

Off Depot Air Sparge/
Soil Vapor Extraction
System
Annual Operations
Report, Year 11
(August 2021 through
July 2022)

Defense Depot Memphis, Tennessee

Revision 1
July 2023

Off Depot Air Sparge/ Soil Vapor Extraction System
Annual Operations Report, Year 11 (August 2021 through July 2022)
Dunn Field - Defense Depot Memphis, Tennessee

Prepared for:



U.S. Army Corps of Engineers
Mobile District
109 St. Joseph Street
Mobile, Alabama 36602

July 2023

Prepared by:

Trinity Analysis & Development Corp.
Contract No. W91278-16-D-0054
Delivery Order No. W9127820F0137

Table of Contents

1.	Introduction	1-1
1.1	Site Description.....	1-1
1.2	Off Depot Remedial Action.....	1-1
1.3	AS/SVE System Description	1-2
1.4	Previous Operations and Monitoring Results.....	1-3
1.4.1	System Operations and Monitoring	1-3
1.4.2	System Monitoring and Mass Removal.....	1-4
1.4.3	Groundwater Monitoring	1-4
1.5	Scope of Work	1-4
2.	System Operations	2-1
2.1	System Performance	2-1
2.2	System Flow Rates and Vacuums	2-1
2.3	System Maintenance	2-2
2.3.1	Routine System Maintenance.....	2-2
2.3.2	Non-Routine System Maintenance and Repairs	2-3
3.	System Monitoring.....	3-5
3.1	Vacuum Measurements	3-5
3.2	PID Measurements	3-5
3.3	Vapor Samples.....	3-6
3.4	Data Quality Evaluation.....	3-6
3.5	Mass Removal Estimate	3-7
4.	Conclusions and Recommendations	4-1
4.1	System Operations.....	4-1
4.2	System Effectiveness.....	4-2
4.3	Recommendations.....	4-3
5.	References	5-1

Figures

Figure 1 AS/SVE System Layout

Figure 2 Effluent Concentration Trend – Analytical Results and Field PID Measurements

Figure 3 Dunn Field Fluvial Deposits Aquifer, TCE Concentrations, April 2022

Figure 4 TeCA and TCE Concentration Trends at MW-159

Tables

Table 1 Flow Rate and Vacuum Readings at SVE Wells and Effluent

Table 2 Vacuum Readings at VMPs

Table 3 PID Measurements at SVE Wells and Effluent

Table 4 PID Measurements at VMPs

Table 5 Analytical Results Summary – SVE Effluent

Table 6 Mass Removal Calculations

Table 7 Adjacent LTM Wells Exceeding TC or MCL

Appendices

Appendix A Responses to EPA and TDEC Comments and Approval Letters

Appendix B Semiannual and Annual Maintenance Reports

Appendix C Trend Charts for Vacuum and PID Measurements

Appendix D Results of Laboratory Analyses

Appendix E Laboratory Analytical Reports

Appendix F Data Quality Evaluation

Acronyms and Abbreviations

acfm	actual cubic feet per minute
AS/SVE	air sparging and soil vapor extraction
AWS	air/water separator
bgs	below ground surface
BRAC	Base Realignment and Closure
cDCE	cis 1,2-dichloroethene
CVOC	chlorinated volatile organic compound
DDMT	Defense Depot Memphis, Tennessee
DQE	data quality evaluation
DQI	data quality indicator
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
IAQ	Intermediate Aquifer
HDPE	High Density Polyethylene
IRACR	Interim Remedial Action Completion Report
lb	pound
lb/hr	pounds per hour
LTM	long-term monitoring
MAQ	Memphis Aquifer
MCL	maximum contaminant level
MLGW	Memphis Light, Gas and Water
MW	monitoring well
NPL	National Priorities List
O&M	operations and maintenance
PID	photoionization detector
PLC	programmable logic controller
ppbv	parts per billion by volume
ppm	parts per million
QAPP	Quality Assurance Project Plan
QC	quality control
RA	remedial action
RL	reporting limit
ROD	Record of Decision
scfm	standard cubic feet per minute
SCHD	Shelby County Health Department
SVE	soil vapor extraction
TC	target concentration
TCE	trichloroethene
TDEC	Tennessee Department of Environment and Conservation
TeCA	1,1,2,2-tetrachloroethane
Trinity	Trinity Analysis & Development Corp.
VMP	vapor monitoring point
VOC	volatile organic compound
µg/L	micrograms per liter
%	percent

1. Introduction

This report summarizes the operations and maintenance (O&M) activities and the results of system monitoring for Year 11 operations at the Off Depot air sparging and soil vapor extraction (AS/SVE) system at the former Defense Depot Memphis, Tennessee (DDMT). The AS/SVE system addresses the Off Depot groundwater plume west of Dunn Field (“the site”). The report was prepared under Contract W91278-16-D-0054, Delivery Order W9127820F0137 to the U.S. Army Corps of Engineers, Mobile District. The Year 11 report covers operations from 27 July 2021 through 31 July 2022.

Responses to comments from the Tennessee Department of Environment and Conservation (TDEC) and U.S. Environmental Protection Agency (EPA) Region 4 and approval letters will be provided in [Appendix A](#).

1.1 Site Description

DDMT, located in southeastern Memphis, originated as a military facility in the early 1940s for receipt, warehousing, and distribution of supplies to military services and some civil agencies. The property consists of approximately 632 acres in two adjacent areas: the Main Installation and Dunn Field. Storage and distribution of material ended in September 1997, when the facility was closed under Base Realignment and Closure (BRAC).

DDMT was added to the National Priorities List (NPL) in 1992; the EPA Identification Number is TN4210020570. Responsibility for environmental restoration at DDMT transferred from the Defense Logistics Agency to the Department of the Army in December 2010. The regulatory oversight agencies are EPA Region 4 and TDEC.

The geologic units at DDMT are (from youngest to oldest): loess, including surface soil; fluvial deposits; Jackson Formation/upper Claiborne Group; and Memphis Sand. The uppermost aquifer is the unconfined Fluvial Deposits Aquifer, consisting of saturated sands and gravelly sands in the lower portion of the deposits. The base of the Fluvial Deposits Aquifer is controlled by the surface of the uppermost clay in the Upper Claiborne. The Jackson/Upper Claiborne forms the upper confining unit for the Memphis Aquifer (MAQ) on a regional basis and separates the Fluvial Deposits Aquifer from the MAQ at DDMT. The Intermediate Aquifer (IAQ) is locally developed in the Upper Claiborne sands. Where the clay is thin or absent, a hydraulic connection or ‘window’ is created between the Fluvial Deposits Aquifer and the IAQ, and potentially, the MAQ. The MAQ is a regional deep, confined aquifer and is the primary source of water for the City of Memphis. The Allen Well Field, which is operated by Memphis Light, Gas & Water (MLGW), is located approximately 2 miles west of Dunn Field.

1.2 Off Depot Remedial Action

The Off Depot remedial action (RA) includes the following components:

- An AS/SVE system installed across the core of the plume near the down-gradient end.

- Monitored natural attenuation and long-term groundwater monitoring to document remedy performance, as indicated by changes in chlorinated volatile organic compound (CVOC) concentrations and/or changes in the lateral or vertical extent of the CVOC plume.

- Institutional controls to prevent access to contaminated groundwater.

RA construction and Year One operations are described in the *Off Depot Groundwater Interim Remedial Action Completion Report, Revision 1* (Off Depot IRACR) (HDR, 2011a), which was approved by EPA and TDEC in November 2011.

1.3 AS/SVE System Description

AS/SVE is being conducted near the leading edge of the groundwater plume west of Dunn Field to volatilize CVOCs and prevent further plume migration. The AS/SVE system was designed to intercept the majority of the Off Depot CVOC plume and to reduce individual CVOC concentrations below 50 micrograms per liter ($\mu\text{g/L}$). AS/SVE operations began 21 December 2009. The AS/SVE system consists of 95 AS wells (including five additional AS wells installed in September 2020), 12 SVE wells, 10 pairs of vapor monitoring points (VMPs), and control buildings for the AS compressor, SVE blowers, and system controls. The system layout is shown on [Figure 1](#).

AS/SVE operations were incorporated into the Shelby County Health Department (SCHD) Permit #01030-01P issued in 2007 for the fluvial soil vapor extraction system on Dunn Field. Permit conditions included maintaining volatile organic compound (VOC) emissions below 5.71 pounds per hour (lb/hr) as documented in an annual emissions report. In May 2016, SCHD cancelled the permit and exempted the remediation system based on emissions consistently below the *de minimis* limit of 0.1 lb/hr.

The AS system is powered by a Kaeser CSD 100 rotary screw air compressor; air filters minimize oil particles in the air stream from the compressor. The other AS components are the receiving tank, refrigerated dryer, pressure regulator and relief valve, solenoid panel and sparge manifold, and 95 AS wells. The AS wells were installed at the base of the fluvial aquifer at depths of 82 to 115 feet below ground surface (bgs). Individual solenoid valves are used to set operating periods for each AS well.

75 of the AS wells are presently in use, with approximately one-third of them operating at any one time for a total of approximately 12 hours each day (pulsed operation). Pulsed operation was selected to decrease the required system injection flow capacity, optimize air distribution by limiting the formation of permanent air channels, and limit groundwater flow around the AS well network due to reduction in permeability caused by air injection.

The SVE system consists of two Kaeser rotary blowers (Model 420C/53P) installed in parallel. The blowers are connected to 12 SVE wells with 30-foot screens beginning at depths of 35 to 45 feet bgs. The SVE wells were installed on roughly 50-foot centers to capture the vapors from the AS wells; the maximum separation between an AS well and the nearest SVE well is approximately 60 feet. System operations were designed for the vapor extraction rate to be at least 1.5 times the air injection rate.

The AS wells and SVE wells are connected via buried piping to two equipment buildings: one housing the compressor for the AS wells and the other housing two blowers for the SVE wells. The AS/SVE system is operated through programmable logic controllers (PLCs) in the AS and SVE control buildings. The AS PLC operates the solenoids to direct air to the individual AS wells for the programmed daily schedule, to monitor operations, and to trigger alarms or shutdowns as necessary. The AS compressor has a separate controller to monitor operations and trigger alarms or shutdowns as necessary. The SVE PLC monitors blower operations and sends alarm notifications or shuts down the system if necessary.

Extracted vapor from the individual wells combine in a single 6-inch header at the piping manifold outside the SVE building; the SVE wells can be adjusted at the manifold to balance individual flow rates. The vapor stream passes through the air/water separator (AWS) tank to remove entrained vapor and debris from the air stream. No other treatment is performed prior to discharge.

VMPs were installed to monitor the radius of influence of the SVE wells and the CVOC concentrations in the vadose zone. There are ten pairs of nested VMPs with 5-foot screens located 20 to 60 feet from the nearest SVE well; the deep ('A') VMPs are screened at an average depth of 64 feet bgs and the shallow ('B') VMPs are screened at an average depth of 49 feet bgs.

Condensate from SVE operations is collected in a 160-gallon AWS and then transferred from the AWS to a 505-gallon polyethylene tank outside the SVE building. Once the exterior tank nears capacity, water is pumped to a trailer-mounted transfer tank and transferred to a storage tank on Dunn Field where it is combined with purge water generated during the LTM activities. Information on the handling, characterization, and discharge of the water at Dunn Field during the period covered in this report is provided in the Annual Long-Term Monitoring Report – 2022 [(HDR, 2023) (Section 2.3 and related appendices)].

1.4 Previous Operations and Monitoring Results

This section summarizes the results of AS/SVE operations in prior operating years (Year One through Year Ten). Year 11 operations are reported in [Section 2](#), [Section 3](#), and [Section 4](#).

1.4.1 System Operations and Monitoring

AS/SVE operations were described for Year One in the Off Depot IRACR and for later years in annual operations reports. The most recent annual report, *Off Depot AS/SVE System Annual Operations Report, Year Ten, Revision 1* (Trinity, 2022) was approved by TDEC in May 2022 and by EPA in July 2022 and includes a description of the addition of AS wells 91-95 to the system.

System start-up and modifications to address noise issues were completed in May 2010. The AS/SVE system was then operated with both blowers for all 12 SVE wells and one-third of the original 90 AS wells operating at all times. The AS wells were operated in three groupings (A: AS-1, AS-4, AS-7...; B: AS-2, AS-5, AS-8...; and C: AS-3, AS-6, AS-9...). Each AS group was operated for four hours before the system switched to the next group.

Groundwater monitoring results in September 2010 indicated the plume was partially diverted around the southern edge of the AS/SVE system, possibly due to decreased permeability from the air injection. Since that time, operations have been varied to restore the groundwater flow in the treatment area so that the contaminant plume would pass through the AS wells.

Year Five operations began in January 2014, but were halted in February 2014 due to extensive equipment damage from a lightning-related power surge. System repairs were completed, and operations resumed in March 2015. Year Five operations continued through December 2015. Starting in March 2015, the AS/SVE system was alternated between full and standby operation on a roughly 4-week interval.

Year Six operations took place from 01 January 2016 to 30 April 2017. The AS/SVE system was generally operated in stand-by mode until 06 May 2016 while a new task order was put in place. The system was alternated between full and standby operations, as in Year Five, from May 2016 through April 2017. Year Seven continued uninterrupted from May 2017 through April 2018. The system operated in standby mode to 06 August 2018 as contract actions for Year Eight and Year Nine were finalized. Year Eight operations were conducted from 01 May 2018 through 31 July 2019. Year Nine operations took place from 01 August 2019 through 31 July 2020. Year Ten operations occurred from 01 August 2020 through 31 July 2021 and included the addition of five new AS wells (AS-91 through -95) south of MW-159 (Trinity 2022). The five new AS wells began operation in October 2020 to address the continued high trichloroethene (TCE) concentration at MW-159. During years eight, nine, and ten, the system generally alternated between full and standby operation (as planned) on a roughly 4-week interval, except for relatively short periods of downtime related to system maintenance, equipment failure, or loss of power.

1.4.2 System Monitoring and Mass Removal

Average total VOC concentrations in the system effluent decreased from 1,240 parts per billion by volume (ppbv) at start-up in December 2009 to 31.8 ppbv in February 2012; total VOC concentrations have gradually increased since February 2012 and averaged 73 ppbv in June 2021, at the end of Year Ten.

VOC emission rates decreased from 0.025 lb/hr at startup to 0.001 lb/hr in September 2010. The emission rate has generally been at or below 0.001 lb/hr since that time. The AS/SVE emissions have never exceeded the *de minimus* standard of 0.1 lb/hr for the SCHD operating permit.

The AS/SVE system uptime percentage (%) and the mass removal in pounds during the first ten years of operations are shown below. The system uptime determination did not include the period required for equipment repair (February 2014 to March 2015) in Year Five or the periods in standby mode in Year Six (January to May 2016) and Year Eight (1 May 2018 to 6 August 2018). The cumulative mass of VOCs removed through July 2021 was 91.1 lb (see footnote 1 below).

Period	System Uptime	VOC Removal (pounds)
Year One (2010)	97%	70.5
Year Two (2011)	94%	4.1
Year Three (2012)	97%	2.3
Year Four (2013)	91%	2.9
Year Five (January 2014-December 2015)	93%	2.0
Year Six (January 2016-April 2017)	93%	1.7
Year Seven (May 2017-April 2018)	89%	1.7
Year Eight (May 2018-July 2019)	87%	2.0
Year Nine (August 2019-July 2020)	74%	2.0
Year Ten (August 2020-July 2021)	94%	2.0

Cumulative Mass Removed through Year Ten: 91.1 lb¹

1.4.3 Groundwater Monitoring

Long-term monitoring (LTM) results are used to assess the overall effectiveness of the AS/SVE system. The treatment goal for the AS/SVE system is to reduce groundwater concentrations down-gradient of the AS/SVE well network to below 50 µg/L for individual CVOCs. The goal was met in the five performance monitoring wells (MW-241, -243, -245, -246, -247) immediately down-gradient of the AS/SVE well network in June 2010. Since October 2012, CVOC concentrations in the Off Depot plume have met the treatment goal of 50 µg/L for individual CVOCs in all but one LTM well in the AS/SVE area, MW-159 (as of December 2021, MW-159 is also below the treatment goal as discussed in [Section 4.2](#)).

1.5 Scope of Work

O&M activities have been performed for the AS/SVE system since system startup in December 2009. The goals for O&M are to:

Maintain system operations through regular field inspections, maintenance, and repairs; and

¹Cumulative mass removed is calculated from the quarterly mass removal estimates provided in Table 6 and differs slightly from the sum of the VOC removal values displayed above due to rounding functions in Table 6.

Monitor system effectiveness through air injection and vapor extraction flow rates, vacuum measurements, photoionization detector (PID) measurements, and laboratory analysis of system effluent samples.

O&M activities follow procedures described in the *Dunn Field Off Depot Groundwater Air Sparge and Soil Vapor Extraction System Operations and Maintenance Manual* (AS/SVE O&M Manual) (HDR, 2011b). System monitoring is performed in accordance with the *Dunn Field Off Depot Groundwater Remedial Action Work Plan, Revision 2* (HDR, 2009).

Year 11 AS/SVE operations included the following activities:

- AS well optimization, including operating select AS wells during “off” months when the majority of AS wells are not operating.

- Weekly system inspections with measurements of operating conditions, operational adjustments and equipment maintenance checks;

- Bi-weekly readings (every other week) at AS wells, SVE wells and system effluent for flow rate and vacuum pressures when the AS manifold is open and monthly readings when the AS manifold is closed;

- Bi-monthly (every other month) PID measurements at SVE wells, VMPs, and system effluent when the AS manifold is open;

- Bi-monthly (every other month) vacuum measurements at VMPs;

- Quarterly collection of system effluent samples for laboratory analysis of VOCs;

- General equipment repair and modifications;

- Condensate transportation and disposal on an as-needed basis;

- Semiannual report describing O&M activities, system status, performance, and monitoring results; and

- Annual operations report summarizing system operations and monitoring results with data quality evaluation, and recommendations for future operations.

2. System Operations

The AS wells are operated in three groups of 22 to 25 AS wells with 69 AS wells operated 4 hours each per day (full-time) and 6 AS wells operated 2 hours each per day (half-time); the remaining 20 AS wells are closed ([Figure 1](#)). The three groups of AS wells that are operated 4 hours each per day are programmed such that while one group is operating, the other two groups are off. Operation is sequenced so that when one group shuts off, the next group immediately turns on. As each group operates for 4 hours per day, the total AS well operation sums to 12 hours per day. Other than the addition of five AS wells in 2020 (AS-91 – 95), this is consistent with Year Nine operations. The five additional AS wells were installed south of MW-159 and began operation in October 2020 to address the continued high trichloroethene (TCE) concentration at MW-159.

During full operation, the AS well network is operated for a total of 12 hours per day to remove volatile organic compounds (VOCs) from groundwater and the SVE wells are operated 24 hours per day to remove soil vapor with VOCs from the vadose zone. During limited operations in the alternate months up to December 2021, the AS manifold was closed except for brief periods during site inspections, and the SVE wells were operated 12 hours per day. During Year 11, the AS manifold was open for full operation from 27 July 2021 through 31 August 2021, 28 September through 02 November 2021, and 29 November 2021 through 28 December 2021. Beginning on 28 December 2021 and continuing through much of the remainder of the Year 11 reporting period, AS wells 91-95 continued to operate during “off” months while all other air sparge wells were shut off. The air compressor and blowers continued to operate during this period. This activity was conducted as a test to determine if continued operation of these five AS wells would more quickly reduce TCE concentrations at MW-159 (the only remaining monitoring well with TCE concentrations in excess of the 50 µg/L treatment goal). The results of this test are discussed in [Section 4.2](#).

Beginning in July 2022, AS wells 01 – 42 (except AS-09, 18, and 33 that are permanently off) were operated for approximately one week during the middle of each “off month” to prevent plume migration beyond the SVE wells. This activity is discussed further in [Section 4.2](#).

2.1 System Performance

The periods of full operation in Year 11 totaled 313 days with 2,726 hours available for system operations (the system is considered to be operating when the AS manifold is open, at least some AS wells are operating, and a blower is operating). The AS/SVE system was down for short periods of time in Year 11 due to routine and non-routine system maintenance, repairs, power failures, and weather-related events as described in [Sections 2.3.1](#) and [2.3.2](#). System downtime totaled 277 hours. AS/SVE system uptime during periods of full operation in Year 11 was approximately 90 percent.

2.2 System Flow Rates and Vacuums

Weekly measurements consist of pressure and air temperature at the AS compressor and air flow rates at the manifold, and vacuum and air temperature for each blower and the system effluent. Operating hours for each blower and the compressor were also recorded.

Flow rates and pressure/vacuum at the operating AS wells, SVE wells and the effluent were recorded biweekly during full operation. SVE system effluent flow rates are measured by an inline mass flow meter and flow rates at individual wells are measured by vane-type meters at the well manifold. Vacuum measurements are collected using a digital manometer. Operating conditions were recorded on standardized forms and maintained in the project files. Remote system monitoring is used to augment the site visits, although not all parameters are available remotely.

AS injection rates, listed on [Table 1](#), ranged from 50 to 169 standard cubic feet per minute (scfm) and averaged 116 scfm. Air extraction rates and vacuum measurements at SVE wells and system effluent are also shown on [Table 1](#). The system was operated with all 12 SVE wells during Year 11; average flow rates at individual SVE wells were 13 to 98 actual cubic feet per minute (acfm). Combined flow from all SVE wells during full operations averaged 552 scfm at 9.20 inches of mercury. Both blowers operated alternately in 24-hour blocks throughout Year 11.

Per the AS/SVE O&M Manual (HDR, 2011b), the design combined flow rate with both blowers in operation was 675 scfm or 1.5 times the target injection rate of 450 scfm. Based on the average AS injection rate of 116 scfm and the average combined SVE flow rate of 552 scfm, the SVE system extracted approximately 4.8 times the injection rate during Year 11. The increased ratio (above the design rate) of air extraction vs. injection is attributable to compressor flow rates that have always been lower than the design injection rate. A summary of average AS injection rates reported in the annual operations reports is provided below. Although the annual operating reports do not identify reasons for the lower injection rates, the system has proven itself to be effective at reducing groundwater concentrations to below the 50 µg/L treatment goal in all monitoring wells (see Section 4.2 for additional discussion).

Period	Average AS Injection Rate	Annual Report Reference
Year One (2010)	285	HDR 2011a
Year Two (2011)	300	HDR 2012
Year Three (2012)	268	HDR 2013
Year Four (2013)	193	HDR 2014
Year Five (January 2014-December 2015)	180	HDR 2016
Year Six (January 2016-April 2017)	152	HDR 2018a
Year Seven (May 2017-April 2018)	148	HDR 2018b
Year Eight (May 2018-July 2019)	160	Trinity 2020
Year Nine (August 2019-July 2020)	161	Trinity 2021
Year Ten (August 2020-July 2021)	123	Trinity 2022
Year Eleven (August 2021-July 2022)	116	This document

2.3 System Maintenance

System inspections were performed weekly and included checking SVE blower v-belts and oil levels, automatic drains in the AS compressor and refrigerated dryer, and air intake filters for the AS building. Semi-annual and annual equipment maintenance was conducted by the AS/SVE equipment manufacturer as described below. Field notes are recorded on maintenance and inspection forms. General housekeeping at the AS and SVE buildings and equipment compound is performed as needed. Semiannual and annual maintenance reports are included in [Appendix B](#).

2.3.1 Routine System Maintenance

Routine system inspections are performed weekly, as possible, and include checking SVE blower v-belts and oil levels, automatic drains in the AS compressor and refrigerated dryer, and air intake filters for the AS building. System operations are also checked remotely through the system computer's internet connection. Semiannual and annual preventative maintenance, performed by the equipment manufacturer (Kaeser), includes checking the AS compressor and SVE blower oil levels and adding or replacing oil as needed, checking and cleaning air filter mats in the compressor control panel, cleaning the compressor and dryer heat exchange radiators, checking tension on blower v-belts, and other tasks per

the equipment operating manuals. Routine Year 11 preventive maintenance activities are summarized below.

On 19 October 2021, Kaeser performed annual preventative maintenance on AS compressor, dryer, drains, and AWS, resulting in approximately 4 hours of system downtime.

On 02 November 2021, Kaeser performed annual preventative maintenance on the SVE blowers. As the manifold was already closed, this activity did not result in any additional system downtime.

On 28 April 2022, Kaeser performed semi-annual preventative maintenance on the AS compressor and blowers. This work occurred concurrently with the repair of the ecodrain (discussed below in [Section 2.3.2](#)) and did not result in any additional downtime beyond what was associated with the ecodrain.

2.3.2 Non-Routine System Maintenance and Repairs

Non-routine maintenance activities are required when alerts, faults, and other out-of-cycle repairs are required as identified during the routine inspections or system notifications. Condensate water transfers from the 505-gallon polyethylene tank outside the SVE building to the Dunn Field bulk storage tank are also included below. Non-routine Year 11 system maintenance and repairs are summarized below.

- On 03 August 2021, site personnel replaced the air conditioning unit that cools the computer area. This included reframing the opening in the wall to close it up around the new, smaller unit. This activity did not result in any system downtime.
- On 03 August 2021, site personnel replaced the two effluent air couplers and installed pipe supports to prevent future sagging of the effluent air lines at the couplers. This activity did not result in any system downtime.
- On 11 August 2021, the AWS overfilled shutting down the system and resulting in approximately 2 hours of system downtime.
- On 04 November 2021, site personnel detected and repaired (using JB Weld) a corrosion hole in the SVE influent line. This activity did not result in any system downtime.
- On 11 December 2021, the system shutdown due to a low voltage/phase alarm, resulting in approximately 28 hours of system downtime.
- On 16 December 2021, the system was shut down while debris was removed from the AWS pump, resulting in approximately 2 hours of system downtime. Also on 16 December 2021, Kaeser diagnosed an unusual sound from Blower 1 as the result of rust build-up on the rotors. The remedy is to run Blower 1 more often. This activity did not result in any system downtime.
- On 20 December 2021, the system shut down due to AWS transfer pump overload, resulting in approximately 17 hours of system downtime.
- On 22 and 23 December 2021, Roy Blackwell Enterprises removed the inoperable AWS transfer pump, disassembled and sandblasted the interior of the unit at their shop, and reinstalled the pump and successfully tested it. This resulted in approximately 12 hours of system downtime.
- On 17 January 2022, 500 gallons of condensate water were transferred to Dunn Field bulk storage tank. This activity did not result in any system downtime.
- On 26 January 2022, 500 gallons of condensate water were transferred to Dunn Field bulk storage tank. This activity did not result in any system downtime.

- On 01 February 2022, 30 gallons of condensate water were transferred to Dunn Field bulk storage tank. This activity did not result in any system downtime.
- On 03 February 2022, an ice storm resulted in a city-wide power outage that shut the system down, resulting in approximately 60 hours of system downtime.
- On 17 February 2022, a power interruption occurred, resulting in approximately 5 hours of system downtime.
- On 21 February 2022, site personnel replaced the AWS transfer line. This activity did not result in any system downtime.
- On 22 February 2022, 500 gallons of condensate water were transferred to Dunn Field bulk storage tank. This activity did not result in any system downtime.
- On 26 February 2022, the system was restarted after having shut down due to the condensate collection tank being full. System downtime was approximately 21 hours.
- On 07 March 2022, the system was restarted after having shut down due to the condensate collection tank being full and no capacity at the Dunn Field tank. System downtime was approximately 24 hours. 200 gallons of condensate water were transferred to Dunn Field bulk storage tank.
- On 16 March 2022, 750 gallons of condensate water were transferred to Dunn Field bulk storage tank.
- On 05 April 2022, site personnel repair a leaking hose associated with the compressor. This activity did not result in any system downtime.
- On 07 April 2022, a compressor alarm (no pressure buildup) shut down the system, resulting in approximately 45 hours of system downtime.
- On 13 April 2022, a heavy rain event prompted shutdown of the system to avoid generation of a large quantity of condensate, resulting in approximately 10 hours of system downtime.
- On 26 April 2022, compressor ecodrain failure prompted system shutdown for approximately 24 hours.
- On 28 April 2022, Kaeser diagnosed and repaired the compressor pressure issue associated with the ecodrain reported on 26 April 2022. The pneumatic-operated valve was blowing air constantly out of the relief port and the compressor air vent valve was failing to close off the vent line while loaded. Kaeser replaced the pneumatic valve. This activity occurred concurrently with the semi-annual preventative compressor and blower maintenance and did not result in system downtime.
- On 28 April 2022, Kaeser diagnosed and corrected a water leak from beneath the receiver tank. Leak was traced to an open fitting in the condensate drain lines from the dryer to the KCF. Kaeser installed an extension from the dryer drain to the open port to correct the issue. This activity occurred concurrently with the semi-annual preventative compressor and blower maintenance and did not result in system downtime.
- On 14 May 2022, an electrical storm caused the system to shut down, resulting in approximately 20 hours of system downtime.
- On 07 June 2022, site personnel identified and repaired a leaking compressor drain line. This activity did not result in any system downtime.

During Year 11, system downtime during periods of full operation of the AS/SVE system equated to approximately 281 hours. This total includes the 277 hours identified above (sum of routine maintenance and non-routine maintenance/repairs downtime) plus an additional 4 hours on 20 October 2021 when the manifold was closed for groundwater level measurements and LTM sampling.

3. System Monitoring

AS/SVE system monitoring consists of vacuum measurements at VMPs; PID readings at the system effluent, SVE wells and VMPs; and laboratory analysis of vapor samples from the system effluent. PID readings at the SVE well manifold and the system effluent are collected bi-monthly (during months of full AS/SVE operation; e.g. when the AS manifold is open). PID readings and vacuum measurements at VMPs are also collected bi-monthly. Effluent vapor samples are collected quarterly during full operation. System monitoring was performed during full operation in August, October, and December 2021, and February, April, and June 2022.

3.1 Vacuum Measurements

Vacuum measurements are collected at VMPs by connecting a digital manometer to a quick-connect fitting in the sealed cap of each VMP well casing. Vacuum measurements ranged from 1.5 to 33.3 inches of water and the average at each VMP was 4.3 to 27.4 inches of water. Measurements are shown on [Table 2](#). The measurements indicate a partial vacuum is created throughout the treatment area by the SVE wells, and therefore vapor-phase contamination generated during sparging is being captured by the SVE wells.

Charts showing the trend in vacuum readings at VMPs since start-up tests in October 2009 are provided in [Appendix C-1](#). Vacuum measurements at VMPs have generally ranged from 4 to 40 inches of water since operations began in December 2009. Two blowers were often operated in 2010 when the AS manifold was open, resulting in slightly higher vacuum measurements during that period.

3.2 PID Measurements

Total VOC concentrations are monitored through field measurements at individual SVE wells, system effluent, and VMPs with a PID. Whole air samples are collected from sampling ports at each monitoring point by directly filling a dedicated Tedlar® sample bag using an air sampling pump. The sample bag is then attached to a calibrated PID and the maximum PID reading for each bag is recorded. PID readings are made for at least three sample bags at each location; the PID is re-calibrated and additional readings are made if the initial readings are not consistent.

PID measurements from SVE wells and system effluent are provided in [Table 3](#). Total VOC concentrations ranged from 0.0 to 0.9 parts per million (ppm) at the SVE wells during Year 1, and from 0.0 ppm to 0.3 ppm in the system effluent. Consistent with historical trends, water in the SVE air line prevented several readings at SVE-10. SVE-08 and SVE-11 were also affected by the presence of water during some of the Year 11 monitoring events. It should be noted that operation and performance of the SVE wells are not impacted despite water being present in the air lines. Vacuum/air flow rates at each SVE well will be evaluated during future monitoring events and adjusted as necessary to mitigate water in the air lines.

Charts showing the trend in PID measurements at SVE wells and the system effluent since start-up tests in November 2009 are provided in [Appendix C-2](#). PID measurements at SVE wells have ranged from 0.0 to 32.9 ppm and were at the higher end of the range in 2012. At that time two wells, SVE-08 and -12, were closed to increase vapor extraction at SVE wells near the operating AS wells; the PID measurements decreased after the wells were re-opened later in 2012.

The VMPs are purged of at least three tubing volumes using the sampling pump prior to filling the first sample bag. The VMP PID measurements are provided in [Table 4](#). PID measurements were 0.0 ppm for approximately 64 percent of the measurements and were below 1 ppm in 91 percent of the measurements. The maximum PID reading in Year 11 was 3.1 ppm at VMP-5A during the 12 October 2021

monitoring event. Charts showing the trend in PID measurements at VMPs since start-up tests in October 2009 are provided in [Appendix C-3](#).

3.3 Vapor Samples

System effluent samples for laboratory analysis are collected in 6-liter Summa canisters without a flow regulator (consistent with all sampling events beginning in Year 2). The Summa canisters are shipped from the laboratory with negative pressure; thus, a sampling pump is not required. For each sampling event, the field technician first confirms via the cannister vacuum gauge that the cannister has an initial vacuum in the range of -30 to -25 inches mercury. The technician then connects the cannister via tubing to the effluent sampling port and opens the cannister valve part-way to control the rate of flow into the cannister. The cannister is allowed to fill over a period of approximately five minutes, until the cannister vacuum gauge reads -5 inches mercury.

The quarterly vapor samples were collected on 12 October 2021, 13 December 2021, 13 April 2022, and 07 June 2022. The samples were submitted for laboratory analysis of VOCs by EPA Method TO-15.

The complete tabulated analytical results are presented in [Appendix D, Table D-1](#); the complete laboratory analytical reports are provided in [Appendix E](#) (electronic copy only). [Table 5](#) provides the analytical results for the primary CVOCs historically detected at Dunn Field and for other VOCs detected in one or more samples. The totals for primary CVOCs and for total VOCs (primary CVOCs and other VOCs) are also listed.

Total primary CVOCs in the system effluent ranged from 50.1 ppbv to 61.8 ppbv during Year 11. During Year 11, the primary CVOCs detected at the highest concentrations were TCE and cis-1,2-dichloroethene (cDCE). Both were detected at similar concentrations. During Year 11, TCE was 37% to 42% of the total primary CVOc concentration and cDCE was 38% to 43%.

Total VOCs in system effluent ranged from 58.1 ppbv to 67.5 ppbv, with the exception of the duplicate sample collected during the October 2021 monitoring event. The duplicate sample contained an elevated concentration of carbon disulfide that was not detected in the associated field sample and was much higher than all other samples collected during the Year 11 monitoring period. Carbon disulfide is not a contaminant associated with the site and its presence is likely due to cross-contamination during either sampling or lab analysis.

The total VOC calculations exclude ethanol (detected at an anomalous concentration in the duplicate sample collected in October 2021) and 4-ethyltoluene (detected at an anomalous concentration in the sample collected in April 2022). Ethanol and 4-ethyltoluene are not contaminants associated with this site. Their presence at elevated concentrations may be the result of cross-contamination associated with increased and wide-spread use of sanitizers during the COVID-19 pandemic. System effluent concentration trends from PID measurements and analytical results are shown on [Figure 2](#).

3.4 Data Quality Evaluation

Analytical results for AS/SVE effluent vapor samples collected in Year 11 were reviewed based on guidelines in the Quality Assurance Project Plan (QAPP). The complete analytical results for field and quality control (QC) samples, including data quality evaluation (DQE) flags, are presented in [Appendix D, Table D-1](#).

Overall, the VOC data from the vapor samples met project data quality objectives and were determined to be sufficient to support the evaluation of AS/SVE system performance. The DQEs for Year 11 samples are provided in [Appendix F](#).

3.5 Mass Removal Estimate

The VOC mass removed by the AS/SVE system is estimated from the average total VOC concentrations in the effluent sample (based on TCE), system operating hours, and flow rates. The molar mass of TCE is used as a surrogate for all VOCs to simplify the calculation. System operating hours are based on operation of the AS compressor and the SVE blowers and assumes 12 hours per day during “full” operation when the majority of the AS wells are sparging and four hours per day when only AS-91 through AS-95 are operating (AS-91 – 95 are programmed within the same group and turn on and off at the same time for a total of four hours per day). During the one-week period in the middle of July 2021 when AS-01 through 42 (except for AS-09, 18, and 33 that are permanently off) were operating in addition to AS-91 – 95, operating hours were calculated at 12 per day as AS-01 – 42 are programmed across three different groups that turn on and off at different times each day, totaling 12 hours of system operation each day. Operating hours for the SVE blower without the AS compressor are not included in the mass removal estimate. The mass emission calculations are summarized on [Table 6](#).

As noted in [Section 3.3](#), ethanol and 4-ethyltoluene were each anomalously detected in one of the Year 11 samples. Because these results were considered anomalous and likely associated with cross-contamination during sample handling, they were omitted from the total VOC concentrations used for the mass emission calculations ([Table 6](#)).

The average estimated VOC emission rate in the effluent was 0.0007 lb/hr during Year 11. The emissions remained well below the SCHD *de minimis* standard of 0.1 lb/hr. The AS/SVE system removed approximately 1.8 lbs of VOCs in Year 11 and 92.9 lbs of VOCs since startup ([Table 6](#)).

4. Conclusions and Recommendations

4.1 System Operations

The AS/SVE system is generally limited to full operations in alternate 4-week periods in order to maintain northerly groundwater flow in the treatment area. Beginning on 28 December 2021 and continuing through the remainder of the Year 11 reporting period, AS wells 91-95 continued to operate during “off months” while all other air sparge wells were shut off. The air compressor and blowers continued to operate during this period. This activity was conducted as a test to determine if continued operation of these five AS wells would more quickly reduce TCE concentrations at MW-159 (the only remaining monitoring well with TCE concentrations in excess of the 50 µg/L treatment goal). The results of this test are discussed in [Section 4.2](#).

Beginning in July 2022, AS wells 01 – 42 (except for AS-09, 18 and 33 that are permanently off) were operated for approximately one week during the middle of each “off month” to prevent plume migration beyond the SVE wells. This activity is discussed further in [Section 4.2](#).

System downtime was experienced during periods identified in [Section 2.3.1](#) and [Section 2.3.2](#). The AS/SVE system uptime was approximately 90% during periods of full operation in Year 11.

The SVE system extracted approximately 4.8 times the AS injection rate during Year 11. Vacuum measurements at VMPs indicated vapor capture throughout the AS/SVE treatment area. 100 percent of the PID measurements taken at the SVE wells were below 1 ppm (measurements were not recorded on five occasions at SVE-10, once at SVE-08, and once at SVE-11, due to water in the piping) and 100 percent of the effluent PID measurements were below 1 ppm ([Table 3](#)). Similarly, 91 percent of the PID readings taken at the VMPs were below 1 ppm ([Table 4](#)). As noted in [Table 5](#), total VOC concentrations in effluent vapor samples, excluding ethanol and 4-ethyltoluene attributed to cross-contamination during sample handling, ranged from 58.1 ppbv to 67.5 ppbv. The estimated VOC emission rate in the effluent was 0.0007 lb/hr during Year 11, well below the SCHD *de minimis* standard. Approximately 92.9 lbs of VOCs have been removed since startup in 2009.

The total VOCs in the effluent have been below 100 ppbv (0.1 ppm) since September 2010. The total VOCs (and total CVOCs) in the effluent have had a slight increasing trend from 2012 to 2021 with total VOCs increasing from 28 ppbv in February 2012 to approximately 67.5 ppbv in July 2022 ([Figure 2](#)). Contrary to this trend; however, the Year 11 quarterly sample averages were the lowest since the first quarter of Year 5 ([Table 6](#)). The July 2022 total VOC concentration (67.5 ppbv, excluding ethanol and 4-ethyltoluene) is approximately 5.4 percent of the concentration at startup in December 2009 (1,240 ppbv).

Approximate system uptime percentages and estimated VOC removal in pounds by operating year are presented in the following table.

Period	System Uptime	VOC Removal (pounds)
Year One (2010)	97%	70.5
Year Two (2011)	94%	4.1
Year Three (2012)	97%	2.3
Year Four (2013)	91%	2.9
Year Five (January 2014-December 2015)	93%	2.0
Year Six (January 2016-April 2017)	93%	1.7
Year Seven (May 2017-April 2018)	89%	1.7
Year Eight (May 2018-July 2019)	87%	2.0
Year Nine (August 2019-July 2020)	74%	2.0
Year Ten (August 2020-July 2021)	94%	2.0
Year Eleven (August 2021-July 2022)	90%	1.8

Cumulative Mass Removed through Year 11: 92.9²

4.2 System Effectiveness

CVOC concentrations in groundwater, as provided in LTM reports, are considered the most useful measure of AS/SVE remedy effectiveness. The AS/SVE system was installed to intercept the majority of the Off Depot CVOC plume and to reduce individual CVOC concentrations below 50 µg/L. Operations are to continue until the up-gradient concentrations from the Dunn Field plume do not exceed 50 µg/L for individual CVOCs. Based on discussions with EPA, the procedures described in the EPA document titled: Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well (EPA 2014) will be used to guide the decision making as to when system operations may cease.

The *Dunn Field Record of Decision Amendment* (e2M, 2009) states that "Groundwater modeling results indicate that the AS-SVE system in combination with natural attenuation processes will reduce groundwater concentrations to MCLs in accordance with the RAOs within a reasonable period of time." The initial estimated period of AS/SVE system operations was 5 years, which ended in December 2014. The system has continued to operate since that time due to individual TCE concentrations above the 50 µg/L treatment goal in monitoring well MW-159. As indicated in [Table 7](#), the overall trend of TCE concentrations at MW-159 has been downward since October 2014 and concentrations have been below 50 µg/L since December 2021. The continued decline in concentration (less than the treatment goal) during the latter half of Year 11 is primarily attributed to the continued operation of AS wells 91 -95 during alternate months when other AS wells are off.

There are 22 Fluvial Deposits Aquifer LTM wells in the immediate vicinity of the AS/SVE system. Following damage to the AS/SVE system in 2014, CVOC concentrations at six of these wells increased above MCLs or the target concentrations (TCs) from the Dunn Field ROD. In April 2022, CVOC concentrations exceeded a TC or MCL in only two of these wells, MW-159 and MW-246. Groundwater elevation contours and the April 2022 analytical results for TCE at LTM wells in the general area of the AS/SVE system are shown on [Figure 3](#). Concentrations of 1,1,2,2-tetrachloroethane (TeCA) and TCE, the CVOCs most commonly detected above the TCs or MCLs in the Off Depot area, are shown on [Table 7](#) for October 2014 through August 2022. A time-trend plot for TeCA and TCE concentrations in MW-159 is provided on [Figure 4](#).

²Cumulative mass removed is calculated from the quarterly mass removal estimates provided in Table 6 and differs slightly from the sum of the VOC removal values displayed above due to rounding functions in Table 6.

The recent concentration trends are summarized below:

The TCE concentration at MW-159 was reported at 59.9 µg/L in October 2021, 48.7 µg/L in December 2021, 28.8 µg/L in April 2022, and 35.2 µg/L in August 2022. All concentrations since December 2021 have been below the treatment goal for AS/SVE operations of 50 µg/L, but remain above the TC of 5.0 µg/L for TCE. The TeCA concentration at MW-159 was reported at 2.1 µg/L in October 2021 and 1.6 µg/L in June 2022. Both of these concentrations are below the TC of 3.0 µg/L for TeCA.

The decrease in TCE at MW-159 to below the treatment goal is attributed to the continued operation of AS wells 91-95 during “off months” when the remaining AS wells were not operating.

TCE and TeCA concentrations at up-gradient well MW-150 have remained below the MCL and TC since October 2017 and have been undetected or detected at estimated concentrations below the quantitation limit since October 2018, except for the April 2022 TCE result of 1.4 µg/L.

The TCE concentration at up-gradient well MW-54 decreased to 1.6 µg/L in April 2022 (below the TC). TeCA concentrations at up-gradient well MW-54 decreased to below the specified quantitation limit in October and April 2022.

The TCE concentration in down-gradient well MW-246 increased above the TC to 6.3 µg/L in April 2022, then declined below the TC to 1.6 µg/L in August 2022. The TeCA concentration in MW-246 has been reported below the TC since October 2019. The August 2022 concentration was 1.6 µg/L.

The April 2022 TC exceedance for TCE in MW-246 may have been associated with the continued operation of AS wells 91-95 during “off” months. It is possible that the operation of these AS wells caused a portion of the plume to migrate downgradient of the SVE wells. To prevent further migration, AS wells 01 – 42 (except for AS wells 09, 18, and 33 that are permanently off) were operated for approximately one week in the middle of July 2022 (an “off” month) and will continue to be operated for approximately one week in the middle of each “off” month going forward. Increased frequency of sampling of MW-246 will provide future data to determine if the additional operation of these AS wells maintains the TCE concentration below the TC at MW-246.

TCE and TeCA concentrations at the other two wells (MW-165 and MW-243), located immediately down-gradient of the treatment area, decreased after AS/SVE operations resumed in March 2015 and have remained below the respective TCs.

4.3 Recommendations

The following recommendations are made based on the data and observations reported herein:

- Continued operation of AS wells 91-95 during “off” months when other AS wells are not operating.
- Continued operation of AS wells 01 – 42 (except for AS-09, 18 and 33 that are permanently off) for approximately one week during the middle of each “off” to prevent plume migration beyond the SVE wells.
- Continued additional sampling of MW-159 to confirm that concentrations remain below the treatment goal of 50 µg/L.

- Continued additional sampling of MW-246 to confirm that TCE concentrations remain below the TC/MCL of 5.0 µg/L.
- Continue planning for eventual system shutdown using guidance provided in EPA's document titled: *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (EPA 2014).

5. References

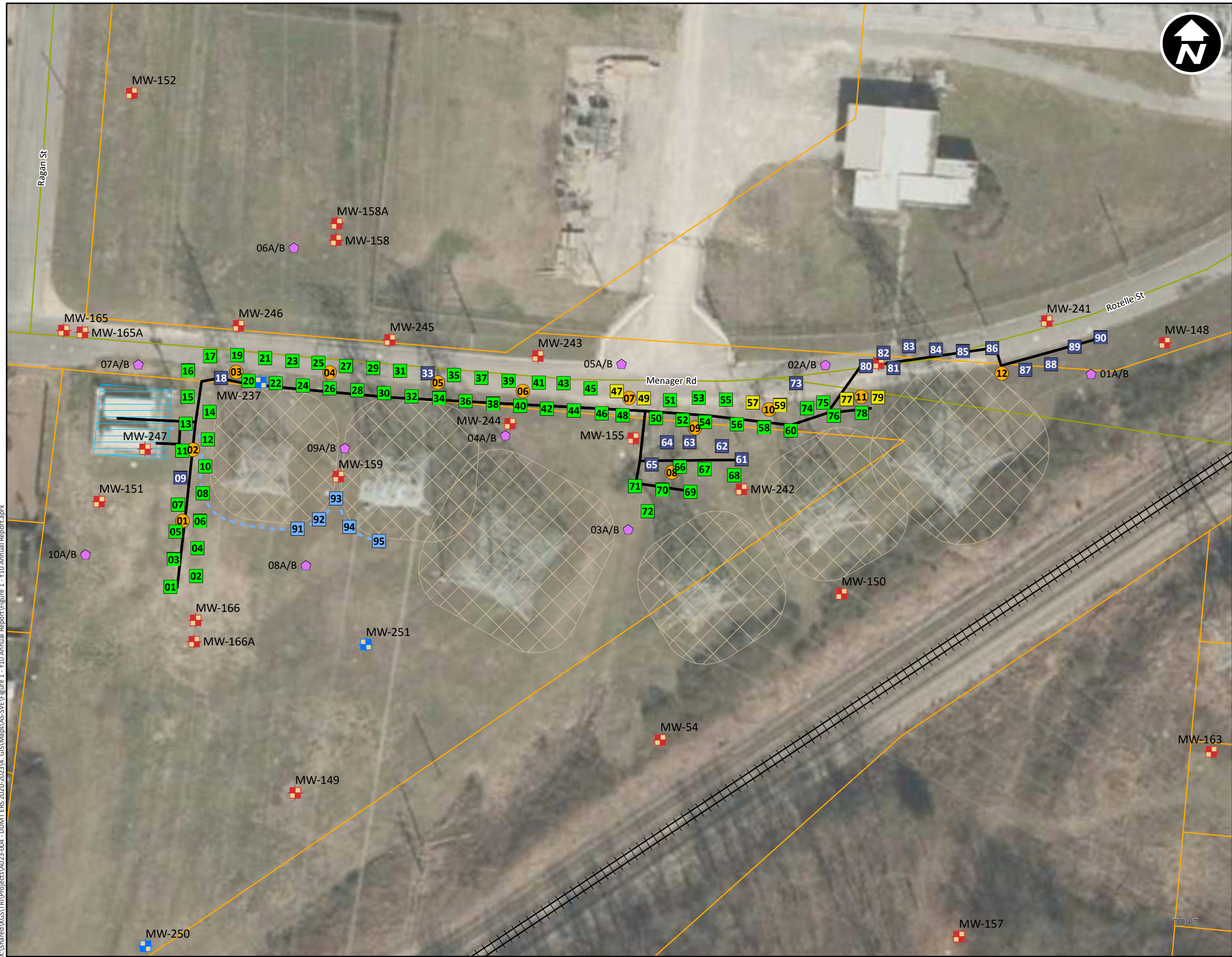
- e2M, 2009. Dunn Field Record of Decision Amendment, Defense Depot Memphis, Tennessee, Defense Logistics Agency, Revision 3. Prepared for Air Force Center for Engineering and the Environment. January 2009.
- HDR, 2009. Dunn Field Off Depot Groundwater Remedial Action Work Plan, Defense Depot Memphis, Tennessee, Defense Logistics Agency. Revision 2. Prepared for the Air Force Center for Engineering and the Environment. April 2009.
- HDR, 2011a. Dunn Field Off Depot Groundwater Interim Remedial Action Completion Report, Defense Depot Memphis, Tennessee, Department of the Army. Revision 1. Prepared for the Air Force Center for Engineering and the Environment. July 2011.
- HDR, 2011b. Dunn Field Off Depot Groundwater Air Sparge and Soil Vapor Extraction System Operations and Maintenance Manual, Defense Depot Memphis, Tennessee, Department of the Army, Revision 0. Prepared for the Air Force Center for Engineering and the Environment. March 2011.
- HDR, 2012. Off Depot Air Sparge – Soil Vapor Extraction System Annual Operations Report, Year Two, Dunn Field, Defense Depot Memphis, Tennessee. Prepared for Department of the Army. April 2012.
- HDR, 2013. Off Depot Air Sparge – Soil Vapor Extraction System Annual Operations Report, Year Three, Dunn Field, Defense Depot Memphis, Tennessee. Prepared for Department of the Army. February 2013.
- HDR, 2014. Off Depot Air Sparge – Soil Vapor Extraction System Annual Operations Report, Year Four, Dunn Field, Defense Depot Memphis, Tennessee. Prepared for Department of the Army. August 2014.
- HDR, 2016. Off Depot Air Sparge – Soil Vapor Extraction System Annual Operations Report, Year Five, Dunn Field, Defense Depot Memphis, Tennessee. Prepared for Department of the Army. August 2016.
- HDR, 2017. 2017 Uniform Federal Policy-Quality Assurance Project Plan, Revision 0, Environmental Restoration Support at Former Defense Depot Memphis, Tennessee. Prepared for U.S. Army Corps of Engineers, Mobile District. May 2017.
- HDR, 2018a. Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year Six (January 2016 to May 2017), Dunn Field - Defense Depot Memphis, Tennessee. June 2018.
- HDR, 2018b. Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year Seven (May 2017 through April 2018), Dunn Field - Defense Depot Memphis, Tennessee. November 2018.
- HDR, 2023. Annual Long-Term Monitoring Report-2022, Defense Depot Memphis, Tennessee, TN4210020570, Revision 0. March 2023.
- Trinity Analysis & Development Corp (Trinity), 2020. Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year Eight (May 2018 through July 2019), Dunn Field - Defense Depot Memphis, Tennessee. Prepared for U.S. Army Corps of Engineers, Mobile District. June 2020.
- Trinity, 2021. Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year Nine (August 2019 through July 2020), Dunn Field - Defense Depot Memphis, Tennessee. Prepared for U.S. Army Corps of Engineers, Mobile District. July 2021.

Trinity, 2022. Off Depot Air Sparge – Soil Vapor Extraction System Annual Operations Report, Year Ten (August 2020 to July 2021), Dunn Field - Defense Depot Memphis, Tennessee, Department of the Army, Revision 1. July 2022.

United States Environmental Protection Agency (EPA), 2014. Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well. OSWER 9283.1-44. August 2014.

Figures

X:\Shared\KGS\TR\Projects\A023-004 - DDMT ERS 2020-2023\4. GIS\Maps\AS-SVE\Figure 1 - Y10 Annual Report.aprx



- Air Sparge Location (full-time)
- Air Sparge Location (half-time)
- Air Sparge Location (closed)
- Air Sparge Location (installed 9/2020)
- Soil Vapor Extraction Location
- Vapor Monitoring Point
- Monitoring Well - Fluvial Aquifer
- Monitoring Well - Intermediate Aquifer
- Conveyance Line
- Conveyance Line (installed 9/2020)
- Parcel Boundary
- Railroad
- MLGW Transmission Tower with 20 foot No Construction Buffer
- AS/SVE System Enclosure

Notes:

Sources:
U.S. Census Bureau TIGER
<http://mapgis.memphistn.gov/arcgis/services>

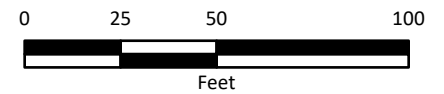


Figure 1
AS/SVE
System Layout

Trinity Analysis & Development Corp.

Off Depot AS/SVE System
Year 11, Annual Operations Report
Dunn Field -
Defense Depot Memphis, Tennessee



Contract: W91278-16-D-0054 / W9127820F0137

Scale: AS SHOWN

Date: 9/7/2021

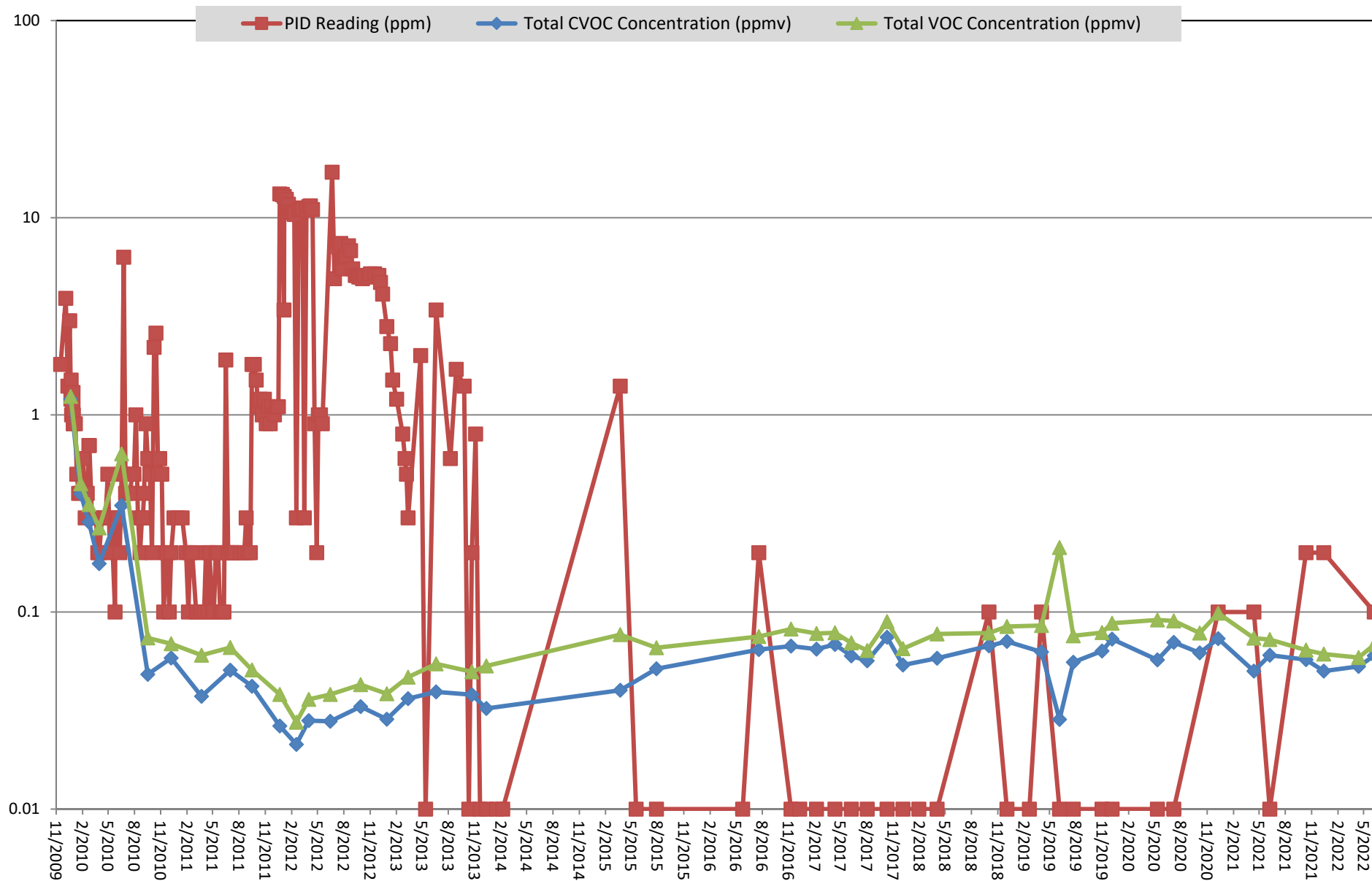
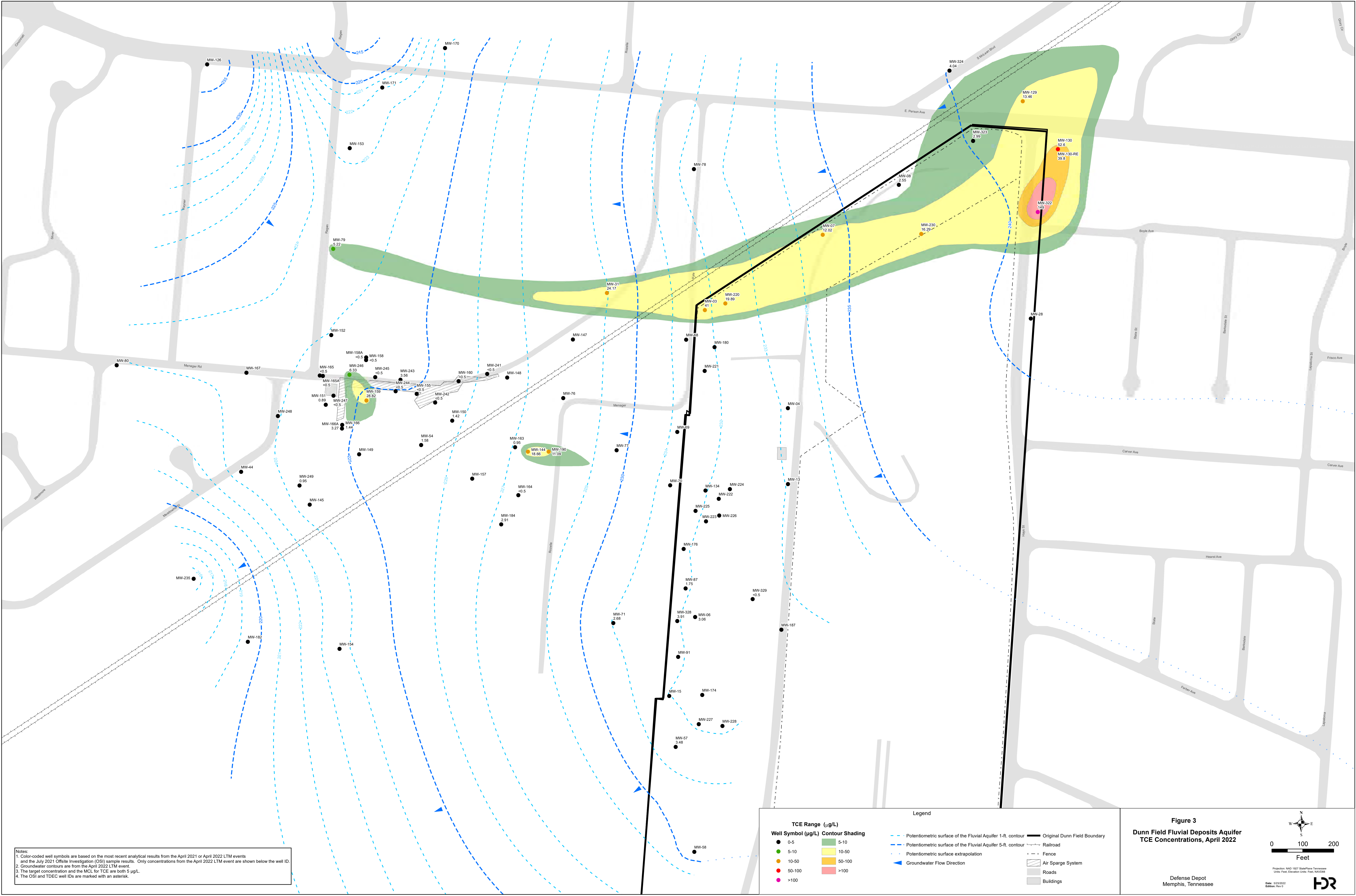


Figure 2
Effluent Concentration Trend - Analytical Results and Field PID Measurements
Off Depot AS/SVE Year Eleven, Annual Operations Report
Defense Depot Memphis, Tennessee

Notes:
1. Color-coded well symbols are based on the most recent analytical results from the April 2021 or April 2022 LTM events and the July 2021 Offsite Investigation (OSI) sample results. Only concentrations from the April 2022 LTM event are shown below the well ID.
2. Groundwater contours are from the April 2022 LTM event.
3. The target concentration and the MCL for TCE are both 5 µg/L.
4. The OSI and TDEC well IDs are marked with an asterisk.



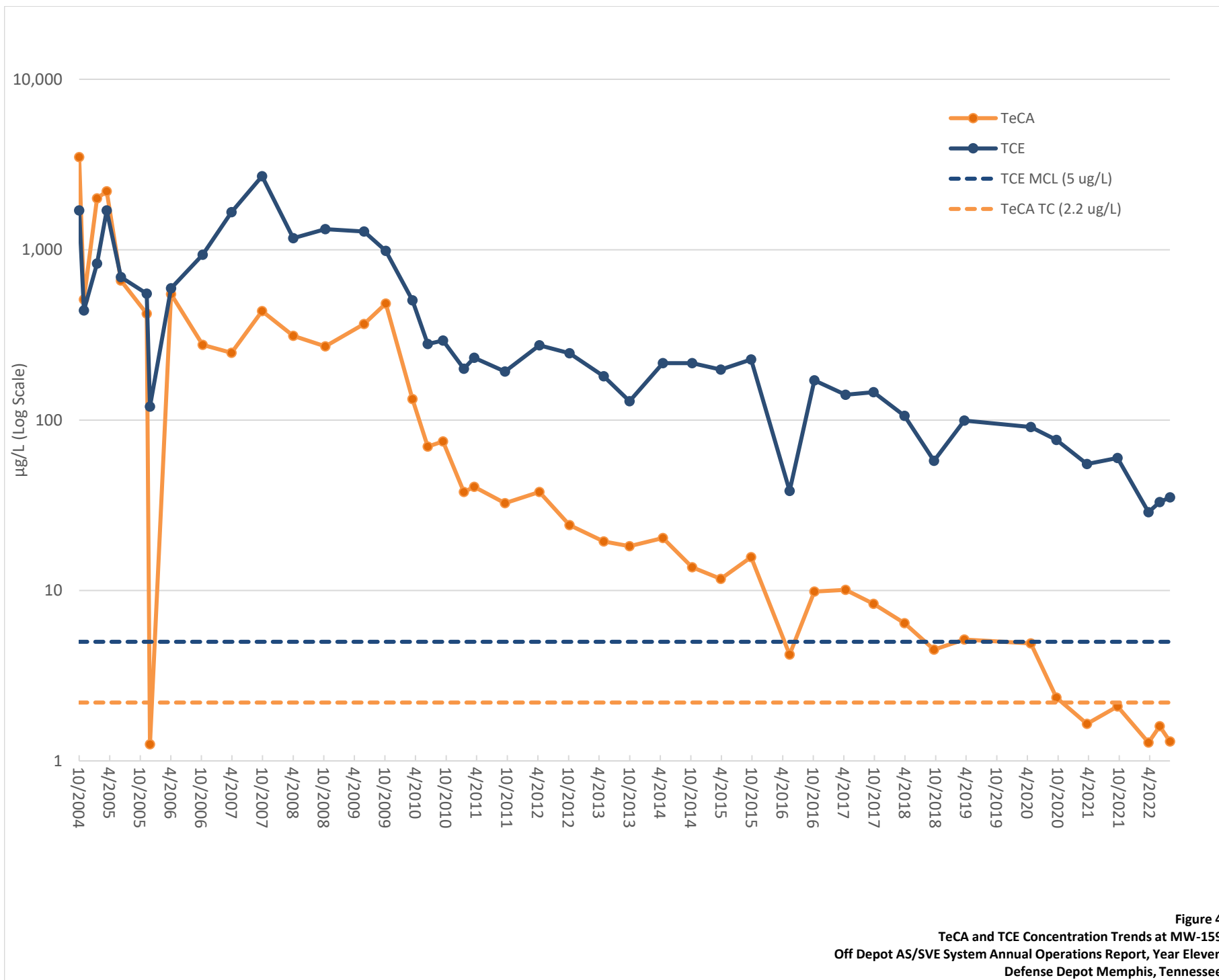


Figure 4
TeCA and TCE Concentration Trends at MW-159
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee

Tables

Table 1
Flow Rate and Vacuum Readings at SVE Wells and Effluent
Off Depot AS/SVE Year 11, Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

Date	Number of Blowers in Operation	AS Compressor	SVE Effluent		SVE-01		SVE-02		SVE-03		SVE-04		SVE-05		SVE-06		SVE-07		SVE-08		SVE-09		SVE-10		SVE-11		SVE-12	
		Flow rate (scfm)	Flow rate (scfm)	Vacuum (in. Hg.)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)
8/3/2021	1	138	440	9.6	70	84.2	30	44.9	90	87.5	50	58.7	40	83.5	80	63.8	25	90	70	83.9	30	87.9	10	81.8	90	62.3	45	33.1
8/17/2021	1	125	540	9.5	60	84	30	44.8	90	84.9	50	58.7	50	81.7	80	64.2	25	88.3	80	79.6	30	86.6	10	35.7	90	62.5	45	34.5
8/31/2021	1	142	520	9.2	50	78.9	30	41.5	90	81.6	50	55.1	30	78.1	80	60.6	30	84.6	90	75.2	30	82.6	10	30.2	90	58.4	40	31.7
9/13/2021	1	117	550	9.6	60	84.1	40	41.7	90	85.8	50	59.6	30	83.1	70	64.4	25	89	90	78.1	35	86.1	20	29.3	90	61.1	45	33.2
9/28/2021	1	140	560	8.5	60	68.1	40	28.4	90	71.7	50	44.7	40	68.7	80	49.8	25	75	80	65.2	30	71.7	20	16.5	90	49.4	45	22.9
10/12/2021	1	134	550	9.6	70	83.1	40	45.6	90	84.8	60	58.8	50	81.1	80	63.8	25	86.6	90	75.5	30	84.3	20	25.8	100	60.5	45	32.1
10/26/2021	1	119	540	9	60	73.6	40	39.2	80	77.6	50	52.2	30	73.4	70	56.3	25	79	90	69.8	30	76.3	15	17.1	90	53.3	40	26.9
11/10/2021	1	141	550	9.1	60	81.8	45	42.9	80	81.2	50	56.8	40	78	70	60.6	30	83.2	90	73.9	30	80.1	25	17.3	100	58.4	45	29.5
11/29/2021	1	154	580	8.5	80	72.7	60	32.7	80	71.8	50	47.9	50	68.8	80	52.6	25	74.7	90	66.7	35	71.4	25	11.1	100	49.6	45	24.3
12/13/2021	1	144	640	8	80	68.2	60	28.7	100	66.9	60	41.4	50	63.3	90	45.9	30	68.3	100	59.9	35	65.3	10	55.1	100	41.9	45	23.8
12/28/2021	1	131	570	9.2	70	84.5	50	46.3	90	83.2	50	55.4	50	78.7	70	61.7	30	85.9	100	74.6	40	82.2	10	69.6	100	56.1	40	30.8
1/12/2022	1	82	550	9.5	70	84.2	60	47.5	90	82.9	50	57.7	50	78.5	80	61.4	30	81.9	90	75.1	40	78.2	10	68.6	100	56.8	40	31.8
1/25/2022	1	84	570	9.9	70	92.8	60	52.7	90	87.9	50	64.6	60	83.4	90	66.9	30	89.7	100	79.1	40	85.1	10	74.5	100	60.7	40	36.5
2/8/2022	1	120	650	7.9	90	64.1	60	23.3	90	64.6	60	36.7	60	60.7	80	42.5	30	64.6	100	59.1	40	66.4	10	48.2	100	42.6	45	21.3
2/22/2022	1	132	540	9.2	70	83.4	55	48.1	80	82.8	60	57.2	40	78.3	80	63.6	30	81.6	100	73.9	30	76.7	10	67.7	100	58.8	35	30.3
3/7/2022	1	102	580	8.4	80	76.1	60	38.2	90	75.8	60	48.7	50	72.1	80	51.5	30	74.3	90	67.6	40	72.1	10	62.1	100	52.4	50	25.8
3/21/2022	1	70	580	9.6	70	86.1	55	50.6	90	85.7	50	63.9	50	82.3	80	63.9	30	85.7	100	76.4	35	80.8	10	72.2	100	58.5	45	37.9
4/5/2022	1	138	540	9.2	70	83.7	55	49.9	80	82.9	50	58.9	40	79.8	75	61.5	30	81.5	90	74.6	30	78.4	10	68.5	100	57.8	40	32.6
4/18/2022	1	169	570	9.5	80	89.1	60	51.3	90	87.8	50	61.4	50	83.7	80	65.5	30	86.6	100	78.6	40	82.7	10	74.9	100	60.4	40	33.8
5/3/2022	1	143	540	9.1	70	85.7	50	46.9	70	83.6	60	57.4	50	79.4	80	60.6	25	80.9	90	74.9	30	77.9	10	67.8	100	58.4	35	28.1
5/17/2022	1	50	570	7.9	80	66.9	40	18.8	90	67.2	50	35	50	62.8	80	41.1	30	68.4	100	60.1	30	67.5	10	66.5	100	41.5	30	14.6
5/31/2022	1	98	520	9.7	60	90.9	10	42.2	90	88.5	50	59	50	83.9	80	62.8	25	86.1	90	81.2	30	85.2	*2	75.9	100	61.5	25	27.6
6/7/2022	1	88	530	10	60	94.9	10	40.7	90	91.5	50	59.5	50	86.2	80	63.3	30	88.3	100	83.9	35	87.5	*2	79.3	100	62.3	25	26.8
6/21/2022	1	110	540	10	70	92	40	45.1	90	89.5	60	58	50	84.2	80	60.7	25	85	100	79.5	35	84.1	*2	78.4	100	59.3	20	24.7
7/12/2022	1	76	510	9.6	60	89.5	35	44.4	90	87.3	50	57.2	50	81.8	80	60.8	25	83.6	100	77.9	30	80.7	10	80.2	100	57.9	10	24.6
7/27/2022	1	63	530	9.7	70	92.9	30	44.1	100	89.6	50	58.4	50	83.9	80	61.8	20	85.1	100	79.8	30	82.4	10	77.9	100	57.9	15	24.5
Average Flow Rate/Vacuum		116	552	9.2	69	82.1	44	41.6	88	81.7	53	54.7	47	77.7	79	58.9	28	81.8	93.1	74	33.5	79	13	55.9	98	56.2	38	28.6

Notes
scfm: standard cubic feet per minute
acfm: actual cubic feet per minute
in. Hg: inches of mercury
in. H₂O: inches of water
NR No reading due to water in gauge; needle fluctuating
* needle fluctuates; repeatedly hesitates at value shown

Table 2
Vacuum Readings at VMPs
Off Depot AS/SVE Year 11 Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

	Date	8/3/2021	10/12/2021	12/13/2021	2/22/2022	4/5/2022	6/7/2022	
Number of Blowers in Operation		1	1	1	1	1	1	AVERAGE
Air Sparge Manifold Open		Yes	Yes	Yes	Yes	Yes	Yes	per well
VMP-1A		NM(W)	NM(W)	1.6	5.6	5.7	NM(W)	4.3
VMP-1B		15.4	15.1	4.0	11.6	11.7	15.3	12.2
VMP-2A		9.7	13.3	5.3	12.3	11.4	14.5	11.1
VMP-2B		19.6	20.2	6.5	12.9	10.3	19.0	14.8
VMP-3A		NM(W)	NM(W)	NM(W)	NM(W)	5.5	9.3	7.4
VMP-3B		22.5	22.5	7.7	18.5	17.9	23.2	18.7
VMP-4A		2.6	11.5	7.2	16.3	12.9	14.1	10.8
VMP-4B		27.5	26.3	10.9	23.1	22.1	30.1	23.3
VMP-5A		12.0	15.4	7.7	11.8	7.7	16.0	11.8
VMP-5B		26.6	26.4	12.2	14.2	20.9	28.1	21.4
VMP-6A		8.0	11.8	10.5	11.5	14.6	11.3	11.3
VMP-6B		29.2	29.6	12.1	14.1	23.6	30.6	23.2
VMP-7A		10.2	27	NM(W)	15.5	16.8	24.0	18.7
VMP-7B		14.3	21.1	1.5	14.7	NM(W)	NM(W)	12.9
VMP-8A		8.0	14.0	5.2	9.3	17	17.3	11.8
VMP-8B		28.9	28.8	7.1	24.6	23.6	29.2	23.7
VMP-9A		11.1	18.1	9.7	26.4	23.2	20.7	18.2
VMP-9B		32.8	31.8	9.9	28.8	27.5	33.3	27.4
VMP-10A		4.5	5.3	7.0	12.5	11.0	8.6	8.2
VMP-10B		30.8	33.1	13.1	27.6	26.8	33.2	27.4

Notes:

- 1) Vacuum measurements made with a digital manometer; units are in inches of water.
- 2) NM(W) = No measurement, water in line.

Table 3
PID Measurements at SVE Wells and Effluent
Off Depot AS/SVE Year 11 Annual Operations Report
Defense Depot Memphis, Tennessee

Date	Number of Blowers in Operation	Air Sparge Manifold Open	SVE-01	SVE-02	SVE-03	SVE-04	SVE-05	SVE-06	SVE-07	SVE-08	SVE-09	SVE-10	SVE-11	SVE-12	Effluent
8/3/2021	1	Yes	0.2	0.1	0.2	0.2	0.9	0.2	0.1	0.5	0.5	NM	0.1	0.1	0.3
10/12/2021	1	Yes	0.0	0.0	0.0	0.0	0.7	0.1	0.0	0.2	0.6	0.0	0.0	0.0	0.2
12/13/2021	1	Yes	0.0	0.0	0.1	0.4	0.8	0.2	0.0	0.4	0.3	NM	0.0	0.0	0.2
2/22/2022	1	Yes	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	NM	0.0	0.0	0.0
4/5/2022	1	Yes	0.0	0.0	0.0	0.0	0.5	0.0	0.0	NM	0.0	NM	0.0	0.0	0.0
6/7/2022	1	Yes	0.0	0.0	0.0	0.3	0.6	0.0	0.1	0.5	0.0	NM	NM	0.0	0.1

Notes:

- 1) PID measurements made with a MiniRae 2000 (10.6 electron volt lamp); units are in parts per million by volume (ppmv).
- Yes: Sparge system was operating during measurements.
- NM: No measurement due to water in piping.

Table 4
PID Measurements at VMPs
Off Depot AS/SVE Year 11 Annual Operations Report
Defense Depot Memphis, Tennessee

	Date	8/3/2021	10/12/2021	12/13/2021	2/22/2022	4/5/2022	6/7/2022
Number of Blowers in Operation		1	1	1	1	1	1
Air Sparge Manifold Open		Yes	Yes	Yes	Yes	Yes	Yes
VMP-1A		NM1	NM1	NM1	NM1	NM1	NM2
VMP-1B		0.2	0.3	0.0	0.1	0.0	0.4
VMP-2A		1.7	1.2	0.4	0.1	0.3	1.1
VMP-2B		0.4	0.6	0.1	0.1	0.0	0.4
VMP-3A		NM1	NM1	NM1	NM1	NM1	NM2
VMP-3B		0.3	0.3	0.0	0.1	0.0	0.4
VMP-4A		0.5	0.9	0.2	0.0	0.0	NM1
VMP-4B		0.5	0.7	0.2	0.0	0.0	0.5
VMP-5A		2.1	3.1	1.2	0.5	0.7	0.6
VMP-5B		0.2	0.5	0.0	0.0	0.0	0.1
VMP-6A		0.5	NM1	NM1	0.3	NM1	NM2
VMP-6B		0.2	0.4	0.1	0.0	0.0	0.1
VMP-7A		0.4	0.5	NM1	0.0	0.8	0.5
VMP-7B		0.5	0.7	0.4	0.2	NM1	0.4
VMP-8A		0.5	1.3	NM1	0.2	0.0	0.1
VMP-8B		0.2	0.5	0.0	0.0	0.0	0.3
VMP-9A		0.5	1.0	0.2	0.0	0.0	0.8
VMP-9B		0.1	0.4	0.0	0.0	0.0	0.1
VMP-10A		NM1	NM1	NM1	NM1	NM1	NM1
VMP-10B		0.2	0.3	0.0	0.0	0.0	0.0

Notes:

PID measurements made with a MiniRae 2000 (10.6 electron volt lamp);

units are in parts per million by volume (ppmv).

NM1: No measurement; water in line

NM2: No measurement; field notes do not identify reason

Table 5
Analytical Results Summary - SVE Effluent
Off Depot AS/SVE Year 11, Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

SampleID Lab ID Date	October 2021 Sample and Duplicate		December 2021 Sample	April 2022 Sample	June 2022 Sample
	ODSVE-EFF-Y11Q1	ODSVE-DUP1-Y11Q1	ODSVE-EFF-Y11Q2	ODSVE-Y11Q3	ODSVE-Y11Q4
	P2105399-001 10/12/2021	P2105399-002 10/12/2021	P2106529-001 12/13/2021	4/13/2022 P2201515-001	6/7/2022 P2202553-001
Primary CVOCs	Units				
1,1,2,2-Tetrachloroethane	ppbv	0.25	0.26	0.35	0.21
1,1,2-Trichloroethane	ppbv	0.045 J	0.046 J	0.046 J	0.04J
1,1-Dichloroethene	ppbv	0.41	0.44	0.31	0.43
1,2-Dichloroethane	ppbv	0.071 U	0.065 U	0.054	0.054U
Carbon Tetrachloride	ppbv	0.41	0.43	0.36	0.63
Chloroform	ppbv	6.7	7.1	6.3	7.8
cis-1,2-Dichloroethene	ppbv	23	25	19	26
Methylene Chloride	ppbv	0.15 U	0.14 U	0.12 U	0.12U
Tetrachloroethene	ppbv	1.9	1.9	2.1	2.2
trans-1,2-Dichloroethene	ppbv	0.51	0.51	0.53	0.62
Trichloroethene	ppbv	24	26	21	22
Vinyl Chloride	ppbv	0.069 J+	0.073 J+	0.048 J	0.069J
Total Primary CVOCs	ppbv	57.3	61.8	50.1	52.9
Other VOCs					
1,1,1-Trichloroethane	ppbv	0.19	0.2	0.16	0.18
1,1,2-Trichlorotrifluoroethane	ppbv	3	3	3	4
1,1-Dichloroethane	ppbv	0.21 J	0.22	0.15 J	0.2
1,2,4-Trichlorobenzene	ppbv	0.072 U	0.066 U	0.056 U	0.056U
1,2,4-Trimethylbenzene	ppbv	0.055 U	0.05 U	0.042 U	0.042U
1,3,5-Trimethylbenzene	ppbv	0.058 U	0.053 U	0.045 U	0.045U
1,3-Butadiene	ppbv	0.24 U	0.22 U	0.19 U	0.19U
1,2-Dichlorobenzene	ppbv	0.048 U	0.044 U	0.036	0.037U
1,3-Dichlorobenzene	ppbv	0.048 U	0.044 U	0.036	0.037U
1,4-Dichlorobenzene	ppbv	0.048 U	0.044 U	0.036	0.037U
1,4-Dioxane	ppbv	0.075 U	0.068 U	0.057 U	0.058U
1,2-Dichloro-1,1,2,2-tetrafluoro	ppbv	0.077 U	0.019 U	0.059 U	0.016J
2-Butanone	ppbv	0.078 J	0.57 J	0.061 J	0.067J
2-Hexanone	ppbv	0.08 J	0.079 U	0.066 U	0.067U
2-Propanol	ppbv	0.42 UJ	1.1 J	0.33 U	0.33U
4-Ethyltoluene	ppbv	0.11 U	0.1 U	0.084 U	100*
4-Methyl-2-pentanone	ppbv	0.086 U	0.079 U	0.066 U	0.085U
Acetone	ppbv	1.4 J	1.9 J	0.99 J	0.067U
Acetonitrile	ppbv	0.32 U	0.29 U	0.25 U	1.4U
Acrolein	ppbv	0.26 U	0.23 J	0.39 J	0.2U
alpha-Pinene	ppbv	0.051 U	0.047 U	0.039 U	0.04U
Benzene	ppbv	0.089 U	0.082 U	0.17 J	0.031J
Bromodichloromethane	ppbv	0.043 U	0.039 U	0.033 U	0.033U
Bromomethane	ppbv	0.074 U	0.067 U	0.056 U	0.057U
Carbon Disulfide	ppbv	0.18 UJ	14 J	0.76	0.41J
Chlorobenzene	ppbv	0.058 U	0.054 U	0.045 U	0.045U
Chloroethane	ppbv	0.11 U	0.099 U	0.044 J	0.084U
Chloromethane	ppbv	0.26 U	0.24 U	0.2 U	0.2U
Cyclohexane	ppbv	0.16 U	0.15 U	0.12 U	0.12U
Dibromochloromethane	ppbv	0.034 U	0.31 U	0.026 U	0.026U
Dichlorodifluoromethane	ppbv	0.74	0.76	0.57	0.72
d-Limonene	ppbv	0.094 U	0.086 U	0.072 U	0.072U
Ethanol	ppbv	0.71 J*	14 J*	2.4 J*	0.64J*
Ethyl Acetate	ppbv	0.29 U	0.27 U	0.22 U	0.22U
Ethylbenzene	ppbv	0.066 U	0.06 U	0.082 J	0.051U
Hexachlorobutadiene	ppbv	0.049 UJ	0.45 UJ	0.038 U	0.038U
Cumene	ppbv	0.058 U	0.053 U	0.045 U	0.045U
m,p-Xylenes	ppbv	0.13 U	0.12 U	0.098 U	0.099U
Methyl tert-Butyl Ether	ppbv	0.075 U	0.068 U	0.057 U	0.058U
Naphthalene	ppbv	0.099 U	0.091 U	0.68	0.077U
n-Butyl Acetate	ppbv	0.074 U	0.068 U	0.057 U	0.057U
n-Heptane	ppbv	0.13 U	0.12 U	0.098 U	0.098U
n-Hexane	ppbv	0.15U	0.14 U	0.11 U	0.11U

Table 5
Analytical Results Summary - SVE Effluent
Off Depot AS/SVE Year 11, Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

	SampleID Lab ID Date	October 2021 Sample and Duplicate		December 2021 Sample	April 2022 Sample	June 2022 Sample
		ODSVE-EFF-Y11Q1	ODSVE-DUP1-Y11Q1	ODSVE-EFF-Y11Q2	ODSVE-Y11Q3	ODSVE-Y11Q4
		P2105399-001 10/12/2021	P2105399-002 10/12/2021	P2106529-001 12/13/2021	4/13/2022 P2201515-001	6/7/2022 P2202553-001
Primary CVOCs	Units					
n-Nonane	ppbv	0.1 U	0.094 U	0.079 U	0.079U	0.079U
n-Octane	ppbv	0.11 U	0.1 U	0.086 U	0.086U	0.086U
o-Xylene	ppbv	0.066 U	0.06 U	0.051 U	0.051U	0.051U
Propene	ppbv	0.31 UJ	0.77 J+	0.26 J	0.24U	0.24U
Styrene	ppbv	0.12 U	0.04 J	0.23	0.095U	0.094U
Tetrahydrofuran	ppbv	0.11 U	0.057 U	0.088 U	0.088U	0.11J
Toluene	ppbv	0.076 U	0.069 U	0.28	0.025J	0.076J
Trichlorofluoromethane	ppbv	0.29	0.29	0.25	0.28	0.33
Vinyl Acetate	ppbv	1.3 U	1.2 U	0.48 J	1U	0.99U
Total VOCs		63.3	84.8	58.8	58.1	67.5

Non-detect compounds were not included in the total primary CVOC and total VOC calculations.

* Indicates an anomalous detection of a compound not associated with the site, presumed to be associated with potential contamination from hand sanitizer or sanitizer used in the lab; therefore, this result was not included in total VOC calculation.

CVOCS = chlorinated VOCs

ppbv = parts per billion by volume

VOC = volatile organic compound

DQE Flags:

U: Analyte not detected above Reporting Limit

J: Estimated

J+: Estimated with a possible high bias (the target compound was recovered above the upper control limit in the associated laboratory spike samples)

Table 6
Mass Removal Calculations
Off Depot AS/SVE Year 11, Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

Period	Start Date	End Date	Hours Operating Between Dates	Average Flow rate (scfm)	Laboratory Total VOC Effluent Concentration (ppbv)	Average Effluent VOC Concentration (ppbv)	Effluent Emission Rate (lb/hr)	Estimated VOC Mass Removal During Period (lbs)	Cumulative Mass Removed From Fluvial Subsurface (lbs)
Year 1	11/12/2009	12/11/2009	92	977	1240	1240	0.025	2.3	2.3
	12/11/2009	1/25/2010	1074	1054	447	844	0.018	19.9	22.2
	1/25/2010	2/23/2010	665	926	351	399	0.008	5.1	27.3
	2/23/2010	3/31/2010	890	916	267	309	0.006	5.2	32.5
	3/31/2010	6/17/2010	1854	1119	633	450	0.010	19.4	51.9
	6/17/2010	9/16/2010	1958	1114	73.8	353	0.008	16.0	68.0
	9/16/2010	12/7/2010	1695	1006	68.9	71.4	0.001	2.5	70.5
Year 2	12/7/2010	3/24/2011	872	965	60.4	64.7	0.001	1.1	71.6
	3/24/2011	6/17/2011	783	974	66.0	63.2	0.001	1.0	72.6
	6/17/2011	9/16/2011	1042	958	50.8	58.4	0.001	1.2	73.8
	9/16/2011	12/22/2011	1148	724	38.2	44.5	0.0007	0.8	74.6
Year 3	12/22/2011	2/16/2012	759	719	27.6	32.9	0.0005	0.4	75.0
	2/16/2012	3/31/2012	437	660	36.0	31.8	0.0004	0.2	75.2
	3/31/2012	6/30/2012	969	834	38.1	37.1	0.0006	0.6	75.8
	6/30/2012	9/30/2012	1124	612	42.8	40.5	0.0005	0.6	76.4
	9/30/2012	12/31/2012	1061	628	38.5	40.7	0.0005	0.6	76.9
Year 4	12/31/2012	3/31/2013	1070	628	46.7	42.6	0.0006	0.6	77.5
	3/31/2013	6/30/2013	1070	760	54.5	50.6	0.0008	0.9	78.4
	6/30/2013	9/30/2013	730	662	49.2	51.9	0.0007	0.5	78.9
	9/30/2013	12/31/2013	1104	763	53.2	51.2	0.0008	0.9	79.8
Year 5	12/31/2013	3/30/2014	465	810	-	53.2	0.0009	0.4	80.2
	3/6/2015	6/30/2015	525	615	86.2	86.2	0.0011	0.6	80.8
	6/30/2015	9/30/2015	667	555	65.9	76.1	0.0009	0.6	81.4
	9/30/2015	12/31/2015	507	566	72.2	69.1	0.0008	0.4	81.8
Year 6	12/31/2015	7/31/2016	518	565	75.1	73.7	0.0009	0.4	82.3
	7/31/2016	11/30/2016	540	574	82.4	78.8	0.0009	0.5	82.8
	11/30/2016	2/28/2017	442	598	77.7	80.1	0.0010	0.4	83.2
	2/28/2017	5/5/2017	292	595	78.3	78.0	0.0010	0.3	83.5
Year 7	5/5/2017	7/31/2017	349	582	69.8	74.1	0.0009	0.3	83.8
	7/31/2017	10/31/2017	555	558	89.4	79.6	0.0009	0.5	84.3
	10/31/2017	1/31/2018	329	584	65.2	77.3	0.0009	0.3	84.6
	1/31/2018	4/30/2018	715	574	77.3	71.3	0.0009	0.6	85.2
Year 8	8/6/2018	10/31/2018	692	560	78.2	77.8	0.0009	0.6	85.8
	10/31/2018	1/31/2019	386	583	81.0	79.6	0.0010	0.4	86.2
	1/31/2019	4/30/2019	585	547	85.2	83.1	0.0009	0.6	86.8
	4/30/2019	7/30/2019	505	510	75.7	80.5	0.0009	0.4	87.2
Year 9	7/30/2019	10/31/2019	335	518	78.6	77.2	0.0008	0.3	87.5
	10/31/2019	1/28/2020	653	522	87.7	83.2	0.0009	0.6	88.1
	1/28/2020	5/13/2020	914	511	91.0	89.4	0.0010	0.9	88.9
	5/13/2020	8/4/2020	264	490	89.1	90.1	0.0009	0.2	89.2
Year 10	8/4/2020	11/3/2020	564	474	78.2	83.6	0.0008	0.5	89.7
	11/3/2020	1/29/2021	402	515	100.0	89.1	0.0010	0.4	90.0
	1/29/2021	4/27/2021	686	546	73.6	86.8	0.0010	0.7	90.7
	4/27/2021	7/27/2021	547	520	72.4	73.0	0.0008	0.4	91.1
Year 11	7/27/2021	11/2/2021	831	529	63.3	67.9	0.0007	0.6	91.8
	11/2/2021	2/1/2022	428	577	58.8	61.1	0.0007	0.3	92.1
	2/1/2022	4/26/2022	599	577	58.1	58.5	0.0007	0.4	92.5
	4/26/2022	7/30/2022	647	534	67.5	62.8	0.0007	0.5	92.9

Notes:

lbs pounds
lb/hr pounds per hour
ppbv parts per billion by volume
scfm standard cubic feet per minute

Constants:

Mass of TCE: 131.4 lb/lb-mol
Molar Vol Air 379 ft³/lb-mol (@ 60° F)

Table 7
Adjacent LTM Wells Exceeding TC or MCL
Off Depot AS/SVE Annual Operations Report, Year 11
Defense Depot Memphis, Tennessee

1,1,2,2-Tetrachloroethane (TeCA) Concentration (µg/L)						
Date	TC: 2.2 µg/L			MCL: NA		
	MW-54	MW-150	MW-159	MW-165	MW-243	MW-246
Oct 2014	2.5	0.8	13.7	0.7	2.6	9.6
Apr 2015	2.2	1.8	11.7	0.4	1.7	5.4
Oct 2015	1.1	3.1	15.7	0.5	1.3	3.3
Apr 2016	<0.5	<0.5	4.2	0.2 J	1.3	0.4 J
Oct 2016	<0.5	<0.5	9.9	<0.5	1.2	4.3
Apr 2017	0.4	0.2	10.1	<0.5	1.7	4.8
Oct 2017	–	2.6	8.4	<0.5	–	3.6
Apr 2018	0.5	1.0	6.4	<0.5	1.3	3.8
Oct 2018	–	<0.5	4.5	<0.5	–	3.1
Apr 2019	0.6	<0.5	5.2	<0.5	1.6	2.8
Oct 2019	–	–	3.3	–	–	0.7 J
May 2020	1.4	<0.8	4.9	<0.8	0.4 J	1.2
Oct 2020	–	–	2.4	–	–	0.3 J
Dec 2021	–	–	1.7	–	–	–
Apr 2021	0.73 J	<0.8	1.7	<0.8	0.748 J	1.3
Oct 2021	<0.4	–	2.1	–	–	2.0
Apr 2022	<0.2	<0.2	1.3	<0.2	<0.2	1.3
Jun 2022	–	–	1.6	–	–	–
Aug 2022	–	–	1.3	–	–	1.6

Trichloroethene (TCE) Concentration (µg/L)						
Date	TC: 5 µg/L			MCL: 5 µg/L		
	MW-54	MW-150	MW-159	MW-165	MW-243	MW-246
Oct 2014	10.0	2.3	216	6.3	5.0	28.5
Apr 2015	10.4	7.4	198	6.2	1.7	1.0
Oct 2015	5.3	9.5	227	3.6	1.5	0.7
Apr 2016	<1.0	<1.0	38.4	1.9	2.6	3.6
Oct 2016	<1.0	<1.0	171	1.1	2.4	0.4 J
Apr 2017	1.7	0.9	141	1.2	3.2	0.8
Oct 2017	–	7.7	146	1.0	–	0.6
Apr 2018	2.6	3.1	106	0.9 J	3.4	1.7
Oct 2018	–	<1.0	57.7	1.0	–	10.7
Apr 2019	3.6	0.6 J	99.3	0.9 J	2.6	2.4
Oct 2019	–	–	93.8	–	–	2.8
May 2020	5.5	<1.0	91.0	0.5 J	1.2	<1.0
Oct 2020	–	–	76.4	–	–	0.988 J
Apr 2021	4.2	0.72 J	55.3	0.729 J	1.8	2.3
Oct 2021	4.3	–	59.9	–	–	2.1
Dec 2021	–	–	48.7	–	–	–
Apr 2022	1.6	1.4	28.8	<0.2	3.6	6.3
Jun 2022	–	–	33.0	–	–	–
Aug 2022	–	–	35.2	–	–	3.3

Notes:

MCL : Maximum Contaminant Level

TC : Target Concentration

NA : not applicable

µg/L : micrograms per liter

< : compound undetected at the specified quantitation limit

– : no sample collected

1) Results above MCL or TC shown in **red bold**

Appendix A Responses to EPA and TDEC Comments and Approval Letters



U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W. ATLANTA, GEORGIA 30303

5/27/2023

Mr. James Foster
Base Realignment and Closure Division (ACSIM-ODB)
2530 Crystal Drive (Taylor Building), Room 5000
Arlington, VA 22202-3940

Subject: United States Environmental Agency Review of the United States Army's Responses to EPA comments on the Revision 0 Off Depot Air Sparge/ Soil Vapor Extraction System, Annual Operations Report, Year 11 (August 2021 through July 2022), Defense Depot Memphis, Tennessee

Dear Mr. Foster,

The United States Environmental Protection Agency (EPA/USEPA) has completed its review of United States Army's (USARMY/Lead Agency) Responses to EPA comments on the Revision 0, Year 11 (August 2021 through July 2022), Off Depot Air Sparge/ Soil Vapor Extraction (AS/SVE) System Annual Operations Report (Report), Defense Depot Memphis, Tennessee (DDMT), dated March 2023. The EPA agrees with the Lead Agency and requests that the comments on this letter, as well as the responses from the Lead Agency, be appended to the Report and considered when generating a clear copy of the final version before final approval. Furthermore, the EPA provides an additional comment to improve clarity over the responses.

General Comment

The Lead Agency responses discussed the AS/SVE rates and their relationship with the AS well injection rate. In addition, the responses noted that the AS/SVE rates have generally been in the range of 3-4 times the AS well injection rate and have increased over time and that the Year 11 rate of 4.8 times the AS well injection rate is only modestly higher than previous rates. In summary, it was inferred that the increased extraction rate has not had any impacts on the performance of the treatment system, because *"the system has shown to serve its purpose and performed effectively, reducing groundwater concentrations below the treatment goal at all points of compliance."*

Generally, a rate and extent of mass removal by SVE depends on several factors that influence contaminant mass transfer into the gas phase. Although, the Report does not provide any information on why the system has shown indications of incremented contaminant removal rate. The response also does not provide any specific information over the cause of the increased extraction rate. For clarity, please provide an explanation of why the system has shown an incremented extraction rate.

Overall, if the SVE did not reach asymptotic conditions but has served its purpose and performed effectively, reducing groundwater concentrations below the treatment goal at all points of

U.S. ENVIRONMENTAL PROTECTION AGENCY
U.S. Army Responses to EPA comments on the Revision 0
Off Depot Air Sparge/ Soil Vapor Extraction System,
Annual Operations Report, Year 11 (August 2021 through July 2022),
Defense Depot Memphis, Tennessee

compliance, it may be an indication that transitioning to Monitored Natural Attenuation (MNA) is an appropriate path forward. Moreover, MNA can be used as a polishing step after active remediation has been completed, such as SVE, to reach ultimate remedial action objectives (RAOs). Further, evaluating previous extraction rates and estimating degradation timeframes could be an important factor while considering transitioning from active remedies. This can help to estimate how long it would take for the contaminants to degrade to acceptable levels. Likewise, the decision to transition to MNA should be based on site-specific conditions, regulatory requirements, and cleanup goals.

Moreover, restoration is considered likely when contaminant reductions and plume capture indicate that RAOs and cleanup levels may be attained in the established timeframe. If concentrations have decreased in a timely manner, it is likely that the current remedial approach was adequate and functioned as intended. If concentrations are decreasing in a less than timely manner, but restoration of the aquifer is still a feasible goal within a timeframe that supports future intended aquifer uses, the review and optimization of the existing remedy may be also an appropriate approach.

As a result, additional monitoring for continued rebound and trends analysis may be required during and after the temporary discontinuation of the active remedy to determine whether the proposed or implemented passive remedies will or are achieving the RAOs and associated cleanup levels on timely manner. As we move forward, continuous progress toward and achievement of RAOs and cleanup levels should be assessed in a timely manner to address the remedial requirements in question.

The USEPA commends the USARMY for its efforts on further investigating the DDMT environmental conditions. If you have any questions about this letter, please contact me via email at martinez-torres.fernando@epa.gov or at 404-695- 4991.

Sincerely,

Fernando Martinez Torres
Remedial Project Manager
Department of Defense Section
Superfund & Emergency Management Division
United States Environmental Protection Agency

cc: Jamie A. Woods, TDEC
William Millar, CALIBRE
Ben Bentkowski, USEPA, R4
Kevin Koporec, USEPA, R4

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL COMMENTS

1. The Report recommends continued planning for an eventual system shutdown in accordance with the EPA guidance titled: *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (EPA, 2014). However, it is unclear what initial planning has been conducted to date for the eventual shutdown, as this is the first annual report that mentions this EPA guidance.

Please revise the Report to discuss what planning work has been conducted to date and timeframes to support the eventual system shutdown.

Response: Planning to date has included increasing the frequency of VOC sampling at monitoring well MW-159 to ensure that adequate data is collected in accordance with the referenced EPA guidance document, and discussions both internally and with EPA and TDEC regarding the Army's intent to shut the system down at the end of July 2023. The rationale for a system shutdown is presented below. No change to the Year 11 Annual Report is proposed to address this comment as the document primarily conveys the results of the Year 11 operations.

The treatment goal identified in the Dunn Field Record of Decision Amendment (January 2009) is 50 µg/L for individual CVOCs. Since October 2012, CVOC concentrations in the Off Depot plume have met the treatment goal of 50 µg/L for individual CVOCs in all LTM wells in the AS/SVE area except MW-159. TCE concentrations at MW-159 remained above 50 µg/L through October 2021. TCE decreased below 50 µg/L beginning in December 2021 and have remained below 50 µg/L through six consecutive rounds of sampling up to and including February 2023. This decrease was caused by additional AS wells installed south of MW-159 to increase removal of CVOCs from groundwater starting in October 2020. Refer to section 1.3 of the AS-SVE report and the Annual Long-Term Monitoring Reports for additional information. The data indicate that the treatment system has accomplished the treatment goal expressed in the ROD.

SPECIFIC COMMENTS

1. **Section 1.0, Introduction, Page 1-1:** The text states that the year 11 report covers the period from 27 July 2021 to 31 July 2022, and the title of the Report lists the reporting period as August 2021 to July 2022; however, it is noted the year 10 report covers the period from 01 August 2020 through 31 July 2021. Therefore, four days are included in both reporting periods (27 July 2021 to 31 July 2021).

Please revise the year 11 reporting period to exclude 27 July to 31 July 2021 from the reporting period or provide an explanation why these four days should be included in the year 11 report and change the title of the Report to reflect the actual reporting period.

Response: The annual reports cover the general period of August through the following July. However, the system is considered "operating" if the AS manifold is open and air

U.S. ENVIRONMENTAL PROTECTION AGENCY

sparging is occurring, and these dates do not always coincide with the first day of August or the last day of July. In the Year 10 Annual Report, the last paragraph of Section 2.0 states that “the AS manifold was opened on 27 July 2021 for the August operating period and that time will be accounted for as part of the Year Eleven reporting”. No change to the Year 11 report is proposed.

2. **Section 1.3, AS/SVE Description, Page 1-3:** The text states that condensate generated from soil vapor extraction (SVE) operations is transferred to a storage tank on Dunn Field for analysis prior to discharge; however, it is unclear what analysis are conducted or where the condensate water is discharged based on the analytical results.

Please revise the Report to provide the condensate water analytical results and describe in the text where the wastewater was discharged based on the results.

Response: Section 1.3 was revised as follows to discuss the condensate sampling and discharge: “Condensate from SVE operations is collected in a 160-gallon AWS and then transferred from the AWS to a 505-gallon polyethylene tank outside the SVE building. Once the exterior tank nears capacity, water is pumped to a trailer-mounted transfer tank and transferred to a storage tank on Dunn Field where it is combined with purge water generated during the LTM activities. Information on the handling, characterization, and discharge of the water at Dunn Field during the period covered in this report is provided in the Annual Long-Term Monitoring Report – 2022 [(HDR, 2023) (Section 2.3 and related appendices)].”

3. **Section 2.1, System Performance, Pages 2-1 and Section 2.3.3, Non-Routine System Maintenance and Repairs, Page 2-4:** These sections state that the system was down for a total of 277 hours; however, according to a total count of the system down time hours discussed in Section 2.3.1 (Routine System Maintenance) and Section 2.3.2 (Non-Routine System Maintenance and Repairs) and bulleted events listed on pages 2-3 and 2-4, system downtime totaled 274 hours.

Please revise the text to address the discrepancy in the total number of system downtime hours presented.

Response: The sum of the bulleted events is 273 hours. The AS manifold was closed for 4 hours on 20 October 2022 in preparation for LTM sampling. These four hours are included in the calculation of system downtime (277 hours) but are not considered as part of routine or non-routine maintenance and repairs. This is explained in the last paragraph of Section 2.3.2. No change to the Year 11 report is proposed.

4. **Section 2.3.1, Routine System Maintenance, Page 2-2:** This section states that annual preventive maintenance was conducted on the oil-water separator (OWS); however, no details of the maintenance activities are provided, and it is unclear if the OWS was cleaned, which may have resulted in the generation of water and/or sediment.

Please revise the text to discuss the details of the OWS maintenance activities and whether any waste was generated, and if so, include a description of the characterization and

U.S. ENVIRONMENTAL PROTECTION AGENCY

disposal of the waste.

Response: The reference to an oil-water separator was a typo. The text was revised to correct this to AWS.

5. **Section 3.3, Vapor Samples, Page 3-2:** Based on the detections of ethanol and 4-ethyltoluene in system effluent samples, it appears that the connection between the Summa canister and sampling port may not be airtight; however, it is unclear what leak testing controls are in place to confirm no leaks occur in the sampling apparatus and whether this has an impact on the sampling quality.

Please revise the text to discuss what procedures are in place to ensure no leakage occurs in the effluent sampling apparatus and to state whether the status for quality sampling has been disrupted.

Response: Effluent air is sampled via a port on the exterior portion of the effluent air pipe. The port is equipped with a barbed fitting and a valve/handle. The sample tubing is pushed on to the barbs and creates a tight seal. The effluent air is under pressure, helping ensure that the sample collected in the Summa canister is representative of SVE effluent. Effluent air samples have been collected in this manner for multiple sampling events over more than a decade.

If the ethanol and 4-ethyltoluene results were the result of a poor connection between the Summa canister and the sampling port as stated in EPA's comment, then those compounds would have to be present at those concentrations (or greater) in outdoor air. This seems unlikely, given the location of the AS/SVE compound (a grassy field with nearby residences). A more likely scenario is that the results are related to cross-contamination related to sanitizer used in the lab as stated in the footnote to Table 5. No change to the Year 11 report is proposed.

6. **Section 4.1, System Operations, Page 4-1:** This section states that the SVE system extracted 4.8 times the air sparge (AS) injection rate during year 11, which is an increase from 4.1 times in year 10; however, there is no discussion or explanation of the significance for the increased SVE extraction rate. As such, it is unclear how this condition of increased extraction rate may be impacting the performance of the treatment system.

Please include a discussion of the cause for the increased extraction rate and what impacts this has on the performance of the treatment system.

Response: The combined SVE well flow rate versus the air injection rate has exceeded the minimum design rate since system startup in 2011. Rates have generally been in the range of 3-4 times the AS well injection rate and have increased over time. The Year 11 rate of 4.8 times the AS well injection rate is only modestly higher than previous rates. Further evaluation of extraction rates and impacts on system performance is unnecessary because the system has served its purpose and performed effectively, reducing

U.S. ENVIRONMENTAL PROTECTION AGENCY

groundwater concentrations below the treatment goal at all points of compliance. Barring new data that suggests otherwise, the Army intends to shut the system down in July 2023. No change to the Year 11 report is proposed.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Remediation
Memphis Environmental Field Office
8383 Wolf Lake Drive
Bartlett, TN 38133-4119

March 9, 2023

James C. Foster
BRAC Program Manager
Headquarters Department of the Army,
Assistant Chief of Staff for
Installation Management (DAIM-ODB)
Army Pentagon,
2530 Crystal Drive,
Arlington, VA 22202-3934

Subject: Off Depot AS/SVE System Annual Operations Report, Year 11 (Rev 0)
Defense Depot Memphis, Tennessee
TDOR ID # 79-736
TN4210020570

Mr. Foster,

TDEC-DoR has reviewed the **Off Depot AS/SVE System Annual Operations Report (Y11)** and has no comments regarding the document's contents. If there are questions regarding the approval, please contact me at (901) 371-3041 or at jamie.woods@tn.gov.

Regards,

A handwritten signature in blue ink, appearing to read "J A Woods", with a long horizontal flourish extending to the right.

Jamie A. Woods, P.G.
Project Manager
Division of Remediation
Memphis Environmental Field Office

cc: Bill Millar (CALIBRE)
T. Holmes (HDR Inc)
F. Martinez-Torres (EPA-PM)

TDoR NCO: file 79-736
TDoR MEFO: file 79-736

Appendix B Semiannual and Annual Maintenance Reports

SERVICE ORDER**72868436** Page1/12

Location	Trinity Analysis and Development	Customer	Trinity Analysis and Development
10049408	1605 Menager Rd		1605 Menager Rd
	Memphis TN 38106-7012		Memphis TN 38106-7012
Responsible	Ms. Denise Cooper	Order	21-MSA-0029
	901-268-2478	Pers.in charge	Richard Montgomery
Start (approx.)	Tuesday, 10/19/21 / 12:00 AM		(877)882-8376
Service techn.	Sam Coats		

Attachments

Add attachment

Periodical maintenance

Contract No: Maintenance Agreement- Sign
Service Agreement 'Maintenance'

Major PM - CSD100, tank, TE141, KCF100, KOR485, KPF485, and KFS485
Quote - 86458599

Scheduled 10/19/2021 per Denise Cooper - JP 09/22/2021

Delivered - Recvd by: RM - DN 10/15

Label all returned goods!

Reason for return	Returned goods	to oper.	Pc	Material No.	Serial No.	Returned by		
Disposal	As Consumed	0030	2	As Consumed		☐ Customer ☒ Technician ☐ Waste contractor		
Disposal	Filter Element	0130	1	USFS-485		☐ Customer ☒ Technician ☐ Waste contractor		
Disposal	Filter Element	0120	1	USPF-485		☐ Customer ☒ Technician ☐ Waste contractor		

Set up time				Wrap up time			
Date	Duration	Service technician		Date	Duration	Service technician	
10/19/21	15 Min	Sam Coats	+ -				+ -

Start of work	End of work	Breaks	Date / Weekday	Service technician
8:30 AM	4:00 PM	0 Min	Tuesday, 10/19/21	Sam Coats

Additional work(not included in contract)	Duration	to Oper	Description

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1 1/2% interest per month (annual rate 18%).

SERVICE ORDER

72868436 Page2/12



Shorten service interval due to environment or operating conditions?

☒ No ☐ Yes

Work performed acc. to work plan.

Work accepted.

Any outstanding deficiencies?

☐ Yes ☒ No

Confirmed work and material of work plan.

E-mail service manager(for confirmation)

richard.montgomery@kaeser.com

Customer e-mail(for confirmation)

denise.cooper@hdrinc.com

Service
technician's
signature

Kaeser Field
Service PN

Digitally signed by
Kaeser Field Service PN
Date: 2021.10.19
16:23:51 -05'00'

☒ Signature unavailable

Remark:

Remark:

Denise Cooper

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1½% interest per month (annual rate 18%)

Kaeser Compressors, Inc. P.O.Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

SERVICE ORDER

72868436 Page 3 / 12

KAESER COMPRESSORS

Oper. 0030 **Maintain screw compressor - package B** 6.0
 Type CSD 100 125 psi 460/60 US 1008967979
 Material No. 100818.1 Year 2009
 Serial No. 1234 EMR 3498678

Previous service hours 55,822 h **Current service hours** 59,091 h

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	LOTO
☒ -Check motor-airend coupling	ok
☒ -Change filter mat(s) in compressor/control cabinet/SFC cabinet	replaced
☒ -Change air filter	replaced
☒ -Check oil filter and change if necessary	replaced
☒ -Maintain valves and proportional regulator	ok
☐ -Change motor bearings (drive motor and/or fan motor)	na
☒ -Check cooler and clean if necessary/check fan blades and guarding	ok
☐ -Maintain condensate drain	na
☒ -Check hose lines and change as necessary	ok
☒ -Check electrical cables and cable inlets	ok
☒ -Tighten mains terminals and check for oxidation	ok
☒ -Check shutdown function when separator air outlet temp. too high	ok
☒ -Check overcurrent relays and motor protection switches	ok
☒ -Check door and guard interlocks and emergency stop function	ok
☒ -Check oil and change if necessary	replaced M460
☒ -Check oil separator cartridge difference pressure 1 psi/bar,	ok
change as needed	
☒ Check fan motor bearings ☒ Re-greased	greased
☒ Check compressor motor bearings ☒ Re-greased	greased
☒ -Check nominal pressure shutdown function,	ok
shutdown at 100 120 psi/bar	ok
☒ -Check shutdown function when airend discharge temp. too high	ok
☒ -Check control voltage: L1 125 V	ok
☒ -Check power consumption: Line U1 138 A V1 139 A W1 141 A	ok
☒ -Check pressure relief valve(s)	ok
☒ -Check airend discharge temperature 178 °F/°C	ok
☒ -Test run, check conditions: start, idle, load and shut-down	ok
☒ -Check oil level, for leaks (compr.air./oil/water), idling press.	ok
☒ -Register service: stick label/service manual/controller	ok
Total h 59091 Load h 27722 Ambient temp. 77 °F/°C	ok
Oil type M460 Control mode Dual	ok

Work to be done	Comment
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	complete
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Picked up parts from branch and brought to job site. Unloaded parts and took into container where equipment is located. LOTO unit and began Major/B Service. Drained oil. Took oil sample. Replaced oil separator, oil filter, air filter and filter mats. Refilled with M460 oil. Serviced CAVV. Went to service the Anti-rumble valve and found that wrong kit was sent. Pulled 400706.0 from van stock and serviced anti-rumble valve. Will be returning kit that was shipped. Tightened electrical connections. Wiped down unit. Applied power and found that 24v power supply was bad. Replaced 24v power supply with van stock. Test ran unit and checked for proper operation. No issues at this time.	

Consumed material	Material No.	Pc	Serial No.	Part ID/batch	Stock
24v Power Supply	7.7605PO	1			1002
Vent Valve Maintenance Kit	400706.0	1			1002
Sleeve	9.0675.0	1			1002
Ferrel/Cutting Ring	6.0351.00010	1			1002

Material delivered in advance	Material No.	Pc	Serial No.	Return	Returned by
Filter mat 112x112x10	6.3572.0	2		0	☐ Tech. ☐ Customer
Oil filter 16bar	6.3465.0	1		0	☐ Tech. ☐ Customer
KIT Air filter cartridge	4E0302.0	1		0	☐ Tech. ☐ Customer
KIT oil separator cartridge Ø28	6.3623.0	1		0	☐ Tech. ☐ Customer
M-460 Semi-Synthetic Oil 5	ANM460-5	3		0	☐ Tech. ☐ Customer
KIT mainten. vent auxiliary valv	400905.0	2		1	☒ Tech. ☐ Customer
Oil Analysis Kit (red)	ANKCPIND2BR	1		0	☐ Tech. ☐ Customer
					☐ Tech. ☐ Customer

SERVICE ORDER**72868436** Page 5 / 12**KAESER COMPRESSORS**

Oper. 0050 **Maintain compr. air receiver - package B** 0.5
Type 200 Gal Tank w/ AMD 6550 1008968321
Material No. 9.9999.9 Year 2009
Serial No. 1251 EMR 4403267

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Visually check air receiver exterior condition	ok
☒ -Maintain condensate drain	served AMD6550
☒ -Check pressure indicator	ok
☒ -Check pressure relief valve(s) for visible damage/contamination	ok
☒ -Check for leaks	ok
☒ -Register service: stick label/service manual	ok
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	complete
☒ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Inspected tank. Serviced AMD6550. Applied air and checked for leaks. No issues at this time.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance **Material No.** **Pc** **Serial No.** **Return** **Returned by**

KIT maintenance AMD 6550 US50180 1 0
C Tech
C Customer

C Tech
C Customer

Oper. 0070 **Maintain refrigeration dryer** 2.0
Type Refrig. dryer TE 141 460/3/60 **1008967982**
Material No. 1.8039.00010 **Year** 2009
Serial No. 1343 **EMR** 3575706

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Check for condensate in air network	none
☒ -Clean refrigerant condenser and straighten laminations	ok
☒ -Maintain condensate drain	serviced
☒ -Repair any damage to the refrigerant circuit thermal insulation	ok
☒ -Check fan motor, blades and guarding	ok
☒ -Check electrical cables and cable inlets	ok
☒ -Check cut-out pressure: high 115 psi/bar low 125 psi/bar	ok
☒ -Check compressed air temp.: Inlet 94 °F/°C Outlet 83 °F/°C	ok
☒ -Check dew point: ☐ blue ☒ green ☐ red 36 °F/°C	ok
Refilled/disposed refrigerant quantity: / kg/lb	na
Refrigerant type and total quantity*: R134 / na kg/lb	ok
☒ -Check refrigerant circuit for leaks	none
☐ -Check setting and function of the compressed air bypass/diversion	ok
☒ -Test run	ok
☒ -Register service: stick label/service manual	ok
Refrigerant type R135 Ambient temperature 76 °F/°C	ok
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	complete
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	

Additional comments:

Serviced both eco31 drains. Blew out condenser. Checked electrical. Ran dryer and checked dew point. Checked for leaks. No issues found at this time.

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

KIT Service-UNIT ECO-DRAIN	AN8247400370	2		0	☐ Tech. ☐ Customer ☐ Tech. ☐ Customer

SERVICE ORDER**72868436** Page 8 / 12**KAESER COMPRESSORS**

Oper. 0080 **Maintain oil-water sep. - package A** 0.5
Type KCF-100 Condensate Treatment System **1008967983**
Material No. ANKCF100 Year 2009
Serial No. 10900584 EMR 3486488

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☐ -Empty oil catcher	na
☒ -Check activated carbon filter and prefilter, change if necessary	ok
☒ -Change expansion chamber filter	ok
☒ -Check settling tank for contamination and clean if necessary	ok
☒ -Check oil drain and clean if necessary	ok
☒ -Check water drain, clean if necessary	ok
☒ -Check for leaks in hoses, connections and air receiver	none
☐ -Check heating (option)	na
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	complete
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Replaced cartridge. Cleaned housing. Checked fittings and hoses for leaks.	

Consumed material	Material No.	Pc	Serial No.	Part ID/batch	Stock
Replacement Filter Set - KCF100	ANKCF100CAR	1			1001

Material delivered in advance	Material No.	Pc	Serial No.	Return	Returned by

☐ Tech.
☐ Customer

SERVICE ORDER**72868436** Page 9 / 12**KAESER COMPRESSORS**

Oper. 0100 **Maintain compr. air filter - package B** 1.0
Type Oil Removal KOR-485.2 w/ AMD1550 1008967984
Material No. USKOR485.2 **Year** 2009
Serial No. * **EMR** 3742806

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Change filter element(s)	replaced
☒ -Clean filter housing and control bores in the filter head	cleaned
☒ -Maintain condensate drain	served
☒ -Check pressure differential indicator (option)	ok
☐ -Check optional shutdown function, only with user's permission	na
☒ -Check for leaks	none
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	complete
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Replaced element and cleaned housing. Replaced top o'ring. Rebuild AMD1550 drain. ** Only one o'ring sent per filter. These filters have two o'rings each.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>
Std 485 KOR Element (RED)	USOR-485	1		0	☐ Tech ☐ Customer
KIT maintenance AMD 1550	AN55800	1		0	☐ Tech ☐ Customer
O-ring, BUNA 5.734 ID	US3098816	1		0	☐ Tech ☐ Customer

SERVICE ORDER**72868436** Page 10 / 12 **KAESER COMPRESSORS**

Oper. 0120 **Maintain compr. air filter - package B** 1.0
Type Particulate KPF-485.2 w/ AMD1550 **1008968332**
Material No. USKPF485.2 **Year** 2009
Serial No. * **EMR** 3742805

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Change filter element(s)	replaced
☒ -Clean filter housing and control bores in the filter head	ok
☒ -Maintain condensate drain	served
☒ -Check pressure differential indicator (option)	ok
☒ -Check optional shutdown function, only with user's permission	ok
☒ -Check for leaks	none
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	complete
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Replaced element and cleaned housing. Replaced top o'ring. Rebuild AMD1550 drain. ** Only one o'ring sent per filter. These filters have two o'rings each.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>
Std 485 KPF Element	USPF-485	1		0	☐ Tech ☐ Customer
KIT maintenance AMD 1550	AN55800	1		0	☐ Tech ☐ Customer
O-ring, BUNA 5.734 ID	US3098816	1		0	☐ Tech ☐ Customer

SERVICE ORDER**72868436** Page 11 / 12 **KAESER COMPRESSORS**

Oper. 0130 **Maintain filter - package A** 1.0
Type Separator - KFS-485.2 AMD 1550 **1008968288**
Material No. USKFS485.2 **Year**
Serial No. **** **EMR** **6348333**

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Check filter element(s)	replaced
☒ -Check / maintain condensate drain	rebuilt
☐ -Check optional shutdown function, only with user's permission	na
☒ -Check for leaks	na
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	complete
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Replaced element and cleaned housing. Replaced top o'ring. Rebuild AMD1550 drain. ** Only one o'ring sent per filter. These filters have two o'rings each.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance	Material No.	Pc	Serial No.	Return	Returned by
KIT maintenance AMD 1550	AN55800	1		0	☐ Tech ☐ Customer
Std 485 KFS Element	USFS-485	1		0	☐ Tech ☐ Customer
O-ring, BUNA 5.734 ID	US3098816	1		0	☐ Tech ☐ Customer

SERVICE ORDER

KAESER COMPRESSORS

Equipment at customer location 10049408 Trinity Analysis and Development, Memphis

Registered machines

- Please enter or correct missing or incorrect years of manufacture, material numbers or serial numbers
- As far as air receivers, ZK, filters and dryers are concerned, please complete information applicable to the condensate drain (if not yet registered) -ED= ECO-Drain,FV= Float valve,SV= Solenoid valve
- If the customer has more than one compressed air station in different locations at the same address, please enter the exact location of each station (e.g. paint shop, number 1 works) etc.

Type	S. Hr.	Year	Material No.	Serial No.		Station	
Refrig. dryer TE 141 460/3/60		2009	1.8039.00010	1343	reg.		-
CSD 100 125 psi 460/60 US		2009	100818.1	1234	reg.		-
200 Gal Tank w/ AMD 6550		2009	9.9999.9	41588	reg.		-
KCF-100 Condensate Treatment System		2009	ANKCF100	2144292	-----		-
Separator - KFS-485.2 AMD 1550		2018	USKFS485.2	20150824	-----		-
Oil Removal KOR-485.2 w/ AMD1550		2009	USKOR485.2	1055	-----		-
Particulate KPF-485.2 w/ AMD1550		2009	USKPF485.2	1025	-----		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2140	reg.	BLOWER #1	-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2138	reg.	BLOWER #2	-

Non-registered machines

Type	S. Hr.	Year	Material No.	Serial No.		Station	
							+ -

SERVICE ORDER**72868493** Page1/7**KAESER**
COMPRESSORS*Built for a lifetime.*

Location	Trinity Analysis and Development	Customer	Trinity Analysis and Development
10049408	1605 Menager Rd		1605 Menager Rd
	Memphis TN 38106-7012		Memphis TN 38106-7012
Responsible	Ms. Denise Cooper	Order	21-MSA-0029
	901-268-2478	Pers.in charge	Richard Montgomery
Start (approx.)	Tuesday, 11/2/21 / 12:00 AM		(877)882-8376
Service techn.	Sam Coats		

Attachments

Add attachment

Periodical maintenance

Contract No: Maintenance Agreement/Signe
Maintenance Agreement, verbal

PM - EB 420 x2
Quote - 86459159

Rescheduled 11/02/2021 per Denise Cooper - JP 09/22/2021

Delivered - Received By: MONTGOMREY - DN 10/13

Label all returned goods!

Reason for return	Returned goods	to oper.	Pc	Material No.	Serial No.	Returned by		
Disposal	As Consumed	0020	1	As Consumed		☐ Customer ☐ Technician ☐ Waste contractor		
Disposal	As Consumed	0040	1	As Consumed		☐ Customer ☐ Technician ☐ Waste contractor		

Set up time				Wrap up time			
Date	Duration	Service technician		Date	Duration	Service technician	
			+ -				+ -

Start of work	End of work	Breaks	Date / Weekday	Service technician
8:15 AM	12:30 AM	0 Min	Tuesday, 11/2/21	Sam Coats

Additional work(not included in contract)	Duration	to Oper	Description

Minimum charge for any invoice is \$50 00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1½% interest per month (annual rate 18%)

Kaeser Compressors, Inc. P.O. Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

SERVICE ORDER

72868493 Page2/7

KAESER
COMPRESSORS

Built for a lifetime™

Shorten service interval due to environment or operating conditions?

☒ No ☐ Yes

Work performed acc. to work plan.

Any outstanding deficiencies?

☒ Yes ☐ No

If yes, these discussed with customer?

☒ Yes ☐ No

E-mail service manager(for confirmation)

richard.montgomery@kaeser.com

Work accepted.

Confirmed work and material of work plan.

Outstanding deficiencies acknowledged.

Customer e-mail(for confirmation)

denise.cooper@hdrinc.com

Service
technician's
signature

**Kaeser Field
Service PN**

Digitally signed by
Kaeser Field Service PN
Date: 2021.11.02
13:03:04 -05'00'

☒ Signature unavailable

Remark:

Remark:

Denise Cooper

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1½% interest per month (annual rate 18%)

Kaeser Compressors, Inc. P.O.Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

Oper. 0020 **Maintain blower - package B** 1.5
Type EB 420 C VAC 40,0 hp 2.460 rpm 1008967980
Material No. EBC **Year** 2009
Serial No. 2138 **EMR** 3605958 **ID No. BLOWER #2**

Previous service hours

35,252 h

Current service hours

37,317 h

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	LOTO
☒ -Clean surface of airend and motor	wiped/vacuumed
☒ -Check that the block mechanism turns freely	ok
☒ -Check the block drive shaft seal	ok
☒ -Check V-belts and change or re-tension as necessary	ok
☒ -Check guard	ok
☒ -Check extractor blade (enclosure)	ok
☒ -Change air filter	replaced
☒ -Check oil and change if necessary	replaced
☒ -Check the oil drain lines and connections	ok
☒ -Check pipe connections	ok
☒ -Check compensator(s) and change if necessary	ok
☐ -Open and check unloaded start valve	na
☒ -Open and check the check valve	ok
☒ -Check electrical cables and cable inlets	ok
☒ -Tighten mains terminals and check for oxidation	ok
☒ -Check overcurrent relays and motor protection switches	ok
☒ -Check motor bearings, re-grease (Unirex N3 only) as needed/change	greased
-Check control voltage: L1 V	
☐ -Check power consumption: Line U1 A V1 A W1 A	
☒ -Check overheating shutdown function (option)	ok
☒ -Check pressure relief valve(s)	ok
☒ -Test run, check conditions: start, load and shut-down	ok
☒ -Check display functions	ok
☒ -Check oil level and check for leaks	ok
☒ -Register service: stick label/service manual/controller	
Operating hours: 37317 h Oil type: SB220	ok
Existing safety deficiencies? ☒ No ☐ Yes:	none
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>>> Equipment not released for use!	

Work to be done	Comment
☐ Rectified deficiencies:	
☒ Tasks fully completed	complete
☒ Follow-up assignment necessary for:	Schedule follow up troubleshoot on other unit.
☐ Follow-up order issued for:	
☐ Supply spares:	
☐	
Additional comments:	
Drained oil. Refilled unit with SB220 oil. Replaced air filter. Checked belt tension. Wiped down inside and outside of unit. Checked amp draw. Started unit and checked for proper operation. No issues at this time with this unit.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

Filter fleece DN150	893606.0	1		0	☐ Tech ☐ Customer
Omega Blower 220 Synthetic C ANSB-220		2		0	☐ Tech ☐ Customer
					☐ Tech ☐ Customer

Oper. 0040 **Maintain blower - package B** 1.5
 Type EB 420 C VAC 40,0 hp 2.460 rpm **1008967981**
 Material No. EBC Year 2009
 Serial No. 2140 EMR 3605982 ID No. BLOWER #1

Previous service hours

30,437 h

Current service hours

32,134 h

Work to be done		Comment
☐	>Tasks to be completed and current condition recorded: OK	
☒	-Ensure safe working conditions as described in the manual	LOTO
☒	-Clean surface of airend and motor	ok
☒	-Check that the block mechanism turns freely	ok
☒	-Check the block drive shaft seal	ok
☒	-Check V-belts and change or re-tension as necessary	tightened
☒	-Check guard	ok
☒	-Check extractor blade (enclosure)	ok
☒	-Change air filter	replaced
☒	-Check oil and change if necessary	replaced
☒	-Check the oil drain lines and connections	ok
☒	-Check pipe connections	ok
☒	-Check compensator(s) and change if necessary	ok
☒	-Open and check unloaded start valve	ok
☒	-Open and check the check valve	ok
☒	-Check electrical cables and cable inlets	ok
☒	-Tighten mains terminals and check for oxidation	ok
☒	-Check overcurrent relays and motor protection switches	ok
☒	-Check motor bearings, re-grease (Unirex N3 only) as needed/change	ok
☐	-Check control voltage: L1 V	
☐	-Check power consumption: Line U1 A V1 A W1 A	
☒	-Check overheating shutdown function (option)	ok
☒	-Check pressure relief valve(s)	ok
☒	-Test run, check conditions: start, load and shut-down	noise
☒	-Check display functions	ok
☒	-Check oil level and check for leaks	ok
☒	-Register service: stick label/service manual/controller	ok
☐	Operating hours: 32134 h Oil type: SB220	ok
☐	Existing safety deficiencies? ☒ No ☐ Yes:	none
☐	Cause(s):	
☐	Arising danger:	
☐	Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
☐	>>>> Equipment not released for use!	

Work to be done		Comment
☐	Rectified deficiencies:	
☒	Tasks fully completed	complete
☒	Follow-up assignment necessary for:	Quote and schedule further diagnose of problem
☒	Follow-up order issued for:	2 techs 4hrs
☐	Supply spares:	
☐		
Additional comments:		
Drained oil. Refilled unit with SB220 oil. Replaced air filter. Tightened belts. Wiped down inside and outside of unit. Started unit and checked for proper operation. Checked amp draw. Noticed odd sound. Shut down unit, removed belts and started back up to see if sound was coming from motor. Sound went away. Spun blower block by hand and everything felt fine. Checked Check valve valve. No issues. Installed belts and ran again. Sound definitely sounds like it is coming from the front of the blower block. In order to remove the block or even inspect the block the intake will need to come off. Which means the roof panel will need to come off. This will require two techs. Please reschedule 2 techs to further troubleshoot issue.		

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>
Filter fleece DN150	893606.0	1		0	☐ Tech. ☐ Customer
Omega Blower 220 Synthetic C ANSB-220		2		0	☐ Tech. ☐ Customer
					☐ Tech. ☐ Customer

KAESER COMPRESSORS

Registered machines

Type	S. Hr.	Year	Material No.	Serial No.		Station	
Refrig. dryer TE 141 460/3/60		2009	1.8039.00010	1343	reg.	BLOWER #1 BLOWER #2	-
CSD 100 125 psi 460/60 US		2009	100818.1	1234	reg.		-
200 Gal Tank w/ AMD 6550		2009	9.9999.9	41588	reg.		-
KCF-100 Condensate Treatment System		2009	ANKCF100	2144292	-----		-
Separator - KFS-485.2 AMD 1550		2018	USKFS485.2	20150824	-----		-
Oil Removal KOR-485.2 w/ AMD1550		2009	USKOR485.2	1055	-----		-
Particulate KPF-485.2 w/ AMD1550		2009	USKPF485.2	1025	-----		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2140	reg.		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2138	reg.	-	

[illegible]

SERVICE ORDER**73002376** Page1/12**KAESER**
COMPRESSORS*Built for a lifetime.™*

Location	Trinity Analysis and Development	Customer	Trinity Analysis and Development
10049408	1605 Menager Rd		1605 Menager Rd
	Memphis TN 38106-7012		Memphis TN 38106-7012
Responsible	Ms. Denise Cooper	Order	21-MSA-0029
	901-268-2478	Pers.in charge	Richard Montgomery
Start (approx.)	Thursday, 4/28/22 / 12:00 AM		(877)882-8376
Service techn.	Terry Linkous		

Attachments**Periodical maintenance**

Contract No: Maintenance Agreement- Sign
Service Agreement 'Maintenance'

Minor w/ Oil on CSD 100

Per Quote 86572120

Oil from branch stock

Rescheduled for 4/28 per Denise Cooper - LB 4/20/22

Label all returned goods!

Reason for return	Returned goods	to oper.	Pc	Material No.	Serial No.	Returned by		
Disposal	As consumed	0010	2	as consumed		☐ Customer ☒ Technician ☐ Waste contractor		
Set up time				Wrap up time				
Date	Duration	Service technician		Date	Duration	Service technician		
			+ -				+ -	
Start of work	End of work	Breaks	Date / Weekday			Service technician		
12:45 PM	3:30 PM	0 Min	Thursday, 4/28/22			Terry Linkous		
Additional work(not included in contract)		Duration	to Oper	Description				

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1½% interest per month (annual rate 18%).

Kaeser Compressors, Inc. P.O. Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

Shorten service interval due to environment or operating conditions?

☒ No ☐ Yes

Work performed acc. to work plan.

Work accepted.

Any outstanding deficiencies?

☐ Yes ☒ No

Confirmed work and material of work plan.

E-mail service manager(for confirmation)

richard.montgomery@kaeser.com

Customer e-mail(for confirmation)

denise.cooper@hdrinc.com

Service
technician's
signatureKaeser Field
Service PNDigitally signed by
Kaeser Field Service PN
Date: 2022.04.28
16:54:36 -05'00'☒ Signature unavailable

Remark:

Remark:

Denise Cooper
no signature covid protocol

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1½% interest per month (annual rate 18%)

SERVICE ORDER

73002376 Page 3 / 12

KAESER COMPRESSORS

Oper. 0010 **Maintain screw compressor - package A** 1.5
 Type CSD 100 125 psi 460/60 US 1009496207
 Material No. 100818.1 Year 2009
 Serial No. 1234 EMR 3498678

Previous service hours 59,091 h **Current service hours** 62,752 h

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Check motor-airend coupling	Inspected
☒ -Change filter mat(s) in compressor/control cabinet/SFC cabinet	Changed
☒ -Change air filter	Changed
☒ -Check oil filter and change if necessary	Changed
☒ -Check cooler and clean if necessary/check fan blades and guarding	Ok
☐ -Maintain condensate drain	Na
☒ -Check electrical cables and cable inlets	Ok
☒ -Tighten mains terminals and check for oxidation	Ok
☐ -Check shutdown function when separator air outlet temp. too high	Na
☐ -Check overcurrent relays and motor protection switches	
☒ -Check door and guard interlocks and emergency stop function	Ok
☒ -Check oil and change if necessary	Changed, switch to S460 next service
☒ -Check oil separator cartridge difference pressure 1.2 psi/bar,	Ok
change as needed	Ok
☒ Check fan motor bearings ☐ Re-greased	Ok
☒ Check compressor motor bearings ☐ Re-greased	Ok
☒ -Check nominal pressure shutdown function,	Ok
shutdown at 125 psi/bar	Ok
☒ -Check shutdown function when airend discharge temp. too high	Ok
☒ -Check control voltage: L1 130 V	Ok
☒ -Check power consumption: Line U1 122 A V1 125 A W1 129 A	Ok
☒ -Check pressure relief valve(s)	Ok
☒ -Check airend discharge temperature 175 °F/°C	Ok
☒ -Test run, check conditions: start, idle, load and shut-down	Ok
☒ -Check oil level, for leaks (compr.air./oil/water), idling press.	Ok
☒ -Register service: stick label/service manual/controller	Ok
Total h 62752 Load h 31364 Ambient temp. 80 °F/°C	Ok
Oil type M460 Control mode Dual	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	OK
Arising danger:	Na

Work to be done	Comment
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Upon arrival coordinated with POC to gain access to the facility. Customer advised of some issues with this unit so it had been turned off. Customer noted that this unit was over pressurizing from the normal modulation set point and heard air leaking from inside the cabinet. Test ran uni and found that the unit was climbing up to the unload point, but also found that it would fail to load intermittently. Checked the load circuit and found that the pneumatic operated valve was blowing air out of the relief port constantly and the CAVV was failing to close off the vent line while loaded. Replaced the pneumatic valve, completed PKG A PM and changed the oil. ***Please convert this unit to S-460 next service*****	

Consumed material	Material No.	Pc	Serial No.	Part ID/batch	Stock
M-460 Semi-Synthetic Oil \$/(5	ANM460-5	3			1001
Pneumatic operated valve	7.4801E3	1			1004

Material delivered in advance	Material No.	Pc	Serial No.	Return	Returned by
Filter mat 112x112x10	6.3572.0	2		0	☐ Tech. ☐ Customer
KIT Air filter cartridge	4E0302.0	1		0	☐ Tech. ☐ Customer
Oil filter 16bar	6.3465.0	1		0	☐ Tech. ☐ Customer
Oil Analysis Kit (red)	ANKCPIND2BR	1		0	☐ Tech. ☐ Customer
					☐ Tech. ☐ Customer

Oper.0020 **Maintain oil-water sep. - package A** 0.5
Type KCF-100 Condensate Treatment System **1009496209**
Material No. ANKCF100 **Year** **2009**
Serial No. 10900584 **EMR** **3486488**

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☐ -Empty oil catcher	Na
☒ -Check activated carbon filter and prefilter, change if necessary	Ok
☒ -Change expansion chamber filter	Inspected
☒ -Check settling tank for contamination and clean if necessary	Ok
☐ -Check oil drain and clean if necessary	Na
☒ -Check water drain, clean if necessary	Ok
☒ -Check for leaks in hoses, connections and air receiver	Found and repaired leak from the dryer
☐ -Check heating (option)	Na
☒ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>>> Equipment not released for use!	Na
Rectified deficiencies:	Na
☒ Tasks fully completed	OK
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
During preliminary discussion with the POC it was mentioned that the floor was wet coming from underneath the receiver tank. Traced the leak to an open fitting in the condensate drain lines from the dryer to the KCF, one of the dryer drains was no longer connected. Installed an extension from the dryer drain to the open port to correct the issue. Completed the inspection of the KCF no other issues found.	

Consumed material Material No. Pc Serial No. Part ID/batch Stock

Material delivered in advance Material No. Pc Serial No. Return Returned by

C Tech.
 C Customer

SERVICE ORDER

73002376 Page 6 / 12

KAESER COMPRESSORS

Oper. 0030 **Maintain refrigeration dryer** 2.0
 Type Refrig. dryer TE 141 460/3/60 1009496208
 Material No. 1.8039.00010 Year 2009
 Serial No. 1343 EMR 3575706

Work to be done	Comment
☐ >Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Check for condensate in air network	Ok
☒ -Clean refrigerant condenser and straighten laminations	Ok
☒ -Check condensate drain	Changed on drain
☐ -Repair any damage to the refrigerant circuit thermal insulation	Ok
☒ -Check fan motor, blades and guarding	OK
☒ -Check electrical cables and cable inlets	OK
☐ -Check safety shutdown, switch-point °F/°C psi/bar	Na
☒ -Check compressed air temp.: Inlet 83 °F/°C Outlet 77 °F/°C	Ok
☒ -Check dew point: ☐ blue ☒ green ☐ red °F/°C	OK
☒ -Check refrigerant circuit for leaks	OK
Refilled/disposed refrigerant quantity: / kg/lb	Na
Refrigerant type and total quantity*: / kg/lb	Na
☒ -Check setting and function of the compressed air bypass/diversion	Ok
☒ -Test run	OK
☒ -Register service: stick label/service manual/controller	Ok
Refrigerant type R134a Ambient temperature 80 °F/°C	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of this dryer. Found one of the condensate drains inoperable, installed new service module.	

SERVICE ORDER**73002376** Page 7 / 12**KAESER COMPRESSORS**

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>
ECO 31 service module	AN8247400370	1			1004

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

☐ Tech.
☐ Customer

SERVICE ORDER**73002376** Page 8 / 12**KAESER COMPRESSORS**

Oper. 0040 **Maintain compr. air filter - package A** 1.0
Type Particulate KPF-485.2 w/ AMD1550 **1009496601**
Material No. USKPF485.2 Year **2009**
Serial No. * EMR **3742805**

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Change filter element(s)	Inspected
☒ -Clean filter housing and control bores in the filter head	Inspected
☒ -Maintain condensate drain	Inspected
☒ -Check pressure differential indicator (option)	Ok
☐ -Check optional shutdown function, only with user's permission	na
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	na
☐	
Additional comments:	
Completed inspection of this filter no issues found.	

Consumed material Material No. Pc Serial No. Part ID/batch Stock

Material delivered in advance Material No. Pc Serial No. Return Returned by

☐ Tech
☐ Customer

SERVICE ORDER**73002376** Page 9 / 12**KAESER COMPRESSORS**

Oper. 0050 **Maintain compr. air filter - package A** 1.0
Type Oil Removal KOR-485.2 w/ AMD1550 1009496210
Material No. USKOR485.2 Year 2009
Serial No. * EMR 3742806

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Change filter element(s)	Inspected
☒ -Clean filter housing and control bores in the filter head	Ok
☒ -Maintain condensate drain	Inspected
☒ -Check pressure differential indicator (option)	Ok
☐ -Check optional shutdown function, only with user's permission	Na
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	OK
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of this filter, no issues found.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance **Material No.** **Pc** **Serial No.** **Return** **Returned by**

☐ Tech
☐ Customer

SERVICE ORDER**73002376** Page 10 / 12 **KAESER COMPRESSORS**

Oper. 0060 **Maintain compr. air receiver - package A** 0.5
Type 200 Gal Tank w/ AMD 6550 **1009496582**
Material No. 9.9999.9 **Year** **2009**
Serial No. 1251 **EMR** **4403267**

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Visually check air receiver exterior condition	Ok
☒ -Maintain condensate drain	Inspected
☒ -Check pressure indicator	Ok
☐ -Check pressure relief valve(s) for visible damage - contamination	Ok
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of the receiver tank, no issues found.	

Consumed material Material No. Pc Serial No. Part ID/batch Stock

Material delivered in advance Material No. Pc Serial No. Return Returned by

☐ Tech.
☐ Customer

Oper. 0080 **Maintain filter - package B** 1.0
Type Separator - KFS-485.2 AMD 1550 **1009496545**
Material No. USKFS485.2 **Year**
Serial No. **** **EMR** **6348333**

Work to be done	Comment
☐ >Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☐ -Change filter element(s)	Na
☐ -Clean filter housing and control bores in the filter head	Na
☒ -Check/maintain condensate drain	Inspected
☐ -Check optional shutdown function, only with user's permission	Inspected
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of this filter.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance **Material No.** **Pc** **Serial No.** **Return** **Returned by**

C Tech.
 C Customer

SERVICE ORDER

KAESER COMPRESSORS

Equipment at customer location 10049408 Trinity Analysis and Development, Memphis

Registered machines

- Please enter or correct missing or incorrect years of manufacture, material numbers or serial numbers
- As far as air receivers, ZK, filters and dryers are concerned, please complete information applicable to the condensate drain (if not yet registered) -**ED**= ECO-Drain, **FV**= Float valve, **SV**= Solenoid valve
- If the customer has more than one compressed air station in different locations at the same address, please enter the exact location of each station (e.g. paint shop, number 1 works) etc.

Type	S. Hr.	Year	Material No.	Serial No.		Station	
Refrig. dryer TE 141 460/3/60		2009	1.8039.00010	1343	reg.		-
CSD 100 125 psi 460/60 US		2009	100818.1	1234	reg.		-
200 Gal Tank w/ AMD 6550		2009	9.9999.9	41588	reg.		-
KCF-100 Condensate Treatment System		2009	ANKCF100	2144292	-----		-
Separator - KFS-485.2 AMD 1550		2018	USKFS485.2	20150824	-----		-
Oil Removal KOR-485.2 w/ AMD1550		2009	USKOR485.2	1055	-----		-
Particulate KPF-485.2 w/ AMD1550		2009	USKPF485.2	1025	-----		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2140	reg.	BLOWER #1	-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2138	reg.	BLOWER #2	-

Non-registered machines

Type	S. Hr.	Year	Material No.	Serial No.		Station	
							+ -

SERVICE ORDER**73014810** Page1/7**KAESER**
COMPRESSORS*Built for a lifetime.™*

Location	Trinity Analysis and Development	Customer	Trinity Analysis and Development
10049408	1605 Menager Rd		1605 Menager Rd
	Memphis TN 38106-7012		Memphis TN 38106-7012
Responsible	Ms. Denise Cooper	Order	21-MSA-0029
	901-268-2478	Pers.in charge	Richard Montgomery
Start (approx.)	Thursday, 4/28/22 / 12:00 AM		(877)882-8376
Service techn.	Terry Linkous		

Attachments**Periodical maintenance**

Contract No: Maintenance Agreement/Signe
Maintenance Agreement, verbal

Filter Fleece on BB 420C x2
Per Quote 86572116

Rescheduled for 4/28 per Denise Cooper - LB 4/20/22

Label all returned goods!

Reason for return	Returned goods	to oper.	Pc	Material No.	Serial No.	Returned by		
						☐ Customer ☐ Technician ☐ Waste contractor		
Set up time				Wrap up time				
Date	Duration	Service technician		Date	Duration	Service technician		
			+ -				+ -	
Start of work	End of work	Breaks	Date / Weekday			Service technician		
3:30 PM	5:30 PM	0 Min	Thursday, 4/28/22			Terry Linkous		
Additional work(not included in contract)		Duration	to Oper	Description				

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1½% interest per month (annual rate 18%).

Kaeser Compressors, Inc. P.O. Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

SERVICE ORDER

73014810 Page2/7



Shorten service interval due to environment or operating conditions?

☒ No ☐ Yes

Work performed acc. to work plan.

Work accepted.

Any outstanding deficiencies?

☐ Yes ☒ No

Confirmed work and material of work plan.

E-mail service manager(for confirmation)

richard.montgomery@kaeser.com

Customer e-mail(for confirmation)

denise.cooper@hdrinc.com

Service
technician's
signature

Kaeser Field
Service PN

Digitally signed by
Kaeser Field Service PN
Date: 2022.04.28
17:05:46 -05'00'

☒ Signature unavailable

Remark:

Remark:

Denise Cooper
no signature covid protocol

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1½% interest per month (annual rate 18%)

Kaeser Compressors, Inc. P.O.Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

SERVICE ORDER

73014810 Page 3 / 7

KAESER COMPRESSORS

Oper. 0010 **Maintain blower - package A** 1.0
 Type EB 420 C VAC 40,0 hp 2.460 rpm 1009542962
 Material No. EBC Year 2009
 Serial No. 2138 EMR 3605958 ID No. BLOWER #2

Previous service hours 37,317 h Current service hours 39,289 h

Work to be done

Comment

☐	>Tasks to be completed and current condition recorded: OK	
☒	-Ensure safe working conditions as described in the manual	Ok
☒	-Clean surface of airend and motor	Ok
☒	-Check that the block mechanism turns freely	Ok
☒	-Check the block drive shaft seal	Ok
☒	-Check V-belts and change or re-tension as necessary	Ok
☒	-Check guard	OK
☒	-Check extractor blade (enclosure)	Ok
☒	-Change air filter	Changed
☒	-Check oil and change if necessary	Inspected
☒	-Check the oil drain lines and connections	Ok
☒	-Check pipe connections	Ok
☐	-Check compensator(s) and change if necessary	Na
☐	-Open and check unloaded start valve	Na
☐	-Open and check the check valve	Na
☐	-Check electrical cables and cable inlets	Na
☐	-Tighten mains terminals and check for oxidation	Na
☐	-Check overcurrent relays and motor protection switches	Na
☒	-Check motor bearings, re-grease (Unirex N3 only) as needed/change	Ok
☒	-Check control voltage: L1 24 V	Ok
☒	-Check power consumption: Line U1 26 A V1 26 A W1 26 A	Ok
☒	-Check overheating shutdown function (option)	Ok
☒	-Check pressure relief valve(s)	Ok
☒	-Test run, check conditions: start, load and shut-down	Ok
☒	-Check display functions	Ok
☒	-Check oil level and check for leaks	Ok
☒	-Register service: stick label/service manual/controller	Ok
☐	Operating hours: 39289 h Oil type: SB220	Ok
☐	Existing safety deficiencies? ☒ No ☐ Yes:	Ok
☐	Cause(s):	Na
☐	Arising danger:	Na
☐	Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
☐	>>>>> Equipment not released for use!	Na

Work to be done	Comment
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed minor PM on this unit changing the air filter, checked the belts, oil level and wiped unit down. Test ran and verified operation to be satisfactory at this time.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

Filter fleece DN150	893606.0	1		0	☐ Tech ☐ Customer ☐ Tech ☐ Customer

Oper. 0020 **Maintain blower - package A** 1.0
Type EB 420 C VAC 40,0 hp 2.460 rpm **1009542963**
Material No. EBC **Year** 2009
Serial No. 2140 **EMR** 3605982 **ID No.** BLOWER #1

Previous service hours 32,134 h **Current service hours** 33,437 h

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Clean surface of airend and motor	Ok
☒ -Check that the block mechanism turns freely	Ok
☒ -Check the block drive shaft seal	Ok
☒ -Check V-belts and change or re-tension as necessary	OK
☒ -Check guard	Ok
☒ -Check extractor blade (enclosure)	Ok
☒ -Change air filter	Changed
☒ -Check oil and change if necessary	inspected
☒ -Check the oil drain lines and connections	Ok
☒ -Check pipe connections	Ok
☒ -Check compensator(s) and change if necessary	Ok
☐ -Open and check unloaded start valve	Na
☐ -Open and check the check valve	Na
☐ -Check electrical cables and cable inlets	Na
☐ -Tighten mains terminals and check for oxidation	Na
☐ -Check overcurrent relays and motor protection switches	Na
☒ -Check motor bearings, re-grease (Unirex N3 only) as needed/change	Ok
☐ -Check control voltage: L1 24 V	Ok
☒ -Check power consumption: Line U1 25 A V1 25 A W1 25 A	Ok
☒ -Check overheating shutdown function (option)	Ok
☒ -Check pressure relief valve(s)	Ok
☒ -Test run, check conditions: start, load and shut-down	Ok
☒ -Check display functions	Ok
☒ -Check oil level and check for leaks	Ok
☒ -Register service: stick label/service manual/controller	Ok
Operating hours: 33437 h Oil type: SB220	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>>> Equipment not released for use!	Na

Work to be done	Comment
☐ Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed minor PM on this unit changing the air filter, checked the belts, oil level and wiped unit down. Test ran and verified operation to be satisfactory at this time.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

Filter fleece DN150	893606.0	1		0	☐ Tech. ☐ Customer ☐ Tech. ☐ Customer

SERVICE ORDER

KAESER COMPRESSORS

Equipment at customer location 10049408 Trinity Analysis and Development, Memphis

Registered machines

- Please enter or correct missing or incorrect years of manufacture, material numbers or serial numbers
- As far as air receivers, ZK, filters and dryers are concerned, please complete information applicable to the condensate drain (if not yet registered) -**ED**= ECO-Drain, **FV**= Float valve, **SV**= Solenoid valve
- If the customer has more than one compressed air station in different locations at the same address, please enter the exact location of each station (e.g. paint shop, number 1 works) etc.

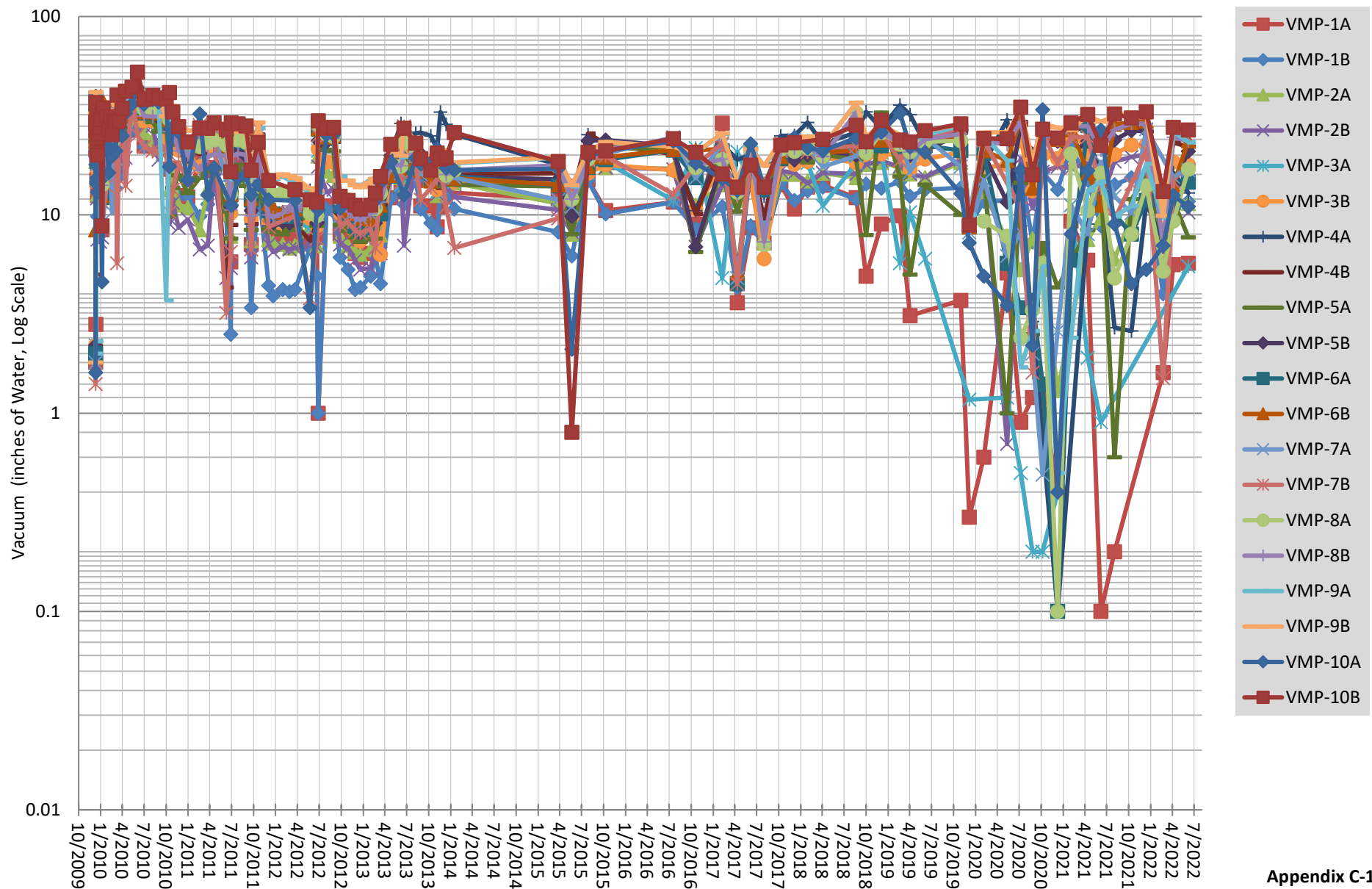
Type	S. Hr.	Year	Material No.	Serial No.		Station	
Refrig. dryer TE 141 460/3/60		2009	1.8039.00010	1343	reg.		-
CSD 100 125 psi 460/60 US		2009	100818.1	1234	reg.		-
200 Gal Tank w/ AMD 6550		2009	9.9999.9	41588	reg.		-
KCF-100 Condensate Treatment System		2009	ANKCF100	2144292	-----		-
Separator - KFS-485.2 AMD 1550		2018	USKFS485.2	20150824	-----		-
Oil Removal KOR-485.2 w/ AMD1550		2009	USKOR485.2	1055	-----		-
Particulate KPF-485.2 w/ AMD1550		2009	USKPF485.2	1025	-----		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2140	reg.	BLOWER #1	-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2138	reg.	BLOWER #2	-

Non-registered machines

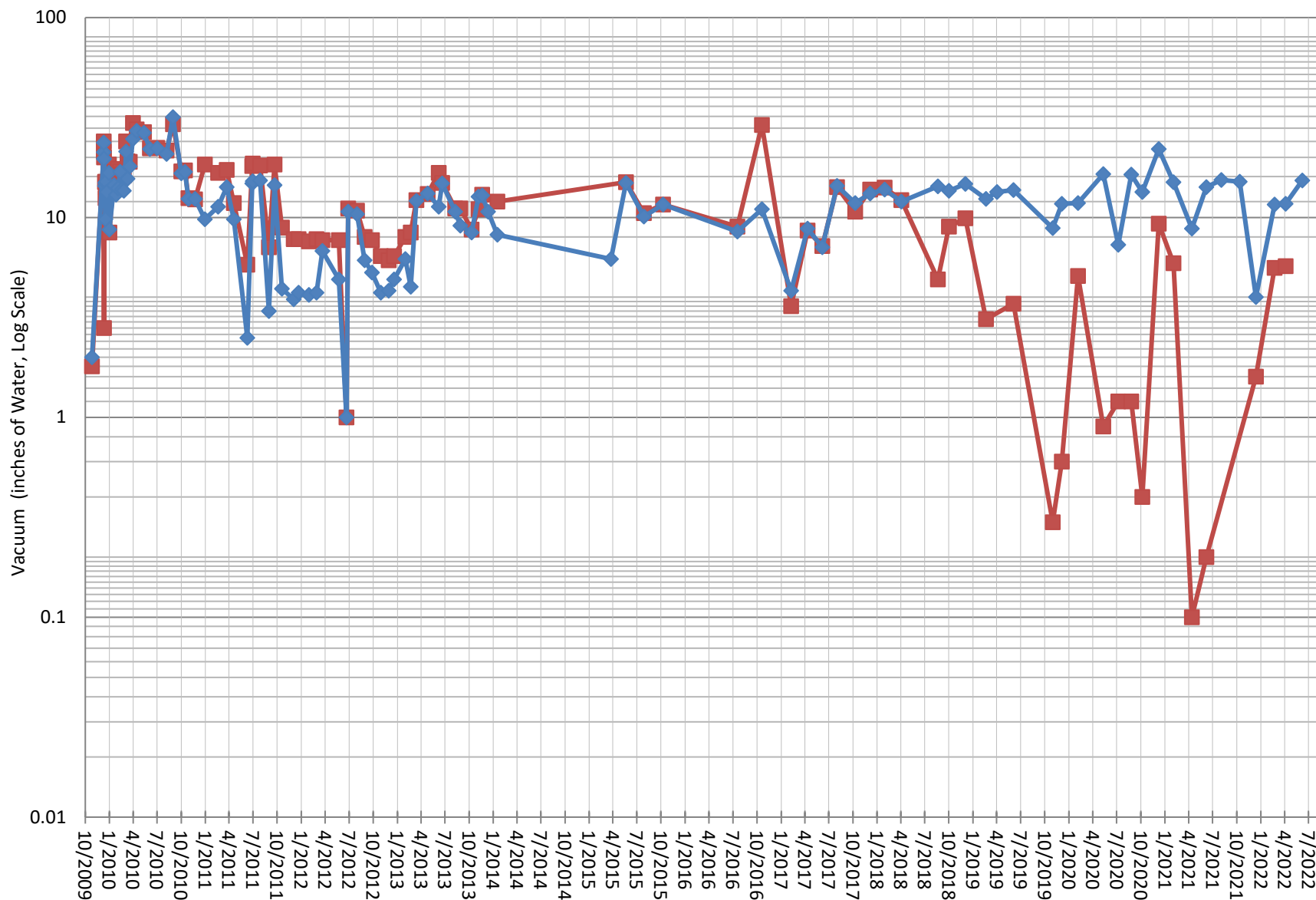
Type	S. Hr.	Year	Material No.	Serial No.		Station	
							+ -

Appendix C Trend Charts for Vacuum and PID Measurements

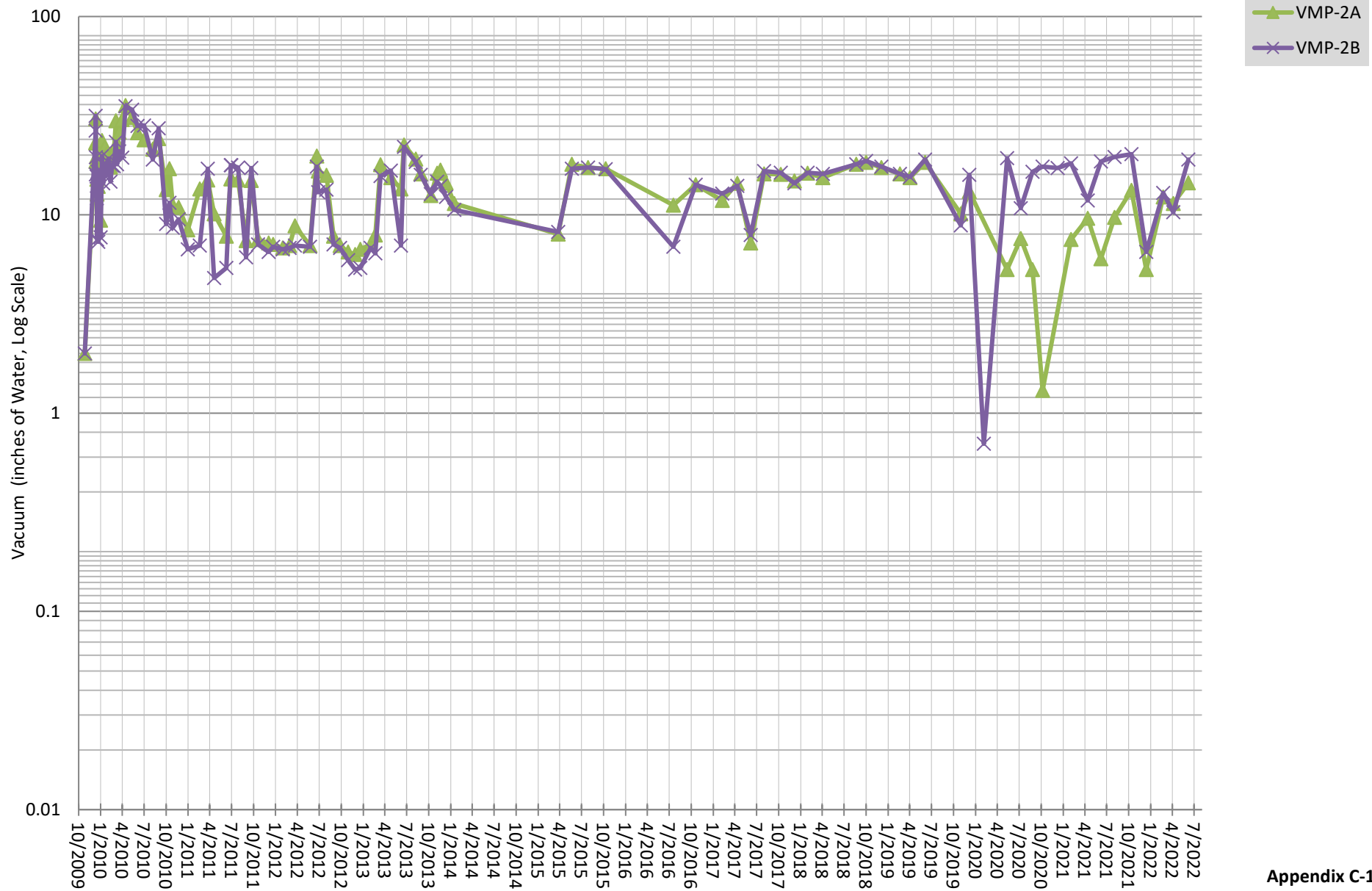
Appendix C-1 VMP Trends – Vacuum Readings



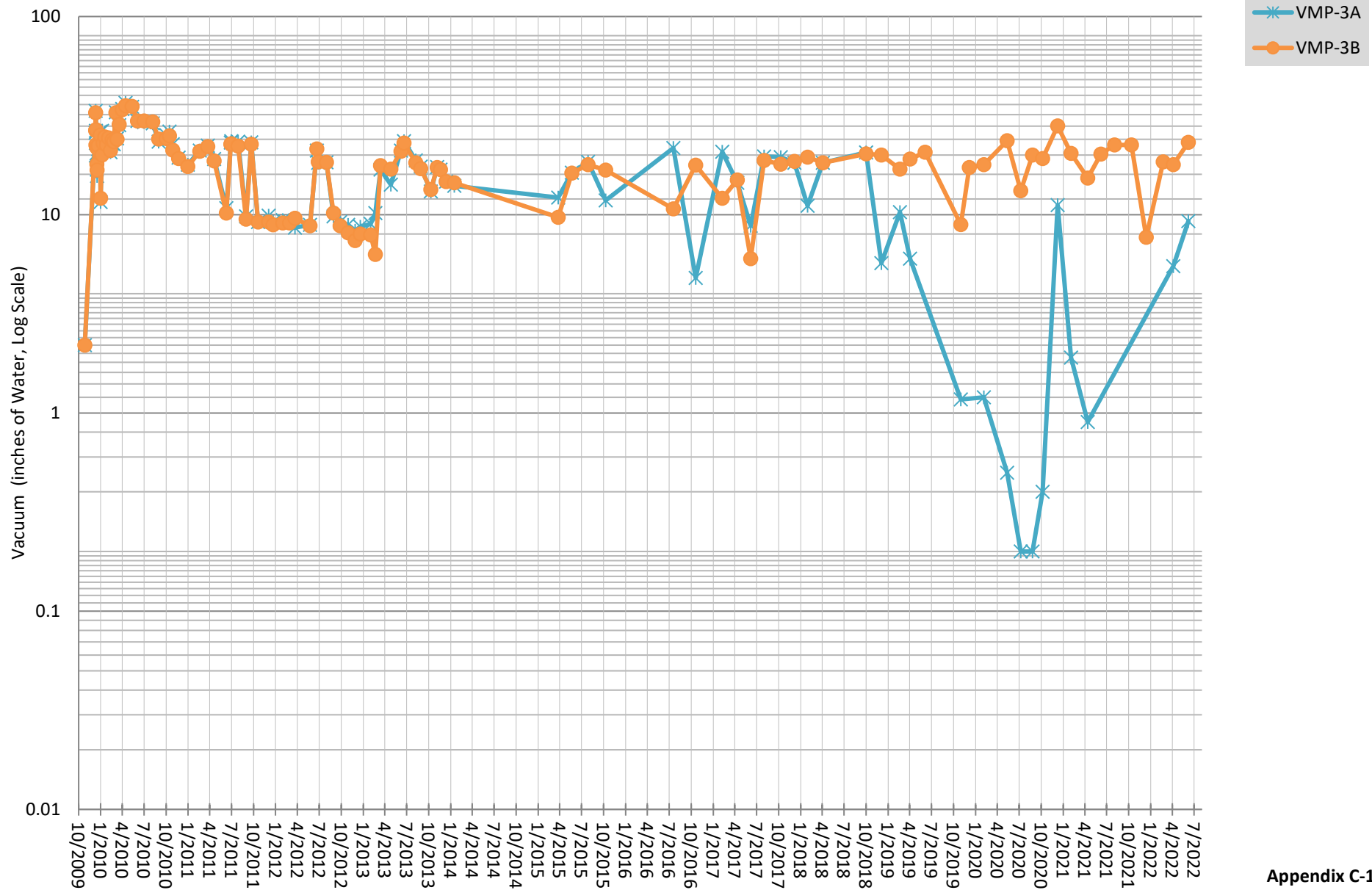
Appendix C-1
Figure 1
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



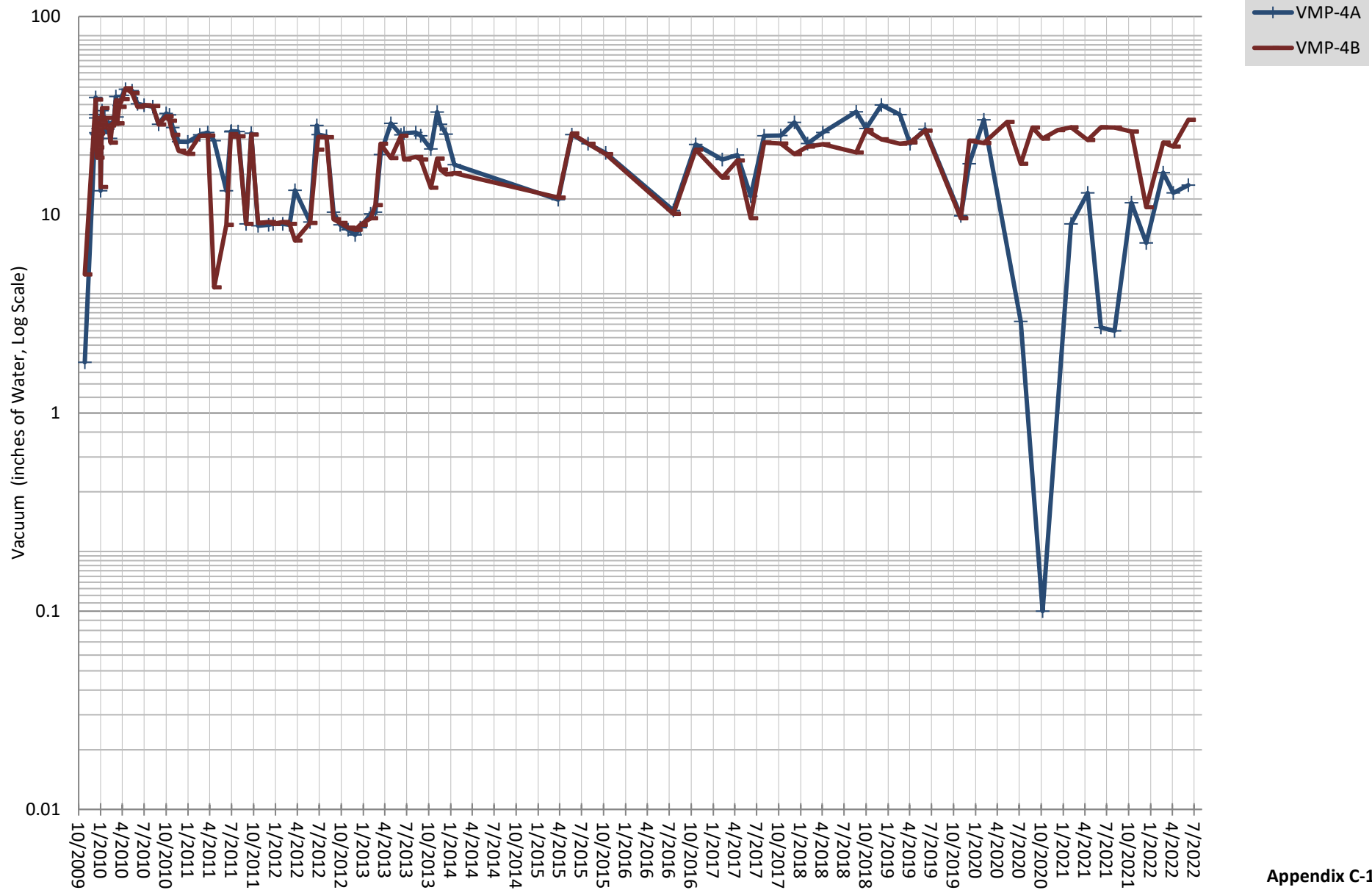
Appendix C-1
 Figure 2
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee



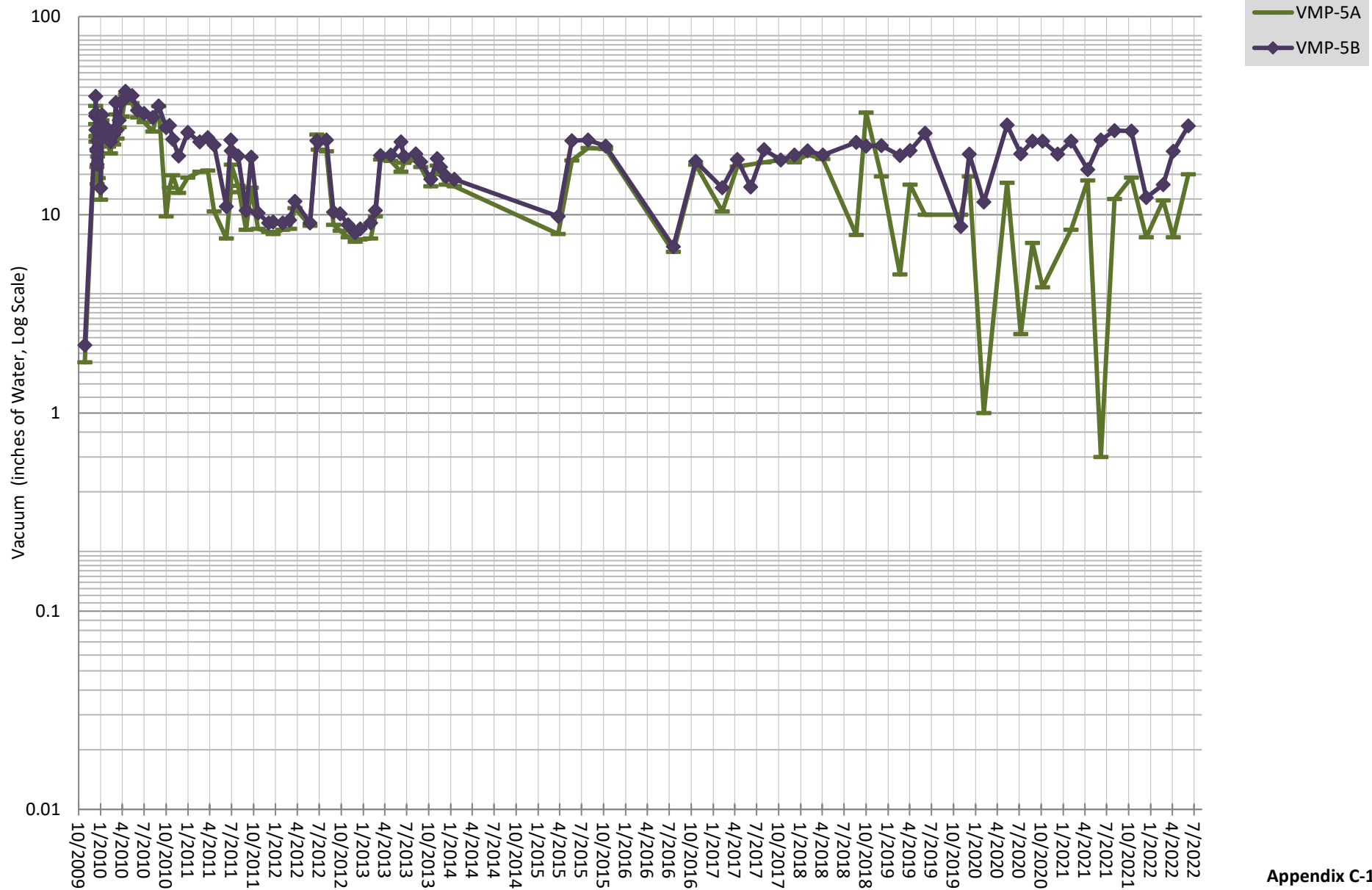
Appendix C-1
 Figure 3
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee



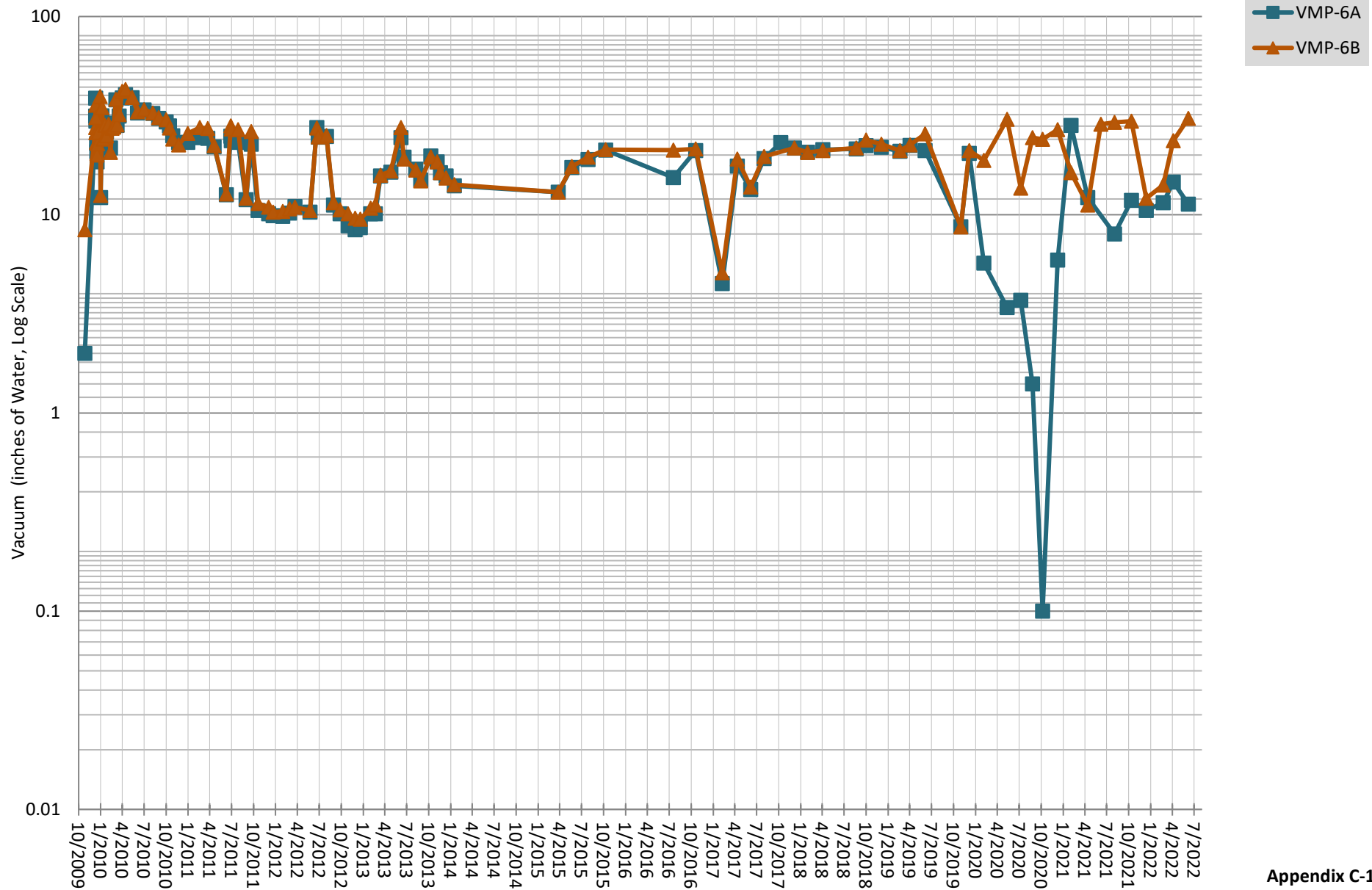
Appendix C-1
 Figure 4
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee



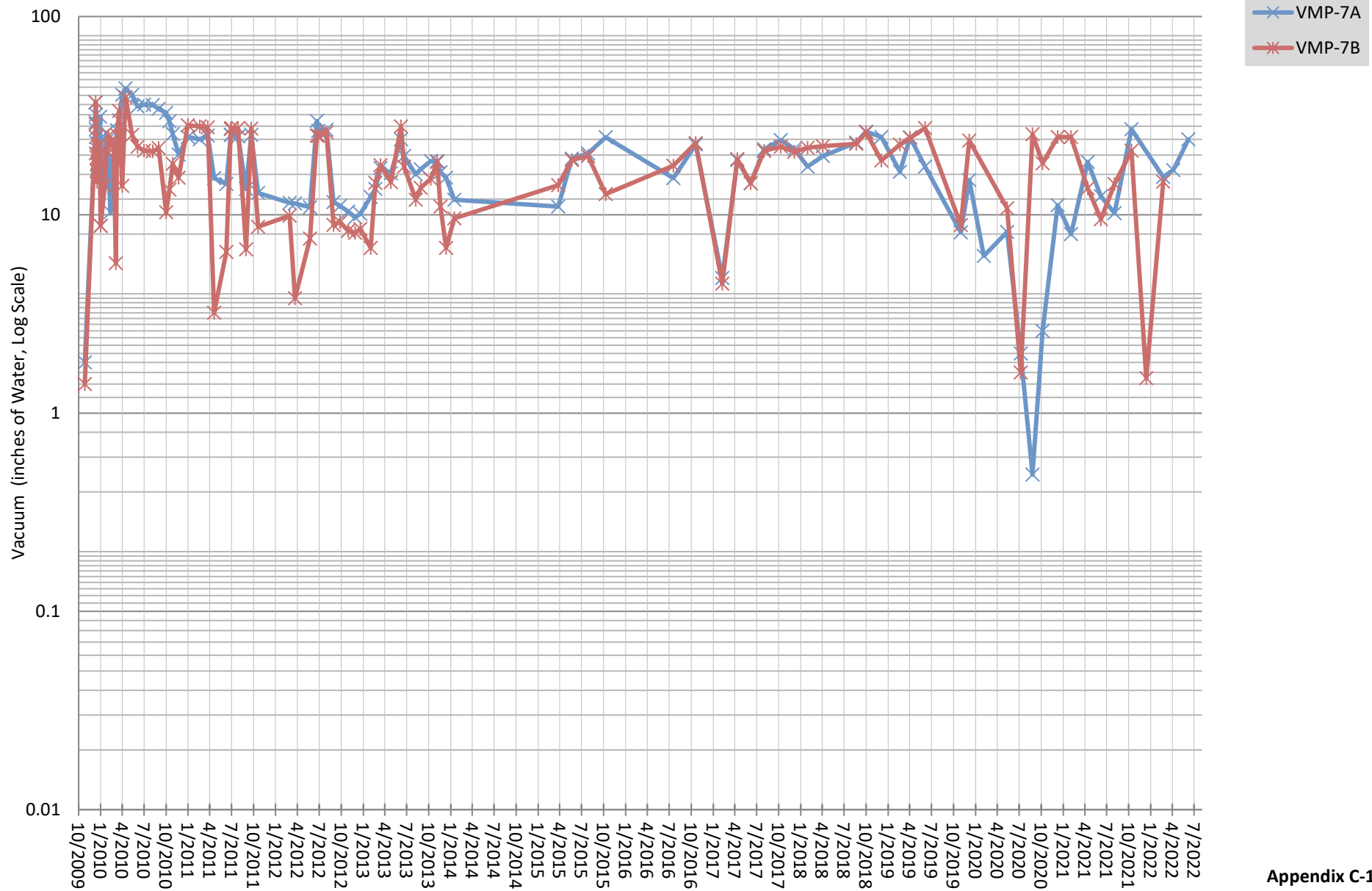
Appendix C-1
Figure 5
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



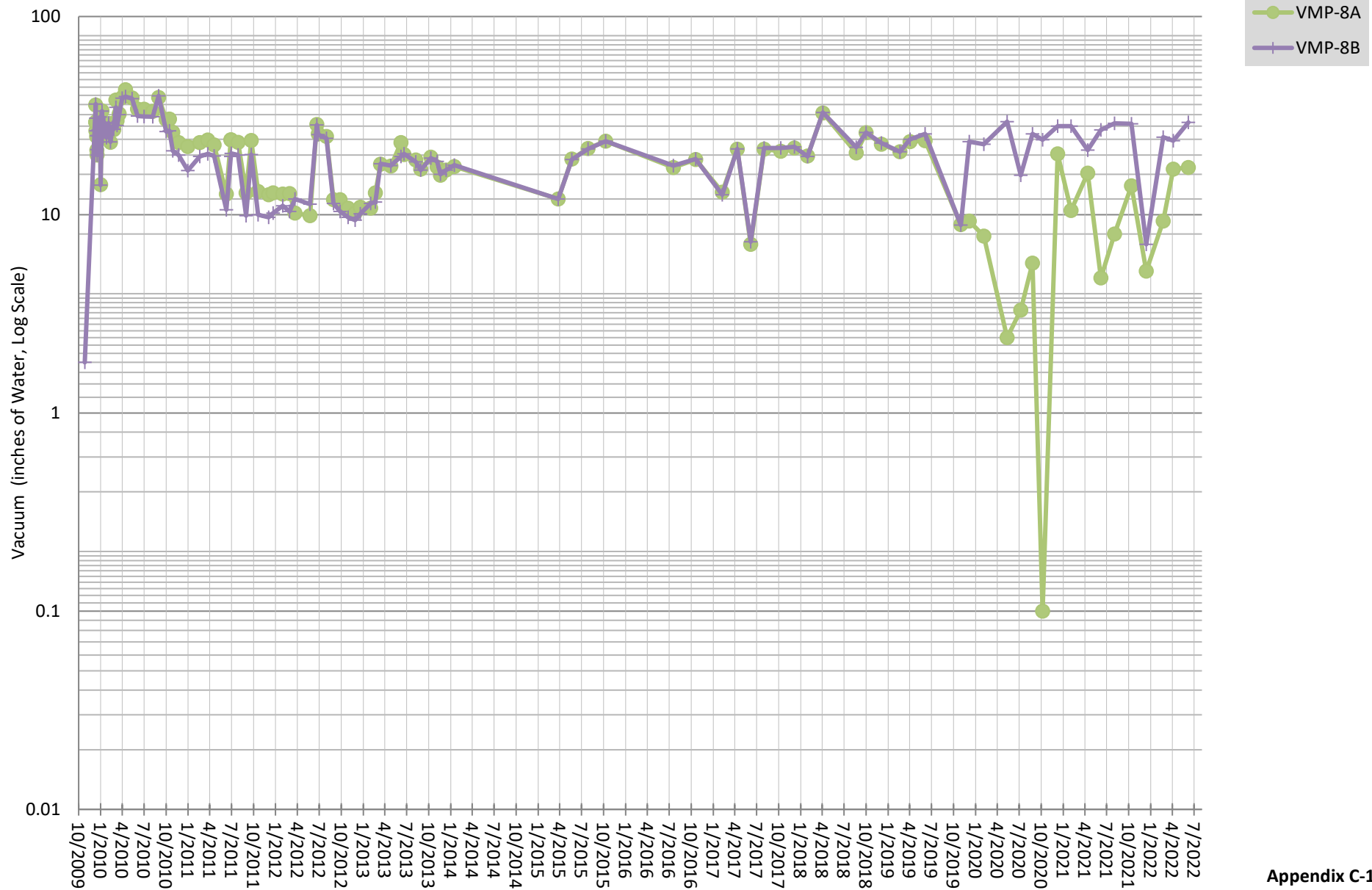
Appendix C-1
 Figure 6
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee



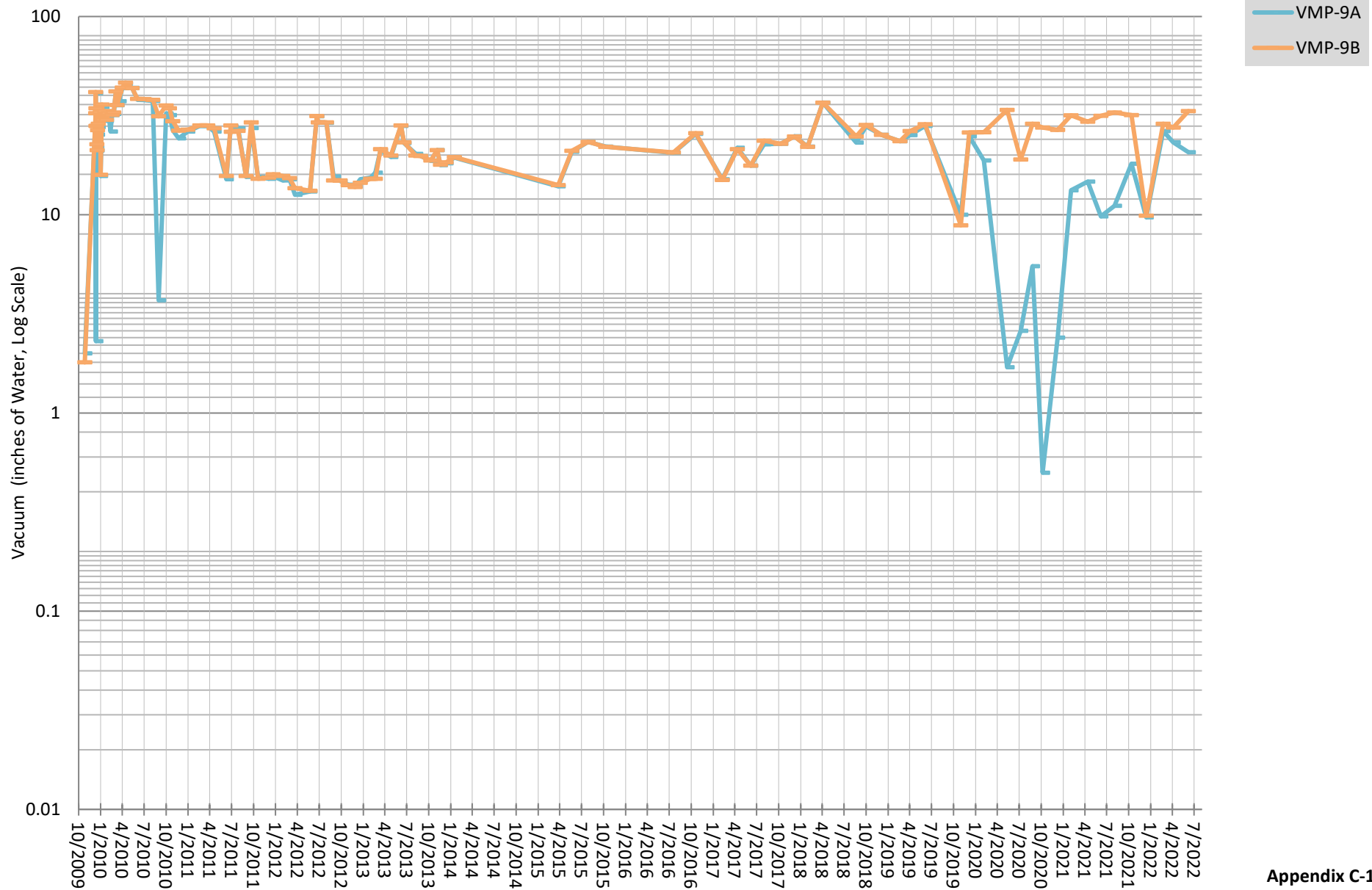
Appendix C-1
 Figure 7
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee



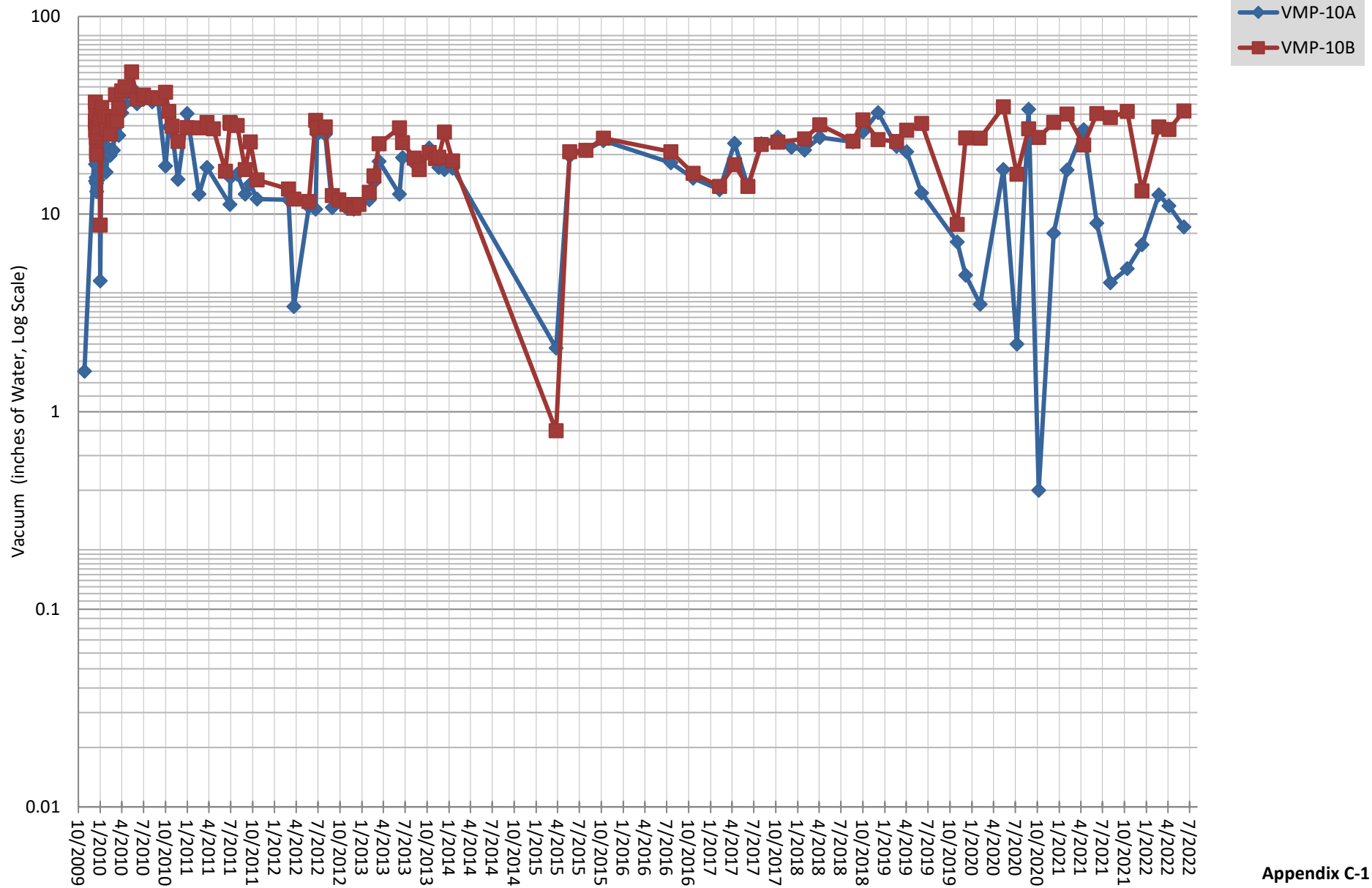
Appendix C-1
Figure 8
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-1
 Figure 9
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee

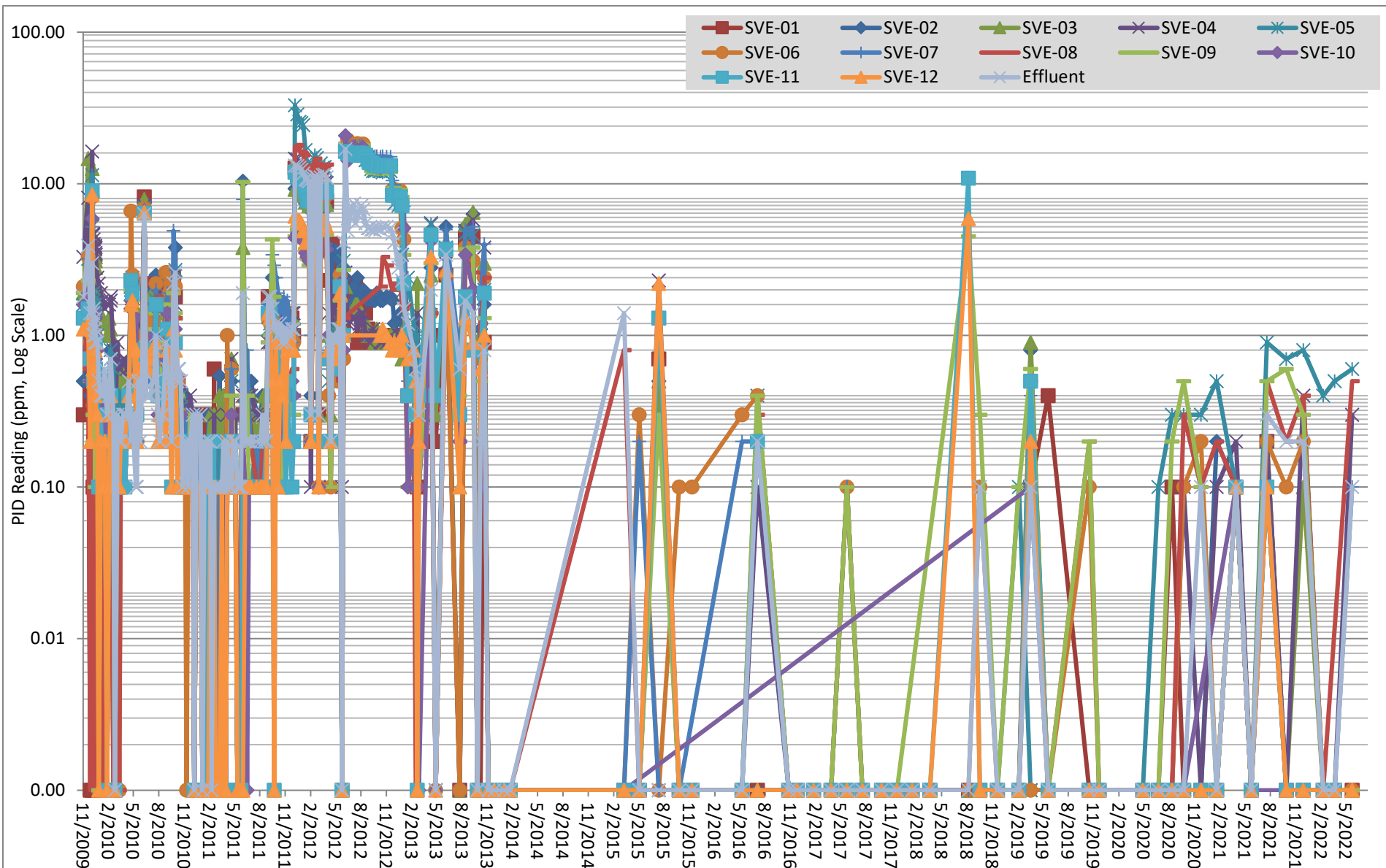


Appendix C-1
 Figure 10
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee



Appendix C-1
Figure 11
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee

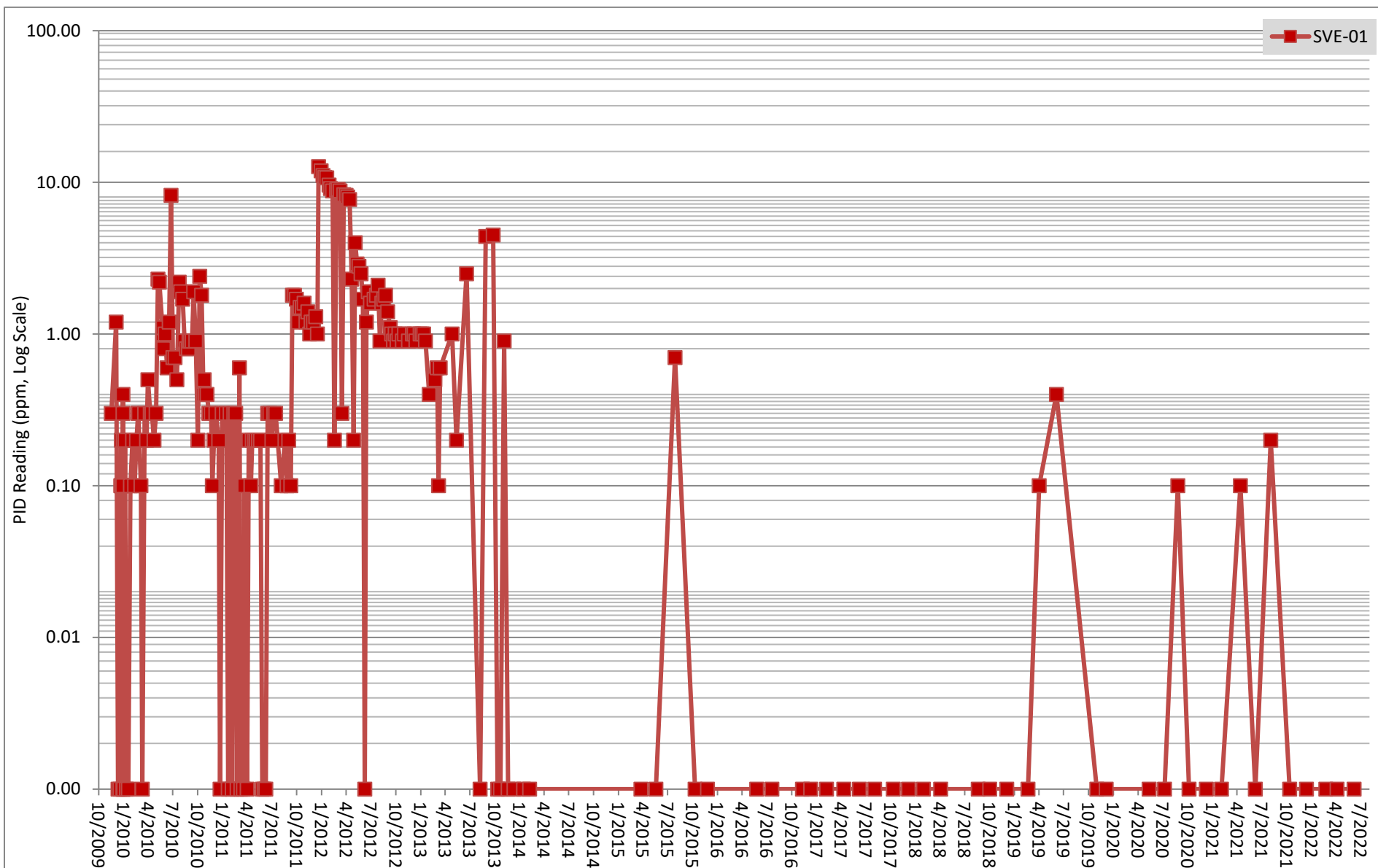
Appendix C-2 SVE Wells and Effluent Concentration Trends – Field PID Measurements



