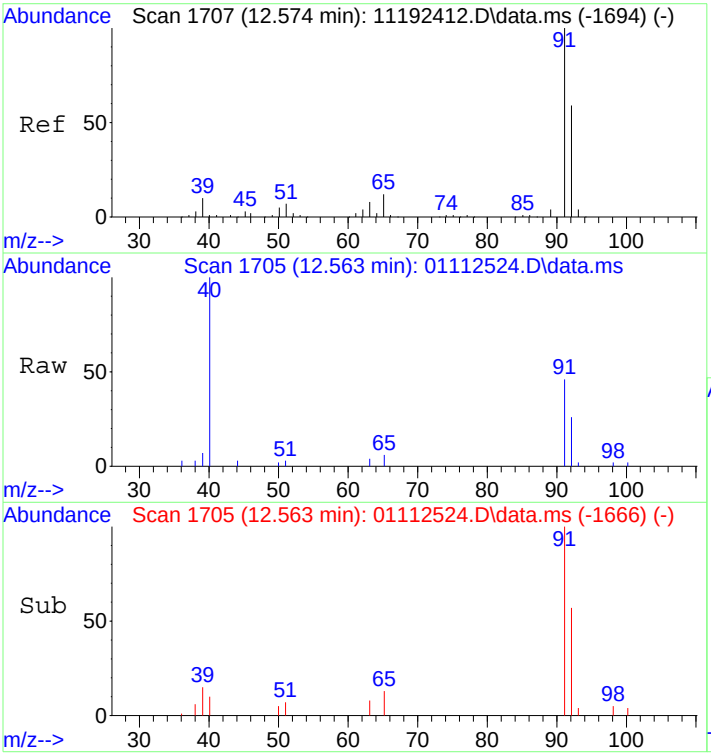


#51
n-Heptane
Concen: 0.18 ng
RT: 10.58 min Scan# 1355
Delta R.T. 0.029 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 71 Resp: 2118

Ion	Ratio	Lower	Upper
71	100		
57	111.5	83.3	123.3
100	26.3	8.7	48.7

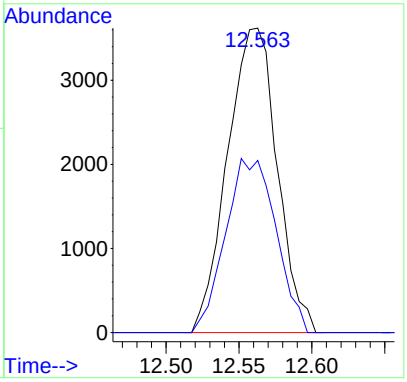




#58
Toluene
Concen: 0.16 ng
RT: 12.56 min Scan# 1705
Delta R.T. -0.028 min
Lab File: 01112524.D
Acq: 11 Jan 2025 19:22

Tgt Ion: 91 Resp: 8595

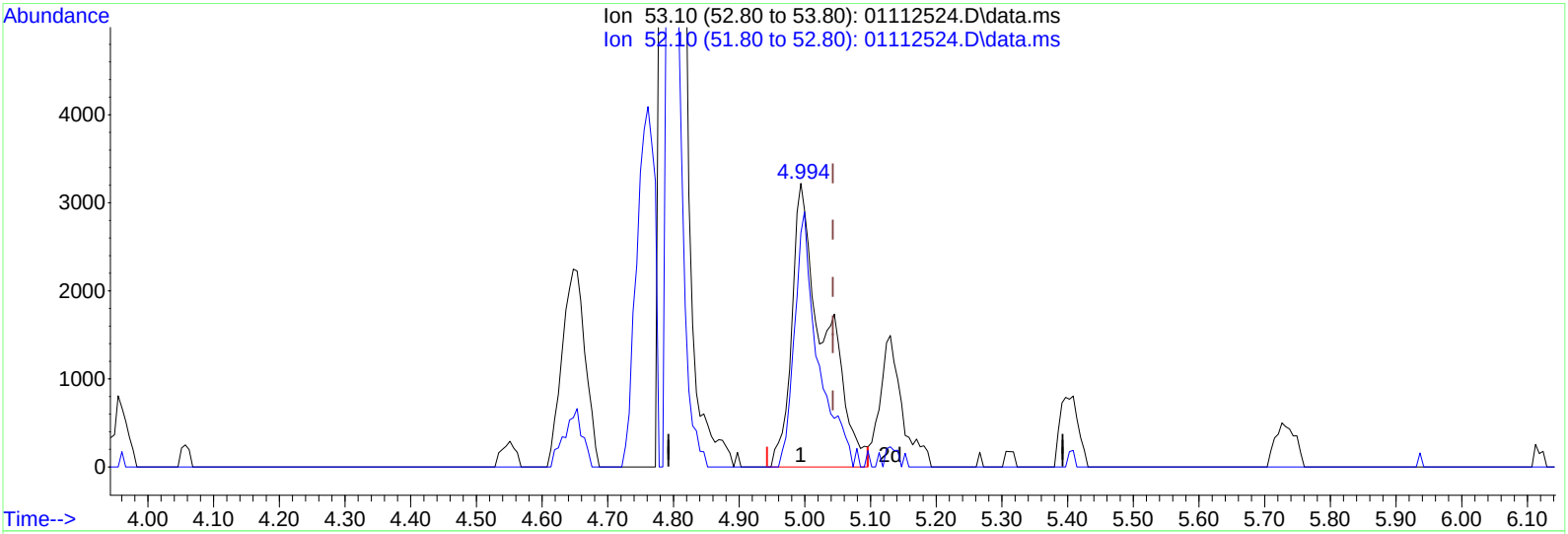
Ion	Ratio	Lower	Upper
91	100		
92	58.0	39.2	79.2

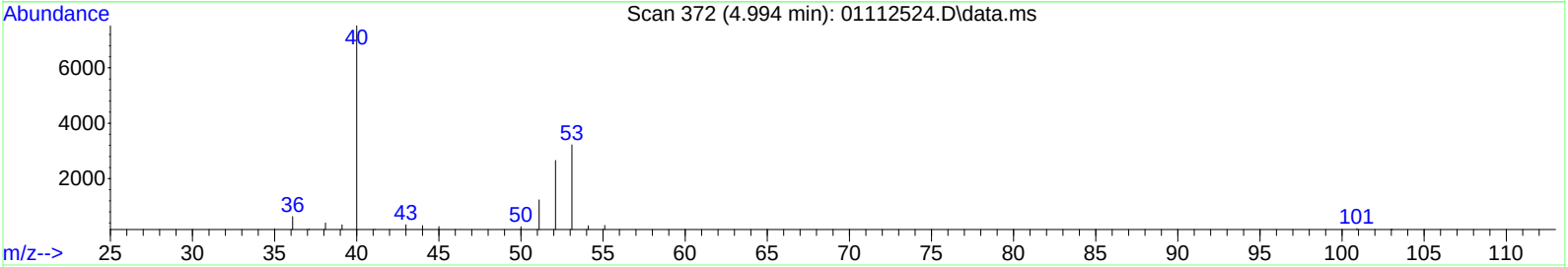


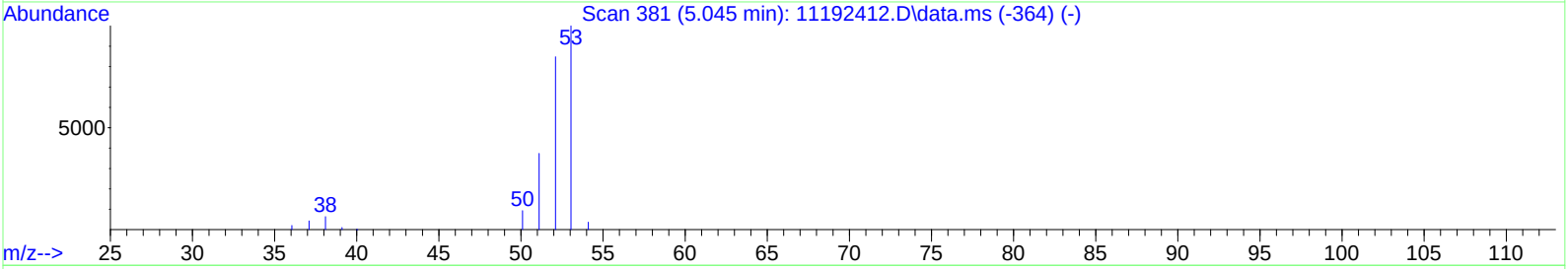
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 07:52:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112524.D\data.ms

(16) Acrylonitrile (T)

4.994min (-0.049) 0.60ng

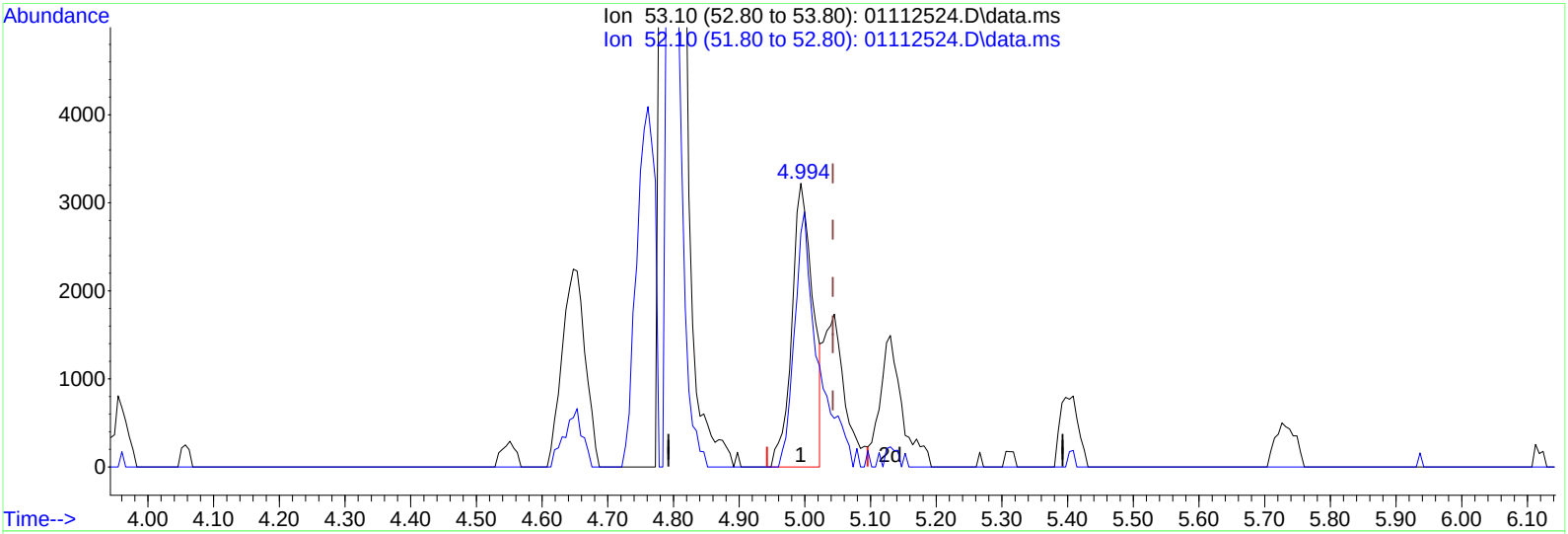
response 11070

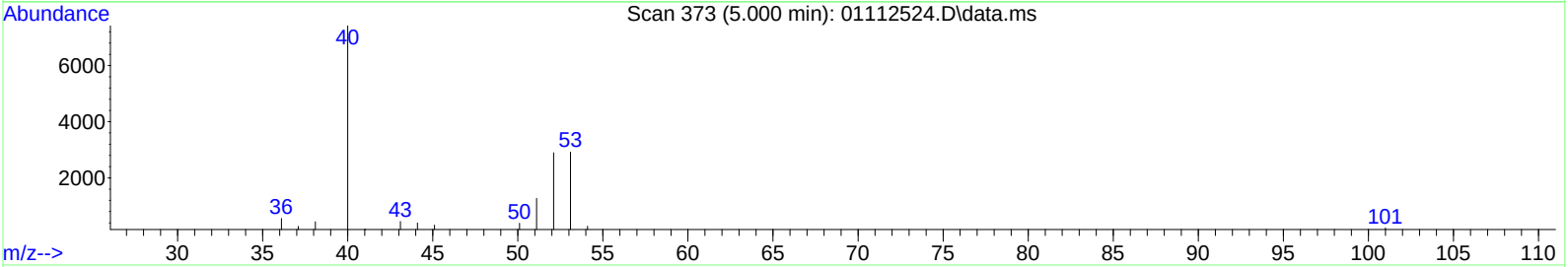
Ion	Exp%	Act%
53.10	100	100
52.10	85.70	65.28#
0.00	0.00	0.00
0.00	0.00	0.00

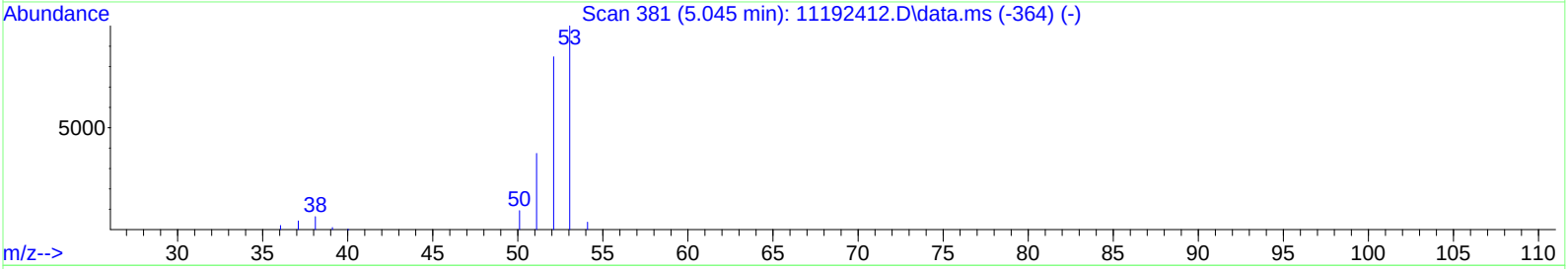
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 07:52:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112524.D\data.ms

(16) Acrylonitrile (T)

4.994min (-0.049) 0.39ng m

response 7191

Ion	Exp%	Act%
53.10	100	100
52.10	85.70	100.50
0.00	0.00	0.00
0.00	0.00	0.00

IPC

1/13/25

1/15/25

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

1/13/25

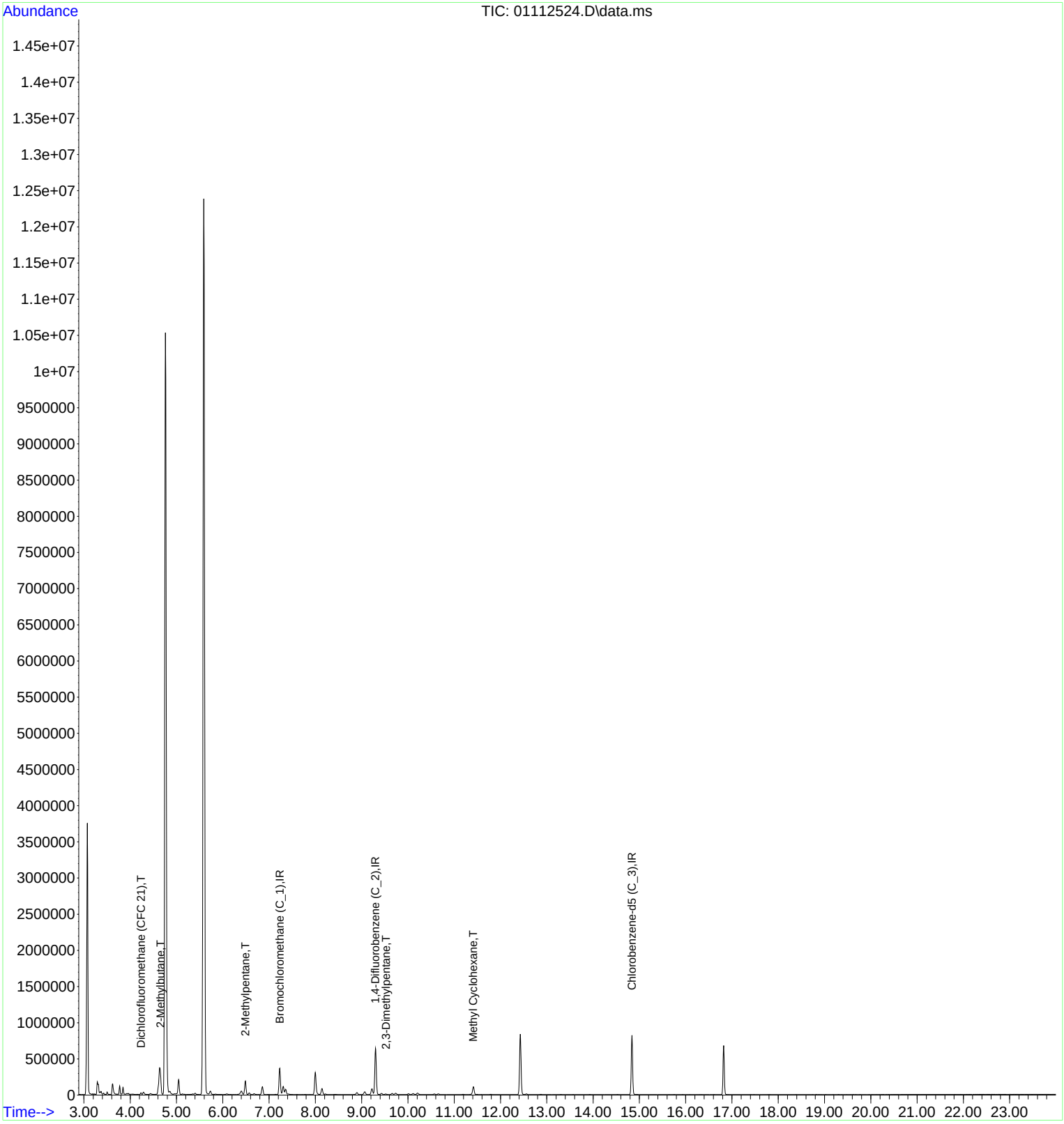
Quant Time: Jan 13 10:49:38 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	154325	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	665197	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	125146	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	207	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	1211	N.D.			
4) 1,1-Difluoroethane	0.00	65	0	N.D.			
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d		
6) 1-Chloro-1,1-Difluoroe...	3.50	65	491	N.D.			
7) Dichlorofluoromethane ...	4.23	67	19811	0.634	ng		98
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	1916	N.D.			
10) 2-Methylbutane	4.65	57	67972	4.564	ng	#	84
11) Methyl Acetate	5.35	43	847	N.D.			
12) 2-Methylpentane	6.49	71	43067	3.392	ng		97
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	0.00	84	0	N.D.	d		
17) 2,3-Dimethylpentane	9.53	56	4207	0.159	ng		94
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.41	55	49057	2.197	ng		97
21) 1,3-Dichloropropane	0.00	76	0	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	0.00	91	0	N.D.			
27) 4-Chlorotoluene	0.00	91	0	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

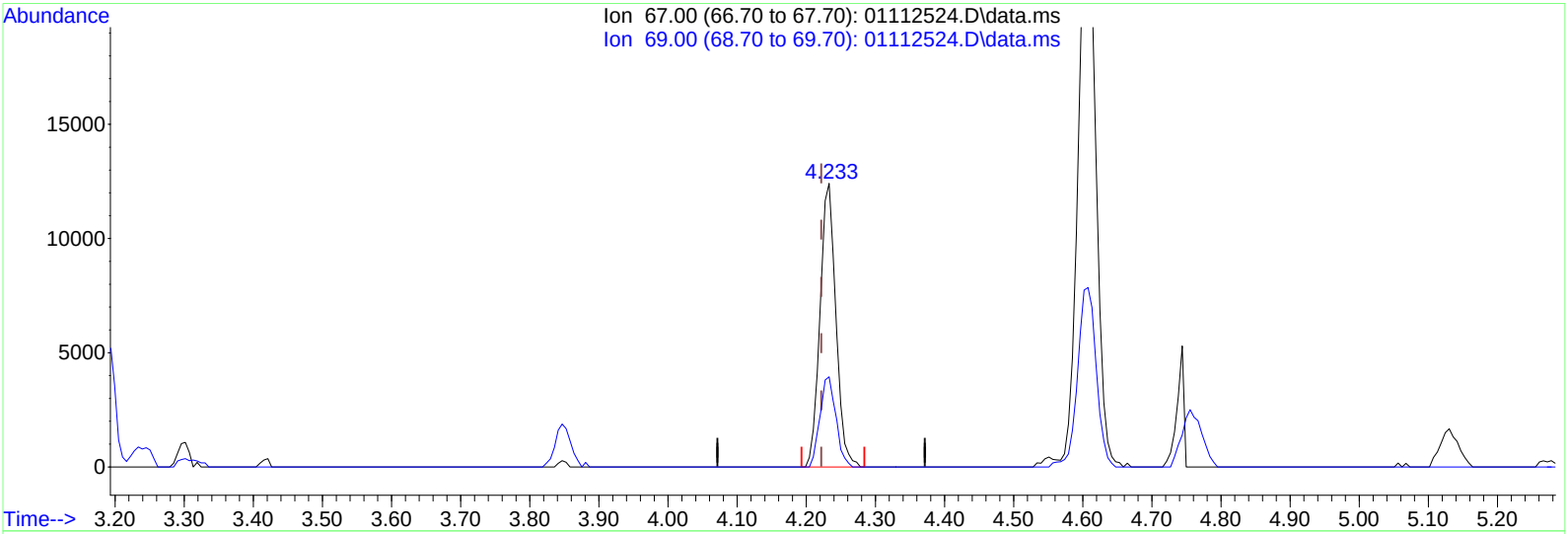
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

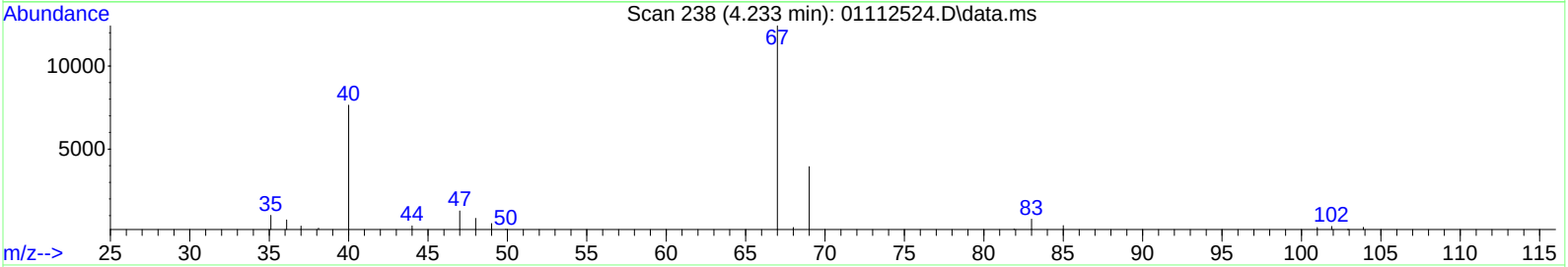
Quant Time: Jan 13 10:49:38 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

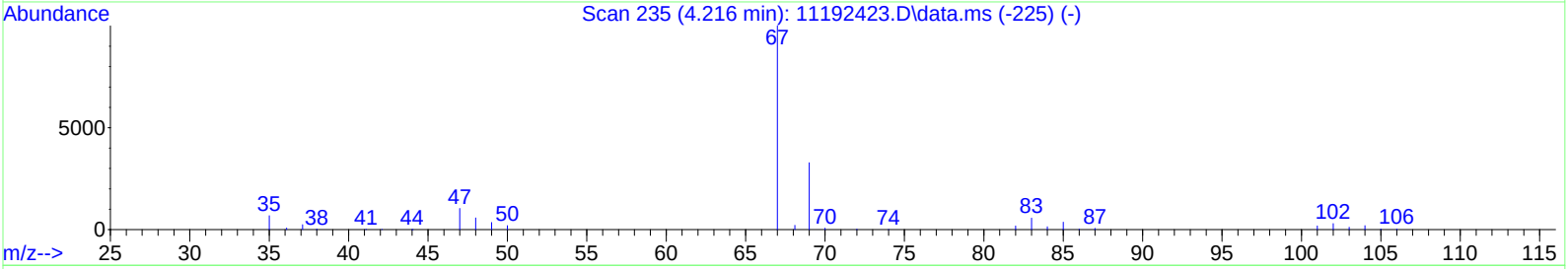


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 10:40:33 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112524.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.63ng

response 19811

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	31.83
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122511.D
Acq On : 12 Jan 2025 10:27
Operator : SC
Sample : P2405139-061Dil (40mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 11:10:45 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

VOA 1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	144527	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	630193	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	113954	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	241937	12.287	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.32%				
57) Toluene-d8 (SS2)	12.43	98	653595	12.929	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%				
73) Bromofluorobenzene (SS3)	16.82	174	227483	13.040	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.32%				
Target Compounds							Qvalue
2) Propene	3.33	42	711	N.D.			
3) Dichlorodifluoromethan...	3.33	85	733	N.D.			
4) Chloromethane	3.39	50	309	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	0.00	45	0	N.D. d			
11) Acetonitrile	4.47	41	940	N.D.			
12) Acrolein	0.00	56	0	N.D. d			
13) Acetone	4.65	58	7600	0.781	ng	#	73
14) Trichlorofluoromethane	4.75	101	955538	36.064	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	58	N.D.			
16) Acrylonitrile	5.04	53	388	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.41	59	53	N.D.			
19) Methylene Chloride	5.36	84	228	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	366578	30.665	ng		96
22) Carbon Disulfide	5.61	76	22409	0.509	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	7.34	87	176	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.30	57	1578	0.073	ng	#	86
32) Chloroform	7.36	83	3502	0.149	ng		93
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.89	78	1895	N.D.			
42) Carbon Tetrachloride	9.06	117	1104	0.055	ng		99
43) Cyclohexane	9.21	84	1428	0.081	ng		96
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122511.D
Acq On : 12 Jan 2025 10:27
Operator : SC
Sample : P2405139-061Dil (40mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 13 11:10:45 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

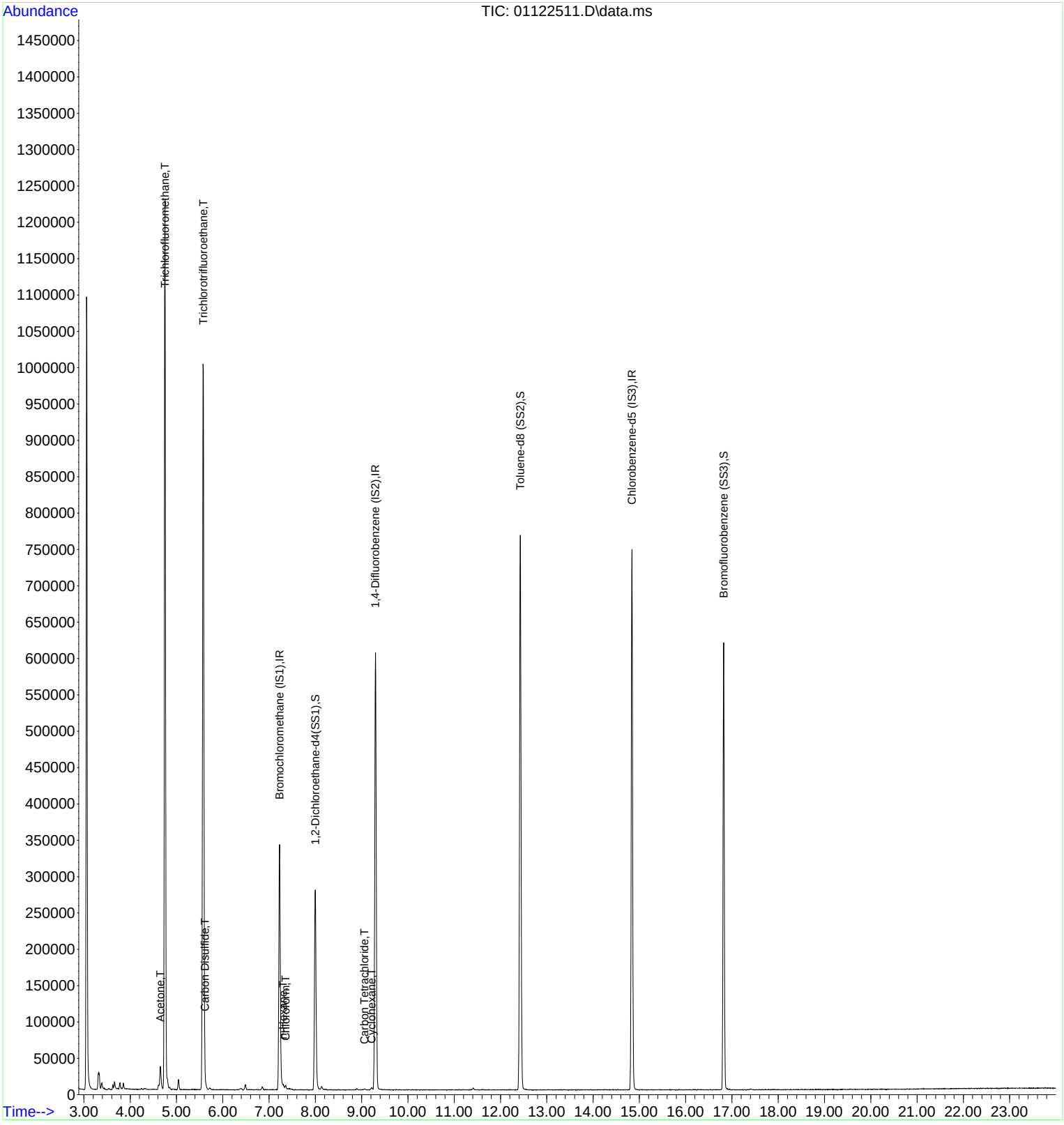
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	189	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

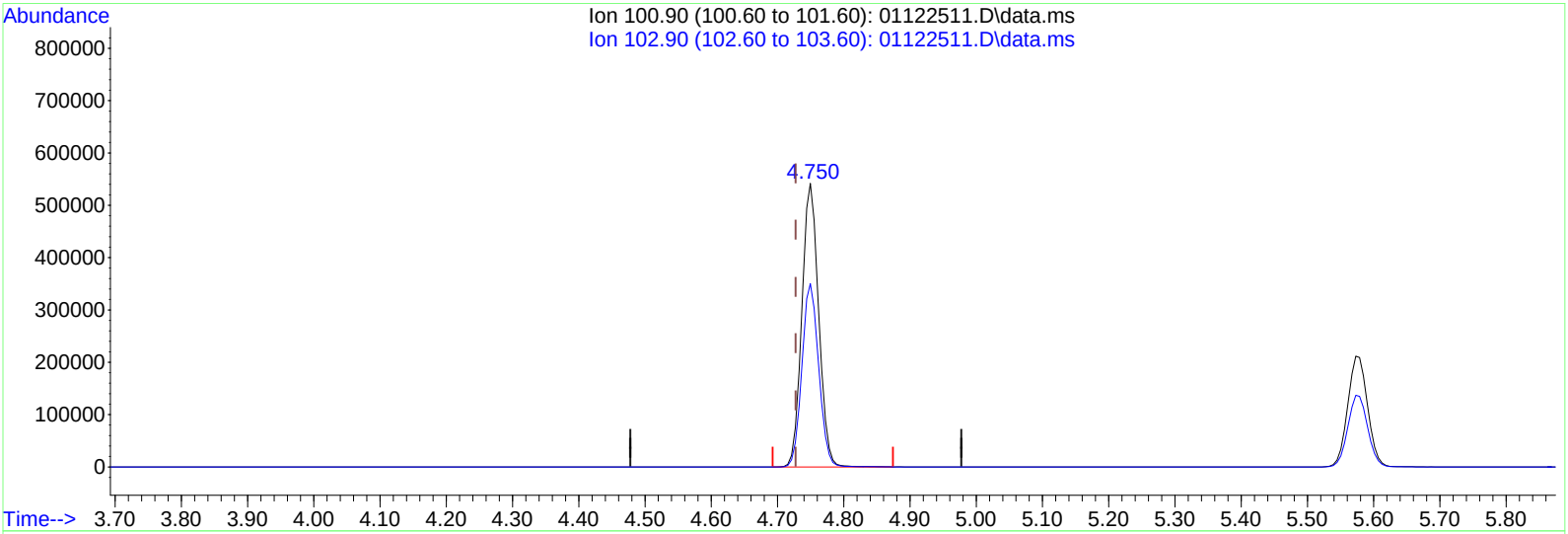
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122511.D
Acq On : 12 Jan 2025 10:27
Operator : SC
Sample : P2405139-061Dil (40mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

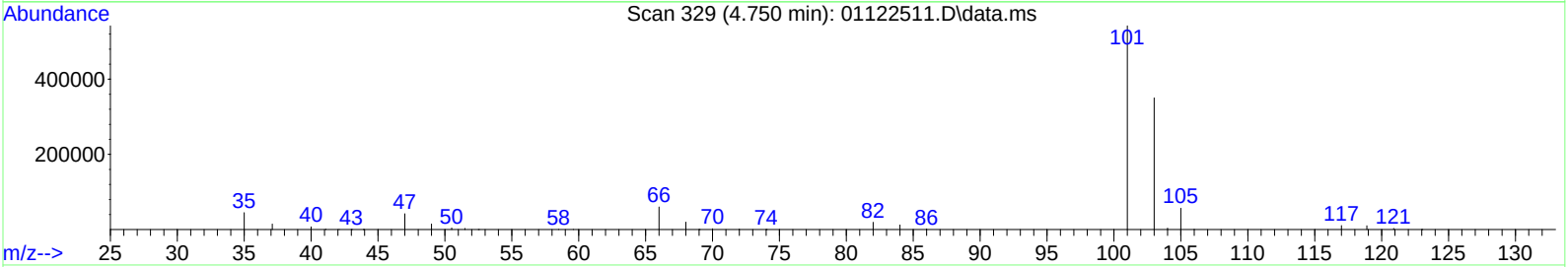
Quant Time: Jan 13 11:10:45 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

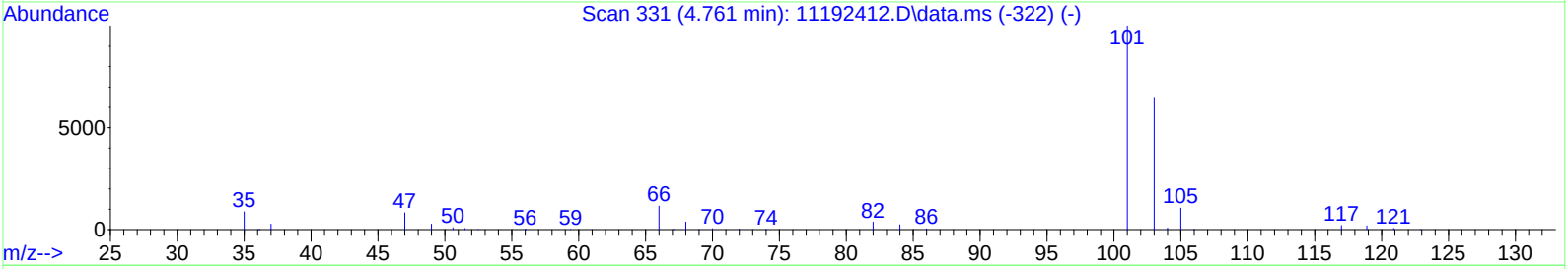


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122511.D
Acq On : 12 Jan 2025 10:27
Operator : SC
Sample : P2405139-061Dil (40mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 10:49:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122511.D\data.ms

(14) Trichlorofluoromethane (T)

4.750min (+0.022) 36.06ng

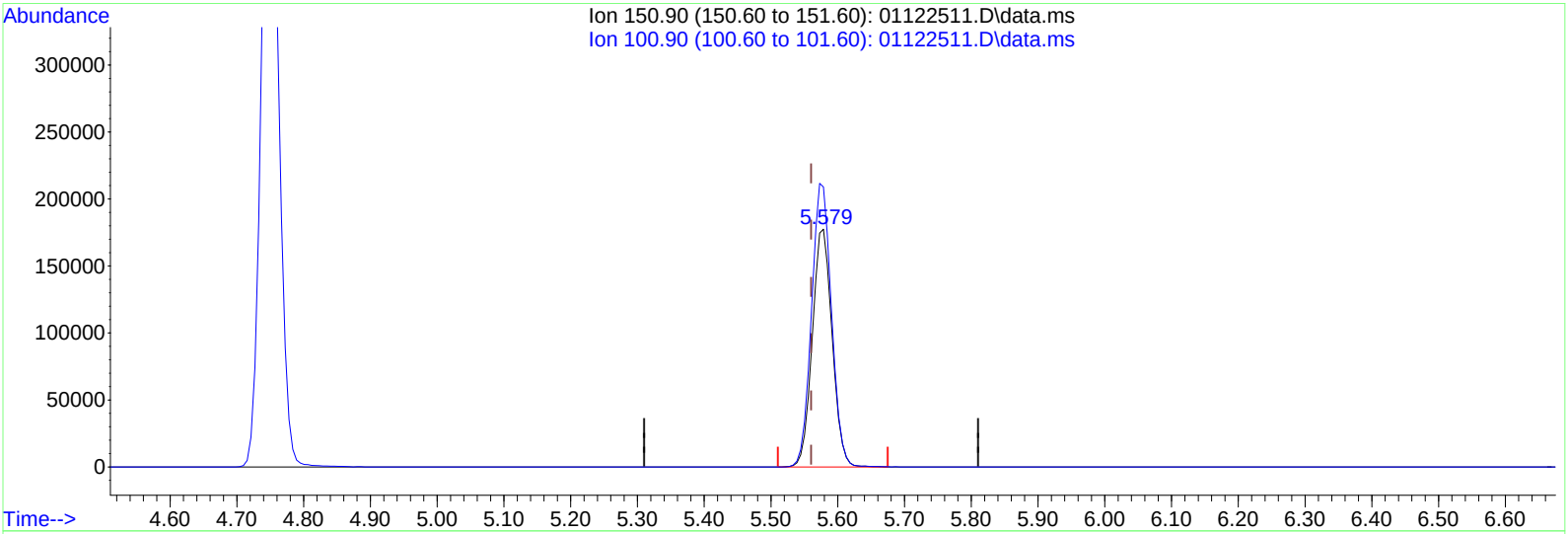
response 955538

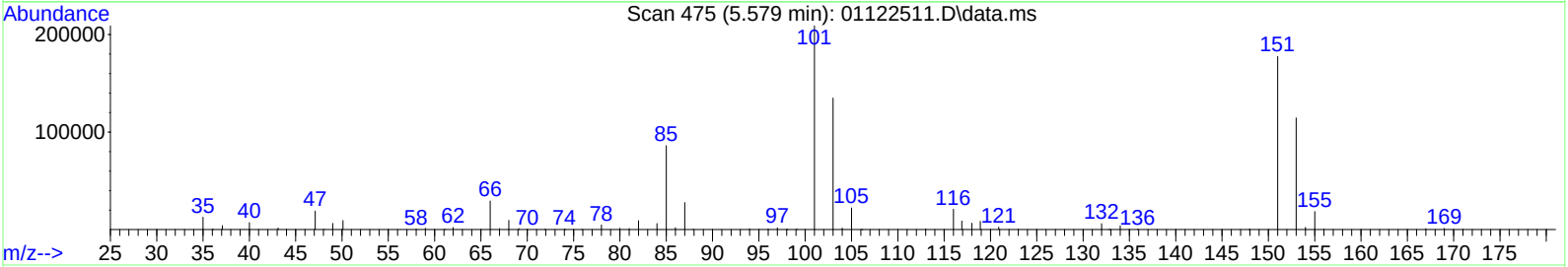
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.59
0.00	0.00	0.00
0.00	0.00	0.00

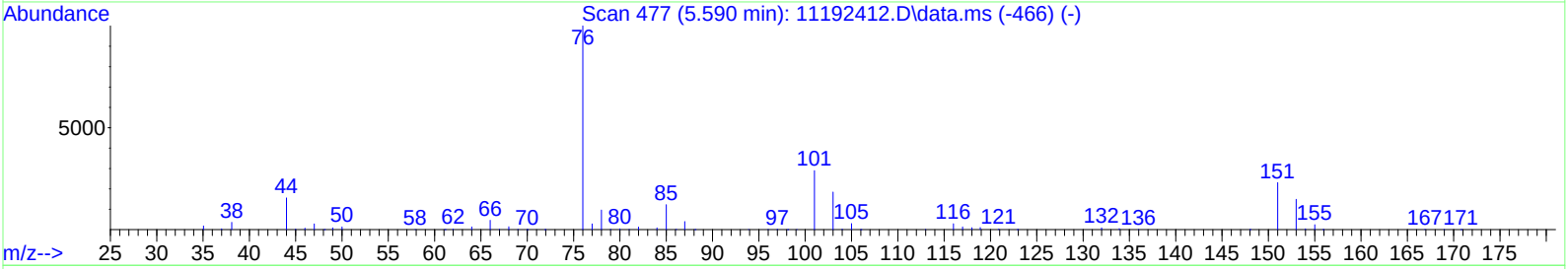
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122511.D
Acq On : 12 Jan 2025 10:27
Operator : SC
Sample : P2405139-061Dil (40mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 12 10:49:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01122511.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.018) 30.67ng

response 366578

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	119.89
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112524.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.290	67	72	79	rBV3	174071	412184	1.42%	0.622%
2	3.370	84	86	92	rVV	42037	56463	0.19%	0.085%
3	3.427	92	96	104	rVB	17994	27233	0.09%	0.041%
4	3.500	104	109	117	rVB	34575	44539	0.15%	0.067%
5	3.620	122	130	144	rBV3	146216	309189	1.06%	0.466%
6	3.773	152	157	164	rBV	113759	152480	0.53%	0.230%
7	3.841	164	169	178	rVV	95720	135686	0.47%	0.205%
8	3.932	180	185	187	rVV2	11970	19529	0.07%	0.029%
9	3.966	187	191	197	rVB4	12560	20150	0.07%	0.030%
10	4.233	232	238	242	rBV	23928	37365	0.13%	0.056%
11	4.284	242	247	260	rVB	32155	70576	0.24%	0.106%
12	4.437	267	274	283	rBV2	12733	29624	0.10%	0.045%
13	4.636	297	309	321	rVB3	366024	1109942	3.82%	1.674%
14	4.761	321	331	344	rBV	10524688	23939574	82.46%	36.116%
15	4.858	344	348	360	rVB3	41153	92028	0.32%	0.139%
16	4.960	360	366	369	rBV4	6489	13118	0.05%	0.020%
17	5.045	374	381	391	rVB	203164	389600	1.34%	0.588%
18	5.130	391	396	400	rBV	7056	12006	0.04%	0.018%
19	5.352	430	435	439	rBV3	6792	11035	0.04%	0.017%
20	5.403	439	444	454	rVB	17500	36515	0.13%	0.055%
21	5.590	462	477	495	rBV	12381243	29033266	100.00%	43.800%
22	5.732	495	502	510	rVB	44966	99131	0.34%	0.150%
23	6.090	557	565	574	rVB5	8560	22107	0.08%	0.033%
24	6.402	609	620	627	rBV2	44934	117083	0.40%	0.177%
25	6.487	627	635	644	rVB	185131	391093	1.35%	0.590%
26	6.572	644	650	659	rVB4	22672	45544	0.16%	0.069%
27	6.675	661	668	681	rVB	11970	27271	0.09%	0.041%
28	6.856	689	700	709	rVB	108419	242086	0.83%	0.365%
29	7.231	757	766	773	rBV	364562	802817	2.77%	1.211%
30	7.305	773	779	784	rVV	108573	236723	0.82%	0.357%
31	7.356	784	788	796	rVB	67031	132029	0.45%	0.199%
32	7.998	891	901	916	rBV	304091	707854	2.44%	1.068%
33	8.145	918	927	935	rVV	83334	200016	0.69%	0.302%
34	8.213	935	939	949	rVB3	7858	17453	0.06%	0.026%
35	8.900	1052	1060	1069	rVB	27031	64759	0.22%	0.098%
36	9.065	1078	1089	1099	rVB2	37441	97413	0.34%	0.147%
37	9.224	1107	1117	1122	rBV	80059	194548	0.67%	0.293%
38	9.298	1122	1130	1143	rVV	640685	1467212	5.05%	2.213%
39	9.429	1145	1153	1160	rVV2	15954	40823	0.14%	0.062%
40	9.525	1160	1170	1178	rVB5	8039	21288	0.07%	0.032%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

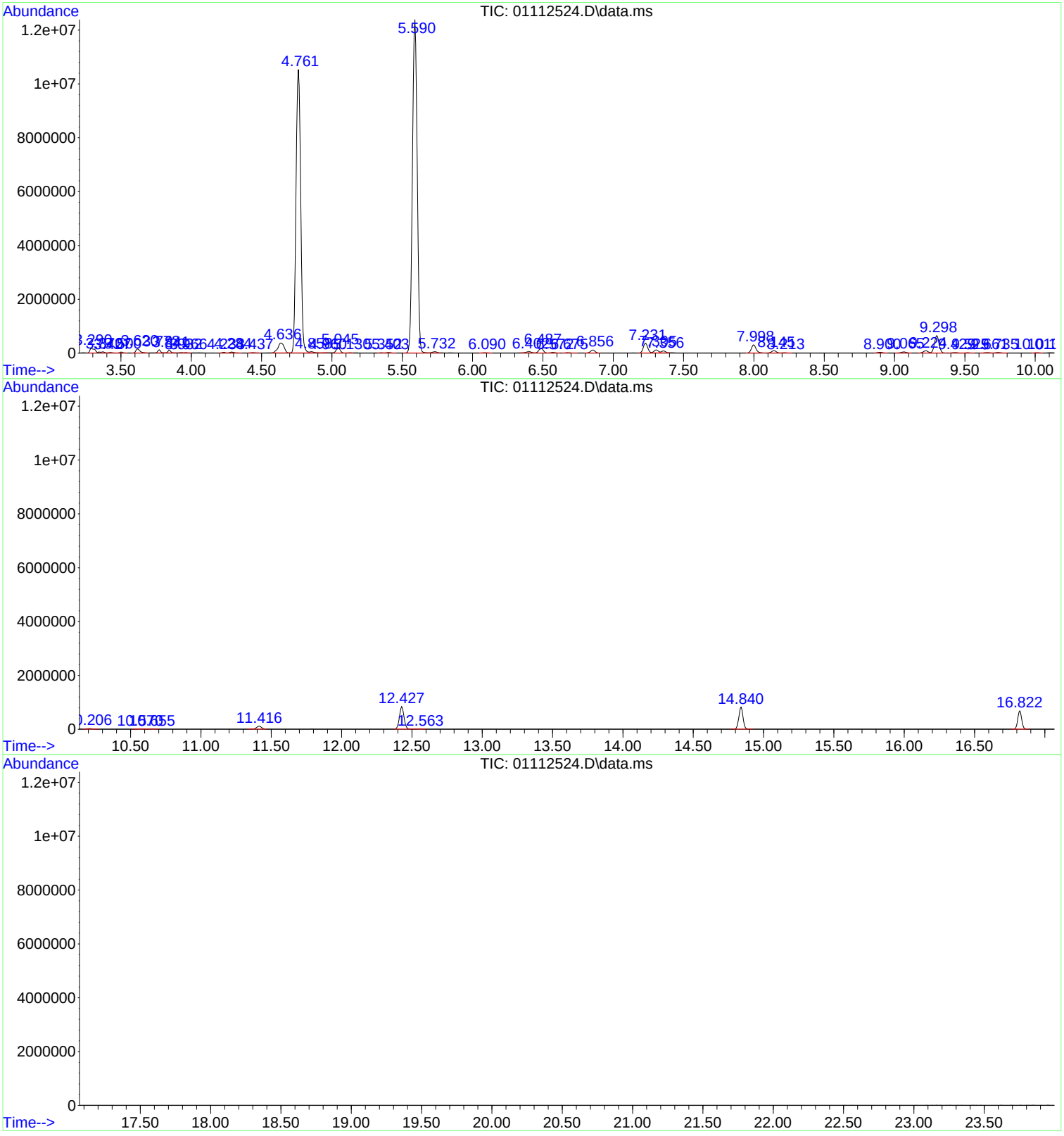
41	9.661	1184	1194	1200	rBV3	15180	38818	0.13%	0.059%
42	9.735	1200	1207	1219	rVB5	19406	48618	0.17%	0.073%
43	10.013	1249	1256	1263	rBV3	11564	27201	0.09%	0.041%
44	10.110	1265	1273	1282	rVV6	13781	36408	0.13%	0.055%
45	10.206	1282	1290	1302	rVB3	20419	55678	0.19%	0.084%
46	10.570	1344	1354	1362	rBV3	8956	21499	0.07%	0.032%
47	10.655	1362	1369	1377	rVB5	10075	24597	0.08%	0.037%
48	11.416	1488	1503	1512	rBV	107073	269989	0.93%	0.407%
49	12.427	1671	1681	1697	rBV	836693	1888585	6.50%	2.849%
50	12.563	1697	1705	1712	rVB3	8704	20944	0.07%	0.032%
51	14.840	2093	2106	2121	rBV	818600	1682437	5.79%	2.538%
52	16.822	2444	2455	2467	rBV	676927	1291642	4.45%	1.949%

Sum of corrected areas: 66285768

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:22
Operator : LS
Sample : P2405139-061 (400mL)
Misc : S37-12312401
ALS Vial : 10 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\11\\
Data File : 01112524.D
Acq On : 11 Jan 2025 19:222
Operator : LSS
Sample : P2405139-061 (400mL))
Misc : S37-123124011
ALS Vial : 10 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

						--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 05:51:26 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	151787	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	658859	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	123148	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	253339	12.251 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.00%			
57) Toluene-d8 (SS2)	12.43	98	692273	12.672 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.36%			
73) Bromofluorobenzene (SS3)	16.82	174	248672	13.190 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	17081	0.576 ng		100
4) Chloromethane	3.51	50	3753	0.170 ng		97
5) 1,2-Dichloro-1,1,2,2-t...	3.63	135	327	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.29	45	5831	0.519 ng		96
11) Acetonitrile	4.46	41	974	N.D.		
12) Acrolein	4.56	56	115	N.D.		
13) Acetone	4.65	58	9125	0.893 ng		89
14) Trichlorofluoromethane	4.77	101	9477	0.341 ng		96
15) 2-Propanol (Isopropanol)	4.84	45	49564	1.354 ng		96
16) Acrylonitrile	5.06	53	107	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.36	84	1326	0.092 ng		96
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.59	151	8546	0.681 ng		100
22) Carbon Disulfide	5.62	76	7648	0.165 ng		92
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.69	72	579	0.071 ng	#	28
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.30	61	807	0.159 ng		92
31) n-Hexane	7.30	57	399	N.D.		
32) Chloroform	7.35	83	266	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.86	56	1108	No Calib		
41) Benzene	8.90	78	4122	0.078 ng		94
42) Carbon Tetrachloride	9.05	117	2280	0.108 ng		99
43) Cyclohexane	9.28	84	173	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 05:51:26 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

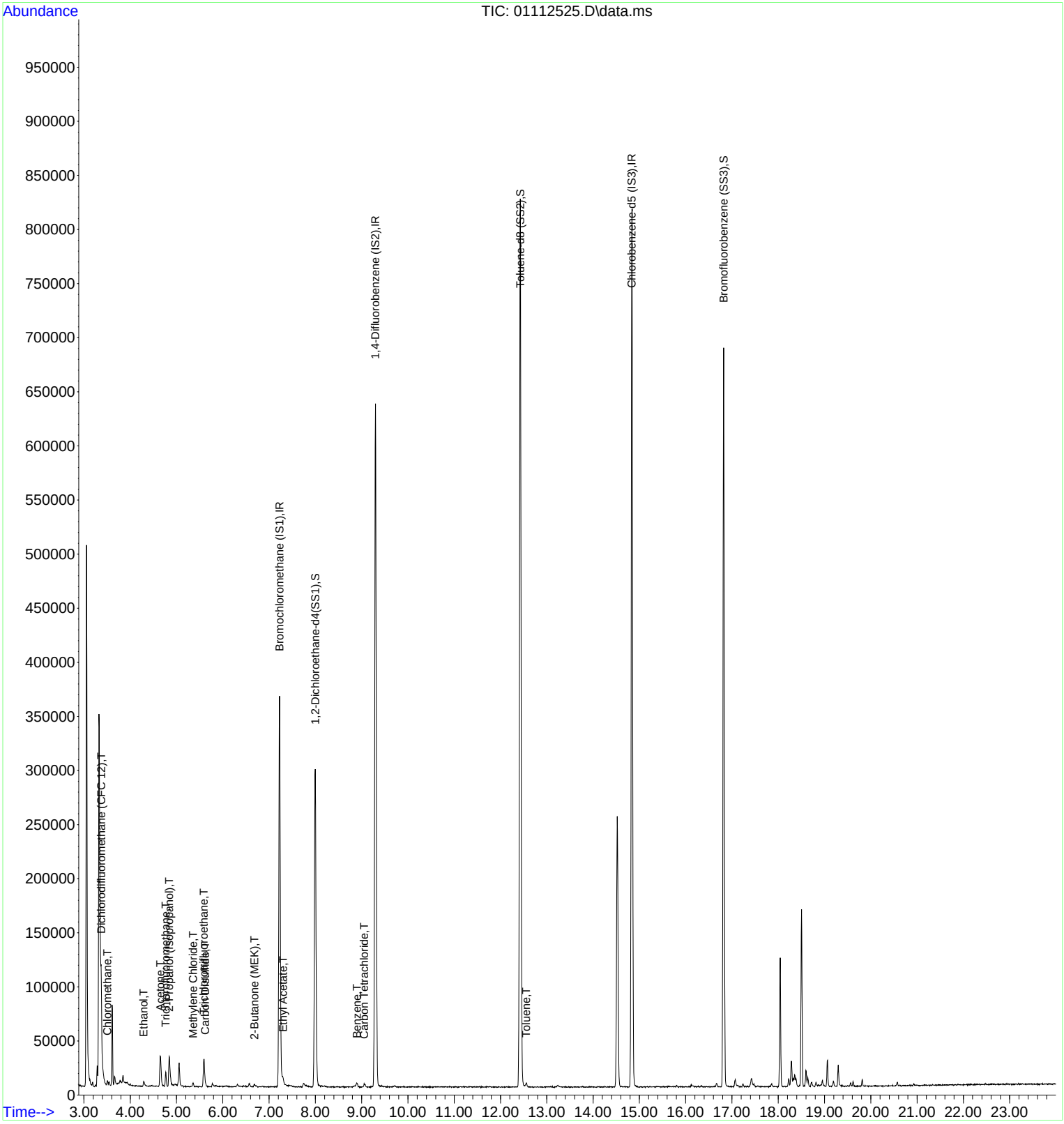
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	384	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	3861	0.073 ng	99
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	403	N.D.	
67) m- & p-Xylenes	15.63	91	670	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.25	91	199	N.D.	
71) n-Nonane	16.60	43	119	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	127	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	346	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	18.04	58	2907	No Calib	#
94) 1,2,4-Trichlorobenzene	20.85	180	200	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	d
100) n-Butylbenzene	19.38	91	123	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 05:51:26 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

VOA 1/13/25

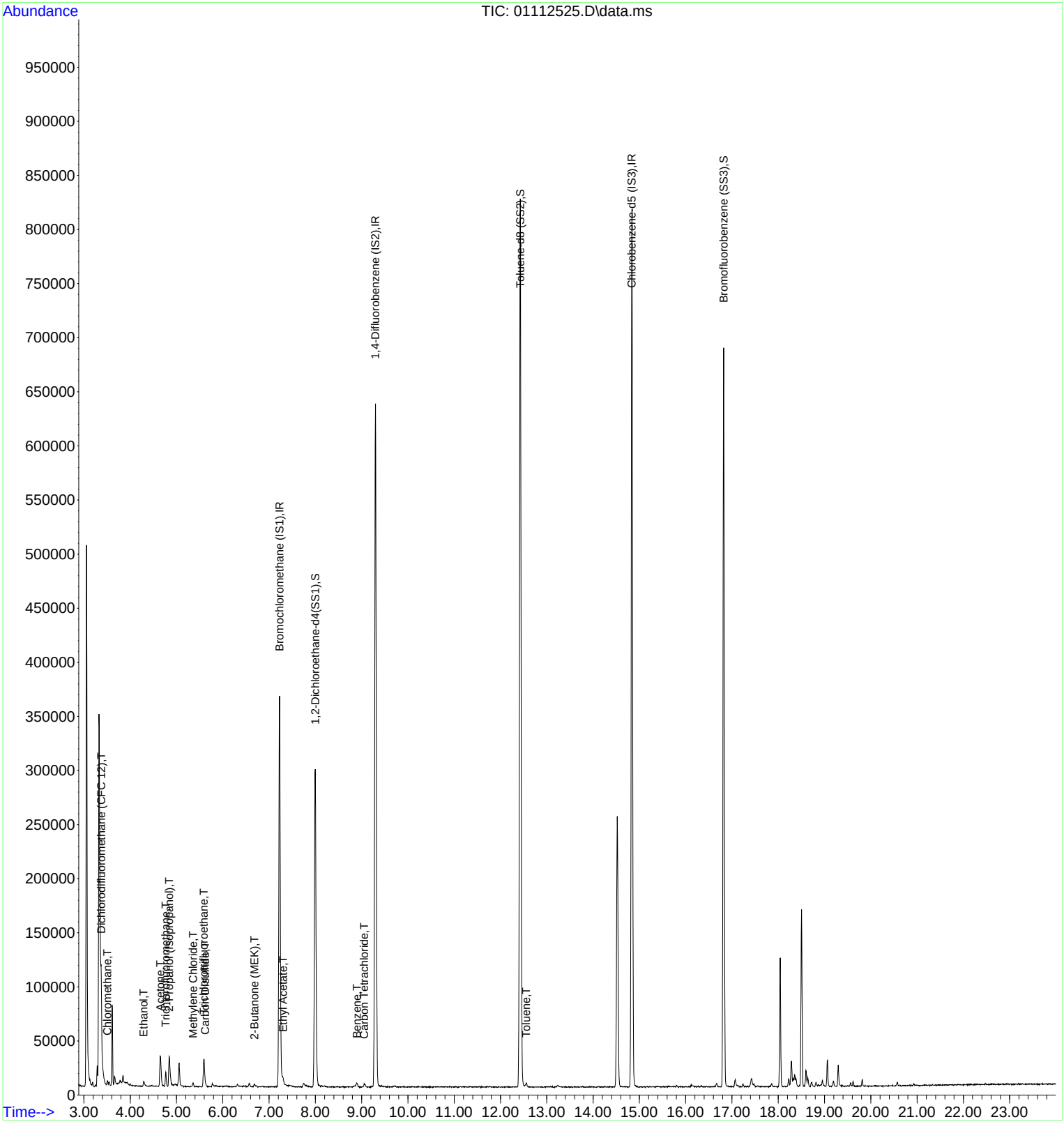
Quant Time: Jan 13 05:51:26 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

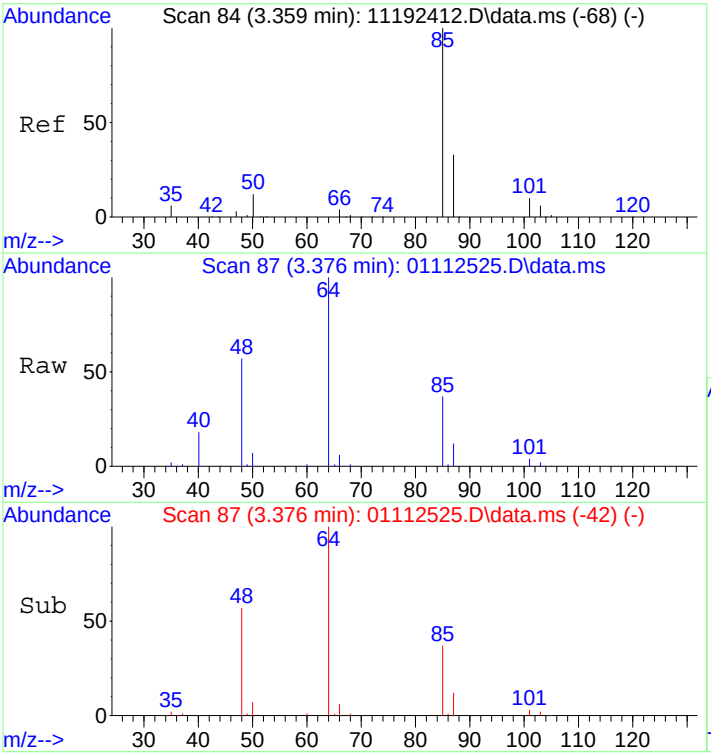
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	151787	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	658859	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	123148	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	253339	12.251	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.00%				
57) Toluene-d8 (SS2)	12.43	98	692273	12.672	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.36%				
73) Bromofluorobenzene (SS3)	16.82	174	248672	13.190	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	17081	0.576	ng		100
4) Chloromethane	3.51	50	3753	0.170	ng		97
10) Ethanol	4.29	45	5831	0.519	ng		96
13) Acetone	4.65	58	9125	0.893	ng		89
14) Trichlorofluoromethane	4.77	101	9477	0.341	ng		96
15) 2-Propanol (Isopropanol)	4.84	45	49564	1.354	ng		96
19) Methylene Chloride	5.36	84	1326	0.092	ng		96
21) Trichlorotrifluoroethane	5.59	151	8546	0.681	ng		100
22) Carbon Disulfide	5.62	76	7648	0.165	ng		92
27) 2-Butanone (MEK)	6.69	72	579	0.071	ng	#	28
30) Ethyl Acetate	7.30	61	807	0.159	ng		92
41) Benzene	8.90	78	4122	0.078	ng		94
42) Carbon Tetrachloride	9.05	117	2280	0.108	ng		99
58) Toluene	12.56	91	3861	0.073	ng		99

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 05:51:26 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

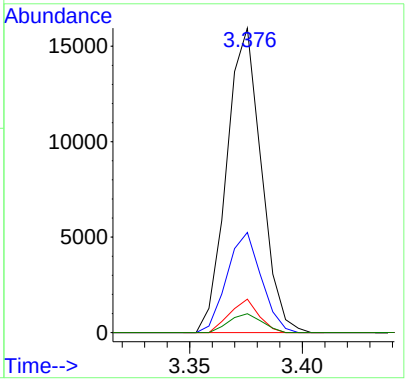


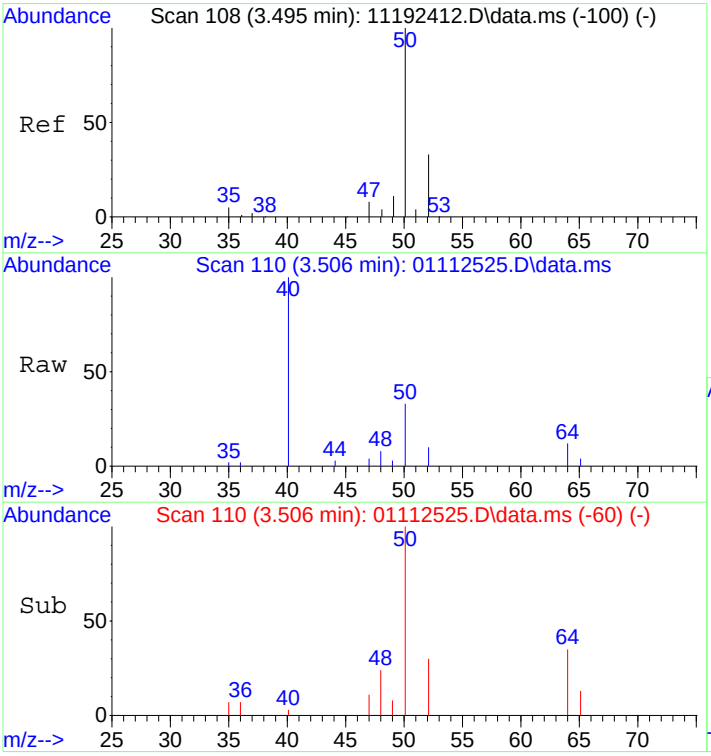


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.58 ng
RT: 3.38 min Scan# 87
Delta R.T. 0.004 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 85 Resp: 17081

Ion	Ratio	Lower	Upper
85	100		
87	32.7	12.6	52.6
101	9.2	0.0	29.6
103	5.9	0.0	26.2

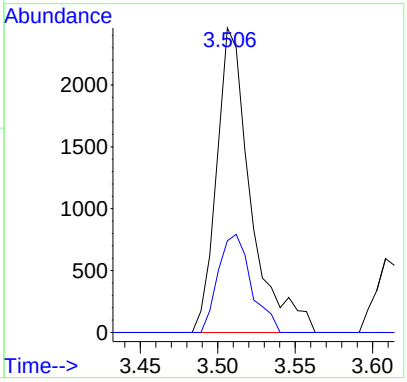


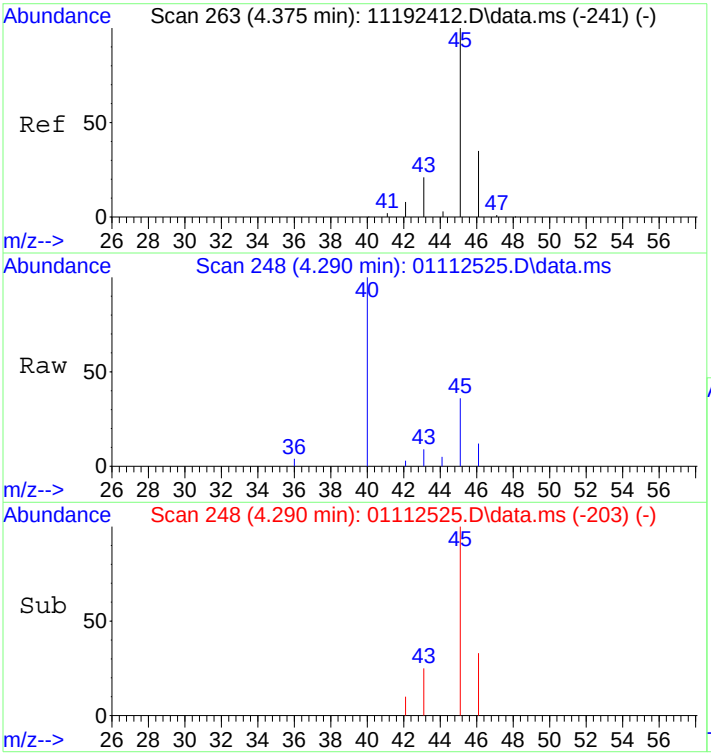


#4
Chloromethane
Concen: 0.17 ng
RT: 3.51 min Scan# 110
Delta R.T. 0.033 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 50 Resp: 3753

Ion	Ratio	Lower	Upper
50	100		
52	31.4	13.0	53.0

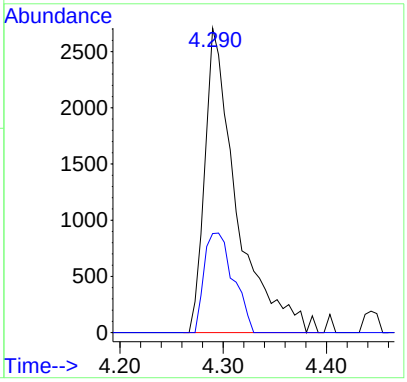


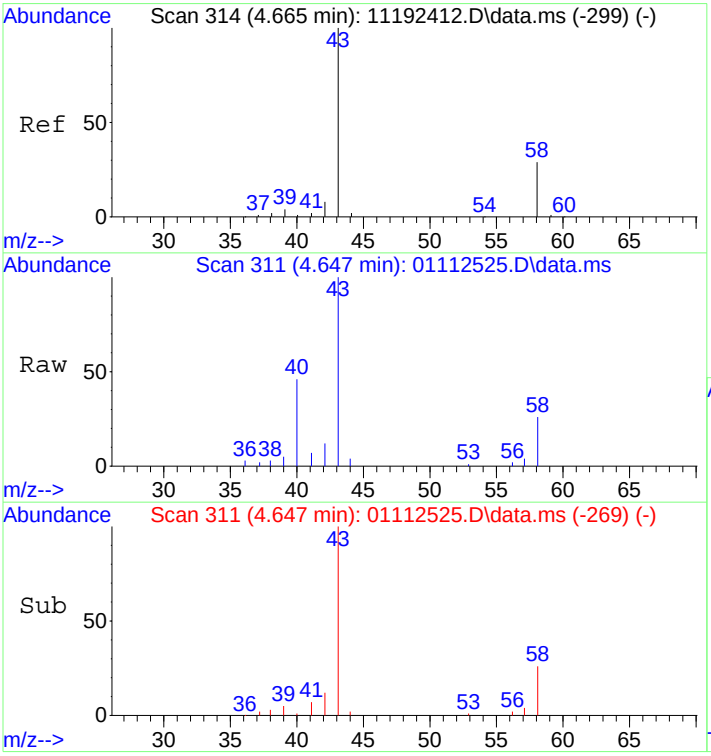


#10
Ethanol
Concen: 0.52 ng
RT: 4.29 min Scan# 248
Delta R.T. 0.005 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 45 Resp: 5831

Ion	Ratio	Lower	Upper
45	100		
46	29.8	11.8	51.8

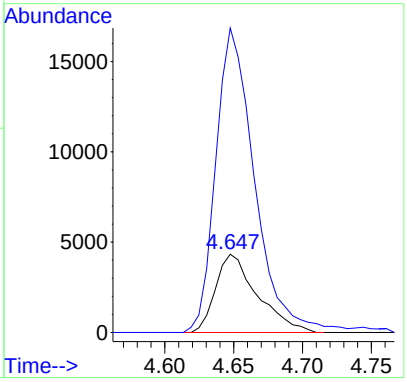


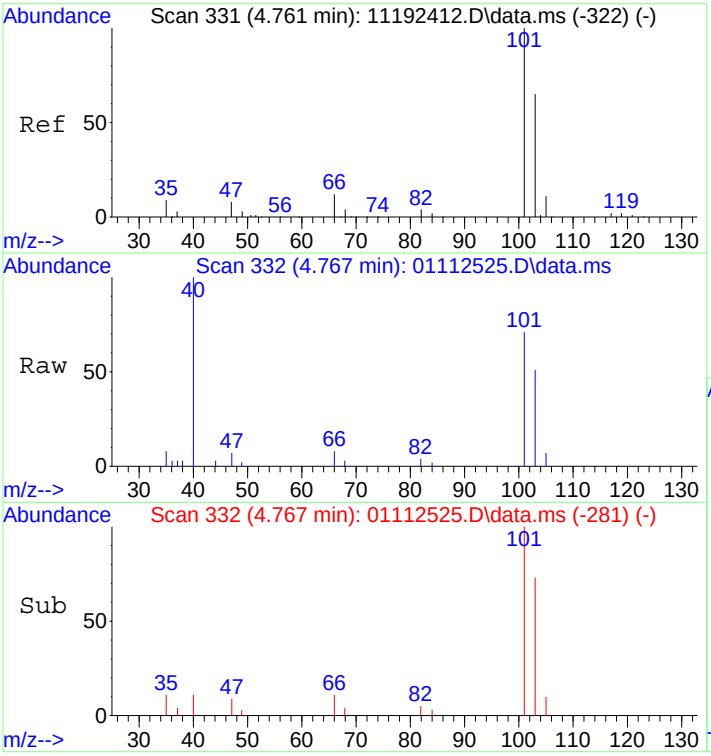


#13
Acetone
Concen: 0.89 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 58 Resp: 9125

Ion	Ratio	Lower	Upper
58	100		
43	367.0	312.5	372.5

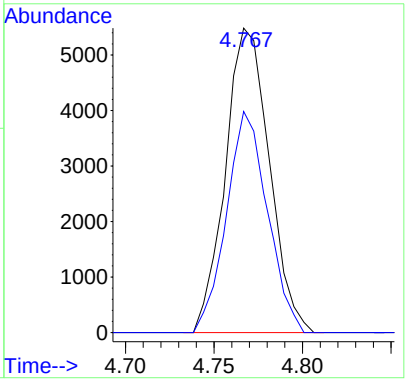


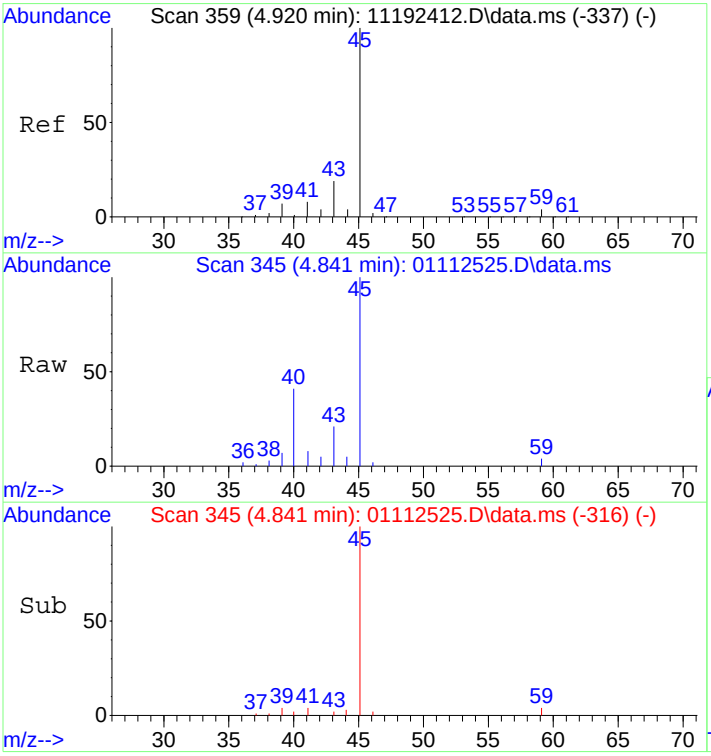


#14
Trichlorofluoromethane
Concen: 0.34 ng
RT: 4.77 min Scan# 332
Delta R.T. 0.039 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion:101 Resp: 9477

Ion	Ratio	Lower	Upper
101	100		
103	67.6	44.8	84.8

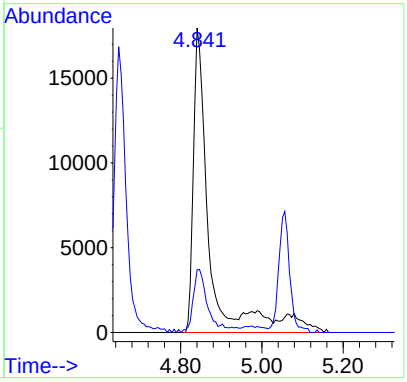


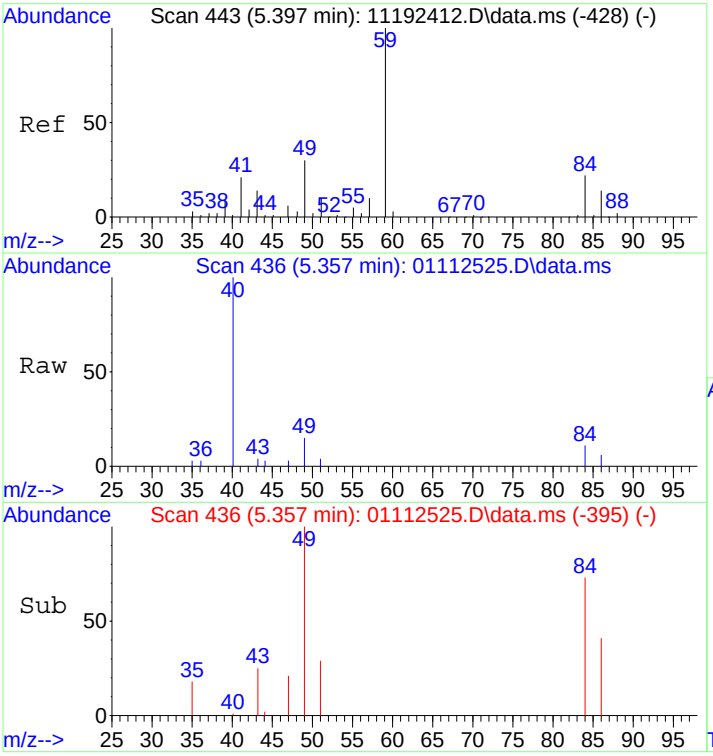


#15
2-Propanol (Isopropanol)
Concen: 1.35 ng
RT: 4.84 min Scan# 345
Delta R.T. -0.084 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 45 Resp: 49564

Ion	Ratio	Lower	Upper
45	100		
43	21.9	0.2	40.2

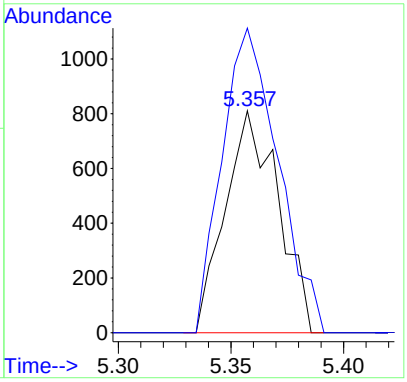


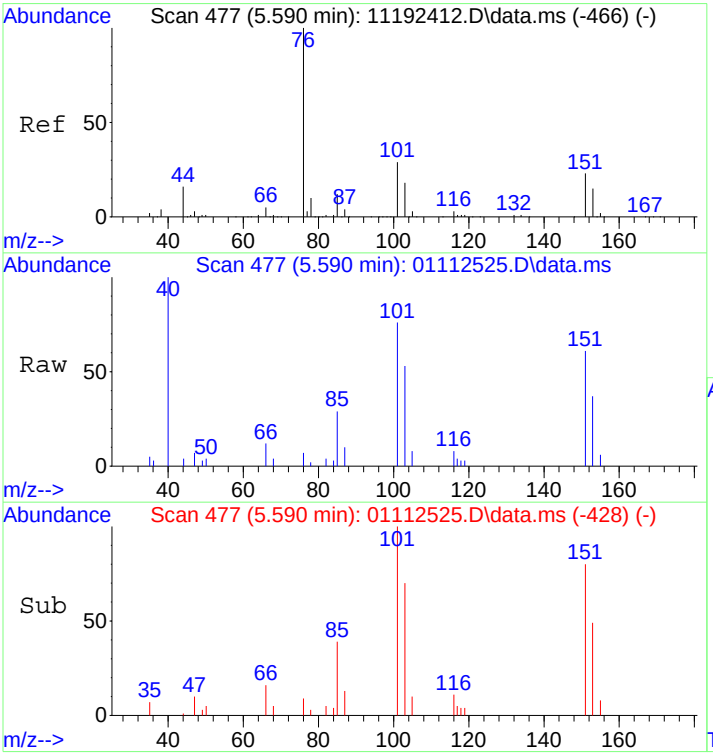


#19
Methylene Chloride
Concen: 0.09 ng
RT: 5.36 min Scan# 436
Delta R.T. -0.017 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 84 Resp: 1326

Ion	Ratio	Lower	Upper
84	100		
49	145.5	116.0	166.0

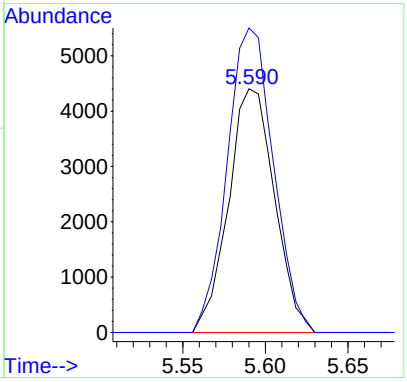


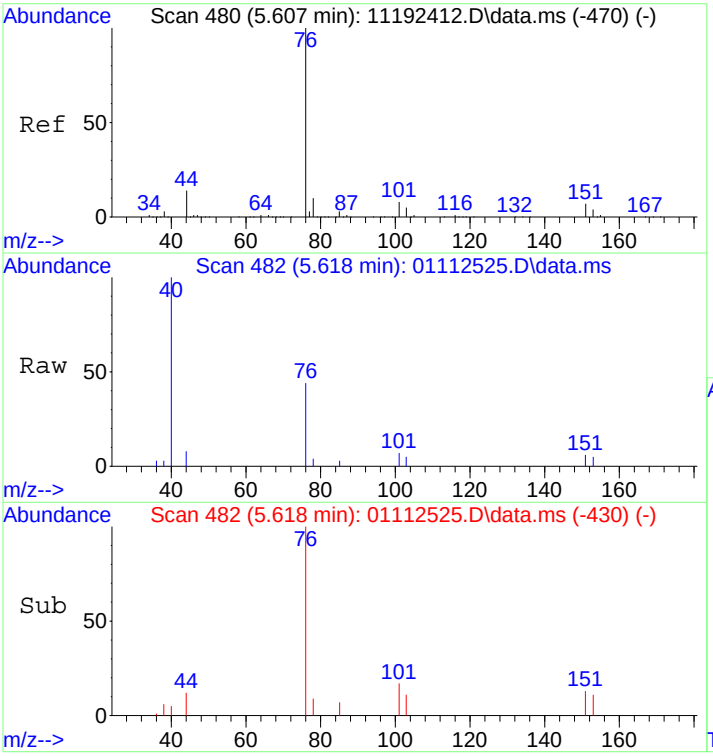


#21
Trichlorotrifluoroethane
Concen: 0.68 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion:151 Resp: 8546

Ion	Ratio	Lower	Upper
151	100		
101	125.3	105.0	145.0

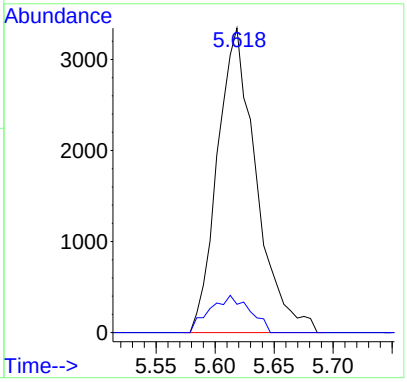


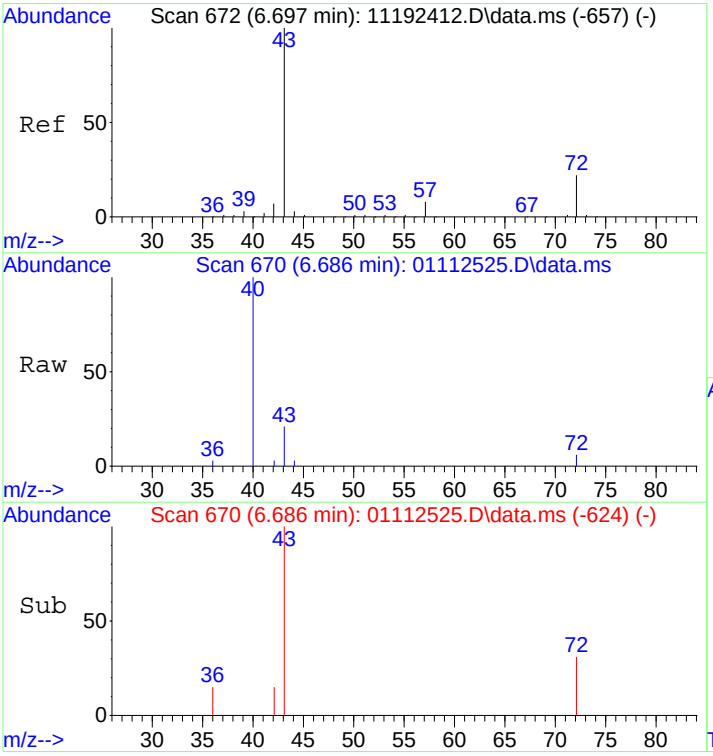


#22
Carbon Disulfide
Concen: 0.17 ng
RT: 5.62 min Scan# 482
Delta R.T. 0.047 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 76 Resp: 7648

Ion	Ratio	Lower	Upper
76	100		
78	12.6	0.0	29.6

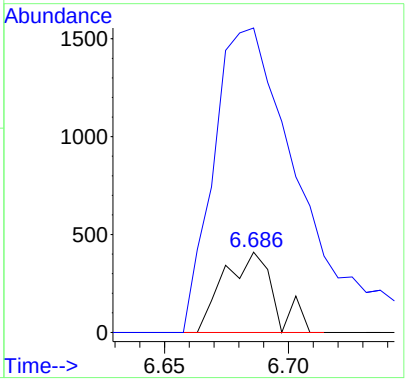


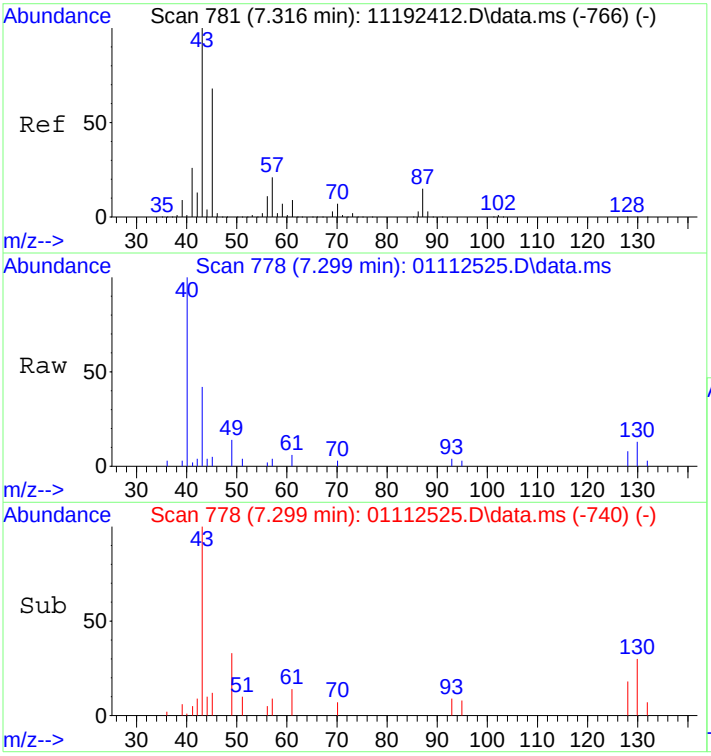


#27
2-Butanone (MEK)
Concen: 0.07 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 72 Resp: 579

Ion	Ratio	Lower	Upper
72	100		
43	648.4	439.8	479.8#

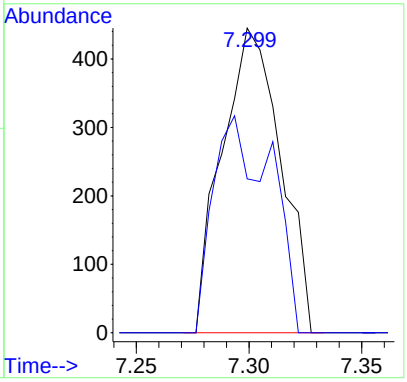


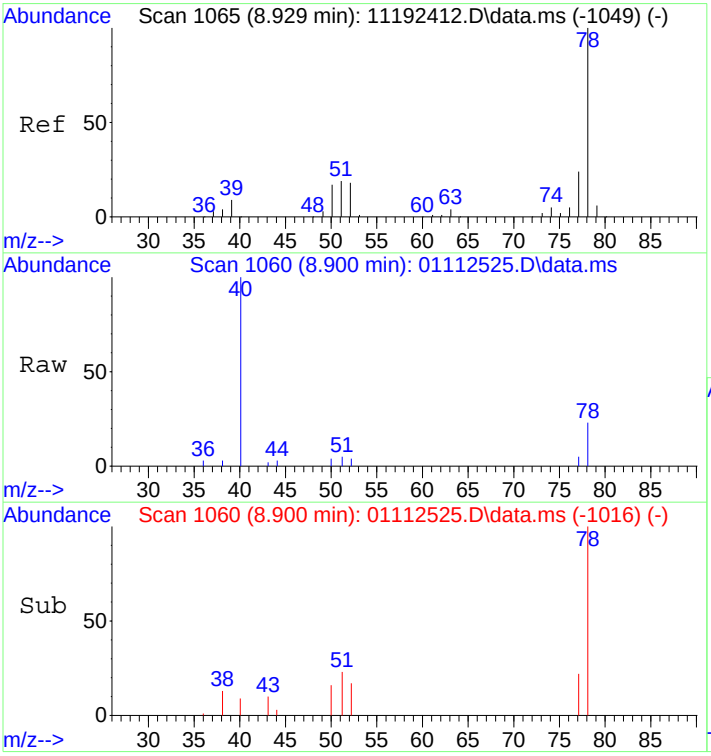


#30
Ethyl Acetate
Concen: 0.16 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.018 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 61 Resp: 807

Ion	Ratio	Lower	Upper
61	100		
70	70.1	57.3	97.3

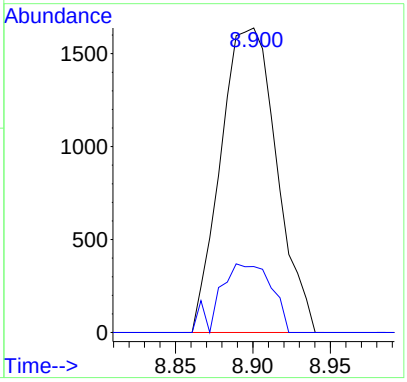


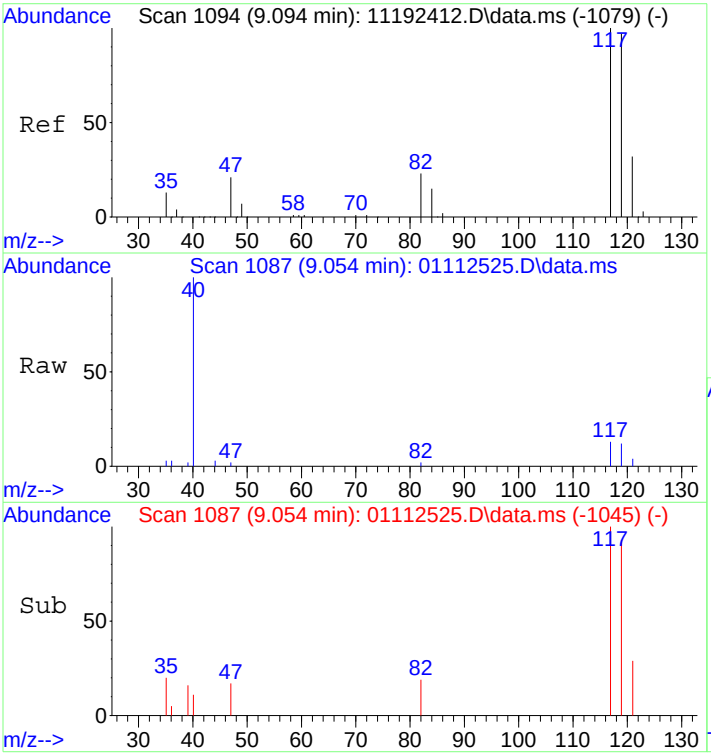


#41
Benzene
Concen: 0.08 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 78 Resp: 4122

Ion	Ratio	Lower	Upper
78	100		
77	20.9	3.7	43.7

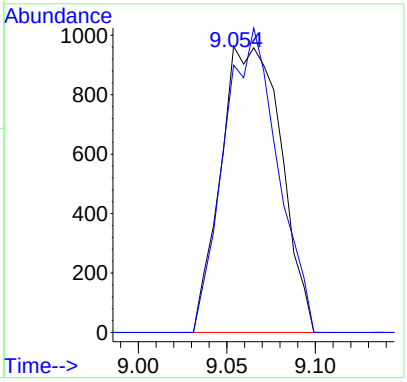


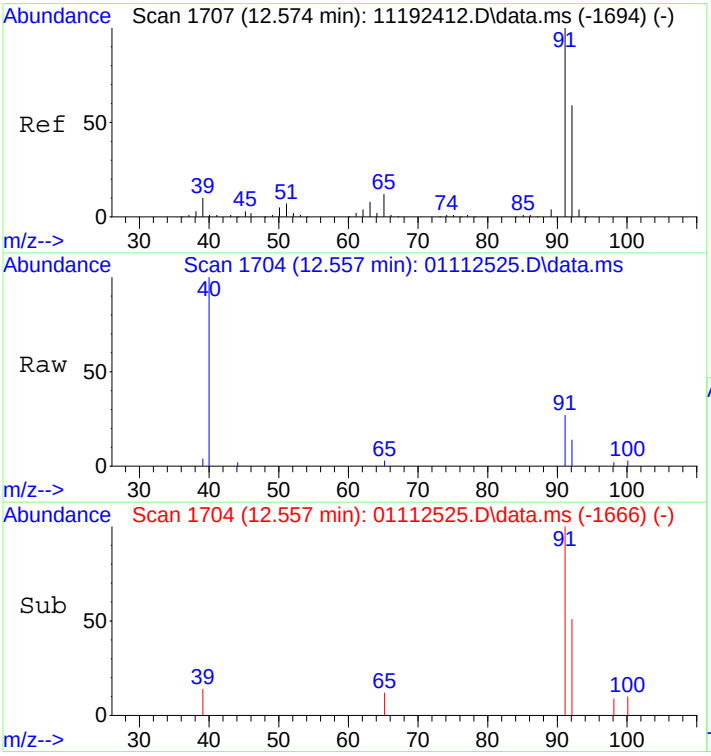


#42
Carbon Tetrachloride
Concen: 0.11 ng
RT: 9.05 min Scan# 1087
Delta R.T. -0.013 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion:117 Resp: 2280

Ion	Ratio	Lower	Upper
117	100		
119	94.9	75.7	115.7

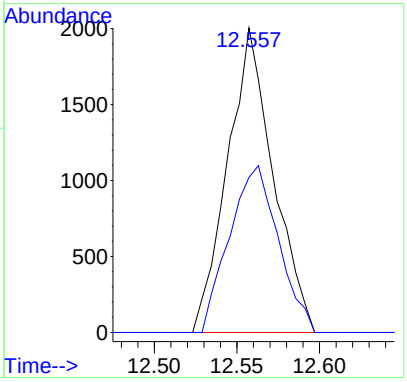




#58
Toluene
Concen: 0.07 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01112525.D
Acq: 11 Jan 2025 19:54

Tgt Ion: 91 Resp: 3861

Ion	Ratio	Lower	Upper
91	100		
92	58.7	39.2	79.2



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 10:50:14 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

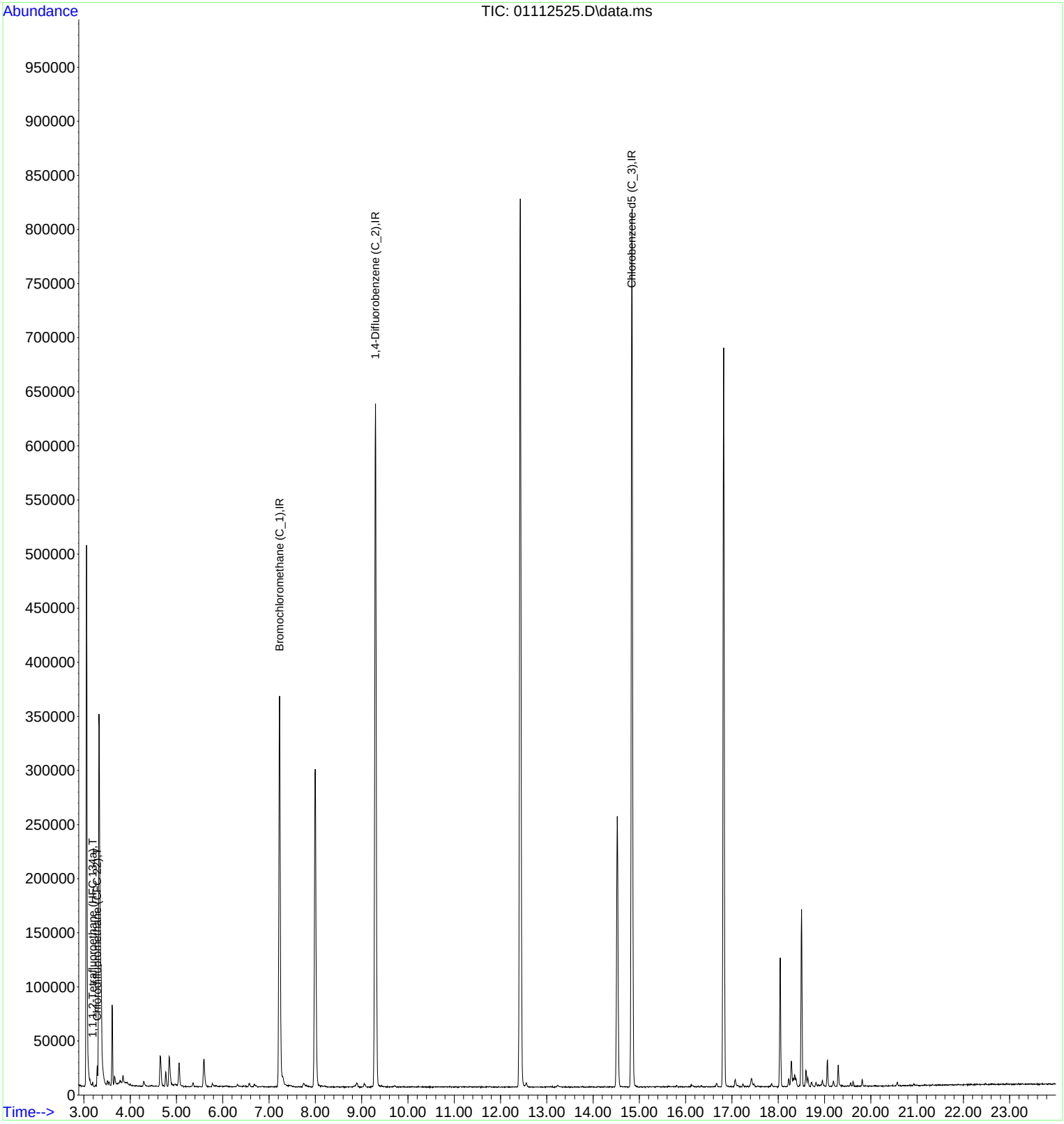
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	153223	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	658757	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	123148	12.500	ng	-0.01
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	200	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	1979	0.142	ng	98
4) 1,1-Difluoroethane	3.25	65	421	N.D.		
5) Chlorodifluoromethane ...	3.28	67	2480	0.581	ng	90
6) 1-Chloro-1,1-Difluoroe...	3.50	65	499	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D. d		
11) Methyl Acetate	5.35	43	620	N.D.		
12) 2-Methylpentane	6.49	71	65	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 10:50:14 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112525.D\data.ms

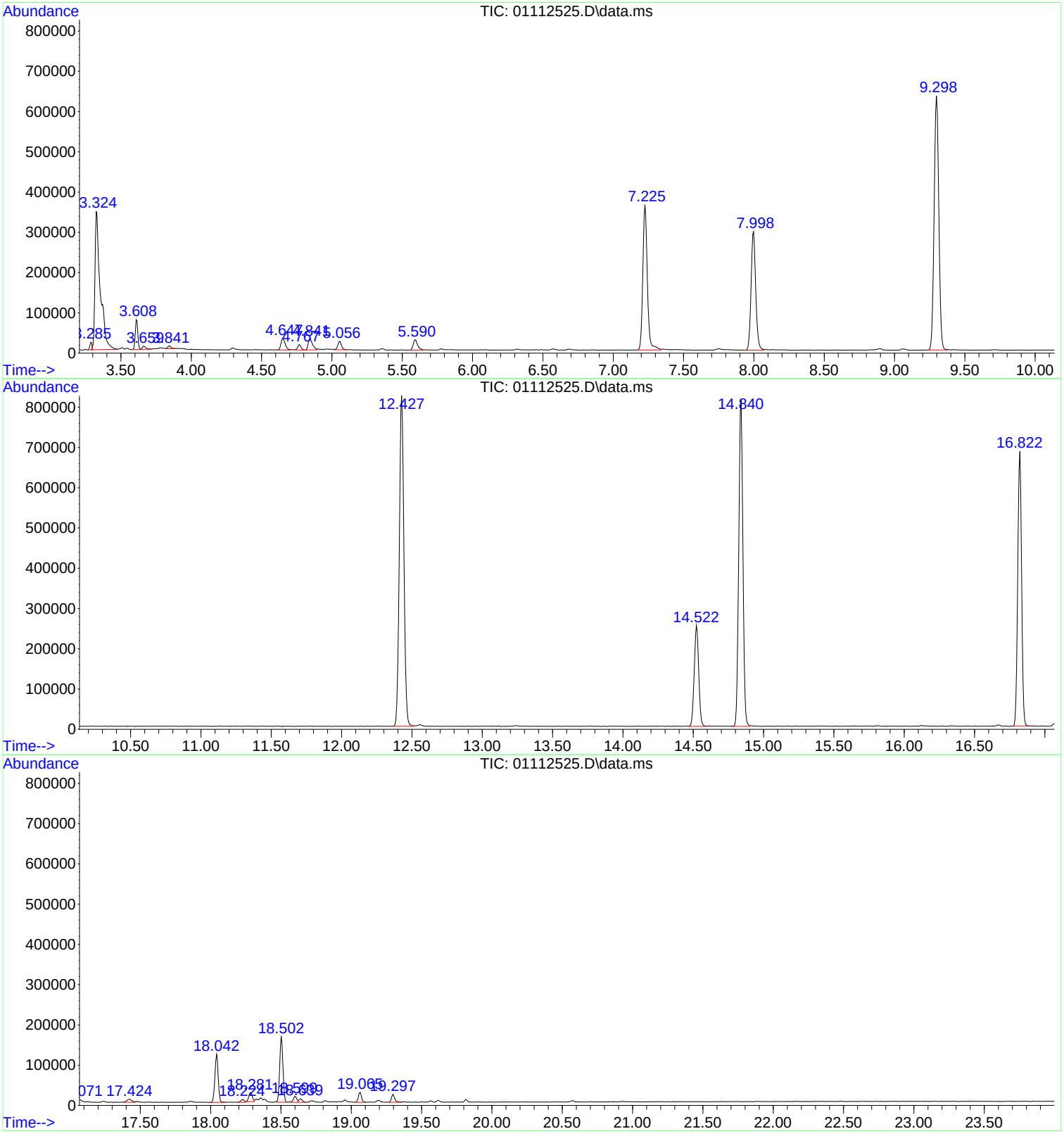
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.285	68	71	73	rBV	18868	20921	1.13%	0.205%
2	3.324	73	78	105	rVB	343566	902015	48.51%	8.834%
3	3.608	123	128	133	rBV	74485	90921	4.89%	0.890%
4	3.659	133	137	147	rVV2	7671	14318	0.77%	0.140%
5	3.841	165	169	178	rBV2	6685	10284	0.55%	0.101%
6	4.647	305	311	321	rBV3	28229	59870	3.22%	0.586%
7	4.767	327	332	339	rBV	13237	21321	1.15%	0.209%
8	4.841	340	345	354	rBV	27643	59269	3.19%	0.580%
9	5.056	376	383	392	rVB	21426	38517	2.07%	0.377%
10	5.590	470	477	487	rBV3	25531	56799	3.05%	0.556%
11	7.225	756	765	785	rBV	361086	806525	43.37%	7.899%
12	7.998	889	901	914	rBV	294098	676992	36.41%	6.631%
13	9.298	1119	1130	1144	rBV	631260	1441959	77.55%	14.123%
14	12.427	1670	1681	1696	rBV	820862	1859484	100.00%	18.212%
15	14.522	2040	2050	2062	rBV	250345	554041	29.80%	5.426%
16	14.840	2094	2106	2117	rBV	811467	1669715	89.79%	16.353%
17	16.822	2446	2455	2467	rBV	682999	1282848	68.99%	12.564%
18	17.071	2493	2499	2506	rBV2	6983	15107	0.81%	0.148%
19	17.424	2553	2561	2569	rBV6	7597	19983	1.07%	0.196%
20	18.042	2663	2670	2681	rVB	119431	191826	10.32%	1.879%
21	18.224	2696	2702	2706	rBV2	7206	11975	0.64%	0.117%
22	18.281	2706	2712	2717	rBV2	22078	39058	2.10%	0.383%
23	18.502	2745	2751	2758	rVB	163690	258894	13.92%	2.536%
24	18.599	2763	2768	2772	rVV3	14782	24803	1.33%	0.243%
25	18.639	2772	2775	2782	rVB2	8506	13257	0.71%	0.130%
26	19.065	2844	2850	2857	rVB	24299	37980	2.04%	0.372%
27	19.297	2886	2891	2902	rVB	19936	31583	1.70%	0.309%

Sum of corrected areas: 10210265

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:54
Operator : LS
Sample : P2405139-062 (400mL)
Misc : S37-12312401
ALS Vial : 11 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\11\\
Data File : 01112525.D
Acq On : 11 Jan 2025 19:544
Operator : LSS
Sample : P2405139-062 (400mL))
Misc : S37-123124011
ALS Vial : 11 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 05:52:25 2025 1/13/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	147377	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	642568	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	120609	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	249255	12.414	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%				
57) Toluene-d8 (SS2)	12.43	98	675274	12.621	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%				
73) Bromofluorobenzene (SS3)	16.82	174	241591	13.085	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
Target Compounds							Qvalue
2) Propene	3.33	42	303	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	3.55	50	259	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	6734	0.618	ng		97
11) Acetonitrile	4.47	41	135	N.D.			
12) Acrolein	4.55	56	170	N.D.			
13) Acetone	4.65	58	10230	1.031	ng		94
14) Trichlorofluoromethane	4.78	101	1505	0.056	ng		94
15) 2-Propanol (Isopropanol)	4.86	45	5643	0.159	ng		77
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.36	59	67	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.60	151	4132	0.339	ng		98
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	1021	0.128	ng	#	51
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.85	56	1311	No Calib			
41) Benzene	8.90	78	1084	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	3711	0.253	ng		93
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 05:52:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

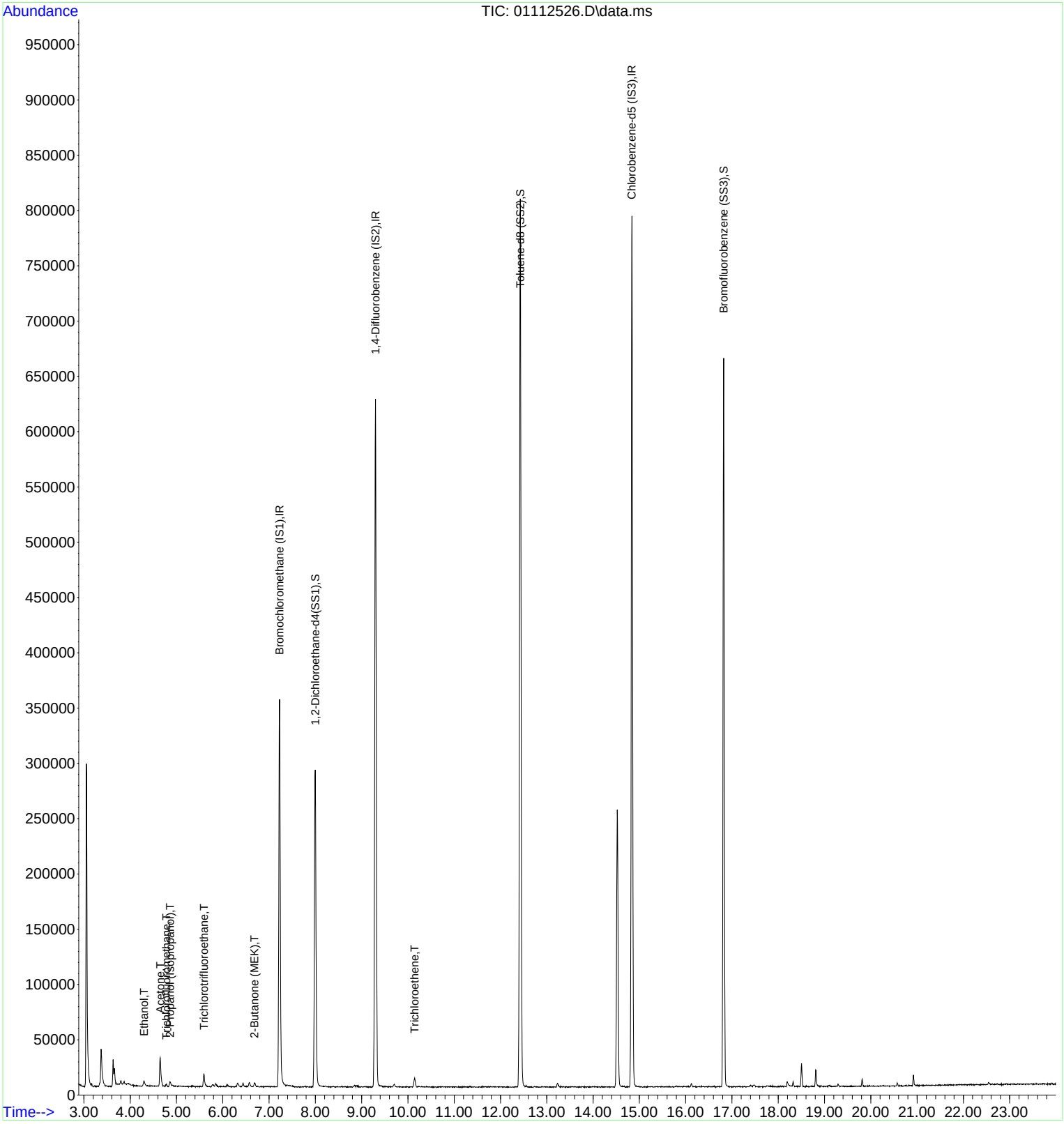
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	637	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.55	91	827	N.D.		
59) 2-Hexanone	12.94	43	306	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.68	91	121	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	437	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	266	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.94	128	302	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.51	119	410	N.D.		
100) n-Butylbenzene	19.39	91	130	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 05:52:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

MOA 1/13/25

Quant Time: Jan 13 05:52:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

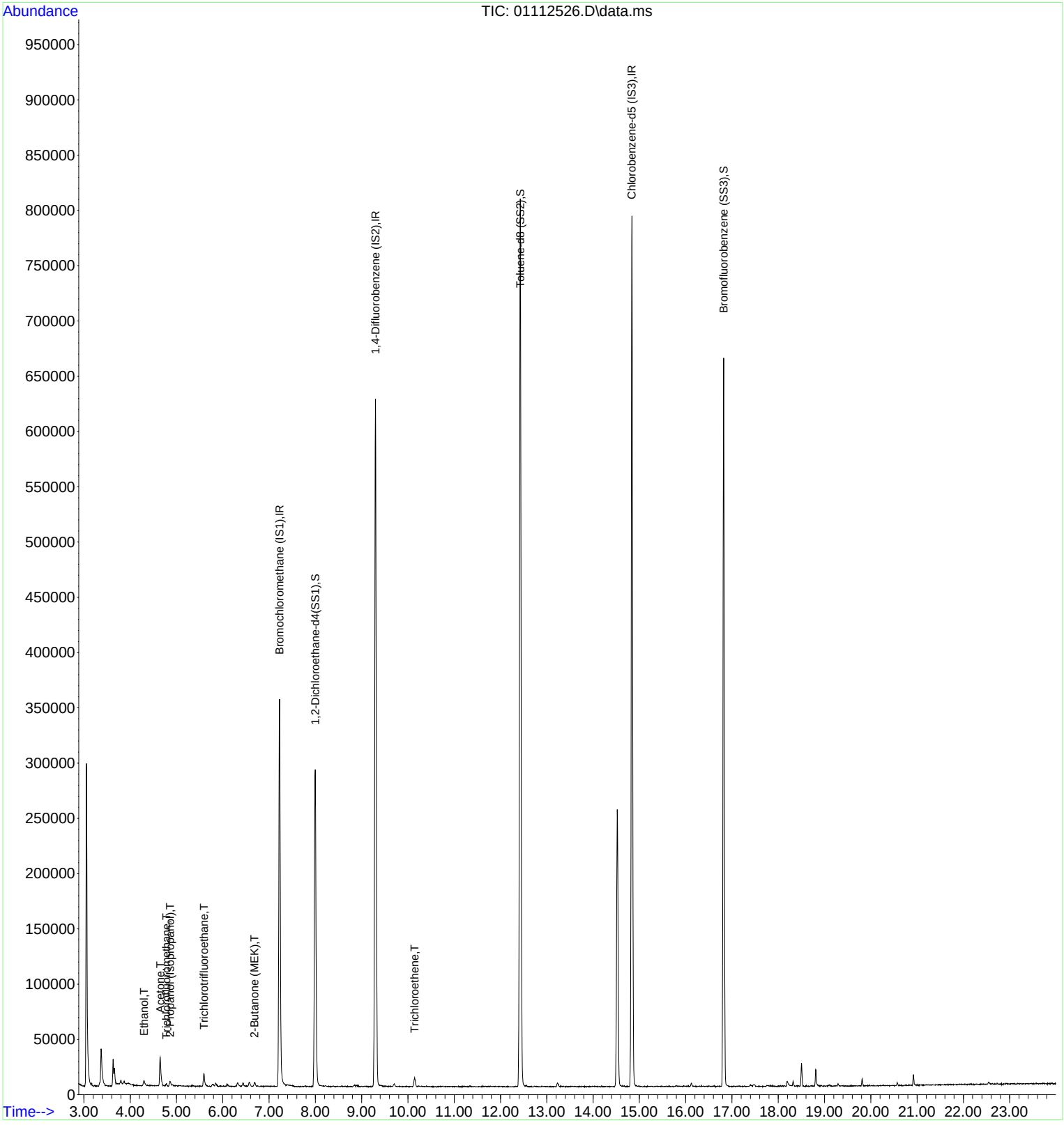
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	147377	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	642568	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.83	54	120609	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	249255	12.414	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%				
57) Toluene-d8 (SS2)	12.43	98	675274	12.621	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%				
73) Bromofluorobenzene (SS3)	16.82	174	241591	13.085	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
Target Compounds							Qvalue
10) Ethanol	4.30	45	6734	0.618	ng		97
13) Acetone	4.65	58	10230	1.031	ng		94
14) Trichlorofluoromethane	4.78	101	1505	0.056	ng		94
15) 2-Propanol (Isopropanol)	4.86	45	5643	0.159	ng		77
21) Trichlorotrifluoroethane	5.60	151	4132	0.339	ng		98
27) 2-Butanone (MEK)	6.69	72	1021	0.128	ng	#	51
47) Trichloroethene	10.14	130	3711	0.253	ng		93

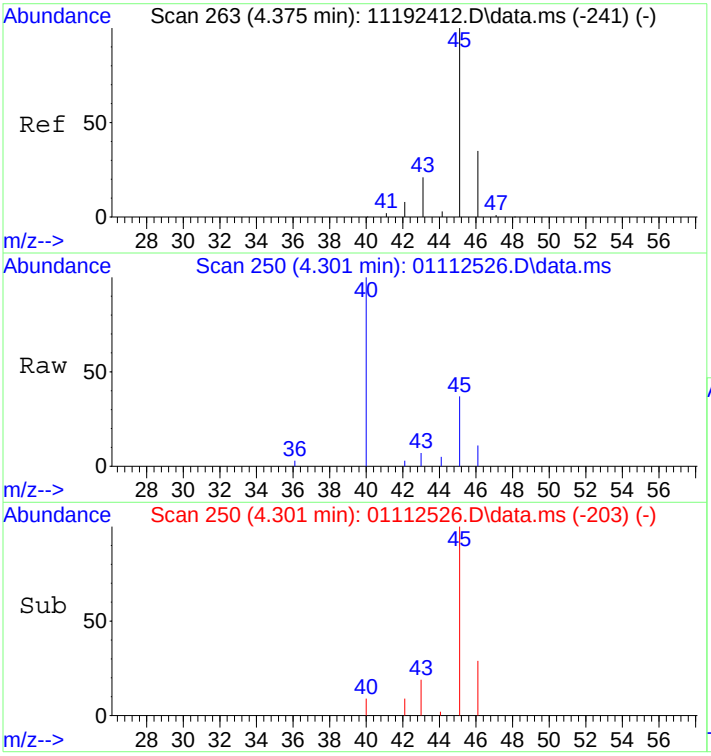
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 05:52:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

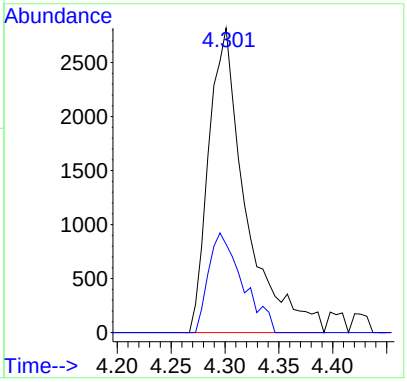


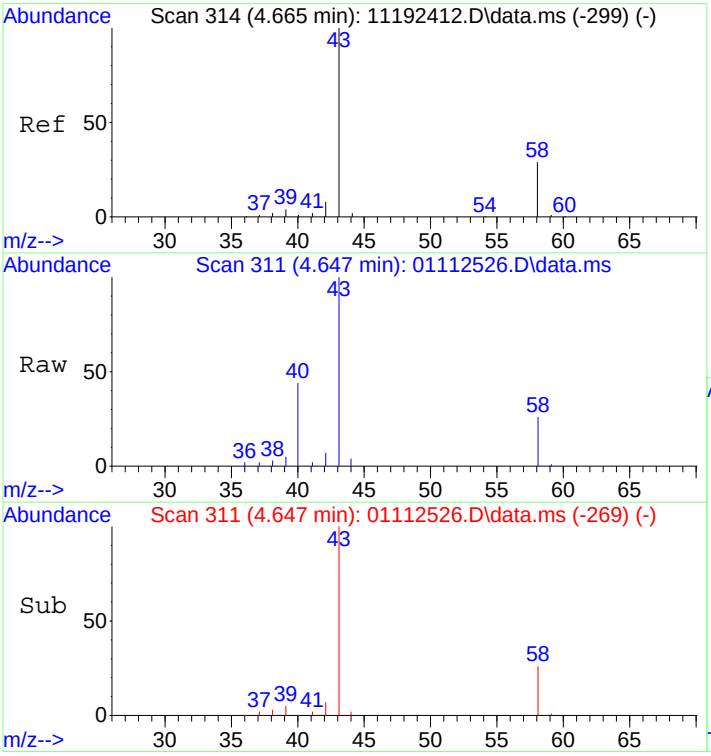


#10
Ethanol
Concen: 0.62 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01112526.D
Acq: 11 Jan 2025 20:26

Tgt Ion: 45 Resp: 6734

Ion	Ratio	Lower	Upper
45	100		
46	30.1	11.8	51.8

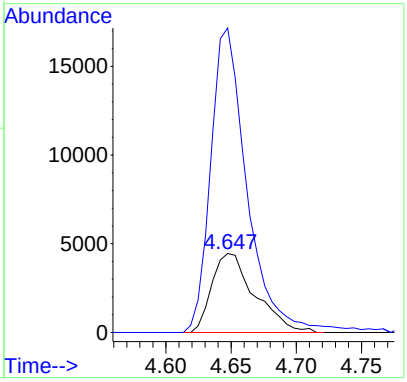


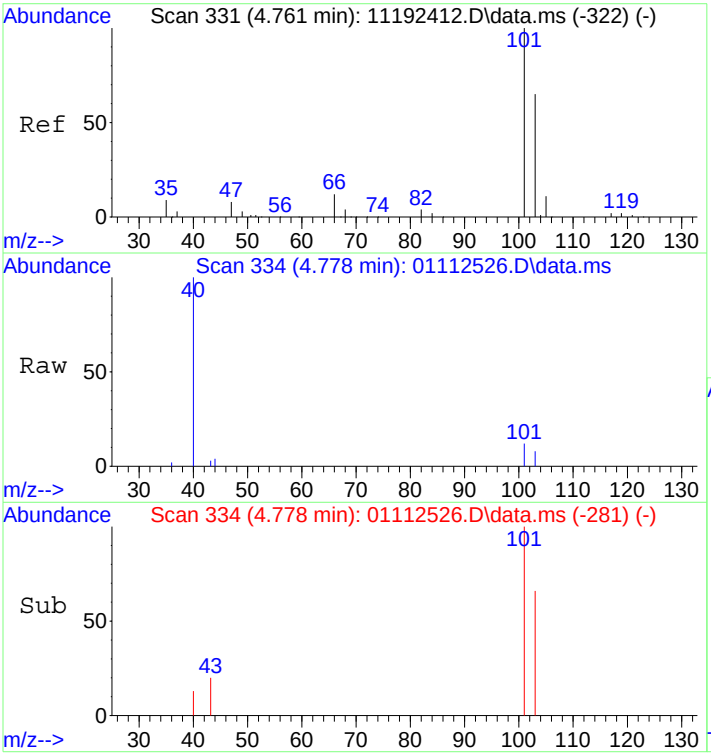


#13
Acetone
Concen: 1.03 ng
RT: 4.65 min Scan# 311
Delta R.T. -0.013 min
Lab File: 01112526.D
Acq: 11 Jan 2025 20:26

Tgt Ion: 58 Resp: 10230

Ion	Ratio	Lower	Upper
58	100		
43	329.5	312.5	372.5

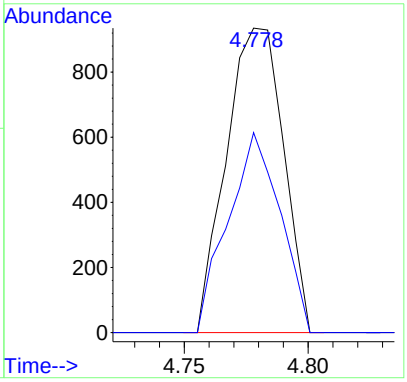


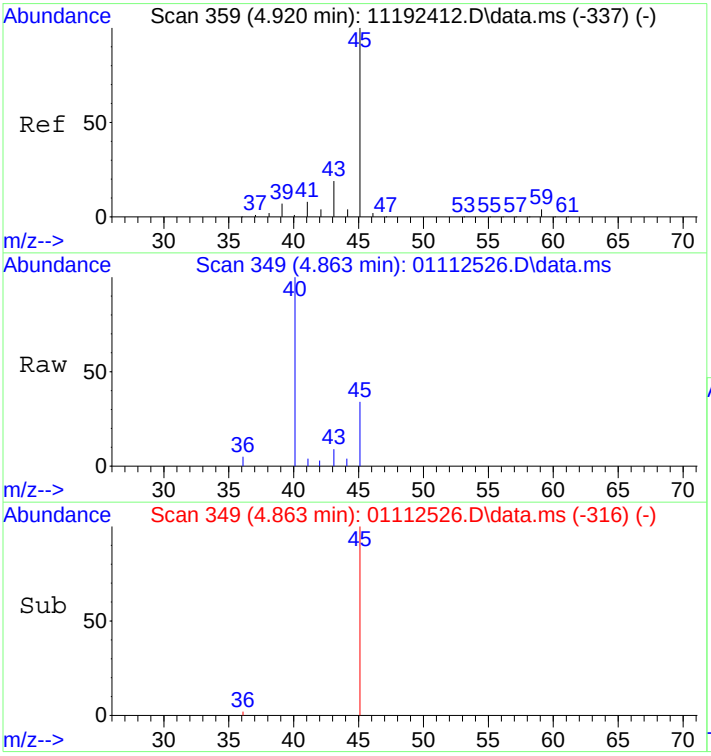


#14
Trichlorofluoromethane
Concen: 0.06 ng
RT: 4.78 min Scan# 334
Delta R.T. 0.050 min
Lab File: 01112526.D
Acq: 11 Jan 2025 20:26

Tgt Ion:101 Resp: 1505

Ion	Ratio	Lower	Upper
101	100		
103	59.8	44.8	84.8

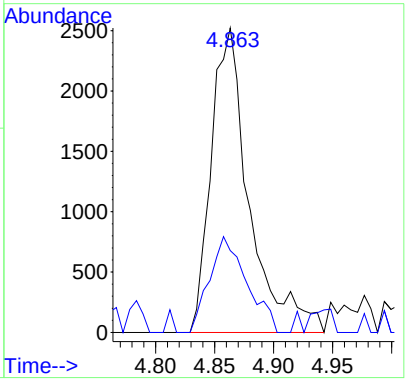


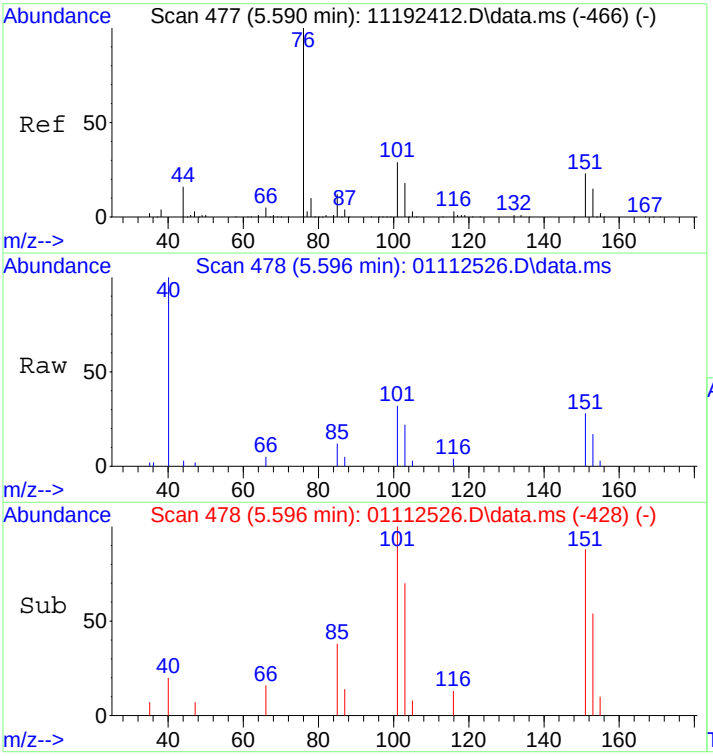


#15
2-Propanol (Isopropanol)
Concen: 0.16 ng
RT: 4.86 min Scan# 349
Delta R.T. -0.061 min
Lab File: 01112526.D
Acq: 11 Jan 2025 20:26

Tgt Ion: 45 Resp: 5643

Ion	Ratio	Lower	Upper
45	100		
43	31.0	0.2	40.2

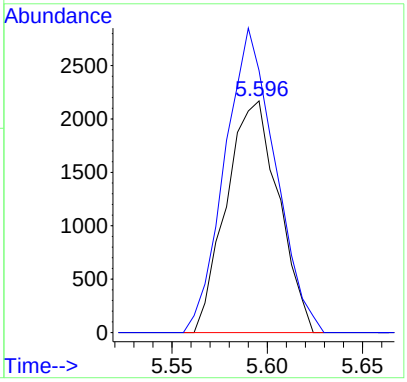


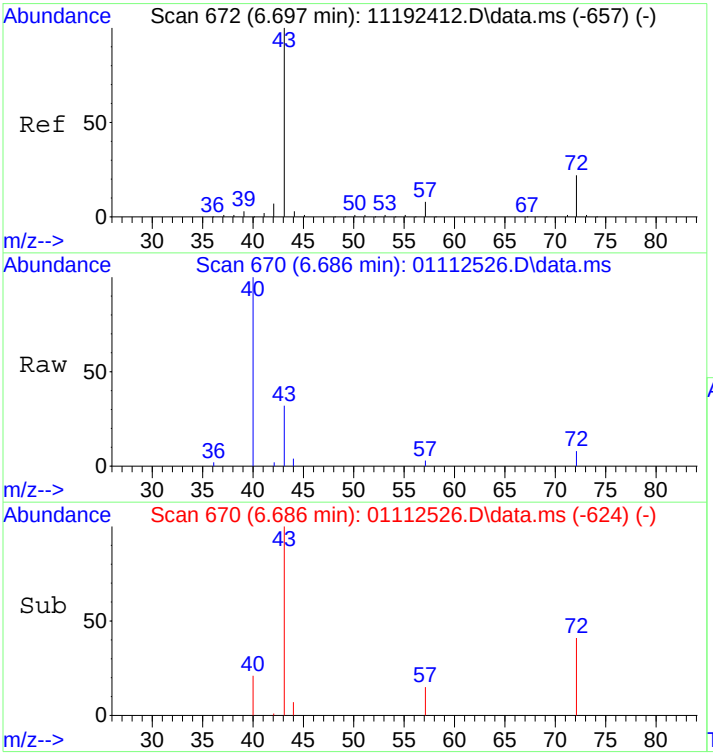


#21
Trichlorotrifluoroethane
Concen: 0.34 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.035 min
Lab File: 01112526.D
Acq: 11 Jan 2025 20:26

Tgt Ion:151 Resp: 4132

Ion	Ratio	Lower	Upper
151	100		
101	126.9	105.0	145.0

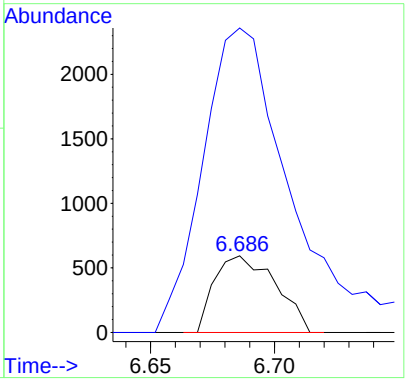


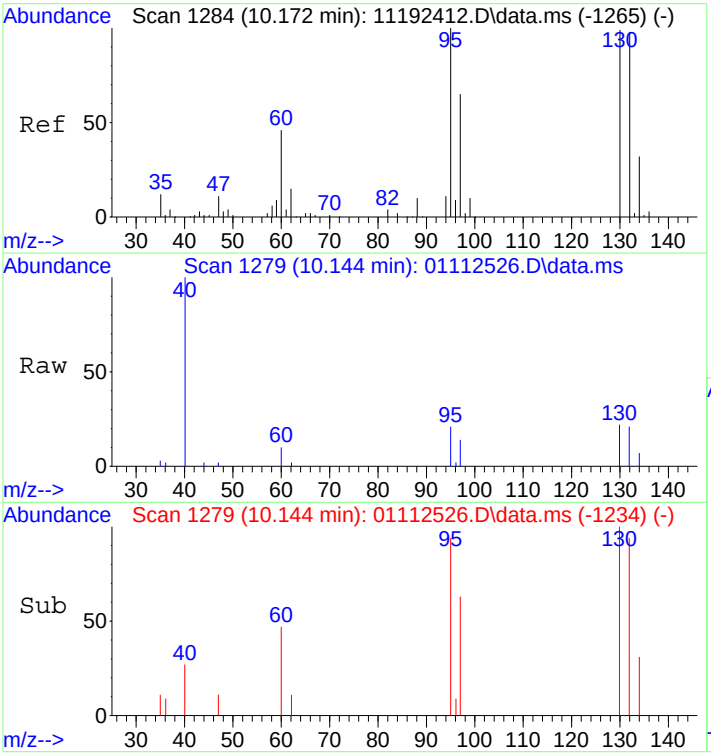


#27
2-Butanone (MEK)
Concen: 0.13 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01112526.D
Acq: 11 Jan 2025 20:26

Tgt Ion: 72 Resp: 1021

Ion	Ratio	Lower	Upper
72	100		
43	588.0	439.8	479.8#

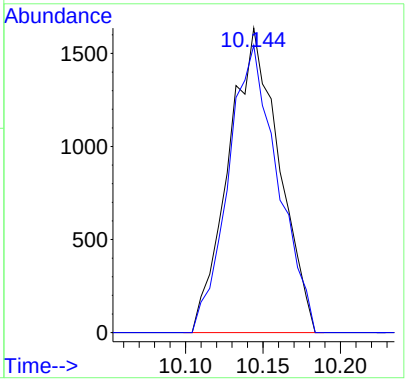




#47
Trichloroethene
Concen: 0.25 ng
RT: 10.14 min Scan# 1279
Delta R.T. 0.004 min
Lab File: 01112526.D
Acq: 11 Jan 2025 20:26

Tgt Ion:130 Resp: 3711

Ion	Ratio	Lower	Upper
130	100		
132	92.2	79.3	119.3



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 10:40:35 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

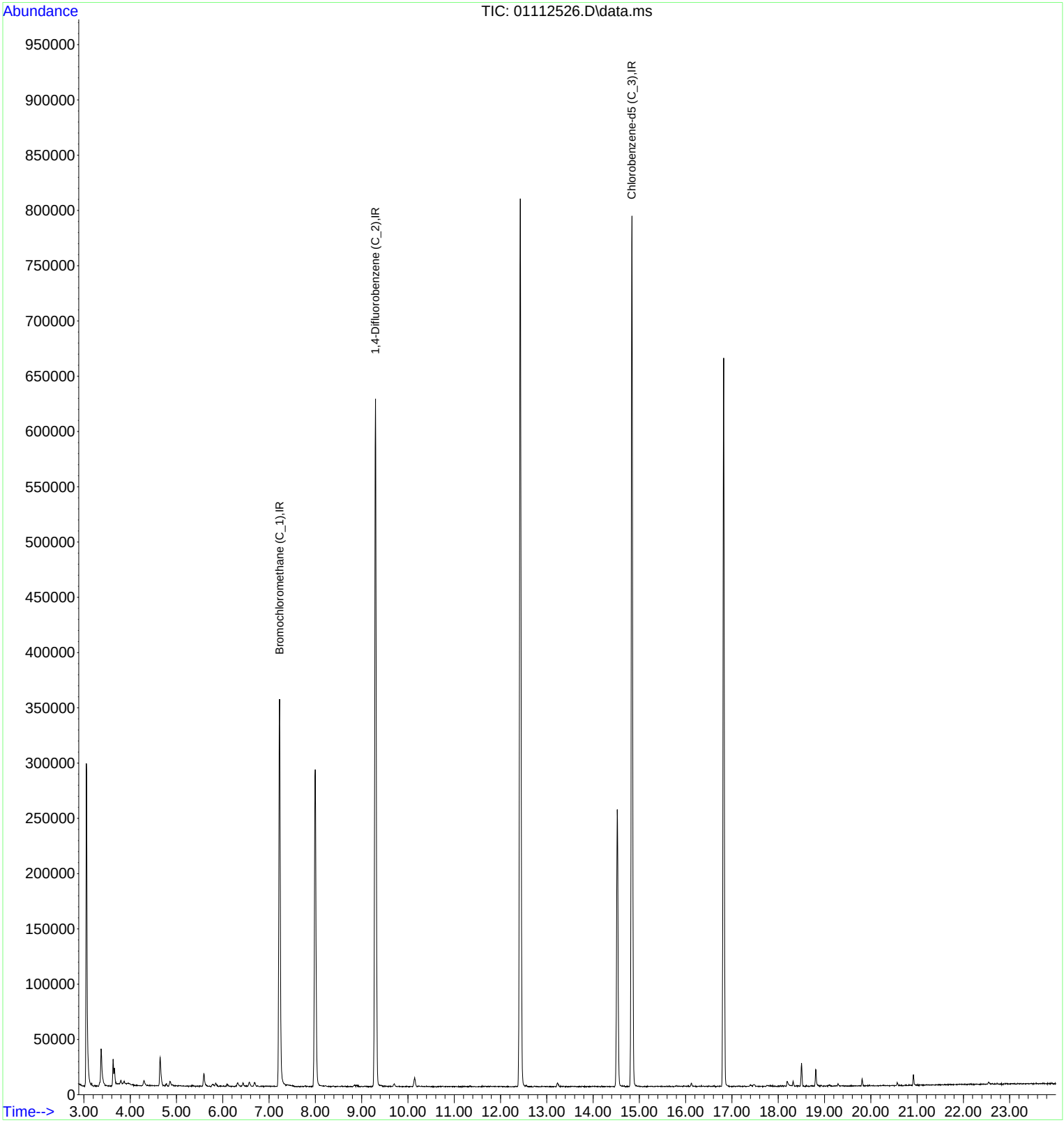
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	149466	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	643382	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.83	54	120609	12.500	ng	-0.01
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	3.28	65	254	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	0.00	67	0	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.68	57	834	N.D.		
11) Methyl Acetate	5.35	43	178	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	17.68	91	121	N.D.		
27) 4-Chlorotoluene	17.68	91	121	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 13 10:40:35 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112526.D\data.ms

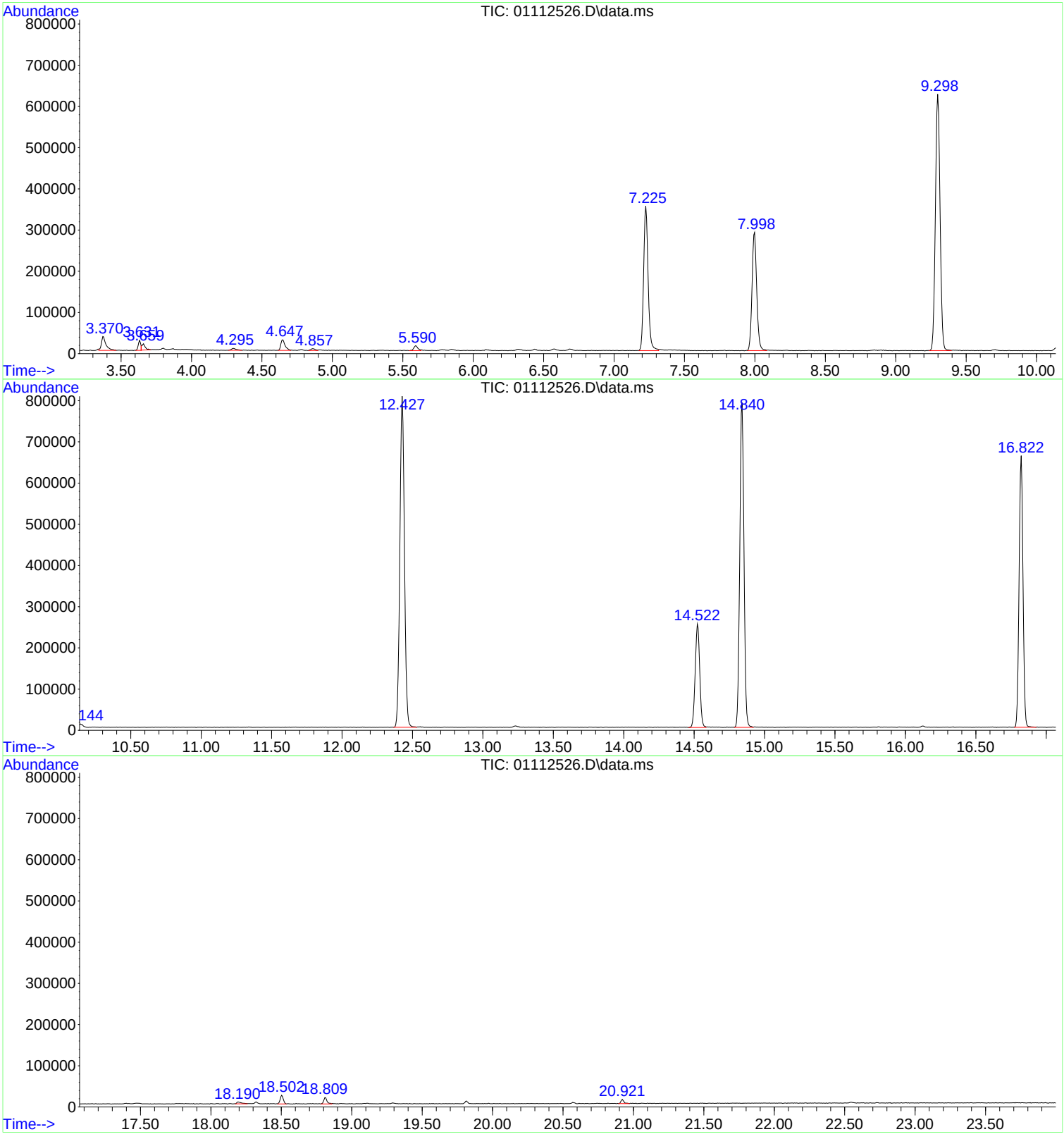
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.370	81	86	103	rVB	33510	73412	4.04%	0.869%
2	3.631	127	132	134	rBV	24180	29713	1.63%	0.352%
3	3.659	134	137	146	rVB	15005	23398	1.29%	0.277%
4	4.295	243	249	260	rVB3	4845	11611	0.64%	0.137%
5	4.647	305	311	321	rBV	25677	52593	2.89%	0.623%
6	4.857	343	348	355	rBV4	4483	10172	0.56%	0.120%
7	5.590	469	477	484	rBV3	11764	24409	1.34%	0.289%
8	7.225	756	765	781	rBV	350489	776500	42.69%	9.193%
9	7.998	892	901	916	rBV	286779	662041	36.40%	7.838%
10	9.298	1119	1130	1147	rBV	622353	1418825	78.01%	16.797%
11	10.144	1271	1279	1288	rBV3	8354	18962	1.04%	0.224%
12	12.427	1670	1681	1699	rBV	803394	1818831	100.00%	21.532%
13	14.522	2039	2050	2061	rBV	251151	559080	30.74%	6.619%
14	14.840	2096	2106	2120	rBV	787826	1629749	89.60%	19.294%
15	16.822	2446	2455	2474	rVB	659183	1254021	68.95%	14.846%
16	18.190	2693	2696	2708	rBV2	4481	10931	0.60%	0.129%
17	18.502	2746	2751	2757	rVB3	20943	31768	1.75%	0.376%
18	18.809	2800	2805	2814	rBV2	15356	25435	1.40%	0.301%
19	20.921	3172	3177	3186	rBV4	10216	15464	0.85%	0.183%

Sum of corrected areas: 8446915

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:26
Operator : LS
Sample : P2405139-063 (400mL)
Misc : S37-12312401
ALS Vial : 12 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\11\\
Data File : 01112526.D
Acq On : 11 Jan 2025 20:266
Operator : LSS
Sample : P2405139-063 (400mL))
Misc : S37-123124011
ALS Vial : 12 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

VOA 1/13/25

Quant Time: Jan 13 05:55:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	148787	12.500 ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	643622	12.500 ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	121356	12.500 ng		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	253211	12.491 ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.92%			
57) Toluene-d8 (SS2)	12.43	98	677609	12.587 ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%			
73) Bromofluorobenzene (SS3)	16.82	174	245984	13.240 ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.92%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.38	85	16328	0.561 ng		97
4) Chloromethane	3.52	50	3027	0.140 ng		92
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	385	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	4.01	94	536	0.051 ng		97
9) Chloroethane	4.15	64	418	N.D.		
10) Ethanol	4.30	45	8313	0.755 ng		99
11) Acetonitrile	0.00	41	0	N.D. d		
12) Acrolein	4.54	56	4833	0.514 ng		99
13) Acetone	4.63	58	74257	7.412 ng	#	82
14) Trichlorofluoromethane	4.75	101	1469655	53.880 ng		100
15) 2-Propanol (Isopropanol)	4.85	45	11735	0.327 ng		98
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d		
19) Methylene Chloride	5.36	84	376	N.D.		
20) 3-Chloro-1-propene (Al...	5.38	41	244	N.D.		
21) Trichlorotrifluoroethane	5.57	151	671338	54.552 ng		97
22) Carbon Disulfide	5.60	76	13447	0.297 ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	6.43	86	4860	2.004 ng	#	44
27) 2-Butanone (MEK)	6.66	72	14681	1.824 ng	#	89
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	7.30	61	340	0.068 ng	#	53
31) n-Hexane	7.30	57	2459	0.110 ng	#	73
32) Chloroform	7.36	83	8157	0.337 ng		98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D. d		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.81	56	5235	No Calib	#	
41) Benzene	8.89	78	4168	0.081 ng		97
42) Carbon Tetrachloride	9.05	117	450	N.D.		
43) Cyclohexane	9.22	84	200	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.06	83	195	N.D.		
47) Trichloroethene	10.14	130	442	N.D.		
48) 1,4-Dioxane	10.14	88	128	N.D.		

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

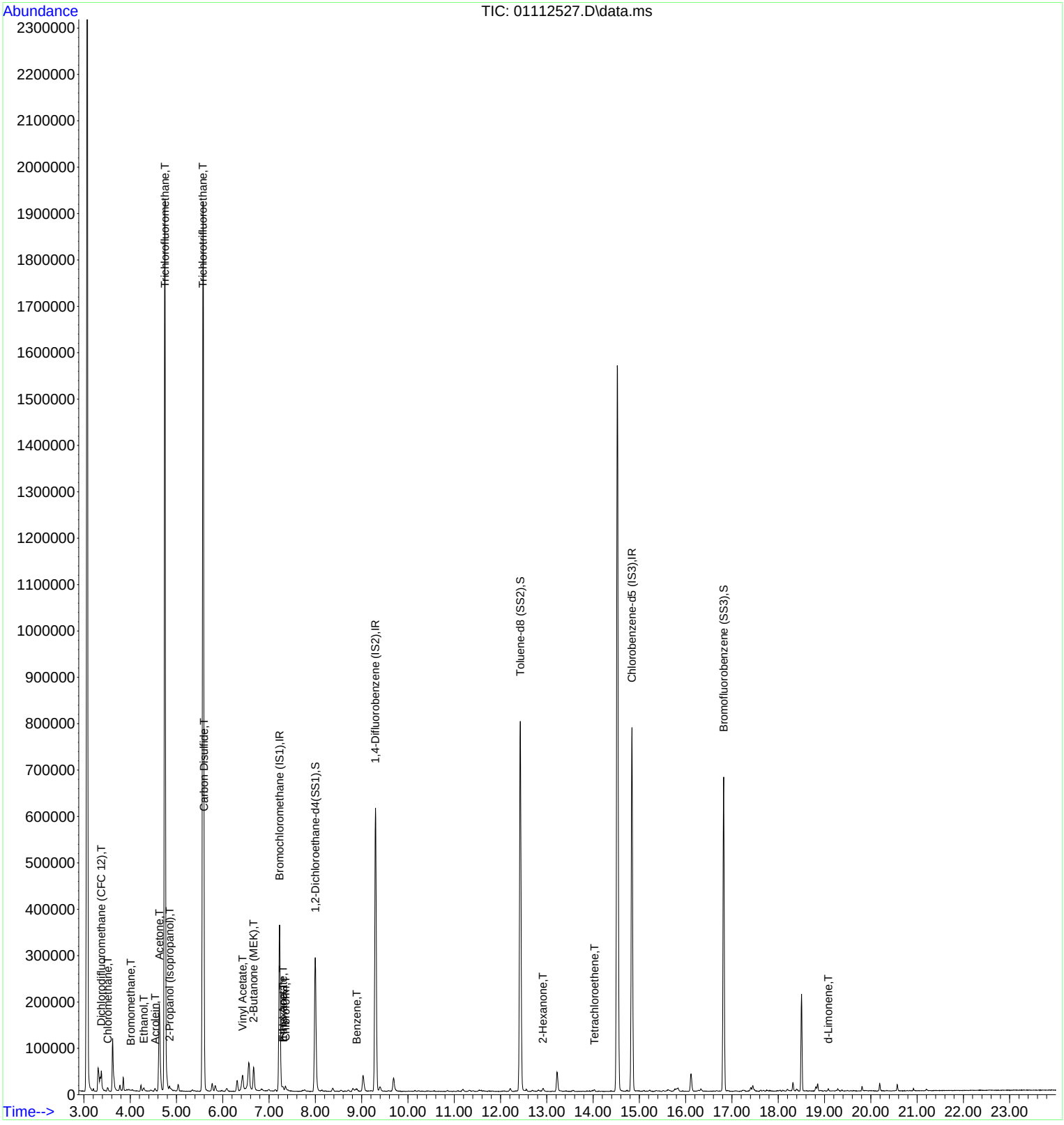
Quant Time: Jan 13 05:55:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	10.24	57	1188	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D. d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	2414	N.D.	
59) 2-Hexanone	12.92	43	6911	0.274 ng	86
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.78	43	404	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.03	166	1217	0.079 ng	99
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	465	N.D.	
67) m- & p-Xylenes	15.64	91	983	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.10	104	619	N.D.	
70) o-Xylene	16.24	91	323	N.D.	
71) n-Nonane	16.61	43	812	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	17.53	93	145	N.D.	
76) n-Propylbenzene	17.68	91	697	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	286	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.55	91	137	N.D.	
85) 1,3-Dichlorobenzene	18.50	146	147	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.74	105	110	N.D.	
88) 4-Isopropyltoluene (p-...	18.92	119	937	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.08	68	971	0.063 ng	91
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	174	N.D.	
95) Naphthalene	20.94	128	303	N.D.	
96) n-Dodecane	18.85	58	176	No Calib #	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.21	55	980	No Calib #	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	19.38	91	561	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 13 05:55:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

NOA 1/13/25

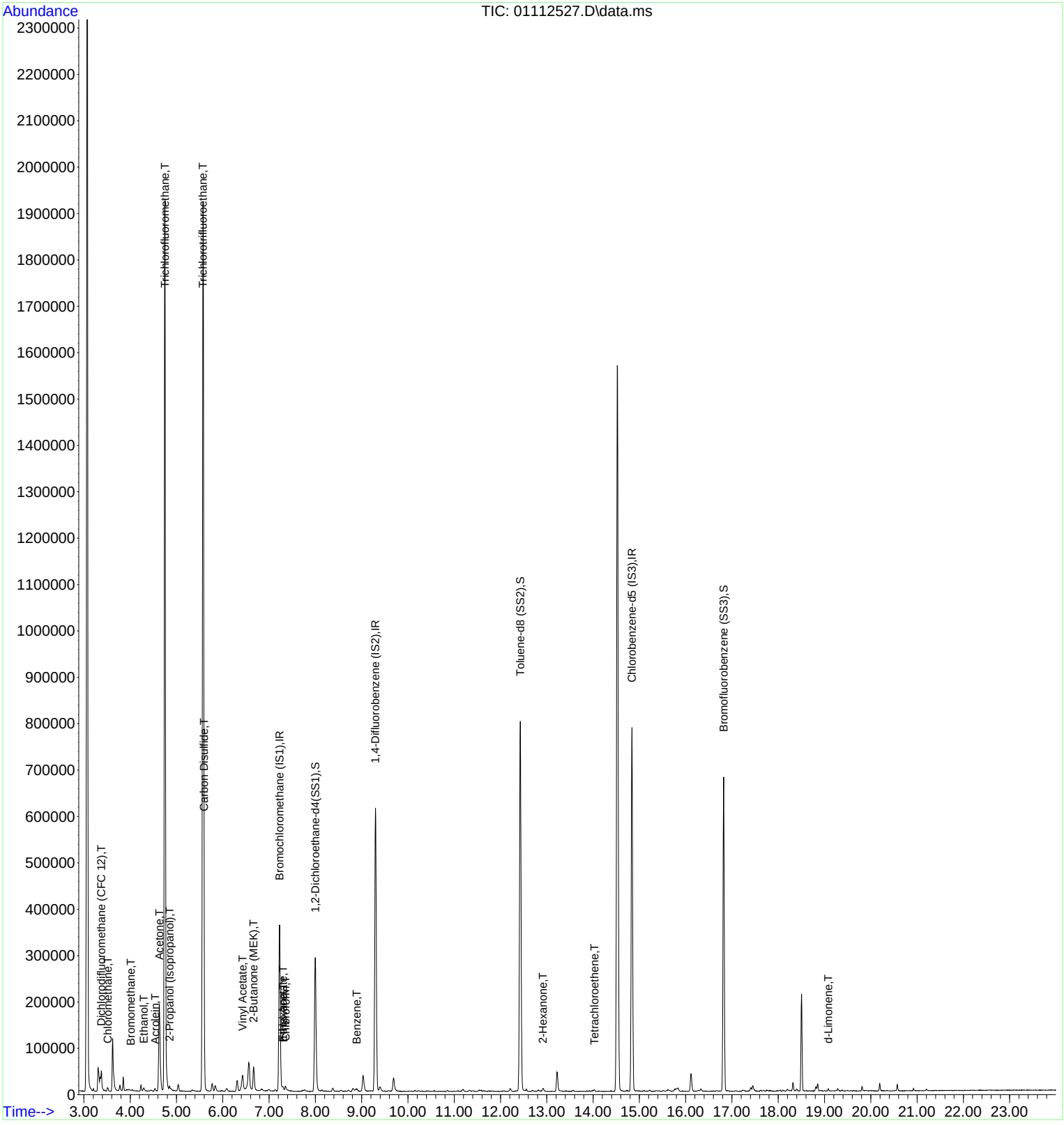
Quant Time: Jan 13 05:55:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

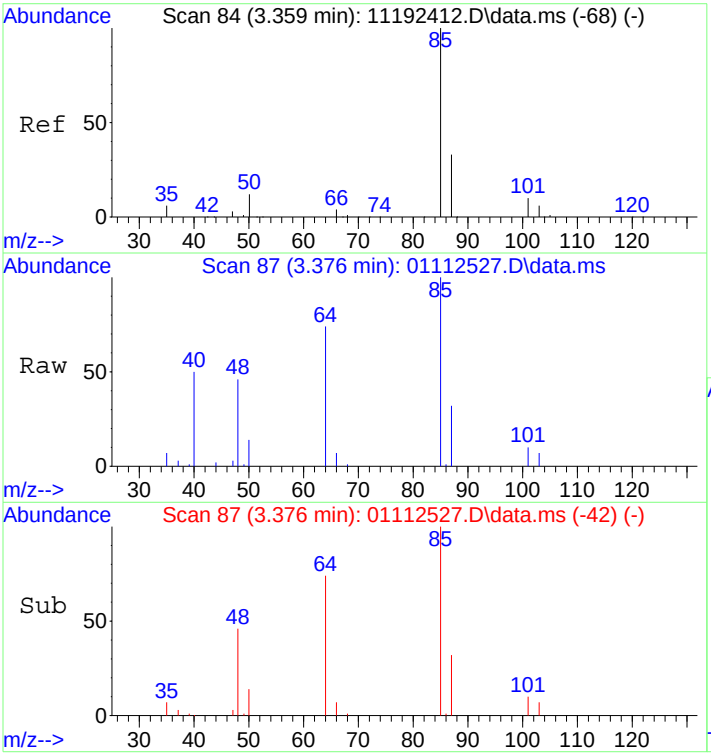
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	148787	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	643622	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	121356	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	253211	12.491	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.92%				
57) Toluene-d8 (SS2)	12.43	98	677609	12.587	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%				
73) Bromofluorobenzene (SS3)	16.82	174	245984	13.240	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.92%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.38	85	16328	0.561	ng		97
4) Chloromethane	3.52	50	3027	0.140	ng		92
8) Bromomethane	4.01	94	536	0.051	ng		97
10) Ethanol	4.30	45	8313	0.755	ng		99
12) Acrolein	4.54	56	4833	0.514	ng		99
13) Acetone	4.63	58	74257	7.412	ng	#	82
14) Trichlorofluoromethane	4.75	101	1469655	53.880	ng		100
15) 2-Propanol (Isopropanol)	4.85	45	11735	0.327	ng		98
21) Trichlorotrifluoroethane	5.57	151	671338	54.552	ng		97
22) Carbon Disulfide	5.60	76	13447	0.297	ng	#	1
26) Vinyl Acetate	6.43	86	4860	2.004	ng	#	44
27) 2-Butanone (MEK)	6.66	72	14681	1.824	ng	#	89
30) Ethyl Acetate	7.30	61	340	0.068	ng	#	53
31) n-Hexane	7.30	57	2459	0.110	ng	#	73
32) Chloroform	7.36	83	8157	0.337	ng		98
41) Benzene	8.89	78	4168	0.081	ng		97
59) 2-Hexanone	12.92	43	6911	0.274	ng		86
64) Tetrachloroethene	14.03	166	1217	0.079	ng		99
91) d-Limonene	19.08	68	971	0.063	ng		91

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 13 05:55:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

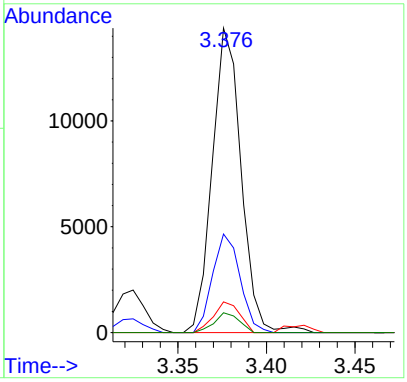


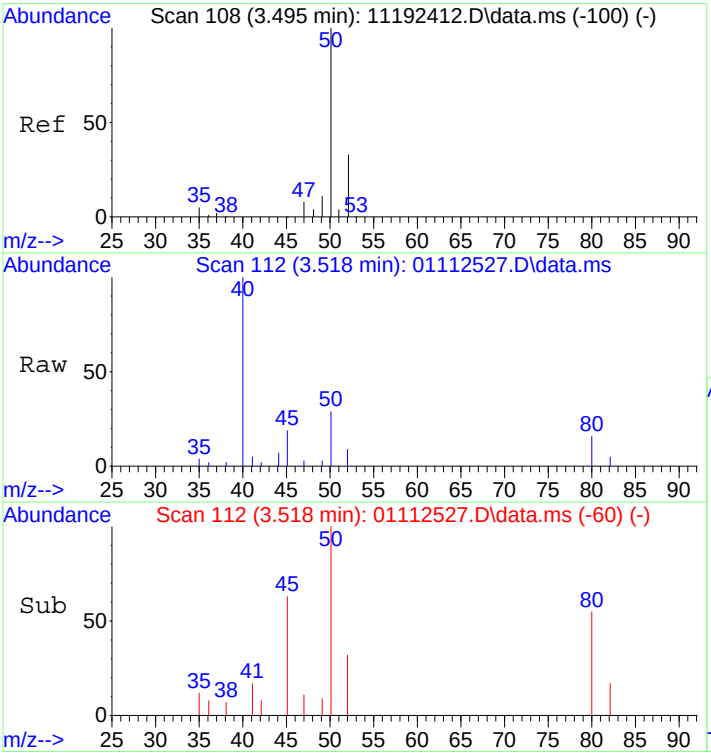


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.56 ng
RT: 3.38 min Scan# 87
Delta R.T. 0.004 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 85 Resp: 16328

Ion	Ratio	Lower	Upper
85	100		
87	30.8	12.6	52.6
101	9.1	0.0	29.6
103	5.6	0.0	26.2

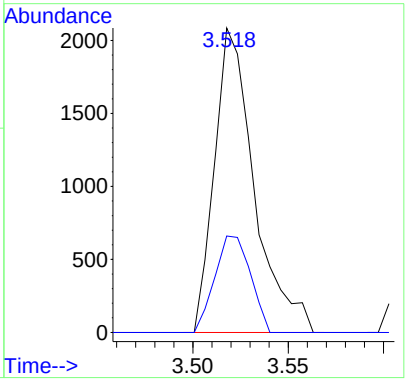


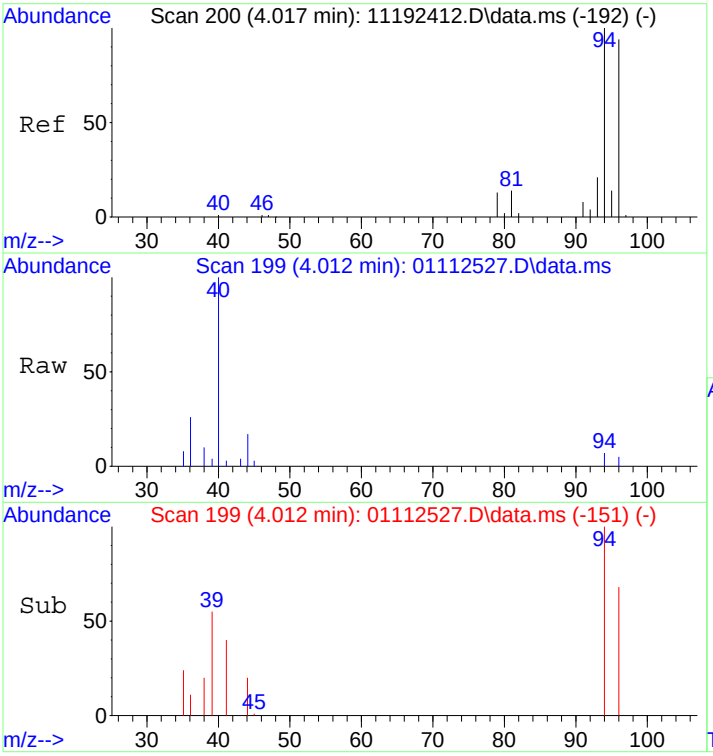


#4
Chloromethane
Concen: 0.14 ng
RT: 3.52 min Scan# 112
Delta R.T. 0.044 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 50 Resp: 3027

Ion	Ratio	Lower	Upper
50	100		
52	28.4	13.0	53.0

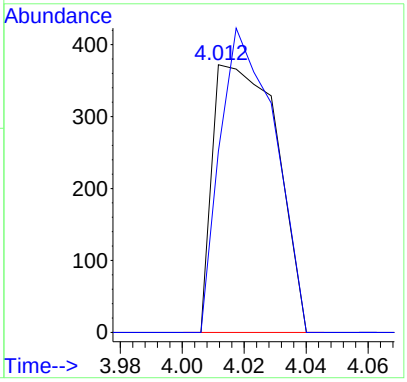


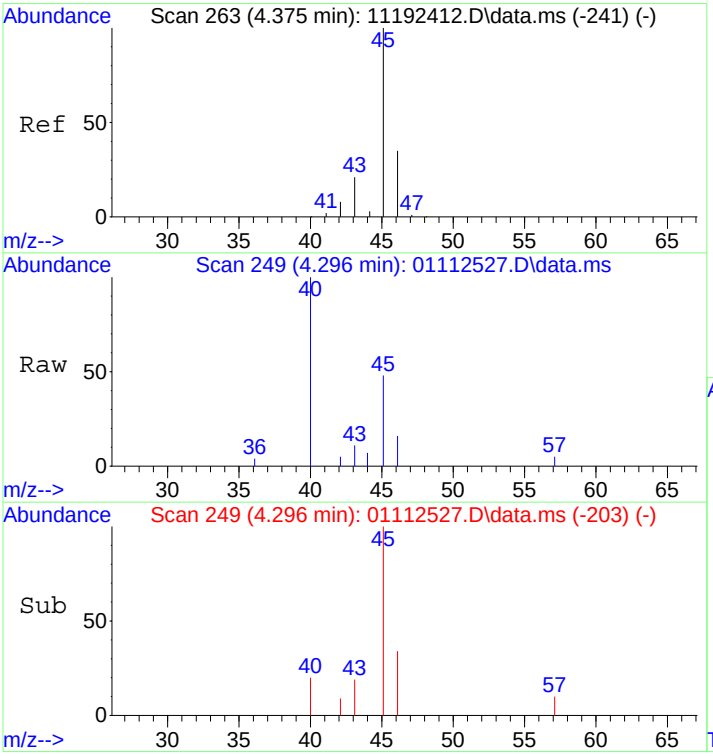


#8
Bromomethane
Concen: 0.05 ng
RT: 4.01 min Scan# 199
Delta R.T. 0.021 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 94 Resp: 536

Ion	Ratio	Lower	Upper
94	100		
96	96.6	73.5	113.5

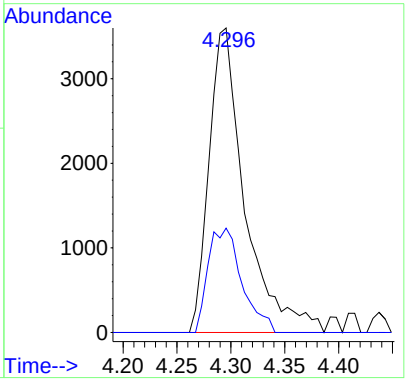


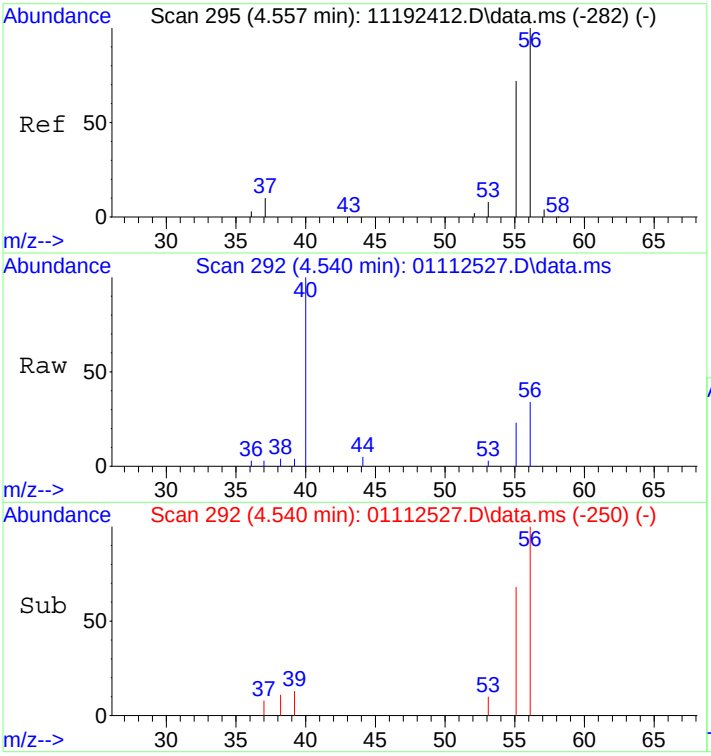


#10
Ethanol
Concen: 0.76 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.011 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 45 Resp: 8313

Ion	Ratio	Lower	Upper
45	100		
46	32.3	11.8	51.8

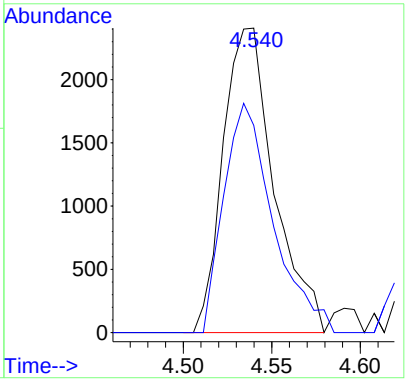


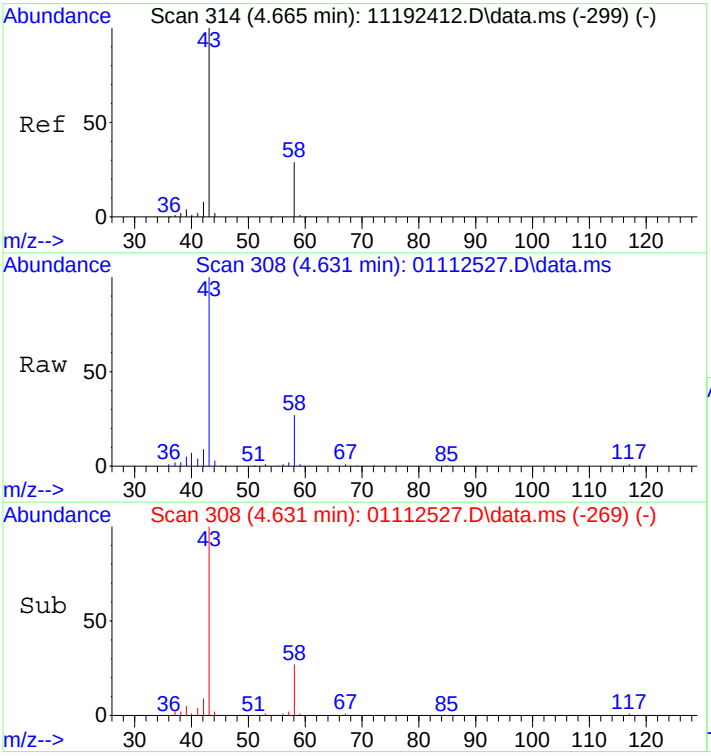


#12
Acrolein
Concen: 0.51 ng
RT: 4.54 min Scan# 292
Delta R.T. -0.014 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 56 Resp: 4833

Ion	Ratio	Lower	Upper
56	100		
55	72.6	53.1	93.1

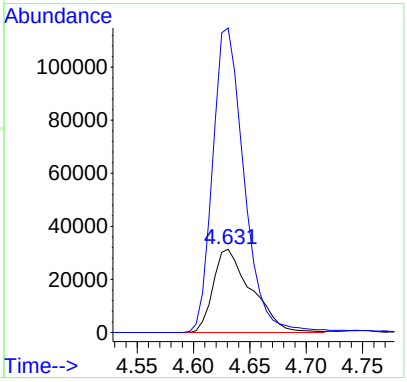


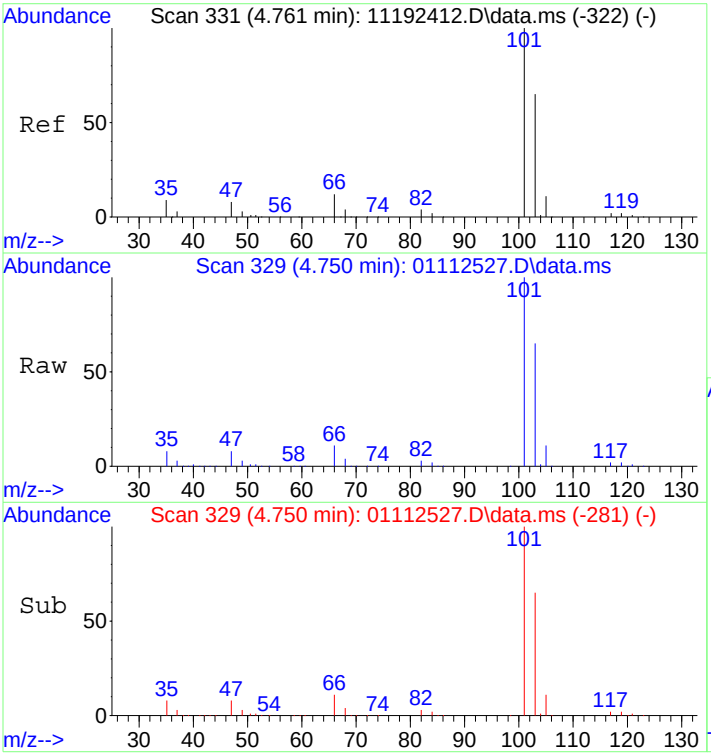


#13
Acetone
Concen: 7.41 ng
RT: 4.63 min Scan# 308
Delta R.T. -0.030 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 58 Resp: 74257

Ion	Ratio	Lower	Upper
58	100		
43	304.2	312.5	372.5#

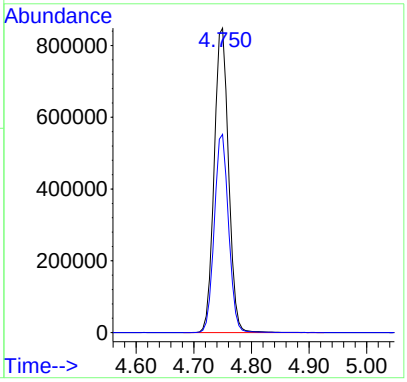


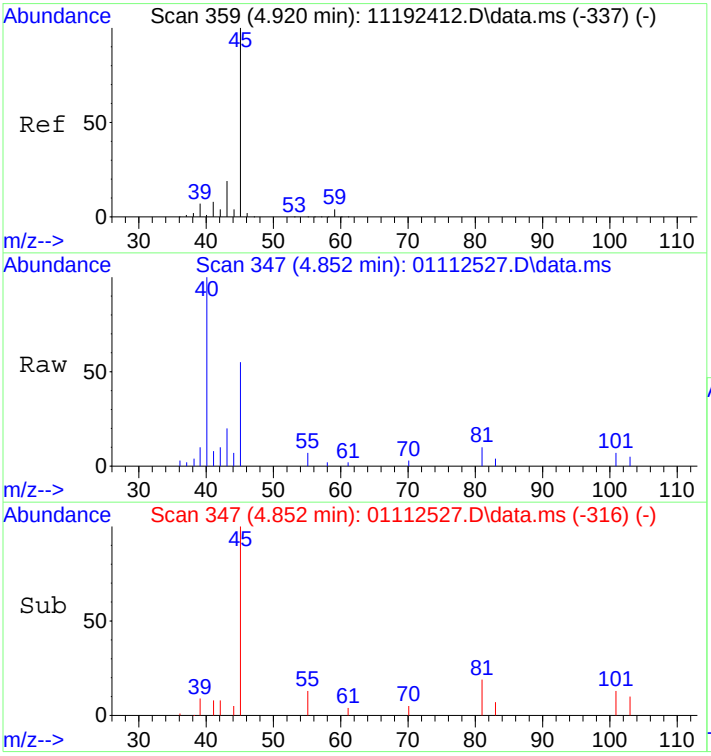


#14
Trichlorofluoromethane
Concen: 53.88 ng
RT: 4.75 min Scan# 329
Delta R.T. 0.022 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion:101 Resp: 1469655

Ion	Ratio	Lower	Upper
101	100		
103	64.6	44.8	84.8

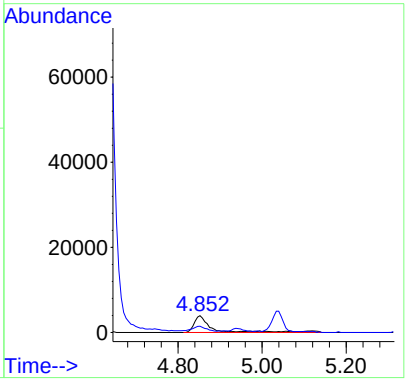


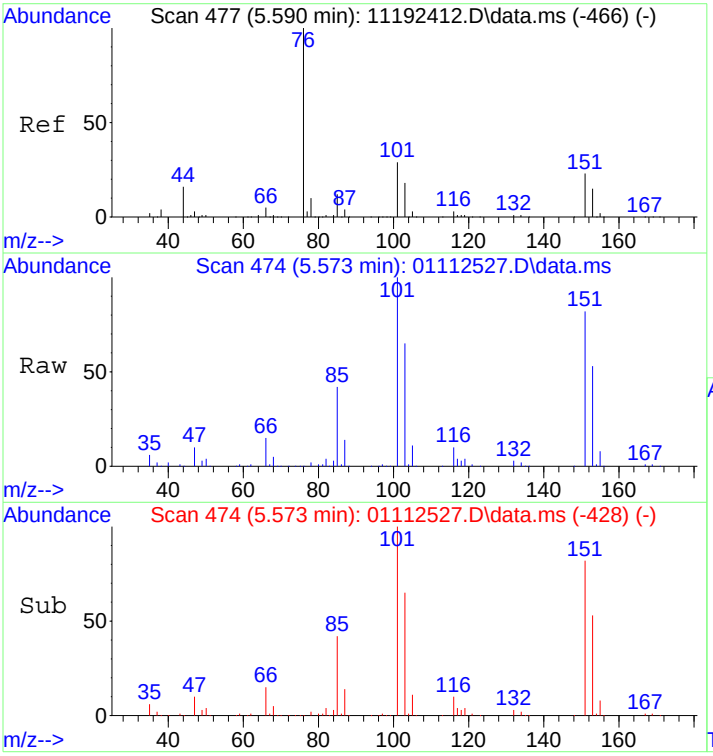


#15
2-Propanol (Isopropanol)
Concen: 0.33 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 45 Resp: 11735

Ion	Ratio	Lower	Upper
45	100		
43	21.2	0.2	40.2

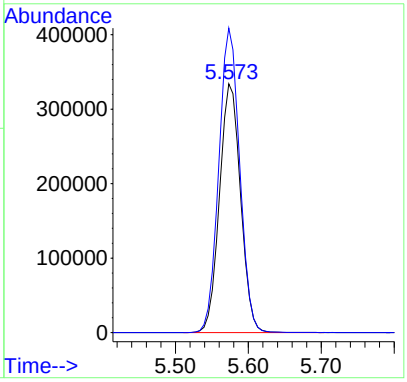


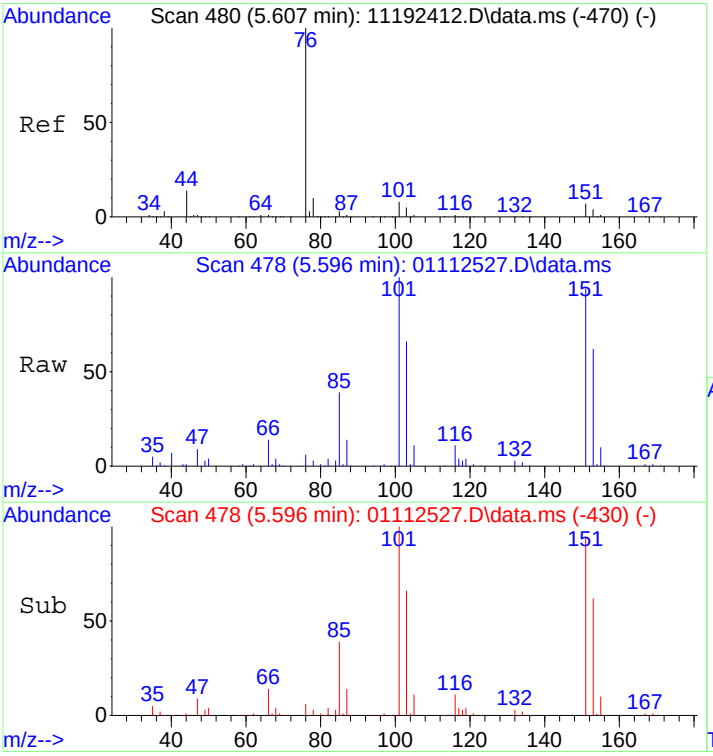


#21
Trichlorotrifluoroethane
Concen: 54.55 ng
RT: 5.57 min Scan# 474
Delta R.T. 0.013 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion:151 Resp: 671338

Ion	Ratio	Lower	Upper
151	100		
101	121.1	105.0	145.0

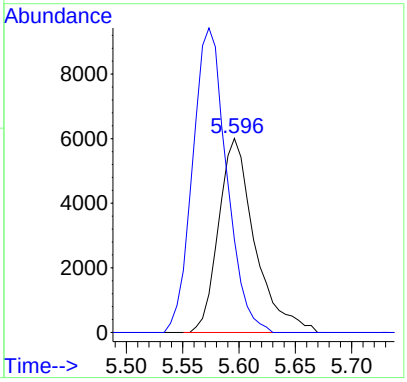


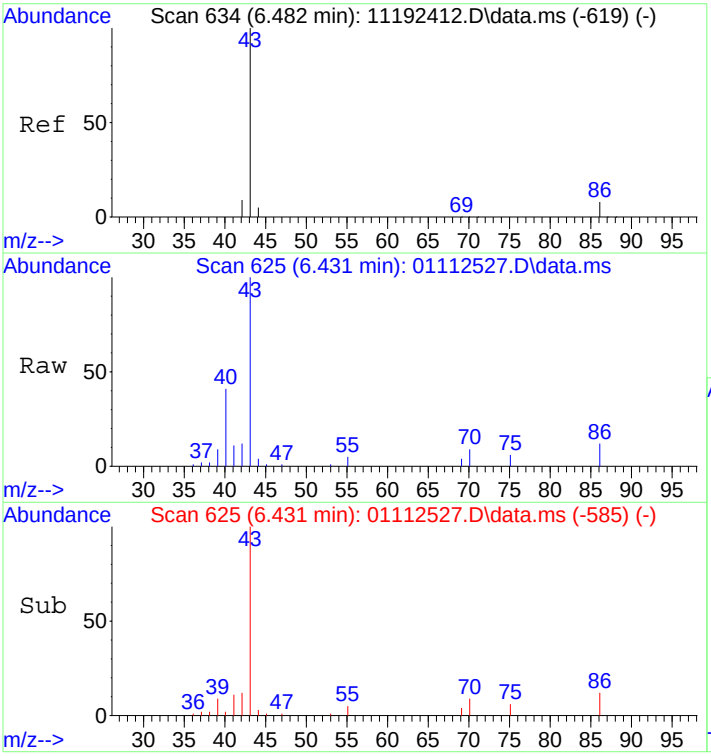


#22
Carbon Disulfide
Concen: 0.30 ng
RT: 5.60 min Scan# 478
Delta R.T. 0.024 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 76 Resp: 13447

Ion	Ratio	Lower	Upper
76	100		
78	147.2	0.0	29.6#

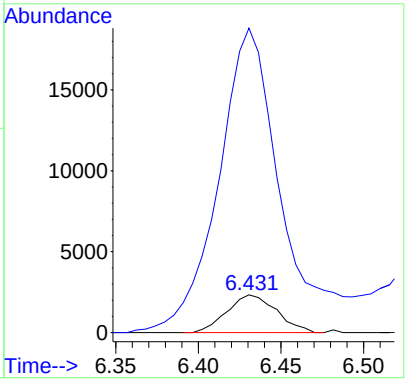


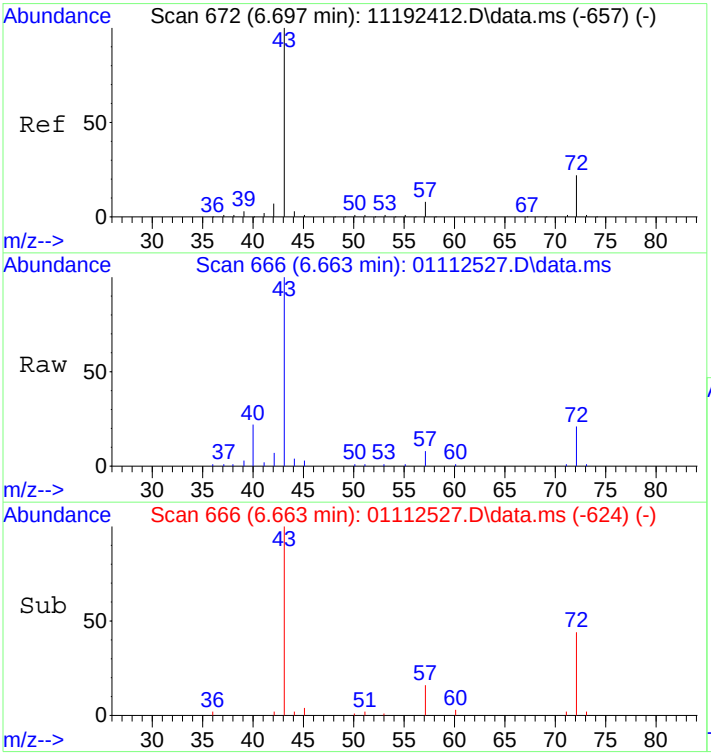


#26
Vinyl Acetate
Concen: 2.00 ng
RT: 6.43 min Scan# 625
Delta R.T. -0.024 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 86 Resp: 4860

Ion	Ratio	Lower	Upper
86	100		
43	1040.0	1331.6	1371.6#

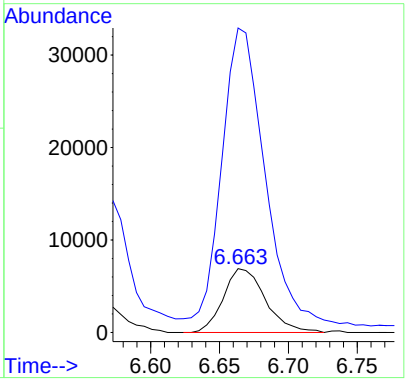


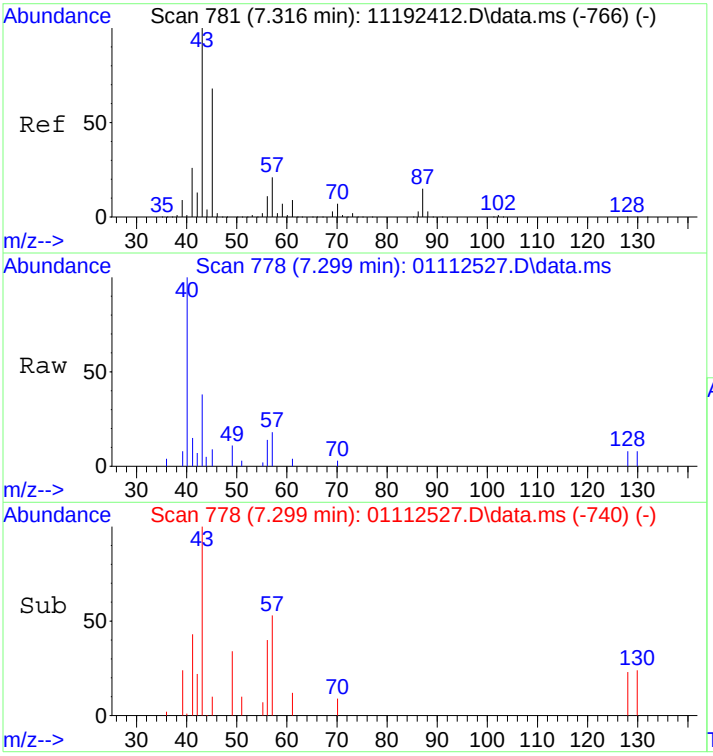


#27
2-Butanone (MEK)
Concen: 1.82 ng
RT: 6.66 min Scan# 666
Delta R.T. -0.011 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 72 Resp: 14681

Ion	Ratio	Lower	Upper
72	100		
43	487.8	439.8	479.8#

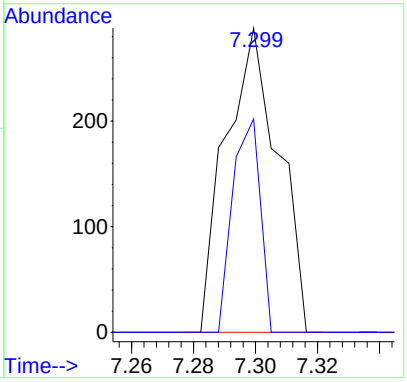


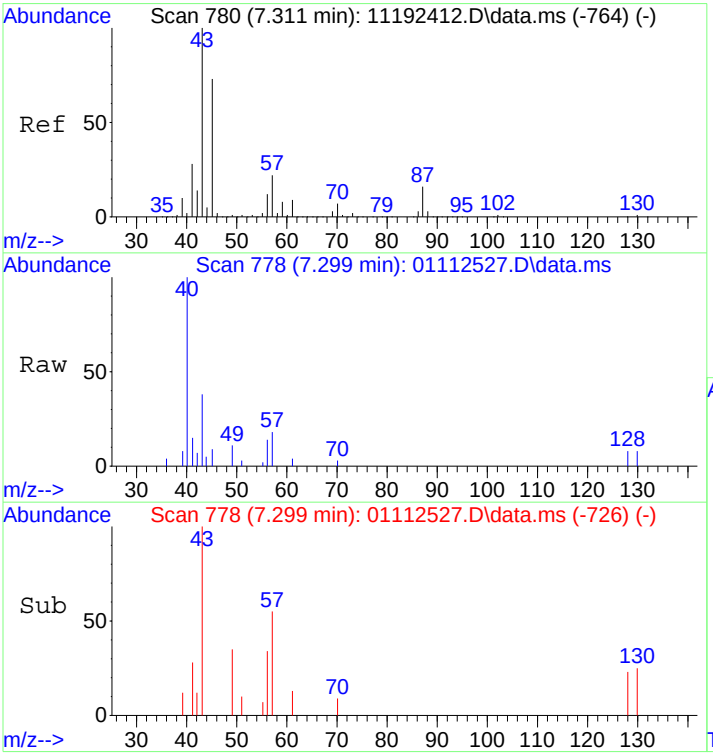


#30
Ethyl Acetate
Concen: 0.07 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.018 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 61 Resp: 340