Appendix C-2

Figure 1

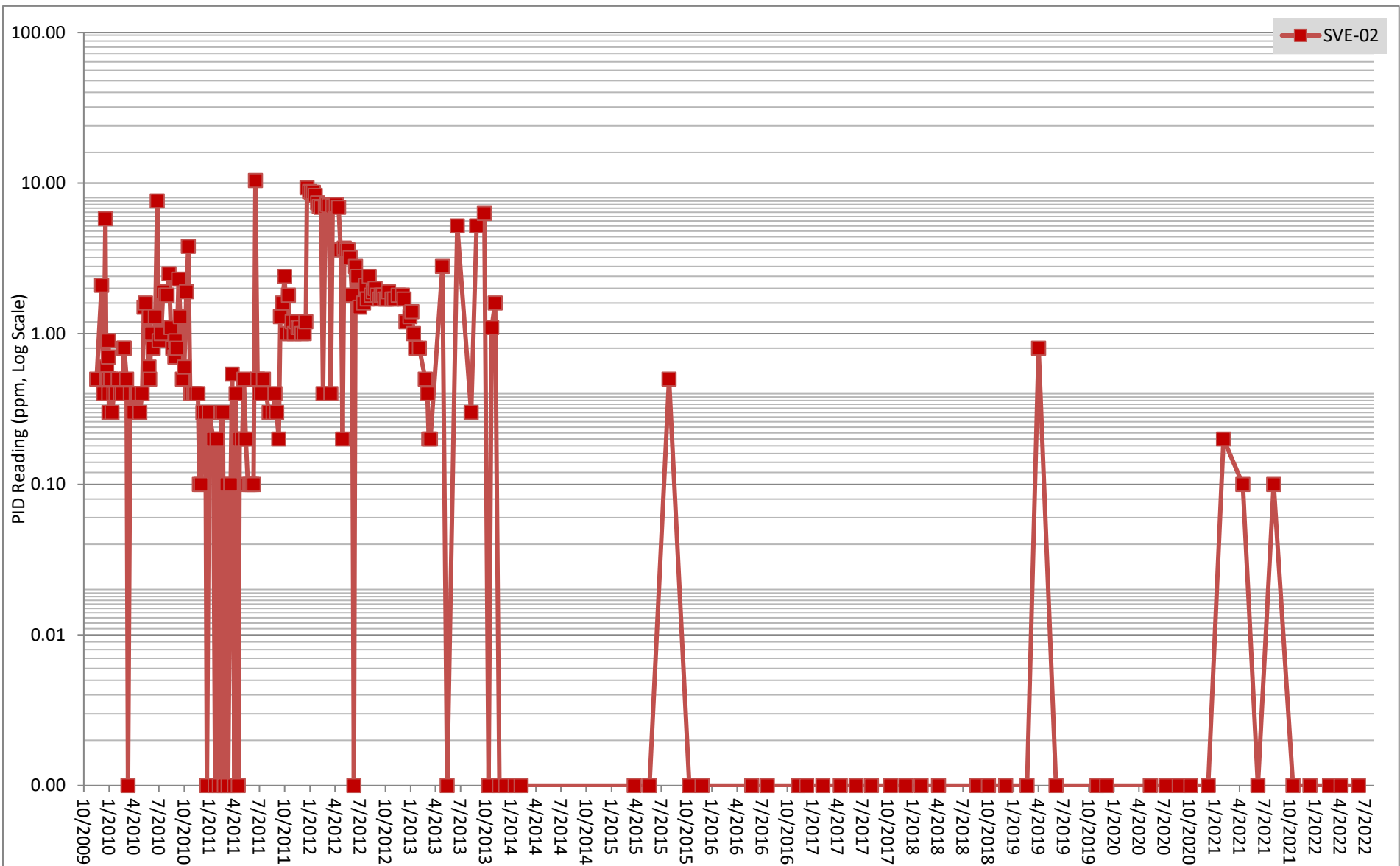
SVE Wells and Effluent Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 2

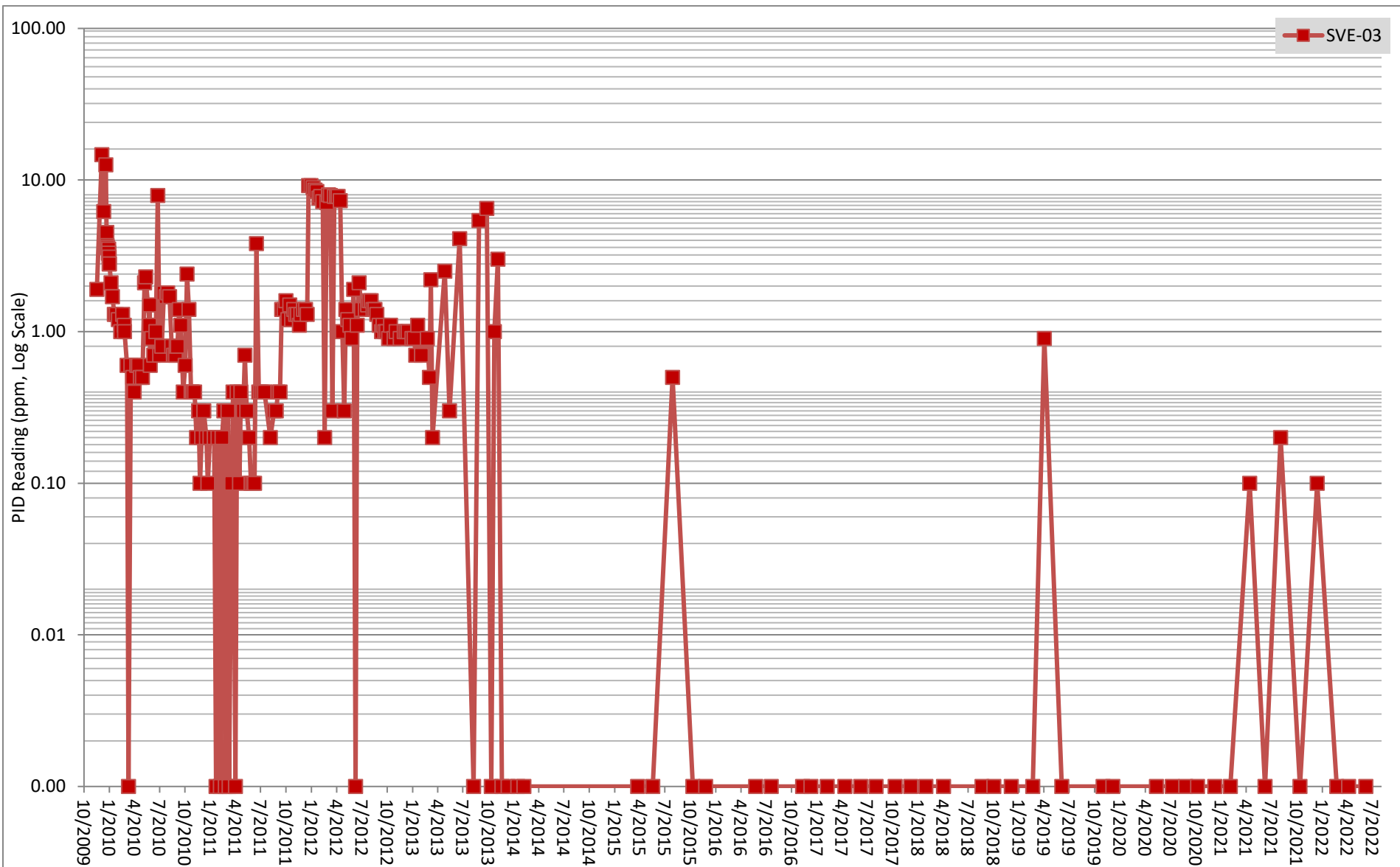
SVE Well #1 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 3

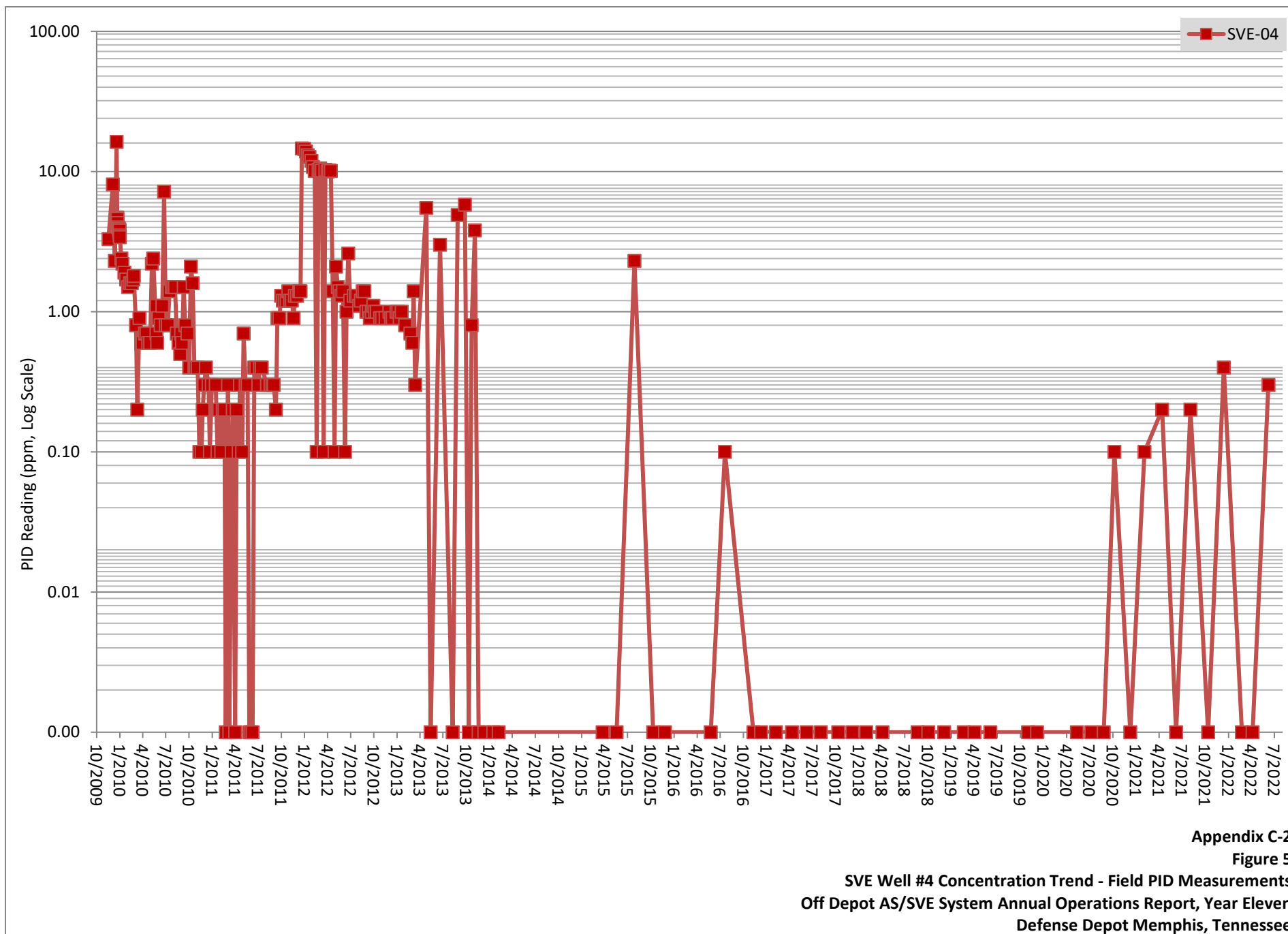
SVE Well #2 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee

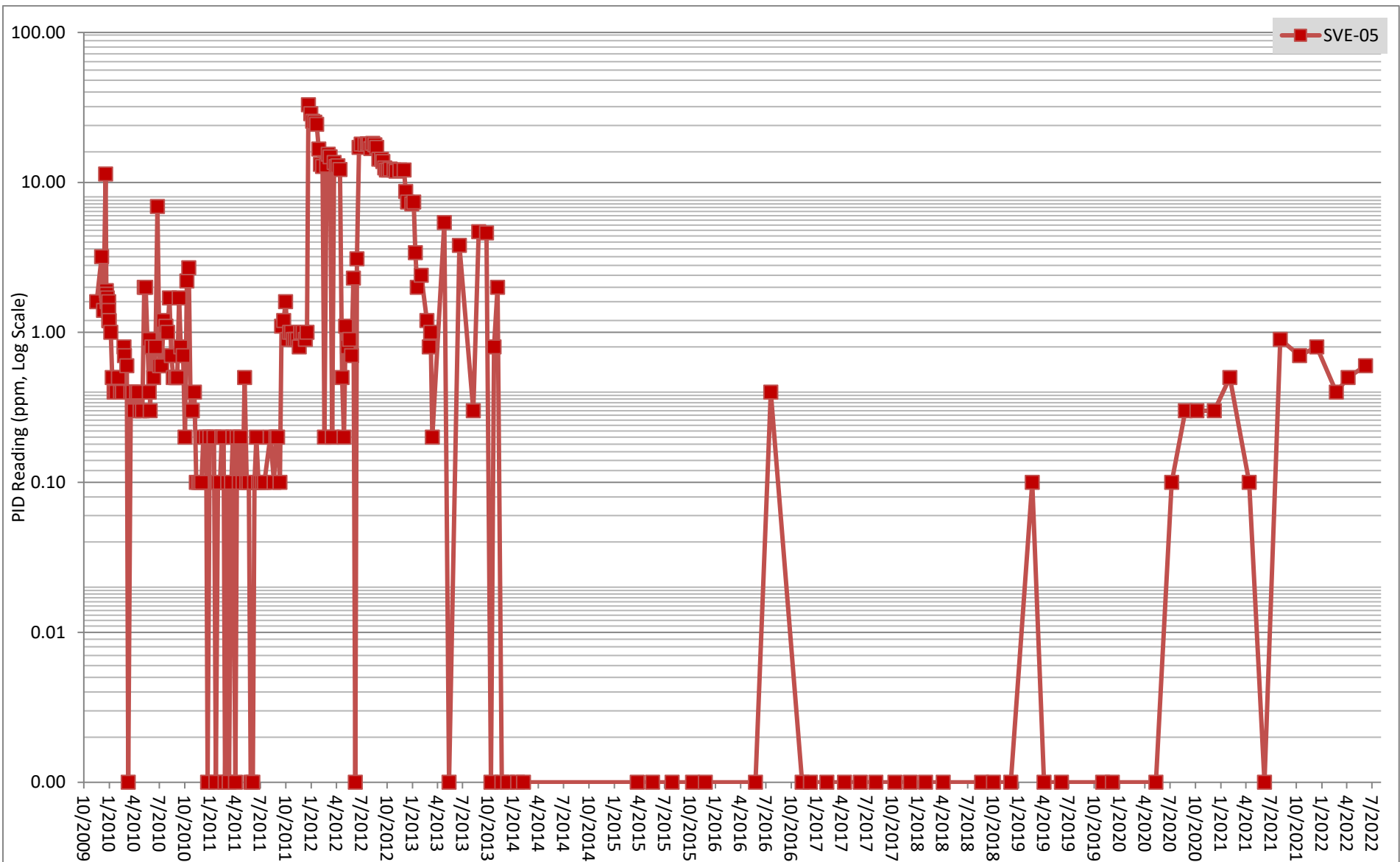


Appendix C-2

Figure 4

SVE Well # 3 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee

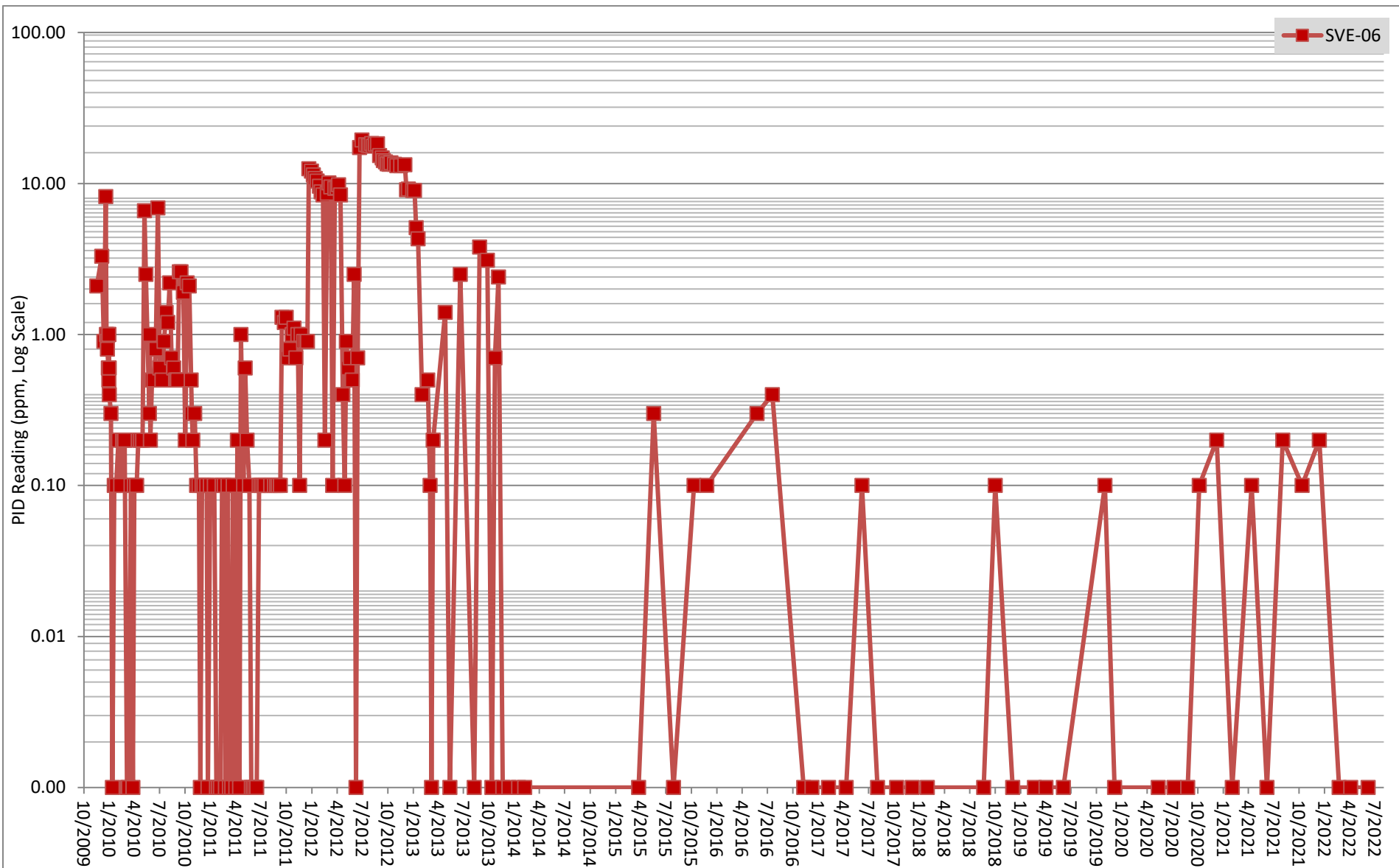




Appendix C-2

Figure 6

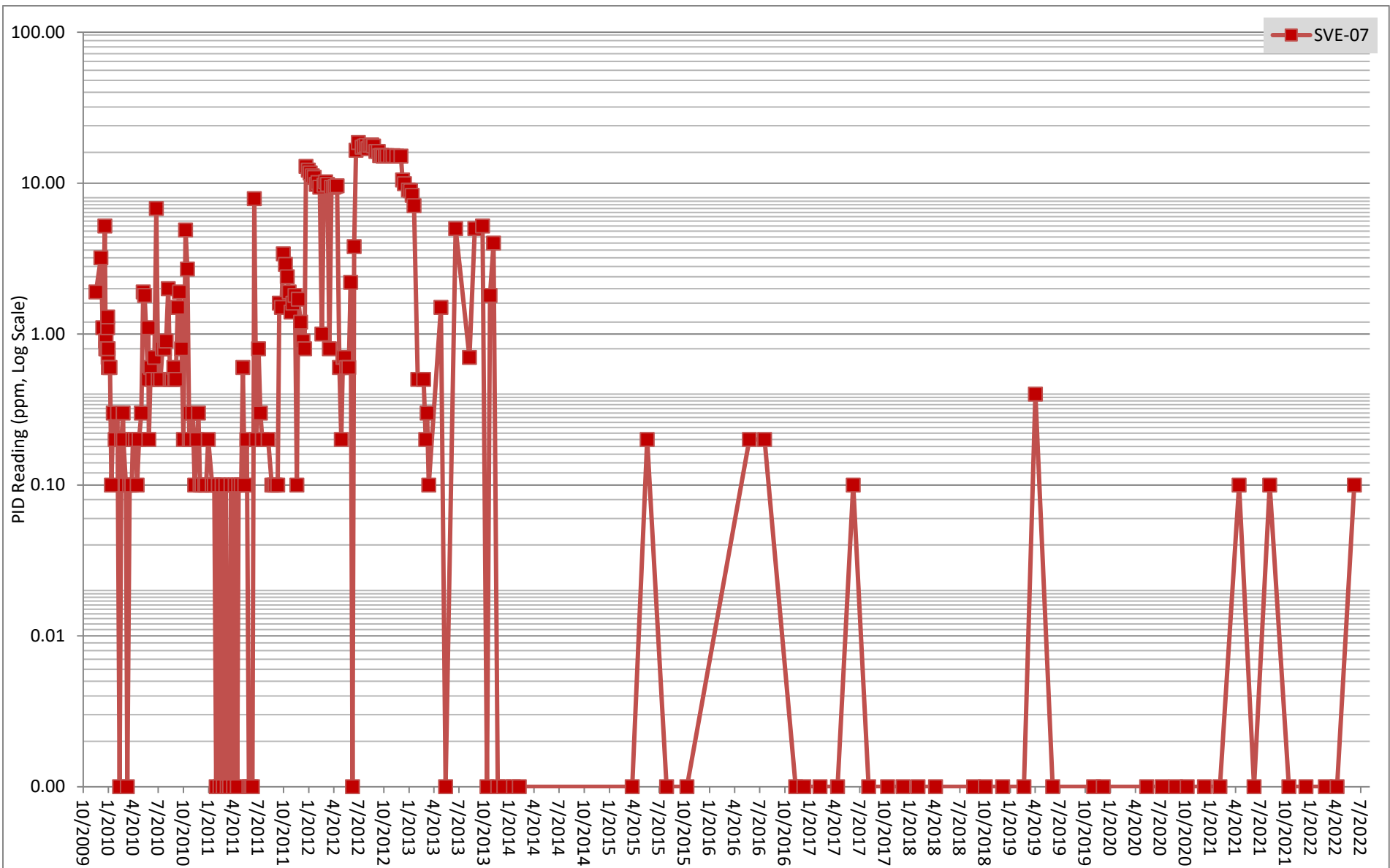
SVE Well #5 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 7

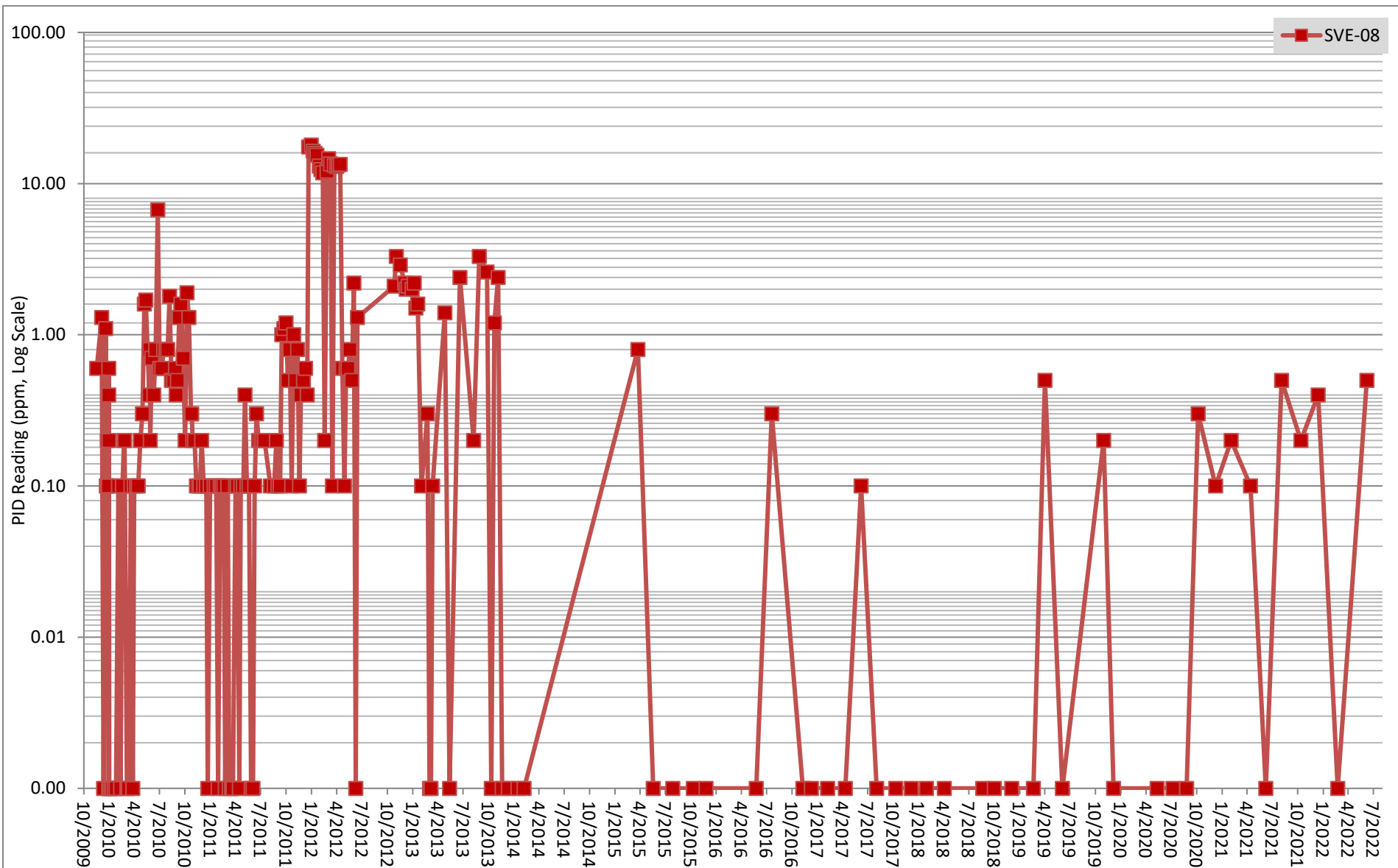
SVE Well #6 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 8

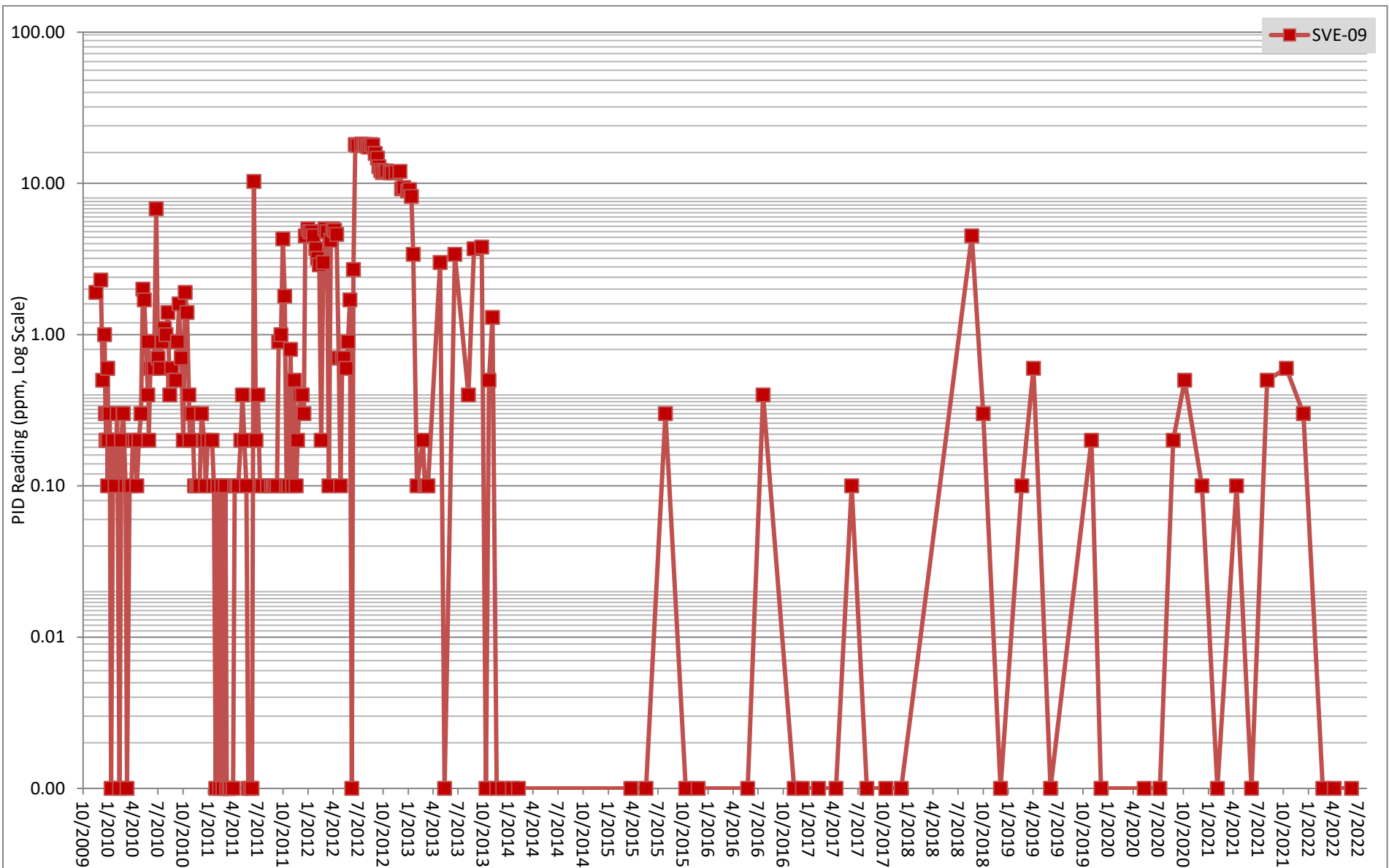
SVE Well #7 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 9

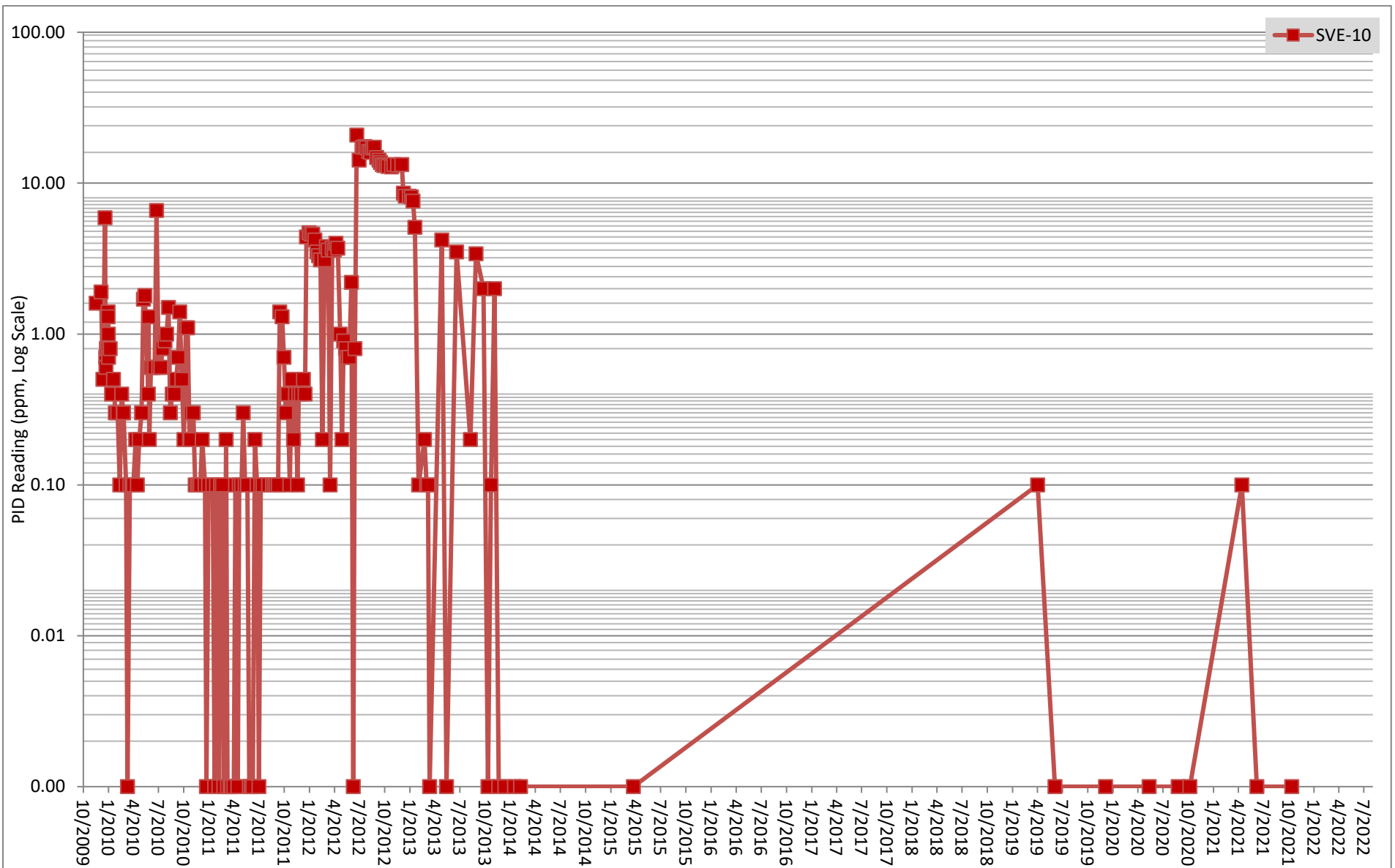
SVE Well #8 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 10

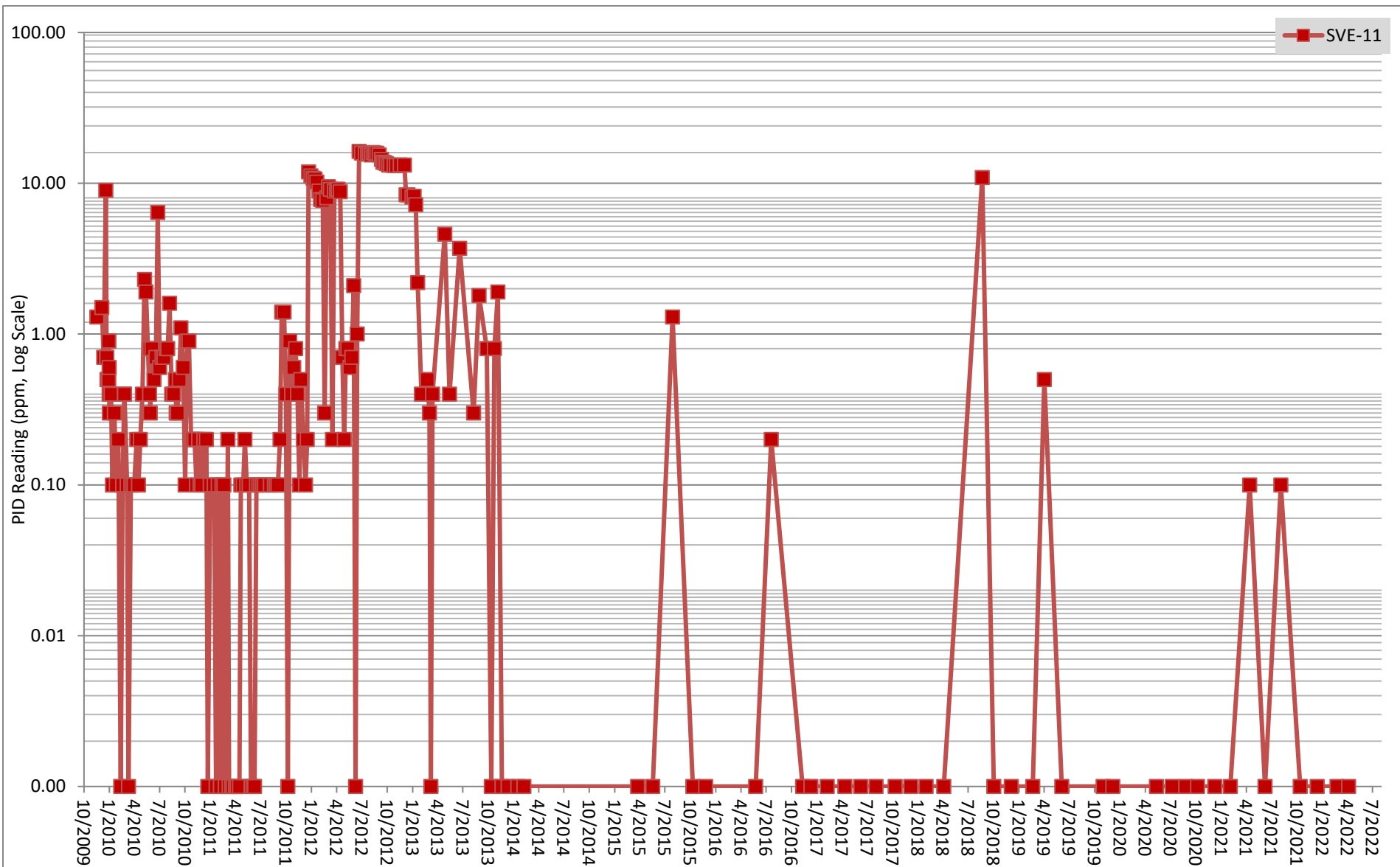
SVE Well #9 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 11

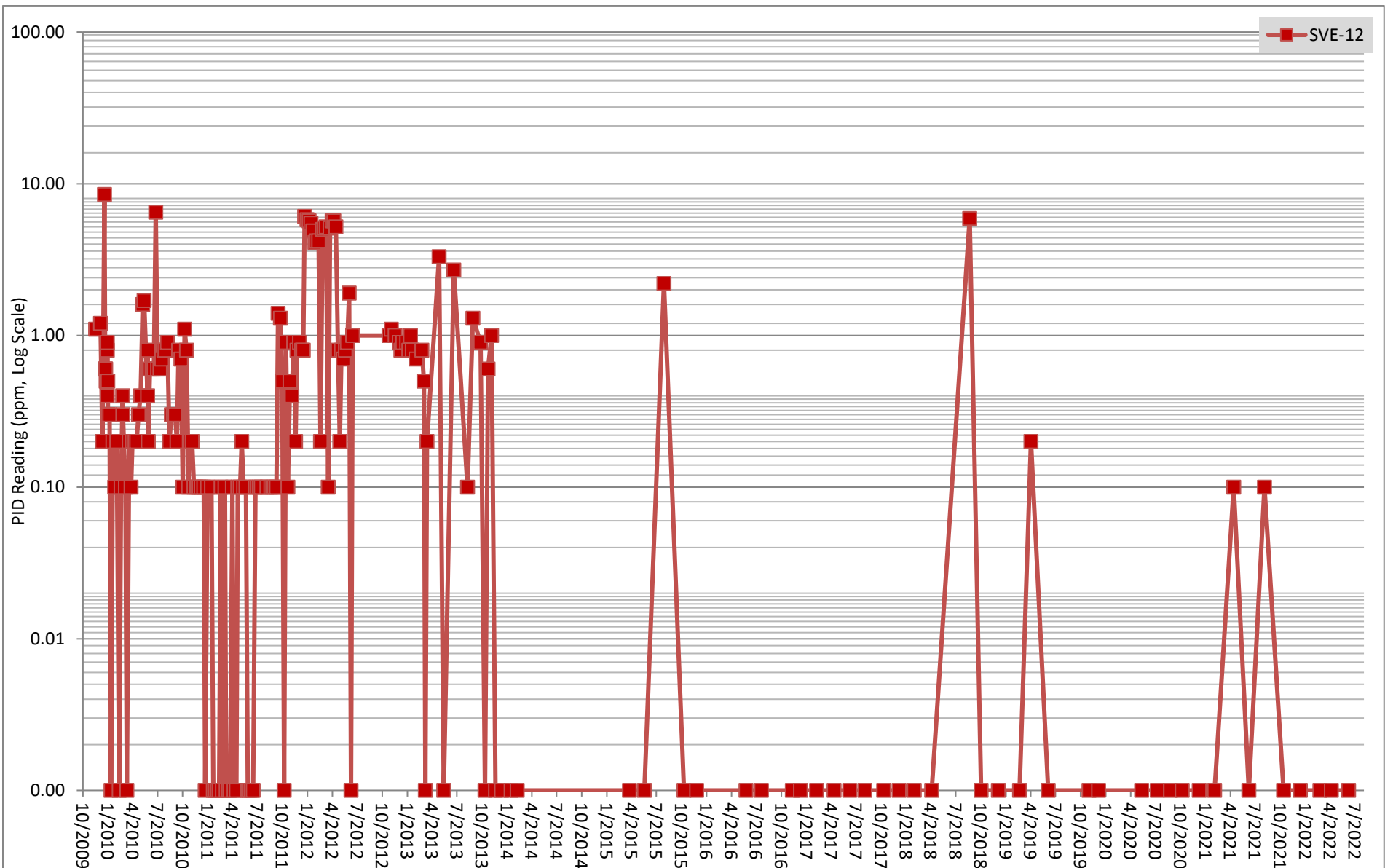
SVE Well #10 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 12

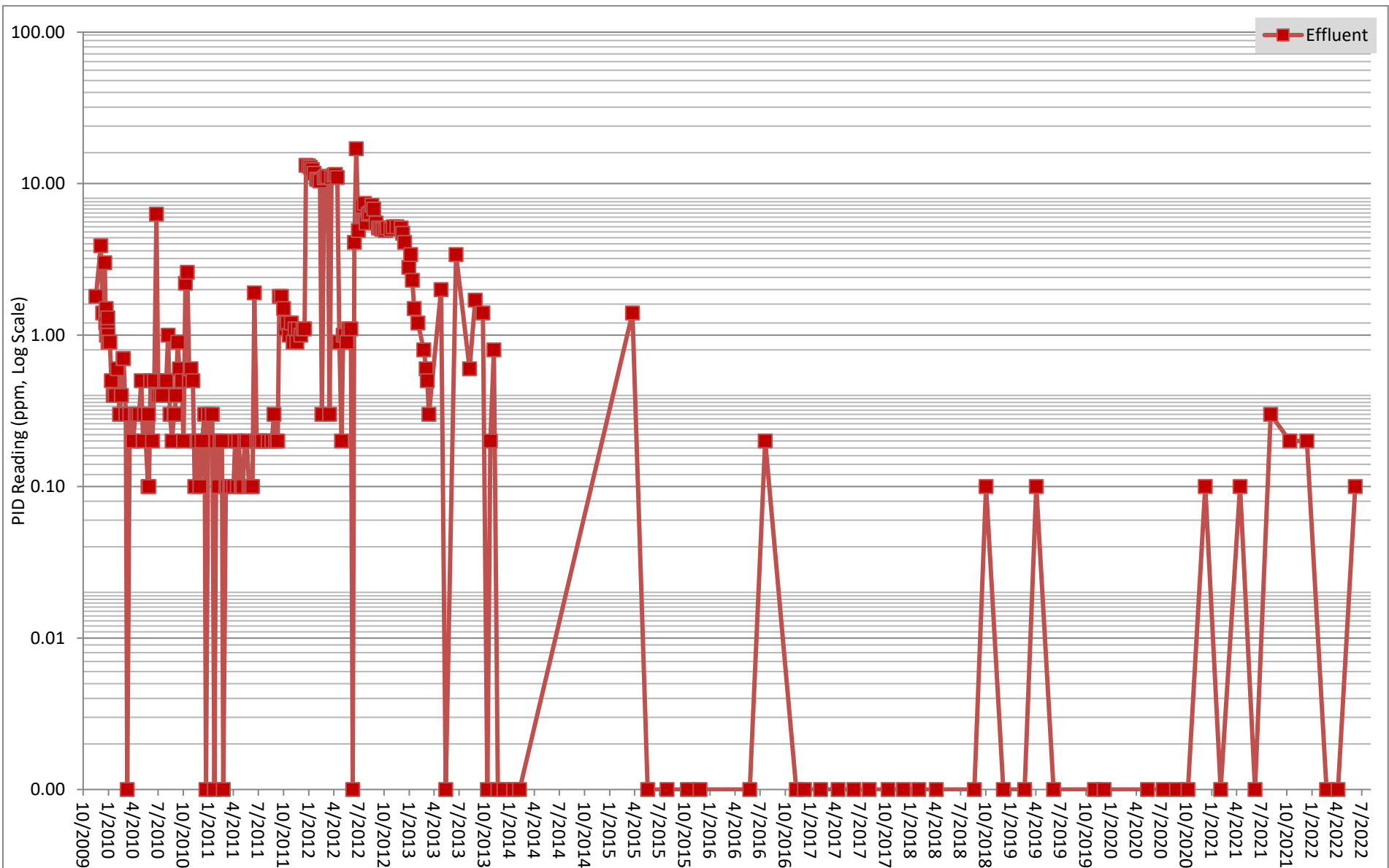
SVE Well #11 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 13

SVE Well #12 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee

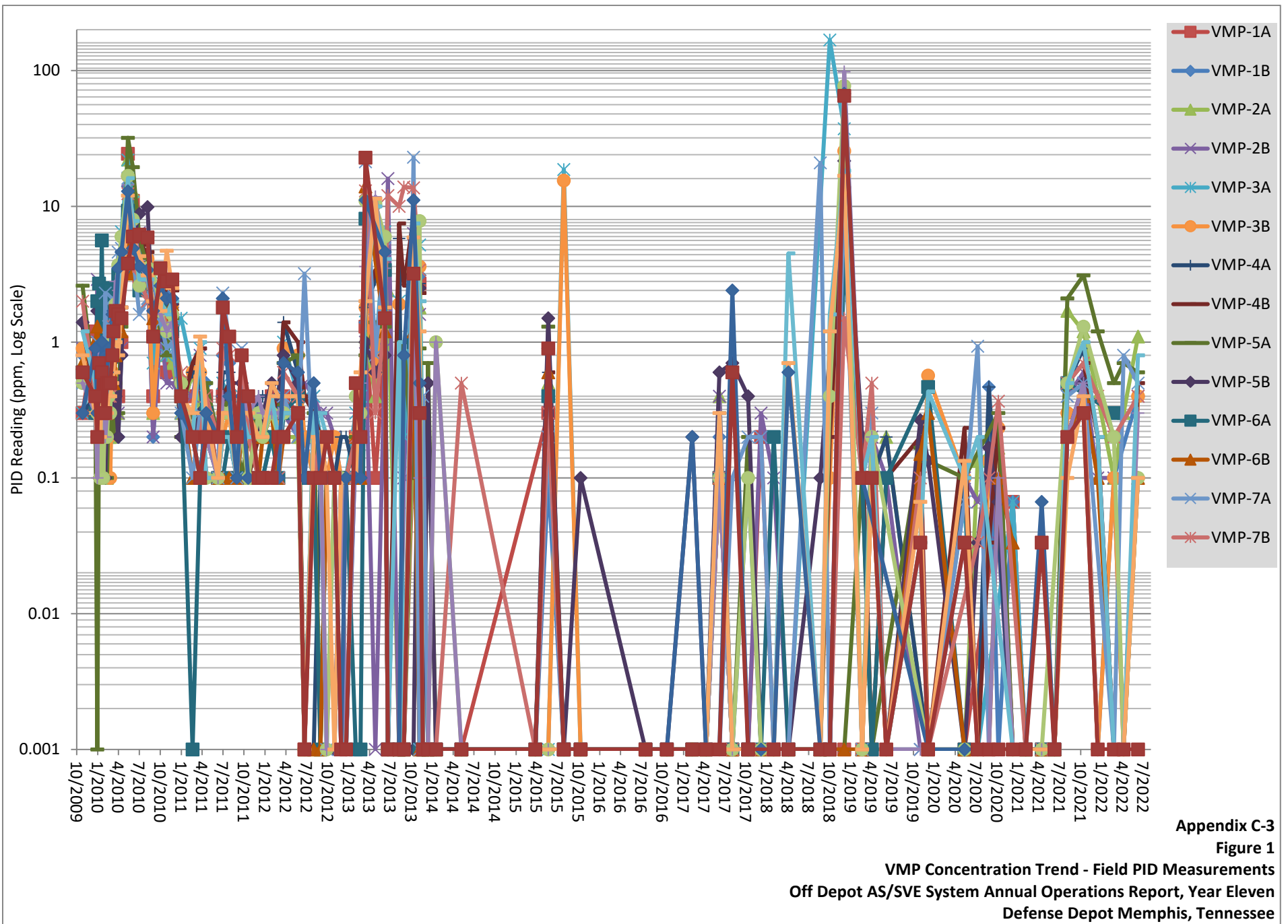


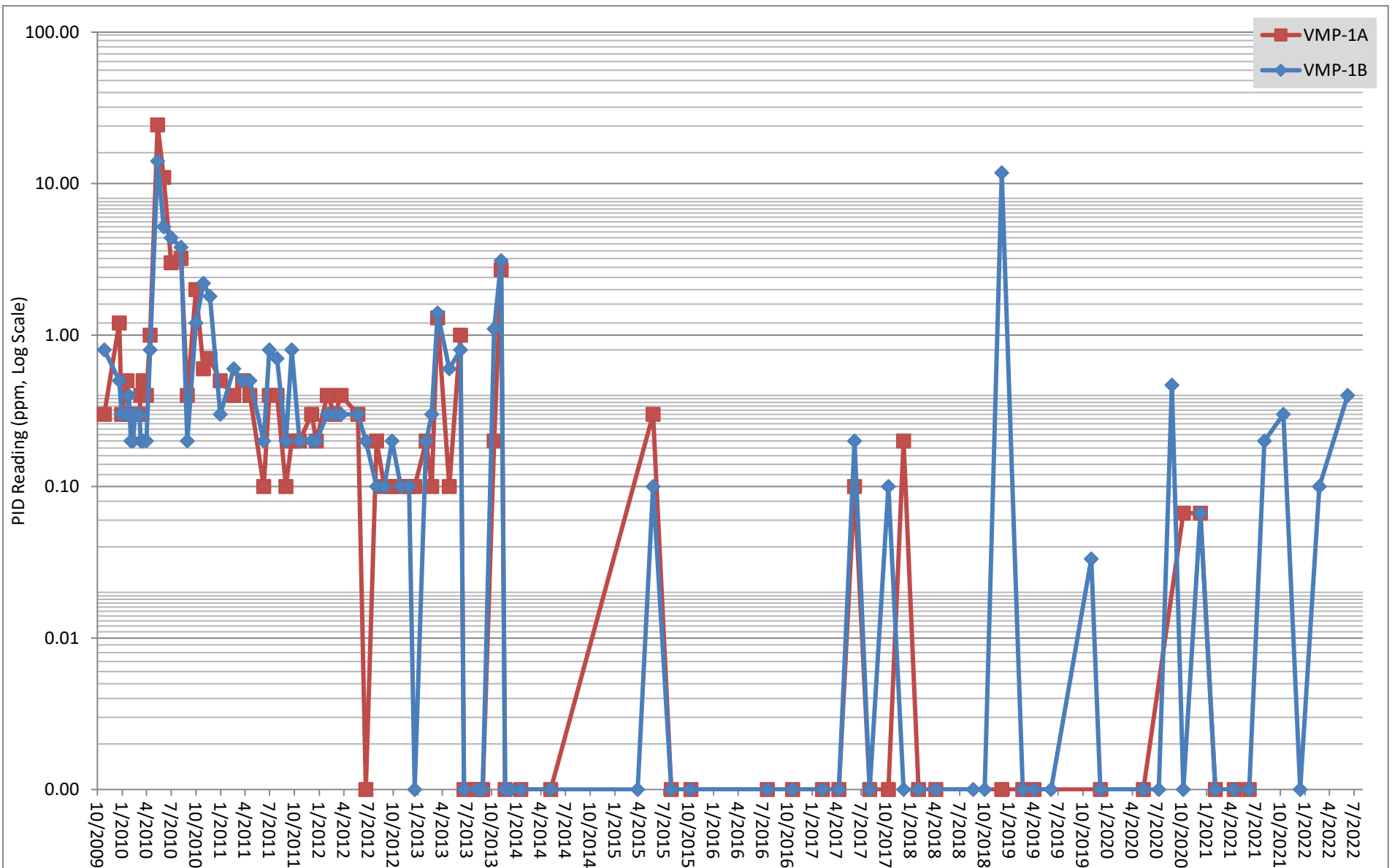
Appendix C-2

Figure 14

SVE Effluent Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee

Appendix C-3 VMP Concentration Trends – Field PID Measurements

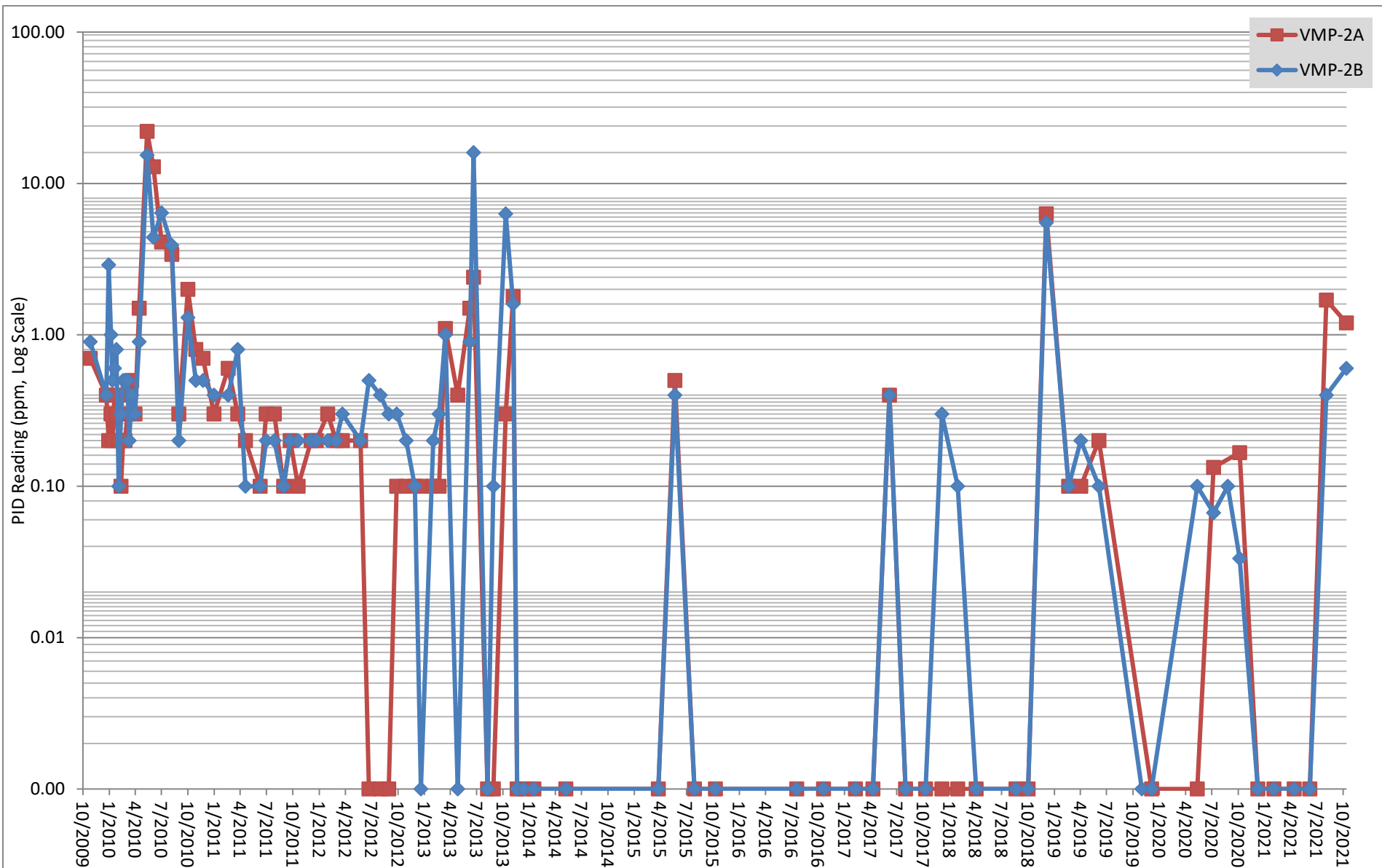




Appendix C-3

Figure 2

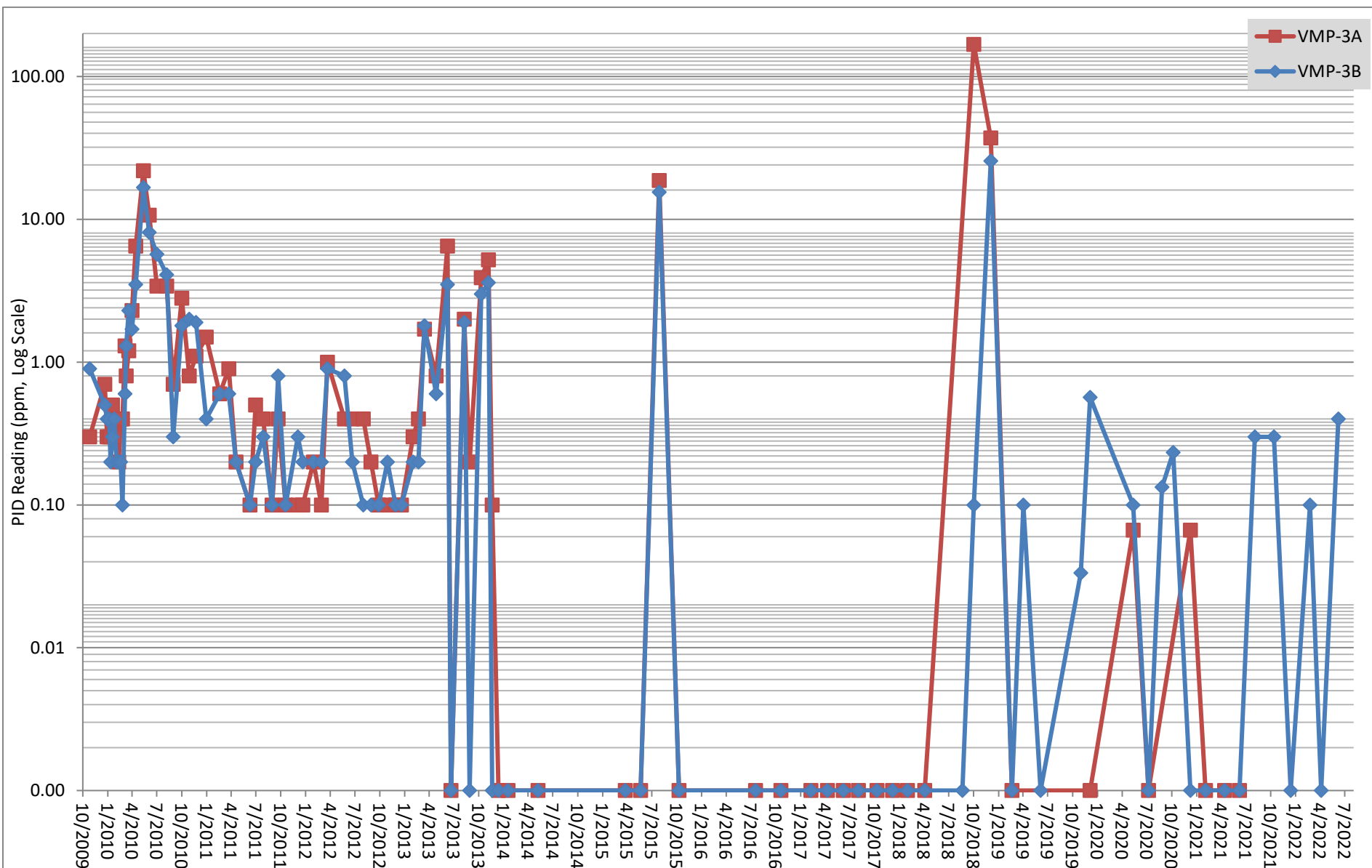
VMP-1A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 3

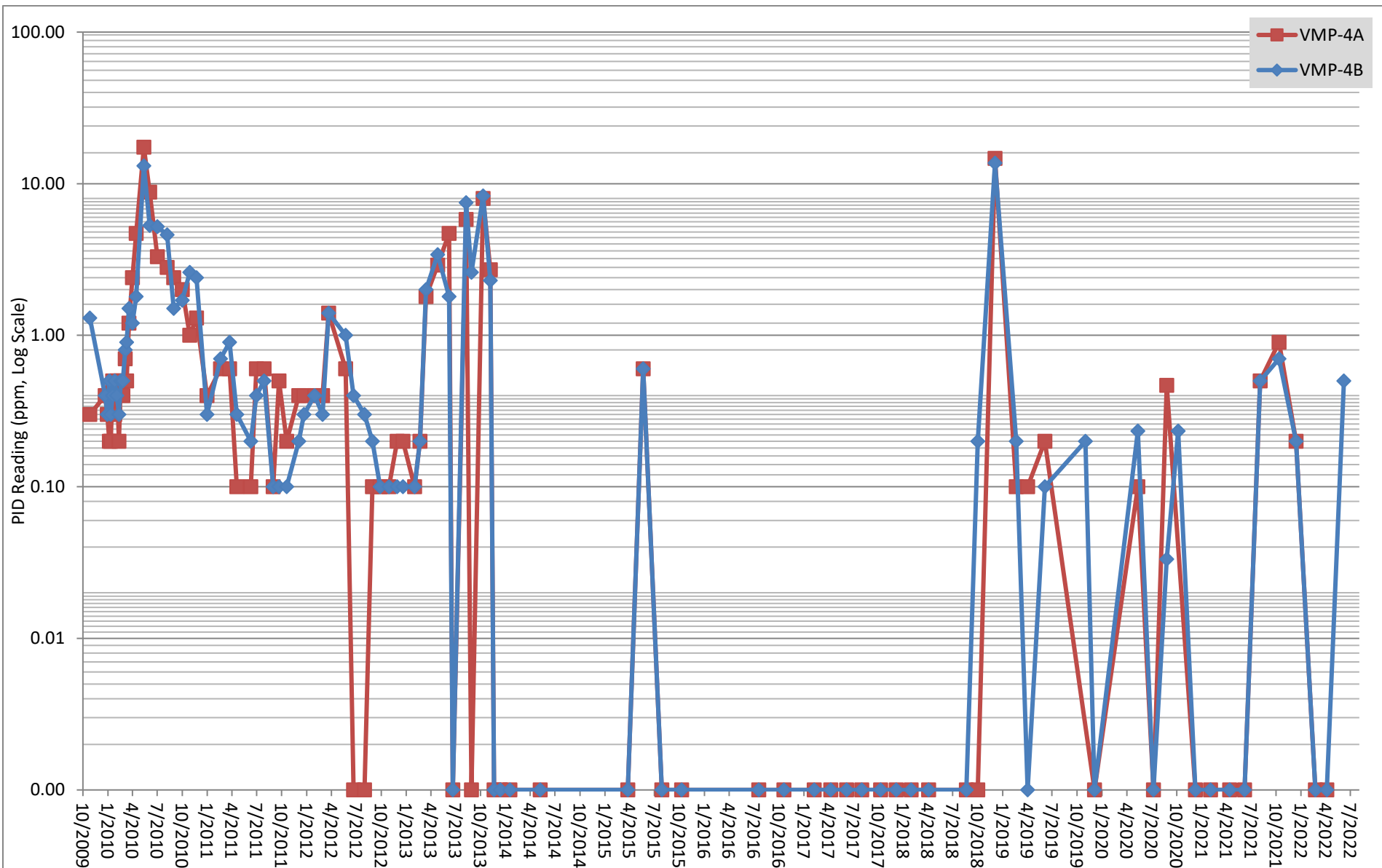
VMP-2A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Ten
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 4

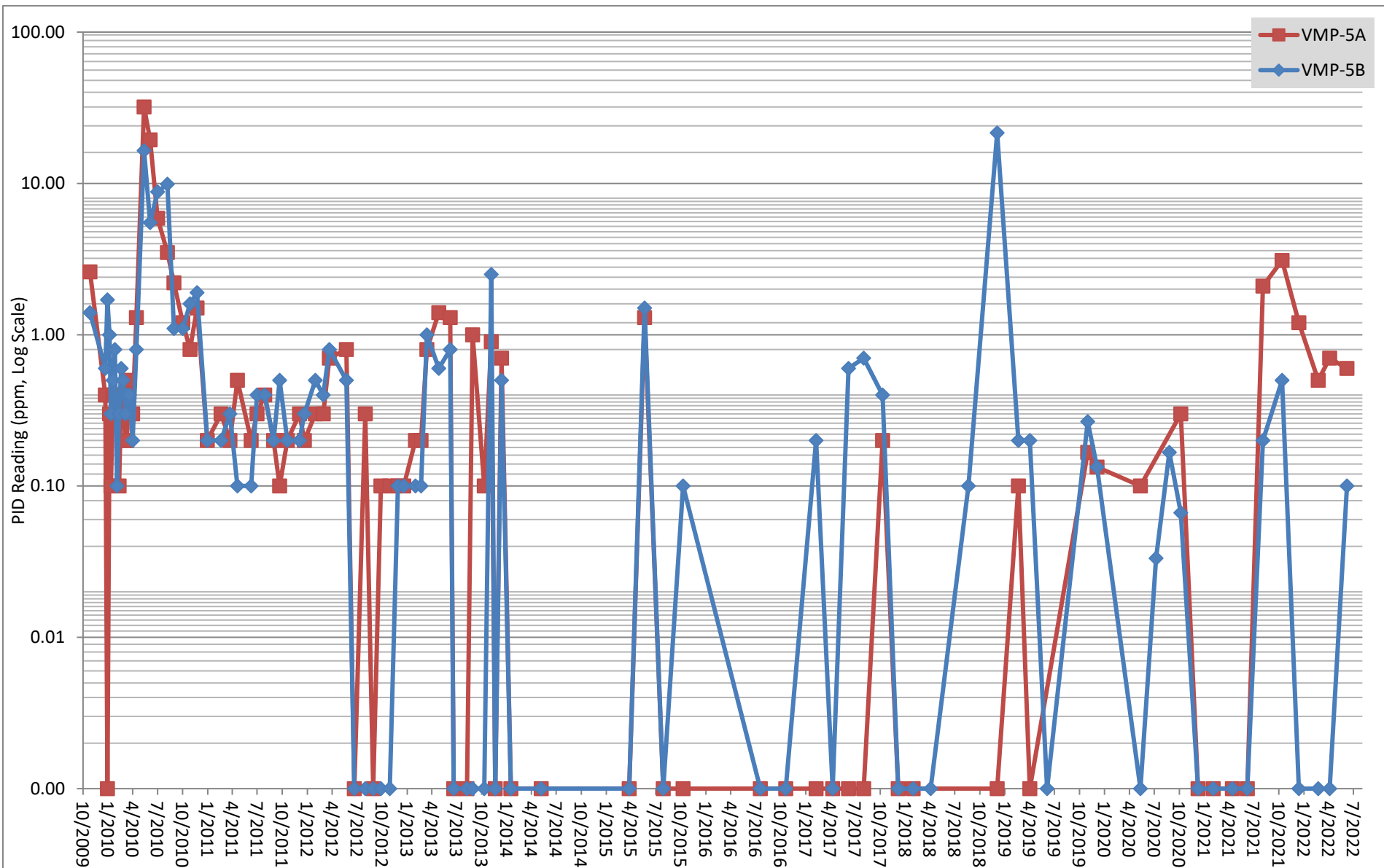
VMP-3A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 5

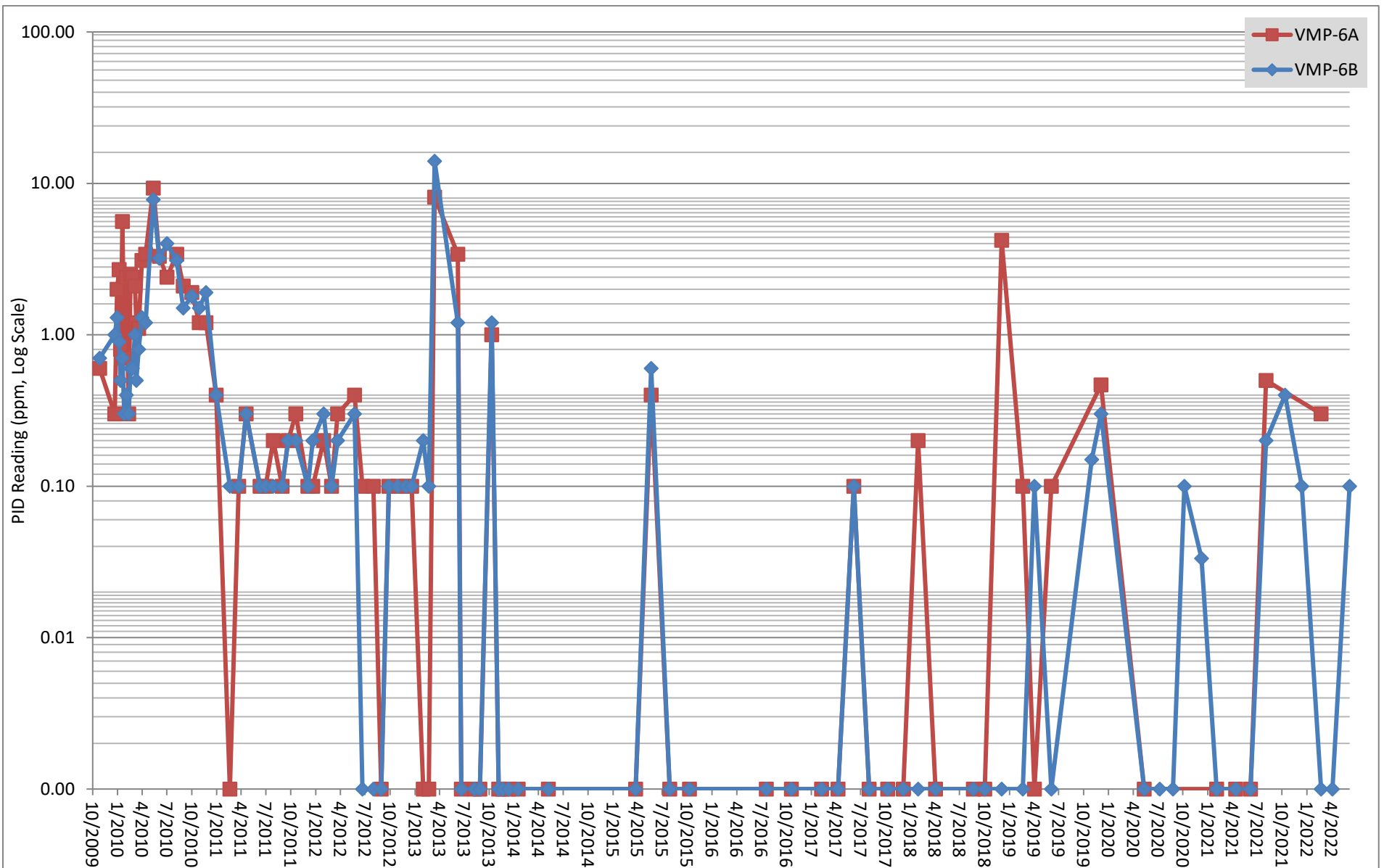
VMP-4A/B Concentration Trend - Field PID Measurements
 Off Depot AS/SVE System Annual Operations Report, Year Eleven
 Defense Depot Memphis, Tennessee



Appendix C-3

Figure 6

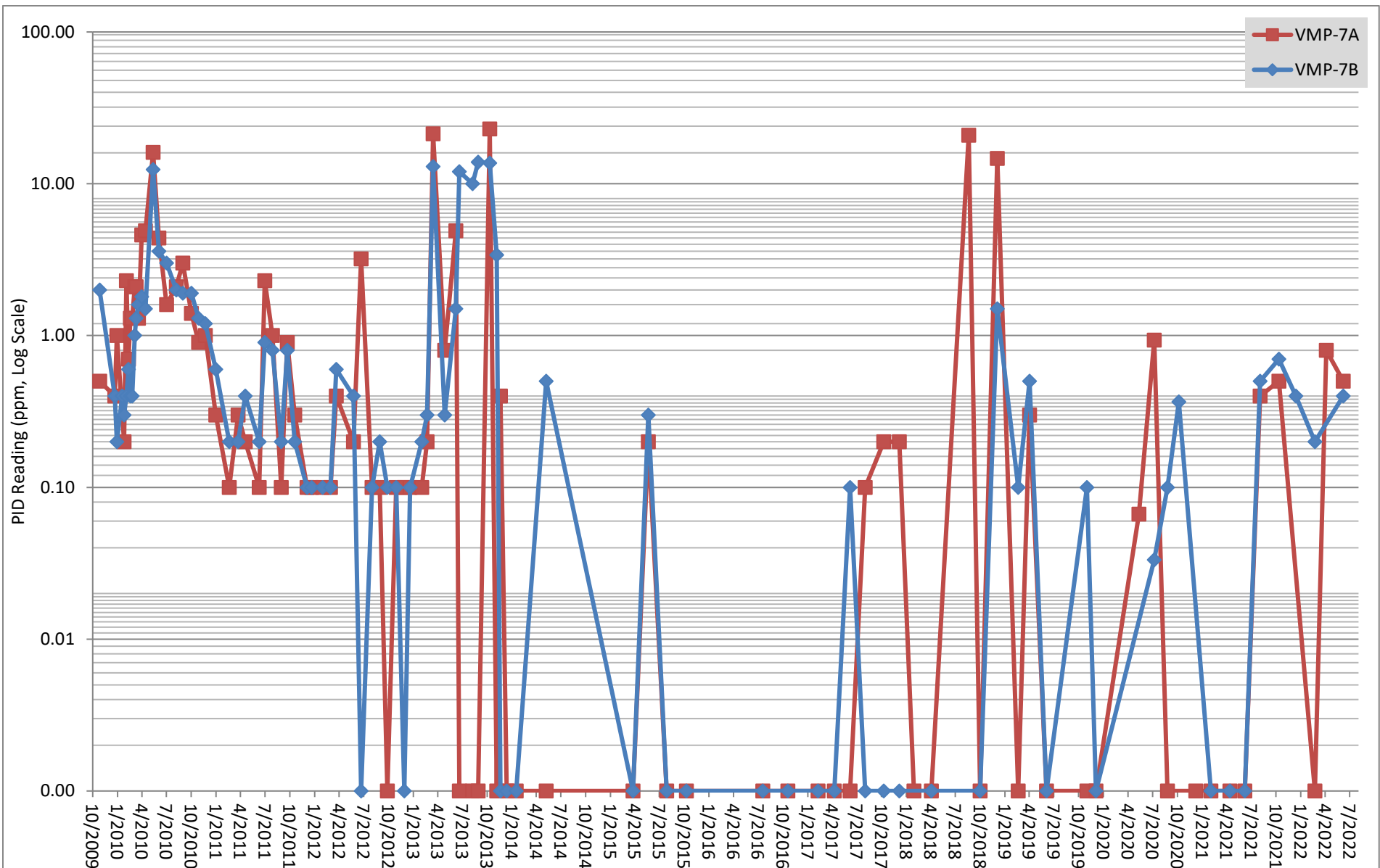
VMP-5A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 7

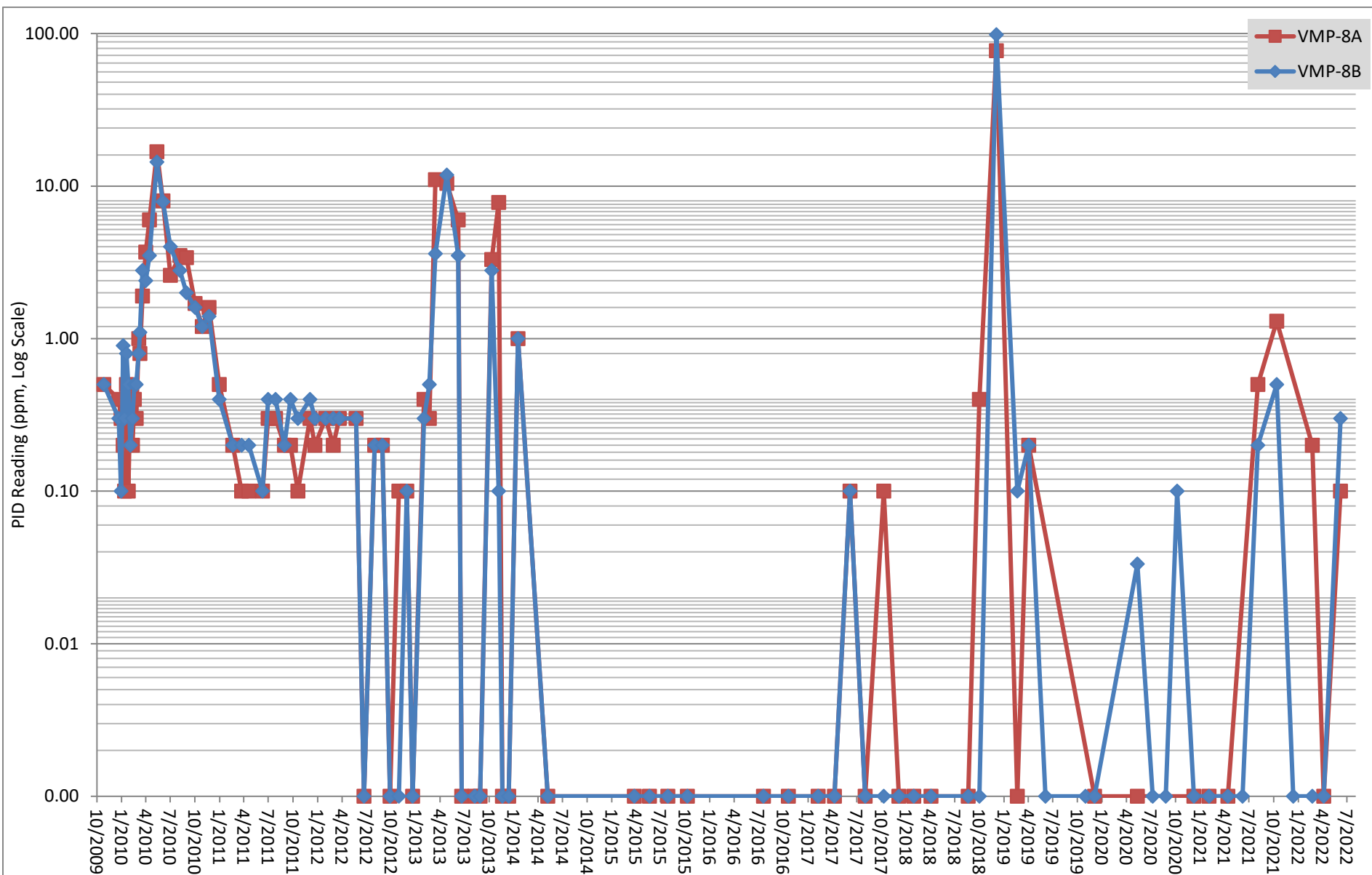
VMP-6A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 8

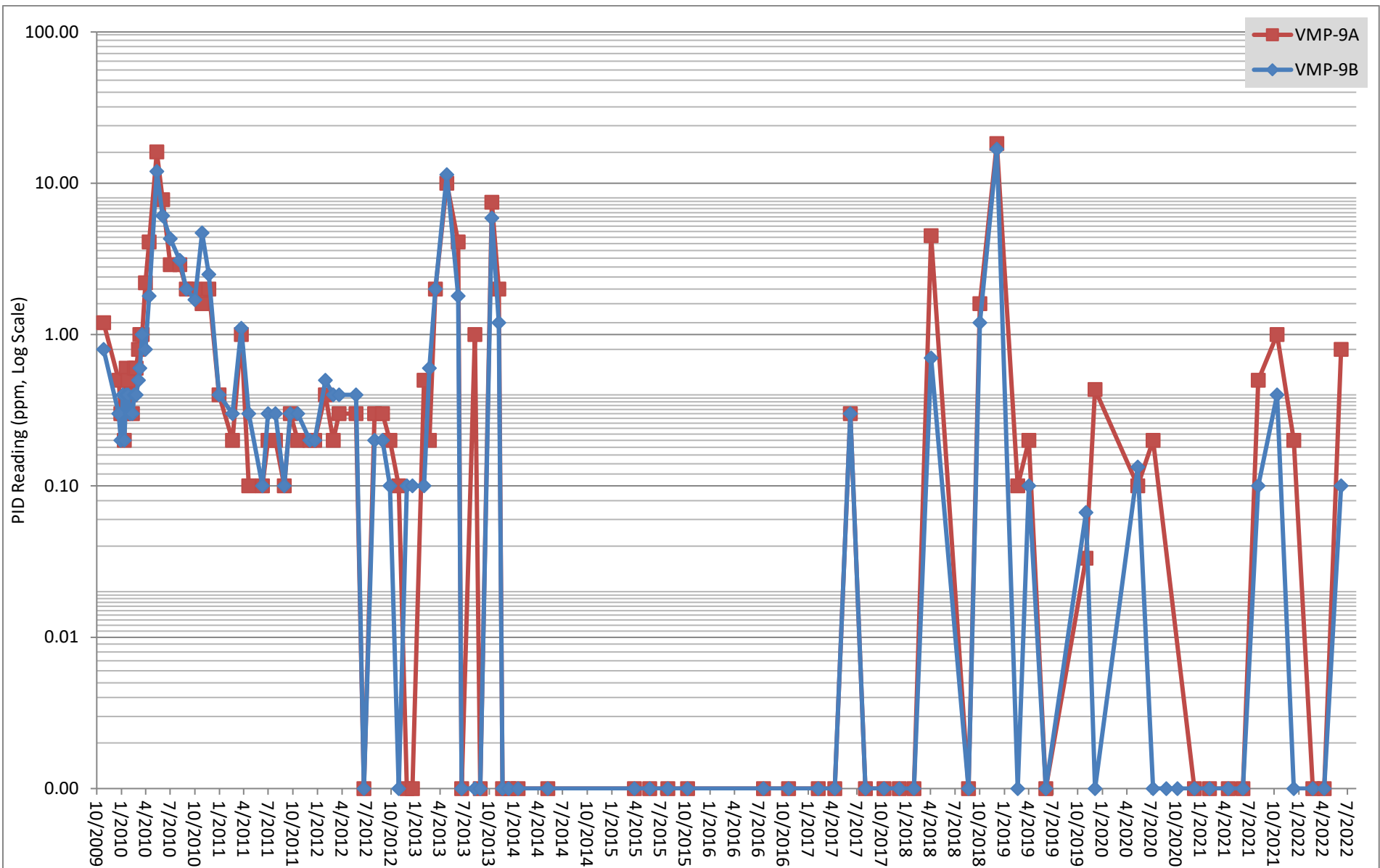
VMP-7A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 9

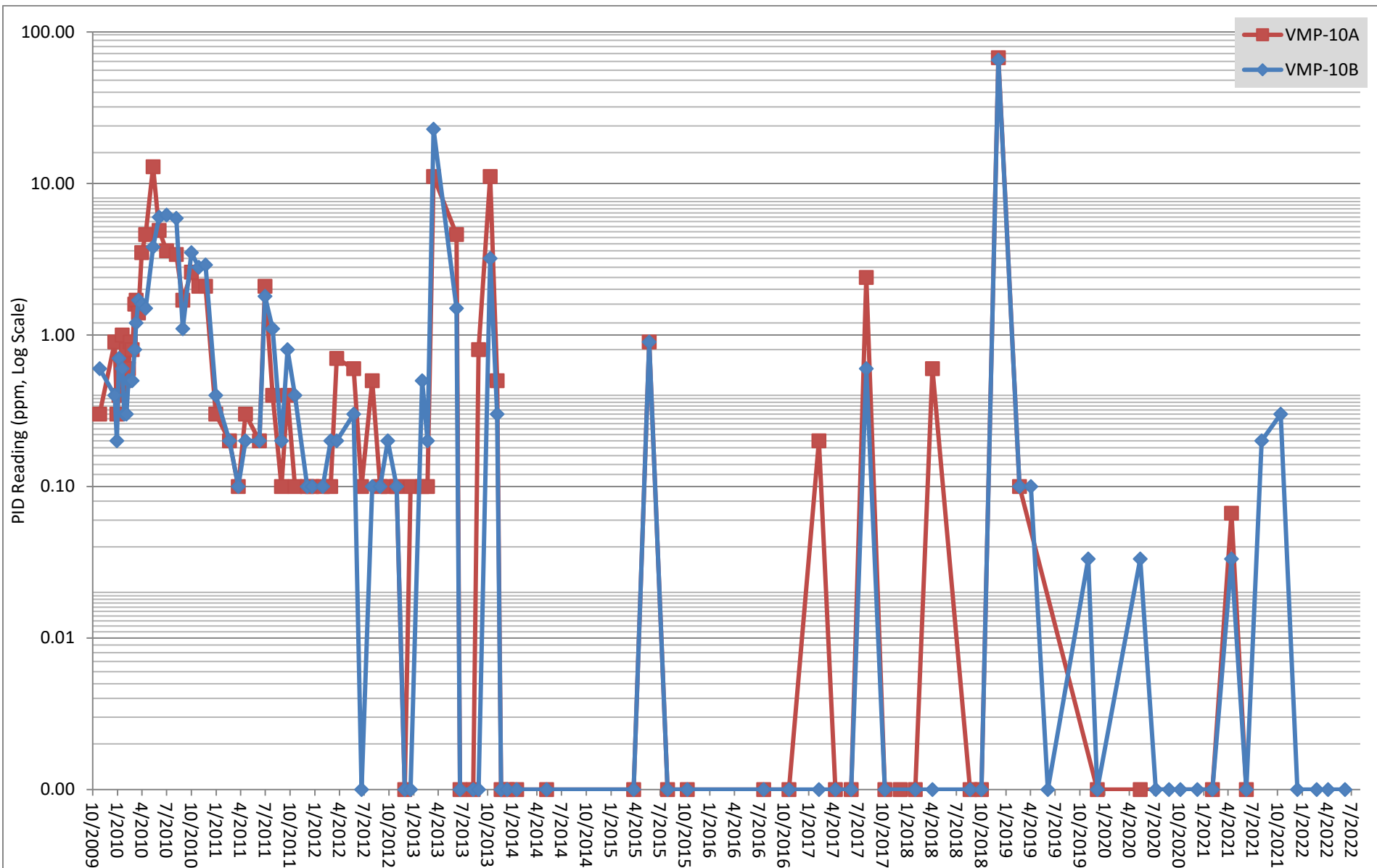
VMP-8A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 10

VMP-9A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 11

VMP-10A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year Eleven
Defense Depot Memphis, Tennessee

Appendix D Results of Laboratory Analyses

Table D-1
Analytical Results - SVE Effluent
Off Depot AS/SVE Year 11, Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

	Sample ID	ODSVE-EFF-Y11Q1	ODSVE-DUP1-Y11Q1	ODSVE-EFF-Y11Q2	ODSVE-EFF-Y11Q3	ODSVE-EFF-Y11Q4
	Event	ODSVE-Y11Q1	ODSVE-Y11Q1	ODSVE-Y11Q2	ODSVE-Y11Q3	ODSVE-Y11Q4
	Date	12-Oct-21	12-Oct-21	13-Dec-21	13-Apr-22	7-Jun-22
	Lab ID	P2105399-001	P2105399-002	P2106529-001	P2201515-001	P2202553-001
Analyte	Units					
1,1,1-Trichloroethane	ppbv	0.19	0.2	0.16	0.18	0.18
1,1,2,2-Tetrachloroethane	ppbv	0.25	0.26	0.35	0.28	0.21
1,1,2-Trichloroethane	ppbv	0.045 J	0.046 J	0.046 J	0.041 J	0.04 J
1,1,2-Trichlorotrifluoroethane	ppbv	3	3	3	3.2	4
1,1-Dichloroethane	ppbv	0.21 J	0.22	0.15 J	0.21	0.2
1,1-Dichloroethene	ppbv	0.41	0.44	0.31	0.5	0.43
1,2,4-Trichlorobenzene	ppbv	0.072 U	0.066 U	0.056 U	0.056 U	0.056 U
1,2,4-Trimethylbenzene	ppbv	0.055 U	0.05 U	0.042 U	0.042 U	0.042 U
1,2-Dibromo 3-Chloropropane	ppbv	0.056 U	0.051 U	0.043 U	0.043 U	0.043 U
1,2-Dibromoethane	ppbv	0.037 U	0.034 U	0.029 U	0.029 U	0.029 U
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ppbv	0.077 U	0.019 U	0.059 U	0.016 J	0.017 J
1,2-Dichlorobenzene	ppbv	0.048 U	0.044 U	0.036 U	0.037 U	0.036 U
1,2-Dichloroethane	ppbv	0.071 U	0.065 U	0.054 U	0.055 U	0.054 U
1,2-Dichloropropane	ppbv	0.062 U	0.057 U	0.047 U	0.048 U	0.047 U
1,3,5-Trimethylbenzene	ppbv	0.058 U	0.053 U	0.045 U	0.045 U	0.045 U
1,3-Butadiene	ppbv	0.24 U	0.22 U	0.19 U	0.19 U	0.19 U
1,3-Dichlorobenzene	ppbv	0.048 U	0.044 U	0.036 U	0.037 U	0.036 U
1,4-Dichlorobenzene	ppbv	0.048 U	0.044 U	0.036 U	0.037 U	0.036 U
1,4-Dioxane	ppbv	0.075 U	0.068 U	0.057 U	0.058 U	0.057 U
2-Butanone (MEK)	ppbv	0.078 J	0.57 J	0.061 J	0.067 J	0.075 J
2-Hexanone	ppbv	0.08 J	0.079 U	0.066 U	0.067 U	0.066 U
2-Propanol (Isopropyl Alcohol)	ppbv	0.42 UJ	1.1 J	0.33 U	0.33 U	0.19 J
3-Chloro-1-propene (Allyl Chloride)	ppbv	0.091 U	0.084 U	0.07 U	0.071 U	0.07 U
4-Ethyltoluene	ppbv	0.11 U	0.1 U	0.084 U	100	0.084 U
4-Methyl-2-pentanone	ppbv	0.086 U	0.079 U	0.066 U	0.085 U	0.066 U
Acetone	ppbv	1.4 J	1.9 J	0.99 J	0.067 U	0.67 J
Acetonitrile	ppbv	0.32 U	0.29 U	0.25 U	1.4 U	0.25 U
Acrolein	ppbv	0.26 U	0.23 J	0.39 J	0.2 U	0.2 U
Acrylonitrile	ppbv	0.26 U	0.23 U	0.2 U	0.2 U	0.2 U
alpha-Pinene	ppbv	0.051 U	0.047 U	0.039 U	0.04 U	0.039 U
Benzene	ppbv	0.089 U	0.082 U	0.17 J	0.031 J	0.069 U
Benzyl Chloride	ppbv	0.11 U	0.1 U	0.085 U	0.085 U	0.085 U
Bromodichloromethane	ppbv	0.043 U	0.039 U	0.033 U	0.033 U	0.033 U
Bromoform	ppbv	0.052 U	0.048 U	0.04 U	0.04 U	0.04 U
Bromomethane	ppbv	0.074 U	0.067 U	0.056 U	0.057 U	0.056 U
Carbon Disulfide	ppbv	0.18 UJ	14 J	0.76	0.41 J	0.12 J
Carbon Tetrachloride	ppbv	0.41	0.43	0.36	0.52	0.63
Chlorobenzene	ppbv	0.058 U	0.054 U	0.045 U	0.045 U	0.045 U
Chloroethane	ppbv	0.11 U	0.099 U	0.044 J	0.084 U	0.083 U
Chloroform	ppbv	6.7	7.1	6.3	6.3	7.8
Chloromethane	ppbv	0.26 U	0.24 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	ppbv	23	25	19	21	26
cis-1,3-Dichloropropene	ppbv	0.12 U	0.11 U	0.091 U	0.092 U	0.091 U
Cyclohexane	ppbv	0.16 U	0.15 U	0.12 U	0.12 U	0.12 U
Dibromochloromethane	ppbv	0.034 U	0.031 U	0.026 U	0.026 U	0.026 U
Dichlorodifluoromethane (CFC 12)	ppbv	0.74	0.76	0.57	0.72	0.79
Dichloromethane (Methylene Chloride)	ppbv	0.15 U	0.14 U	0.12 U	0.12 U	0.12 U
d-Limonene	ppbv	0.094 U	0.086 U	0.072 U	0.072 U	0.072 U
Ethanol	ppbv	0.71 J	14 J	2.4 J	0.64 J	0.68 J
Ethyl Acetate	ppbv	0.29 U	0.27 U	0.22 U	0.22 U	0.83
Ethylbenzene	ppbv	0.066 U	0.06 U	0.082 J	0.051 U	0.051 U
Hexachlorobutadiene	ppbv	0.049 UJ	0.045 UJ	0.038 U	0.038 U	0.038 U
Cumene	ppbv	0.058 U	0.053 U	0.045 U	0.045 U	0.045 U
m,p-Xylenes	ppbv	0.13 U	0.12 U	0.098 U	0.099 U	0.098 U
Methyl Methacrylate	ppbv	0.25 U	0.23 U	0.2 U	0.2 U	0.2 U
Methyl tert-Butyl Ether	ppbv	0.075 U	0.068 U	0.057 U	0.058 U	0.057 U
Naphthalene	ppbv	0.099 U	0.091 U	0.68	0.077 U	0.076 U
n-Butyl Acetate	ppbv	0.074 U	0.068 U	0.057 U	0.057 U	0.057 U
n-Heptane	ppbv	0.13 U	0.12 U	0.098 U	0.098 U	0.098 U
Hexane	ppbv	0.15 U	0.14 U	0.11 U	0.11 U	0.11 U
n-Nonane	ppbv	0.1 U	0.094 U	0.079 U	0.079 U	0.079 U
n-Octane	ppbv	0.11 U	0.1 U	0.086 U	0.086 U	0.086 U
n-Propylbenzene	ppbv	0.058 U	0.053 U	0.045 U	0.045 U	0.045 U
o-Xylene	ppbv	0.066 U	0.06 U	0.051 U	0.051 U	0.051 U

Table D-1
Analytical Results - SVE Effluent
Off Depot AS/SVE Year 11, Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

	Sample ID	ODSVE-EFF-Y11Q1	ODSVE-DUP1-Y11Q1	ODSVE-EFF-Y11Q2	ODSVE-EFF-Y11Q3	ODSVE-EFF-Y11Q4
	Event	ODSVE-Y11Q1	ODSVE-Y11Q1	ODSVE-Y11Q2	ODSVE-Y11Q3	ODSVE-Y11Q4
	Date	12-Oct-21	12-Oct-21	13-Dec-21	13-Apr-22	7-Jun-22
	Lab ID	P2105399-001	P2105399-002	P2106529-001	P2201515-001	P2202553-001
Analyte	Units					
Propene	ppbv	0.31 UJ	0.77 J+	0.26 J	0.24 U	0.24 U
Styrene	ppbv	0.12 U	0.04 J	0.23	0.095 U	0.094 U
Tetrachloroethene	ppbv	1.9	1.9	2.1	2.6	2.2
Tetrahydrofuran (THF)	ppbv	0.11 U	0.057 U	0.088 U	0.088 U	0.11 J
Toluene	ppbv	0.076 U	0.069 U	0.28	0.025 J	0.076 J
trans-1,2-Dichloroethene	ppbv	0.51	0.51	0.53	0.62	0.54
trans-1,3-Dichloropropene	ppbv	0.11 U	0.11 U	0.088 U	0.089 U	0.088 U
Trichloroethene	ppbv	24	26	21	21	22
Trichlorofluoromethane	ppbv	0.29	0.29	0.25	0.28	0.33
Vinyl Acetate	ppbv	1.3 U	1.2 U	0.48 J	1 U	0.99 U
Vinyl Chloride	ppbv	0.069 J+	0.073 J+	0.048 J	0.069 J	0.082 J

Notes:

ppbv: part per billion volume

DQE Flags:

U: Analyte not detected above reporting limit

J: Estimated

J+: Estimated with a possible high bias (the target compound was recovered above the upper control limit in the associated laboratory spike samples)

Appendix E Laboratory Analytical Reports



2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

November 2, 2021

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT MEMPHIS / 10A023

Dear Larry:

Enclosed are the results of the samples submitted to our laboratory on October 13, 2021. For your reference, these analyses have been assigned our service request number P2105399.

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.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 5:14 pm, Nov 02, 2021

Sue Anderson
Project Manager



2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: KOMAN Government Solutions, LLC
Project: DDMT MEMPHIS / 10A023

Service Request No: P2105399

CASE NARRATIVE

The samples were received intact under chain of custody on October 13, 2021 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 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.

The upper control criteria were exceeded for propene and chloromethane in the Continuing Calibration Verification (CCV) analyzed on October 26, 2021. Therefore, a potential for a high bias exists for those associated sample concentrations reported with positive results. The data has been qualified accordingly.

The upper control criteria were exceeded for propene, chloromethane and vinyl acetate in the Laboratory Control Sample (LCS) analyzed on October 26, 2021. The upper control criterion for Freon-114 in the LCS was outside the upper control criterion but the recovery met the laboratory generated acceptance limits. The upper control criterion was exceeded for chloromethane in the Duplicate Laboratory Control Sample (DLCS). The upper control criterion was exceeded in the DLCS for Freon-114 and vinyl chloride but the recoveries met the laboratory generated acceptance limits. The data has been flagged accordingly. No corrective action was required.

Manual integrations were performed on the following samples and analytes). Refer to the raw data for additional information.

Sample Identification(s)	Analyte(s)
P2105399-002, 002dup	Acetone

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.3 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.



2655 Park Center Dr., Suite A
 Simi Valley, CA 93065
 T: +1 805 526 7161
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	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)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-008
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
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	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
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

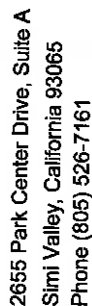
Client: KOMAN Government Solutions, LLC
Project ID: DDMT MEMPHIS / 10A023

Service Request: P2105399

Date Received: 10/13/2021
Time Received: 10:00

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
ODSVE-EFF-YIIQ1	P2105399-001	Air	10/12/2021	11:57	AS01631	-3.72	3.73	X
ODSVE-DUP1-YIIQ1	P2105399-002	Air	10/12/2021	11:57	AS00936	-2.84	3.56	X



P2105399

5 of 136

ALS Environmental **Sample Acceptance Check Form**

Client: Trinity Analysis & Development Corp. Work order: P2105399
 Project: DDMT MEMPHIS / 10A023
 Sample(s) received on: 10/13/21 Date opened: 10/13/21 by: DENISE.POSADA

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.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
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)? <u>Box sealing.</u> 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 <u>if necessary</u> 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?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2105399-001.01	6.0 L Silonite Can					
P2105399-002.01	6.0 L Silonite Can					

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01631

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.72

Final Pressure (psig): 3.73

Container Dilution Factor: 1.68

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.31	0.51	0.31	0.13	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.74	0.18	0.11	0.030	
74-87-3	Chloromethane	0.26	0.42	0.26	0.070	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.077	0.13	0.077	0.020	U
75-01-4	Vinyl Chloride	0.069	0.34	0.11	0.037	J
106-99-0	1,3-Butadiene	0.24	0.40	0.24	0.067	U
74-83-9	Bromomethane	0.074	0.22	0.074	0.032	U
75-00-3	Chloroethane	0.11	0.32	0.11	0.042	U
64-17-5	Ethanol	0.71	4.5	0.75	0.33	J
75-05-8	Acetonitrile	0.32	1.0	0.32	0.13	U
107-02-8	Acrolein	0.26	0.73	0.26	0.11	U
67-64-1	Acetone	1.4	3.7	1.8	0.85	J
75-69-4	Trichlorofluoromethane	0.29	0.16	0.048	0.024	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.42	0.68	0.42	0.15	U
107-13-1	Acrylonitrile	0.26	0.77	0.26	0.085	U
75-35-4	1,1-Dichloroethene	0.41	0.23	0.072	0.031	
75-09-2	Methylene Chloride	0.15	0.25	0.15	0.073	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.091	0.28	0.091	0.039	U
76-13-1	Trichlorotrifluoroethane	3.0	0.12	0.037	0.017	
75-15-0	Carbon Disulfide	0.18	0.59	0.18	0.086	U
156-60-5	trans-1,2-Dichloroethene	0.51	0.22	0.072	0.031	
75-34-3	1,1-Dichloroethane	0.21	0.22	0.071	0.032	J
1634-04-4	Methyl tert-Butyl Ether	0.075	0.25	0.075	0.029	U
108-05-4	Vinyl Acetate	1.3	2.4	1.3	0.57	U
78-93-3	2-Butanone (MEK)	0.078	0.57	0.19	0.063	J

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01631

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.72

Final Pressure (psig): 3.73

Container Dilution Factor: 1.68

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	23	0.22	0.072	0.032	
141-78-6	Ethyl Acetate	0.29	0.98	0.29	0.13	U
110-54-3	n-Hexane	0.15	0.25	0.15	0.052	U
67-66-3	Chloroform	6.7	0.19	0.059	0.024	
109-99-9	Tetrahydrofuran (THF)	0.11	0.57	0.11	0.038	U
107-06-2	1,2-Dichloroethane	0.071	0.22	0.071	0.024	U
71-55-6	1,1,1-Trichloroethane	0.19	0.16	0.049	0.020	
71-43-2	Benzene	0.089	0.26	0.089	0.041	U
56-23-5	Carbon Tetrachloride	0.41	0.13	0.043	0.020	
110-82-7	Cyclohexane	0.16	0.54	0.16	0.073	U
78-87-5	1,2-Dichloropropane	0.062	0.18	0.062	0.024	U
75-27-4	Bromodichloromethane	0.043	0.13	0.043	0.019	U
79-01-6	Trichloroethene	24	0.16	0.050	0.023	
123-91-1	1,4-Dioxane	0.075	0.24	0.075	0.029	U
80-62-6	Methyl Methacrylate	0.25	0.45	0.25	0.078	U
142-82-5	n-Heptane	0.13	0.22	0.13	0.035	U
10061-01-5	cis-1,3-Dichloropropene	0.12	0.19	0.12	0.031	U
108-10-1	4-Methyl-2-pentanone	0.086	0.45	0.086	0.030	U
10061-02-6	trans-1,3-Dichloropropene	0.11	0.19	0.11	0.041	U
79-00-5	1,1,2-Trichloroethane	0.045	0.16	0.052	0.017	J
108-88-3	Toluene	0.076	0.23	0.076	0.029	U
591-78-6	2-Hexanone	0.080	0.45	0.086	0.027	J
124-48-1	Dibromochloromethane	0.034	0.10	0.034	0.014	U
106-93-4	1,2-Dibromoethane	0.037	0.11	0.037	0.014	U
123-86-4	n-Butyl Acetate	0.074	0.39	0.074	0.026	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01631

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.72 Final Pressure (psig): 3.73

Container Dilution Factor: 1.68

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.11	0.19	0.11	0.043	U
127-18-4	Tetrachloroethene	1.9	0.13	0.042	0.017	
108-90-7	Chlorobenzene	0.058	0.19	0.058	0.026	U
100-41-4	Ethylbenzene	0.066	0.20	0.066	0.029	U
179601-23-1	m,p-Xylenes	0.13	0.43	0.13	0.054	U
75-25-2	Bromoform	0.052	0.085	0.052	0.018	U
100-42-5	Styrene	0.12	0.20	0.12	0.034	U
95-47-6	o-Xylene	0.066	0.20	0.066	0.030	U
111-84-2	n-Nonane	0.10	0.17	0.10	0.029	U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	0.13	0.042	0.018	
98-82-8	Cumene	0.058	0.18	0.058	0.026	U
80-56-8	alpha-Pinene	0.051	0.16	0.051	0.025	U
103-65-1	n-Propylbenzene	0.058	0.18	0.058	0.026	U
622-96-8	4-Ethyltoluene	0.11	0.18	0.11	0.029	U
108-67-8	1,3,5-Trimethylbenzene	0.058	0.18	0.058	0.026	U
95-63-6	1,2,4-Trimethylbenzene	0.055	0.18	0.055	0.025	U
100-44-7	Benzyl Chloride	0.11	0.36	0.11	0.039	U
541-73-1	1,3-Dichlorobenzene	0.048	0.15	0.048	0.022	U
106-46-7	1,4-Dichlorobenzene	0.048	0.15	0.048	0.023	U
95-50-1	1,2-Dichlorobenzene	0.048	0.15	0.048	0.022	U
5989-27-5	d-Limonene	0.094	0.15	0.094	0.033	U
96-12-8	1,2-Dibromo-3-chloropropane	0.056	0.17	0.056	0.017	U
120-82-1	1,2,4-Trichlorobenzene	0.072	0.25	0.072	0.029	U
91-20-3	Naphthalene	0.099	0.17	0.099	0.042	U
87-68-3	Hexachlorobutadiene	0.049	0.082	0.049	0.017	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS00936

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.84

Final Pressure (psig): 3.56

Container Dilution Factor: 1.54

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.77	0.47	0.29	0.12	V
75-71-8	Dichlorodifluoromethane (CFC 12)	0.76	0.17	0.10	0.027	
74-87-3	Chloromethane	0.24	0.38	0.24	0.064	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.019	0.12	0.071	0.019	J
75-01-4	Vinyl Chloride	0.073	0.31	0.10	0.034	J
106-99-0	1,3-Butadiene	0.22	0.36	0.22	0.061	U
74-83-9	Bromomethane	0.067	0.20	0.067	0.029	U
75-00-3	Chloroethane	0.099	0.30	0.099	0.039	U
64-17-5	Ethanol	14	4.1	0.69	0.30	
75-05-8	Acetonitrile	0.29	0.92	0.29	0.12	U
107-02-8	Acrolein	0.23	0.67	0.24	0.10	J
67-64-1	Acetone	1.9	3.4	1.7	0.78	J
75-69-4	Trichlorofluoromethane	0.29	0.14	0.044	0.022	
67-63-0	2-Propanol (Isopropyl Alcohol)	1.1	0.63	0.39	0.14	
107-13-1	Acrylonitrile	0.23	0.71	0.23	0.078	U
75-35-4	1,1-Dichloroethene	0.44	0.21	0.066	0.029	
75-09-2	Methylene Chloride	0.14	0.23	0.14	0.067	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.084	0.26	0.084	0.035	U
76-13-1	Trichlorotrifluoroethane	3.0	0.11	0.034	0.015	
75-15-0	Carbon Disulfide	14	0.54	0.16	0.079	
156-60-5	trans-1,2-Dichloroethene	0.51	0.21	0.066	0.029	
75-34-3	1,1-Dichloroethane	0.22	0.20	0.065	0.030	
1634-04-4	Methyl tert-Butyl Ether	0.068	0.23	0.068	0.027	U
108-05-4	Vinyl Acetate	1.2	2.2	1.2	0.53	U
78-93-3	2-Butanone (MEK)	0.57	0.52	0.17	0.057	

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

V = The continuing calibration verification standard and ending continuing calibration verification standard was outside (biased high) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS00936

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.84

Final Pressure (psig): 3.56

Container Dilution Factor: 1.54

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	25	0.20	0.066	0.029	
141-78-6	Ethyl Acetate	0.27	0.90	0.27	0.12	U
110-54-3	n-Hexane	0.14	0.23	0.14	0.048	U
67-66-3	Chloroform	7.1	0.17	0.054	0.022	
109-99-9	Tetrahydrofuran (THF)	0.057	0.52	0.10	0.035	J
107-06-2	1,2-Dichloroethane	0.065	0.20	0.065	0.022	U
71-55-6	1,1,1-Trichloroethane	0.20	0.15	0.045	0.019	
71-43-2	Benzene	0.082	0.24	0.082	0.037	U
56-23-5	Carbon Tetrachloride	0.43	0.12	0.039	0.018	
110-82-7	Cyclohexane	0.15	0.49	0.15	0.067	U
78-87-5	1,2-Dichloropropane	0.057	0.17	0.057	0.022	U
75-27-4	Bromodichloromethane	0.039	0.12	0.039	0.018	U
79-01-6	Trichloroethene	26	0.15	0.046	0.021	
123-91-1	1,4-Dioxane	0.068	0.22	0.068	0.027	U
80-62-6	Methyl Methacrylate	0.23	0.41	0.23	0.071	U
142-82-5	n-Heptane	0.12	0.20	0.12	0.032	U
10061-01-5	cis-1,3-Dichloropropene	0.11	0.17	0.11	0.028	U
108-10-1	4-Methyl-2-pentanone	0.079	0.41	0.079	0.027	U
10061-02-6	trans-1,3-Dichloropropene	0.11	0.17	0.11	0.037	U
79-00-5	1,1,2-Trichloroethane	0.046	0.15	0.048	0.015	J
108-88-3	Toluene	0.069	0.21	0.069	0.027	U
591-78-6	2-Hexanone	0.079	0.41	0.079	0.025	U
124-48-1	Dibromochloromethane	0.031	0.096	0.031	0.013	U
106-93-4	1,2-Dibromoethane	0.034	0.10	0.034	0.012	U
123-86-4	n-Butyl Acetate	0.068	0.36	0.068	0.024	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS00936

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.84 Final Pressure (psig): 3.56

Container Dilution Factor: 1.54

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.10	0.17	0.10	0.040	U
127-18-4	Tetrachloroethene	1.9	0.12	0.039	0.016	
108-90-7	Chlorobenzene	0.054	0.17	0.054	0.024	U
100-41-4	Ethylbenzene	0.060	0.18	0.060	0.027	U
179601-23-1	m,p-Xylenes	0.12	0.39	0.12	0.050	U
75-25-2	Bromoform	0.048	0.077	0.048	0.016	U
100-42-5	Styrene	0.040	0.18	0.11	0.031	J
95-47-6	o-Xylene	0.060	0.18	0.060	0.027	U
111-84-2	n-Nonane	0.094	0.15	0.094	0.026	U
79-34-5	1,1,2,2-Tetrachloroethane	0.26	0.12	0.038	0.017	
98-82-8	Cumene	0.053	0.16	0.053	0.024	U
80-56-8	alpha-Pinene	0.047	0.15	0.047	0.023	U
103-65-1	n-Propylbenzene	0.053	0.17	0.053	0.024	U
622-96-8	4-Ethyltoluene	0.10	0.17	0.10	0.027	U
108-67-8	1,3,5-Trimethylbenzene	0.053	0.16	0.053	0.024	U
95-63-6	1,2,4-Trimethylbenzene	0.050	0.16	0.050	0.023	U
100-44-7	Benzyl Chloride	0.10	0.33	0.10	0.036	U
541-73-1	1,3-Dichlorobenzene	0.044	0.13	0.044	0.020	U
106-46-7	1,4-Dichlorobenzene	0.044	0.13	0.044	0.021	U
95-50-1	1,2-Dichlorobenzene	0.044	0.14	0.044	0.020	U
5989-27-5	d-Limonene	0.086	0.14	0.086	0.030	U
96-12-8	1,2-Dibromo-3-chloropropane	0.051	0.16	0.051	0.016	U
120-82-1	1,2,4-Trichlorobenzene	0.066	0.23	0.066	0.027	U
91-20-3	Naphthalene	0.091	0.15	0.091	0.038	U
87-68-3	Hexachlorobutadiene	0.045	0.075	0.045	0.016	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P211026-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.30	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.077	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.19	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.41	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.46	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.35	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
108-05-4	Vinyl Acetate	0.77	1.4	0.77	0.34	U
78-93-3	2-Butanone (MEK)	0.11	0.34	0.11	0.037	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P211026-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.095	0.029	0.012	U
71-43-2	Benzene	0.053	0.16	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.080	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.32	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.079	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.097	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.14	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.11	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.095	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.062	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.23	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P211026-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.11	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.077	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.11	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.050	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.099	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.076	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.097	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.21	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.087	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.087	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.088	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.090	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.10	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.099	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.049	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 10/12/21
Date(s) Received: 10/13/21
Date(s) Analyzed: 10/26/21

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P211026-MB	97	91	76	70-130	
Lab Control Sample	P211026-LCS	96	90	81	70-130	
Duplicate Lab Control Sample	P211026-DLCS	92	93	83	70-130	
ODSVE-EFF-YIIQ1	P2105399-001	92	92	82	70-130	
ODSVE-DUP1-YIIQ1	P2105399-002	93	89	80	70-130	
ODSVE-DUP1-YIIQ1	P2105399-002DUP	94	88	79	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

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P211026-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	120	167	162	139	135	57-136	3	25	L
75-71-8	Dichlorodifluoromethane (CFC 12)	42.1	40.7	39.8	97	95	59-128	2	25	
74-87-3	Chloromethane	99.8	142	137	142	137	59-132	4	25	L
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	29.8	36.2	36.5	121	122	63-121	0.8	25	L
75-01-4	Vinyl Chloride	81.4	107	104	131	128	64-127	2	25	L
106-99-0	1,3-Butadiene	93.2	124	120	133	129	66-134	3	25	
74-83-9	Bromomethane	53.1	52.0	53.6	98	101	63-134	3	25	
75-00-3	Chloroethane	78.1	76.9	78.6	98	101	63-127	3	25	
64-17-5	Ethanol	442	508	502	115	114	59-125	0.9	25	
75-05-8	Acetonitrile	120	123	123	103	103	63-132	0	25	
107-02-8	Acrolein	182	200	201	110	110	62-126	0	25	
67-64-1	Acetone	431	436	429	101	100	58-128	1	25	
75-69-4	Trichlorofluoromethane	36.0	32.6	32.3	91	90	62-126	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	163	162	158	99	97	52-125	2	25	
107-13-1	Acrylonitrile	185	199	199	108	108	71-137	0	25	
75-35-4	1,1-Dichloroethene	53.0	50.7	51.0	96	96	61-133	0	25	
75-09-2	Methylene Chloride	59.9	56.1	56.3	94	94	62-115	0	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	65.2	67.1	66.1	103	101	71-131	2	25	
76-13-1	Trichlorotrifluoroethane	28.2	22.6	23.0	80	82	66-126	2	25	
75-15-0	Carbon Disulfide	133	129	127	97	95	57-134	2	25	
156-60-5	trans-1,2-Dichloroethene	52.5	53.0	52.7	101	100	67-124	1	25	
75-34-3	1,1-Dichloroethane	52.9	49.1	48.8	93	92	68-126	1	25	
1634-04-4	Methyl tert-Butyl Ether	57.2	52.2	51.8	91	91	66-126	0	25	
108-05-4	Vinyl Acetate	268	318	314	119	117	56-139	2	25	
78-93-3	2-Butanone (MEK)	138	142	141	103	102	67-130	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

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P211026-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	52.0	50.7	50.2	98	97	70-121	1	25	
141-78-6	Ethyl Acetate	161	163	156	101	97	65-128	4	25	
110-54-3	n-Hexane	59.0	59.9	57.5	102	97	63-120	5	25	
67-66-3	Chloroform	43.0	38.5	37.7	90	88	68-123	2	25	
109-99-9	Tetrahydrofuran (THF)	137	141	140	103	102	64-123	1	25	
107-06-2	1,2-Dichloroethane	51.9	47.8	46.5	92	90	65-128	2	25	
71-55-6	1,1,1-Trichloroethane	38.1	33.6	33.5	88	88	68-125	0	25	
71-43-2	Benzene	65.1	62.1	62.3	95	96	69-119	1	25	
56-23-5	Carbon Tetrachloride	32.1	29.3	29.4	91	92	68-132	1	25	
110-82-7	Cyclohexane	120	117	116	98	97	70-117	1	25	
78-87-5	1,2-Dichloropropane	44.6	44.4	44.2	100	99	69-123	1	25	
75-27-4	Bromodichloromethane	31.1	29.6	29.2	95	94	72-128	1	25	
79-01-6	Trichloroethene	38.0	38.3	38.7	101	102	71-123	1	25	
123-91-1	1,4-Dioxane	57.2	60.2	60.3	105	105	71-122	0	25	
80-62-6	Methyl Methacrylate	100	102	102	102	102	70-128	0	25	
142-82-5	n-Heptane	50.3	50.3	49.8	100	99	69-123	1	25	
10061-01-5	cis-1,3-Dichloropropene	45.8	48.6	48.1	106	105	70-128	0.9	25	
108-10-1	4-Methyl-2-pentanone	101	112	110	111	109	67-130	2	25	
10061-02-6	trans-1,3-Dichloropropene	44.1	42.9	42.2	97	96	75-133	1	25	
79-00-5	1,1,2-Trichloroethane	38.1	37.6	37.3	99	98	73-119	1	25	
108-88-3	Toluene	54.7	48.0	49.8	88	91	66-119	3	25	
591-78-6	2-Hexanone	99.1	106	107	107	108	62-128	0.9	25	
124-48-1	Dibromochloromethane	24.7	21.8	22.6	88	91	70-130	3	25	
106-93-4	1,2-Dibromoethane	27.1	24.9	25.9	92	96	74-122	4	25	
123-86-4	n-Butyl Acetate	85.5	89.8	90.8	105	106	65-134	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.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P211026-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	44.5	41.3	42.3	93	95	69-121	2	25	
127-18-4	Tetrachloroethene	31.3	24.0	25.0	77	80	66-124	4	25	
108-90-7	Chlorobenzene	44.7	41.9	42.9	94	96	70-119	2	25	
100-41-4	Ethylbenzene	47.4	43.0	44.1	91	93	70-124	2	25	
179601-23-1	m,p-Xylenes	95.8	83.7	85.4	87	89	61-134	2	25	
75-25-2	Bromoform	20.3	16.4	16.9	81	83	66-139	2	25	
100-42-5	Styrene	47.5	44.9	46.1	95	97	73-127	2	25	
95-47-6	o-Xylene	47.9	41.8	42.8	87	89	67-125	2	25	
111-84-2	n-Nonane	39.7	40.1	40.5	101	102	63-128	1	25	
79-34-5	1,1,2,2-Tetrachloroethane	30.3	30.4	31.0	100	102	65-127	2	25	
98-82-8	Cumene	41.9	37.2	38.0	89	91	68-124	2	25	
80-56-8	alpha-Pinene	37.7	35.3	36.2	94	96	62-136	2	25	
103-65-1	n-Propylbenzene	42.3	36.6	37.4	87	88	69-123	1	25	
622-96-8	4-Ethyltoluene	42.3	40.6	41.5	96	98	67-129	2	25	
108-67-8	1,3,5-Trimethylbenzene	42.3	38.3	39.3	91	93	67-130	2	25	
95-63-6	1,2,4-Trimethylbenzene	41.9	41.2	41.9	98	100	66-132	2	25	
100-44-7	Benzyl Chloride	80.4	81.2	82.8	101	103	50-147	2	25	
541-73-1	1,3-Dichlorobenzene	34.6	35.6	36.6	103	106	65-130	3	25	
106-46-7	1,4-Dichlorobenzene	34.9	33.8	34.7	97	99	60-131	2	25	
95-50-1	1,2-Dichlorobenzene	34.9	34.6	35.4	99	101	63-129	2	25	
5989-27-5	d-Limonene	37.0	37.6	38.1	102	103	65-136	1	25	
96-12-8	1,2-Dibromo-3-chloropropane	41.8	36.6	37.4	88	89	73-133	1	25	
120-82-1	1,2,4-Trichlorobenzene	56.6	44.0	44.9	78	79	55-142	1	25	
91-20-3	Naphthalene	40.1	33.9	34.9	85	87	57-138	2	25	
87-68-3	Hexachlorobutadiene	19.9	13.0	13.4	65	67	56-138	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 DUPLICATE SUMMARY RESULTS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-002DUP

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS00936

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.84

Final Pressure (psig): 3.56

Container Dilution Factor: 1.54

Compound	Duplicate		Average	% RPD	RPD Limit	Data Qualifier
	Sample Result	Sample Result				
	ppbV	ppbV	ppbV			
Propene	0.773	0.884	0.8285	13	25	V
Dichlorodifluoromethane (CFC 12)	0.760	0.754	0.757	0.8	25	
Chloromethane	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.0185	0.0205	0.0195	10	25	J
Vinyl Chloride	0.0729	0.0777	0.0753	6	25	J
1,3-Butadiene	ND	ND	-	-	25	
Bromomethane	ND	ND	-	-	25	
Chloroethane	ND	ND	-	-	25	
Ethanol	14.0	14.1	14.05	0.7	25	
Acetonitrile	ND	ND	-	-	25	
Acrolein	0.226	0.235	0.2305	4	25	J
Acetone	1.94	1.78	1.86	9	25	J
Trichlorofluoromethane	0.288	0.291	0.2895	1	25	
2-Propanol (Isopropyl Alcohol)	1.15	1.08	1.115	6	25	
Acrylonitrile	ND	ND	-	-	25	
1,1-Dichloroethene	0.436	0.444	0.44	2	25	
Methylene Chloride	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	-	-	25	
Trichlorotrifluoroethane	2.96	2.88	2.92	3	25	
Carbon Disulfide	14.3	14.2	14.25	0.7	25	
trans-1,2-Dichloroethene	0.507	0.503	0.505	0.8	25	
1,1-Dichloroethane	0.215	0.209	0.212	3	25	
Methyl tert-Butyl Ether	ND	ND	-	-	25	
Vinyl Acetate	ND	ND	-	-	25	
2-Butanone (MEK)	0.567	0.558	0.5625	2	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

V = The continuing calibration verification standard and ending continuing calibration verification standard was outside (biased high) the specified limits for this compound.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-002DUP

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS00936

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.84

Final Pressure (psig): 3.56

Container Dilution Factor: 1.54

Compound	Duplicate		Average	% RPD	RPD Limit	Data Qualifier
	Sample Result	Sample Result				
	ppbV	ppbV	ppbV			
cis-1,2-Dichloroethene	25.2	25.0	25.1	0.8	25	
Ethyl Acetate	ND	ND	-	-	25	
n-Hexane	ND	ND	-	-	25	
Chloroform	7.08	7.03	7.055	0.7	25	
Tetrahydrofuran (THF)	0.0569	0.0528	0.05485	7	25	J
1,2-Dichloroethane	ND	ND	-	-	25	
1,1,1-Trichloroethane	0.198	0.192	0.195	3	25	
Benzene	ND	ND	-	-	25	
Carbon Tetrachloride	0.433	0.423	0.428	2	25	
Cyclohexane	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	-	-	25	
Trichloroethene	26.4	26.2	26.3	0.8	25	
1,4-Dioxane	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	-	-	25	
n-Heptane	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	-	-	25	
1,1,2-Trichloroethane	0.0460	0.0491	0.04755	7	25	J
Toluene	ND	ND	-	-	25	
2-Hexanone	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	-	-	25	
n-Butyl Acetate	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-YIIQ1

Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

ALS Sample ID: P2105399-002DUP

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS00936

Date Collected: 10/12/21

Date Received: 10/13/21

Date Analyzed: 10/26/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.84

Final Pressure (psig): 3.56

Container Dilution Factor: 1.54

Compound	Sample Result ppbV	Duplicate Sample Result ppbV	Average ppbV	% RPD	RPD Limit	Data Qualifier
n-Octane	ND	ND	-	-	25	
Tetrachloroethene	1.94	1.87	1.905	4	25	
Chlorobenzene	ND	ND	-	-	25	
Ethylbenzene	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	-	-	25	
Bromoform	ND	ND	-	-	25	
Styrene	0.0402	0.0384	0.0393	5	25	J
o-Xylene	ND	ND	-	-	25	
n-Nonane	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	0.258	0.249	0.2535	4	25	
Cumene	ND	ND	-	-	25	
alpha-Pinene	ND	ND	-	-	25	
n-Propylbenzene	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	-	-	25	
d-Limonene	ND	ND	-	-	25	
1,2-Dibromo-3-chloropropane	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	-	-	25	
Naphthalene	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 10262103.D
Date Analyzed: 10/26/21
Time Analyzed: 03:52

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P211026-LCS	10262104.D	04:26
Duplicate Lab Control Sample	P211026-DLCS	10262105.D	05:00
ODSVE-EFF-YIIQ1	P2105399-001	10262111.D	10:04
ODSVE-DUP1-YIIQ1	P2105399-002	10262112.D	10:38
ODSVE-DUP1-YIIQ1 (Lab Duplicate)	P2105399-002DUP	10262113.D	11:12

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT MEMPHIS / 10A023

ALS Project ID: P2105399

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:
Lab File ID: 10262101.D
Date Analyzed: 10/26/21
Time Analyzed: 02:45

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	157257	11.09	705425	13.20	154663	17.51
Upper Limit	220160	11.42	987595	13.53	216528	17.84
Lower Limit	94354	10.76	423255	12.87	92798	17.18

Client Sample ID		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA	#	RT	#	AREA	#
01	Method Blank	141810	11.06	646027	13.19	140225	17.51
02	Lab Control Sample	149346	11.08	673192	13.20	151856	17.51
03	Duplicate Lab Control Sample	162331	11.08	721890	13.20	155673	17.51
04	ODSVE-EFF-YIIQ1	170383	11.07	754839	13.20	161667	17.51
05	ODSVE-DUP1-YIIQ1	157855	11.07	695874	13.20	156861	17.51
06	ODSVE-DUP1-YIIQ1 (Lab Duplicate)	157455	11.07	695489	13.20	159487	17.51
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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 specified limits.

Data File : I:\MS16\DATA\2021_10\26\10262111.D
 Acq On : 26 Oct 2021 10:04
 Sample : P2105399-001 (1000mL)
 Misc : S34-09132101

Vial: 1
 Operator: WA
 Inst : GCMS-16

T2 10/27/21

Quant Time: Oct 27 15:01:11 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	170383	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.20	114	754839	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	161667	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	300813	11.431	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.44%
57) Toluene-d8 (SS2)	15.65	98	775427	11.454	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.60%
73) Bromofluorobenzene (SS3)	18.92	174	253000	10.202	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	81.60%

Target Compounds

						Qvalue
2) Propene	4.08	42	2830	0.113	ng	# 39
3) Dichlorodifluoromethan...	4.22	85	81496	2.181	ng	100
4) Chloromethane	4.53	50	227	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	d	
6) Vinyl Chloride	4.93	62	2225	0.105	ng	88
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	6.31	45	13021	0.798	ng	93
11) Acetonitrile	6.60	41	2011	N.D.		
12) Acrolein	6.78	56	1598	0.128	ng	100
13) Acetone	6.98	58	29020	1.923	ng	93
14) Trichlorofluoromethane	7.18	101	33570	0.955	ng	99
15) 2-Propanol (Isopropanol)	7.48	45	6814	0.141	ng	69
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	8.13	96	16420	0.967	ng	99
18) 2-Methyl-2-Propanol (t...	8.13	59	879	N.D.		
19) Methylene Chloride	8.35	84	604	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	8.77	151	228479	13.495	ng	87
22) Carbon Disulfide	8.62	76	6312	0.098	ng	86
23) trans-1,2-Dichloroethene	9.62	61	33002	1.193	ng	99
24) 1,1-Dichloroethane	9.88	63	17615	0.498	ng	99
25) Methyl tert-Butyl Ether	10.04	73	434	N.D.		
26) Vinyl Acetate	10.14	86	327	0.097	ng	# 1
27) 2-Butanone (MEK)	10.44	72	1597	0.136	ng	# 1
28) cis-1,2-Dichloroethene	10.89	61	1524124	54.605	ng	95
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	0.00	61	0	N.D.	d	
31) n-Hexane	11.19	57	1425	N.D.		
32) Chloroform	11.23	83	635623	19.488	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	12.05	62	776	N.D.		
38) 1,1,1-Trichloroethane	12.32	97	18593	0.609	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	12.83	56	3175	No Calib	#	
41) Benzene	12.81	78	4746	0.066	ng	94
42) Carbon Tetrachloride	12.96	117	39475	1.538	ng	99
43) Cyclohexane	13.09	84	344	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	13.66	63	104	N.D.		
46) Bromodichloromethane	13.85	83	956	N.D.		
47) Trichloroethene	13.90	130	1449283	78.338	ng	100
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	13.97	57	2820	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.	d	

Data File : I:\MS16\DATA\2021_10\26\10262111.D
 Acq On : 26 Oct 2021 10:04
 Sample : P2105399-001 (1000mL)
 Misc : S34-09132101

Vial: 1
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 27 15:01:11 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

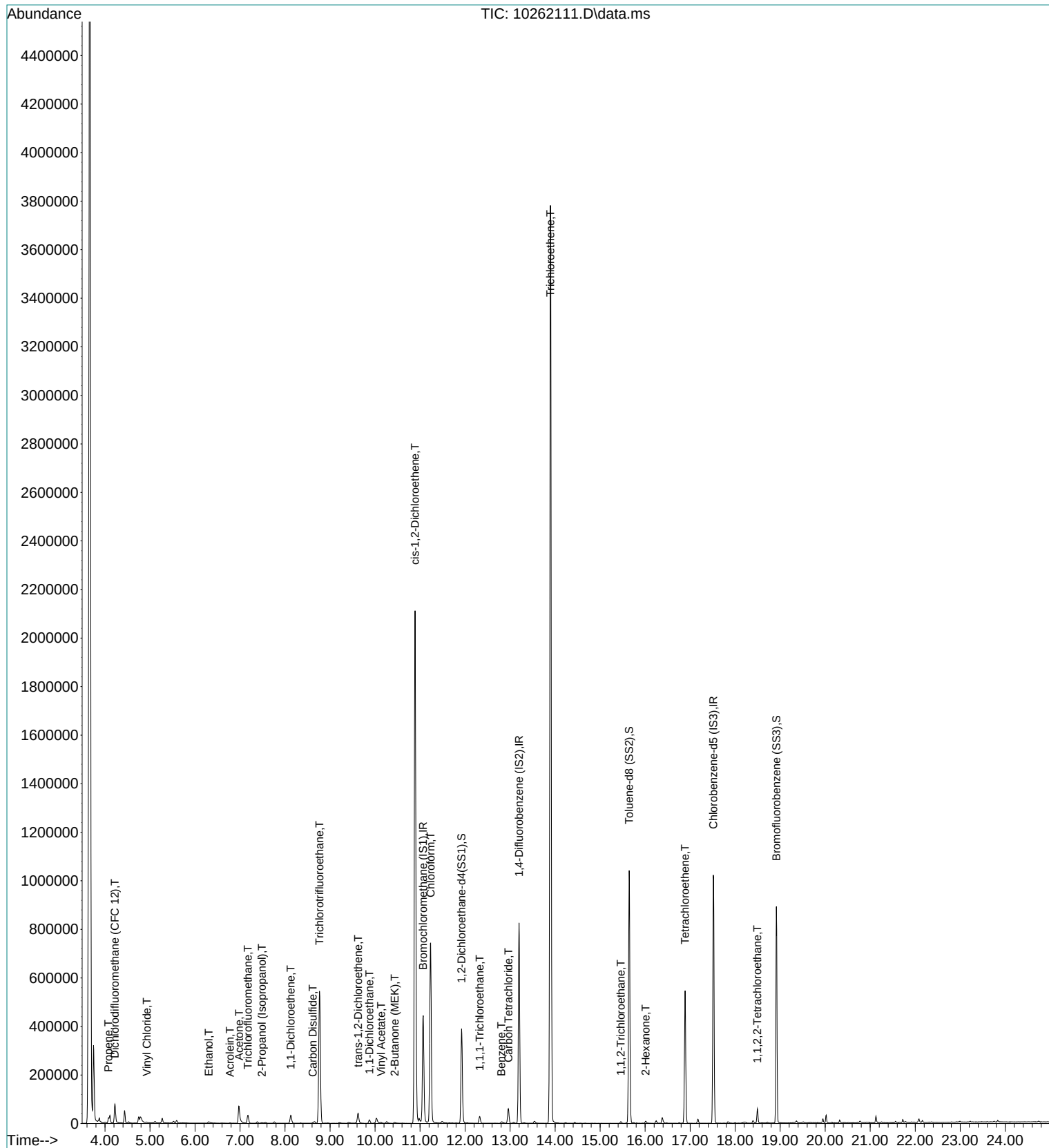
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	363	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.46	97	2458	0.145	ng	95
58) Toluene	15.75	91	2416	N.D.		
59) 2-Hexanone	16.01	43	8868	0.195	ng	91
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.65	43	637	N.D.		
63) n-Octane	16.76	57	537	N.D.		
64) Tetrachloroethene	16.89	166	179532	7.805	ng	100
65) Chlorobenzene	17.56	112	314	N.D.		
66) Ethylbenzene	17.93	91	349	N.D.		
67) m- & p-Xylenes	18.08	91	651	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.42	104	227	N.D.		
70) o-Xylene	18.52	91	331	N.D.		
71) n-Nonane	18.72	43	1593	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.49	83	29984	1.010	ng	97
74) Cumene	18.91	105	356	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	19.49	91	106	N.D.		
77) 3-Ethyltoluene	19.63	105	110	No Calib	#	
78) 4-Ethyltoluene	19.63	105	110	N.D.		
79) 1,3,5-Trimethylbenzene	19.63	105	110	N.D.		
80) alpha-Methylstyrene	19.83	118	438	No Calib	#	
81) 2-Ethyltoluene	19.63	105	110	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.06	105	398	N.D.		
83) n-Decane	19.95	58	117	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	20.25	146	258	N.D.		
86) 1,4-Dichlorobenzene	20.25	146	258	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	20.43	119	373	N.D.		
89) 1,2,3-Trimethylbenzene	20.06	105	259	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.57	68	121	N.D.		
92) 1,2-Dibromo-3-Chloropr...	20.86	157	111	N.D.		
93) n-Undecane	21.13	57	6093	No Calib		
94) 1,2,4-Trichlorobenzene	22.06	180	570	N.D.		
95) Naphthalene	22.16	128	1271	N.D.		
96) n-Dodecane	22.16	57	2229	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	17.99	55	336	No Calib	#	
99) tert-Butylbenzene	20.02	119	627	N.D.		
100) n-Butylbenzene	20.79	91	488	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data File : I:\MS16\DATA\2021_10\26\10262111.D
Acq On : 26 Oct 2021 10:04
Sample : P2105399-001 (1000mL)
Misc : S34-09132101

Vial: 1
Operator: WA
Inst : GCMS-16

Quant Time: Oct 27 15:01:11 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M



Data File : I:\MS16\DATA\2021_10\26\10262111.D
 Acq On : 26 Oct 2021 10:04
 Sample : P2105399-001 (1000mL)
 Misc : S34-09132101

Vial: 1
 Operator: WA
 Inst : GCMS-16

Tz 10/27/21

Quant Time: Oct 27 15:01:11 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:T015A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	170383	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.20	114	754839	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	161667	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	300813	11.431	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.44%
57) Toluene-d8 (SS2)	15.65	98	775427	11.454	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.60%
73) Bromofluorobenzene (SS3)	18.92	174	253000	10.202	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	81.60%

Target Compounds

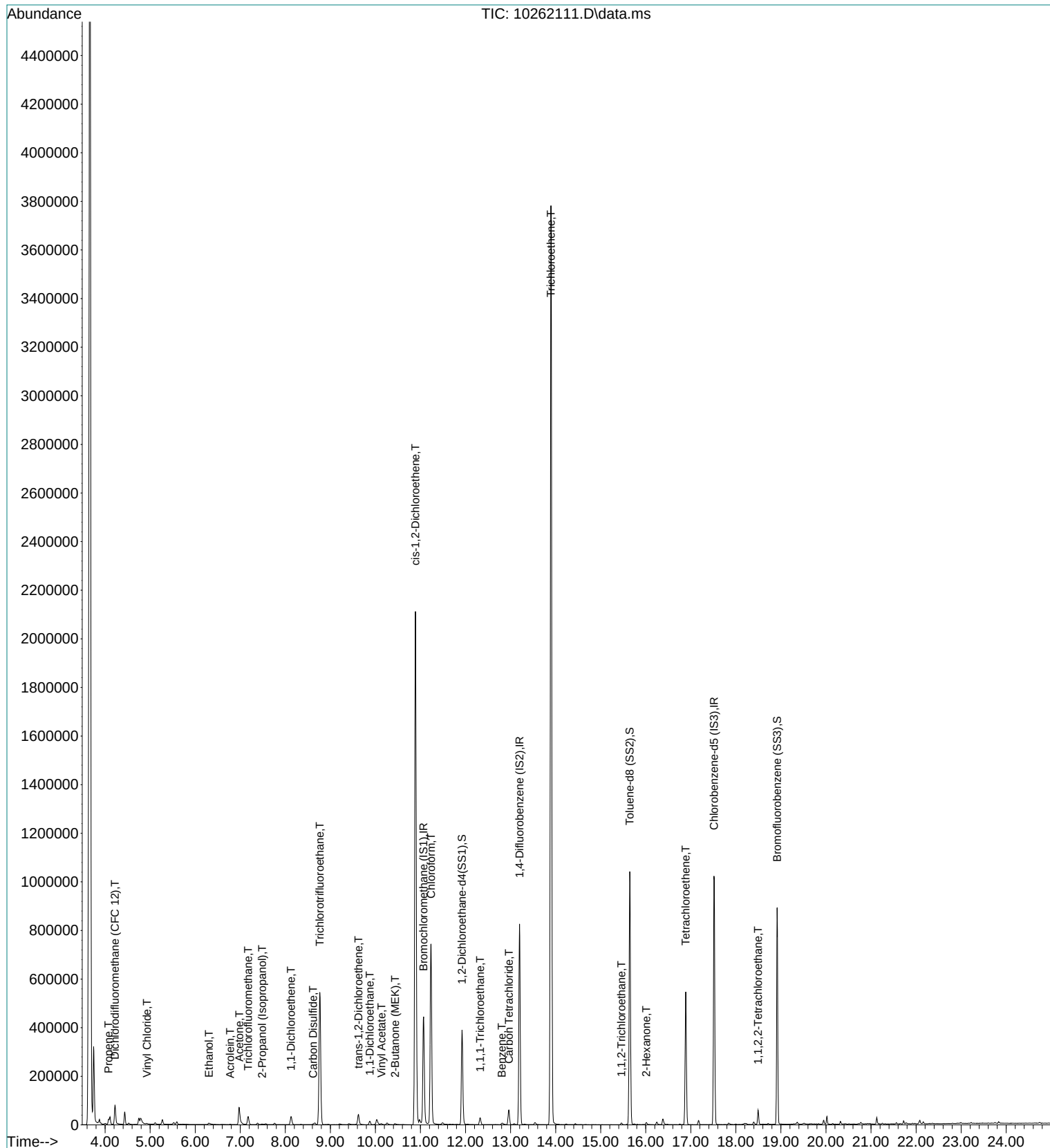
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Propene	4.08	42	2830	0.113	ng	# 39
3) Dichlorodifluoromethan...	4.22	85	81496	2.181	ng	100
6) Vinyl Chloride	4.93	62	2225	0.105	ng	88
10) Ethanol	6.31	45	13021	0.798	ng	93
12) Acrolein	6.78	56	1598	0.128	ng	100
13) Acetone	6.98	58	29020	1.923	ng	93
14) Trichlorofluoromethane	7.18	101	33570	0.955	ng	99
15) 2-Propanol (Isopropanol)	7.48	45	6814	0.141	ng	69
17) 1,1-Dichloroethene	8.13	96	16420	0.967	ng	99
21) Trichlorotrifluoroethane	8.77	151	228479	13.495	ng	87
22) Carbon Disulfide	8.62	76	6312	0.098	ng	86
23) trans-1,2-Dichloroethene	9.62	61	33002	1.193	ng	99
24) 1,1-Dichloroethane	9.88	63	17615	0.498	ng	99
26) Vinyl Acetate	10.14	86	327	0.097	ng	# 1
27) 2-Butanone (MEK)	10.44	72	1597	0.136	ng	# 1
28) cis-1,2-Dichloroethene	10.89	61	1524124	54.605	ng	95
32) Chloroform	11.23	83	635623	19.488	ng	99
38) 1,1,1-Trichloroethane	12.32	97	18593	0.609	ng	97
41) Benzene	12.81	78	4746	0.066	ng	94
42) Carbon Tetrachloride	12.96	117	39475	1.538	ng	99
47) Trichloroethene	13.90	130	1449283	78.338	ng	100
55) 1,1,2-Trichloroethane	15.46	97	2458	0.145	ng	95
59) 2-Hexanone	16.01	43	8868	0.195	ng	91
64) Tetrachloroethene	16.89	166	179532	7.805	ng	100
72) 1,1,2,2-Tetrachloroethane	18.49	83	29984	1.010	ng	97

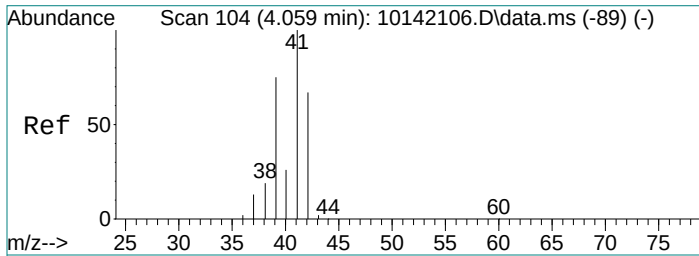
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS16\DATA\2021_10\26\10262111.D
Acq On : 26 Oct 2021 10:04
Sample : P2105399-001 (1000mL)
Misc : S34-09132101

Vial: 1
Operator: WA
Inst : GCMS-16

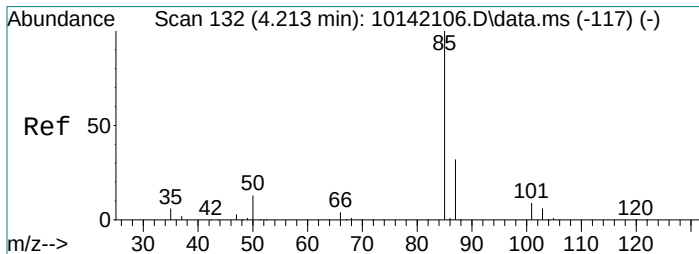
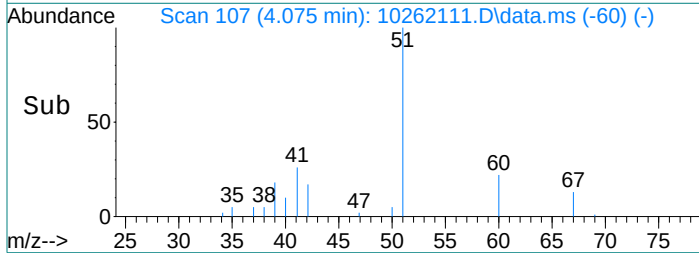
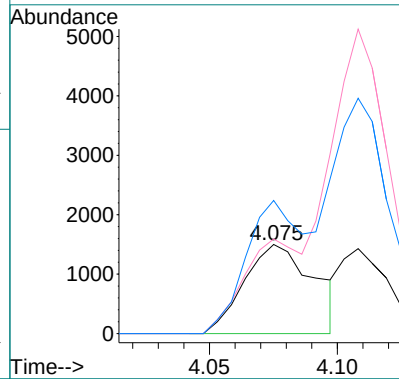
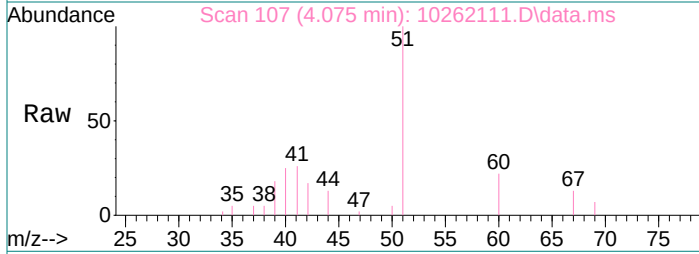
Quant Time: Oct 27 15:01:11 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M





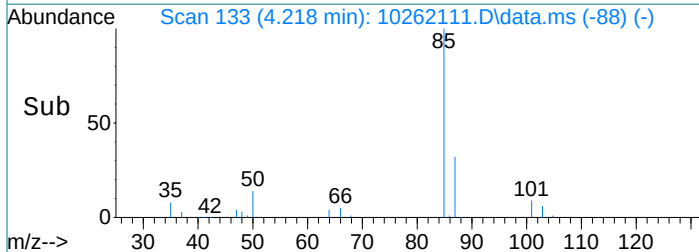
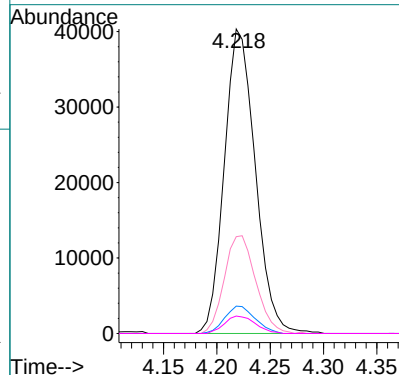
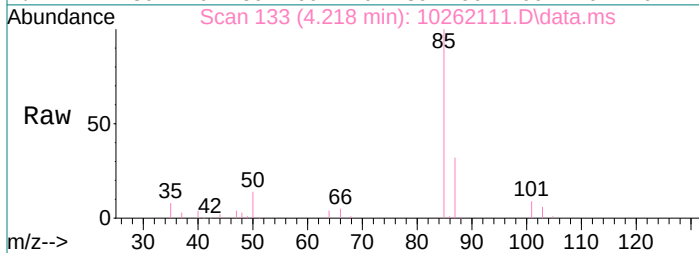
#2
 Propene
 Concen: 0.11 ng
 RT: 4.08 min Scan# 107
 Delta R.T. 0.011 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

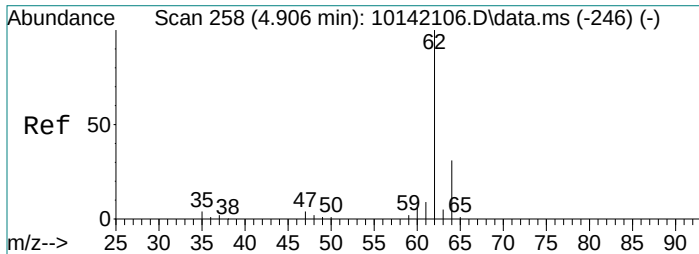
Tgt Ion: 42 Resp: 2830
 Ion Ratio Lower Upper
 42 100
 39 0.0 92.3 132.3#
 41 114.5 131.3 171.3#



#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.18 ng
 RT: 4.22 min Scan# 133
 Delta R.T. 0.000 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

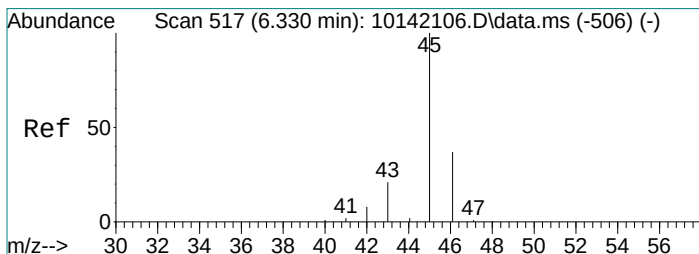
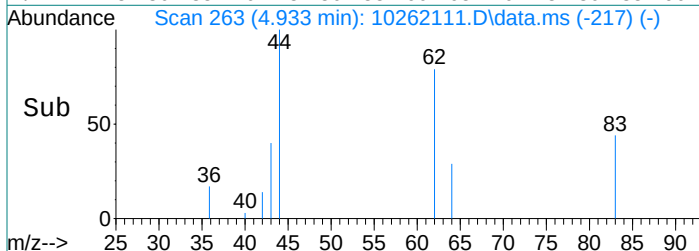
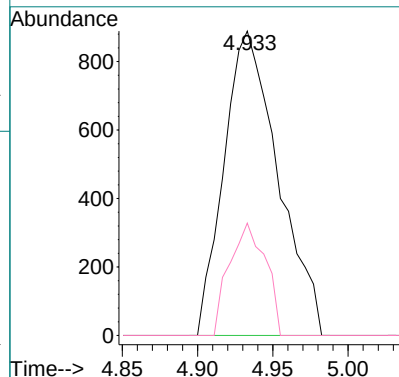
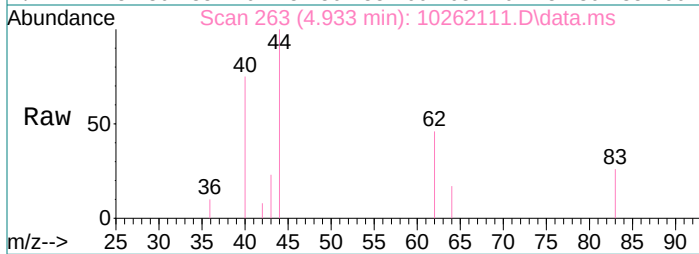
Tgt Ion: 85 Resp: 81496
 Ion Ratio Lower Upper
 85 100
 87 32.5 12.4 52.4
 101 8.8 0.0 29.0
 103 5.7 0.0 25.9





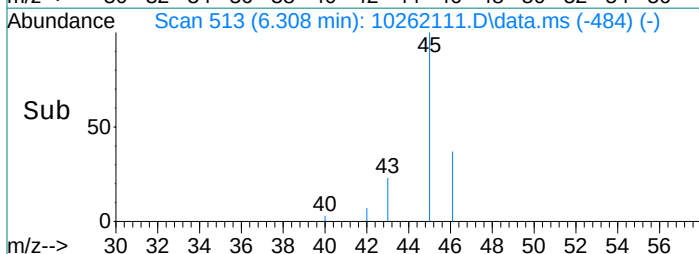
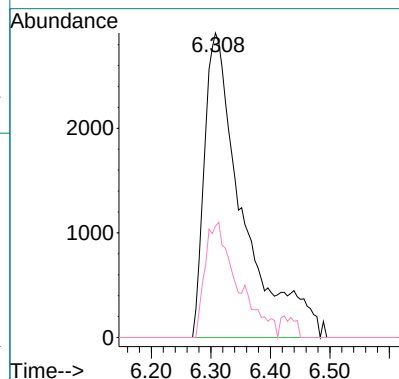
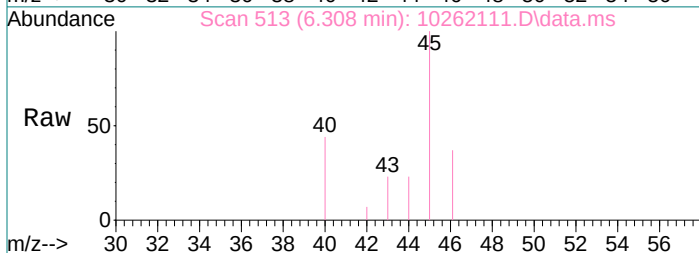
#6
Vinyl Chloride
Concen: 0.10 ng
RT: 4.93 min Scan# 263
Delta R.T. 0.005 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

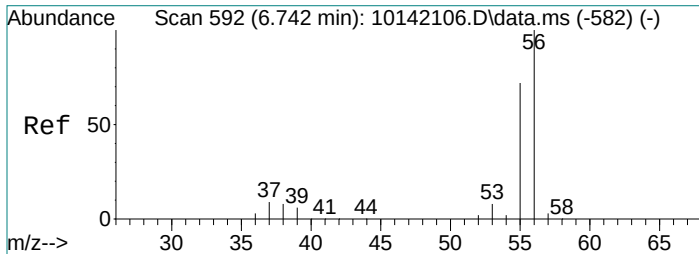
Tgt Ion: 62 Resp: 2225
Ion Ratio Lower Upper
62 100
64 24.6 11.0 51.0



#10
Ethanol
Concen: 0.80 ng
RT: 6.31 min Scan# 513
Delta R.T. -0.088 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

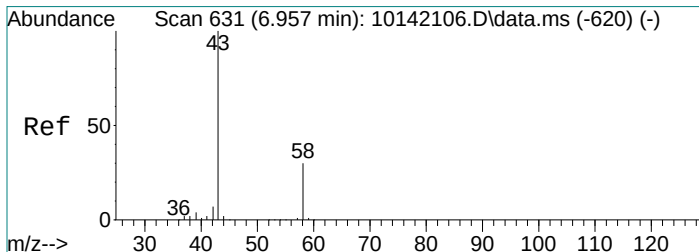
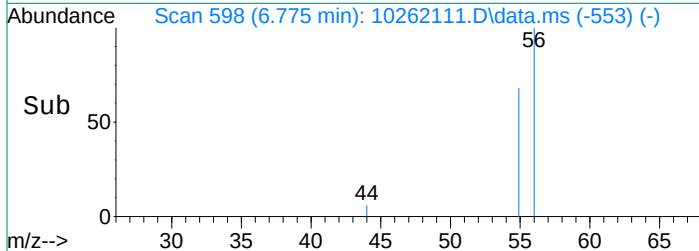
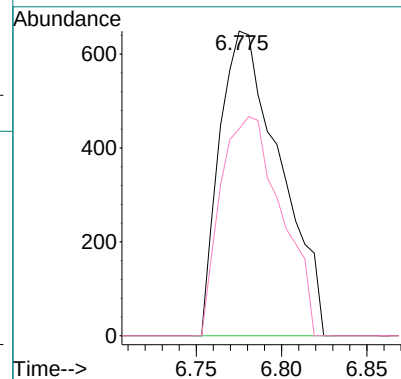
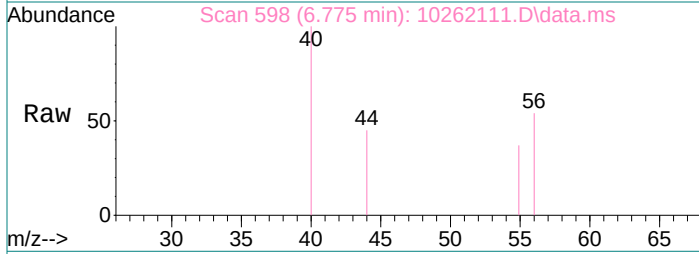
Tgt Ion: 45 Resp: 13021
Ion Ratio Lower Upper
45 100
46 32.3 16.6 56.6





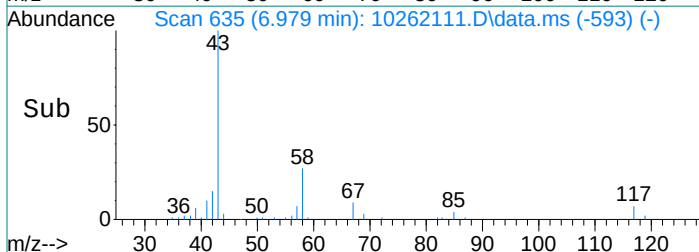
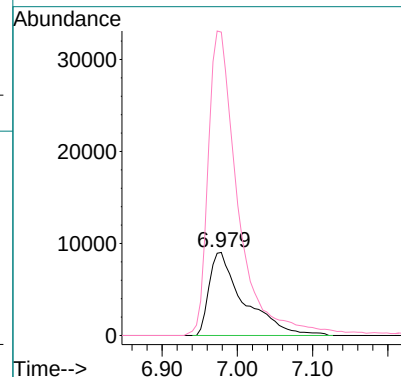
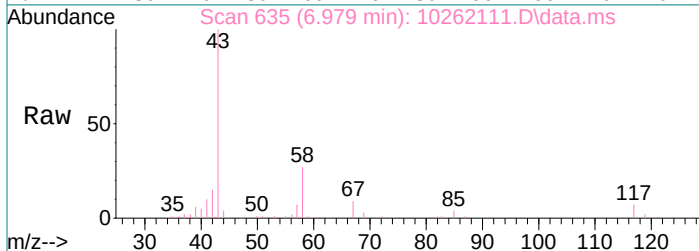
#12
Acrolein
Concen: 0.13 ng
RT: 6.78 min Scan# 598
Delta R.T. -0.000 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

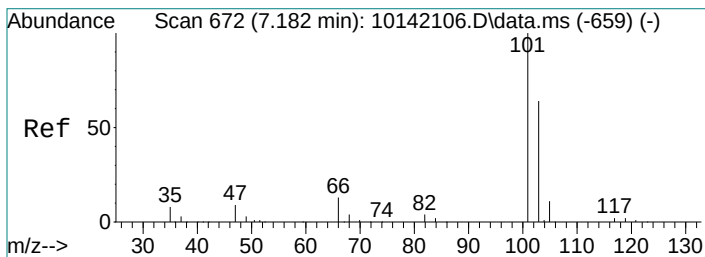
Tgt Ion: 56 Resp: 1598
Ion Ratio Lower Upper
56 100
55 72.0 52.1 92.1



#13
Acetone
Concen: 1.92 ng
RT: 6.98 min Scan# 635
Delta R.T. -0.017 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

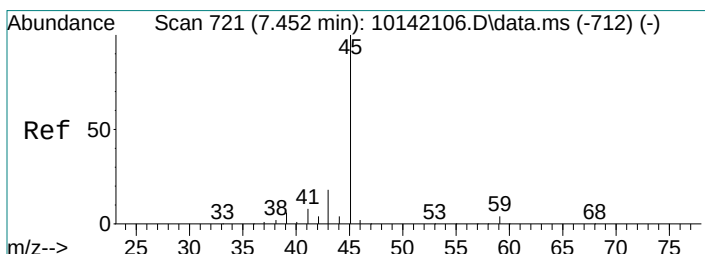
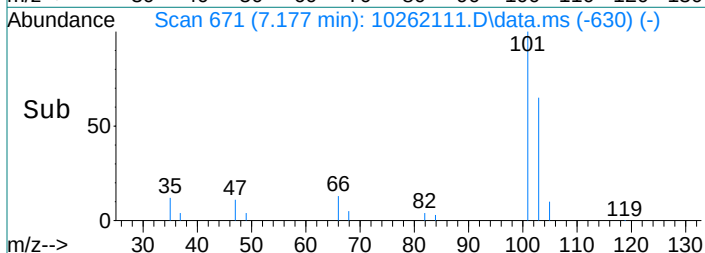
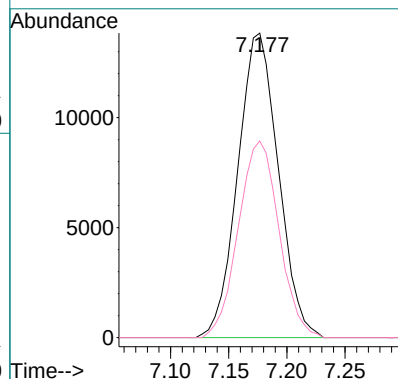
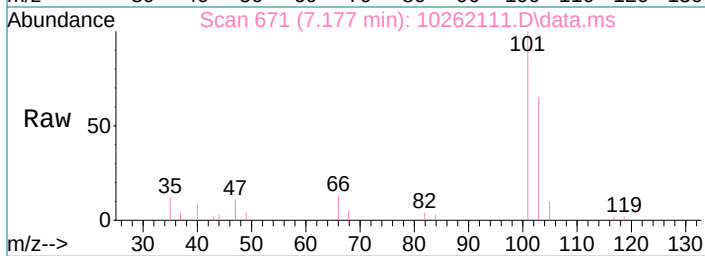
Tgt Ion: 58 Resp: 29020
Ion Ratio Lower Upper
58 100
43 318.1 303.0 363.0





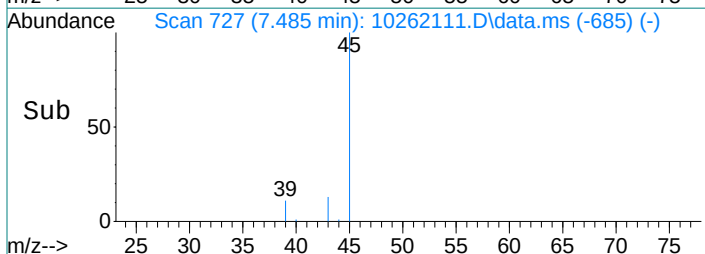
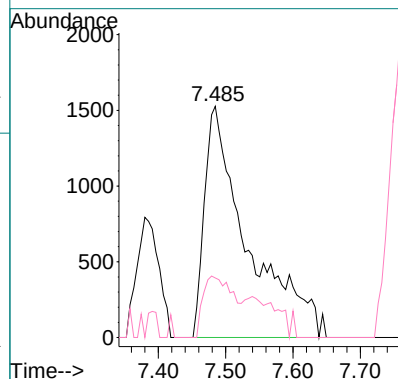
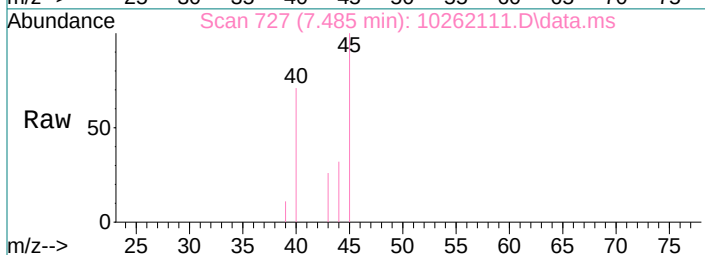
#14
 Trichlorofluoromethane
 Concen: 0.96 ng
 RT: 7.18 min Scan# 671
 Delta R.T. -0.022 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

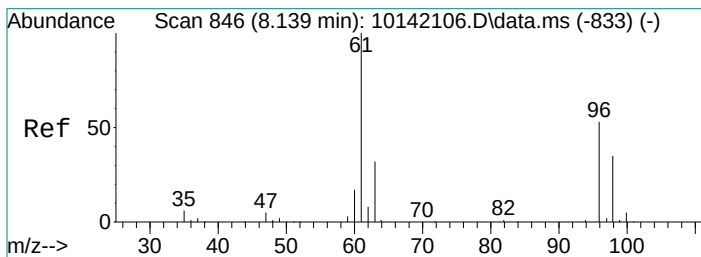
Tgt Ion: 101 Resp: 33570
 Ion Ratio Lower Upper
 101 100
 103 64.7 45.2 85.2



#15
 2-Propanol (Isopropanol)
 Concen: 0.14 ng
 RT: 7.48 min Scan# 727
 Delta R.T. -0.017 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

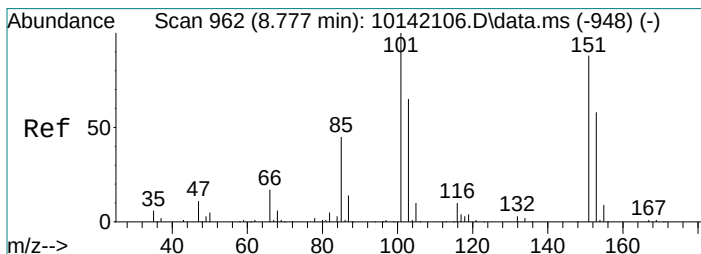
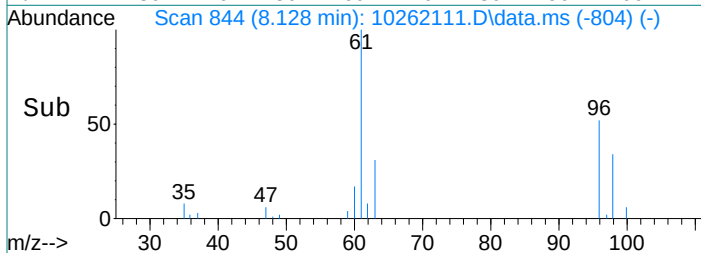
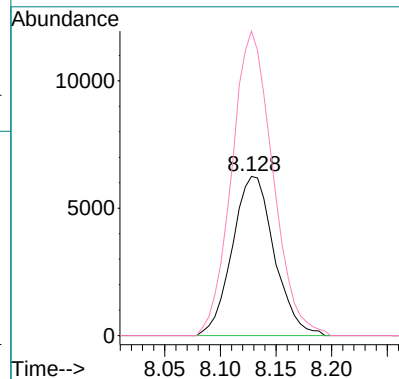
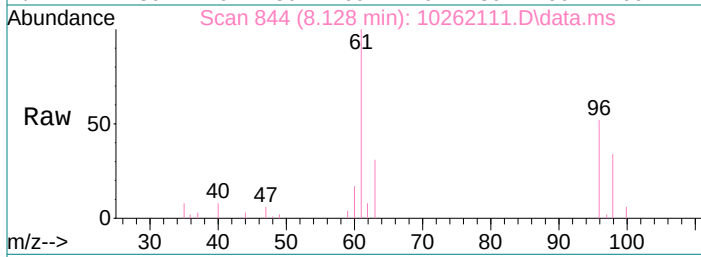
Tgt Ion: 45 Resp: 6814
 Ion Ratio Lower Upper
 45 100
 43 32.2 0.0 38.4





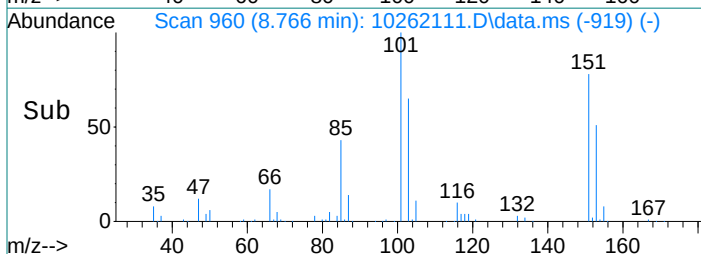
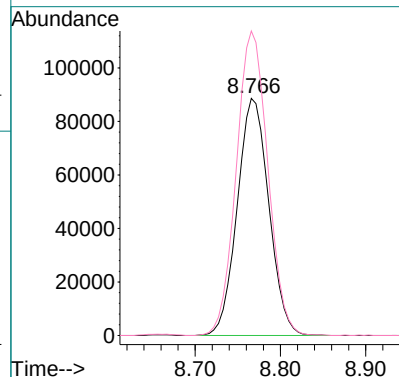
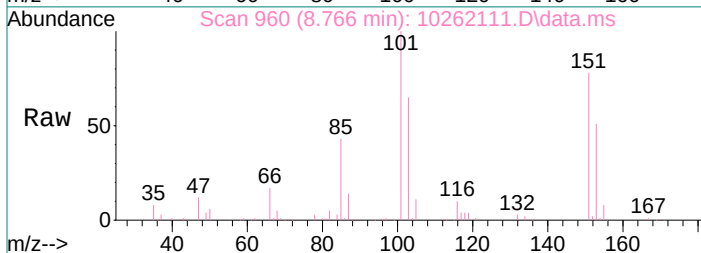
#17
1,1-Dichloroethene
Concen: 0.97 ng
RT: 8.13 min Scan# 844
Delta R.T. -0.028 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

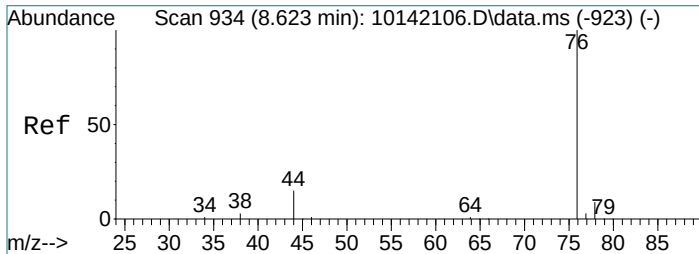
Tgt Ion: 96 Resp: 16420
Ion Ratio Lower Upper
96 100
61 186.9 169.0 209.0



#21
Trichlorotrifluoroethane
Concen: 13.50 ng
RT: 8.77 min Scan# 960
Delta R.T. -0.022 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

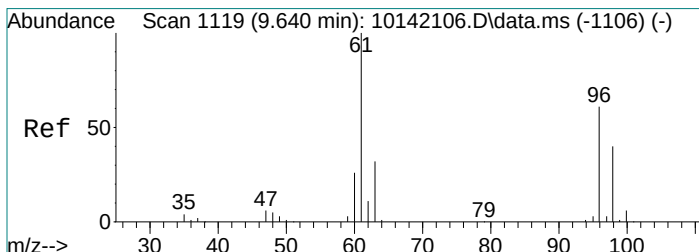
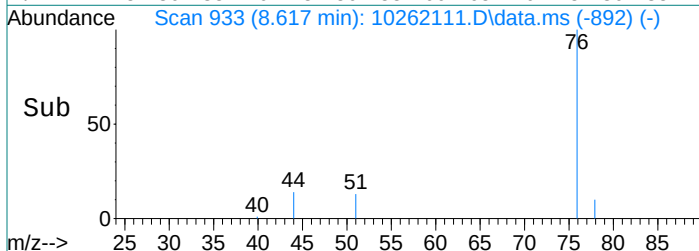
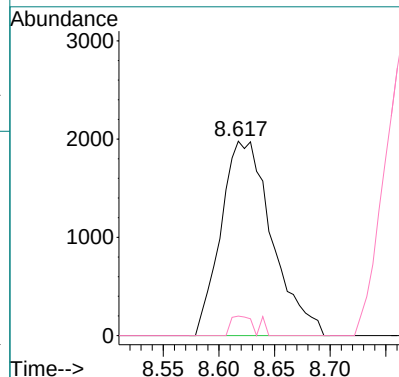
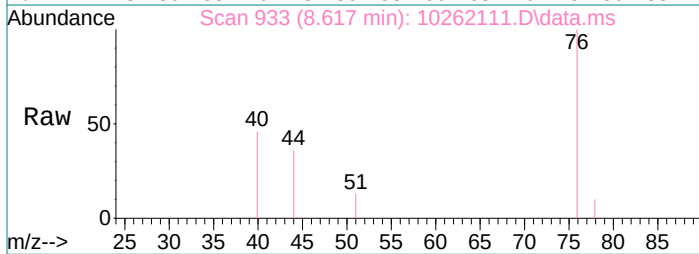
Tgt Ion: 151 Resp: 228479
Ion Ratio Lower Upper
151 100
101 128.3 93.9 133.9





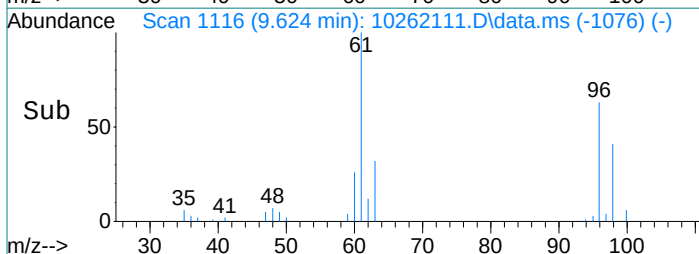
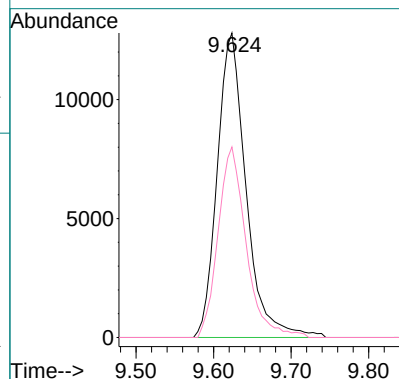
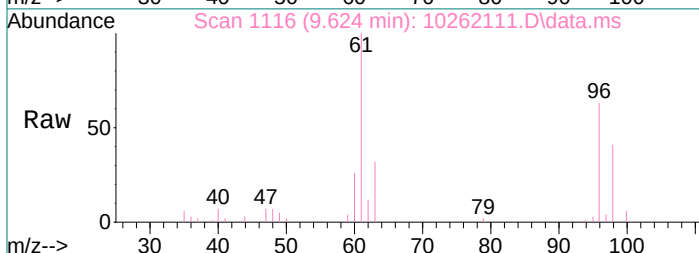
#22
Carbon Disulfide
Concen: 0.10 ng
RT: 8.62 min Scan# 933
Delta R.T. -0.022 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

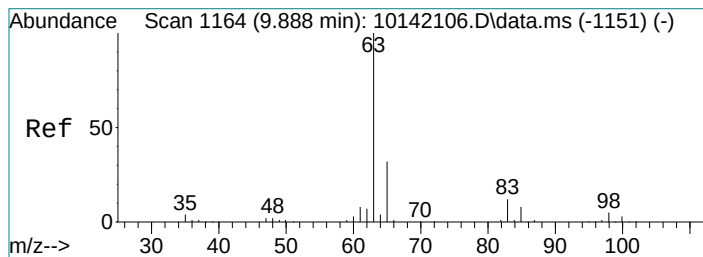
Tgt Ion: 76 Resp: 6312
Ion Ratio Lower Upper
76 100
78 3.9 0.0 29.1



#23
trans-1,2-Dichloroethene
Concen: 1.19 ng
RT: 9.62 min Scan# 1116
Delta R.T. -0.028 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

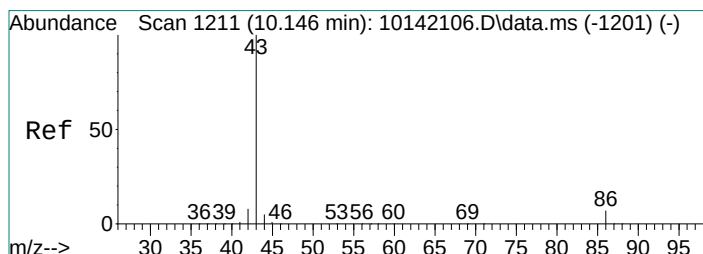
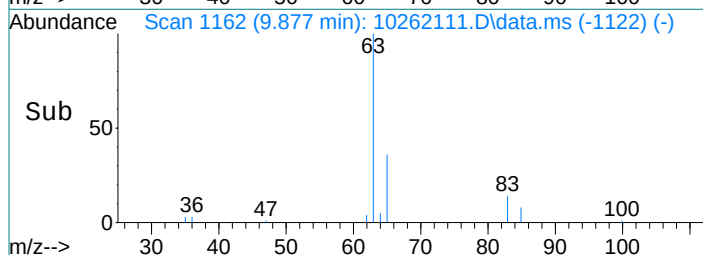
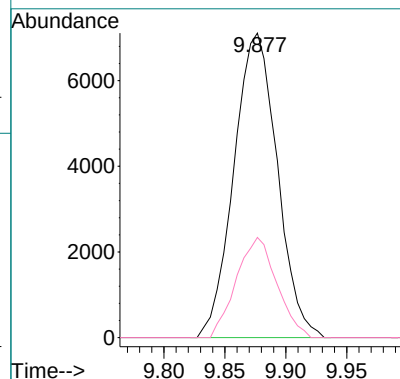
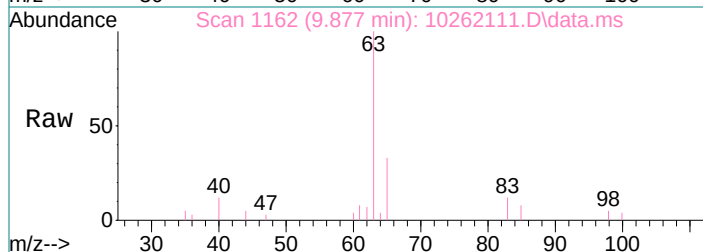
Tgt Ion: 61 Resp: 33002
Ion Ratio Lower Upper
61 100
96 61.0 40.5 80.5





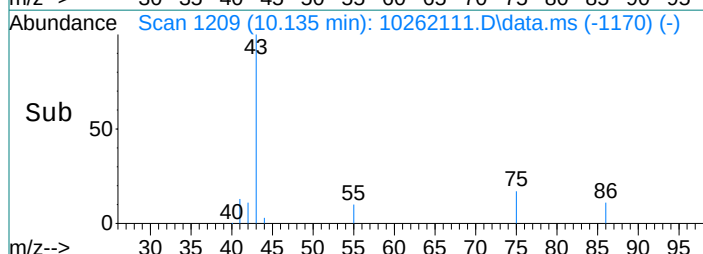
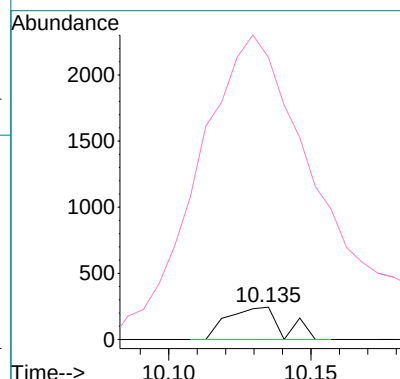
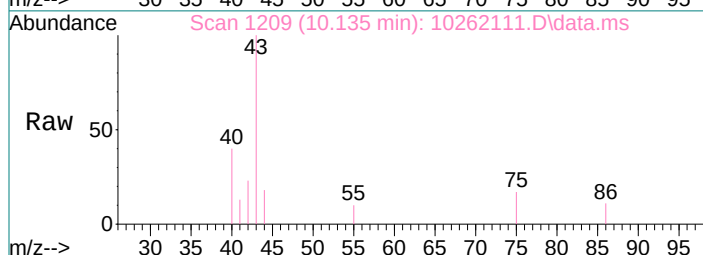
#24
 1,1-Dichloroethane
 Concen: 0.50 ng
 RT: 9.88 min Scan# 1162
 Delta R.T. -0.028 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

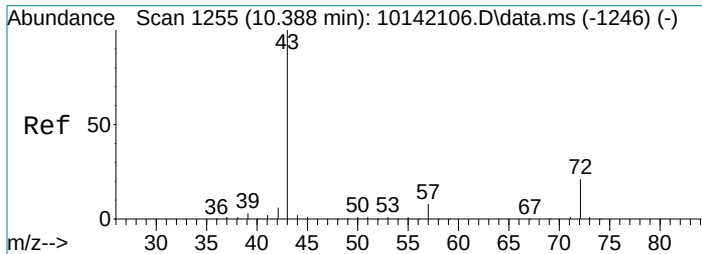
Tgt Ion: 63 Resp: 17615
 Ion Ratio Lower Upper
 63 100
 65 30.7 11.3 51.3



#26
 Vinyl Acetate
 Concen: 0.10 ng
 RT: 10.14 min Scan# 1209
 Delta R.T. -0.033 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

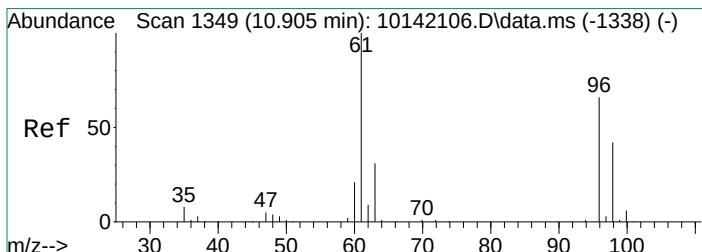
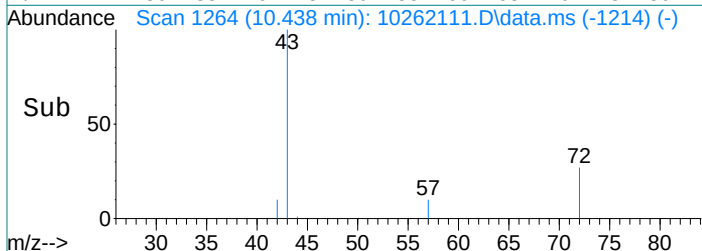
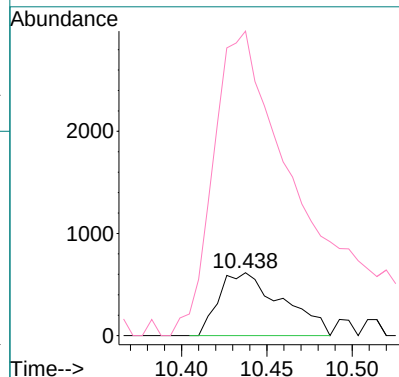
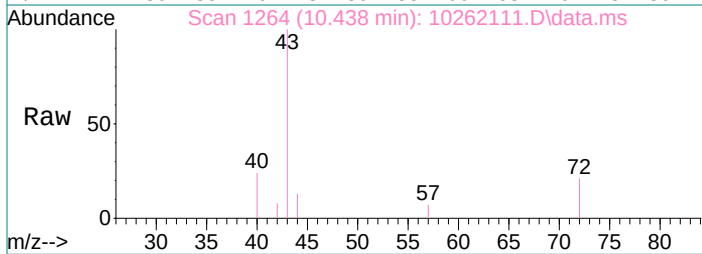
Tgt Ion: 86 Resp: 327
 Ion Ratio Lower Upper
 86 100
 43 2259.0 1320.5 1360.5#





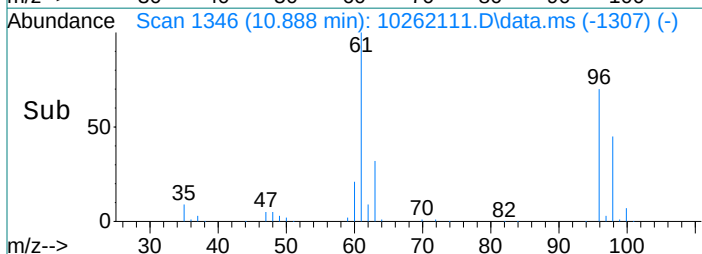
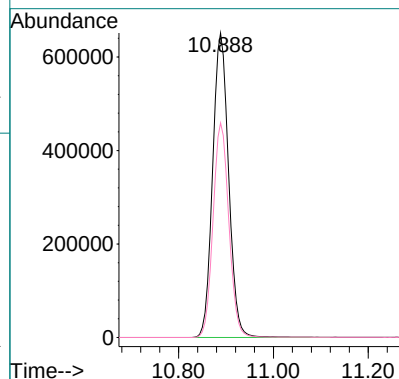
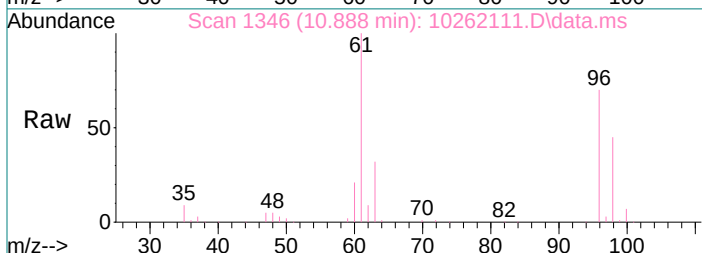
#27
2-Butanone (MEK)
Concen: 0.14 ng
RT: 10.44 min Scan# 1264
Delta R.T. 0.027 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

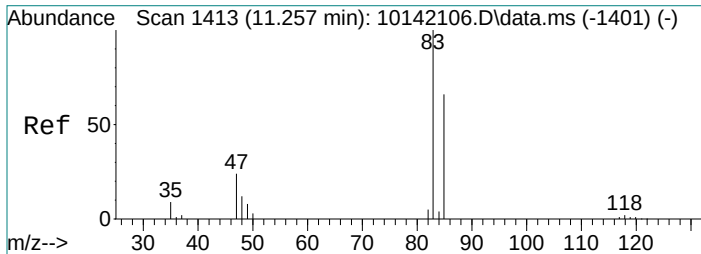
Tgt Ion: 72 Resp: 1597
Ion Ratio Lower Upper
72 100
43 782.7 454.3 494.3#



#28
cis-1,2-Dichloroethene
Concen: 54.61 ng
RT: 10.89 min Scan# 1346
Delta R.T. -0.033 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

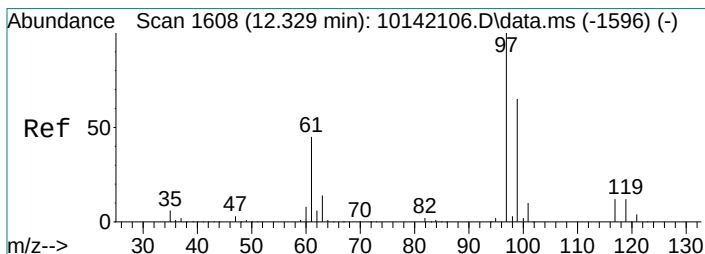
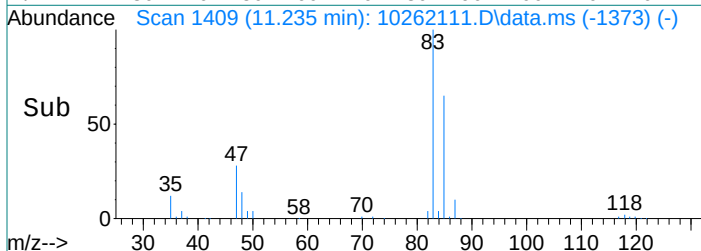
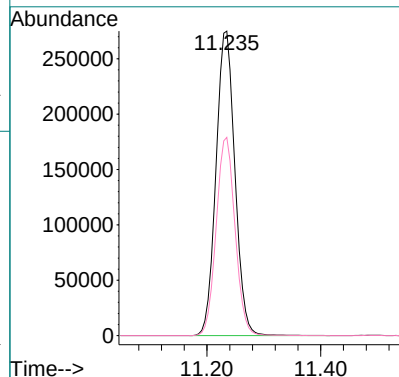
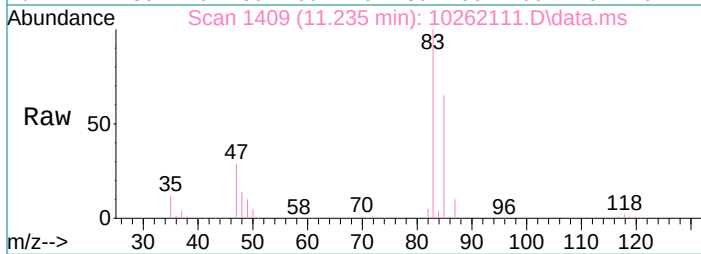
Tgt Ion: 61 Resp: 1524124
Ion Ratio Lower Upper
61 100
96 70.0 46.3 86.3





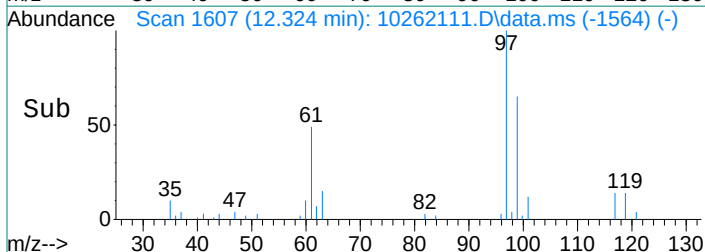
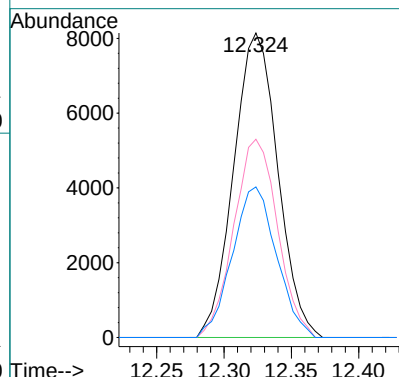
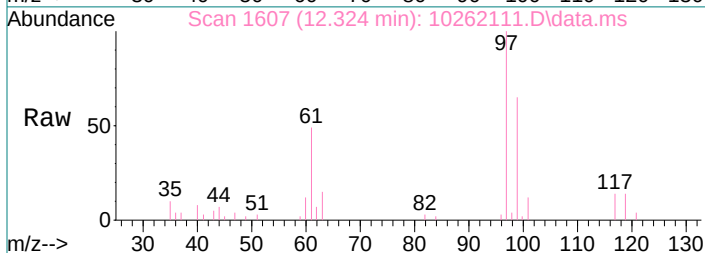
#32
Chloroform
Concen: 19.49 ng
RT: 11.23 min Scan# 1409
Delta R.T. -0.050 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

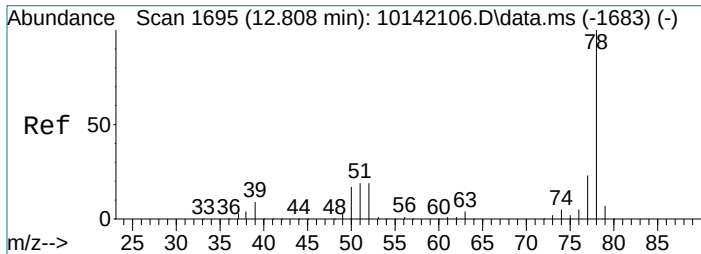
Tgt Ion: 83 Resp: 635623
Ion Ratio Lower Upper
83 100
85 64.9 45.6 85.6



#38
1,1,1-Trichloroethane
Concen: 0.61 ng
RT: 12.32 min Scan# 1607
Delta R.T. -0.011 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

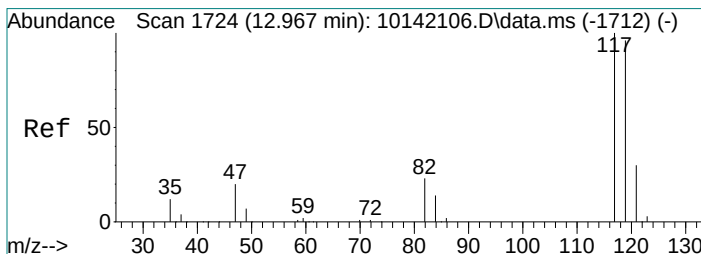
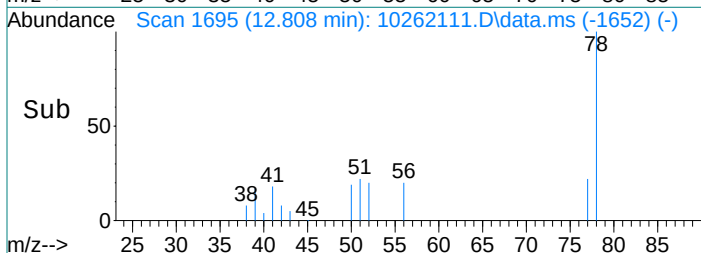
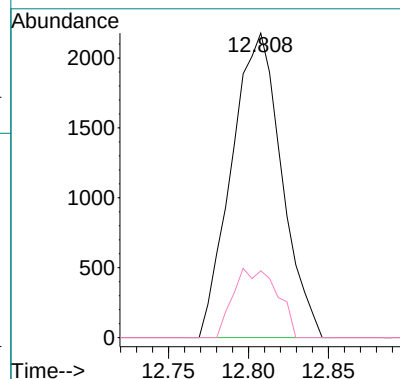
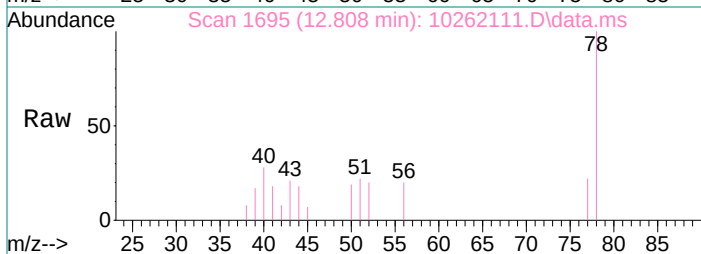
Tgt Ion: 97 Resp: 18593
Ion Ratio Lower Upper
97 100
99 64.4 44.6 84.6
61 49.5 24.8 64.8





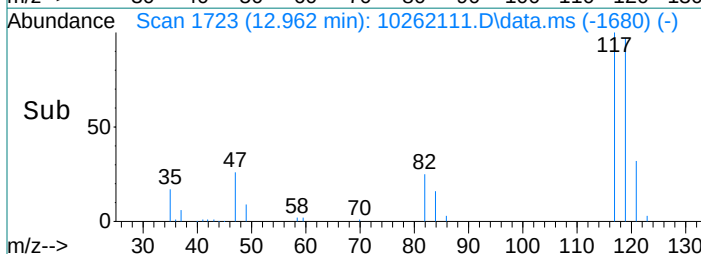
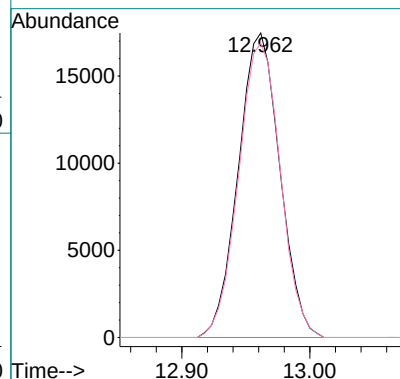
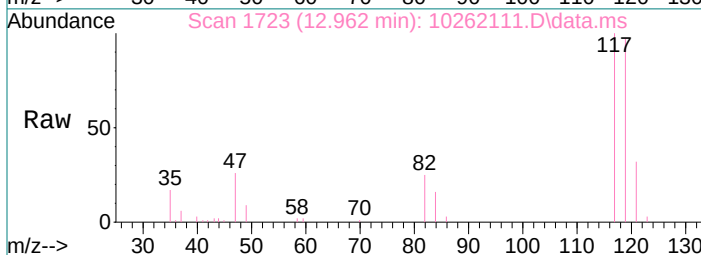
#41
Benzene
Concen: 0.07 ng
RT: 12.81 min Scan# 1695
Delta R.T. -0.011 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

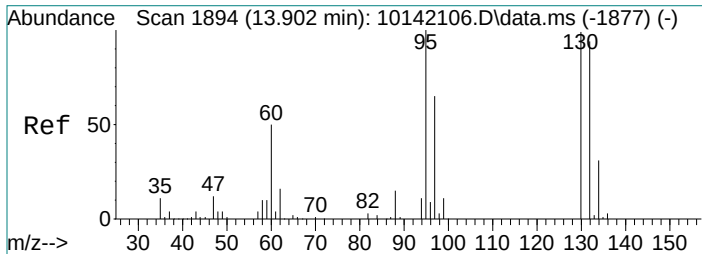
Tgt Ion: 78 Resp: 4746
Ion Ratio Lower Upper
78 100
77 20.0 3.0 43.0



#42
Carbon Tetrachloride
Concen: 1.54 ng
RT: 12.96 min Scan# 1723
Delta R.T. -0.011 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

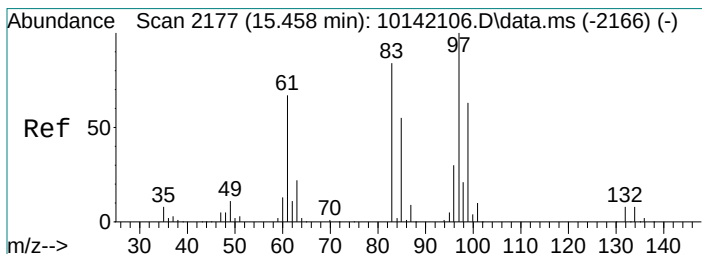
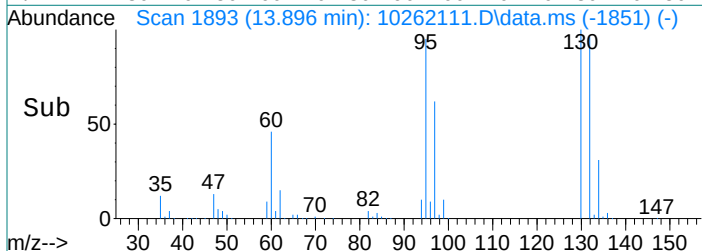
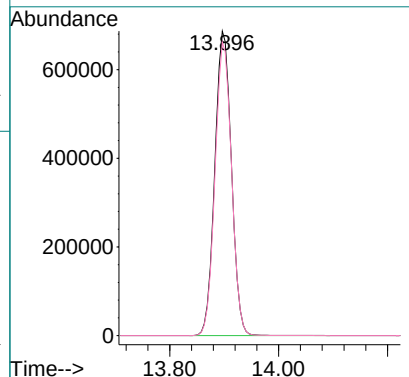
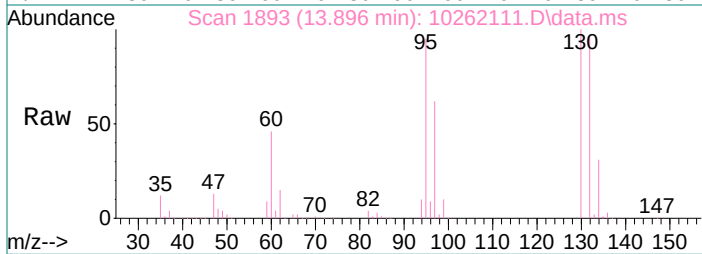
Tgt Ion: 117 Resp: 39475
Ion Ratio Lower Upper
117 100
119 97.3 76.3 116.3





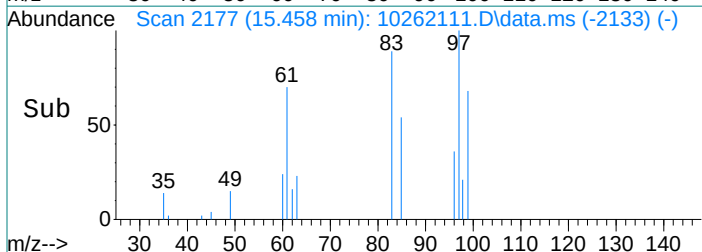
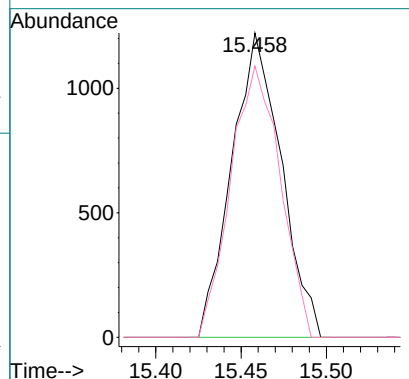
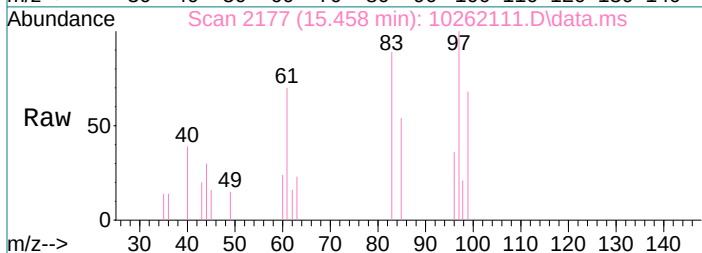
#47
 Trichloroethene
 Concen: 78.34 ng
 RT: 13.90 min Scan# 1893
 Delta R.T. -0.017 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

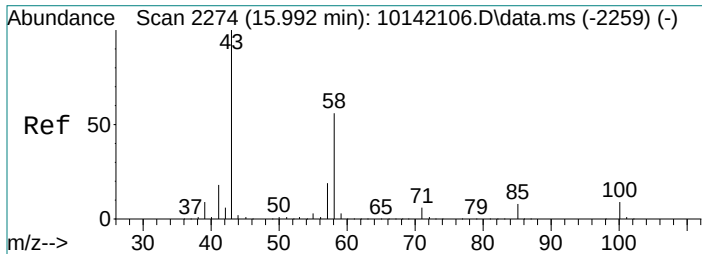
Tgt Ion: 130 Resp: 1449283
 Ion Ratio Lower Upper
 130 100
 132 96.1 75.9 115.9



#55
 1,1,2-Trichloroethane
 Concen: 0.14 ng
 RT: 15.46 min Scan# 2177
 Delta R.T. -0.006 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

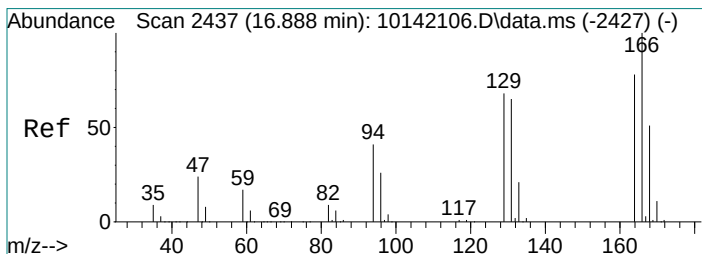
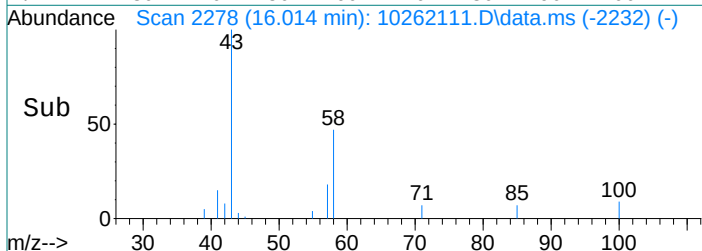
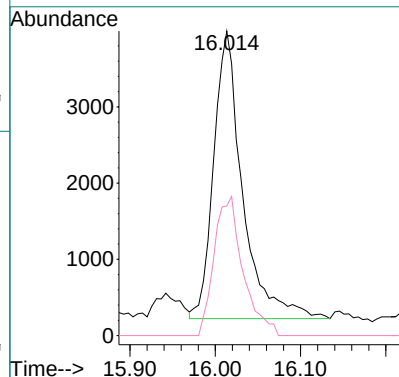
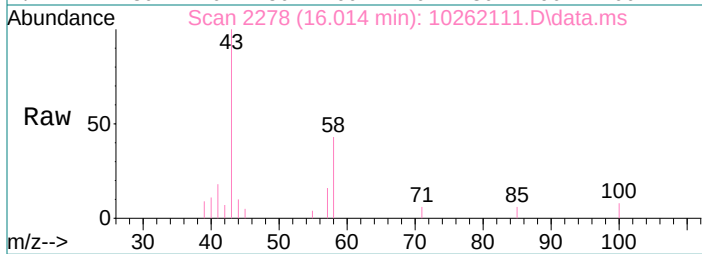
Tgt Ion: 97 Resp: 2458
 Ion Ratio Lower Upper
 97 100
 83 89.5 65.2 105.2





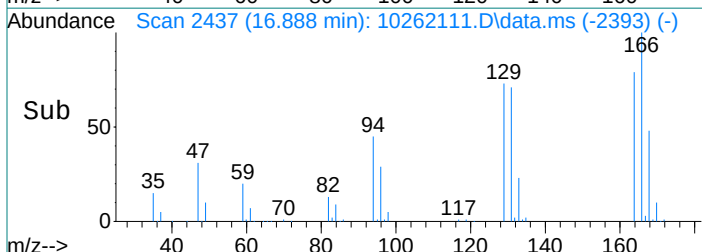
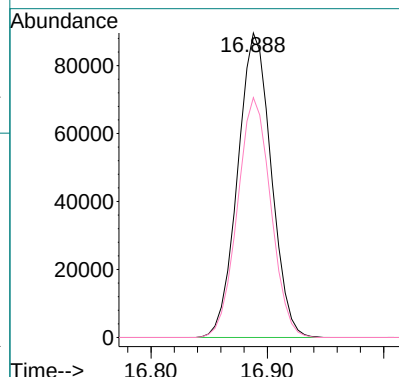
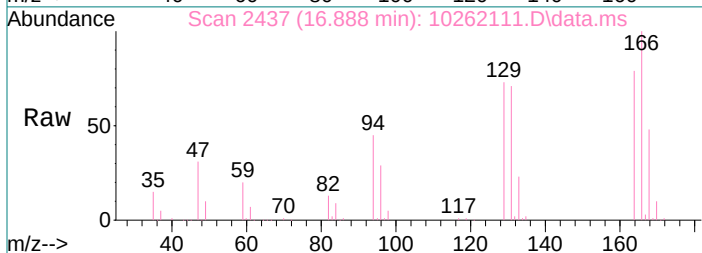
#59
2-Hexanone
Concen: 0.20 ng
RT: 16.01 min Scan# 2278
Delta R.T. 0.005 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

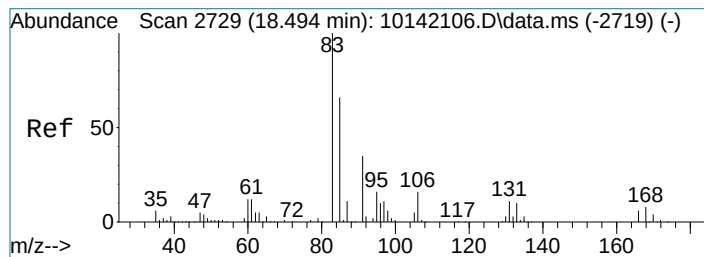
Tgt Ion: 43 Resp: 8868
Ion Ratio Lower Upper
43 100
58 48.2 35.0 75.0



#64
Tetrachloroethene
Concen: 7.80 ng
RT: 16.89 min Scan# 2437
Delta R.T. -0.006 min
Lab File: 10262111.D
Acq: 26 Oct 2021 10:04

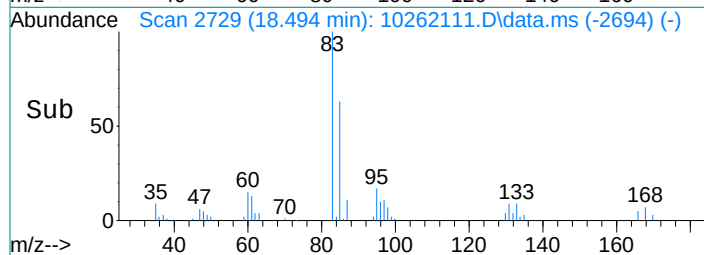
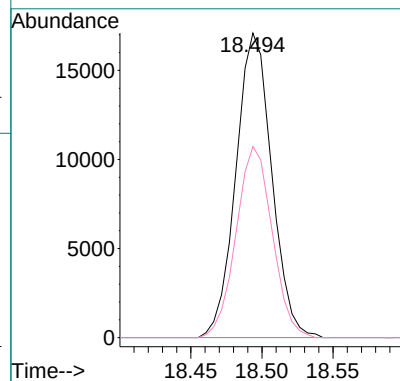
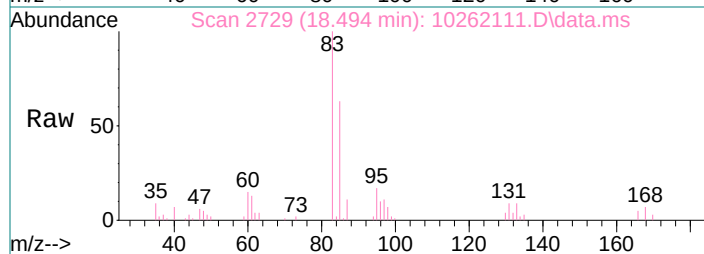
Tgt Ion: 166 Resp: 179532
Ion Ratio Lower Upper
166 100
164 78.4 58.2 98.2





#72
 1,1,2,2-Tetrachloroethane
 Concen: 1.01 ng
 RT: 18.49 min Scan# 2729
 Delta R.T. -0.006 min
 Lab File: 10262111.D
 Acq: 26 Oct 2021 10:04

Tgt Ion: 83 Resp: 29984
 Ion Ratio Lower Upper
 83 100
 85 63.2 45.4 85.4



Data File : I:\MS16\DATA\2021_10\26\10262112.D
 Acq On : 26 Oct 2021 10:38
 Sample : P2105399-002 (1000mL)
 Misc : S34-09132101

Vial: 8
 Operator: WA
 Inst : GCMS-16

T2 10/27/21

Quant Time: Oct 27 15:05:58 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:T015A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	157855	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.20	114	695874	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	156861	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	284508	11.670	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.36%
57) Toluene-d8 (SS2)	15.65	98	731098	11.130	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	89.04%
73) Bromofluorobenzene (SS3)	18.92	174	242047	10.059	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	80.48%

Target Compounds

						Qvalue
2) Propene	4.07	42	20016	0.863	ng	# 86
3) Dichlorodifluoromethan...	4.22	85	84460	2.439	ng	100
4) Chloromethane	4.52	50	276	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	1089	0.084	ng	74
6) Vinyl Chloride	4.92	62	2380	0.121	ng	99
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.	d	
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.29	45	259747	17.172	ng	99
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	6.76	56	3887	0.337	ng	98
13) Acetone	6.97	58	41810m	2.991	ng	
14) Trichlorofluoromethane	7.17	101	34184	1.050	ng	99
15) 2-Propanol (Isopropanol)	7.45	45	81914	1.833	ng	89
16) Acrylonitrile	7.74	53	182	N.D.		
17) 1,1-Dichloroethene	8.13	96	17651	1.122	ng	97
18) 2-Methyl-2-Propanol (t...	8.13	59	1187	N.D.		
19) Methylene Chloride	8.35	84	765	N.D.		
20) 3-Chloro-1-propene (Al...	8.44	41	573	N.D.		
21) Trichlorotrifluoroethane	8.77	151	230795	14.714	ng	86
22) Carbon Disulfide	8.61	76	1731656	28.930	ng	100
23) trans-1,2-Dichloroethene	9.62	61	33437	1.304	ng	99
24) 1,1-Dichloroethane	9.87	63	18534	0.565	ng	99
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d	
26) Vinyl Acetate	10.11	86	3215	1.030	ng	# 33
27) 2-Butanone (MEK)	10.40	72	11815	1.086	ng	# 80
28) cis-1,2-Dichloroethene	10.89	61	1678193	64.897	ng	97
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	11.19	57	1096	N.D.		
32) Chloroform	11.23	83	678197	22.443	ng	98
34) Tetrahydrofuran (THF)	11.70	72	1114	0.109	ng	# 1
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.04	62	780	N.D.		
38) 1,1,1-Trichloroethane	12.32	97	19746	0.701	ng	95
39) Isopropyl Acetate	12.89	61	471	No Calib	#	
40) 1-Butanol	12.78	56	1022141	No Calib	#	
41) Benzene	12.81	78	4874	0.074	ng	99
42) Carbon Tetrachloride	12.96	117	41836	1.768	ng	99
43) Cyclohexane	13.09	84	321	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	13.84	83	1065	N.D.		
47) Trichloroethene	13.90	130	1572587	92.206	ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.	d	
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	0.00	100	0	N.D.	d	

Data File : I:\MS16\DATA\2021_10\26\10262112.D
 Acq On : 26 Oct 2021 10:38
 Sample : P2105399-002 (1000mL)
 Misc : S34-09132101

Vial: 8
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 27 15:05:58 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

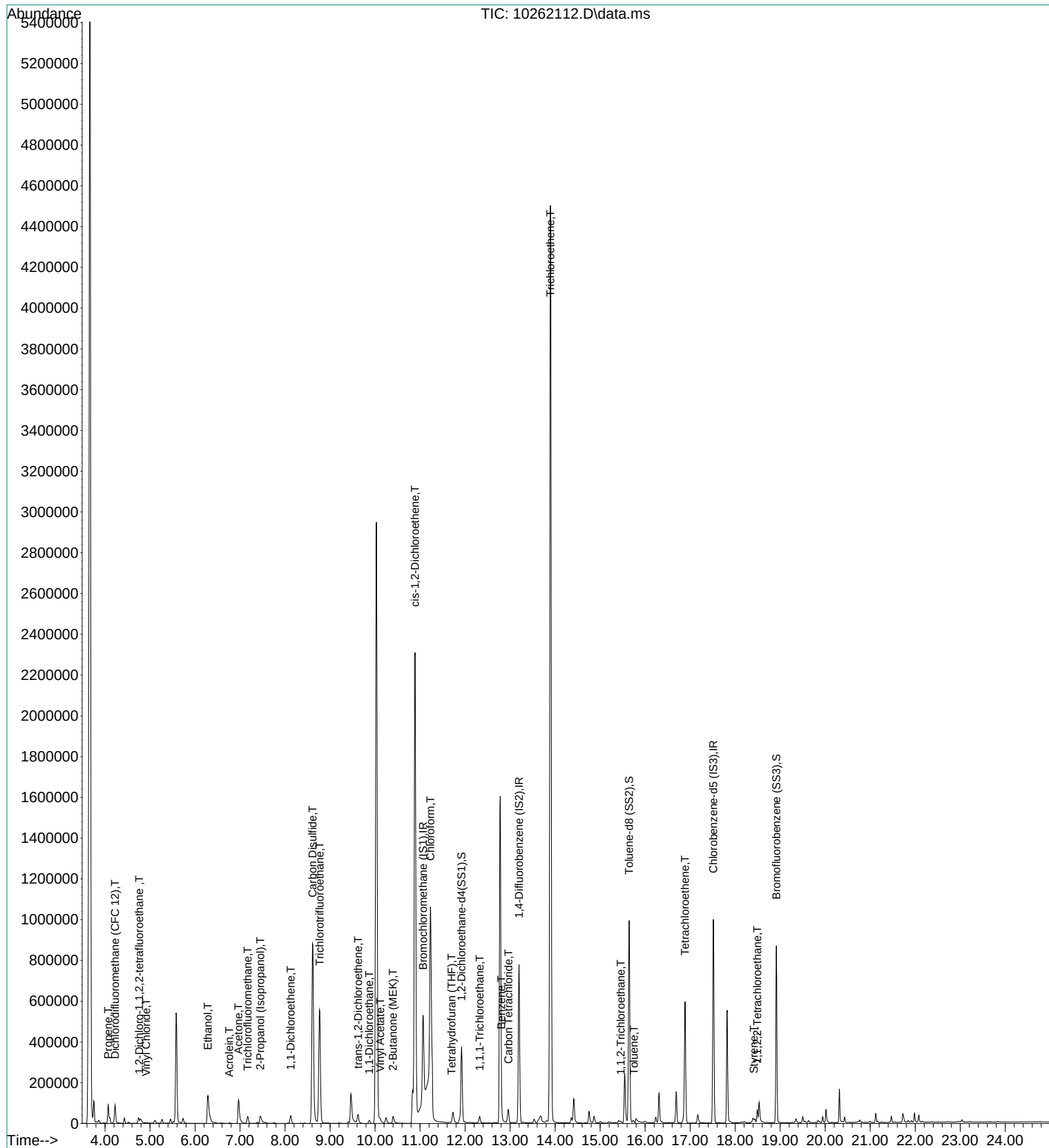
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.41	71	504	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.46	97	2552	0.163	ng	97
58) Toluene	15.75	91	4664	0.064	ng	97
59) 2-Hexanone	0.00	43	0	N.D.	d	
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	16.32	107	184	N.D.		
62) n-Butyl Acetate	16.63	43	1993	N.D.		
63) n-Octane	16.74	57	415	N.D.		
64) Tetrachloroethene	16.89	166	190791	8.548	ng	100
65) Chlorobenzene	17.56	112	330	N.D.		
66) Ethylbenzene	17.92	91	773	N.D.		
67) m- & p-Xylenes	18.08	91	1617	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.42	104	5639	0.111	ng	95
70) o-Xylene	18.52	91	610	N.D.		
71) n-Nonane	18.72	43	828	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.49	83	33076	1.148	ng	99
74) Cumene	18.92	105	347	N.D.		
75) alpha-Pinene	19.26	93	111	N.D.		
76) n-Propylbenzene	19.50	91	174	N.D.		
77) 3-Ethyltoluene	19.63	105	459	No Calib	#	
78) 4-Ethyltoluene	19.63	105	459	N.D.		
79) 1,3,5-Trimethylbenzene	19.63	105	459	N.D.		
80) alpha-Methylstyrene	19.83	118	117	No Calib	#	
81) 2-Ethyltoluene	19.63	105	459	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.06	105	1043	N.D.		
83) n-Decane	20.04	58	277	No Calib	#	
84) Benzyl Chloride	20.05	91	537	N.D.		
85) 1,3-Dichlorobenzene	20.19	146	192	N.D.		
86) 1,4-Dichlorobenzene	20.25	146	354	N.D.		
87) sec-Butylbenzene	20.43	105	701	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	d	
89) 1,2,3-Trimethylbenzene	20.43	105	701	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.56	68	352	N.D.		
92) 1,2-Dibromo-3-Chloropr...	20.87	157	118	N.D.		
93) n-Undecane	21.12	57	7828	No Calib		
94) 1,2,4-Trichlorobenzene	22.06	180	229	N.D.		
95) Naphthalene	22.16	128	1463	N.D.		
96) n-Dodecane	22.16	57	1725	No Calib	#	
97) Hexachlorobutadiene	22.48	225	172	N.D.		
98) Cyclohexanone	18.06	55	127	No Calib	#	
99) tert-Butylbenzene	20.02	119	1678	N.D.		
100) n-Butylbenzene	20.80	91	754	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data File : I:\MS16\DATA\2021_10\26\10262112.D
Acq On : 26 Oct 2021 10:38
Sample : P2105399-002 (1000mL)
Misc : S34-09132101

Vial: 8
Operator: WA
Inst : GCMS-16

Quant Time: Oct 27 15:05:58 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M



Data File : I:\MS16\DATA\2021_10\26\10262112.D
 Acq On : 26 Oct 2021 10:38
 Sample : P2105399-002 (1000mL)
 Misc : S34-09132101

Vial: 8
 Operator: WA
 Inst : GCMS-16

T₂ 10/27/21

Quant Time: Oct 27 15:05:58 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	157855	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.20	114	695874	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	156861	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	284508	11.670	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.36%
57) Toluene-d8 (SS2)	15.65	98	731098	11.130	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	89.04%
73) Bromofluorobenzene (SS3)	18.92	174	242047	10.059	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	80.48%

Target Compounds

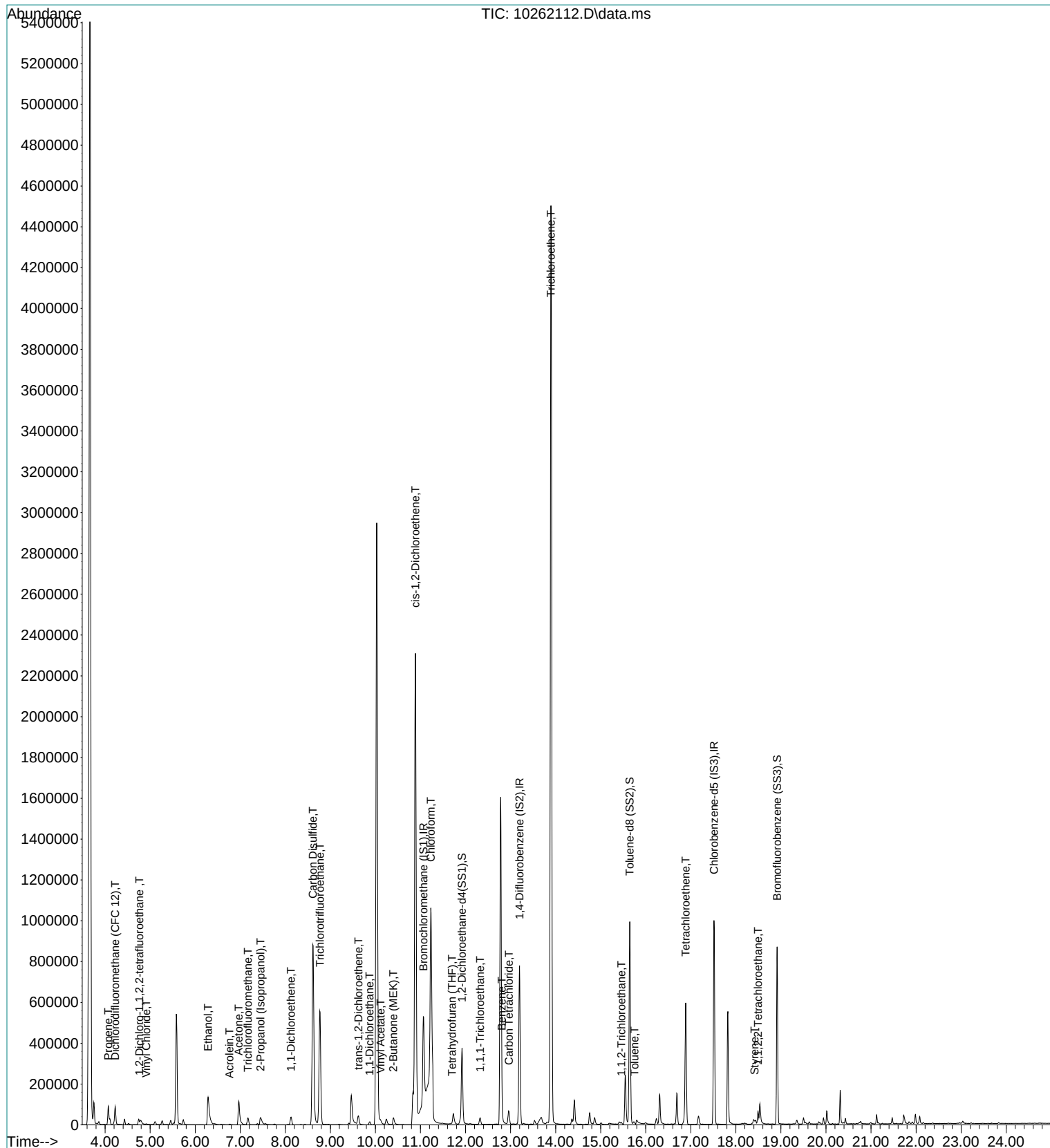
						Qvalue
2) Propene	4.07	42	20016	0.863	ng	# 86
3) Dichlorodifluoromethan...	4.22	85	84460	2.439	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	1089	0.084	ng	74
6) Vinyl Chloride	4.92	62	2380	0.121	ng	99
10) Ethanol	6.29	45	259747	17.172	ng	99
12) Acrolein	6.76	56	3887	0.337	ng	98
13) Acetone	6.97	58	41810m	2.991	ng	
14) Trichlorofluoromethane	7.17	101	34184	1.050	ng	99
15) 2-Propanol (Isopropanol)	7.45	45	81914	1.833	ng	89
17) 1,1-Dichloroethene	8.13	96	17651	1.122	ng	97
21) Trichlorotrifluoroethane	8.77	151	230795	14.714	ng	86
22) Carbon Disulfide	8.61	76	1731656	28.930	ng	100
23) trans-1,2-Dichloroethene	9.62	61	33437	1.304	ng	99
24) 1,1-Dichloroethane	9.87	63	18534	0.565	ng	99
26) Vinyl Acetate	10.11	86	3215	1.030	ng	# 33
27) 2-Butanone (MEK)	10.40	72	11815	1.086	ng	# 80
28) cis-1,2-Dichloroethene	10.89	61	1678193	64.897	ng	97
32) Chloroform	11.23	83	678197	22.443	ng	98
34) Tetrahydrofuran (THF)	11.70	72	1114	0.109	ng	# 1
38) 1,1,1-Trichloroethane	12.32	97	19746	0.701	ng	95
41) Benzene	12.81	78	4874	0.074	ng	99
42) Carbon Tetrachloride	12.96	117	41836	1.768	ng	99
47) Trichloroethene	13.90	130	1572587	92.206	ng	99
55) 1,1,2-Trichloroethane	15.46	97	2552	0.163	ng	97
58) Toluene	15.75	91	4664	0.064	ng	97
64) Tetrachloroethene	16.89	166	190791	8.548	ng	100
69) Styrene	18.42	104	5639	0.111	ng	95
72) 1,1,2,2-Tetrachloroethane	18.49	83	33076	1.148	ng	99

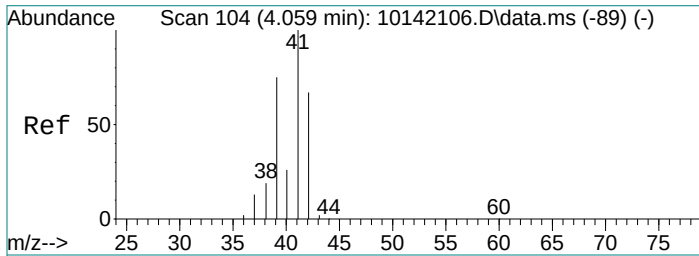
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS16\DATA\2021_10\26\10262112.D
Acq On : 26 Oct 2021 10:38
Sample : P2105399-002 (1000mL)
Misc : S34-09132101

Vial: 8
Operator: WA
Inst : GCMS-16

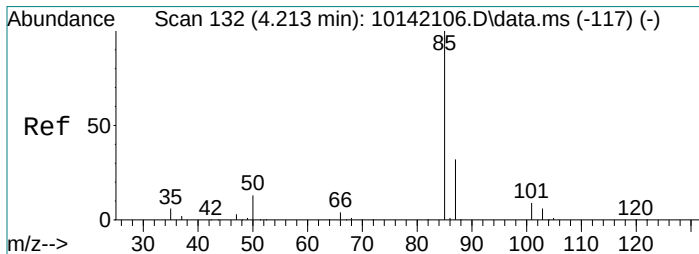
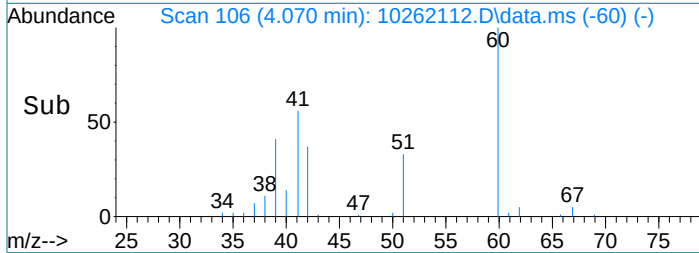
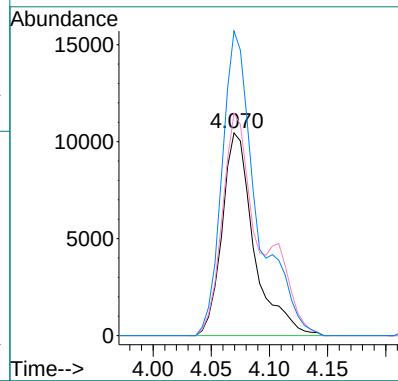
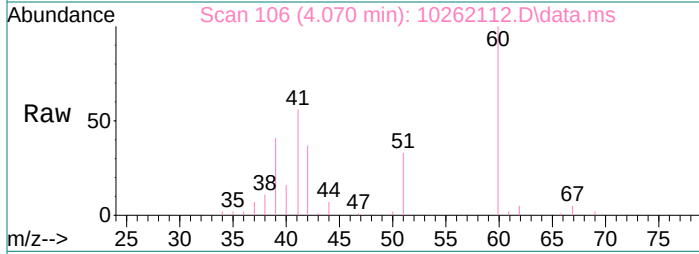
Quant Time: Oct 27 15:05:58 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M





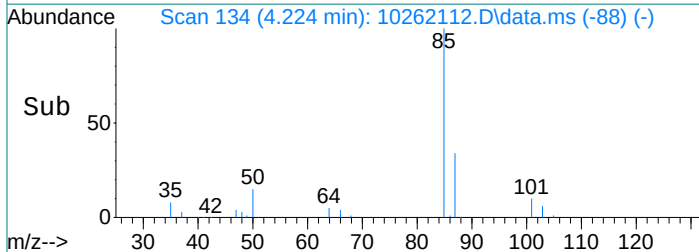
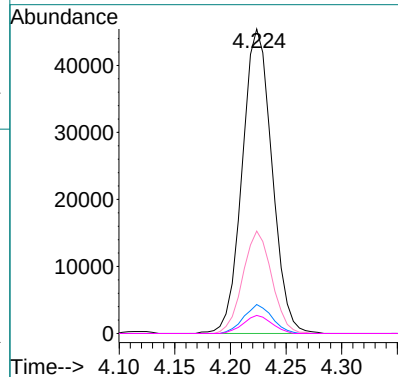
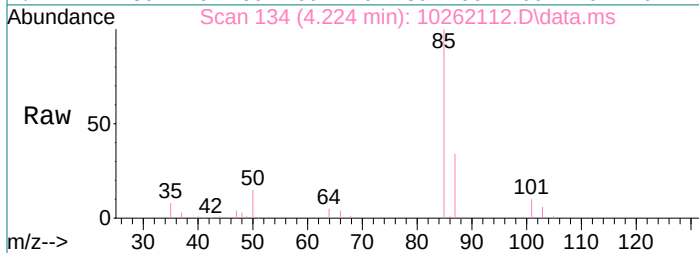
#2
 Propene
 Concen: 0.86 ng
 RT: 4.07 min Scan# 106
 Delta R.T. 0.005 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

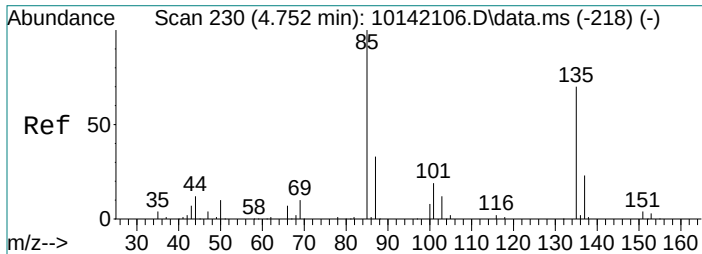
Tgt Ion: 42 Resp: 20016
 Ion Ratio Lower Upper
 42 100
 39 133.2 92.3 132.3#
 41 163.4 131.3 171.3



#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.44 ng
 RT: 4.22 min Scan# 134
 Delta R.T. 0.006 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

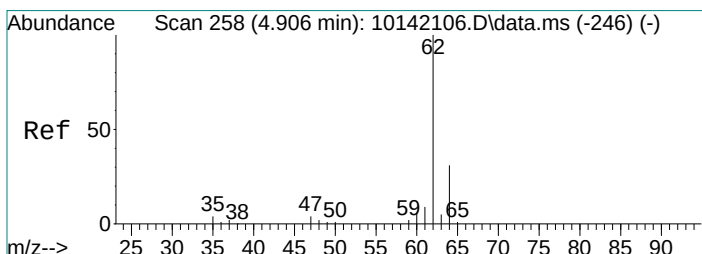
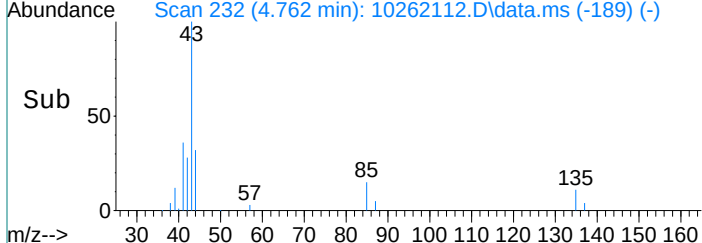
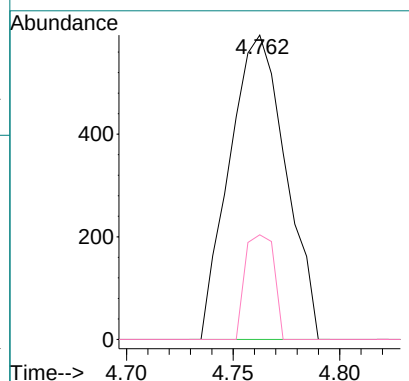
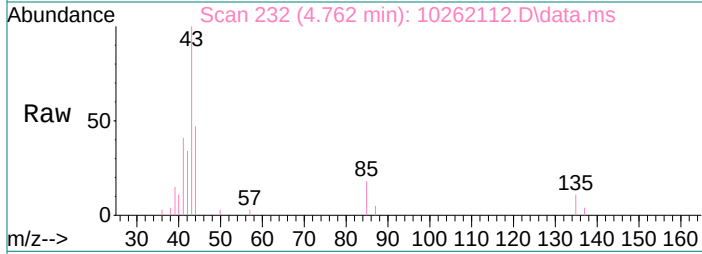
Tgt Ion: 85 Resp: 84460
 Ion Ratio Lower Upper
 85 100
 87 32.7 12.4 52.4
 101 9.0 0.0 29.0
 103 5.7 0.0 25.9





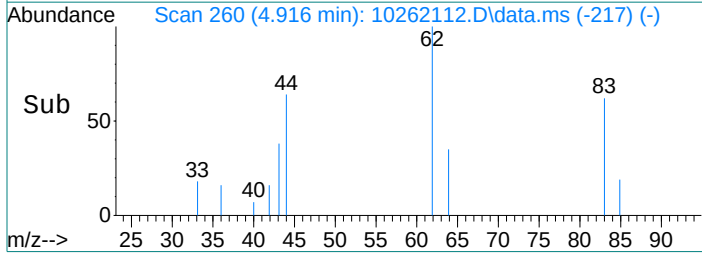
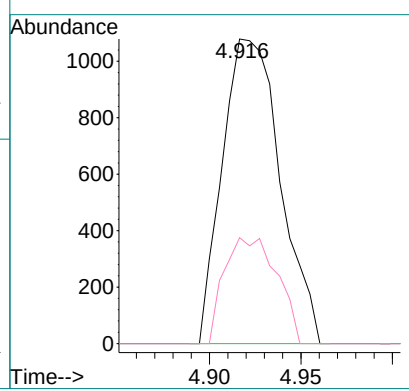
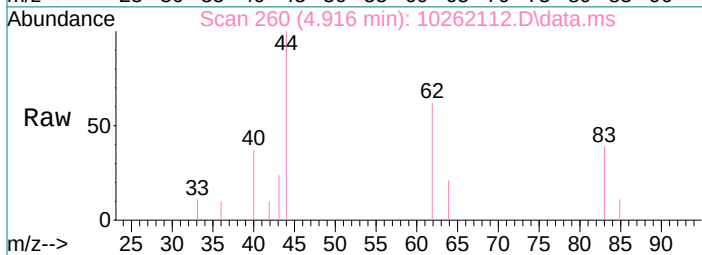
#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.08 ng
 RT: 4.76 min Scan# 232
 Delta R.T. -0.011 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

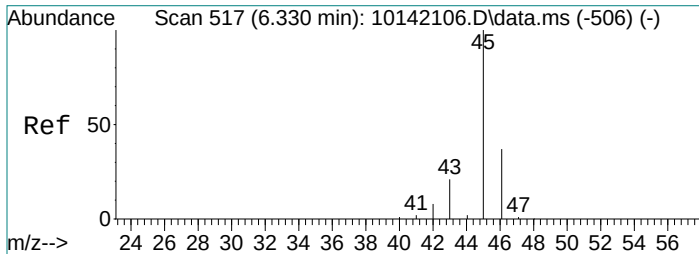
Tgt Ion:	135	Resp:	1089
Ion Ratio	Lower	Upper	
135	100		
137	17.7	12.4	52.4



#6
 Vinyl Chloride
 Concen: 0.12 ng
 RT: 4.92 min Scan# 260
 Delta R.T. -0.011 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

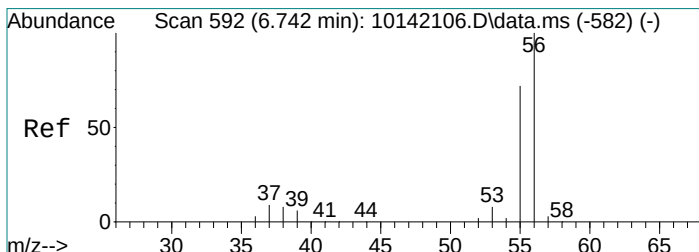
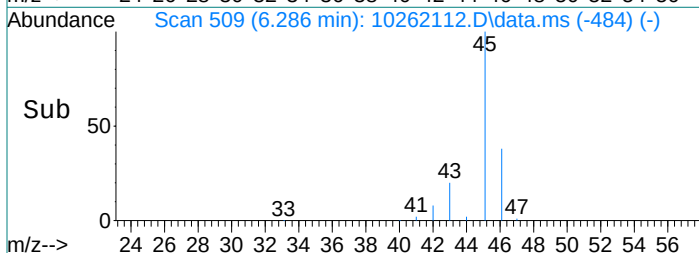
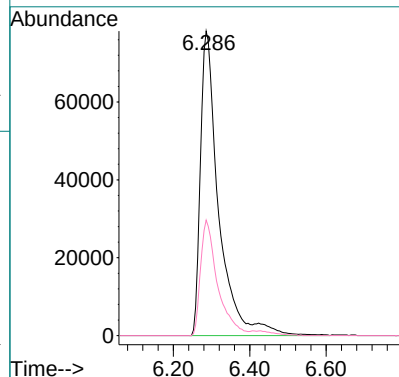
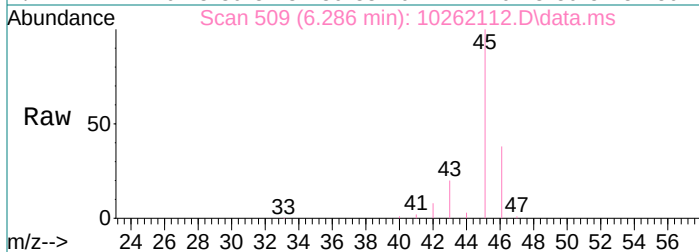
Tgt Ion:	62	Resp:	2380
Ion Ratio	Lower	Upper	
62	100		
64	31.7	11.0	51.0





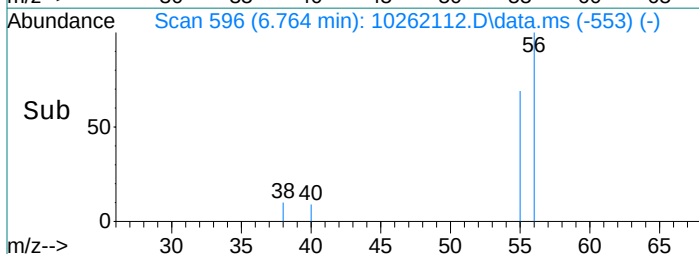
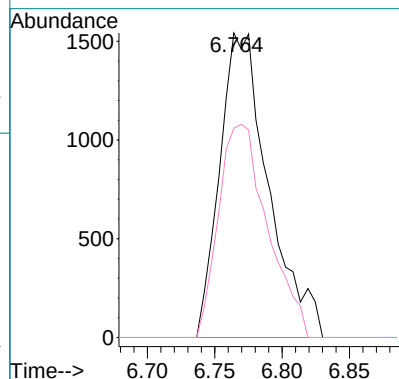
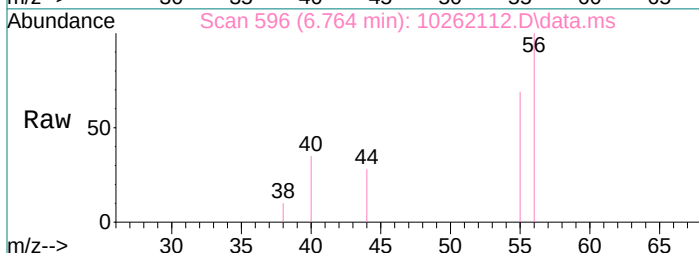
#10
Ethanol
Concen: 17.17 ng
RT: 6.29 min Scan# 509
Delta R.T. -0.110 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

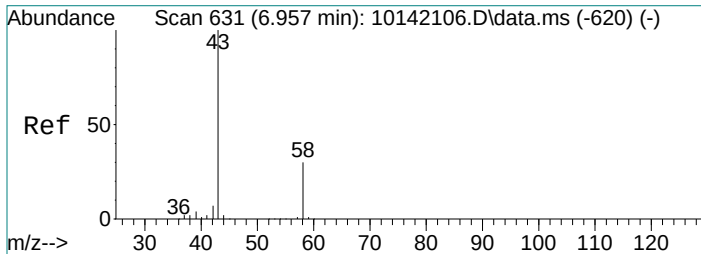
Tgt Ion: 45 Resp: 259747
Ion Ratio Lower Upper
45 100
46 37.3 16.6 56.6



#12
Acrolein
Concen: 0.34 ng
RT: 6.76 min Scan# 596
Delta R.T. -0.011 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

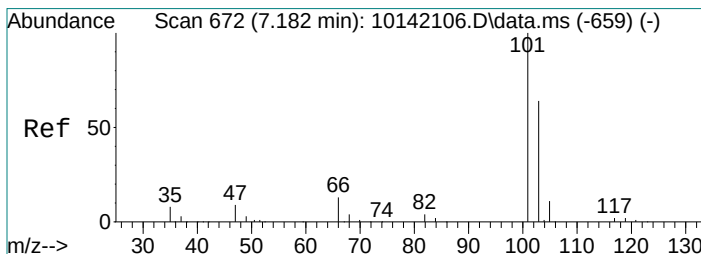
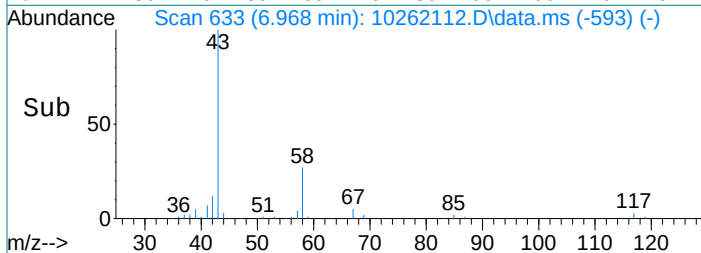
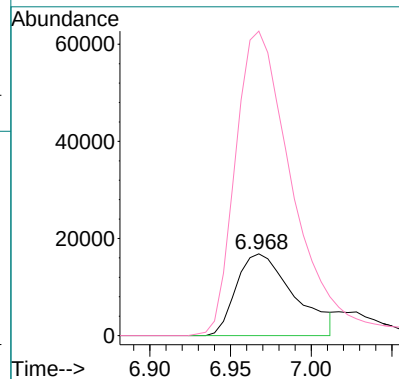
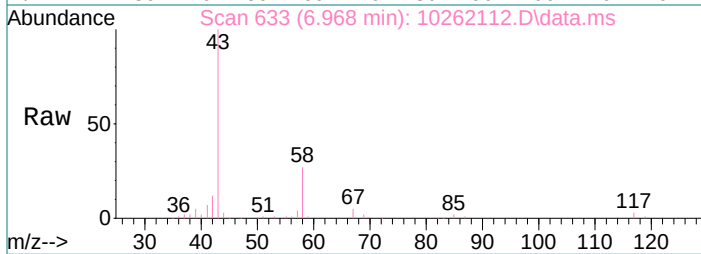
Tgt Ion: 56 Resp: 3887
Ion Ratio Lower Upper
56 100
55 70.1 52.1 92.1





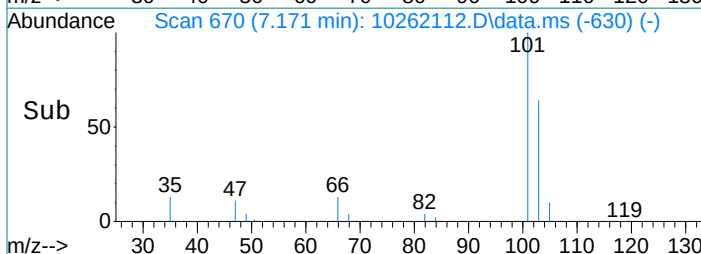
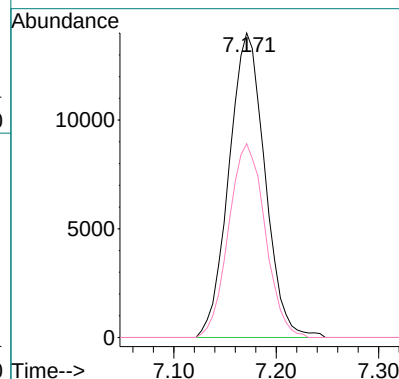
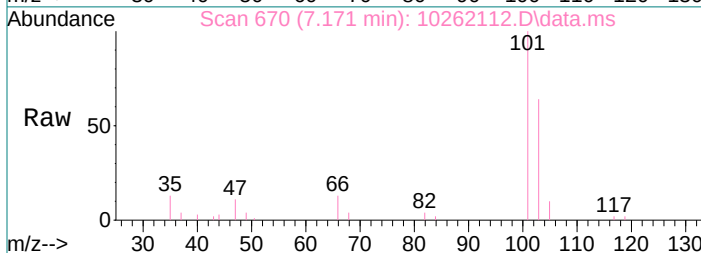
#13
Acetone
Concen: 2.99 ng m
RT: 6.97 min Scan# 633
Delta R.T. -0.028 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

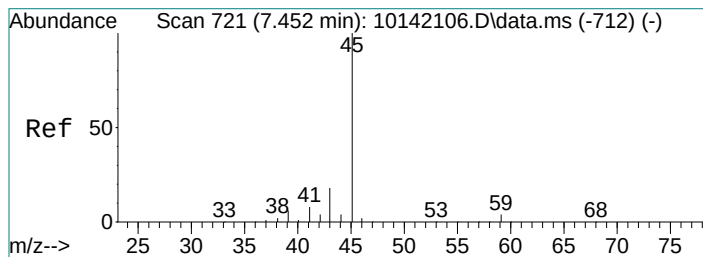
Tgt Ion: 58 Resp: 41810
Ion Ratio Lower Upper
58 100
43 385.6 303.0 363.0#



#14
Trichlorofluoromethane
Concen: 1.05 ng
RT: 7.17 min Scan# 670
Delta R.T. -0.028 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

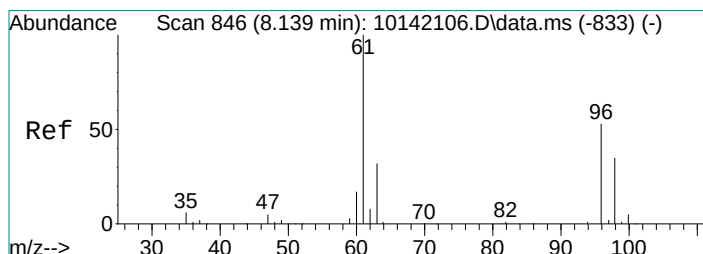
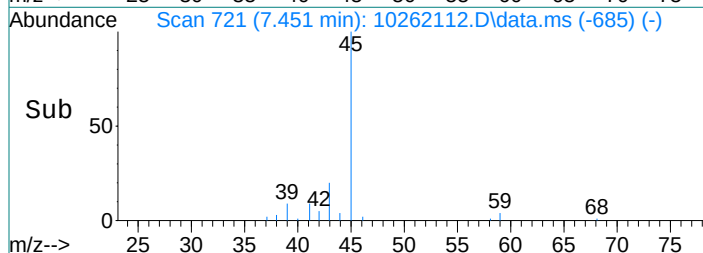
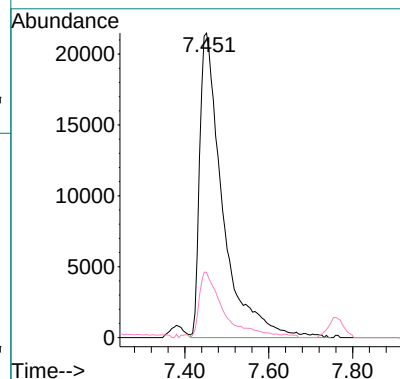
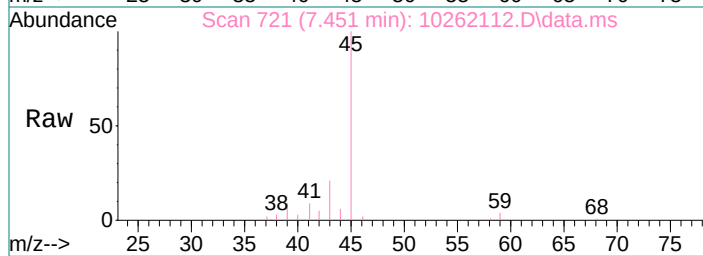
Tgt Ion: 101 Resp: 34184
Ion Ratio Lower Upper
101 100
103 64.6 45.2 85.2





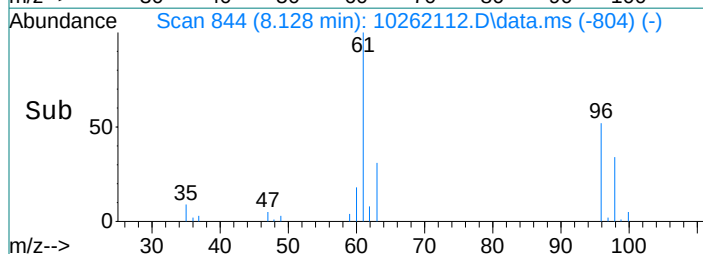
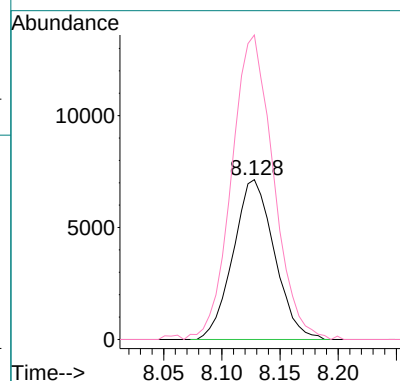
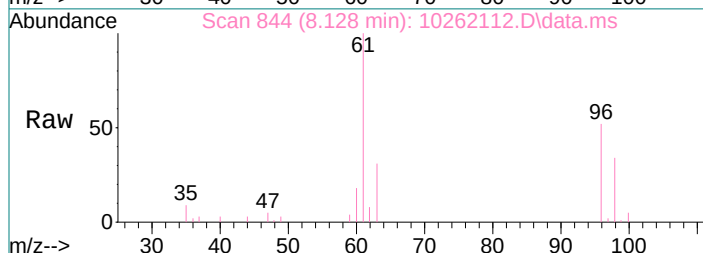
#15
 2-Propanol (Isopropanol)
 Concen: 1.83 ng
 RT: 7.45 min Scan# 721
 Delta R.T. -0.050 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

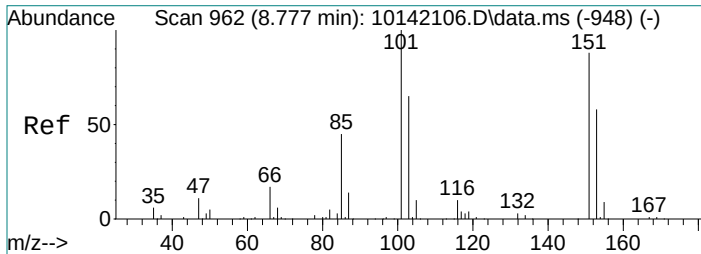
Tgt Ion: 45 Resp: 81914
 Ion Ratio Lower Upper
 45 100
 43 23.1 0.0 38.4



#17
 1,1-Dichloroethene
 Concen: 1.12 ng
 RT: 8.13 min Scan# 844
 Delta R.T. -0.028 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

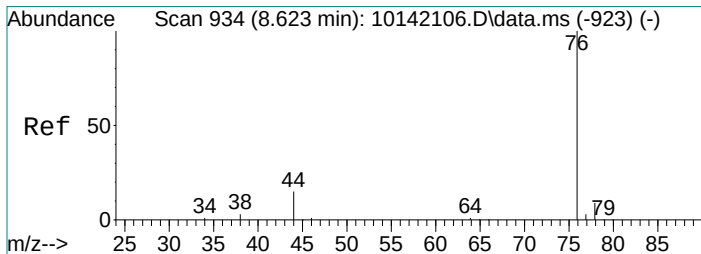
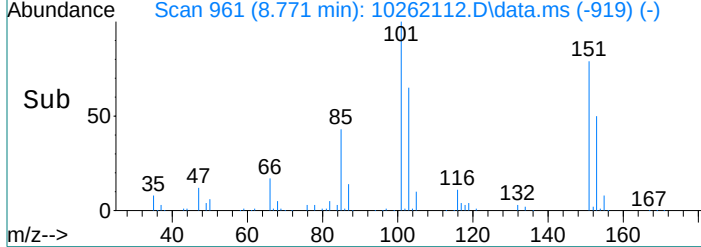
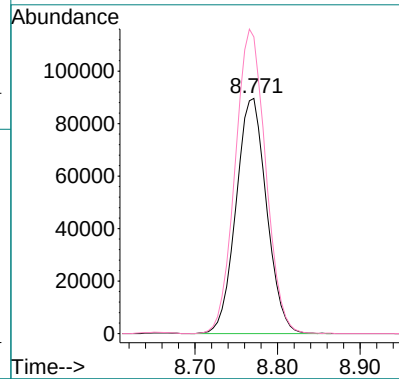
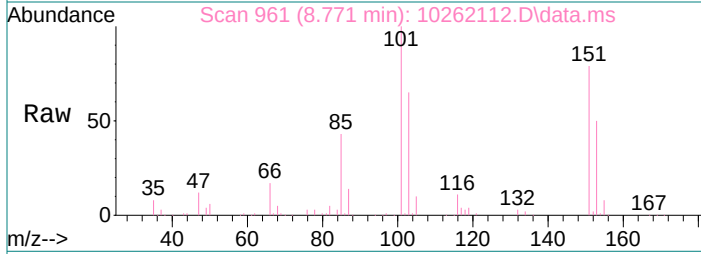
Tgt Ion: 96 Resp: 17651
 Ion Ratio Lower Upper
 96 100
 61 193.2 169.0 209.0





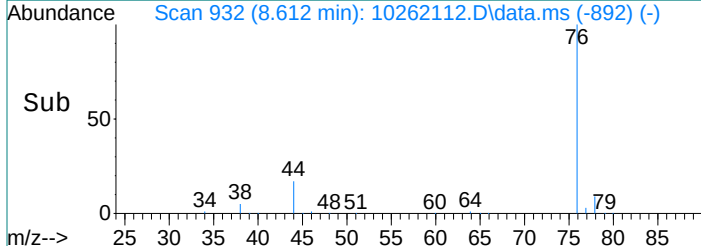
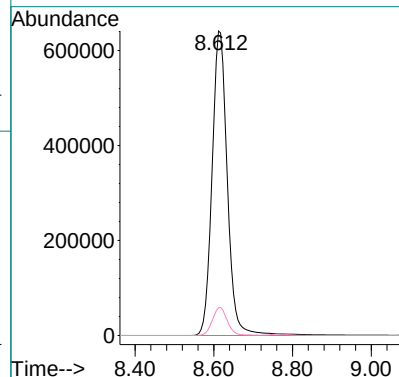
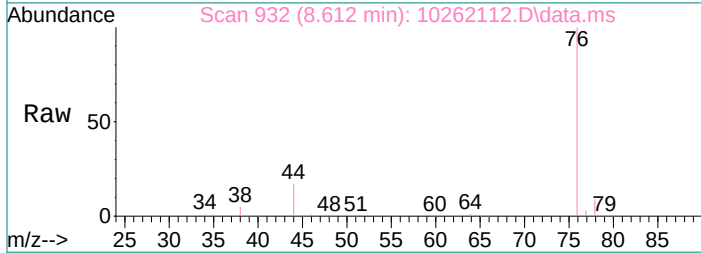
#21
 Trichlorotrifluoroethane
 Concen: 14.71 ng
 RT: 8.77 min Scan# 961
 Delta R.T. -0.017 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

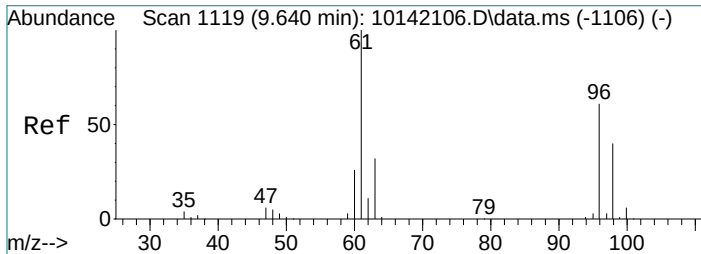
Tgt Ion: 151 Resp: 230795
 Ion Ratio Lower Upper
 151 100
 101 129.5 93.9 133.9



#22
 Carbon Disulfide
 Concen: 28.93 ng
 RT: 8.61 min Scan# 932
 Delta R.T. -0.028 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

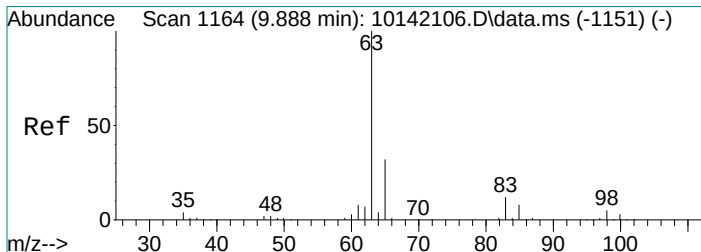
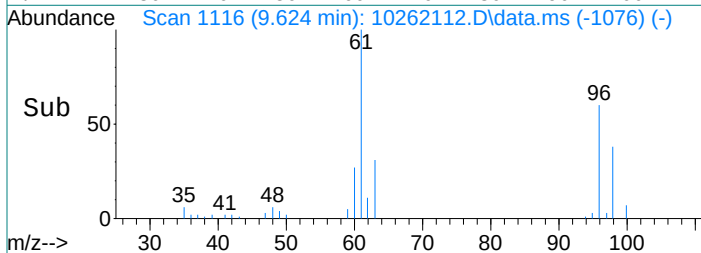
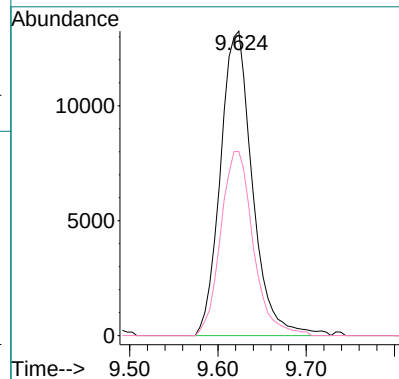
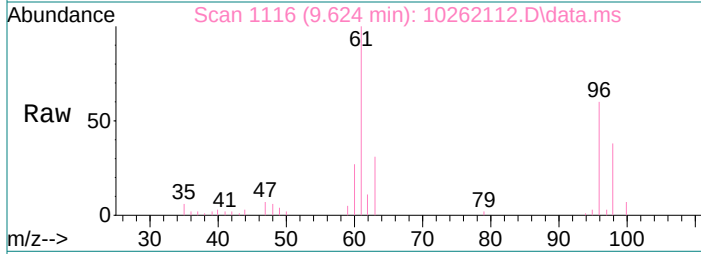
Tgt Ion: 76 Resp: 1731656
 Ion Ratio Lower Upper
 76 100
 78 9.0 0.0 29.1





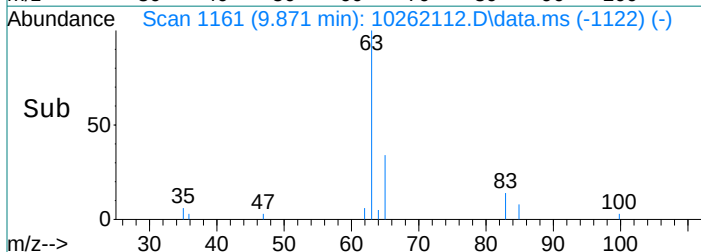
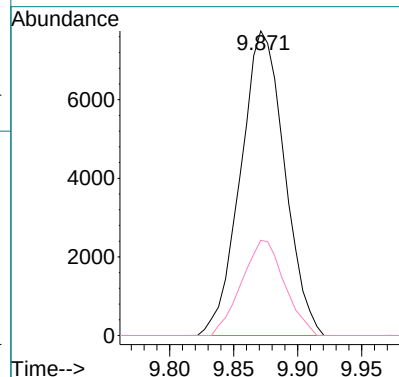
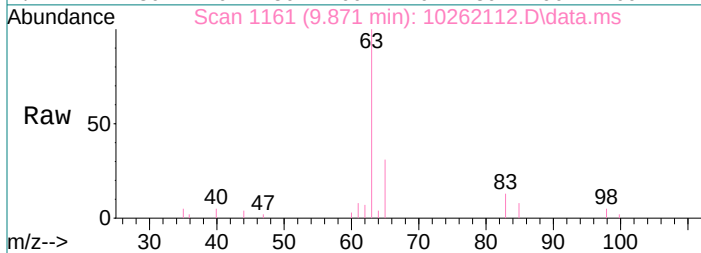
#23
trans-1,2-Dichloroethene
Concen: 1.30 ng
RT: 9.62 min Scan# 1116
Delta R.T. -0.028 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

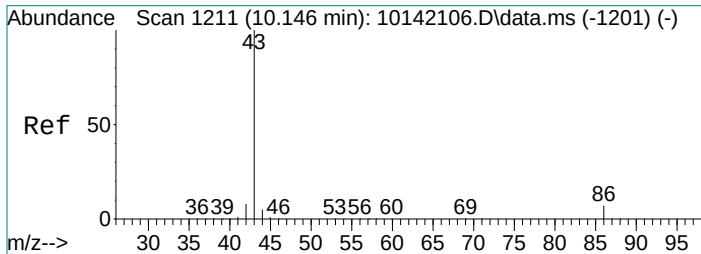
Tgt Ion: 61 Resp: 33437
Ion Ratio Lower Upper
61 100
96 61.3 40.5 80.5



#24
1,1-Dichloroethane
Concen: 0.57 ng
RT: 9.87 min Scan# 1161
Delta R.T. -0.033 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

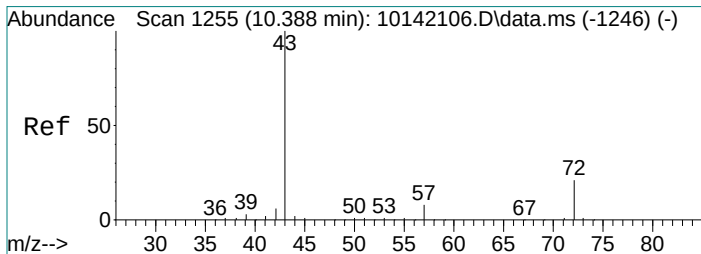
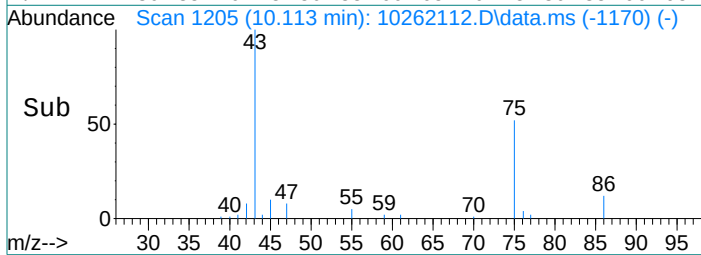
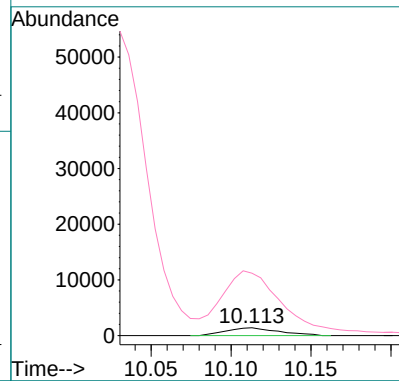
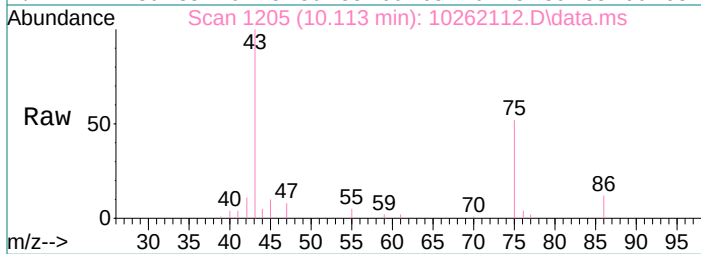
Tgt Ion: 63 Resp: 18534
Ion Ratio Lower Upper
63 100
65 30.6 11.3 51.3





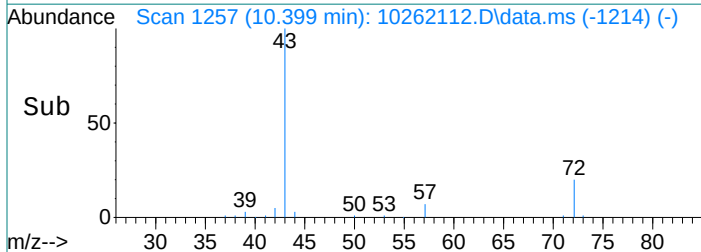
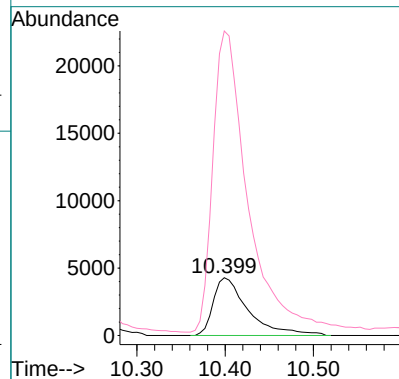
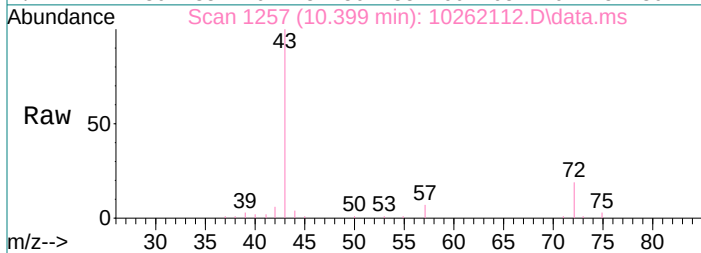
#26
Vinyl Acetate
Concen: 1.03 ng
RT: 10.11 min Scan# 1205
Delta R.T. -0.055 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

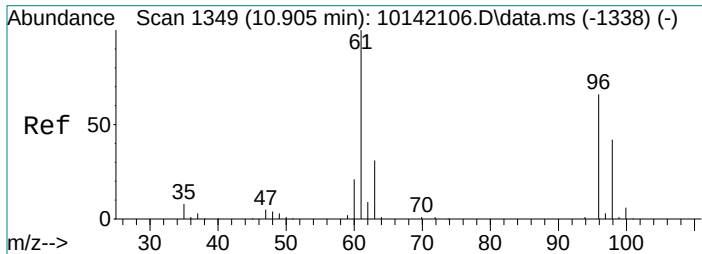
Tgt Ion: 86 Resp: 3215
Ion Ratio Lower Upper
86 100
43 969.0 1320.5 1360.5#



#27
2-Butanone (MEK)
Concen: 1.09 ng
RT: 10.40 min Scan# 1257
Delta R.T. -0.011 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

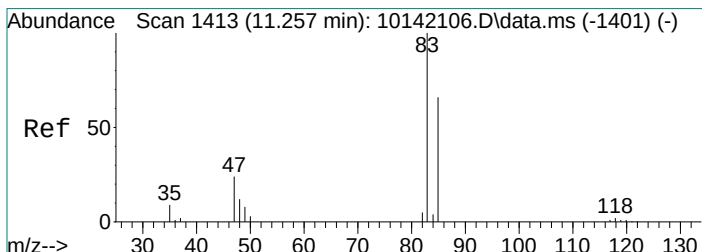
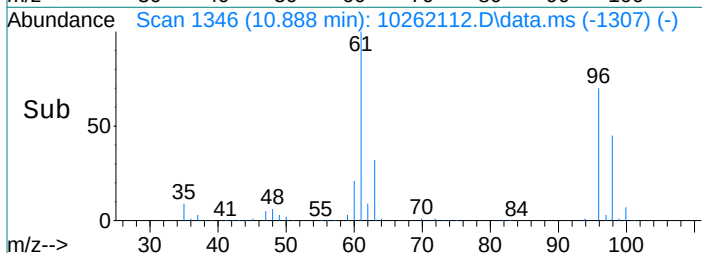
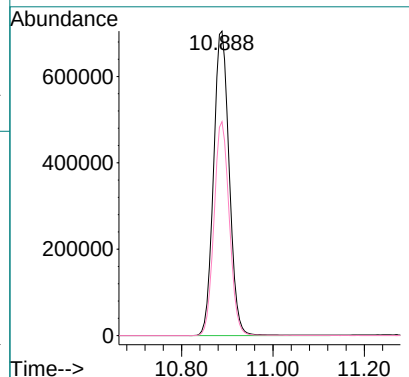
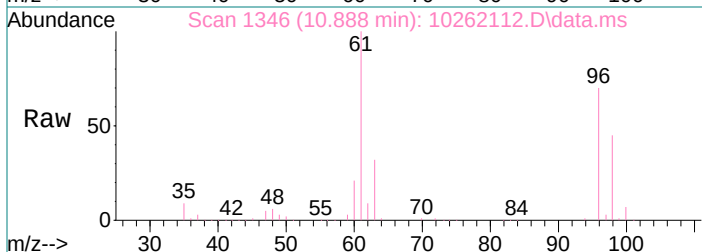
Tgt Ion: 72 Resp: 11815
Ion Ratio Lower Upper
72 100
43 527.7 454.3 494.3#





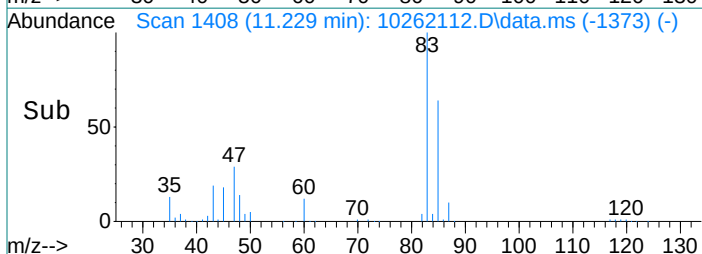
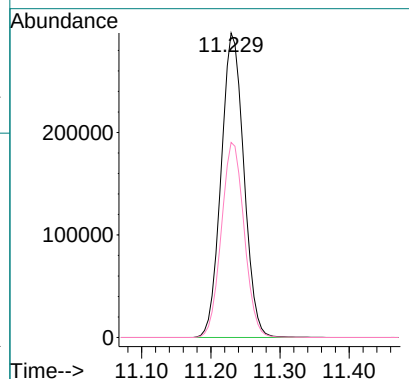
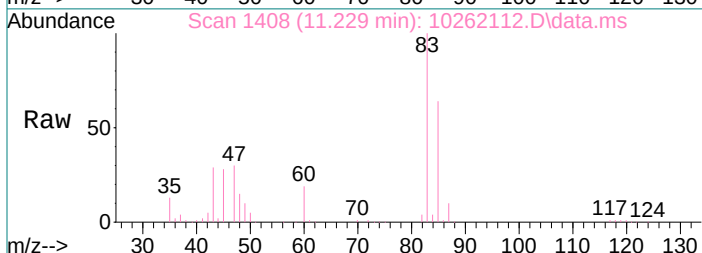
#28
 cis-1,2-Dichloroethene
 Concen: 64.90 ng
 RT: 10.89 min Scan# 1346
 Delta R.T. -0.033 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

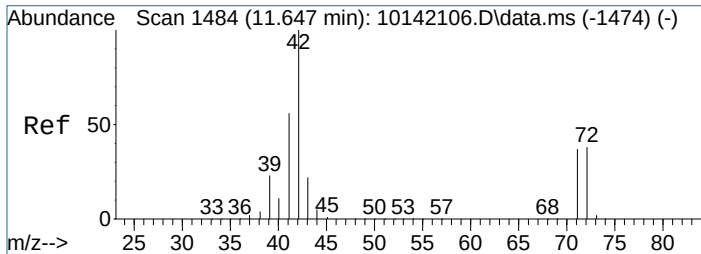
Tgt Ion: 61 Resp: 1678193
 Ion Ratio Lower Upper
 61 100
 96 68.8 46.3 86.3



#32
 Chloroform
 Concen: 22.44 ng
 RT: 11.23 min Scan# 1408
 Delta R.T. -0.055 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

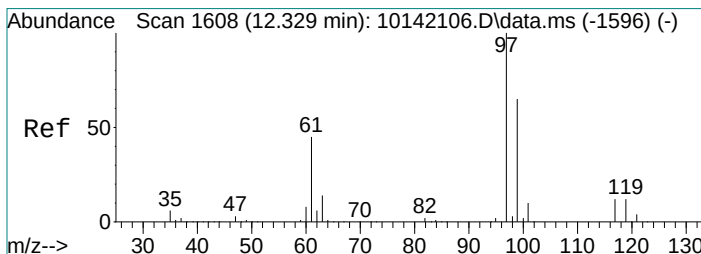
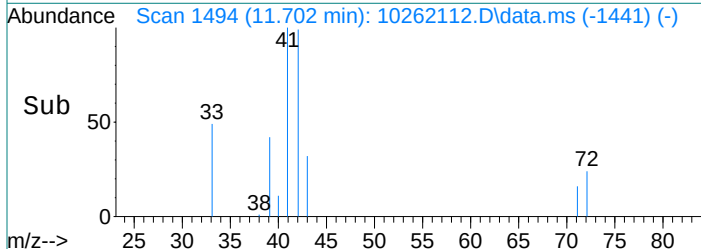
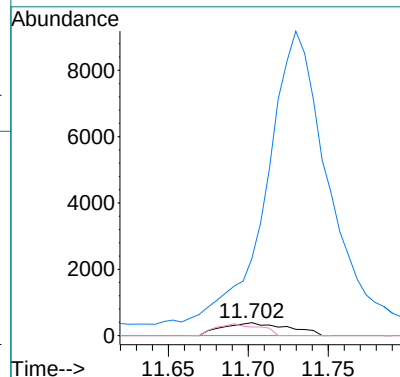
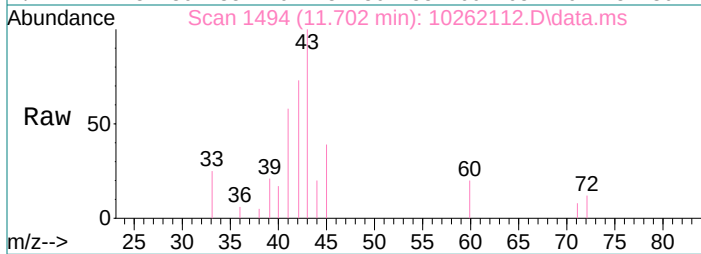
Tgt Ion: 83 Resp: 678197
 Ion Ratio Lower Upper
 83 100
 85 64.4 45.6 85.6





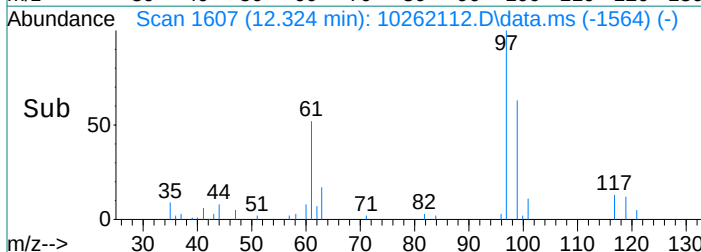
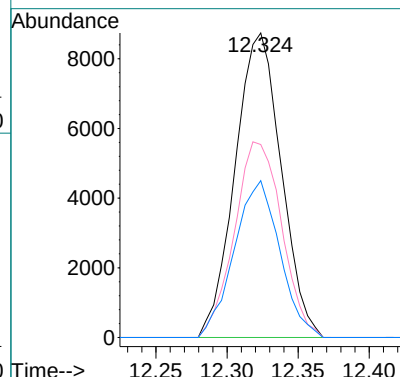
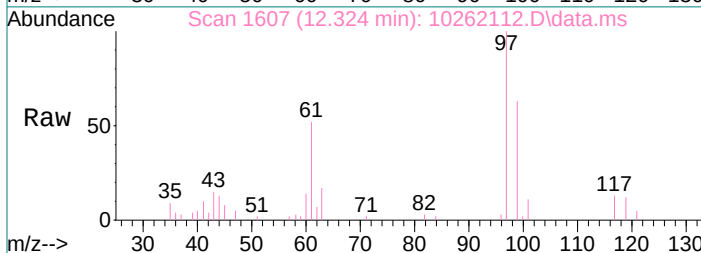
#34
Tetrahydrofuran (THF)
Concen: 0.11 ng
RT: 11.70 min Scan# 1494
Delta R.T. 0.044 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

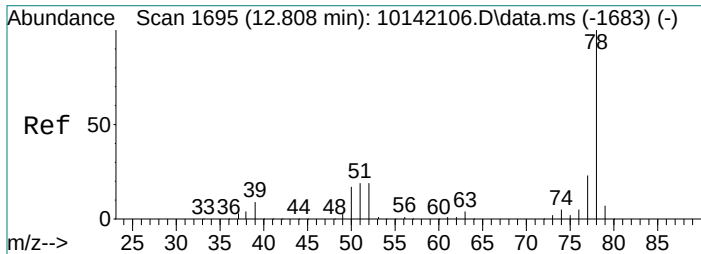
Tgt Ion: 72 Resp: 1114
Ion Ratio Lower Upper
72 100
71 62.1 77.1 117.1#
42 2157.2 248.2 288.2#



#38
1,1,1-Trichloroethane
Concen: 0.70 ng
RT: 12.32 min Scan# 1607
Delta R.T. -0.011 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

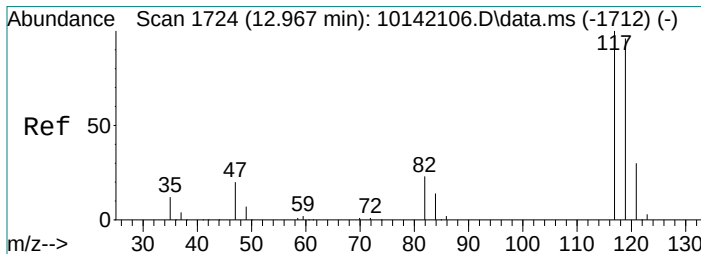
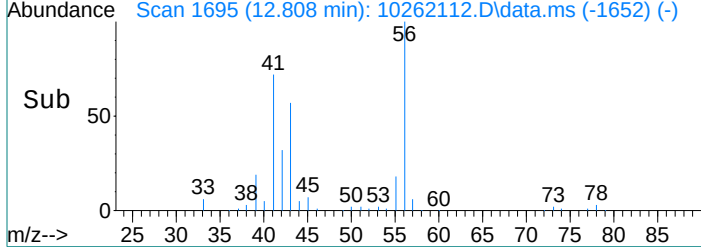
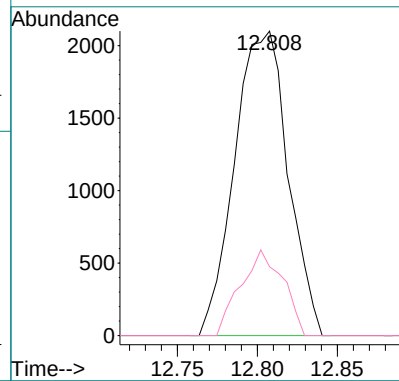
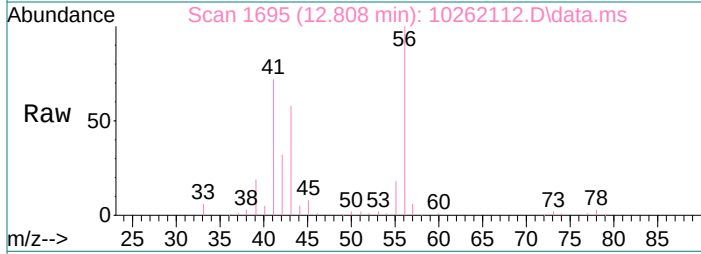
Tgt Ion: 97 Resp: 19746
Ion Ratio Lower Upper
97 100
99 65.9 44.6 84.6
61 50.8 24.8 64.8





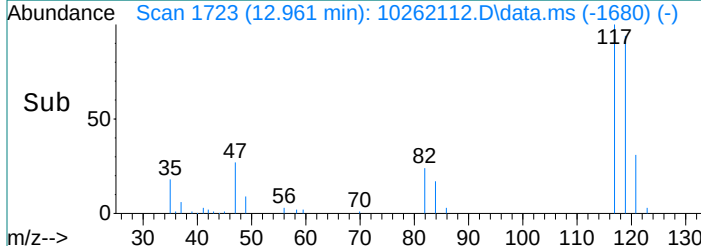
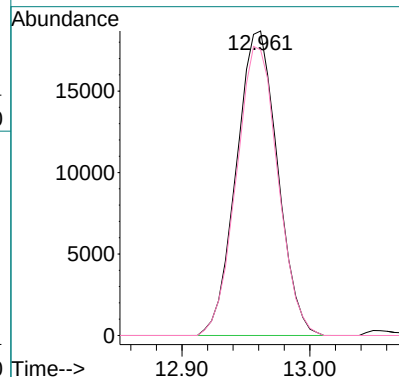
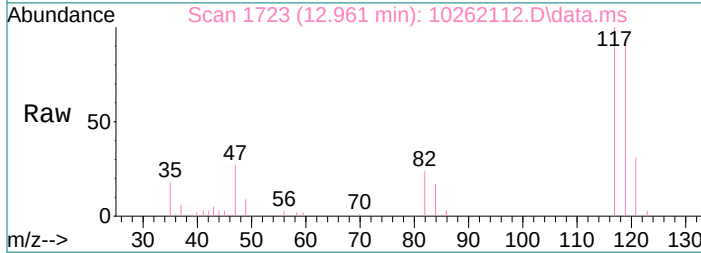
#41
Benzene
Concen: 0.07 ng
RT: 12.81 min Scan# 1695
Delta R.T. -0.011 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

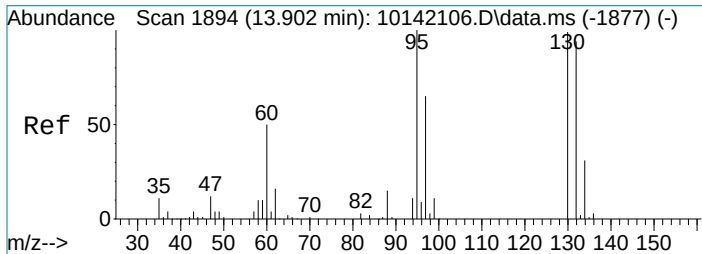
Tgt Ion: 78 Resp: 4874
Ion Ratio Lower Upper
78 100
77 22.4 3.0 43.0



#42
Carbon Tetrachloride
Concen: 1.77 ng
RT: 12.96 min Scan# 1723
Delta R.T. -0.011 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

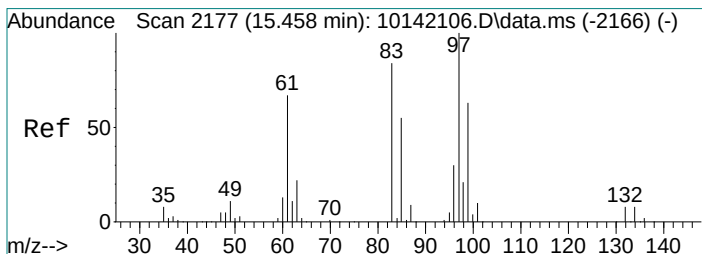
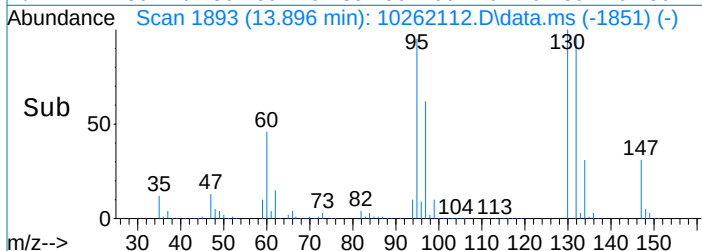
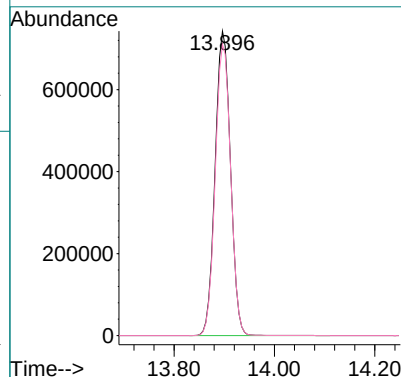
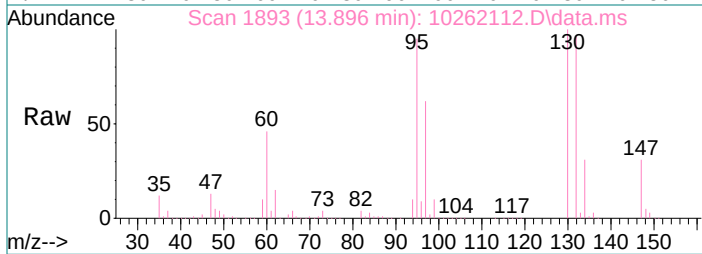
Tgt Ion: 117 Resp: 41836
Ion Ratio Lower Upper
117 100
119 95.6 76.3 116.3





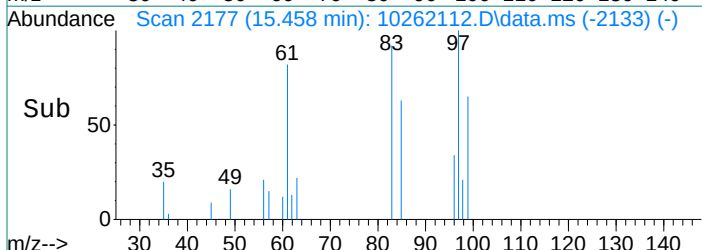
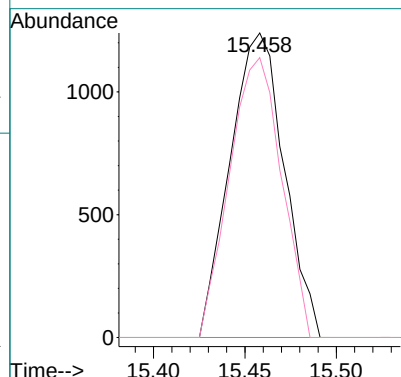
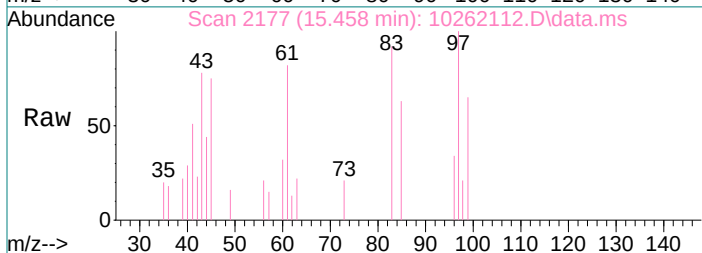
#47
 Trichloroethene
 Concen: 92.21 ng
 RT: 13.90 min Scan# 1893
 Delta R.T. -0.017 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

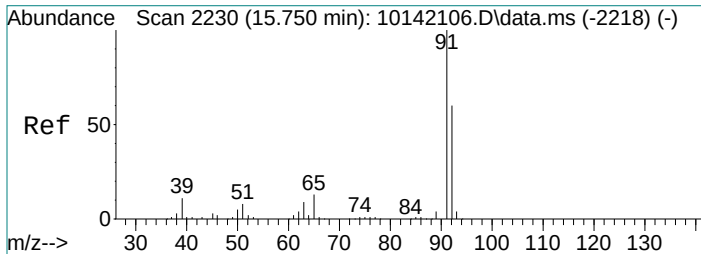
Tgt Ion: 130 Resp: 1572587
 Ion Ratio Lower Upper
 130 100
 132 96.5 75.9 115.9



#55
 1,1,2-Trichloroethane
 Concen: 0.16 ng
 RT: 15.46 min Scan# 2177
 Delta R.T. -0.006 min
 Lab File: 10262112.D
 Acq: 26 Oct 2021 10:38

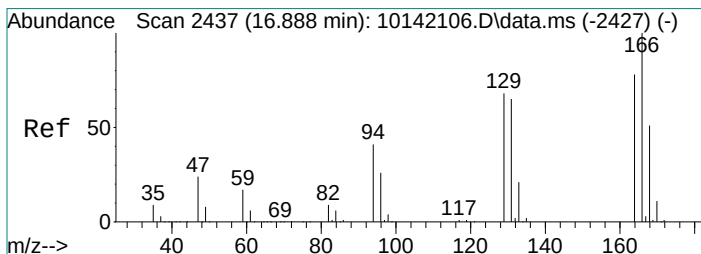
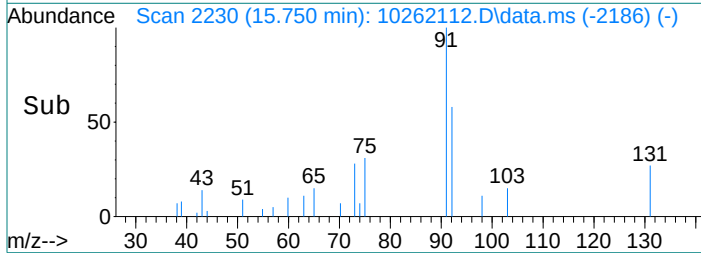
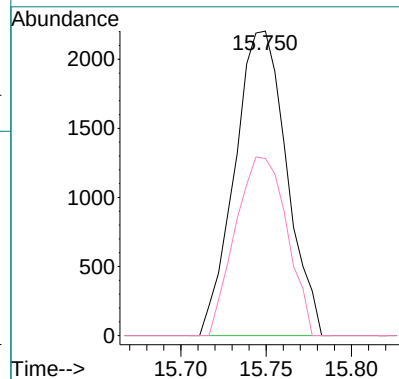
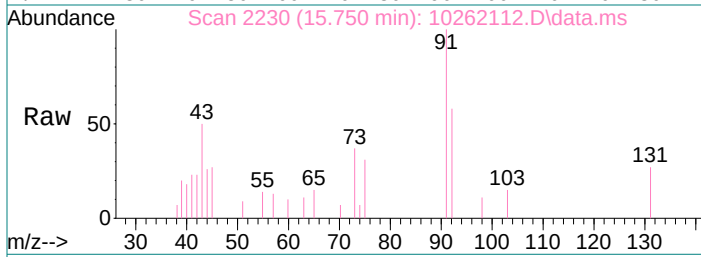
Tgt Ion: 97 Resp: 2552
 Ion Ratio Lower Upper
 97 100
 83 88.3 65.2 105.2





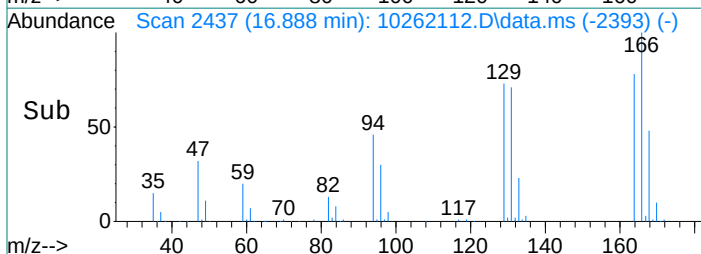
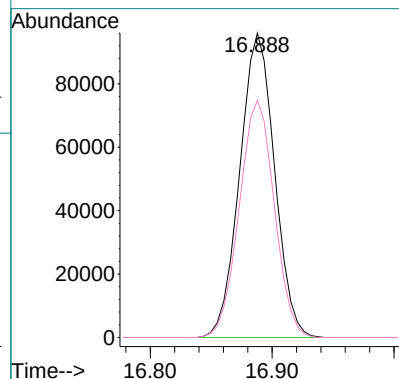
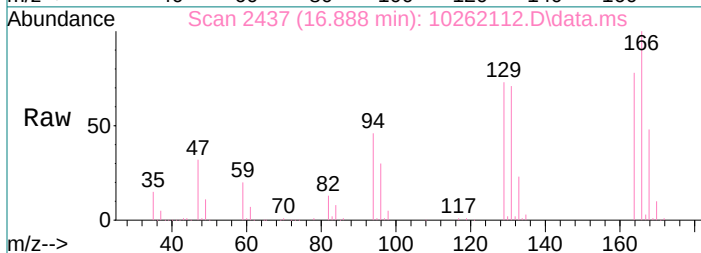
#58
Toluene
Concen: 0.06 ng
RT: 15.75 min Scan# 2230
Delta R.T. -0.006 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

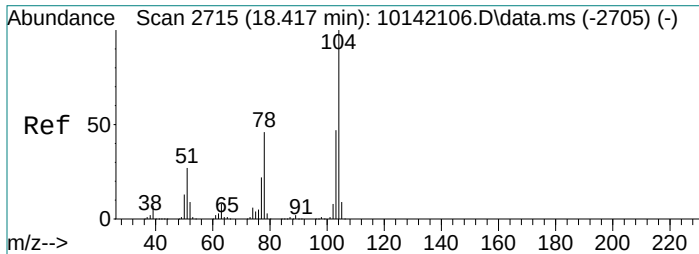
Tgt Ion: 91 Resp: 4664
Ion Ratio Lower Upper
91 100
92 58.1 40.0 80.0



#64
Tetrachloroethene
Concen: 8.55 ng
RT: 16.89 min Scan# 2437
Delta R.T. -0.006 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

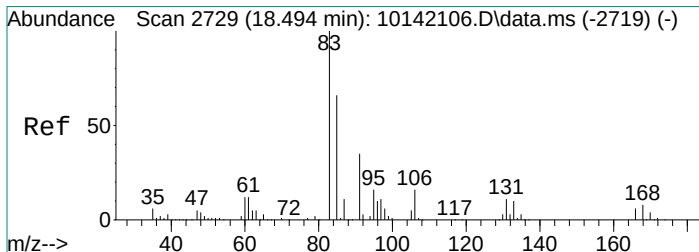
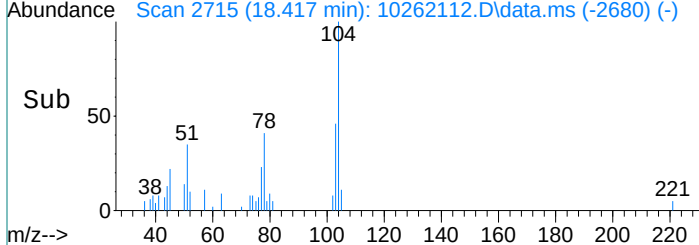
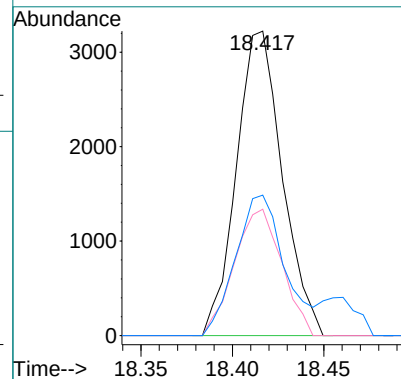
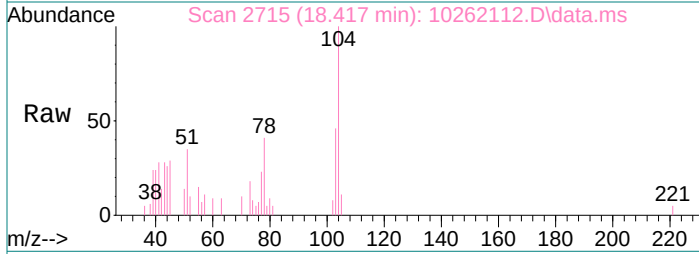
Tgt Ion: 166 Resp: 190791
Ion Ratio Lower Upper
166 100
164 78.4 58.2 98.2





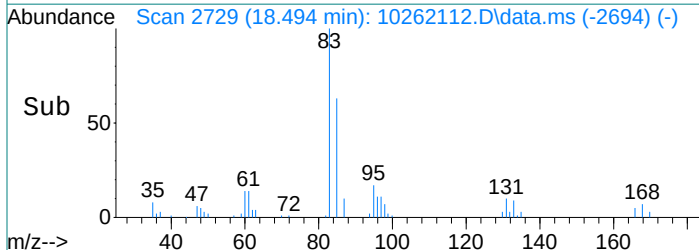
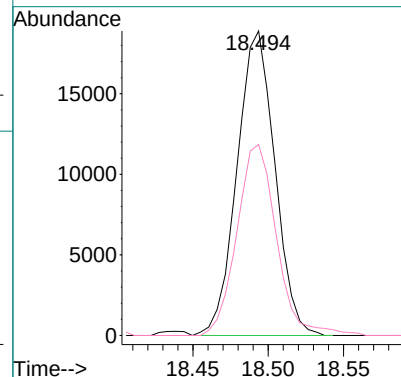
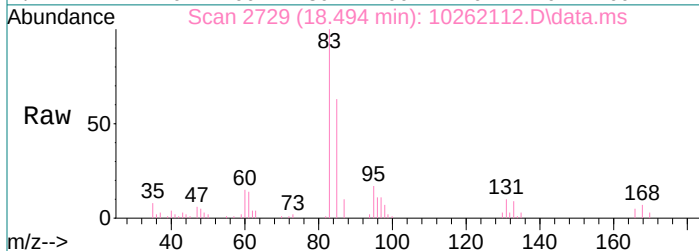
#69
Styrene
Concen: 0.11 ng
RT: 18.42 min Scan# 2715
Delta R.T. -0.006 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

Tgt Ion:	104	Resp:	5639
Ion Ratio		Lower	Upper
104	100		
78	42.9	26.8	66.8
103	49.2	27.0	67.0



#72
1,1,2,2-Tetrachloroethane
Concen: 1.15 ng
RT: 18.49 min Scan# 2729
Delta R.T. -0.006 min
Lab File: 10262112.D
Acq: 26 Oct 2021 10:38

Tgt Ion:	83	Resp:	33076
Ion Ratio		Lower	Upper
83	100		
85	65.8	45.4	85.4

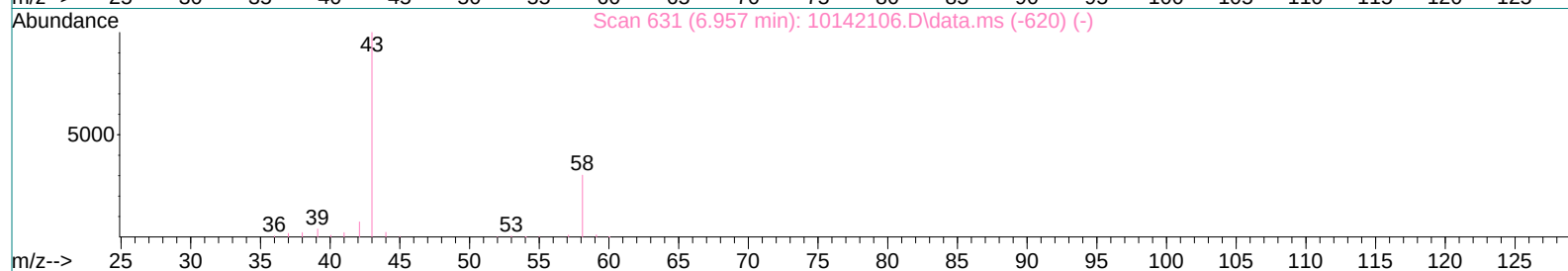
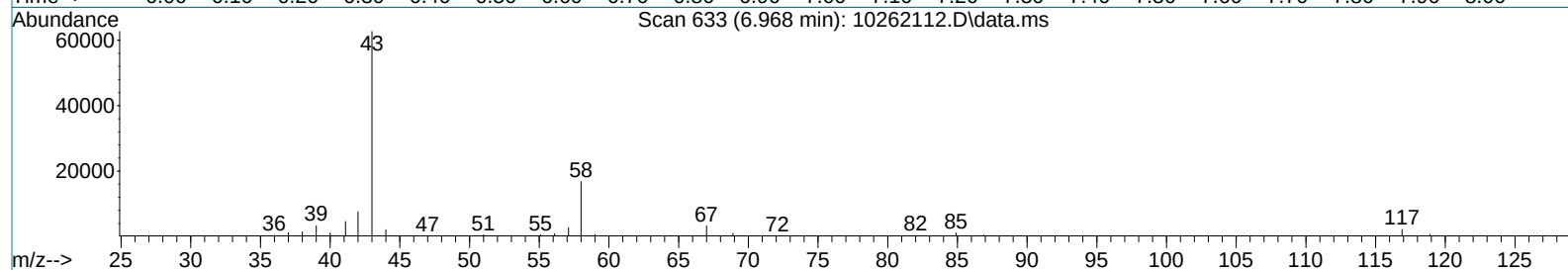
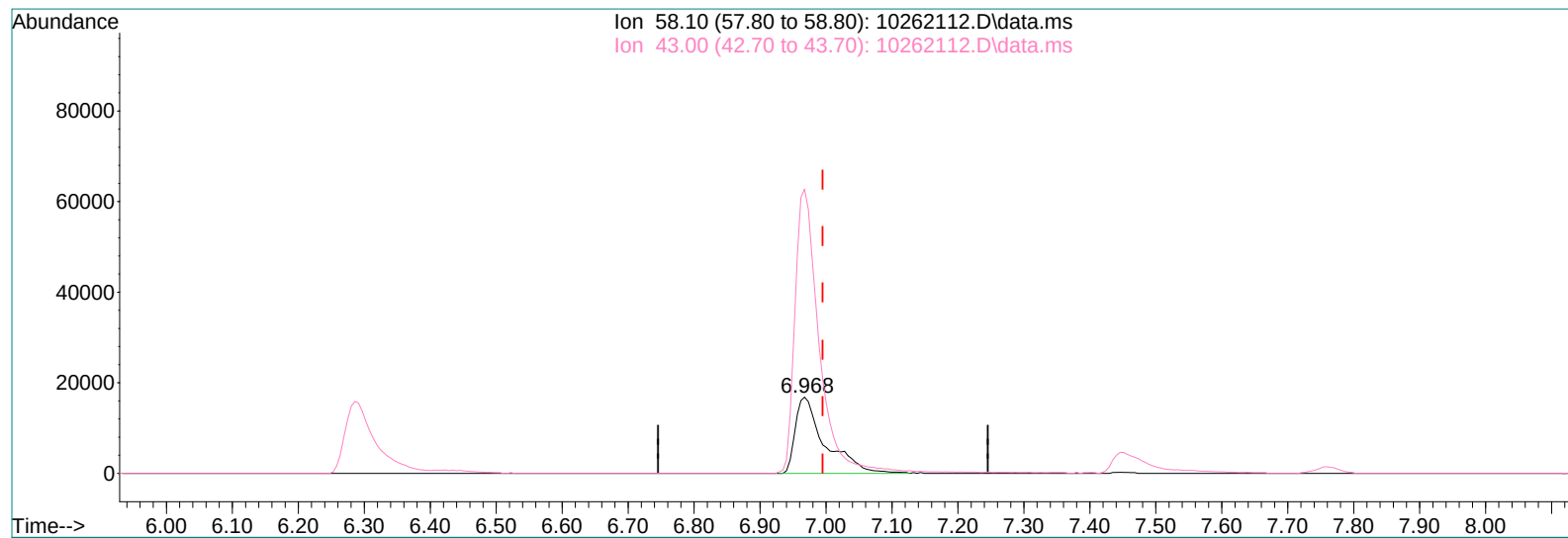


Quantitation Report (Qedit)

Data File : I:\MS16\DATA\2021_10\26\10262112.D
Acq On : 26 Oct 2021 10:38
Sample : P2105399-002 (1000mL)
Misc : S34-09132101

Vial: 8
Operator: WA
Inst : GCMS-16

Quant Time: Oct 27 15:03:29 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M



TIC: 10262112.D\data.ms

(13) Acetone (T)

6.968min (-0.028) 3.76ng

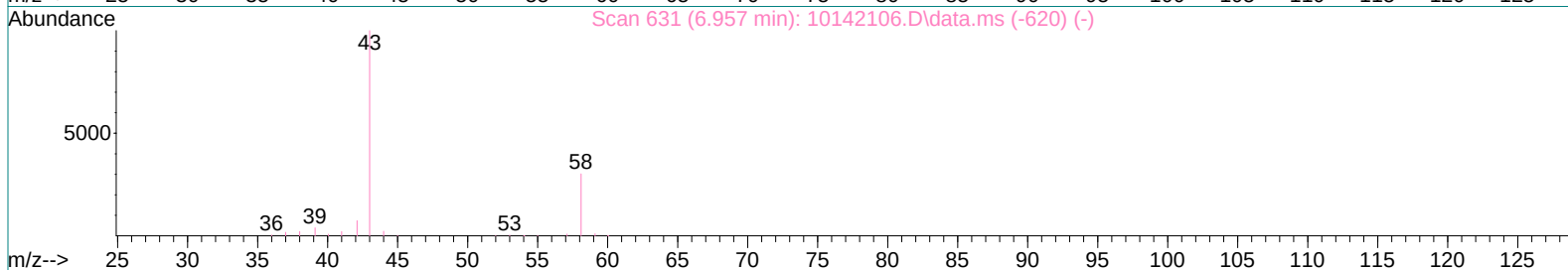
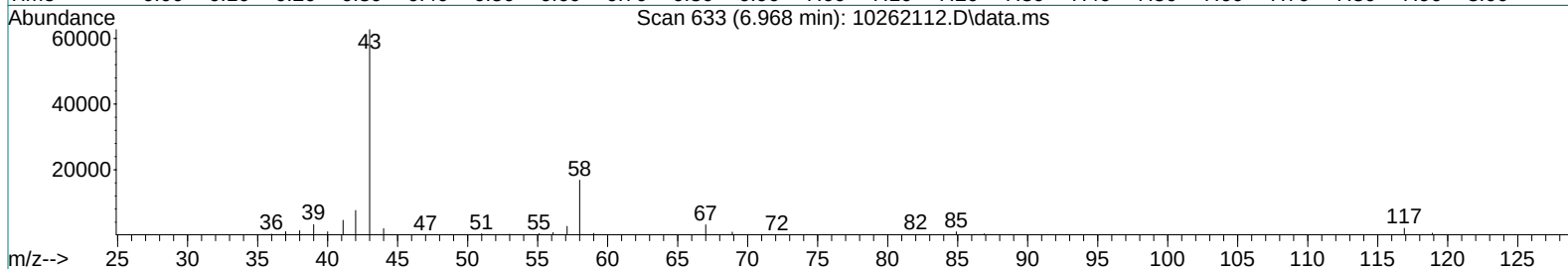
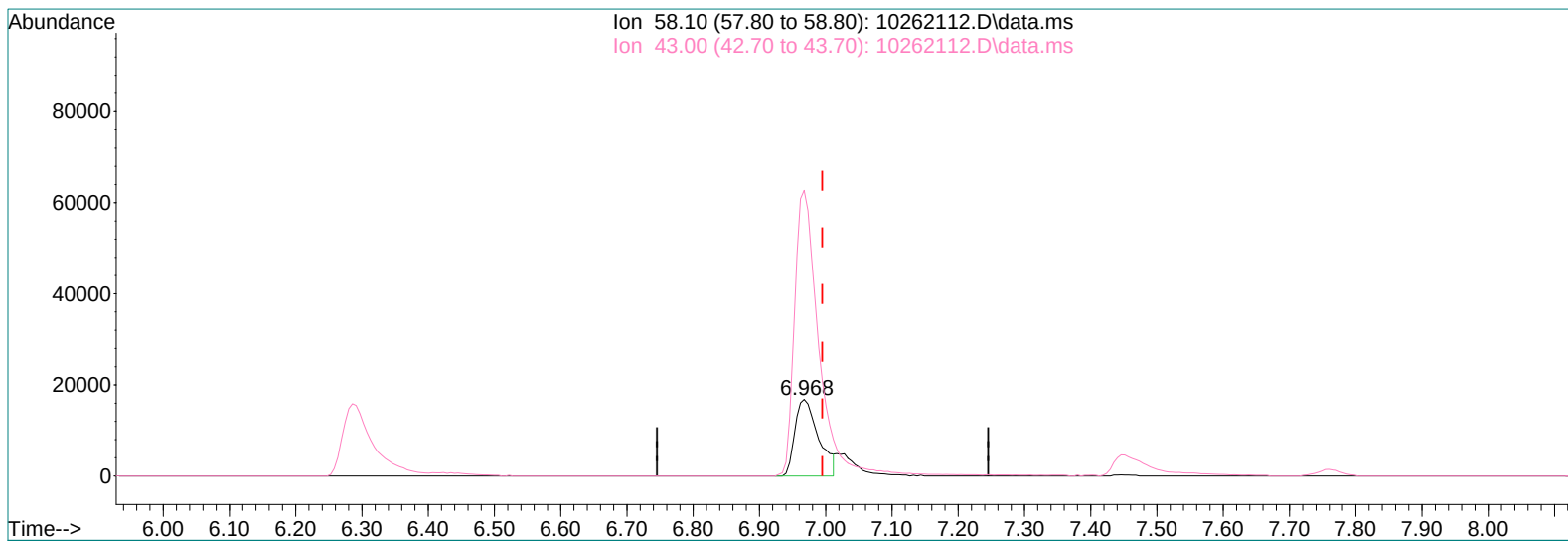
response 52553

Ion	Exp%	Act%
58.10	100	100
43.00	333.00	306.80
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS16\DATA\2021_10\26\10262112.D
Acq On : 26 Oct 2021 10:38
Sample : P2105399-002 (1000mL)
Misc : S34-09132101

Vial: 8
Operator: WA
Inst : GCMS-16

Quant Time: Oct 27 15:03:29 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M



TIC: 10262112.D\data.ms

(13) Acetone (T)

6.968min (-0.028) 2.99ng m

response 41810

IPC

Ion	Exp%	Act%

TZ 10/27/21

58.10	100	100

LH 10/28/21

43.00	333.00	385.63#

0.00	0.00	0.00

0.00	0.00	0.00

Data File : I:\MS16\DATA\2021_10\26\10262103.D
 Acq On : 26 Oct 2021 3:52
 Sample : MB R16102621_1000mL
 Misc : S34-09132101

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 06:07:50 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

10/26/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	141810	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.19	114	646027	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.51	54	140225	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	267146	12.198	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.60%
57) Toluene-d8 (SS2)	15.65	98	664948	11.324	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	90.56%
73) Bromofluorobenzene (SS3)	18.92	174	203231	9.448	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	75.60%

Target Compounds

						Qvalue
2) Propene	4.13	42	109	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	6.38	45	1555	0.114	ng	# 61
11) Acetonitrile	6.67	41	357	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	7.05	58	732	0.058	ng	# 18
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	12.81	78	690	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	13.19	84	543	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	13.91	130	104	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.		

Data File : I:\MS16\DATA\2021_10\26\10262103.D
 Acq On : 26 Oct 2021 3:52
 Sample : MB R16102621_1000mL
 Misc : S34-09132101

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 06:07:50 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

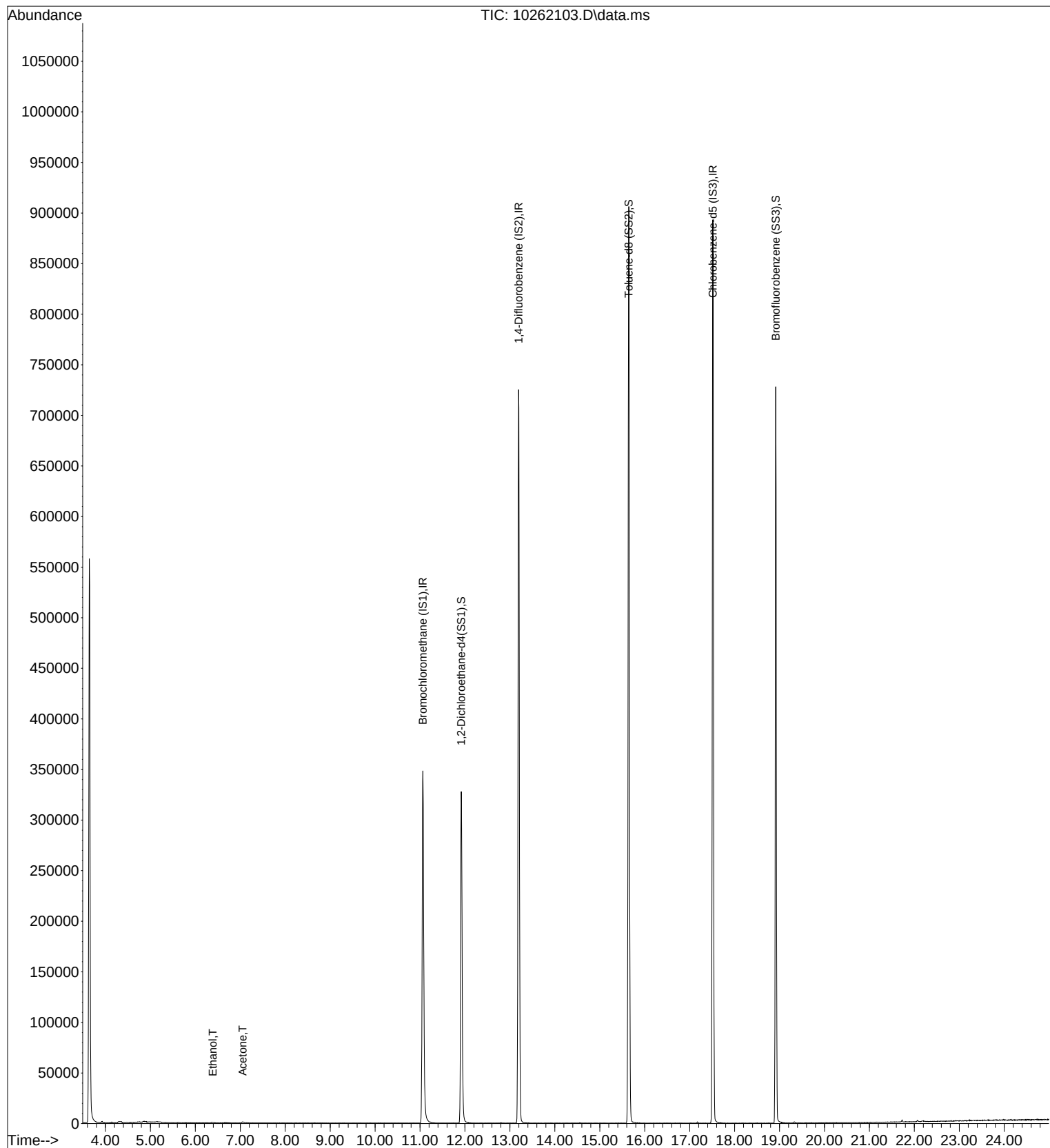
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.75	91	267	N.D.		
59) 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	18.92	105	293	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	20.26	146	252	N.D.		
86) 1,4-Dichlorobenzene	20.26	146	252	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	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.07	180	663	N.D.		
95) Naphthalene	22.18	128	1897	N.D.		
96) n-Dodecane	0.00	57	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 File : I:\MS16\DATA\2021_10\26\10262103.D
Acq On : 26 Oct 2021 3:52
Sample : MB R16102621_1000mL
Misc : S34-09132101

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Oct 26 06:07:50 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M



Data File : I:\MS16\DATA\2021_10\26\10262104.D
 Acq On : 26 Oct 2021 4:26
 Sample : LCS R16102621_25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 06:07:59 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

10/26/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	149346	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	673192	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	151856	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	277724	12.041	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.32%
57) Toluene-d8 (SS2)	15.65	98	716037	11.260	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	90.08%
73) Bromofluorobenzene (SS3)	18.92	174	235546	10.111	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	80.88%

Target Compounds

						Qvalue
2) Propene	4.05	42	786941	35.870	ng	97
3) Dichlorodifluoromethan...	4.21	85	823523	25.140	ng	100
4) Chloromethane	4.49	50	722292	36.519	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	387064	31.648	ng	99
6) Vinyl Chloride	4.90	62	634619	34.067	ng	99
7) 1,3-Butadiene	5.16	54	565400	34.315	ng	97
8) Bromomethane	5.60	94	325880	25.246	ng	99
9) Chloroethane	5.92	64	289927	25.368	ng	99
10) Ethanol	6.32	45	1712600	119.672	ng	98
11) Acetonitrile	6.56	41	932139	25.760	ng	99
12) Acrolein	6.74	56	623861	57.199	ng	99
13) Acetone	6.95	58	1713461	129.541	ng	93
14) Trichlorofluoromethane	7.18	101	704645	22.874	ng	100
15) 2-Propanol (Isopropanol)	7.44	45	2097631	49.608	ng	99
16) Acrylonitrile	7.70	53	1331082	54.057	ng	99
17) 1,1-Dichloroethene	8.13	96	373882	25.118	ng	100
18) 2-Methyl-2-Propanol (t...	8.30	59	1740609	39.700	ng	96
19) Methylene Chloride	8.36	84	388747	24.371	ng	88
20) 3-Chloro-1-propene (Al...	8.52	41	727072	26.248	ng	97
21) Trichlorotrifluoroethane	8.77	151	321098	21.637	ng	85
22) Carbon Disulfide	8.62	76	2835808	50.075	ng	100
23) trans-1,2-Dichloroethene	9.63	61	636509	26.247	ng	99
24) 1,1-Dichloroethane	9.89	63	770757	24.843	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1188123	23.494	ng	95
26) Vinyl Acetate	10.15	86	412798	139.769	ng	# 93
27) 2-Butanone (MEK)	10.38	72	537662	52.215	ng	# 88
28) cis-1,2-Dichloroethene	10.91	61	614455	25.115	ng	99
29) Diisopropyl Ether	11.20	87	648234	48.106	ng	# 77
30) Ethyl Acetate	11.21	61	472001	73.350	ng	93
31) n-Hexane	11.19	57	774443	26.371	ng	99
32) Chloroform	11.25	83	671925	23.503	ng	99
34) Tetrahydrofuran (THF)	11.64	72	503537	51.878	ng	# 89
35) Ethyl tert-Butyl Ether	11.79	87	969883	49.004	ng	95
36) 1,2-Dichloroethane	12.05	62	593066	24.196	ng	99
38) 1,1,1-Trichloroethane	12.32	97	623343	22.886	ng	97
39) Isopropyl Acetate	12.80	61	20742	No Calib	#	
40) 1-Butanol	12.82	56	7031	No Calib	#	
41) Benzene	12.81	78	1579684	24.794	ng	100
42) Carbon Tetrachloride	12.96	117	527027	23.023	ng	100
43) Cyclohexane	13.09	84	1214390	50.153	ng	96
44) tert-Amyl Methyl Ether	13.44	73	2325650	49.011	ng	97
45) 1,2-Dichloropropane	13.65	63	441215	25.620	ng	99
46) Bromodichloromethane	13.85	83	565743	24.745	ng	99
47) Trichloroethene	13.90	130	424840	25.749	ng	99
48) 1,4-Dioxane	13.87	88	332250	27.091	ng	98
49) 2,2,4-Trimethylpentane...	13.97	57	1956325	25.170	ng	99
50) Methyl Methacrylate	14.11	100	338974	52.185	ng	97

Data File : I:\MS16\DATA\2021_10\26\10262104.D
 Acq On : 26 Oct 2021 4:26
 Sample : LCS R16102621_25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 06:07:59 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	409416	25.766	ng	98
52) cis-1,3-Dichloropropene	14.77	75	668239	27.558	ng	100
53) 4-Methyl-2-pentanone	14.80	58	912519	57.421	ng	95
54) trans-1,3-Dichloropropene	15.28	75	618653	24.321	ng	100
55) 1,1,2-Trichloroethane	15.45	97	388250	25.657	ng	97
58) Toluene	15.75	91	1605558	22.610	ng	99
59) 2-Hexanone	15.99	43	2317911	54.342	ng	98
60) Dibromochloromethane	16.16	129	465659	23.191	ng	99
61) 1,2-Dibromoethane	16.40	107	448537	23.941	ng	100
62) n-Butyl Acetate	16.63	43	2636508	53.285	ng	99
63) n-Octane	16.76	57	422026	24.125	ng	96
64) Tetrachloroethene	16.89	166	439359	20.334	ng	99
65) Chlorobenzene	17.56	112	1101709	24.097	ng	100
66) Ethylbenzene	17.92	91	1895313	23.317	ng	99
67) m- & p-Xylenes	18.09	91	2981015	45.433	ng	96
68) Bromoform	18.15	173	383657	21.184	ng	100
69) Styrene	18.41	104	1176327	23.892	ng	95
70) o-Xylene	18.52	91	1469610	22.701	ng	95
71) n-Nonane	18.72	43	1032042	26.278	ng	95
72) 1,1,2,2-Tetrachloroethane	18.49	83	727427	26.087	ng	99
74) Cumene	19.04	105	1888366	22.870	ng	97
75) alpha-Pinene	19.40	93	1012114	24.574	ng	98
76) n-Propylbenzene	19.49	91	2306688	22.475	ng	99
77) 3-Ethyltoluene	19.63	105	1887360	No Calib		
78) 4-Ethyltoluene	19.63	105	1887360	24.928	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	1554958	23.503	ng	95
80) alpha-Methylstyrene	19.63	118	11392	No Calib		
81) 2-Ethyltoluene	19.63	105	1887360	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	1597651	25.296	ng	96
83) n-Decane	20.06	58	84989	No Calib	#	
84) Benzyl Chloride	20.17	91	2805691	52.539	ng	95
85) 1,3-Dichlorobenzene	20.19	146	913692	26.780	ng	100
86) 1,4-Dichlorobenzene	20.25	146	902685	25.383	ng	100
87) sec-Butylbenzene	20.29	105	2079545	23.842	ng	99
88) 4-Isopropyltoluene (p-...	20.43	119	1821003	24.504	ng	98
89) 1,2,3-Trimethylbenzene	20.29	105	2079545	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	890012	25.964	ng	99
91) d-Limonene	20.56	68	628357	26.169	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.94	157	691372	44.245	ng	95
93) n-Undecane	21.14	57	162	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1386811	40.828	ng	98
95) Naphthalene	22.16	128	2118849	22.219	ng	100
96) n-Dodecane	22.16	57	1035	No Calib	#	
97) Hexachlorobutadiene	22.48	225	400413	17.346	ng	100
98) Cyclohexanone	18.09	55	2588	No Calib		
99) tert-Butylbenzene	20.06	119	1559701	24.082	ng	97
100) n-Butylbenzene	20.80	91	1748851	26.273	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	402875	23.221	ng	99

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

Data File : I:\MS16\DATA\2021_10\26\10262104.D
Acq On : 26 Oct 2021 4:26
Sample : LCS R16102621_25ng
Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Oct 26 06:07:59 2021

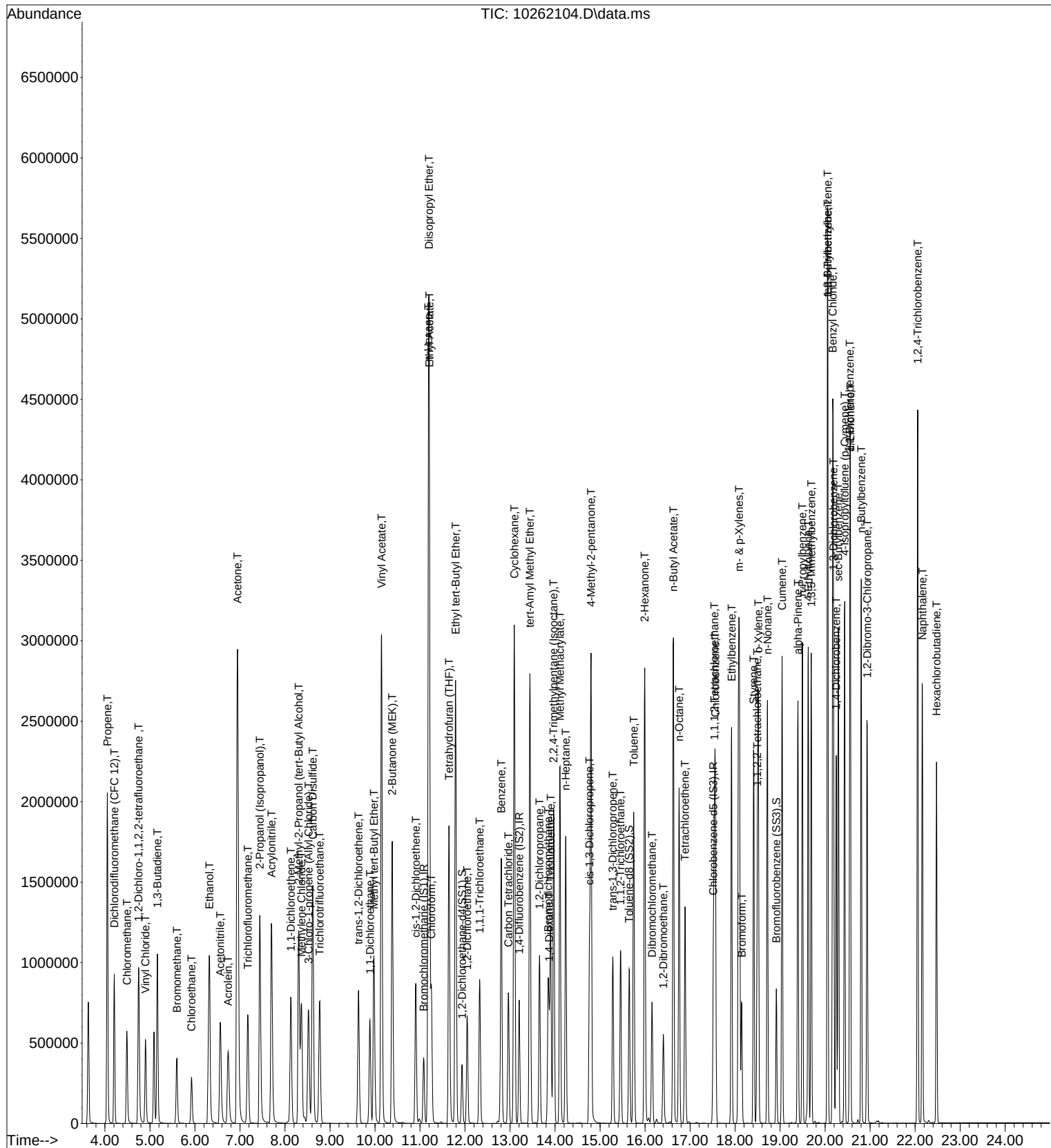
Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M



Data File : I:\MS16\DATA\2021_10\26\10262105.D

Vial: 2

Acq On : 26 Oct 2021 5:00

Operator: WA

Sample : LCSD R16102621_25ng

Inst : GCMS-16

Misc : S34-09132101/S34-10122104 (11/11)

Quant Time: Oct 26 06:09:00 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

10/26/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	162331	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	721890	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	155673	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	288575	11.510	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	92.08%
57) Toluene-d8 (SS2)	15.65	98	752045	11.536	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	92.32%
73) Bromofluorobenzene (SS3)	18.92	174	246934	10.340	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	82.72%

Target Compounds

						Qvalue
2) Propene	4.06	42	832361	34.905	ng	96
3) Dichlorodifluoromethan...	4.21	85	875991	24.602	ng	100
4) Chloromethane	4.49	50	758544	35.284	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	423539	31.861	ng	100
6) Vinyl Chloride	4.91	62	675106	33.341	ng	99
7) 1,3-Butadiene	5.17	54	594114	33.173	ng	96
8) Bromomethane	5.60	94	365180	26.028	ng	99
9) Chloroethane	5.93	64	322114	25.929	ng	99
10) Ethanol	6.32	45	1839309	118.245	ng	98
11) Acetonitrile	6.57	41	1017283	25.864	ng	99
12) Acrolein	6.74	56	682808	57.596	ng	99
13) Acetone	6.95	58	1832354	127.449	ng	90
14) Trichlorofluoromethane	7.18	101	760241	22.705	ng	100
15) 2-Propanol (Isopropanol)	7.44	45	2227825	48.473	ng	100
16) Acrylonitrile	7.70	53	1441877	53.873	ng	99
17) 1,1-Dichloroethene	8.13	96	408522	25.250	ng	98
18) 2-Methyl-2-Propanol (t...	8.30	59	1847999	38.778	ng	97
19) Methylene Chloride	8.36	84	423509	24.427	ng	90
20) 3-Chloro-1-propene (Al...	8.52	41	778718	25.864	ng	98
21) Trichlorotrifluoroethane	8.77	151	355955	22.067	ng	88
22) Carbon Disulfide	8.62	76	3038442	49.362	ng	100
23) trans-1,2-Dichloroethene	9.63	61	688296	26.112	ng	98
24) 1,1-Dichloroethane	9.89	63	831999	24.672	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1283678	23.353	ng	95
26) Vinyl Acetate	10.15	86	443672	138.207	ng	99
27) 2-Butanone (MEK)	10.38	72	582367	52.032	ng	93
28) cis-1,2-Dichloroethene	10.90	61	661136	24.862	ng	98
29) Diisopropyl Ether	11.20	87	684227	46.716	ng	# 75
30) Ethyl Acetate	11.21	61	492834	70.461	ng	94
31) n-Hexane	11.19	57	807932	25.310	ng	99
32) Chloroform	11.25	83	715635	23.029	ng	99
34) Tetrahydrofuran (THF)	11.64	72	542435	51.415	ng	92
35) Ethyl tert-Butyl Ether	11.79	87	1036817	48.196	ng	95
36) 1,2-Dichloroethane	12.05	62	625909	23.494	ng	99
38) 1,1,1-Trichloroethane	12.33	97	667626	22.858	ng	98
39) Isopropyl Acetate	12.80	61	22587	No Calib	#	
40) 1-Butanol	12.83	56	7919	No Calib	#	
41) Benzene	12.81	78	1700338	24.888	ng	100
42) Carbon Tetrachloride	12.96	117	567697	23.127	ng	100
43) Cyclohexane	13.09	84	1300126	50.072	ng	97
44) tert-Amyl Methyl Ether	13.44	73	2471285	48.567	ng	98
45) 1,2-Dichloropropane	13.65	63	470865	25.497	ng	100
46) Bromodichloromethane	13.85	83	598641	24.417	ng	99
47) Trichloroethene	13.90	130	460148	26.008	ng	99
48) 1,4-Dioxane	13.87	88	357050	27.150	ng	98
49) 2,2,4-Trimethylpentane...	13.97	57	2077999	24.932	ng	100
50) Methyl Methacrylate	14.11	100	364444	52.321	ng	99

Data File : I:\MS16\DATA\2021_10\26\10262105.D
 Acq On : 26 Oct 2021 5:00
 Sample : LCSD R16102621_25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

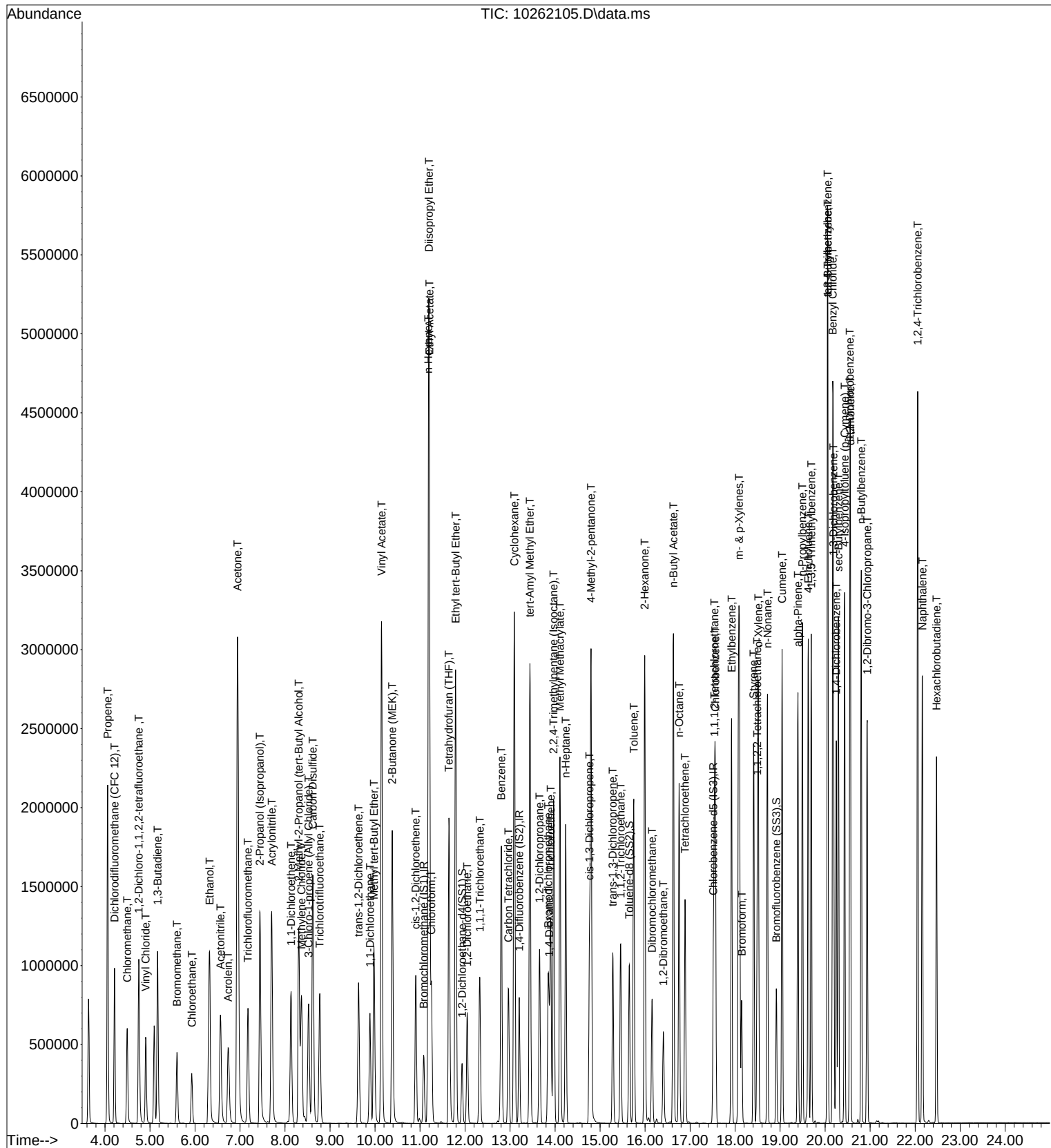
Quant Time: Oct 26 06:09:00 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:T015A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	434693	25.511	ng	98
52) cis-1,3-Dichloropropene	14.77	75	709331	27.279	ng	100
53) 4-Methyl-2-pentanone	14.80	58	958788	56.263	ng	97
54) trans-1,3-Dichloropropene	15.28	75	653715	23.966	ng	100
55) 1,1,2-Trichloroethane	15.46	97	412761	25.437	ng	97
58) Toluene	15.75	91	1706848	23.447	ng	99
59) 2-Hexanone	15.99	43	2399658	54.879	ng	100
60) Dibromochloromethane	16.16	129	495043	24.050	ng	99
61) 1,2-Dibromoethane	16.40	107	477586	24.866	ng	100
62) n-Butyl Acetate	16.63	43	2733974	53.900	ng	100
63) n-Octane	16.76	57	442984	24.702	ng	96
64) Tetrachloroethene	16.89	166	469717	21.206	ng	99
65) Chlorobenzene	17.56	112	1157862	24.705	ng	100
66) Ethylbenzene	17.92	91	1994397	23.935	ng	99
67) m- & p-Xylenes	18.09	91	3118532	46.363	ng	96
68) Bromoform	18.15	173	406360	21.888	ng	100
69) Styrene	18.41	104	1237783	24.524	ng	96
70) o-Xylene	18.52	91	1540204	23.208	ng	96
71) n-Nonane	18.72	43	1067545	26.515	ng	96
72) 1,1,2,2-Tetrachloroethane	18.49	83	760327	26.598	ng	99
74) Cumene	19.04	105	1975958	23.344	ng	97
75) alpha-Pinene	19.40	93	1064214	25.206	ng	98
76) n-Propylbenzene	19.49	91	2415440	22.957	ng	99
77) 3-Ethyltoluene	19.63	105	1976863	No Calib		
78) 4-Ethyltoluene	19.63	105	1976863	25.470	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	1636770	24.133	ng	96
80) alpha-Methylstyrene	19.63	118	11813	No Calib		
81) 2-Ethyltoluene	19.63	105	1976863	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	1665437	25.723	ng	96
83) n-Decane	20.06	58	86928	No Calib	#	
84) Benzyl Chloride	20.17	91	2930994	53.540	ng	95
85) 1,3-Dichlorobenzene	20.19	146	961635	27.494	ng	99
86) 1,4-Dichlorobenzene	20.25	146	950485	26.072	ng	100
87) sec-Butylbenzene	20.30	105	2181214	24.394	ng	98
88) 4-Isopropyltoluene (p-...	20.43	119	1907379	25.037	ng	97
89) 1,2,3-Trimethylbenzene	20.30	105	2180781	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	934816	26.602	ng	100
91) d-Limonene	20.56	68	653080	26.531	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.94	157	722584	45.109	ng	95
93) n-Undecane	21.16	57	213	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1451259	41.678	ng	98
95) Naphthalene	22.16	128	2232773	22.840	ng	100
96) n-Dodecane	22.16	57	1113	No Calib	#	
97) Hexachlorobutadiene	22.47	225	422585	17.858	ng	100
98) Cyclohexanone	18.08	55	2774	No Calib		
99) tert-Butylbenzene	20.06	119	1620451	24.406	ng	97
100) n-Butylbenzene	20.80	91	1831071	26.834	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	422627	23.762	ng	100

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

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Oct 26 06:09:00 2021



Data File : I:\MS16\DATA\2021_10\26\10262113.D
 Acq On : 26 Oct 2021 11:12
 Sample : P2105399-002dup (1000mL)
 Misc : S34-09132101

Vial: 9
 Operator: WA
 Inst : GCMS-16

T₂ 10/27/21

Quant Time: Oct 27 15:05:31 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	157455	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.20	114	695489	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	159487	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	286291	11.773	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	94.16%
57) Toluene-d8 (SS2)	15.65	98	733800	10.987	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	87.92%
73) Bromofluorobenzene (SS3)	18.92	174	242572	9.915	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	79.28%

Target Compounds

						Qvalue
2) Propene	4.09	42	22841	0.988	ng	# 88
3) Dichlorodifluoromethan...	4.23	85	83559	2.419	ng	100
4) Chloromethane	4.54	50	180	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.77	135	1200	0.093	ng	71
6) Vinyl Chloride	4.93	62	2540	0.129	ng	97
7) 1,3-Butadiene	5.19	54	227	N.D.		
8) Bromomethane	5.59	94	464	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.30	45	259862	17.223	ng	99
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	6.78	56	4008	0.349	ng	95
13) Acetone	6.97	58	38307m	2.747	ng	
14) Trichlorofluoromethane	7.18	101	34523	1.063	ng	99
15) 2-Propanol (Isopropanol)	7.46	45	76513	1.716	ng	88
16) Acrylonitrile	7.74	53	116	N.D.		
17) 1,1-Dichloroethene	8.13	96	17918	1.142	ng	98
18) 2-Methyl-2-Propanol (t...	8.13	59	1112	N.D.		
19) Methylene Chloride	8.35	84	808	N.D.		
20) 3-Chloro-1-propene (Al...	8.44	41	587	N.D.		
21) Trichlorotrifluoroethane	8.77	151	224040	14.319	ng	85
22) Carbon Disulfide	8.62	76	1719563	28.801	ng	100
23) trans-1,2-Dichloroethene	9.62	61	33083	1.294	ng	100
24) 1,1-Dichloroethane	9.88	63	17997	0.550	ng	100
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d	
26) Vinyl Acetate	10.12	86	3191	1.025	ng	# 39
27) 2-Butanone (MEK)	10.40	72	11606	1.069	ng	# 86
28) cis-1,2-Dichloroethene	10.89	61	1661511	64.415	ng	97
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	11.44	61	106	N.D.		
31) n-Hexane	0.00	57	0	N.D.	d	
32) Chloroform	11.23	83	672021	22.296	ng	99
34) Tetrahydrofuran (THF)	11.69	72	1038	0.101	ng	# 1
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.04	62	871	N.D.		
38) 1,1,1-Trichloroethane	12.32	97	19102	0.679	ng	95
39) Isopropyl Acetate	12.91	61	496	No Calib	#	
40) 1-Butanol	12.78	56	1001882	No Calib	#	
41) Benzene	12.81	78	4753	0.072	ng	94
42) Carbon Tetrachloride	12.96	117	40886	1.729	ng	100
43) Cyclohexane	13.08	84	232	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.	d	
47) Trichloroethene	13.90	130	1560442	91.544	ng	100
48) 1,4-Dioxane	0.00	88	0	N.D.	d	
49) 2,2,4-Trimethylpentane...	13.97	57	3058	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.	d	

Data File : I:\MS16\DATA\2021_10\26\10262113.D
 Acq On : 26 Oct 2021 11:12
 Sample : P2105399-002dup (1000mL)
 Misc : S34-09132101

Vial: 9
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 27 15:05:31 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

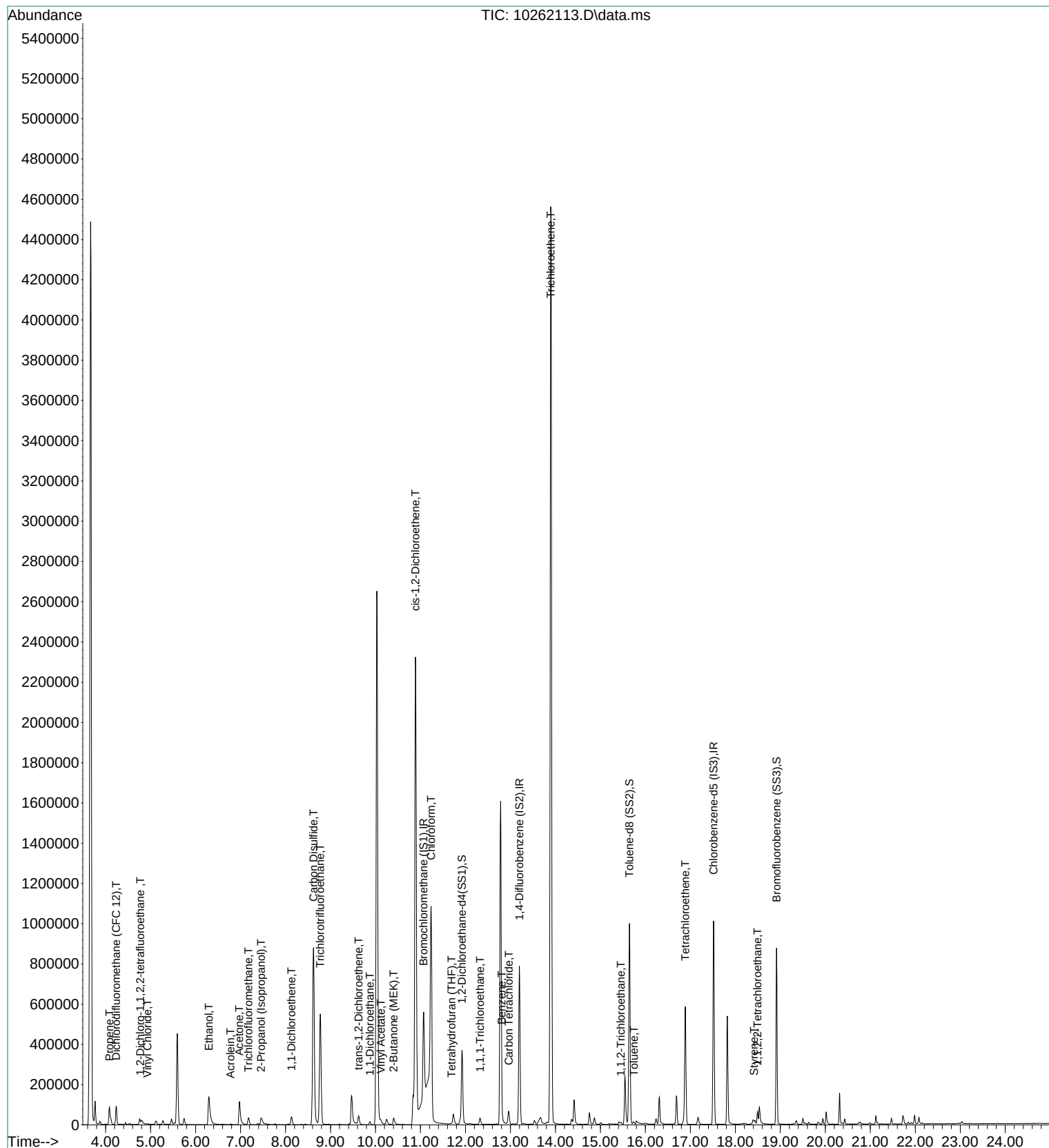
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	109	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.45	97	2716	0.174	ng	98
58) Toluene	15.74	91	4448	0.060	ng	97
59) 2-Hexanone	0.00	43	0	N.D.	d	
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	16.30	107	158	N.D.		
62) n-Butyl Acetate	16.63	43	1921	N.D.		
63) n-Octane	16.75	57	321	N.D.		
64) Tetrachloroethene	16.89	166	186744	8.229	ng	99
65) Chlorobenzene	17.56	112	243	N.D.		
66) Ethylbenzene	17.92	91	728	N.D.		
67) m- & p-Xylenes	18.08	91	1428	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.42	104	5501	0.106	ng	97
70) o-Xylene	18.52	91	633	N.D.		
71) n-Nonane	18.71	43	946	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.49	83	32539	1.111	ng	98
74) Cumene	18.91	105	346	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	19.49	91	227	N.D.		
77) 3-Ethyltoluene	19.63	105	319	No Calib	#	
78) 4-Ethyltoluene	19.63	105	319	N.D.		
79) 1,3,5-Trimethylbenzene	19.63	105	319	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.63	105	319	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.06	105	999	N.D.		
83) n-Decane	20.04	58	294	No Calib	#	
84) Benzyl Chloride	20.07	91	582	N.D.		
85) 1,3-Dichlorobenzene	20.19	146	225	N.D.		
86) 1,4-Dichlorobenzene	20.25	146	236	N.D.		
87) sec-Butylbenzene	20.43	105	749	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	d	
89) 1,2,3-Trimethylbenzene	20.43	105	749	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.56	68	396	N.D.		
92) 1,2-Dibromo-3-Chloropr...	20.86	157	143	N.D.		
93) n-Undecane	21.12	57	7161	No Calib		
94) 1,2,4-Trichlorobenzene	22.06	180	200	N.D.		
95) Naphthalene	22.16	128	1225	N.D.		
96) n-Dodecane	22.16	57	1448	No Calib	#	
97) Hexachlorobutadiene	22.48	225	115	N.D.		
98) Cyclohexanone	18.22	55	2113	No Calib	#	
99) tert-Butylbenzene	20.02	119	1501	N.D.		
100) n-Butylbenzene	20.80	91	623	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data File : I:\MS16\DATA\2021_10\26\10262113.D
Acq On : 26 Oct 2021 11:12
Sample : P2105399-002dup (1000mL)
Misc : S34-09132101

Vial: 9
Operator: WA
Inst : GCMS-16

Quant Time: Oct 27 15:05:31 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M

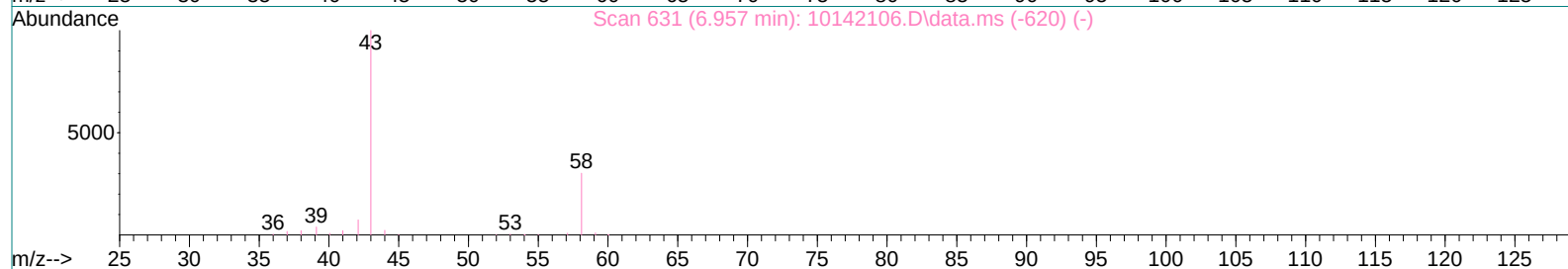
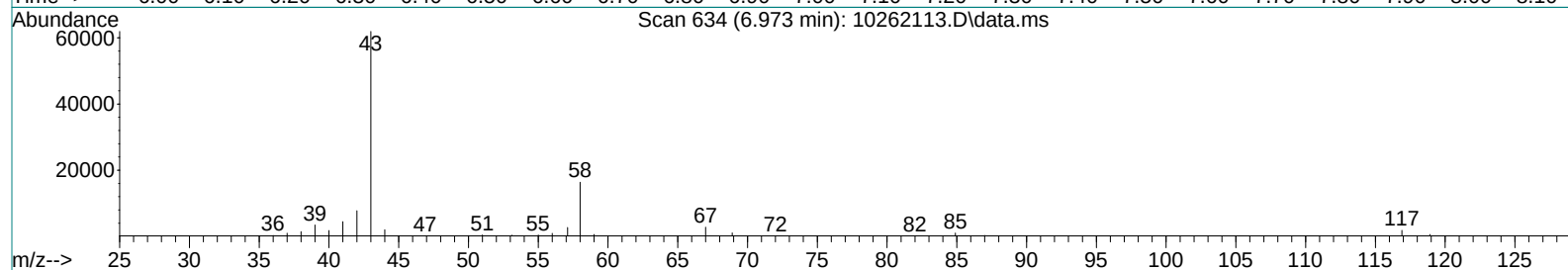
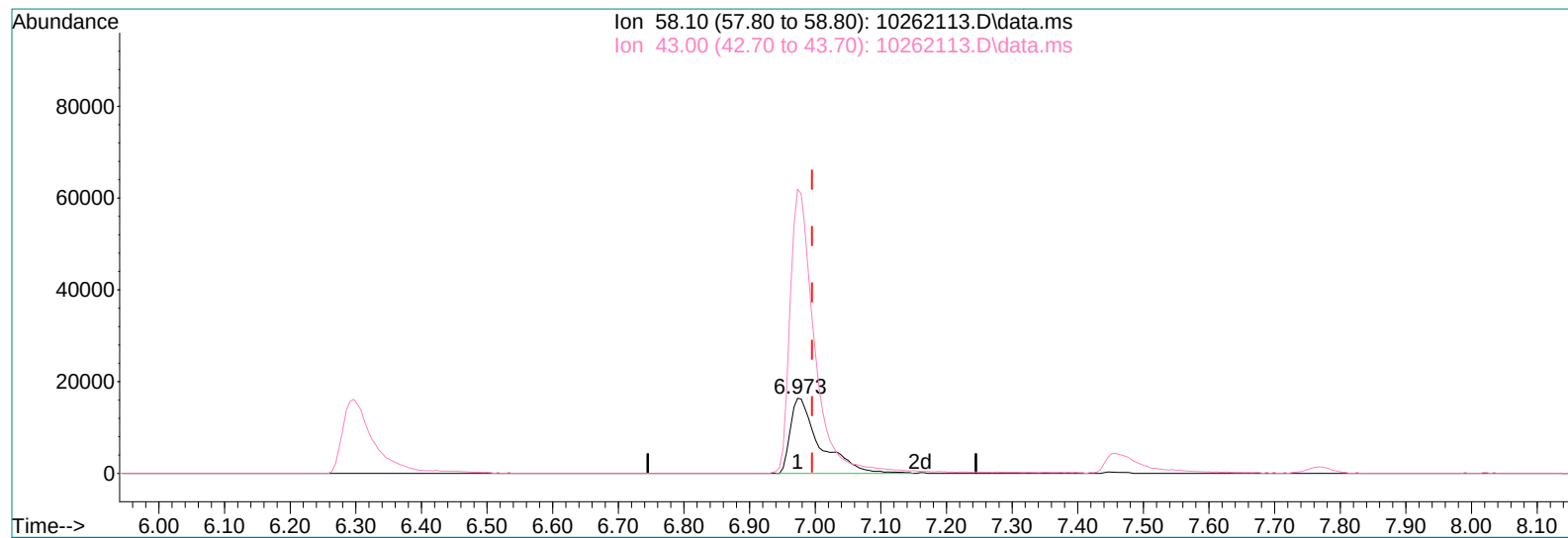


Quantitation Report (Qedit)

Data File : I:\MS16\DATA\2021_10\26\10262113.D
Acq On : 26 Oct 2021 11:12
Sample : P2105399-002dup (1000mL)
Misc : S34-09132101

Vial: 9
Operator: WA
Inst : GCMS-16

Quant Time: Oct 26 12:27:28 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M



TIC: 10262113.D\data.ms

(13) Acetone (T)

6.973min (-0.022) 3.68ng

response 51274

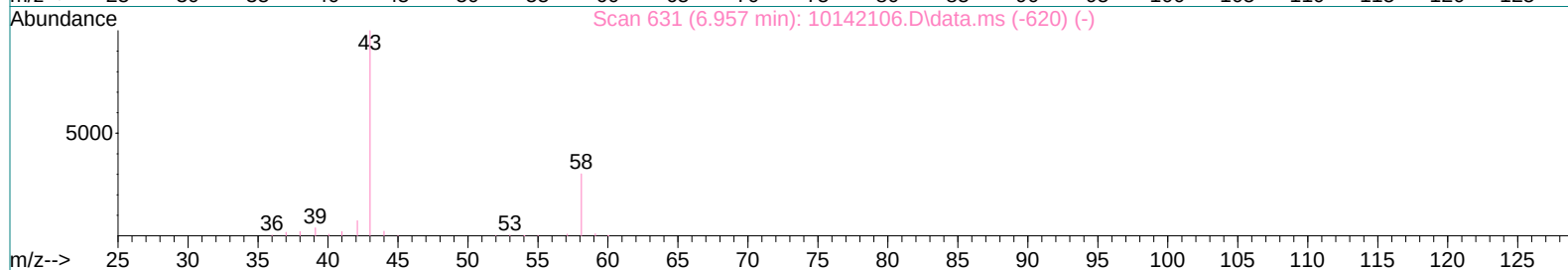
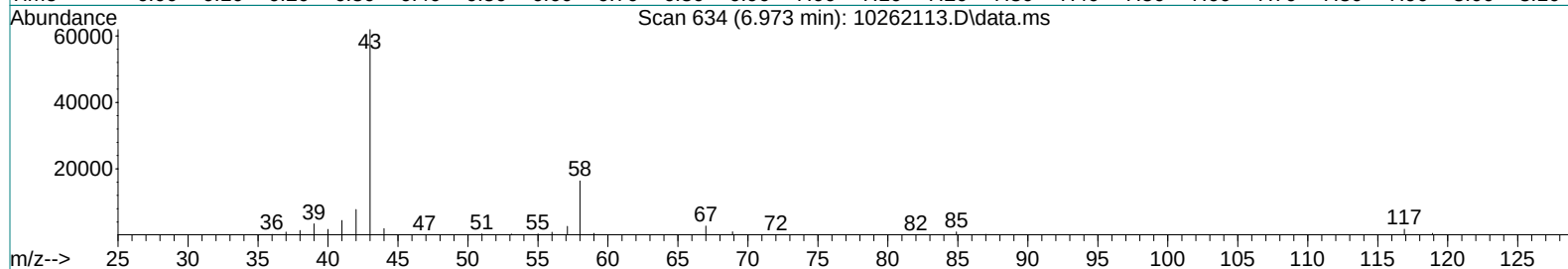
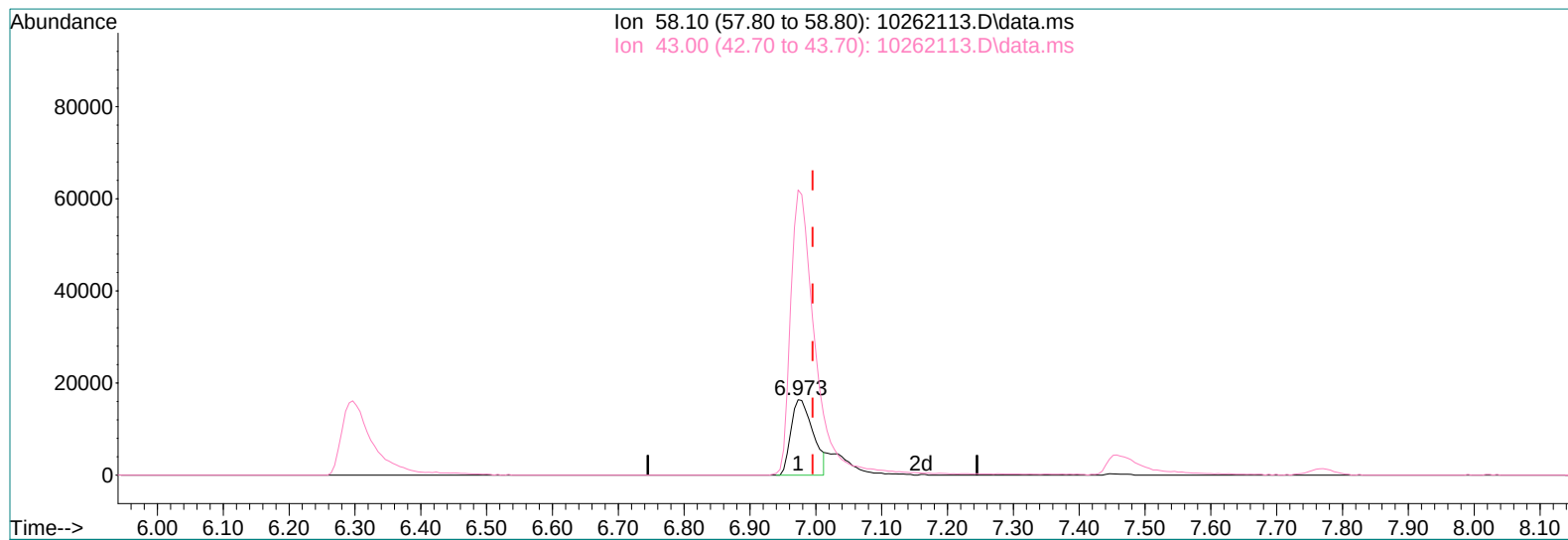
Ion	Exp%	Act%
58.10	100	100
43.00	333.00	314.59
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS16\DATA\2021_10\26\10262113.D
Acq On : 26 Oct 2021 11:12
Sample : P2105399-002dup (1000mL)
Misc : S34-09132101

Vial: 9
Operator: WA
Inst : GCMS-16

Quant Time: Oct 26 12:27:28 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Oct 14 09:19:57 2021
Response via : Initial Calibration
DataAcq Meth:T015A.M



TIC: 10262113.D\data.ms

(13) Acetone (T)

6.973min (-0.022) 2.75ng m

response 38307

Ion	Exp%	Act%
58.10	100	100
43.00	333.00	421.08#
0.00	0.00	0.00
0.00	0.00	0.00

IPC

TZ 10/27/21

LH 10/28/21

Method Path : I:\MS16\METHODS\
 Method File : R16101421.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Oct 14 09:19:57 2021
 Response Via : Initial Calibration

Calibration Files

0.1 =10142101.D 0.2 =10142102.D 0.5 =10142110.D 1.0 =10142104.D 5.0 =10142105.D 25 =10142106.D 50 =10142107.D
 100 =10142108.D

Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1) IR Bromochloromethane...										
2) T Propene	1.930	1.805	1.771	1.964	2.207	1.961	1.650	1.401	1.836	13.14
3) T Dichlorodifluo...	3.121	2.983	2.923	3.079	2.871	2.674	2.280	2.003	2.742	14.65
4) T Chloromethane	1.564	1.664	2.443	1.771	1.405	1.636	1.703	1.058	1.655	23.56
5) T 1,2-Dichloro-1...	0.937	0.959	1.416	0.986	0.924	0.896	1.047	1.024	1.024	16.27
6) T Vinyl Chloride	1.400	1.368	2.183	1.464	1.402	1.415	1.528	1.713	1.559	17.66
7) T 1,3-Butadiene	1.514	1.407	1.856	1.152	1.104	1.222	1.380	1.398	1.379	17.31
8) T Bromomethane	1.027	1.033	1.257	1.132	0.993	1.103	1.062	1.035	1.080	7.78
9) T Chloroethane	0.948	0.933	1.067	0.995	0.940	0.977	0.912	0.880	0.957	5.95
10) T Ethanol	1.056	1.103	1.493	1.289	1.253	1.254	1.119	1.014	1.198	13.04
11) T Acetonitrile	2.619	2.785	3.464	3.256	3.177	3.206	2.924	2.797	3.029	9.56
12) T Acrolein	0.645	0.759	1.062	1.017	0.986	1.022	0.936	0.876	0.913	15.90
13) T Acetone	1.221	1.170	1.302	1.245	1.132	1.059	0.926	0.801	1.107	15.40
14) T Trichlorofluor...	2.775	2.696	2.749	2.803	2.640	2.572	2.306	2.087	2.578	9.84
15) T 2-Propanol (Is...	3.762	3.618	4.583	4.183	3.317	3.481	2.886	2.482	3.539	18.98
16) T Acrylonitrile			2.133	2.135	2.166	2.154	1.973	1.805	2.061	6.99
17) T 1,1-Dichloroet...	1.261	1.208	1.380	1.268	1.235	1.252	1.204	1.158	1.246	5.23
18) T 2-Methyl-2-Pro...	3.823	3.562	4.297	4.219	3.433	3.800	2.555	1.219	1.335	15.91
19) T Methylene Chlo...	1.450	1.298	1.457	1.364	1.298	1.327	2.256	2.089	2.318	6.34
20) T 3-Chloro-1-pro...	2.331	2.286	2.457	2.407	2.301	2.420	2.256	2.089	2.318	5.03
21) T Trichlorotrifl...	1.308	1.304	1.385	1.334	1.205	1.216	1.131	1.053	1.242	8.98
22) T Carbon Disulfide	5.264	4.894	5.143	4.945	4.731	4.613	4.310	4.019	4.740	8.82
23) T trans-1,2-Dich...	1.637	1.790	2.260	2.198	2.150	2.202	2.069	1.931	2.030	10.99
24) T 1,1-Dichloroet...	2.725	2.597	2.773	2.743	2.589	2.605	2.449	2.292	2.597	6.24
25) T Methyl tert-Bu...	4.077	4.087	4.736	4.475	4.415	4.465	4.137	3.470	4.233	9.09
26) T Vinyl Acetate			0.204	0.250	0.277	0.265	0.240	0.247	0.247	11.28
27) T 2-Butanone (MEK)			0.972	0.873	0.870	0.882	0.837	0.736	0.862	8.89
28) T cis-1,2-Dichlo...	1.888	1.988	2.226	2.188	2.119	2.128	1.992	1.852	2.048	6.74
29) T Diisopropyl Ether	1.207	1.167	1.388	1.343	1.215	1.053	0.905	0.746	1.128	19.26
30) T Ethyl Acetate		0.471	0.639	0.599	0.569	0.519	0.434		0.539	14.52
31) T n-Hexane	2.782	2.572	2.924	2.735	2.562	2.333	2.043	1.713	2.458	16.60
32) T Chloroform	2.628	2.413	2.623	2.633	2.424	2.356	2.146	1.921	2.393	10.62
33) S 1,2-Dichloroet...	1.983	2.002	1.870	2.003	2.018	1.947	1.864	1.758	1.931	4.75
34) T Tetrahydrofura...	0.737	0.752	0.959	0.867	0.839	0.837	0.789	0.718	0.812	9.80
35) T Ethyl tert-But...	1.656	1.626	1.858	1.799	1.727	1.691	1.547	1.347	1.657	9.57
36) T 1,2-Dichloroet...	2.134	2.013	2.188	2.201	2.142	2.092	1.922	1.720	2.051	7.93
37) IR 1,4-Difluorobenzen...										
38) T 1,1,1-Trichlor...	0.511	0.529	0.537	0.544	0.516	0.511	0.471	0.425	0.506	7.79
39) T Isopropyl Acetate									0.000	-1.00
40) T 1-Butanol									0.000	-1.00
41) T Benzene	1.287	1.141	1.340	1.232	1.159	1.161	1.101	1.043	1.183	8.26
42) T Carbon Tetrach...	0.435	0.434	0.437	0.451	0.442	0.438	0.400	0.364	0.425	6.81

Method Path : I:\MS16\METHODS\
Method File : R16101421.M

Title		EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)															
43)	T	Cyclohexane	0.482	0.444	0.516	0.477	0.450	0.447	0.415	0.367	0.450	10.07					
44)	T	tert-Amyl Meth...	0.909	0.885	0.985	0.943	0.903	0.893	0.817	0.713	0.881	9.46					
45)	T	1,2-Dichloropr...	0.343	0.295	0.358	0.334	0.320	0.322	0.304	0.283	0.320	7.96					
46)	T	Bromodichlorom...	0.411	0.412	0.462	0.448	0.440	0.440	0.408	0.375	0.425	6.60					
47)	T	Trichloroethene	0.282	0.289	0.354	0.328	0.315	0.315	0.298	0.270	0.306	8.79					
48)	T	1,4-Dioxane	0.143	0.187	0.279	0.254	0.247	0.252	0.238	0.221	0.228	19.04					
49)	T	2,2,4-Trimethy...	1.515	1.517	1.660	1.549	1.453	1.417	1.298	1.137	1.443	11.24					
50)	T	Methyl Methacr...			0.130	0.118	0.122	0.127	0.118	0.108	0.121	6.54					
51)	T	n-Heptane	0.307	0.283	0.329	0.318	0.296	0.296	0.278	0.254	0.295	8.05					
52)	T	cis-1,3-Dichlo...	0.325	0.370	0.493	0.486	0.495	0.509	0.479	0.445	0.450	14.91					
53)	T	4-Methyl-2-pen...	0.243	0.254	0.357	0.339	0.326	0.316	0.283	0.241	0.295	15.48					
54)	T	trans-1,3-Dich...			0.457	0.446	0.489	0.512	0.481	0.448	0.472	5.58					
55)	T	1,1,2-Trichlor...	0.250	0.269	0.318	0.296	0.288	0.290	0.275	0.262	0.281	7.57					
Chlorobenzene-d5 (.....ISTD.....)																	
56)	IR	Chlorobenzene-d5	5.158	5.119	5.352	5.073	5.072	5.195	5.333	5.575	5.235	3.33					
57)	S	Toluene-d8 (SS2)	6.032	5.528	6.805	6.049	5.582	5.731	5.599	5.436	5.845	7.67					
58)	T	Toluene		2.611	4.158	3.932	3.875	3.768	3.363	2.870	3.511	16.60					
59)	T	2-Hexanone	1.482	1.475	1.760	1.730	1.678	1.774	1.699	1.625	1.653	7.10					
60)	T	Dibromochlorom...	1.139	1.305	1.760	1.643	1.587	1.670	1.627	1.606	1.542	13.56					
61)	T	1,2-Dibromoethane		4.598	4.282	4.298	4.250	3.800	3.209	4.073		12.14					
62)	T	n-Butyl Acetate	1.491	1.397	1.665	1.528	1.432	1.435	1.358	1.212	1.440	9.15					
63)	T	n-Octane	1.808	1.829	1.997	1.835	1.722	1.755	1.689	1.595	1.779	6.71					
64)	T	Tetrachloroethene	3.771	3.420	4.408	3.978	3.684	3.798	3.658	3.391	3.763	8.62					
65)	T	Chlorobenzene	6.607	6.016	7.813	6.988	6.640	6.774	6.525	6.165	6.691	8.23					
66)	T	Ethylbenzene	5.915	4.885	6.331	5.750	5.369	5.384	5.050	4.523	5.401	10.87					
67)	T	m- & p-Xylenes	1.306	1.210	1.530	1.548	1.564	1.674	1.600	1.494	1.491	10.41					
68)	T	Bromoform		4.308	3.937	3.932	4.166	4.094	3.881	4.053		4.08					
69)	T	Styrene	5.620	4.881	6.282	5.708	5.311	5.339	5.004	4.485	5.329	10.41					
70)	T	o-Xylene	3.069	3.051	3.919	3.670	3.458	3.323	2.945	2.427	3.233	14.38					
71)	T	n-Nonane	2.067	1.957	2.665	2.426	2.361	2.408	2.313	2.165	2.295	9.80					
72)	T	1,1,2,2-Tetrac...	1.888	1.882	1.973	1.853	1.855	1.895	1.955	2.039	1.918	3.41					
73)	S	Bromofluoroben...	7.006	6.351	7.952	7.214	6.729	6.814	6.421	5.885	6.797	9.19					
74)	T	Cumene	3.266	3.140	3.720	3.504	3.449	3.548	3.379	3.115	3.390	6.15					
75)	T	alpha-Pinene	1.135	0.727	0.956	0.859	0.804	0.812	0.767	0.698	0.845	E1 16.81					
76)	T	n-Propylbenzene									0.000	-1.00					
77)	T	3-Ethyltoluene	5.157	4.922	7.596	6.878	6.576	6.683	6.316	5.731	6.232	14.52					
78)	T	4-Ethyltoluene	5.010	4.622	6.690	6.046	5.608	5.641	5.263	4.688	5.446	12.89					
79)	T	1,3,5-Trimethy...									0.000	-1.00					
80)	T	alpha-Methylst...									0.000	-1.00					
81)	T	2-Ethyltoluene									0.000	-1.00					
82)	T	1,2,4-Trimethy...	4.259	4.060	6.686	6.093	5.750	5.584	5.016	4.143	5.199	18.95					
83)	T	n-Decane									0.000	-1.00					
84)	T	Benzyl Chloride		4.393	4.101	4.654	4.968	4.544	4.544	3.714	4.396	10.01					
85)	T	1,3-Dichlorobe...	1.878	1.832	3.811	3.354	3.184	3.182	2.865	2.362	2.808	25.55					
86)	T	1,4-Dichlorobe...	1.853	1.721	4.093	3.396	3.201	3.291	3.106	2.759	2.927	27.25					
87)	T	sec-Butylbenzene	6.651	6.327	8.739	7.915	7.466	7.476	6.901	5.964	7.180	12.57					
88)	T	4-Isopropyltol...	5.145	5.034	7.565	6.990	6.571	6.496	5.972	5.164	6.117	15.45					
89)	T	1,2,3-Trimethy...									0.000	-1.00					
90)	T	1,2-Dichlorobe...	2.187	2.047	3.810	3.292	3.059	3.039	2.780	2.359	2.822	21.27					
91)	T	d-Limonene	1.550	1.583	2.390	2.286	2.221	2.209	1.982	1.591	1.977	17.80					
92)	T	1,2-Dibromo-3-...		1.403	1.317	1.334	1.356	1.232	1.075	1.286		9.14					
93)	T	n-Undecane									0.000	-1.00					
94)	T	1,2,4-Trichlor...		3.537	2.913	2.843	2.837	2.536	2.110	2.796		16.80					

Method Path : I:\MS16\METHODS\
Method File : R16101421.M
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

95)	T	Naphthalene	9.866	7.114	7.422	8.072	7.687	6.936	7.850	13.60
96)	T	n-Dodecane							0.000	-1.00
97)	T	Hexachlorobuta...	1.786	1.678	2.288	2.082	1.962	1.963	1.611	11.63
98)	T	Cyclohexanone							0.000	-1.00
99)	T	tert-Butylbenzene	5.496	5.166	6.421	5.973	5.559	5.323	4.766	14.07
100)	T	n-Butylbenzene	3.766	3.569	7.127	6.368	6.110	6.131	5.698	23.01
101)	T	1,1,1,2-Tetrac...	1.589	1.398	1.511	1.511	1.410	1.430	1.226	7.86

(#) = Out of Range

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:	40ng/L Std. ID:
4ng/L Std. ID: S34-10052104	200ng/L Std. ID: S34-10122103
20ng/L Std. ID: S34-10122107	1000ng/L Std. ID:

Dilution Factors:														1		5		25		50		250		1000		Working STD Conc.(ng/L):	
Compounds		Source Std. mg/m ³		1000ng/L		200ng/L		40ng/L		20ng/L		4ng/L		1ng/L		Injection (L):		ICAL Points:									
Propene		1.04	1040	1050	210	42.0	21.0	4.20	21.0	4.20	21.0	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	50ng	100ng					
Dichlorodifluoromethane		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	4.08	1.05		0.105	0.210	0.525	1.05	26.25	52.5	50ng	104					
Chloromethane		1.02	1020	204	40.8	20.4	40.8	20.4	4.08	20.4	4.08	1.02		0.102	0.204	0.510	1.02	25.50	51.0	51.0	102						
Freon-114		1.08	1080	216	43.2	21.6	43.2	21.6	4.32	21.6	4.32	1.08		0.108	0.216	0.540	1.08	27.00	54.0	54.0	108						
Vinyl Chloride		1.04	1040	208	41.6	20.8	41.6	20.8	4.16	20.8	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	52.0	104						
1,1,3-Butadiene		1.04	1040	208	41.6	20.8	41.6	20.8	4.16	20.8	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	52.0	104						
Bromomethane		1.02	1020	204	40.8	20.4	40.8	20.4	4.08	20.4	4.08	1.02		0.102	0.204	0.510	1.02	25.50	51.0	51.0	102						
Chloroethane		1.02	1020	204	40.8	20.4	40.8	20.4	4.08	20.4	4.08	1.02		0.102	0.204	0.510	1.02	25.50	51.0	51.0	102						
Ethanol		3.62	3620	724	144.8	72.4	144.8	72.4	14.48	72.4	14.48	3.62		0.362	0.724	1.810	3.62	90.50	181.0	181.0	362						
Acetonitrile		0.93	930	186	37.2	18.6	37.2	18.6	3.72	18.6	3.72	0.93		0.093	0.186	0.465	0.93	23.25	46.5	46.5	93						
Acrolein		2.00	2000	400	80.0	40.0	80.0	40.0	8.00	40.0	8.00	2.00		0.200	0.400	1.000	2.00	50.00	100.0	100.0	200						
Acetone		5.19	5190	1038	207.6	103.8	207.6	103.8	20.76	103.8	20.76	5.19		0.519	1.038	2.595	5.19	129.75	259.5	259.5	519						
Trichlorofluoromethane		1.03	1030	206	41.2	20.6	41.2	20.6	4.12	20.6	4.12	1.03		0.103	0.206	0.515	1.03	25.75	51.5	51.5	103						
Isopropanol		2.02	2020	404	80.8	40.4	80.8	40.4	8.08	40.4	8.08	2.02		0.202	0.404	1.010	2.02	50.50	101.0	101.0	202						
Acrylonitrile		2.03	2030	406	81.2	40.6	81.2	40.6	8.12	40.6	8.12	2.03		0.203	0.406	1.015	2.03	50.75	101.5	101.5	203						
1,1,1-Dichloroethene		1.07	1070	214	42.8	21.4	42.8	21.4	4.28	21.4	4.28	1.07		0.107	0.214	0.535	1.07	26.75	53.5	53.5	107						
tert-Butanol		2.10	2100	420	84.0	42.0	84.0	42.0	8.40	42.0	8.40	2.10		0.210	0.420	1.050	2.10	52.50	105.0	105.0	210						
Methylene Chloride		1.04	1040	208	41.6	20.8	41.6	20.8	4.16	20.8	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	52.0	104						
Vinyl Chloride		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	1.05		0.105	0.210	0.525	1.05	26.25	52.5	52.5	105						
Trichlorotrifluoroethane		1.08	1080	216	43.2	21.6	43.2	21.6	4.32	21.6	4.32	1.08		0.108	0.216	0.540	1.08	27.00	54.0	54.0	108						
Carbon Disulfide		2.10	2100	420	84.0	42.0	84.0	42.0	8.40	42.0	8.40	2.10		0.210	0.420	1.050	2.10	52.50	105.0	105.0	210						
trans-1,2-Dichloroethene		1.06	1060	212	42.4	21.2	42.4	21.2	4.24	21.2	4.24	1.06		0.106	0.212	0.530	1.06	26.50	53.0	53.0	106						
1,1,1-Dichloroethane		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	1.05		0.105	0.210	0.525	1.05	26.25	52.5	52.5	105						
Methyl tert-Butyl Ether		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	1.05		0.105	0.210	0.525	1.05	26.25	52.5	52.5	105						
Vinyl Acetate		3.40	3400	680	136.0	68.0	136.0	68.0	13.60	68.0	13.60	3.40		0.340	0.680	1.700	3.40	85.00	170.0	170.0	340						
2-Butanone		2.06	2060	412	82.4	41.2	82.4	41.2	8.24	41.2	8.24	2.06		0.206	0.412	1.030	2.06	51.50	103.0	103.0	206						
cis-1,2-Dichloroethene		1.04	1040	208	41.6	20.8	41.6	20.8	4.16	20.8	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	52.0	104						
Diisopropyl Ether		2.12	2120	424	84.8	42.4	84.8	42.4	8.48	42.4	8.48	2.12		0.212	0.424	1.060	2.12	53.00	106.0	106.0	212						
Ethyl Acetate		4.08	4080	816	163.2	81.6	163.2	81.6	16.32	81.6	16.32	4.08		0.408	0.816	2.040	4.08	102.00	204.0	204.0	408						
n-Hexane		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	1.05		0.105	0.210	0.525	1.05	26.25	52.5	52.5	105						
Chloroform		1.07	1070	214	42.8	21.4	42.8	21.4	4.28	21.4	4.28	1.07		0.107	0.214	0.535	1.07	26.75	53.5	53.5	107						
Tetrahydrofuran		1.97	1970	394	78.8	39.4	78.8	39.4	7.88	39.4	7.88	1.97		0.197	0.394	0.985	1.97	49.25	98.5	98.5	197						
Ethyl tert-Butyl Ether		2.10	2100	420	84.0	42.0	84.0	42.0	8.40	42.0	8.40	2.10		0.210	0.420	1.050	2.10	52.50	105.0	105.0	210						
1,2-Dichloroethane		1.06	1060	212	42.4	21.2	42.4	21.2	4.24	21.2	4.24	1.06		0.106	0.212	0.530	1.06	26.50	53.0	53.0	106						
1,1,1-Trichloroethane		1.04	1040	208	41.6	20.8	41.6	20.8	4.16	20.8	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	52.0	104						
Benzene		1.04	1040	208	41.6	20.8	41.6	20.8	4.16	20.8	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	52.0	104						
Carbon Tetrachloride		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	1.05		0.105	0.210	0.525	1.05	26.25	52.5	52.5	105						
Cyclohexane		2.07	2070	414	82.8	41.4	82.8	41.4	8.28	41.4	8.28	2.07		0.207	0.414	1.035	2.07	51.75	103.5	103.5	207						
tert-Amyl Methyl Ether		2.09	2090	418	83.6	41.8	83.6	41.8	8.36	41.8	8.36	2.09		0.209	0.418	1.045	2.09	52.25	104.5	104.5	209						
1,2-Dichloropropane		1.03	1030	206	41.2	20.6	41.2	20.6	4.12	20.6	4.12	1.03		0.103	0.206	0.515	1.03	25.75	51.5	51.5	103						
Bromodichloromethane		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	1.05		0.105	0.210	0.525	1.05	26.25	52.5	52.5	105						
Trichloroethene		1.03	1030	206	41.2	20.6	41.2	20.6	4.12	20.6	4.12	1.03		0.103	0.206	0.515	1.03	25.75	51.5	51.5	103						
1,4-Dioxane		1.04	1040	208	41.6	20.8	41.6	20.8	4.16	20.8	4.16	1.04		0.104	0.208	0.520	1.04	26.00	52.0	52.0	104						
Isocane		1.06	1060	212	42.4	21.2	42.4	21.2	4.24	21.2	4.24	1.06		0.106	0.212	0.530	1.06	26.50	53.0	53.0	106						
Methyl Methacrylate		2.08	2080	416	83.2	41.6	83.2	41.6	8.32	41.6	8.32	2.08		0.208	0.416	1.040	2.08	52.00	104.0	104.0	208						
Heptane		1.05	1050	210	42.0	21.0	42.0	21.0	4.20	21.0	4.20	1.05		0.105	0.210	0.525	1.05	26.25	52.5	52.5	105						

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S34-10052104 4ng/L Std. ID: S34-10122103 20ng/L Std. ID: S34-10122107										40ng/L Std. ID: S34-10122103 200ng/L Std. ID: S34-10122103 1000ng/L Std. ID: S34-10122107										
Dilution Factors:			1		5		25		50		250		1000		Working STD Conc.(ng/L):					
Compounds	Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	20ng/L	4ng/L	20ng/L	4ng/L	20	20	20	20	20	200	200	200	200	
cis-1,3-Dichloropropene	1.05	1050	210	420	210	4.20	21.0	4.20	21.0	1.05	0.025	0.050	0.250	0.050	0.25	25ng	50ng	25ng	50ng	
4-Methyl-2-pentanone	2.08	2080	416	832	416	8.32	41.6	8.32	41.6	2.08	0.105	0.210	0.525	1.05	5.25	26.25	52.5	26.25	52.5	
trans-1,3-Dichloropropene	1.01	1010	202	404	202	4.04	20.2	4.04	20.2	1.01	0.208	0.416	1.040	2.08	10.40	52.00	104.0	52.00	104.0	
1,1,2-Trichloroethane	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.101	0.202	0.505	1.01	5.05	25.25	50.5	25.25	50.5	
Toluene	1.03	1030	206	412	206	4.12	20.6	4.12	20.6	1.03	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
2-Hexanone	2.05	2050	410	820	410	8.20	41.0	8.20	41.0	2.05	0.103	0.206	0.515	1.03	5.15	25.75	51.5	25.75	51.5	
Dibromochloromethane	1.05	1050	210	420	210	4.20	21.0	4.20	21.0	1.05	0.205	0.410	1.025	2.05	10.25	51.25	102.5	51.25	102.5	
1,2-Dibromoethane	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.105	0.210	0.525	1.05	5.25	26.25	52.5	26.25	52.5	
n-Butyl Acetate	2.04	2040	408	816	408	8.16	40.8	8.16	40.8	2.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
n-Octane	1.05	1050	210	420	210	4.20	21.0	4.20	21.0	1.05	0.204	0.408	1.020	2.04	10.20	51.00	102.0	51.00	102.0	
Tetrachloroethene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.105	0.210	0.525	1.05	5.25	26.25	52.5	26.25	52.5	
Chlorobenzene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
Ethylbenzene	1.03	1030	206	412	206	4.12	20.6	4.12	20.6	1.03	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
m- & p-Xylene	2.06	2060	412	824	412	8.24	41.2	8.24	41.2	2.06	0.103	0.206	0.515	1.03	5.15	25.75	51.5	25.75	51.5	
Bromoform	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.206	0.412	1.030	2.06	10.30	51.50	103.0	51.50	103.0	
Styrene	1.03	1030	206	412	206	4.12	20.6	4.12	20.6	1.03	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
o-Xylene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.103	0.206	0.515	1.03	5.15	25.75	51.5	25.75	51.5	
n-Nonane	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
1,1,2,2-Tetrachloroethane	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
α-Cumene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
α-Pinene	1.08	1080	216	432	216	4.32	21.6	4.32	21.6	1.08	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
n-Propylbenzene	1.05	1050	210	420	210	4.20	21.0	4.20	21.0	1.05	0.108	0.216	0.540	1.08	5.40	27.00	54.0	27.00	54.0	
4-Ethyltoluene	1.06	1060	212	424	212	4.24	21.2	4.24	21.2	1.06	0.105	0.210	0.525	1.05	5.25	26.25	52.5	26.25	52.5	
1,3,5-Trimethylbenzene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.106	0.212	0.530	1.06	5.30	26.50	53.0	26.50	53.0	
1,2,4-Trimethylbenzene	1.03	1030	206	412	206	4.12	20.6	4.12	20.6	1.03	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
Benzyl Chloride	2.06	2060	412	824	412	8.24	41.2	8.24	41.2	2.06	0.103	0.206	0.515	1.03	5.15	25.75	51.5	25.75	51.5	
1,3-Dichlorobenzene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.206	0.412	1.030	2.06	10.30	51.50	103.0	51.50	103.0	
1,4-Dichlorobenzene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
sec-Butylbenzene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
p-Isopropyltoluene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
1,2-Dichlorobenzene	1.05	1050	210	420	210	4.20	21.0	4.20	21.0	1.05	0.105	0.210	0.525	1.05	5.25	26.25	52.5	26.25	52.5	
d-Limonene	1.05	1050	210	420	210	4.20	21.0	4.20	21.0	1.05	0.105	0.210	0.525	1.05	5.25	26.25	52.5	26.25	52.5	
1,2-Dibromo-3-chloropropane	2.00	2000	400	800	400	8.00	40.0	8.00	40.0	2.00	0.200	0.400	1.000	2.00	10.00	50.00	100.0	50.00	100.0	
1,2,4-Trichlorobenzene	2.04	2040	408	816	408	8.16	40.8	8.16	40.8	2.04	0.204	0.408	1.020	2.04	10.20	51.00	102.0	51.00	102.0	
Naphthalene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
Hexachloro-1,3-butadiene	1.03	1030	206	412	206	4.12	20.6	4.12	20.6	1.03	0.103	0.206	0.515	1.03	5.15	25.75	51.5	25.75	51.5	
tert-Butylbenzene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
n-Butylbenzene	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	
1,1,1,2-Tetrachloroethane	1.04	1040	208	416	208	4.16	20.8	4.16	20.8	1.04	0.104	0.208	0.520	1.04	5.20	26.00	52.0	26.00	52.0	

Method : I:\MS16\METHODS\R16101421.M (RTE Integrator)
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS16\DATA\2021_10\14\10142101.D
2	0.2	0	13	I:\MS16\DATA\2021_10\14\10142102.D
3	0.5	1	13	I:\MS16\DATA\2021_10\14\10142110.D
4	1.0	1	13	I:\MS16\DATA\2021_10\14\10142104.D
5	5.0	5	13	I:\MS16\DATA\2021_10\14\10142105.D
6	25	26	13	I:\MS16\DATA\2021_10\14\10142106.D
7	50	52	13	I:\MS16\DATA\2021_10\14\10142107.D
8	100	104	13	I:\MS16\DATA\2021_10\14\10142108.D

10/14/21

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Oct 14 07:20 2021	Oct 14 07:19 2021	14 Oct 2021 3:40
2	0.2	Oct 14 07:21 2021	Oct 14 07:20 2021	14 Oct 2021 4:14
3	0.5	Oct 14 09:11 2021	Oct 14 09:10 2021	14 Oct 2021 8:43
4	1.0	Oct 14 07:23 2021	Oct 14 07:23 2021	14 Oct 2021 5:21
5	5.0	Oct 14 07:24 2021	Oct 14 07:24 2021	14 Oct 2021 5:54
6	25	Oct 14 07:26 2021	Oct 14 07:25 2021	14 Oct 2021 6:28
7	50	Oct 14 07:28 2021	Oct 14 07:28 2021	14 Oct 2021 7:01
8	100	Oct 14 09:19 2021	Oct 14 08:08 2021	14 Oct 2021 7:35

R16101421.M

Thu Oct 14 10:05:11 2021

Data File : I:\MS16\DATA\2021_10\14\10142101.D
 Acq On : 14 Oct 2021 3:40
 Sample : 0.1ng R16101421 ICAL std
 Misc : S34-09132101/S34-10052104 (11/4)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:19:39 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	127282	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.19	114	582582	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	120415	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	252377	11.972	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.76%
57) Toluene-d8 (SS2)	15.65	98	621052	12.153	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.20%
73) Bromofluorobenzene (SS3)	18.92	174	227386	13.144	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	105.12%

Target Compounds

						Qvalue
2) Propene	4.11	42	2044	0.094	ng	95
3) Dichlorodifluoromethan...	4.26	85	3337	0.102	ng	# 95
4) Chloromethane	4.54	50	1624	0.076	ng	82
5) 1,2-Dichloro-1,1,2,2-t...	4.78	135	1030	0.083	ng	83
6) Vinyl Chloride	4.95	62	1483	0.077	ng	68
7) 1,3-Butadiene	5.21	54	1603	0.112	ng	95
8) Bromomethane	5.63	94	1067	0.081	ng	95
9) Chloroethane	5.97	64	985	0.087	ng	79
10) Ethanol	6.36	45	3893	0.286	ng	84
11) Acetonitrile	6.64	41	2480	0.071	ng	# 33
12) Acrolein	6.80	56	1314	0.123	ng	# 66
13) Acetone	7.01	58	6455	0.558	ng	98
14) Trichlorofluoromethane	7.19	101	2910	0.098	ng	100
15) 2-Propanol (Isopropanol)	7.54	45	7739	0.214	ng	95
16) Acrylonitrile	7.81	53	2083	0.100	ng	97
17) 1,1-Dichloroethene	8.14	96	1374	0.097	ng	94
18) 2-Methyl-2-Propanol (t...	8.40	59	8174	0.196	ng	# 65
19) Methylene Chloride	8.36	84	1536	0.099	ng	94
20) 3-Chloro-1-propene (Al...	8.54	41	2492	0.100	ng	81
21) Trichlorotrifluoroethane	8.78	151	1438	0.114	ng	96
22) Carbon Disulfide	8.64	76	11256	0.199	ng	90
23) trans-1,2-Dichloroethene	9.63	61	1767	0.077	ng	90
24) 1,1-Dichloroethane	9.88	63	2914	0.101	ng	86
25) Methyl tert-Butyl Ether	10.04	73	4359	0.086	ng	92
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	10.47	72	984	0.102	ng	# 1
28) cis-1,2-Dichloroethene	10.91	61	1999	0.088	ng	98
29) Diisopropyl Ether	11.22	87	2605	0.207	ng	# 89
30) Ethyl Acetate	11.25	61	1662	0.307	ng	86
31) n-Hexane	11.18	57	2974	0.123	ng	# 91
32) Chloroform	11.24	83	2863	0.106	ng	91
34) Tetrahydrofuran (THF)	11.71	72	1479	0.152	ng	# 77
35) Ethyl tert-Butyl Ether	11.82	87	3542	0.194	ng	# 90
36) 1,2-Dichloroethane	12.05	62	2303	0.101	ng	88
38) 1,1,1-Trichloroethane	12.31	97	2479	0.094	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	6238	0.099	ng	99
42) Carbon Tetrachloride	12.96	117	2128	0.098	ng	100
43) Cyclohexane	13.09	84	4649	0.206	ng	98
44) tert-Amyl Methyl Ether	13.46	73	8856	0.197	ng	96
45) 1,2-Dichloropropane	13.66	63	1648	0.102	ng	87
46) Bromodichloromethane	13.85	83	2013	0.090	ng	93
47) Trichloroethene	13.90	130	1354	0.092	ng	91
48) 1,4-Dioxane	13.95	88	695	0.059	ng	# 18
49) 2,2,4-Trimethylpentane...	13.97	57	7483	0.109	ng	94
50) Methyl Methacrylate	14.13	100	560	0.101	ng	# 76

Data File : I:\MS16\DATA\2021_10\14\10142101.D
 Acq On : 14 Oct 2021 3:40
 Sample : 0.1ng R16101421 ICAL std
 Misc : S34-09132101/S34-10052104 (11/4)

Vial: 2
 Operator: WA
 Inst : GCMS-16

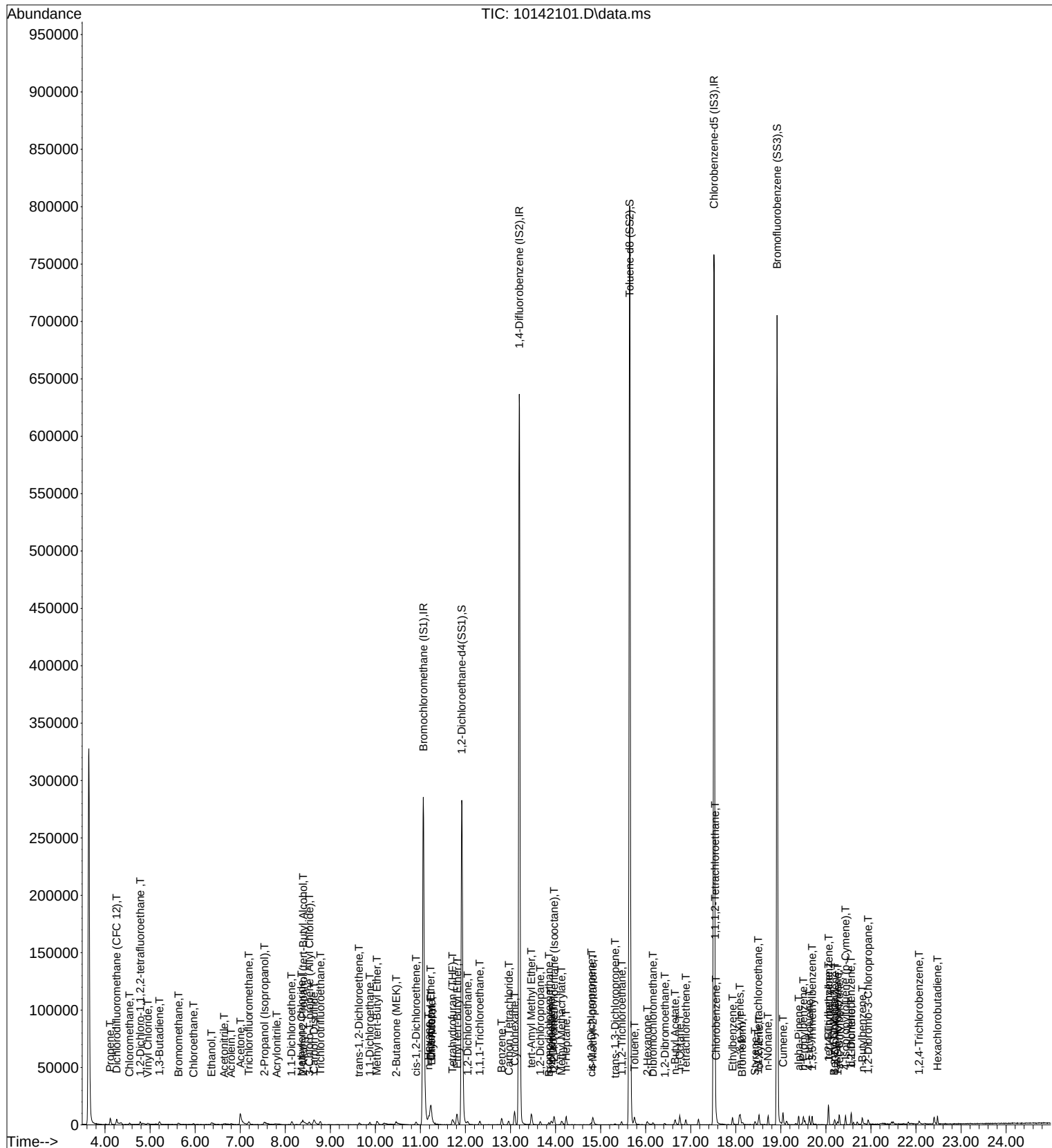
Quant Time: Oct 14 07:19:39 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 07:17:38 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.23	71	1503	0.096	ng	96
52) cis-1,3-Dichloropropene	14.79	75	1591	0.065	ng	79
53) 4-Methyl-2-pentanone	14.83	58	2360	0.171	ng	76
54) trans-1,3-Dichloropropene	15.32	75	741	0.032	ng	# 43
55) 1,1,2-Trichloroethane	15.47	97	1213	0.084	ng	96
58) Toluene	15.75	91	5985	0.101	ng	100
59) 2-Hexanone	16.04	43	4251	0.127	ng	89
60) Dibromochloromethane	16.16	129	1499	0.092	ng	99
61) 1,2-Dibromoethane	16.43	107	1141	0.070	ng	98
62) n-Butyl Acetate	16.65	43	5069	0.138	ng	95
63) n-Octane	16.76	57	1508	0.109	ng	89
64) Tetrachloroethene	16.89	166	1811	0.110	ng	97
65) Chlorobenzene	17.56	112	3778	0.101	ng	97
66) Ethylbenzene	17.93	91	6556	0.096	ng	92
67) m- & p-Xylenes	18.09	91	11738	0.219	ng	87
68) Bromoform	18.14	173	1308	0.094	ng	89
69) Styrene	18.43	104	2181	0.056	ng	96
70) o-Xylene	18.52	91	5630	0.105	ng	95
71) n-Nonane	18.71	43	3075	0.099	ng	96
72) 1,1,2,2-Tetrachloroethane	18.50	83	2071	0.084	ng	96
74) Cumene	19.05	105	7019	0.104	ng	98
75) alpha-Pinene	19.40	93	3398	0.100	ng	95
76) n-Propylbenzene	19.50	91	11482	0.140	ng	84
77) 3-Ethyltoluene	19.63	105	5266	No Calib		
78) 4-Ethyltoluene	19.63	105	5266	0.082	ng	94
79) 1,3,5-Trimethylbenzene	19.69	105	5019	0.091	ng	95
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	4226	0.080	ng	95
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.18	91	2588	0.062	ng	79
85) 1,3-Dichlorobenzene	20.20	146	1881	0.065	ng	97
86) 1,4-Dichlorobenzene	20.26	146	1856	0.059	ng	98
87) sec-Butylbenzene	20.30	105	6663	0.091	ng	96
88) 4-Isopropyltoluene (p-...	20.43	119	5155	0.084	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.56	146	2212	0.077	ng	99
91) d-Limonene	20.56	68	1568	0.077	ng	98
92) 1,2-Dibromo-3-Chloropr...	20.94	157	1281	0.111	ng	# 81
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.07	180	2261	0.095	ng	# 89
95) Naphthalene	0.00	128	0	N.D.	d	
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.48	225	1772	0.106	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	5506	0.108	ng	99
100) n-Butylbenzene	20.81	91	3773	0.062	ng	# 75
101) 1,1,1,2-Tetrachloroethane	17.54	131	1592	0.119	ng	# 92