Ion	Ratio	Lower	Upper
61	100		
70	36.8	57.3	97.3#

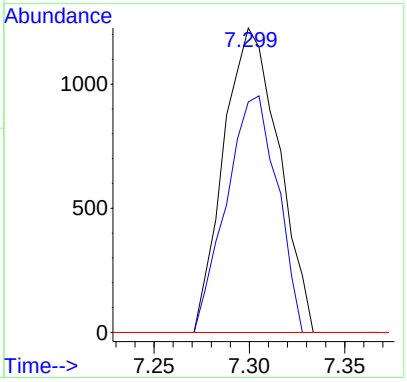


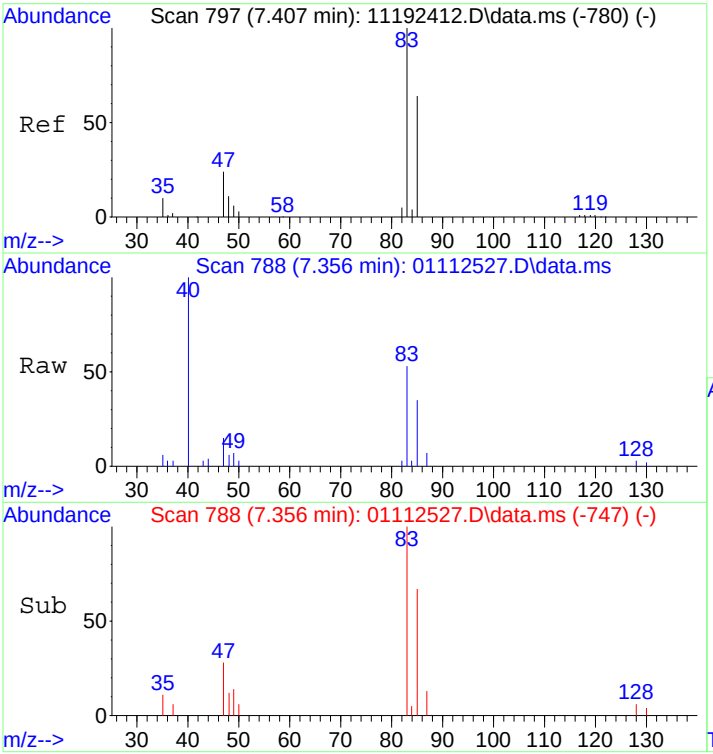


#31
n-Hexane
Concen: 0.11 ng
RT: 7.30 min Scan# 778
Delta R.T. 0.046 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 57 Resp: 2459

Ion	Ratio	Lower	Upper
57	100		
56	71.9	43.4	65.0#
86	0.0	10.9	16.3#

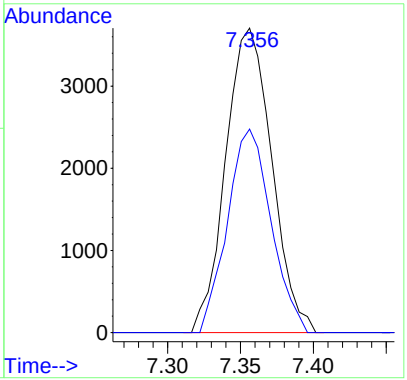


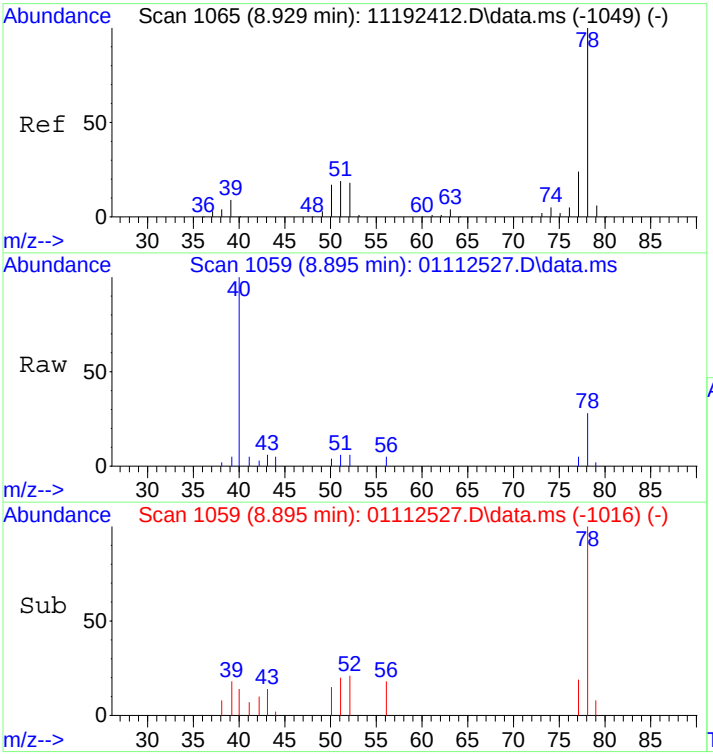


#32
Chloroform
Concen: 0.34 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.015 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 83 Resp: 8157

Ion	Ratio	Lower	Upper
83	100		
85	63.1	45.1	85.1

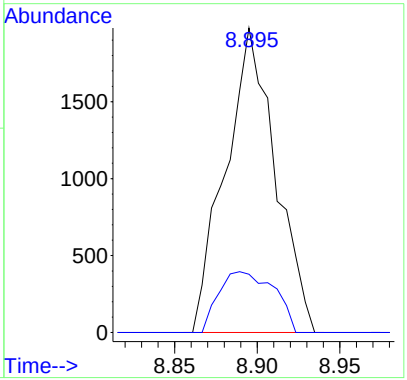


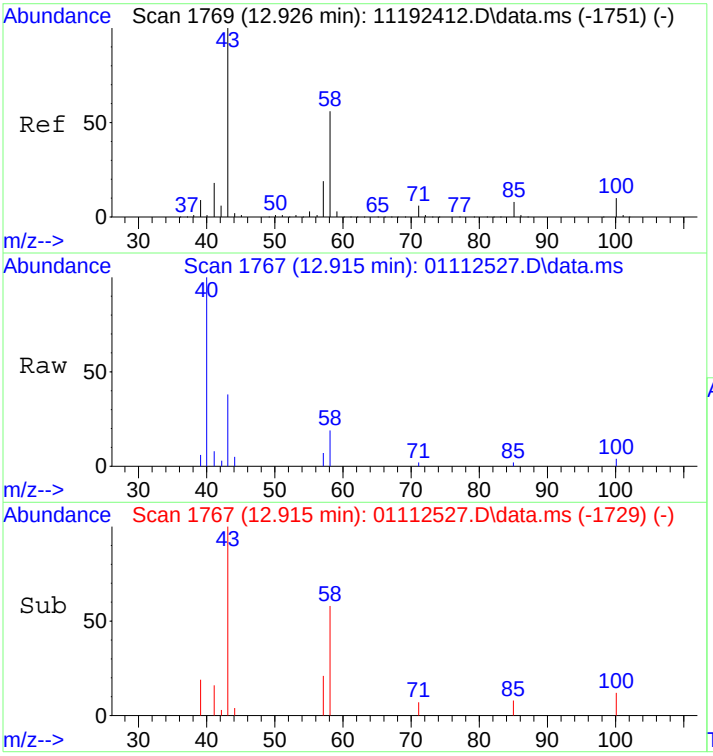


#41
Benzene
Concen: 0.08 ng
RT: 8.89 min Scan# 1059
Delta R.T. -0.008 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 78 Resp: 4168

Ion	Ratio	Lower	Upper
78	100		
77	22.1	3.7	43.7

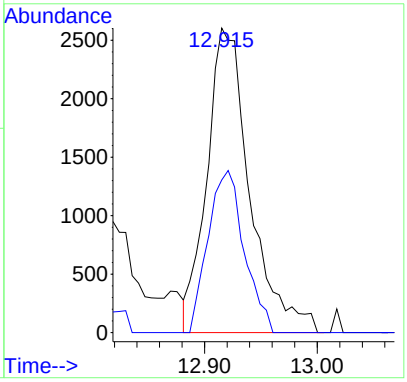


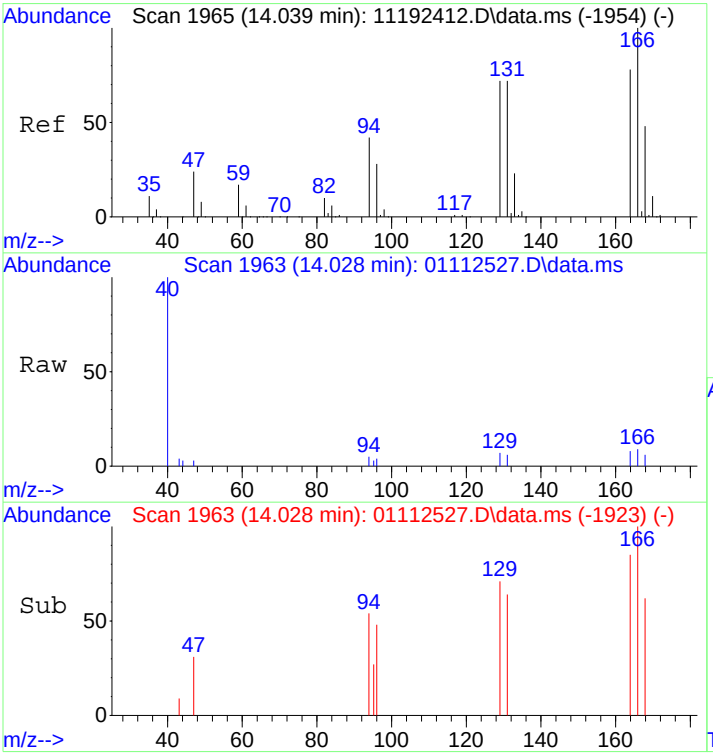


#59
2-Hexanone
Concen: 0.27 ng
RT: 12.92 min Scan# 1767
Delta R.T. -0.034 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 43 Resp: 6911

Ion	Ratio	Lower	Upper
43	100		
58	44.8	35.2	75.2

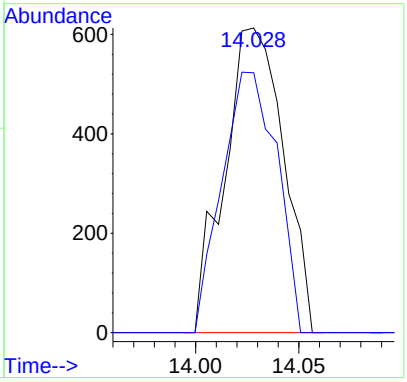


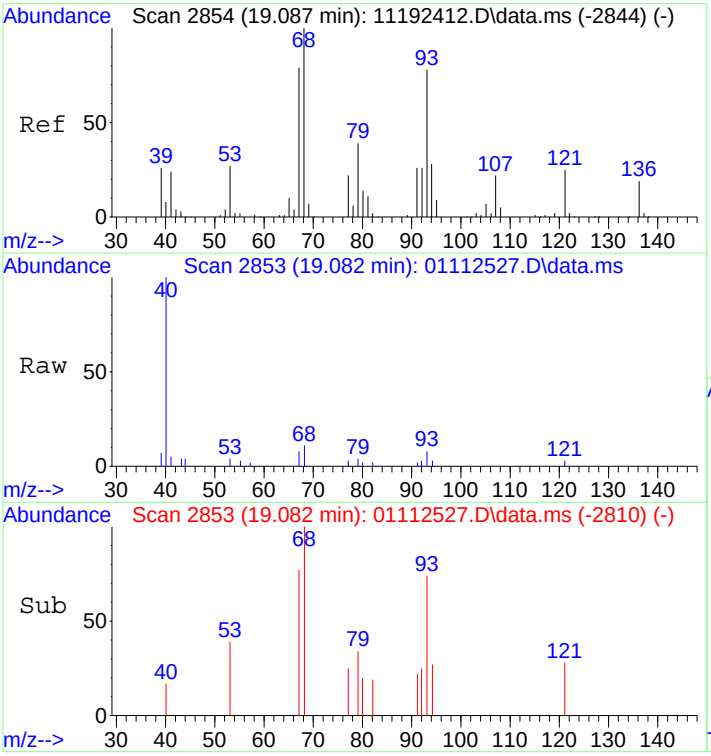


#64
Tetrachloroethene
Concen: 0.08 ng
RT: 14.03 min Scan# 1963
Delta R.T. -0.023 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion:166 Resp: 1217

Ion	Ratio	Lower	Upper
166	100		
164	79.7	58.7	98.7

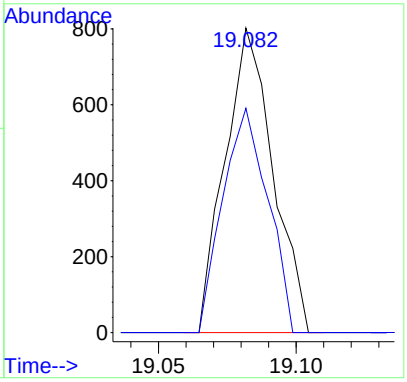




#91
d-Limonene
Concen: 0.06 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01112527.D
Acq: 11 Jan 2025 20:58

Tgt Ion: 68 Resp: 971

Ion	Ratio	Lower	Upper
68	100		
93	69.2	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 13 10:51:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

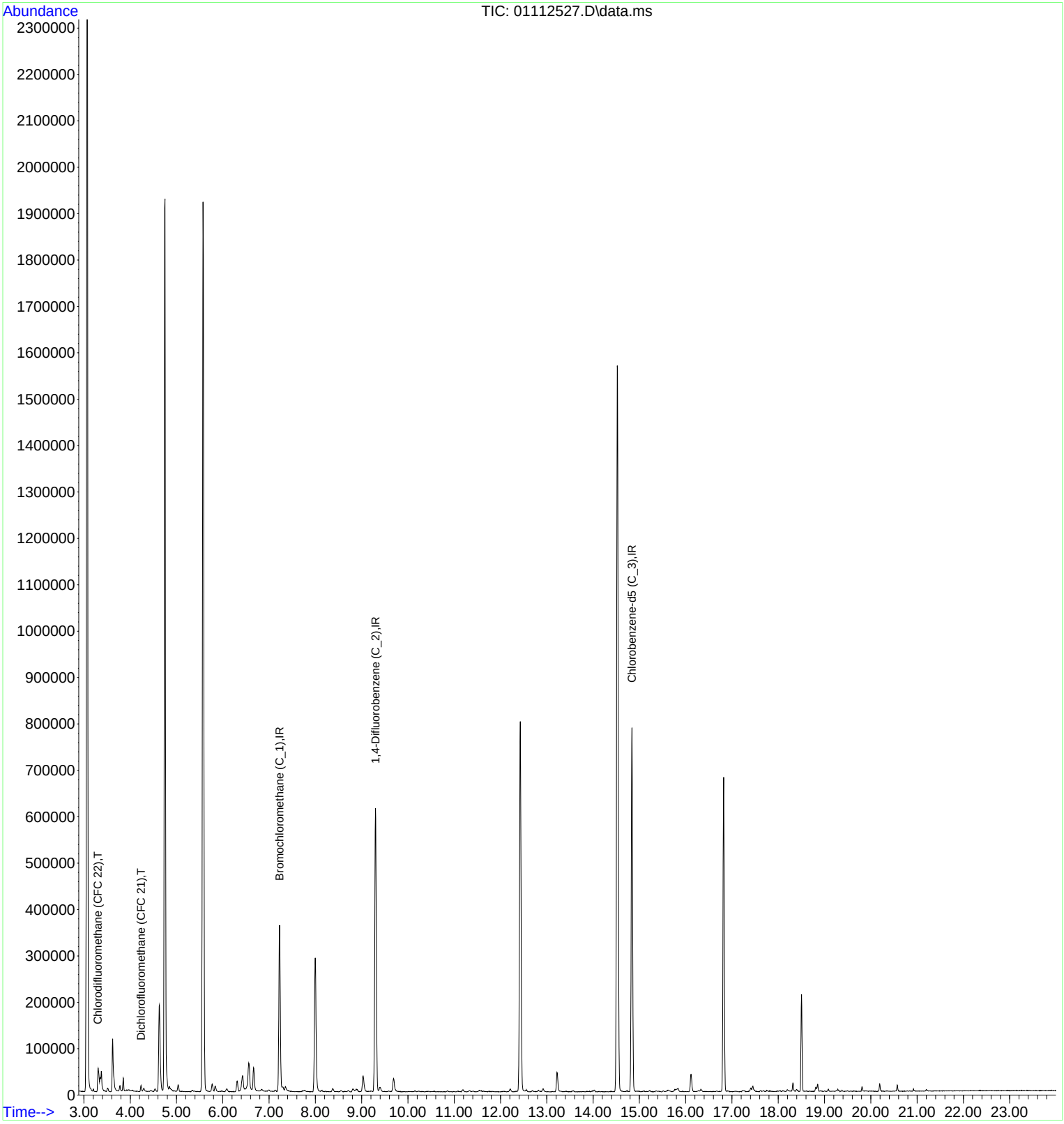
1/13/25

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	150618	12.500 ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	644417	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	121356	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.15	85	188	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	1319	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	3.30	67	864	0.206 ng	96
6) 1-Chloro-1,1-Difluoroe...	3.51	65	344	N.D.	
7) Dichlorofluoromethane ...	4.23	67	10562	0.346 ng	100
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	199	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D. d	
11) Methyl Acetate	5.33	43	2349	N.D.	
12) 2-Methylpentane	6.49	71	958	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	9.03	84	2140	N.D.	
17) 2,3-Dimethylpentane	9.51	56	64	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	11.42	55	636	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	15.20	91	68	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	17.68	91	697	N.D.	
27) 4-Chlorotoluene	17.68	91	697	N.D.	
28) Indane	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

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

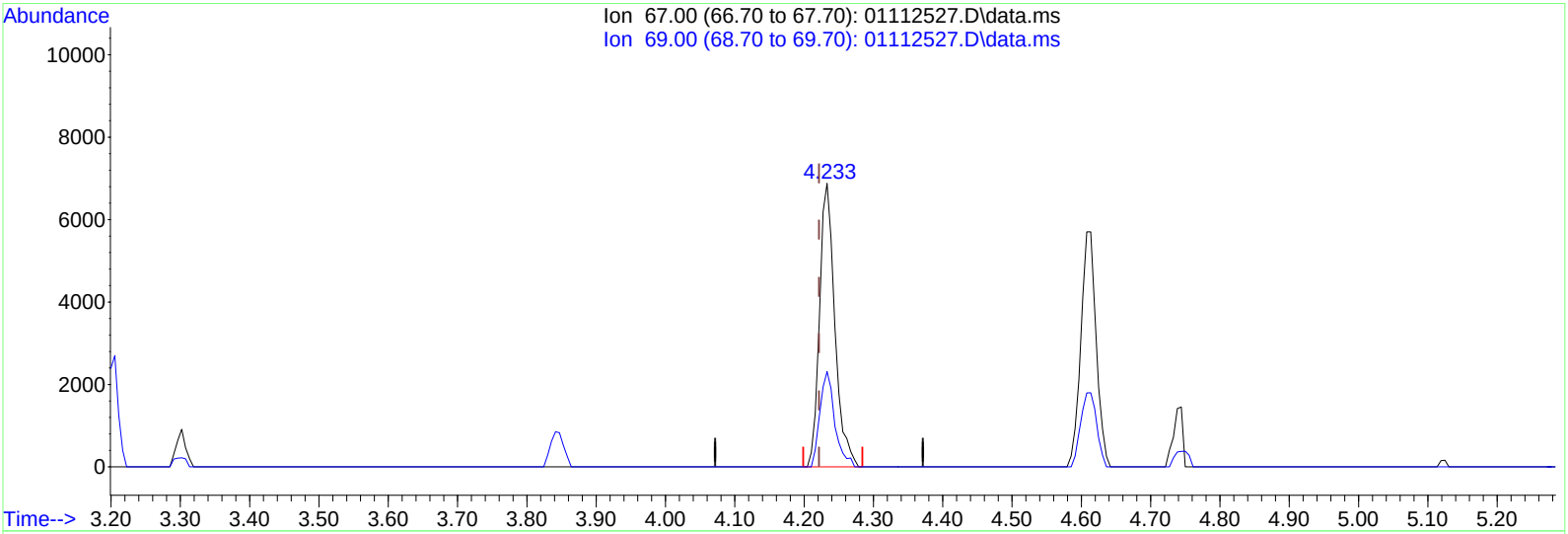
Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

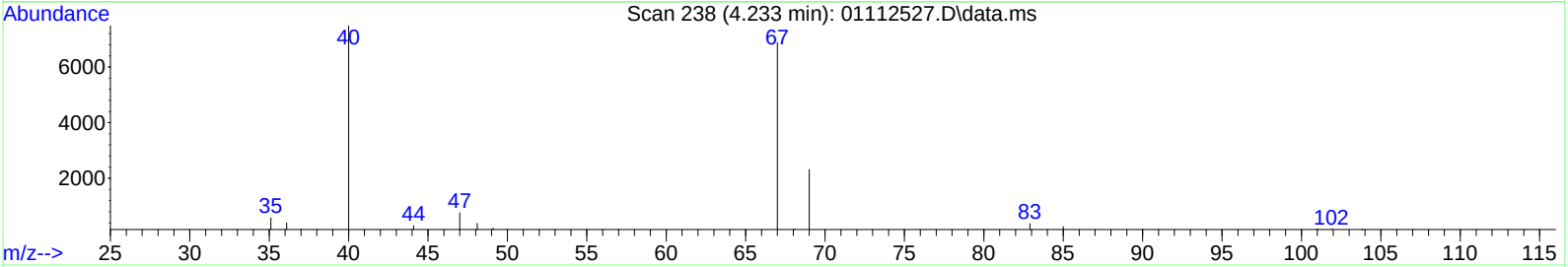
Quant Time: Jan 13 10:51:29 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

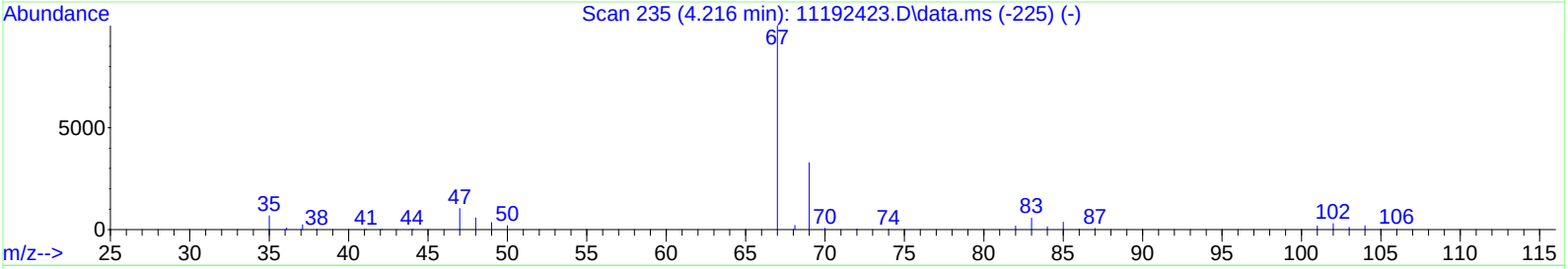


Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 13 10:40:36 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01112527.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.35ng

response 10562

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	32.59
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01112527.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.308	69	75	80	rBV5	50358	108064	2.81%	0.514%
2	3.353	80	83	84	rVV	30172	38586	1.00%	0.184%
3	3.376	84	87	99	rVB	43140	68530	1.78%	0.326%
4	3.512	106	111	121	rVB4	7954	15807	0.41%	0.075%
5	3.620	124	130	147	rBV2	113792	214411	5.57%	1.021%
6	3.779	152	158	165	rVV	11512	17750	0.46%	0.085%
7	3.847	165	170	175	rBV2	28351	37493	0.97%	0.178%
8	4.233	232	238	243	rBV	13020	18769	0.49%	0.089%
9	4.296	243	249	258	rVB4	6759	14489	0.38%	0.069%
10	4.534	286	291	297	rBV3	6040	10824	0.28%	0.052%
11	4.631	299	308	321	rVV	186076	413480	10.75%	1.968%
12	4.750	321	329	343	rVV	1924004	3378548	87.83%	16.084%
13	4.852	343	347	360	rVB5	10378	27192	0.71%	0.129%
14	5.034	373	379	386	rVB	14108	25162	0.65%	0.120%
15	5.573	464	474	490	rBV	1917255	3846593	100.00%	18.313%
16	5.772	499	509	516	rBV	16247	32975	0.86%	0.157%
17	5.834	516	520	532	rVB3	12118	26186	0.68%	0.125%
18	6.084	557	564	571	rBV3	6471	15874	0.41%	0.076%
19	6.311	596	604	611	rBV	23476	51567	1.34%	0.245%
20	6.425	614	624	632	rVV3	34200	95912	2.49%	0.457%
21	6.561	635	648	659	rVV3	60611	184302	4.79%	0.877%
22	6.663	660	666	682	rVB	50100	111901	2.91%	0.533%
23	7.226	755	765	775	rBV	358324	786655	20.45%	3.745%
24	7.351	783	787	797	rVB2	8634	16455	0.43%	0.078%
25	7.998	890	901	921	rBV	288750	688301	17.89%	3.277%
26	8.373	960	967	974	rBV3	6853	14903	0.39%	0.071%
27	8.810	1037	1044	1051	rBV5	6543	17343	0.45%	0.083%
28	9.031	1073	1083	1098	rBV2	33927	86009	2.24%	0.409%
29	9.298	1120	1130	1142	rBV	610879	1420599	36.93%	6.763%
30	9.395	1142	1147	1156	rVB	8788	21829	0.57%	0.104%
31	9.690	1191	1199	1215	rVB2	28474	72886	1.89%	0.347%
32	11.189	1456	1463	1470	rBV2	4633	10769	0.28%	0.051%
33	12.211	1635	1643	1651	rBV3	6040	14077	0.37%	0.067%
34	12.427	1667	1681	1699	rBV	797662	1829231	47.55%	8.709%
35	12.921	1762	1768	1779	rVB3	6444	14064	0.37%	0.067%
36	13.222	1814	1821	1829	rBV2	41508	89759	2.33%	0.427%
37	14.522	2039	2050	2066	rBV	1565022	3639710	94.62%	17.328%
38	14.840	2097	2106	2121	rVB	784162	1629802	42.37%	7.759%
39	15.834	2277	2281	2291	rVB3	7312	15066	0.39%	0.072%
40	16.118	2322	2331	2342	rBV4	37560	84035	2.18%	0.400%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

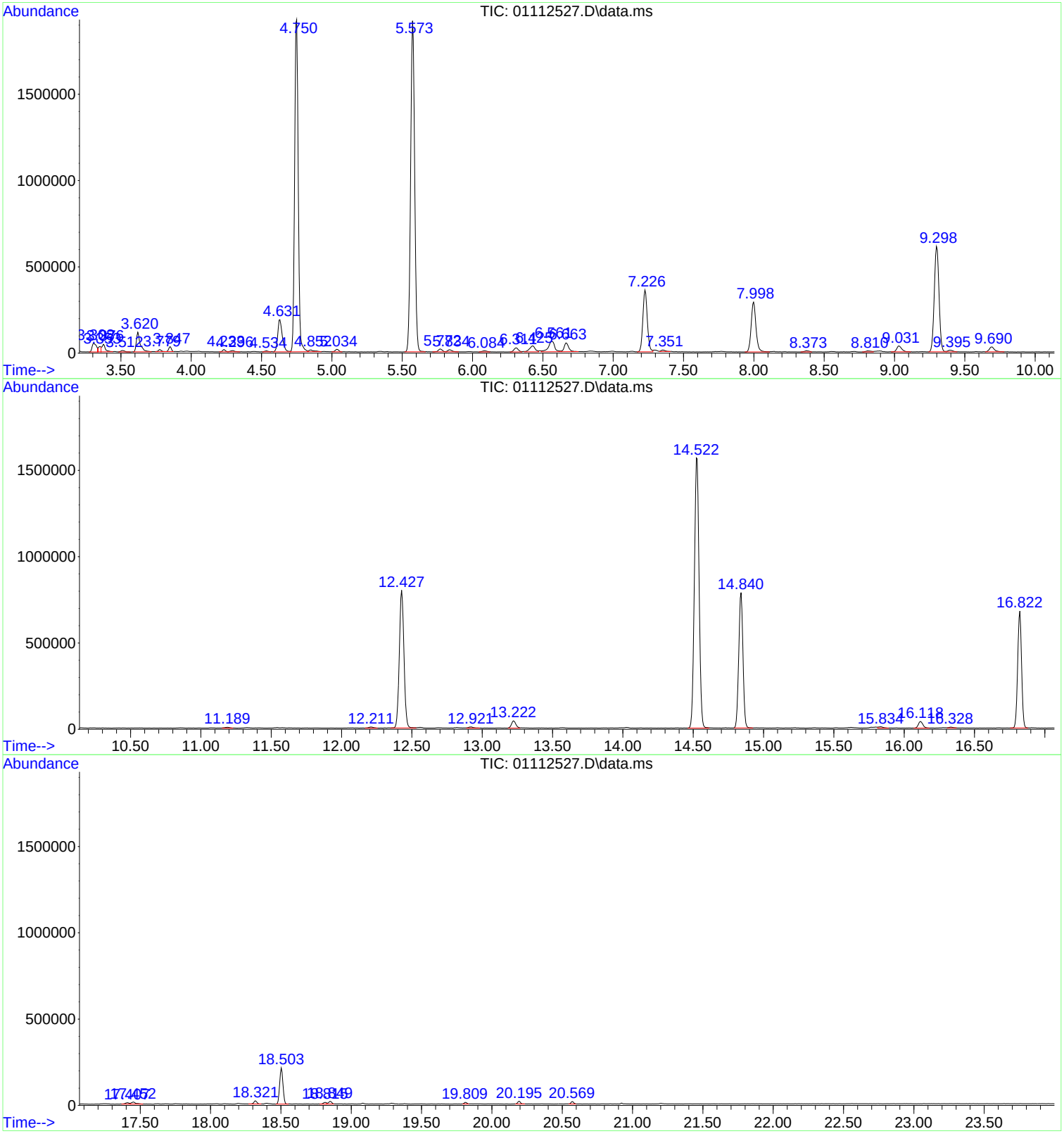
41	16.328	2364	2368	2376	rVB3	5186	10276	0.27%	0.049%
42	16.822	2443	2455	2465	rBV	677453	1284631	33.40%	6.116%
43	17.407	2551	2558	2562	rBV5	7479	15641	0.41%	0.074%
44	17.452	2562	2566	2578	rVB5	11856	26110	0.68%	0.124%
45	18.321	2710	2719	2726	rBV2	17784	28036	0.73%	0.133%
46	18.503	2744	2751	2760	rBV2	209347	339729	8.83%	1.617%
47	18.815	2799	2806	2808	rBV3	9630	16193	0.42%	0.077%
48	18.849	2808	2812	2817	rVB2	15147	24431	0.64%	0.116%
49	19.809	2978	2981	2986	rBV	9619	12909	0.34%	0.061%
50	20.195	3044	3049	3056	rVB3	15723	22851	0.59%	0.109%
51	20.569	3111	3115	3120	rVB	13565	18360	0.48%	0.087%

Sum of corrected areas: 21005075

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

****
Peak Number 1 Isobutane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
3.620	3.41 ng	214411	Bromochloromethane (IS1)	7.226

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	9
2	Isobutane	58	C4H10	000075-28-5	9
3	Isobutane	58	C4H10	000075-28-5	9
4	Cyclopropyl carbinol	72	C4H8O	002516-33-8	4
5	Isopropylsulfonyl chloride	142	C3H7ClO2S	010147-37-2	4

****
Peak Number 2 Acetic acid Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.561	2.93 ng	184302	Bromochloromethane (IS1)	7.226

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Acetic acid	60	C2H4O2	000064-19-7	47
2	Butanal	72	C4H8O	000123-72-8	41
3	Butanal	72	C4H8O	000123-72-8	38
4	Acetic acid	60	C2H4O2	000064-19-7	38
5	1,3-Butanediol, (S)-	90	C4H10O2	024621-61-2	38

****
Peak Number 3 Cyclotrisiloxane, hexamethyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.522	27.92 ng	3639710	Chlorobenzene-d5 (IS3)	14.840

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	91
2	Arsenous acid, tris(trimethylsil...	342	C9H27AsO3Si3	055429-29-3	72
3	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	52
4	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	46
5	Cyclohexane-1,3-dione, 2-allylam...	207	C12H17NO2	104926-37-6	43

****
Peak Number 4 2-Morpholinophenazine Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.503	2.61 ng	339729	Chlorobenzene-d5 (IS3)	14.840

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2-Morpholinophenazine	265	C16H15N3O	022316-93-4	14
2	Benzo[f]quinoline, 2-methyl-	193	C14H11N	039258-30-5	11
3	3-Bromo-5-methoxy-1-methyl-1,2,4...	191	C4H6BrN3O	1000435-10-2	11

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

4	Acridine Orange	265	C17H19N3	000494-38-2	11
5	5-Chloro-4-hydroxy-3-methylquino...	193	C10H8ClNO	1000213-48-9	11

Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025_01\11\
Data File : 01112527.D
Acq On : 11 Jan 2025 20:58
Operator : LS
Sample : P2405139-064 (400mL)
Misc : S37-12312401
ALS Vial : 13 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc
Isobutane	3.620	3.4	ng	214411	1	7.226	786655	12.5
Acetic acid	6.561	2.9	ng	184302	1	7.226	786655	12.5
Cyclotrisiloxan...	14.522	27.9	ng	3639710	3	14.840	1629800	12.5
2-Morpholinophe...	18.503	2.6	ng	339729	3	14.840	1629800	12.5

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 11:12:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141496	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	614579	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	112065	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	238469	12.370	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%				
57) Toluene-d8 (SS2)	12.43	98	637364	12.821	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.56%				
73) Bromofluorobenzene (SS3)	16.82	174	225596	13.150	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.20%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.32	85	2605	0.094	ng	#	89
4) Chloromethane	3.49	50	122	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	2147	0.205	ng		84
11) Acetonitrile	4.47	41	64	N.D.			
12) Acrolein	4.55	56	228	N.D.			
13) Acetone	4.65	58	9947	1.044	ng	#	72
14) Trichlorofluoromethane	4.74	101	2050419	79.045	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	1195	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	267	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.57	151	1059547	90.533	ng		96
22) Carbon Disulfide	0.00	76	0	N.D. d			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.69	72	915	0.120	ng	#	32
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.31	57	201	N.D.			
32) Chloroform	7.35	83	8851	0.384	ng		96
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	1269	No Calib			
41) Benzene	8.89	78	1960	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.14	130	665	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

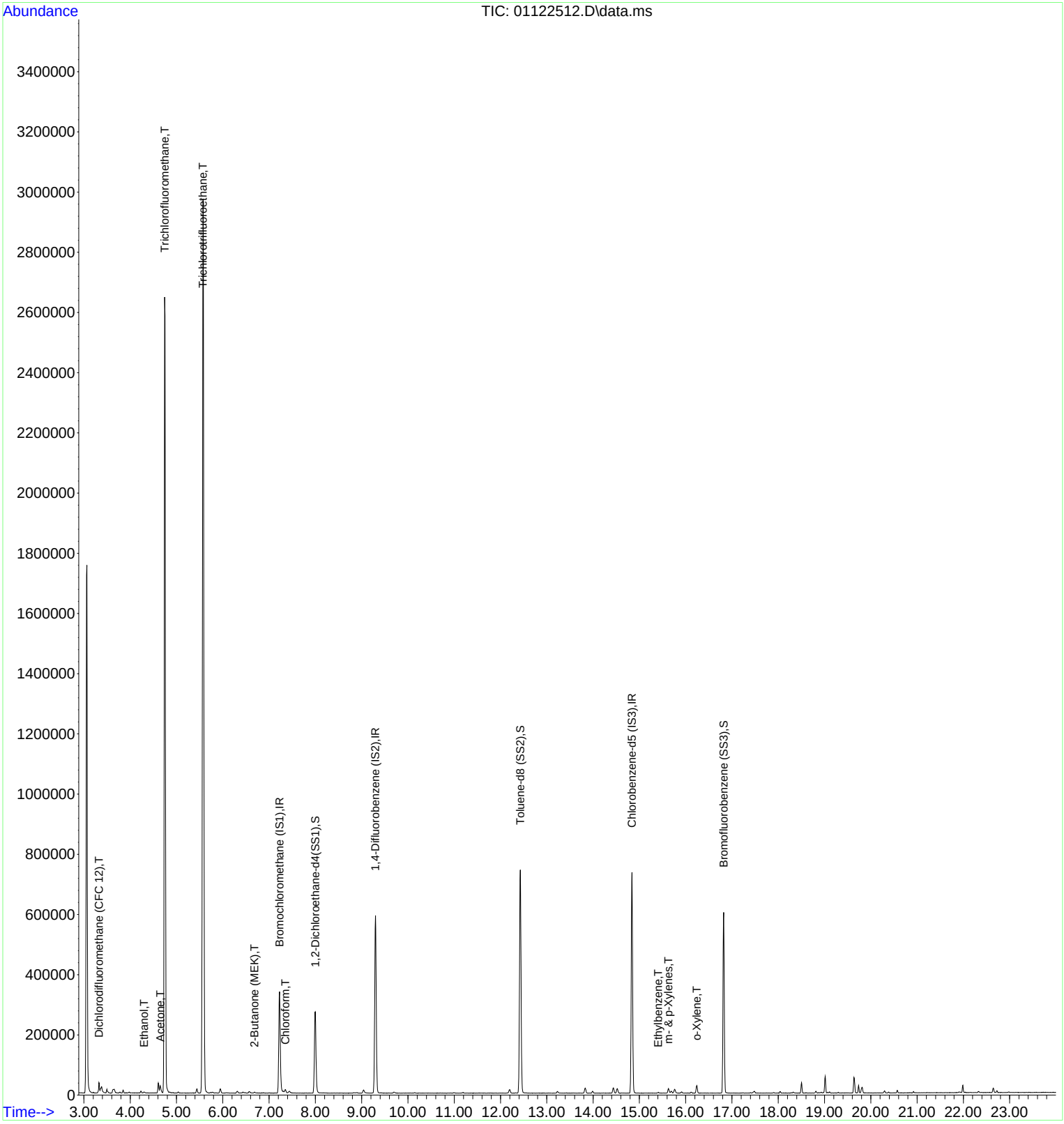
Quant Time: Jan 13 11:12:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	922	N.D.	
59) 2-Hexanone	12.95	43	128	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	2965	0.056 ng	95
67) m- & p-Xylenes	15.63	91	12585	0.291 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	18772	0.438 ng	98
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.03	105	389	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	17.03	105	389	No Calib #	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	389	No Calib #	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	306	N.D.	
89) 1,2,3-Trimethylbenzene	17.03	105	389	No Calib #	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.01	68	192	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.85	180	125	N.D.	
95) Naphthalene	20.94	128	332	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.50	119	692	N.D.	
100) n-Butylbenzene	19.39	91	128	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 13 11:12:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

NOA 1/13/25

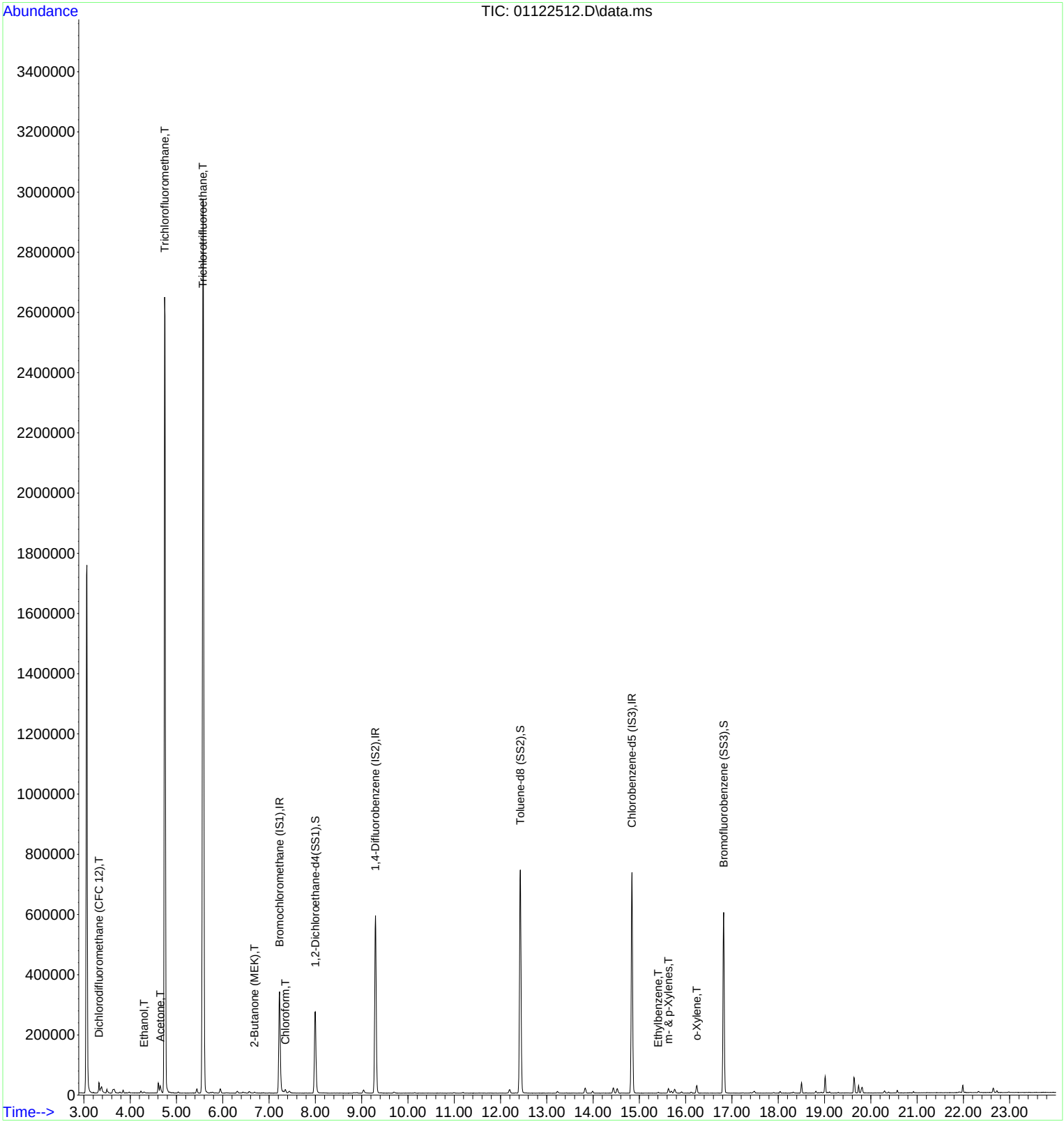
Quant Time: Jan 13 11:12:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

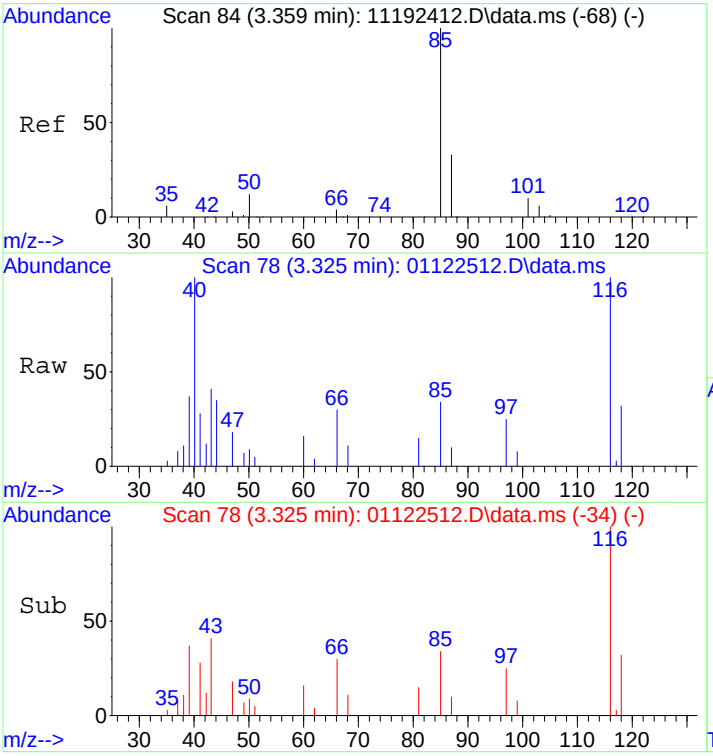
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141496	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	614579	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	112065	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	238469	12.370	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%				
57) Toluene-d8 (SS2)	12.43	98	637364	12.821	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.56%				
73) Bromofluorobenzene (SS3)	16.82	174	225596	13.150	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.20%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.32	85	2605	0.094	ng	#	89
10) Ethanol	4.30	45	2147	0.205	ng		84
13) Acetone	4.65	58	9947	1.044	ng	#	72
14) Trichlorofluoromethane	4.74	101	2050419	79.045	ng		100
21) Trichlorotrifluoroethane	5.57	151	1059547	90.533	ng		96
27) 2-Butanone (MEK)	6.69	72	915	0.120	ng	#	32
32) Chloroform	7.35	83	8851	0.384	ng		96
66) Ethylbenzene	15.41	91	2965	0.056	ng		95
67) m- & p-Xylenes	15.63	91	12585	0.291	ng		99
70) o-Xylene	16.24	91	18772	0.438	ng		98

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

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 13 11:12:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

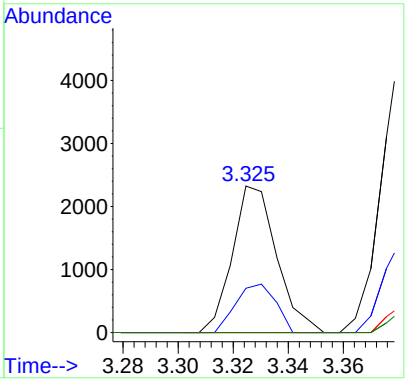


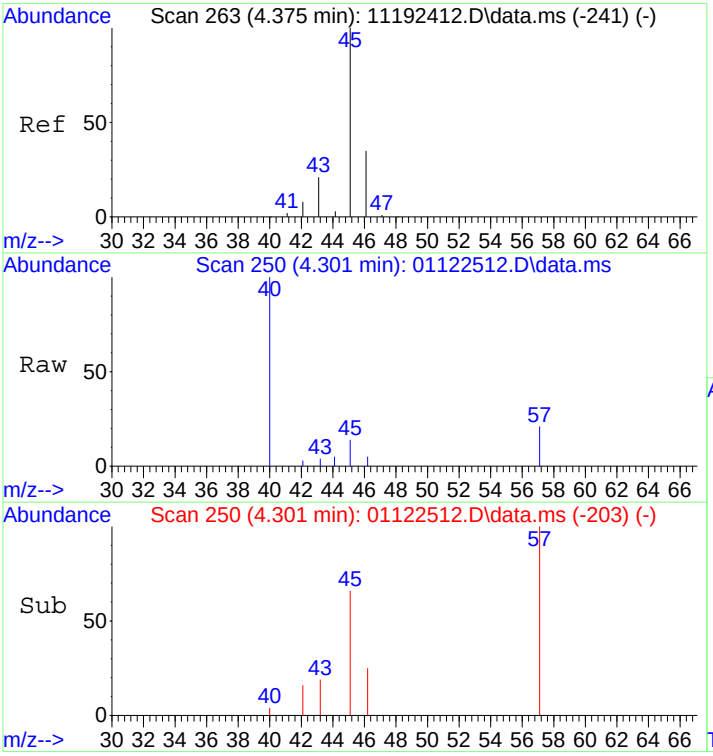


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.09 ng
RT: 3.32 min Scan# 78
Delta R.T. -0.003 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 85 Resp: 2605

Ion	Ratio	Lower	Upper
85	100		
87	29.7	12.6	52.6
101	0.0	0.0	29.6
103	0.0	0.0	26.2

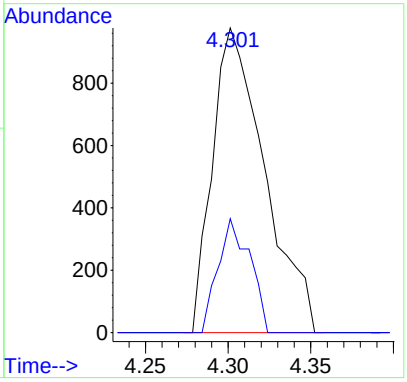


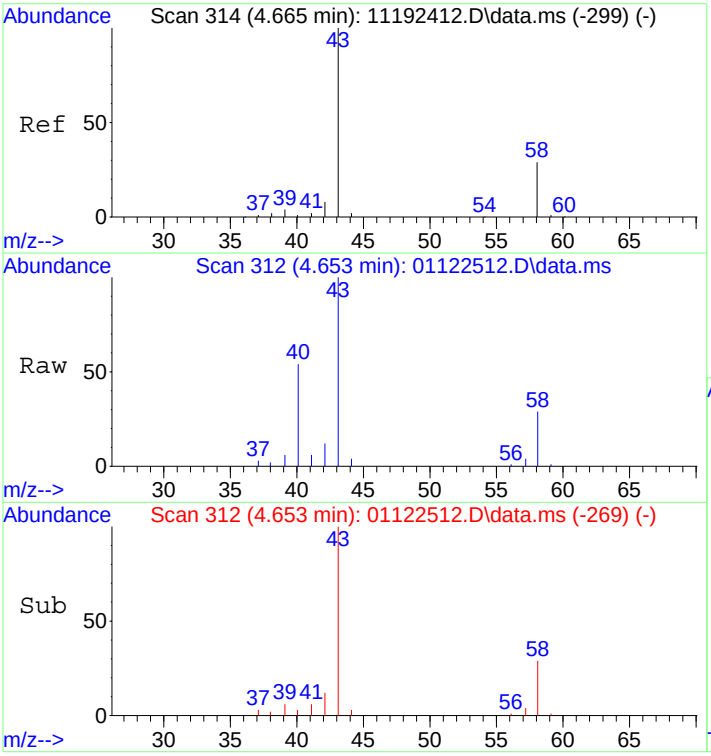


#10
Ethanol
Concen: 0.21 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 45 Resp: 2147

Ion	Ratio	Lower	Upper
45	100		
46	22.8	11.8	51.8

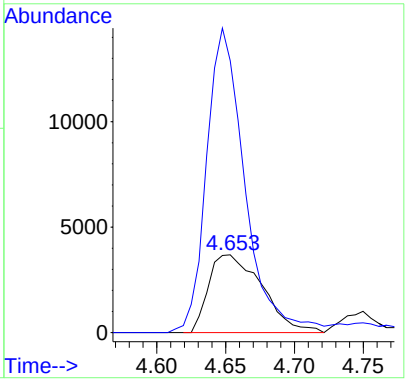


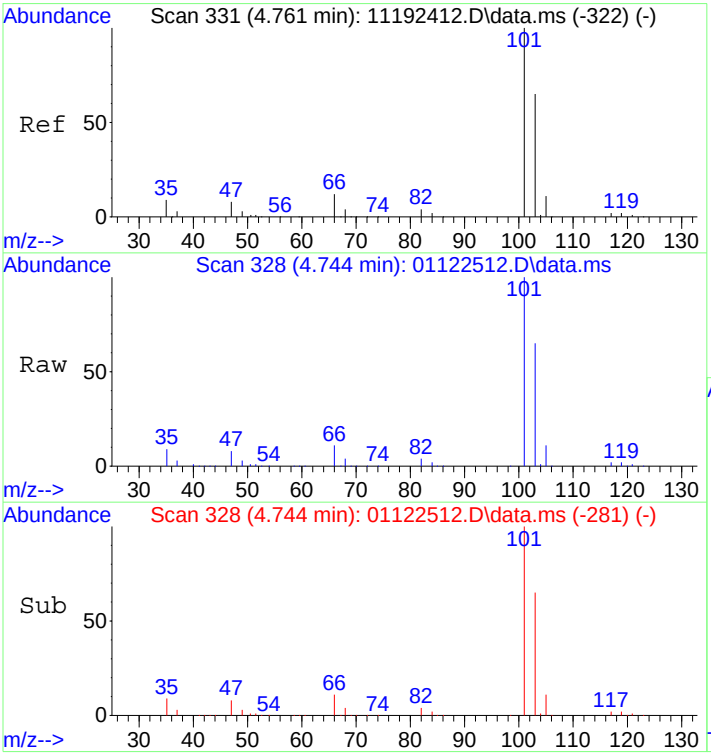


#13
Acetone
Concen: 1.04 ng
RT: 4.65 min Scan# 312
Delta R.T. -0.007 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 58 Resp: 9947

Ion	Ratio	Lower	Upper
58	100		
43	281.6	312.5	372.5#

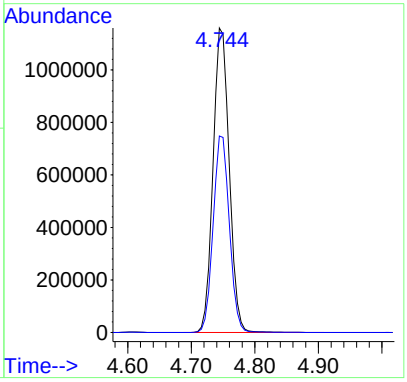


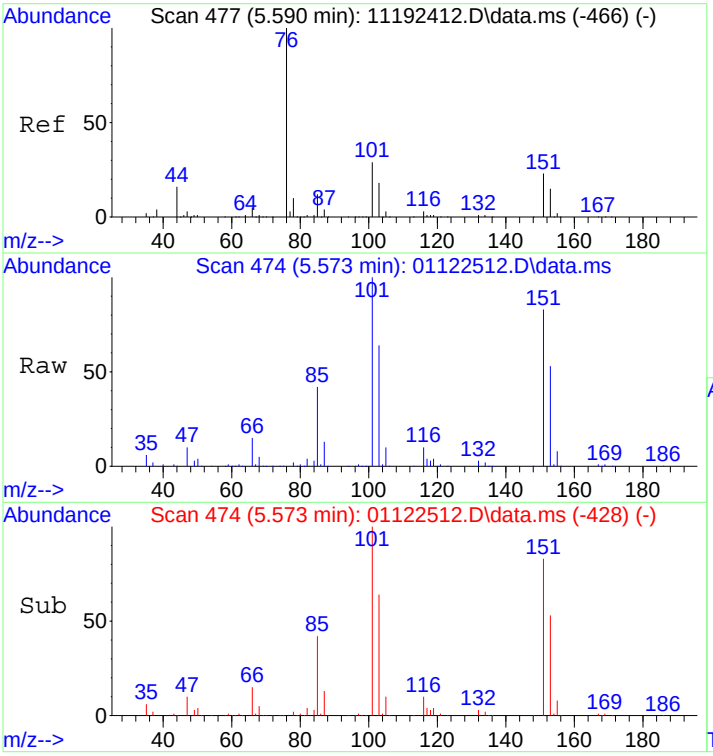


#14
Trichlorofluoromethane
Concen: 79.05 ng
RT: 4.74 min Scan# 328
Delta R.T. 0.016 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion:101 Resp: 2050419

Ion	Ratio	Lower	Upper
101	100		
103	64.8	44.8	84.8

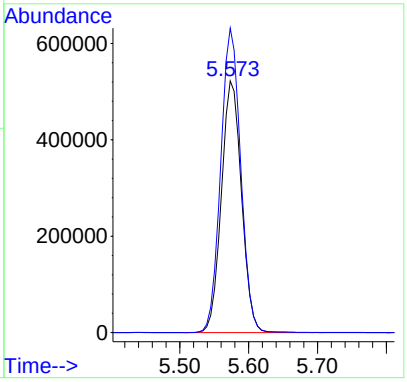


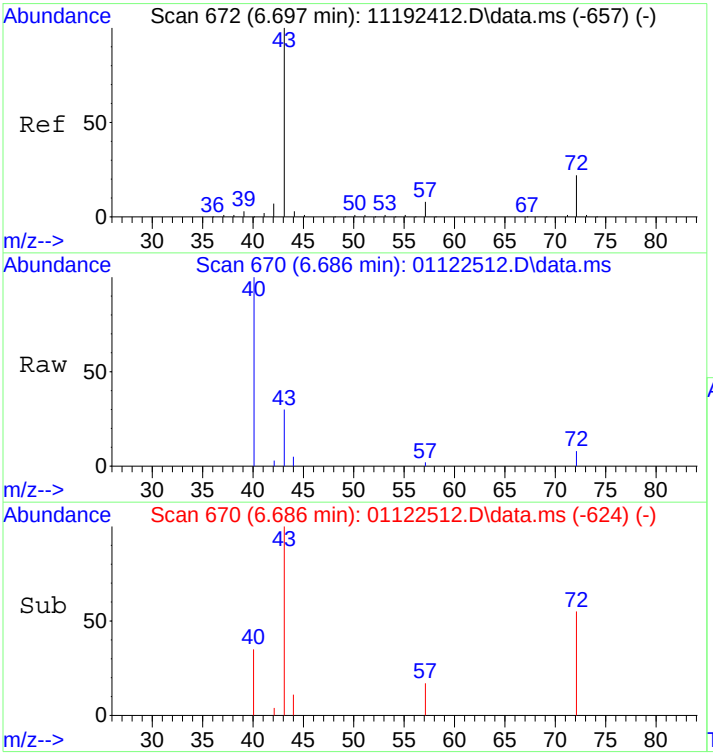


#21
Trichlorotrifluoroethane
Concen: 90.53 ng
RT: 5.57 min Scan# 474
Delta R.T. 0.013 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion:151 Resp: 1059547

Ion	Ratio	Lower	Upper
151	100		
101	120.1	105.0	145.0

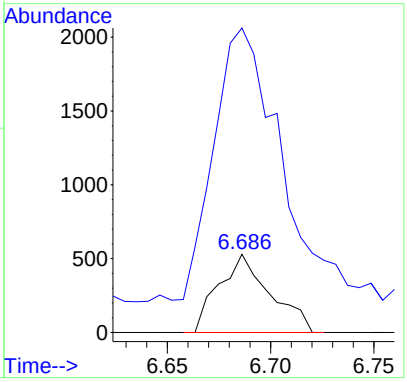


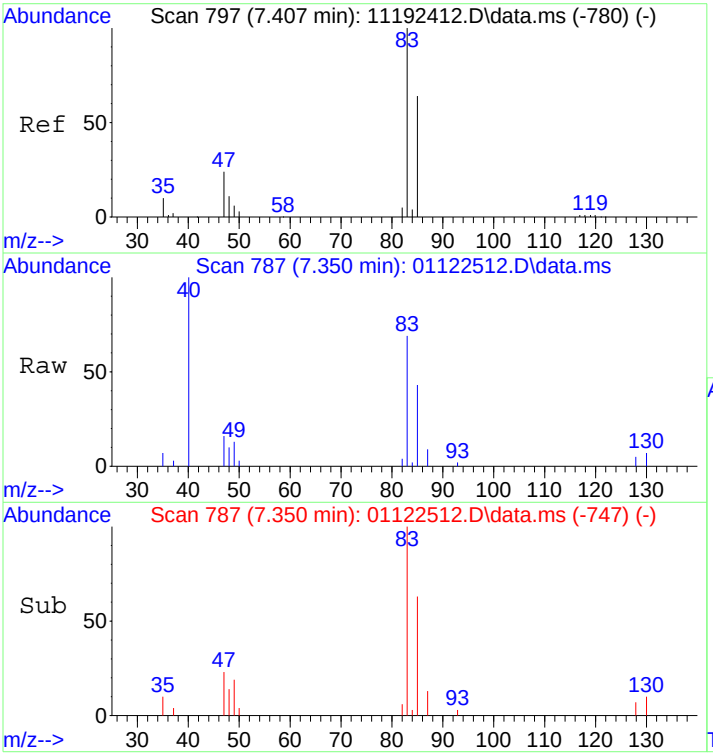


#27
2-Butanone (MEK)
Concen: 0.12 ng
RT: 6.69 min Scan# 670
Delta R.T. 0.012 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 72 Resp: 915

Ion	Ratio	Lower	Upper
72	100		
43	636.9	439.8	479.8#

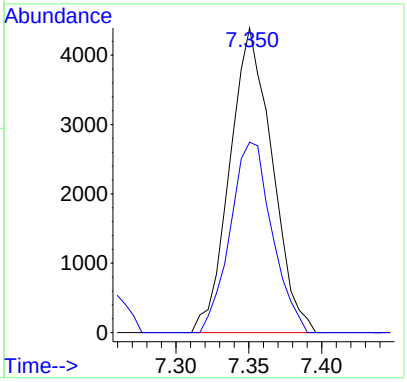


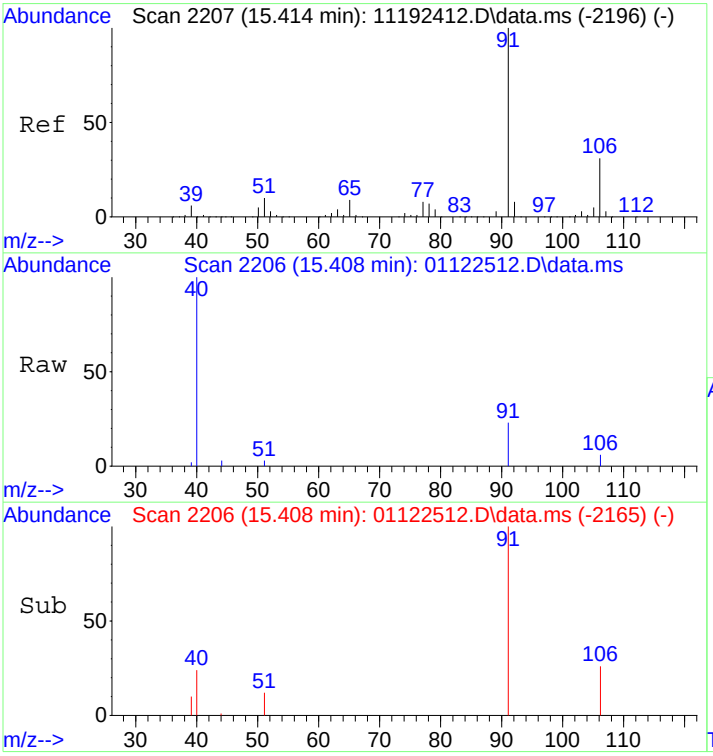


#32
Chloroform
Concen: 0.38 ng
RT: 7.35 min Scan# 787
Delta R.T. -0.021 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 83 Resp: 8851

Ion	Ratio	Lower	Upper
83	100		
85	61.9	45.1	85.1

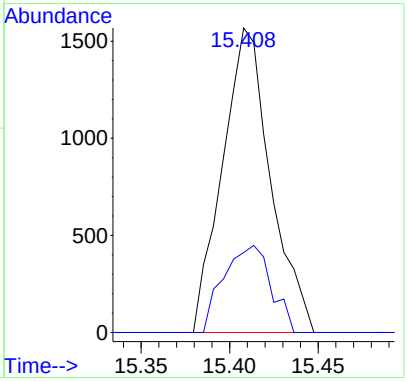


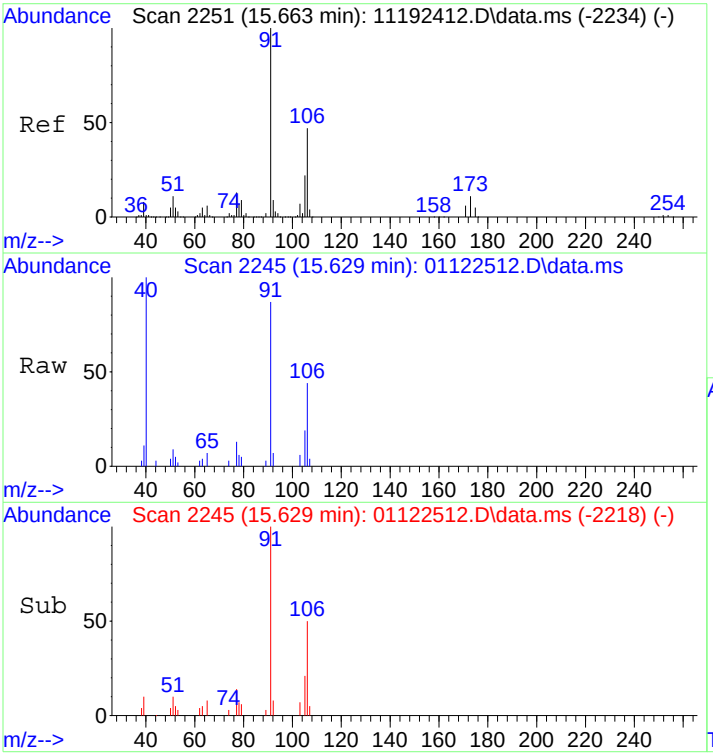


#66
Ethylbenzene
Concen: 0.06 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 91 Resp: 2965

Ion	Ratio	Lower	Upper
91	100		
106	28.2	10.7	50.7

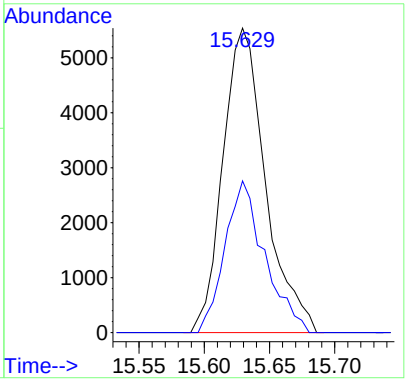


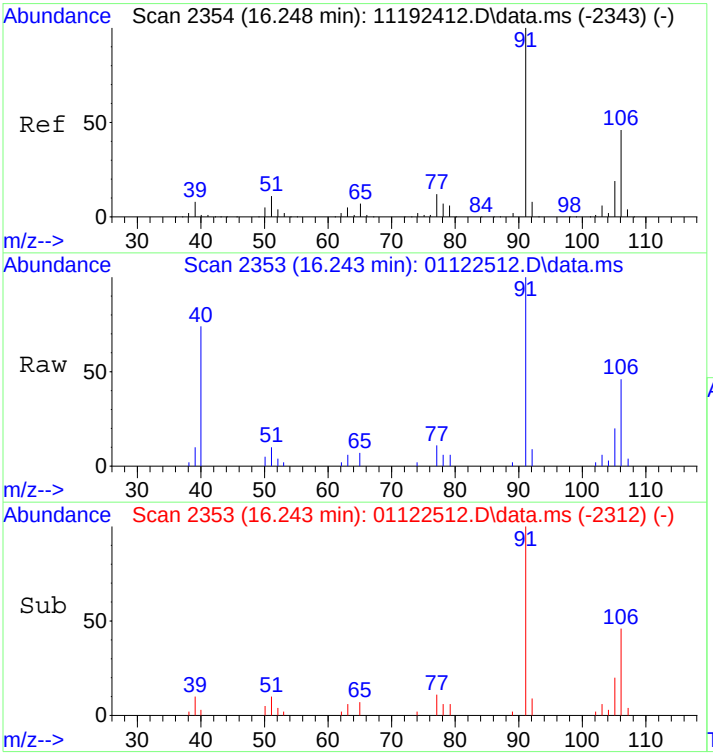


#67
m- & p-Xylenes
Concen: 0.29 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 91 Resp: 12585

Ion	Ratio	Lower	Upper
91	100		
106	46.5	27.1	67.1

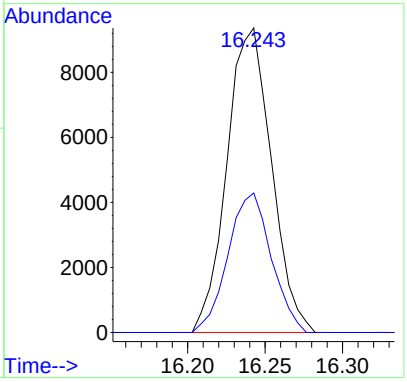




#70
o-Xylene
Concen: 0.44 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01122512.D
Acq: 12 Jan 2025 10:59

Tgt Ion: 91 Resp: 18772

Ion	Ratio	Lower	Upper
91	100		
106	44.5	25.8	65.8



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 12:33:28 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

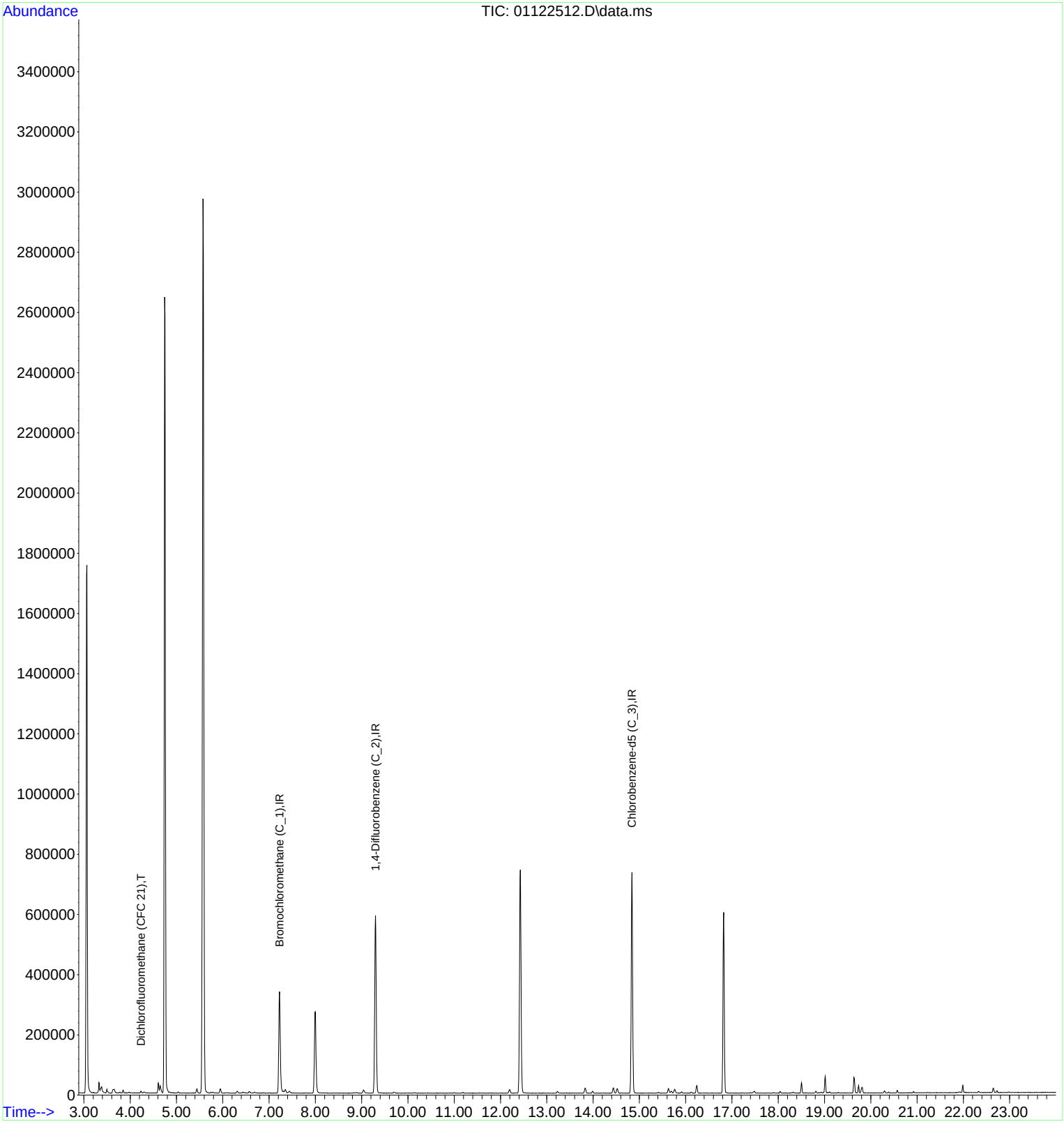
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	143768	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C_2)	9.30	114	614579	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	112065	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.20	83	399	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	3.30	67	267	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.50	65	52	N.D.		
7) Dichlorofluoromethane ...	4.23	67	5967	0.205	ng	96
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	143	N.D.		
10) 2-Methylbutane	0.00	57	0	N.D. d		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	6.48	71	59	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	9.04	84	455	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	19.11	117	258	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

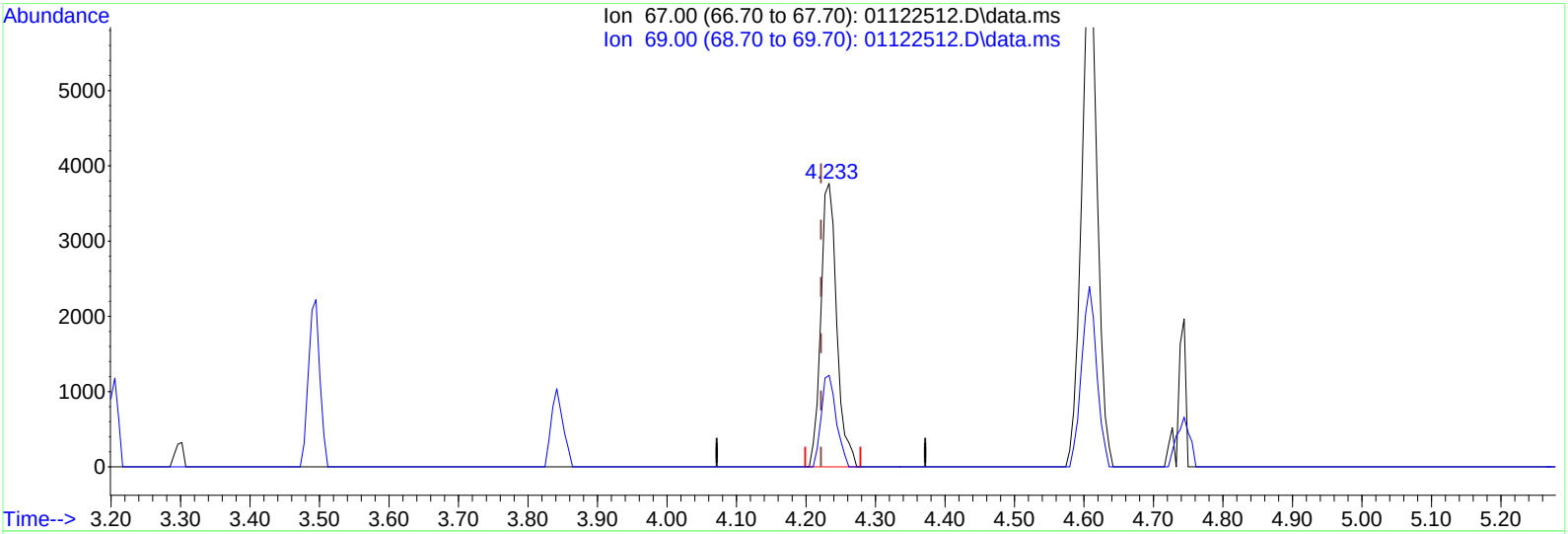
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

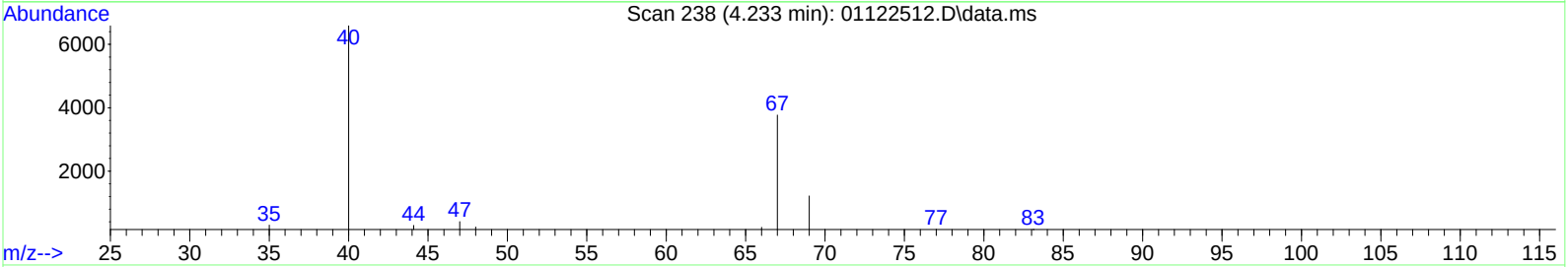
Quant Time: Jan 13 12:33:28 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

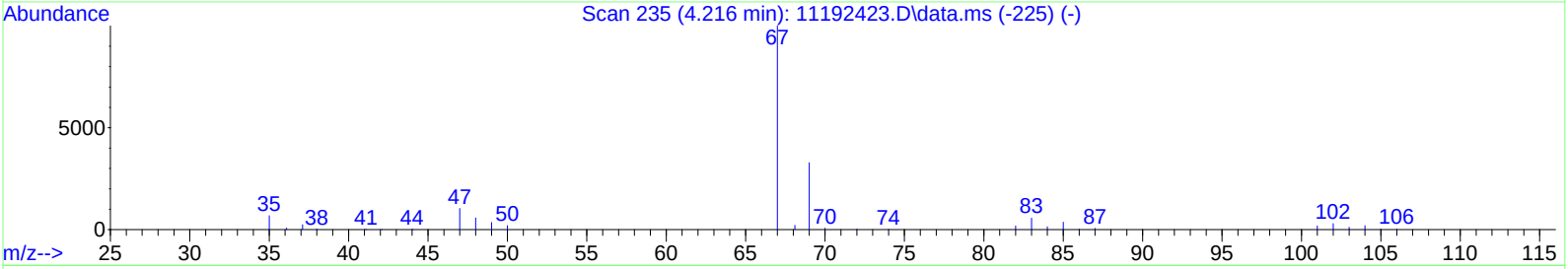


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 13 12:29:21 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01122512.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.233min (+0.011) 0.20ng

response 5967

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	30.42
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122512.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.325	70	78	82	rBV3	34639	51454	0.85%	0.272%
2	3.381	82	88	99	rVB2	19858	50688	0.84%	0.268%
3	3.495	104	108	120	rVB4	12975	21939	0.36%	0.116%
4	3.654	123	136	149	rBV3	13132	47237	0.78%	0.249%
5	3.847	165	170	176	rVB2	9745	14111	0.23%	0.074%
6	4.227	232	237	243	rBV	6445	10240	0.17%	0.054%
7	4.608	298	304	308	rBV	33065	53866	0.89%	0.284%
8	4.648	308	311	320	rVB2	24008	44051	0.73%	0.233%
9	4.744	320	328	344	rBV	2643187	4663410	77.42%	24.615%
10	5.443	445	451	457	rVB3	14135	24345	0.40%	0.128%
11	5.573	463	474	496	rBV	2971444	6023359	100.00%	31.793%
12	5.948	530	540	546	rBV	14282	28355	0.47%	0.150%
13	6.311	598	604	611	rBV2	6297	13968	0.23%	0.074%
14	6.573	642	650	660	rBV5	5493	13191	0.22%	0.070%
15	7.226	755	765	777	rBV	337046	771327	12.81%	4.071%
16	7.350	782	787	795	rVV2	11546	25464	0.42%	0.134%
17	7.441	798	803	811	rVB2	5780	12729	0.21%	0.067%
18	7.998	891	901	918	rBV	270298	629801	10.46%	3.324%
19	9.043	1076	1085	1097	rBV	10724	25622	0.43%	0.135%
20	9.298	1117	1130	1142	rBV	590056	1345389	22.34%	7.101%
21	12.200	1633	1641	1651	rVB2	11860	26966	0.45%	0.142%
22	12.427	1670	1681	1698	rBV	741635	1706395	28.33%	9.007%
23	13.227	1815	1822	1831	rBV3	5709	11012	0.18%	0.058%
24	13.829	1919	1928	1936	rVB3	17131	38612	0.64%	0.204%
25	13.988	1951	1956	1962	rBV3	6592	12135	0.20%	0.064%
26	14.437	2028	2035	2043	rBV	17671	37330	0.62%	0.197%
27	14.522	2043	2050	2060	rVB	15624	35131	0.58%	0.185%
28	14.840	2096	2106	2125	rBV	733358	1510242	25.07%	7.971%
29	15.629	2236	2245	2251	rBV	15372	30404	0.50%	0.160%
30	15.686	2251	2255	2261	rVV2	6211	12213	0.20%	0.064%
31	15.760	2261	2268	2277	rVB4	12460	28554	0.47%	0.151%
32	16.243	2344	2353	2362	rBV	25402	50141	0.83%	0.265%
33	16.822	2446	2455	2469	rBV	600406	1161521	19.28%	6.131%
34	17.486	2562	2572	2577	rBV5	5815	14838	0.25%	0.078%
35	18.503	2745	2751	2757	rBV2	34485	51840	0.86%	0.274%
36	18.815	2801	2806	2813	rVB3	6422	10791	0.18%	0.057%
37	19.014	2835	2841	2848	rVB2	54908	85067	1.41%	0.449%
38	19.638	2945	2951	2958	rBV	51872	93563	1.55%	0.494%
39	19.735	2963	2968	2974	rVV	24993	33061	0.55%	0.175%
40	19.814	2974	2982	2989	rVB2	19403	42200	0.70%	0.223%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

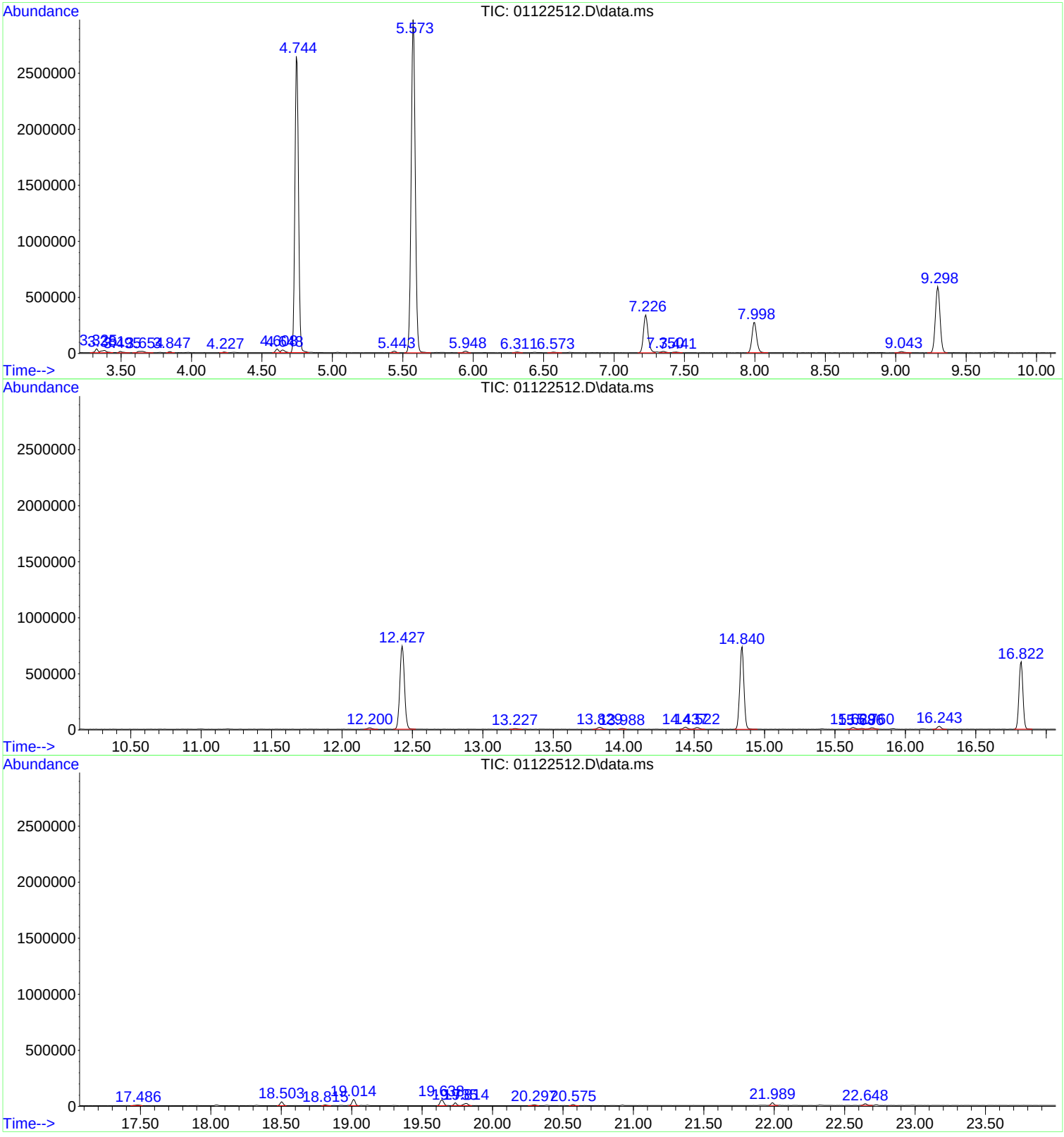
41	20.297	3059	3067	3073	rBV	7146	13181	0.22%	0.070%
42	20.575	3110	3116	3123	rBV2	8768	12177	0.20%	0.064%
43	21.989	3360	3365	3372	rBV3	23927	32889	0.55%	0.174%
44	22.648	3475	3481	3490	rBV2	14772	24904	0.41%	0.131%

Sum of corrected areas: 18945713

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:59
Operator : SC
Sample : P2405139-065 (150mL)
Misc : S37-12312401
ALS Vial : 14 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122512.D
Acq On : 12 Jan 2025 10:599
Operator : SCC
Sample : P2405139-065 (150mL))
Misc : S37-123124011
ALS Vial : 14 Sample Multiplier: 11

VOA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 11:14:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	138288	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	603216	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	111733	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	235423	12.496	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%				
57) Toluene-d8 (SS2)	12.43	98	626579	12.641	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
73) Bromofluorobenzene (SS3)	16.82	174	221921	12.974	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.76%				
Target Compounds							Qvalue
2) Propene	3.34	42	381	N.D.			
3) Dichlorodifluoromethan...	3.34	85	679	N.D.			
4) Chloromethane	3.39	50	569	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	0.00	45	0	N.D. d			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	2687	0.289	ng		97
14) Trichlorofluoromethane	4.76	101	2474858	97.621	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	363	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	5.36	84	214	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	1666678	145.713	ng		96
22) Carbon Disulfide	5.62	76	5601	0.133	ng	#	1
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	6.44	86	649	0.288	ng	#	70
27) 2-Butanone (MEK)	6.69	72	275	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.36	83	6576	0.292	ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.86	56	309	No Calib		#	
41) Benzene	8.90	78	961	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.16	130	273	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 11:14:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

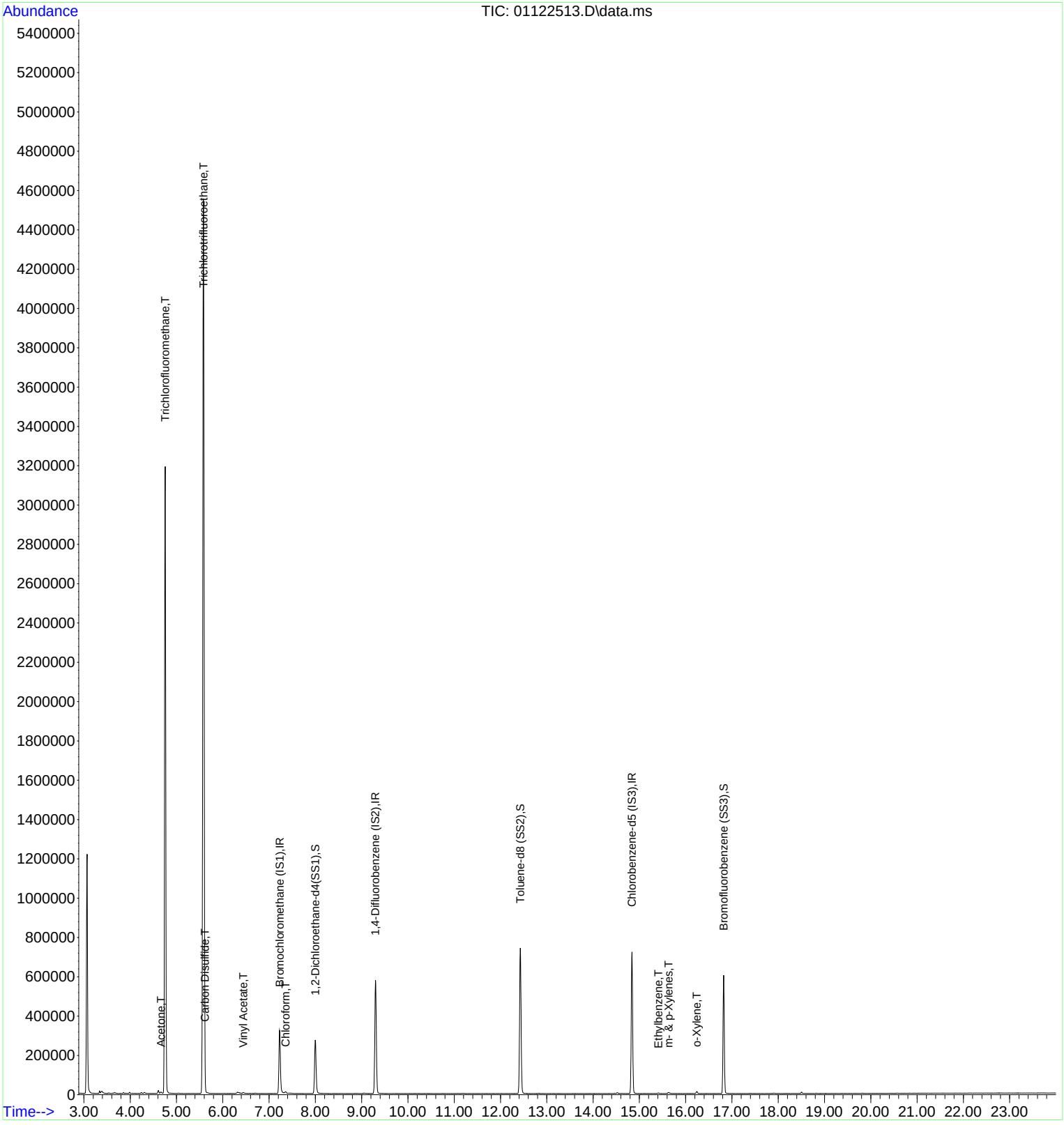
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.56	91	220	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	3136	0.059 ng	93
67) m- & p-Xylenes	15.63	91	5436	0.126 ng	100
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	7645	0.179 ng	98
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 11:14:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
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1/13/25

Quant Time: Jan 13 11:14:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
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Response via : Initial Calibration

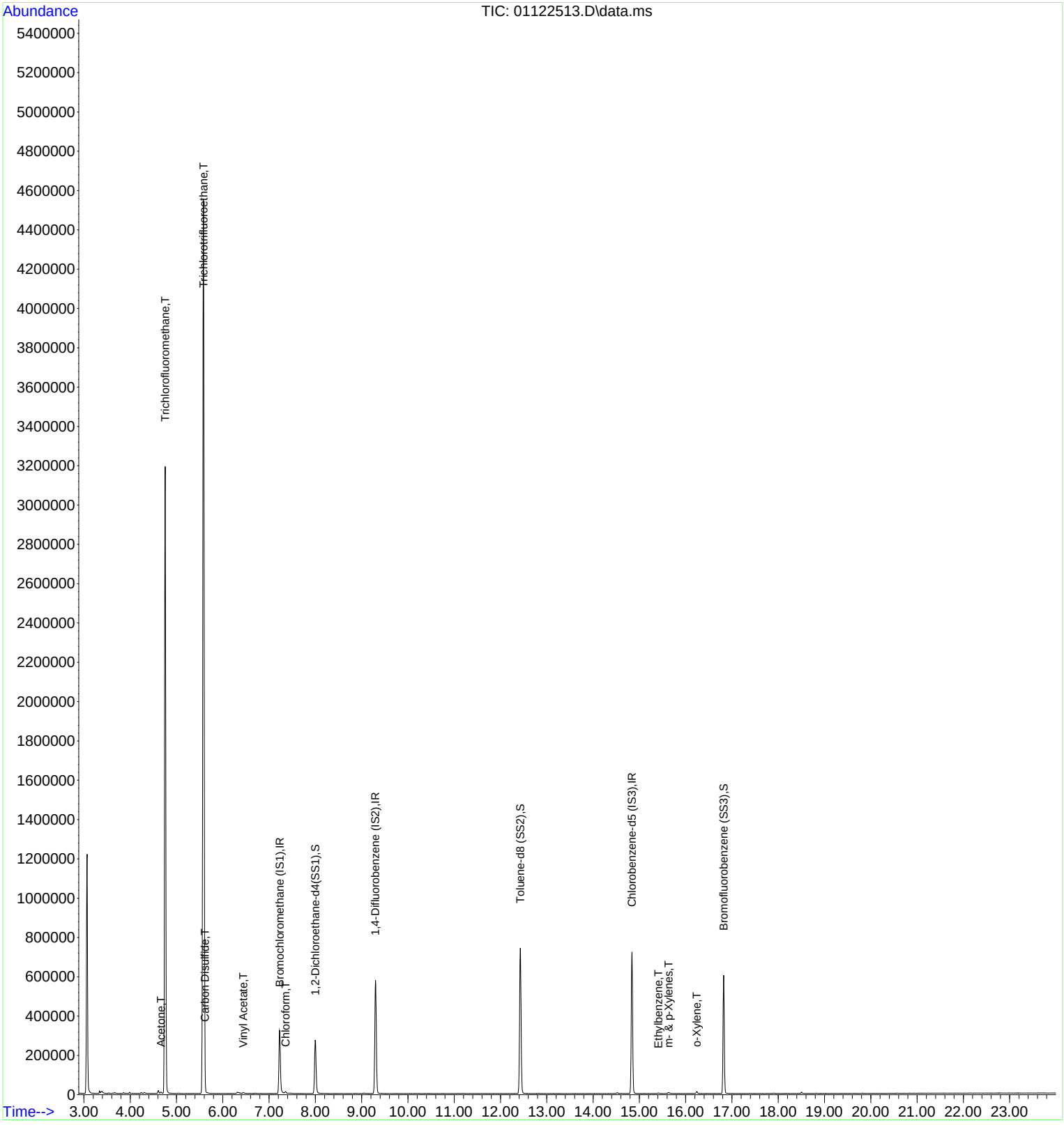
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	138288	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	603216	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	111733	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	235423	12.496	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%				
57) Toluene-d8 (SS2)	12.43	98	626579	12.641	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
73) Bromofluorobenzene (SS3)	16.82	174	221921	12.974	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.76%				
Target Compounds							Qvalue
13) Acetone	4.66	58	2687	0.289	ng		97
14) Trichlorofluoromethane	4.76	101	2474858	97.621	ng		100
21) Trichlorotrifluoroethane	5.58	151	1666678	145.713	ng		96
22) Carbon Disulfide	5.62	76	5601	0.133	ng	#	1
26) Vinyl Acetate	6.44	86	649	0.288	ng	#	70
32) Chloroform	7.36	83	6576	0.292	ng		99
66) Ethylbenzene	15.41	91	3136	0.059	ng		93
67) m- & p-Xylenes	15.63	91	5436	0.126	ng		100
70) o-Xylene	16.24	91	7645	0.179	ng		98

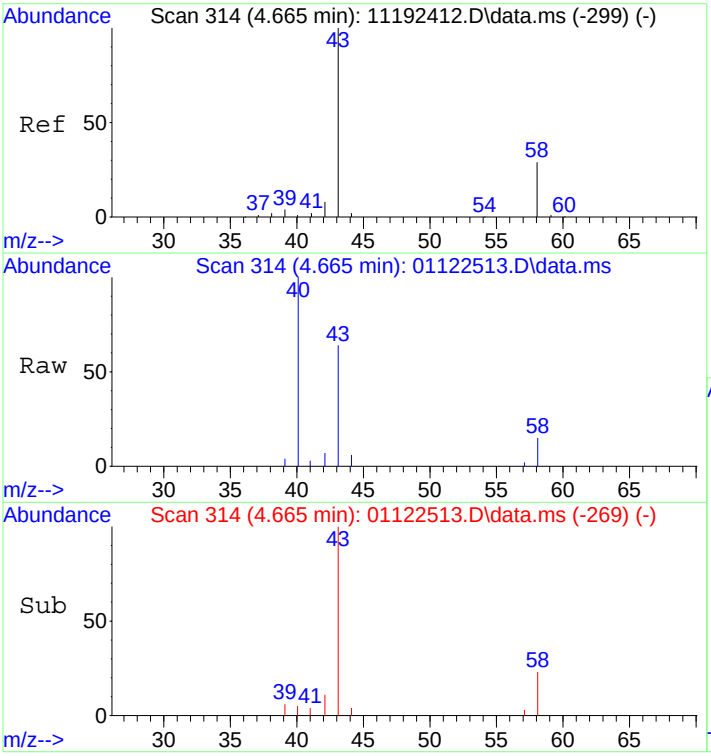
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 11:14:28 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

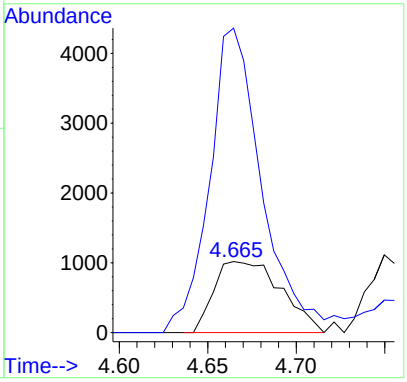


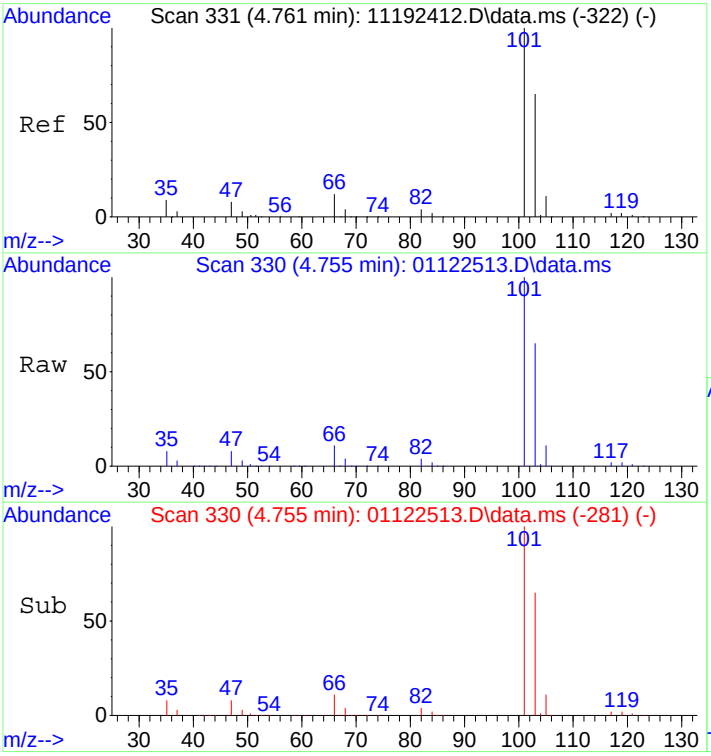


#13
Acetone
Concen: 0.29 ng
RT: 4.66 min Scan# 314
Delta R.T. 0.004 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion: 58 Resp: 2687

Ion	Ratio	Lower	Upper
58	100		
43	337.0	312.5	372.5

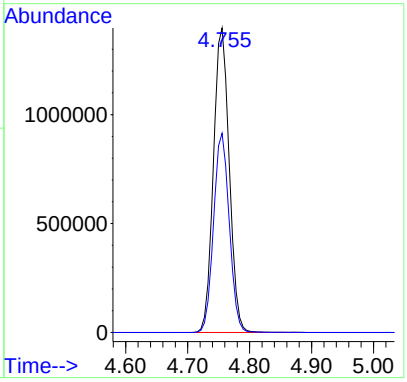


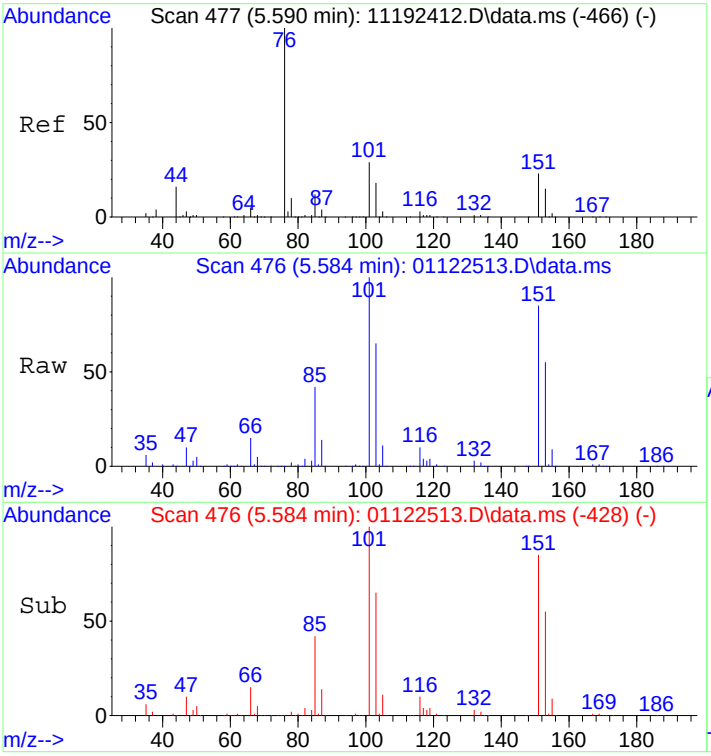


#14
Trichlorofluoromethane
Concen: 97.62 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion:101 Resp: 2474858

Ion	Ratio	Lower	Upper
101	100		
103	64.9	44.8	84.8

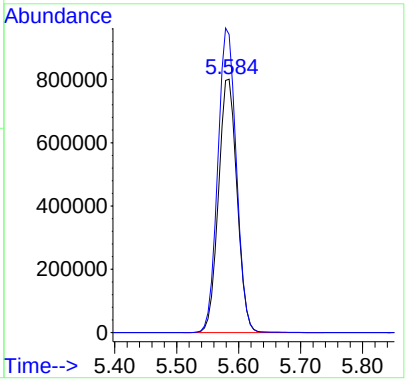


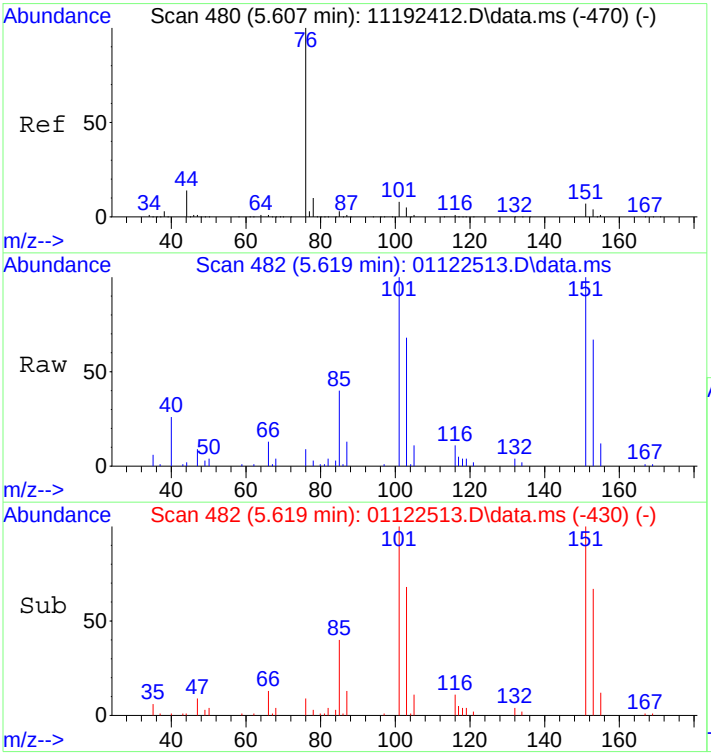


#21
Trichlorotrifluoroethane
Concen: 145.71 ng
RT: 5.58 min Scan# 476
Delta R.T. 0.024 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion:151 Resp: 1666678

Ion	Ratio	Lower	Upper
151	100		
101	119.9	105.0	145.0

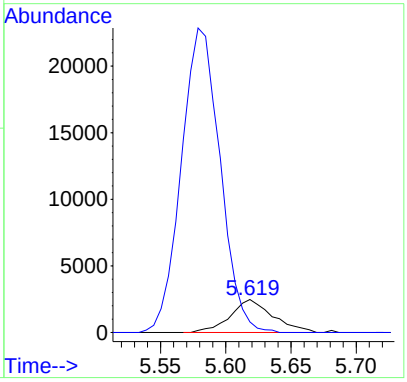


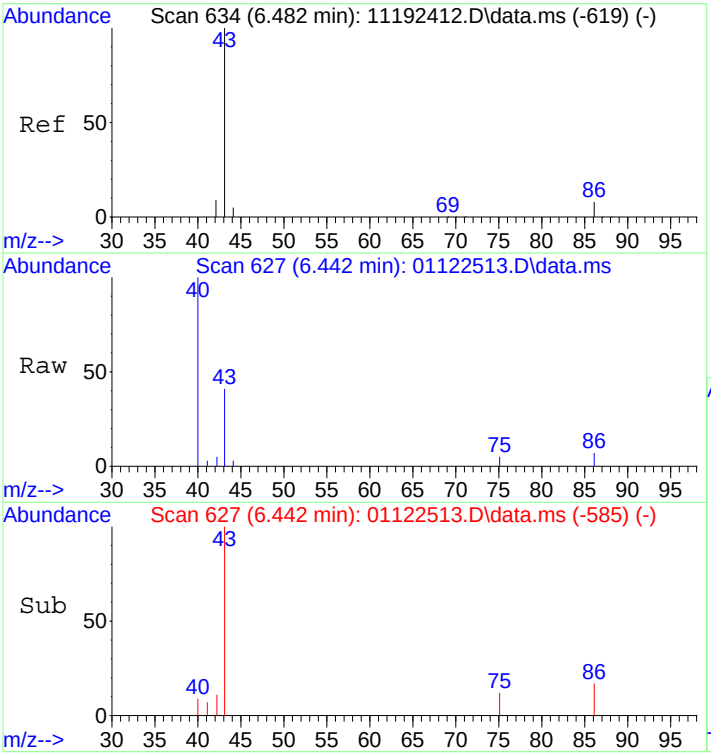


#22
Carbon Disulfide
Concen: 0.13 ng
RT: 5.62 min Scan# 482
Delta R.T. 0.047 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion: 76 Resp: 5601

Ion	Ratio	Lower	Upper
76	100		
78	846.1	0.0	29.6#

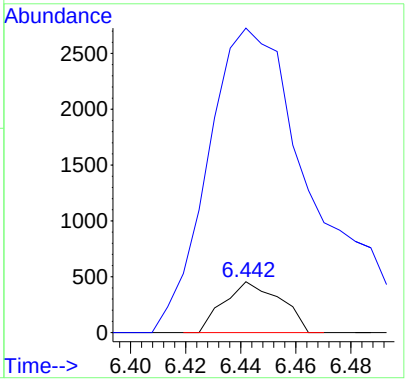


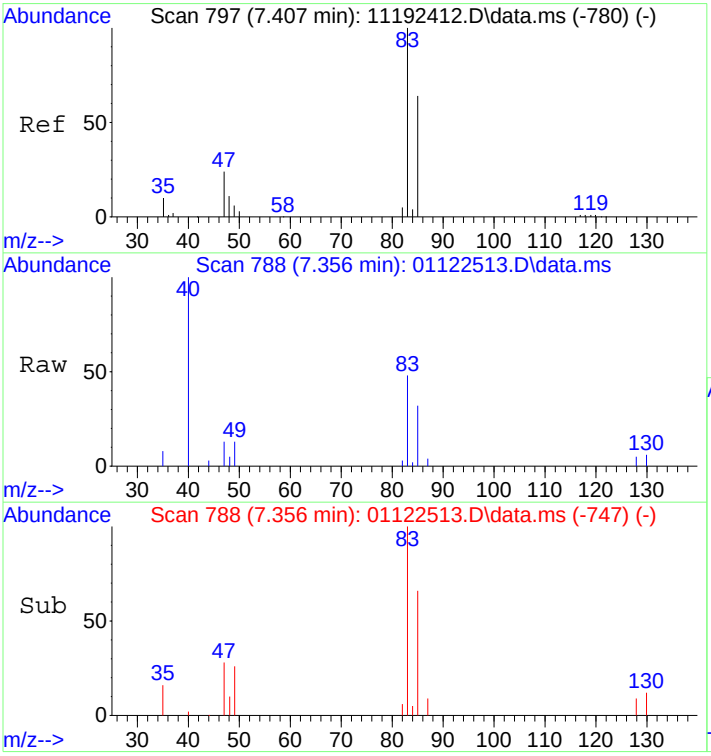


#26
Vinyl Acetate
Concen: 0.29 ng
RT: 6.44 min Scan# 627
Delta R.T. -0.013 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion: 86 Resp: 649

Ion	Ratio	Lower	Upper
86	100		
43	1182.9	1331.6	1371.6#

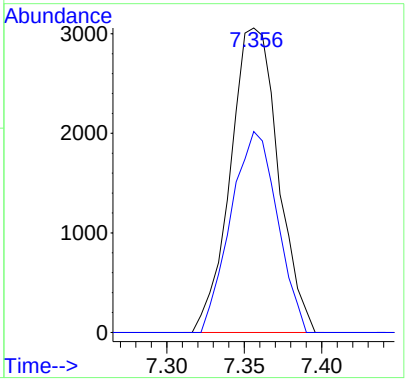


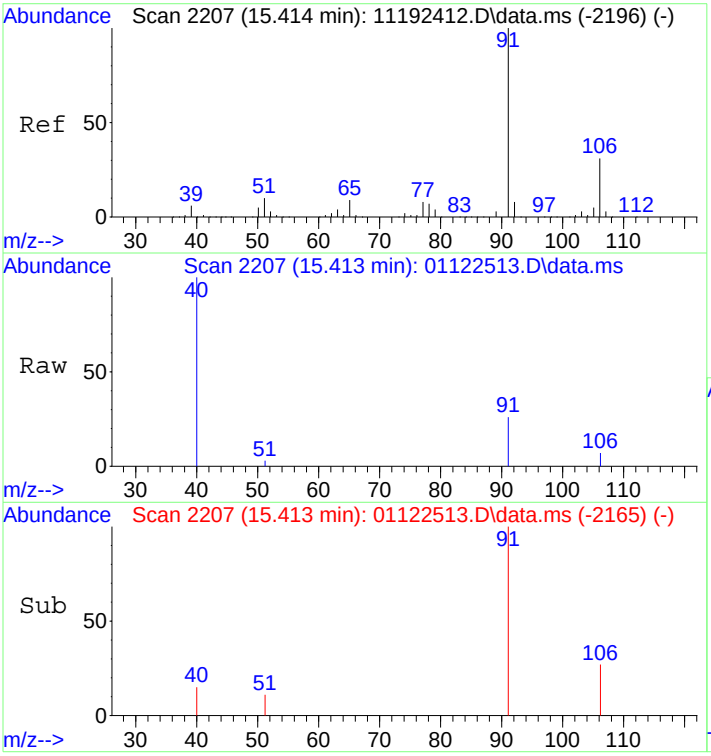


#32
Chloroform
Concen: 0.29 ng
RT: 7.36 min Scan# 788
Delta R.T. -0.016 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion: 83 Resp: 6576

Ion	Ratio	Lower	Upper
83	100		
85	64.1	45.1	85.1

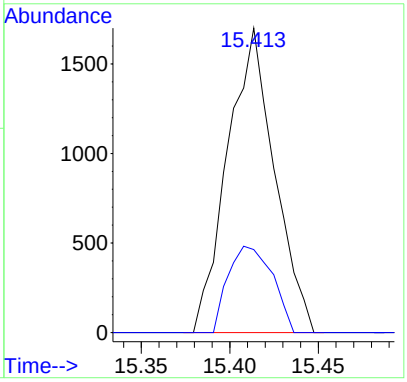


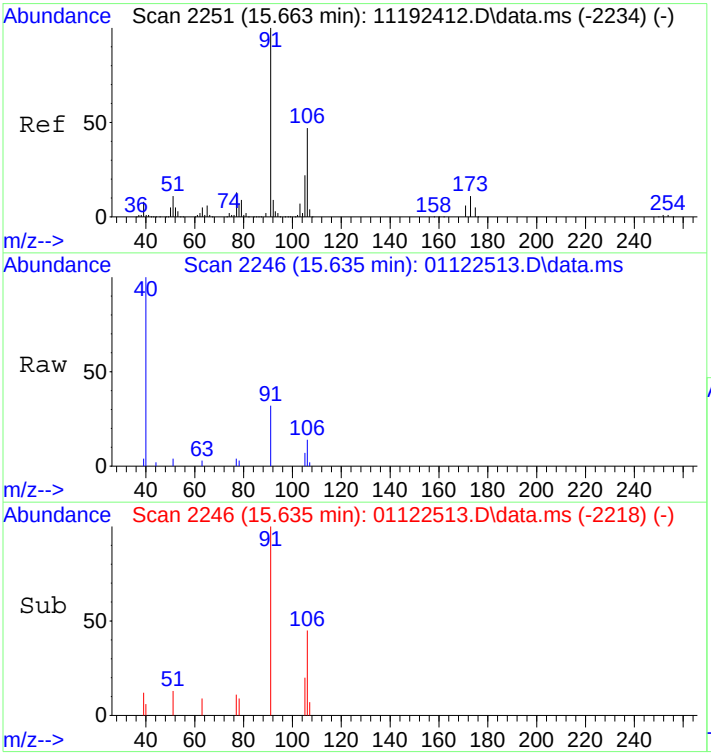


#66
Ethylbenzene
Concen: 0.06 ng
RT: 15.41 min Scan# 2207
Delta R.T. -0.011 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion: 91 Resp: 3136

Ion	Ratio	Lower	Upper
91	100		
106	26.8	10.7	50.7

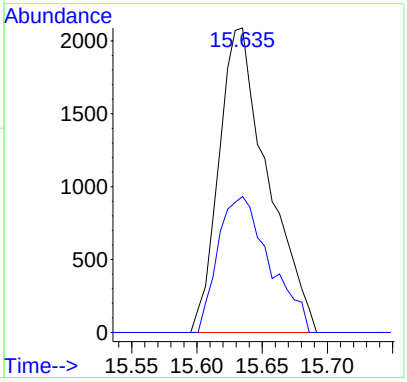


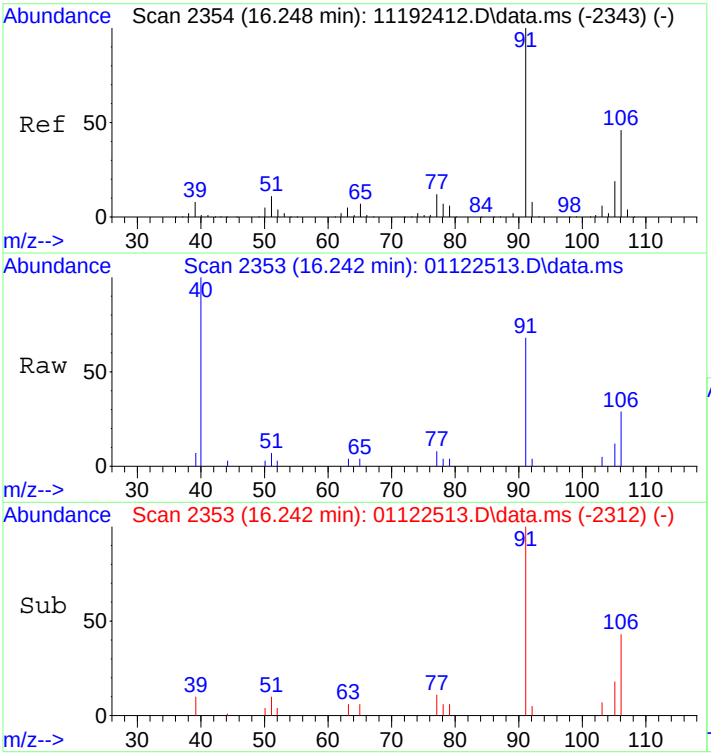


#67
m- & p-Xylenes
Concen: 0.13 ng
RT: 15.63 min Scan# 2246
Delta R.T. -0.040 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion: 91 Resp: 5436

Ion	Ratio	Lower	Upper
91	100		
106	47.3	27.1	67.1

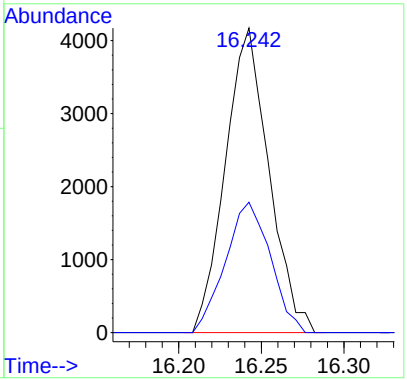




#70
o-Xylene
Concen: 0.18 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01122513.D
Acq: 12 Jan 2025 11:31

Tgt Ion: 91 Resp: 7645

Ion	Ratio	Lower	Upper
91	100		
106	44.2	25.8	65.8



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 12:29:22 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

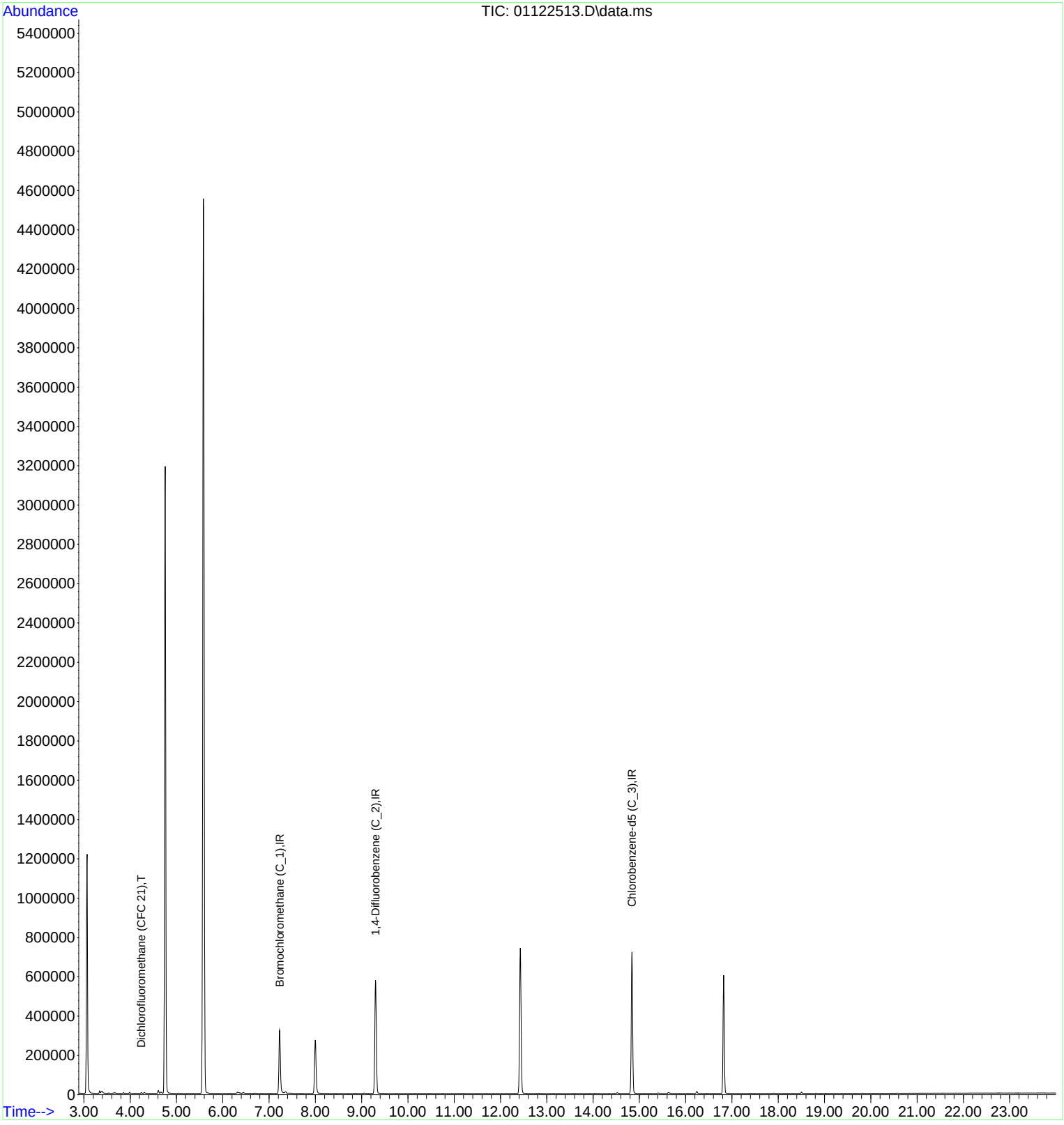
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	139743	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	604467	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	111733	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	52	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.		
7) Dichlorofluoromethane ...	4.24	67	3562	0.126	ng	97
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	57	N.D.		
10) 2-Methylbutane	4.66	57	330	N.D.		
11) Methyl Acetate	0.00	43	0	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	0.00	174	0	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	0.00	77	0	N.D.		
26) 2-Chlorotoluene	0.00	91	0	N.D.		
27) 4-Chlorotoluene	0.00	91	0	N.D.		
28) Indane	0.00	117	0	N.D.		
29) Indene	0.00	115	0	N.D.		
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.		
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.		
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.		
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.		

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

Quantitation Report (QT Reviewed)

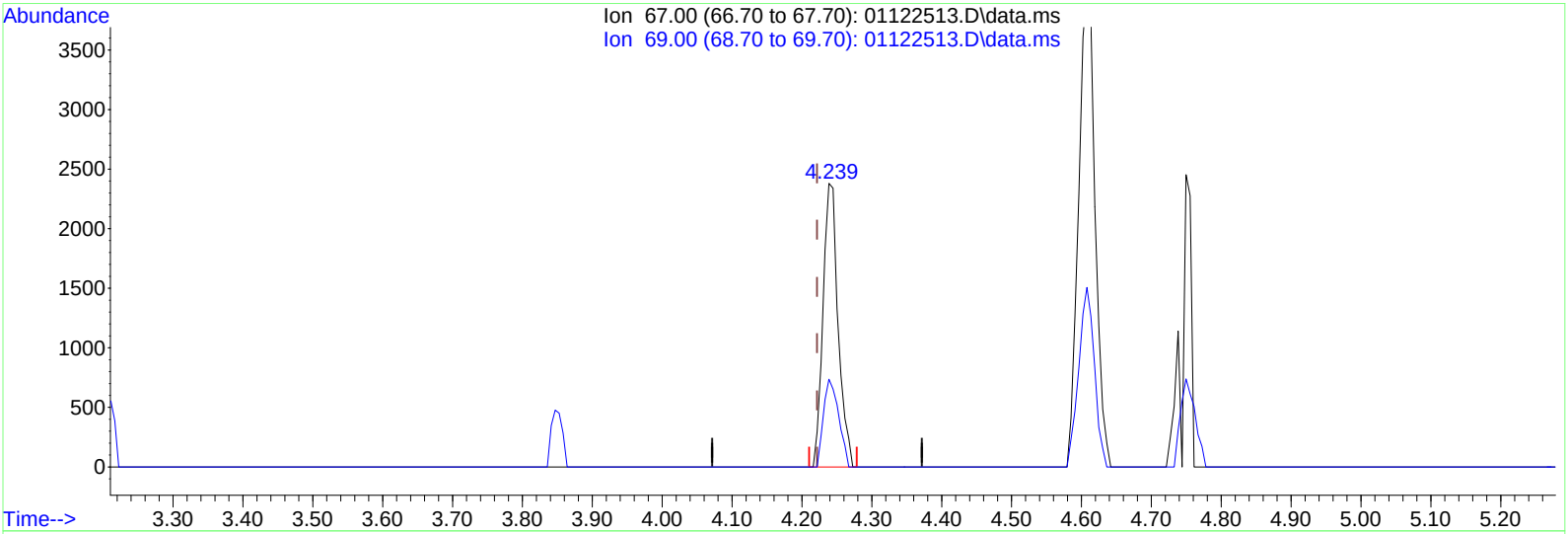
Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

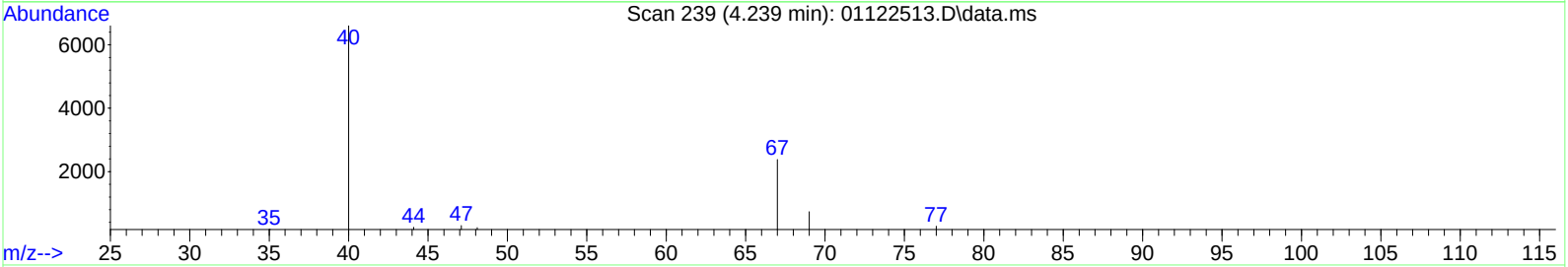
Quant Time: Jan 13 12:29:22 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

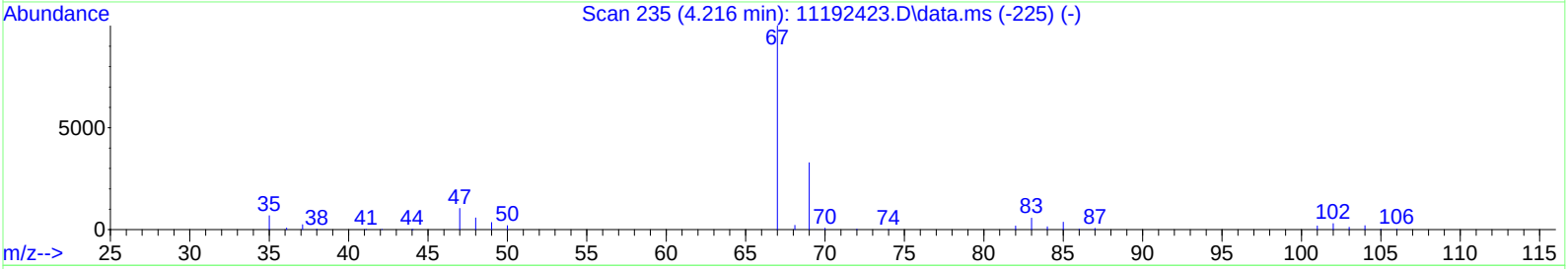


Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 13 12:29:22 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration







TIC: 01122513.D\data.ms

(7) Dichlorofluoromethane (CFC 21) (T)

4.239min (+0.017) 0.13ng

response 3562

Ion	Exp%	Act%
67.00	100	100
69.00	32.80	30.97
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112529.D
Acq On : 11 Jan 2025 22:02
Operator : LS
Sample : P2405139-066dil (15mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

1/13/25

Quant Time: Jan 12 07:55:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143206	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	623785	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	116425	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	243511	12.481	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
57) Toluene-d8 (SS2)	12.43	98	651769	12.619	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%				
73) Bromofluorobenzene (SS3)	16.82	174	231865	13.009	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.08%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	3.39	85	544	N.D.			
4) Chloromethane	3.39	50	388	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.33	45	219	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.68	58	821	0.085	ng	#	79
14) Trichlorofluoromethane	4.75	101	802120	30.553	ng		99
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.58	151	526725	44.469	ng		96
22) Carbon Disulfide	5.63	76	1654	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	7.35	83	1901	0.082	ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	1112	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112529.D
Acq On : 11 Jan 2025 22:02
Operator : LS
Sample : P2405139-066dil (15mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

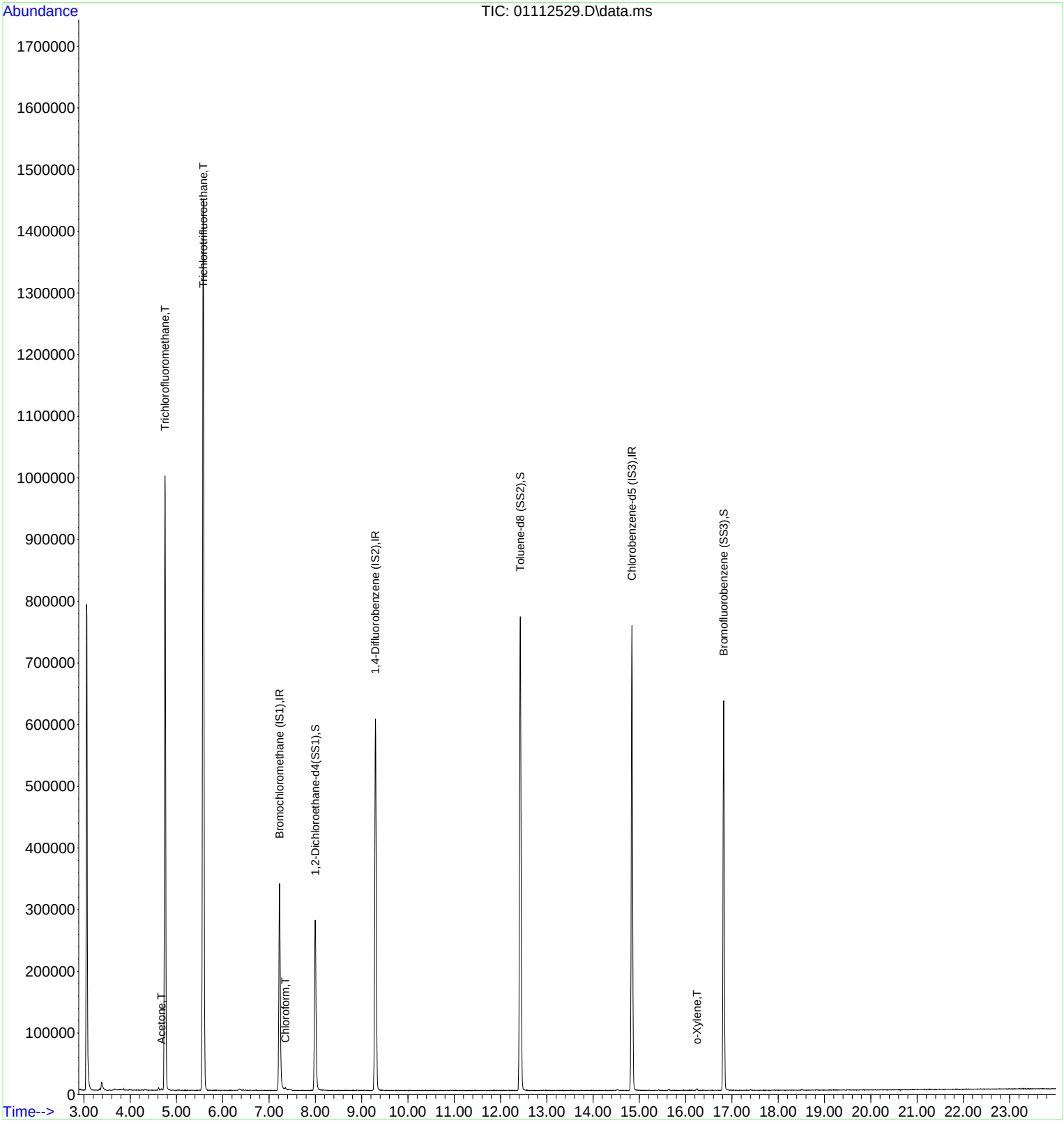
Quant Time: Jan 12 07:55:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.55	91	107	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	973	N.D.		
67) m- & p-Xylenes	15.63	91	1578	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	16.25	91	2347	0.053	ng	94
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112529.D
Acq On : 11 Jan 2025 22:02
Operator : LS
Sample : P2405139-066dil (15mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

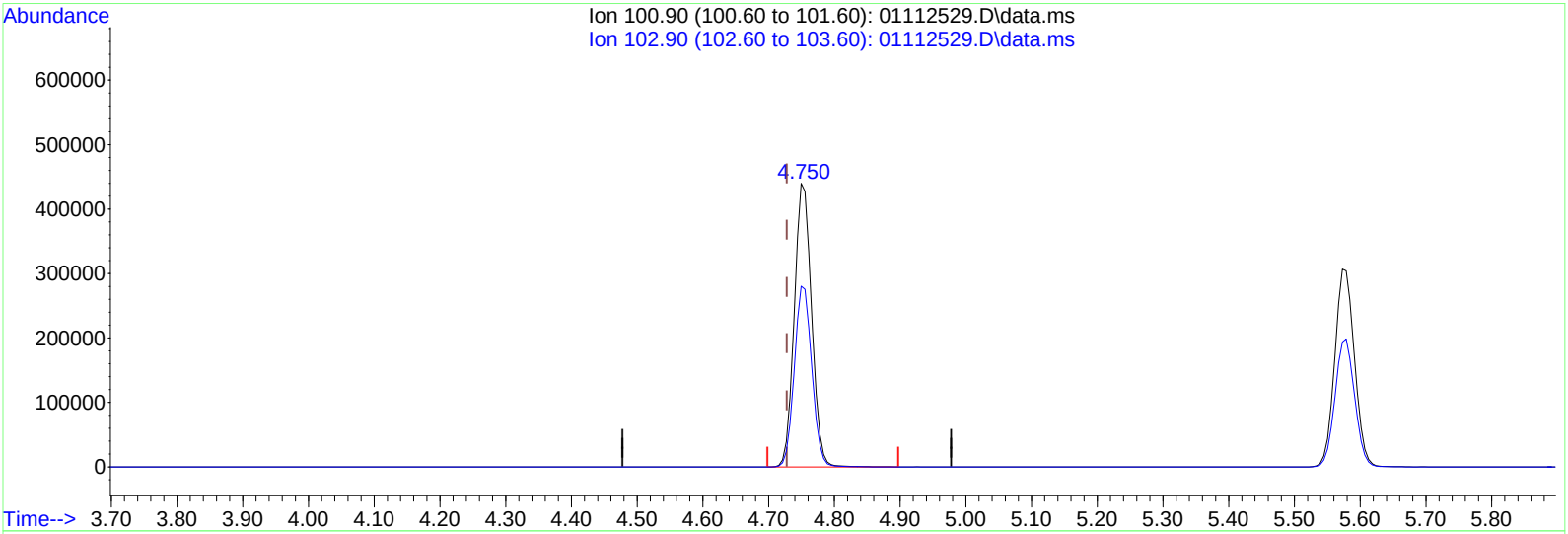
Quant Time: Jan 12 07:55:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

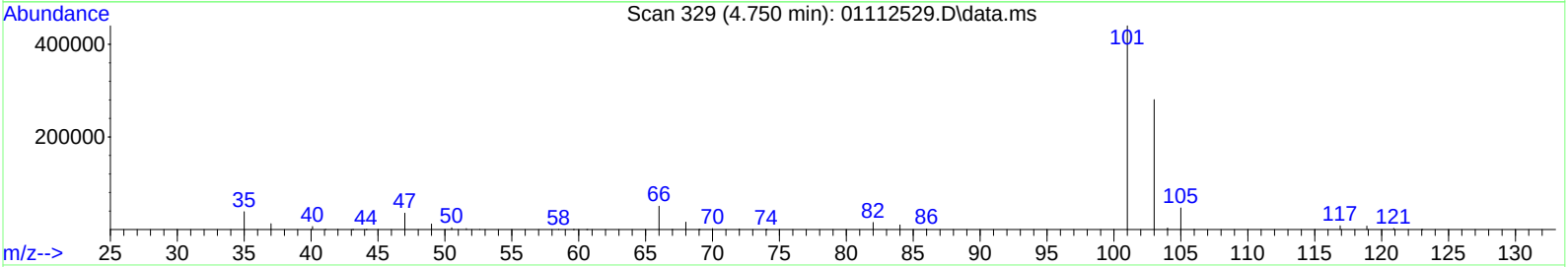


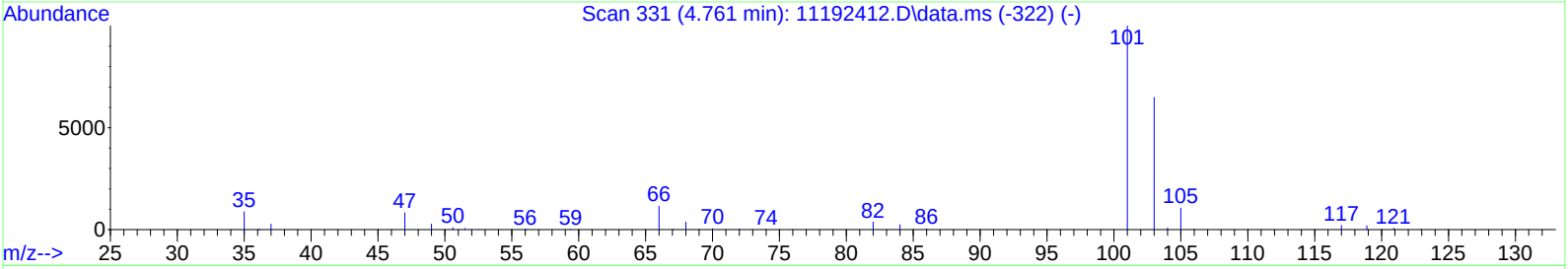
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112529.D
Acq On : 11 Jan 2025 22:02
Operator : LS
Sample : P2405139-066dil (15mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 12 07:55:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112529.D\data.ms

(14) Trichlorofluoromethane (T)

4.750min (+0.022) 30.55ng

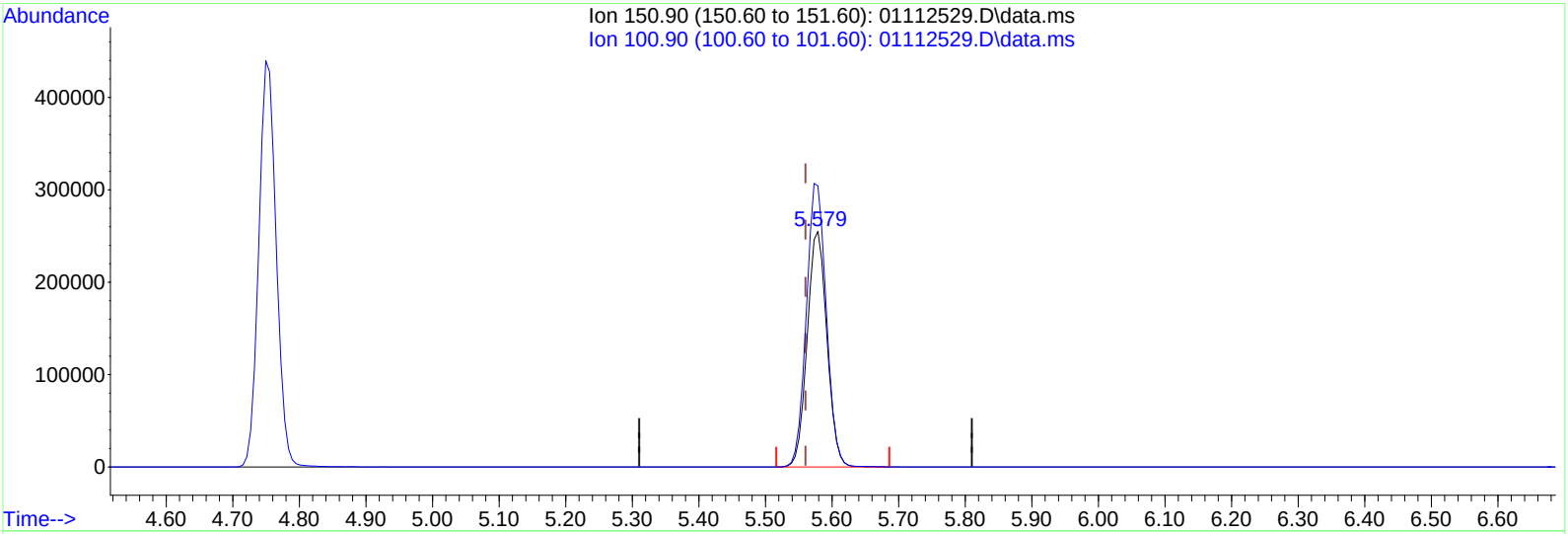
response 802120

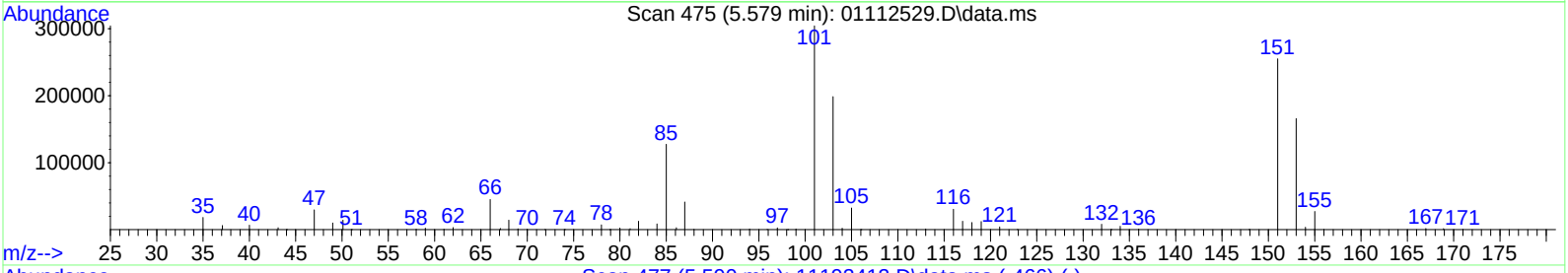
Ion	Exp%	Act%
100.90	100	100
102.90	64.80	64.30
0.00	0.00	0.00
0.00	0.00	0.00

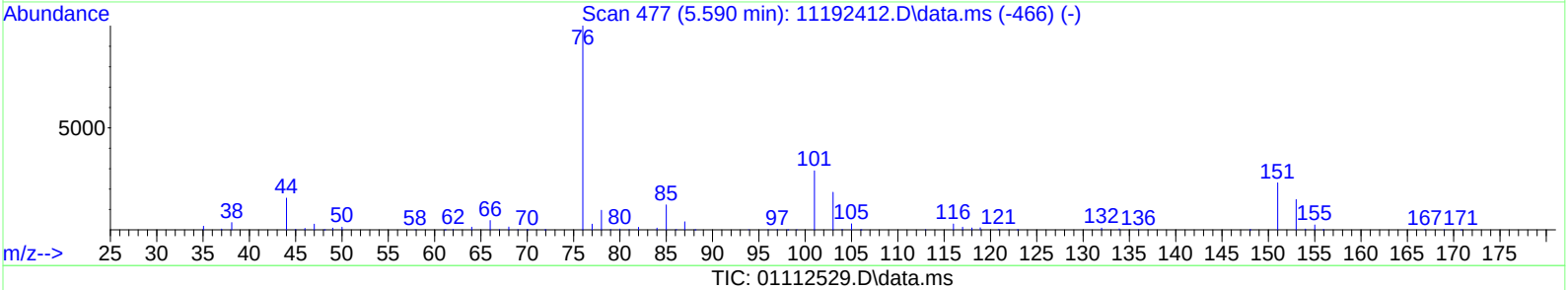
Quantitation Report (Qedit)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112529.D
Acq On : 11 Jan 2025 22:02
Operator : LS
Sample : P2405139-066dil (15mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 12 07:55:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration







TIC: 01112529.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.579min (+0.018) 44.47ng

response 526725

Ion	Exp%	Act%
150.90	100	100
100.90	125.00	121.00
0.00	0.00	0.00
0.00	0.00	0.00

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122513.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.336	77	80	84	rBV3	12358	15004	0.16%	0.067%
2	3.393	84	90	101	rVB2	10847	29656	0.31%	0.133%
3	4.608	297	304	309	rBV3	14942	23640	0.25%	0.106%
4	4.659	309	313	321	rVV2	6524	12763	0.13%	0.057%
5	4.755	321	330	348	rVV	3188483	5630292	59.44%	25.308%
6	5.579	463	475	500	rVB	4552762	9472789	100.00%	42.580%
7	6.317	599	605	611	rBV2	6138	15562	0.16%	0.070%
8	7.225	756	765	782	rBV	321229	723008	7.63%	3.250%
9	7.356	782	788	795	rVB2	7619	17859	0.19%	0.080%
10	7.998	891	901	914	rBV	272255	618251	6.53%	2.779%
11	9.298	1120	1130	1149	rBV	576505	1322894	13.97%	5.946%
12	12.427	1671	1681	1696	rBV	739477	1679986	17.73%	7.552%
13	14.840	2096	2106	2121	rBV	720100	1499300	15.83%	6.739%
14	15.635	2239	2246	2256	rBV3	5097	12537	0.13%	0.056%
15	16.242	2344	2353	2361	rBV2	9902	18953	0.20%	0.085%
16	16.822	2446	2455	2469	rBV	601003	1143794	12.07%	5.141%
17	18.502	2746	2751	2760	rBV4	6666	10677	0.11%	0.048%

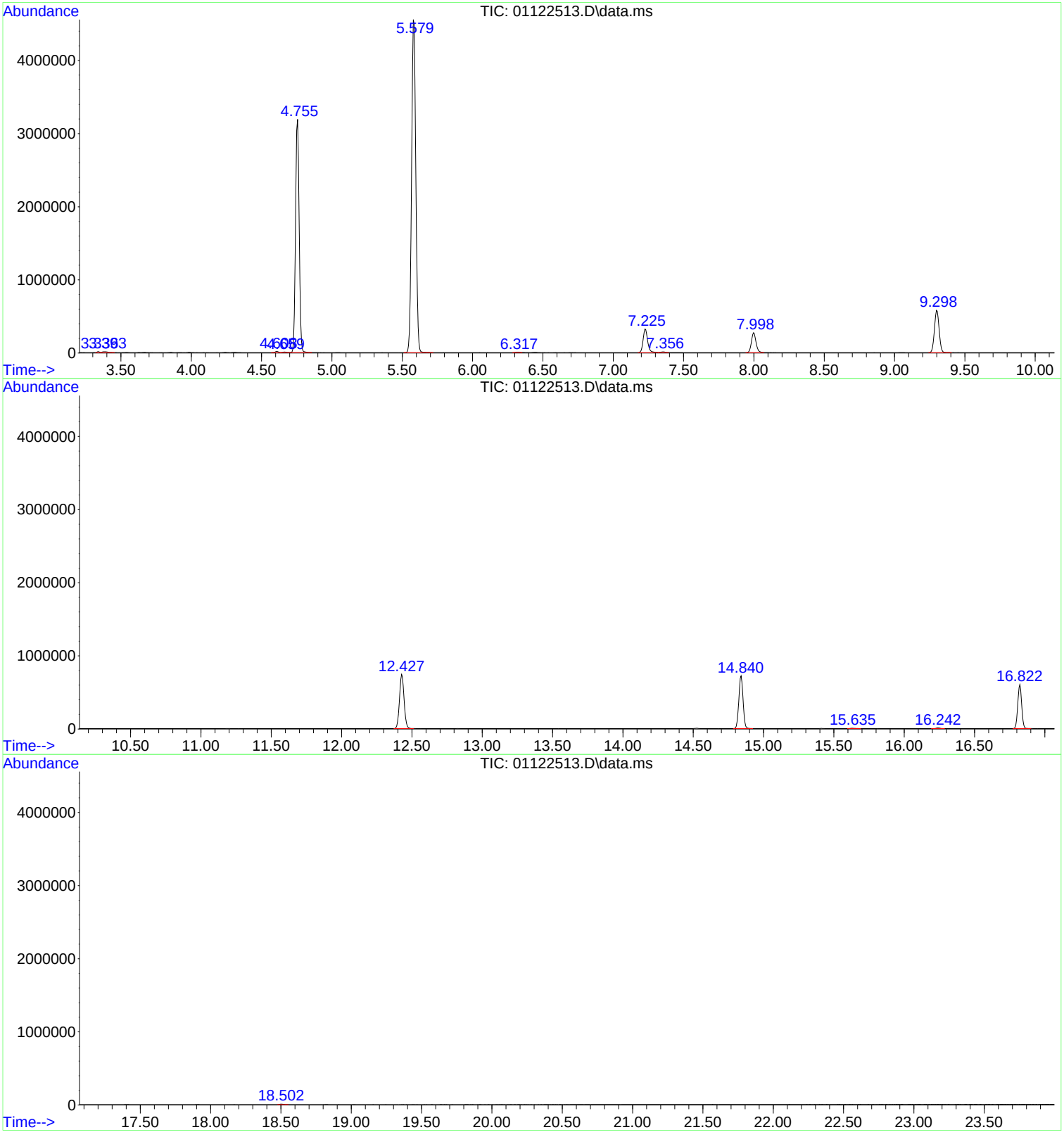
Sum of corrected areas: 22246965

LSC Report - Integrated Chromatogram

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:31
Operator : SC
Sample : P2405139-066 (50mL)
Misc : S37-12312401
ALS Vial : 15 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122513.D
Acq On : 12 Jan 2025 11:311
Operator : SCC
Sample : P2405139-066 (50mL))
Misc : S37-123124011
ALS Vial : 15 Sample Multiplier: 11

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)) VOA 1/13/25

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 11:16:04 2025 1/13/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139824	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	606076	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	112914	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	235827	12.380	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.04%				
57) Toluene-d8 (SS2)	12.43	98	633862	12.654	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.20%				
73) Bromofluorobenzene (SS3)	16.82	174	226010	13.075	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.56%				
Target Compounds							Qvalue
2) Propene	3.30	42	3769	0.252	ng	#	35
3) Dichlorodifluoromethan...	3.36	85	15948	0.583	ng		99
4) Chloromethane	3.53	50	3033	0.149	ng		96
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	318	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	60761	5.875	ng		98
11) Acetonitrile	4.46	41	947	N.D.			
12) Acrolein	4.55	56	429	N.D.			
13) Acetone	4.64	58	37992	4.035	ng	#	22
14) Trichlorofluoromethane	4.76	101	15783	0.616	ng		98
15) 2-Propanol (Isopropanol)	4.85	45	136656	4.053	ng		97
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	5.36	84	1439	0.109	ng		99
20) 3-Chloro-1-propene (Al...	5.41	41	323	N.D.			
21) Trichlorotrifluoroethane	5.59	151	8494	0.734	ng		92
22) Carbon Disulfide	5.61	76	7171	0.168	ng		100
23) trans-1,2-Dichloroethene	6.15	61	113	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.32	73	220	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.67	72	3269	0.432	ng	#	90
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.28	61	74024	15.856	ng		97
31) n-Hexane	7.31	57	5428	0.258	ng		97
32) Chloroform	7.36	83	668	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D. d			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.11	62	124	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	3242	No Calib		#	
41) Benzene	8.90	78	12527	0.257	ng		99
42) Carbon Tetrachloride	9.07	117	2009	0.103	ng		97
43) Cyclohexane	9.21	84	2855	0.168	ng		98
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	9.86	63	640	0.054	ng	#	76
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.16	130	125	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 11:16:04 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.23	57	2391	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	10.58	71	1222	0.113 ng	#	84
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.34	58	5362	0.512 ng		86
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.56	91	77180	1.601 ng		100
59) 2-Hexanone	12.93	43	966	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.78	43	2407	0.091 ng	#	85
63) n-Octane	13.92	57	738	0.074 ng		96
64) Tetrachloroethene	14.03	166	141	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.41	91	4282	0.080 ng		96
67) m- & p-Xylenes	15.63	91	9073	0.208 ng		98
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.11	104	932	N.D.		
70) o-Xylene	16.24	91	3609	0.084 ng		100
71) n-Nonane	16.62	43	1110	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.03	105	300	N.D.		
75) alpha-Pinene	17.52	93	8039	0.303 ng		90
76) n-Propylbenzene	17.68	91	542	N.D.		
77) 3-Ethyltoluene	17.03	105	300	No Calib	#	
78) 4-Ethyltoluene	17.87	105	467	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	436	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	300	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.43	105	1094	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.93	119	1946	N.D.		
89) 1,2,3-Trimethylbenzene	17.03	105	300	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.08	68	4108	0.287 ng		88
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.04	58	3553	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.85	180	159	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	18.95	58	256	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.50	119	531	N.D.		
100) n-Butylbenzene	19.39	91	329	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

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Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
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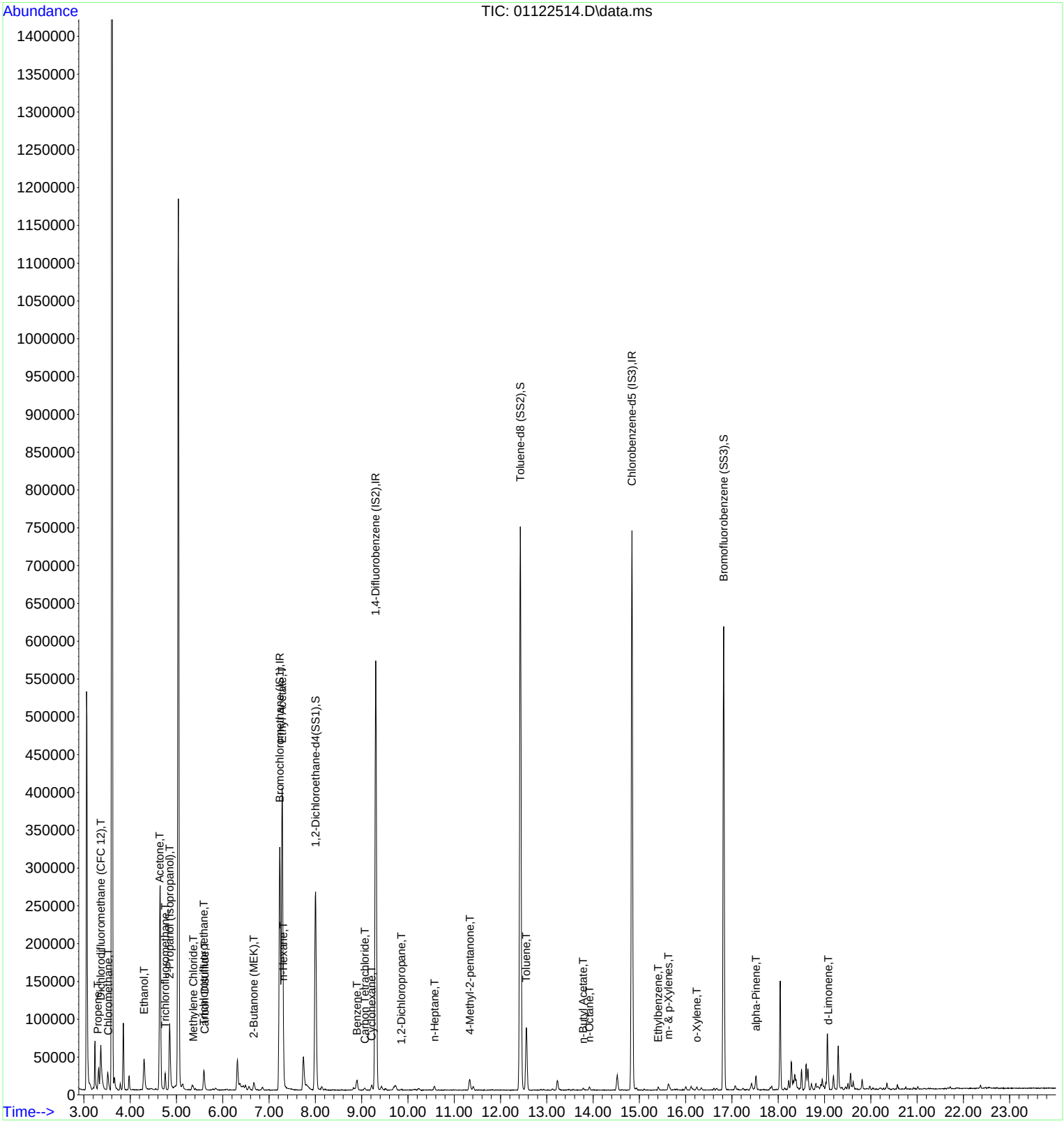

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

NOA 1/13/25

Quant Time: Jan 13 11:16:04 2025
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1) Bromochloromethane (IS1)	7.23	130	139824	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	606076	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	112914	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	235827	12.380	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.04%				
57) Toluene-d8 (SS2)	12.43	98	633862	12.654	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.20%				
73) Bromofluorobenzene (SS3)	16.82	174	226010	13.075	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.56%				
Target Compounds							Qvalue
2) Propene	3.30	42	3769	0.252	ng	#	35
3) Dichlorodifluoromethan...	3.36	85	15948	0.583	ng		99
4) Chloromethane	3.53	50	3033	0.149	ng		96
10) Ethanol	4.30	45	60761	5.875	ng		98
13) Acetone	4.64	58	37992	4.035	ng	#	22
14) Trichlorofluoromethane	4.76	101	15783	0.616	ng		98
15) 2-Propanol (Isopropanol)	4.85	45	136656	4.053	ng		97
19) Methylene Chloride	5.36	84	1439	0.109	ng		99
21) Trichlorotrifluoroethane	5.59	151	8494	0.734	ng		92
22) Carbon Disulfide	5.61	76	7171	0.168	ng		100
27) 2-Butanone (MEK)	6.67	72	3269	0.432	ng	#	90
30) Ethyl Acetate	7.28	61	74024	15.856	ng		97
31) n-Hexane	7.31	57	5428	0.258	ng		97
41) Benzene	8.90	78	12527	0.257	ng		99
42) Carbon Tetrachloride	9.07	117	2009	0.103	ng		97
43) Cyclohexane	9.21	84	2855	0.168	ng		98
45) 1,2-Dichloropropane	9.86	63	640	0.054	ng	#	76
51) n-Heptane	10.58	71	1222	0.113	ng	#	84
53) 4-Methyl-2-pentanone	11.34	58	5362	0.512	ng		86
58) Toluene	12.56	91	77180	1.601	ng		100
62) n-Butyl Acetate	13.78	43	2407	0.091	ng	#	85
63) n-Octane	13.92	57	738	0.074	ng		96
66) Ethylbenzene	15.41	91	4282	0.080	ng		96
67) m- & p-Xylenes	15.63	91	9073	0.208	ng		98
70) o-Xylene	16.24	91	3609	0.084	ng		100
75) alpha-Pinene	17.52	93	8039	0.303	ng		90
91) d-Limonene	19.08	68	4108	0.287	ng		88

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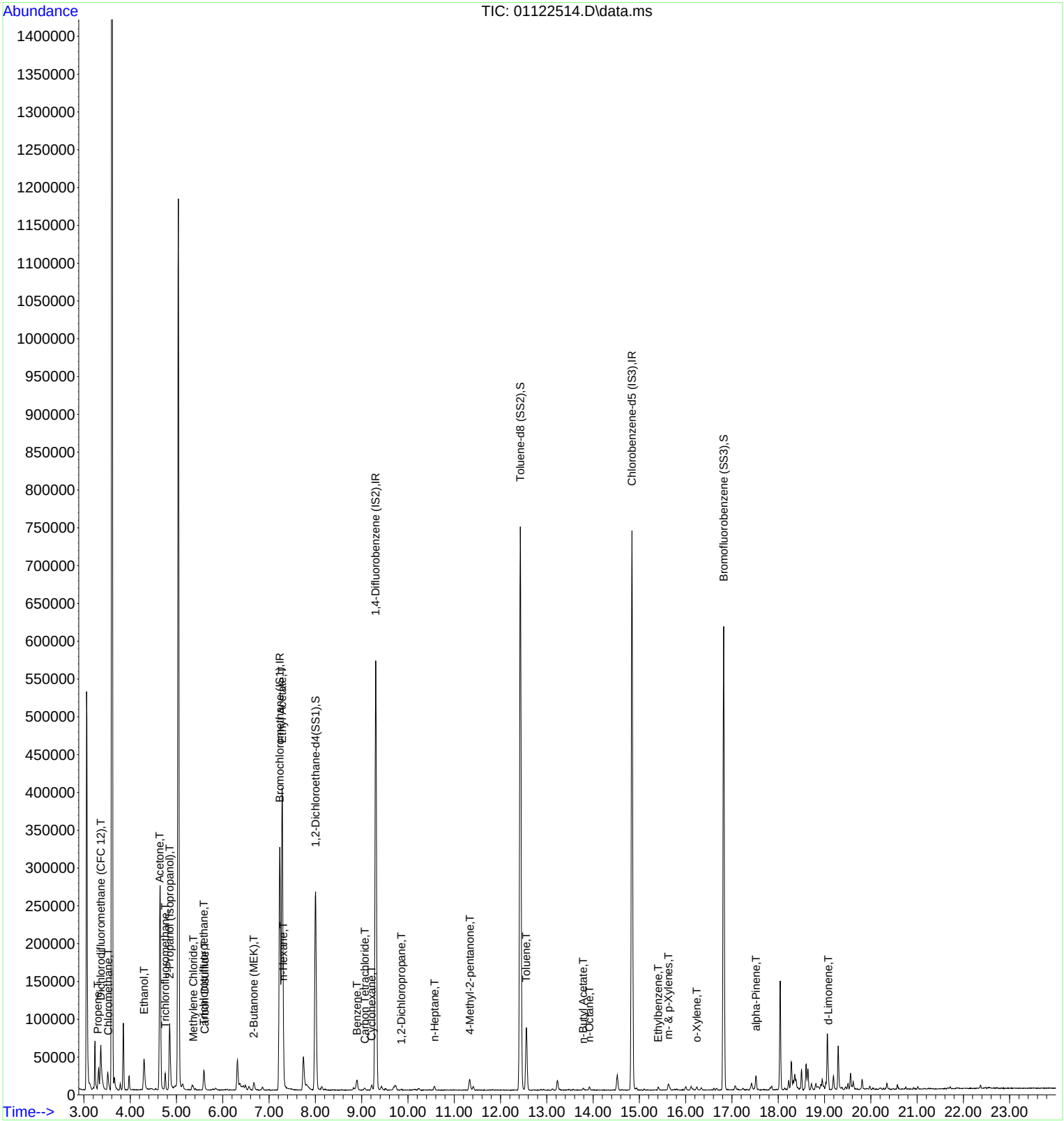
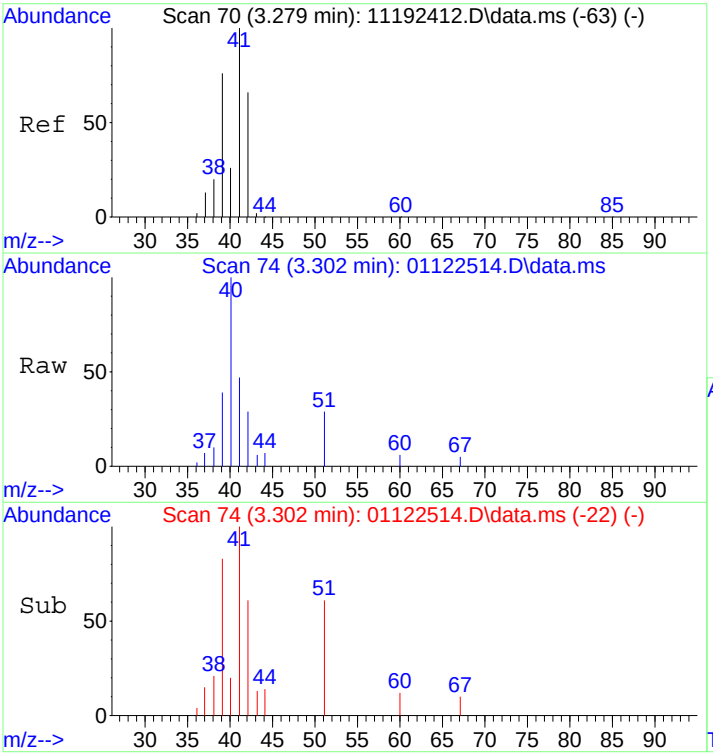
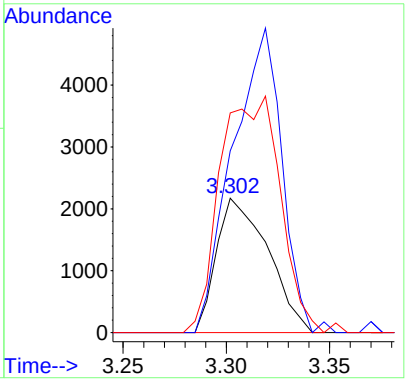


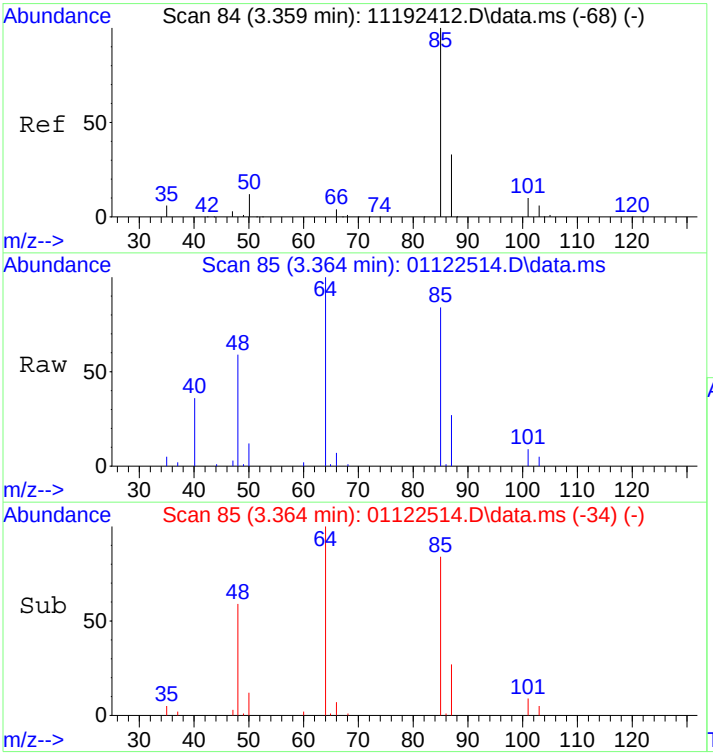


#2
Propene
Concen: 0.25 ng
RT: 3.30 min Scan# 74
Delta R.T. 0.048 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 42 Resp: 3769

Ion	Ratio	Lower	Upper
42	100		
39	217.3	95.4	135.4#
41	206.3	131.9	171.9#

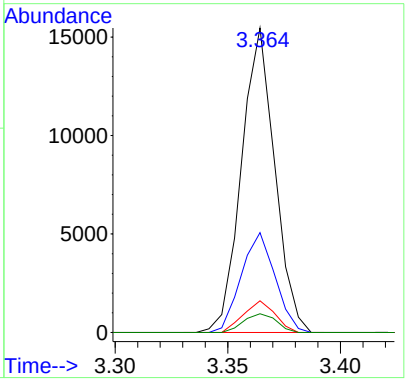


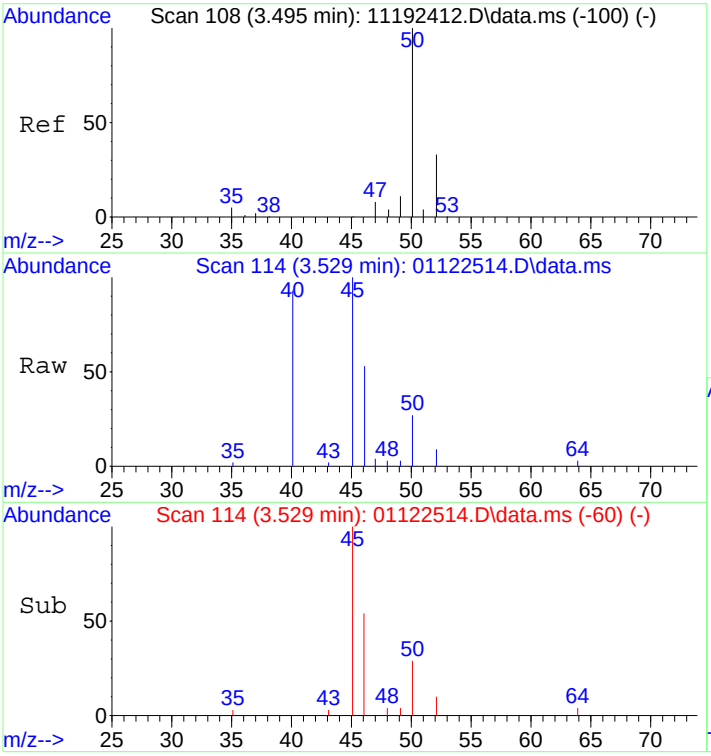


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.58 ng
RT: 3.36 min Scan# 85
Delta R.T. 0.037 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 85 Resp: 15948

Ion	Ratio	Lower	Upper
85	100		
87	33.4	12.6	52.6
101	9.8	0.0	29.6
103	6.0	0.0	26.2

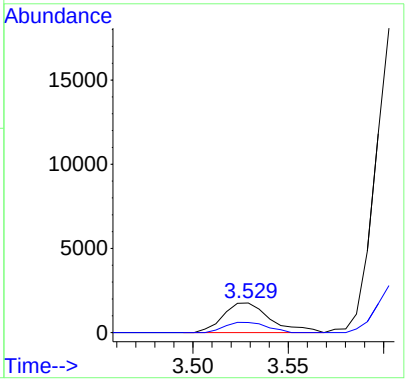


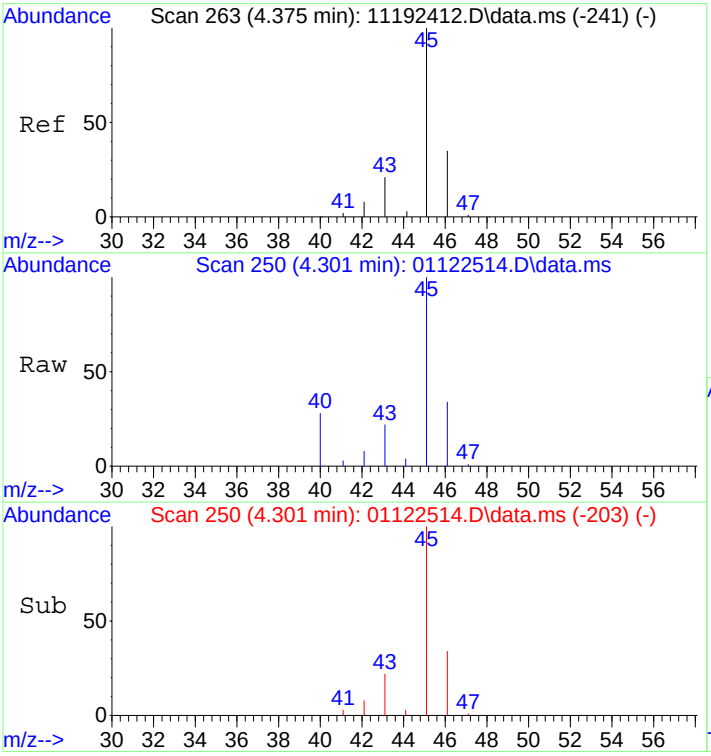


#4
Chloromethane
Concen: 0.15 ng
RT: 3.53 min Scan# 114
Delta R.T. 0.056 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 50 Resp: 3033

Ion	Ratio	Lower	Upper
50	100		
52	30.6	13.0	53.0

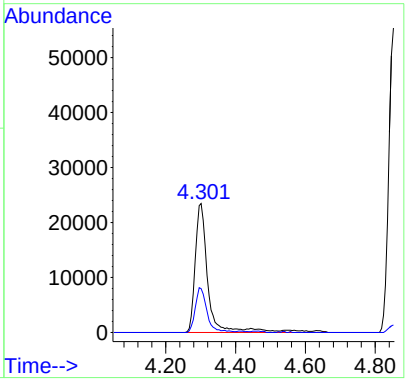


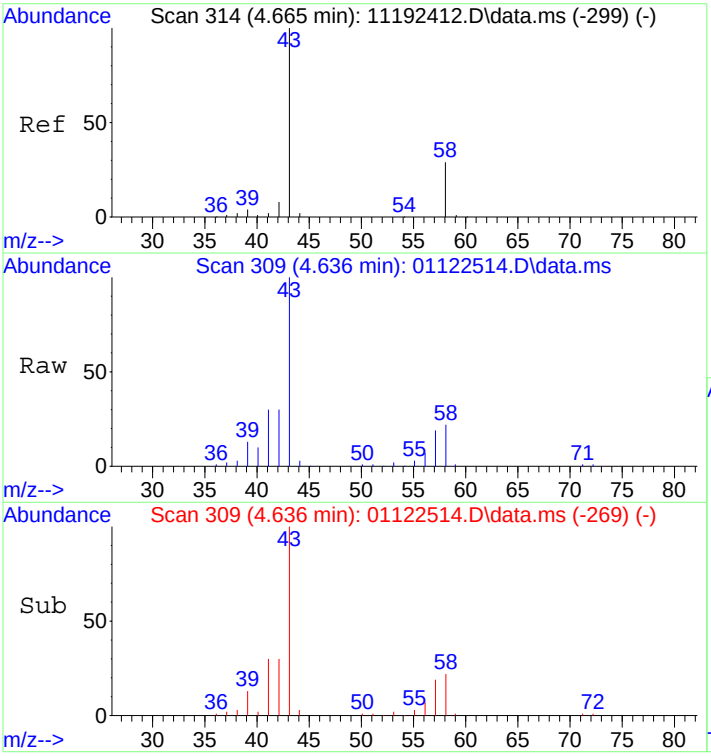


#10
Ethanol
Concen: 5.87 ng
RT: 4.30 min Scan# 250
Delta R.T. 0.017 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 45 Resp: 60761

Ion	Ratio	Lower	Upper
45	100		
46	32.7	11.8	51.8

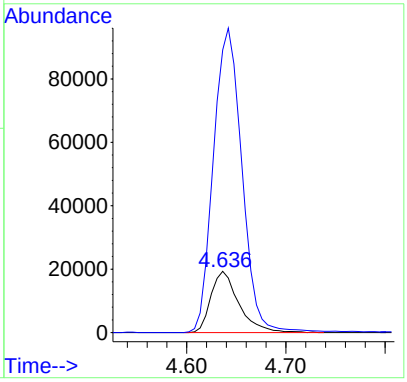


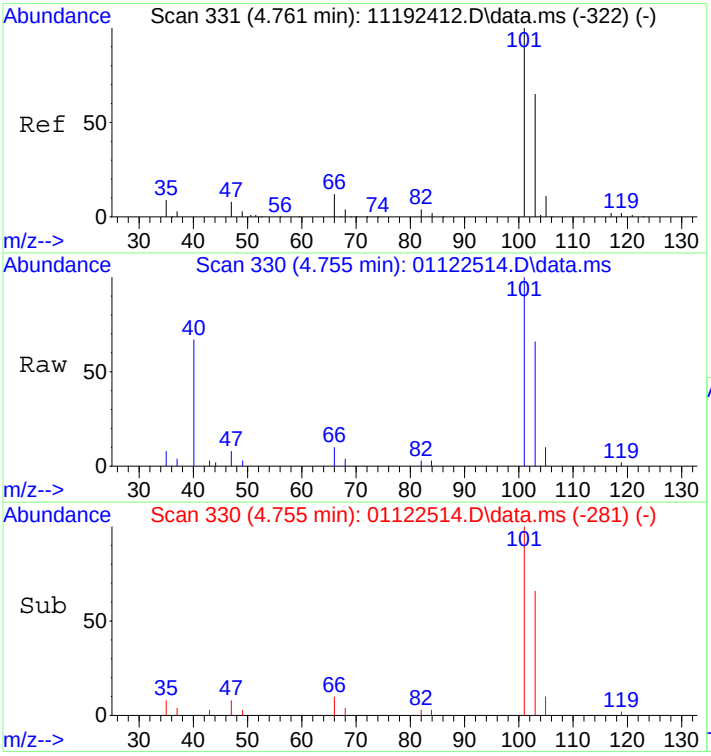


#13
Acetone
Concen: 4.04 ng
RT: 4.64 min Scan# 309
Delta R.T. -0.024 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 58 Resp: 37992

Ion	Ratio	Lower	Upper
58	100		
43	508.7	312.5	372.5#

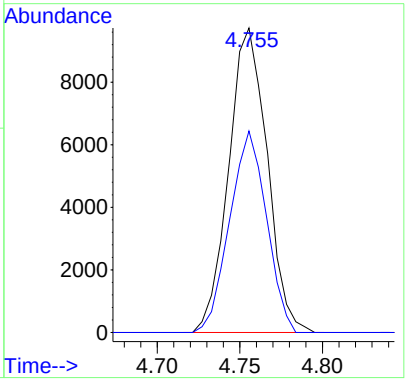


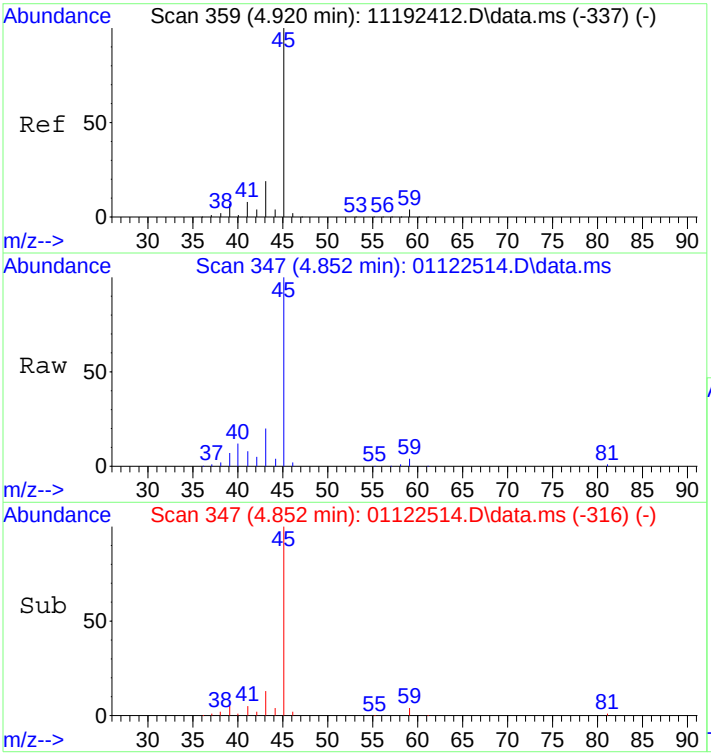


#14
Trichlorofluoromethane
Concen: 0.62 ng
RT: 4.76 min Scan# 330
Delta R.T. 0.028 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion:101 Resp: 15783

Ion	Ratio	Lower	Upper
101	100		
103	63.2	44.8	84.8

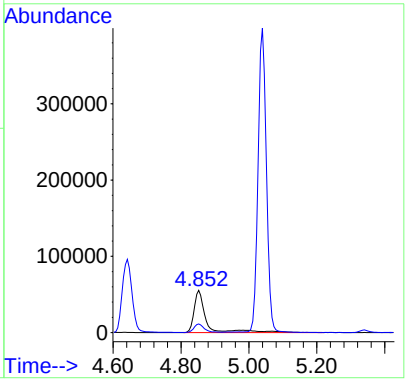


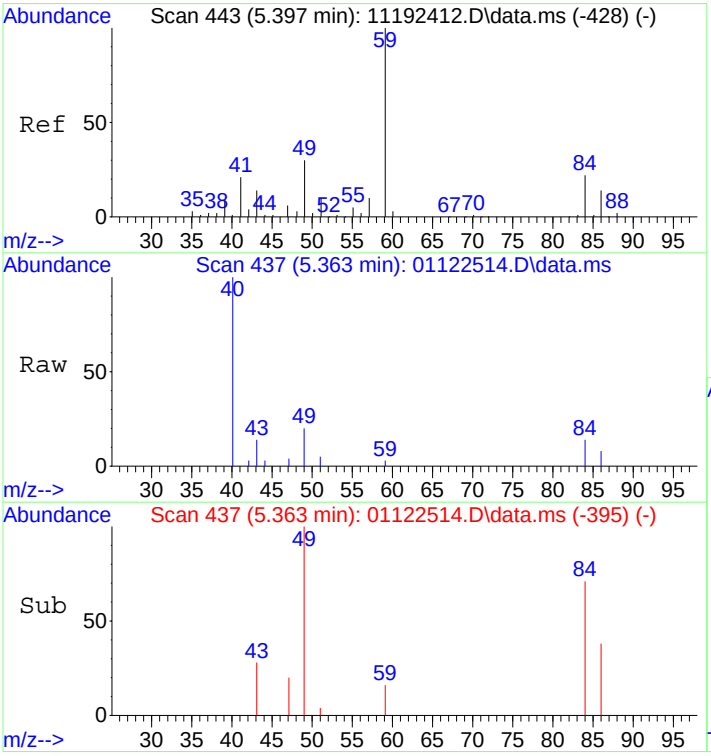


#15
2-Propanol (Isopropanol)
Concen: 4.05 ng
RT: 4.85 min Scan# 347
Delta R.T. -0.073 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 45 Resp: 136656

Ion	Ratio	Lower	Upper
45	100		
43	19.0	0.2	40.2

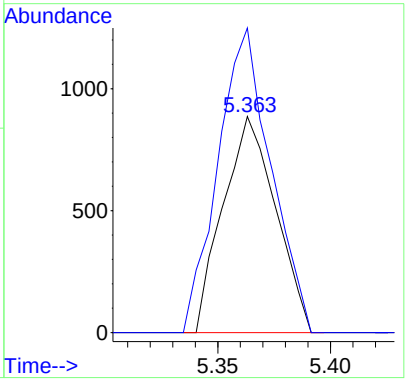


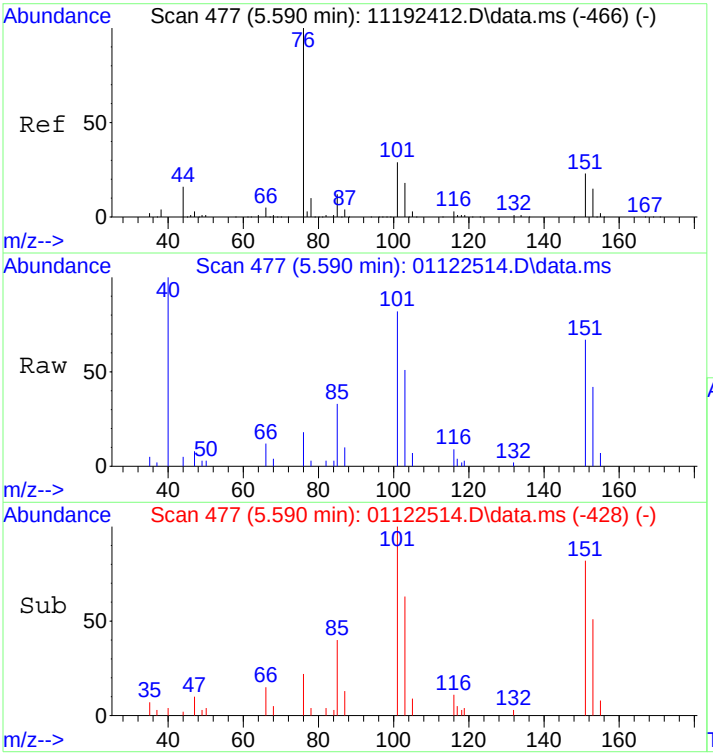


#19
Methylene Chloride
Concen: 0.11 ng
RT: 5.36 min Scan# 437
Delta R.T. -0.012 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 84 Resp: 1439

Ion	Ratio	Lower	Upper
84	100		
49	142.0	116.0	166.0

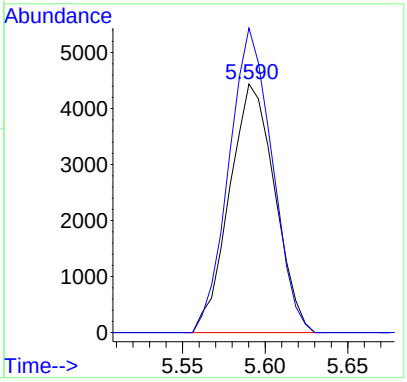


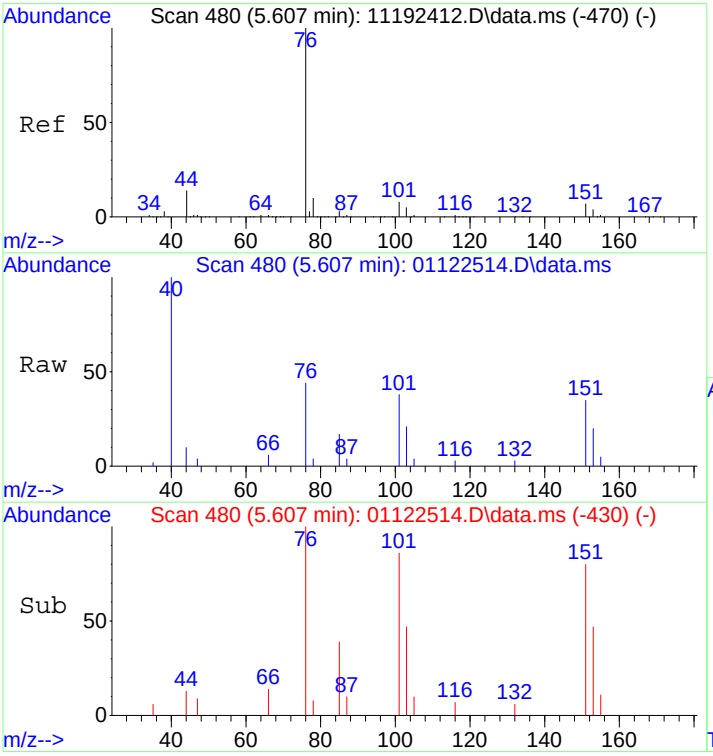


#21
Trichlorotrifluoroethane
Concen: 0.73 ng
RT: 5.59 min Scan# 477
Delta R.T. 0.030 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion:151 Resp: 8494

Ion	Ratio	Lower	Upper
151	100		
101	116.3	105.0	145.0

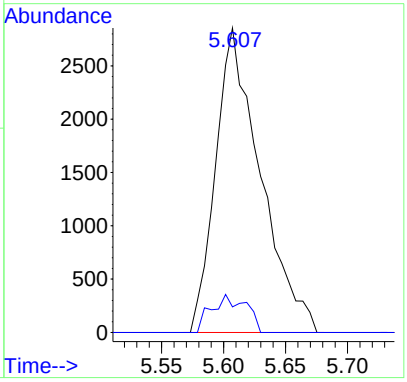


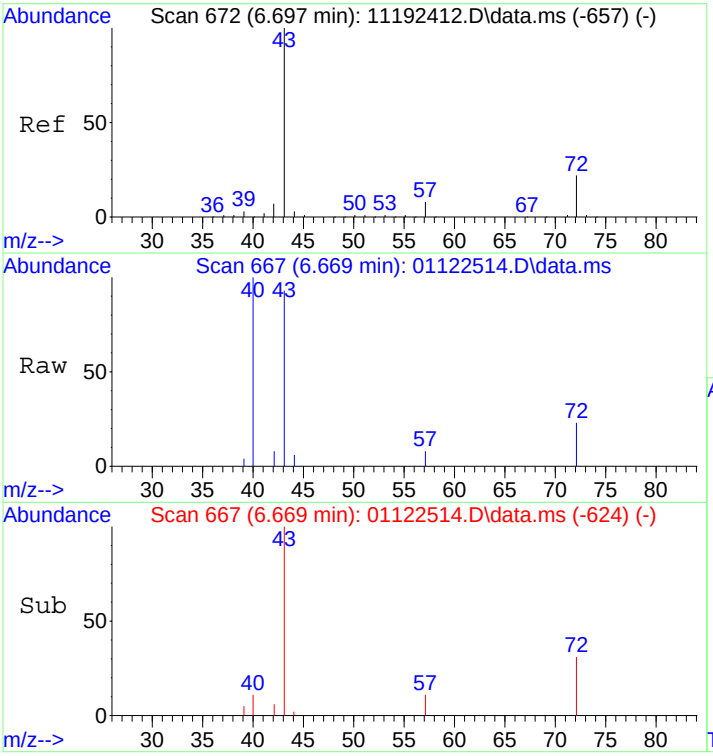


#22
Carbon Disulfide
Concen: 0.17 ng
RT: 5.61 min Scan# 480
Delta R.T. 0.036 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 76 Resp: 7171

Ion	Ratio	Lower	Upper
76	100		
78	9.5	0.0	29.6

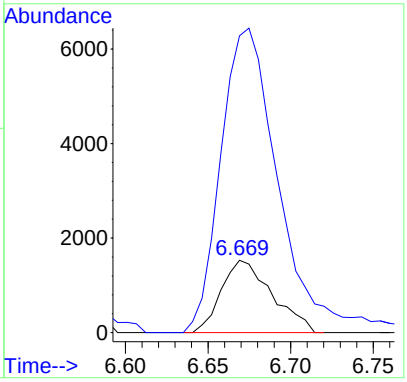


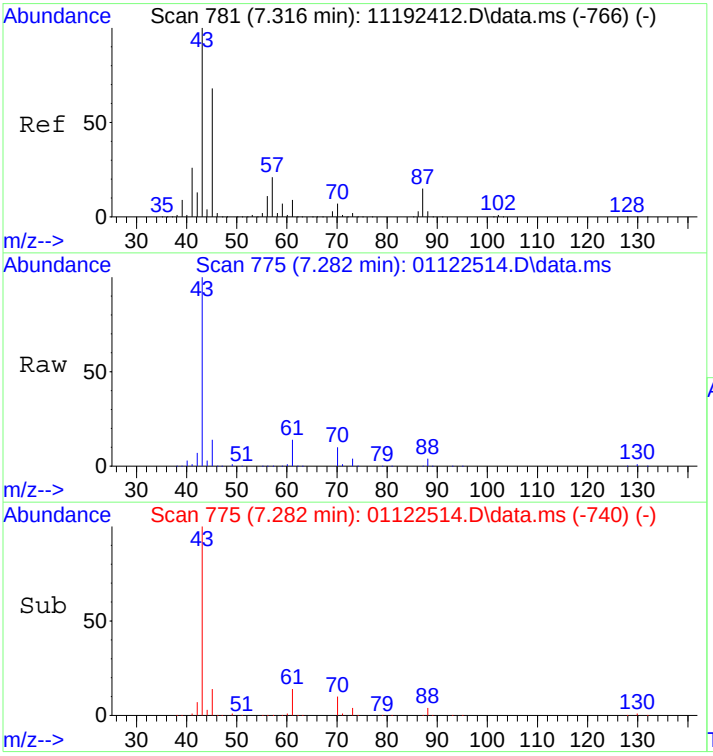


#27
2-Butanone (MEK)
Concen: 0.43 ng
RT: 6.67 min Scan# 667
Delta R.T. -0.005 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 72 Resp: 3269

Ion	Ratio	Lower	Upper
72	100		
43	484.7	439.8	479.8#

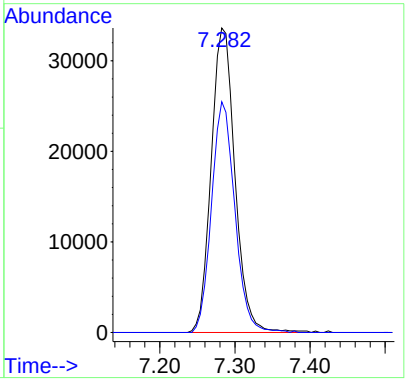


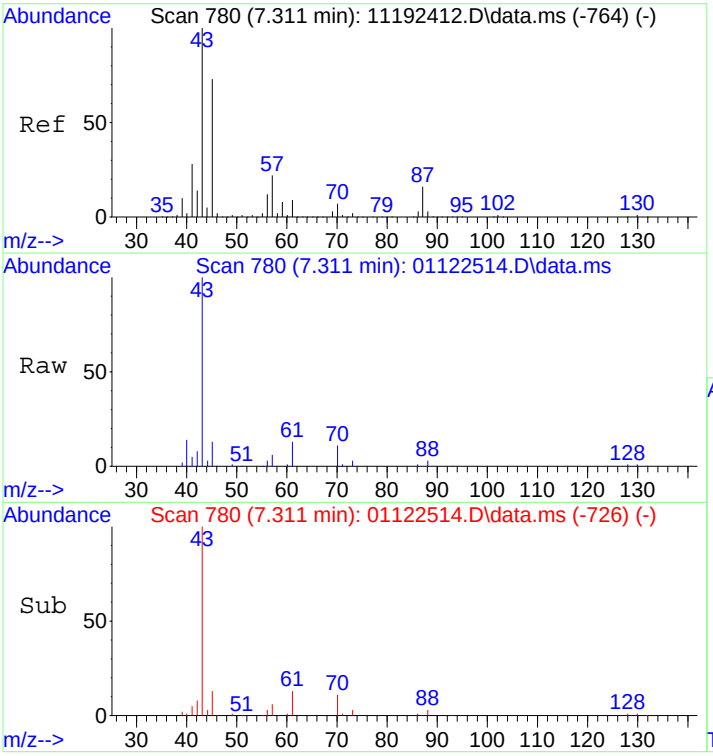


#30
Ethyl Acetate
Concen: 15.86 ng
RT: 7.28 min Scan# 775
Delta R.T. 0.001 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 61 Resp: 74024

Ion	Ratio	Lower	Upper
61	100		
70	74.3	57.3	97.3

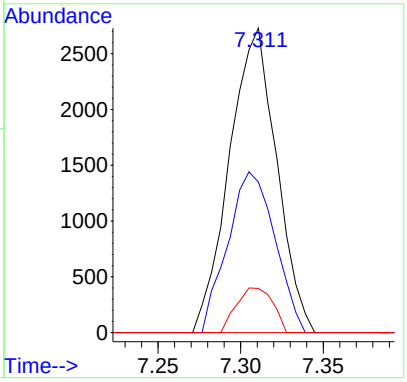


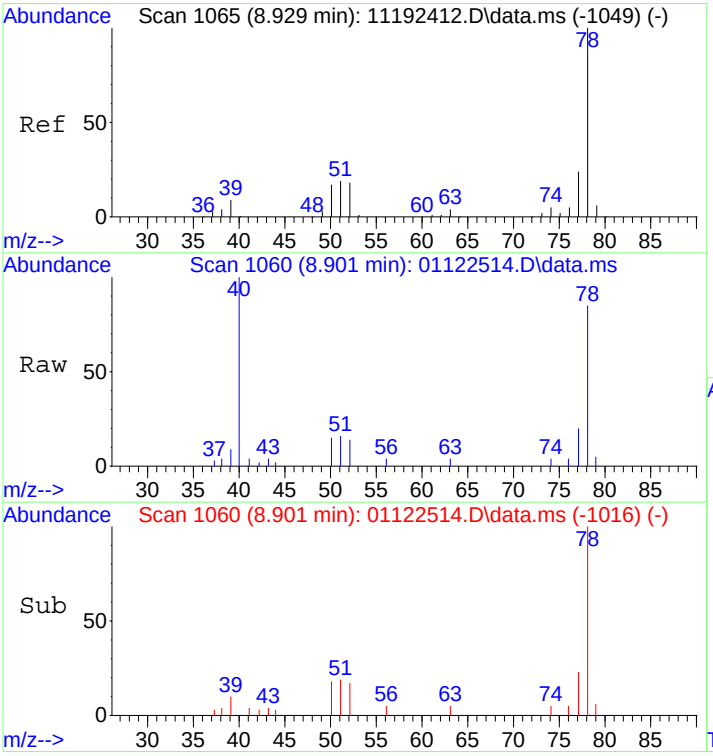


#31
n-Hexane
Concen: 0.26 ng
RT: 7.31 min Scan# 780
Delta R.T. 0.057 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 57 Resp: 5428

Ion	Ratio	Lower	Upper
57	100		
56	52.7	43.4	65.0
86	11.3	10.9	16.3

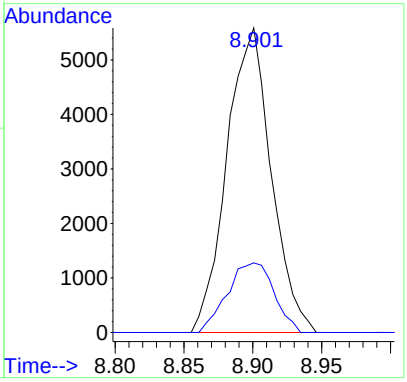


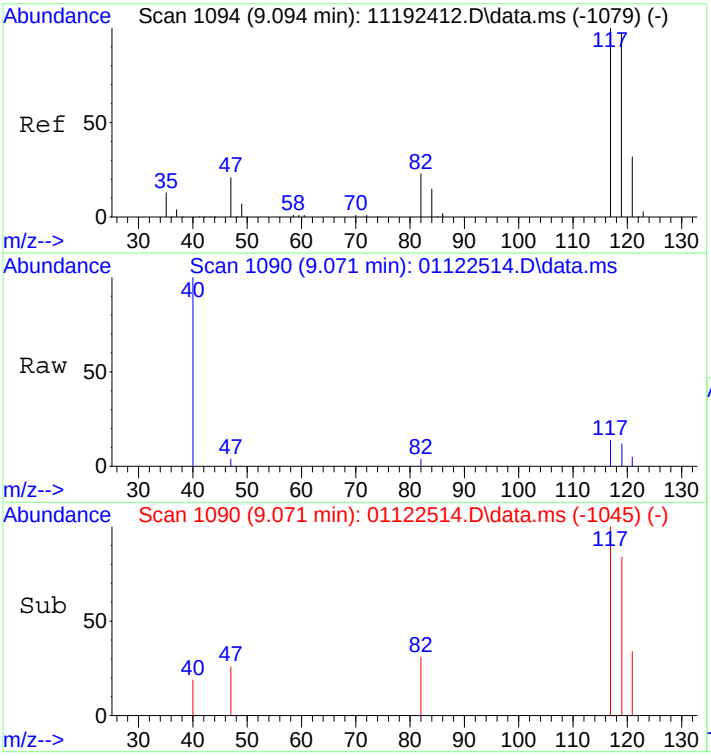


#41
Benzene
Concen: 0.26 ng
RT: 8.90 min Scan# 1060
Delta R.T. -0.003 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 78 Resp: 12527

Ion	Ratio	Lower	Upper
78	100		
77	24.0	3.7	43.7

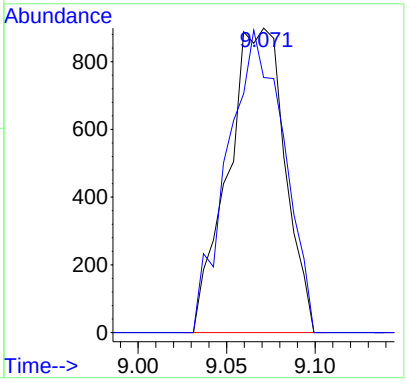


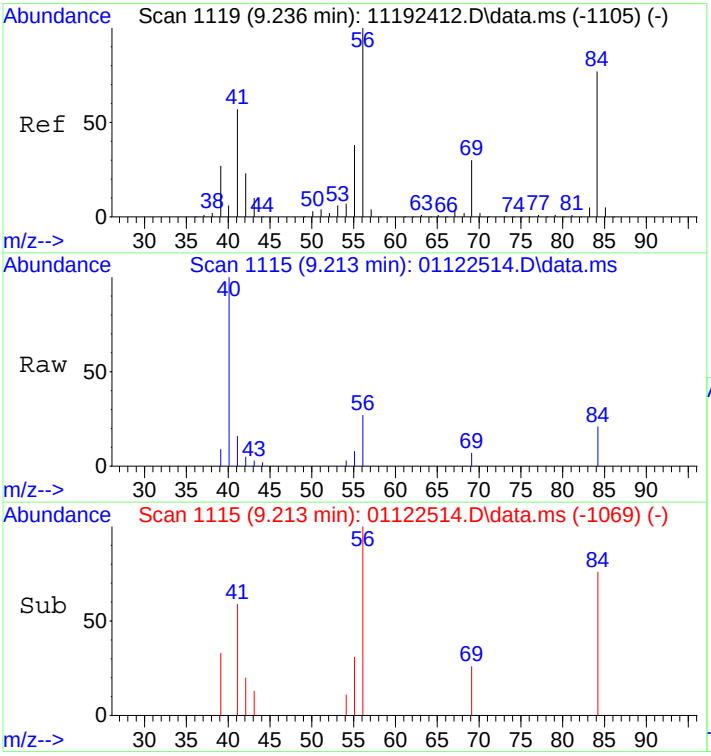


#42
Carbon Tetrachloride
Concen: 0.10 ng
RT: 9.07 min Scan# 1090
Delta R.T. 0.004 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion:117 Resp: 2009

Ion	Ratio	Lower	Upper
117	100		
119	98.3	75.7	115.7

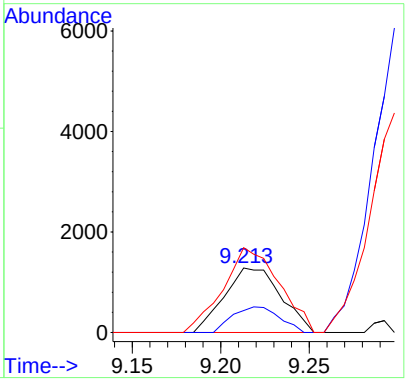


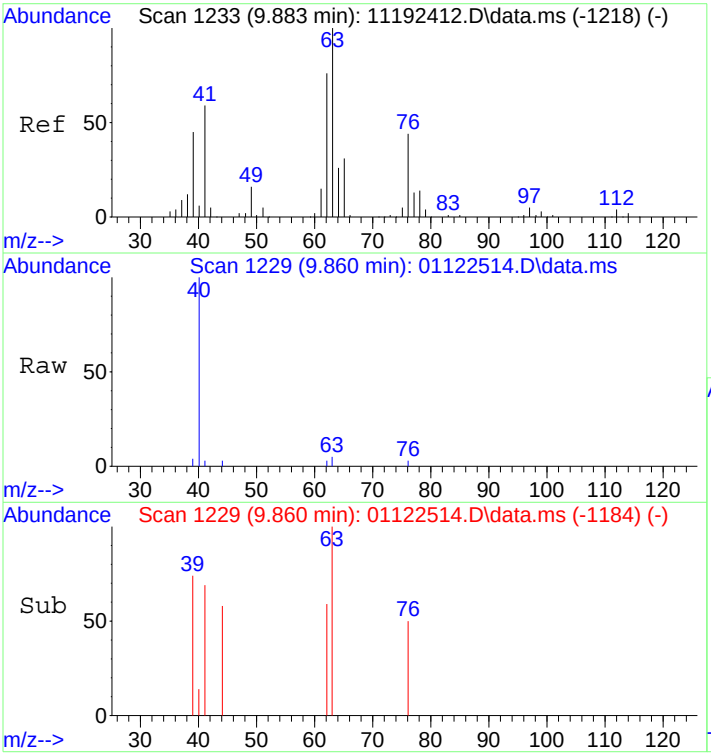


#43
Cyclohexane
Concen: 0.17 ng
RT: 9.21 min Scan# 1115
Delta R.T. 0.010 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 84 Resp: 2855

Ion	Ratio	Lower	Upper
84	100		
69	32.9	18.3	58.3
56	130.1	110.7	150.7

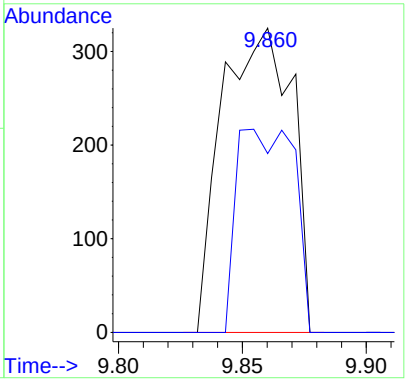


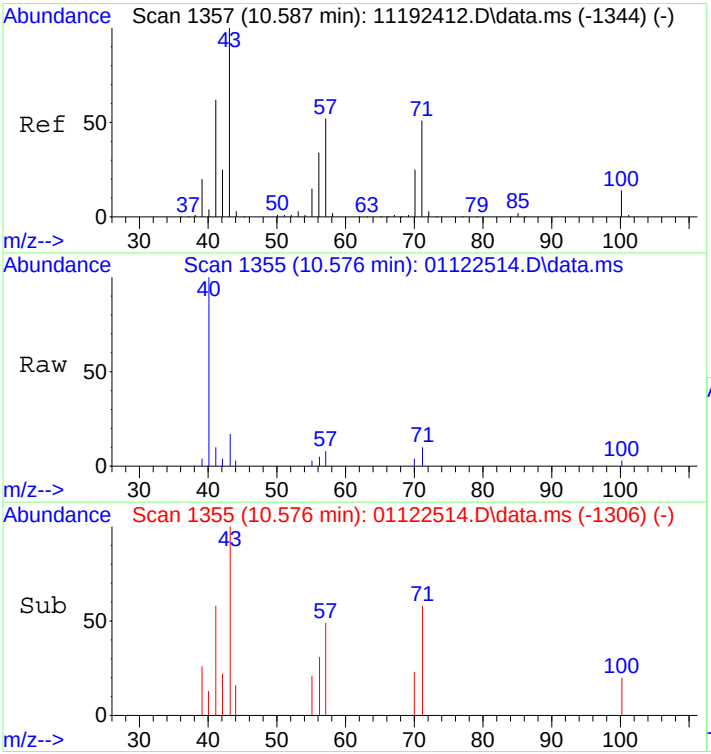


#45
1,2-Dichloropropane
Concen: 0.05 ng
RT: 9.86 min Scan# 1229
Delta R.T. 0.008 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 63 Resp: 640

Ion	Ratio	Lower	Upper
63	100		
62	55.2	55.9	95.9#

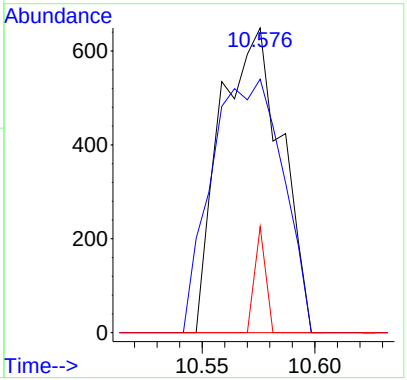


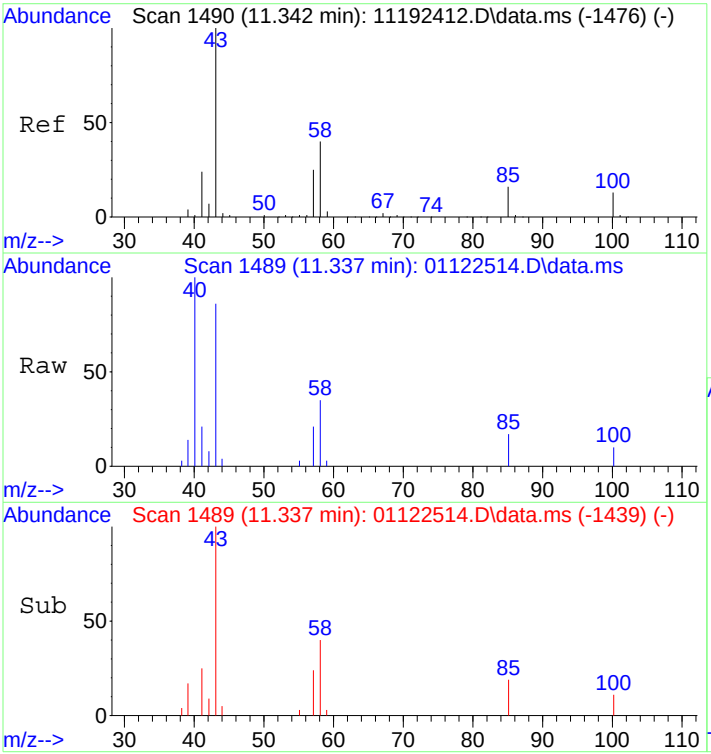


#51
n-Heptane
Concen: 0.11 ng
RT: 10.58 min Scan# 1355
Delta R.T. 0.029 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 71 Resp: 1222

Ion	Ratio	Lower	Upper
71	100		
57	97.1	83.3	123.3
100	0.0	8.7	48.7#

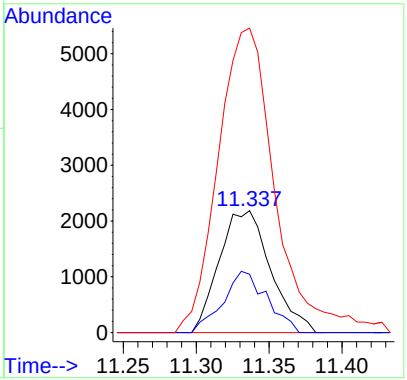


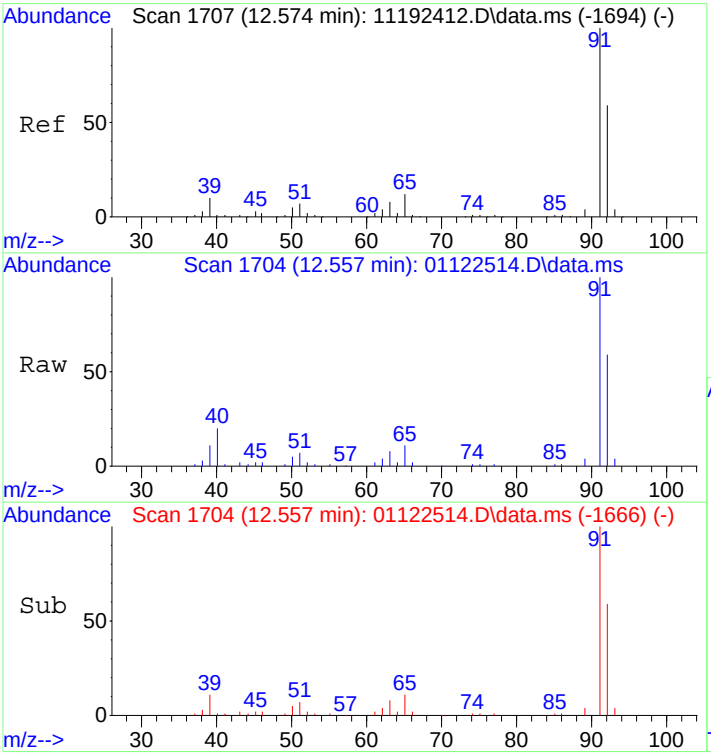


#53
4-Methyl-2-pentanone
Concen: 0.51 ng
RT: 11.34 min Scan# 1489
Delta R.T. 0.033 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 58 Resp: 5362

Ion	Ratio	Lower	Upper
58	100		
85	42.8	33.8	50.6
43	278.4	199.5	299.3

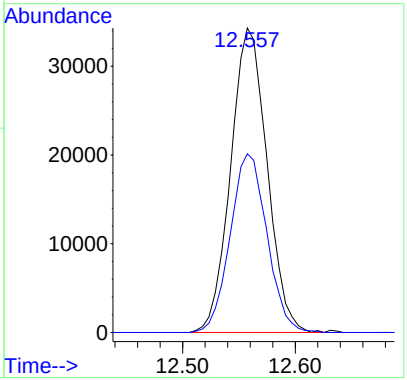


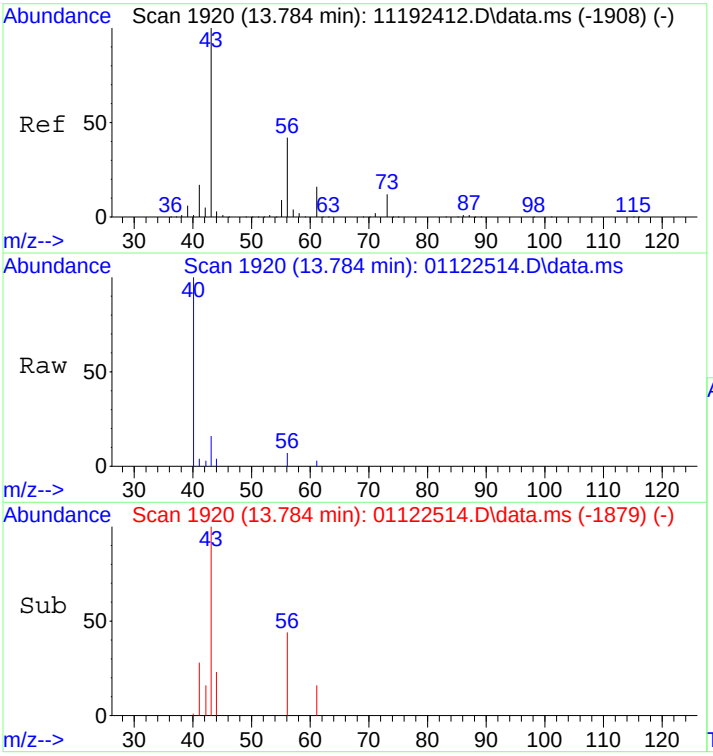


#58
Toluene
Concen: 1.60 ng
RT: 12.56 min Scan# 1704
Delta R.T. -0.034 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 91 Resp: 77180

Ion	Ratio	Lower	Upper
91	100		
92	59.3	39.2	79.2

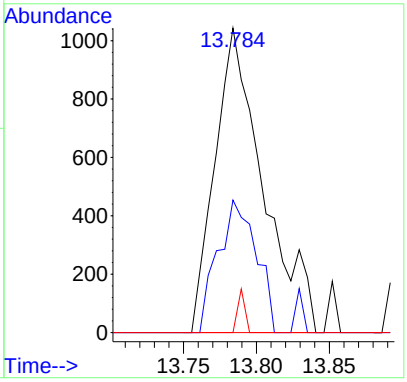


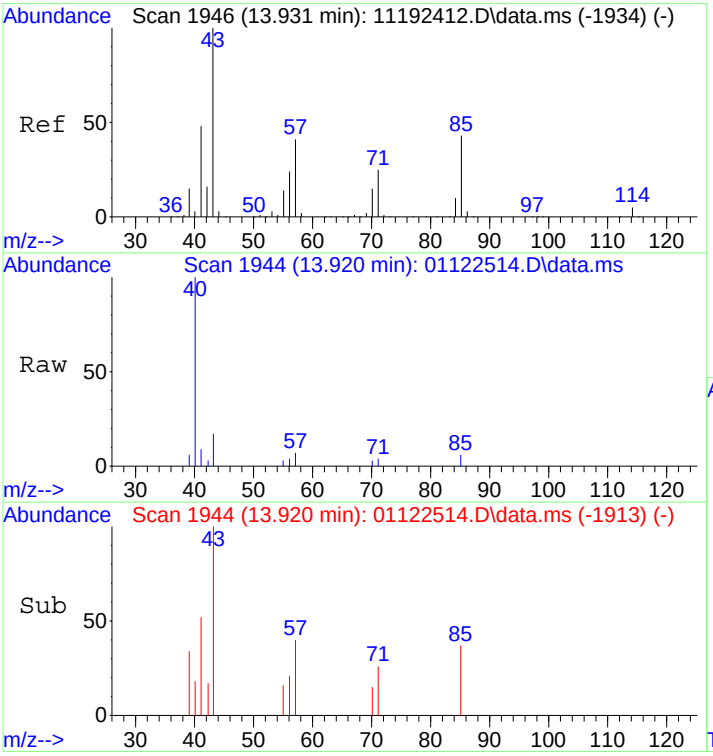


#62
n-Butyl Acetate
Concen: 0.09 ng
RT: 13.78 min Scan# 1920
Delta R.T. -0.017 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 43 Resp: 2407

Ion	Ratio	Lower	Upper
43	100		
56	34.6	20.9	60.9
73	0.0	0.0	32.0

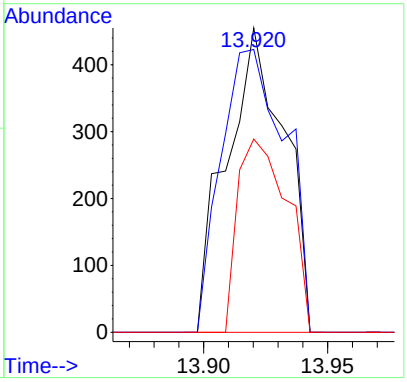


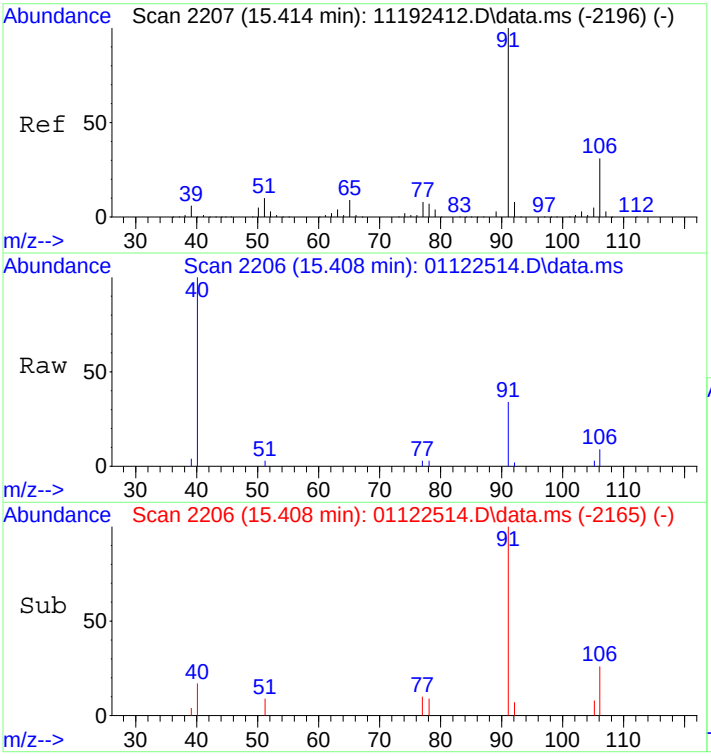


#63
n-Octane
Concen: 0.07 ng
RT: 13.92 min Scan# 1944
Delta R.T. -0.023 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 57 Resp: 738

Ion	Ratio	Lower	Upper
57	100		
85	103.8	83.6	125.4
71	54.7	49.0	73.4

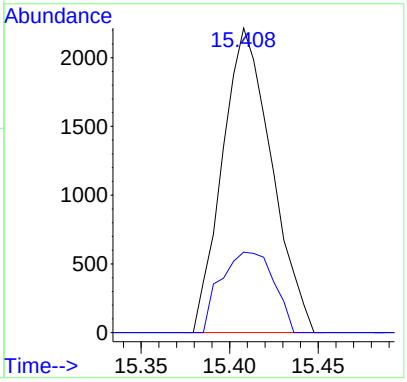


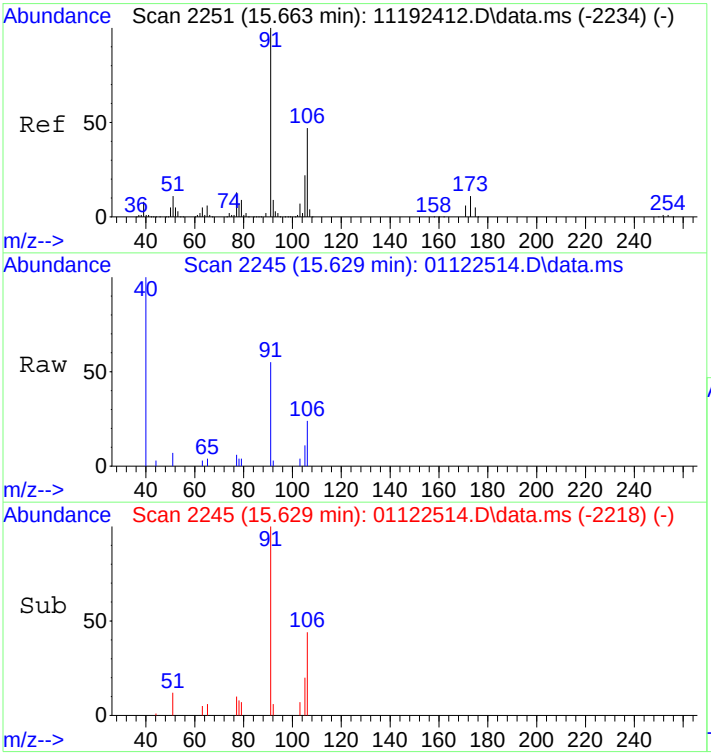


#66
Ethylbenzene
Concen: 0.08 ng
RT: 15.41 min Scan# 2206
Delta R.T. -0.017 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 91 Resp: 4282

Ion	Ratio	Lower	Upper
91	100		
106	28.4	10.7	50.7

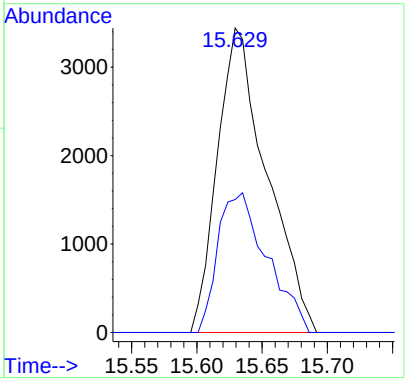


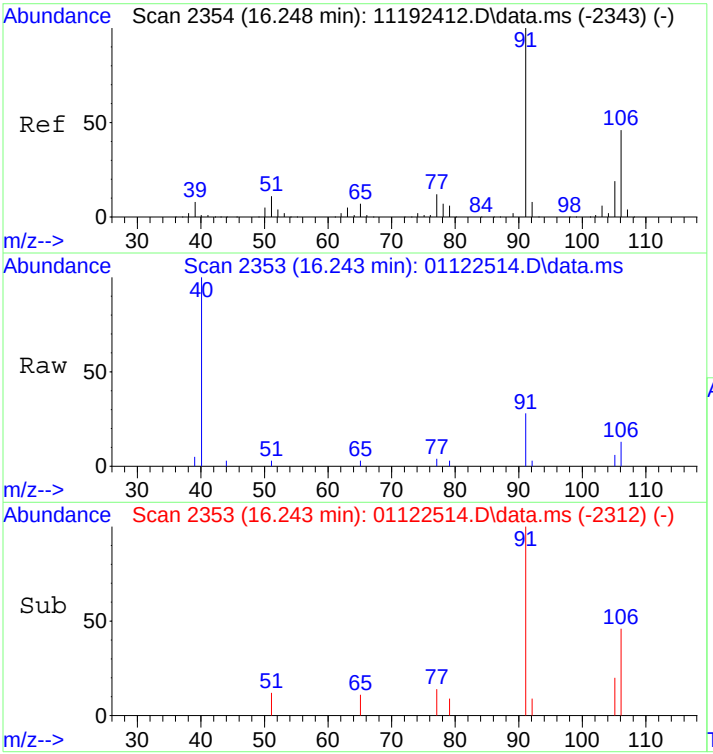


#67
m- & p-Xylenes
Concen: 0.21 ng
RT: 15.63 min Scan# 2245
Delta R.T. -0.045 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 91 Resp: 9073

Ion	Ratio	Lower	Upper
91	100		
106	45.5	27.1	67.1

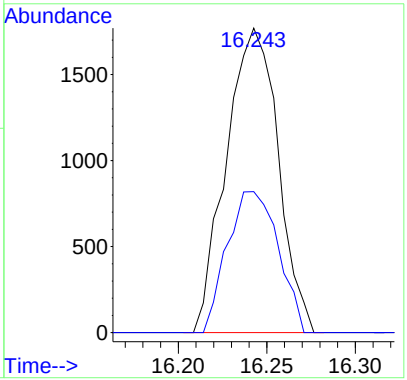


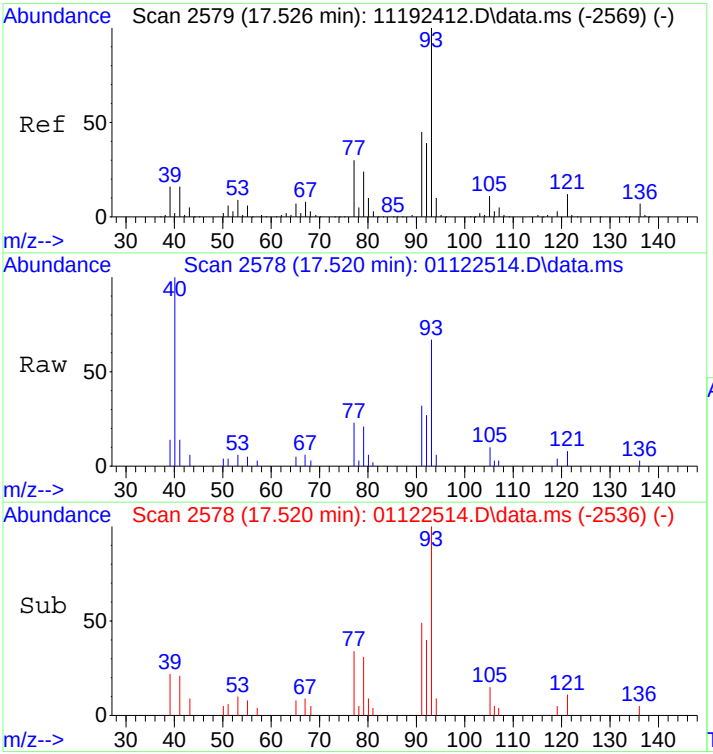


#70
o-Xylene
Concen: 0.08 ng
RT: 16.24 min Scan# 2353
Delta R.T. -0.017 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 91 Resp: 3609

Ion	Ratio	Lower	Upper
91	100		
106	45.5	25.8	65.8

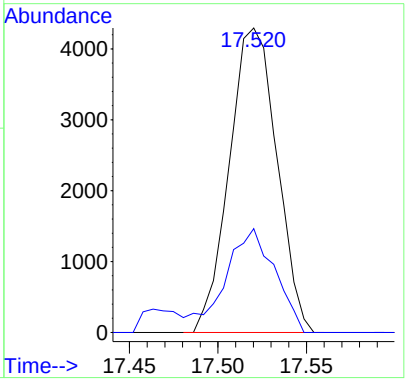


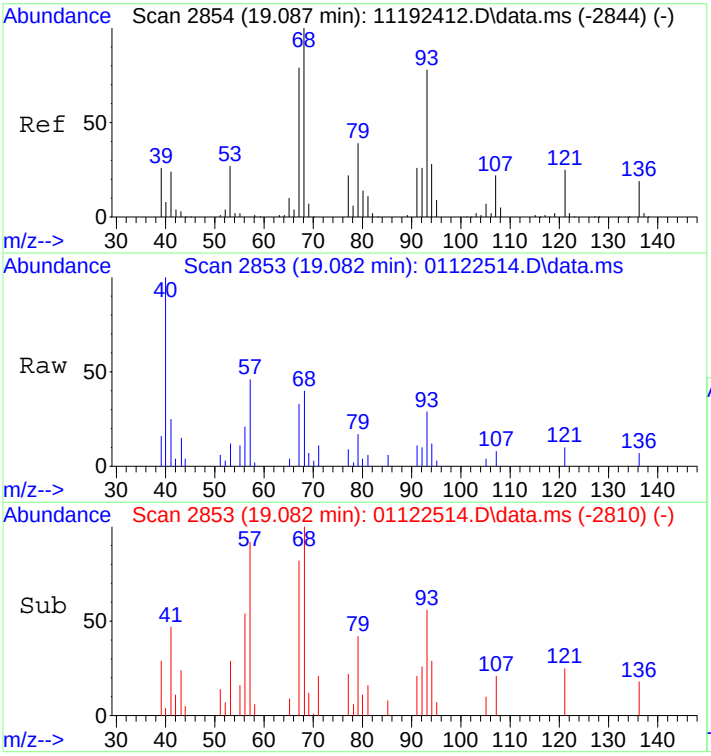


#75
alpha-Pinene
Concen: 0.30 ng
RT: 17.52 min Scan# 2578
Delta R.T. -0.011 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 93 Resp: 8039

Ion	Ratio	Lower	Upper
93	100		
77	35.5	10.1	50.1

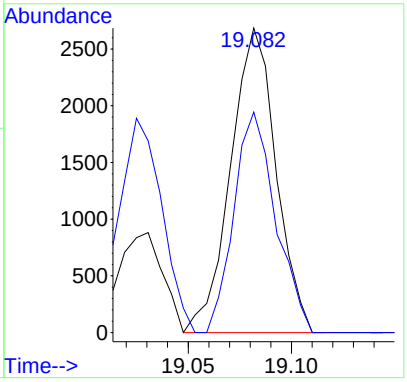




#91
d-Limonene
Concen: 0.29 ng
RT: 19.08 min Scan# 2853
Delta R.T. -0.006 min
Lab File: 01122514.D
Acq: 12 Jan 2025 12:03

Tgt Ion: 68 Resp: 4108

Ion	Ratio	Lower	Upper
68	100		
93	66.4	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

1/13/25

Quant Time: Jan 13 12:34:35 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration

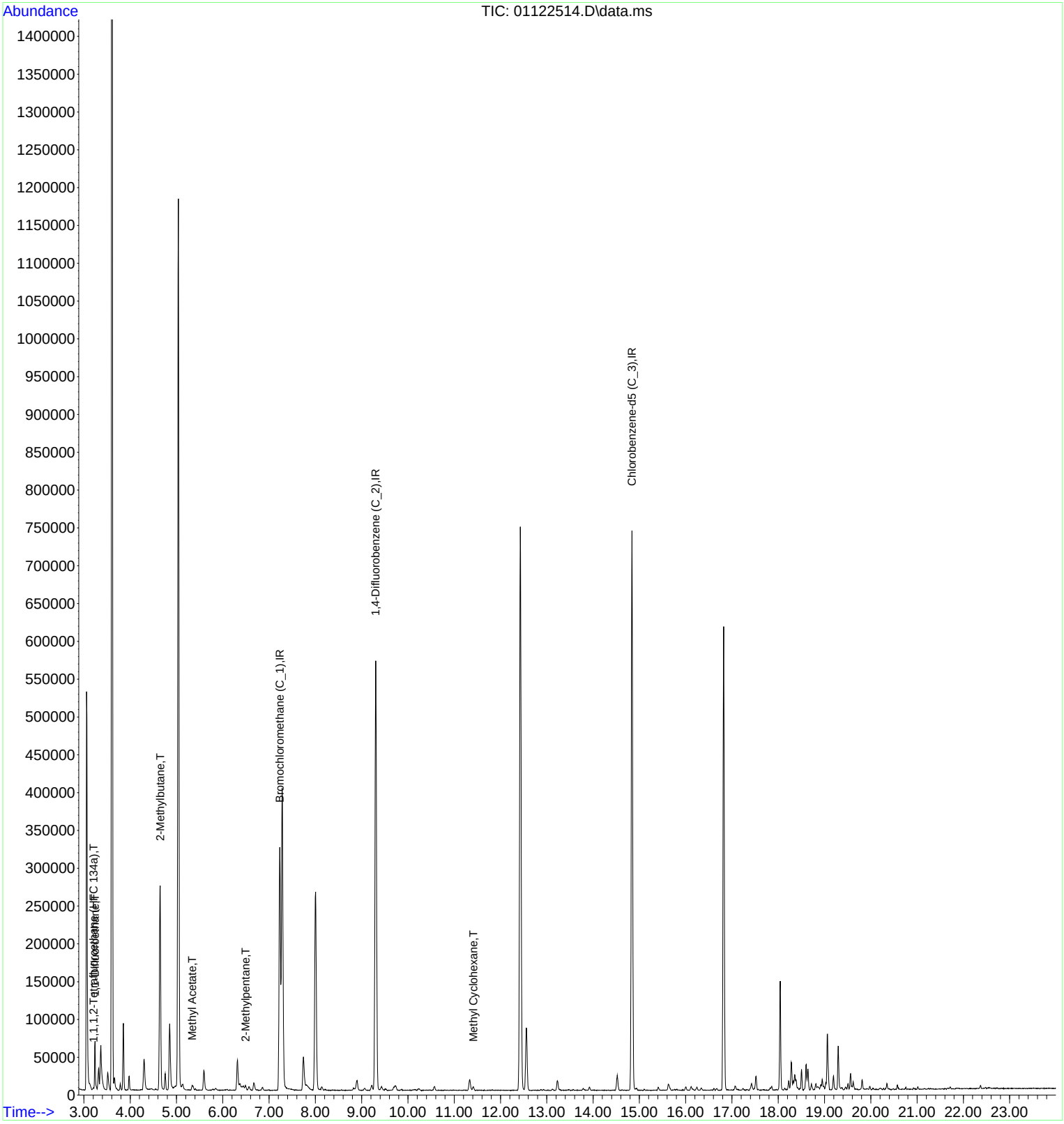
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C_1)	7.23	130	142133	12.500	ng		-0.02
16) 1,4-Difluorobenzene (C_2)	9.30	114	606076	12.500	ng		-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	112914	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.14	85	213	N.D.			
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	2027	0.157	ng		94
4) 1,1-Difluoroethane	3.24	65	19531	1.697	ng		98
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	d		
6) 1-Chloro-1,1-Difluoroe...	3.51	65	512	N.D.			
7) Dichlorofluoromethane ...	0.00	67	0	N.D.			
8) Vinylbromide	0.00	108	0	N.D.			
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.			
10) 2-Methylbutane	4.65	57	50224	3.662	ng		90
11) Methyl Acetate	5.34	43	6623	0.203	ng	#	82
12) 2-Methylpentane	6.49	71	1200	0.103	ng	#	1
13) 2,2-Dichloropropane	0.00	77	0	N.D.			
14) 1,1-Dichloropropene	0.00	75	0	N.D.			
15) Thiophene	9.06	84	60	N.D.			
17) 2,3-Dimethylpentane	9.52	56	928	N.D.			
18) Dibromomethane	0.00	174	0	N.D.			
20) Methyl Cyclohexane	11.42	55	2095	0.104	ng		96
21) 1,3-Dichloropropane	12.55	76	118	N.D.			
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.			
23) 1-Chlorohexane	0.00	91	0	N.D.			
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.			
25) Bromobenzene	0.00	77	0	N.D.			
26) 2-Chlorotoluene	17.68	91	542	N.D.			
27) 4-Chlorotoluene	17.68	91	542	N.D.			
28) Indane	0.00	117	0	N.D.			
29) Indene	0.00	115	0	N.D.			
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.			
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.			
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.			
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.			

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 13 12:34:35 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration



LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Signal : TIC: 01122514.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.239	59	63	71	rVB	63404	77450	2.17%	0.469%
2	3.319	71	77	80	rBV3	27685	45427	1.27%	0.275%
3	3.364	80	85	106	rVB2	58859	133181	3.74%	0.807%
4	3.512	106	111	121	rVB2	22918	44644	1.25%	0.270%
5	3.603	121	127	134	rBV	2569229	3564794	100.00%	21.593%
6	3.660	134	137	144	rVB	14438	23665	0.66%	0.143%
7	3.785	152	159	164	rBV2	8936	12169	0.34%	0.074%
8	3.853	164	171	179	rVB	88519	127911	3.59%	0.775%
9	3.978	188	193	200	rVB	18426	25748	0.72%	0.156%
10	4.301	243	250	262	rBV	40178	90116	2.53%	0.546%
11	4.648	302	311	324	rBV3	269924	515108	14.45%	3.120%
12	4.755	324	330	339	rVB	21589	34903	0.98%	0.211%
13	4.852	339	347	358	rBV	87371	178518	5.01%	1.081%
14	5.039	372	380	391	rVV	1174713	1990185	55.83%	12.055%
15	5.136	393	397	409	rVB4	7561	17175	0.48%	0.104%
16	5.590	470	477	490	rBV2	25952	53696	1.51%	0.325%
17	6.317	597	605	612	rBV	39494	86634	2.43%	0.525%
18	6.487	631	635	643	rVB4	6007	11813	0.33%	0.072%
19	6.669	661	667	676	rBV	9913	22818	0.64%	0.138%
20	7.231	756	766	770	rBV	321491	694497	19.48%	4.207%
21	7.282	770	775	788	rVB	396611	887336	24.89%	5.375%
22	7.742	846	856	866	rBV2	44269	113265	3.18%	0.686%
23	8.003	892	902	917	rBV	262368	627081	17.59%	3.798%
24	8.901	1052	1060	1070	rVB	12914	30802	0.86%	0.187%
25	9.219	1109	1116	1121	rBV4	6972	15693	0.44%	0.095%
26	9.304	1121	1131	1144	rVV	568023	1330298	37.32%	8.058%
27	9.429	1147	1153	1162	rVB3	4649	10040	0.28%	0.061%
28	9.730	1204	1206	1213	rVB3	5922	10183	0.29%	0.062%
29	11.337	1479	1489	1497	rBV	14531	37269	1.05%	0.226%
30	11.416	1497	1503	1511	rVB3	5101	11811	0.33%	0.072%
31	12.427	1670	1681	1696	rBV	745392	1708573	47.93%	10.349%
32	12.557	1696	1704	1716	rVB	82993	190293	5.34%	1.153%
33	13.227	1815	1822	1833	rBV2	12868	29648	0.83%	0.180%
34	14.522	2042	2050	2060	rBV	20097	43865	1.23%	0.266%
35	14.840	2092	2106	2118	rBV	740160	1521235	42.67%	9.214%
36	15.624	2239	2244	2257	rVB3	8266	21182	0.59%	0.128%
37	16.118	2324	2331	2338	rBV5	4902	11279	0.32%	0.068%
38	16.822	2447	2455	2468	rVB	613038	1167595	32.75%	7.072%
39	17.066	2492	2498	2504	rBV3	5286	10838	0.30%	0.066%
40	17.424	2553	2561	2568	rBV5	8798	21095	0.59%	0.128%

LSC Area Percent Report

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: LSCINT.P
Integrator: RTE
Smoothing : OFF Filtering: 5
Sampling : 1 Min Area: 10000 Area counts
Start Thrs: 0.15 Max Peaks: 200
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

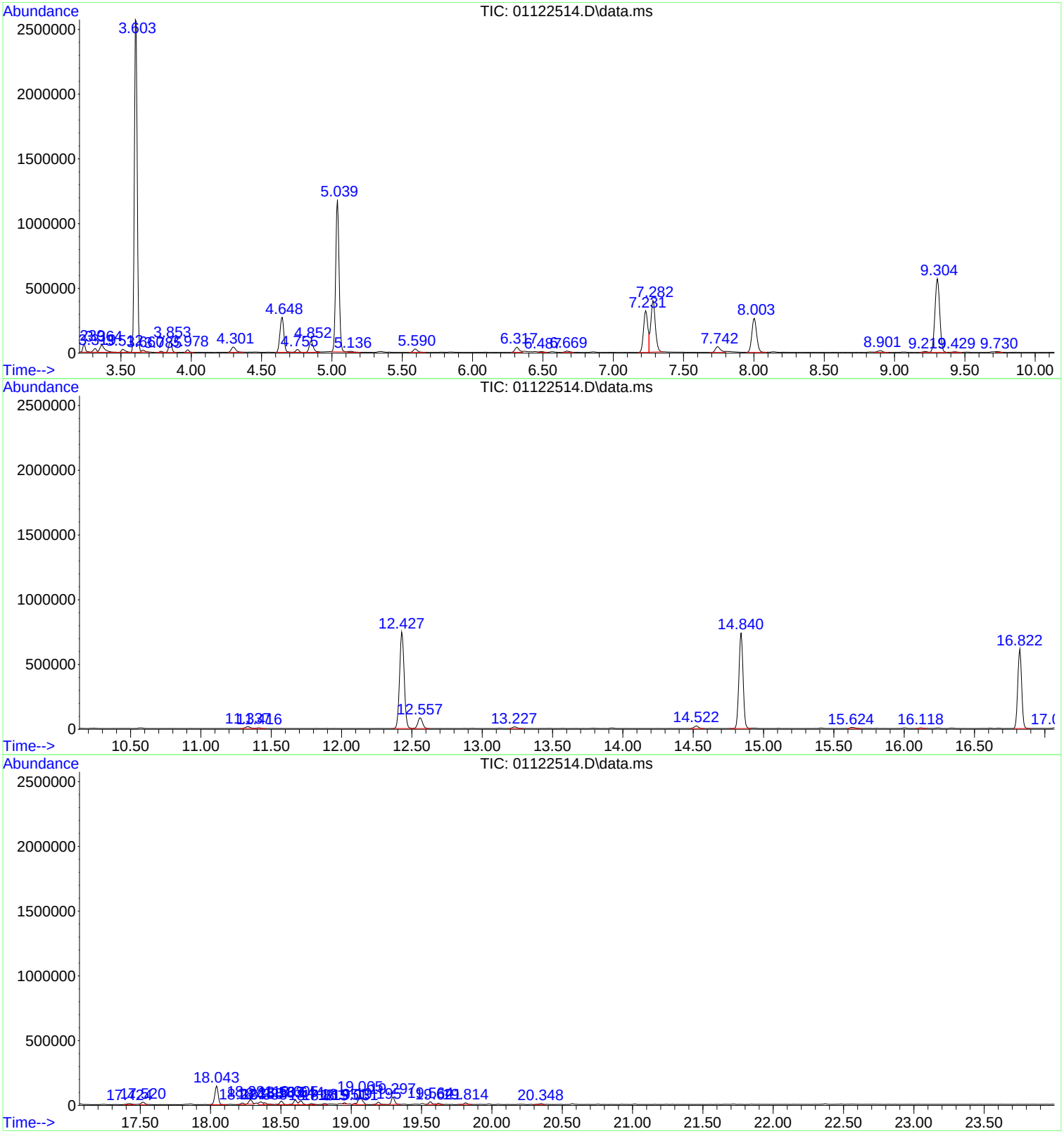
41	17.520	2573	2578	2584	rVB2	18049	33249	0.93%	0.201%
42	18.043	2661	2670	2683	rVB	144212	236613	6.64%	1.433%
43	18.224	2696	2702	2706	rBV	11976	20104	0.56%	0.122%
44	18.281	2706	2712	2717	rBV	34089	58909	1.65%	0.357%
45	18.355	2722	2725	2729	rVV	20198	37721	1.06%	0.228%
46	18.383	2729	2730	2742	rVV4	13740	21168	0.59%	0.128%
47	18.503	2745	2751	2758	rVB5	27755	42841	1.20%	0.259%
48	18.605	2758	2769	2772	rBV2	34204	61994	1.74%	0.376%
49	18.644	2772	2776	2783	rVB	27912	47073	1.32%	0.285%
50	18.718	2783	2789	2796	rBV4	8351	15293	0.43%	0.093%
51	18.815	2801	2806	2809	rBV4	7735	12778	0.36%	0.077%
52	18.951	2827	2830	2835	rVV2	9745	11930	0.33%	0.072%
53	19.031	2839	2844	2845	rBV2	8659	11163	0.31%	0.068%
54	19.065	2845	2850	2858	rVB	73334	134332	3.77%	0.814%
55	19.195	2865	2873	2883	rBV2	18567	32567	0.91%	0.197%
56	19.297	2885	2891	2900	rBV	57479	93551	2.62%	0.567%
57	19.564	2932	2938	2945	rBV	20616	36930	1.04%	0.224%
58	19.621	2945	2948	2954	rVB	10373	15643	0.44%	0.095%
59	19.814	2973	2982	2990	rBV2	12687	21042	0.59%	0.127%
60	20.348	3067	3076	3081	rBV3	8140	14638	0.41%	0.089%

Sum of corrected areas: 16509372

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:03
Operator : SC
Sample : P2405139-067 (400mL)
Misc : S37-12312401
ALS Vial : 16 Sample Multiplier: 1

Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Tentatively Identified Compound (LSC) summary

Data Path : I:\MS09\DATA\2025 01\12\\
Data File : 01122514.D
Acq On : 12 Jan 2025 12:033
Operator : SCC
Sample : P2405139-067 (400mL))
Misc : S37-123124011
ALS Vial : 16 Sample Multiplier: 11

VOA 1/13/25

Quant Method : I:\MS09\METHODS\R09111924.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042504.D
Acq On : 4 Jan 2025 4:48
Operator : SC
Sample : MB R09010425 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

CG 1/4/25

Quant Time: Jan 04 08:37:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	149003	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	643130	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.84	54	108240	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	245096	12.074	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.56%			
57) Toluene-d8 (SS2)	12.43	98	659736	13.740	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.92%			
73) Bromofluorobenzene (SS3)	16.82	174	228620	13.797	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.40%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	4.48	41	107	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.67	58	2824	0.281	ng	99
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	0.00	76	0	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.90	78	928	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.29	84	542	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042504.D
Acq On : 4 Jan 2025 4:48
Operator : SC
Sample : MB R09010425 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 04 08:37:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

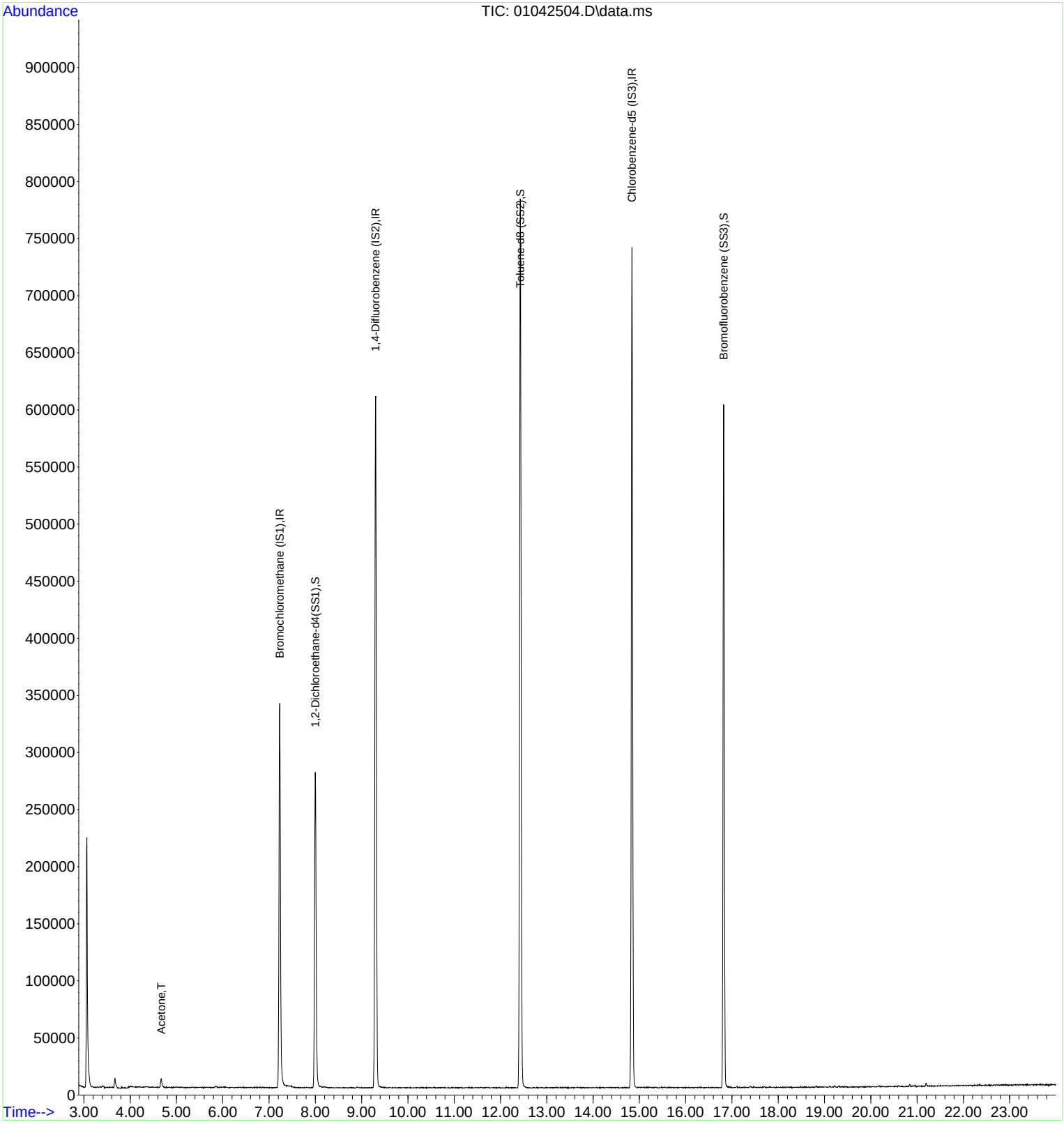
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0		N.D.	
50) Methyl Methacrylate	0.00	100	0		N.D.	
51) n-Heptane	0.00	71	0		N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0		N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0		N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0		N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0		N.D.	
58) Toluene	0.00	91	0		N.D.	
59) 2-Hexanone	0.00	43	0		N.D.	
60) Dibromochloromethane	0.00	129	0		N.D.	
61) 1,2-Dibromoethane	0.00	107	0		N.D.	
62) n-Butyl Acetate	0.00	43	0		N.D.	
63) n-Octane	0.00	57	0		N.D.	
64) Tetrachloroethene	0.00	166	0		N.D.	
65) Chlorobenzene	0.00	112	0		N.D.	
66) Ethylbenzene	15.38	91	104		N.D.	
67) m- & p-Xylenes	15.63	91	165		N.D.	
68) Bromoform	0.00	173	0		N.D.	
69) Styrene	0.00	104	0		N.D.	
70) o-Xylene	0.00	91	0		N.D.	
71) n-Nonane	0.00	43	0		N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0		N.D.	
74) Cumene	0.00	105	0		N.D.	
75) alpha-Pinene	0.00	93	0		N.D.	
76) n-Propylbenzene	17.70	91	988		N.D.	
77) 3-Ethyltoluene	0.00	105	0		N.D.	
78) 4-Ethyltoluene	0.00	105	0		N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0		N.D.	
80) alpha-Methylstyrene	0.00	118	0		N.D.	
81) 2-Ethyltoluene	0.00	105	0		N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0		N.D.	
83) n-Decane	0.00	58	0		N.D.	
84) Benzyl Chloride	18.56	91	352		N.D.	
85) 1,3-Dichlorobenzene	18.58	146	124		N.D.	
86) 1,4-Dichlorobenzene	18.66	146	210		N.D.	
87) sec-Butylbenzene	0.00	105	0		N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0		N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0		N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0		N.D.	
91) d-Limonene	0.00	68	0		N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0		N.D.	
93) n-Undecane	0.00	58	0		N.D.	
94) 1,2,4-Trichlorobenzene	20.85	180	806		N.D.	
95) Naphthalene	20.95	128	912		N.D.	
96) n-Dodecane	0.00	58	0		N.D.	
97) Hexachlorobutadiene	0.00	225	0		N.D.	
98) Cyclohexanone	0.00	55	0		N.D.	
99) tert-Butylbenzene	0.00	119	0		N.D.	
100) n-Butylbenzene	19.39	91	182		N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0		N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042504.D
Acq On : 4 Jan 2025 4:48
Operator : SC
Sample : MB R09010425 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 04 08:37:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\04\01042504.D Vial: 2
Acq On : 4 Jan 2025 4:48 Operator: SC
Sample : MB R09010425 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 17 12:38:48 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/17/25

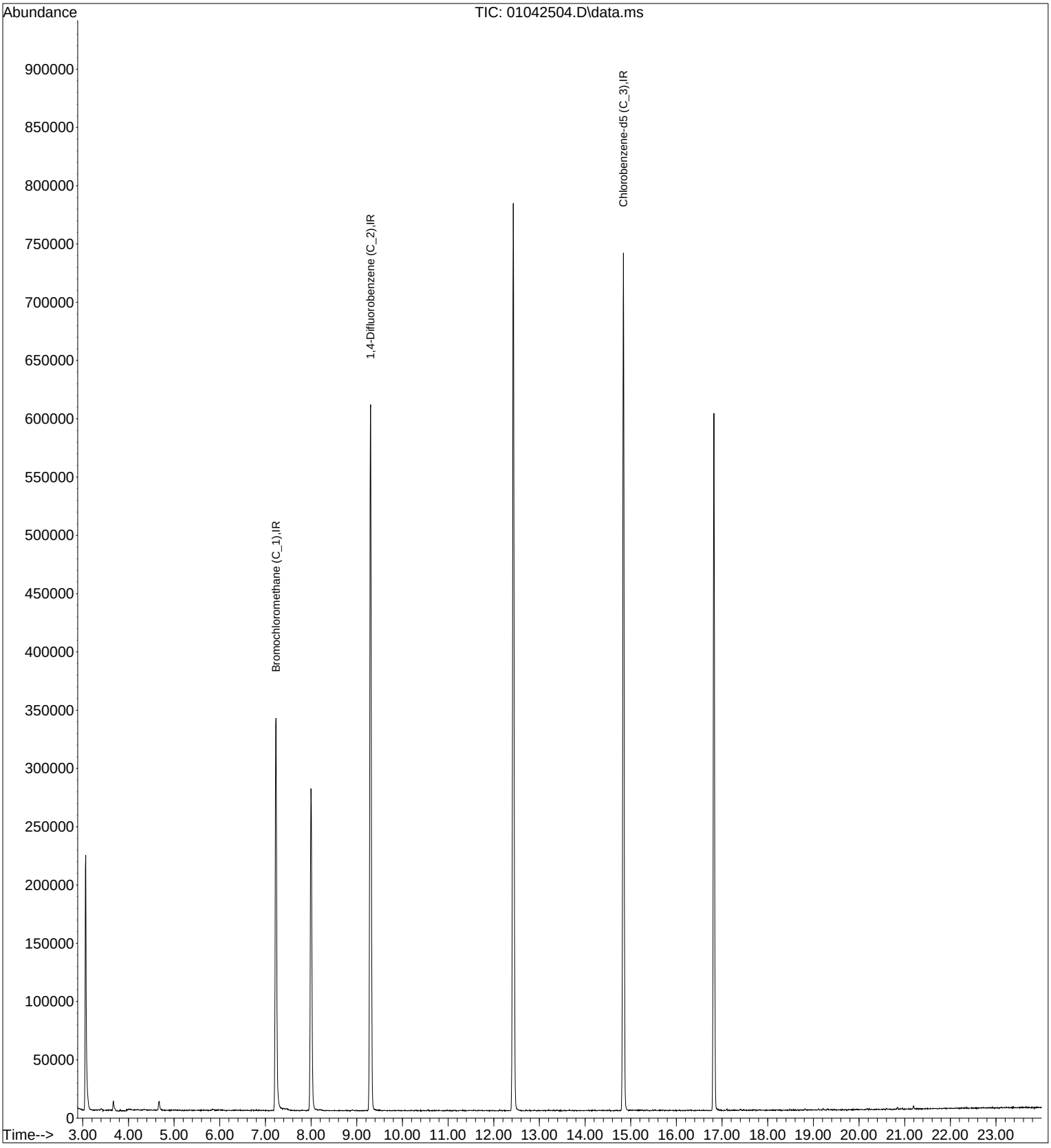
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	151450	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.30	114	645171	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	108240	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	3.29	65	130	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.55	65	369	N.D.		
7) Dichlorofluoromethane ...	4.26	67	239	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	105	N.D.		
10) 2-Methylbutane	4.68	57	61	N.D.		
11) Methyl Acetate	5.37	43	258	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.80	174	159	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	17.10	77	302	N.D.		
26) 2-Chlorotoluene	17.61	91	419	N.D.		
27) 4-Chlorotoluene	17.70	91	988	N.D.		
28) Indane	19.12	117	638	N.D.		
29) Indene	19.21	115	691	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	693	N.D.		
31) 1,2,3,4-Tetramethylben...	20.18	119	693	N.D.		
32) 1,2,3,5-Tetramethylben...	20.60	119	745	N.D.		
33) 1,2,3-Trichlorobenzene	21.19	180	1130	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\04\01042504.D Vial: 2
Acq On : 4 Jan 2025 4:48 Operator: SC
Sample : MB R09010425 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 17 12:38:48 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062504.D Vial: 2
Acq On : 6 Jan 2025 9:31 Operator: SC
Sample : MB R09010625 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 06 10:16:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/6/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	162348	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	706748	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	119910	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.99	65	265817	12.018	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.16%			
57) Toluene-d8 (SS2)	12.43	98	721738	13.568	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.56%			
73) Bromofluorobenzene (SS3)	16.82	174	266124	14.497	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.00%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	3.51	50	120	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	4.03	64	120	N.D.		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	4.47	41	118	N.D.		
12) Acrolein	4.57	56	56	N.D.		
13) Acetone	4.66	58	4203	0.384	ng	88
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.35	84	105	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.58	76	29299	0.592	ng	98
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.87	56	123	No Calib	#	
41) Benzene	8.90	78	703	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062504.D Vial: 2
Acq On : 6 Jan 2025 9:31 Operator: SC
Sample : MB R09010625 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 06 10:16:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

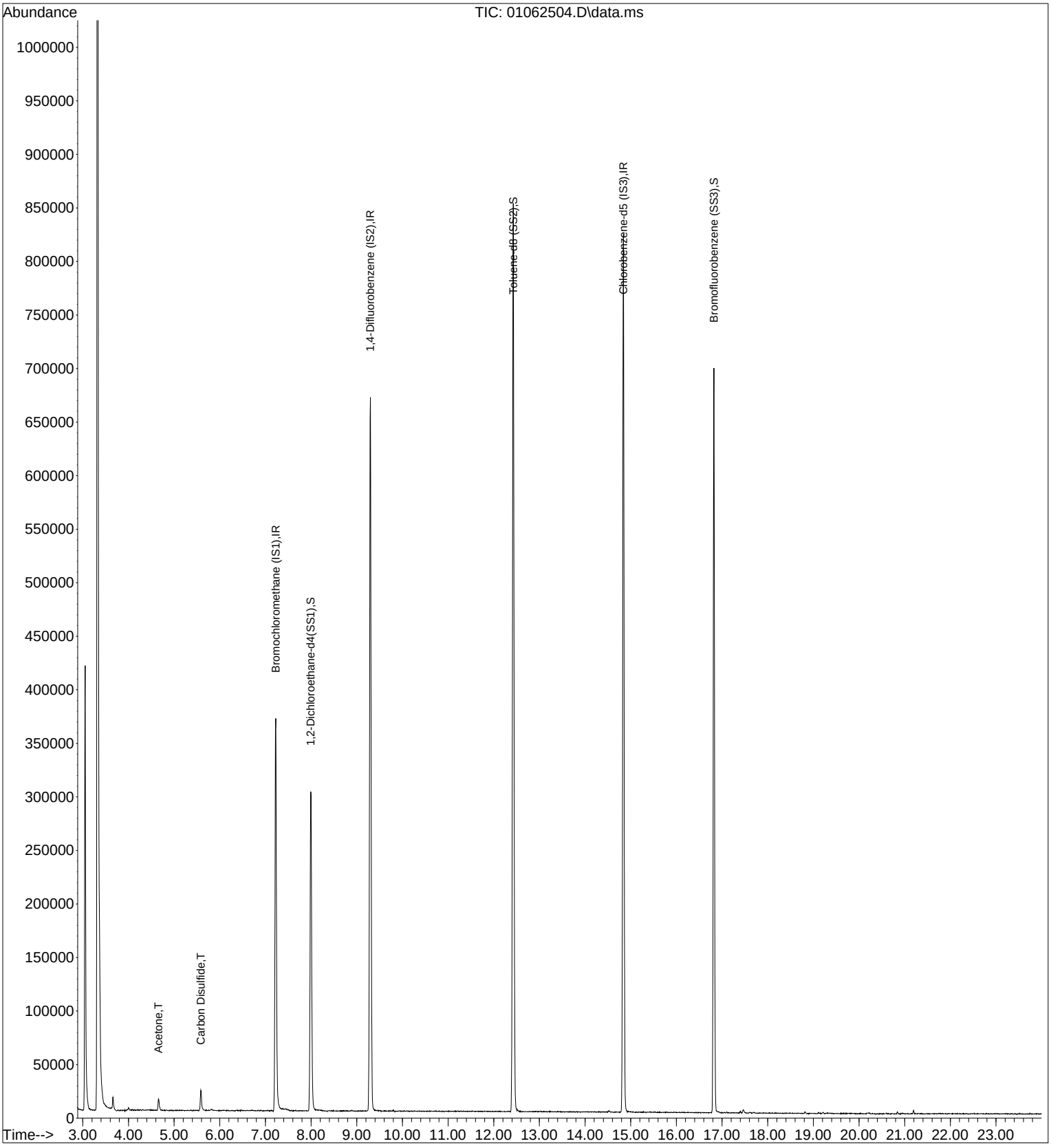
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	0.00	91	0	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	450	N.D.	
67) m- & p-Xylenes	15.64	91	300	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	192	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.71	91	1037	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	18.66	146	170	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	170	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	790	N.D.	
95) Naphthalene	20.96	128	1034	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	19.39	91	107	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062504.D Vial: 2
Acq On : 6 Jan 2025 9:31 Operator: SC
Sample : MB R09010625 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 06 10:16:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062504.D Vial: 2
Acq On : 6 Jan 2025 9:31 Operator: SC
Sample : MB R09010625 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 06 10:20:51 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/6/25

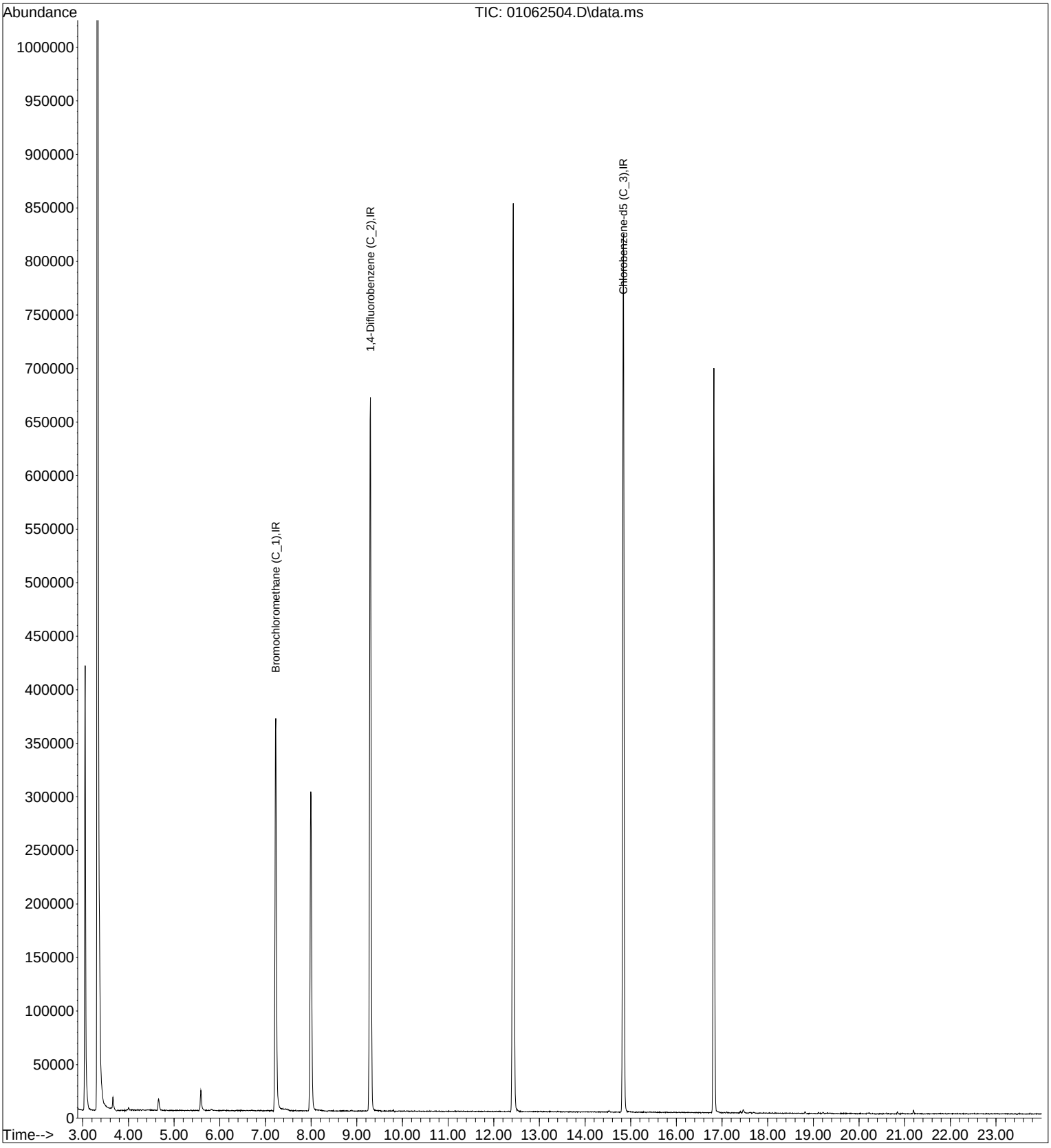
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	165872	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C 2)	9.30	114	707084	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	119910	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	293	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	70	N.D.		
4) 1,1-Difluoroethane	3.25	65	157	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.49	65	381	N.D.		
7) Dichlorofluoromethane ...	4.26	67	312	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	54	N.D.		
10) 2-Methylbutane	4.66	57	126	N.D.		
11) Methyl Acetate	5.36	43	259	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	9.03	84	116	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.79	174	114	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	15.25	91	59	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	17.11	77	345	N.D.		
26) 2-Chlorotoluene	17.61	91	539	N.D.		
27) 4-Chlorotoluene	17.71	91	1037	N.D.		
28) Indane	19.12	117	673	N.D.		
29) Indene	19.22	115	841	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	819	N.D.		
31) 1,2,3,4-Tetramethylben...	20.18	119	819	N.D.		
32) 1,2,3,5-Tetramethylben...	20.60	119	774	N.D.		
33) 1,2,3-Trichlorobenzene	21.19	180	1163	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062504.D Vial: 2
Acq On : 6 Jan 2025 9:31 Operator: SC
Sample : MB R09010625 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 06 10:20:51 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072504.D
Acq On : 7 Jan 2025 5:06
Operator : SC
Sample : MB R09010725 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 07 09:23:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139011	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	581953	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	102537	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	227961	12.037	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.32%			
57) Toluene-d8 (SS2)	12.43	98	602217	13.239	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.92%			
73) Bromofluorobenzene (SS3)	16.82	174	223722	14.252	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.00%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D. d		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.67	58	2734	0.292	ng	98
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.62	76	4378	0.103	ng	81
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.90	78	700	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072504.D
Acq On : 7 Jan 2025 5:06
Operator : SC
Sample : MB R09010725 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

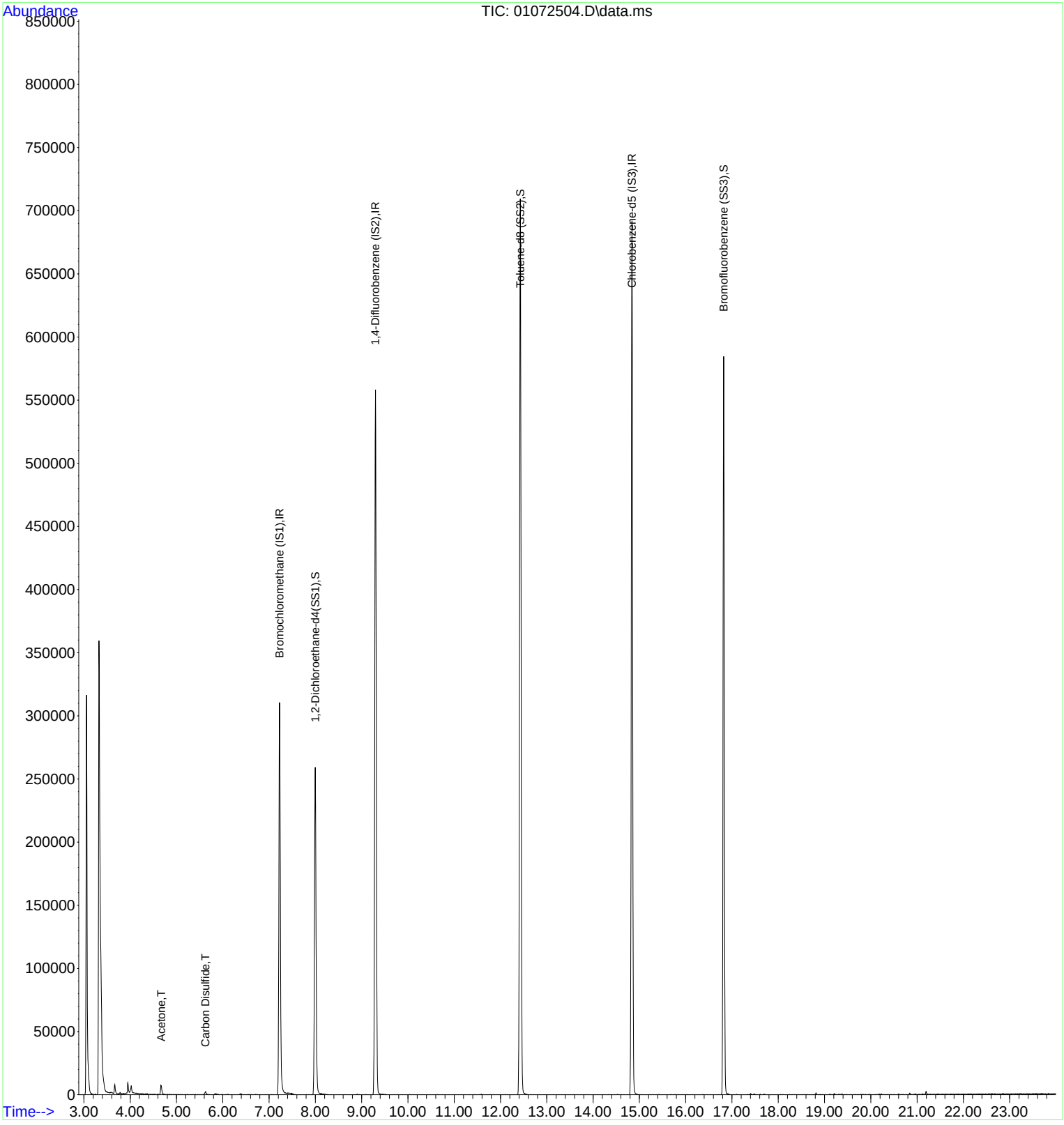
Quant Time: Jan 07 09:23:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	15.67	91	125	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.70	91	645	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	595	N.D.		
95) Naphthalene	20.95	128	721	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072504.D
Acq On : 7 Jan 2025 5:06
Operator : SC
Sample : MB R09010725 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 07 09:23:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072504.D Vial: 2
Acq On : 7 Jan 2025 5:06 Operator: SC
Sample : MB R09010725 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 07 11:26:20 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/7/25

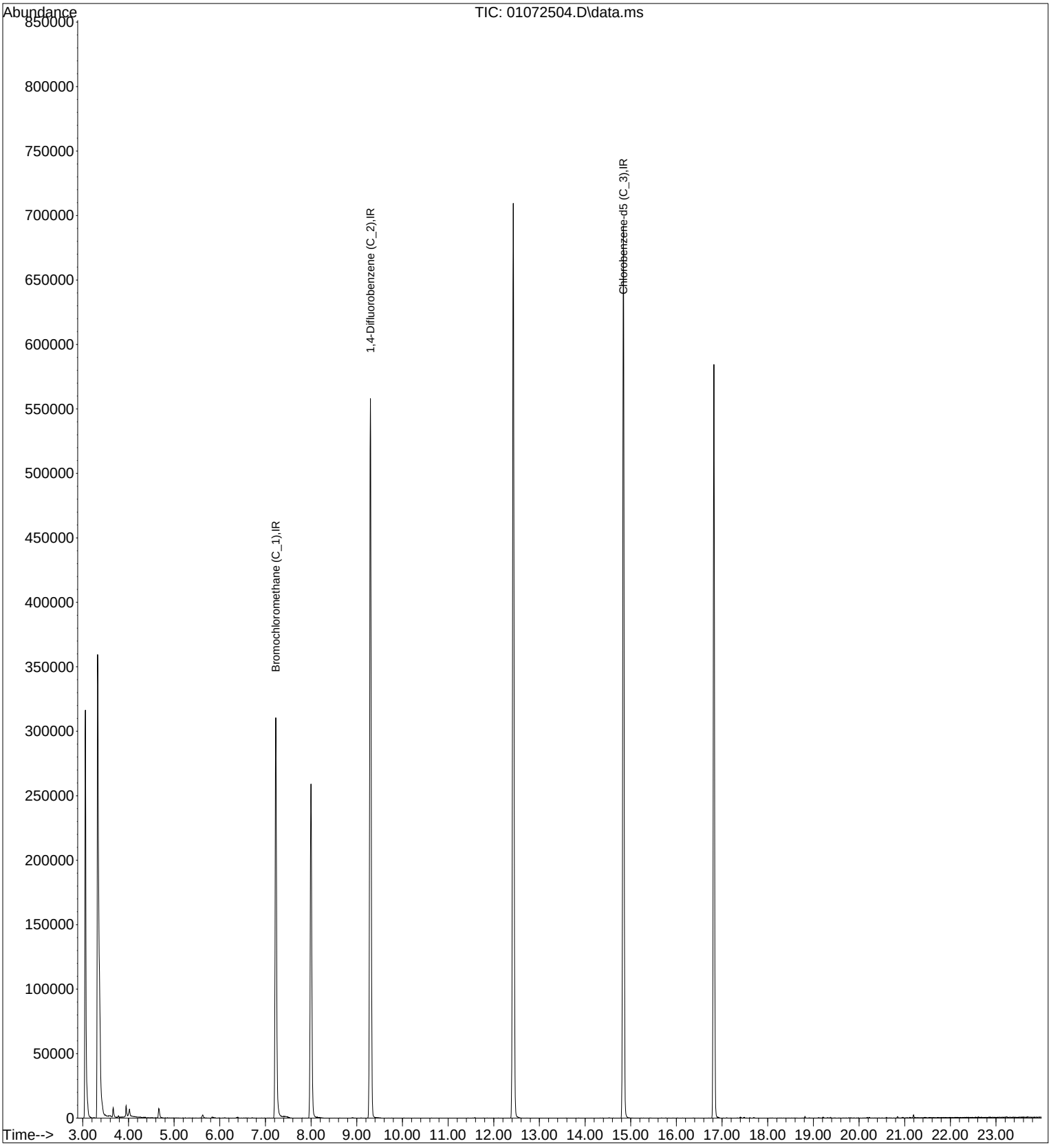
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	139961	12.500 ng	-0.03
16) 1,4-Difluorobenzene (C 2)	9.30	114	584240	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	102537	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	3.16	85	170	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	3.50	65	138	N.D.	
7) Dichlorofluoromethane ...	4.26	67	143	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	4.68	57	119	N.D.	
11) Methyl Acetate	5.37	43	63	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	9.80	174	52	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	15.23	91	123	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	17.10	77	227	N.D.	
26) 2-Chlorotoluene	17.61	91	272	N.D.	
27) 4-Chlorotoluene	17.70	91	645	N.D.	
28) Indane	19.12	117	342	N.D.	
29) Indene	19.21	115	481	N.D.	
30) 1,2,4,5-Tetramethylben...	20.18	119	462	N.D.	
31) 1,2,3,4-Tetramethylben...	20.23	119	466	N.D.	
32) 1,2,3,5-Tetramethylben...	20.60	119	523	N.D.	
33) 1,2,3-Trichlorobenzene	21.19	180	845	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072504.D Vial: 2
Acq On : 7 Jan 2025 5:06 Operator: SC
Sample : MB R09010725 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 07 11:26:20 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102505.D Vial: 2
Acq On : 10 Jan 2025 19:27 Operator: CG
Sample : MB R09011025 1000mL Inst : MS09
Misc : S37-12312401/AS00880

TR 1/10/25

Quant Time: Jan 10 21:37:22 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143679	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	622780	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	117360	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	255676	13.061	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.48%			
57) Toluene-d8 (SS2)	12.43	98	646557	12.419	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%			
73) Bromofluorobenzene (SS3)	16.82	174	229457	12.771	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.16%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.33	45	1167	0.110	ng	79
11) Acetonitrile	4.48	41	231	N.D.		
12) Acrolein	4.57	56	194	N.D.		
13) Acetone	4.66	58	3753	0.388	ng	98
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.93	45	64	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.63	76	1235	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.88	56	309	No Calib	#	
41) Benzene	8.90	78	612	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102505.D Vial: 2
Acq On : 10 Jan 2025 19:27 Operator: CG
Sample : MB R09011025 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 10 21:37:22 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

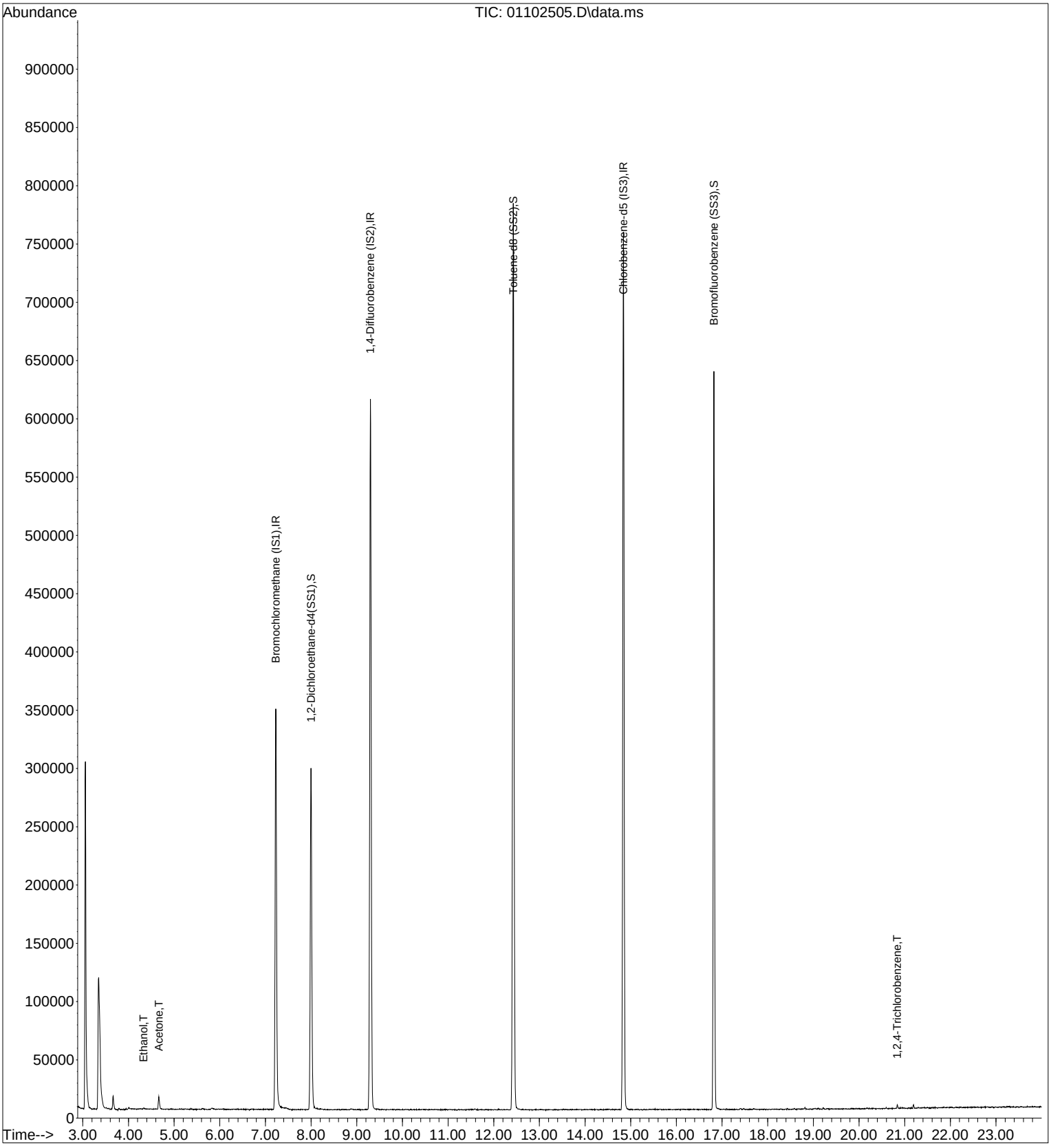
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	0.00	91	0	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.41	91	448	N.D.	
67) m- & p-Xylenes	15.64	91	644	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.24	91	243	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.04	105	116	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.70	91	1133	N.D.	
77) 3-Ethyltoluene	17.04	105	116	No Calib	#
78) 4-Ethyltoluene	17.86	105	256	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.04	105	116	No Calib	#
82) 1,2,4-Trimethylbenzene	18.43	105	283	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.58	91	240	N.D.	
85) 1,3-Dichlorobenzene	18.58	146	448	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	417	N.D.	
87) sec-Butylbenzene	18.74	105	193	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	507	N.D.	
89) 1,2,3-Trimethylbenzene	17.04	105	116	No Calib	#
90) 1,2-Dichlorobenzene	19.04	146	493	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	1170	0.057 ng	# 91
95) Naphthalene	20.94	128	1269	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.30	225	300	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	140	N.D.	
100) n-Butylbenzene	19.39	91	396	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102505.D Vial: 2
Acq On : 10 Jan 2025 19:27 Operator: CG
Sample : MB R09011025 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 10 21:37:22 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102505.D Vial: 2
Acq On : 10 Jan 2025 19:27 Operator: CG
Sample : MB R09011025 1000mL Inst : MS09
Misc : S37-12312401/AS00880

TZ 1/10/25

Quant Time: Jan 10 21:40:54 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

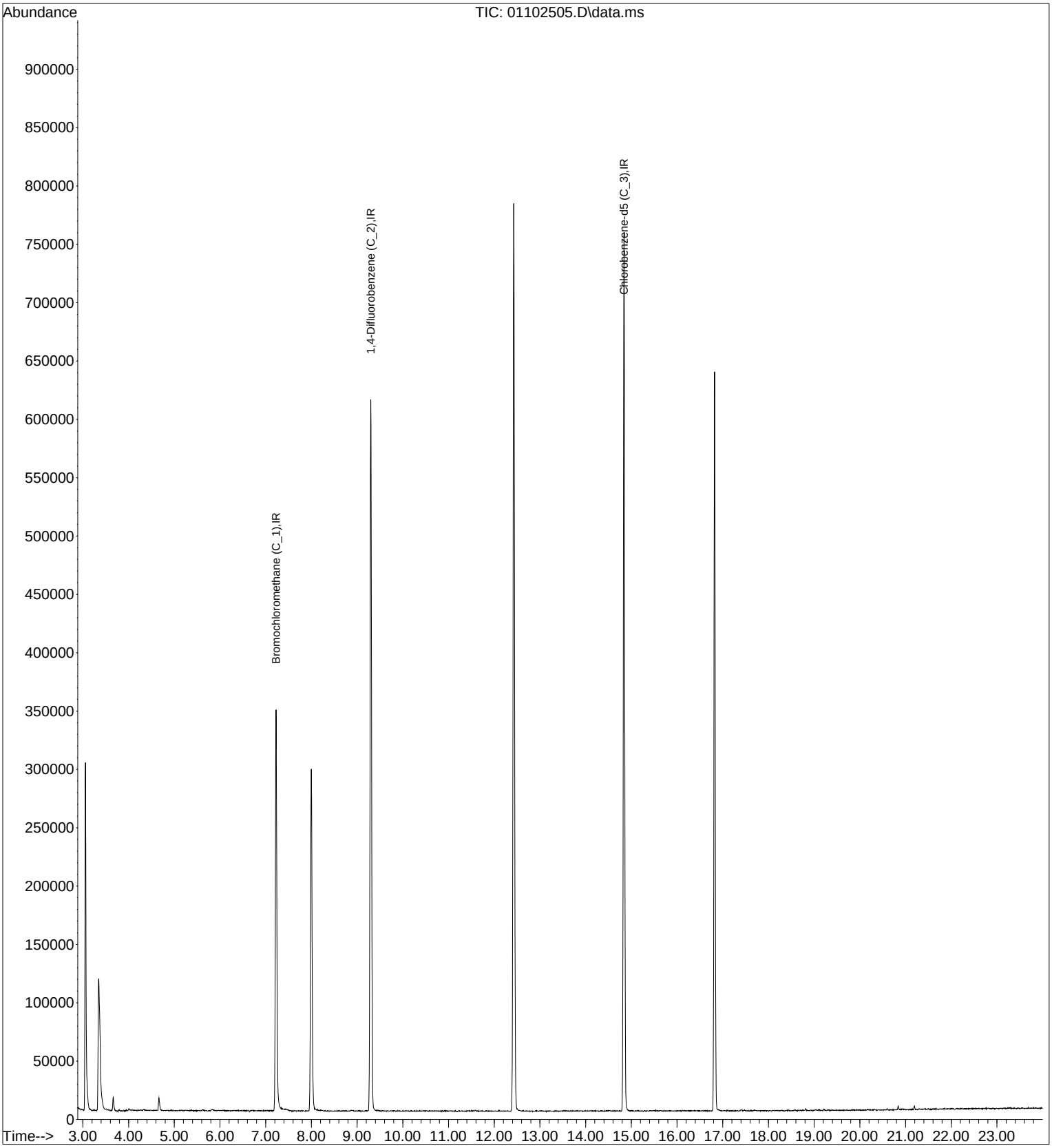
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	145536	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C 2)	9.30	114	622626	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	117360	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	163	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	59	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.52	65	191	N.D.		
7) Dichlorofluoromethane ...	4.26	67	293	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.68	57	235	N.D.		
11) Methyl Acetate	5.36	43	324	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.80	174	52	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	15.29	91	51	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	17.10	77	315	N.D.		
26) 2-Chlorotoluene	17.61	91	367	N.D.		
27) 4-Chlorotoluene	17.70	91	1133	N.D.		
28) Indane	19.12	117	449	N.D.		
29) Indene	19.22	115	660	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	616	N.D.		
31) 1,2,3,4-Tetramethylben...	20.22	119	548	N.D.		
32) 1,2,3,5-Tetramethylben...	20.60	119	613	N.D.		
33) 1,2,3-Trichlorobenzene	21.19	180	1047	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102505.D Vial: 2
Acq On : 10 Jan 2025 19:27 Operator: CG
Sample : MB R09011025 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 10 21:40:54 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112503.D
Acq On : 11 Jan 2025 6:05
Operator : CG
Sample : MB R09011125 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

CG 1/11/25

Quant Time: Jan 11 08:56:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	145433	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	643052	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	113897	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	255732	12.907	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.28%			
57) Toluene-d8 (SS2)	12.43	98	660321	13.069	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.56%			
73) Bromofluorobenzene (SS3)	16.82	174	217914	12.498	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D. d		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	4.48	41	328	N.D.		
12) Acrolein	4.58	56	53	N.D.		
13) Acetone	4.66	58	3407	0.348	ng	95
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.93	45	127	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.63	76	531	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.89	78	753	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112503.D
Acq On : 11 Jan 2025 6:05
Operator : CG
Sample : MB R09011125 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:56:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

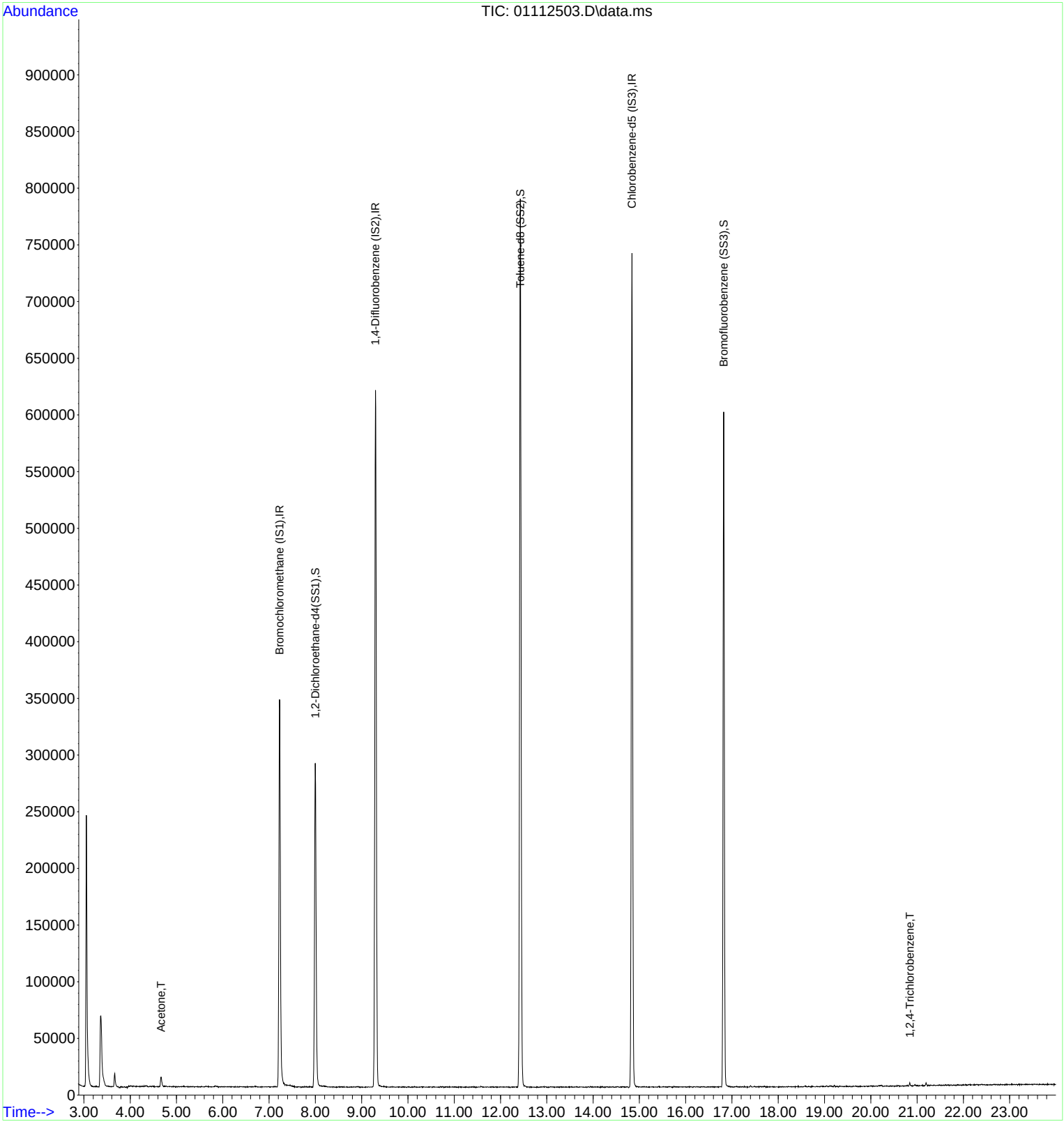
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	0.00	91	0	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.42	91	190	N.D.	
67) m- & p-Xylenes	15.63	91	452	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.25	91	109	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	0.00	105	0	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.70	91	1210	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D.	
78) 4-Ethyltoluene	17.87	105	188	N.D.	
79) 1,3,5-Trimethylbenzene	17.87	105	188	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.43	105	120	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.57	91	330	N.D.	
85) 1,3-Dichlorobenzene	18.58	146	341	N.D.	
86) 1,4-Dichlorobenzene	18.66	146	402	N.D.	
87) sec-Butylbenzene	18.74	105	103	N.D.	
88) 4-Isopropyltoluene (p-...	18.93	119	266	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	19.04	146	301	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	1134	0.057 ng	# 88
95) Naphthalene	20.95	128	1225	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.30	225	124	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	19.39	91	271	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112503.D
Acq On : 11 Jan 2025 6:05
Operator : CG
Sample : MB R09011125 1000mL
Misc : S37-12312401/AS00880
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:56:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\11\01112503.D Vial: 2
Acq On : 11 Jan 2025 6:05 Operator: CG
Sample : MB R09011125 1000mL Inst : MS09
Misc : S37-12312401/AS00880

1/12/25

Quant Time: Jan 12 08:19:55 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

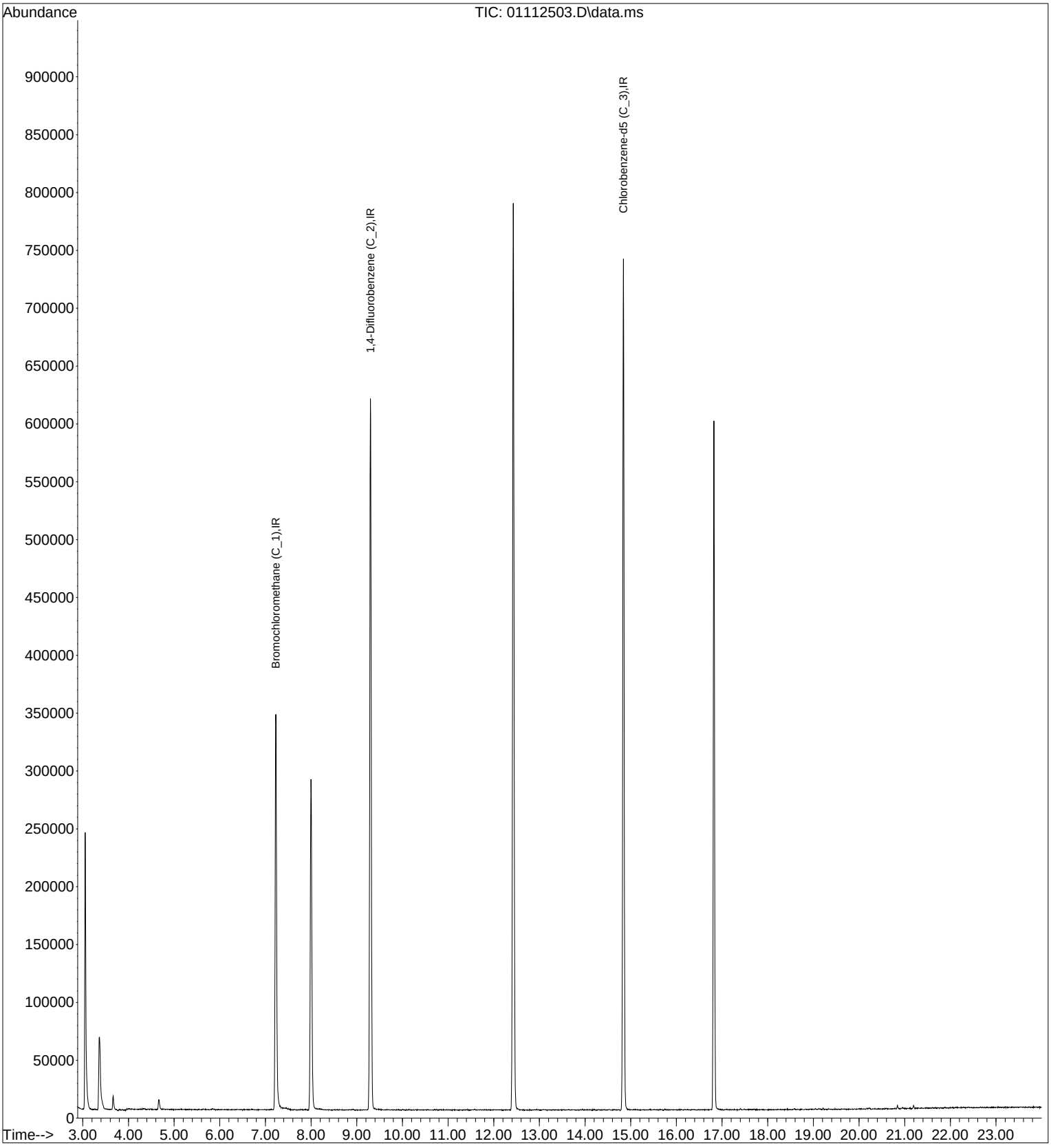
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	147480	12.500	ng	-0.03
16) 1,4-Difluorobenzene (C 2)	9.30	114	643052	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	113897	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.17	85	128	N.D.		
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.		
4) 1,1-Difluoroethane	0.00	65	0	N.D.		
5) Chlorodifluoromethane ...	0.00	67	0	N.D.		
6) 1-Chloro-1,1-Difluoroe...	3.52	65	121	N.D.		
7) Dichlorofluoromethane ...	4.26	67	197	N.D.		
8) Vinylbromide	0.00	108	0	N.D.		
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.		
10) 2-Methylbutane	4.68	57	253	N.D.		
11) Methyl Acetate	5.36	43	142	N.D.		
12) 2-Methylpentane	0.00	71	0	N.D.		
13) 2,2-Dichloropropane	0.00	77	0	N.D.		
14) 1,1-Dichloropropene	0.00	75	0	N.D.		
15) Thiophene	0.00	84	0	N.D.		
17) 2,3-Dimethylpentane	0.00	56	0	N.D.		
18) Dibromomethane	9.81	174	53	N.D.		
20) Methyl Cyclohexane	0.00	55	0	N.D.		
21) 1,3-Dichloropropane	0.00	76	0	N.D.		
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		
23) 1-Chlorohexane	0.00	91	0	N.D.		
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.		
25) Bromobenzene	17.11	77	261	N.D.		
26) 2-Chlorotoluene	17.61	91	406	N.D.		
27) 4-Chlorotoluene	17.70	91	1210	N.D.		
28) Indane	19.12	117	370	N.D.		
29) Indene	19.21	115	543	N.D.		
30) 1,2,4,5-Tetramethylben...	20.18	119	567	N.D.		
31) 1,2,3,4-Tetramethylben...	20.18	119	567	N.D.		
32) 1,2,3,5-Tetramethylben...	20.60	119	616	N.D.		
33) 1,2,3-Trichlorobenzene	21.19	180	1148	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\11\01112503.D Vial: 2
Acq On : 11 Jan 2025 6:05 Operator: CG
Sample : MB R09011125 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 12 08:19:55 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122503.D Vial: 2
Acq On : 12 Jan 2025 00:42 Operator: LS
Sample : MB R09011225 1000mL Inst : MS09
Misc : S37-12312401/AS00880

1/12/25

Quant Time: Jan 12 07:33:12 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	145387	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	636395	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	117647	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	246192	12.429	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%			
57) Toluene-d8 (SS2)	12.43	98	667739	12.794	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.32%			
73) Bromofluorobenzene (SS3)	16.82	174	231976	12.880	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.04%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D. d		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	4.48	41	132	N.D.		
12) Acrolein	4.57	56	64	N.D.		
13) Acetone	4.66	58	3800	0.388	ng	100
14) Trichlorofluoromethane	4.78	101	405	N.D.		
15) 2-Propanol (Isopropanol)	4.93	45	61	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.59	151	770	0.064	ng	93
22) Carbon Disulfide	5.63	76	435	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.90	78	568	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122503.D Vial: 2
Acq On : 12 Jan 2025 00:42 Operator: LS
Sample : MB R09011225 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 12 07:33:12 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

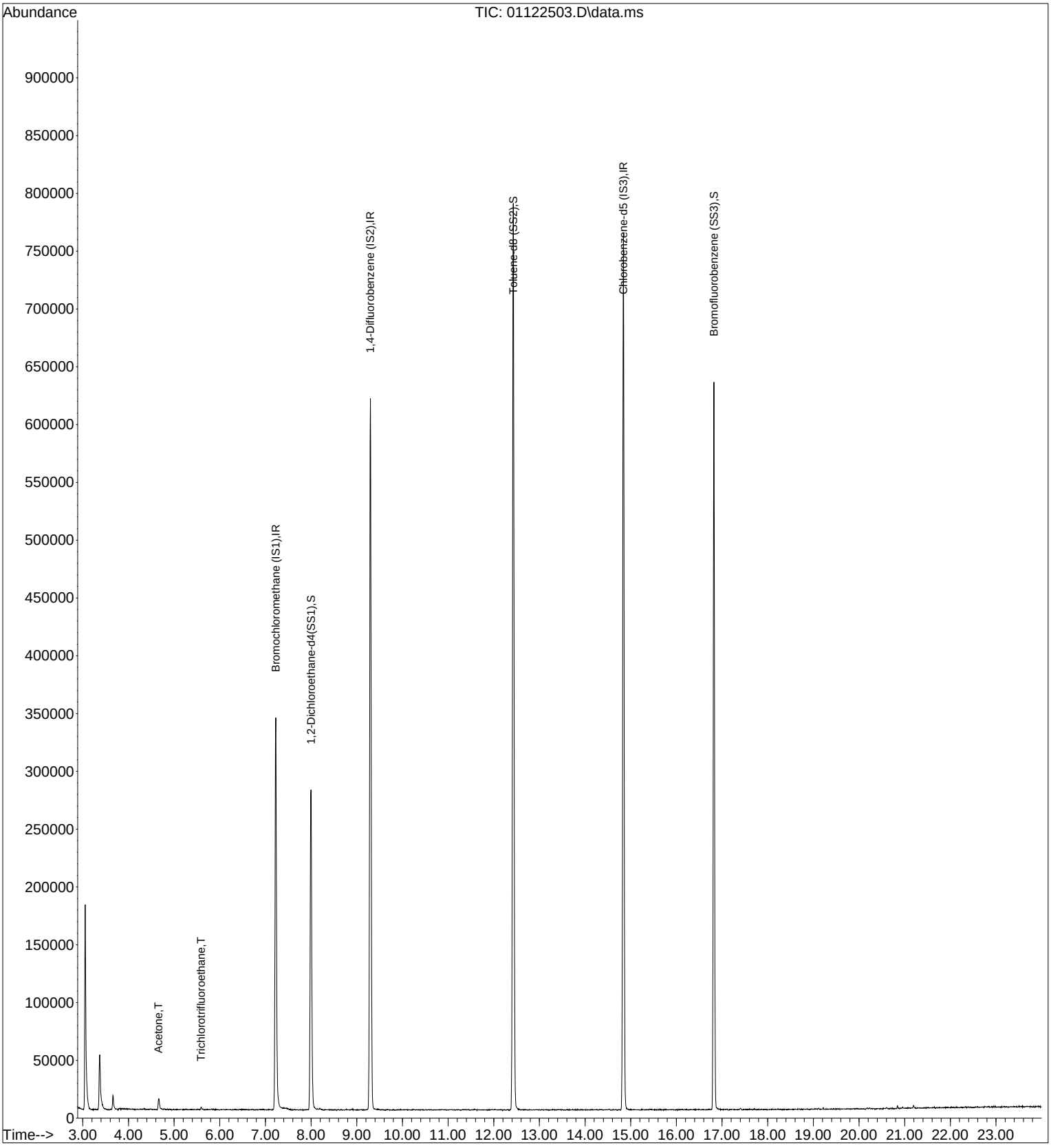
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.42	91	162	N.D.		
67) m- & p-Xylenes	15.68	91	135	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.71	91	957	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	109	N.D.		
79) 1,3,5-Trimethylbenzene	17.96	105	109	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.43	105	115	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.58	91	137	N.D.		
85) 1,3-Dichlorobenzene	18.59	146	116	N.D.		
86) 1,4-Dichlorobenzene	18.67	146	225	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.04	146	186	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	900	N.D.		
95) Naphthalene	20.95	128	1435	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	19.39	91	273	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122503.D Vial: 2
Acq On : 12 Jan 2025 00:42 Operator: LS
Sample : MB R09011225 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 12 07:33:12 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122503.D Vial: 2
Acq On : 12 Jan 2025 00:42 Operator: LS
Sample : MB R09011225 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 12 07:43:57 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

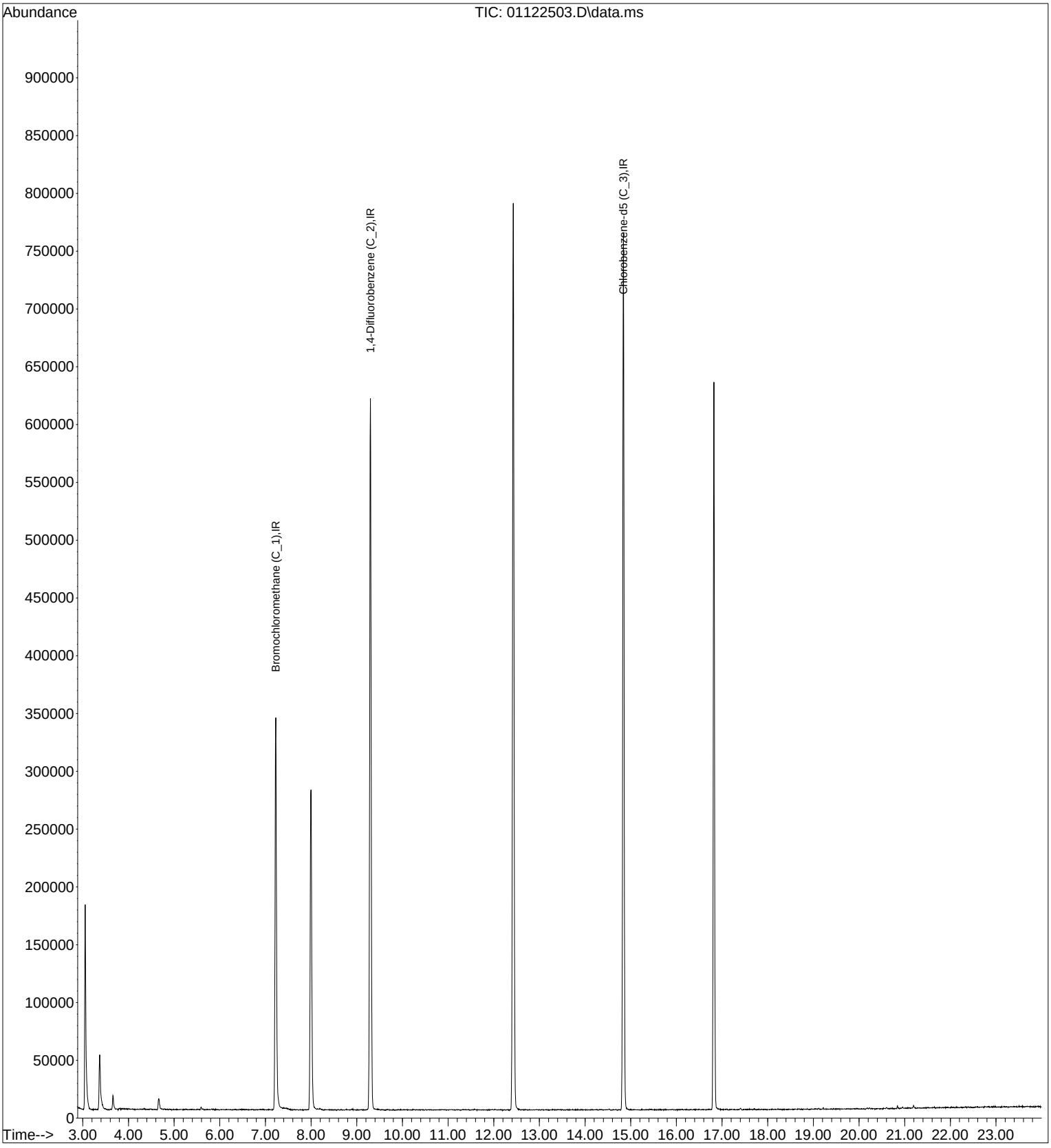
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	147296	12.500 ng	-0.03
16) 1,4-Difluorobenzene (C 2)	9.30	114	637682	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	117647	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.23	83	56	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	3.53	65	239	N.D.	
7) Dichlorofluoromethane ...	4.26	67	228	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	4.68	57	293	N.D.	
11) Methyl Acetate	5.35	43	164	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	9.80	174	162	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	15.32	91	54	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	17.11	77	301	N.D.	
26) 2-Chlorotoluene	17.61	91	457	N.D.	
27) 4-Chlorotoluene	17.71	91	957	N.D.	
28) Indane	19.12	117	543	N.D.	
29) Indene	19.22	115	724	N.D.	
30) 1,2,4,5-Tetramethylben...	20.18	119	865	N.D.	
31) 1,2,3,4-Tetramethylben...	20.23	119	800	N.D.	
32) 1,2,3,5-Tetramethylben...	20.60	119	714	N.D.	
33) 1,2,3-Trichlorobenzene	21.19	180	1054	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122503.D Vial: 2
Acq On : 12 Jan 2025 00:42 Operator: LS
Sample : MB R09011225 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 12 07:43:57 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132503.D Vial: 2
Acq On : 13 Jan 2025 00:32 Operator: SC
Sample : MB R09011325 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 13 08:09:33 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143036	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	628917	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.84	54	116529	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	241752	12.406	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%				
57) Toluene-d8 (SS2)	12.43	98	656145	12.693	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.52%				
73) Bromofluorobenzene (SS3)	16.82	174	231494	12.977	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.84%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	0.00	50	0	N.D.	d		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.34	45	1043	0.099	ng	#	55
11) Acetonitrile	4.49	41	265	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.66	58	3952	0.410	ng		98
14) Trichlorofluoromethane	0.00	101	0	N.D.			
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	5.64	76	253	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	377	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.28	84	112	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132503.D Vial: 2
Acq On : 13 Jan 2025 00:32 Operator: SC
Sample : MB R09011325 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 13 08:09:33 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

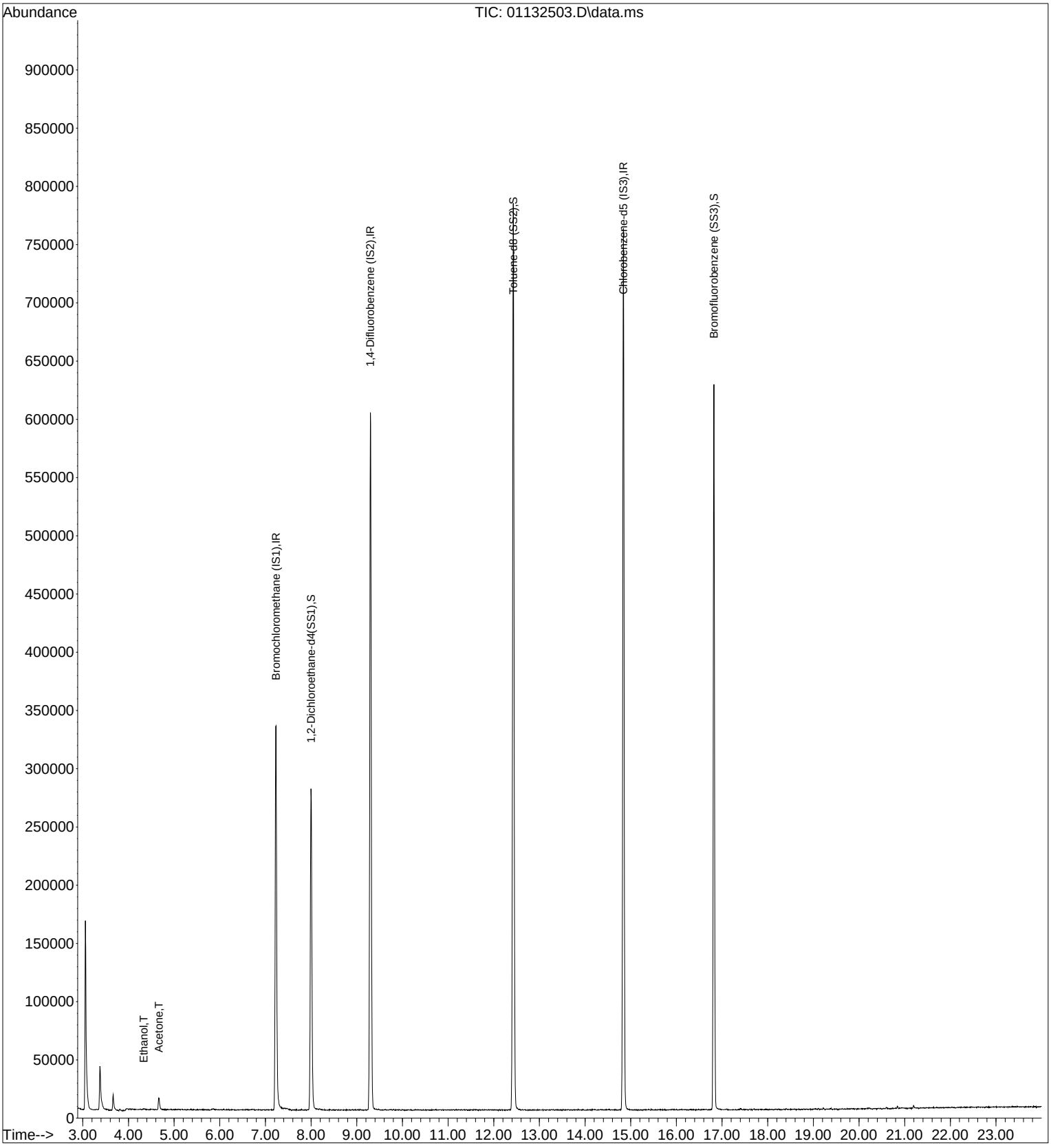
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.46	91	105	N.D.		
67) m- & p-Xylenes	15.67	91	169	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.71	91	1071	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	18.66	146	137	N.D.		
86) 1,4-Dichlorobenzene	18.66	146	137	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.04	146	109	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	884	N.D.		
95) Naphthalene	20.94	128	1237	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	19.39	91	281	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132503.D Vial: 2
Acq On : 13 Jan 2025 00:32 Operator: SC
Sample : MB R09011325 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 13 08:09:33 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132503.D Vial: 2
Acq On : 13 Jan 2025 00:32 Operator: SC
Sample : MB R09011325 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 13 10:46:41 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/13/25

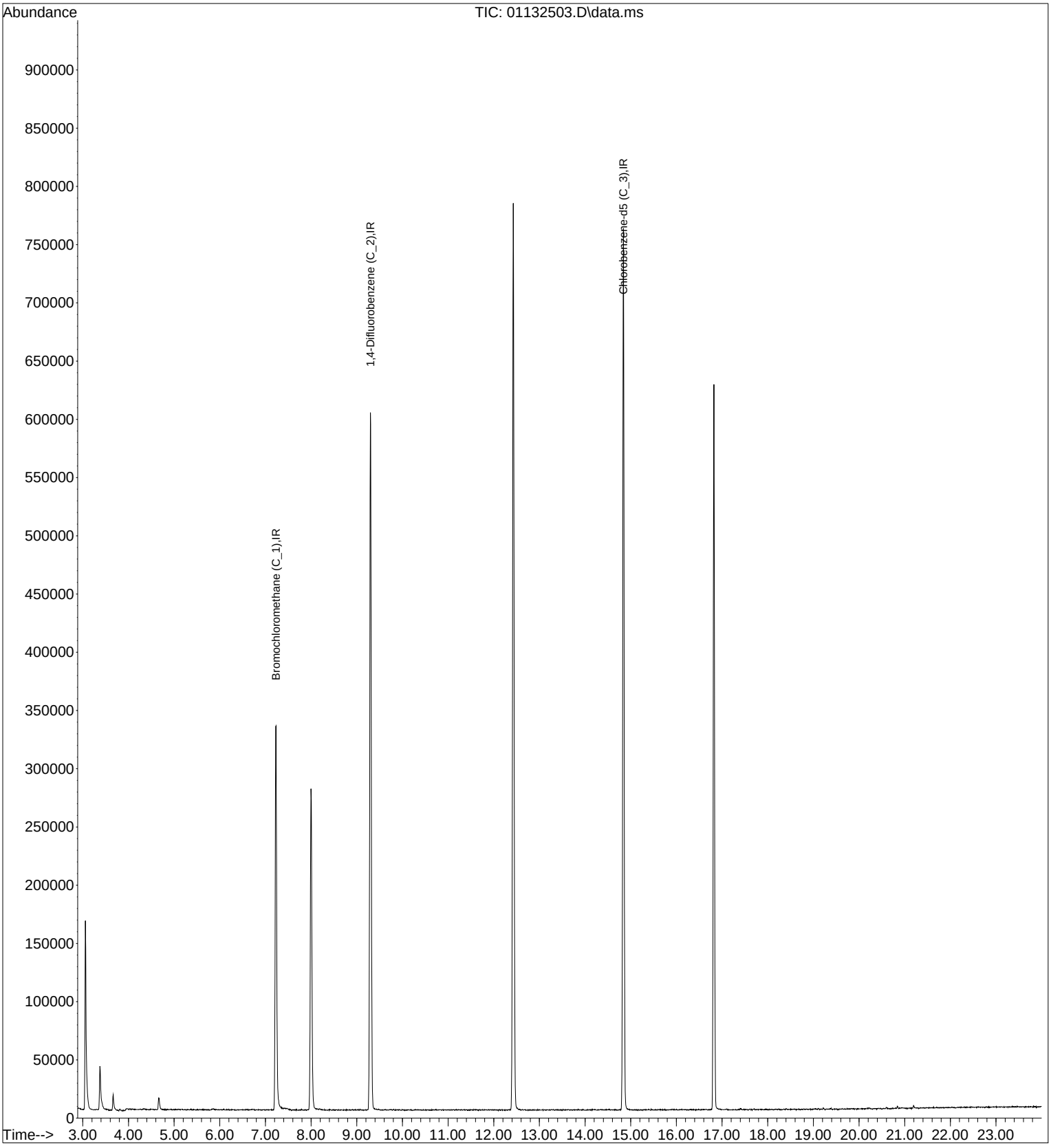
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	145211	12.500 ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.30	114	631077	12.500 ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	116529	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	3.23	83	54	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	3.53	65	167	N.D.	
7) Dichlorofluoromethane ...	4.26	67	255	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	4.58	83	51	N.D.	
10) 2-Methylbutane	4.68	57	263	N.D.	
11) Methyl Acetate	5.36	43	259	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	9.81	174	59	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	15.32	91	54	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	17.09	77	313	N.D.	
26) 2-Chlorotoluene	17.61	91	479	N.D.	
27) 4-Chlorotoluene	17.71	91	1071	N.D.	
28) Indane	19.12	117	561	N.D.	
29) Indene	19.22	115	723	N.D.	
30) 1,2,4,5-Tetramethylben...	20.18	119	742	N.D.	
31) 1,2,3,4-Tetramethylben...	20.22	119	828	N.D.	
32) 1,2,3,5-Tetramethylben...	20.60	119	863	N.D.	
33) 1,2,3-Trichlorobenzene	21.19	180	1109	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132503.D Vial: 2
Acq On : 13 Jan 2025 00:32 Operator: SC
Sample : MB R09011325 1000mL Inst : MS09
Misc : S37-12312401/AS00880

Quant Time: Jan 13 10:46:41 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Not Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042505.D
Acq On : 4 Jan 2025 5:20
Operator : SC
Sample : LCS R09010425 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

LH 1/5/25

Quant Time: Jan 05 14:54:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	155824	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.34	114	666756	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.85	54	112194	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	253979	11.963	ng		0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.68%				
57) Toluene-d8 (SS2)	12.44	98	679586	13.654	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.20%				
73) Bromofluorobenzene (SS3)	16.83	174	241808	14.079	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.64%				
Target Compounds							Qvalue
2) Propene	3.28	42	328354	19.728	ng		97
3) Dichlorodifluoromethan...	3.36	85	735284	24.139	ng		100
4) Chloromethane	3.50	50	418988	18.522	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	398127	27.607	ng		100
6) Vinyl Chloride	3.69	62	449896	25.848	ng		99
7) 1,3-Butadiene	3.80	54	340565	29.680	ng		98
8) Bromomethane	4.02	94	319072	29.067	ng		100
9) Chloroethane	4.16	64	215312	23.505	ng		100
10) Ethanol	4.37	45	1315670	114.149	ng		96
11) Acetonitrile	4.49	41	578189	19.503	ng		99
12) Acrolein	4.56	56	470521	47.753	ng		98
13) Acetone	4.66	58	1152367	109.832	ng		97
14) Trichlorofluoromethane	4.76	101	716657	25.087	ng		100
15) 2-Propanol (Isopropanol)	4.92	45	1816675	48.352	ng		99
16) Acrylonitrile	5.04	53	884045	47.225	ng		99
17) 1,1-Dichloroethene	5.27	96	341550	26.010	ng		95
18) 2-Methyl-2-Propanol (t...	5.39	59	1322577	43.933	ng		99
19) Methylene Chloride	5.40	84	343636	23.276	ng		88
20) 3-Chloro-1-propene (Al...	5.48	41	474793	19.381	ng		94
21) Trichlorotrifluoroethane	5.60	151	355663	27.595	ng		93
22) Carbon Disulfide	5.61	76	2394122	50.439	ng		100
23) trans-1,2-Dichloroethene	6.17	61	513315	25.452	ng		96
24) 1,1-Dichloroethane	6.36	63	603853	24.120	ng		100
25) Methyl tert-Butyl Ether	6.38	73	926666	24.889	ng		97
26) Vinyl Acetate	6.48	86	370404	145.856	ng	#	79
27) 2-Butanone (MEK)	6.70	72	409179	48.542	ng	#	88
28) cis-1,2-Dichloroethene	7.12	61	487099	24.787	ng		97
29) Diisopropyl Ether	7.30	87	523548	49.354	ng	#	81
30) Ethyl Acetate	7.32	61	241897	46.493	ng		96
31) n-Hexane	7.31	57	529648	22.625	ng		99
32) Chloroform	7.41	83	662730	26.127	ng		100
34) Tetrahydrofuran (THF)	7.77	72	375963	47.293	ng	#	90
35) Ethyl tert-Butyl Ether	7.85	87	819311	53.383	ng		92
36) 1,2-Dichloroethane	8.15	62	524849	24.426	ng		100
38) 1,1,1-Trichloroethane	8.43	97	639851	27.731	ng		98
39) Isopropyl Acetate	9.62	61	771	No Calib		#	
40) 1-Butanol	8.84	56	1606	No Calib		#	
41) Benzene	8.93	78	1260228	23.546	ng		100
42) Carbon Tetrachloride	9.09	117	604628	28.242	ng		99
43) Cyclohexane	9.24	84	969194	51.908	ng		93
44) tert-Amyl Methyl Ether	9.62	73	1906301	55.122	ng		97
45) 1,2-Dichloropropane	9.88	63	321245	24.605	ng		98
46) Bromodichloromethane	10.10	83	544223	29.365	ng		100
47) Trichloroethene	10.17	130	419012	27.479	ng		99
48) 1,4-Dioxane	10.13	88	256884	27.714	ng		94

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042505.D
Acq On : 4 Jan 2025 5:20
Operator : SC
Sample : LCS R09010425 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 05 14:54:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration

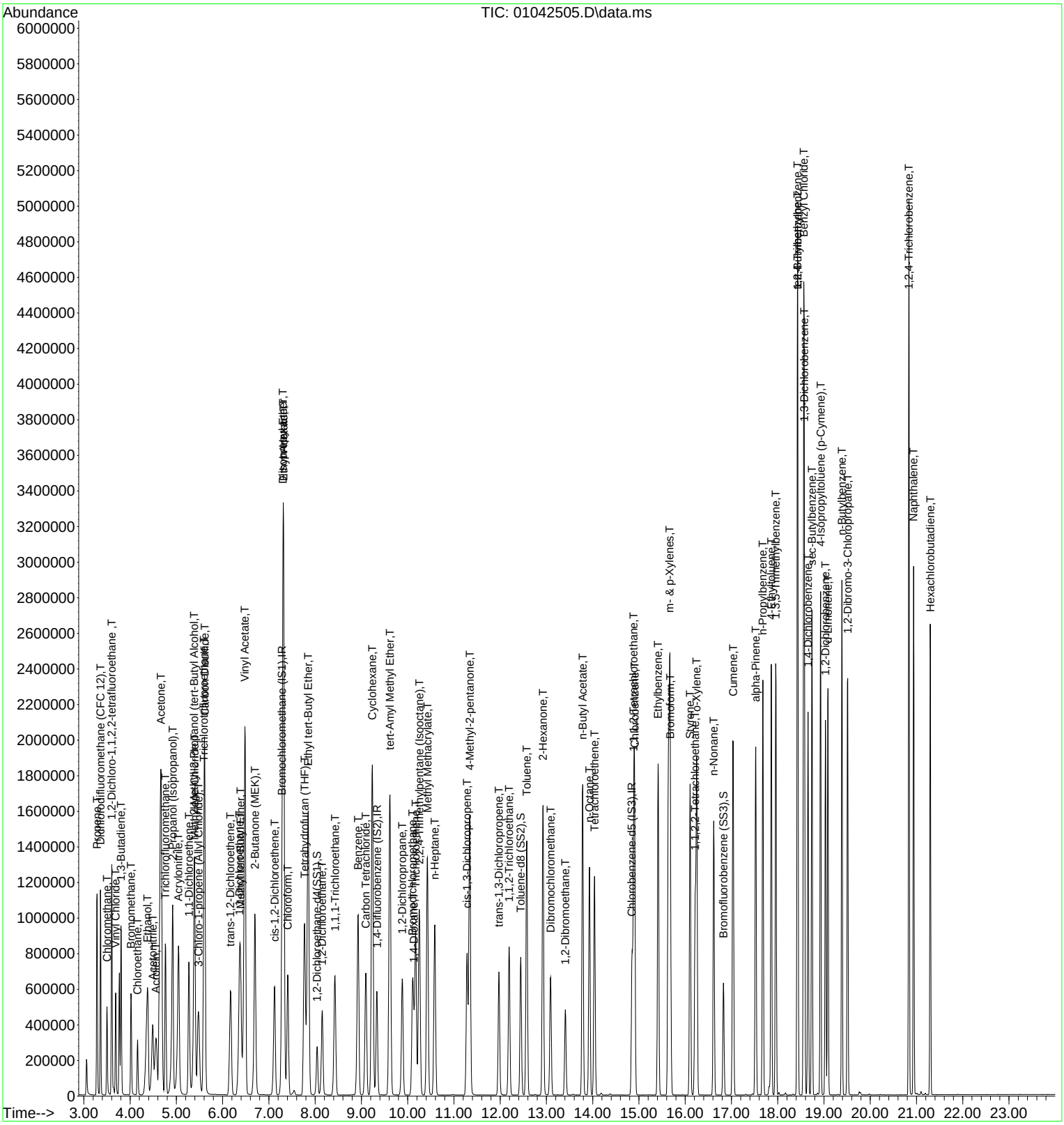
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	1343778	23.997 ng		99
50) Methyl Methacrylate	10.43	100	295252	60.480 ng		92
51) n-Heptane	10.59	71	303145	25.398 ng		95
52) cis-1,3-Dichloropropene	11.29	75	605854	28.418 ng		100
53) 4-Methyl-2-pentanone	11.34	58	608588	52.866 ng		96
54) trans-1,3-Dichloropropene	11.97	75	504664	26.157 ng		100
55) 1,1,2-Trichloroethane	12.19	97	358192	27.681 ng		96
58) Toluene	12.57	91	1406054	29.361 ng		100
59) 2-Hexanone	12.93	43	1377460	59.026 ng		98
60) Dibromochloromethane	13.09	129	497757	34.848 ng		99
61) 1,2-Dibromoethane	13.41	107	434168	31.816 ng		100
62) n-Butyl Acetate	13.78	43	1565842	59.707 ng		99
63) n-Octane	13.93	57	281106	28.313 ng		93
64) Tetrachloroethene	14.04	166	469602	32.966 ng		100
65) Chlorobenzene	14.91	112	1013695	30.006 ng		100
66) Ethylbenzene	15.41	91	1682180	31.769 ng		99
67) m- & p-Xylenes	15.66	91	2725891	62.901 ng		100
68) Bromoform	15.68	173	466403	41.099 ng		100
69) Styrene	16.11	104	1031609	34.074 ng		99
70) o-Xylene	16.25	91	1360486	31.723 ng		100
71) n-Nonane	16.62	43	630824	27.688 ng		95
72) 1,1,2,2-Tetrachloroethane	16.21	83	606512	29.719 ng		99
74) Cumene	17.04	105	1681192	31.508 ng		100
75) alpha-Pinene	17.53	93	872725	33.153 ng		100
76) n-Propylbenzene	17.68	91	1975984	31.233 ng		99
77) 3-Ethyltoluene	17.04	105	1681192	No Calib		
78) 4-Ethyltoluene	17.86	105	1686348	33.533 ng		100
79) 1,3,5-Trimethylbenzene	17.96	105	1429517	32.512 ng		100
80) alpha-Methylstyrene	17.03	118	3683	No Calib	#	
81) 2-Ethyltoluene	17.04	105	1681192	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	1442254	32.432 ng		99
83) n-Decane	17.02	58	12107	No Calib		
84) Benzyl Chloride	18.56	91	2593608	71.057 ng		99
85) 1,3-Dichlorobenzene	18.58	146	896101	32.273 ng		100
86) 1,4-Dichlorobenzene	18.66	146	891432	31.179 ng		100
87) sec-Butylbenzene	18.74	105	1842246	31.281 ng		99
88) 4-Isopropyltoluene (p-...	18.93	119	1609819	32.919 ng		99
89) 1,2,3-Trimethylbenzene	17.04	105	1681192	No Calib		
90) 1,2-Dichlorobenzene	19.03	146	866815	30.878 ng		99
91) d-Limonene	19.09	68	467479	32.919 ng		97
92) 1,2-Dibromo-3-Chloropr...	19.51	157	698337	73.038 ng		92
93) n-Undecane	17.96	58	23857	No Calib		
94) 1,2,4-Trichlorobenzene	20.84	180	1344207	68.771 ng		100
95) Naphthalene	20.94	128	1933268	32.462 ng		100
96) n-Dodecane	18.92	58	31849	No Calib	#	
97) Hexachlorobutadiene	21.30	225	480828	32.736 ng		100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.43	119	1384703	33.169 ng		100
100) n-Butylbenzene	19.39	91	1472045	31.915 ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	418289	33.944 ng		100

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

Quantitation Report (Not Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042505.D
Acq On : 4 Jan 2025 5:20
Operator : SC
Sample : LCS R09010425 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 05 14:54:53 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Jan 05 14:51:43 2025
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042506.D
Acq On : 4 Jan 2025 5:52
Operator : SC
Sample : LCSD R09010425 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

CG 1/4/25

Quant Time: Jan 04 08:33:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	155933	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	670083	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	112415	12.500	ng		0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	253837	11.948	ng		0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.60%				
57) Toluene-d8 (SS2)	12.44	98	682750	13.691	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.52%				
73) Bromofluorobenzene (SS3)	16.83	174	241325	14.023	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.16%				
Target Compounds							Qvalue
2) Propene	3.28	42	313847	18.843	ng		96
3) Dichlorodifluoromethan...	3.36	85	722052	23.688	ng		100
4) Chloromethane	3.50	50	424704	18.762	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	394225	27.317	ng		100
6) Vinyl Chloride	3.69	62	449502	25.808	ng		99
7) 1,3-Butadiene	3.81	54	330517	28.784	ng		99
8) Bromomethane	4.02	94	314238	28.607	ng		100
9) Chloroethane	4.16	64	211377	23.060	ng		99
10) Ethanol	4.37	45	1309979	113.576	ng		97
11) Acetonitrile	4.49	41	571451	19.263	ng		100
12) Acrolein	4.56	56	468847	47.550	ng		99
13) Acetone	4.66	58	1134602	108.064	ng		96
14) Trichlorofluoromethane	4.77	101	709418	24.817	ng		100
15) 2-Propanol (Isopropanol)	4.92	45	1817531	48.340	ng		99
16) Acrylonitrile	5.04	53	876227	46.775	ng		99
17) 1,1-Dichloroethene	5.27	96	337700	25.699	ng		95
18) 2-Methyl-2-Propanol (t...	5.39	59	1512752	50.215	ng		98
19) Methylene Chloride	5.40	84	339575	22.985	ng		88
20) 3-Chloro-1-propene (Al...	5.48	41	477809	19.491	ng		95
21) Trichlorotrifluoroethane	5.60	151	349857	27.126	ng		92
22) Carbon Disulfide	5.61	76	2388351	50.282	ng		100
23) trans-1,2-Dichloroethene	6.17	61	509646	25.252	ng		96
24) 1,1-Dichloroethane	6.36	63	599958	23.948	ng		100
25) Methyl tert-Butyl Ether	6.39	73	1003227	26.926	ng		96
26) Vinyl Acetate	6.48	86	371643	146.241	ng	#	79
27) 2-Butanone (MEK)	6.70	72	407791	48.343	ng	#	88
28) cis-1,2-Dichloroethene	7.12	61	483356	24.579	ng		96
29) Diisopropyl Ether	7.31	87	522088	49.182	ng	#	80
30) Ethyl Acetate	7.32	61	240976	46.284	ng		96
31) n-Hexane	7.31	57	524391	22.385	ng		99
32) Chloroform	7.41	83	658909	25.958	ng		100
34) Tetrahydrofuran (THF)	7.77	72	374198	47.038	ng	#	85
35) Ethyl tert-Butyl Ether	7.85	87	815939	53.126	ng		92
36) 1,2-Dichloroethane	8.15	62	523542	24.348	ng		100
38) 1,1,1-Trichloroethane	8.43	97	637703	27.500	ng		98
39) Isopropyl Acetate	9.61	61	912	No Calib		#	
40) 1-Butanol	8.85	56	1578	No Calib			
41) Benzene	8.93	78	1256419	23.359	ng		100
42) Carbon Tetrachloride	9.09	117	601591	27.961	ng		99
43) Cyclohexane	9.24	84	970350	51.712	ng		93
44) tert-Amyl Methyl Ether	9.62	73	1901593	54.713	ng		97
45) 1,2-Dichloropropane	9.88	63	317991	24.235	ng		98
46) Bromodichloromethane	10.10	83	544645	29.242	ng		100
47) Trichloroethene	10.17	130	415085	27.087	ng		99
48) 1,4-Dioxane	10.13	88	260485	27.963	ng		94

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042506.D
Acq On : 4 Jan 2025 5:52
Operator : SC
Sample : LCSD R09010425 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 04 08:33:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

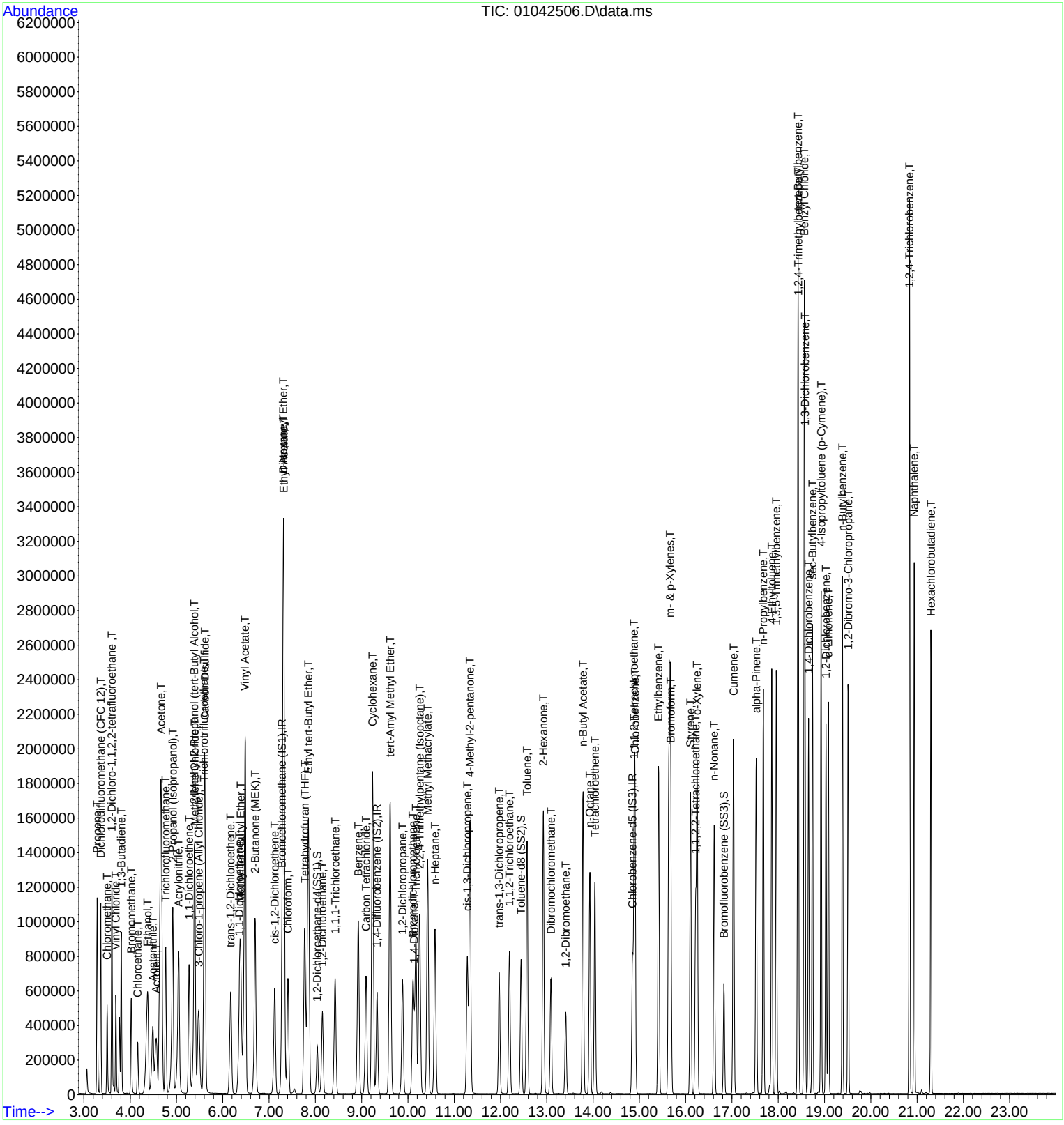
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	1341079	23.830 ng		98
50) Methyl Methacrylate	10.42	100	296021	60.336 ng		91
51) n-Heptane	10.59	71	303926	25.337 ng		96
52) cis-1,3-Dichloropropene	11.29	75	607326	28.346 ng		100
53) 4-Methyl-2-pentanone	11.34	58	606894	52.457 ng		96
54) trans-1,3-Dichloropropene	11.97	75	503558	25.970 ng		100
55) 1,1,2-Trichloroethane	12.19	97	357235	27.470 ng		97
58) Toluene	12.57	91	1418644	29.566 ng		99
59) 2-Hexanone	12.93	43	1393880	59.612 ng		99
60) Dibromochloromethane	13.09	129	500923	35.001 ng		99
61) 1,2-Dibromoethane	13.41	107	434855	31.804 ng		100
62) n-Butyl Acetate	13.78	43	1574283	59.911 ng		98
63) n-Octane	13.93	57	281720	28.319 ng		94
64) Tetrachloroethene	14.04	166	472016	33.071 ng		99
65) Chlorobenzene	14.91	112	1014048	29.957 ng		99
66) Ethylbenzene	15.41	91	1695526	31.958 ng		100
67) m- & p-Xylenes	15.66	91	2736473	63.021 ng		100
68) Bromoform	15.68	173	466817	41.054 ng		99
69) Styrene	16.11	104	1041834	34.344 ng		99
70) o-Xylene	16.25	91	1362242	31.702 ng		100
71) n-Nonane	16.62	43	633536	27.752 ng		95
72) 1,1,2,2-Tetrachloroethane	16.21	83	615263	30.089 ng		100
74) Cumene	17.04	105	1692127	31.651 ng		100
75) alpha-Pinene	17.53	93	875015	33.175 ng		100
76) n-Propylbenzene	17.68	91	1978754	31.216 ng		99
77) 3-Ethyltoluene	17.04	105	1692127	No Calib		
78) 4-Ethyltoluene	17.86	105	1694966	33.638 ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	1443733	32.771 ng		100
80) alpha-Methylstyrene	17.04	118	3542	No Calib	#	
81) 2-Ethyltoluene	17.04	105	1692127	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	1463474	32.845 ng		99
83) n-Decane	17.03	58	11724	No Calib		
84) Benzyl Chloride	18.56	91	2635718	72.069 ng		98
85) 1,3-Dichlorobenzene	18.58	146	905914	32.563 ng		99
86) 1,4-Dichlorobenzene	18.66	146	907399	31.675 ng		100
87) sec-Butylbenzene	18.74	105	1856813	31.466 ng		99
88) 4-Isopropyltoluene (p-...	18.93	119	1631965	33.306 ng		99
89) 1,2,3-Trimethylbenzene	17.04	105	1692127	No Calib		
90) 1,2-Dichlorobenzene	19.03	146	883240	31.401 ng		100
91) d-Limonene	19.08	68	471827	33.160 ng		96
92) 1,2-Dibromo-3-Chloropr...	19.51	157	712186	74.340 ng		92
93) n-Undecane	17.96	58	24200	No Calib		
94) 1,2,4-Trichlorobenzene	20.84	180	1401610	71.567 ng		100
95) Naphthalene	20.94	128	2025238	33.940 ng		100
96) n-Dodecane	18.92	58	37677	No Calib	#	
97) Hexachlorobutadiene	21.30	225	494311	33.588 ng		99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.43	119	1395705	33.367 ng		100
100) n-Butylbenzene	19.39	91	1495548	32.361 ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	418720	33.913 ng		100

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042506.D
Acq On : 4 Jan 2025 5:52
Operator : SC
Sample : LCSD R09010425 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 04 08:33:31 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062505.D Vial: 2
Acq On : 6 Jan 2025 10:03 Operator: SC
Sample : LCS R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 06 10:37:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/6/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.27	130	167609	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	717798	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	124105	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.03	65	268313	11.750	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.00%				
57) Toluene-d8 (SS2)	12.44	98	735965	13.368	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.96%				
73) Bromofluorobenzene (SS3)	16.83	174	278169	14.641	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.12%				
Target Compounds							Qvalue
2) Propene	3.27	42	292079	16.315	ng		97
3) Dichlorodifluoromethan...	3.35	85	768690	23.461	ng		100
4) Chloromethane	3.49	50	359269	14.766	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	418886	27.004	ng		100
6) Vinyl Chloride	3.68	62	462992	24.730	ng		100
7) 1,3-Butadiene	3.80	54	268080	21.720	ng		97
8) Bromomethane	4.01	94	331344	28.063	ng		100
9) Chloroethane	4.15	64	221542	22.485	ng		99
10) Ethanol	4.36	45	1349603	108.860	ng		97
11) Acetonitrile	4.48	41	585185	18.351	ng		99
12) Acrolein	4.55	56	491153	46.342	ng		98
13) Acetone	4.65	58	1180139	104.571	ng		96
14) Trichlorofluoromethane	4.76	101	742608	24.168	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1843381	45.613	ng		99
16) Acrylonitrile	5.03	53	903262	44.859	ng		98
17) 1,1-Dichloroethene	5.26	96	350696	24.829	ng		95
18) 2-Methyl-2-Propanol (t...	5.37	59	1282583	39.609	ng		99
19) Methylene Chloride	5.39	84	355853	22.409	ng		87
20) 3-Chloro-1-propene (Al...	5.47	41	465618	17.670	ng		94
21) Trichlorotrifluoroethane	5.58	151	370866	26.752	ng		92
22) Carbon Disulfide	5.60	76	2477737	48.530	ng		100
23) trans-1,2-Dichloroethene	6.16	61	522230	24.073	ng		95
24) 1,1-Dichloroethane	6.35	63	619482	23.005	ng		100
25) Methyl tert-Butyl Ether	6.38	73	822713	20.543	ng		96
26) Vinyl Acetate	6.48	86	378974	138.738	ng	#	78
27) 2-Butanone (MEK)	6.69	72	419558	46.273	ng	#	86
28) cis-1,2-Dichloroethene	7.11	61	498253	23.572	ng		96
29) Diisopropyl Ether	7.30	87	540207	47.344	ng	#	79
30) Ethyl Acetate	7.31	61	247625	44.248	ng		95
31) n-Hexane	7.31	57	544713	21.633	ng		99
32) Chloroform	7.40	83	683320	25.044	ng		100
34) Tetrahydrofuran (THF)	7.77	72	382480	44.730	ng	#	84
35) Ethyl tert-Butyl Ether	7.84	87	832456	50.426	ng		91
36) 1,2-Dichloroethane	8.15	62	538524	23.300	ng		100
38) 1,1,1-Trichloroethane	8.42	97	660057	26.572	ng		98
39) Isopropyl Acetate	9.61	61	849	No Calib		#	
40) 1-Butanol	8.83	56	2662	No Calib		#	
41) Benzene	8.92	78	1305812	22.663	ng		100
42) Carbon Tetrachloride	9.09	117	620346	26.916	ng		99
43) Cyclohexane	9.23	84	1003526	49.925	ng		93
44) tert-Amyl Methyl Ether	9.61	73	1931646	51.883	ng		97
45) 1,2-Dichloropropane	9.88	63	329764	23.461	ng		98
46) Bromodichloromethane	10.10	83	562999	28.218	ng		100
47) Trichloroethene	10.17	130	434216	26.451	ng		100
48) 1,4-Dioxane	10.13	88	265740	26.630	ng		93
49) 2,2,4-Trimethylpentane...	10.25	57	1381981	22.925	ng		99
50) Methyl Methacrylate	10.42	100	306423	58.305	ng		90

Data File : I:\MS09\DATA\2025 01\06\01062505.D Vial: 2
Acq On : 6 Jan 2025 10:03 Operator: SC
Sample : LCS R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 06 10:37:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

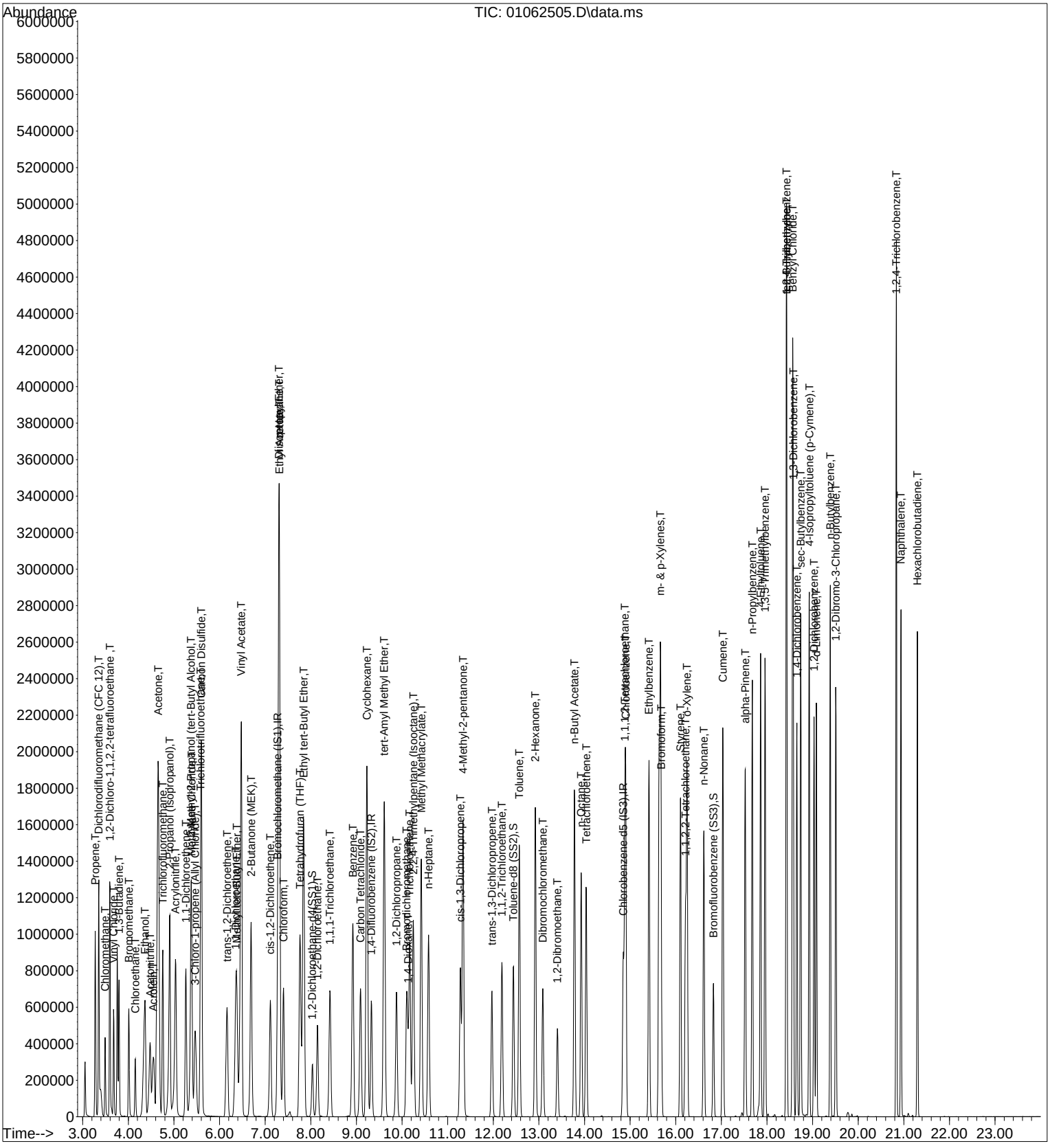
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	313492	24.398 ng	95
52) cis-1,3-Dichloropropene	11.28	75	619664	26.999 ng	100
53) 4-Methyl-2-pentanone	11.34	58	625436	50.466 ng	95
54) trans-1,3-Dichloropropene	11.97	75	502743	24.204 ng	100
55) 1,1,2-Trichloroethane	12.19	97	367911	26.410 ng	97
58) Toluene	12.57	91	1461156	27.584 ng	99
59) 2-Hexanone	12.92	43	1414900	54.811 ng	98
60) Dibromochloromethane	13.09	129	519571	32.884 ng	99
61) 1,2-Dibromoethane	13.40	107	448437	29.708 ng	100
62) n-Butyl Acetate	13.78	43	1602176	55.229 ng	99
63) n-Octane	13.93	57	288046	26.228 ng	93
64) Tetrachloroethene	14.04	166	493757	31.335 ng	100
65) Chlorobenzene	14.90	112	1056143	28.262 ng	100
66) Ethylbenzene	15.41	91	1738344	29.679 ng	99
67) m- & p-Xylenes	15.66	91	2821291	58.854 ng	100
68) Bromoform	15.68	173	484139	38.567 ng	100
69) Styrene	16.11	104	1061944	31.709 ng	99
70) o-Xylene	16.25	91	1398617	29.483 ng	100
71) n-Nonane	16.62	43	644048	25.555 ng	94
72) 1,1,2,2-Tetrachloroethane	16.21	83	624717	27.673 ng	99
74) Cumene	17.03	105	1748732	29.628 ng	100
75) alpha-Pinene	17.53	93	860546	29.553 ng	100
76) n-Propylbenzene	17.68	91	2035492	29.086 ng	99
77) 3-Ethyltoluene	17.03	105	1748732	No Calib	
78) 4-Ethyltoluene	17.86	105	1715124	30.832 ng	99
79) 1,3,5-Trimethylbenzene	17.96	105	1479163	30.413 ng	99
80) alpha-Methylstyrene	17.03	118	3537	No Calib #	
81) 2-Ethyltoluene	17.03	105	1748732	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1484423	30.177 ng	98
83) n-Decane	17.03	58	11506	No Calib	
84) Benzyl Chloride	18.57	91	2314969	57.336 ng	99
85) 1,3-Dichlorobenzene	18.58	146	920348	29.965 ng	99
86) 1,4-Dichlorobenzene	18.66	146	909236	28.749 ng	99
87) sec-Butylbenzene	18.74	105	1903615	29.221 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1668964	30.853 ng	99
89) 1,2,3-Trimethylbenzene	17.03	105	1748732	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	890998	28.693 ng	100
91) d-Limonene	19.08	68	459793	29.270 ng	95
92) 1,2-Dibromo-3-Chloropr...	19.51	157	702737	66.444 ng	91
93) n-Undecane	17.96	58	25571	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1311330	60.650 ng	100
95) Naphthalene	20.94	128	1843428	27.983 ng	100
96) n-Dodecane	18.92	58	39546	No Calib #	
97) Hexachlorobutadiene	21.30	225	481598	29.641 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1439535	31.173 ng	100
100) n-Butylbenzene	19.39	91	1500474	29.409 ng	99
101) 1,1,1,2-Tetrachloroethane	14.89	131	433417	31.796 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062505.D Vial: 2
Acq On : 6 Jan 2025 10:03 Operator: SC
Sample : LCS R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 06 10:37:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062506.D Vial: 2
Acq On : 6 Jan 2025 10:35 Operator: SC
Sample : LCSD R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 06 11:04:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/6/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.27	130	171000	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	731985	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	127274	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.03	65	274682	11.790	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.32%				
57) Toluene-d8 (SS2)	12.44	98	749562	13.276	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.24%				
73) Bromofluorobenzene (SS3)	16.83	174	287275	14.744	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.92%				
Target Compounds							Qvalue
2) Propene	3.27	42	292158	15.996	ng		97
3) Dichlorodifluoromethan...	3.35	85	754095	22.559	ng		100
4) Chloromethane	3.49	50	385134	15.515	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	419576	26.512	ng		100
6) Vinyl Chloride	3.68	62	463404	24.261	ng		99
7) 1,3-Butadiene	3.80	54	279434	22.191	ng		98
8) Bromomethane	4.01	94	327074	27.152	ng		100
9) Chloroethane	4.15	64	218640	21.750	ng		99
10) Ethanol	4.36	45	1346935	106.490	ng		97
11) Acetonitrile	4.48	41	584368	17.962	ng		99
12) Acrolein	4.55	56	487264	45.064	ng		99
13) Acetone	4.65	58	1176951	102.220	ng		97
14) Trichlorofluoromethane	4.76	101	737436	23.524	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1847601	44.810	ng		99
16) Acrylonitrile	5.03	53	907847	44.193	ng		99
17) 1,1-Dichloroethene	5.26	96	351617	24.400	ng		95
18) 2-Methyl-2-Propanol (t...	5.37	59	1366924	41.376	ng		99
19) Methylene Chloride	5.39	84	353813	21.838	ng		87
20) 3-Chloro-1-propene (Al...	5.47	41	467350	17.384	ng		94
21) Trichlorotrifluoroethane	5.58	151	372327	26.325	ng		91
22) Carbon Disulfide	5.60	76	2479299	47.598	ng		100
23) trans-1,2-Dichloroethene	6.16	61	524385	23.693	ng		95
24) 1,1-Dichloroethane	6.35	63	616805	22.451	ng		100
25) Methyl tert-Butyl Ether	6.38	73	910081	22.274	ng		96
26) Vinyl Acetate	6.48	86	382727	137.333	ng	#	77
27) 2-Butanone (MEK)	6.69	72	420168	45.422	ng	#	86
28) cis-1,2-Dichloroethene	7.11	61	494487	22.930	ng		95
29) Diisopropyl Ether	7.30	87	540170	46.402	ng	#	79
30) Ethyl Acetate	7.30	61	247378	43.327	ng		95
31) n-Hexane	7.30	57	542291	21.110	ng		100
32) Chloroform	7.40	83	678964	24.391	ng		100
34) Tetrahydrofuran (THF)	7.76	72	386949	44.355	ng	#	83
35) Ethyl tert-Butyl Ether	7.84	87	836733	49.680	ng		90
36) 1,2-Dichloroethane	8.15	62	537813	22.808	ng		99
38) 1,1,1-Trichloroethane	8.42	97	656169	25.904	ng		98
39) Isopropyl Acetate	9.60	61	1012	No Calib		#	
40) 1-Butanol	8.84	56	2952	No Calib		#	
41) Benzene	8.92	78	1304382	22.200	ng		100
42) Carbon Tetrachloride	9.09	117	621890	26.460	ng		99
43) Cyclohexane	9.23	84	1002797	48.922	ng		92
44) tert-Amyl Methyl Ether	9.61	73	1938700	51.063	ng		97
45) 1,2-Dichloropropane	9.88	63	327815	22.871	ng		99
46) Bromodichloromethane	10.10	83	561054	27.576	ng		100
47) Trichloroethene	10.17	130	433182	25.877	ng		100
48) 1,4-Dioxane	10.13	88	265514	26.092	ng		93
49) 2,2,4-Trimethylpentane...	10.25	57	1380544	22.457	ng		99
50) Methyl Methacrylate	10.42	100	306399	57.170	ng		91

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062506.D Vial: 2
Acq On : 6 Jan 2025 10:35 Operator: SC
Sample : LCSD R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 06 11:04:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

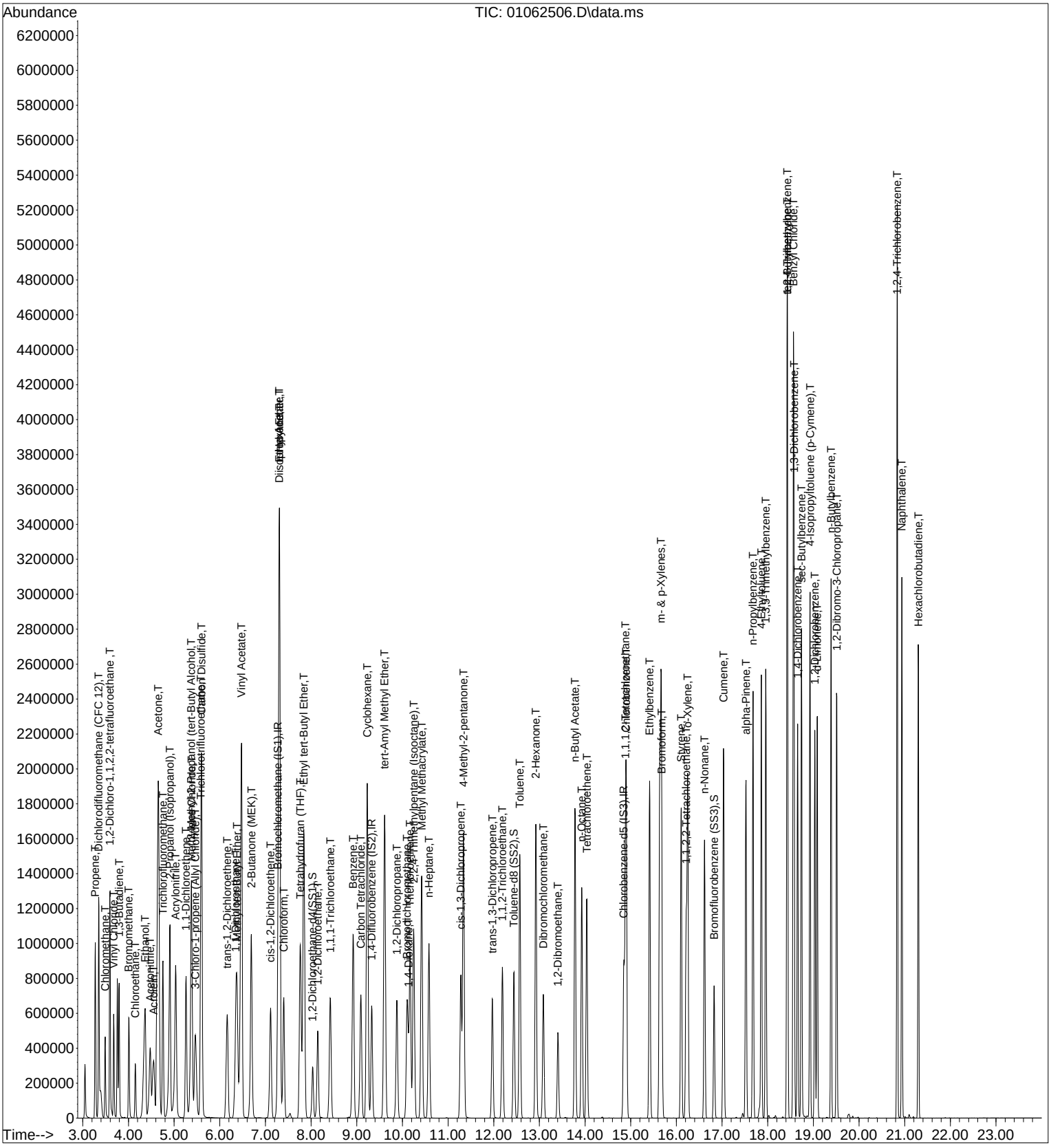
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	312119	23.820 ng	95
52) cis-1,3-Dichloropropene	11.28	75	619199	26.456 ng	100
53) 4-Methyl-2-pentanone	11.34	58	626229	49.551 ng	95
54) trans-1,3-Dichloropropene	11.97	75	505062	23.845 ng	99
55) 1,1,2-Trichloroethane	12.19	97	369025	25.977 ng	97
58) Toluene	12.57	91	1468998	27.041 ng	99
59) 2-Hexanone	12.92	43	1418802	53.594 ng	98
60) Dibromochloromethane	13.09	129	520562	32.126 ng	99
61) 1,2-Dibromoethane	13.40	107	448297	28.959 ng	100
62) n-Butyl Acetate	13.78	43	1608856	54.078 ng	98
63) n-Octane	13.93	57	288210	25.589 ng	93
64) Tetrachloroethene	14.04	166	495224	30.646 ng	100
65) Chlorobenzene	14.90	112	1055261	27.535 ng	99
66) Ethylbenzene	15.41	91	1752926	29.182 ng	100
67) m- & p-Xylenes	15.66	91	2833052	57.628 ng	100
68) Bromoform	15.68	173	487385	37.859 ng	100
69) Styrene	16.11	104	1073619	31.260 ng	99
70) o-Xylene	16.25	91	1406640	28.913 ng	100
71) n-Nonane	16.62	43	650670	25.175 ng	95
72) 1,1,2,2-Tetrachloroethane	16.21	83	633411	27.360 ng	100
74) Cumene	17.03	105	1751715	28.940 ng	100
75) alpha-Pinene	17.53	93	880582	29.488 ng	99
76) n-Propylbenzene	17.68	91	2066805	28.798 ng	98
77) 3-Ethyltoluene	17.03	105	1751715	No Calib	
78) 4-Ethyltoluene	17.86	105	1772780	31.075 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	1501825	30.110 ng	100
80) alpha-Methylstyrene	17.03	118	3793	No Calib	
81) 2-Ethyltoluene	17.03	105	1751715	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1517303	30.077 ng	98
83) n-Decane	17.03	58	12195	No Calib	
84) Benzyl Chloride	18.56	91	2450350	59.178 ng	98
85) 1,3-Dichlorobenzene	18.58	146	948688	30.119 ng	99
86) 1,4-Dichlorobenzene	18.66	146	945345	29.147 ng	100
87) sec-Butylbenzene	18.74	105	1932965	28.933 ng	99
88) 4-Isopropyltoluene (p-...	18.93	119	1711552	30.852 ng	99
89) 1,2,3-Trimethylbenzene	17.03	105	1751715	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	919608	28.877 ng	99
91) d-Limonene	19.08	68	475208	29.498 ng	95
92) 1,2-Dibromo-3-Chloropr...	19.51	157	735808	67.839 ng	91
93) n-Undecane	17.96	58	25659	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1435914	64.759 ng	100
95) Naphthalene	20.94	128	2036473	30.144 ng	100
96) n-Dodecane	18.92	58	40768	No Calib #	
97) Hexachlorobutadiene	21.30	225	508727	30.532 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1454445	30.711 ng	100
100) n-Butylbenzene	19.39	91	1544934	29.526 ng	99
101) 1,1,1,2-Tetrachloroethane	14.89	131	435857	31.179 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062506.D Vial: 2
Acq On : 6 Jan 2025 10:35 Operator: SC
Sample : LCSD R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 06 11:04:50 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072505.D Vial: 2
Acq On : 7 Jan 2025 5:38 Operator: SC
Sample : LCS R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

1/7/25

Quant Time: Jan 07 10:19:03 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	144204	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	610240	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	107782	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	239342	12.182	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.44%				
57) Toluene-d8 (SS2)	12.44	98	632247	13.223	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.76%				
73) Bromofluorobenzene (SS3)	16.83	174	240286	14.563	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.48%				
Target Compounds							Qvalue
2) Propene	3.28	42	258887	16.808	ng		97
3) Dichlorodifluoromethan...	3.35	85	659411	23.392	ng		99
4) Chloromethane	3.49	50	329151	15.724	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	350319	26.249	ng		100
6) Vinyl Chloride	3.68	62	385502	23.933	ng		99
7) 1,3-Butadiene	3.80	54	276629	26.051	ng		97
8) Bromomethane	4.01	94	278249	27.391	ng		100
9) Chloroethane	4.15	64	186537	22.005	ng		99
10) Ethanol	4.37	45	1138979	106.782	ng		97
11) Acetonitrile	4.48	41	491985	17.933	ng		98
12) Acrolein	4.56	56	410516	45.020	ng		100
13) Acetone	4.66	58	996604	102.641	ng		94
14) Trichlorofluoromethane	4.76	101	642467	24.302	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1585956	45.612	ng		98
16) Acrylonitrile	5.04	53	757582	43.731	ng		98
17) 1,1-Dichloroethene	5.27	96	297506	24.482	ng		95
18) 2-Methyl-2-Propanol (t...	5.38	59	1172070	42.071	ng		99
19) Methylene Chloride	5.39	84	298116	21.820	ng		89
20) 3-Chloro-1-propene (Al...	5.47	41	399141	17.606	ng		93
21) Trichlorotrifluoroethane	5.59	151	316571	26.542	ng		92
22) Carbon Disulfide	5.61	76	2077174	47.288	ng		100
23) trans-1,2-Dichloroethene	6.16	61	445591	23.874	ng		96
24) 1,1-Dichloroethane	6.35	63	524675	22.646	ng		100
25) Methyl tert-Butyl Ether	6.38	73	752789	21.848	ng		96
26) Vinyl Acetate	6.48	86	318490	135.519	ng	#	80
27) 2-Butanone (MEK)	6.69	72	351203	45.021	ng	#	89
28) cis-1,2-Dichloroethene	7.12	61	422474	23.231	ng		96
29) Diisopropyl Ether	7.31	87	457595	46.613	ng	#	80
30) Ethyl Acetate	7.31	61	206121	42.809	ng		96
31) n-Hexane	7.31	57	457573	21.122	ng		99
32) Chloroform	7.40	83	584558	24.902	ng		100
34) Tetrahydrofuran (THF)	7.76	72	321356	43.681	ng	#	84
35) Ethyl tert-Butyl Ether	7.84	87	710116	49.997	ng		92
36) 1,2-Dichloroethane	8.15	62	469125	23.592	ng		100
38) 1,1,1-Trichloroethane	8.42	97	572007	27.086	ng		98
39) Isopropyl Acetate	9.62	61	721	No Calib		#	
40) 1-Butanol	8.84	56	2014	No Calib		#	
41) Benzene	8.92	78	1088335	22.218	ng		100
42) Carbon Tetrachloride	9.09	117	542947	27.710	ng		100
43) Cyclohexane	9.23	84	839039	49.099	ng		93
44) tert-Amyl Methyl Ether	9.61	73	1652667	52.214	ng		97
45) 1,2-Dichloropropane	9.88	63	276209	23.115	ng		98
46) Bromodichloromethane	10.10	83	481693	28.399	ng		100
47) Trichloroethene	10.17	130	365203	26.169	ng		99
48) 1,4-Dioxane	10.13	88	221463	26.105	ng		94
49) 2,2,4-Trimethylpentane...	10.25	57	1158980	22.614	ng		98
50) Methyl Methacrylate	10.42	100	255343	57.149	ng		91

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072505.D Vial: 2
Acq On : 7 Jan 2025 5:38 Operator: SC
Sample : LCS R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 07 10:19:03 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

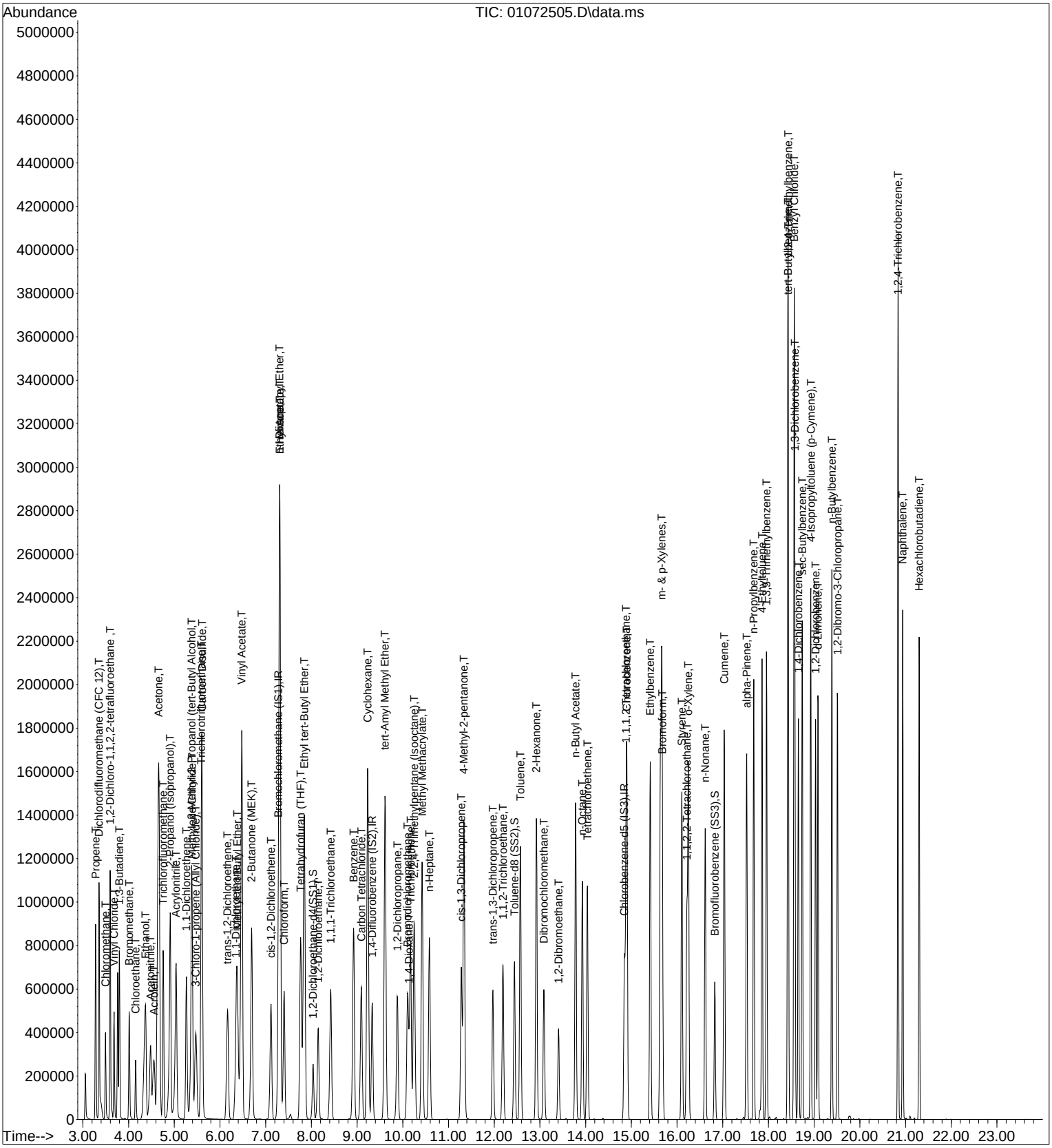
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	263044	24.080 ng	95
52) cis-1,3-Dichloropropene	11.28	75	522696	26.788 ng	100
53) 4-Methyl-2-pentanone	11.34	58	523344	49.671 ng	96
54) trans-1,3-Dichloropropene	11.97	75	430371	24.372 ng	100
55) 1,1,2-Trichloroethane	12.19	97	307256	25.943 ng	97
58) Toluene	12.57	91	1230441	26.746 ng	99
59) 2-Hexanone	12.92	43	1179761	52.623 ng	99
60) Dibromochloromethane	13.09	129	438997	31.992 ng	100
61) 1,2-Dibromoethane	13.41	107	376728	28.737 ng	100
62) n-Butyl Acetate	13.78	43	1330544	52.812 ng	99
63) n-Octane	13.93	57	241087	25.277 ng	94
64) Tetrachloroethene	14.04	166	414325	30.277 ng	99
65) Chlorobenzene	14.90	112	880694	27.136 ng	99
66) Ethylbenzene	15.41	91	1466282	28.825 ng	100
67) m- & p-Xylenes	15.66	91	2382830	57.235 ng	100
68) Bromoform	15.68	173	408215	37.444 ng	100
69) Styrene	16.11	104	886579	30.482 ng	99
70) o-Xylene	16.25	91	1178247	28.599 ng	100
71) n-Nonane	16.62	43	542750	24.797 ng	96
72) 1,1,2,2-Tetrachloroethane	16.21	83	521345	26.592 ng	100
74) Cumene	17.03	105	1466122	28.602 ng	100
75) alpha-Pinene	17.53	93	756373	29.909 ng	100
76) n-Propylbenzene	17.68	91	1706632	28.080 ng	99
77) 3-Ethyltoluene	17.03	105	1466122	No Calib	
78) 4-Ethyltoluene	17.86	105	1443082	29.870 ng	99
79) 1,3,5-Trimethylbenzene	17.96	105	1240179	29.361 ng	100
80) alpha-Methylstyrene	17.03	118	3337	No Calib #	
81) 2-Ethyltoluene	17.03	105	1466122	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1254157	29.357 ng	99
83) n-Decane	17.03	58	9698	No Calib	
84) Benzyl Chloride	18.57	91	2103062	59.976 ng	99
85) 1,3-Dichlorobenzene	18.58	146	770437	28.883 ng	99
86) 1,4-Dichlorobenzene	18.66	146	762527	27.762 ng	100
87) sec-Butylbenzene	18.74	105	1596368	28.216 ng	99
88) 4-Isopropyltoluene (p-...	18.93	119	1402406	29.852 ng	99
89) 1,2,3-Trimethylbenzene	17.03	105	1466122	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	743704	27.577 ng	100
91) d-Limonene	19.08	68	394665	28.929 ng	94
92) 1,2-Dibromo-3-Chloropr...	19.51	157	583774	63.555 ng	92
93) n-Undecane	17.96	58	20553	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1090868	58.094 ng	99
95) Naphthalene	20.94	128	1547320	27.045 ng	100
96) n-Dodecane	18.92	58	28404	No Calib #	
97) Hexachlorobutadiene	21.30	225	404362	28.657 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1214134	30.274 ng	100
100) n-Butylbenzene	19.39	91	1259950	28.435 ng	99
101) 1,1,1,2-Tetrachloroethane	14.89	131	370016	31.256 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072505.D Vial: 2
Acq On : 7 Jan 2025 5:38 Operator: SC
Sample : LCS R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 07 10:19:03 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072506.D Vial: 2
Acq On : 7 Jan 2025 6:11 Operator: SC
Sample : LCSD R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 07 10:21:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/7/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.27	130	144848	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	622245	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	108697	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	240290	12.176	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.44%				
57) Toluene-d8 (SS2)	12.44	98	636120	13.192	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.52%				
73) Bromofluorobenzene (SS3)	16.83	174	242365	14.565	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.48%				
Target Compounds							Qvalue
2) Propene	3.28	42	257516	16.645	ng		96
3) Dichlorodifluoromethan...	3.35	85	648108	22.889	ng		100
4) Chloromethane	3.49	50	359909	17.116	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	355479	26.518	ng		100
6) Vinyl Chloride	3.68	62	389189	24.055	ng		99
7) 1,3-Butadiene	3.80	54	279887	26.240	ng		97
8) Bromomethane	4.01	94	276361	27.084	ng		100
9) Chloroethane	4.15	64	183225	21.518	ng		99
10) Ethanol	4.36	45	1143091	106.691	ng		97
11) Acetonitrile	4.48	41	492533	17.873	ng		98
12) Acrolein	4.55	56	407394	44.479	ng		98
13) Acetone	4.66	58	995865	102.109	ng		94
14) Trichlorofluoromethane	4.76	101	641810	24.170	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1593559	45.627	ng		98
16) Acrylonitrile	5.03	53	760552	43.707	ng		98
17) 1,1-Dichloroethene	5.26	96	296875	24.321	ng		95
18) 2-Methyl-2-Propanol (t...	5.38	59	1275577	45.582	ng		99
19) Methylene Chloride	5.39	84	298569	21.756	ng		88
20) 3-Chloro-1-propene (Al...	5.47	41	407810	17.908	ng		94
21) Trichlorotrifluoroethane	5.58	151	319296	26.651	ng		91
22) Carbon Disulfide	5.60	76	2093412	47.446	ng		100
23) trans-1,2-Dichloroethene	6.16	61	447958	23.894	ng		96
24) 1,1-Dichloroethane	6.35	63	527062	22.648	ng		100
25) Methyl tert-Butyl Ether	6.38	73	839466	24.255	ng		96
26) Vinyl Acetate	6.48	86	321089	136.018	ng	#	80
27) 2-Butanone (MEK)	6.69	72	354124	45.194	ng	#	88
28) cis-1,2-Dichloroethene	7.11	61	422187	23.112	ng		96
29) Diisopropyl Ether	7.30	87	459313	46.580	ng	#	79
30) Ethyl Acetate	7.31	61	208246	43.058	ng		95
31) n-Hexane	7.30	57	455606	20.937	ng		99
32) Chloroform	7.40	83	587291	24.907	ng		100
34) Tetrahydrofuran (THF)	7.76	72	323555	43.785	ng	#	84
35) Ethyl tert-Butyl Ether	7.84	87	716372	50.213	ng		91
36) 1,2-Dichloroethane	8.15	62	469487	23.505	ng		100
38) 1,1,1-Trichloroethane	8.42	97	570227	26.481	ng		98
39) Isopropyl Acetate	9.61	61	688	No Calib		#	
40) 1-Butanol	8.83	56	1941	No Calib		#	
41) Benzene	8.92	78	1096939	21.962	ng		100
42) Carbon Tetrachloride	9.09	117	542842	27.170	ng		99
43) Cyclohexane	9.23	84	844528	48.467	ng		93
44) tert-Amyl Methyl Ether	9.61	73	1674248	51.875	ng		97
45) 1,2-Dichloropropane	9.88	63	278290	22.840	ng		99
46) Bromodichloromethane	10.10	83	482528	27.899	ng		100
47) Trichloroethene	10.17	130	369088	25.937	ng		100
48) 1,4-Dioxane	10.13	88	223820	25.874	ng		94
49) 2,2,4-Trimethylpentane...	10.25	57	1170278	22.394	ng		98
50) Methyl Methacrylate	10.42	100	257250	56.465	ng		91