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

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 07:19:39 2021



Data File : I:\MS16\DATA\2021_10\14\10142102.D
 Acq On : 14 Oct 2021 4:14
 Sample : 0.2ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10052104 (11/4)

Vial: 14
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:20:53 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	126038	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.19	114	572851	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	120297	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	252323	12.087	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.72%
57) Toluene-d8 (SS2)	15.65	98	615785	12.062	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.48%
73) Bromofluorobenzene (SS3)	18.92	174	226425	13.101	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	104.80%

Target Compounds

						Qvalue
2) Propene	4.11	42	3786	0.176	ng	95
3) Dichlorodifluoromethan...	4.25	85	6317	0.195	ng	98
4) Chloromethane	4.53	50	3422	0.162	ng	88
5) 1,2-Dichloro-1,1,2,2-t...	4.78	135	2089	0.170	ng	90
6) Vinyl Chloride	4.94	62	2869	0.150	ng	88
7) 1,3-Butadiene	5.20	54	2951	0.208	ng	97
8) Bromomethane	5.62	94	2125	0.164	ng	99
9) Chloroethane	5.95	64	1920	0.171	ng	85
10) Ethanol	6.33	45	8051	0.596	ng	89
11) Acetonitrile	6.63	41	5224	0.150	ng	# 1
12) Acrolein	6.78	56	3062	0.290	ng	80
13) Acetone	6.98	58	12245	1.068	ng	99
14) Trichlorofluoromethane	7.19	101	5600	0.191	ng	98
15) 2-Propanol (Isopropanol)	7.50	45	14740	0.411	ng	99
16) Acrylonitrile	7.74	53	6170	0.299	ng	96
17) 1,1-Dichloroethene	8.14	96	2606	0.186	ng	99
18) 2-Methyl-2-Propanol (t...	8.36	59	15083	0.365	ng	94
19) Methylene Chloride	8.36	84	2723	0.177	ng	97
20) 3-Chloro-1-propene (Al...	8.53	41	4841	0.196	ng	86
21) Trichlorotrifluoroethane	8.77	151	2841	0.227	ng	99
22) Carbon Disulfide	8.63	76	20724	0.370	ng	96
23) trans-1,2-Dichloroethene	9.63	61	3827	0.169	ng	98
24) 1,1-Dichloroethane	9.87	63	5499	0.193	ng	93
25) Methyl tert-Butyl Ether	10.02	73	8654	0.173	ng	98
26) Vinyl Acetate	10.18	86	536	0.198	ng	# 1
27) 2-Butanone (MEK)	10.43	72	1989	0.209	ng	# 14
28) cis-1,2-Dichloroethene	10.89	61	4170	0.185	ng	98
29) Diisopropyl Ether	11.22	87	4989	0.401	ng	# 87
30) Ethyl Acetate	11.23	61	3873	0.722	ng	97
31) n-Hexane	11.19	57	5446	0.227	ng	# 97
32) Chloroform	11.23	83	5206	0.195	ng	97
34) Tetrahydrofuran (THF)	11.69	72	2989	0.311	ng	# 89
35) Ethyl tert-Butyl Ether	11.80	87	6886	0.380	ng	91
36) 1,2-Dichloroethane	12.04	62	4304	0.190	ng	97
38) 1,1,1-Trichloroethane	12.32	97	5045	0.194	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	10875	0.175	ng	98
42) Carbon Tetrachloride	12.96	117	4178	0.196	ng	97
43) Cyclohexane	13.09	84	8425	0.379	ng	96
44) tert-Amyl Methyl Ether	13.46	73	16957	0.384	ng	96
45) 1,2-Dichloropropane	13.65	63	2781	0.175	ng	97
46) Bromodichloromethane	13.85	83	3968	0.181	ng	98
47) Trichloroethene	13.90	130	2731	0.189	ng	99
48) 1,4-Dioxane	13.92	88	1785	0.153	ng	# 72
49) 2,2,4-Trimethylpentane...	13.96	57	14736	0.218	ng	100
50) Methyl Methacrylate	14.12	100	1486	0.273	ng	# 86

Data File : I:\MS16\DATA\2021_10\14\10142102.D
 Acq On : 14 Oct 2021 4:14
 Sample : 0.2ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10052104 (11/4)

Vial: 14
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:20:53 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

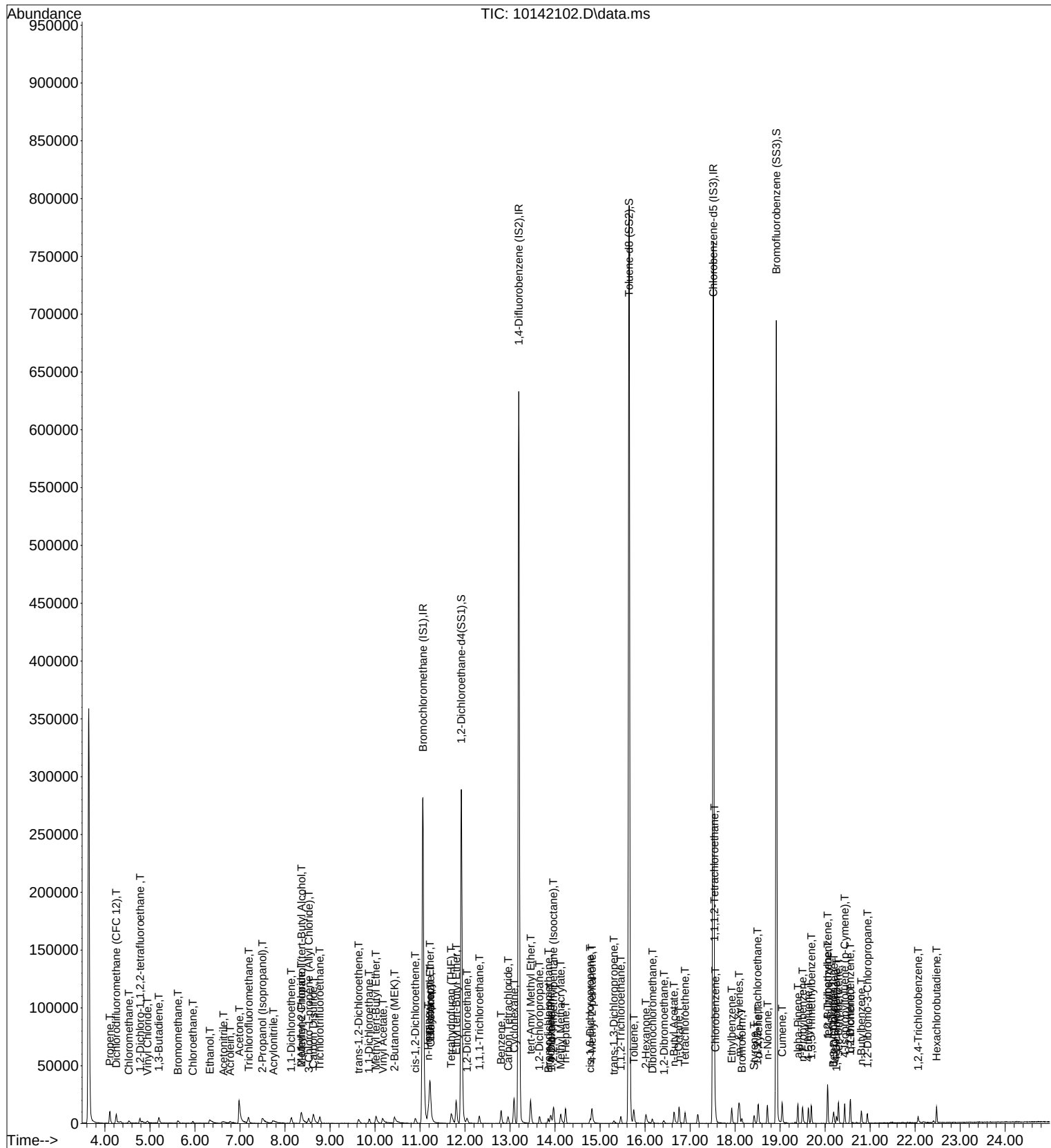
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.23	71	2720	0.177	ng	93
52) cis-1,3-Dichloropropene	14.78	75	3559	0.148	ng	86
53) 4-Methyl-2-pentanone	14.82	58	4843	0.356	ng	81
54) trans-1,3-Dichloropropene	15.31	75	2446	0.106	ng	85
55) 1,1,2-Trichloroethane	15.46	97	2567	0.180	ng	98
58) Toluene	15.75	91	10959	0.185	ng	100
59) 2-Hexanone	16.02	43	10303	0.308	ng	89
60) Dibromochloromethane	16.17	129	2980	0.182	ng	98
61) 1,2-Dibromoethane	16.42	107	2613	0.161	ng	100
62) n-Butyl Acetate	16.64	43	11120	0.303	ng	94
63) n-Octane	16.75	57	2824	0.204	ng	90
64) Tetrachloroethene	16.89	166	3661	0.222	ng	96
65) Chlorobenzene	17.56	112	6845	0.184	ng	98
66) Ethylbenzene	17.92	91	11926	0.175	ng	95
67) m- & p-Xylenes	18.09	91	19369	0.362	ng	95
68) Bromoform	18.15	173	2423	0.175	ng	92
69) Styrene	18.42	104	4308	0.110	ng	97
70) o-Xylene	18.52	91	9771	0.182	ng	94
71) n-Nonane	18.72	43	6107	0.196	ng	97
72) 1,1,2,2-Tetrachloroethane	18.50	83	3918	0.159	ng	97
74) Cumene	19.04	105	12713	0.189	ng	97
75) alpha-Pinene	19.40	93	6528	0.192	ng	97
76) n-Propylbenzene	19.50	91	14693	0.179	ng	95
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	10042	0.156	ng	97
79) 1,3,5-Trimethylbenzene	19.69	105	9253	0.167	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	8049	0.152	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.18	91	5269	0.126	ng	85
85) 1,3-Dichlorobenzene	20.19	146	3668	0.126	ng	98
86) 1,4-Dichlorobenzene	20.25	146	3445	0.110	ng	99
87) sec-Butylbenzene	20.30	105	12665	0.173	ng	97
88) 4-Isopropyltoluene (p-...	20.43	119	10076	0.164	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.56	146	4136	0.143	ng	99
91) d-Limonene	20.56	68	3199	0.158	ng	98
92) 1,2-Dibromo-3-Chloropr...	20.94	157	2580	0.223	ng	81
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.07	180	2942	0.123	ng	96
95) Naphthalene	0.00	128	0	N.D.	d	
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.47	225	3327	0.199	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	10341	0.203	ng	100
100) n-Butylbenzene	20.80	91	7144	0.117	ng	95
101) 1,1,1,2-Tetrachloroethane	17.54	131	2799	0.210	ng	98

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

Vial: 14
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 07:20:53 2021



Data File : I:\MS16\DATA\2021_10\14\10142110.D
 Acq On : 14 Oct 2021 8:43
 Sample : 0.5ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122107 (11/11)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 09:10:59 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 08:08:34 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	131572	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.20	114	607765	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	125278	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	246026	11.986	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.92%
57) Toluene-d8 (SS2)	15.65	98	670497	12.855	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	102.88%
73) Bromofluorobenzene (SS3)	18.92	174	247210	12.953	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.60%

Target Compounds

						Qvalue
2) Propene	4.10	42	9695	0.488	ng	99
3) Dichlorodifluoromethan...	4.25	85	16152	0.560	ng	100
4) Chloromethane	4.53	50	13116	0.768	ng	96
5) 1,2-Dichloro-1,1,2,2-t...	4.77	135	8051	0.794	ng	96
6) Vinyl Chloride	4.93	62	11951	0.781	ng	97
7) 1,3-Butadiene	5.19	54	10160	0.755	ng	99
8) Bromomethane	5.62	94	6749	0.609	ng	98
9) Chloroethane	5.94	64	5726	0.580	ng	95
10) Ethanol	6.30	45	28447	2.328	ng	97
11) Acetonitrile	6.58	41	16956	0.544	ng	98
12) Acrolein	6.76	56	11175	1.198	ng	98
13) Acetone	6.96	58	35559	3.107	ng	95
14) Trichlorofluoromethane	7.18	101	14899	0.550	ng	98
15) 2-Propanol (Isopropanol)	7.45	45	48727	1.384	ng	98
16) Acrylonitrile	7.70	53	22788	1.184	ng	98
17) 1,1-Dichloroethene	8.13	96	7771	0.602	ng	96
18) 2-Methyl-2-Propanol (t...	8.34	59	47486	1.268	ng	98
19) Methylene Chloride	8.35	84	7976	0.578	ng	95
20) 3-Chloro-1-propene (Al...	8.52	41	13576	0.561	ng	97
21) Trichlorotrifluoroethane	8.78	151	7873	0.612	ng	98
22) Carbon Disulfide	8.62	76	56839	1.147	ng	99
23) trans-1,2-Dichloroethene	9.63	61	12606	0.599	ng	99
24) 1,1-Dichloroethane	9.87	63	15326	0.566	ng	99
25) Methyl tert-Butyl Ether	10.00	73	26171	0.598	ng	99
26) Vinyl Acetate	10.15	86	3486	1.589	ng	# 60
27) 2-Butanone (MEK)	10.40	72	10542	1.366	ng	# 90
28) cis-1,2-Dichloroethene	10.89	61	12185	0.575	ng	95
29) Diisopropyl Ether	11.21	87	15483	1.271	ng	98
30) Ethyl Acetate	11.21	61	13730	2.595	ng	95
31) n-Hexane	11.19	57	16159	0.635	ng	98
32) Chloroform	11.24	83	14771	0.593	ng	99
34) Tetrahydrofuran (THF)	11.67	72	9943	1.191	ng	98
35) Ethyl tert-Butyl Ether	11.80	87	20531	1.194	ng	98
36) 1,2-Dichloroethane	12.04	62	12206	0.570	ng	100
38) 1,1,1-Trichloroethane	12.32	97	13582	0.558	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	33873	0.601	ng	100
42) Carbon Tetrachloride	12.96	117	11154	0.542	ng	98
43) Cyclohexane	13.09	84	25966	1.213	ng	100
44) tert-Amyl Methyl Ether	13.45	73	50069	1.188	ng	98
45) 1,2-Dichloropropane	13.65	63	8976	0.586	ng	99
46) Bromodichloromethane	13.85	83	11788	0.580	ng	98
47) Trichloroethene	13.90	130	8854	0.608	ng	99
48) 1,4-Dioxane	13.90	88	7042	0.661	ng	89
49) 2,2,4-Trimethylpentane...	13.97	57	42784	0.621	ng	99
50) Methyl Methacrylate	14.12	100	6588	1.320	ng	94

Data File : I:\MS16\DATA\2021_10\14\10142110.D
 Acq On : 14 Oct 2021 8:43
 Sample : 0.5ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122107 (11/11)

Vial: 16
 Operator: WA
 Inst : GCMS-16

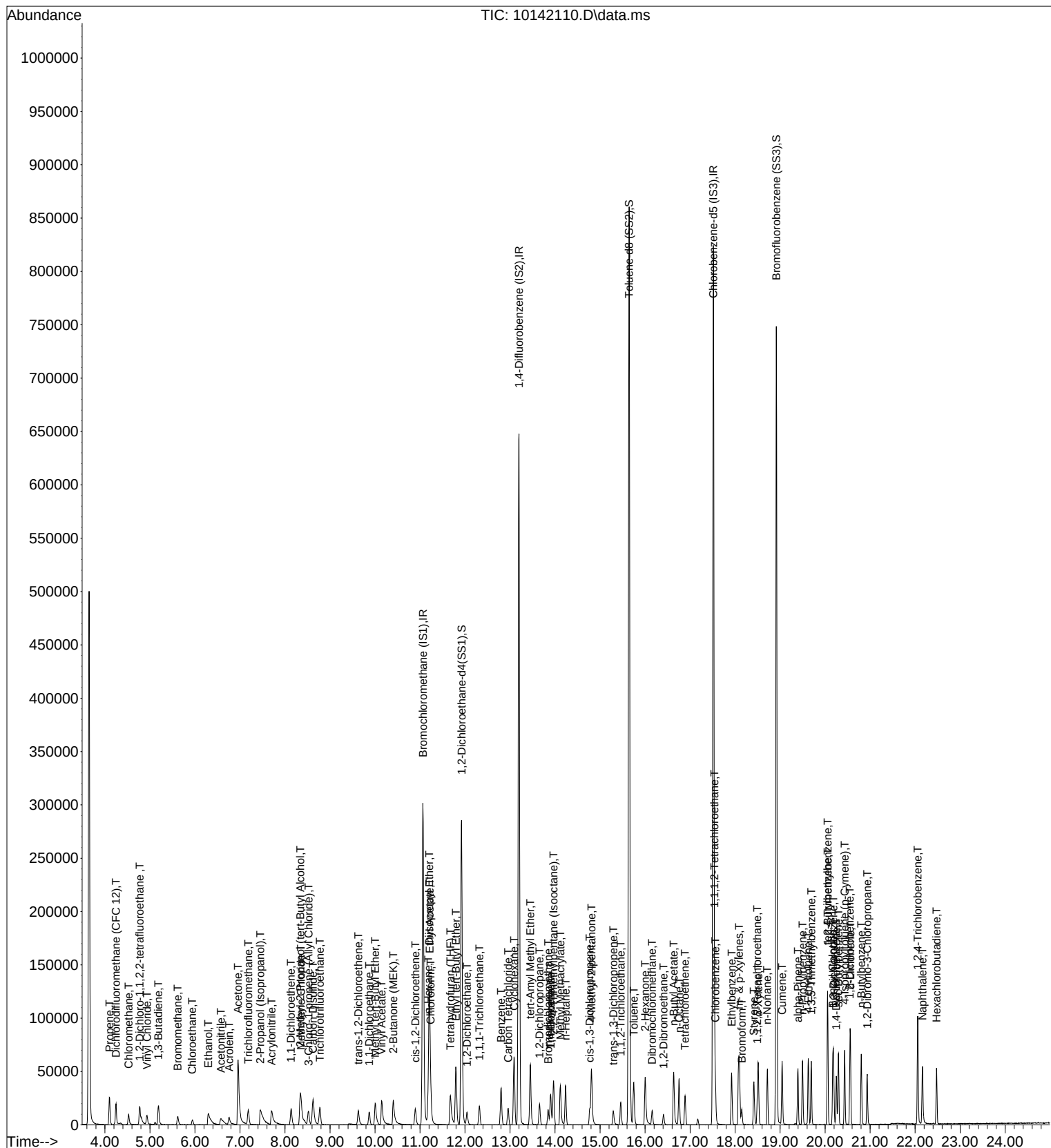
Quant Time: Oct 14 09:10:59 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 08:08:34 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	8394	0.595	ng	95
52) cis-1,3-Dichloropropene	14.77	75	12595	0.592	ng	99
53) 4-Methyl-2-pentanone	14.81	58	18055	1.302	ng	96
54) trans-1,3-Dichloropropene	15.29	75	11216	0.591	ng	96
55) 1,1,2-Trichloroethane	15.46	97	8036	0.603	ng	97
58) Toluene	15.75	91	35124	0.618	ng	99
59) 2-Hexanone	16.00	43	42713	1.337	ng	100
60) Dibromochloromethane	16.16	129	9258	0.570	ng	98
61) 1,2-Dibromoethane	16.41	107	9173	0.616	ng	99
62) n-Butyl Acetate	16.64	43	47007	1.324	ng	99
63) n-Octane	16.76	57	8762	0.622	ng	99
64) Tetrachloroethene	16.89	166	10409	0.597	ng	98
65) Chlorobenzene	17.56	112	22971	0.630	ng	100
66) Ethylbenzene	17.92	91	40325	0.623	ng	99
67) m- & p-Xylenes	18.09	91	65358	1.251	ng	99
68) Bromoform	18.15	173	7974	0.545	ng	99
69) Styrene	18.42	104	22233	0.663	ng	98
70) o-Xylene	18.52	91	32740	0.634	ng	99
71) n-Nonane	18.71	43	20426	0.649	ng	96
72) 1,1,2,2-Tetrachloroethane	18.49	83	13887	0.622	ng	99
74) Cumene	19.04	105	41444	0.629	ng	99
75) alpha-Pinene	19.40	93	20135	0.605	ng	93
76) n-Propylbenzene	19.50	91	50326	0.619	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	40347	0.682	ng	99
79) 1,3,5-Trimethylbenzene	19.69	105	34865	0.669	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	34512	0.704	ng	99
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.17	91	45353	1.404	ng	98
85) 1,3-Dichlorobenzene	20.19	146	19860	0.772	ng	99
86) 1,4-Dichlorobenzene	20.25	146	21331	0.809	ng	99
87) sec-Butylbenzene	20.30	105	45542	0.659	ng	99
88) 4-Isopropyltoluene (p-...	20.43	119	39428	0.676	ng	99
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.55	146	20048	0.770	ng	98
91) d-Limonene	20.56	68	12578	0.666	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.94	157	14063	1.338	ng	96
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.06	180	36154	1.815	ng	98
95) Naphthalene	22.16	128	51418	0.704	ng	98
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.48	225	11809	0.648	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	33461	0.648	ng	98
100) n-Butylbenzene	20.80	91	37142	0.737	ng	97
101) 1,1,1,2-Tetrachloroethane	17.54	131	7877	0.558	ng	97

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

Vial: 16
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 09:10:59 2021



Data File : I:\MS16\DATA\2021_10\14\10142104.D
 Acq On : 14 Oct 2021 5:21
 Sample : 1.0ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122107 (11/11)

Vial: 14
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:23:07 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	123307	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	556289	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	117263	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	246998	12.094	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.72%
57) Toluene-d8 (SS2)	15.65	98	594909	11.954	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.60%
73) Bromofluorobenzene (SS3)	18.92	174	217284	12.898	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.20%

Target Compounds

						Qvalue
2) Propene	4.09	42	20146	0.958	ng	99
3) Dichlorodifluoromethan...	4.23	85	31887	1.007	ng	99
4) Chloromethane	4.51	50	17815	0.863	ng	96
5) 1,2-Dichloro-1,1,2,2-t...	4.77	135	10501	0.876	ng	99
6) Vinyl Chloride	4.93	62	15019	0.800	ng	99
7) 1,3-Butadiene	5.18	54	11819	0.851	ng	99
8) Bromomethane	5.61	94	11390	0.898	ng	100
9) Chloroethane	5.93	64	10009	0.912	ng	98
10) Ethanol	6.29	45	46028	3.486	ng	98
11) Acetonitrile	6.57	41	29871	0.877	ng	93
12) Acrolein	6.74	56	20071	1.940	ng	97
13) Acetone	6.95	58	63750	5.685	ng	97
14) Trichlorofluoromethane	7.18	101	28476	0.994	ng	100
15) 2-Propanol (Isopropanol)	7.43	45	83344	2.377	ng	93
16) Acrylonitrile	7.69	53	42760	2.116	ng	99
17) 1,1-Dichloroethene	8.13	96	13385	0.975	ng	97
18) 2-Methyl-2-Propanol (t...	8.30	59	87399	2.159	ng	97
19) Methylene Chloride	8.35	84	13995	0.930	ng	95
20) 3-Chloro-1-propene (Al...	8.51	41	24930	1.031	ng	98
21) Trichlorotrifluoroethane	8.77	151	14211	1.163	ng	98
22) Carbon Disulfide	8.62	76	102446	1.869	ng	100
23) trans-1,2-Dichloroethene	9.62	61	22983	1.040	ng	97
24) 1,1-Dichloroethane	9.87	63	28408	1.017	ng	97
25) Methyl tert-Butyl Ether	10.00	73	46350	0.946	ng	100
26) Vinyl Acetate	10.14	86	6857	2.592	ng	# 60
27) 2-Butanone (MEK)	10.40	72	17746	1.905	ng	93
28) cis-1,2-Dichloroethene	10.89	61	22448	1.020	ng	99
29) Diisopropyl Ether	11.20	87	28087	2.307	ng	# 95
30) Ethyl Acetate	11.21	61	24102	4.593	ng	93
31) n-Hexane	11.19	57	28330	1.207	ng	99
32) Chloroform	11.23	83	27793	1.062	ng	99
34) Tetrahydrofuran (THF)	11.66	72	16841	1.788	ng	96
35) Ethyl tert-Butyl Ether	11.80	87	37275	2.104	ng	96
36) 1,2-Dichloroethane	12.04	62	23014	1.037	ng	99
38) 1,1,1-Trichloroethane	12.32	97	25194	0.997	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	57027	0.945	ng	99
42) Carbon Tetrachloride	12.96	117	21084	1.020	ng	99
43) Cyclohexane	13.09	84	43923	2.036	ng	96
44) tert-Amyl Methyl Ether	13.45	73	87701	2.043	ng	97
45) 1,2-Dichloropropane	13.65	63	15322	0.991	ng	100
46) Bromodichloromethane	13.84	83	20929	0.983	ng	99
47) Trichloroethene	13.90	130	15020	1.069	ng	100
48) 1,4-Dioxane	13.89	88	11767	1.039	ng	97
49) 2,2,4-Trimethylpentane...	13.97	57	73069	1.114	ng	98
50) Methyl Methacrylate	14.12	100	10942	2.066	ng	89

Data File : I:\MS16\DATA\2021_10\14\10142104.D
 Acq On : 14 Oct 2021 5:21
 Sample : 1.0ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122107 (11/11)

Vial: 14
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:23:07 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	14856	0.993	ng	97
52) cis-1,3-Dichloropropene	14.77	75	22704	0.970	ng	100
53) 4-Methyl-2-pentanone	14.80	58	31401	2.377	ng	92
54) trans-1,3-Dichloropropene	15.29	75	20048	0.893	ng	99
55) 1,1,2-Trichloroethane	15.46	97	13689	0.990	ng	98
58) Toluene	15.74	91	58445	1.010	ng	99
59) 2-Hexanone	16.00	43	75622	2.320	ng	97
60) Dibromochloromethane	16.16	129	17038	1.068	ng	99
61) 1,2-Dibromoethane	16.41	107	16026	1.012	ng	99
62) n-Butyl Acetate	16.63	43	81946	2.291	ng	98
63) n-Octane	16.76	57	15051	1.117	ng	97
64) Tetrachloroethene	16.89	166	17899	1.114	ng	98
65) Chlorobenzene	17.56	112	38809	1.070	ng	100
66) Ethylbenzene	17.92	91	67519	1.015	ng	99
67) m- & p-Xylenes	18.09	91	111120	2.130	ng	99
68) Bromoform	18.15	173	15105	1.119	ng	100
69) Styrene	18.42	104	38039	1.000	ng	99
70) o-Xylene	18.52	91	55692	1.067	ng	99
71) n-Nonane	18.71	43	35804	1.181	ng	95
72) 1,1,2,2-Tetrachloroethane	18.49	83	23669	0.987	ng	100
74) Cumene	19.04	105	70379	1.074	ng	100
75) alpha-Pinene	19.40	93	35502	1.073	ng	96
76) n-Propylbenzene	19.49	91	84613	1.057	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	68396	1.090	ng	99
79) 1,3,5-Trimethylbenzene	19.69	105	58983	1.095	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	58873	1.143	ng	99
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.17	91	79257	1.944	ng	99
85) 1,3-Dichlorobenzene	20.19	146	32725	1.157	ng	99
86) 1,4-Dichlorobenzene	20.25	146	33128	1.082	ng	99
87) sec-Butylbenzene	20.30	105	77220	1.080	ng	97
88) 4-Isopropyltoluene (p-...	20.43	119	68192	1.138	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.55	146	32423	1.152	ng	99
91) d-Limonene	20.56	68	22516	1.139	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.94	157	24717	2.193	ng	95
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.06	180	55747	2.394	ng	99
95) Naphthalene	22.16	128	69402	1.013	ng	100
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.48	225	20114	1.235	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	58270	1.176	ng	100
100) n-Butylbenzene	20.80	91	62125	1.043	ng	100
101) 1,1,1,2-Tetrachloroethane	17.54	131	14745	1.135	ng	99

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

Vial: 14
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 07:23:07 2021

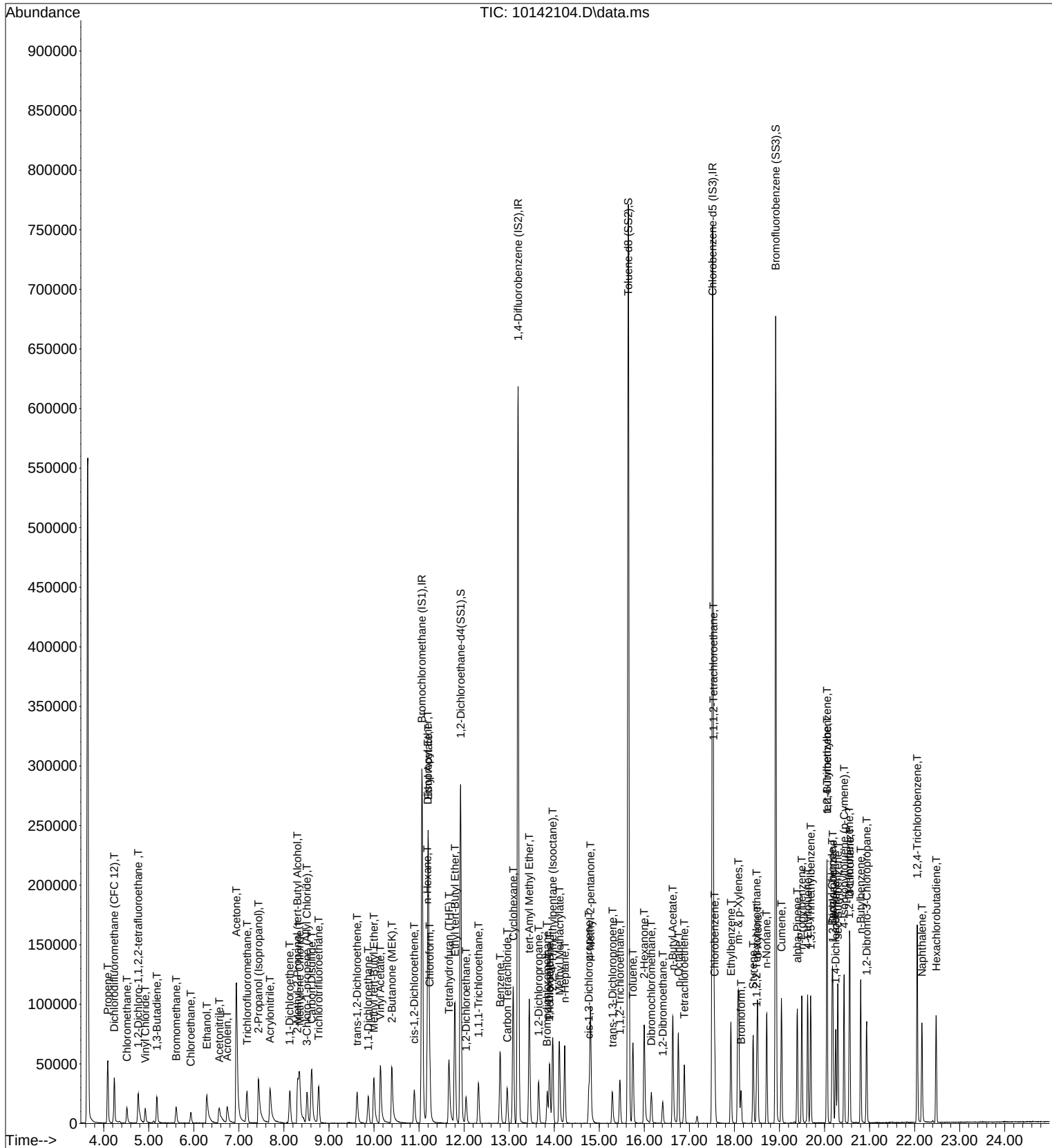
Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\14\10142105.D
 Acq On : 14 Oct 2021 5:54
 Sample : 5.0ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122107 (11/11)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:24:13 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	122538	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	13.20	114	552701	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	117303	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	247261	12.183	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.44%
57) Toluene-d8 (SS2)	15.65	98	594949	11.951	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.60%
73) Bromofluorobenzene (SS3)	18.92	174	217587	12.911	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.28%

Target Compounds

						Qvalue
2) Propene	4.06	42	112503	5.382	ng	99
3) Dichlorodifluoromethan...	4.22	85	147779	4.697	ng	100
4) Chloromethane	4.50	50	70268	3.423	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	48909	4.104	ng	100
6) Vinyl Chloride	4.91	62	71452	3.830	ng	100
7) 1,3-Butadiene	5.17	54	56262	4.079	ng	99
8) Bromomethane	5.60	94	49670	3.940	ng	100
9) Chloroethane	5.92	64	46998	4.309	ng	99
10) Ethanol	6.29	45	222376	16.946	ng	100
11) Acetonitrile	6.55	41	144824	4.281	ng	99
12) Acrolein	6.74	56	96652	9.402	ng	99
13) Acetone	6.93	58	288053	25.849	ng	96
14) Trichlorofluoromethane	7.18	101	133295	4.682	ng	100
15) 2-Propanol (Isopropanol)	7.44	45	328411	9.425	ng	97
16) Acrylonitrile	7.69	53	215559	10.736	ng	100
17) 1,1-Dichloroethene	8.13	96	64783	4.751	ng	98
18) 2-Methyl-2-Propanol (t...	8.30	59	353346	8.785	ng	98
19) Methylene Chloride	8.35	84	66167	4.426	ng	95
20) 3-Chloro-1-propene (Al...	8.51	41	118440	4.929	ng	99
21) Trichlorotrifluoroethane	8.77	151	63797	5.252	ng	98
22) Carbon Disulfide	8.61	76	486989	8.939	ng	100
23) trans-1,2-Dichloroethene	9.62	61	111721	5.088	ng	100
24) 1,1-Dichloroethane	9.88	63	133250	4.800	ng	99
25) Methyl tert-Butyl Ether	9.98	73	227234	4.668	ng	99
26) Vinyl Acetate	10.14	86	41649	15.839	ng	# 88
27) 2-Butanone (MEK)	10.38	72	87882	9.494	ng	# 91
28) cis-1,2-Dichloroethene	10.90	61	108033	4.941	ng	99
29) Diisopropyl Ether	11.20	87	126218	10.431	ng	# 93
30) Ethyl Acetate	11.20	61	113777	21.820	ng	95
31) n-Hexane	11.18	57	131877	5.655	ng	100
32) Chloroform	11.25	83	127104	4.887	ng	100
34) Tetrahydrofuran (THF)	11.65	72	81001	8.655	ng	97
35) Ethyl tert-Butyl Ether	11.79	87	177813	10.102	ng	98
36) 1,2-Dichloroethane	12.04	62	111284	5.045	ng	99
38) 1,1,1-Trichloroethane	12.32	97	118651	4.728	ng	100
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	12.80	78	266495	4.443	ng	100
42) Carbon Tetrachloride	12.96	117	102606	4.998	ng	99
43) Cyclohexane	13.09	84	205959	9.609	ng	97
44) tert-Amyl Methyl Ether	13.44	73	417333	9.784	ng	98
45) 1,2-Dichloropropane	13.65	63	72767	4.738	ng	99
46) Bromodichloromethane	13.85	83	102095	4.826	ng	99
47) Trichloroethene	13.90	130	71707	5.135	ng	100
48) 1,4-Dioxane	13.88	88	56802	5.048	ng	100
49) 2,2,4-Trimethylpentane...	13.97	57	340443	5.224	ng	99
50) Methyl Methacrylate	14.11	100	56311	10.704	ng	97

Data File : I:\MS16\DATA\2021_10\14\10142105.D
 Acq On : 14 Oct 2021 5:54
 Sample : 5.0ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122107 (11/11)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:24:13 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	68679	4.622	ng	99
52) cis-1,3-Dichloropropene	14.77	75	114814	4.938	ng	99
53) 4-Methyl-2-pentanone	14.80	58	149958	11.427	ng	94
54) trans-1,3-Dichloropropene	15.28	75	109235	4.899	ng	99
55) 1,1,2-Trichloroethane	15.45	97	66169	4.814	ng	100
58) Toluene	15.74	91	269785	4.662	ng	99
59) 2-Hexanone	15.99	43	372771	11.435	ng	97
60) Dibromochloromethane	16.16	129	82673	5.182	ng	99
61) 1,2-Dibromoethane	16.40	107	77457	4.892	ng	100
62) n-Butyl Acetate	16.63	43	411422	11.497	ng	98
63) n-Octane	16.76	57	70571	5.233	ng	97
64) Tetrachloroethene	16.89	166	84016	5.226	ng	100
65) Chlorobenzene	17.56	112	179794	4.954	ng	100
66) Ethylbenzene	17.92	91	320890	4.821	ng	99
67) m- & p-Xylenes	18.08	91	518982	9.945	ng	99
68) Bromoform	18.15	173	76301	5.648	ng	99
69) Styrene	18.41	104	190039	4.995	ng	99
70) o-Xylene	18.52	91	259187	4.963	ng	99
71) n-Nonane	18.71	43	168768	5.566	ng	97
72) 1,1,2,2-Tetrachloroethane	18.49	83	115221	4.804	ng	99
74) Cumene	19.04	105	328378	5.012	ng	100
75) alpha-Pinene	19.40	93	174770	5.282	ng	97
76) n-Propylbenzene	19.49	91	396313	4.950	ng	100
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	327061	5.210	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	273677	5.077	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	277870	5.391	ng	99
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.17	91	449830	11.032	ng	99
85) 1,3-Dichlorobenzene	20.19	146	155380	5.492	ng	100
86) 1,4-Dichlorobenzene	20.25	146	156220	5.099	ng	100
87) sec-Butylbenzene	20.30	105	364332	5.094	ng	99
88) 4-Isopropyltoluene (p-...	20.43	119	320655	5.349	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.55	146	150729	5.355	ng	100
91) d-Limonene	20.56	68	109406	5.532	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.94	157	125168	11.101	ng	97
93) n-Undecane	0.00	57	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	22.06	180	272124	11.680	ng	100
95) Naphthalene	22.16	128	362202	5.286	ng	100
96) n-Dodecane	0.00	57	0	N.D.	d	
97) Hexachlorobutadiene	22.48	225	94798	5.820	ng	100
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	20.06	119	271244	5.471	ng	100
100) n-Butylbenzene	20.80	91	298158	5.005	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	68797	5.292	ng	100

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

Data File : I:\MS16\DATA\2021_10\14\10142105.D
Acq On : 14 Oct 2021 5:54
Sample : 5.0ng R16101421 ICAL Std
Misc : S34-09132101/S34-10122107 (11/11)

Vial: 16
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 07:24:13 2021

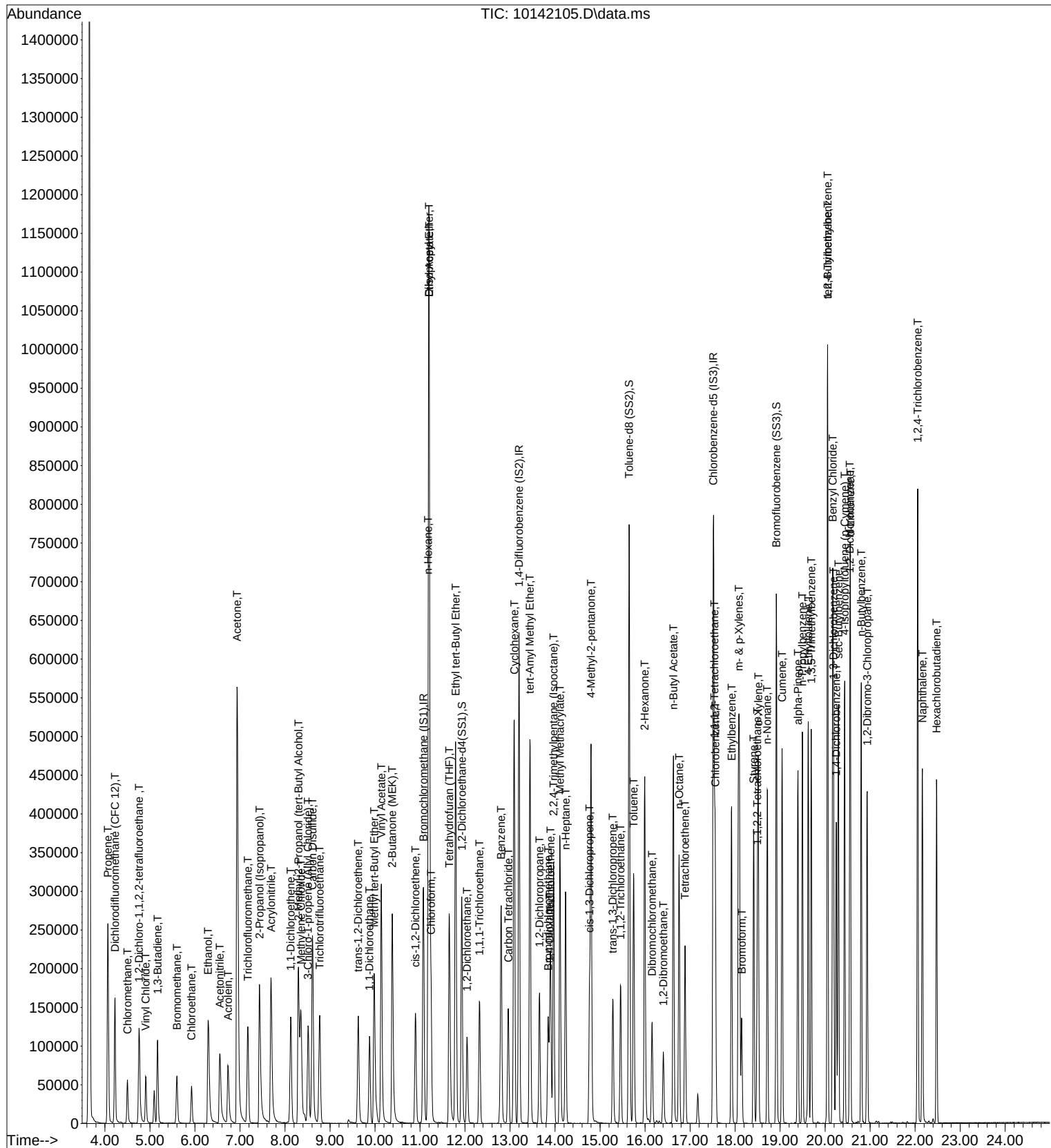
Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 07:17:38 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\14\10142107.D
 Acq On : 14 Oct 2021 7:01
 Sample : 50ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:28:05 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 07:26:08 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	133099	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.21	114	598383	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.52	54	119598	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.94	65	248111	11.729	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.84%
57) Toluene-d8 (SS2)	15.65	98	637805	12.712	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.68%
73) Bromofluorobenzene (SS3)	18.92	174	233819	12.904	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.20%

Target Compounds

						Qvalue
2) Propene	4.06	42	913802	44.536	ng	100
3) Dichlorodifluoromethan...	4.22	85	1274615	42.155	ng	100
4) Chloromethane	4.50	50	924974	53.839	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	601779	59.312	ng	100
6) Vinyl Chloride	4.92	62	845981	54.240	ng	100
7) 1,3-Butadiene	5.19	54	763930	57.367	ng	98
8) Bromomethane	5.61	94	576699	50.692	ng	100
9) Chloroethane	5.94	64	495190	48.676	ng	100
10) Ethanol	6.36	45	2157503	177.263	ng	100
11) Acetonitrile	6.59	41	1447816	45.271	ng	100
12) Acrolein	6.76	56	996159	104.885	ng	100
13) Acetone	6.97	58	2557552	226.667	ng	93
14) Trichlorofluoromethane	7.19	101	1264365	44.928	ng	100
15) 2-Propanol (Isopropanol)	7.47	45	3104015	88.346	ng	99
16) Acrylonitrile	7.73	53	2131908	110.857	ng	100
17) 1,1-Dichloroethene	8.14	96	685832	52.139	ng	97
18) 2-Methyl-2-Propanol (t...	8.33	59	2856199	75.330	ng	100
19) Methylene Chloride	8.38	84	701206	49.546	ng	96
20) 3-Chloro-1-propene (Al...	8.54	41	1261157	51.506	ng	97
21) Trichlorotrifluoroethane	8.78	151	650156	50.090	ng	99
22) Carbon Disulfide	8.63	76	4818253	95.086	ng	100
23) trans-1,2-Dichloroethene	9.65	61	1167560	54.696	ng	98
24) 1,1-Dichloroethane	9.90	63	1369215	49.618	ng	100
25) Methyl tert-Butyl Ether	9.99	73	2312582	50.757	ng	100
26) Vinyl Acetate	10.16	86	478884	214.523	ng	# 85
27) 2-Butanone (MEK)	10.40	72	917733	116.536	ng	# 90
28) cis-1,2-Dichloroethene	10.92	61	1103104	51.220	ng	98
29) Diisopropyl Ether	11.21	87	1021323	83.972	ng	# 81
30) Ethyl Acetate	11.22	61	943357	181.719	ng	97
31) n-Hexane	11.19	57	1142268	45.954	ng	100
32) Chloroform	11.27	83	1222585	47.853	ng	99
34) Tetrahydrofuran (THF)	11.65	72	827916	97.754	ng	94
35) Ethyl tert-Butyl Ether	11.80	87	1729711	99.998	ng	97
36) 1,2-Dichloroethane	12.05	62	1084780	49.327	ng	100
38) 1,1,1-Trichloroethane	12.33	97	1172310	47.896	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	12.81	78	2741322	49.138	ng	100
42) Carbon Tetrachloride	12.97	117	1005264	48.717	ng	100
43) Cyclohexane	13.10	84	2053858	98.696	ng	96
44) tert-Amyl Methyl Ether	13.45	73	4086080	99.460	ng	98
45) 1,2-Dichloropropane	13.66	63	748347	49.776	ng	100
46) Bromodichloromethane	13.85	83	1025375	50.437	ng	100
47) Trichloroethene	13.91	130	734133	52.064	ng	100
48) 1,4-Dioxane	13.88	88	592467	57.118	ng	97
49) 2,2,4-Trimethylpentane...	13.97	57	3293427	49.467	ng	98
50) Methyl Methacrylate	14.12	100	587310	121.779	ng	98

Data File : I:\MS16\DATA\2021_10\14\10142107.D
 Acq On : 14 Oct 2021 7:01
 Sample : 50ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 07:28:05 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 07:26:08 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	697825	49.995	ng	98
52) cis-1,3-Dichloropropene	14.77	75	1202831	56.518	ng	99
53) 4-Methyl-2-pentanone	14.80	58	1409827	106.646	ng	94
54) trans-1,3-Dichloropropene	15.29	75	1163813	60.464	ng	100
55) 1,1,2-Trichloroethane	15.46	97	684187	52.024	ng	100
58) Toluene	15.75	91	2758926	51.232	ng	100
59) 2-Hexanone	16.00	43	3298080	111.438	ng	96
60) Dibromochloromethane	16.16	129	853662	54.911	ng	99
61) 1,2-Dibromoethane	16.41	107	809273	56.713	ng	100
62) n-Butyl Acetate	16.63	43	3708323	113.051	ng	97
63) n-Octane	16.76	57	682349	51.846	ng	98
64) Tetrachloroethene	16.89	166	840136	51.606	ng	99
65) Chlorobenzene	17.56	112	1819953	53.478	ng	100
66) Ethylbenzene	17.92	91	3214930	52.356	ng	100
67) m- & p-Xylenes	18.09	91	4977066	101.403	ng	99
68) Bromoform	18.15	173	796022	57.714	ng	100
69) Styrene	18.42	104	2017217	63.971	ng	99
70) o-Xylene	18.52	91	2489718	51.228	ng	98
71) n-Nonane	18.72	43	1465217	50.031	ng	96
72) 1,1,2,2-Tetrachloroethane	18.49	83	1150708	54.537	ng	99
74) Cumene	19.05	105	3194772	51.457	ng	100
75) alpha-Pinene	19.40	93	1745892	55.458	ng	99
76) n-Propylbenzene	19.50	91	3853281	50.251	ng	100
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	3202575	57.518	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	2618508	53.381	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	2471500	54.573	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.18	91	4477893	146.380	ng	100
85) 1,3-Dichlorobenzene	20.19	146	1425317	60.128	ng	99
86) 1,4-Dichlorobenzene	20.25	146	1545348	62.816	ng	99
87) sec-Butylbenzene	20.30	105	3433334	53.034	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	2971022	54.352	ng	99
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.55	146	1396661	57.960	ng	100
91) d-Limonene	20.56	68	995594	56.937	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.94	157	1178780	120.436	ng	98
93) n-Undecane	0.00	57	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	22.06	180	2475106	135.163	ng	99
95) Naphthalene	22.16	128	3824350	55.544	ng	100
96) n-Dodecane	0.00	57	0	N.D.	d	
97) Hexachlorobutadiene	22.48	225	903003	53.339	ng	100
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	20.06	119	2371084	49.659	ng	100
100) n-Butylbenzene	20.80	91	2834711	59.504	ng	100
101) 1,1,1,2-Tetrachloroethane	17.54	131	671197	50.489	ng	100

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

Data File : I:\MS16\DATA\2021_10\14\10142107.D
Acq On : 14 Oct 2021 7:01
Sample : 50ng R16101421 ICAL Std
Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 07:28:05 2021

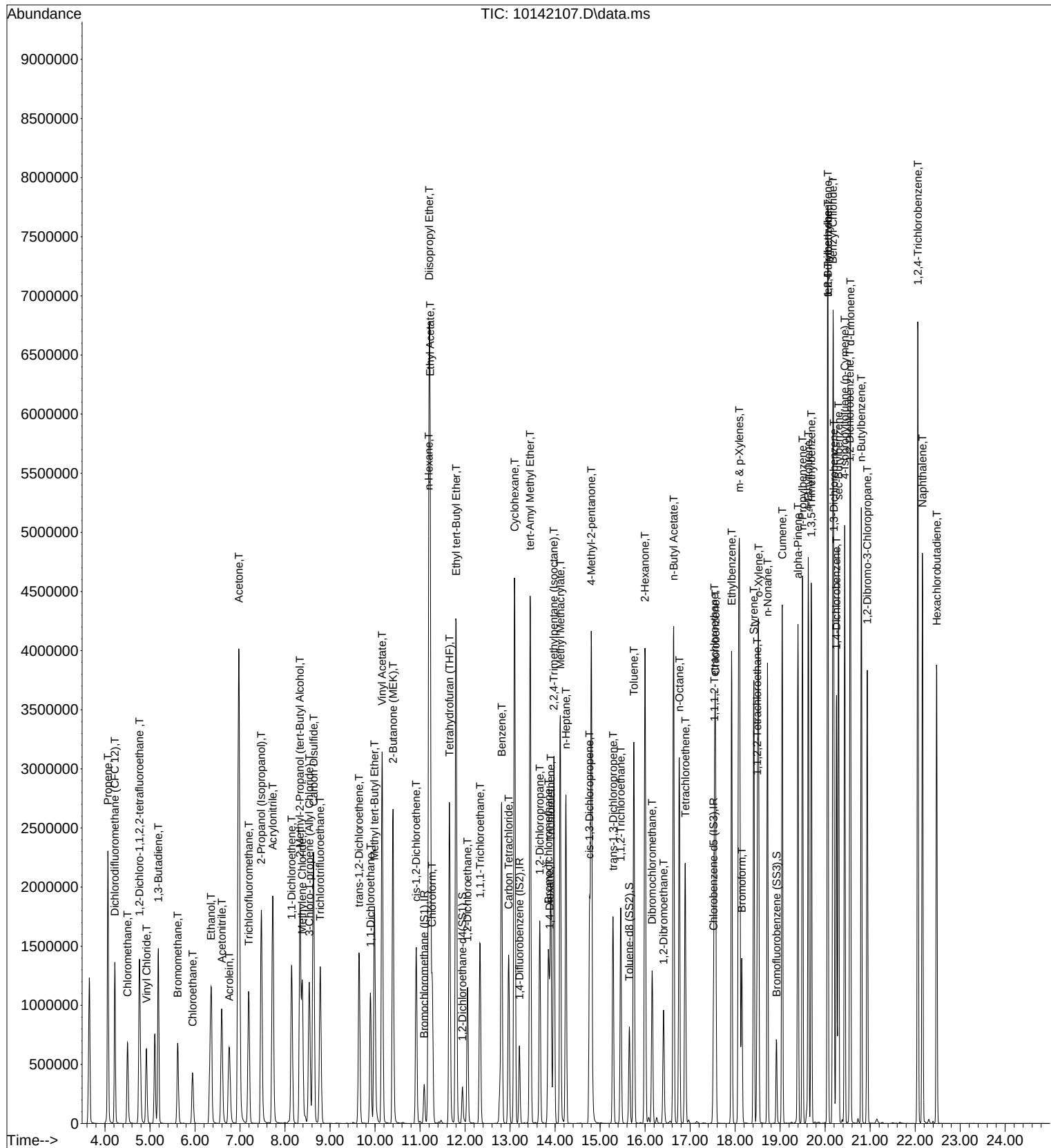
Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 07:26:08 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\14\10142108.D
 Acq On : 14 Oct 2021 7:35
 Sample : 100ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 08:08:20 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 07:28:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.10	130	137745	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.21	114	612553	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.52	54	118119	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.95	65	242159	11.163	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	89.28%
57) Toluene-d8 (SS2)	15.66	98	658512	13.332	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	106.64%
73) Bromofluorobenzene (SS3)	18.92	174	240844	13.397	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	107.20%

Target Compounds

						Qvalue
2) Propene	4.06	42	1605609	76.860	ng	100
3) Dichlorodifluoromethan...	4.22	85	2317151	75.652	ng	100
4) Chloromethane	4.50	50	1189307	66.495	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.77	135	1219263	116.326	ng	100
6) Vinyl Chloride	4.93	62	1963365	124.351	ng	100
7) 1,3-Butadiene	5.19	54	1602434	116.335	ng	96
8) Bromomethane	5.63	94	1162840	99.941	ng	100
9) Chloroethane	5.96	64	989523	95.288	ng	100
10) Ethanol	6.40	45	4046181	320.035	ng	99
11) Acetonitrile	6.62	41	2866340	87.514	ng	100
12) Acrolein	6.78	56	1930008	197.737	ng	99
13) Acetone	7.00	58	4583574	389.165	ng	86
14) Trichlorofluoromethane	7.20	101	2369047	82.557	ng	100
15) 2-Propanol (Isopropanol)	7.50	45	5524253	151.154	ng	99
16) Acrylonitrile	7.75	53	4037160	202.317	ng	100
17) 1,1-Dichloroethene	8.16	96	1365789	101.076	ng	94
18) 2-Methyl-2-Propanol (t...	8.35	59	2379478	60.693	ng	99
19) Methylene Chloride	8.39	84	1396876	96.374	ng	90
20) 3-Chloro-1-propene (Al...	8.55	41	2417578	95.802	ng	95
21) Trichlorotrifluoroethane	8.79	151	1253607	93.390	ng	99
22) Carbon Disulfide	8.64	76	9301080	179.513	ng	100
23) trans-1,2-Dichloroethene	9.65	61	2256013	102.601	ng	96
24) 1,1-Dichloroethane	9.90	63	2652152	93.505	ng	100
25) Methyl tert-Butyl Ether	9.99	73	4015304	86.396	ng	100
26) Vinyl Acetate	10.17	86	897794	392.673	ng	# 67
27) 2-Butanone (MEK)	10.41	72	1670482	206.966	ng	# 78
28) cis-1,2-Dichloroethene	10.92	61	2122901	95.761	ng	96
29) Diisopropyl Ether	11.21	87	1742121	136.624	ng	# 60
30) Ethyl Acetate	11.24	61	1523206	274.962	ng	93
31) n-Hexane	11.19	57	1981577	75.847	ng	100
32) Chloroform	11.28	83	2264976	86.460	ng	99
34) Tetrahydrofuran (THF)	11.66	72	1559169	179.071	ng	# 86
35) Ethyl tert-Butyl Ether	11.81	87	3116839	174.567	ng	92
36) 1,2-Dichloroethane	12.06	62	2009310	89.183	ng	100
38) 1,1,1-Trichloroethane	12.33	97	2167928	87.615	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	12.82	78	5317903	93.808	ng	100
42) Carbon Tetrachloride	12.97	117	1870402	89.590	ng	100
43) Cyclohexane	13.10	84	3717963	174.217	ng	92
44) tert-Amyl Methyl Ether	13.45	73	7299976	173.928	ng	96
45) 1,2-Dichloropropane	13.67	63	1427300	92.996	ng	100
46) Bromodichloromethane	13.85	83	1928022	93.710	ng	100
47) Trichloroethene	13.91	130	1365174	94.052	ng	100
48) 1,4-Dioxane	13.89	88	1126678	106.039	ng	94
49) 2,2,4-Trimethylpentane...	13.98	57	5907194	86.292	ng	96
50) Methyl Methacrylate	14.12	100	1099598	221.453	ng	96

Data File : I:\MS16\DATA\2021_10\14\10142108.D
 Acq On : 14 Oct 2021 7:35
 Sample : 100ng R16101421 ICAL Std
 Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 08:08:20 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 07:28:21 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

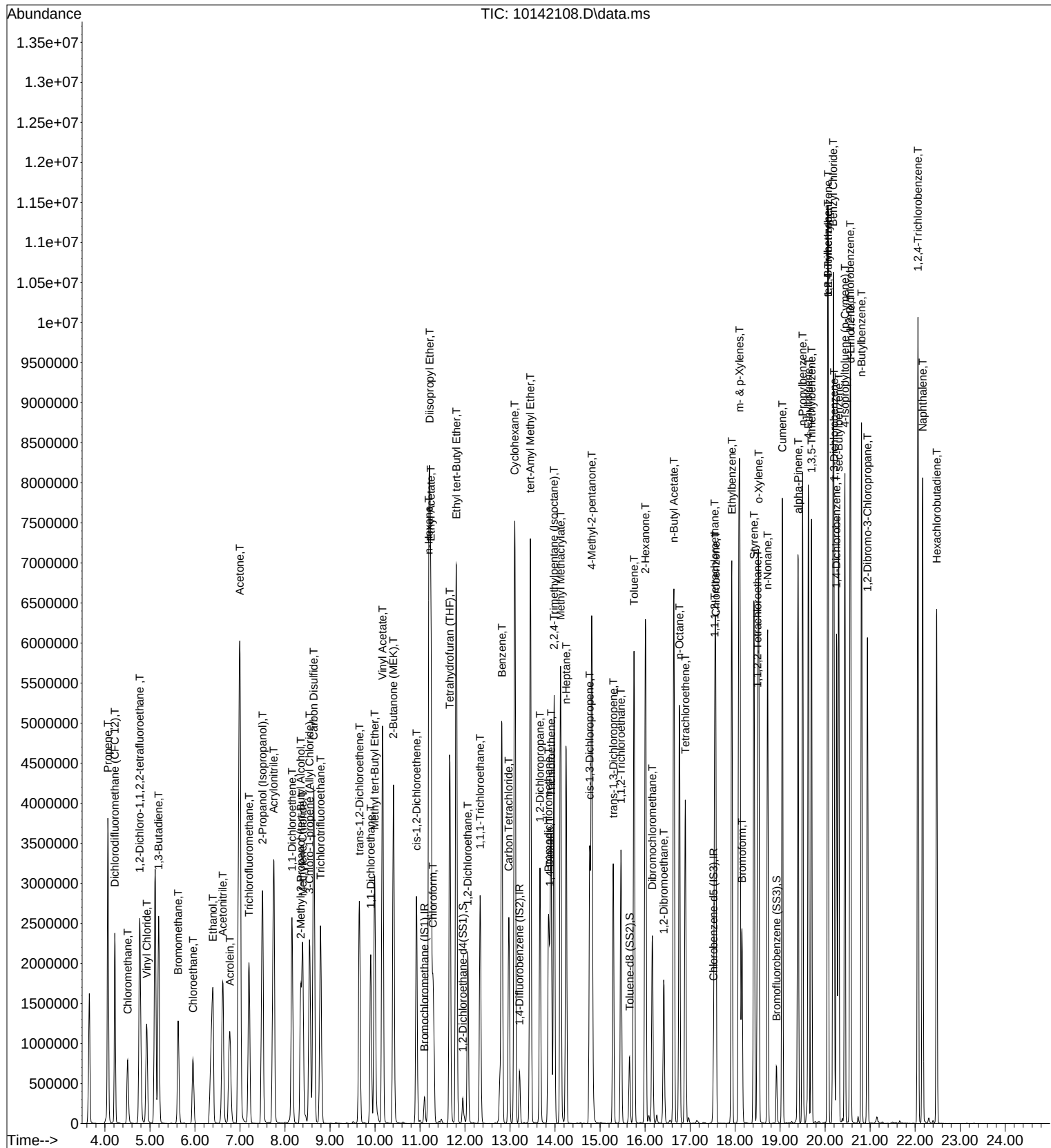
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.25	71	1307475	92.188	ng	95
52) cis-1,3-Dichloropropene	14.77	75	2291447	106.431	ng	99
53) 4-Methyl-2-pentanone	14.81	58	2457866	179.569	ng	88
54) trans-1,3-Dichloropropene	15.29	75	2218711	114.704	ng	100
55) 1,1,2-Trichloroethane	15.46	97	1336567	99.712	ng	100
58) Toluene	15.76	91	5290896	99.453	ng	100
59) 2-Hexanone	16.01	43	5559048	188.378	ng	92
60) Dibromochloromethane	16.16	129	1612609	105.323	ng	99
61) 1,2-Dibromoethane	16.42	107	1578657	112.625	ng	100
62) n-Butyl Acetate	16.64	43	6186170	188.851	ng	95
63) n-Octane	16.76	57	1202951	91.895	ng	94
64) Tetrachloroethene	16.89	166	1567843	96.560	ng	99
65) Chlorobenzene	17.57	112	3332303	98.386	ng	100
66) Ethylbenzene	17.93	91	6000577	99.058	ng	99
67) m- & p-Xylenes	18.10	91	8804346	181.317	ng	98
68) Bromoform	18.15	173	1468401	107.381	ng	100
69) Styrene	18.42	104	3777388	120.873	ng	98
70) o-Xylene	18.52	91	4407691	91.715	ng	98
71) n-Nonane	18.72	43	2385329	81.777	ng	90
72) 1,1,2,2-Tetrachloroethane	18.50	83	2128105	102.187	ng	99
74) Cumene	19.05	105	5783377	94.147	ng	100
75) alpha-Pinene	19.40	93	3178878	102.275	ng	98
76) n-Propylbenzene	19.50	91	6925013	91.430	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	5740281	104.165	ng	100
79) 1,3,5-Trimethylbenzene	19.70	105	4606879	94.975	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.07	105	4032581	89.211	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.18	91	7229525	237.410	ng	99
85) 1,3-Dichlorobenzene	20.20	146	2320973	97.902	ng	100
86) 1,4-Dichlorobenzene	20.25	146	2711068	110.656	ng	100
87) sec-Butylbenzene	20.30	105	5860909	91.371	ng	100
88) 4-Isopropyltoluene (p-...	20.44	119	5075384	93.669	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.56	146	2340292	97.237	ng	100
91) d-Limonene	20.57	68	1578433	90.935	ng	97
92) 1,2-Dibromo-3-Chloropr...	20.94	157	2032290	208.463	ng	94
93) n-Undecane	0.00	57	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	22.06	180	4068193	221.771	ng	99
95) Naphthalene	22.17	128	6816572	100.181	ng	100
96) n-Dodecane	0.00	57	0	N.D.	d	
97) Hexachlorobutadiene	22.48	225	1567519	92.557	ng	100
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	20.06	119	3879700	81.280	ng	100
100) n-Butylbenzene	20.81	91	4978585	106.117	ng	100
101) 1,1,1,2-Tetrachloroethane	17.55	131	1204708	91.370	ng	100

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

Data File : I:\MS16\DATA\2021_10\14\10142108.D
Acq On : 14 Oct 2021 7:35
Sample : 100ng R16101421 ICAL Std
Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 08:08:20 2021
Quant Method : I:\MS16\METHODS\R16101421.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Oct 14 07:28:21 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\14\10142106.D
 Acq On : 14 Oct 2021 6:28
 Sample : CCV R16101421 ICAL Std 25ng
 Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 09:36:48 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	126968	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	13.20	114	570347	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	117674	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	247154	12.604	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.80%
57) Toluene-d8 (SS2)	15.65	98	611366	12.406	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.28%
73) Bromofluorobenzene (SS3)	18.92	174	222939	12.350	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.80%

Target Compounds

						Qvalue
2) Propene	4.06	42	517948	27.770	ng	100
3) Dichlorodifluoromethan...	4.21	85	713022	25.603	ng	100
4) Chloromethane	4.49	50	423631	25.194	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	245785	23.639	ng	100
6) Vinyl Chloride	4.91	62	373703	23.596	ng	100
7) 1,3-Butadiene	5.17	54	322693	23.037	ng	100
8) Bromomethane	5.60	94	285789	26.043	ng	100
9) Chloroethane	5.93	64	253115	26.050	ng	100
10) Ethanol	6.33	45	1152911	94.761	ng	100
11) Acetonitrile	6.57	41	757238	24.615	ng	100
12) Acrolein	6.74	56	519253	55.999	ng	100
13) Acetone	6.96	58	1395575	124.104	ng	100
14) Trichlorofluoromethane	7.18	101	672694	25.686	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	1786216	49.689	ng	100
16) Acrylonitrile	7.71	53	1110807	53.062	ng	100
17) 1,1-Dichloroethene	8.14	96	340261	26.889	ng	100
18) 2-Methyl-2-Propanol (t...	8.31	59	2026995	54.380	ng	100
19) Methylene Chloride	8.37	84	350462	25.844	ng	100
20) 3-Chloro-1-propene (Al...	8.53	41	645279	27.401	ng	100
21) Trichlorotrifluoroethane	8.78	151	333608	26.442	ng	100
22) Carbon Disulfide	8.62	76	2460861	51.113	ng	100
23) trans-1,2-Dichloroethene	9.64	61	592774	28.752	ng	100
24) 1,1-Dichloroethane	9.89	63	694476	26.330	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1190600	27.692	ng	100
26) Vinyl Acetate	10.15	86	239536	95.399	ng	100
27) 2-Butanone (MEK)	10.39	72	461664	56.312	ng	100
28) cis-1,2-Dichloroethene	10.90	61	561860	27.013	ng	100
29) Diisopropyl Ether	11.20	87	566867	49.482	ng	100
30) Ethyl Acetate	11.21	61	538060	106.734	ng	100
31) n-Hexane	11.19	57	622018	24.913	ng	100
32) Chloroform	11.26	83	640087	26.335	ng	100
34) Tetrahydrofuran (THF)	11.65	72	418883	50.763	ng	100
35) Ethyl tert-Butyl Ether	11.80	87	901953	53.604	ng	100
36) 1,2-Dichloroethane	12.05	62	562990	27.018	ng	100
38) 1,1,1-Trichloroethane	12.33	97	606564	26.286	ng	100
39) Isopropyl Acetate	12.77	61	39721	No Calib		
40) 1-Butanol	12.80	56	17105	No Calib		
41) Benzene	12.81	78	1376858	25.508	ng	100
42) Carbon Tetrachloride	12.97	117	524238	27.031	ng	100
43) Cyclohexane	13.09	84	1055549	51.454	ng	100
44) tert-Amyl Methyl Ether	13.45	73	2129707	52.974	ng	100
45) 1,2-Dichloropropane	13.65	63	377972	25.905	ng	100
46) Bromodichloromethane	13.85	83	527457	27.230	ng	100
47) Trichloroethene	13.90	130	370264	26.488	ng	100
48) 1,4-Dioxane	13.87	88	299234	28.799	ng	100
49) 2,2,4-Trimethylpentane...	13.97	57	1713535	26.021	ng	100
50) Methyl Methacrylate	14.11	100	301041	54.702	ng	100

Data File : I:\MS16\DATA\2021_10\14\10142106.D
 Acq On : 14 Oct 2021 6:28
 Sample : CCV R16101421 ICAL Std 25ng
 Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 09:36:48 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	354837	26.357	ng	100
52) cis-1,3-Dichloropropene	14.77	75	610021	29.693	ng	100
53) 4-Methyl-2-pentanone	14.80	58	750870	55.769	ng	100
54) trans-1,3-Dichloropropene	15.28	75	590080	27.381	ng	100
55) 1,1,2-Trichloroethane	15.46	97	343806	26.817	ng	100
58) Toluene	15.75	91	1389125	25.245	ng	100
59) 2-Hexanone	15.99	43	1817881	54.999	ng	100
60) Dibromochloromethane	16.16	129	438355	28.173	ng	100
61) 1,2-Dibromoethane	16.41	107	408825	28.160	ng	100
62) n-Butyl Acetate	16.63	43	2040421	53.217	ng	100
63) n-Octane	16.76	57	354571	26.157	ng	100
64) Tetrachloroethene	16.89	166	429465	25.650	ng	100
65) Chlorobenzene	17.56	112	929485	26.236	ng	100
66) Ethylbenzene	17.92	91	1641958	26.068	ng	100
67) m- & p-Xylenes	18.09	91	2610085	51.335	ng	100
68) Bromoform	18.15	173	409731	29.196	ng	100
69) Styrene	18.42	104	1009763	26.466	ng	100
70) o-Xylene	18.52	91	1306762	26.049	ng	100
71) n-Nonane	18.72	43	813329	26.724	ng	100
72) 1,1,2,2-Tetrachloroethane	18.49	83	589336	27.274	ng	100
74) Cumene	19.04	105	1667851	26.067	ng	100
75) alpha-Pinene	19.40	93	901719	28.254	ng	100
76) n-Propylbenzene	19.49	91	2005596	25.217	ng	100
77) 3-Ethyltoluene	19.63	105	1667306	No Calib		
78) 4-Ethyltoluene	19.63	105	1667306	28.418	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1380627	26.930	ng	100
80) alpha-Methylstyrene	19.63	118	10083	No Calib		
81) 2-Ethyltoluene	19.63	105	1667306	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	1353582	27.657	ng	100
83) n-Decane	20.06	58	64796	No Calib	#	
84) Benzyl Chloride	20.17	91	2408670	58.207	ng	100
85) 1,3-Dichlorobenzene	20.19	146	778814	29.458	ng	100
86) 1,4-Dichlorobenzene	20.25	146	805406	29.226	ng	100
87) sec-Butylbenzene	20.30	105	1829801	27.072	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	1590065	27.612	ng	100
89) 1,2,3-Trimethylbenzene	20.30	105	1829033	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	751107	28.277	ng	100
91) d-Limonene	20.56	68	545947	29.341	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.94	157	638128	52.700	ng	100
93) n-Undecane	21.14	57	271	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1361962	51.744	ng	100
95) Naphthalene	22.16	128	1975769	26.738	ng	100
96) n-Dodecane	22.16	57	1302	No Calib		
97) Hexachlorobutadiene	22.48	225	475804	26.599	ng	100
98) Cyclohexanone	18.09	55	2102	No Calib		
99) tert-Butylbenzene	20.06	119	1302880	25.960	ng	100
100) n-Butylbenzene	20.80	91	1500584	29.092	ng	100
101) 1,1,1,2-Tetrachloroethane	17.54	131	350044	26.037	ng	100

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

Data File : I:\MS16\DATA\2021_10\14\10142106.D
Acq On : 14 Oct 2021 6:28
Sample : CCV R16101421 ICAL Std 25ng
Misc : S34-09132101/S34-10122103 (11/11)

Vial: 15
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 09:36:48 2021

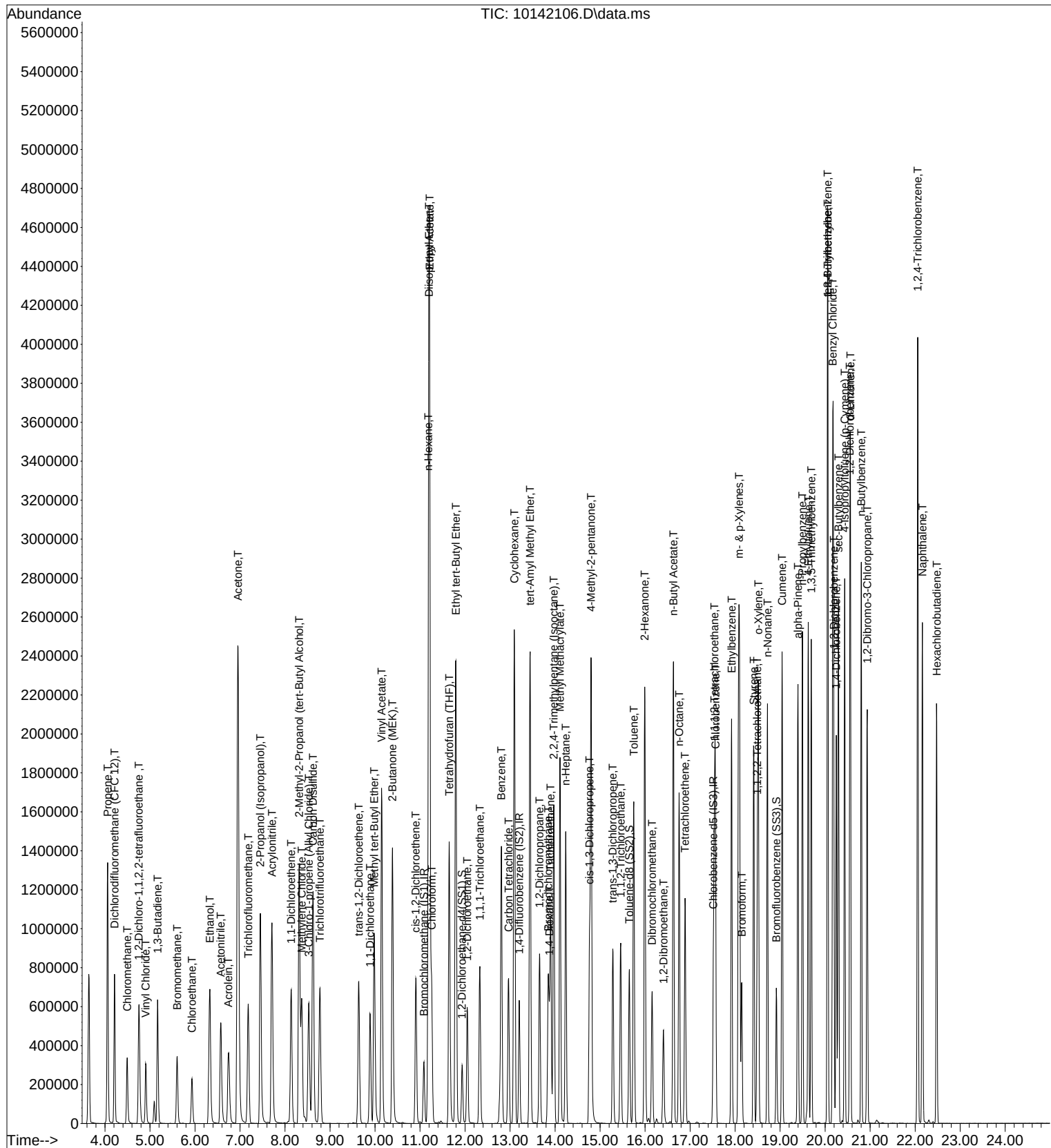
Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



QC Checks for Internal Standards for TO15 Initial Calibration

Method Name: R16101421.M Method Date: 10/14/2021
Instrument Name: EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

Area response and RTcheck for the Internal Standards

WA 10/14/21

(the area response for an IS must be $\leq$ 40% difference of the average area of that IS from the points in the ICAL)

(the retention time for an IS must not shift more than +/- 20 seconds for that IS from the RT's in the ICAL)

Bromochloromethane (IS1)

	Area	% Diff		RT	+/- 20 sec
0.1ng R16101421 ICAL str	127282	-1.00	pass	11.06	pass
0.2ng R16101421 ICAL St	126038	-1.97	pass	11.06	pass
0.5ng R16101421 ICAL St	131572	2.34	pass	11.06	pass
1.0ng R16101421 ICAL St	123307	-4.09	pass	11.06	pass
5.0ng R16101421 ICAL St	122538	-4.69	pass	11.08	pass
25ng R16101421 ICAL Str	126968	-1.24	pass	11.09	pass
50ng R16101421 ICAL Str	133099	3.52	pass	11.09	pass
100ng R16101421 ICAL S	137745	7.14	pass	11.10	pass

Average Area 128569 Average RT 11.08

1,4-Difluorobenzene (IS2)

	Area	% Diff		RT	+/- 20 sec
0.1ng R16101421 ICAL str	582582	0.15	pass	13.19	pass
0.2ng R16101421 ICAL St	572851	-1.52	pass	13.19	pass
0.5ng R16101421 ICAL St	607765	4.48	pass	13.20	pass
1.0ng R16101421 ICAL St	556289	-4.37	pass	13.20	pass
5.0ng R16101421 ICAL St	552701	-4.98	pass	13.20	pass
25ng R16101421 ICAL Str	570347	-1.95	pass	13.20	pass
50ng R16101421 ICAL Str	598383	2.87	pass	13.21	pass
100ng R16101421 ICAL S	612553	5.31	pass	13.21	pass

Average Area 581684 Average RT 13.20

Chlorobenzene-d5 (IS3)

	Area	% Diff		RT	+/- 20 sec
0.1ng R16101421 ICAL str	120415	0.77	pass	17.51	pass
0.2ng R16101421 ICAL St	120297	0.67	pass	17.51	pass
0.5ng R16101421 ICAL St	125278	4.84	pass	17.51	pass
1.0ng R16101421 ICAL St	117263	-1.87	pass	17.51	pass
5.0ng R16101421 ICAL St	117303	-1.83	pass	17.51	pass
25ng R16101421 ICAL Str	117674	-1.52	pass	17.51	pass
50ng R16101421 ICAL Str	119598	0.09	pass	17.52	pass
100ng R16101421 ICAL S	118119	-1.15	pass	17.52	pass

Average Area 119493 Average RT 17.51

Data File : I:\MS16\DATA\2021_10\14\10142111.D
 Acq On : 14 Oct 2021 9:26
 Sample : LCS_25ng R16101421 ICV Std
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 10:10:09 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/14/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	140412	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	13.20	114	631885	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.52	54	127111	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.94	65	255203	11.768	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	94.16%
57) Toluene-d8 (SS2)	15.65	98	682782	12.827	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	102.64%
73) Bromofluorobenzene (SS3)	18.92	174	252349	12.941	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.52%

Target Compounds

						Qvalue
2) Propene	4.06	42	540425	26.201	ng	99
3) Dichlorodifluoromethan...	4.22	85	707126	22.960	ng	100
4) Chloromethane	4.50	50	559101	30.066	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	340893	29.647	ng	99
6) Vinyl Chloride	4.91	62	548443	31.314	ng	100
7) 1,3-Butadiene	5.17	54	458508	29.598	ng	96
8) Bromomethane	5.60	94	309339	25.490	ng	99
9) Chloroethane	5.93	64	265119	24.673	ng	99
10) Ethanol	6.33	45	1147559	85.290	ng	100
11) Acetonitrile	6.58	41	758108	22.284	ng	100
12) Acrolein	6.75	56	525348	51.232	ng	99
13) Acetone	6.96	58	1414862	113.772	ng	94
14) Trichlorofluoromethane	7.18	101	637350	22.006	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	1691322	42.544	ng	99
16) Acrylonitrile	7.71	53	1111395	48.007	ng	100
17) 1,1-Dichloroethene	8.14	96	350606	25.053	ng	95
18) 2-Methyl-2-Propanol (t...	8.31	59	1919440	46.564	ng	99
19) Methylene Chloride	8.38	84	362016	24.140	ng	94
20) 3-Chloro-1-propene (Al...	8.53	41	633258	24.316	ng	95
21) Trichlorotrifluoroethane	8.78	151	336970	24.151	ng	99
22) Carbon Disulfide	8.62	76	2606674	48.958	ng	100
23) trans-1,2-Dichloroethene	9.64	61	604345	26.506	ng	97
24) 1,1-Dichloroethane	9.89	63	724357	24.833	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1235814	25.991	ng	100
26) Vinyl Acetate	10.15	86	254653	91.709	ng	# 88
27) 2-Butanone (MEK)	10.39	72	494154	51.043	ng	# 92
28) cis-1,2-Dichloroethene	10.91	61	580076	25.219	ng	97
29) Diisopropyl Ether	11.20	87	650163	51.319	ng	# 78
30) Ethyl Acetate	11.21	61	567972	93.880	ng	99
31) n-Hexane	11.19	57	654721	23.713	ng	100
32) Chloroform	11.26	83	653017	24.295	ng	100
34) Tetrahydrofuran (THF)	11.65	72	448134	49.108	ng	96
35) Ethyl tert-Butyl Ether	11.80	87	940403	50.538	ng	99
36) 1,2-Dichloroethane	12.05	62	557270	24.183	ng	100
38) 1,1,1-Trichloroethane	12.33	97	608681	23.809	ng	100
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	12.81	78	1478320	24.720	ng	100
42) Carbon Tetrachloride	12.97	117	515135	23.975	ng	100
43) Cyclohexane	13.10	84	1131734	49.795	ng	98
44) tert-Amyl Methyl Ether	13.45	73	2235145	50.183	ng	98
45) 1,2-Dichloropropane	13.66	63	400138	24.754	ng	100
46) Bromodichloromethane	13.85	83	537962	25.068	ng	100
47) Trichloroethene	13.90	130	392545	25.347	ng	100
48) 1,4-Dioxane	13.87	88	320141	27.811	ng	98
49) 2,2,4-Trimethylpentane...	13.97	57	1805432	24.747	ng	98
50) Methyl Methacrylate	14.11	100	319300	52.370	ng	100

Data File : I:\MS16\DATA\2021_10\14\10142111.D
 Acq On : 14 Oct 2021 9:26
 Sample : LCS_25ng R16101421 ICV Std
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 14 10:10:09 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	381665	25.589	ng	98
52) cis-1,3-Dichloropropene	14.77	75	636678	27.972	ng	99
53) 4-Methyl-2-pentanone	14.80	58	787230	52.775	ng	97
54) trans-1,3-Dichloropropene	15.29	75	606918	25.420	ng	100
55) 1,1,2-Trichloroethane	15.46	97	365430	25.727	ng	100
58) Toluene	15.75	91	1482472	24.941	ng	100
59) 2-Hexanone	15.99	43	1842918	51.617	ng	97
60) Dibromochloromethane	16.16	129	444170	26.427	ng	100
61) 1,2-Dibromoethane	16.41	107	426263	27.181	ng	100
62) n-Butyl Acetate	16.63	43	2070904	50.002	ng	98
63) n-Octane	16.76	57	370577	25.308	ng	98
64) Tetrachloroethene	16.89	166	446781	24.703	ng	99
65) Chlorobenzene	17.56	112	991165	25.900	ng	100
66) Ethylbenzene	17.92	91	1728576	25.406	ng	100
67) m- & p-Xylenes	18.09	91	2720140	49.528	ng	99
68) Bromoform	18.15	173	416486	27.474	ng	100
69) Styrene	18.42	104	1083753	26.297	ng	98
70) o-Xylene	18.52	91	1356415	25.031	ng	98
71) n-Nonane	18.72	43	832153	25.313	ng	98
72) 1,1,2,2-Tetrachloroethane	18.49	83	623503	26.713	ng	100
74) Cumene	19.04	105	1743400	25.225	ng	99
75) alpha-Pinene	19.40	93	946027	27.441	ng	98
76) n-Propylbenzene	19.49	91	2097978	24.420	ng	100
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	1746480	27.558	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1427138	25.770	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	1402650	26.532	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.17	91	2498019	55.884	ng	100
85) 1,3-Dichlorobenzene	20.19	146	804860	28.183	ng	100
86) 1,4-Dichlorobenzene	20.25	146	840380	28.231	ng	100
87) sec-Butylbenzene	20.30	105	1911879	26.187	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	1647946	26.492	ng	99
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.55	146	782231	27.262	ng	100
91) d-Limonene	20.56	68	571306	28.424	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.94	157	650688	49.748	ng	98
93) n-Undecane	0.00	57	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	22.06	180	1396803	49.128	ng	100
95) Naphthalene	22.16	128	2065689	25.879	ng	100
96) n-Dodecane	0.00	57	0	N.D.	d	
97) Hexachlorobutadiene	22.48	225	485789	25.141	ng	100
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	20.06	119	1341872	24.752	ng	100
100) n-Butylbenzene	20.80	91	1554505	27.900	ng	100
101) 1,1,1,2-Tetrachloroethane	17.54	131	357697	24.631	ng	100

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

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Oct 14 10:10:09 2021

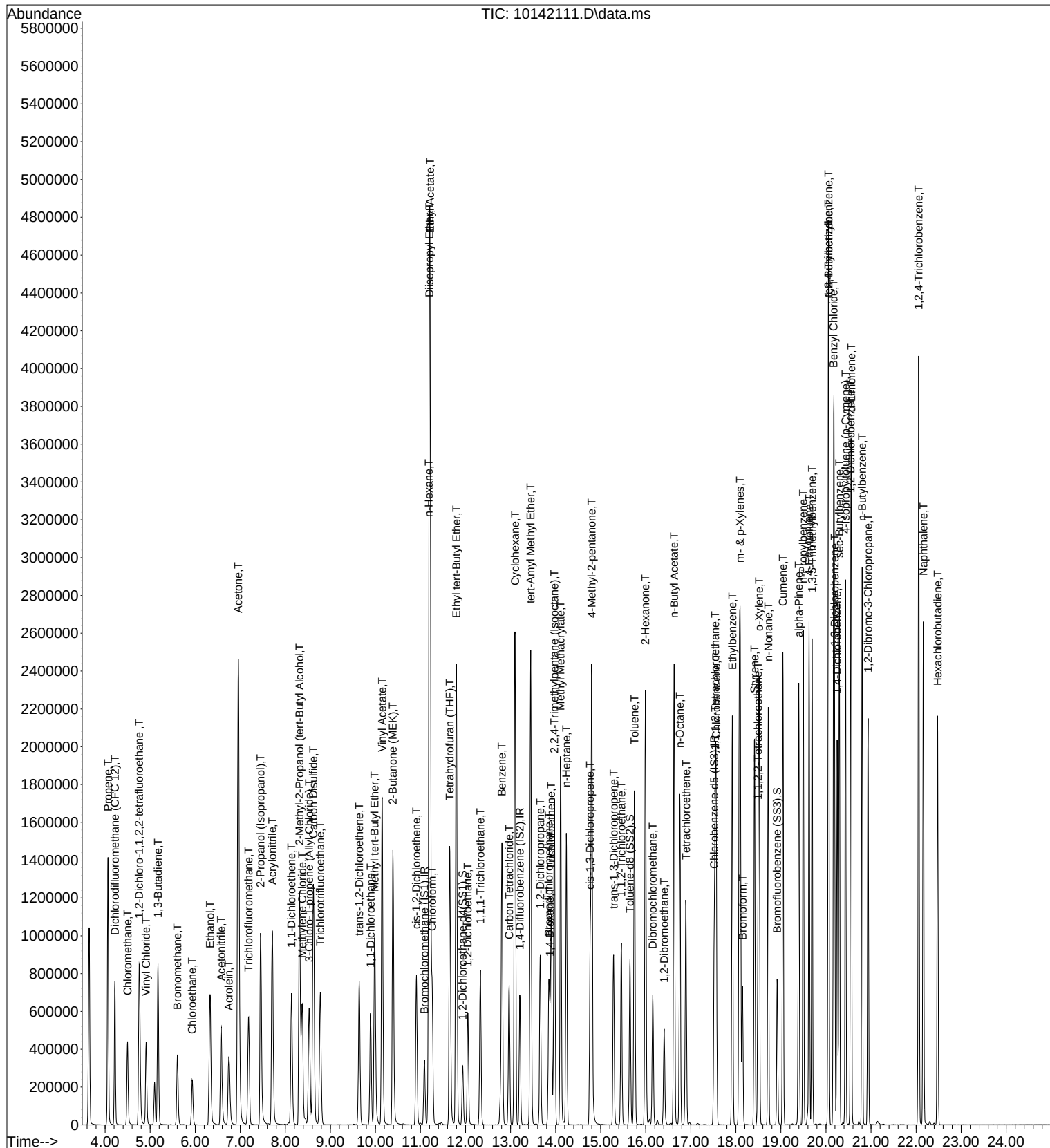
Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

10/14/21

Data File Name: 10142111.D

Acq. Method File: TO15.M

Data File Path: I:\MS16\DATA\2021_10\14\

Sample Name: LCS_25ng R16101421 ICV Stc

Operator: WA

Misc Info: S34-09132101/S34-10122104 (

Date Acquired: 10/14/2021

9:26

Instrument Name: GCMS-16

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	Propene	4.06	26.2	25.75	102	56	128	*	*
3)	Dichlorodifluoromethane (CFC 12)	4.22	23.0	26.00	88	71	112	*	*
4)	Chloromethane	4.50	30.1	25.75	117	53	126	*	*
5)	1,2-Dichloro-1,1,2,2-tetrafluoroethane	4.76	29.6	26.00	114	62	121	*	*
6)	Vinyl Chloride	4.91	31.3	26.00	120	63	123	*	*
7)	1,3-Butadiene	5.17	29.6	25.75	115	63	135	*	*
8)	Bromomethane	5.60	25.5	25.75	99	71	112	*	*
9)	Chloroethane	5.93	24.7	25.75	96	66	117	*	*
10)	Ethanol	6.33	85	104.00	82	57	117	*	*
11)	Acetonitrile	6.58	22.3	25.25	88	59	131	*	*
12)	Acrolein	6.75	51.2	52.00	98	71	123	*	*
13)	Acetone	6.96	114	128.00	89	60	117	*	*
14)	Trichlorofluoromethane	7.18	22.0	25.25	87	71	114	*	*
15)	2-Propanol (Isopropanol)	7.45	42.5	50.00	85	61	124	*	*
16)	Acrylonitrile	7.71	48.0	50.25	96	65	130	*	*
17)	1,1-Dichloroethene	8.14	25.1	26.25	96	74	114	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alcohol)	8.31	46.6	51.00	91	56	135	*	*
19)	Methylene Chloride	8.38	24.1	26.00	93	75	112	*	*
20)	3-Chloro-1-propene (Allyl Chloride)	8.53	24.3	25.50	95	57	127	*	*
21)	Trichlorotrifluoroethane	8.78	24.2	27.00	90	73	114	*	*
22)	Carbon Disulfide	8.62	49.0	51.75	95	70	113	*	*
23)	trans-1,2-Dichloroethene	9.64	26.5	26.00	102	76	119	*	*
24)	1,1-Dichloroethane	9.89	24.8	26.75	93	70	114	*	*
25)	Methyl tert-Butyl Ether	9.98	26.0	25.75	101	72	118	*	*
26)	Vinyl Acetate	10.15	92	117.75	78	56	137	*	*
27)	2-Butanone (MEK)	10.39	51.0	51.00	100	74	121	*	*
28)	cis-1,2-Dichloroethene	10.91	25.2	25.75	98	73	117	*	*
29)	Diisopropyl Ether	11.20	51.3	52.25	98	58	124	*	*
30)	Ethyl Acetate	11.21	93.9	72.50	130	59	161	*	*
31)	n-Hexane	11.19	23.7	26.00	91	55	130	*	*
32)	Chloroform	11.26	24.3	26.25	93	71	114	*	*
34)	Tetrahydrofuran (THF)	11.65	49.1	50.50	97	73	114	*	*
35)	Ethyl tert-Butyl Ether	11.80	50.5	51.75	98	76	119	*	*
36)	1,2-Dichloroethane	12.05	24.2	26.25	92	71	119	*	*
38)	1,1,1-Trichloroethane	12.33	23.8	26.00	92	73	119	*	*
41)	Benzene	12.81	24.7	26.00	95	72	113	*	*
42)	Carbon Tetrachloride	12.97	24.0	25.25	95	67	123	*	*
43)	Cyclohexane	13.10	49.8	51.50	97	70	119	*	*
44)	tert-Amyl Methyl Ether	13.45	50.2	51.50	97	74	120	*	*
45)	1,2-Dichloropropane	13.66	24.8	25.75	96	70	118	*	*
46)	Bromodichloromethane	13.85	25.1	26.00	97	74	119	*	*
47)	Trichloroethene	13.90	25.3	25.50	99	74	115	*	*
48)	1,4-Dioxane	13.87	27.8	25.75	108	77	124	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	13.97	24.7	26.25	94	65	120	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: 10142111.D

TO15.M

Data File Path: I:\MS16\DATA\2021_10\14\

Sample Name: LCS_25ng R16101421 ICV Stc

Operator: WA

Misc Info: S34-09132101/S34-10122104 (

Date Acquired: 10/14/2021

9:26

Instrument Name: GCMS-16

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	Methyl Methacrylate	14.11	52.4	51.25	102	78	126	*	*
51)	n-Heptane	14.24	25.6	25.75	99	70	119	*	*
52)	cis-1,3-Dichloropropene	14.77	28.0	26.00	108	81	126	*	*
53)	4-Methyl-2-pentanone	14.80	52.8	51.50	103	73	129	*	*
54)	trans-1,3-Dichloropropene	15.29	25.4	25.00	102	80	127	*	*
55)	1,1,2-Trichloroethane	15.46	25.7	26.00	99	78	117	*	*
58)	Toluene	15.75	24.9	25.75	97	70	118	*	*
59)	2-Hexanone	15.99	51.6	50.75	102	74	132	*	*
60)	Dibromochloromethane	16.16	26.4	26.25	101	69	137	*	*
61)	1,2-Dibromoethane	16.41	27.2	26.00	105	76	128	*	*
62)	n-Butyl Acetate	16.63	50.0	50.75	99	75	134	*	*
63)	n-Octane	16.76	25.3	26.00	97	68	120	*	*
64)	Tetrachloroethene	16.89	24.7	26.50	93	63	130	*	*
65)	Chlorobenzene	17.56	25.9	25.75	101	70	118	*	*
66)	Ethylbenzene	17.92	25.4	25.75	99	71	123	*	*
67)	m- & p-Xylenes	18.09	49.5	52.00	95	67	127	*	*
68)	Bromoform	18.15	27.5	26.25	105	65	149	*	*
69)	Styrene	18.42	26.3	25.25	104	76	132	*	*
70)	o-Xylene	18.52	25.0	26.00	96	69	124	*	*
71)	n-Nonane	18.72	25.3	26.00	97	64	127	*	*
72)	1,1,2,2-Tetrachloroethane	18.49	26.7	26.00	103	69	128	*	*
74)	Cumene	19.04	25.2	25.75	98	69	125	*	*
75)	alpha-Pinene	19.40	27.4	26.25	104	68	129	*	*
76)	n-Propylbenzene	19.49	24.4	26.00	94	70	127	*	*
78)	4-Ethyltoluene	19.63	27.6	26.00	106	69	127	*	*
79)	1,3,5-Trimethylbenzene	19.69	25.8	26.00	99	66	129	*	*
82)	1,2,4-Trimethylbenzene	20.06	26.5	25.75	103	63	142	*	*
84)	Benzyl Chloride	20.17	55.9	52.00	108	73	145	*	*
85)	1,3-Dichlorobenzene	20.19	28.2	26.00	108	67	136	*	*
86)	1,4-Dichlorobenzene	20.25	28.2	26.25	107	63	134	*	*
87)	sec-Butylbenzene	20.30	26.2	25.50	103	68	130	*	*
88)	4-Isopropyltoluene (p-Cymene)	20.43	26.5	25.75	103	60	139	*	*
90)	1,2-Dichlorobenzene	20.55	27.3	26.25	104	64	139	*	*
91)	d-Limonene	20.56	28.4	25.75	110	63	137	*	*
92)	1,2-Dibromo-3-Chloropropane	20.94	49.7	50.50	98	72	145	*	*
94)	1,2,4-Trichlorobenzene	22.06	49.1	52.50	94	62	154	*	*
95)	Naphthalene	22.16	25.9	26.25	99	62	156	*	*
97)	Hexachlorobutadiene	22.48	25.1	26.50	95	55	142	*	*
99)	tert-Butylbenzene	20.06	24.8	25.75	96	61	140	*	*
100)	n-Butylbenzene	20.80	27.9	26.00	107	70	131	*	*
101)	1,1,1,2-Tetrachloroethane	17.54	24.6	25.75	96	70	130	*	*

Bold = 75 Compound List

* = Pass

Data File : I:\MS16\DATA\2021_10\26\10262101.D
 Acq On : 26 Oct 2021 2:45
 Sample : CCV R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 03:57:26 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15A.M

10/26/21

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 (IS1)	1.000	1.000	0.0	124	-0.01
2 T	Propene	1.836	2.494	-35.8#	158	0.00
3 T	Dichlorodifluoromethane (CF	2.742	2.605	5.0	121	0.00
4 T	Chloromethane	1.655	2.244	-35.6#	170	-0.01
5 T	1,2-Dichloro-1,1,2,2-tetra	1.024	1.221	-19.2	169	-0.02
6 T	Vinyl Chloride	1.559	1.998	-28.2	175	-0.02
7 T	1,3-Butadiene	1.379	1.790	-29.8	181	-0.02
8 T	Bromomethane	1.080	1.084	-0.4	122	-0.02
9 T	Chloroethane	0.957	0.951	0.6	120	-0.03
10 T	Ethanol	1.198	1.337	-11.6	132	-0.08
11 T	Acetonitrile	3.029	3.407	-12.5	132	-0.05
12 T	Acrolein	0.913	1.030	-12.8	125	-0.03
13 T	Acetone	1.107	1.112	-0.5	130	-0.04
14 T	Trichlorofluoromethane	2.578	2.302	10.7	111	-0.02
15 T	2-Propanol (Isopropanol)	3.539	3.332	5.8	119	-0.06
16 T	Acrylonitrile	2.061	2.221	-7.8	128	-0.04
17 T	1,1-Dichloroethene	1.246	1.183	5.1	117	-0.02
18 T	2-Methyl-2-Propanol (tert-B	3.670	2.466	32.8#	80	-0.04
19 T	Methylene Chloride	1.335	1.263	5.4	118	-0.02
20 T	3-Chloro-1-propene (Allyl C	2.318	2.484	-7.2	127	-0.02
21 T	Trichlorotrifluoroethane	1.242	1.027	17.3	105	-0.02
22 T	Carbon Disulfide	4.740	4.604	2.9	124	-0.02
23 T	trans-1,2-Dichloroethene	2.030	2.055	-1.2	116	-0.02
24 T	1,1-Dichloroethane	2.597	2.411	7.2	115	-0.02
25 T	Methyl tert-Butyl Ether	4.233	3.910	7.6	108	-0.02
26 T	Vinyl Acetate	0.247	0.284	-15.0	127	-0.02
27 T	2-Butanone (MEK)	0.862	0.887	-2.9	124	-0.03
28 T	cis-1,2-Dichloroethene	2.048	1.974	3.6	115	-0.02
29 T	Diisopropyl Ether	1.128	0.998	11.5	117	-0.02
30 T	Ethyl Acetate	0.539	0.510	5.4	122	-0.03
31 T	n-Hexane	2.458	2.389	2.8	127	0.00
32 T	Chloroform	2.393	2.048	14.4	108	-0.03
33 S	1,2-Dichloroethane-d4(SS1)	1.931	1.792	7.2	114	-0.02
34 T	Tetrahydrofuran (THF)	0.812	0.823	-1.4	122	-0.01
35 T	Ethyl tert-Butyl Ether	1.657	1.558	6.0	114	-0.02
36 T	1,2-Dichloroethane	2.051	1.847	9.9	109	-0.01
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	124	0.00
38 T	1,1,1-Trichloroethane	0.506	0.441	12.8	107	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	0#	0.00
40 T	1-Butanol	0.000	0.000	0.0	0#	0.00
41 T	Benzene	1.183	1.106	6.5	118	-0.01
42 T	Carbon Tetrachloride	0.425	0.387	8.9	109	-0.01
43 T	Cyclohexane	0.450	0.439	2.4	121	-0.01
44 T	tert-Amyl Methyl Ether	0.881	0.835	5.2	116	-0.01
45 T	1,2-Dichloropropane	0.320	0.314	1.9	121	-0.01
46 T	Bromodichloromethane	0.425	0.395	7.1	111	0.00
47 T	Trichloroethene	0.306	0.305	0.3	120	-0.01
48 T	1,4-Dioxane	0.228	0.238	-4.4	117	-0.02
49 T	2,2,4-Trimethylpentane (Iso	1.443	1.398	3.1	122	0.00
50 T	Methyl Methacrylate	0.121	0.122	-0.8	119	-0.01
51 T	n-Heptane	0.295	0.292	1.0	122	-0.01
52 T	cis-1,3-Dichloropropene	0.450	0.471	-4.7	114	0.00
53 T	4-Methyl-2-pentanone	0.295	0.323	-9.5	126	-0.02
54 T	trans-1,3-Dichloropropene	0.472	0.452	4.2	109	-0.01
55 T	1,1,2-Trichloroethane	0.281	0.275	2.1	117	0.00

Data File : I:\MS16\DATA\2021_10\26\10262101.D
 Acq On : 26 Oct 2021 2:45
 Sample : CCV R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 03:57:26 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:T015A.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	131	0.00
57	S Toluene-d8 (SS2)	5.235	4.760	9.1	120	-0.01
58	T Toluene	5.845	5.210	10.9	120	0.00
59	T 2-Hexanone	3.511	3.735	-6.4	130	-0.02
60	T Dibromochloromethane	1.653	1.540	6.8	114	0.00
61	T 1,2-Dibromoethane	1.542	1.467	4.9	115	-0.01
62	T n-Butyl Acetate	4.073	4.183	-2.7	129	-0.01
63	T n-Octane	1.440	1.361	5.5	125	0.00
64	T Tetrachloroethene	1.779	1.418	20.3	106	0.00
65	T Chlorobenzene	3.763	3.552	5.6	123	-0.01
66	T Ethylbenzene	6.691	6.065	9.4	118	0.00
67	T m- & p-Xylenes	5.401	4.762	11.8	116	-0.01
68	T Bromoform	1.491	1.261	15.4	99	-0.01
69	T Styrene	4.053	3.833	5.4	121	-0.01
70	T o-Xylene	5.329	4.667	12.4	115	0.00
71	T n-Nonane	3.233	3.251	-0.6	129	0.00
72	T 1,1,2,2-Tetrachloroethane	2.295	2.307	-0.5	126	0.00
73	S Bromofluorobenzene (SS3)	1.918	1.564	18.5	108	0.00
74	T Cumene	6.797	6.079	10.6	117	0.00
75	T alpha-Pinene	3.390	3.171	6.5	117	0.00
76	T n-Propylbenzene	8.448	7.400	12.4	120	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	0#	0.00
78	T 4-Ethyltoluene	6.232	5.994	3.8	118	0.00
79	T 1,3,5-Trimethylbenzene	5.446	4.927	9.5	115	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	0#	0.00
82	T 1,2,4-Trimethylbenzene	5.199	5.084	2.2	120	-0.01
83	T n-Decane	0.000	0.000	0.0	0#	0.01
84	T Benzyl Chloride	4.396	4.439	-1.0	117	-0.01
85	T 1,3-Dichlorobenzene	2.808	2.890	-2.9	119	-0.01
86	T 1,4-Dichlorobenzene	2.927	2.854	2.5	114	0.00
87	T sec-Butylbenzene	7.180	6.724	6.4	118	0.00
88	T 4-Isopropyltoluene (p-Cymen	6.117	5.895	3.6	119	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	0#	0.00
90	T 1,2-Dichlorobenzene	2.822	2.843	-0.7	123	0.00
91	T d-Limonene	1.977	1.963	0.7	117	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.286	1.150	10.6	112	0.00
93	T n-Undecane	0.000	0.000	0.0	0#	0.02
94	T 1,2,4-Trichlorobenzene	2.796	2.189	21.7	101	0.00
95	T Naphthalene	7.850	6.589	16.1	107	0.00
96	T n-Dodecane	0.000	0.000	0.0	0#	0.00
97	T Hexachlorobutadiene	1.900	1.333	29.8	89	0.00
98	T Cyclohexanone	0.000	0.000	0.0	0#	0.00
99	T tert-Butylbenzene	5.331	4.974	6.7	123	0.00
100	T n-Butylbenzene	5.479	5.543	-1.2	119	0.00
101	T 1,1,1,2-Tetrachloroethane	1.428	1.316	7.8	121	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS16\DATA\2021_10\26\10262101.D
 Acq On : 26 Oct 2021 2:45
 Sample : CCV R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 03:57:26 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

10/26/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	157257	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	13.20	114	705425	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	154663	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	281767	11.601	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	92.80%
57) Toluene-d8 (SS2)	15.65	98	736146	11.366	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	90.96%
73) Bromofluorobenzene (SS3)	18.92	174	241837	10.193	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	81.52%

Target Compounds

						Qvalue
2) Propene	4.06	42	815782	35.314	ng	96
3) Dichlorodifluoromethan...	4.21	85	860254	24.940	ng	100
4) Chloromethane	4.49	50	719778	34.561	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	414780	32.209	ng	99
6) Vinyl Chloride	4.91	62	653429	33.312	ng	99
7) 1,3-Butadiene	5.17	54	585599	33.753	ng	96
8) Bromomethane	5.60	94	347821	25.591	ng	99
9) Chloroethane	5.93	64	304953	25.340	ng	99
10) Ethanol	6.32	45	1522240	101.019	ng	98
11) Acetonitrile	6.57	41	996684	26.158	ng	99
12) Acrolein	6.74	56	648184	56.440	ng	99
13) Acetone	6.95	58	1815143	130.325	ng	90
14) Trichlorofluoromethane	7.18	101	745704	22.989	ng	99
15) 2-Propanol (Isopropanol)	7.44	45	2117026	47.548	ng	100
16) Acrylonitrile	7.70	53	1418166	54.696	ng	99
17) 1,1-Dichloroethene	8.13	96	398001	25.394	ng	98
18) 2-Methyl-2-Propanol (t...	8.30	59	1628996	35.285	ng	97
19) Methylene Chloride	8.37	84	413099	24.595	ng	90
20) 3-Chloro-1-propene (Al...	8.52	41	820155	28.119	ng	98
21) Trichlorotrifluoroethane	8.77	151	348792	22.321	ng	87
22) Carbon Disulfide	8.62	76	3040889	50.995	ng	100
23) trans-1,2-Dichloroethene	9.63	61	685227	26.835	ng	98
24) 1,1-Dichloroethane	9.89	63	796345	24.377	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1291138	24.246	ng	95
26) Vinyl Acetate	10.15	86	303643	97.639	ng	# 90
27) 2-Butanone (MEK)	10.38	72	574498	52.985	ng	# 91
28) cis-1,2-Dichloroethene	10.90	61	645674	25.064	ng	98
29) Diisopropyl Ether	11.20	87	665273	46.887	ng	98
30) Ethyl Acetate	11.21	61	654088	96.533	ng	95
31) n-Hexane	11.19	57	789001	25.515	ng	99
32) Chloroform	11.26	83	689324	22.898	ng	99
34) Tetrahydrofuran (THF)	11.65	72	509670	49.868	ng	# 91
35) Ethyl tert-Butyl Ether	11.79	87	1029035	49.377	ng	96
36) 1,2-Dichloroethane	12.05	62	615879	23.863	ng	99
38) 1,1,1-Trichloroethane	12.33	97	647387	22.683	ng	98
39) Isopropyl Acetate	12.77	61	44869	No Calib	#	
40) 1-Butanol	12.80	56	17559	No Calib	#	
41) Benzene	12.81	78	1622124	24.297	ng	100
42) Carbon Tetrachloride	12.96	117	572815	23.880	ng	100
43) Cyclohexane	13.09	84	1281277	50.497	ng	96
44) tert-Amyl Methyl Ether	13.44	73	2461346	49.500	ng	98
45) 1,2-Dichloropropane	13.65	63	456221	25.281	ng	99
46) Bromodichloromethane	13.85	83	584787	24.409	ng	100
47) Trichloroethene	13.90	130	443172	25.633	ng	99
48) 1,4-Dioxane	13.87	88	349803	27.219	ng	98
49) 2,2,4-Trimethylpentane...	13.97	57	2091323	25.677	ng	100
50) Methyl Methacrylate	14.11	100	357320	52.496	ng	98

Data File : I:\MS16\DATA\2021_10\26\10262101.D
 Acq On : 26 Oct 2021 2:45
 Sample : CCV R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 03:57:26 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	433147	26.013	ng	97
52) cis-1,3-Dichloropropene	14.77	75	697835	27.463	ng	100
53) 4-Methyl-2-pentanone	14.80	58	946669	56.848	ng	97
54) trans-1,3-Dichloropropene	15.28	75	644092	24.164	ng	99
55) 1,1,2-Trichloroethane	15.46	97	403375	25.438	ng	97
58) Toluene	15.75	91	1660041	22.953	ng	99
59) 2-Hexanone	15.99	43	2368202	54.514	ng	99
60) Dibromochloromethane	16.16	129	500292	24.464	ng	99
61) 1,2-Dibromoethane	16.40	107	471908	24.731	ng	100
62) n-Butyl Acetate	16.63	43	2639833	52.384	ng	99
63) n-Octane	16.76	57	442064	24.812	ng	96
64) Tetrachloroethene	16.89	166	456284	20.734	ng	99
65) Chlorobenzene	17.56	112	1142604	24.538	ng	100
66) Ethylbenzene	17.92	91	1932472	23.343	ng	98
67) m- & p-Xylenes	18.09	91	3034582	45.410	ng	96
68) Bromoform	18.14	173	405791	22.000	ng	100
69) Styrene	18.41	104	1221136	24.352	ng	95
70) o-Xylene	18.52	91	1501231	22.769	ng	95
71) n-Nonane	18.72	43	1045955	26.149	ng	96
72) 1,1,2,2-Tetrachloroethane	18.49	83	742052	26.129	ng	99
74) Cumene	19.04	105	1955658	23.255	ng	97
75) alpha-Pinene	19.40	93	1059246	25.252	ng	98
76) n-Propylbenzene	19.49	91	2403491	22.993	ng	99
77) 3-Ethyltoluene	19.63	105	1965257	No Calib		
78) 4-Ethyltoluene	19.63	105	1965257	25.485	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	1584868	23.520	ng	95
80) alpha-Methylstyrene	19.63	118	11875	No Calib		
81) 2-Ethyltoluene	19.63	105	1965257	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	1619667	25.179	ng	96
83) n-Decane	20.06	58	86240	No Calib	#	
84) Benzyl Chloride	20.17	91	2828700	52.009	ng	95
85) 1,3-Dichlorobenzene	20.19	146	929652	26.753	ng	100
86) 1,4-Dichlorobenzene	20.25	146	918050	25.346	ng	100
87) sec-Butylbenzene	20.30	105	2163206	24.351	ng	98
88) 4-Isopropyltoluene (p-...	20.43	119	1896393	25.055	ng	97
89) 1,2,3-Trimethylbenzene	20.30	105	2163206	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	923508	26.452	ng	100
91) d-Limonene	20.56	68	637557	26.070	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.94	157	711695	44.719	ng	96
93) n-Undecane	21.16	57	256	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1381164	39.924	ng	98
95) Naphthalene	22.16	128	2119665	21.825	ng	100
96) n-Dodecane	22.16	57	1528	No Calib	#	
97) Hexachlorobutadiene	22.47	225	424734	18.066	ng	100
98) Cyclohexanone	18.08	55	2896	No Calib	#	
99) tert-Butylbenzene	20.06	119	1600038	24.256	ng	97
100) n-Butylbenzene	20.80	91	1783180	26.303	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	423210	23.950	ng	99

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

Data File : I:\MS16\DATA\2021_10\26\10262101.D
Acq On : 26 Oct 2021 2:45
Sample : CCV R16102621 25ng
Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Oct 26 03:57:26 2021

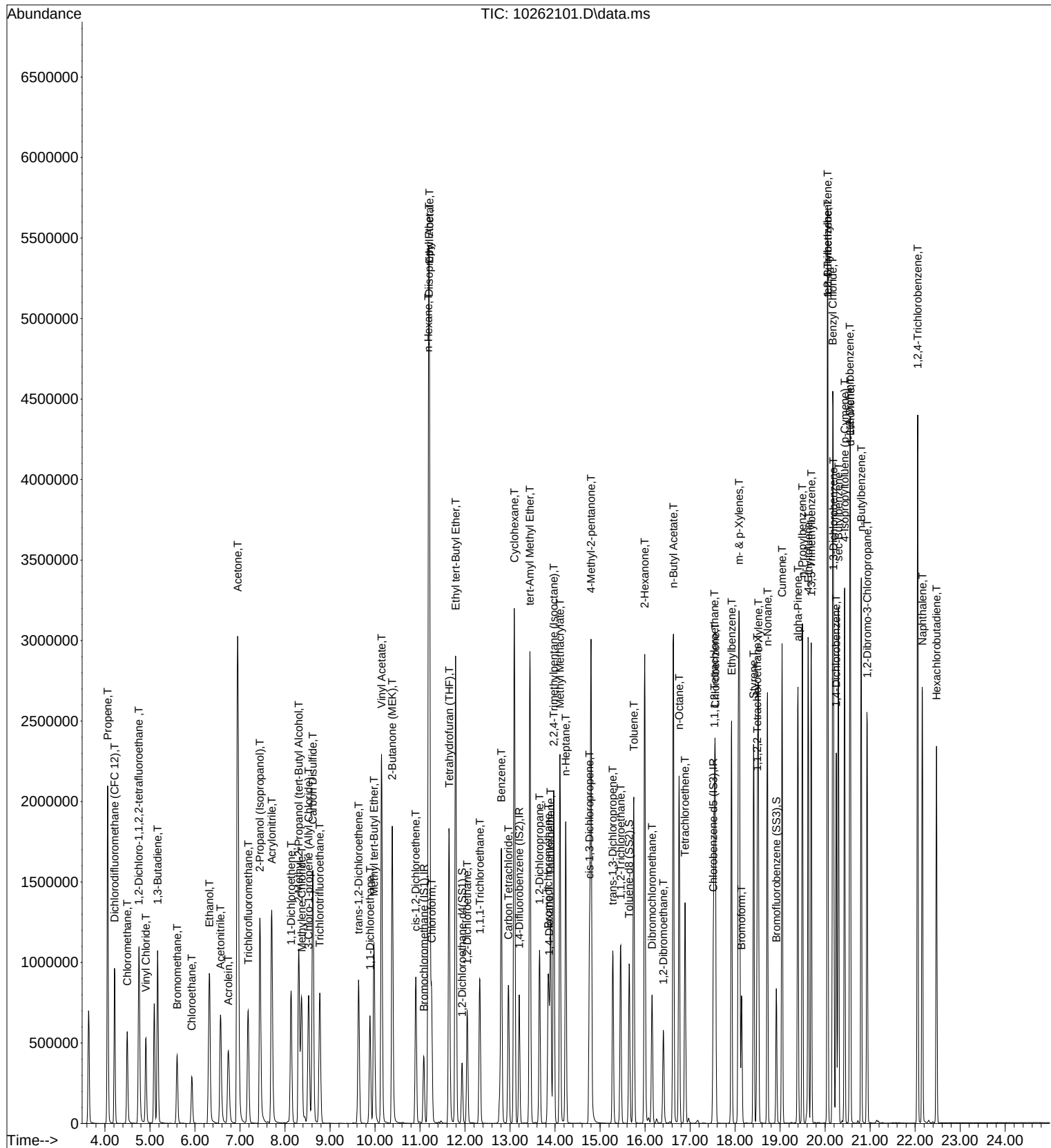
Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M



Data File : I:\MS16\DATA\2021_10\26\10262118.D
 Acq On : 26 Oct 2021 14:21
 Sample : CCV2 R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 14:48:39 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15A.M

10/26/21

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 (IS1)	1.000	1.000	0.0	120	-0.02
2 T	Propene	1.836	2.386	-30.0	146	-0.01
3 T	Dichlorodifluoromethane (CF	2.742	2.546	7.1	115	-0.01
4 T	Chloromethane	1.655	2.200	-32.9#	162	-0.02
5 T	1,2-Dichloro-1,1,2,2-tetra	1.024	1.186	-15.8	159	-0.02
6 T	Vinyl Chloride	1.559	1.934	-24.1	164	-0.02
7 T	1,3-Butadiene	1.379	1.451	-5.2	143	-0.03
8 T	Bromomethane	1.080	1.043	3.4	114	-0.03
9 T	Chloroethane	0.957	0.922	3.7	114	-0.03
10 T	Ethanol	1.198	1.258	-5.0	121	-0.08
11 T	Acetonitrile	3.029	3.272	-8.0	123	-0.05
12 T	Acrolein	0.913	0.896	1.9	105	-0.04
13 T	Acetone	1.107	0.994	10.2	113	-0.05
14 T	Trichlorofluoromethane	2.578	2.260	12.3	106	-0.02
15 T	2-Propanol (Isopropanol)	3.539	3.205	9.4	111	-0.06
16 T	Acrylonitrile	2.061	2.144	-4.0	120	-0.05
17 T	1,1-Dichloroethene	1.246	1.153	7.5	111	-0.02
18 T	2-Methyl-2-Propanol (tert-B	3.670	2.391	34.9#	76	-0.04
19 T	Methylene Chloride	1.335	1.235	7.5	112	-0.03
20 T	3-Chloro-1-propene (Allyl C	2.318	2.355	-1.6	117	-0.02
21 T	Trichlorotrifluoroethane	1.242	0.992	20.1	98	-0.02
22 T	Carbon Disulfide	4.740	4.517	4.7	118	-0.02
23 T	trans-1,2-Dichloroethene	2.030	1.982	2.4	108	-0.02
24 T	1,1-Dichloroethane	2.597	2.357	9.2	109	-0.02
25 T	Methyl tert-Butyl Ether	4.233	3.747	11.5	101	-0.02
26 T	Vinyl Acetate	0.247	0.278	-12.6	121	-0.02
27 T	2-Butanone (MEK)	0.862	0.864	-0.2	118	-0.03
28 T	cis-1,2-Dichloroethene	2.048	1.928	5.9	109	-0.02
29 T	Diisopropyl Ether	1.128	0.983	12.9	112	-0.02
30 T	Ethyl Acetate	0.539	0.504	6.5	117	-0.03
31 T	n-Hexane	2.458	2.332	5.1	120	-0.01
32 T	Chloroform	2.393	2.020	15.6	103	-0.03
33 S	1,2-Dichloroethane-d4(SS1)	1.931	1.814	6.1	112	-0.02
34 T	Tetrahydrofuran (THF)	0.812	0.780	3.9	112	-0.02
35 T	Ethyl tert-Butyl Ether	1.657	1.511	8.8	108	-0.02
36 T	1,2-Dichloroethane	2.051	1.813	11.6	104	-0.01
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	119	0.00
38 T	1,1,1-Trichloroethane	0.506	0.437	13.6	102	-0.01
39 T	Isopropyl Acetate	0.000	0.000	0.0	0#	0.00
40 T	1-Butanol	0.000	0.000	0.0	0#	0.00
41 T	Benzene	1.183	1.092	7.7	112	-0.02
42 T	Carbon Tetrachloride	0.425	0.384	9.6	105	-0.01
43 T	Cyclohexane	0.450	0.430	4.4	115	-0.01
44 T	tert-Amyl Methyl Ether	0.881	0.814	7.6	109	-0.01
45 T	1,2-Dichloropropane	0.320	0.310	3.1	115	-0.01
46 T	Bromodichloromethane	0.425	0.394	7.3	107	0.00
47 T	Trichloroethene	0.306	0.298	2.6	113	-0.01
48 T	1,4-Dioxane	0.228	0.236	-3.5	112	-0.02
49 T	2,2,4-Trimethylpentane (Iso	1.443	1.374	4.8	116	-0.01
50 T	Methyl Methacrylate	0.121	0.120	0.8	113	-0.01
51 T	n-Heptane	0.295	0.288	2.4	116	-0.01
52 T	cis-1,3-Dichloropropene	0.450	0.465	-3.3	109	0.00
53 T	4-Methyl-2-pentanone	0.295	0.319	-8.1	121	-0.02
54 T	trans-1,3-Dichloropropene	0.472	0.451	4.4	105	-0.01
55 T	1,1,2-Trichloroethane	0.281	0.275	2.1	113	-0.01

Data File : I:\MS16\DATA\2021_10\26\10262118.D
 Acq On : 26 Oct 2021 14:21
 Sample : CCV2 R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 14:48:39 2021
 Quant Method : I:\MS16\METHODS\R16101421.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Oct 14 09:19:57 2021
 Response via : Initial Calibration
 DataAcq Meth:T015A.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	133	0.00
57	S Toluene-d8 (SS2)	5.235	4.660	11.0	119	-0.01
58	T Toluene	5.845	4.950	15.3	115	0.00
59	T 2-Hexanone	3.511	3.522	-0.3	124	-0.02
60	T Dibromochloromethane	1.653	1.469	11.1	110	0.00
61	T 1,2-Dibromoethane	1.542	1.399	9.3	112	-0.01
62	T n-Butyl Acetate	4.073	3.957	2.8	124	-0.01
63	T n-Octane	1.440	1.281	11.0	119	0.00
64	T Tetrachloroethene	1.779	1.345	24.4	102	0.00
65	T Chlorobenzene	3.763	3.377	10.3	118	-0.01
66	T Ethylbenzene	6.691	5.794	13.4	114	0.00
67	T m- & p-Xylenes	5.401	4.536	16.0	112	-0.02
68	T Bromoform	1.491	1.207	19.0	96	-0.01
69	T Styrene	4.053	3.646	10.0	117	-0.01
70	T o-Xylene	5.329	4.439	16.7	111	0.00
71	T n-Nonane	3.233	3.087	4.5	124	0.00
72	T 1,1,2,2-Tetrachloroethane	2.295	2.201	4.1	122	0.00
73	S Bromofluorobenzene (SS3)	1.918	1.634	14.8	115	0.00
74	T Cumene	6.797	5.779	15.0	113	0.00
75	T alpha-Pinene	3.390	3.008	11.3	113	0.00
76	T n-Propylbenzene	8.448	7.037	16.7	115	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	0#	-0.01
78	T 4-Ethyltoluene	6.232	5.707	8.4	114	0.00
79	T 1,3,5-Trimethylbenzene	5.446	4.685	14.0	111	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	0#	0.00
82	T 1,2,4-Trimethylbenzene	5.199	4.838	6.9	115	-0.01
83	T n-Decane	0.000	0.000	0.0	0#	0.01
84	T Benzyl Chloride	4.396	4.210	4.2	113	-0.01
85	T 1,3-Dichlorobenzene	2.808	2.753	2.0	115	-0.01
86	T 1,4-Dichlorobenzene	2.927	2.712	7.3	110	0.00
87	T sec-Butylbenzene	7.180	6.394	10.9	114	-0.01
88	T 4-Isopropyltoluene (p-Cymen	6.117	5.603	8.4	115	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	0#	0.00
90	T 1,2-Dichlorobenzene	2.822	2.704	4.2	118	0.00
91	T d-Limonene	1.977	1.860	5.9	112	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.286	1.097	14.7	108	-0.01
93	T n-Undecane	0.000	0.000	0.0	0#	0.00
94	T 1,2,4-Trichlorobenzene	2.796	2.072	25.9	97	0.00
95	T Naphthalene	7.850	6.204	21.0	102	-0.01
96	T n-Dodecane	0.000	0.000	0.0	0#	0.00
97	T Hexachlorobutadiene	1.900	1.262	33.6#	86	0.00
98	T Cyclohexanone	0.000	0.000	0.0	0#	0.00
99	T tert-Butylbenzene	5.331	4.732	11.2	118	0.00
100	T n-Butylbenzene	5.479	5.278	3.7	115	0.00
101	T 1,1,1,2-Tetrachloroethane	1.428	1.249	12.5	116	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS16\DATA\2021_10\26\10262118.D
 Acq On : 26 Oct 2021 14:21
 Sample : CCV2 R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 26 14:48:39 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

DataAcq Meth:T015A.M

10/26/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	152805	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	681447	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	156697	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	277257	11.748	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	94.00%
57) Toluene-d8 (SS2)	15.65	98	730175	11.127	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	89.04%
73) Bromofluorobenzene (SS3)	18.92	174	256010	10.650	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	85.20%

Target Compounds

						Qvalue
2) Propene	4.05	42	758291	33.781	ng	96
3) Dichlorodifluoromethan...	4.21	85	816842	24.371	ng	100
4) Chloromethane	4.49	50	685864	33.892	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	391612	31.296	ng	99
6) Vinyl Chloride	4.91	62	614694	32.250	ng	99
7) 1,3-Butadiene	5.16	54	461327	27.365	ng	96
8) Bromomethane	5.60	94	325100	24.616	ng	99
9) Chloroethane	5.93	64	287290	24.568	ng	99
10) Ethanol	6.32	45	1391719	95.048	ng	98
11) Acetonitrile	6.56	41	929961	25.118	ng	99
12) Acrolein	6.74	56	547708	49.080	ng	99
13) Acetone	6.95	58	1576830	116.513	ng	92
14) Trichlorofluoromethane	7.18	101	711461	22.573	ng	100
15) 2-Propanol (Isopropanol)	7.44	45	1978811	45.739	ng	100
16) Acrylonitrile	7.70	53	1329882	52.786	ng	99
17) 1,1-Dichloroethene	8.13	96	376926	24.750	ng	98
18) 2-Methyl-2-Propanol (t...	8.30	59	1534426	34.205	ng	96
19) Methylene Chloride	8.36	84	392367	24.042	ng	90
20) 3-Chloro-1-propene (Al...	8.52	41	755715	26.665	ng	99
21) Trichlorotrifluoroethane	8.77	151	327513	21.570	ng	86
22) Carbon Disulfide	8.62	76	2899227	50.036	ng	100
23) trans-1,2-Dichloroethene	9.63	61	642060	25.877	ng	98
24) 1,1-Dichloroethane	9.89	63	756344	23.827	ng	99
25) Methyl tert-Butyl Ether	9.98	73	1202534	23.240	ng	95
26) Vinyl Acetate	10.15	86	288897	95.603	ng	# 91
27) 2-Butanone (MEK)	10.38	72	544063	51.640	ng	# 92
28) cis-1,2-Dichloroethene	10.91	61	612787	24.480	ng	98
29) Diisopropyl Ether	11.20	87	636910	46.196	ng	98
30) Ethyl Acetate	11.21	61	628575	95.471	ng	94
31) n-Hexane	11.18	57	748203	24.900	ng	99
32) Chloroform	11.25	83	660676	22.586	ng	99
34) Tetrahydrofuran (THF)	11.64	72	469791	47.306	ng	# 91
35) Ethyl tert-Butyl Ether	11.79	87	969636	47.883	ng	95
36) 1,2-Dichloroethane	12.05	62	587317	23.419	ng	99
38) 1,1,1-Trichloroethane	12.32	97	619868	22.483	ng	98
41) Benzene	12.80	78	1547615	23.997	ng	100
42) Carbon Tetrachloride	12.96	117	549095	23.697	ng	100
43) Cyclohexane	13.09	84	1213274	49.500	ng	97
44) tert-Amyl Methyl Ether	13.44	73	2319272	48.284	ng	98
45) 1,2-Dichloropropane	13.65	63	435343	24.973	ng	100
46) Bromodichloromethane	13.85	83	563174	24.334	ng	100
47) Trichloroethene	13.90	130	418167	25.038	ng	99
48) 1,4-Dioxane	13.87	88	334345	26.932	ng	99
49) 2,2,4-Trimethylpentane...	13.97	57	1984565	25.224	ng	100
50) Methyl Methacrylate	14.11	100	341297	51.906	ng	98
51) n-Heptane	14.24	71	411698	25.595	ng	98
52) cis-1,3-Dichloropropene	14.77	75	665864	27.127	ng	100

Data File : I:\MS16\DATA\2021_10\26\10262118.D

Vial: 2

Acq On : 26 Oct 2021 14:21

Operator: WA

Sample : CCV2 R16102621 25ng

Inst : GCMS-16

Misc : S34-09132101/S34-10122102 (11/11)

Quant Time: Oct 26 14:48:39 2021

Quant Method : I:\MS16\METHODS\R16101421.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Oct 14 09:19:57 2021

Response via : Initial Calibration

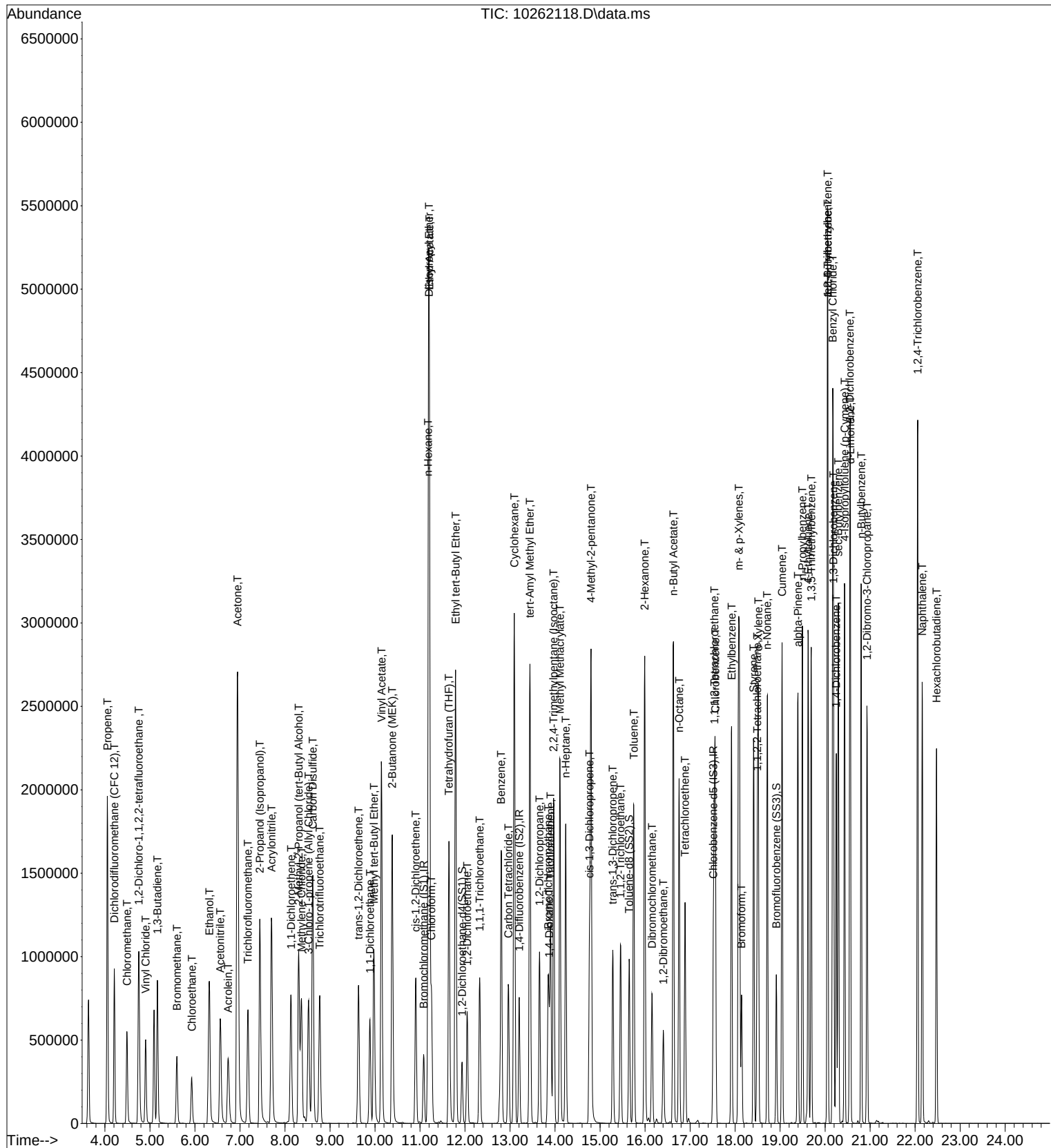
DataAcq Meth:T015A.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) 4-Methyl-2-pentanone	14.80	58	905037	56.260	ng	97
54) trans-1,3-Dichloropropene	15.28	75	621301	24.129	ng	100
55) 1,1,2-Trichloroethane	15.45	97	389491	25.427	ng	98
58) Toluene	15.75	91	1597926	21.808	ng	99
59) 2-Hexanone	15.99	43	2262821	51.412	ng	100
60) Dibromochloromethane	16.16	129	483434	23.333	ng	99
61) 1,2-Dibromoethane	16.40	107	455998	23.587	ng	99
62) n-Butyl Acetate	16.63	43	2529723	49.547	ng	99
63) n-Octane	16.76	57	421425	23.347	ng	96
64) Tetrachloroethene	16.89	166	438270	19.657	ng	99
65) Chlorobenzene	17.56	112	1100722	23.332	ng	100
66) Ethylbenzene	17.92	91	1870408	22.300	ng	99
67) m- & p-Xylenes	18.08	91	2928699	43.257	ng	96
68) Bromoform	18.14	173	393451	21.054	ng	100
69) Styrene	18.41	104	1177035	23.168	ng	95
70) o-Xylene	18.52	91	1446839	21.659	ng	96
71) n-Nonane	18.71	43	1006016	24.824	ng	96
72) 1,1,2,2-Tetrachloroethane	18.49	83	717344	24.931	ng	99
74) Cumene	19.04	105	1883590	22.108	ng	97
75) alpha-Pinene	19.40	93	1017980	23.953	ng	98
76) n-Propylbenzene	19.49	91	2315582	21.864	ng	99
78) 4-Ethyltoluene	19.62	105	1895807	24.266	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	1526884	22.366	ng	95
82) 1,2,4-Trimethylbenzene	20.06	105	1561565	23.961	ng	96
84) Benzyl Chloride	20.17	91	2717800	49.321	ng	95
85) 1,3-Dichlorobenzene	20.19	146	897361	25.489	ng	100
86) 1,4-Dichlorobenzene	20.25	146	883782	24.084	ng	99
87) sec-Butylbenzene	20.29	105	2083849	23.153	ng	98
88) 4-Isopropyltoluene (p-...	20.43	119	1826291	23.816	ng	98
90) 1,2-Dichlorobenzene	20.55	146	889807	25.156	ng	100
91) d-Limonene	20.56	68	611975	24.699	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.93	157	687657	42.648	ng	96
94) 1,2,4-Trichlorobenzene	22.06	180	1324595	37.792	ng	98
95) Naphthalene	22.16	128	2022078	20.550	ng	100
97) Hexachlorobutadiene	22.48	225	407507	17.108	ng	100
99) tert-Butylbenzene	20.06	119	1542325	23.078	ng	97
100) n-Butylbenzene	20.80	91	1720368	25.047	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	407244	22.748	ng	99

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

Vial: 2
Operator: WA
Inst : GCMS-16

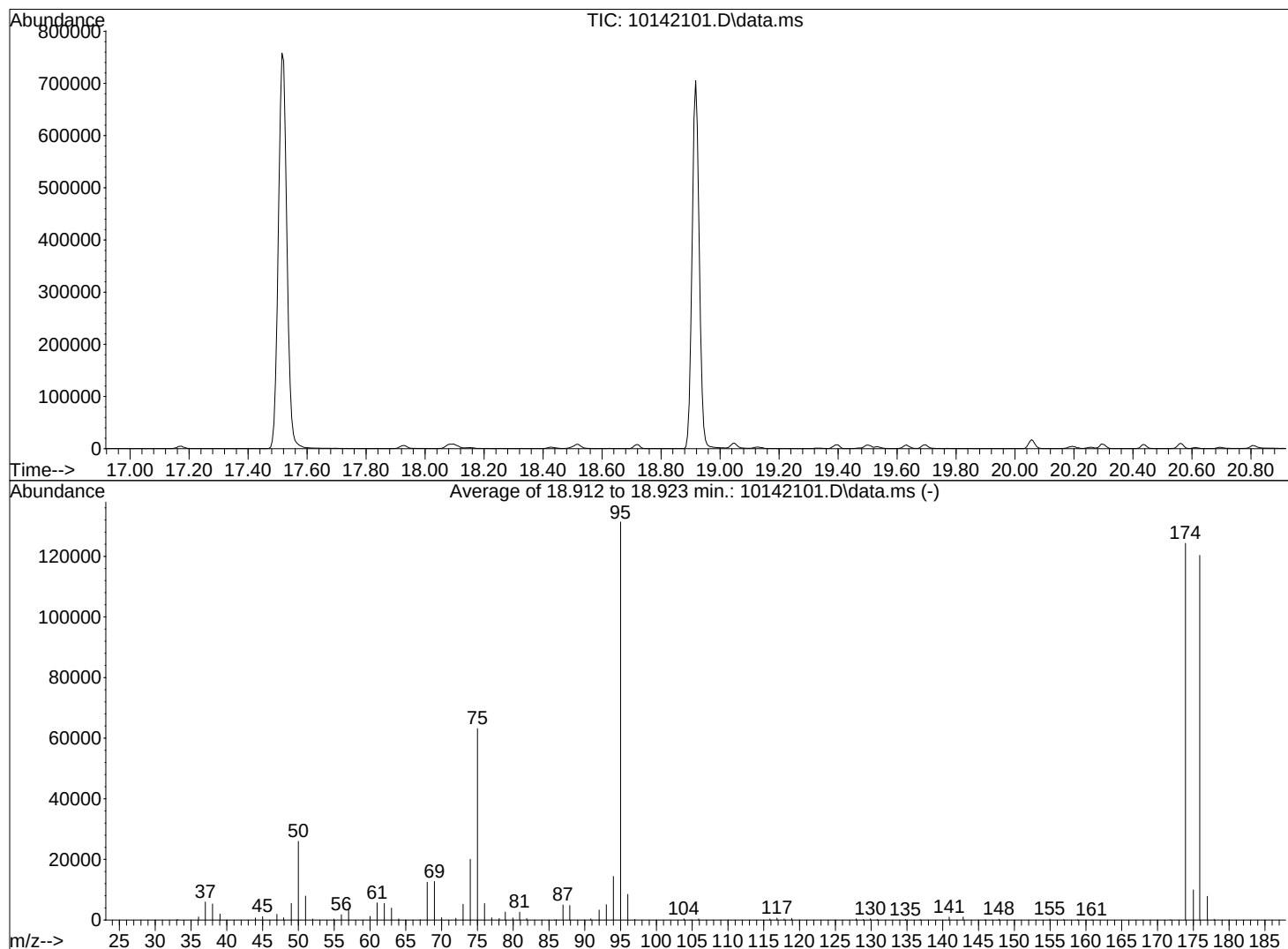
Quant Time: Oct 26 14:48:39 2021



Data Path : I:\MS16\DATA\2021_10\14\
 Data File : 10142101.D
 Acq On : 14 Oct 2021 3:40
 Operator : WA
 Sample : 0.1ng R16101421 ICAL std
 Misc : S34-09132101/S34-10052104 (11/4)
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16101421.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Oct 14 09:19:57 2021



AutoFind: Scans 2805, 2806, 2807; Background Corrected with Scan 2798

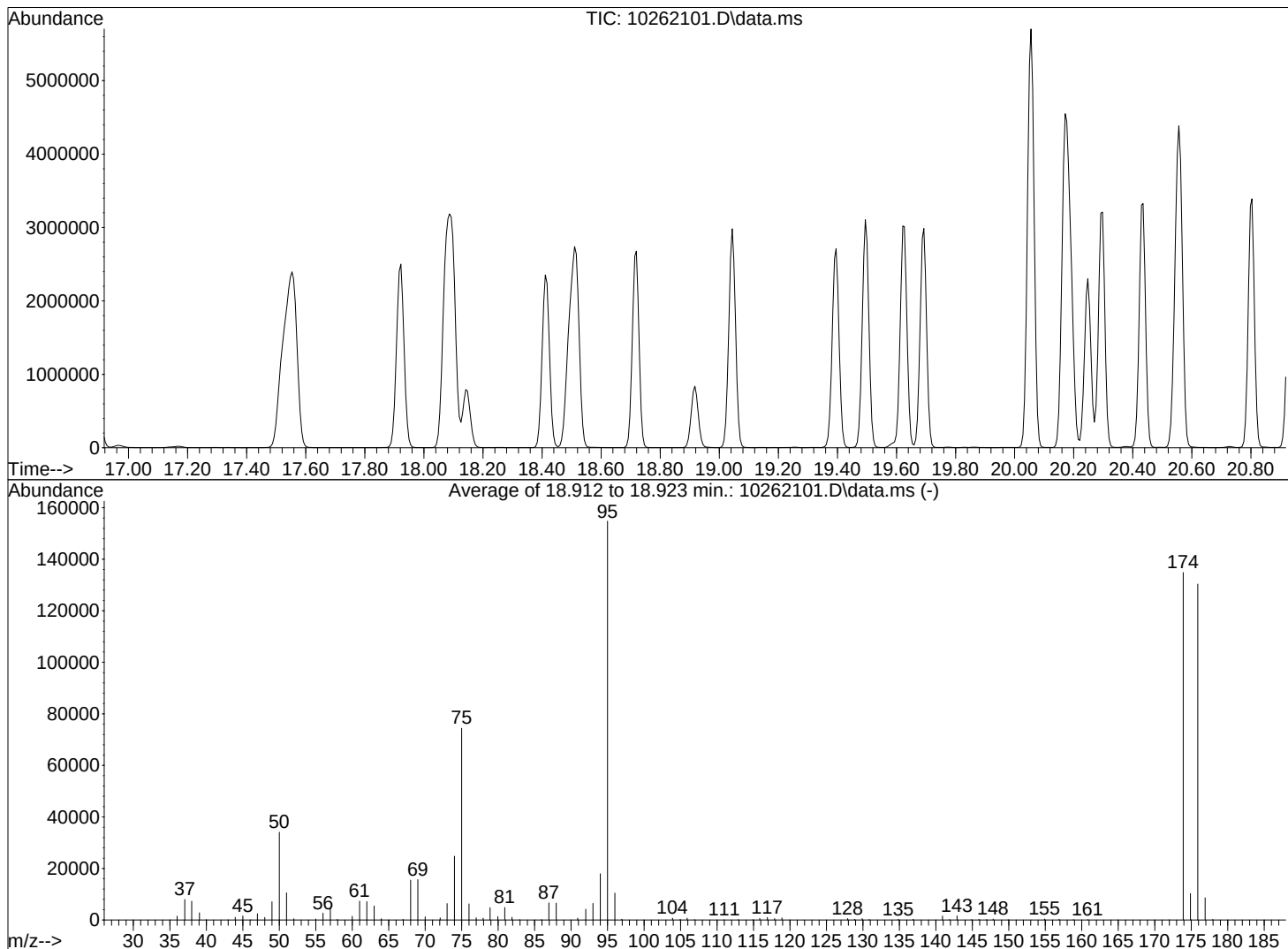
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.8	25971	PASS
75	95	30	66	48.1	63189	PASS
95	95	100	100	100.0	131341	PASS
96	95	5	9	6.4	8471	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	94.7	124317	PASS
175	174	4	9	8.0	9974	PASS
176	174	93	101	96.8	120325	PASS
177	176	5	9	6.5	7801	PASS

WA 10/14/21

Data Path : I:\MS16\DATA\2021_10\26\
 Data File : 10262101.D
 Acq On : 26 Oct 2021 2:45
 Operator : WA
 Sample : CCV R16102621 25ng
 Misc : S34-09132101/S34-10122102 (11/11)
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16101421.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Oct 14 09:19:57 2021



AutoFind: Scans 2805, 2806, 2807; Background Corrected with Scan 2797

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	22.0	34077	PASS
75	95	30	66	48.1	74397	PASS
95	95	100	100	100.0	154773	PASS
96	95	5	9	6.7	10429	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	87.1	134856	PASS
175	174	4	9	7.6	10292	PASS
176	174	93	101	96.7	130365	PASS
177	176	5	9	6.6	8604	PASS

WA 10/26/21

Injection Log

Directory: J:\MS16\DATA\2021_10\14\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	10/14/21 3:40	10142101.D	0.1ng R16101421 ICAL std	S34-09132101/S34-10052104 (11/4)	WA	2	
2	10/14/21 4:14	10142102.D	0.2ng R16101421 ICAL Std	S34-09132101/S34-10052104 (11/4)	WA	14	
3	10/14/21 4:47	10142103.D	0.5ng R16101421 ICAL Std	S34-09132101/S34-10052104 (11/4)	WA	14	rerun
4	10/14/21 5:21	10142104.D	1.0ng R16101421 ICAL Std	S34-09132101/S34-10122107 (11/11)	WA	14	R16101421.M
5	10/14/21 5:54	10142105.D	5.0ng R16101421 ICAL Std	S34-09132101/S34-10122107 (11/11)	WA	16	
6	10/14/21 6:28	10142106.D	25ng R16101421 ICAL Std	S34-09132101/S34-10122107 (11/11)	WA	15	
7	10/14/21 7:01	10142107.D	50ng R16101421 ICAL Std	S34-09132101/S34-10122107 (11/11)	WA	15	
8	10/14/21 7:35	10142108.D	100ng R16101421 ICAL Std	S34-09132101/S34-10122107 (11/11)	WA	15	
9	10/14/21 8:09	10142109.D	Blank	S34-09132101	WA	2	
10	10/14/21 8:43	10142110.D	0.5ng R16101421 ICAL Std	S34-09132101/S34-10122107 (11/11)	WA	16	
11	10/14/21 9:26	10142111.D	25ng R16101421 ICV Std	S34-09132101/S34-10122104 (11/11)	WA	2	Pass
	R16101421.M: ICAL, ranges from 0.1ng --> 100ng; except: acrylonitrile, styrene,trans-1,3-DCP, naphthalene: 0.5ng-> 100ng; TBA: 0.2ng --> 100ng,						
	Vinyl Ac. From 5ng --> 500ng, MEK, MeMethacrylate, ButylAc,Benzyl-Cl, 1,2-DBCP, 1,2,4-TC: from 1ng --> 200ng, Ethyl Ac.: 0.4ng --> 100ng						

Injection Log

Directory: I:\MS16\DATA\2021_10\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	10/26/21 2:45	10262101.D	CCV R16102621_25ng	S34-09132101/S34-10122102 (11/11)	WA	2	<i>Passed*</i>
2	10/26/21 3:18	10262102.D	Blank	S34-09132101	WA	5	
3	10/26/21 3:52	10262103.D	MB R16102621_1000mL	S34-09132101	WA	2	<i>Passed</i>
4	10/26/21 4:26	10262104.D	LCS R16102621_25ng	S34-09132101/S34-10122104 (11/11)	WA	2	<i>Passed</i>
5	10/26/21 5:00	10262105.D	LCSD R16102621_25ng	S34-09132101/S34-10122104 (11/11)	WA	2	<i>Passed</i>
6	10/26/21 6:32	10262106.D	P2105435-006dil (40mL) pf2	S34-09132101	WA	14	
7	10/26/21 7:28	10262107.D	P2105435-002 (15mL)	S34-09132101	WA	7	
8	10/26/21 8:02	10262108.D	P2105435-007 (50mL)	S34-09132101	WA	12	
9	10/26/21 8:36	10262109.D	P2105435-008 (400mL)	S34-09132101	WA	6	
10	10/26/21 9:10	10262110.D	P2105435-008dil (40mL)	S34-09132101	WA	6	
11	10/26/21 10:04	10262111.D	P2105399-001 (1000mL)	S34-09132101	WA	1	
12	10/26/21 10:38	10262112.D	P2105399-002 (1000mL)	S34-09132101	WA	8	
13	10/26/21 11:12	10262113.D	P2105399-002dup (1000mL)	S34-09132101	WA	9	<i>Passed</i>
14	10/26/21 11:57	10262114.D	P2105508-001 (0.4mL)	S34-09132101	WA	5	<i>rerun</i>
15	10/26/21 12:31	10262115.D	P2105508-002 (400mL)	S34-09132101	WA	9	
16	10/26/21 13:06	10262116.D	P2105508-003 (400mL)	S34-09132101	WA	10	
17	10/26/21 13:47	10262117.D	P2105508-001 (2.0mL)	S34-09132101	WA	5	
18	10/26/21 14:21	10262118.D	CCV2 R16102621_25ng	S34-09132101/S34-10122102 (11/11)	WA	2	<i>CCVend DoD</i>
19	10/26/21 14:55	10262119.D	P2105508-001dil (0.5mL)	S34-09132101	WA	5	
20	10/26/21 15:28	10262120.D	P2105371-001 (400mL)	S34-09132101	WA	3	
21	10/26/21 16:02	10262121.D	P2105371-002 (400mL)	S34-09132101	WA	4	
22	10/26/21 17:12	10262122.D	RL R16102621_0.5ng	S34-09132101/S34-10052104 (11/4)	WA	16	
23	10/26/21 17:45	10262123.D	P2105371-003 (400mL)	S34-09132101	WA	6	
24	10/26/21 18:19	10262124.D	P2105371-004 (75mL)	S34-09132101	WA	7	
25	10/26/21 18:53	10262125.D	P2105371-004dil (15mL)	S34-09132101	WA	7	
26	10/26/21 19:27	10262126.D	P2105371-005 (400mL)	S34-09132101	WA	8	
27	10/26/21 20:01	10262127.D	P2105318-001 (1000mL)	S34-09132101	WA	3	
28	10/26/21 20:35	10262128.D	P2105318-002 (1000mL)	S34-09132101	WA	4	
29	10/26/21 21:10	10262129.D	P2105318-003 (1000mL)	S34-09132101	WA	5	
30	10/26/21 21:44	10262130.D	P2105318-004 (1000mL)	S34-09132101	WA	14	
31	10/26/21 22:18	10262131.D	P2105318-005 (1000mL)	S34-09132101	WA	15	
	CCV/CCVend:: out high for propene and chloromethane						
	LCS: Propene, chloromethane, Vinyl Cl out high and LCSD: Freon-114 and Vinyl-Cl above, w/in 130%						
	 10/27/21						

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-05

Cycles: 30

Batch: 28351

Batch Started By: on 9/29/21 0433
Finished Cleaning By: on 9/29/21 0433

Container IDs	Cleaned Date	QC Date Analyzed	QC Results		Initial Vacuum		Final Vacuum		Comments
			Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AS01631	9/29/21		-14.3	9/29/21 0433		-14.0	10/7/21 0127		MS_09/30/21
AS01640	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1010		
AS01625	9/29/21	9/30/21	-14.3	9/29/21 0433		-14.0	10/26/21 1258		
AS01626	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1010		
AS01627	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1010		
AS01634	9/29/21		-14.3	9/29/21 0433		-14.0	10/5/21 0855		
AS01629	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1009		
AS01633	9/29/21		-14.3	9/29/21 0433		-14.0	10/5/21 0855		
AS01637	9/29/21		-14.3	9/29/21 0433					
AS01628	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1009		
AS01630	9/29/21		-14.3	9/29/21 0433					
AS01632	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1009		
AS01635	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1009		
AS01636	9/29/21		-14.3	9/29/21 0433		-14.0	10/5/21 0855		
AS01638	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1010		
AS01639	9/29/21		-14.3	9/29/21 0433		-14.0	10/18/21 1010		

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

*** QC Canister**

Data Path : I:\MS21\DATA\2021_09\30\
 Data File : 09302106.D
 Acq On : 30 Sep 2021 9:52
 Operator : RVT
 Sample : 093021_AS01625_28351
 Misc : LL+TICS (Sig #1); S34-09242101 (Sig #2)
 ALS Vial : 2 Sample Multiplier: 1

RVT 10/1/21

Quant Time: Oct 01 09:15:07 2021
 Quant Method : I:\MS21\Methods\F21091821.M
 Quant Title : EPA T0-15
 QLast Update : Mon Sep 20 12:19:59 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.489	130	40908	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.651	114	81403	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.679	54	13028	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.296	65	51884	961.07	pg	0.00
Spiked Amount 1000.000			Recovery	=	96.11%	
57) Toluene-d8 (SS2)	12.565	98	71640	962.65	pg	0.00
Spiked Amount 1000.000			Recovery	=	96.27%	
74) Bromofluorobenzene (SS3)	16.115	174	24136	855.87	pg	0.00
Spiked Amount 1000.000			Recovery	=	85.59%	
Target Compounds						Qvalue
2] * Propene	3.491	42	252	7.75	pg	# 73
3] * Dichlorodifluoromethane	0.000		0	N.D.		
4] * Chloromethane	3.680	50	132	1.54	pg	# 41
5] * 1,2-Dichloro-1,1,2,2...	0.000		0	N.D.		
6] * Vinyl Chloride	0.000		0	N.D.		
7] * 1,3-Butadiene	3.959	54	22	0.32	pg	# 9
8] * Bromomethane	4.186	94	52	0.69	pg	# 2
9] * Chloroethane	0.000		0	N.D.		
10] * Ethanol	4.415	45	1270	29.25	pg	99
11] * Acetonitrile	4.581	41	184	1.62	pg	# 1
12] * Acrolein	4.680	56	76	1.76	pg	# 15
13] * Acetone	4.810	58	1777	35.30	pg	# 57
14] * Trichlorofluoromethane	0.000		0	N.D.		
15] * 2-Propanol (Isopropa...	5.018	45	475	3.77	pg	96
16] * Acrylonitrile	0.000		0	N.D.		
17] * 1,1-Dichloroethene	5.396	96	282	4.35	pg	96
18] tert-Butanol	5.036	59	832	113.41	pg	# 1
19] * Methylene Chloride	5.527	84	157	2.45	pg	# 59
20] * 3-Chloro-1-propene (...)	0.000		0	N.D.		
21] * Trichlorotrifluoroet...	0.000		0	N.D.		
22] * Carbon Disulfide	5.789	76	10120	49.81	pg	98
23] * trans-1,2-Dichloroet...	0.000		0	N.D.		
24] * 1,1-Dichloroethane	6.584	63	51	0.68	pg	# 43
25] * Methyl tert-Butyl Ether	0.000		0	N.D.		
26] * Vinyl Acetate	0.000		0	N.D.		
27] * 2-Butanone (MEK)	6.956	72	79	4.07	pg	# 15
28] * cis-1,2-Dichloroethene	0.000		0	N.D.		
29] DIPE	0.000		0	N.D.		
30] * Ethyl Acetate	0.000		0	N.D.		
31] * n-Hexane	7.573	57	90	2.47	pg	# 51
32] * Chloroform	0.000		0	N.D.		
34] * Tetrahydrofuran	0.000		0	N.D.		
35] ETBE	0.000		0	N.D.		
36] * 1,2-Dichloroethane	0.000		0	N.D.		
38] * 1,1,1-Trichloroethane	0.000		0	N.D.		
39] * Benzene	9.229	78	810	7.00	pg	98
40] Isopropyl Acetate	0.000		0	N.D.		
41] 1-Butanol	9.245	56	97	No Calib	#	
42] * Carbon Tetrachloride	0.000		0	N.D.		
43] * Cyclohexane	0.000		0	N.D.		
44] TAME	0.000		0	N.D.		
45] * 1,2-Dichloropropane	0.000		0	N.D.		
46] * Bromodichloromethane	0.000		0	N.D.		
47] * Trichloroethene	10.398	130	117	2.31	pg	# 18

Data Path : I:\MS21\DATA\2021_09\30\
 Data File : 09302106.D
 Acq On : 30 Sep 2021 9:52
 Operator : RVT
 Sample : 093021_AS01625_28351
 Misc : LL+TICS (Sig #1); S34-09242101 (Sig #2)
 ALS Vial : 2 Sample Multiplier: 1

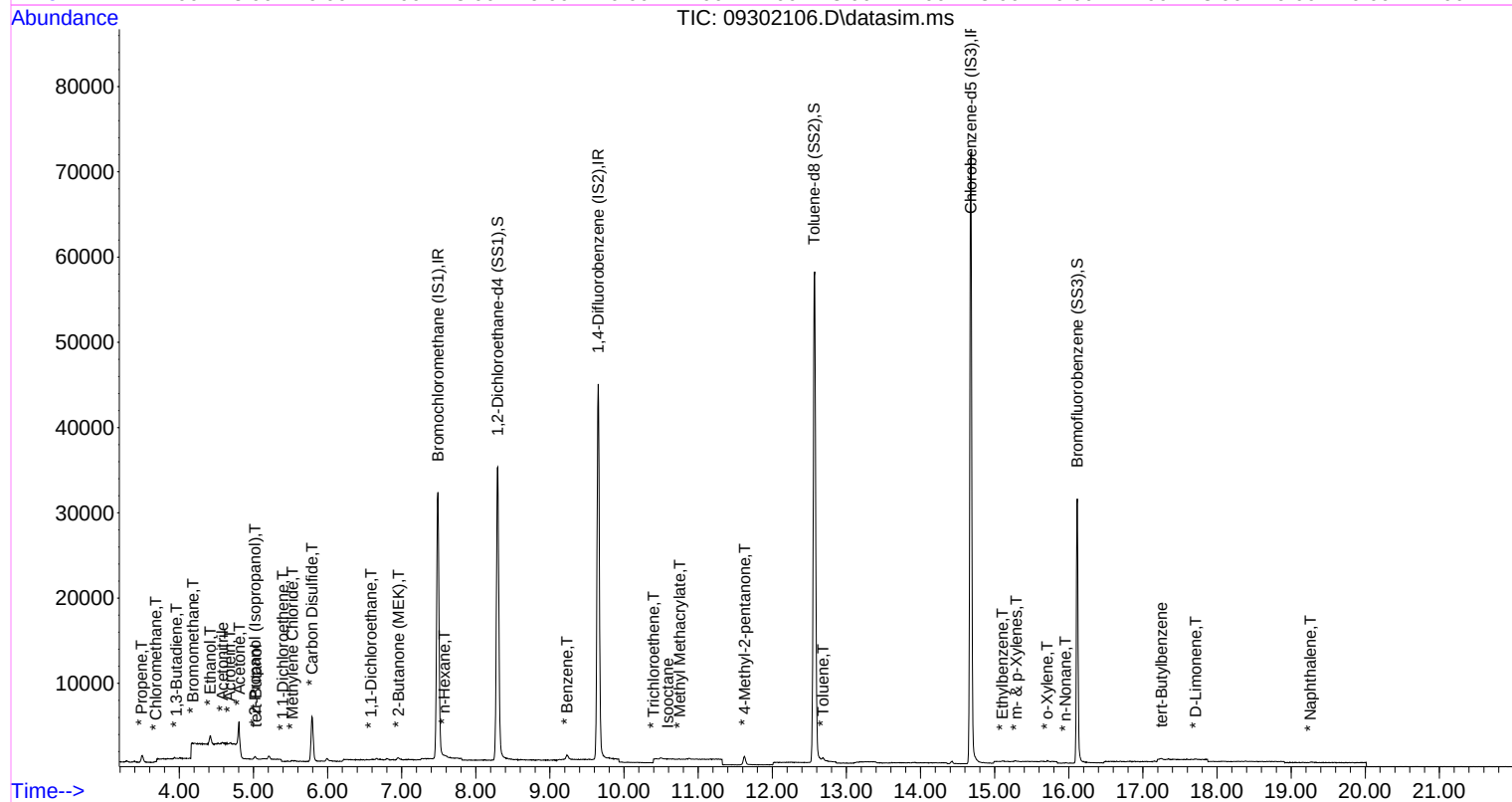
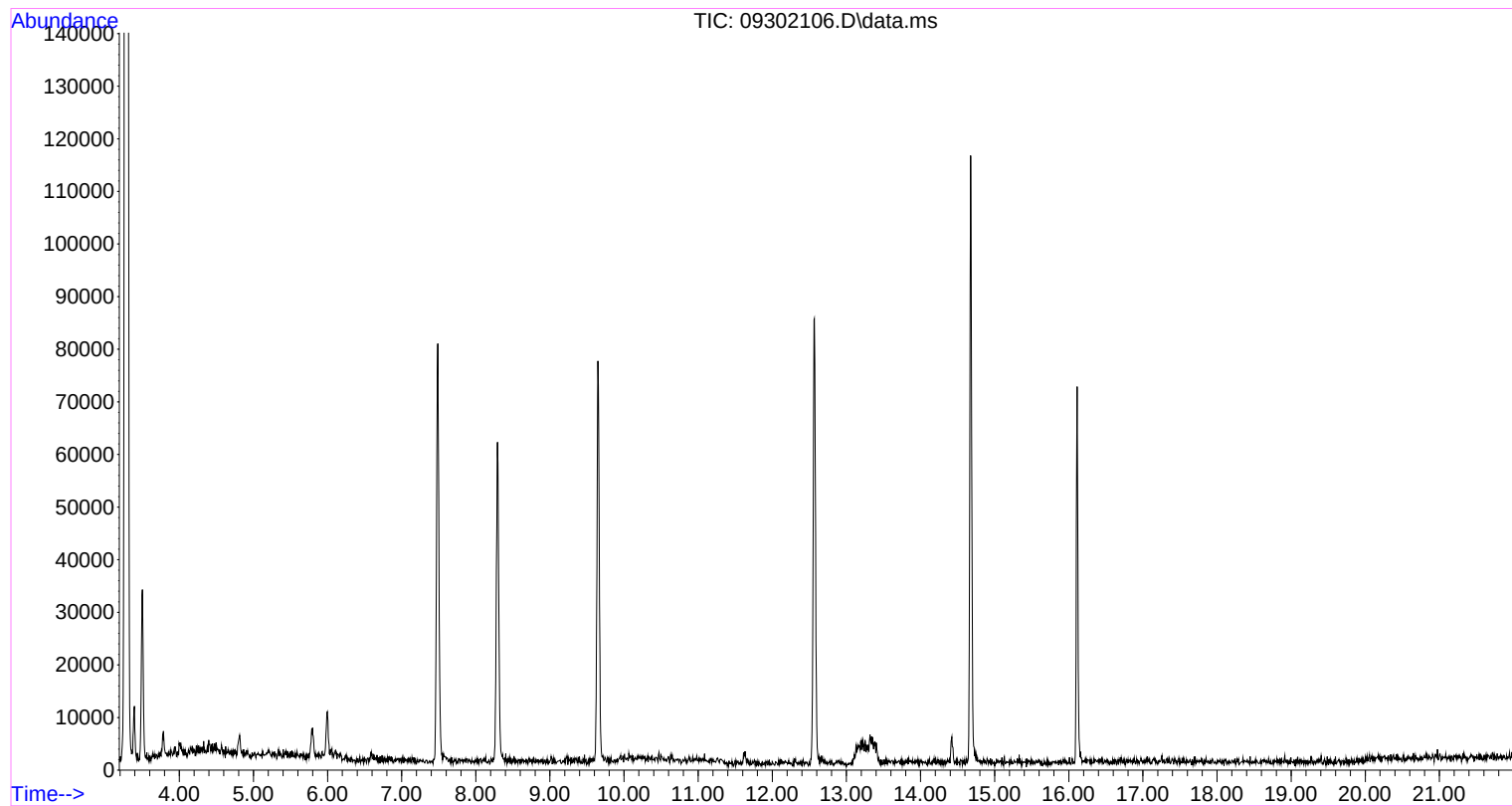
Quant Time: Oct 01 09:15:07 2021
 Quant Method : I:\MS21\Methods\F21091821.M
 Quant Title : EPA T0-15
 QLast Update : Mon Sep 20 12:19:59 2021
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
48)	* 1,4-Dioxane	0.000		0	N.D.		
49]	Isooctane	10.591	56	65	1.51	pg	# 1
50]	* Methyl Methacrylate	10.750	69	60	2.90	pg	# 35
51)	* n-Heptane	0.000		0	N.D.		
52)	* cis-1,3-Dichloropropene	0.000		0	N.D.		
53]	* 4-Methyl-2-pentanone	11.626	58	575	46.71	pg	88
54)	* trans-1,3-Dichloropr...	0.000		0	N.D.		
55)	* 1,1,2-Trichloroethane	0.000		0	N.D.		
58]	* Toluene	12.684	91	370	3.85	pg	100
59)	* 2-Hexanone	0.000		0	N.D.		
60)	* Dibromochloromethane	0.000		0	N.D.		
61)	* 1,2-Dibromoethane	0.000		0	N.D.		
62)	* n-Butyl Acetate	0.000		0	N.D.		
63)	* n-Octane	0.000		0	N.D.		
64)	* Tetrachloroethene	0.000		0	N.D.		
65)	* Chlorobenzene	0.000		0	N.D.		
66]	* Ethylbenzene	15.106	91	67	0.90	pg	# 1
67]	* m- & p-Xylenes	15.294	91	51	0.88	pg	# 29
68)	* Bromoform	0.000		0	N.D.		
69)	Cyclohexanone	0.000		0	N.D.		
70)	* Styrene	0.000		0	N.D.		
71]	* o-Xylene	15.710	91	80	1.48	pg	# 29
72]	* n-Nonane	15.955	57	51	2.80	pg	# 31
73)	* 1,1,2,2-Tetrachloroe...	0.000		0	N.D.		
75)	* Cumene	0.000		0	N.D.		
76)	* alpha-Pinene	0.000		0	N.D.		
77)	* n-Propylbenzene	0.000		0	N.D.		
78)	3-Ethyltoluene	0.000		0	N.D.		
79)	* 4-Ethyltoluene	0.000		0	N.D.		
80)	* 1,3,5-Trimethylbenzene	0.000		0	N.D.		
81)	alpha-Methylstyrene	0.000		0	N.D.		
82)	2-Ethyltoluene	0.000		0	N.D.		
83]	tert-Butylbenzene	17.250	134	61	4.97	pg	# 1
84)	* 1,2,4-Trimethylbenzene	0.000		0	N.D.		
85)	* Benzyl Chloride	0.000		0	N.D.		
86)	* 1,3-Dichlorobenzene	0.000		0	N.D.		
87)	* 1,4-Dichlorobenzene	0.000		0	N.D.		
88)	n-Decane	0.000		0	N.D.		
89)	sec-Butylbenzene	0.000		0	N.D.		
90)	1,2,3-Trimethylbenzene	0.000		0	N.D.		
91)	p-Isopropyltoluene	0.000		0	N.D.		
92)	* 1,2-Dichlorobenzene	0.000		0	N.D.		
93]	* D-Limonene	17.714	68	62	3.74	pg	# 8
94)	n-Butylbenzene	0.000		0	N.D.		
95)	* 1,2-Dibromo-3-chloro...	0.000		0	N.D.		
96)	n-Undecane	0.000		0	N.D.		
97)	* 1,2,4-Trichlorobenzene	0.000		0	N.D.		
98]	* Naphthalene	19.262	128	50	0.90	pg	# 64
99)	n-Dodecane	0.000		0	N.D.		
100)	* Hexachlorobutadiene	0.000		0	N.D.		

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

Data Path : I:\MS21\DATA\2021_09\30\
Data File : 09302106.D
Acq On : 30 Sep 2021 9:52
Operator : RVT
Sample : 093021_AS01625_28351
Misc : LL+TICS (Sig #1); S34-09242101 (Sig #2)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 01 09:15:07 2021
Quant Method : I:\MS21\Methods\F21091821.M
Quant Title : EPA T0-15
QLast Update : Mon Sep 20 12:19:59 2021
Response via : Initial Calibration



SIMIVALLEY QC Certification

Conditioner: P-Conditioner-07

Cycles: 30

Batch: 28377

Batch Started By: ANAKLOWYCZ on 10/5/21 1104
Finished Cleaning By: ANAKLOWYCZ on 10/5/21 1105

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AC02296	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/8/21 0821		
AS00384	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/12/21 0756		
AS00936	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/7/21 0127		
AS01513	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/8/21 0954		
AC02066	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/7/21 0208		
AC02399	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/8/21 0821		
AS00325	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/11/21 0759		
AC02388	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/8/21 0821		
AS01230	10/5/21		Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/11/21 0759		
AS00326	10/5/21	10/5/21	Pass w/ Conditions	-14.3	10/5/21 1105	ANAKLOWYCZ	-14.0	10/11/21 0759		ms21_10/05/21

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

* QC Canister

Data Path : I:\MS21\DATA\2021_10\05\
 Data File : 10052117.D
 Acq On : 5 Oct 2021 19:59
 Operator : RVT
 Sample : 100521_AS00326_28377
 Misc : LL+TICS (Sig #1); S34-09242101 (Sig #2)
 ALS Vial : 8 Sample Multiplier: 1

RVT 10/8/21

Quant Time: Oct 06 07:34:55 2021
 Quant Method : I:\MS21\Methods\F21091821.M
 Quant Title : EPA T0-15
 QLast Update : Mon Sep 20 12:19:59 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.483	130	42881	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.646	114	90923	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.674	54	14870	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.286	65	54991	971.75	pg	0.00
Spiked Amount 1000.000			Recovery	=	97.17%	
57) Toluene-d8 (SS2)	12.566	98	77212	909.00	pg	0.00
Spiked Amount 1000.000			Recovery	=	90.90%	
74) Bromofluorobenzene (SS3)	16.112	174	27072	841.07	pg	0.00
Spiked Amount 1000.000			Recovery	=	84.11%	
Target Compounds						Qvalue
2] * Propene	3.496	42	3358	98.51	pg	# 2
3] * Dichlorodifluoromethane	3.543	85	4805	40.37	pg	99
4] * Chloromethane	3.672	50	2527	28.08	pg	96
5] * 1,2-Dichloro-1,1,2,2...	3.543	85	4805	41.52	pg	99
6] * Vinyl Chloride	0.000		0	N.D.		
7] * 1,3-Butadiene	3.954	54	47	0.66	pg	# 9
8] * Bromomethane	4.165	94	53	0.67	pg	# 1
9] * Chloroethane	4.311	64	124	2.28	pg	# 43
10] * Ethanol	4.394	45	54329	1193.79	pg	98
11] * Acetonitrile	4.566	41	3041	25.50	pg	94
12] * Acrolein	4.670	56	1007	22.30	pg	90
13] * Acetone	4.779	58	25867	490.24	pg	89
14] * Trichlorofluoromethane	4.912	101	2058	14.81	pg	99
15] * 2-Propanol (Isopropa...	4.989	45	38711	292.83	pg	# 79
16] * Acrylonitrile	5.132	53	67	0.82	pg	# 8
17] * 1,1-Dichloroethene	5.386	96	425	6.26	pg	# 66
18] tert-Butanol	4.989	59	1788	232.50	pg	# 62
19] * Methylene Chloride	5.517	84	11409	169.76	pg	98
20] * 3-Chloro-1-propene (...)	0.000		0	N.D.		
21] * Trichlorotrifluoroet...	5.765	151	485	8.16	pg	99
22] * Carbon Disulfide	5.785	76	8120	38.12	pg	100
23] * trans-1,2-Dichloroet...	0.000		0	N.D.		
24] * 1,1-Dichloroethane	0.000		0	N.D.		
25] * Methyl tert-Butyl Ether	0.000		0	N.D.		
26] * Vinyl Acetate	6.645	86	918	154.14	pg	# 1
27] * 2-Butanone (MEK)	6.911	72	4533	223.00	pg	94
28] * cis-1,2-Dichloroethene	0.000		0	N.D.		
29] DIPE	7.567	45	10916	129.93	pg	# 50
30] * Ethyl Acetate	7.567	61	11958	1076.51	pg	100
31] * n-Hexane	7.574	57	810	21.19	pg	# 40
32] * Chloroform	7.619	83	208	2.07	pg	96
34] * Tetrahydrofuran	8.095	71	486	35.23	pg	80
35] ETBE	0.000		0	N.D.		
36] * 1,2-Dichloroethane	0.000		0	N.D.		
38] * 1,1,1-Trichloroethane	0.000		0	N.D.		
39] * Benzene	9.224	78	2426	18.78	pg	# 90
40] Isopropyl Acetate	9.193	61	131	No Calib	#	
41] 1-Butanol	9.219	56	2624	No Calib	#	
42] * Carbon Tetrachloride	9.402	117	445	6.33	pg	83
43] * Cyclohexane	9.568	84	133	4.74	pg	# 47
44] TAME	0.000		0	N.D.		
45] * 1,2-Dichloropropane	0.000		0	N.D.		
46] * Bromodichloromethane	0.000		0	N.D.		
47] * Trichloroethene	10.406	130	257	4.54	pg	# 51

Data Path : I:\MS21\DATA\2021_10\05\
 Data File : 10052117.D
 Acq On : 5 Oct 2021 19:59
 Operator : RVT
 Sample : 100521_AS00326_28377
 Misc : LL+TICS (Sig #1); S34-09242101 (Sig #2)
 ALS Vial : 8 Sample Multiplier: 1

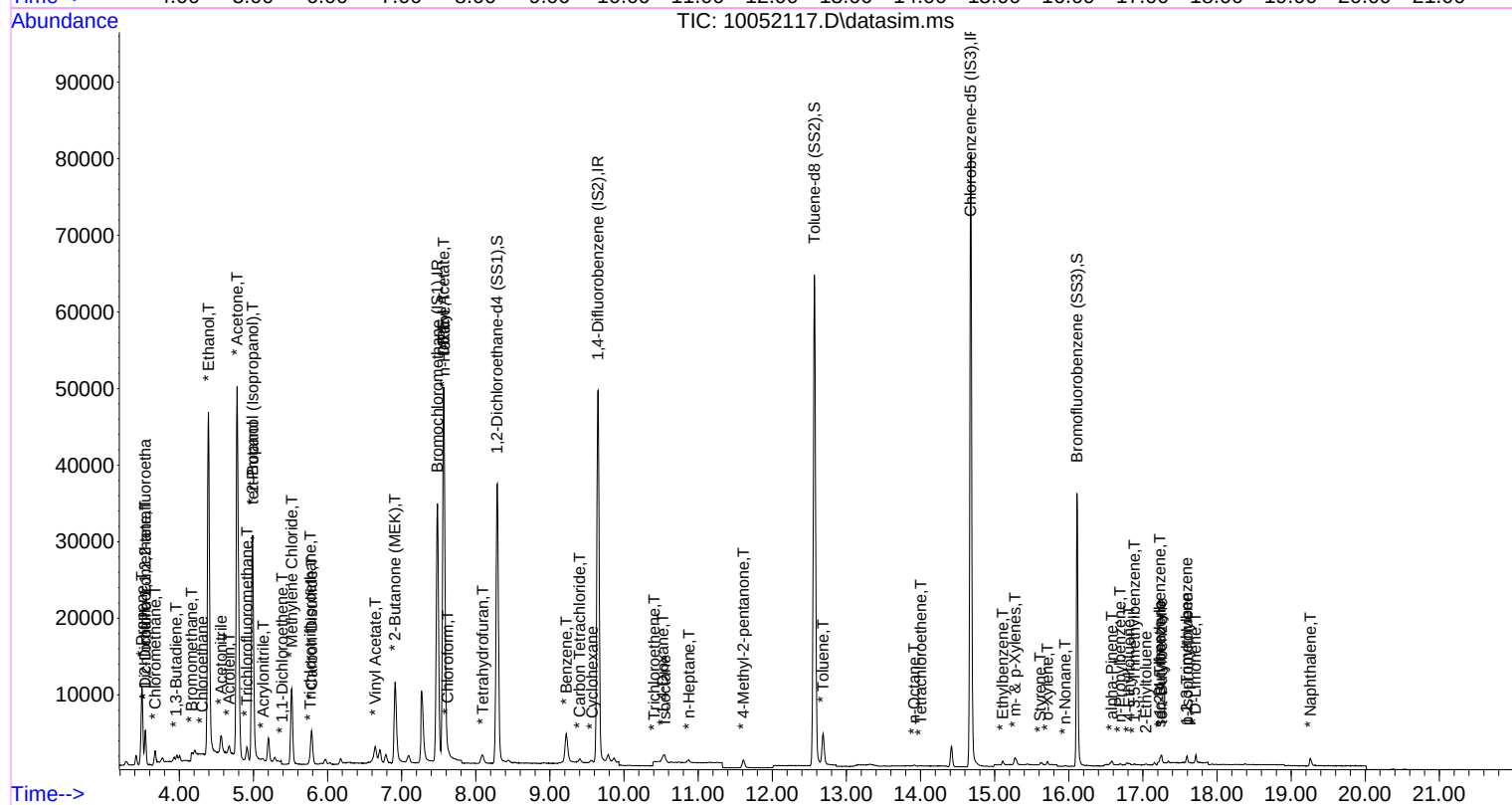
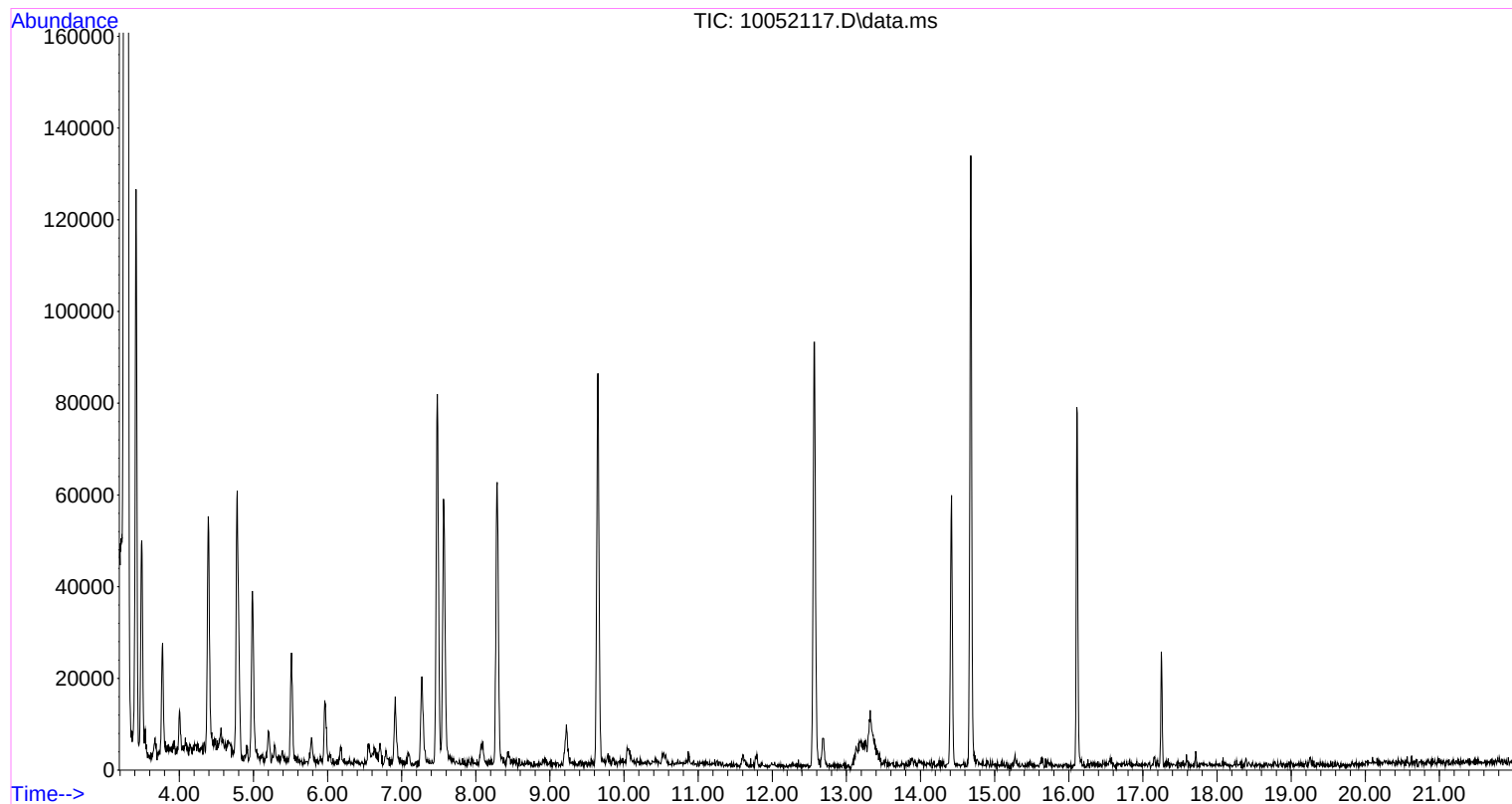
Quant Time: Oct 06 07:34:55 2021
 Quant Method : I:\MS21\Methods\F21091821.M
 Quant Title : EPA T0-15
 QLast Update : Mon Sep 20 12:19:59 2021
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
48]	* 1,4-Dioxane	10.524	88	691	32.44	pg	82
49]	Isooctane	10.551	56	926	19.20	pg	# 63
50]	* Methyl Methacrylate	0.000		0	N.D.		
51]	* n-Heptane	10.875	71	288	12.43	pg	91
52]	* cis-1,3-Dichloropropene	0.000		0	N.D.		
53]	* 4-Methyl-2-pentanone	11.611	58	562	40.88	pg	100
54]	* trans-1,3-Dichloropr...	0.000		0	N.D.		
55]	* 1,1,2-Trichloroethane	0.000		0	N.D.		
58]	* Toluene	12.685	91	5260	48.01	pg	99
59]	* 2-Hexanone	0.000		0	N.D.		
60]	* Dibromochloromethane	0.000		0	N.D.		
61]	* 1,2-Dibromoethane	0.000		0	N.D.		
62]	* n-Butyl Acetate	0.000		0	N.D.		
63]	* n-Octane	13.912	85	90	5.02	pg	85
64]	* Tetrachloroethene	14.005	166	50	0.90	pg	# 11
65]	* Chlorobenzene	0.000		0	N.D.		
66]	* Ethylbenzene	15.107	91	552	6.51	pg	91
67]	* m- & p-Xylenes	15.272	91	1331	20.22	pg	90
68]	* Bromoform	0.000		0	N.D.		
69]	Cyclohexanone	0.000		0	N.D.		
70]	* Styrene	15.614	104	156	3.70	pg	87
71]	* o-Xylene	15.711	91	430	6.96	pg	95
72]	* n-Nonane	15.951	57	91	4.37	pg	# 83
73]	* 1,1,2,2-Tetrachloroe...	0.000		0	N.D.		
75]	* Cumene	0.000		0	N.D.		
76]	* alpha-Pinene	16.581	93	342	9.44	pg	96
77]	* n-Propylbenzene	16.692	91	162	1.68	pg	# 71
78]	3-Ethyltoluene	16.785	105	273	No Calib	#	
79]	* 4-Ethyltoluene	16.814	105	166	2.55	pg	# 43
80]	* 1,3,5-Trimethylbenzene	16.882	105	130	2.17	pg	# 26
81]	alpha-Methylstyrene	0.000		0	N.D.		
82]	2-Ethyltoluene	17.042	105	155	459.78	pg	# 39
83]	tert-Butylbenzene	17.251	134	371	26.50	pg	# 1
84]	* 1,2,4-Trimethylbenzene	17.230	105	442	7.81	pg	94
85]	* Benzyl Chloride	0.000		0	N.D.		
86]	* 1,3-Dichlorobenzene	0.000		0	N.D.		
87]	* 1,4-Dichlorobenzene	0.000		0	N.D.		
88]	n-Decane	17.343	85	72	No Calib	#	
89]	sec-Butylbenzene	17.230	105	442	7.89	pg	# 1
90]	1,2,3-Trimethylbenzene	17.591	105	155	44.60	pg	# 15
91]	p-Isopropyltoluene	17.597	134	179	10.04	pg	98
92]	* 1,2-Dichlorobenzene	0.000		0	N.D.		
93]	* D-Limonene	17.710	68	507	26.81	pg	96
94]	n-Butylbenzene	0.000		0	N.D.		
95]	* 1,2-Dibromo-3-chloro...	0.000		0	N.D.		
96]	n-Undecane	18.379	85	62	No Calib	#	
97]	* 1,2,4-Trichlorobenzene	0.000		0	N.D.		
98]	* Naphthalene	19.258	128	1338	21.08	pg	94
99]	n-Dodecane	19.276	85	86	No Calib	#	
100]	* Hexachlorobutadiene	0.000		0	N.D.		

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

Data Path : I:\MS21\DATA\2021_10\05\
Data File : 10052117.D
Acq On : 5 Oct 2021 19:59
Operator : RVT
Sample : 100521_AS00326_28377
Misc : LL+TICS (Sig #1); S34-09242101 (Sig #2)
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 06 07:34:55 2021
Quant Method : I:\MS21\Methods\F21091821.M
Quant Title : EPA T0-15
QLast Update : Mon Sep 20 12:19:59 2021
Response via : Initial Calibration





2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

January 7, 2022

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT Memphis / 10A023

Dear Larry:

Enclosed are the results of the samples submitted to our laboratory on December 14, 2021. For your reference, these analyses have been assigned our service request number P2106529.

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.

Respectfully submitted,

ALS | Environmental



By Sue Anderson at 5:36 pm, Jan 07, 2022

Sue Anderson
Project Manager



2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: KOMAN Government Solutions, LLC
Project: DDMT Memphis / 10A023

Service Request No: P2106529

CASE NARRATIVE

The samples were received intact under chain of custody on December 14, 2021 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 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.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.3 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.

Manual integrations were performed on the following sample(s) and analyte(s). Refer to the raw data for additional information.

Sample Identification(s)	Analyte(s)
P2106529-001	Propene, Acetone, 2-Butanone

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.