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072506.D Vial: 2
Acq On : 7 Jan 2025 6:11 Operator: SC
Sample : LCSD R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 07 10:21:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

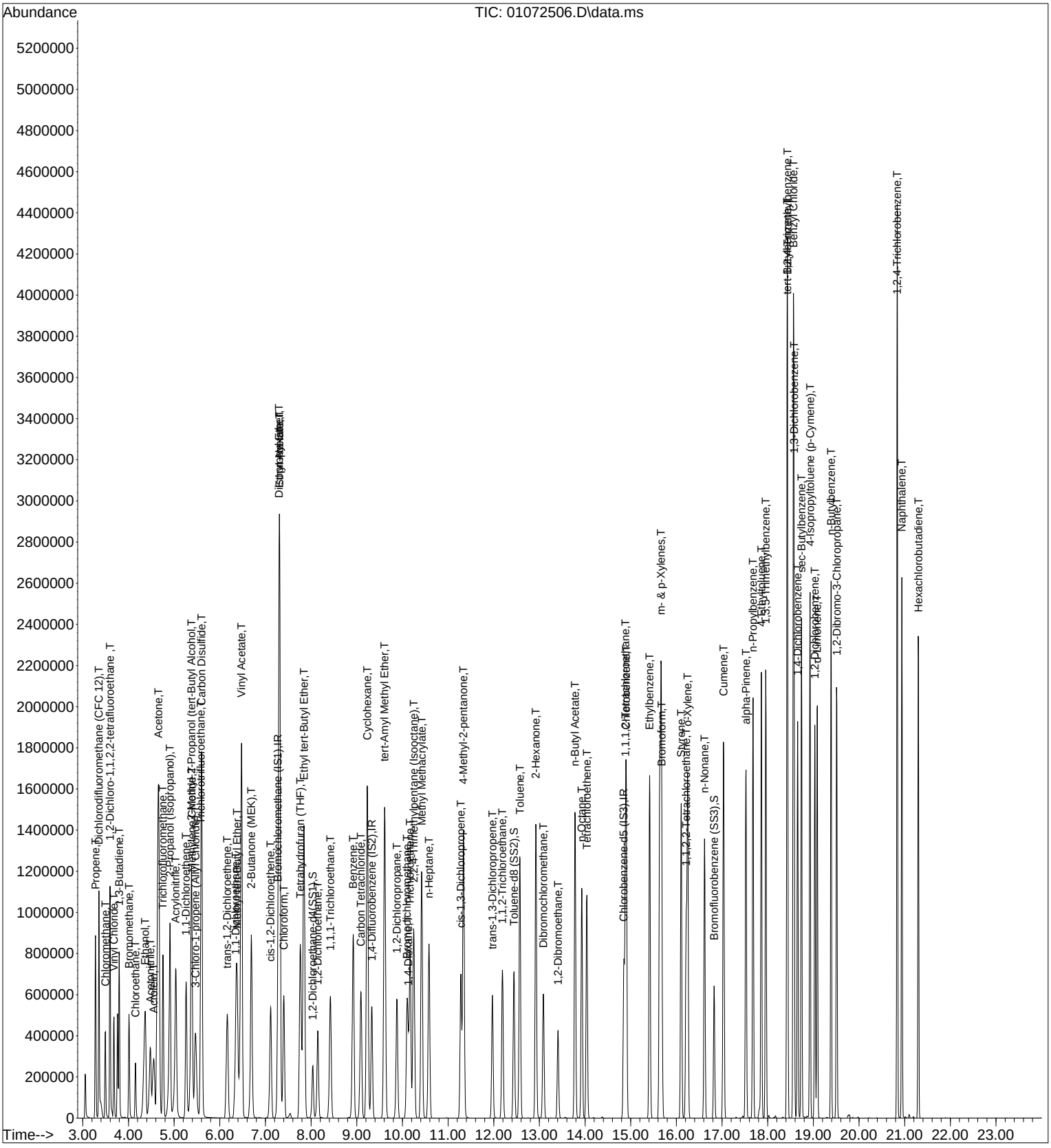
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.58	71	264520	23.748	ng		95
52) cis-1,3-Dichloropropene	11.28	75	528284	26.552	ng		100
53) 4-Methyl-2-pentanone	11.34	58	529387	49.275	ng		96
54) trans-1,3-Dichloropropene	11.97	75	433976	24.102	ng		100
55) 1,1,2-Trichloroethane	12.19	97	313752	25.981	ng		97
58) Toluene	12.57	91	1242773	26.787	ng		99
59) 2-Hexanone	12.92	43	1202258	53.175	ng		99
60) Dibromochloromethane	13.09	129	444054	32.088	ng		99
61) 1,2-Dibromoethane	13.41	107	381283	28.840	ng		99
62) n-Butyl Acetate	13.78	43	1353561	53.273	ng		99
63) n-Octane	13.93	57	244955	25.466	ng		94
64) Tetrachloroethene	14.04	166	418705	30.339	ng		100
65) Chlorobenzene	14.90	112	891261	27.231	ng		100
66) Ethylbenzene	15.41	91	1490096	29.047	ng		100
67) m- & p-Xylenes	15.66	91	2416690	57.560	ng		100
68) Bromoform	15.68	173	418043	38.022	ng		100
69) Styrene	16.11	104	910295	31.034	ng		99
70) o-Xylene	16.25	91	1200156	28.885	ng		100
71) n-Nonane	16.62	43	546598	24.763	ng		95
72) 1,1,2,2-Tetrachloroethane	16.21	83	533905	27.003	ng		100
74) Cumene	17.03	105	1490471	28.832	ng		100
75) alpha-Pinene	17.53	93	759716	29.789	ng		100
76) n-Propylbenzene	17.68	91	1742494	28.429	ng		99
77) 3-Ethyltoluene	17.03	105	1490471	No Calib			
78) 4-Ethyltoluene	17.86	105	1493560	30.655	ng		100
79) 1,3,5-Trimethylbenzene	17.96	105	1268039	29.768	ng		99
80) alpha-Methylstyrene	17.03	118	3150	No Calib		#	
81) 2-Ethyltoluene	17.03	105	1490471	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	1290333	29.950	ng		99
83) n-Decane	17.03	58	9618	No Calib			
84) Benzyl Chloride	18.56	91	2221386	62.817	ng		99
85) 1,3-Dichlorobenzene	18.58	146	803174	29.857	ng		99
86) 1,4-Dichlorobenzene	18.66	146	797997	28.809	ng		100
87) sec-Butylbenzene	18.74	105	1643955	28.812	ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	1447830	30.559	ng		99
89) 1,2,3-Trimethylbenzene	17.03	105	1490471	No Calib			
90) 1,2-Dichlorobenzene	19.03	146	781293	28.727	ng		100
91) d-Limonene	19.08	68	408187	29.668	ng		95
92) 1,2-Dibromo-3-Chloropr...	19.51	157	625821	67.560	ng		92
93) n-Undecane	17.96	58	22247	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	1215785	64.202	ng		99
95) Naphthalene	20.94	128	1727016	29.932	ng		100
96) n-Dodecane	18.93	58	28914	No Calib		#	
97) Hexachlorobutadiene	21.30	225	434730	30.550	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.43	119	1244560	30.771	ng		100
100) n-Butylbenzene	19.39	91	1314770	29.422	ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	372883	31.233	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072506.D Vial: 2
Acq On : 7 Jan 2025 6:11 Operator: SC
Sample : LCSD R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 07 10:21:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

TZ 1/10/25

Data File : I:\MS09\DATA\2025 01\10\01102506.D Vial: 2
Acq On : 10 Jan 2025 19:59 Operator: CG
Sample : LCS R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 10 21:37:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	157590	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	681017	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	128000	12.500	ng	0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	279733	13.029	ng	0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%			
57) Toluene-d8 (SS2)	12.44	98	700021	12.328	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.64%			
73) Bromofluorobenzene (SS3)	16.83	174	247266	12.619	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%			
Target Compounds						Qvalue
2) Propene	3.28	42	302048	17.944	ng	97
3) Dichlorodifluoromethan...	3.35	85	683752	22.195	ng	100
4) Chloromethane	3.49	50	372128	16.267	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	352520	24.171	ng	100
6) Vinyl Chloride	3.68	62	413224	23.475	ng	100
7) 1,3-Butadiene	3.80	54	305021	26.285	ng	99
8) Bromomethane	4.01	94	281742	25.379	ng	100
9) Chloroethane	4.15	64	196490	21.210	ng	100
10) Ethanol	4.37	45	1257696	107.896	ng	96
11) Acetonitrile	4.48	41	545520	18.195	ng	98
12) Acrolein	4.56	56	438812	44.036	ng	99
13) Acetone	4.66	58	1063037	100.183	ng	87
14) Trichlorofluoromethane	4.76	101	651526	22.552	ng	100
15) 2-Propanol (Isopropanol)	4.91	45	1735993	45.686	ng	98
16) Acrylonitrile	5.04	53	819597	43.292	ng	98
17) 1,1-Dichloroethene	5.27	96	295807	22.274	ng	97
18) 2-Methyl-2-Propanol (t...	5.39	59	1300535	42.717	ng	98
19) Methylene Chloride	5.39	84	301433	20.189	ng	97
20) 3-Chloro-1-propene (Al...	5.47	41	445091	17.965	ng	99
21) Trichlorotrifluoroethane	5.59	151	306581	23.521	ng	95
22) Carbon Disulfide	5.61	76	2123250	44.231	ng	100
23) trans-1,2-Dichloroethene	6.17	61	473524	23.215	ng	100
24) 1,1-Dichloroethane	6.36	63	554320	21.893	ng	99
25) Methyl tert-Butyl Ether	6.39	73	838032	22.256	ng	98
26) Vinyl Acetate	6.48	86	321483	125.173	ng	100
27) 2-Butanone (MEK)	6.70	72	364562	42.764	ng	100
28) cis-1,2-Dichloroethene	7.12	61	449181	22.601	ng	99
29) Diisopropyl Ether	7.30	87	467918	43.616	ng	95
30) Ethyl Acetate	7.31	61	221168	42.033	ng	98
31) n-Hexane	7.31	57	498100	21.039	ng	99
32) Chloroform	7.41	83	598727	23.339	ng	100
34) Tetrahydrofuran (THF)	7.77	72	335652	41.749	ng	93
35) Ethyl tert-Butyl Ether	7.84	87	727752	46.886	ng	98
36) 1,2-Dichloroethane	8.15	62	497145	22.878	ng	100
38) 1,1,1-Trichloroethane	8.42	97	579857	24.604	ng	99
39) Isopropyl Acetate	9.61	61	1027	No Calib	#	
40) 1-Butanol	8.84	56	2634	No Calib	#	
41) Benzene	8.92	78	1121384	20.513	ng	100
42) Carbon Tetrachloride	9.09	117	546829	25.007	ng	99
43) Cyclohexane	9.23	84	863987	45.304	ng	97
44) tert-Amyl Methyl Ether	9.61	73	1699965	48.126	ng	99
45) 1,2-Dichloropropane	9.88	63	290730	21.801	ng	98
46) Bromodichloromethane	10.10	83	497961	26.307	ng	100
47) Trichloroethene	10.17	130	359918	23.110	ng	100
48) 1,4-Dioxane	10.14	88	223092	23.564	ng	99
49) 2,2,4-Trimethylpentane...	10.25	57	1254289	21.930	ng	96
50) Methyl Methacrylate	10.43	100	257914	51.725	ng	96

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102506.D Vial: 2
Acq On : 10 Jan 2025 19:59 Operator: CG
Sample : LCS R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 10 21:37:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

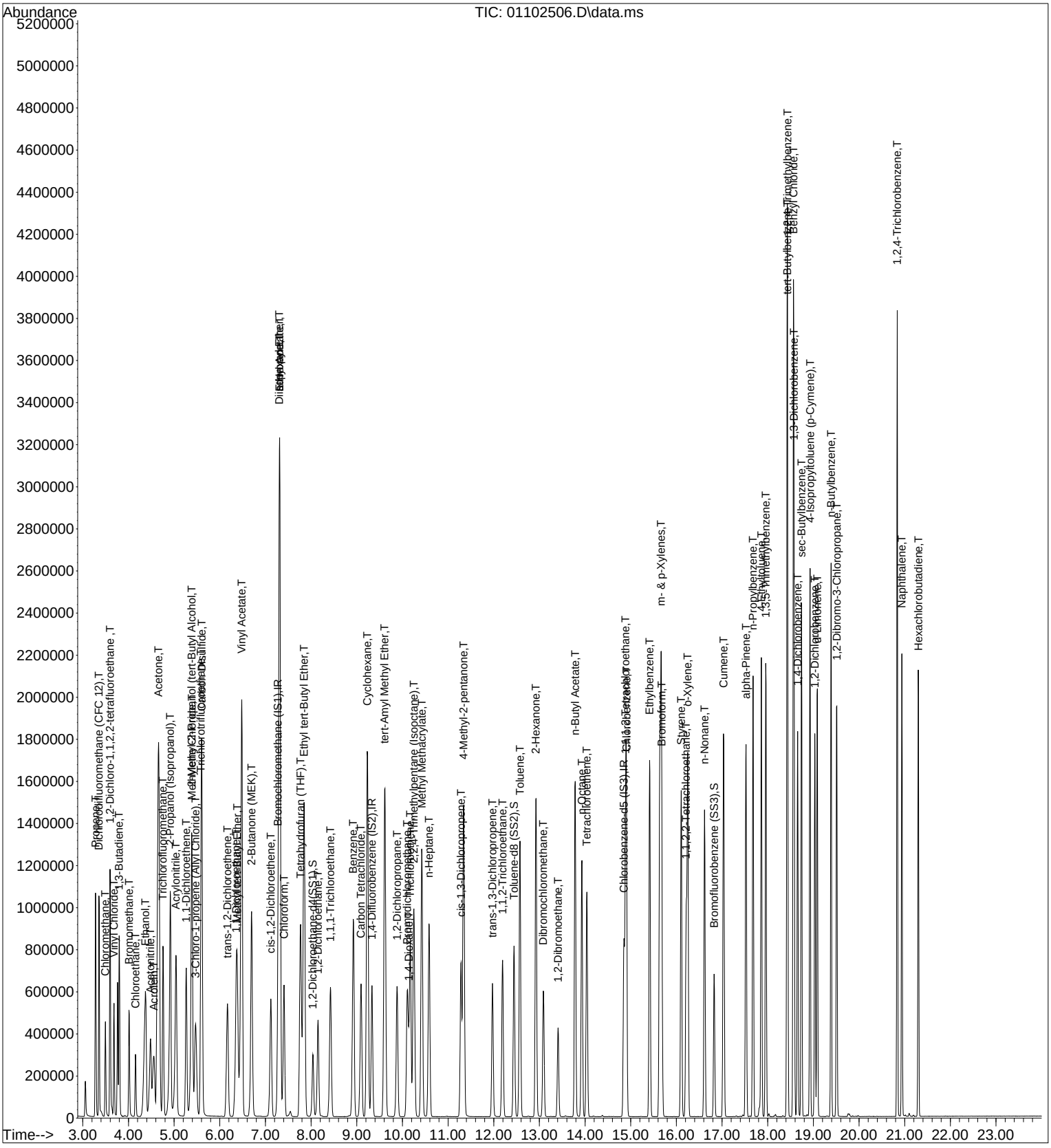
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	275538	22.602 ng	98
52) cis-1,3-Dichloropropene	11.29	75	537660	24.692 ng	100
53) 4-Methyl-2-pentanone	11.34	58	560986	47.710 ng	97
54) trans-1,3-Dichloropropene	11.97	75	443412	22.501 ng	100
55) 1,1,2-Trichloroethane	12.19	97	312285	23.628 ng	99
58) Toluene	12.57	91	1249479	22.870 ng	99
59) 2-Hexanone	12.92	43	1321746	49.644 ng	98
60) Dibromochloromethane	13.09	129	438998	26.939 ng	99
61) 1,2-Dibromoethane	13.41	107	375493	24.119 ng	100
62) n-Butyl Acetate	13.78	43	1488444	49.747 ng	99
63) n-Octane	13.93	57	261265	23.065 ng	98
64) Tetrachloroethene	14.04	166	403535	24.830 ng	100
65) Chlorobenzene	14.91	112	884658	22.953 ng	99
66) Ethylbenzene	15.41	91	1504264	24.901 ng	99
67) m- & p-Xylenes	15.66	91	2440428	49.360 ng	98
68) Bromoform	15.68	173	397356	30.691 ng	99
69) Styrene	16.11	104	888461	25.722 ng	98
70) o-Xylene	16.25	91	1208436	24.698 ng	99
71) n-Nonane	16.62	43	613097	23.587 ng	99
72) 1,1,2,2-Tetrachloroethane	16.21	83	530499	22.785 ng	100
74) Cumene	17.03	105	1490902	24.491 ng	99
75) alpha-Pinene	17.53	93	774003	25.772 ng	99
76) n-Propylbenzene	17.68	91	1756356	24.334 ng	100
77) 3-Ethyltoluene	17.03	105	1490902	No Calib	
78) 4-Ethyltoluene	17.86	105	1478523	25.770 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	1262850	25.175 ng	99
80) alpha-Methylstyrene	17.03	118	3416	No Calib #	
81) 2-Ethyltoluene	17.03	105	1490902	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1275190	25.135 ng	100
83) n-Decane	17.03	58	10423	No Calib	
84) Benzyl Chloride	18.56	91	2180765	52.369 ng	100
85) 1,3-Dichlorobenzene	18.58	146	755373	23.846 ng	99
86) 1,4-Dichlorobenzene	18.66	146	739671	22.676 ng	100
87) sec-Butylbenzene	18.74	105	1618981	24.095 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1406929	25.217 ng	100
89) 1,2,3-Trimethylbenzene	17.03	105	1490902	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	726849	22.695 ng	99
91) d-Limonene	19.09	68	415023	25.616 ng	96
92) 1,2-Dibromo-3-Chloropr...	19.51	157	560976	51.427 ng	99
93) n-Undecane	17.96	58	22037	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1008805	45.238 ng	100
95) Naphthalene	20.94	128	1405534	20.687 ng	100
96) n-Dodecane	18.93	58	33786	No Calib #	
97) Hexachlorobutadiene	21.30	225	379643	22.655 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1219767	25.610 ng	100
100) n-Butylbenzene	19.39	91	1293317	24.577 ng	100
101) 1,1,1,2-Tetrachloroethane	14.89	131	368585	26.217 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102506.D Vial: 2
Acq On : 10 Jan 2025 19:59 Operator: CG
Sample : LCS R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 10 21:37:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102507.D Vial: 2
Acq On : 10 Jan 2025 20:31 Operator: CG
Sample : LCSD R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

TZ 1/10/25

Quant Time: Jan 10 21:37:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	158558	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	684992	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	127239	12.500	ng	0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	278268	12.882	ng	0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.04%			
57) Toluene-d8 (SS2)	12.44	98	702211	12.441	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%			
73) Bromofluorobenzene (SS3)	16.83	174	247041	12.683	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.44%			
Target Compounds						Qvalue
2) Propene	3.27	42	305028	18.011	ng	96
3) Dichlorodifluoromethan...	3.35	85	677339	21.853	ng	100
4) Chloromethane	3.49	50	418399	18.178	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	356377	24.286	ng	100
6) Vinyl Chloride	3.68	62	438295	24.748	ng	100
7) 1,3-Butadiene	3.80	54	314451	26.932	ng	99
8) Bromomethane	4.01	94	287947	25.780	ng	100
9) Chloroethane	4.15	64	199253	21.377	ng	100
10) Ethanol	4.37	45	1293669	110.305	ng	97
11) Acetonitrile	4.48	41	559432	18.545	ng	97
12) Acrolein	4.55	56	447716	44.655	ng	98
13) Acetone	4.65	58	1089545	102.054	ng	89
14) Trichlorofluoromethane	4.76	101	660107	22.709	ng	100
15) 2-Propanol (Isopropanol)	4.91	45	1790627	46.836	ng	98
16) Acrylonitrile	5.04	53	837544	43.970	ng	97
17) 1,1-Dichloroethene	5.26	96	304996	22.826	ng	99
18) 2-Methyl-2-Propanol (t...	5.39	59	1459194	47.635	ng	99
19) Methylene Chloride	5.39	84	309934	20.631	ng	97
20) 3-Chloro-1-propene (Al...	5.47	41	465129	18.659	ng	99
21) Trichlorotrifluoroethane	5.58	151	313147	23.878	ng	96
22) Carbon Disulfide	5.60	76	2175074	45.034	ng	100
23) trans-1,2-Dichloroethene	6.16	61	482961	23.534	ng	100
24) 1,1-Dichloroethane	6.35	63	563156	22.107	ng	100
25) Methyl tert-Butyl Ether	6.38	73	940787	24.832	ng	98
26) Vinyl Acetate	6.48	86	333019	128.873	ng	100
27) 2-Butanone (MEK)	6.70	72	374898	43.708	ng	99
28) cis-1,2-Dichloroethene	7.12	61	454443	22.727	ng	100
29) Diisopropyl Ether	7.30	87	477190	44.209	ng	95
30) Ethyl Acetate	7.31	61	226605	42.803	ng	98
31) n-Hexane	7.30	57	508726	21.357	ng	99
32) Chloroform	7.41	83	609145	23.600	ng	99
34) Tetrahydrofuran (THF)	7.76	72	344438	42.580	ng	98
35) Ethyl tert-Butyl Ether	7.84	87	744362	47.663	ng	98
36) 1,2-Dichloroethane	8.15	62	502421	22.979	ng	100
38) 1,1,1-Trichloroethane	8.42	97	588293	24.817	ng	99
39) Isopropyl Acetate	9.61	61	931	No Calib	#	
40) 1-Butanol	8.84	56	2763	No Calib		
41) Benzene	8.92	78	1147815	20.875	ng	100
42) Carbon Tetrachloride	9.09	117	553624	25.171	ng	100
43) Cyclohexane	9.23	84	889306	46.362	ng	97
44) tert-Amyl Methyl Ether	9.61	73	1744334	49.096	ng	99
45) 1,2-Dichloropropane	9.88	63	298573	22.260	ng	99
46) Bromodichloromethane	10.10	83	504301	26.487	ng	100
47) Trichloroethene	10.17	130	367812	23.479	ng	100
48) 1,4-Dioxane	10.13	88	229792	24.131	ng	98
49) 2,2,4-Trimethylpentane...	10.25	57	1288059	22.390	ng	97
50) Methyl Methacrylate	10.42	100	264447	52.728	ng	96

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102507.D Vial: 2
Acq On : 10 Jan 2025 20:31 Operator: CG
Sample : LCSD R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 10 21:37:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

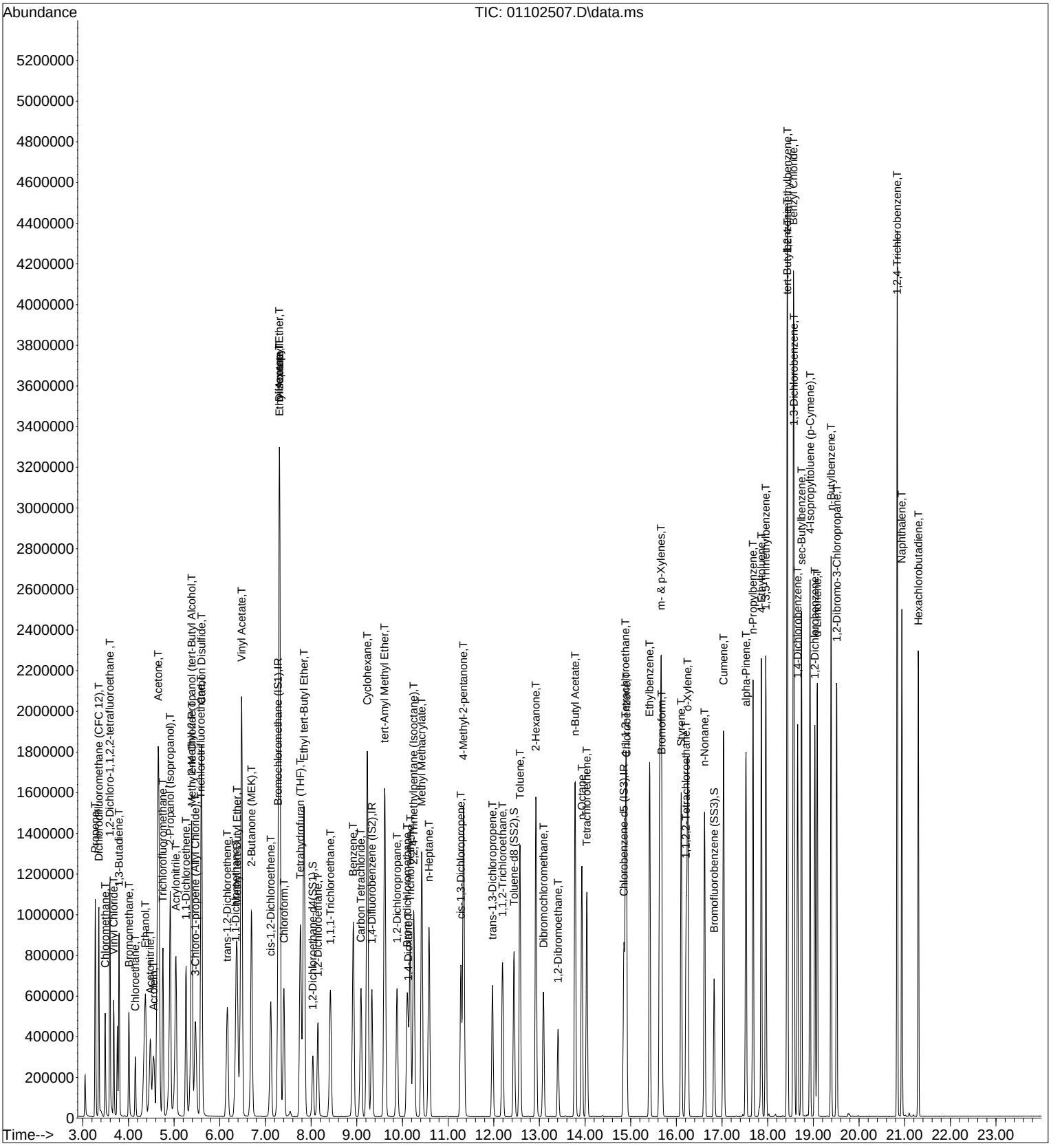
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	280269	22.857 ng	99
52) cis-1,3-Dichloropropene	11.28	75	550398	25.130 ng	100
53) 4-Methyl-2-pentanone	11.34	58	577205	48.805 ng	97
54) trans-1,3-Dichloropropene	11.97	75	455734	22.992 ng	99
55) 1,1,2-Trichloroethane	12.19	97	320682	24.122 ng	98
58) Toluene	12.57	91	1283278	23.629 ng	99
59) 2-Hexanone	12.92	43	1358472	51.329 ng	99
60) Dibromochloromethane	13.09	129	448065	27.660 ng	99
61) 1,2-Dibromoethane	13.41	107	386584	24.980 ng	100
62) n-Butyl Acetate	13.78	43	1532113	51.513 ng	99
63) n-Octane	13.93	57	269810	23.962 ng	98
64) Tetrachloroethene	14.04	166	410092	25.385 ng	100
65) Chlorobenzene	14.91	112	904600	23.611 ng	99
66) Ethylbenzene	15.41	91	1543959	25.711 ng	100
67) m- & p-Xylenes	15.66	91	2506210	50.994 ng	99
68) Bromoform	15.68	173	407510	31.663 ng	100
69) Styrene	16.11	104	926251	26.976 ng	98
70) o-Xylene	16.25	91	1240584	25.507 ng	99
71) n-Nonane	16.62	43	627882	24.300 ng	99
72) 1,1,2,2-Tetrachloroethane	16.21	83	552561	23.874 ng	100
74) Cumene	17.03	105	1535059	25.368 ng	99
75) alpha-Pinene	17.53	93	799563	26.782 ng	99
76) n-Propylbenzene	17.68	91	1807999	25.199 ng	100
77) 3-Ethyltoluene	17.03	105	1535059	No Calib	
78) 4-Ethyltoluene	17.86	105	1541583	27.029 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	1305561	26.182 ng	99
80) alpha-Methylstyrene	17.03	118	3719	No Calib #	
81) 2-Ethyltoluene	17.03	105	1535059	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1324628	26.265 ng	100
83) n-Decane	17.03	58	11594	No Calib	
84) Benzyl Chloride	18.56	91	2307606	55.746 ng	100
85) 1,3-Dichlorobenzene	18.58	146	794501	25.231 ng	99
86) 1,4-Dichlorobenzene	18.66	146	780745	24.078 ng	100
87) sec-Butylbenzene	18.74	105	1678001	25.123 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1462142	26.364 ng	100
89) 1,2,3-Trimethylbenzene	17.03	105	1535059	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	766457	24.074 ng	100
91) d-Limonene	19.09	68	436165	27.082 ng	97
92) 1,2-Dibromo-3-Chloropr...	19.51	157	612017	56.441 ng	98
93) n-Undecane	17.96	58	23328	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1147625	51.771 ng	99
95) Naphthalene	20.94	128	1642912	24.325 ng	100
96) n-Dodecane	18.92	58	32426	No Calib #	
97) Hexachlorobutadiene	21.30	225	415992	24.973 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1259029	26.592 ng	99
100) n-Butylbenzene	19.39	91	1367655	26.146 ng	99
101) 1,1,1,2-Tetrachloroethane	14.89	131	374719	26.813 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102507.D Vial: 2
Acq On : 10 Jan 2025 20:31 Operator: CG
Sample : LCSD R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 10 21:37:25 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

CG 1/11/25

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112504.D
Acq On : 11 Jan 2025 6:36
Operator : CG
Sample : LCS R09011125 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:48:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	161623	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	699274	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	124623	12.500	ng		0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	279636	12.699	ng		0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.60%				
57) Toluene-d8 (SS2)	12.44	98	715387	12.940	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.52%				
73) Bromofluorobenzene (SS3)	16.83	174	236760	12.410	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%				
Target Compounds							Qvalue
2) Propene	3.28	42	312106	18.079	ng		97
3) Dichlorodifluoromethan...	3.36	85	686970	21.743	ng		100
4) Chloromethane	3.49	50	402406	17.151	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	360804	24.121	ng		99
6) Vinyl Chloride	3.68	62	424548	23.517	ng		99
7) 1,3-Butadiene	3.80	54	318325	26.747	ng		98
8) Bromomethane	4.02	94	287395	25.242	ng		99
9) Chloroethane	4.16	64	203787	21.449	ng		100
10) Ethanol	4.37	45	1293106	108.166	ng		96
11) Acetonitrile	4.49	41	561996	18.277	ng		99
12) Acrolein	4.56	56	450875	44.117	ng		99
13) Acetone	4.66	58	1097518	100.852	ng		90
14) Trichlorofluoromethane	4.76	101	662619	22.363	ng		100
15) 2-Propanol (Isopropanol)	4.92	45	1778632	45.640	ng		99
16) Acrylonitrile	5.04	53	844213	43.479	ng		98
17) 1,1-Dichloroethene	5.27	96	308751	22.669	ng		100
18) 2-Methyl-2-Propanol (t...	5.39	59	1350439	43.249	ng		99
19) Methylene Chloride	5.40	84	312442	20.404	ng		96
20) 3-Chloro-1-propene (Al...	5.47	41	455439	17.924	ng		97
21) Trichlorotrifluoroethane	5.59	151	319622	23.909	ng		94
22) Carbon Disulfide	5.61	76	2198395	44.654	ng		100
23) trans-1,2-Dichloroethene	6.17	61	483839	23.129	ng		99
24) 1,1-Dichloroethane	6.36	63	568984	21.912	ng		100
25) Methyl tert-Butyl Ether	6.38	73	875236	22.664	ng		98
26) Vinyl Acetate	6.48	86	333628	126.661	ng	#	96
27) 2-Butanone (MEK)	6.70	72	376038	43.010	ng		99
28) cis-1,2-Dichloroethene	7.12	61	455372	22.341	ng		100
29) Diisopropyl Ether	7.31	87	482213	43.827	ng	#	93
30) Ethyl Acetate	7.32	61	226436	41.960	ng		97
31) n-Hexane	7.31	57	509239	20.973	ng		99
32) Chloroform	7.41	83	610482	23.204	ng		100
34) Tetrahydrofuran (THF)	7.77	72	347131	42.100	ng		96
35) Ethyl tert-Butyl Ether	7.85	87	744951	46.796	ng		98
36) 1,2-Dichloroethane	8.15	62	499842	22.428	ng		100
38) 1,1,1-Trichloroethane	8.43	97	583727	24.122	ng		99
39) Isopropyl Acetate	9.61	61	827	No Calib		#	
40) 1-Butanol	8.84	56	2475	No Calib		#	
41) Benzene	8.93	78	1162897	20.717	ng		100
42) Carbon Tetrachloride	9.09	117	550690	24.526	ng		100
43) Cyclohexane	9.24	84	894891	45.700	ng		97
44) tert-Amyl Methyl Ether	9.62	73	1748945	48.220	ng		100
45) 1,2-Dichloropropane	9.88	63	301896	22.048	ng		98
46) Bromodichloromethane	10.10	83	501855	25.820	ng		100
47) Trichloroethene	10.17	130	373925	23.382	ng		100
48) 1,4-Dioxane	10.14	88	229363	23.594	ng		98

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112504.D
Acq On : 11 Jan 2025 6:36
Operator : CG
Sample : LCS R09011125 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:48:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

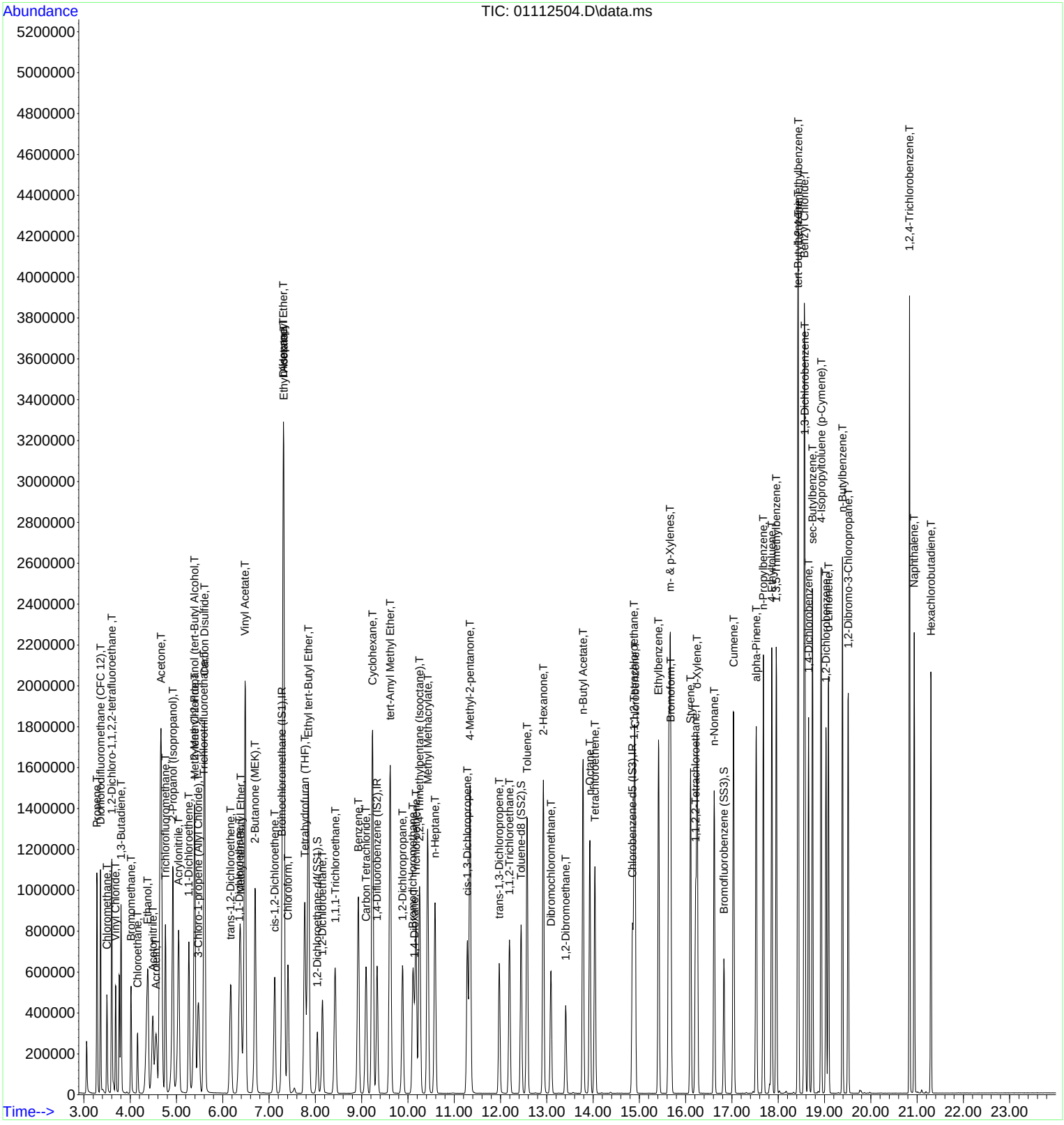
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	1292780	22.013	ng		97
50) Methyl Methacrylate	10.43	100	268247	52.393	ng		95
51) n-Heptane	10.59	71	283853	22.676	ng		98
52) cis-1,3-Dichloropropene	11.29	75	552356	24.704	ng		100
53) 4-Methyl-2-pentanone	11.34	58	574376	47.574	ng		99
54) trans-1,3-Dichloropropene	11.97	75	453787	22.426	ng		100
55) 1,1,2-Trichloroethane	12.19	97	321700	23.705	ng		98
58) Toluene	12.57	91	1290055	24.252	ng		99
59) 2-Hexanone	12.93	43	1324011	51.077	ng		99
60) Dibromochloromethane	13.09	129	440030	27.734	ng		100
61) 1,2-Dibromoethane	13.41	107	386872	25.523	ng		100
62) n-Butyl Acetate	13.78	43	1503261	51.604	ng		99
63) n-Octane	13.93	57	269170	24.407	ng		97
64) Tetrachloroethene	14.04	166	415736	26.274	ng		99
65) Chlorobenzene	14.91	112	909807	24.245	ng		100
66) Ethylbenzene	15.41	91	1537340	26.138	ng		100
67) m- & p-Xylenes	15.66	91	2490421	51.736	ng		99
68) Bromoform	15.68	173	400427	31.766	ng		100
69) Styrene	16.11	104	918385	27.309	ng		99
70) o-Xylene	16.25	91	1229707	25.814	ng		99
71) n-Nonane	16.62	43	624343	24.670	ng		99
72) 1,1,2,2-Tetrachloroethane	16.21	83	541952	23.907	ng		100
74) Cumene	17.04	105	1521686	25.675	ng		99
75) alpha-Pinene	17.53	93	794322	27.165	ng		100
76) n-Propylbenzene	17.68	91	1788755	25.454	ng		100
77) 3-Ethyltoluene	17.04	105	1521686	No Calib			
78) 4-Ethyltoluene	17.86	105	1507592	26.988	ng		100
79) 1,3,5-Trimethylbenzene	17.96	105	1272229	26.049	ng		99
80) alpha-Methylstyrene	17.03	118	3282	No Calib		#	
81) 2-Ethyltoluene	17.04	105	1521686	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	1286864	26.052	ng		100
83) n-Decane	17.04	58	11132	No Calib			
84) Benzyl Chloride	18.56	91	2167868	53.470	ng		100
85) 1,3-Dichlorobenzene	18.58	146	756885	24.541	ng		99
86) 1,4-Dichlorobenzene	18.66	146	749244	23.592	ng		100
87) sec-Butylbenzene	18.74	105	1646398	25.167	ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	1413634	26.024	ng		100
89) 1,2,3-Trimethylbenzene	17.04	105	1521686	No Calib			
90) 1,2-Dichlorobenzene	19.03	146	728861	23.374	ng		100
91) d-Limonene	19.09	68	425379	26.967	ng		98
92) 1,2-Dibromo-3-Chloropr...	19.51	157	563927	53.098	ng		97
93) n-Undecane	17.96	58	22925	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	1016099	46.800	ng		99
95) Naphthalene	20.94	128	1447375	21.880	ng		100
96) n-Dodecane	18.92	58	35249	No Calib		#	
97) Hexachlorobutadiene	21.30	225	379314	23.249	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.43	119	1232785	26.585	ng		100
100) n-Butylbenzene	19.39	91	1290121	25.181	ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	371761	27.160	ng		100

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112504.D
Acq On : 11 Jan 2025 6:36
Operator : CG
Sample : LCS R09011125 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:48:15 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112505.D
Acq On : 11 Jan 2025 7:08
Operator : CG
Sample : LCSD R09011125 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

CG 1/11/25

Quant Time: Jan 11 08:48:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	162769	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	706141	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	124226	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	280342	12.642	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
57) Toluene-d8 (SS2)	12.44	98	720932	13.082	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
73) Bromofluorobenzene (SS3)	16.83	174	238763	12.555	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.40%				
Target Compounds							Qvalue
2) Propene	3.27	42	308361	17.737	ng		96
3) Dichlorodifluoromethan...	3.35	85	676428	21.259	ng		100
4) Chloromethane	3.49	50	414108	17.526	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	360541	23.934	ng		100
6) Vinyl Chloride	3.68	62	428208	23.552	ng		100
7) 1,3-Butadiene	3.80	54	319694	26.673	ng		99
8) Bromomethane	4.01	94	285678	24.915	ng		99
9) Chloroethane	4.15	64	201055	21.013	ng		100
10) Ethanol	4.37	45	1301289	108.084	ng		96
11) Acetonitrile	4.48	41	564589	18.232	ng		99
12) Acrolein	4.55	56	453435	44.056	ng		99
13) Acetone	4.66	58	1099622	100.333	ng		90
14) Trichlorofluoromethane	4.76	101	659824	22.112	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1791483	45.647	ng		99
16) Acrylonitrile	5.04	53	844237	43.174	ng		97
17) 1,1-Dichloroethene	5.26	96	310449	22.633	ng		100
18) 2-Methyl-2-Propanol (t...	5.39	59	1416740	45.053	ng		99
19) Methylene Chloride	5.39	84	314379	20.386	ng		95
20) 3-Chloro-1-propene (Al...	5.47	41	458919	17.934	ng		97
21) Trichlorotrifluoroethane	5.58	151	319946	23.765	ng		95
22) Carbon Disulfide	5.60	76	2213905	44.652	ng		100
23) trans-1,2-Dichloroethene	6.16	61	487548	23.142	ng		99
24) 1,1-Dichloroethane	6.35	63	571287	21.846	ng		100
25) Methyl tert-Butyl Ether	6.38	73	875053	22.500	ng		98
26) Vinyl Acetate	6.48	86	334241	126.000	ng		98
27) 2-Butanone (MEK)	6.70	72	380876	43.256	ng		98
28) cis-1,2-Dichloroethene	7.12	61	456774	22.252	ng		99
29) Diisopropyl Ether	7.30	87	482508	43.545	ng		94
30) Ethyl Acetate	7.31	61	229252	42.183	ng		98
31) n-Hexane	7.30	57	517102	21.147	ng		100
32) Chloroform	7.41	83	614881	23.206	ng		100
34) Tetrahydrofuran (THF)	7.76	72	351904	42.378	ng	#	90
35) Ethyl tert-Butyl Ether	7.84	87	752188	46.918	ng		97
36) 1,2-Dichloroethane	8.15	62	498226	22.198	ng		99
38) 1,1,1-Trichloroethane	8.42	97	588285	24.074	ng		99
39) Isopropyl Acetate	9.61	61	886	No Calib		#	
40) 1-Butanol	8.84	56	2428	No Calib			
41) Benzene	8.92	78	1170710	20.654	ng		100
42) Carbon Tetrachloride	9.09	117	550361	24.273	ng		100
43) Cyclohexane	9.23	84	903352	45.683	ng		97
44) tert-Amyl Methyl Ether	9.61	73	1767091	48.247	ng		99
45) 1,2-Dichloropropane	9.88	63	304163	21.997	ng		99
46) Bromodichloromethane	10.10	83	504442	25.701	ng		100
47) Trichloroethene	10.17	130	375429	23.248	ng		100
48) 1,4-Dioxane	10.13	88	232674	23.702	ng		97

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112505.D
Acq On : 11 Jan 2025 7:08
Operator : CG
Sample : LCSD R09011125 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:48:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

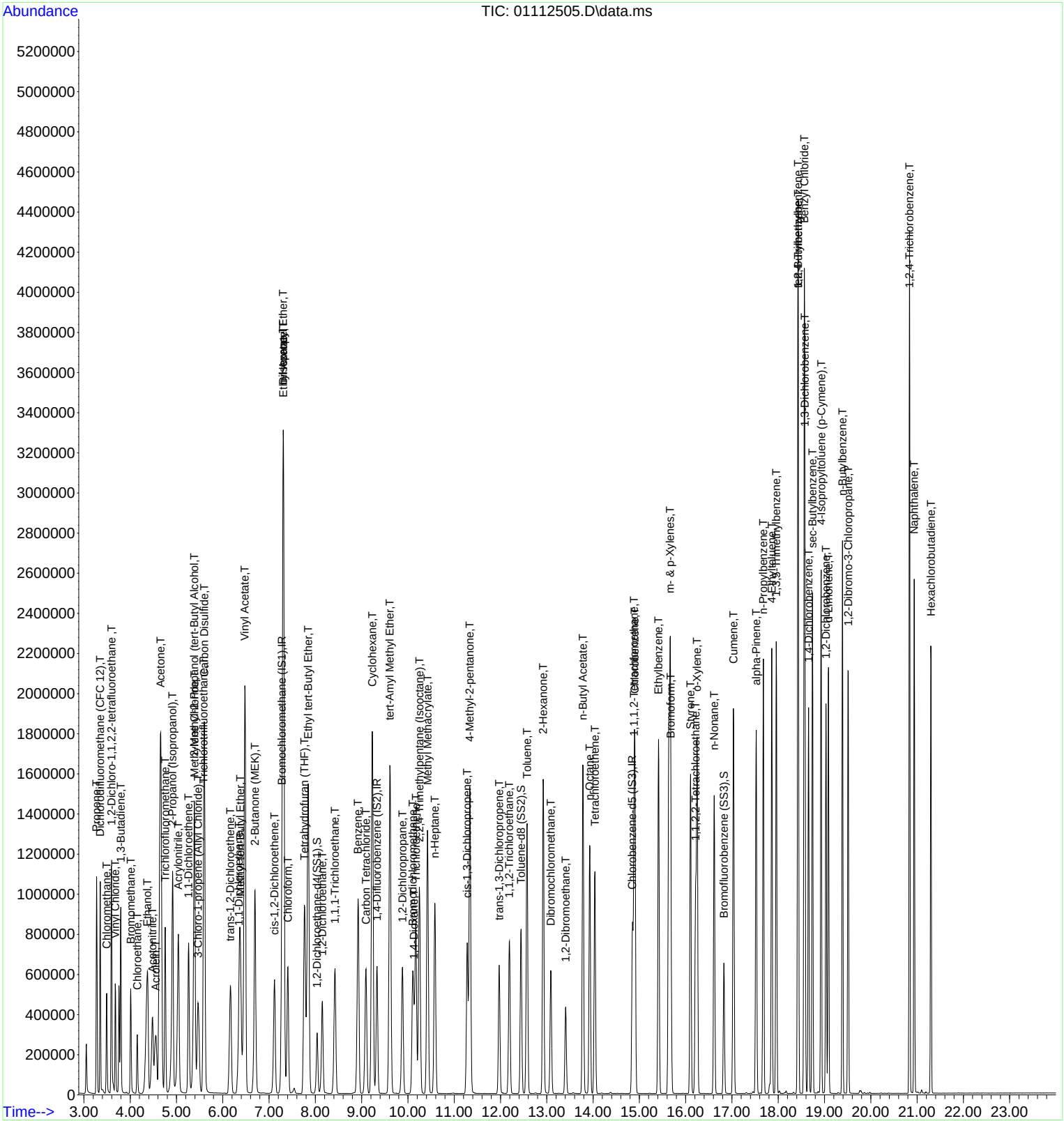
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	1304954	22.004 ng		97
50) Methyl Methacrylate	10.42	100	271982	52.606 ng		94
51) n-Heptane	10.58	71	286662	22.678 ng		98
52) cis-1,3-Dichloropropene	11.28	75	560599	24.829 ng		100
53) 4-Methyl-2-pentanone	11.34	58	582479	47.776 ng		98
54) trans-1,3-Dichloropropene	11.97	75	457520	22.391 ng		100
55) 1,1,2-Trichloroethane	12.19	97	326478	23.823 ng		98
58) Toluene	12.57	91	1301547	24.547 ng		100
59) 2-Hexanone	12.92	43	1347247	52.139 ng		99
60) Dibromochloromethane	13.09	129	446416	28.227 ng		100
61) 1,2-Dibromoethane	13.41	107	391599	25.917 ng		99
62) n-Butyl Acetate	13.78	43	1527791	52.614 ng		99
63) n-Octane	13.93	57	274969	25.013 ng		98
64) Tetrachloroethene	14.04	166	417593	26.476 ng		100
65) Chlorobenzene	14.90	112	920582	24.610 ng		99
66) Ethylbenzene	15.41	91	1557534	26.566 ng		100
67) m- & p-Xylenes	15.66	91	2520854	52.536 ng		99
68) Bromoform	15.68	173	408020	32.472 ng		100
69) Styrene	16.11	104	937700	27.972 ng		98
70) o-Xylene	16.25	91	1255277	26.435 ng		99
71) n-Nonane	16.62	43	633695	25.120 ng		99
72) 1,1,2,2-Tetrachloroethane	16.21	83	559652	24.767 ng		100
74) Cumene	17.03	105	1546939	26.184 ng		100
75) alpha-Pinene	17.53	93	803894	27.580 ng		99
76) n-Propylbenzene	17.68	91	1826441	26.073 ng		100
77) 3-Ethyltoluene	17.03	105	1546939	No Calib		
78) 4-Ethyltoluene	17.86	105	1521440	27.323 ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	1314062	26.992 ng		99
80) alpha-Methylstyrene	17.03	118	3420	No Calib	#	
81) 2-Ethyltoluene	17.03	105	1546939	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	1328246	26.976 ng		100
83) n-Decane	17.04	58	10907	No Calib		
84) Benzyl Chloride	18.56	91	2298777	56.880 ng		100
85) 1,3-Dichlorobenzene	18.58	146	797523	25.941 ng		99
86) 1,4-Dichlorobenzene	18.66	146	787526	24.877 ng		100
87) sec-Butylbenzene	18.74	105	1691970	25.947 ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	1469915	27.147 ng		100
89) 1,2,3-Trimethylbenzene	17.03	105	1546939	No Calib		
90) 1,2-Dichlorobenzene	19.03	146	772935	24.867 ng		100
91) d-Limonene	19.09	68	441429	28.074 ng		99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	606883	57.325 ng		97
93) n-Undecane	17.96	58	22989	No Calib		
94) 1,2,4-Trichlorobenzene	20.84	180	1146785	52.988 ng		100
95) Naphthalene	20.94	128	1646204	24.965 ng		100
96) n-Dodecane	18.93	58	33727	No Calib	#	
97) Hexachlorobutadiene	21.30	225	411192	25.283 ng		100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.43	119	1264497	27.356 ng		100
100) n-Butylbenzene	19.39	91	1362719	26.683 ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	377625	27.676 ng		99

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112505.D
Acq On : 11 Jan 2025 7:08
Operator : CG
Sample : LCSD R09011125 25ng
Misc : S37-12312401/S37-12272408 (1/26)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:48:17 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122504.D Vial: 2
Acq On : 12 Jan 2025 1:14 Operator: LS
Sample : LCS R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 12 07:33:45 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	161084	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	698191	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	126334	12.500	ng	0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	272645	12.423	ng	0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%			
57) Toluene-d8 (SS2)	12.44	98	722468	12.891	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.12%			
73) Bromofluorobenzene (SS3)	16.83	174	251933	13.026	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%			
Target Compounds						Qvalue
2) Propene	3.28	42	306679	17.824	ng	97
3) Dichlorodifluoromethan...	3.36	85	648611	20.598	ng	100
4) Chloromethane	3.49	50	377446	16.141	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	343171	23.019	ng	100
6) Vinyl Chloride	3.68	62	411554	22.873	ng	100
7) 1,3-Butadiene	3.80	54	307434	25.918	ng	99
8) Bromomethane	4.02	94	281368	24.796	ng	100
9) Chloroethane	4.15	64	196843	20.788	ng	100
10) Ethanol	4.38	45	1261573	105.881	ng	96
11) Acetonitrile	4.48	41	551968	18.011	ng	99
12) Acrolein	4.56	56	442324	43.426	ng	99
13) Acetone	4.66	58	1077736	99.365	ng	94
14) Trichlorofluoromethane	4.76	101	620454	21.010	ng	100
15) 2-Propanol (Isopropanol)	4.92	45	1724106	44.389	ng	100
16) Acrylonitrile	5.05	53	827460	42.759	ng	98
17) 1,1-Dichloroethene	5.27	96	299246	22.044	ng	99
18) 2-Methyl-2-Propanol (t...	5.39	59	1333548	42.851	ng	99
19) Methylene Chloride	5.39	84	304777	19.970	ng	96
20) 3-Chloro-1-propene (Al...	5.47	41	448250	17.700	ng	98
21) Trichlorotrifluoroethane	5.59	151	303615	22.788	ng	95
22) Carbon Disulfide	5.61	76	2141990	43.654	ng	100
23) trans-1,2-Dichloroethene	6.17	61	469816	22.534	ng	99
24) 1,1-Dichloroethane	6.36	63	553596	21.391	ng	99
25) Methyl tert-Butyl Ether	6.39	73	849861	22.081	ng	98
26) Vinyl Acetate	6.48	86	322096	122.692	ng	97
27) 2-Butanone (MEK)	6.70	72	368259	42.261	ng	99
28) cis-1,2-Dichloroethene	7.12	61	444782	21.895	ng	99
29) Diisopropyl Ether	7.31	87	469343	42.800	ng	95
30) Ethyl Acetate	7.32	61	225232	41.877	ng	99
31) n-Hexane	7.31	57	502543	20.766	ng	99
32) Chloroform	7.41	83	584583	22.293	ng	100
34) Tetrahydrofuran (THF)	7.77	72	338369	41.174	ng	98
35) Ethyl tert-Butyl Ether	7.85	87	716733	45.174	ng	97
36) 1,2-Dichloroethane	8.15	62	473493	21.317	ng	100
38) 1,1,1-Trichloroethane	8.42	97	549239	22.732	ng	99
39) Isopropyl Acetate	9.61	61	998	No Calib	#	
40) 1-Butanol	8.84	56	2396	No Calib	#	
41) Benzene	8.92	78	1134326	20.240	ng	100
42) Carbon Tetrachloride	9.09	117	509351	22.720	ng	99
43) Cyclohexane	9.23	84	874153	44.710	ng	98
44) tert-Amyl Methyl Ether	9.62	73	1665267	45.984	ng	99
45) 1,2-Dichloropropane	9.88	63	296500	21.687	ng	98
46) Bromodichloromethane	10.10	83	479301	24.698	ng	100
47) Trichloroethene	10.17	130	358716	22.466	ng	100
48) 1,4-Dioxane	10.14	88	223938	23.072	ng	98
49) 2,2,4-Trimethylpentane...	10.25	57	1267119	21.609	ng	98
50) Methyl Methacrylate	10.43	100	259309	50.726	ng	95

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122504.D Vial: 2
Acq On : 12 Jan 2025 1:14 Operator: LS
Sample : LCS R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 12 07:33:45 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

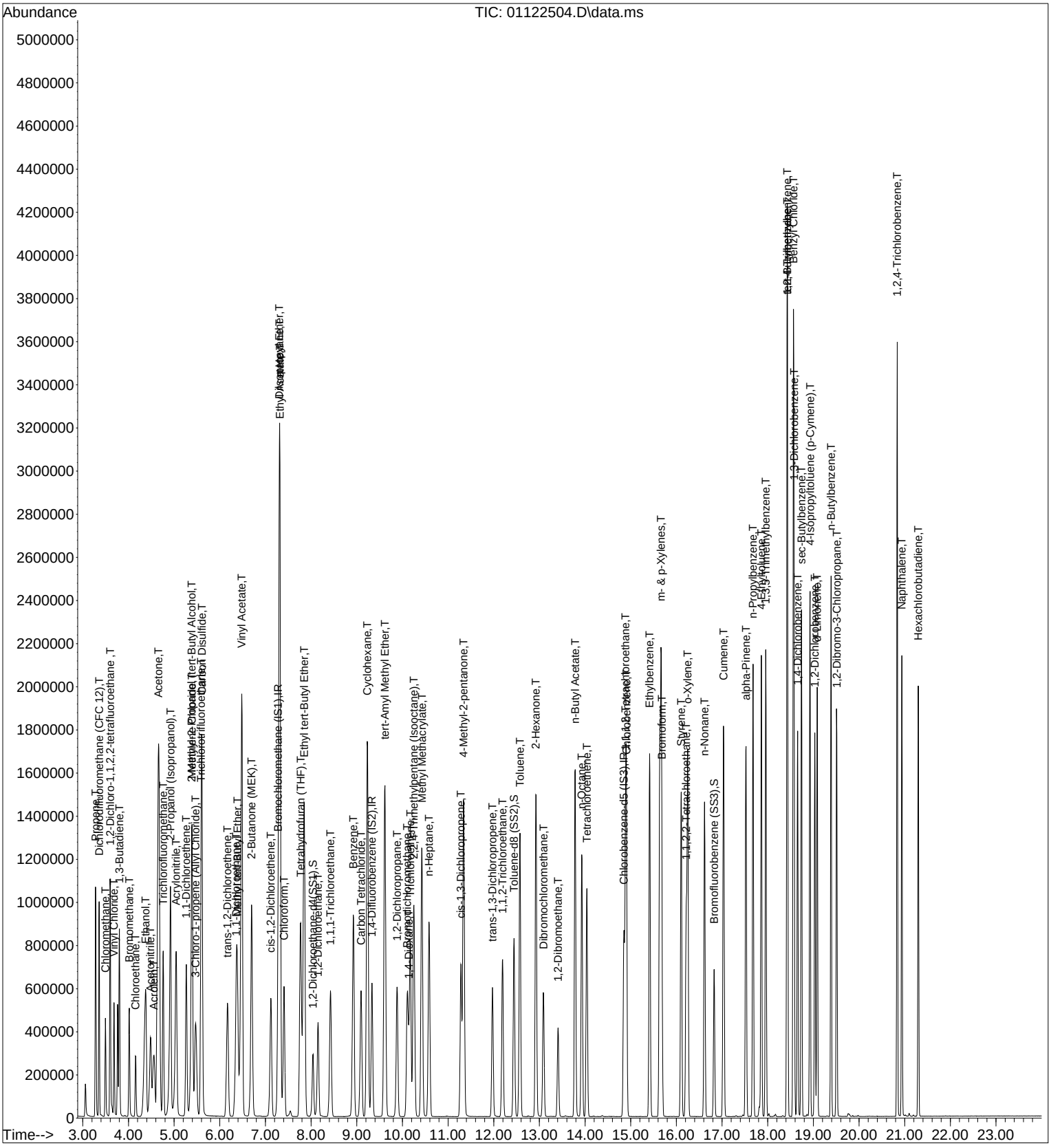
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	278368	22.273 ng	98
52) cis-1,3-Dichloropropene	11.28	75	531038	23.788 ng	100
53) 4-Methyl-2-pentanone	11.34	58	567339	47.064 ng	99
54) trans-1,3-Dichloropropene	11.97	75	429542	21.261 ng	100
55) 1,1,2-Trichloroethane	12.19	97	314401	23.203 ng	99
58) Toluene	12.57	91	1258138	23.332 ng	99
59) 2-Hexanone	12.92	43	1318893	50.190 ng	99
60) Dibromochloromethane	13.09	129	423946	26.359 ng	99
61) 1,2-Dibromoethane	13.41	107	376497	24.502 ng	100
62) n-Butyl Acetate	13.78	43	1490530	50.474 ng	100
63) n-Octane	13.93	57	266046	23.797 ng	98
64) Tetrachloroethene	14.04	166	397284	24.768 ng	100
65) Chlorobenzene	14.91	112	883241	23.218 ng	100
66) Ethylbenzene	15.41	91	1498072	25.125 ng	100
67) m- & p-Xylenes	15.66	91	2408496	49.356 ng	100
68) Bromoform	15.68	173	379243	29.678 ng	100
69) Styrene	16.11	104	897613	26.330 ng	99
70) o-Xylene	16.25	91	1195488	24.756 ng	99
71) n-Nonane	16.62	43	622479	24.264 ng	99
72) 1,1,2,2-Tetrachloroethane	16.21	83	531846	23.144 ng	100
74) Cumene	17.03	105	1485418	24.723 ng	100
75) alpha-Pinene	17.53	93	777185	26.219 ng	100
76) n-Propylbenzene	17.68	91	1753345	24.612 ng	100
77) 3-Ethyltoluene	17.03	105	1485418	No Calib	
78) 4-Ethyltoluene	17.86	105	1446338	25.541 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	1239656	25.039 ng	100
80) alpha-Methylstyrene	17.03	118	2836	No Calib #	
81) 2-Ethyltoluene	17.03	105	1485418	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1250935	24.982 ng	99
83) n-Decane	17.03	58	10670	No Calib	
84) Benzyl Chloride	18.56	91	2036139	49.541 ng	100
85) 1,3-Dichlorobenzene	18.58	146	738236	23.612 ng	99
86) 1,4-Dichlorobenzene	18.66	146	726093	22.553 ng	99
87) sec-Butylbenzene	18.74	105	1607055	24.233 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1372876	24.932 ng	99
89) 1,2,3-Trimethylbenzene	17.03	105	1485418	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	705849	22.330 ng	99
91) d-Limonene	19.08	68	416526	26.048 ng	98
92) 1,2-Dibromo-3-Chloropr...	19.51	157	536203	49.804 ng	97
93) n-Undecane	17.96	58	23363	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	969849	44.065 ng	100
95) Naphthalene	20.94	128	1402201	20.910 ng	100
96) n-Dodecane	18.93	58	34793	No Calib #	
97) Hexachlorobutadiene	21.30	225	357098	21.591 ng	99
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1203381	25.599 ng	100
100) n-Butylbenzene	19.39	91	1267002	24.395 ng	100
101) 1,1,1,2-Tetrachloroethane	14.89	131	356909	25.722 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122504.D Vial: 2
Acq On : 12 Jan 2025 1:14 Operator: LS
Sample : LCS R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 12 07:33:45 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122505.D Vial: 2
Acq On : 12 Jan 2025 1:46 Operator: LS
Sample : LCSD R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 12 07:35:44 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	161143	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	701246	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	128101	12.500	ng	0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	271003	12.344	ng	0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.72%			
57) Toluene-d8 (SS2)	12.44	98	731450	12.871	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.96%			
73) Bromofluorobenzene (SS3)	16.83	174	254394	12.972	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.76%			
Target Compounds						Qvalue
2) Propene	3.28	42	309212	17.965	ng	97
3) Dichlorodifluoromethan...	3.36	85	646654	20.528	ng	100
4) Chloromethane	3.49	50	383875	16.410	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	347823	23.323	ng	100
6) Vinyl Chloride	3.68	62	424641	23.592	ng	100
7) 1,3-Butadiene	3.80	54	315287	26.570	ng	99
8) Bromomethane	4.02	94	280234	24.687	ng	100
9) Chloroethane	4.16	64	196416	20.735	ng	100
10) Ethanol	4.37	45	1278338	107.249	ng	96
11) Acetonitrile	4.49	41	558747	18.225	ng	99
12) Acrolein	4.56	56	448259	43.992	ng	99
13) Acetone	4.66	58	1088534	100.324	ng	93
14) Trichlorofluoromethane	4.76	101	624306	21.133	ng	100
15) 2-Propanol (Isopropanol)	4.92	45	1754613	45.158	ng	100
16) Acrylonitrile	5.04	53	837321	43.253	ng	98
17) 1,1-Dichloroethene	5.27	96	303043	22.316	ng	99
18) 2-Methyl-2-Propanol (t...	5.39	59	1293828	41.559	ng	99
19) Methylene Chloride	5.40	84	307599	20.147	ng	96
20) 3-Chloro-1-propene (Al...	5.47	41	456478	18.019	ng	98
21) Trichlorotrifluoroethane	5.59	151	310050	23.262	ng	95
22) Carbon Disulfide	5.61	76	2170431	44.217	ng	100
23) trans-1,2-Dichloroethene	6.17	61	474151	22.734	ng	99
24) 1,1-Dichloroethane	6.36	63	557572	21.536	ng	100
25) Methyl tert-Butyl Ether	6.39	73	857232	22.264	ng	98
26) Vinyl Acetate	6.48	86	328783	125.193	ng	98
27) 2-Butanone (MEK)	6.70	72	373495	42.846	ng	99
28) cis-1,2-Dichloroethene	7.12	61	448694	22.079	ng	100
29) Diisopropyl Ether	7.30	87	472585	43.080	ng	96
30) Ethyl Acetate	7.32	61	226995	42.189	ng	98
31) n-Hexane	7.31	57	509581	21.050	ng	100
32) Chloroform	7.41	83	590735	22.520	ng	100
34) Tetrahydrofuran (THF)	7.77	72	345943	42.080	ng	97
35) Ethyl tert-Butyl Ether	7.85	87	731264	46.073	ng	97
36) 1,2-Dichloroethane	8.15	62	475716	21.409	ng	100
38) 1,1,1-Trichloroethane	8.43	97	554385	22.845	ng	99
39) Isopropyl Acetate	9.62	61	958	No Calib	#	
40) 1-Butanol	8.85	56	2472	No Calib		
41) Benzene	8.93	78	1154313	20.507	ng	100
42) Carbon Tetrachloride	9.09	117	514738	22.861	ng	99
43) Cyclohexane	9.24	84	885050	45.070	ng	98
44) tert-Amyl Methyl Ether	9.62	73	1699306	46.720	ng	99
45) 1,2-Dichloropropane	9.88	63	298758	21.757	ng	99
46) Bromodichloromethane	10.10	83	486596	24.965	ng	100
47) Trichloroethene	10.17	130	364344	22.719	ng	100
48) 1,4-Dioxane	10.14	88	228117	23.400	ng	97
49) 2,2,4-Trimethylpentane...	10.25	57	1290452	21.912	ng	98
50) Methyl Methacrylate	10.43	100	264519	51.519	ng	96

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122505.D Vial: 2
Acq On : 12 Jan 2025 1:46 Operator: LS
Sample : LCSD R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 12 07:35:44 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

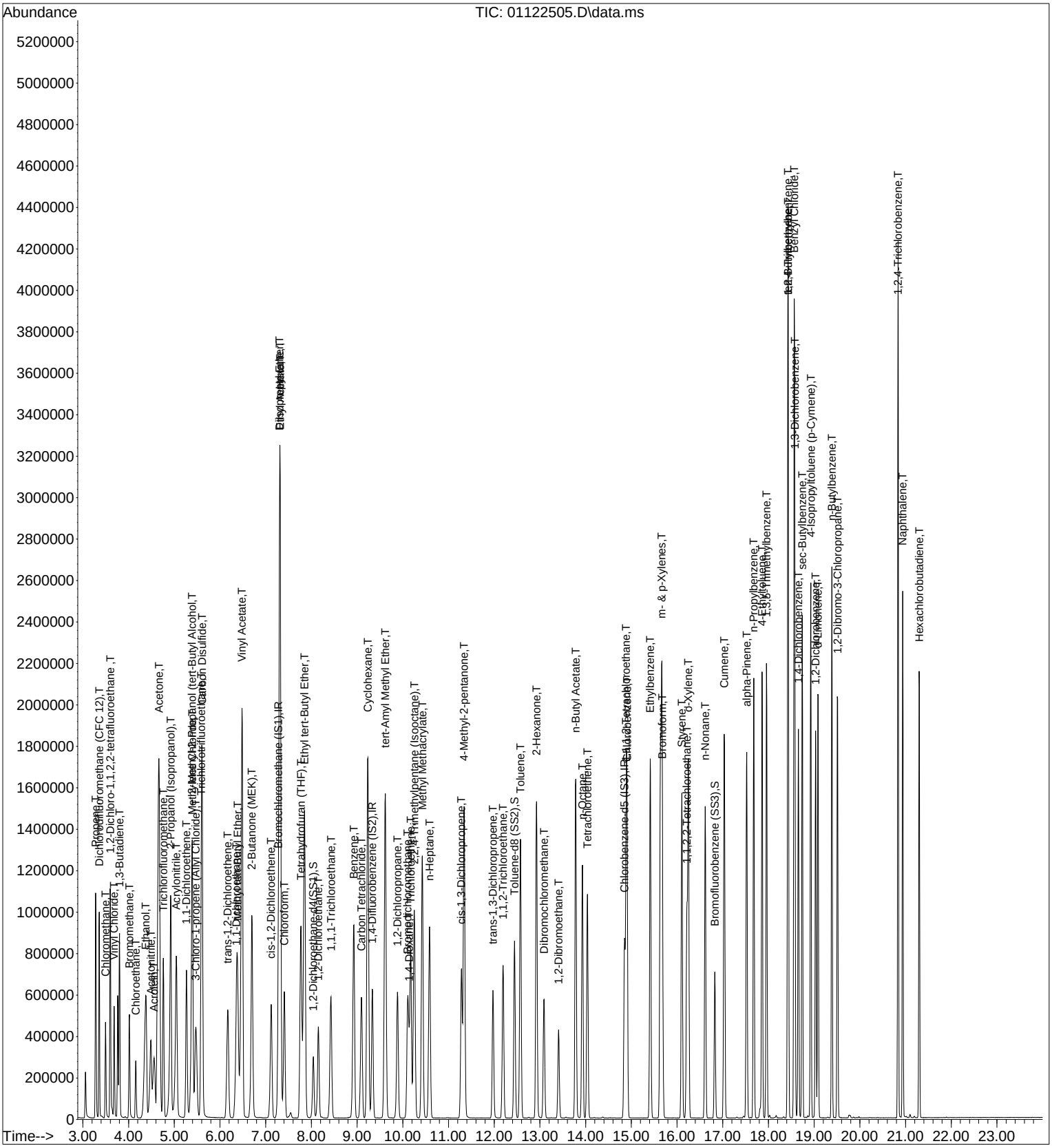
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.59	71	283730	22.603	ng		98
52) cis-1,3-Dichloropropene	11.28	75	544883	24.301	ng		100
53) 4-Methyl-2-pentanone	11.34	58	577871	47.729	ng		99
54) trans-1,3-Dichloropropene	11.97	75	441727	21.769	ng		100
55) 1,1,2-Trichloroethane	12.19	97	320388	23.541	ng		99
58) Toluene	12.57	91	1282794	23.461	ng		99
59) 2-Hexanone	12.93	43	1342291	50.376	ng		100
60) Dibromochloromethane	13.09	129	431017	26.428	ng		99
61) 1,2-Dibromoethane	13.41	107	383144	24.591	ng		100
62) n-Butyl Acetate	13.78	43	1522059	50.831	ng		99
63) n-Octane	13.93	57	268444	23.681	ng		98
64) Tetrachloroethene	14.04	166	403796	24.827	ng		99
65) Chlorobenzene	14.91	112	905779	23.482	ng		100
66) Ethylbenzene	15.41	91	1529857	25.304	ng		100
67) m- & p-Xylenes	15.66	91	2454847	49.612	ng		99
68) Bromoform	15.68	173	386171	29.803	ng		100
69) Styrene	16.11	104	921386	26.654	ng		99
70) o-Xylene	16.25	91	1216204	24.838	ng		100
71) n-Nonane	16.62	43	633130	24.338	ng		99
72) 1,1,2,2-Tetrachloroethane	16.21	83	547725	23.506	ng		100
74) Cumene	17.03	105	1519930	24.949	ng		100
75) alpha-Pinene	17.53	93	791973	26.350	ng		100
76) n-Propylbenzene	17.68	91	1791365	24.799	ng		99
77) 3-Ethyltoluene	17.03	105	1519930	No Calib			
78) 4-Ethyltoluene	17.86	105	1514498	26.376	ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	1278397	25.465	ng		100
80) alpha-Methylstyrene	17.03	118	2988	No Calib		#	
81) 2-Ethyltoluene	17.03	105	1519930	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	1297020	25.545	ng		99
83) n-Decane	17.03	58	10781	No Calib			
84) Benzyl Chloride	18.56	91	2174100	52.168	ng		100
85) 1,3-Dichlorobenzene	18.58	146	774170	24.420	ng		99
86) 1,4-Dichlorobenzene	18.66	146	772006	23.649	ng		100
87) sec-Butylbenzene	18.74	105	1664098	24.747	ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	1435378	25.707	ng		99
89) 1,2,3-Trimethylbenzene	17.03	105	1519930	No Calib			
90) 1,2-Dichlorobenzene	19.03	146	756072	23.588	ng		100
91) d-Limonene	19.08	68	437486	26.981	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	589486	53.998	ng		96
93) n-Undecane	17.96	58	24595	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	1116985	50.050	ng		100
95) Naphthalene	20.94	128	1635494	24.052	ng		100
96) n-Dodecane	18.93	58	39211	No Calib		#	
97) Hexachlorobutadiene	21.30	225	393906	23.488	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.43	119	1229320	25.790	ng		100
100) n-Butylbenzene	19.39	91	1341333	25.470	ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	360415	25.616	ng		99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122505.D Vial: 2
Acq On : 12 Jan 2025 1:46 Operator: LS
Sample : LCSD R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 12 07:35:44 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132504.D Vial: 2
Acq On : 13 Jan 2025 1:04 Operator: SC
Sample : LCS R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 13 06:13:24 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	155107	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	680020	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	124146	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	262890	12.440	ng	0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%			
57) Toluene-d8 (SS2)	12.44	98	704098	12.785	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%			
73) Bromofluorobenzene (SS3)	16.83	174	245765	12.931	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%			
Target Compounds						Qvalue
2) Propene	3.28	42	296649	17.906	ng	97
3) Dichlorodifluoromethan...	3.35	85	611251	20.160	ng	100
4) Chloromethane	3.49	50	377602	16.770	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	328483	22.883	ng	100
6) Vinyl Chloride	3.68	62	398840	23.021	ng	100
7) 1,3-Butadiene	3.80	54	293503	25.697	ng	99
8) Bromomethane	4.01	94	268434	24.567	ng	100
9) Chloroethane	4.15	64	188939	20.722	ng	100
10) Ethanol	4.37	45	1205955	105.114	ng	96
11) Acetonitrile	4.48	41	523557	17.742	ng	99
12) Acrolein	4.55	56	417650	42.583	ng	99
13) Acetone	4.66	58	1017223	97.400	ng	94
14) Trichlorofluoromethane	4.76	101	583324	20.514	ng	100
15) 2-Propanol (Isopropanol)	4.91	45	1643046	43.932	ng	100
16) Acrylonitrile	5.04	53	786820	42.226	ng	99
17) 1,1-Dichloroethene	5.26	96	280977	21.496	ng	99
18) 2-Methyl-2-Propanol (t...	5.39	59	1269982	42.381	ng	99
19) Methylene Chloride	5.39	84	287591	19.570	ng	95
20) 3-Chloro-1-propene (Al...	5.47	41	423337	17.361	ng	98
21) Trichlorotrifluoroethane	5.59	151	284319	22.162	ng	96
22) Carbon Disulfide	5.61	76	2025469	42.869	ng	100
23) trans-1,2-Dichloroethene	6.17	61	443861	22.110	ng	100
24) 1,1-Dichloroethane	6.36	63	520057	20.869	ng	100
25) Methyl tert-Butyl Ether	6.38	73	824647	22.251	ng	99
26) Vinyl Acetate	6.48	86	305077	120.687	ng	97
27) 2-Butanone (MEK)	6.69	72	352584	42.021	ng	96
28) cis-1,2-Dichloroethene	7.12	61	420208	21.482	ng	100
29) Diisopropyl Ether	7.31	87	440581	41.725	ng	95
30) Ethyl Acetate	7.31	61	211401	40.820	ng	99
31) n-Hexane	7.31	57	473827	20.334	ng	99
32) Chloroform	7.41	83	549012	21.744	ng	100
34) Tetrahydrofuran (THF)	7.76	72	321398	40.616	ng	97
35) Ethyl tert-Butyl Ether	7.84	87	676273	44.267	ng	98
36) 1,2-Dichloroethane	8.15	62	439977	20.571	ng	99
38) 1,1,1-Trichloroethane	8.42	97	517957	22.010	ng	99
39) Isopropyl Acetate	9.61	61	753	No Calib	#	
40) 1-Butanol	8.84	56	2310	No Calib	#	
41) Benzene	8.92	78	1073679	19.670	ng	100
42) Carbon Tetrachloride	9.09	117	480207	21.993	ng	100
43) Cyclohexane	9.23	84	828074	43.485	ng	98
44) tert-Amyl Methyl Ether	9.61	73	1595608	45.238	ng	99
45) 1,2-Dichloropropane	9.88	63	280795	21.087	ng	99
46) Bromodichloromethane	10.10	83	452601	23.945	ng	99
47) Trichloroethene	10.17	130	338070	21.739	ng	100
48) 1,4-Dioxane	10.13	88	211955	22.421	ng	97
49) 2,2,4-Trimethylpentane...	10.25	57	1208697	21.164	ng	99
50) Methyl Methacrylate	10.42	100	245304	49.268	ng	96

Data File : I:\MS09\DATA\2025 01\13\01132504.D Vial: 2
Acq On : 13 Jan 2025 1:04 Operator: SC
Sample : LCS R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 13 06:13:24 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

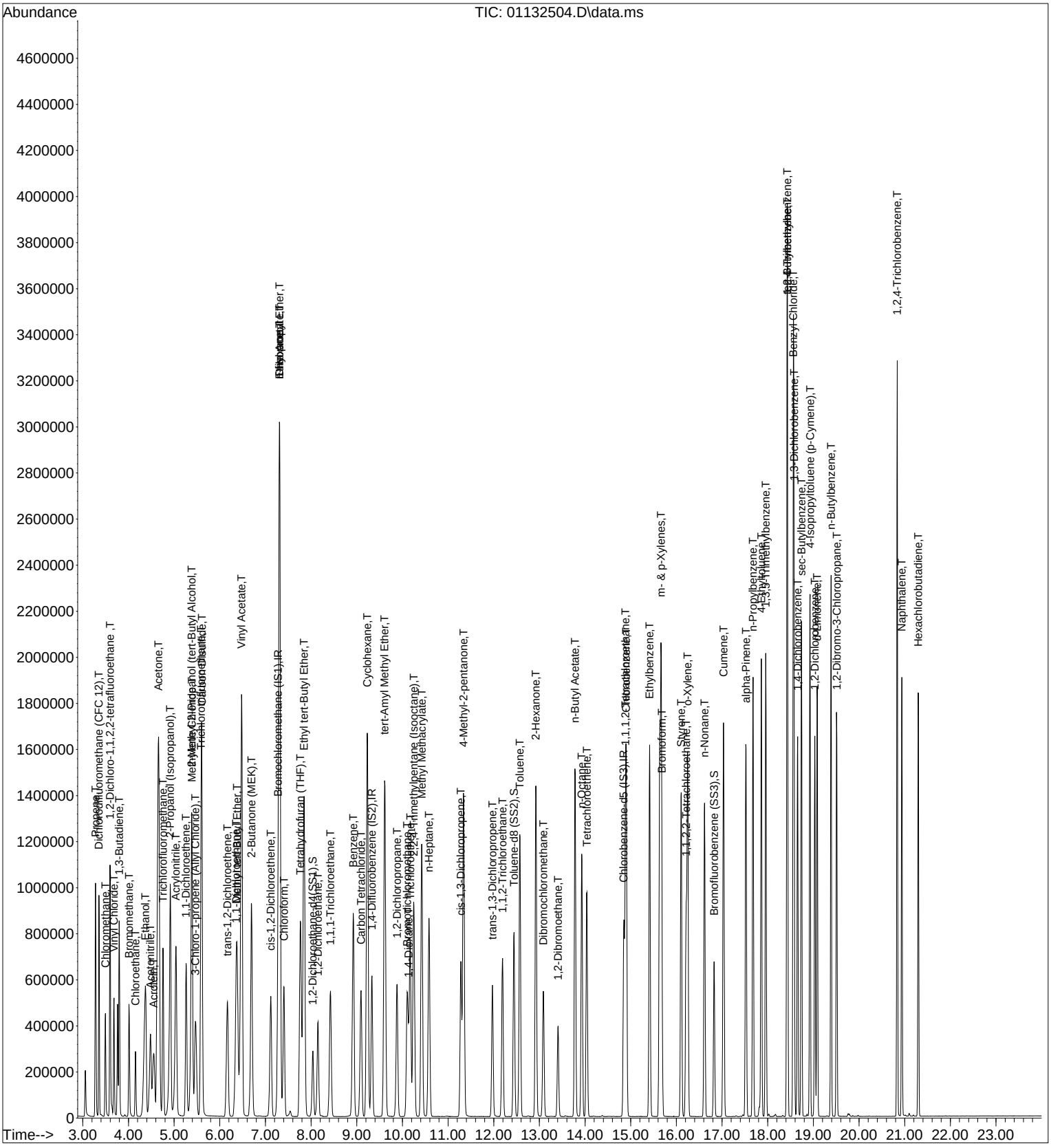
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	263411	21.639 ng	98
52) cis-1,3-Dichloropropene	11.28	75	506150	23.279 ng	100
53) 4-Methyl-2-pentanone	11.34	58	536060	45.657 ng	98
54) trans-1,3-Dichloropropene	11.97	75	406726	20.670 ng	100
55) 1,1,2-Trichloroethane	12.19	97	295639	22.401 ng	99
58) Toluene	12.57	91	1184988	22.363 ng	100
59) 2-Hexanone	12.92	43	1237420	47.920 ng	100
60) Dibromochloromethane	13.09	129	397135	25.127 ng	99
61) 1,2-Dibromoethane	13.41	107	351778	23.297 ng	100
62) n-Butyl Acetate	13.78	43	1407259	48.494 ng	100
63) n-Octane	13.93	57	250734	22.823 ng	98
64) Tetrachloroethene	14.04	166	369710	23.455 ng	100
65) Chlorobenzene	14.90	112	828684	22.168 ng	99
66) Ethylbenzene	15.41	91	1413011	24.116 ng	100
67) m- & p-Xylenes	15.66	91	2264540	47.224 ng	99
68) Bromoform	15.68	173	353208	28.128 ng	100
69) Styrene	16.11	104	842924	25.161 ng	99
70) o-Xylene	16.25	91	1124097	23.688 ng	99
71) n-Nonane	16.62	43	590661	23.429 ng	99
72) 1,1,2,2-Tetrachloroethane	16.21	83	501861	22.224 ng	100
74) Cumene	17.03	105	1387352	23.498 ng	100
75) alpha-Pinene	17.53	93	731265	25.105 ng	100
76) n-Propylbenzene	17.68	91	1639383	23.418 ng	100
77) 3-Ethyltoluene	17.03	105	1387352	No Calib	
78) 4-Ethyltoluene	17.86	105	1367884	24.581 ng	99
79) 1,3,5-Trimethylbenzene	17.96	105	1157598	23.793 ng	100
80) alpha-Methylstyrene	17.03	118	2770	No Calib #	
81) 2-Ethyltoluene	17.03	105	1387352	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1164251	23.660 ng	100
83) n-Decane	17.03	58	9766	No Calib	
84) Benzyl Chloride	18.56	91	1929740	47.779 ng	100
85) 1,3-Dichlorobenzene	18.58	146	687177	22.366 ng	100
86) 1,4-Dichlorobenzene	18.66	146	673817	21.298 ng	100
87) sec-Butylbenzene	18.74	105	1498739	22.998 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1281548	23.683 ng	100
89) 1,2,3-Trimethylbenzene	17.03	105	1387352	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	661423	21.293 ng	100
91) d-Limonene	19.08	68	394387	25.098 ng	100
92) 1,2-Dibromo-3-Chloropr...	19.51	157	495062	46.793 ng	98
93) n-Undecane	17.96	58	21847	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	868370	40.150 ng	99
95) Naphthalene	20.94	128	1259250	19.109 ng	100
96) n-Dodecane	18.93	58	32513	No Calib #	
97) Hexachlorobutadiene	21.30	225	328408	20.206 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1121607	24.280 ng	100
100) n-Butylbenzene	19.39	91	1183694	23.193 ng	100
101) 1,1,1,2-Tetrachloroethane	14.89	131	332880	24.413 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132504.D Vial: 2
Acq On : 13 Jan 2025 1:04 Operator: SC
Sample : LCS R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 13 06:13:24 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132505.D Vial: 2
Acq On : 13 Jan 2025 1:36 Operator: SC
Sample : LCSD R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 13 06:13:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	156532	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	681097	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	125149	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	264935	12.423	ng	0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%			
57) Toluene-d8 (SS2)	12.44	98	707024	12.735	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.92%			
73) Bromofluorobenzene (SS3)	16.83	174	246458	12.864	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%			
Target Compounds						Qvalue
2) Propene	3.28	42	292863	17.516	ng	97
3) Dichlorodifluoromethan...	3.36	85	608511	19.886	ng	100
4) Chloromethane	3.49	50	370743	16.316	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	323963	22.363	ng	100
6) Vinyl Chloride	3.68	62	397891	22.757	ng	100
7) 1,3-Butadiene	3.80	54	293942	25.501	ng	99
8) Bromomethane	4.02	94	264016	23.943	ng	100
9) Chloroethane	4.16	64	185008	20.106	ng	100
10) Ethanol	4.38	45	1196502	103.340	ng	96
11) Acetonitrile	4.49	41	524682	17.618	ng	87
12) Acrolein	4.56	56	418009	42.232	ng	99
13) Acetone	4.66	58	1016437	96.439	ng	93
14) Trichlorofluoromethane	4.76	101	582020	20.282	ng	100
15) 2-Propanol (Isopropanol)	4.92	45	1642752	43.525	ng	99
16) Acrylonitrile	5.05	53	791298	42.079	ng	99
17) 1,1-Dichloroethene	5.27	96	282496	21.416	ng	99
18) 2-Methyl-2-Propanol (t...	5.39	59	1266379	41.876	ng	99
19) Methylene Chloride	5.39	84	288623	19.461	ng	96
20) 3-Chloro-1-propene (Al...	5.47	41	422801	17.181	ng	97
21) Trichlorotrifluoroethane	5.59	151	285365	22.041	ng	96
22) Carbon Disulfide	5.61	76	2033008	42.637	ng	100
23) trans-1,2-Dichloroethene	6.17	61	446062	22.017	ng	100
24) 1,1-Dichloroethane	6.36	63	522337	20.770	ng	100
25) Methyl tert-Butyl Ether	6.39	73	829426	22.176	ng	98
26) Vinyl Acetate	6.48	86	308066	120.760	ng	98
27) 2-Butanone (MEK)	6.70	72	350521	41.395	ng	98
28) cis-1,2-Dichloroethene	7.12	61	421475	21.351	ng	99
29) Diisopropyl Ether	7.31	87	445053	41.765	ng	94
30) Ethyl Acetate	7.32	61	211334	40.435	ng	99
31) n-Hexane	7.31	57	476344	20.256	ng	100
32) Chloroform	7.41	83	552124	21.668	ng	100
34) Tetrahydrofuran (THF)	7.77	72	322743	40.415	ng	98
35) Ethyl tert-Butyl Ether	7.85	87	683344	44.322	ng	98
36) 1,2-Dichloroethane	8.15	62	444999	20.616	ng	100
38) 1,1,1-Trichloroethane	8.42	97	520497	22.083	ng	99
39) Isopropyl Acetate	9.62	61	819	No Calib	#	
40) 1-Butanol	8.84	56	2402	No Calib		
41) Benzene	8.92	78	1082227	19.795	ng	100
42) Carbon Tetrachloride	9.09	117	481729	22.028	ng	99
43) Cyclohexane	9.24	84	836027	43.833	ng	98
44) tert-Amyl Methyl Ether	9.62	73	1615116	45.719	ng	100
45) 1,2-Dichloropropane	9.88	63	283149	21.230	ng	99
46) Bromodichloromethane	10.10	83	453164	23.937	ng	100
47) Trichloroethene	10.17	130	341057	21.896	ng	99
48) 1,4-Dioxane	10.14	88	213401	22.538	ng	98
49) 2,2,4-Trimethylpentane...	10.25	57	1218884	21.309	ng	98
50) Methyl Methacrylate	10.43	100	249091	49.950	ng	95

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132505.D Vial: 2
Acq On : 13 Jan 2025 1:36 Operator: SC
Sample : LCSD R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 13 06:13:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

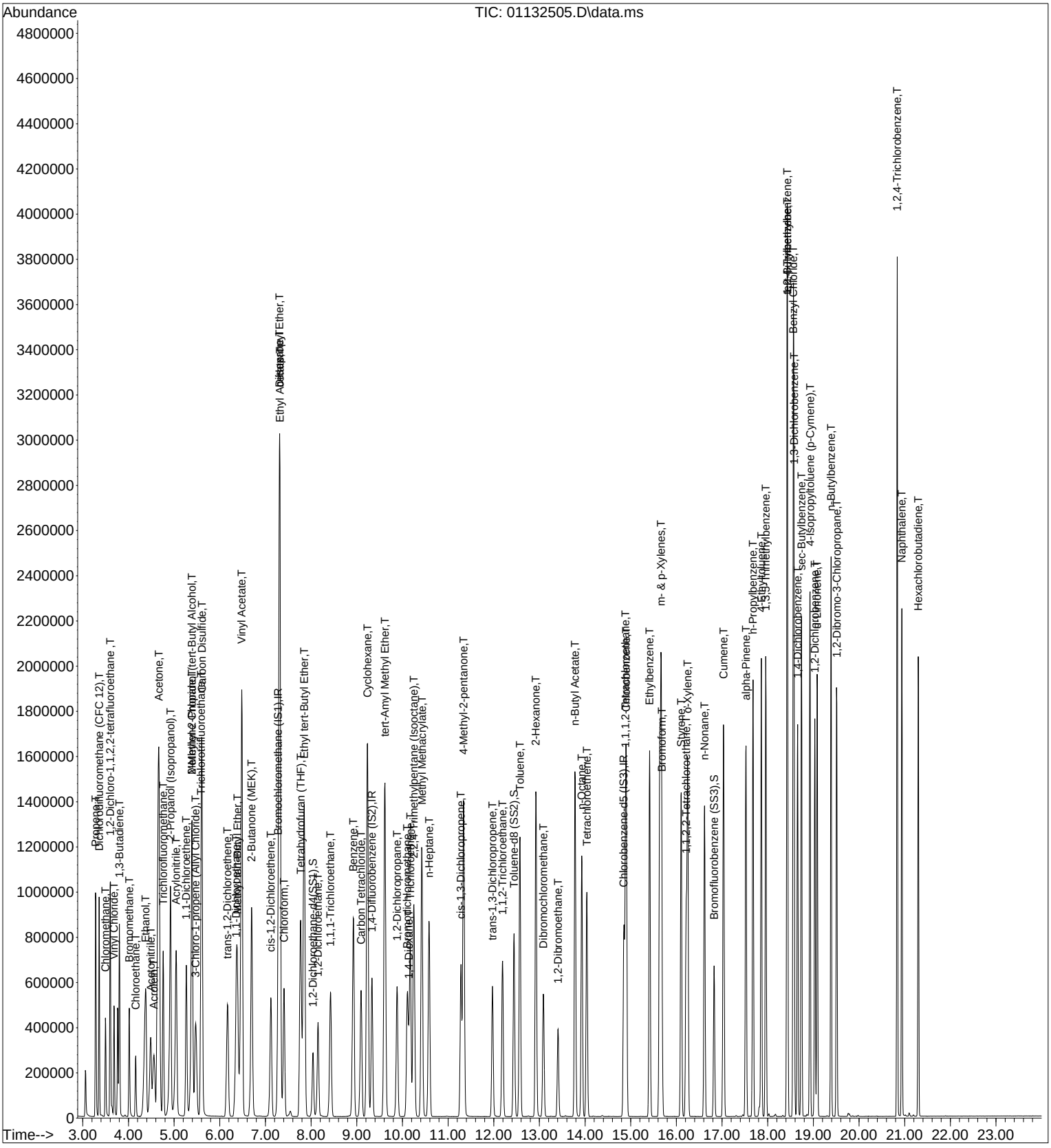
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.59	71	265933	21.812 ng	98
52) cis-1,3-Dichloropropene	11.28	75	510895	23.460 ng	99
53) 4-Methyl-2-pentanone	11.34	58	543472	46.215 ng	99
54) trans-1,3-Dichloropropene	11.97	75	415357	21.075 ng	100
55) 1,1,2-Trichloroethane	12.19	97	298228	22.561 ng	99
58) Toluene	12.57	91	1201332	22.490 ng	99
59) 2-Hexanone	12.92	43	1260789	48.433 ng	99
60) Dibromochloromethane	13.09	129	399613	25.081 ng	100
61) 1,2-Dibromoethane	13.41	107	355311	23.342 ng	99
62) n-Butyl Acetate	13.78	43	1426337	48.757 ng	100
63) n-Octane	13.93	57	253060	22.850 ng	98
64) Tetrachloroethene	14.04	166	372890	23.467 ng	100
65) Chlorobenzene	14.90	112	839339	22.273 ng	100
66) Ethylbenzene	15.41	91	1421042	24.059 ng	100
67) m- & p-Xylenes	15.66	91	2286936	47.309 ng	99
68) Bromoform	15.68	173	357267	28.223 ng	99
69) Styrene	16.11	104	856286	25.355 ng	99
70) o-Xylene	16.25	91	1140438	23.840 ng	99
71) n-Nonane	16.62	43	594411	23.389 ng	99
72) 1,1,2,2-Tetrachloroethane	16.21	83	518050	22.757 ng	99
74) Cumene	17.03	105	1409120	23.675 ng	100
75) alpha-Pinene	17.53	93	738315	25.144 ng	100
76) n-Propylbenzene	17.68	91	1669851	23.662 ng	100
77) 3-Ethyltoluene	17.03	105	1409120	No Calib	
78) 4-Ethyltoluene	17.86	105	1382733	24.649 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	1188548	24.234 ng	100
80) alpha-Methylstyrene	17.03	118	2757	No Calib #	
81) 2-Ethyltoluene	17.03	105	1409120	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1198426	24.160 ng	99
83) n-Decane	17.03	58	10209	No Calib	
84) Benzyl Chloride	18.56	91	2052447	50.410 ng	100
85) 1,3-Dichlorobenzene	18.58	146	714132	23.057 ng	99
86) 1,4-Dichlorobenzene	18.66	146	710792	22.287 ng	100
87) sec-Butylbenzene	18.74	105	1542454	23.479 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1332724	24.432 ng	100
89) 1,2,3-Trimethylbenzene	17.03	105	1409120	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	696616	22.246 ng	100
91) d-Limonene	19.08	68	407143	25.702 ng	99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	545516	51.149 ng	97
93) n-Undecane	17.96	58	22224	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1020907	46.824 ng	100
95) Naphthalene	20.94	128	1478881	22.262 ng	100
96) n-Dodecane	18.92	58	28674	No Calib #	
97) Hexachlorobutadiene	21.30	225	362637	22.133 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1138983	24.459 ng	100
100) n-Butylbenzene	19.39	91	1254611	24.385 ng	99
101) 1,1,1,2-Tetrachloroethane	14.89	131	336645	24.491 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132505.D Vial: 2
Acq On : 13 Jan 2025 1:36 Operator: SC
Sample : LCSD R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12272408 (1/26)

Quant Time: Jan 13 06:13:27 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Response Factor Report MS09

Method Path : I:\MS09\METHODS\
Method File : R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Nov 19 16:47:40 2024
Response Via : Initial Calibration

11/20/24

Calibration Files
0.1 =11192407.D 0.2 =11192408.D 0.5 =11192409.D 1.0 =11192410.D 5.0 =11192411.D 25 =11192
100 =11192414.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	ISTD	----------							
2)	T	Propene	1.269	1.227	1.324	1.334	1.436	1.378	1.330	1.383	1.335	4.96
3)	T	Dichlorodifluo...	2.341	2.401	2.486	2.493	2.475	2.507	2.383	2.463	2.444	2.47
4)	T	Chloromethane	1.699	1.833	1.917	1.956	1.830	1.956	1.777	1.549	1.815	7.68
5)	T	1,2-Dichloro-1...	1.061	1.135	1.141	1.174	1.162	1.171	1.174	1.236	1.157	4.26
6)	T	Vinyl Chloride	1.121	1.259	1.326	1.383	1.443	1.446	1.559	1.633	1.396	11.71
7)	T	1,3-Butadiene	0.712	0.843	0.852	0.879	0.928	0.967	1.001	1.182	0.920	14.95
8)	T	Bromomethane	0.818	0.969	0.978	1.004	0.723	1.005	0.757	0.792	0.881	13.57
9)	T	Chloroethane	0.558	0.715	0.744	0.756	0.742	0.773	0.789	0.803	0.735	10.45
10)	T	Ethanol	0.808	0.791	0.952	0.979	0.992	0.974	0.973	0.927	0.925	8.64
11)	T	Acetonitrile			2.037	2.201	2.294	2.277	2.679	2.781	2.378	12.15
12)	T	Acrolein	0.629	0.722	0.734	0.782	0.844	0.859	0.876	0.877	0.790	11.35
13)	T	Acetone	0.818	0.858	0.847	0.860	0.858	0.835	0.838	0.819	0.842	2.04
14)	T	Trichlorofluor...	2.155	2.235	2.262	2.316	2.304	2.328	2.327	2.405	2.292	3.25
15)	T	2-Propanol (Is...	2.149	3.047	3.104	3.230	3.112	3.301	3.188	2.982	3.014	12.08
16)	T	Acrylonitrile	1.080	1.352	1.407	1.513	1.653	1.664	1.656	1.688	1.502	14.17
17)	T	1,1-Dichloroet...	0.968	0.979	1.005	1.041	1.054	1.107	1.114	1.158	1.053	6.52
18)	T	2-Methyl-2-Pro...	2.491	2.709	2.861	2.929	2.111	2.656	2.134	1.429	2.415	20.75
19)	T	Methylene Chlo...	1.107	1.210	1.181	1.164	1.175	1.209	1.200	1.230	1.184	3.21
20)	T	3-Chloro-1-pro...	1.840	2.071	2.111	2.088	1.991	1.933	1.887	1.800	1.965	6.03
21)	T	Trichlorotrifl...	1.002	1.031	0.993	1.026	1.033	1.061	1.042	1.082	1.034	2.80
22)	T	Carbon Disulfide	3.363	3.563	3.760	3.923	4.009	4.070	3.953	3.819	3.808	6.31
23)	T	trans-1,2-Dich...	1.248	1.459	1.509	1.599	1.713	1.788	1.794	1.834	1.618	12.59
24)	T	1,1-Dichloroet...	1.835	1.964	1.950	1.997	2.049	2.091	2.080	2.100	2.008	4.52
25)	T	Methyl tert-Bu...	2.564	2.842	2.964	3.143	3.146	3.333	3.194	2.708	2.987	8.86
26)	T	Vinyl Acetate	0.124	0.169	0.172	0.197	0.231	0.245	0.245	0.247	0.204	22.46
27)	T	2-Butanone (MEK)	0.495	0.623	0.652	0.678	0.716	0.747	0.745	0.753	0.676	12.95
28)	T	cis-1,2-Dichlo...	1.346	1.428	1.526	1.571	1.626	1.694	1.693	1.727	1.576	8.66
29)	T	Diisopropyl Ether	0.743	0.911	0.833	0.861	0.875	0.877	0.858	0.850	0.851	5.77
30)	T	Ethyl Acetate	0.295	0.368	0.419	0.436	0.471	0.469	0.449	0.432	0.417	14.14
31)	T	n-Hexane	1.804	1.911	1.962	1.962	1.986	1.920	1.802	1.676	1.878	5.72
32)	T	Chloroform	1.753	1.976	2.042	2.046	2.076	2.115	2.113	2.158	2.035	6.23
33)	S	1,2-Dichloroet...	1.673	1.678	1.686	1.670	1.678	1.687	1.735	1.818	1.703	2.98
34)	T	Tetrahydrofura...	0.514	0.547	0.612	0.644	0.676	0.702	0.700	0.705	0.638	11.58
35)	T	Ethyl tert-But...	1.007	1.107	1.194	1.238	1.270	1.339	1.339	1.357	1.231	10.09
36)	T	1,2-Dichloroet...	1.509	1.618	1.722	1.729	1.742	1.810	1.806	1.852	1.724	6.51
37)	IR	1,4-Difluorobenzen...	----------	ISTD	----------							
38)	T	1,1,1-Trichlor...	0.388	0.403	0.430	0.436	0.446	0.463	0.450	0.445	0.433	5.83
39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	1.022	1.046	0.996	0.999	1.009	1.019	0.982	0.953	1.003	2.79
42)	T	Carbon Tetrach...	0.346	0.380	0.392	0.397	0.416	0.437	0.424	0.419	0.401	7.22
43)	T	Cyclohexane	0.308	0.341	0.351	0.357	0.370	0.375	0.357	0.341	0.350	5.94
44)	T	tert-Amyl Meth...	0.555	0.599	0.626	0.646	0.689	0.720	0.691	0.662	0.648	8.34
45)	T	1,2-Dichloropr...	0.206	0.238	0.246	0.250	0.257	0.262	0.254	0.246	0.245	7.07
46)	T	Bromodichlorom...	0.279	0.330	0.337	0.341	0.365	0.384	0.375	0.370	0.347	9.78
47)	T	Trichloroethene	0.274	0.285	0.278	0.283	0.291	0.301	0.291	0.284	0.286	2.94
48)	T	1,4-Dioxane	0.115	0.146	0.168	0.171	0.191	0.206	0.200	0.192	0.174	17.67
49)	T	2,2,4-Trimethy...	0.952	0.984	1.055	1.088	1.115	1.123	1.072	1.009	1.050	5.94
50)	T	Methyl Methacr...	0.058	0.075	0.081	0.093	0.104	0.109	0.107	0.104	0.092	20.12
51)	T	n-Heptane	0.187	0.210	0.224	0.228	0.243	0.241	0.233	0.225	0.224	8.12
52)	T	cis-1,3-Dichlo...	0.294	0.338	0.359	0.383	0.440	0.470	0.461	0.453	0.400	16.43
53)	T	4-Methyl-2-pen...	0.144	0.184	0.206	0.222	0.245	0.256	0.243	0.226	0.216	17.25
54)	T	trans-1,3-Dich...			0.277	0.307	0.366	0.410	0.406	0.405	0.362	15.79

55)	T	1,1,2-Trichlor...	0.200	0.230	0.240	0.245	0.258	0.264	0.255	0.250	0.243	8.34
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	5.680	5.604	5.566	5.595	5.534	5.434	5.482	5.466	5.545	1.48
58)	T	Toluene	5.482	5.466	5.312	5.403	5.411	5.426	5.226	4.958	5.335	3.26
59)	T	2-Hexanone	1.763	2.272	2.436	2.718	3.001	3.096	2.901	2.613	2.600	16.87
60)	T	Dibromochlorom...	1.323	1.376	1.470	1.559	1.692	1.801	1.765	1.745	1.591	11.68
61)	T	1,2-Dibromoethane	1.215	1.395	1.398	1.536	1.612	1.706	1.675	1.625	1.520	11.18
62)	T	n-Butyl Acetate	2.057	2.450	2.646	3.027	3.405	3.548	3.305	2.937	2.922	17.49
63)	T	n-Octane	0.942	1.015	1.101	1.185	1.198	1.195	1.146	1.067	1.106	8.42
64)	T	Tetrachloroethene	1.459	1.533	1.603	1.625	1.625	1.661	1.614	1.578	1.587	4.04
65)	T	Chlorobenzene	3.655	3.721	3.838	3.832	3.865	3.917	3.741	3.543	3.764	3.28
66)	T	Ethylbenzene	5.128	5.572	5.621	6.005	6.390	6.484	6.179	5.817	5.899	7.73
67)	T	m- & p-Xylenes	4.241	4.472	4.786	5.061	5.226	5.255	4.991	4.593	4.828	7.63
68)	T	Bromoform	0.966	1.024	1.117	1.204	1.373	1.512	1.480	1.440	1.264	16.99
69)	T	Styrene	2.384	2.646	2.990	3.340	3.826	4.092	3.946	3.762	3.373	18.94
70)	T	o-Xylene	4.015	4.362	4.788	5.068	5.128	5.213	4.977	4.674	4.778	8.67
71)	T	n-Nonane	2.088	2.275	2.580	2.722	2.855	2.821	2.623	2.343	2.538	10.87
72)	T	1,1,2,2-Tetrac...	1.895	2.141	2.230	2.380	2.456	2.461	2.376	2.252	2.274	8.37
73)	S	Bromofluoroben...	1.911	1.888	1.911	1.922	1.915	1.907	1.914	1.941	1.914	0.77
74)	T	Cumene	5.409	5.609	5.890	6.144	6.363	6.412	6.063	5.669	5.945	6.12
75)	T	alpha-Pinene	2.429	2.527	2.711	2.966	3.254	3.350	3.208	3.018	2.933	11.74
76)	T	n-Propylbenzene	5.700	6.652	6.943	7.541	7.786	7.750	7.310	6.706	7.049	9.96
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	4.490	4.941	5.478	5.789	6.198	6.383	6.035	5.510	5.603	11.46
79)	T	1,3,5-Trimethy...	4.128	4.331	4.856	5.208	5.387	5.402	5.123	4.754	4.899	9.69
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	3.866	4.422	4.964	5.382	5.626	5.592	5.171	4.615	4.955	12.47
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride			2.996	3.601	4.446	4.913	4.548	3.895	4.067	17.34
85)	T	1,3-Dichlorobe...	2.674	3.027	3.110	3.273	3.292	3.353	3.143	2.877	3.094	7.42
86)	T	1,4-Dichlorobe...	2.908	2.987	3.161	3.291	3.311	3.445	3.277	3.105	3.185	5.64
87)	T	sec-Butylbenzene	5.608	6.077	6.654	7.003	7.209	7.153	6.706	6.081	6.562	8.87
88)	T	4-Isopropyltol...	4.200	4.979	5.392	5.827	6.083	6.149	5.733	5.225	5.448	11.91
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	2.779	3.009	3.103	3.276	3.289	3.363	3.186	3.016	3.128	6.10
91)	T	d-Limonene	0.939	1.292	1.429	1.620	1.858	1.946	1.855	1.719	1.582	21.68
92)	T	1,2-Dibromo-3-...	0.768	0.876	0.954	1.076	1.205	1.271	1.220	1.152	1.065	17.02
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	1.680	1.913	1.981	2.189	2.419	2.591	2.444	2.205	2.178	14.07
95)	T	Naphthalene			5.077	5.940	6.911	7.833	7.383	6.667	6.635	15.05
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	1.577	1.536	1.565	1.646	1.709	1.755	1.686	1.618	1.636	4.66
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	3.994	4.370	4.648	5.040	5.165	5.072	4.691	4.230	4.651	9.20
100)	T	n-Butylbenzene	3.918	4.471	4.983	5.480	5.828	5.905	5.532	4.995	5.139	13.39
101)	T	1,1,1,2-Tetrac...	1.218	1.275	1.362	1.392	1.448	1.486	1.431	1.373	1.373	6.50

(#) = Out of Range

R09111924.M Wed Nov 20 10:15:11 2024

Primary Source Standards Concentrations (Working & Initial Calibration)

11/22/24

1ng/L Std. ID:		40ng/L Std. ID:	
4ng/L Std. ID:	S37-11182404	200ng/L Std. ID:	S37-11182402
20ng/L Std. ID:	S37-11182403	1000ng/L Std. ID:	

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	20	200	200	200
	Source Std.			Primary Working Standards				Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Propene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Dichlorodifluoromethane	1.01	1010	202	40.4	20.2	4.04	1.01		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
Chloromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Freon-114	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Vinyl Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,3-Butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Chloroethane	1.10	1100	220	44.0	22.0	4.40	1.10		0.110	0.220	0.550	1.10	5.50	27.50	55.0	110
Ethanol	5.25	5250	1050	210.0	105.0	21.00	5.25		0.525	1.050	2.625	5.25	26.25	131.25	262.5	525
Acetonitrile	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Acrolein	2.18	2180	436	87.2	43.6	8.72	2.18		0.218	0.436	1.090	2.18	10.90	54.50	109.0	218
Acetone	5.12	5120	1024	204.8	102.4	20.48	5.12		0.512	1.024	2.560	5.12	25.60	128.00	256.0	512
Trichlorofluoromethane	1.01	1010	202	40.4	20.2	4.04	1.01		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
Isopropanol	2.06	2060	412	82.4	41.2	8.24	2.06		0.206	0.412	1.030	2.06	10.30	51.50	103.0	206
Acrylonitrile	2.08	2080	416	83.2	41.6	8.32	2.08		0.208	0.416	1.040	2.08	10.40	52.00	104.0	208
1,1-Dichloroethene	0.91	910	182	36.4	18.2	3.64	0.91		0.091	0.182	0.455	0.91	4.55	22.75	45.5	91
tert-Butanol	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
Methylene Chloride	0.91	910	182	36.4	18.2	3.64	0.91		0.091	0.182	0.455	0.91	4.55	22.75	45.5	91
Allyl Chloride	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
Trichlorotrifluoroethane	0.92	920	184	36.8	18.4	3.68	0.92		0.092	0.184	0.460	0.92	4.60	23.00	46.0	92
Carbon Disulfide	2.07	2070	414	82.8	41.4	8.28	2.07		0.207	0.414	1.035	2.07	10.35	51.75	103.5	207
trans-1,2-Dichloroethene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,1-Dichloroethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Methyl tert-Butyl Ether	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Vinyl Acetate	5.29	5290	1058	211.6	105.8	21.16	5.29		0.529	1.058	2.645	5.29	26.45	132.25	264.5	529
2-Butanone	2.04	2040	408	81.6	40.8	8.16	2.04		0.204	0.408	1.020	2.04	10.20	51.00	102.0	204
cis-1,2-Dichloroethene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Diisopropyl Ether	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
Ethyl Acetate	1.95	1950	390	78.0	39.0	7.80	1.95		0.195	0.390	0.975	1.95	9.75	48.75	97.5	195
n-Hexane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Chloroform	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Tetrahydrofuran	1.90	1900	380	76.0	38.0	7.60	1.90		0.190	0.380	0.950	1.90	9.50	47.50	95.0	190
Ethyl tert-Butyl Ether	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
1,2-Dichloroethane	1.01	1010	202	40.4	20.2	4.04	1.01		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
1,1,1-Trichloroethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Benzene	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Carbon Tetrachloride	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Cyclohexane	2.08	2080	416	83.2	41.6	8.32	2.08		0.208	0.416	1.040	2.08	10.40	52.00	104.0	208
tert-Amyl Methyl Ether	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
1,2-Dichloropropane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Bromodichloromethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Trichloroethene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,4-Dioxane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Isooctane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Methyl Methacrylate	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
n-Heptane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:		40ng/L Std. ID:	
4ng/L Std. ID:	S37-11182404	200ng/L Std. ID:	S37-11182402
20ng/L Std. ID:	S37-11182403	1000ng/L Std. ID:	

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	20	200	200	200
	Source Std.			Primary Working Standards				Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
cis-1,3-Dichloropropene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
4-Methyl-2-pentanone	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
trans-1,3-Dichloropropene	0.99	990	198	39.6	19.8	3.96	0.99		0.099	0.198	0.495	0.99	4.95	24.75	49.5	99
1,1,2-Trichloroethane	1.10	1100	220	44.0	22.0	4.40	1.10		0.110	0.220	0.550	1.10	5.50	27.50	55.0	110
Toluene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
2-Hexanone	2.08	2080	416	83.2	41.6	8.32	2.08		0.208	0.416	1.040	2.08	10.40	52.00	104.0	208
Dibromochloromethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
1,2-Dibromoethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
n-Butyl Acetate	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
n-Octane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Tetrachloroethene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Chlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Ethylbenzene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
m-&p-Xylene	2.14	2140	428	85.6	42.8	8.56	2.14		0.214	0.428	1.070	2.14	10.70	53.50	107.0	214
Bromoform	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
Styrene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
o-Xylene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
n-Nonane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,1,2,2-Tetrachloroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Cumene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
alpha-Pinene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Propylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
4-Ethyltoluene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,3,5-Trimethylbenzene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2,4-Trimethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzyl Chloride	2.15	2150	430	86.0	43.0	8.60	2.15		0.215	0.430	1.075	2.15	10.75	53.75	107.5	215
1,3-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,4-Dichlorobenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
sec-Butylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
p-Isopropyltoluene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,2-Dichlorobenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
d-Limonene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
1,2-Dibromo-3-chloropropane	2.11	2110	422	84.4	42.2	8.44	2.11		0.211	0.422	1.055	2.11	10.55	52.75	105.5	211
1,2,4-Trichlorobenzene	2.17	2170	434	86.8	43.4	8.68	2.17		0.217	0.434	1.085	2.17	10.85	54.25	108.5	217
Naphthalene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
Hexachloro-1,3-butadiene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
tert-Butylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
n-Butylbenzene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
1,1,1,2-Tetrachloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107

Calibration Status Report MS09

Method : I:\MS09\METHODS\R09111924.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Nov 19 16:47:40 2024
Response via : Initial Calibration

11/20/24

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS09\DATA\2024_11\19\11192407.D
2	0.2	0	13	I:\MS09\DATA\2024_11\19\11192408.D
3	0.5	1	13	I:\MS09\DATA\2024_11\19\11192409.D
4	1.0	1	13	I:\MS09\DATA\2024_11\19\11192410.D
5	5.0	5	13	I:\MS09\DATA\2024_11\19\11192411.D
6	25	26	13	I:\MS09\DATA\2024_11\19\11192412.D
7	50	53	13	I:\MS09\DATA\2024_11\19\11192413.D
8	100	105	13	I:\MS09\DATA\2024_11\19\11192414.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Nov 19 16:45 2024	Nov 19 15:57 2024	19 Nov 2024 12:36
2	0.2	Nov 19 16:45 2024	Nov 19 15:55 2024	19 Nov 2024 13:08
3	0.5	Nov 19 16:46 2024	Nov 19 15:52 2024	19 Nov 2024 13:40
4	1.0	Nov 19 16:46 2024	Nov 19 15:51 2024	19 Nov 2024 14:12
5	5.0	Nov 19 16:46 2024	Nov 19 15:49 2024	19 Nov 2024 14:45
6	25	Nov 19 16:47 2024	Nov 19 15:47 2024	19 Nov 2024 15:17
7	50	Nov 19 16:47 2024	Nov 19 16:11 2024	19 Nov 2024 15:49
8	100	Nov 19 16:47 2024	Nov 19 16:43 2024	19 Nov 2024 16:21

R09111924.M Wed Nov 20 09:06:49 2024

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192407.D Vial: 5
Acq On : 19 Nov 2024 12:36 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

11/19/24

Quant Time: Nov 19 15:57:50 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	143011	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.30	114	641588	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.84	54	117890	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	239225	11.842	ng		-0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.72%				
57) Toluene-d8 (SS2)	12.43	98	669631	12.858	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
73) Bromofluorobenzene (SS3)	16.82	174	225286	13.763	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.08%				
Target Compounds							Qvalue
2) Propene	3.34	42	1524	0.074	ng		97
3) Dichlorodifluoromethan...	3.40	85	2705	0.085	ng	#	94
4) Chloromethane	3.55	50	2061m	0.079	ng		
5) 1,2-Dichloro-1,1,2,2-t...	3.64	135	1311	0.094	ng		93
6) Vinyl Chloride	3.73	62	1359	0.063	ng		93
7) 1,3-Butadiene	3.85	54	864	0.063	ng	#	68
8) Bromomethane	4.06	94	954	0.078	ng		99
9) Chloroethane	4.20	64	702	0.065	ng		79
10) Ethanol	4.31	45	4853	0.338	ng		92
11) Acetonitrile	4.46	41	2084	0.059	ng	#	13
12) Acrolein	4.56	56	1569	0.142	ng		89
13) Acetone	4.65	58	4789	0.412	ng		90
14) Trichlorofluoromethane	4.78	101	2490	0.088	ng		100
15) 2-Propanol (Isopropanol)	4.88	45	5064	0.116	ng		88
16) Acrylonitrile	5.02	53	2571	0.120	ng		96
17) 1,1-Dichloroethene	5.28	96	1008	0.073	ng		94
18) 2-Methyl-2-Propanol (t...	5.41	59	5956	0.197	ng	#	79
19) Methylene Chloride	5.37	84	1152	0.075	ng		86
20) 3-Chloro-1-propene (Al...	5.47	41	2295m	0.079	ng		
21) Trichlorotrifluoroethane	5.60	151	1055	0.084	ng		92
22) Carbon Disulfide	5.63	76	7964	0.147	ng		93
23) trans-1,2-Dichloroethene	6.15	61	1499	0.068	ng		99
24) 1,1-Dichloroethane	6.32	63	2162	0.079	ng		91
25) Methyl tert-Butyl Ether	6.40	73	3110	0.080	ng		95
26) Vinyl Acetate	6.46	86	748	0.260	ng	#	31
27) 2-Butanone (MEK)	6.69	72	1155	0.123	ng	#	49
28) cis-1,2-Dichloroethene	7.08	61	1586	0.075	ng		94
29) Diisopropyl Ether	7.30	87	1777	0.159	ng	#	91
30) Ethyl Acetate	7.30	61	659	0.117	ng		88
31) n-Hexane	7.31	57	2146	0.084	ng	#	89
32) Chloroform	7.35	83	2126	0.085	ng		100
34) Tetrahydrofuran (THF)	7.78	72	1118	0.126	ng		94
35) Ethyl tert-Butyl Ether	7.84	87	2407	0.149	ng		96
36) 1,2-Dichloroethane	8.11	62	1744	0.080	ng		91
38) 1,1,1-Trichloroethane	8.40	97	2051	0.087	ng		98
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	5352	0.086	ng		97
42) Carbon Tetrachloride	9.07	117	1813	0.082	ng		100
43) Cyclohexane	9.22	84	3292	0.154	ng		99
44) tert-Amyl Methyl Ether	9.62	73	5982	0.153	ng		93
45) 1,2-Dichloropropane	9.86	63	1131	0.072	ng		97
46) Bromodichloromethane	10.08	83	1530	0.078	ng		98
47) Trichloroethene	10.16	130	1478	0.094	ng		91
48) 1,4-Dioxane	10.14	88	628	0.060	ng		98
49) 2,2,4-Trimethylpentane...	10.23	57	5180	0.079	ng		99
50) Methyl Methacrylate	10.41	100	632	0.122	ng		93

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192407.D Vial: 5
Acq On : 19 Nov 2024 12:36 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:57:50 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

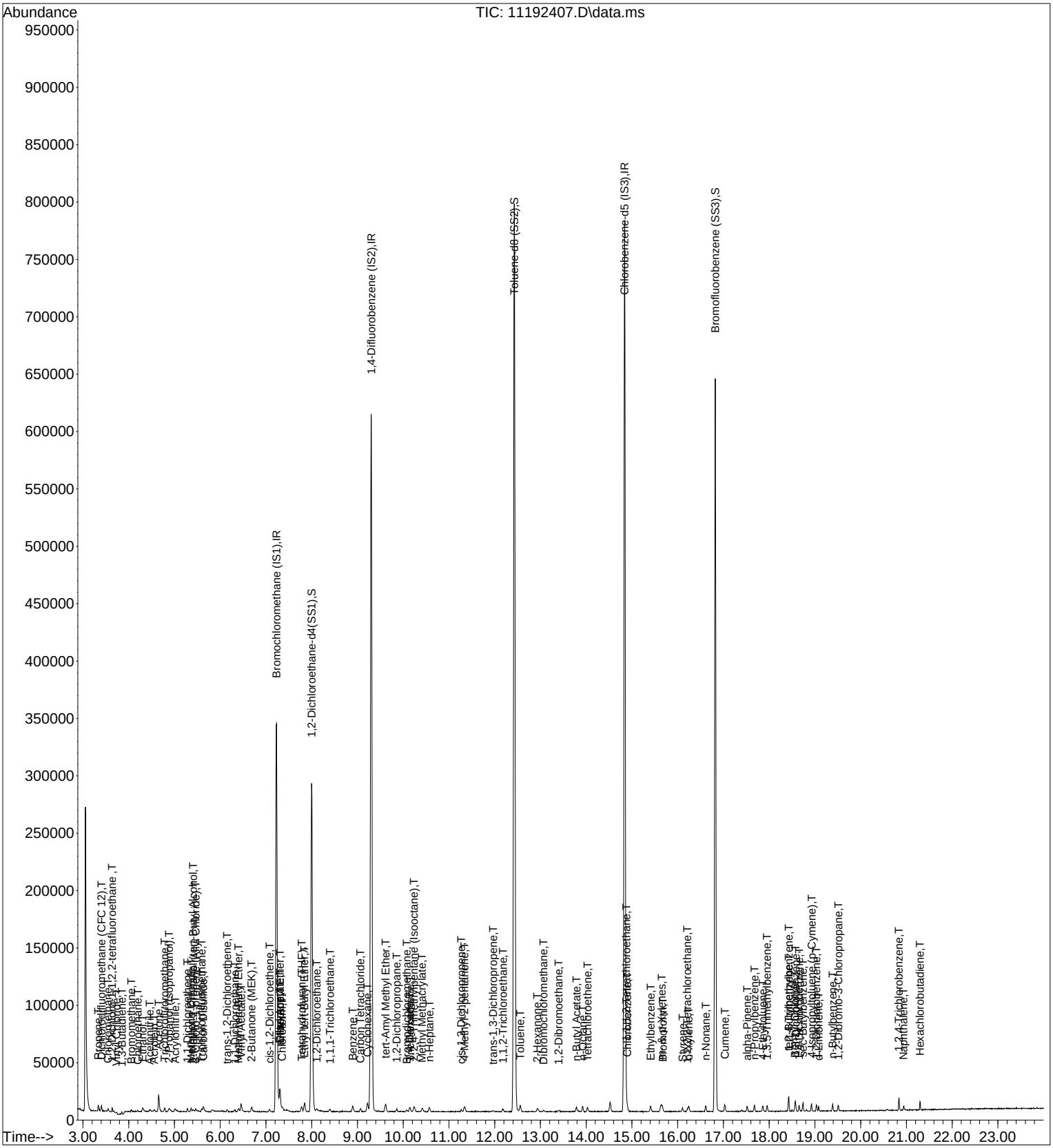
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.58	71	998	0.071 ng	#	86
52) cis-1,3-Dichloropropene	11.27	75	1583	0.063 ng		74
53) 4-Methyl-2-pentanone	11.34	58	1549	0.114 ng		75
54) trans-1,3-Dichloropropene	11.97	75	791	0.039 ng		79
55) 1,1,2-Trichloroethane	12.18	97	1129	0.082 ng		96
58) Toluene	12.56	91	5635	0.107 ng		100
59) 2-Hexanone	12.93	43	3459	0.122 ng		97
60) Dibromochloromethane	13.07	129	1285	0.086 ng		84
61) 1,2-Dibromoethane	13.40	107	1203	0.083 ng		94
62) n-Butyl Acetate	13.79	43	4074	0.127 ng		93
63) n-Octane	13.93	57	942	0.080 ng	#	84
64) Tetrachloroethene	14.03	166	1472	0.099 ng		99
65) Chlorobenzene	14.90	112	3688	0.103 ng		99
66) Ethylbenzene	15.41	91	5272	0.090 ng		96
67) m- & p-Xylenes	15.65	91	8559	0.182 ng		97
68) Bromoform	15.67	173	993	0.084 ng		85
69) Styrene	16.11	104	2383	0.071 ng		93
70) o-Xylene	16.24	91	4090	0.087 ng		98
71) n-Nonane	16.62	43	2068	0.073 ng		96
72) 1,1,2,2-Tetrachloroethane	16.21	83	1930	0.087 ng		96
74) Cumene	17.03	105	5356	0.094 ng		95
75) alpha-Pinene	17.52	93	2451	0.085 ng		96
76) n-Propylbenzene	17.68	91	5591	0.081 ng		97
77) 3-Ethyltoluene	17.03	105	5356	No Calib		
78) 4-Ethyltoluene	17.86	105	4404	0.081 ng		96
79) 1,3,5-Trimethylbenzene	17.95	105	4205	0.089 ng		96
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.03	105	5356	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	3828	0.081 ng		98
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.56	91	4261	0.118 ng		98
85) 1,3-Dichlorobenzene	18.58	146	2673	0.097 ng		99
86) 1,4-Dichlorobenzene	18.66	146	2880	0.102 ng		86
87) sec-Butylbenzene	18.74	105	5501	0.087 ng		95
88) 4-Isopropyltoluene (p-...	18.93	119	4120	0.078 ng		97
89) 1,2,3-Trimethylbenzene	17.03	105	5356	No Calib		
90) 1,2-Dichlorobenzene	19.03	146	2726	0.098 ng		100
91) d-Limonene	19.08	68	912	0.054 ng		89
92) 1,2-Dibromo-3-Chloropr...	19.51	157	1528	0.169 ng	#	75
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.84	180	3438	0.177 ng		93
95) Naphthalene	20.94	128	4129	0.079 ng		92
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.30	225	1562	0.106 ng		90
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.43	119	3955	0.089 ng		99
100) n-Butylbenzene	19.39	91	3806	0.077 ng	#	93
101) 1,1,1,2-Tetrachloroethane	14.88	131	1229	0.100 ng	#	93

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192407.D Vial: 5
Acq On : 19 Nov 2024 12:36 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

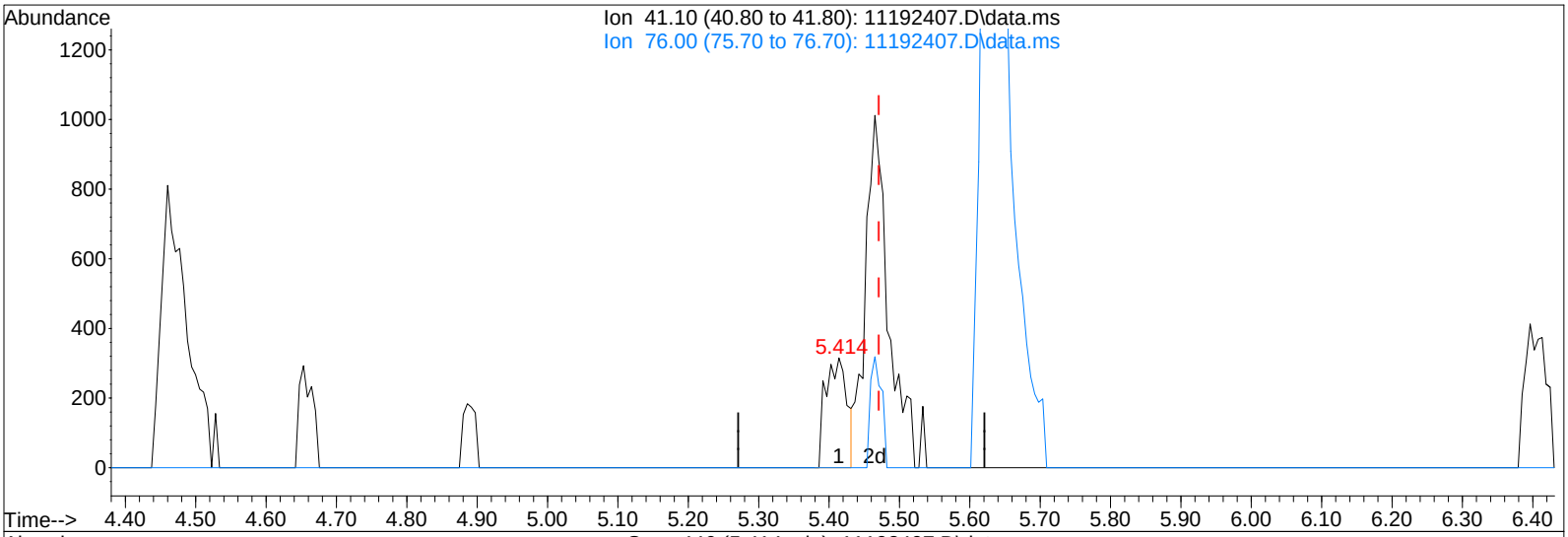
Quant Time: Nov 19 15:57:50 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

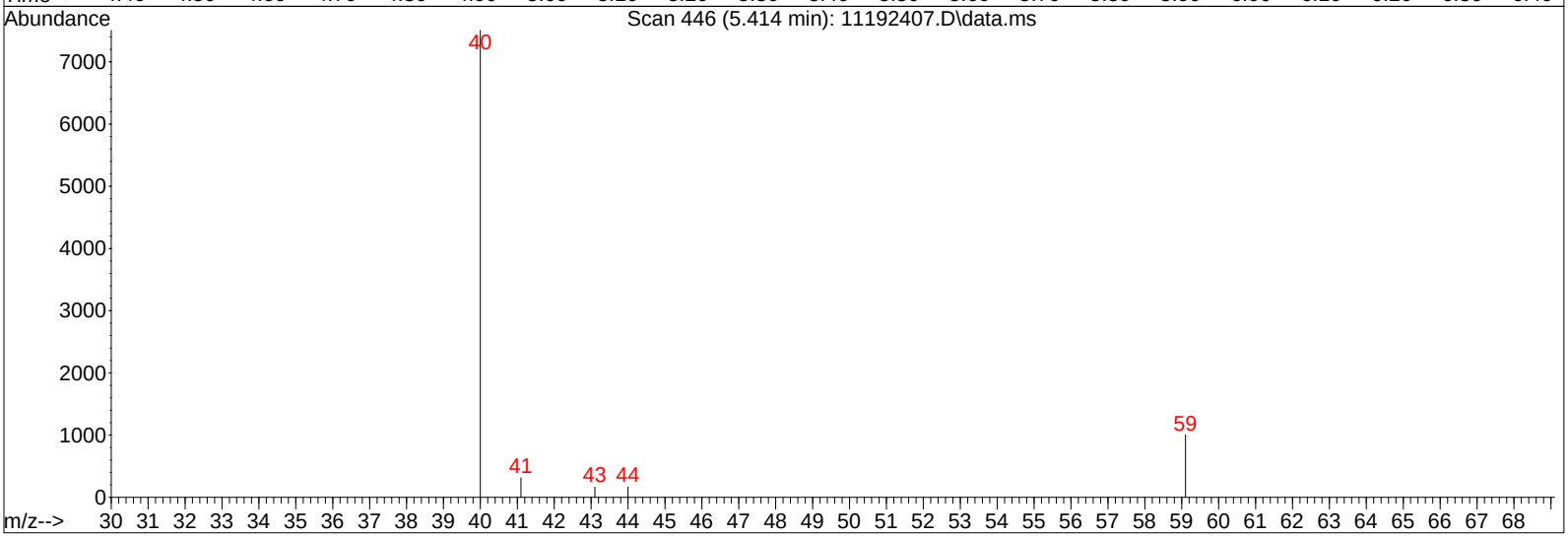


Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192407.D Vial: 5
Acq On : 19 Nov 2024 12:36 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:56:49 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 11192407.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.414min (-0.057) 0.02ng

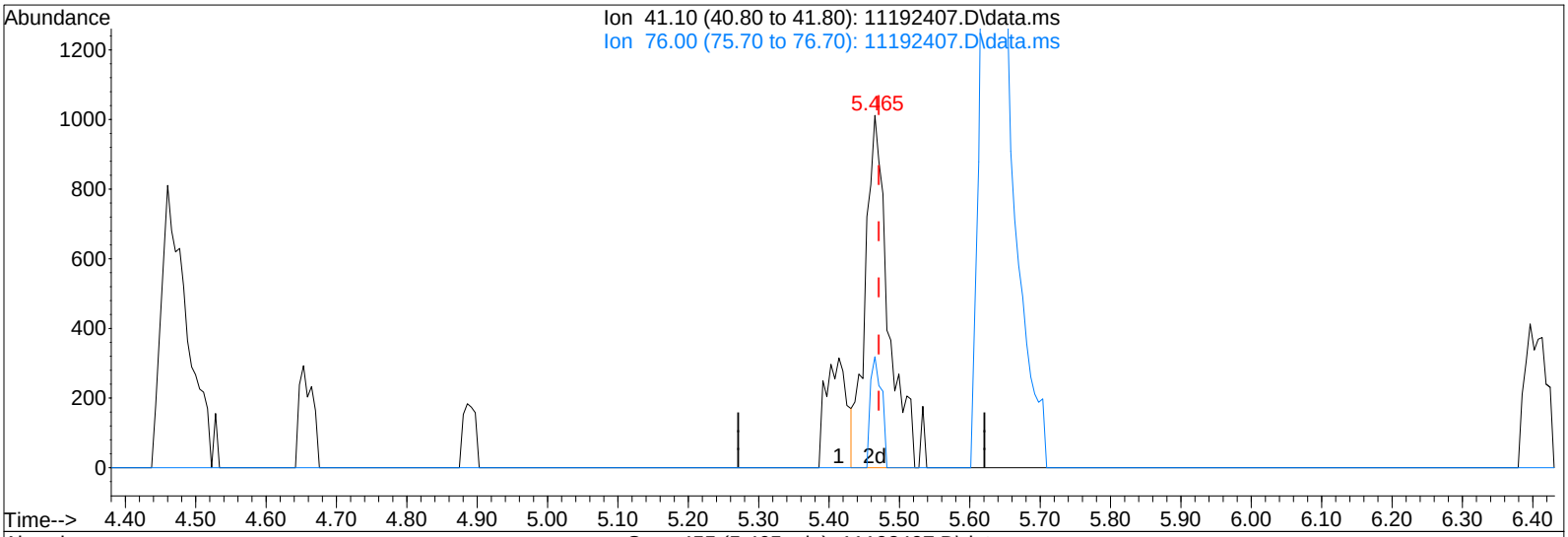
response 663

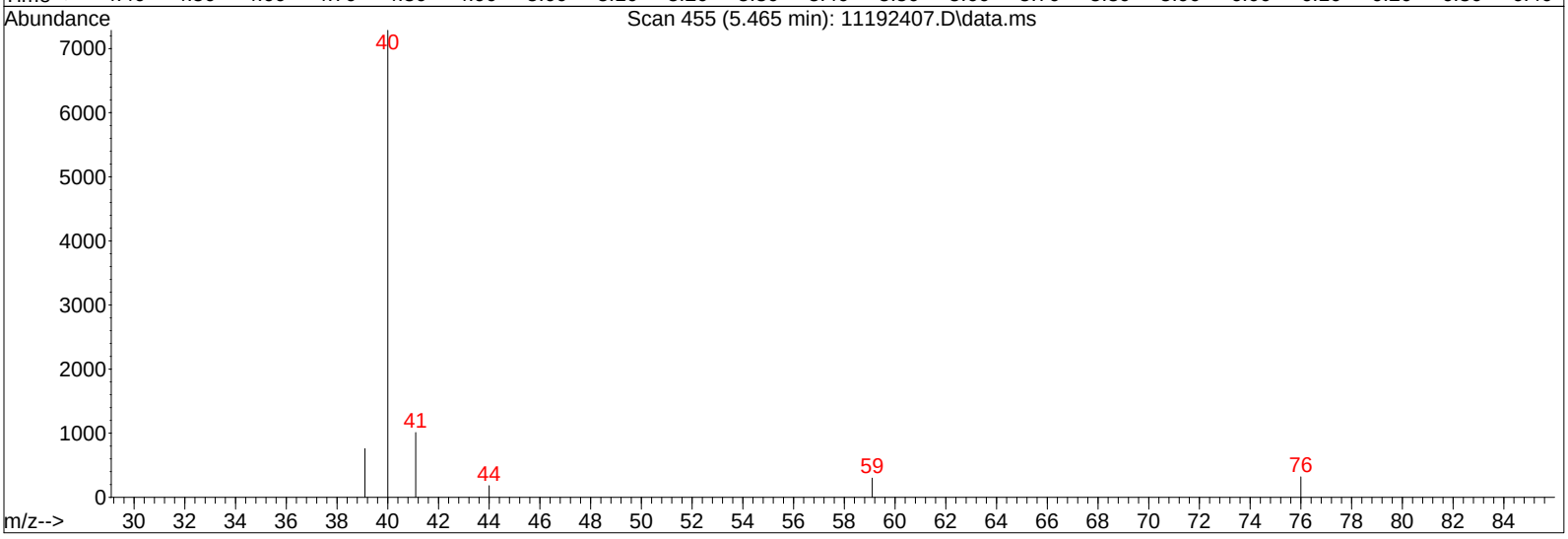
Ion	Exp%	Act%
41.10	100	100
76.00	30.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192407.D Vial: 5
Acq On : 19 Nov 2024 12:36 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:56:49 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 11192407.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.465min (-0.006) 0.08ng m

response 2295

Ion	Exp%	Act%
41.10	100	100
76.00	30.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

WP

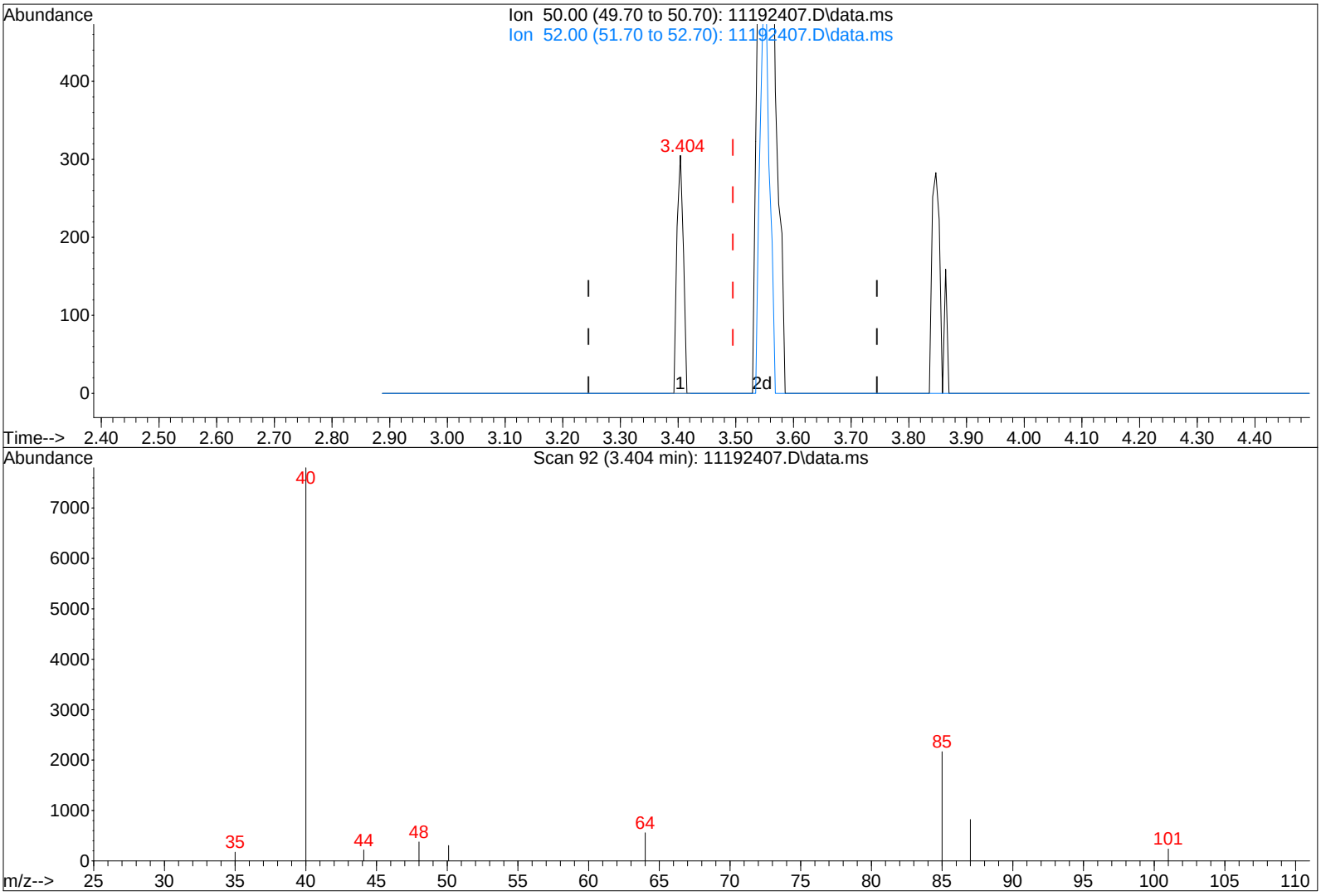
11/19/24

11/21/24

Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192407.D Vial: 5
Acq On : 19 Nov 2024 12:36 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:56:49 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11192407.D\data.ms

(4) Chloromethane (T)

3.404min (-0.091) 0.01ng

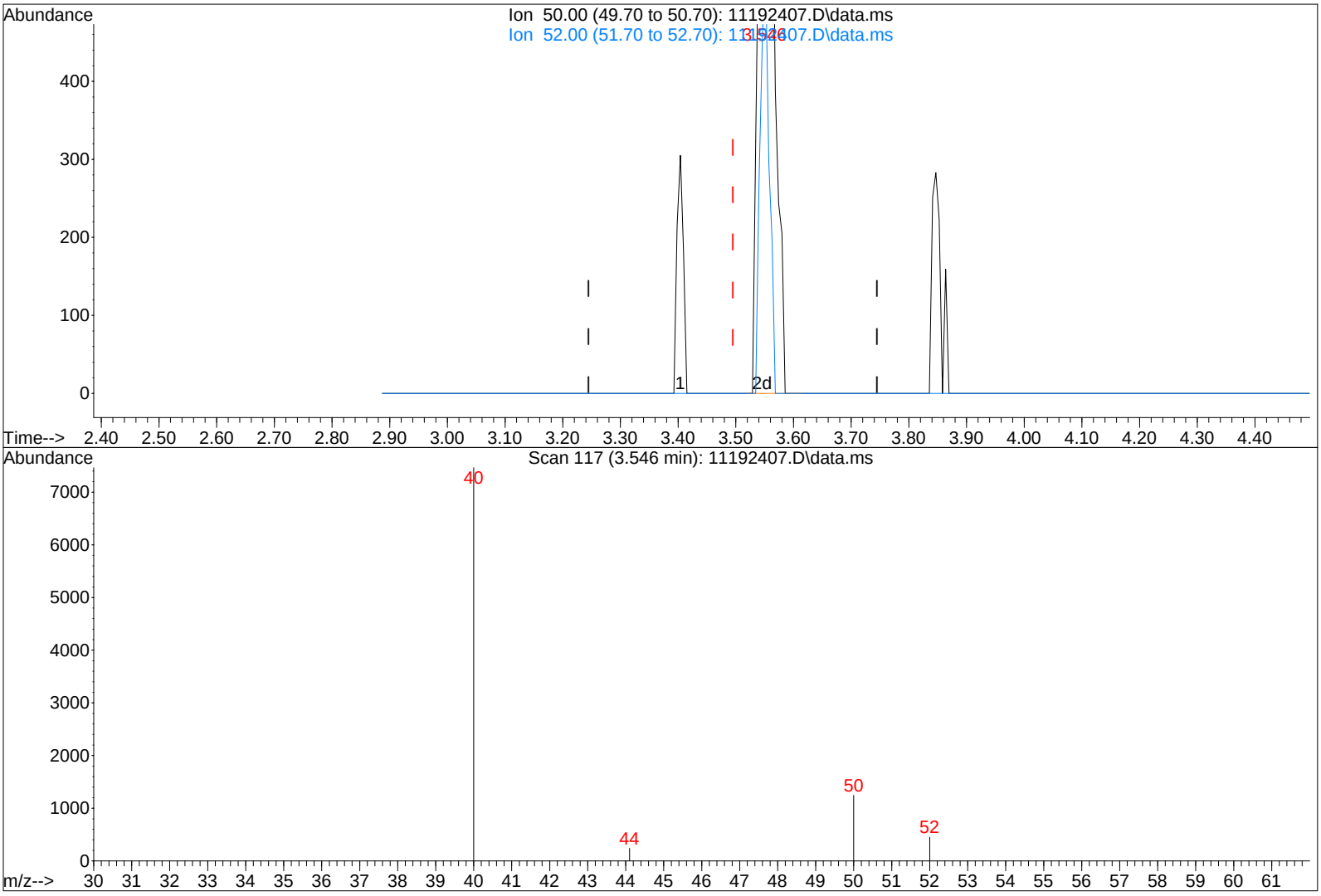
response 238

Ion	Exp%	Act%
50.00	100	100
52.00	33.00	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192407.D Vial: 5
Acq On : 19 Nov 2024 12:36 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:56:49 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11192407.D\data.ms

(4) Chloromethane (T)

3.546min (+0.051) 0.08ng m

response 2061

Ion	Exp%	Act%
50.00	100	100
52.00	33.00	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

MP

11/19/24

TR 11/21/24

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192408.D Vial: 5
Acq On : 19 Nov 2024 13:08 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:55:17 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/19/24

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	141776	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.30	114	631533	12.500	ng		-0.04
56) Chlorobenzene-d5 (IS3)	14.84	54	118764	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	237892	11.879	ng		-0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.04%				
57) Toluene-d8 (SS2)	12.43	98	665574	12.686	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.52%				
73) Bromofluorobenzene (SS3)	16.82	174	224206	13.596	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.80%				
Target Compounds							Qvalue
2) Propene	3.32	42	2922	0.144	ng		92
3) Dichlorodifluoromethan...	3.39	85	5502	0.175	ng		98
4) Chloromethane	3.54	50	4407	0.170	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.63	135	2781	0.201	ng		96
6) Vinyl Chloride	3.72	62	3028	0.142	ng		96
7) 1,3-Butadiene	3.84	54	2027	0.150	ng		87
8) Bromomethane	4.05	94	2241	0.186	ng		99
9) Chloroethane	4.19	64	1783	0.167	ng		93
10) Ethanol	4.29	45	9417	0.663	ng		97
11) Acetonitrile	4.45	41	4997	0.144	ng	#	1
12) Acrolein	4.55	56	3570	0.326	ng		94
13) Acetone	4.65	58	9963	0.864	ng		97
14) Trichlorofluoromethane	4.78	101	5121	0.182	ng		100
15) 2-Propanol (Isopropanol)	4.86	45	14237	0.328	ng		95
16) Acrylonitrile	5.00	53	6379	0.300	ng		94
17) 1,1-Dichloroethene	5.27	96	2020	0.147	ng		98
18) 2-Methyl-2-Propanol (t...	5.41	59	12843	0.428	ng		85
19) Methylene Chloride	5.36	84	2497	0.164	ng		99
20) 3-Chloro-1-propene (Al...	5.46	41	5120m	0.178	ng		
21) Trichlorotrifluoroethane	5.59	151	2152	0.173	ng		100
22) Carbon Disulfide	5.62	76	16731	0.311	ng		96
23) trans-1,2-Dichloroethene	6.14	61	3474	0.158	ng		97
24) 1,1-Dichloroethane	6.32	63	4589	0.168	ng		99
25) Methyl tert-Butyl Ether	6.39	73	6834	0.178	ng		99
26) Vinyl Acetate	6.45	86	2028	0.710	ng	#	69
27) 2-Butanone (MEK)	6.68	72	2882	0.309	ng	#	69
28) cis-1,2-Dichloroethene	7.07	61	3336	0.159	ng		96
29) Diisopropyl Ether	7.29	87	4318	0.390	ng	#	91
30) Ethyl Acetate	7.30	61	1627	0.293	ng		99
31) n-Hexane	7.31	57	4508	0.178	ng	#	95
32) Chloroform	7.36	83	4751	0.192	ng		99
34) Tetrahydrofuran (THF)	7.77	72	2359	0.267	ng	#	89
35) Ethyl tert-Butyl Ether	7.84	87	5246	0.327	ng		92
36) 1,2-Dichloroethane	8.12	62	3708	0.171	ng		99
38) 1,1,1-Trichloroethane	8.40	97	4193	0.182	ng		99
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	10778	0.177	ng		97
42) Carbon Tetrachloride	9.06	117	3916	0.180	ng		99
43) Cyclohexane	9.22	84	7159	0.340	ng		100
44) tert-Amyl Methyl Ether	9.61	73	12702	0.331	ng		97
45) 1,2-Dichloropropane	9.85	63	2577	0.167	ng		93
46) Bromodichloromethane	10.08	83	3568	0.184	ng		92
47) Trichloroethene	10.14	130	3020	0.196	ng		90
48) 1,4-Dioxane	10.14	88	1567	0.151	ng		98
49) 2,2,4-Trimethylpentane...	10.24	57	10536	0.163	ng		96
50) Methyl Methacrylate	10.41	100	1605	0.315	ng		100

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192408.D Vial: 5
Acq On : 19 Nov 2024 13:08 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:55:17 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

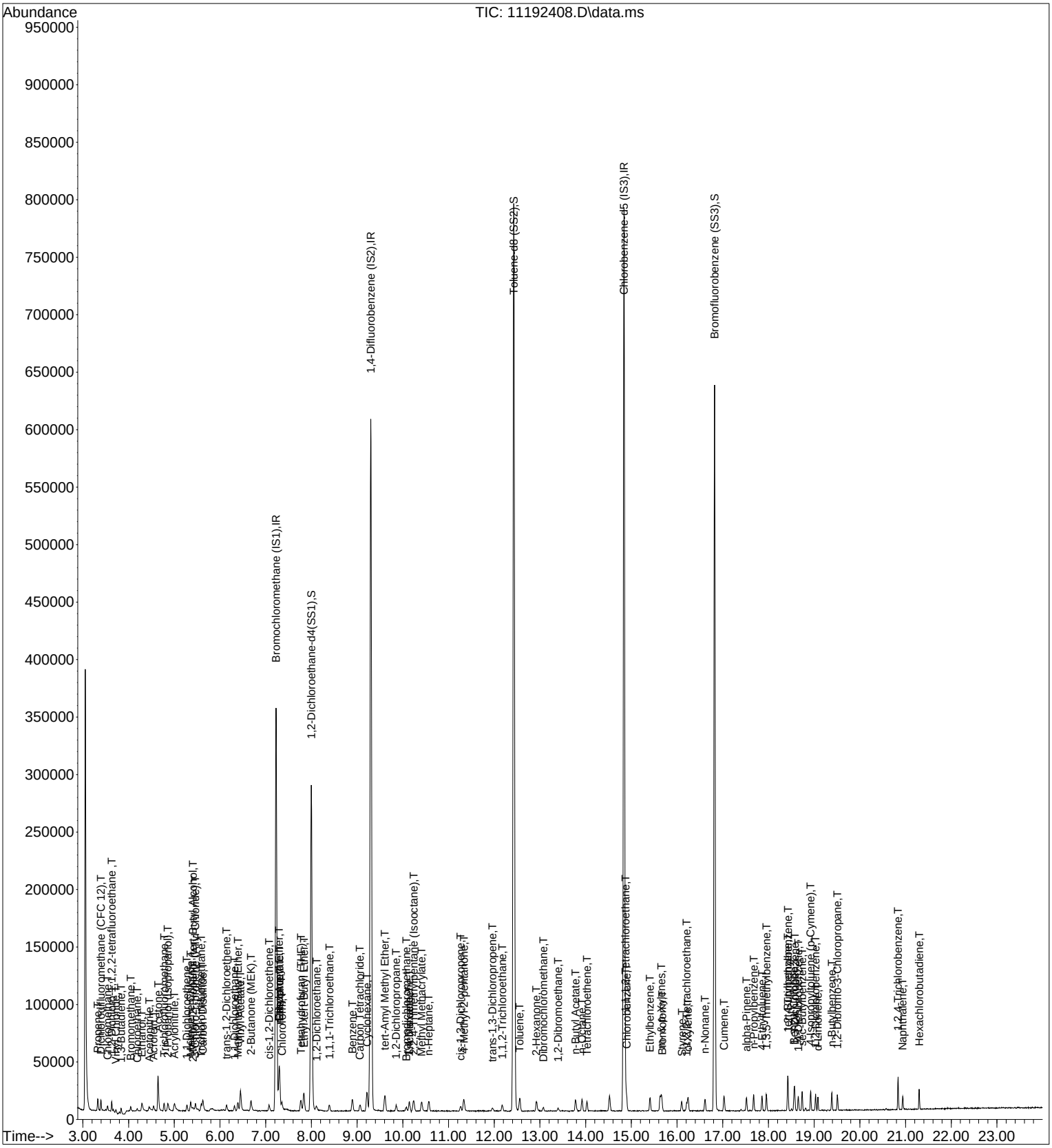
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.56	71	2202	0.158 ng	96
52) cis-1,3-Dichloropropene	11.26	75	3586	0.146 ng	98
53) 4-Methyl-2-pentanone	11.34	58	3900	0.293 ng	90
54) trans-1,3-Dichloropropene	11.96	75	2179	0.110 ng	99
55) 1,1,2-Trichloroethane	12.18	97	2556	0.188 ng	94
58) Toluene	12.56	91	11322	0.214 ng	98
59) 2-Hexanone	12.92	43	8979	0.315 ng	91
60) Dibromochloromethane	13.07	129	2694	0.179 ng	100
61) 1,2-Dibromoethane	13.40	107	2784	0.191 ng	96
62) n-Butyl Acetate	13.78	43	9778	0.303 ng	96
63) n-Octane	13.92	57	2044	0.173 ng	91
64) Tetrachloroethene	14.03	166	3116	0.208 ng	97
65) Chlorobenzene	14.90	112	7566	0.210 ng	99
66) Ethylbenzene	15.41	91	11540	0.196 ng	97
67) m- & p-Xylenes	15.66	91	18186	0.384 ng	98
68) Bromoform	15.67	173	2121	0.178 ng	93
69) Styrene	16.11	104	5329	0.158 ng	95
70) o-Xylene	16.24	91	8952	0.188 ng	99
71) n-Nonane	16.61	43	4539	0.158 ng	92
72) 1,1,2,2-Tetrachloroethane	16.21	83	4393	0.196 ng	100
74) Cumene	17.03	105	11191	0.194 ng	100
75) alpha-Pinene	17.52	93	5137	0.176 ng	92
76) n-Propylbenzene	17.68	91	13146	0.189 ng	96
77) 3-Ethyltoluene	17.03	105	11191	No Calib	
78) 4-Ethyltoluene	17.86	105	9765	0.178 ng	97
79) 1,3,5-Trimethylbenzene	17.96	105	8888	0.188 ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	11191	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	8822	0.185 ng	97
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.56	91	10763	0.297 ng	96
85) 1,3-Dichlorobenzene	18.58	146	6097	0.219 ng	99
86) 1,4-Dichlorobenzene	18.66	146	5959	0.209 ng	99
87) sec-Butylbenzene	18.74	105	12009	0.189 ng	99
88) 4-Isopropyltoluene (p-...	18.92	119	9840	0.186 ng	97
89) 1,2,3-Trimethylbenzene	17.03	105	11191	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	5946	0.212 ng	100
91) d-Limonene	19.08	68	2529	0.149 ng	96
92) 1,2-Dibromo-3-Chloropr...	19.51	157	3512	0.386 ng	87
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.84	180	7888	0.403 ng	97
95) Naphthalene	20.94	128	9286	0.176 ng	95
96) n-Dodecane	18.93	58	117	No Calib #	
97) Hexachlorobutadiene	21.30	225	3065	0.207 ng	96
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.42	119	8720	0.194 ng	99
100) n-Butylbenzene	19.39	91	8751	0.176 ng	96
101) 1,1,1,2-Tetrachloroethane	14.87	131	2592	0.209 ng	94

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192408.D Vial: 5
Acq On : 19 Nov 2024 13:08 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

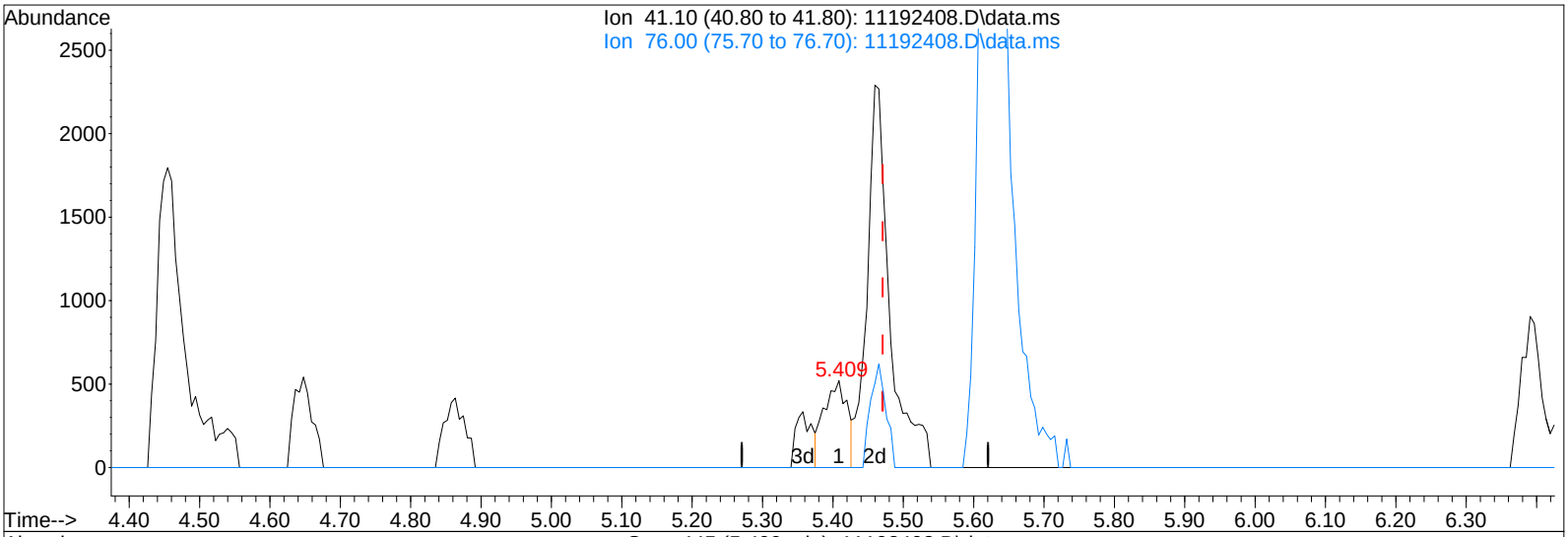
Quant Time: Nov 19 15:55:17 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

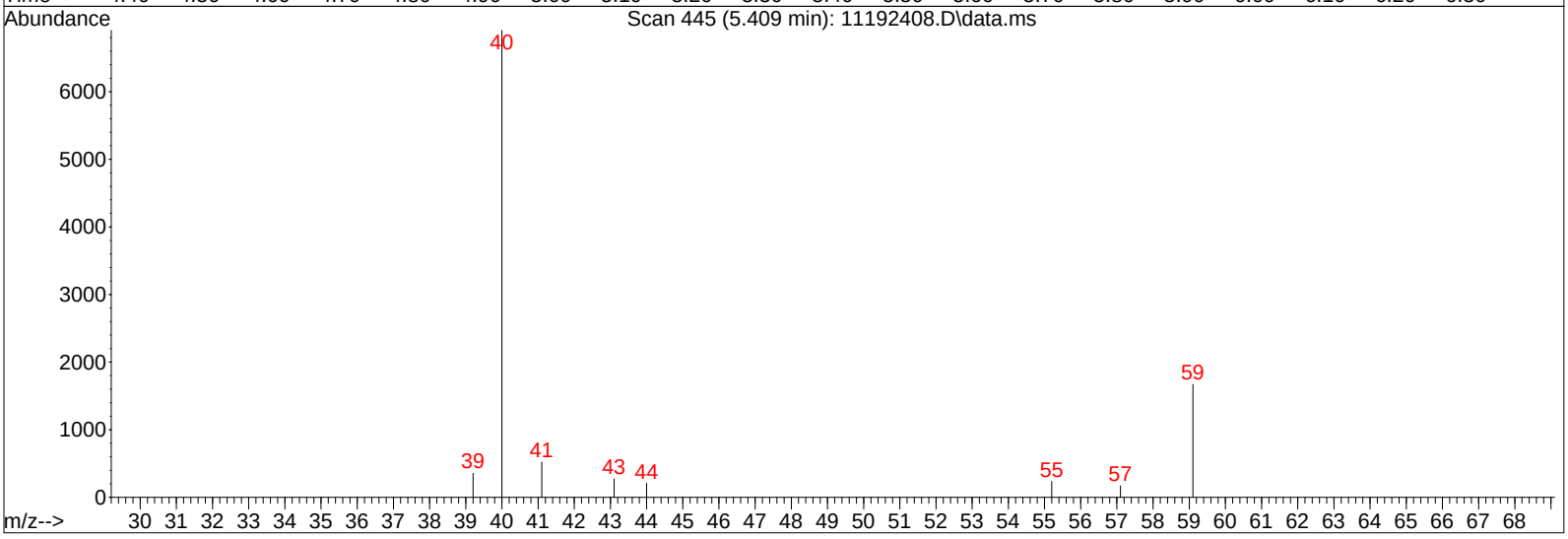


Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192408.D Vial: 5
Acq On : 19 Nov 2024 13:08 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:54:54 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 11192408.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.409min (-0.062) 0.04ng

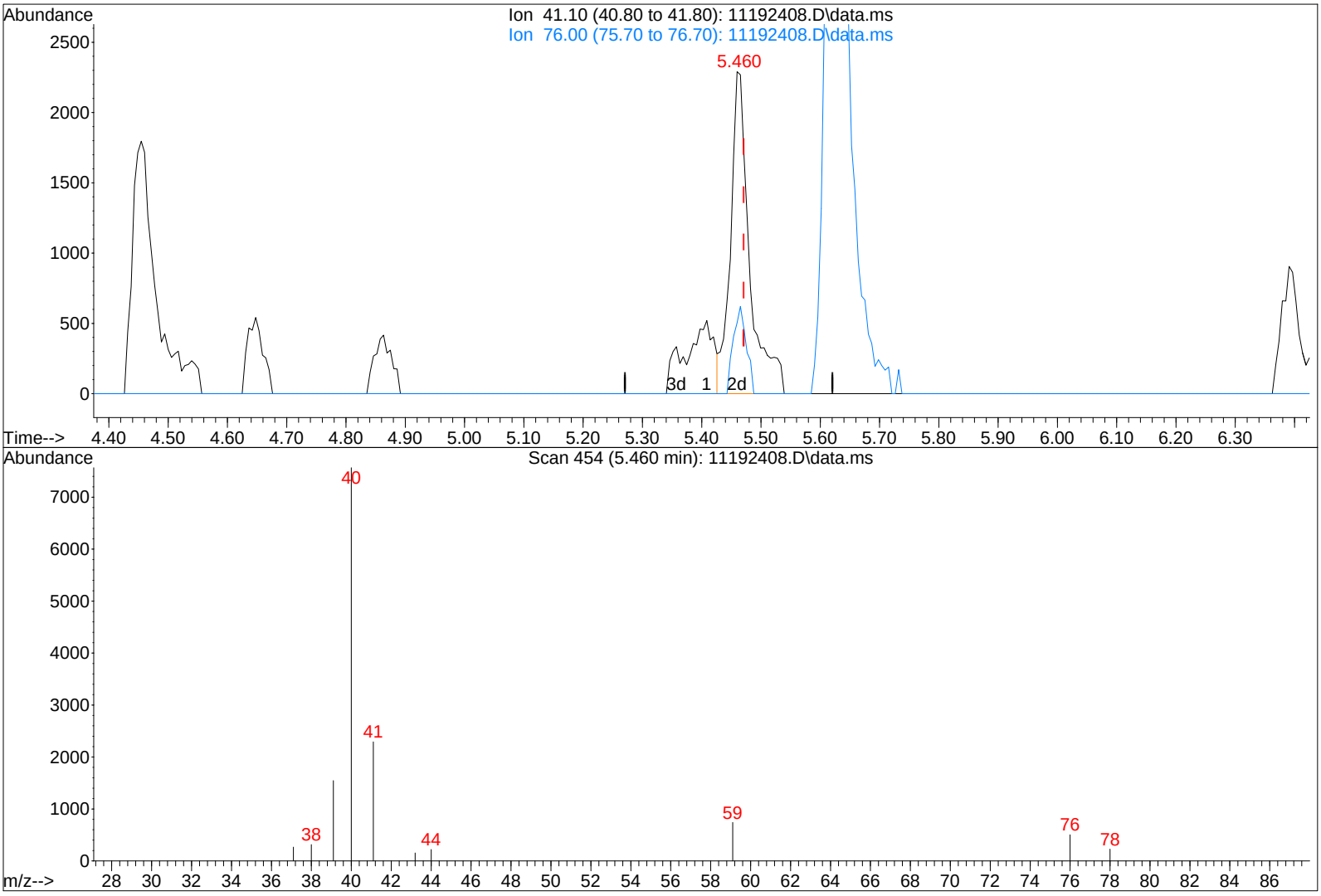
response 1187

Ion	Exp%	Act%
41.10	100	100
76.00	30.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192408.D Vial: 5
Acq On : 19 Nov 2024 13:08 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182404 (12/18)

Quant Time: Nov 19 15:54:54 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11192408.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.460min (-0.011) 0.18ng m

response 5120

Ion	Exp%	Act%
41.10	100	100
76.00	30.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

WP

11/19/24

11/21/24

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192409.D Vial: 6
Acq On : 19 Nov 2024 13:40 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:52:55 2024 11/19/24
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	140569	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.30	114	627417	12.500	ng		-0.04
56) Chlorobenzene-d5 (IS3)	14.84	54	118744	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	236982	11.935	ng		-0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.44%				
57) Toluene-d8 (SS2)	12.43	98	660903	12.599	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.80%				
73) Bromofluorobenzene (SS3)	16.82	174	226909	13.763	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.08%				
Target Compounds							Qvalue
2) Propene	3.31	42	7817	0.388	ng		99
3) Dichlorodifluoromethan...	3.38	85	14118	0.454	ng		99
4) Chloromethane	3.52	50	11426	0.444	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	6930	0.504	ng		100
6) Vinyl Chloride	3.70	62	7904	0.375	ng		100
7) 1,3-Butadiene	3.82	54	5077	0.378	ng		95
8) Bromomethane	4.03	94	5608	0.468	ng		98
9) Chloroethane	4.18	64	4602	0.435	ng		97
10) Ethanol	4.28	45	28117	1.995	ng		89
11) Acetonitrile	4.44	41	11798	0.342	ng		75
12) Acrolein	4.53	56	9001	0.828	ng		96
13) Acetone	4.63	58	24381	2.132	ng		98
14) Trichlorofluoromethane	4.77	101	12848	0.461	ng		98
15) 2-Propanol (Isopropanol)	4.84	45	35950	0.835	ng		85
16) Acrylonitrile	4.99	53	16455	0.780	ng		98
17) 1,1-Dichloroethene	5.27	96	5141	0.377	ng		98
18) 2-Methyl-2-Propanol (t...	5.32	59	33624	1.131	ng		92
19) Methylene Chloride	5.35	84	6042	0.400	ng		99
20) 3-Chloro-1-propene (Al...	5.46	41	12939m	0.454	ng		
21) Trichlorotrifluoroethane	5.58	151	5139	0.417	ng		97
22) Carbon Disulfide	5.61	76	43768	0.821	ng		98
23) trans-1,2-Dichloroethene	6.14	61	8909	0.410	ng		98
24) 1,1-Dichloroethane	6.32	63	11295	0.417	ng		99
25) Methyl tert-Butyl Ether	6.38	73	17664	0.464	ng		99
26) Vinyl Acetate	6.44	86	5129	1.812	ng	#	70
27) 2-Butanone (MEK)	6.67	72	7477	0.808	ng	#	85
28) cis-1,2-Dichloroethene	7.07	61	8835	0.426	ng		99
29) Diisopropyl Ether	7.29	87	9792	0.892	ng	#	91
30) Ethyl Acetate	7.29	61	4595	0.833	ng		91
31) n-Hexane	7.30	57	11476	0.458	ng		99
32) Chloroform	7.36	83	12172	0.496	ng		96
34) Tetrahydrofuran (THF)	7.76	72	6542	0.748	ng		99
35) Ethyl tert-Butyl Ether	7.83	87	14028	0.881	ng		96
36) 1,2-Dichloroethane	8.11	62	9781	0.456	ng		99
38) 1,1,1-Trichloroethane	8.39	97	11115	0.485	ng		99
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.89	78	25496	0.420	ng		100
42) Carbon Tetrachloride	9.07	117	10032	0.463	ng		99
43) Cyclohexane	9.22	84	18305	0.874	ng		100
44) tert-Amyl Methyl Ether	9.60	73	33003	0.865	ng		98
45) 1,2-Dichloropropane	9.85	63	6604	0.430	ng		99
46) Bromodichloromethane	10.07	83	9050	0.470	ng		96
47) Trichloroethene	10.14	130	7317	0.477	ng		100
48) 1,4-Dioxane	10.13	88	4472	0.435	ng		98
49) 2,2,4-Trimethylpentane...	10.23	57	28058	0.436	ng		100
50) Methyl Methacrylate	10.41	100	4329	0.855	ng		95

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192409.D Vial: 6
Acq On : 19 Nov 2024 13:40 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:52:55 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

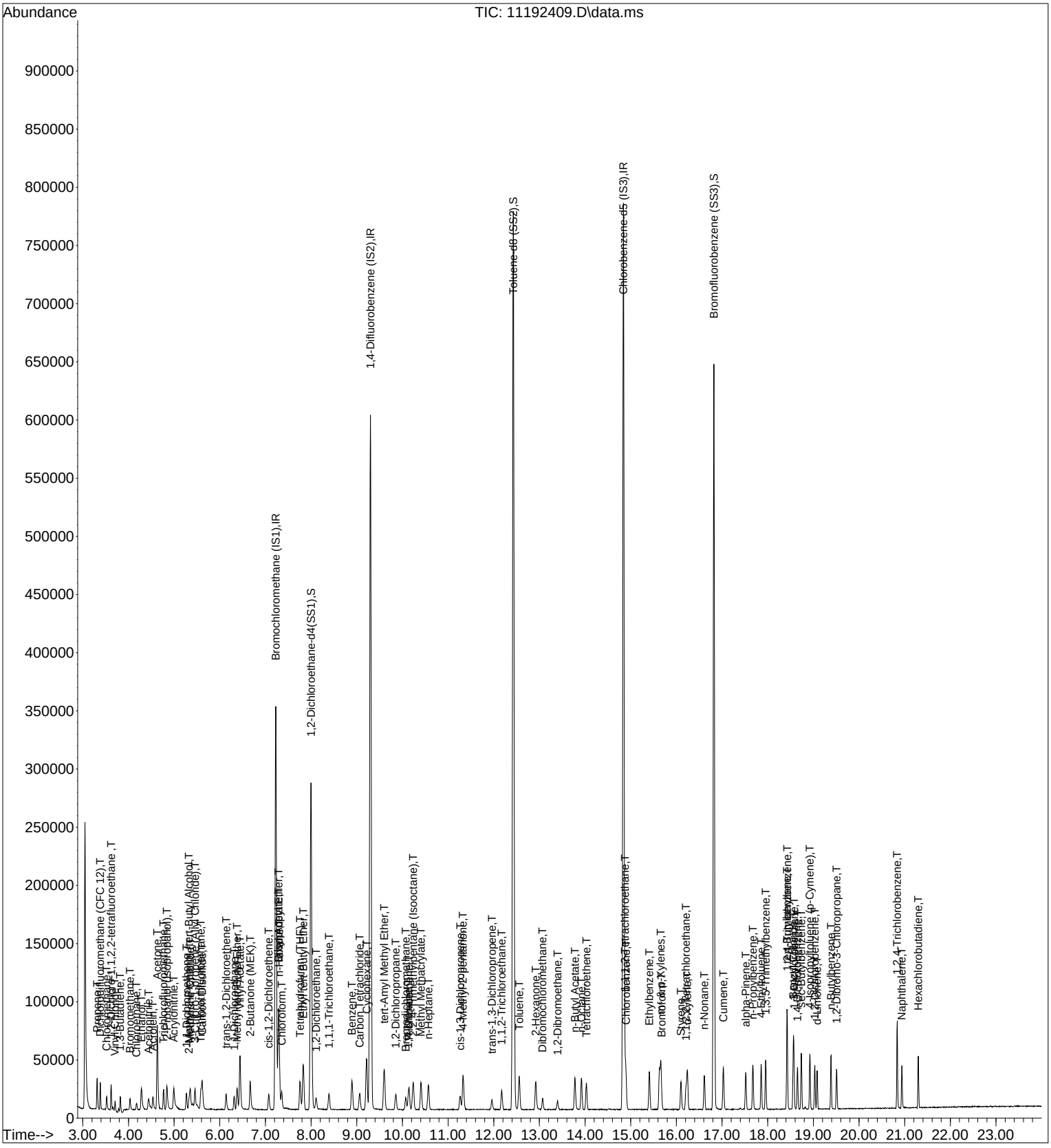
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.57	71	5838	0.422 ng	97
52) cis-1,3-Dichloropropene	11.27	75	9449	0.387 ng	99
53) 4-Methyl-2-pentanone	11.33	58	10871	0.822 ng	92
54) trans-1,3-Dichloropropene	11.96	75	6876	0.350 ng	95
55) 1,1,2-Trichloroethane	12.17	97	6618	0.491 ng	99
58) Toluene	12.56	91	27501	0.519 ng	100
59) 2-Hexanone	12.92	43	24069	0.844 ng	96
60) Dibromochloromethane	13.07	129	7191	0.478 ng	100
61) 1,2-Dibromoethane	13.40	107	6972	0.478 ng	97
62) n-Butyl Acetate	13.78	43	26394	0.819 ng	99
63) n-Octane	13.92	57	5545	0.469 ng	98
64) Tetrachloroethene	14.03	166	8146	0.544 ng	99
65) Chlorobenzene	14.90	112	19506	0.541 ng	100
66) Ethylbenzene	15.41	91	29102	0.494 ng	100
67) m- & p-Xylenes	15.66	91	48648	1.028 ng	100
68) Bromoform	15.67	173	5781	0.485 ng	99
69) Styrene	16.10	104	15055	0.446 ng	98
70) o-Xylene	16.24	91	24560	0.516 ng	98
71) n-Nonane	16.61	43	12869	0.448 ng	95
72) 1,1,2,2-Tetrachloroethane	16.21	83	11438	0.510 ng	98
74) Cumene	17.03	105	29373	0.510 ng	99
75) alpha-Pinene	17.52	93	13779	0.472 ng	96
76) n-Propylbenzene	17.67	91	34298	0.493 ng	99
77) 3-Ethyltoluene	17.03	105	29373	No Calib	
78) 4-Ethyltoluene	17.86	105	27062	0.493 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	24911	0.526 ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.03	105	29373	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	24756	0.519 ng	99
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.56	91	30593	0.845 ng	99
85) 1,3-Dichlorobenzene	18.58	146	15657	0.563 ng	96
86) 1,4-Dichlorobenzene	18.65	146	15763	0.552 ng	96
87) sec-Butylbenzene	18.74	105	32871	0.517 ng	98
88) 4-Isopropyltoluene (p-...	18.92	119	26633	0.503 ng	100
89) 1,2,3-Trimethylbenzene	17.03	105	29373	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	15330	0.546 ng	100
91) d-Limonene	19.08	68	6993	0.413 ng	99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	9565	1.051 ng	94
93) n-Undecane	17.95	58	507	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	20413	1.043 ng	99
95) Naphthalene	20.94	128	26285	0.497 ng	99
96) n-Dodecane	18.93	58	696	No Calib	#
97) Hexachlorobutadiene	21.30	225	7806	0.528 ng	98
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.42	119	23182	0.515 ng	100
100) n-Butylbenzene	19.39	91	24376	0.490 ng	99
101) 1,1,1,2-Tetrachloroethane	14.87	131	6922	0.559 ng	98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192409.D Vial: 6
Acq On : 19 Nov 2024 13:40 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

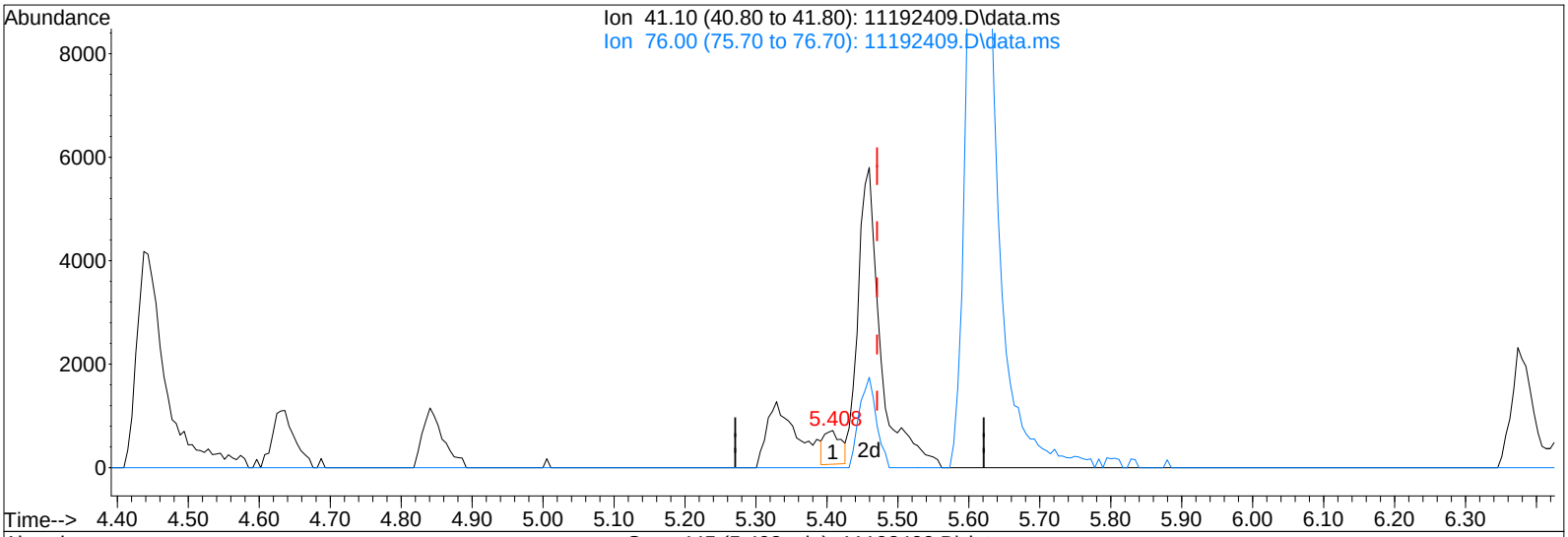
Quant Time: Nov 19 15:52:55 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

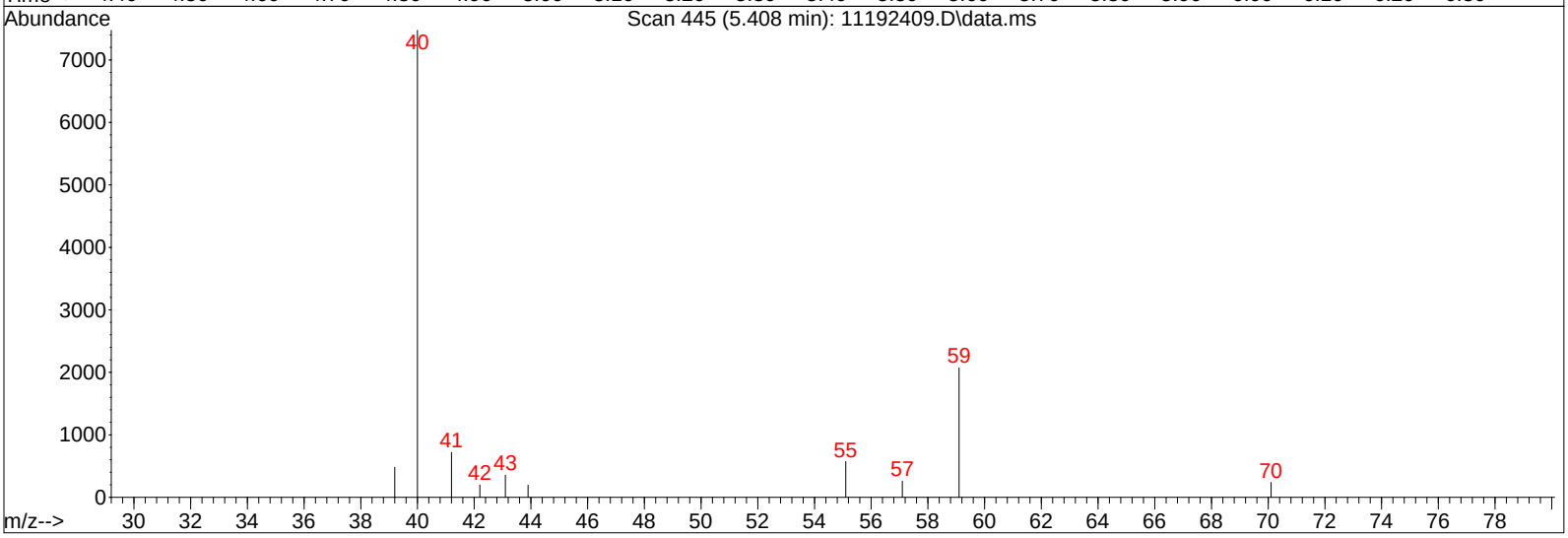


Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192409.D Vial: 6
Acq On : 19 Nov 2024 13:40 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:52:29 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 11192409.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.408min (-0.063) 0.04ng

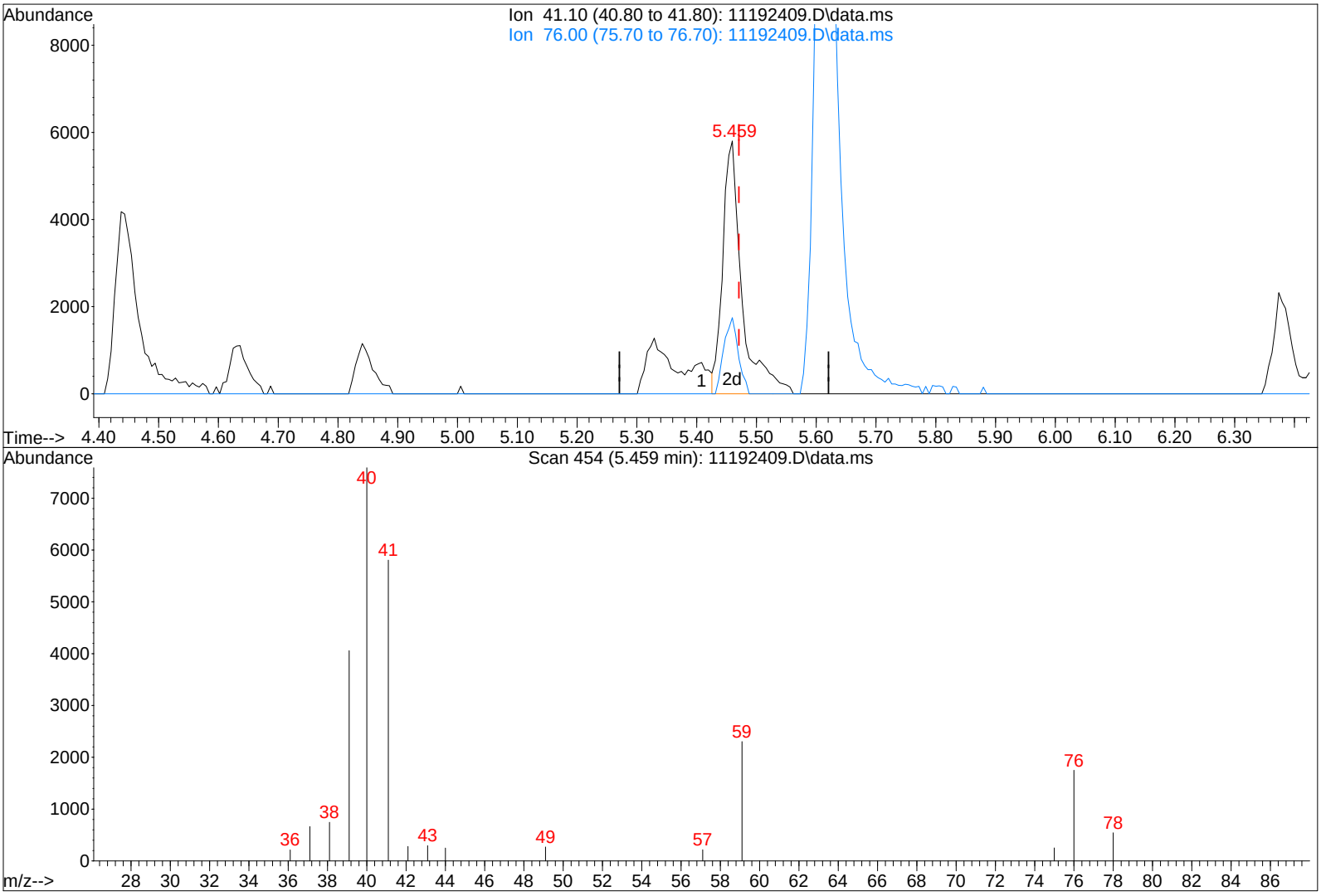
response 1095

Ion	Exp%	Act%
41.10	100	100
76.00	30.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2024 11\19\11192409.D Vial: 6
Acq On : 19 Nov 2024 13:40 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:52:29 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11192409.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.459min (-0.011) 0.45ng m

response 12939

Ion	Exp%	Act%
41.10	100	100
76.00	30.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

WP

11/19/24

TZ 11/21/24

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192410.D Vial: 6
Acq On : 19 Nov 2024 14:12 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:51:06 2024 11/19/24
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	139272	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.30	114	625489	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.84	54	117204	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	232524	11.819	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.56%				
57) Toluene-d8 (SS2)	12.43	98	655779	12.666	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.36%				
73) Bromofluorobenzene (SS3)	16.82	174	225266	13.842	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.72%				
Target Compounds							Qvalue
2) Propene	3.31	42	15609	0.781	ng		98
3) Dichlorodifluoromethan...	3.38	85	28052	0.910	ng		99
4) Chloromethane	3.52	50	23099	0.907	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.62	135	14121	1.037	ng		100
6) Vinyl Chloride	3.70	62	16337	0.782	ng		99
7) 1,3-Butadiene	3.81	54	10383	0.780	ng		95
8) Bromomethane	4.03	94	11406	0.961	ng		100
9) Chloroethane	4.17	64	9265	0.883	ng		98
10) Ethanol	4.29	45	57294	4.104	ng		88
11) Acetonitrile	4.44	41	25254	0.739	ng		91
12) Acrolein	4.53	56	18987	1.763	ng		99
13) Acetone	4.63	58	49084	4.332	ng		97
14) Trichlorofluoromethane	4.77	101	26066	0.944	ng		98
15) 2-Propanol (Isopropanol)	4.85	45	74130	1.738	ng		90
16) Acrylonitrile	4.99	53	35067	1.678	ng		97
17) 1,1-Dichloroethene	5.27	96	10558	0.781	ng		100
18) 2-Methyl-2-Propanol (t...	5.32	59	68205	2.316	ng		94
19) Methylene Chloride	5.35	84	11799	0.788	ng		98
20) 3-Chloro-1-propene (Al...	5.46	41	25361	0.899	ng		88
21) Trichlorotrifluoroethane	5.58	151	10519	0.861	ng		96
22) Carbon Disulfide	5.61	76	90482	1.713	ng		98
23) trans-1,2-Dichloroethene	6.14	61	18702	0.869	ng		99
24) 1,1-Dichloroethane	6.32	63	22917	0.855	ng		98
25) Methyl tert-Butyl Ether	6.38	73	37122	0.985	ng		99
26) Vinyl Acetate	6.45	86	11608	4.138	ng	#	82
27) 2-Butanone (MEK)	6.67	72	15416	1.682	ng	#	86
28) cis-1,2-Dichloroethene	7.08	61	18032	0.877	ng		99
29) Diisopropyl Ether	7.29	87	20055	1.844	ng	#	93
30) Ethyl Acetate	7.29	61	9475	1.735	ng		98
31) n-Hexane	7.30	57	22737	0.915	ng		99
32) Chloroform	7.36	83	24158	0.994	ng		98
34) Tetrahydrofuran (THF)	7.76	72	13633	1.573	ng		96
35) Ethyl tert-Butyl Ether	7.83	87	28819	1.826	ng		97
36) 1,2-Dichloroethane	8.12	62	19462	0.915	ng		99
38) 1,1,1-Trichloroethane	8.40	97	22461	0.983	ng		100
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.90	78	51004	0.843	ng		99
42) Carbon Tetrachloride	9.07	117	20271	0.939	ng		97
43) Cyclohexane	9.22	84	37193	1.781	ng		99
44) tert-Amyl Methyl Ether	9.60	73	67838	1.784	ng		97
45) 1,2-Dichloropropane	9.86	63	13365	0.873	ng		99
46) Bromodichloromethane	10.08	83	18247	0.951	ng		98
47) Trichloroethene	10.14	130	14880	0.974	ng		100
48) 1,4-Dioxane	10.12	88	9047	0.883	ng		99
49) 2,2,4-Trimethylpentane...	10.24	57	57706	0.900	ng		100
50) Methyl Methacrylate	10.41	100	9892	1.960	ng		99

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192410.D Vial: 6
Acq On : 19 Nov 2024 14:12 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:51:06 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

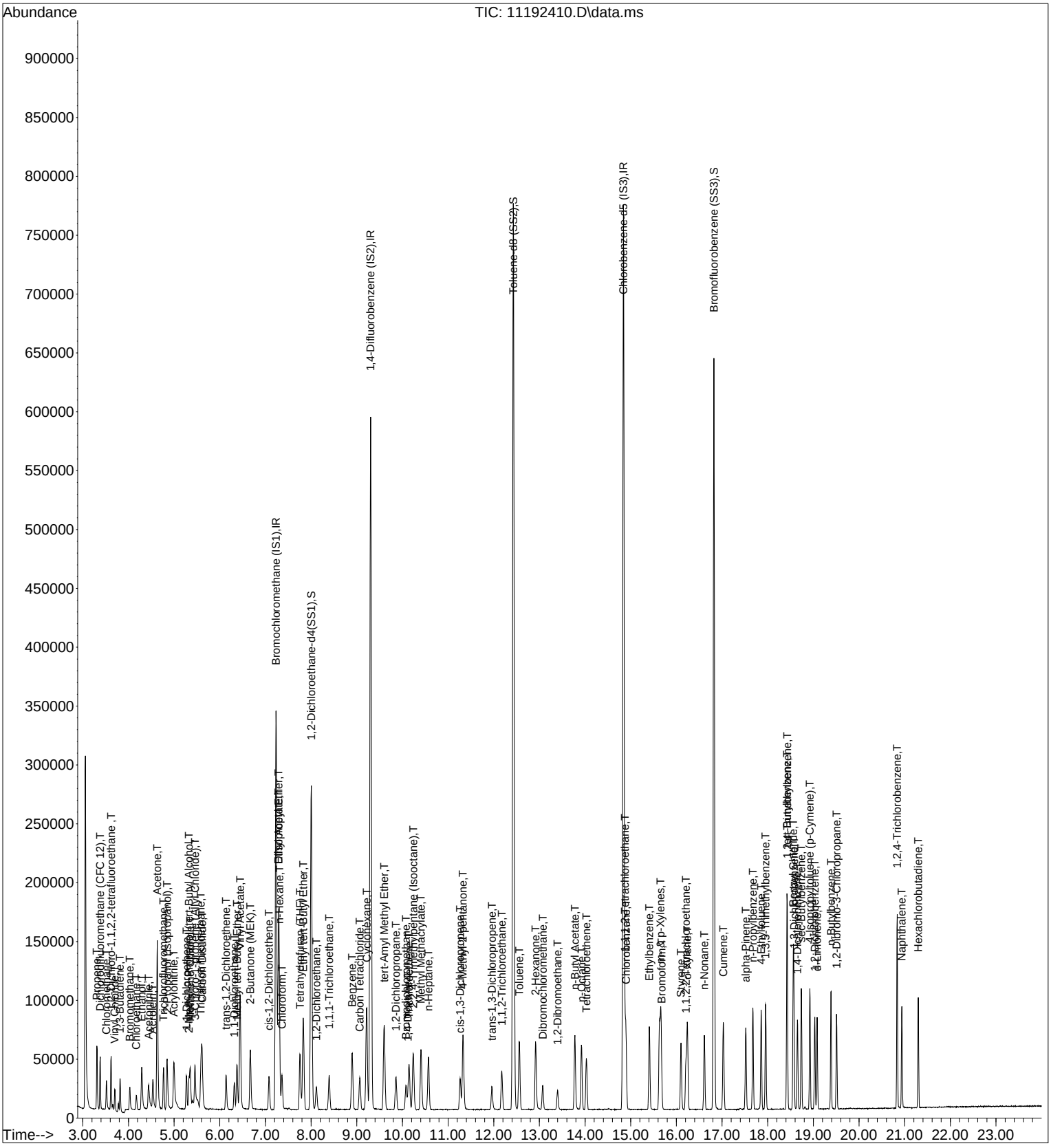
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.57	71	11866	0.860	ng		98
52) cis-1,3-Dichloropropene	11.26	75	20124	0.827	ng		100
53) 4-Methyl-2-pentanone	11.33	58	23367	1.771	ng		92
54) trans-1,3-Dichloropropene	11.96	75	15227	0.778	ng		99
55) 1,1,2-Trichloroethane	12.18	97	13493	1.003	ng		100
58) Toluene	12.56	91	55218	1.056	ng		100
59) 2-Hexanone	12.92	43	53004	1.882	ng		97
60) Dibromochloromethane	13.07	129	15060	1.015	ng		99
61) 1,2-Dibromoethane	13.40	107	15122	1.051	ng		99
62) n-Butyl Acetate	13.78	43	59603	1.874	ng		97
63) n-Octane	13.93	57	11778	1.009	ng		97
64) Tetrachloroethene	14.03	166	16301	1.103	ng		100
65) Chlorobenzene	14.90	112	38442	1.081	ng		100
66) Ethylbenzene	15.41	91	61371	1.055	ng		100
67) m- & p-Xylenes	15.65	91	101553	2.174	ng		99
68) Bromoform	15.67	173	12300	1.045	ng		100
69) Styrene	16.10	104	33199	0.997	ng		99
70) o-Xylene	16.24	91	51316	1.092	ng		99
71) n-Nonane	16.61	43	26798	0.946	ng		98
72) 1,1,2,2-Tetrachloroethane	16.21	83	24101	1.088	ng		98
74) Cumene	17.03	105	60487	1.063	ng		100
75) alpha-Pinene	17.52	93	29757	1.033	ng		99
76) n-Propylbenzene	17.67	91	73539	1.072	ng		98
77) 3-Ethyltoluene	17.03	105	60487	No Calib			
78) 4-Ethyltoluene	17.86	105	56449	1.042	ng		99
79) 1,3,5-Trimethylbenzene	17.95	105	52734	1.129	ng		100
80) alpha-Methylstyrene	17.03	118	248	No Calib		#	
81) 2-Ethyltoluene	17.03	105	60487	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	52983	1.126	ng		99
83) n-Decane	17.04	58	438	No Calib		#	
84) Benzyl Chloride	18.56	91	72599	2.031	ng		99
85) 1,3-Dichlorobenzene	18.58	146	32534	1.186	ng		99
86) 1,4-Dichlorobenzene	18.65	146	32401	1.149	ng		97
87) sec-Butylbenzene	18.74	105	68289	1.089	ng		99
88) 4-Isopropyltoluene (p-...	18.92	119	56820	1.087	ng		100
89) 1,2,3-Trimethylbenzene	17.03	105	60487	No Calib			
90) 1,2-Dichlorobenzene	19.03	146	31943	1.153	ng		99
91) d-Limonene	19.08	68	15645	0.936	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	21286	2.369	ng		94
93) n-Undecane	17.95	58	1037	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	44546	2.306	ng		100
95) Naphthalene	20.94	128	60703	1.163	ng		98
96) n-Dodecane	18.92	58	1925	No Calib		#	
97) Hexachlorobutadiene	21.30	225	16206	1.110	ng		99
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.42	119	49620	1.118	ng		99
100) n-Butylbenzene	19.39	91	52923	1.078	ng		98
101) 1,1,1,2-Tetrachloroethane	14.87	131	13961	1.142	ng		99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192410.D Vial: 6
Acq On : 19 Nov 2024 14:12 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:51:06 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192411.D Vial: 6
Acq On : 19 Nov 2024 14:45 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:49:54 2024 11/19/24
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	141459	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.32	114	623155	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.84	54	118768	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	237405	11.881	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.04%				
57) Toluene-d8 (SS2)	12.43	98	657303	12.528	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.24%				
73) Bromofluorobenzene (SS3)	16.83	174	227479	13.794	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.32%				
Target Compounds							Qvalue
2) Propene	3.28	42	85315	4.203	ng		99
3) Dichlorodifluoromethan...	3.36	85	141425	4.518	ng		100
4) Chloromethane	3.49	50	109745	4.242	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	71026	5.138	ng		99
6) Vinyl Chloride	3.68	62	86547	4.076	ng		100
7) 1,3-Butadiene	3.80	54	55673	4.117	ng		98
8) Bromomethane	4.01	94	41708	3.461	ng		99
9) Chloroethane	4.15	64	46192	4.335	ng		99
10) Ethanol	4.32	45	294723	20.782	ng		100
11) Acetonitrile	4.45	41	133690	3.853	ng		99
12) Acrolein	4.53	56	104145	9.523	ng		99
13) Acetone	4.63	58	248531	21.595	ng		99
14) Trichlorofluoromethane	4.76	101	131699	4.695	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	362742	8.373	ng		94
16) Acrylonitrile	5.01	53	194528	9.163	ng		100
17) 1,1-Dichloroethene	5.26	96	54292	3.954	ng		98
18) 2-Methyl-2-Propanol (t...	5.34	59	249680	8.348	ng		95
19) Methylene Chloride	5.36	84	60511	3.980	ng		98
20) 3-Chloro-1-propene (Al...	5.45	41	122798	4.285	ng		95
21) Trichlorotrifluoroethane	5.58	151	53749	4.331	ng		99
22) Carbon Disulfide	5.60	76	469577	8.753	ng		99
23) trans-1,2-Dichloroethene	6.14	61	101777	4.654	ng		99
24) 1,1-Dichloroethane	6.33	63	119425	4.386	ng		99
25) Methyl tert-Butyl Ether	6.37	73	188675	4.927	ng		100
26) Vinyl Acetate	6.45	86	69164	24.274	ng	#	92
27) 2-Butanone (MEK)	6.67	72	82683	8.880	ng	#	92
28) cis-1,2-Dichloroethene	7.09	61	94791	4.538	ng		100
29) Diisopropyl Ether	7.29	87	103430	9.364	ng	#	92
30) Ethyl Acetate	7.29	61	51927	9.360	ng		98
31) n-Hexane	7.30	57	116864	4.632	ng		100
32) Chloroform	7.38	83	124491	5.043	ng		99
34) Tetrahydrofuran (THF)	7.75	72	72672	8.254	ng		97
35) Ethyl tert-Butyl Ether	7.83	87	150145	9.366	ng		97
36) 1,2-Dichloroethane	8.13	62	99543	4.610	ng		99
38) 1,1,1-Trichloroethane	8.41	97	114542	5.030	ng		99
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	526	No Calib		#	
41) Benzene	8.91	78	256588	4.259	ng		99
42) Carbon Tetrachloride	9.08	117	105735	4.914	ng		100
43) Cyclohexane	9.22	84	191687	9.215	ng		99
44) tert-Amyl Methyl Ether	9.60	73	360412	9.513	ng		99
45) 1,2-Dichloropropane	9.87	63	68553	4.494	ng		99
46) Bromodichloromethane	10.09	83	97256	5.087	ng		100
47) Trichloroethene	10.16	130	76262	5.008	ng		99
48) 1,4-Dioxane	10.12	88	50460	4.941	ng		99
49) 2,2,4-Trimethylpentane...	10.24	57	294701	4.613	ng		100
50) Methyl Methacrylate	10.41	100	55215	10.979	ng		100

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192411.D Vial: 6
Acq On : 19 Nov 2024 14:45 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:49:54 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

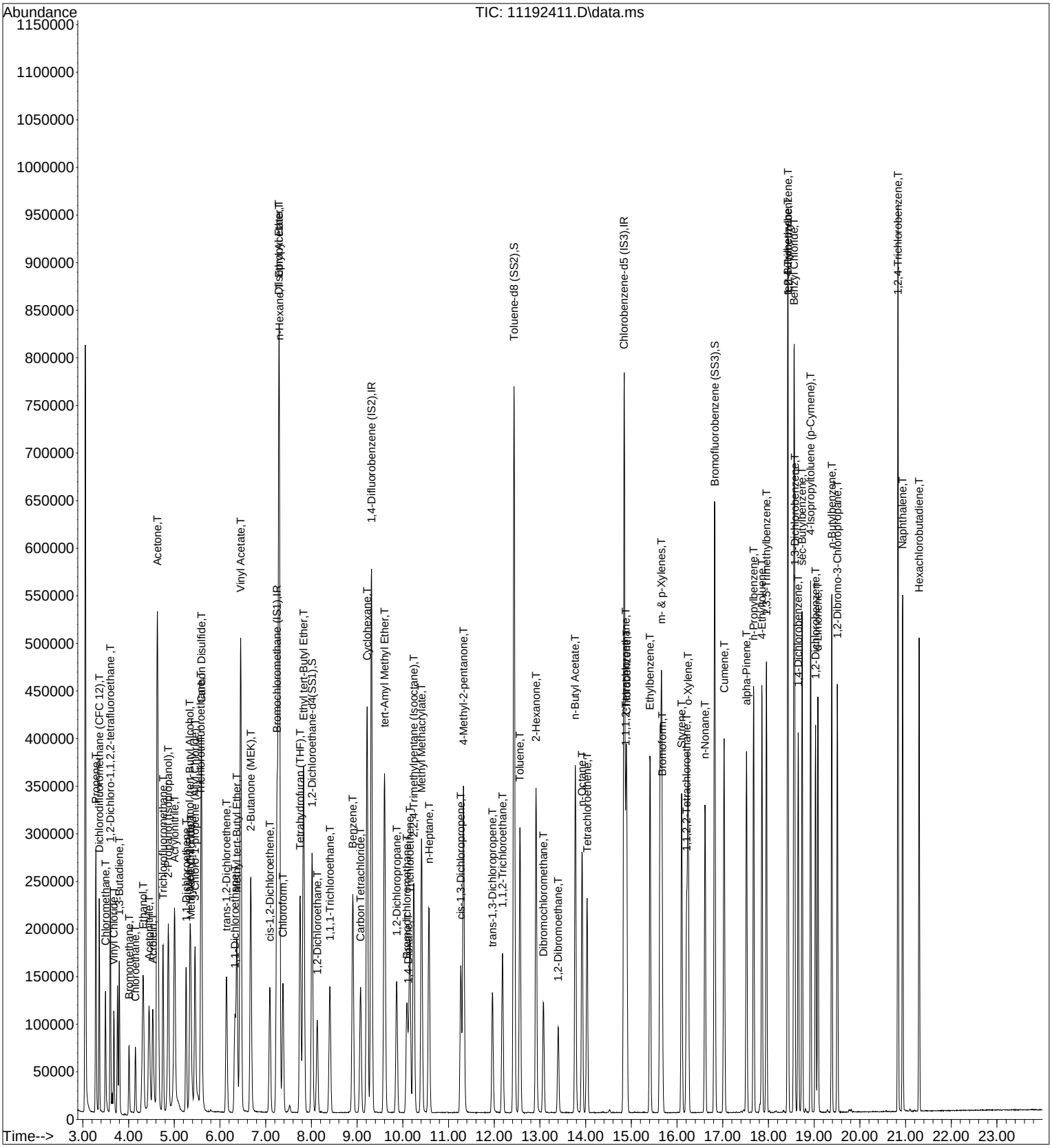
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.58	71	62874	4.574	ng		98
52) cis-1,3-Dichloropropene	11.27	75	115159	4.751	ng		99
53) 4-Methyl-2-pentanone	11.33	58	128331	9.765	ng		97
54) trans-1,3-Dichloropropene	11.96	75	90236	4.628	ng		100
55) 1,1,2-Trichloroethane	12.18	97	70710	5.278	ng		99
58) Toluene	12.56	91	280212	5.286	ng		100
59) 2-Hexanone	12.92	43	296566	10.392	ng		98
60) Dibromochloromethane	13.07	129	82775	5.503	ng		100
61) 1,2-Dibromoethane	13.40	107	80409	5.514	ng		99
62) n-Butyl Acetate	13.77	43	339659	10.537	ng		100
63) n-Octane	13.92	57	60325	5.101	ng		99
64) Tetrachloroethene	14.03	166	82592	5.513	ng		100
65) Chlorobenzene	14.90	112	196459	5.452	ng		100
66) Ethylbenzene	15.41	91	330867	5.611	ng		99
67) m- & p-Xylenes	15.66	91	531304	11.223	ng		100
68) Bromoform	15.67	173	71080	5.962	ng		100
69) Styrene	16.10	104	192654	5.711	ng		99
70) o-Xylene	16.24	91	263119	5.528	ng		100
71) n-Nonane	16.61	43	142415	4.960	ng		98
72) 1,1,2,2-Tetrachloroethane	16.21	83	125994	5.612	ng		99
74) Cumene	17.03	105	317425	5.506	ng		99
75) alpha-Pinene	17.52	93	165417	5.665	ng		99
76) n-Propylbenzene	17.67	91	384687	5.532	ng		99
77) 3-Ethyltoluene	17.03	105	317425	No Calib			
78) 4-Ethyltoluene	17.86	105	306209	5.576	ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	276420	5.838	ng		100
80) alpha-Methylstyrene	17.03	118	1091	No Calib		#	
81) 2-Ethyltoluene	17.03	105	317425	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	280651	5.888	ng		100
83) n-Decane	17.04	58	2785	No Calib		#	
84) Benzyl Chloride	18.56	91	454159	12.535	ng		99
85) 1,3-Dichlorobenzene	18.58	146	165777	5.965	ng		100
86) 1,4-Dichlorobenzene	18.65	146	165156	5.779	ng		100
87) sec-Butylbenzene	18.74	105	356201	5.606	ng		99
88) 4-Isopropyltoluene (p-...	18.92	119	300537	5.672	ng		100
89) 1,2,3-Trimethylbenzene	17.03	105	317425	No Calib			
90) 1,2-Dichlorobenzene	19.03	146	162486	5.788	ng		100
91) d-Limonene	19.08	68	90893	5.367	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	120761	13.260	ng		98
93) n-Undecane	17.96	58	6007	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	249339	12.736	ng		99
95) Naphthalene	20.94	128	357881	6.768	ng		99
96) n-Dodecane	18.92	58	7195	No Calib		#	
97) Hexachlorobutadiene	21.30	225	85256	5.761	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.42	119	257631	5.726	ng		100
100) n-Butylbenzene	19.39	91	285165	5.731	ng		99
101) 1,1,1,2-Tetrachloroethane	14.88	131	73606	5.944	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192411.D Vial: 6
Acq On : 19 Nov 2024 14:45 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182403 (12/18)

Quant Time: Nov 19 15:49:54 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192412.D Vial: 7
Acq On : 19 Nov 2024 15:17 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 15:47:40 2024 11/19/24
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	141140	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.34	114	624874	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.85	54	120300	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	238100	11.943	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.52%			
57) Toluene-d8 (SS2)	12.44	98	653653	12.300	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.40%			
73) Bromofluorobenzene (SS3)	16.83	174	229392	13.733	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.84%			
Target Compounds						Qvalue
2) Propene	3.28	42	408471	20.168	ng	100
3) Dichlorodifluoromethan...	3.36	85	714623	22.881	ng	100
4) Chloromethane	3.49	50	585121	22.666	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	357114	25.890	ng	100
6) Vinyl Chloride	3.68	62	432570	20.419	ng	100
7) 1,3-Butadiene	3.80	54	289333	21.445	ng	100
8) Bromomethane	4.02	94	289417	24.071	ng	100
9) Chloroethane	4.16	64	239940	22.567	ng	100
10) Ethanol	4.38	45	1443304	102.005	ng	100
11) Acetonitrile	4.49	41	662165	19.126	ng	100
12) Acrolein	4.56	56	528770	48.459	ng	100
13) Acetone	4.66	58	1207480	105.155	ng	100
14) Trichlorofluoromethane	4.76	101	663599	23.712	ng	100
15) 2-Propanol (Isopropanol)	4.92	45	1919446	44.408	ng	100
16) Acrylonitrile	5.05	53	976733	46.112	ng	100
17) 1,1-Dichloroethene	5.27	96	284417	20.762	ng	100
18) 2-Methyl-2-Propanol (t...	5.39	59	1567016	52.512	ng	100
19) Methylene Chloride	5.40	84	310663	20.480	ng	100
20) 3-Chloro-1-propene (Al...	5.47	41	594874	20.805	ng	100
21) Trichlorotrifluoroethane	5.59	151	275556	22.254	ng	100
22) Carbon Disulfide	5.61	76	2378392	44.435	ng	100
23) trans-1,2-Dichloroethene	6.17	61	530076	24.292	ng	100
24) 1,1-Dichloroethane	6.36	63	607901	22.376	ng	100
25) Methyl tert-Butyl Ether	6.39	73	997144	26.099	ng	100
26) Vinyl Acetate	6.48	86	365503	128.570	ng	100
27) 2-Butanone (MEK)	6.70	72	430287	46.317	ng	100
28) cis-1,2-Dichloroethene	7.12	61	492603	23.637	ng	100
29) Diisopropyl Ether	7.31	87	517157	46.924	ng	100
30) Ethyl Acetate	7.32	61	258081	46.623	ng	100
31) n-Hexane	7.31	57	563692	22.393	ng	100
32) Chloroform	7.41	83	632940	25.697	ng	100
34) Tetrahydrofuran (THF)	7.77	72	376699	42.881	ng	100
35) Ethyl tert-Butyl Ether	7.85	87	790145	49.399	ng	100
36) 1,2-Dichloroethane	8.15	62	516110	23.955	ng	100
38) 1,1,1-Trichloroethane	8.43	97	595708	26.090	ng	100
39) Isopropyl Acetate	9.61	61	876	No Calib	#	
40) 1-Butanol	8.84	56	2168	No Calib		
41) Benzene	8.93	78	1299437	21.509	ng	100
42) Carbon Tetrachloride	9.09	117	556640	25.801	ng	100
43) Cyclohexane	9.24	84	975155	46.748	ng	100
44) tert-Amyl Methyl Ether	9.62	73	1890253	49.757	ng	100
45) 1,2-Dichloropropane	9.88	63	350107	22.886	ng	100
46) Bromodichloromethane	10.10	83	513629	26.793	ng	100
47) Trichloroethene	10.17	130	394829	25.858	ng	100
48) 1,4-Dioxane	10.14	88	273442	26.702	ng	100
49) 2,2,4-Trimethylpentane...	10.25	57	1488141	23.231	ng	100
50) Methyl Methacrylate	10.43	100	289651	57.437	ng	100

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192412.D Vial: 7
Acq On : 19 Nov 2024 15:17 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 15:47:40 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

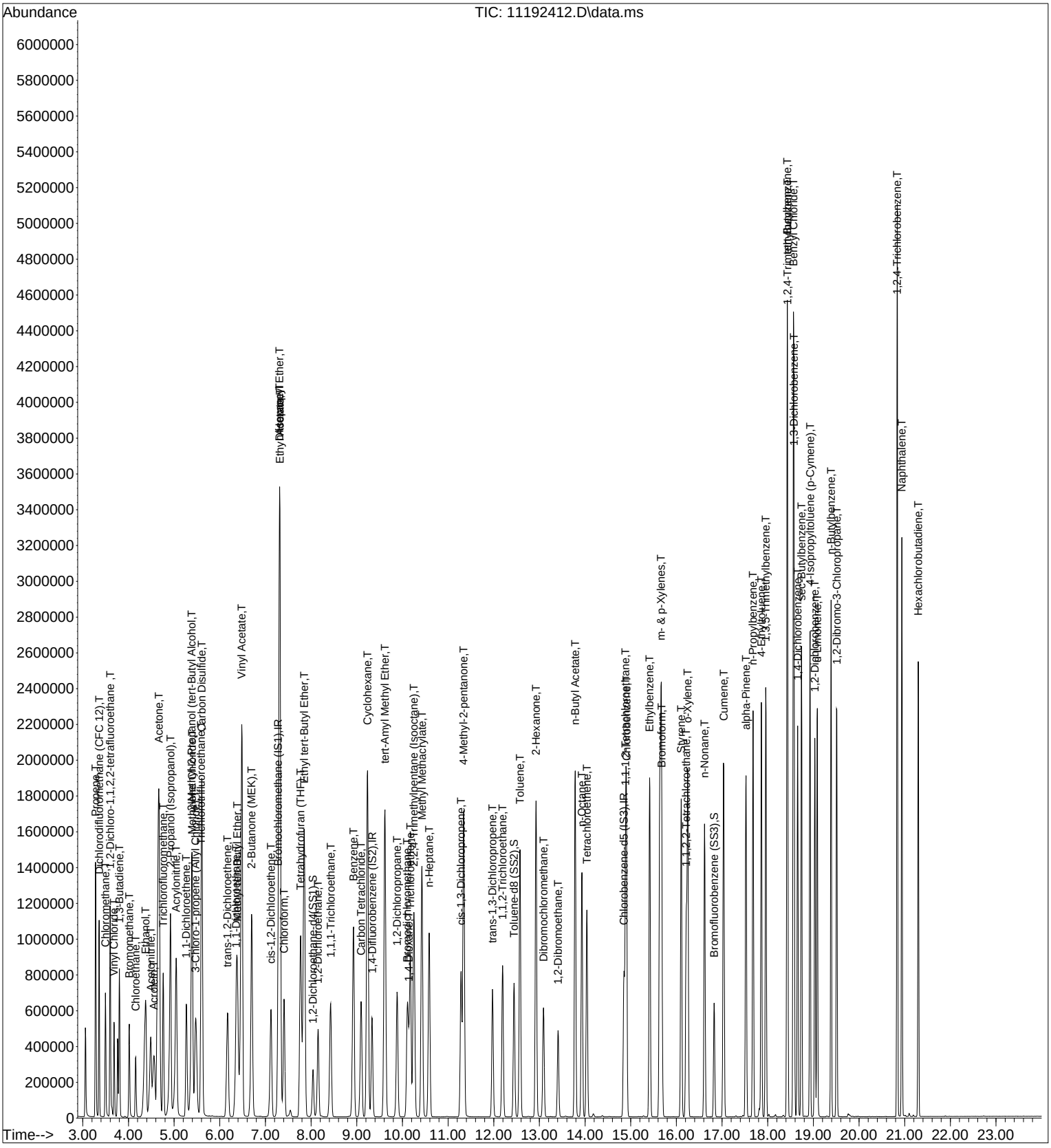
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.59	71	313159	22.720 ng	100
52) cis-1,3-Dichloropropene	11.29	75	616171	25.350 ng	100
53) 4-Methyl-2-pentanone	11.34	58	672238	51.013 ng	100
54) trans-1,3-Dichloropropene	11.97	75	506725	25.920 ng	100
55) 1,1,2-Trichloroethane	12.19	97	362489	26.983 ng	100
58) Toluene	12.57	91	1422942	26.503 ng	100
59) 2-Hexanone	12.93	43	1549320	53.599 ng	100
60) Dibromochloromethane	13.09	129	446253	29.288 ng	100
61) 1,2-Dibromoethane	13.41	107	431045	29.181 ng	100
62) n-Butyl Acetate	13.78	43	1792618	54.902 ng	100
63) n-Octane	13.93	57	304648	25.434 ng	100
64) Tetrachloroethene	14.04	166	427655	28.183 ng	100
65) Chlorobenzene	14.91	112	1008314	27.628 ng	100
66) Ethylbenzene	15.41	91	1700336	28.467 ng	100
67) m- & p-Xylenes	15.66	91	2705891	56.431 ng	100
68) Bromoform	15.68	173	396605	32.840 ng	100
69) Styrene	16.11	104	1043620	30.541 ng	100
70) o-Xylene	16.25	91	1354654	28.096 ng	100
71) n-Nonane	16.62	43	712707	24.507 ng	100
72) 1,1,2,2-Tetrachloroethane	16.21	83	639400	28.116 ng	100
74) Cumene	17.04	105	1619816	27.740 ng	100
75) alpha-Pinene	17.53	93	862334	29.154 ng	100
76) n-Propylbenzene	17.68	91	1939191	27.531 ng	100
77) 3-Ethyltoluene	17.04	105	1619816	No Calib	
78) 4-Ethyltoluene	17.86	105	1597144	28.714 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	1403711	29.268 ng	100
80) alpha-Methylstyrene	17.03	118	3460	No Calib	
81) 2-Ethyltoluene	17.04	105	1619816	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1412787	29.263 ng	100
83) n-Decane	17.03	58	12704	No Calib	
84) Benzyl Chloride	18.56	91	2541616	69.256 ng	100
85) 1,3-Dichlorobenzene	18.58	146	855077	30.373 ng	100
86) 1,4-Dichlorobenzene	18.66	146	870267	30.062 ng	100
87) sec-Butylbenzene	18.74	105	1789935	27.814 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1538615	28.670 ng	100
89) 1,2,3-Trimethylbenzene	17.04	105	1619816	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	841522	29.597 ng	100
91) d-Limonene	19.09	68	482172	28.107 ng	100
92) 1,2-Dibromo-3-Chloropr...	19.51	157	645367	69.963 ng	100
93) n-Undecane	17.96	58	28578	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1352973	68.228 ng	100
95) Naphthalene	20.94	128	2054339	38.358 ng	100
96) n-Dodecane	18.93	58	36087	No Calib #	
97) Hexachlorobutadiene	21.30	225	443257	29.571 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1281258	28.115 ng	100
100) n-Butylbenzene	19.39	91	1463409	29.038 ng	100
101) 1,1,1,2-Tetrachloroethane	14.89	131	382441	30.490 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192412.D Vial: 7
Acq On : 19 Nov 2024 15:17 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 15:47:40 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192413.D Vial: 7
Acq On : 19 Nov 2024 15:49 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 16:11:00 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/19/24

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.29	130	140723	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	9.34	114	643735	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.85	54	123694	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.05	65	244177	12.284	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
57) Toluene-d8 (SS2)	12.45	98	678135	12.410	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%				
73) Bromofluorobenzene (SS3)	16.83	174	236801	13.788	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.32%				
Target Compounds							Qvalue
2) Propene	3.28	42	786151	38.930	ng		99
3) Dichlorodifluoromethan...	3.35	85	1354705	43.505	ng		99
4) Chloromethane	3.49	50	1060303	41.194	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	713867	51.908	ng		100
6) Vinyl Chloride	3.69	62	929955	44.028	ng		100
7) 1,3-Butadiene	3.80	54	596994	44.379	ng		96
8) Bromomethane	4.02	94	434463	36.241	ng		100
9) Chloroethane	4.16	64	488235	46.056	ng		100
10) Ethanol	4.40	45	2875130	203.801	ng		100
11) Acetonitrile	4.51	41	1553330	44.999	ng		98
12) Acrolein	4.57	56	1074933	98.803	ng		99
13) Acetone	4.68	58	2416475	211.065	ng		98
14) Trichlorofluoromethane	4.76	101	1322798	47.407	ng		100
15) 2-Propanol (Isopropanol)	4.94	45	3696721	85.781	ng		99
16) Acrylonitrile	5.06	53	1939419	91.833	ng		99
17) 1,1-Dichloroethene	5.27	96	570775	41.790	ng		99
18) 2-Methyl-2-Propanol (t...	5.41	59	2509979	84.361	ng		97
19) Methylene Chloride	5.41	84	614465	40.627	ng		99
20) 3-Chloro-1-propene (Al...	5.48	41	1157659	40.607	ng		98
21) Trichlorotrifluoroethane	5.60	151	539669	43.713	ng		100
22) Carbon Disulfide	5.61	76	4605723	86.302	ng		100
23) trans-1,2-Dichloroethene	6.18	61	1060200	48.730	ng		100
24) 1,1-Dichloroethane	6.37	63	1206035	44.523	ng		100
25) Methyl tert-Butyl Ether	6.40	73	1905699	50.026	ng		100
26) Vinyl Acetate	6.50	86	730579	257.751	ng	#	91
27) 2-Butanone (MEK)	6.71	72	855744	92.387	ng		96
28) cis-1,2-Dichloroethene	7.13	61	981392	47.230	ng		100
29) Diisopropyl Ether	7.32	87	1009285	91.848	ng	#	90
30) Ethyl Acetate	7.33	61	492512	89.238	ng		98
31) n-Hexane	7.32	57	1054652	42.021	ng		100
32) Chloroform	7.42	83	1260837	51.340	ng		100
34) Tetrahydrofuran (THF)	7.78	72	748674	85.477	ng		98
35) Ethyl tert-Butyl Ether	7.86	87	1575301	98.777	ng		98
36) 1,2-Dichloroethane	8.16	62	1026854	47.802	ng		100
38) 1,1,1-Trichloroethane	8.44	97	1194100	50.764	ng		100
39) Isopropyl Acetate	9.63	61	1772	No Calib		#	
40) 1-Butanol	8.84	56	3218	No Calib		#	
41) Benzene	8.93	78	2579684	41.450	ng		100
42) Carbon Tetrachloride	9.10	117	1112680	50.063	ng		100
43) Cyclohexane	9.24	84	1913329	89.036	ng		99
44) tert-Amyl Methyl Ether	9.62	73	3734459	95.422	ng		99
45) 1,2-Dichloropropane	9.89	63	699519	44.388	ng		99
46) Bromodichloromethane	10.12	83	1032620	52.288	ng		100
47) Trichloroethene	10.18	130	786073	49.973	ng		99
48) 1,4-Dioxane	10.14	88	545842	51.741	ng		99
49) 2,2,4-Trimethylpentane...	10.26	57	2925879	44.337	ng		100
50) Methyl Methacrylate	10.43	100	583386	112.294	ng		98

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192413.D Vial: 7
Acq On : 19 Nov 2024 15:49 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 16:11:00 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

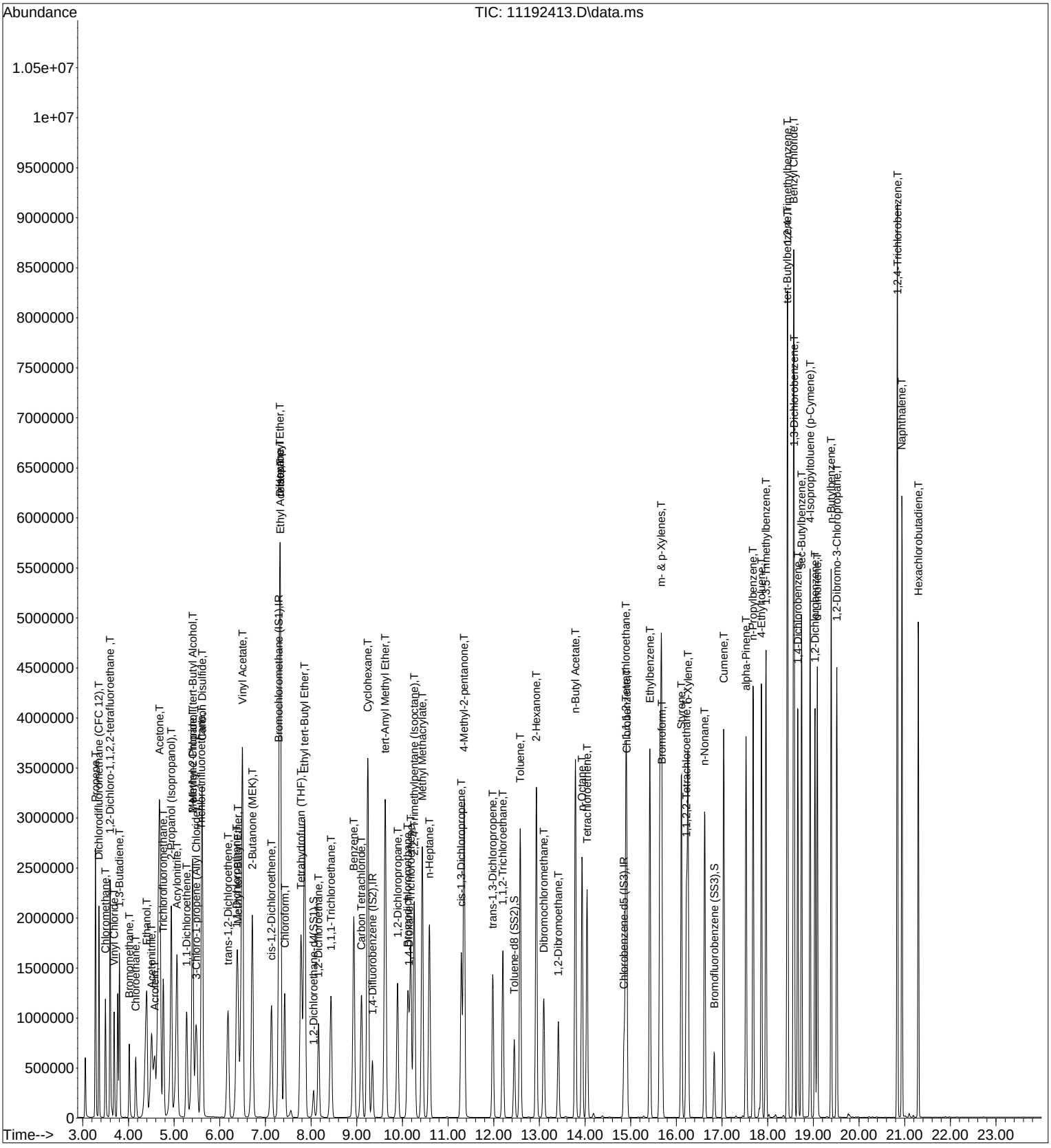
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.59	71	624021	43.947	ng		99
52) cis-1,3-Dichloropropene	11.29	75	1246828	49.792	ng		100
53) 4-Methyl-2-pentanone	11.35	58	1315972	96.937	ng		97
54) trans-1,3-Dichloropropene	11.98	75	1034113	51.347	ng		100
55) 1,1,2-Trichloroethane	12.20	97	721027	52.100	ng		100
58) Toluene	12.58	91	2818166	51.050	ng		100
59) 2-Hexanone	12.93	43	2986005	100.467	ng		98
60) Dibromochloromethane	13.10	129	899667	57.425	ng		100
61) 1,2-Dibromoethane	13.41	107	870282	57.301	ng		100
62) n-Butyl Acetate	13.79	43	3433620	102.275	ng		98
63) n-Octane	13.93	57	601009	48.799	ng		100
64) Tetrachloroethene	14.05	166	854234	54.750	ng		100
65) Chlorobenzene	14.91	112	1980526	52.778	ng		100
66) Ethylbenzene	15.42	91	3332614	54.264	ng		100
67) m- & p-Xylenes	15.67	91	5284951	107.192	ng		100
68) Bromoform	15.69	173	798292	64.288	ng		99
69) Styrene	16.11	104	2069412	58.898	ng		99
70) o-Xylene	16.25	91	2659305	53.641	ng		100
71) n-Nonane	16.62	43	1362443	45.562	ng		98
72) 1,1,2,2-Tetrachloroethane	16.22	83	1269709	54.300	ng		100
74) Cumene	17.04	105	3149885	52.463	ng		99
75) alpha-Pinene	17.53	93	1698599	55.850	ng		100
76) n-Propylbenzene	17.68	91	3761717	51.940	ng		100
77) 3-Ethyltoluene	17.04	105	3149885	No Calib			
78) 4-Ethyltoluene	17.86	105	3105493	54.300	ng		100
79) 1,3,5-Trimethylbenzene	17.96	105	2737734	55.516	ng		100
80) alpha-Methylstyrene	17.04	118	5975	No Calib		#	
81) 2-Ethyltoluene	17.04	105	3149885	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	2686169	54.112	ng		100
83) n-Decane	17.03	58	27009	No Calib			
84) Benzyl Chloride	18.57	91	4837837	128.209	ng		99
85) 1,3-Dichlorobenzene	18.58	146	1648164	56.938	ng		100
86) 1,4-Dichlorobenzene	18.66	146	1702258	57.188	ng		100
87) sec-Butylbenzene	18.74	105	3450888	52.152	ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	2949797	53.457	ng		99
89) 1,2,3-Trimethylbenzene	17.04	105	3149885	No Calib			
90) 1,2-Dichlorobenzene	19.04	146	1639451	56.078	ng		100
91) d-Limonene	19.09	68	945305	53.591	ng		100
92) 1,2-Dibromo-3-Chloropr...	19.51	157	1273831	134.304	ng		99
93) n-Undecane	17.96	58	54482	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	2623602	128.673	ng		99
95) Naphthalene	20.94	128	3981469	72.301	ng		99
96) n-Dodecane	18.93	58	79654	No Calib		#	
97) Hexachlorobutadiene	21.30	225	875677	56.816	ng		99
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.43	119	2436981	52.008	ng		100
100) n-Butylbenzene	19.39	91	2819171	54.404	ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	757531	58.738	ng		99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192413.D Vial: 7
Acq On : 19 Nov 2024 15:49 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 16:11:00 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 15:47:27 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192414.D Vial: 7
Acq On : 19 Nov 2024 16:21 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 16:43:50 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 16:43:37 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/19/24

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.31	130	131196	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.36	114	626496	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.86	54	122233	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.07	65	238454	12.867	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.96%				
57) Toluene-d8 (SS2)	12.46	98	668123	12.373	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%				
73) Bromofluorobenzene (SS3)	16.83	174	237201	13.976	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.84%				
Target Compounds							Qvalue
2) Propene	3.28	42	1524420	80.972	ng		98
3) Dichlorodifluoromethan...	3.36	85	2610938	89.935	ng		99
4) Chloromethane	3.51	50	1723574	71.826	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	1401091	109.276	ng		100
6) Vinyl Chloride	3.69	62	1817072	92.275	ng		99
7) 1,3-Butadiene	3.81	54	1314583	104.820	ng		96
8) Bromomethane	4.03	94	848352	75.905	ng		99
9) Chloroethane	4.16	64	926753	93.771	ng		100
10) Ethanol	4.43	45	5108761	388.427	ng		100
11) Acetonitrile	4.53	41	3005885	93.402	ng		95
12) Acrolein	4.60	56	2005956	197.768	ng		99
13) Acetone	4.70	58	4399826	412.205	ng		97
14) Trichlorofluoromethane	4.77	101	2549494	98.005	ng		100
15) 2-Propanol (Isopropanol)	4.97	45	6447851	160.484	ng		99
16) Acrylonitrile	5.09	53	3685310	187.174	ng		100
17) 1,1-Dichloroethene	5.29	96	1106345	86.885	ng		98
18) 2-Methyl-2-Propanol (t...	5.43	59	3133823	112.978	ng	#	28
19) Methylene Chloride	5.43	84	1174451	83.290	ng		99
20) 3-Chloro-1-propene (Al...	5.49	41	2058694	77.456	ng		93
21) Trichlorotrifluoroethane	5.61	151	1045149	90.804	ng		98
22) Carbon Disulfide	5.62	76	8298009	166.780	ng		99
23) trans-1,2-Dichloroethene	6.19	61	2020918	99.633	ng		99
24) 1,1-Dichloroethane	6.39	63	2270486	89.906	ng		100
25) Methyl tert-Butyl Ether	6.41	73	3012883	84.834	ng		99
26) Vinyl Acetate	6.52	86	1369070	518.088	ng	#	82
27) 2-Butanone (MEK)	6.74	72	1612400	186.717	ng	#	90
28) cis-1,2-Dichloroethene	7.15	61	1867383	96.395	ng		99
29) Diisopropyl Ether	7.33	87	1864791	182.025	ng	#	77
30) Ethyl Acetate	7.35	61	884893	171.976	ng		95
31) n-Hexane	7.32	57	1829776	78.199	ng		99
32) Chloroform	7.44	83	2400674	104.852	ng		100
34) Tetrahydrofuran (THF)	7.79	72	1406526	172.246	ng		93
35) Ethyl tert-Butyl Ether	7.87	87	2976769	200.209	ng		94
36) 1,2-Dichloroethane	8.18	62	1962838	98.009	ng		100
38) 1,1,1-Trichloroethane	8.45	97	2296453	100.315	ng		99
39) Isopropyl Acetate	9.63	61	3330	No Calib		#	
40) 1-Butanol	8.86	56	6133	No Calib		#	
41) Benzene	8.95	78	4871871	80.434	ng		99
42) Carbon Tetrachloride	9.12	117	2144103	99.124	ng		100
43) Cyclohexane	9.25	84	3557407	170.097	ng		96
44) tert-Amyl Methyl Ether	9.64	73	6967988	182.944	ng		98
45) 1,2-Dichloropropane	9.91	63	1317040	85.872	ng		99
46) Bromodichloromethane	10.13	83	1982036	103.124	ng		100
47) Trichloroethene	10.20	130	1495422	97.684	ng		99
48) 1,4-Dioxane	10.16	88	1022285	99.570	ng		98
49) 2,2,4-Trimethylpentane...	10.27	57	5362217	83.491	ng		99
50) Methyl Methacrylate	10.45	100	1103730	218.299	ng		96

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192414.D Vial: 7
Acq On : 19 Nov 2024 16:21 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 16:43:50 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 16:43:37 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

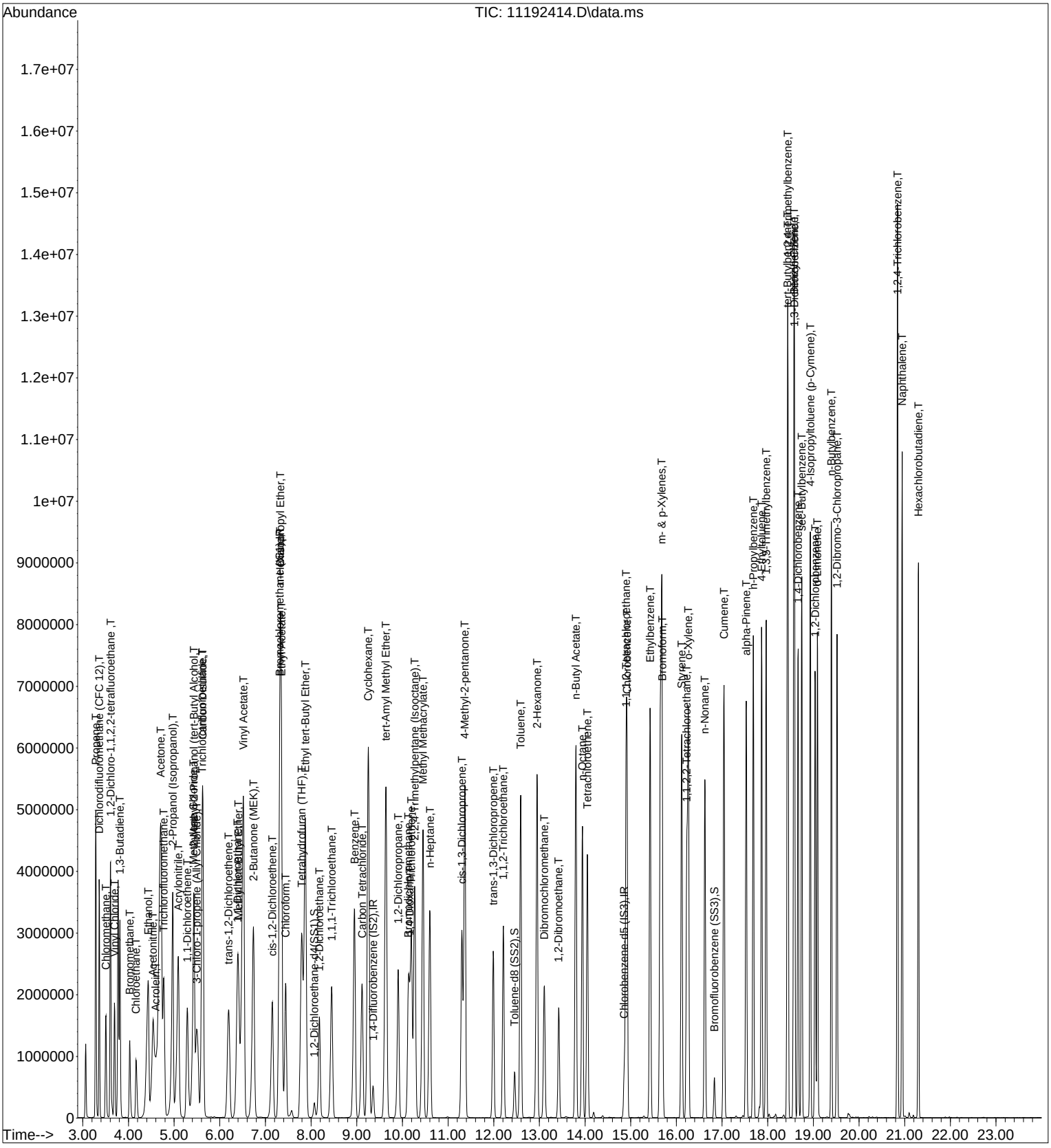
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.60	71	1174900	85.021	ng		97
52) cis-1,3-Dichloropropene	11.30	75	2386062	97.910	ng		100
53) 4-Methyl-2-pentanone	11.36	58	2375985	179.836	ng		93
54) trans-1,3-Dichloropropene	11.99	75	2010747	102.587	ng		99
55) 1,1,2-Trichloroethane	12.21	97	1377427	102.269	ng		100
58) Toluene	12.59	91	5284451	96.870	ng		100
59) 2-Hexanone	12.95	43	5314062	180.934	ng		96
60) Dibromochloromethane	13.11	129	1757536	113.523	ng		100
61) 1,2-Dibromoethane	13.42	107	1668953	111.200	ng		100
62) n-Butyl Acetate	13.80	43	6032078	181.821	ng		96
63) n-Octane	13.94	57	1106465	90.913	ng		97
64) Tetrachloroethene	14.05	166	1651363	107.106	ng		99
65) Chlorobenzene	14.92	112	3707504	99.979	ng		99
66) Ethylbenzene	15.42	91	6200463	102.167	ng		99
67) m- & p-Xylenes	15.67	91	9612198	197.290	ng		99
68) Bromoform	15.69	173	1534554	125.057	ng		99
69) Styrene	16.12	104	3899228	112.303	ng		98
70) o-Xylene	16.26	91	4935971	100.754	ng		100
71) n-Nonane	16.62	43	2405646	81.410	ng		95
72) 1,1,2,2-Tetrachloroethane	16.23	83	2378825	102.949	ng		100
74) Cumene	17.04	105	5820477	98.102	ng		99
75) alpha-Pinene	17.53	93	3158057	105.079	ng		99
76) n-Propylbenzene	17.68	91	6819687	95.289	ng		98
77) 3-Ethyltoluene	17.04	105	5820477	No Calib			
78) 4-Ethyltoluene	17.87	105	5603276	99.145	ng		98
79) 1,3,5-Trimethylbenzene	17.97	105	5020203	103.017	ng		99
80) alpha-Methylstyrene	17.04	118	10449	No Calib		#	
81) 2-Ethyltoluene	17.04	105	5820477	No Calib			
82) 1,2,4-Trimethylbenzene	18.44	105	4738040	96.587	ng		98
83) n-Decane	17.04	58	42283	No Calib			
84) Benzyl Chloride	18.58	91	8189359	219.622	ng		95
85) 1,3-Dichlorobenzene	18.59	146	2982113	104.253	ng		99
86) 1,4-Dichlorobenzene	18.67	146	3187708	108.373	ng		100
87) sec-Butylbenzene	18.75	105	6183944	94.573	ng		98
88) 4-Isopropyltoluene (p-...	18.93	119	5313633	97.446	ng		97
89) 1,2,3-Trimethylbenzene	17.04	105	5820477	No Calib			
90) 1,2-Dichlorobenzene	19.04	146	3067592	106.182	ng		99
91) d-Limonene	19.09	68	1731384	99.329	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.52	157	2376623	253.570	ng		97
93) n-Undecane	17.96	58	96758	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	4679842	232.264	ng		98
95) Naphthalene	20.94	128	7106601	130.594	ng		98
96) n-Dodecane	18.93	58	119180	No Calib		#	
97) Hexachlorobutadiene	21.30	225	1660955	109.055	ng		100
98) Cyclohexanone	15.25	55	110	No Calib		#	
99) tert-Butylbenzene	18.43	119	4343087	93.794	ng		99
100) n-Butylbenzene	19.39	91	5030567	98.240	ng		98
101) 1,1,1,2-Tetrachloroethane	14.90	131	1436371	112.705	ng		99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192414.D Vial: 7
Acq On : 19 Nov 2024 16:21 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S37-11192401/S37-11182402 (12/18)

Quant Time: Nov 19 16:43:50 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 16:43:37 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192416.D Vial: 2
Acq On : 19 Nov 2024 17:25 Operator: SC
Sample : ICV R09111924 25ng Inst : MS09
Misc : S37-11192401/S37-11072403 (12/6)

Quant Time: Nov 20 10:16:33 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 16:47:40 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/20/24

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	148852	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	660905	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.85	54	121739	12.500	ng	-0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	245072	12.085	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.64%			
57) Toluene-d8 (SS2)	12.44	98	690553	12.787	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.32%			
73) Bromofluorobenzene (SS3)	16.83	174	237736	12.756	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.08%			
Target Compounds						Qvalue
2) Propene	3.27	42	412971	25.974	ng	99
3) Dichlorodifluoromethan...	3.35	85	723344	24.859	ng	100
4) Chloromethane	3.49	50	566716	26.227	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	380926	27.651	ng	100
6) Vinyl Chloride	3.68	62	494652	29.751	ng	100
7) 1,3-Butadiene	3.80	54	345852	31.553	ng	98
8) Bromomethane	4.01	94	330036	31.474	ng	99
9) Chloroethane	4.15	64	245073	28.008	ng	100
10) Ethanol	4.37	45	1588546	144.279	ng	100
11) Acetonitrile	4.48	41	708557	25.020	ng	99
12) Acrolein	4.56	56	553036	58.756	ng	100
13) Acetone	4.66	58	1322031	131.905	ng	98
14) Trichlorofluoromethane	4.76	101	680830	24.949	ng	100
15) 2-Propanol (Isopropanol)	4.91	45	2068631	57.636	ng	99
16) Acrylonitrile	5.04	53	1031903	57.706	ng	99
17) 1,1-Dichloroethene	5.27	96	353429	28.175	ng	98
18) 2-Methyl-2-Propanol (t...	5.39	59	1488465	51.759	ng	100
19) Methylene Chloride	5.39	84	365336	25.905	ng	98
20) 3-Chloro-1-propene (Al...	5.47	41	562876	24.053	ng	100
21) Trichlorotrifluoroethane	5.59	151	331645	26.937	ng	100
22) Carbon Disulfide	5.61	76	2539687	56.012	ng	100
23) trans-1,2-Dichloroethene	6.17	61	559933	29.063	ng	99
24) 1,1-Dichloroethane	6.36	63	653689	27.334	ng	100
25) Methyl tert-Butyl Ether	6.38	73	991552	27.879	ng	100
26) Vinyl Acetate	6.48	86	389576	160.590	ng	98
27) 2-Butanone (MEK)	6.70	72	450771	55.981	ng	98
28) cis-1,2-Dichloroethene	7.12	61	525214	27.978	ng	99
29) Diisopropyl Ether	7.30	87	542343	53.521	ng	97
30) Ethyl Acetate	7.31	61	271863	54.700	ng	100
31) n-Hexane	7.31	57	587651	26.279	ng	100
32) Chloroform	7.41	83	666424	27.503	ng	100
34) Tetrahydrofuran (THF)	7.76	72	412818	54.362	ng	99
35) Ethyl tert-Butyl Ether	7.84	87	831870	56.740	ng	99
36) 1,2-Dichloroethane	8.15	62	524174	25.537	ng	100
38) 1,1,1-Trichloroethane	8.42	97	613729	26.834	ng	100
39) Isopropyl Acetate	9.61	61	838	No Calib	#	
40) 1-Butanol	8.84	56	2531	No Calib		
41) Benzene	8.92	78	1351236	25.470	ng	100
42) Carbon Tetrachloride	9.09	117	568295	26.780	ng	100
43) Cyclohexane	9.23	84	1035718	55.962	ng	99
44) tert-Amyl Methyl Ether	9.62	73	1998576	58.302	ng	99
45) 1,2-Dichloropropane	9.88	63	359986	27.816	ng	99
46) Bromodichloromethane	10.10	83	541224	29.462	ng	100
47) Trichloroethene	10.17	130	409053	27.064	ng	99
48) 1,4-Dioxane	10.13	88	291819	31.761	ng	99
49) 2,2,4-Trimethylpentane...	10.25	57	1537150	27.694	ng	99
50) Methyl Methacrylate	10.43	100	305346	63.101	ng	98

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192416.D Vial: 2
Acq On : 19 Nov 2024 17:25 Operator: SC
Sample : ICV R09111924 25ng Inst : MS09
Misc : S37-11192401/S37-11072403 (12/6)

Quant Time: Nov 20 10:16:33 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 16:47:40 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

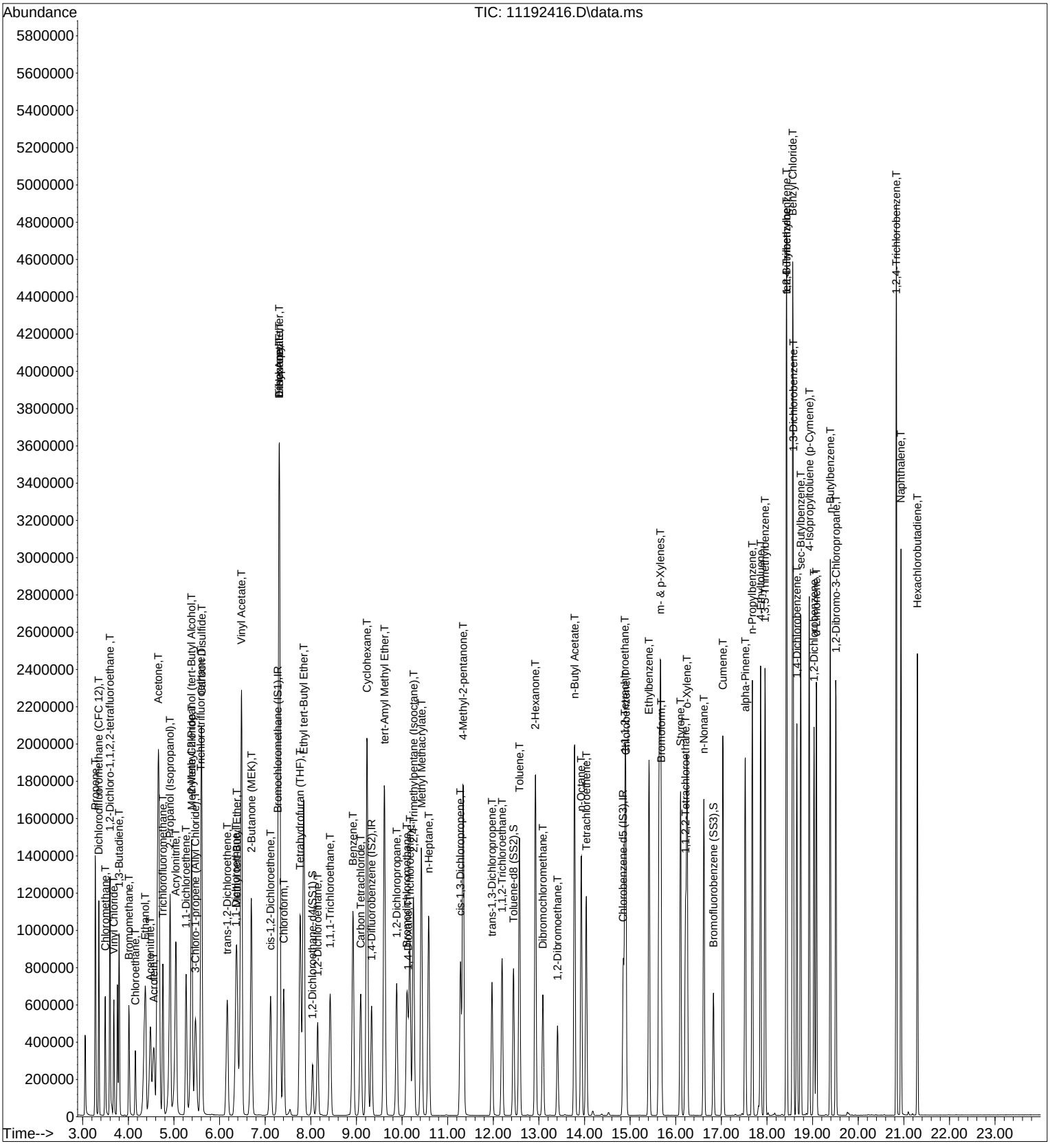
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.59	71	332143	28.074 ng	99
52) cis-1,3-Dichloropropene	11.28	75	634925	30.046 ng	100
53) 4-Methyl-2-pentanone	11.34	58	705830	61.856 ng	99
54) trans-1,3-Dichloropropene	11.97	75	513255	26.838 ng	100
55) 1,1,2-Trichloroethane	12.19	97	369248	28.788 ng	100
58) Toluene	12.57	91	1461270	28.122 ng	100
59) 2-Hexanone	12.92	43	1631656	64.436 ng	99
60) Dibromochloromethane	13.09	129	473366	30.542 ng	100
61) 1,2-Dibromoethane	13.41	107	434709	29.358 ng	100
62) n-Butyl Acetate	13.78	43	1866941	65.607 ng	100
63) n-Octane	13.93	57	315924	29.325 ng	99
64) Tetrachloroethene	14.04	166	436831	28.262 ng	100
65) Chlorobenzene	14.91	112	1017265	27.751 ng	100
66) Ethylbenzene	15.41	91	1714286	29.837 ng	100
67) m- & p-Xylenes	15.66	91	2731427	58.087 ng	100
68) Bromoform	15.68	173	418455	33.982 ng	100
69) Styrene	16.11	104	1046394	31.852 ng	100
70) o-Xylene	16.25	91	1363995	29.312 ng	100
71) n-Nonane	16.62	43	737155	29.818 ng	100
72) 1,1,2,2-Tetrachloroethane	16.21	83	643449	29.057 ng	100
74) Cumene	17.03	105	1670911	28.860 ng	100
75) alpha-Pinene	17.53	93	881577	30.864 ng	100
76) n-Propylbenzene	17.68	91	2002331	29.168 ng	100
77) 3-Ethyltoluene	17.03	105	1670911	No Calib	
78) 4-Ethyltoluene	17.86	105	1669170	30.589 ng	99
79) 1,3,5-Trimethylbenzene	17.96	105	1402296	29.393 ng	100
80) alpha-Methylstyrene	17.03	118	3313	No Calib #	
81) 2-Ethyltoluene	17.03	105	1670911	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1403810	29.093 ng	99
83) n-Decane	17.03	58	13089	No Calib	
84) Benzyl Chloride	18.56	91	2556262	64.543 ng	100
85) 1,3-Dichlorobenzene	18.58	146	842438	27.962 ng	100
86) 1,4-Dichlorobenzene	18.66	146	852540	27.480 ng	99
87) sec-Butylbenzene	18.74	105	1832597	28.677 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1570194	29.591 ng	99
89) 1,2,3-Trimethylbenzene	17.03	105	1670911	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	828019	27.183 ng	100
91) d-Limonene	19.08	68	503969	32.706 ng	99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	653892	63.028 ng	99
93) n-Undecane	17.96	58	29275	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1281288	60.412 ng	100
95) Naphthalene	20.94	128	1962195	30.365 ng	100
96) n-Dodecane	18.92	58	38447	No Calib #	
97) Hexachlorobutadiene	21.30	225	435012	27.294 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1327847	29.313 ng	100
100) n-Butylbenzene	19.39	91	1497668	29.925 ng	100
101) 1,1,1,2-Tetrachloroethane	14.89	131	395168	29.554 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192416.D Vial: 2
Acq On : 19 Nov 2024 17:25 Operator: SC
Sample : ICV R09111924 25ng Inst : MS09
Misc : S37-11192401/S37-11072403 (12/6)

Quant Time: Nov 20 10:16:33 2024
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Nov 19 16:47:40 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS Environmental

LCS Acceptance Criteria

11/20/24

ICV R09111924_25ng

	RT
Bromochloromethane (IS1)	7.28
1,4-Difluorobenzene (IS2)	9.33
Chlorobenzene-d5 (IS3)	14.85

Datafile: 11192416.D
Instrument: MS-09
Date: ##########

CAS No	Analyte	Amount Found	Spike Amount	% REC	ALS LCS Limits	ALS Pass/Fail	70-130 LCS Limits	70-130 Pass/Fail	DOD LCS Limits	DOD Pass/Fail
115-07-1	Propene	25.974	26.500	98	50-133	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	24.859	25.500	97	66-122	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	26.227	26.000	101	56-131	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	27.651	26.000	106	63-120	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	29.751	26.500	112	57-129	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	31.553	26.500	119	62-132	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	31.474	26.250	120	72-120	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	28.008	26.500	106	67-123	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	144.279	139.3	104	52-120	ok	70-130	ok	59-125	ok
75-05-8	Acetonitrile	25.020	26.750	94	50-114	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	58.756	53.250	110	63-125	ok	70-130	ok	62-126	ok
67-64-1	Acetone	131.905	132.3	100	61-120	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	24.949	26.250	95	65-122	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	57.636	52.250	110	59-132	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	57.706	53.000	109	60-128	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	28.175	26.000	108	75-120	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	51.759	51.250	101	60-143	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	25.905	26.000	100	71-123	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	24.053	26.750	90	50-118	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	26.937	26.250	103	65-121	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	56.012	53.750	104	69-115	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	29.063	27.250	107	67-123	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	27.334	27.000	101	66-120	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	27.879	27.000	103	65-124	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	160.590	136.5	118	76-147	ok	70-130	ok	56-139	ok
78-93-3	2-Butanone	55.981	51.750	108	70-125	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	27.978	27.000	104	64-120	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	53.521	53.250	101	64-120	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	54.700	49.750	110	56-120	ok	70-130	ok	65-128	ok
110-54-3	n-Hexane	26.279	26.500	99	60-125	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	27.503	27.000	102	64-121	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	54.362	50.500	108	67-117	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	56.740	53.000	107	69-121	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	25.537	25.750	99	64-138	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	26.834	26.250	102	67-125	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	-	-	-	-	70-130	-	65-129	-
71-36-3	1-Butanol	0.000	-	-	-	-	70-130	-	62-133	-
71-43-2	Benzene	25.470	25.750	99	73-128	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	26.780	26.250	102	71-134	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	55.962	53.500	105	71-118	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	58.302	53.000	110	70-126	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	27.816	26.750	104	68-121	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	29.462	27.250	108	70-125	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	27.064	26.750	101	68-124	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	31.761	26.750	119	76-127	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	27.694	26.750	104	62-124	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	63.101	53.500	118	77-118	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	28.074	26.750	105	72-121	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	30.046	26.500	113	87-137	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	61.856	53.250	116	67-137	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

ICV R09111924_25ng

	RT
Bromochloromethane (IS1)	7.28
1,4-Difluorobenzene (IS2)	9.33
Chlorobenzene-d5 (IS3)	14.85

Datafile: 11192416.D
Instrument: MS-09
Date: #########

CAS No	Analyte	Amount Found	Spike Amount	% REC	ALS LCS Limits	ALS Pass/Fail	70-130 LCS Limits	70-130 Pass/Fail	DOD LCS Limits	DOD Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	26.838	24.500	110	73-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	28.788	27.000	107	71-119	ok	70-130	ok	73-119	ok
108-88-3	Toluene	28.122	26.750	105	64-121	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	64.436	53.250	121	70-136	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	30.542	26.750	114	67-128	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	29.358	25.750	114	69-129	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	65.607	53.250	123	70-135	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	29.325	26.750	110	66-124	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	28.262	26.750	106	55-132	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	27.751	27.250	102	63-124	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	29.837	27.250	109	64-119	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	58.087	54.000	108	64-121	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	33.982	27.250	125	63-132	ok	70-130	ok	66-139	ok
100-42-5	Styrene	31.852	26.750	119	71-125	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	29.312	27.000	109	66-122	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	29.818	26.750	111	65-129	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	29.057	27.000	108	71-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	28.860	26.500	109	66-126	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	30.864	27.000	114	65-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	29.168	26.750	109	67-126	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	-	-	-	-	70-130	-	62-123	-
622-96-8	4-Ethyltoluene	30.589	27.250	112	67-128	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	29.393	27.250	108	66-125	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	-	-	-	-	70-130	-	67-128	-
611-14-3	2-Ethyltoluene	0.000	-	-	-	-	70-130	-	66-121	-
95-63-6	1,2,4-Trimethylbenzene	29.093	26.500	110	67-130	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	-	-	-	-	70-130	-	70-118	-
100-44-7	Benzyl Chloride	64.543	53.750	120	58-151	ok	70-130	ok	50-147	ok
541-73-1	1,3-Dichlorobenzene	27.962	26.750	105	57-135	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	27.480	26.750	103	56-129	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	28.677	26.500	108	64-132	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	29.591	26.250	113	65-125	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	-	-	-	-	70-130	-	60-134	-
95-50-1	1,2-Dichlorobenzene	27.183	26.500	103	57-138	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	32.706	26.000	126	70-129	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	63.028	53.250	118	63-138	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	-	-	-	-	70-130	-	69-123	-
120-82-1	1,2,4-Trichlorobenzene	60.412	55.000	110	50-137	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	30.365	27.500	110	50-157	ok	70-130	ok	57-138	ok
112-40-3	n-Dodecane	0.000	-	-	-	-	70-130	-	62-147	-
87-68-3	Hexachloro-1,3-butadiene	27.294	26.750	102	50-133	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	-	-	-	-	70-130	-	61-132	-
98-06-6	tert-Butylbenzene	29.313	26.750	110	63-130	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	29.925	26.250	114	69-133	ok	70-130	ok	66-130	ok

Response Factor Report MS09

Method Path : I:\MS09\METHODS\
Method File : C09111924.M
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 08:49:42 2024
Response Via : Initial Calibration

11/20/24

Calibration Files
0.40=11192419.D 1.0 =11192420.D 2.5 =11192421.D 5.0 =11192422.D 25 =11192423.D 50 =11192

		Compound	0.40	1.0	2.5	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	ISTD	----------						
2)	T	Chloropentaflu...	1.744	1.638	1.564	1.568	1.520	1.450	1.337	1.546	8.44
3)	T	1,1,1,2-Tetraf...	1.247	1.210	1.146	1.124	1.119	1.076	1.034	1.136	6.46
4)	T	1,1-Difluoroet...	1.140	1.073	1.023	1.028	0.999	0.958	0.864	1.012	8.59
5)	T	Chlorodifluoro...	0.371	0.360	0.342	0.348	0.349	0.337	0.330	0.348	4.03
6)	T	1-Chloro-1,1-D...	2.559	2.349	2.283	2.306	2.236	2.163	2.059	2.279	6.88
7)	T	Dichlorofluoro...	2.901	2.652	2.549	2.442	2.493	2.391	2.302	2.533	7.79
8)	T	Vinylbromide	1.139	1.046	1.044	1.037	1.072	1.029	0.993	1.052	4.28
9)	T	2,2-Dichloro-1...	1.959	1.782	1.741	1.677	1.694	1.657	1.600	1.730	6.74
10)	T	2-Methylbutane	1.362	1.273	1.244	1.183	1.177	1.134	1.070	1.206	7.96
11)	T	Methyl Acetate	3.102	2.942	2.877	2.785	2.852	2.805	2.685	2.864	4.62
12)	T	2-Methylpentane	1.118	1.075	1.045	1.002	1.015	0.991	0.953	1.028	5.38
13)	T	2,2-Dichloropr...	1.745	1.647	1.560	1.525	1.665	1.634	1.458	1.605	6.01
14)	T	1,1-Dichloropr...	1.717	1.625	1.593	1.562	1.635	1.595	1.558	1.612	3.37
15)	T	Thiophene	2.777	2.581	2.478	2.390	2.479	2.367	2.300	2.482	6.40
16)	IR	1,4-Difluorobenzen...	----------	ISTD	----------						
17)	T	2,3-Dimethylpe...	0.546	0.524	0.506	0.481	0.492	0.474	0.450	0.496	6.48
18)	T	Dibromomethane	0.218	0.209	0.207	0.207	0.213	0.210	0.207	0.210	2.03
19)	IR	Chlorobenzene-d5 (...	----------	ISTD	----------						
20)	T	Methyl Cyclohe...	2.460	2.308	2.247	2.182	2.231	2.134	2.048	2.230	5.90
21)	T	1,3-Dichloropr...	2.322	2.210	2.156	2.101	2.155	2.075	2.035	2.151	4.42
22)	T	1,1,1,2-Tetrac...	1.475	1.485	1.433	1.420	1.481	1.444	1.438	1.454	1.78
23)	T	1-Chlorohexane	2.210	2.068	2.095	2.075	2.160	2.095	2.039	2.106	2.80
24)	T	1,2,3-Trichlor...	2.287	2.145	2.126	2.117	2.181	2.114	2.078	2.150	3.18
25)	T	Bromobenzene	2.667	2.583	2.487	2.462	2.580	2.514	2.448	2.534	3.12
26)	T	2-Chlorotoluene	4.958	4.702	4.713	4.679	4.751	4.554	4.346	4.672	4.02
27)	T	4-Chlorotoluene	5.233	4.979	4.911	4.879	4.988	4.807	4.609	4.915	3.87
28)	T	Indane	5.387	5.373	5.499	5.557	5.633	5.299	4.891	5.377	4.52
29)	T	Indene	4.008	4.285	4.421	4.537	5.077	4.881	4.585	4.542	7.88
30)	T	1,2,4,5-Tetram...	4.908	5.147	5.369	5.522	6.022	5.653	5.322	5.420	6.63
31)	T	1,2,3,4-Tetram...	5.430	5.473	5.435	5.479	5.764	5.513	4.917	5.430	4.67
32)	T	1,2,3,5-Tetram...	4.772	4.983	5.064	5.197	5.687	5.444	5.015	5.166	5.97
33)	T	1,2,3-Trichlor...	1.988	1.997	2.002	2.008	2.271	2.295	2.228	2.113	6.80

(#) = Out of Range

C09111924.M Wed Nov 20 08:49:54 2024

11/22/24

Std#: **Working Standards**

(1) 200 ng/L Working Std. ID: S37-11192402

(2) 20 ng/L Working Std. ID: S37-11192403

Injection Amts.(L):	0.020	0.050	0.125	0.250	0.125	0.250	0.500
Standards Used:	(2)	(2)	(2)	(2)	(1)	(1)	(1)
Compounds/ Concentrations (ng):	0.4ng	1.0ng	2.5ng	5.0ng	25ng	50ng	100ng
Vinyl bromide	0.400	1.000	2.500	5.00	25.00	50.0	100
2-Methylbutane (Isopentane)	0.408	1.020	2.550	5.10	25.50	51.0	102
2-Methylpentane	0.400	1.000	2.500	5.00	25.00	50.0	100
2,2-Dichloropropane	0.396	0.990	2.475	4.95	24.75	49.5	99
1,1-Dichloropropene	0.416	1.040	2.600	5.20	26.00	52.0	104
Thiophene	0.404	1.010	2.525	5.05	25.25	50.5	101
2,3-Dimethylpentane	0.416	1.040	2.600	5.20	26.00	52.0	104
Dibromomethane	0.428	1.070	2.675	5.35	26.75	53.5	107
1,3-Dichloropropane	0.416	1.040	2.600	5.20	26.00	52.0	104
1,1,1,2-Tetrachloroethane	0.348	0.870	2.175	4.35	21.75	43.5	87
1-Chlorohexane	0.412	1.030	2.575	5.15	25.75	51.5	103
1,2,3-Trichloropropane	0.420	1.050	2.625	5.25	26.25	52.5	105
Bromobenzene	0.420	1.050	2.625	5.25	26.25	52.5	105
2-Chlorotoluene	0.424	1.060	2.650	5.30	26.50	53.0	106
4-Chlorotoluene	0.404	1.010	2.525	5.05	25.25	50.5	101
Indane	0.396	0.990	2.475	4.95	24.75	49.5	99
Indene	0.376	0.940	2.350	4.70	23.50	47.0	94
1,2,4,5-Tetramethylbenzene	0.404	1.010	2.525	5.05	25.25	50.5	101
1,2,3,4-Tetramethylbenzene	0.412	1.030	2.575	5.15	25.75	51.5	103
1,2,3,5-Tetramethylbenzene	0.404	1.010	2.525	5.05	25.25	50.5	101
1,2,3-Trichlorobenzene	0.420	1.050	2.625	5.25	26.25	52.5	105
Chloropentafluoroethane (R115)	0.396	0.990	2.475	4.95	24.75	49.5	99
2,2-Dichloro-1,1,1-trifluoroethane (R123)	0.416	1.040	2.600	5.20	26.00	52.0	104
1,1-Difluoroethane (R152a)	0.424	1.060	2.650	5.30	26.50	53.0	106
Chlorodifluoromethane (R22)	0.416	1.040	2.600	5.20	26.00	52.0	104
Dichlorofluoromethane (R21)	0.396	0.990	2.475	4.95	24.75	49.5	99
1,1,1,2-Tetrafluoroethane (R134a)	0.400	1.000	2.500	5.00	25.00	50.0	100
1-Chloro-1,1-Difluoroethane	0.416	1.040	2.600	5.20	26.00	52.0	104
Methyl Acetate	0.384	0.960	2.400	4.80	24.00	48.0	96
Methylcyclohexane	0.428	1.070	2.675	5.35	26.75	53.5	107
Chlorotrifluoroethene	0.408	1.020	2.550	5.10	25.50	51.0	102

Calibration Status Report MS09

Method : I:\MS09\METHODS\C09111924.M (RTE Integrator)
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 08:51:00 2024
Response via : Initial Calibration

11/20/24

#	ID	Conc	ISTD Conc	Path\File
1	0.40	0	13	I:\MS09\DATA\2024_11\19\11192419.D
2	1.0	1	13	I:\MS09\DATA\2024_11\19\11192420.D
3	2.5	2	13	I:\MS09\DATA\2024_11\19\11192421.D
4	5.0	5	13	I:\MS09\DATA\2024_11\19\11192422.D
5	25	25	13	I:\MS09\DATA\2024_11\19\11192423.D
6	50	50	13	I:\MS09\DATA\2024_11\19\11192424.D
7	100	99	13	I:\MS09\DATA\2024_11\19\11192425.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.40	Nov 20 08:48 2024	Nov 20 08:43 2024	19 Nov 2024 19:02
2	1.0	Nov 20 08:48 2024	Nov 20 08:42 2024	19 Nov 2024 19:34
3	2.5	Nov 20 08:48 2024	Nov 20 08:41 2024	19 Nov 2024 20:06
4	5.0	Nov 20 08:49 2024	Nov 20 08:41 2024	19 Nov 2024 20:38
5	25	Nov 20 08:49 2024	Nov 20 08:40 2024	19 Nov 2024 21:10
6	50	Nov 20 08:49 2024	Nov 20 08:44 2024	19 Nov 2024 21:42
7	100	Nov 20 08:49 2024	Nov 20 08:45 2024	19 Nov 2024 22:14

C09111924.M Wed Nov 20 09:05:21 2024

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192419.D Vial: 8
Acq On : 19 Nov 2024 19:02 Operator: SC
Sample : 0.4ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

Quant Time: Nov 20 08:43:27 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/20/24

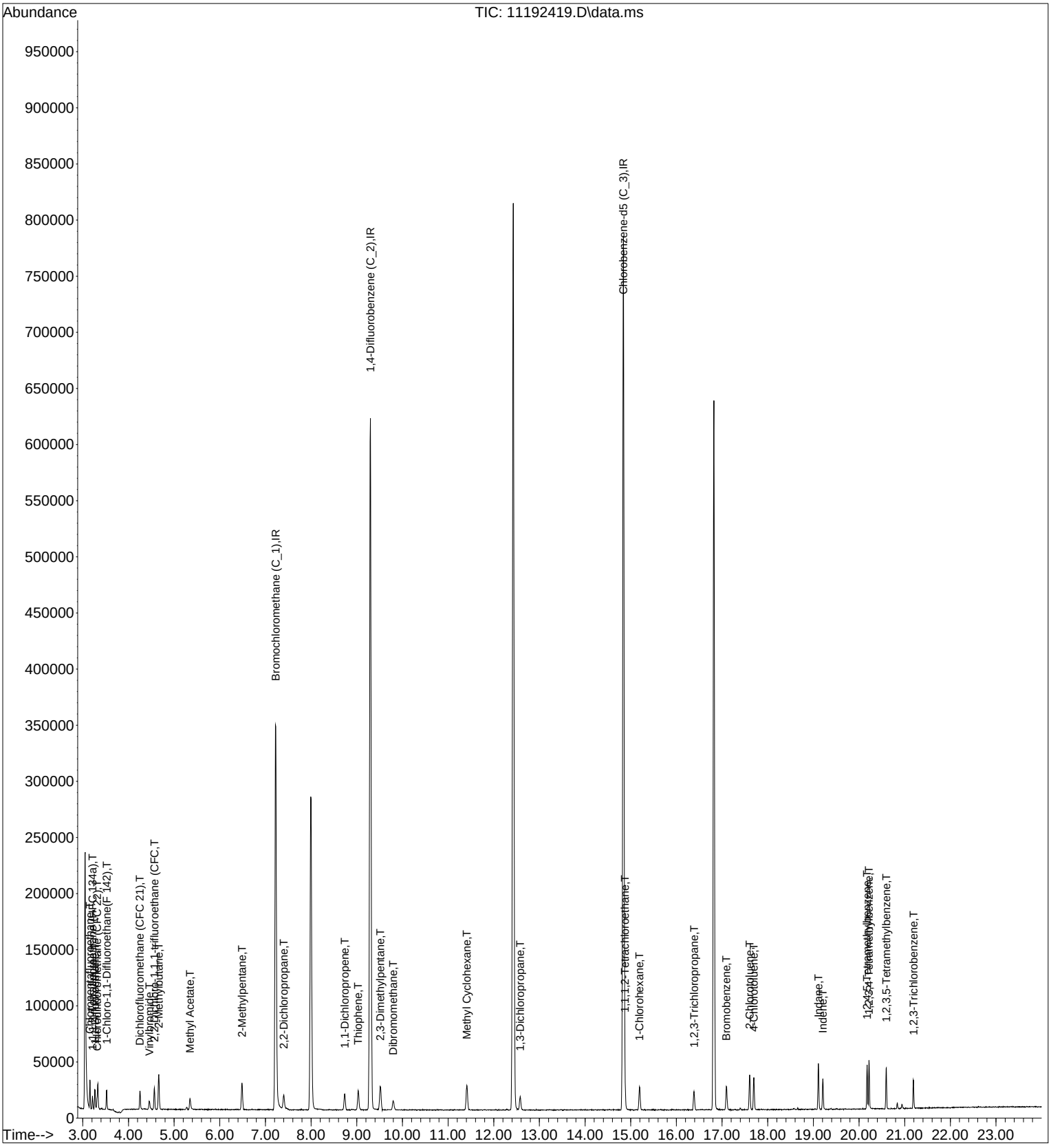
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	146929	12.500	ng		-0.01
16) 1,4-Difluorobenzene (C 2)	9.30	114	644689	12.500	ng		-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	117224	12.500	ng		0.00
Target Compounds							Qvalue
2) Chloropentafluoroethane	3.15	85	8119	0.444	ng		99
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	5863	0.389	ng		94
4) 1,1-Difluoroethane	3.27	65	5681	0.443	ng		89
5) Chlorodifluoromethane ...	3.31	67	1816	0.363	ng		90
6) 1-Chloro-1,1-Difluoroe...	3.52	65	12512	0.378	ng		99
7) Dichlorofluoromethane ...	4.25	67	13503	0.401	ng		100
8) Vinylbromide	4.46	108	5354	0.426	ng		95
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	9580	0.470	ng		98
10) 2-Methylbutane	4.66	57	6533	0.373	ng		94
11) Methyl Acetate	5.35	43	14003	0.283	ng	#	96
12) 2-Methylpentane	6.49	71	5256	0.413	ng		92
13) 2,2-Dichloropropane	7.40	77	8123	0.339	ng		96
14) 1,1-Dichloropropene	8.74	75	8394	0.401	ng		98
15) Thiophene	9.03	84	13186	0.441	ng		98
17) 2,3-Dimethylpentane	9.51	56	11717	0.376	ng		99
18) Dibromomethane	9.80	174	4822	0.421	ng		98
20) Methyl Cyclohexane	11.41	55	9874	0.491	ng		97
21) 1,3-Dichloropropane	12.58	76	9057	0.580	ng		99
22) 1,1,1,2-Tetrachloroethane	14.87	131	4814	0.466	ng		97
23) 1-Chlorohexane	15.19	91	8540	0.589	ng		100
24) 1,2,3-Trichloropropane	16.39	75	9009	0.576	ng		98
25) Bromobenzene	17.09	77	10505	0.572	ng		99
26) 2-Chlorotoluene	17.61	91	19716	0.583	ng		99
27) 4-Chlorotoluene	17.70	91	19826	0.578	ng		95
28) Indane	19.11	117	20005	0.516	ng		96
29) Indene	19.21	115	14132	0.475	ng		99
30) 1,2,4,5-Tetramethylben...	20.18	119	18596	0.464	ng		99
31) 1,2,3,4-Tetramethylben...	20.22	119	20981	0.519	ng		100
32) 1,2,3,5-Tetramethylben...	20.60	119	18078	0.471	ng		99
33) 1,2,3-Trichlorobenzene	21.19	180	7831	0.559	ng		98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192419.D Vial: 8
Acq On : 19 Nov 2024 19:02 Operator: SC
Sample : 0.4ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

Quant Time: Nov 20 08:43:27 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192420.D Vial: 8
Acq On : 19 Nov 2024 19:34 Operator: SC
Sample : 1.0ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

Quant Time: Nov 20 08:42:38 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/20/24

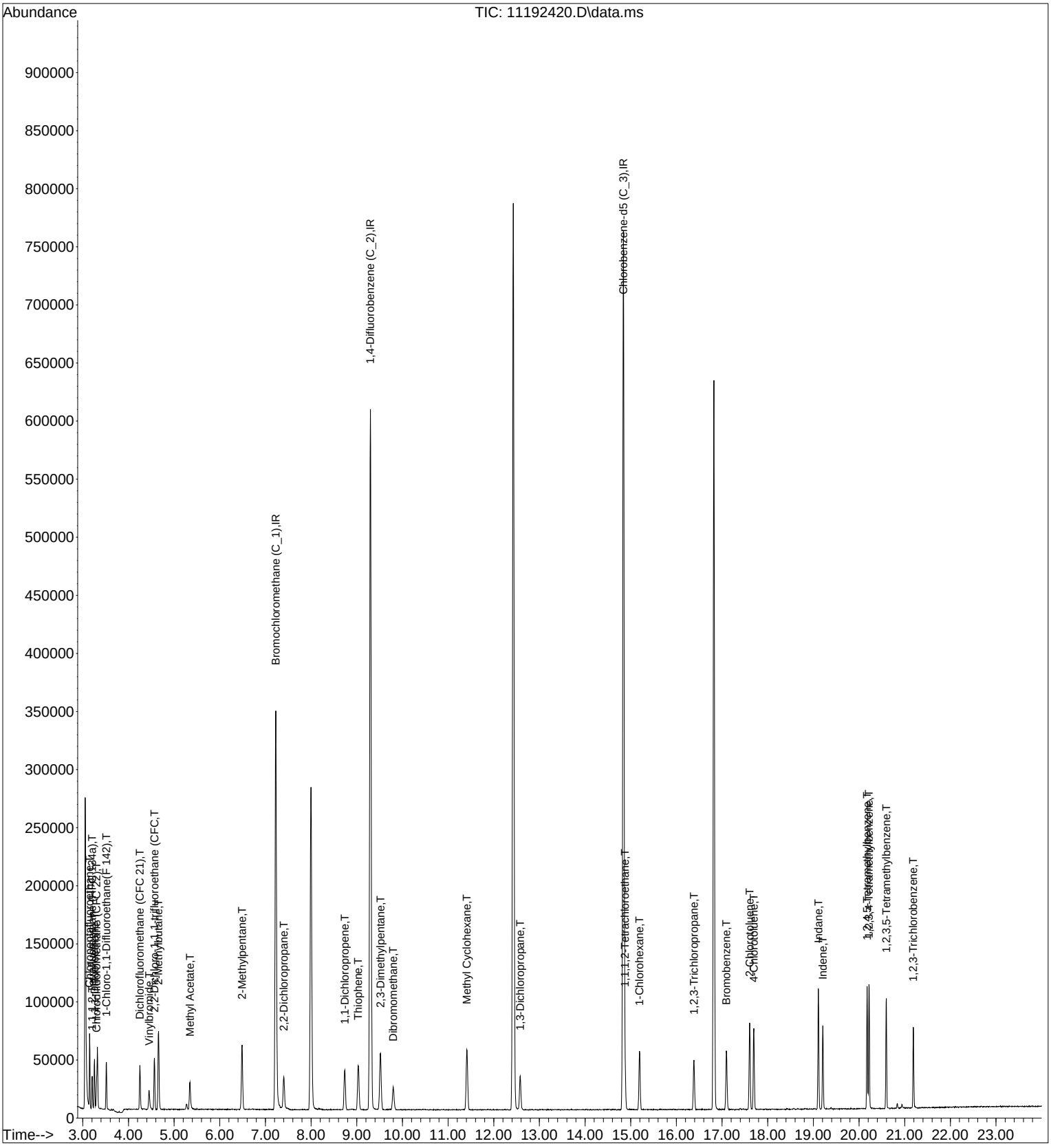
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	143039	12.500	ng	-0.01
16) 1,4-Difluorobenzene (C 2)	9.30	114	632371	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	115599	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.15	85	18559	1.043	ng	99
3) 1,1,1,2-Tetrafluoroeth...	3.21	83	13842	0.943	ng	98
4) 1,1-Difluoroethane	3.26	65	13010	1.042	ng	92
5) Chlorodifluoromethane ...	3.30	67	4283	0.879	ng	97
6) 1-Chloro-1,1-Difluoroe...	3.52	65	27956	0.868	ng	100
7) Dichlorofluoromethane ...	4.25	67	30041	0.916	ng	100
8) Vinylbromide	4.45	108	11971	0.978	ng	98
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	21205	1.068	ng	98
10) 2-Methylbutane	4.66	57	14860	0.871	ng	96
11) Methyl Acetate	5.35	43	32316	0.670	ng	98
12) 2-Methylpentane	6.49	71	12300	0.993	ng	97
13) 2,2-Dichloropropane	7.40	77	18655	0.800	ng	99
14) 1,1-Dichloropropene	8.74	75	19338	0.948	ng	99
15) Thiophene	9.03	84	29835	1.024	ng	100
17) 2,3-Dimethylpentane	9.52	56	27582	0.901	ng	99
18) Dibromomethane	9.80	174	11293	1.004	ng	99
20) Methyl Cyclohexane	11.41	55	22836	1.151	ng	98
21) 1,3-Dichloropropane	12.58	76	21255	1.379	ng	99
22) 1,1,1,2-Tetrachloroethane	14.87	131	11945	1.172	ng	98
23) 1-Chlorohexane	15.19	91	19700	1.378	ng	96
24) 1,2,3-Trichloropropane	16.38	75	20831	1.350	ng	99
25) Bromobenzene	17.09	77	25083	1.385	ng	99
26) 2-Chlorotoluene	17.61	91	46092	1.381	ng	99
27) 4-Chlorotoluene	17.70	91	46506	1.376	ng	98
28) Indane	19.11	117	49191	1.287	ng	97
29) Indene	19.21	115	37248	1.270	ng	98
30) 1,2,4,5-Tetramethylben...	20.18	119	48075	1.216	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	52134	1.308	ng	99
32) 1,2,3,5-Tetramethylben...	20.60	119	46545	1.230	ng	98
33) 1,2,3-Trichlorobenzene	21.19	180	19392	1.404	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192420.D Vial: 8
Acq On : 19 Nov 2024 19:34 Operator: SC
Sample : 1.0ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

Quant Time: Nov 20 08:42:38 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192421.D Vial: 8
Acq On : 19 Nov 2024 20:06 Operator: SC
Sample : 2.5ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

11/20/24

Quant Time: Nov 20 08:41:56 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

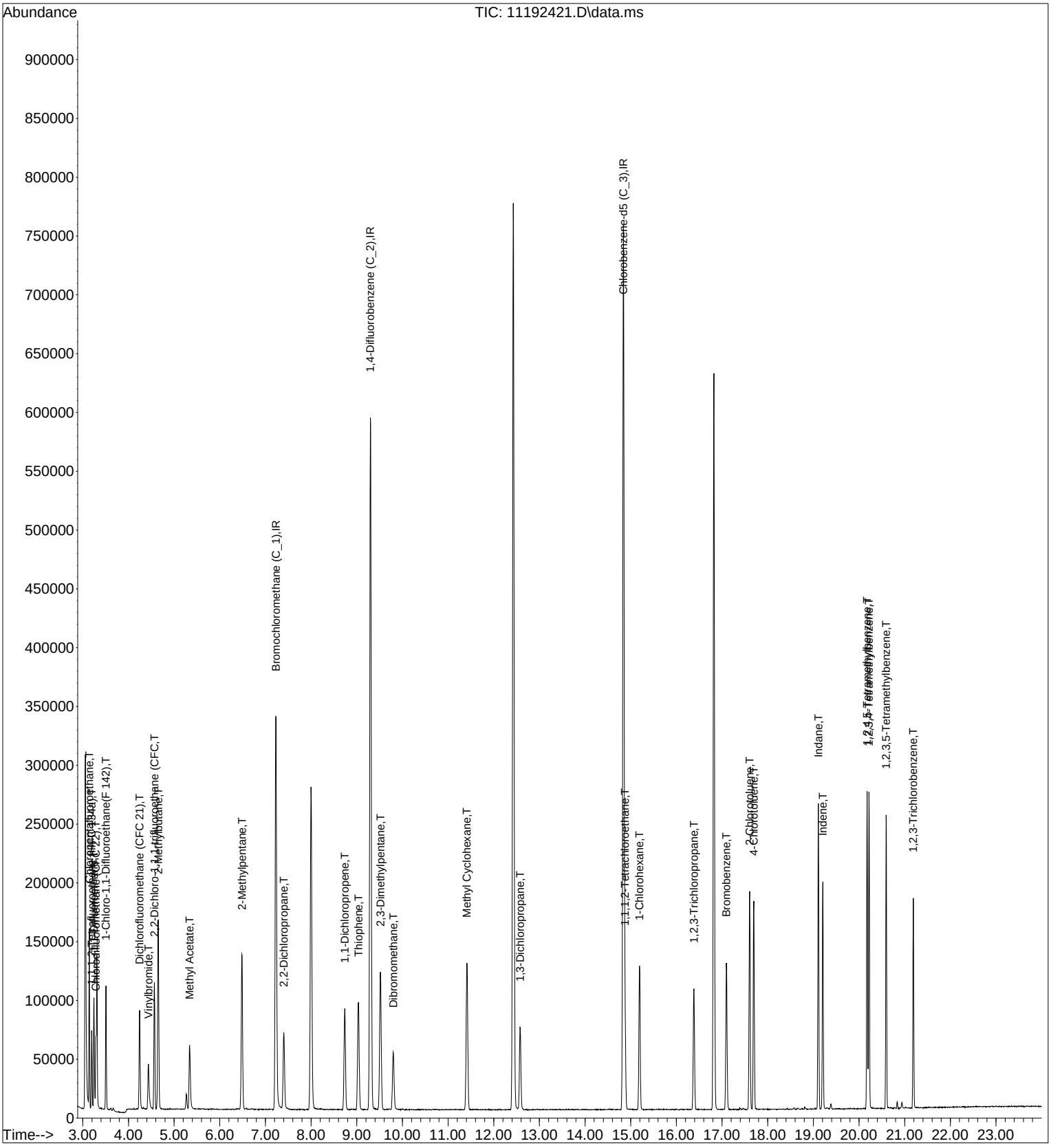
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	142783	12.500	ng	0.00
16) 1,4-Difluorobenzene (C 2)	9.30	114	625575	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	114779	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	3.14	85	44229	2.490	ng	99
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	32718	2.233	ng	98
4) 1,1-Difluoroethane	3.25	65	30977	2.485	ng	93
5) Chlorodifluoromethane ...	3.28	67	10158	2.088	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.51	65	67801	2.108	ng	100
7) Dichlorofluoromethane ...	4.24	67	72052	2.201	ng	99
8) Vinylbromide	4.44	108	29814	2.440	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	51710	2.610	ng	99
10) 2-Methylbutane	4.65	57	36237	2.128	ng	97
11) Methyl Acetate	5.34	43	78875	1.639	ng	99
12) 2-Methylpentane	6.49	71	29829	2.413	ng	97
13) 2,2-Dichloropropane	7.40	77	44096	1.894	ng	98
14) 1,1-Dichloropropene	8.74	75	47297	2.323	ng	100
15) Thiophene	9.04	84	71459	2.457	ng	99
17) 2,3-Dimethylpentane	9.52	56	65793	2.173	ng	99
18) Dibromomethane	9.80	174	27702	2.490	ng	99
20) Methyl Cyclohexane	11.41	55	55190	2.802	ng	100
21) 1,3-Dichloropropane	12.58	76	51475	3.364	ng	99
22) 1,1,1,2-Tetrachloroethane	14.87	131	28615	2.829	ng	100
23) 1-Chlorohexane	15.19	91	49532	3.489	ng	99
24) 1,2,3-Trichloropropane	16.38	75	51241	3.344	ng	99
25) Bromobenzene	17.09	77	59940	3.334	ng	99
26) 2-Chlorotoluene	17.61	91	114677	3.461	ng	100
27) 4-Chlorotoluene	17.70	91	113859	3.392	ng	99
28) Indane	19.11	117	124979	3.292	ng	98
29) Indene	19.21	115	95403	3.276	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	124482	3.171	ng	99
31) 1,2,3,4-Tetramethylben...	20.22	119	128517	3.247	ng	100
32) 1,2,3,5-Tetramethylben...	20.59	119	117409	3.126	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	48261	3.519	ng	98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192421.D Vial: 8
Acq On : 19 Nov 2024 20:06 Operator: SC
Sample : 2.5ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

Quant Time: Nov 20 08:41:56 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192422.D Vial: 8
Acq On : 19 Nov 2024 20:38 Operator: SC
Sample : 5.0ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

Quant Time: Nov 20 08:41:16 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/20/24

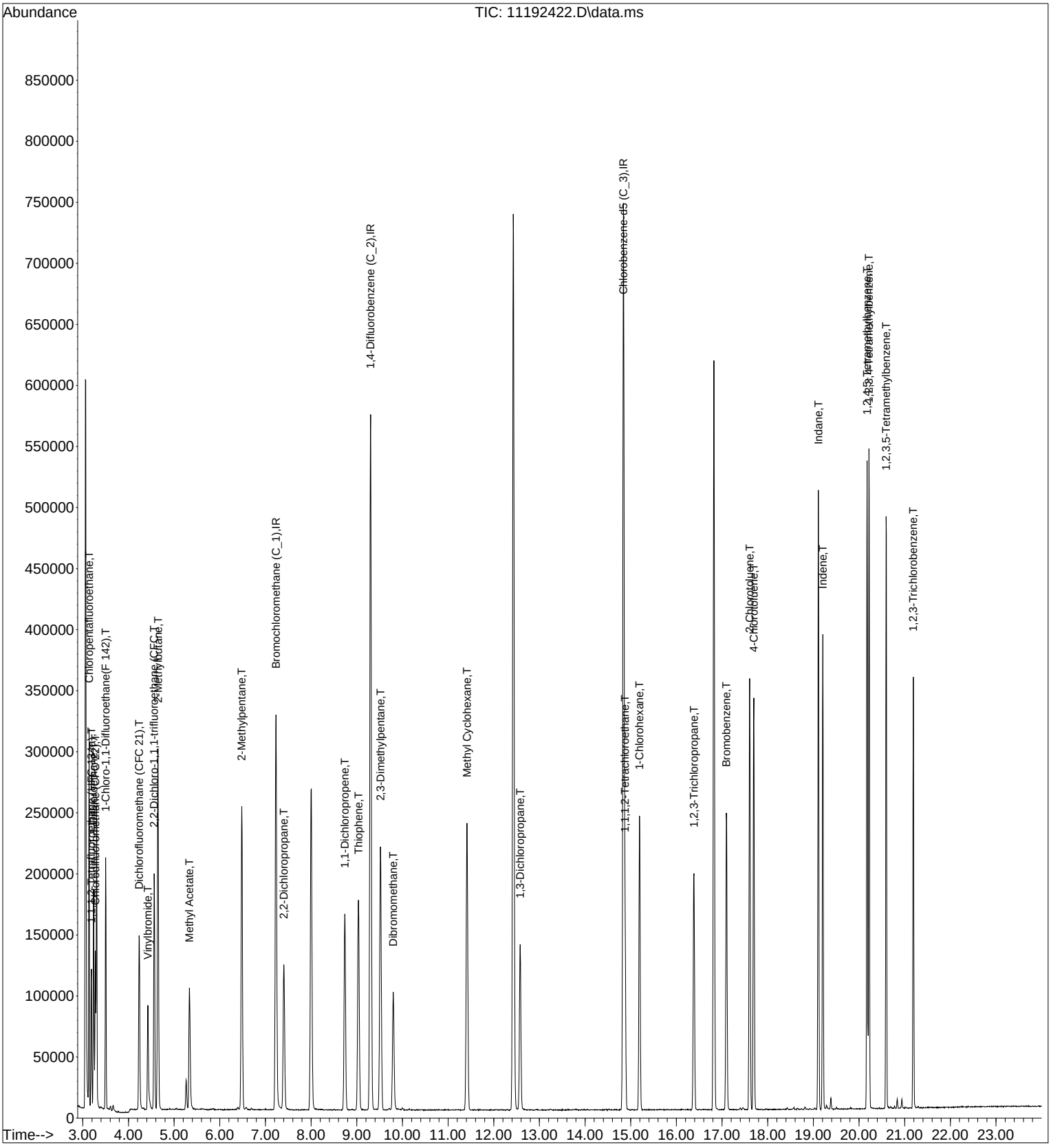
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.23	130	138811	12.500	ng	0.00
16) 1,4-Difluorobenzene (C 2)	9.30	114	602161	12.500	ng	0.00
19) Chlorobenzene-d5 (C_3)	14.84	54	110668	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.14	85	86169	4.990	ng	99
3) 1,1,1,2-Tetrafluoroeth...	3.19	83	62410	4.382	ng	96
4) 1,1-Difluoroethane	3.23	65	60486	4.991	ng	99
5) Chlorodifluoromethane ...	3.27	67	20084	4.246	ng	99
6) 1-Chloro-1,1-Difluoroe...	3.50	65	133186	4.259	ng	99
7) Dichlorofluoromethane ...	4.23	67	134212	4.216	ng	100
8) Vinylbromide	4.43	108	57585	4.848	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	96832	5.027	ng	100
10) 2-Methylbutane	4.65	57	66983	4.046	ng	97
11) Methyl Acetate	5.33	43	148446	3.173	ng	99
12) 2-Methylpentane	6.48	71	55663	4.631	ng	99
13) 2,2-Dichloropropane	7.40	77	83841	3.704	ng	100
14) 1,1-Dichloropropene	8.74	75	90207	4.557	ng	100
15) Thiophene	9.04	84	134011	4.739	ng	99
17) 2,3-Dimethylpentane	9.52	56	120490	4.135	ng	99
18) Dibromomethane	9.80	174	53354	4.983	ng	99
20) Methyl Cyclohexane	11.42	55	103333	5.441	ng	99
21) 1,3-Dichloropropane	12.58	76	96714	6.556	ng	99
22) 1,1,1,2-Tetrachloroethane	14.87	131	54690	5.607	ng	99
23) 1-Chlorohexane	15.19	91	94596	6.910	ng	99
24) 1,2,3-Trichloropropane	16.38	75	98406	6.661	ng	99
25) Bromobenzene	17.09	77	114430	6.601	ng	98
26) 2-Chlorotoluene	17.61	91	219561	6.872	ng	100
27) 4-Chlorotoluene	17.70	91	218149	6.741	ng	99
28) Indane	19.11	117	243513	6.653	ng	99
29) Indene	19.21	115	188786	6.724	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	246907	6.524	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	249831	6.546	ng	100
32) 1,2,3,5-Tetramethylben...	20.59	119	232348	6.415	ng	99
33) 1,2,3-Trichlorobenzene	21.19	180	93315	7.057	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192422.D Vial: 8
Acq On : 19 Nov 2024 20:38 Operator: SC
Sample : 5.0ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192403 (12/19)

Quant Time: Nov 20 08:41:16 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192423.D Vial: 9
Acq On : 19 Nov 2024 21:10 Operator: SC
Sample : 25ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192402 (12/19)

Quant Time: Nov 20 08:40:32 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/20/24

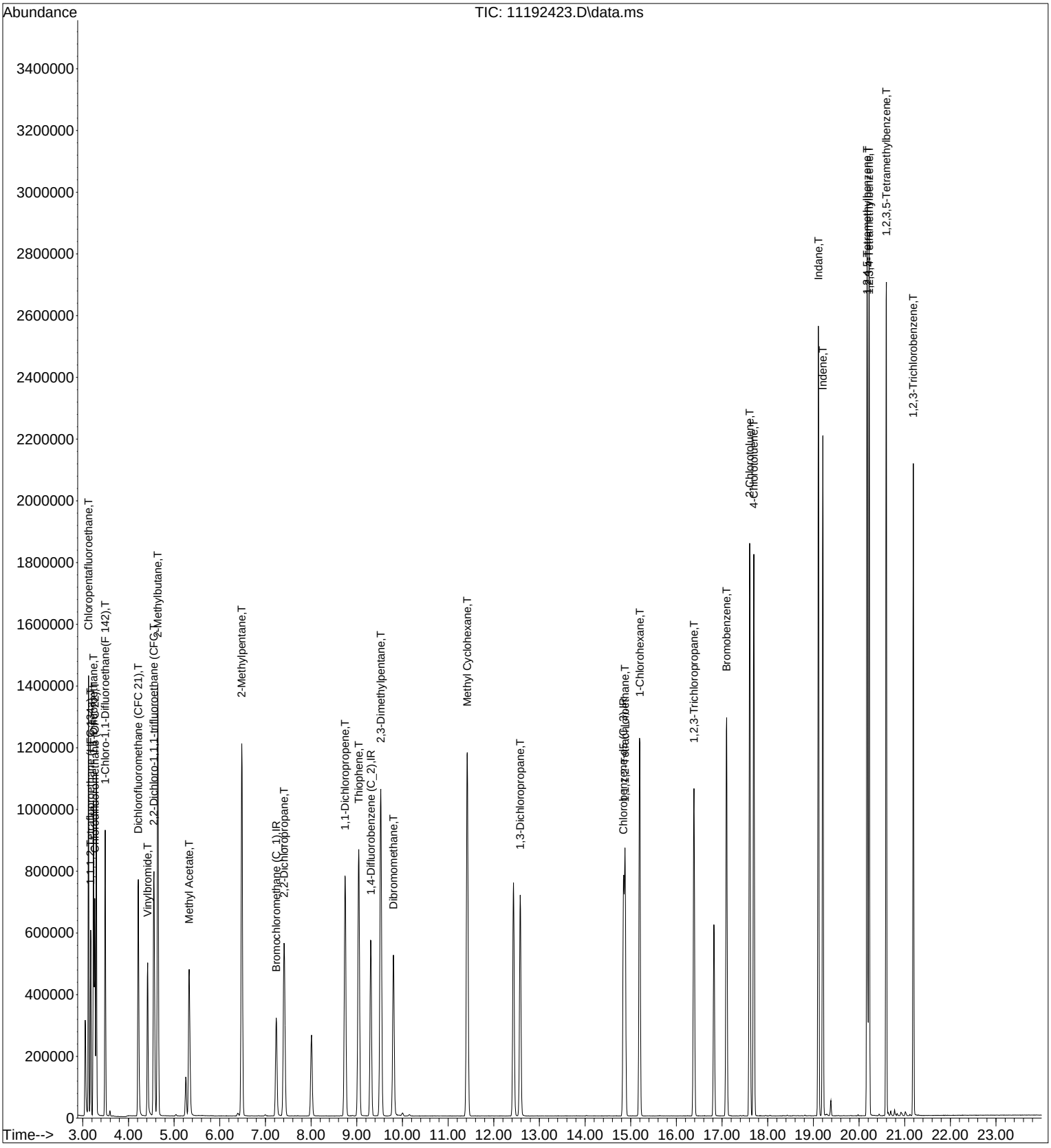
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	140675	12.500	ng	0.00
16) 1,4-Difluorobenzene (C 2)	9.31	114	617816	12.500	ng	0.00
19) Chlorobenzene-d5 (C_3)	14.84	54	114382	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.13	85	423465	24.198	ng	100
3) 1,1,1,2-Tetrafluoroeth...	3.17	83	314756	21.806	ng	100
4) 1,1-Difluoroethane	3.23	65	298045	24.266	ng	100
5) Chlorodifluoromethane ...	3.26	67	102010	21.280	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.49	65	654241	20.644	ng	100
7) Dichlorofluoromethane ...	4.22	67	694464	21.528	ng	100
8) Vinylbromide	4.42	108	301617	25.058	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	495578	25.387	ng	100
10) 2-Methylbutane	4.64	57	337882	20.138	ng	100
11) Methyl Acetate	5.33	43	770296	16.249	ng	100
12) 2-Methylpentane	6.48	71	285497	23.439	ng	100
13) 2,2-Dichloropropane	7.41	77	463722	20.214	ng	100
14) 1,1-Dichloropropene	8.74	75	478291	23.843	ng	100
15) Thiophene	9.04	84	704353	24.580	ng	100
17) 2,3-Dimethylpentane	9.53	56	632872	21.169	ng	100
18) Dibromomethane	9.80	174	282115	25.680	ng	100
20) Methyl Cyclohexane	11.42	55	546188	27.827	ng	100
21) 1,3-Dichloropropane	12.58	76	512715	33.626	ng	100
22) 1,1,1,2-Tetrachloroethane	14.87	131	294672	29.231	ng	100
23) 1-Chlorohexane	15.20	91	508923	35.970	ng	100
24) 1,2,3-Trichloropropane	16.38	75	523938	34.313	ng	100
25) Bromobenzene	17.10	77	619774	34.594	ng	100
26) 2-Chlorotoluene	17.61	91	1152185	34.891	ng	100
27) 4-Chlorotoluene	17.70	91	1152464	34.454	ng	100
28) Indane	19.11	117	1275645	33.719	ng	100
29) Indene	19.21	115	1091689	37.621	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1391406	35.571	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1358253	34.433	ng	100
32) 1,2,3,5-Tetramethylben...	20.60	119	1313996	35.102	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	545584	39.921	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192423.D Vial: 9
Acq On : 19 Nov 2024 21:10 Operator: SC
Sample : 25ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192402 (12/19)

Quant Time: Nov 20 08:40:32 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192424.D Vial: 9
Acq On : 19 Nov 2024 21:42 Operator: SC
Sample : 50ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192402 (12/19)

11/20/24

Quant Time: Nov 20 08:44:36 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

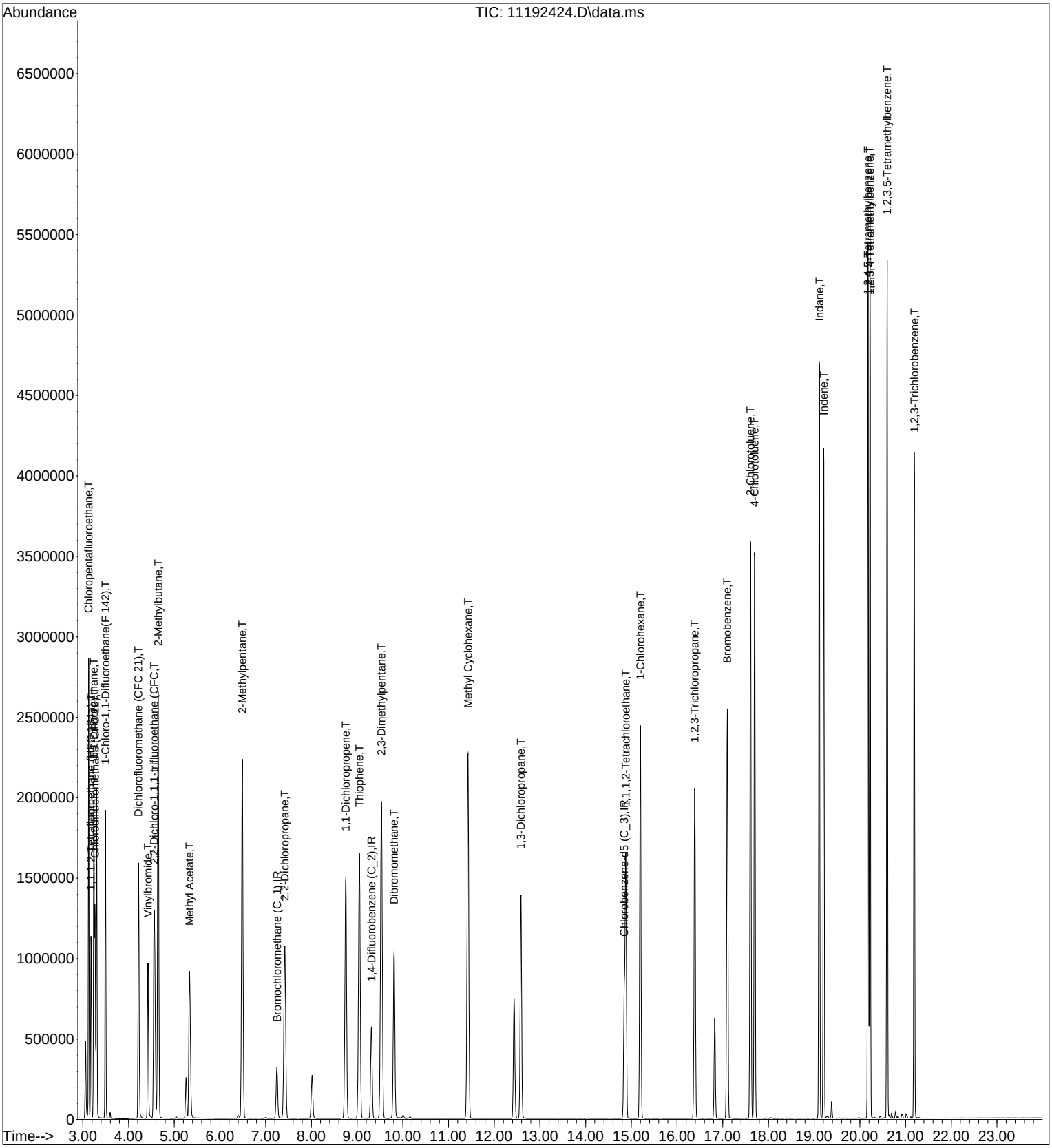
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.25	130	144241	12.500	ng	0.01
16) 1,4-Difluorobenzene (C 2)	9.31	114	624831	12.500	ng	0.00
19) Chlorobenzene-d5 (C_3)	14.85	54	116477	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.13	85	828383	46.165	ng	100
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	620931	41.954	ng	100
4) 1,1-Difluoroethane	3.24	65	585670	46.505	ng	99
5) Chlorodifluoromethane ...	3.26	67	202355	41.169	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.49	65	1298025	39.945	ng	100
7) Dichlorofluoromethane ...	4.22	67	1365549	41.285	ng	100
8) Vinylbromide	4.43	108	593980	48.126	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	994406	49.681	ng	100
10) 2-Methylbutane	4.65	57	667566	38.804	ng	99
11) Methyl Acetate	5.33	43	1553796	31.966	ng	100
12) 2-Methylpentane	6.49	71	571697	45.776	ng	97
13) 2,2-Dichloropropane	7.42	77	933205	39.673	ng	100
14) 1,1-Dichloropropene	8.75	75	956981	46.527	ng	100
15) Thiophene	9.05	84	1379306	46.943	ng	100
17) 2,3-Dimethylpentane	9.53	56	1232239	40.754	ng	99
18) Dibromomethane	9.81	174	560374	50.437	ng	99
20) Methyl Cyclohexane	11.43	55	1063953	53.231	ng	99
21) 1,3-Dichloropropane	12.59	76	1005342	64.748	ng	100
22) 1,1,1,2-Tetrachloroethane	14.88	131	585510	57.037	ng	99
23) 1-Chlorohexane	15.20	91	1005164	69.766	ng	100
24) 1,2,3-Trichloropropane	16.38	75	1033954	66.497	ng	99
25) Bromobenzene	17.10	77	1229645	67.400	ng	100
26) 2-Chlorotoluene	17.61	91	2249081	66.882	ng	100
27) 4-Chlorotoluene	17.70	91	2261981	66.407	ng	100
28) Indane	19.12	117	2444117	63.444	ng	99
29) Indene	19.21	115	2137463	72.335	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	2660042	66.781	ng	99
31) 1,2,3,4-Tetramethylben...	20.22	119	2645758	65.866	ng	100
32) 1,2,3,5-Tetramethylben...	20.60	119	2561601	67.200	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	1122687	80.672	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192424.D Vial: 9
Acq On : 19 Nov 2024 21:42 Operator: SC
Sample : 50ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192402 (12/19)

Quant Time: Nov 20 08:44:36 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192425.D Vial: 9
Acq On : 19 Nov 2024 22:14 Operator: SC
Sample : 100ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192402 (12/19)

Quant Time: Nov 20 08:45:46 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/20/24

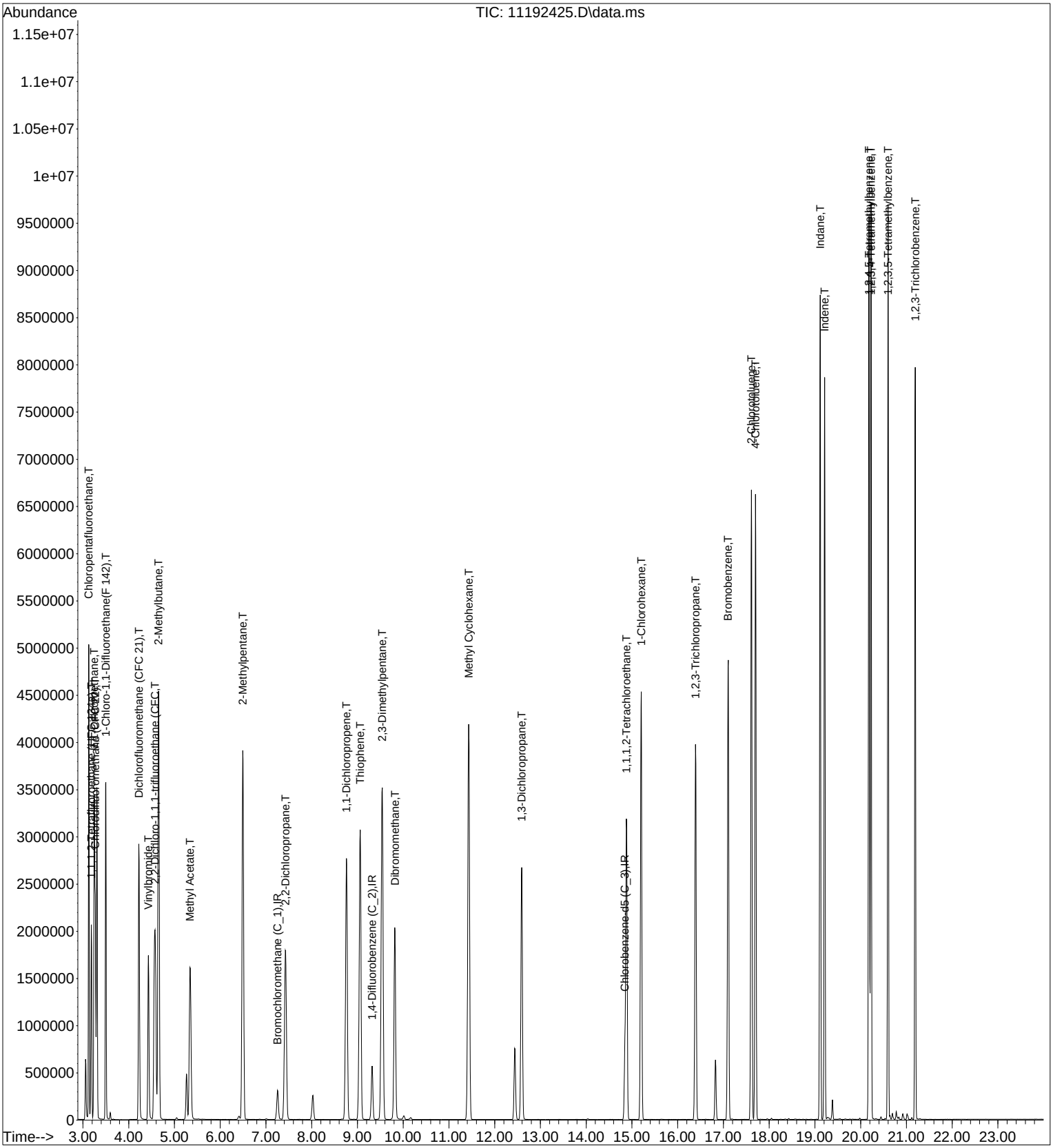
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.25	130	145556	12.500	ng	0.02
16) 1,4-Difluorobenzene (C 2)	9.32	114	631284	12.500	ng	0.01
19) Chlorobenzene-d5 (C_3)	14.85	54	116508	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.13	85	1541425	85.127	ng	99
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	1203699	80.594	ng	98
4) 1,1-Difluoroethane	3.25	65	1066757	83.940	ng	97
5) Chlorodifluoromethane ...	3.27	67	399135	80.470	ng	99
6) 1-Chloro-1,1-Difluoroe...	3.50	65	2493192	76.032	ng	100
7) Dichlorofluoromethane ...	4.22	67	2653249	79.492	ng	99
8) Vinylbromide	4.43	108	1156821	92.883	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	1938138	95.955	ng	100
10) 2-Methylbutane	4.65	57	1271152	73.221	ng	95
11) Methyl Acetate	5.34	43	3001243	61.186	ng	99
12) 2-Methylpentane	6.49	71	1109910	88.068	ng	93
13) 2,2-Dichloropropane	7.43	77	1680941	70.816	ng	100
14) 1,1-Dichloropropene	8.76	75	1886952	90.911	ng	99
15) Thiophene	9.06	84	2705589	91.250	ng	100
17) 2,3-Dimethylpentane	9.54	56	2365700	77.442	ng	99
18) Dibromomethane	9.82	174	1120941	99.860	ng	99
20) Methyl Cyclohexane	11.43	55	2042850	102.179	ng	98
21) 1,3-Dichloropropane	12.59	76	1973092	127.042	ng	99
22) 1,1,1,2-Tetrachloroethane	14.88	131	1166335	113.587	ng	100
23) 1-Chlorohexane	15.20	91	1957642	135.840	ng	99
24) 1,2,3-Trichloropropane	16.39	75	2033207	130.727	ng	99
25) Bromobenzene	17.10	77	2395779	131.285	ng	100
26) 2-Chlorotoluene	17.61	91	4293790	127.652	ng	99
27) 4-Chlorotoluene	17.70	91	4338754	127.343	ng	99
28) Indane	19.12	117	4512908	117.114	ng	98
29) Indene	19.21	115	4017092	135.908	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	5009762	125.737	ng	99
31) 1,2,3,4-Tetramethylben...	20.23	119	4720461	117.484	ng	98
32) 1,2,3,5-Tetramethylben...	20.60	119	4721392	123.827	ng	99
33) 1,2,3-Trichlorobenzene	21.19	180	2180893	156.668	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192425.D Vial: 9
Acq On : 19 Nov 2024 22:14 Operator: SC
Sample : 100ng TO-15 Custom ICAL STD Inst : MS09
Misc : S37-11192401/S37-11192402 (12/19)

Quant Time: Nov 20 08:45:46 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:40:21 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192427.D Vial: 10
Acq On : 19 Nov 2024 23:18 Operator: SC
Sample : 25ng TO-15 Custom ICV STD Inst : MS09
Misc : S37-11192401/S37-11192404 (12/19)

Quant Time: Nov 20 08:51:21 2024 11/20/24
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:51:00 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

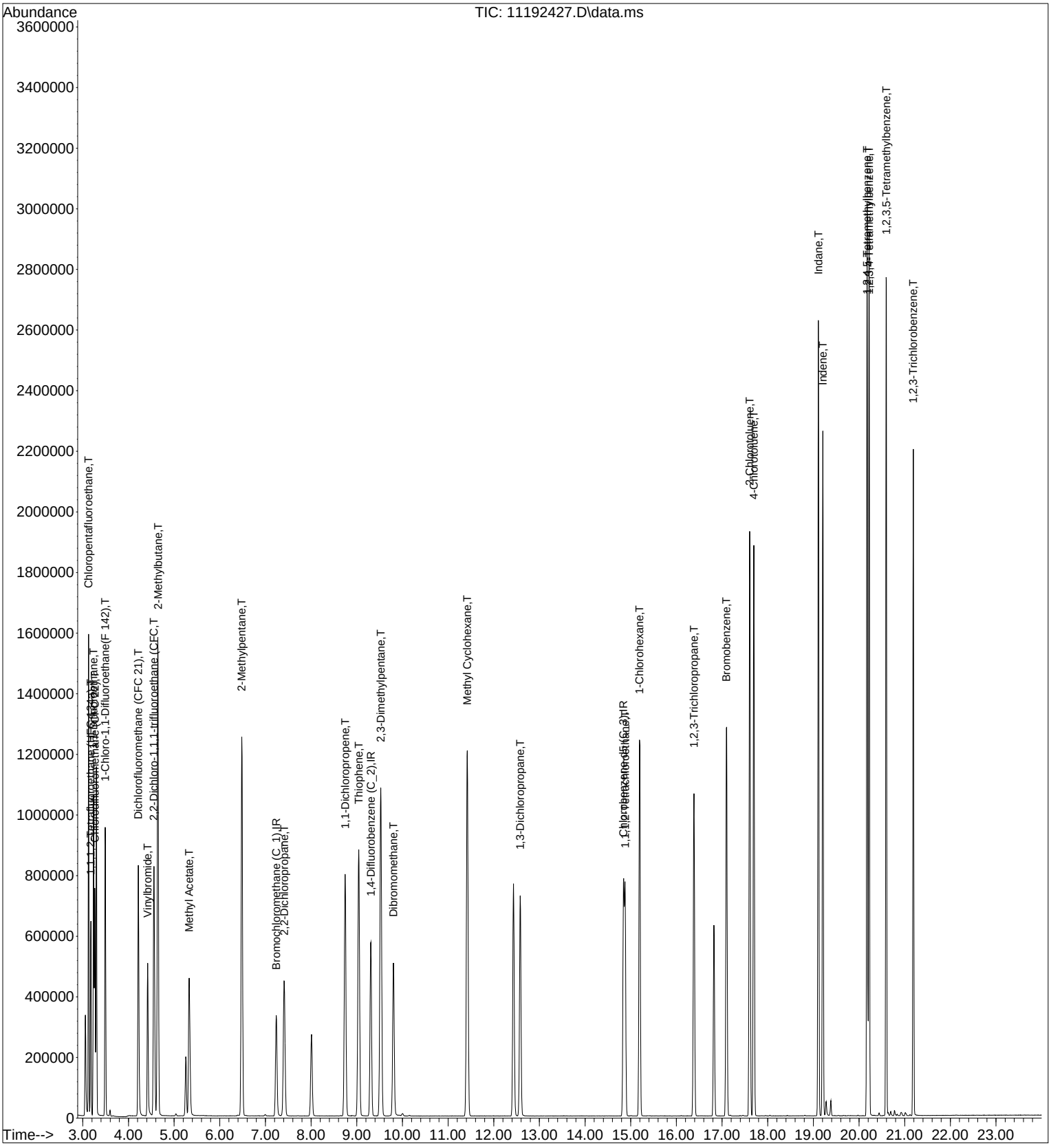
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	146648	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.31	114	621175	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	114164	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	3.13	85	449101	24.760	ng	100
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	331827	24.889	ng	100
4) 1,1-Difluoroethane	3.23	65	317128	26.708	ng	100
5) Chlorodifluoromethane ...	3.26	67	107924	26.429	ng	99
6) 1-Chloro-1,1-Difluoroe...	3.49	65	689672	25.791	ng	100
7) Dichlorofluoromethane ...	4.22	67	723908	24.364	ng	100
8) Vinylbromide	4.42	108	303737	24.620	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	505406	24.901	ng	100
10) 2-Methylbutane	4.65	57	364457	25.753	ng	93
11) Methyl Acetate	5.33	43	740980	22.053	ng	100
12) 2-Methylpentane	6.48	71	294158	24.382	ng	100
13) 2,2-Dichloropropane	7.41	77	365965	19.438	ng	100
14) 1,1-Dichloropropene	8.75	75	488500	25.831	ng	100
15) Thiophene	9.04	84	718440	24.677	ng	100
17) 2,3-Dimethylpentane	9.53	56	650827	26.390	ng	100
18) Dibromomethane	9.80	174	271705	26.012	ng	100
20) Methyl Cyclohexane	11.42	55	553872	27.194	ng	100
21) 1,3-Dichloropropane	12.58	76	519116	26.430	ng	100
22) 1,1,1,2-Tetrachloroethane	14.88	131	263902	19.877	ng	99
23) 1-Chlorohexane	15.19	91	516703	26.864	ng	100
24) 1,2,3-Trichloropropane	16.38	75	527092	26.847	ng	100
25) Bromobenzene	17.09	77	629118	27.179	ng	100
26) 2-Chlorotoluene	17.61	91	1200952	28.145	ng	100
27) 4-Chlorotoluene	17.70	91	1191302	26.538	ng	100
28) Indane	19.11	117	1295712	26.385	ng	100
29) Indene	19.21	115	1127140	27.172	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1412755	28.537	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1386369	27.953	ng	100
32) 1,2,3,5-Tetramethylben...	20.60	119	1348761	28.587	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	570877	29.584	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2024 11\19\11192427.D Vial: 10
Acq On : 19 Nov 2024 23:18 Operator: SC
Sample : 25ng TO-15 Custom ICV STD Inst : MS09
Misc : S37-11192401/S37-11192404 (12/19)

Quant Time: Nov 20 08:51:21 2024
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:51:00 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS Environmental

ICV / LCS Custom Report Acceptance Criteria

25ng TO-15 Custom ICV STD

11/20/24

	RT
Bromochloromethane (IS1)	7.24
1,4-Difluorobenzene (IS2)	9.31
Chlorobenzene-d5 (IS3)	14.84

Datafile: 11192427.D
Instrument: MS-09
Date: 11/19/2024

CAS No	Analyte	Amount Found	Spike Amount	% REC	ALS LCS Limits	Pass/Fail
76-15-3	Chloropentafluoroethane	24.760	25.8	96	70-130	ok
811-97-2	1,1,1,2-Tetrafluoroethane (HFC 134a)	24.889	25.5	98	70-130	ok
75-37-6	1,1-Difluoroethane	26.708	26.8	100	70-130	ok
75-45-6	Chlorodifluoromethane (CFC 22)	26.429	26.5	100	70-130	ok
75-68-3	1-Chloro-1,1-Difluoroethane(F 142)	25.791	26.0	99	70-130	ok
75-43-4	Dichlorofluoromethane (CFC 21)	24.364	25.3	96	70-130	ok
593-60-2	Vinylbromide	24.620	24.5	100	70-130	ok
306-83-2	2,2-Dichloro-1,1,1-trifluoroethane (CFC	24.901	27.0	92	70-130	ok
78-78-4	2-Methylbutane	25.753	27.8	93	70-130	ok
79-20-9	Methyl Acetate	22.053	22.0	100	70-130	ok
107-83-5	2-Methylpentane	24.382	24.5	100	70-130	ok
594-20-7	2,2-Dichloropropane	19.438	18.8	103	70-130	ok
563-58-6	1,1-Dichloropropene	25.831	25.8	100	70-130	ok
110-02-1	Thiophene	24.677	25.3	98	70-130	ok
565-59-3	2,3-Dimethylpentane	26.390	26.0	102	70-130	ok
74-95-3	Dibromomethane	26.012	25.5	102	70-130	ok
108-87-2	Methyl Cyclohexane	27.194	26.5	103	70-130	ok
142-28-9	1,3-Dichloropropane	26.430	26.3	100	70-130	ok
630-20-6	1,1,1,2-Tetrachloroethane	19.877	19.0	105	70-130	ok
544-10-5	1-Chlorohexane	26.864	25.8	104	70-130	ok
96-18-4	1,2,3-Trichloropropane	26.847	26.3	102	70-130	ok
108-86-1	Bromobenzene	27.179	26.5	103	70-130	ok
95-49-8	2-Chlorotoluene	28.145	27.3	103	70-130	ok
106-43-4	4-Chlorotoluene	26.538	25.8	103	70-130	ok
496-11-7	Indan	26.385	25.0	106	70-130	ok
95-13-6	Indene	27.172	24.0	113	70-130	ok
95-93-2	1,2,4,5-Tetramethylbenzene	28.537	25.8	111	70-130	ok
488-23-3	1,2,3,4-Tetramethylbenzene	27.953	26.3	106	70-130	ok
527-53-7	1,2,3,5-Tetramethylbenzene	28.587	25.8	111	70-130	ok
87-61-6	1,2,3-Trichlorobenzene	29.584	26.0	114	70-130	ok

ALS Environmental

ICV / LCS Custom Report Acceptance Criteria

25ng TO-15 Custom ICV STD

	RT
Bromochloromethane (IS1)	7.24
1,4-Difluorobenzene (IS2)	9.31
Chlorobenzene-d5 (IS3)	14.84

Datafile: 11192427.D
Instrument: MS-09
Date: 11/19/2024

CAS No	Analyte	Amount Found	Spike Amount	% REC	ALS LCS Limits	Pass/Fail

Evaluate Continuing Calibration Report

Data Path : I:\MS09\DATA\2025_01\04\
Data File : 01042502.D
Acq On : 4 Jan 2025 3:44
Operator : SC
Sample : CCV R09010425_25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

LH 1/5/25

Quant Time: Jan 04 08:33:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	111	0.03
2	T	Propene	1.335	0.987	26.1	80	0.03
3	T	Dichlorodifluoromethane (CF	2.444	2.315	5.3	103	0.03
4	T	Chloromethane	1.815	1.365	24.8	78	0.03
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.157	0.0	110	0.03
6	T	Vinyl Chloride	1.396	1.366	2.1	105	0.03
7	T	1,3-Butadiene	0.920	1.014	-10.2	117	0.02
8	T	Bromomethane	0.881	0.972	-10.3	108	0.03
9	T	Chloroethane	0.735	0.666	9.4	96	0.03
10	T	Ethanol	0.925	0.784	15.2	90	0.08
11	T	Acetonitrile	2.378	1.765	25.8	86	0.00
12	T	Acrolein	0.790	0.691	12.5	89	0.00
13	T	Acetone	0.842	0.706	16.2	94	0.00
14	T	Trichlorofluoromethane	2.292	2.255	1.6	108	0.03
15	T	2-Propanol (Isopropanol)	3.014	2.777	7.9	94	-0.01
16	T	Acrylonitrile	1.502	1.335	11.1	89	0.00
17	T	1,1-Dichloroethene	1.053	0.992	5.8	100	0.03
18	T	2-Methyl-2-Propanol (tert-B	2.415	2.370	1.9	99	0.00
19	T	Methylene Chloride	1.184	1.068	9.8	98	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.553	21.0	89	0.03
21	T	Trichlorotrifluoroethane	1.034	1.048	-1.4	110	0.03
22	T	Carbon Disulfide	3.808	3.619	5.0	99	0.04
23	T	trans-1,2-Dichloroethene	1.618	1.516	6.3	94	0.04
24	T	1,1-Dichloroethane	2.008	1.800	10.4	96	0.03
25	T	Methyl tert-Butyl Ether	2.987	3.060	-2.4	102	0.04
26	T	Vinyl Acetate	0.204	0.218	-6.9	99	0.03
27	T	2-Butanone (MEK)	0.676	0.641	5.2	95	0.02
28	T	cis-1,2-Dichloroethene	1.576	1.448	8.1	95	0.03
29	T	Diisopropyl Ether	0.851	0.801	5.9	102	0.05
30	T	Ethyl Acetate	0.417	0.391	6.2	93	0.03
31	T	n-Hexane	1.878	1.597	15.0	92	0.06
32	T	Chloroform	2.035	1.949	4.2	102	0.04
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.634	4.1	108	0.04
34	T	Tetrahydrofuran (THF)	0.638	0.601	5.8	95	0.05
35	T	Ethyl tert-Butyl Ether	1.231	1.255	-1.9	104	0.05
36	T	1,2-Dichloroethane	1.724	1.644	4.6	101	0.05
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	107	0.02
38	T	1,1,1-Trichloroethane	0.433	0.460	-6.2	107	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	96	0.03
40	T	1-Butanol	0.000	0.000	0.0	76	0.03
41	T	Benzene	1.003	0.916	8.7	96	0.02
42	T	Carbon Tetrachloride	0.401	0.435	-8.5	107	0.03
43	T	Cyclohexane	0.350	0.339	3.1	97	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.686	-5.9	102	0.03
45	T	1,2-Dichloropropane	0.245	0.227	7.3	93	0.03
46	T	Bromodichloromethane	0.347	0.367	-5.8	102	0.03
47	T	Trichloroethene	0.286	0.294	-2.8	105	0.03

48	T	1,4-Dioxane	0.174	0.197	-13.2	102	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.949	9.6	91	0.04
50	T	Methyl Methacrylate	0.092	0.103	-12.0	101	0.03
51	T	n-Heptane	0.224	0.213	4.9	95	0.03
52	T	cis-1,3-Dichloropropene	0.400	0.429	-7.2	98	0.04
53	T	4-Methyl-2-pentanone	0.216	0.223	-3.2	93	0.03
54	T	trans-1,3-Dichloropropene	0.362	0.368	-1.7	96	0.05
55	T	1,1,2-Trichloroethane	0.243	0.244	-0.4	99	0.05
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	96	0.00
57	S	Toluene-d8 (SS2)	5.545	5.959	-7.5	105	-0.01
58	T	Toluene	5.335	5.696	-6.8	100	-0.02
59	T	2-Hexanone	2.600	3.017	-16.0	93	-0.03
60	T	Dibromochloromethane	1.591	2.017	-26.8	107	-0.02
61	T	1,2-Dibromoethane	1.520	1.777	-16.9	100	-0.01
62	T	n-Butyl Acetate	2.922	3.381	-15.7	91	-0.02
63	T	n-Octane	1.106	1.149	-3.9	92	-0.02
64	T	Tetrachloroethene	1.587	1.926	-21.4	111	-0.01
65	T	Chlorobenzene	3.764	4.125	-9.6	101	-0.01
66	T	Ethylbenzene	5.899	6.836	-15.9	101	-0.01
67	T	m- & p-Xylenes	4.828	5.593	-15.8	102	-0.01
68	T	Bromoform	1.264	1.774	-40.3#	112	-0.01
69	T	Styrene	3.373	4.050	-20.1	95	-0.01
70	T	o-Xylene	4.778	5.569	-16.6	102	-0.01
71	T	n-Nonane	2.538	2.595	-2.2	88	0.00
72	T	1,1,2,2-Tetrachloroethane	2.274	2.487	-9.4	97	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	2.121	-10.8	106	0.00
74	T	Cumene	5.945	6.921	-16.4	103	-0.01
75	T	alpha-Pinene	2.933	3.525	-20.2	101	0.00
76	T	n-Propylbenzene	7.049	8.080	-14.6	100	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	103	-0.01
78	T	4-Ethyltoluene	5.603	6.823	-21.8	102	0.00
79	T	1,3,5-Trimethylbenzene	4.899	5.855	-19.5	104	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	101	0.00
81	T	2-Ethyltoluene	0.000	0.000	0.0	103	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	6.077	-22.6	104	0.00
83	T	n-Decane	0.000	0.000	0.0	89	-0.01
84	T	Benzyl Chloride	4.067	4.665	-14.7	91	-0.01
85	T	1,3-Dichlorobenzene	3.094	3.518	-13.7	100	-0.01
86	T	1,4-Dichlorobenzene	3.185	3.378	-6.1	94	-0.01
87	T	sec-Butylbenzene	6.562	7.732	-17.8	103	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	6.687	-22.7	104	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	103	-0.01
90	T	1,2-Dichlorobenzene	3.128	3.596	-15.0	102	-0.01
91	T	d-Limonene	1.582	1.854	-17.2	91	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.372	-28.8	103	0.00
93	T	n-Undecane	0.000	0.000	0.0	89	0.00
94	T	1,2,4-Trichlorobenzene	2.178	2.378	-9.2	88	0.00
95	T	Naphthalene	6.635	5.945	10.4	73	0.00
96	T	n-Dodecane	0.000	0.000	0.0	87	-0.01
97	T	Hexachlorobutadiene	1.636	2.051	-25.4	112	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.25#
99	T	tert-Butylbenzene	4.651	5.665	-21.8	107	0.00
100	T	n-Butylbenzene	5.139	5.988	-16.5	97	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.685	-22.7	109	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

R09111924.M Sun Jan 05 14:36:22 2025

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042502.D
Acq On : 4 Jan 2025 3:44
Operator : SC
Sample : CCV R09010425 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

CG 1/4/25

Quant Time: Jan 04 08:33:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	156900	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	669874	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	115081	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	256418	11.995	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.00%				
57) Toluene-d8 (SS2)	12.44	98	685756	13.433	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.44%				
73) Bromofluorobenzene (SS3)	16.83	174	244078	13.854	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.80%				
Target Compounds							Qvalue
2) Propene	3.28	42	325252	19.408	ng		97
3) Dichlorodifluoromethan...	3.36	85	733796	23.925	ng		100
4) Chloromethane	3.50	50	454000	19.933	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	392274	27.015	ng		100
6) Vinyl Chloride	3.69	62	454385	25.927	ng		99
7) 1,3-Butadiene	3.80	54	337372	29.200	ng		99
8) Bromomethane	4.02	94	311204	28.156	ng		100
9) Chloroethane	4.16	64	229863	24.922	ng		100
10) Ethanol	4.37	45	1291767	111.306	ng		97
11) Acetonitrile	4.48	41	570321	19.106	ng		99
12) Acrolein	4.56	56	473036	47.679	ng		99
13) Acetone	4.66	58	1134063	107.347	ng		96
14) Trichlorofluoromethane	4.76	101	714659	24.846	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1795227	47.453	ng		99
16) Acrylonitrile	5.04	53	871397	46.230	ng		98
17) 1,1-Dichloroethene	5.27	96	283370	21.432	ng		96
18) 2-Methyl-2-Propanol (t...	5.39	59	1554316	51.277	ng		98
19) Methylene Chloride	5.40	84	304959	20.515	ng		89
20) 3-Chloro-1-propene (Al...	5.48	41	531176	21.534	ng		95
21) Trichlorotrifluoroethane	5.59	151	302650	23.321	ng		93
22) Carbon Disulfide	5.61	76	2350842	49.187	ng		100
23) trans-1,2-Dichloroethene	6.17	61	499613	24.602	ng		96
24) 1,1-Dichloroethane	6.36	63	581684	23.075	ng		100
25) Methyl tert-Butyl Ether	6.39	73	1017692	27.146	ng		96
26) Vinyl Acetate	6.48	86	362495	141.762	ng	#	81
27) 2-Butanone (MEK)	6.70	72	410333	48.345	ng	#	88
28) cis-1,2-Dichloroethene	7.12	61	468168	23.660	ng		96
29) Diisopropyl Ether	7.30	87	525408	49.190	ng	#	80
30) Ethyl Acetate	7.32	61	239489	45.715	ng		95
31) n-Hexane	7.31	57	521256	22.114	ng		99
32) Chloroform	7.41	83	648170	25.378	ng		100
34) Tetrahydrofuran (THF)	7.77	72	358271	44.759	ng	#	85
35) Ethyl tert-Butyl Ether	7.85	87	823167	53.266	ng		92
36) 1,2-Dichloroethane	8.15	62	521081	24.085	ng		100
38) 1,1,1-Trichloroethane	8.42	97	634921	27.389	ng		98
39) Isopropyl Acetate	9.61	61	843	No Calib		#	
40) 1-Butanol	8.84	56	1649	No Calib		#	
41) Benzene	8.92	78	1251761	23.279	ng		100
42) Carbon Tetrachloride	9.09	117	594531	27.641	ng		99
43) Cyclohexane	9.24	84	943980	50.322	ng		94
44) tert-Amyl Methyl Ether	9.62	73	1930652	55.566	ng		97
45) 1,2-Dichloropropane	9.88	63	324794	24.761	ng		98
46) Bromodichloromethane	10.10	83	525628	28.230	ng		100
47) Trichloroethene	10.17	130	413727	27.006	ng		99
48) 1,4-Dioxane	10.13	88	280062	30.074	ng		94

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042502.D
Acq On : 4 Jan 2025 3:44
Operator : SC
Sample : CCV R09010425 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 04 08:33:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

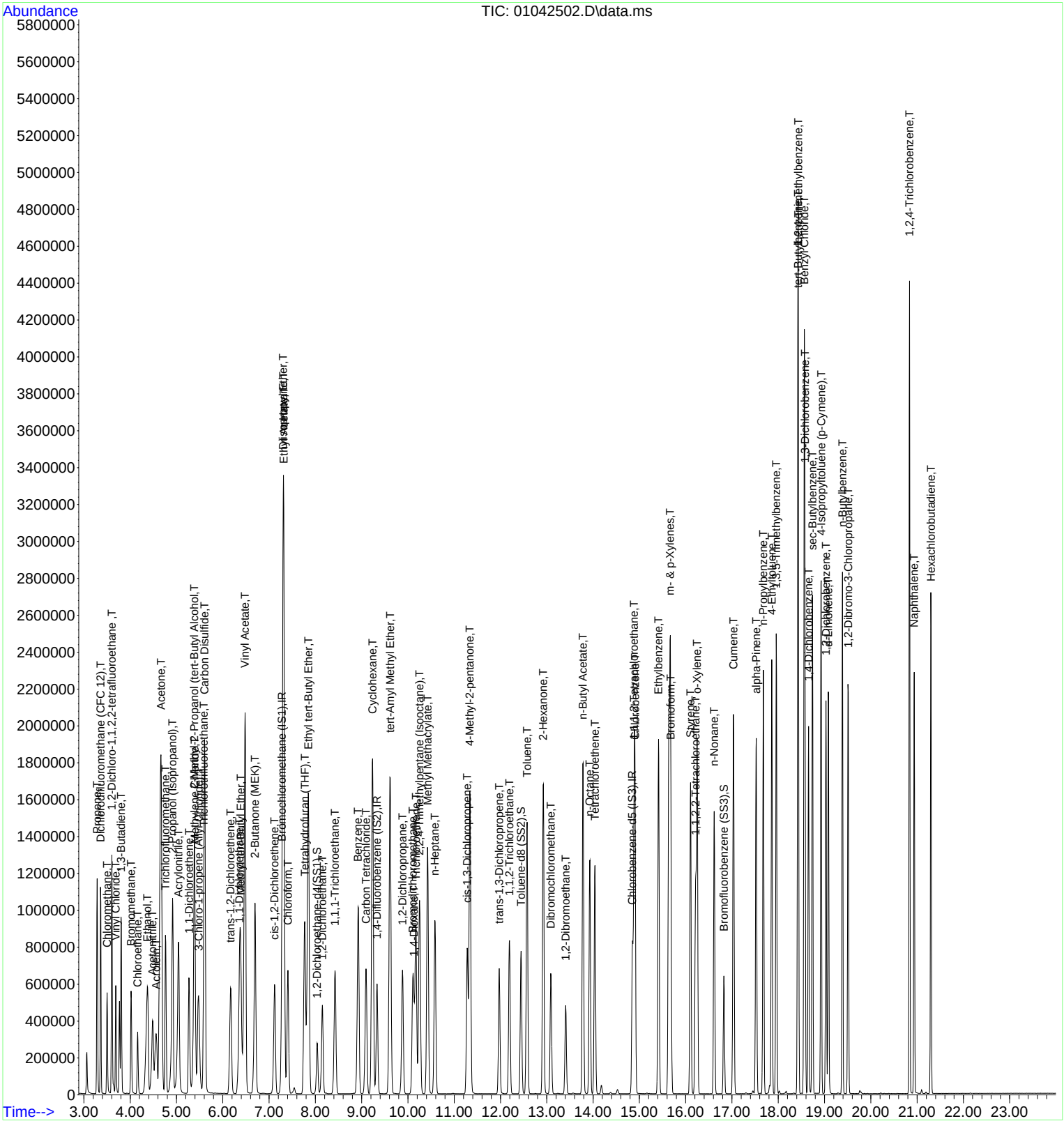
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	1348354	23.967 ng		99
50) Methyl Methacrylate	10.43	100	293135	59.767 ng		91
51) n-Heptane	10.58	71	296890	24.759 ng		95
52) cis-1,3-Dichloropropene	11.28	75	603329	28.168 ng		100
53) 4-Methyl-2-pentanone	11.34	58	627938	54.293 ng		96
54) trans-1,3-Dichloropropene	11.97	75	488464	25.199 ng		100
55) 1,1,2-Trichloroethane	12.19	97	358868	27.604 ng		98
58) Toluene	12.57	91	1429078	29.094 ng		99
59) 2-Hexanone	12.92	43	1444390	60.341 ng		99
60) Dibromochloromethane	13.09	129	478203	32.639 ng		100
61) 1,2-Dibromoethane	13.41	107	429381	30.676 ng		100
62) n-Butyl Acetate	13.78	43	1634289	60.754 ng		98
63) n-Octane	13.93	57	280218	27.516 ng		94
64) Tetrachloroethene	14.04	166	474269	32.459 ng		100
65) Chlorobenzene	14.91	112	1015835	29.315 ng		100
66) Ethylbenzene	15.41	91	1714956	31.575 ng		100
67) m- & p-Xylenes	15.66	91	2754837	61.974 ng		100
68) Bromoform	15.68	173	444993	38.228 ng		100
69) Styrene	16.11	104	988206	31.821 ng		99
70) o-Xylene	16.25	91	1384281	31.469 ng		99
71) n-Nonane	16.62	43	627070	26.833 ng		96
72) 1,1,2,2-Tetrachloroethane	16.21	83	618191	29.531 ng		100
74) Cumene	17.03	105	1672546	30.560 ng		100
75) alpha-Pinene	17.53	93	868180	32.153 ng		100
76) n-Propylbenzene	17.68	91	1934012	29.803 ng		99
77) 3-Ethyltoluene	17.03	105	1672546	No Calib		
78) 4-Ethyltoluene	17.86	105	1633138	31.660 ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	1455440	32.272 ng		100
80) alpha-Methylstyrene	17.04	118	3486	No Calib	#	
81) 2-Ethyltoluene	17.03	105	1672546	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	1468591	32.196 ng		99
83) n-Decane	17.03	58	11266	No Calib		
84) Benzyl Chloride	18.56	91	2308507	61.660 ng		99
85) 1,3-Dichlorobenzene	18.58	146	858340	30.138 ng		100
86) 1,4-Dichlorobenzene	18.66	146	816423	27.839 ng		99
87) sec-Butylbenzene	18.74	105	1850749	30.637 ng		99
88) 4-Isopropyltoluene (p-...	18.93	119	1600686	31.911 ng		99
89) 1,2,3-Trimethylbenzene	17.03	105	1672546	No Calib		
90) 1,2-Dichlorobenzene	19.03	146	860676	29.890 ng		100
91) d-Limonene	19.08	68	439483	30.171 ng		96
92) 1,2-Dibromo-3-Chloropr...	19.51	157	666304	67.940 ng		92
93) n-Undecane	17.96	58	25311	No Calib		
94) 1,2,4-Trichlorobenzene	20.84	180	1187668	59.238 ng		100
95) Naphthalene	20.94	128	1491384	24.414 ng		100
96) n-Dodecane	18.92	58	31310	No Calib	#	
97) Hexachlorobutadiene	21.30	225	495720	32.903 ng		100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.43	119	1369055	31.971 ng		100
100) n-Butylbenzene	19.39	91	1419660	30.007 ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	414950	32.829 ng		99

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042502.D
Acq On : 4 Jan 2025 3:44
Operator : SC
Sample : CCV R09010425 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 04 08:33:23 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\04\01042503.D Vial: 3
Acq On : 4 Jan 2025 4:16 Operator: SC
Sample : CCV C09010425 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 17 12:37:47 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/17/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (C 1)	1.000	1.000	0.0	109	-0.02
2	T	Chloropentafluoroethane	1.546	1.265	18.2	91	0.00
3	T	1,1,1,2-Tetrafluoroethane (	1.136	0.991	12.8	97	0.00
4	T	1,1-Difluoroethane	1.012	0.750	25.9	82	0.00
5	T	Chlorodifluoromethane (CFC	0.348	0.303	12.9	95	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.279	1.979	13.2	97	0.00
7	T	Dichlorofluoromethane (CFC	2.533	2.107	16.8	92	0.00
8	T	Vinylbromide	1.052	0.929	11.7	95	0.00
9	T	2,2-Dichloro-1,1,1-trifluor	1.730	1.430	17.3	92	-0.01
10	T	2-Methylbutane	1.206	0.916	24.0	85	0.00
11	T	Methyl Acetate	2.864	2.153	24.8	83	-0.01
12	T	2-Methylpentane	1.028	0.827	19.6	89	0.00
13	T	2,2-Dichloropropane	1.605	1.506	6.2	99	-0.02
14	T	1,1-Dichloropropene	1.612	1.383	14.2	93	-0.02
15	T	Thiophene	2.482	2.033	18.1	90	-0.02
16	IR	1,4-Difluorobenzene (C 2)	1.000	1.000	0.0	105	-0.01
17	T	2,3-Dimethylpentane	0.496	0.396	20.2	84	-0.02
18	T	Dibromomethane	0.210	0.210	0.0	103	-0.02
19	IR	Chlorobenzene-d5 (C 3)	1.000	1.000	0.0	97	0.00
20	T	Methyl Cyclohexane	2.230	1.986	10.9	86	-0.01
21	T	1,3-Dichloropropane	2.151	2.035	5.4	91	-0.01
22	T	1,1,1,2-Tetrachloroethane	1.454	1.543	-6.1	101	0.00
23	T	1-Chlorohexane	2.106	2.091	0.7	94	0.00
24	T	1,2,3-Trichloropropane	2.150	2.101	2.3	93	0.00
25	T	Bromobenzene	2.534	2.493	1.6	93	0.00
26	T	2-Chlorotoluene	4.672	4.734	-1.3	96	0.00
27	T	4-Chlorotoluene	4.915	4.987	-1.5	97	0.00
28	T	Indane	5.377	5.757	-7.1	99	0.00
29	T	Indene	4.542	5.158	-13.6	98	0.00
30	T	1,2,4,5-Tetramethylbenzene	5.420	6.253	-15.4	100	0.00
31	T	1,2,3,4-Tetramethylbenzene	5.430	6.059	-11.6	102	0.00
32	T	1,2,3,5-Tetramethylbenzene	5.166	5.974	-15.6	102	0.00
33	T	1,2,3-Trichlorobenzene	2.113	2.511	-18.8	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\04\01042503.D Vial: 3
Acq On : 4 Jan 2025 4:16 Operator: SC
Sample : CCV C09010425 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 17 12:37:47 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/17/25

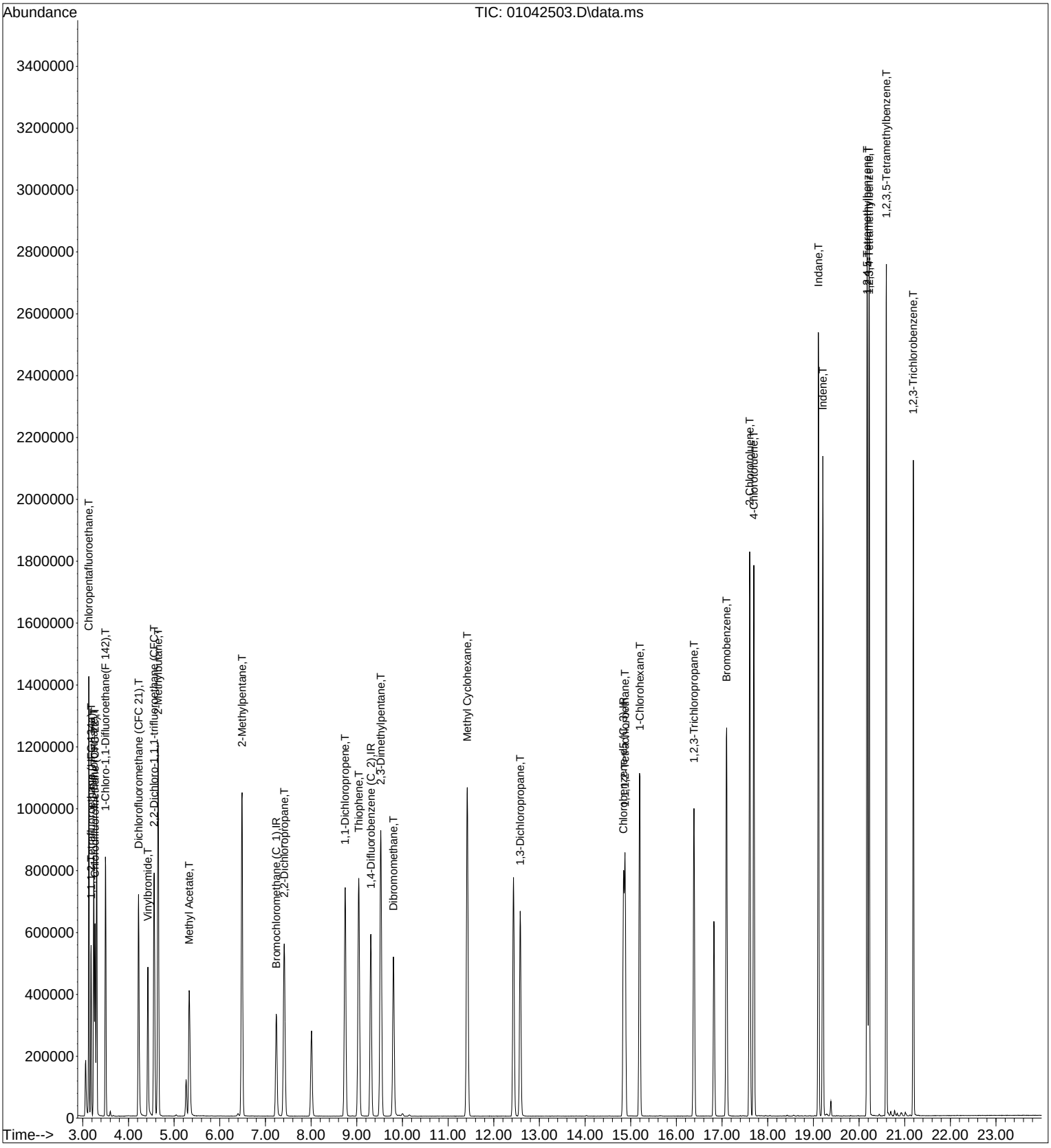
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	153886	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.31	114	646483	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	110707	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.13	85	385454	20.252	ng	95
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	304987	21.800	ng	91
4) 1,1-Difluoroethane	3.24	65	244702	19.639	ng	92
5) Chlorodifluoromethane ...	3.27	67	96829	22.596	ng	99
6) 1-Chloro-1,1-Difluoroe...	3.49	65	633318	22.570	ng	99
7) Dichlorofluoromethane ...	4.22	67	641901	20.588	ng	99
8) Vinylbromide	4.43	108	285940	22.088	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	457857	21.497	ng	100
10) 2-Methylbutane	4.65	57	287671	19.371	ng	97
11) Methyl Acetate	5.33	43	636183	18.043	ng	97
12) 2-Methylpentane	6.49	71	254609	20.111	ng	89
13) 2,2-Dichloropropane	7.41	77	458789	23.222	ng	99
14) 1,1-Dichloropropene	8.74	75	442740	22.310	ng	98
15) Thiophene	9.04	84	631910	20.684	ng	97
17) 2,3-Dimethylpentane	9.53	56	531858	20.722	ng	97
18) Dibromomethane	9.80	174	291049	26.773	ng	91
20) Methyl Cyclohexane	11.42	55	470579	23.826	ng	95
21) 1,3-Dichloropropane	12.58	76	468512	24.599	ng	98
22) 1,1,1,2-Tetrachloroethane	14.87	131	297317	23.093	ng	100
23) 1-Chlorohexane	15.20	91	476927	25.570	ng	97
24) 1,2,3-Trichloropropane	16.38	75	488510	25.659	ng	97
25) Bromobenzene	17.10	77	579476	25.817	ng	92
26) 2-Chlorotoluene	17.61	91	1111016	26.851	ng	99
27) 4-Chlorotoluene	17.70	91	1115224	25.619	ng	99
28) Indane	19.11	117	1262018	26.502	ng	100
29) Indene	19.21	115	1073630	26.690	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1398330	29.128	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1381761	28.730	ng	100
32) 1,2,3,5-Tetramethylben...	20.60	119	1335940	29.199	ng	99
33) 1,2,3-Trichlorobenzene	21.19	180	583796	31.198	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\04\01042503.D Vial: 3
Acq On : 4 Jan 2025 4:16 Operator: SC
Sample : CCV C09010425 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 17 12:37:47 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\06\01062502.D Vial: 2
Acq On : 6 Jan 2025 8:27 Operator: SC
Sample : CCV R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 06 08:49:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/6/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	121	0.03
2	T	Propene	1.335	0.818	38.7#	72	0.03
3	T	Dichlorodifluoromethane (CF	2.444	2.290	6.3	111	0.03
4	T	Chloromethane	1.815	1.324	27.1	82	0.03
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.173	-1.4	121	0.03
6	T	Vinyl Chloride	1.396	1.357	2.8	114	0.03
7	T	1,3-Butadiene	0.920	0.781	15.1	98	0.02
8	T	Bromomethane	0.881	0.956	-8.5	115	0.03
9	T	Chloroethane	0.735	0.654	11.0	103	0.03
10	T	Ethanol	0.925	0.776	16.1	97	0.09
11	T	Acetonitrile	2.378	1.720	27.7	92	0.00
12	T	Acrolein	0.790	0.688	12.9	97	0.00
13	T	Acetone	0.842	0.699	17.0	102	0.00
14	T	Trichlorofluoromethane	2.292	2.226	2.9	116	0.03
15	T	2-Propanol (Isopropanol)	3.014	2.680	11.1	99	0.00
16	T	Acrylonitrile	1.502	1.295	13.8	94	0.00
17	T	1,1-Dichloroethene	1.053	0.992	5.8	109	0.03
18	T	2-Methyl-2-Propanol (tert-B	2.415	2.128	11.9	97	0.00
19	T	Methylene Chloride	1.184	1.051	11.2	105	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.432	27.1	90	0.03
21	T	Trichlorotrifluoroethane	1.034	1.057	-2.2	121	0.03
22	T	Carbon Disulfide	3.808	3.606	5.3	108	0.04
23	T	trans-1,2-Dichloroethene	1.618	1.482	8.4	101	0.04
24	T	1,1-Dichloroethane	2.008	1.757	12.5	102	0.03
25	T	Methyl tert-Butyl Ether	2.987	2.722	8.9	99	0.04
26	T	Vinyl Acetate	0.204	0.214	-4.9	106	0.03
27	T	2-Butanone (MEK)	0.676	0.626	7.4	102	0.02
28	T	cis-1,2-Dichloroethene	1.576	1.415	10.2	101	0.03
29	T	Diisopropyl Ether	0.851	0.792	6.9	110	0.05
30	T	Ethyl Acetate	0.417	0.387	7.2	100	0.03
31	T	n-Hexane	1.878	1.571	16.3	99	0.06
32	T	Chloroform	2.035	1.916	5.8	110	0.04
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.606	5.7	116	0.05
34	T	Tetrahydrofuran (THF)	0.638	0.592	7.2	102	0.05
35	T	Ethyl tert-Butyl Ether	1.231	1.172	4.8	106	0.05
36	T	1,2-Dichloroethane	1.724	1.608	6.7	108	0.05
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	117	0.02
38	T	1,1,1-Trichloroethane	0.433	0.452	-4.4	115	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	104	0.04
40	T	1-Butanol	0.000	0.000	0.0	151	0.02
41	T	Benzene	1.003	0.908	9.5	105	0.02
42	T	Carbon Tetrachloride	0.401	0.424	-5.7	114	0.03
43	T	Cyclohexane	0.350	0.339	3.1	106	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.632	2.5	103	0.03
45	T	1,2-Dichloropropane	0.245	0.220	10.2	99	0.03
46	T	Bromodichloromethane	0.347	0.360	-3.7	110	0.03
47	T	Trichloroethene	0.286	0.293	-2.4	114	0.03
48	T	1,4-Dioxane	0.174	0.193	-10.9	110	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.929	11.5	97	0.03
50	T	Methyl Methacrylate	0.092	0.101	-9.8	109	0.03
51	T	n-Heptane	0.224	0.211	5.8	103	0.04
52	T	cis-1,3-Dichloropropene	0.400	0.416	-4.0	104	0.04
53	T	4-Methyl-2-pentanone	0.216	0.219	-1.4	100	0.03
54	T	trans-1,3-Dichloropropene	0.362	0.350	3.3	100	0.05
55	T	1,1,2-Trichloroethane	0.243	0.242	0.4	108	0.05

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\06\01062502.D Vial: 2
Acq On : 6 Jan 2025 8:27 Operator: SC
Sample : CCV R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 06 08:49:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	104	0.00
57	S	Toluene-d8 (SS2)	5.545	6.009	-8.4	115	-0.01
58	T	Toluene	5.335	5.633	-5.6	108	-0.02
59	T	2-Hexanone	2.600	2.936	-12.9	99	-0.02
60	T	Dibromochloromethane	1.591	2.018	-26.8	117	-0.02
61	T	1,2-Dibromoethane	1.520	1.755	-15.5	107	-0.01
62	T	n-Butyl Acetate	2.922	3.279	-12.2	96	-0.02
63	T	n-Octane	1.106	1.118	-1.1	97	-0.01
64	T	Tetrachloroethene	1.587	1.942	-22.4	122	-0.01
65	T	Chlorobenzene	3.764	4.089	-8.6	109	-0.02
66	T	Ethylbenzene	5.899	6.753	-14.5	108	-0.01
67	T	m- & p-Xylenes	4.828	5.582	-15.6	111	-0.01
68	T	Bromoform	1.264	1.789	-41.5#	123	-0.01
69	T	Styrene	3.373	4.029	-19.4	103	-0.01
70	T	o-Xylene	4.778	5.511	-15.3	110	-0.01
71	T	n-Nonane	2.538	2.532	0.2	93	0.00
72	T	1,1,2,2-Tetrachloroethane	2.274	2.477	-8.9	105	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	2.232	-16.6	122	0.00
74	T	Cumene	5.945	6.886	-15.8	112	-0.01
75	T	alpha-Pinene	2.933	3.216	-9.6	100	0.00
76	T	n-Propylbenzene	7.049	8.064	-14.4	108	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	112	-0.01
78	T	4-Ethyltoluene	5.603	6.637	-18.5	108	0.00
79	T	1,3,5-Trimethylbenzene	4.899	5.851	-19.4	113	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	116	0.00
81	T	2-Ethyltoluene	0.000	0.000	0.0	112	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	6.037	-21.8	112	-0.01
83	T	n-Decane	0.000	0.000	0.0	102	-0.01
84	T	Benzyl Chloride	4.067	4.030	0.9	85	-0.02
85	T	1,3-Dichlorobenzene	3.094	3.527	-14.0	110	-0.01
86	T	1,4-Dichlorobenzene	3.185	3.404	-6.9	103	-0.01
87	T	sec-Butylbenzene	6.562	7.654	-16.6	111	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	6.806	-24.9	115	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	112	-0.01
90	T	1,2-Dichlorobenzene	3.128	3.589	-14.7	111	-0.01
91	T	d-Limonene	1.582	1.748	-10.5	94	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.387	-30.2#	114	0.00
93	T	n-Undecane	0.000	0.000	0.0	98	0.00
94	T	1,2,4-Trichlorobenzene	2.178	2.397	-10.1	96	0.00
95	T	Naphthalene	6.635	5.916	10.8	79	0.00
96	T	n-Dodecane	0.000	0.000	0.0	95	-0.01
97	T	Hexachlorobutadiene	1.636	2.099	-28.3	125	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-0.04
99	T	tert-Butylbenzene	4.651	5.673	-22.0	116	0.00
100	T	n-Butylbenzene	5.139	5.967	-16.1	105	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.676	-22.1	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062502.D Vial: 2
Acq On : 6 Jan 2025 8:27 Operator: SC
Sample : CCV R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 06 08:49:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/6/25

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	171292	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	733110	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	125258	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	275147	11.790	ng		0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.32%				
57) Toluene-d8 (SS2)	12.44	98	752715	13.546	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.40%				
73) Bromofluorobenzene (SS3)	16.83	174	279568	14.579	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.64%				
Target Compounds							Qvalue
2) Propene	3.28	42	294383	16.090	ng		97
3) Dichlorodifluoromethan...	3.36	85	792255	23.660	ng		99
4) Chloromethane	3.50	50	480934	19.341	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	433851	27.367	ng		100
6) Vinyl Chloride	3.69	62	492925	25.763	ng		100
7) 1,3-Butadiene	3.80	54	283656	22.488	ng		98
8) Bromomethane	4.02	94	334015	27.681	ng		100
9) Chloroethane	4.16	64	246366	24.467	ng		100
10) Ethanol	4.37	45	1395387	110.133	ng		97
11) Acetonitrile	4.49	41	606916	18.624	ng		98
12) Acrolein	4.56	56	514158	47.470	ng		99
13) Acetone	4.66	58	1225880	106.288	ng		97
14) Trichlorofluoromethane	4.76	101	770353	24.532	ng		100
15) 2-Propanol (Isopropanol)	4.92	45	1891179	45.789	ng		99
16) Acrylonitrile	5.04	53	922667	44.837	ng		98
17) 1,1-Dichloroethene	5.27	96	309236	21.423	ng		95
18) 2-Methyl-2-Propanol (t...	5.39	59	1523616	46.041	ng		99
19) Methylene Chloride	5.40	84	327610	20.187	ng		89
20) 3-Chloro-1-propene (Al...	5.47	41	534836	19.861	ng		95
21) Trichlorotrifluoroethane	5.59	151	333111	23.512	ng		91
22) Carbon Disulfide	5.61	76	2557143	49.009	ng		100
23) trans-1,2-Dichloroethene	6.17	61	533209	24.051	ng		96
24) 1,1-Dichloroethane	6.36	63	619817	22.522	ng		100
25) Methyl tert-Butyl Ether	6.39	73	988569	24.154	ng		96
26) Vinyl Acetate	6.48	86	386939	138.608	ng	#	77
27) 2-Butanone (MEK)	6.70	72	437409	47.205	ng	#	87
28) cis-1,2-Dichloroethene	7.12	61	499241	23.111	ng		95
29) Diisopropyl Ether	7.31	87	566915	48.617	ng	#	79
30) Ethyl Acetate	7.32	61	258702	45.233	ng		95
31) n-Hexane	7.31	57	559735	21.751	ng		99
32) Chloroform	7.41	83	695899	24.957	ng		100
34) Tetrahydrofuran (THF)	7.77	72	385515	44.116	ng	#	89
35) Ethyl tert-Butyl Ether	7.85	87	838928	49.725	ng		91
36) 1,2-Dichloroethane	8.15	62	556222	23.549	ng		100
38) 1,1,1-Trichloroethane	8.42	97	682479	26.901	ng		98
39) Isopropyl Acetate	9.62	61	914	No Calib		#	
40) 1-Butanol	8.83	56	3281	No Calib		#	
41) Benzene	8.92	78	1358018	23.077	ng		100
42) Carbon Tetrachloride	9.09	117	634458	26.953	ng		99
43) Cyclohexane	9.24	84	1032687	50.303	ng		93
44) tert-Amyl Methyl Ether	9.62	73	1944625	51.141	ng		97
45) 1,2-Dichloropropane	9.88	63	345355	24.057	ng		99
46) Bromodichloromethane	10.10	83	564844	27.720	ng		100
47) Trichloroethene	10.17	130	451709	26.942	ng		99
48) 1,4-Dioxane	10.14	88	300641	29.499	ng		94
49) 2,2,4-Trimethylpentane...	10.25	57	1443794	23.450	ng		99
50) Methyl Methacrylate	10.43	100	315331	58.747	ng		91

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062502.D Vial: 2
Acq On : 6 Jan 2025 8:27 Operator: SC
Sample : CCV R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 06 08:49:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

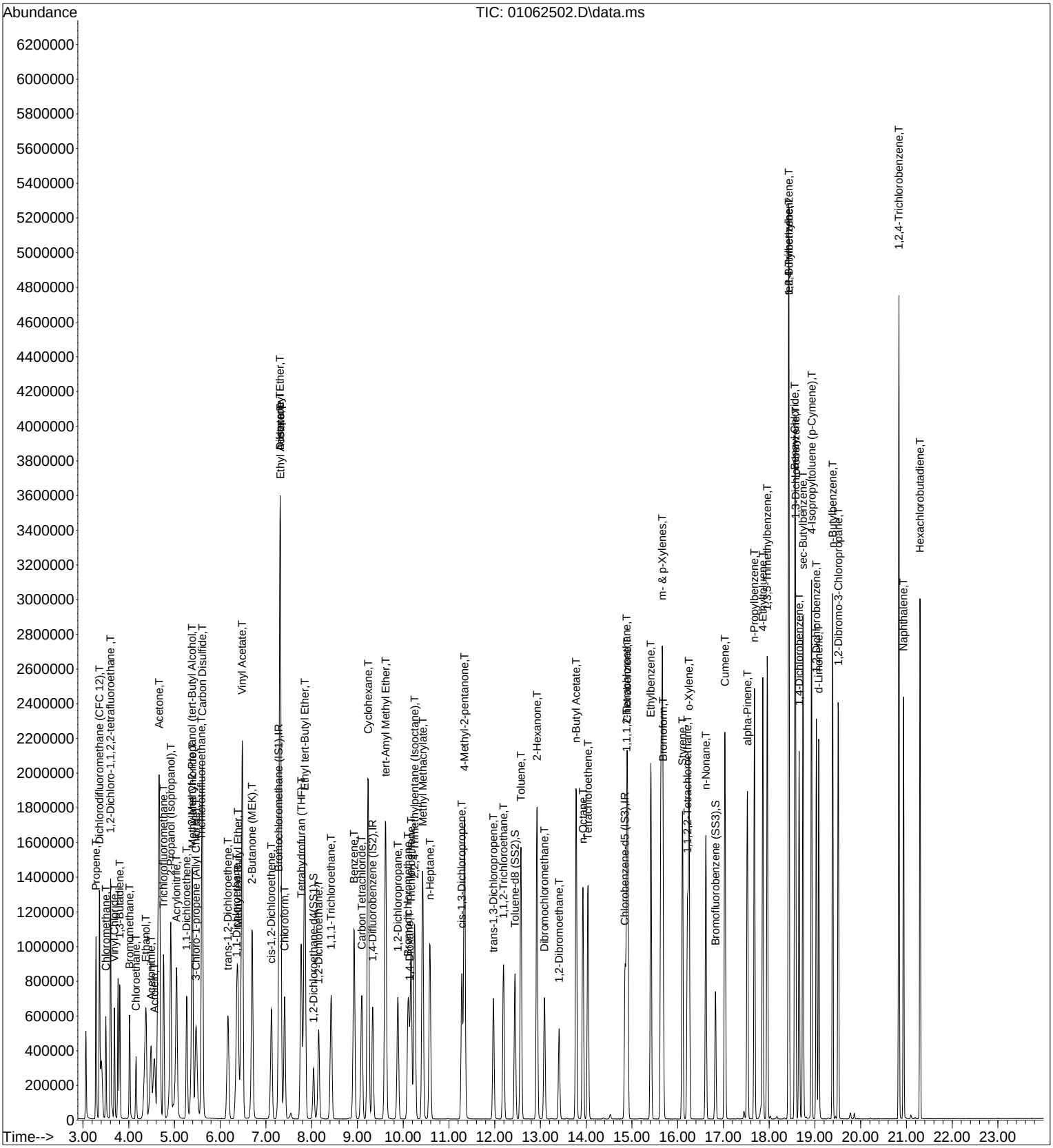
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.59	71	322309	24.560 ng		95
52) cis-1,3-Dichloropropene	11.28	75	640939	27.343 ng		100
53) 4-Methyl-2-pentanone	11.34	58	673910	53.242 ng		95
54) trans-1,3-Dichloropropene	11.97	75	508103	23.952 ng		100
55) 1,1,2-Trichloroethane	12.19	97	390997	27.481 ng		96
58) Toluene	12.57	91	1538185	28.771 ng		99
59) 2-Hexanone	12.93	43	1529843	58.718 ng		98
60) Dibromochloromethane	13.09	129	520792	32.658 ng		99
61) 1,2-Dibromoethane	13.41	107	461572	30.297 ng		100
62) n-Butyl Acetate	13.78	43	1724984	58.915 ng		98
63) n-Octane	13.93	57	296832	26.779 ng		94
64) Tetrachloroethene	14.04	166	520612	32.736 ng		100
65) Chlorobenzene	14.90	112	1095934	29.057 ng		99
66) Ethylbenzene	15.41	91	1843862	31.190 ng		99
67) m- & p-Xylenes	15.66	91	2992677	61.855 ng		100
68) Bromoform	15.68	173	488428	38.551 ng		100
69) Styrene	16.11	104	1069765	31.649 ng		99
70) o-Xylene	16.25	91	1491019	31.141 ng		100
71) n-Nonane	16.62	43	665974	26.182 ng		95
72) 1,1,2,2-Tetrachloroethane	16.21	83	670226	29.416 ng		100
74) Cumene	17.03	105	1811185	30.404 ng		99
75) alpha-Pinene	17.53	93	862071	29.333 ng		100
76) n-Propylbenzene	17.68	91	2100978	29.746 ng		99
77) 3-Ethyltoluene	17.03	105	1811185	No Calib		
78) 4-Ethyltoluene	17.86	105	1729245	30.799 ng		98
79) 1,3,5-Trimethylbenzene	17.96	105	1583096	32.250 ng		100
80) alpha-Methylstyrene	17.04	118	4013	No Calib	#	
81) 2-Ethyltoluene	17.03	105	1811185	No Calib		
82) 1,2,4-Trimethylbenzene	18.43	105	1588037	31.986 ng		99
83) n-Decane	17.03	58	12959	No Calib		
84) Benzyl Chloride	18.56	91	2170539	53.264 ng		98
85) 1,3-Dichlorobenzene	18.58	146	936542	30.212 ng		99
86) 1,4-Dichlorobenzene	18.66	146	895386	28.051 ng		100
87) sec-Butylbenzene	18.74	105	1994196	30.330 ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	1773295	32.480 ng		99
89) 1,2,3-Trimethylbenzene	17.03	105	1811185	No Calib		
90) 1,2-Dichlorobenzene	19.03	146	934969	29.832 ng		100
91) d-Limonene	19.08	68	451150	28.456 ng		95
92) 1,2-Dibromo-3-Chloropr...	19.51	157	733192	68.686 ng		91
93) n-Undecane	17.96	58	27965	No Calib		
94) 1,2,4-Trichlorobenzene	20.84	180	1303190	59.719 ng		99
95) Naphthalene	20.94	128	1615442	24.296 ng		100
96) n-Dodecane	18.92	58	34253	No Calib	#	
97) Hexachlorobutadiene	21.30	225	552002	33.662 ng		100
98) Cyclohexanone	15.21	55	203	No Calib	#	
99) tert-Butylbenzene	18.43	119	1492180	32.015 ng		100
100) n-Butylbenzene	19.39	91	1539587	29.898 ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	449337	32.661 ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062502.D Vial: 2
Acq On : 6 Jan 2025 8:27 Operator: SC
Sample : CCV R09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 06 08:49:02 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\06\01062503.D Vial: 3
Acq On : 6 Jan 2025 8:59 Operator: SC
Sample : CCV C09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

1/6/25

Quant Time: Jan 06 09:21:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (C 1)	1.000	1.000	0.0	118	-0.01
2	T	Chloropentafluoroethane	1.546	1.255	18.8	97	0.01
3	T	1,1,1,2-Tetrafluoroethane (	1.136	0.974	14.3	103	0.00
4	T	1,1-Difluoroethane	1.012	0.694	31.4#	82	0.00
5	T	Chlorodifluoromethane (CFC	0.348	0.294	15.5	99	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.279	1.959	14.0	103	0.00
7	T	Dichlorofluoromethane (CFC	2.533	2.097	17.2	99	0.00
8	T	Vinylbromide	1.052	0.914	13.1	100	0.00
9	T	2,2-Dichloro-1,1,1-trifluor	1.730	1.408	18.6	98	-0.01
10	T	2-Methylbutane	1.206	0.902	25.2	90	0.00
11	T	Methyl Acetate	2.864	2.082	27.3	86	0.00
12	T	2-Methylpentane	1.028	0.822	20.0	95	0.00
13	T	2,2-Dichloropropane	1.605	1.143	28.8	81	-0.02
14	T	1,1-Dichloropropene	1.612	1.378	14.5	99	-0.01
15	T	Thiophene	2.482	2.037	17.9	97	-0.02
16	IR	1,4-Difluorobenzene (C 2)	1.000	1.000	0.0	115	-0.01
17	T	2,3-Dimethylpentane	0.496	0.382	23.0	89	-0.02
18	T	Dibromomethane	0.210	0.209	0.5	113	-0.02
19	IR	Chlorobenzene-d5 (C 3)	1.000	1.000	0.0	106	0.00
20	T	Methyl Cyclohexane	2.230	1.928	13.5	91	-0.01
21	T	1,3-Dichloropropane	2.151	1.976	8.1	97	-0.01
22	T	1,1,1,2-Tetrachloroethane	1.454	1.521	-4.6	109	0.00
23	T	1-Chlorohexane	2.106	2.033	3.5	99	0.00
24	T	1,2,3-Trichloropropane	2.150	2.036	5.3	99	0.00
25	T	Bromobenzene	2.534	2.431	4.1	100	0.00
26	T	2-Chlorotoluene	4.672	4.621	1.1	103	0.00
27	T	4-Chlorotoluene	4.915	4.892	0.5	104	0.00
28	T	Indane	5.377	5.674	-5.5	106	0.00
29	T	Indene	4.542	4.971	-9.4	103	0.00
30	T	1,2,4,5-Tetramethylbenzene	5.420	6.198	-14.4	109	0.00
31	T	1,2,3,4-Tetramethylbenzene	5.430	5.980	-10.1	110	0.00
32	T	1,2,3,5-Tetramethylbenzene	5.166	5.938	-14.9	110	0.00
33	T	1,2,3-Trichlorobenzene	2.113	2.516	-19.1	117	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062503.D Vial: 3
Acq On : 6 Jan 2025 8:59 Operator: SC
Sample : CCV C09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 06 09:21:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/6/25