2655 Park Center Dr., Suite A
 Simi Valley, CA 93065
 T: +1 805 526 7161
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	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)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-008
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlab.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
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: KOMAN Government Solutions, LLC
Project ID: DDMT Memphis / 10A023

Service Request: P2106529

Date Received: 12/14/2021
Time Received: 11:00

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)
ODSVE-EFF-Y11Q2	P2106529-001	Air	12/13/2021	11:40	AS01300	-0.15	4.11

X

5 of 119

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P2106529-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01300

Date Collected: 12/13/21

Date Received: 12/14/21

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15

Final Pressure (psig): 4.11

Container Dilution Factor: 1.29

CAS #	Compound	Result µg/m ³	LOQ µg/m ³	LOD µg/m ³	MDL µg/m ³	Data Qualifier
115-07-1	Propene	0.45	0.67	0.41	0.17	J
75-71-8	Dichlorodifluoromethane (CFC 12)	2.8	0.68	0.41	0.11	
74-87-3	Chloromethane	0.41	0.66	0.41	0.11	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.41	0.70	0.41	0.11	U
75-01-4	Vinyl Chloride	0.12	0.67	0.22	0.074	J
106-99-0	1,3-Butadiene	0.41	0.67	0.41	0.11	U
74-83-9	Bromomethane	0.22	0.66	0.22	0.095	U
75-00-3	Chloroethane	0.11	0.66	0.22	0.085	J
64-17-5	Ethanol	4.6	6.5	1.1	0.48	J, B
75-05-8	Acetonitrile	0.41	1.3	0.41	0.17	U
107-02-8	Acrolein	0.89	1.3	0.45	0.19	J
67-64-1	Acetone	2.4	6.7	3.4	1.5	J
75-69-4	Trichlorofluoromethane	1.4	0.67	0.21	0.10	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.80	1.3	0.80	0.28	U
107-13-1	Acrylonitrile	0.43	1.3	0.43	0.14	U
75-35-4	1,1-Dichloroethene	1.2	0.70	0.22	0.095	
75-09-2	Methylene Chloride	0.40	0.67	0.40	0.19	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.22	0.68	0.22	0.093	U
76-13-1	Trichlorotrifluoroethane	23	0.70	0.22	0.098	
75-15-0	Carbon Disulfide	2.4	1.4	0.43	0.21	
156-60-5	trans-1,2-Dichloroethene	2.1	0.68	0.22	0.095	
75-34-3	1,1-Dichloroethane	0.59	0.68	0.22	0.10	J
1634-04-4	Methyl tert-Butyl Ether	0.21	0.68	0.21	0.081	U
108-05-4	Vinyl Acetate	1.7	6.5	3.5	1.5	J
78-93-3	2-Butanone (MEK)	0.18	1.3	0.43	0.14	J

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P2106529-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01300

Date Collected: 12/13/21

Date Received: 12/14/21

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15 Final Pressure (psig): 4.11

Container Dilution Factor: 1.29

CAS #	Compound	Result µg/m ³	LOQ µg/m ³	LOD µg/m ³	MDL µg/m ³	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	77	0.67	0.22	0.097	
141-78-6	Ethyl Acetate	0.80	2.7	0.80	0.36	U
110-54-3	n-Hexane	0.40	0.68	0.40	0.14	U
67-66-3	Chloroform	31	0.70	0.22	0.092	
109-99-9	Tetrahydrofuran (THF)	0.26	1.3	0.26	0.086	U
107-06-2	1,2-Dichloroethane	0.22	0.68	0.22	0.076	U
71-55-6	1,1,1-Trichloroethane	0.86	0.67	0.21	0.085	
71-43-2	Benzene	0.56	0.65	0.22	0.099	J
56-23-5	Carbon Tetrachloride	2.2	0.65	0.21	0.095	
110-82-7	Cyclohexane	0.43	1.4	0.43	0.19	U
78-87-5	1,2-Dichloropropane	0.22	0.65	0.22	0.085	U
75-27-4	Bromodichloromethane	0.22	0.68	0.22	0.099	U
79-01-6	Trichloroethene	110	0.67	0.21	0.093	
123-91-1	1,4-Dioxane	0.21	0.67	0.21	0.081	U
80-62-6	Methyl Methacrylate	0.80	1.4	0.80	0.25	U
142-82-5	n-Heptane	0.40	0.68	0.40	0.11	U
10061-01-5	cis-1,3-Dichloropropene	0.41	0.65	0.41	0.11	U
108-10-1	4-Methyl-2-pentanone	0.27	1.4	0.27	0.094	U
10061-02-6	trans-1,3-Dichloropropene	0.40	0.66	0.40	0.14	U
79-00-5	1,1,2-Trichloroethane	0.25	0.67	0.22	0.070	J
108-88-3	Toluene	1.1	0.67	0.22	0.084	
591-78-6	2-Hexanone	0.27	1.4	0.27	0.085	U
124-48-1	Dibromochloromethane	0.22	0.68	0.22	0.090	U
106-93-4	1,2-Dibromoethane	0.22	0.67	0.22	0.080	U
123-86-4	n-Butyl Acetate	0.27	1.4	0.27	0.094	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P2106529-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01300

Date Collected: 12/13/21

Date Received: 12/14/21

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15 Final Pressure (psig): 4.11

Container Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
111-65-9	n-Octane	0.40	0.68	0.40	0.15	U
127-18-4	Tetrachloroethene	14	0.67	0.22	0.089	
108-90-7	Chlorobenzene	0.21	0.67	0.21	0.092	U
100-41-4	Ethylbenzene	0.36	0.67	0.22	0.097	J
179601-23-1	m,p-Xylenes	0.43	1.4	0.43	0.18	U
75-25-2	Bromoform	0.41	0.67	0.41	0.14	U
100-42-5	Styrene	0.96	0.65	0.40	0.11	
95-47-6	o-Xylene	0.22	0.67	0.22	0.099	U
111-84-2	n-Nonane	0.41	0.67	0.41	0.11	U
79-34-5	1,1,2,2-Tetrachloroethane	2.4	0.67	0.22	0.095	
98-82-8	Cumene	0.22	0.67	0.22	0.099	U
80-56-8	alpha-Pinene	0.22	0.70	0.22	0.11	U
103-65-1	n-Propylbenzene	0.22	0.68	0.22	0.099	U
622-96-8	4-Ethyltoluene	0.41	0.68	0.41	0.11	U
108-67-8	1,3,5-Trimethylbenzene	0.22	0.67	0.22	0.099	U
95-63-6	1,2,4-Trimethylbenzene	0.21	0.67	0.21	0.095	U
100-44-7	Benzyl Chloride	0.44	1.4	0.44	0.15	U
541-73-1	1,3-Dichlorobenzene	0.22	0.67	0.22	0.10	U
106-46-7	1,4-Dichlorobenzene	0.22	0.67	0.22	0.11	U
95-50-1	1,2-Dichlorobenzene	0.22	0.68	0.22	0.10	U
5989-27-5	d-Limonene	0.40	0.65	0.40	0.14	U
96-12-8	1,2-Dibromo-3-chloropropane	0.41	1.3	0.41	0.13	U
120-82-1	1,2,4-Trichlorobenzene	0.41	1.4	0.41	0.17	U
91-20-3	Naphthalene	3.5	0.67	0.40	0.17	
87-68-3	Hexachlorobutadiene	0.40	0.67	0.40	0.14	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m ³	LOQ µg/m ³	LOD µg/m ³	MDL µg/m ³	Data Qualifier
115-07-1	Propene	0.32	0.52	0.32	0.13	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.32	0.53	0.32	0.087	U
74-87-3	Chloromethane	0.32	0.51	0.32	0.086	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.32	0.54	0.32	0.084	U
75-01-4	Vinyl Chloride	0.17	0.52	0.17	0.057	U
106-99-0	1,3-Butadiene	0.32	0.52	0.32	0.088	U
74-83-9	Bromomethane	0.17	0.51	0.17	0.074	U
75-00-3	Chloroethane	0.17	0.51	0.17	0.066	U
64-17-5	Ethanol	0.42	5.0	0.84	0.37	J
75-05-8	Acetonitrile	0.32	1.0	0.32	0.13	U
107-02-8	Acrolein	0.35	1.0	0.35	0.15	U
67-64-1	Acetone	2.6	5.2	2.6	1.2	U
75-69-4	Trichlorofluoromethane	0.16	0.52	0.16	0.081	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.62	1.0	0.62	0.22	U
107-13-1	Acrylonitrile	0.33	1.0	0.33	0.11	U
75-35-4	1,1-Dichloroethene	0.17	0.54	0.17	0.074	U
75-09-2	Methylene Chloride	0.31	0.52	0.31	0.15	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.17	0.53	0.17	0.072	U
76-13-1	Trichlorotrifluoroethane	0.17	0.54	0.17	0.076	U
75-15-0	Carbon Disulfide	0.33	1.1	0.33	0.16	U
156-60-5	trans-1,2-Dichloroethene	0.17	0.53	0.17	0.074	U
75-34-3	1,1-Dichloroethane	0.17	0.53	0.17	0.078	U
1634-04-4	Methyl tert-Butyl Ether	0.16	0.53	0.16	0.063	U
108-05-4	Vinyl Acetate	2.7	5.0	2.7	1.2	U
78-93-3	2-Butanone (MEK)	0.33	1.0	0.33	0.11	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m ³	LOQ µg/m ³	LOD µg/m ³	MDL µg/m ³	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.17	0.52	0.17	0.075	U
141-78-6	Ethyl Acetate	0.62	2.1	0.62	0.28	U
110-54-3	n-Hexane	0.31	0.53	0.31	0.11	U
67-66-3	Chloroform	0.17	0.54	0.17	0.071	U
109-99-9	Tetrahydrofuran (THF)	0.20	1.0	0.20	0.067	U
107-06-2	1,2-Dichloroethane	0.17	0.53	0.17	0.059	U
71-55-6	1,1,1-Trichloroethane	0.16	0.52	0.16	0.066	U
71-43-2	Benzene	0.17	0.50	0.17	0.077	U
56-23-5	Carbon Tetrachloride	0.16	0.50	0.16	0.074	U
110-82-7	Cyclohexane	0.33	1.1	0.33	0.15	U
78-87-5	1,2-Dichloropropane	0.17	0.50	0.17	0.066	U
75-27-4	Bromodichloromethane	0.17	0.53	0.17	0.077	U
79-01-6	Trichloroethene	0.16	0.52	0.16	0.072	U
123-91-1	1,4-Dioxane	0.16	0.52	0.16	0.063	U
80-62-6	Methyl Methacrylate	0.62	1.1	0.62	0.19	U
142-82-5	n-Heptane	0.31	0.53	0.31	0.085	U
10061-01-5	cis-1,3-Dichloropropene	0.32	0.50	0.32	0.083	U
108-10-1	4-Methyl-2-pentanone	0.21	1.1	0.21	0.073	U
10061-02-6	trans-1,3-Dichloropropene	0.31	0.51	0.31	0.11	U
79-00-5	1,1,2-Trichloroethane	0.17	0.52	0.17	0.054	U
108-88-3	Toluene	0.17	0.52	0.17	0.065	U
591-78-6	2-Hexanone	0.21	1.1	0.21	0.066	U
124-48-1	Dibromochloromethane	0.17	0.53	0.17	0.070	U
106-93-4	1,2-Dibromoethane	0.17	0.52	0.17	0.062	U
123-86-4	n-Butyl Acetate	0.21	1.1	0.21	0.073	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m ³	LOQ µg/m ³	LOD µg/m ³	MDL µg/m ³	Data Qualifier
111-65-9	n-Octane	0.31	0.53	0.31	0.12	U
127-18-4	Tetrachloroethene	0.17	0.52	0.17	0.069	U
108-90-7	Chlorobenzene	0.16	0.52	0.16	0.071	U
100-41-4	Ethylbenzene	0.17	0.52	0.17	0.075	U
179601-23-1	m,p-Xylenes	0.33	1.1	0.33	0.14	U
75-25-2	Bromoform	0.32	0.52	0.32	0.11	U
100-42-5	Styrene	0.31	0.50	0.31	0.086	U
95-47-6	o-Xylene	0.17	0.52	0.17	0.077	U
111-84-2	n-Nonane	0.32	0.52	0.32	0.089	U
79-34-5	1,1,2,2-Tetrachloroethane	0.17	0.52	0.17	0.074	U
98-82-8	Cumene	0.17	0.52	0.17	0.077	U
80-56-8	alpha-Pinene	0.17	0.54	0.17	0.082	U
103-65-1	n-Propylbenzene	0.17	0.53	0.17	0.077	U
622-96-8	4-Ethyltoluene	0.32	0.53	0.32	0.085	U
108-67-8	1,3,5-Trimethylbenzene	0.17	0.52	0.17	0.077	U
95-63-6	1,2,4-Trimethylbenzene	0.16	0.52	0.16	0.074	U
100-44-7	Benzyl Chloride	0.34	1.1	0.34	0.12	U
541-73-1	1,3-Dichlorobenzene	0.17	0.52	0.17	0.080	U
106-46-7	1,4-Dichlorobenzene	0.17	0.52	0.17	0.082	U
95-50-1	1,2-Dichlorobenzene	0.17	0.53	0.17	0.079	U
5989-27-5	d-Limonene	0.31	0.50	0.31	0.11	U
96-12-8	1,2-Dibromo-3-chloropropane	0.32	1.0	0.32	0.10	U
120-82-1	1,2,4-Trichlorobenzene	0.32	1.1	0.32	0.13	U
91-20-3	Naphthalene	0.31	0.52	0.31	0.13	U
87-68-3	Hexachlorobutadiene	0.31	0.52	0.31	0.11	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 12/13/21
Date(s) Received: 12/14/21
Date(s) Analyzed: 12/29/21

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P211229-MB	100	97	97	70-130	
Lab Control Sample	P211229-LCS	99	93	95	70-130	
Duplicate Lab Control Sample	P211229-DLCS	99	91	93	70-130	
ODSVE-EFF-Y11Q2	P2106529-001	98	95	104	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

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS µg/m³	LCS µg/m³	DLCS µg/m³	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	206	185	187	90	91	57-136	1	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	208	173	172	83	83	59-128	0	25	
74-87-3	Chloromethane	206	178	177	86	86	59-132	0	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	208	186	185	89	89	63-121	0	25	
75-01-4	Vinyl Chloride	208	186	186	89	89	64-127	0	25	
106-99-0	1,3-Butadiene	206	213	207	103	100	66-134	3	25	
74-83-9	Bromomethane	206	188	185	91	90	63-134	1	25	
75-00-3	Chloroethane	206	190	188	92	91	63-127	1	25	
64-17-5	Ethanol	832	822	833	99	100	59-125	1	25	
75-05-8	Acetonitrile	202	177	180	88	89	63-132	1	25	
107-02-8	Acrolein	416	403	401	97	96	62-126	1	25	
67-64-1	Acetone	1,020	937	936	92	92	58-128	0	25	
75-69-4	Trichlorofluoromethane	202	181	179	90	89	62-126	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	400	444	449	111	112	52-125	0.9	25	
107-13-1	Acrylonitrile	402	409	412	102	102	71-137	0	25	
75-35-4	1,1-Dichloroethene	210	192	189	91	90	61-133	1	25	
75-09-2	Methylene Chloride	208	179	176	86	85	62-115	1	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	204	192	194	94	95	71-131	1	25	
76-13-1	Trichlorotrifluoroethane	216	204	200	94	93	66-126	1	25	
75-15-0	Carbon Disulfide	414	357	356	86	86	57-134	0	25	
156-60-5	trans-1,2-Dichloroethene	208	203	203	98	98	67-124	0	25	
75-34-3	1,1-Dichloroethane	214	194	192	91	90	68-126	1	25	
1634-04-4	Methyl tert-Butyl Ether	206	193	191	94	93	66-126	1	25	
108-05-4	Vinyl Acetate	942	825	818	88	87	56-139	1	25	
78-93-3	2-Butanone (MEK)	408	391	389	96	95	67-130	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.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS µg/m³	LCS µg/m³	DLCS µg/m³	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	206	197	197	96	96	70-121	0	25	
141-78-6	Ethyl Acetate	580	569	565	98	97	65-128	1	25	
110-54-3	n-Hexane	208	200	200	96	96	63-120	0	25	
67-66-3	Chloroform	210	185	185	88	88	68-123	0	25	
109-99-9	Tetrahydrofuran (THF)	404	386	386	96	96	64-123	0	25	
107-06-2	1,2-Dichloroethane	210	191	191	91	91	65-128	0	25	
71-55-6	1,1,1-Trichloroethane	208	182	181	88	87	68-125	1	25	
71-43-2	Benzene	208	181	181	87	87	69-119	0	25	
56-23-5	Carbon Tetrachloride	202	187	185	93	92	68-132	1	25	
110-82-7	Cyclohexane	412	375	372	91	90	70-117	1	25	
78-87-5	1,2-Dichloropropane	206	192	192	93	93	69-123	0	25	
75-27-4	Bromodichloromethane	208	195	193	94	93	72-128	1	25	
79-01-6	Trichloroethene	204	194	192	95	94	71-123	1	25	
123-91-1	1,4-Dioxane	206	198	198	96	96	71-122	0	25	
80-62-6	Methyl Methacrylate	410	405	402	99	98	70-128	1	25	
142-82-5	n-Heptane	206	194	194	94	94	69-123	0	25	
10061-01-5	cis-1,3-Dichloropropene	208	213	211	102	101	70-128	1	25	
108-10-1	4-Methyl-2-pentanone	412	427	428	104	104	67-130	0	25	
10061-02-6	trans-1,3-Dichloropropene	200	204	204	102	102	75-133	0	25	
79-00-5	1,1,2-Trichloroethane	208	184	183	88	88	73-119	0	25	
108-88-3	Toluene	206	178	175	86	85	66-119	1	25	
591-78-6	2-Hexanone	406	452	451	111	111	62-128	0	25	
124-48-1	Dibromochloromethane	210	203	199	97	95	70-130	2	25	
106-93-4	1,2-Dibromoethane	208	198	193	95	93	74-122	2	25	
123-86-4	n-Butyl Acetate	406	460	458	113	113	65-134	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

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS µg/m³	LCS µg/m³	DLCS µg/m³	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	208	204	201	98	97	69-121	1	25	
127-18-4	Tetrachloroethene	212	197	192	93	91	66-124	2	25	
108-90-7	Chlorobenzene	206	184	180	89	87	70-119	2	25	
100-41-4	Ethylbenzene	206	189	186	92	90	70-124	2	25	
179601-23-1	m,p-Xylenes	416	388	379	93	91	61-134	2	25	
75-25-2	Bromoform	210	216	208	103	99	66-139	4	25	
100-42-5	Styrene	202	193	189	96	94	73-127	2	25	
95-47-6	o-Xylene	208	194	189	93	91	67-125	2	25	
111-84-2	n-Nonane	208	220	217	106	104	63-128	2	25	
79-34-5	1,1,2,2-Tetrachloroethane	208	195	191	94	92	65-127	2	25	
98-82-8	Cumene	206	193	188	94	91	68-124	3	25	
80-56-8	alpha-Pinene	210	196	192	93	91	62-136	2	25	
103-65-1	n-Propylbenzene	208	191	187	92	90	69-123	2	25	
622-96-8	4-Ethyltoluene	208	202	197	97	95	67-129	2	25	
108-67-8	1,3,5-Trimethylbenzene	208	203	198	98	95	67-130	3	25	
95-63-6	1,2,4-Trimethylbenzene	206	212	207	103	100	66-132	3	25	
100-44-7	Benzyl Chloride	416	385	378	93	91	50-147	2	25	
541-73-1	1,3-Dichlorobenzene	208	205	200	99	96	65-130	3	25	
106-46-7	1,4-Dichlorobenzene	210	198	195	94	93	60-131	1	25	
95-50-1	1,2-Dichlorobenzene	210	202	197	96	94	63-129	2	25	
5989-27-5	d-Limonene	206	208	204	101	99	65-136	2	25	
96-12-8	1,2-Dibromo-3-chloropropane	404	401	388	99	96	73-133	3	25	
120-82-1	1,2,4-Trichlorobenzene	420	428	416	102	99	55-142	3	25	
91-20-3	Naphthalene	210	199	196	95	93	57-138	2	25	
87-68-3	Hexachlorobutadiene	212	206	202	97	95	56-138	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.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:
Lab File ID: 12292101.D
Date Analyzed: 12/28/21
Time Analyzed: 23:56

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	231828	11.09	1022838	13.20	243290	17.51
Upper Limit	324559	11.42	1431973	13.53	340606	17.84
Lower Limit	139097	10.76	613703	12.87	145974	17.18

Client Sample ID						
01	Method Blank	215267	11.06	977322	13.19	220527
02	Lab Control Sample	221960	11.09	985159	13.20	233908
03	Duplicate Lab Control Sample	231048	11.09	1019956	13.20	245588
04	ODSVE-EFF-Y11Q2	249980	11.07	1105136	13.20	254146
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

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 specified limits.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 12292103.D
Date Analyzed: 12/29/21
Time Analyzed: 01:03

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P211229-LCS	12292104.D	01:37
Duplicate Lab Control Sample	P211229-DLCS	12292105.D	02:11
ODSVE-EFF-Y11Q2	P2106529-001	12292132.D	18:40

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P2106529-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01300

Date Collected: 12/13/21

Date Received: 12/14/21

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15

Final Pressure (psig): 4.11

Container Dilution Factor: 1.29

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.26	0.39	0.24	0.097	J
75-71-8	Dichlorodifluoromethane (CFC 12)	0.57	0.14	0.084	0.023	
74-87-3	Chloromethane	0.20	0.32	0.20	0.054	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.059	0.10	0.059	0.016	U
75-01-4	Vinyl Chloride	0.048	0.26	0.086	0.029	J
106-99-0	1,3-Butadiene	0.19	0.30	0.19	0.051	U
74-83-9	Bromomethane	0.056	0.17	0.056	0.025	U
75-00-3	Chloroethane	0.044	0.25	0.083	0.032	J
64-17-5	Ethanol	2.4	3.4	0.58	0.25	J, B
75-05-8	Acetonitrile	0.25	0.77	0.25	0.10	U
107-02-8	Acrolein	0.39	0.56	0.20	0.084	J
67-64-1	Acetone	0.99	2.8	1.4	0.65	J
75-69-4	Trichlorofluoromethane	0.25	0.12	0.037	0.019	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.33	0.53	0.33	0.12	U
107-13-1	Acrylonitrile	0.20	0.59	0.20	0.065	U
75-35-4	1,1-Dichloroethene	0.31	0.18	0.055	0.024	
75-09-2	Methylene Chloride	0.12	0.19	0.12	0.056	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.070	0.22	0.070	0.030	U
76-13-1	Trichlorotrifluoroethane	3.0	0.091	0.029	0.013	
75-15-0	Carbon Disulfide	0.76	0.46	0.14	0.066	
156-60-5	trans-1,2-Dichloroethene	0.53	0.17	0.055	0.024	
75-34-3	1,1-Dichloroethane	0.15	0.17	0.054	0.025	J
1634-04-4	Methyl tert-Butyl Ether	0.057	0.19	0.057	0.023	U
108-05-4	Vinyl Acetate	0.48	1.8	0.99	0.44	J
78-93-3	2-Butanone (MEK)	0.061	0.44	0.14	0.048	J

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P2106529-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01300

Date Collected: 12/13/21

Date Received: 12/14/21

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15 Final Pressure (psig): 4.11

Container Dilution Factor: 1.29

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	19	0.17	0.055	0.024	
141-78-6	Ethyl Acetate	0.22	0.75	0.22	0.10	U
110-54-3	n-Hexane	0.11	0.19	0.11	0.040	U
67-66-3	Chloroform	6.3	0.14	0.045	0.019	
109-99-9	Tetrahydrofuran (THF)	0.088	0.44	0.088	0.029	U
107-06-2	1,2-Dichloroethane	0.054	0.17	0.054	0.019	U
71-55-6	1,1,1-Trichloroethane	0.16	0.12	0.038	0.016	
71-43-2	Benzene	0.17	0.20	0.069	0.031	J
56-23-5	Carbon Tetrachloride	0.36	0.10	0.033	0.015	
110-82-7	Cyclohexane	0.12	0.41	0.12	0.056	U
78-87-5	1,2-Dichloropropane	0.047	0.14	0.047	0.018	U
75-27-4	Bromodichloromethane	0.033	0.10	0.033	0.015	U
79-01-6	Trichloroethene	21	0.12	0.038	0.017	
123-91-1	1,4-Dioxane	0.057	0.19	0.057	0.023	U
80-62-6	Methyl Methacrylate	0.20	0.35	0.20	0.060	U
142-82-5	n-Heptane	0.098	0.17	0.098	0.027	U
10061-01-5	cis-1,3-Dichloropropene	0.091	0.14	0.091	0.024	U
108-10-1	4-Methyl-2-pentanone	0.066	0.35	0.066	0.023	U
10061-02-6	trans-1,3-Dichloropropene	0.088	0.14	0.088	0.031	U
79-00-5	1,1,2-Trichloroethane	0.046	0.12	0.040	0.013	J
108-88-3	Toluene	0.28	0.18	0.058	0.022	
591-78-6	2-Hexanone	0.066	0.35	0.066	0.021	U
124-48-1	Dibromochloromethane	0.026	0.080	0.026	0.011	U
106-93-4	1,2-Dibromoethane	0.029	0.087	0.029	0.010	U
123-86-4	n-Butyl Acetate	0.057	0.30	0.057	0.020	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P2106529-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01300

Date Collected: 12/13/21

Date Received: 12/14/21

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15 Final Pressure (psig): 4.11

Container Dilution Factor: 1.29

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.086	0.15	0.086	0.033	U
127-18-4	Tetrachloroethene	2.1	0.099	0.032	0.013	
108-90-7	Chlorobenzene	0.045	0.15	0.045	0.020	U
100-41-4	Ethylbenzene	0.082	0.15	0.051	0.022	J
179601-23-1	m,p-Xylenes	0.098	0.33	0.098	0.042	U
75-25-2	Bromoform	0.040	0.065	0.040	0.014	U
100-42-5	Styrene	0.23	0.15	0.094	0.026	
95-47-6	o-Xylene	0.051	0.15	0.051	0.023	U
111-84-2	n-Nonane	0.079	0.13	0.079	0.022	U
79-34-5	1,1,2,2-Tetrachloroethane	0.35	0.098	0.032	0.014	
98-82-8	Cumene	0.045	0.14	0.045	0.020	U
80-56-8	alpha-Pinene	0.039	0.13	0.039	0.019	U
103-65-1	n-Propylbenzene	0.045	0.14	0.045	0.020	U
622-96-8	4-Ethyltoluene	0.084	0.14	0.084	0.022	U
108-67-8	1,3,5-Trimethylbenzene	0.045	0.14	0.045	0.020	U
95-63-6	1,2,4-Trimethylbenzene	0.042	0.14	0.042	0.019	U
100-44-7	Benzyl Chloride	0.085	0.27	0.085	0.030	U
541-73-1	1,3-Dichlorobenzene	0.036	0.11	0.036	0.017	U
106-46-7	1,4-Dichlorobenzene	0.036	0.11	0.036	0.018	U
95-50-1	1,2-Dichlorobenzene	0.036	0.11	0.036	0.017	U
5989-27-5	d-Limonene	0.072	0.12	0.072	0.025	U
96-12-8	1,2-Dibromo-3-chloropropane	0.043	0.13	0.043	0.013	U
120-82-1	1,2,4-Trichlorobenzene	0.056	0.19	0.056	0.023	U
91-20-3	Naphthalene	0.68	0.13	0.076	0.032	
87-68-3	Hexachlorobutadiene	0.038	0.063	0.038	0.013	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.30	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.077	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.19	0.064	0.025	U
64-17-5	Ethanol	0.22	2.7	0.45	0.20	J
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.41	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.46	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.35	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
108-05-4	Vinyl Acetate	0.77	1.4	0.77	0.34	U
78-93-3	2-Butanone (MEK)	0.11	0.34	0.11	0.037	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.095	0.029	0.012	U
71-43-2	Benzene	0.053	0.16	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.080	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.32	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.079	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.097	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.14	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.11	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.095	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.062	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.23	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.11	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.077	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.11	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.050	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.099	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.076	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.097	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.21	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.087	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.087	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.088	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.090	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.10	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.099	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.049	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 12/13/21
Date(s) Received: 12/14/21
Date(s) Analyzed: 12/29/21

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P211229-MB	99	97	97	70-130	
Lab Control Sample	P211229-LCS	98	93	95	70-130	
Duplicate Lab Control Sample	P211229-DLCS	99	92	93	70-130	
ODSVE-EFF-Y11Q2	P2106529-001	97	95	104	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

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	120	108	109	90	91	57-136	1	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.1	35.0	34.8	83	83	59-128	0	25	
74-87-3	Chloromethane	99.8	86.3	85.7	86	86	59-132	0	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	29.8	26.6	26.4	89	89	63-121	0	25	
75-01-4	Vinyl Chloride	81.4	72.6	72.6	89	89	64-127	0	25	
106-99-0	1,3-Butadiene	93.2	96.3	93.7	103	101	66-134	2	25	
74-83-9	Bromomethane	53.1	48.5	47.6	91	90	63-134	1	25	
75-00-3	Chloroethane	78.1	72.0	71.3	92	91	63-127	1	25	
64-17-5	Ethanol	442	436	442	99	100	59-125	1	25	
75-05-8	Acetonitrile	120	105	107	88	89	63-132	1	25	
107-02-8	Acrolein	182	176	175	97	96	62-126	1	25	
67-64-1	Acetone	431	395	394	92	91	58-128	1	25	
75-69-4	Trichlorofluoromethane	36.0	32.2	31.8	89	88	62-126	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	163	181	183	111	112	52-125	0.9	25	
107-13-1	Acrylonitrile	185	188	190	102	103	71-137	1	25	
75-35-4	1,1-Dichloroethene	53.0	48.4	47.8	91	90	61-133	1	25	
75-09-2	Methylene Chloride	59.9	51.4	50.8	86	85	62-115	1	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	65.2	61.3	62.1	94	95	71-131	1	25	
76-13-1	Trichlorotrifluoroethane	28.2	26.6	26.2	94	93	66-126	1	25	
75-15-0	Carbon Disulfide	133	115	115	86	86	57-134	0	25	
156-60-5	trans-1,2-Dichloroethene	52.5	51.3	51.1	98	97	67-124	1	25	
75-34-3	1,1-Dichloroethane	52.9	47.9	47.5	91	90	68-126	1	25	
1634-04-4	Methyl tert-Butyl Ether	57.2	53.4	53.0	93	93	66-126	0	25	
108-05-4	Vinyl Acetate	268	234	233	87	87	56-139	0	25	
78-93-3	2-Butanone (MEK)	138	133	132	96	96	67-130	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

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	52.0	49.7	49.7	96	96	70-121	0	25	
141-78-6	Ethyl Acetate	161	158	157	98	98	65-128	0	25	
110-54-3	n-Hexane	59.0	56.8	56.7	96	96	63-120	0	25	
67-66-3	Chloroform	43.0	38.0	37.8	88	88	68-123	0	25	
109-99-9	Tetrahydrofuran (THF)	137	131	131	96	96	64-123	0	25	
107-06-2	1,2-Dichloroethane	51.9	47.3	47.1	91	91	65-128	0	25	
71-55-6	1,1,1-Trichloroethane	38.1	33.3	33.2	87	87	68-125	0	25	
71-43-2	Benzene	65.1	56.6	56.6	87	87	69-119	0	25	
56-23-5	Carbon Tetrachloride	32.1	29.7	29.5	93	92	68-132	1	25	
110-82-7	Cyclohexane	120	109	108	91	90	70-117	1	25	
78-87-5	1,2-Dichloropropane	44.6	41.5	41.5	93	93	69-123	0	25	
75-27-4	Bromodichloromethane	31.1	29.1	28.8	94	93	72-128	1	25	
79-01-6	Trichloroethene	38.0	36.2	35.7	95	94	71-123	1	25	
123-91-1	1,4-Dioxane	57.2	54.9	54.9	96	96	71-122	0	25	
80-62-6	Methyl Methacrylate	100	98.8	98.2	99	98	70-128	1	25	
142-82-5	n-Heptane	50.3	47.5	47.5	94	94	69-123	0	25	
10061-01-5	cis-1,3-Dichloropropene	45.8	46.8	46.5	102	102	70-128	0	25	
108-10-1	4-Methyl-2-pentanone	101	104	105	103	104	67-130	1	25	
10061-02-6	trans-1,3-Dichloropropene	44.1	45.0	44.9	102	102	75-133	0	25	
79-00-5	1,1,2-Trichloroethane	38.1	33.7	33.6	88	88	73-119	0	25	
108-88-3	Toluene	54.7	47.2	46.4	86	85	66-119	1	25	
591-78-6	2-Hexanone	99.1	110	110	111	111	62-128	0	25	
124-48-1	Dibromochloromethane	24.7	23.8	23.4	96	95	70-130	1	25	
106-93-4	1,2-Dibromoethane	27.1	25.8	25.2	95	93	74-122	2	25	
123-86-4	n-Butyl Acetate	85.5	96.8	96.4	113	113	65-134	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

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

ALS Sample ID: P211229-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/29/21

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	44.5	43.7	43.1	98	97	69-121	1	25	
127-18-4	Tetrachloroethene	31.3	29.1	28.4	93	91	66-124	2	25	
108-90-7	Chlorobenzene	44.7	40.0	39.2	89	88	70-119	1	25	
100-41-4	Ethylbenzene	47.4	43.6	42.9	92	91	70-124	1	25	
179601-23-1	m,p-Xylenes	95.8	89.4	87.4	93	91	61-134	2	25	
75-25-2	Bromoform	20.3	20.9	20.2	103	100	66-139	3	25	
100-42-5	Styrene	47.5	45.3	44.4	95	93	73-127	2	25	
95-47-6	o-Xylene	47.9	44.6	43.6	93	91	67-125	2	25	
111-84-2	n-Nonane	39.7	41.9	41.4	106	104	63-128	2	25	
79-34-5	1,1,2,2-Tetrachloroethane	30.3	28.4	27.8	94	92	65-127	2	25	
98-82-8	Cumene	41.9	39.3	38.3	94	91	68-124	3	25	
80-56-8	alpha-Pinene	37.7	35.2	34.5	93	92	62-136	1	25	
103-65-1	n-Propylbenzene	42.3	38.9	38.1	92	90	69-123	2	25	
622-96-8	4-Ethyltoluene	42.3	41.1	40.2	97	95	67-129	2	25	
108-67-8	1,3,5-Trimethylbenzene	42.3	41.2	40.2	97	95	67-130	2	25	
95-63-6	1,2,4-Trimethylbenzene	41.9	43.2	42.2	103	101	66-132	2	25	
100-44-7	Benzyl Chloride	80.4	74.4	73.0	93	91	50-147	2	25	
541-73-1	1,3-Dichlorobenzene	34.6	34.1	33.2	99	96	65-130	3	25	
106-46-7	1,4-Dichlorobenzene	34.9	32.9	32.4	94	93	60-131	1	25	
95-50-1	1,2-Dichlorobenzene	34.9	33.6	32.8	96	94	63-129	2	25	
5989-27-5	d-Limonene	37.0	37.3	36.5	101	99	65-136	2	25	
96-12-8	1,2-Dibromo-3-chloropropane	41.8	41.5	40.1	99	96	73-133	3	25	
120-82-1	1,2,4-Trichlorobenzene	56.6	57.7	56.0	102	99	55-142	3	25	
91-20-3	Naphthalene	40.1	38.0	37.4	95	93	57-138	2	25	
87-68-3	Hexachlorobutadiene	19.9	19.3	18.9	97	95	56-138	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.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 12292101.D
Date Analyzed: 12/28/21
Time Analyzed: 23:56

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	231828		11.09		1022838	13.20
Upper Limit	324559		11.42		1431973	13.53
Lower Limit	139097		10.76		613703	12.87

Client Sample ID		IS1 (BCM)	IS2 (DFB)	IS3 (CBZ)
01	Method Blank	215267	11.06	977322
02	Lab Control Sample	221960	11.09	985159
03	Duplicate Lab Control Sample	231048	11.09	1019956
04	ODSVE-EFF-Y11Q2	249980	11.07	1105136
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

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 specified limits.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2106529

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 12292103.D
Date Analyzed: 12/29/21
Time Analyzed: 01:03

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P211229-LCS	12292104.D	01:37
Duplicate Lab Control Sample	P211229-DLCS	12292105.D	02:11
ODSVE-EFF-Y11Q2	P2106529-001	12292132.D	18:40

Data File : I:\MS16\DATA\2021_12\29\12292132.D
 Acq On : 29 Dec 2021 18:40
 Sample : P2106529-001 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 19:35:04 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

12/29/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	249980	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	13.20	114	1105136	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	254146	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	447787	12.222	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.76%
57) Toluene-d8 (SS2)	15.65	98	1081844	11.907	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.28%
73) Bromofluorobenzene (SS3)	18.92	174	413468	12.954	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.60%

Target Compounds

						Qvalue
2) Propene	4.08	42	17350m	0.352	ng	
3) Dichlorodifluoromethan...	4.21	85	119440	2.178	ng	99
4) Chloromethane	4.52	50	3268	0.066	ng	88
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	2047	0.082	ng	88
6) Vinyl Chloride	4.92	62	3929	0.096	ng	95
7) 1,3-Butadiene	5.18	54	508	N.D.		
8) Bromomethane	5.59	94	842	N.D.		
9) Chloroethane	5.93	64	1737	0.089	ng	81
10) Ethanol	6.31	45	99180	3.573	ng	98
11) Acetonitrile	6.59	41	6209	0.084	ng	99
12) Acrolein	6.78	56	13553	0.690	ng	98
13) Acetone	6.98	58	42486m	1.823	ng	
14) Trichlorofluoromethane	7.18	101	51242	1.069	ng	100
15) 2-Propanol (Isopropanol)	7.39	45	2705	N.D.		
16) Acrylonitrile	7.75	53	52	N.D.		
17) 1,1-Dichloroethene	8.13	96	22521	0.964	ng	93
18) 2-Methyl-2-Propanol (t...	8.13	59	1427	N.D.		
19) Methylene Chloride	8.35	84	1869	0.071	ng	98
20) 3-Chloro-1-propene (Al...	8.52	41	300	N.D.		
21) Trichlorotrifluoroethane	8.77	151	366089	17.577	ng	92
22) Carbon Disulfide	8.61	76	174045	1.835	ng	99
23) trans-1,2-Dichloroethene	9.62	61	65412	1.629	ng	96
24) 1,1-Dichloroethane	9.87	63	22768	0.455	ng	100
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	10.12	86	6201	1.315	ng	# 7
27) 2-Butanone (MEK)	10.49	72	2258m	0.139	ng	
28) cis-1,2-Dichloroethene	10.88	61	2353409	59.421	ng	96
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	0.00	61	0	N.D.	d	
31) n-Hexane	11.18	57	918	N.D.		
32) Chloroform	11.23	83	1034340	24.005	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	12.04	62	1192	N.D.		
38) 1,1,1-Trichloroethane	12.32	97	26761	0.663	ng	97
39) Isopropyl Acetate	12.80	61	583	No Calib	#	
40) 1-Butanol	12.88	56	4386	No Calib	#	
41) Benzene	12.80	78	44337	0.433	ng	100
42) Carbon Tetrachloride	12.96	117	59221	1.734	ng	99
43) Cyclohexane	13.09	84	714	N.D.		
44) tert-Amyl Methyl Ether	13.44	73	2231	N.D.		
45) 1,2-Dichloropropane	13.65	63	468	N.D.		
46) Bromodichloromethane	13.84	83	1885	0.055	ng	86
47) Trichloroethene	13.90	130	2302873	87.550	ng	96
48) 1,4-Dioxane	0.00	88	0	N.D.	d	
49) 2,2,4-Trimethylpentane...	13.97	57	13516	0.107	ng	88
50) Methyl Methacrylate	0.00	100	0	N.D.	d	

Data File : I:\MS16\DATA\2021_12\29\12292132.D
 Acq On : 29 Dec 2021 18:40
 Sample : P2106529-001 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 19:35:04 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

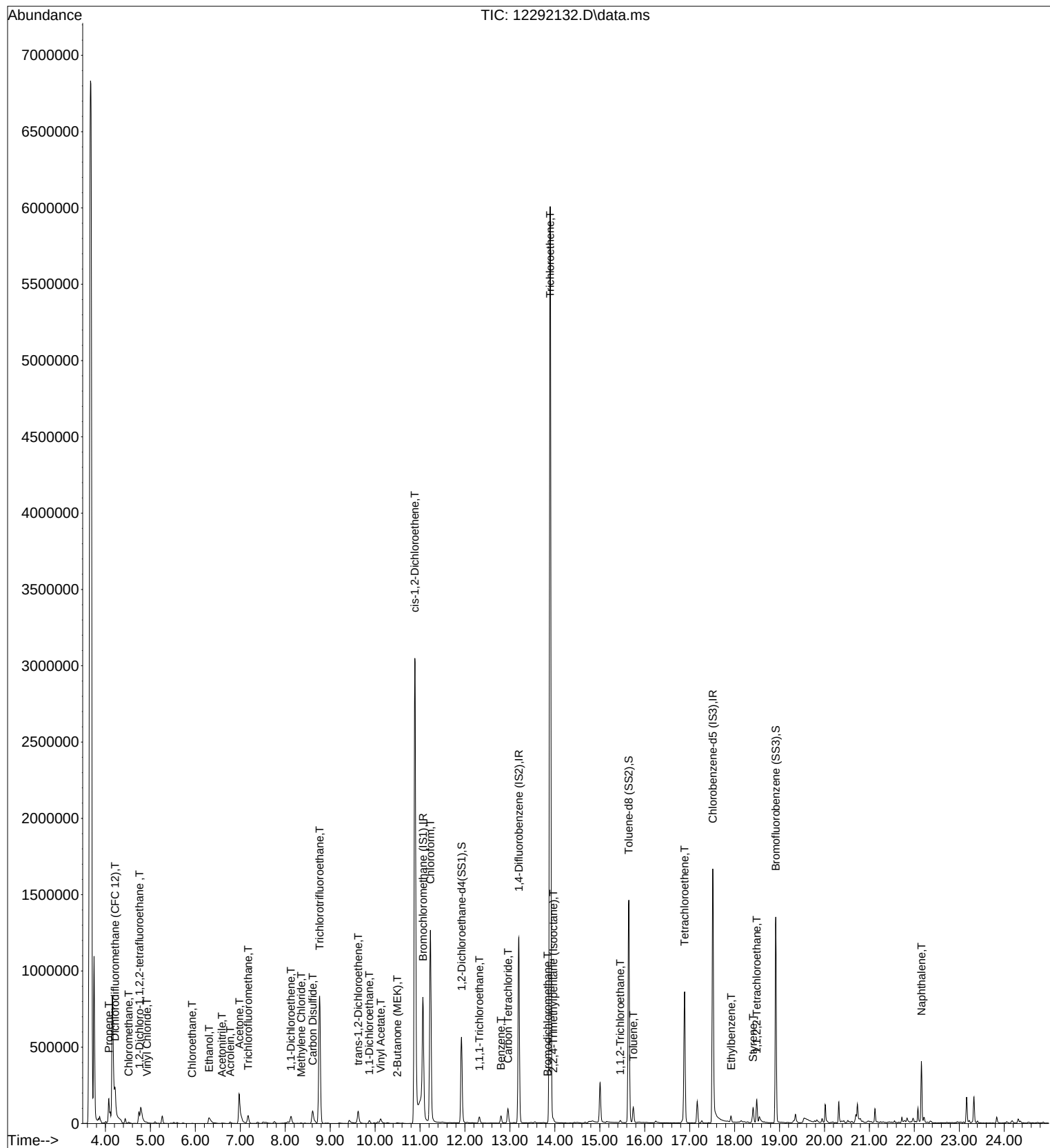
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	188	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.45	97	4646	0.193	ng	98
58) Toluene	15.74	91	81667	0.818	ng	98
59) 2-Hexanone	16.05	43	1815	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.65	43	930	N.D.		
63) n-Octane	16.75	57	587	N.D.		
64) Tetrachloroethene	16.89	166	295505	11.001	ng	99
65) Chlorobenzene	17.56	112	384	N.D.		
66) Ethylbenzene	17.92	91	30248	0.276	ng	99
67) m- & p-Xylenes	18.08	91	3602	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.41	104	48547	0.743	ng	99
70) o-Xylene	18.52	91	1385	N.D.		
71) n-Nonane	18.71	43	2181	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.49	83	77154	1.886	ng	100
74) Cumene	19.04	105	1301	N.D.		
75) alpha-Pinene	19.40	93	312	N.D.		
76) n-Propylbenzene	19.49	91	987	N.D.		
77) 3-Ethyltoluene	19.62	105	1454	No Calib		
78) 4-Ethyltoluene	19.62	105	1454	N.D.		
79) 1,3,5-Trimethylbenzene	19.70	105	723	N.D.		
80) alpha-Methylstyrene	19.83	118	3307	No Calib	#	
81) 2-Ethyltoluene	19.62	105	1454	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	2983	N.D.		
83) n-Decane	20.01	58	1157	No Calib		
84) Benzyl Chloride	20.18	91	189	N.D.		
85) 1,3-Dichlorobenzene	20.19	146	215	N.D.		
86) 1,4-Dichlorobenzene	20.25	146	722	N.D.		
87) sec-Butylbenzene	20.43	105	1042	N.D.		
88) 4-Isopropyltoluene (p-...	20.43	119	4392	N.D.		
89) 1,2,3-Trimethylbenzene	20.43	105	1042	No Calib	#	
90) 1,2-Dichlorobenzene	20.54	146	201	N.D.		
91) d-Limonene	20.56	68	966	N.D.		
92) 1,2-Dibromo-3-Chloropr...	20.86	157	403	N.D.		
93) n-Undecane	21.12	57	15875	No Calib		
94) 1,2,4-Trichlorobenzene	22.05	180	117	N.D.		
95) Naphthalene	22.16	128	300602	2.746	ng	99
96) n-Dodecane	22.16	57	2109	No Calib	#	
97) Hexachlorobutadiene	22.48	225	228	N.D.		
98) Cyclohexanone	18.14	55	1171	No Calib	#	
99) tert-Butylbenzene	20.02	119	2910	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 File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 19:35:04 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_12\29\12292132.D
 Acq On : 29 Dec 2021 18:40
 Sample : P2106529-001 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 19:35:04 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

12/29/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	249980	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	13.20	114	1105136	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	254146	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	447787	12.222	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.76%
57) Toluene-d8 (SS2)	15.65	98	1081844	11.907	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.28%
73) Bromofluorobenzene (SS3)	18.92	174	413468	12.954	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.60%

Target Compounds

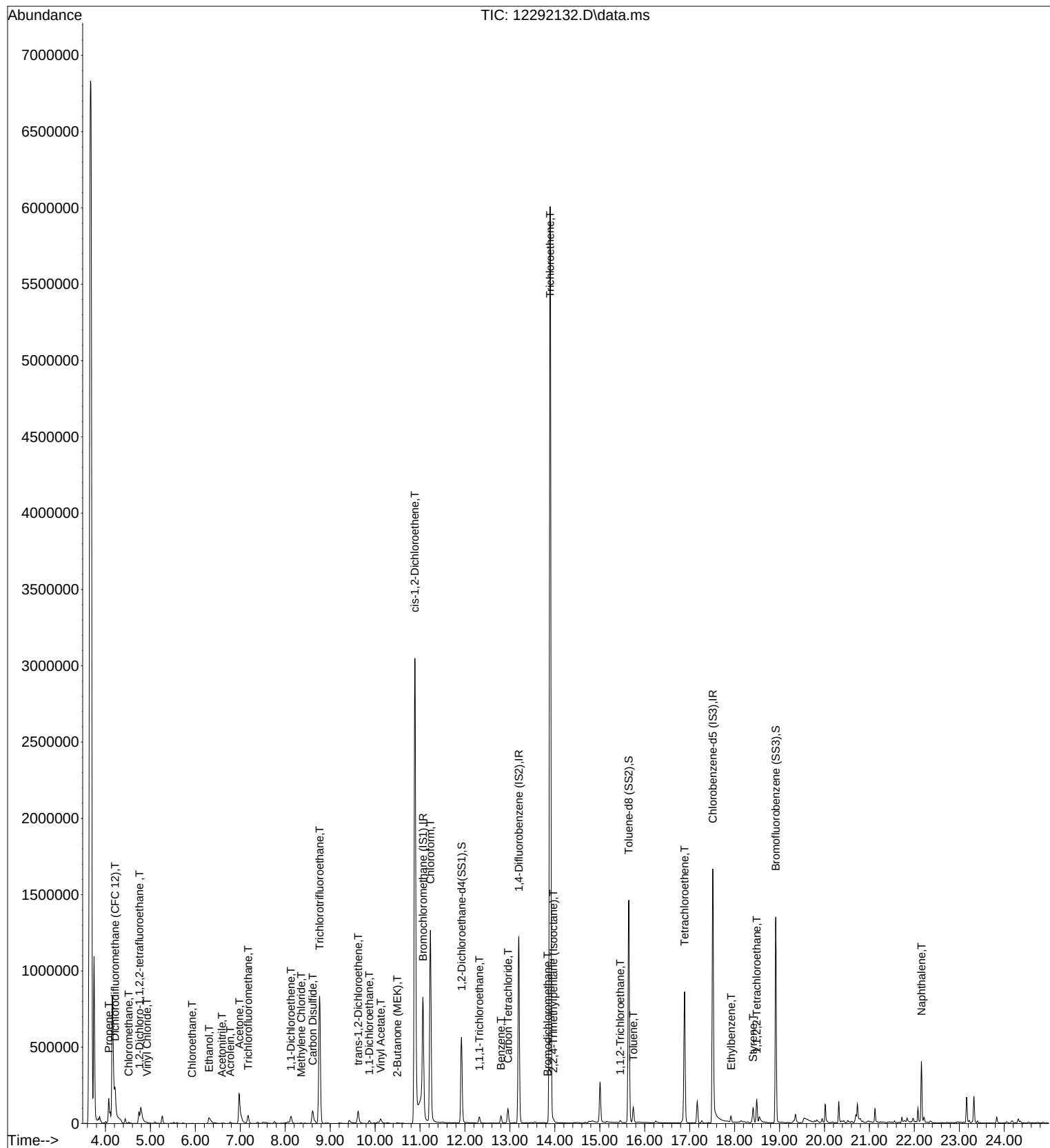
						Qvalue
2) Propene	4.08	42	17350m	0.352	ng	
3) Dichlorodifluoromethan...	4.21	85	119440	2.178	ng	99
4) Chloromethane	4.52	50	3268	0.066	ng	88
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	2047	0.082	ng	88
6) Vinyl Chloride	4.92	62	3929	0.096	ng	95
9) Chloroethane	5.93	64	1737	0.089	ng	81
10) Ethanol	6.31	45	99180	3.573	ng	98
11) Acetonitrile	6.59	41	6209	0.084	ng	99
12) Acrolein	6.78	56	13553	0.690	ng	98
13) Acetone	6.98	58	42486m	1.823	ng	
14) Trichlorofluoromethane	7.18	101	51242	1.069	ng	100
17) 1,1-Dichloroethene	8.13	96	22521	0.964	ng	93
19) Methylene Chloride	8.35	84	1869	0.071	ng	98
21) Trichlorotrifluoroethane	8.77	151	366089	17.577	ng	92
22) Carbon Disulfide	8.61	76	174045	1.835	ng	99
23) trans-1,2-Dichloroethene	9.62	61	65412	1.629	ng	96
24) 1,1-Dichloroethane	9.87	63	22768	0.455	ng	100
26) Vinyl Acetate	10.12	86	6201	1.315	ng	# 7
27) 2-Butanone (MEK)	10.49	72	2258m	0.139	ng	
28) cis-1,2-Dichloroethene	10.88	61	2353409	59.421	ng	96
32) Chloroform	11.23	83	1034340	24.005	ng	100
38) 1,1,1-Trichloroethane	12.32	97	26761	0.663	ng	97
41) Benzene	12.80	78	44337	0.433	ng	100
42) Carbon Tetrachloride	12.96	117	59221	1.734	ng	99
46) Bromodichloromethane	13.84	83	1885	0.055	ng	86
47) Trichloroethene	13.90	130	2302873	87.550	ng	96
49) 2,2,4-Trimethylpentane...	13.97	57	13516	0.107	ng	88
55) 1,1,2-Trichloroethane	15.45	97	4646	0.193	ng	98
58) Toluene	15.74	91	81667	0.818	ng	98
64) Tetrachloroethene	16.89	166	295505	11.001	ng	99
66) Ethylbenzene	17.92	91	30248	0.276	ng	99
69) Styrene	18.41	104	48547	0.743	ng	99
72) 1,1,2,2-Tetrachloroethane	18.49	83	77154	1.886	ng	100
95) Naphthalene	22.16	128	300602	2.746	ng	99

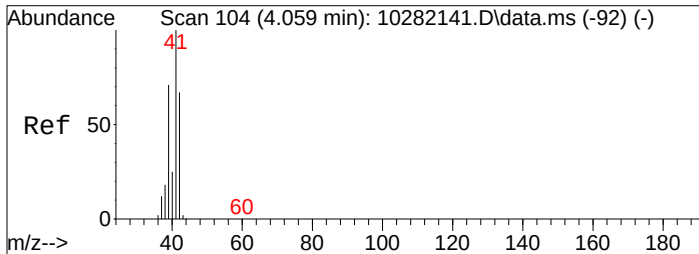
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

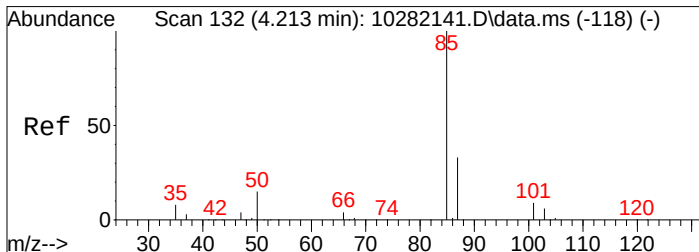
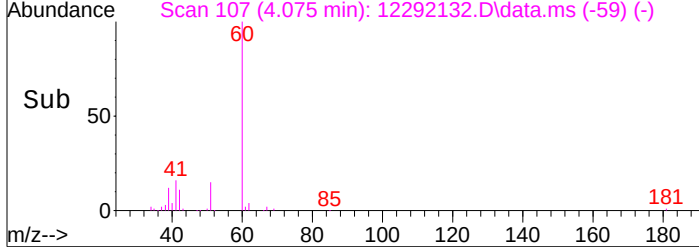
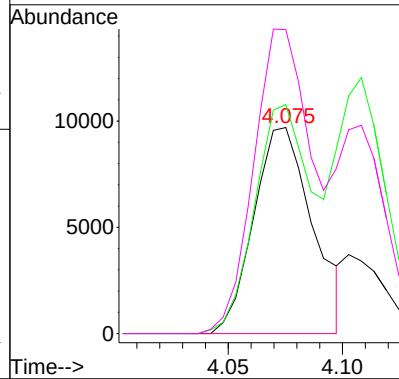
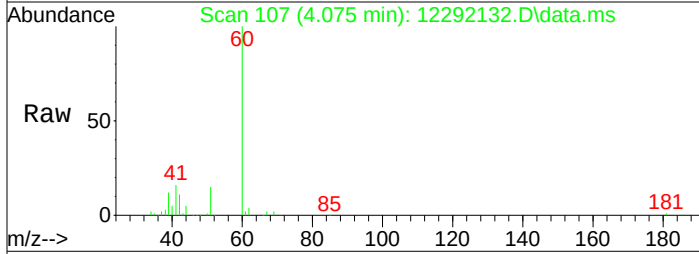
Quant Time: Dec 29 19:35:04 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M





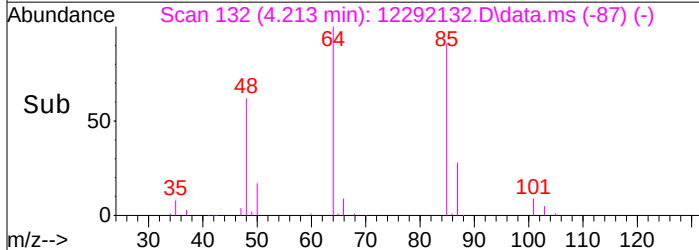
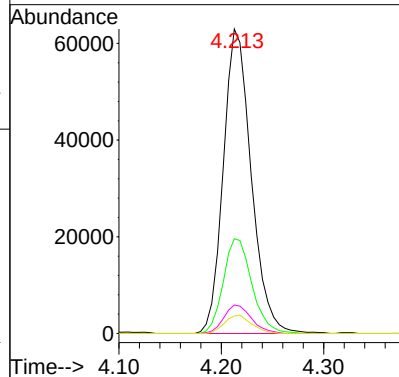
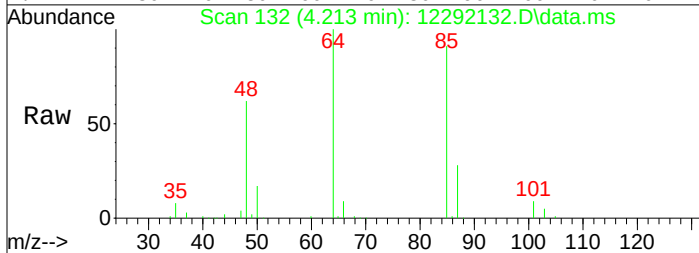
#2
 Propene
 Concen: 0.35 ng m
 RT: 4.08 min Scan# 107
 Delta R.T. 0.017 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

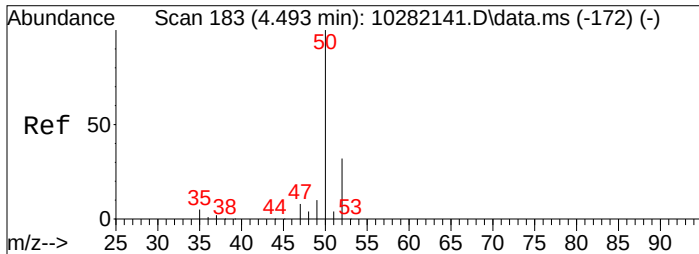
Tgt Ion: 42 Resp: 17350
 Ion Ratio Lower Upper
 42 100
 39 109.4 86.5 126.5
 41 143.5 128.8 168.8



#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.18 ng
 RT: 4.21 min Scan# 132
 Delta R.T. -0.000 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

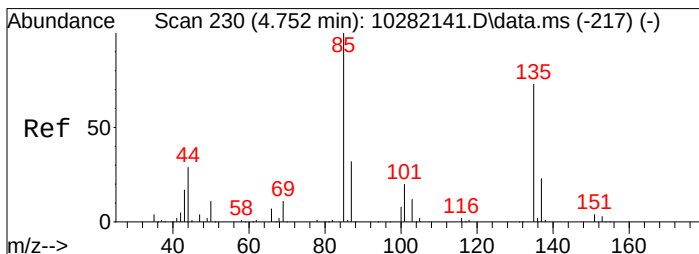
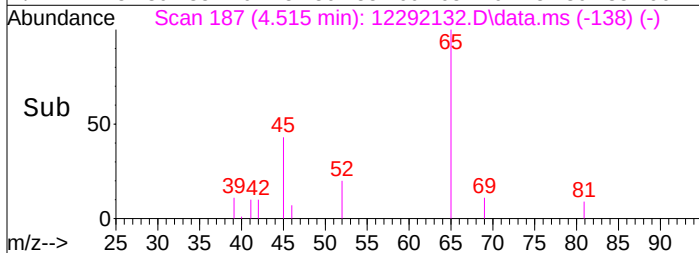
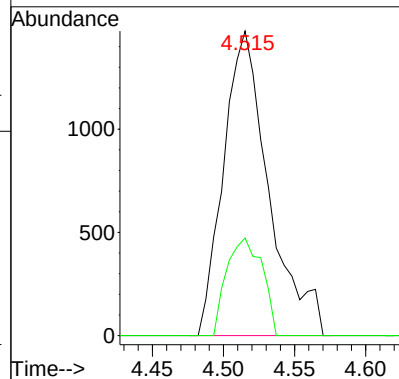
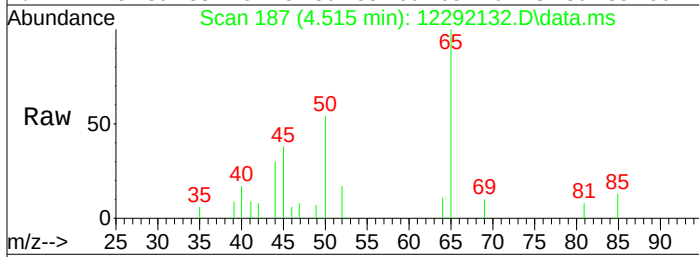
Tgt Ion: 85 Resp: 119440
 Ion Ratio Lower Upper
 85 100
 87 31.8 12.5 52.5
 101 9.2 0.0 28.9
 103 5.8 0.0 25.8





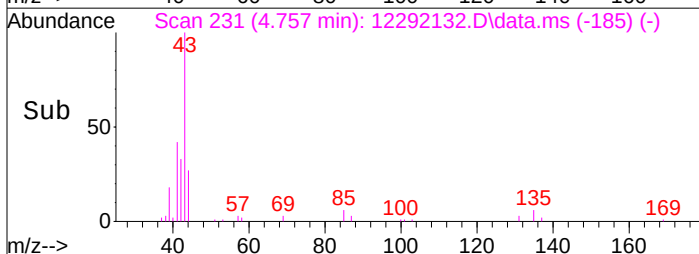
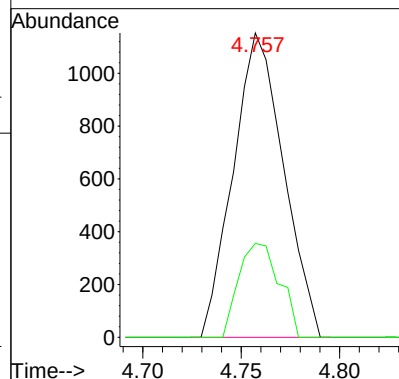
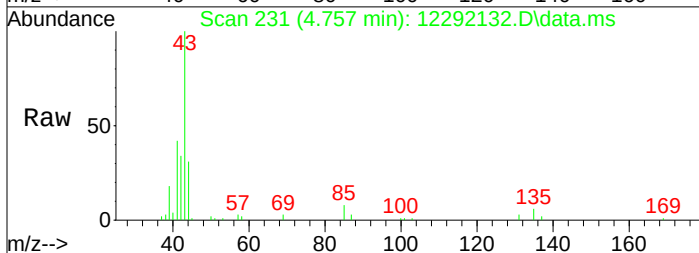
#4
Chloromethane
Concen: 0.07 ng
RT: 4.52 min Scan# 187
Delta R.T. 0.022 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

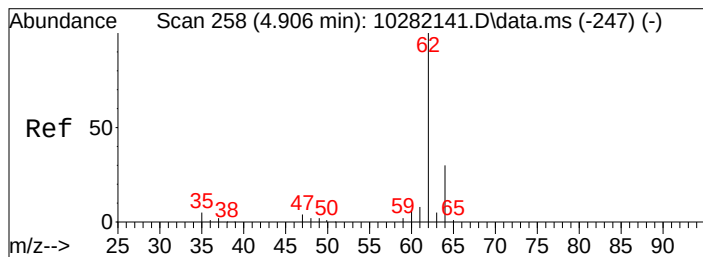
Tgt Ion: 50 Resp: 3268
Ion Ratio Lower Upper
50 100
52 25.1 11.8 51.8



#5
1,2-Dichloro-1,1,2,2-tetrafluoroethane
Concen: 0.08 ng
RT: 4.76 min Scan# 231
Delta R.T. 0.006 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

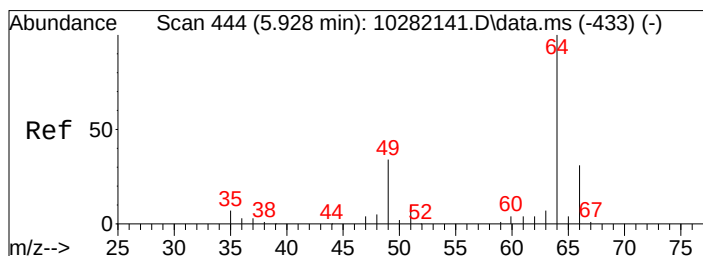
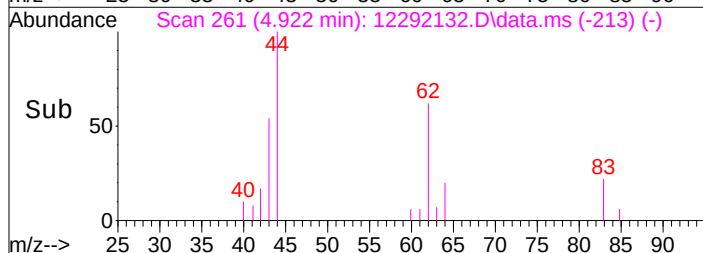
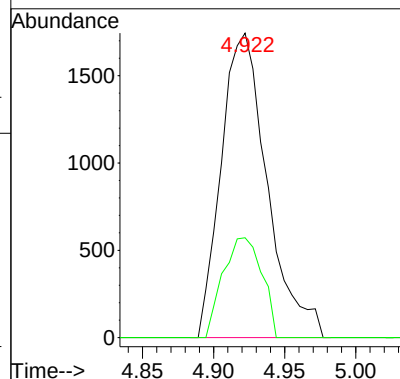
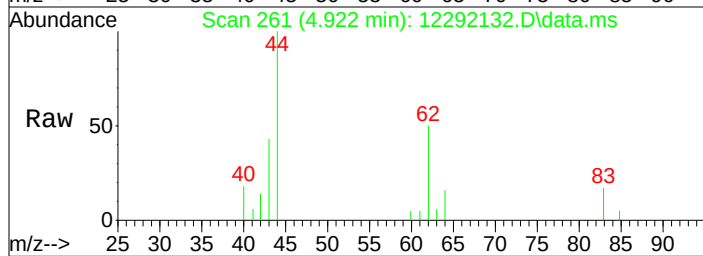
Tgt Ion: 135 Resp: 2047
Ion Ratio Lower Upper
135 100
137 25.1 11.9 51.9





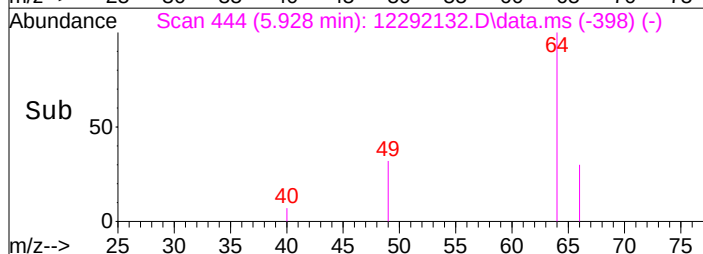
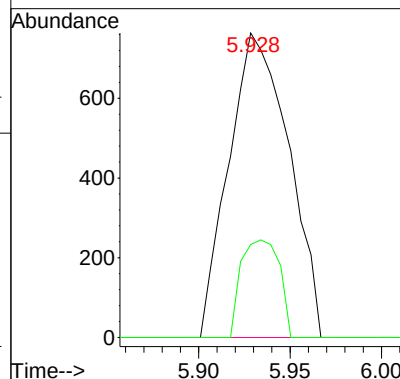
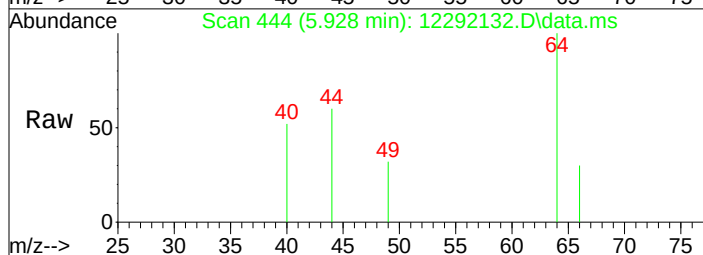
#6
 Vinyl Chloride
 Concen: 0.10 ng
 RT: 4.92 min Scan# 261
 Delta R.T. 0.016 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

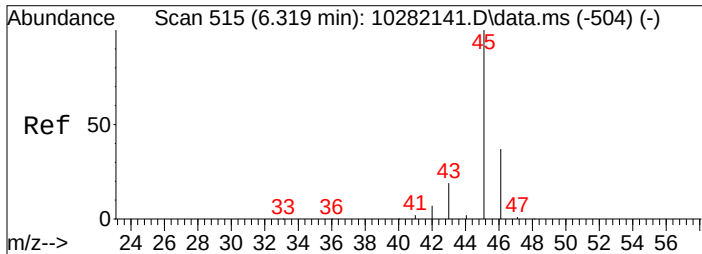
Tgt Ion: 62 Resp: 3929
 Ion Ratio Lower Upper
 62 100
 64 27.7 10.2 50.2



#9
 Chloroethane
 Concen: 0.09 ng
 RT: 5.93 min Scan# 444
 Delta R.T. 0.000 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

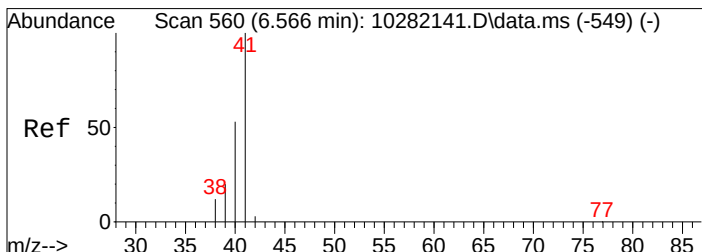
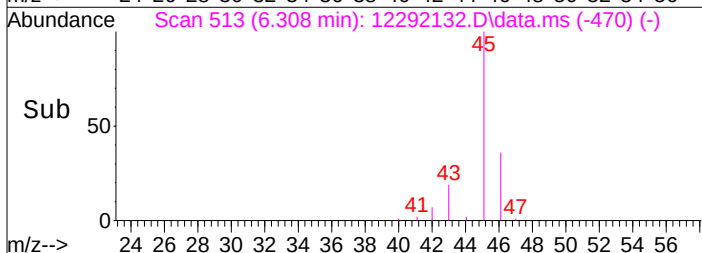
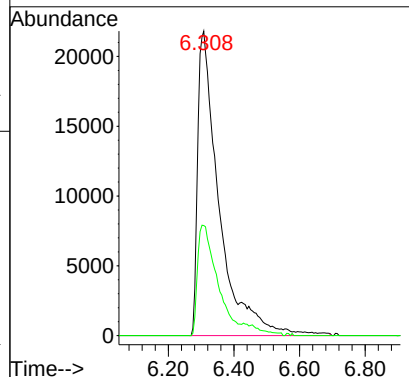
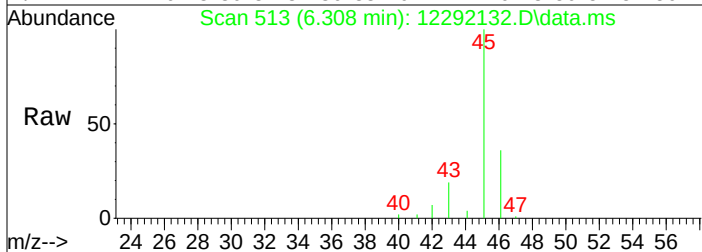
Tgt Ion: 64 Resp: 1737
 Ion Ratio Lower Upper
 64 100
 66 20.6 11.0 51.0





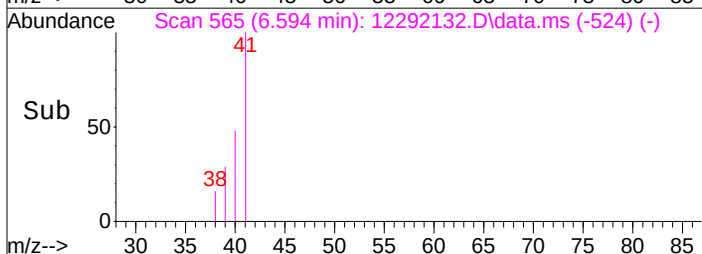
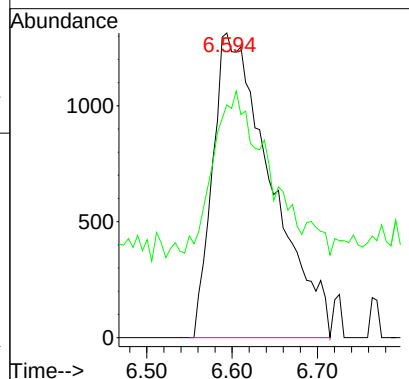
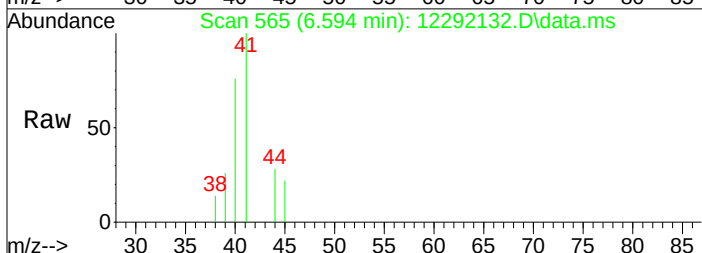
#10
Ethanol
Concen: 3.57 ng
RT: 6.31 min Scan# 513
Delta R.T. -0.011 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

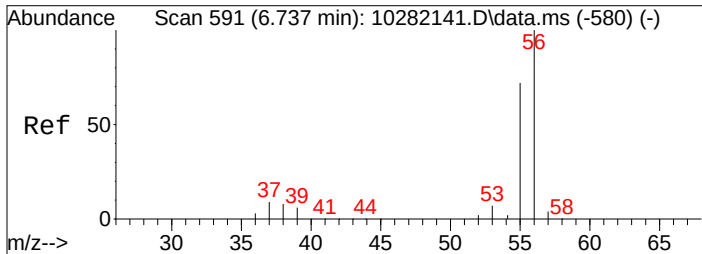
Tgt Ion: 45 Resp: 99180
Ion Ratio Lower Upper
45 100
46 36.7 17.6 57.6



#11
Acetonitrile
Concen: 0.08 ng
RT: 6.59 min Scan# 565
Delta R.T. 0.027 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

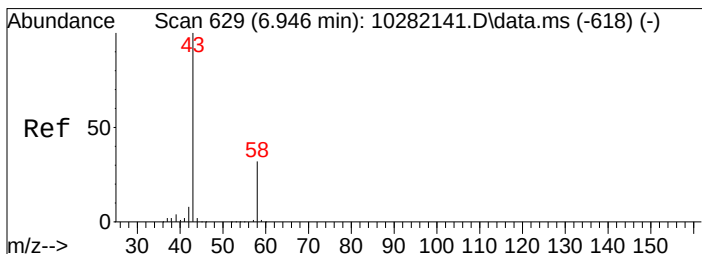
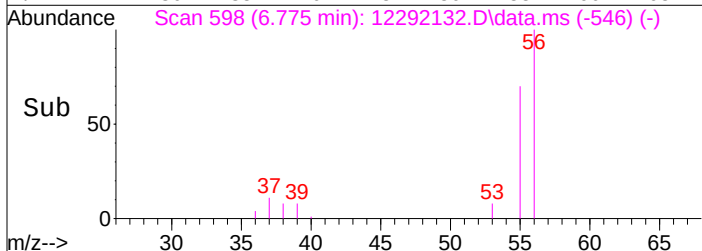
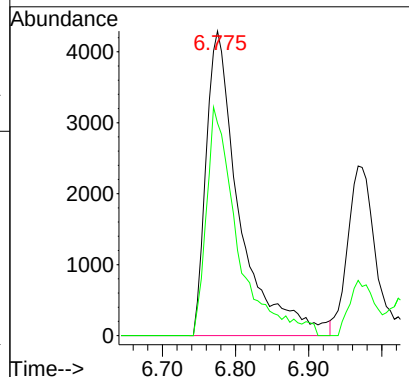
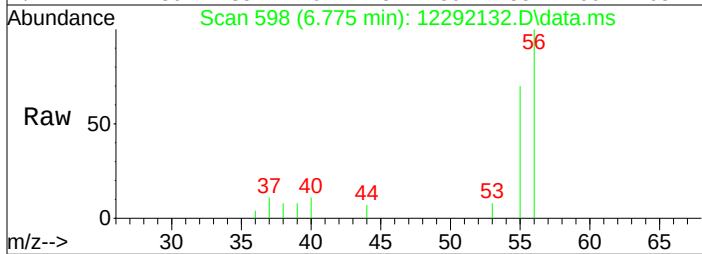
Tgt Ion: 41 Resp: 6209
Ion Ratio Lower Upper
41 100
40 52.0 32.8 72.8





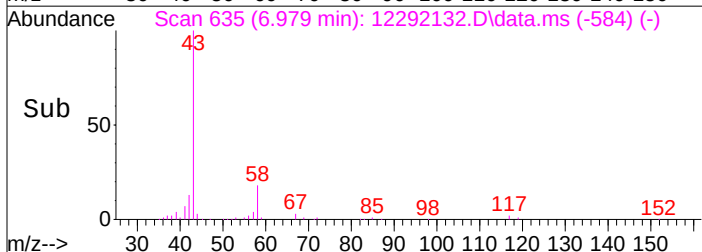
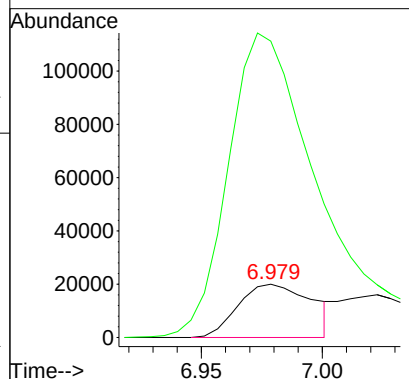
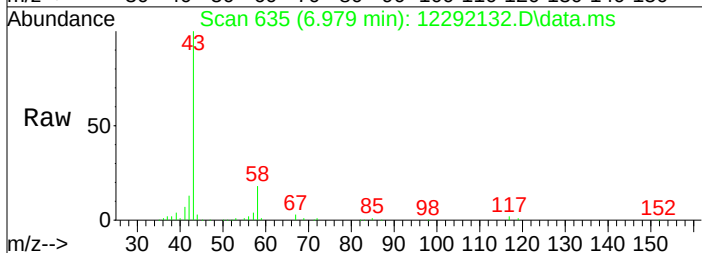
#12
 Acrolein
 Concen: 0.69 ng
 RT: 6.78 min Scan# 598
 Delta R.T. 0.038 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

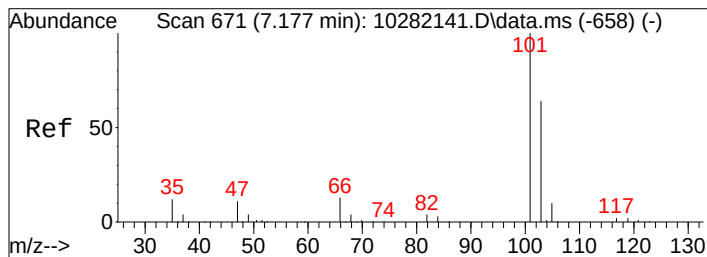
Tgt Ion:	56	Resp:	13553
Ion Ratio		Lower	Upper
56	100		
55	69.8	51.4	91.4



#13
 Acetone
 Concen: 1.82 ng m
 RT: 6.98 min Scan# 635
 Delta R.T. 0.033 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

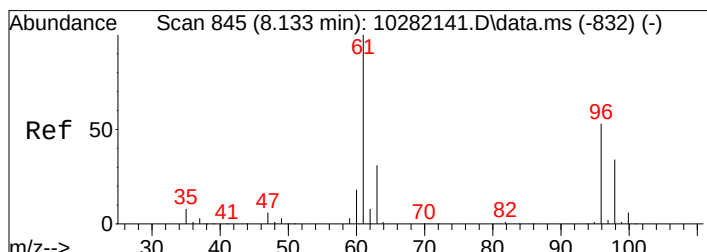
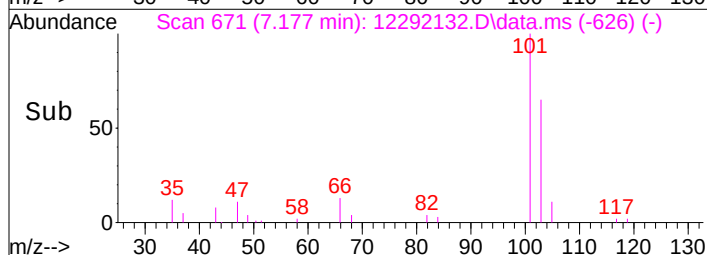
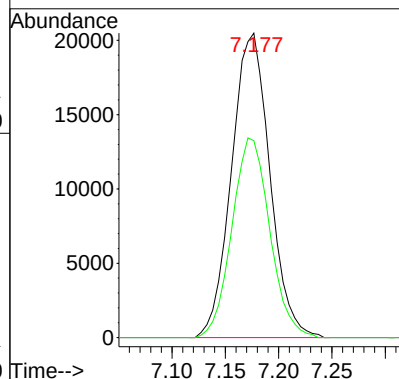
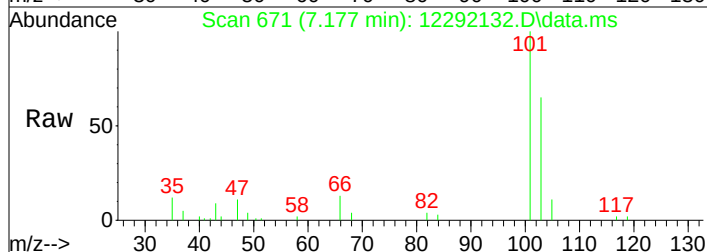
Tgt Ion:	58	Resp:	42486
Ion Ratio		Lower	Upper
58	100		
43	788.2	291.4	351.4#





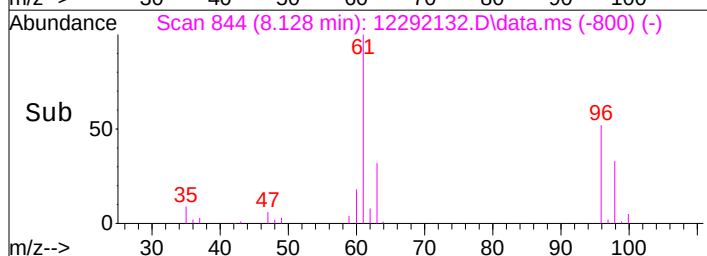
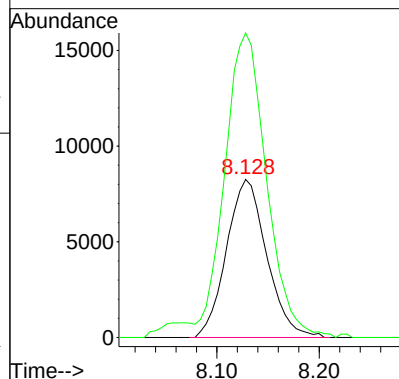
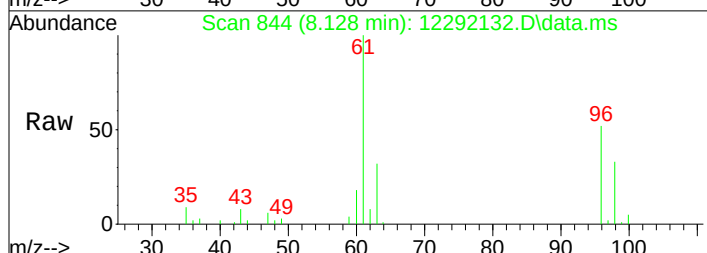
#14
 Trichlorofluoromethane
 Concen: 1.07 ng
 RT: 7.18 min Scan# 671
 Delta R.T. 0.000 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

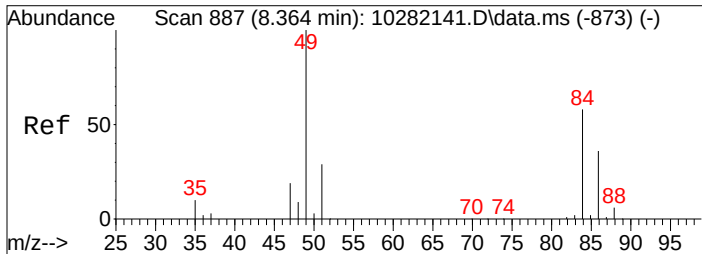
Tgt Ion: 101 Resp: 51242
 Ion Ratio Lower Upper
 101 100
 103 64.7 44.6 84.6



#17
 1,1-Dichloroethene
 Concen: 0.96 ng
 RT: 8.13 min Scan# 844
 Delta R.T. -0.005 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

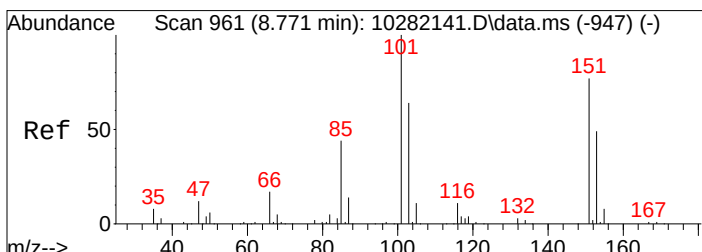
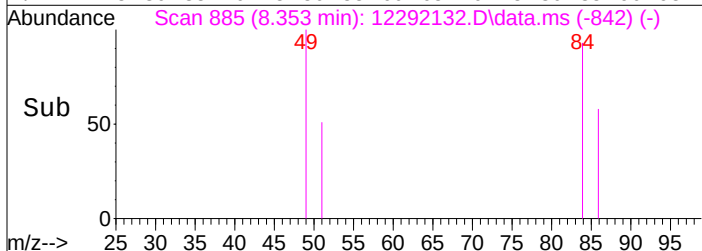
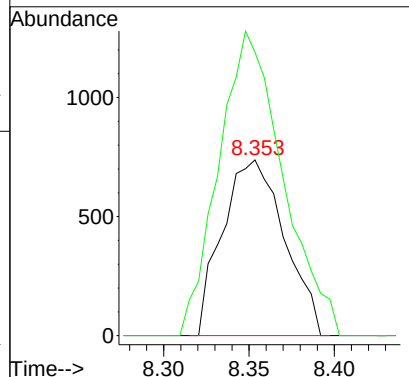
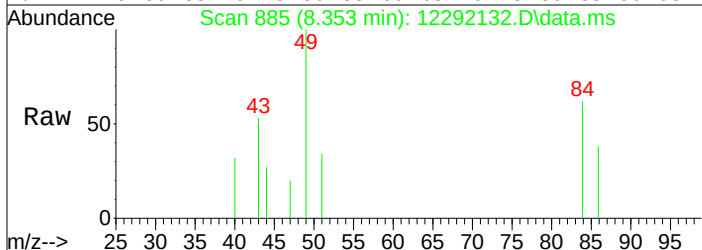
Tgt Ion: 96 Resp: 22521
 Ion Ratio Lower Upper
 96 100
 61 199.7 169.6 209.6





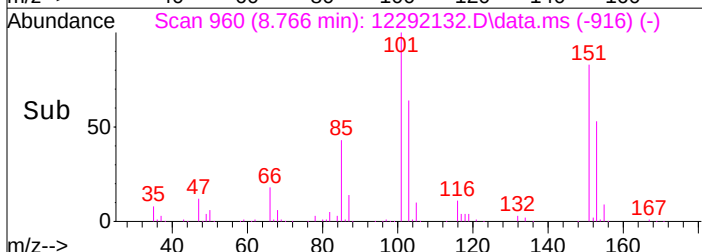
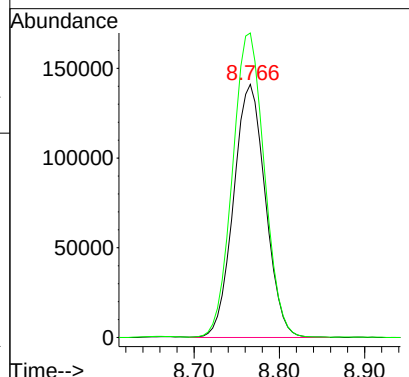
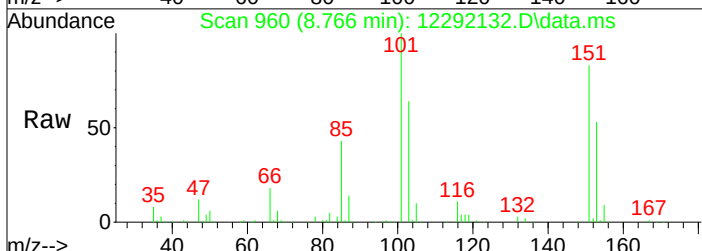
#19
Methylene Chloride
Concen: 0.07 ng
RT: 8.35 min Scan# 885
Delta R.T. -0.011 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

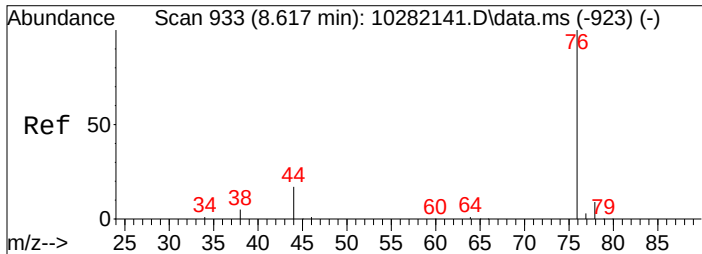
Tgt Ion: 84 Resp: 1869
Ion Ratio Lower Upper
84 100
49 179.1 151.0 201.0



#21
Trichlorotrifluoroethane
Concen: 17.58 ng
RT: 8.77 min Scan# 960
Delta R.T. -0.005 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

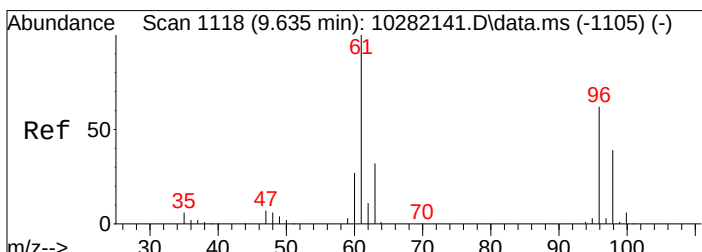
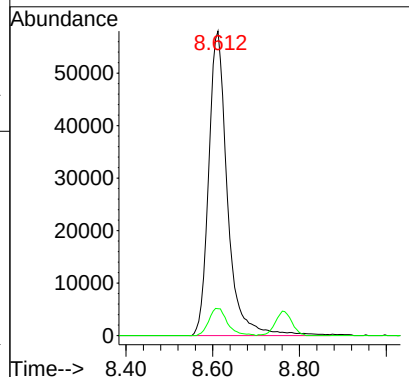
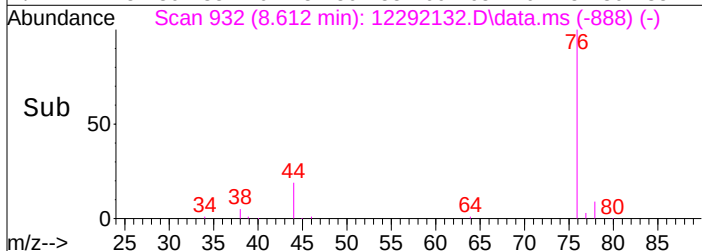
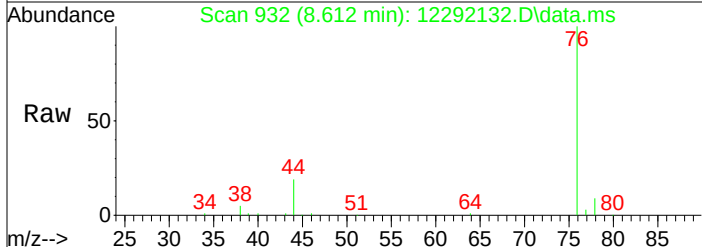
Tgt Ion: 151 Resp: 366089
Ion Ratio Lower Upper
151 100
101 120.4 110.2 150.2





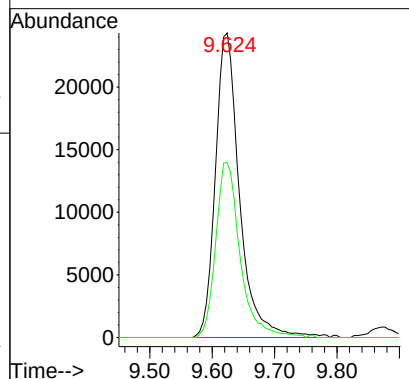
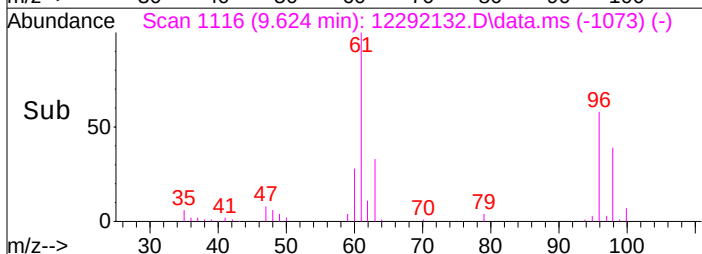
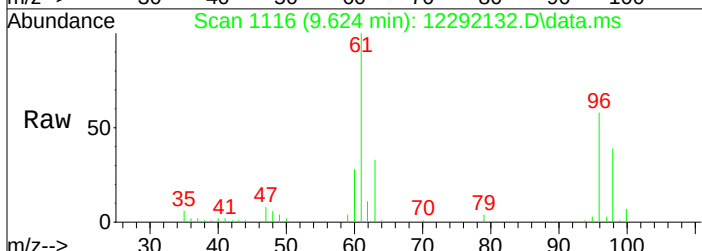
#22
Carbon Disulfide
Concen: 1.83 ng
RT: 8.61 min Scan# 932
Delta R.T. -0.005 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

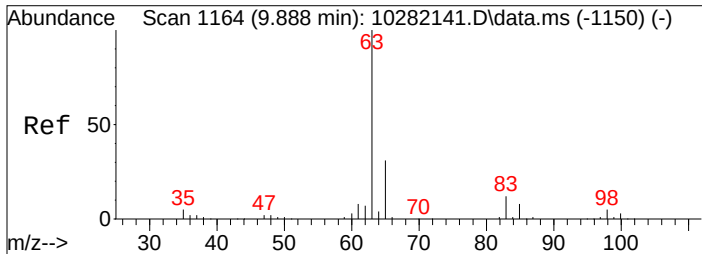
Tgt Ion: 76 Resp: 174045
Ion Ratio Lower Upper
76 100
78 8.9 0.0 29.2



#23
trans-1,2-Dichloroethene
Concen: 1.63 ng
RT: 9.62 min Scan# 1116
Delta R.T. -0.011 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

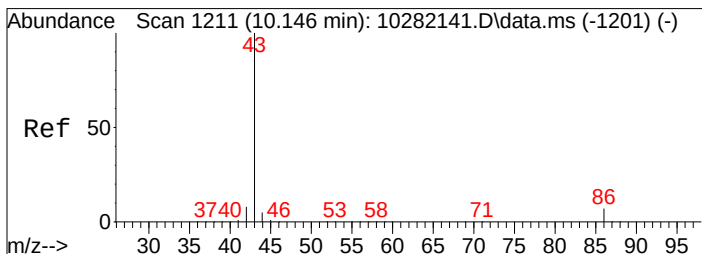
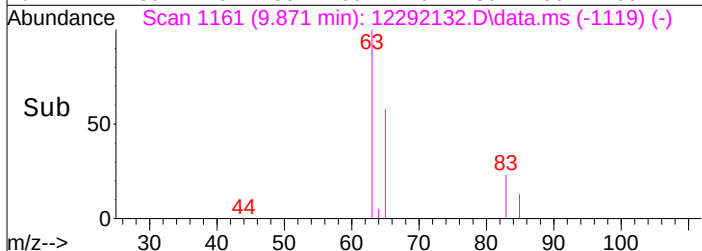
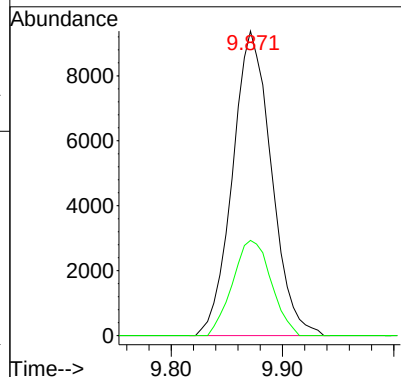
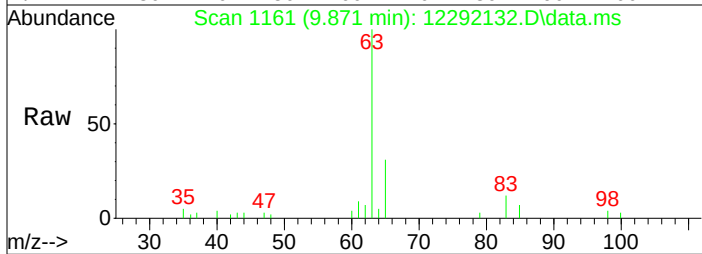
Tgt Ion: 61 Resp: 65412
Ion Ratio Lower Upper
61 100
96 58.0 40.9 80.9





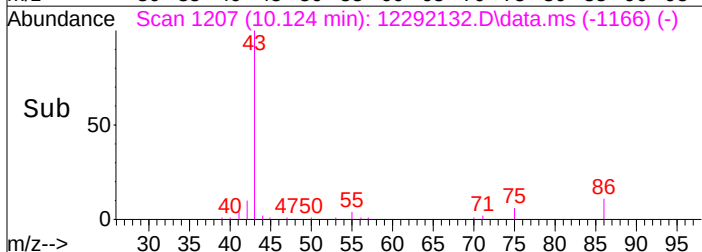
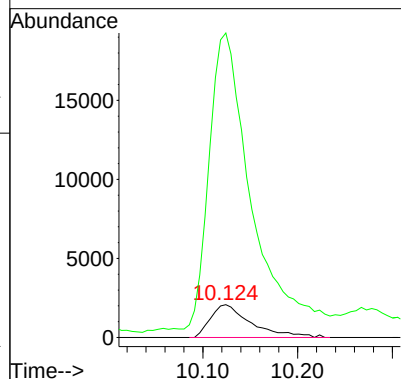
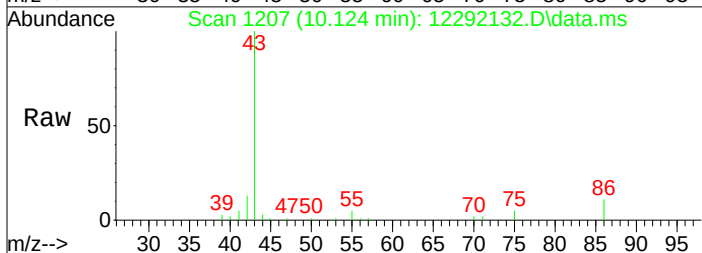
#24
 1,1-Dichloroethane
 Concen: 0.45 ng
 RT: 9.87 min Scan# 1161
 Delta R.T. -0.016 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

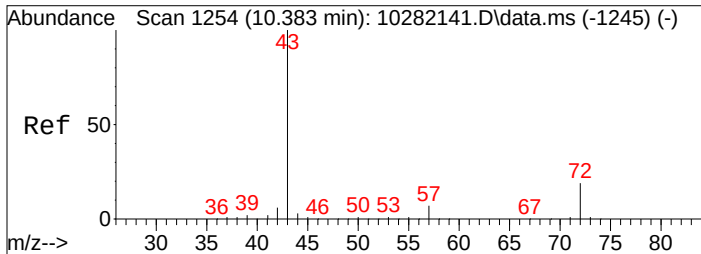
Tgt Ion: 63 Resp: 22768
 Ion Ratio Lower Upper
 63 100
 65 31.1 10.9 50.9



#26
 Vinyl Acetate
 Concen: 1.32 ng
 RT: 10.12 min Scan# 1207
 Delta R.T. -0.022 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

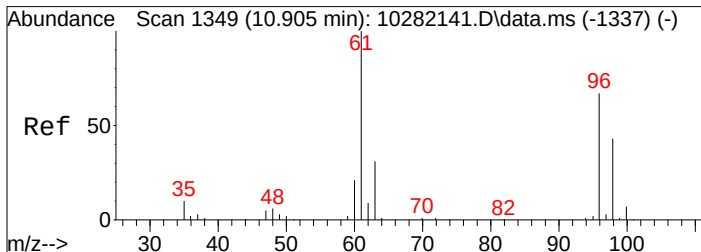
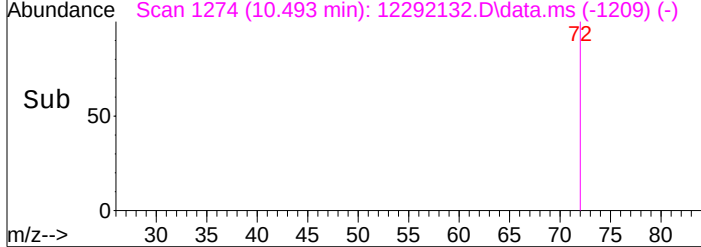
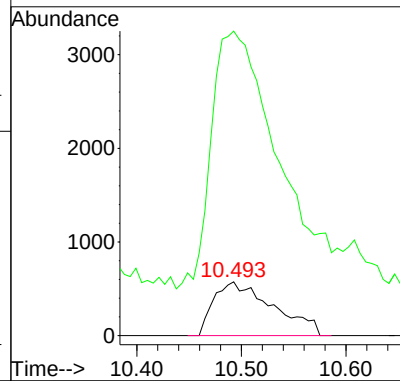
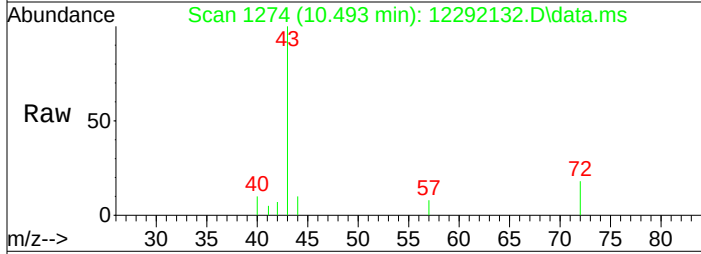
Tgt Ion: 86 Resp: 6201
 Ion Ratio Lower Upper
 86 100
 43 944.0 1480.2 1520.2#





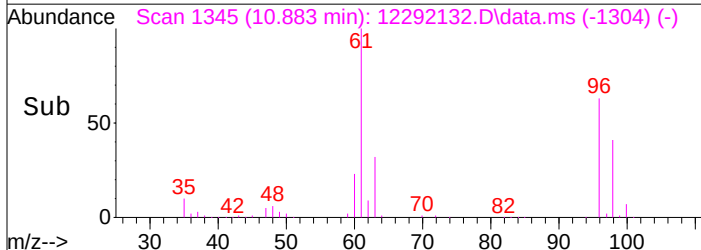
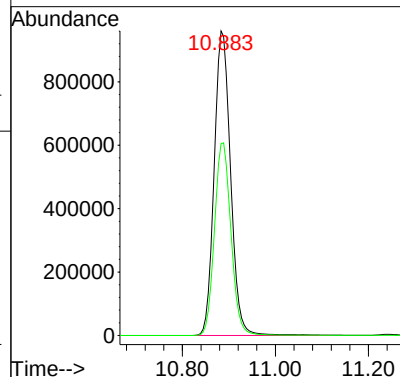
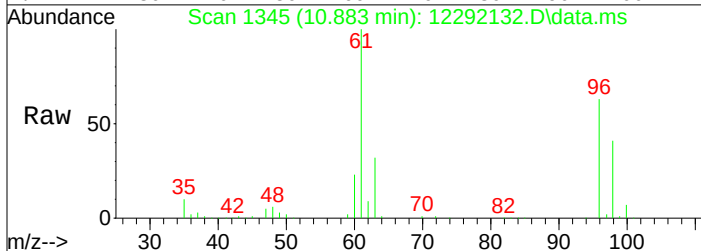
#27
2-Butanone (MEK)
Concen: 0.14 ng m
RT: 10.49 min Scan# 1274
Delta R.T. 0.110 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

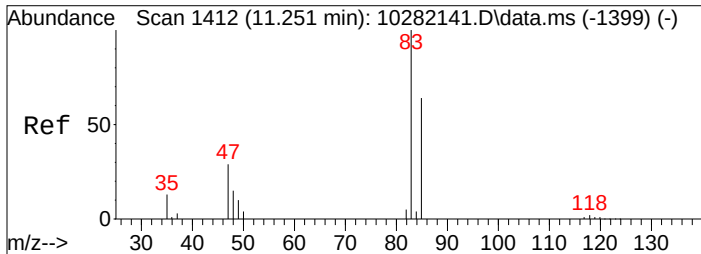
Tgt Ion: 72 Resp: 2258
Ion Ratio Lower Upper
72 100
43 227.9 506.0 546.0#



#28
cis-1,2-Dichloroethene
Concen: 59.42 ng
RT: 10.88 min Scan# 1345
Delta R.T. -0.022 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

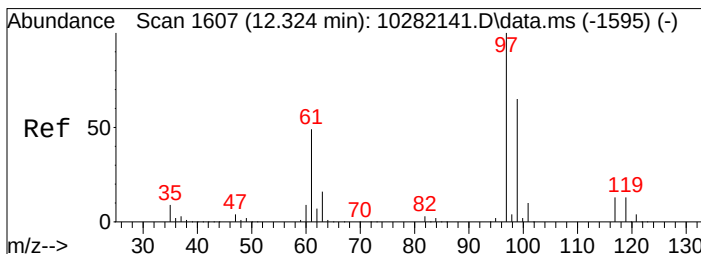
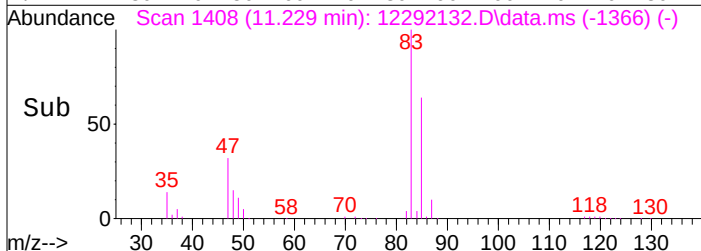
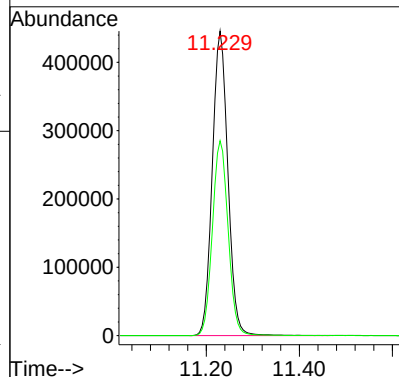
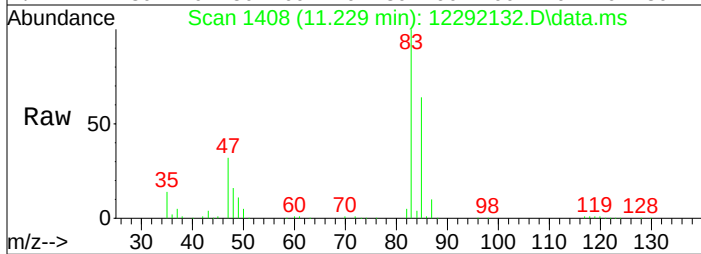
Tgt Ion: 61 Resp: 2353409
Ion Ratio Lower Upper
61 100
96 63.6 46.8 86.8





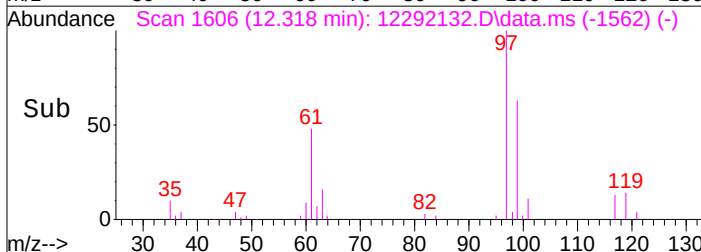
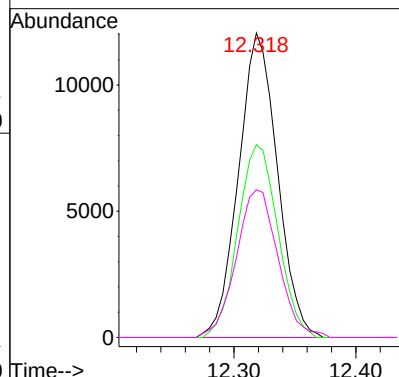
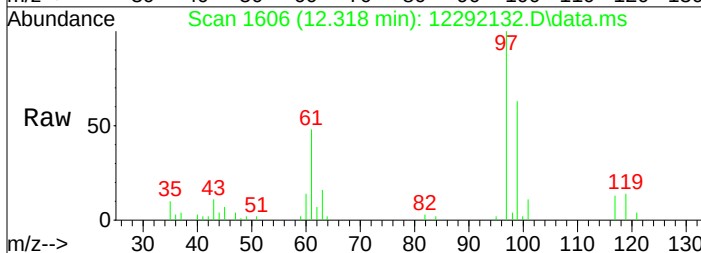
#32
Chloroform
Concen: 24.00 ng
RT: 11.23 min Scan# 1408
Delta R.T. -0.022 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

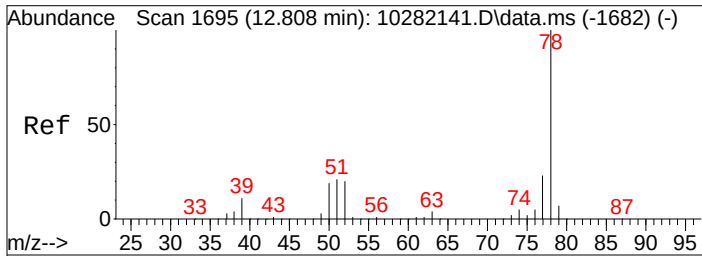
Tgt Ion: 83 Resp: 1034340
Ion Ratio Lower Upper
83 100
85 64.6 44.7 84.7



#38
1,1,1-Trichloroethane
Concen: 0.66 ng
RT: 12.32 min Scan# 1606
Delta R.T. -0.005 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

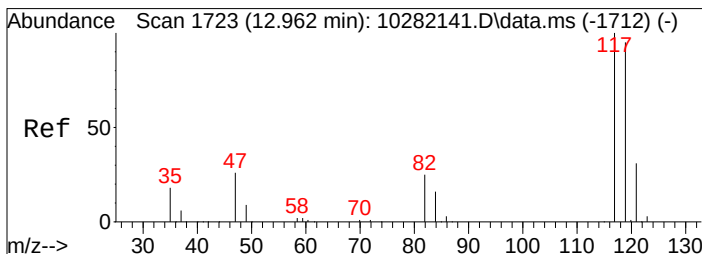
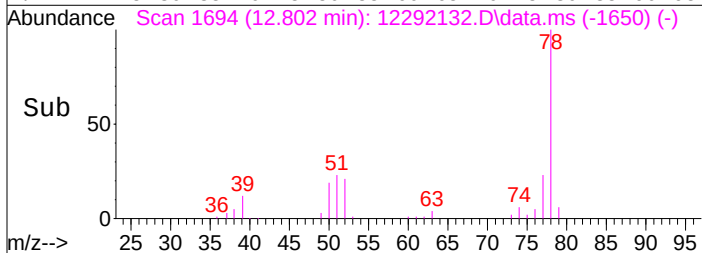
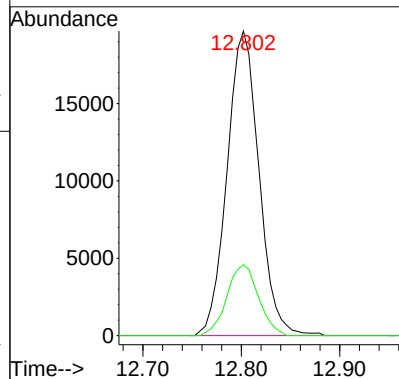
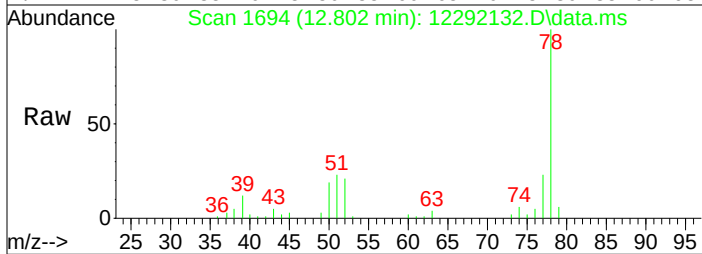
Tgt Ion: 97 Resp: 26761
Ion Ratio Lower Upper
97 100
99 65.1 44.5 84.5
61 52.2 28.8 68.8





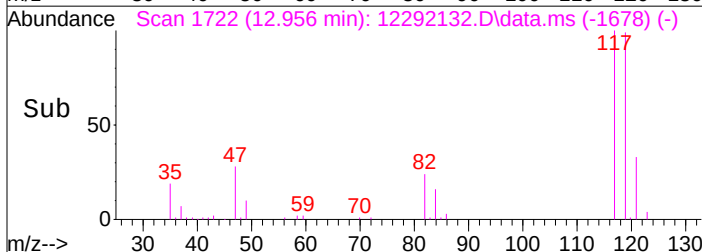
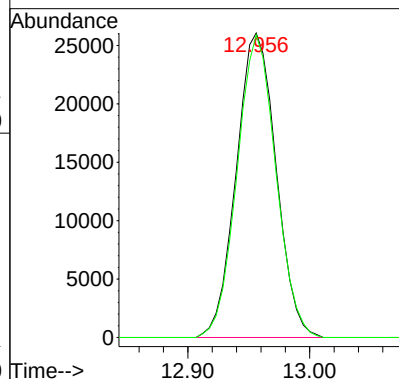
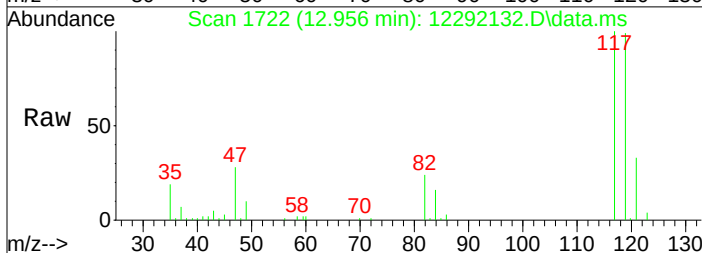
#41
Benzene
Concen: 0.43 ng
RT: 12.80 min Scan# 1694
Delta R.T. -0.005 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

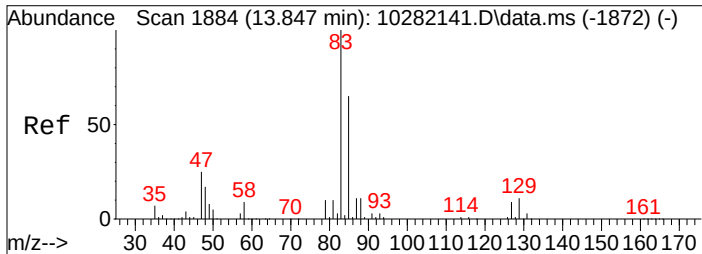
Tgt Ion: 78 Resp: 44337
Ion Ratio Lower Upper
78 100
77 23.0 2.8 42.8



#42
Carbon Tetrachloride
Concen: 1.73 ng
RT: 12.96 min Scan# 1722
Delta R.T. -0.005 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

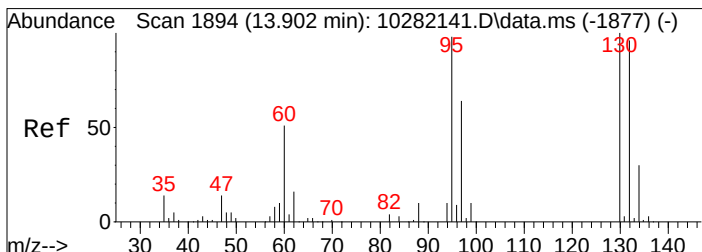
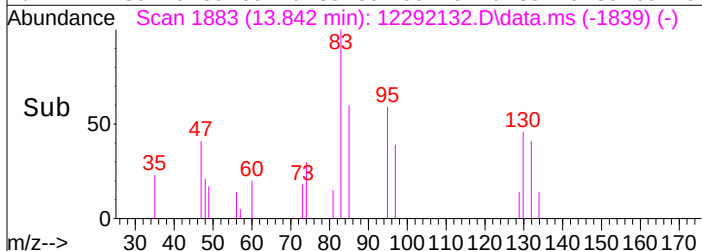
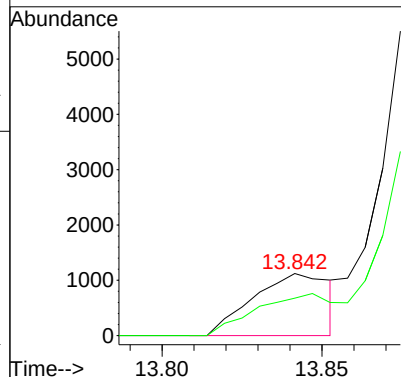
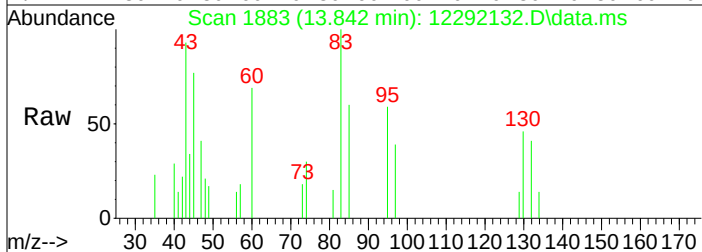
Tgt Ion: 117 Resp: 59221
Ion Ratio Lower Upper
117 100
119 96.7 75.7 115.7





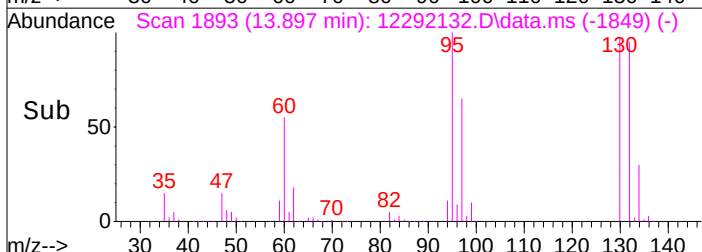
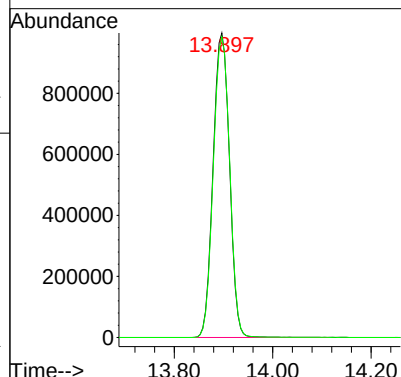
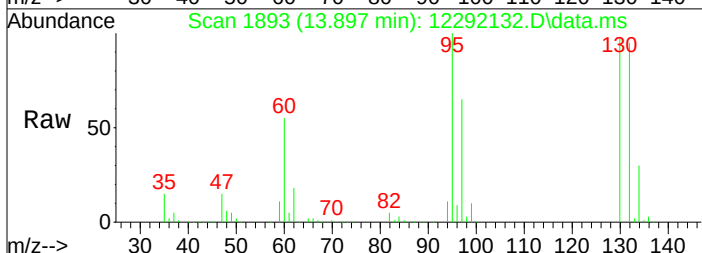
#46
 Bromodichloromethane
 Concen: 0.06 ng
 RT: 13.84 min Scan# 1883
 Delta R.T. -0.005 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

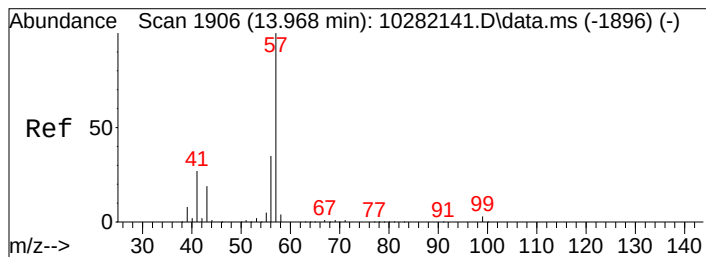
Tgt Ion: 83 Resp: 1885
 Ion Ratio Lower Upper
 83 100
 85 75.4 44.1 84.1



#47
 Trichloroethene
 Concen: 87.55 ng
 RT: 13.90 min Scan# 1893
 Delta R.T. -0.005 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

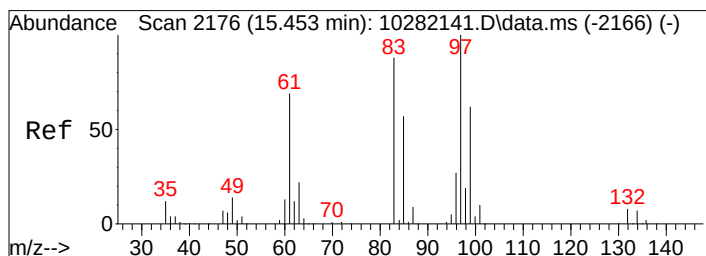
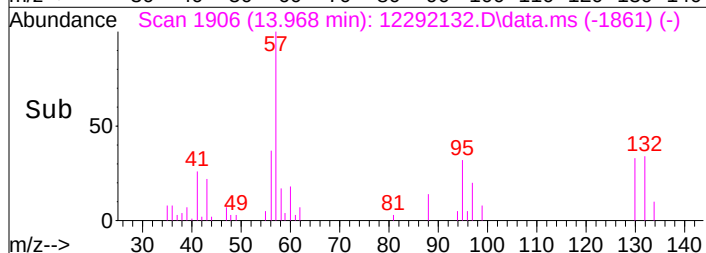
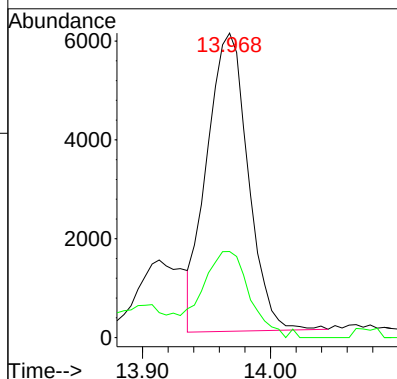
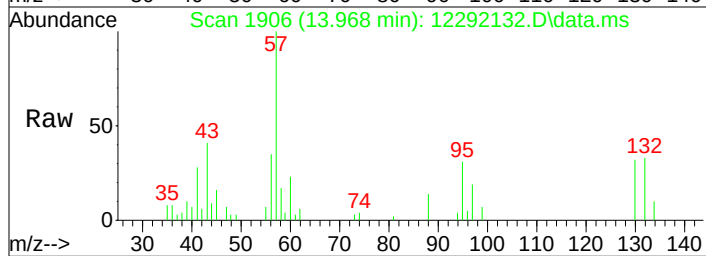
Tgt Ion: 130 Resp: 2302873
 Ion Ratio Lower Upper
 130 100
 132 98.9 75.1 115.1





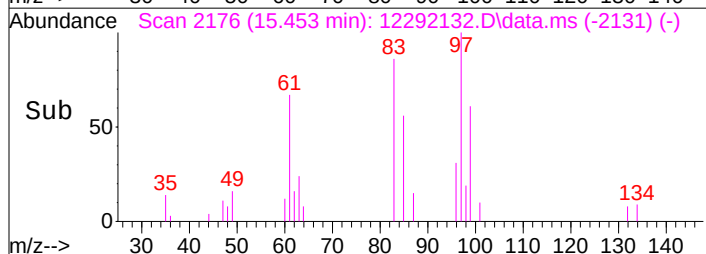
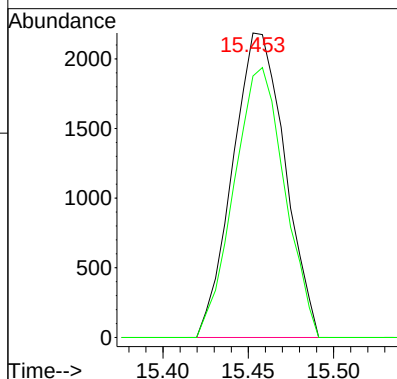
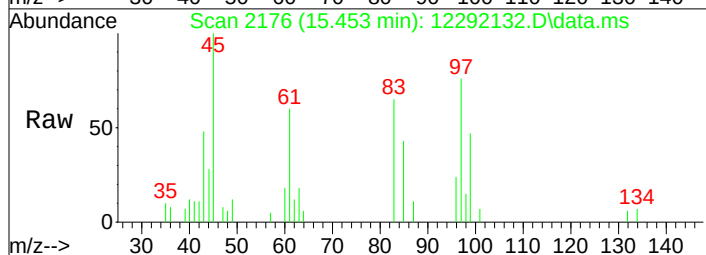
#49
 2,2,4-Trimethylpentane (Isooctane)
 Concen: 0.11 ng
 RT: 13.97 min Scan# 1906
 Delta R.T. 0.000 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

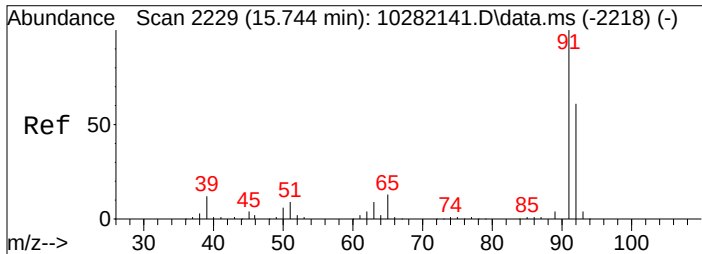
Tgt Ion: 57 Resp: 13516
 Ion Ratio Lower Upper
 57 100
 41 33.2 7.1 47.1



#55
 1,1,2-Trichloroethane
 Concen: 0.19 ng
 RT: 15.45 min Scan# 2176
 Delta R.T. 0.000 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

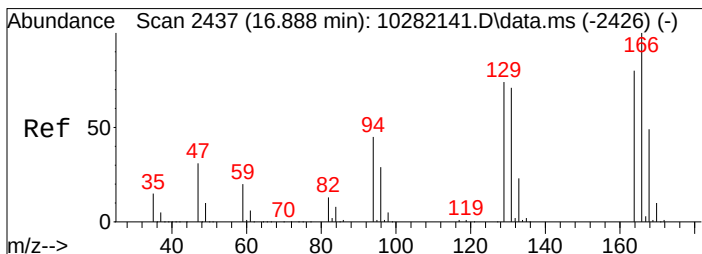
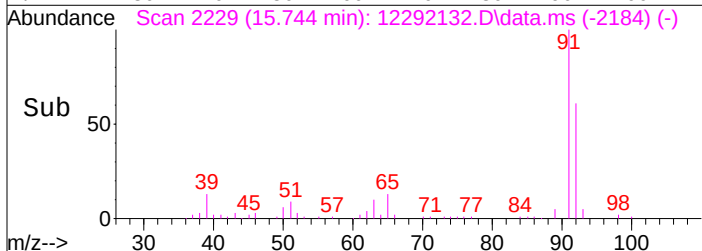
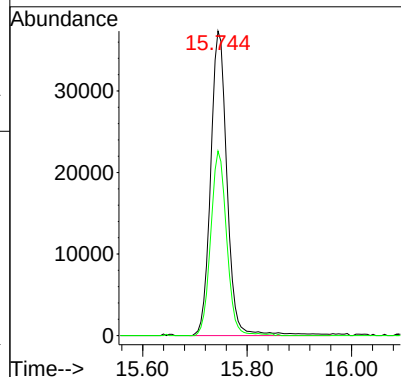
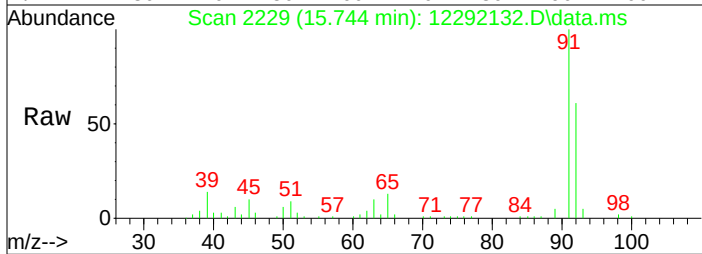
Tgt Ion: 97 Resp: 4646
 Ion Ratio Lower Upper
 97 100
 83 86.0 68.0 108.0





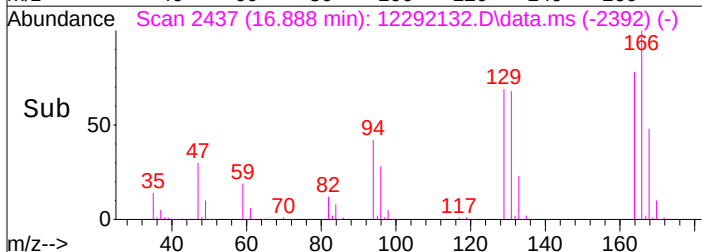
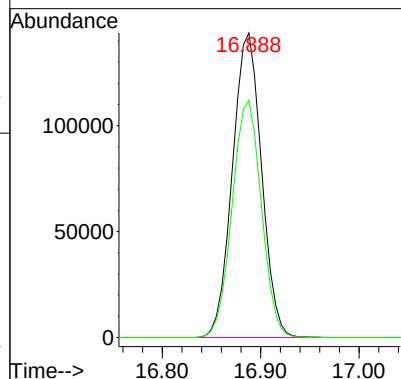
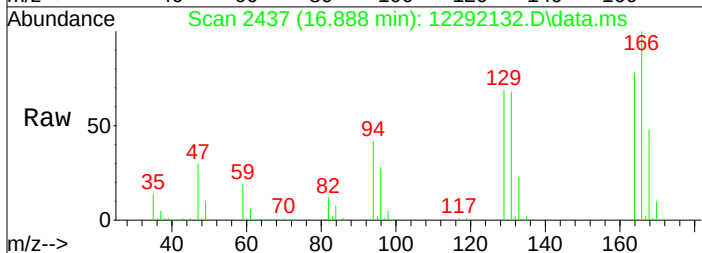
#58
Toluene
Concen: 0.82 ng
RT: 15.74 min Scan# 2229
Delta R.T. 0.000 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

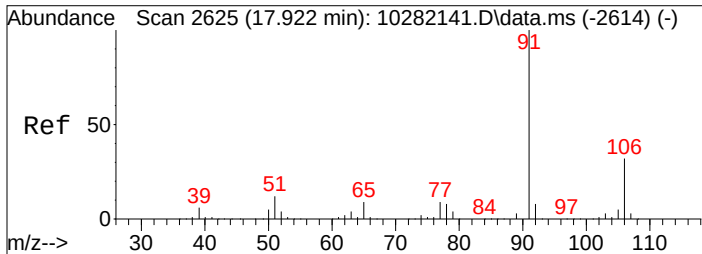
Tgt Ion: 91 Resp: 81667
Ion Ratio Lower Upper
91 100
92 58.8 40.6 80.6



#64
Tetrachloroethene
Concen: 11.00 ng
RT: 16.89 min Scan# 2437
Delta R.T. 0.000 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

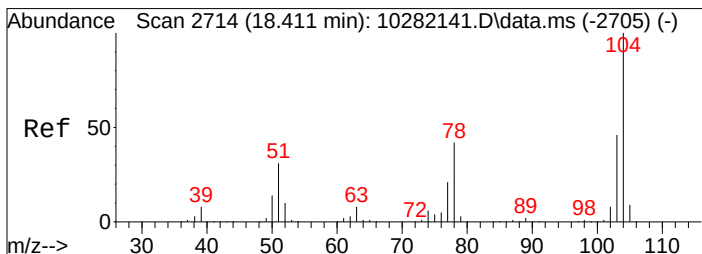
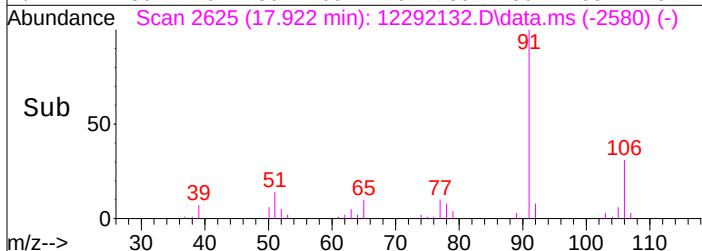
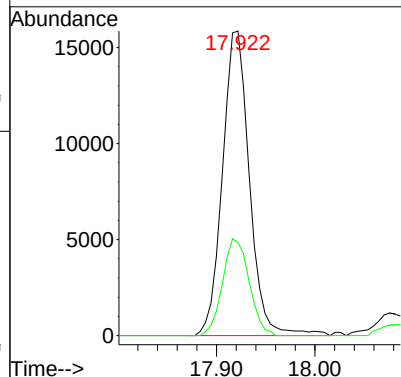
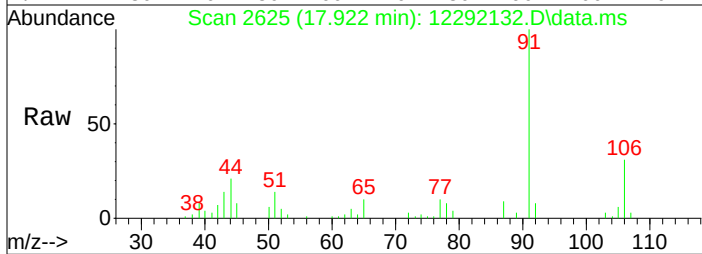
Tgt Ion: 166 Resp: 295505
Ion Ratio Lower Upper
166 100
164 78.2 59.1 99.1





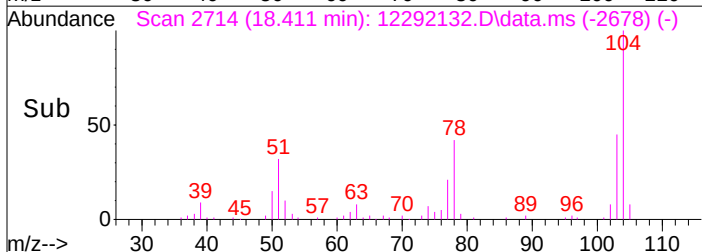
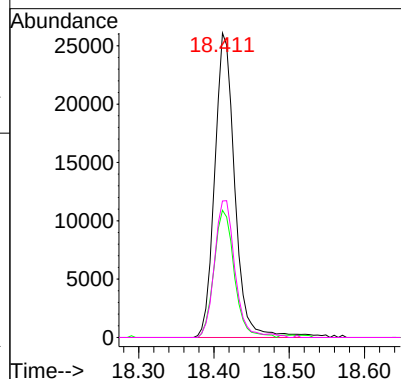
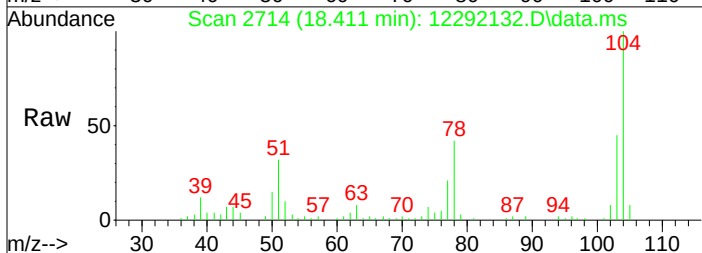
#66
Ethylbenzene
Concen: 0.28 ng
RT: 17.92 min Scan# 2625
Delta R.T. 0.000 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

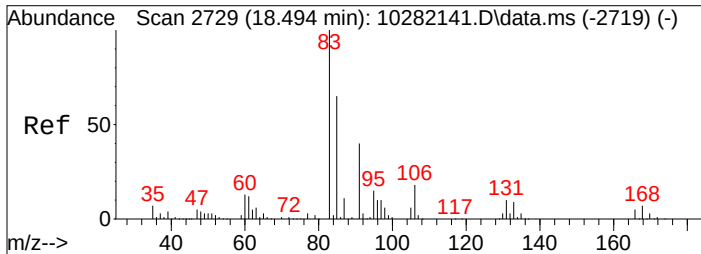
Tgt Ion: 91 Resp: 30248
Ion Ratio Lower Upper
91 100
106 31.3 11.7 51.7



#69
Styrene
Concen: 0.74 ng
RT: 18.41 min Scan# 2714
Delta R.T. 0.000 min
Lab File: 12292132.D
Acq: 29 Dec 2021 18:40

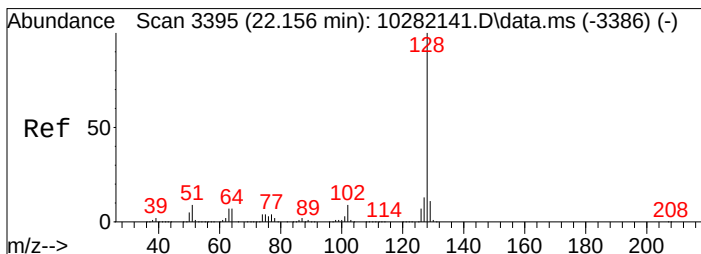
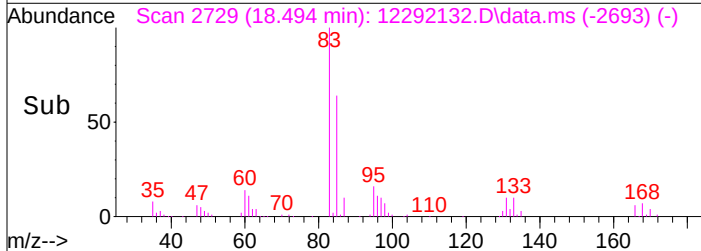
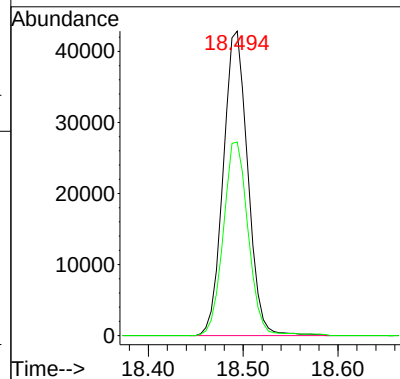
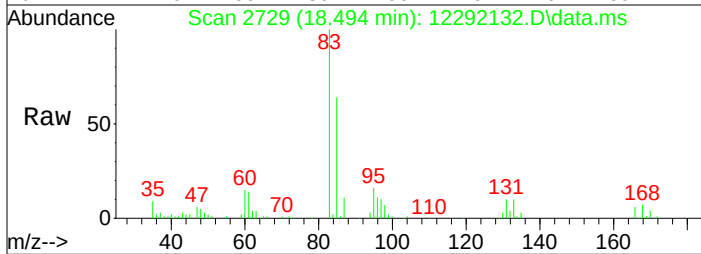
Tgt Ion: 104 Resp: 48547
Ion Ratio Lower Upper
104 100
78 42.0 21.8 61.8
103 46.0 26.5 66.5





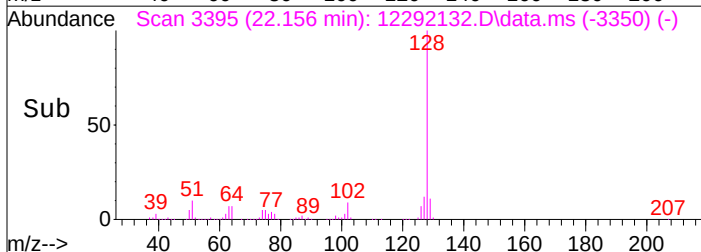
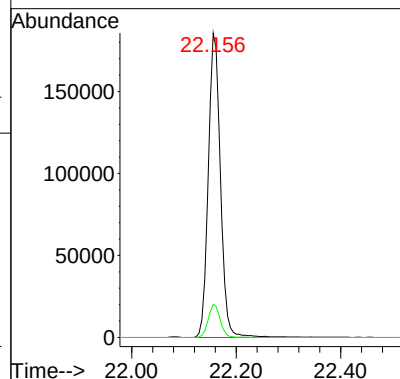
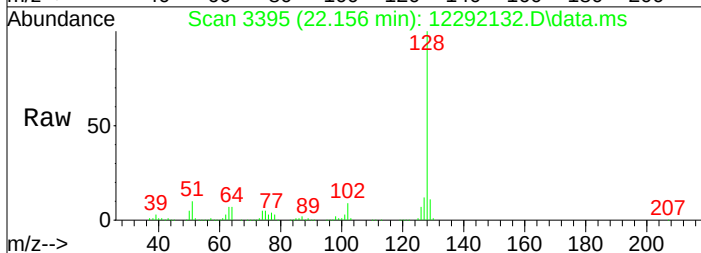
#72
 1,1,2,2-Tetrachloroethane
 Concen: 1.89 ng
 RT: 18.49 min Scan# 2729
 Delta R.T. 0.000 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

Tgt Ion: 83 Resp: 77154
 Ion Ratio Lower Upper
 83 100
 85 64.7 44.6 84.6



#95
 Naphthalene
 Concen: 2.75 ng
 RT: 22.16 min Scan# 3395
 Delta R.T. 0.000 min
 Lab File: 12292132.D
 Acq: 29 Dec 2021 18:40

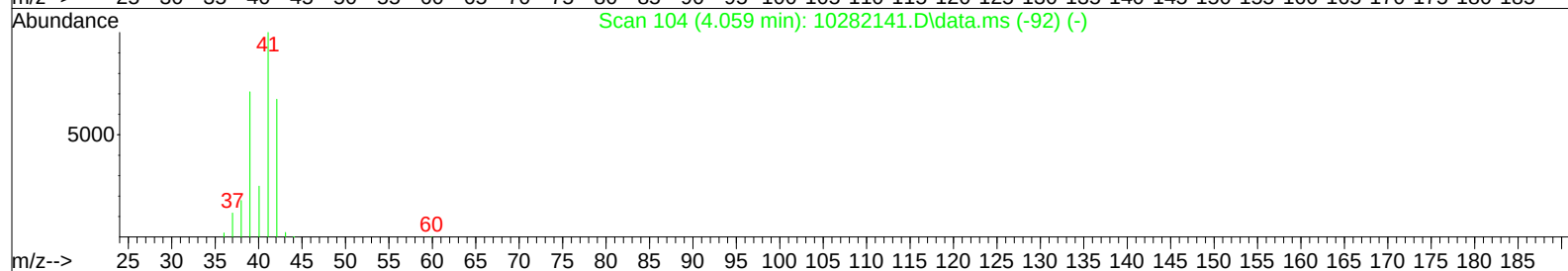
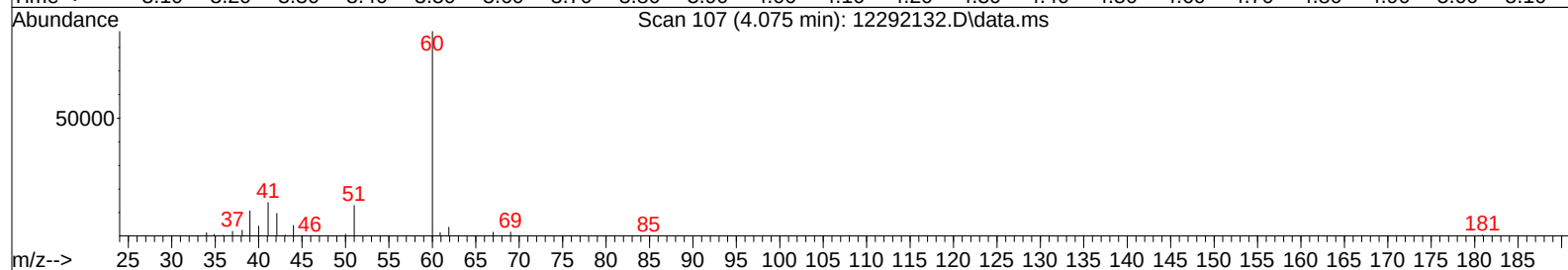
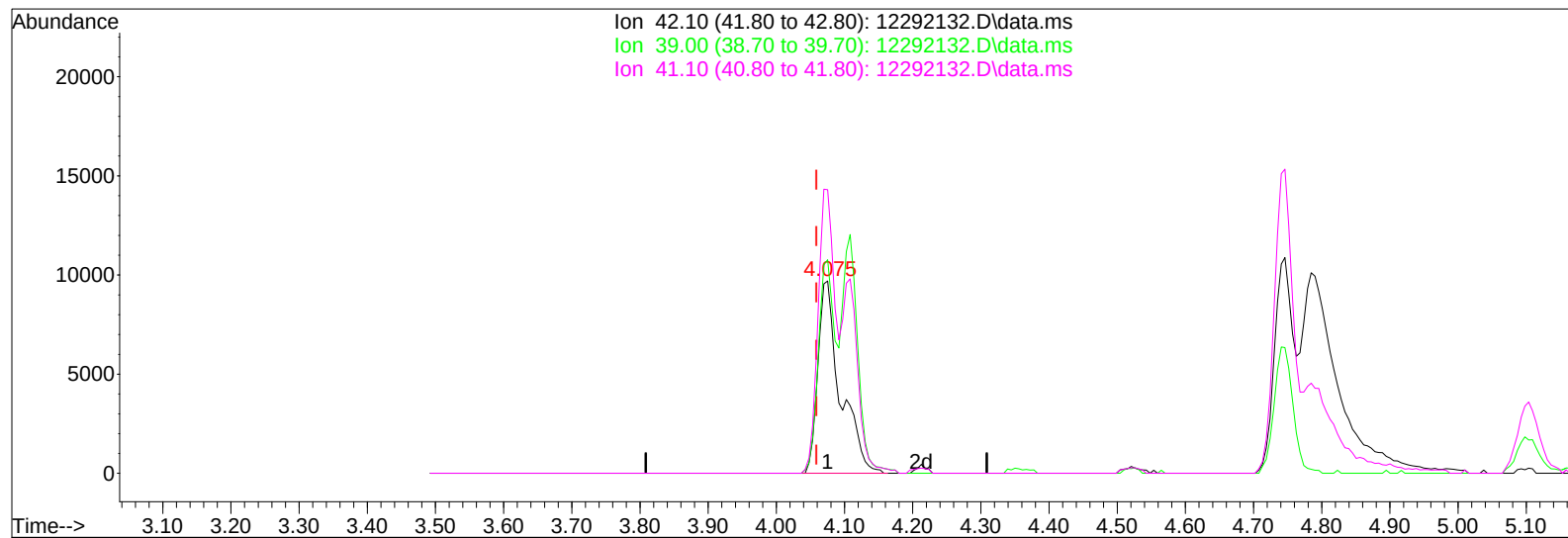
Tgt Ion: 128 Resp: 300602
 Ion Ratio Lower Upper
 128 100
 129 10.7 0.0 31.0



Data File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 19:28:40 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12292132.D\data.ms

(2) Propene (T)

4.075min (+0.017) 0.45ng

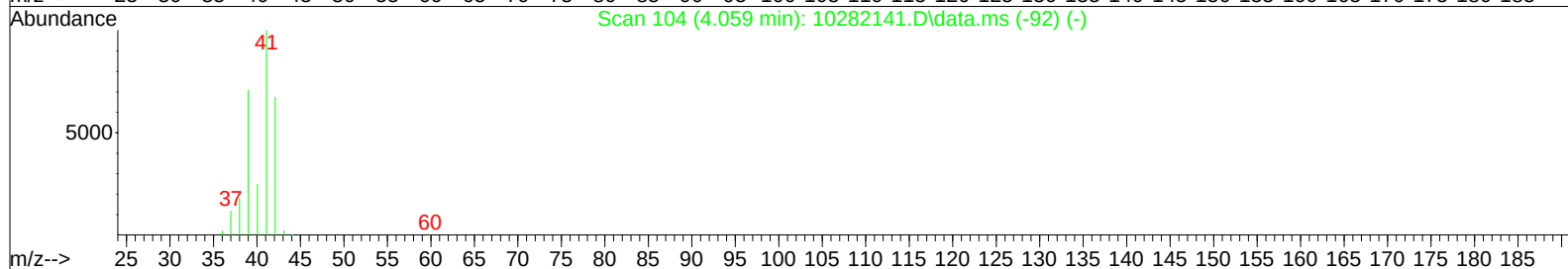
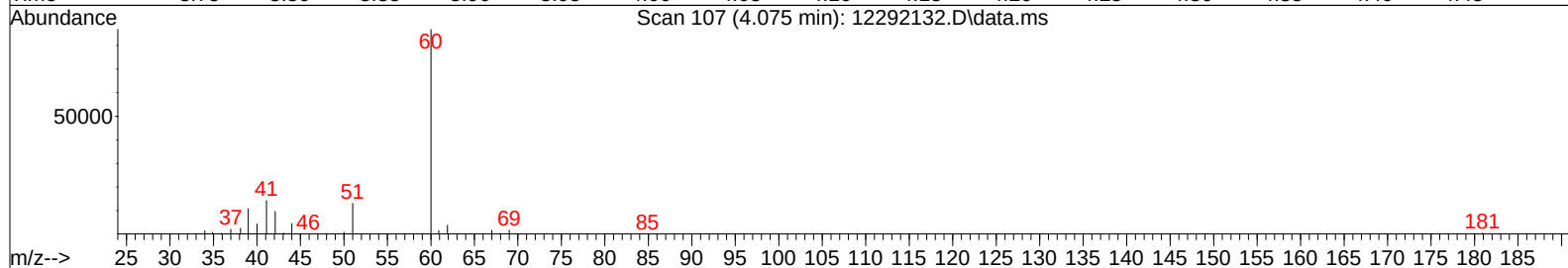
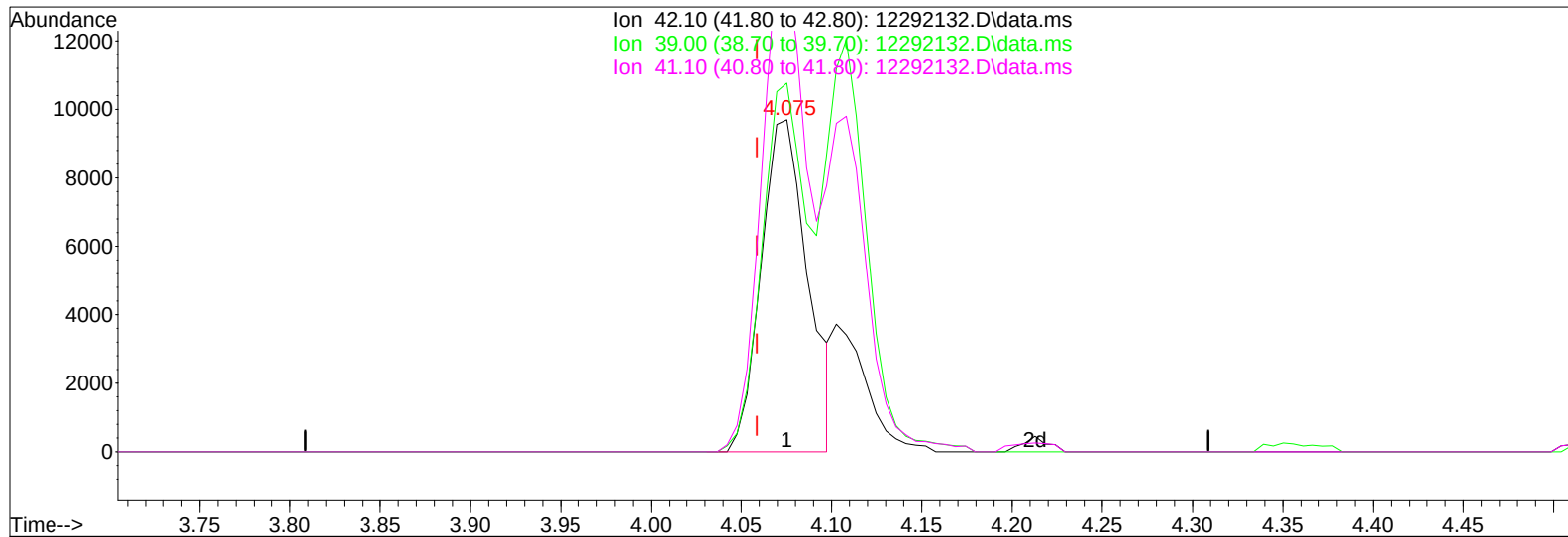
response 22233

Ion	Exp%	Act%
42.10	100	100
39.00	106.50	85.37#
41.10	148.80	111.97#
0.00	0.00	0.00

Data File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 19:28:40 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12292132.D\data.ms

(2) Propene (T)

IPC

4.075min (+0.017) 0.35ng m

response 17350

12/29/21

Ion	Exp%	Act%

42.10	100	100

39.00	106.50	109.40

41.10	148.80	143.48

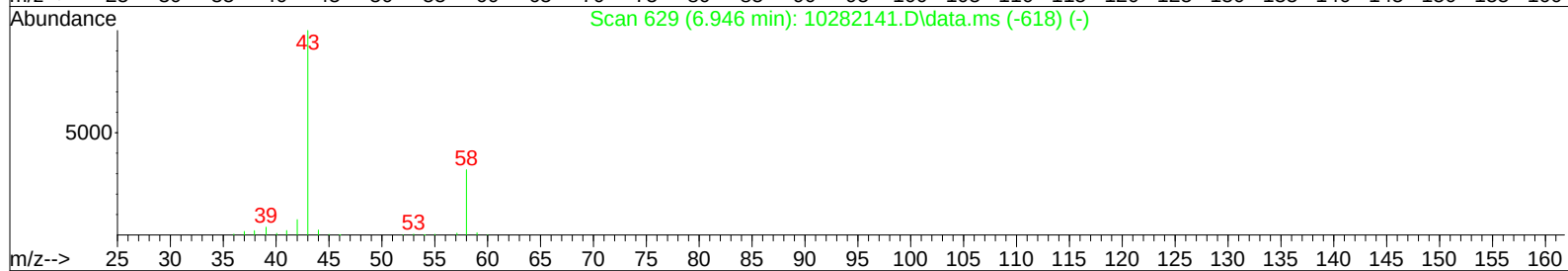
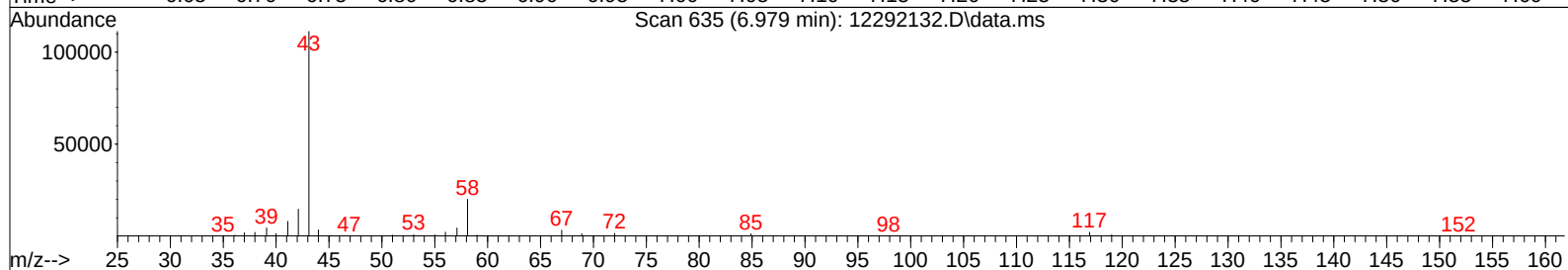
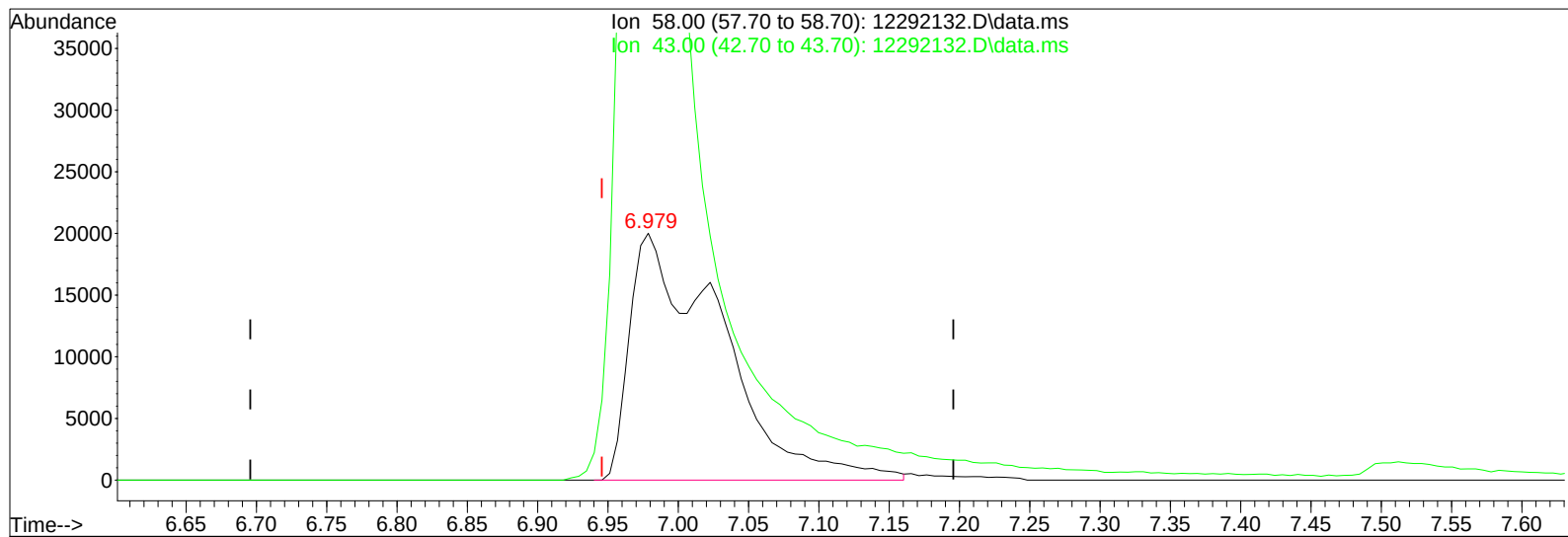
0.00	0.00	0.00

12/30/21

Data File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 19:28:40 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12292132.D\data.ms

(13) Acetone (T)

6.979min (+0.033) 3.91ng

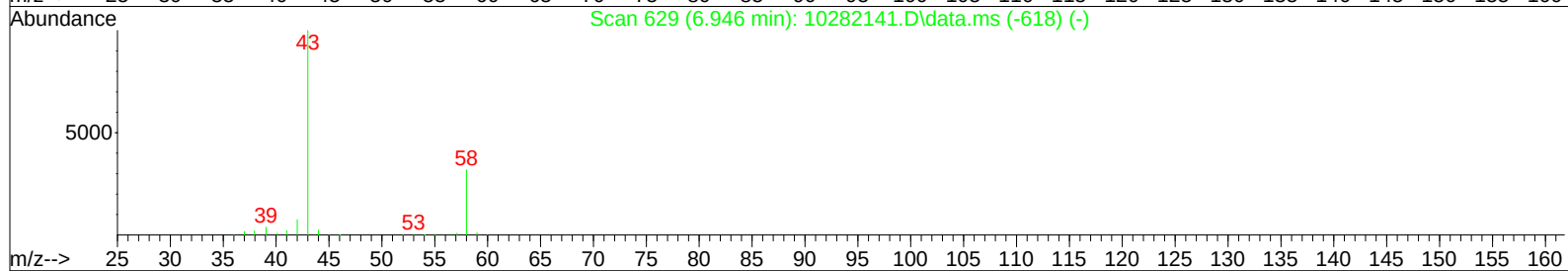
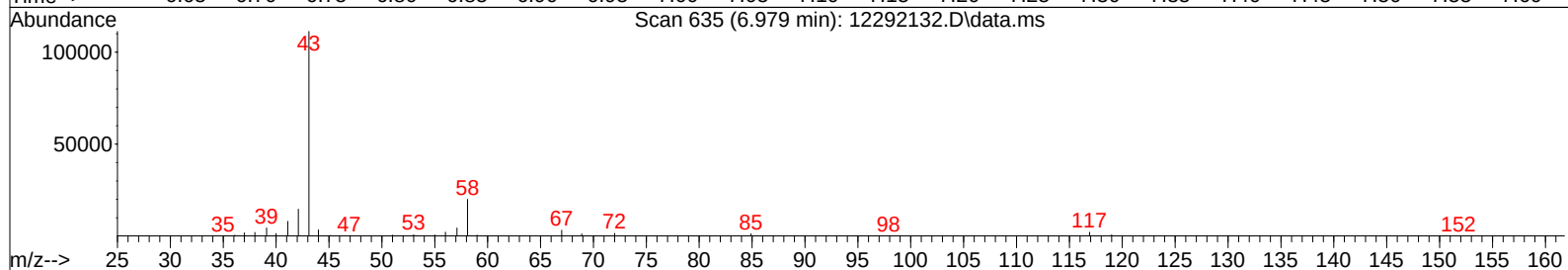
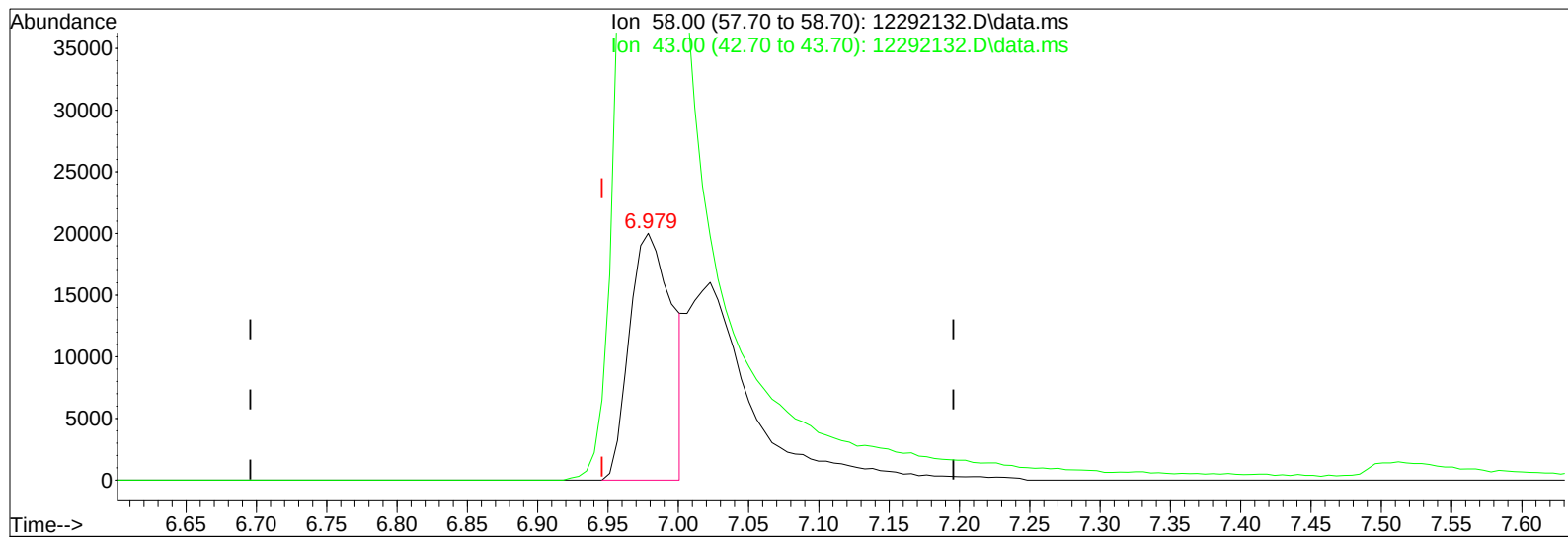
response 91050

Ion	Exp%	Act%
58.00	100	100
43.00	321.40	367.80#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 19:28:40 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12292132.D\data.ms

(13) Acetone (T)

6.979min (+0.033) 1.82ng m

response 42486

IPC

12/30/21

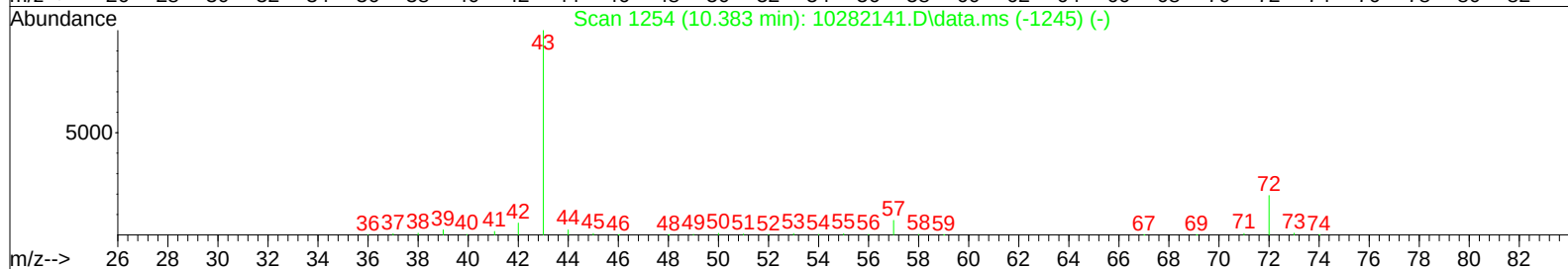
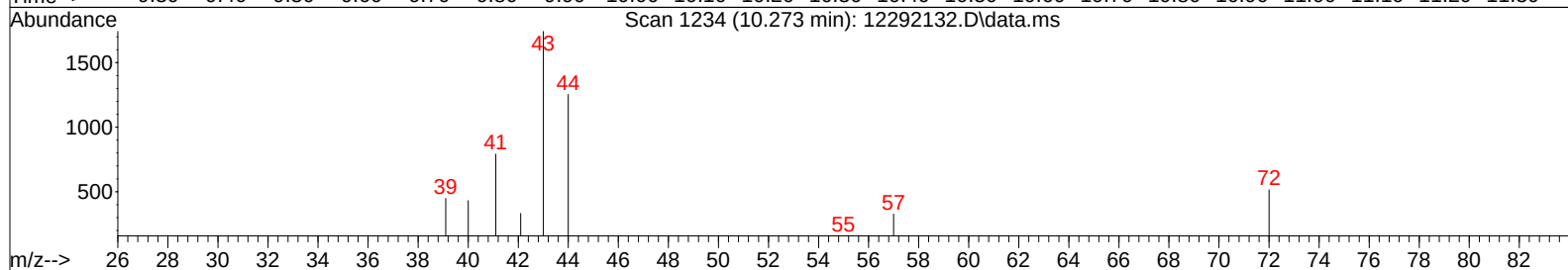
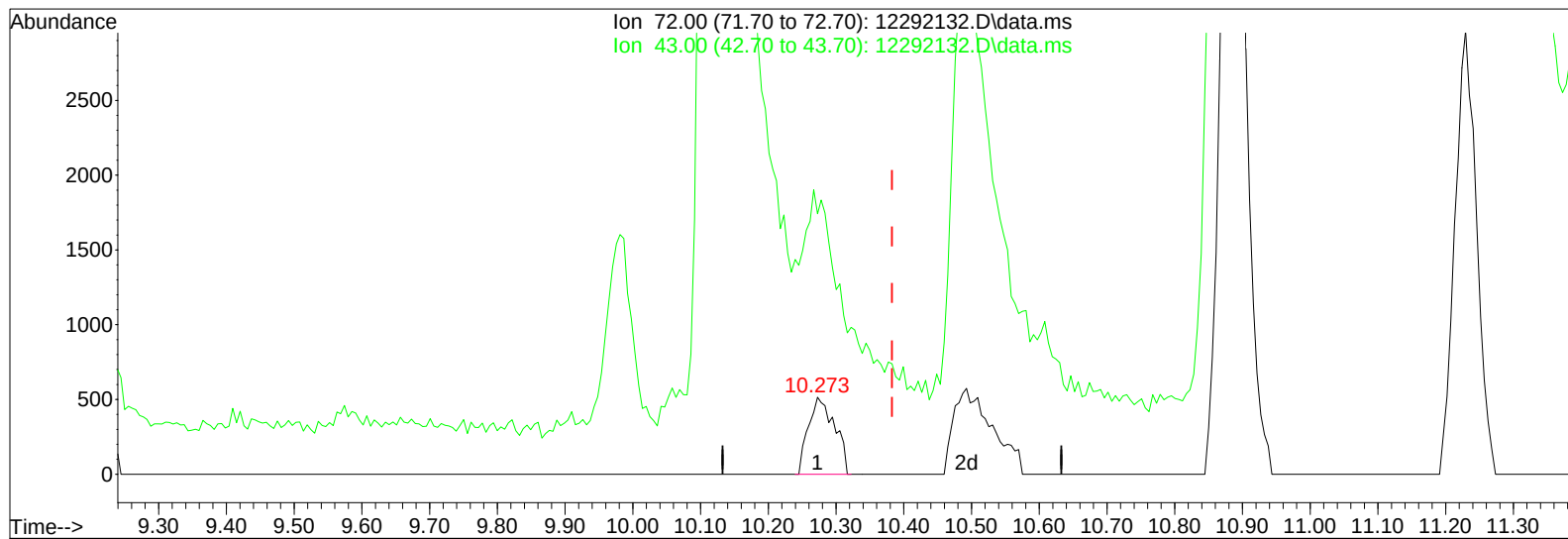
12/29/21

Ion	Exp%	Act%
58.00	100	100
43.00	321.40	788.22#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 19:28:40 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12292132.D\data.ms

(27) 2-Butanone (MEK) (T)

10.273min (-0.110) 0.08ng

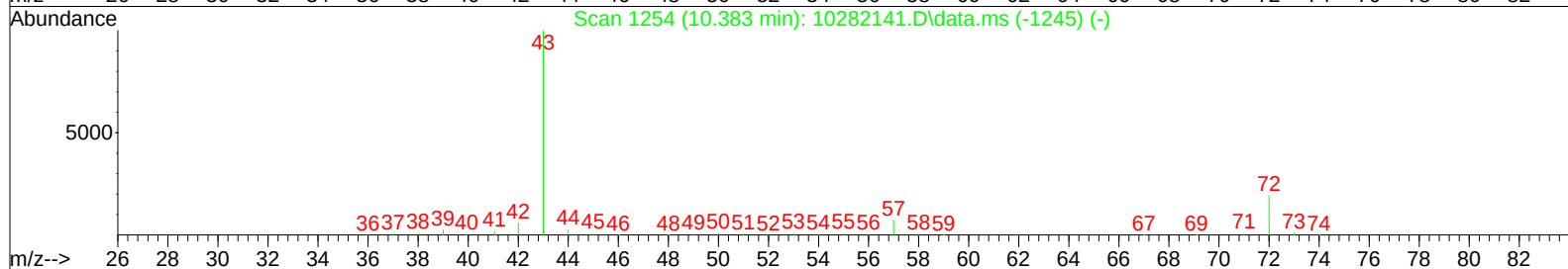
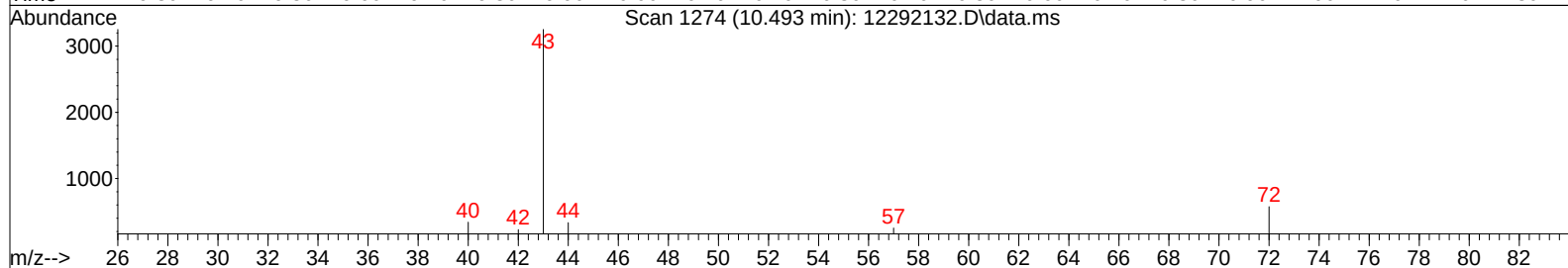
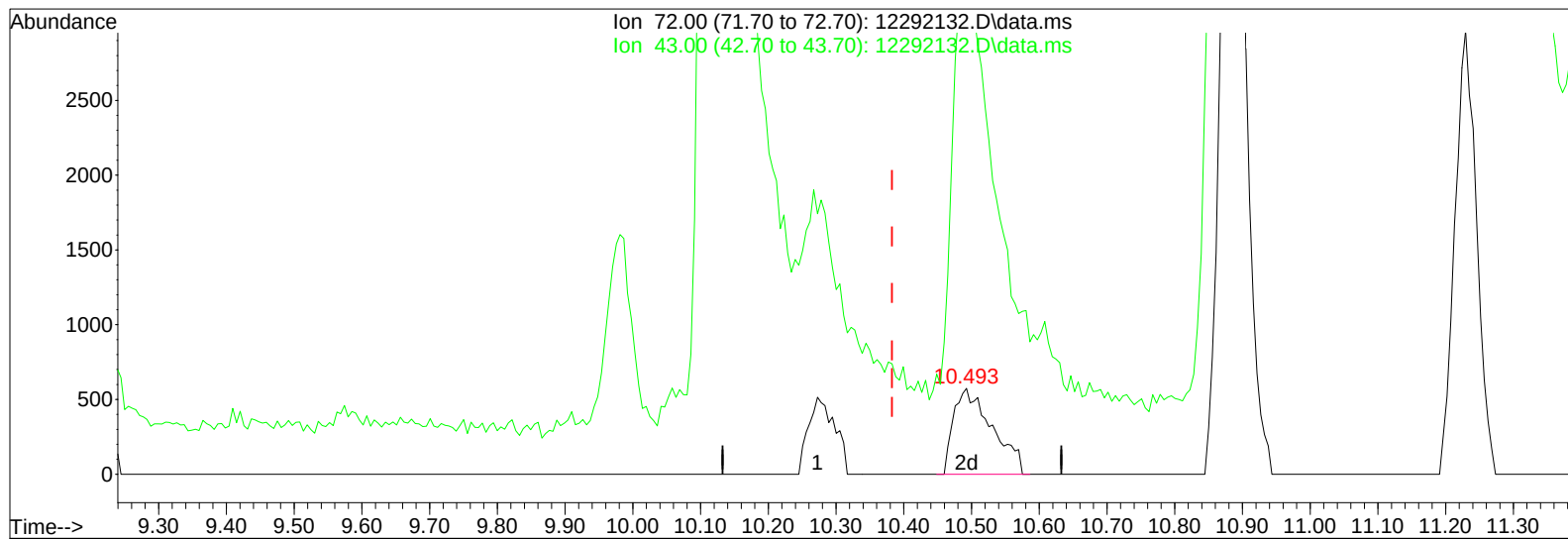
response 1381

Ion	Exp%	Act%
72.00	100	100
43.00	526.00	372.63#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS16\DATA\2021_12\29\12292132.D
Acq On : 29 Dec 2021 18:40
Sample : P2106529-001 (1000mL)
Misc : S34-09132101

Vial: 6
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 19:28:40 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12292132.D\data.ms

(27) 2-Butanone (MEK) (T)

MP

10.493min (+0.110) 0.14ng m

12/29/21

response 2258

12/30/21

Ion	Exp%	Act%
72.00	100	100
43.00	526.00	227.90#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS16\DATA\2021_12\29\12292103.D
 Acq On : 29 Dec 2021 1:03
 Sample : MB R16122921_1000mL
 Misc : S34-09132101

Vial: 3
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:09:59 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

12/29/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	215267	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.19	114	977322	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	220527	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	393048	12.458	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	99.68%	
57) Toluene-d8 (SS2)	15.65	98	954472	12.106	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.88%	
73) Bromofluorobenzene (SS3)	18.92	174	337051	12.169	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	97.36%	

Target Compounds

						Qvalue
2) Propene	4.14	42	632	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	6.41	45	9965	0.417	ng	84
11) Acetonitrile	6.71	41	4312	0.068	ng	85
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	7.15	58	539	N.D.		
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	12.82	78	690	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	13.19	84	692	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	13.92	130	113	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.		

Data File : I:\MS16\DATA\2021_12\29\12292103.D
 Acq On : 29 Dec 2021 1:03
 Sample : MB R16122921_1000mL
 Misc : S34-09132101

Vial: 3
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:09:59 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

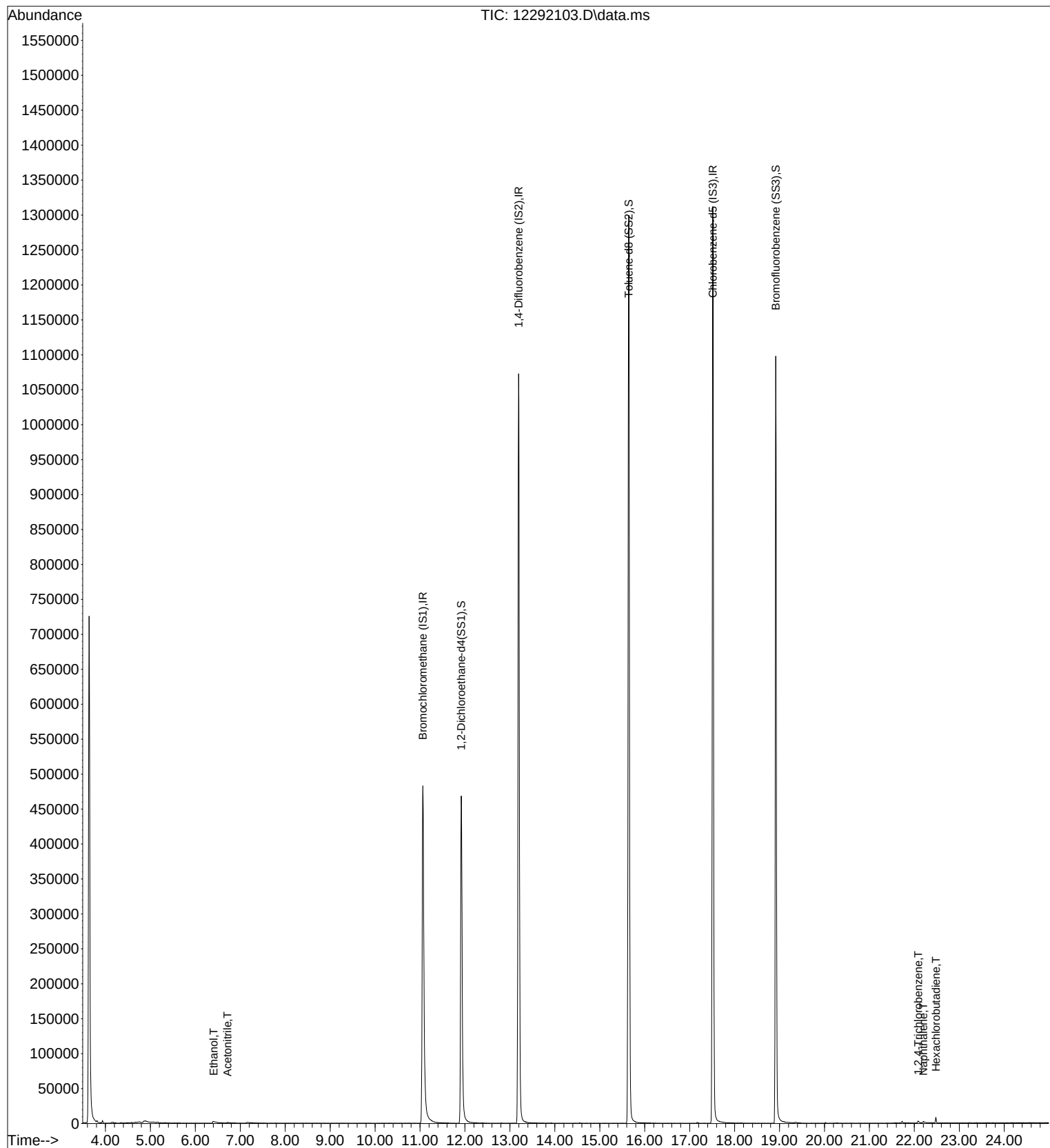
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.77	91	612	N.D.		
59) 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	17.56	112	262	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	18.14	91	233	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	18.92	105	677	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	19.71	105	211	No Calib	#	
78) 4-Ethyltoluene	19.71	105	211	N.D.		
79) 1,3,5-Trimethylbenzene	19.71	105	211	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.71	105	211	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	20.21	146	433	N.D.		
86) 1,4-Dichlorobenzene	20.21	146	433	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	20.58	146	294	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	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.08	180	2105	0.069 ng	#	94
95) Naphthalene	22.20	128	7532	0.079 ng		79
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.48	225	1835	0.092 ng		92
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 File : I:\MS16\DATA\2021_12\29\12292103.D
Acq On : 29 Dec 2021 1:03
Sample : MB R16122921_1000mL
Misc : S34-09132101

Vial: 3
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 03:09:59 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_12\29\12292104.D
 Acq On : 29 Dec 2021 1:37
 Sample : LCS R16122921_25ng
 Misc : S34-09132101/S35-12032103 (1/02)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:10:01 2021

12/29/21

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	221960	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.20	114	985159	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	233908	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	401867	12.353	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.80%
57) Toluene-d8 (SS2)	15.65	98	968334	11.580	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	92.64%
73) Bromofluorobenzene (SS3)	18.92	174	349473	11.896	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.20%

Target Compounds

						Qvalue
2) Propene	4.06	42	1012478	23.118	ng	99
3) Dichlorodifluoromethan...	4.22	85	1051760	21.603	ng	100
4) Chloromethane	4.50	50	972738	22.276	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	512905	23.191	ng	100
6) Vinyl Chloride	4.91	62	843074	23.191	ng	100
7) 1,3-Butadiene	5.18	54	836308	26.622	ng	96
8) Bromomethane	5.60	94	453928	23.540	ng	100
9) Chloroethane	5.93	64	411776	23.735	ng	100
10) Ethanol	6.32	45	2531541	102.727	ng	100
11) Acetonitrile	6.57	41	1452562	22.114	ng	99
12) Acrolein	6.74	56	878367	50.332	ng	99
13) Acetone	6.95	58	2423870	117.157	ng	94
14) Trichlorofluoromethane	7.18	101	961223	22.577	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	3351604	55.557	ng	99
16) Acrylonitrile	7.70	53	1913149	51.072	ng	100
17) 1,1-Dichloroethene	8.14	96	497468	23.985	ng	93
18) 2-Methyl-2-Propanol (t...	8.31	59	1999796	38.690	ng	99
19) Methylene Chloride	8.37	84	519272	22.332	ng	89
20) 3-Chloro-1-propene (Al...	8.52	41	1093745	23.974	ng	95
21) Trichlorotrifluoroethane	8.78	151	470968	25.467	ng	93
22) Carbon Disulfide	8.62	76	3762271	44.662	ng	100
23) trans-1,2-Dichloroethene	9.63	61	905703	25.404	ng	95
24) 1,1-Dichloroethane	9.89	63	1076778	24.211	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1562485	24.070	ng	98
26) Vinyl Acetate	10.15	86	431700	103.133	ng	# 75
27) 2-Butanone (MEK)	10.38	72	706279	48.937	ng	# 84
28) cis-1,2-Dichloroethene	10.91	61	865451	24.610	ng	94
29) Diisopropyl Ether	11.20	87	880112	46.814	ng	# 83
30) Ethyl Acetate	11.21	61	643149	71.076	ng	99
31) n-Hexane	11.19	57	1071844	25.027	ng	99
32) Chloroform	11.25	83	886965	23.183	ng	100
34) Tetrahydrofuran (THF)	11.65	72	663157	48.264	ng	# 89
35) Ethyl tert-Butyl Ether	11.79	87	1248166	49.317	ng	91
36) 1,2-Dichloroethane	12.05	62	813361	23.937	ng	100
38) 1,1,1-Trichloroethane	12.32	97	816529	22.700	ng	98
39) Isopropyl Acetate	12.80	61	31413	No Calib	#	
40) 1-Butanol	12.84	56	26003	No Calib	#	
41) Benzene	12.81	78	2061653	22.611	ng	100
42) Carbon Tetrachloride	12.96	117	711821	23.376	ng	99
43) Cyclohexane	13.09	84	1552413	46.873	ng	93
44) tert-Amyl Methyl Ether	13.44	73	3088688	51.282	ng	97
45) 1,2-Dichloropropane	13.65	63	612112	23.987	ng	100
46) Bromodichloromethane	13.85	83	743496	24.353	ng	100
47) Trichloroethene	13.90	130	569598	24.292	ng	97
48) 1,4-Dioxane	13.87	88	424705	24.708	ng	95
49) 2,2,4-Trimethylpentane...	13.97	57	2736480	24.355	ng	98
50) Methyl Methacrylate	14.11	100	429925	50.574	ng	97

Data File : I:\MS16\DATA\2021_12\29\12292104.D
 Acq On : 29 Dec 2021 1:37
 Sample : LCS R16122921_25ng
 Misc : S34-09132101/S35-12032103 (1/02)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:10:01 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

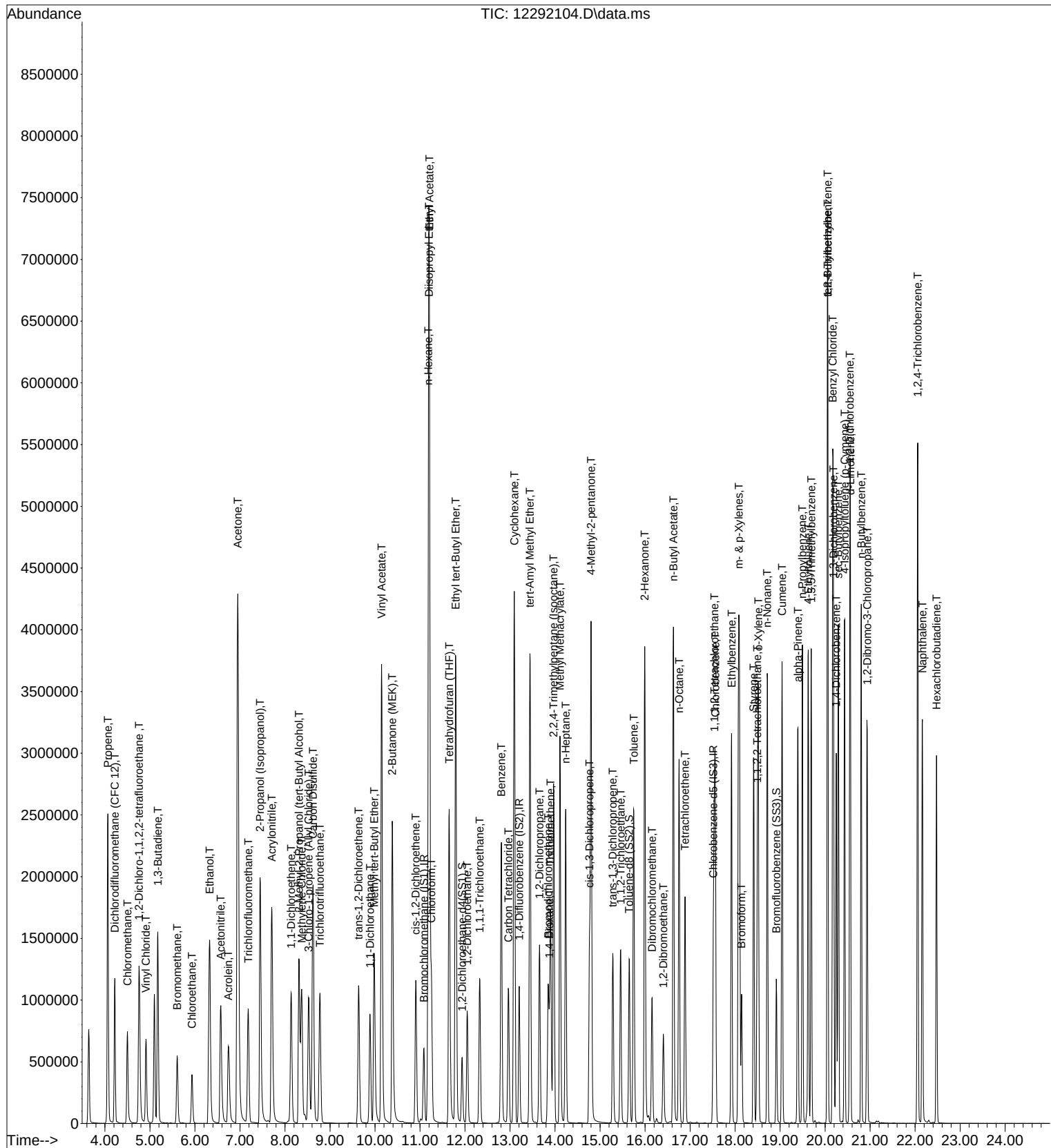
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	536300	24.303	ng	96
52) cis-1,3-Dichloropropene	14.77	75	888594	26.570	ng	100
53) 4-Methyl-2-pentanone	14.80	58	1236955	53.336	ng	93
54) trans-1,3-Dichloropropene	15.28	75	816800	25.535	ng	100
55) 1,1,2-Trichloroethane	15.46	97	493257	22.955	ng	98
58) Toluene	15.75	91	2042944	22.236	ng	99
59) 2-Hexanone	15.99	43	3342417	56.442	ng	96
60) Dibromochloromethane	16.16	129	621285	25.354	ng	100
61) 1,2-Dibromoethane	16.40	107	591709	24.790	ng	100
62) n-Butyl Acetate	16.63	43	3683939	57.472	ng	96
63) n-Octane	16.76	57	593523	25.526	ng	95
64) Tetrachloroethene	16.89	166	610330	24.687	ng	99
65) Chlorobenzene	17.56	112	1402526	23.018	ng	100
66) Ethylbenzene	17.92	91	2389507	23.663	ng	99
67) m- & p-Xylenes	18.08	91	3802369	48.507	ng	99
68) Bromoform	18.14	173	543945	26.954	ng	100
69) Styrene	18.41	104	1449305	24.094	ng	99
70) o-Xylene	18.52	91	1882364	24.227	ng	99
71) n-Nonane	18.71	43	1527764	27.463	ng	96
72) 1,1,2,2-Tetrachloroethane	18.49	83	918419	24.390	ng	100
74) Cumene	19.04	105	2420768	24.142	ng	99
75) alpha-Pinene	19.40	93	1213068	24.508	ng	96
76) n-Propylbenzene	19.49	91	2889572	23.922	ng	99
77) 3-Ethyltoluene	19.63	105	2394280	No Calib		
78) 4-Ethyltoluene	19.63	105	2394280	25.261	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	2009034	25.333	ng	97
80) alpha-Methylstyrene	19.63	118	13963	No Calib	#	
81) 2-Ethyltoluene	19.63	105	2394280	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	2031696	26.514	ng	96
83) n-Decane	20.06	58	115175	No Calib	#	
84) Benzyl Chloride	20.17	91	3199961	48.145	ng	98
85) 1,3-Dichlorobenzene	20.19	146	1177761	25.599	ng	100
86) 1,4-Dichlorobenzene	20.25	146	1189674	24.750	ng	99
87) sec-Butylbenzene	20.29	105	2630924	24.422	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	2248692	24.980	ng	99
89) 1,2,3-Trimethylbenzene	20.29	105	2630924	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	1131298	25.278	ng	100
91) d-Limonene	20.56	68	752837	25.951	ng	95
92) 1,2-Dibromo-3-Chloropr...	20.94	157	878189	50.165	ng	96
93) n-Undecane	21.26	57	715	No Calib		
94) 1,2,4-Trichlorobenzene	22.06	180	1730913	53.511	ng	100
95) Naphthalene	22.16	128	2509882	24.914	ng	100
96) n-Dodecane	22.16	57	1075	No Calib	#	
97) Hexachlorobutadiene	22.48	225	543084	25.772	ng	100
98) Cyclohexanone	18.09	55	3958	No Calib		
99) tert-Butylbenzene	20.06	119	1896477	24.773	ng	100
100) n-Butylbenzene	20.80	91	2141335	24.542	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	523714	24.471	ng	98

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

Data File : I:\MS16\DATA\2021_12\29\12292104.D
Acq On : 29 Dec 2021 1:37
Sample : LCS R16122921_25ng
Misc : S34-09132101/S35-12032103 (1/02)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 03:10:01 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Sat Oct 30 07:47:28 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_12\29\12292105.D
 Acq On : 29 Dec 2021 2:11
 Sample : LCSD R16122921_25ng
 Misc : S34-09132101/S35-12032103 (1/02)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:10:03 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

WA 12/29/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	231048	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.20	114	1019956	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	245588	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	419436	12.386	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.12%
57) Toluene-d8 (SS2)	15.65	98	1003801	11.433	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.44%
73) Bromofluorobenzene (SS3)	18.92	174	360429	11.685	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.52%

Target Compounds

						Qvalue
2) Propene	4.06	42	1064270	23.345	ng	99
3) Dichlorodifluoromethan...	4.22	85	1089317	21.494	ng	99
4) Chloromethane	4.50	50	1005166	22.113	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	530960	23.063	ng	100
6) Vinyl Chloride	4.91	62	878027	23.203	ng	100
7) 1,3-Butadiene	5.18	54	846936	25.900	ng	96
8) Bromomethane	5.61	94	463804	23.106	ng	100
9) Chloroethane	5.93	64	424319	23.496	ng	100
10) Ethanol	6.32	45	2669575	104.067	ng	100
11) Acetonitrile	6.57	41	1538654	22.504	ng	99
12) Acrolein	6.74	56	910522	50.123	ng	99
13) Acetone	6.95	58	2519793	117.002	ng	93
14) Trichlorofluoromethane	7.18	101	988969	22.315	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	3526065	56.150	ng	99
16) Acrylonitrile	7.70	53	2008184	51.500	ng	100
17) 1,1-Dichloroethene	8.14	96	510735	23.656	ng	92
18) 2-Methyl-2-Propanol (t...	8.31	59	2030237	37.734	ng	99
19) Methylene Chloride	8.37	84	533546	22.044	ng	88
20) 3-Chloro-1-propene (Al...	8.52	41	1152469	24.268	ng	94
21) Trichlorotrifluoroethane	8.78	151	482152	25.047	ng	93
22) Carbon Disulfide	8.62	76	3907090	44.557	ng	100
23) trans-1,2-Dichloroethene	9.63	61	940349	25.339	ng	94
24) 1,1-Dichloroethane	9.89	63	1112518	24.031	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1614093	23.887	ng	98
26) Vinyl Acetate	10.15	86	445792	102.311	ng	# 70
27) 2-Butanone (MEK)	10.39	72	730977	48.656	ng	# 81
28) cis-1,2-Dichloroethene	10.91	61	900823	24.608	ng	93
29) Diisopropyl Ether	11.20	87	907492	46.372	ng	# 83
30) Ethyl Acetate	11.21	61	664890	70.589	ng	100
31) n-Hexane	11.19	57	1112817	24.961	ng	99
32) Chloroform	11.25	83	918736	23.069	ng	99
34) Tetrahydrofuran (THF)	11.65	72	689498	48.207	ng	# 88
35) Ethyl tert-Butyl Ether	11.79	87	1292265	49.051	ng	# 90
36) 1,2-Dichloroethane	12.05	62	842954	23.832	ng	100
38) 1,1,1-Trichloroethane	12.33	97	842948	22.635	ng	98
39) Isopropyl Acetate	12.80	61	32523	No Calib	#	
40) 1-Butanol	12.84	56	28412	No Calib	#	
41) Benzene	12.81	78	2132571	22.591	ng	100
42) Carbon Tetrachloride	12.96	117	729819	23.149	ng	99
43) Cyclohexane	13.09	84	1595403	46.527	ng	91
44) tert-Amyl Methyl Ether	13.45	73	3196906	51.268	ng	96
45) 1,2-Dichloropropane	13.65	63	632933	23.957	ng	100
46) Bromodichloromethane	13.85	83	761242	24.083	ng	100
47) Trichloroethene	13.90	130	582664	24.002	ng	97
48) 1,4-Dioxane	13.87	88	440051	24.727	ng	94
49) 2,2,4-Trimethylpentane...	13.97	57	2845374	24.460	ng	97
50) Methyl Methacrylate	14.11	100	442320	50.257	ng	96

Data File : I:\MS16\DATA\2021_12\29\12292105.D

Vial: 2

Acq On : 29 Dec 2021 2:11

Operator: WA

Sample : LCSD R16122921_25ng

Inst : GCMS-16

Misc : S34-09132101/S35-12032103 (1/02)

Quant Time: Dec 29 03:10:03 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	555373	24.309	ng	96
52) cis-1,3-Dichloropropene	14.77	75	912566	26.356	ng	100
53) 4-Methyl-2-pentanone	14.80	58	1285830	53.552	ng	92
54) trans-1,3-Dichloropropene	15.28	75	844005	25.485	ng	100
55) 1,1,2-Trichloroethane	15.46	97	509174	22.887	ng	98
58) Toluene	15.75	91	2109320	21.866	ng	99
59) 2-Hexanone	15.99	43	3508851	56.435	ng	96
60) Dibromochloromethane	16.16	129	640252	24.885	ng	100
61) 1,2-Dibromoethane	16.40	107	605996	24.181	ng	100
62) n-Butyl Acetate	16.63	43	3851875	57.234	ng	96
63) n-Octane	16.76	57	614306	25.164	ng	94
64) Tetrachloroethene	16.89	166	623677	24.028	ng	100
65) Chlorobenzene	17.56	112	1442722	22.551	ng	100
66) Ethylbenzene	17.92	91	2467812	23.276	ng	100
67) m- & p-Xylenes	18.09	91	3901856	47.409	ng	99
68) Bromoform	18.15	173	551740	26.040	ng	100
69) Styrene	18.41	104	1490185	23.596	ng	99
70) o-Xylene	18.52	91	1931987	23.683	ng	100
71) n-Nonane	18.72	43	1586165	27.157	ng	95
72) 1,1,2,2-Tetrachloroethane	18.49	83	942006	23.827	ng	100
74) Cumene	19.04	105	2477898	23.536	ng	99
75) alpha-Pinene	19.40	93	1248276	24.020	ng	96
76) n-Propylbenzene	19.49	91	2969629	23.416	ng	99
77) 3-Ethyltoluene	19.63	105	2454634	No Calib		
78) 4-Ethyltoluene	19.63	105	2454634	24.666	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	2056312	24.696	ng	97
80) alpha-Methylstyrene	19.63	118	14205	No Calib	#	
81) 2-Ethyltoluene	19.63	105	2454634	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	2084227	25.905	ng	95
83) n-Decane	20.06	58	117911	No Calib	#	
84) Benzyl Chloride	20.17	91	3294405	47.209	ng	98
85) 1,3-Dichlorobenzene	20.19	146	1205086	24.947	ng	100
86) 1,4-Dichlorobenzene	20.25	146	1227584	24.324	ng	100
87) sec-Butylbenzene	20.29	105	2696651	23.842	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	2301887	24.355	ng	99
89) 1,2,3-Trimethylbenzene	20.29	105	2696651	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	1159418	24.674	ng	99
91) d-Limonene	20.56	68	775056	25.447	ng	95
92) 1,2-Dibromo-3-Chloropr...	20.94	157	890903	48.471	ng	95
93) n-Undecane	21.25	57	600	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1764206	51.947	ng	100
95) Naphthalene	22.16	128	2589166	24.478	ng	100
96) n-Dodecane	22.16	57	1057	No Calib	#	
97) Hexachlorobutadiene	22.48	225	557274	25.188	ng	99
98) Cyclohexanone	18.08	55	4196	No Calib		
99) tert-Butylbenzene	20.06	119	1935355	24.079	ng	99
100) n-Butylbenzene	20.80	91	2202828	24.046	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	535510	23.832	ng	99

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

Data File : I:\MS16\DATA\2021_12\29\12292105.D
Acq On : 29 Dec 2021 2:11
Sample : LCSD R16122921_25ng
Misc : S34-09132101/S35-12032103 (1/02)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 03:10:03 2021

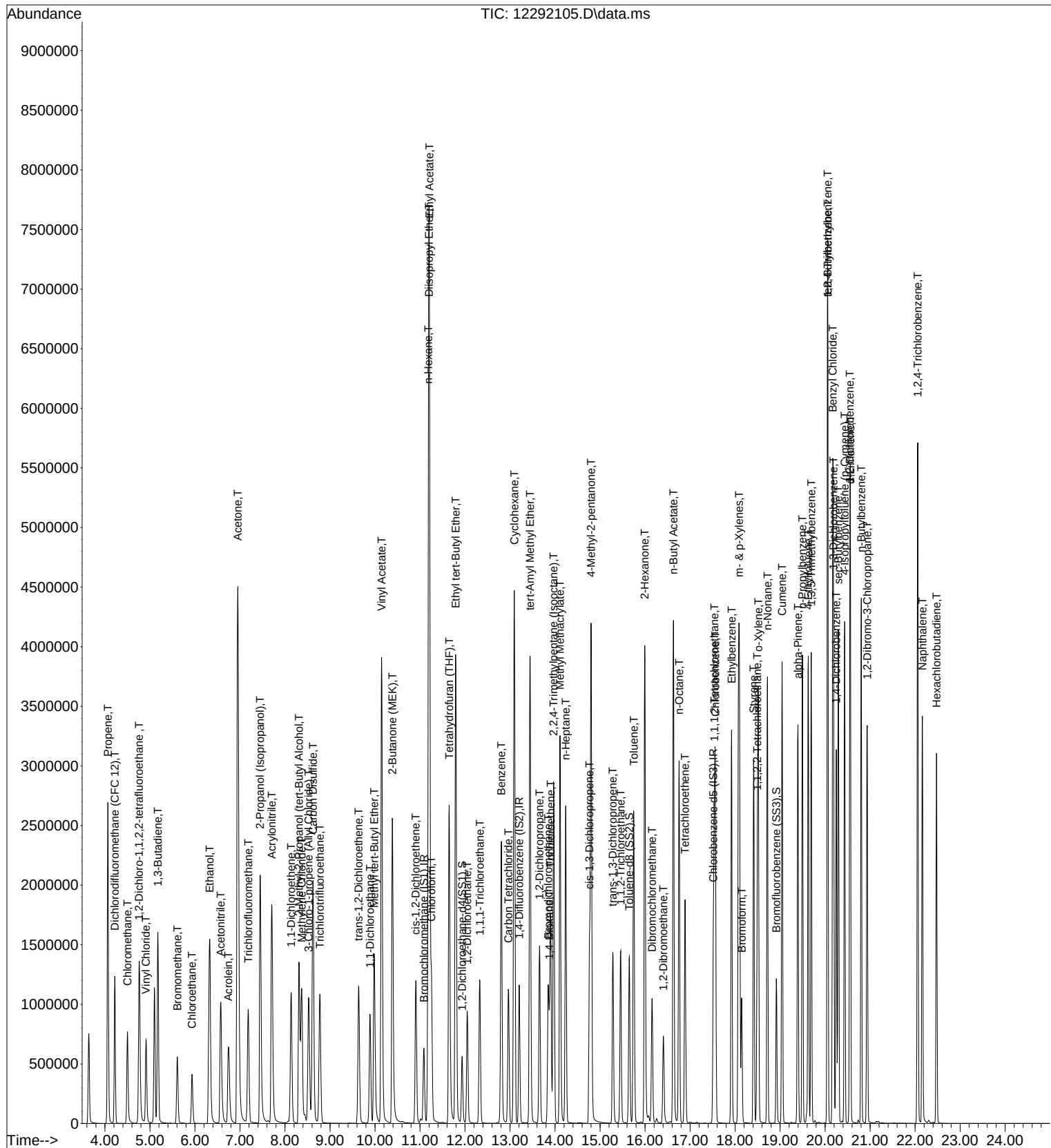
Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



Method Path : I:\MS16\METHODS\
 Method File : R16102821.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Sat Oct 30 07:47:28 2021
 Response Via : Initial Calibration

10/30/21

Calibration Files

0.1 =10282136.D 0.2 =10282137.D 0.5 =10282138.D 1.0 =10282139.D 5.0 =10282140.D 25 =10282141.D
 100 =10282143.D

	Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1) IR	Bromochloromethane...	-----ISTD-----									
2) T	Propene	2.632	2.554	2.300	2.392	2.925	2.770	2.300	1.859	2.466	13.42
3) T	Dichlorodifluo...	2.986	2.825	2.952	2.925	2.794	2.849	2.444	2.161	2.742	10.55
4) T	Chloromethane	2.577	2.664	2.934	2.861	2.219	2.755	2.227	1.437	2.459	19.96
5) T	1,2-Dichloro-1...	1.237	1.279	1.362	1.319	1.251	1.303	1.181	1.033	1.246	8.20
6) T	Vinyl Chloride	1.972	2.035	2.220	2.177	2.127	2.182	1.954	1.711	2.047	8.23
7) T	1,3-Butadiene	1.629	1.603	1.897	1.908	1.907	2.017	1.750	1.442	1.769	11.11
8) T	Bromomethane	1.067	1.067	1.128	1.127	1.067	1.150	1.094	0.989	1.086	4.69
9) T	Chloroethane	0.963	0.945	1.013	1.000	0.973	1.033	0.978	0.910	0.977	4.00
10) T	Ethanol	1.625	1.452	1.372	1.370	1.396	1.490	1.320	1.078	1.388	11.30
11) T	Acetonitrile	4.280	3.702	3.632	3.658	3.615	3.828	3.594	3.283	3.699	7.59
12) T	Acrolein	0.780	0.852	0.974	0.979	1.044	1.150	1.088	0.993	0.983	12.23
13) T	Acetone	1.389	1.344	1.213	1.195	1.187	1.222	1.029	0.744	1.165	17.31
14) T	Trichlorofluor...	2.545	2.416	2.517	2.485	2.348	2.471	2.293	2.106	2.398	6.07
15) T	2-Propanol (Is...	3.353	3.239	3.947	3.801	3.064	3.886	3.240	2.649	3.397	13.30
16) T	Acrylonitrile	1.709	1.849	2.088	2.146	2.267	2.495	2.318	2.005	2.110	12.13
17) T	1,1-Dichloroet...	1.082	1.070	1.208	1.182	1.156	1.274	1.225	1.147	1.168	5.94
18) T	2-Methyl-2-Pro...	2.621	2.857	3.300	3.461	2.291	3.570	2.276		2.911	18.62
19) T	Methylene Chlo...	1.381	1.296	1.334	1.317	1.295	1.366	1.290	1.197	1.309	4.33
20) T	3-Chloro-1-pro...	2.550	2.411	2.645	2.638	2.587	2.821	2.598	2.303	2.569	6.09
21) T	Trichlorotrifl...	1.055	1.065	1.049	1.042	0.992	1.085	1.052	0.990	1.041	3.23
22) T	Carbon Disulfide	5.120	4.841	5.040	4.868	4.761	5.026	4.538	3.758	4.744	9.25
23) T	trans-1,2-Dich...	1.835	1.822	2.009	2.047	2.083	2.245	2.107	1.913	2.008	7.21
24) T	1,1-Dichloroet...	2.536	2.435	2.596	2.552	2.509	2.654	2.483	2.272	2.505	4.61
25) T	Methyl tert-Bu...	3.321	3.361	3.690	3.741	3.871	4.188	3.865	3.209	3.656	9.13
26) T	Vinyl Acetate			0.165	0.205	0.241	0.298	0.276	0.229	0.236	20.31
27) T	2-Butanone (MEK)			0.689	0.776	0.858	0.957	0.877	0.720	0.813	12.57
28) T	cis-1,2-Dichlo...	1.942	1.863	1.965	1.992	2.028	2.172	2.032	1.850	1.980	5.20
29) T	Diisopropyl Ether	1.028	1.055	1.157	1.148	1.173	1.056	0.794		1.059	12.29
30) T	Ethyl Acetate		0.429	0.541	0.564	0.596	0.560	0.367		0.510	17.73
31) T	n-Hexane	2.686	2.485	2.725	2.684	2.714	2.625	1.993	1.382	2.412	19.97
32) T	Chloroform	2.262	2.179	2.322	2.293	2.228	2.239	1.975	1.739	2.155	9.22
33) S	1,2-Dichloroet...	1.820	1.854	1.886	1.891	1.882	1.847	1.775	1.701	1.832	3.59
34) T	Tetrahydrofura...	0.672	0.715	0.806	0.796	0.806	0.893	0.814	0.687	0.774	9.74
35) T	Ethyl tert-But...	1.304	1.328	1.464	1.482	1.526	1.640	1.484	1.175	1.425	10.31
36) T	1,2-Dichloroet...	1.937	1.908	2.008	1.973	1.929	2.034	1.855	1.665	1.914	6.02
37) IR	1,4-Difluorobenzen...	-----ISTD-----									
38) T	1,1,1-Trichlor...	0.457	0.454	0.466	0.458	0.452	0.487	0.459	0.419	0.456	4.09
39) T	Isopropyl Acetate									0.000	-1.00
40) T	1-Butanol									0.000	-1.00
41) T	Benzene	1.284	1.153	1.158	1.135	1.136	1.223	1.146	1.019	1.157	6.58
42) T	Carbon Tetrach...	0.366	0.362	0.393	0.383	0.382	0.422	0.404	0.379	0.386	5.07
43) T	Cyclohexane	0.431	0.401	0.430	0.429	0.439	0.475	0.424	0.332	0.420	9.79
44) T	tert-Amyl Meth...	0.706	0.708	0.771	0.791	0.827	0.896	0.799	0.615	0.764	11.30
45) T	1,2-Dichloropr...	0.325	0.303	0.325	0.326	0.324	0.352	0.333	0.302	0.324	4.94
46) T	Bromodichlorom...	0.347	0.346	0.393	0.392	0.398	0.439	0.412	0.373	0.387	8.13
47) T	Trichloroethene	0.299	0.279	0.300	0.293	0.293	0.327	0.312	0.278	0.298	5.49
48) T	1,4-Dioxane			0.192	0.199	0.218	0.254	0.238	0.208	0.218	10.88
49) T	2,2,4-Trimethy...	1.445	1.402	1.487	1.473	1.481	1.573	1.418	1.125	1.426	9.26
50) T	Methyl Methacr...			0.082	0.093	0.112	0.132	0.123	0.104	0.108	17.26
51) T	n-Heptane	0.235	0.255	0.290	0.292	0.298	0.321	0.296	0.253	0.280	10.30
52) T	cis-1,3-Dichlo...	0.329	0.341	0.395	0.414	0.453	0.520	0.493	0.450	0.424	15.96
53) T	4-Methyl-2-pen...			0.266	0.287	0.320	0.361	0.309	0.223	0.294	16.16
54) T	trans-1,3-Dich...		0.277	0.338	0.365	0.431	0.505	0.478	0.447	0.406	20.17