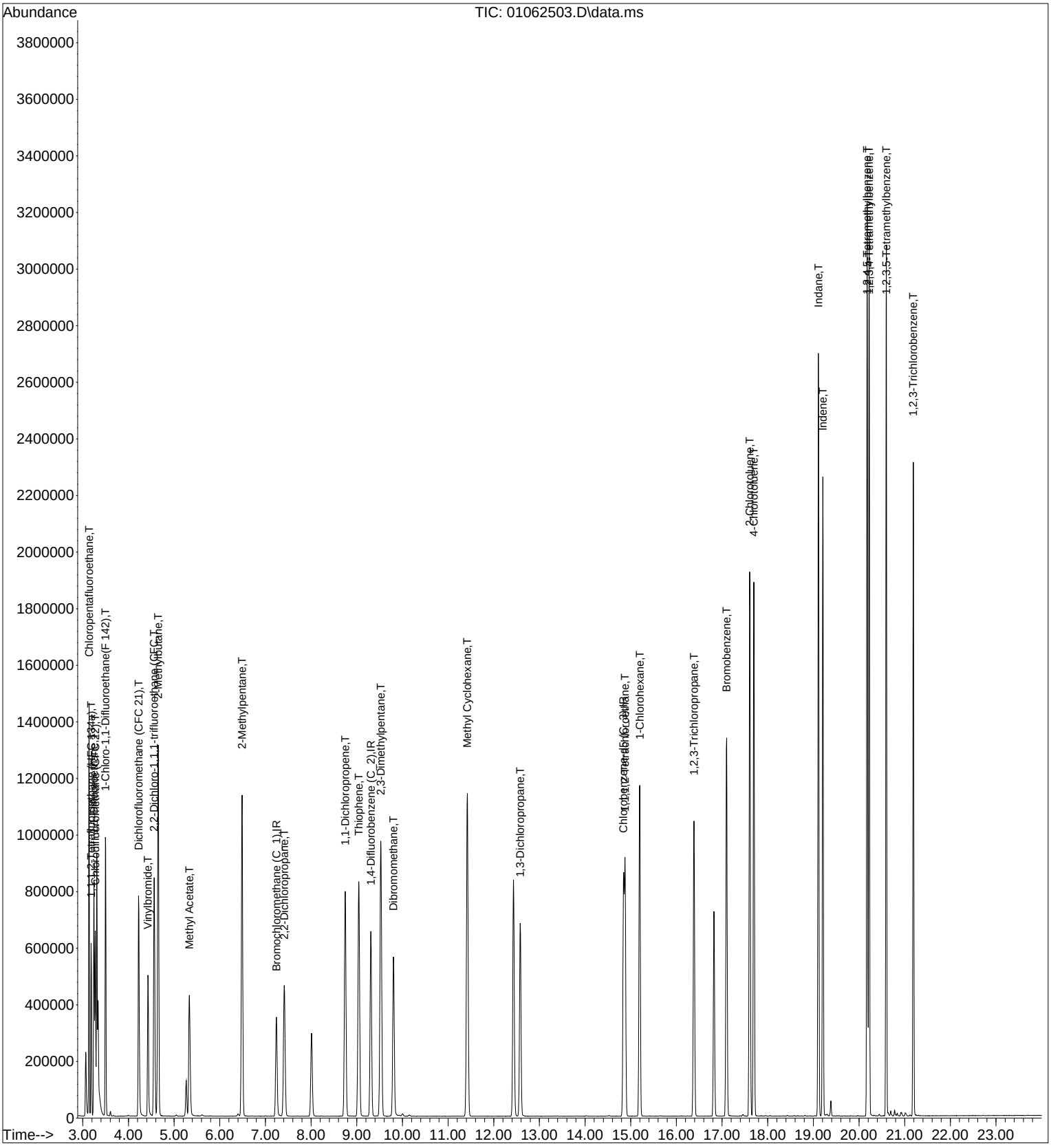
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	165695	12.500	ng	-0.01
16) 1,4-Difluorobenzene (C 2)	9.31	114	712025	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	120813	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.14	85	411662	20.087	ng	96
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	322676	21.420	ng	90
4) 1,1-Difluoroethane	3.24	65	243678	18.163	ng	92
5) Chlorodifluoromethane ...	3.27	67	101493	21.997	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.49	65	675263	22.350	ng	99
7) Dichlorofluoromethane ...	4.22	67	687869	20.490	ng	100
8) Vinylbromide	4.43	108	303017	21.739	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	485326	21.163	ng	99
10) 2-Methylbutane	4.65	57	304725	19.057	ng	89
11) Methyl Acetate	5.33	43	662507	17.451	ng	96
12) 2-Methylpentane	6.49	71	272266	19.973	ng	88
13) 2,2-Dichloropropane	7.41	77	374971	17.627	ng	100
14) 1,1-Dichloropropene	8.75	75	474784	22.220	ng	97
15) Thiophene	9.04	84	681839	20.727	ng	96
17) 2,3-Dimethylpentane	9.53	56	565080	19.989	ng	97
18) Dibromomethane	9.80	174	318941	26.638	ng	90
20) Methyl Cyclohexane	11.42	55	498421	23.125	ng	94
21) 1,3-Dichloropropane	12.58	76	496650	23.895	ng	97
22) 1,1,1,2-Tetrachloroethane	14.87	131	319734	22.757	ng	100
23) 1-Chlorohexane	15.20	91	506040	24.862	ng	96
24) 1,2,3-Trichloropropane	16.38	75	516598	24.864	ng	96
25) Bromobenzene	17.10	77	616706	25.177	ng	89
26) 2-Chlorotoluene	17.61	91	1183465	26.209	ng	98
27) 4-Chlorotoluene	17.70	91	1193741	25.129	ng	98
28) Indane	19.11	117	1357241	26.117	ng	99
29) Indene	19.21	115	1129097	25.721	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1512641	28.873	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1488251	28.356	ng	100
32) 1,2,3,5-Tetramethylben...	20.60	119	1449225	29.026	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	638449	31.265	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\06\01062503.D Vial: 3
Acq On : 6 Jan 2025 8:59 Operator: SC
Sample : CCV C09010625 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 06 09:21:16 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\07\01072502.D Vial: 2
Acq On : 7 Jan 2025 4:01 Operator: SC
Sample : CCV R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 07 05:24:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/7/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	100	0.03
2	T	Propene	1.335	0.900	32.6#	65	0.02
3	T	Dichlorodifluoromethane (CF	2.444	2.317	5.2	92	0.03
4	T	Chloromethane	1.815	1.323	27.1	67	0.02
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.153	0.3	98	0.02
6	T	Vinyl Chloride	1.396	1.332	4.6	92	0.02
7	T	1,3-Butadiene	0.920	0.944	-2.6	97	0.02
8	T	Bromomethane	0.881	0.953	-8.2	95	0.02
9	T	Chloroethane	0.735	0.645	12.2	83	0.03
10	T	Ethanol	0.925	0.759	17.9	78	0.09
11	T	Acetonitrile	2.378	1.693	28.8	74	0.00
12	T	Acrolein	0.790	0.670	15.2	78	0.00
13	T	Acetone	0.842	0.690	18.1	82	0.00
14	T	Trichlorofluoromethane	2.292	2.292	0.0	98	0.03
15	T	2-Propanol (Isopropanol)	3.014	2.706	10.2	82	-0.01
16	T	Acrylonitrile	1.502	1.283	14.6	77	0.00
17	T	1,1-Dichloroethene	1.053	0.978	7.1	88	0.02
18	T	2-Methyl-2-Propanol (tert-B	2.415	2.242	7.2	84	0.00
19	T	Methylene Chloride	1.184	1.043	11.9	86	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.459	25.8	75	0.03
21	T	Trichlorotrifluoroethane	1.034	1.050	-1.5	99	0.02
22	T	Carbon Disulfide	3.808	3.531	7.3	86	0.03
23	T	trans-1,2-Dichloroethene	1.618	1.492	7.8	83	0.04
24	T	1,1-Dichloroethane	2.008	1.758	12.5	84	0.03
25	T	Methyl tert-Butyl Ether	2.987	2.856	4.4	85	0.03
26	T	Vinyl Acetate	0.204	0.206	-1.0	84	0.02
27	T	2-Butanone (MEK)	0.676	0.619	8.4	83	0.02
28	T	cis-1,2-Dichloroethene	1.576	1.408	10.7	83	0.03
29	T	Diisopropyl Ether	0.851	0.782	8.1	89	0.05
30	T	Ethyl Acetate	0.417	0.379	9.1	81	0.03
31	T	n-Hexane	1.878	1.546	17.7	80	0.05
32	T	Chloroform	2.035	1.936	4.9	91	0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.682	1.2	99	0.04
34	T	Tetrahydrofuran (THF)	0.638	0.582	8.8	83	0.04
35	T	Ethyl tert-Butyl Ether	1.231	1.219	1.0	91	0.05
36	T	1,2-Dichloroethane	1.724	1.658	3.8	91	0.05
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	97	0.02
38	T	1,1,1-Trichloroethane	0.433	0.461	-6.5	96	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	94	0.03
40	T	1-Butanol	0.000	0.000	0.0	103	0.03
41	T	Benzene	1.003	0.886	11.7	84	0.02
42	T	Carbon Tetrachloride	0.401	0.439	-9.5	97	0.03
43	T	Cyclohexane	0.350	0.332	5.1	85	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.667	-2.9	89	0.02
45	T	1,2-Dichloropropane	0.245	0.217	11.4	80	0.03
46	T	Bromodichloromethane	0.347	0.365	-5.2	92	0.03
47	T	Trichloroethene	0.286	0.289	-1.0	93	0.03
48	T	1,4-Dioxane	0.174	0.192	-10.3	90	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.914	13.0	78	0.03
50	T	Methyl Methacrylate	0.092	0.099	-7.6	87	0.03
51	T	n-Heptane	0.224	0.206	8.0	83	0.03
52	T	cis-1,3-Dichloropropene	0.400	0.411	-2.7	85	0.04
53	T	4-Methyl-2-pentanone	0.216	0.214	0.9	81	0.03
54	T	trans-1,3-Dichloropropene	0.362	0.348	3.9	82	0.05
55	T	1,1,2-Trichloroethane	0.243	0.238	2.1	87	0.04

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\07\01072502.D Vial: 2
Acq On : 7 Jan 2025 4:01 Operator: SC
Sample : CCV R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 07 05:24:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	89	0.00
57	S	Toluene-d8 (SS2)	5.545	5.769	-4.0	95	-0.01
58	T	Toluene	5.335	5.316	0.4	87	-0.02
59	T	2-Hexanone	2.600	2.745	-5.6	79	-0.03
60	T	Dibromochloromethane	1.591	1.942	-22.1	96	-0.02
61	T	1,2-Dibromoethane	1.520	1.657	-9.0	87	-0.01
62	T	n-Butyl Acetate	2.922	3.064	-4.9	77	-0.02
63	T	n-Octane	1.106	1.058	4.3	79	-0.02
64	T	Tetrachloroethene	1.587	1.852	-16.7	99	-0.01
65	T	Chlorobenzene	3.764	3.874	-2.9	88	-0.01
66	T	Ethylbenzene	5.899	6.433	-9.1	89	-0.01
67	T	m- & p-Xylenes	4.828	5.311	-10.0	90	-0.01
68	T	Bromoform	1.264	1.715	-35.7#	101	-0.01
69	T	Styrene	3.373	3.809	-12.9	83	-0.01
70	T	o-Xylene	4.778	5.260	-10.1	90	-0.01
71	T	n-Nonane	2.538	2.395	5.6	76	0.00
72	T	1,1,2,2-Tetrachloroethane	2.274	2.323	-2.2	84	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	2.210	-15.5	103	0.00
74	T	Cumene	5.945	6.553	-10.2	91	-0.01
75	T	alpha-Pinene	2.933	3.309	-12.8	88	0.00
76	T	n-Propylbenzene	7.049	7.618	-8.1	88	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	91	-0.01
78	T	4-Ethyltoluene	5.603	6.348	-13.3	89	0.00
79	T	1,3,5-Trimethylbenzene	4.899	5.560	-13.5	92	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	94	-0.01
81	T	2-Ethyltoluene	0.000	0.000	0.0	91	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	5.804	-17.1	93	0.00
83	T	n-Decane	0.000	0.000	0.0	75	-0.01
84	T	Benzyl Chloride	4.067	4.155	-2.2	75	-0.01
85	T	1,3-Dichlorobenzene	3.094	3.353	-8.4	89	-0.01
86	T	1,4-Dichlorobenzene	3.185	3.218	-1.0	83	-0.01
87	T	sec-Butylbenzene	6.562	7.324	-11.6	91	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	6.411	-17.7	93	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	91	-0.01
90	T	1,2-Dichlorobenzene	3.128	3.440	-10.0	91	-0.01
91	T	d-Limonene	1.582	1.716	-8.5	79	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.312	-23.2	92	0.00
93	T	n-Undecane	0.000	0.000	0.0	78	0.00
94	T	1,2,4-Trichlorobenzene	2.178	2.288	-5.1	79	0.00
95	T	Naphthalene	6.635	5.635	15.1	64	0.00
96	T	n-Dodecane	0.000	0.000	0.0	81	-0.01
97	T	Hexachlorobutadiene	1.636	2.011	-22.9	102	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.25#
99	T	tert-Butylbenzene	4.651	5.427	-16.7	95	0.00
100	T	n-Butylbenzene	5.139	5.669	-10.3	86	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.613	-17.5	97	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072502.D Vial: 2
Acq On : 7 Jan 2025 4:01 Operator: SC
Sample : CCV R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

1/7/25

Quant Time: Jan 07 05:24:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.27	130	140642	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	603164	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	107329	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	236574	12.347	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%				
57) Toluene-d8 (SS2)	12.44	98	619221	13.005	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.08%				
73) Bromofluorobenzene (SS3)	16.83	174	237249	14.439	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.52%				
Target Compounds							Qvalue
2) Propene	3.27	42	265780	17.692	ng		97
3) Dichlorodifluoromethan...	3.35	85	658340	23.946	ng		100
4) Chloromethane	3.49	50	394568	19.326	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	350376	26.918	ng		100
6) Vinyl Chloride	3.68	62	397239	25.287	ng		99
7) 1,3-Butadiene	3.80	54	281552	27.186	ng		99
8) Bromomethane	4.01	94	273539	27.609	ng		100
9) Chloroethane	4.15	64	199481	24.128	ng		100
10) Ethanol	4.37	45	1120863	107.745	ng		97
11) Acetonitrile	4.48	41	490638	18.337	ng		99
12) Acrolein	4.56	56	411002	46.215	ng		99
13) Acetone	4.66	58	993228	104.884	ng		94
14) Trichlorofluoromethane	4.76	101	651226	25.258	ng		99
15) 2-Propanol (Isopropanol)	4.91	45	1568107	46.241	ng		98
16) Acrylonitrile	5.04	53	750591	44.424	ng		98
17) 1,1-Dichloroethene	5.26	96	250316	21.120	ng		97
18) 2-Methyl-2-Propanol (t...	5.38	59	1317995	48.507	ng		99
19) Methylene Chloride	5.39	84	267070	20.043	ng		89
20) 3-Chloro-1-propene (Al...	5.47	41	447470	20.238	ng		93
21) Trichlorotrifluoroethane	5.58	151	271848	23.369	ng		92
22) Carbon Disulfide	5.60	76	2056214	47.996	ng		100
23) trans-1,2-Dichloroethene	6.17	61	440638	24.206	ng		97
24) 1,1-Dichloroethane	6.35	63	509319	22.540	ng		100
25) Methyl tert-Butyl Ether	6.38	73	851656	25.343	ng		96
26) Vinyl Acetate	6.48	86	306210	133.594	ng	#	81
27) 2-Butanone (MEK)	6.70	72	355421	46.716	ng	#	87
28) cis-1,2-Dichloroethene	7.11	61	407863	22.995	ng		97
29) Diisopropyl Ether	7.31	87	459762	48.020	ng	#	80
30) Ethyl Acetate	7.31	61	207847	44.261	ng		96
31) n-Hexane	7.31	57	452115	21.398	ng		99
32) Chloroform	7.40	83	577388	25.220	ng		100
34) Tetrahydrofuran (THF)	7.76	72	311048	43.351	ng	#	85
35) Ethyl tert-Butyl Ether	7.84	87	716582	51.730	ng		92
36) 1,2-Dichloroethane	8.15	62	470900	24.281	ng		100
38) 1,1,1-Trichloroethane	8.42	97	573311	27.466	ng		98
39) Isopropyl Acetate	9.61	61	823	No Calib		#	
40) 1-Butanol	8.84	56	2242	No Calib		#	
41) Benzene	8.92	78	1090529	22.524	ng		100
42) Carbon Tetrachloride	9.09	117	540651	27.916	ng		99
43) Cyclohexane	9.23	84	832765	49.304	ng		93
44) tert-Amyl Methyl Ether	9.61	73	1688938	53.986	ng		97
45) 1,2-Dichloropropane	9.88	63	279802	23.690	ng		99
46) Bromodichloromethane	10.10	83	470888	28.087	ng		100
47) Trichloroethene	10.17	130	365974	26.531	ng		100
48) 1,4-Dioxane	10.13	88	245302	29.254	ng		92
49) 2,2,4-Trimethylpentane...	10.25	57	1168189	23.061	ng		98
50) Methyl Methacrylate	10.42	100	252476	57.170	ng		92

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072502.D Vial: 2
Acq On : 7 Jan 2025 4:01 Operator: SC
Sample : CCV R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 07 05:24:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

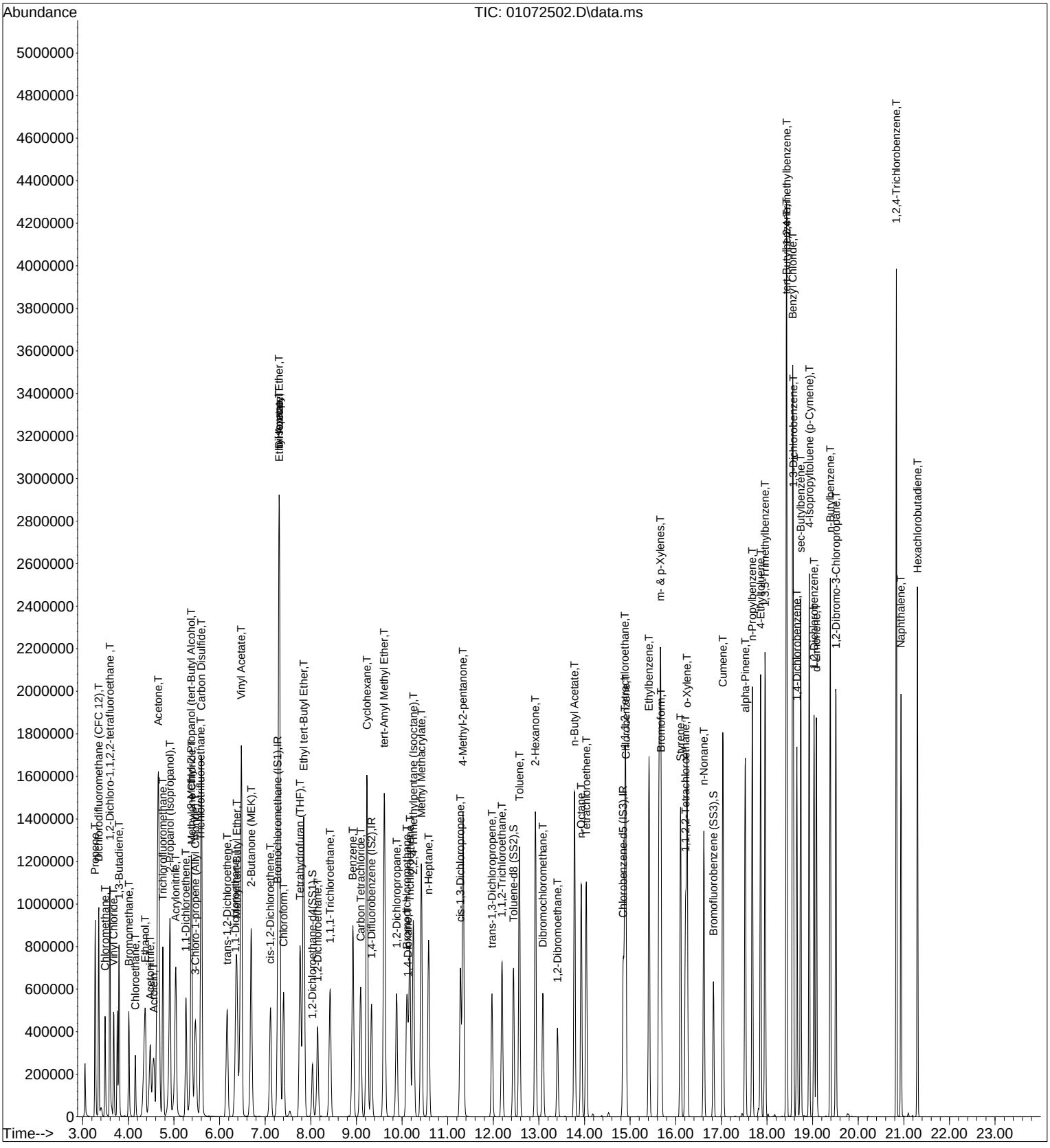
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	258930	23.981 ng	95
52) cis-1,3-Dichloropropene	11.28	75	520823	27.006 ng	100
53) 4-Methyl-2-pentanone	11.34	58	543249	52.165 ng	97
54) trans-1,3-Dichloropropene	11.97	75	415594	23.811 ng	99
55) 1,1,2-Trichloroethane	12.19	97	315439	26.947 ng	97
58) Toluene	12.57	91	1243842	27.151 ng	100
59) 2-Hexanone	12.92	43	1225752	54.906 ng	99
60) Dibromochloromethane	13.09	129	429414	31.426 ng	99
61) 1,2-Dibromoethane	13.41	107	373571	28.617 ng	99
62) n-Butyl Acetate	13.78	43	1381404	55.062 ng	99
63) n-Octane	13.93	57	240760	25.349 ng	93
64) Tetrachloroethene	14.04	166	425480	31.223 ng	100
65) Chlorobenzene	14.91	112	889803	27.533 ng	100
66) Ethylbenzene	15.41	91	1505070	29.712 ng	100
67) m- & p-Xylenes	15.66	91	2439680	58.848 ng	100
68) Bromoform	15.68	173	401315	36.966 ng	100
69) Styrene	16.11	104	866788	29.927 ng	99
70) o-Xylene	16.25	91	1219479	29.724 ng	100
71) n-Nonane	16.62	43	539799	24.767 ng	96
72) 1,1,2,2-Tetrachloroethane	16.21	83	538592	27.587 ng	99
74) Cumene	17.03	105	1476984	28.936 ng	100
75) alpha-Pinene	17.53	93	760050	30.181 ng	100
76) n-Propylbenzene	17.68	91	1700664	28.100 ng	99
77) 3-Ethyltoluene	17.03	105	1476984	No Calib	
78) 4-Ethyltoluene	17.86	105	1417165	29.457 ng	100
79) 1,3,5-Trimethylbenzene	17.96	105	1289029	30.646 ng	100
80) alpha-Methylstyrene	17.03	118	3251	No Calib #	
81) 2-Ethyltoluene	17.03	105	1476984	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1308188	30.751 ng	99
83) n-Decane	17.03	58	9566	No Calib	
84) Benzyl Chloride	18.57	91	1917599	54.918 ng	99
85) 1,3-Dichlorobenzene	18.58	146	762989	28.725 ng	99
86) 1,4-Dichlorobenzene	18.66	146	725303	26.518 ng	100
87) sec-Butylbenzene	18.74	105	1634963	29.020 ng	99
88) 4-Isopropyltoluene (p-...	18.93	119	1431261	30.594 ng	99
89) 1,2,3-Trimethylbenzene	17.03	105	1476984	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	768072	28.601 ng	99
91) d-Limonene	19.08	68	379335	27.923 ng	94
92) 1,2-Dibromo-3-Chloropr...	19.51	157	594076	64.950 ng	93
93) n-Undecane	17.96	58	22229	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1065650	56.991 ng	100
95) Naphthalene	20.94	128	1318496	23.143 ng	100
96) n-Dodecane	18.92	58	29204	No Calib #	
97) Hexachlorobutadiene	21.30	225	453180	32.252 ng	99
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1223153	30.627 ng	100
100) n-Butylbenzene	19.39	91	1253438	28.407 ng	99
101) 1,1,1,2-Tetrachloroethane	14.89	131	370509	31.430 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072502.D Vial: 2
Acq On : 7 Jan 2025 4:01 Operator: SC
Sample : CCV R09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 07 05:24:11 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\07\01072503.D Vial: 3
Acq On : 7 Jan 2025 4:34 Operator: SC
Sample : CCV C09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 07 11:25:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/7/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (C 1)	1.000	1.000	0.0	100	-0.01
2	T	Chloropentafluoroethane	1.546	1.229	20.5	80	0.01
3	T	1,1,1,2-Tetrafluoroethane (	1.136	0.987	13.1	88	0.00
4	T	1,1-Difluoroethane	1.012	0.668	34.0#	66	0.00
5	T	Chlorodifluoromethane (CFC	0.348	0.297	14.7	85	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.279	1.995	12.5	89	0.00
7	T	Dichlorofluoromethane (CFC	2.533	2.083	17.8	83	0.00
8	T	Vinylbromide	1.052	0.905	14.0	84	0.00
9	T	2,2-Dichloro-1,1,1-trifluor	1.730	1.389	19.7	82	-0.01
10	T	2-Methylbutane	1.206	0.886	26.5	75	0.00
11	T	Methyl Acetate	2.864	2.054	28.3	72	0.00
12	T	2-Methylpentane	1.028	0.795	22.7	78	0.00
13	T	2,2-Dichloropropane	1.605	1.315	18.1	79	-0.02
14	T	1,1-Dichloropropene	1.612	1.352	16.1	82	-0.01
15	T	Thiophene	2.482	1.995	19.6	80	-0.01
16	IR	1,4-Difluorobenzene (C 2)	1.000	1.000	0.0	95	-0.01
17	T	2,3-Dimethylpentane	0.496	0.385	22.4	74	-0.01
18	T	Dibromomethane	0.210	0.212	-1.0	94	-0.02
19	IR	Chlorobenzene-d5 (C 3)	1.000	1.000	0.0	90	0.00
20	T	Methyl Cyclohexane	2.230	1.881	15.7	76	-0.01
21	T	1,3-Dichloropropane	2.151	1.903	11.5	80	-0.01
22	T	1,1,1,2-Tetrachloroethane	1.454	1.484	-2.1	91	0.00
23	T	1-Chlorohexane	2.106	1.959	7.0	82	0.00
24	T	1,2,3-Trichloropropane	2.150	1.979	8.0	82	0.00
25	T	Bromobenzene	2.534	2.361	6.8	83	0.00
26	T	2-Chlorotoluene	4.672	4.523	3.2	86	0.00
27	T	4-Chlorotoluene	4.915	4.737	3.6	86	0.00
28	T	Indane	5.377	5.478	-1.9	88	0.00
29	T	Indene	4.542	4.854	-6.9	86	0.00
30	T	1,2,4,5-Tetramethylbenzene	5.420	6.054	-11.7	91	0.00
31	T	1,2,3,4-Tetramethylbenzene	5.430	5.881	-8.3	92	0.00
32	T	1,2,3,5-Tetramethylbenzene	5.166	5.759	-11.5	92	0.00
33	T	1,2,3-Trichlorobenzene	2.113	2.442	-15.6	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072503.D Vial: 3
Acq On : 7 Jan 2025 4:34 Operator: SC
Sample : CCV C09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 07 11:25:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/7/25

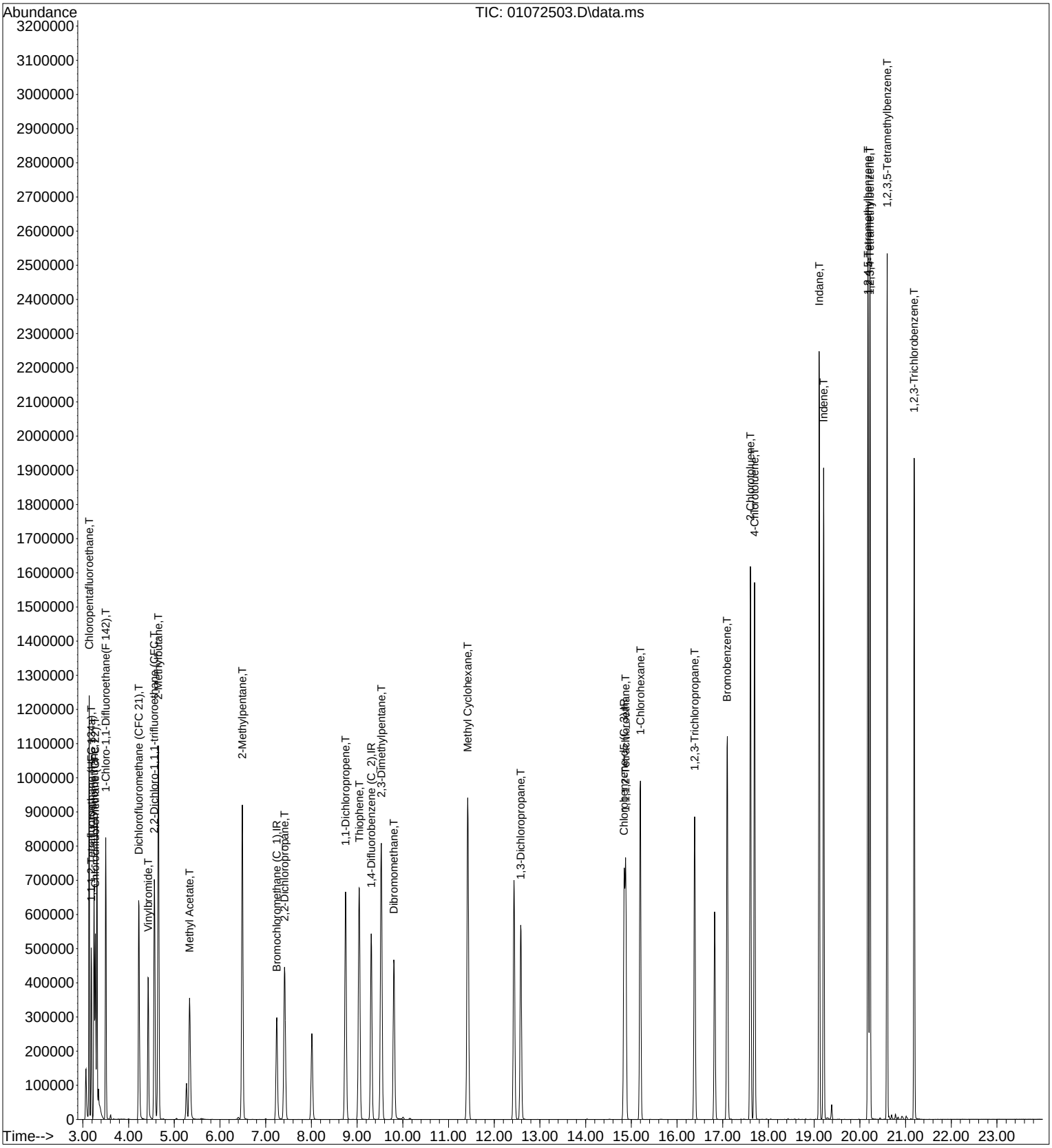
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	139984	12.500	ng	-0.01
16) 1,4-Difluorobenzene (C 2)	9.31	114	584892	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	103392	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.14	85	340699	19.678	ng	95
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	276213	21.704	ng	87
4) 1,1-Difluoroethane	3.24	65	198094	17.477	ng	90
5) Chlorodifluoromethane ...	3.27	67	86434	22.174	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.50	65	580874	22.757	ng	99
7) Dichlorofluoromethane ...	4.22	67	577212	20.351	ng	100
8) Vinylbromide	4.43	108	253404	21.518	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	404456	20.876	ng	100
10) 2-Methylbutane	4.65	57	252871	18.719	ng	92
11) Methyl Acetate	5.33	43	552024	17.211	ng	97
12) 2-Methylpentane	6.49	71	222614	19.330	ng	89
13) 2,2-Dichloropropane	7.41	77	364416	20.277	ng	99
14) 1,1-Dichloropropene	8.75	75	393629	21.805	ng	98
15) Thiophene	9.05	84	564037	20.295	ng	97
17) 2,3-Dimethylpentane	9.53	56	467923	20.150	ng	97
18) Dibromomethane	9.80	174	265485	26.993	ng	90
20) Methyl Cyclohexane	11.42	55	416117	22.559	ng	95
21) 1,3-Dichloropropane	12.58	76	409255	23.008	ng	98
22) 1,1,1,2-Tetrachloroethane	14.87	131	267017	22.207	ng	100
23) 1-Chlorohexane	15.20	91	417308	23.957	ng	97
24) 1,2,3-Trichloropropane	16.38	75	429607	24.161	ng	96
25) Bromobenzene	17.09	77	512530	24.450	ng	90
26) 2-Chlorotoluene	17.61	91	991406	25.655	ng	99
27) 4-Chlorotoluene	17.70	91	989345	24.335	ng	98
28) Indane	19.11	117	1121454	25.216	ng	100
29) Indene	19.21	115	943450	25.114	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1264329	28.200	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1252573	27.886	ng	100
32) 1,2,3,5-Tetramethylben...	20.60	119	1202788	28.149	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	530199	30.339	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\07\01072503.D Vial: 3
Acq On : 7 Jan 2025 4:34 Operator: SC
Sample : CCV C09010725 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 07 11:25:24 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\10\01102503.D Vial: 2
Acq On : 10 Jan 2025 18:23 Operator: CG
Sample : CCV R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

TZ 1/10/25

Quant Time: Jan 10 21:33:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	116	0.03
2	T	Propene	1.335	0.898	32.7#	75	0.02
3	T	Dichlorodifluoromethane (CF	2.444	2.179	10.8	100	0.03
4	T	Chloromethane	1.815	0.890	51.0#	53	0.02
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.074	7.2	106	0.02
6	T	Vinyl Chloride	1.396	1.293	7.4	103	0.02
7	T	1,3-Butadiene	0.920	0.955	-3.8	114	0.02
8	T	Bromomethane	0.881	0.870	1.2	100	0.02
9	T	Chloroethane	0.735	0.608	17.3	91	0.03
10	T	Ethanol	0.925	0.756	18.3	90	0.09
11	T	Acetonitrile	2.378	1.698	28.6	86	0.00
12	T	Acrolein	0.790	0.652	17.5	88	0.00
13	T	Acetone	0.842	0.669	20.5	92	0.00
14	T	Trichlorofluoromethane	2.292	2.118	7.6	105	0.03
15	T	2-Propanol (Isopropanol)	3.014	2.635	12.6	92	-0.01
16	T	Acrylonitrile	1.502	1.252	16.6	87	0.00
17	T	1,1-Dichloroethene	1.053	0.894	15.1	93	0.02
18	T	2-Methyl-2-Propanol (tert-B	2.415	1.601	33.7#	70	0.00
19	T	Methylene Chloride	1.184	0.955	19.3	91	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.448	26.3	87	0.03
21	T	Trichlorotrifluoroethane	1.034	0.928	10.3	101	0.02
22	T	Carbon Disulfide	3.808	3.278	13.9	93	0.03
23	T	trans-1,2-Dichloroethene	1.618	1.423	12.1	92	0.03
24	T	1,1-Dichloroethane	2.008	1.651	17.8	91	0.03
25	T	Methyl tert-Butyl Ether	2.987	1.944	34.9#	67	0.03
26	T	Vinyl Acetate	0.204	0.192	5.9	91	0.02
27	T	2-Butanone (MEK)	0.676	0.577	14.6	89	0.02
28	T	cis-1,2-Dichloroethene	1.576	1.350	14.3	92	0.03
29	T	Diisopropyl Ether	0.851	0.723	15.0	95	0.05
30	T	Ethyl Acetate	0.417	0.360	13.7	89	0.03
31	T	n-Hexane	1.878	1.512	19.5	91	0.05
32	T	Chloroform	2.035	1.787	12.2	98	0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.780	-4.5	122	0.04
34	T	Tetrahydrofuran (THF)	0.638	0.544	14.7	90	0.04
35	T	Ethyl tert-Butyl Ether	1.231	1.126	8.5	97	0.05
36	T	1,2-Dichloroethane	1.724	1.586	8.0	101	0.04
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	113	0.02
38	T	1,1,1-Trichloroethane	0.433	0.416	3.9	102	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	115	0.03
40	T	1-Butanol	0.000	0.000	0.0	133	0.03
41	T	Benzene	1.003	0.810	19.2	90	0.01
42	T	Carbon Tetrachloride	0.401	0.396	1.2	103	0.02
43	T	Cyclohexane	0.350	0.302	13.7	91	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.604	6.8	95	0.02
45	T	1,2-Dichloropropane	0.245	0.201	18.0	87	0.03
46	T	Bromodichloromethane	0.347	0.334	3.7	99	0.03
47	T	Trichloroethene	0.286	0.254	11.2	96	0.03
48	T	1,4-Dioxane	0.174	0.172	1.1	94	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.867	17.4	87	0.03
50	T	Methyl Methacrylate	0.092	0.089	3.3	93	0.03
51	T	n-Heptane	0.224	0.191	14.7	90	0.03
52	T	cis-1,3-Dichloropropene	0.400	0.377	5.8	91	0.04
53	T	4-Methyl-2-pentanone	0.216	0.204	5.6	90	0.03
54	T	trans-1,3-Dichloropropene	0.362	0.323	10.8	89	0.05
55	T	1,1,2-Trichloroethane	0.243	0.212	12.8	91	0.04

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\10\01102503.D Vial: 2
Acq On : 10 Jan 2025 18:23 Operator: CG
Sample : CCV R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 10 21:33:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	116	0.00
57	S	Toluene-d8 (SS2)	5.545	5.266	5.0	112	-0.02
58	T	Toluene	5.335	4.337	18.7	93	-0.02
59	T	2-Hexanone	2.600	2.469	5.0	93	-0.03
60	T	Dibromochloromethane	1.591	1.558	2.1	100	-0.02
61	T	1,2-Dibromoethane	1.520	1.336	12.1	91	-0.02
62	T	n-Butyl Acetate	2.922	2.751	5.9	90	-0.02
63	T	n-Octane	1.106	0.910	17.7	88	-0.02
64	T	Tetrachloroethene	1.587	1.441	9.2	101	-0.01
65	T	Chlorobenzene	3.764	3.110	17.4	92	-0.02
66	T	Ethylbenzene	5.899	5.269	10.7	94	-0.01
67	T	m- & p-Xylenes	4.828	4.356	9.8	96	-0.01
68	T	Bromoform	1.264	1.353	-7.0	104	-0.01
69	T	Styrene	3.373	3.073	8.9	87	-0.02
70	T	o-Xylene	4.778	4.307	9.9	96	-0.01
71	T	n-Nonane	2.538	2.152	15.2	88	-0.01
72	T	1,1,2,2-Tetrachloroethane	2.274	1.897	16.6	89	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	1.986	-3.8	121	0.00
74	T	Cumene	5.945	5.331	10.3	96	-0.01
75	T	alpha-Pinene	2.933	2.717	7.4	94	0.00
76	T	n-Propylbenzene	7.049	6.292	10.7	94	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	96	-0.01
78	T	4-Ethyltoluene	5.603	5.163	7.9	94	0.00
79	T	1,3,5-Trimethylbenzene	4.899	4.560	6.9	98	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	109	-0.01
81	T	2-Ethyltoluene	0.000	0.000	0.0	96	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	4.741	4.3	98	-0.01
83	T	n-Decane	0.000	0.000	0.0	83	-0.01
84	T	Benzyl Chloride	4.067	3.484	14.3	82	-0.02
85	T	1,3-Dichlorobenzene	3.094	2.633	14.9	91	-0.01
86	T	1,4-Dichlorobenzene	3.185	2.514	21.1	85	-0.01
87	T	sec-Butylbenzene	6.562	5.960	9.2	97	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	5.179	4.9	98	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	96	-0.01
90	T	1,2-Dichlorobenzene	3.128	2.704	13.6	93	-0.01
91	T	d-Limonene	1.582	1.444	8.7	86	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.044	2.0	95	0.00
93	T	n-Undecane	0.000	0.000	0.0	83	0.00
94	T	1,2,4-Trichlorobenzene	2.178	1.798	17.4	81	0.00
95	T	Naphthalene	6.635	4.454	32.9#	66	0.00
96	T	n-Dodecane	0.000	0.000	0.0	82	-0.01
97	T	Hexachlorobutadiene	1.636	1.584	3.2	105	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.25#
99	T	tert-Butylbenzene	4.651	4.400	5.4	101	0.00
100	T	n-Butylbenzene	5.139	4.677	9.0	92	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.290	6.0	101	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102503.D Vial: 2
Acq On : 10 Jan 2025 18:23 Operator: CG
Sample : CCV R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

TR 1/10/25

Quant Time: Jan 10 21:33:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	163033	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	707336	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	139545	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.04	65	290183	13.064	ng		0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.48%				
57) Toluene-d8 (SS2)	12.44	98	734875	11.871	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.96%				
73) Bromofluorobenzene (SS3)	16.83	174	277067	12.970	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.76%				
Target Compounds							Qvalue
2) Propene	3.27	42	307383	17.652	ng		97
3) Dichlorodifluoromethan...	3.35	85	717680	22.519	ng		100
4) Chloromethane	3.49	50	307526	12.994	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	378105	25.059	ng		100
6) Vinyl Chloride	3.68	62	446771	24.534	ng		100
7) 1,3-Butadiene	3.80	54	330216	27.506	ng		98
8) Bromomethane	4.01	94	289407	25.199	ng		100
9) Chloroethane	4.15	64	218015	22.748	ng		100
10) Ethanol	4.37	45	1293394	107.254	ng		96
11) Acetonitrile	4.48	41	570117	18.381	ng		98
12) Acrolein	4.56	56	463678	44.978	ng		100
13) Acetone	4.66	58	1116313	101.691	ng		87
14) Trichlorofluoromethane	4.76	101	697389	23.333	ng		100
15) 2-Propanol (Isopropanol)	4.91	45	1770120	45.029	ng		98
16) Acrylonitrile	5.04	53	848976	43.346	ng		98
17) 1,1-Dichloroethene	5.26	96	265309	19.311	ng		97
18) 2-Methyl-2-Propanol (t...	5.38	59	1090824	34.632	ng		97
19) Methylene Chloride	5.39	84	283475	18.352	ng		97
20) 3-Chloro-1-propene (Al...	5.47	41	514780	20.084	ng		99
21) Trichlorotrifluoroethane	5.58	151	278351	20.642	ng		95
22) Carbon Disulfide	5.60	76	2212196	44.545	ng		100
23) trans-1,2-Dichloroethene	6.16	61	487231	23.090	ng		99
24) 1,1-Dichloroethane	6.35	63	554318	21.162	ng		100
25) Methyl tert-Butyl Ether	6.38	73	671913	17.249	ng		98
26) Vinyl Acetate	6.48	86	331951	124.934	ng		98
27) 2-Butanone (MEK)	6.69	72	384135	43.556	ng		99
28) cis-1,2-Dichloroethene	7.11	61	453446	22.054	ng		99
29) Diisopropyl Ether	7.31	87	492528	44.377	ng	#	94
30) Ethyl Acetate	7.31	61	228613	41.997	ng		97
31) n-Hexane	7.31	57	512606	20.929	ng		99
32) Chloroform	7.40	83	617681	23.274	ng		100
34) Tetrahydrofuran (THF)	7.76	72	337229	40.545	ng		98
35) Ethyl tert-Butyl Ether	7.84	87	767385	47.789	ng		97
36) 1,2-Dichloroethane	8.15	62	522295	23.233	ng		100
38) 1,1,1-Trichloroethane	8.42	97	606223	24.766	ng		99
39) Isopropyl Acetate	9.61	61	1006	No Calib		#	
40) 1-Butanol	8.84	56	2880	No Calib			
41) Benzene	8.92	78	1169190	20.592	ng		100
42) Carbon Tetrachloride	9.09	117	571817	25.177	ng		100
43) Cyclohexane	9.23	84	887678	44.815	ng		97
44) tert-Amyl Methyl Ether	9.61	73	1795139	48.930	ng		99
45) 1,2-Dichloropropane	9.88	63	303940	21.944	ng		99
46) Bromodichloromethane	10.10	83	505986	25.736	ng		100
47) Trichloroethene	10.17	130	377216	23.319	ng		100
48) 1,4-Dioxane	10.13	88	258209	26.258	ng		97
49) 2,2,4-Trimethylpentane...	10.25	57	1300429	21.891	ng		96
50) Methyl Methacrylate	10.42	100	268391	51.823	ng		95

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102503.D Vial: 2
Acq On : 10 Jan 2025 18:23 Operator: CG
Sample : CCV R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 10 21:33:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

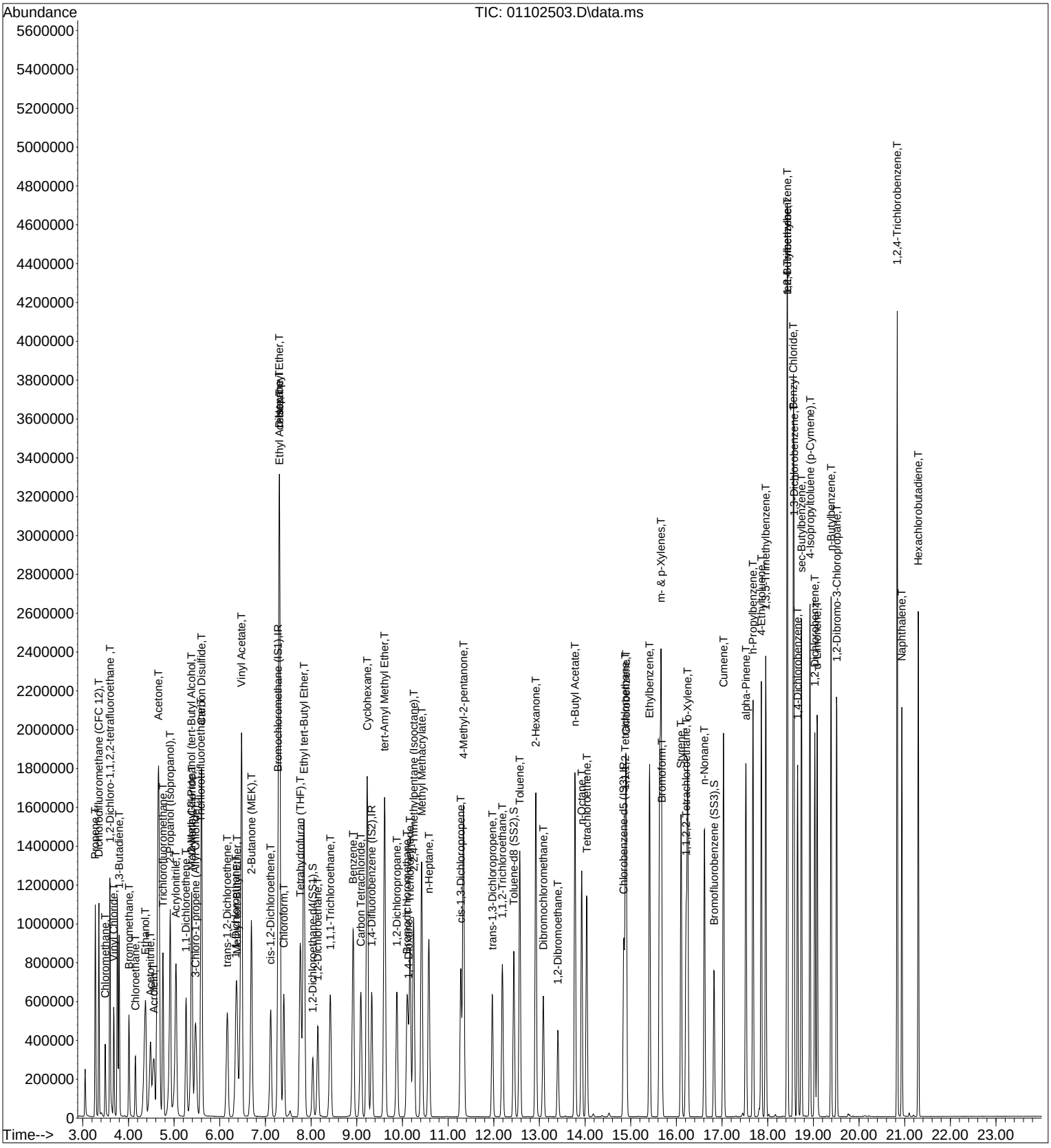
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.58	71	280409	22.146	ng		98
52) cis-1,3-Dichloropropene	11.28	75	560310	24.774	ng		100
53) 4-Methyl-2-pentanone	11.34	58	607296	49.727	ng		98
54) trans-1,3-Dichloropropene	11.97	75	451844	22.076	ng		100
55) 1,1,2-Trichloroethane	12.19	97	330674	24.088	ng		98
58) Toluene	12.57	91	1319315	22.150	ng		99
59) 2-Hexanone	12.92	43	1433447	49.385	ng		99
60) Dibromochloromethane	13.09	129	447777	25.204	ng		100
61) 1,2-Dibromoethane	13.40	107	391524	23.068	ng		99
62) n-Butyl Acetate	13.78	43	1612363	49.431	ng		99
63) n-Octane	13.93	57	269356	21.812	ng		98
64) Tetrachloroethene	14.04	166	430400	24.292	ng		100
65) Chlorobenzene	14.90	112	928675	22.101	ng		100
66) Ethylbenzene	15.41	91	1602867	24.338	ng		99
67) m- & p-Xylenes	15.66	91	2601529	48.265	ng		99
68) Bromoform	15.68	173	411505	29.154	ng		100
69) Styrene	16.10	104	909105	24.142	ng		98
70) o-Xylene	16.25	91	1298158	24.337	ng		99
71) n-Nonane	16.61	43	630581	22.252	ng		99
72) 1,1,2,2-Tetrachloroethane	16.21	83	571809	22.527	ng		99
74) Cumene	17.03	105	1562329	23.541	ng		99
75) alpha-Pinene	17.53	93	811291	24.779	ng		99
76) n-Propylbenzene	17.68	91	1826217	23.208	ng		99
77) 3-Ethyltoluene	17.03	105	1562329	No Calib			
78) 4-Ethyltoluene	17.86	105	1498556	23.958	ng		100
79) 1,3,5-Trimethylbenzene	17.96	105	1374365	25.132	ng		99
80) alpha-Methylstyrene	17.03	118	3772	No Calib		#	
81) 2-Ethyltoluene	17.03	105	1562329	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	1389466	25.121	ng		100
83) n-Decane	17.03	58	10563	No Calib			
84) Benzyl Chloride	18.56	91	2090595	46.050	ng		100
85) 1,3-Dichlorobenzene	18.58	146	779012	22.557	ng		99
86) 1,4-Dichlorobenzene	18.66	146	736743	20.718	ng		99
87) sec-Butylbenzene	18.74	105	1729807	23.615	ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	1503348	24.716	ng		100
89) 1,2,3-Trimethylbenzene	17.03	105	1562329	No Calib			
90) 1,2-Dichlorobenzene	19.03	146	784910	22.480	ng		100
91) d-Limonene	19.08	68	414984	23.495	ng		96
92) 1,2-Dibromo-3-Chloropr...	19.51	157	615040	51.718	ng		99
93) n-Undecane	17.96	58	23784	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	1089154	44.801	ng		100
95) Naphthalene	20.94	128	1354813	18.290	ng		100
96) n-Dodecane	18.92	58	29737	No Calib		#	
97) Hexachlorobutadiene	21.30	225	464301	25.415	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.43	119	1289515	24.834	ng		100
100) n-Butylbenzene	19.39	91	1344425	23.435	ng		99
101) 1,1,1,2-Tetrachloroethane	14.88	131	385191	25.132	ng		99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102503.D Vial: 2
Acq On : 10 Jan 2025 18:23 Operator: CG
Sample : CCV R09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 10 21:33:59 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\10\01102504.D Vial: 3
Acq On : 10 Jan 2025 18:55 Operator: CG
Sample : CCV C09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

TZ 1/10/25

Quant Time: Jan 10 21:40:05 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (C 1)	1.000	1.000	0.0	106	-0.02
2	T	Chloropentafluoroethane	1.546	1.255	18.8	87	0.00
3	T	1,1,1,2-Tetrafluoroethane (	1.136	1.008	11.3	95	0.00
4	T	1,1-Difluoroethane	1.012	0.735	27.4	78	-0.01
5	T	Chlorodifluoromethane (CFC	0.348	0.313	10.1	95	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.279	2.057	9.7	97	-0.01
7	T	Dichlorofluoromethane (CFC	2.533	2.135	15.7	90	0.00
8	T	Vinylbromide	1.052	0.893	15.1	88	-0.01
9	T	2,2-Dichloro-1,1,1-trifluor	1.730	1.394	19.4	87	-0.02
10	T	2-Methylbutane	1.206	0.942	21.9	84	-0.01
11	T	Methyl Acetate	2.864	2.269	20.8	84	-0.01
12	T	2-Methylpentane	1.028	0.820	20.2	85	-0.01
13	T	2,2-Dichloropropane	1.605	1.370	14.6	87	-0.02
14	T	1,1-Dichloropropene	1.612	1.382	14.3	89	-0.01
15	T	Thiophene	2.482	2.002	19.3	85	-0.02
16	IR	1,4-Difluorobenzene (C 2)	1.000	1.000	0.0	103	-0.02
17	T	2,3-Dimethylpentane	0.496	0.401	19.2	84	-0.02
18	T	Dibromomethane	0.210	0.197	6.2	95	-0.02
19	IR	Chlorobenzene-d5 (C 3)	1.000	1.000	0.0	105	0.00
20	T	Methyl Cyclohexane	2.230	1.825	18.2	86	-0.02
21	T	1,3-Dichloropropane	2.151	1.756	18.4	86	-0.01
22	T	1,1,1,2-Tetrachloroethane	1.454	1.319	9.3	94	0.00
23	T	1-Chlorohexane	2.106	1.775	15.7	87	0.00
24	T	1,2,3-Trichloropropane	2.150	1.835	14.7	89	0.00
25	T	Bromobenzene	2.534	2.151	15.1	88	0.00
26	T	2-Chlorotoluene	4.672	4.089	12.5	91	0.00
27	T	4-Chlorotoluene	4.915	4.310	12.3	91	0.00
28	T	Indane	5.377	4.914	8.6	92	0.00
29	T	Indene	4.542	4.335	4.6	90	0.00
30	T	1,2,4,5-Tetramethylbenzene	5.420	5.409	0.2	95	0.00
31	T	1,2,3,4-Tetramethylbenzene	5.430	5.245	3.4	96	0.00
32	T	1,2,3,5-Tetramethylbenzene	5.166	5.149	0.3	95	0.00
33	T	1,2,3-Trichlorobenzene	2.113	2.094	0.9	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102504.D Vial: 3
Acq On : 10 Jan 2025 18:55 Operator: CG
Sample : CCV C09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

TZ 1/10/25

Quant Time: Jan 10 21:40:05 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

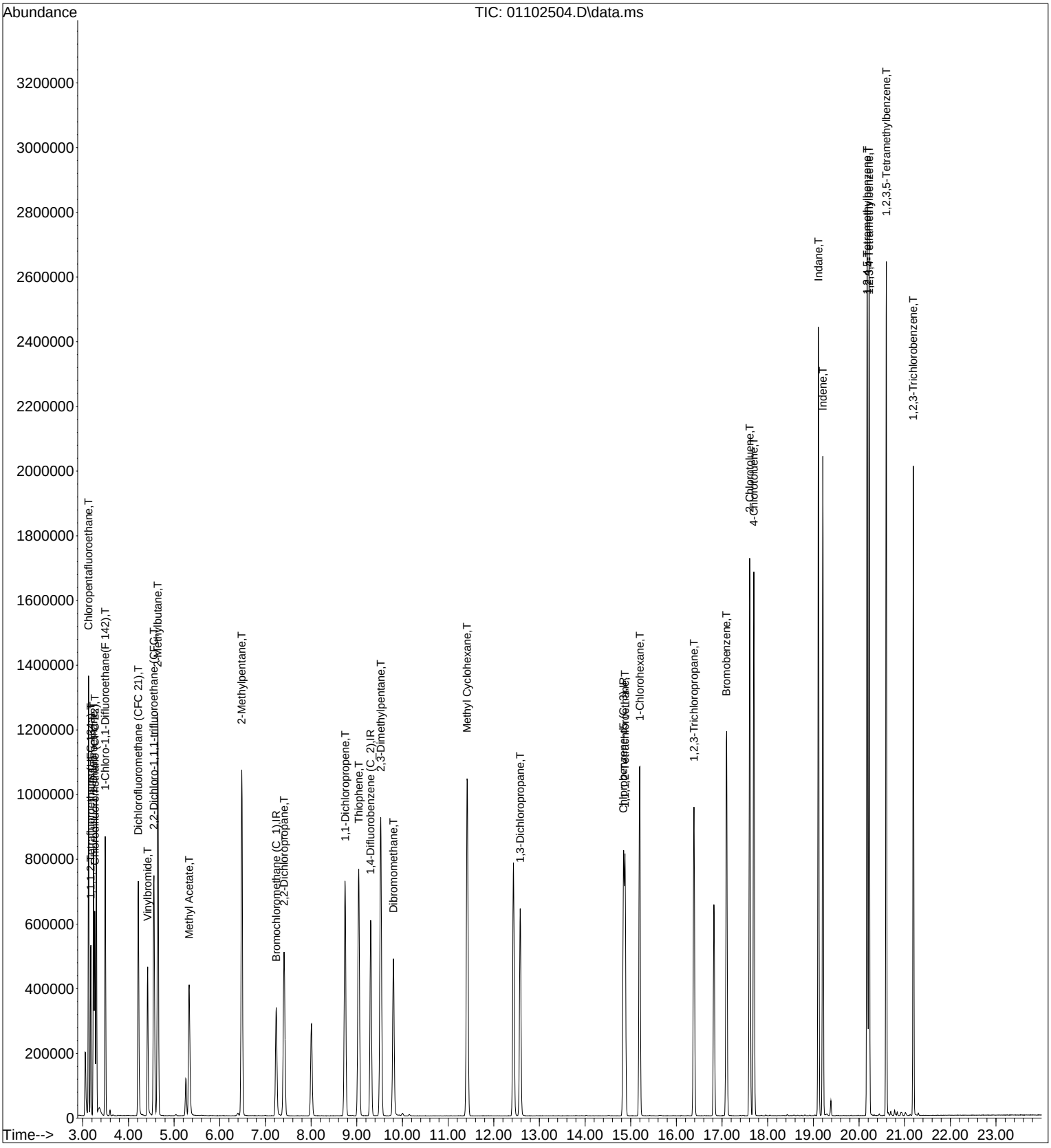
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	148636	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.30	114	633805	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	120647	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.13	85	369386	20.093	ng	96
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	299629	22.173	ng	88
4) 1,1-Difluoroethane	3.23	65	231723	19.254	ng	88
5) Chlorodifluoromethane ...	3.26	67	96813	23.391	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.49	65	635928	23.463	ng	98
7) Dichlorofluoromethane ...	4.22	67	628401	20.867	ng	99
8) Vinylbromide	4.42	108	265543	21.237	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	430903	20.946	ng	100
10) 2-Methylbutane	4.64	57	285492	19.903	ng	93
11) Methyl Acetate	5.33	43	647657	19.018	ng	99
12) 2-Methylpentane	6.48	71	243676	19.927	ng	98
13) 2,2-Dichloropropane	7.41	77	403199	21.129	ng	99
14) 1,1-Dichloropropene	8.75	75	427200	22.287	ng	97
15) Thiophene	9.04	84	600991	20.366	ng	99
17) 2,3-Dimethylpentane	9.53	56	528662	21.009	ng	98
18) Dibromomethane	9.80	174	266748	25.028	ng	96
20) Methyl Cyclohexane	11.42	55	471153	21.890	ng	100
21) 1,3-Dichloropropane	12.58	76	440563	21.225	ng	98
22) 1,1,1,2-Tetrachloroethane	14.87	131	276856	19.732	ng	99
23) 1-Chlorohexane	15.20	91	441115	21.702	ng	98
24) 1,2,3-Trichloropropane	16.38	75	464917	22.407	ng	97
25) Bromobenzene	17.09	77	545021	22.281	ng	95
26) 2-Chlorotoluene	17.61	91	1045828	23.193	ng	100
27) 4-Chlorotoluene	17.70	91	1050451	22.143	ng	99
28) Indane	19.11	117	1173869	22.620	ng	99
29) Indene	19.21	115	983174	22.428	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1318303	25.198	ng	99
31) 1,2,3,4-Tetramethylben...	20.22	119	1303514	24.870	ng	99
32) 1,2,3,5-Tetramethylben...	20.60	119	1254790	25.166	ng	98
33) 1,2,3-Trichlorobenzene	21.19	180	530590	26.019	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\10\01102504.D Vial: 3
Acq On : 10 Jan 2025 18:55 Operator: CG
Sample : CCV C09011025 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 10 21:40:05 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\11\01112501.D Vial: 2
Acq On : 11 Jan 2025 5:01 Operator: CG
Sample : CCV R09011125 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 11 08:48:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	109	0.03
2	T	Propene	1.335	0.997	25.3	79	0.02
3	T	Dichlorodifluoromethane (CF	2.444	2.271	7.1	98	0.03
4	T	Chloromethane	1.815	1.059	41.7#	59	0.02
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.120	3.2	104	0.02
6	T	Vinyl Chloride	1.396	1.406	-0.7	106	0.02
7	T	1,3-Butadiene	0.920	1.041	-13.2	117	0.02
8	T	Bromomethane	0.881	0.937	-6.4	101	0.03
9	T	Chloroethane	0.735	0.657	10.6	92	0.03
10	T	Ethanol	0.925	0.824	10.9	92	0.08
11	T	Acetonitrile	2.378	1.848	22.3	88	0.00
12	T	Acrolein	0.790	0.710	10.1	90	0.00
13	T	Acetone	0.842	0.725	13.9	94	0.00
14	T	Trichlorofluoromethane	2.292	2.230	2.7	104	0.03
15	T	2-Propanol (Isopropanol)	3.014	2.887	4.2	95	-0.01
16	T	Acrylonitrile	1.502	1.370	8.8	89	0.00
17	T	1,1-Dichloroethene	1.053	0.970	7.9	95	0.03
18	T	2-Methyl-2-Propanol (tert-B	2.415	1.953	19.1	80	0.00
19	T	Methylene Chloride	1.184	1.040	12.2	93	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.558	20.7	87	0.03
21	T	Trichlorotrifluoroethane	1.034	0.996	3.7	102	0.02
22	T	Carbon Disulfide	3.808	3.569	6.3	95	0.04
23	T	trans-1,2-Dichloroethene	1.618	1.541	4.8	94	0.04
24	T	1,1-Dichloroethane	2.008	1.813	9.7	94	0.03
25	T	Methyl tert-Butyl Ether	2.987	2.124	28.9	69	0.03
26	T	Vinyl Acetate	0.204	0.206	-1.0	91	0.03
27	T	2-Butanone (MEK)	0.676	0.632	6.5	92	0.02
28	T	cis-1,2-Dichloroethene	1.576	1.461	7.3	94	0.03
29	T	Diisopropyl Ether	0.851	0.786	7.6	97	0.05
30	T	Ethyl Acetate	0.417	0.398	4.6	92	0.03
31	T	n-Hexane	1.878	1.648	12.2	93	0.06
32	T	Chloroform	2.035	1.926	5.4	99	0.04
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.748	-2.6	112	0.04
34	T	Tetrahydrofuran (THF)	0.638	0.598	6.3	92	0.04
35	T	Ethyl tert-Butyl Ether	1.231	1.228	0.2	100	0.05
36	T	1,2-Dichloroethane	1.724	1.680	2.6	101	0.05
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	108	0.02
38	T	1,1,1-Trichloroethane	0.433	0.436	-0.7	102	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	90	0.03
40	T	1-Butanol	0.000	0.000	0.0	108	0.03
41	T	Benzene	1.003	0.879	12.4	93	0.02
42	T	Carbon Tetrachloride	0.401	0.410	-2.2	101	0.03
43	T	Cyclohexane	0.350	0.325	7.1	94	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.656	-1.2	98	0.02
45	T	1,2-Dichloropropane	0.245	0.221	9.8	91	0.03
46	T	Bromodichloromethane	0.347	0.353	-1.7	99	0.03
47	T	Trichloroethene	0.286	0.274	4.2	99	0.03
48	T	1,4-Dioxane	0.174	0.188	-8.0	98	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.948	9.7	91	0.04
50	T	Methyl Methacrylate	0.092	0.098	-6.5	97	0.03
51	T	n-Heptane	0.224	0.207	7.6	93	0.03
52	T	cis-1,3-Dichloropropene	0.400	0.408	-2.0	94	0.04
53	T	4-Methyl-2-pentanone	0.216	0.221	-2.3	93	0.03
54	T	trans-1,3-Dichloropropene	0.362	0.346	4.4	91	0.05
55	T	1,1,2-Trichloroethane	0.243	0.231	4.9	95	0.05

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\11\01112501.D Vial: 2
Acq On : 11 Jan 2025 5:01 Operator: CG
Sample : CCV R09011125 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 11 08:48:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	104	0.00
57	S	Toluene-d8 (SS2)	5.545	5.558	-0.2	107	-0.01
58	T	Toluene	5.335	5.023	5.8	97	-0.02
59	T	2-Hexanone	2.600	2.819	-8.4	95	-0.02
60	T	Dibromochloromethane	1.591	1.740	-9.4	101	-0.02
61	T	1,2-Dibromoethane	1.520	1.522	-0.1	93	-0.01
62	T	n-Butyl Acetate	2.922	3.171	-8.5	93	-0.02
63	T	n-Octane	1.106	1.060	4.2	93	-0.02
64	T	Tetrachloroethene	1.587	1.641	-3.4	103	-0.01
65	T	Chlorobenzene	3.764	3.577	5.0	95	-0.01
66	T	Ethylbenzene	5.899	6.044	-2.5	97	-0.01
67	T	m- & p-Xylenes	4.828	4.966	-2.9	99	-0.01
68	T	Bromoform	1.264	1.491	-18.0	103	-0.01
69	T	Styrene	3.373	3.525	-4.5	90	-0.01
70	T	o-Xylene	4.778	4.902	-2.6	98	-0.01
71	T	n-Nonane	2.538	2.479	2.3	92	0.00
72	T	1,1,2,2-Tetrachloroethane	2.274	2.195	3.5	93	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	1.947	-1.7	106	0.00
74	T	Cumene	5.945	6.109	-2.8	99	-0.01
75	T	alpha-Pinene	2.933	3.106	-5.9	97	0.00
76	T	n-Propylbenzene	7.049	7.175	-1.8	97	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	99	-0.01
78	T	4-Ethyltoluene	5.603	5.966	-6.5	97	0.00
79	T	1,3,5-Trimethylbenzene	4.899	5.168	-5.5	100	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	104	-0.01
81	T	2-Ethyltoluene	0.000	0.000	0.0	99	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	5.340	-7.8	100	0.00
83	T	n-Decane	0.000	0.000	0.0	113	-0.01
84	T	Benzyl Chloride	4.067	3.920	3.6	83	-0.01
85	T	1,3-Dichlorobenzene	3.094	2.977	3.8	93	-0.01
86	T	1,4-Dichlorobenzene	3.185	2.856	10.3	86	-0.01
87	T	sec-Butylbenzene	6.562	6.780	-3.3	99	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	5.850	-7.4	99	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	99	-0.01
90	T	1,2-Dichlorobenzene	3.128	3.066	2.0	95	-0.01
91	T	d-Limonene	1.582	1.670	-5.6	90	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.168	-9.7	96	0.00
93	T	n-Undecane	0.000	0.000	0.0	93	0.00
94	T	1,2,4-Trichlorobenzene	2.178	1.966	9.7	79	0.00
95	T	Naphthalene	6.635	4.931	25.7	66	0.00
96	T	n-Dodecane	0.000	0.000	0.0	85	0.00
97	T	Hexachlorobutadiene	1.636	1.754	-7.2	104	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.25#
99	T	tert-Butylbenzene	4.651	4.956	-6.6	102	0.00
100	T	n-Butylbenzene	5.139	5.310	-3.3	94	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.448	-5.5	102	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112501.D
Acq On : 11 Jan 2025 5:01
Operator : CG
Sample : CCV R09011125 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

CG 1/11/25

Quant Time: Jan 11 08:48:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	153218	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	675428	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	125466	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	267784	12.828	ng	0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.64%			
57) Toluene-d8 (SS2)	12.44	98	697361	12.529	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.24%			
73) Bromofluorobenzene (SS3)	16.83	174	244226	12.715	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%			
Target Compounds						Qvalue
2) Propene	3.28	42	320797	19.602	ng	97
3) Dichlorodifluoromethan...	3.36	85	702848	23.466	ng	100
4) Chloromethane	3.49	50	344011	15.467	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	370522	26.130	ng	100
6) Vinyl Chloride	3.68	62	456744	26.688	ng	100
7) 1,3-Butadiene	3.80	54	338143	29.970	ng	100
8) Bromomethane	4.02	94	292850	27.132	ng	100
9) Chloroethane	4.15	64	221579	24.601	ng	99
10) Ethanol	4.37	45	1325925	116.995	ng	96
11) Acetonitrile	4.48	41	583346	20.012	ng	98
12) Acrolein	4.55	56	474013	48.926	ng	99
13) Acetone	4.66	58	1138008	110.309	ng	90
14) Trichlorofluoromethane	4.76	101	690238	24.573	ng	100
15) 2-Propanol (Isopropanol)	4.91	45	1822591	49.334	ng	99
16) Acrylonitrile	5.04	53	873322	47.446	ng	98
17) 1,1-Dichloroethene	5.27	96	270393	20.942	ng	99
18) 2-Methyl-2-Propanol (t...	5.39	59	1250801	42.255	ng	98
19) Methylene Chloride	5.39	84	290068	19.982	ng	96
20) 3-Chloro-1-propene (Al...	5.47	41	520252	21.598	ng	97
21) Trichlorotrifluoroethane	5.58	151	280745	22.153	ng	95
22) Carbon Disulfide	5.61	76	2263992	48.509	ng	100
23) trans-1,2-Dichloroethene	6.17	61	495981	25.010	ng	100
24) 1,1-Dichloroethane	6.36	63	572283	23.248	ng	99
25) Methyl tert-Butyl Ether	6.38	73	689974	18.847	ng	98
26) Vinyl Acetate	6.48	86	333128	133.408	ng	99
27) 2-Butanone (MEK)	6.70	72	394796	47.632	ng	99
28) cis-1,2-Dichloroethene	7.12	61	461092	23.863	ng	100
29) Diisopropyl Ether	7.30	87	503675	48.289	ng	94
30) Ethyl Acetate	7.31	61	237986	46.519	ng	97
31) n-Hexane	7.31	57	525063	22.811	ng	99
32) Chloroform	7.41	83	625675	25.086	ng	100
34) Tetrahydrofuran (THF)	7.76	72	347980	44.518	ng	92
35) Ethyl tert-Butyl Ether	7.84	87	786445	52.113	ng	98
36) 1,2-Dichloroethane	8.15	62	520088	24.616	ng	100
38) 1,1,1-Trichloroethane	8.42	97	606281	25.938	ng	99
39) Isopropyl Acetate	9.61	61	785	No Calib	#	
40) 1-Butanol	8.84	56	2333	No Calib	#	
41) Benzene	8.92	78	1211035	22.337	ng	100
42) Carbon Tetrachloride	9.09	117	564718	26.039	ng	100
43) Cyclohexane	9.23	84	912987	48.270	ng	97
44) tert-Amyl Methyl Ether	9.61	73	1859825	53.088	ng	99
45) 1,2-Dichloropropane	9.88	63	319643	24.168	ng	99
46) Bromodichloromethane	10.10	83	509808	27.155	ng	100
47) Trichloroethene	10.17	130	389306	25.203	ng	100
48) 1,4-Dioxane	10.13	88	269214	28.671	ng	97

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112501.D
Acq On : 11 Jan 2025 5:01
Operator : CG
Sample : CCV R09011125 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:48:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration

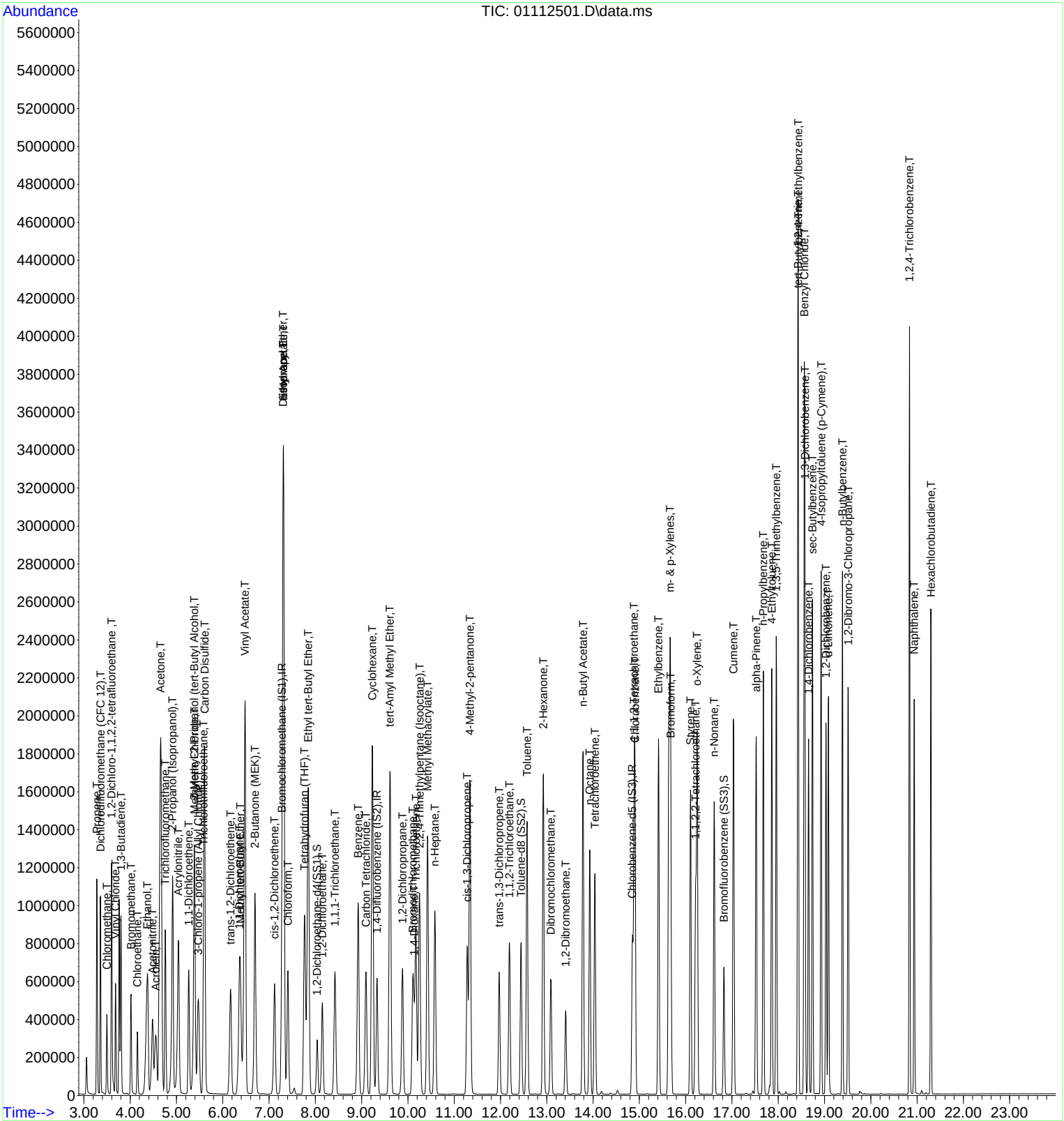
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 2,2,4-Trimethylpentane...	10.25	57	1358104	23.942	ng		97
50) Methyl Methacrylate	10.42	100	280303	56.680	ng		94
51) n-Heptane	10.58	71	291328	24.095	ng		98
52) cis-1,3-Dichloropropene	11.28	75	579091	26.814	ng		100
53) 4-Methyl-2-pentanone	11.34	58	627814	53.836	ng		98
54) trans-1,3-Dichloropropene	11.97	75	462692	23.674	ng		100
55) 1,1,2-Trichloroethane	12.19	97	342739	26.146	ng		99
58) Toluene	12.57	91	1373839	25.654	ng		99
59) 2-Hexanone	12.93	43	1471402	56.381	ng		99
60) Dibromochloromethane	13.09	129	449724	28.155	ng		99
61) 1,2-Dibromoethane	13.41	107	401012	26.278	ng		100
62) n-Butyl Acetate	13.78	43	1670839	56.971	ng		99
63) n-Octane	13.93	57	281844	25.385	ng		98
64) Tetrachloroethene	14.04	166	440731	27.667	ng		100
65) Chlorobenzene	14.91	112	960353	25.420	ng		100
66) Ethylbenzene	15.41	91	1653173	27.918	ng		100
67) m- & p-Xylenes	15.66	91	2666578	55.023	ng		99
68) Bromoform	15.68	173	407910	32.142	ng		100
69) Styrene	16.11	104	937729	27.697	ng		98
70) o-Xylene	16.25	91	1328593	27.703	ng		99
71) n-Nonane	16.62	43	653190	25.637	ng		100
72) 1,1,2,2-Tetrachloroethane	16.21	83	594936	26.068	ng		100
74) Cumene	17.03	105	1609688	26.977	ng		99
75) alpha-Pinene	17.53	93	833887	28.327	ng		99
76) n-Propylbenzene	17.68	91	1872495	26.467	ng		100
77) 3-Ethyltoluene	17.03	105	1609688	No Calib			
78) 4-Ethyltoluene	17.86	105	1557036	27.686	ng		99
79) 1,3,5-Trimethylbenzene	17.96	105	1400605	28.485	ng		99
80) alpha-Methylstyrene	17.03	118	3582	No Calib		#	
81) 2-Ethyltoluene	17.03	105	1609688	No Calib			
82) 1,2,4-Trimethylbenzene	18.43	105	1407011	28.293	ng		100
83) n-Decane	17.03	58	14309	No Calib			
84) Benzyl Chloride	18.56	91	2114877	51.812	ng		100
85) 1,3-Dichlorobenzene	18.58	146	791952	25.505	ng		99
86) 1,4-Dichlorobenzene	18.66	146	752421	23.533	ng		100
87) sec-Butylbenzene	18.74	105	1769413	26.866	ng		100
88) 4-Isopropyltoluene (p-...	18.93	119	1526737	27.918	ng		100
89) 1,2,3-Trimethylbenzene	17.03	105	1609688	No Calib			
90) 1,2-Dichlorobenzene	19.03	146	800237	25.491	ng		100
91) d-Limonene	19.08	68	431566	27.175	ng		98
92) 1,2-Dibromo-3-Chloropr...	19.51	157	618171	57.815	ng		98
93) n-Undecane	17.96	58	26591	No Calib			
94) 1,2,4-Trichlorobenzene	20.84	180	1070331	48.967	ng		100
95) Naphthalene	20.94	128	1348708	20.251	ng		99
96) n-Dodecane	18.93	58	30738	No Calib		#	
97) Hexachlorobutadiene	21.30	225	462125	28.134	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.43	119	1305920	27.973	ng		100
100) n-Butylbenzene	19.39	91	1372382	26.607	ng		99
101) 1,1,1,2-Tetrachloroethane	14.89	131	388906	28.221	ng		100

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

Quantitation Report (QT Reviewed)

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112501.D
Acq On : 11 Jan 2025 5:01
Operator : CG
Sample : CCV R09011125 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 11 08:48:08 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\11\01112502.D Vial: 3
Acq On : 11 Jan 2025 5:33 Operator: CG
Sample : CCV C09011125 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 12 08:18:51 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

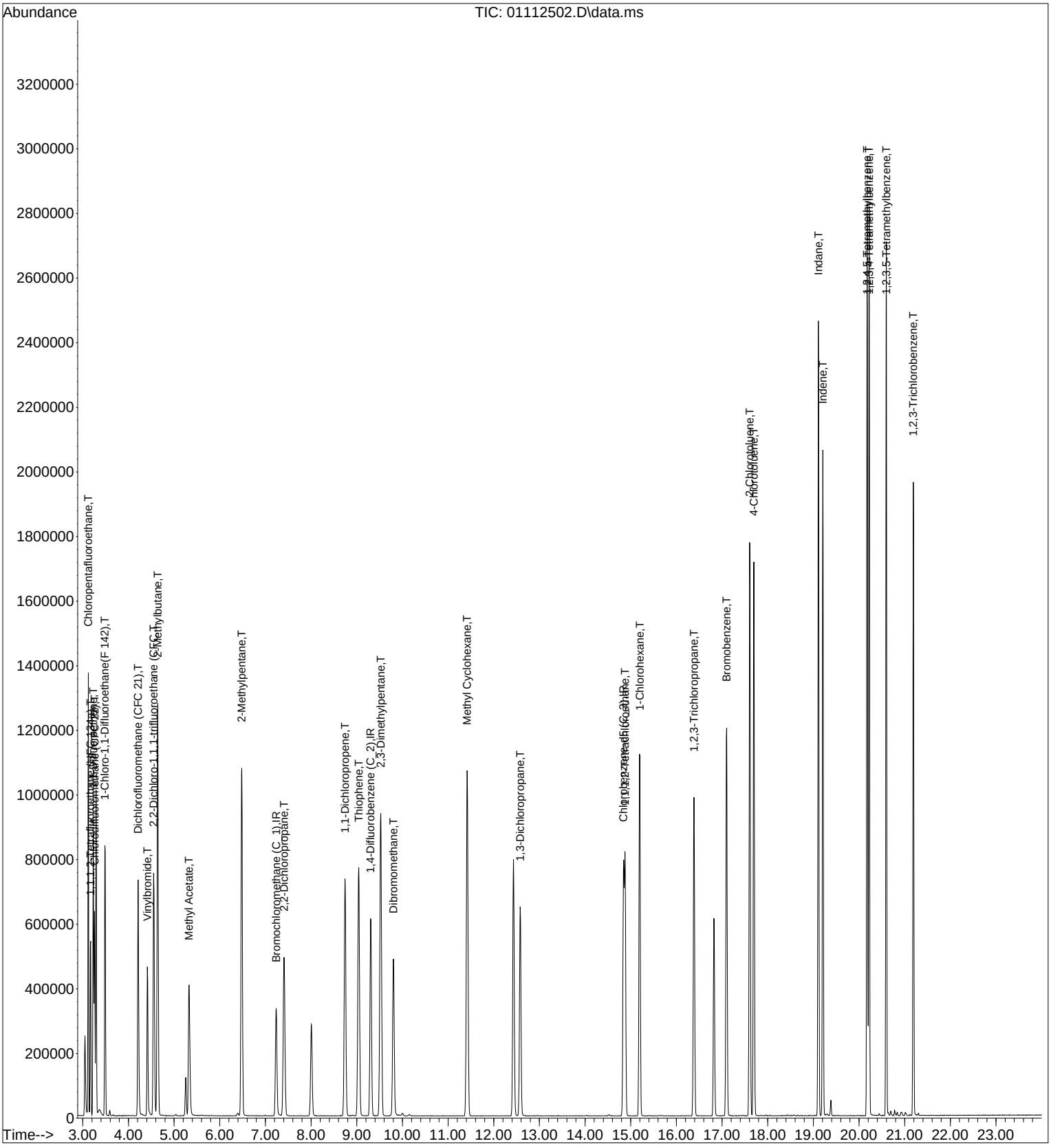
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	151263	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.30	114	654925	12.500	ng	-0.02
19) Chlorobenzene-d5 (C_3)	14.84	54	116835	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.12	85	376639	20.132	ng	96
3) 1,1,1,2-Tetrafluoroeth...	3.17	83	302854	22.023	ng	91
4) 1,1-Difluoroethane	3.23	65	245762	20.066	ng	91
5) Chlorodifluoromethane ...	3.26	67	97161	23.067	ng	99
6) 1-Chloro-1,1-Difluoroe...	3.48	65	634098	22.990	ng	98
7) Dichlorofluoromethane ...	4.21	67	638506	20.834	ng	100
8) Vinylbromide	4.41	108	274700	21.587	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.55	83	445224	21.267	ng	100
10) 2-Methylbutane	4.64	57	295058	20.213	ng	92
11) Methyl Acetate	5.32	43	664979	19.187	ng	99
12) 2-Methylpentane	6.48	71	252244	20.270	ng	98
13) 2,2-Dichloropropane	7.41	77	400244	20.610	ng	99
14) 1,1-Dichloropropene	8.74	75	440133	22.563	ng	98
15) Thiophene	9.04	84	623647	20.767	ng	100
17) 2,3-Dimethylpentane	9.53	56	548126	21.080	ng	98
18) Dibromomethane	9.80	174	271543	24.657	ng	95
20) Methyl Cyclohexane	11.42	55	482980	23.172	ng	99
21) 1,3-Dichloropropane	12.58	76	457005	22.736	ng	98
22) 1,1,1,2-Tetrachloroethane	14.87	131	280244	20.625	ng	99
23) 1-Chlorohexane	15.20	91	456838	23.209	ng	99
24) 1,2,3-Trichloropropane	16.38	75	473449	23.563	ng	98
25) Bromobenzene	17.10	77	562937	23.764	ng	95
26) 2-Chlorotoluene	17.61	91	1077265	24.669	ng	100
27) 4-Chlorotoluene	17.70	91	1081607	23.544	ng	99
28) Indane	19.11	117	1201722	23.912	ng	99
29) Indene	19.21	115	1009330	23.776	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1329856	26.248	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1317611	25.959	ng	99
32) 1,2,3,5-Tetramethylben...	20.60	119	1267033	26.241	ng	99
33) 1,2,3-Trichlorobenzene	21.19	180	535112	27.097	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\11\01112502.D Vial: 3
Acq On : 11 Jan 2025 5:33 Operator: CG
Sample : CCV C09011125 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 12 08:18:51 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\11\01112502.D Vial: 3
Acq On : 11 Jan 2025 5:33 Operator: CG
Sample : CCV C09011125 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 12 08:18:51 2025 1/12/25
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (C 1)	1.000	1.000	0.0	108	-0.02
2	T	Chloropentafluoroethane	1.546	1.258	18.6	89	0.00
3	T	1,1,1,2-Tetrafluoroethane (	1.136	1.001	11.9	96	-0.01
4	T	1,1-Difluoroethane	1.012	0.766	24.3	82	-0.02
5	T	Chlorodifluoromethane (CFC	0.348	0.309	11.2	95	-0.01
6	T	1-Chloro-1,1-Difluoroethane	2.279	2.015	11.6	97	-0.02
7	T	Dichlorofluoromethane (CFC	2.533	2.132	15.8	92	-0.01
8	T	Vinylbromide	1.052	0.908	13.7	91	-0.02
9	T	2,2-Dichloro-1,1,1-trifluor	1.730	1.415	18.2	90	-0.02
10	T	2-Methylbutane	1.206	0.956	20.7	87	-0.01
11	T	Methyl Acetate	2.864	2.290	20.0	86	-0.02
12	T	2-Methylpentane	1.028	0.834	18.9	88	-0.01
13	T	2,2-Dichloropropane	1.605	1.336	16.8	86	-0.02
14	T	1,1-Dichloropropene	1.612	1.399	13.2	92	-0.02
15	T	Thiophene	2.482	2.041	17.8	89	-0.02
16	IR	1,4-Difluorobenzene (C 2)	1.000	1.000	0.0	106	-0.02
17	T	2,3-Dimethylpentane	0.496	0.402	19.0	87	-0.02
18	T	Dibromomethane	0.210	0.194	7.6	96	-0.02
19	IR	Chlorobenzene-d5 (C 3)	1.000	1.000	0.0	102	0.00
20	T	Methyl Cyclohexane	2.230	1.932	13.4	88	-0.02
21	T	1,3-Dichloropropane	2.151	1.881	12.6	89	-0.01
22	T	1,1,1,2-Tetrachloroethane	1.454	1.379	5.2	95	0.00
23	T	1-Chlorohexane	2.106	1.898	9.9	90	0.00
24	T	1,2,3-Trichloropropane	2.150	1.930	10.2	90	0.00
25	T	Bromobenzene	2.534	2.294	9.5	91	0.00
26	T	2-Chlorotoluene	4.672	4.349	6.9	93	0.00
27	T	4-Chlorotoluene	4.915	4.583	6.8	94	0.00
28	T	Indane	5.377	5.195	3.4	94	0.00
29	T	Indene	4.542	4.595	-1.2	92	0.00
30	T	1,2,4,5-Tetramethylbenzene	5.420	5.635	-4.0	96	0.00
31	T	1,2,3,4-Tetramethylbenzene	5.430	5.475	-0.8	97	0.00
32	T	1,2,3,5-Tetramethylbenzene	5.166	5.369	-3.9	96	0.00
33	T	1,2,3-Trichlorobenzene	2.113	2.181	-3.2	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\12\01122501.D Vial: 2
Acq On : 11 Jan 2025 23:38 Operator: LS
Sample : CCV R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 12 07:30:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	108	0.03
2	T	Propene	1.335	1.008	24.5	79	0.03
3	T	Dichlorodifluoromethane (CF	2.444	2.175	11.0	94	0.03
4	T	Chloromethane	1.815	1.296	28.6	72	0.03
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.081	6.6	100	0.03
6	T	Vinyl Chloride	1.396	1.370	1.9	102	0.03
7	T	1,3-Butadiene	0.920	0.996	-8.3	111	0.02
8	T	Bromomethane	0.881	0.917	-4.1	99	0.03
9	T	Chloroethane	0.735	0.646	12.1	90	0.03
10	T	Ethanol	0.925	0.813	12.1	90	0.08
11	T	Acetonitrile	2.378	1.854	22.0	88	0.00
12	T	Acrolein	0.790	0.701	11.3	88	0.00
13	T	Acetone	0.842	0.715	15.1	93	0.00
14	T	Trichlorofluoromethane	2.292	2.116	7.7	98	0.03
15	T	2-Propanol (Isopropanol)	3.014	2.838	5.8	93	-0.01
16	T	Acrylonitrile	1.502	1.361	9.4	88	0.00
17	T	1,1-Dichloroethene	1.053	0.954	9.4	93	0.03
18	T	2-Methyl-2-Propanol (tert-B	2.415	2.208	8.6	90	0.00
19	T	Methylene Chloride	1.184	1.019	13.9	91	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.573	19.9	88	0.03
21	T	Trichlorotrifluoroethane	1.034	0.971	6.1	99	0.03
22	T	Carbon Disulfide	3.808	3.501	8.1	93	0.04
23	T	trans-1,2-Dichloroethene	1.618	1.495	7.6	90	0.04
24	T	1,1-Dichloroethane	2.008	1.767	12.0	91	0.03
25	T	Methyl tert-Butyl Ether	2.987	2.897	3.0	94	0.03
26	T	Vinyl Acetate	0.204	0.205	-0.5	91	0.03
27	T	2-Butanone (MEK)	0.676	0.623	7.8	90	0.02
28	T	cis-1,2-Dichloroethene	1.576	1.438	8.8	92	0.03
29	T	Diisopropyl Ether	0.851	0.774	9.0	95	0.05
30	T	Ethyl Acetate	0.417	0.398	4.6	92	0.03
31	T	n-Hexane	1.878	1.637	12.8	92	0.06
32	T	Chloroform	2.035	1.872	8.0	96	0.04
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.689	0.8	108	0.04
34	T	Tetrahydrofuran (THF)	0.638	0.587	8.0	90	0.05
35	T	Ethyl tert-Butyl Ether	1.231	1.183	3.9	96	0.05
36	T	1,2-Dichloroethane	1.724	1.604	7.0	96	0.05
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	106	0.02
38	T	1,1,1-Trichloroethane	0.433	0.423	2.3	97	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	102	0.03
40	T	1-Butanol	0.000	0.000	0.0	108	0.03
41	T	Benzene	1.003	0.889	11.4	92	0.02
42	T	Carbon Tetrachloride	0.401	0.396	1.2	96	0.03
43	T	Cyclohexane	0.350	0.329	6.0	93	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.640	1.2	94	0.02
45	T	1,2-Dichloropropane	0.245	0.222	9.4	90	0.03
46	T	Bromodichloromethane	0.347	0.348	-0.3	96	0.03
47	T	Trichloroethene	0.286	0.273	4.5	96	0.03
48	T	1,4-Dioxane	0.174	0.188	-8.0	96	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.958	8.8	90	0.03
50	T	Methyl Methacrylate	0.092	0.097	-5.4	94	0.03
51	T	n-Heptane	0.224	0.210	6.3	92	0.03
52	T	cis-1,3-Dichloropropene	0.400	0.404	-1.0	91	0.04
53	T	4-Methyl-2-pentanone	0.216	0.225	-4.2	93	0.03
54	T	trans-1,3-Dichloropropene	0.362	0.339	6.4	87	0.05
55	T	1,1,2-Trichloroethane	0.243	0.232	4.5	93	0.04

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\12\01122501.D Vial: 2
Acq On : 11 Jan 2025 23:38 Operator: LS
Sample : CCV R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 12 07:30:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	103	0.00
57	S	Toluene-d8 (SS2)	5.545	5.551	-0.1	106	-0.01
58	T	Toluene	5.335	4.973	6.8	95	-0.02
59	T	2-Hexanone	2.600	2.837	-9.1	95	-0.03
60	T	Dibromochloromethane	1.591	1.701	-6.9	98	-0.02
61	T	1,2-Dibromoethane	1.520	1.515	0.3	92	-0.01
62	T	n-Butyl Acetate	2.922	3.162	-8.2	92	-0.02
63	T	n-Octane	1.106	1.045	5.5	90	-0.01
64	T	Tetrachloroethene	1.587	1.605	-1.1	100	-0.01
65	T	Chlorobenzene	3.764	3.519	6.5	93	-0.02
66	T	Ethylbenzene	5.899	5.960	-1.0	95	-0.01
67	T	m- & p-Xylenes	4.828	4.879	-1.1	96	-0.01
68	T	Bromoform	1.264	1.449	-14.6	99	-0.01
69	T	Styrene	3.373	3.520	-4.4	89	-0.01
70	T	o-Xylene	4.778	4.846	-1.4	96	-0.01
71	T	n-Nonane	2.538	2.496	1.7	91	0.00
72	T	1,1,2,2-Tetrachloroethane	2.274	2.186	3.9	92	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	2.057	-7.5	112	0.00
74	T	Cumene	5.945	6.063	-2.0	98	-0.01
75	T	alpha-Pinene	2.933	3.086	-5.2	95	0.00
76	T	n-Propylbenzene	7.049	7.116	-1.0	95	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	98	-0.01
78	T	4-Ethyltoluene	5.603	5.832	-4.1	94	0.00
79	T	1,3,5-Trimethylbenzene	4.899	5.095	-4.0	97	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	88	0.00
81	T	2-Ethyltoluene	0.000	0.000	0.0	98	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	5.259	-6.1	97	0.00
83	T	n-Decane	0.000	0.000	0.0	89	-0.01
84	T	Benzyl Chloride	4.067	3.735	8.2	79	-0.01
85	T	1,3-Dichlorobenzene	3.094	2.950	4.7	91	-0.01
86	T	1,4-Dichlorobenzene	3.185	2.818	11.5	85	-0.01
87	T	sec-Butylbenzene	6.562	6.736	-2.7	97	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	5.824	-6.9	98	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	98	-0.01
90	T	1,2-Dichlorobenzene	3.128	3.037	2.9	93	-0.01
91	T	d-Limonene	1.582	1.670	-5.6	89	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.154	-8.4	94	0.00
93	T	n-Undecane	0.000	0.000	0.0	89	0.00
94	T	1,2,4-Trichlorobenzene	2.178	1.958	10.1	78	0.00
95	T	Naphthalene	6.635	4.920	25.8	65	0.00
96	T	n-Dodecane	0.000	0.000	0.0	86	-0.01
97	T	Hexachlorobutadiene	1.636	1.703	-4.1	100	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.25#
99	T	tert-Butylbenzene	4.651	4.899	-5.3	100	0.00
100	T	n-Butylbenzene	5.139	5.272	-2.6	92	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.410	-2.7	98	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122501.D Vial: 2
Acq On : 11 Jan 2025 23:38 Operator: LS
Sample : CCV R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 12 07:30:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	152676	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.33	114	659998	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.85	54	124342	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	257863	12.397	ng	0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%			
57) Toluene-d8 (SS2)	12.44	98	690280	12.514	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%			
73) Bromofluorobenzene (SS3)	16.83	174	255817	13.439	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.52%			
Target Compounds						Qvalue
2) Propene	3.28	42	323209	19.820	ng	97
3) Dichlorodifluoromethan...	3.36	85	670681	22.472	ng	100
4) Chloromethane	3.50	50	419415	18.924	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	356352	25.220	ng	100
6) Vinyl Chloride	3.69	62	443306	25.995	ng	100
7) 1,3-Butadiene	3.80	54	322353	28.672	ng	98
8) Bromomethane	4.02	94	285578	26.552	ng	100
9) Chloroethane	4.16	64	217046	24.183	ng	100
10) Ethanol	4.37	45	1302608	115.346	ng	96
11) Acetonitrile	4.48	41	583003	20.071	ng	99
12) Acrolein	4.56	56	466477	48.319	ng	99
13) Acetone	4.66	58	1117231	108.679	ng	93
14) Trichlorofluoromethane	4.76	101	652572	23.315	ng	100
15) 2-Propanol (Isopropanol)	4.91	45	1784999	48.488	ng	100
16) Acrylonitrile	5.04	53	864173	47.115	ng	98
17) 1,1-Dichloroethene	5.27	96	265066	20.602	ng	99
18) 2-Methyl-2-Propanol (t...	5.38	59	1409338	47.780	ng	99
19) Methylene Chloride	5.39	84	283212	19.579	ng	96
20) 3-Chloro-1-propene (Al...	5.47	41	523626	21.815	ng	99
21) Trichlorotrifluoroethane	5.59	151	272852	21.607	ng	96
22) Carbon Disulfide	5.61	76	2212919	47.583	ng	100
23) trans-1,2-Dichloroethene	6.17	61	479385	24.259	ng	99
24) 1,1-Dichloroethane	6.36	63	555660	22.653	ng	100
25) Methyl tert-Butyl Ether	6.38	73	937788	25.707	ng	98
26) Vinyl Acetate	6.48	86	331412	133.192	ng	98
27) 2-Butanone (MEK)	6.70	72	388074	46.987	ng	100
28) cis-1,2-Dichloroethene	7.12	61	452129	23.482	ng	100
29) Diisopropyl Ether	7.30	87	493879	47.518	ng	94
30) Ethyl Acetate	7.31	61	236856	46.463	ng	100
31) n-Hexane	7.31	57	519746	22.660	ng	99
32) Chloroform	7.41	83	606034	24.384	ng	100
34) Tetrahydrofuran (THF)	7.77	72	340804	43.754	ng	92
35) Ethyl tert-Butyl Ether	7.84	87	754742	50.190	ng	98
36) 1,2-Dichloroethane	8.15	62	494797	23.502	ng	100
38) 1,1,1-Trichloroethane	8.42	97	575261	25.187	ng	99
39) Isopropyl Acetate	9.62	61	893	No Calib	#	
40) 1-Butanol	8.84	56	2347	No Calib		
41) Benzene	8.92	78	1196781	22.590	ng	100
42) Carbon Tetrachloride	9.09	117	533707	25.184	ng	100
43) Cyclohexane	9.23	84	903094	48.863	ng	98
44) tert-Amyl Methyl Ether	9.61	73	1774510	51.837	ng	99
45) 1,2-Dichloropropane	9.88	63	313820	24.282	ng	99
46) Bromodichloromethane	10.10	83	491982	26.818	ng	100
47) Trichloroethene	10.17	130	378849	25.100	ng	100
48) 1,4-Dioxane	10.13	88	263334	28.700	ng	98
49) 2,2,4-Trimethylpentane...	10.25	57	1339855	24.172	ng	98
50) Methyl Methacrylate	10.42	100	272480	56.387	ng	95

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122501.D Vial: 2
Acq On : 11 Jan 2025 23:38 Operator: LS
Sample : CCV R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 12 07:30:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

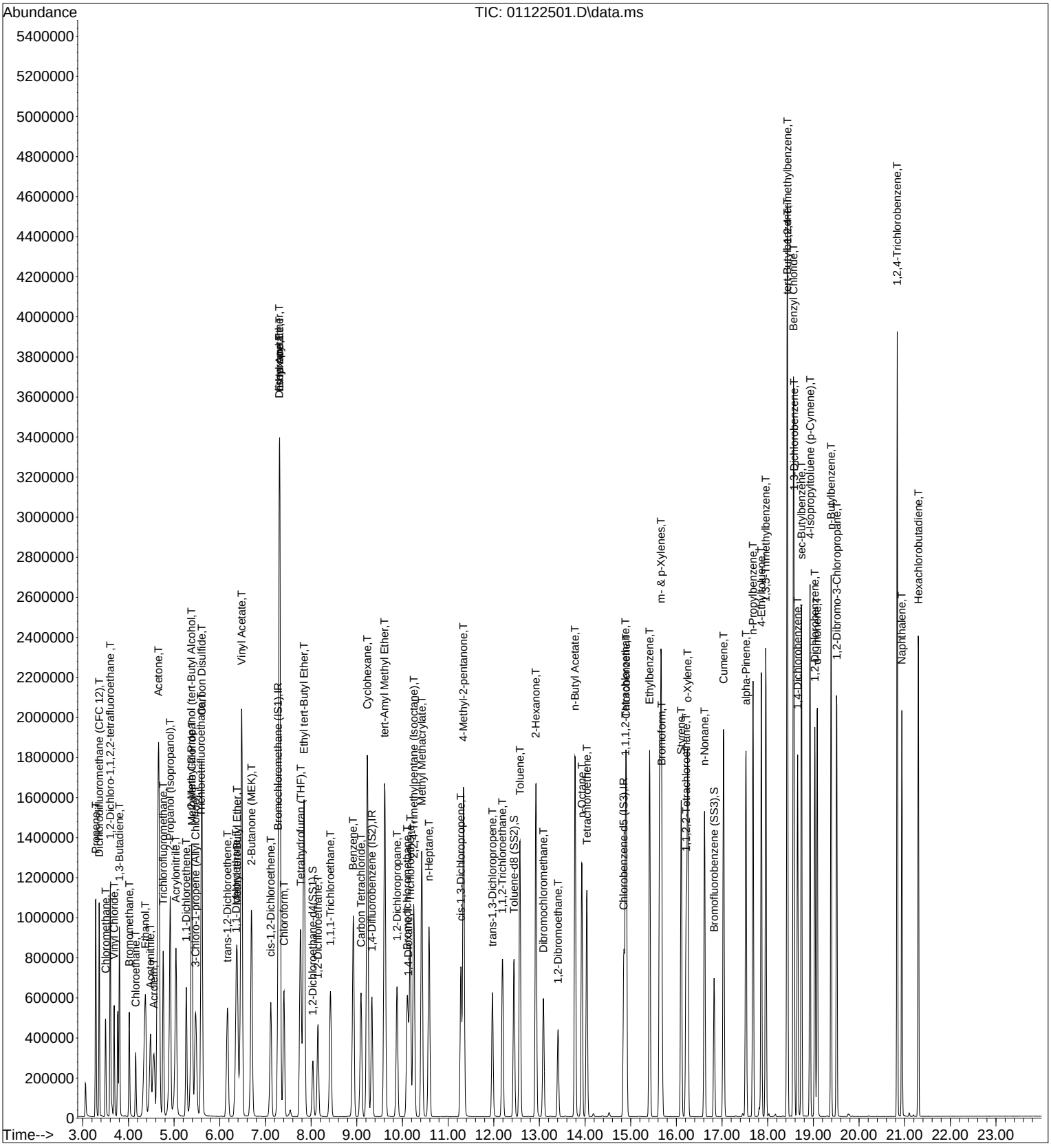
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.58	71	288196	24.393 ng	98
52) cis-1,3-Dichloropropene	11.28	75	559990	26.536 ng	100
53) 4-Methyl-2-pentanone	11.34	58	622375	54.617 ng	99
54) trans-1,3-Dichloropropene	11.97	75	442951	23.193 ng	99
55) 1,1,2-Trichloroethane	12.19	97	336158	26.244 ng	100
58) Toluene	12.57	91	1347978	25.399 ng	99
59) 2-Hexanone	12.92	43	1467666	56.747 ng	99
60) Dibromochloromethane	13.09	129	435712	27.524 ng	100
61) 1,2-Dibromoethane	13.41	107	395706	26.165 ng	100
62) n-Butyl Acetate	13.78	43	1651425	56.818 ng	99
63) n-Octane	13.93	57	275550	25.042 ng	98
64) Tetrachloroethene	14.04	166	427016	27.048 ng	100
65) Chlorobenzene	14.90	112	936379	25.009 ng	99
66) Ethylbenzene	15.41	91	1615419	27.527 ng	100
67) m- & p-Xylenes	15.66	91	2596656	54.065 ng	100
68) Bromoform	15.68	173	392904	31.239 ng	100
69) Styrene	16.11	104	927797	27.651 ng	99
70) o-Xylene	16.25	91	1301419	27.381 ng	100
71) n-Nonane	16.62	43	651757	25.812 ng	99
72) 1,1,2,2-Tetrachloroethane	16.21	83	587039	25.955 ng	100
74) Cumene	17.03	105	1583290	26.774 ng	100
75) alpha-Pinene	17.53	93	821033	28.142 ng	100
76) n-Propylbenzene	17.68	91	1840398	26.248 ng	100
77) 3-Ethyltoluene	17.03	105	1583290	No Calib	
78) 4-Ethyltoluene	17.86	105	1508463	27.065 ng	99
79) 1,3,5-Trimethylbenzene	17.96	105	1368331	28.080 ng	100
80) alpha-Methylstyrene	17.04	118	3059	No Calib #	
81) 2-Ethyltoluene	17.03	105	1583290	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1373227	27.863 ng	99
83) n-Decane	17.03	58	11331	No Calib	
84) Benzyl Chloride	18.56	91	1996787	49.361 ng	100
85) 1,3-Dichlorobenzene	18.58	146	777565	25.268 ng	100
86) 1,4-Dichlorobenzene	18.66	146	735948	23.226 ng	100
87) sec-Butylbenzene	18.74	105	1742251	26.693 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1506205	27.791 ng	99
89) 1,2,3-Trimethylbenzene	17.03	105	1583290	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	785389	25.244 ng	100
91) d-Limonene	19.08	68	427771	27.180 ng	98
92) 1,2-Dibromo-3-Chloropr...	19.51	157	605515	57.143 ng	97
93) n-Undecane	17.96	58	25340	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1056391	48.766 ng	100
95) Naphthalene	20.94	128	1333694	20.207 ng	100
96) n-Dodecane	18.92	58	30986	No Calib #	
97) Hexachlorobutadiene	21.30	225	444664	27.316 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1279256	27.649 ng	100
100) n-Butylbenzene	19.39	91	1350366	26.416 ng	99
101) 1,1,1,2-Tetrachloroethane	14.89	131	375091	27.465 ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122501.D Vial: 2
Acq On : 11 Jan 2025 23:38 Operator: LS
Sample : CCV R09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 12 07:30:51 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\12\01122502.D Vial: 3
Acq On : 12 Jan 2025 00:10 Operator: LS
Sample : CCV C09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 12 07:43:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (C 1)	1.000	1.000	0.0	107	-0.02
2	T	Chloropentafluoroethane	1.546	1.238	19.9	87	0.00
3	T	1,1,1,2-Tetrafluoroethane (	1.136	0.961	15.4	92	0.00
4	T	1,1-Difluoroethane	1.012	0.760	24.9	81	0.00
5	T	Chlorodifluoromethane (CFC	0.348	0.295	15.2	90	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.279	1.957	14.1	94	0.00
7	T	Dichlorofluoromethane (CFC	2.533	2.105	16.9	90	0.00
8	T	Vinylbromide	1.052	0.900	14.4	90	-0.01
9	T	2,2-Dichloro-1,1,1-trifluor	1.730	1.406	18.7	89	-0.02
10	T	2-Methylbutane	1.206	0.960	20.4	87	0.00
11	T	Methyl Acetate	2.864	2.295	19.9	86	-0.01
12	T	2-Methylpentane	1.028	0.834	18.9	88	0.00
13	T	2,2-Dichloropropane	1.605	1.223	23.8	78	-0.02
14	T	1,1-Dichloropropene	1.612	1.394	13.5	91	-0.01
15	T	Thiophene	2.482	2.044	17.6	88	-0.02
16	IR	1,4-Difluorobenzene (C 2)	1.000	1.000	0.0	105	-0.01
17	T	2,3-Dimethylpentane	0.496	0.406	18.1	87	-0.02
18	T	Dibromomethane	0.210	0.194	7.6	95	-0.02
19	IR	Chlorobenzene-d5 (C 3)	1.000	1.000	0.0	104	0.00
20	T	Methyl Cyclohexane	2.230	1.891	15.2	88	-0.01
21	T	1,3-Dichloropropane	2.151	1.839	14.5	89	-0.01
22	T	1,1,1,2-Tetrachloroethane	1.454	1.316	9.5	93	0.00
23	T	1-Chlorohexane	2.106	1.850	12.2	89	0.00
24	T	1,2,3-Trichloropropane	2.150	1.882	12.5	90	0.00
25	T	Bromobenzene	2.534	2.239	11.6	90	0.00
26	T	2-Chlorotoluene	4.672	4.233	9.4	93	0.00
27	T	4-Chlorotoluene	4.915	4.474	9.0	93	0.00
28	T	Indane	5.377	5.082	5.5	94	0.00
29	T	Indene	4.542	4.486	1.2	92	0.00
30	T	1,2,4,5-Tetramethylbenzene	5.420	5.512	-1.7	95	0.00
31	T	1,2,3,4-Tetramethylbenzene	5.430	5.353	1.4	97	0.00
32	T	1,2,3,5-Tetramethylbenzene	5.166	5.272	-2.1	97	0.00
33	T	1,2,3-Trichlorobenzene	2.113	2.141	-1.3	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122502.D Vial: 3
Acq On : 12 Jan 2025 00:10 Operator: LS
Sample : CCV C09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 12 07:43:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/12/25

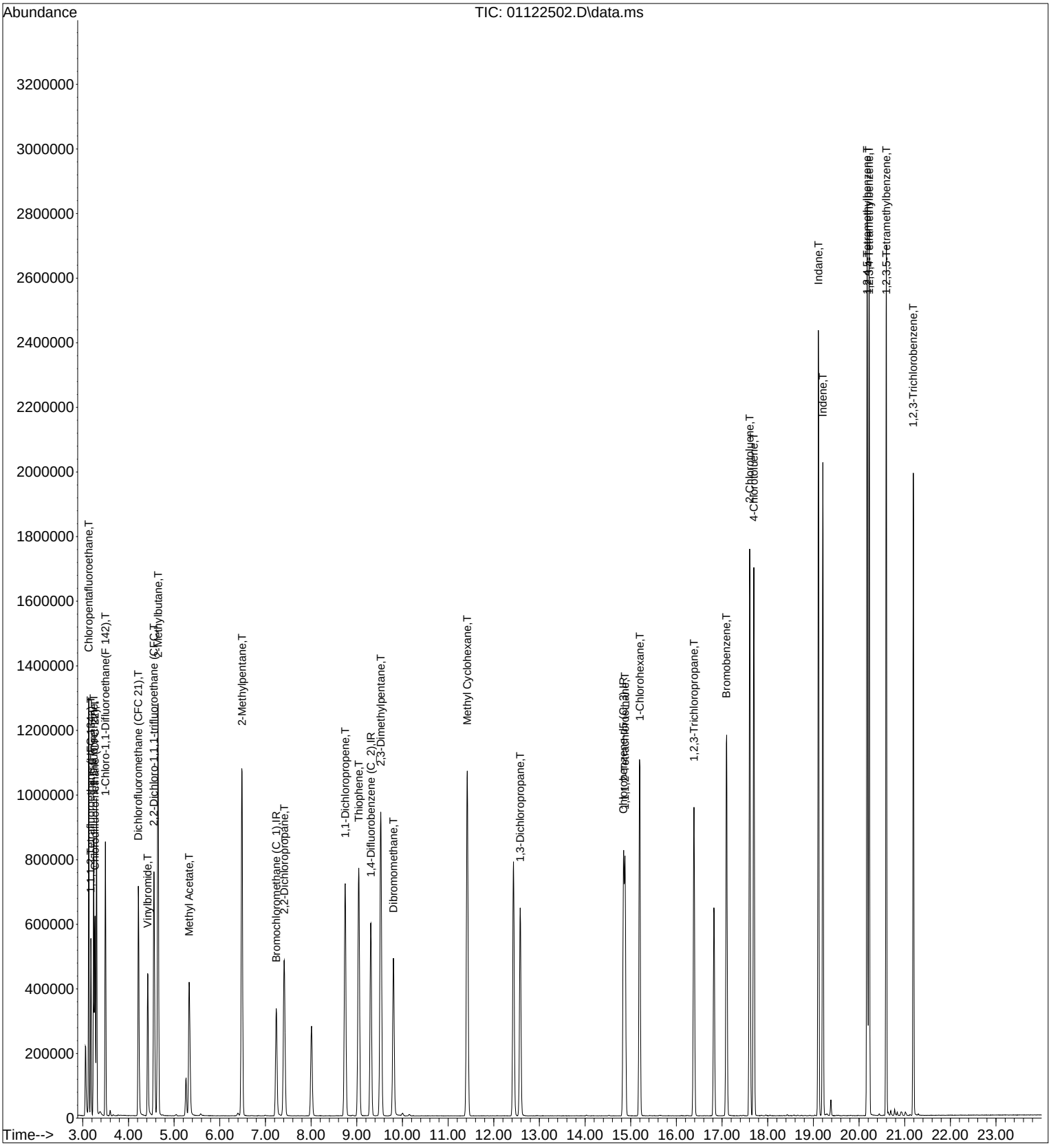
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	150307	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.31	114	649436	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	119165	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.13	85	368478	19.821	ng	97
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	288927	21.143	ng	94
4) 1,1-Difluoroethane	3.24	65	242021	19.886	ng	93
5) Chlorodifluoromethane ...	3.27	67	92285	22.049	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.49	65	611973	22.329	ng	99
7) Dichlorofluoromethane ...	4.22	67	626370	20.568	ng	100
8) Vinylbromide	4.42	108	270477	21.391	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	439425	21.123	ng	99
10) 2-Methylbutane	4.65	57	294310	20.290	ng	95
11) Methyl Acetate	5.33	43	662228	19.229	ng	100
12) 2-Methylpentane	6.49	71	250839	20.285	ng	100
13) 2,2-Dichloropropane	7.41	77	363939	18.860	ng	99
14) 1,1-Dichloropropene	8.75	75	435702	22.478	ng	99
15) Thiophene	9.04	84	620460	20.792	ng	100
17) 2,3-Dimethylpentane	9.53	56	548737	21.282	ng	98
18) Dibromomethane	9.80	174	268970	24.629	ng	95
20) Methyl Cyclohexane	11.42	55	482349	22.689	ng	99
21) 1,3-Dichloropropane	12.58	76	455716	22.228	ng	99
22) 1,1,1,2-Tetrachloroethane	14.87	131	272951	19.696	ng	100
23) 1-Chlorohexane	15.20	91	454193	22.623	ng	99
24) 1,2,3-Trichloropropane	16.38	75	470872	22.977	ng	98
25) Bromobenzene	17.09	77	560183	23.186	ng	96
26) 2-Chlorotoluene	17.61	91	1069468	24.012	ng	100
27) 4-Chlorotoluene	17.70	91	1077028	22.986	ng	100
28) Indane	19.11	117	1198973	23.391	ng	100
29) Indene	19.21	115	1005105	23.213	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1326778	25.676	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1314042	25.383	ng	99
32) 1,2,3,5-Tetramethylben...	20.60	119	1268925	25.766	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	535704	26.596	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\12\01122502.D Vial: 3
Acq On : 12 Jan 2025 00:10 Operator: LS
Sample : CCV C09011225 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 12 07:43:01 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\13\01132501.D Vial: 2
Acq On : 12 Jan 2025 23:28 Operator: SC
Sample : CCV R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 13 06:13:16 2025 1/13/25
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	106	0.04
2	T	Propene	1.335	1.028	23.0	79	0.04
3	T	Dichlorodifluoromethane (CF	2.444	2.166	11.4	92	0.00
4	T	Chloromethane	1.815	1.261	30.5#	69	0.03
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.157	1.069	7.6	97	0.03
6	T	Vinyl Chloride	1.396	1.374	1.6	101	0.03
7	T	1,3-Butadiene	0.920	0.991	-7.7	109	0.03
8	T	Bromomethane	0.881	0.916	-4.0	97	0.03
9	T	Chloroethane	0.735	0.655	10.9	90	0.04
10	T	Ethanol	0.925	0.813	12.1	89	0.10
11	T	Acetonitrile	2.378	1.846	22.4	86	0.00
12	T	Acrolein	0.790	0.702	11.1	87	0.00
13	T	Acetone	0.842	0.715	15.1	91	0.00
14	T	Trichlorofluoromethane	2.292	2.099	8.4	96	0.04
15	T	2-Propanol (Isopropanol)	3.014	2.841	5.7	92	0.00
16	T	Acrylonitrile	1.502	1.362	9.3	87	0.00
17	T	1,1-Dichloroethene	1.053	0.955	9.3	92	0.03
18	T	2-Methyl-2-Propanol (tert-B	2.415	2.246	7.0	90	0.01
19	T	Methylene Chloride	1.184	1.031	12.9	91	0.02
20	T	3-Chloro-1-propene (Allyl C	1.965	1.549	21.2	85	0.03
21	T	Trichlorotrifluoroethane	1.034	0.949	8.2	95	0.04
22	T	Carbon Disulfide	3.808	3.518	7.6	92	0.04
23	T	trans-1,2-Dichloroethene	1.618	1.516	6.3	90	0.04
24	T	1,1-Dichloroethane	2.008	1.776	11.6	90	0.04
25	T	Methyl tert-Butyl Ether	2.987	2.896	3.0	92	0.04
26	T	Vinyl Acetate	0.204	0.204	0.0	89	0.03
27	T	2-Butanone (MEK)	0.676	0.629	7.0	90	0.03
28	T	cis-1,2-Dichloroethene	1.576	1.439	8.7	90	0.04
29	T	Diisopropyl Ether	0.851	0.772	9.3	94	0.05
30	T	Ethyl Acetate	0.417	0.392	6.0	89	0.03
31	T	n-Hexane	1.878	1.628	13.3	90	0.06
32	T	Chloroform	2.035	1.860	8.6	94	0.04
33	S	1,2-Dichloroethane-d4(SS1)	1.703	1.724	-1.2	109	0.05
34	T	Tetrahydrofuran (THF)	0.638	0.594	6.9	90	0.05
35	T	Ethyl tert-Butyl Ether	1.231	1.191	3.2	95	0.05
36	T	1,2-Dichloroethane	1.724	1.598	7.3	94	0.05
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	106	0.03
38	T	1,1,1-Trichloroethane	0.433	0.413	4.6	95	0.02
39	T	Isopropyl Acetate	0.000	0.000	0.0	95	0.04
40	T	1-Butanol	0.000	0.000	0.0	104	0.03
41	T	Benzene	1.003	0.868	13.5	90	0.03
42	T	Carbon Tetrachloride	0.401	0.385	4.0	94	0.03
43	T	Cyclohexane	0.350	0.323	7.7	91	0.03
44	T	tert-Amyl Methyl Ether	0.648	0.638	1.5	94	0.03
45	T	1,2-Dichloropropane	0.245	0.220	10.2	89	0.03
46	T	Bromodichloromethane	0.347	0.339	2.3	94	0.04
47	T	Trichloroethene	0.286	0.267	6.6	94	0.03
48	T	1,4-Dioxane	0.174	0.185	-6.3	95	0.03
49	T	2,2,4-Trimethylpentane (Iso	1.050	0.946	9.9	89	0.04
50	T	Methyl Methacrylate	0.092	0.094	-2.2	92	0.03
51	T	n-Heptane	0.224	0.206	8.0	91	0.04
52	T	cis-1,3-Dichloropropene	0.400	0.397	0.8	90	0.04
53	T	4-Methyl-2-pentanone	0.216	0.222	-2.8	92	0.04
54	T	trans-1,3-Dichloropropene	0.362	0.332	8.3	86	0.05
55	T	1,1,2-Trichloroethane	0.243	0.227	6.6	92	0.05

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\13\01132501.D Vial: 2
Acq On : 12 Jan 2025 23:28 Operator: SC
Sample : CCV R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 13 06:13:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	104	0.01
57	S	Toluene-d8 (SS2)	5.545	5.534	0.2	106	-0.01
58	T	Toluene	5.335	4.805	9.9	93	-0.02
59	T	2-Hexanone	2.600	2.736	-5.2	92	-0.02
60	T	Dibromochloromethane	1.591	1.639	-3.0	95	-0.02
61	T	1,2-Dibromoethane	1.520	1.461	3.9	89	-0.01
62	T	n-Butyl Acetate	2.922	3.078	-5.3	91	-0.02
63	T	n-Octane	1.106	1.035	6.4	91	-0.01
64	T	Tetrachloroethene	1.587	1.536	3.2	97	-0.01
65	T	Chlorobenzene	3.764	3.405	9.5	91	-0.02
66	T	Ethylbenzene	5.899	5.772	2.2	93	-0.01
67	T	m- & p-Xylenes	4.828	4.732	2.0	94	-0.01
68	T	Bromoform	1.264	1.388	-9.8	96	-0.01
69	T	Styrene	3.373	3.386	-0.4	86	-0.01
70	T	o-Xylene	4.778	4.710	1.4	94	-0.01
71	T	n-Nonane	2.538	2.445	3.7	91	0.00
72	T	1,1,2,2-Tetrachloroethane	2.274	2.141	5.8	91	-0.01
73	S	Bromofluorobenzene (SS3)	1.914	2.023	-5.7	111	0.00
74	T	Cumene	5.945	5.819	2.1	95	-0.01
75	T	alpha-Pinene	2.933	2.978	-1.5	93	0.00
76	T	n-Propylbenzene	7.049	6.873	2.5	93	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	95	-0.01
78	T	4-Ethyltoluene	5.603	5.697	-1.7	93	0.00
79	T	1,3,5-Trimethylbenzene	4.899	4.927	-0.6	95	-0.01
80	T	alpha-Methylstyrene	0.000	0.000	0.0	94	-0.01
81	T	2-Ethyltoluene	0.000	0.000	0.0	95	-0.01
82	T	1,2,4-Trimethylbenzene	4.955	5.066	-2.2	95	0.00
83	T	n-Decane	0.000	0.000	0.0	110	-0.01
84	T	Benzyl Chloride	4.067	3.656	10.1	78	-0.01
85	T	1,3-Dichlorobenzene	3.094	2.803	9.4	87	-0.01
86	T	1,4-Dichlorobenzene	3.185	2.701	15.2	82	-0.01
87	T	sec-Butylbenzene	6.562	6.459	1.6	94	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.448	5.551	-1.9	94	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	95	-0.01
90	T	1,2-Dichlorobenzene	3.128	2.889	7.6	90	-0.01
91	T	d-Limonene	1.582	1.626	-2.8	87	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.065	1.099	-3.2	90	0.00
93	T	n-Undecane	0.000	0.000	0.0	89	0.00
94	T	1,2,4-Trichlorobenzene	2.178	1.849	15.1	75	0.00
95	T	Naphthalene	6.635	4.710	29.0	63	0.00
96	T	n-Dodecane	0.000	0.000	0.0	105	-0.02
97	T	Hexachlorobutadiene	1.636	1.611	1.5	96	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.25#
99	T	tert-Butylbenzene	4.651	4.694	-0.9	97	0.00
100	T	n-Butylbenzene	5.139	5.100	0.8	90	0.00
101	T	1,1,1,2-Tetrachloroethane	1.373	1.361	0.9	96	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132501.D Vial: 2
Acq On : 12 Jan 2025 23:28 Operator: SC
Sample : CCV R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 13 06:13:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/13/25

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	150145	12.500	ng	0.04
37) 1,4-Difluorobenzene (IS2)	9.34	114	663393	12.500	ng	0.03
56) Chlorobenzene-d5 (IS3)	14.85	54	125666	12.500	ng	0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.04	65	258917	12.657	ng	0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.28%			
57) Toluene-d8 (SS2)	12.44	98	695465	12.475	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%			
73) Bromofluorobenzene (SS3)	16.83	174	254241	13.216	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.76%			
Target Compounds						Qvalue
2) Propene	3.29	42	324019	20.204	ng	98
3) Dichlorodifluoromethan...	3.36	85	656859	22.380	ng	99
4) Chloromethane	3.50	50	401246	18.409	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.61	135	346577	24.941	ng	100
6) Vinyl Chloride	3.69	62	437285	26.074	ng	100
7) 1,3-Butadiene	3.81	54	315288	28.517	ng	99
8) Bromomethane	4.02	94	280552	26.525	ng	99
9) Chloroethane	4.16	64	216298	24.506	ng	100
10) Ethanol	4.38	45	1282114	115.445	ng	96
11) Acetonitrile	4.49	41	571076	19.992	ng	99
12) Acrolein	4.56	56	459295	48.377	ng	99
13) Acetone	4.67	58	1098682	108.676	ng	93
14) Trichlorofluoromethane	4.77	101	636504	23.124	ng	100
15) 2-Propanol (Isopropanol)	4.93	45	1757361	48.542	ng	100
16) Acrylonitrile	5.05	53	850403	47.146	ng	99
17) 1,1-Dichloroethene	5.27	96	261071	20.633	ng	99
18) 2-Methyl-2-Propanol (t...	5.39	59	1409912	48.605	ng	99
19) Methylene Chloride	5.40	84	281643	19.798	ng	95
20) 3-Chloro-1-propene (Al...	5.48	41	507132	21.484	ng	98
21) Trichlorotrifluoroethane	5.60	151	262199	21.113	ng	96
22) Carbon Disulfide	5.61	76	2186817	47.814	ng	100
23) trans-1,2-Dichloroethene	6.17	61	477844	24.589	ng	99
24) 1,1-Dichloroethane	6.36	63	549415	22.776	ng	100
25) Methyl tert-Butyl Ether	6.39	73	921871	25.697	ng	98
26) Vinyl Acetate	6.49	86	323546	132.223	ng	98
27) 2-Butanone (MEK)	6.70	72	385229	47.429	ng	98
28) cis-1,2-Dichloroethene	7.12	61	444967	23.499	ng	100
29) Diisopropyl Ether	7.31	87	484519	47.403	ng	94
30) Ethyl Acetate	7.32	61	229578	45.794	ng	98
31) n-Hexane	7.31	57	508326	22.536	ng	100
32) Chloroform	7.41	83	592002	24.221	ng	100
34) Tetrahydrofuran (THF)	7.77	72	339073	44.266	ng	92
35) Ethyl tert-Butyl Ether	7.85	87	747538	50.549	ng	98
36) 1,2-Dichloroethane	8.16	62	484735	23.413	ng	100
38) 1,1,1-Trichloroethane	8.43	97	565044	24.613	ng	99
39) Isopropyl Acetate	9.62	61	832	No Calib	#	
40) 1-Butanol	8.84	56	2264	No Calib		
41) Benzene	8.93	78	1174928	22.064	ng	100
42) Carbon Tetrachloride	9.10	117	521510	24.483	ng	99
43) Cyclohexane	9.24	84	890365	47.928	ng	98
44) tert-Amyl Methyl Ether	9.62	73	1777931	51.671	ng	100
45) 1,2-Dichloropropane	9.88	63	312843	24.083	ng	99
46) Bromodichloromethane	10.11	83	480720	26.070	ng	100
47) Trichloroethene	10.17	130	371762	24.504	ng	99
48) 1,4-Dioxane	10.14	88	259696	28.159	ng	97
49) 2,2,4-Trimethylpentane...	10.25	57	1330102	23.873	ng	98
50) Methyl Methacrylate	10.43	100	265753	54.713	ng	97

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132501.D Vial: 2
Acq On : 12 Jan 2025 23:28 Operator: SC
Sample : CCV R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 13 06:13:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

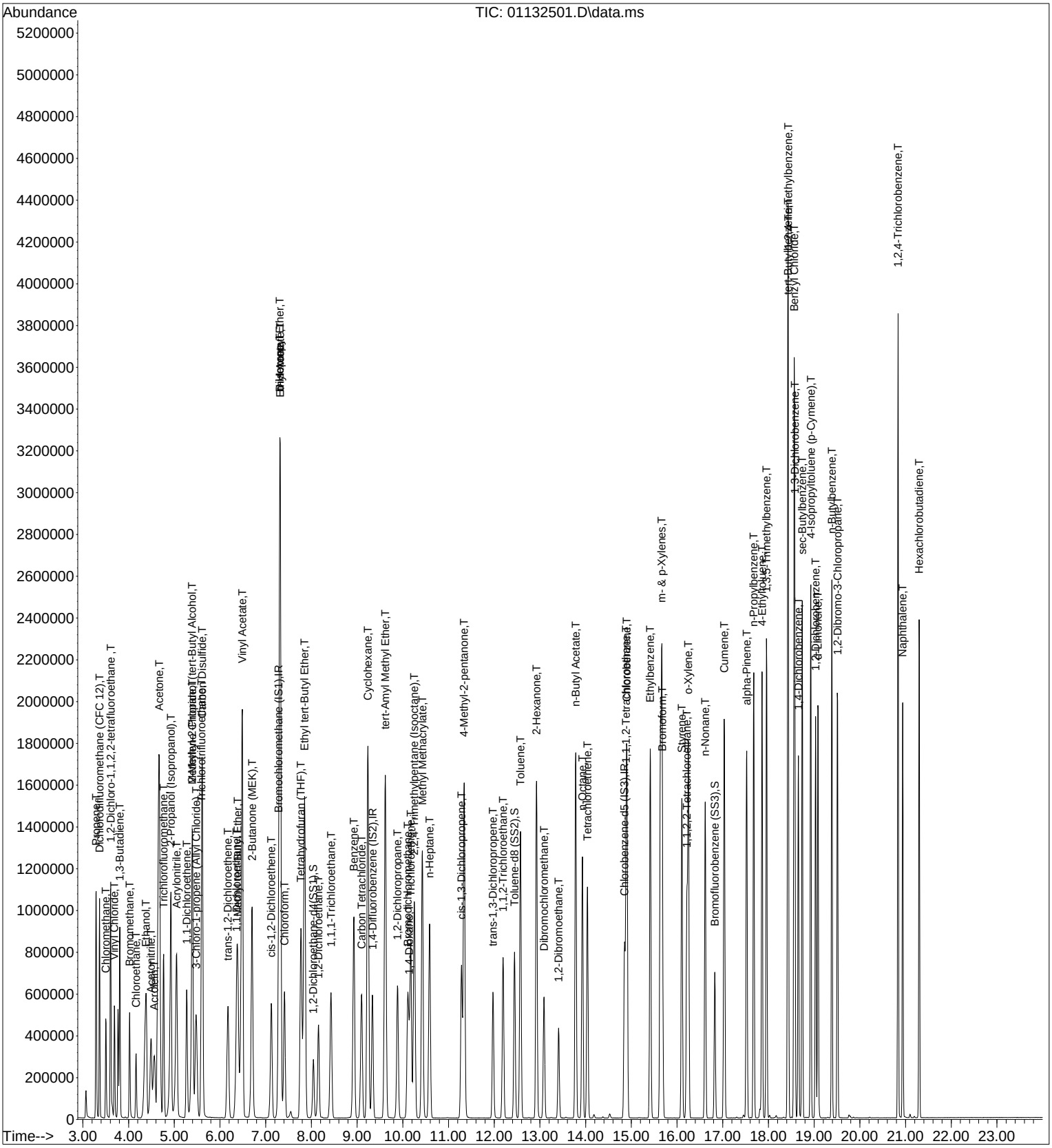
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.59	71	284336	23.943 ng	98
52) cis-1,3-Dichloropropene	11.29	75	553093	26.075 ng	100
53) 4-Methyl-2-pentanone	11.34	58	619843	54.117 ng	100
54) trans-1,3-Dichloropropene	11.97	75	435763	22.700 ng	100
55) 1,1,2-Trichloroethane	12.19	97	331962	25.784 ng	99
58) Toluene	12.57	91	1316357	24.541 ng	100
59) 2-Hexanone	12.93	43	1430150	54.713 ng	99
60) Dibromochloromethane	13.09	129	424290	26.520 ng	100
61) 1,2-Dibromoethane	13.41	107	385560	25.225 ng	100
62) n-Butyl Acetate	13.78	43	1624573	55.305 ng	99
63) n-Octane	13.93	57	275832	24.804 ng	99
64) Tetrachloroethene	14.04	166	412966	25.883 ng	100
65) Chlorobenzene	14.90	112	915626	24.197 ng	100
66) Ethylbenzene	15.41	91	1581121	26.659 ng	100
67) m- & p-Xylenes	15.66	91	2544993	52.431 ng	99
68) Bromoform	15.68	173	380206	29.911 ng	100
69) Styrene	16.11	104	902054	26.600 ng	99
70) o-Xylene	16.25	91	1278509	26.616 ng	99
71) n-Nonane	16.62	43	645156	25.281 ng	99
72) 1,1,2,2-Tetrachloroethane	16.21	83	581079	25.420 ng	100
74) Cumene	17.03	105	1535696	25.696 ng	100
75) alpha-Pinene	17.53	93	800869	27.162 ng	100
76) n-Propylbenzene	17.68	91	1796522	25.352 ng	100
77) 3-Ethyltoluene	17.03	105	1535696	No Calib	
78) 4-Ethyltoluene	17.86	105	1489177	26.437 ng	99
79) 1,3,5-Trimethylbenzene	17.96	105	1337337	27.155 ng	99
80) alpha-Methylstyrene	17.03	118	3253	No Calib #	
81) 2-Ethyltoluene	17.03	105	1535696	No Calib	
82) 1,2,4-Trimethylbenzene	18.43	105	1336780	26.838 ng	100
83) n-Decane	17.03	58	13926	No Calib	
84) Benzyl Chloride	18.56	91	1975654	48.324 ng	100
85) 1,3-Dichlorobenzene	18.58	146	746666	24.008 ng	100
86) 1,4-Dichlorobenzene	18.66	146	712887	22.261 ng	99
87) sec-Butylbenzene	18.74	105	1688165	25.592 ng	100
88) 4-Isopropyltoluene (p-...	18.93	119	1451013	26.491 ng	100
89) 1,2,3-Trimethylbenzene	17.03	105	1535696	No Calib	
90) 1,2-Dichlorobenzene	19.03	146	755212	24.018 ng	99
91) d-Limonene	19.08	68	420839	26.458 ng	99
92) 1,2-Dibromo-3-Chloropr...	19.51	157	583031	54.441 ng	98
93) n-Undecane	17.96	58	25420	No Calib	
94) 1,2,4-Trichlorobenzene	20.84	180	1008364	46.058 ng	100
95) Naphthalene	20.94	128	1290268	19.343 ng	100
96) n-Dodecane	18.92	58	37971	No Calib #	
97) Hexachlorobutadiene	21.30	225	425164	25.843 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.43	119	1238799	26.493 ng	100
100) n-Butylbenzene	19.39	91	1320349	25.557 ng	100
101) 1,1,1,2-Tetrachloroethane	14.89	131	366114	26.525 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132501.D Vial: 2
Acq On : 12 Jan 2025 23:28 Operator: SC
Sample : CCV R09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202406 (1/19)

Quant Time: Jan 13 06:13:16 2025
Quant Method : I:\MS09\METHODS\R09111924.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sun Nov 24 11:14:44 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2025 01\13\01132502.D Vial: 3
Acq On : 13 Jan 2025 00:00 Operator: SC
Sample : CCV C09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 13 10:45:47 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/13/25

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (C 1)	1.000	1.000	0.0	105	-0.02
2	T	Chloropentafluoroethane	1.546	1.252	19.0	86	0.00
3	T	1,1,1,2-Tetrafluoroethane (	1.136	0.961	15.4	90	0.00
4	T	1,1-Difluoroethane	1.012	0.773	23.6	81	0.00
5	T	Chlorodifluoromethane (CFC	0.348	0.298	14.4	90	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.279	1.938	15.0	91	0.00
7	T	Dichlorofluoromethane (CFC	2.533	2.102	17.0	88	0.00
8	T	Vinylbromide	1.052	0.895	14.9	87	-0.01
9	T	2,2-Dichloro-1,1,1-trifluor	1.730	1.407	18.7	87	-0.02
10	T	2-Methylbutane	1.206	0.964	20.1	86	0.00
11	T	Methyl Acetate	2.864	2.311	19.3	85	-0.01
12	T	2-Methylpentane	1.028	0.845	17.8	87	-0.01
13	T	2,2-Dichloropropane	1.605	1.311	18.3	82	-0.02
14	T	1,1-Dichloropropene	1.612	1.389	13.8	89	-0.01
15	T	Thiophene	2.482	2.053	17.3	87	-0.02
16	IR	1,4-Difluorobenzene (C 2)	1.000	1.000	0.0	103	-0.01
17	T	2,3-Dimethylpentane	0.496	0.405	18.3	85	-0.02
18	T	Dibromomethane	0.210	0.190	9.5	92	-0.02
19	IR	Chlorobenzene-d5 (C 3)	1.000	1.000	0.0	105	0.00
20	T	Methyl Cyclohexane	2.230	1.860	16.6	87	-0.01
21	T	1,3-Dichloropropane	2.151	1.783	17.1	87	-0.01
22	T	1,1,1,2-Tetrachloroethane	1.454	1.269	12.7	90	0.00
23	T	1-Chlorohexane	2.106	1.809	14.1	88	0.00
24	T	1,2,3-Trichloropropane	2.150	1.828	15.0	88	0.00
25	T	Bromobenzene	2.534	2.184	13.8	89	0.00
26	T	2-Chlorotoluene	4.672	4.105	12.1	91	0.00
27	T	4-Chlorotoluene	4.915	4.310	12.3	91	0.00
28	T	Indane	5.377	4.903	8.8	91	0.00
29	T	Indene	4.542	4.330	4.7	89	0.00
30	T	1,2,4,5-Tetramethylbenzene	5.420	5.281	2.6	92	0.00
31	T	1,2,3,4-Tetramethylbenzene	5.430	5.123	5.7	93	0.00
32	T	1,2,3,5-Tetramethylbenzene	5.166	5.043	2.4	93	0.00
33	T	1,2,3-Trichlorobenzene	2.113	2.035	3.7	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132502.D Vial: 3
Acq On : 13 Jan 2025 00:00 Operator: SC
Sample : CCV C09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 13 10:45:47 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

1/13/25

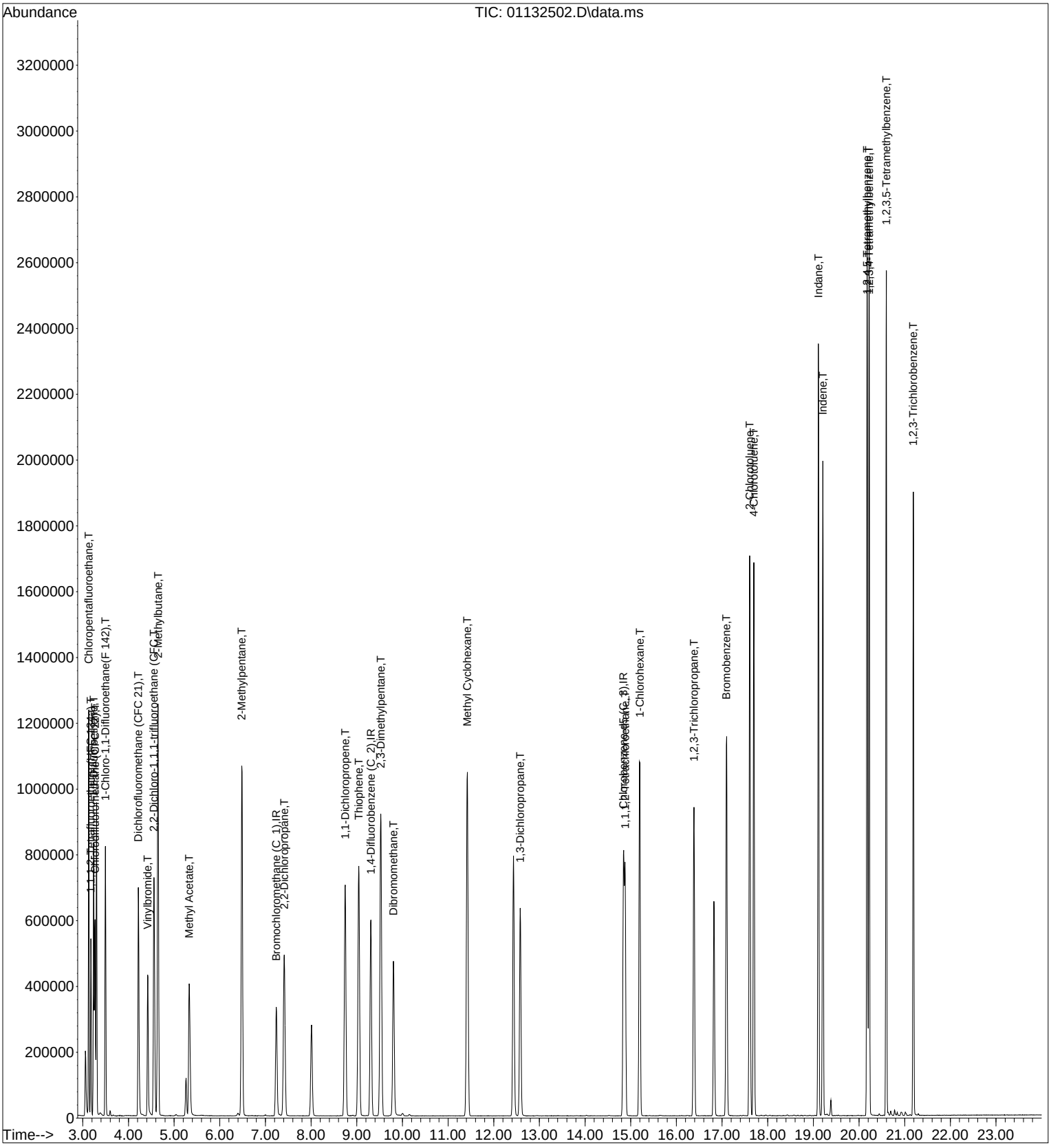
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (C 1)	7.24	130	147236	12.500	ng	-0.02
16) 1,4-Difluorobenzene (C 2)	9.31	114	638999	12.500	ng	-0.01
19) Chlorobenzene-d5 (C_3)	14.84	54	119980	12.500	ng	0.00
Target Compounds						Qvalue
2) Chloropentafluoroethane	3.13	85	365093	20.048	ng	98
3) 1,1,1,2-Tetrafluoroeth...	3.18	83	282890	21.133	ng	94
4) 1,1-Difluoroethane	3.24	65	241413	20.250	ng	94
5) Chlorodifluoromethane ...	3.27	67	91400	22.293	ng	100
6) 1-Chloro-1,1-Difluoroe...	3.49	65	593437	22.104	ng	99
7) Dichlorofluoromethane ...	4.22	67	612728	20.540	ng	100
8) Vinylbromide	4.42	108	263462	21.270	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	431008	21.151	ng	100
10) 2-Methylbutane	4.65	57	289523	20.376	ng	96
11) Methyl Acetate	5.33	43	653189	19.362	ng	100
12) 2-Methylpentane	6.48	71	248787	20.539	ng	98
13) 2,2-Dichloropropane	7.41	77	382127	20.215	ng	99
14) 1,1-Dichloropropene	8.75	75	425237	22.396	ng	99
15) Thiophene	9.04	84	610579	20.888	ng	100
17) 2,3-Dimethylpentane	9.53	56	538697	21.234	ng	99
18) Dibromomethane	9.80	174	259812	24.179	ng	96
20) Methyl Cyclohexane	11.42	55	477489	22.308	ng	100
21) 1,3-Dichloropropane	12.58	76	445042	21.560	ng	99
22) 1,1,1,2-Tetrachloroethane	14.88	131	264993	18.991	ng	100
23) 1-Chlorohexane	15.20	91	447087	22.118	ng	99
24) 1,2,3-Trichloropropane	16.38	75	460527	22.319	ng	99
25) Bromobenzene	17.09	77	550213	22.618	ng	97
26) 2-Chlorotoluene	17.61	91	1044241	23.286	ng	100
27) 4-Chlorotoluene	17.70	91	1044453	22.139	ng	100
28) Indane	19.11	117	1164837	22.570	ng	99
29) Indene	19.21	115	976695	22.404	ng	100
30) 1,2,4,5-Tetramethylben...	20.18	119	1279821	24.599	ng	100
31) 1,2,3,4-Tetramethylben...	20.22	119	1266108	24.291	ng	100
32) 1,2,3,5-Tetramethylben...	20.60	119	1222120	24.647	ng	100
33) 1,2,3-Trichlorobenzene	21.19	180	512827	25.288	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2025 01\13\01132502.D Vial: 3
Acq On : 13 Jan 2025 00:00 Operator: SC
Sample : CCV C09011325 25ng Inst : MS09
Misc : S37-12312401/S37-12202405 (1/19)

Quant Time: Jan 13 10:45:47 2025
Quant Method : I:\MS09\METHODS\C09111924.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 08:49:42 2024
Response via : Initial Calibration
DataAcq Meth:TO15.M

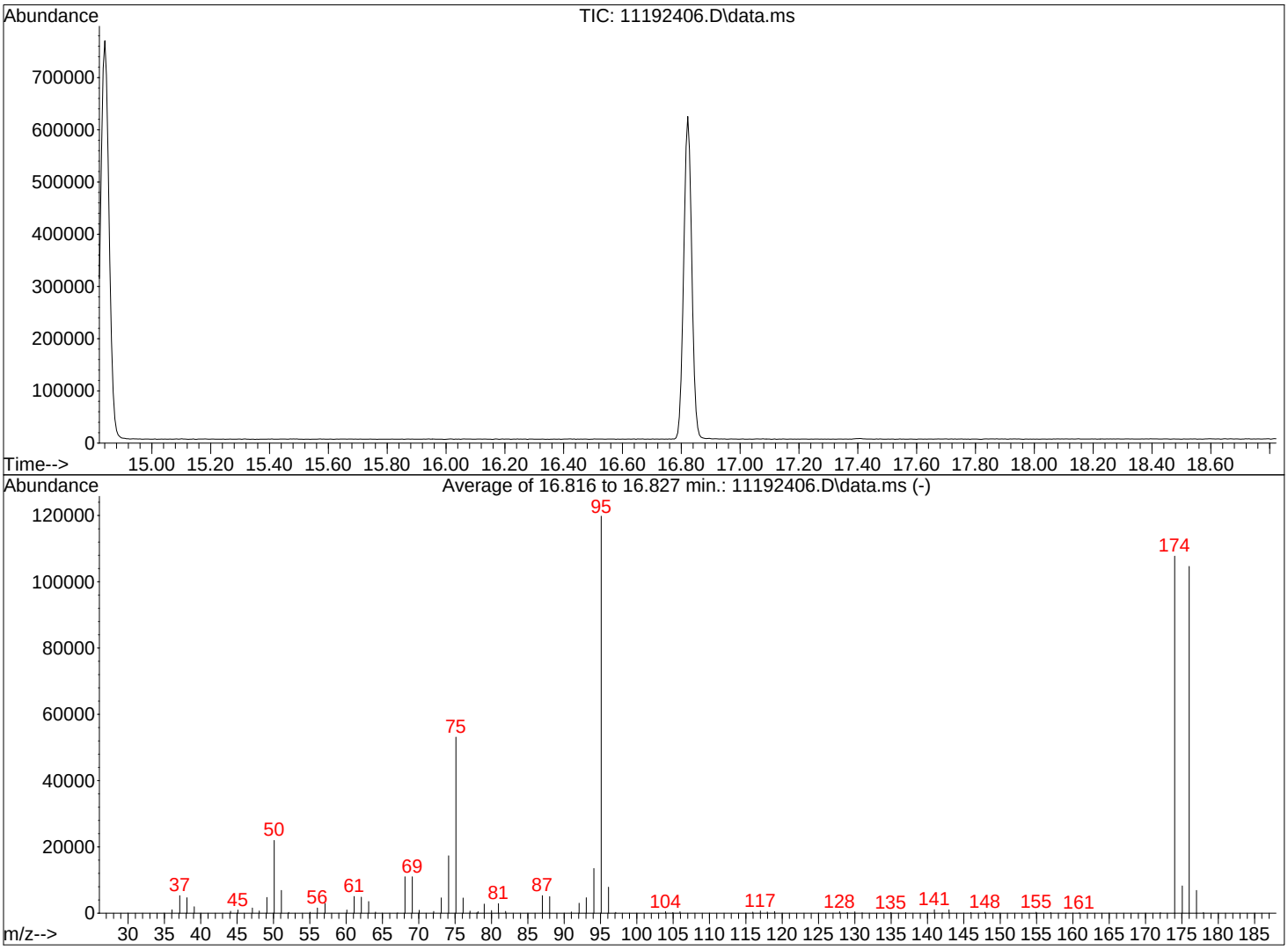


Data Path : I:\MS09\DATA\2024 11\19\
Data File : 11192406.D
Acq On : 19 Nov 2024 12:04
Operator : SC
Sample : 12.5ng TO-15 BFB STD
Misc : S37-11192401
ALS Vial : 2 Sample Multiplier: 1

11/19/24

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Nov 19 15:47:27 2024



AutoFind: Scans 2454, 2455, 2456; Background Corrected with Scan 2446

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.3	21973	PASS
75	95	30	66	44.3	53112	PASS
95	95	100	100	100.0	119805	PASS
96	95	5	9	6.6	7859	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	89.9	107744	PASS
175	174	4	9	7.6	8228	PASS
176	174	93	101	97.1	104667	PASS
177	176	5	9	6.6	6891	PASS

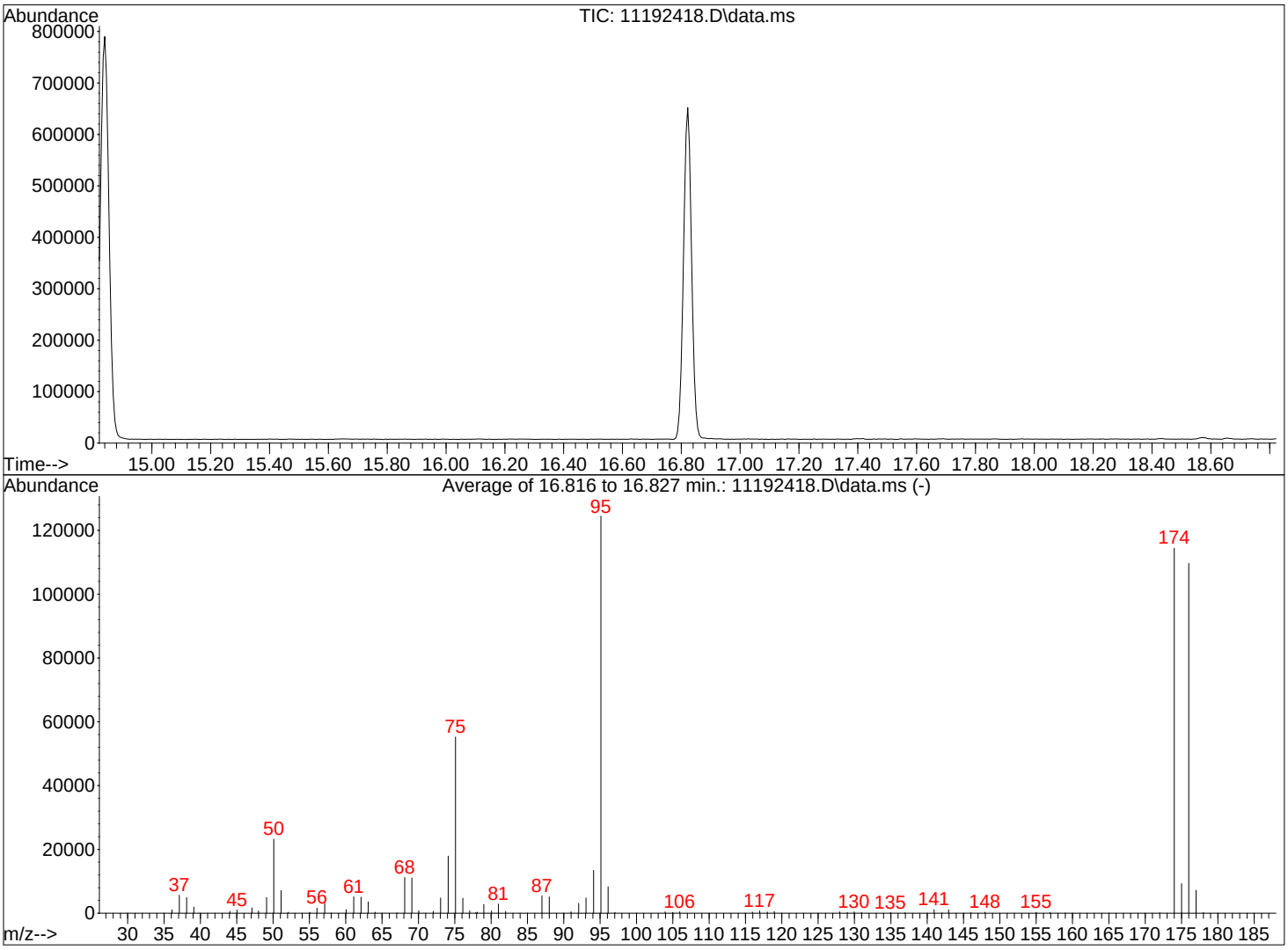
BFB

Data Path : I:\MS09\DATA\2024 11\19\
Data File : 11192418.D
Acq On : 19 Nov 2024 18:30
Operator : SC
Sample : 12.5ng TO-15 Custom BFB
Misc : S37-11192401
ALS Vial : 2 Sample Multiplier: 1

11/20/24

Integration File: RTEINTVB.P

Method : I:\MS09\METHODS\C09111924.M
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 08:40:21 2024



AutoFind: Scans 2454, 2455, 2456; Background Corrected with Scan 2444

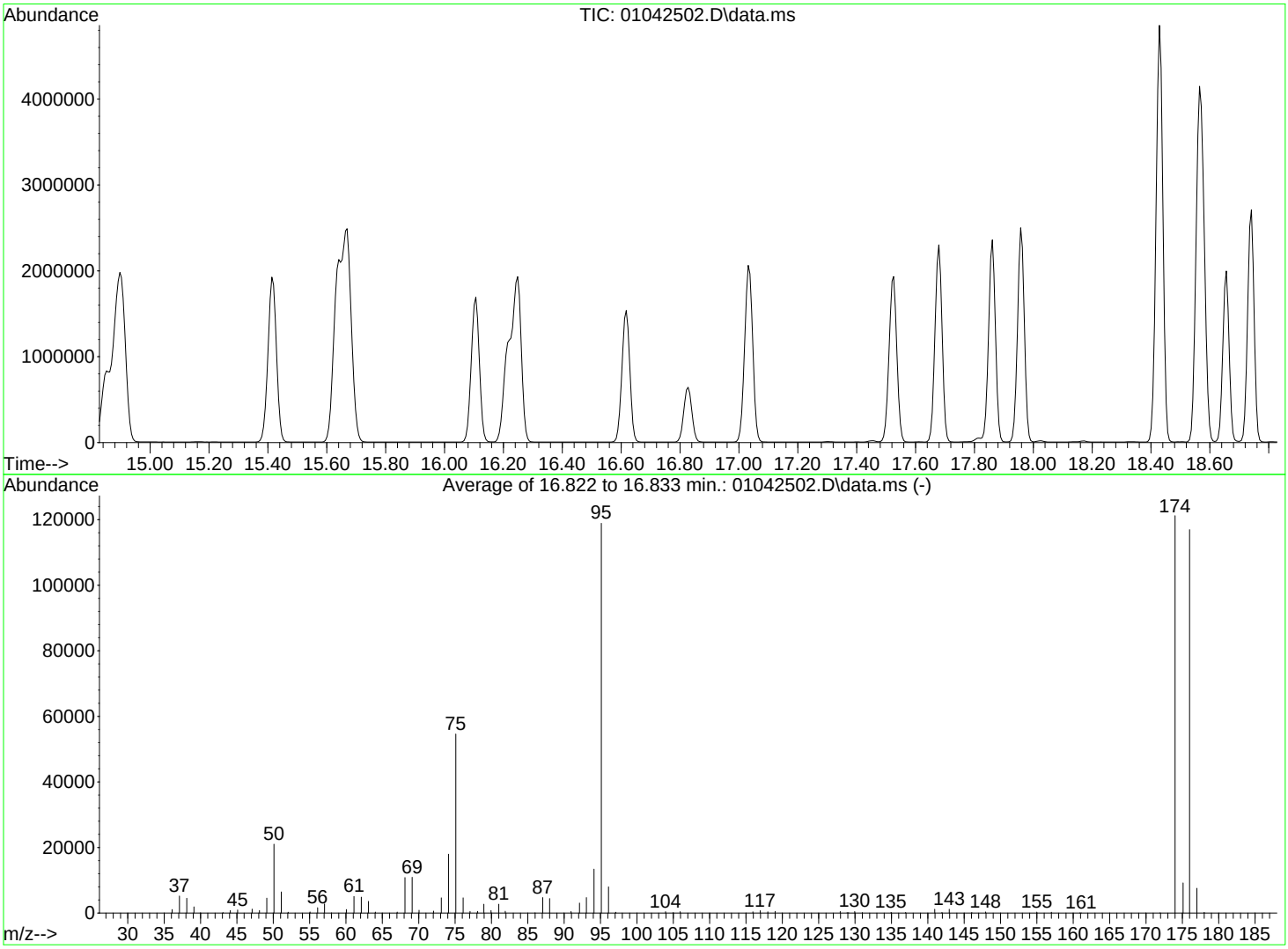
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.6	23189	PASS
75	95	30	66	44.4	55237	PASS
95	95	100	100	100.0	124445	PASS
96	95	5	9	6.7	8293	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	91.9	114395	PASS
175	174	4	9	8.1	9275	PASS
176	174	93	101	95.9	109667	PASS
177	176	5	9	6.6	7213	PASS

BFB

Data Path : I:\MS09\DATA\2025 01\04\
Data File : 01042502.D
Acq On : 4 Jan 2025 3:44
Operator : SC
Sample : CCV R09010425 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sun Nov 24 11:14:44 2024



AutoFind: Scans 2455, 2456, 2457; Background Corrected with Scan 2446

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.7	20992	PASS
75	95	30	66	45.9	54597	PASS
95	95	100	100	100.0	118917	PASS
96	95	5	9	6.7	8007	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	101.9	121211	PASS
175	174	4	9	7.6	9213	PASS
176	174	93	101	96.5	116965	PASS
177	176	5	9	6.5	7555	PASS

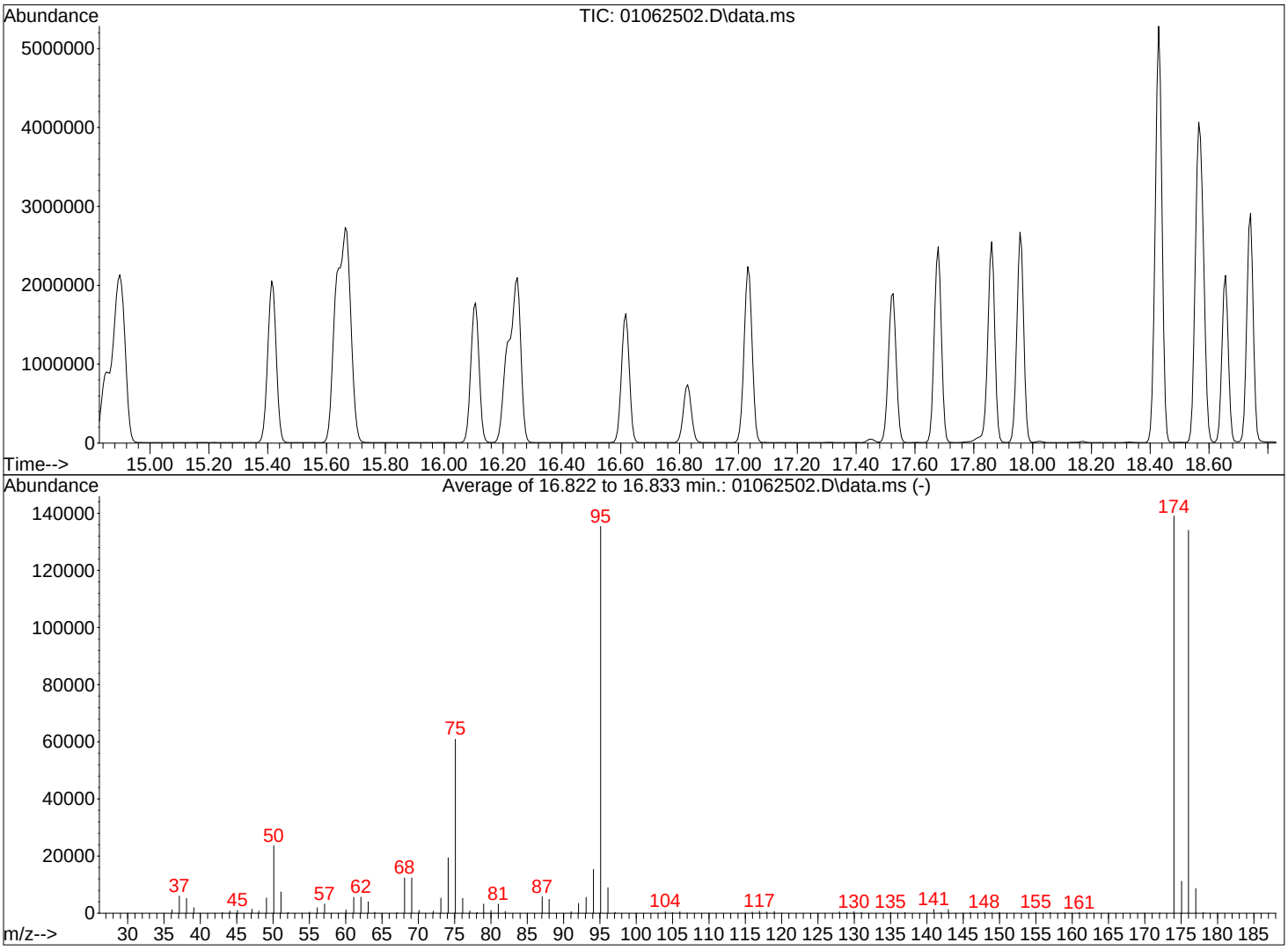
LH 1/5/25

Data Path : I:\MS09\DATA\2025 01\06\
Data File : 01062502.D
Acq On : 6 Jan 2025 8:27
Operator : SC
Sample : CCV R09010625 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

1/6/25

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sun Nov 24 11:14:44 2024



AutoFind: Scans 2455, 2456, 2457; Background Corrected with Scan 2446

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.4	23589	PASS
75	95	30	66	45.0	60915	PASS
95	95	100	100	100.0	135395	PASS
96	95	5	9	6.6	8931	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	102.7	138987	PASS
175	174	4	9	8.1	11205	PASS
176	174	93	101	96.4	134045	PASS
177	176	5	9	6.5	8677	PASS

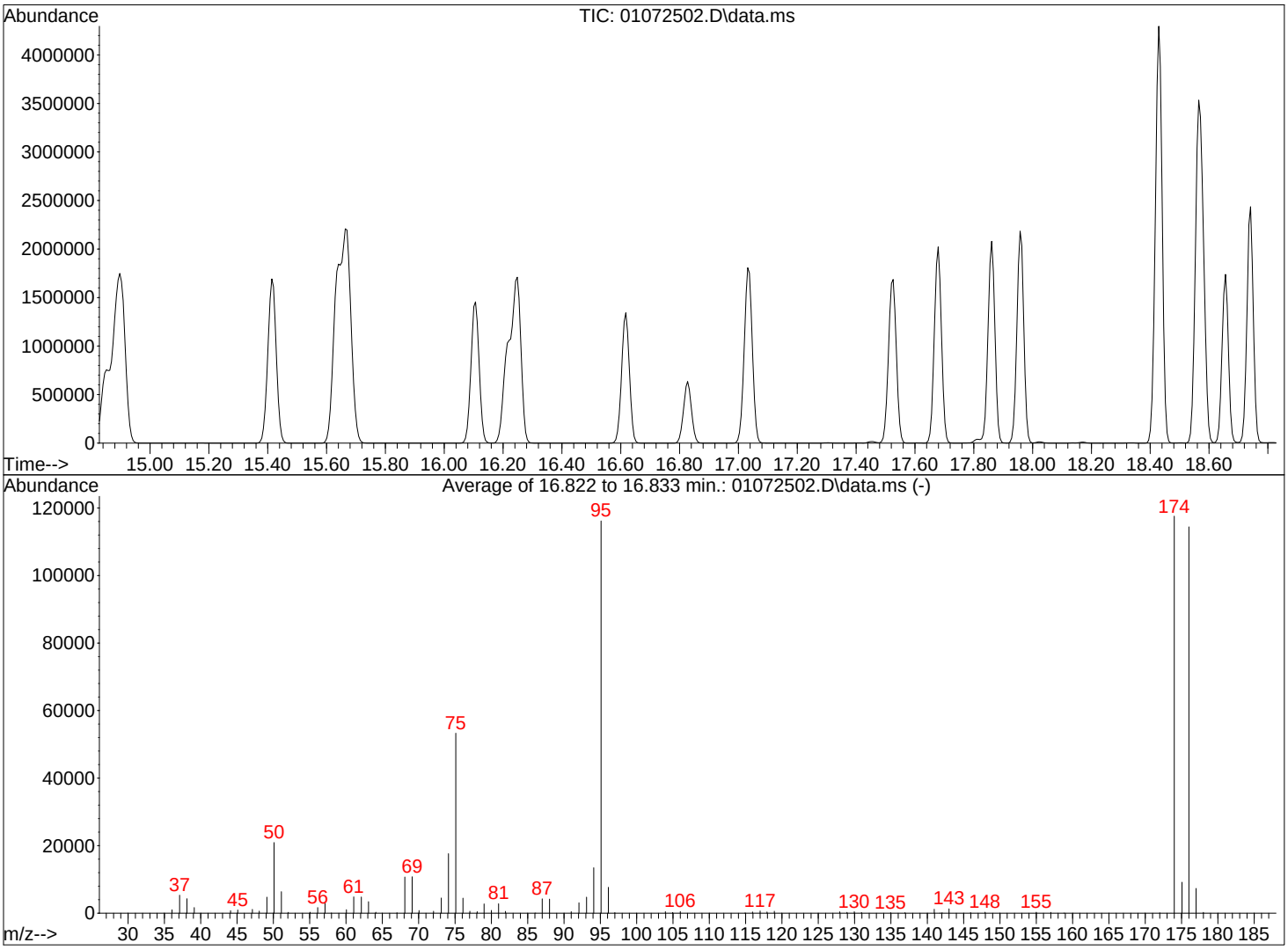
BFB

Data Path : I:\MS09\DATA\2025 01\07\
Data File : 01072502.D
Acq On : 7 Jan 2025 4:01
Operator : SC
Sample : CCV R09010725 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

1/7/25

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sun Nov 24 11:14:44 2024



AutoFind: Scans 2455, 2456, 2457; Background Corrected with Scan 2447

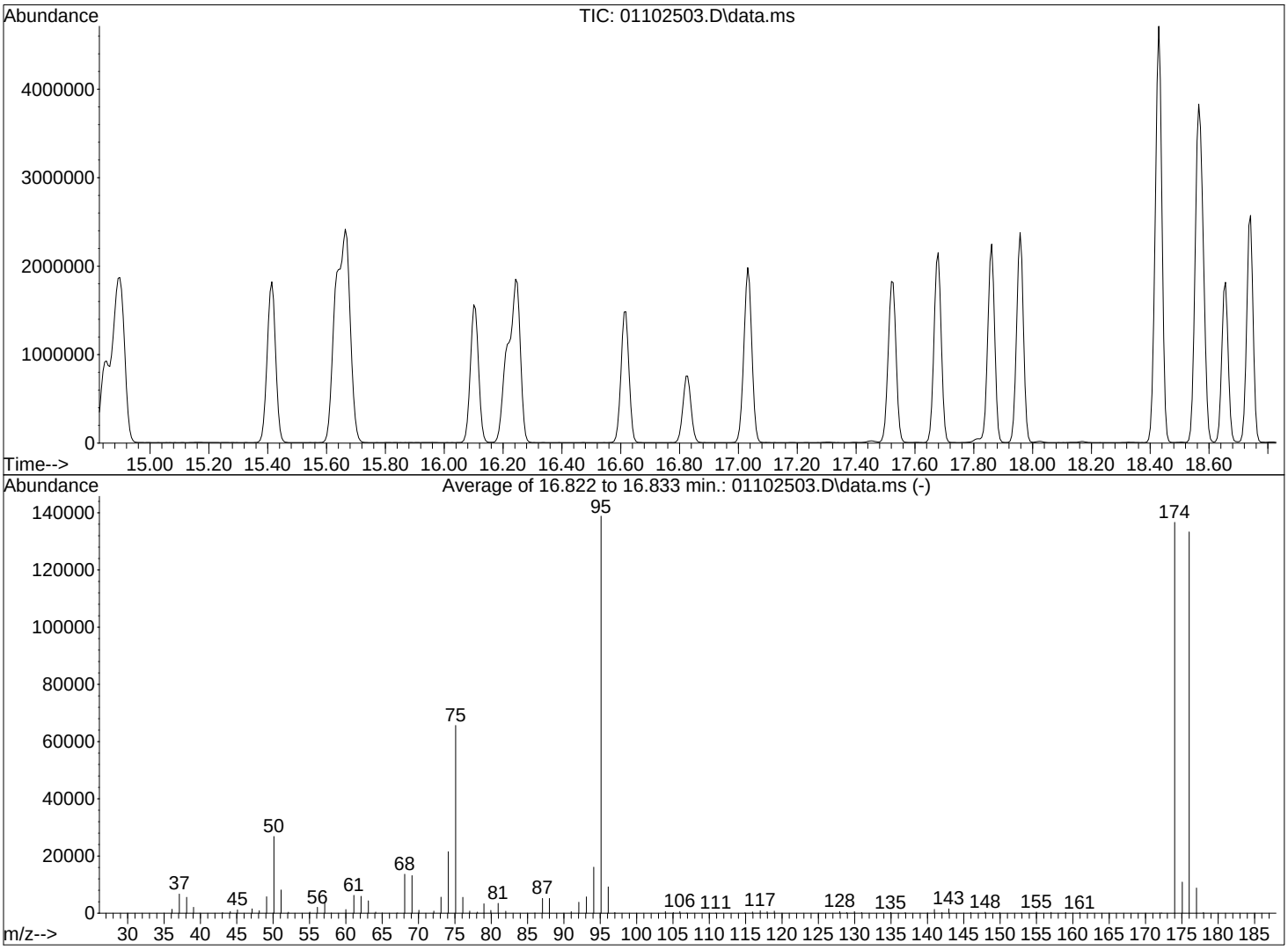
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.0	20920	PASS
75	95	30	66	45.9	53328	PASS
95	95	100	100	100.0	116176	PASS
96	95	5	9	6.6	7677	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	101.2	117576	PASS
175	174	4	9	7.8	9162	PASS
176	174	93	101	97.3	114408	PASS
177	176	5	9	6.4	7320	PASS

BFB

Data Path : I:\MS09\DATA\2025 01\10\
Data File : 01102503.D
Acq On : 10 Jan 2025 18:23
Operator : CG
Sample : CCV R09011025 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sun Nov 24 11:14:44 2024



AutoFind: Scans 2455, 2456, 2457; Background Corrected with Scan 2446

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.3	26813	PASS
75	95	30	66	47.3	65661	PASS
95	95	100	100	100.0	138813	PASS
96	95	5	9	6.6	9202	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	98.4	136656	PASS
175	174	4	9	8.0	10892	PASS
176	174	93	101	97.6	133315	PASS
177	176	5	9	6.6	8821	PASS

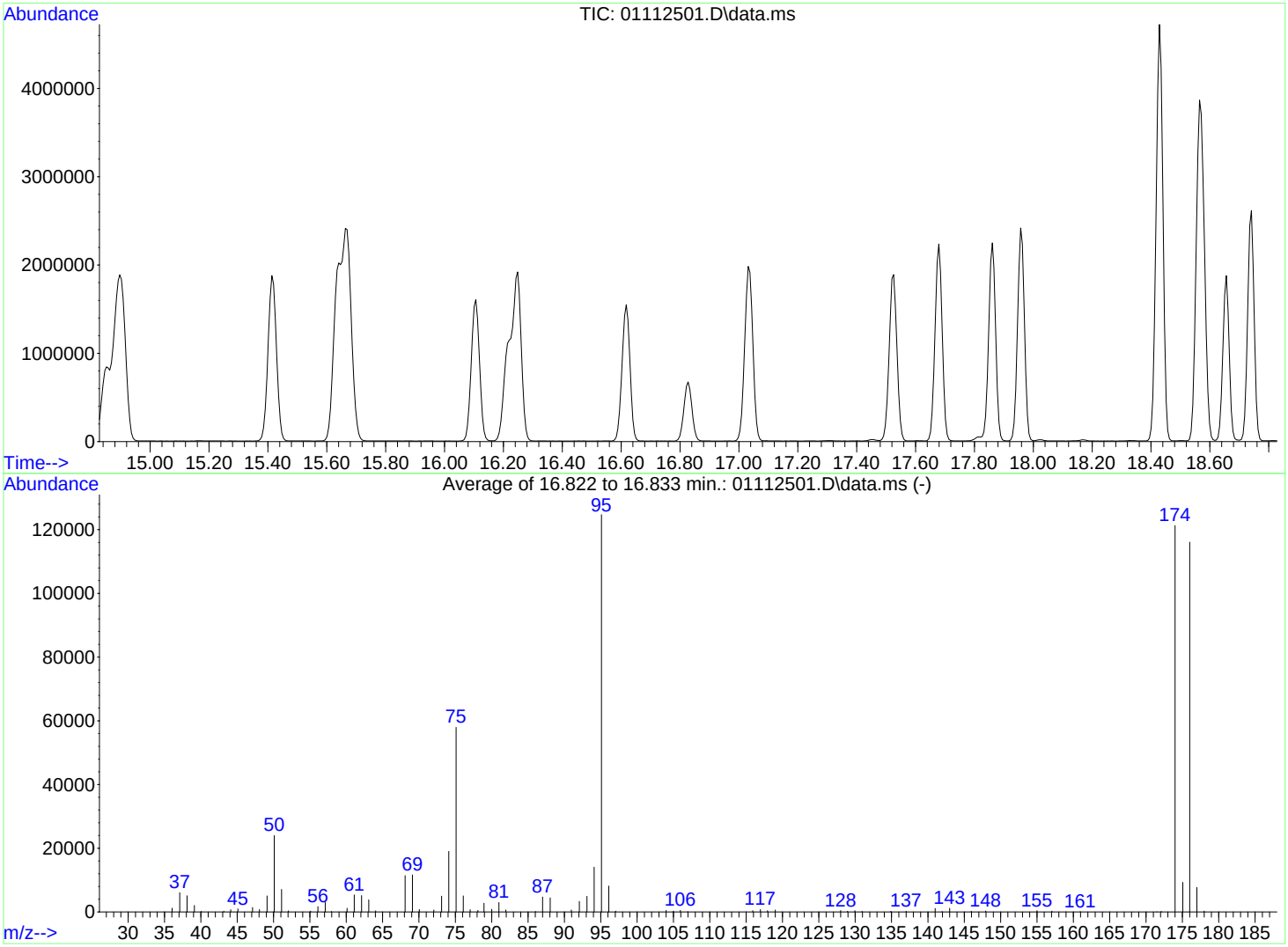
TR 1/10/25

BFB

Data Path : I:\MS09\DATA\2025 01\11\
Data File : 01112501.D
Acq On : 11 Jan 2025 5:01
Operator : CG
Sample : CCV R09011125 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sun Nov 24 11:14:44 2024



AutoFind: Scans 2455, 2456, 2457; Background Corrected with Scan 2447

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.2	23971	PASS
75	95	30	66	46.5	57971	PASS
95	95	100	100	100.0	124693	PASS
96	95	5	9	6.5	8136	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	97.3	121280	PASS
175	174	4	9	7.7	9303	PASS
176	174	93	101	95.7	116077	PASS
177	176	5	9	6.6	7692	PASS

CG 1/11/25

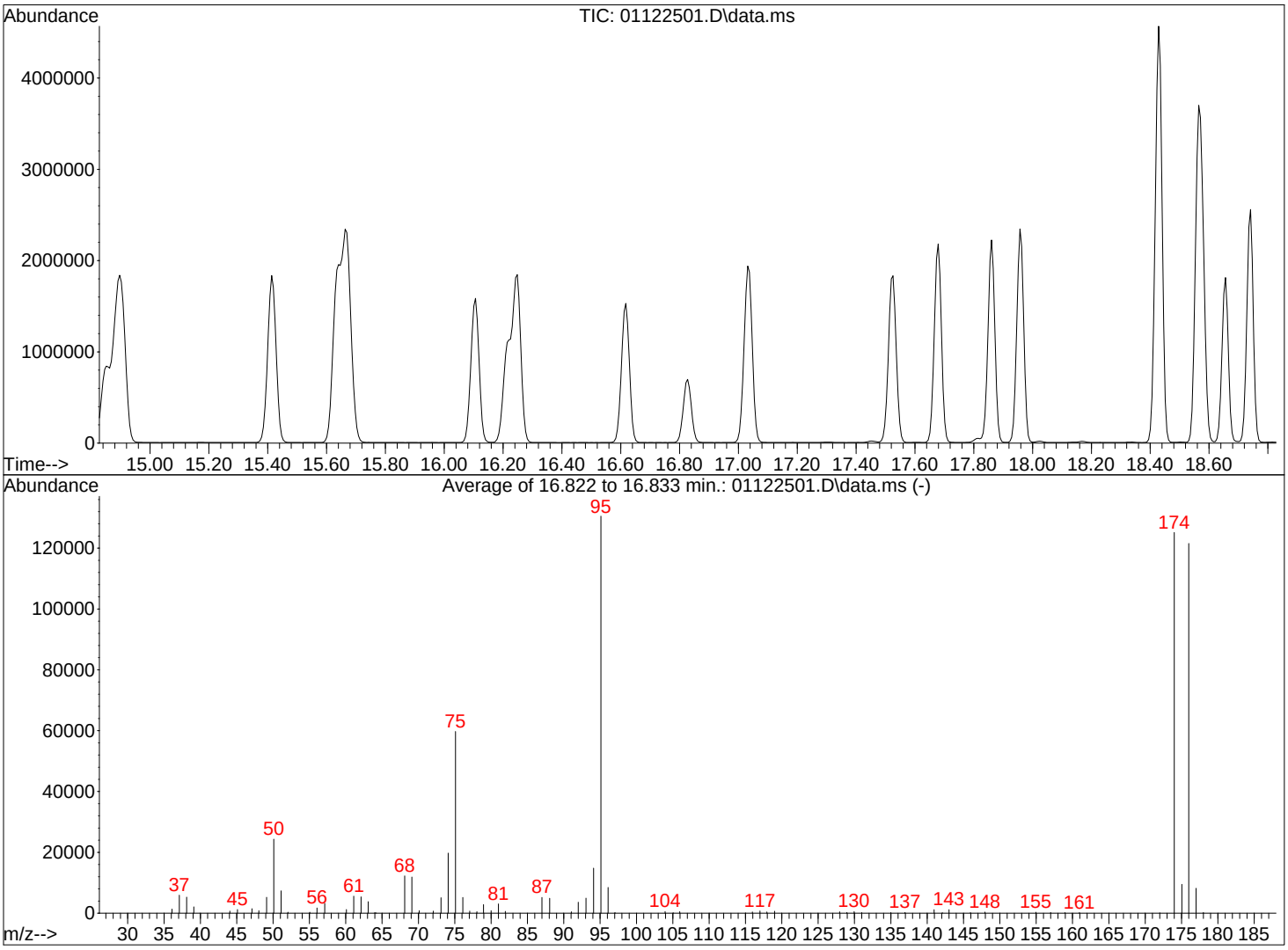
BFB

Data Path : I:\MS09\DATA\2025 01\12\
Data File : 01122501.D
Acq On : 11 Jan 2025 23:38
Operator : LS
Sample : CCV R09011225 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

1/12/25

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sun Nov 24 11:14:44 2024



AutoFind: Scans 2455, 2456, 2457; Background Corrected with Scan 2447

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.6	24331	PASS
75	95	30	66	45.8	59757	PASS
95	95	100	100	100.0	130515	PASS
96	95	5	9	6.5	8472	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	95.9	125131	PASS
175	174	4	9	7.6	9491	PASS
176	174	93	101	97.1	121525	PASS
177	176	5	9	6.8	8206	PASS

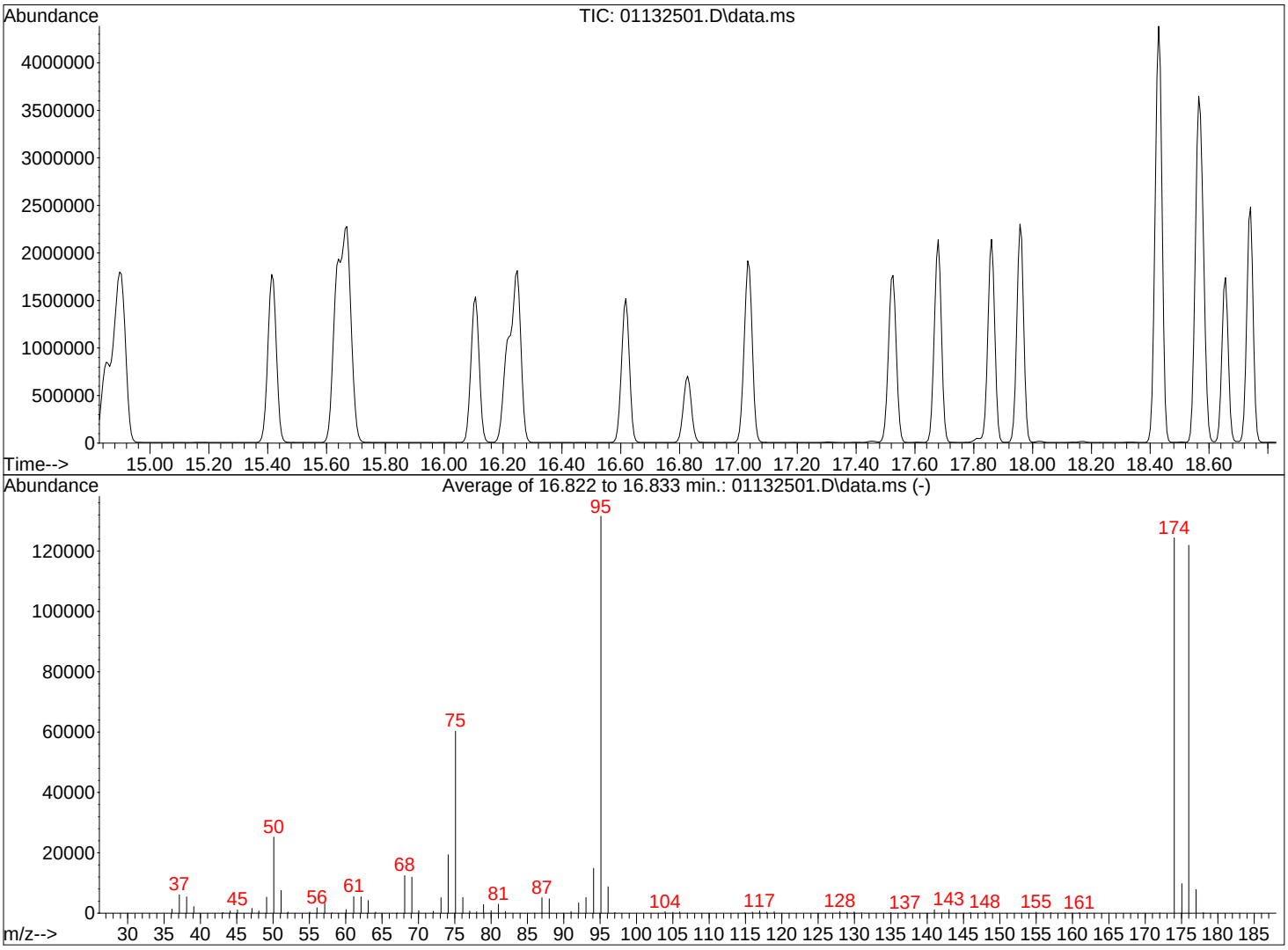
BFB

Data Path : I:\MS09\DATA\2025 01\13\
Data File : 01132501.D
Acq On : 12 Jan 2025 23:28
Operator : SC
Sample : CCV R09011325 25ng
Misc : S37-12312401/S37-12202406 (1/19)
ALS Vial : 2 Sample Multiplier: 1

1/13/25

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R09111924.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sun Nov 24 11:14:44 2024



AutoFind: Scans 2455, 2456, 2457; Background Corrected with Scan 2446

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.2	25221	PASS
75	95	30	66	45.8	60304	PASS
95	95	100	100	100.0	131565	PASS
96	95	5	9	6.7	8772	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	94.5	124368	PASS
175	174	4	9	7.9	9807	PASS
176	174	93	101	98.0	121925	PASS
177	176	5	9	6.4	7854	PASS

11/20/24

Injection Log

Directory: J:\MS09\DATA\2024_11\19\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	11/19/24 9:02	11192401.D	Blank	S37-10212404	SC	1	
2	11/19/24 9:37	11192402.D	Blank	S37-11192401	SC	1	
3	11/19/24 10:12	11192403.D	Blank	S37-11192401	SC	1	
4	11/19/24 10:53	11192404.D	CCV R09111924_25ng	S37-11192401/S37-11042404 12/4)	SC	2	
5	11/19/24 11:32	11192405.D	Blank	S37-11192401	SC	2	
6	11/19/24 12:04	11192406.D	12.5ng TO-15 BFB STD	S37-11192401	SC	2	passed
7	11/19/24 12:36	11192407.D	0.1ng TO-15 ICAL STD	S37-11192401/S37-11182404 (12/18)	SC	5	
8	11/19/24 13:08	11192408.D	0.2ng TO-15 ICAL STD	S37-11192401/S37-11182404 (12/18)	SC	5	
9	11/19/24 13:40	11192409.D	0.5ng TO-15 ICAL STD	S37-11192401/S37-11182403 (12/18)	SC	6	
10	11/19/24 14:12	11192410.D	1.0ng TO-15 ICAL STD	S37-11192401/S37-11182403 (12/18)	SC	6	
11	11/19/24 14:45	11192411.D	5.0ng TO-15 ICAL STD	S37-11192401/S37-11182403 (12/18)	SC	6	
12	11/19/24 15:17	11192412.D	25ng TO-15 ICAL STD	S37-11192401/S37-11182402 (12/18)	SC	7	
13	11/19/24 15:49	11192413.D	50ng TO-15 ICAL STD	S37-11192401/S37-11182402 (12/18)	SC	7	
14	11/19/24 16:21	11192414.D	100ng TO-15 ICAL STD	S37-11192401/S37-11182402 (12/18)	SC	7	
15	11/19/24 16:53	11192415.D	Blank	S37-11192401	SC	2	
16	11/19/24 17:25	11192416.D	ICV R09111924_25ng	S37-11192401/S37-11072403 (12/6)	SC	2	passed
17	11/19/24 17:58	11192417.D	ICV R09111924_25ng	S37-11192401/S37-11072403 (12/6)	SC	2	passed
18	11/19/24 18:30	11192418.D	12.5ng TO-15 Custom BFB	S37-11192401	SC	2	passed
19	11/19/24 19:02	11192419.D	0.4ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	8	
20	11/19/24 19:34	11192420.D	1.0ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	8	
21	11/19/24 20:06	11192421.D	2.5ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	15	
22	11/19/24 20:38	11192422.D	5.0ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	8	
23	11/19/24 21:10	11192423.D	25ng TO-15 Custom ICAL STD	S37-11192401/S37-11192402 (12/19)	SC	9	
24	11/19/24 21:42	11192424.D	50ng TO-15 Custom ICAL STD	S37-11192401/S37-11192402 (12/19)	SC	9	
25	11/19/24 22:14	11192425.D	100ng TO-15 Custom ICAL STD	S37-11192401/S37-11192402 (12/19)	SC	9	
26	11/19/24 22:46	11192426.D	Blank	S37-11192401	SC	2	
27	11/19/24 23:18	11192427.D	25ng TO-15 Custom ICV STD	S37-11192401/S37-11192404 (12/19)	SC	10	passed
28	11/19/24 23:50	11192428.D	25ng TO-15 Custom ICV STD	S37-11192401/S37-11192404 (12/19)	SC	10	passed
29							
30							
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36							
37							

Injection Log

11/20/24

Directory: J:\MS09\DATA\2024_11\19\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	11/19/24 9:02	11192401.D	Blank	S37-10212404	SC	1	
2	11/19/24 9:37	11192402.D	Blank	S37-11192401	SC	1	
3	11/19/24 10:12	11192403.D	Blank	S37-11192401	SC	1	
4	11/19/24 10:53	11192404.D	CCV R09111924_25ng	S37-11192401/S37-11042404 12/4)	SC	2	
5	11/19/24 11:32	11192405.D	Blank	S37-11192401	SC	2	
6	11/19/24 12:04	11192406.D	12.5ng TO-15 BFB STD	S37-11192401	SC	2	passed
7	11/19/24 12:36	11192407.D	0.1ng TO-15 ICAL STD	S37-11192401/S37-11182404 (12/18)	SC	5	
8	11/19/24 13:08	11192408.D	0.2ng TO-15 ICAL STD	S37-11192401/S37-11182404 (12/18)	SC	5	
9	11/19/24 13:40	11192409.D	0.5ng TO-15 ICAL STD	S37-11192401/S37-11182403 (12/18)	SC	6	
10	11/19/24 14:12	11192410.D	1.0ng TO-15 ICAL STD	S37-11192401/S37-11182403 (12/18)	SC	6	
11	11/19/24 14:45	11192411.D	5.0ng TO-15 ICAL STD	S37-11192401/S37-11182403 (12/18)	SC	6	
12	11/19/24 15:17	11192412.D	25ng TO-15 ICAL STD	S37-11192401/S37-11182402 (12/18)	SC	7	
13	11/19/24 15:49	11192413.D	50ng TO-15 ICAL STD	S37-11192401/S37-11182402 (12/18)	SC	7	
14	11/19/24 16:21	11192414.D	100ng TO-15 ICAL STD	S37-11192401/S37-11182402 (12/18)	SC	7	
15	11/19/24 16:53	11192415.D	Blank	S37-11192401	SC	2	
16	11/19/24 17:25	11192416.D	ICV R09111924_25ng	S37-11192401/S37-11072403 (12/6)	SC	2	passed
17	11/19/24 17:58	11192417.D	ICV R09111924_25ng	S37-11192401/S37-11072403 (12/6)	SC	2	passed
18	11/19/24 18:30	11192418.D	12.5ng TO-15 Custom BFB	S37-11192401	SC	2	passed
19	11/19/24 19:02	11192419.D	0.4ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	8	
20	11/19/24 19:34	11192420.D	1.0ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	8	
21	11/19/24 20:06	11192421.D	2.5ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	15	
22	11/19/24 20:38	11192422.D	5.0ng TO-15 Custom ICAL STD	S37-11192401/S37-11192403 (12/19)	SC	8	
23	11/19/24 21:10	11192423.D	25ng TO-15 Custom ICAL STD	S37-11192401/S37-11192402 (12/19)	SC	9	
24	11/19/24 21:42	11192424.D	50ng TO-15 Custom ICAL STD	S37-11192401/S37-11192402 (12/19)	SC	9	
25	11/19/24 22:14	11192425.D	100ng TO-15 Custom ICAL STD	S37-11192401/S37-11192402 (12/19)	SC	9	
26	11/19/24 22:46	11192426.D	Blank	S37-11192401	SC	2	
27	11/19/24 23:18	11192427.D	25ng TO-15 Custom ICV STD	S37-11192401/S37-11192404 (12/19)	SC	10	passed
28	11/19/24 23:50	11192428.D	25ng TO-15 Custom ICV STD	S37-11192401/S37-11192404 (12/19)	SC	10	passed
29							
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35							
36							
37							

Injection Log

Directory: I:\MS09\DATA\2025_01\04\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/4/25 3:12	01042501.D	Blank	S37-12312401	SC	1	
2	1/4/25 3:44	01042502.D	CCV R09010425_25ng	S37-12312401/S37-12202406 (1/19)	SC	2	passed
3	1/4/25 4:16	01042503.D	CCV C09010425_25ng	S37-12312401/S37-12202405 (1/19)	SC	3	passed
4	1/4/25 4:48	01042504.D	MB R09010425_1000mL	S37-12312401/AS00880	SC	2	passed
5	1/4/25 5:20	01042505.D	LCS R09010425_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	passed
6	1/4/25 5:52	01042506.D	LCSD R09010425_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	passed
7	1/4/25 9:50	01042507.D	P2405193-001dil (40mL)	S37-12312401	CG	5	
8	1/4/25 10:22	01042508.D	P2405193-005dil (20mL)	S37-12312401	CG	10	
9	1/4/25 12:10	01042509.D	P2405194-001 (0.1mL)	S37-12312401	CG	1	
10	1/4/25 12:42	01042510.D	P2405139-001 (400mL)	S37-12312401	CG	4	
11	1/4/25 13:14	01042511.D	P2405209-001 (400mL)	S37-12312401	CG	5	
12	1/4/25 13:46	01042512.D	P2405209-002 (120mL)	S37-12312401	CG	6	overdiluted
13	1/4/25 14:18	01042513.D	P2404968-001 (2.0mL)	S37-12312401/ (20mL->628mL; 63mL)	CG	7	overdiluted
14	1/4/25 14:50	01042514.D	P2405139-002 (400mL)	S37-12312401	CG	8	
15	1/4/25 15:22	01042515.D	P2405139-003 (400mL)	S37-12312401	CG	9	
16	1/4/25 15:55	01042516.D	P2405139-004 (400mL)	S37-12312401	CG	10	
17	1/4/25 16:27	01042517.D	P2405139-006 (400mL)	S37-12312401	CG	11	
18	1/4/25 16:59	01042518.D	P2405139-007 (400mL)	S37-12312401	CG	12	
19	1/4/25 17:31	01042519.D	P2404968-009 (15mL)	S37-12312401	CG	13	overdiluted
20	1/4/25 18:03	01042520.D	P2404968-009dup (15mL)	S37-12312401	CG	13	passed
21	1/4/25 18:35	01042521.D	P2404968-011 (15mL)	S37-12312401	CG	14	overdiluted
22	1/4/25 19:07	01042522.D	P2404968-013 (15mL)	S37-12312401	CG	15	
23	1/4/25 19:39	01042523.D	P2405051-001 (100mL)	S37-12312401	CG	16	

LH 1/5/25

Injection Log

Directory: I:\MS09\DATA\2025_01\04\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment

Injection Log

Directory: I:\MS09\DATA\2025_01\06\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/6/25 7:55	01062501.D	Blank	S37-12312401	SC	1	
2	1/6/25 8:27	01062502.D	CCV R09010625_25ng	S37-12312401/S37-12202406 (1/19)	SC	2	Passed
3	1/6/25 8:59	01062503.D	CCV C09010625_25ng	S37-12312401/S37-12202405 (1/19)	SC	3	Passed
4	1/6/25 9:31	01062504.D	MB R09010625_1000mL	S37-12312401/AS00880	TZ	2	Passed
5	1/6/25 10:03	01062505.D	LCS R09010625_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	Passed
6	1/6/25 10:35	01062506.D	LCSD R09010625_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	Passed
7	1/6/25 11:11	01062507.D	P2405209-002 (400mL)	S37-12312401	SC	6	
8	1/6/25 11:43	01062508.D	P2404968-011 (35mL)	S37-12312401	SC	14	
9	1/6/25 12:49	01062509.D	RL R09010625_0.5ng	S37-12312401/S37-12162404 (1/15)	SC	4	Passed
10	1/6/25 13:22	01062510.D	P2405139-008 (400mL)	S37-12312401	SC	5	
11	1/6/25 13:54	01062511.D	P2405139-009 Dil (40mL)	S37-12312401	SC	6	
12	1/6/25 14:26	01062512.D	P2405139-010 (400mL)	S37-12312401	SC	7	
13	1/6/25 14:58	01062513.D	P2405139-009 (100mL)	S37-12312401	SC	6	
14	1/6/25 15:31	01062514.D	P2405139-005Dil (0.2mL)	S37-12312401	SC	1	
15	1/6/25 16:03	01062515.D	P2405195-001 (400mL)	S37-12312401	SC	5	
16	1/6/25 16:43	01062516.D	P2405139-005 (0.5mL)	S37-12312401	SC	1	
17	1/6/25 17:16	01062517.D	P2405196-001 (400mL)	S37-12312401	SC	6	
18	1/6/25 17:48	01062518.D	P2405230-001 (400mL)	S37-12312401	SC	7	
19	1/6/25 18:20	01062519.D	P2405139-011 (400mL)	S37-12312401	SC	8	
20	1/6/25 18:52	01062520.D	P2405139-012dil (40mL)	S37-12312401	SC	9	
21	1/6/25 19:25	01062521.D	xP2405139-012dup (40mL)	S37-12312401	SC	9	not used
22	1/6/25 19:57	01062522.D	xP2405139-013 (20mL)	S37-12312401	SC	10	not used
23	1/6/25 20:29	01062523.D	P2405139-014dil (15mL)	S37-12312401	SC	11	
24	1/6/25 21:02	01062524.D	xP2405139-015 (20mL)	S37-12312401	SC	12	not used
25	1/6/25 21:34	01062525.D	xP2405139-016 (50mL)	S37-12312401	SC	13	not used
26	1/6/25 22:06	01062526.D	P2405139-017 (400mL)	S37-12312401	SC	14	
27	1/6/25 22:38	01062527.D	P2405139-018 (400mL)	S37-12312401	SC	15	
28	1/6/25 23:11	01062528.D	P2405139-019dil (20mL)	S37-12312401	SC	16	
29	1/6/25 23:43	01062529.D	P2405139-011dil (40mL)	S37-12312401	SC	8	
30	1/7/25 0:15	01062530.D	P2405139-012 (80mL)	S37-12312401	SC	9	
31	1/7/25 0:48	01062531.D	P2405139-013 (200mL)	S37-12312401	SC	10	
32	1/7/25 1:20	01062532.D	P2405139-014 (50mL)	S37-12312401	SC	11	
33	1/7/25 1:52	01062533.D	xP2405139-014dupx (50mL)	S37-12312401	SC	11	not used
34	1/7/25 2:24	01062534.D	P2405139-015 (50mL)	S37-12312401	SC	12	
35	1/7/25 2:57	01062535.D	P2405139-016 (400mL)	S37-12312401	SC	13	

1/7/25

Injection Log

Directory: I:\MS09\DATA\2025_01\15\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/7/25 3:29	01072501.D	Blank	S37-12312401	SC	1	
2	1/7/25 4:01	01072502.D	CCV R09010725_25ng	S37-12312401/S37-12202406 (1/19)	SC	2	Pass
3	1/7/25 4:34	01072503.D	CCV C09010725_25ng	S37-12312401/S37-12202405 (1/19)	SC	3	Pass
4	1/7/25 5:06	01072504.D	MB R09010725_1000mL	S37-12312401/AS00880	SC	2	Pass
5	1/7/25 5:38	01072505.D	LCS R09010725_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	Pass
6	1/7/25 6:11	01072506.D	LCSD R09010725_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	Pass
7	1/7/25 6:43	01072507.D	RL R09010725_0.5ng	S37-12312401/S37-12162404 (1/15)	SC	4	Pass
8	1/7/25 7:16	01072508.D	P2405139-018dil (40mL)	S37-12312401	SC	15	
9	1/7/25 7:48	01072509.D	P2405139-019 (60mL)	S37-12312401	SC	16	need dil
10	1/7/25 8:46	01072510.D	P2405139-004Dil (40mL)	S37-12312401	SC	5	
11	1/7/25 9:59	01072511.D	P2405139-020Dil (8.0mL)	S37-12312401	SC	1	
12	1/7/25 10:31	01072512.D	P2405139-021 (400mL)	S37-12312401	SC	6	
13	1/7/25 11:03	01072513.D	P2405139-022 (400mL)	S37-12312401	SC	7	
14	1/7/25 11:35	01072514.D	P2405139-023 (400mL)	S37-12312401	SC	8	
15	1/7/25 12:08	01072515.D	P2405139-020 (30mL)	S37-12312401	SC	5	
16	1/7/25 12:40	01072516.D	P2405139-021Dil (40mL)	S37-12312401	SC	6	
17	1/7/25 13:12	01072517.D	P2405139-024 (30mL)	S37-12312401	SC	9	
18	1/7/25 13:44	01072518.D	P2405139-025 (15mL)	S37-12312401	SC	10	
19	1/7/25 14:17	01072519.D	P2405139-026 (400mL)	S37-12312401	SC	11	
20	1/7/25 14:49	01072520.D	P2405139-027 Dil(40mL)	S37-12312401	SC	12	
21	1/7/25 15:22	01072521.D	P2405139-029 (6.0mL)	S37-12312401	SC	1	
22	1/7/25 15:54	01072522.D	P2405139-038 (1.0mL)	S37-12312401	SC	1	
23	1/7/25 16:27	01072523.D	P2405139-026Dil (40mL)	S37-12312401	SC	11	
24	1/7/25 17:06	01072524.D	RL R09010725_0.5ng	S37-12312401/S37-12262405 (1/25)	SC	4	
25	1/7/25 17:38	01072525.D	P2405139-027 (100mL)	S37-12312401	SC	12	
26	1/7/25 18:11	01072526.D	P2405139-028 (400mL)	S37-12312401	SC	13	over diluted
27	1/7/25 18:43	01072527.D	P2405139-030 (100mL)	S37-12312401	SC	14	over diluted
28	1/7/25 19:15	01072528.D	P2405139-031 (100mL)	S37-12312401	SC	15	
29	1/7/25 19:47	01072529.D	P2405139-032 (400mL)	S37-12312401	SC	16	
30	1/7/25 20:20	01072530.D	P2405139-033 (400mL)	S37-12312401	SC	5	need dil
31	1/7/25 20:52	01072531.D	P2405139-034 (400mL)	S37-12312401	SC	6	
32	1/7/25 21:24	01072532.D	P2405139-035 (400mL)	S37-12312401	SC	7	
	CCV: bromoform out high; propene out low (RL checked pass)						
	LCS/LCSD: bromoform out high						

Injection Log

Directory: I:\MS09\DATA\2025_01\15\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment

Injection Log

Directory: I:\MS09\DATA\2025_01\10\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/10/25 18:23	01102503.D	CCV R09011025_25ng	S37-12312401/S37-12202406 (1/19)	CG	2	passed
2	1/10/25 18:55	01102504.D	CCV C09011025_25ng	S37-12312401/S37-12202405 (1/19)	CG	3	passed
3	1/10/25 19:27	01102505.D	MB R09011025_1000mL	S37-12312401/AS00880	CG	2	passed
4	1/10/25 19:59	01102506.D	LCS R09011025_25ng	S37-12312401/S37-12272408 (1/26)	CG	2	passed
5	1/10/25 20:31	01102507.D	LCSD R09011025_25ng	S37-12312401/S37-12272408 (1/26)	CG	2	passed
6	1/10/25 21:03	01102508.D	RL R09011025_0.5ng	S37-12312401/S37-12262405 (1/25)	CG	4	
7	1/10/25 21:34	01102509.D	P2405139-036 (400mL)pf2	S37-12312401	CG	5	
8	1/10/25 22:06	01102510.D	P2405139-037 (400mL)pf2	S37-12312401	CG	6	
9	1/10/25 22:38	01102511.D	P2405139-040 (400mL)pf2	S37-12312401	CG	7	
10	1/10/25 23:10	01102512.D	P2405139-041 (400mL)	S37-12312401	CG	8	
11	1/10/25 23:42	01102513.D	P2405139-042 (400mL)	S37-12312401	CG	9	
12	1/11/25 0:14	01102514.D	P2405139-043 (400mL)	S37-12312401	CG	10	
13	1/11/25 0:46	01102515.D	P2405139-044 (400mL)	S37-12312401	CG	12	
14	1/11/25 1:18	01102516.D	P2405139-046 (150mL)	S37-12312401	CG	13	need dil 15mL
15	1/11/25 1:50	01102517.D	P2405139-047 (400mL)	S37-12312401	CG	14	
16	1/11/25 2:21	01102518.D	P2405139-048 (400mL)	S37-12312401	CG	15	
17	1/11/25 2:53	01102519.D	P2405139-049 (400mL)	S37-12312401	CG	16	
18	1/11/25 3:25	01102520.D	P2405046-001 (1000mL)	S37-12312401	CG	11	
19	1/11/25 3:57	01102521.D	P2405046-001dup (1000mL)	S37-12312401	CG	11	failed CFC11
20	1/11/25 4:29	01102522.D	CCV End R09011025_25ng	S37-12312401/S37-12202406 (1/19)	CG	2	passed
	CCV: Propene, Chloromethane, MTBE, Naphthalene out low - RL passed						
	LCS/D: allyl chloride failed DoD, passed lab standard						

CG 1/11/25

Injection Log

Directory: I:\MS09\DATA\2025_01\11\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/11/25 5:01	01112501.D	CCV R09011125_25ng	S37-12312401/S37-12202406 (1/19)	CG	2	Passed
2	1/11/25 5:33	01112502.D	CCV C09011125_25ng	S37-12312401/S37-12202405 (1/19)	CG	3	Passed
3	1/11/25 6:05	01112503.D	MB R09011125_1000mL	S37-12312401/AS00880	CG	2	Passed
4	1/11/25 6:36	01112504.D	LCS R09011125_25ng	S37-12312401/S37-12272408 (1/26)	CG	2	Passed
5	1/11/25 7:08	01112505.D	LCSD R09011125_25ng	S37-12312401/S37-12272408 (1/26)	CG	2	Passed
6	1/11/25 7:40	01112506.D	RL R09011125_0.5ng	S37-12312401/S37-12262405 (1/25)	CG	4	Passed
7	1/11/25 9:25	01112507.D	P2405139-046dil (15mL)	S37-12312401	CG	13	
8	1/11/25 10:08	01112508.D	P2405139-038dil (0.7mL)	S37-12312401	LS	1	
9	1/11/25 10:40	01112509.D	P2405139-038 (1.5mL)	S37-12312401	LS	1	
10	1/11/25 11:12	01112510.D	xP2500081-001 (15mL)	S37-12312401	LS	5	not used
11	1/11/25 11:53	01112511.D	P2500081-003 (100mL)	S37-12312401	LS	7	
12	1/11/25 12:25	01112512.D	P2500081-004 (100mL)	S37-12312401	LS	8	
13	1/11/25 12:57	01112513.D	P2500081-001 (100mL)	S37-12312401	LS	5	
14	1/11/25 13:29	01112514.D	P2500081-002 (100mL)	S37-12312401	LS	6	
15	1/11/25 14:02	01112515.D	P2500081-002dup (100mL)	S37-12312401	LS	6	
16	1/11/25 14:34	01112516.D	xP2405139-039 (2.0mL)	S37-12312401	LS	1	not used
17	1/11/25 15:06	01112517.D	P2405139-039 (4.0mL)	S37-12312401	LS	1	
18	1/11/25 16:10	01112518.D	P2405139-045 (1.5mL)	S37-12312401	LS	1	
19	1/11/25 16:42	01112519.D	P2405139-055 (400mL)	S37-12312401	LS	5	
20	1/11/25 17:14	01112520.D	P2405139-057 (400mL)	S37-12312401	LS	6	Rerun
21	1/11/25 17:46	01112521.D	P2405139-058 (400mL)	S37-12312401	LS	7	
22	1/11/25 18:18	01112522.D	P2405139-059 (400mL)	S37-12312401	LS	8	
23	1/11/25 18:50	01112523.D	P2405139-060 (400mL)	S37-12312401	LS	9	
24	1/11/25 19:22	01112524.D	P2405139-061 (400mL)	S37-12312401	LS	10	
25	1/11/25 19:54	01112525.D	P2405139-062 (400mL)	S37-12312401	LS	11	
26	1/11/25 20:26	01112526.D	P2405139-063 (400mL)	S37-12312401	LS	12	
27	1/11/25 20:58	01112527.D	P2405139-064 (400mL)	S37-12312401	LS	13	
28	1/11/25 21:30	01112528.D	P2405139-065 (60mL)	S37-12312401	LS	14	
29	1/11/25 22:02	01112529.D	P2405139-066 (15mL)	S37-12312401	LS	15	
30	1/11/25 22:34	01112530.D	P2405139-067 (100mL)	S37-12312401	LS	16	
31	1/11/25 23:06	01112531.D	CCV End R09011125_25ng	S37-12312401/S37-12202406 (1/19)	LS	2	Passed

1/12/25

Injection Log

Directory: I:\MS09\DATA\2025_01\12\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/11/25 23:38	01122501.D	CCV R09011225_25ng	S37-12312401/S37-12202406 (1/19)	LS	2	Passed
2	1/12/25 0:10	01122502.D	CCV C09011225_25ng	S37-12312401/S37-12202405 (1/19)	LS	3	Passed
3	1/12/25 0:42	01122503.D	MB R09011225_1000mL	S37-12312401/AS00880	LS	2	Passed
4	1/12/25 1:14	01122504.D	LCS R09011225_25ng	S37-12312401/S37-12272408 (1/26)	LS	2	Passed
5	1/12/25 1:46	01122505.D	LCSD R09011225_25ng	S37-12312401/S37-12272408 (1/26)	LS	2	Passed
6	1/12/25 2:17	01122506.D	RL R09011225_0.5ng	S37-12312401/S37-12262405 (1/25)	LS	4	Passed
7	1/12/25 8:05	01122507.D	Blank (100mL)	S37-12312401	SC	1	
8	1/12/25 8:51	01122508.D	P2405139-045Dil (0.15mL)	S37-12312401	SC	1	
9	1/12/25 9:23	01122509.D	P2405139-055Dil (40mL)	S37-12312401	SC	5	
10	1/12/25 9:55	01122510.D	P2405139-057 (20mL)	S37-12312401	SC	6	
11	1/12/25 10:27	01122511.D	P2405139-061Dil (40mL)	S37-12312401	SC	10	
12	1/12/25 10:59	01122512.D	P2405139-065 (150mL)	S37-12312401	SC	14	
13	1/12/25 11:31	01122513.D	P2405139-066 (50mL)	S37-12312401	SC	15	
14	1/12/25 12:03	01122514.D	P2405139-067 (400mL)	S37-12312401	SC	16	
15	1/12/25 12:53	01122515.D	P2405139-057Dil (0.5mL)	S37-12312401	SC	1	
16	1/12/25 13:25	01122516.D	P2405158-001 (400mL)	S37-12312401	SC	5	
17	1/12/25 13:57	01122517.D	P2405158-002 (400mL)	S37-12312401	SC	6	
18	1/12/25 14:30	01122518.D	P2405158-003 (80mL)	S37-12312401	SC	7	
19	1/12/25 15:02	01122519.D	P2405091-001 (100mL)	S37-12312401	SC	8	
20	1/12/25 15:34	01122520.D	P2405316-001 (2.0mL)	S37-12312401	SC	1	
21	1/12/25 16:32	01122521.D	P2405139-056 (0.2mL)	S37-12312401	SC	1	
22	1/12/25 17:04	01122522.D	P2405158-003 (400mL)	S37-12312401	SC	7	
23	1/12/25 17:36	01122523.D	P2405091-001 (1000mL)	S37-12312401	SC	8	
24	1/12/25 18:08	01122524.D	P2405139-050 (400mL)	S37-12312401	SC	9	
25	1/12/25 18:40	01122525.D	P2405139-051 (400mL)	S37-12312401	SC	10	
26	1/12/25 19:12	01122526.D	P2405139-052 (400mL)	S37-12312401	SC	11	
27	1/12/25 19:44	01122527.D	P2405139-053 (400mL)	S37-12312401	SC	12	
28	1/12/25 20:16	01122528.D	P2405139-054 (140mL)	S37-12312401	SC	13	
29	1/12/25 20:48	01122529.D	P2405139-054dup (140mL)	S37-12312401	SC	13	
30	1/12/25 21:20	01122530.D	P2405139-030 (400mL)	S37-12312401	SC	14	
31	1/12/25 21:52	01122531.D	P2405139-031 (400mL)PF2	S37-12312401	SC	15	
32	1/12/25 22:24	01122532.D	P2405139-033Dil (40mL)	S37-12312401	SC	16	
33	1/12/25 22:56	01122533.D	CCV End R09011225_25ng	S37-12312401/S37-12202406 (1/19)	SC	2	Passed

1/13/25

Injection Log

Directory: I:\MS09\DATA\2025_01\13\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/12/25 23:28	01132501.D	CCV R09011325_25ng	S37-12312401/S37-12202406 (1/19)	SC	2	Passed
2	1/13/25 0:00	01132502.D	CCV C09011325_25ng	S37-12312401/S37-12202405 (1/19)	SC	3	Passed
3	1/13/25 0:32	01132503.D	MB R09011325_1000mL	S37-12312401/AS00880	SC	2	Passed
4	1/13/25 1:04	01132504.D	LCS R09011325_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	Passed
5	1/13/25 1:36	01132505.D	LCSD R09011325_25ng	S37-12312401/S37-12272408 (1/26)	SC	2	Passed
6	1/13/25 2:08	01132506.D	RL R09011325_0.5ng	S37-12312401/S37-12262405 (1/25)	SC	4	Passed
7	1/13/25 8:58	01132507.D	xP2405139-056 (15mL)	S37-12312401	SC	1	not used
8	1/13/25 9:30	01132508.D	P2405139-054 (400mL)PF2	S37-12312401	SC	13	
9	1/13/25 10:21	01132509.D	P2405139-056 (400mL)	S37-12312401	SC	16	
10	1/13/25 10:53	01132510.D	P2405136-001 (400mL)	S37-12312401	SC	5	
11	1/13/25 11:25	01132511.D	P2405136-002 (400mL)	S37-12312401	SC	6	
12	1/13/25 11:58	01132512.D	P2405136-003 (400mL)	S37-12312401	SC	7	
13	1/13/25 12:30	01132513.D	P2405136-004 (400mL)	S37-12312401	SC	8	
14	1/13/25 13:02	01132514.D	P2405136-005 (400mL)	S37-12312401	SC	9	
15	1/13/25 13:34	01132515.D	P2405136-006 (400mL)	S37-12312401	SC	10	
16	1/13/25 14:06	01132516.D	P2405136-007 (400mL)	S37-12312401	SC	11	
17	1/13/25 14:38	01132517.D	P2405136-008 (400mL)	S37-12312401	SC	12	
18	1/13/25 15:11	01132518.D	P2405136-004Dil (40mL)	S37-12312401	SC	8	
19	1/13/25 15:43	01132519.D	P2405136-005Dil (20mL)	S37-12312401	SC	9	
20	1/13/25 16:15	01132520.D	P2405136-006Dil (40mL)	S37-12312401	SC	10	
21	1/13/25 16:47	01132521.D	AS01596	S37-12312401	SC	13	
22	1/13/25 17:38	01132522.D	P2405053-002 (1.5mL)	S37-12312401	SC	1	
23	1/13/25 18:10	01132523.D	P2405302-001 (1000mL)	S37-12312401	SC	5	
24	1/13/25 18:42	01132524.D	P2405302-002 (1000mL)	S37-12312401	SC	6	
25	1/13/25 19:14	01132525.D	P2405302-003 (1000mL)	S37-12312401	SC	7	
26	1/13/25 19:46	01132526.D	P2405302-004 (1000mL)	S37-12312401	SC	8	
27	1/13/25 20:18	01132527.D	P2405302-005 (1000mL)	S37-12312401	SC	9	
28	1/13/25 20:50	01132528.D	P2405053-001 (50mL)	S37-12312401	SC	10	
29	1/13/25 21:22	01132529.D	P2405053-001dup (50mL)	S37-12312401	SC	10	Passed
30	1/13/25 21:54	01132530.D	P2405053-003 (1000mL)	S37-12312401	SC	11	
31	1/13/25 22:26	01132531.D	P2405053-004 (1000mL)	S37-12312401	SC	12	
32	1/13/25 22:58	01132532.D	P2405302-004dil (100mL)	S37-12312401	SC	8	

1/14/25

Appendix D
Mann-Kendall Trend Tests

NDMA 400-EV-131 Mann-Kendall Trend Test



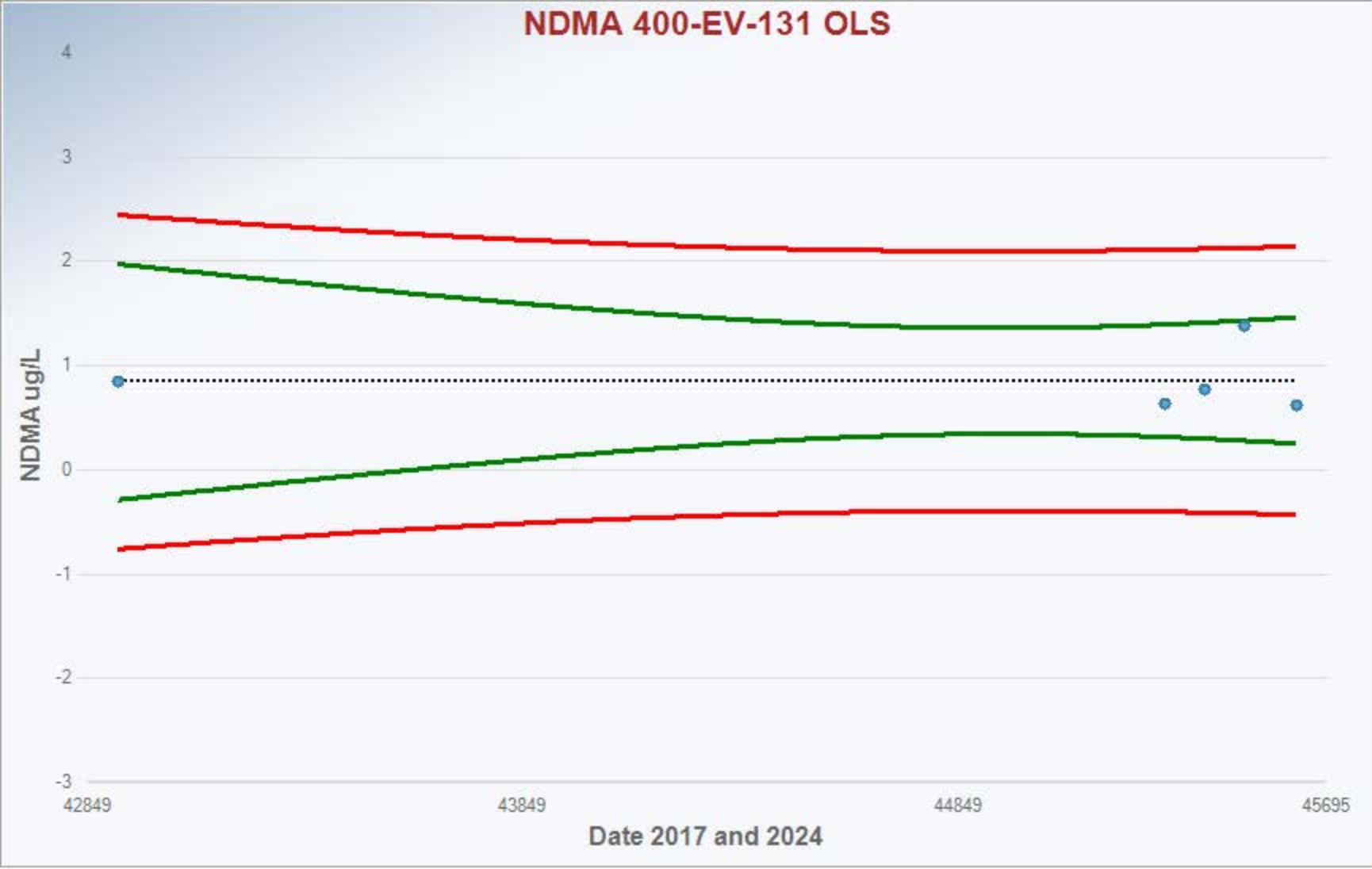
Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.8404

Insufficient statistical evidence of a significant trend at the specified level of significance.



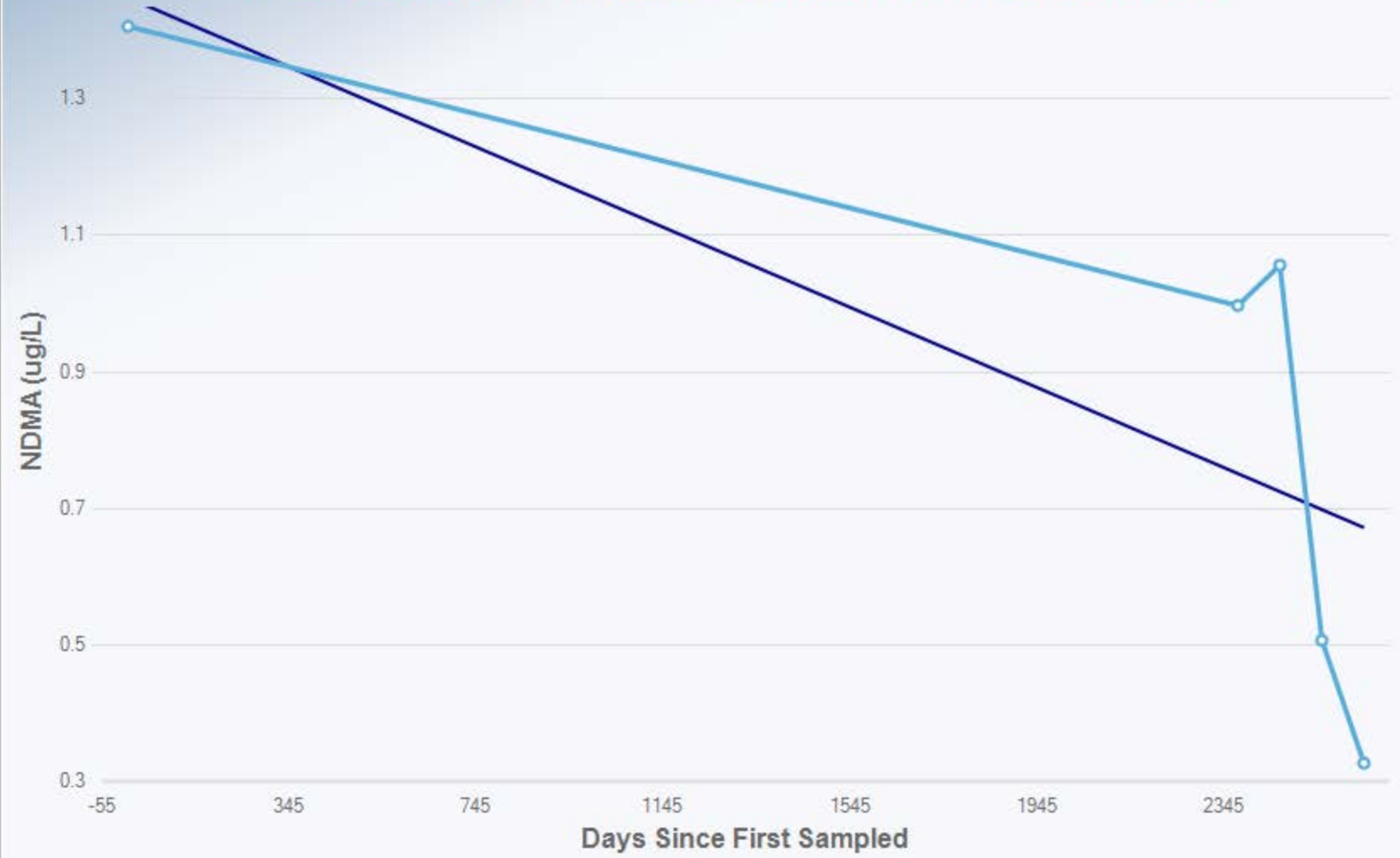
OLS	
n	5
Slope	0.0000
Intercept	0.6181
R-sq	0.0004
R	0.0194
Scale Estimate	0.3571
P-value (Reg)	0.9753
P-value (Slope)	0.9753

Mann-Kendall	
S	-2.0000
SD of S	4.0825
Standardized S	-0.2449
Approximate p-value	0.4032

Confidence Coefficient	0.9500

Red = Prediction Interval
Green = Confidence Interval

NDMA 400-FV-131 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

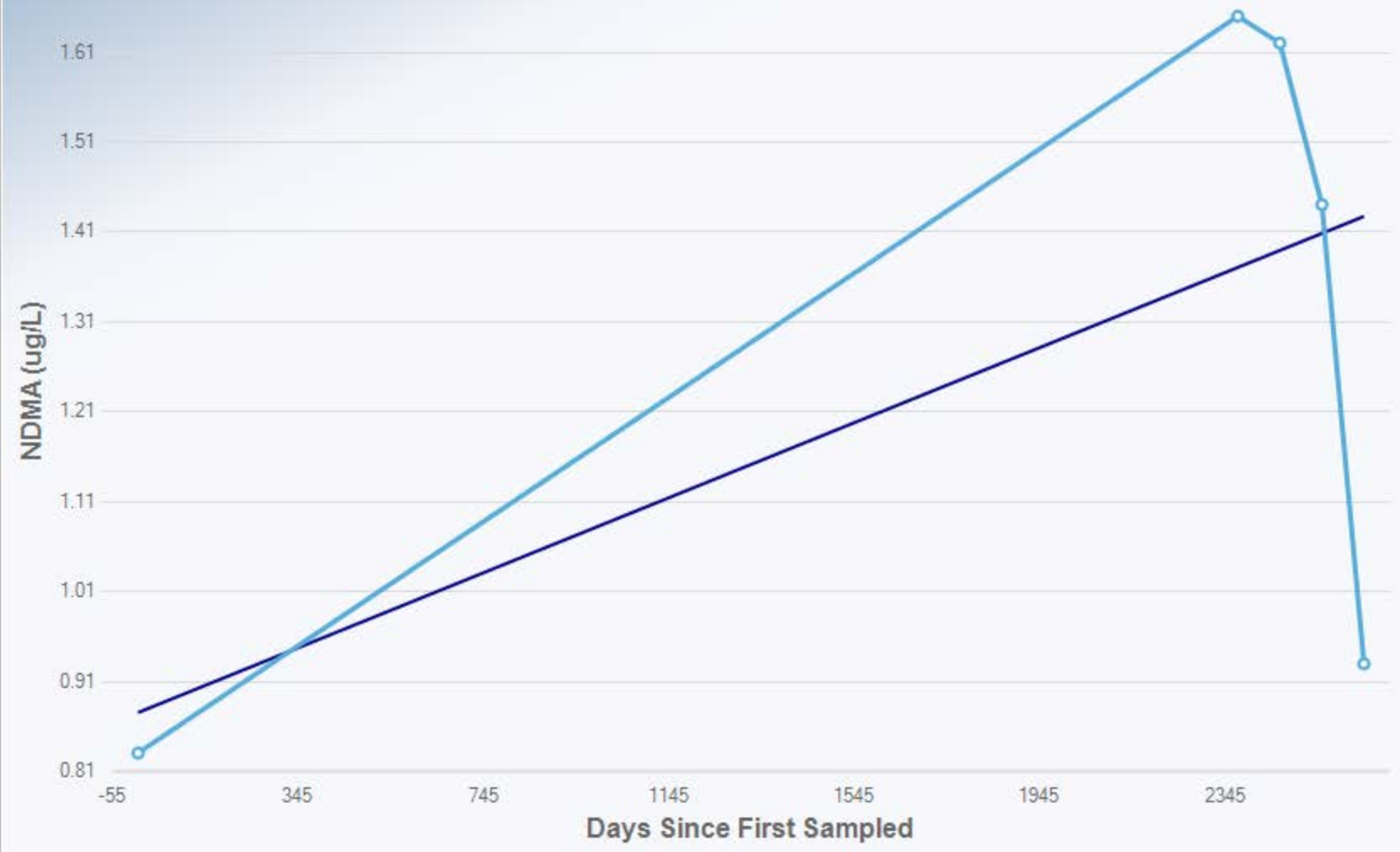
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.7146
M-K Test Value (S)	-8
Tabulated p-value	0.0420
Approximate p-value	0.0432

OLS Regression Line (Blue)

OLS Regression Slope	-0.0003
OLS Regression Intercept	1.4412

Statistically significant evidence of a decreasing trend at the specified level of significance.

NDMA 400-GV-125 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	0.0002
OLS Regression Intercept	0.8754

Insufficient statistical evidence of a significant trend at the specified level of significance.

NDMA 400-HV-147 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

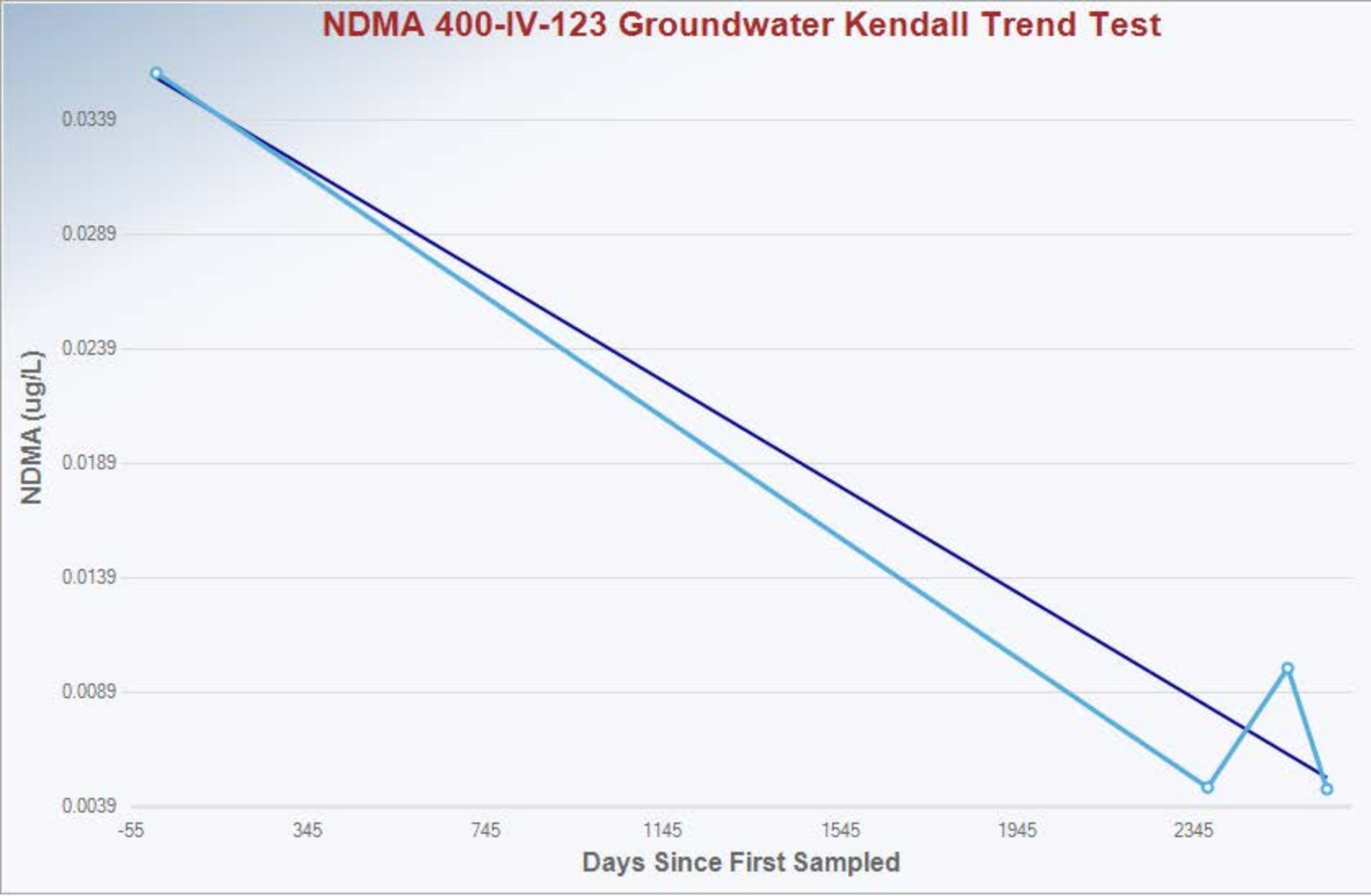
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	1.7146
M-K Test Value (S)	8
Tabulated p-value	0.0420
Approximate p-value	0.0432

OLS Regression Line (Blue)

OLS Regression Slope	0.0409
OLS Regression Intercept	46.6756

Statistically significant evidence of an increasing trend at the specified level of significance.

NDMA 400-IV-123 Groundwater Kendall Trend Test



Mann-Kendall Trend Analysis

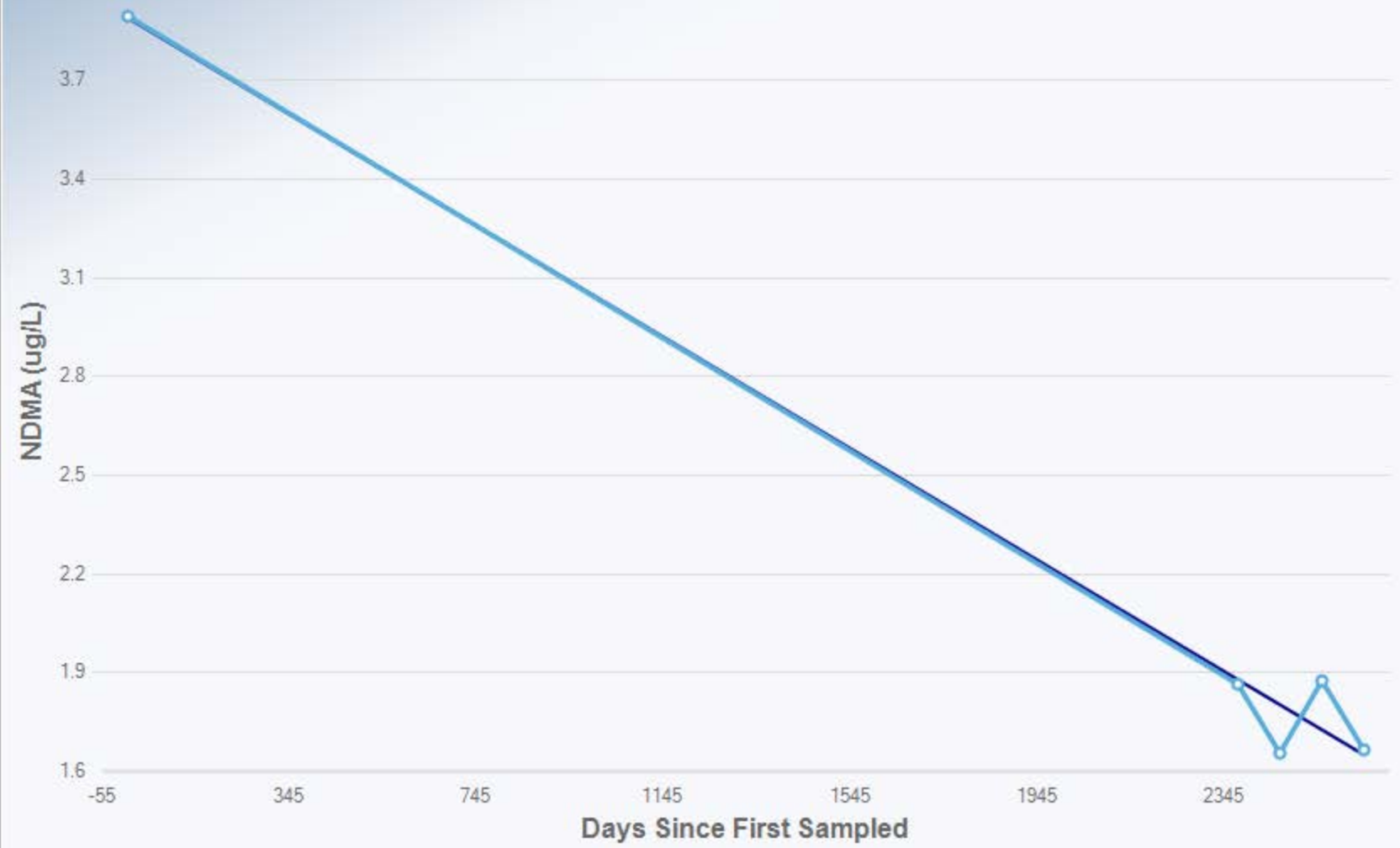
n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-1.0190
M-K Test Value (S)	-4
Tabulated p-value	0.1670
Approximate p-value	0.1541

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.0358

Insufficient statistical evidence of a significant trend at the specified level of significance.

NDMA 400-JV-150 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

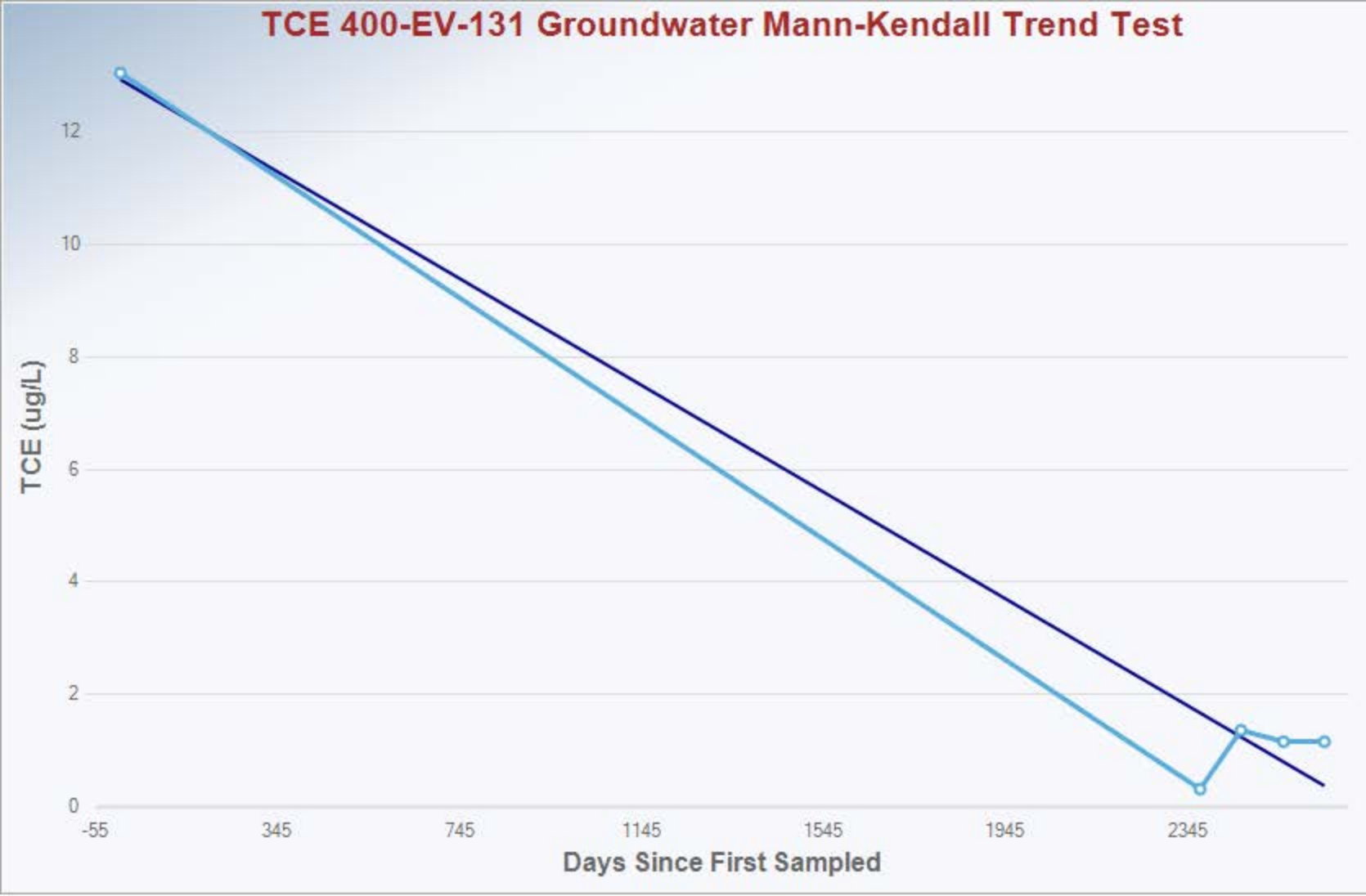
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-0.0008
OLS Regression Intercept	3.8932

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-EV-131 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

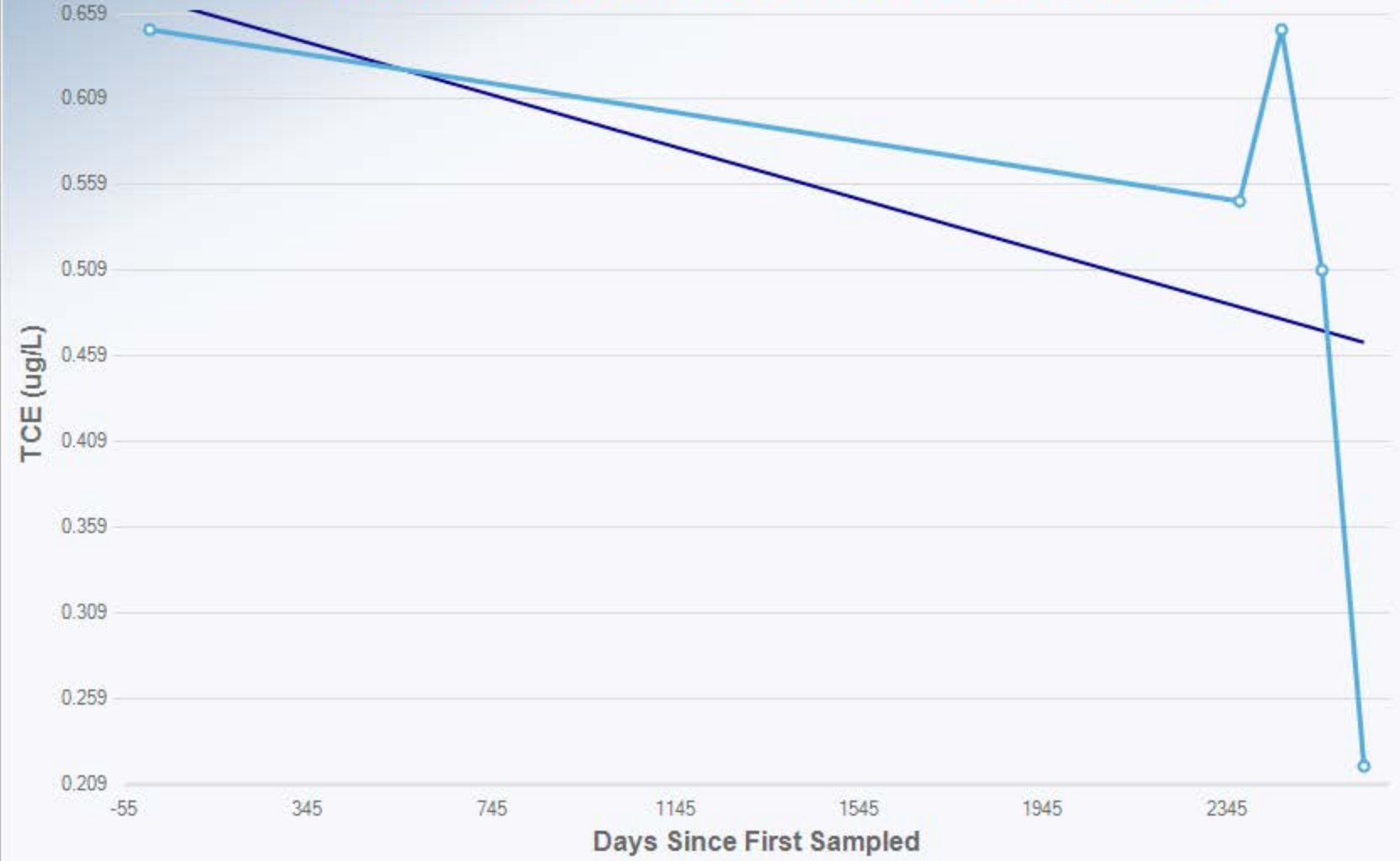
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-0.5053
M-K Test Value (S)	-3
Tabulated p-value	0.4080
Approximate p-value	0.3067

OLS Regression Line (Blue)

OLS Regression Slope	-0.0048
OLS Regression Intercept	12.8816

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-FV-131 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

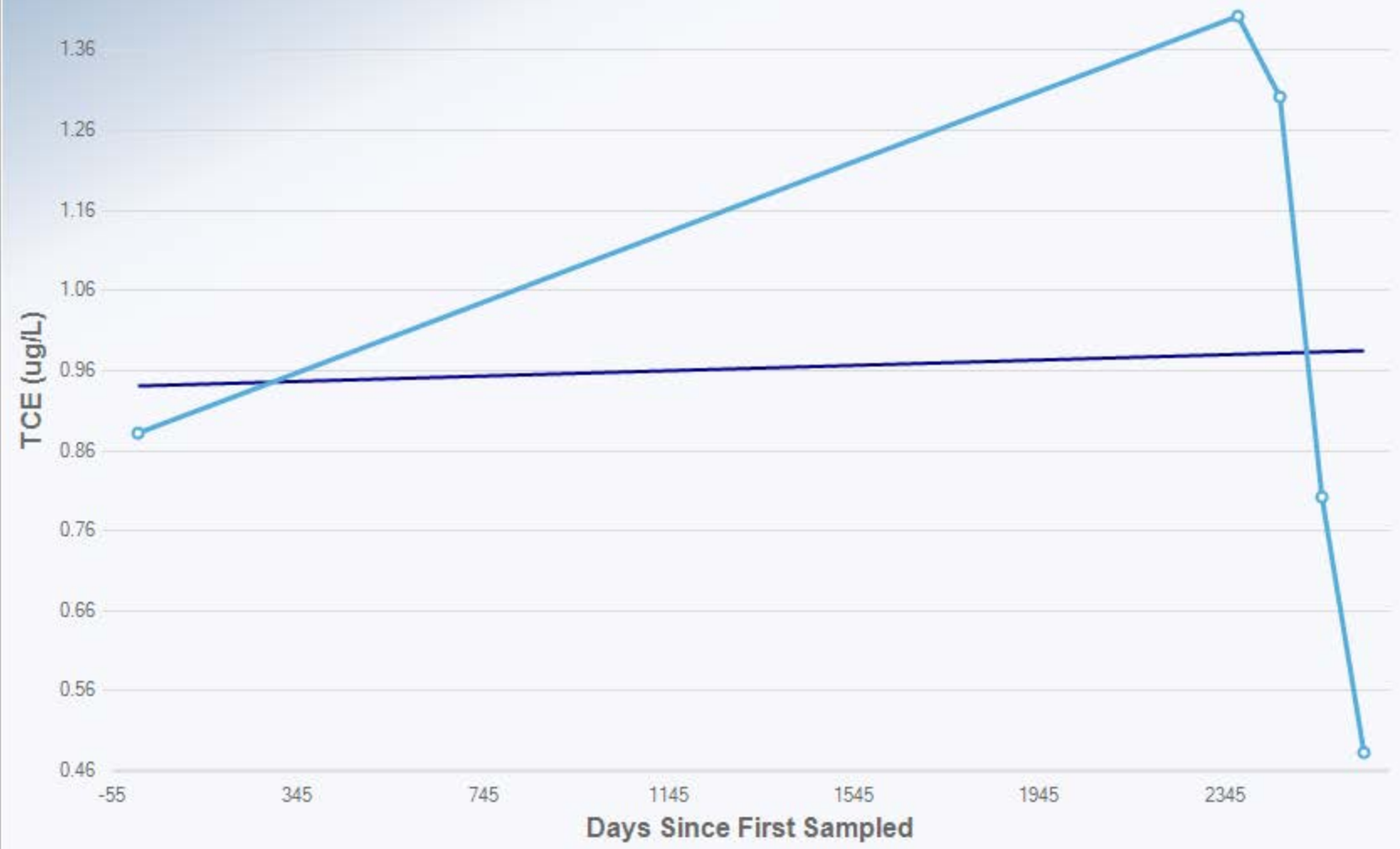
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-1.5159
M-K Test Value (S)	-7
Tabulated p-value	0.1170
Approximate p-value	0.0648

OLS Regression Line (Blue)

OLS Regression Slope	-0.0001
OLS Regression Intercept	0.6691

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-GV-125 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.9388

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-HG-147 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

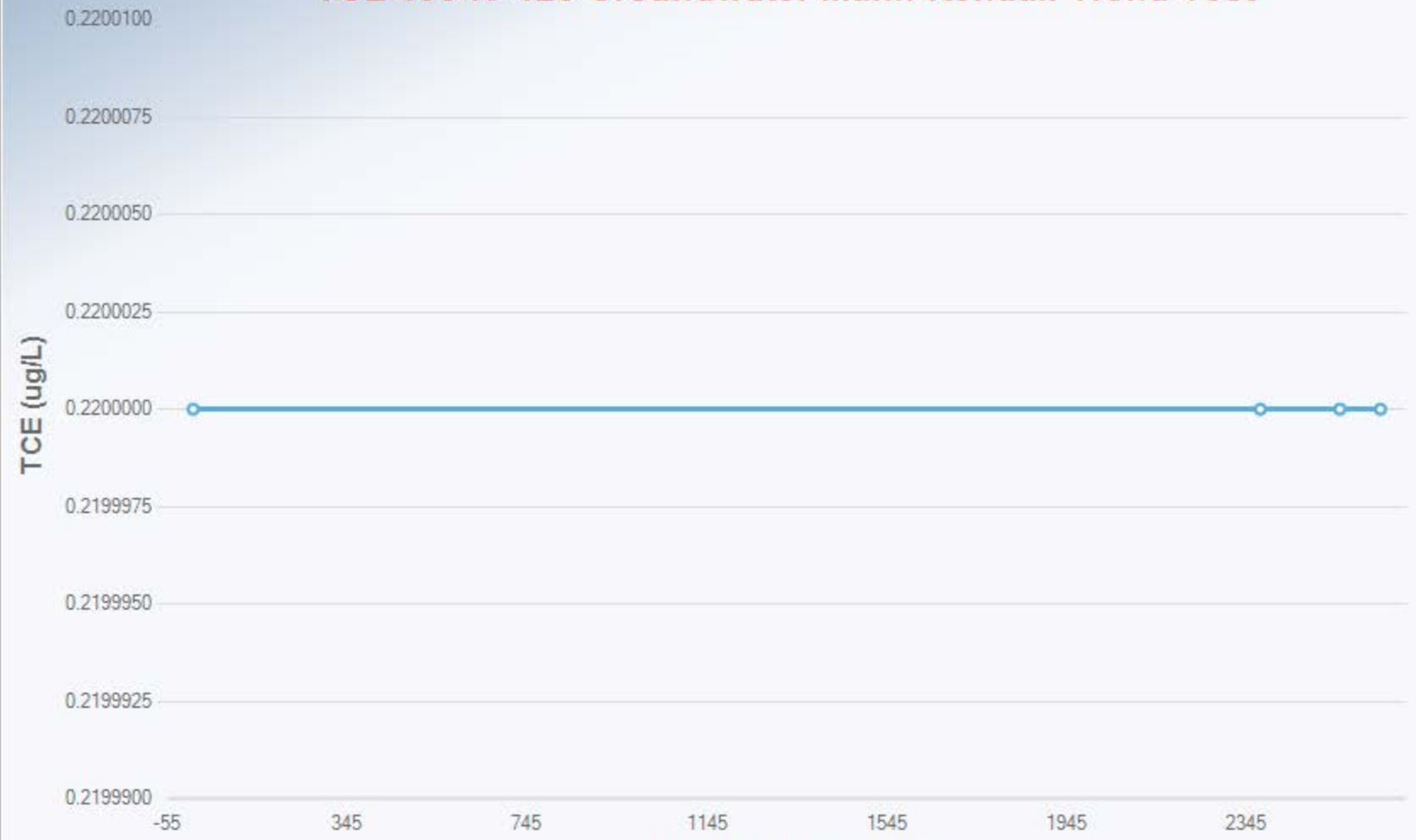
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0006
OLS Regression Intercept	1.7864

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-IV-123 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	0.0000
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.6250
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.2200

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-JV-150 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-0.0004
OLS Regression Intercept	1.4969

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-EV-131 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0894
OLS Regression Intercept	506.0274

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-FV-131 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-1.5159
M-K Test Value (S)	-7
Tabulated p-value	0.1170
Approximate p-value	0.0648

OLS Regression Line (Blue)

OLS Regression Slope	-0.0168
OLS Regression Intercept	105.3338

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-GV-125 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

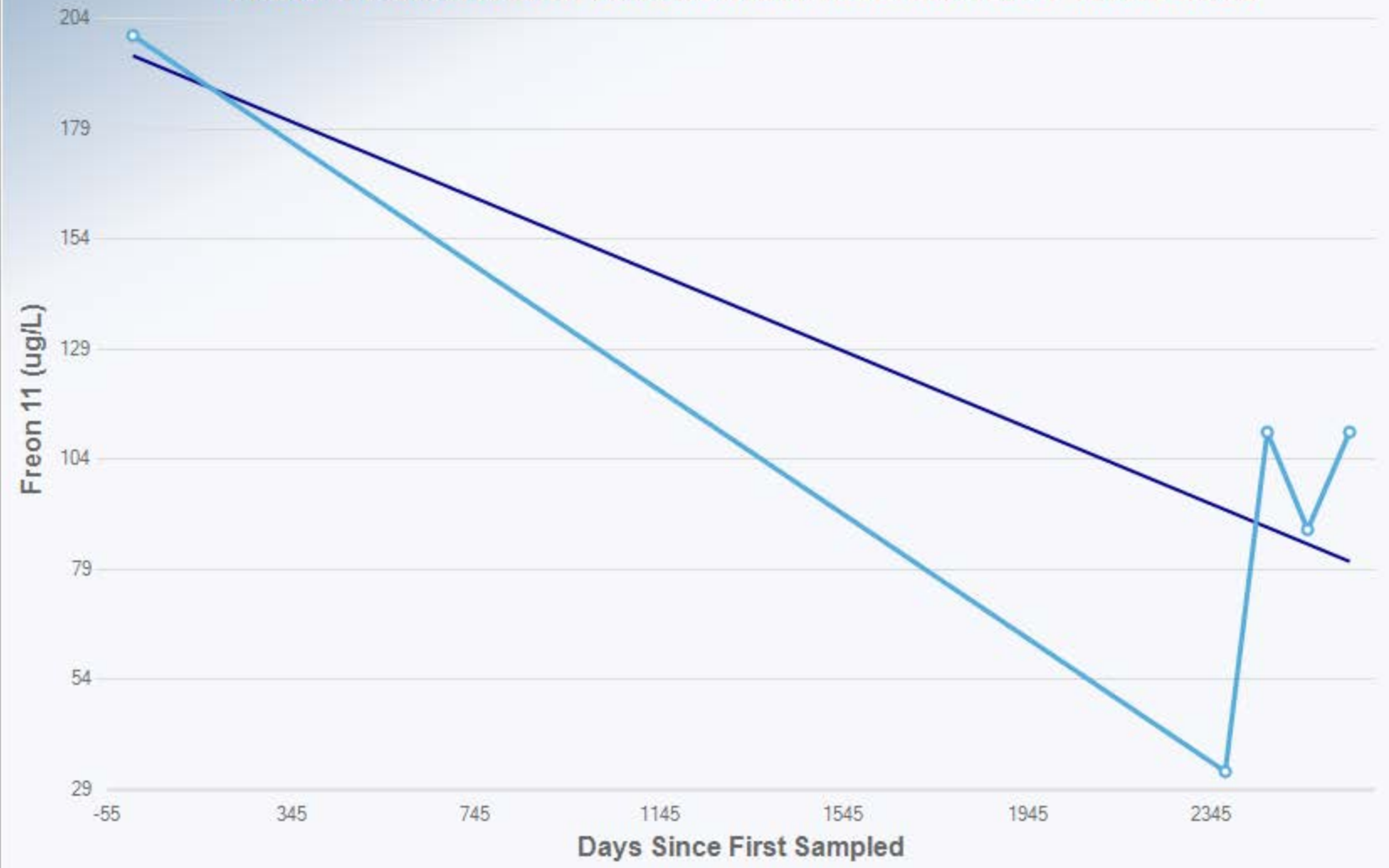
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-0.0068
OLS Regression Intercept	177.6088

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-HV-147 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

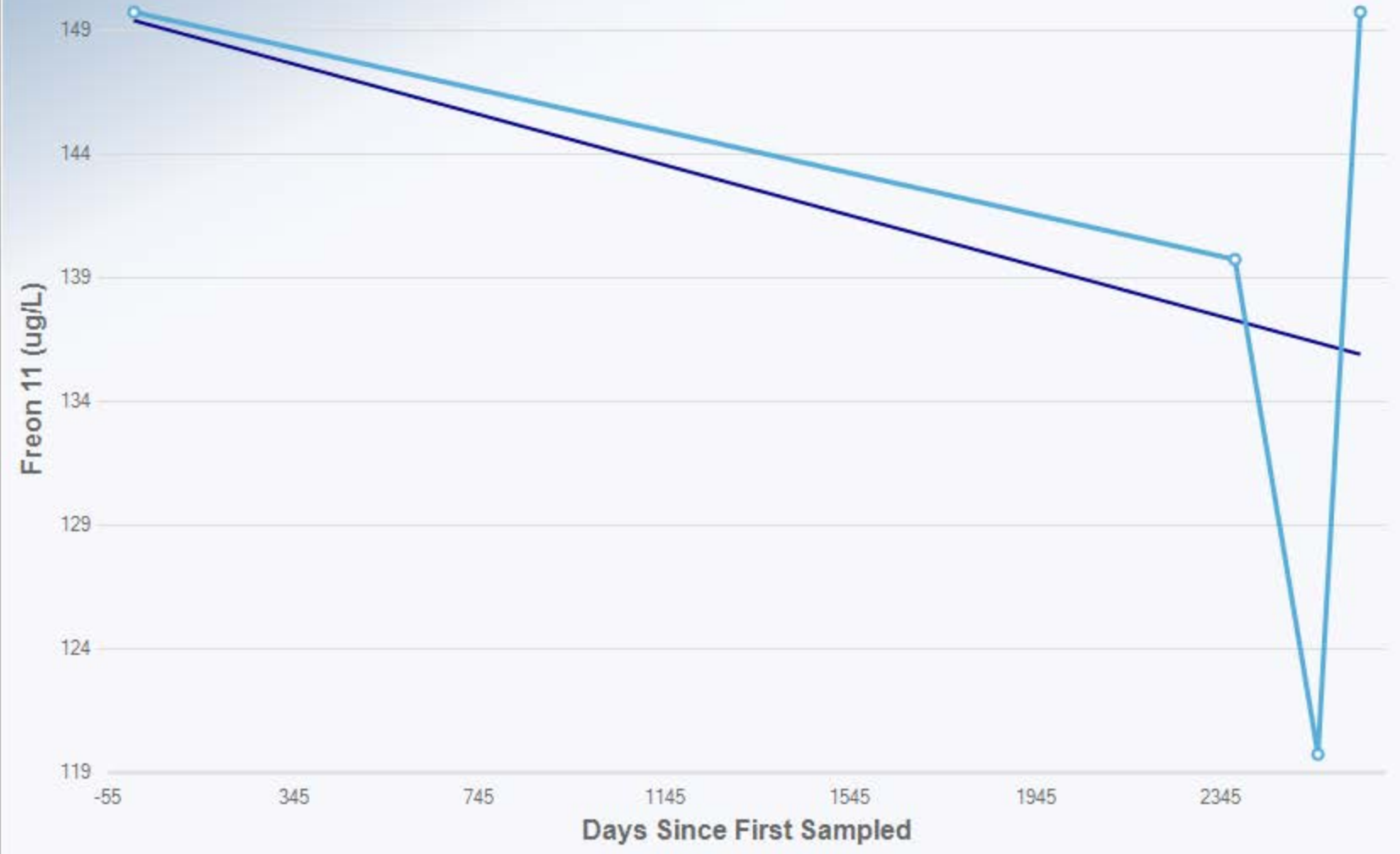
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.0436
OLS Regression Intercept	195.5450

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-IV-123 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.7689
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.6250
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.0051
OLS Regression Intercept	149.6853

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-JV-150 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.5053
M-K Test Value (S)	3
Tabulated p-value	0.4080
Approximate p-value	0.3067

OLS Regression Line (Blue)

OLS Regression Slope	-0.0755
OLS Regression Intercept	577.4201

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-EV-131 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

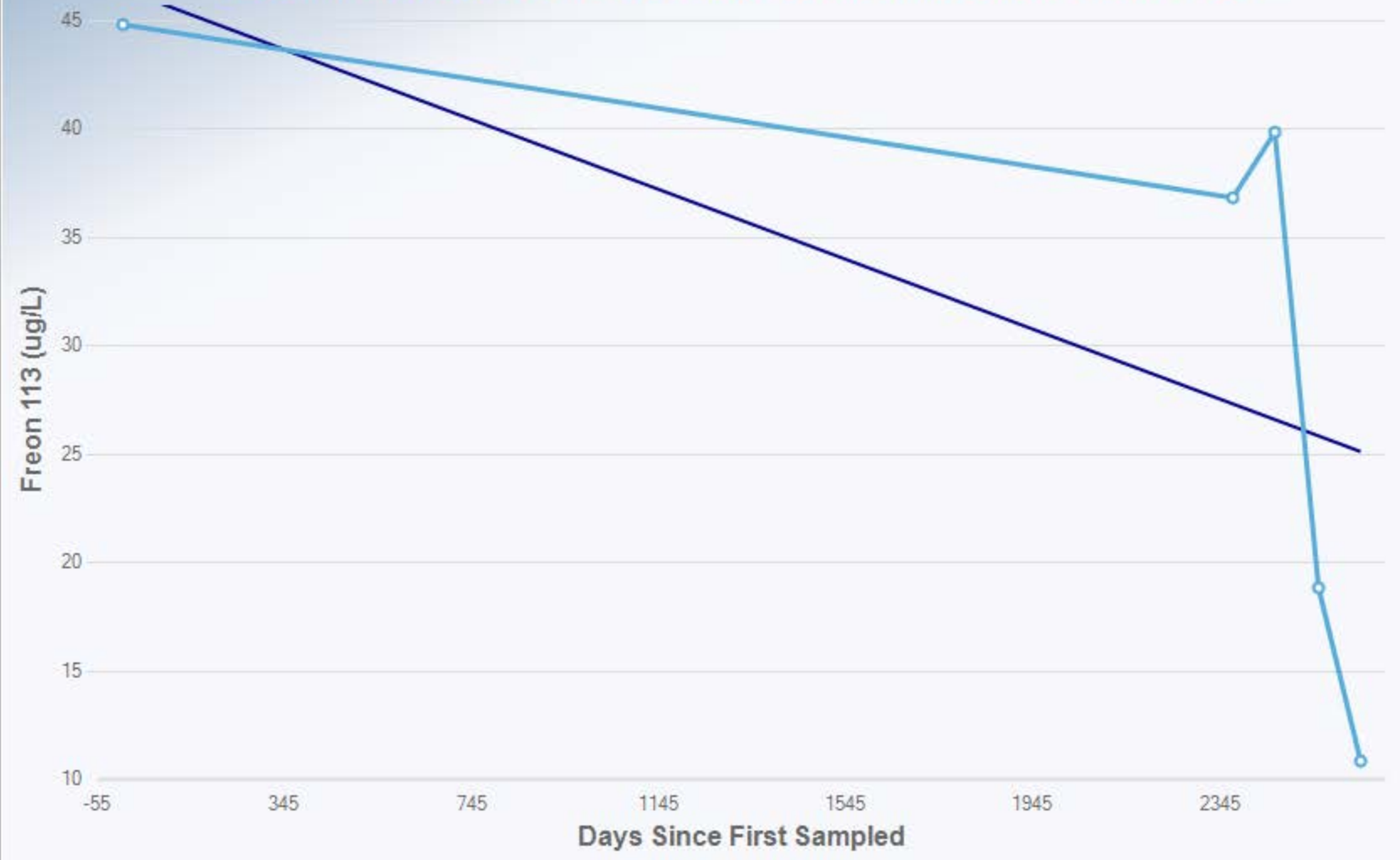
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0334
OLS Regression Intercept	146.0673

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-FV-131 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.7146
M-K Test Value (S)	-8
Tabulated p-value	0.0420
Approximate p-value	0.0432

OLS Regression Line (Blue)

OLS Regression Slope	-0.0081
OLS Regression Intercept	46.6462

Statistically significant evidence of a decreasing trend at the specified level of significance.

Freon 113 400-GV-125 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

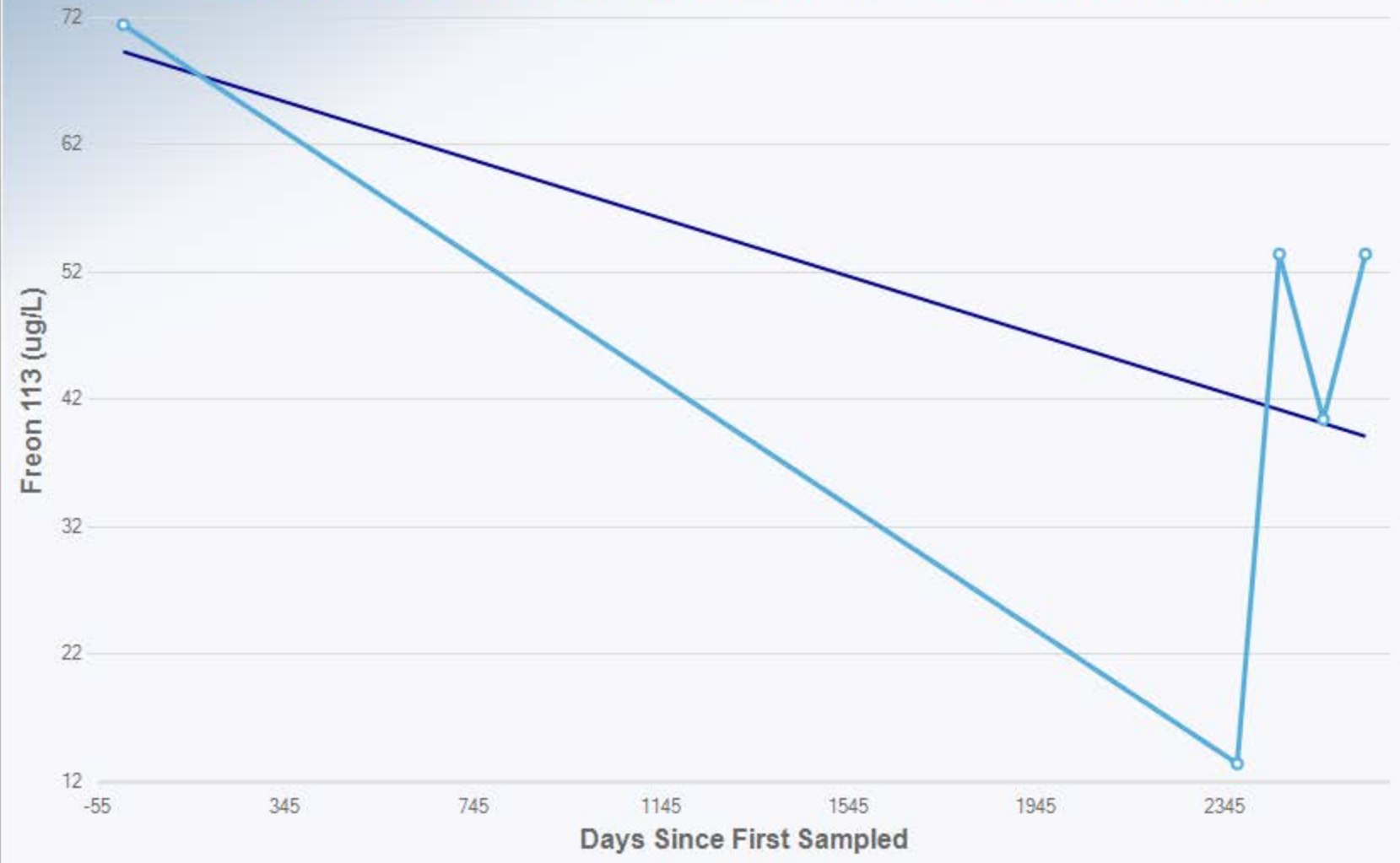
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-0.0002
OLS Regression Intercept	48.4859

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-HV-147 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.0114
OLS Regression Intercept	68.8950

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-IV-123 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-0.3397
M-K Test Value (S)	-2
Tabulated p-value	0.3750
Approximate p-value	0.3670

OLS Regression Line (Blue)

OLS Regression Slope	-0.0005
OLS Regression Intercept	4.1884

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-JV-150 Groundwater Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0180
OLS Regression Intercept	125.1318

Insufficient statistical evidence of a significant trend at the specified level of significance.

	A	B	C	D	E	F	G	H
1				Mann-Kendall Trend Test Analysis				
2			User Selected Options					
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 2:41:40 PM				
4			From File	MK_Input.xls				
5			Full Precision	OFF				
6			Confidence Coefficient	0.95				
7			Level of Significance	0.05				
8								
9			**NDMA_EV**					
10								
11			**General Statistics**					
12			Number of Events Reported (m)		5			
13			Number of Missing Events		0			
14			Number or Reported Events Used		5			
15			Number Values Reported (n)		5			
16			Minimum		0.62			
17			Maximum		1.38			
18			Mean		0.854			
19			Geometric Mean		0.817			
20			Median		0.78			
21			Standard Deviation		0.309			
22			Coefficient of Variation		0.362			
23								
24			**Mann-Kendall Test**					
25			M-K Test Value (S)		-2			
26			Tabulated p-value		0.408			
27			Standard Deviation of S		4.082			
28			Standardized Value of S		-0.245			
29			Approximate p-value		0.403			
30								
31	**Insufficient evidence to identify a significant**							
32	**trend at the specified level of significance.**							

	A	B	C	D	E	F	G	H
1				Ordinary Least Squares Linear Regression Output Sheet				
2		User Selected Options						
3		Date/Time of Computation		ProUCL 5.2 5/15/2025 2:28:48 PM				
4		From File		MK_Input.xls				
5		Full Precision		OFF				
6								
7		Display Limits		False				
8		Display Regresion Diagnostics		False				
9		Display Regresion Tables		True				
10		Title For Y vs X Plots		Classical Regression				
11		nfidence Level for Regression Line		0.95				
12		Display Confidence Band		True				
13		Display Prediction Band		True				
14								
15								
16			Dependendant Variable (Y-Data)		NDMA_EV			
17			Number Reported (Y values)		5			
18			Independent Variable (x-data)		Date_GW			
19			Number Reported (x-values)		5			
20								
21								
22			Regression Estimates and Inference Table					
23	Parameter	Estimates	Std. Error	T-values	p-values			
24	intercept	0.618	7.007	0.0882	0.935			
25	Date_GW	5.2468E-6	1.5581E-4	0.0337	0.975			
26								
27			OLS ANOVA Table					
28		Source of Variation		SS	DOF	MS	F-Value	P-Value
29		Regression		1.4460E-4	1	1.4460E-4	0.00113	0.9753
30		Error		0.383	3	0.128		
31		Total		0.383	4			
32								
33				R Square	3.7783E-4			
34				Adjusted R Square	0			
35				Sqrt(MSE) = Scale	0.357			
36								
37			Regression Table					
38	Obs	Y Vector	Yhat	Residuals	Res/Scale			
39	1	0.85	0.843	0.0067	0.0188			
40	2	0.64	0.856	-0.216	-0.605			
41	3	0.78	0.856	-0.0764	-0.214			
42	4	1.38	0.857	0.523	1.465			
43	5	0.62	0.858	-0.238	-0.665			
44								

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 2:43:49 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			NDMA_FV				
10							
11			General Statistics				
12			Number of Events Reported (m)	5			
13			Number of Missing Events	0			
14			Number or Reported Events Used	5			
15			Number Values Reported (n)	5			
16			Minimum	0.32			
17			Maximum	1.4			
18			Mean	0.852			
19			Geometric Mean	0.747			
20			Median	0.99			
21			Standard Deviation	0.437			
22			Coefficient of Variation	0.513			
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)	-8			
26			Tabulated p-value	0.042			
27			Standard Deviation of S	4.082			
28			Standardized Value of S	-1.715			
29			Approximate p-value	0.0432			
30							
31	Statistically significant evidence of a decreasing						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 2:45:59 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			NDMA_GV				
10							
11			General Statistics				
12			Number of Events Reported (m)	5			
13			Number of Missing Events	0			
14			Number or Reported Events Used	5			
15			Number Values Reported (n)	5			
16			Minimum	0.83			
17			Maximum	1.65			
18			Mean	1.294			
19			Geometric Mean	1.243			
20			Median	1.44			
21			Standard Deviation	0.388			
22			Coefficient of Variation	0.3			
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)	-2			
26			Tabulated p-value	0.408			
27			Standard Deviation of S	4.082			
28			Standardized Value of S	-0.245			
29			Approximate p-value	0.403			
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 2:48:13 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			NDMA_HV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		48		
17			Maximum		164.6		
18			Mean		128.8		
19			Geometric Mean		118.4		
20			Median		136		
21			Standard Deviation		47.13		
22			Coefficient of Variation		0.366		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		8		
26			Tabulated p-value		0.042		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		1.715		
29			Approximate p-value		0.0432		
30							
31	Statistically significant evidence of an increasing						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 2:50:29 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			NDMA_IV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		1		
14			Number or Reported Events Used		4		
15			Number Values Reported (n)		5		
16			Number Values Missing		1		
17			Number Values Used		4		
18			Minimum		0.0047		
19			Maximum		0.036		
20			Mean		0.0139		
21			Geometric Mean		0.00949		
22			Median		0.0074		
23			Standard Deviation		0.015		
24			Coefficient of Variation		1.078		
25							
26			Mann-Kendall Test				
27			M-K Test Value (S)		-4		
28			Tabulated p-value		0.167		
29			Standard Deviation of S		2.944		
30			Standardized Value of S		-1.019		
31			Approximate p-value		0.154		
32							
33	Insufficient evidence to identify a significant						
34	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 2:53:14 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			NDMA_JV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		1.66		
17			Maximum		3.9		
18			Mean		2.196		
19			Geometric Mean		2.07		
20			Median		1.87		
21			Standard Deviation		0.958		
22			Coefficient of Variation		0.436		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-4		
26			Tabulated p-value		0.242		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-0.735		
29			Approximate p-value		0.231		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 4/9/2025 6:50:38 AM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			TCE_400EV131				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		0.26		
17			Maximum		13		
18			Mean		3.352		
19			Geometric Mean		1.397		
20			Median		1.1		
21			Standard Deviation		5.408		
22			Coefficient of Variation		1.613		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-3		
26			Tabulated p-value		0.408		
27			Standard Deviation of S		3.958		
28			Standardized Value of S		-0.505		
29			Approximate p-value		0.307		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 4/9/2025 6:58:57 AM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			**TCE_400FV131**				
10							
11			**General Statistics**				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		0.22		
17			Maximum		0.65		
18			Mean		0.516		
19			Geometric Mean		0.482		
20			Median		0.55		
21			Standard Deviation		0.177		
22			Coefficient of Variation		0.342		
23							
24			**Mann-Kendall Test**				
25			M-K Test Value (S)		-7		
26			Tabulated p-value		0.117		
27			Standard Deviation of S		3.958		
28			Standardized Value of S		-1.516		
29			Approximate p-value		0.0648		
30							
31	**Insufficient evidence to identify a significant**						
32	**trend at the specified level of significance.**						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 4/9/2025 7:01:14 AM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			TCE_400GV125				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		0.48		
17			Maximum		1.4		
18			Mean		0.972		
19			Geometric Mean		0.907		
20			Median		0.88		
21			Standard Deviation		0.378		
22			Coefficient of Variation		0.389		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-6		
26			Tabulated p-value		0.117		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-1.225		
29			Approximate p-value		0.11		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 4/9/2025 7:03:40 AM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			TCE_400HG147				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		0.22		
17			Maximum		1.8		
18			Mean		0.584		
19			Geometric Mean		0.403		
20			Median		0.31		
21			Standard Deviation		0.681		
22			Coefficient of Variation		1.166		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-2		
26			Tabulated p-value		0.408		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-0.245		
29			Approximate p-value		0.403		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 4/9/2025 7:05:45 AM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			**TCE_400IV123**				
10							
11			**General Statistics**				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		1		
14			Number or Reported Events Used		4		
15			Number Values Reported (n)		5		
16			Number Values Missing		1		
17			Number Values Used		4		
18			Minimum		0.22		
19			Maximum		0.22		
20			Mean		0.22		
21			Geometric Mean		0.22		
22			Median		0.22		
23			Standard Deviation		0		
24			Coefficient of Variation		N/A		
25							
26			**Mann-Kendall Test**				
27			M-K Test Value (S)		0		
28			Tabulated p-value		0.625		
29			Standard Deviation of S		0		
30			Standard Deviation of S		N/A		
31			Approximate p-value		N/A		
32							
33	**Insufficient evidence to identify a significant**						
34	**trend at the specified level of significance.**						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 4/9/2025 7:08:32 AM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			**TCE_400JV150**				
10							
11			**General Statistics**				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		0.39		
17			Maximum		1.5		
18			Mean		0.686		
19			Geometric Mean		0.598		
20			Median		0.54		
21			Standard Deviation		0.463		
22			Coefficient of Variation		0.675		
23							
24			**Mann-Kendall Test**				
25			M-K Test Value (S)		-4		
26			Tabulated p-value		0.242		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-0.735		
29			Approximate p-value		0.231		
30							
31	**Insufficient evidence to identify a significant**						
32	**trend at the specified level of significance.**						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 3:33:38 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			F11_EV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		84		
17			Maximum		520		
18			Mean		326.8		
19			Geometric Mean		277.9		
20			Median		370		
21			Standard Deviation		166.6		
22			Coefficient of Variation		0.51		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-2		
26			Tabulated p-value		0.408		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-0.245		
29			Approximate p-value		0.403		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				**Mann-Kendall Trend Test Analysis**			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 3:35:33 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			**F11_FV**				
10							
11			**General Statistics**				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		6.9		
17			Maximum		100		
18			Mean		71.58		
19			Geometric Mean		51.56		
20			Median		96		
21			Standard Deviation		40.84		
22			Coefficient of Variation		0.57		
23							
24			**Mann-Kendall Test**				
25			M-K Test Value (S)		-7		
26			Tabulated p-value		0.117		
27			Standard Deviation of S		3.958		
28			Standardized Value of S		-1.516		
29			Approximate p-value		0.0648		
30							
31	**Insufficient evidence to identify a significant**						
32	**trend at the specified level of significance.**						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2		User Selected Options					
3		Date/Time of Computation		ProUCL 5.2 5/15/2025 3:37:16 PM			
4		From File		MK_Input.xls			
5		Full Precision		OFF			
6		Confidence Coefficient		0.95			
7		Level of Significance		0.05			
8							
9		**F11_GV**					
10							
11		**General Statistics**					
12		Number of Events Reported (m)			5		
13		Number of Missing Events			0		
14		Number or Reported Events Used			5		
15		Number Values Reported (n)			5		
16		Minimum			100		
17		Maximum			220		
18		Mean			164		
19		Geometric Mean			157.6		
20		Median			170		
21		Standard Deviation			49.3		
22		Coefficient of Variation			0.301		
23							
24		**Mann-Kendall Test**					
25		M-K Test Value (S)			-6		
26		Tabulated p-value			0.117		
27		Standard Deviation of S			4.082		
28		Standardized Value of S			-1.225		
29		Approximate p-value			0.11		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 3:39:35 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			**F11_HV**				
10							
11			**General Statistics**				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		33		
17			Maximum		200		
18			Mean		108.2		
19			Geometric Mean		93.19		
20			Median		110		
21			Standard Deviation		60.2		
22			Coefficient of Variation		0.556		
23							
24			**Mann-Kendall Test**				
25			M-K Test Value (S)		-1		
26			Tabulated p-value		0.592		
27			Standard Deviation of S		3.958		
28			Standardized Value of S		0		
29			Approximate p-value		0.5		
30							
31	**Insufficient evidence to identify a significant**						
32	**trend at the specified level of significance.**						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 3:41:59 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			F11_IV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		1		
14			Number or Reported Events Used		4		
15			Number Values Reported (n)		5		
16			Number Values Missing		1		
17			Number Values Used		4		
18			Minimum		120		
19			Maximum		150		
20			Mean		140		
21			Geometric Mean		139.4		
22			Median		145		
23			Standard Deviation		14.14		
24			Coefficient of Variation		0.101		
25							
26			Mann-Kendall Test				
27			M-K Test Value (S)		-1		
28			Tabulated p-value		0.625		
29			Standard Deviation of S		2.769		
30			Standardized Value of S		0		
31			Approximate p-value		0.5		
32							
33	Insufficient evidence to identify a significant						
34	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 3:46:37 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			**F11_JV**				
10							
11			**General Statistics**				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		120		
17			Maximum		680		
18			Mean		426		
19			Geometric Mean		324.2		
20			Median		600		
21			Standard Deviation		281		
22			Coefficient of Variation		0.66		
23							
24			**Mann-Kendall Test**				
25			M-K Test Value (S)		3		
26			Tabulated p-value		0.408		
27			Standard Deviation of S		3.958		
28			Standardized Value of S		0.505		
29			Approximate p-value		0.307		
30							
31	**Insufficient evidence to identify a significant**						
32	**trend at the specified level of significance.**						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/27/2025 12:32:39 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			F113_EV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		13		
17			Maximum		150		
18			Mean		79		
19			Geometric Mean		60.85		
20			Median		88		
21			Standard Deviation		50.56		
22			Coefficient of Variation		0.64		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-2		
26			Tabulated p-value		0.408		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-0.245		
29			Approximate p-value		0.403		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/27/2025 12:37:29 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			F113_FV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		11		
17			Maximum		45		
18			Mean		30.4		
19			Geometric Mean		26.84		
20			Median		37		
21			Standard Deviation		14.62		
22			Coefficient of Variation		0.481		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-8		
26			Tabulated p-value		0.042		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-1.715		
29			Approximate p-value		0.0432		
30							
31	Statistically significant evidence of a decreasing						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/27/2025 12:40:15 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			F113_GV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		36		
17			Maximum		59		
18			Mean		48		
19			Geometric Mean		47.22		
20			Median		47		
21			Standard Deviation		9.566		
22			Coefficient of Variation		0.199		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-6		
26			Tabulated p-value		0.117		
27			Standard Deviation of S		4.082		
28			Standardized Value of S		-1.225		
29			Approximate p-value		0.11		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/27/2025 12:42:06 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			F113_HV				
10							
11			General Statistics				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		0		
14			Number or Reported Events Used		5		
15			Number Values Reported (n)		5		
16			Minimum		13		
17			Maximum		71		
18			Mean		46		
19			Geometric Mean		40.1		
20			Median		53		
21			Standard Deviation		21.49		
22			Coefficient of Variation		0.467		
23							
24			Mann-Kendall Test				
25			M-K Test Value (S)		-1		
26			Tabulated p-value		0.592		
27			Standard Deviation of S		3.958		
28			Standardized Value of S		0		
29			Approximate p-value		0.5		
30							
31	Insufficient evidence to identify a significant						
32	trend at the specified level of significance.						

	A	B	C	D	E	F	G
1				Mann-Kendall Trend Test Analysis			
2			User Selected Options				
3			Date/Time of Computation	ProUCL 5.2 5/27/2025 12:44:04 PM			
4			From File	MK_Input.xls			
5			Full Precision	OFF			
6			Confidence Coefficient	0.95			
7			Level of Significance	0.05			
8							
9			**F113_IV**				
10							
11			**General Statistics**				
12			Number of Events Reported (m)		5		
13			Number of Missing Events		1		
14			Number or Reported Events Used		4		
15			Number Values Reported (n)		5		
16			Number Values Missing		1		
17			Number Values Used		4		
18			Minimum		2.7		
19			Maximum		4.2		
20			Mean		3.325		
21			Geometric Mean		3.282		
22			Median		3.2		
23			Standard Deviation		0.634		
24			Coefficient of Variation		0.191		
25							
26			**Mann-Kendall Test**				
27			M-K Test Value (S)		-2		
28			Tabulated p-value		0.375		
29			Standard Deviation of S		2.944		
30			Standardized Value of S		-0.34		
31			Approximate p-value		0.367		
32							
33	Insufficient evidence to identify a significant						
34	trend at the specified level of significance.						

	Mann-Kendall Trend Test Analysis	
User Selected Options		
Date/Time of Computation	ProUCL 5.2 5/27/2025 12:46:50 PM	
From File	MK_Input.xls	
Full Precision	OFF	
Confidence Coefficient	0.95	
Level of Significance	0.05	

F113_JV

General Statistics

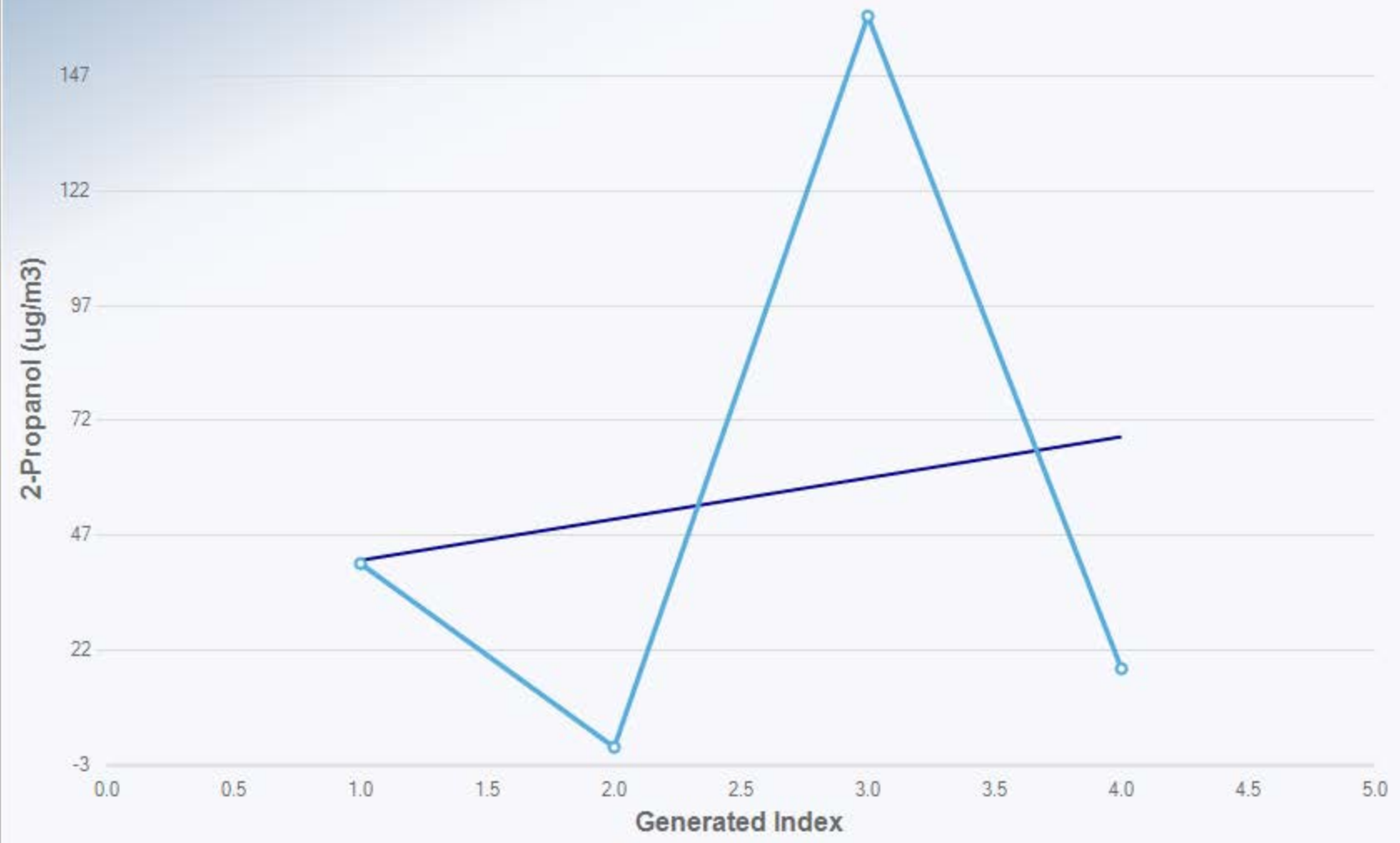
Number of Events Reported (m)	5
Number of Missing Events	0
Number or Reported Events Used	5
Number Values Reported (n)	5
Minimum	30
Maximum	140
Mean	89
Geometric Mean	73.2
Median	110
Standard Deviation	52.73
Coefficient of Variation	0.592

Mann-Kendall Test

M-K Test Value (S)	2
Tabulated p-value	0.408
Standard Deviation of S	4.082
Standardized Value of S	0.245
Approximate p-value	0.403

Insufficient evidence to identify a significant trend at the specified level of significance.

2-Propanol 400-JV-150 at 12.5 ft Soil Vapor Mann-Kendall - DL Reduced



Mann-Kendall Trend Analysis

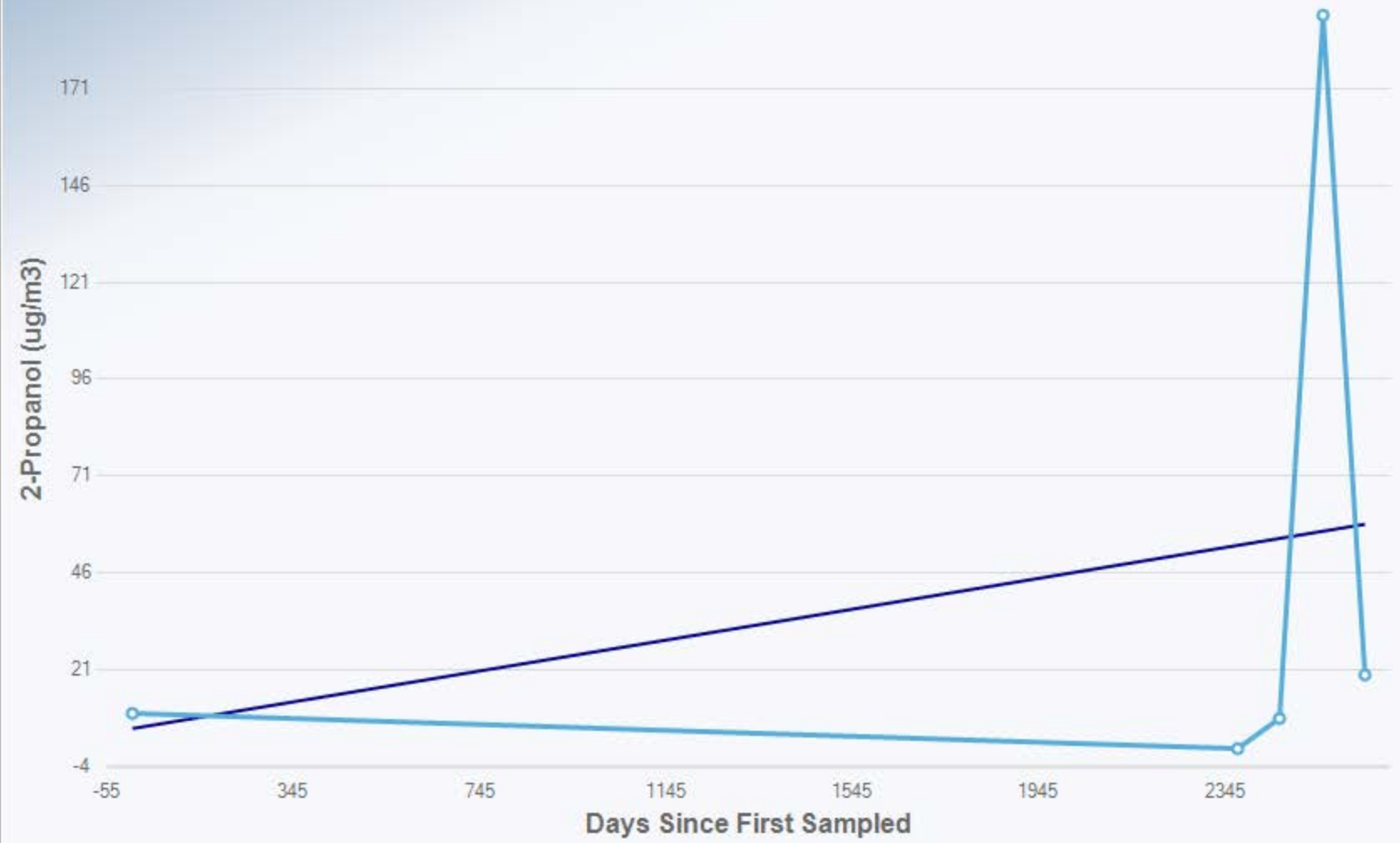
n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.6250
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	9.0020
OLS Regression Intercept	32.4900

Insufficient statistical evidence of a significant trend at the specified level of significance.

2-Propanol 400-SV-07 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.7348
M-K Test Value (S)	4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	0.0199
OLS Regression Intercept	6.0329

Insufficient statistical evidence of a significant trend at the specified level of significance.

1,2,4-Trimethylbenzene 400-SV-03 at 10 ft Soil Vapor Mann-Kendal



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	0.0295
OLS Regression Intercept	7.4252

Insufficient statistical evidence of a significant trend at the specified level of significance.

Benzene 400-SV-09 at 104 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

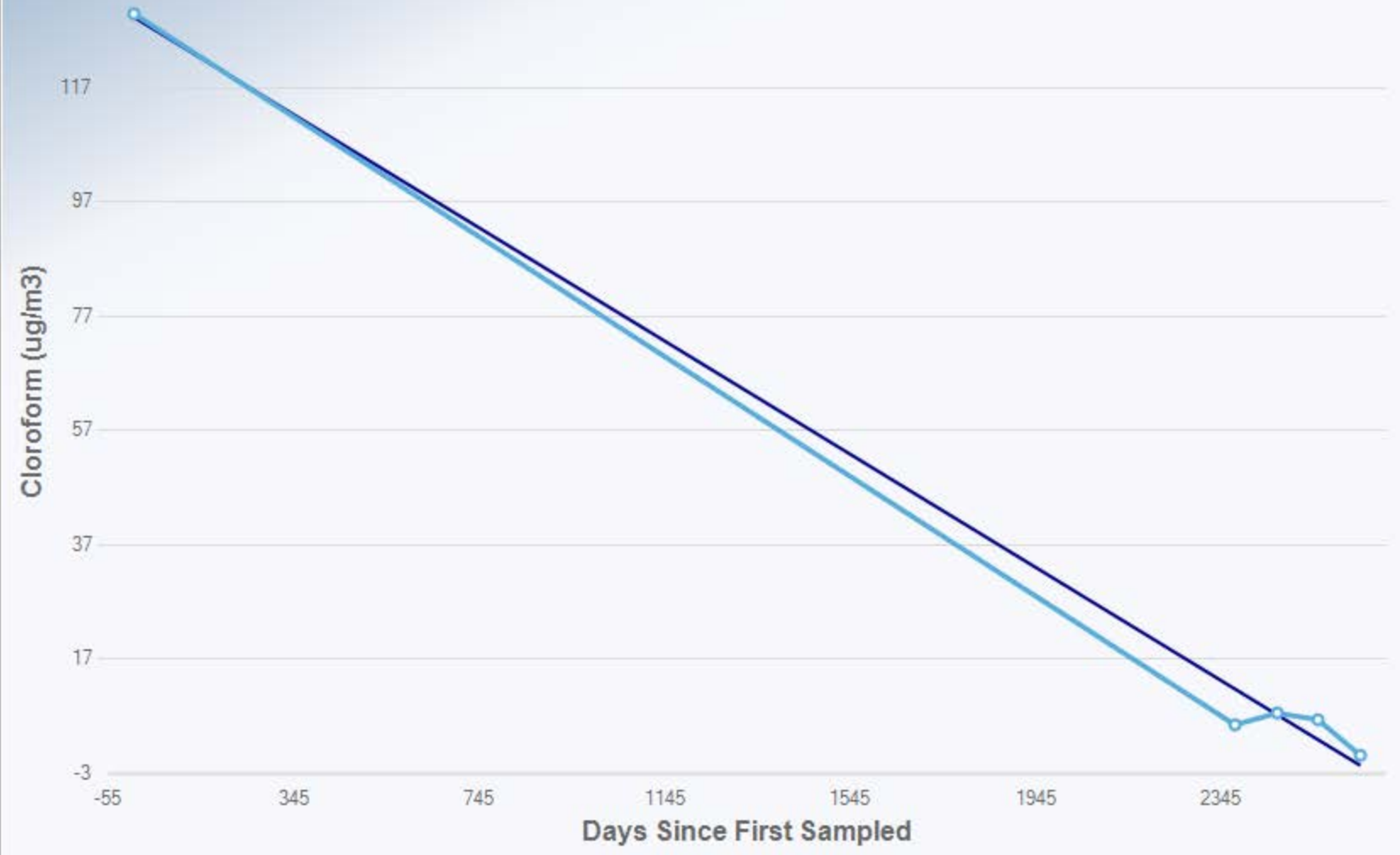
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	0.0040
OLS Regression Intercept	17.2836

Insufficient statistical evidence of a significant trend at the specified level of significance.

Chloroform 400-SV-10 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-0.0496
OLS Regression Intercept	129.5158

Insufficient statistical evidence of a significant trend at the specified level of significance.

Chloroform 400-SV-10 at 100 ft Soil Vapor Mann-Kendall - No NDs > VISLs



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	0.3397
M-K Test Value (S)	2
Tabulated p-value	0.3750
Approximate p-value	0.3670

OLS Regression Line (Blue)

OLS Regression Slope	3.8200
OLS Regression Intercept	9.6000

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-FV-131 at 63 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

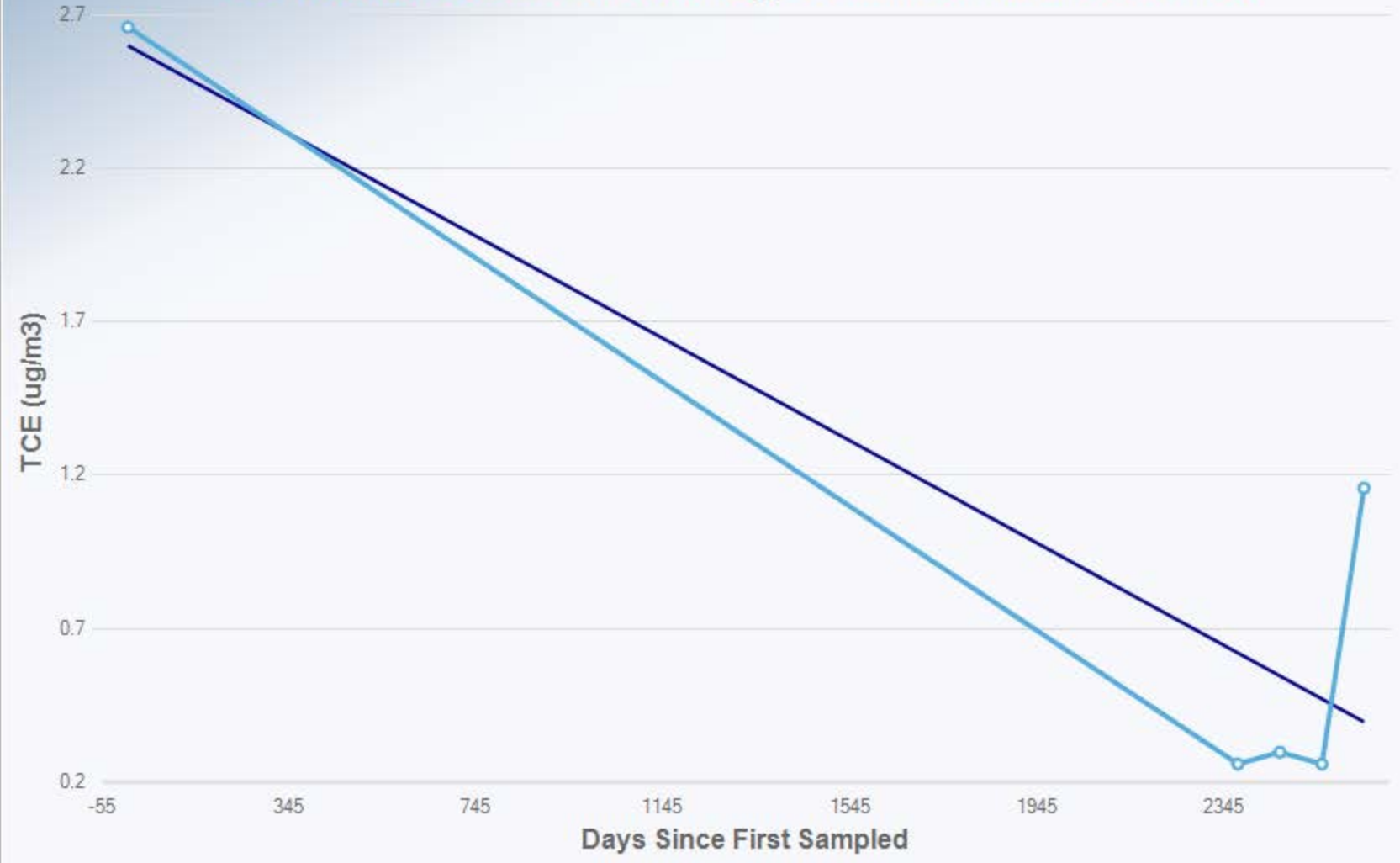
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-1.5159
M-K Test Value (S)	-7
Tabulated p-value	0.1170
Approximate p-value	0.0648

OLS Regression Line (Blue)

OLS Regression Slope	-0.0001
OLS Regression Intercept	0.7449

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-GV-125 at 10 ft Soil Vapor Mann-Kendall Trend Test



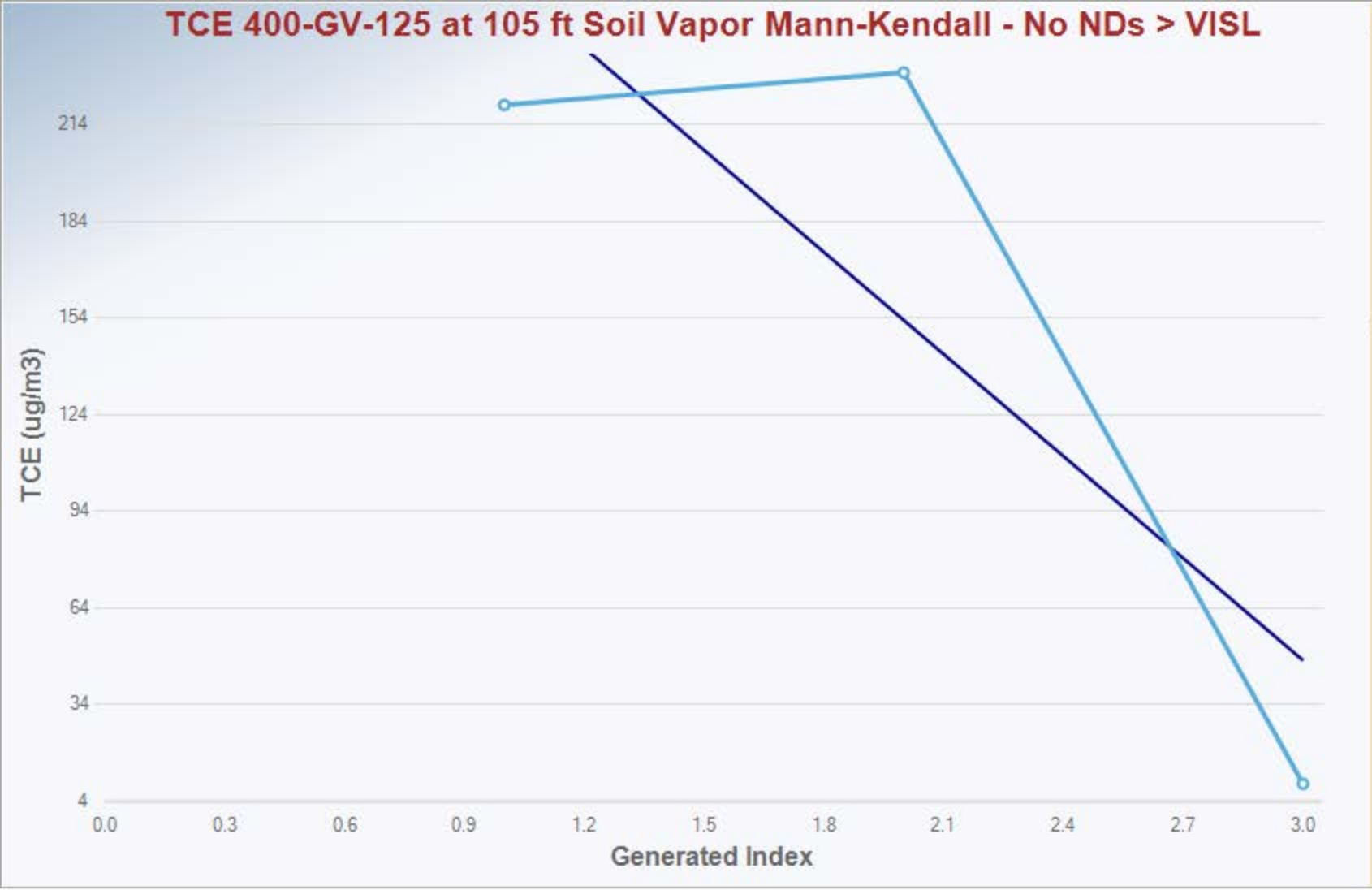
Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.0008
OLS Regression Intercept	2.6388

Insufficient statistical evidence of a significant trend at the specified level of significance.



Mann-Kendall Trend Analysis

n	3
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1.9149
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-105.4000
OLS Regression Intercept	363.8667

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-HV-147 at 95 ft Soil Vapor Mann-Kendall - DL Reduced



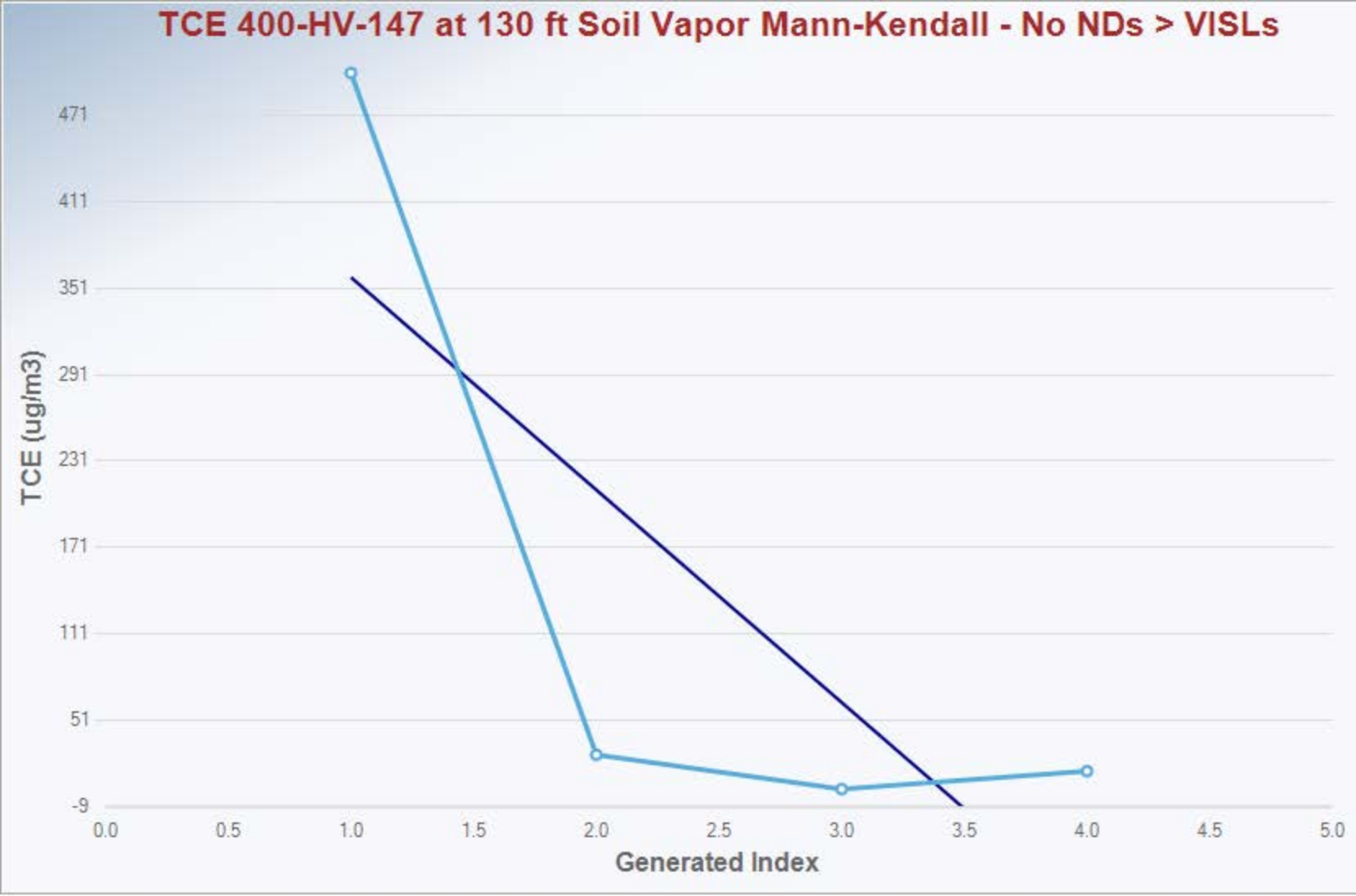
Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	2.2000

Insufficient statistical evidence of a significant trend at the specified level of significance.



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-1.0190
M-K Test Value (S)	-4
Tabulated p-value	0.1670
Approximate p-value	0.1541

OLS Regression Line (Blue)

OLS Regression Slope	-147.5900
OLS Regression Intercept	505.5000

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-IV-123 at 80 ft Soil Vapor Mann-Kendall - No NDs > VISLs



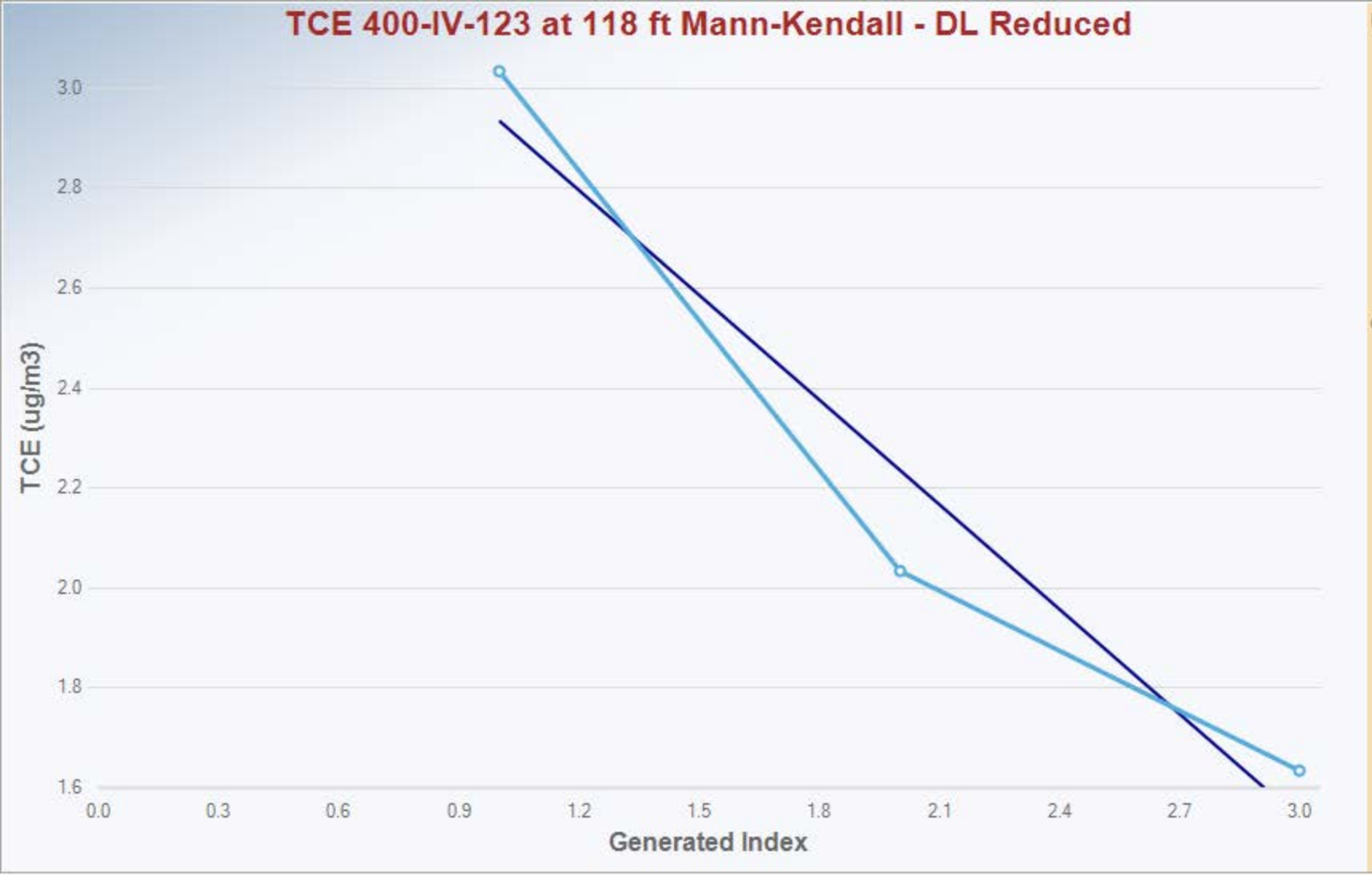
Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-0.3397
M-K Test Value (S)	-2
Tabulated p-value	0.3750
Approximate p-value	0.3670

OLS Regression Line (Blue)

OLS Regression Slope	-253.2000
OLS Regression Intercept	970.0000

Insufficient statistical evidence of a significant trend at the specified level of significance.



Mann-Kendall Trend Analysis

n	3
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1.9149
Standardized Value of S	-1.0445
M-K Test Value (S)	-3
Tabulated p-value	
Approximate p-value	0.1481

OLS Regression Line (Blue)

OLS Regression Slope	-0.7000
OLS Regression Intercept	3.6000

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-JV-150 at 12.5 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

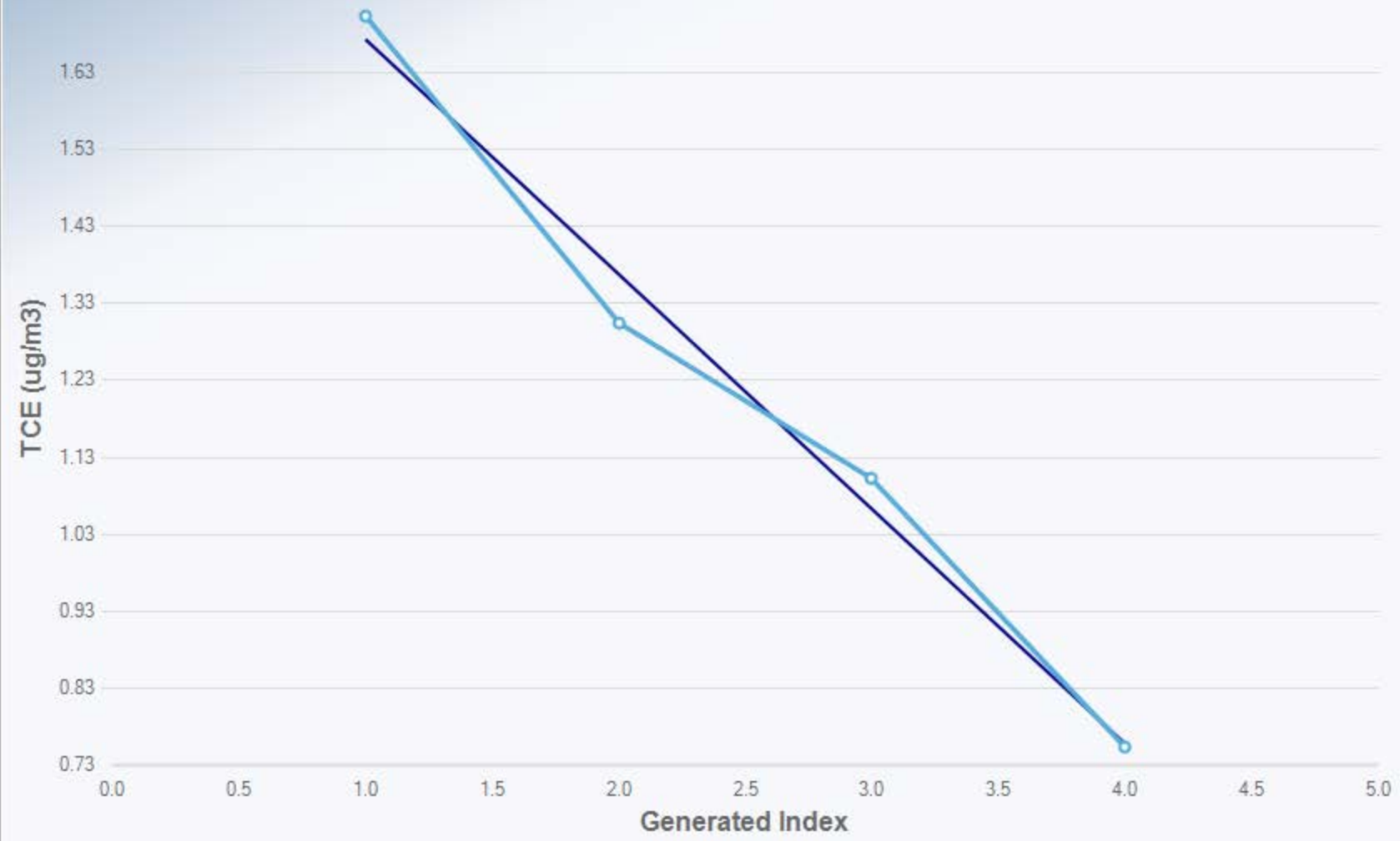
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-2.0212
M-K Test Value (S)	-9
Tabulated p-value	0.0420
Approximate p-value	0.0216

OLS Regression Line (Blue)

OLS Regression Slope	-0.0058
OLS Regression Intercept	14.9290

Statistically significant evidence of a decreasing trend at the specified level of significance.

TCE 400-JV-150 at 100 ft Soil Vapor Mann-Kendall - DL Reduced



Mann-Kendall Trend Analysis

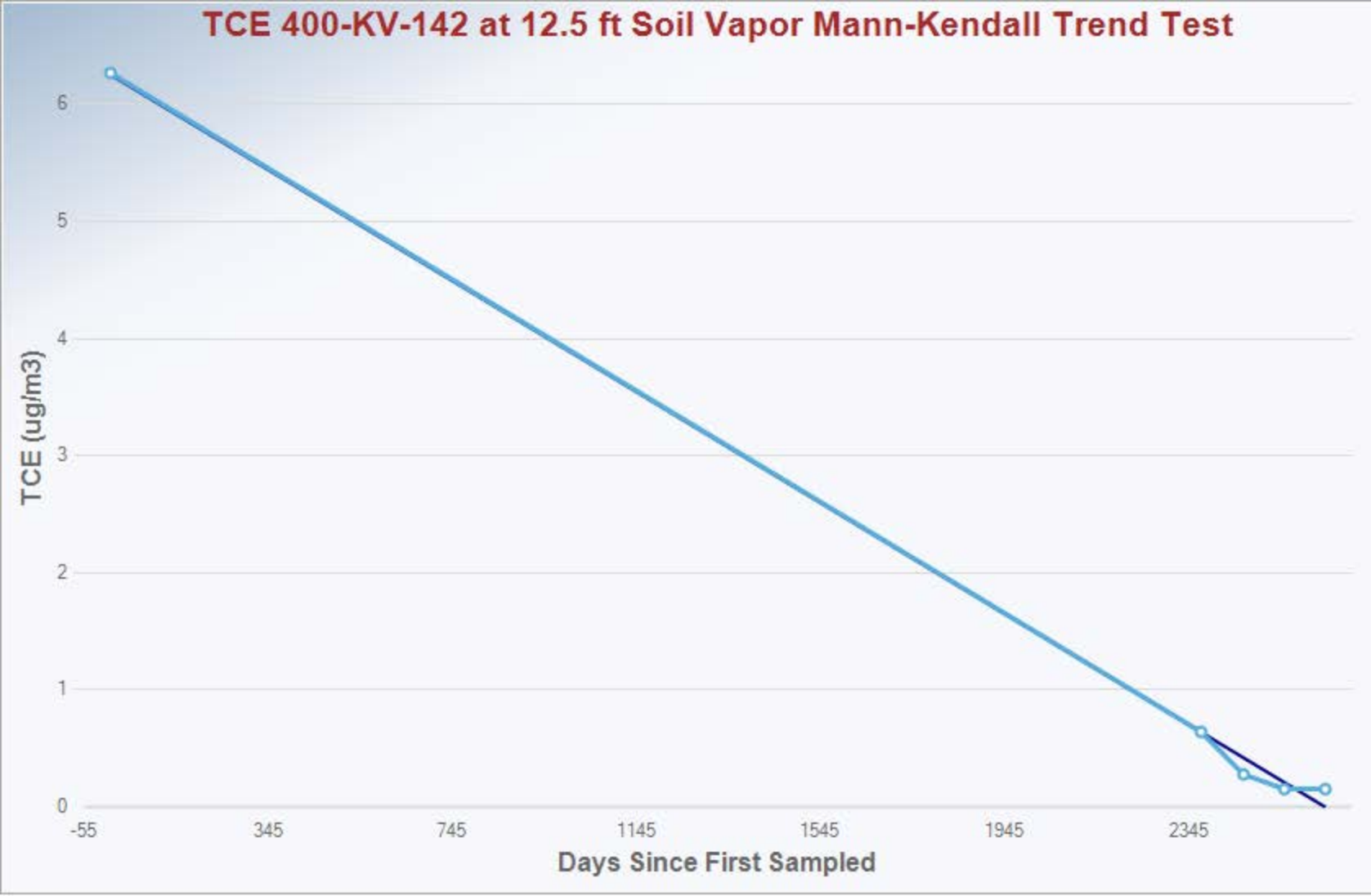
n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-1.6984
M-K Test Value (S)	-6
Tabulated p-value	0.0420
Approximate p-value	0.0447

OLS Regression Line (Blue)

OLS Regression Slope	-0.3050
OLS Regression Intercept	1.9750

Statistically significant evidence of a decreasing trend at the specified level of significance.

TCE 400-KV-142 at 12.5 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

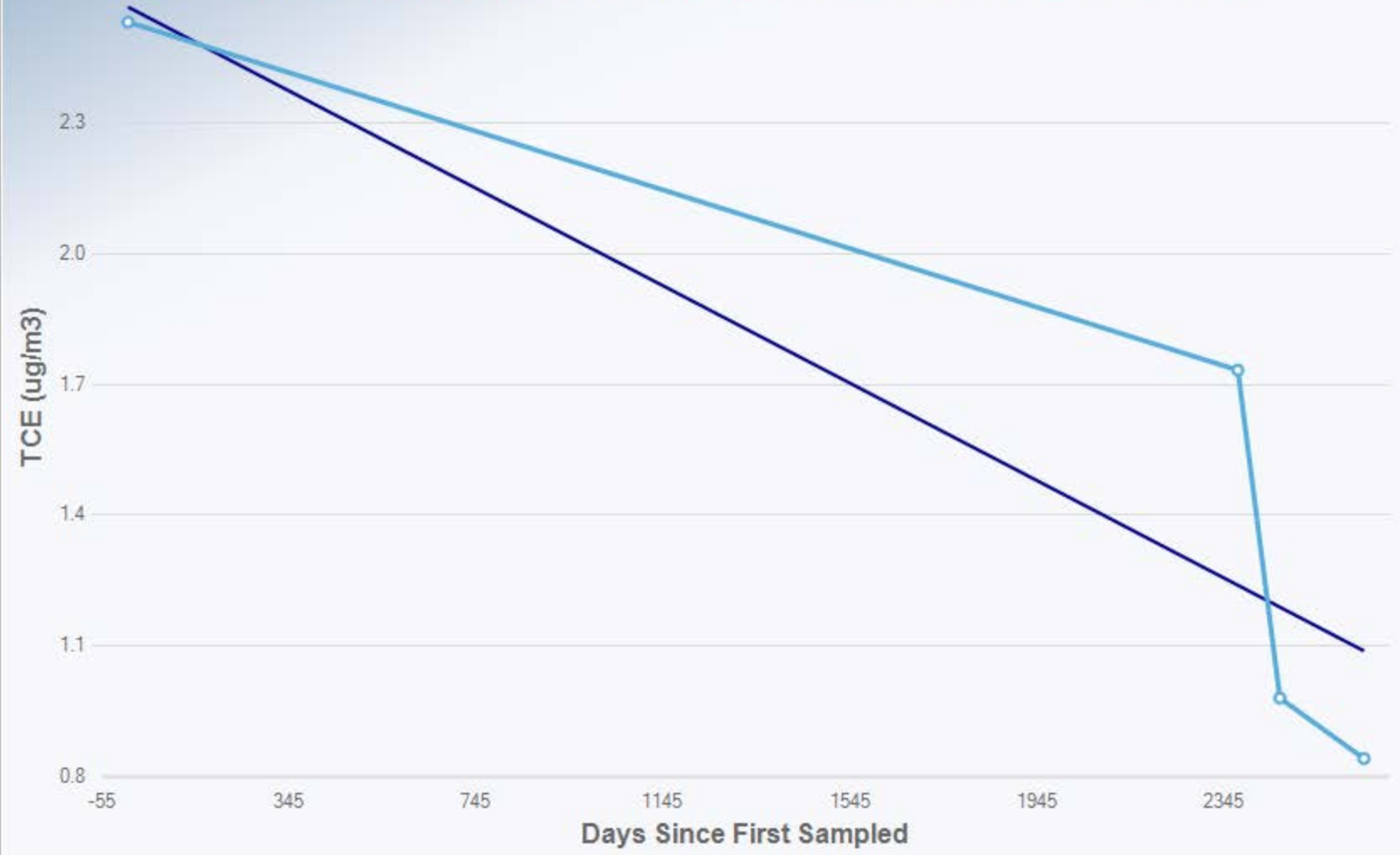
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-2.0212
M-K Test Value (S)	-9
Tabulated p-value	0.0420
Approximate p-value	0.0216

OLS Regression Line (Blue)

OLS Regression Slope	-0.0024
OLS Regression Intercept	6.3902

Statistically significant evidence of a decreasing trend at the specified level of significance.

TCE 400-KV-142 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-1.6984
M-K Test Value (S)	-6
Tabulated p-value	0.0420
Approximate p-value	0.0447

OLS Regression Line (Blue)

OLS Regression Slope	-0.0006
OLS Regression Intercept	2.5361

Statistically significant evidence of a decreasing trend at the specified level of significance.

TCE 400-KV-142 at 100 ft Soil Vapor Mann-Kendall - DL Reduced



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-0.3397
M-K Test Value (S)	-2
Tabulated p-value	0.3750
Approximate p-value	0.3670

OLS Regression Line (Blue)

OLS Regression Slope	-0.1300
OLS Regression Intercept	2.0500

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-LV-125 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

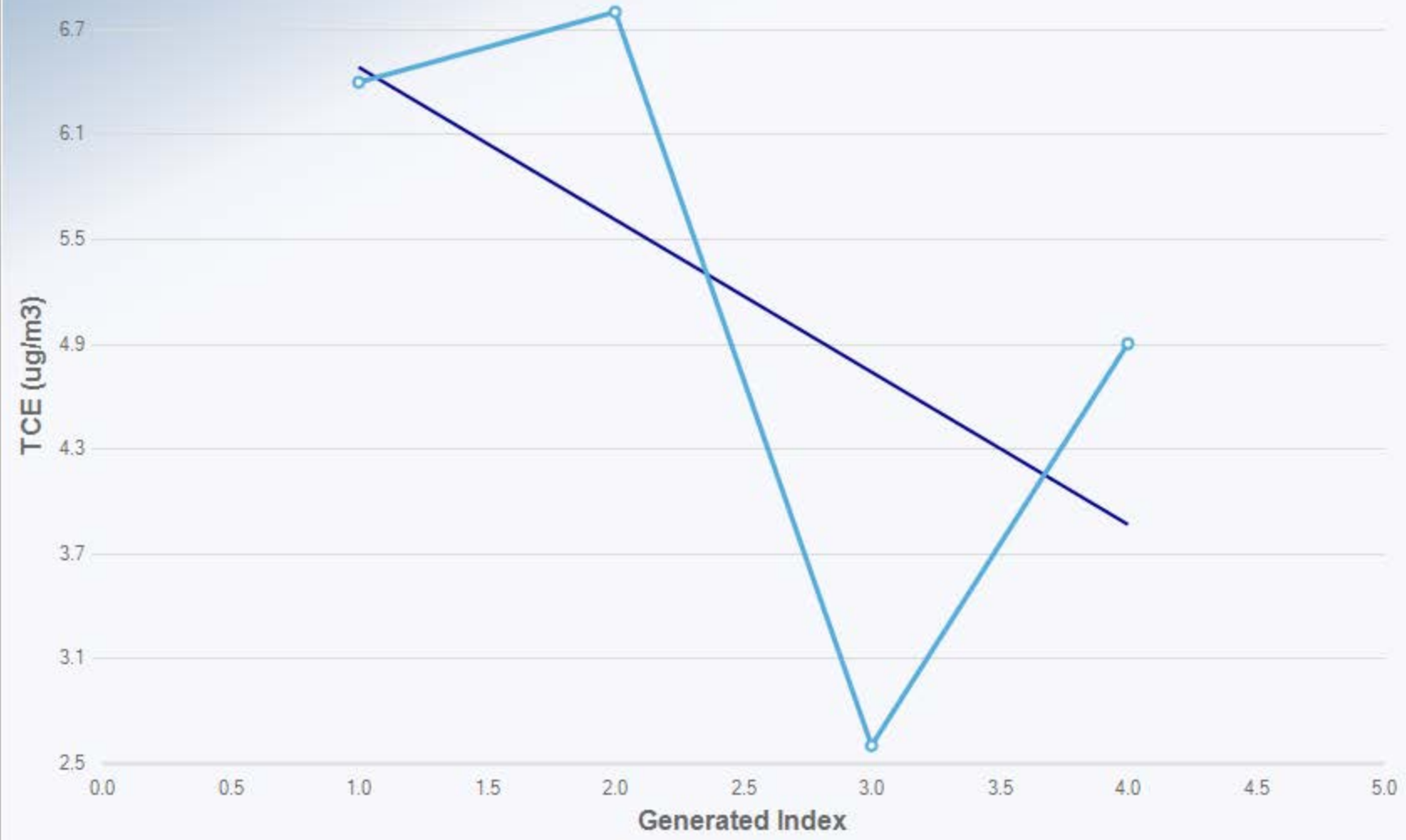
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.8297
Standardized Value of S	-0.7833
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2167

OLS Regression Line (Blue)

OLS Regression Slope	0.0030
OLS Regression Intercept	3.6151

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-LV-125 at 95 ft Soil Vapor Mann-Kendall - DL Reduced



Mann-Kendall Trend Analysis

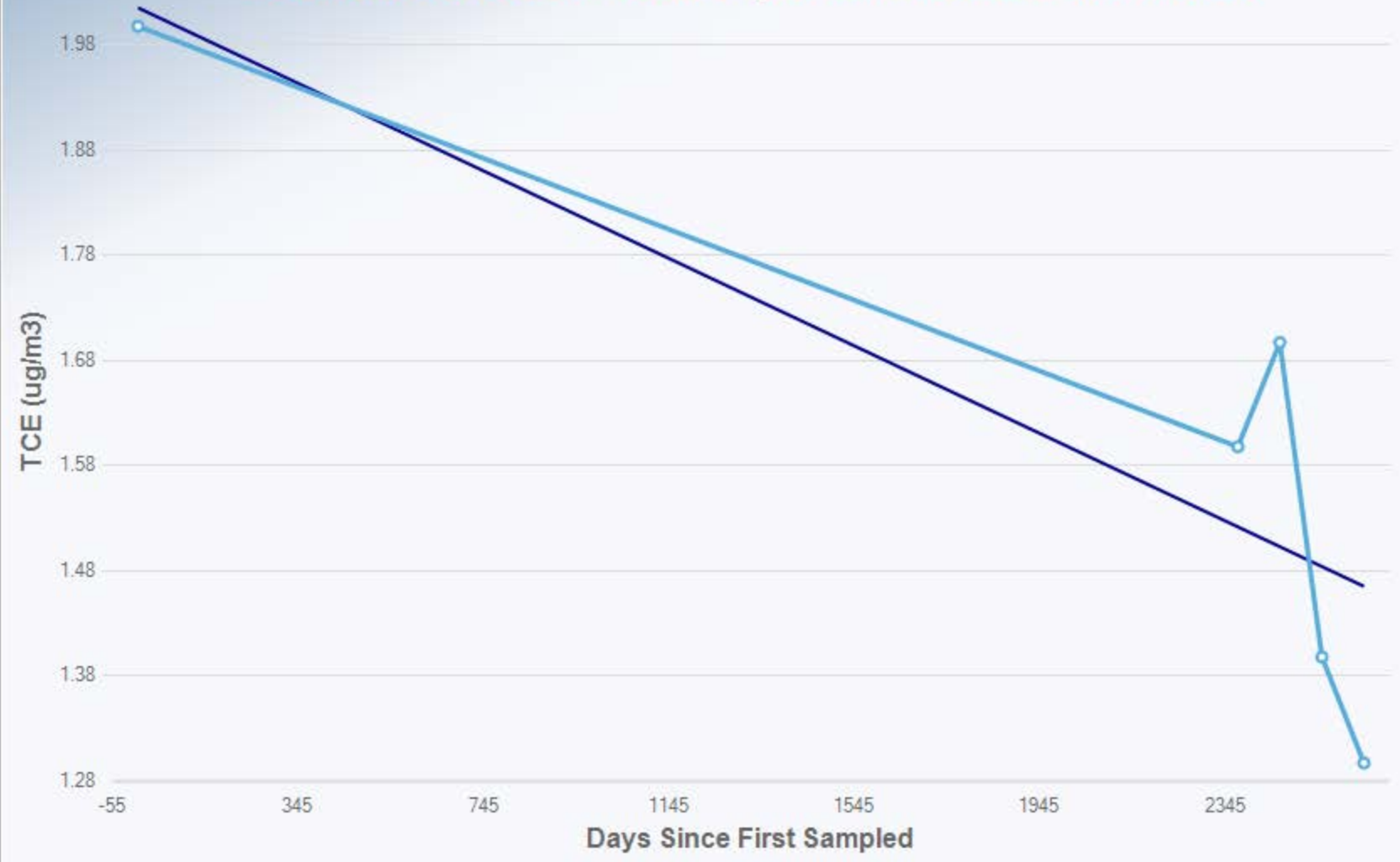
n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-0.3397
M-K Test Value (S)	-2
Tabulated p-value	0.3750
Approximate p-value	0.3670

OLS Regression Line (Blue)

OLS Regression Slope	-0.8700
OLS Regression Intercept	7.3500

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-SV-02 at 50 ft Soil Vapor Mann-Kendall Trend Test



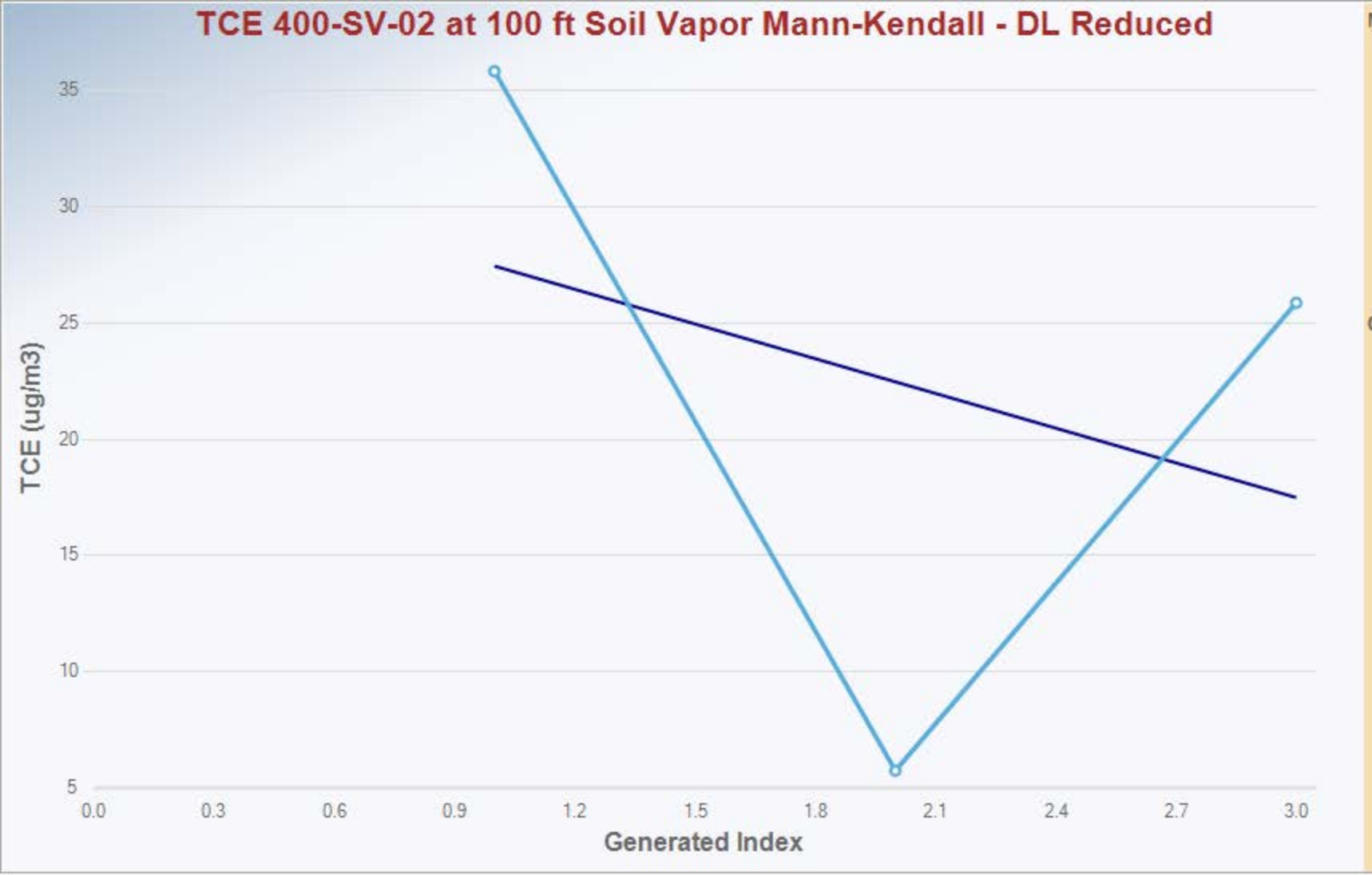
Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.7146
M-K Test Value (S)	-8
Tabulated p-value	0.0420
Approximate p-value	0.0432

OLS Regression Line (Blue)

OLS Regression Slope	-0.0002
OLS Regression Intercept	2.0182

Statistically significant evidence of a decreasing trend at the specified level of significance.



Mann-Kendall Trend Analysis

n	3
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1.9149
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-5.0000
OLS Regression Intercept	32.6333

Insufficient statistical evidence of a significant trend at the specified level of significance.

TCE 400-SV-05 at 50 ft Soil Vapor Mann-Kendall - DL Reduced



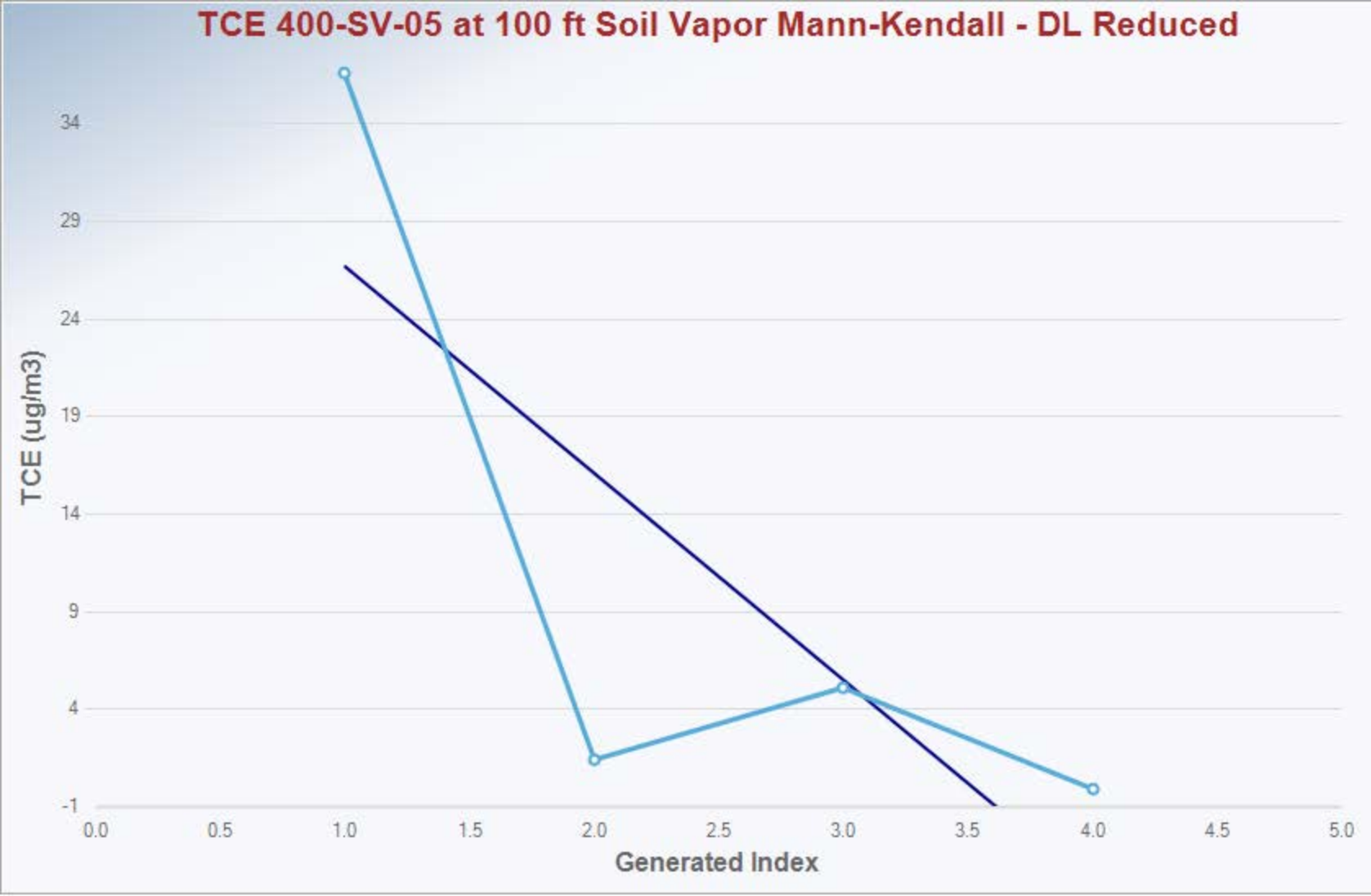
Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-1.6984
M-K Test Value (S)	-6
Tabulated p-value	0.0420
Approximate p-value	0.0447

OLS Regression Line (Blue)

OLS Regression Slope	-0.6860
OLS Regression Intercept	3.5100

Statistically significant evidence of a decreasing trend at the specified level of significance.



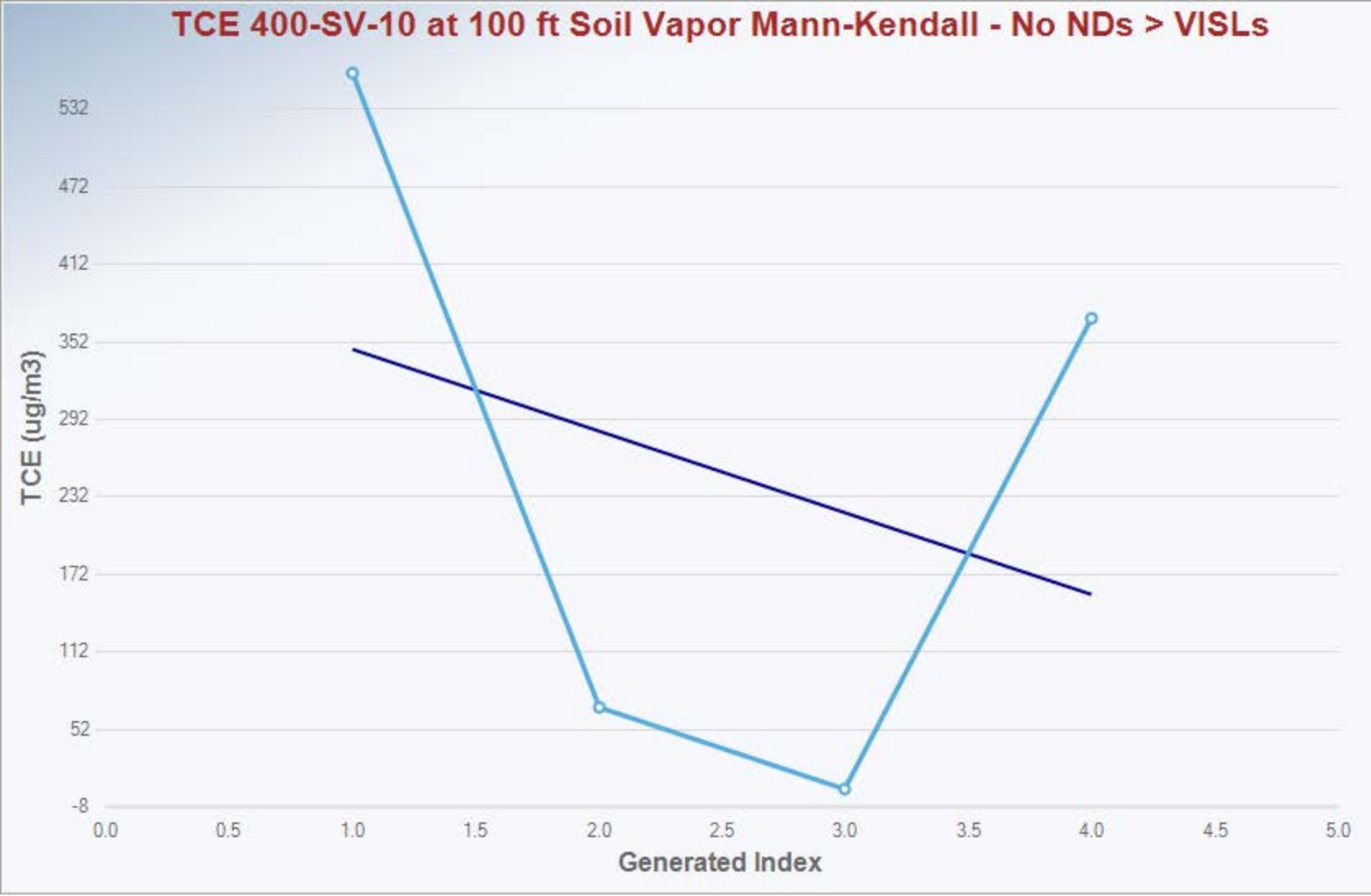
Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-1.0190
M-K Test Value (S)	-4
Tabulated p-value	0.1670
Approximate p-value	0.1541

OLS Regression Line (Blue)

OLS Regression Slope	-10.6460
OLS Regression Intercept	37.7600

Insufficient statistical evidence of a significant trend at the specified level of significance.



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	-0.3397
M-K Test Value (S)	-2
Tabulated p-value	0.3750
Approximate p-value	0.3670

OLS Regression Line (Blue)

OLS Regression Slope	-63.3500
OLS Regression Intercept	409.5000

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-EV-131 at 130 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.6056
Standardized Value of S	-0.5547
M-K Test Value (S)	-3
Tabulated p-value	0.4080
Approximate p-value	0.2895

OLS Regression Line (Blue)

OLS Regression Slope	-435.0720
OLS Regression Intercept	1,092,956.4353

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-GV-125 at 105 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

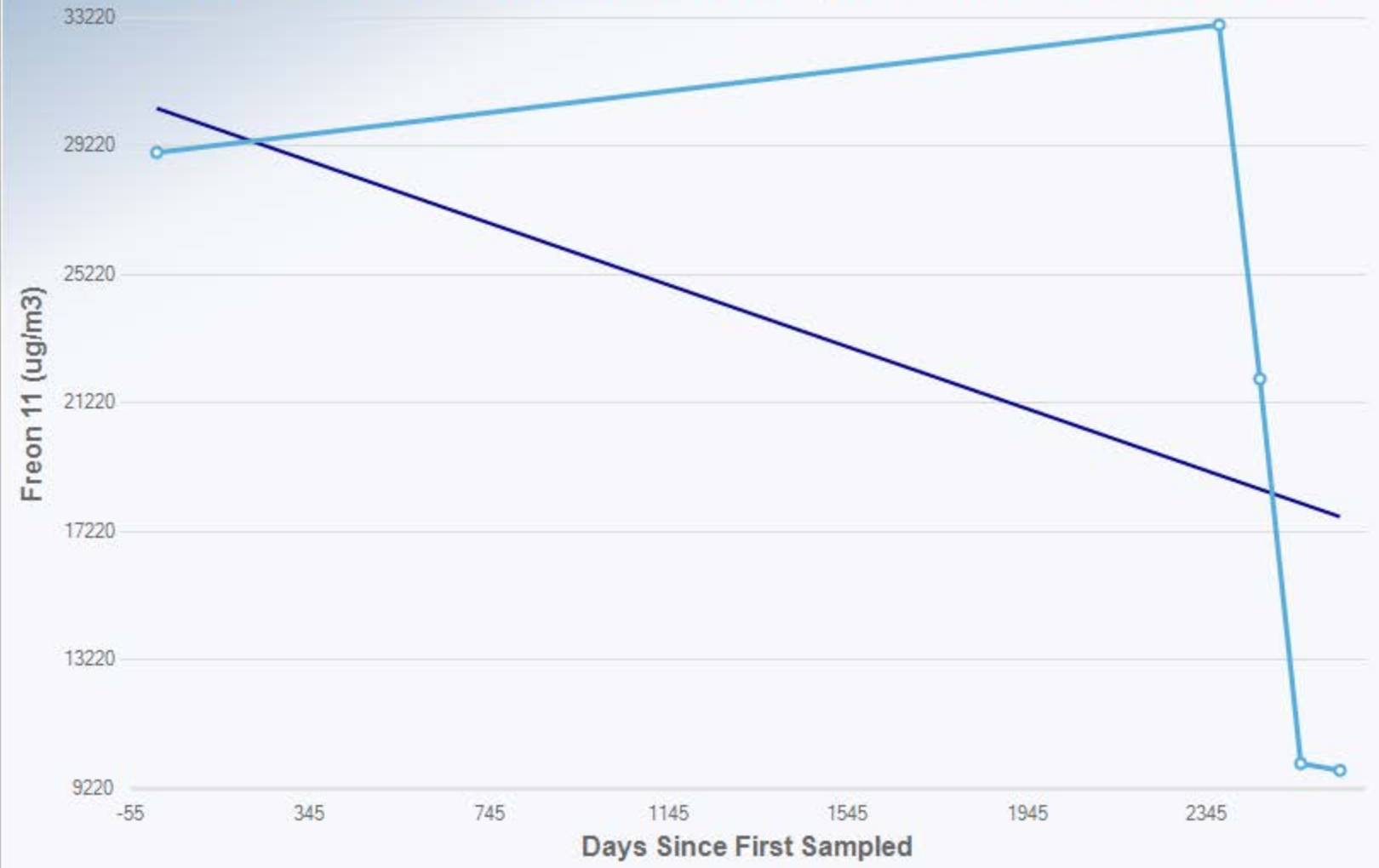
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-9.4081
OLS Regression Intercept	87,268.8364

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-GV-125 at 120 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

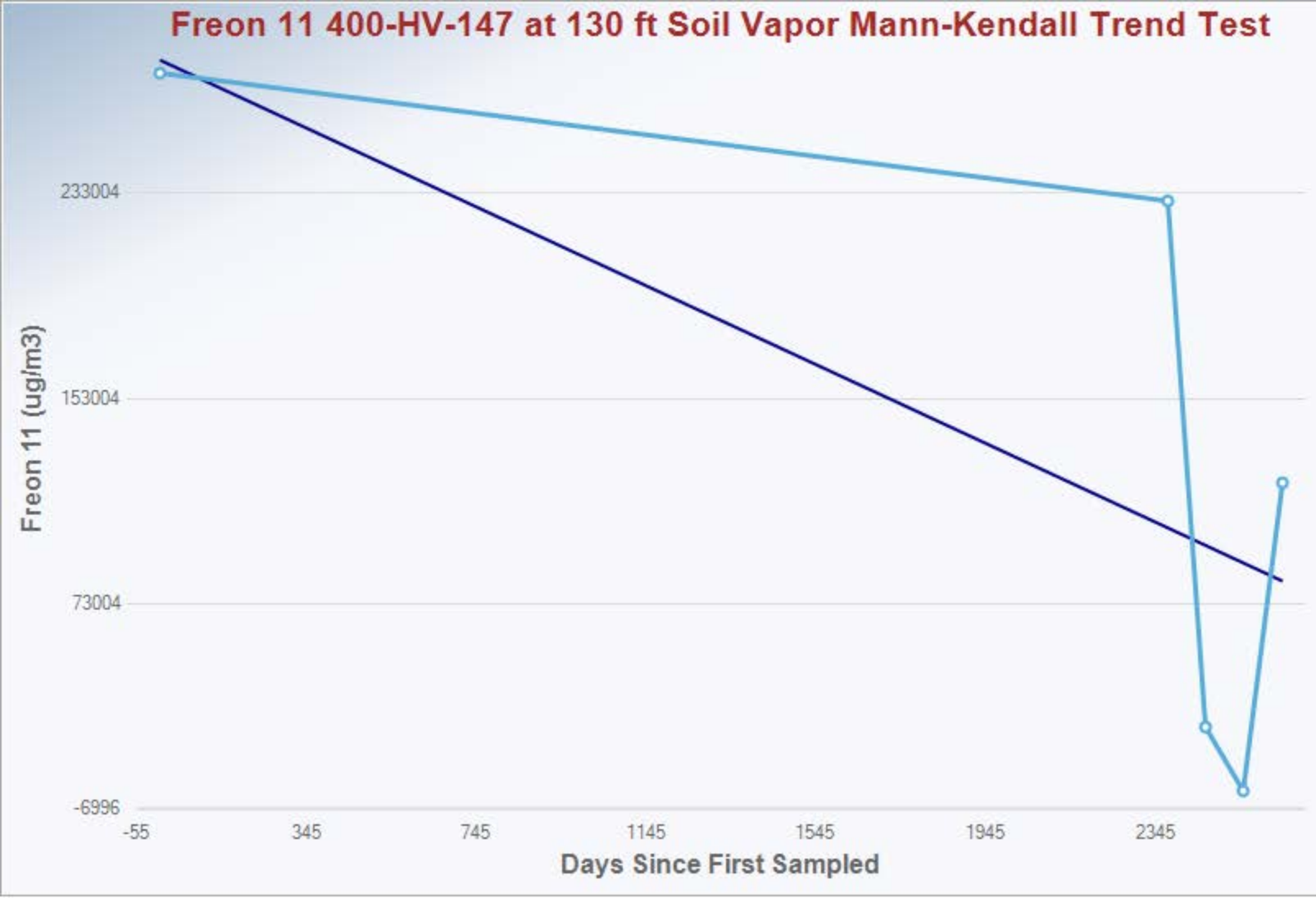
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.7146
M-K Test Value (S)	-8
Tabulated p-value	0.0420
Approximate p-value	0.0432

OLS Regression Line (Blue)

OLS Regression Slope	-4.8001
OLS Regression Intercept	30,387.1538

Statistically significant evidence of a decreasing trend at the specified level of significance.

Freon 11 400-HV-147 at 130 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

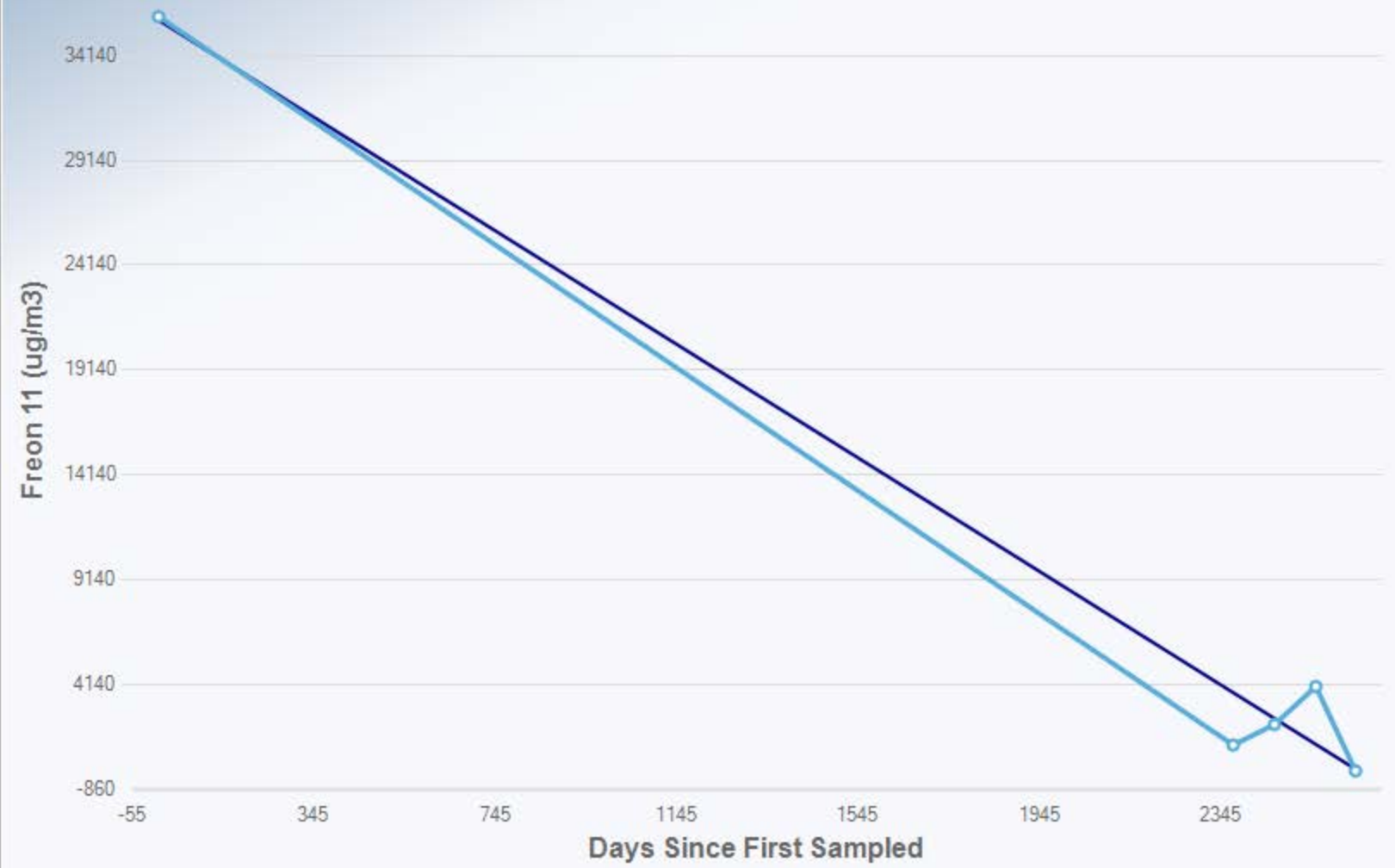
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-76.8498
OLS Regression Intercept	285,130.6050

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-IV-123 at 45 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

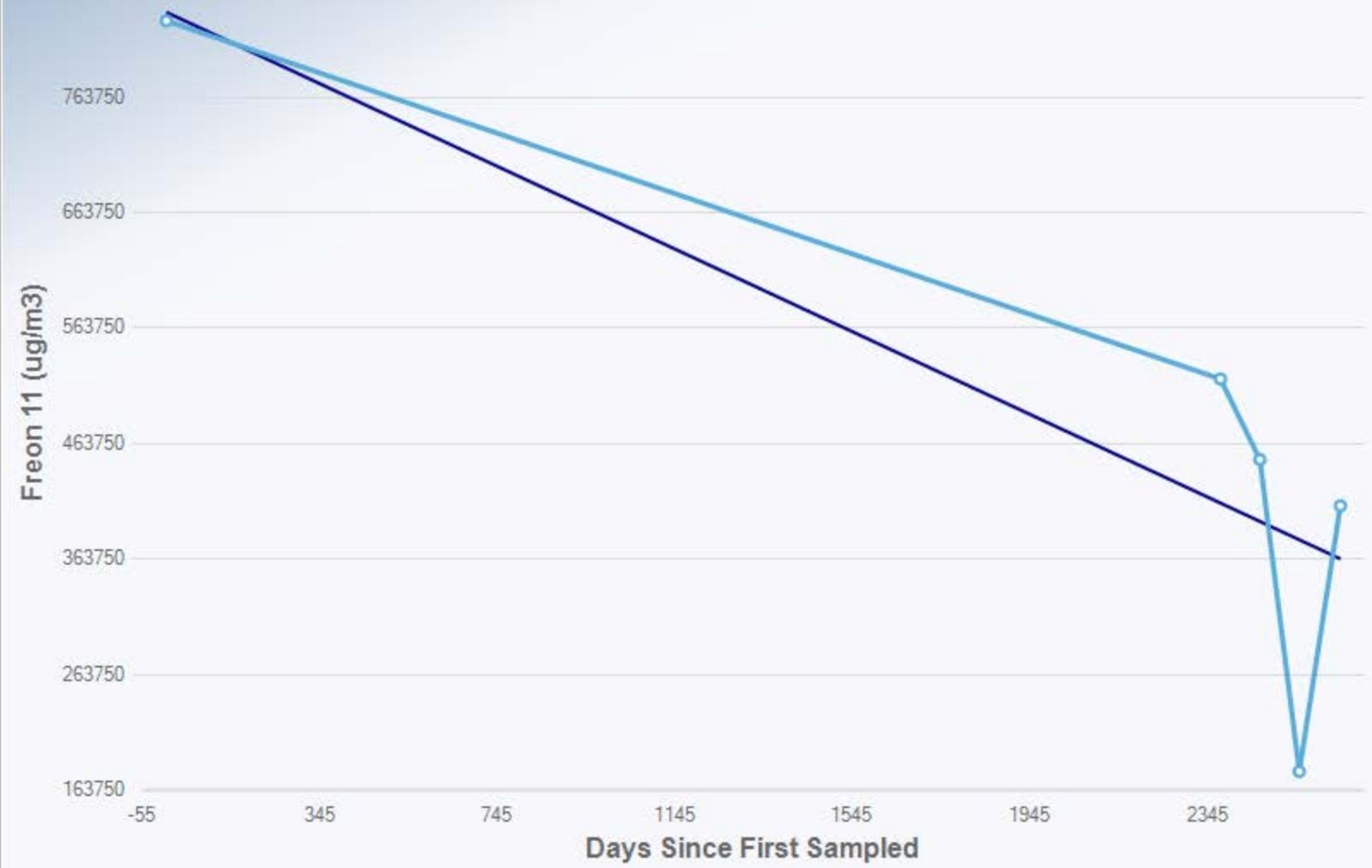
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-13.4971
OLS Regression Intercept	35,817.5521

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-IV-123 at 80 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

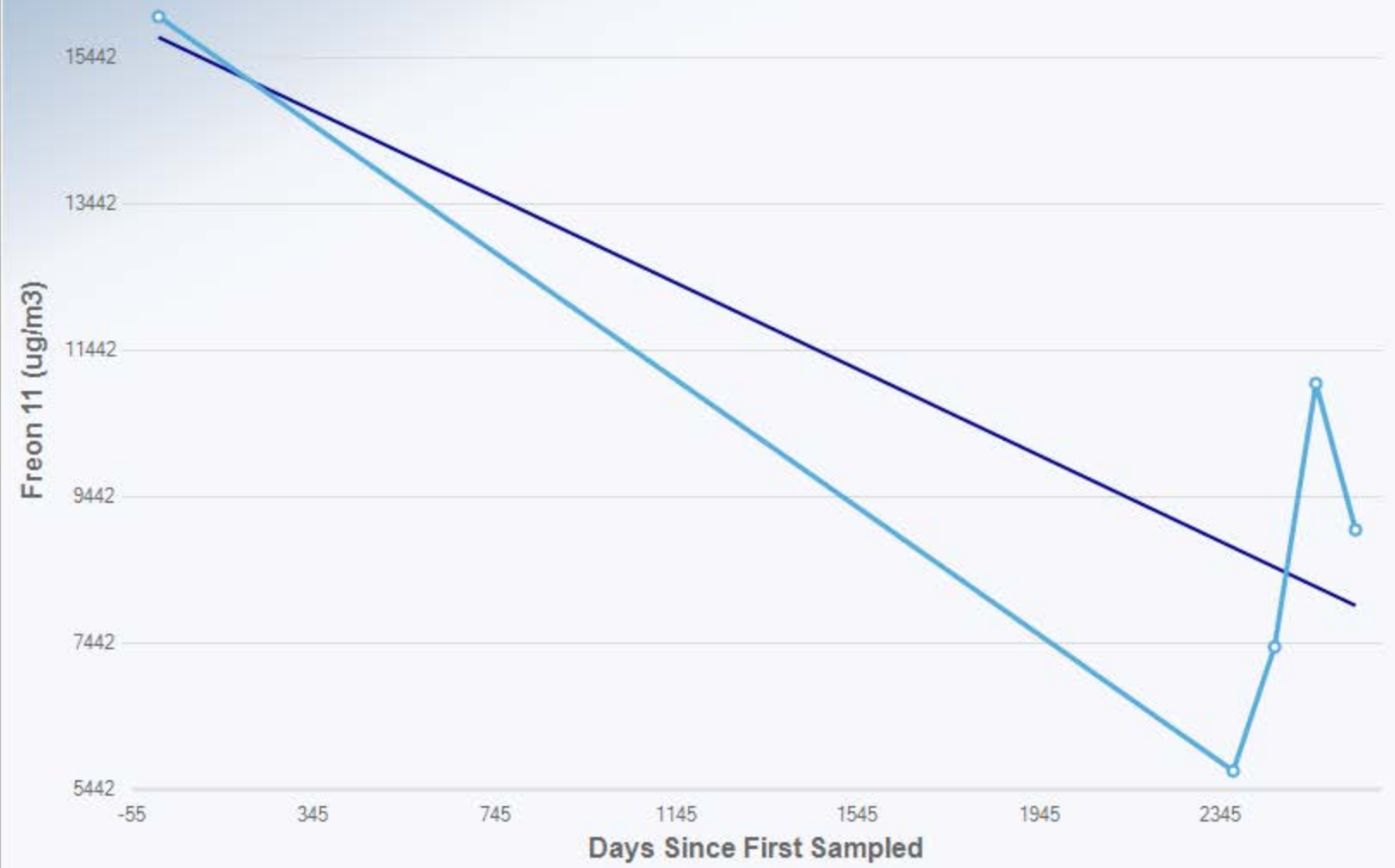
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.7146
M-K Test Value (S)	-8
Tabulated p-value	0.0420
Approximate p-value	0.0432

OLS Regression Line (Blue)

OLS Regression Slope	-179.4332
OLS Regression Intercept	837,871.1436

Statistically significant evidence of a decreasing trend at the specified level of significance.