55)	T	1,1,2-Trichlor...	0.256	0.253	0.271	0.269	0.272	0.304	0.290	0.265	0.273	6.26
56)	IR	Chlorobenzene-d5 (...)	-----ISTD-----									
57)	S	Toluene-d8 (SS2)	4.531	4.454	4.474	4.385	4.340	4.367	4.488	4.712	4.469	2.64
58)	T	Toluene	5.440	4.851	4.966	4.737	4.688	5.148	4.934	4.515	4.910	5.86
59)	T	2-Hexanone			2.836	3.199	3.531	3.871	3.245	2.305	3.165	17.24
60)	T	Dibromochlorom...	1.099	1.051	1.275	1.249	1.299	1.519	1.507	1.476	1.310	13.74
61)	T	1,2-Dibromoethane	1.091	1.086	1.245	1.220	1.266	1.451	1.444	1.401	1.276	11.45
62)	T	n-Butyl Acetate			2.882	3.252	3.880	4.340	3.657	2.542	3.425	19.38
63)	T	n-Octane	1.184	1.175	1.285	1.274	1.276	1.386	1.290	1.070	1.243	7.72
64)	T	Tetrachloroethene	1.397	1.283	1.326	1.249	1.226	1.387	1.388	1.313	1.321	4.99
65)	T	Chlorobenzene	3.609	3.321	3.289	3.115	3.095	3.495	3.307	2.819	3.256	7.58
66)	T	Ethylbenzene	5.460	4.898	5.293	5.287	5.448	6.040	5.704	5.042	5.396	6.69
67)	T	m- & p-Xylenes	4.284	3.909	4.303	4.240	4.336	4.739	4.302	3.398	4.189	9.32
68)	T	Bromoform			0.878	0.925	0.999	1.244	1.251	1.174	1.078	15.31
69)	T	Styrene			2.630	2.808	3.142	3.825	3.645	3.237	3.214	14.40
70)	T	o-Xylene	4.208	3.921	4.274	4.237	4.298	4.634	4.225	3.420	4.152	8.51
71)	T	n-Nonane	2.838	2.837	3.216	3.240	3.343	3.461	2.879	1.970	2.973	15.86
72)	T	1,1,2,2-Tetrac...	1.846	1.876	2.000	2.036	2.102	2.306	2.147	1.785	2.012	8.63
73)	S	Bromofluoroben...	1.574	1.519	1.529	1.506	1.518	1.561	1.629	1.723	1.570	4.70
74)	T	Cumene	5.509	5.001	5.358	5.283	5.438	5.985	5.581	4.715	5.359	7.12
75)	T	alpha-Pinene			2.351	2.445	2.646	3.054	2.888	2.487	2.645	10.38
76)	T	n-Propylbenzene	6.512	5.915	6.459	6.486	6.725	7.335	6.704	5.503	6.455	8.51
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	4.886	4.458	4.941	4.970	5.276	5.923	5.497	4.568	5.065	9.56
79)	T	1,3,5-Trimethy...	4.169	3.677	4.328	4.253	4.401	4.874	4.499	3.704	4.238	9.40
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	3.906	3.668	4.343	4.314	4.581	5.002	4.092	2.856	4.095	15.78
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride			2.770	3.024	3.677	4.504	3.784		3.552	19.24
85)	T	1,3-Dichlorobe...	2.695	2.418	2.477	2.390	2.485	2.905	2.489	1.810	2.459	12.71
86)	T	1,4-Dichlorobe...	2.946	2.479	2.382	2.334	2.430	2.892	2.748	2.339	2.569	9.86
87)	T	sec-Butylbenzene	5.565	5.330	5.914	5.914	6.176	6.645	5.935	4.576	5.757	10.71
88)	T	4-Isopropyltol...	4.350	4.108	4.800	4.813	5.193	5.812	5.269	4.138	4.811	12.46
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	2.549	2.256	2.341	2.333	2.433	2.816	2.510	1.896	2.392	11.07
91)	T	d-Limonene			1.312	1.420	1.580	1.888	1.552		1.550	14.00
92)	T	1,2-Dibromo-3-...			0.779	0.810	0.941	1.149	1.074	0.860	0.936	15.92
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...			1.390	1.408	1.617	2.264	1.964		1.729	21.86
95)	T	Naphthalene			3.945	4.156	4.774	7.069	6.701	5.657	5.384	24.36
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	1.086	1.047	1.023	1.022	1.087	1.312	1.298	1.134	1.126	10.34
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	4.112	3.867	4.320	4.300	4.506	4.850	3.948	2.825	4.091	14.66
100)	T	n-Butylbenzene	4.227	3.985	4.675	4.708	5.059	5.572	5.053	4.022	4.663	12.02
101)	T	1,1,1,2-Tetrac...	1.085	1.056	1.147	1.121	1.131	1.290	1.242	1.078	1.144	7.16

(#) = Out of Range

R16102821.M Sat Oct 30 13:48:52 2021

Primary Source Standards Concentrations (Working & Initial Calibration)

10/31/21

1ng/L Std. ID: S34-10142102
4ng/L Std. ID: S34-10142102
20ng/L Std. ID: S34-10142101

40ng/L Std. ID: S34-10192101
200ng/L Std. ID: S34-10192101
1000ng/L Std. ID: S34-10192101

Dilution Factors:		1		5		25		50		250		1000		Working STD Conc. (ng/L):				
		Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	2ng/L	0.4ng/L	0.1ng/L	0.025ng/L	0.005ng/L	0.001ng/L	4	4	20	20	200
Compounds			Primary Working Standards											Injection (L):				
														ICAL Points:				
Propene	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.025	0.050	0.250	0.250	250
Dichlorodifluoromethane	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.104	0.208	0.520	0.520	520
Chloromethane	1.02	1020	204	40.8	20.4	4.08	1.02	0.204	0.0408	0.00816	0.001632	0.000408	0.0000816	0.105	0.210	0.525	0.525	525
Freon-114	1.08	1080	216	43.2	21.6	4.32	1.08	0.216	0.0432	0.00864	0.001728	0.000432	0.0000864	0.102	0.204	0.510	0.510	510
Vinyl Chloride	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.108	0.216	0.540	0.540	540
1,3-Butadiene	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.104	0.208	0.520	0.520	520
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02	0.204	0.0408	0.00816	0.001632	0.000408	0.0000816	0.104	0.204	0.510	0.510	510
Chloroethane	1.02	1020	204	40.8	20.4	4.08	1.02	0.204	0.0408	0.00816	0.001632	0.000408	0.0000816	0.102	0.204	0.510	0.510	510
Ethanol	3.62	3620	724	144.8	72.4	14.48	3.62	0.724	0.1448	0.02896	0.005792	0.001448	0.0002896	0.362	0.724	1.810	1.810	1810
Acetonitrile	0.93	930	186	37.2	18.6	3.72	0.93	0.186	0.0372	0.00744	0.001488	0.000372	0.0000744	0.093	0.186	0.465	0.465	465
Acrolein	2.00	2000	400	80.0	40.0	8.00	2.00	0.400	0.0800	0.01600	0.003200	0.000800	0.0001600	0.200	0.400	1.000	1.000	1000
Acetone	5.19	5190	1038	207.6	103.8	20.76	5.19	1.038	0.2076	0.04152	0.008304	0.002076	0.0004152	0.519	1.038	2.595	2.595	2595
Trichlorofluoromethane	1.03	1030	206	41.2	20.6	4.12	1.03	0.206	0.0412	0.00824	0.001648	0.000412	0.0000824	0.103	0.206	0.515	0.515	515
Isopropanol	2.02	2020	404	80.8	40.4	8.08	2.02	0.404	0.0808	0.01616	0.003232	0.000808	0.0001616	0.202	0.404	1.010	1.010	1010
Acrylonitrile	2.03	2030	406	81.2	40.6	8.12	2.03	0.406	0.0812	0.01624	0.003248	0.000812	0.0001624	0.203	0.406	1.015	1.015	1015
1,1-Dichloroethene	1.07	1070	214	42.8	21.4	4.28	1.07	0.214	0.0428	0.00856	0.001712	0.000428	0.0000856	0.107	0.214	0.535	0.535	535
tert-Butanol	2.10	2100	420	84.0	42.0	8.40	2.10	0.420	0.0840	0.01680	0.003360	0.000840	0.0001680	0.210	0.420	1.050	1.050	1050
Methylene Chloride	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.104	0.208	0.520	0.520	520
2-Methyl Chloride	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.105	0.210	0.525	0.525	525
1,1,1-Trichloroethane	1.08	1080	216	43.2	21.6	4.32	1.08	0.216	0.0432	0.00864	0.001728	0.000432	0.0000864	0.108	0.216	0.540	0.540	540
1,2-Dichloroethane	2.10	2100	420	84.0	42.0	8.40	2.10	0.420	0.0840	0.01680	0.003360	0.000840	0.0001680	0.210	0.420	1.050	1.050	1050
trans-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06	0.212	0.0424	0.00848	0.001696	0.000424	0.0000848	0.106	0.212	0.530	0.530	530
1,1-Dichloroethane	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.105	0.210	0.525	0.525	525
Methyl tert-Butyl Ether	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.105	0.210	0.525	0.525	525
Vinyl Acetate	3.40	3400	680	136.0	68.0	13.60	3.40	0.680	0.1360	0.02720	0.005440	0.001360	0.0002720	0.340	0.680	1.700	1.700	1700
2-Butanone	2.06	2060	412	82.4	41.2	8.24	2.06	0.412	0.0824	0.01648	0.003296	0.000824	0.0001648	0.206	0.412	1.030	1.030	1030
cis-1,2-Dichloroethene	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.104	0.208	0.520	0.520	520
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12	0.424	0.0848	0.01696	0.003392	0.000848	0.0001696	0.212	0.424	1.060	1.060	1060
Ethyl Acetate	4.08	4080	816	163.2	81.6	16.32	4.08	0.816	0.1632	0.03264	0.006528	0.001632	0.0003264	0.408	0.816	2.040	2.040	2040
n-Hexane	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.105	0.210	0.525	0.525	525
Chloroform	1.07	1070	214	42.8	21.4	4.28	1.07	0.214	0.0428	0.00856	0.001712	0.000428	0.0000856	0.107	0.214	0.535	0.535	535
Tetrahydrofuran	1.97	1970	394	78.8	39.4	7.88	1.97	0.394	0.0788	0.01576	0.003152	0.000788	0.0001576	0.197	0.394	0.985	0.985	985
Ethyl tert-Butyl Ether	2.10	2100	420	84.0	42.0	8.40	2.10	0.420	0.0840	0.01680	0.003360	0.000840	0.0001680	0.210	0.420	1.050	1.050	1050
1,2-Dichloroethane	1.06	1060	212	42.4	21.2	4.24	1.06	0.212	0.0424	0.00848	0.001696	0.000424	0.0000848	0.106	0.212	0.530	0.530	530
1,1,1-Trichloroethane	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.104	0.208	0.520	0.520	520
Benzene	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.104	0.208	0.520	0.520	520
Carbon Tetrachloride	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.105	0.210	0.525	0.525	525
Cyclohexane	2.07	2070	414	82.8	41.4	8.28	2.07	0.414	0.0828	0.01656	0.003312	0.000828	0.0001656	0.207	0.414	1.035	1.035	1035
tert-Amyl Methyl Ether	2.09	2090	418	83.6	41.8	8.36	2.09	0.418	0.0836	0.01672	0.003344	0.000836	0.0001672	0.209	0.418	1.045	1.045	1045
1,2-Dichloropropane	1.03	1030	206	41.2	20.6	4.12	1.03	0.206	0.0412	0.00824	0.001648	0.000412	0.0000824	0.103	0.206	0.515	0.515	515
Bromodichloromethane	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.105	0.210	0.525	0.525	525
Trichloroethene	1.03	1030	206	41.2	20.6	4.12	1.03	0.206	0.0412	0.00824	0.001648	0.000412	0.0000824	0.103	0.206	0.515	0.515	515
1,4-Dioxane	1.04	1040	208	41.6	20.8	4.16	1.04	0.208	0.0416	0.00832	0.001664	0.000416	0.0000832	0.104	0.208	0.520	0.520	520
Isocane	1.06	1060	212	42.4	21.2	4.24	1.06	0.212	0.0424	0.00848	0.001696	0.000424	0.0000848	0.106	0.212	0.530	0.530	530
Methyl Methacrylate	2.08	2080	416	83.2	41.6	8.32	2.08	0.416	0.0832	0.01664	0.003328	0.000832	0.0001664	0.208	0.416	1.040	1.040	1040
n-Heptane	1.05	1050	210	42.0	21.0	4.20	1.05	0.210	0.0420	0.00840	0.001680	0.000420	0.0000840	0.105	0.210	0.525	0.525	525

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S34-10142102 4ng/L Std. ID: S34-10142102 20ng/L Std. ID: S34-10142101										40ng/L Std. ID: S34-10192101 200ng/L Std. ID: S34-10192101 1000ng/L Std. ID: S34-10192101														
Dilution Factors:			1		5		25		50		250		1000		Working STD Conc.(ng/L): Injection (L): ICAL Points:									
Compounds	Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	20ng/L	4ng/L	1ng/L															
		0.025	0.050	0.100	0.200	0.400	0.800	1.600	3.200															
cis-1,3-Dichloropropene	1.05	1050	210	420	210	420	210	420	210	420	210	420	210	1.05	0.025	0.050	0.100	0.200	0.400	0.800	1.600	3.200	6.400	12.800
4-Methyl-2-pentanone	2.08	2080	416	832	416	832	416	832	416	832	416	832	416	2.08	0.105	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
trans-1,3-Dichloropropene	1.01	1010	202	404	202	404	202	404	202	404	202	404	202	1.01	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248	106.496
1,1,2-Trichloroethane	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
Toluene	1.03	1030	206	412	206	412	206	412	206	412	206	412	206	1.03	0.103	0.206	0.412	0.824	1.648	3.296	6.592	13.184	26.368	52.736
2-Hexanone	2.05	2050	410	820	410	820	410	820	410	820	410	820	410	2.05	0.205	0.410	0.820	1.640	3.280	6.560	13.120	26.240	52.480	104.960
Dibromochloromethane	1.05	1050	210	420	210	420	210	420	210	420	210	420	210	1.05	0.105	0.210	0.420	0.840	1.680	3.360	6.720	13.440	26.880	53.760
1,2-Dibromoethane	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
n-Butyl Acetate	2.04	2040	408	816	408	816	408	816	408	816	408	816	408	2.04	0.204	0.408	0.816	1.632	3.264	6.528	13.056	26.112	52.224	104.448
n-Octane	1.05	1050	210	420	210	420	210	420	210	420	210	420	210	1.05	0.105	0.210	0.420	0.840	1.680	3.360	6.720	13.440	26.880	53.760
Tetrachloroethene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
Chlorobenzene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
Ethylbenzene	1.03	1030	206	412	206	412	206	412	206	412	206	412	206	1.03	0.103	0.206	0.412	0.824	1.648	3.296	6.592	13.184	26.368	52.736
m- & p-Xylene	2.06	2060	412	824	412	824	412	824	412	824	412	824	412	2.06	0.206	0.412	0.824	1.648	3.296	6.592	13.184	26.368	52.736	105.472
Bromoform	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
Styrene	1.03	1030	206	412	206	412	206	412	206	412	206	412	206	1.03	0.103	0.206	0.412	0.824	1.648	3.296	6.592	13.184	26.368	52.736
o-Xylene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
n-Nonane	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
1,1,1,2,2-Tetrachloroethane	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
α-Cumene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
1,2,4-Trimethylbenzene	1.08	1080	216	432	216	432	216	432	216	432	216	432	216	1.08	0.108	0.216	0.432	0.864	1.728	3.456	6.912	13.824	27.648	55.296
n-Propylbenzene	1.05	1050	210	420	210	420	210	420	210	420	210	420	210	1.05	0.105	0.210	0.420	0.840	1.680	3.360	6.720	13.440	26.880	53.760
4-Ethyltoluene	1.06	1060	212	424	212	424	212	424	212	424	212	424	212	1.06	0.106	0.212	0.424	0.848	1.696	3.392	6.784	13.568	27.136	54.272
1,3,5-Trimethylbenzene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
1,2,4-Trimethylbenzene	1.03	1030	206	412	206	412	206	412	206	412	206	412	206	1.03	0.103	0.206	0.412	0.824	1.648	3.296	6.592	13.184	26.368	52.736
Benzyl Chloride	2.06	2060	412	824	412	824	412	824	412	824	412	824	412	2.06	0.206	0.412	0.824	1.648	3.296	6.592	13.184	26.368	52.736	105.472
1,3-Dichlorobenzene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
1,4-Dichlorobenzene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
sec-Butylbenzene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
p-Isopropyltoluene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
1,2-Dichlorobenzene	1.05	1050	210	420	210	420	210	420	210	420	210	420	210	1.05	0.105	0.210	0.420	0.840	1.680	3.360	6.720	13.440	26.880	53.760
d-Limonene	1.05	1050	210	420	210	420	210	420	210	420	210	420	210	1.05	0.105	0.210	0.420	0.840	1.680	3.360	6.720	13.440	26.880	53.760
1,2-Dibromo-3-chloropropane	2.00	2000	400	800	400	800	400	800	400	800	400	800	400	2.00	0.200	0.400	0.800	1.600	3.200	6.400	12.800	25.600	51.200	102.400
1,2,4-Trichlorobenzene	2.04	2040	408	816	408	816	408	816	408	816	408	816	408	2.04	0.204	0.408	0.816	1.632	3.264	6.528	13.056	26.112	52.224	104.448
Naphthalene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
Hexachloro-1,3-butadiene	1.03	1030	206	412	206	412	206	412	206	412	206	412	206	1.03	0.103	0.206	0.412	0.824	1.648	3.296	6.592	13.184	26.368	52.736
tert-Butylbenzene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
n-Butylbenzene	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248
1,1,1,2,2-Tetrachloroethane	1.04	1040	208	416	208	416	208	416	208	416	208	416	208	1.04	0.104	0.208	0.416	0.832	1.664	3.328	6.656	13.312	26.624	53.248

Method : I:\MS16\METHODS\R16102821.M (RTE Integrator)
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File

1	0.1	0	13	I:\MS16\DATA\2021_10\28\10282136.D
2	0.2	0	13	I:\MS16\DATA\2021_10\28\10282137.D
3	0.5	1	13	I:\MS16\DATA\2021_10\28\10282138.D
4	1.0	1	13	I:\MS16\DATA\2021_10\28\10282139.D
5	5.0	5	13	I:\MS16\DATA\2021_10\28\10282140.D
6	25	26	13	I:\MS16\DATA\2021_10\28\10282141.D
7	50	52	13	I:\MS16\DATA\2021_10\28\10282142.D
8	100	104	13	I:\MS16\DATA\2021_10\28\10282143.D

 10/30/21

#	ID	Update Time				Quant Time				Acquisition Time			
--	--	-----				-----				-----			
1	0.1	Oct	29	02:43	2021	Oct	29	02:38	2021	28	Oct	2021	22:19
2	0.2	Oct	29	02:44	2021	Oct	29	02:35	2021	28	Oct	2021	22:53
3	0.5	Oct	29	02:44	2021	Oct	29	02:35	2021	28	Oct	2021	23:27
4	1.0	Oct	29	02:44	2021	Oct	29	02:35	2021	29	Oct	2021	00:01
5	5.0	Oct	29	02:45	2021	Oct	29	02:35	2021	29	Oct	2021	00:35
6	25	Oct	30	07:47	2021	Oct	29	02:35	2021	29	Oct	2021	1:08
7	50	Oct	29	02:46	2021	Oct	29	02:35	2021	29	Oct	2021	1:42
8	100	Oct	29	02:50	2021	Oct	29	02:50	2021	29	Oct	2021	2:16

R16102821.M

Sat Oct 30 13:10:29 2021

Data File : I:\MS16\DATA\2021_10\28\10282136.D
 Acq On : 28 Oct 2021 22:19
 Sample : 0.1ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142102 (11/13)

Vial: 14
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:38:36 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	171076	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.19	114	768850	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.51	54	175986	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	311397	11.786	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	94.32%
57) Toluene-d8 (SS2)	15.65	98	797356	10.819	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.56%
73) Bromofluorobenzene (SS3)	18.92	174	276954	10.259	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	82.08%

Target Compounds

						Qvalue
2) Propene	4.11	42	3746	0.149	ng	95
3) Dichlorodifluoromethan...	4.26	85	4291	0.114	ng	# 91
4) Chloromethane	4.55	50	3597	0.159	ng	92
5) 1,2-Dichloro-1,1,2,2-t...	4.78	135	1828	0.130	ng	93
6) Vinyl Chloride	4.95	62	2807	0.132	ng	95
7) 1,3-Butadiene	5.21	54	2318	0.123	ng	# 85
8) Bromomethane	5.63	94	1489	0.101	ng	95
9) Chloroethane	5.96	64	1345	0.103	ng	79
10) Ethanol	6.34	45	8052	0.491	ng	88
11) Acetonitrile	6.64	41	5448	0.131	ng	76
12) Acrolein	6.79	56	2136	0.171	ng	91
13) Acetone	6.99	58	9864	0.651	ng	90
14) Trichlorofluoromethane	7.19	101	3588	0.102	ng	93
15) 2-Propanol (Isopropanol)	7.53	45	9270	0.191	ng	86
16) Acrylonitrile	7.75	53	4749	0.168	ng	98
17) 1,1-Dichloroethene	8.14	96	1585	0.093	ng	92
18) 2-Methyl-2-Propanol (t...	8.38	59	7534	0.150	ng	91
19) Methylene Chloride	8.35	84	1966	0.108	ng	95
20) 3-Chloro-1-propene (Al...	8.52	41	3665	0.116	ng	83
21) Trichlorotrifluoroethane	8.78	151	1560	0.092	ng	100
22) Carbon Disulfide	8.63	76	14715	0.227	ng	94
23) trans-1,2-Dichloroethene	9.63	61	2662	0.096	ng	97
24) 1,1-Dichloroethane	9.87	63	3644	0.103	ng	92
25) Methyl tert-Butyl Ether	10.02	73	4772	0.082	ng	97
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.	d	
28) cis-1,2-Dichloroethene	10.89	61	2764	0.099	ng	95
29) Diisopropyl Ether	11.21	87	2983	0.193	ng	# 1
30) Ethyl Acetate	11.25	61	1852	0.251	ng	87
31) n-Hexane	11.19	57	3860	0.115	ng	# 97
32) Chloroform	11.23	83	3312	0.101	ng	99
34) Tetrahydrofuran (THF)	11.70	72	1813	0.163	ng	# 58
35) Ethyl tert-Butyl Ether	11.80	87	3747	0.165	ng	# 91
36) 1,2-Dichloroethane	12.04	62	2810	0.100	ng	96
38) 1,1,1-Trichloroethane	12.32	97	2922	0.094	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	8215	0.113	ng	97
42) Carbon Tetrachloride	12.96	117	2363	0.090	ng	96
43) Cyclohexane	13.09	84	5491	0.199	ng	97
44) tert-Amyl Methyl Ether	13.46	73	9078	0.168	ng	92
45) 1,2-Dichloropropane	13.65	63	2062	0.105	ng	95
46) Bromodichloromethane	13.85	83	2244	0.086	ng	93
47) Trichloroethene	13.90	130	1892	0.100	ng	98
48) 1,4-Dioxane	13.93	88	632	0.045	ng	# 7
49) 2,2,4-Trimethylpentane...	13.96	57	9422	0.106	ng	95
50) Methyl Methacrylate	0.00	100	0	N.D.	d	

Data File : I:\MS16\DATA\2021_10\28\10282136.D
 Acq On : 28 Oct 2021 22:19
 Sample : 0.1ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142102 (11/13)

Vial: 14
 Operator: WA
 Inst : GCMS-16

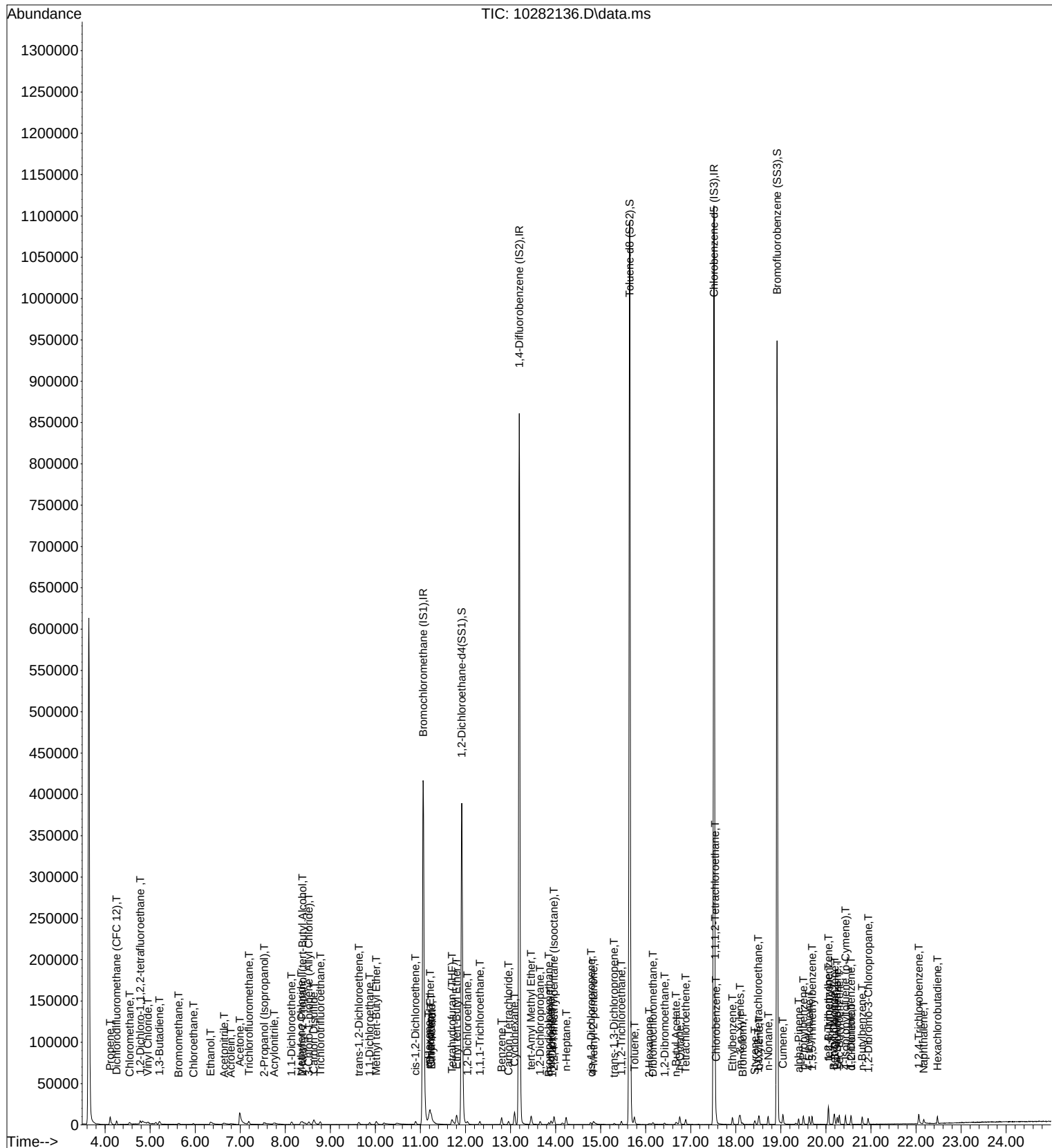
Quant Time: Oct 29 02:38:36 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Oct 29 02:34:21 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	1519	0.084	ng	# 83
52) cis-1,3-Dichloropropene	14.79	75	2127	0.077	ng	92
53) 4-Methyl-2-pentanone	14.84	58	1870	0.103	ng	# 37
54) trans-1,3-Dichloropropene	15.30	75	1385	0.048	ng	78
55) 1,1,2-Trichloroethane	15.46	97	1638	0.095	ng	94
58) Toluene	15.75	91	7888	0.096	ng	96
59) 2-Hexanone	16.08	43	4508	0.091	ng	72
60) Dibromochloromethane	16.16	129	1625	0.070	ng	93
61) 1,2-Dibromoethane	16.42	107	1597	0.074	ng	95
62) n-Butyl Acetate	16.67	43	4178	0.073	ng	93
63) n-Octane	16.76	57	1751	0.086	ng	91
64) Tetrachloroethene	16.89	166	2046	0.082	ng	98
65) Chlorobenzene	17.56	112	5284	0.100	ng	96
66) Ethylbenzene	17.92	91	7917	0.084	ng	93
67) m- & p-Xylenes	18.09	91	12424	0.163	ng	96
68) Bromoform	18.15	173	1054	0.050	ng	80
69) Styrene	18.42	104	2937	0.051	ng	95
70) o-Xylene	18.52	91	6162	0.082	ng	94
71) n-Nonane	18.72	43	4156	0.091	ng	93
72) 1,1,2,2-Tetrachloroethane	18.50	83	2703	0.084	ng	98
74) Cumene	19.04	105	8066	0.084	ng	97
75) alpha-Pinene	19.40	93	2721	0.057	ng	98
76) n-Propylbenzene	19.50	91	9627	0.081	ng	94
77) 3-Ethyltoluene	19.63	105	7291	No Calib		
78) 4-Ethyltoluene	19.63	105	7291	0.083	ng	95
79) 1,3,5-Trimethylbenzene	19.69	105	6104	0.080	ng	93
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.63	105	7291	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	5664	0.077	ng	98
83) n-Decane	20.06	58	363	No Calib	#	
84) Benzyl Chloride	20.18	91	6935	0.112	ng	90
85) 1,3-Dichlorobenzene	20.19	146	3946	0.100	ng	96
86) 1,4-Dichlorobenzene	20.25	146	4313	0.105	ng	96
87) sec-Butylbenzene	20.30	105	8149	0.081	ng	93
88) 4-Isopropyltoluene (p-...	20.43	119	6370	0.074	ng	97
89) 1,2,3-Trimethylbenzene	20.30	105	8149	No Calib	#	
90) 1,2-Dichlorobenzene	20.56	146	3768	0.095	ng	99
91) d-Limonene	20.56	68	735	0.026	ng	91
92) 1,2-Dibromo-3-Chloropr...	20.94	157	1832	0.101	ng	# 52
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.06	180	4814	0.122	ng	97
95) Naphthalene	22.17	128	7276	0.066	ng	89
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.47	225	1575	0.059	ng	91
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	6021	0.080	ng	98
100) n-Butylbenzene	20.80	91	6189	0.080	ng	92
101) 1,1,1,2-Tetrachloroethane	17.54	131	1589	0.079	ng	# 97

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

Vial: 14
Operator: WA
Inst : GCMS-16

Quant Time: Oct 29 02:38:36 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Oct 29 02:34:21 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021_10\28\10282137.D
 Acq On : 28 Oct 2021 22:53
 Sample : 0.2ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142102 (11/13)

Vial: 14
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:36 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	162618	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	730368	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	171223	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	301449	12.003	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.00%
57) Toluene-d8 (SS2)	15.65	98	762560	10.635	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	85.04%
73) Bromofluorobenzene (SS3)	18.92	174	260093	9.902	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	79.20%

Target Compounds

						Qvalue
2) Propene	4.11	42	6912	0.289	ng	99
3) Dichlorodifluoromethan...	4.26	85	7718	0.216	ng	98
4) Chloromethane	4.54	50	7070	0.328	ng	94
5) 1,2-Dichloro-1,1,2,2-t...	4.78	135	3595	0.270	ng	98
6) Vinyl Chloride	4.95	62	5507	0.271	ng	96
7) 1,3-Butadiene	5.20	54	4338	0.242	ng	90
8) Bromomethane	5.63	94	2833	0.202	ng	95
9) Chloroethane	5.96	64	2508	0.202	ng	95
10) Ethanol	6.33	45	13674	0.878	ng	95
11) Acetonitrile	6.64	41	8958	0.227	ng	93
12) Acrolein	6.78	56	4436	0.374	ng	97
13) Acetone	6.98	58	18145	1.260	ng	92
14) Trichlorofluoromethane	7.19	101	6476	0.193	ng	98
15) 2-Propanol (Isopropanol)	7.50	45	17022	0.370	ng	79
16) Acrylonitrile	7.73	53	9765	0.364	ng	97
17) 1,1-Dichloroethene	8.14	96	2980	0.184	ng	96
18) 2-Methyl-2-Propanol (t...	8.38	59	15609	0.327	ng	91
19) Methylene Chloride	8.35	84	3506	0.202	ng	93
20) 3-Chloro-1-propene (Al...	8.52	41	6586	0.218	ng	90
21) Trichlorotrifluoroethane	8.78	151	2994	0.185	ng	99
22) Carbon Disulfide	8.63	76	26450	0.429	ng	96
23) trans-1,2-Dichloroethene	9.62	61	5026	0.190	ng	98
24) 1,1-Dichloroethane	9.87	63	6652	0.197	ng	100
25) Methyl tert-Butyl Ether	10.01	73	9183	0.167	ng	95
26) Vinyl Acetate	10.17	86	749	0.233	ng	# 1
27) 2-Butanone (MEK)	10.44	72	2731	0.244	ng	# 80
28) cis-1,2-Dichloroethene	10.89	61	5041	0.189	ng	99
29) Diisopropyl Ether	11.20	87	5820	0.397	ng	# 80
30) Ethyl Acetate	11.23	61	4553	0.650	ng	87
31) n-Hexane	11.18	57	6789	0.212	ng	99
32) Chloroform	11.23	83	6066	0.195	ng	99
34) Tetrahydrofuran (THF)	11.70	72	3664	0.347	ng	# 91
35) Ethyl tert-Butyl Ether	11.80	87	7256	0.337	ng	93
36) 1,2-Dichloroethane	12.04	62	5262	0.197	ng	96
38) 1,1,1-Trichloroethane	12.32	97	5515	0.187	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	14010	0.203	ng	98
42) Carbon Tetrachloride	12.96	117	4445	0.179	ng	99
43) Cyclohexane	13.09	84	9701	0.369	ng	100
44) tert-Amyl Methyl Ether	13.46	73	17302	0.336	ng	92
45) 1,2-Dichloropropane	13.66	63	3644	0.195	ng	98
46) Bromodichloromethane	13.85	83	4243	0.171	ng	99
47) Trichloroethene	13.90	130	3357	0.188	ng	95
48) 1,4-Dioxane	13.92	88	1726	0.130	ng	# 38
49) 2,2,4-Trimethylpentane...	13.97	57	17369	0.206	ng	95
50) Methyl Methacrylate	14.13	100	1125	0.160	ng	# 63

Data File : I:\MS16\DATA\2021_10\28\10282137.D
 Acq On : 28 Oct 2021 22:53
 Sample : 0.2ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142102 (11/13)

Vial: 14
 Operator: WA
 Inst : GCMS-16

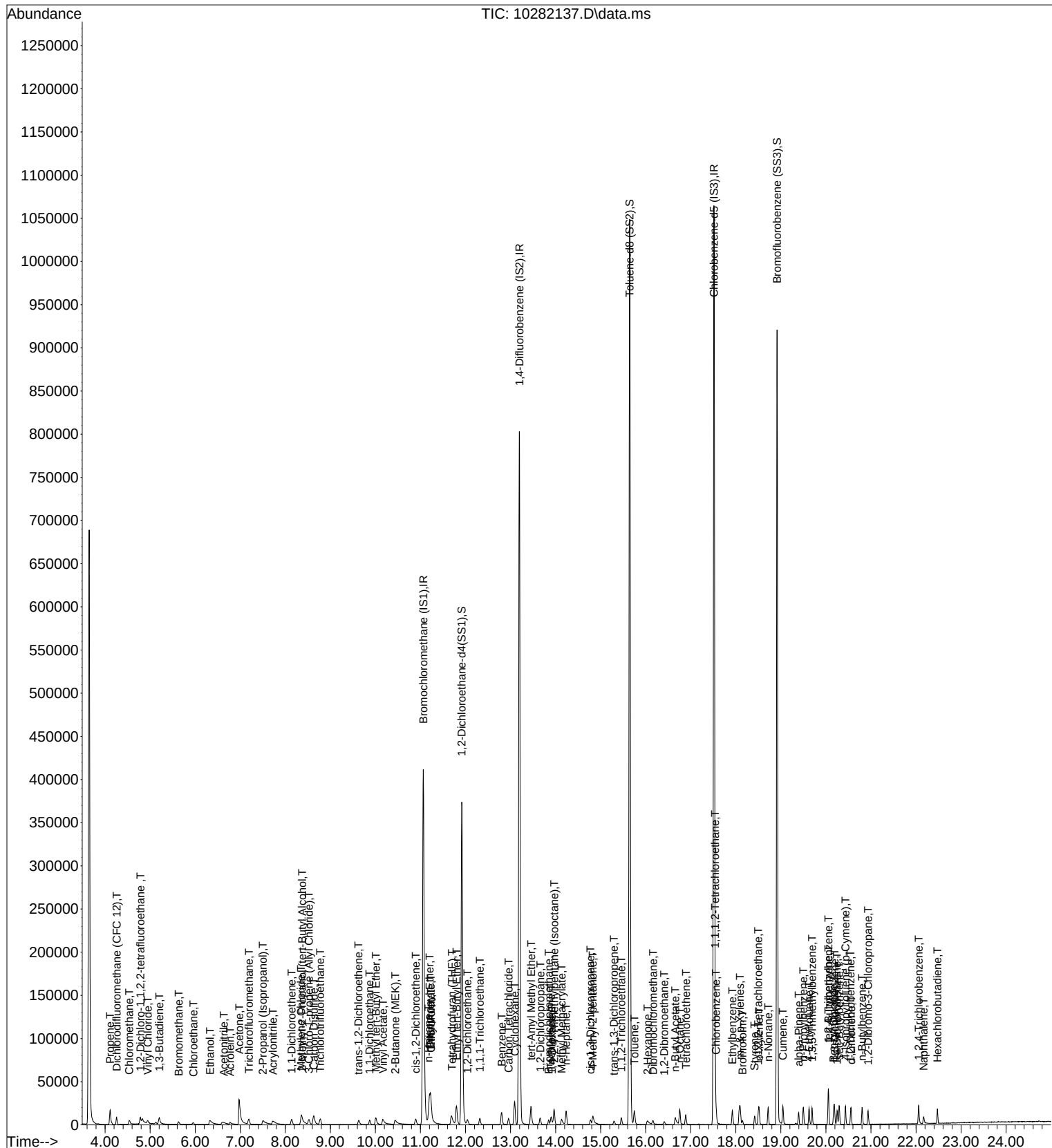
Quant Time: Oct 29 02:35:36 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Oct 29 02:34:21 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.23	71	3130	0.182	ng	91
52) cis-1,3-Dichloropropene	14.78	75	4189	0.159	ng	94
53) 4-Methyl-2-pentanone	14.83	58	4720	0.274	ng	# 70
54) trans-1,3-Dichloropropene	15.29	75	3275	0.119	ng	88
55) 1,1,2-Trichloroethane	15.46	97	3072	0.187	ng	99
58) Toluene	15.75	91	13688	0.171	ng	99
59) 2-Hexanone	16.04	43	12144	0.253	ng	83
60) Dibromochloromethane	16.16	129	3024	0.134	ng	98
61) 1,2-Dibromoethane	16.41	107	3093	0.146	ng	97
62) n-Butyl Acetate	16.66	43	10973	0.197	ng	94
63) n-Octane	16.76	57	3381	0.171	ng	95
64) Tetrachloroethene	16.89	166	3655	0.150	ng	100
65) Chlorobenzene	17.56	112	9462	0.184	ng	99
66) Ethylbenzene	17.92	91	13822	0.151	ng	97
67) m- & p-Xylenes	18.09	91	22063	0.298	ng	97
68) Bromoform	18.15	173	2110	0.103	ng	93
69) Styrene	18.42	104	5653	0.102	ng	99
70) o-Xylene	18.52	91	11171	0.153	ng	95
71) n-Nonane	18.72	43	8082	0.183	ng	92
72) 1,1,2,2-Tetrachloroethane	18.50	83	5346	0.170	ng	98
74) Cumene	19.04	105	14248	0.153	ng	97
75) alpha-Pinene	19.40	93	5166	0.111	ng	96
76) n-Propylbenzene	19.50	91	17015	0.147	ng	97
77) 3-Ethyltoluene	19.63	105	12946	No Calib		
78) 4-Ethyltoluene	19.63	105	12946	0.152	ng	97
79) 1,3,5-Trimethylbenzene	19.69	105	10477	0.140	ng	97
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.63	105	12946	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	10349	0.145	ng	98
83) n-Decane	20.05	58	641	No Calib	#	
84) Benzyl Chloride	20.17	91	13299	0.221	ng	92
85) 1,3-Dichlorobenzene	20.19	146	6889	0.179	ng	98
86) 1,4-Dichlorobenzene	20.25	146	7062	0.176	ng	99
87) sec-Butylbenzene	20.30	105	15187	0.154	ng	94
88) 4-Isopropyltoluene (p-...	20.43	119	11705	0.140	ng	96
89) 1,2,3-Trimethylbenzene	20.30	105	15187	No Calib	#	
90) 1,2-Dichlorobenzene	20.55	146	6489	0.168	ng	99
91) d-Limonene	20.56	68	1566	0.058	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.94	157	3501	0.199	ng	# 55
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.06	180	7502	0.196	ng	99
95) Naphthalene	22.17	128	10097	0.094	ng	89
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.47	225	2954	0.113	ng	96
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	11019	0.151	ng	99
100) n-Butylbenzene	20.80	91	11354	0.151	ng	95
101) 1,1,1,2-Tetrachloroethane	17.54	131	3010	0.154	ng	97

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

Vial: 14
Operator: WA
Inst : GCMS-16

Quant Time: Oct 29 02:35:36 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Oct 29 02:34:21 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021_10\28\10282138.D
 Acq On : 28 Oct 2021 23:27
 Sample : 0.5ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142101 (11/13)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:38 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	156999	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	708811	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	165379	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	296137	12.213	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	97.68%	
57) Toluene-d8 (SS2)	15.65	98	739850	10.683	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	85.44%	
73) Bromofluorobenzene (SS3)	18.92	174	252804	9.965	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	79.68%	

Target Compounds

						Qvalue
2) Propene	4.10	42	15019	0.651	ng	99
3) Dichlorodifluoromethan...	4.25	85	19467	0.565	ng	99
4) Chloromethane	4.53	50	18796	0.904	ng	96
5) 1,2-Dichloro-1,1,2,2-t...	4.77	135	9238	0.719	ng	99
6) Vinyl Chloride	4.93	62	14500	0.740	ng	98
7) 1,3-Butadiene	5.19	54	12387	0.715	ng	93
8) Bromomethane	5.61	94	7224	0.532	ng	98
9) Chloroethane	5.94	64	6486	0.540	ng	98
10) Ethanol	6.30	45	31180	2.073	ng	98
11) Acetonitrile	6.58	41	21215	0.558	ng	88
12) Acrolein	6.76	56	12237	1.067	ng	96
13) Acetone	6.96	58	39520	2.842	ng	86
14) Trichlorofluoromethane	7.18	101	16282	0.503	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	50076	1.127	ng	83
16) Acrylonitrile	7.70	53	26613	1.028	ng	98
17) 1,1-Dichloroethene	8.13	96	8119	0.519	ng	97
18) 2-Methyl-2-Propanol (t...	8.34	59	43514	0.944	ng	92
19) Methylene Chloride	8.35	84	8710	0.519	ng	93
20) 3-Chloro-1-propene (Al...	8.52	41	17440	0.599	ng	94
21) Trichlorotrifluoroethane	8.78	151	7116	0.456	ng	94
22) Carbon Disulfide	8.62	76	66463	1.116	ng	97
23) trans-1,2-Dichloroethene	9.62	61	13373	0.525	ng	98
24) 1,1-Dichloroethane	9.87	63	17115	0.525	ng	100
25) Methyl tert-Butyl Ether	10.00	73	24331	0.458	ng	99
26) Vinyl Acetate	10.15	86	3530	1.137	ng	# 42
27) 2-Butanone (MEK)	10.41	72	8917	0.824	ng	95
28) cis-1,2-Dichloroethene	10.89	61	12832	0.499	ng	100
29) Diisopropyl Ether	11.20	87	15401	1.087	ng	# 77
30) Ethyl Acetate	11.21	61	13867	2.050	ng	96
31) n-Hexane	11.19	57	17967	0.582	ng	99
32) Chloroform	11.23	83	15601	0.519	ng	100
34) Tetrahydrofuran (THF)	11.66	72	9973	0.977	ng	98
35) Ethyl tert-Butyl Ether	11.80	87	19306	0.928	ng	93
36) 1,2-Dichloroethane	12.04	62	13365	0.519	ng	98
38) 1,1,1-Trichloroethane	12.32	97	13750	0.479	ng	98
39) Isopropyl Acetate	12.80	61	116	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	34156	0.509	ng	99
42) Carbon Tetrachloride	12.96	117	11704	0.486	ng	99
43) Cyclohexane	13.09	84	25261	0.991	ng	99
44) tert-Amyl Methyl Ether	13.45	73	45698	0.915	ng	94
45) 1,2-Dichloropropane	13.65	63	9492	0.523	ng	98
46) Bromodichloromethane	13.85	83	11686	0.485	ng	100
47) Trichloroethene	13.90	130	8761	0.504	ng	99
48) 1,4-Dioxane	13.90	88	5647	0.437	ng	89
49) 2,2,4-Trimethylpentane...	13.97	57	44680	0.546	ng	96
50) Methyl Methacrylate	14.12	100	4863	0.711	ng	# 74

Data File : I:\MS16\DATA\2021_10\28\10282138.D
 Acq On : 28 Oct 2021 23:27
 Sample : 0.5ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142101 (11/13)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:38 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

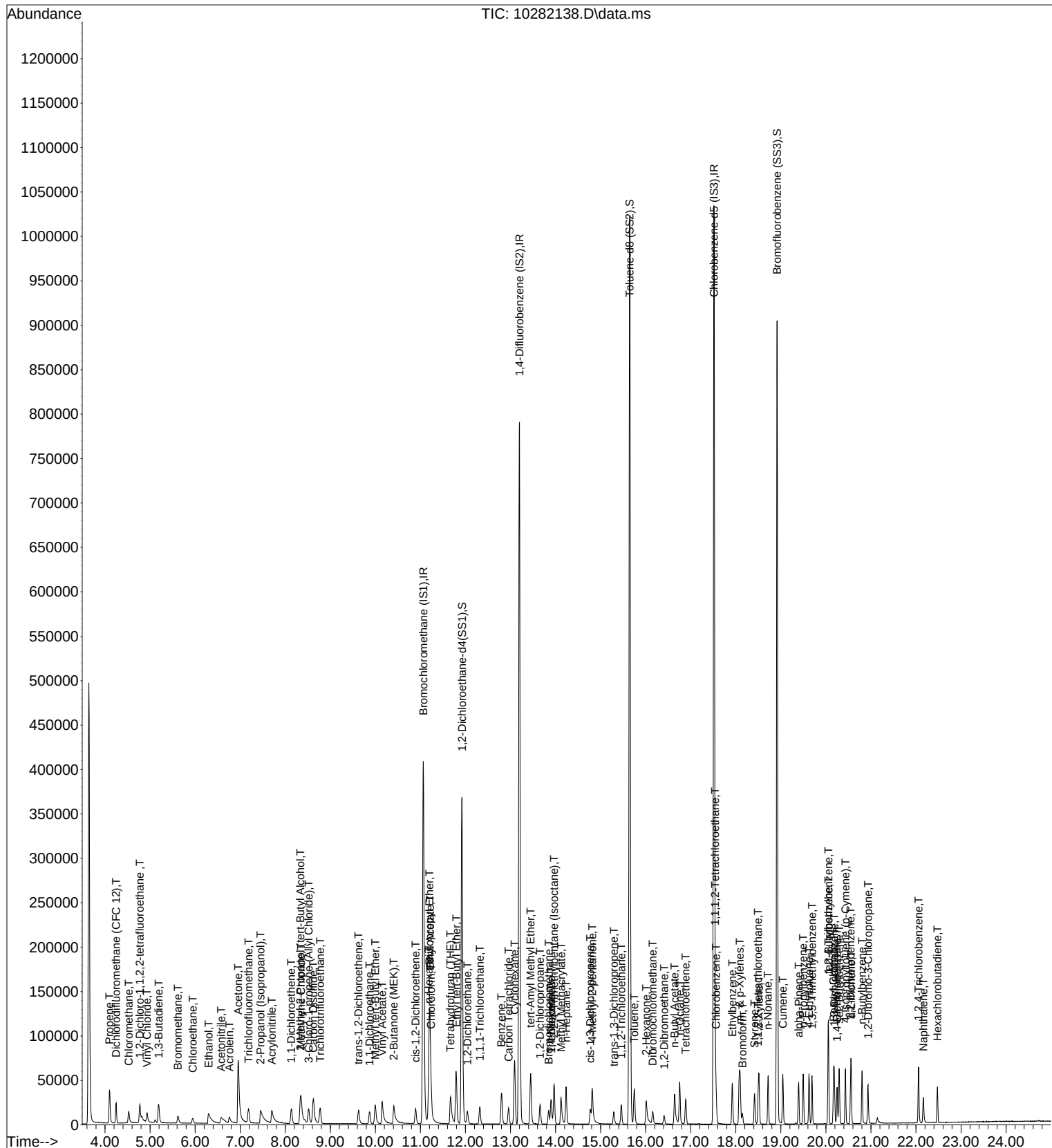
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	8639	0.516	ng	97
52) cis-1,3-Dichloropropene	14.77	75	11746	0.460	ng	97
53) 4-Methyl-2-pentanone	14.81	58	15664	0.936	ng	83
54) trans-1,3-Dichloropropene	15.29	75	9677	0.361	ng	97
55) 1,1,2-Trichloroethane	15.46	97	8004	0.502	ng	99
58) Toluene	15.74	91	33838	0.438	ng	100
59) 2-Hexanone	16.01	43	38465	0.828	ng	87
60) Dibromochloromethane	16.16	129	8859	0.405	ng	99
61) 1,2-Dibromoethane	16.41	107	8565	0.420	ng	98
62) n-Butyl Acetate	16.64	43	38886	0.722	ng	95
63) n-Octane	16.76	57	8925	0.468	ng	98
64) Tetrachloroethene	16.89	166	9122	0.388	ng	98
65) Chlorobenzene	17.56	112	22625	0.454	ng	99
66) Ethylbenzene	17.92	91	36063	0.407	ng	98
67) m- & p-Xylenes	18.09	91	58644	0.821	ng	99
68) Bromoform	18.15	173	6040	0.306	ng	99
69) Styrene	18.42	104	17918	0.334	ng	99
70) o-Xylene	18.52	91	29402	0.417	ng	96
71) n-Nonane	18.71	43	22127	0.517	ng	93
72) 1,1,2,2-Tetrachloroethane	18.49	83	13757	0.453	ng	100
74) Cumene	19.04	105	36859	0.410	ng	97
75) alpha-Pinene	19.40	93	16799	0.375	ng	98
76) n-Propylbenzene	19.49	91	44861	0.401	ng	98
77) 3-Ethyltoluene	19.63	105	34650	No Calib		
78) 4-Ethyltoluene	19.63	105	34650	0.420	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	29775	0.413	ng	96
80) alpha-Methylstyrene	19.63	118	174	No Calib	#	
81) 2-Ethyltoluene	19.63	105	34650	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	29593	0.430	ng	98
83) n-Decane	20.06	58	2011	No Calib	#	
84) Benzyl Chloride	20.17	91	37741	0.649	ng	94
85) 1,3-Dichlorobenzene	20.19	146	17041	0.459	ng	98
86) 1,4-Dichlorobenzene	20.25	146	16387	0.423	ng	99
87) sec-Butylbenzene	20.30	105	40684	0.428	ng	95
88) 4-Isopropyltoluene (p-...	20.43	119	33025	0.408	ng	96
89) 1,2,3-Trimethylbenzene	20.30	105	40684	No Calib	#	
90) 1,2-Dichlorobenzene	20.55	146	16261	0.436	ng	99
91) d-Limonene	20.56	68	9115	0.349	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.94	157	10312	0.606	ng	# 67
93) n-Undecane	21.14	57	1906	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	18760	0.507	ng	98
95) Naphthalene	22.16	128	27143	0.261	ng	97
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.48	225	6970	0.277	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	29722	0.421	ng	98
100) n-Butylbenzene	20.80	91	32163	0.444	ng	95
101) 1,1,1,2-Tetrachloroethane	17.54	131	7892	0.418	ng	99

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

Vial: 15
Operator: WA
Inst : GCMS-16

Quant Time: Oct 29 02:35:38 2021



Data File : I:\MS16\DATA\2021_10\28\10282139.D
 Acq On : 29 Oct 2021 00:01
 Sample : 1.0ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142101 (11/13)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:40 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	151115	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	680995	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	162698	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	285769	12.244	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	97.92%	
57) Toluene-d8 (SS2)	15.65	98	713367	10.470	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	83.76%	
73) Bromofluorobenzene (SS3)	18.92	174	245076	9.819	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	78.56%	

Target Compounds

						Qvalue
2) Propene	4.09	42	30068	1.354	ng	98
3) Dichlorodifluoromethan...	4.23	85	37126	1.120	ng	100
4) Chloromethane	4.51	50	35274	1.763	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	17225	1.392	ng	100
6) Vinyl Chloride	4.92	62	27373	1.452	ng	100
7) 1,3-Butadiene	5.17	54	23989	1.439	ng	97
8) Bromomethane	5.60	94	13895	1.064	ng	99
9) Chloroethane	5.93	64	12337	1.067	ng	97
10) Ethanol	6.28	45	59976	4.142	ng	99
11) Acetonitrile	6.56	41	41130	1.123	ng	98
12) Acrolein	6.74	56	23678	2.146	ng	94
13) Acetone	6.94	58	74960	5.601	ng	# 85
14) Trichlorofluoromethane	7.18	101	30943	0.993	ng	100
15) 2-Propanol (Isopropanol)	7.44	45	92830	2.170	ng	86
16) Acrylonitrile	7.69	53	52662	2.114	ng	99
17) 1,1-Dichloroethene	8.13	96	15291	1.015	ng	97
18) 2-Methyl-2-Propanol (t...	8.31	59	87872	1.981	ng	94
19) Methylene Chloride	8.34	84	16561	1.026	ng	95
20) 3-Chloro-1-propene (Al...	8.51	41	33492	1.195	ng	94
21) Trichlorotrifluoroethane	8.77	151	13607	0.906	ng	96
22) Carbon Disulfide	8.61	76	123596	2.157	ng	99
23) trans-1,2-Dichloroethene	9.62	61	26232	1.069	ng	98
24) 1,1-Dichloroethane	9.87	63	32400	1.032	ng	100
25) Methyl tert-Butyl Ether	9.99	73	47488	0.928	ng	99
26) Vinyl Acetate	10.15	86	8430	2.821	ng	# 72
27) 2-Butanone (MEK)	10.39	72	19327	1.855	ng	96
28) cis-1,2-Dichloroethene	10.89	61	25041	1.012	ng	99
29) Diisopropyl Ether	11.20	87	29425	2.158	ng	# 71
30) Ethyl Acetate	11.21	61	27835	4.275	ng	96
31) n-Hexane	11.19	57	34074	1.147	ng	99
32) Chloroform	11.23	83	29656	1.025	ng	99
34) Tetrahydrofuran (THF)	11.66	72	18959	1.930	ng	96
35) Ethyl tert-Butyl Ether	11.79	87	37618	1.878	ng	95
36) 1,2-Dichloroethane	12.04	62	25283	1.019	ng	99
38) 1,1,1-Trichloroethane	12.32	97	25923	0.941	ng	99
39) Isopropyl Acetate	12.80	61	958	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.80	78	64326	0.998	ng	100
42) Carbon Tetrachloride	12.96	117	21920	0.947	ng	99
43) Cyclohexane	13.09	84	48368	1.975	ng	99
44) tert-Amyl Methyl Ether	13.44	73	90103	1.877	ng	95
45) 1,2-Dichloropropane	13.65	63	18299	1.050	ng	99
46) Bromodichloromethane	13.84	83	22440	0.970	ng	99
47) Trichloroethene	13.90	130	16430	0.984	ng	100
48) 1,4-Dioxane	13.89	88	11300	0.911	ng	93
49) 2,2,4-Trimethylpentane...	13.96	57	85058	1.082	ng	95
50) Methyl Methacrylate	14.12	100	10529	1.602	ng	# 87

Data File : I:\MS16\DATA\2021_10\28\10282139.D
 Acq On : 29 Oct 2021 00:01
 Sample : 1.0ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142101 (11/13)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:40 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Oct 29 02:34:21 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

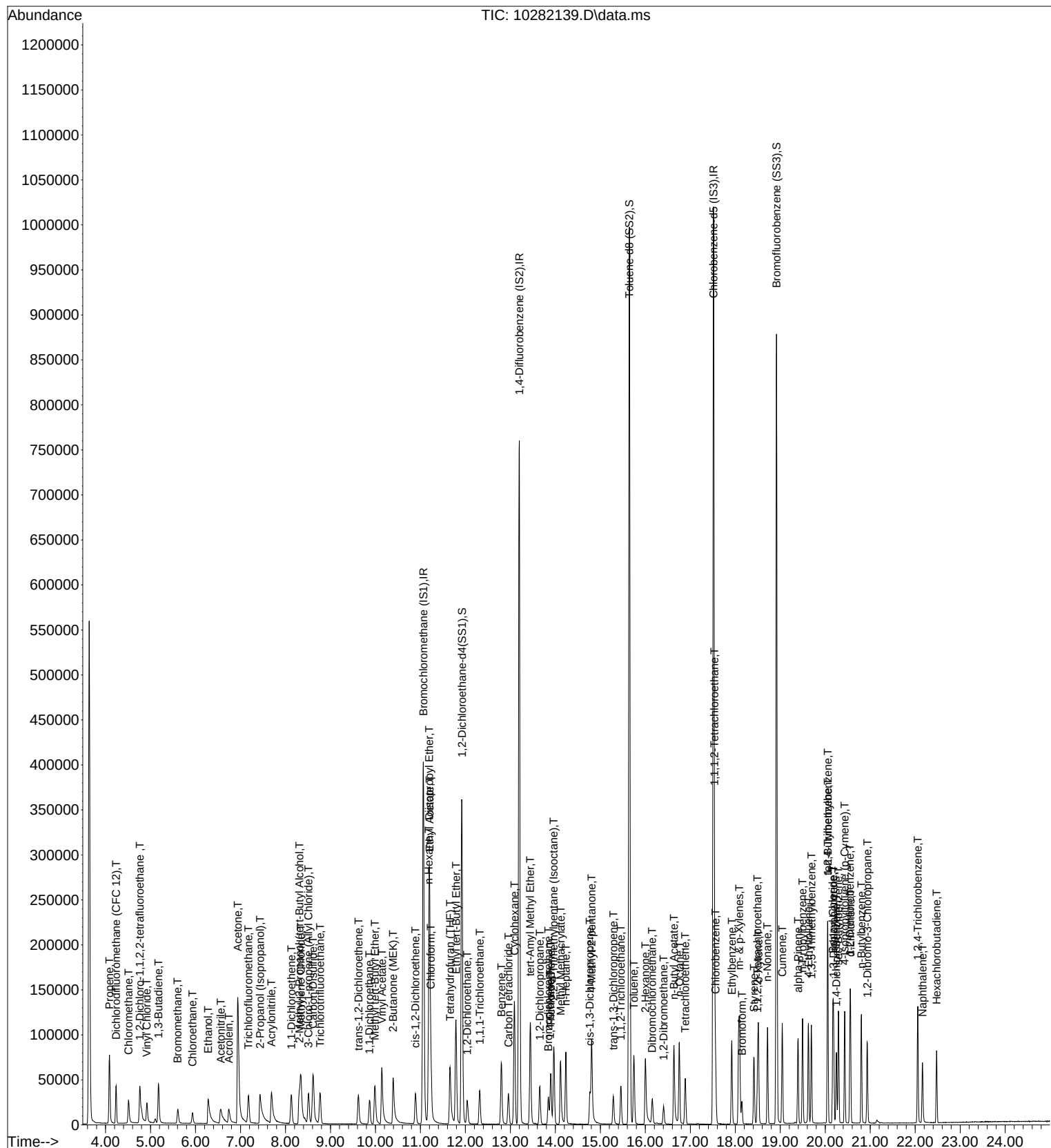
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.23	71	16695	1.039	ng	98
52) cis-1,3-Dichloropropene	14.77	75	23693	0.966	ng	99
53) 4-Methyl-2-pentanone	14.80	58	32514	2.023	ng	87
54) trans-1,3-Dichloropropene	15.29	75	20073	0.780	ng	98
55) 1,1,2-Trichloroethane	15.45	97	15267	0.997	ng	100
58) Toluene	15.74	91	63511	0.835	ng	99
59) 2-Hexanone	16.00	43	85355	1.868	ng	91
60) Dibromochloromethane	16.15	129	17070	0.793	ng	98
61) 1,2-Dibromoethane	16.40	107	16519	0.823	ng	99
62) n-Butyl Acetate	16.63	43	86337	1.629	ng	96
63) n-Octane	16.76	57	17413	0.929	ng	97
64) Tetrachloroethene	16.89	166	16909	0.730	ng	99
65) Chlorobenzene	17.56	112	42160	0.861	ng	99
66) Ethylbenzene	17.92	91	70874	0.814	ng	98
67) m- & p-Xylenes	18.09	91	113679	1.617	ng	98
68) Bromoform	18.15	173	12520	0.645	ng	100
69) Styrene	18.42	104	37640	0.714	ng	99
70) o-Xylene	18.52	91	57359	0.827	ng	98
71) n-Nonane	18.71	43	43857	1.042	ng	93
72) 1,1,2,2-Tetrachloroethane	18.49	83	27557	0.922	ng	98
74) Cumene	19.04	105	71508	0.808	ng	98
75) alpha-Pinene	19.40	93	34375	0.779	ng	98
76) n-Propylbenzene	19.49	91	88641	0.806	ng	98
77) 3-Ethyltoluene	19.63	105	68572	No Calib		
78) 4-Ethyltoluene	19.63	105	68572	0.845	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	57574	0.812	ng	97
80) alpha-Methylstyrene	19.63	118	589	No Calib	#	
81) 2-Ethyltoluene	19.63	105	68572	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	57832	0.855	ng	98
83) n-Decane	20.05	58	3883	No Calib	#	
84) Benzyl Chloride	20.17	91	81070	1.417	ng	95
85) 1,3-Dichlorobenzene	20.19	146	32347	0.885	ng	99
86) 1,4-Dichlorobenzene	20.25	146	31600	0.829	ng	99
87) sec-Butylbenzene	20.29	105	80052	0.857	ng	96
88) 4-Isopropyltoluene (p-...	20.43	119	65154	0.818	ng	97
89) 1,2,3-Trimethylbenzene	20.29	105	80052	No Calib	#	
90) 1,2-Dichlorobenzene	20.55	146	31880	0.868	ng	99
91) d-Limonene	20.56	68	19402	0.754	ng	98
92) 1,2-Dibromo-3-Chloropr...	20.94	157	21073	1.259	ng	# 69
93) n-Undecane	21.14	57	1177	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	37392	1.027	ng	98
95) Naphthalene	22.16	128	56256	0.551	ng	98
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.47	225	13700	0.554	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.06	119	58201	0.839	ng	98
100) n-Butylbenzene	20.80	91	63728	0.894	ng	97
101) 1,1,1,2-Tetrachloroethane	17.54	131	15172	0.816	ng	99

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

Data File : I:\MS16\DATA\2021_10\28\10282139.D
Acq On : 29 Oct 2021 00:01
Sample : 1.0ng R16102821 ICAL Std
Misc : S34-09132101/S34-10142101 (11/13)

Vial: 15
Operator: WA
Inst : GCMS-16

Quant Time: Oct 29 02:35:40 2021
Quant Method : I:\MS16\METHODS\R16102821.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Fri Oct 29 02:34:21 2021
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\28\10282140.D
 Acq On : 29 Oct 2021 00:35
 Sample : 5.0ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142101 (11/13)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:43 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	153625	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.20	114	684448	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	167567	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	289093	12.184	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.44%
57) Toluene-d8 (SS2)	15.65	98	727324	10.365	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	82.88%
73) Bromofluorobenzene (SS3)	18.92	174	254377	9.896	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	79.20%

Target Compounds

						Qvalue
2) Propene	4.07	42	186918	8.283	ng	98
3) Dichlorodifluoromethan...	4.22	85	180254	5.349	ng	99
4) Chloromethane	4.50	50	139105	6.837	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	82996	6.597	ng	100
6) Vinyl Chloride	4.91	62	135907	7.092	ng	99
7) 1,3-Butadiene	5.17	54	121889	7.192	ng	98
8) Bromomethane	5.60	94	66851	5.035	ng	100
9) Chloroethane	5.92	64	60982	5.187	ng	100
10) Ethanol	6.29	45	310489	21.092	ng	99
11) Acetonitrile	6.55	41	206573	5.550	ng	99
12) Acrolein	6.73	56	128306	11.436	ng	99
13) Acetone	6.93	58	378631	27.828	ng	87
14) Trichlorofluoromethane	7.18	101	148641	4.691	ng	99
15) 2-Propanol (Isopropanol)	7.43	45	380297	8.743	ng	96
16) Acrylonitrile	7.69	53	282792	11.165	ng	100
17) 1,1-Dichloroethene	8.13	96	76032	4.966	ng	95
18) 2-Methyl-2-Propanol (t...	8.29	59	295669	6.556	ng	95
19) Methylene Chloride	8.35	84	82753	5.043	ng	99
20) 3-Chloro-1-propene (Al...	8.51	41	166912	5.858	ng	97
21) Trichlorotrifluoroethane	8.77	151	65852	4.314	ng	98
22) Carbon Disulfide	8.61	76	614319	10.546	ng	100
23) trans-1,2-Dichloroethene	9.62	61	135711	5.440	ng	97
24) 1,1-Dichloroethane	9.88	63	161907	5.073	ng	99
25) Methyl tert-Butyl Ether	9.98	73	249764	4.801	ng	100
26) Vinyl Acetate	10.14	86	50423	16.597	ng	# 83
27) 2-Butanone (MEK)	10.38	72	108670	10.259	ng	94
28) cis-1,2-Dichloroethene	10.89	61	129576	5.149	ng	98
29) Diisopropyl Ether	11.19	87	152756	11.020	ng	# 78
30) Ethyl Acetate	11.20	61	149391	22.569	ng	97
31) n-Hexane	11.18	57	175143	5.798	ng	100
32) Chloroform	11.24	83	146527	4.982	ng	100
34) Tetrahydrofuran (THF)	11.64	72	97571	9.772	ng	95
35) Ethyl tert-Butyl Ether	11.78	87	196965	9.675	ng	97
36) 1,2-Dichloroethane	12.04	62	125677	4.985	ng	100
38) 1,1,1-Trichloroethane	12.32	97	128778	4.650	ng	99
39) Isopropyl Acetate	12.78	61	7990	No Calib		
40) 1-Butanol	12.90	56	1929	No Calib	#	
41) Benzene	12.80	78	323464	4.994	ng	100
42) Carbon Tetrachloride	12.96	117	109953	4.724	ng	100
43) Cyclohexane	13.09	84	249073	10.117	ng	98
44) tert-Amyl Methyl Ether	13.44	73	472943	9.803	ng	97
45) 1,2-Dichloropropane	13.65	63	91460	5.223	ng	99
46) Bromodichloromethane	13.84	83	114381	4.921	ng	100
47) Trichloroethene	13.90	130	82659	4.927	ng	100
48) 1,4-Dioxane	13.87	88	62058	4.977	ng	99
49) 2,2,4-Trimethylpentane...	13.97	57	429905	5.440	ng	97
50) Methyl Methacrylate	14.11	100	63943	9.682	ng	95

Data File : I:\MS16\DATA\2021_10\28\10282140.D
 Acq On : 29 Oct 2021 00:35
 Sample : 5.0ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10142101 (11/13)

Vial: 15
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:43 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

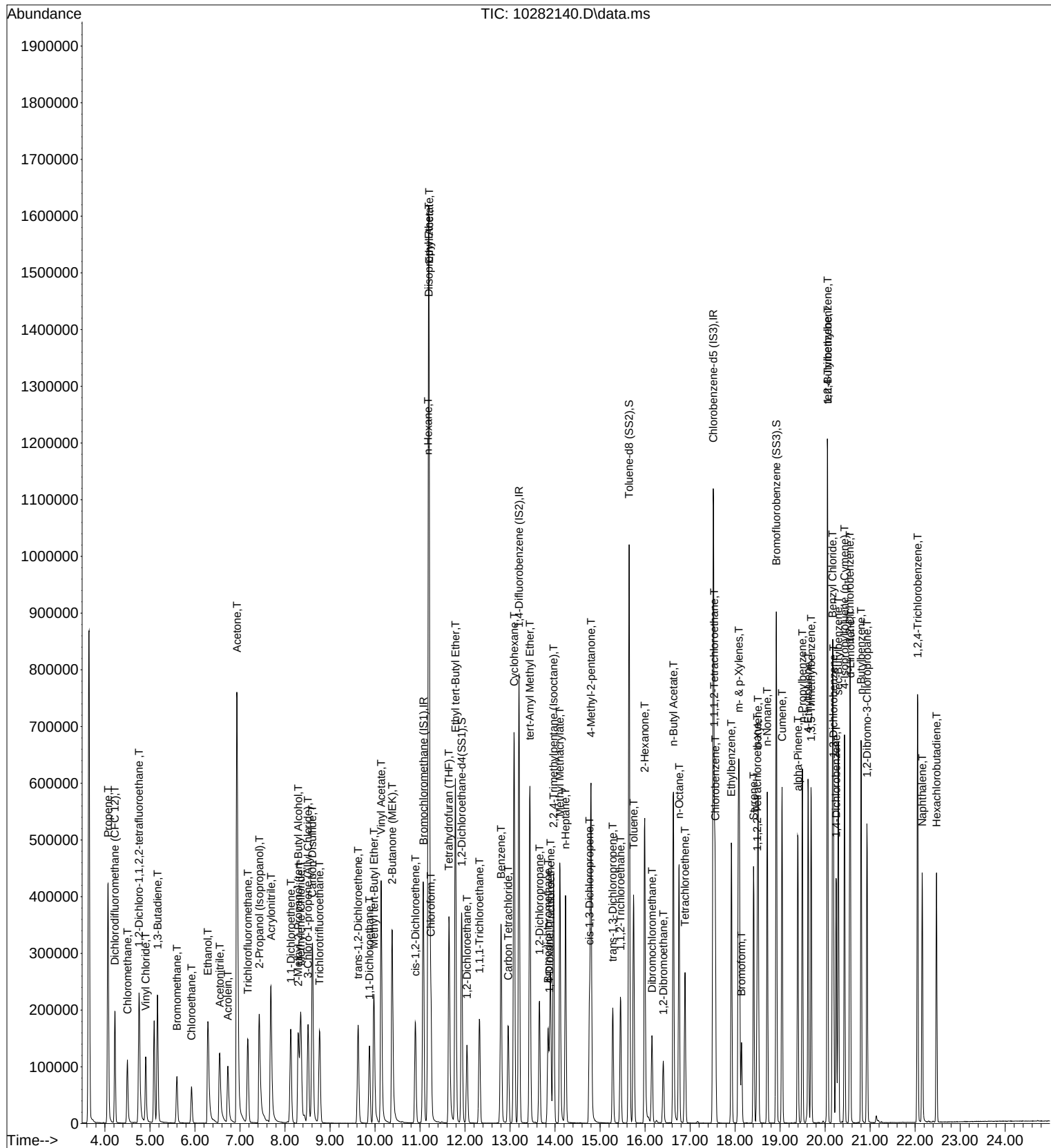
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.23	71	85733	5.307	ng	100
52) cis-1,3-Dichloropropene	14.77	75	130246	5.283	ng	100
53) 4-Methyl-2-pentanone	14.80	58	182383	11.288	ng	89
54) trans-1,3-Dichloropropene	15.28	75	119048	4.603	ng	100
55) 1,1,2-Trichloroethane	15.45	97	77579	5.042	ng	98
58) Toluene	15.74	91	323669	4.131	ng	99
59) 2-Hexanone	15.99	43	485240	10.310	ng	95
60) Dibromochloromethane	16.16	129	91416	4.126	ng	99
61) 1,2-Dibromoethane	16.40	107	88283	4.270	ng	100
62) n-Butyl Acetate	16.63	43	530574	9.718	ng	97
63) n-Octane	16.76	57	89773	4.651	ng	99
64) Tetrachloroethene	16.89	166	85454	3.584	ng	100
65) Chlorobenzene	17.56	112	215779	4.277	ng	100
66) Ethylbenzene	17.92	91	376104	4.193	ng	99
67) m- & p-Xylenes	18.08	91	598762	8.270	ng	99
68) Bromoform	18.14	173	69646	3.485	ng	100
69) Styrene	18.41	104	216932	3.993	ng	99
70) o-Xylene	18.51	91	299581	4.194	ng	98
71) n-Nonane	18.71	43	233007	5.377	ng	95
72) 1,1,2,2-Tetrachloroethane	18.49	83	146533	4.762	ng	99
74) Cumene	19.04	105	379045	4.160	ng	99
75) alpha-Pinene	19.40	93	191544	4.215	ng	97
76) n-Propylbenzene	19.49	91	473315	4.179	ng	98
77) 3-Ethyltoluene	19.62	105	374873	No Calib		
78) 4-Ethyltoluene	19.62	105	374873	4.487	ng	99
79) 1,3,5-Trimethylbenzene	19.69	105	306756	4.202	ng	98
80) alpha-Methylstyrene	19.62	118	2451	No Calib	#	
81) 2-Ethyltoluene	19.62	105	374873	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	316238	4.538	ng	99
83) n-Decane	20.05	58	20098	No Calib	#	
84) Benzyl Chloride	20.17	91	507767	8.617	ng	97
85) 1,3-Dichlorobenzene	20.19	146	173248	4.602	ng	100
86) 1,4-Dichlorobenzene	20.25	146	169357	4.316	ng	100
87) sec-Butylbenzene	20.29	105	430513	4.473	ng	98
88) 4-Isopropyltoluene (p-...	20.43	119	362020	4.415	ng	98
89) 1,2,3-Trimethylbenzene	20.29	105	430513	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	171217	4.527	ng	100
91) d-Limonene	20.56	68	111201	4.197	ng	97
92) 1,2-Dibromo-3-Chloropr...	20.93	157	126093	7.313	ng	84
93) n-Undecane	21.13	57	2914	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	221126	5.900	ng	99
95) Naphthalene	22.16	128	332781	3.163	ng	99
96) n-Dodecane	22.16	57	803	No Calib		
97) Hexachlorobutadiene	22.48	225	75062	2.947	ng	99
98) Cyclohexanone	18.09	55	632	No Calib	#	
99) tert-Butylbenzene	20.06	119	314102	4.395	ng	99
100) n-Butylbenzene	20.80	91	352674	4.801	ng	98
101) 1,1,1,2-Tetrachloroethane	17.54	131	78810	4.117	ng	100

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

Vial: 15
Operator: WA
Inst : GCMS-16

Quant Time: Oct 29 02:35:43 2021



Data File : I:\MS16\DATA\2021_10\28\10282141.D
 Acq On : 29 Oct 2021 1:08
 Sample : 25ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:45 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	158562	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.20	114	703329	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	172078	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	292913	11.961	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.68%
57) Toluene-d8 (SS2)	15.65	98	751472	10.428	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.44%
73) Bromofluorobenzene (SS3)	18.92	174	268639	10.177	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	81.44%

Target Compounds

						Qvalue
2) Propene	4.06	42	913490	39.218	ng	100
3) Dichlorodifluoromethan...	4.21	85	948533	27.273	ng	100
4) Chloromethane	4.49	50	891209	42.440	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	446238	34.366	ng	100
6) Vinyl Chloride	4.91	62	719576	36.382	ng	100
7) 1,3-Butadiene	5.17	54	665234	38.027	ng	100
8) Bromomethane	5.60	94	372056	27.148	ng	100
9) Chloroethane	5.93	64	334221	27.544	ng	100
10) Ethanol	6.32	45	1710304	112.565	ng	100
11) Acetonitrile	6.57	41	1128973	29.386	ng	100
12) Acrolein	6.74	56	729487	62.996	ng	100
13) Acetone	6.95	58	2010439	143.159	ng	100
14) Trichlorofluoromethane	7.18	101	807029	24.675	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	2489652	55.457	ng	100
16) Acrylonitrile	7.70	53	1606394	61.446	ng	100
17) 1,1-Dichloroethene	8.13	96	432283	27.354	ng	100
18) 2-Methyl-2-Propanol (t...	8.30	59	2377459	51.074	ng	100
19) Methylene Chloride	8.36	84	450551	26.604	ng	100
20) 3-Chloro-1-propene (Al...	8.52	41	939475	31.945	ng	100
21) Trichlorotrifluoroethane	8.77	151	371724	23.593	ng	100
22) Carbon Disulfide	8.62	76	3347391	55.673	ng	100
23) trans-1,2-Dichloroethene	9.63	61	754646	29.310	ng	100
24) 1,1-Dichloroethane	9.89	63	883795	26.831	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1394468	25.971	ng	100
26) Vinyl Acetate	10.15	86	321467	102.519	ng	100
27) 2-Butanone (MEK)	10.38	72	625037	57.172	ng	100
28) cis-1,2-Dichloroethene	10.91	61	716509	27.584	ng	100
29) Diisopropyl Ether	11.20	87	710278	49.647	ng	100
30) Ethyl Acetate	11.21	61	724715	106.076	ng	100
31) n-Hexane	11.18	57	874076	28.033	ng	100
32) Chloroform	11.25	83	759793	25.032	ng	100
34) Tetrahydrofuran (THF)	11.64	72	558144	54.162	ng	100
35) Ethyl tert-Butyl Ether	11.79	87	1092011	51.968	ng	100
36) 1,2-Dichloroethane	12.05	62	683680	26.272	ng	100
38) 1,1,1-Trichloroethane	12.32	97	711840	25.015	ng	100
39) Isopropyl Acetate	12.77	61	50950	No Calib		
40) 1-Butanol	12.81	56	18340	No Calib		
41) Benzene	12.81	78	1789131	26.878	ng	100
42) Carbon Tetrachloride	12.96	117	622890	26.045	ng	100
43) Cyclohexane	13.09	84	1382244	54.639	ng	100
44) tert-Amyl Methyl Ether	13.44	73	2635388	53.158	ng	100
45) 1,2-Dichloropropane	13.65	63	509890	28.339	ng	100
46) Bromodichloromethane	13.85	83	647966	27.127	ng	100
47) Trichloroethene	13.90	130	473585	27.473	ng	100
48) 1,4-Dioxane	13.87	88	370944	28.950	ng	100
49) 2,2,4-Trimethylpentane...	13.97	57	2346154	28.892	ng	100
50) Methyl Methacrylate	14.11	100	387191	57.054	ng	100

Data File : I:\MS16\DATA\2021_10\28\10282141.D
 Acq On : 29 Oct 2021 1:08
 Sample : 25ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:45 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Oct 29 02:34:21 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	473594	28.527	ng	100
52) cis-1,3-Dichloropropene	14.77	75	767490	30.294	ng	100
53) 4-Methyl-2-pentanone	14.80	58	1055857	63.594	ng	100
54) trans-1,3-Dichloropropene	15.28	75	717807	27.010	ng	100
55) 1,1,2-Trichloroethane	15.45	97	445341	28.169	ng	100
58) Toluene	15.74	91	1824749	22.677	ng	100
59) 2-Hexanone	15.99	43	2731409	56.511	ng	100
60) Dibromochloromethane	16.16	129	548760	24.118	ng	100
61) 1,2-Dibromoethane	16.40	107	519450	24.467	ng	100
62) n-Butyl Acetate	16.63	43	3047232	54.349	ng	100
63) n-Octane	16.76	57	500783	25.263	ng	100
64) Tetrachloroethene	16.89	166	496500	20.278	ng	100
65) Chlorobenzene	17.56	112	1250973	24.147	ng	100
66) Ethylbenzene	17.92	91	2140993	23.245	ng	100
67) m- & p-Xylenes	18.09	91	3360084	45.192	ng	100
68) Bromoform	18.14	173	445159	21.692	ng	100
69) Styrene	18.41	104	1355870	24.302	ng	100
70) o-Xylene	18.52	91	1658646	22.610	ng	100
71) n-Nonane	18.71	43	1238644	27.832	ng	100
72) 1,1,2,2-Tetrachloroethane	18.49	83	825373	26.121	ng	100
74) Cumene	19.04	105	2142278	22.897	ng	100
75) alpha-Pinene	19.40	93	1135027	24.320	ng	100
76) n-Propylbenzene	19.49	91	2650753	22.792	ng	100
77) 3-Ethyltoluene	19.63	105	2160899	No Calib		
78) 4-Ethyltoluene	19.63	105	2160899	25.187	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1744398	23.268	ng	100
80) alpha-Methylstyrene	19.63	118	13062	No Calib		
81) 2-Ethyltoluene	19.63	105	2160899	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	1773054	24.774	ng	100
83) n-Decane	20.06	58	98166	No Calib	#	
84) Benzyl Chloride	20.17	91	3193330	52.771	ng	100
85) 1,3-Dichlorobenzene	20.19	146	1039811	26.895	ng	100
86) 1,4-Dichlorobenzene	20.25	146	1035151	25.687	ng	100
87) sec-Butylbenzene	20.29	105	2378325	24.063	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	2080213	24.702	ng	100
89) 1,2,3-Trimethylbenzene	20.29	105	2378325	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	1017603	26.197	ng	100
91) d-Limonene	20.56	68	682094	25.068	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.94	157	791098	44.678	ng	100
93) n-Undecane	21.16	57	213	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1589454	41.295	ng	100
95) Naphthalene	22.16	128	2529983	23.413	ng	100
96) n-Dodecane	22.16	57	5283	No Calib		
97) Hexachlorobutadiene	22.48	225	465041	17.778	ng	100
98) Cyclohexanone	18.09	55	3324	No Calib		
99) tert-Butylbenzene	20.06	119	1735929	23.653	ng	100
100) n-Butylbenzene	20.80	91	1994224	26.439	ng	100
101) 1,1,1,2-Tetrachloroethane	17.54	131	461581	23.478	ng	100

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

Data File : I:\MS16\DATA\2021_10\28\10282141.D
Acq On : 29 Oct 2021 1:08
Sample : 25ng R16102821 ICAL Std
Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
Operator: WA
Inst : GCMS-16

Quant Time: Oct 29 02:35:45 2021

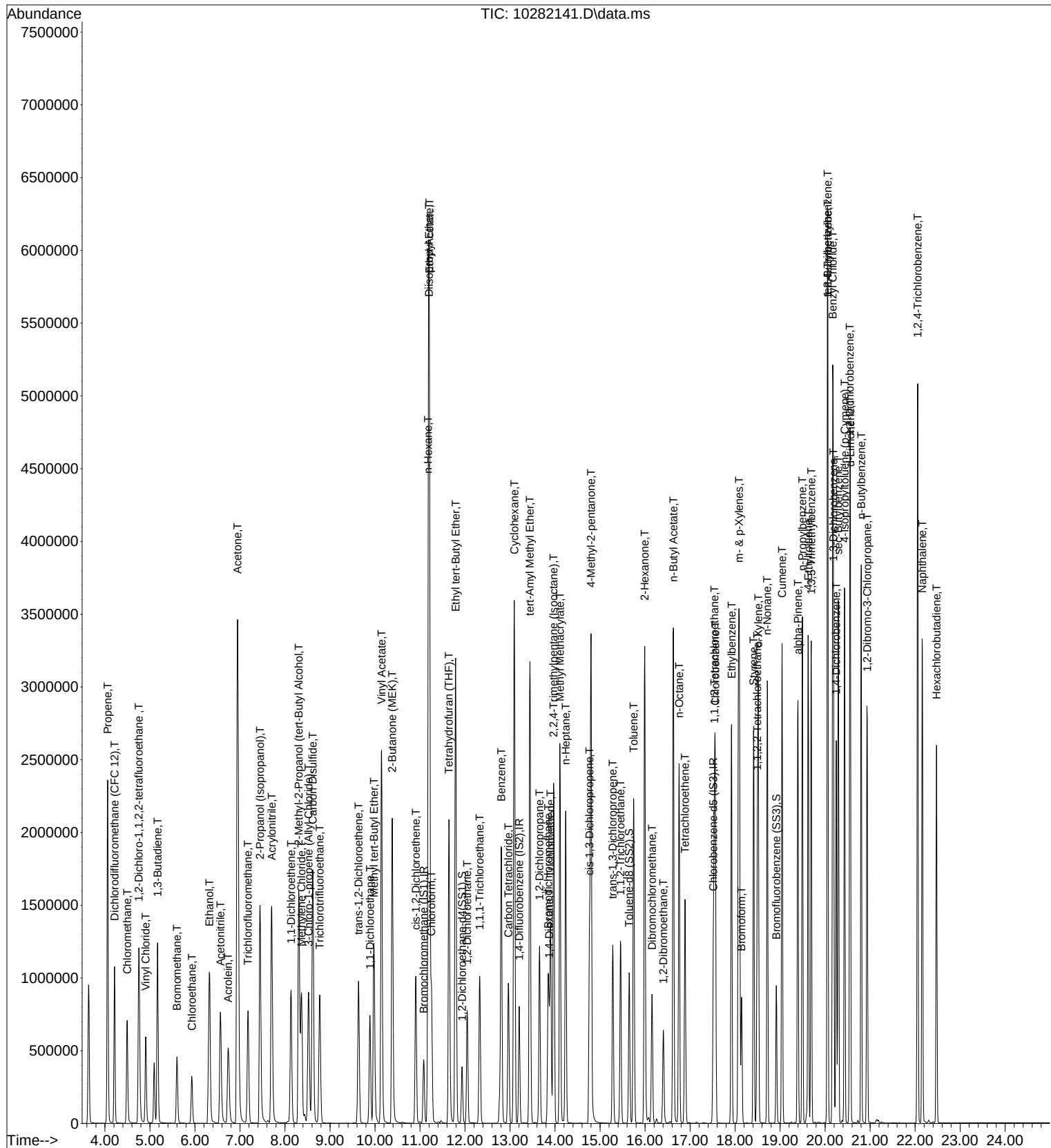
Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\28\10282142.D

Vial: 16

Acq On : 29 Oct 2021 1:42

Operator: WA

Sample : 50ng R16102821 ICAL Std

Inst : GCMS-16

Misc : S34-09132101/S34-10192101 (11/18)

Quant Time: Oct 29 02:35:47 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:TO15.M

DA 10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	174862	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	13.20	114	767058	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.52	54	181421	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.94	65	310326	11.491	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.92%
57) Toluene-d8 (SS2)	15.65	98	814257	10.718	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	85.76%
73) Bromofluorobenzene (SS3)	18.92	174	295553	10.620	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	84.96%

Target Compounds

						Qvalue
2) Propene	4.06	42	1673349	65.143	ng	99
3) Dichlorodifluoromethan...	4.21	85	1794685	46.792	ng	100
4) Chloromethane	4.49	50	1588736	68.604	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	891790	62.277	ng	100
6) Vinyl Chloride	4.91	62	1421416	65.168	ng	100
7) 1,3-Butadiene	5.18	54	1273159	65.995	ng	98
8) Bromomethane	5.61	94	780277	51.628	ng	100
9) Chloroethane	5.94	64	697966	52.158	ng	100
10) Ethanol	6.35	45	3342204	199.465	ng	100
11) Acetonitrile	6.58	41	2337564	55.173	ng	99
12) Acrolein	6.75	56	1522588	119.229	ng	100
13) Acetone	6.97	58	3735015	241.171	ng	90
14) Trichlorofluoromethane	7.19	101	1651704	45.793	ng	99
15) 2-Propanol (Isopropanol)	7.46	45	4577385	92.457	ng	99
16) Acrylonitrile	7.72	53	3291512	114.167	ng	100
17) 1,1-Dichloroethene	8.14	96	916500	52.588	ng	96
18) 2-Methyl-2-Propanol (t...	8.32	59	3342905	65.120	ng	99
19) Methylene Chloride	8.38	84	938734	50.264	ng	96
20) 3-Chloro-1-propene (Al...	8.54	41	1907966	58.829	ng	99
21) Trichlorotrifluoroethane	8.78	151	794458	45.723	ng	97
22) Carbon Disulfide	8.62	76	6665430	100.525	ng	100
23) trans-1,2-Dichloroethene	9.64	61	1562182	55.018	ng	99
24) 1,1-Dichloroethane	9.89	63	1823446	50.198	ng	100
25) Methyl tert-Butyl Ether	9.98	73	2838628	47.939	ng	100
26) Vinyl Acetate	10.15	86	655554	189.575	ng	# 76
27) 2-Butanone (MEK)	10.39	72	1263070	104.763	ng	# 88
28) cis-1,2-Dichloroethene	10.91	61	1478028	51.597	ng	98
29) Diisopropyl Ether	11.20	87	1177498	74.633	ng	# 57
30) Ethyl Acetate	11.22	61	1047737	139.062	ng	91
31) n-Hexane	11.19	57	1463991	42.576	ng	100
32) Chloroform	11.27	83	1478024	44.155	ng	100
34) Tetrahydrofuran (THF)	11.65	72	1121952	98.724	ng	94
35) Ethyl tert-Butyl Ether	11.80	87	2179387	94.047	ng	93
36) 1,2-Dichloroethane	12.05	62	1375189	47.919	ng	100
38) 1,1,1-Trichloroethane	12.33	97	1464475	47.189	ng	99
39) Isopropyl Acetate	12.77	61	108014	No Calib		
40) 1-Butanol	12.80	56	45351	No Calib	#	
41) Benzene	12.81	78	3658161	50.391	ng	100
42) Carbon Tetrachloride	12.97	117	1300778	49.871	ng	100
43) Cyclohexane	13.10	84	2694522	97.663	ng	96
44) tert-Amyl Methyl Ether	13.45	73	5123769	94.765	ng	96
45) 1,2-Dichloropropane	13.66	63	1051012	53.561	ng	100
46) Bromodichloromethane	13.85	83	1326798	50.931	ng	100
47) Trichloroethene	13.90	130	986606	52.480	ng	100
48) 1,4-Dioxane	13.87	88	759970	54.384	ng	98
49) 2,2,4-Trimethylpentane...	13.97	57	4611514	52.070	ng	97
50) Methyl Methacrylate	14.11	100	785635	106.148	ng	96

Data File : I:\MS16\DATA\2021_10\28\10282142.D
 Acq On : 29 Oct 2021 1:42
 Sample : 50ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:35:47 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Oct 29 02:34:21 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	952239	52.593	ng	98
52) cis-1,3-Dichloropropene	14.77	75	1587380	57.451	ng	100
53) 4-Methyl-2-pentanone	14.80	58	1972585	108.937	ng	89
54) trans-1,3-Dichloropropene	15.29	75	1482544	51.151	ng	100
55) 1,1,2-Trichloroethane	15.46	97	924049	53.592	ng	100
58) Toluene	15.75	91	3688068	43.473	ng	100
59) 2-Hexanone	16.00	43	4827114	94.727	ng	94
60) Dibromochloromethane	16.16	129	1148578	47.881	ng	99
61) 1,2-Dibromoethane	16.41	107	1089441	48.673	ng	100
62) n-Butyl Acetate	16.63	43	5413445	91.579	ng	96
63) n-Octane	16.76	57	983262	47.049	ng	98
64) Tetrachloroethene	16.89	166	1047395	40.575	ng	100
65) Chlorobenzene	17.56	112	2496049	45.698	ng	100
66) Ethylbenzene	17.92	91	4263719	43.907	ng	99
67) m- & p-Xylenes	18.09	91	6431599	82.048	ng	100
68) Bromoform	18.15	173	944120	43.636	ng	100
69) Styrene	18.42	104	2724292	46.315	ng	100
70) o-Xylene	18.52	91	3188387	41.225	ng	100
71) n-Nonane	18.72	43	2172576	46.303	ng	93
72) 1,1,2,2-Tetrachloroethane	18.49	83	1620575	48.646	ng	100
74) Cumene	19.04	105	4211789	42.697	ng	99
75) alpha-Pinene	19.40	93	2263152	45.995	ng	100
76) n-Propylbenzene	19.49	91	5108174	41.659	ng	99
77) 3-Ethyltoluene	19.63	105	4228502	No Calib		
78) 4-Ethyltoluene	19.63	105	4228502	46.748	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	3395514	42.959	ng	100
80) alpha-Methylstyrene	19.63	118	25411	No Calib		
81) 2-Ethyltoluene	19.63	105	4228502	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	3058284	40.531	ng	99
83) n-Decane	20.05	58	135794	No Calib	#	
84) Benzyl Chloride	20.17	91	5657366	88.675	ng	100
85) 1,3-Dichlorobenzene	20.19	146	1878729	46.092	ng	100
86) 1,4-Dichlorobenzene	20.25	146	2074167	48.819	ng	99
87) sec-Butylbenzene	20.30	105	4479147	42.984	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	3976629	44.790	ng	100
89) 1,2,3-Trimethylbenzene	20.30	105	4479147	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	1912585	46.702	ng	100
91) d-Limonene	20.56	68	1182378	41.217	ng	95
92) 1,2-Dibromo-3-Chloropr...	20.94	157	1559084	83.516	ng	93
93) n-Undecane	21.18	57	123	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	2906782	71.631	ng	100
95) Naphthalene	22.16	128	5057441	44.392	ng	100
96) n-Dodecane	22.16	57	10233	No Calib		
97) Hexachlorobutadiene	22.48	225	970070	35.175	ng	100
98) Cyclohexanone	18.09	55	5900	No Calib		
99) tert-Butylbenzene	20.06	119	2979501	38.507	ng	100
100) n-Butylbenzene	20.80	91	3813658	47.956	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	937227	45.217	ng	100

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

Data File : I:\MS16\DATA\2021_10\28\10282142.D
Acq On : 29 Oct 2021 1:42
Sample : 50ng R16102821 ICAL Std
Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
Operator: WA
Inst : GCMS-16

Quant Time: Oct 29 02:35:47 2021

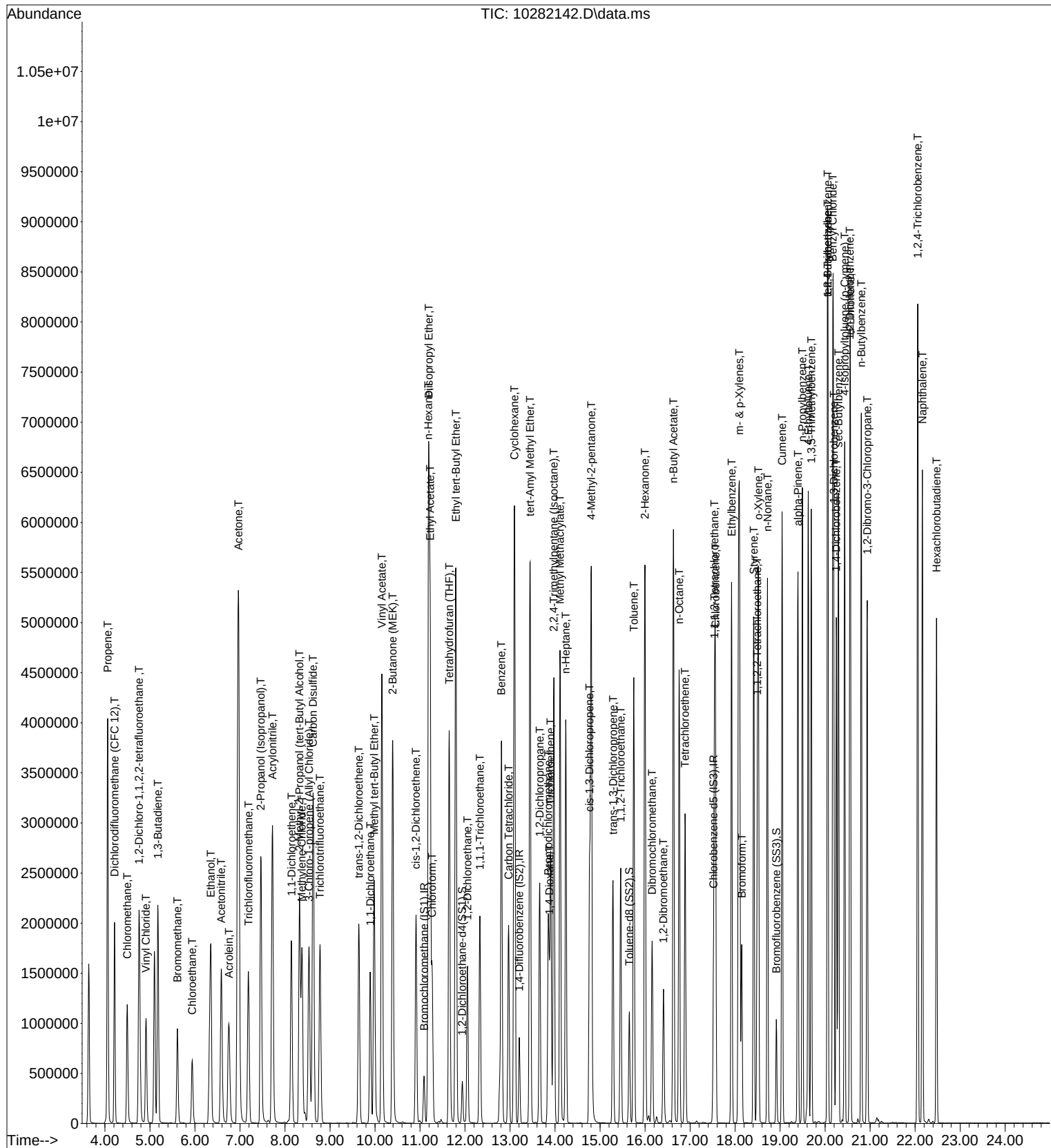
Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:34:21 2021

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\28\10282143.D
 Acq On : 29 Oct 2021 2:16
 Sample : 100ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:50:05 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Oct 29 02:46:10 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.10	130	192727	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.21	114	829721	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.52	54	188506	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.95	65	327832	11.489	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.92%
57) Toluene-d8 (SS2)	15.65	98	888299	13.284	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	106.24%
73) Bromofluorobenzene (SS3)	18.92	174	324880	13.917	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	111.36%

Target Compounds

						Qvalue
2) Propene	4.07	42	2981061	75.728	ng	99
3) Dichlorodifluoromethan...	4.22	85	3497696	80.307	ng	99
4) Chloromethane	4.50	50	2259685	56.255	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.77	135	1719512	87.408	ng	99
6) Vinyl Chloride	4.93	62	2743759	84.932	ng	100
7) 1,3-Butadiene	5.20	54	2312812	82.610	ng	95
8) Bromomethane	5.63	94	1554846	91.687	ng	100
9) Chloroethane	5.96	64	1431175	94.087	ng	100
10) Ethanol	6.39	45	6016770	272.497	ng	100
11) Acetonitrile	6.62	41	4708030	81.245	ng	99
12) Acrolein	6.77	56	3063305	202.471	ng	100
13) Acetone	6.98	58	5952567	315.081	ng	# 82
14) Trichlorofluoromethane	7.20	101	3343703	88.902	ng	99
15) 2-Propanol (Isopropanol)	7.50	45	8249445	152.680	ng	99
16) Acrylonitrile	7.75	53	6275129	191.566	ng	100
17) 1,1-Dichloroethene	8.16	96	1891534	104.754	ng	94
18) 2-Methyl-2-Propanol (t...	8.34	59	3127026	69.675	ng	98
19) Methylene Chloride	8.39	84	1918812	93.883	ng	91
20) 3-Chloro-1-propene (Al...	8.55	41	3728825	92.760	ng	96
21) Trichlorotrifluoroethane	8.79	151	1648675	101.956	ng	94
22) Carbon Disulfide	8.64	76	12168641	161.571	ng	100
23) trans-1,2-Dichloroethene	9.65	61	3127145	100.345	ng	97
24) 1,1-Dichloroethane	9.90	63	3678813	94.017	ng	100
25) Methyl tert-Butyl Ether	9.99	73	5194958	90.585	ng	99
26) Vinyl Acetate	10.17	86	1199570	367.504	ng	# 39
27) 2-Butanone (MEK)	10.41	72	2285241	190.563	ng	# 69
28) cis-1,2-Dichloroethene	10.92	61	2967131	96.269	ng	97
29) Diisopropyl Ether	11.21	87	1777256	108.874	ng	# 37
30) Ethyl Acetate	11.24	61	1458079	195.320	ng	83
31) n-Hexane	11.19	57	2237833	56.718	ng	99
32) Chloroform	11.28	83	2869619	84.068	ng	100
34) Tetrahydrofuran (THF)	11.66	72	2087542	172.224	ng	# 80
35) Ethyl tert-Butyl Ether	11.80	87	3805299	168.926	ng	# 80
36) 1,2-Dichloroethane	12.06	62	2721286	90.554	ng	99
38) 1,1,1-Trichloroethane	12.33	97	2892543	94.374	ng	99
39) Isopropyl Acetate	12.77	61	227863	No Calib		
40) 1-Butanol	12.80	56	97008	No Calib		#
41) Benzene	12.81	78	7035731	90.087	ng	99
42) Carbon Tetrachloride	12.97	117	2638083	102.565	ng	100
43) Cyclohexane	13.10	84	4559008	158.669	ng	# 85
44) tert-Amyl Methyl Ether	13.45	73	8526126	163.508	ng	91
45) 1,2-Dichloropropane	13.67	63	2065511	95.194	ng	100
46) Bromodichloromethane	13.85	83	2596387	100.424	ng	100
47) Trichloroethene	13.91	130	1897781	95.188	ng	100
48) 1,4-Dioxane	13.88	88	1435692	112.866	ng	94
49) 2,2,4-Trimethylpentane...	13.98	57	7917979	81.229	ng	94
50) Methyl Methacrylate	14.12	100	1436844	220.363	ng	# 89

Data File : I:\MS16\DATA\2021_10\28\10282143.D
 Acq On : 29 Oct 2021 2:16
 Sample : 100ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:50:05 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Oct 29 02:46:10 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

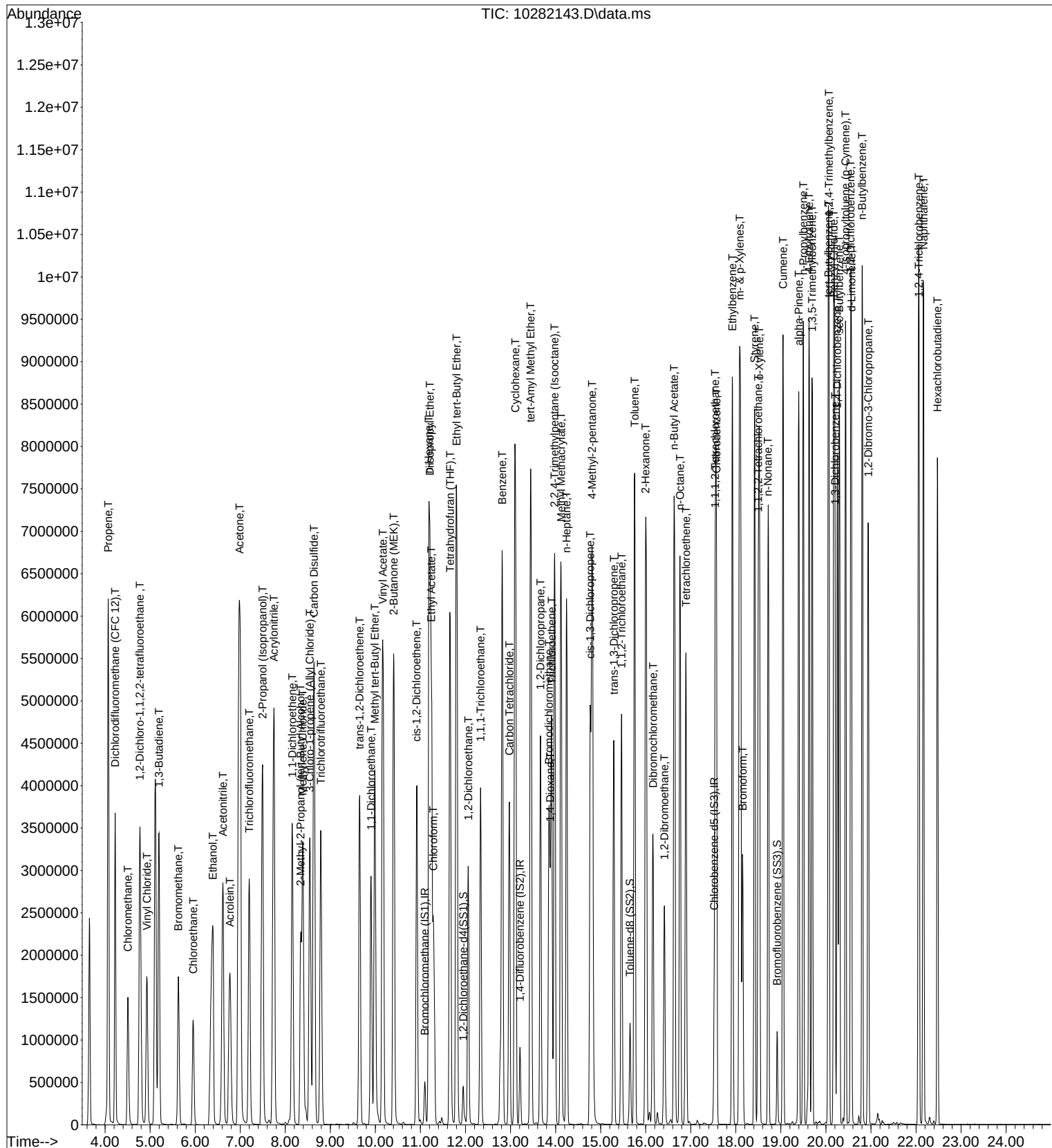
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	1764457	93.656	ng	94
52) cis-1,3-Dichloropropene	14.77	75	3135182	112.270	ng	100
53) 4-Methyl-2-pentanone	14.81	58	3076374	172.280	ng	# 75
54) trans-1,3-Dichloropropene	15.29	75	2994729	120.663	ng	99
55) 1,1,2-Trichloroethane	15.46	97	1829359	100.678	ng	99
58) Toluene	15.76	91	7013017	93.639	ng	99
59) 2-Hexanone	16.00	43	7124817	162.058	ng	86
60) Dibromochloromethane	16.16	129	2337790	120.574	ng	99
61) 1,2-Dibromoethane	16.41	107	2198034	115.903	ng	100
62) n-Butyl Acetate	16.63	43	7820996	169.415	ng	90
63) n-Octane	16.76	57	1693770	88.630	ng	91
64) Tetrachloroethene	16.89	166	2059456	103.278	ng	99
65) Chlorobenzene	17.57	112	4421056	88.337	ng	100
66) Ethylbenzene	17.92	91	7830921	95.332	ng	99
67) m- & p-Xylenes	18.09	91	10554808	162.688	ng	100
68) Bromoform	18.15	173	1841420	126.496	ng	100
69) Styrene	18.42	104	5028670	116.256	ng	99
70) o-Xylene	18.52	91	5363331	83.551	ng	99
71) n-Nonane	18.71	43	3089428	65.742	ng	80
72) 1,1,2,2-Tetrachloroethane	18.50	83	2799897	90.801	ng	100
74) Cumene	19.05	105	7394501	89.962	ng	99
75) alpha-Pinene	19.40	93	4049818	111.103	ng	99
76) n-Propylbenzene	19.50	91	8713596	87.667	ng	98
77) 3-Ethyltoluene	19.63	105	7302852	No Calib		
78) 4-Ethyltoluene	19.63	105	7302852	94.287	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	5809392	89.289	ng	99
80) alpha-Methylstyrene	19.63	118	43393	No Calib	#	
81) 2-Ethyltoluene	19.63	105	7302852	No Calib		
82) 1,2,4-Trimethylbenzene	20.07	105	4435595	68.849	ng	99
83) n-Decane	20.06	58	174382	No Calib	#	
84) Benzyl Chloride	20.18	91	7881617	162.548	ng	98
85) 1,3-Dichlorobenzene	20.20	146	2839096	73.790	ng	100
86) 1,4-Dichlorobenzene	20.25	146	3668491	93.508	ng	99
87) sec-Butylbenzene	20.30	105	7176413	80.309	ng	99
88) 4-Isopropyltoluene (p-...	20.43	119	6490395	87.714	ng	99
89) 1,2,3-Trimethylbenzene	20.30	105	7176413	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	3001716	80.832	ng	99
91) d-Limonene	20.57	68	1593186	84.104	ng	87
92) 1,2-Dibromo-3-Chloropr...	20.94	157	2593957	199.258	ng	88
93) n-Undecane	21.13	57	1465	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	4547414	181.006	ng	100
95) Naphthalene	22.17	128	8872794	117.144	ng	99
96) n-Dodecane	22.16	57	16763	No Calib		
97) Hexachlorobutadiene	22.47	225	1761463	103.828	ng	100
98) Cyclohexanone	18.09	55	8384	No Calib	#	
99) tert-Butylbenzene	20.06	119	4430285	68.770	ng	99
100) n-Butylbenzene	20.80	91	6308354	87.989	ng	98
101) 1,1,1,2-Tetrachloroethane	17.54	131	1690482	97.214	ng	100

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

Data File : I:\MS16\DATA\2021_10\28\10282143.D
 Acq On : 29 Oct 2021 2:16
 Sample : 100ng R16102821 ICAL Std
 Misc : S34-09132101/S34-10192101 (11/18)

Vial: 16
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 29 02:50:05 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Fri Oct 29 02:46:10 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2021_10\28\10282146.D
 Acq On : 29 Oct 2021 3:57
 Sample : 25ng R16102821 ICV Std
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Oct 31 11:57:37 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

10/31/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	198340	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.20	114	870062	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	196877	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	342966	11.798	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	94.40%
57) Toluene-d8 (SS2)	15.65	98	908145	12.903	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.20%
73) Bromofluorobenzene (SS3)	18.92	174	326513	13.205	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	105.60%

Target Compounds

						Qvalue
2) Propene	4.06	42	963391	24.617	ng	100
3) Dichlorodifluoromethan...	4.21	85	974843	22.408	ng	100
4) Chloromethane	4.49	50	815216	20.892	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	461106	23.332	ng	100
6) Vinyl Chloride	4.91	62	738691	22.740	ng	100
7) 1,3-Butadiene	5.17	54	659240	23.484	ng	97
8) Bromomethane	5.60	94	422202	24.502	ng	100
9) Chloroethane	5.93	64	371950	23.993	ng	100
10) Ethanol	6.32	45	2117650	96.165	ng	100
11) Acetonitrile	6.57	41	1198195	20.414	ng	99
12) Acrolein	6.74	56	807469	51.780	ng	100
13) Acetone	6.95	58	2095642	113.354	ng	94
14) Trichlorofluoromethane	7.18	101	856477	22.513	ng	100
15) 2-Propanol (Isopropanol)	7.44	45	2523737	46.816	ng	99
16) Acrylonitrile	7.70	53	1681316	50.228	ng	100
17) 1,1-Dichloroethene	8.13	96	474866	25.621	ng	95
18) 2-Methyl-2-Propanol (t...	8.30	59	1818457	39.372	ng	99
19) Methylene Chloride	8.36	84	488657	23.518	ng	95
20) 3-Chloro-1-propene (Al...	8.52	41	912356	22.380	ng	98
21) Trichlorotrifluoroethane	8.77	151	413406	25.017	ng	96
22) Carbon Disulfide	8.62	76	3462528	45.999	ng	100
23) trans-1,2-Dichloroethene	9.63	61	793778	24.916	ng	98
24) 1,1-Dichloroethane	9.89	63	957699	24.098	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1442724	24.872	ng	100
26) Vinyl Acetate	10.15	86	483733	129.326	ng	# 79
27) 2-Butanone (MEK)	10.38	72	658063	51.026	ng	# 92
28) cis-1,2-Dichloroethene	10.91	61	753252	23.971	ng	98
29) Diisopropyl Ether	11.20	87	744381	44.310	ng	# 65
30) Ethyl Acetate	11.21	61	541699	66.994	ng	97
31) n-Hexane	11.18	57	901443	23.555	ng	100
32) Chloroform	11.25	83	803530	23.504	ng	100
34) Tetrahydrofuran (THF)	11.64	72	613475	49.965	ng	95
35) Ethyl tert-Butyl Ether	11.79	87	1147291	50.730	ng	98
36) 1,2-Dichloroethane	12.05	62	703275	23.162	ng	100
38) 1,1,1-Trichloroethane	12.32	97	751780	23.665	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	12.80	78	1935726	24.038	ng	100
42) Carbon Tetrachloride	12.96	117	636829	23.680	ng	100
43) Cyclohexane	13.09	84	1445023	49.402	ng	98
44) tert-Amyl Methyl Ether	13.44	73	2752211	51.740	ng	98
45) 1,2-Dichloropropane	13.65	63	543048	24.096	ng	100
46) Bromodichloromethane	13.85	83	680840	25.250	ng	100
47) Trichloroethene	13.90	130	517382	24.984	ng	100
48) 1,4-Dioxane	13.87	88	406814	26.798	ng	99
49) 2,2,4-Trimethylpentane...	13.97	57	2391248	24.098	ng	98
50) Methyl Methacrylate	14.11	100	409965	54.606	ng	98

Data File : I:\MS16\DATA\2021_10\28\10282146.D
 Acq On : 29 Oct 2021 3:57
 Sample : 25ng R16102821 ICV Std
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

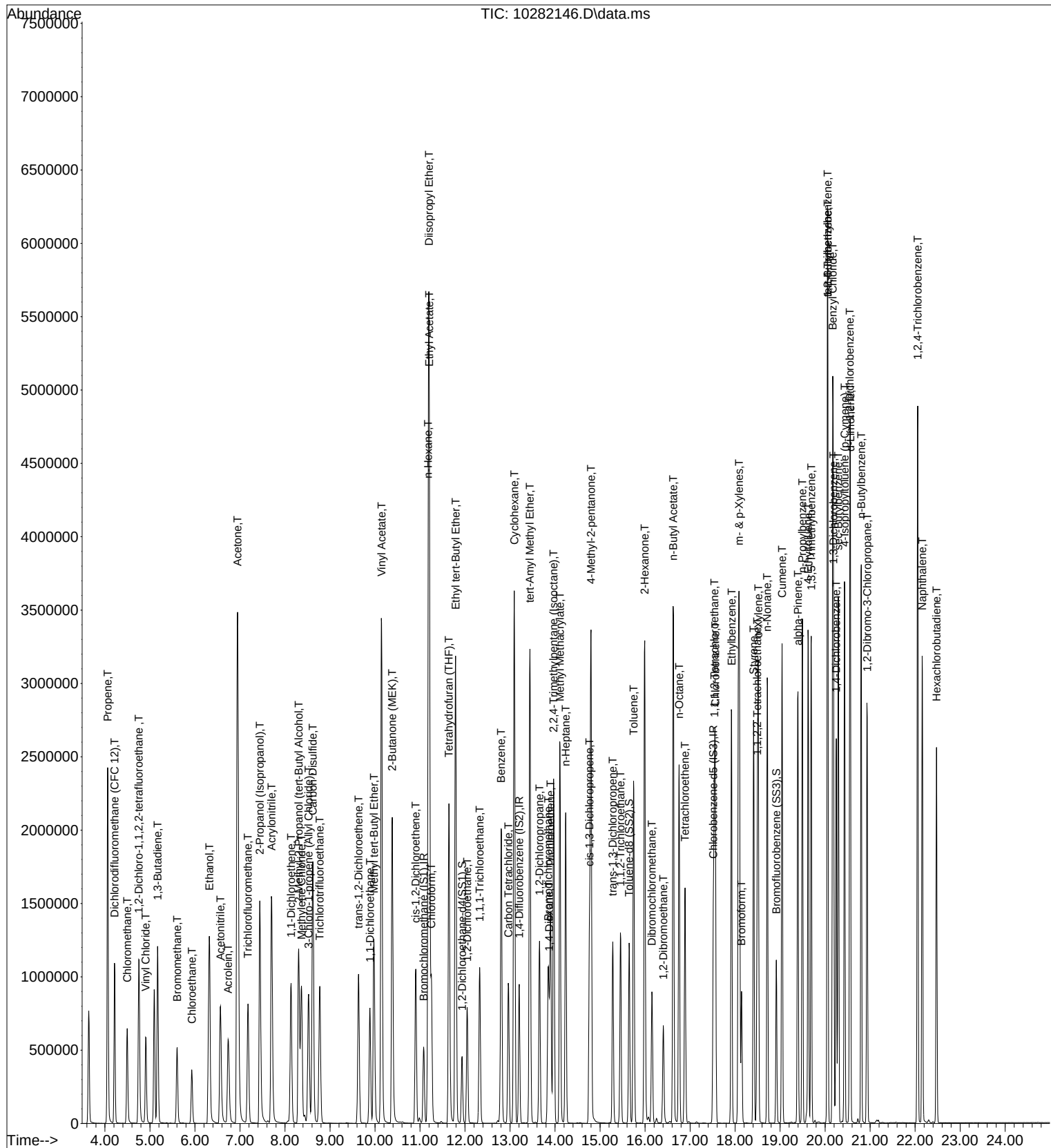
Quant Time: Oct 31 11:57:37 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	492064	25.248	ng	98
52) cis-1,3-Dichloropropene	14.77	75	807104	27.326	ng	100
53) 4-Methyl-2-pentanone	14.80	58	1097260	53.571	ng	95
54) trans-1,3-Dichloropropene	15.28	75	740458	26.210	ng	100
55) 1,1,2-Trichloroethane	15.45	97	473531	24.952	ng	99
58) Toluene	15.74	91	1936963	25.048	ng	100
59) 2-Hexanone	15.99	43	2777638	55.727	ng	98
60) Dibromochloromethane	16.15	129	562609	27.278	ng	100
61) 1,2-Dibromoethane	16.40	107	543542	27.055	ng	100
62) n-Butyl Acetate	16.62	43	3145670	58.306	ng	99
63) n-Octane	16.76	57	510249	26.073	ng	99
64) Tetrachloroethene	16.89	166	540392	25.970	ng	100
65) Chlorobenzene	17.56	112	1286394	25.083	ng	100
66) Ethylbenzene	17.92	91	2244178	26.404	ng	100
67) m- & p-Xylenes	18.09	91	3496457	52.994	ng	100
68) Bromoform	18.14	173	466493	27.464	ng	100
69) Styrene	18.41	104	1391332	27.481	ng	100
70) o-Xylene	18.52	91	1729877	26.453	ng	99
71) n-Nonane	18.71	43	1227811	26.222	ng	97
72) 1,1,2,2-Tetrachloroethane	18.49	83	852092	26.885	ng	100
74) Cumene	19.04	105	2200467	26.073	ng	100
75) alpha-Pinene	19.40	93	1176151	28.232	ng	100
76) n-Propylbenzene	19.49	91	2684743	26.407	ng	100
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.62	105	2182036	27.352	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1808921	27.100	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.06	105	1802322	27.944	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	20.17	91	3182767	56.894	ng	100
85) 1,3-Dichlorobenzene	20.19	146	1052363	27.175	ng	100
86) 1,4-Dichlorobenzene	20.25	146	1053911	26.050	ng	100
87) sec-Butylbenzene	20.29	105	2392866	26.391	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	2083525	27.499	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.55	146	1021864	27.128	ng	100
91) d-Limonene	20.56	68	724798	29.684	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.94	157	798894	54.219	ng	98
93) n-Undecane	0.00	57	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	22.06	180	1578022	57.961	ng	100
95) Naphthalene	22.16	128	2469111	29.119	ng	100
96) n-Dodecane	0.00	57	0	N.D.	d	
97) Hexachlorobutadiene	22.48	225	472759	26.655	ng	99
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	20.06	119	1741026	27.020	ng	100
100) n-Butylbenzene	20.80	91	2007496	27.336	ng	100
101) 1,1,1,2-Tetrachloroethane	17.54	131	470327	26.110	ng	100

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

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Oct 31 11:57:37 2021



Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: 10282146.D

Acq. Method File: TO15.M

10/31/21

Data File Path: I:\MS16\DATA\2021_10\28\

Sample Name: 25ng R16102821 ICV Std

Operator: WA

Misc Info: S34-09132101/S34-10122104 (

Date Acquired: 10/29/2021

3:57

Instrument Name: GCMS-16

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	Propene	4.06	24.6	25.75	96	56	128	*	*
3)	Dichlorodifluoromethane (CFC 12)	4.21	22.4	26.00	86	71	112	*	*
4)	Chloromethane	4.49	20.9	25.75	81	53	126	*	*
5)	1,2-Dichloro-1,1,2,2-tetrafluoroethane	4.75	23.3	26.00	90	62	121	*	*
6)	Vinyl Chloride	4.91	22.7	26.00	87	63	123	*	*
7)	1,3-Butadiene	5.17	23.5	25.75	91	63	135	*	*
8)	Bromomethane	5.60	24.5	25.75	95	71	112	*	*
9)	Chloroethane	5.93	24.0	25.75	93	66	117	*	*
10)	Ethanol	6.32	96	104.00	92	57	117	*	*
11)	Acetonitrile	6.57	20.4	25.25	81	59	131	*	*
12)	Acrolein	6.74	51.8	52.00	100	71	123	*	*
13)	Acetone	6.95	113	128.00	88	60	117	*	*
14)	Trichlorofluoromethane	7.18	22.5	25.25	89	71	114	*	*
15)	2-Propanol (Isopropanol)	7.44	46.8	50.00	94	61	124	*	*
16)	Acrylonitrile	7.70	50.2	50.25	100	65	130	*	*
17)	1,1-Dichloroethene	8.13	25.6	26.25	98	74	114	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alcohol)	8.30	39.4	51.00	77	56	135	*	*
19)	Methylene Chloride	8.36	23.5	26.00	90	75	112	*	*
20)	3-Chloro-1-propene (Allyl Chloride)	8.52	22.4	25.50	88	57	127	*	*
21)	Trichlorotrifluoroethane	8.77	25.0	27.00	93	73	114	*	*
22)	Carbon Disulfide	8.62	46.0	51.75	89	70	113	*	*
23)	trans-1,2-Dichloroethene	9.63	24.9	26.00	96	76	119	*	*
24)	1,1-Dichloroethane	9.89	24.1	26.75	90	70	114	*	*
25)	Methyl tert-Butyl Ether	9.98	24.9	25.75	97	72	118	*	*
26)	Vinyl Acetate	10.15	129	117.75	110	56	137	*	*
27)	2-Butanone (MEK)	10.38	51.0	51.00	100	74	121	*	*
28)	cis-1,2-Dichloroethene	10.91	24.0	25.75	93	73	117	*	*
29)	Diisopropyl Ether	11.20	44.3	52.25	85	58	124	*	*
30)	Ethyl Acetate	11.21	67.0	72.50	92	59	161	*	*
31)	n-Hexane	11.18	23.6	26.00	91	55	130	*	*
32)	Chloroform	11.25	23.5	26.25	90	71	114	*	*
34)	Tetrahydrofuran (THF)	11.64	50.0	50.50	99	73	114	*	*
35)	Ethyl tert-Butyl Ether	11.79	50.7	51.75	98	76	119	*	*
36)	1,2-Dichloroethane	12.05	23.2	26.25	88	71	119	*	*
38)	1,1,1-Trichloroethane	12.32	23.7	26.00	91	73	119	*	*
41)	Benzene	12.80	24.0	26.00	92	72	113	*	*
42)	Carbon Tetrachloride	12.96	23.7	25.25	94	67	123	*	*
43)	Cyclohexane	13.09	49.4	51.50	96	70	119	*	*
44)	tert-Amyl Methyl Ether	13.44	51.7	51.50	100	74	120	*	*
45)	1,2-Dichloropropane	13.65	24.1	25.75	94	70	118	*	*
46)	Bromodichloromethane	13.85	25.3	26.00	97	74	119	*	*
47)	Trichloroethene	13.90	25.0	25.50	98	74	115	*	*
48)	1,4-Dioxane	13.87	26.8	25.75	104	77	124	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	13.97	24.1	26.25	92	65	120	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: 10282146.D

TO15.M

Data File Path: I:\MS16\DATA\2021_10\28\

Sample Name: 25ng R16102821 ICV Std

Operator: WA

Misc Info: S34-09132101/S34-10122104 (

Date Acquired: 10/29/2021

3:57

Instrument Name: GCMS-16

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	Methyl Methacrylate	14.11	54.6	51.25	107	78	126	*	*
51)	n-Heptane	14.24	25.2	25.75	98	70	119	*	*
52)	cis-1,3-Dichloropropene	14.77	27.3	26.00	105	81	126	*	*
53)	4-Methyl-2-pentanone	14.80	53.6	51.50	104	73	129	*	*
54)	trans-1,3-Dichloropropene	15.28	26.2	25.00	105	80	127	*	*
55)	1,1,2-Trichloroethane	15.45	25.0	26.00	96	78	117	*	*
58)	Toluene	15.74	25.0	25.75	97	70	118	*	*
59)	2-Hexanone	15.99	55.7	50.75	110	74	132	*	*
60)	Dibromochloromethane	16.15	27.3	26.25	104	69	137	*	*
61)	1,2-Dibromoethane	16.40	27.1	26.00	104	76	128	*	*
62)	n-Butyl Acetate	16.62	58.3	50.75	115	75	134	*	*
63)	n-Octane	16.76	26.1	26.00	100	68	120	*	*
64)	Tetrachloroethene	16.89	26.0	26.50	98	63	130	*	*
65)	Chlorobenzene	17.56	25.1	25.75	97	70	118	*	*
66)	Ethylbenzene	17.92	26.4	25.75	103	71	123	*	*
67)	m- & p-Xylenes	18.09	53.0	52.00	102	67	127	*	*
68)	Bromoform	18.14	27.5	26.25	105	65	149	*	*
69)	Styrene	18.41	27.5	25.25	109	76	132	*	*
70)	o-Xylene	18.52	26.5	26.00	102	69	124	*	*
71)	n-Nonane	18.71	26.2	26.00	101	64	127	*	*
72)	1,1,2,2-Tetrachloroethane	18.49	26.9	26.00	103	69	128	*	*
74)	Cumene	19.04	26.1	25.75	101	69	125	*	*
75)	alpha-Pinene	19.40	28.2	26.25	107	68	129	*	*
76)	n-Propylbenzene	19.49	26.4	26.00	102	70	127	*	*
78)	4-Ethyltoluene	19.62	27.4	26.00	105	69	127	*	*
79)	1,3,5-Trimethylbenzene	19.69	27.1	26.00	104	66	129	*	*
82)	1,2,4-Trimethylbenzene	20.06	27.9	25.75	108	63	142	*	*
84)	Benzyl Chloride	20.17	56.9	52.00	109	73	145	*	*
85)	1,3-Dichlorobenzene	20.19	27.2	26.00	105	67	136	*	*
86)	1,4-Dichlorobenzene	20.25	26.0	26.25	99	63	134	*	*
87)	sec-Butylbenzene	20.29	26.4	25.50	104	68	130	*	*
88)	4-Isopropyltoluene (p-Cymene)	20.43	27.5	25.75	107	60	139	*	*
90)	1,2-Dichlorobenzene	20.55	27.1	26.25	103	64	139	*	*
91)	d-Limonene	20.56	29.7	25.75	115	63	137	*	*
92)	1,2-Dibromo-3-Chloropropane	20.94	54.2	50.50	107	72	145	*	*
94)	1,2,4-Trichlorobenzene	22.06	58.0	52.50	110	62	154	*	*
95)	Naphthalene	22.16	29.1	26.25	111	62	156	*	*
97)	Hexachlorobutadiene	22.48	26.7	26.50	101	55	142	*	*
99)	tert-Butylbenzene	20.06	27.0	25.75	105	61	140	*	*
100)	n-Butylbenzene	20.80	27.3	26.00	105	70	131	*	*
101)	1,1,1,2-Tetrachloroethane	17.54	26.1	25.75	101	70	130	*	*

Bold = 75 Compound List

* = Pass

Data File : I:\MS16\DATA\2021_12\29\12292101.D
 Acq On : 28 Dec 2021 23:56
 Sample : CCV R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:09:54 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

12/29/21

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 (IS1)	1.000	1.000	0.0	146	0.00
2 T	Propene	2.466	2.067	16.2	109	0.00
3 T	Dichlorodifluoromethane (CF	2.742	2.195	19.9	113	0.00
4 T	Chloromethane	2.459	2.233	9.2	119	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.246	1.068	14.3	120	0.00
6 T	Vinyl Chloride	2.047	1.786	12.8	120	0.00
7 T	1,3-Butadiene	1.769	1.835	-3.7	133	0.00
8 T	Bromomethane	1.086	0.992	8.7	126	0.00
9 T	Chloroethane	0.977	0.897	8.2	127	0.00
10 T	Ethanol	1.388	1.341	3.4	132	0.00
11 T	Acetonitrile	3.699	3.558	3.8	136	0.00
12 T	Acrolein	0.983	1.013	-3.1	129	0.00
13 T	Acetone	1.165	1.053	9.6	126	0.00
14 T	Trichlorofluoromethane	2.398	2.112	11.9	125	0.00
15 T	2-Propanol (Isopropanol)	3.397	3.868	-13.9	146	0.00
16 T	Acrylonitrile	2.110	2.183	-3.5	128	0.00
17 T	1,1-Dichloroethene	1.168	1.055	9.7	121	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.911	2.525	13.3	103	0.00
19 T	Methylene Chloride	1.309	1.137	13.1	122	0.00
20 T	3-Chloro-1-propene (Allyl C	2.569	2.526	1.7	131	0.00
21 T	Trichlorotrifluoroethane	1.041	0.997	4.2	134	0.00
22 T	Carbon Disulfide	4.744	4.134	12.9	120	0.00
23 T	trans-1,2-Dichloroethene	2.008	1.960	2.4	128	0.00
24 T	1,1-Dichloroethane	2.505	2.277	9.1	125	0.00
25 T	Methyl tert-Butyl Ether	3.656	3.486	4.6	122	0.00
26 T	Vinyl Acetate	0.236	0.218	7.6	107	0.00
27 T	2-Butanone (MEK)	0.813	0.792	2.6	121	0.00
28 T	cis-1,2-Dichloroethene	1.980	1.905	3.8	128	0.00
29 T	Diisopropyl Ether	1.059	0.930	12.2	129	0.00
30 T	Ethyl Acetate	0.510	0.490	3.9	128	0.00
31 T	n-Hexane	2.412	2.260	6.3	126	0.00
32 T	Chloroform	2.155	1.873	13.1	122	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.832	1.786	2.5	141	0.00
34 T	Tetrahydrofuran (THF)	0.774	0.742	4.1	121	0.00
35 T	Ethyl tert-Butyl Ether	1.425	1.366	4.1	122	0.00
36 T	1,2-Dichloroethane	1.914	1.746	8.8	126	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	145	0.00
38 T	1,1,1-Trichloroethane	0.456	0.406	11.0	121	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	132	0.01
40 T	1-Butanol	0.000	0.000	0.0	125	0.04
41 T	Benzene	1.157	1.009	12.8	120	0.00
42 T	Carbon Tetrachloride	0.386	0.364	5.7	126	0.00
43 T	Cyclohexane	0.420	0.387	7.9	118	0.00
44 T	tert-Amyl Methyl Ether	0.764	0.766	-0.3	124	0.00
45 T	1,2-Dichloropropane	0.324	0.303	6.5	125	0.00
46 T	Bromodichloromethane	0.387	0.363	6.2	120	0.00
47 T	Trichloroethene	0.298	0.282	5.4	125	0.00
48 T	1,4-Dioxane	0.218	0.207	5.0	118	0.00
49 T	2,2,4-Trimethylpentane (Iso	1.426	1.364	4.3	126	0.00
50 T	Methyl Methacrylate	0.108	0.108	0.0	119	0.00
51 T	n-Heptane	0.280	0.267	4.6	121	0.00
52 T	cis-1,3-Dichloropropene	0.424	0.437	-3.1	122	0.00
53 T	4-Methyl-2-pentanone	0.294	0.310	-5.4	125	0.00
54 T	trans-1,3-Dichloropropene	0.406	0.423	-4.2	122	0.00
55 T	1,1,2-Trichloroethane	0.273	0.246	9.9	118	0.00

Data File : I:\MS16\DATA\2021_12\29\12292101.D
 Acq On : 28 Dec 2021 23:56
 Sample : CCV R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:09:54 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	141	0.00
57	S Toluene-d8 (SS2)	4.469	4.146	7.2	134	0.00
58	T Toluene	4.910	4.294	12.5	118	0.00
59	T 2-Hexanone	3.165	3.549	-12.1	130	0.00
60	T Dibromochloromethane	1.310	1.332	-1.7	124	0.00
61	T 1,2-Dibromoethane	1.276	1.255	1.6	122	0.00
62	T n-Butyl Acetate	3.425	3.969	-15.9	129	0.00
63	T n-Octane	1.243	1.235	0.6	126	0.00
64	T Tetrachloroethene	1.321	1.266	4.2	129	0.00
65	T Chlorobenzene	3.256	2.949	9.4	119	0.00
66	T Ethylbenzene	5.396	5.012	7.1	117	0.00
67	T m- & p-Xylenes	4.189	3.970	5.2	118	0.00
68	T Bromoform	1.078	1.145	-6.2	130	0.00
69	T Styrene	3.214	3.202	0.4	118	0.00
70	T o-Xylene	4.152	3.897	6.1	119	0.00
71	T n-Nonane	2.973	3.150	-6.0	129	0.00
72	T 1,1,2,2-Tetrachloroethane	2.012	1.902	5.5	117	0.00
73	S Bromofluorobenzene (SS3)	1.570	1.507	4.0	136	0.00
74	T Cumene	5.359	5.090	5.0	120	0.00
75	T alpha-Pinene	2.645	2.615	1.1	121	0.00
76	T n-Propylbenzene	6.455	6.047	6.3	117	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	119	0.00
78	T 4-Ethyltoluene	5.065	4.990	1.5	119	0.00
79	T 1,3,5-Trimethylbenzene	4.238	4.162	1.8	121	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	115	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	119	0.00
82	T 1,2,4-Trimethylbenzene	4.095	4.254	-3.9	120	0.00
83	T n-Decane	0.000	0.000	0.0	122	0.00
84	T Benzyl Chloride	3.552	3.687	-3.8	116	0.00
85	T 1,3-Dichlorobenzene	2.459	2.468	-0.4	120	0.00
86	T 1,4-Dichlorobenzene	2.569	2.526	1.7	123	0.00
87	T sec-Butylbenzene	5.757	5.602	2.7	119	0.00
88	T 4-Isopropyltoluene (p-Cymen	4.811	4.783	0.6	116	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	119	0.00
90	T 1,2-Dichlorobenzene	2.392	2.357	1.5	118	0.00
91	T d-Limonene	1.550	1.733	-11.8	130	0.00
92	T 1,2-Dibromo-3-Chloropropane	0.936	0.964	-3.0	119	0.00
93	T n-Undecane	0.000	0.000	0.0	52	-0.03
94	T 1,2,4-Trichlorobenzene	1.729	1.899	-9.8	119	0.00
95	T Naphthalene	5.384	5.820	-8.1	116	0.00
96	T n-Dodecane	0.000	0.000	0.0	0#	0.00
97	T Hexachlorobutadiene	1.126	1.164	-3.4	125	0.00
98	T Cyclohexanone	0.000	0.000	0.0	132	0.00
99	T tert-Butylbenzene	4.091	3.964	3.1	116	0.00
100	T n-Butylbenzene	4.663	4.553	2.4	116	0.00
101	T 1,1,1,2-Tetrachloroethane	1.144	1.107	3.2	121	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS16\DATA\2021_12\29\12292101.D
 Acq On : 28 Dec 2021 23:56
 Sample : CCV R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 29 03:09:54 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

12/29/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	231828	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.20	114	1022838	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	243290	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	414100	12.188	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.52%
57) Toluene-d8 (SS2)	15.65	98	1008643	11.597	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	92.80%
73) Bromofluorobenzene (SS3)	18.92	174	366611	11.998	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.00%

Target Compounds

						Qvalue
2) Propene	4.06	42	996511	21.785	ng	99
3) Dichlorodifluoromethan...	4.22	85	1068773	21.018	ng	100
4) Chloromethane	4.50	50	1056194	23.157	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.76	135	534593	23.143	ng	100
6) Vinyl Chloride	4.91	62	861344	22.685	ng	100
7) 1,3-Butadiene	5.18	54	884726	26.964	ng	97
8) Bromomethane	5.60	94	469309	23.301	ng	100
9) Chloroethane	5.93	64	424379	23.421	ng	99
10) Ethanol	6.32	45	2250015	87.417	ng	100
11) Acetonitrile	6.57	41	1534321	22.365	ng	99
12) Acrolein	6.74	56	939250	51.530	ng	99
13) Acetone	6.95	58	2533342	117.236	ng	95
14) Trichlorofluoromethane	7.18	101	1008667	22.683	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	3622625	57.493	ng	99
16) Acrylonitrile	7.70	53	2054908	52.521	ng	100
17) 1,1-Dichloroethene	8.14	96	523561	24.168	ng	93
18) 2-Methyl-2-Propanol (t...	8.31	59	2458998	45.549	ng	100
19) Methylene Chloride	8.37	84	548033	22.566	ng	91
20) 3-Chloro-1-propene (Al...	8.52	41	1229598	25.805	ng	95
21) Trichlorotrifluoroethane	8.78	151	499439	25.857	ng	92
22) Carbon Disulfide	8.62	76	4025328	45.751	ng	100
23) trans-1,2-Dichloroethene	9.63	61	963461	25.874	ng	95
24) 1,1-Dichloroethane	9.89	63	1108504	23.863	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1696904	25.028	ng	99
26) Vinyl Acetate	10.15	86	343169	78.493	ng	# 72
27) 2-Butanone (MEK)	10.38	72	756279	50.171	ng	# 86
28) cis-1,2-Dichloroethene	10.91	61	918546	25.008	ng	94
29) Diisopropyl Ether	11.20	87	913840	46.539	ng	# 89
30) Ethyl Acetate	11.21	61	927423	98.129	ng	100
31) n-Hexane	11.19	57	1100238	24.596	ng	99
32) Chloroform	11.26	83	929222	23.254	ng	100
34) Tetrahydrofuran (THF)	11.65	72	677623	47.218	ng	# 91
35) Ethyl tert-Butyl Ether	11.79	87	1329852	50.308	ng	92
36) 1,2-Dichloroethane	12.05	62	858327	24.185	ng	100
38) 1,1,1-Trichloroethane	12.32	97	864768	23.155	ng	99
39) Isopropyl Acetate	12.78	61	67125	No Calib		
40) 1-Butanol	12.85	56	22871	No Calib	#	
41) Benzene	12.81	78	2147022	22.680	ng	100
42) Carbon Tetrachloride	12.96	117	782608	24.754	ng	99
43) Cyclohexane	13.09	84	1637929	47.633	ng	93
44) tert-Amyl Methyl Ether	13.45	73	3276855	52.402	ng	97
45) 1,2-Dichloropropane	13.65	63	639191	24.125	ng	100
46) Bromodichloromethane	13.85	83	779706	24.598	ng	100
47) Trichloroethene	13.90	130	593376	24.374	ng	97
48) 1,4-Dioxane	13.87	88	439399	24.621	ng	95
49) 2,2,4-Trimethylpentane...	13.97	57	2958059	25.357	ng	98
50) Methyl Methacrylate	14.11	100	460677	52.195	ng	97

Data File : I:\MS16\DATA\2021_12\29\12292101.D
 Acq On : 28 Dec 2021 23:56
 Sample : CCV R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

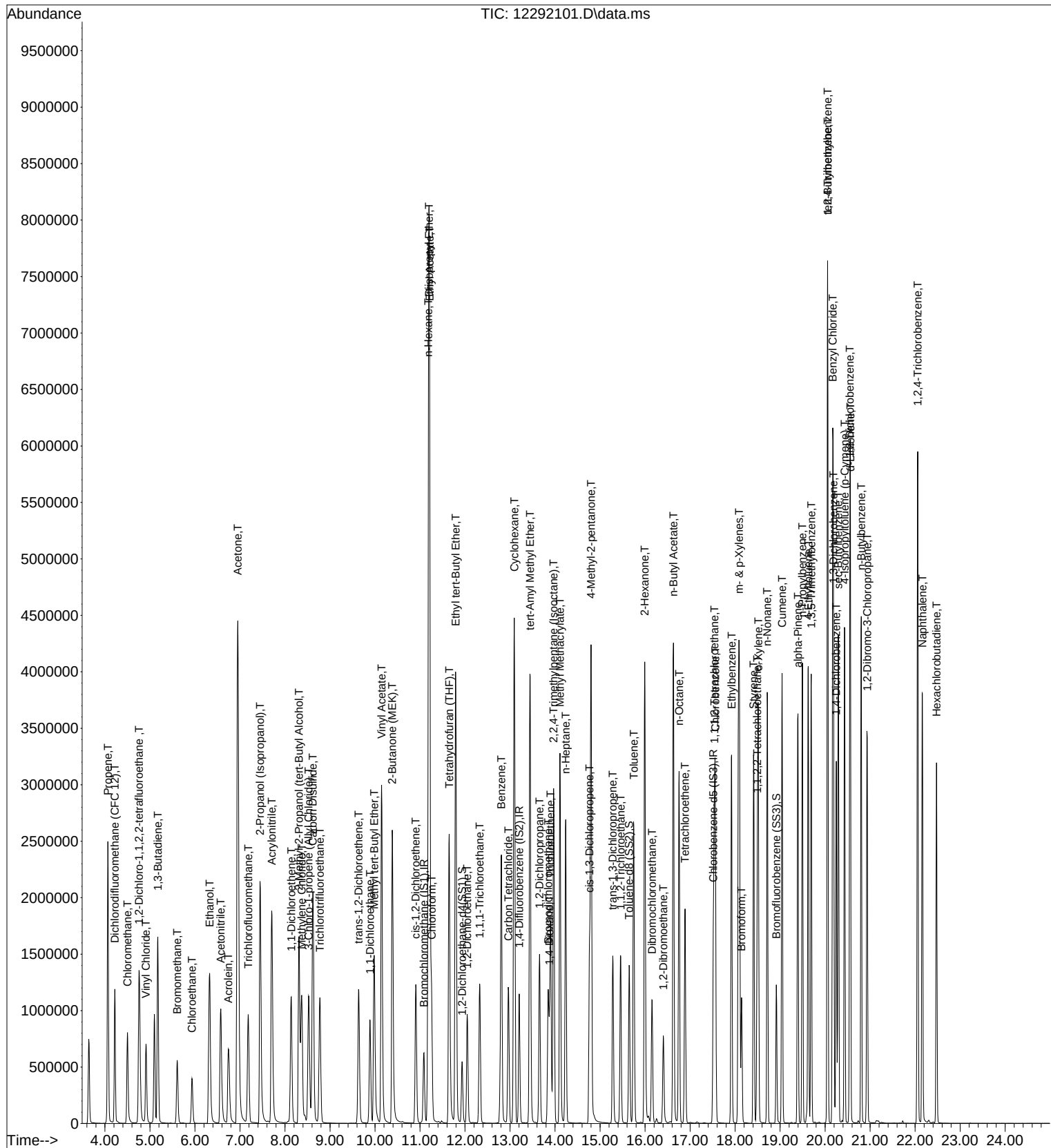
Quant Time: Dec 29 03:09:54 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	573846	25.047	ng	97
52) cis-1,3-Dichloropropene	14.77	75	938000	27.014	ng	100
53) 4-Methyl-2-pentanone	14.80	58	1317462	54.714	ng	95
54) trans-1,3-Dichloropropene	15.28	75	874586	26.334	ng	100
55) 1,1,2-Trichloroethane	15.46	97	524128	23.493	ng	99
58) Toluene	15.75	91	2151984	22.519	ng	100
59) 2-Hexanone	15.99	43	3540551	57.482	ng	97
60) Dibromochloromethane	16.16	129	680309	26.692	ng	100
61) 1,2-Dibromoethane	16.40	107	635143	25.584	ng	100
62) n-Butyl Acetate	16.63	43	3939978	59.096	ng	97
63) n-Octane	16.76	57	631057	26.094	ng	95
64) Tetrachloroethene	16.89	166	640870	24.923	ng	100
65) Chlorobenzene	17.56	112	1492299	23.547	ng	100
66) Ethylbenzene	17.92	91	2512089	23.918	ng	99
67) m- & p-Xylenes	18.09	91	3978884	48.802	ng	99
68) Bromoform	18.14	173	579645	27.615	ng	99
69) Styrene	18.41	104	1604895	25.652	ng	99
70) o-Xylene	18.52	91	1971929	24.401	ng	100
71) n-Nonane	18.71	43	1593899	27.547	ng	97
72) 1,1,2,2-Tetrachloroethane	18.49	83	962544	24.576	ng	100
74) Cumene	19.04	105	2575606	24.696	ng	99
75) alpha-Pinene	19.40	93	1374309	26.695	ng	98
76) n-Propylbenzene	19.49	91	3089286	24.590	ng	99
77) 3-Ethyltoluene	19.63	105	2573545	No Calib		
78) 4-Ethyltoluene	19.63	105	2573545	26.106	ng	99
79) 1,3,5-Trimethylbenzene	19.69	105	2106379	25.536	ng	97
80) alpha-Methylstyrene	19.63	118	14982	No Calib	#	
81) 2-Ethyltoluene	19.63	105	2573545	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	2132079	26.751	ng	96
83) n-Decane	20.06	58	120177	No Calib	#	
84) Benzyl Chloride	20.17	91	3695859	53.462	ng	98
85) 1,3-Dichlorobenzene	20.19	146	1249044	26.101	ng	99
86) 1,4-Dichlorobenzene	20.25	146	1278263	25.568	ng	99
87) sec-Butylbenzene	20.29	105	2834845	25.301	ng	100
88) 4-Isopropyltoluene (p-...	20.43	119	2420475	25.851	ng	99
89) 1,2,3-Trimethylbenzene	20.29	105	2834845	No Calib		
90) 1,2-Dichlorobenzene	20.55	146	1204384	25.874	ng	100
91) d-Limonene	20.56	68	885459	29.346	ng	95
92) 1,2-Dibromo-3-Chloropr...	20.94	157	938355	51.535	ng	96
93) n-Undecane	21.13	57	110	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1885426	56.040	ng	100
95) Naphthalene	22.16	128	2945011	28.106	ng	100
96) n-Dodecane	22.16	57	4089	No Calib	#	
97) Hexachlorobutadiene	22.47	225	583181	26.608	ng	100
98) Cyclohexanone	18.08	55	4372	No Calib		
99) tert-Butylbenzene	20.06	119	2005799	25.191	ng	100
100) n-Butylbenzene	20.80	91	2303972	25.388	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	560392	25.175	ng	98

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

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Dec 29 03:09:54 2021



Data File : I:\MS16\DATA\2021_12\29\12292138.D
 Acq On : 29 Dec 2021 22:03
 Sample : CCVend R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 30 03:53:40 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

12/30/21

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 (IS1)	1.000	1.000	0.0	156	0.00
2 T	Propene	2.466	1.765	28.4	100	0.00
3 T	Dichlorodifluoromethane (CF	2.742	2.144	21.8	118	0.00
4 T	Chloromethane	2.459	1.811	26.4	103	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.246	1.025	17.7	123	0.00
6 T	Vinyl Chloride	2.047	1.671	18.4	120	0.00
7 T	1,3-Butadiene	1.769	1.520	14.1	118	0.00
8 T	Bromomethane	1.086	0.960	11.6	131	0.00
9 T	Chloroethane	0.977	0.875	10.4	133	0.00
10 T	Ethanol	1.388	1.146	17.4	120	0.00
11 T	Acetonitrile	3.699	3.221	12.9	132	0.00
12 T	Acrolein	0.983	0.976	0.7	133	0.00
13 T	Acetone	1.165	0.986	15.4	126	0.00
14 T	Trichlorofluoromethane	2.398	2.108	12.1	133	0.00
15 T	2-Propanol (Isopropanol)	3.397	3.558	-4.7	143	0.00
16 T	Acrylonitrile	2.110	2.043	3.2	128	0.00
17 T	1,1-Dichloroethene	1.168	1.038	11.1	127	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.911	2.648	9.0	116	0.00
19 T	Methylene Chloride	1.309	1.132	13.5	130	0.00
20 T	3-Chloro-1-propene (Allyl C	2.569	2.267	11.8	126	0.00
21 T	Trichlorotrifluoroethane	1.041	0.998	4.1	144	0.00
22 T	Carbon Disulfide	4.744	4.070	14.2	127	0.00
23 T	trans-1,2-Dichloroethene	2.008	1.916	4.6	134	0.00
24 T	1,1-Dichloroethane	2.505	2.221	11.3	131	0.00
25 T	Methyl tert-Butyl Ether	3.656	3.456	5.5	129	0.00
26 T	Vinyl Acetate	0.236	0.225	4.7	118	0.00
27 T	2-Butanone (MEK)	0.813	0.782	3.8	128	0.00
28 T	cis-1,2-Dichloroethene	1.980	1.849	6.6	133	0.00
29 T	Diisopropyl Ether	1.059	0.859	18.9	127	0.00
30 T	Ethyl Acetate	0.510	0.423	17.1	118	0.00
31 T	n-Hexane	2.412	1.969	18.4	117	0.00
32 T	Chloroform	2.155	1.874	13.0	131	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.832	1.799	1.8	152	0.00
34 T	Tetrahydrofuran (THF)	0.774	0.727	6.1	127	0.00
35 T	Ethyl tert-Butyl Ether	1.425	1.331	6.6	127	0.00
36 T	1,2-Dichloroethane	1.914	1.735	9.4	133	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	156	0.00
38 T	1,1,1-Trichloroethane	0.456	0.405	11.2	130	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	142	0.00
40 T	1-Butanol	0.000	0.000	0.0	153	0.02
41 T	Benzene	1.157	0.995	14.0	127	0.00
42 T	Carbon Tetrachloride	0.386	0.368	4.7	136	0.00
43 T	Cyclohexane	0.420	0.377	10.2	124	0.00
44 T	tert-Amyl Methyl Ether	0.764	0.741	3.0	129	0.00
45 T	1,2-Dichloropropane	0.324	0.296	8.6	131	0.00
46 T	Bromodichloromethane	0.387	0.361	6.7	128	0.00
47 T	Trichloroethene	0.298	0.274	8.1	130	0.00
48 T	1,4-Dioxane	0.218	0.205	6.0	126	0.00
49 T	2,2,4-Trimethylpentane (Iso	1.426	1.299	8.9	128	0.00
50 T	Methyl Methacrylate	0.108	0.108	0.0	127	0.00
51 T	n-Heptane	0.280	0.262	6.4	127	0.00
52 T	cis-1,3-Dichloropropene	0.424	0.430	-1.4	129	0.00
53 T	4-Methyl-2-pentanone	0.294	0.292	0.7	126	0.00
54 T	trans-1,3-Dichloropropene	0.406	0.414	-2.0	127	0.00
55 T	1,1,2-Trichloroethane	0.273	0.244	10.6	125	0.00

Data File : I:\MS16\DATA\2021_12\29\12292138.D
 Acq On : 29 Dec 2021 22:03
 Sample : CCVend R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 30 03:53:40 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	149	0.00
57	S Toluene-d8 (SS2)	4.469	4.248	4.9	145	0.00
58	T Toluene	4.910	4.386	10.7	127	0.00
59	T 2-Hexanone	3.165	3.244	-2.5	125	0.00
60	T Dibromochloromethane	1.310	1.360	-3.8	133	0.00
61	T 1,2-Dibromoethane	1.276	1.261	1.2	129	0.00
62	T n-Butyl Acetate	3.425	3.622	-5.8	124	0.00
63	T n-Octane	1.243	1.189	4.3	128	0.00
64	T Tetrachloroethene	1.321	1.279	3.2	137	0.00
65	T Chlorobenzene	3.256	2.926	10.1	125	0.00
66	T Ethylbenzene	5.396	5.045	6.5	124	0.00
67	T m- & p-Xylenes	4.189	3.959	5.5	124	0.00
68	T Bromoform	1.078	1.188	-10.2	142	0.00
69	T Styrene	3.214	3.241	-0.8	126	0.00
70	T o-Xylene	4.152	3.901	6.0	125	0.00
71	T n-Nonane	2.973	2.842	4.4	122	0.00
72	T 1,1,2,2-Tetrachloroethane	2.012	1.899	5.6	123	0.00
73	S Bromofluorobenzene (SS3)	1.570	1.593	-1.5	152	0.00
74	T Cumene	5.359	5.100	4.8	127	0.00
75	T alpha-Pinene	2.645	2.593	2.0	126	0.00
76	T n-Propylbenzene	6.455	6.087	5.7	124	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	126	0.00
78	T 4-Ethyltoluene	5.065	5.026	0.8	126	0.00
79	T 1,3,5-Trimethylbenzene	4.238	4.190	1.1	128	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	122	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	126	0.00
82	T 1,2,4-Trimethylbenzene	4.095	4.128	-0.8	123	0.00
83	T n-Decane	0.000	0.000	0.0	115	0.00
84	T Benzyl Chloride	3.552	3.350	5.7	111	0.00
85	T 1,3-Dichlorobenzene	2.459	2.428	1.3	124	0.00
86	T 1,4-Dichlorobenzene	2.569	2.531	1.5	130	0.00
87	T sec-Butylbenzene	5.757	5.635	2.1	126	0.00
88	T 4-Isopropyltoluene (p-Cymen	4.811	4.793	0.4	123	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	126	0.00
90	T 1,2-Dichlorobenzene	2.392	2.310	3.4	122	0.00
91	T d-Limonene	1.550	1.670	-7.7	132	0.00
92	T 1,2-Dibromo-3-Chloropropane	0.936	0.952	-1.7	123	0.00
93	T n-Undecane	0.000	0.000	0.0	50	0.03
94	T 1,2,4-Trichlorobenzene	1.729	1.816	-5.0	119	0.00
95	T Naphthalene	5.384	5.821	-8.1	123	0.00
96	T n-Dodecane	0.000	0.000	0.0	0#	0.00
97	T Hexachlorobutadiene	1.126	1.164	-3.4	132	0.00
98	T Cyclohexanone	0.000	0.000	0.0	128	0.00
99	T tert-Butylbenzene	4.091	3.823	6.6	117	0.00
100	T n-Butylbenzene	4.663	4.582	1.7	122	0.00
101	T 1,1,1,2-Tetrachloroethane	1.144	1.090	4.7	126	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS16\DATA\2021_12\29\12292138.D
 Acq On : 29 Dec 2021 22:03
 Sample : CCVend R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 30 03:53:40 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:T015.M

12/30/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	248008	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.20	114	1093881	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	256264	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.93	65	446245	12.277	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.24%
57) Toluene-d8 (SS2)	15.65	98	1088499	11.881	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.04%
73) Bromofluorobenzene (SS3)	18.92	174	408347	12.687	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.52%

Target Compounds

						Qvalue
2) Propene	4.06	42	910734	18.611	ng	99
3) Dichlorodifluoromethan...	4.22	85	1116675	20.527	ng	100
4) Chloromethane	4.50	50	916136	18.776	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.75	135	549073	22.219	ng	100
6) Vinyl Chloride	4.91	62	862208	21.227	ng	100
7) 1,3-Butadiene	5.17	54	784354	22.346	ng	98
8) Bromomethane	5.60	94	485913	22.552	ng	100
9) Chloroethane	5.93	64	442930	22.850	ng	99
10) Ethanol	6.32	45	2058093	74.744	ng	100
11) Acetonitrile	6.57	41	1485687	20.243	ng	99
12) Acrolein	6.74	56	967792	49.632	ng	100
13) Acetone	6.95	58	2538016	109.789	ng	100
14) Trichlorofluoromethane	7.18	101	1077202	22.644	ng	100
15) 2-Propanol (Isopropanol)	7.44	45	3564579	52.881	ng	99
16) Acrylonitrile	7.70	53	2056785	49.139	ng	100
17) 1,1-Dichloroethene	8.13	96	551023	23.776	ng	94
18) 2-Methyl-2-Propanol (t...	8.30	59	2758630	47.766	ng	99
19) Methylene Chloride	8.37	84	584198	22.486	ng	97
20) 3-Chloro-1-propene (Al...	8.52	41	1180632	23.161	ng	100
21) Trichlorotrifluoroethane	8.77	151	534765	25.880	ng	93
22) Carbon Disulfide	8.62	76	4239390	45.041	ng	100
23) trans-1,2-Dichloroethene	9.63	61	1007615	25.294	ng	96
24) 1,1-Dichloroethane	9.89	63	1156487	23.272	ng	100
25) Methyl tert-Butyl Ether	9.98	73	1800034	24.817	ng	99
26) Vinyl Acetate	10.15	86	378862	81.004	ng	# 96
27) 2-Butanone (MEK)	10.38	72	798959	49.544	ng	99
28) cis-1,2-Dichloroethene	10.91	61	953798	24.274	ng	95
29) Diisopropyl Ether	11.20	87	902950	42.985	ng	# 79
30) Ethyl Acetate	11.21	61	855103	84.575	ng	95
31) n-Hexane	11.18	57	1025274	21.425	ng	100
32) Chloroform	11.25	83	994514	23.264	ng	100
34) Tetrahydrofuran (THF)	11.64	72	710447	46.275	ng	98
35) Ethyl tert-Butyl Ether	11.79	87	1386143	49.017	ng	97
36) 1,2-Dichloroethane	12.05	62	912010	24.021	ng	100
38) 1,1,1-Trichloroethane	12.32	97	922298	23.092	ng	98
39) Isopropyl Acetate	12.77	61	72451	No Calib		
40) 1-Butanol	12.83	56	28032	No Calib	#	
41) Benzene	12.81	78	2264746	22.370	ng	100
42) Carbon Tetrachloride	12.96	117	846158	25.026	ng	99
43) Cyclohexane	13.09	84	1709008	46.472	ng	98
44) tert-Amyl Methyl Ether	13.44	73	3390413	50.697	ng	100
45) 1,2-Dichloropropane	13.65	63	666526	23.523	ng	100
46) Bromodichloromethane	13.85	83	830409	24.496	ng	100
47) Trichloroethene	13.90	130	617949	23.735	ng	96
48) 1,4-Dioxane	13.87	88	465926	24.412	ng	98
49) 2,2,4-Trimethylpentane...	13.97	57	3012015	24.143	ng	99
50) Methyl Methacrylate	14.11	100	493018	52.232	ng	99

Data File : I:\MS16\DATA\2021_12\29\12292138.D
 Acq On : 29 Dec 2021 22:03
 Sample : CCVend R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Dec 30 03:53:40 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:T015.M

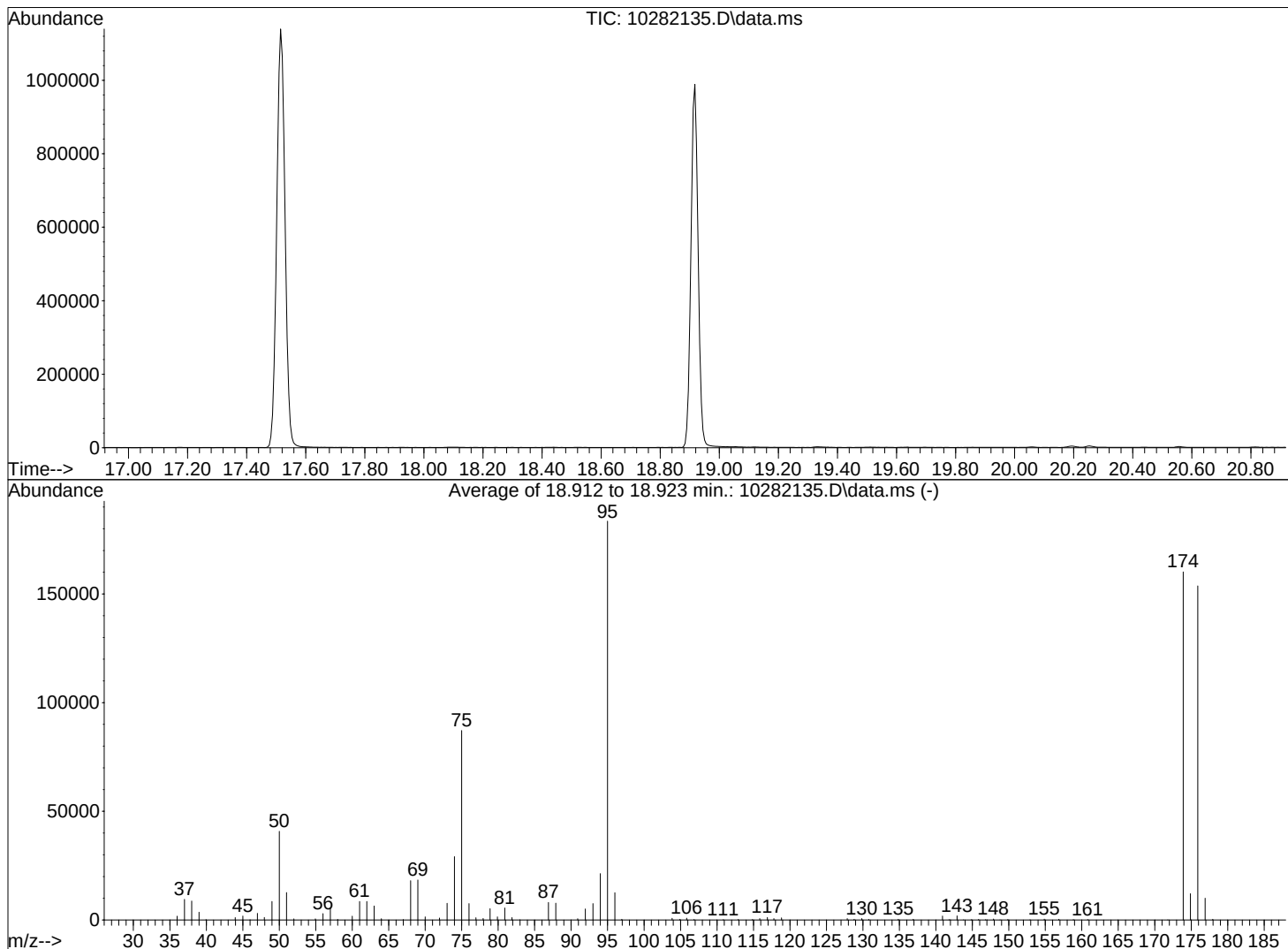
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.24	71	602142	24.575	ng	99
52) cis-1,3-Dichloropropene	14.77	75	988216	26.612	ng	100
53) 4-Methyl-2-pentanone	14.80	58	1327855	51.564	ng	98
54) trans-1,3-Dichloropropene	15.28	75	914996	25.762	ng	100
55) 1,1,2-Trichloroethane	15.45	97	556182	23.310	ng	99
58) Toluene	15.74	91	2315570	23.004	ng	99
59) 2-Hexanone	15.99	43	3408598	52.538	ng	99
60) Dibromochloromethane	16.15	129	732002	27.266	ng	100
61) 1,2-Dibromoethane	16.40	107	672208	25.706	ng	100
62) n-Butyl Acetate	16.63	43	3786506	53.919	ng	100
63) n-Octane	16.76	57	639851	25.118	ng	98
64) Tetrachloroethene	16.89	166	681556	25.163	ng	100
65) Chlorobenzene	17.56	112	1559679	23.364	ng	100
66) Ethylbenzene	17.92	91	2663237	24.073	ng	99
67) m- & p-Xylenes	18.09	91	4180386	48.677	ng	99
68) Bromoform	18.14	173	633408	28.649	ng	100
69) Styrene	18.41	104	1711002	25.964	ng	99
70) o-Xylene	18.52	91	2079113	24.425	ng	99
71) n-Nonane	18.71	43	1514921	24.856	ng	98
72) 1,1,2,2-Tetrachloroethane	18.49	83	1012141	24.534	ng	100
74) Cumene	19.04	105	2718247	24.744	ng	98
75) alpha-Pinene	19.40	93	1435265	26.467	ng	97
76) n-Propylbenzene	19.49	91	3275948	24.755	ng	99
77) 3-Ethyltoluene	19.62	105	2730639	No Calib		
78) 4-Ethyltoluene	19.62	105	2730639	26.297	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	2233207	25.703	ng	96
80) alpha-Methylstyrene	19.62	118	15876	No Calib	#	
81) 2-Ethyltoluene	19.62	105	2730639	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	2179229	25.958	ng	95
83) n-Decane	20.05	58	113014	No Calib	#	
84) Benzyl Chloride	20.17	91	3537217	48.577	ng	98
85) 1,3-Dichlorobenzene	20.19	146	1294262	25.677	ng	100
86) 1,4-Dichlorobenzene	20.25	146	1349273	25.622	ng	100
87) sec-Butylbenzene	20.29	105	3003517	25.449	ng	99
88) 4-Isopropyltoluene (p-...	20.43	119	2554737	25.904	ng	99
89) 1,2,3-Trimethylbenzene	20.29	105	3003517	No Calib		
90) 1,2-Dichlorobenzene	20.54	146	1243333	25.358	ng	100
91) d-Limonene	20.56	68	898878	28.283	ng	97
92) 1,2-Dibromo-3-Chloropr...	20.94	157	975377	50.856	ng	95
93) n-Undecane	21.19	57	107	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.06	180	1898697	53.577	ng	100
95) Naphthalene	22.16	128	3102616	28.111	ng	100
96) n-Dodecane	22.16	57	4252	No Calib	#	
97) Hexachlorobutadiene	22.48	225	614663	26.624	ng	100
98) Cyclohexanone	18.08	55	4247	No Calib		
99) tert-Butylbenzene	20.06	119	2037859	24.298	ng	99
100) n-Butylbenzene	20.80	91	2442375	25.551	ng	99
101) 1,1,1,2-Tetrachloroethane	17.54	131	580946	24.777	ng	98

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

Data Path : I:\MS16\DATA\2021_10\28\
 Data File : 10282135.D
 Acq On : 28 Oct 2021 21:45
 Operator : WA
 Sample : BFB Std
 Misc : S34-09132101
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16102821.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 Last Update : Sat Oct 30 07:47:28 2021



AutoFind: Scans 2805, 2806, 2807; Background Corrected with Scan 2797

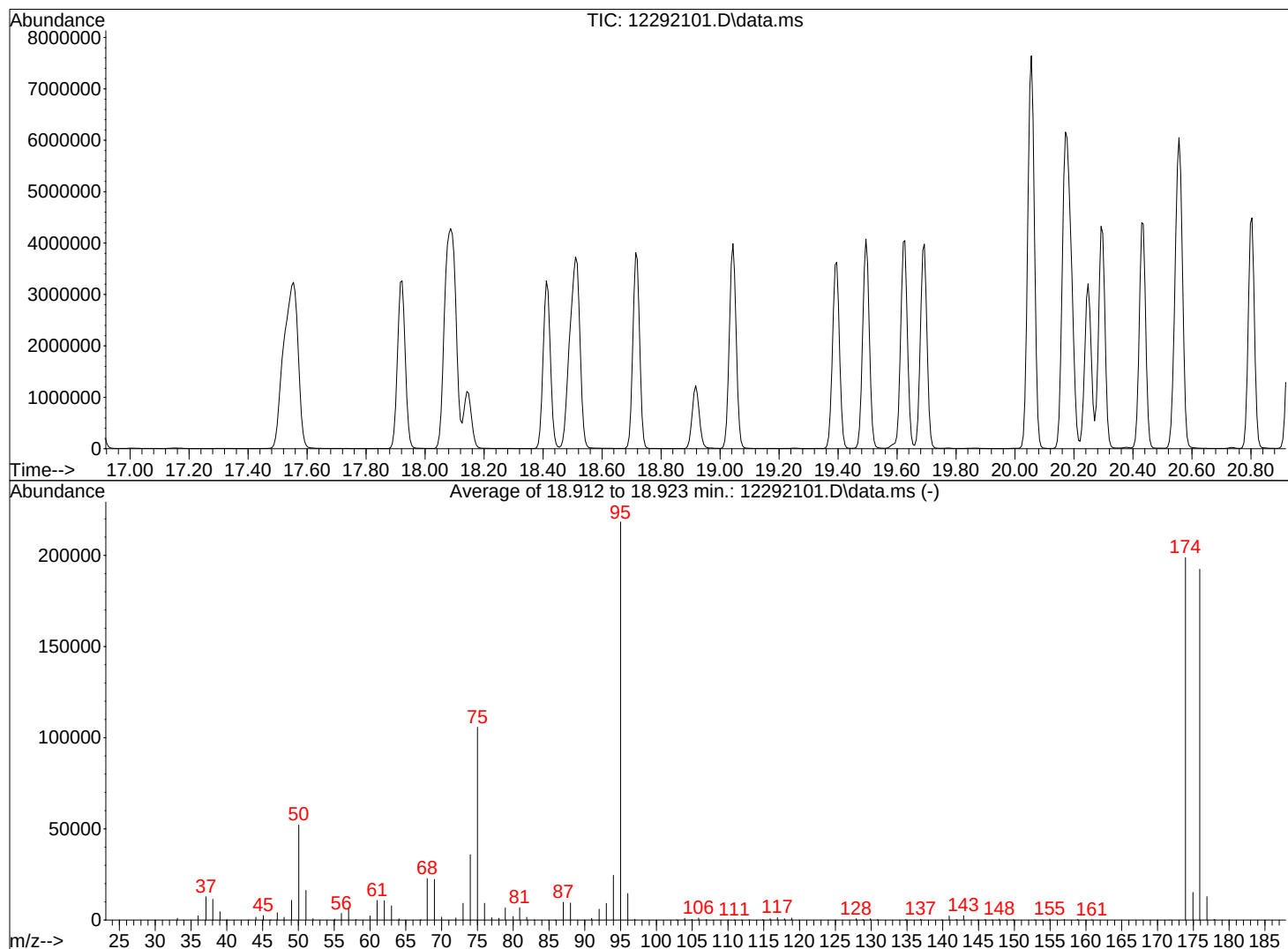
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	22.2	40760	PASS
75	95	30	66	47.5	87203	PASS
95	95	100	100	100.0	183509	PASS
96	95	5	9	6.9	12576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	87.3	160171	PASS
175	174	4	9	7.6	12116	PASS
176	174	93	101	96.0	153728	PASS
177	176	5	9	6.5	10038	PASS

107 10/30/21

Data Path : I:\MS16\DATA\2021_12\29\
 Data File : 12292101.D
 Acq On : 28 Dec 2021 23:56
 Operator : WA
 Sample : CCV R16122921_25ng
 Misc : S34-09132101/S35-12152101 (1/14/22)
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16102821.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Sat Oct 30 07:47:28 2021



AutoFind: Scans 2805, 2806, 2807; Background Corrected with Scan 2797

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	23.9	52173	PASS
75	95	30	66	48.4	105712	PASS
95	95	100	100	100.0	218304	PASS
96	95	5	9	6.7	14546	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	91.0	198741	PASS
175	174	4	9	7.6	15183	PASS
176	174	93	101	96.8	192363	PASS
177	176	5	9	6.7	12878	PASS

12/29/21

Injection Log

Directory: J:\MS16\DATA\2021_10\28\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
35	10/28/21 21:45	10282135.D	BFB Std	S34-09132101	WA	2	Passed
36	10/28/21 22:19	10282136.D	0.1ng R16102821 ICAL Std	S34-09132101/S34-10142102 (11/13)	WA	14	R16102821.M
37	10/28/21 22:53	10282137.D	0.2ng R16102821 ICAL Std	S34-09132101/S34-10142102 (11/13)	WA	14	
38	10/28/21 23:27	10282138.D	0.5ng R16102821 ICAL Std	S34-09132101/S34-10142101 (11/13)	WA	15	
40	10/29/21 0:01	10282139.D	1.0ng R16102821 ICAL Std	S34-09132101/S34-10142101 (11/13)	WA	15	
41	10/29/21 0:35	10282140.D	5.0ng R16102821 ICAL Std	S34-09132101/S34-10142101 (11/13)	WA	15	
43	10/29/21 1:08	10282141.D	25ng R16102821 ICAL Std	S34-09132101/S34-10192101 (11/18)	WA	16	
45	10/29/21 1:42	10282142.D	50ng R16102821 ICAL Std	S34-09132101/S34-10192101 (11/18)	WA	16	
47	10/29/21 2:16	10282143.D	100ng R16102821 ICAL Std	S34-09132101/S34-10192101 (11/18)	WA	16	
48	10/29/21 2:49	10282144.D	Blank	S34-09132101	WA	2	
49	10/29/21 3:23	10282145.D	25ng R16102821 ICV Std	S34-09132101/S34-10252107 (11/24)	WA	12	not used
50	10/29/21 3:57	10282146.D	25ng R16102821 ICV Std	S34-09132101/S34-10122104 (11/11)	WA	2	Passed
	R16102821.M: good for low level 75 compounds list.ranges from 0.1ng --> 100ng, except: TBA, trans-1,3-DCP, DIPE from 0.2ng --> 100ng						
	From 0.5ng --> 100ng: 1,4-dioxane,bromoform, styrene, alpha-Pinene, naphthalene; from 0.5ng --> 50ng: d-Limonene:						
	From 1.0ng --> 200ng: : Ethyl Ac, MEK, MIBK, 2-Hexanone, ButylAcetate.&DBCP; from1.7ng ___> 340ng for Vinyl Acetate						

Injection Log

Directory: I:\MS16\DATA\2021_12\29\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	12/28/21 23:56	12292101.D	CCV R16122921_25ng	S34-09132101/S35-12152101 (1/14/22)	WA	2	Passed
2	12/29/21 0:29	12292102.D	CCV R16122921_5ng	S34-09132101/S35-12152101 (1/14/22)	WA	2	Passed
3	12/29/21 1:03	12292103.D	MB R16122921_1000mL	S34-09132101	WA	3	Passed
4	12/29/21 1:37	12292104.D	LCS R16122921_25ng	S34-09132101/S35-12032103 (1/02)	WA	2	Passed
5	12/29/21 2:11	12292105.D	LCSD R16122921_25ng	S34-09132101/S35-12032103 (1/02)	WA	2	Passed
6	12/29/21 2:45	12292106.D	LOQ R16122921_0.4ng	S34-09132101/S35-11302105 (12/30)	WA	16	Passed
7	12/29/21 3:18	12292107.D	P2106744-001 (500mL)	S34-09132101	WA	13	
8	12/29/21 3:52	12292108.D	P2106744-001dil (50mL)	S34-09132101	WA	13	
9	12/29/21 4:26	12292109.D	P2106595-001 (1000mL)	S34-09132101	WA	1	
10	12/29/21 5:51	12292110.D	P2106681-004dil (100mL)	S34-09132101	WA	6	
11	12/29/21 6:24	12292111.D	P2106681-008dil (100mL)	S34-09132101	WA	10	
12	12/29/21 6:58	12292112.D	P2106595-001dup (1000mL)	S34-09132101	WA	1	Passed
13	12/29/21 7:37	12292113.D	P2106490-001 (1.5mL)	S34-09132101	WA	1	not used
14	12/29/21 8:10	12292114.D	P2106490-001 (0.20mL)	S34-09132101	WA	1	
15	12/29/21 8:43	12292115.D	P2106490-001dil (0.05mL)	S34-09132101	WA	1	
16	12/29/21 9:20	12292116.D	P2106490-002 (125mL)	S34-09132101	WA	5	saturated
17	12/29/21 9:54	12292117.D	Blank	S34-09132101	WA	1	
18	12/29/21 10:27	12292118.D	Blank_200mL	S34-09132101	WA	5	
19	12/29/21 11:01	12292119.D	Blank_100mL	S34-09132101	WA	1	
20	12/29/21 11:53	12292120.D	P2106490-002 (0.04mL)	S34-09132101	WA	1	
21	12/29/21 12:27	12292121.D	P2106583-001 (1000mL)	S34-09132101	WA	3	
22	12/29/21 13:00	12292122.D	P2106583-002 (1000mL)	S34-09132101	WA	4	
23	12/29/21 13:34	12292123.D	P2106583-002dil (100mL)	S34-09132101	WA	4	
24	12/29/21 14:07	12292124.D	Blank_100mL	S34-09132101	WA	2	
25	12/29/21 14:41	12292125.D	Instr. Blank	S34-09132101	WA	2	
26	12/29/21 15:15	12292126.D	P2106490-002 (0.03mL)	S34-09132101	WA	13	
27	12/29/21 15:49	12292127.D	P2106799-001dil (50mL)	S34-09132101	WA	14	not needed
28	12/29/21 16:23	12292128.D	P2106799-002 (100mL)	S34-09132101	WA	15	
29	12/29/21 16:59	12292129.D	P2106490-002dil (0.01mL)	S34-09132101 (2mL-->1L; 5mL)	WA	1	rerun
30	12/29/21 17:33	12292130.D	P2106799-001 (100mL)	S34-09132101	WA	14	
31	12/29/21 18:06	12292131.D	P2106799-003 (100mL)	S34-09132101	WA	15	
32	12/29/21 18:40	12292132.D	P2106529-001 (1000mL)	S34-09132101	WA	6	
33	12/29/21 19:14	12292133.D	P2106538-001 (400mL)	S34-09132101	WA	7	
34	12/29/21 19:47	12292134.D	P2106538-002 (400mL)	S34-09132101	WA	8	
35	12/29/21 20:21	12292135.D	P2106538-003 (400mL)	S34-09132101	WA	9	need dil
36	12/29/21 20:55	12292136.D	P2106538-004 (400mL)	S34-09132101	WA	10	
37	12/29/21 21:29	12292137.D	CCVend R16122921_5ng	S34-09132101/S35-12152101 (1/14/22)	WA	2	Passed
38	12/29/21 22:03	12292138.D	CCVend R16122921_25ng	S34-09132101/S35-12152101 (1/14/22)	WA	2	Passed

WA 12/30/21

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-05

Cycles: 30

Batch: 28644

Batch Started By: on 12/6/21 0409
Finished Cleaning By: on 12/6/21 0409

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AC02053	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409					
AS01583	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1024		
AS01005	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/7/21 0205		
AS01570	12/6/21	12/7/21	Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/7/21 0205		MS13_12072111
AS01634	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1111		
AS01300	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1032		
AC00442	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1026		
AS00588	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1026		
AS01136	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1024		
AS00584	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409					
AS01451	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1024		
AC02067	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/8/21 1111		
AS00682	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/7/21 0205		
AS01077	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/7/21 0205		
AC02230	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/7/21 0205		
AS01431	12/6/21		Pass w/ Conditions	-14.3	12/6/21 0409		-14.0	12/7/21 0205		

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Data File: I:\MS13\DATA\2021_12\07\12072111.D

Sample : 120721_AS01570_28644

Acq On : 7 Dec 2021 12:39

Misc : S35-10202101

ALS Vial : 2 Sample Multiplier: 1

Inst : GCMS13

Operator: JMM

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

Quant Time: Dec 07 13:07:13 2021

Quant Method : I:\MS13\METHODS\R13102521.M

QLast Update : Tue Oct 26 13:32:19 2021

Response via : Initial Calibration

RVT 12/7/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.31	130	133414	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.45	114	600181	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.75	54	147454	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	233929	8.973	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	71.76%	
57) Toluene-d8 (SS2)	15.90	98	683265	12.882	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	103.04%	
73) Bromofluorobenzene (SS3)	19.13	174	257455	14.476	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	115.84%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Propene	4.27	42	345	0.013	ng	87
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	6.52	45	713	0.041	ng	# 64
11) Acetonitrile	6.80	41	427	0.009	ng	# 1
12) Acrolein	6.99	56	128	0.011	ng	# 14
13) Acetone	7.22	58	2494	0.187	ng	# 82
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	7.71	45	1050	0.018	ng	# 58
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	8.90	76	2339	0.040	ng	# 75
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	11.14	61	419	0.017	ng	# 55
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	13.06	78	146	0.003	ng	# 52
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	13.43	84	576	0.029	ng	# 1
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.		

Data File: I:\MS13\DATA\2021_12\07\12072111.D

Sample : 120721_AS01570_28644

Acq On : 7 Dec 2021 12:39

Misc : S35-10202101

ALS Vial : 2 Sample Multiplier: 1

Inst : GCMS13

Operator: JMM

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

Quant Time: Dec 07 13:07:13 2021

Quant Method : I:\MS13\METHODS\R13102521.M

QLast Update : Tue Oct 26 13:32:19 2021

Response via : Initial Calibration

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	16.27	43	447	0.009 ng	#	31
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.89	43	116	0.002 ng	#	48
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	19.13	105	283	0.004 ng	#	51
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-...	20.62	119	803	0.013 ng	#	63
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	21.31	57	1688	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.26	180	220	0.008 ng	#	81
95) Naphthalene	22.36	128	797	0.011 ng	#	71
96) n-Dodecane	22.36	57	1443	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.45	55	246	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	17.71	131	121	0.009 ng	#	12

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

Data File: I:\MS13\DATA\2021_12\07\12072111.D

Sample : 120721_AS01570_28644

Acq On : 7 Dec 2021 12:39

Misc : S35-10202101

ALS Vial : 2 Sample Multiplier: 1

Inst : GCMS13

Operator: JMM

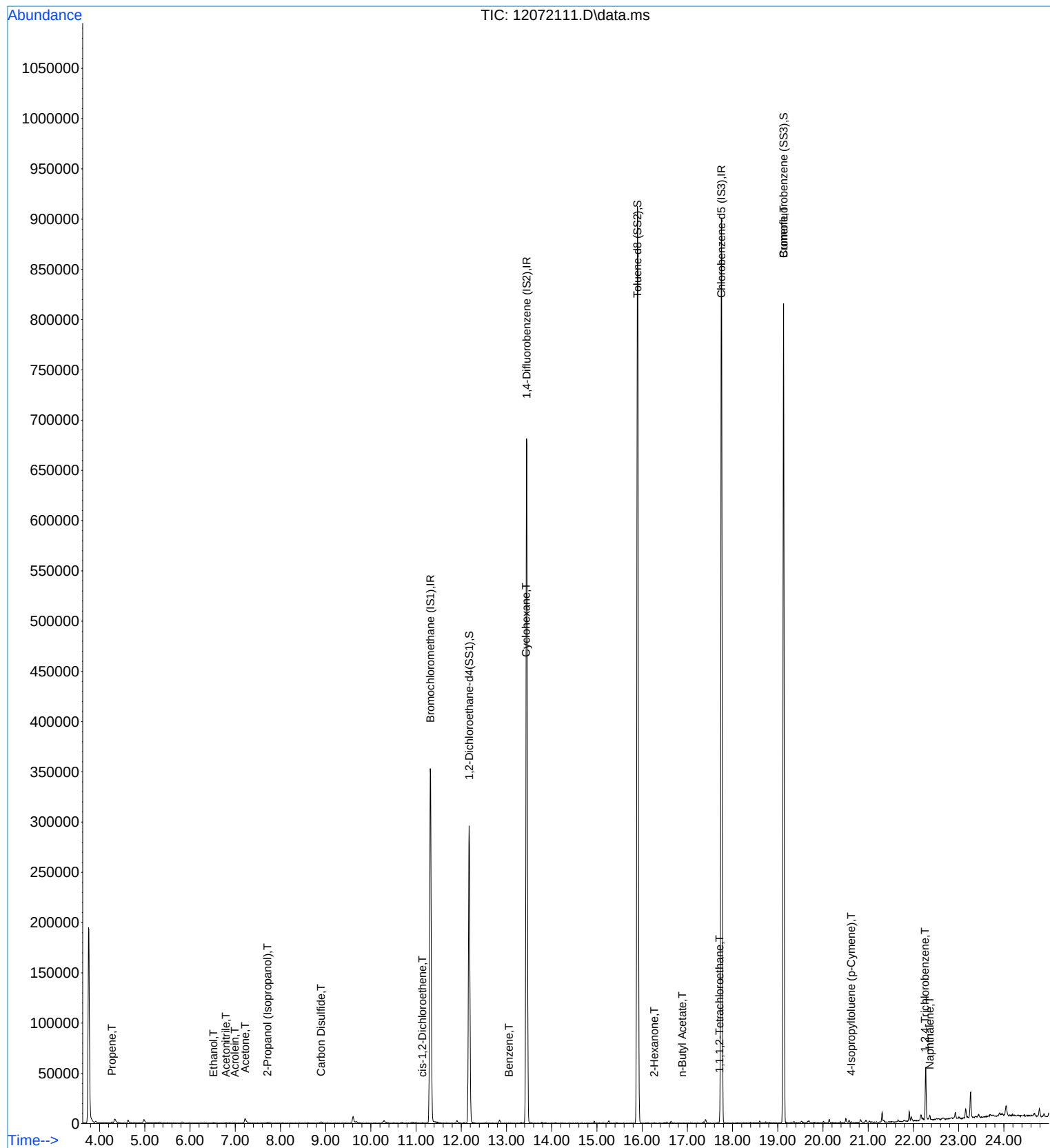
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

Quant Time: Dec 07 13:07:13 2021

Quant Method : I:\MS13\METHODS\R13102521.M

QLast Update : Tue Oct 26 13:32:19 2021

Response via : Initial Calibration





LABORATORY REPORT

April 27, 2022

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT Memphis / 10A023

Dear Larry:

Your report P2201515 has been amended for the sample submitted to our laboratory on April 6, 2022. The sample identification was revised per client e-mail instructions. 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

By Sue Anderson at 2:33 pm, Apr 27, 2022

Sue Anderson
Project Manager



Client: KOMAN Government Solutions, LLC
Project: DDMT Memphis / 10A023

Service Request No: P2201515

CASE NARRATIVE

The sample was received intact under chain of custody on April 6, 2022 and was 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 sample at the time of sample receipt.

Volatile Organic Compound Analysis

The sample was analyzed for volatile organic compounds 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.

The minimum criterion for methyl tert-butyl ether was not met in the Closing Continuing Calibration Verification (CCV) analyzed on April 13, 2022. In accordance with ALS Environmental standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analyte 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. Because the sensitivity was shown to be adequate to detect the compound in question and the compound was not detected in the field sample, the data quality has not been significantly affected. This procedure is a quantitative confirmation of non-detect results at or below the MRL. No further corrective action was necessary.

The container was cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.3 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	http://dec.alaska.gov/eh/lab.aspx	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)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-008
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
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	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
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: KOMAN Government Solutions, LLC
Project ID: DDMT Memphis / 10A023

Service Request: P2201515

Date Received: 4/6/2022
Time Received: 09:42

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
ODSVE-EFF-Y11-Q3	P2201515-001	Air	4/5/2022	10:45	AS01306	-0.12	4.27	X



Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Page 1 of 1

Company Name & Address (Reporting Information) Trinity Analysis and Development Corp 1002 N Eglon Plwy Shalimar, FL 32579				Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard				ALS Project No P2201515			
Project Manager Larry Parnell				Project Name DDMT Memphis				ALS Contact:			
Phone 508-280-9998				Project Number 10A023				Analysis Method			
Fax 508-508-306-7445				P.O. # / Billing Information 8975				Comments e.g. Actual Preservative or specific instructions			
Email Address for Result Reporting lparnell@konnex.com				Sampler (Print & Sign) Brett Annucci				SI-01			
Client Sample ID 005VE-EFF-Y11-Q4		Laboratory ID Number	Date Collected 4/5/22	Time Collected 1045	Canister ID (Bar code # - AC, SC, etc.) AS013060	Flow Controller ID (Bar code # - FC #) AV604885	Canister Start Pressure "Hg -29.0	Canister End Pressure "Hg/psig -3	Sample Volume 6.0 L	x	
Report Tier Levels - please select Tier I - Results (Default if not specified) _____ Tier II (Results + QC Summaries) _____ Tier III (Results + QC & Calibration Summaries) _____ Tier IV (Data Validation Package) 10% Surcharge _____ EDD required Yes / No _____ Units: _____ Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT											
Relinquished by: (Signature) Brett A				Date: 4/5/22	Time: 1600	Received by: (Signature) FEDER				Date: 4/5/22	Time: _____
Relinquished by: (Signature)				Date: _____	Time: _____	Received by: (Signature)				Date: 4/10/22	Time: 0942
										Cooler / Blank Temperature _____ °C	

Sue Anderson

From: Lutz, Lynn K <Lynn.Lutz@hdrinc.com>
Sent: Tuesday, April 26, 2022 9:44 AM
To: Sue Anderson
Cc: Holmes, Thomas C; Larry Pannell; Mokri, Clayton R; Lutz, Lynn K
Subject: [EXTERNAL] - Incorrect sample ID

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi, Sue – the sampler listed the sample ID incorrectly on the COC for P2201515. It should be ODSVE-EFF-Y11Q³ instead of ***Q⁴. Are you able to correct this id and reissue the data packages and the EDD, please? With a note about this in the narrative?

Thanks.

Lynn K. Lutz
Senior Chemist

HDR
369 Inverness Parkway, Suite 325
Englewood, CO 80112
D 303.754.4266 M 720.633.2380
lynn.lutz@hdrinc.com

hdrinc.com/follow-us

ALS Environmental **Sample Acceptance Check Form**

Client: Trinity Analysis & Development Corp. Work order: P2201515
 Project: DDMT Memphis/10A023
 Sample(s) received on: 4/6/22 Date opened: 4/6/22 by: KYLE.WOODIN

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.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
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 <u>if necessary</u> 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?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11-Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P2201515-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01306

Date Collected: 4/5/22

Date Received: 4/6/22

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.12

Final Pressure (psig): 4.27

Container Dilution Factor: 1.30

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.24	0.39	0.24	0.098	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.72	0.14	0.084	0.023	
74-87-3	Chloromethane	0.20	0.32	0.20	0.054	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.016	0.10	0.060	0.016	J
75-01-4	Vinyl Chloride	0.069	0.26	0.086	0.029	J
106-99-0	1,3-Butadiene	0.19	0.31	0.19	0.052	U
74-83-9	Bromomethane	0.057	0.17	0.057	0.025	U
75-00-3	Chloroethane	0.084	0.25	0.084	0.033	U
64-17-5	Ethanol	0.64	3.5	0.58	0.26	J
75-05-8	Acetonitrile	0.25	0.77	0.25	0.10	U
107-02-8	Acrolein	0.20	0.57	0.20	0.085	U
67-64-1	Acetone	1.4	2.8	1.4	0.66	U
75-69-4	Trichlorofluoromethane	0.28	0.12	0.037	0.019	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.33	0.53	0.33	0.12	U
107-13-1	Acrylonitrile	0.20	0.60	0.20	0.066	U
75-35-4	1,1-Dichloroethene	0.50	0.18	0.056	0.024	
75-09-2	Methylene Chloride	0.12	0.19	0.12	0.056	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.071	0.22	0.071	0.030	U
76-13-1	Trichlorotrifluoroethane	3.2	0.092	0.029	0.013	
75-15-0	Carbon Disulfide	0.41	0.46	0.14	0.067	J
156-60-5	trans-1,2-Dichloroethene	0.62	0.17	0.056	0.024	
75-34-3	1,1-Dichloroethane	0.21	0.17	0.055	0.025	
1634-04-4	Methyl tert-Butyl Ether	0.058	0.19	0.058	0.023	U, V
108-05-4	Vinyl Acetate	1.0	1.8	1.0	0.44	U
78-93-3	2-Butanone (MEK)	0.067	0.44	0.15	0.049	J

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

V = The ending continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11-Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P2201515-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01306

Date Collected: 4/5/22

Date Received: 4/6/22

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.12

Final Pressure (psig): 4.27

Container Dilution Factor: 1.30

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	21	0.17	0.056	0.025	
141-78-6	Ethyl Acetate	0.22	0.76	0.22	0.10	U
110-54-3	n-Hexane	0.11	0.20	0.11	0.041	U
67-66-3	Chloroform	6.3	0.14	0.045	0.019	
109-99-9	Tetrahydrofuran (THF)	0.088	0.44	0.088	0.030	U
107-06-2	1,2-Dichloroethane	0.055	0.17	0.055	0.019	U
71-55-6	1,1,1-Trichloroethane	0.18	0.12	0.038	0.016	
71-43-2	Benzene	0.031	0.20	0.069	0.031	J
56-23-5	Carbon Tetrachloride	0.52	0.10	0.033	0.015	
110-82-7	Cyclohexane	0.12	0.42	0.12	0.057	U
78-87-5	1,2-Dichloropropane	0.048	0.14	0.048	0.019	U
75-27-4	Bromodichloromethane	0.033	0.10	0.033	0.015	U
79-01-6	Trichloroethene	21	0.13	0.039	0.017	
123-91-1	1,4-Dioxane	0.058	0.19	0.058	0.023	U
80-62-6	Methyl Methacrylate	0.20	0.35	0.20	0.060	U
142-82-5	n-Heptane	0.098	0.17	0.098	0.027	U
10061-01-5	cis-1,3-Dichloropropene	0.092	0.14	0.092	0.024	U
108-10-1	4-Methyl-2-pentanone	0.067	0.35	0.067	0.023	U
10061-02-6	trans-1,3-Dichloropropene	0.089	0.15	0.089	0.032	U
79-00-5	1,1,2-Trichloroethane	0.041	0.12	0.041	0.013	J
108-88-3	Toluene	0.025	0.18	0.059	0.022	J
591-78-6	2-Hexanone	0.067	0.35	0.067	0.021	U
124-48-1	Dibromochloromethane	0.026	0.081	0.026	0.011	U
106-93-4	1,2-Dibromoethane	0.029	0.088	0.029	0.010	U
123-86-4	n-Butyl Acetate	0.057	0.30	0.057	0.020	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11-Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P2201515-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01306

Date Collected: 4/5/22

Date Received: 4/6/22

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.12

Final Pressure (psig): 4.27

Container Dilution Factor: 1.30

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.086	0.15	0.086	0.033	U
127-18-4	Tetrachloroethene	2.6	0.10	0.033	0.013	
108-90-7	Chlorobenzene	0.045	0.15	0.045	0.020	U
100-41-4	Ethylbenzene	0.051	0.16	0.051	0.022	U
179601-23-1	m,p-Xylenes	0.099	0.33	0.099	0.042	U
75-25-2	Bromoform	0.040	0.065	0.040	0.014	U
100-42-5	Styrene	0.095	0.15	0.095	0.026	U
95-47-6	o-Xylene	0.051	0.16	0.051	0.023	U
111-84-2	n-Nonane	0.079	0.13	0.079	0.022	U
79-34-5	1,1,2,2-Tetrachloroethane	0.28	0.098	0.032	0.014	
98-82-8	Cumene	0.045	0.14	0.045	0.020	U
80-56-8	alpha-Pinene	0.040	0.13	0.040	0.019	U
103-65-1	n-Propylbenzene	0.045	0.14	0.045	0.020	U
622-96-8	4-Ethyltoluene	0.085	0.14	0.085	0.022	U
108-67-8	1,3,5-Trimethylbenzene	0.045	0.14	0.045	0.020	U
95-63-6	1,2,4-Trimethylbenzene	0.042	0.14	0.042	0.020	U
100-44-7	Benzyl Chloride	0.085	0.28	0.085	0.030	U
541-73-1	1,3-Dichlorobenzene	0.037	0.11	0.037	0.017	U
106-46-7	1,4-Dichlorobenzene	0.037	0.11	0.037	0.018	U
95-50-1	1,2-Dichlorobenzene	0.037	0.11	0.037	0.017	U
5989-27-5	d-Limonene	0.072	0.12	0.072	0.026	U
96-12-8	1,2-Dibromo-3-chloropropane	0.043	0.13	0.043	0.013	U
120-82-1	1,2,4-Trichlorobenzene	0.056	0.19	0.056	0.023	U
91-20-3	Naphthalene	0.077	0.13	0.077	0.032	U
87-68-3	Hexachlorobutadiene	0.038	0.063	0.038	0.013	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P220413-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.30	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.077	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.19	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.41	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.46	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.35	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U, V
108-05-4	Vinyl Acetate	0.77	1.4	0.77	0.34	U
78-93-3	2-Butanone (MEK)	0.11	0.34	0.11	0.037	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

V = The ending continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P220413-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.095	0.029	0.012	U
71-43-2	Benzene	0.053	0.16	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.080	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.32	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.079	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.097	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.14	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.11	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.095	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.062	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.23	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P220413-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.11	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.077	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.11	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.050	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.099	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.076	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.097	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.21	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.087	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.087	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.088	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.090	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.10	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.099	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.049	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 4/5/22
Date(s) Received: 4/6/22
Date(s) Analyzed: 4/13/22

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P220413-MB	96	102	104	70-130	
Lab Control Sample	P220413-LCS	97	100	106	70-130	
Duplicate Lab Control Sample	P220413-DLCS	96	101	103	70-130	
ODSVE-EFF-Y11-Q3	P2201515-001	91	99	100	70-130	
ODSVE-EFF-Y11-Q3	P2201515-001DUP	91	102	101	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

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P220413-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	120	98.0	104	82	87	57-136	6	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.1	36.1	37.1	86	88	59-128	2	25	
74-87-3	Chloromethane	99.8	73.8	81.3	74	81	59-132	9	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	29.8	26.4	28.6	89	96	63-121	8	25	
75-01-4	Vinyl Chloride	81.4	66.6	67.5	82	83	64-127	1	25	
106-99-0	1,3-Butadiene	93.2	78.7	82.6	84	89	66-134	6	25	
74-83-9	Bromomethane	53.1	46.3	47.6	87	90	63-134	3	25	
75-00-3	Chloroethane	78.1	64.5	67.3	83	86	63-127	4	25	
64-17-5	Ethanol	442	355	370	80	84	59-125	5	25	
75-05-8	Acetonitrile	120	89.2	94.1	74	78	63-132	5	25	
107-02-8	Acrolein	182	149	153	82	84	62-126	2	25	
67-64-1	Acetone	431	336	346	78	80	58-128	3	25	
75-69-4	Trichlorofluoromethane	36.0	31.5	32.0	88	89	62-126	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	163	140	145	86	89	52-125	3	25	
107-13-1	Acrylonitrile	185	156	161	84	87	71-137	4	25	
75-35-4	1,1-Dichloroethene	53.0	45.8	56.4	86	106	61-133	21	25	
75-09-2	Methylene Chloride	59.9	48.2	49.2	80	82	62-115	2	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	65.2	53.6	54.8	82	84	71-131	2	25	
76-13-1	Trichlorotrifluoroethane	28.2	24.5	24.6	87	87	66-126	0	25	
75-15-0	Carbon Disulfide	133	103	105	77	79	57-134	3	25	
156-60-5	trans-1,2-Dichloroethene	52.5	46.6	47.7	89	91	67-124	2	25	
75-34-3	1,1-Dichloroethane	52.9	44.1	44.8	83	85	68-126	2	25	
1634-04-4	Methyl tert-Butyl Ether	57.2	48.6	49.2	85	86	66-126	1	25	
108-05-4	Vinyl Acetate	268	274	281	102	105	56-139	3	25	
78-93-3	2-Butanone (MEK)	138	121	125	88	91	67-130	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

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P220413-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	52.0	44.9	45.9	86	88	70-121	2	25	
141-78-6	Ethyl Acetate	161	132	136	82	84	65-128	2	25	
110-54-3	n-Hexane	59.0	48.4	49.2	82	83	63-120	1	25	
67-66-3	Chloroform	43.0	37.4	37.9	87	88	68-123	1	25	
109-99-9	Tetrahydrofuran (THF)	137	115	118	84	86	64-123	2	25	
107-06-2	1,2-Dichloroethane	51.9	45.4	45.4	87	87	65-128	0	25	
71-55-6	1,1,1-Trichloroethane	38.1	34.9	34.7	92	91	68-125	1	25	
71-43-2	Benzene	65.1	56.3	57.5	86	88	69-119	2	25	
56-23-5	Carbon Tetrachloride	32.1	29.9	29.8	93	93	68-132	0	25	
110-82-7	Cyclohexane	120	107	108	89	90	70-117	1	25	
78-87-5	1,2-Dichloropropane	44.6	37.7	38.4	85	86	69-123	1	25	
75-27-4	Bromodichloromethane	31.1	28.3	28.2	91	91	72-128	0	25	
79-01-6	Trichloroethene	38.0	35.1	35.6	92	94	71-123	2	25	
123-91-1	1,4-Dioxane	57.2	53.4	54.2	93	95	71-122	2	25	
80-62-6	Methyl Methacrylate	100	97.5	99.1	98	99	70-128	1	25	
142-82-5	n-Heptane	50.3	45.4	46.1	90	92	69-123	2	25	
10061-01-5	cis-1,3-Dichloropropene	45.8	42.5	43.1	93	94	70-128	1	25	
108-10-1	4-Methyl-2-pentanone	101	92.4	94.4	91	93	67-130	2	25	
10061-02-6	trans-1,3-Dichloropropene	44.1	43.4	43.7	98	99	75-133	1	25	
79-00-5	1,1,2-Trichloroethane	38.1	33.9	34.4	89	90	73-119	1	25	
108-88-3	Toluene	54.7	49.5	50.2	90	92	66-119	2	25	
591-78-6	2-Hexanone	99.1	93.4	95.3	94	96	62-128	2	25	
124-48-1	Dibromochloromethane	24.7	23.4	23.4	95	95	70-130	0	25	
106-93-4	1,2-Dibromoethane	27.1	24.8	25.0	92	92	74-122	0	25	
123-86-4	n-Butyl Acetate	85.5	82.5	84.0	96	98	65-134	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.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P220413-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	44.5	40.0	40.7	90	91	69-121	1	25	
127-18-4	Tetrachloroethene	31.3	28.7	28.6	92	91	66-124	1	25	
108-90-7	Chlorobenzene	44.7	41.1	41.5	92	93	70-119	1	25	
100-41-4	Ethylbenzene	47.4	44.7	45.2	94	95	70-124	1	25	
179601-23-1	m,p-Xylenes	95.8	90.5	90.7	94	95	61-134	1	25	
75-25-2	Bromoform	20.3	20.1	19.8	99	98	66-139	1	25	
100-42-5	Styrene	47.5	48.6	48.5	102	102	73-127	0	25	
95-47-6	o-Xylene	47.9	46.3	46.1	97	96	67-125	1	25	
111-84-2	n-Nonane	39.7	36.3	36.5	91	92	63-128	1	25	
79-34-5	1,1,2,2-Tetrachloroethane	30.3	27.5	27.5	91	91	65-127	0	25	
98-82-8	Cumene	41.9	40.3	40.0	96	95	68-124	1	25	
80-56-8	alpha-Pinene	37.7	38.8	38.9	103	103	62-136	0	25	
103-65-1	n-Propylbenzene	42.3	40.5	40.1	96	95	69-123	1	25	
622-96-8	4-Ethyltoluene	42.3	41.9	41.7	99	99	67-129	0	25	
108-67-8	1,3,5-Trimethylbenzene	42.3	42.0	41.6	99	98	67-130	1	25	
95-63-6	1,2,4-Trimethylbenzene	41.9	42.8	42.4	102	101	66-132	1	25	
100-44-7	Benzyl Chloride	80.4	91.9	90.9	114	113	50-147	0.9	25	
541-73-1	1,3-Dichlorobenzene	34.6	34.5	33.9	100	98	65-130	2	25	
106-46-7	1,4-Dichlorobenzene	34.9	34.3	34.0	98	97	60-131	1	25	
95-50-1	1,2-Dichlorobenzene	34.9	34.4	33.7	99	97	63-129	2	25	
5989-27-5	d-Limonene	37.0	39.2	38.7	106	105	65-136	0.9	25	
96-12-8	1,2-Dibromo-3-chloropropane	41.8	43.6	42.5	104	102	73-133	2	25	
120-82-1	1,2,4-Trichlorobenzene	56.6	59.1	57.3	104	101	55-142	3	25	
91-20-3	Naphthalene	40.1	42.6	41.4	106	103	57-138	3	25	
87-68-3	Hexachlorobutadiene	19.9	19.7	19.1	99	96	56-138	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 DUPLICATE SUMMARY RESULTS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11-Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P2201515-001DUP

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01306

Date Collected: 4/5/22

Date Received: 4/6/22

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.12

Final Pressure (psig): 4.27

Container Dilution Factor: 1.30

Compound	Sample Result ppbV	Duplicate Sample Result ppbV	Average ppbV	% RPD	RPD Limit	Data Qualifier
Propene	ND	ND	-	-	25	
Dichlorodifluoromethane (CFC 12)	0.725	0.694	0.7095	4	25	
Chloromethane	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.0164	0.0160	0.0162	2	25	J
Vinyl Chloride	0.0687	0.0641	0.0664	7	25	J
1,3-Butadiene	ND	ND	-	-	25	
Bromomethane	ND	ND	-	-	25	
Chloroethane	ND	ND	-	-	25	
Ethanol	0.636	0.585	0.6105	8	25	J
Acetonitrile	ND	ND	-	-	25	
Acrolein	ND	ND	-	-	25	
Acetone	ND	ND	-	-	25	
Trichlorofluoromethane	0.283	0.282	0.2825	0.4	25	
2-Propanol (Isopropyl Alcohol)	ND	ND	-	-	25	
Acrylonitrile	ND	ND	-	-	25	
1,1-Dichloroethene	0.499	0.492	0.4955	1	25	
Methylene Chloride	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	-	-	25	
Trichlorotrifluoroethane	3.15	2.96	3.055	6	25	
Carbon Disulfide	0.406	0.401	0.4035	1	25	J
trans-1,2-Dichloroethene	0.616	0.614	0.615	0.3	25	
1,1-Dichloroethane	0.209	0.208	0.2085	0.5	25	
Methyl tert-Butyl Ether	ND	ND	-	-	25	V
Vinyl Acetate	ND	ND	-	-	25	
2-Butanone (MEK)	0.0670	0.0547	0.06085	20	25	J

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

V = The ending continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11-Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P2201515-001DUP

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01306

Date Collected: 4/5/22

Date Received: 4/6/22

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.12

Final Pressure (psig): 4.27

Container Dilution Factor: 1.30

Compound	Sample Result ppbV	Duplicate Sample Result ppbV	Average ppbV	% RPD	RPD Limit	Data Qualifier
cis-1,2-Dichloroethene	20.6	20.4	20.5	1	25	
Ethyl Acetate	ND	ND	-	-	25	
n-Hexane	ND	ND	-	-	25	
Chloroform	6.30	6.30	6.3	0	25	
Tetrahydrofuran (THF)	ND	ND	-	-	25	
1,2-Dichloroethane	ND	ND	-	-	25	
1,1,1-Trichloroethane	0.182	0.184	0.183	1	25	
Benzene	0.0313	0.0313	0.0313	0	25	J
Carbon Tetrachloride	0.524	0.518	0.521	1	25	
Cyclohexane	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	-	-	25	
Trichloroethene	21.1	21.4	21.25	1	25	
1,4-Dioxane	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	-	-	25	
n-Heptane	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	-	-	25	
1,1,2-Trichloroethane	0.0412	0.0396	0.0404	4	25	J
Toluene	0.0248	0.0259	0.02535	4	25	J
2-Hexanone	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	-	-	25	
n-Butyl Acetate	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11-Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

ALS Sample ID: P2201515-001DUP

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01306

Date Collected: 4/5/22

Date Received: 4/6/22

Date Analyzed: 4/13/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.12

Final Pressure (psig): 4.27

Container Dilution Factor: 1.30

Compound	Sample Result ppbV	Duplicate Sample Result ppbV	Average ppbV	% RPD	RPD Limit	Data Qualifier
n-Octane	ND	ND	-	-	25	
Tetrachloroethene	2.58	2.68	2.63	4	25	
Chlorobenzene	ND	ND	-	-	25	
Ethylbenzene	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	-	-	25	
Bromoform	ND	ND	-	-	25	
Styrene	ND	ND	-	-	25	
o-Xylene	ND	ND	-	-	25	
n-Nonane	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	0.277	0.280	0.2785	1	25	
Cumene	ND	ND	-	-	25	
alpha-Pinene	ND	ND	-	-	25	
n-Propylbenzene	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	-	-	25	
d-Limonene	ND	ND	-	-	25	
1,2-Dibromo-3-chloropropane	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	-	-	25	
Naphthalene	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 04132203.D
Date Analyzed: 4/13/22
Time Analyzed: 00:42

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P220413-LCS	04132204.D	01:16
Duplicate Lab Control Sample	P220413-DLCS	04132205.D	01:50
ODSVE-EFF-Y11-Q3	P2201515-001	04132230.D	19:00
ODSVE-EFF-Y11-Q3 (Lab Duplicate)	P2201515-001DUP	04132231.D	19:34

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2201515

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 04132201.D
Date Analyzed: 4/12/22
Time Analyzed: 23:34

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	156335	11.34	639037	13.45	92401	17.75
Upper Limit	218869	11.67	894652	13.78	129361	18.08
Lower Limit	93801	11.01	383422	13.12	55441	17.42

Client Sample ID						
01	Method Blank	129250	11.31	540821	13.44	75810
02	Lab Control Sample	131159	11.34	545122	13.45	79880
03	Duplicate Lab Control Sample	138888	11.34	577958	13.45	84084
04	ODSVE-EFF-Y11-Q3	143239	11.32	614900	13.44	89253
05	ODSVE-EFF-Y11-Q3 (Lab Duplicate)	134566	11.32	572923	13.44	81545
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

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 specified limits.

Data File : I:\MS13\DATA\2022_04\13\04132230.D
 Acq On : 13 Apr 2022 19:00
 Sample : P2201515-001 (1000mL)
 Misc : S35-03142201

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 14 09:56:05 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

TZ 4/14/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	143239	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	614900	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	89253	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	167417	11.357	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	90.88%	
57) Toluene-d8 (SS2)	15.89	98	669572	12.441	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	99.52%	
73) Bromofluorobenzene (SS3)	19.12	174	251143	12.517	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.16%	

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.	d	
3) Dichlorodifluoromethan...	4.38	85	65506	2.756	ng	100
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	1228	0.088	ng	# 42
6) Vinyl Chloride	5.11	62	2513	0.135	ng	90
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	6.51	45	7776	0.921	ng	97
11) Acetonitrile	6.82	41	422	N.D.		
12) Acrolein	7.00	56	632	0.087	ng	90
13) Acetone	7.23	58	7596	0.891	ng	85
14) Trichlorofluoromethane	7.42	101	26050	1.221	ng	99
15) 2-Propanol (Isopropanol)	7.71	45	5287	0.194	ng	97
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	8.39	96	19089	1.520	ng	97
18) 2-Methyl-2-Propanol (t...	8.39	59	730	N.D.		
19) Methylene Chloride	8.59	84	798	0.059	ng	98
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	9.03	151	233705	18.589	ng	93
22) Carbon Disulfide	8.88	76	47843	0.971	ng	99
23) trans-1,2-Dichloroethene	9.87	61	30465	1.877	ng	100
24) 1,1-Dichloroethane	10.13	63	13511	0.650	ng	99
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	10.36	86	740	0.325	ng	# 62
27) 2-Butanone (MEK)	10.67	72	1222	0.152	ng	91
28) cis-1,2-Dichloroethene	11.14	61	1008104	62.721	ng	99
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	0.00	61	0	N.D.	d	
31) n-Hexane	11.43	57	336	N.D.		
32) Chloroform	11.48	83	501169	23.673	ng	100
34) Tetrahydrofuran (THF)	11.95	72	136	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.29	62	441	N.D.		
38) 1,1,1-Trichloroethane	12.57	97	15246	0.763	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	13.04	56	4832	No Calib	#	
41) Benzene	13.06	78	3975	0.077	ng	92
42) Carbon Tetrachloride	13.21	117	44970	2.536	ng	99
43) Cyclohexane	13.33	84	172	N.D.		
44) tert-Amyl Methyl Ether	13.80	73	111	N.D.		
45) 1,2-Dichloropropane	13.90	63	114	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.	d	
47) Trichloroethene	14.14	130	1417032	87.195	ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	14.22	57	1511	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.	d	

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132230.D
 Acq On : 13 Apr 2022 19:00
 Sample : P2201515-001 (1000mL)
 Misc : S35-03142201

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 14 09:56:05 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.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	15.54	75	472	N.D.		
55) 1,1,2-Trichloroethane	15.70	97	2353	0.173 ng		94
58) Toluene	15.99	91	3914	0.072 ng		96
59) 2-Hexanone	16.25	43	445	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.87	43	661	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	17.13	166	252351	13.455 ng		99
65) Chlorobenzene	17.79	112	107	N.D.		
66) Ethylbenzene	18.14	91	629	N.D.		
67) m- & p-Xylenes	18.29	91	1242	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.62	104	392	N.D.		
70) o-Xylene	18.72	91	429	N.D.		
71) n-Nonane	18.91	43	486	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.70	83	33875	1.465 ng		99
74) Cumene	19.24	105	117	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.	d	
76) n-Propylbenzene	19.68	91	273	N.D.		
77) 3-Ethyltoluene	19.82	105	129	No Calib	#	
78) 4-Ethyltoluene	19.82	105	129	N.D.		
79) 1,3,5-Trimethylbenzene	19.82	105	129	N.D.		
80) alpha-Methylstyrene	20.02	118	1055	No Calib	#	
81) 2-Ethyltoluene	19.82	105	129	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.24	105	466	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	20.36	91	119	N.D.		
85) 1,3-Dichlorobenzene	20.37	146	187	N.D.		
86) 1,4-Dichlorobenzene	20.43	146	665	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	20.61	119	1181	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	20.74	68	412	N.D.		
92) 1,2-Dibromo-3-Chloropr...	21.03	157	382	N.D.		
93) n-Undecane	21.42	57	598	No Calib	#	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	22.35	128	1473	N.D.		
96) n-Dodecane	22.34	57	950	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.31	55	837	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	20.97	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 File : I:\MS13\DATA\2022_04\13\04132230.D
Acq On : 13 Apr 2022 19:00
Sample : P2201515-001 (1000mL)
Misc : S35-03142201

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Apr 14 09:56:05 2022

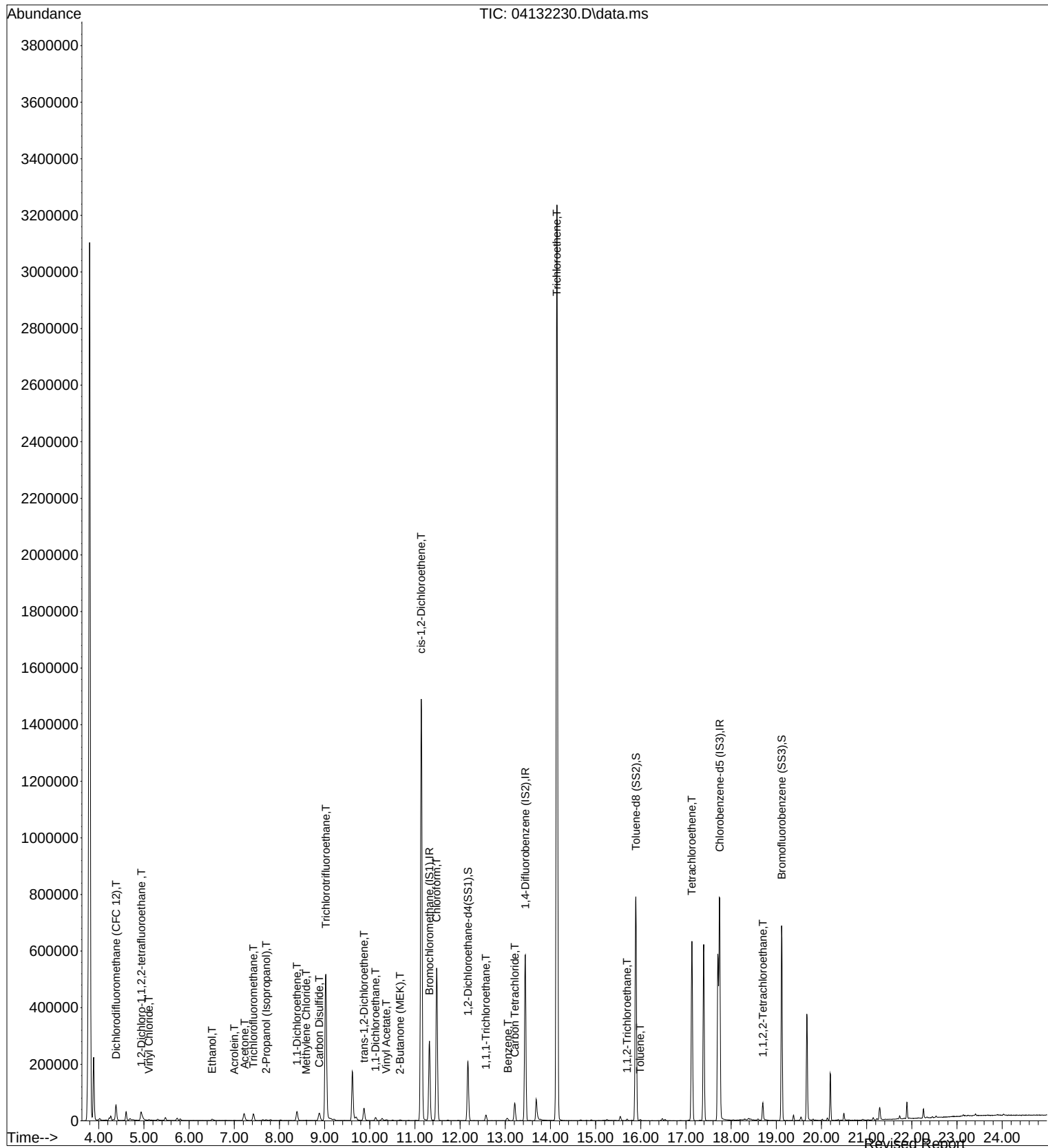
Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132230.D
 Acq On : 13 Apr 2022 19:00
 Sample : P2201515-001 (1000mL)
 Misc : S35-03142201

Vial: 14
 Operator: TZ
 Inst : GCMS13

TZ 4/14/22

Quant Time: Apr 14 09:56:05 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	143239	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	614900	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	89253	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	167417	11.357	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	90.88%	
57) Toluene-d8 (SS2)	15.89	98	669572	12.441	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	99.52%	
73) Bromofluorobenzene (SS3)	19.12	174	251143	12.517	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.16%	

Target Compounds

						Qvalue
3) Dichlorodifluoromethan...	4.38	85	65506	2.756	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	1228	0.088	ng	# 42
6) Vinyl Chloride	5.11	62	2513	0.135	ng	90
10) Ethanol	6.51	45	7776	0.921	ng	97
12) Acrolein	7.00	56	632	0.087	ng	90
13) Acetone	7.23	58	7596	0.891	ng	85
14) Trichlorofluoromethane	7.42	101	26050	1.221	ng	99
15) 2-Propanol (Isopropanol)	7.71	45	5287	0.194	ng	97
17) 1,1-Dichloroethene	8.39	96	19089	1.520	ng	97
19) Methylene Chloride	8.59	84	798	0.059	ng	98
21) Trichlorotrifluoroethane	9.03	151	233705	18.589	ng	93
22) Carbon Disulfide	8.88	76	47843	0.971	ng	99
23) trans-1,2-Dichloroethene	9.87	61	30465	1.877	ng	100
24) 1,1-Dichloroethane	10.13	63	13511	0.650	ng	99
26) Vinyl Acetate	10.36	86	740	0.325	ng	# 62
27) 2-Butanone (MEK)	10.67	72	1222	0.152	ng	91
28) cis-1,2-Dichloroethene	11.14	61	1008104	62.721	ng	99
32) Chloroform	11.48	83	501169	23.673	ng	100
38) 1,1,1-Trichloroethane	12.57	97	15246	0.763	ng	98
41) Benzene	13.06	78	3975	0.077	ng	92
42) Carbon Tetrachloride	13.21	117	44970	2.536	ng	99
47) Trichloroethene	14.14	130	1417032	87.195	ng	99
55) 1,1,2-Trichloroethane	15.70	97	2353	0.173	ng	94
58) Toluene	15.99	91	3914	0.072	ng	96
64) Tetrachloroethene	17.13	166	252351	13.455	ng	99
72) 1,1,2,2-Tetrachloroethane	18.70	83	33875	1.465	ng	99

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

Data File : I:\MS13\DATA\2022_04\13\04132230.D
Acq On : 13 Apr 2022 19:00
Sample : P2201515-001 (1000mL)
Misc : S35-03142201

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Apr 14 09:56:05 2022

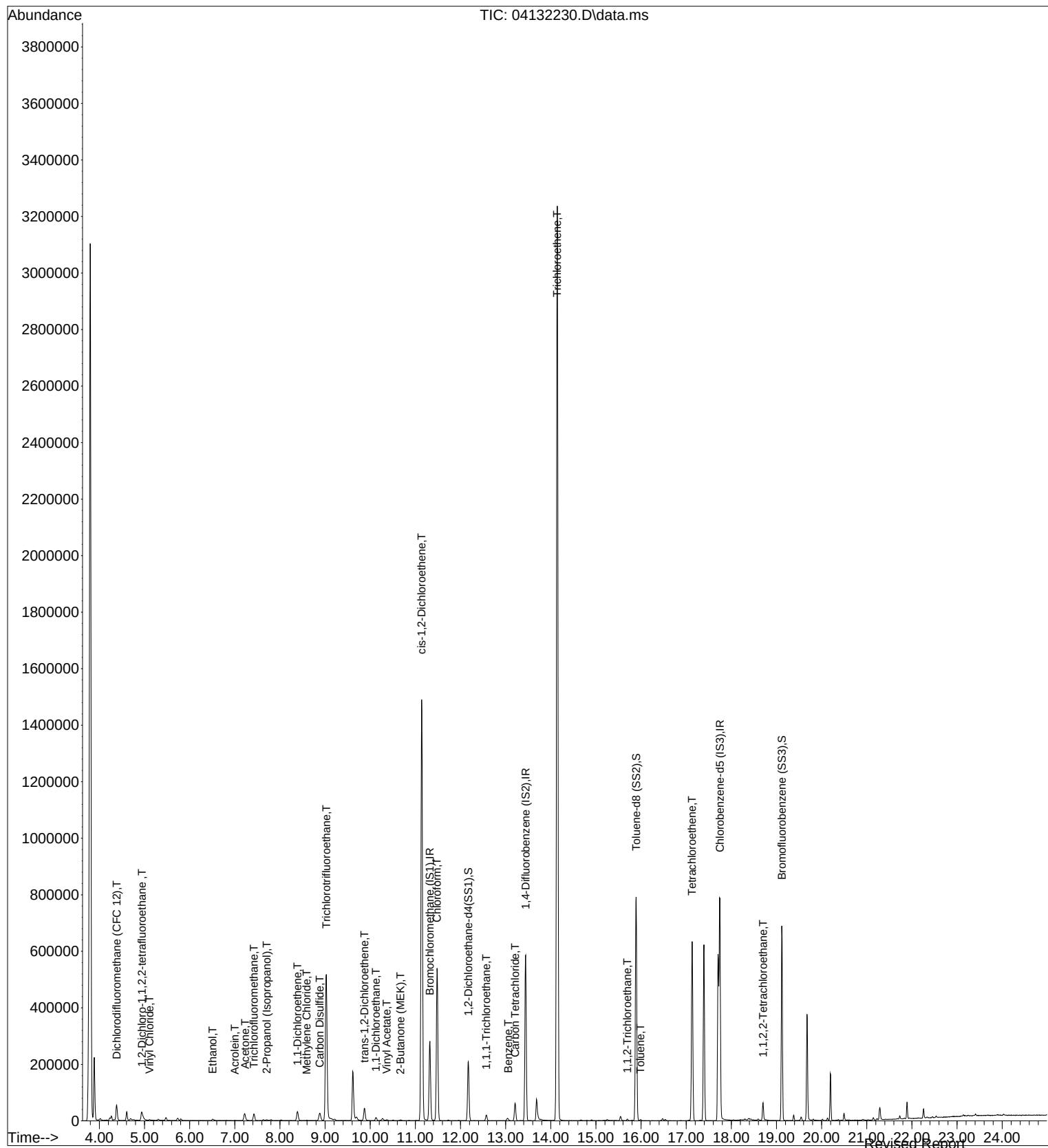
Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

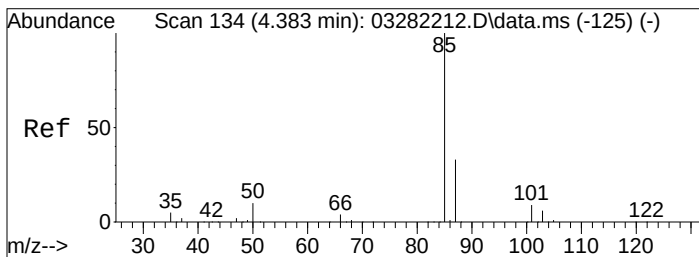
QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

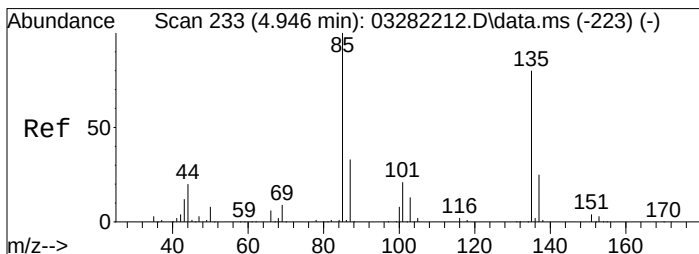
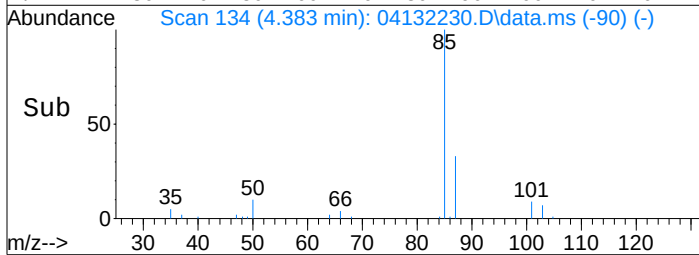
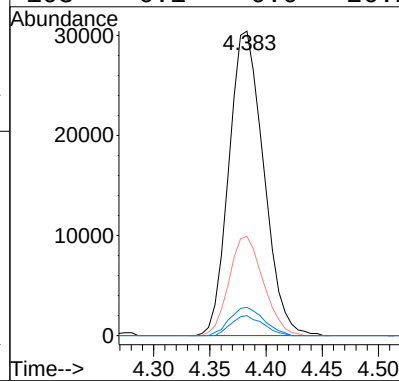
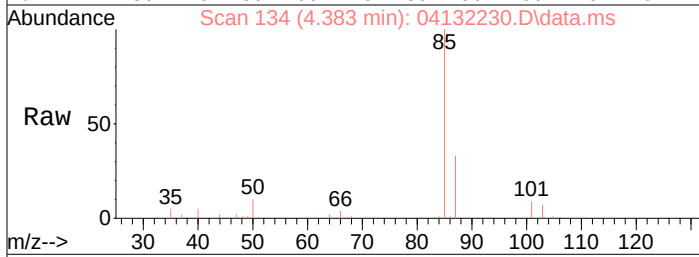


Revised Report



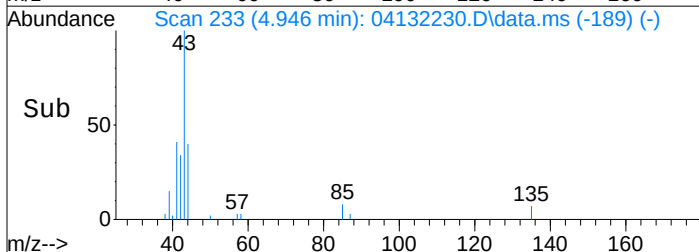
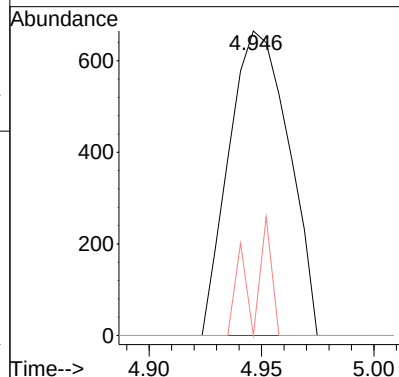
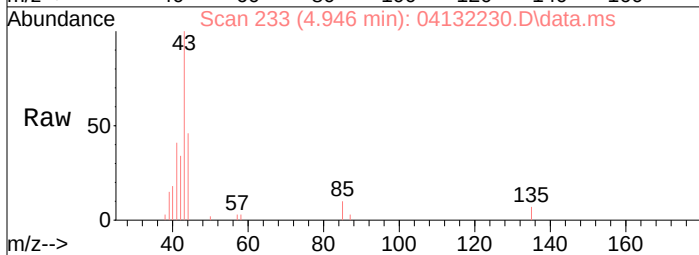
#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.76 ng
 RT: 4.38 min Scan# 134
 Delta R.T. 0.000 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

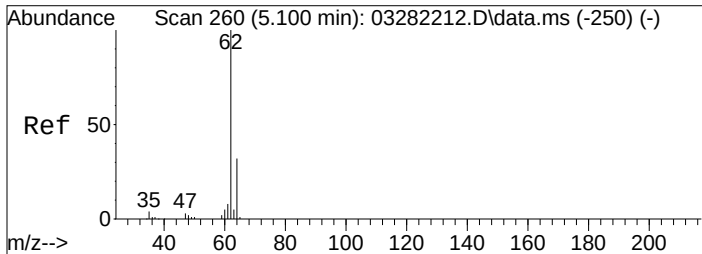
Tgt Ion: 85 Resp: 65506
 Ion Ratio Lower Upper
 85 100
 87 32.2 12.5 52.5
 101 9.2 0.0 29.3
 103 6.1 0.0 26.1



#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.09 ng
 RT: 4.95 min Scan# 233
 Delta R.T. 0.000 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

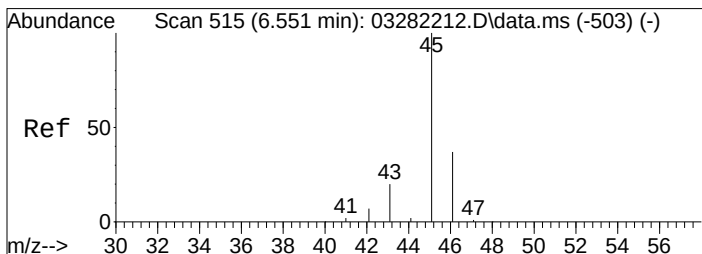
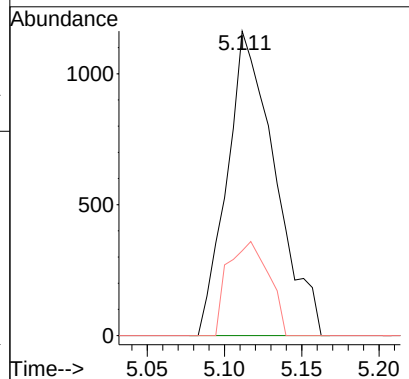
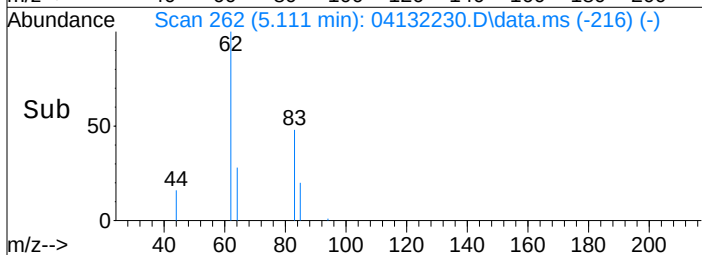
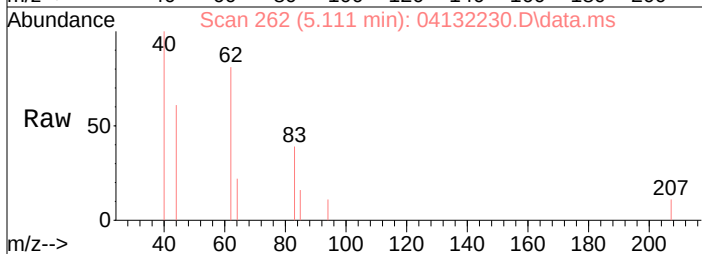
Tgt Ion: 135 Resp: 1228
 Ion Ratio Lower Upper
 135 100
 137 0.0 12.2 52.2#





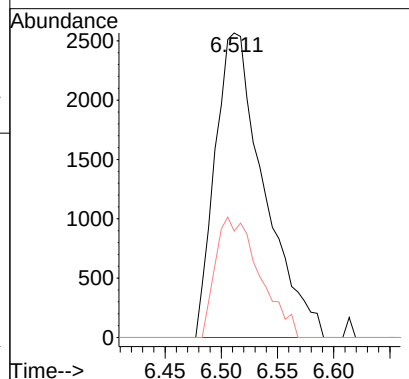
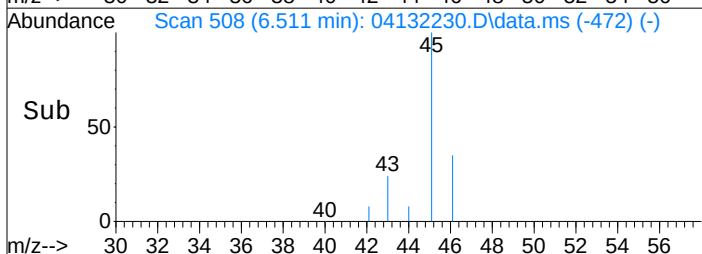
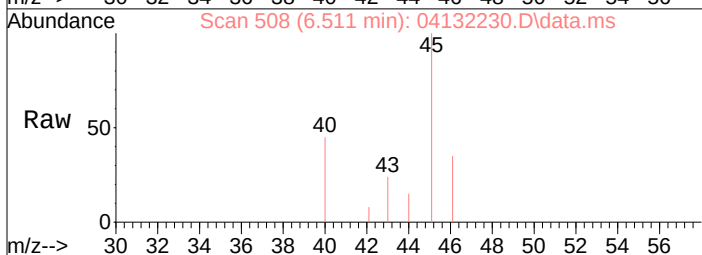
#6
 Vinyl Chloride
 Concen: 0.13 ng
 RT: 5.11 min Scan# 262
 Delta R.T. 0.011 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

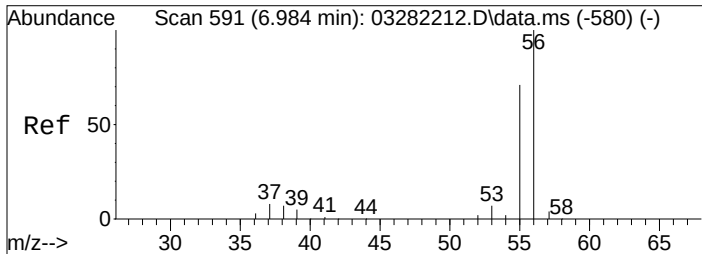
Tgt Ion: 62 Resp: 2513
 Ion Ratio Lower Upper
 62 100
 64 26.5 11.9 51.9



#10
 Ethanol
 Concen: 0.92 ng
 RT: 6.51 min Scan# 508
 Delta R.T. -0.046 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

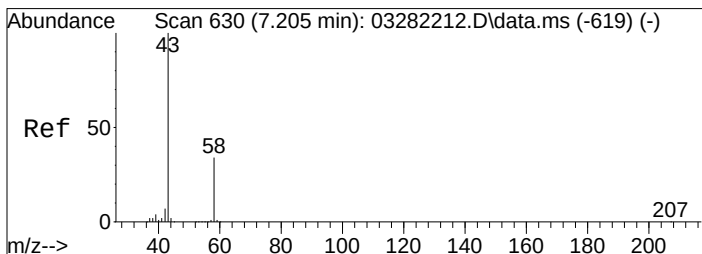
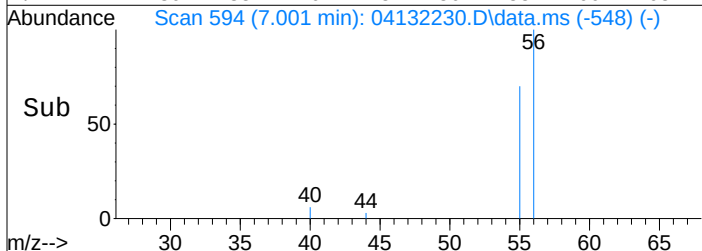
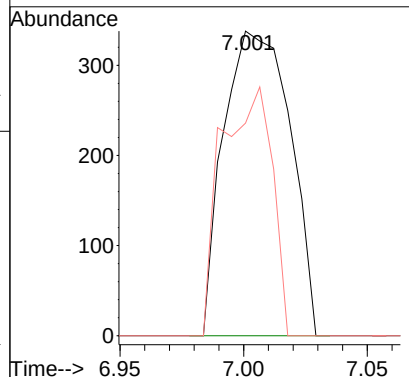
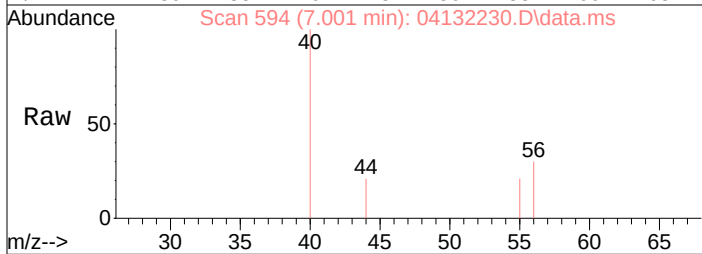
Tgt Ion: 45 Resp: 7776
 Ion Ratio Lower Upper
 45 100
 46 35.6 17.2 57.2





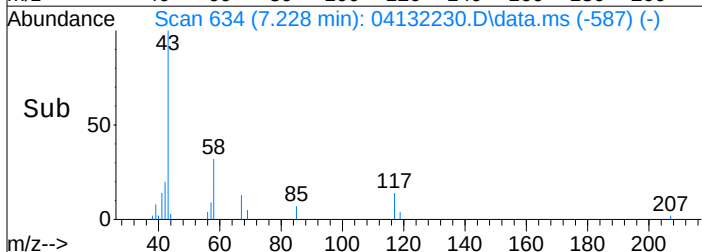
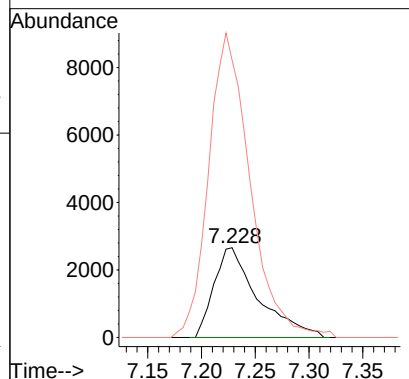
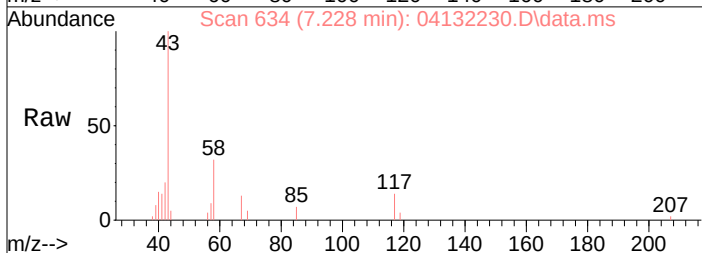
#12
 Acrolein
 Concen: 0.09 ng
 RT: 7.00 min Scan# 594
 Delta R.T. 0.011 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

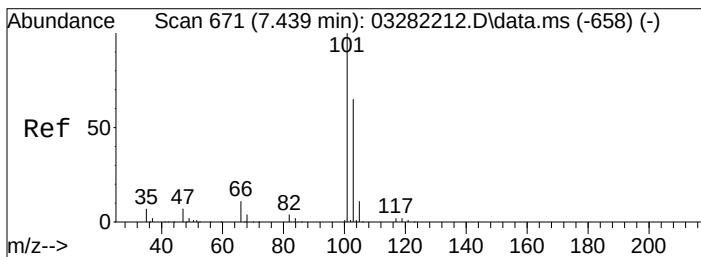
Tgt Ion	Ratio	Resp	Lower	Upper
56	100	632		
55	62.0		50.0	90.0



#13
 Acetone
 Concen: 0.89 ng
 RT: 7.23 min Scan# 634
 Delta R.T. 0.017 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

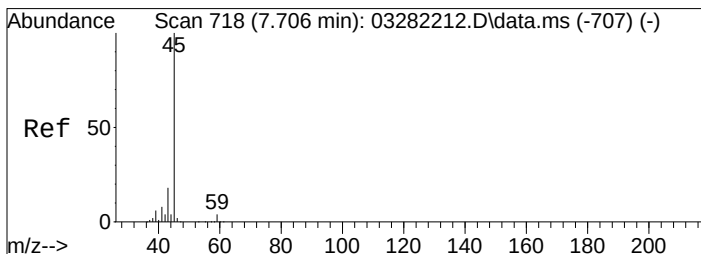
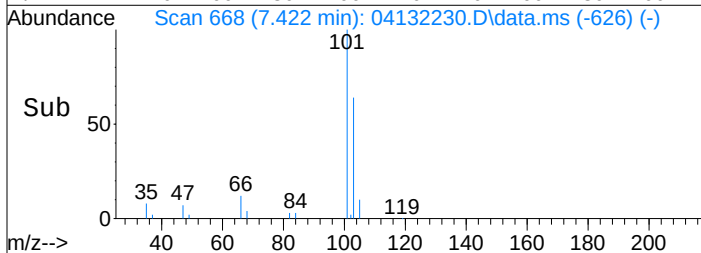
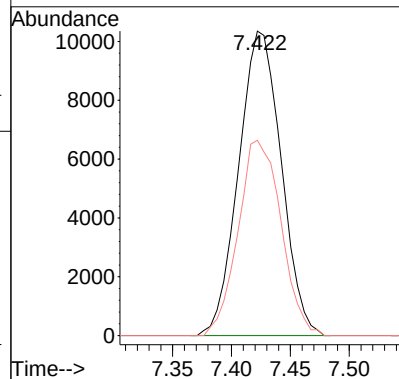
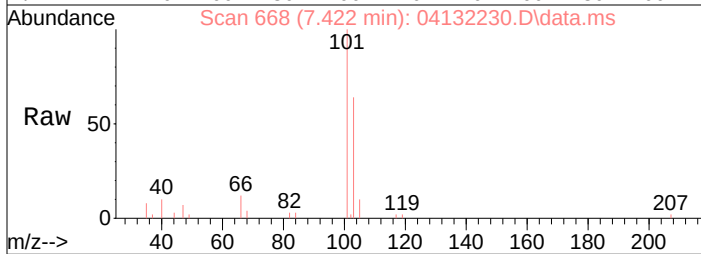
Tgt Ion	Ratio	Resp	Lower	Upper
58	100	7596		
43	318.9		260.8	320.8





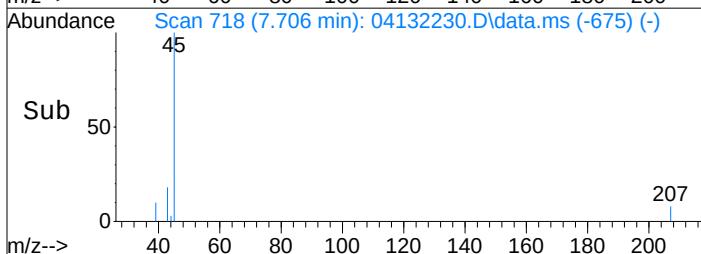
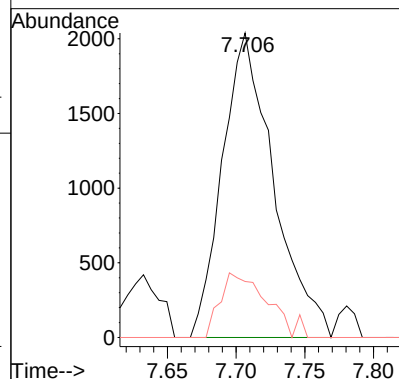
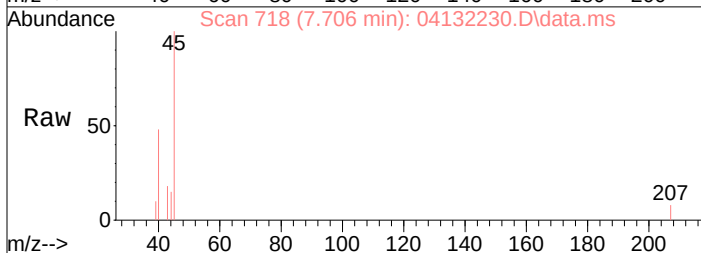
#14
 Trichlorofluoromethane
 Concen: 1.22 ng
 RT: 7.42 min Scan# 668
 Delta R.T. -0.011 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

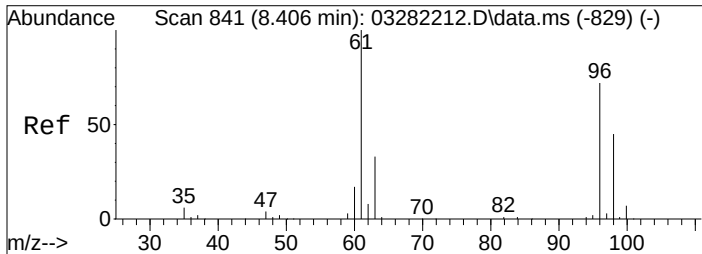
Tgt Ion: 101 Resp: 26050
 Ion Ratio Lower Upper
 101 100
 103 64.8 45.6 85.6



#15
 2-Propanol (Isopropanol)
 Concen: 0.19 ng
 RT: 7.71 min Scan# 718
 Delta R.T. -0.006 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

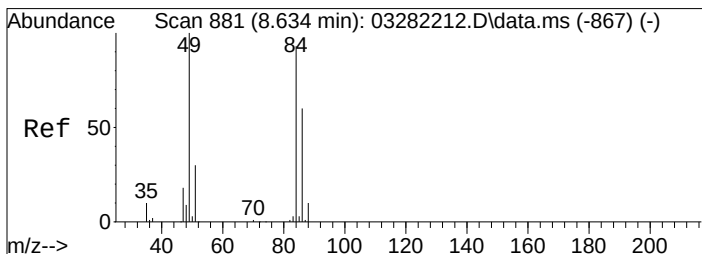
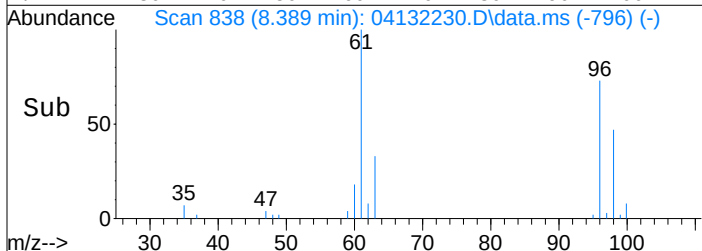
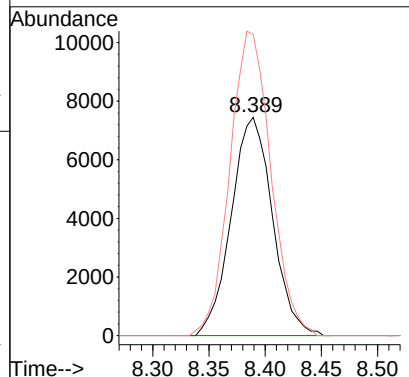
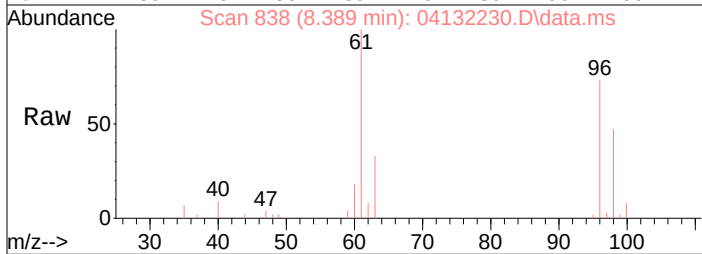
Tgt Ion: 45 Resp: 5287
 Ion Ratio Lower Upper
 45 100
 43 19.6 0.0 38.4





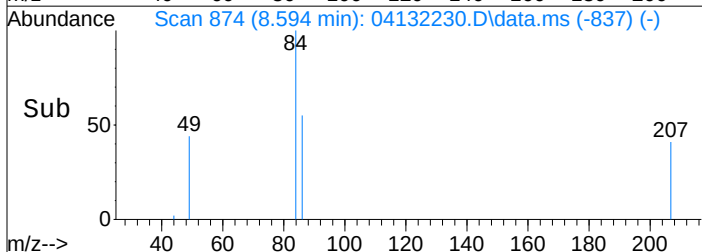
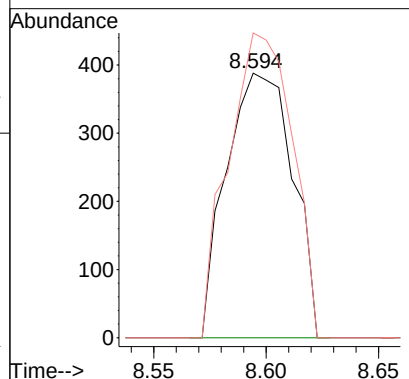
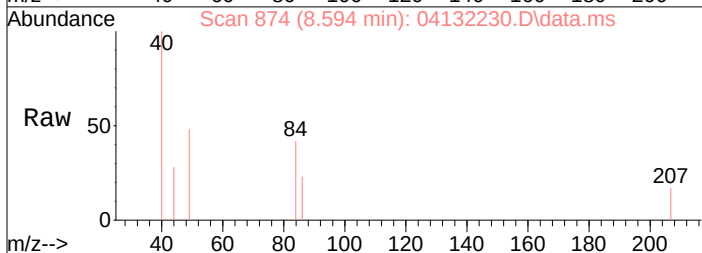
#17
 1,1-Dichloroethene
 Concen: 1.52 ng
 RT: 8.39 min Scan# 838
 Delta R.T. -0.011 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

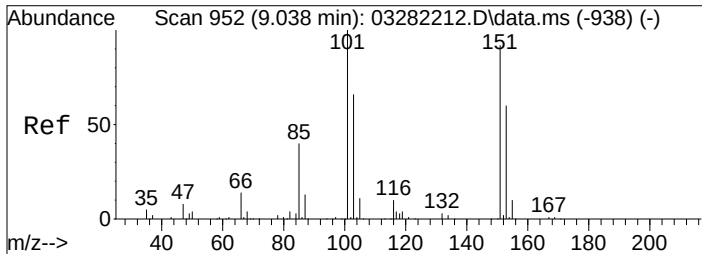
Tgt Ion:	96	Resp:	19089
Ion Ratio	Lower	Upper	
96	100		
61	138.7	122.3	162.3



#19
 Methylene Chloride
 Concen: 0.06 ng
 RT: 8.59 min Scan# 874
 Delta R.T. -0.040 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

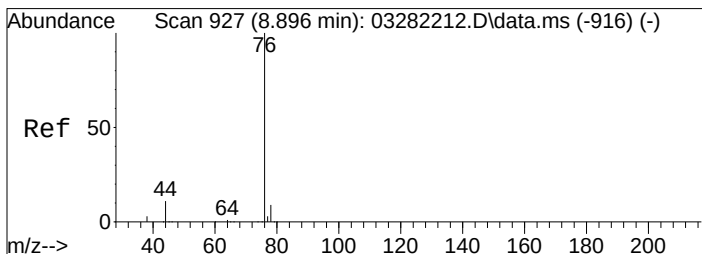
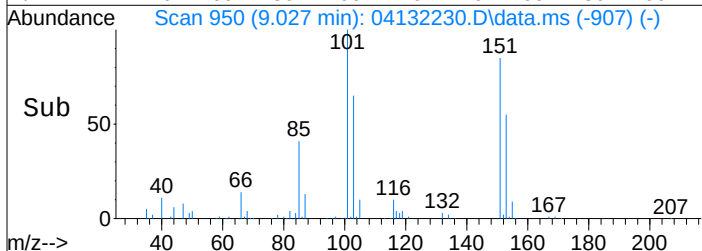
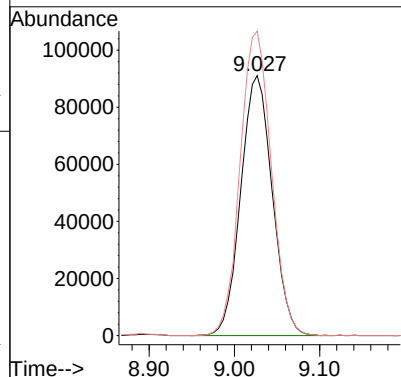
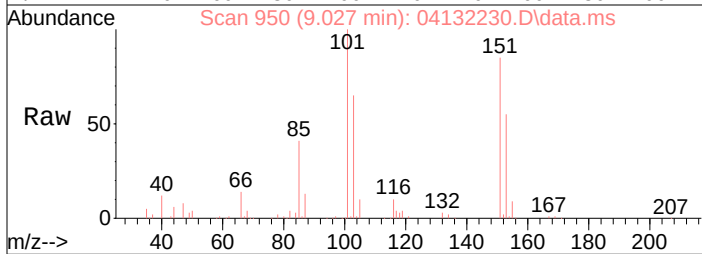
Tgt Ion:	84	Resp:	798
Ion Ratio	Lower	Upper	
84	100		
49	110.8	83.9	133.9





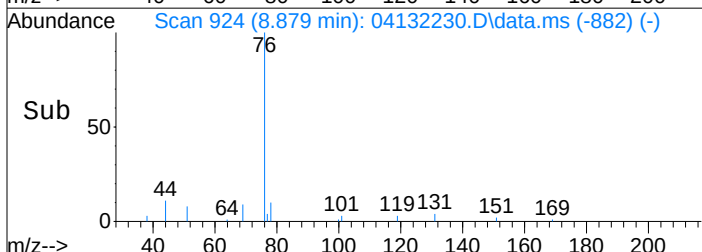
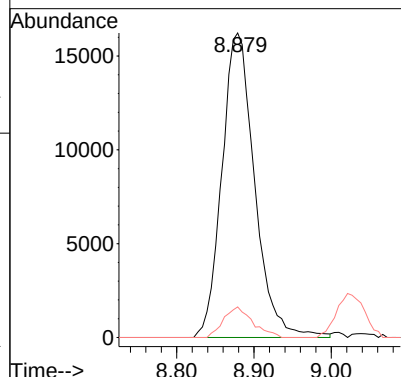
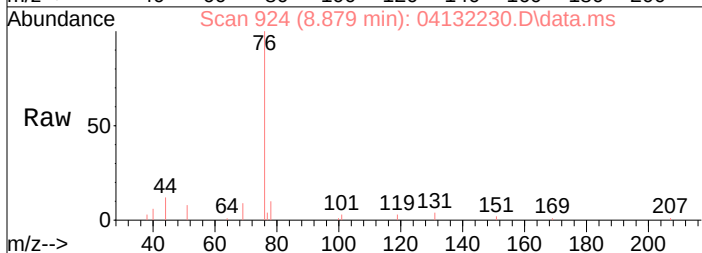
#21
 Trichlorotrifluoroethane
 Concen: 18.59 ng
 RT: 9.03 min Scan# 950
 Delta R.T. -0.006 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

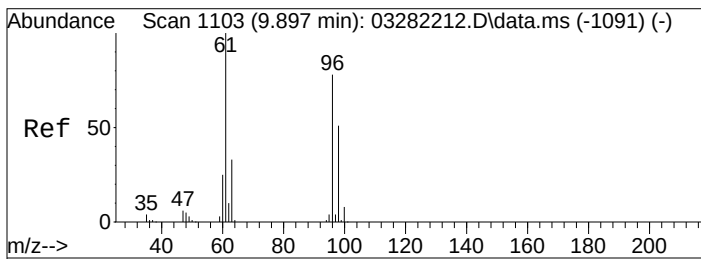
Tgt Ion	151	Resp	233705
Ion Ratio	Lower	Upper	
151	100		
101	116.3	88.7	128.7



#22
 Carbon Disulfide
 Concen: 0.97 ng
 RT: 8.88 min Scan# 924
 Delta R.T. -0.011 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

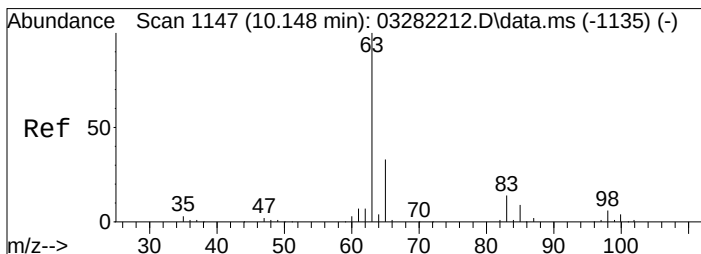
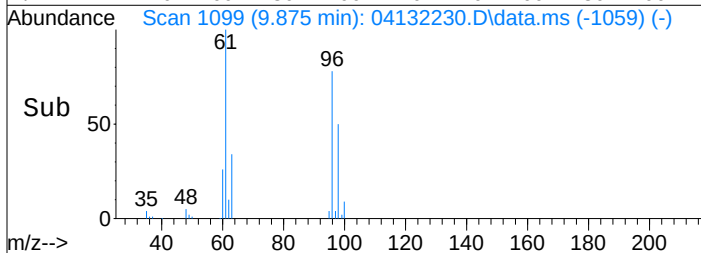
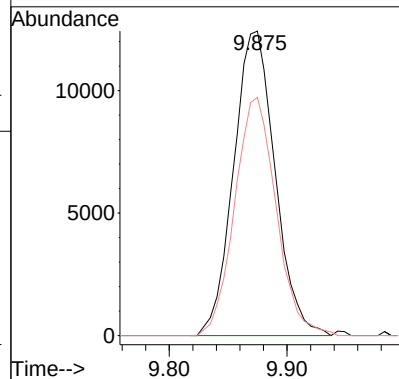
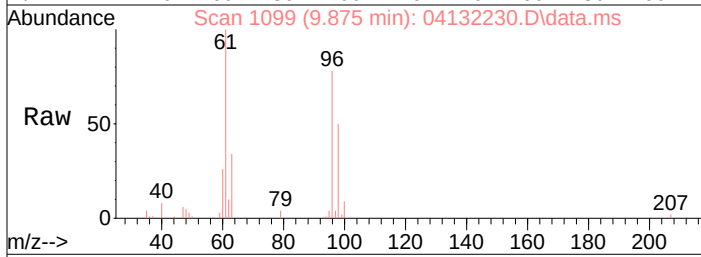
Tgt Ion	76	Resp	47843
Ion Ratio	Lower	Upper	
76	100		
78	8.9	0.0	29.1





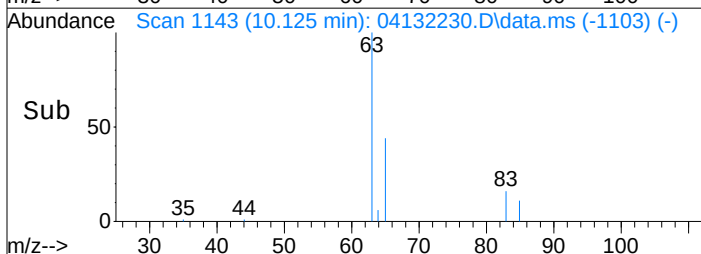
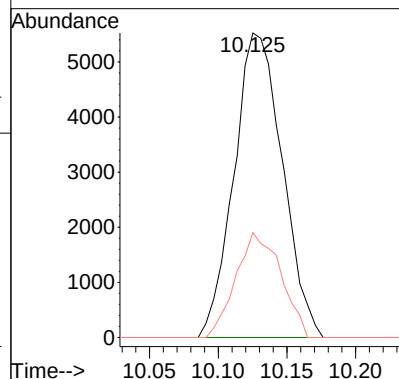
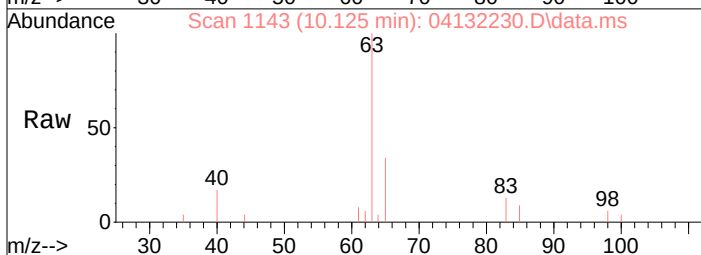
#23
trans-1,2-Dichloroethene
Concen: 1.88 ng
RT: 9.87 min Scan# 1099
Delta R.T. -0.023 min
Lab File: 04132230.D
Acq: 13 Apr 2022 19:00

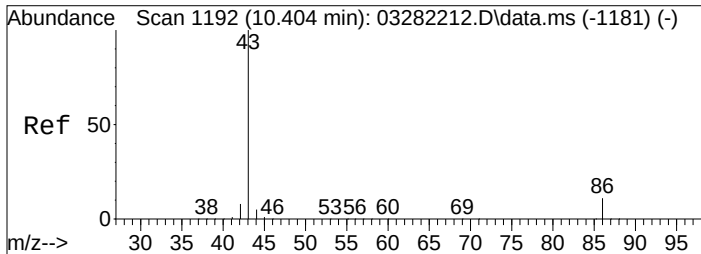
Tgt Ion: 61 Resp: 30465
Ion Ratio Lower Upper
61 100
96 78.2 58.3 98.3



#24
1,1-Dichloroethane
Concen: 0.65 ng
RT: 10.13 min Scan# 1143
Delta R.T. -0.023 min
Lab File: 04132230.D
Acq: 13 Apr 2022 19:00

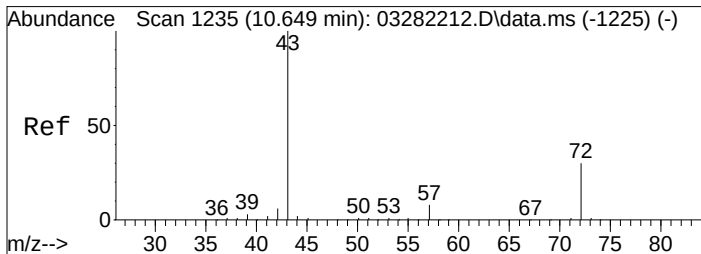
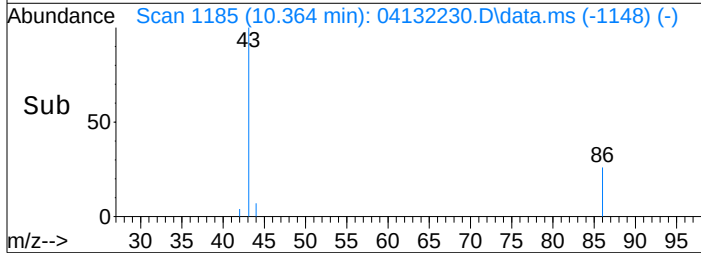
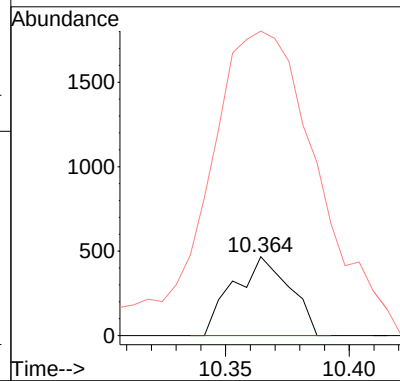
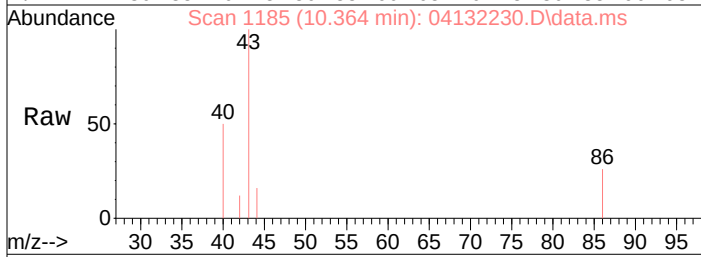
Tgt Ion: 63 Resp: 13511
Ion Ratio Lower Upper
63 100
65 32.1 12.5 52.5





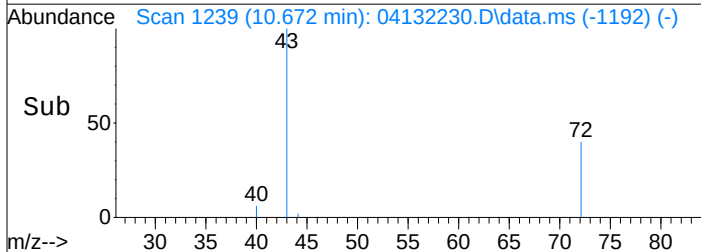
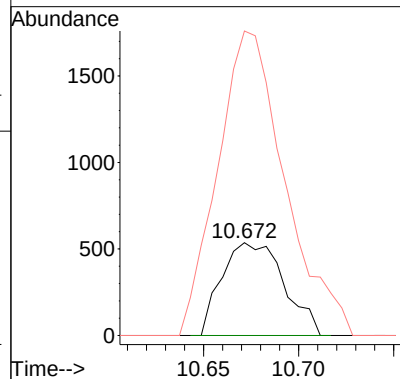
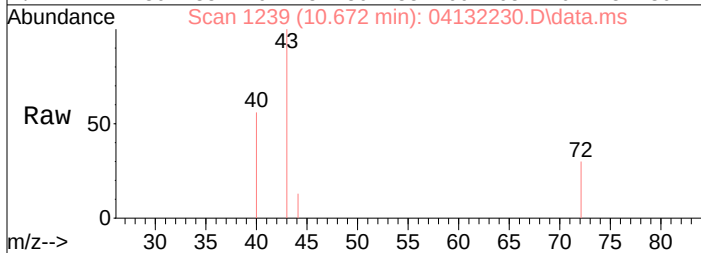
#26
Vinyl Acetate
Concen: 0.33 ng
RT: 10.36 min Scan# 1185
Delta R.T. -0.040 min
Lab File: 04132230.D
Acq: 13 Apr 2022 19:00

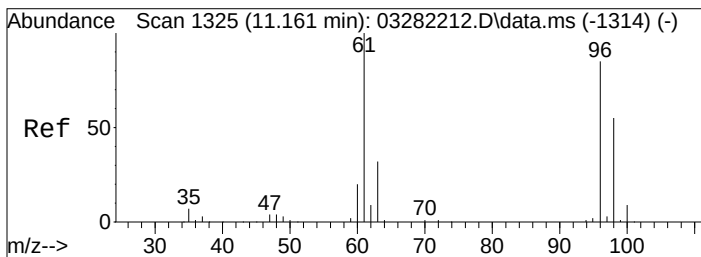
Tgt Ion	Ratio	Resp	Lower	Upper
86	100	740		
43	763.9	906.4	946.4	#



#27
2-Butanone (MEK)
Concen: 0.15 ng
RT: 10.67 min Scan# 1239
Delta R.T. 0.017 min
Lab File: 04132230.D
Acq: 13 Apr 2022 19:00

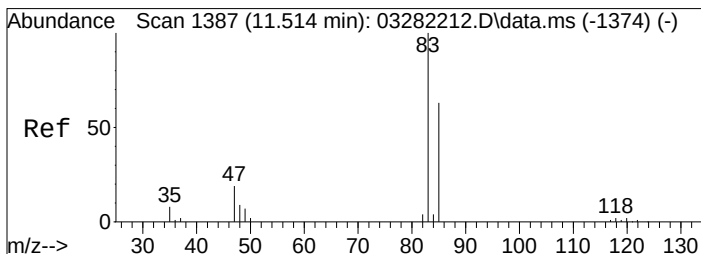
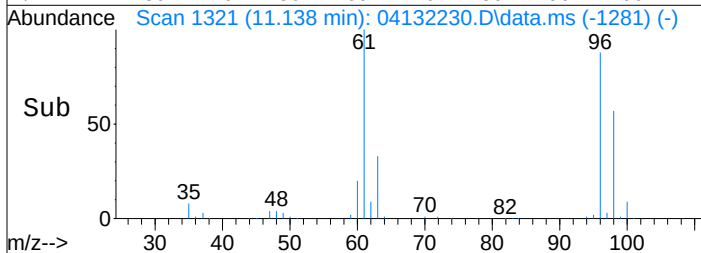
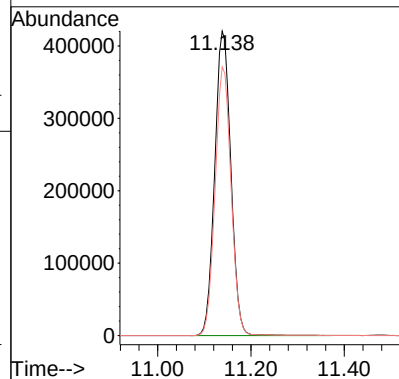
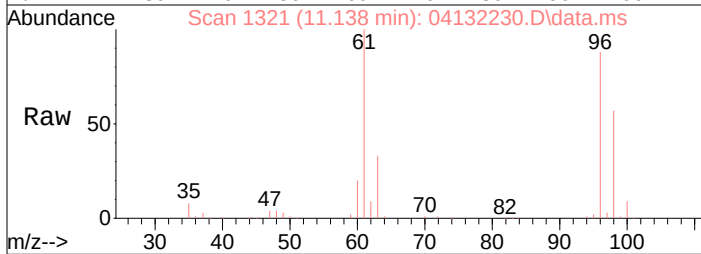
Tgt Ion	Ratio	Resp	Lower	Upper
72	100	1222		
43	354.4	315.4	355.4	





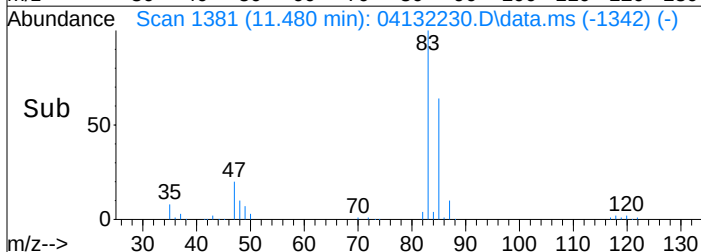
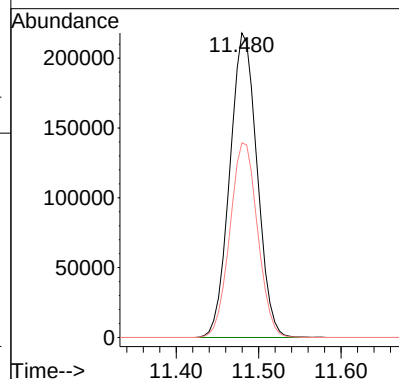
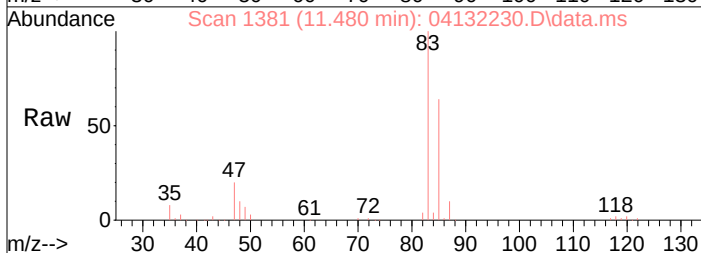
#28
 cis-1,2-Dichloroethene
 Concen: 62.72 ng
 RT: 11.14 min Scan# 1321
 Delta R.T. -0.023 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

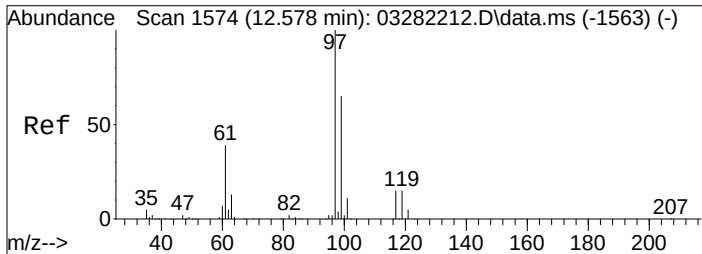
Tgt Ion: 61 Resp: 1008104
 Ion Ratio Lower Upper
 61 100
 96 87.7 66.5 106.5



#32
 Chloroform
 Concen: 23.67 ng
 RT: 11.48 min Scan# 1381
 Delta R.T. -0.028 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

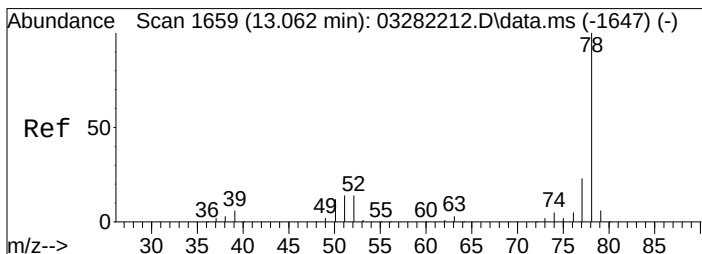
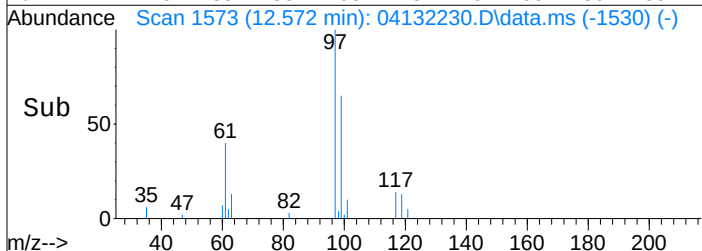
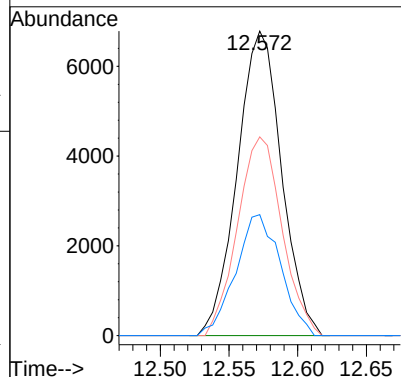
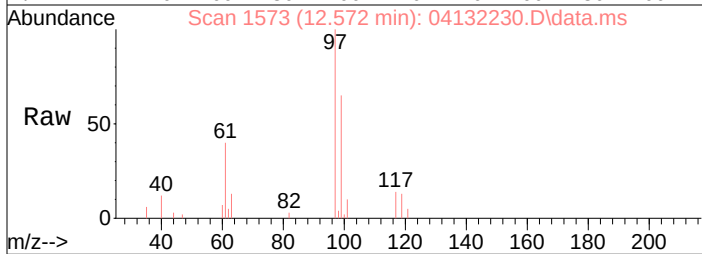
Tgt Ion: 83 Resp: 501169
 Ion Ratio Lower Upper
 83 100
 85 65.0 45.0 85.0





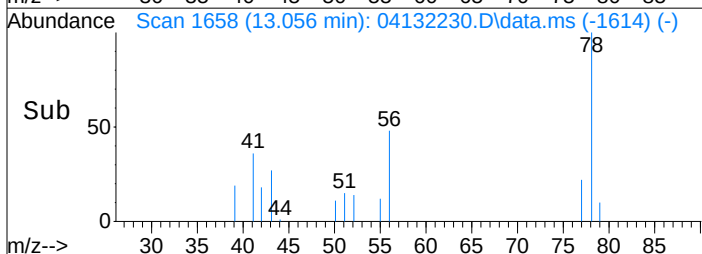
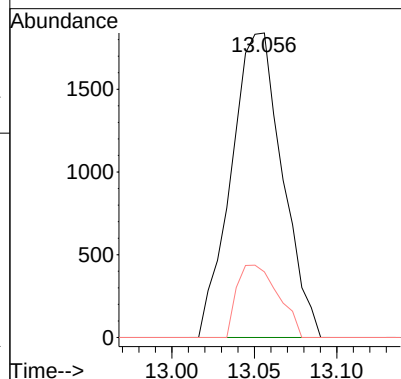
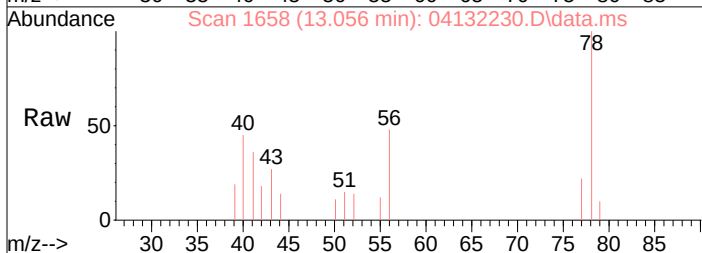
#38
 1,1,1-Trichloroethane
 Concen: 0.76 ng
 RT: 12.57 min Scan# 1573
 Delta R.T. -0.006 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

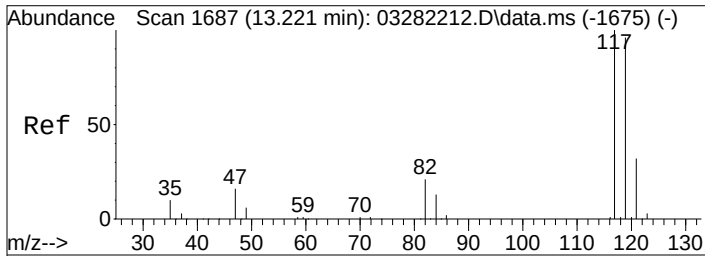
Tgt Ion:	97	Resp:	15246
Ion Ratio		Lower	Upper
97	100		
99	65.5	44.6	84.6
61	40.2	18.9	58.9



#41
 Benzene
 Concen: 0.08 ng
 RT: 13.06 min Scan# 1658
 Delta R.T. 0.000 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

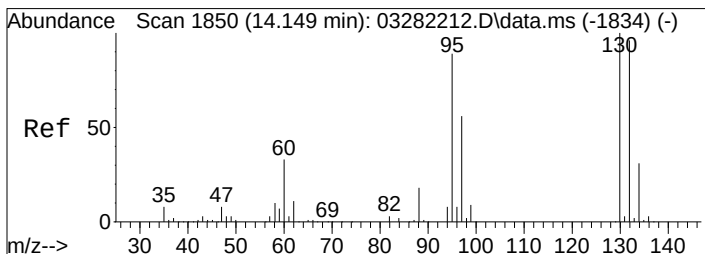
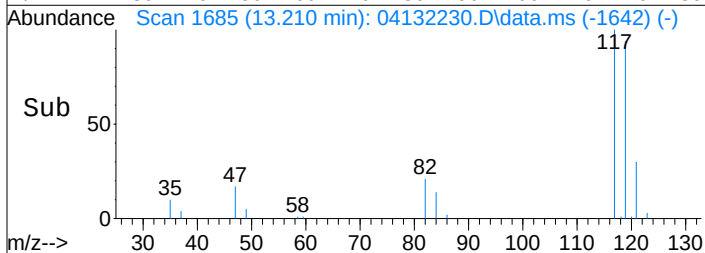
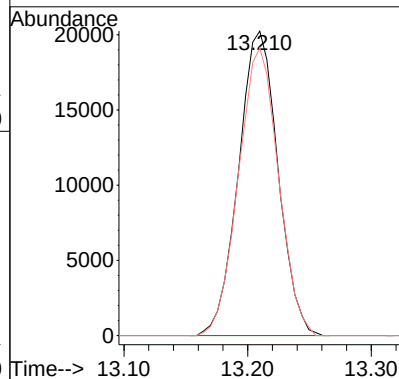
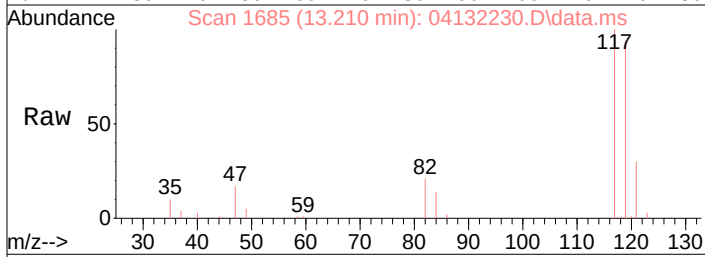
Tgt Ion:	78	Resp:	3975
Ion Ratio		Lower	Upper
78	100		
77	19.2	3.3	43.3





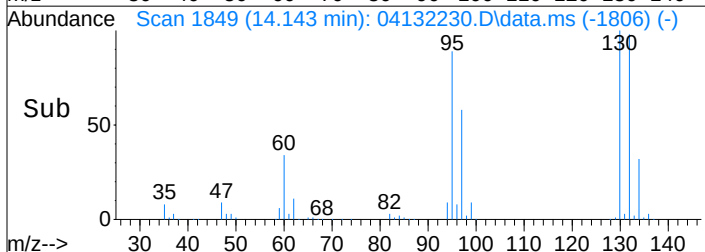
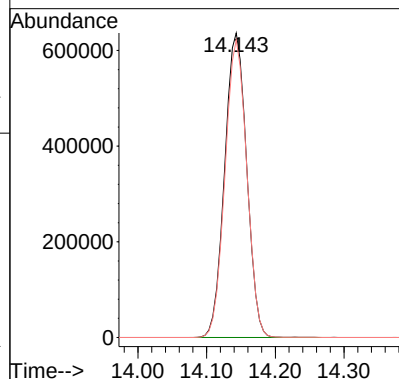
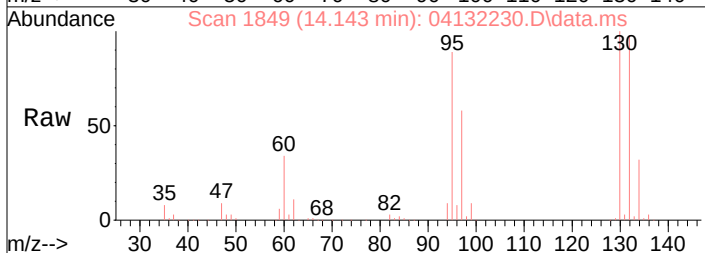
#42
Carbon Tetrachloride
Concen: 2.54 ng
RT: 13.21 min Scan# 1685
Delta R.T. -0.006 min
Lab File: 04132230.D
Acq: 13 Apr 2022 19:00

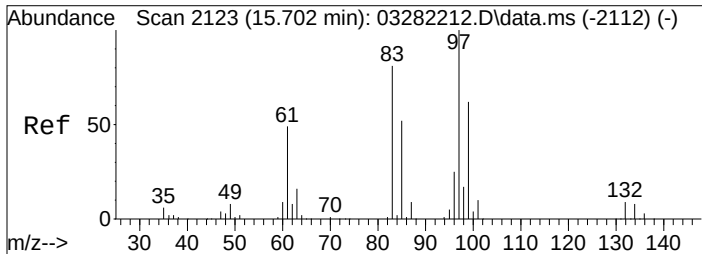
Tgt Ion:117 Resp: 44970
Ion Ratio Lower Upper
117 100
119 95.7 76.4 116.4



#47
Trichloroethene
Concen: 87.20 ng
RT: 14.14 min Scan# 1849
Delta R.T. -0.006 min
Lab File: 04132230.D
Acq: 13 Apr 2022 19:00

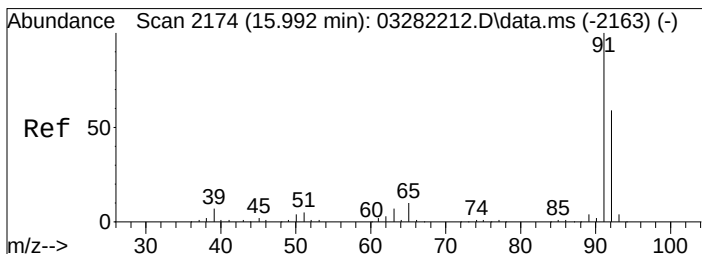
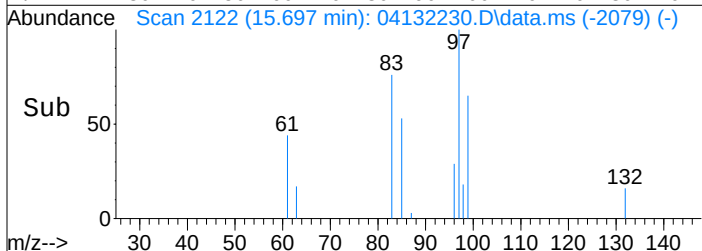
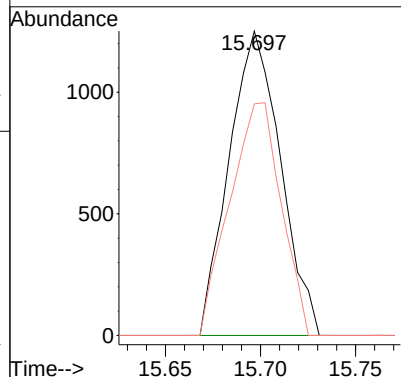
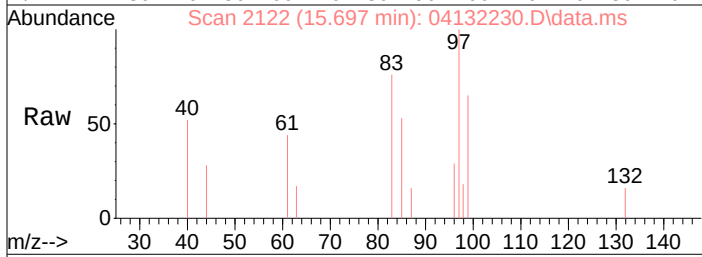
Tgt Ion:130 Resp: 1417032
Ion Ratio Lower Upper
130 100
132 96.8 76.3 116.3





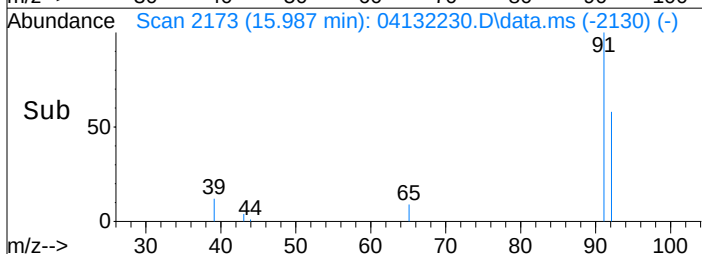
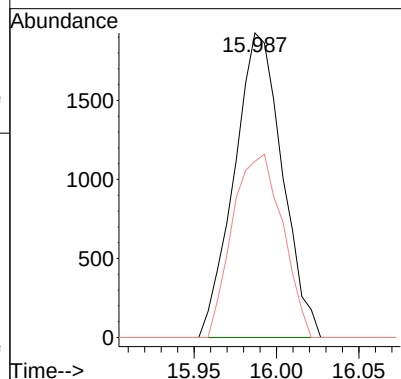
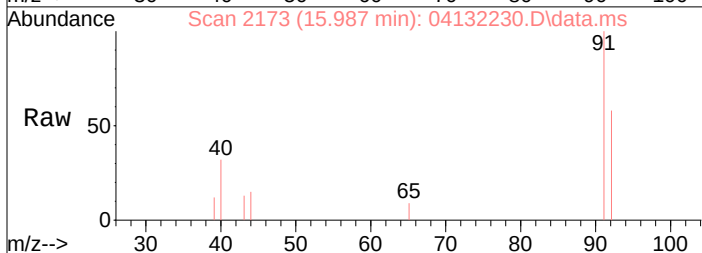
#55
 1,1,2-Trichloroethane
 Concen: 0.17 ng
 RT: 15.70 min Scan# 2122
 Delta R.T. -0.006 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

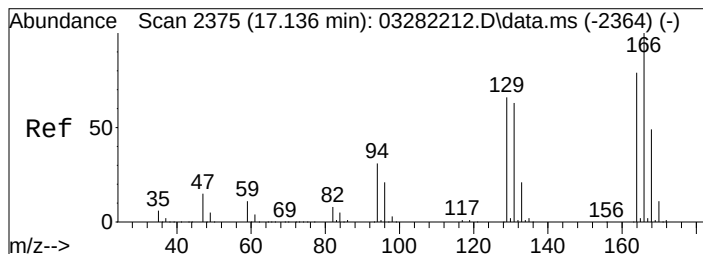
Tgt Ion: 97 Resp: 2353
 Ion Ratio Lower Upper
 97 100
 83 76.5 62.0 102.0



#58
 Toluene
 Concen: 0.07 ng
 RT: 15.99 min Scan# 2173
 Delta R.T. -0.006 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

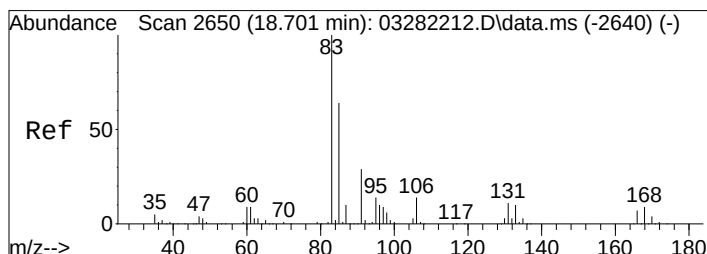
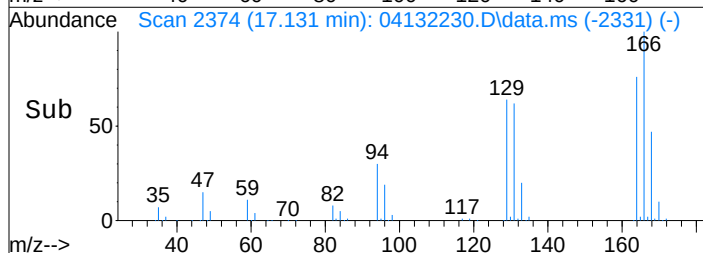
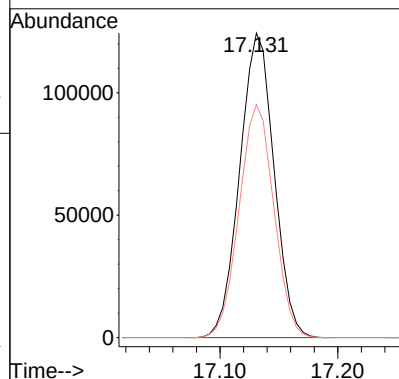
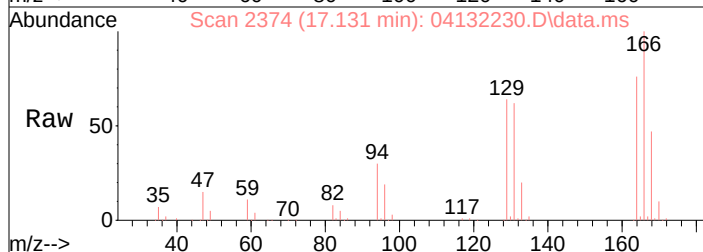
Tgt Ion: 91 Resp: 3914
 Ion Ratio Lower Upper
 91 100
 92 62.5 39.5 79.5





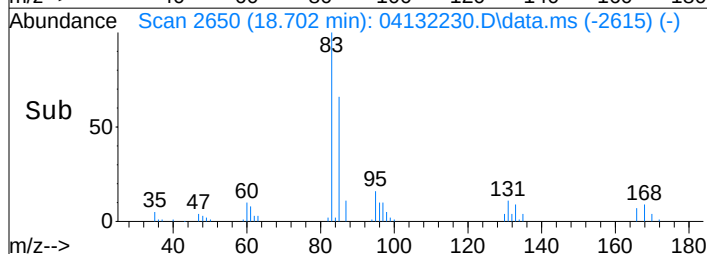
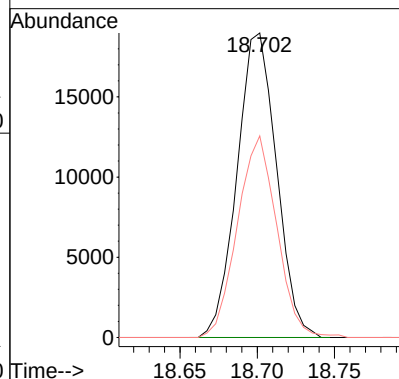
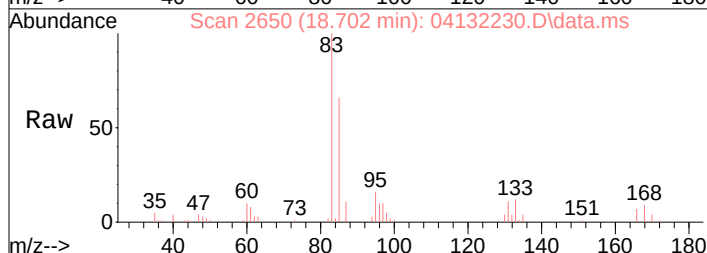
#64
 Tetrachloroethene
 Concen: 13.46 ng
 RT: 17.13 min Scan# 2374
 Delta R.T. -0.006 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

Tgt Ion	166	Resp	252351
Ion Ratio	Lower	Upper	
166	100		
164	77.4	57.9	97.9



#72
 1,1,2,2-Tetrachloroethane
 Concen: 1.47 ng
 RT: 18.70 min Scan# 2650
 Delta R.T. 0.000 min
 Lab File: 04132230.D
 Acq: 13 Apr 2022 19:00

Tgt Ion	83	Resp	33875
Ion Ratio	Lower	Upper	
83	100		
85	66.0	44.8	84.8



Data File : I:\MS13\DATA\2022_04\13\04132203.D
 Acq On : 13 Apr 2022 00:42
 Sample : MB R13041322 1000mL
 Misc : S35-03142201_AC01837

Vial: 1
 Operator: TZ
 Inst : GCMS13

Tz 4/13/22

Quant Time: Apr 13 07:24:04 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.31	130	129250	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	540821	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.75	54	75810	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	160290	12.050	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.40%	
57) Toluene-d8 (SS2)	15.88	98	585241	12.802	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	102.40%	
73) Bromofluorobenzene (SS3)	19.12	174	220895	12.962	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	103.68%	

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	6.53	45	1197	0.157	ng	73
11) Acetonitrile	6.82	41	197	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	7.23	58	1249	0.162	ng	93
14) Trichlorofluoromethane	0.00	101	0	N.D.		
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...	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	8.90	76	2047	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	0.00	78	0	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	13.43	84	452	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.		

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132203.D
 Acq On : 13 Apr 2022 00:42
 Sample : MB R13041322 1000mL
 Misc : S35-03142201_AC01837

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 13 07:24:04 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

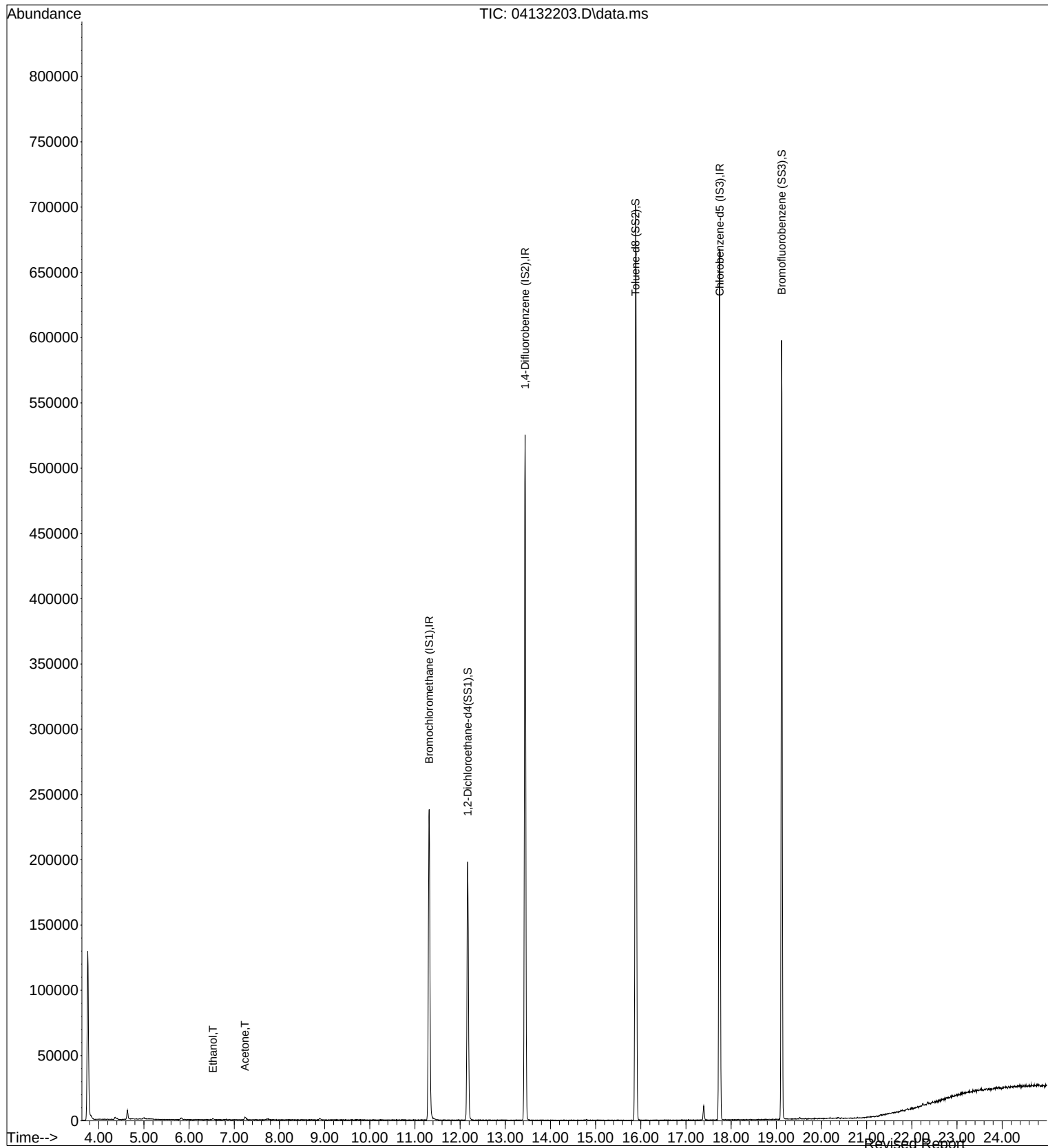
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	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	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	20.36	91	413	N.D.		
85) 1,3-Dichlorobenzene	20.38	146	317	N.D.		
86) 1,4-Dichlorobenzene	20.44	146	142	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	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	909	N.D.		
95) Naphthalene	22.35	128	1918	N.D.		
96) n-Dodecane	0.00	57	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 File : I:\MS13\DATA\2022_04\13\04132203.D
Acq On : 13 Apr 2022 00:42
Sample : MB R13041322 1000mL
Misc : S35-03142201_AC01837

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Apr 13 07:24:04 2022
Quant Method : I:\MS13\METHODS\R13032822.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Mon Apr 11 11:34:00 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2022_04\13\04132204.D
 Acq On : 13 Apr 2022 1:16
 Sample : LCS R13041322 25ng
 Misc : S35-03142201/S35-03292205 (4/28)

Vial: 1
 Operator: TZ
 Inst : GCMS13

T2 4/13/22

Quant Time: Apr 13 06:41:05 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.34	130	131159	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.45	114	545122	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	79880	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.19	65	163944	12.146	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	97.20%	
57) Toluene-d8 (SS2)	15.89	98	603207	12.523	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.16%	
73) Bromofluorobenzene (SS3)	19.12	174	238878	13.303	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	106.40%	

Target Compounds

						Qvalue
2) Propene	4.22	42	232034	21.076	ng	99
3) Dichlorodifluoromethan...	4.38	85	485984	22.334	ng	100
4) Chloromethane	4.67	50	297282	19.035	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.94	135	293622	23.093	ng	100
6) Vinyl Chloride	5.09	62	362924	21.274	ng	99
7) 1,3-Butadiene	5.37	54	263531	21.767	ng	99
8) Bromomethane	5.82	94	229106	22.485	ng	100
9) Chloroethane	6.15	64	162842	21.273	ng	99
10) Ethanol	6.55	45	646438	83.660	ng	100
11) Acetonitrile	6.80	41	352785	18.713	ng	100
12) Acrolein	6.98	56	282387	42.590	ng	100
13) Acetone	7.20	58	779819	99.865	ng	96
14) Trichlorofluoromethane	7.43	101	432465	22.130	ng	100
15) 2-Propanol (Isopropanol)	7.70	45	1077983	43.132	ng	99
16) Acrylonitrile	7.96	53	559650	42.191	ng	100
17) 1,1-Dichloroethene	8.39	96	260904	22.689	ng	99
18) 2-Methyl-2-Propanol (t...	8.57	59	993983	42.650	ng	99
19) Methylene Chloride	8.63	84	257051	20.912	ng	97
20) 3-Chloro-1-propene (Al...	8.78	41	298061	20.970	ng	98
21) Trichlorotrifluoroethane	9.03	151	269636	23.422	ng	98
22) Carbon Disulfide	8.89	76	1808260	40.084	ng	100
23) trans-1,2-Dichloroethene	9.89	61	342750	23.062	ng	98
24) 1,1-Dichloroethane	10.14	63	424520	22.313	ng	99
25) Methyl tert-Butyl Ether	10.24	73	684425	21.910	ng	99
26) Vinyl Acetate	10.40	86	250860	120.505	ng	# 93
27) 2-Butanone (MEK)	10.65	72	328253	44.488	ng	98
28) cis-1,2-Dichloroethene	11.16	61	327261	22.236	ng	98
29) Diisopropyl Ether	11.45	87	449623	45.789	ng	# 70
30) Ethyl Acetate	11.46	61	239672	59.377	ng	97
31) n-Hexane	11.43	57	364060	21.311	ng	99
32) Chloroform	11.50	83	442846	22.844	ng	100
34) Tetrahydrofuran (THF)	11.91	72	314166	42.438	ng	97
35) Ethyl tert-Butyl Ether	12.04	87	632774	47.429	ng	97
36) 1,2-Dichloroethane	12.30	62	324466	22.969	ng	100
38) 1,1,1-Trichloroethane	12.58	97	421842	23.826	ng	100
39) Isopropyl Acetate	13.02	61	13064	No Calib	#	
40) 1-Butanol	13.04	56	6280	No Calib	#	
41) Benzene	13.06	78	1026104	22.493	ng	100
42) Carbon Tetrachloride	13.22	117	368876	23.465	ng	99
43) Cyclohexane	13.35	84	783083	45.833	ng	98
44) tert-Amyl Methyl Ether	13.69	73	1449517	47.064	ng	99
45) 1,2-Dichloropropane	13.90	63	242892	21.793	ng	100
46) Bromodichloromethane	14.09	83	370880	23.721	ng	100
47) Trichloroethene	14.15	130	339126	23.539	ng	99
48) 1,4-Dioxane	14.13	88	222639	24.054	ng	98
49) 2,2,4-Trimethylpentane...	14.21	57	971139	21.712	ng	98
50) Methyl Methacrylate	14.35	100	238108	49.877	ng	95

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132204.D
 Acq On : 13 Apr 2022 1:16
 Sample : LCS R13041322 25ng
 Misc : S35-03142201/S35-03292205 (4/28)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 13 06:41:05 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	257381	23.230	ng	99
52) cis-1,3-Dichloropropene	15.01	75	430596	24.117	ng	99
53) 4-Methyl-2-pentanone	15.04	58	427020	47.300	ng	99
54) trans-1,3-Dichloropropene	15.53	75	397846	24.597	ng	100
55) 1,1,2-Trichloroethane	15.70	97	278374	23.090	ng	100
58) Toluene	15.99	91	1141721	23.315	ng	100
59) 2-Hexanone	16.24	43	938214	47.789	ng	99
60) Dibromochloromethane	16.40	129	371559	24.933	ng	100
61) 1,2-Dibromoethane	16.65	107	330940	23.816	ng	100
62) n-Butyl Acetate	16.86	43	1051754	48.960	ng	99
63) n-Octane	16.99	57	212076	23.341	ng	98
64) Tetrachloroethene	17.13	166	407673	24.287	ng	100
65) Chlorobenzene	17.79	112	822095	23.654	ng	100
66) Ethylbenzene	18.14	91	1327245	24.271	ng	100
67) m- & p-Xylenes	18.30	91	2074081	49.122	ng	100
68) Bromoform	18.36	173	368993	25.963	ng	99
69) Styrene	18.62	104	872510	25.829	ng	100
70) o-Xylene	18.72	91	1071233	25.103	ng	100
71) n-Nonane	18.91	43	463898	23.778	ng	100
72) 1,1,2,2-Tetrachloroethane	18.70	83	488697	23.620	ng	99
74) Cumene	19.24	105	1425642	24.730	ng	100
75) alpha-Pinene	19.59	93	714957	27.014	ng	100
76) n-Propylbenzene	19.69	91	1669908	24.902	ng	100
77) 3-Ethyltoluene	19.88	105	1200974	No Calib		
78) 4-Ethyltoluene	19.82	105	1440292	25.757	ng	100
79) 1,3,5-Trimethylbenzene	19.88	105	1200974	25.806	ng	100
80) alpha-Methylstyrene	19.88	118	8958	No Calib		
81) 2-Ethyltoluene	19.88	105	1200974	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	1213916	26.309	ng	100
83) n-Decane	20.24	58	46501	No Calib		
84) Benzyl Chloride	20.36	91	2021468	59.426	ng	100
85) 1,3-Dichlorobenzene	20.38	146	812823	25.898	ng	100
86) 1,4-Dichlorobenzene	20.44	146	817073	25.772	ng	100
87) sec-Butylbenzene	20.48	105	1639619	25.477	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	1477422	26.354	ng	100
89) 1,2,3-Trimethylbenzene	20.61	105	49796	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	777724	25.843	ng	100
91) d-Limonene	20.74	68	418868	27.311	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.11	157	627755	52.668	ng	99
93) n-Undecane	21.42	57	335	No Calib		
94) 1,2,4-Trichlorobenzene	22.24	180	1392195	54.799	ng	100
95) Naphthalene	22.34	128	1913535	27.881	ng	100
96) n-Dodecane	22.33	57	878	No Calib	#	
97) Hexachlorobutadiene	22.66	225	470813	26.267	ng	100
98) Cyclohexanone	18.31	55	1262	No Calib	#	
99) tert-Butylbenzene	20.24	119	1200052	25.877	ng	100
100) n-Butylbenzene	20.98	91	1312774	26.474	ng	100
101) 1,1,1,2-Tetrachloroethane	17.77	131	312108	24.016	ng	100

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

Data File : I:\MS13\DATA\2022_04\13\04132204.D
Acq On : 13 Apr 2022 1:16
Sample : LCS R13041322 25ng
Misc : S35-03142201/S35-03292205 (4/28)

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Apr 13 06:41:05 2022

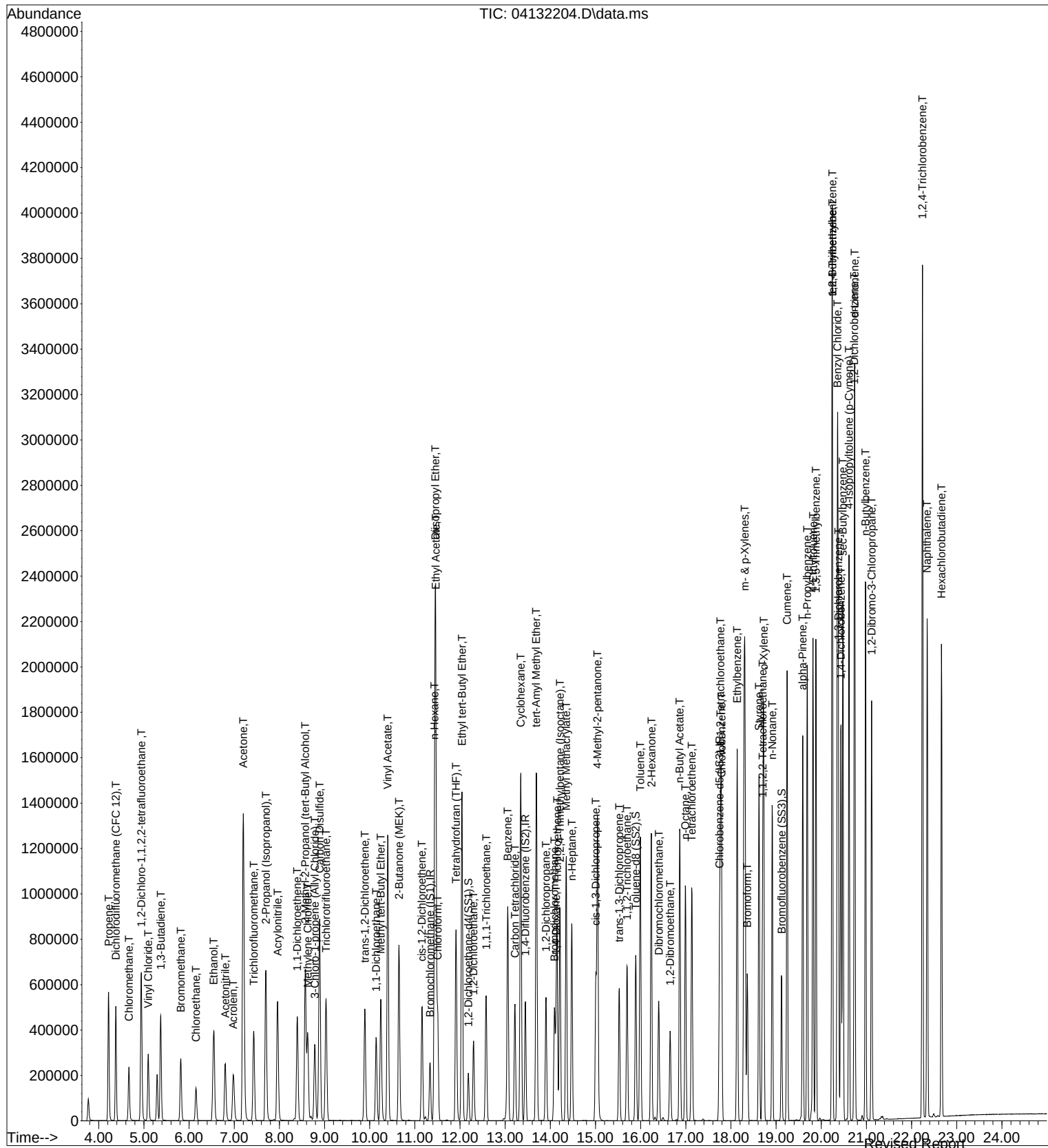
Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132205.D
 Acq On : 13 Apr 2022 1:50
 Sample : LCSD R13041322 25ng
 Misc : S35-03142201/S35-03292205 (4/28)

Vial: 1
 Operator: TZ
 Inst : GCMS13

TZ 4/13/22

Quant Time: Apr 13 06:41:07 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.34	130	138888	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.45	114	577958	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	84084	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.19	65	171465	11.996	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.00%	
57) Toluene-d8 (SS2)	15.89	98	636241	12.548	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.40%	
73) Bromofluorobenzene (SS3)	19.12	174	243254	12.869	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	102.96%	

Target Compounds

						Qvalue
2) Propene	4.21	42	261990	22.472	ng	99
3) Dichlorodifluoromethan...	4.38	85	527846	22.908	ng	100
4) Chloromethane	4.66	50	347025	20.983	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.94	135	336619	25.001	ng	100
6) Vinyl Chloride	5.09	62	389528	21.563	ng	100
7) 1,3-Butadiene	5.37	54	292811	22.840	ng	99
8) Bromomethane	5.82	94	249101	23.087	ng	99
9) Chloroethane	6.15	64	179894	22.193	ng	99
10) Ethanol	6.55	45	713416	87.190	ng	100
11) Acetonitrile	6.80	41	394148	19.743	ng	99
12) Acrolein	6.98	56	308234	43.901	ng	100
13) Acetone	7.20	58	848203	102.577	ng	97
14) Trichlorofluoromethane	7.43	101	464422	22.443	ng	99
15) 2-Propanol (Isopropanol)	7.70	45	1177192	44.480	ng	99
16) Acrylonitrile	7.96	53	613314	43.664	ng	99
17) 1,1-Dichloroethene	8.39	96	339976	27.920	ng	94
18) 2-Methyl-2-Propanol (t...	8.57	59	1076438	43.618	ng	100
19) Methylene Chloride	8.62	84	277790	21.342	ng	98
20) 3-Chloro-1-propene (Al...	8.78	41	322419	21.421	ng	98
21) Trichlorotrifluoroethane	9.03	151	287423	23.578	ng	98
22) Carbon Disulfide	8.89	76	1957333	40.974	ng	100
23) trans-1,2-Dichloroethene	9.89	61	371960	23.634	ng	99
24) 1,1-Dichloroethane	10.14	63	456830	22.675	ng	100
25) Methyl tert-Butyl Ether	10.24	73	733808	22.184	ng	99
26) Vinyl Acetate	10.40	86	272400	123.570	ng	# 93
27) 2-Butanone (MEK)	10.65	72	359215	45.975	ng	97
28) cis-1,2-Dichloroethene	11.16	61	354680	22.758	ng	98
29) Diisopropyl Ether	11.45	87	485350	46.676	ng	# 71
30) Ethyl Acetate	11.46	61	262282	61.362	ng	98
31) n-Hexane	11.43	57	392141	21.677	ng	100
32) Chloroform	11.50	83	474723	23.126	ng	100
34) Tetrahydrofuran (THF)	11.91	72	340431	43.426	ng	97
35) Ethyl tert-Butyl Ether	12.04	87	679451	48.093	ng	97
36) 1,2-Dichloroethane	12.30	62	343519	22.965	ng	100
38) 1,1,1-Trichloroethane	12.58	97	444547	23.682	ng	100
39) Isopropyl Acetate	13.02	61	8144	No Calib	#	
40) 1-Butanol	13.03	56	6821	No Calib	#	
41) Benzene	13.06	78	1110927	22.969	ng	100
42) Carbon Tetrachloride	13.22	117	390413	23.424	ng	100
43) Cyclohexane	13.35	84	837818	46.250	ng	99
44) tert-Amyl Methyl Ether	13.69	73	1550700	47.489	ng	100
45) 1,2-Dichloropropane	13.90	63	261899	22.164	ng	100
46) Bromodichloromethane	14.09	83	390922	23.582	ng	100
47) Trichloroethene	14.15	130	364816	23.883	ng	100
48) 1,4-Dioxane	14.13	88	239665	24.422	ng	99
49) 2,2,4-Trimethylpentane...	14.21	57	1050337	22.149	ng	98
50) Methyl Methacrylate	14.35	100	256549	50.687	ng	96

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132205.D
 Acq On : 13 Apr 2022 1:50
 Sample : LCSD R13041322 25ng
 Misc : S35-03142201/S35-03292205 (4/28)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 13 06:41:07 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.47	71	277103	23.590	ng	98
52) cis-1,3-Dichloropropene	15.01	75	463078	24.463	ng	100
53) 4-Methyl-2-pentanone	15.04	58	462650	48.335	ng	100
54) trans-1,3-Dichloropropene	15.53	75	425318	24.801	ng	100
55) 1,1,2-Trichloroethane	15.70	97	299514	23.432	ng	99
58) Toluene	15.99	91	1217229	23.615	ng	100
59) 2-Hexanone	16.24	43	1008417	48.796	ng	100
60) Dibromochloromethane	16.40	129	390218	24.876	ng	100
61) 1,2-Dibromoethane	16.65	107	351082	24.002	ng	100
62) n-Butyl Acetate	16.86	43	1127245	49.851	ng	100
63) n-Octane	16.99	57	227126	23.747	ng	98
64) Tetrachloroethene	17.13	166	428915	24.275	ng	100
65) Chlorobenzene	17.79	112	872755	23.856	ng	100
66) Ethylbenzene	18.14	91	1412094	24.531	ng	100
67) m- & p-Xylenes	18.30	91	2187663	49.221	ng	100
68) Bromoform	18.36	173	382493	25.568	ng	100
69) Styrene	18.62	104	916703	25.780	ng	100
70) o-Xylene	18.72	91	1124852	25.042	ng	100
71) n-Nonane	18.91	43	490724	23.896	ng	100
72) 1,1,2,2-Tetrachloroethane	18.70	83	514068	23.604	ng	100
74) Cumene	19.24	105	1489779	24.551	ng	100
75) alpha-Pinene	19.59	93	754828	27.094	ng	100
76) n-Propylbenzene	19.69	91	1738718	24.632	ng	100
77) 3-Ethyltoluene	19.88	105	1249687	No Calib		
78) 4-Ethyltoluene	19.82	105	1509063	25.638	ng	100
79) 1,3,5-Trimethylbenzene	19.88	105	1251361	25.544	ng	100
80) alpha-Methylstyrene	19.88	118	9478	No Calib		
81) 2-Ethyltoluene	19.88	105	1251361	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	1266472	26.075	ng	100
83) n-Decane	20.24	58	49204	No Calib		
84) Benzyl Chloride	20.36	91	2105651	58.806	ng	99
85) 1,3-Dichlorobenzene	20.38	146	841638	25.475	ng	100
86) 1,4-Dichlorobenzene	20.44	146	851493	25.515	ng	100
87) sec-Butylbenzene	20.48	105	1702304	25.129	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	1525609	25.853	ng	100
89) 1,2,3-Trimethylbenzene	20.61	105	51829	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	801553	25.303	ng	100
91) d-Limonene	20.74	68	435136	26.953	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.11	157	643897	51.322	ng	99
93) n-Undecane	21.42	57	327	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.24	180	1421854	53.169	ng	100
95) Naphthalene	22.35	128	1959120	27.118	ng	100
96) n-Dodecane	22.33	57	1012	No Calib	#	
97) Hexachlorobutadiene	22.66	225	481029	25.495	ng	100
98) Cyclohexanone	18.30	55	1221	No Calib		
99) tert-Butylbenzene	20.24	119	1246704	25.539	ng	100
100) n-Butylbenzene	20.98	91	1352712	25.916	ng	99
101) 1,1,1,2-Tetrachloroethane	17.77	131	326094	23.838	ng	99

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

Data File : I:\MS13\DATA\2022_04\13\04132231.D
 Acq On : 13 Apr 2022 19:34
 Sample : P2201515-001dup (1000mL)
 Misc : S35-03142201

Vial: 14
 Operator: TZ
 Inst : GCMS13

TZ 4/14/22

Quant Time: Apr 14 09:57:39 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	134566	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	572923	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	81545	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	157276	11.357	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	90.88%	
57) Toluene-d8 (SS2)	15.89	98	623706	12.684	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	101.44%	
73) Bromofluorobenzene (SS3)	19.12	174	231860	12.648	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	101.20%	

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.	d	
3) Dichlorodifluoromethan...	4.39	85	58920	2.639	ng	100
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	1124	0.086	ng	84
6) Vinyl Chloride	5.12	62	2208	0.126	ng	97
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	6.51	45	6719	0.848	ng	95
11) Acetonitrile	6.80	41	425	N.D.		
12) Acrolein	7.01	56	519	0.076	ng	# 61
13) Acetone	7.23	58	6582	0.822	ng	# 78
14) Trichlorofluoromethane	7.43	101	24445	1.219	ng	99
15) 2-Propanol (Isopropanol)	7.72	45	4829	0.188	ng	98
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	8.39	96	17707	1.501	ng	99
18) 2-Methyl-2-Propanol (t...	8.39	59	669	N.D.		
19) Methylene Chloride	8.59	84	868	0.069	ng	99
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	9.03	151	206066	17.447	ng	99
22) Carbon Disulfide	8.88	76	44440	0.960	ng	99
23) trans-1,2-Dichloroethene	9.87	61	28565	1.873	ng	99
24) 1,1-Dichloroethane	10.13	63	12613	0.646	ng	94
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	10.37	86	633	0.296	ng	96
27) 2-Butanone (MEK)	10.68	72	938	0.124	ng	# 64
28) cis-1,2-Dichloroethene	11.14	61	940925	62.314	ng	98
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	0.00	61	0	N.D.	d	
31) n-Hexane	11.43	57	767	N.D.		
32) Chloroform	11.49	83	470827	23.673	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	12.29	62	333	N.D.		
38) 1,1,1-Trichloroethane	12.57	97	14360	0.772	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	13.03	56	3904	No Calib	#	
41) Benzene	13.05	78	3682	0.077	ng	90
42) Carbon Tetrachloride	13.21	117	41400	2.506	ng	98
43) Cyclohexane	13.34	84	262	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.	d	
46) Bromodichloromethane	14.09	83	637	N.D.		
47) Trichloroethene	14.14	130	1341421	88.590	ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	14.21	57	2009	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.	d	

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132231.D
 Acq On : 13 Apr 2022 19:34
 Sample : P2201515-001dup (1000mL)
 Misc : S35-03142201

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 14 09:57:39 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.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	15.54	75	532	N.D.		
55) 1,1,2-Trichloroethane	15.70	97	2106	0.166 ng		100
58) Toluene	15.99	91	3764	0.075 ng		100
59) 2-Hexanone	16.25	43	247	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.87	43	503	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	17.13	166	239485	13.976 ng		99
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	18.14	91	550	N.D.		
67) m- & p-Xylenes	18.29	91	1046	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.62	104	323	N.D.		
70) o-Xylene	18.72	91	332	N.D.		
71) n-Nonane	18.91	43	175	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.70	83	31182	1.476 ng		100
74) Cumene	19.12	105	123	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.	d	
76) n-Propylbenzene	19.69	91	185	N.D.		
77) 3-Ethyltoluene	19.78	105	127	No Calib	#	
78) 4-Ethyltoluene	19.78	105	127	N.D.		
79) 1,3,5-Trimethylbenzene	19.78	105	127	N.D.		
80) alpha-Methylstyrene	20.02	118	1098	No Calib	#	
81) 2-Ethyltoluene	19.78	105	127	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.24	105	487	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	20.38	146	217	N.D.		
86) 1,4-Dichlorobenzene	20.44	146	597	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	20.61	119	1118	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	20.74	68	403	N.D.		
92) 1,2-Dibromo-3-Chloropr...	21.04	157	321	N.D.		
93) n-Undecane	21.42	57	519	No Calib	#	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	22.34	128	1303	N.D.		
96) n-Dodecane	22.33	57	832	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.44	55	796	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	21.14	91	389	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data File : I:\MS13\DATA\2022_04\13\04132231.D
Acq On : 13 Apr 2022 19:34
Sample : P2201515-001dup (1000mL)
Misc : S35-03142201

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Apr 14 09:57:39 2022

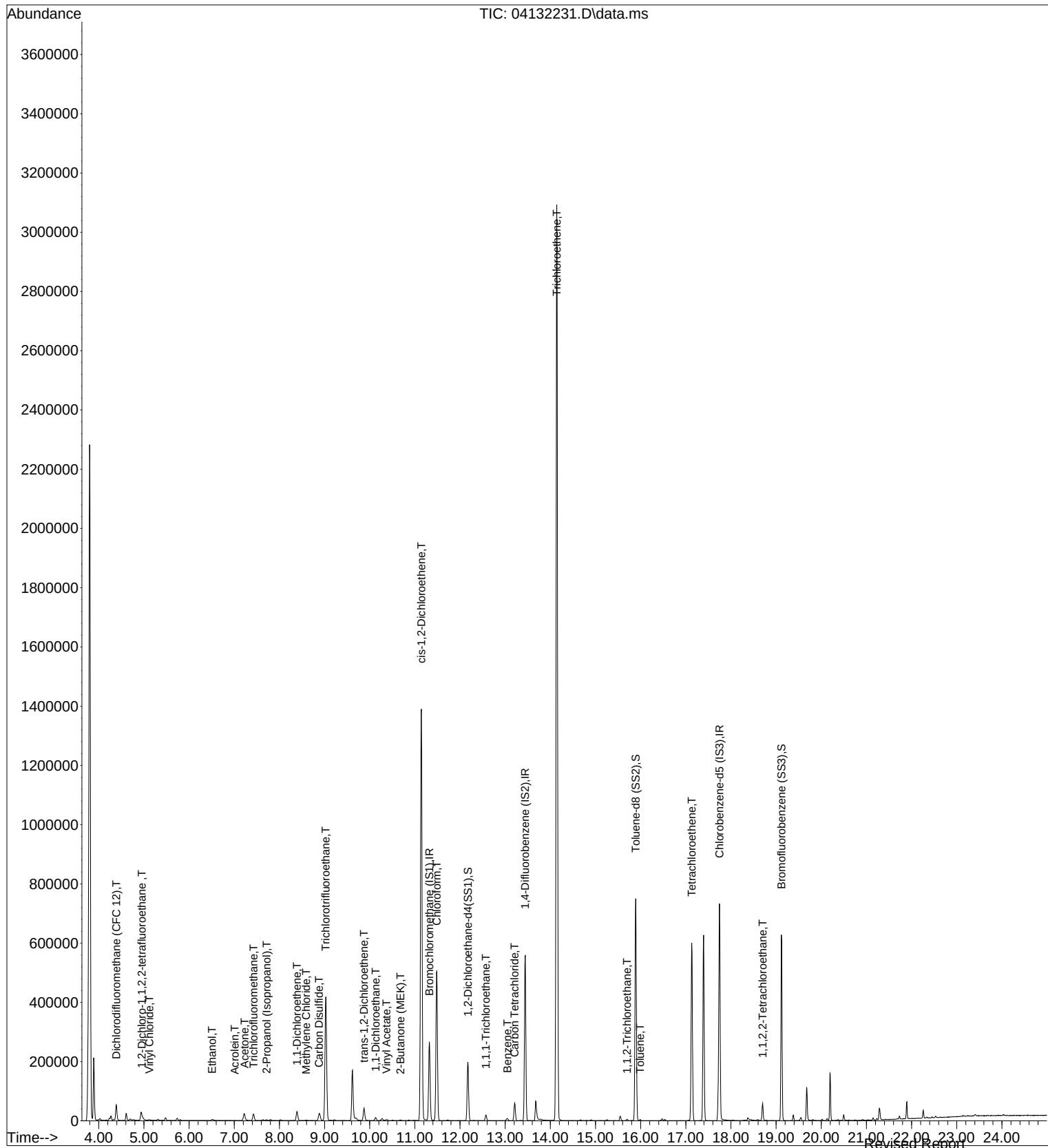
Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M



Data File : I:\MS13\DATA\2022_04\13\04132231.D
 Acq On : 13 Apr 2022 19:34
 Sample : P2201515-001dup (1000mL)
 Misc : S35-03142201

Vial: 14
 Operator: TZ
 Inst : GCMS13

TZ 4/14/22

Quant Time: Apr 14 09:57:39 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	134566	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	572923	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	81545	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	157276	11.357	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	90.88%
57) Toluene-d8 (SS2)	15.89	98	623706	12.684	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.44%
73) Bromofluorobenzene (SS3)	19.12	174	231860	12.648	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.20%

Target Compounds

						Qvalue
3) Dichlorodifluoromethan...	4.39	85	58920	2.639	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	1124	0.086	ng	84
6) Vinyl Chloride	5.12	62	2208	0.126	ng	97
10) Ethanol	6.51	45	6719	0.848	ng	95
12) Acrolein	7.01	56	519	0.076	ng	# 61
13) Acetone	7.23	58	6582	0.822	ng	# 78
14) Trichlorofluoromethane	7.43	101	24445	1.219	ng	99
15) 2-Propanol (Isopropanol)	7.72	45	4829	0.188	ng	98
17) 1,1-Dichloroethene	8.39	96	17707	1.501	ng	99
19) Methylene Chloride	8.59	84	868	0.069	ng	99
21) Trichlorotrifluoroethane	9.03	151	206066	17.447	ng	99
22) Carbon Disulfide	8.88	76	44440	0.960	ng	99
23) trans-1,2-Dichloroethene	9.87	61	28565	1.873	ng	99
24) 1,1-Dichloroethane	10.13	63	12613	0.646	ng	94
26) Vinyl Acetate	10.37	86	633	0.296	ng	96
27) 2-Butanone (MEK)	10.68	72	938	0.124	ng	# 64
28) cis-1,2-Dichloroethene	11.14	61	940925	62.314	ng	98
32) Chloroform	11.49	83	470827	23.673	ng	100
38) 1,1,1-Trichloroethane	12.57	97	14360	0.772	ng	99
41) Benzene	13.05	78	3682	0.077	ng	90
42) Carbon Tetrachloride	13.21	117	41400	2.506	ng	98
47) Trichloroethene	14.14	130	1341421	88.590	ng	99
55) 1,1,2-Trichloroethane	15.70	97	2106	0.166	ng	100
58) Toluene	15.99	91	3764	0.075	ng	100
64) Tetrachloroethene	17.13	166	239485	13.976	ng	99
72) 1,1,2,2-Tetrachloroethane	18.70	83	31182	1.476	ng	100

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

Data File : I:\MS13\DATA\2022_04\13\04132231.D
Acq On : 13 Apr 2022 19:34
Sample : P2201515-001dup (1000mL)
Misc : S35-03142201

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Apr 14 09:57:39 2022

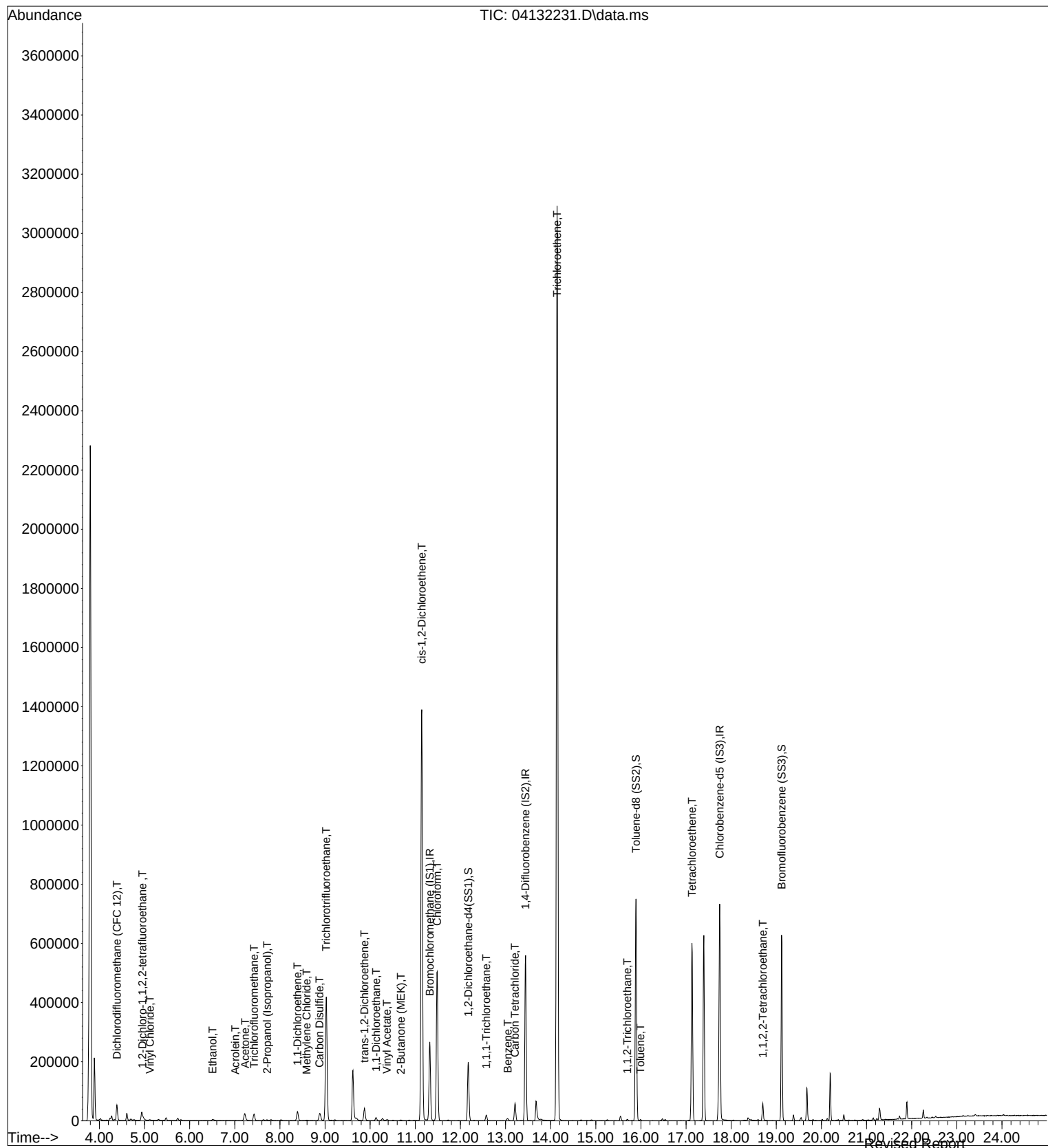
Quant Method : I:\MS13\METHODS\R13032822.M

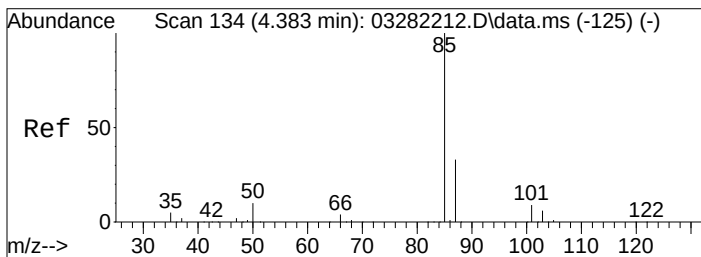
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

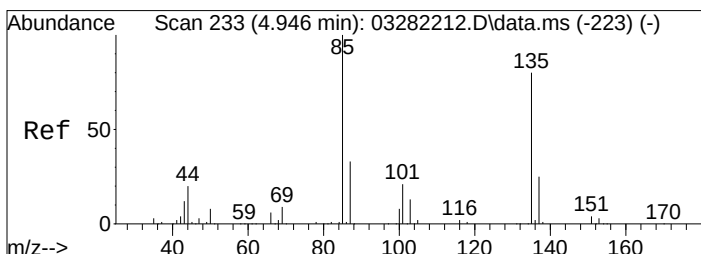
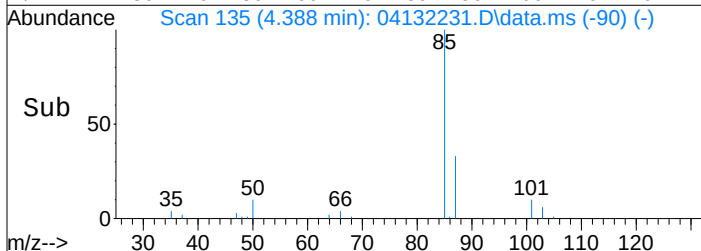
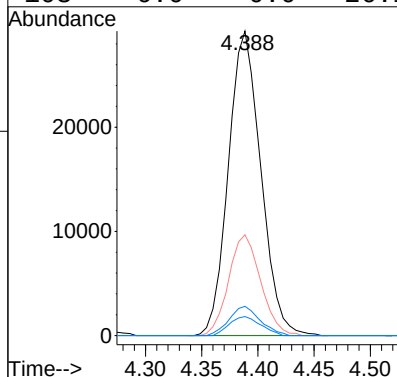
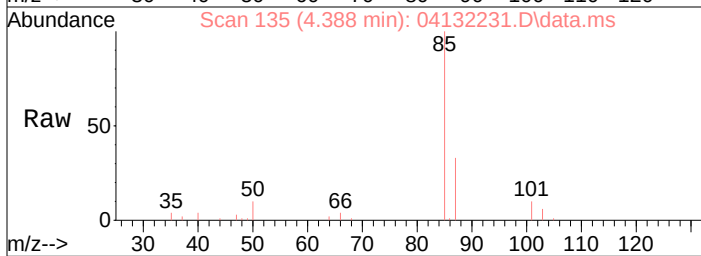
DataAcq Meth:TO15.M





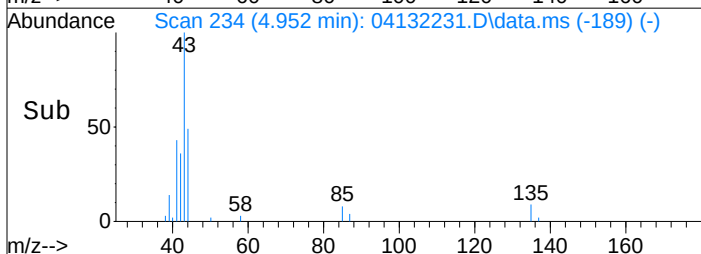
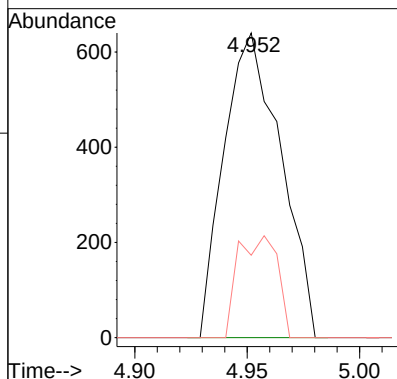
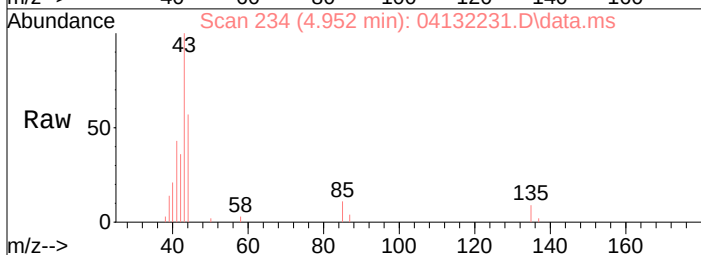
#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.64 ng
 RT: 4.39 min Scan# 135
 Delta R.T. 0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

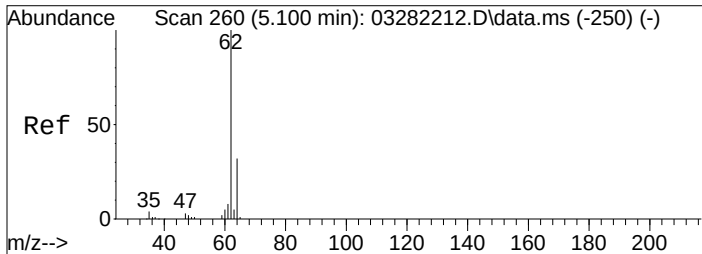
Tgt Ion:	85	Resp:	58920
Ion Ratio	Lower	Upper	
85	100		
87	32.6	12.5	52.5
101	9.2	0.0	29.3
103	6.0	0.0	26.1



#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.09 ng
 RT: 4.95 min Scan# 234
 Delta R.T. 0.005 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

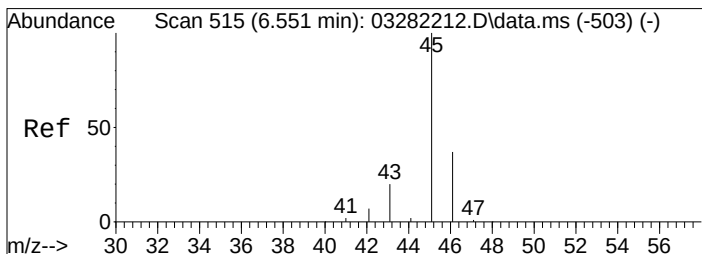
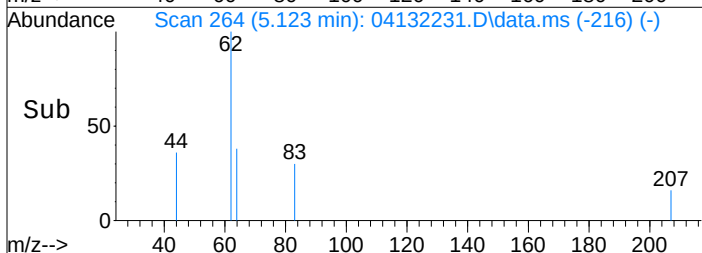
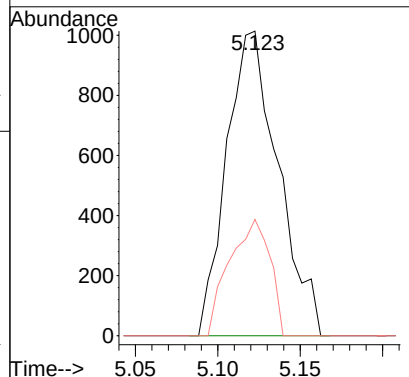
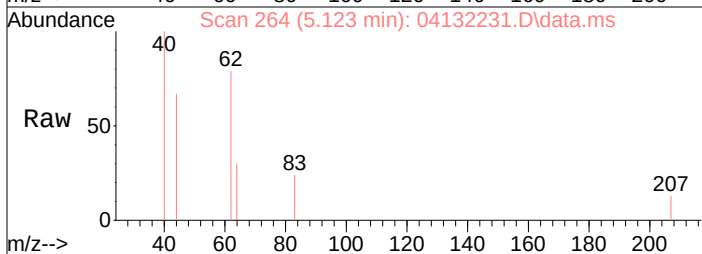
Tgt Ion:	135	Resp:	1124
Ion Ratio	Lower	Upper	
135	100		
137	23.3	12.2	52.2





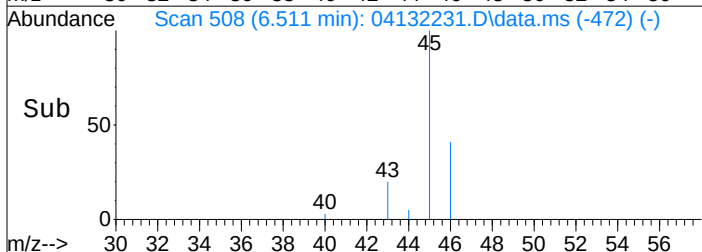
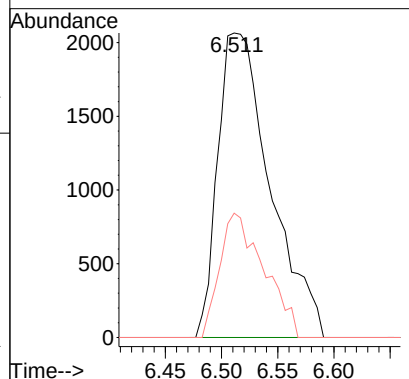
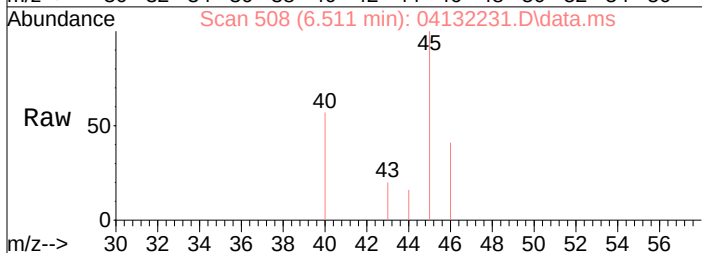
#6
 Vinyl Chloride
 Concen: 0.13 ng
 RT: 5.12 min Scan# 264
 Delta R.T. 0.023 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

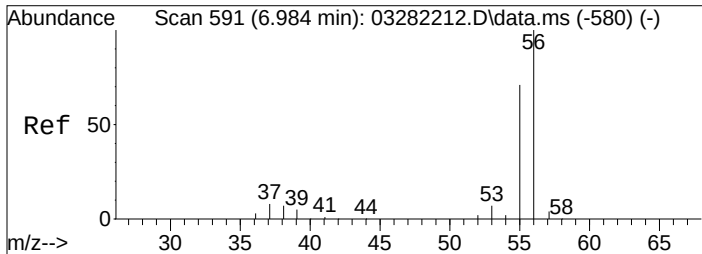
Tgt Ion: 62 Resp: 2208
 Ion Ratio Lower Upper
 62 100
 64 30.1 11.9 51.9



#10
 Ethanol
 Concen: 0.85 ng
 RT: 6.51 min Scan# 508
 Delta R.T. -0.046 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

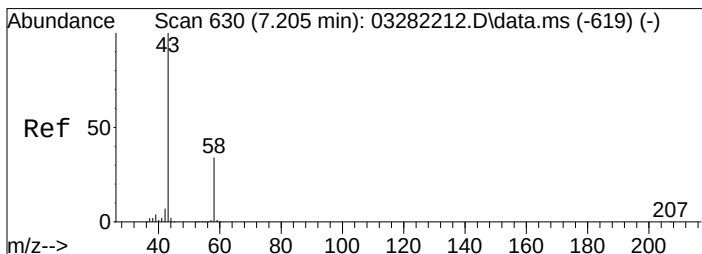
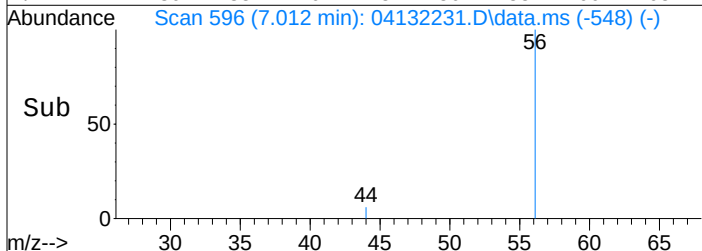
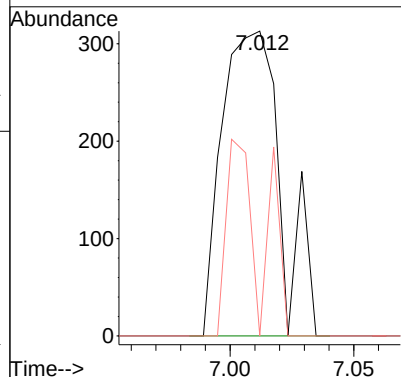
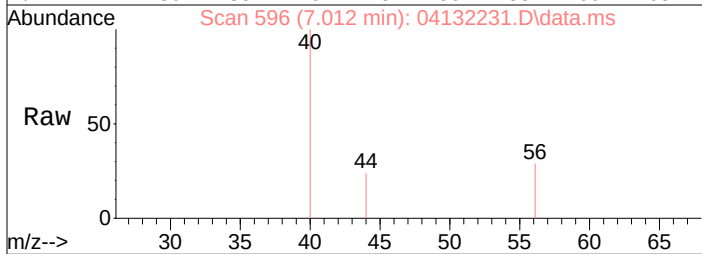
Tgt Ion: 45 Resp: 6719
 Ion Ratio Lower Upper
 45 100
 46 34.4 17.2 57.2





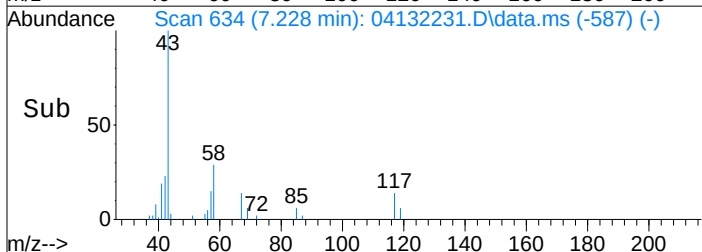
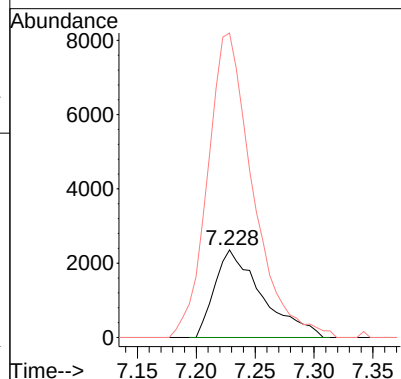
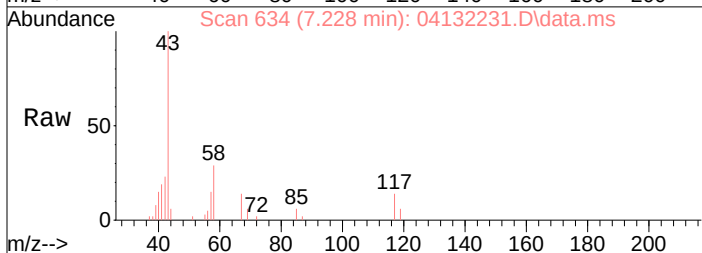
#12
 Acrolein
 Concen: 0.08 ng
 RT: 7.01 min Scan# 596
 Delta R.T. 0.023 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

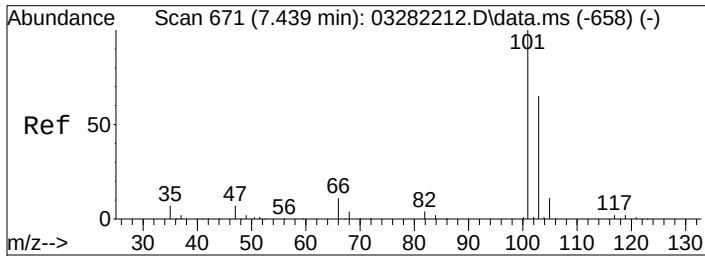
Tgt Ion	Ratio	Resp	Lower	Upper
56	100			
55	38.3	50.0	90.0	



#13
 Acetone
 Concen: 0.82 ng
 RT: 7.23 min Scan# 634
 Delta R.T. 0.017 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

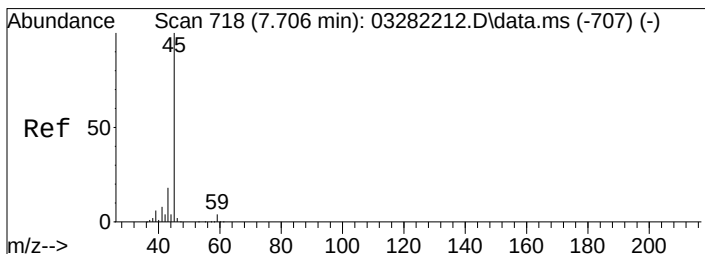
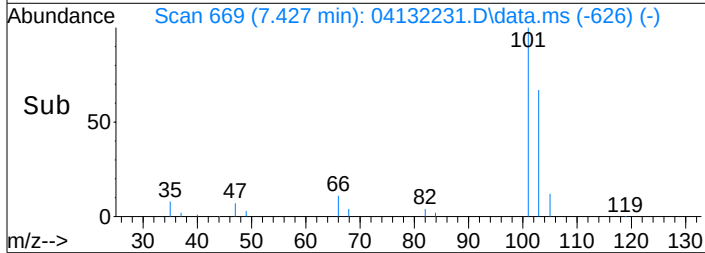
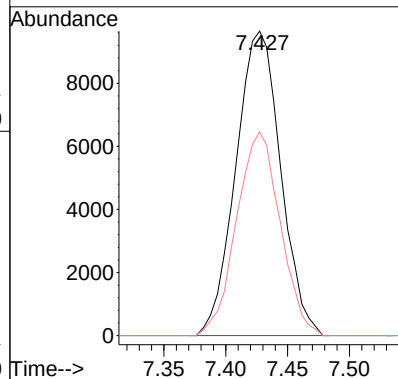
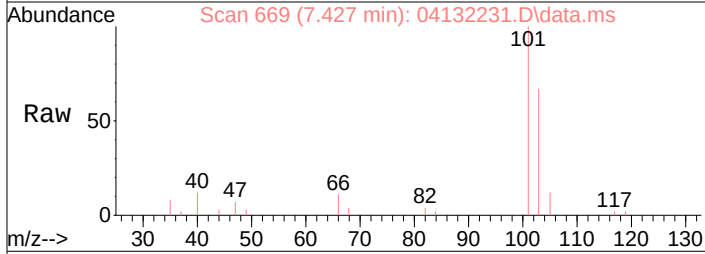
Tgt Ion	Ratio	Resp	Lower	Upper
58	100			
43	332.8	260.8	320.8	





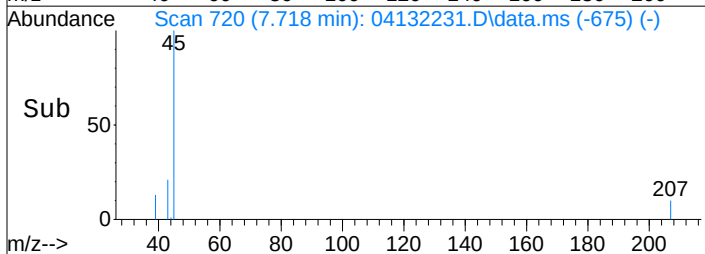
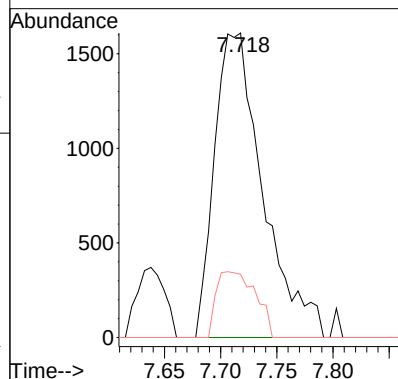
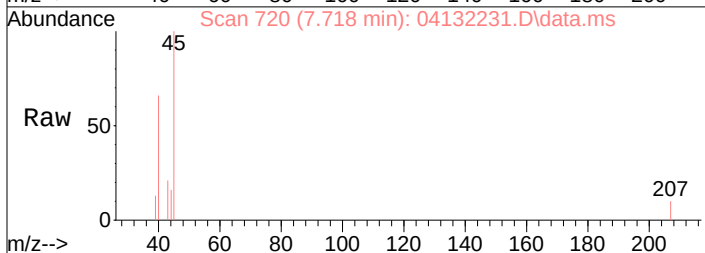
#14
 Trichlorofluoromethane
 Concen: 1.22 ng
 RT: 7.43 min Scan# 669
 Delta R.T. -0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

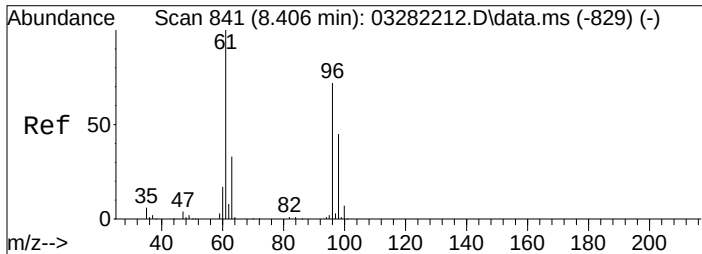
Tgt Ion: 101 Resp: 24445
 Ion Ratio Lower Upper
 101 100
 103 65.1 45.6 85.6



#15
 2-Propanol (Isopropanol)
 Concen: 0.19 ng
 RT: 7.72 min Scan# 720
 Delta R.T. 0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

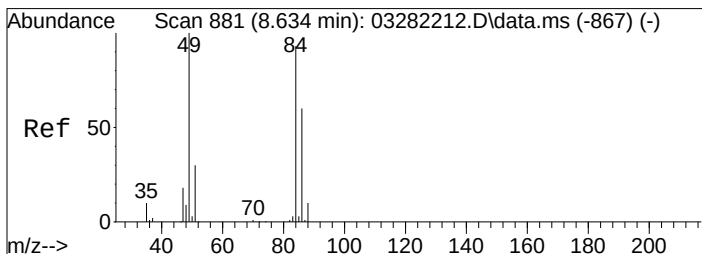
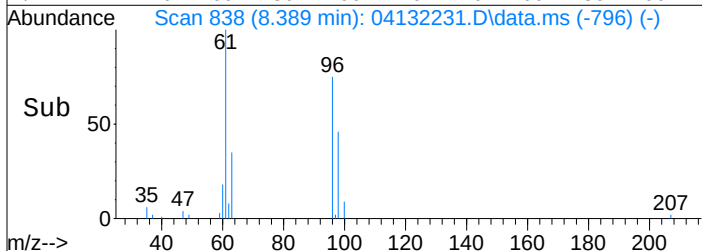
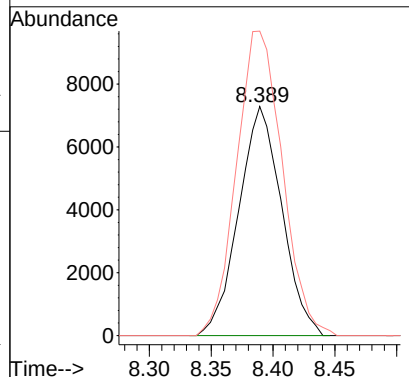
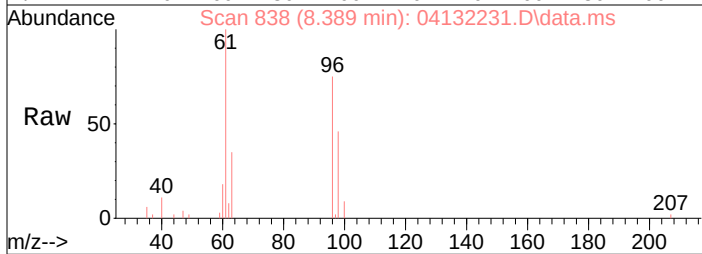
Tgt Ion: 45 Resp: 4829
 Ion Ratio Lower Upper
 45 100
 43 17.5 0.0 38.4





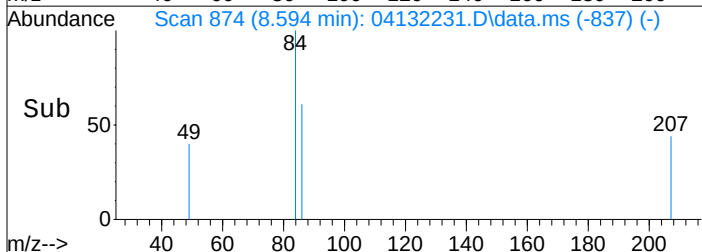
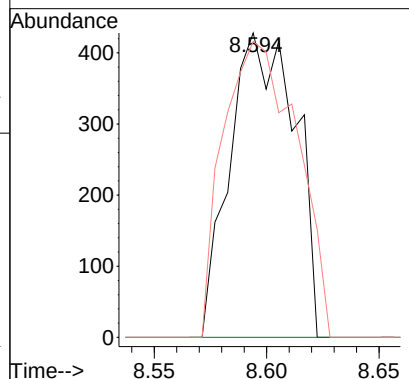
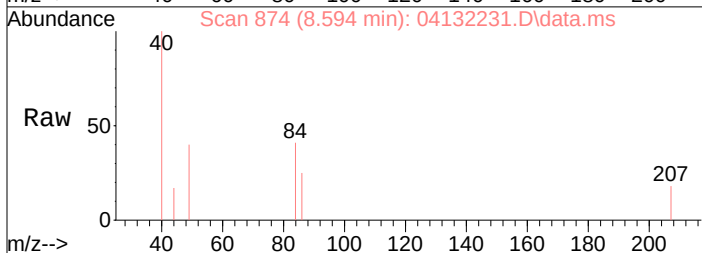
#17
 1,1-Dichloroethene
 Concen: 1.50 ng
 RT: 8.39 min Scan# 838
 Delta R.T. -0.012 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

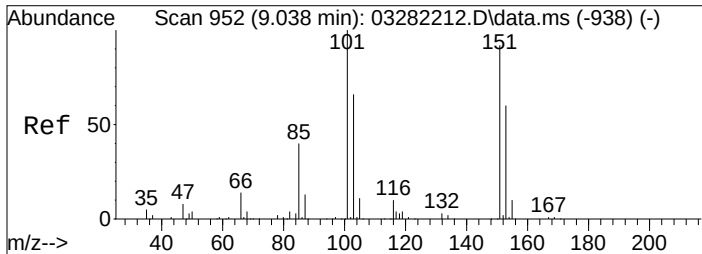
Tgt Ion: 96 Resp: 17707
 Ion Ratio Lower Upper
 96 100
 61 141.4 122.3 162.3



#19
 Methylene Chloride
 Concen: 0.07 ng
 RT: 8.59 min Scan# 874
 Delta R.T. -0.040 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

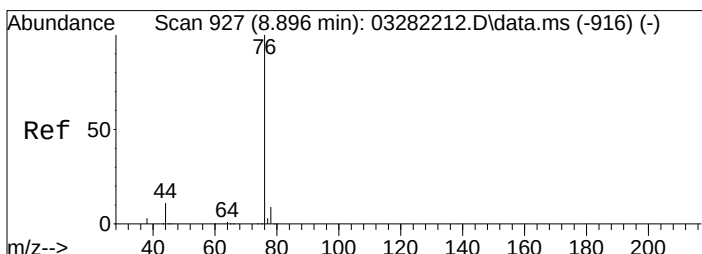
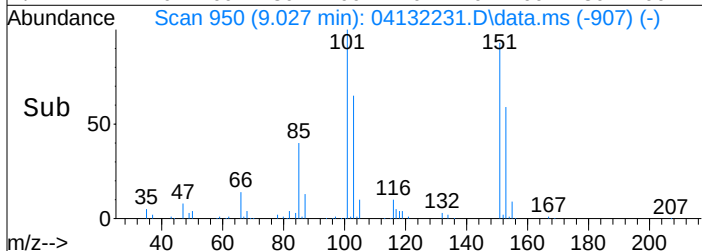
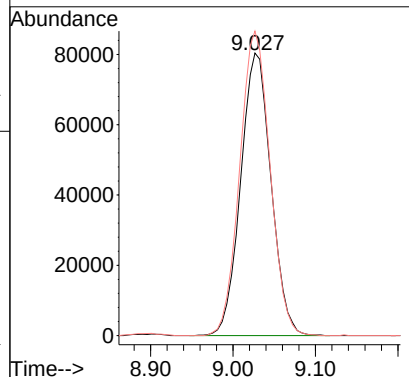
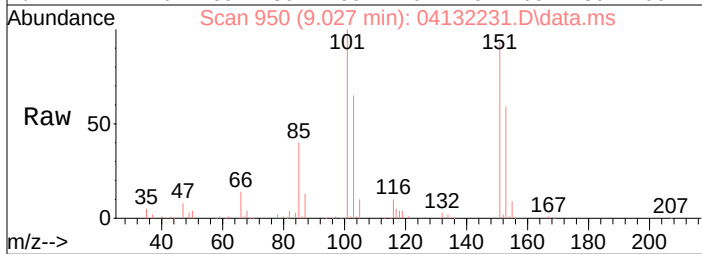
Tgt Ion: 84 Resp: 868
 Ion Ratio Lower Upper
 84 100
 49 109.4 83.9 133.9





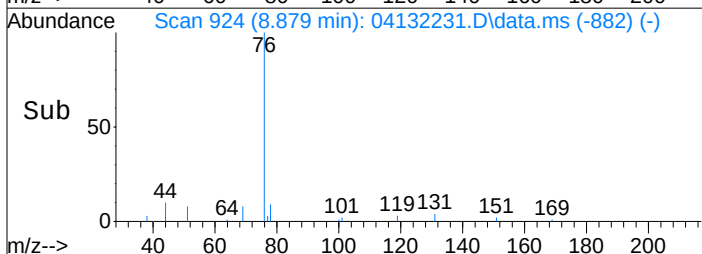
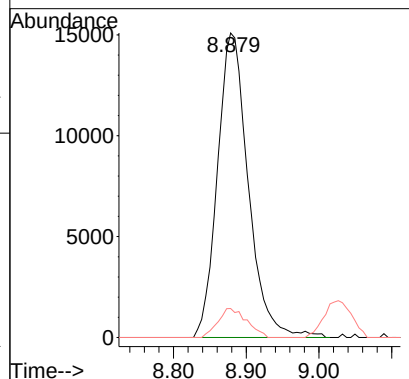
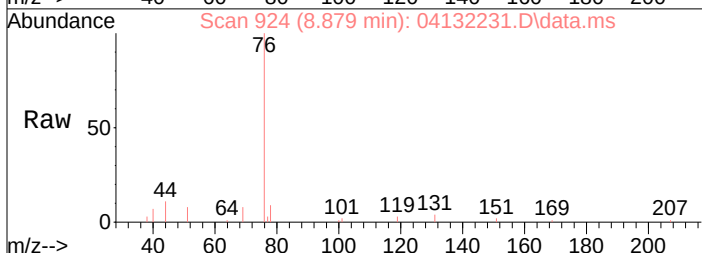
#21
 Trichlorotrifluoroethane
 Concen: 17.45 ng
 RT: 9.03 min Scan# 950
 Delta R.T. -0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

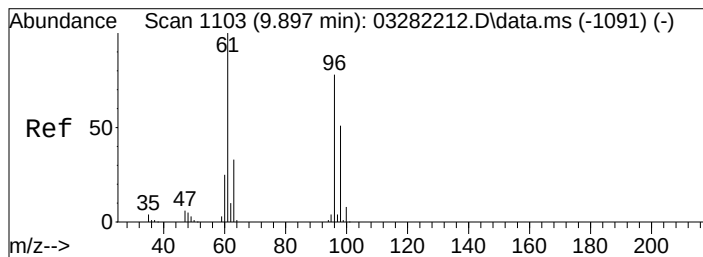
Tgt Ion:	151	Resp:	206066
Ion Ratio	Lower	Upper	
151	100		
101	107.6	88.7	128.7



#22
 Carbon Disulfide
 Concen: 0.96 ng
 RT: 8.88 min Scan# 924
 Delta R.T. -0.012 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

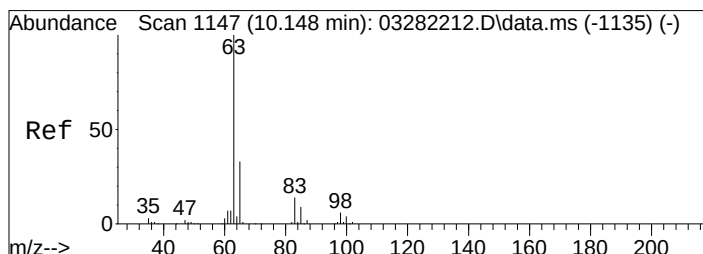
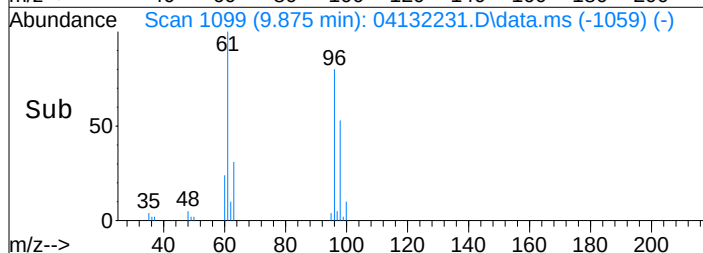
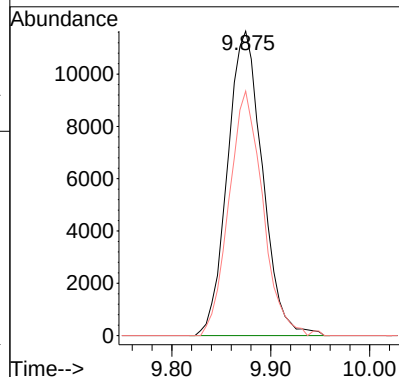
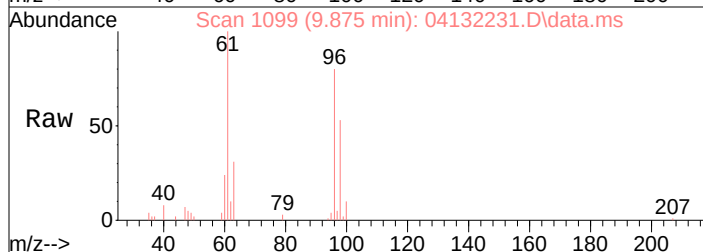
Tgt Ion:	76	Resp:	44440
Ion Ratio	Lower	Upper	
76	100		
78	8.9	0.0	29.1





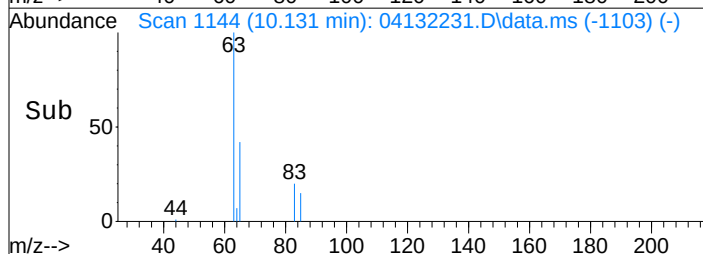
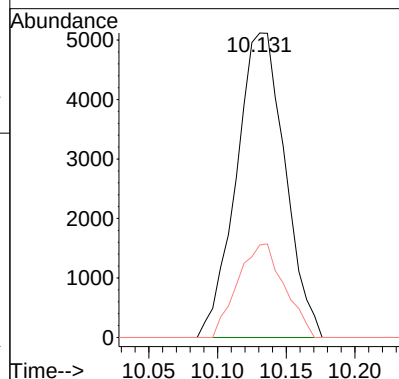
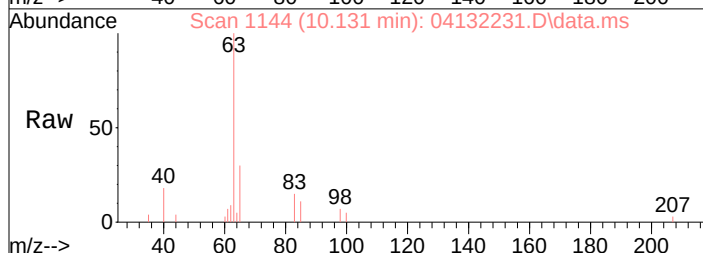
#23
 trans-1,2-Dichloroethene
 Concen: 1.87 ng
 RT: 9.87 min Scan# 1099
 Delta R.T. -0.023 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

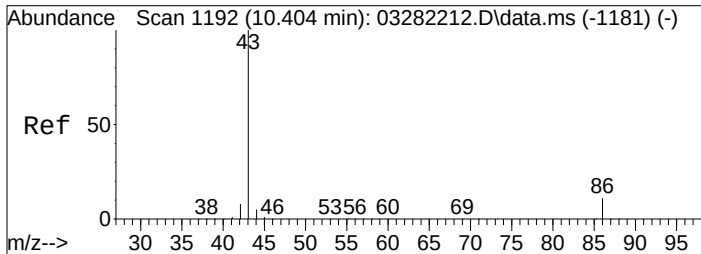
Tgt Ion: 61 Resp: 28565
 Ion Ratio Lower Upper
 61 100
 96 77.3 58.3 98.3



#24
 1,1-Dichloroethane
 Concen: 0.65 ng
 RT: 10.13 min Scan# 1144
 Delta R.T. -0.017 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

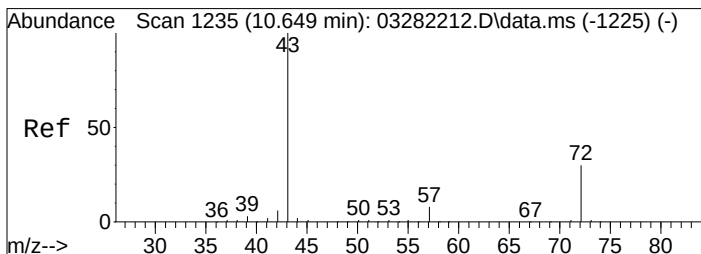
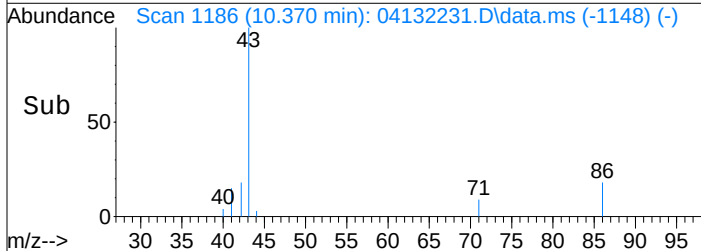
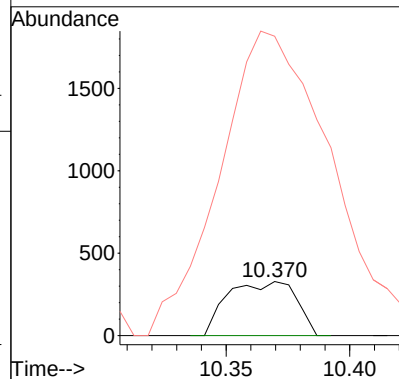
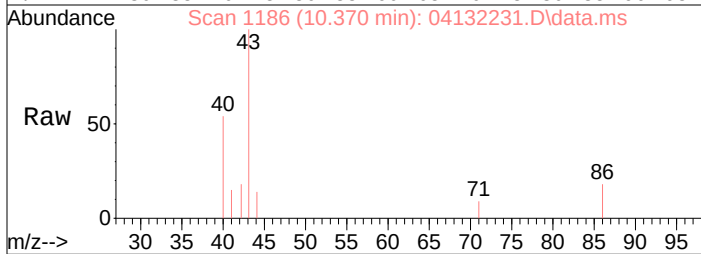
Tgt Ion: 63 Resp: 12613
 Ion Ratio Lower Upper
 63 100
 65 29.4 12.5 52.5





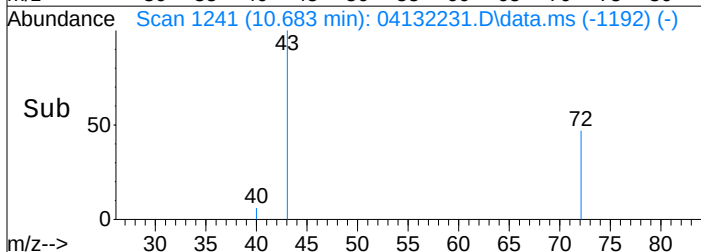
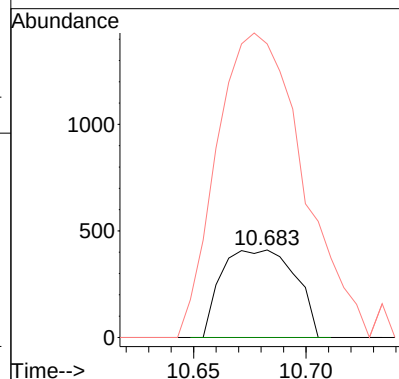
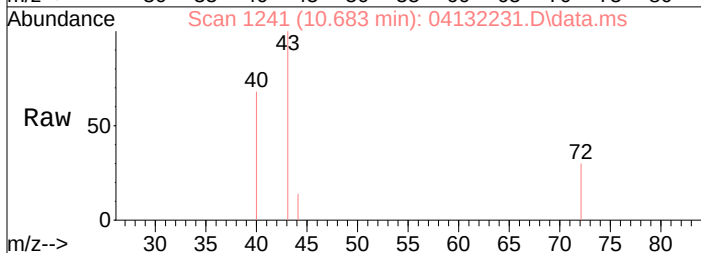
#26
Vinyl Acetate
Concen: 0.30 ng
RT: 10.37 min Scan# 1186
Delta R.T. -0.034 min
Lab File: 04132231.D
Acq: 13 Apr 2022 19:34

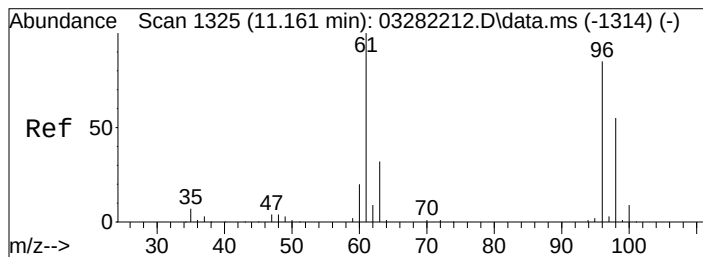
Tgt Ion	Ratio	Resp	Lower	Upper
86	100	633		
43	909.2	906.4	946.4	



#27
2-Butanone (MEK)
Concen: 0.12 ng
RT: 10.68 min Scan# 1241
Delta R.T. 0.028 min
Lab File: 04132231.D
Acq: 13 Apr 2022 19:34

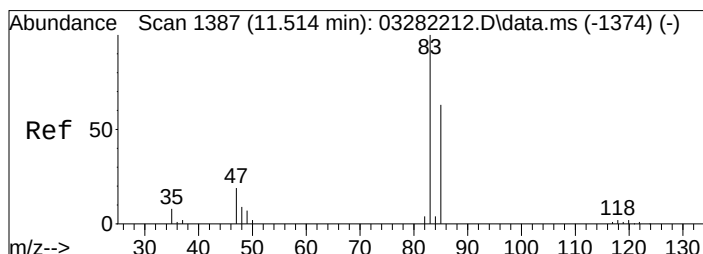
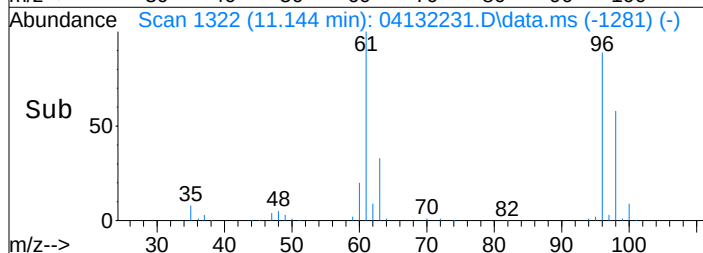
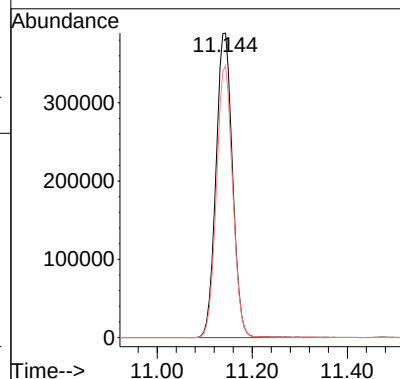
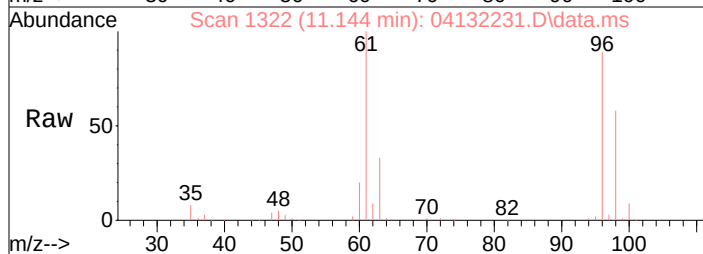
Tgt Ion	Ratio	Resp	Lower	Upper
72	100	938		
43	412.0	315.4	355.4#	





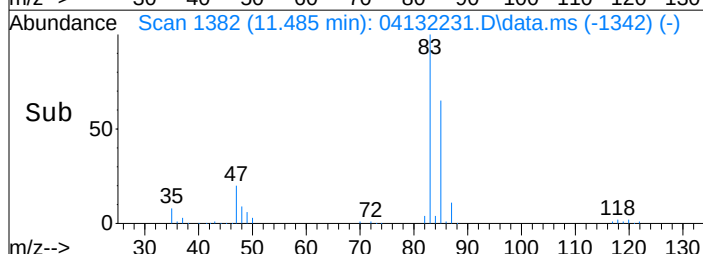
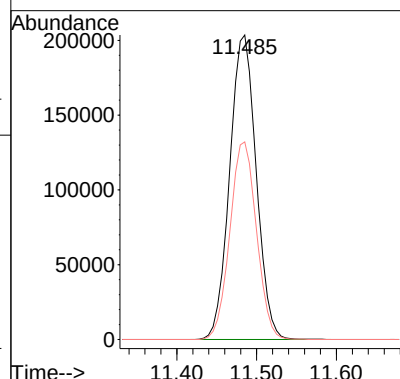
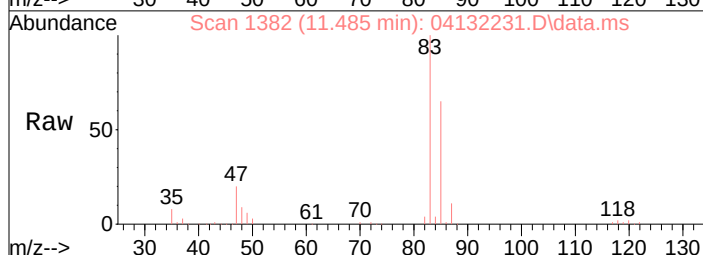
#28
 cis-1,2-Dichloroethene
 Concen: 62.31 ng
 RT: 11.14 min Scan# 1322
 Delta R.T. -0.017 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

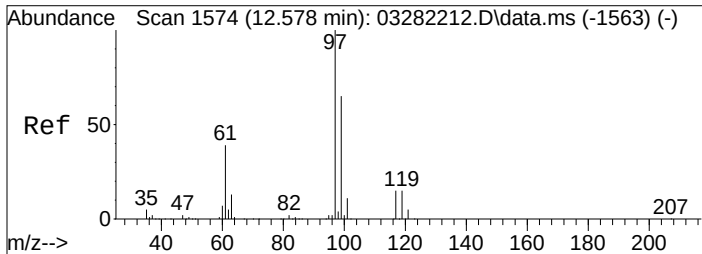
Tgt Ion: 61 Resp: 940925
 Ion Ratio Lower Upper
 61 100
 96 88.0 66.5 106.5



#32
 Chloroform
 Concen: 23.67 ng
 RT: 11.49 min Scan# 1382
 Delta R.T. -0.023 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

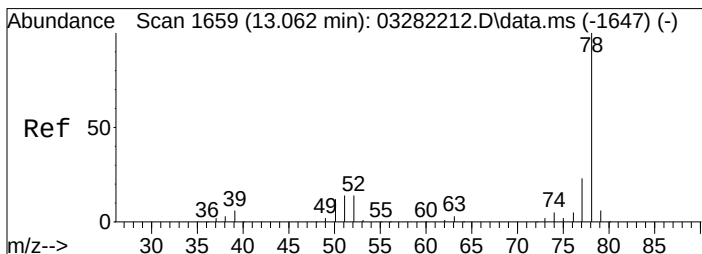
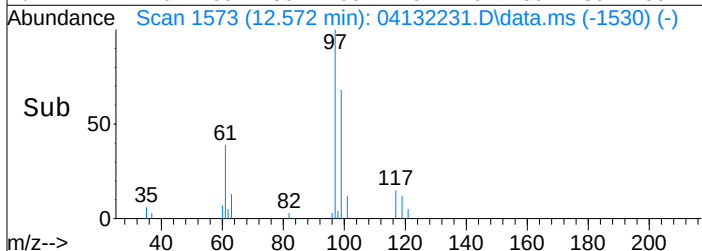
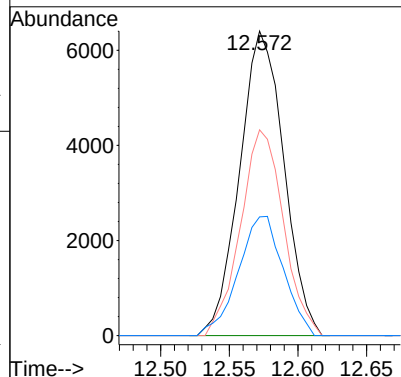
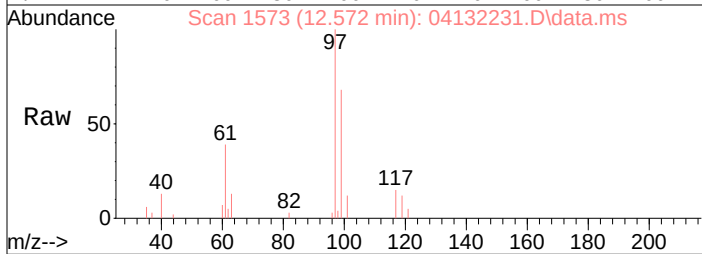
Tgt Ion: 83 Resp: 470827
 Ion Ratio Lower Upper
 83 100
 85 64.9 45.0 85.0





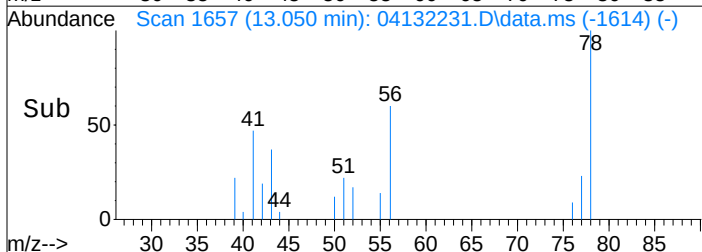
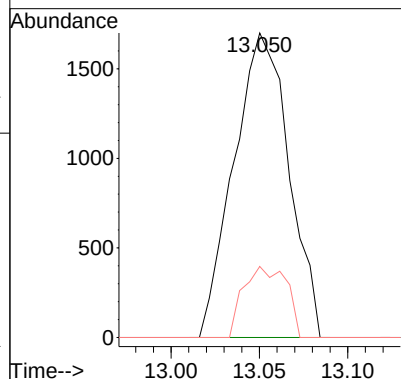
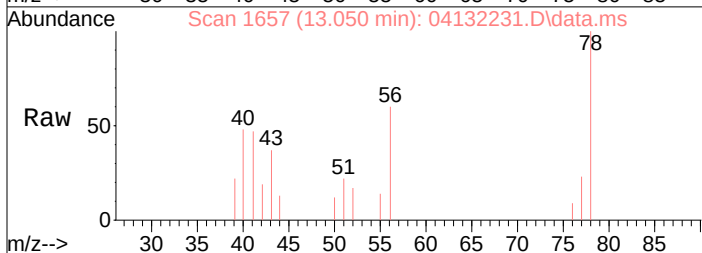
#38
 1,1,1-Trichloroethane
 Concen: 0.77 ng
 RT: 12.57 min Scan# 1573
 Delta R.T. -0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

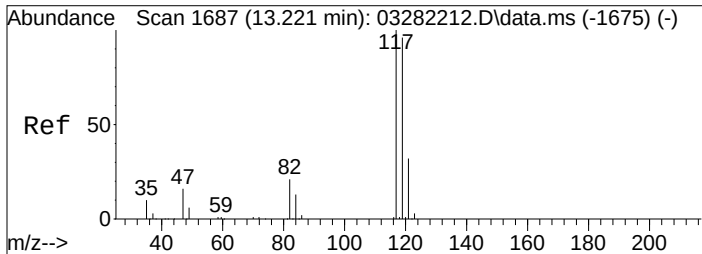
Tgt Ion:	97	Resp:	14360
Ion Ratio	Lower	Upper	
97	100		
99	65.6	44.6	84.6
61	39.8	18.9	58.9



#41
 Benzene
 Concen: 0.08 ng
 RT: 13.05 min Scan# 1657
 Delta R.T. -0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

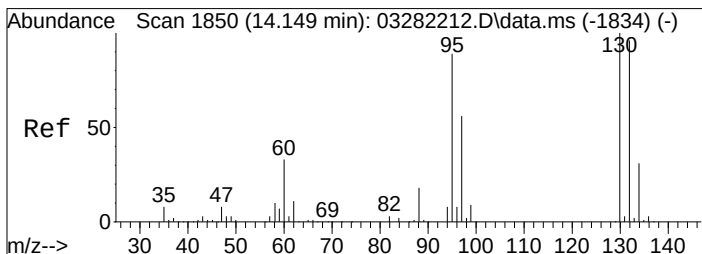
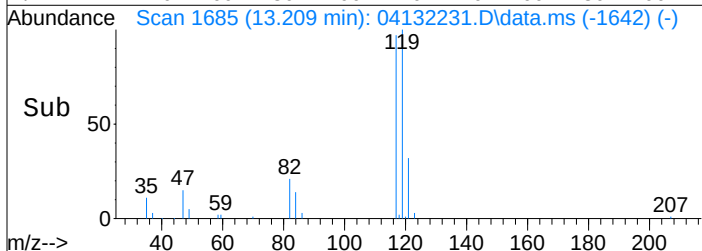
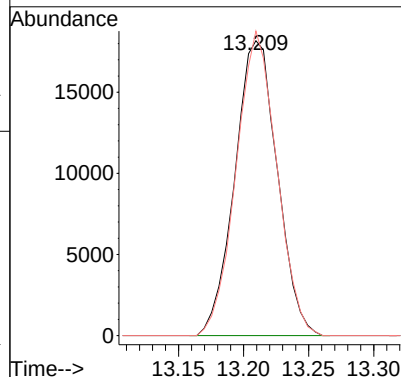
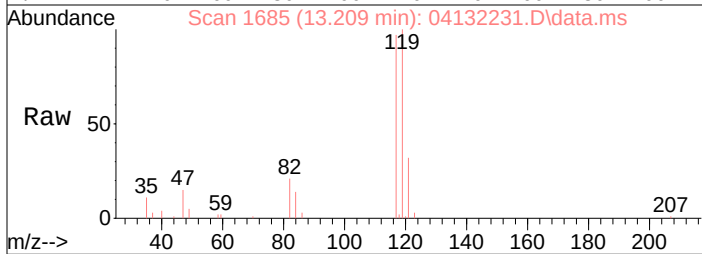
Tgt Ion:	78	Resp:	3682
Ion Ratio	Lower	Upper	
78	100		
77	18.3	3.3	43.3





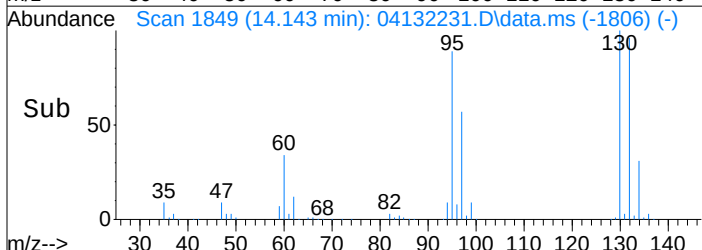
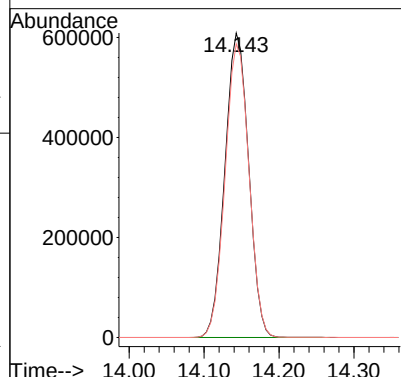
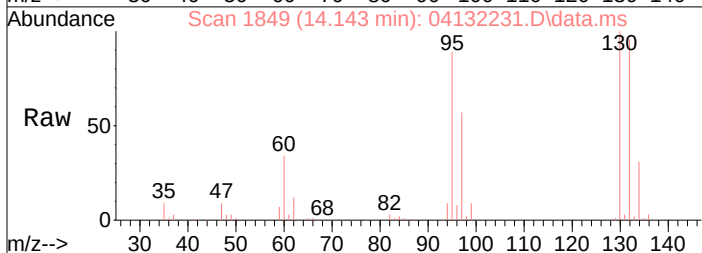
#42
Carbon Tetrachloride
Concen: 2.51 ng
RT: 13.21 min Scan# 1685
Delta R.T. -0.006 min
Lab File: 04132231.D
Acq: 13 Apr 2022 19:34

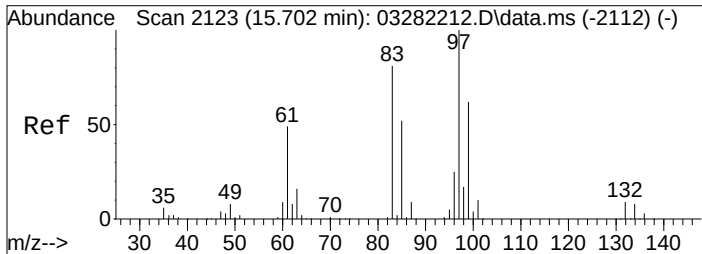
Tgt Ion:	117	Resp:	41400
Ion Ratio	Lower	Upper	
117	100		
119	98.3	76.4	116.4



#47
Trichloroethene
Concen: 88.59 ng
RT: 14.14 min Scan# 1849
Delta R.T. -0.006 min
Lab File: 04132231.D
Acq: 13 Apr 2022 19:34

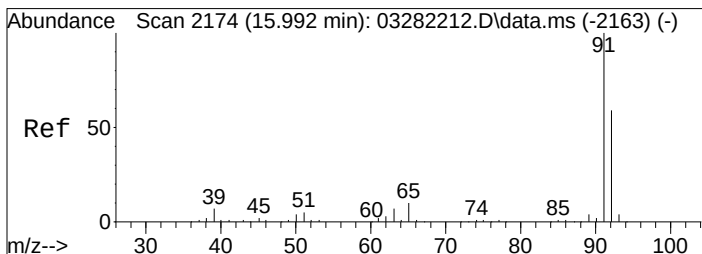
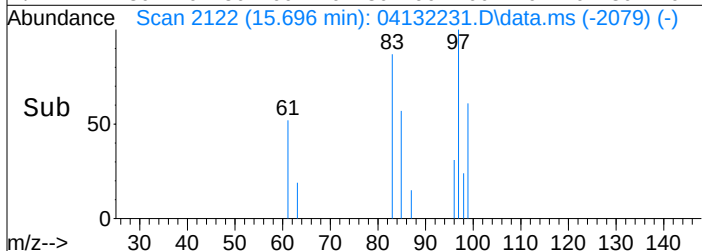
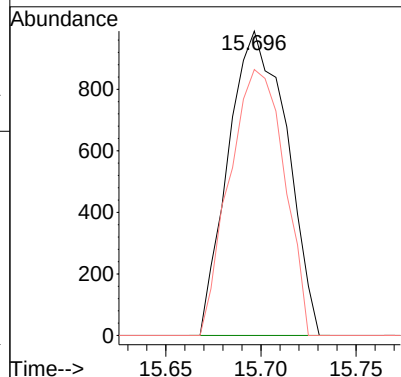
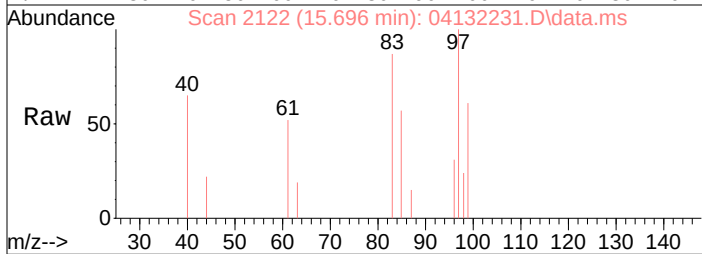
Tgt Ion:	130	Resp:	1341421
Ion Ratio	Lower	Upper	
130	100		
132	96.9	76.3	116.3