Freon 11 400-IV-123 at 118 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

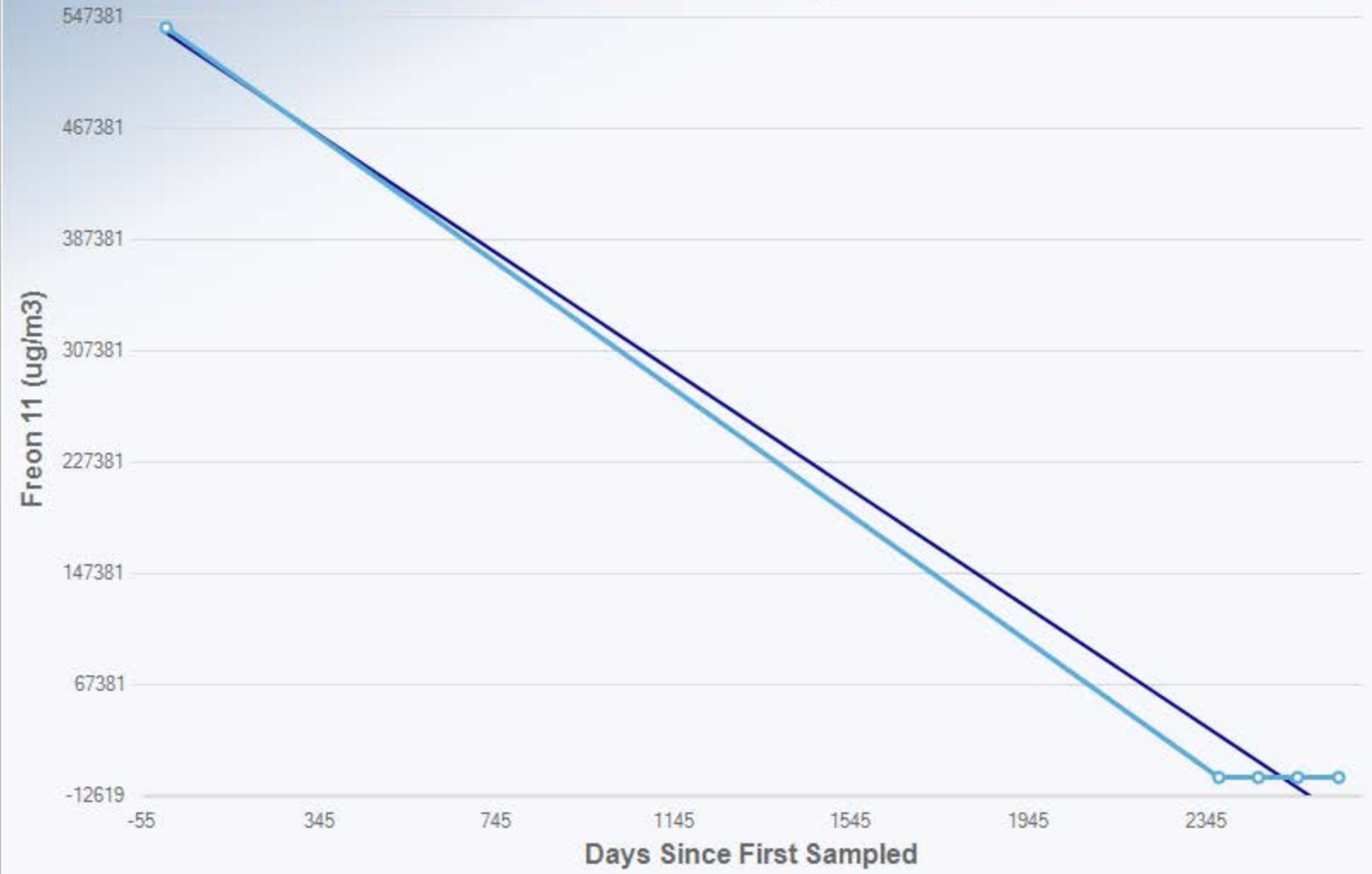
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.5920
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	-2.9369
OLS Regression Intercept	15,710.2337

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-LV-125 at 122 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

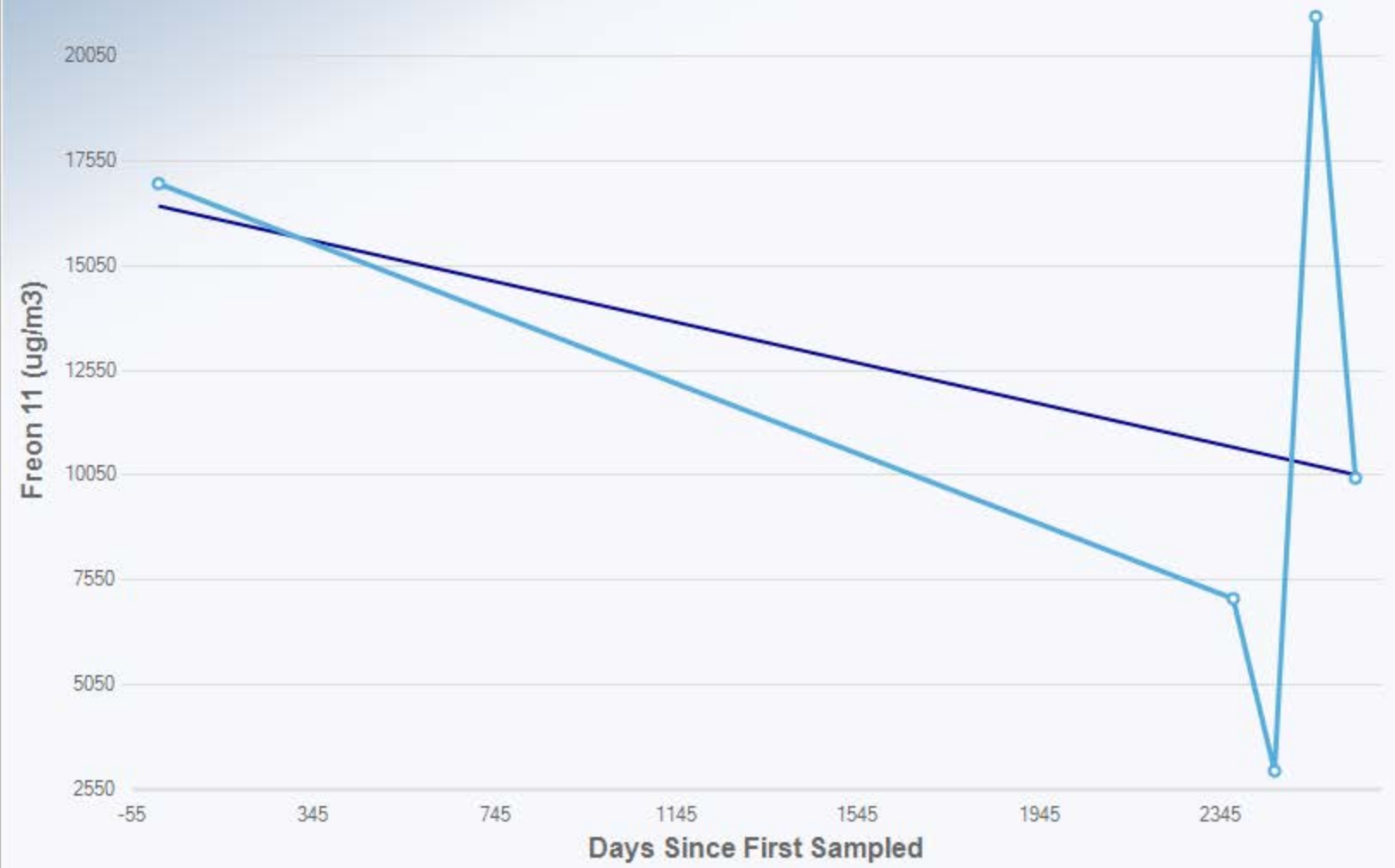
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-213.2754
OLS Regression Intercept	536,557.0990

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 11 400-SV-15 at 90 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

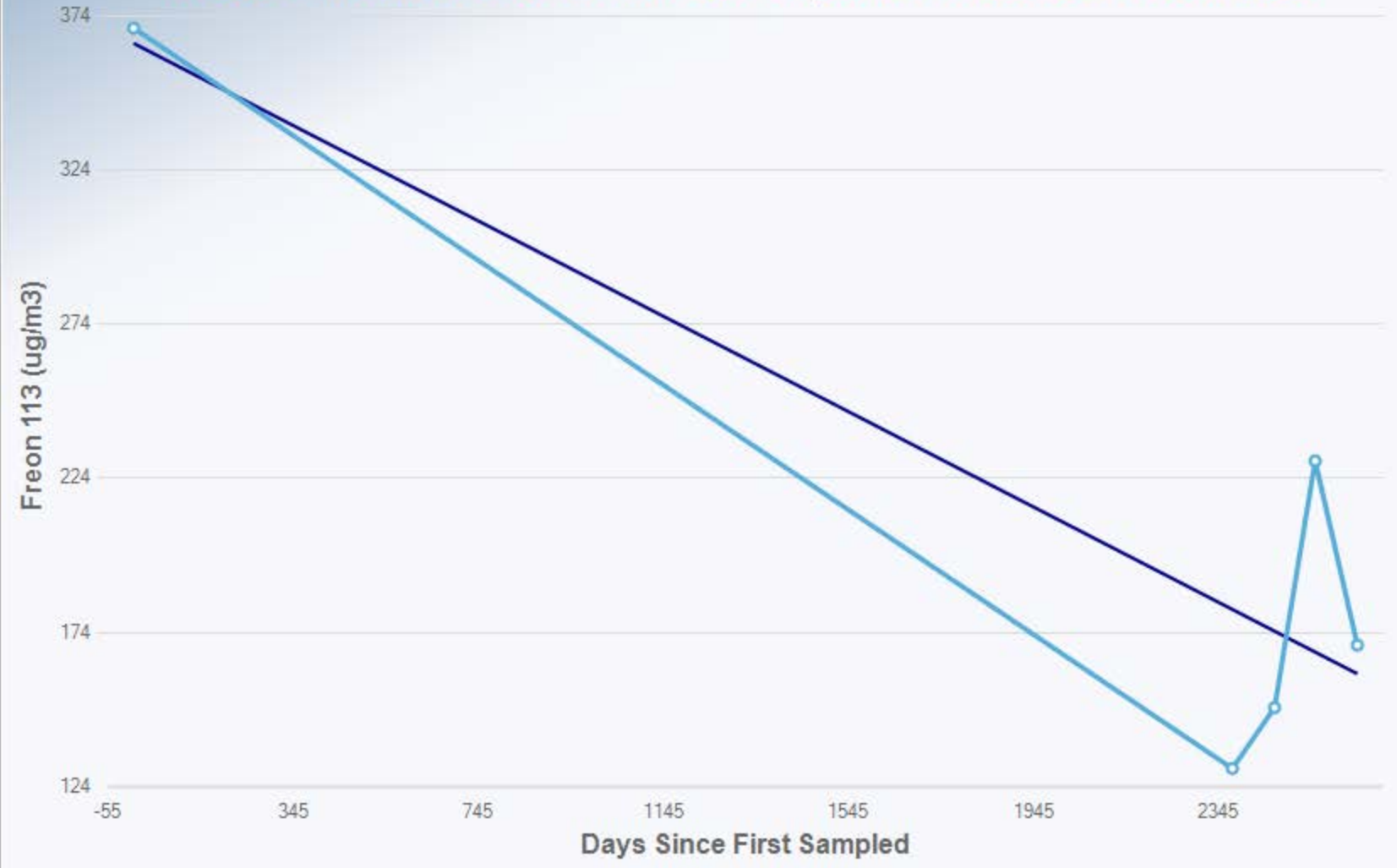
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.5920
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	-2.4240
OLS Regression Intercept	16,481.5827

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-EV-131 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

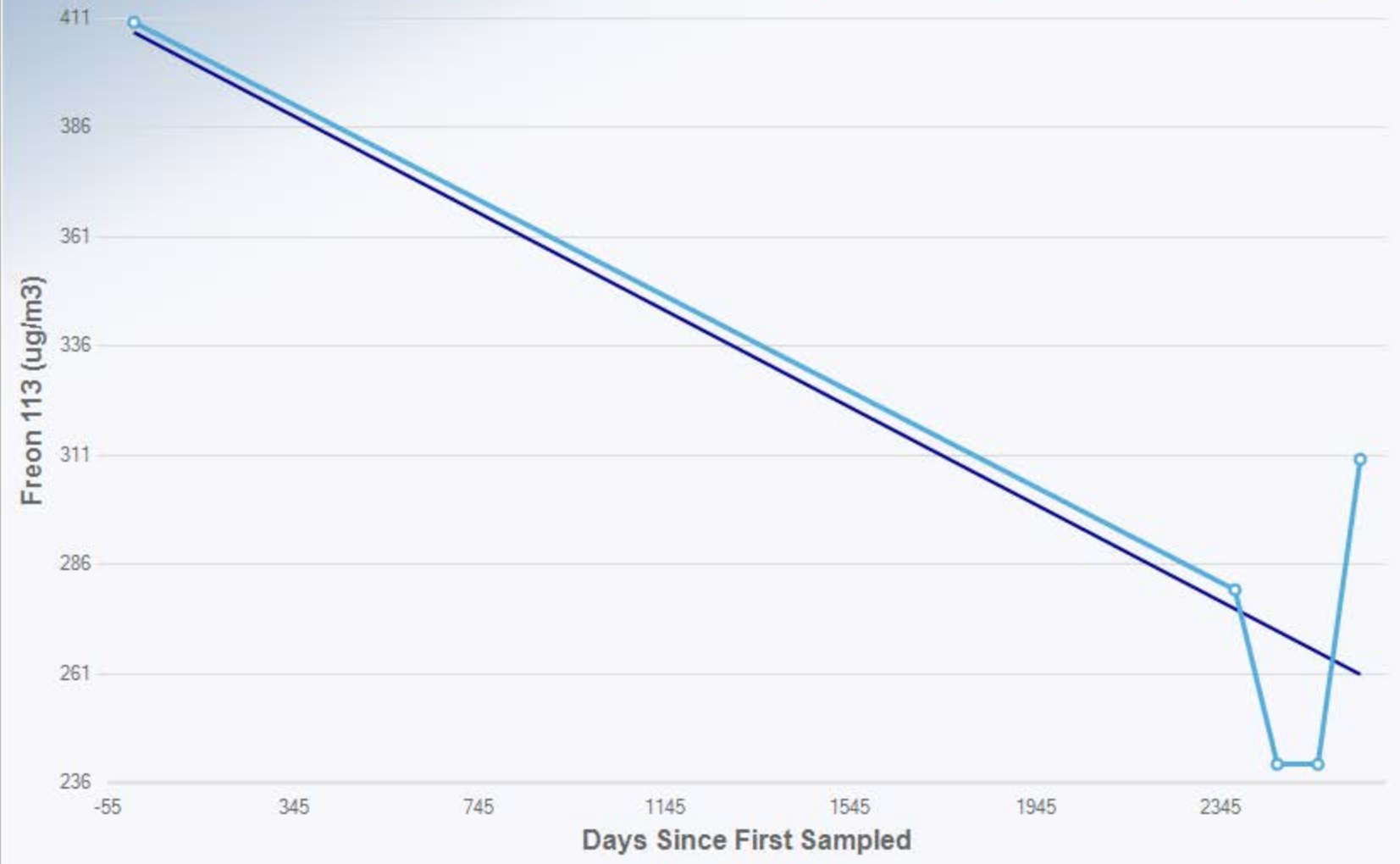
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.5920
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	-0.0774
OLS Regression Intercept	365.1603

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-EV-131 at 47.5 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

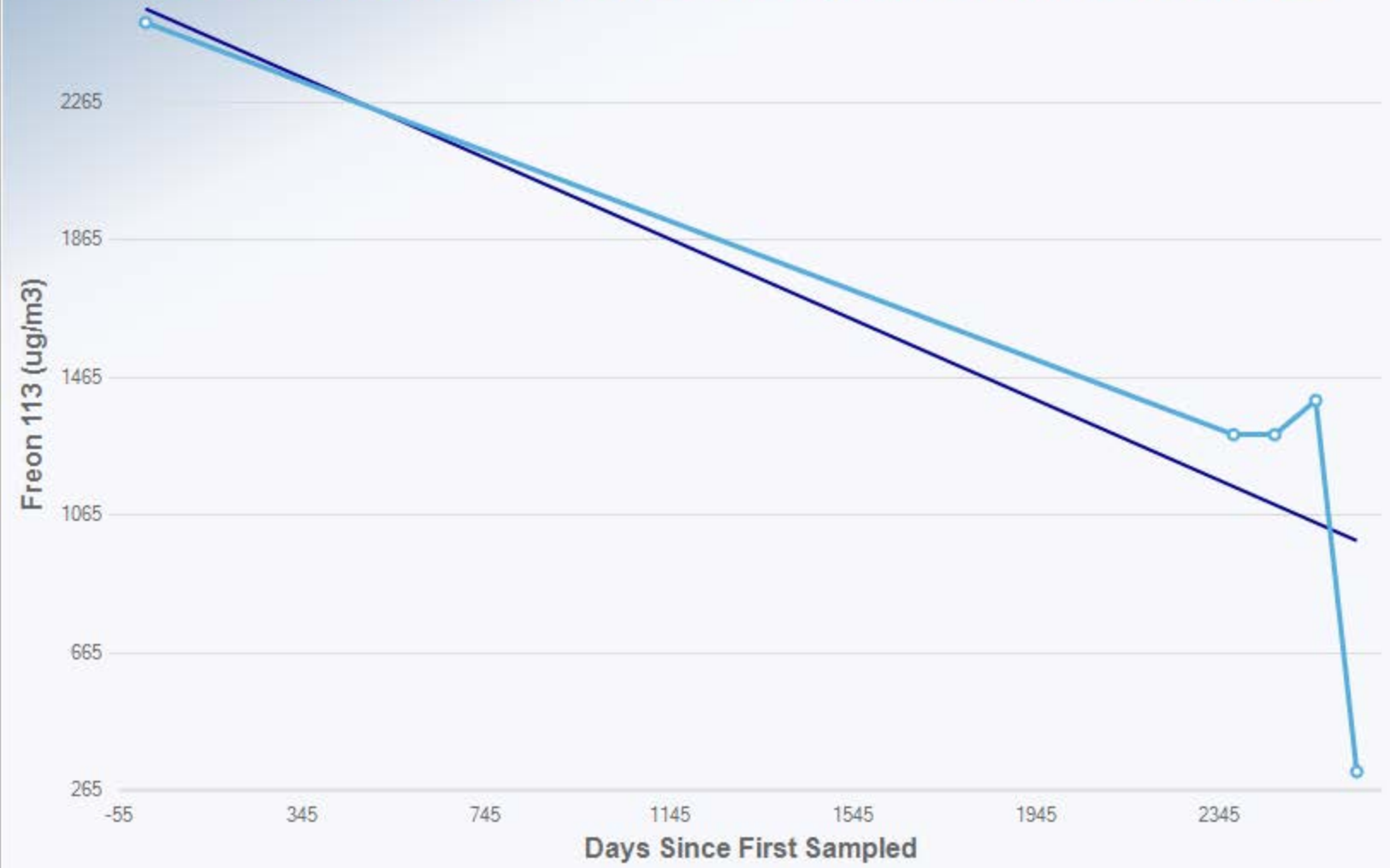
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-0.5053
M-K Test Value (S)	-3
Tabulated p-value	0.4080
Approximate p-value	0.3067

OLS Regression Line (Blue)

OLS Regression Slope	-0.0556
OLS Regression Intercept	407.4865

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-EV-131 at 100 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

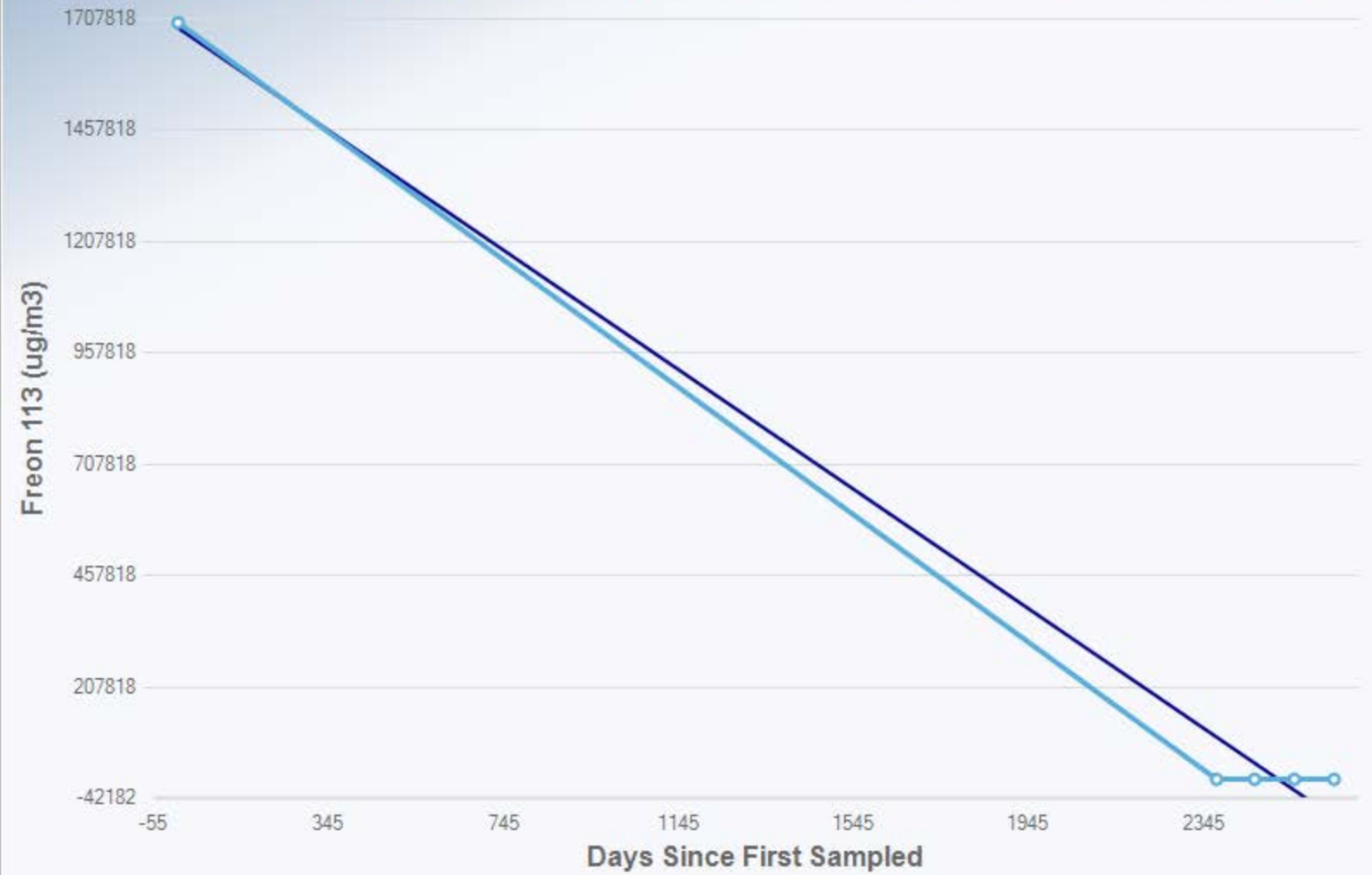
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-1.0106
M-K Test Value (S)	-5
Tabulated p-value	0.2420
Approximate p-value	0.1561

OLS Regression Line (Blue)

OLS Regression Slope	-0.5871
OLS Regression Intercept	2,541.4928

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-EV-131 at 130 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

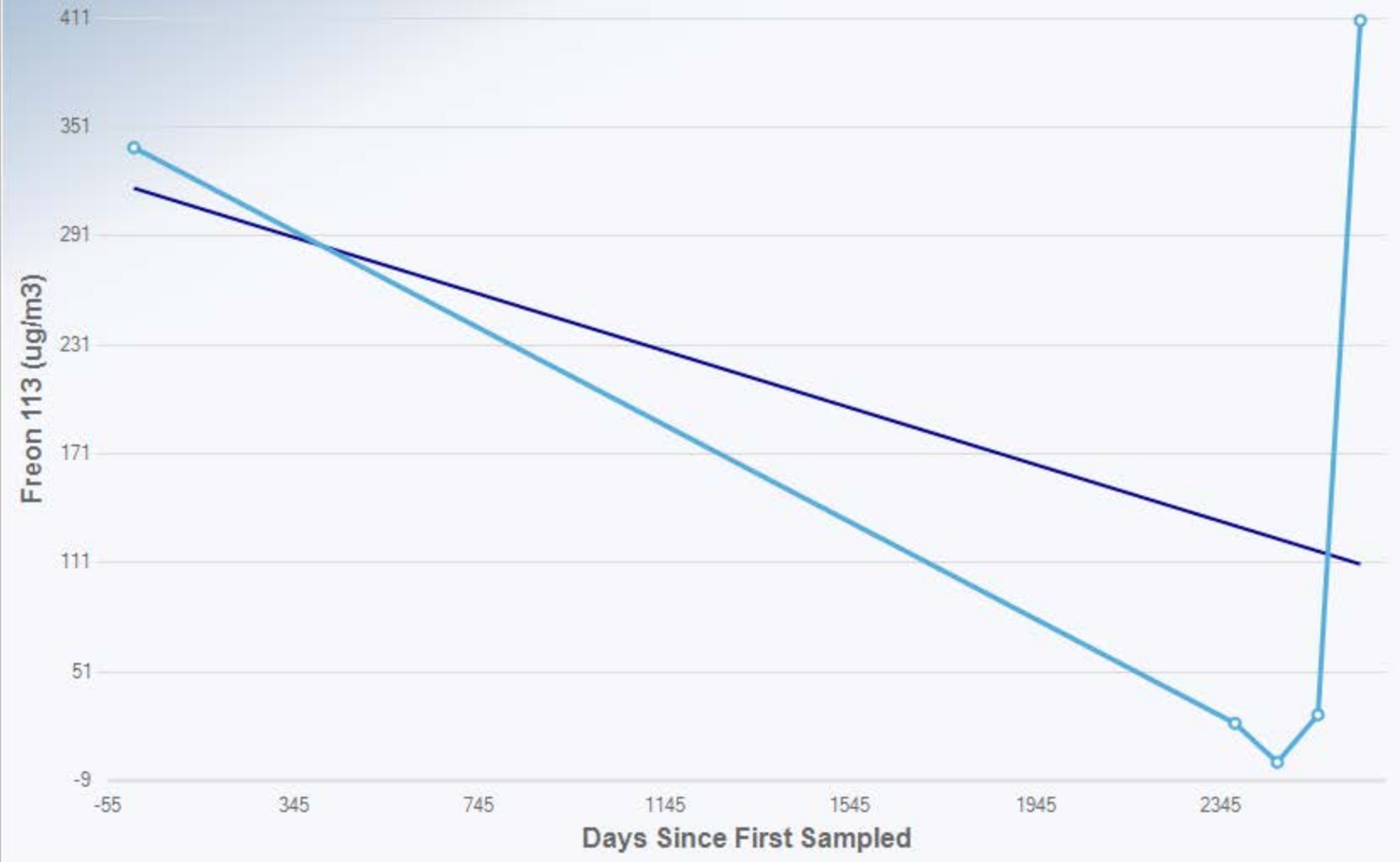
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.6056
Standardized Value of S	-0.5547
M-K Test Value (S)	-3
Tabulated p-value	0.4080
Approximate p-value	0.2895

OLS Regression Line (Blue)

OLS Regression Slope	-672.4212
OLS Regression Intercept	1,689,114.0366

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-FV-131 at 15 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0782
OLS Regression Intercept	317.4207

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-FV-131 at 63 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-0.5053
M-K Test Value (S)	-3
Tabulated p-value	0.4080
Approximate p-value	0.3067

OLS Regression Line (Blue)

OLS Regression Slope	-0.0038
OLS Regression Intercept	30.9749

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-GV-125 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

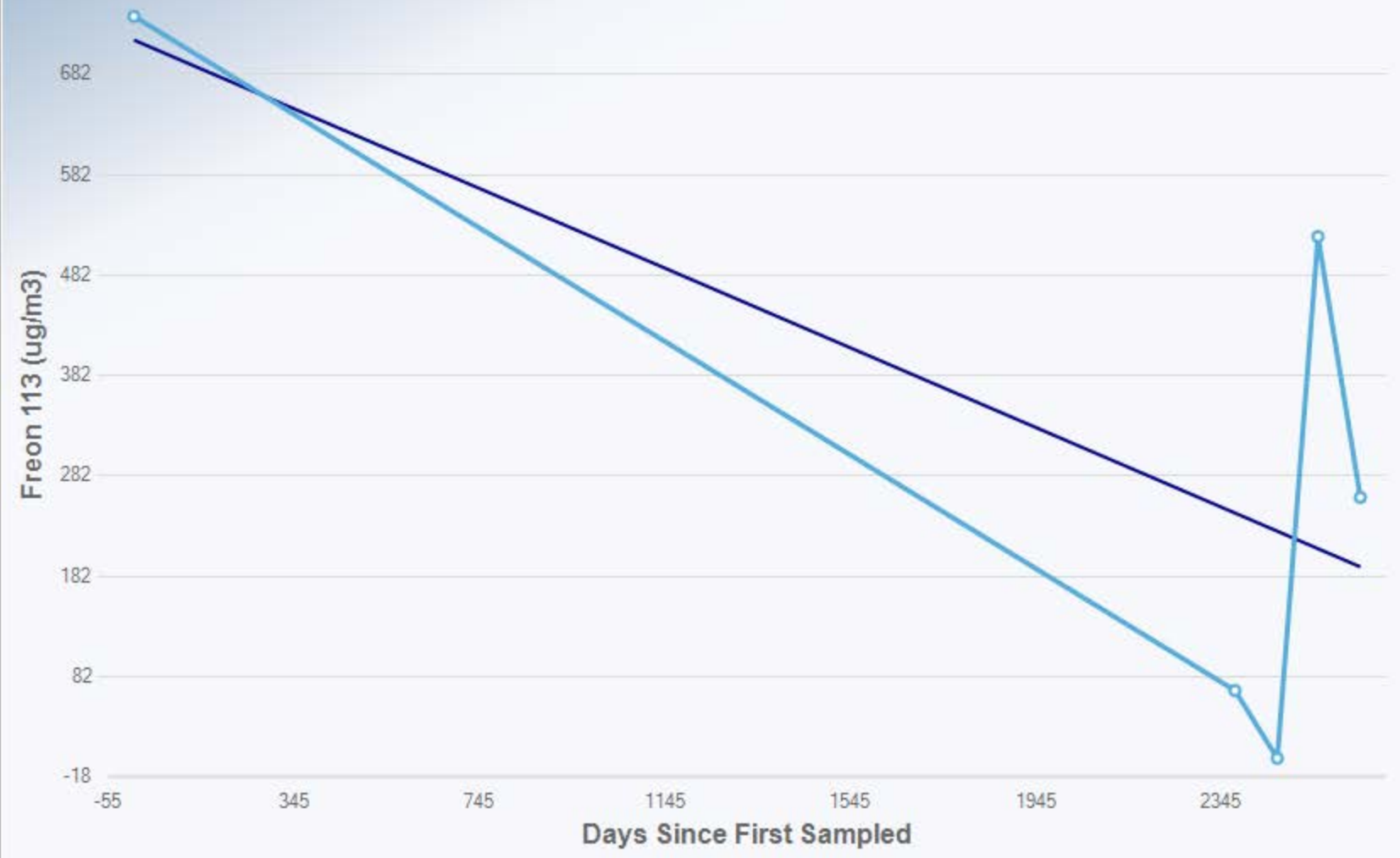
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.1141
OLS Regression Intercept	296.6214

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-GV-125 at 46 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

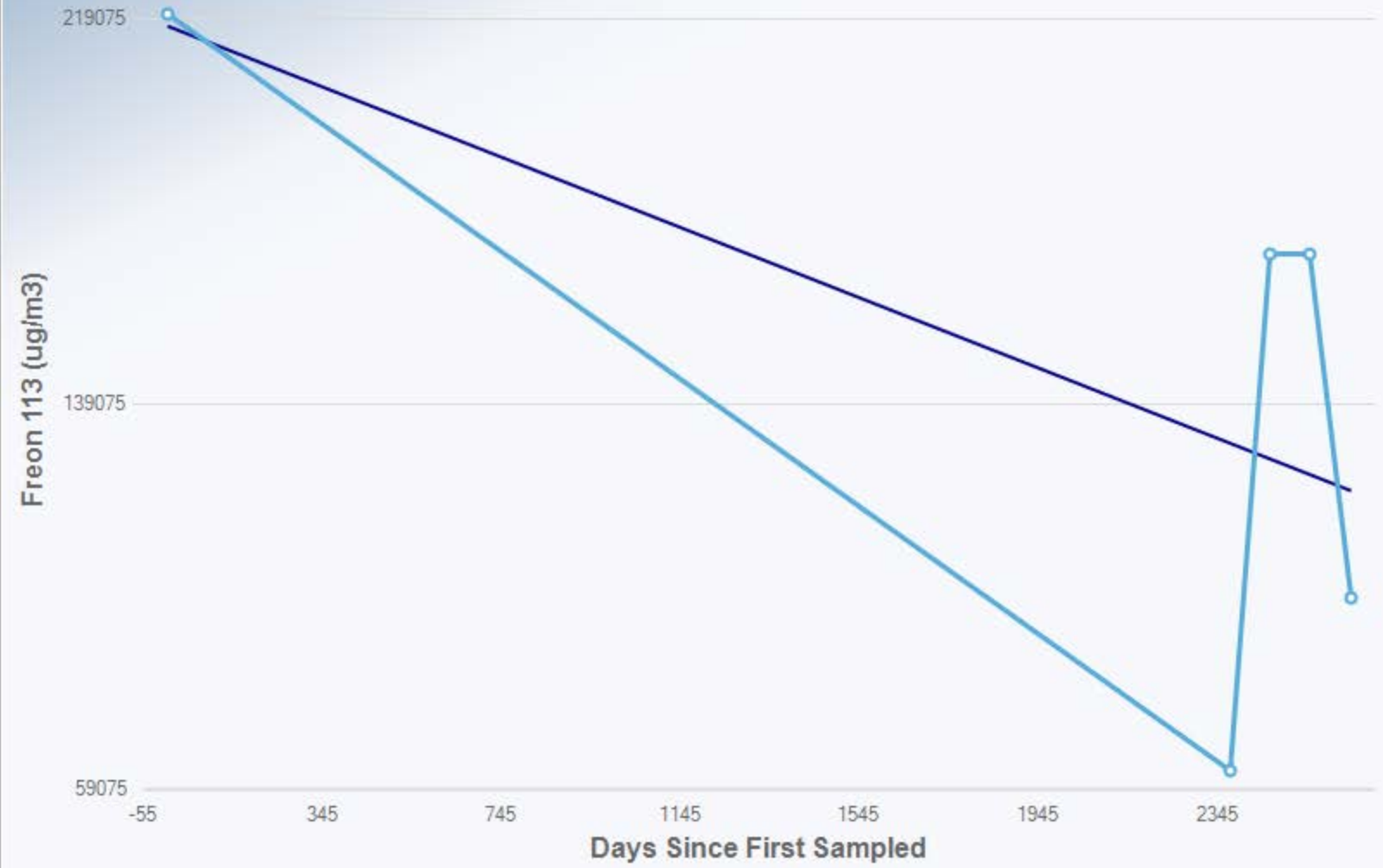
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.1992
OLS Regression Intercept	717.1190

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-GV-125 at 105 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

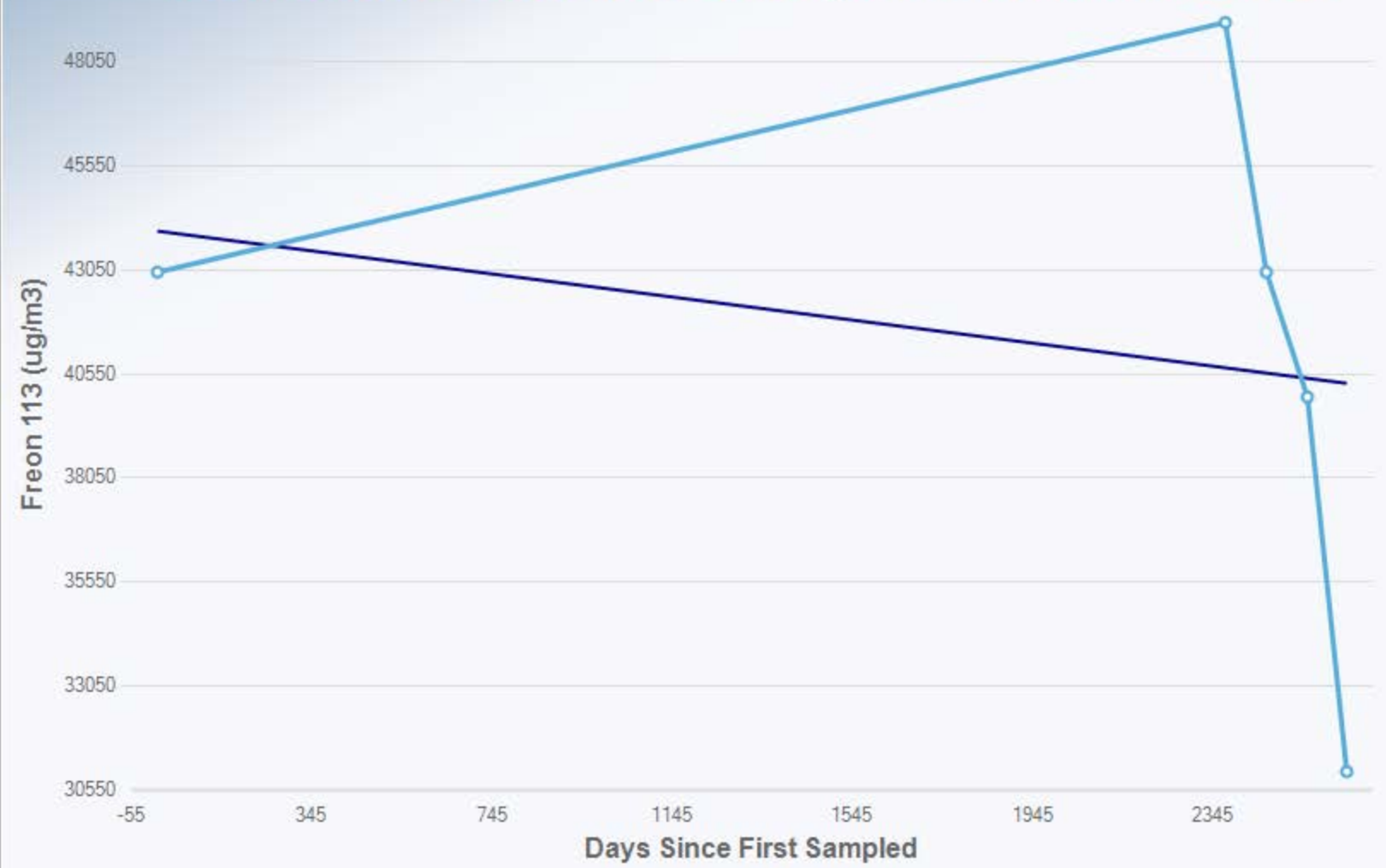
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-0.5053
M-K Test Value (S)	-3
Tabulated p-value	0.4080
Approximate p-value	0.3067

OLS Regression Line (Blue)

OLS Regression Slope	-36.4344
OLS Regression Intercept	217,472.8387

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-GV-125 at 120 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

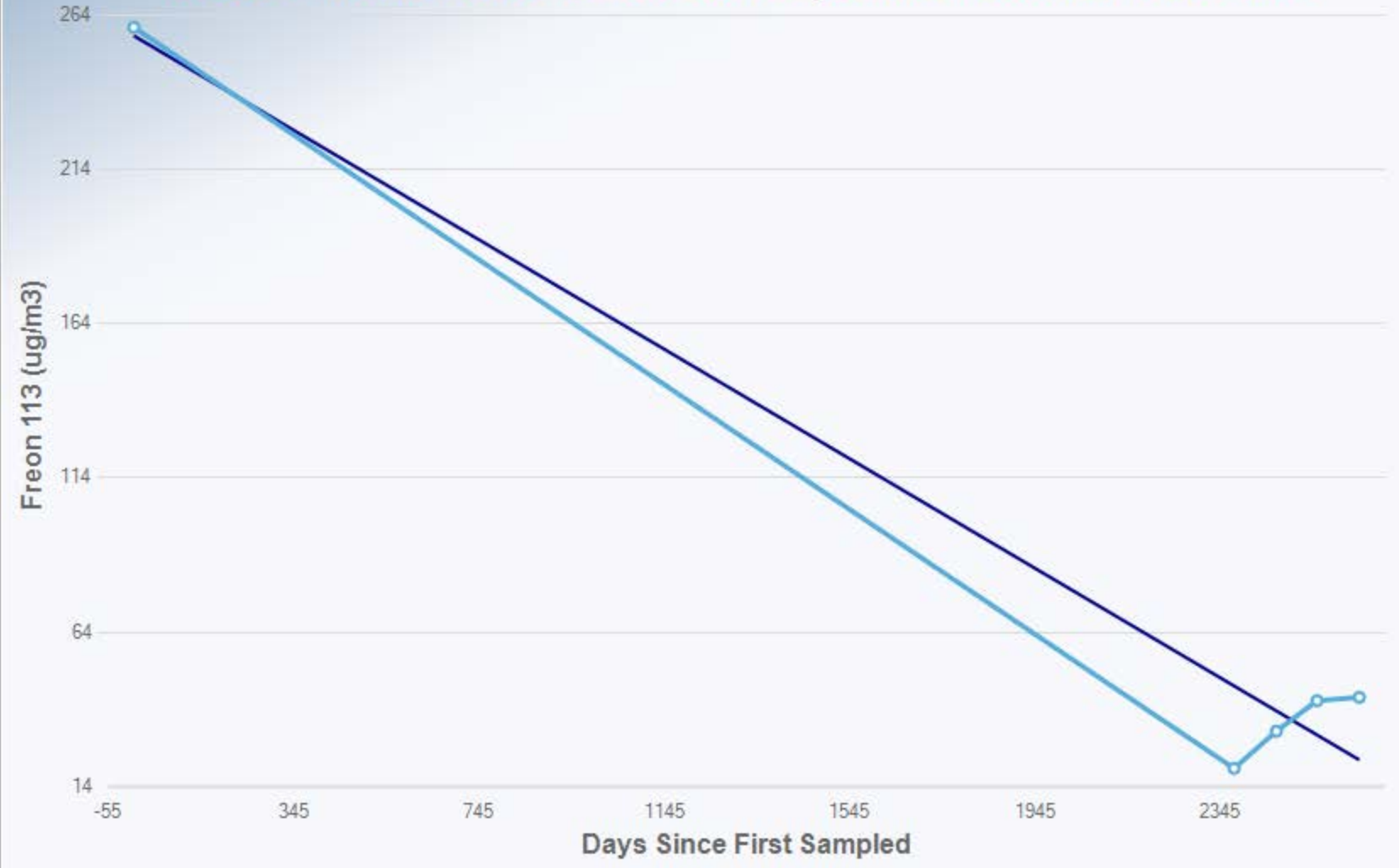
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-1.5159
M-K Test Value (S)	-7
Tabulated p-value	0.1170
Approximate p-value	0.0648

OLS Regression Line (Blue)

OLS Regression Slope	-1.3964
OLS Regression Intercept	44,000.5770

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-HV-147 at 12 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

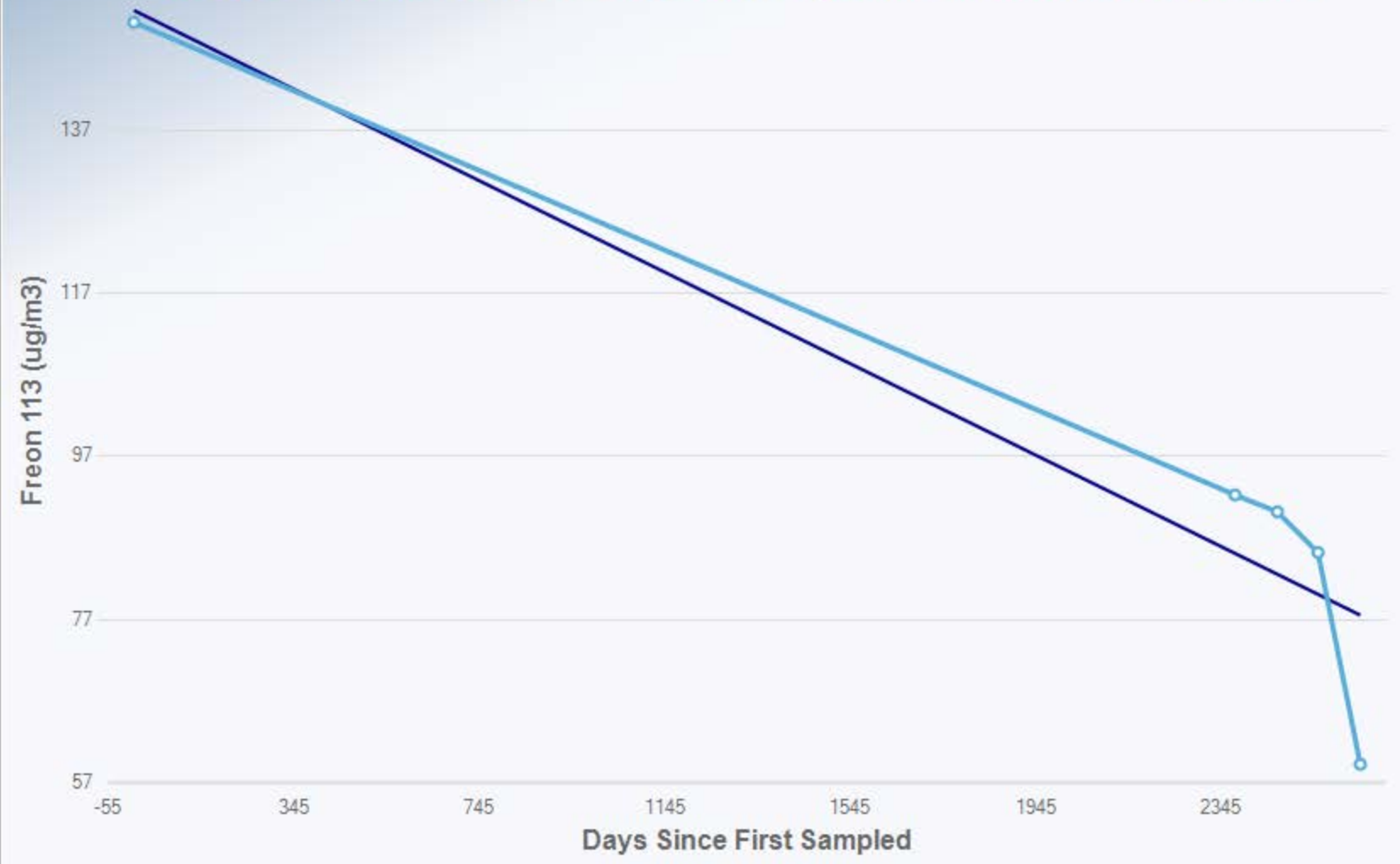
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0886
OLS Regression Intercept	257.1502

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-HV-147 at 45 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

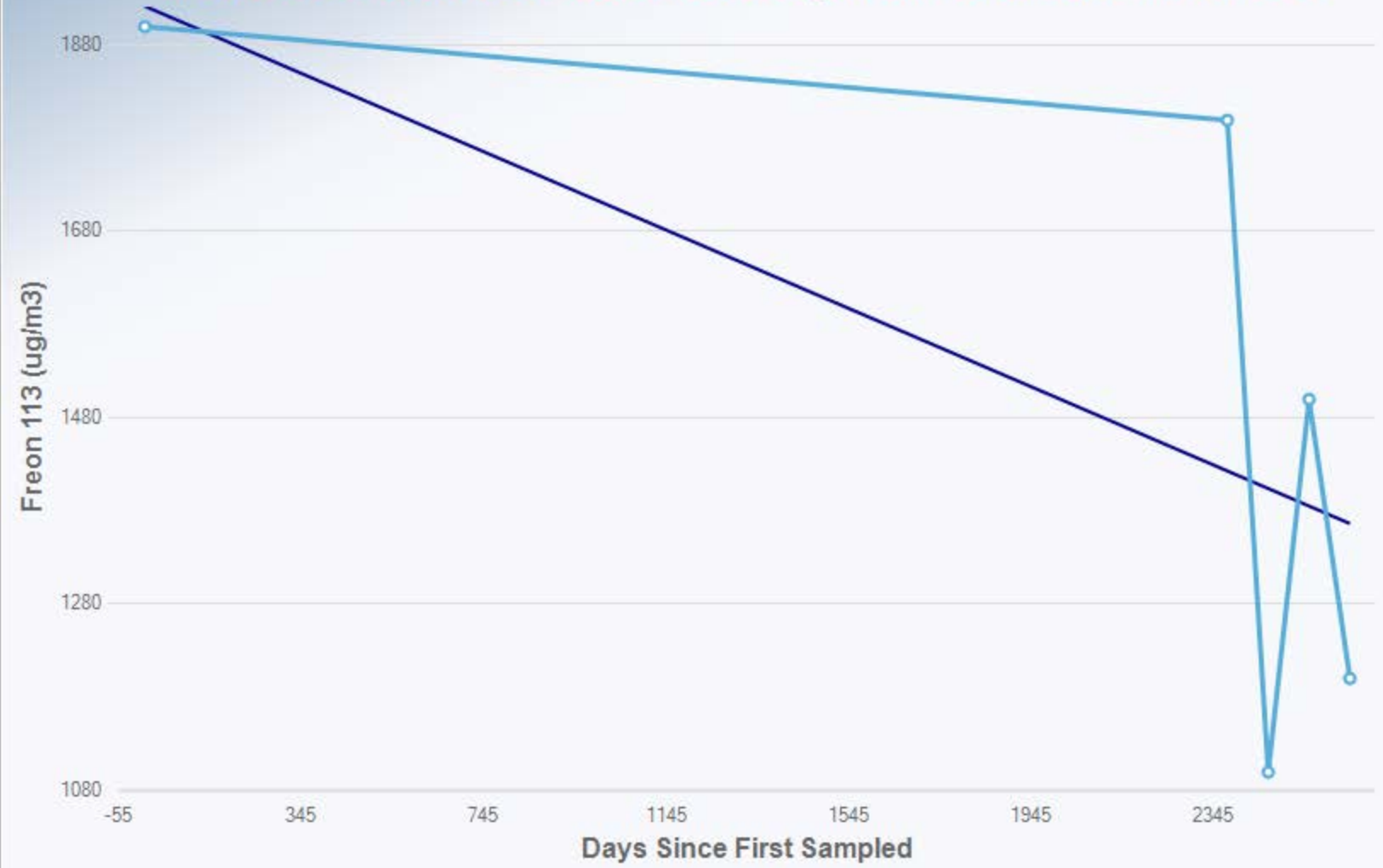
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-2.2045
M-K Test Value (S)	-10
Tabulated p-value	0.0080
Approximate p-value	0.0137

OLS Regression Line (Blue)

OLS Regression Slope	-0.0280
OLS Regression Intercept	151.4140

Statistically significant evidence of a decreasing trend at the specified level of significance.

Freon 113 400-HV-147 at 95 ft Soil Vapor Mann-Kendall Trend Test



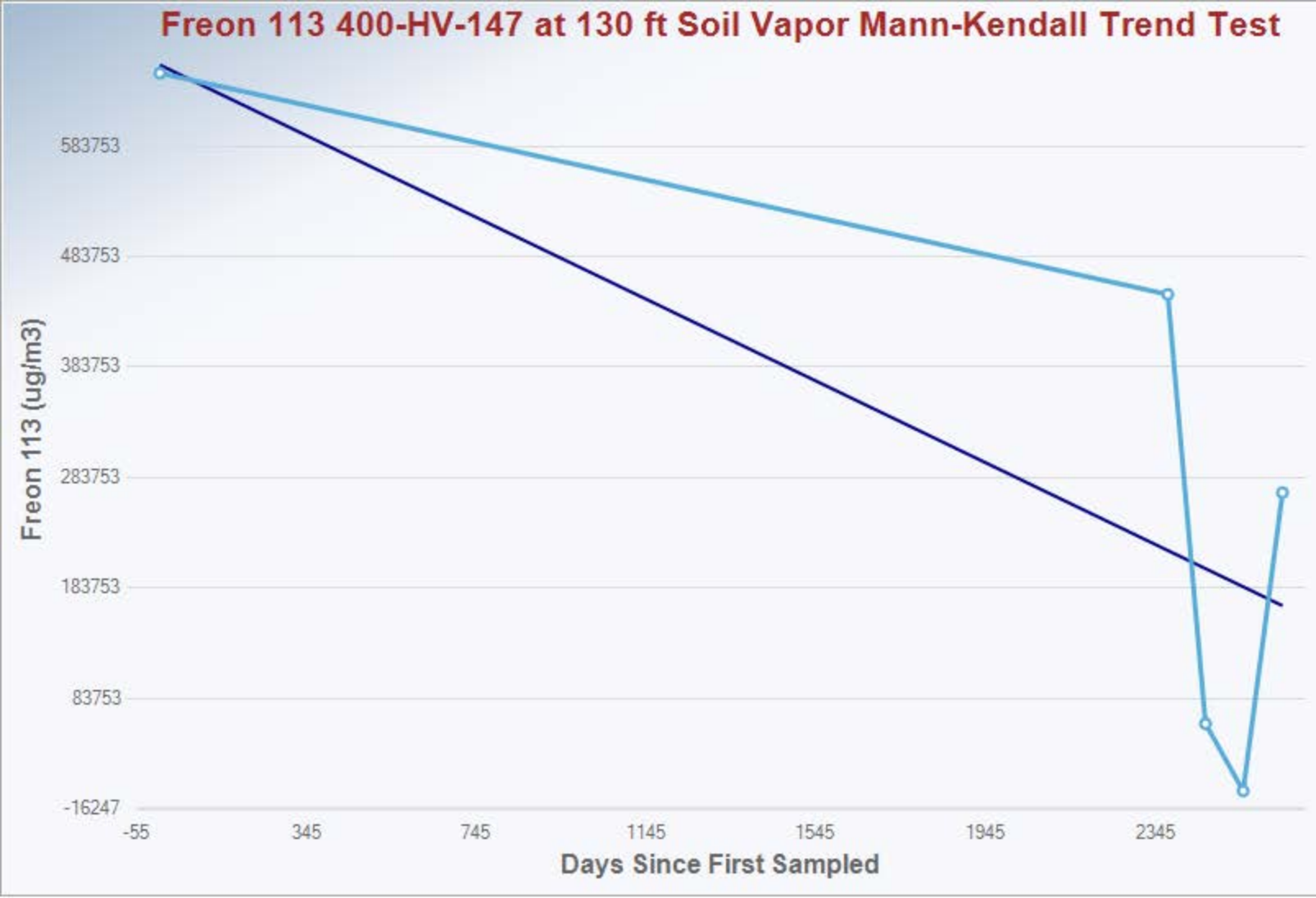
Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-0.2103
OLS Regression Intercept	1,921.7327

Insufficient statistical evidence of a significant trend at the specified level of significance.



Mann-Kendall Trend Analysis

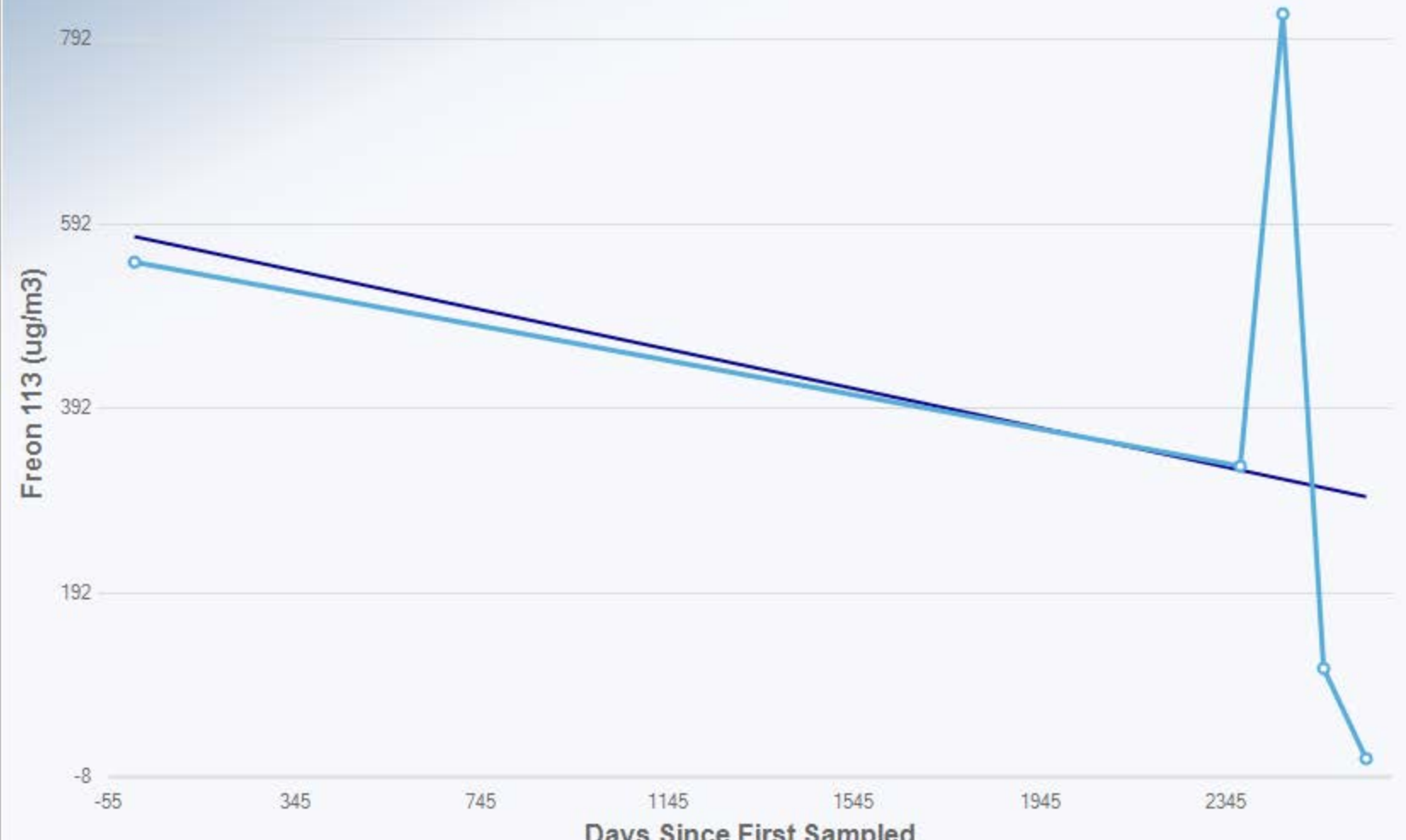
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-185.2782
OLS Regression Intercept	657,794.6089

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-IV-123 at 10 ft Soil Vapor Mann-Kendall Trend Test

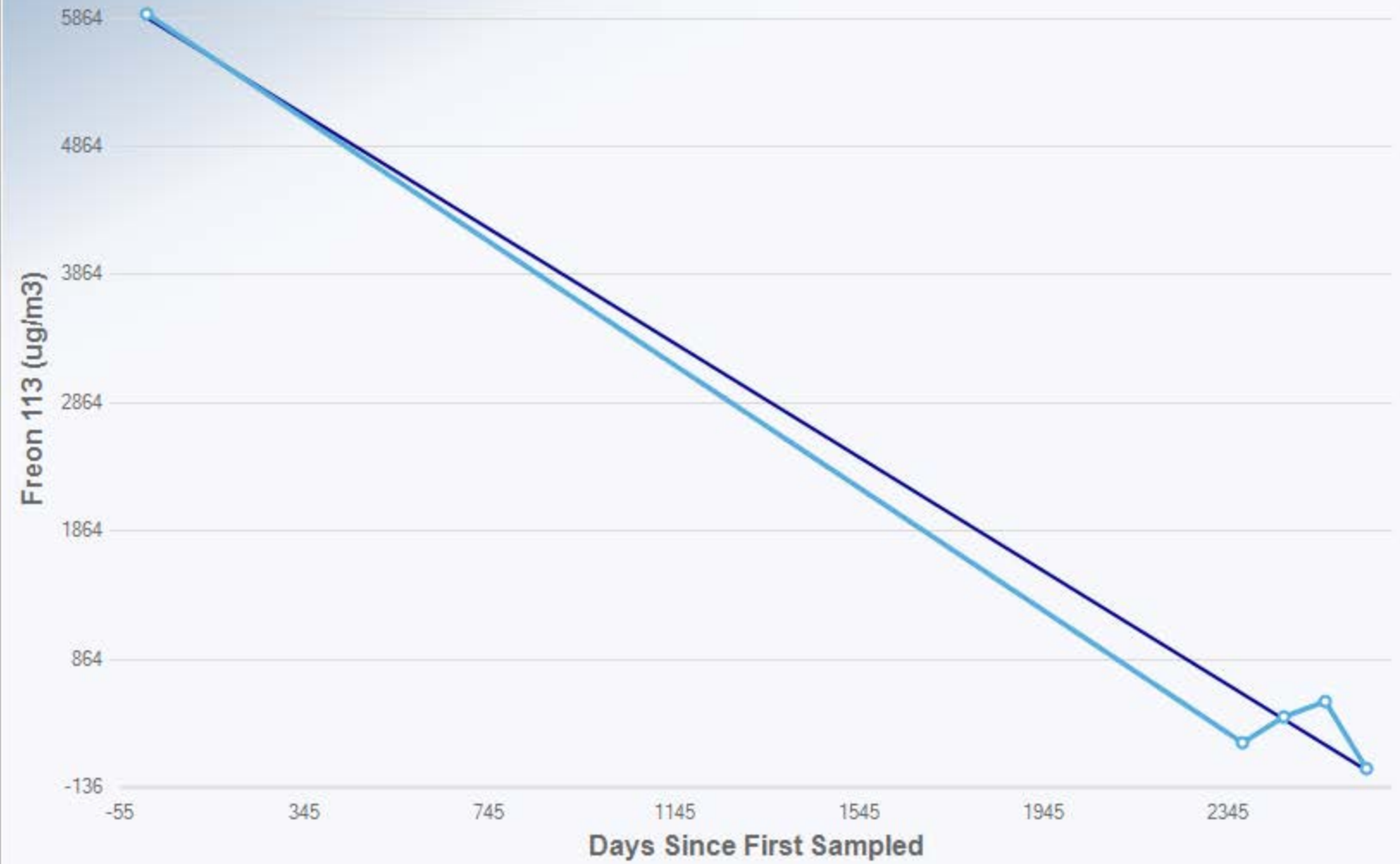


Mann-Kendall Trend Analysis	
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)	
OLS Regression Slope	-0.1066
OLS Regression Intercept	578.1467

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-IV-123 at 45 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

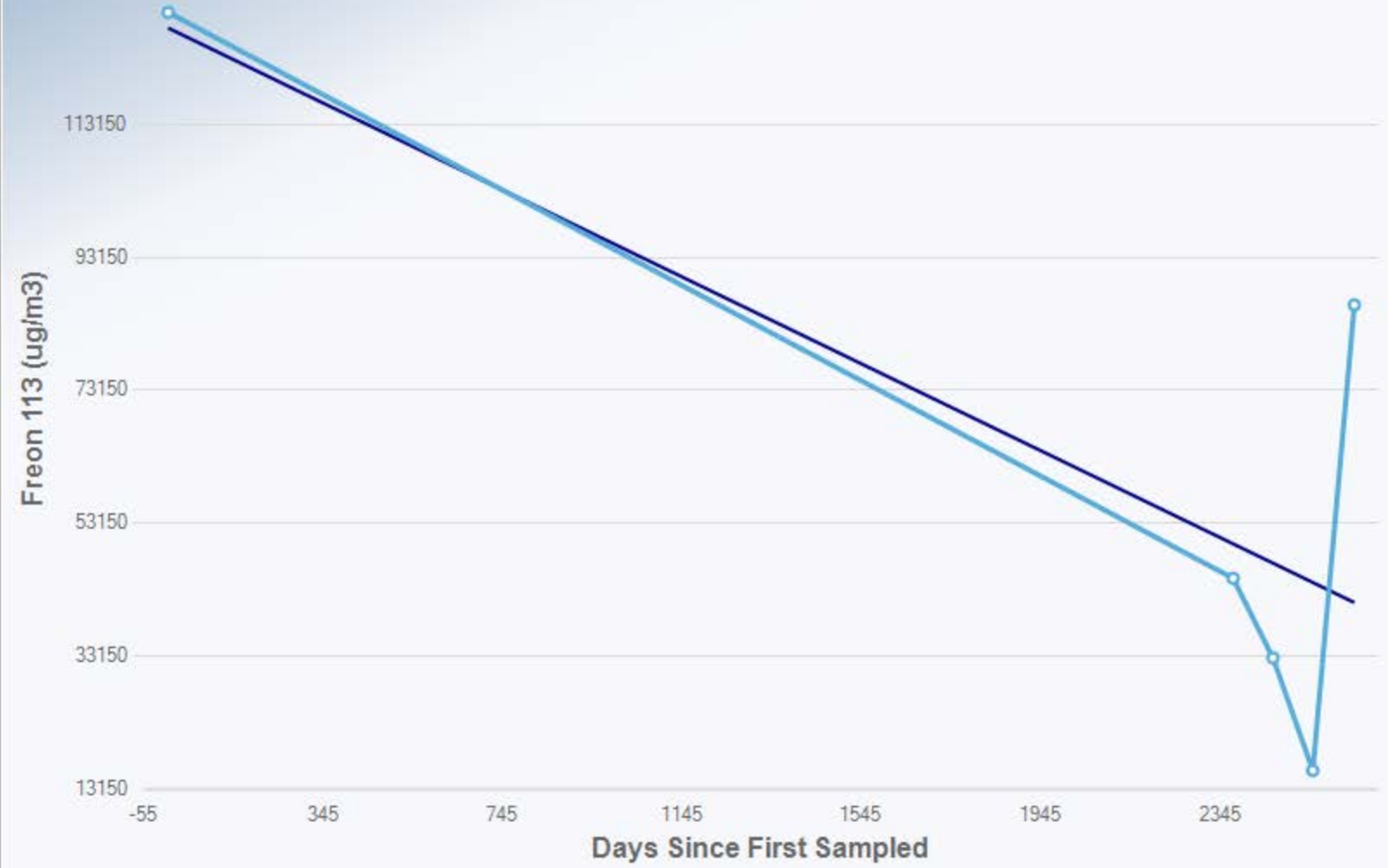
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-2.2231
OLS Regression Intercept	5,872.8280

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-IV-123 at 80 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

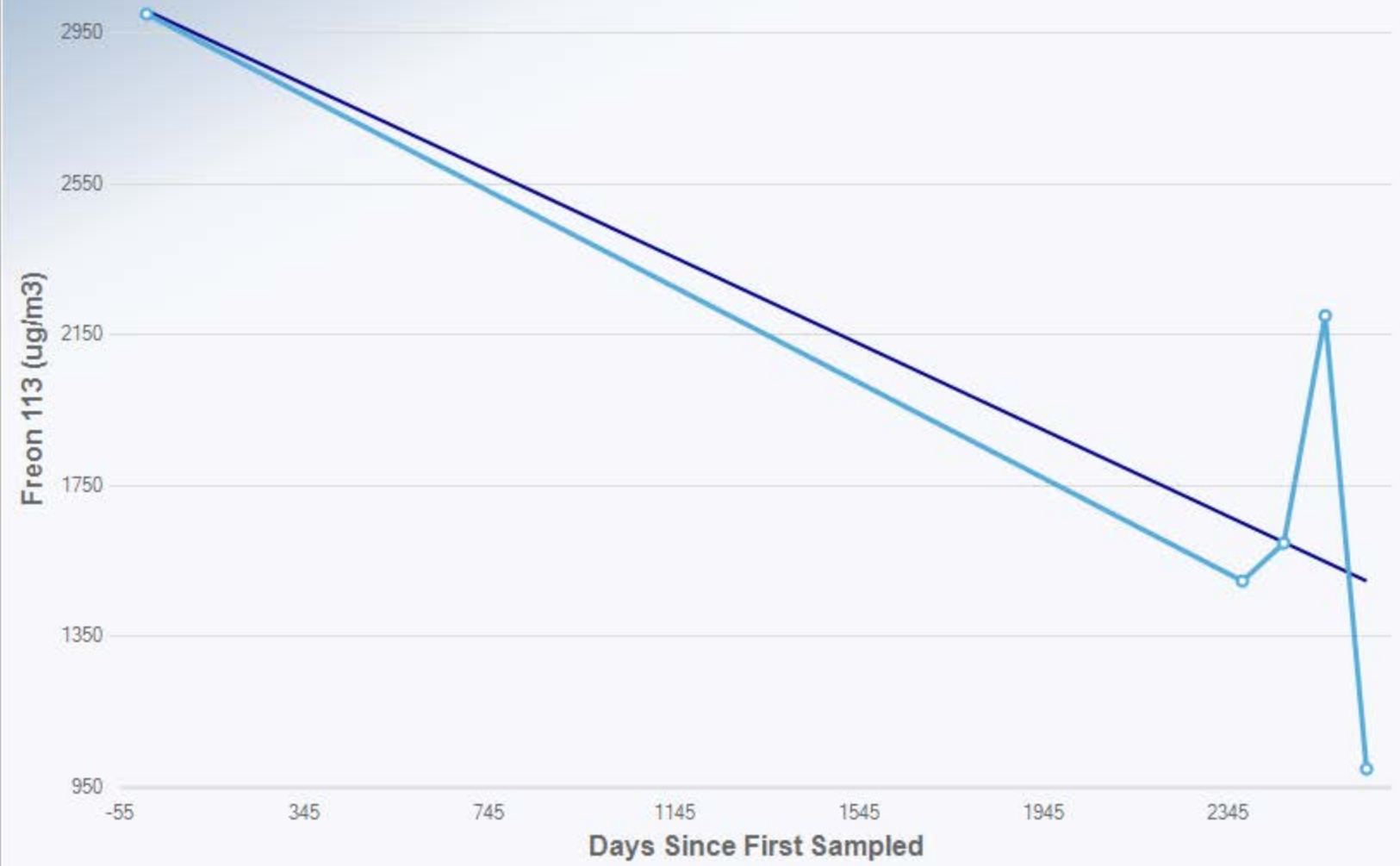
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-32.6930
OLS Regression Intercept	127,569.1789

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-IV-123 at 118 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	-0.5719
OLS Regression Intercept	3,006.9165

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-JV-150 at 12.5 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

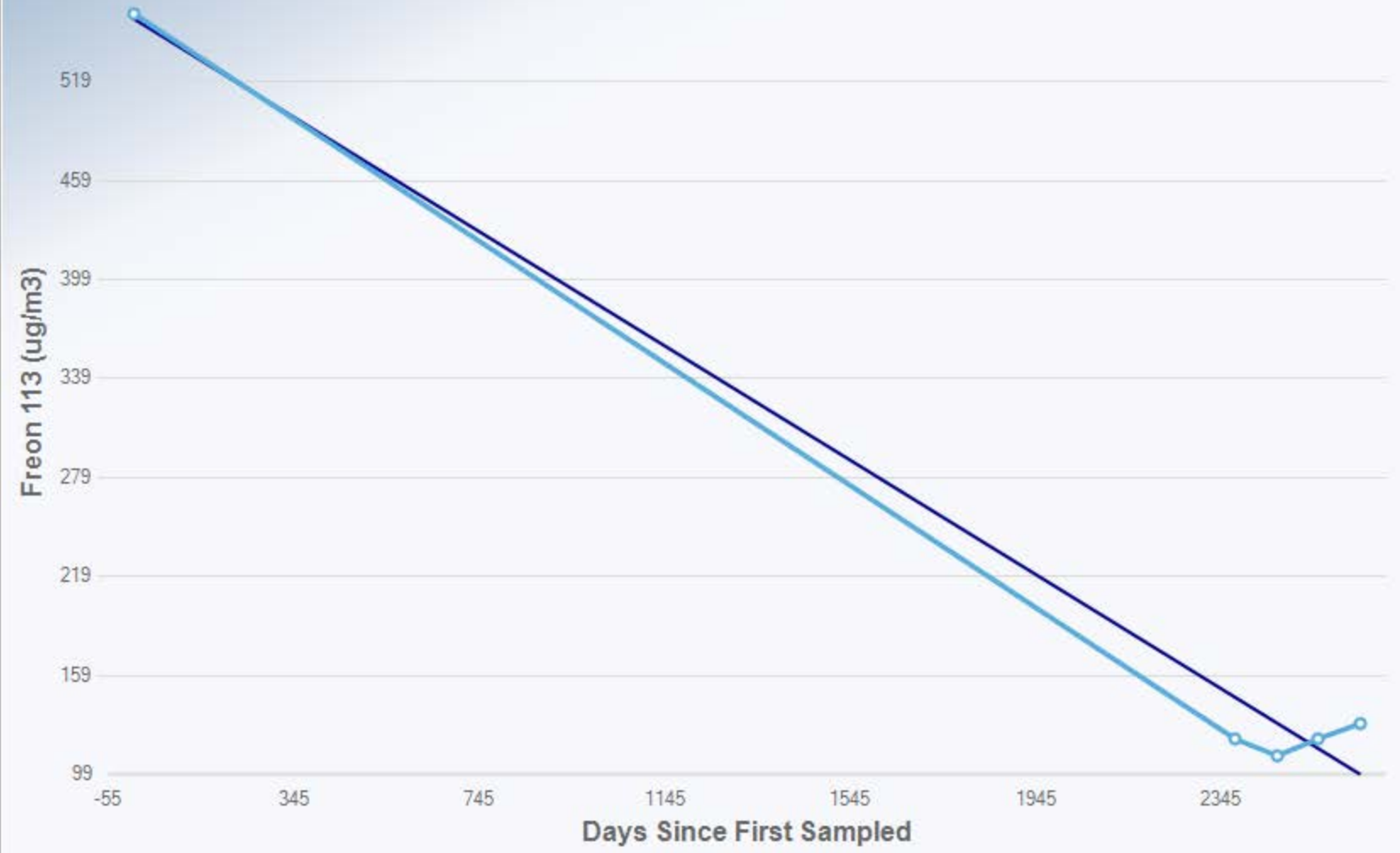
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-2.2045
M-K Test Value (S)	-10
Tabulated p-value	0.0080
Approximate p-value	0.0137

OLS Regression Line (Blue)

OLS Regression Slope	-1.5419
OLS Regression Intercept	3,999.6261

Statistically significant evidence of a decreasing trend at the specified level of significance.

Freon 113 400-JV-150 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.1738
OLS Regression Intercept	556.4751

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-JV-150 at 100 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

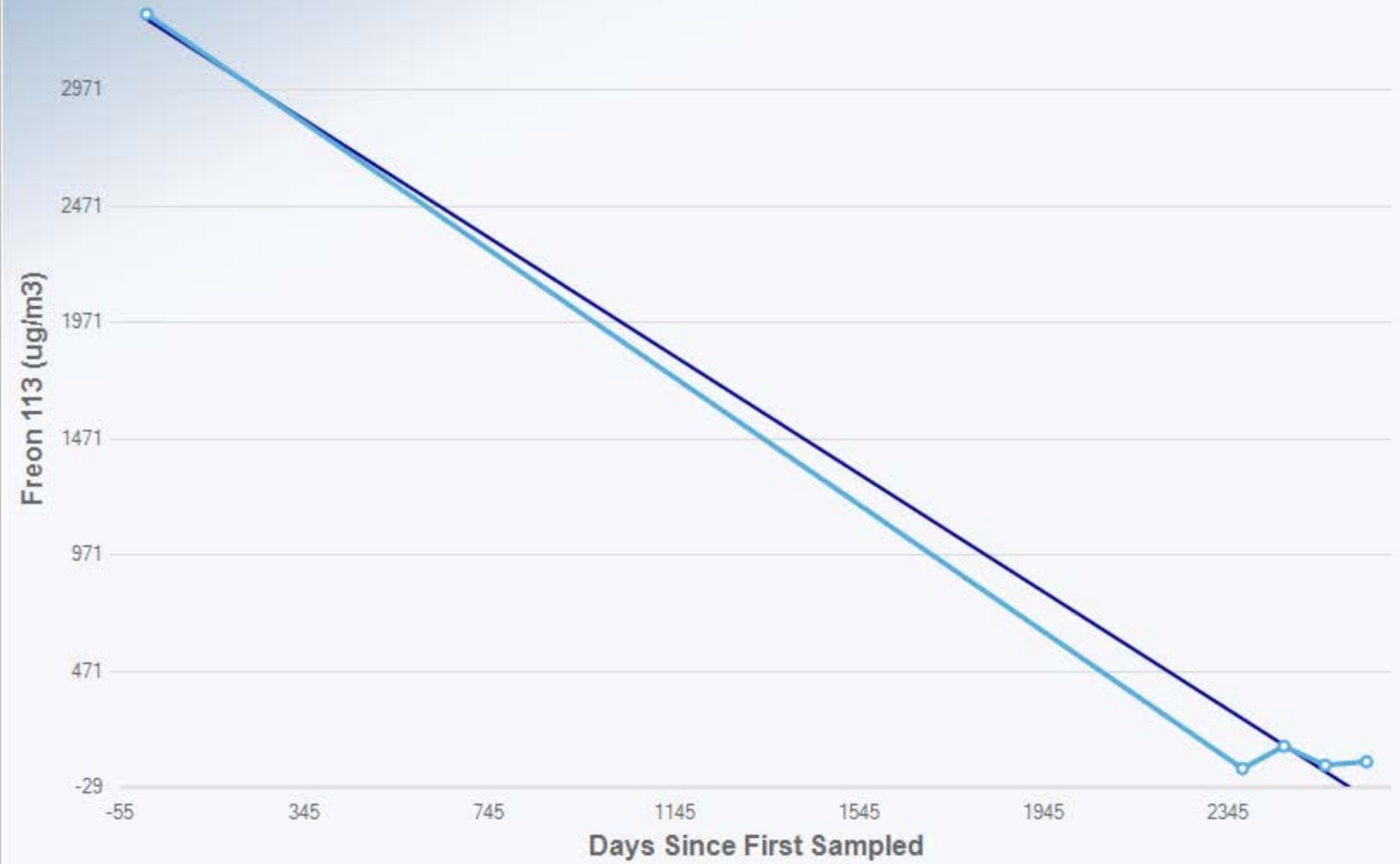
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.7146
M-K Test Value (S)	-8
Tabulated p-value	0.0420
Approximate p-value	0.0432

OLS Regression Line (Blue)

OLS Regression Slope	-1.3512
OLS Regression Intercept	4,625.9184

Statistically significant evidence of a decreasing trend at the specified level of significance.

Freon 113 400-KV-142 at 12.5 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

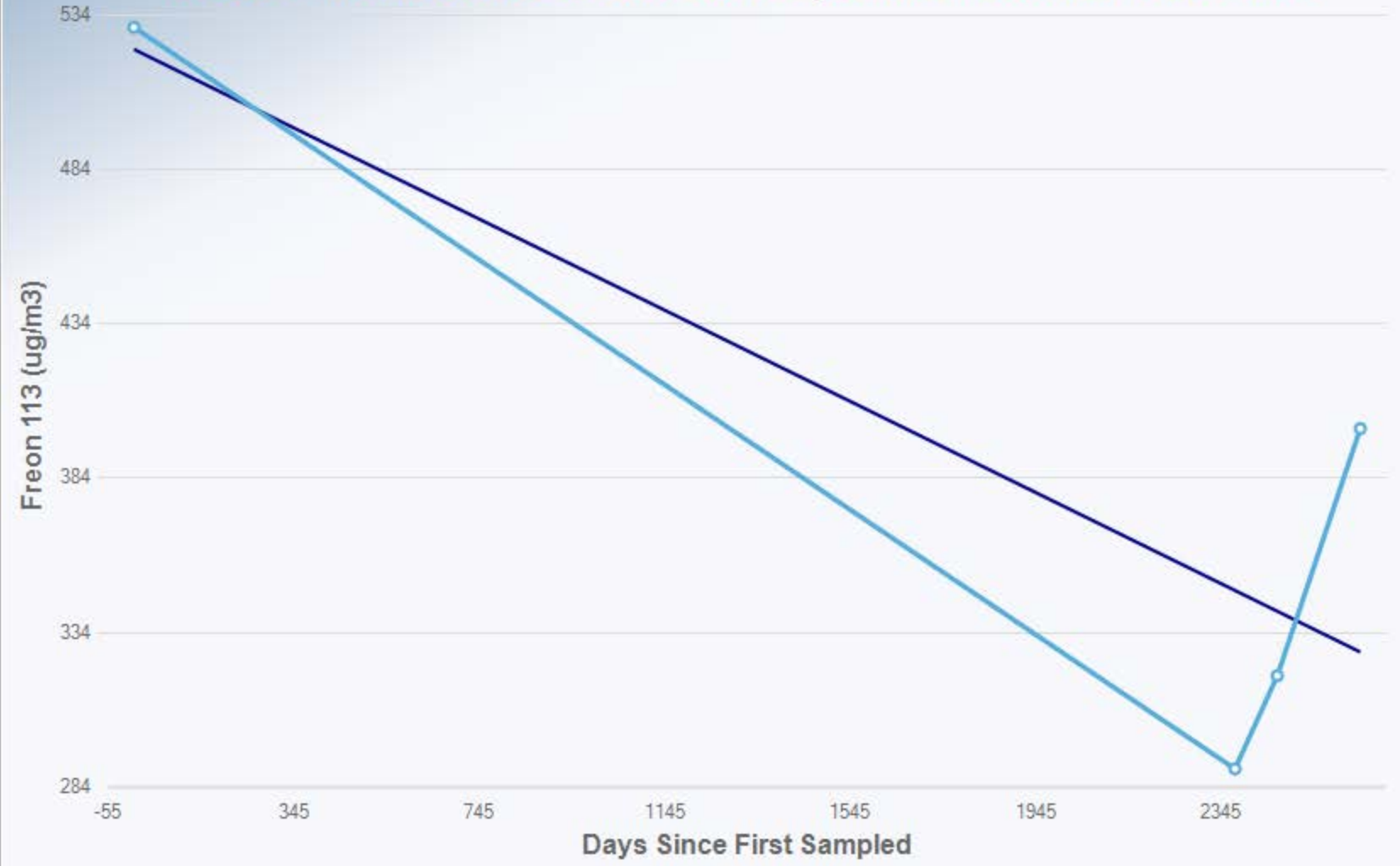
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-1.2708
OLS Regression Intercept	3,279.2734

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-KV-142 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	4
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	2.9439
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.6250
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	-0.0736
OLS Regression Intercept	522.6230

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-KV-142 at 100 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

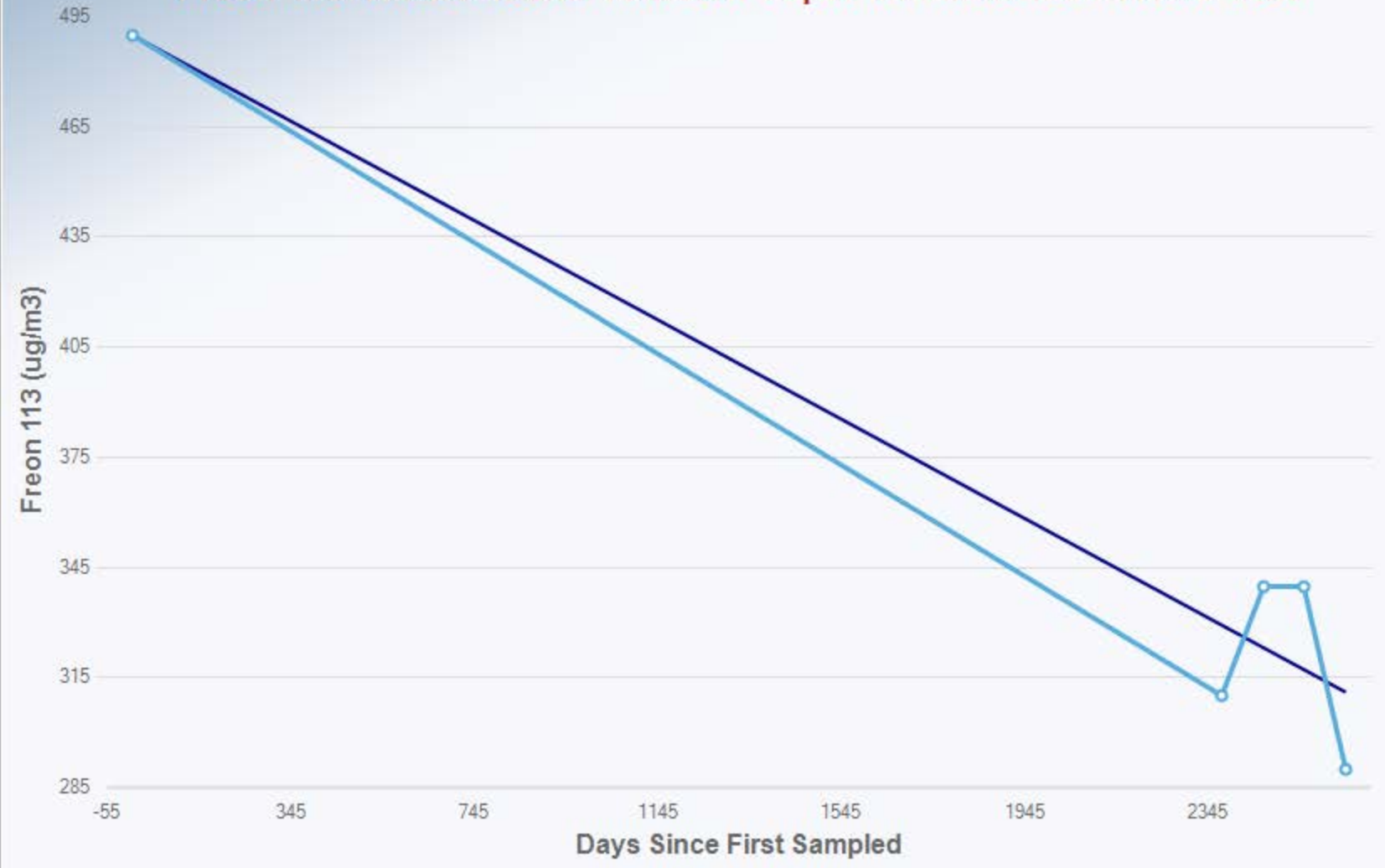
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.6056
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.6350
OLS Regression Intercept	3,373.5867

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-LV-125 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-1.0106
M-K Test Value (S)	-5
Tabulated p-value	0.2420
Approximate p-value	0.1561

OLS Regression Line (Blue)

OLS Regression Slope	-0.0678
OLS Regression Intercept	489.9817

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-LV-125 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	2.0212
M-K Test Value (S)	9
Tabulated p-value	0.0420
Approximate p-value	0.0216

OLS Regression Line (Blue)

OLS Regression Slope	0.2245
OLS Regression Intercept	1,849.7772

Statistically significant evidence of an increasing trend at the specified level of significance.

Freon 113 400-LV-125 at 95 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

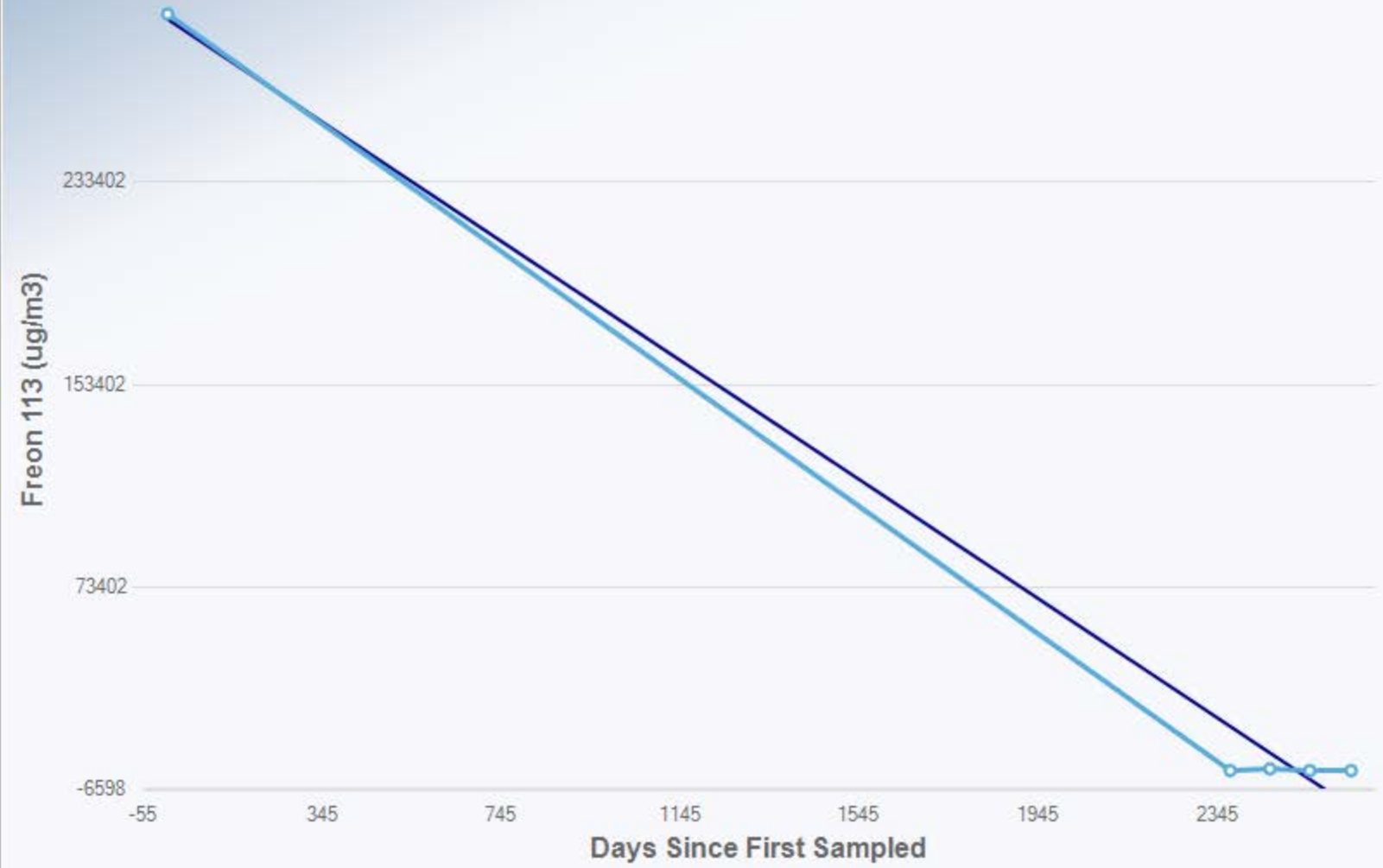
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	-0.5053
M-K Test Value (S)	-3
Tabulated p-value	0.4080
Approximate p-value	0.3067

OLS Regression Line (Blue)

OLS Regression Slope	-0.0445
OLS Regression Intercept	6,769.2848

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-LV-125 at 122 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

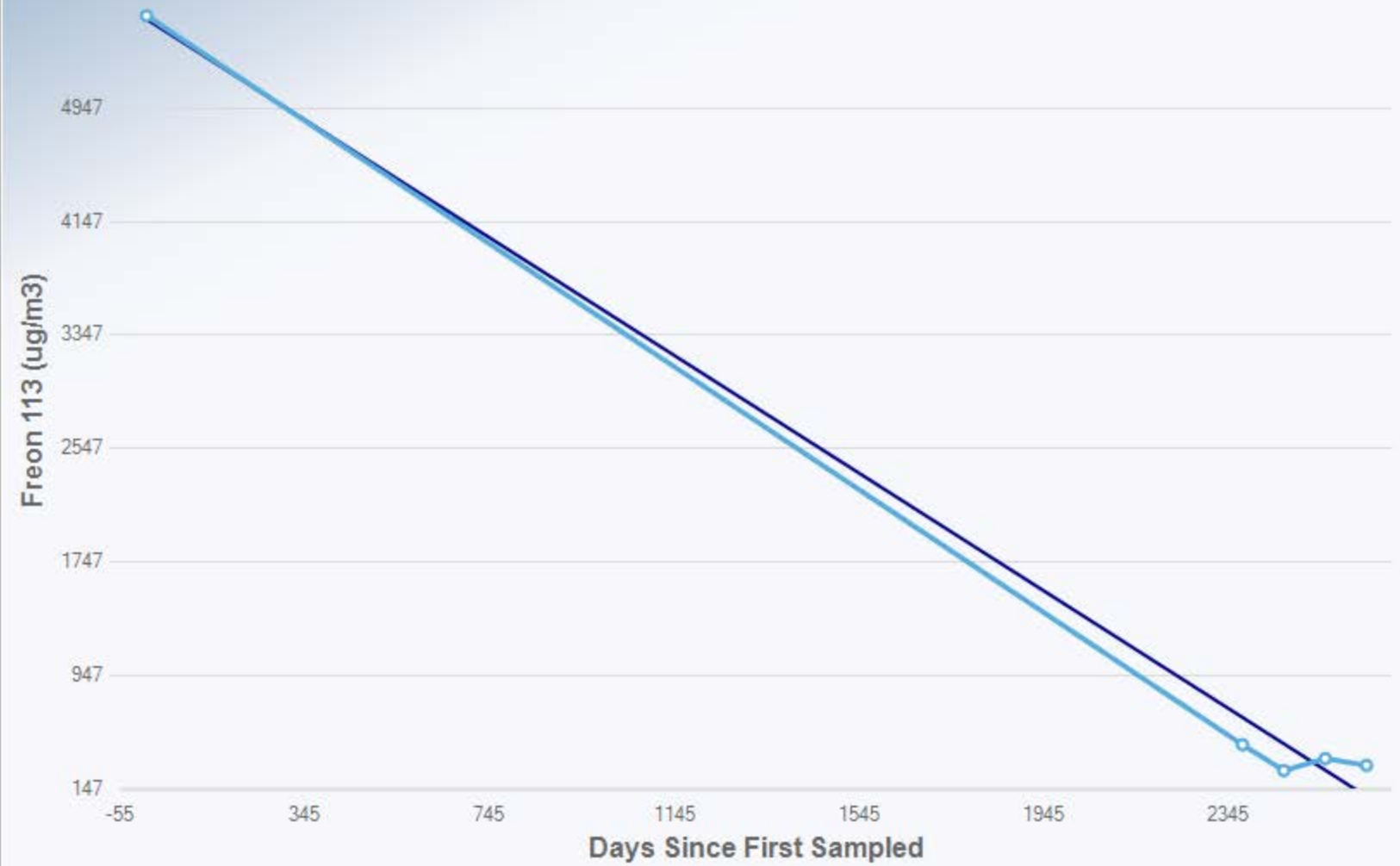
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-118.2940
OLS Regression Intercept	298,084.5002

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-02 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-2.0784
OLS Regression Intercept	5,572.5261

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-02 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0361
OLS Regression Intercept	1,872.4915

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-02 at 100 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	2.8624
OLS Regression Intercept	13,459.0861

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-03 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	-1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.0077
OLS Regression Intercept	271.4907

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-03 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

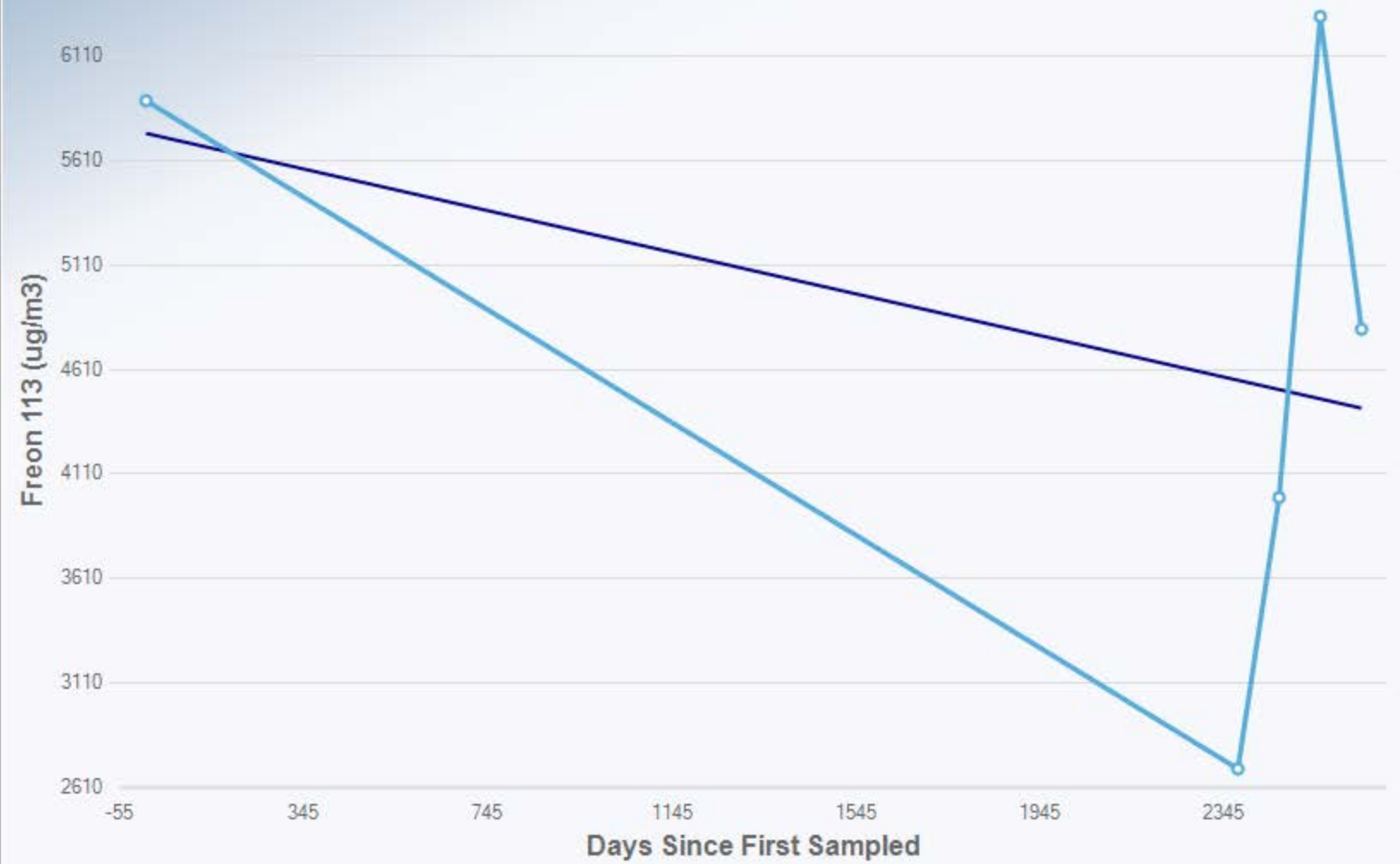
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0292
OLS Regression Intercept	816.6041

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-03 at 92 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

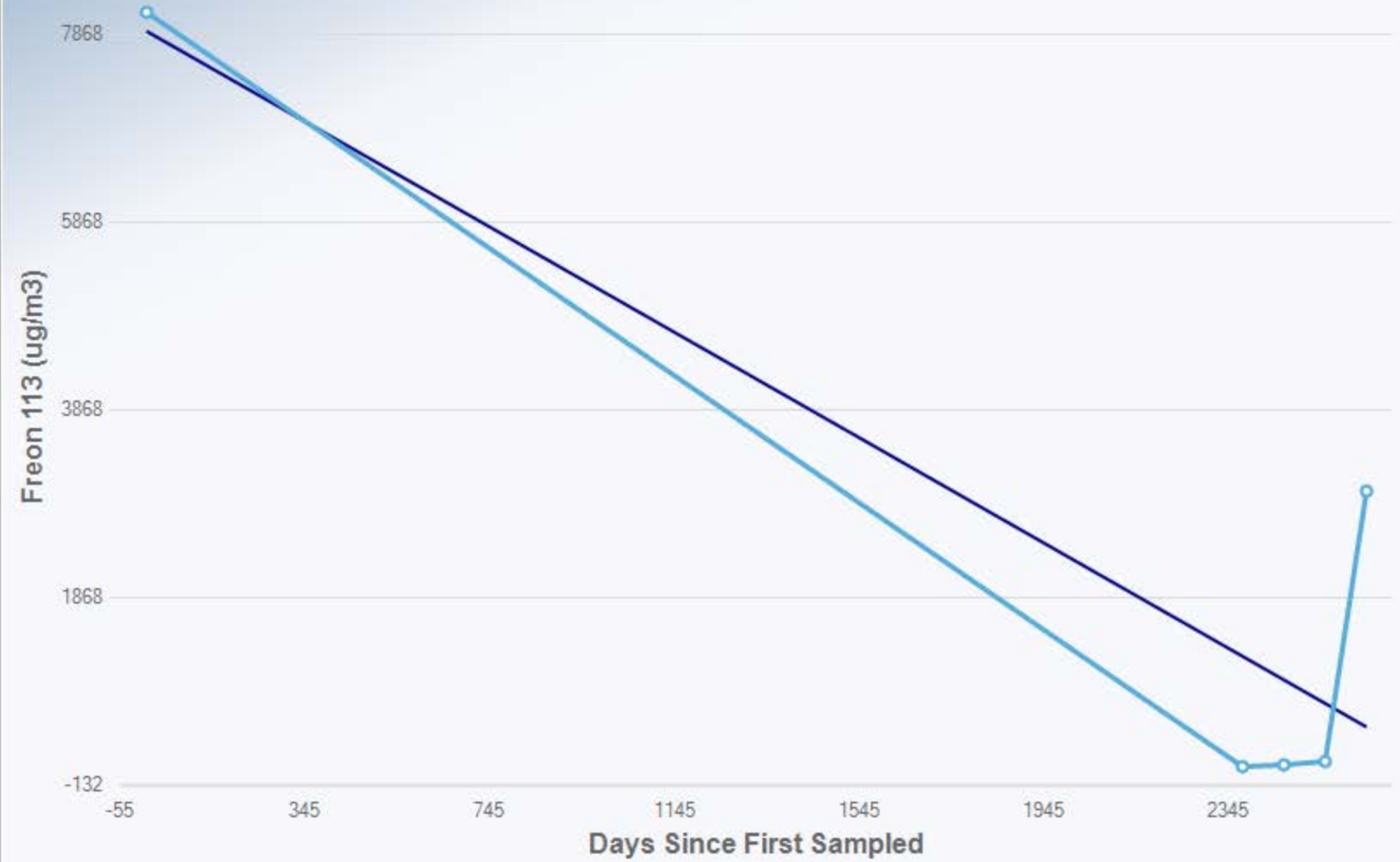
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.4974
OLS Regression Intercept	5,737.5968

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-05 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

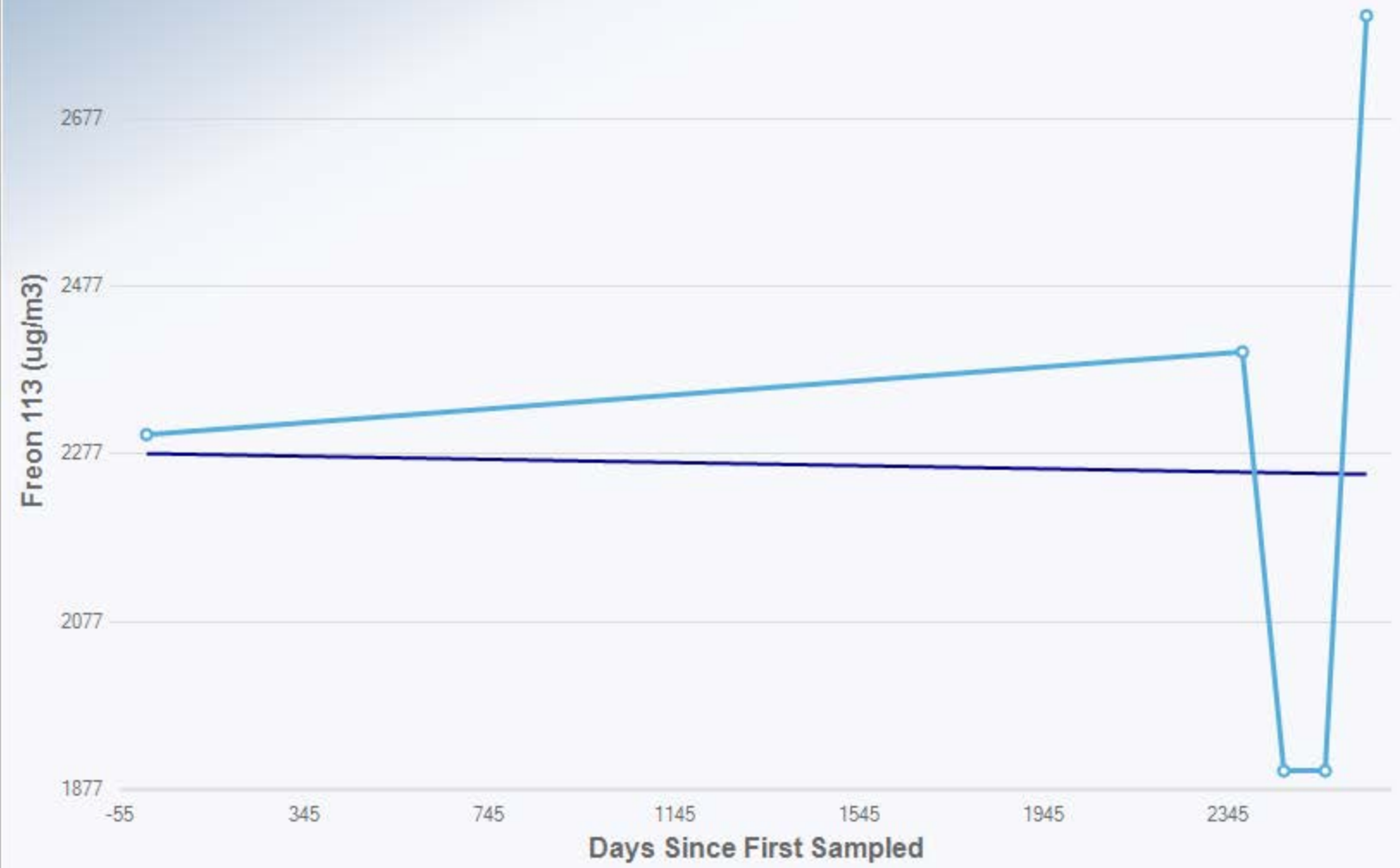
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.2449
M-K Test Value (S)	2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-2.8032
OLS Regression Intercept	7,896.1822

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-05 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

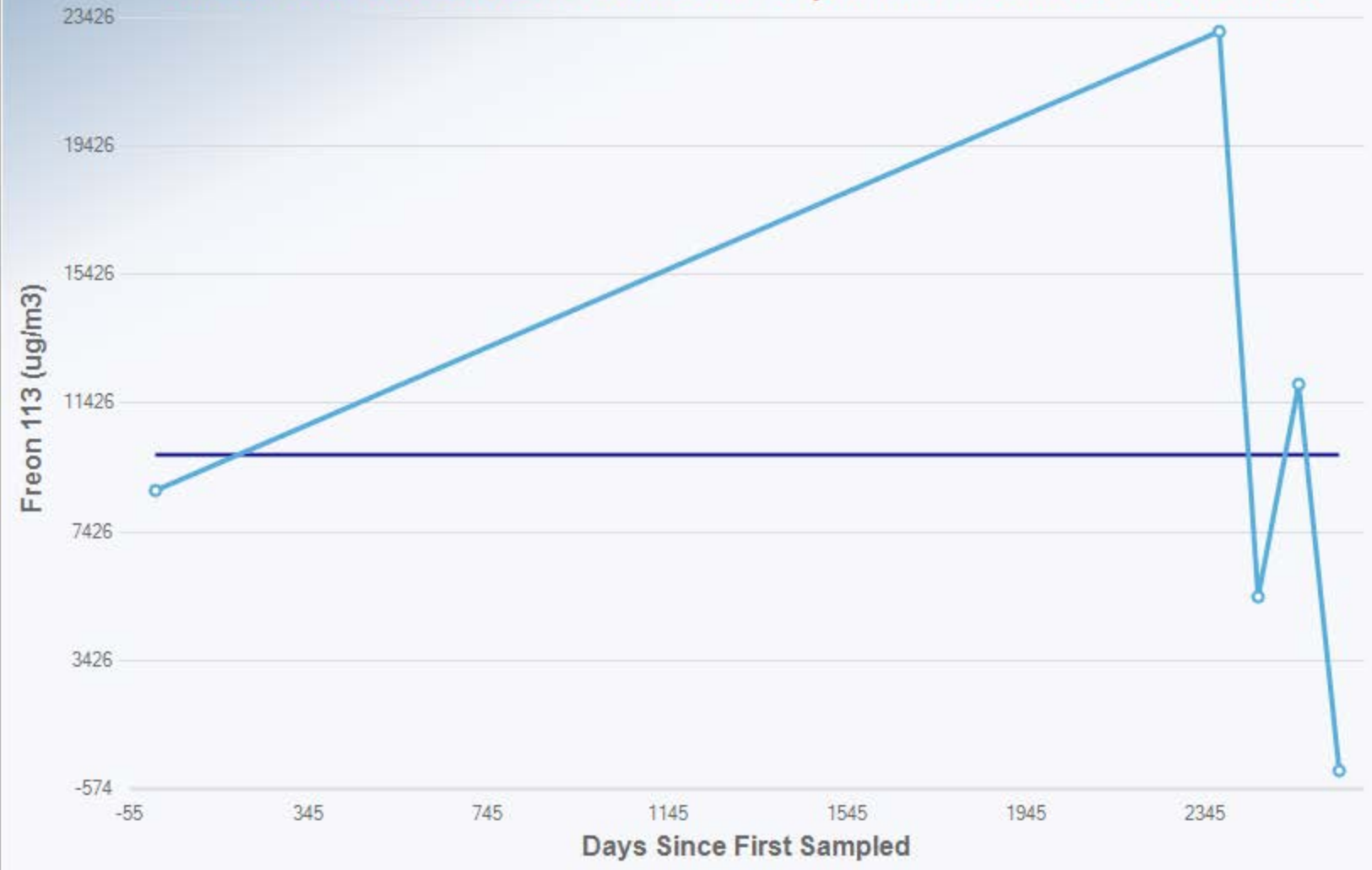
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.0091
OLS Regression Intercept	2,278.3128

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-05 at 100 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

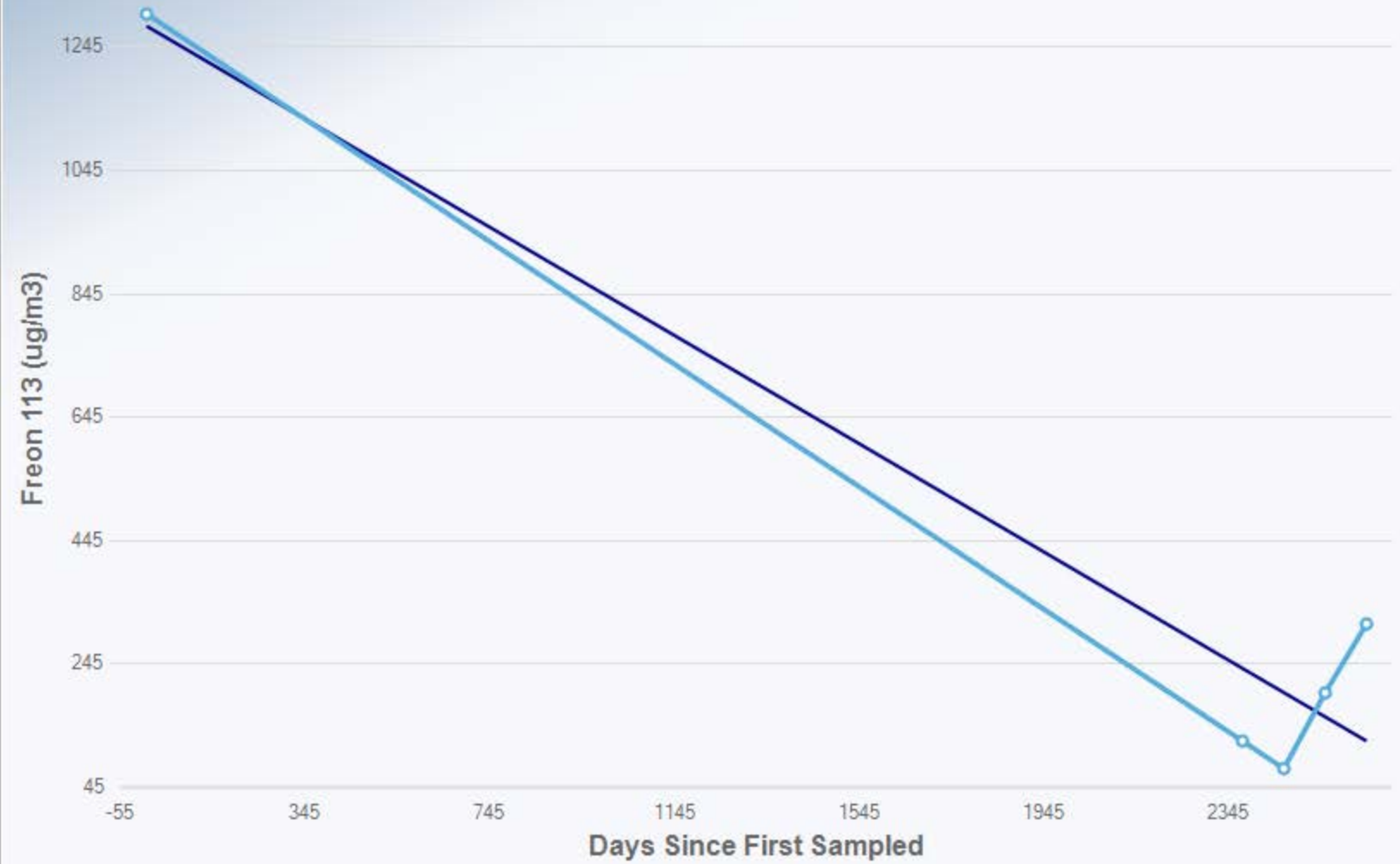
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.7348
M-K Test Value (S)	-4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	0.0001
OLS Regression Intercept	9,820.0011

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-07 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.5920
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	-0.4384
OLS Regression Intercept	1,280.4606

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-07 at 45 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.1750
OLS Regression Intercept	625.0186

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-07 at 100 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

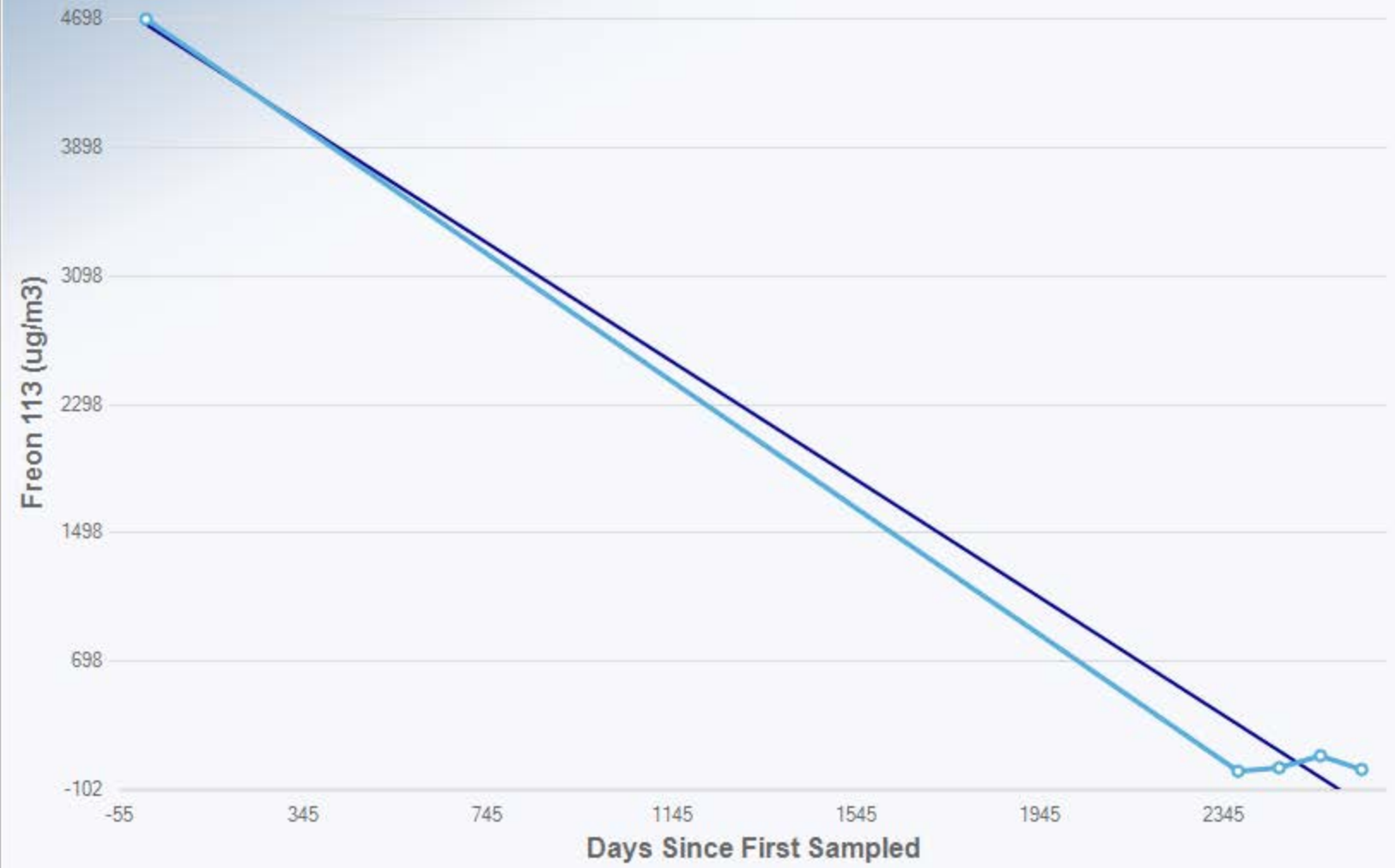
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-2.2045
M-K Test Value (S)	-10
Tabulated p-value	0.0080
Approximate p-value	0.0137

OLS Regression Line (Blue)

OLS Regression Slope	-0.5752
OLS Regression Intercept	3,153.5326

Statistically significant evidence of a decreasing trend at the specified level of significance.

Freon 113 400-SV-09 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-1.8412
OLS Regression Intercept	4,668.5503

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-09 at 45 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

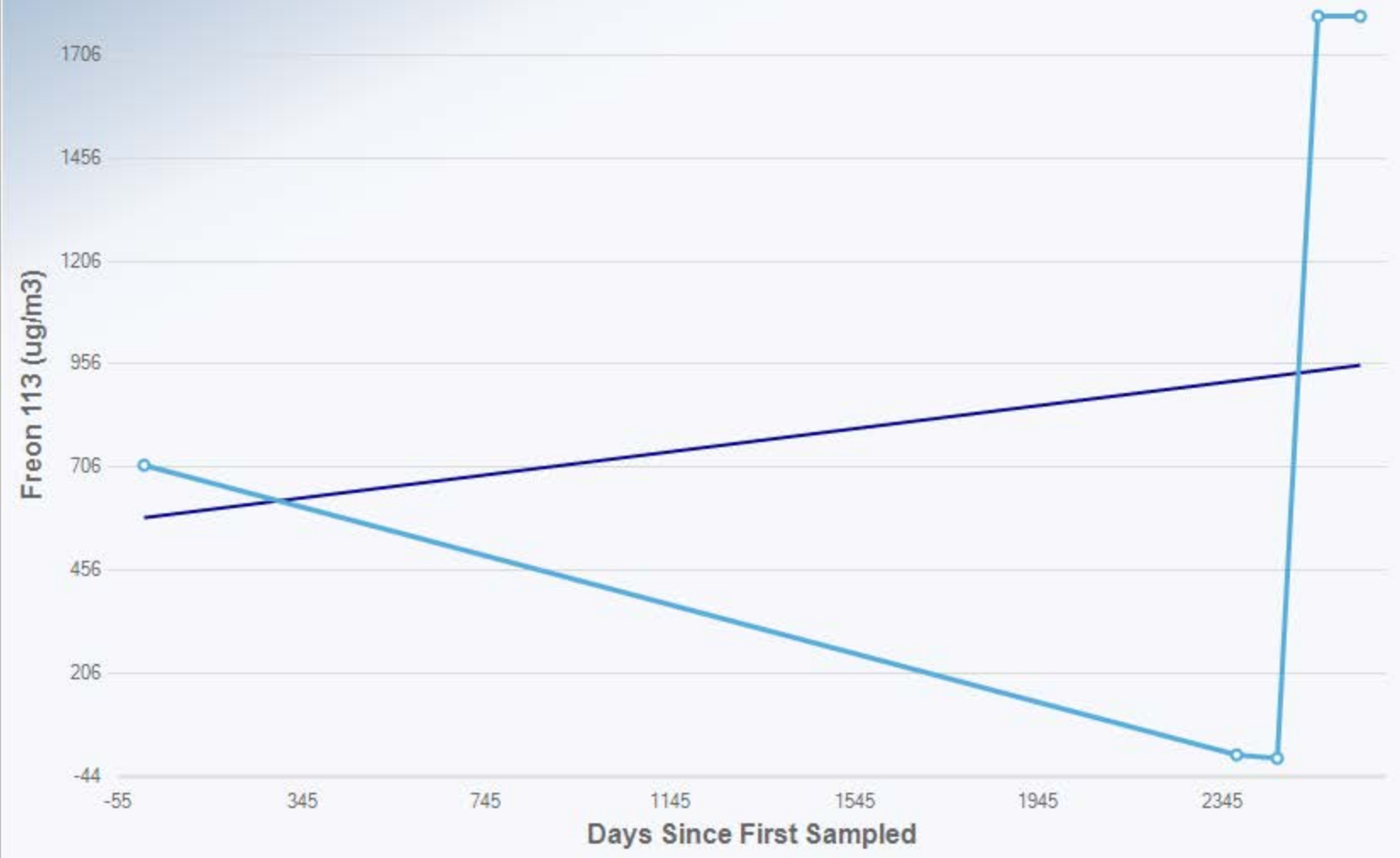
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.0661
OLS Regression Intercept	216.0138

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-09 at 104 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis	
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.5053
M-K Test Value (S)	3
Tabulated p-value	0.4080
Approximate p-value	0.3067

OLS Regression Line (Blue)	
OLS Regression Slope	0.1399
OLS Regression Intercept	583.5735

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-10 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

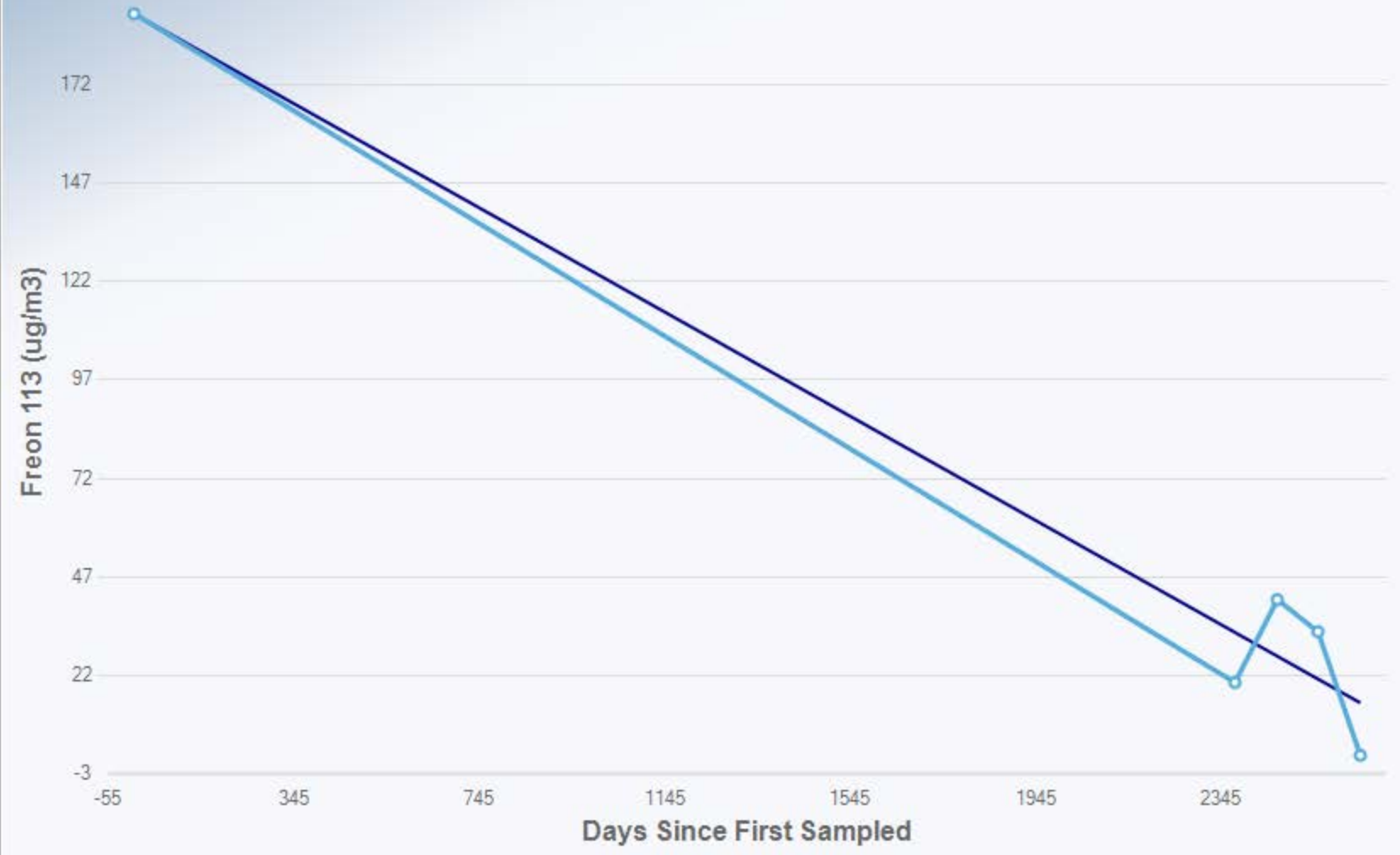
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-0.3862
OLS Regression Intercept	992.5151

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-10 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

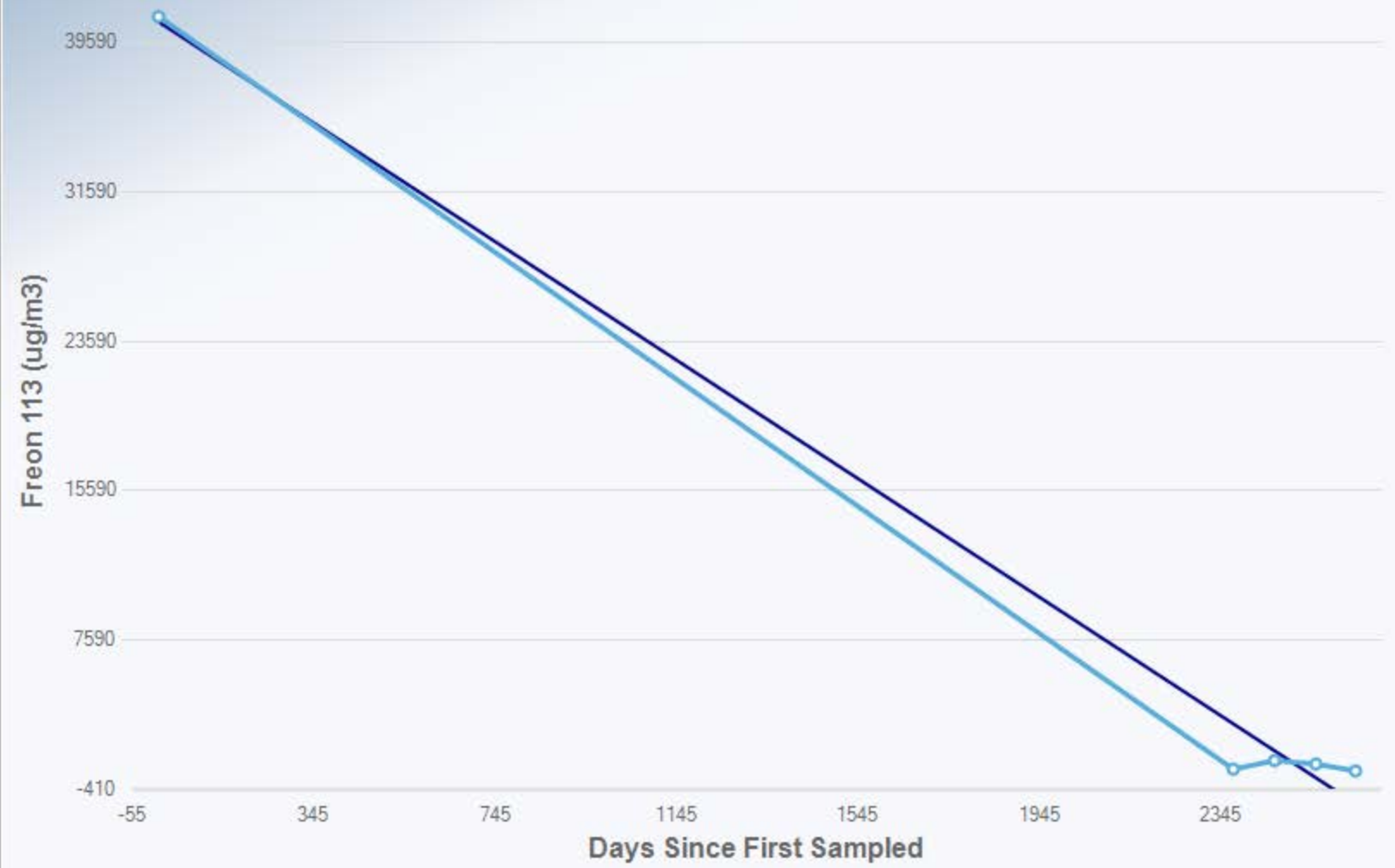
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-0.0663
OLS Regression Intercept	190.0636

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-10 at 100 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-15.8814
OLS Regression Intercept	40,753.6716

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-10 at 125 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	0.7348
M-K Test Value (S)	4
Tabulated p-value	0.2420
Approximate p-value	0.2312

OLS Regression Line (Blue)

OLS Regression Slope	54.0156
OLS Regression Intercept	191,666.3862

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-15 at 10 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

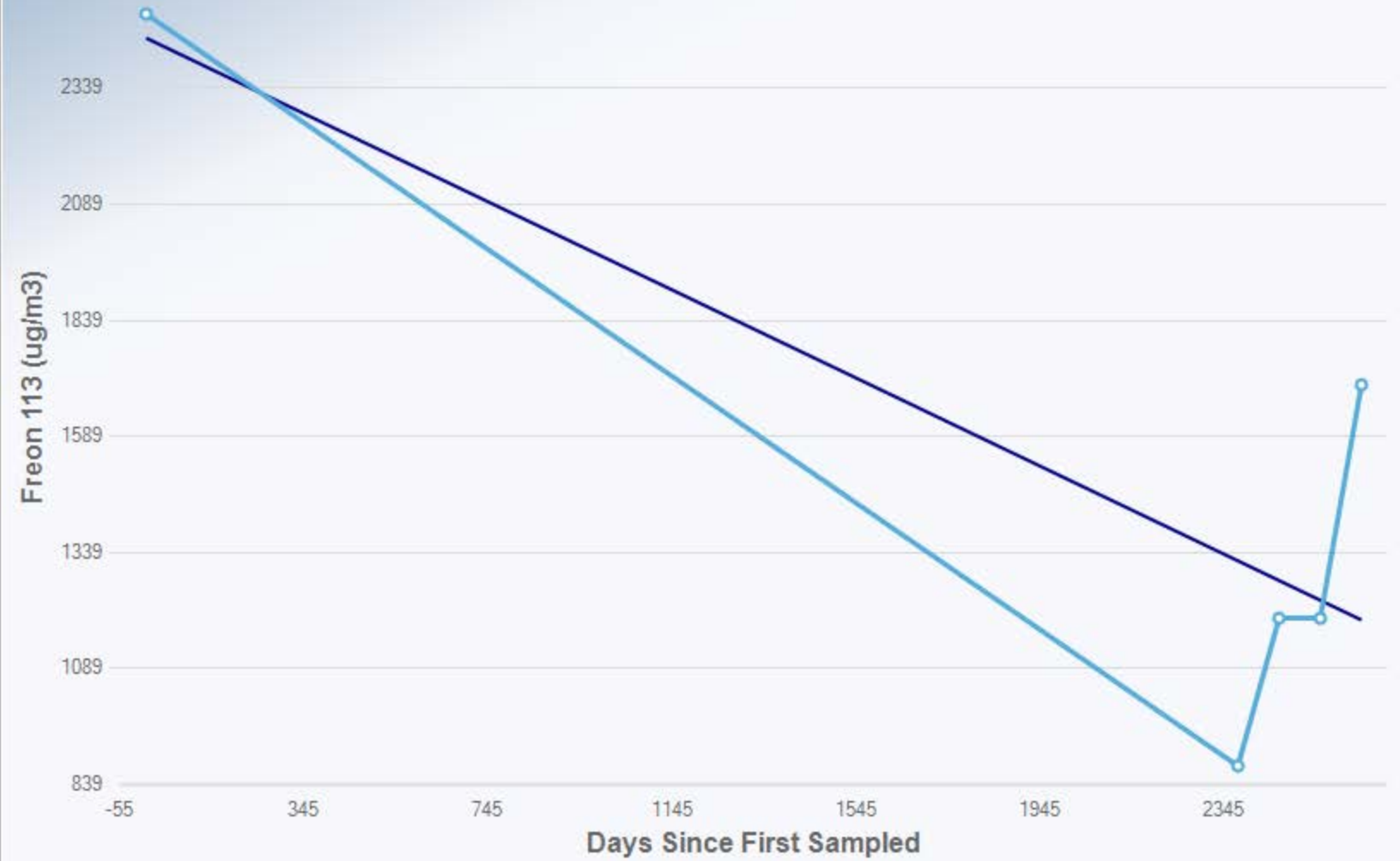
n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-1.2247
M-K Test Value (S)	-6
Tabulated p-value	0.1170
Approximate p-value	0.1103

OLS Regression Line (Blue)

OLS Regression Slope	-0.0637
OLS Regression Intercept	514.4707

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-15 at 50 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	3.9581
Standardized Value of S	0.0000
M-K Test Value (S)	1
Tabulated p-value	0.5920
Approximate p-value	0.5000

OLS Regression Line (Blue)

OLS Regression Slope	-0.4748
OLS Regression Intercept	2,448.1740

Insufficient statistical evidence of a significant trend at the specified level of significance.

Freon 113 400-SV-15 at 90 ft Soil Vapor Mann-Kendall Trend Test



Mann-Kendall Trend Analysis

n	5
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	4.0825
Standardized Value of S	-0.2449
M-K Test Value (S)	-2
Tabulated p-value	0.4080
Approximate p-value	0.4032

OLS Regression Line (Blue)

OLS Regression Slope	-1.1896
OLS Regression Intercept	8,165.9036

Insufficient statistical evidence of a significant trend at the specified level of significance.

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:23:56 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**2prop_400JV_12_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	0.98							
18			Maximum	160							
19			Mean	55							
20			Geometric Mean	18.44							
21			Median	29.5							
22			Standard Deviation	71.9							
23			Coefficient of Variation	1.307							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	0							
27			Tabulated p-value	0.625							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	N/A							
30			Approximate p-value	N/A							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:28:53 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**2prop_400SV7_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	0.8							
17			Maximum	190							
18			Mean	45.9							
19			Geometric Mean	12.15							
20			Median	10							
21			Standard Deviation	80.84							
22			Coefficient of Variation	1.761							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:32:24 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9	**124trimethbenz_400SV3_10**										
10											
11	**General Statistics**										
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	0.3							
17			Maximum	330							
18			Mean	66.54							
19			Geometric Mean	2.115							
20			Median	0.93							
21			Standard Deviation	147.3							
22			Coefficient of Variation	2.213							
23											
24	**Mann-Kendall Test**										
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:20:22 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**Benzene_400SV9_104**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1.3							
17			Maximum	95							
18			Mean	25.36							
19			Geometric Mean	9.51							
20			Median	12							
21			Standard Deviation	39.35							
22			Coefficient of Variation	1.551							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:14:55 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**Cloroform_400SV10_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	0.31							
17			Maximum	130							
18			Mean	30.02							
19			Geometric Mean	6.474							
20			Median	6.4							
21			Standard Deviation	55.96							
22			Coefficient of Variation	1.864							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:17:48 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9	**Cloroform_400SV10_100_NoHighDL**										
10											
11	**General Statistics**										
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	7.6							
18			Maximum	27							
19			Mean	19.15							
20			Geometric Mean	17.3							
21			Median	21							
22			Standard Deviation	8.364							
23			Coefficient of Variation	0.437							
24											
25	**Mann-Kendall Test**										
26			M-K Test Value (S)	2							
27			Tabulated p-value	0.375							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	0.34							
30			Approximate p-value	0.367							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 4:54:28 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400FV_63**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		0.29						
17			Maximum		0.93						
18			Mean		0.526						
19			Geometric Mean		0.469						
20			Median		0.41						
21			Standard Deviation		0.284						
22			Coefficient of Variation		0.539						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		-7						
26			Tabulated p-value		0.117						
27			Standard Deviation of S		3.958						
28			Standardized Value of S		-1.516						
29			Approximate p-value		0.0648						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 5:11:18 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400GV_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	0.3							
17			Maximum	2.7							
18			Mean	0.968							
19			Geometric Mean	0.63							
20			Median	0.34							
21			Standard Deviation	1.042							
22			Coefficient of Variation	1.076							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-1							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	0							
29			Approximate p-value	0.5							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 5:18:08 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400GV_105_NoHighDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	3							
14			Number Values Reported (n)	4							
15			Number Values Missing	1							
16			Number Values Used	3							
17			Minimum	9.2							
18			Maximum	230							
19			Mean	153.1							
20			Geometric Mean	77.5							
21			Median	220							
22			Standard Deviation	124.7							
23			Coefficient of Variation	0.815							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-1							
27			Tabulated p-value	N/A							
28			Standard Deviation of S	1.915							
29			Standardized Value of S	0							
30			Approximate p-value	0.5							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 5:21:33 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400HV_95_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	5							
14			Number Values Reported (n)	5							
15			Minimum	1							
16			Maximum	3.4							
17			Mean	2.2							
18			Geometric Mean	2.019							
19			Median	2.2							
20			Standard Deviation	0.949							
21			Coefficient of Variation	0.431							
22											
23			**Mann-Kendall Test**								
24			M-K Test Value (S)	-2							
25			Tabulated p-value	0.408							
26			Standard Deviation of S	4.082							
27			Standardized Value of S	-0.245							
28			Approximate p-value	0.403							
29											
30	**Insufficient evidence to identify a significant**										
31	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 5:32:56 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400HV_130_NoHighDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	3.1							
18			Maximum	500							
19			Mean	136.5							
20			Geometric Mean	28.61							
21			Median	21.5							
22			Standard Deviation	242.5							
23			Coefficient of Variation	1.776							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-4							
27			Tabulated p-value	0.167							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	-1.019							
30			Approximate p-value	0.154							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 5:37:54 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400IV_80_NoHighDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	68							
18			Maximum	980							
19			Mean	337							
20			Geometric Mean	196.6							
21			Median	150							
22			Standard Deviation	430.5							
23			Coefficient of Variation	1.277							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-2							
27			Tabulated p-value	0.375							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	-0.34							
30			Approximate p-value	0.367							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 5:40:48 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400IV_118_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	3							
14			Number Values Reported (n)	5							
15			Number Values Missing	2							
16			Number Values Used	3							
17			Minimum	1.6							
18			Maximum	3							
19			Mean	2.2							
20			Geometric Mean	2.125							
21			Median	2							
22			Standard Deviation	0.721							
23			Coefficient of Variation	0.328							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-3							
27			Tabulated p-value	N/A							
28			Standard Deviation of S	1.915							
29			Standardized Value of S	-1.044							
30			Approximate p-value	0.148							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 5:50:06 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400JV_12_SV**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	0.29							
17			Maximum	15							
18			Mean	3.334							
19			Geometric Mean	0.814							
20			Median	0.43							
21			Standard Deviation	6.523							
22			Coefficient of Variation	1.957							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-9							
26			Tabulated p-value	0.042							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-2.021							
29			Approximate p-value	0.0216							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:17:53 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400JV_100_SV_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	0.75							
18			Maximum	1.7							
19			Mean	1.213							
20			Geometric Mean	1.162							
21			Median	1.2							
22			Standard Deviation	0.397							
23			Coefficient of Variation	0.327							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-6							
27			Tabulated p-value	0.042							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	-1.698							
30			Approximate p-value	0.0447							
31											
32	**Statistically significant evidence of a decreasing**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:23:52 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400KV_12_SV**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	0.28							
17			Maximum	6.4							
18			Mean	1.626							
19			Geometric Mean	0.688							
20			Median	0.4							
21			Standard Deviation	2.676							
22			Coefficient of Variation	1.646							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-9							
26			Tabulated p-value	0.042							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-2.021							
29			Approximate p-value	0.0216							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:26:47 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400KV_50_SV**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	1							
14			Number or Reported Events Used	4							
15			Number Values Reported (n)	5							
16			Number Values Missing	1							
17			Number Values Used	4							
18			Minimum	0.81							
19			Maximum	2.5							
20			Mean	1.49							
21			Geometric Mean	1.345							
22			Median	1.325							
23			Standard Deviation	0.779							
24			Coefficient of Variation	0.522							
25											
26			**Mann-Kendall Test**								
27			M-K Test Value (S)	-6							
28			Tabulated p-value	0.042							
29			Standard Deviation of S	2.944							
30			Standardized Value of S	-1.698							
31			Approximate p-value	0.0447							
32											
33	**Statistically significant evidence of a decreasing**										
34	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:29:11 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400KV_100_SV_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	1.3							
18			Maximum	2.2							
19			Mean	1.725							
20			Geometric Mean	1.694							
21			Median	1.7							
22			Standard Deviation	0.377							
23			Coefficient of Variation	0.219							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-2							
27			Tabulated p-value	0.375							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	-0.34							
30			Approximate p-value	0.367							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:31:20 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400LV_50_SV**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	2.4							
17			Maximum	38							
18			Mean	9.72							
19			Geometric Mean	4.498							
20			Median	2.9							
21			Standard Deviation	15.81							
22			Coefficient of Variation	1.627							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	3.83							
28			Standardized Value of S	-0.783							
29			Approximate p-value	0.217							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:33:50 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400LV_95_SV_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used		0						
13			Number of Generated Events		4						
14			Number Values Reported (n)		5						
15			Number Values Missing		1						
16			Number Values Used		4						
17			Minimum		2.6						
18			Maximum		6.8						
19			Mean		5.175						
20			Geometric Mean		4.852						
21			Median		5.65						
22			Standard Deviation		1.902						
23			Coefficient of Variation		0.367						
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)		-2						
27			Tabulated p-value		0.375						
28			Standard Deviation of S		2.944						
29			Standardized Value of S		-0.34						
30			Approximate p-value		0.367						
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:36:06 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400SV2_50_SV**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1.3							
17			Maximum	2							
18			Mean	1.6							
19			Geometric Mean	1.582							
20			Median	1.6							
21			Standard Deviation	0.274							
22			Coefficient of Variation	0.171							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-8							
26			Tabulated p-value	0.042							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.715							
29			Approximate p-value	0.0432							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:38:27 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9	**TCE_400SV2_100_SV_ReducedDL**										
10											
11	**General Statistics**										
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	3							
14			Number Values Reported (n)	5							
15			Number Values Missing	2							
16			Number Values Used	3							
17			Minimum	5.9							
18			Maximum	36							
19			Mean	22.63							
20			Geometric Mean	17.68							
21			Median	26							
22			Standard Deviation	15.33							
23			Coefficient of Variation	0.677							
24											
25	**Mann-Kendall Test**										
26			M-K Test Value (S)	-1							
27			Tabulated p-value	N/A							
28			Standard Deviation of S	1.915							
29			Standardized Value of S	0							
30			Approximate p-value	0.5							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:41:07 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400SV5_50_SV_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	0.28							
18			Maximum	2.5							
19			Mean	1.795							
20			Geometric Mean	1.356							
21			Median	2.2							
22			Standard Deviation	1.023							
23			Coefficient of Variation	0.57							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-6							
27			Tabulated p-value	0.042							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	-1.698							
30			Approximate p-value	0.0447							
31											
32	**Statistically significant evidence of a decreasing**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:43:46 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**TCE_400SV5_100_SV_ReducedDL**								
10											
11			**General Statistics**								
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	0.28							
18			Maximum	37							
19			Mean	11.15							
20			Geometric Mean	3.182							
21			Median	3.65							
22			Standard Deviation	17.38							
23			Coefficient of Variation	1.559							
24											
25			**Mann-Kendall Test**								
26			M-K Test Value (S)	-4							
27			Tabulated p-value	0.167							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	-1.019							
30			Approximate p-value	0.154							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:45:47 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9	**TCE_400SV10_100_SV_NoHighDL**										
10											
11	**General Statistics**										
12			Number or Reported Events Not Used	0							
13			Number of Generated Events	4							
14			Number Values Reported (n)	5							
15			Number Values Missing	1							
16			Number Values Used	4							
17			Minimum	5.5							
18			Maximum	560							
19			Mean	251.1							
20			Geometric Mean	94.17							
21			Median	219.5							
22			Standard Deviation	260.2							
23			Coefficient of Variation	1.036							
24											
25	**Mann-Kendall Test**										
26			M-K Test Value (S)	-2							
27			Tabulated p-value	0.375							
28			Standard Deviation of S	2.944							
29			Standardized Value of S	-0.34							
30			Approximate p-value	0.367							
31											
32	**Insufficient evidence to identify a significant**										
33	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:49:08 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400EV_130**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	260							
17			Maximum	1100000							
18			Mean	220376							
19			Geometric Mean	1843							
20			Median	260							
21			Standard Deviation	491725							
22			Coefficient of Variation	2.231							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-3							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	3.606							
28			Standardized Value of S	-0.555							
29			Approximate p-value	0.29							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:54:26 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400GV_105**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	29000							
17			Maximum	110000							
18			Mean	68400							
19			Geometric Mean	58987							
20			Median	82000							
21			Standard Deviation	36923							
22			Coefficient of Variation	0.54							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:57:27 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400GV_120**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	9800							
17			Maximum	33000							
18			Mean	20760							
19			Geometric Mean	18319							
20			Median	22000							
21			Standard Deviation	10667							
22			Coefficient of Variation	0.514							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-8							
26			Tabulated p-value	0.042							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.715							
29			Approximate p-value	0.0432							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 6:59:27 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400HV_130**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	3.5							
17			Maximum	280000							
18			Mean	131001							
19			Geometric Mean	14656							
20			Median	120000							
21			Standard Deviation	123003							
22			Coefficient of Variation	0.939							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:01:48 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400IV_45**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	39							
17			Maximum	36000							
18			Mean	8748							
19			Geometric Mean	1767							
20			Median	2300							
21			Standard Deviation	15307							
22			Coefficient of Variation	1.75							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:03:53 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400IV_80**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	180000							
17			Maximum	830000							
18			Mean	478000							
19			Geometric Mean	427829							
20			Median	450000							
21			Standard Deviation	234457							
22			Coefficient of Variation	0.49							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-8							
26			Tabulated p-value	0.042							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.715							
29			Approximate p-value	0.0432							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:07:59 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400IV_118**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	5700							
17			Maximum	16000							
18			Mean	9820							
19			Geometric Mean	9225							
20			Median	9000							
21			Standard Deviation	3971							
22			Coefficient of Variation	0.404							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	0							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	N/A							
29			Approximate p-value	N/A							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:09:52 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400LV_122**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	860							
17			Maximum	540000							
18			Mean	108812							
19			Geometric Mean	3524							
20			Median	1000							
21			Standard Deviation	241041							
22			Coefficient of Variation	2.215							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:12:21 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F11_400SV15_90**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		3000						
17			Maximum		21000						
18			Mean		11620						
19			Geometric Mean		9467						
20			Median		10000						
21			Standard Deviation		7319						
22			Coefficient of Variation		0.63						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		0						
26			Tabulated p-value		0.592						
27			Standard Deviation of S		4.082						
28			Standardized Value of S		N/A						
29			Approximate p-value		N/A						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:36:43 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400EV_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	130							
17			Maximum	370							
18			Mean	210							
19			Geometric Mean	195							
20			Median	170							
21			Standard Deviation	96.95							
22			Coefficient of Variation	0.462							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	0							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	N/A							
29			Approximate p-value	N/A							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:38:58 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400EV_47**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	240							
17			Maximum	410							
18			Mean	296							
19			Geometric Mean	290							
20			Median	280							
21			Standard Deviation	70.21							
22			Coefficient of Variation	0.237							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-3							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-0.505							
29			Approximate p-value	0.307							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/15/2025 7:41:55 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400EV_100**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	320							
17			Maximum	2500							
18			Mean	1364							
19			Geometric Mean	1136							
20			Median	1300							
21			Standard Deviation	773							
22			Coefficient of Variation	0.567							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-5							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-1.011							
29			Approximate p-value	0.156							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 8:43:26 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400EV_130**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	310							
17			Maximum	1700000							
18			Mean	340506							
19			Geometric Mean	2408							
20			Median	310							
21			Standard Deviation	759980							
22			Coefficient of Variation	2.232							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-3							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	3.606							
28			Standardized Value of S	-0.555							
29			Approximate p-value	0.29							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 8:48:38 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400FV_15**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1.5							
17			Maximum	410							
18			Mean	160.5							
19			Geometric Mean	42.25							
20			Median	28							
21			Standard Deviation	197.6							
22			Coefficient of Variation	1.231							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 8:51:43 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400FV_63**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	15							
17			Maximum	31							
18			Mean	23.4							
19			Geometric Mean	22.4							
20			Median	23							
21			Standard Deviation	7.537							
22			Coefficient of Variation	0.322							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-3							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-0.505							
29			Approximate p-value	0.307							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 8:54:55 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400GV_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1.3							
17			Maximum	300							
18			Mean	67.7							
19			Geometric Mean	10.3							
20			Median	3.1							
21			Standard Deviation	130.4							
22			Coefficient of Variation	1.927							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-1							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	0							
29			Approximate p-value	0.5							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 8:57:01 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400GV_46**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	0.51							
17			Maximum	740							
18			Mean	317.7							
19			Geometric Mean	80.92							
20			Median	260							
21			Standard Deviation	310.5							
22			Coefficient of Variation	0.977							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 8:59:15 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400GV_105**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	63000							
17			Maximum	220000							
18			Mean	144400							
19			Geometric Mean	131722							
20			Median	170000							
21			Standard Deviation	62676							
22			Coefficient of Variation	0.434							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-3							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-0.505							
29			Approximate p-value	0.307							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:21:40 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400GV_120**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	31000							
17			Maximum	49000							
18			Mean	41200							
19			Geometric Mean	40748							
20			Median	43000							
21			Standard Deviation	6573							
22			Coefficient of Variation	0.16							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-7							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-1.516							
29			Approximate p-value	0.0648							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:23:51 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400HV_12**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	20							
17			Maximum	260							
18			Mean	79.4							
19			Geometric Mean	49.61							
20			Median	42							
21			Standard Deviation	101.4							
22			Coefficient of Variation	1.277							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:26:09 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400HV_45**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	59							
17			Maximum	150							
18			Mean	95.2							
19			Geometric Mean	90.97							
20			Median	90							
21			Standard Deviation	33.37							
22			Coefficient of Variation	0.351							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-10							
26			Tabulated p-value	0.008							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-2.205							
29			Approximate p-value	0.0137							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:29:40 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400HV_95**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1100							
17			Maximum	1900							
18			Mean	1500							
19			Geometric Mean	1466							
20			Median	1500							
21			Standard Deviation	353.6							
22			Coefficient of Variation	0.236							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:31:46 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400HV_130**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	3.3							
17			Maximum	650000							
18			Mean	286201							
19			Geometric Mean	27559							
20			Median	270000							
21			Standard Deviation	270216							
22			Coefficient of Variation	0.944							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:33:47 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400IV_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	12							
17			Maximum	820							
18			Mean	364.4							
19			Geometric Mean	181.4							
20			Median	330							
21			Standard Deviation	328.7							
22			Coefficient of Variation	0.902							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:45:54 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400IV_45**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	11							
17			Maximum	5900							
18			Mean	1414							
19			Geometric Mean	313.6							
20			Median	420							
21			Standard Deviation	2516							
22			Coefficient of Variation	1.779							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:48:34 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400IV_80**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	16000							
17			Maximum	130000							
18			Mean	62000							
19			Geometric Mean	48401							
20			Median	45000							
21			Standard Deviation	45951							
22			Coefficient of Variation	0.741							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:50:25 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400IV_118**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		1000						
17			Maximum		3000						
18			Mean		1860						
19			Geometric Mean		1738						
20			Median		1600						
21			Standard Deviation		766.8						
22			Coefficient of Variation		0.412						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		-4						
26			Tabulated p-value		0.242						
27			Standard Deviation of S		4.082						
28			Standardized Value of S		-0.735						
29			Approximate p-value		0.231						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:52:46 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400JV_12**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	6.7							
17			Maximum	4000							
18			Mean	907.1							
19			Geometric Mean	100.2							
20			Median	78							
21			Standard Deviation	1738							
22			Coefficient of Variation	1.916							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-10							
26			Tabulated p-value	0.008							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-2.205							
29			Approximate p-value	0.0137							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:56:39 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400JV_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		110						
17			Maximum		560						
18			Mean		208						
19			Geometric Mean		163.1						
20			Median		120						
21			Standard Deviation		196.9						
22			Coefficient of Variation		0.947						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		-1						
26			Tabulated p-value		0.592						
27			Standard Deviation of S		3.958						
28			Standardized Value of S		0						
29			Approximate p-value		0.5						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 9:59:04 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400JV_100**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		780						
17			Maximum		4600						
18			Mean		1916						
19			Geometric Mean		1569						
20			Median		1300						
21			Standard Deviation		1536						
22			Coefficient of Variation		0.801						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		-8						
26			Tabulated p-value		0.042						
27			Standard Deviation of S		4.082						
28			Standardized Value of S		-1.715						
29			Approximate p-value		0.0432						
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:01:12 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400KV_12**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	52							
17			Maximum	3300							
18			Mean	730.6							
19			Geometric Mean	170.8							
20			Median	83							
21			Standard Deviation	1437							
22			Coefficient of Variation	1.967							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:03:40 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400KV_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	1							
14			Number or Reported Events Used	4							
15			Number Values Reported (n)	5							
16			Number Values Missing	1							
17			Number Values Used	4							
18			Minimum	290							
19			Maximum	530							
20			Mean	385							
21			Geometric Mean	374.5							
22			Median	360							
23			Standard Deviation	107.2							
24			Coefficient of Variation	0.279							
25											
26			**Mann-Kendall Test**								
27			M-K Test Value (S)	0							
28			Tabulated p-value	0.625							
29			Standard Deviation of S	2.944							
30			Standardized Value of S	N/A							
31			Approximate p-value	N/A							
32											
33	**Insufficient evidence to identify a significant**										
34	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:05:57 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400KV_100**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1700							
17			Maximum	3400							
18			Mean	2100							
19			Geometric Mean	2017							
20			Median	1700							
21			Standard Deviation	738.2							
22			Coefficient of Variation	0.352							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-1							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	3.606							
28			Standardized Value of S	0							
29			Approximate p-value	0.5							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:07:52 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400LV_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	290							
17			Maximum	490							
18			Mean	354							
19			Geometric Mean	347.8							
20			Median	340							
21			Standard Deviation	78.93							
22			Coefficient of Variation	0.223							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-5							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-1.011							
29			Approximate p-value	0.156							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:11:58 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400LV_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1900							
17			Maximum	3000							
18			Mean	2300							
19			Geometric Mean	2270							
20			Median	2300							
21			Standard Deviation	430.1							
22			Coefficient of Variation	0.187							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	9							
26			Tabulated p-value	0.042							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	2.021							
29			Approximate p-value	0.0216							
30											
31	**Statistically significant evidence of an increasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:14:29 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400LV_95**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	5800							
17			Maximum	7100							
18			Mean	6680							
19			Geometric Mean	6663							
20			Median	6900							
21			Standard Deviation	511.9							
22			Coefficient of Variation	0.0766							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-3							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	-0.505							
29			Approximate p-value	0.307							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:17:13 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400LV_122**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	880							
17			Maximum	300000							
18			Mean	60834							
19			Geometric Mean	3201							
20			Median	1100							
21			Standard Deviation	133698							
22			Coefficient of Variation	2.198							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:44:38 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV2_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	280							
17			Maximum	5600							
18			Mean	1404							
19			Geometric Mean	608							
20			Median	360							
21			Standard Deviation	2347							
22			Coefficient of Variation	1.671							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:46:36 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV2_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		1500						
17			Maximum		2100						
18			Mean		1800						
19			Geometric Mean		1789						
20			Median		1800						
21			Standard Deviation		223.6						
22			Coefficient of Variation		0.124						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		2						
26			Tabulated p-value		0.408						
27			Standard Deviation of S		4.082						
28			Standardized Value of S		0.245						
29			Approximate p-value		0.403						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:48:22 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV2_100**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	13000							
17			Maximum	27000							
18			Mean	19200							
19			Geometric Mean	18668							
20			Median	19000							
21			Standard Deviation	5119							
22			Coefficient of Variation	0.267							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:50:05 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV3_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	200							
17			Maximum	370							
18			Mean	256							
19			Geometric Mean	249.5							
20			Median	220							
21			Standard Deviation	68.77							
22			Coefficient of Variation	0.269							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-1							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	0							
29			Approximate p-value	0.5							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:54:58 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV3_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		510						
17			Maximum		970						
18			Mean		758						
19			Geometric Mean		737.3						
20			Median		830						
21			Standard Deviation		191.1						
22			Coefficient of Variation		0.252						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		2						
26			Tabulated p-value		0.408						
27			Standard Deviation of S		4.082						
28			Standardized Value of S		0.245						
29			Approximate p-value		0.403						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 10:57:46 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV3_92**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		2700						
17			Maximum		6300						
18			Mean		4740						
19			Geometric Mean		4539						
20			Median		4800						
21			Standard Deviation		1457						
22			Coefficient of Variation		0.307						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		2						
26			Tabulated p-value		0.408						
27			Standard Deviation of S		4.082						
28			Standardized Value of S		0.245						
29			Approximate p-value		0.403						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:00:00 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV5_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	69							
17			Maximum	8100							
18			Mean	2274							
19			Geometric Mean	439							
20			Median	120							
21			Standard Deviation	3492							
22			Coefficient of Variation	1.536							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:02:07 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV5_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		1900						
17			Maximum		2800						
18			Mean		2260						
19			Geometric Mean		2235						
20			Median		2300						
21			Standard Deviation		378.2						
22			Coefficient of Variation		0.167						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		1						
26			Tabulated p-value		0.592						
27			Standard Deviation of S		3.958						
28			Standardized Value of S		0						
29			Approximate p-value		0.5						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:03:41 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV5_100**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1.2							
17			Maximum	23000							
18			Mean	9820							
19			Geometric Mean	1731							
20			Median	8700							
21			Standard Deviation	8597							
22			Coefficient of Variation	0.875							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:06:12 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV7_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	76							
17			Maximum	1300							
18			Mean	401.2							
19			Geometric Mean	236.2							
20			Median	200							
21			Standard Deviation	510.3							
22			Coefficient of Variation	1.272							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	0							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	N/A							
29			Approximate p-value	N/A							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:09:51 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV7_45**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	150							
17			Maximum	630							
18			Mean	274							
19			Geometric Mean	234.9							
20			Median	200							
21			Standard Deviation	200.3							
22			Coefficient of Variation	0.731							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:12:25 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV7_100**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1200							
17			Maximum	3100							
18			Mean	2000							
19			Geometric Mean	1898							
20			Median	1800							
21			Standard Deviation	731.4							
22			Coefficient of Variation	0.366							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-10							
26			Tabulated p-value	0.008							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-2.205							
29			Approximate p-value	0.0137							
30											
31	**Statistically significant evidence of a decreasing**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:14:24 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV9_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	15							
17			Maximum	4700							
18			Mean	975.8							
19			Geometric Mean	88.32							
20			Median	33							
21			Standard Deviation	2082							
22			Coefficient of Variation	2.134							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:16:08 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV9_45**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)		5						
13			Number of Missing Events		0						
14			Number or Reported Events Used		5						
15			Number Values Reported (n)		5						
16			Minimum		1.4						
17			Maximum		220						
18			Mean		83.48						
19			Geometric Mean		28.88						
20			Median		68						
21			Standard Deviation		90.34						
22			Coefficient of Variation		1.082						
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)		-2						
26			Tabulated p-value		0.408						
27			Standard Deviation of S		4.082						
28			Standardized Value of S		-0.245						
29			Approximate p-value		0.403						
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:17:52 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV9_104**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1.3							
17			Maximum	1800							
18			Mean	864.2							
19			Geometric Mean	124							
20			Median	710							
21			Standard Deviation	901.4							
22			Coefficient of Variation	1.043							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	3							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	0.505							
29			Approximate p-value	0.307							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:20:08 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV10_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	2.1							
17			Maximum	1000							
18			Mean	217.9							
19			Geometric Mean	22.47							
20			Median	9.7							
21			Standard Deviation	438.2							
22			Coefficient of Variation	2.011							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:22:49 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV10_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1.6							
17			Maximum	190							
18			Mean	57.12							
19			Geometric Mean	24.16							
20			Median	33							
21			Standard Deviation	75.76							
22			Coefficient of Variation	1.326							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:24:50 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV10_100**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	600							
17			Maximum	41000							
18			Mean	8902							
19			Geometric Mean	1839							
20			Median	990							
21			Standard Deviation	17945							
22			Coefficient of Variation	2.016							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:26:33 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV10_125**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	100000							
17			Maximum	510000							
18			Mean	300000							
19			Geometric Mean	256416							
20			Median	230000							
21			Standard Deviation	172916							
22			Coefficient of Variation	0.576							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	4							
26			Tabulated p-value	0.242							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	0.735							
29			Approximate p-value	0.231							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:30:50 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV15_10**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	7.8							
17			Maximum	1400							
18			Mean	386.8							
19			Geometric Mean	70.26							
20			Median	20							
21			Standard Deviation	602.7							
22			Coefficient of Variation	1.558							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-6							
26			Tabulated p-value	0.117							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-1.225							
29			Approximate p-value	0.11							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

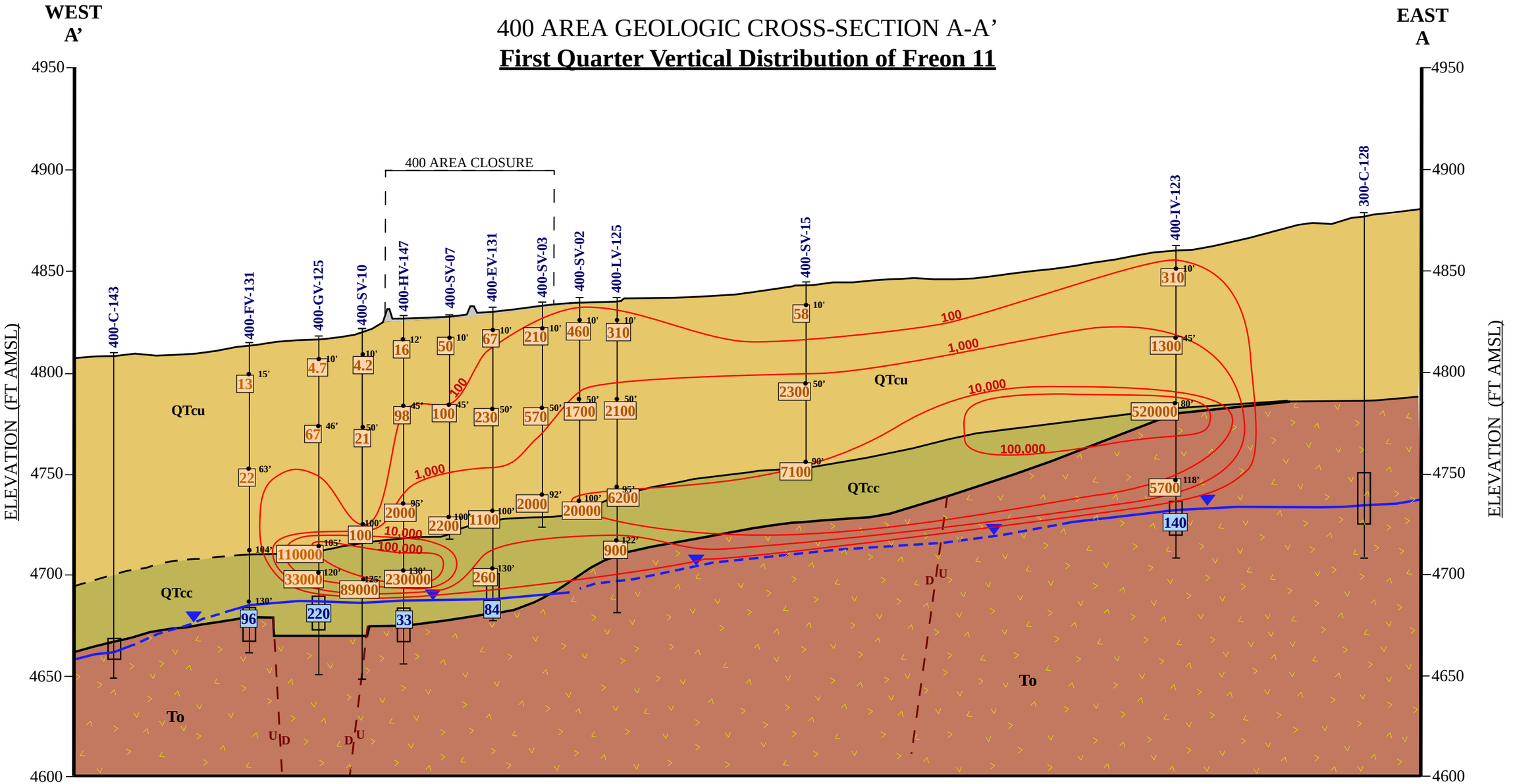
	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:32:42 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV15_50**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	880							
17			Maximum	2500							
18			Mean	1496							
19			Geometric Mean	1400							
20			Median	1200							
21			Standard Deviation	633.3							
22			Coefficient of Variation	0.423							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	1							
26			Tabulated p-value	0.592							
27			Standard Deviation of S	3.958							
28			Standardized Value of S	0							
29			Approximate p-value	0.5							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

	A	B	C	D	E	F	G	H	I	J	K
1				**Mann-Kendall Trend Test Analysis**							
2			User Selected Options								
3			Date/Time of Computation	ProUCL 5.2 5/25/2025 11:34:22 PM							
4			From File	MK_Input_a.xls							
5			Full Precision	OFF							
6			Confidence Coefficient	0.95							
7			Level of Significance	0.05							
8											
9			**F113_400SV15_90**								
10											
11			**General Statistics**								
12			Number of Events Reported (m)	5							
13			Number of Missing Events	0							
14			Number or Reported Events Used	5							
15			Number Values Reported (n)	5							
16			Minimum	1100							
17			Maximum	9300							
18			Mean	5780							
19			Geometric Mean	4661							
20			Median	5400							
21			Standard Deviation	3231							
22			Coefficient of Variation	0.559							
23											
24			**Mann-Kendall Test**								
25			M-K Test Value (S)	-2							
26			Tabulated p-value	0.408							
27			Standard Deviation of S	4.082							
28			Standardized Value of S	-0.245							
29			Approximate p-value	0.403							
30											
31	**Insufficient evidence to identify a significant**										
32	**trend at the specified level of significance.**										

Appendix E
Vertical Contaminant Profiles for 1Q24, 2Q24, and 3Q24

400 AREA GEOLOGIC CROSS-SECTION A-A'

First Quarter Vertical Distribution of Freon 11



100'

SCALE

VERTICAL
EXAGGERATION = 1:4

May 2025

400'

MONITORING WELLS

400-C-143

Monitoring Well

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

1200 Soil Vapor Concentration (ug/m^3)

Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

100 Groundwater Concentration (ug/L)

No Concentration Value Indicates A Non-detect Value Or No Sample For The Quarter

GEOLOGY

Concrete Or Other Man-made Structure

QTcu Camp Rice Formation, Undivided

QTcc Cemented Fanglomerate Facies, Camp Rice Formation

To Orejon Andesite

STRUCTURE

Contact Between Geologic Units (dashed Where Inferred)

D U Inferred Fault With Displacement

HYDROGEOLOGY

Potentiometric Surface (2024)

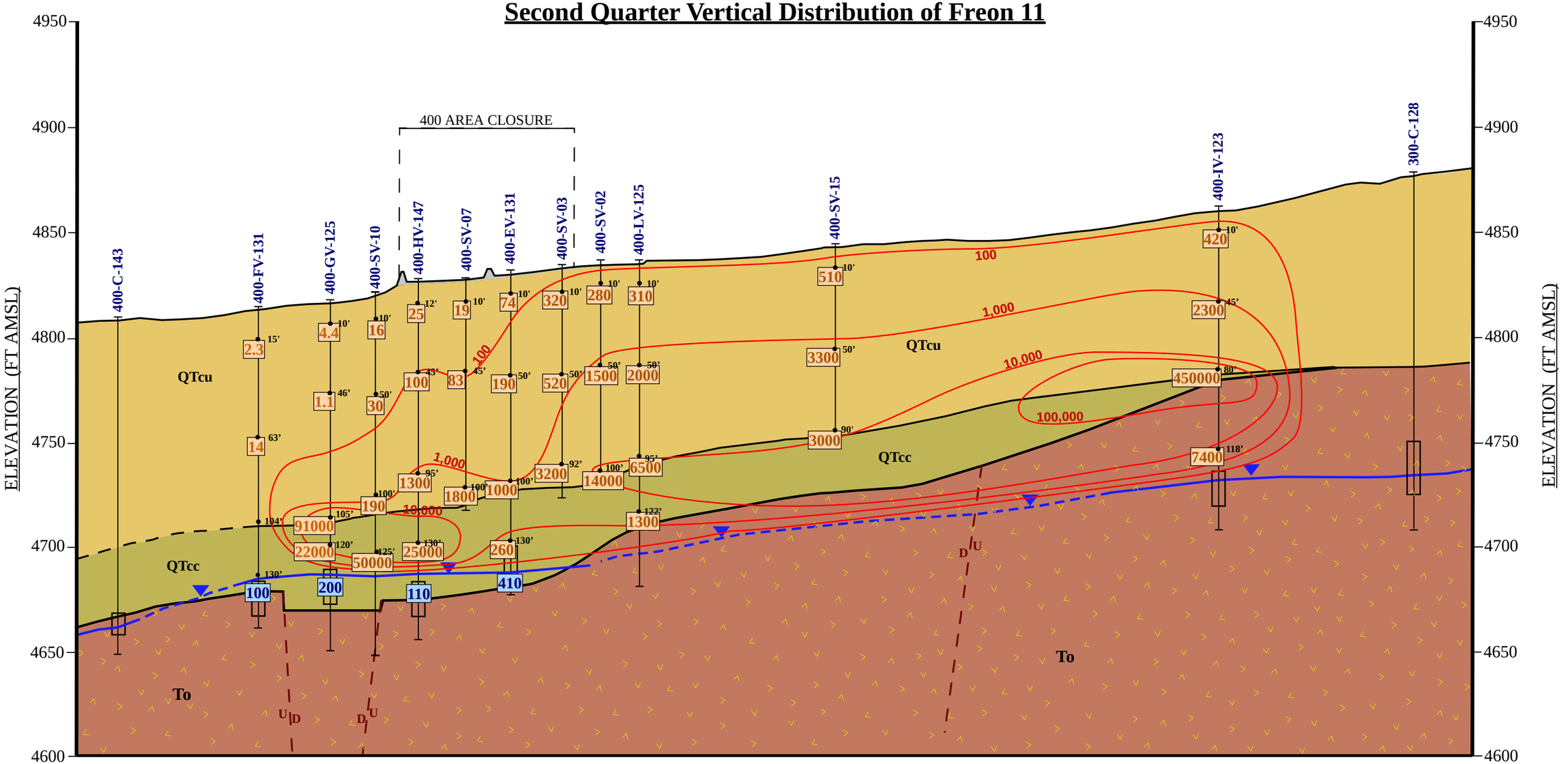
Soil Vapor Concentration Contour (ug/m3)

400 AREA GEOLOGIC CROSS-SECTION A-A'

Second Quarter Vertical Distribution of Freon 11

WEST
A'

EAST
A



100'

SCALE

VERTICAL
EXAGGERATION = 1:4

400'

May 2025

MONITORING WELLS

Monitoring Well

400-C-143

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

1200 Soil Vapor Concentration (ug/m^3)

Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

100 Groundwater Concentration (ug/L)

No Concentration Value Indicates A Non-detect Value Or No Sample For The Quarter

GEOLOGY

Concrete Or Other Man-made Structure

QTcu Camp Rice Formation, Undivided

QTcc Cemented Fanglomerate Facies, Camp Rice Formation

To Orejon Andesite

STRUCTURE

Contact Between Geologic Units (dashed Where Inferred)

D U Inferred Fault With Displacement

HYDROGEOLOGY

Potentiometric Surface (2024)

Soil Vapor Concentration Contour (ug/m3)

400 AREA GEOLOGIC CROSS-SECTION A-A'

Third Quarter Vertical Distribution of Freon 11

WEST
A'

EAST
A

ELEVATION (FT AMSL)

400 AREA CLOSURE

400-C-143 | 400-FV-131 | 400-GV-125 | 400-SV-10 | 400-HV-147 | 400-SV-07 | 400-EV-131 | 400-SV-03 | 400-SV-02 | 400-LV-125 | 400-SV-15 | 400-IV-123 | 300-C-128

QTcu | QTcc | To

100 | 1,000 | 10,000 | 100,000

MONITORING WELLS

Monitoring Well

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

1200 Soil Vapor Concentration (ug/m3)

Soil Vapor Concentration (ug/m3) - Residential RBC Exceedance

100 Groundwater Concentration (ug/L)

No Concentration Value Indicates A Non-detect Value Or No Sample For The Quarter

GEOLOGY

Concrete Or Other Man-made Structure

QTcu Camp Rice Formation, Undivided

QTcc Cemented Fanglomerate Facies, Camp Rice Formation

To Orejon Andesite

STRUCTURE

Contact Between Geologic Units (dashed Where Inferred)

D U Inferred Fault With Displacement

HYDROGEOLOGY

Potentiometric Surface (2024)

Soil Vapor Concentration Contour (ug/m3)

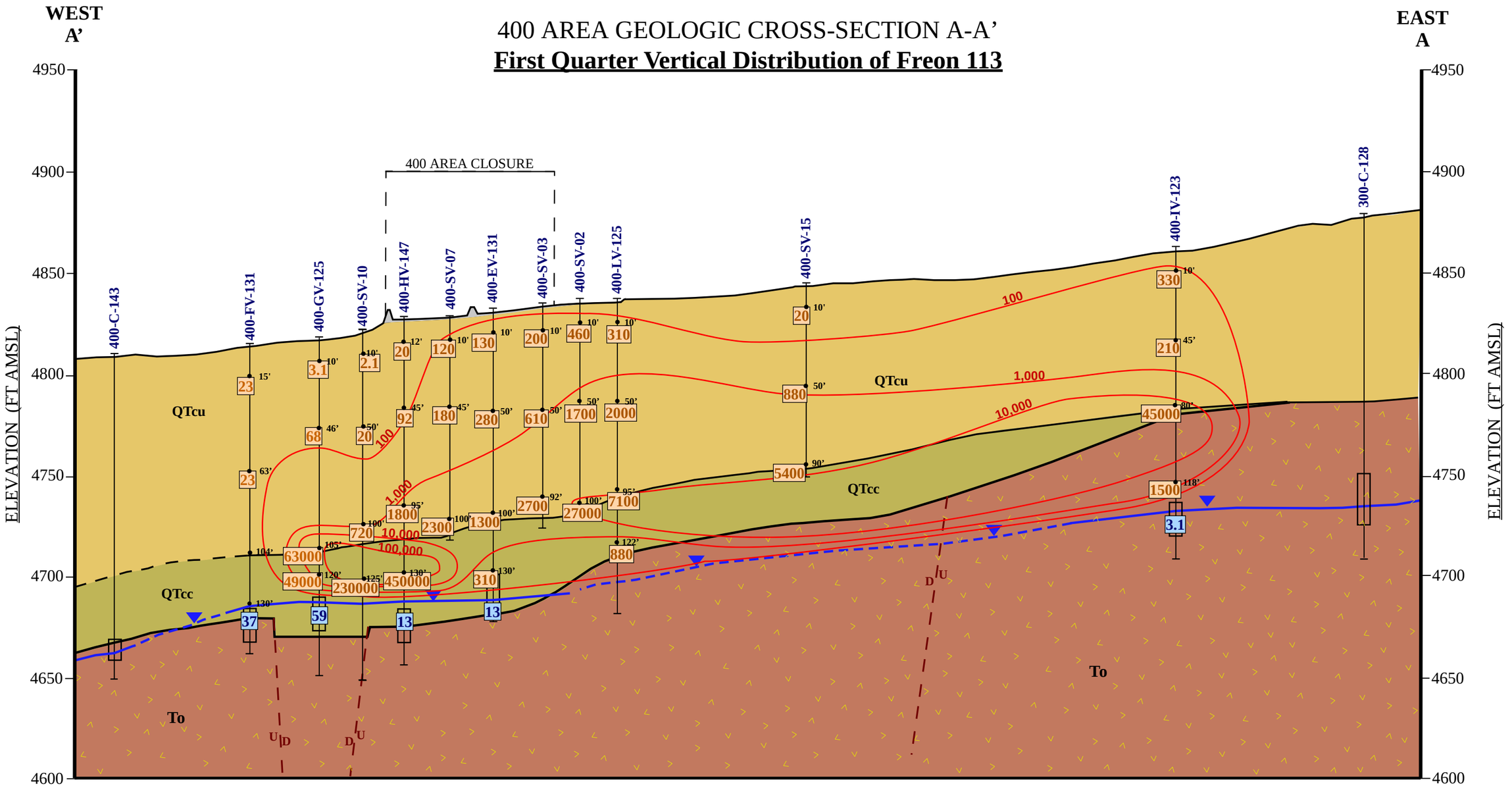
SCALE

VERTICAL EXAGGERATION = 1:4

May 2025

400 AREA GEOLOGIC CROSS-SECTION A-A'

First Quarter Vertical Distribution of Freon 113



100'

SCALE

VERTICAL
EXAGGERATION = 1:4

400'

May 2025

MONITORING WELLS

Monitoring Well

Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

Soil Vapor Concentration (ug/m^3)

Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

Groundwater Concentration (ug/L)

No Concentration Value Indicates A Non-detect Value Or No Sample For The Quarter

GEOLOGY

- Concrete Or Other Man-made Structure
- QTcu — Camp Rice Formation, Undivided
- QTcc — Cemented Fanglomerate Facies, Camp Rice Formation
- To — Orejon Andesite

STRUCTURE

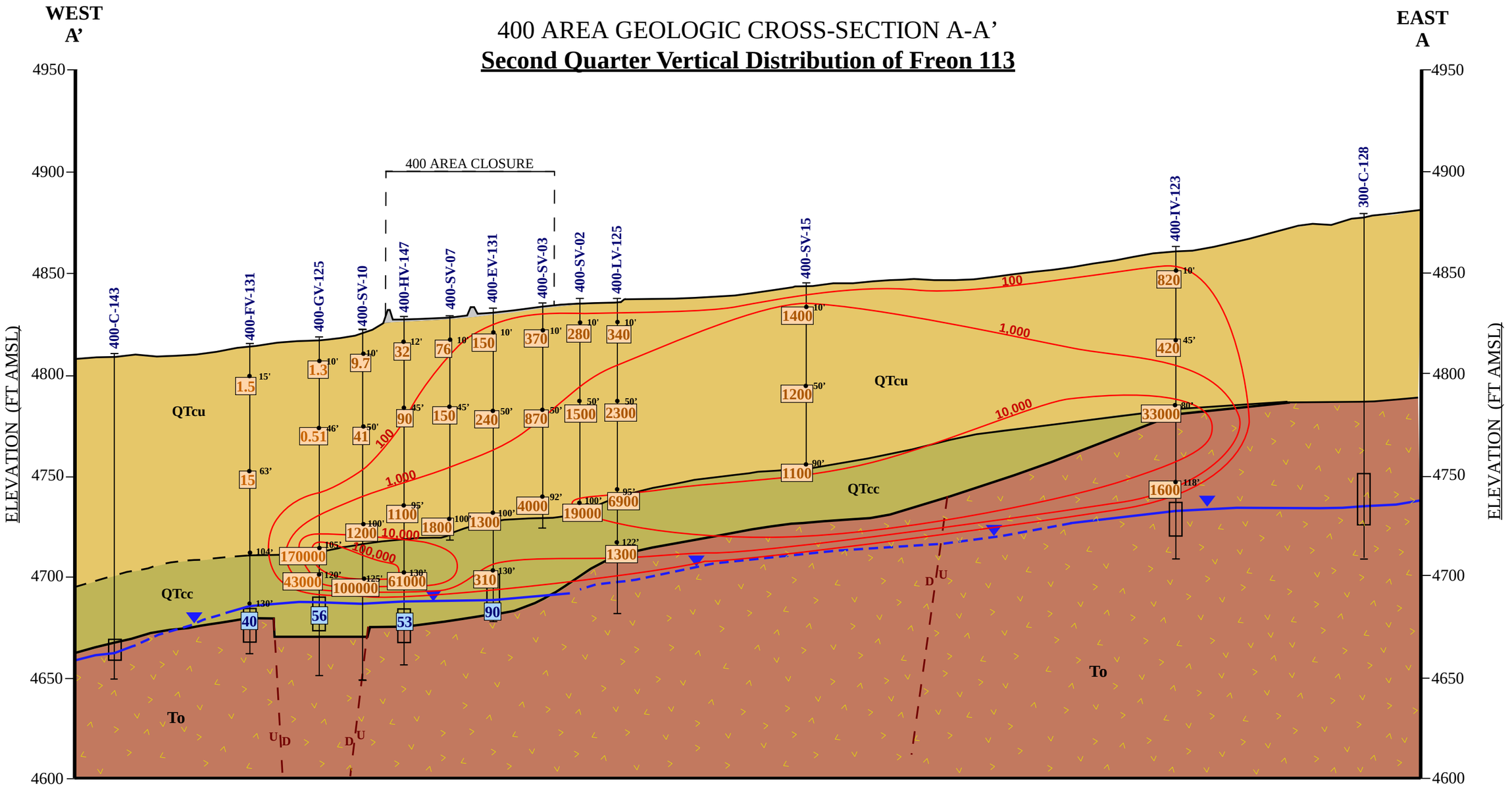
- Contact Between Geologic Units (dashed Where Inferred)
- Inferred Fault With Displacement

HYDROGEOLOGY

- Potentiometric Surface (2024)
- Soil Vapor Concentration Contour (ug/m3)

400 AREA GEOLOGIC CROSS-SECTION A-A'

Second Quarter Vertical Distribution of Freon 113



100'

SCALE

VERTICAL
EXAGGERATION = 1:4

May 2025

400'

MONITORING WELLS

Monitoring Well

400-C-143

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

1200 Soil Vapor Concentration (ug/m^3)

Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

11 Groundwater Concentration (ug/L)

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GEOLOGY

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QTcu Camp Rice Formation, Undivided

QTcc Cemented Fanglomerate Facies, Camp Rice Formation

To Orejon Andesite

STRUCTURE

Contact Between Geologic Units (dashed Where Inferred)

U / D Inferred Fault With Displacement

HYDROGEOLOGY

Potentiometric Surface (2024)

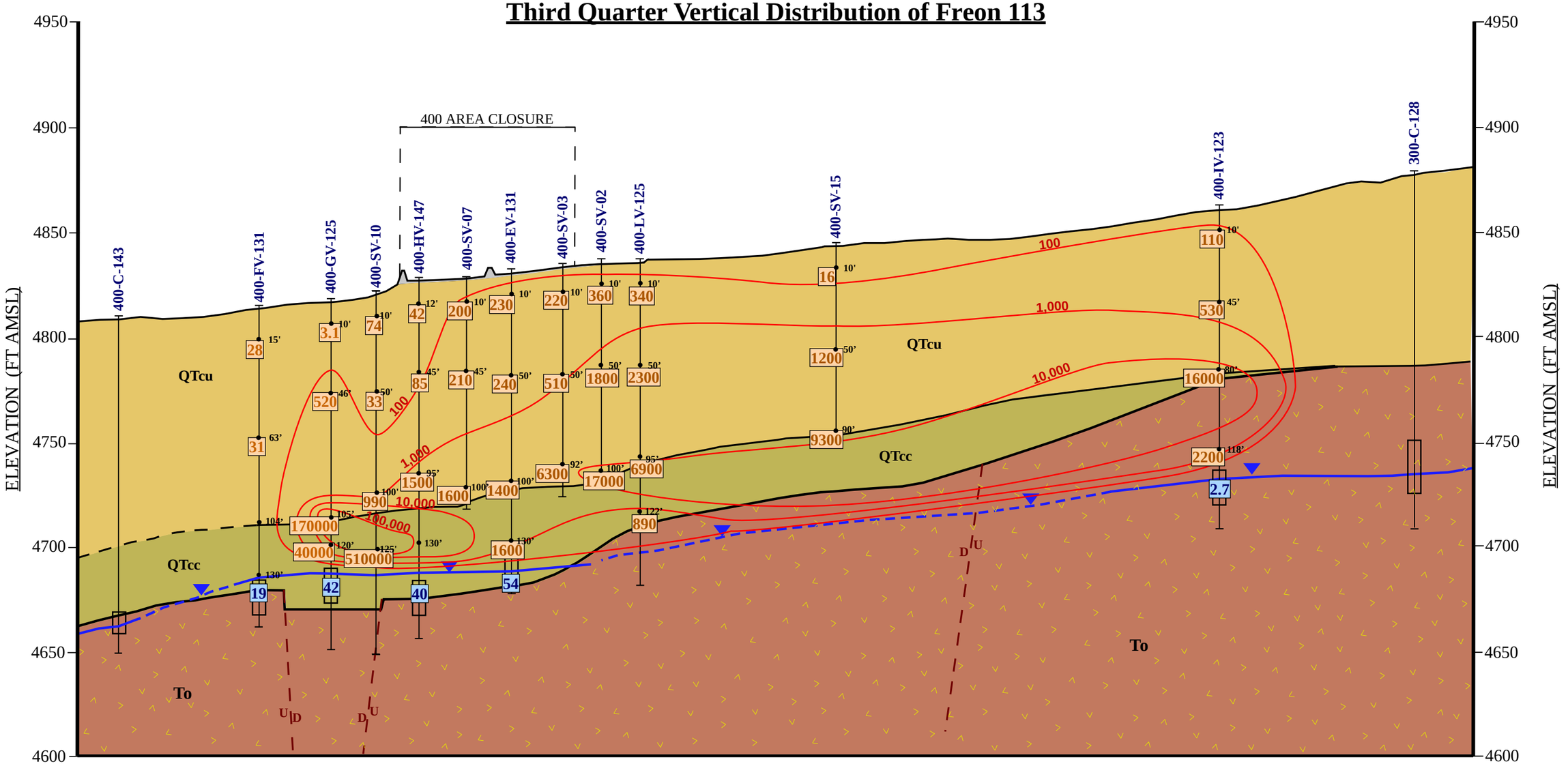
Soil Vapor Concentration Contour (ug/m3)

400 AREA GEOLOGIC CROSS-SECTION A-A'

Third Quarter Vertical Distribution of Freon 113

WEST
A'

EAST
A



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400'

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May 2025

MONITORING WELLS

Monitoring Well

400-C-143

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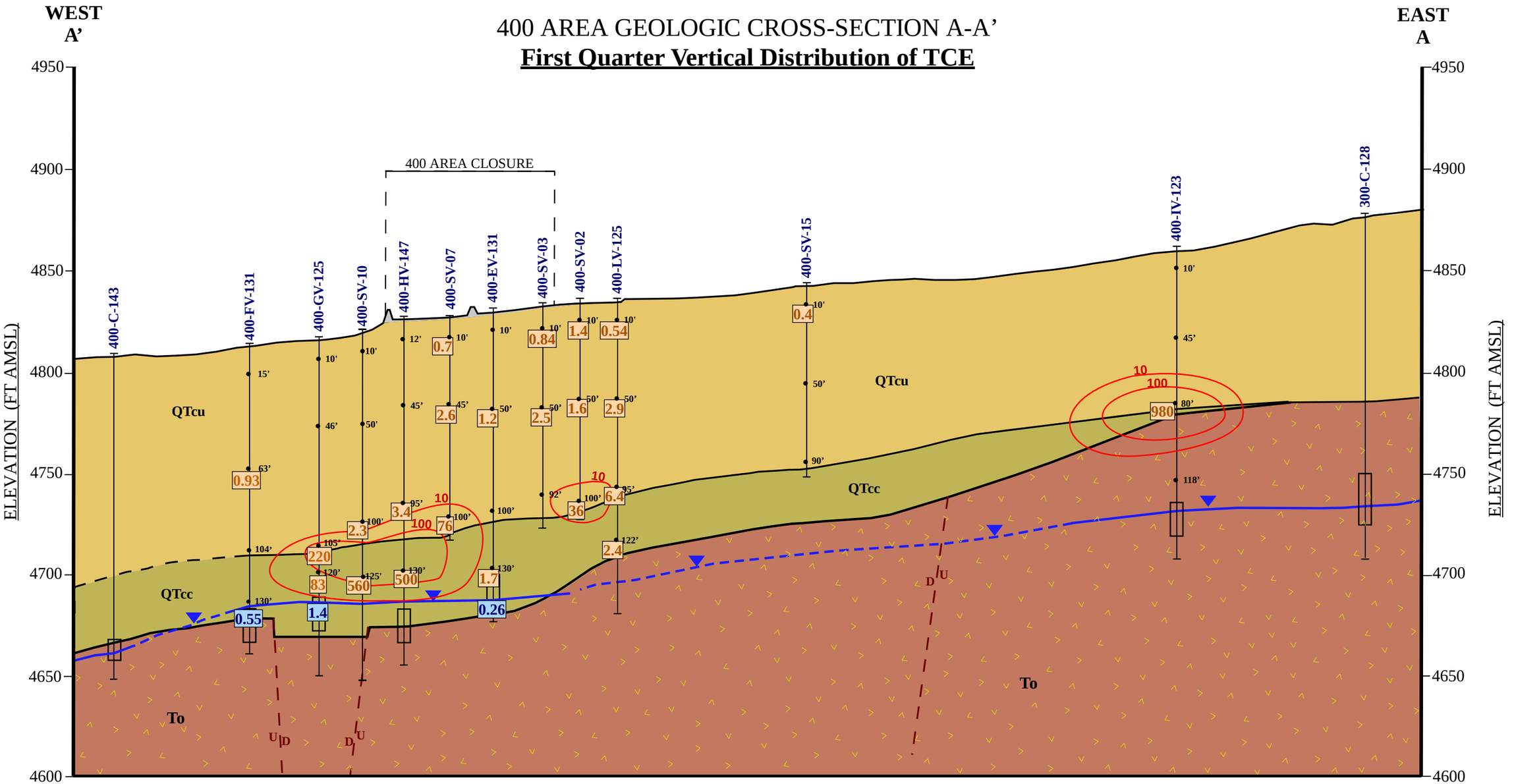
400 AREA GEOLOGIC CROSS-SECTION A-A'

First Quarter Vertical Distribution of TCE



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May 2025

MONITORING WELLS

Monitoring Well

400-C-143

10' Soil Vapor Monitoring Port With Depth

Well Screen (groundwater Sampling Zone)

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Soil Vapor Concentration (ug/m^3) - Residential RBC Exceedance

1.1 Groundwater Concentration (ug/L)

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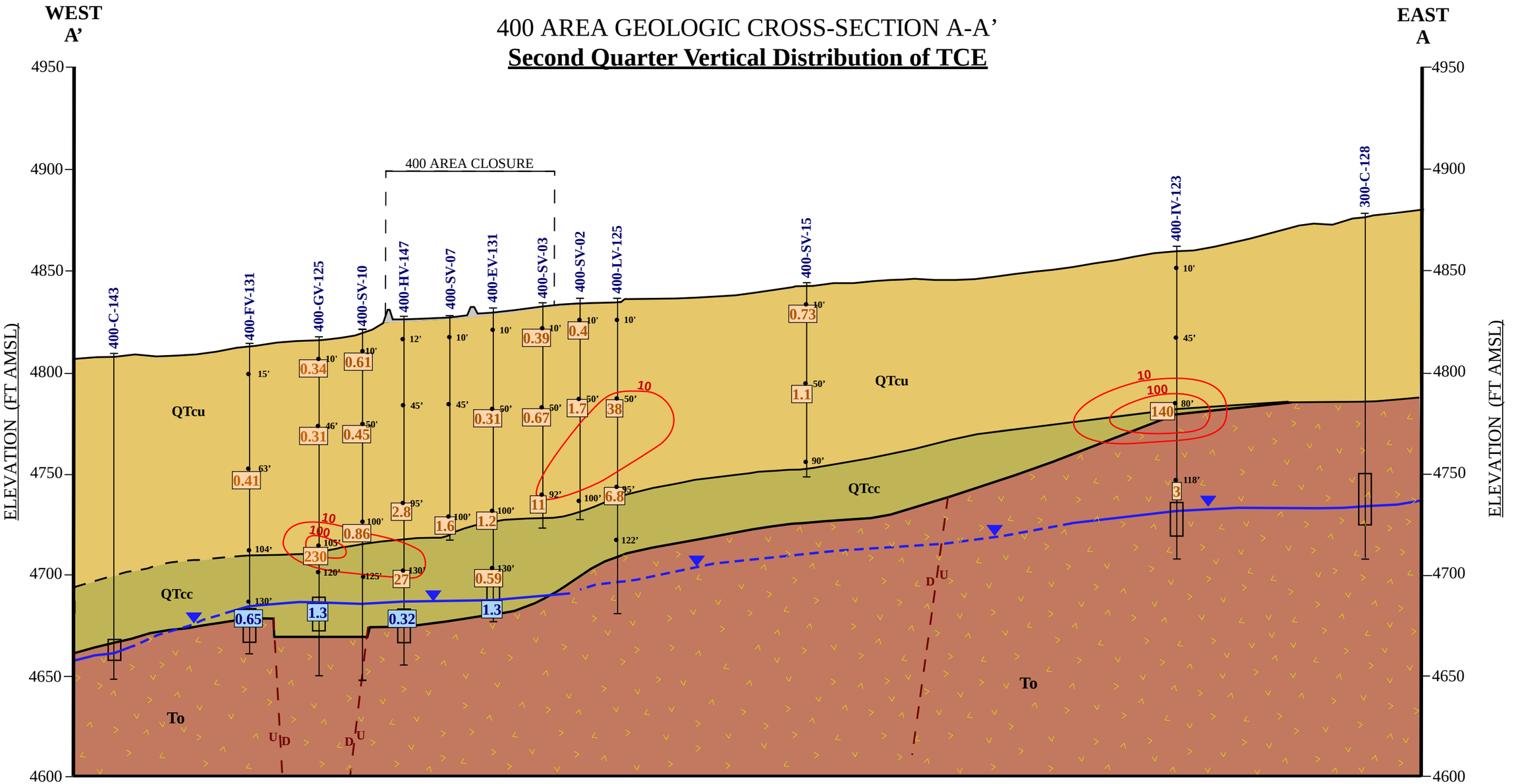
HYDROGEOLOGY

Potentiometric Surface (2024)

Soil Vapor Concentration Contour (ug/m3)

400 AREA GEOLOGIC CROSS-SECTION A-A’

Second Quarter Vertical Distribution of TCE



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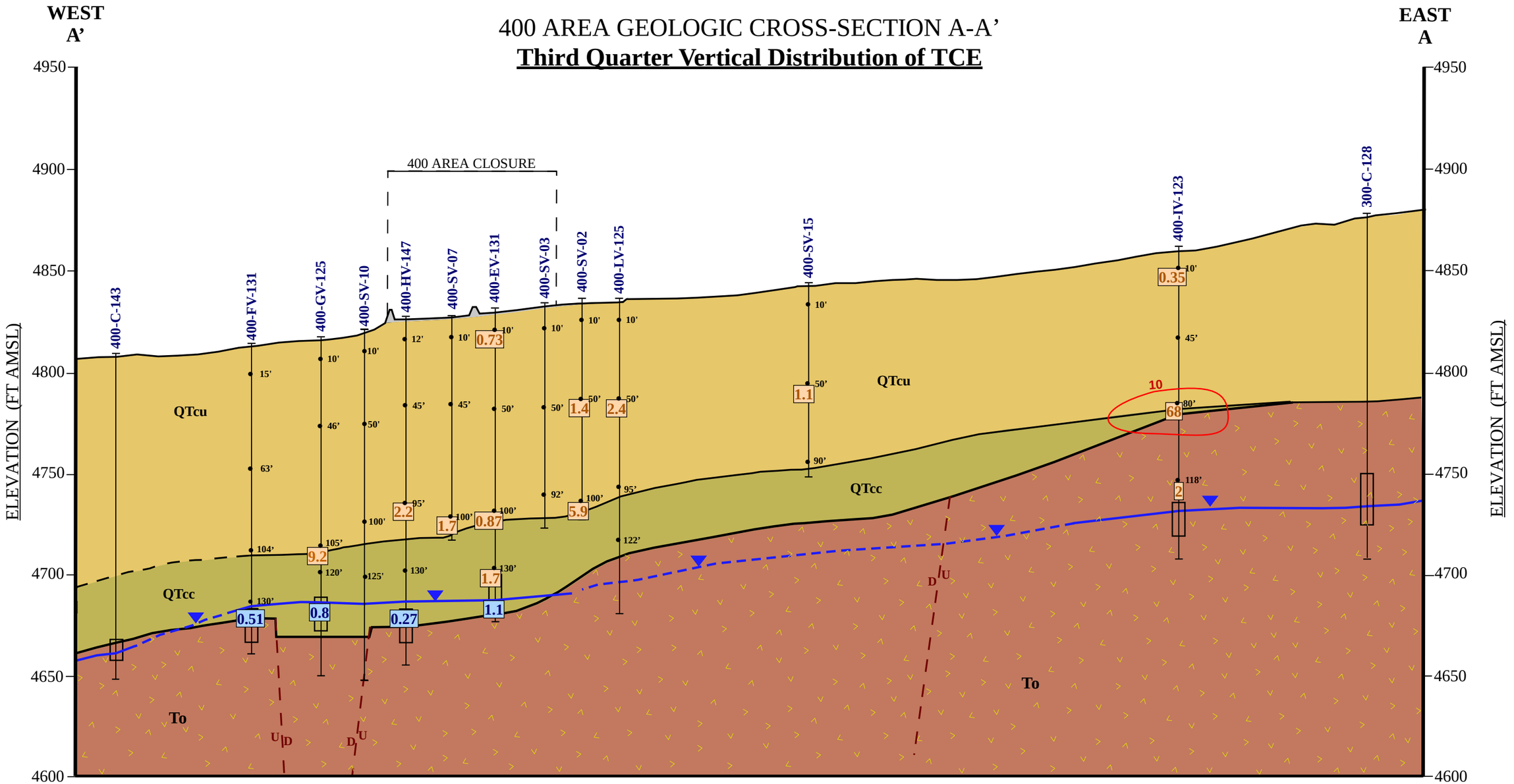
Soil Vapor Concentration Contour (ug/m3)

400 AREA GEOLOGIC CROSS-SECTION A-A’

Third Quarter Vertical Distribution of TCE



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