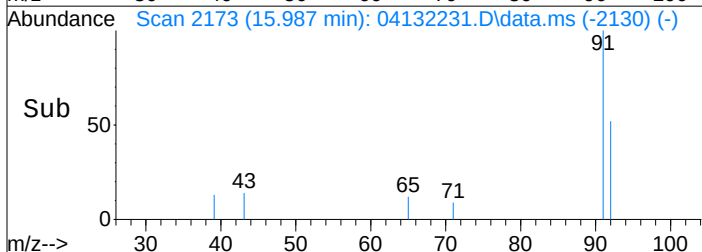
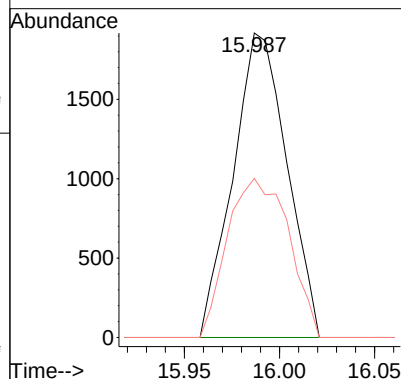
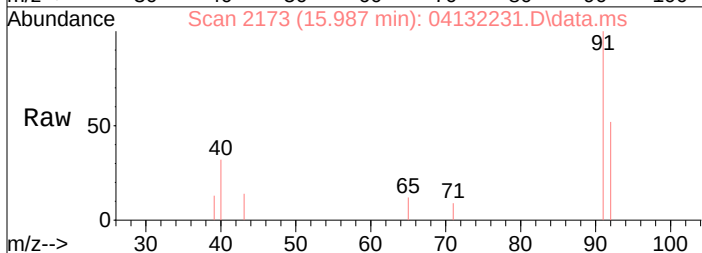
#55
 1,1,2-Trichloroethane
 Concen: 0.17 ng
 RT: 15.70 min Scan# 2122
 Delta R.T. -0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

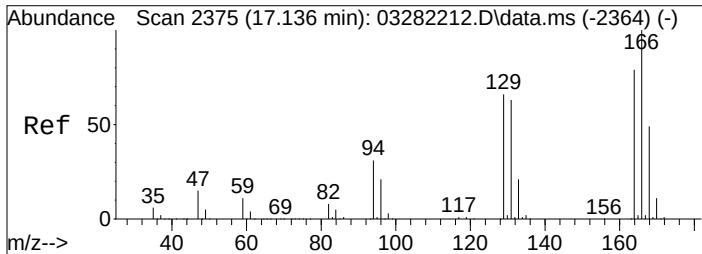
Tgt Ion: 97 Resp: 2106
 Ion Ratio Lower Upper
 97 100
 83 82.2 62.0 102.0



#58
 Toluene
 Concen: 0.08 ng
 RT: 15.99 min Scan# 2173
 Delta R.T. -0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

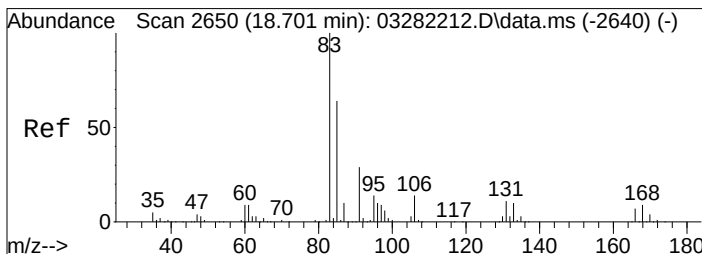
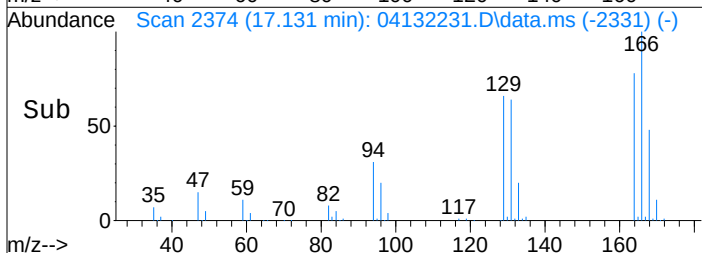
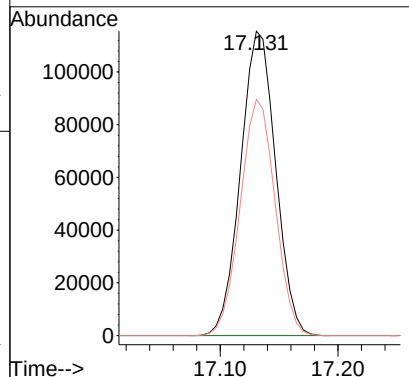
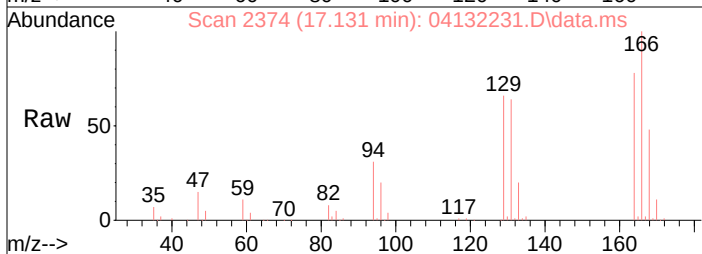
Tgt Ion: 91 Resp: 3764
 Ion Ratio Lower Upper
 91 100
 92 59.5 39.5 79.5





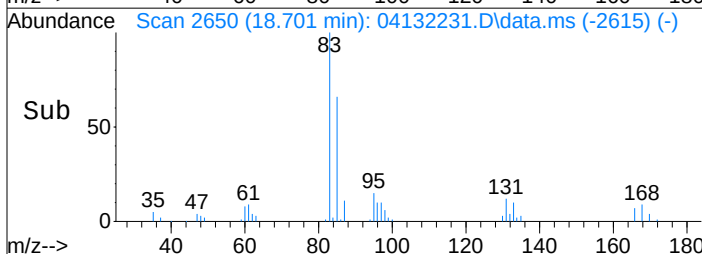
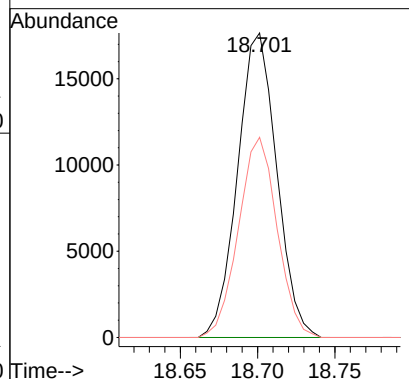
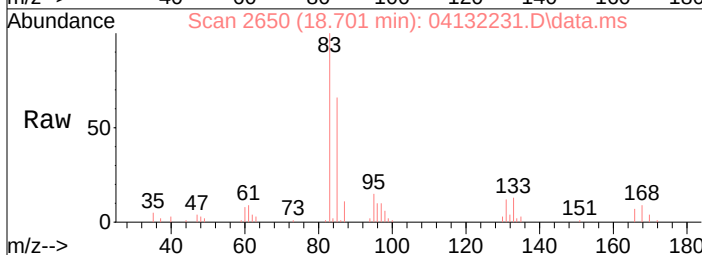
#64
 Tetrachloroethene
 Concen: 13.98 ng
 RT: 17.13 min Scan# 2374
 Delta R.T. -0.006 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

Tgt Ion:	166	Resp:	239485
Ion Ratio	Lower	Upper	
166	100		
164	77.4	57.9	97.9



#72
 1,1,2,2-Tetrachloroethane
 Concen: 1.48 ng
 RT: 18.70 min Scan# 2650
 Delta R.T. -0.000 min
 Lab File: 04132231.D
 Acq: 13 Apr 2022 19:34

Tgt Ion:	83	Resp:	31182
Ion Ratio	Lower	Upper	
83	100		
85	65.0	44.8	84.8



Method Path : I:\MS13\METHODS\
 Method File : R13032822.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Tue Mar 29 07:57:55 2022
 Response Via : Initial Calibration

T2 3/29/22

Calibration Files

0.1 =03282207.D 0.2 =03282208.D 0.5 =03282209.D 1.0 =03282210.D 5.0 =03282211.D 25 =03282212.D 50 =03282213.D
 100 =03282214.D

Compound		0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD

1) IR	Bromochloromethane...	-----ISTD-----									
2) T	Propene	1.112	1.109	1.029	1.055	1.083	1.039	1.004	0.962	1.049	4.95
3) T	Dichlorodifluo...	2.404	2.217	2.039	2.078	1.990	2.033	2.056	1.774	2.074	8.73
4) T	Chloromethane	1.824	1.591	1.487	1.467	1.175	1.530	1.346		1.488	13.54
5) T	1,2-Dichloro-1...	1.407	1.293	1.197	1.190	1.168	1.221	1.187	1.031	1.212	8.85
6) T	Vinyl Chloride	1.833	1.673	1.560	1.655	1.648	1.696	1.628	1.313	1.626	9.10
7) T	1,3-Butadiene	1.188	1.137	1.118	1.142	1.182	1.211	1.170	1.082	1.154	3.63
8) T	Bromomethane	0.988	1.062	0.919	0.987	0.963	0.995	0.950	0.905	0.971	5.07
9) T	Chloroethane	0.786	0.742	0.740	0.722	0.725	0.731	0.714	0.677	0.730	4.19
10) T	Ethanol	0.909	0.767	0.743	0.732	0.736	0.701	0.676	0.627	0.736	11.23
11) T	Acetonitrile	2.033	1.736	1.685	1.765	1.838	1.810	1.786	1.722	1.797	5.97
12) T	Acrolein	0.635	0.652	0.602	0.625	0.641	0.654	0.636	0.610	0.632	2.95
13) T	Acetone	0.975	0.867	0.748	0.746	0.722	0.699	0.642	0.556	0.744	17.33
14) T	Trichlorofluor...	2.137	2.016	1.815	1.857	1.807	1.828	1.751	1.688	1.862	7.82
15) T	2-Propanol (Is...	2.719	2.514	2.327	2.392	2.286	2.454	2.298	2.065	2.382	8.03
16) T	Acrylonitrile	1.276	1.300	1.236	1.256	1.285	1.301	1.259	1.200	1.264	2.71
17) T	1,1-Dichloroet...	1.271	1.136	1.077	1.055	1.061	1.086	1.057	1.024	1.096	7.11
18) T	2-Methyl-2-Pro...	2.513	2.430	2.389	2.420	1.946	2.535	2.130	1.407	2.221	17.36
19) T	Methylene Chlo...	1.399	1.301	1.160	1.137	1.104	1.129	1.098	1.042	1.171	10.11
20) T	3-Chloro-1-pro...	1.428	1.331	1.302	1.313	1.350	1.420	1.377	1.317	1.355	3.60
21) T	Trichlorotrifl...	1.296	1.216	1.034	1.071	1.045	1.078	1.035	1.001	1.097	9.41
22) T	Carbon Disulfide	5.876	4.974	4.219	4.031	3.926	4.025	3.839	3.505	4.299	17.75
23) T	trans-1,2-Dich...	1.452	1.399	1.379	1.397	1.419	1.484	1.431	1.371	1.416	2.69
24) T	1,1-Dichloroet...	1.954	1.887	1.854	1.827	1.788	1.810	1.734	1.652	1.813	5.11
25) T	Methyl tert-Bu...	3.390	3.085	3.022	3.013	3.028	3.258	2.915	2.106	2.977	12.88
26) T	Vinyl Acetate	0.152	0.169	0.183	0.202	0.216	0.234	0.225	0.207	0.198	14.29
27) T	2-Butanone (MEK)	0.706	0.688	0.684	0.696	0.720	0.749	0.719	0.664	0.703	3.73
28) T	cis-1,2-Dichlo...	1.487	1.437	1.358	1.391	1.384	1.444	1.394	1.326	1.403	3.67
29) T	Diisopropyl Ether	1.112	1.051	0.984	0.996	0.981	0.958	0.773	0.631	0.936	16.75
30) T	Ethyl Acetate	0.411	0.438	0.422	0.421	0.410	0.386	0.326	0.264	0.385	15.51
31) T	n-Hexane	1.973	1.805	1.673	1.690	1.668	1.595	1.420	1.200	1.628	14.40
32) T	Chloroform	2.084	1.956	1.870	1.787	1.754	1.843	1.781	1.706	1.848	6.62
33) S	1,2-Dichloroet...	1.288	1.293	1.291	1.301	1.301	1.282	1.283	1.255	1.286	1.13
34) T	Tetrahydrofura...	0.841	0.745	0.665	0.679	0.678	0.712	0.686	0.638	0.706	8.98
35) T	Ethyl tert-But...	1.309	1.260	1.210	1.273	1.303	1.360	1.293	1.164	1.272	4.81
36) T	1,2-Dichloroet...	1.530	1.397	1.297	1.340	1.316	1.346	1.298	1.247	1.346	6.39
37) IR	1,4-Difluorobenzen...	-----ISTD-----									
38) T	1,1,1-Trichlor...	0.463	0.429	0.395	0.405	0.396	0.406	0.387	0.365	0.406	7.23

39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	1.253	1.117	1.036	1.020	1.007	1.035	0.982	0.919	1.046	9.61
42)	T	Carbon Tetrach...	0.380	0.379	0.358	0.360	0.358	0.365	0.350	0.333	0.360	4.25
43)	T	Cyclohexane	0.439	0.408	0.388	0.395	0.397	0.407	0.374	0.327	0.392	8.25
44)	T	tert-Amyl Meth...	0.792	0.747	0.683	0.694	0.714	0.736	0.684	0.599	0.706	8.06
45)	T	1,2-Dichloropr...	0.288	0.273	0.249	0.257	0.252	0.255	0.242	0.230	0.256	7.07
46)	T	Bromodichlorom...	0.390	0.385	0.354	0.349	0.352	0.361	0.345	0.331	0.359	5.61
47)	T	Trichloroethene	0.381	0.342	0.320	0.327	0.322	0.333	0.318	0.299	0.330	7.29
48)	T	1,4-Dioxane	0.218	0.213	0.195	0.208	0.216	0.227	0.217	0.204	0.212	4.63
49)	T	2,2,4-Trimethy...	1.186	1.089	1.009	1.024	1.023	1.030	0.963	0.881	1.026	8.65
50)	T	Methyl Methacr...	0.106	0.106	0.102	0.110	0.112	0.120	0.114	0.105	0.109	5.33
51)	T	n-Heptane	0.267	0.251	0.247	0.253	0.259	0.269	0.253	0.234	0.254	4.34
52)	T	cis-1,3-Dichlo...	0.446	0.407	0.386	0.390	0.413	0.431	0.411	0.391	0.409	5.16
53)	T	4-Methyl-2-pen...	0.205	0.200	0.201	0.213	0.221	0.226	0.207	0.183	0.207	6.46
54)	T	trans-1,3-Dich...	0.365	0.348	0.338	0.350	0.383	0.410	0.394	0.378	0.371	6.66
55)	T	1,1,2-Trichlor...	0.308	0.288	0.270	0.274	0.274	0.281	0.265	0.252	0.276	5.98
56)	IR	Chlorobenzene-d5 (...)	-----ISTD-----									
57)	S	Toluene-d8 (SS2)	7.487	7.463	7.588	7.647	7.503	7.508	7.604	7.500	7.538	0.87
58)	T	Toluene	8.909	8.088	7.493	7.550	7.397	7.705	7.390	6.769	7.663	8.14
59)	T	2-Hexanone	3.239	2.986	2.893	3.096	3.176	3.362	3.103	2.722	3.072	6.58
60)	T	Dibromochlorom...	2.348	2.390	2.214	2.332	2.314	2.434	2.366	2.259	2.332	3.03
61)	T	1,2-Dibromoethane	2.376	2.280	2.089	2.114	2.127	2.201	2.144	2.065	2.175	4.88
62)	T	n-Butyl Acetate	3.460	3.281	3.109	3.380	3.507	3.725	3.442	2.989	3.362	6.92
63)	T	n-Octane	1.458	1.470	1.405	1.467	1.441	1.480	1.390	1.265	1.422	5.00
64)	T	Tetrachloroethene	3.073	2.787	2.599	2.607	2.463	2.591	2.517	2.376	2.627	8.25
65)	T	Chlorobenzene	6.570	5.845	5.280	5.385	5.229	5.430	5.142	4.628	5.439	10.45
66)	T	Ethylbenzene	9.658	8.762	8.223	8.422	8.392	8.894	8.441	7.668	8.557	6.74
67)	T	m- & p-Xylenes	7.392	6.845	6.501	6.625	6.562	6.837	6.449	5.648	6.607	7.42
68)	T	Bromoform	2.427	2.177	2.101	2.118	2.164	2.339	2.280	2.187	2.224	5.13
69)	T	Styrene	5.439	4.997	4.803	5.060	5.421	5.816	5.619	5.134	5.286	6.49
70)	T	o-Xylene	7.311	6.694	6.576	6.679	6.693	6.951	6.609	5.908	6.678	5.89
71)	T	n-Nonane	3.416	3.142	2.983	3.138	3.147	3.158	2.917	2.521	3.053	8.52
72)	T	1,1,2,2-Tetrac...	3.717	3.458	3.239	3.290	3.173	3.248	3.055	2.720	3.238	8.94
73)	S	Bromofluoroben...	2.794	2.780	2.751	2.792	2.834	2.884	2.832	2.813	2.810	1.44
74)	T	Cumene	1.054	0.931	0.874	0.887	0.891	0.932	0.876	0.772	0.902	E1 8.76
75)	T	alpha-Pinene	4.313	4.035	3.729	3.944	4.291	4.533	4.359	3.928	4.142	6.57
76)	T	n-Propylbenzene	1.206	1.090	1.012	1.051	1.045	1.088	1.018	0.884	1.049	E1 8.62
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	9.827	8.748	8.287	8.735	8.769	9.214	8.716	7.706	8.750	7.07
79)	T	1,3,5-Trimethy...	7.858	7.419	7.031	7.291	7.236	7.646	7.286	6.495	7.283	5.61
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	7.941	7.284	7.052	7.393	7.573	7.773	7.022	5.724	7.220	9.50
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride	5.324	4.943	4.620	4.978	5.524	6.421	5.968	4.807	5.323	11.64
85)	T	1,3-Dichlorobe...	6.002	5.434	4.744	4.857	4.734	5.001	4.658	3.861	4.911	12.64
86)	T	1,4-Dichlorobe...	5.957	5.115	4.665	4.837	4.705	5.049	4.902	4.459	4.961	9.16
87)	T	sec-Butylbenzene	1.140	1.014	0.974	1.016	1.013	1.059	0.992	0.848	1.007	E1 8.14
88)	T	4-Isopropyltol...	9.495	8.610	8.377	8.816	8.971	9.464	8.863	7.585	8.773	7.00
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	5.732	5.013	4.691	4.690	4.611	4.811	4.461	3.665	4.709	12.20
91)	T	d-Limonene	2.397	2.282	2.343	2.448	2.618	2.715	2.453	1.943	2.400	9.69

92)	T	1,2-Dibromo-3-...	2.052	1.877	1.711	1.825	1.873	2.001	1.912	1.671	1.865	6.98
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	5.113	4.075	3.592	3.788	3.883	4.181	3.921	3.251	3.976	13.66
95)	T	Naphthalene	1.391	1.019	0.917	0.996	1.044	1.133	1.110	0.980	1.074	E1 13.58
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	3.250	2.994	2.607	2.668	2.656	2.843	2.795	2.625	2.805	7.95
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	8.315	7.431	7.209	7.485	7.576	7.658	6.838	5.545	7.257	11.14
100)	T	n-Butylbenzene	8.440	7.765	7.393	7.741	7.910	8.304	7.807	6.719	7.760	6.89
101)	T	1,1,1,2-Tetrac...	2.345	2.149	2.037	2.035	1.943	2.042	1.949	1.770	2.034	8.21

 (#) = Out of Range

R13032822.M Tue Mar 29 08:18:27 2022

Primary Source Standards Concentrations (Working & Initial Calibration)

T2 3/29/22

1ng/L Std. ID:

40ng/L Std. ID:

4ng/L Std. ID: S35-03282203

200ng/L Std. ID: S35-03282201

20ng/L Std. ID: S35-03282202

1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
	1	5	25	50	250	1000			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/m ³	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	1.04	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
Dichlorodifluoromethane	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
Chloromethane	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
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	1.04	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-Butadiene	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
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	1.02	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
Ethanol	3.62	3620	724	144.8	72.4	14.48	3.62		0.362	0.724	1.810	3.62	18.10	90.50	181.0	362
Acetonitrile	0.93	930	186	37.2	18.6	3.72	0.93		0.093	0.186	0.465	0.93	4.65	23.25	46.5	93
Acrolein	2.00	2000	400	80.0	40.0	8.00	2.00		0.200	0.400	1.000	2.00	10.00	50.00	100.0	200
Acetone	5.19	5190	1038	207.6	103.8	20.76	5.19		0.519	1.038	2.595	5.19	25.95	129.75	259.5	519
Trichlorofluoromethane	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
Isopropanol	2.02	2020	404	80.8	40.4	8.08	2.02		0.202	0.404	1.010	2.02	10.10	50.50	101.0	202
Acrylonitrile	2.03	2030	406	81.2	40.6	8.12	2.03		0.203	0.406	1.015	2.03	10.15	50.75	101.5	203
1,1-Dichloroethene	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
tert-Butanol	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
Methylene Chloride	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
Allyl Chloride	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
Trichlorotrifluoroethane	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
Carbon Disulfide	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-1,2-Dichloroethene	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
1,1-Dichloroethane	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
Methyl tert-Butyl Ether	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
Vinyl Acetate	3.40	3400	680	136.0	68.0	13.60	3.40		0.340	0.680	1.700	3.40	17.00	85.00	170.0	340
2-Butanone	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
cis-1,2-Dichloroethene	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
Diisopropyl Ether	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
Ethyl Acetate	4.08	4080	816	163.2	81.6	16.32	4.08		0.408	0.816	2.040	4.08	20.40	102.00	204.0	408
n-Hexane	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
Chloroform	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
Tetrahydrofuran	1.97	1970	394	78.8	39.4	7.88	1.97		0.197	0.394	0.985	1.97	9.85	49.25	98.5	197
Ethyl tert-Butyl 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-Dichloroethane	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
1,1,1-Trichloroethane	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
Benzene	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
Carbon Tetrachloride	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
Cyclohexane	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
tert-Amyl Methyl 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-Dichloropropane	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
Bromodichloromethane	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
Trichloroethene	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
1,4-Dioxane	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
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	2.08	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
n-Heptane	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

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:
 4ng/L Std. ID: S35-03282203
 20ng/L Std. ID: S35-03282202

40ng/L Std. ID:
 200ng/L Std. ID: S35-03282201
 1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
		1	5	25	50	250	1000		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/m ³	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	2.08	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
trans-1,3-Dichloropropene	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
1,1,2-Trichloroethane	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
Toluene	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
2-Hexanone	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
Dibromochloromethane	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
1,2-Dibromoethane	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
n-Butyl Acetate	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
n-Octane	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
Tetrachloroethene	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
Chlorobenzene	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
Ethylbenzene	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
m-&p-Xylene	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
Bromoform	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
Styrene	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
o-Xylene	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
n-Nonane	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
1,1,2,2-Tetrachloroethane	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
Cumene	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
alpha-Pinene	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-Propylbenzene	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-Ethyltoluene	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
1,3,5-Trimethylbenzene	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
1,2,4-Trimethylbenzene	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
Benzyl Chloride	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
1,3-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
1,4-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
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	1.05	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
d-Limonene	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
1,2-Dibromo-3-chloropropane	2.00	2000	400	80.0	40.0	8.00	2.00		0.200	0.400	1.000	2.00	10.00	50.00	100.0	200
1,2,4-Trichlorobenzene	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
Naphthalene	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
Hexachloro-1,3-butadiene	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
tert-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
n-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
1,1,1,2-Tetrachloroethane	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

Method : I:\MS13\METHODS\R13032822.M (RTE Integrator)
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Tue Mar 29 07:57:55 2022
 Response via : Initial Calibration

Tz 3/29/22

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS13\DATA\2022_03\28\03282207.D
2	0.2	0	13	I:\MS13\DATA\2022_03\28\03282208.D
3	0.5	1	13	I:\MS13\DATA\2022_03\28\03282209.D
4	1.0	1	13	I:\MS13\DATA\2022_03\28\03282210.D
5	5.0	5	13	I:\MS13\DATA\2022_03\28\03282211.D
6	25	26	13	I:\MS13\DATA\2022_03\28\03282212.D
7	50	52	13	I:\MS13\DATA\2022_03\28\03282213.D
8	100	104	13	I:\MS13\DATA\2022_03\28\03282214.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 14:25
2	0.2	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 14:59
3	0.5	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 15:33
4	1.0	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 16:07
5	5.0	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 16:40
6	25	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 17:14
7	50	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 17:48
8	100	Mar 29 07:57 2022	Mar 29 07:56 2022	28 Mar 2022 18:22

R13032822.M

Tue Mar 29 08:19:30 2022

Data File : I:\MS13\DATA\2022_03\28\03282207.D
 Acq On : 28 Mar 2022 14:25
 Sample : 0.1ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282203 (4/27)

Vial: 13
 Operator: TZ
 Inst : GCMS13

TZ 3/29/22

Quant Time: Mar 29 07:56:27 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	169995	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	711978	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	106319	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	218942	9.674	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	77.36%	
57) Toluene-d8 (SS2)	15.89	98	796056	14.949	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	119.60%	
73) Bromofluorobenzene (SS3)	19.12	174	297083	19.270	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	154.16%#	

Target Compounds

						Qvalue
2) Propene	4.28	42	1573	0.072	ng	# 83
3) Dichlorodifluoromethan...	4.43	85	3433	0.098	ng	# 95
4) Chloromethane	4.72	50	2530	0.099	ng	83
5) 1,2-Dichloro-1,1,2,2-t...	4.98	135	2066	0.126	ng	79
6) Vinyl Chloride	5.15	62	2592	0.094	ng	88
7) 1,3-Butadiene	5.42	54	1680	0.074	ng	94
8) Bromomethane	5.85	94	1371	0.088	ng	92
9) Chloroethane	6.19	64	1090	0.082	ng	# 42
10) Ethanol	6.52	45	4477	0.284	ng	88
11) Acetonitrile	6.80	41	2571	0.065	ng	# 1
12) Acrolein	6.99	56	1728	0.138	ng	100
13) Acetone	7.22	58	6879	0.476	ng	94
14) Trichlorofluoromethane	7.45	101	2994	0.096	ng	96
15) 2-Propanol (Isopropanol)	7.71	45	7470	0.151	ng	95
16) Acrylonitrile	7.96	53	3524	0.139	ng	94
17) 1,1-Dichloroethene	8.41	96	1850	0.108	ng	96
18) 2-Methyl-2-Propanol (t...	8.61	59	7176	0.170	ng	93
19) Methylene Chloride	8.61	84	1979	0.102	ng	98
20) 3-Chloro-1-propene (Al...	8.79	41	2039	0.072	ng	86
21) Trichlorotrifluoroethane	9.04	151	1904	0.129	ng	98
22) Carbon Disulfide	8.90	76	16782	0.239	ng	97
23) trans-1,2-Dichloroethene	9.89	61	2093	0.077	ng	100
24) 1,1-Dichloroethane	10.13	63	2790	0.083	ng	89
25) Methyl tert-Butyl Ether	10.27	73	4841	0.088	ng	92
26) Vinyl Acetate	10.40	86	702	0.202	ng	# 11
27) 2-Butanone (MEK)	10.68	72	1977	0.155	ng	# 78
28) cis-1,2-Dichloroethene	11.14	61	2103	0.077	ng	93
29) Diisopropyl Ether	11.46	87	3205	0.199	ng	# 79
30) Ethyl Acetate	11.47	61	2282	0.296	ng	100
31) n-Hexane	11.44	57	2818	0.086	ng	# 88
32) Chloroform	11.49	83	3032	0.094	ng	98
34) Tetrahydrofuran (THF)	11.94	72	2254	0.176	ng	# 87
35) Ethyl tert-Butyl Ether	12.05	87	3739	0.169	ng	91
36) 1,2-Dichloroethane	12.30	62	2205	0.087	ng	91
38) 1,1,1-Trichloroethane	12.57	97	2744	0.101	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.05	78	7425	0.103	ng	98
42) Carbon Tetrachloride	13.21	117	2274	0.098	ng	92
43) Cyclohexane	13.35	84	5171	0.190	ng	93
44) tert-Amyl Methyl Ether	13.70	73	9430	0.186	ng	97
45) 1,2-Dichloropropane	13.90	63	1690	0.089	ng	93
46) Bromodichloromethane	14.09	83	2334	0.095	ng	96
47) Trichloroethene	14.14	130	2236	0.118	ng	99
48) 1,4-Dioxane	14.15	88	1290	0.096	ng	100
49) 2,2,4-Trimethylpentane...	14.21	57	7163	0.090	ng	98
50) Methyl Methacrylate	14.36	100	1261	0.183	ng	# 88

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282207.D
 Acq On : 28 Mar 2022 14:25
 Sample : 0.1ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282203 (4/27)

Vial: 13
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:27 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

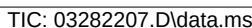
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	1596	0.085	ng	99
52) cis-1,3-Dichloropropene	15.01	75	2669	0.093	ng	95
53) 4-Methyl-2-pentanone	15.06	58	2423	0.150	ng	# 84
54) trans-1,3-Dichloropropene	15.53	75	2099	0.081	ng	92
55) 1,1,2-Trichloroethane	15.70	97	1823	0.105	ng	96
58) Toluene	15.99	91	7805	0.129	ng	97
59) 2-Hexanone	16.25	43	5647	0.183	ng	93
60) Dibromochloromethane	16.40	129	2097	0.127	ng	94
61) 1,2-Dibromoethane	16.66	107	2102	0.133	ng	98
62) n-Butyl Acetate	16.88	43	6004	0.175	ng	90
63) n-Octane	17.00	57	1302	0.098	ng	98
64) Tetrachloroethene	17.14	166	2718	0.168	ng	94
65) Chlorobenzene	17.79	112	5812	0.148	ng	100
66) Ethylbenzene	18.14	91	8461	0.125	ng	99
67) m- & p-Xylenes	18.30	91	12951	0.244	ng	99
68) Bromoform	18.37	173	2147	0.155	ng	99
69) Styrene	18.62	104	4765	0.121	ng	98
70) o-Xylene	18.72	91	6467	0.122	ng	99
71) n-Nonane	18.91	43	3022	0.101	ng	94
72) 1,1,2,2-Tetrachloroethane	18.71	83	3288	0.129	ng	100
74) Cumene	19.25	105	9327	0.139	ng	98
75) alpha-Pinene	19.58	93	3962	0.122	ng	91
76) n-Propylbenzene	19.69	91	10774	0.132	ng	96
77) 3-Ethyltoluene	19.88	105	6951	No Calib		
78) 4-Ethyltoluene	19.82	105	8860	0.137	ng	92
79) 1,3,5-Trimethylbenzene	19.88	105	6951	0.128	ng	97
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.88	105	6951	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	6957	0.130	ng	99
83) n-Decane	20.24	58	261	No Calib	#	
84) Benzyl Chloride	20.36	91	9328	0.232	ng	96
85) 1,3-Dichlorobenzene	20.38	146	5309	0.163	ng	99
86) 1,4-Dichlorobenzene	20.43	146	5269	0.160	ng	98
87) sec-Butylbenzene	20.48	105	10082	0.134	ng	97
88) 4-Isopropyltoluene (p-...	20.61	119	8399	0.134	ng	99
89) 1,2,3-Trimethylbenzene	20.62	105	268	No Calib	#	
90) 1,2-Dichlorobenzene	20.73	146	5119	0.164	ng	100
91) d-Limonene	20.74	68	2141	0.098	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.12	157	3490	0.293	ng	86
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	8871	0.393	ng	96
95) Naphthalene	22.35	128	12307	0.193	ng	94
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.66	225	2847	0.174	ng	89
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.24	119	7355	0.139	ng	100
100) n-Butylbenzene	20.98	91	7466	0.124	ng	96
101) 1,1,1,2-Tetrachloroethane	17.77	131	2074	0.145	ng	# 94

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

Vial: 13
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 07:56:27 2022



Data File : I:\MS13\DATA\2022_03\28\03282208.D
 Acq On : 28 Mar 2022 14:59
 Sample : 0.2ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282203 (4/27)

Vial: 13
 Operator: TZ
 Inst : GCMS13

TZ 3/29/22

Quant Time: Mar 29 07:56:28 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Tue Mar 29 07:56:11 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	166999	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	703702	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	105110	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	215854	9.709	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	77.68%	
57) Toluene-d8 (SS2)	15.89	98	784417	14.900	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	119.20%	
73) Bromofluorobenzene (SS3)	19.12	174	292171	19.170	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	153.36%#	

Target Compounds

						Qvalue
2) Propene	4.28	42	3082	0.144	ng	99
3) Dichlorodifluoromethan...	4.43	85	6219	0.180	ng	95
4) Chloromethane	4.72	50	4335	0.173	ng	93
5) 1,2-Dichloro-1,1,2,2-t...	4.97	135	3732	0.232	ng	97
6) Vinyl Chloride	5.15	62	4650	0.171	ng	95
7) 1,3-Butadiene	5.40	54	3160	0.142	ng	97
8) Bromomethane	5.85	94	2894	0.189	ng	95
9) Chloroethane	6.18	64	2022	0.154	ng	95
10) Ethanol	6.51	45	7423	0.480	ng	98
11) Acetonitrile	6.80	41	4315	0.112	ng	93
12) Acrolein	6.99	56	3483	0.283	ng	93
13) Acetone	7.21	58	12018	0.846	ng	96
14) Trichlorofluoromethane	7.45	101	5548	0.182	ng	98
15) 2-Propanol (Isopropanol)	7.69	45	13568	0.279	ng	97
16) Acrylonitrile	7.95	53	7049	0.283	ng	96
17) 1,1-Dichloroethene	8.41	96	3248	0.192	ng	95
18) 2-Methyl-2-Propanol (t...	8.59	59	13633	0.328	ng	97
19) Methylene Chloride	8.62	84	3615	0.189	ng	100
20) 3-Chloro-1-propene (Al...	8.78	41	3733	0.134	ng	93
21) Trichlorotrifluoroethane	9.04	151	3510	0.243	ng	93
22) Carbon Disulfide	8.90	76	27908	0.404	ng	97
23) trans-1,2-Dichloroethene	9.88	61	3963	0.149	ng	100
24) 1,1-Dichloroethane	10.13	63	5295	0.160	ng	95
25) Methyl tert-Butyl Ether	10.27	73	8655	0.161	ng	100
26) Vinyl Acetate	10.39	86	1532	0.448	ng	# 62
27) 2-Butanone (MEK)	10.66	72	3786	0.302	ng	# 75
28) cis-1,2-Dichloroethene	11.14	61	3994	0.150	ng	97
29) Diisopropyl Ether	11.46	87	5954	0.377	ng	# 82
30) Ethyl Acetate	11.47	61	4772	0.631	ng	90
31) n-Hexane	11.43	57	5063	0.157	ng	97
32) Chloroform	11.49	83	5591	0.177	ng	98
34) Tetrahydrofuran (THF)	11.93	72	3923	0.312	ng	91
35) Ethyl tert-Butyl Ether	12.05	87	7071	0.325	ng	91
36) 1,2-Dichloroethane	12.29	62	3957	0.158	ng	95
38) 1,1,1-Trichloroethane	12.57	97	5023	0.187	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.05	78	13080	0.184	ng	99
42) Carbon Tetrachloride	13.21	117	4485	0.195	ng	97
43) Cyclohexane	13.35	84	9519	0.354	ng	97
44) tert-Amyl Methyl Ether	13.70	73	17582	0.352	ng	98
45) 1,2-Dichloropropane	13.90	63	3165	0.169	ng	98
46) Bromodichloromethane	14.09	83	4556	0.188	ng	96
47) Trichloroethene	14.14	130	3967	0.212	ng	98
48) 1,4-Dioxane	14.15	88	2490	0.187	ng	98
49) 2,2,4-Trimethylpentane...	14.21	57	12995	0.165	ng	100
50) Methyl Methacrylate	14.36	100	2478	0.363	ng	98

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282208.D
 Acq On : 28 Mar 2022 14:59
 Sample : 0.2ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282203 (4/27)

Vial: 13
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:28 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

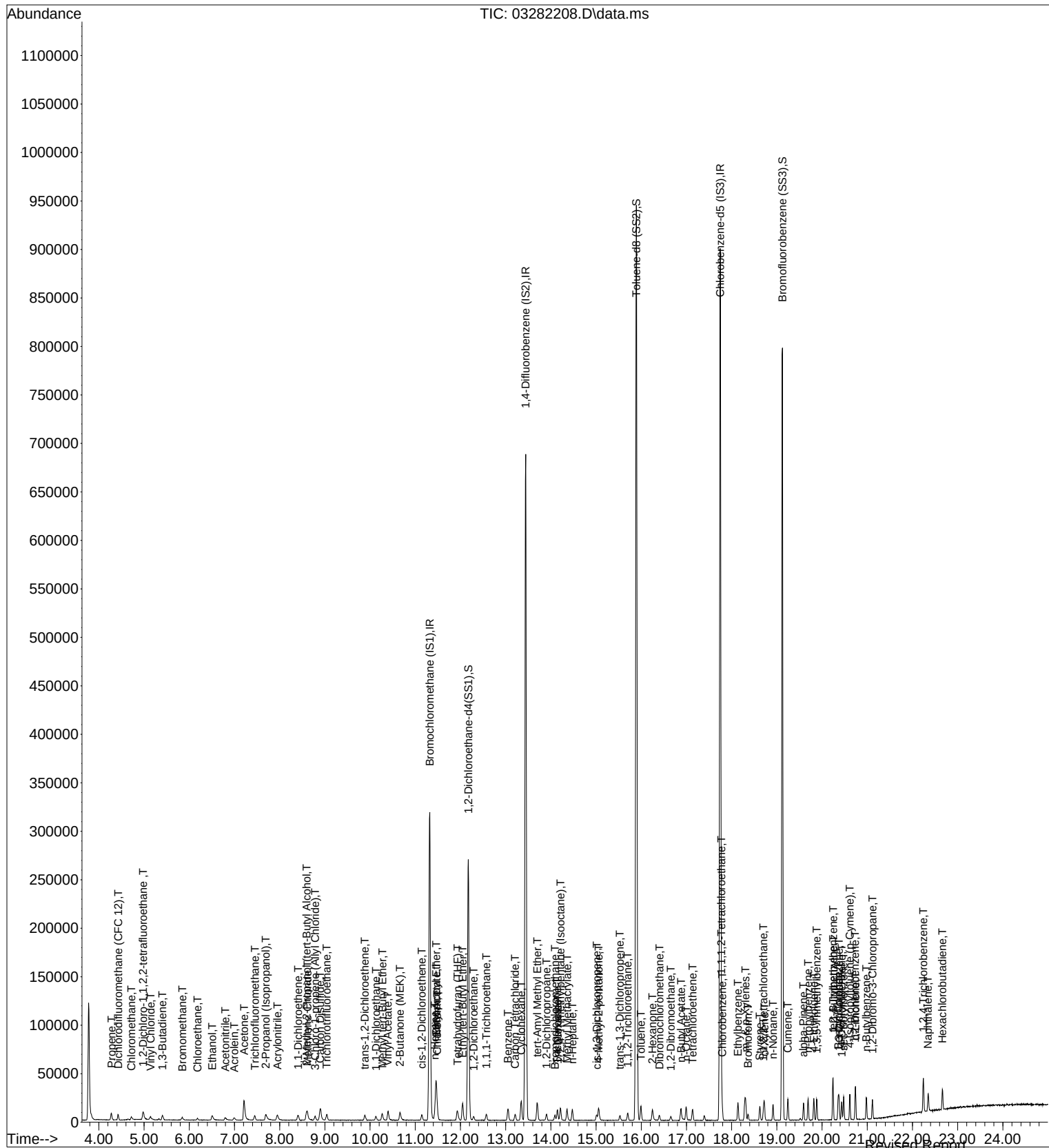
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	2967	0.160	ng	92
52) cis-1,3-Dichloropropene	15.01	75	4817	0.170	ng	94
53) 4-Methyl-2-pentanone	15.06	58	4687	0.293	ng	87
54) trans-1,3-Dichloropropene	15.53	75	3962	0.154	ng	96
55) 1,1,2-Trichloroethane	15.70	97	3375	0.196	ng	92
58) Toluene	15.99	91	14011	0.234	ng	99
59) 2-Hexanone	16.25	43	10296	0.337	ng	99
60) Dibromochloromethane	16.40	129	4220	0.258	ng	99
61) 1,2-Dibromoethane	16.65	107	3988	0.256	ng	97
62) n-Butyl Acetate	16.88	43	11255	0.332	ng	95
63) n-Octane	16.99	57	2596	0.197	ng	92
64) Tetrachloroethene	17.14	166	4875	0.305	ng	93
65) Chlorobenzene	17.79	112	10223	0.263	ng	99
66) Ethylbenzene	18.14	91	15177	0.228	ng	97
67) m- & p-Xylenes	18.30	91	23713	0.451	ng	99
68) Bromoform	18.36	173	3807	0.277	ng	98
69) Styrene	18.62	104	8656	0.223	ng	97
70) o-Xylene	18.72	91	11708	0.223	ng	99
71) n-Nonane	18.91	43	5495	0.185	ng	93
72) 1,1,2,2-Tetrachloroethane	18.70	83	6048	0.240	ng	100
74) Cumene	19.24	105	16278	0.245	ng	99
75) alpha-Pinene	19.59	93	7329	0.228	ng	94
76) n-Propylbenzene	19.69	91	19245	0.239	ng	99
77) 3-Ethyltoluene	19.88	105	12976	No Calib		
78) 4-Ethyltoluene	19.82	105	15594	0.245	ng	98
79) 1,3,5-Trimethylbenzene	19.88	105	12976	0.242	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.88	105	12976	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	12618	0.238	ng	99
83) n-Decane	20.24	58	546	No Calib	#	
84) Benzyl Chloride	20.36	91	17123	0.431	ng	97
85) 1,3-Dichlorobenzene	20.37	146	9504	0.295	ng	95
86) 1,4-Dichlorobenzene	20.44	146	8946	0.275	ng	97
87) sec-Butylbenzene	20.48	105	17732	0.239	ng	98
88) 4-Isopropyltoluene (p-...	20.61	119	15060	0.243	ng	99
89) 1,2,3-Trimethylbenzene	20.61	105	558	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	8852	0.288	ng	100
91) d-Limonene	20.74	68	4030	0.187	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.11	157	6313	0.536	ng	88
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	13982	0.627	ng	99
95) Naphthalene	22.34	128	17828	0.283	ng	98
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.66	225	5187	0.320	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.24	119	12997	0.249	ng	99
100) n-Butylbenzene	20.98	91	13581	0.229	ng	95
101) 1,1,1,2-Tetrachloroethane	17.77	131	3758	0.267	ng	98

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

Vial: 13
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 07:56:28 2022



Data File : I:\MS13\DATA\2022_03\28\03282209.D
 Acq On : 28 Mar 2022 15:33
 Sample : 0.5ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282202 (4/27)

Vial: 14
 Operator: TZ
 Inst : GCMS13

TZ 3/29/22

Quant Time: Mar 29 07:56:30 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	163029	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	689190	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	100861	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	210406	9.694	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	77.52%	
57) Toluene-d8 (SS2)	15.89	98	765366	15.150	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	121.20%	
73) Bromofluorobenzene (SS3)	19.12	174	277469	18.972	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	151.76%#	

Target Compounds

						Qvalue
2) Propene	4.25	42	6978	0.335	ng	97
3) Dichlorodifluoromethan...	4.41	85	13960	0.414	ng	99
4) Chloromethane	4.70	50	9892	0.405	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.96	135	8428	0.537	ng	99
6) Vinyl Chloride	5.12	62	10581	0.398	ng	98
7) 1,3-Butadiene	5.38	54	7584	0.348	ng	97
8) Bromomethane	5.83	94	6114	0.410	ng	96
9) Chloroethane	6.17	64	4922	0.384	ng	93
10) Ethanol	6.50	45	17528	1.160	ng	95
11) Acetonitrile	6.78	41	10218	0.271	ng	84
12) Acrolein	6.98	56	7853	0.653	ng	99
13) Acetone	7.19	58	25318	1.825	ng	100
14) Trichlorofluoromethane	7.43	101	12193	0.409	ng	95
15) 2-Propanol (Isopropanol)	7.68	45	30654	0.645	ng	95
16) Acrylonitrile	7.93	53	16363	0.674	ng	98
17) 1,1-Dichloroethene	8.39	96	7518	0.456	ng	96
18) 2-Methyl-2-Propanol (t...	8.57	59	32716	0.807	ng	98
19) Methylene Chloride	8.60	84	7870	0.421	ng	98
20) 3-Chloro-1-propene (Al...	8.78	41	8913	0.328	ng	94
21) Trichlorotrifluoroethane	9.04	151	7284	0.516	ng	97
22) Carbon Disulfide	8.89	76	57776	0.857	ng	99
23) trans-1,2-Dichloroethene	9.88	61	9530	0.367	ng	98
24) 1,1-Dichloroethane	10.13	63	12692	0.392	ng	98
25) Methyl tert-Butyl Ether	10.25	73	20695	0.394	ng	99
26) Vinyl Acetate	10.39	86	4068	1.218	ng	# 77
27) 2-Butanone (MEK)	10.65	72	9187	0.752	ng	# 90
28) cis-1,2-Dichloroethene	11.14	61	9208	0.354	ng	98
29) Diisopropyl Ether	11.45	87	13603	0.882	ng	# 81
30) Ethyl Acetate	11.46	61	11232	1.521	ng	92
31) n-Hexane	11.43	57	11456	0.364	ng	97
32) Chloroform	11.49	83	13046	0.422	ng	100
34) Tetrahydrofuran (THF)	11.92	72	8546	0.696	ng	93
35) Ethyl tert-Butyl Ether	12.04	87	16572	0.781	ng	94
36) 1,2-Dichloroethane	12.29	62	8966	0.368	ng	99
38) 1,1,1-Trichloroethane	12.57	97	11324	0.431	ng	97
39) Isopropyl Acetate	13.02	61	476	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.05	78	29689	0.427	ng	99
42) Carbon Tetrachloride	13.21	117	10361	0.461	ng	96
43) Cyclohexane	13.35	84	22120	0.839	ng	98
44) tert-Amyl Methyl Ether	13.69	73	39374	0.804	ng	97
45) 1,2-Dichloropropane	13.90	63	7071	0.386	ng	96
46) Bromodichloromethane	14.09	83	10251	0.431	ng	99
47) Trichloroethene	14.14	130	9095	0.497	ng	99
48) 1,4-Dioxane	14.13	88	5600	0.429	ng	95
49) 2,2,4-Trimethylpentane...	14.21	57	29482	0.382	ng	99
50) Methyl Methacrylate	14.35	100	5848	0.876	ng	95

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282209.D
 Acq On : 28 Mar 2022 15:33
 Sample : 0.5ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282202 (4/27)

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:30 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

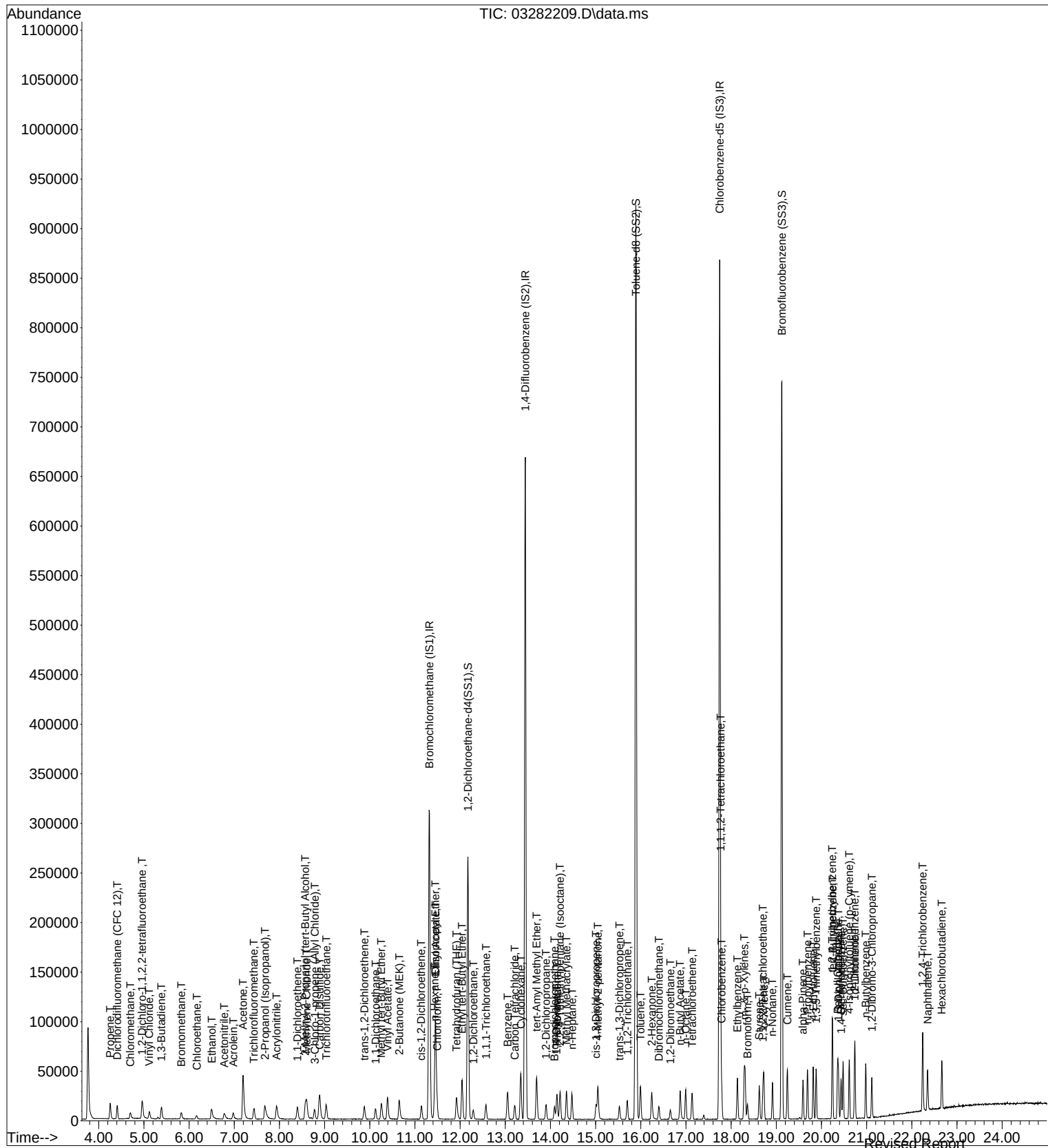
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	7137	0.393	ng	95
52) cis-1,3-Dichloropropene	15.01	75	11168	0.403	ng	99
53) 4-Methyl-2-pentanone	15.05	58	11525	0.736	ng	93
54) trans-1,3-Dichloropropene	15.53	75	9418	0.374	ng	99
55) 1,1,2-Trichloroethane	15.70	97	7751	0.460	ng	97
58) Toluene	15.99	91	31138	0.541	ng	100
59) 2-Hexanone	16.24	43	23927	0.816	ng	98
60) Dibromochloromethane	16.40	129	9377	0.598	ng	96
61) 1,2-Dibromoethane	16.65	107	8765	0.585	ng	98
62) n-Butyl Acetate	16.87	43	25587	0.786	ng	99
63) n-Octane	16.99	57	5951	0.472	ng	96
64) Tetrachloroethene	17.14	166	10903	0.712	ng	98
65) Chlorobenzene	17.79	112	22156	0.595	ng	100
66) Ethylbenzene	18.14	91	34172	0.534	ng	100
67) m- & p-Xylenes	18.29	91	54031	1.071	ng	99
68) Bromoform	18.36	173	8814	0.669	ng	96
69) Styrene	18.62	104	19958	0.535	ng	99
70) o-Xylene	18.72	91	27592	0.547	ng	99
71) n-Nonane	18.91	43	12517	0.439	ng	97
72) 1,1,2,2-Tetrachloroethane	18.70	83	13592	0.562	ng	99
74) Cumene	19.25	105	36652	0.576	ng	100
75) alpha-Pinene	19.59	93	16248	0.526	ng	97
76) n-Propylbenzene	19.69	91	42888	0.556	ng	99
77) 3-Ethyltoluene	19.88	105	29499	No Calib		
78) 4-Ethyltoluene	19.82	105	35441	0.579	ng	99
79) 1,3,5-Trimethylbenzene	19.88	105	29499	0.574	ng	99
80) alpha-Methylstyrene	19.81	118	363	No Calib	#	
81) 2-Ethyltoluene	19.88	105	29499	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	29303	0.575	ng	99
83) n-Decane	20.25	58	1550	No Calib	#	
84) Benzyl Chloride	20.36	91	38396	1.006	ng	97
85) 1,3-Dichlorobenzene	20.37	146	19904	0.644	ng	100
86) 1,4-Dichlorobenzene	20.43	146	19573	0.627	ng	99
87) sec-Butylbenzene	20.48	105	40884	0.575	ng	98
88) 4-Isopropyltoluene (p-...	20.61	119	35149	0.591	ng	99
89) 1,2,3-Trimethylbenzene	20.61	105	1273	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	19873	0.673	ng	97
91) d-Limonene	20.74	68	9925	0.480	ng	97
92) 1,2-Dibromo-3-Chloropr...	21.11	157	13805	1.221	ng	94
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	29562	1.382	ng	100
95) Naphthalene	22.35	128	38471	0.636	ng	97
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.66	225	10834	0.696	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.24	119	30248	0.604	ng	99
100) n-Butylbenzene	20.98	91	31018	0.544	ng	98
101) 1,1,1,2-Tetrachloroethane	17.77	131	8546	0.632	ng	97

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

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 07:56:30 2022



Data File : I:\MS13\DATA\2022_03\28\03282210.D
 Acq On : 28 Mar 2022 16:07
 Sample : 1.0ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282202 (4/27)

Vial: 14
 Operator: TZ
 Inst : GCMS13

TZ 3/29/22

Quant Time: Mar 29 07:56:32 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	160519	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	682294	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	98731	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.17	65	208757	9.769	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	78.16%	
57) Toluene-d8 (SS2)	15.89	98	754966	15.267	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	122.16%	
73) Bromofluorobenzene (SS3)	19.12	174	275674	19.256	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	154.08%#	

Target Compounds

						Qvalue
2) Propene	4.25	42	14086	0.687	ng	97
3) Dichlorodifluoromethan...	4.41	85	28025	0.844	ng	99
4) Chloromethane	4.69	50	19213	0.798	ng	97
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	16508	1.068	ng	100
6) Vinyl Chloride	5.11	62	22102	0.845	ng	98
7) 1,3-Butadiene	5.38	54	15256	0.711	ng	98
8) Bromomethane	5.82	94	12926	0.880	ng	99
9) Chloroethane	6.16	64	9457	0.750	ng	97
10) Ethanol	6.49	45	34039	2.288	ng	100
11) Acetonitrile	6.77	41	21073	0.568	ng	85
12) Acrolein	6.97	56	16050	1.356	ng	99
13) Acetone	7.18	58	49723	3.640	ng	100
14) Trichlorofluoromethane	7.43	101	24564	0.837	ng	99
15) 2-Propanol (Isopropanol)	7.67	45	62042	1.325	ng	95
16) Acrylonitrile	7.93	53	32741	1.369	ng	100
17) 1,1-Dichloroethene	8.40	96	14498	0.893	ng	99
18) 2-Methyl-2-Propanol (t...	8.55	59	65252	1.635	ng	96
19) Methylene Chloride	8.60	84	15190	0.825	ng	100
20) 3-Chloro-1-propene (Al...	8.77	41	17705	0.661	ng	98
21) Trichlorotrifluoroethane	9.03	151	14856	1.068	ng	99
22) Carbon Disulfide	8.88	76	108709	1.637	ng	100
23) trans-1,2-Dichloroethene	9.87	61	19012	0.743	ng	99
24) 1,1-Dichloroethane	10.13	63	24635	0.773	ng	99
25) Methyl tert-Butyl Ether	10.25	73	40626	0.785	ng	99
26) Vinyl Acetate	10.39	86	8820	2.683	ng	# 87
27) 2-Butanone (MEK)	10.65	72	18406	1.529	ng	# 89
28) cis-1,2-Dichloroethene	11.14	61	18581	0.725	ng	99
29) Diisopropyl Ether	11.45	87	27121	1.786	ng	# 83
30) Ethyl Acetate	11.45	61	22060	3.035	ng	93
31) n-Hexane	11.43	57	22781	0.735	ng	100
32) Chloroform	11.49	83	24549	0.807	ng	96
34) Tetrahydrofuran (THF)	11.91	72	17189	1.423	ng	97
35) Ethyl tert-Butyl Ether	12.04	87	34327	1.644	ng	97
36) 1,2-Dichloroethane	12.29	62	18240	0.759	ng	98
38) 1,1,1-Trichloroethane	12.57	97	23015	0.884	ng	99
39) Isopropyl Acetate	13.03	61	1167	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.05	78	57880	0.841	ng	100
42) Carbon Tetrachloride	13.21	117	20642	0.927	ng	100
43) Cyclohexane	13.34	84	44576	1.708	ng	98
44) tert-Amyl Methyl Ether	13.69	73	79196	1.634	ng	98
45) 1,2-Dichloropropane	13.90	63	14432	0.795	ng	98
46) Bromodichloromethane	14.09	83	20015	0.850	ng	99
47) Trichloroethene	14.14	130	18401	1.015	ng	99
48) 1,4-Dioxane	14.13	88	11825	0.916	ng	99
49) 2,2,4-Trimethylpentane...	14.21	57	59269	0.776	ng	99
50) Methyl Methacrylate	14.35	100	12516	1.893	ng	99

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282210.D
 Acq On : 28 Mar 2022 16:07
 Sample : 1.0ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282202 (4/27)

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:32 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Tue Mar 29 07:56:11 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.47	71	14511	0.808	ng	97
52) cis-1,3-Dichloropropene	15.01	75	22334	0.814	ng	99
53) 4-Methyl-2-pentanone	15.05	58	24165	1.558	ng	96
54) trans-1,3-Dichloropropene	15.53	75	19322	0.775	ng	98
55) 1,1,2-Trichloroethane	15.70	97	15538	0.931	ng	98
58) Toluene	15.99	91	61426	1.091	ng	99
59) 2-Hexanone	16.24	43	50132	1.746	ng	98
60) Dibromochloromethane	16.40	129	19339	1.259	ng	100
61) 1,2-Dibromoethane	16.65	107	17366	1.185	ng	99
62) n-Butyl Acetate	16.87	43	54468	1.708	ng	99
63) n-Octane	16.99	57	12167	0.985	ng	96
64) Tetrachloroethene	17.13	166	21417	1.428	ng	99
65) Chlorobenzene	17.79	112	44233	1.213	ng	98
66) Ethylbenzene	18.14	91	68519	1.094	ng	100
67) m- & p-Xylenes	18.30	91	107789	2.184	ng	100
68) Bromoform	18.36	173	17395	1.349	ng	99
69) Styrene	18.62	104	41165	1.127	ng	99
70) o-Xylene	18.72	91	54861	1.111	ng	99
71) n-Nonane	18.91	43	25778	0.923	ng	96
72) 1,1,2,2-Tetrachloroethane	18.70	83	27026	1.142	ng	98
74) Cumene	19.24	105	72900	1.170	ng	100
75) alpha-Pinene	19.59	93	33642	1.113	ng	98
76) n-Propylbenzene	19.69	91	87199	1.154	ng	99
77) 3-Ethyltoluene	19.88	105	59893	No Calib		
78) 4-Ethyltoluene	19.82	105	73136	1.221	ng	97
79) 1,3,5-Trimethylbenzene	19.88	105	59893	1.191	ng	99
80) alpha-Methylstyrene	19.89	118	405	No Calib	#	
81) 2-Ethyltoluene	19.88	105	59893	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	60148	1.206	ng	99
83) n-Decane	20.24	58	3198	No Calib	#	
84) Benzyl Chloride	20.36	91	80995	2.169	ng	97
85) 1,3-Dichlorobenzene	20.37	146	39894	1.319	ng	100
86) 1,4-Dichlorobenzene	20.43	146	39734	1.300	ng	99
87) sec-Butylbenzene	20.48	105	83467	1.199	ng	99
88) 4-Isopropyltoluene (p-...	20.61	119	72415	1.243	ng	99
89) 1,2,3-Trimethylbenzene	20.61	105	2624	No Calib	#	
90) 1,2-Dichlorobenzene	20.73	146	38897	1.346	ng	100
91) d-Limonene	20.74	68	20304	1.003	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.11	157	28835	2.605	ng	96
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	61037	2.914	ng	100
95) Naphthalene	22.34	128	81847	1.382	ng	100
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.66	225	21706	1.425	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.24	119	61488	1.255	ng	99
100) n-Butylbenzene	20.98	91	63588	1.140	ng	98
101) 1,1,1,2-Tetrachloroethane	17.77	131	16720	1.263	ng	99

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

Vial: 14
Operator: TZ
Inst : GCMS13

[illegible]

Data File : I:\MS13\DATA\2022_03\28\03282211.D
 Acq On : 28 Mar 2022 16:40
 Sample : 5.0ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282202 (4/27)

Vial: 14
 Operator: TZ
 Inst : GCMS13

Tz 3/29/22

Quant Time: Mar 29 07:56:34 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Tue Mar 29 07:56:11 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.33	130	163228	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.44	114	692548	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	103064	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.18	65	212306	9.770	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	78.16%	
57) Toluene-d8 (SS2)	15.89	98	773309	14.980	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	119.84%	
73) Bromofluorobenzene (SS3)	19.12	174	292075	19.544	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	156.32%#	

Target Compounds

						Qvalue
2) Propene	4.23	42	73565	3.529	ng	99
3) Dichlorodifluoromethan...	4.39	85	136403	4.041	ng	100
4) Chloromethane	4.67	50	78244	3.197	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	82364	5.239	ng	100
6) Vinyl Chloride	5.10	62	111934	4.210	ng	100
7) 1,3-Butadiene	5.37	54	80251	3.680	ng	100
8) Bromomethane	5.81	94	64116	4.291	ng	99
9) Chloroethane	6.15	64	48285	3.766	ng	99
10) Ethanol	6.52	45	174013	11.501	ng	100
11) Acetonitrile	6.78	41	111579	2.960	ng	96
12) Acrolein	6.97	56	83759	6.959	ng	100
13) Acetone	7.18	58	244548	17.605	ng	99
14) Trichlorofluoromethane	7.43	101	121501	4.074	ng	99
15) 2-Propanol (Isopropanol)	7.68	45	301513	6.334	ng	98
16) Acrylonitrile	7.95	53	170335	7.005	ng	100
17) 1,1-Dichloroethene	8.40	96	74100	4.488	ng	100
18) 2-Methyl-2-Propanol (t...	8.55	59	266823	6.576	ng	98
19) Methylene Chloride	8.62	84	74997	4.008	ng	99
20) 3-Chloro-1-propene (Al...	8.78	41	92540	3.396	ng	98
21) Trichlorotrifluoroethane	9.04	151	73695	5.212	ng	99
22) Carbon Disulfide	8.88	76	538269	7.972	ng	100
23) trans-1,2-Dichloroethene	9.89	61	98231	3.777	ng	98
24) 1,1-Dichloroethane	10.14	63	122570	3.782	ng	99
25) Methyl tert-Butyl Ether	10.24	73	207619	3.946	ng	100
26) Vinyl Acetate	10.39	86	47934	14.338	ng	# 91
27) 2-Butanone (MEK)	10.64	72	96834	7.912	ng	98
28) cis-1,2-Dichloroethene	11.16	61	94000	3.607	ng	98
29) Diisopropyl Ether	11.45	87	135794	8.794	ng	# 87
30) Ethyl Acetate	11.46	61	109154	14.766	ng	95
31) n-Hexane	11.43	57	114372	3.630	ng	100
32) Chloroform	11.50	83	122536	3.959	ng	99
34) Tetrahydrofuran (THF)	11.91	72	87158	7.094	ng	97
35) Ethyl tert-Butyl Ether	12.04	87	178623	8.410	ng	99
36) 1,2-Dichloroethane	12.29	62	91088	3.729	ng	99
38) 1,1,1-Trichloroethane	12.58	97	114225	4.323	ng	100
39) Isopropyl Acetate	13.01	61	6989	No Calib	#	
40) 1-Butanol	13.05	56	2370	No Calib		
41) Benzene	13.06	78	290080	4.153	ng	100
42) Carbon Tetrachloride	13.21	117	103990	4.601	ng	99
43) Cyclohexane	13.35	84	227913	8.604	ng	98
44) tert-Amyl Methyl Ether	13.69	73	413282	8.399	ng	99
45) 1,2-Dichloropropane	13.90	63	71859	3.901	ng	99
46) Bromodichloromethane	14.09	83	102522	4.288	ng	100
47) Trichloroethene	14.15	130	91969	4.998	ng	99
48) 1,4-Dioxane	14.12	88	62228	4.749	ng	99
49) 2,2,4-Trimethylpentane...	14.21	57	300363	3.874	ng	100
50) Methyl Methacrylate	14.35	100	64687	9.638	ng	97

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282211.D
 Acq On : 28 Mar 2022 16:40
 Sample : 5.0ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282202 (4/27)

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:34 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	75304	4.129	ng	99
52) cis-1,3-Dichloropropene	15.01	75	120040	4.310	ng	99
53) 4-Methyl-2-pentanone	15.04	58	127170	8.076	ng	98
54) trans-1,3-Dichloropropene	15.53	75	107239	4.239	ng	99
55) 1,1,2-Trichloroethane	15.70	97	78870	4.654	ng	99
58) Toluene	15.99	91	314103	5.342	ng	99
59) 2-Hexanone	16.23	43	268401	8.954	ng	99
60) Dibromochloromethane	16.40	129	100148	6.248	ng	100
61) 1,2-Dibromoethane	16.65	107	91206	5.961	ng	100
62) n-Butyl Acetate	16.86	43	294941	8.862	ng	99
63) n-Octane	16.99	57	62361	4.836	ng	97
64) Tetrachloroethene	17.14	166	105613	6.746	ng	98
65) Chlorobenzene	17.79	112	224174	5.889	ng	100
66) Ethylbenzene	18.14	91	356324	5.448	ng	100
67) m- & p-Xylenes	18.30	91	557266	10.814	ng	100
68) Bromoform	18.36	173	92796	6.896	ng	99
69) Styrene	18.62	104	230199	6.036	ng	100
70) o-Xylene	18.72	91	286948	5.567	ng	100
71) n-Nonane	18.91	43	134929	4.629	ng	97
72) 1,1,2,2-Tetrachloroethane	18.70	83	136060	5.506	ng	100
74) Cumene	19.24	105	381909	5.873	ng	100
75) alpha-Pinene	19.59	93	191069	6.054	ng	100
76) n-Propylbenzene	19.69	91	452217	5.734	ng	100
77) 3-Ethyltoluene	19.88	105	310235	No Calib		
78) 4-Ethyltoluene	19.82	105	383189	6.128	ng	99
79) 1,3,5-Trimethylbenzene	19.88	105	310235	5.909	ng	99
80) alpha-Methylstyrene	19.88	118	2333	No Calib		
81) 2-Ethyltoluene	19.88	105	310235	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	321583	6.179	ng	99
83) n-Decane	20.24	58	14105	No Calib		
84) Benzyl Chloride	20.36	91	469161	12.035	ng	100
85) 1,3-Dichlorobenzene	20.37	146	202988	6.431	ng	100
86) 1,4-Dichlorobenzene	20.43	146	201736	6.323	ng	100
87) sec-Butylbenzene	20.48	105	434361	5.976	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	384635	6.326	ng	100
89) 1,2,3-Trimethylbenzene	20.61	105	13297	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	199606	6.614	ng	100
91) d-Limonene	20.74	68	113329	5.362	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.11	157	154390	13.361	ng	98
93) n-Undecane	21.42	57	273	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.24	180	326524	14.936	ng	100
95) Naphthalene	22.34	128	447581	7.240	ng	100
96) n-Dodecane	22.34	57	654	No Calib	#	
97) Hexachlorobutadiene	22.66	225	112760	7.091	ng	100
98) Cyclohexanone	18.31	55	177	No Calib	#	
99) tert-Butylbenzene	20.24	119	324800	6.349	ng	100
100) n-Butylbenzene	20.98	91	339118	5.824	ng	99
101) 1,1,1,2-Tetrachloroethane	17.77	131	83285	6.026	ng	100

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

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 07:56:34 2022

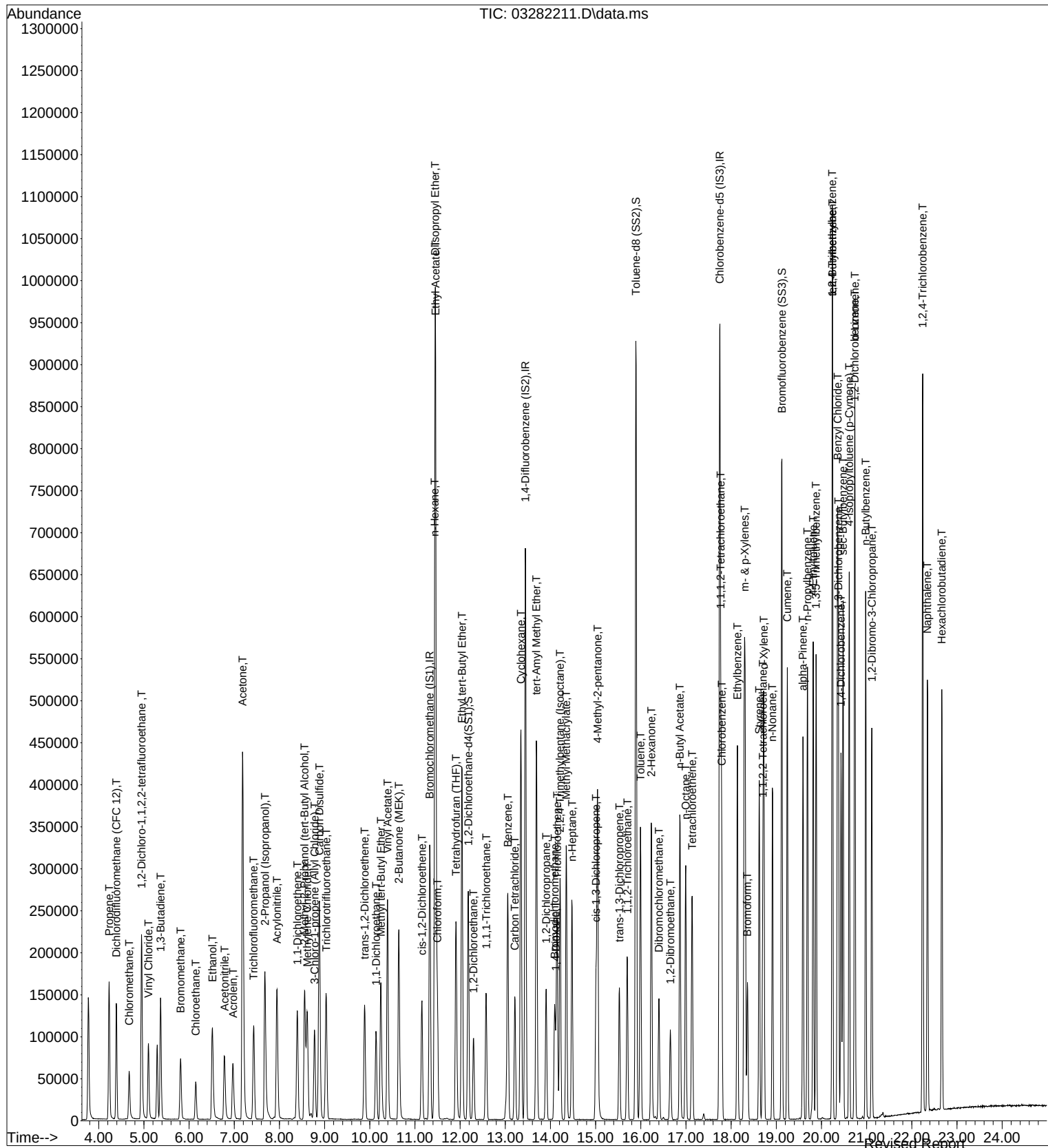
Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2022_03\28\03282212.D
 Acq On : 28 Mar 2022 17:14
 Sample : 25ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282201 (4/27)

Vial: 15
 Operator: TZ
 Inst : GCMS13

TZ 3/29/22

Quant Time: Mar 29 07:56:35 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.34	130	168708	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.45	114	728833	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	108792	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.19	65	216200	9.626	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	77.04%	
57) Toluene-d8 (SS2)	15.90	98	816835	14.991	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	119.92%	
73) Bromofluorobenzene (SS3)	19.12	174	313765	19.890	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	159.12%#	

Target Compounds

						Qvalue
2) Propene	4.22	42	364754	16.927	ng	100
3) Dichlorodifluoromethan...	4.38	85	720237	20.645	ng	100
4) Chloromethane	4.67	50	526481	20.815	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	445069	27.389	ng	100
6) Vinyl Chloride	5.10	62	595208	21.658	ng	100
7) 1,3-Butadiene	5.37	54	424970	18.853	ng	100
8) Bromomethane	5.82	94	342365	22.170	ng	100
9) Chloroethane	6.16	64	251518	18.978	ng	100
10) Ethanol	6.55	45	855704	54.716	ng	100
11) Acetonitrile	6.81	41	567995	14.577	ng	100
12) Acrolein	6.98	56	441147	35.462	ng	100
13) Acetone	7.21	58	1223240	85.200	ng	100
14) Trichlorofluoromethane	7.44	101	635262	20.607	ng	100
15) 2-Propanol (Isopropanol)	7.71	45	1672472	33.992	ng	100
16) Acrylonitrile	7.97	53	891303	35.463	ng	100
17) 1,1-Dichloroethene	8.41	96	392099	22.975	ng	100
18) 2-Methyl-2-Propanol (t...	8.58	59	1796223	42.829	ng	100
19) Methylene Chloride	8.63	84	396189	20.485	ng	100
20) 3-Chloro-1-propene (Al...	8.79	41	503128	17.866	ng	100
21) Trichlorotrifluoroethane	9.04	151	392707	26.871	ng	100
22) Carbon Disulfide	8.90	76	2852113	40.871	ng	100
23) trans-1,2-Dichloroethene	9.90	61	530612	19.738	ng	100
24) 1,1-Dichloroethane	10.15	63	641219	19.141	ng	100
25) Methyl tert-Butyl Ether	10.24	73	1154098	21.223	ng	100
26) Vinyl Acetate	10.40	86	268290	77.647	ng	100
27) 2-Butanone (MEK)	10.65	72	520572	41.150	ng	100
28) cis-1,2-Dichloroethene	11.16	61	506716	18.814	ng	100
29) Diisopropyl Ether	11.45	87	685635	42.958	ng	100
30) Ethyl Acetate	11.47	61	531088	69.512	ng	100
31) n-Hexane	11.44	57	565067	17.351	ng	100
32) Chloroform	11.51	83	665562	20.806	ng	100
34) Tetrahydrofuran (THF)	11.91	72	472942	37.245	ng	100
35) Ethyl tert-Butyl Ether	12.04	87	963741	43.903	ng	100
36) 1,2-Dichloroethane	12.30	62	481300	19.065	ng	100
38) 1,1,1-Trichloroethane	12.58	97	616045	22.153	ng	100
39) Isopropyl Acetate	13.01	61	34111	No Calib		
40) 1-Butanol	13.03	56	14959	No Calib		
41) Benzene	13.06	78	1569209	21.347	ng	100
42) Carbon Tetrachloride	13.22	117	559254	23.510	ng	100
43) Cyclohexane	13.35	84	1227462	44.033	ng	100
44) tert-Amyl Methyl Ether	13.69	73	2242449	43.305	ng	100
45) 1,2-Dichloropropane	13.90	63	382542	19.733	ng	100
46) Bromodichloromethane	14.09	83	552250	21.949	ng	100
47) Trichloroethene	14.15	130	500078	25.822	ng	100
48) 1,4-Dioxane	14.13	88	344777	25.003	ng	100
49) 2,2,4-Trimethylpentane...	14.22	57	1591985	19.509	ng	100
50) Methyl Methacrylate	14.35	100	363421	51.454	ng	100

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282212.D
 Acq On : 28 Mar 2022 17:14
 Sample : 25ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282201 (4/27)

Vial: 15
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:35 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

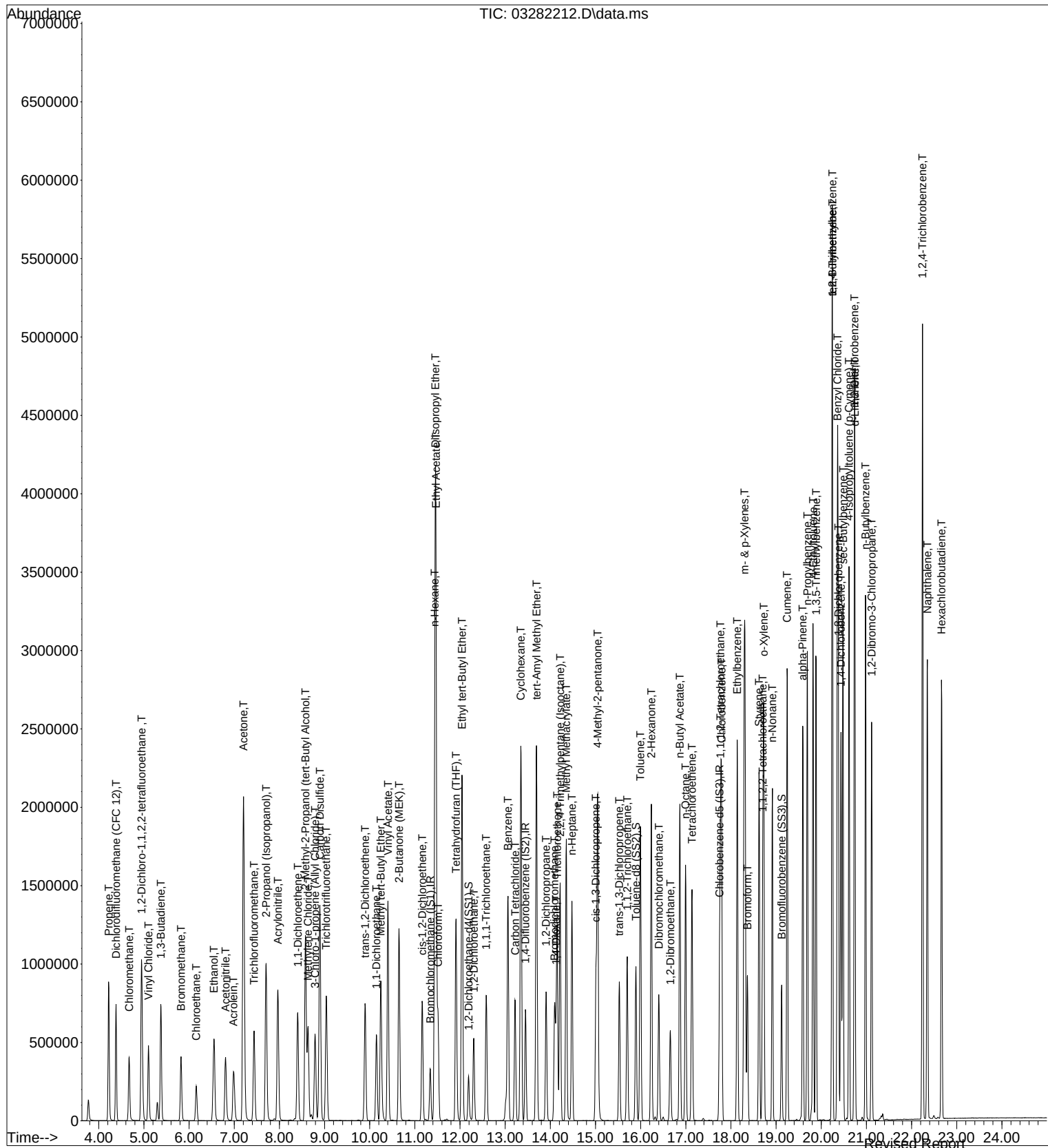
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	411017	21.416	ng	100
52) cis-1,3-Dichloropropene	15.01	75	659586	22.501	ng	100
53) 4-Methyl-2-pentanone	15.05	58	686441	41.425	ng	100
54) trans-1,3-Dichloropropene	15.53	75	603582	22.671	ng	100
55) 1,1,2-Trichloroethane	15.70	97	425561	23.863	ng	100
58) Toluene	15.99	91	1726836	27.824	ng	100
59) 2-Hexanone	16.24	43	1499698	47.395	ng	100
60) Dibromochloromethane	16.40	129	556097	32.865	ng	100
61) 1,2-Dibromoethane	16.66	107	498045	30.838	ng	100
62) n-Butyl Acetate	16.87	43	1653247	47.059	ng	100
63) n-Octane	16.99	57	338062	24.835	ng	100
64) Tetrachloroethene	17.14	166	586309	35.476	ng	100
65) Chlorobenzene	17.79	112	1228651	30.578	ng	100
66) Ethylbenzene	18.14	91	1993182	28.868	ng	100
67) m- & p-Xylenes	18.30	91	3064391	56.335	ng	100
68) Bromoform	18.37	173	529265	37.263	ng	100
69) Styrene	18.62	104	1303478	32.381	ng	100
70) o-Xylene	18.72	91	1572932	28.908	ng	100
71) n-Nonane	18.92	43	714723	23.230	ng	100
72) 1,1,2,2-Tetrachloroethane	18.70	83	735022	28.178	ng	100
74) Cumene	19.24	105	2108515	30.716	ng	100
75) alpha-Pinene	19.59	93	1065273	31.977	ng	100
76) n-Propylbenzene	19.69	91	2484718	29.845	ng	100
77) 3-Ethyltoluene	19.89	105	1730275	No Calib		
78) 4-Ethyltoluene	19.82	105	2125134	32.196	ng	100
79) 1,3,5-Trimethylbenzene	19.89	105	1730275	31.220	ng	100
80) alpha-Methylstyrene	19.89	118	12928	No Calib		
81) 2-Ethyltoluene	19.89	105	1730275	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	1742108	31.711	ng	100
83) n-Decane	20.24	58	72032	No Calib		
84) Benzyl Chloride	20.36	91	2877961	69.936	ng	100
85) 1,3-Dichlorobenzene	20.38	146	1131700	33.967	ng	100
86) 1,4-Dichlorobenzene	20.44	146	1142482	33.922	ng	100
87) sec-Butylbenzene	20.48	105	2396563	31.238	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	2141590	33.368	ng	100
89) 1,2,3-Trimethylbenzene	20.61	105	73200	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	1099108	34.504	ng	100
91) d-Limonene	20.74	68	620318	27.803	ng	100
92) 1,2-Dibromo-3-Chloropr...	21.11	157	870627	71.378	ng	100
93) n-Undecane	21.42	57	878	No Calib		
94) 1,2,4-Trichlorobenzene	22.24	180	1855929	80.423	ng	100
95) Naphthalene	22.35	128	2564695	39.300	ng	100
96) n-Dodecane	22.34	57	2133	No Calib		
97) Hexachlorobutadiene	22.66	225	637172	37.959	ng	100
98) Cyclohexanone	18.29	55	1927	No Calib		
99) tert-Butylbenzene	20.24	119	1732954	32.091	ng	100
100) n-Butylbenzene	20.98	91	1879001	30.573	ng	100
101) 1,1,1,2-Tetrachloroethane	17.77	131	462097	31.672	ng	100

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

Vial: 15
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 07:56:35 2022



Data File : I:\MS13\DATA\2022_03\28\03282216.D
 Acq On : 28 Mar 2022 19:30
 Sample : 25ng R13032822 ICV Std.
 Misc : S35-03142201/S35-03072202 (4/6)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Tz 3/29/22

Quant Time: Mar 29 08:01:28 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:57:55 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.34	130	191725	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.45	114	832000	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	122778	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.19	65	243554	12.343	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	98.72%	
57) Toluene-d8 (SS2)	15.90	98	930050	12.562	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.48%	
73) Bromofluorobenzene (SS3)	19.12	174	340099	12.322	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	98.56%	

Target Compounds

						Qvalue
2) Propene	4.21	42	398814	24.781	ng	99
3) Dichlorodifluoromethan...	4.38	85	739405	23.246	ng	100
4) Chloromethane	4.66	50	409716	17.946	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.94	135	429271	23.096	ng	100
6) Vinyl Chloride	5.09	62	538936	21.612	ng	100
7) 1,3-Butadiene	5.37	54	454777	25.697	ng	99
8) Bromomethane	5.82	94	361450	24.267	ng	100
9) Chloroethane	6.15	64	274485	24.530	ng	99
10) Ethanol	6.55	45	1129878	100.032	ng	100
11) Acetonitrile	6.80	41	622895	22.603	ng	100
12) Acrolein	6.98	56	467979	48.285	ng	99
13) Acetone	7.20	58	1314724	115.179	ng	98
14) Trichlorofluoromethane	7.43	101	650002	22.755	ng	99
15) 2-Propanol (Isopropanol)	7.70	45	1821222	49.850	ng	99
16) Acrylonitrile	7.96	53	947579	48.870	ng	100
17) 1,1-Dichloroethene	8.40	96	414038	24.632	ng	100
18) 2-Methyl-2-Propanol (t...	8.57	59	1622291	47.620	ng	100
19) Methylene Chloride	8.63	84	419442	23.344	ng	100
20) 3-Chloro-1-propene (Al...	8.79	41	496157	23.880	ng	99
21) Trichlorotrifluoroethane	9.03	151	398418	23.676	ng	99
22) Carbon Disulfide	8.89	76	2895800	43.914	ng	100
23) trans-1,2-Dichloroethene	9.90	61	551122	25.367	ng	100
24) 1,1-Dichloroethane	10.15	63	688438	24.754	ng	99
25) Methyl tert-Butyl Ether	10.24	73	1071941	23.475	ng	99
26) Vinyl Acetate	10.40	86	400826	131.719	ng	99
27) 2-Butanone (MEK)	10.65	72	548035	50.812	ng	99
28) cis-1,2-Dichloroethene	11.16	61	531277	24.695	ng	100
29) Diisopropyl Ether	11.45	87	727779	50.702	ng	# 75
30) Ethyl Acetate	11.46	61	409218	69.354	ng	100
31) n-Hexane	11.43	57	607324	24.321	ng	100
32) Chloroform	11.51	83	690512	24.368	ng	100
34) Tetrahydrofuran (THF)	11.91	72	525133	48.527	ng	100
35) Ethyl tert-Butyl Ether	12.04	87	1001035	51.329	ng	99
36) 1,2-Dichloroethane	12.30	62	492335	23.843	ng	100
38) 1,1,1-Trichloroethane	12.58	97	627005	23.203	ng	100
39) Isopropyl Acetate	13.02	61	11789	No Calib	#	
40) 1-Butanol	13.03	56	15381	No Calib	#	
41) Benzene	13.06	78	1674887	24.055	ng	100
42) Carbon Tetrachloride	13.22	117	540131	22.511	ng	100
43) Cyclohexane	13.35	84	1270352	48.715	ng	98
44) tert-Amyl Methyl Ether	13.69	73	2328524	49.535	ng	100
45) 1,2-Dichloropropane	13.90	63	406062	23.871	ng	99
46) Bromodichloromethane	14.09	83	573525	24.034	ng	100
47) Trichloroethene	14.15	130	520431	23.668	ng	100
48) 1,4-Dioxane	14.13	88	359179	25.425	ng	98
49) 2,2,4-Trimethylpentane...	14.22	57	1647087	24.127	ng	100
50) Methyl Methacrylate	14.35	100	376674	51.697	ng	99

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282216.D
 Acq On : 28 Mar 2022 19:30
 Sample : 25ng R13032822 ICV Std.
 Misc : S35-03142201/S35-03072202 (4/6)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 08:01:28 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:57:55 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

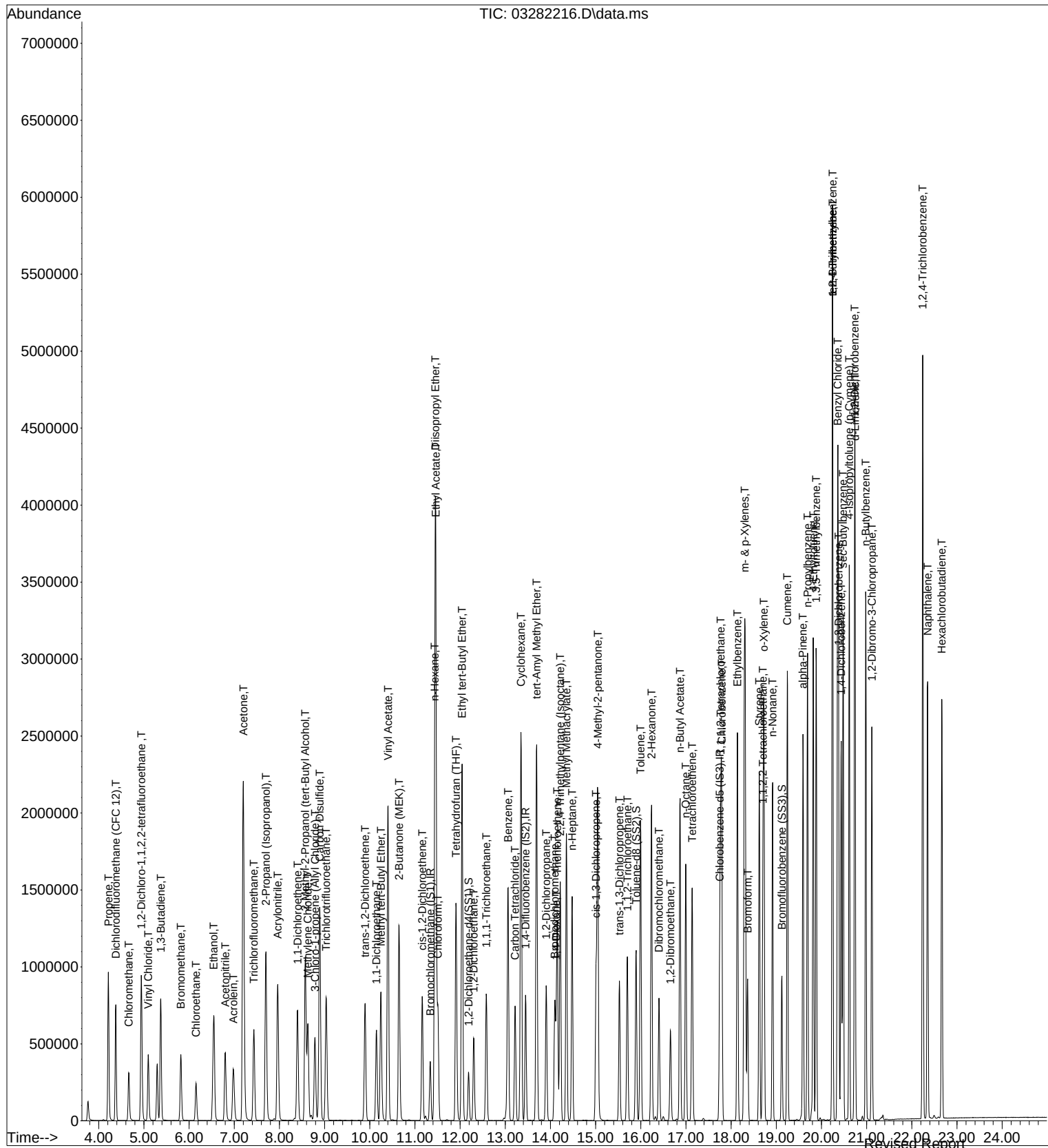
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	424677	25.114	ng	99
52) cis-1,3-Dichloropropene	15.01	75	687404	25.225	ng	100
53) 4-Methyl-2-pentanone	15.05	58	715121	51.899	ng	100
54) trans-1,3-Dichloropropene	15.53	75	619202	25.082	ng	100
55) 1,1,2-Trichloroethane	15.70	97	438756	23.845	ng	98
58) Toluene	15.99	91	1803734	23.965	ng	100
59) 2-Hexanone	16.24	43	1538168	50.973	ng	99
60) Dibromochloromethane	16.40	129	549149	23.975	ng	99
61) 1,2-Dibromoethane	16.65	107	508189	23.793	ng	99
62) n-Butyl Acetate	16.87	43	1721747	52.145	ng	100
63) n-Octane	16.99	57	346999	24.847	ng	100
64) Tetrachloroethene	17.14	166	599341	23.230	ng	100
65) Chlorobenzene	17.79	112	1254927	23.492	ng	100
66) Ethylbenzene	18.14	91	2067585	24.599	ng	100
67) m- & p-Xylenes	18.30	91	3176870	48.951	ng	100
68) Bromoform	18.37	173	525595	24.061	ng	100
69) Styrene	18.62	104	1318276	25.390	ng	100
70) o-Xylene	18.72	91	1639570	24.997	ng	99
71) n-Nonane	18.92	43	754373	25.157	ng	99
72) 1,1,2,2-Tetrachloroethane	18.70	83	769862	24.209	ng	100
74) Cumene	19.24	105	2137389	24.122	ng	100
75) alpha-Pinene	19.59	93	1079091	26.527	ng	100
76) n-Propylbenzene	19.69	91	2523121	24.479	ng	100
77) 3-Ethyltoluene	19.88	105	1781482	No Calib		
78) 4-Ethyltoluene	19.82	105	2144970	24.957	ng	100
79) 1,3,5-Trimethylbenzene	19.88	105	1783426	24.932	ng	100
80) alpha-Methylstyrene	19.89	118	13070	No Calib	#	
81) 2-Ethyltoluene	19.88	105	1783426	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	1791735	25.264	ng	100
83) n-Decane	20.24	58	76815	No Calib		
84) Benzyl Chloride	20.36	91	2874175	54.972	ng	100
85) 1,3-Dichlorobenzene	20.38	146	1150622	23.852	ng	100
86) 1,4-Dichlorobenzene	20.44	146	1148414	23.567	ng	100
87) sec-Butylbenzene	20.48	105	2411210	24.376	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	2128308	24.700	ng	100
89) 1,2,3-Trimethylbenzene	20.61	105	71764	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	1107241	23.937	ng	100
91) d-Limonene	20.74	68	626000	26.555	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.11	157	874551	47.738	ng	99
93) n-Undecane	21.42	57	647	No Calib		
94) 1,2,4-Trichlorobenzene	22.24	180	1825418	46.747	ng	100
95) Naphthalene	22.35	128	2489612	23.600	ng	100
96) n-Dodecane	22.33	57	1796	No Calib	#	
97) Hexachlorobutadiene	22.66	225	628017	22.796	ng	100
98) Cyclohexanone	18.29	55	1979	No Calib		
99) tert-Butylbenzene	20.24	119	1757886	24.661	ng	99
100) n-Butylbenzene	20.98	91	1916033	25.139	ng	100
101) 1,1,1,2-Tetrachloroethane	17.77	131	463272	23.193	ng	100

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

Data File : I:\MS13\DATA\2022_03\28\03282216.D
Acq On : 28 Mar 2022 19:30
Sample : 25ng R13032822 ICV Std.
Misc : S35-03142201/S35-03072202 (4/6)

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 08:01:28 2022
Quant Method : I:\MS13\METHODS\R13032822.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Tue Mar 29 07:57:55 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



Revised Report

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: 03282216.D

Acq. Method File: TO15.M

Data File Path: I:\MS13\DATA\2022_03\28\

Sample Name: 25ng R13032822 ICV Std.

Operator: TZ

Misc Info: S35-03142201/S35-03072202 (

Date Acquired: 3/28/2022

19:30

Instrument Name: GCMS13

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	Propene	4.21	24.8	25.75	96	56	128	*	*
3)	Dichlorodifluoromethane (CFC 12)	4.38	23.2	26.00	89	71	112	*	*
4)	Chloromethane	4.66	17.9	25.75	70	53	126	*	*
5)	1,2-Dichloro-1,1,2,2-tetrafluoroethane	4.94	23.1	26.00	89	62	121	*	*
6)	Vinyl Chloride	5.09	21.6	26.00	83	63	123	*	*
7)	1,3-Butadiene	5.37	25.7	25.75	100	63	135	*	*
8)	Bromomethane	5.82	24.3	25.75	94	71	112	*	*
9)	Chloroethane	6.15	24.5	25.75	95	66	117	*	*
10)	Ethanol	6.55	100	104.00	96	57	117	*	*
11)	Acetonitrile	6.80	22.6	25.25	90	59	131	*	*
12)	Acrolein	6.98	48.3	52.00	93	71	123	*	*
13)	Acetone	7.20	115	128.00	90	60	117	*	*
14)	Trichlorofluoromethane	7.43	22.8	25.25	90	71	114	*	*
15)	2-Propanol (Isopropanol)	7.70	49.9	50.00	100	61	124	*	*
16)	Acrylonitrile	7.96	48.9	50.25	97	65	130	*	*
17)	1,1-Dichloroethene	8.40	24.6	26.25	94	74	114	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alcohol)	8.57	47.6	51.00	93	56	135	*	*
19)	Methylene Chloride	8.63	23.3	26.00	90	75	112	*	*
20)	3-Chloro-1-propene (Allyl Chloride)	8.79	23.9	25.50	94	57	127	*	*
21)	Trichlorotrifluoroethane	9.03	23.7	27.00	88	73	114	*	*
22)	Carbon Disulfide	8.89	43.9	51.75	85	70	113	*	*
23)	trans-1,2-Dichloroethene	9.90	25.4	26.00	98	76	119	*	*
24)	1,1-Dichloroethane	10.15	24.8	26.75	93	70	114	*	*
25)	Methyl tert-Butyl Ether	10.24	23.5	25.75	91	72	118	*	*
26)	Vinyl Acetate	10.40	132	117.75	112	56	137	*	*
27)	2-Butanone (MEK)	10.65	50.8	51.00	100	74	121	*	*
28)	cis-1,2-Dichloroethene	11.16	24.7	25.75	96	73	117	*	*
29)	Diisopropyl Ether	11.45	50.7	52.25	97	58	124	*	*
30)	Ethyl Acetate	11.46	69.4	72.50	96	59	161	*	*
31)	n-Hexane	11.43	24.3	26.00	93	55	130	*	*
32)	Chloroform	11.51	24.4	26.25	93	71	114	*	*
34)	Tetrahydrofuran (THF)	11.91	48.5	50.50	96	73	114	*	*
35)	Ethyl tert-Butyl Ether	12.04	51.3	51.75	99	76	119	*	*
36)	1,2-Dichloroethane	12.30	23.8	26.25	91	71	119	*	*
38)	1,1,1-Trichloroethane	12.58	23.2	26.00	89	73	119	*	*
41)	Benzene	13.06	24.1	26.00	93	72	113	*	*
42)	Carbon Tetrachloride	13.22	22.5	25.25	89	67	123	*	*
43)	Cyclohexane	13.35	48.7	51.50	95	70	119	*	*
44)	tert-Amyl Methyl Ether	13.69	49.5	51.50	96	74	120	*	*
45)	1,2-Dichloropropane	13.90	23.9	25.75	93	70	118	*	*
46)	Bromodichloromethane	14.09	24.0	26.00	92	74	119	*	*
47)	Trichloroethene	14.15	23.7	25.50	93	74	115	*	*
48)	1,4-Dioxane	14.13	25.4	25.75	99	77	124	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	14.22	24.1	26.25	92	65	120	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: 03282216.D

TO15.M

Data File Path: I:\MS13\DATA\2022_03\28\

Sample Name: 25ng R13032822 ICV Std.

Operator: TZ

Misc Info: S35-03142201/S35-03072202 (

Date Acquired: 3/28/2022

19:30

Instrument Name: GCMS13

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	Methyl Methacrylate	14.35	51.7	51.25	101	78	126	*	*
51)	n-Heptane	14.48	25.1	25.75	97	70	119	*	*
52)	cis-1,3-Dichloropropene	15.01	25.2	26.00	97	81	126	*	*
53)	4-Methyl-2-pentanone	15.05	51.9	51.50	101	73	129	*	*
54)	trans-1,3-Dichloropropene	15.53	25.1	25.00	100	80	127	*	*
55)	1,1,2-Trichloroethane	15.70	23.8	26.00	92	78	117	*	*
58)	Toluene	15.99	24.0	25.75	93	70	118	*	*
59)	2-Hexanone	16.24	51.0	50.75	100	74	132	*	*
60)	Dibromochloromethane	16.40	24.0	26.25	91	69	137	*	*
61)	1,2-Dibromoethane	16.65	23.8	26.00	92	76	128	*	*
62)	n-Butyl Acetate	16.87	52.1	50.75	103	75	134	*	*
63)	n-Octane	16.99	24.8	26.00	95	68	120	*	*
64)	Tetrachloroethene	17.14	23.2	26.50	88	63	130	*	*
65)	Chlorobenzene	17.79	23.5	25.75	91	70	118	*	*
66)	Ethylbenzene	18.14	24.6	25.75	96	71	123	*	*
67)	m- & p-Xylenes	18.30	49.0	52.00	94	67	127	*	*
68)	Bromoform	18.37	24.1	26.25	92	65	149	*	*
69)	Styrene	18.62	25.4	25.25	101	76	132	*	*
70)	o-Xylene	18.72	25.0	26.00	96	69	124	*	*
71)	n-Nonane	18.92	25.2	26.00	97	64	127	*	*
72)	1,1,2,2-Tetrachloroethane	18.70	24.2	26.00	93	69	128	*	*
74)	Cumene	19.24	24.1	25.75	94	69	125	*	*
75)	alpha-Pinene	19.59	26.5	26.25	101	68	129	*	*
76)	n-Propylbenzene	19.69	24.5	26.00	94	70	127	*	*
78)	4-Ethyltoluene	19.82	25.0	26.00	96	69	127	*	*
79)	1,3,5-Trimethylbenzene	19.88	24.9	26.00	96	66	129	*	*
82)	1,2,4-Trimethylbenzene	20.24	25.3	25.75	98	63	142	*	*
84)	Benzyl Chloride	20.36	55.0	52.00	106	73	145	*	*
85)	1,3-Dichlorobenzene	20.38	23.9	26.00	92	67	136	*	*
86)	1,4-Dichlorobenzene	20.44	23.6	26.25	90	63	134	*	*
87)	sec-Butylbenzene	20.48	24.4	25.50	96	68	130	*	*
88)	4-Isopropyltoluene (p-Cymene)	20.61	24.7	25.75	96	60	139	*	*
90)	1,2-Dichlorobenzene	20.73	23.9	26.25	91	64	139	*	*
91)	d-Limonene	20.74	26.6	25.75	103	63	137	*	*
92)	1,2-Dibromo-3-Chloropropane	21.11	47.7	50.50	94	72	145	*	*
94)	1,2,4-Trichlorobenzene	22.24	46.7	52.50	89	62	154	*	*
95)	Naphthalene	22.35	23.6	26.25	90	62	156	*	*
97)	Hexachlorobutadiene	22.66	22.8	26.50	86	55	142	*	*
99)	tert-Butylbenzene	20.24	24.7	25.75	96	61	140	*	*
100)	n-Butylbenzene	20.98	25.1	26.00	97	70	131	*	*
101)	1,1,1,2-Tetrachloroethane	17.77	23.2	25.75	90	70	130	*	*

Bold = 75 Compound List

* = Pass

Data File : I:\MS13\DATA\2022_03\28\03282213.D
 Acq On : 28 Mar 2022 17:48
 Sample : 50ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282201 (4/27)

Vial: 15
 Operator: TZ
 Inst : GCMS13

TZ 3/29/22

Quant Time: Mar 29 07:56:36 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.34	130	177075	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.45	114	773912	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	113479	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.19	65	227132	9.635	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	77.04%	
57) Toluene-d8 (SS2)	15.90	98	862863	15.181	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	121.44%	
73) Bromofluorobenzene (SS3)	19.12	174	321381	19.531	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	156.24%#	

Target Compounds

						Qvalue
2) Propene	4.21	42	739714	32.706	ng	99
3) Dichlorodifluoromethan...	4.38	85	1529004	41.756	ng	100
4) Chloromethane	4.67	50	972530	36.634	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	907841	53.228	ng	100
6) Vinyl Chloride	5.10	62	1199041	41.569	ng	100
7) 1,3-Butadiene	5.38	54	861953	36.432	ng	99
8) Bromomethane	5.83	94	686474	42.353	ng	99
9) Chloroethane	6.16	64	515936	37.090	ng	100
10) Ethanol	6.57	45	1733889	105.632	ng	100
11) Acetonitrile	6.82	41	1176363	28.764	ng	100
12) Acrolein	6.99	56	901388	69.036	ng	100
13) Acetone	7.22	58	2359551	156.580	ng	99
14) Trichlorofluoromethane	7.44	101	1277149	39.471	ng	100
15) 2-Propanol (Isopropanol)	7.72	45	3288266	63.674	ng	99
16) Acrylonitrile	7.98	53	1810026	68.614	ng	100
17) 1,1-Dichloroethene	8.41	96	801029	44.719	ng	100
18) 2-Methyl-2-Propanol (t...	8.59	59	3167632	71.960	ng	100
19) Methylene Chloride	8.64	84	808779	39.842	ng	98
20) 3-Chloro-1-propene (Al...	8.79	41	1023834	34.638	ng	99
21) Trichlorotrifluoroethane	9.04	151	791770	51.617	ng	100
22) Carbon Disulfide	8.90	76	5709624	77.954	ng	100
23) trans-1,2-Dichloroethene	9.90	61	1074378	38.078	ng	99
24) 1,1-Dichloroethane	10.15	63	1289839	36.684	ng	100
25) Methyl tert-Butyl Ether	10.25	73	2167664	37.979	ng	100
26) Vinyl Acetate	10.41	86	541469	149.304	ng	# 95
27) 2-Butanone (MEK)	10.65	72	1049486	79.040	ng	97
28) cis-1,2-Dichloroethene	11.17	61	1026844	36.325	ng	99
29) Diisopropyl Ether	11.46	87	1160977	69.303	ng	# 92
30) Ethyl Acetate	11.48	61	941908	117.458	ng	96
31) n-Hexane	11.44	57	1056372	30.904	ng	99
32) Chloroform	11.52	83	1349998	40.208	ng	100
34) Tetrahydrofuran (THF)	11.91	72	957085	71.810	ng	98
35) Ethyl tert-Butyl Ether	12.05	87	1923241	83.474	ng	98
36) 1,2-Dichloroethane	12.30	62	974344	36.771	ng	100
38) 1,1,1-Trichloroethane	12.58	97	1246722	42.220	ng	100
39) Isopropyl Acetate	13.01	61	71234	No Calib		
40) 1-Butanol	13.03	56	33700	No Calib		
41) Benzene	13.06	78	3162157	40.511	ng	100
42) Carbon Tetrachloride	13.22	117	1137731	45.042	ng	100
43) Cyclohexane	13.35	84	2398525	81.031	ng	99
44) tert-Amyl Methyl Ether	13.69	73	4426416	80.502	ng	100
45) 1,2-Dichloropropane	13.91	63	770433	37.426	ng	99
46) Bromodichloromethane	14.10	83	1122189	42.003	ng	100
47) Trichloroethene	14.15	130	1014457	49.331	ng	100
48) 1,4-Dioxane	14.13	88	698454	47.702	ng	100
49) 2,2,4-Trimethylpentane...	14.22	57	3158844	36.455	ng	99
50) Methyl Methacrylate	14.36	100	735499	98.068	ng	98

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282213.D
 Acq On : 28 Mar 2022 17:48
 Sample : 50ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282201 (4/27)

Vial: 15
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:36 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	822386	40.355	ng	99
52) cis-1,3-Dichloropropene	15.01	75	1337545	42.970	ng	100
53) 4-Methyl-2-pentanone	15.05	58	1334781	75.858	ng	99
54) trans-1,3-Dichloropropene	15.53	75	1230584	43.530	ng	100
55) 1,1,2-Trichloroethane	15.70	97	853076	45.049	ng	99
58) Toluene	16.00	91	3454949	53.370	ng	100
59) 2-Hexanone	16.24	43	2887610	87.487	ng	99
60) Dibromochloromethane	16.40	129	1127699	63.894	ng	100
61) 1,2-Dibromoethane	16.66	107	1011935	60.069	ng	100
62) n-Butyl Acetate	16.87	43	3187306	86.979	ng	99
63) n-Octane	16.99	57	662384	46.652	ng	99
64) Tetrachloroethene	17.14	166	1188387	68.937	ng	100
65) Chlorobenzene	17.79	112	2427552	57.920	ng	100
66) Ethylbenzene	18.14	91	3946252	54.794	ng	100
67) m- & p-Xylenes	18.31	91	6030679	106.288	ng	99
68) Bromoform	18.37	173	1076125	72.635	ng	100
69) Styrene	18.63	104	2627141	62.569	ng	99
70) o-Xylene	18.72	91	3120079	54.975	ng	99
71) n-Nonane	18.92	43	1376964	42.906	ng	99
72) 1,1,2,2-Tetrachloroethane	18.70	83	1442089	53.002	ng	100
74) Cumene	19.25	105	4136999	57.776	ng	100
75) alpha-Pinene	19.59	93	2136882	61.495	ng	100
76) n-Propylbenzene	19.69	91	4852799	55.881	ng	99
77) 3-Ethyltoluene	19.89	105	3438616	No Calib		
78) 4-Ethyltoluene	19.82	105	4193941	60.913	ng	100
79) 1,3,5-Trimethylbenzene	19.89	105	3439347	59.494	ng	99
80) alpha-Methylstyrene	19.89	118	25731	No Calib		
81) 2-Ethyltoluene	19.89	105	3439347	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	3282993	57.290	ng	99
83) n-Decane	20.24	58	122583	No Calib		
84) Benzyl Chloride	20.36	91	5580524	130.009	ng	99
85) 1,3-Dichlorobenzene	20.38	146	2199115	63.278	ng	100
86) 1,4-Dichlorobenzene	20.44	146	2314299	65.877	ng	100
87) sec-Butylbenzene	20.48	105	4683143	58.521	ng	99
88) 4-Isopropyltoluene (p-...	20.62	119	4184062	62.500	ng	99
89) 1,2,3-Trimethylbenzene	20.62	105	146117	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	2126353	63.996	ng	100
91) d-Limonene	20.74	68	1169257	50.242	ng	97
92) 1,2-Dibromo-3-Chloropr...	21.12	157	1735841	136.435	ng	99
93) n-Undecane	21.42	57	1717	No Calib		
94) 1,2,4-Trichlorobenzene	22.24	180	3630931	150.841	ng	100
95) Naphthalene	22.35	128	5241717	77.005	ng	100
96) n-Dodecane	22.33	57	3925	No Calib	#	
97) Hexachlorobutadiene	22.66	225	1306868	74.639	ng	100
98) Cyclohexanone	18.30	55	3750	No Calib		
99) tert-Butylbenzene	20.24	119	3227923	57.307	ng	100
100) n-Butylbenzene	20.98	91	3685327	57.487	ng	99
101) 1,1,1,2-Tetrachloroethane	17.77	131	920249	60.468	ng	100

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

Data File : I:\MS13\DATA\2022_03\28\03282213.D
Acq On : 28 Mar 2022 17:48
Sample : 50ng R13032822 ICAL Std.
Misc : S35-03142201/S35-03282201 (4/27)

Vial: 15
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 07:56:36 2022

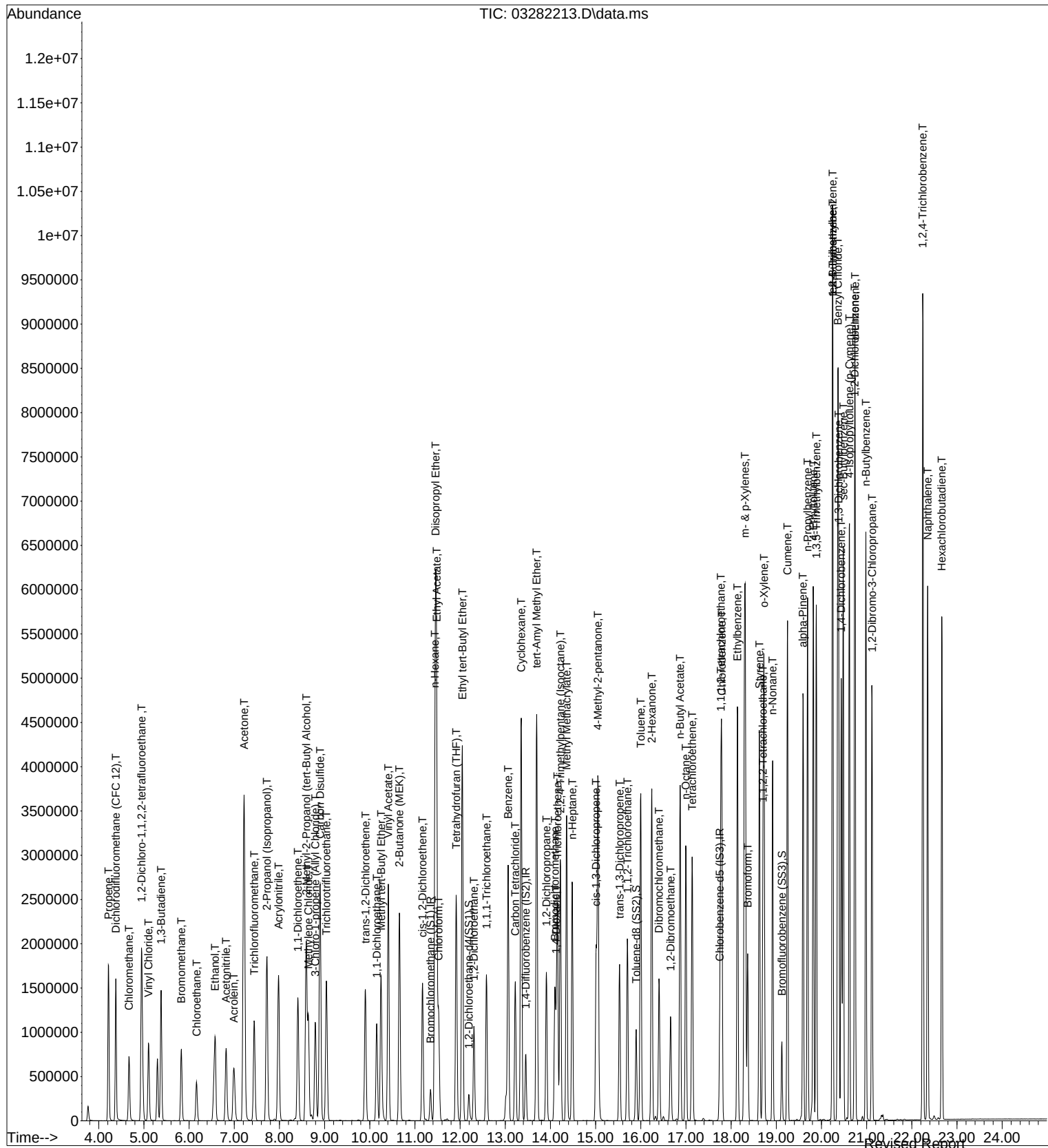
Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282214.D
 Acq On : 28 Mar 2022 18:22
 Sample : 100ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282201 (4/27)

Vial: 15
 Operator: TZ
 Inst : GCMS13

T2 3/29/22

Quant Time: Mar 29 07:56:38 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.35	130	189556	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	13.45	114	830899	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	122650	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.20	65	237901	9.427	ng	0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	75.44%	
57) Toluene-d8 (SS2)	15.90	98	919881	14.974	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	119.76%	
73) Bromofluorobenzene (SS3)	19.12	174	344998	19.399	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	155.20%#	

Target Compounds

						Qvalue
2) Propene	4.22	42	1517500	62.678	ng	99
3) Dichlorodifluoromethan...	4.39	85	2824923	72.067	ng	100
4) Chloromethane	4.68	50	1268842	44.648	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.96	135	1688936	92.504	ng	100
6) Vinyl Chloride	5.12	62	2071466	67.086	ng	99
7) 1,3-Butadiene	5.40	54	1706592	67.383	ng	99
8) Bromomethane	5.84	94	1399544	80.662	ng	100
9) Chloroethane	6.18	64	1046611	70.286	ng	100
10) Ethanol	6.62	45	3440448	195.798	ng	100
11) Acetonitrile	6.85	41	2428467	55.471	ng	100
12) Acrolein	7.01	56	1848907	132.281	ng	100
13) Acetone	7.25	58	4377750	271.379	ng	97
14) Trichlorofluoromethane	7.45	101	2637064	76.133	ng	99
15) 2-Propanol (Isopropanol)	7.76	45	6326634	114.443	ng	100
16) Acrylonitrile	8.01	53	3694292	130.821	ng	100
17) 1,1-Dichloroethene	8.42	96	1660965	86.620	ng	99
18) 2-Methyl-2-Propanol (t...	8.62	59	4481609	95.106	ng	100
19) Methylene Chloride	8.65	84	1644104	75.660	ng	97
20) 3-Chloro-1-propene (Al...	8.80	41	2097315	66.284	ng	98
21) Trichlorotrifluoroethane	9.05	151	1639972	99.874	ng	100
22) Carbon Disulfide	8.91	76	11162204	142.364	ng	99
23) trans-1,2-Dichloroethene	9.91	61	2204148	72.975	ng	99
24) 1,1-Dichloroethane	10.16	63	2630148	69.877	ng	100
25) Methyl tert-Butyl Ether	10.26	73	3352995	54.879	ng	100
26) Vinyl Acetate	10.43	86	1065312	274.406	ng	# 87
27) 2-Butanone (MEK)	10.68	72	2074924	145.979	ng	94
28) cis-1,2-Dichloroethene	11.18	61	2090547	69.085	ng	99
29) Diisopropyl Ether	11.46	87	2029071	113.147	ng	# 94
30) Ethyl Acetate	11.50	61	1632581	190.181	ng	91
31) n-Hexane	11.45	57	1911359	52.234	ng	98
32) Chloroform	11.54	83	2767917	77.010	ng	100
34) Tetrahydrofuran (THF)	11.92	72	1905871	133.582	ng	95
35) Ethyl tert-Butyl Ether	12.05	87	3705958	150.258	ng	95
36) 1,2-Dichloroethane	12.32	62	2004397	70.664	ng	100
38) 1,1,1-Trichloroethane	12.59	97	2524485	79.628	ng	100
39) Isopropyl Acetate	13.02	61	147559	No Calib		
40) 1-Butanol	13.03	56	73910	No Calib	#	
41) Benzene	13.07	78	6352184	75.798	ng	100
42) Carbon Tetrachloride	13.23	117	2325620	85.755	ng	100
43) Cyclohexane	13.36	84	4493756	141.404	ng	98
44) tert-Amyl Methyl Ether	13.70	73	8321164	140.956	ng	98
45) 1,2-Dichloropropane	13.92	63	1571731	71.115	ng	100
46) Bromodichloromethane	14.10	83	2307974	80.462	ng	100
47) Trichloroethene	14.16	130	2043974	92.577	ng	100
48) 1,4-Dioxane	14.13	88	1406895	89.496	ng	99
49) 2,2,4-Trimethylpentane...	14.23	57	6205828	66.708	ng	98
50) Methyl Methacrylate	14.36	100	1450506	180.139	ng	96

Revised Report

Data File : I:\MS13\DATA\2022_03\28\03282214.D
 Acq On : 28 Mar 2022 18:22
 Sample : 100ng R13032822 ICAL Std.
 Misc : S35-03142201/S35-03282201 (4/27)

Vial: 15
 Operator: TZ
 Inst : GCMS13

Quant Time: Mar 29 07:56:38 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Tue Mar 29 07:56:11 2022

Response via : Initial Calibration

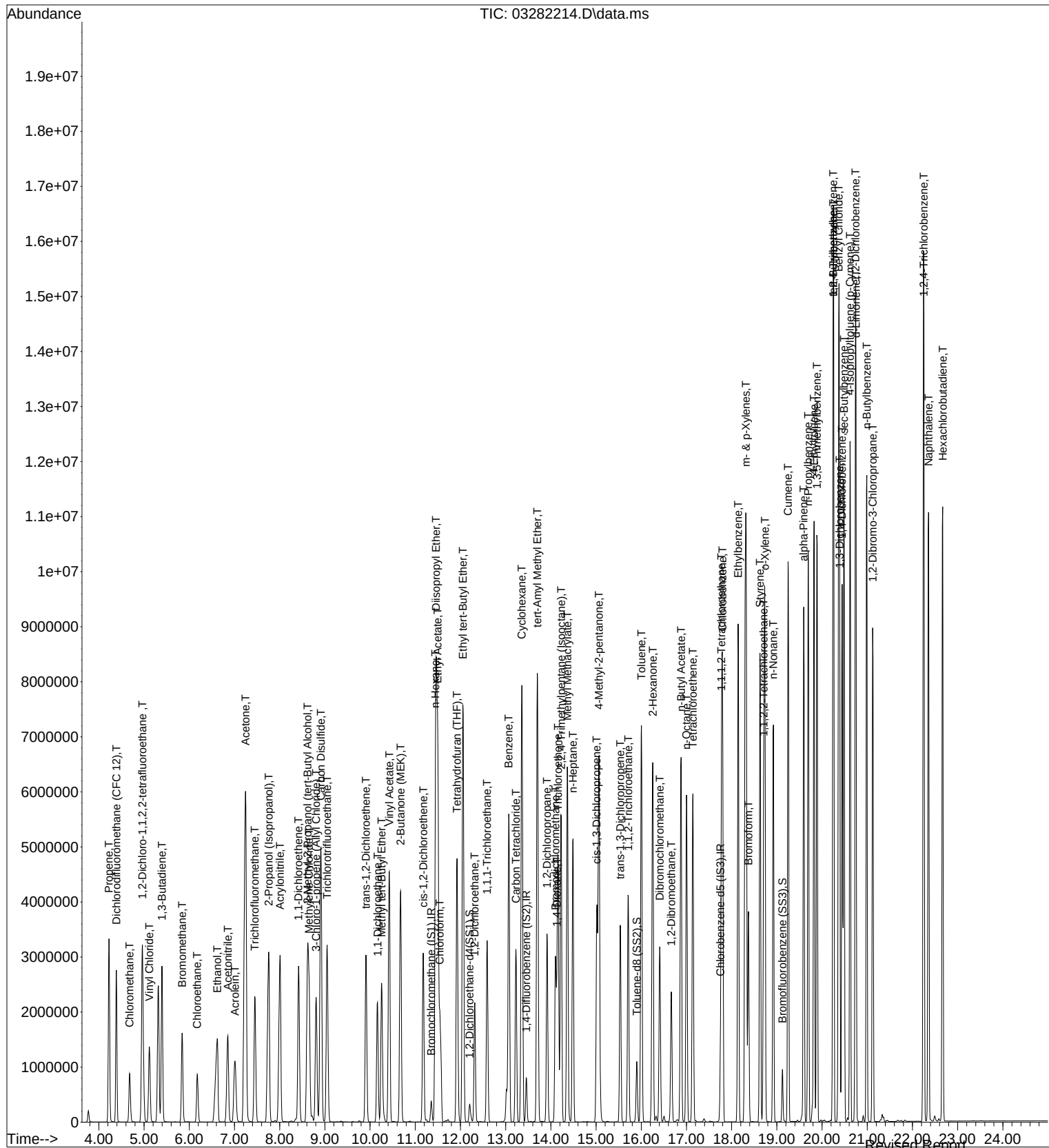
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.49	71	1636361	74.790	ng	99
52) cis-1,3-Dichloropropene	15.01	75	2728766	81.653	ng	100
53) 4-Methyl-2-pentanone	15.06	58	2533371	134.102	ng	97
54) trans-1,3-Dichloropropene	15.54	75	2539821	83.681	ng	100
55) 1,1,2-Trichloroethane	15.71	97	1742894	85.726	ng	99
58) Toluene	16.00	91	6841147	97.777	ng	99
59) 2-Hexanone	16.25	43	5475539	153.490	ng	99
60) Dibromochloromethane	16.41	129	2326961	121.984	ng	100
61) 1,2-Dibromoethane	16.66	107	2106940	115.717	ng	99
62) n-Butyl Acetate	16.88	43	5982427	151.048	ng	99
63) n-Octane	17.00	57	1302968	84.906	ng	97
64) Tetrachloroethene	17.14	166	2424637	130.134	ng	100
65) Chlorobenzene	17.80	112	4722609	104.254	ng	100
66) Ethylbenzene	18.14	91	7749599	99.558	ng	99
67) m- & p-Xylenes	18.31	91	11416419	186.164	ng	98
68) Bromoform	18.37	173	2231497	139.356	ng	100
69) Styrene	18.63	104	5188336	114.327	ng	99
70) o-Xylene	18.74	91	6029292	98.290	ng	99
71) n-Nonane	18.92	43	2572864	74.175	ng	97
72) 1,1,2,2-Tetrachloroethane	18.71	83	2775847	94.393	ng	100
74) Cumene	19.25	105	7875634	101.765	ng	99
75) alpha-Pinene	19.59	93	4162529	110.832	ng	98
76) n-Propylbenzene	19.69	91	9111480	97.076	ng	97
77) 3-Ethyltoluene	19.89	105	6627176	No Calib		
78) 4-Ethyltoluene	19.82	105	8014645	107.702	ng	99
79) 1,3,5-Trimethylbenzene	19.89	105	6627664	106.074	ng	99
80) alpha-Methylstyrene	19.89	118	50116	No Calib	#	
81) 2-Ethyltoluene	19.89	105	6627664	No Calib		
82) 1,2,4-Trimethylbenzene	20.25	105	5785061	93.404	ng	97
83) n-Decane	20.25	58	192674	No Calib		
84) Benzyl Chloride	20.37	91	9716481	209.438	ng	99
85) 1,3-Dichlorobenzene	20.39	146	3939899	104.891	ng	100
86) 1,4-Dichlorobenzene	20.44	146	4550201	119.837	ng	100
87) sec-Butylbenzene	20.48	105	8656024	100.078	ng	97
88) 4-Isopropyltoluene (p-...	20.62	119	7739774	106.968	ng	97
89) 1,2,3-Trimethylbenzene	20.62	105	286158	No Calib		
90) 1,2-Dichlorobenzene	20.74	146	3775410	105.130	ng	100
91) d-Limonene	20.75	68	2001598	79.576	ng	93
92) 1,2-Dibromo-3-Chloropr...	21.12	157	3279528	238.493	ng	96
93) n-Undecane	21.42	57	3963	No Calib		
94) 1,2,4-Trichlorobenzene	22.25	180	6508063	250.150	ng	99
95) Naphthalene	22.36	128	10004781	135.987	ng	99
96) n-Dodecane	22.33	57	8215	No Calib	#	
97) Hexachlorobutadiene	22.67	225	2653175	140.200	ng	100
98) Cyclohexanone	18.31	55	7927	No Calib	#	
99) tert-Butylbenzene	20.25	119	5658309	92.943	ng	100
100) n-Butylbenzene	20.99	91	6855948	98.949	ng	98
101) 1,1,1,2-Tetrachloroethane	17.77	131	1805904	109.790	ng	100

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

Vial: 15
Operator: TZ
Inst : GCMS13

Quant Time: Mar 29 07:56:38 2022



Data File : I:\MS13\DATA\2022_04\13\04132201.D
 Acq On : 12 Apr 2022 23:34
 Sample : CCV R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

TZ 4/13/22

Quant Time: Apr 13 06:40:53 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.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 (IS1)	1.000	1.000	0.0	93	0.00
2 T	Propene	1.049	0.963	8.2	86	-0.01
3 T	Dichlorodifluoromethane (CF	2.074	1.956	5.7	89	0.00
4 T	Chloromethane	1.488	1.462	1.7	89	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.212	1.169	3.5	89	0.00
6 T	Vinyl Chloride	1.626	1.584	2.6	87	0.00
7 T	1,3-Butadiene	1.154	1.090	5.5	83	0.00
8 T	Bromomethane	0.971	0.934	3.8	87	0.00
9 T	Chloroethane	0.730	0.684	6.3	87	0.00
10 T	Ethanol	0.736	0.641	12.9	85	0.00
11 T	Acetonitrile	1.797	1.640	8.7	84	0.00
12 T	Acrolein	0.632	0.589	6.8	83	0.00
13 T	Acetone	0.744	0.622	16.4	83	0.00
14 T	Trichlorofluoromethane	1.862	1.670	10.3	85	0.00
15 T	2-Propanol (Isopropanol)	2.382	2.222	6.7	84	-0.01
16 T	Acrylonitrile	1.264	1.183	6.4	84	0.00
17 T	1,1-Dichloroethene	1.096	1.004	8.4	86	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.221	2.226	-0.2	81	0.00
19 T	Methylene Chloride	1.171	1.022	12.7	84	0.00
20 T	3-Chloro-1-propene (Allyl C	1.355	1.273	6.1	83	0.00
21 T	Trichlorotrifluoroethane	1.097	1.020	7.0	88	0.00
22 T	Carbon Disulfide	4.299	3.648	15.1	84	0.00
23 T	trans-1,2-Dichloroethene	1.416	1.360	4.0	85	0.00
24 T	1,1-Dichloroethane	1.813	1.664	8.2	85	0.00
25 T	Methyl tert-Butyl Ether	2.977	2.942	1.2	84	0.00
26 T	Vinyl Acetate	0.198	0.210	-6.1	83	0.00
27 T	2-Butanone (MEK)	0.703	0.668	5.0	83	0.00
28 T	cis-1,2-Dichloroethene	1.403	1.324	5.6	85	0.00
29 T	Diisopropyl Ether	0.936	0.853	8.9	82	0.00
30 T	Ethyl Acetate	0.385	0.339	11.9	81	0.00
31 T	n-Hexane	1.628	1.420	12.8	83	0.00
32 T	Chloroform	1.848	1.652	10.6	83	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.286	1.206	6.2	87	0.00
34 T	Tetrahydrofuran (THF)	0.706	0.641	9.2	83	0.00
35 T	Ethyl tert-Butyl Ether	1.272	1.230	3.3	84	0.00
36 T	1,2-Dichloroethane	1.346	1.217	9.6	84	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
38 T	1,1,1-Trichloroethane	0.406	0.395	2.7	85	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	103	0.00
40 T	1-Butanol	0.000	0.000	0.0	87	0.00
41 T	Benzene	1.046	0.975	6.8	83	0.00
42 T	Carbon Tetrachloride	0.360	0.355	1.4	85	0.00
43 T	Cyclohexane	0.392	0.378	3.6	81	0.00
44 T	tert-Amyl Methyl Ether	0.706	0.693	1.8	83	0.00
45 T	1,2-Dichloropropane	0.256	0.236	7.8	81	0.00
46 T	Bromodichloromethane	0.359	0.348	3.1	84	0.00
47 T	Trichloroethene	0.330	0.317	3.9	83	0.00
48 T	1,4-Dioxane	0.212	0.215	-1.4	83	0.00
49 T	2,2,4-Trimethylpentane (Iso	1.026	0.949	7.5	81	0.00
50 T	Methyl Methacrylate	0.109	0.113	-3.7	83	0.00
51 T	n-Heptane	0.254	0.249	2.0	81	0.00
52 T	cis-1,3-Dichloropropene	0.409	0.406	0.7	83	0.00
53 T	4-Methyl-2-pentanone	0.207	0.209	-1.0	81	0.00
54 T	trans-1,3-Dichloropropene	0.371	0.390	-5.1	83	0.00
55 T	1,1,2-Trichloroethane	0.276	0.268	2.9	84	0.00

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132201.D
 Acq On : 12 Apr 2022 23:34
 Sample : CCV R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 13 06:40:53 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.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)
56 IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	85	0.00
57 S	Toluene-d8 (SS2)	7.538	7.665	-1.7	87	0.00
58 T	Toluene	7.663	7.445	2.8	82	0.00
59 T	2-Hexanone	3.072	3.188	-3.8	81	0.00
60 T	Dibromochloromethane	2.332	2.409	-3.3	84	0.00
61 T	1,2-Dibromoethane	2.175	2.181	-0.3	84	0.00
62 T	n-Butyl Acetate	3.362	3.567	-6.1	81	0.00
63 T	n-Octane	1.422	1.397	1.8	80	0.00
64 T	Tetrachloroethene	2.627	2.544	3.2	83	0.00
65 T	Chlorobenzene	5.439	5.296	2.6	83	0.00
66 T	Ethylbenzene	8.557	8.619	-0.7	82	0.00
67 T	m- & p-Xylenes	6.607	6.629	-0.3	82	0.00
68 T	Bromoform	2.224	2.327	-4.6	85	0.00
69 T	Styrene	5.286	5.700	-7.8	83	0.00
70 T	o-Xylene	6.678	6.741	-0.9	82	0.00
71 T	n-Nonane	3.053	2.987	2.2	80	0.00
72 T	1,1,2,2-Tetrachloroethane	3.238	3.112	3.9	81	0.00
73 S	Bromofluorobenzene (SS3)	2.810	2.923	-4.0	86	0.00
74 T	Cumene	9.021	9.038	-0.2	82	0.00
75 T	alpha-Pinene	4.142	4.516	-9.0	85	0.00
76 T	n-Propylbenzene	10.494	10.499	-0.0	82	0.00
77 T	3-Ethyltoluene	0.000	0.000	0.0	82	0.00
78 T	4-Ethyltoluene	8.750	8.985	-2.7	83	0.00
79 T	1,3,5-Trimethylbenzene	7.283	7.366	-1.1	82	0.00
80 T	alpha-Methylstyrene	0.000	0.000	0.0	84	0.00
81 T	2-Ethyltoluene	0.000	0.000	0.0	82	0.00
82 T	1,2,4-Trimethylbenzene	7.220	7.443	-3.1	81	0.00
83 T	n-Decane	0.000	0.000	0.0	78	0.00
84 T	Benzyl Chloride	5.323	6.342	-19.1	84	0.00
85 T	1,3-Dichlorobenzene	4.911	4.911	0.0	83	0.00
86 T	1,4-Dichlorobenzene	4.961	4.975	-0.3	84	0.00
87 T	sec-Butylbenzene	10.071	10.320	-2.5	83	0.00
88 T	4-Isopropyltoluene (p-Cymen	8.773	9.213	-5.0	83	0.00
89 T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	83	0.00
90 T	1,2-Dichlorobenzene	4.709	4.688	0.4	83	0.00
91 T	d-Limonene	2.400	2.633	-9.7	82	0.00
92 T	1,2-Dibromo-3-Chloropropane	1.865	1.986	-6.5	84	0.00
93 T	n-Undecane	0.000	0.000	0.0	55	0.00
94 T	1,2,4-Trichlorobenzene	3.976	3.981	-0.1	81	0.00
95 T	Naphthalene	10.740	10.972	-2.2	82	0.00
96 T	n-Dodecane	0.000	0.000	0.0	49#	0.00
97 T	Hexachlorobutadiene	2.805	2.888	-3.0	86	0.00
98 T	Cyclohexanone	0.000	0.000	0.0	84	0.00
99 T	tert-Butylbenzene	7.257	7.420	-2.2	82	0.00
100 T	n-Butylbenzene	7.760	8.051	-3.8	82	0.00
101 T	1,1,1,2-Tetrachloroethane	2.034	2.010	1.2	84	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS13\DATA\2022_04\13\04132201.D
 Acq On : 12 Apr 2022 23:34
 Sample : CCV R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

T2 4/13/22

Quant Time: Apr 13 06:40:53 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.34	130	156335	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.45	114	639037	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	92401	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.19	65	188482	11.715	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	93.68%	
57) Toluene-d8 (SS2)	15.89	98	708243	12.711	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	101.68%	
73) Bromofluorobenzene (SS3)	19.12	174	270122	13.004	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	104.00%	

Target Compounds

						Qvalue
2) Propene	4.21	42	313054	23.856	ng	100
3) Dichlorodifluoromethan...	4.38	85	642193	24.760	ng	100
4) Chloromethane	4.67	50	466319	25.050	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.94	135	394790	26.049	ng	100
6) Vinyl Chloride	5.09	62	515210	25.337	ng	100
7) 1,3-Butadiene	5.37	54	354388	24.558	ng	99
8) Bromomethane	5.82	94	297825	24.522	ng	100
9) Chloroethane	6.15	64	218168	23.911	ng	99
10) Ethanol	6.55	45	725543	78.776	ng	100
11) Acetonitrile	6.80	41	476789	21.217	ng	100
12) Acrolein	6.98	56	368216	46.592	ng	100
13) Acetone	7.21	58	1010103	108.524	ng	98
14) Trichlorofluoromethane	7.43	101	537866	23.092	ng	100
15) 2-Propanol (Isopropanol)	7.70	45	1403398	47.109	ng	100
16) Acrylonitrile	7.96	53	750869	47.491	ng	99
17) 1,1-Dichloroethene	8.40	96	335760	24.497	ng	99
18) 2-Methyl-2-Propanol (t...	8.58	59	1461715	52.619	ng	100
19) Methylene Chloride	8.63	84	332347	22.684	ng	98
20) 3-Chloro-1-propene (Al...	8.78	41	417819	24.662	ng	99
21) Trichlorotrifluoroethane	9.03	151	344398	25.098	ng	100
22) Carbon Disulfide	8.89	76	2395572	44.552	ng	100
23) trans-1,2-Dichloroethene	9.89	61	450840	25.449	ng	99
24) 1,1-Dichloroethane	10.15	63	546177	24.085	ng	100
25) Methyl tert-Butyl Ether	10.24	73	965850	25.940	ng	100
26) Vinyl Acetate	10.40	86	223423	90.041	ng	99
27) 2-Butanone (MEK)	10.65	72	430304	48.927	ng	99
28) cis-1,2-Dichloroethene	11.16	61	430377	24.534	ng	99
29) Diisopropyl Ether	11.45	87	565125	48.283	ng	99
30) Ethyl Acetate	11.47	61	432177	89.826	ng	98
31) n-Hexane	11.43	57	466287	22.900	ng	99
32) Chloroform	11.51	83	552850	23.926	ng	99
34) Tetrahydrofuran (THF)	11.91	72	394627	44.722	ng	98
35) Ethyl tert-Butyl Ether	12.04	87	807404	50.772	ng	99
36) 1,2-Dichloroethane	12.30	62	403224	23.948	ng	100
38) 1,1,1-Trichloroethane	12.58	97	524956	25.293	ng	100
39) Isopropyl Acetate	13.01	61	35087	No Calib	#	
40) 1-Butanol	13.03	56	13023	No Calib		
41) Benzene	13.06	78	1296355	24.240	ng	100
42) Carbon Tetrachloride	13.22	117	476154	25.837	ng	100
43) Cyclohexane	13.35	84	1000019	49.928	ng	100
44) tert-Amyl Methyl Ether	13.69	73	1850572	51.255	ng	100
45) 1,2-Dichloropropane	13.90	63	311126	23.813	ng	100
46) Bromodichloromethane	14.09	83	466401	25.446	ng	100
47) Trichloroethene	14.15	130	416886	24.684	ng	100
48) 1,4-Dioxane	14.13	88	285926	26.352	ng	99
49) 2,2,4-Trimethylpentane...	14.21	57	1285322	24.513	ng	99
50) Methyl Methacrylate	14.35	100	301057	53.796	ng	97

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132201.D
 Acq On : 12 Apr 2022 23:34
 Sample : CCV R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 13 06:40:53 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	334548	25.758	ng	99
52) cis-1,3-Dichloropropene	15.01	75	545377	26.056	ng	100
53) 4-Methyl-2-pentanone	15.05	58	555672	52.505	ng	100
54) trans-1,3-Dichloropropene	15.53	75	502923	26.524	ng	100
55) 1,1,2-Trichloroethane	15.70	97	356253	25.207	ng	100
58) Toluene	15.99	91	1417186	25.019	ng	100
59) 2-Hexanone	16.24	43	1207842	53.186	ng	100
60) Dibromochloromethane	16.40	129	467536	27.122	ng	100
61) 1,2-Dibromoethane	16.65	107	419192	26.079	ng	100
62) n-Butyl Acetate	16.87	43	1344637	54.112	ng	100
63) n-Octane	16.99	57	271084	25.792	ng	98
64) Tetrachloroethene	17.13	166	489006	25.185	ng	100
65) Chlorobenzene	17.79	112	1017955	25.320	ng	100
66) Ethylbenzene	18.14	91	1640560	25.935	ng	100
67) m- & p-Xylenes	18.30	91	2523623	51.670	ng	100
68) Bromoform	18.36	173	447264	27.206	ng	100
69) Styrene	18.62	104	1085046	27.768	ng	100
70) o-Xylene	18.72	91	1295506	26.245	ng	100
71) n-Nonane	18.91	43	574010	25.436	ng	100
72) 1,1,2,2-Tetrachloroethane	18.70	83	598186	24.994	ng	100
74) Cumene	19.24	105	1736988	26.048	ng	100
75) alpha-Pinene	19.59	93	901282	29.439	ng	99
76) n-Propylbenzene	19.69	91	2037154	26.262	ng	100
77) 3-Ethyltoluene	19.88	105	1415772	No Calib		
78) 4-Ethyltoluene	19.82	105	1760056	27.210	ng	100
79) 1,3,5-Trimethylbenzene	19.88	105	1415772	26.299	ng	100
80) alpha-Methylstyrene	19.88	118	10807	No Calib		
81) 2-Ethyltoluene	19.88	105	1415772	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	1416834	26.545	ng	100
83) n-Decane	20.24	58	56269	No Calib		
84) Benzyl Chloride	20.36	91	2414347	61.358	ng	100
85) 1,3-Dichlorobenzene	20.38	146	943826	25.997	ng	100
86) 1,4-Dichlorobenzene	20.44	146	956184	26.073	ng	100
87) sec-Butylbenzene	20.48	105	1983539	26.645	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	1770656	27.305	ng	100
89) 1,2,3-Trimethylbenzene	20.61	105	60701	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	909756	26.134	ng	100
91) d-Limonene	20.74	68	510939	28.800	ng	100
92) 1,2-Dibromo-3-Chloropr...	21.11	157	734161	53.249	ng	99
93) n-Undecane	21.42	57	486	No Calib		
94) 1,2,4-Trichlorobenzene	22.24	180	1500869	51.072	ng	100
95) Naphthalene	22.34	128	2108729	26.561	ng	100
96) n-Dodecane	22.33	57	1046	No Calib	#	
97) Hexachlorobutadiene	22.66	225	549695	26.512	ng	100
98) Cyclohexanone	18.30	55	1621	No Calib		
99) tert-Butylbenzene	20.24	119	1426116	26.584	ng	100
100) n-Butylbenzene	20.98	91	1547426	26.978	ng	100
101) 1,1,1,2-Tetrachloroethane	17.77	131	386303	25.697	ng	100

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

Abundance

TIC: 04132201.D\data.ms

Time-->

Compounds identified in the chromatogram (from left to right):

- Propene, T
- Dichlorodifluoromethane (CFC 12), T
- Chloromethane, T
- Vinyl Chloride, T
- 1,2-Dichloro-1,1,2,2-tetrafluoroethane, T
- 1,3-Butadiene, T
- Bromomethane, T
- Chloroethane, T
- Ethanol, T
- Acetone, T
- Acrylonitrile, T
- Trichlorofluoromethane, T
- 2-Propanol (Isopropanol), T
- Acrylonitrile, T
- 1,1-Dichloroethane, T
- 1,2-Dichloroethane, T
- 1,1,1-Trichloroethane, T
- 1,2-Dichloroethane, T
- 1,1,1-Trichloroethane, T
- trans-1,2-Dichloroethane, T
- 1,1-Dichloroethane, T
- 1,2-Dichloroethane, T
- 2-Butanone (MEK), T
- cis-1,2-Dichloroethane, T
- Bromochloromethane, T
- Tetrahydrofuran (THE), T
- 1,1,1-Trichloroethane, T
- Carbon Tetrachloride, T
- Benzene, T
- 1,4-Difluorobenzene (IS2), IR
- 1,2-Dichloropropane, T
- 1,2-Dichloropropane, T
- n-Heptane, T
- cis-1,3-Dichloropropene, T
- 4-Methyl-2-pentanone, T
- trans-1,3-Dichloropropene, T
- 1,2-Trichloroethane, T
- Toluene, T
- 2-Hexanone, T
- Dibromochloromethane, T
- 1,2-Dibromoethane, T
- n-Butyl Acetate, T
- Tetrahydrofuran (THE), T
- Chlorobenzene, T
- Bromoform, T
- Ethylbenzene, T
- m- & p-Xylenes, T
- n-Nonane, T
- Bromofluorobenzene (SS3), S
- Cumene, T
- alpha-Pinene, T
- Propylbenzene, T
- 1,3-Dichlorobenzene, T
- 1,4-Dichlorobenzene, T
- Benzyl Chloride, T
- 1,2-Dibromo-3-Chloropropane, T
- 1,2-Dibromopropane, T
- Naphthalene, T
- Hexachlorobutadiene, T
- 1,2,4-Trichlorobenzene, T

Data File : I:\MS13\DATA\2022_04\13\04132234.D
 Acq On : 13 Apr 2022 21:16
 Sample : CCVend R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

TZ 4/14/22

Quant Time: Apr 14 07:53:33 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 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 (IS1)	1.000	1.000	0.0	78	0.00
2 T	Propene	1.049	0.872	16.9	66	0.00
3 T	Dichlorodifluoromethane (CF	2.074	1.837	11.4	71	0.00
4 T	Chloromethane	1.488	1.267	14.9	65	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.212	1.099	9.3	71	0.00
6 T	Vinyl Chloride	1.626	1.433	11.9	66	0.00
7 T	1,3-Butadiene	1.154	0.951	17.6	62	0.00
8 T	Bromomethane	0.971	0.867	10.7	68	0.00
9 T	Chloroethane	0.730	0.624	14.5	67	0.00
10 T	Ethanol	0.736	0.596	19.0	67	0.00
11 T	Acetonitrile	1.797	1.521	15.4	66	0.00
12 T	Acrolein	0.632	0.531	16.0	64	0.00
13 T	Acetone	0.744	0.588	21.0	66	0.00
14 T	Trichlorofluoromethane	1.862	1.692	9.1	73	0.00
15 T	2-Propanol (Isopropanol)	2.382	2.094	12.1	67	0.00
16 T	Acrylonitrile	1.264	1.114	11.9	67	0.00
17 T	1,1-Dichloroethene	1.096	0.966	11.9	70	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.221	1.994	10.2	62	0.00
19 T	Methylene Chloride	1.171	0.983	16.1	68	0.00
20 T	3-Chloro-1-propene (Allyl C	1.355	1.203	11.2	66	0.00
21 T	Trichlorotrifluoroethane	1.097	0.993	9.5	72	0.00
22 T	Carbon Disulfide	4.299	3.518	18.2	69	0.00
23 T	trans-1,2-Dichloroethene	1.416	1.301	8.1	69	0.00
24 T	1,1-Dichloroethane	1.813	1.584	12.6	69	0.00
25 T	Methyl tert-Butyl Ether	2.977	2.067	30.6#	50#	0.00
26 T	Vinyl Acetate	0.198	0.204	-3.0	68	0.00
27 T	2-Butanone (MEK)	0.703	0.645	8.3	68	0.00
28 T	cis-1,2-Dichloroethene	1.403	1.273	9.3	69	0.00
29 T	Diisopropyl Ether	0.936	0.841	10.1	69	0.00
30 T	Ethyl Acetate	0.385	0.327	15.1	66	0.00
31 T	n-Hexane	1.628	1.367	16.0	67	0.00
32 T	Chloroform	1.848	1.642	11.1	70	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.286	1.247	3.0	76	0.00
34 T	Tetrahydrofuran (THF)	0.706	0.616	12.7	68	0.00
35 T	Ethyl tert-Butyl Ether	1.272	1.212	4.7	70	0.00
36 T	1,2-Dichloroethane	1.346	1.216	9.7	71	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	76	0.00
38 T	1,1,1-Trichloroethane	0.406	0.378	6.9	71	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	82	0.00
40 T	1-Butanol	0.000	0.000	0.0	70	0.00
41 T	Benzene	1.046	0.928	11.3	68	0.00
42 T	Carbon Tetrachloride	0.360	0.350	2.8	73	0.00
43 T	Cyclohexane	0.392	0.357	8.9	67	0.00
44 T	tert-Amyl Methyl Ether	0.706	0.665	5.8	69	0.00
45 T	1,2-Dichloropropane	0.256	0.223	12.9	67	0.00
46 T	Bromodichloromethane	0.359	0.332	7.5	70	0.00
47 T	Trichloroethene	0.330	0.308	6.7	71	0.00
48 T	1,4-Dioxane	0.212	0.206	2.8	69	0.00
49 T	2,2,4-Trimethylpentane (Iso	1.026	0.900	12.3	67	0.00
50 T	Methyl Methacrylate	0.109	0.110	-0.9	70	0.00
51 T	n-Heptane	0.254	0.239	5.9	68	0.00
52 T	cis-1,3-Dichloropropene	0.409	0.391	4.4	69	0.00
53 T	4-Methyl-2-pentanone	0.207	0.200	3.4	67	0.00
54 T	trans-1,3-Dichloropropene	0.371	0.377	-1.6	70	0.00
55 T	1,1,2-Trichloroethane	0.276	0.256	7.2	70	0.00

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132234.D
 Acq On : 13 Apr 2022 21:16
 Sample : CCVend R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 14 07:53:33 2022
 Quant Method : I:\MS13\METHODS\R13032822.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Mon Apr 11 11:34:00 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	74	0.00
57	S Toluene-d8 (SS2)	7.538	7.595	-0.8	75	0.00
58	T Toluene	7.663	7.185	6.2	69	0.00
59	T 2-Hexanone	3.072	3.039	1.1	67	0.00
60	T Dibromochloromethane	2.332	2.362	-1.3	72	0.00
61	T 1,2-Dibromoethane	2.175	2.099	3.5	71	0.00
62	T n-Butyl Acetate	3.362	3.383	-0.6	67	0.00
63	T n-Octane	1.422	1.348	5.2	68	0.00
64	T Tetrachloroethene	2.627	2.526	3.8	72	0.00
65	T Chlorobenzene	5.439	5.141	5.5	70	0.00
66	T Ethylbenzene	8.557	8.353	2.4	70	0.00
67	T m- & p-Xylenes	6.607	6.458	2.3	70	0.00
68	T Bromoform	2.224	2.300	-3.4	73	0.00
69	T Styrene	5.286	5.504	-4.1	70	0.00
70	T o-Xylene	6.678	6.558	1.8	70	0.00
71	T n-Nonane	3.053	2.871	6.0	68	0.00
72	T 1,1,2,2-Tetrachloroethane	3.238	3.010	7.0	69	0.00
73	S Bromofluorobenzene (SS3)	2.810	2.923	-4.0	75	0.00
74	T Cumene	9.021	8.877	1.6	71	0.00
75	T alpha-Pinene	4.142	4.401	-6.3	72	0.00
76	T n-Propylbenzene	10.494	10.346	1.4	71	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	71	0.00
78	T 4-Ethyltoluene	8.750	8.866	-1.3	71	0.00
79	T 1,3,5-Trimethylbenzene	7.283	7.305	-0.3	71	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	73	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	71	0.00
82	T 1,2,4-Trimethylbenzene	7.220	7.374	-2.1	70	0.00
83	T n-Decane	0.000	0.000	0.0	65	0.00
84	T Benzyl Chloride	5.323	6.177	-16.0	71	0.00
85	T 1,3-Dichlorobenzene	4.911	4.855	1.1	72	0.00
86	T 1,4-Dichlorobenzene	4.961	4.944	0.3	73	0.00
87	T sec-Butylbenzene	10.071	10.186	-1.1	71	0.00
88	T 4-Isopropyltoluene (p-Cymen	8.773	9.163	-4.4	72	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	72	0.00
90	T 1,2-Dichlorobenzene	4.709	4.683	0.6	72	0.00
91	T d-Limonene	2.400	2.547	-6.1	70	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.865	1.980	-6.2	74	0.00
93	T n-Undecane	0.000	0.000	0.0	40#	0.00
94	T 1,2,4-Trichlorobenzene	3.976	3.936	1.0	70	0.00
95	T Naphthalene	10.740	10.673	0.6	70	0.00
96	T n-Dodecane	0.000	0.000	0.0	32#	0.00
97	T Hexachlorobutadiene	2.805	2.914	-3.9	76	0.00
98	T Cyclohexanone	0.000	0.000	0.0	70	-0.01
99	T tert-Butylbenzene	7.257	7.368	-1.5	71	0.00
100	T n-Butylbenzene	7.760	7.976	-2.8	71	0.00
101	T 1,1,1,2-Tetrachloroethane	2.034	1.973	3.0	72	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS13\DATA\2022_04\13\04132234.D
 Acq On : 13 Apr 2022 21:16
 Sample : CCVend R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

TZ 4/14/22

Quant Time: Apr 14 07:53:33 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.34	130	132252	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.45	114	556020	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.75	54	80838	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.18	65	164913	12.116	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.96%	
57) Toluene-d8 (SS2)	15.90	98	613933	12.595	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.72%	
73) Bromofluorobenzene (SS3)	19.12	174	236322	13.004	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	104.00%	

Target Compounds

						Qvalue
2) Propene	4.22	42	239760	21.597	ng	99
3) Dichlorodifluoromethan...	4.38	85	510256	23.255	ng	100
4) Chloromethane	4.67	50	341874	21.709	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.95	135	314026	24.493	ng	100
6) Vinyl Chloride	5.10	62	394234	22.918	ng	99
7) 1,3-Butadiene	5.37	54	261506	21.421	ng	100
8) Bromomethane	5.82	94	234017	22.777	ng	100
9) Chloroethane	6.16	64	168485	21.828	ng	99
10) Ethanol	6.55	45	570337	73.201	ng	100
11) Acetonitrile	6.80	41	374234	19.686	ng	99
12) Acrolein	6.98	56	280947	42.023	ng	100
13) Acetone	7.21	58	806669	102.449	ng	94
14) Trichlorofluoromethane	7.43	101	460977	23.394	ng	99
15) 2-Propanol (Isopropanol)	7.71	45	1118749	44.393	ng	99
16) Acrylonitrile	7.96	53	597940	44.705	ng	100
17) 1,1-Dichloroethene	8.40	96	273437	23.583	ng	99
18) 2-Methyl-2-Propanol (t...	8.58	59	1107650	47.135	ng	99
19) Methylene Chloride	8.63	84	270366	21.813	ng	98
20) 3-Chloro-1-propene (Al...	8.79	41	334046	23.307	ng	98
21) Trichlorotrifluoroethane	9.04	151	283794	24.448	ng	97
22) Carbon Disulfide	8.89	76	1953831	42.953	ng	100
23) trans-1,2-Dichloroethene	9.90	61	364817	24.343	ng	98
24) 1,1-Dichloroethane	10.15	63	439987	22.935	ng	100
25) Methyl tert-Butyl Ether	10.25	73	574197	18.229	ng	99
26) Vinyl Acetate	10.40	86	183565	87.450	ng	96
27) 2-Butanone (MEK)	10.65	72	351707	47.273	ng	97
28) cis-1,2-Dichloroethene	11.16	61	350095	23.591	ng	98
29) Diisopropyl Ether	11.45	87	471372	47.607	ng	98
30) Ethyl Acetate	11.47	61	352545	86.618	ng	97
31) n-Hexane	11.43	57	379761	22.046	ng	99
32) Chloroform	11.51	83	464680	23.772	ng	100
34) Tetrahydrofuran (THF)	11.91	72	320876	42.986	ng	98
35) Ethyl tert-Butyl Ether	12.04	87	673017	50.028	ng	97
36) 1,2-Dichloroethane	12.30	62	340911	23.934	ng	100
38) 1,1,1-Trichloroethane	12.58	97	437119	24.205	ng	99
39) Isopropyl Acetate	13.02	61	27976	No Calib	#	
40) 1-Butanol	13.03	56	10434	No Calib		
41) Benzene	13.06	78	1073553	23.072	ng	100
42) Carbon Tetrachloride	13.22	117	408180	25.456	ng	100
43) Cyclohexane	13.35	84	822329	47.186	ng	98
44) tert-Amyl Methyl Ether	13.69	73	1546421	49.226	ng	99
45) 1,2-Dichloropropane	13.90	63	255828	22.504	ng	99
46) Bromodichloromethane	14.09	83	387537	24.300	ng	100
47) Trichloroethene	14.15	130	352824	24.010	ng	100
48) 1,4-Dioxane	14.13	88	238270	25.238	ng	99
49) 2,2,4-Trimethylpentane...	14.21	57	1060912	23.254	ng	98
50) Methyl Methacrylate	14.35	100	253328	52.026	ng	96

Revised Report

Data File : I:\MS13\DATA\2022_04\13\04132234.D
 Acq On : 13 Apr 2022 21:16
 Sample : CCVend R13041322 25ng
 Misc : S35-03142201/S35-04122202 (5/12)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Apr 14 07:53:33 2022

Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.48	71	278999	24.688	ng	98
52) cis-1,3-Dichloropropene	15.01	75	456832	25.085	ng	100
53) 4-Methyl-2-pentanone	15.05	58	461559	50.124	ng	99
54) trans-1,3-Dichloropropene	15.53	75	423906	25.694	ng	100
55) 1,1,2-Trichloroethane	15.70	97	296290	24.095	ng	99
58) Toluene	15.99	91	1196415	24.143	ng	100
59) 2-Hexanone	16.24	43	1007074	50.688	ng	99
60) Dibromochloromethane	16.40	129	400892	26.583	ng	100
61) 1,2-Dibromoethane	16.65	107	352958	25.099	ng	100
62) n-Butyl Acetate	16.87	43	1115702	51.322	ng	100
63) n-Octane	16.99	57	228877	24.891	ng	99
64) Tetrachloroethene	17.14	166	424792	25.007	ng	100
65) Chlorobenzene	17.79	112	864358	24.575	ng	100
66) Ethylbenzene	18.14	91	1391010	25.135	ng	100
67) m- & p-Xylenes	18.30	91	2150892	50.337	ng	100
68) Bromoform	18.37	173	386762	26.891	ng	100
69) Styrene	18.62	104	916549	26.811	ng	100
70) o-Xylene	18.72	91	1102696	25.534	ng	100
71) n-Nonane	18.91	43	482788	24.453	ng	99
72) 1,1,2,2-Tetrachloroethane	18.70	83	506055	24.169	ng	100
74) Cumene	19.24	105	1492560	25.584	ng	100
75) alpha-Pinene	19.59	93	768520	28.693	ng	100
76) n-Propylbenzene	19.69	91	1756388	25.881	ng	99
77) 3-Ethyltoluene	19.88	105	1228328	No Calib		
78) 4-Ethyltoluene	19.82	105	1519396	26.850	ng	100
79) 1,3,5-Trimethylbenzene	19.88	105	1228328	26.081	ng	100
80) alpha-Methylstyrene	19.88	118	9482	No Calib		
81) 2-Ethyltoluene	19.88	105	1228328	No Calib		
82) 1,2,4-Trimethylbenzene	20.24	105	1228043	26.299	ng	100
83) n-Decane	20.24	58	47056	No Calib		
84) Benzyl Chloride	20.36	91	2057399	59.766	ng	100
85) 1,3-Dichlorobenzene	20.38	146	816323	25.701	ng	100
86) 1,4-Dichlorobenzene	20.44	146	831276	25.910	ng	100
87) sec-Butylbenzene	20.48	105	1712627	26.297	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	1540736	27.158	ng	100
89) 1,2,3-Trimethylbenzene	20.61	105	52843	No Calib		
90) 1,2-Dichlorobenzene	20.73	146	795032	26.105	ng	100
91) d-Limonene	20.74	68	432417	27.860	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.11	157	640078	53.066	ng	99
93) n-Undecane	21.42	57	351	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.24	180	1298121	50.491	ng	100
95) Naphthalene	22.35	128	1794570	25.838	ng	100
96) n-Dodecane	22.34	57	679	No Calib	#	
97) Hexachlorobutadiene	22.66	225	485241	26.751	ng	100
98) Cyclohexanone	18.30	55	1347	No Calib		
99) tert-Butylbenzene	20.24	119	1238926	26.398	ng	100
100) n-Butylbenzene	20.98	91	1341106	26.725	ng	99
101) 1,1,1,2-Tetrachloroethane	17.77	131	331757	25.225	ng	100

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

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Apr 14 07:53:33 2022

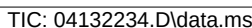
Quant Method : I:\MS13\METHODS\R13032822.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Mon Apr 11 11:34:00 2022

Response via : Initial Calibration

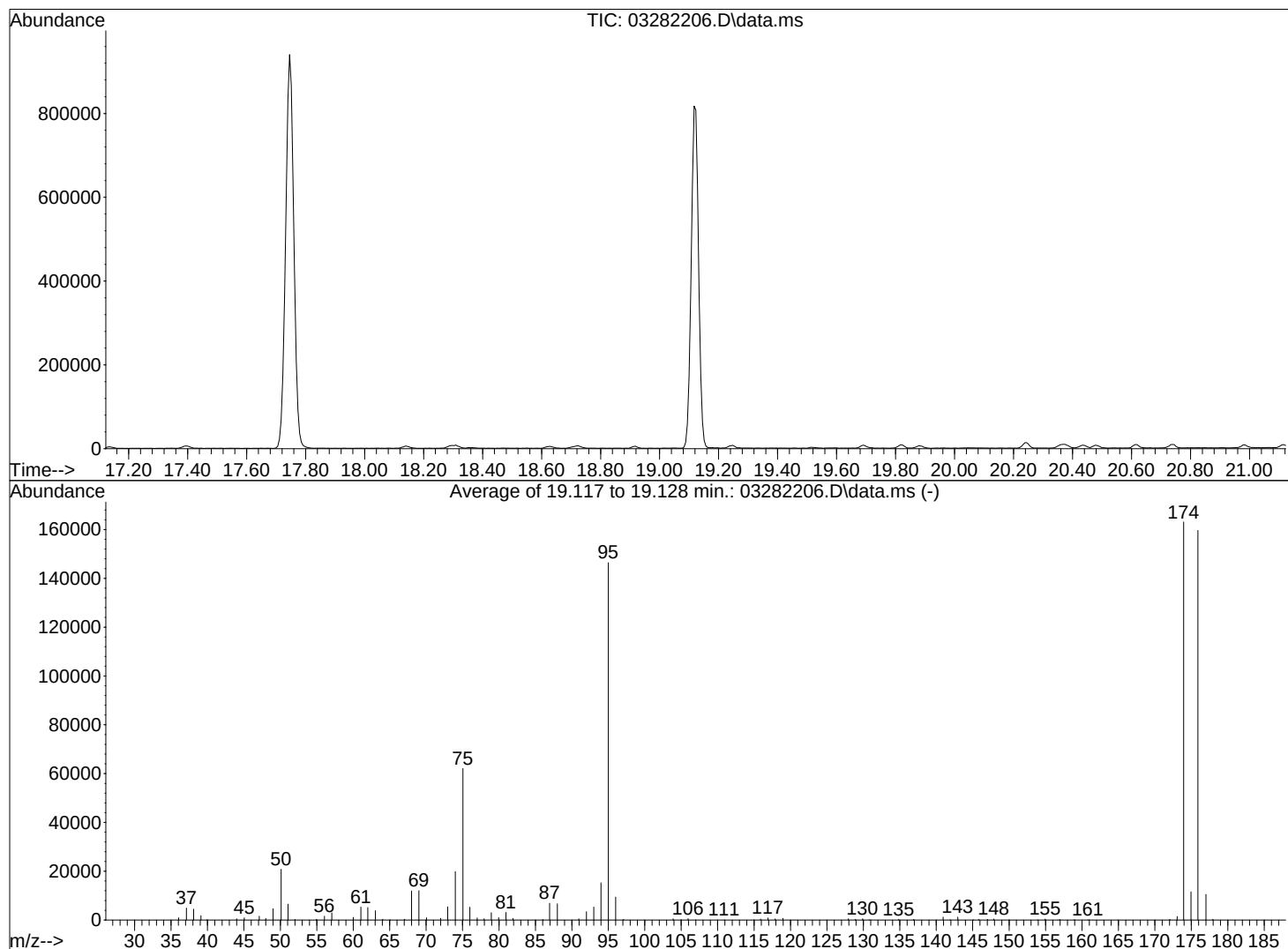
DataAcq Meth:T015.M



Data Path : I:\MS13\DATA\2022_03\28\
Data File : 03282206.D
Acq On : 28 Mar 2022 13:51
Operator : TZ
Sample : BFB R13032822
Misc : S35-03142201
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13032822.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Mar 29 07:57:55 2022



AutoFind: Scans 2723, 2724, 2725; Background Corrected with Scan 2715

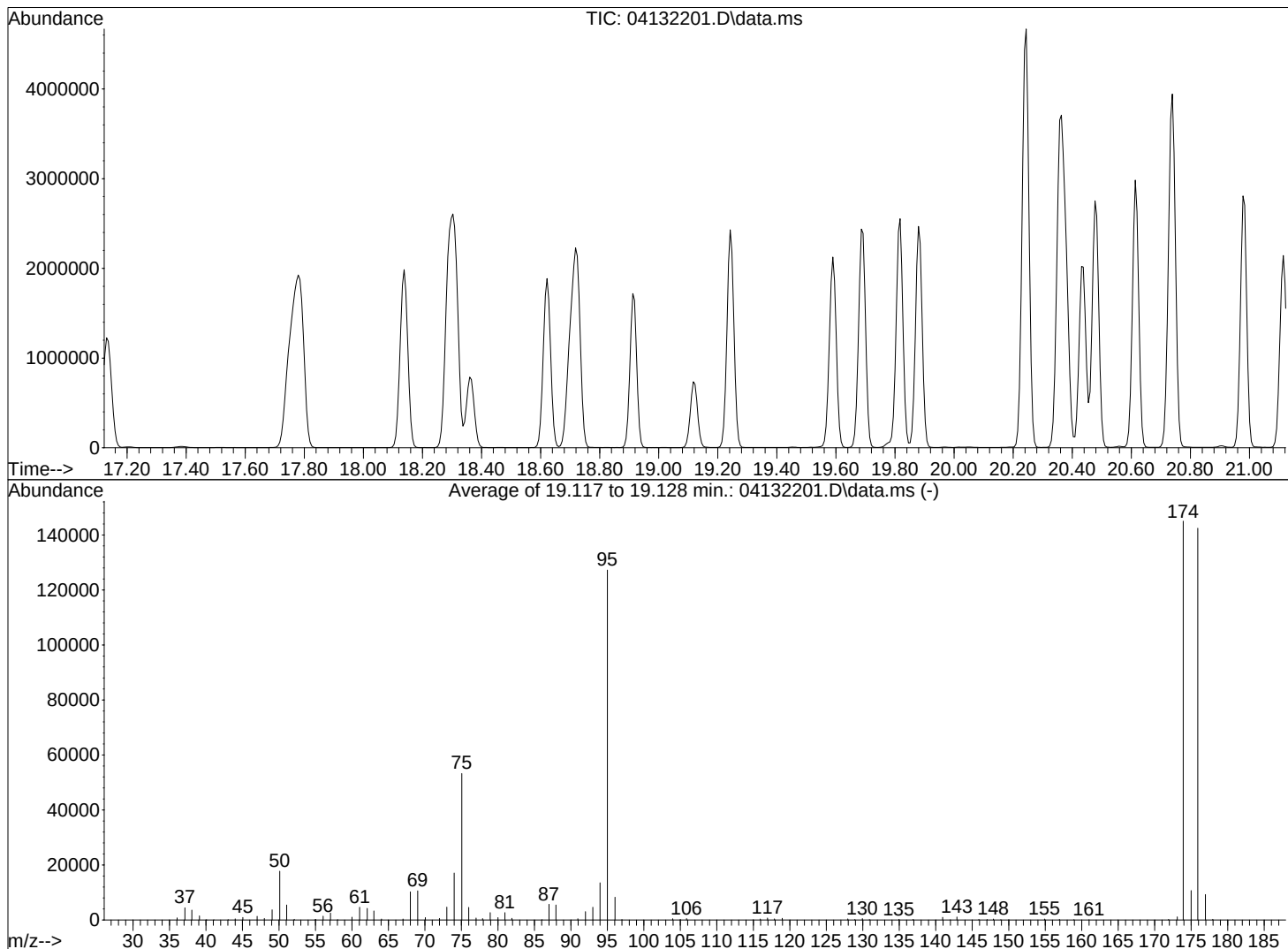
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	14.2	20794	PASS
75	95	30	66	42.4	62077	PASS
95	95	100	100	100.0	146397	PASS
96	95	5	9	6.4	9424	PASS
173	174	0.00	2	0.9	1425	PASS
174	95	50	120	111.4	163115	PASS
175	174	4	9	7.1	11567	PASS
176	174	93	101	97.9	159659	PASS
177	176	5	9	6.6	10512	PASS

TZ 3/29/22

Data Path : I:\MS13\DATA\2022_04\13\
Data File : 04132201.D
Acq On : 12 Apr 2022 23:34
Operator : TZ
Sample : CCV R13041322 25ng
Misc : S35-03142201/S35-04122202 (5/12)
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13032822.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Apr 11 11:34:00 2022



AutoFind: Scans 2723, 2724, 2725; Background Corrected with Scan 2715

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	13.9	17714	PASS
75	95	30	66	41.9	53269	PASS
95	95	100	100	100.0	127213	PASS
96	95	5	9	6.5	8258	PASS
173	174	0.00	2	0.8	1156	PASS
174	95	50	120	114.0	145013	PASS
175	174	4	9	7.4	10715	PASS
176	174	93	101	98.2	142437	PASS
177	176	5	9	6.5	9232	PASS

TZ 4/13/22

Injection Log

Directory: J:\MS13\DATA\2022_03\28\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	3/28/22 8:35	03282201.D	Std. Check 25ng	S35-03142201/S35-03222201 (4/21)	TZ	1	
2	3/28/22 11:35	03282202.D	Blank	S35-03142201	TZ	1	
3	3/28/22 12:09	03282203.D	4ng Check	S35-03142201/S35-03282203 (4/27)	TZ	13	
4	3/28/22 12:43	03282204.D	20ng Check	S35-03142201/S35-03282202 (4/27)	TZ	14	
5	3/28/22 13:17	03282205.D	200ng Check	S35-03142201/S35-03282201 (4/27)	TZ	15	
6	3/28/22 13:51	03282206.D	BFB R13032822	S35-03142201	TZ	1	passed
7	3/28/22 14:25	03282207.D	0.1ng R13032822 ICAL Std.	S35-03142201/S35-03282203 (4/27)	TZ	13	R13032822.M
8	3/28/22 14:59	03282208.D	0.2ng R13032822 ICAL Std.	S35-03142201/S35-03282203 (4/27)	TZ	13	
9	3/28/22 15:33	03282209.D	0.5ng R13032822 ICAL Std.	S35-03142201/S35-03282202 (4/27)	TZ	14	
10	3/28/22 16:07	03282210.D	1.0ng R13032822 ICAL Std.	S35-03142201/S35-03282202 (4/27)	TZ	14	
11	3/28/22 16:40	03282211.D	5.0ng R13032822 ICAL Std.	S35-03142201/S35-03282202 (4/27)	TZ	14	
12	3/28/22 17:14	03282212.D	25ng R13032822 ICAL Std.	S35-03142201/S35-03282201 (4/27)	TZ	15	
13	3/28/22 17:48	03282213.D	50ng R13032822 ICAL Std.	S35-03142201/S35-03282201 (4/27)	TZ	15	
14	3/28/22 18:22	03282214.D	100ng R13032822 ICAL Std.	S35-03142201/S35-03282201 (4/27)	TZ	15	
15	3/28/22 18:56	03282215.D	Blank	S35-03142201	TZ	1	
16	3/28/22 19:30	03282216.D	25ng R13032822 ICV Std.	S35-03142201/S35-03072202 (4/6)	TZ	1	passed
17	3/28/22 20:04	03282217.D	25ng R13032822 ICV Std.	S35-03142201/S35-03152202 (4/15)	TZ	16	not used
R13032822.M ranges from 0.1ng-->100ng except: chloromethane: 0.1-->50ng							

Injection Log

T2 4/14/22

Directory: I:\MS13\DATA\2022_04\13\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	4/12/22 23:34	04132201.D	CCV R13041322 25ng	S35-03142201/S35-04122202 (5/12)	TZ	1	passed
2	4/13/22 0:08	04132202.D	Blank	S35-03142201	TZ	1	
3	4/13/22 0:42	04132203.D	MB R13041322 1000mL	S35-03142201_AC01837	TZ	1	passed
4	4/13/22 1:16	04132204.D	LCS R13041322 25ng	S35-03142201/S35-03292205 (4/28)	TZ	1	passed
5	4/13/22 1:50	04132205.D	LCSD R13041322 25ng	S35-03142201/S35-03292205 (4/28)	TZ	1	passed
6	4/13/22 2:24	04132206.D	P2201517-001 (1000mL)	S35-03142201	TZ	3	
7	4/13/22 2:58	04132207.D	P2201517-002 (1000mL)	S35-03142201	TZ	4	
8	4/13/22 3:31	04132208.D	P2201517-003 (1000mL)	S35-03142201	TZ	5	
9	4/13/22 4:05	04132209.D	P2201496-023 (1000mL)	S35-03142201	TZ	15	
10	4/13/22 4:40	04132210.D	P2201496-024 (1000mL)	S35-03142201	TZ	16	
11	4/13/22 5:14	04132211.D	P2201496-025 (1000mL)	S35-03142201	TZ	2	
12	4/13/22 5:48	04132212.D	P2201490-002 (1000mL)	S35-03142201	TZ	12	
13	4/13/22 8:00	04132213.D	P2201496-023dil (100mL)	S35-03142201	TZ	15	
14	4/13/22 8:34	04132214.D	P2201496-022dil (100mL)	S35-03142201	TZ	14	
15	4/13/22 9:18	04132215.D	P2201490-001 (7.0mL)	S35-03142201	TZ	4	not reporting
16	4/13/22 9:52	04132216.D	P2201490-001 (2.0mL)	S35-03142201	TZ	4	
17	4/13/22 10:50	04132217.D	P2201501-001 (70mL)	S35-03142201	TZ	2	screen
18	4/13/22 11:28	04132218.D	P2201645-002 (0.2mL)	S35-03142201	TZ	4	over diluted
19	4/13/22 12:09	04132219.D	P2201645-002 (0.6mL)	S35-03142201	TZ	4	
20	4/13/22 12:59	04132220.D	P2201645-001 (5.0mL)	S35-03142201	TZ	4	over diluted
21	4/13/22 13:33	04132221.D	P2201645-003 (2.5mL)	S35-03142201	TZ	4	
22	4/13/22 14:07	04132222.D	P2201645-003dil (0.3mL)	S35-03142201	TZ	4	
23	4/13/22 15:02	04132223.D	P2201645-001 (100mL)	S35-03142201	TZ	8	
24	4/13/22 15:36	04132224.D	P2201645-004 (100mL)	S35-03142201	TZ	9	
25	4/13/22 16:09	04132225.D	P2201645-004dil (50mL)	S35-03142201	TZ	9	not needed
26	4/13/22 16:43	04132226.D	P2201673-001 (100mL)	S35-03142201	TZ	10	
27	4/13/22 17:18	04132227.D	P2201673-002 (100mL)	S35-03142201	TZ	11	needs dilution
28	4/13/22 17:52	04132228.D	P2201673-003 (100mL)	S35-03142201	TZ	12	
29	4/13/22 18:26	04132229.D	P2201673-004 (100mL)	S35-03142201	TZ	13	
30	4/13/22 19:00	04132230.D	P2201515-001 (1000mL)	S35-03142201	TZ	14	
31	4/13/22 19:34	04132231.D	P2201515-001dup (1000mL)	S35-03142201	TZ	14	passed
32	4/13/22 20:08	04132232.D	P2201672-001 (20mL)	S35-03142201	TZ	4	over diluted
33	4/13/22 20:42	04132233.D	RL Check R13041322 0.5ng	S35-03142201/S35-04082205 (5/28)	TZ	16	passed
34	4/13/22 21:16	04132234.D	CCVend R13041322 25ng	S35-03142201/S35-04122202 (5/12)	TZ	1	passed
CCVend: out low for MTBE; RL check passed							



LABORATORY REPORT

June 29, 2022

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DPMT Memphis / 10A023

Dear Larry:

Enclosed are the results of the sample submitted to our laboratory on June 9, 2022. For your reference, this analysis has been assigned our service request number P2202553.

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


By Sue Anderson at 2:26 pm, Jun 29, 2022

Sue Anderson
Project Manager



Client: KOMAN Government Solutions, LLC
Project: DPMT Memphis / 10A023

Service Request No: P2202553

CASE NARRATIVE

The sample was received intact under chain of custody on June 9, 2022 and was 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 sample at the time of sample receipt.

Volatile Organic Compound Analysis

The sample was analyzed for volatile organic compounds 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.

The container was cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.3 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	http://dec.alaska.gov/eh/lab.aspx	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)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-008
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
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	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
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: KOMAN Government Solutions, LLC
Project ID: DPMT Memphis / 10A023

Service Request: P2202553

Date Received: 6/9/2022
Time Received: 09:33

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
ODSVE-EFF-Y11Q4	P2202553-001	Air	6/7/2022	14:51	AC01947	-0.53	3.53	X



Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Page 1 of 1

P2202553

Company Name & Address (Reporting Information)				Requested Turnaround Time in Business Days (Surcharges) please circle				ALS Project No.	
Trinity Analysis and Development Corp				1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard				P2101963	
1002 Egun Parkway Simi Valley CA 93065									
Project Manager Larry Pannell				Project Name DPMT Memphis				ALS Contact	
Phone 508-280-9948				Project Number 16A023					
Fax 508-366-7445				P.O. # / Billing Information 8975					
Email Address for Result Reporting lpannell@komanags.com				Sampler (Print & Sign) Elizabeth Giermann					
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Comments e.g. Actual Preservative or specific instructions
005VE-EFF-Y11Q4	1	6-7-2002	1451	AC01947	none	-28	00	6.0L	
Report Tier Levels - please select									
Tier I - Results (Default if not specified) _____									
Tier II (Results + QC Summaries) _____									
Tier III (Results + QC & Calibration Summaries) _____									
Tier IV (Data Validation Package) 10% Surcharge _____									
EDD required Yes / No _____ Units: _____									
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT									
Relinquished by: (Signature) Elizabeth Giermann				Received by: (Signature) FEDEX		Date: 6-7-2002 Time: 1540			
Relinquished by: (Signature)				Received by: (Signature)		Date: 6-9 Time: 0933			
						Cooler / Blank Temperature °C			

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q4

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P2202553-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC01947

Date Collected: 6/7/22

Date Received: 6/9/22

Date Analyzed: 6/14/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.53

Final Pressure (psig): 3.53

Container Dilution Factor: 1.29

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.24	0.39	0.24	0.097	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.79	0.14	0.084	0.023	
74-87-3	Chloromethane	0.20	0.32	0.20	0.054	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.017	0.10	0.059	0.016	J
75-01-4	Vinyl Chloride	0.082	0.26	0.086	0.029	J
106-99-0	1,3-Butadiene	0.19	0.30	0.19	0.051	U
74-83-9	Bromomethane	0.056	0.17	0.056	0.025	U
75-00-3	Chloroethane	0.083	0.25	0.083	0.032	U
64-17-5	Ethanol	0.68	3.4	0.58	0.25	J
75-05-8	Acetonitrile	0.25	0.77	0.25	0.10	U
107-02-8	Acrolein	0.20	0.56	0.20	0.084	U
67-64-1	Acetone	0.67	2.8	1.4	0.65	J
75-69-4	Trichlorofluoromethane	0.33	0.12	0.037	0.019	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.19	0.53	0.33	0.12	J
107-13-1	Acrylonitrile	0.20	0.59	0.20	0.065	U
75-35-4	1,1-Dichloroethene	0.43	0.18	0.055	0.024	
75-09-2	Methylene Chloride	0.12	0.19	0.12	0.056	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.070	0.22	0.070	0.030	U
76-13-1	Trichlorotrifluoroethane	4.0	0.091	0.029	0.013	
75-15-0	Carbon Disulfide	0.12	0.46	0.14	0.066	J
156-60-5	trans-1,2-Dichloroethene	0.54	0.17	0.055	0.024	
75-34-3	1,1-Dichloroethane	0.20	0.17	0.054	0.025	
1634-04-4	Methyl tert-Butyl Ether	0.057	0.19	0.057	0.023	U
108-05-4	Vinyl Acetate	0.99	1.8	0.99	0.44	U
78-93-3	2-Butanone (MEK)	0.075	0.44	0.14	0.048	J

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q4

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P2202553-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC01947

Date Collected: 6/7/22

Date Received: 6/9/22

Date Analyzed: 6/14/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.53

Final Pressure (psig): 3.53

Container Dilution Factor: 1.29

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	26	0.17	0.055	0.024	
141-78-6	Ethyl Acetate	0.83	0.75	0.22	0.10	
110-54-3	n-Hexane	0.11	0.19	0.11	0.040	U
67-66-3	Chloroform	7.8	0.14	0.045	0.019	
109-99-9	Tetrahydrofuran (THF)	0.11	0.44	0.088	0.029	J
107-06-2	1,2-Dichloroethane	0.054	0.17	0.054	0.019	U
71-55-6	1,1,1-Trichloroethane	0.18	0.12	0.038	0.016	
71-43-2	Benzene	0.069	0.20	0.069	0.031	U
56-23-5	Carbon Tetrachloride	0.63	0.10	0.033	0.015	
110-82-7	Cyclohexane	0.12	0.41	0.12	0.056	U
78-87-5	1,2-Dichloropropane	0.047	0.14	0.047	0.018	U
75-27-4	Bromodichloromethane	0.033	0.10	0.033	0.015	U
79-01-6	Trichloroethene	22	0.12	0.038	0.017	
123-91-1	1,4-Dioxane	0.057	0.19	0.057	0.023	U
80-62-6	Methyl Methacrylate	0.20	0.35	0.20	0.060	U
142-82-5	n-Heptane	0.098	0.17	0.098	0.027	U
10061-01-5	cis-1,3-Dichloropropene	0.091	0.14	0.091	0.024	U
108-10-1	4-Methyl-2-pentanone	0.066	0.35	0.066	0.023	U
10061-02-6	trans-1,3-Dichloropropene	0.088	0.14	0.088	0.031	U
79-00-5	1,1,2-Trichloroethane	0.040	0.12	0.040	0.013	J
108-88-3	Toluene	0.076	0.18	0.058	0.022	J
591-78-6	2-Hexanone	0.066	0.35	0.066	0.021	U
124-48-1	Dibromochloromethane	0.026	0.080	0.026	0.011	U
106-93-4	1,2-Dibromoethane	0.029	0.087	0.029	0.010	U
123-86-4	n-Butyl Acetate	0.057	0.30	0.057	0.020	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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 LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y11Q4

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P2202553-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC01947

Date Collected: 6/7/22

Date Received: 6/9/22

Date Analyzed: 6/14/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.53

Final Pressure (psig): 3.53

Container Dilution Factor: 1.29

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.086	0.15	0.086	0.033	U
127-18-4	Tetrachloroethene	2.2	0.099	0.032	0.013	
108-90-7	Chlorobenzene	0.045	0.15	0.045	0.020	U
100-41-4	Ethylbenzene	0.051	0.15	0.051	0.022	U
179601-23-1	m,p-Xylenes	0.098	0.33	0.098	0.042	U
75-25-2	Bromoform	0.040	0.065	0.040	0.014	U
100-42-5	Styrene	0.094	0.15	0.094	0.026	U
95-47-6	o-Xylene	0.051	0.15	0.051	0.023	U
111-84-2	n-Nonane	0.079	0.13	0.079	0.022	U
79-34-5	1,1,2,2-Tetrachloroethane	0.21	0.098	0.032	0.014	
98-82-8	Cumene	0.045	0.14	0.045	0.020	U
80-56-8	alpha-Pinene	0.039	0.13	0.039	0.019	U
103-65-1	n-Propylbenzene	0.045	0.14	0.045	0.020	U
622-96-8	4-Ethyltoluene	0.084	0.14	0.084	0.022	U
108-67-8	1,3,5-Trimethylbenzene	0.045	0.14	0.045	0.020	U
95-63-6	1,2,4-Trimethylbenzene	0.042	0.14	0.042	0.019	U
100-44-7	Benzyl Chloride	0.085	0.27	0.085	0.030	U
541-73-1	1,3-Dichlorobenzene	0.036	0.11	0.036	0.017	U
106-46-7	1,4-Dichlorobenzene	0.036	0.11	0.036	0.018	U
95-50-1	1,2-Dichlorobenzene	0.036	0.11	0.036	0.017	U
5989-27-5	d-Limonene	0.072	0.12	0.072	0.025	U
96-12-8	1,2-Dibromo-3-chloropropane	0.043	0.13	0.043	0.013	U
120-82-1	1,2,4-Trichlorobenzene	0.056	0.19	0.056	0.023	U
91-20-3	Naphthalene	0.076	0.13	0.076	0.032	U
87-68-3	Hexachlorobutadiene	0.038	0.063	0.038	0.013	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P220614-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/14/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.30	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.077	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.19	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.41	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.46	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.35	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
108-05-4	Vinyl Acetate	0.77	1.4	0.77	0.34	U
78-93-3	2-Butanone (MEK)	0.11	0.34	0.11	0.037	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P220614-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/14/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.095	0.029	0.012	U
71-43-2	Benzene	0.053	0.16	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.080	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.32	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.079	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.097	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.14	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.11	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.095	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.062	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.23	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P220614-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/14/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.11	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.077	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.11	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.050	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.099	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.076	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.097	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.21	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.087	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.087	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.088	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.090	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.10	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.099	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.049	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 6/7/22
Date(s) Received: 6/9/22
Date(s) Analyzed: 6/14/22

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P220614-MB	105	89	92	70-130	
Lab Control Sample	P220614-LCS	109	86	94	70-130	
Duplicate Lab Control Sample	P220614-DLCS	112	87	93	70-130	
ODSVE-EFF-Y11Q4	P2202553-001	99	89	94	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

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P220614-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/14/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	120	104	109	87	91	57-136	4	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.1	41.8	42.8	99	102	59-128	3	25	
74-87-3	Chloromethane	99.8	88.1	89.1	88	89	59-132	1	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	29.8	28.5	30.2	96	101	63-121	5	25	
75-01-4	Vinyl Chloride	81.4	75.7	79.1	93	97	64-127	4	25	
106-99-0	1,3-Butadiene	93.2	85.3	88.1	92	95	66-134	3	25	
74-83-9	Bromomethane	53.1	43.9	49.2	83	93	63-134	11	25	
75-00-3	Chloroethane	78.1	65.7	68.6	84	88	63-127	5	25	
64-17-5	Ethanol	442	372	394	84	89	59-125	6	25	
75-05-8	Acetonitrile	120	90.0	95.9	75	80	63-132	6	25	
107-02-8	Acrolein	182	157	165	86	91	62-126	6	25	
67-64-1	Acetone	431	339	355	79	82	58-128	4	25	
75-69-4	Trichlorofluoromethane	36.0	35.1	35.6	98	99	62-126	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	163	149	156	91	96	52-125	5	25	
107-13-1	Acrylonitrile	185	163	170	88	92	71-137	4	25	
75-35-4	1,1-Dichloroethene	53.0	46.4	47.4	88	89	61-133	1	25	
75-09-2	Methylene Chloride	59.9	48.8	50.4	81	84	62-115	4	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	65.2	53.1	55.5	81	85	71-131	5	25	
76-13-1	Trichlorotrifluoroethane	28.2	24.5	25.4	87	90	66-126	3	25	
75-15-0	Carbon Disulfide	133	103	107	77	80	57-134	4	25	
156-60-5	trans-1,2-Dichloroethene	52.5	47.6	49.4	91	94	67-124	3	25	
75-34-3	1,1-Dichloroethane	52.9	45.1	46.8	85	88	68-126	3	25	
1634-04-4	Methyl tert-Butyl Ether	57.2	52.4	54.2	92	95	66-126	3	25	
108-05-4	Vinyl Acetate	268	281	290	105	108	56-139	3	25	
78-93-3	2-Butanone (MEK)	138	121	125	88	91	67-130	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

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P220614-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/14/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	52.0	47.2	48.7	91	94	70-121	3	25	
141-78-6	Ethyl Acetate	161	134	140	83	87	65-128	5	25	
110-54-3	n-Hexane	59.0	49.5	51.0	84	86	63-120	2	25	
67-66-3	Chloroform	43.0	39.9	40.7	93	95	68-123	2	25	
109-99-9	Tetrahydrofuran (THF)	137	117	120	85	88	64-123	3	25	
107-06-2	1,2-Dichloroethane	51.9	51.5	52.4	99	101	65-128	2	25	
71-55-6	1,1,1-Trichloroethane	38.1	37.1	37.4	97	98	68-125	1	25	
71-43-2	Benzene	65.1	56.7	57.6	87	88	69-119	1	25	
56-23-5	Carbon Tetrachloride	32.1	32.2	32.1	100	100	68-132	0	25	
110-82-7	Cyclohexane	120	105	106	88	88	70-117	0	25	
78-87-5	1,2-Dichloropropane	44.6	38.6	39.7	87	89	69-123	2	25	
75-27-4	Bromodichloromethane	31.1	30.3	30.6	97	98	72-128	1	25	
79-01-6	Trichloroethene	38.0	35.2	35.0	93	92	71-123	1	25	
123-91-1	1,4-Dioxane	57.2	52.1	52.4	91	92	71-122	1	25	
80-62-6	Methyl Methacrylate	100	97.7	97.8	98	98	70-128	0	25	
142-82-5	n-Heptane	50.3	45.0	45.2	89	90	69-123	1	25	
10061-01-5	cis-1,3-Dichloropropene	45.8	44.6	45.4	97	99	70-128	2	25	
108-10-1	4-Methyl-2-pentanone	101	93.7	96.1	93	95	67-130	2	25	
10061-02-6	trans-1,3-Dichloropropene	44.1	45.0	45.0	102	102	75-133	0	25	
79-00-5	1,1,2-Trichloroethane	38.1	34.3	34.4	90	90	73-119	0	25	
108-88-3	Toluene	54.7	42.0	43.0	77	79	66-119	3	25	
591-78-6	2-Hexanone	99.1	81.9	84.7	83	85	62-128	2	25	
124-48-1	Dibromochloromethane	24.7	19.7	20.0	80	81	70-130	1	25	
106-93-4	1,2-Dibromoethane	27.1	21.2	21.5	78	79	74-122	1	25	
123-86-4	n-Butyl Acetate	85.5	71.7	74.0	84	87	65-134	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

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

ALS Sample ID: P220614-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/14/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	44.5	32.4	33.6	73	76	69-121	4	25	
127-18-4	Tetrachloroethene	31.3	24.0	24.3	77	78	66-124	1	25	
108-90-7	Chlorobenzene	44.7	34.5	34.9	77	78	70-119	1	25	
100-41-4	Ethylbenzene	47.4	37.6	38.2	79	81	70-124	3	25	
179601-23-1	m,p-Xylenes	95.8	78.1	79.4	82	83	61-134	1	25	
75-25-2	Bromoform	20.3	16.9	17.0	83	84	66-139	1	25	
100-42-5	Styrene	47.5	40.6	41.3	85	87	73-127	2	25	
95-47-6	o-Xylene	47.9	39.3	39.6	82	83	67-125	1	25	
111-84-2	n-Nonane	39.7	31.2	32.1	79	81	63-128	3	25	
79-34-5	1,1,2,2-Tetrachloroethane	30.3	23.0	23.3	76	77	65-127	1	25	
98-82-8	Cumene	41.9	33.5	34.1	80	81	68-124	1	25	
80-56-8	alpha-Pinene	37.7	31.0	31.4	82	83	62-136	1	25	
103-65-1	n-Propylbenzene	42.3	34.0	34.7	80	82	69-123	2	25	
622-96-8	4-Ethyltoluene	42.3	35.2	35.7	83	84	67-129	1	25	
108-67-8	1,3,5-Trimethylbenzene	42.3	35.2	35.6	83	84	67-130	1	25	
95-63-6	1,2,4-Trimethylbenzene	41.9	34.8	35.1	83	84	66-132	1	25	
100-44-7	Benzyl Chloride	80.4	70.8	71.6	88	89	50-147	1	25	
541-73-1	1,3-Dichlorobenzene	34.6	27.2	27.7	79	80	65-130	1	25	
106-46-7	1,4-Dichlorobenzene	34.9	27.4	27.6	79	79	60-131	0	25	
95-50-1	1,2-Dichlorobenzene	34.9	27.6	27.8	79	80	63-129	1	25	
5989-27-5	d-Limonene	37.0	30.4	31.5	82	85	65-136	4	25	
96-12-8	1,2-Dibromo-3-chloropropane	41.8	35.3	35.7	84	85	73-133	1	25	
120-82-1	1,2,4-Trichlorobenzene	56.6	42.3	42.9	75	76	55-142	1	25	
91-20-3	Naphthalene	40.1	29.7	30.4	74	76	57-138	3	25	
87-68-3	Hexachlorobutadiene	19.9	15.3	15.6	77	78	56-138	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.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Lab File ID: 06142204.D
Date Analyzed: 6/14/22
Time Analyzed: 10:36

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P220614-LCS	06142205.D	11:15
Duplicate Lab Control Sample	P220614-DLCS	06142206.D	11:52
ODSVE-EFF-Y11Q4	P2202553-001	06142210.D	14:18

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DPMT Memphis / 10A023

ALS Project ID: P2202553

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Lab File ID: 06142201.D
Date Analyzed: 6/14/22
Time Analyzed: 08:41

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	141470		7.38		611529	9.42
Upper Limit	198058		7.71		856141	9.75
Lower Limit	84882		7.05		366917	9.09

Client Sample ID		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA	#	RT	#	AREA	#
01	Method Blank	135215		7.33		560211	9.39
02	Lab Control Sample	138107		7.38		584183	9.42
03	Duplicate Lab Control Sample	142386		7.38		611420	9.43
04	ODSVE-EFF-Y11Q4	137942		7.35		568433	9.40
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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 specified limits.

Data File : I:\MS13\DATA\2022_06\14\06142210.D
 Acq On : 14 Jun 2022 14:18
 Sample : P2202553-001 (1000mL)
 Misc : S35-06022211

Vial: 13
 Operator: TZ
 Inst : GCMS13

TZ 6/16/22

Quant Time: Jun 16 11:36:40 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.35	130	137942	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.40	114	568433	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.90	54	111307	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	228220	12.381	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.04%
57) Toluene-d8 (SS2)	12.51	98	635176	11.028	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	88.24%
73) Bromofluorobenzene (SS3)	16.87	174	241267	11.804	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	94.40%

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.	d	
3) Dichlorodifluoromethan...	3.46	85	88212	3.028	ng	100
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.73	135	1300	0.094	ng	98
6) Vinyl Chloride	3.82	62	2289	0.162	ng	100
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	4.41	45	8014	0.998	ng	95
11) Acetonitrile	4.58	41	813	N.D.		
12) Acrolein	4.69	56	979	0.149	ng	86
13) Acetone	4.79	58	9270	1.227	ng	# 50
14) Trichlorofluoromethane	4.87	101	37531	1.448	ng	99
15) 2-Propanol (Isopropanol)	4.99	45	9573	0.367	ng	99
16) Acrylonitrile	5.15	53	412	N.D.		
17) 1,1-Dichloroethene	5.37	96	15756	1.336	ng	91
18) 2-Methyl-2-Propanol (t...	5.47	59	66	N.D.		
19) Methylene Chloride	5.47	84	966	0.078	ng	88
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.69	151	297712	23.851	ng	99
22) Carbon Disulfide	5.73	76	13879	0.298	ng	# 1
23) trans-1,2-Dichloroethene	6.25	61	29685	1.672	ng	99
24) 1,1-Dichloroethane	6.44	63	12565	0.615	ng	98
25) Methyl tert-Butyl Ether	6.54	73	196	N.D.		
26) Vinyl Acetate	6.56	86	732	0.419	ng	# 75
27) 2-Butanone (MEK)	6.81	72	1208	0.171	ng	# 69
28) cis-1,2-Dichloroethene	7.19	61	1319426	78.635	ng	95
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	7.41	61	9404	2.313	ng	97
31) n-Hexane	7.41	57	261	N.D.		
32) Chloroform	7.47	83	664470	29.342	ng	99
34) Tetrahydrofuran (THF)	7.91	72	1736	0.241	ng	92
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.22	62	592	N.D.		
38) 1,1,1-Trichloroethane	8.51	97	16367	0.761	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.94	56	1305	No Calib	#	
41) Benzene	9.01	78	3097	0.070	ng	94
42) Carbon Tetrachloride	9.17	117	59595	3.052	ng	97
43) Cyclohexane	9.30	84	320	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	9.96	63	123	N.D.		
46) Bromodichloromethane	10.17	83	1002	0.058	ng	89
47) Trichloroethene	10.25	130	1287217	92.862	ng	100
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	10.33	57	360	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2022_06\14\06142210.D
 Acq On : 14 Jun 2022 14:18
 Sample : P2202553-001 (1000mL)
 Misc : S35-06022211

Vial: 13
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 16 11:36:40 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.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	12.25	97	1956	0.167 ng		93
58) Toluene	12.63	91	12215	0.223 ng		98
59) 2-Hexanone	13.01	43	864	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.85	43	1067	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	14.09	166	220164	11.744 ng		100
65) Chlorobenzene	14.95	112	243	N.D.		
66) Ethylbenzene	15.46	91	718	N.D.		
67) m- & p-Xylenes	15.68	91	1160	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.15	104	1452	N.D.		
70) o-Xylene	16.28	91	583	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	16.26	83	26337	1.139 ng		99
74) Cumene	17.07	105	169	N.D.		
75) alpha-Pinene	17.58	93	161	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	17.07	105	169	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	16.87	118	1105	No Calib	#	
81) 2-Ethyltoluene	16.87	105	343	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	337	N.D.		
83) n-Decane	16.86	58	128	No Calib	#	
84) Benzyl Chloride	18.77	91	743	N.D.		
85) 1,3-Dichlorobenzene	18.79	146	1978	0.059 ng		96
86) 1,4-Dichlorobenzene	18.88	146	605	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	19.19	119	598	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	218	N.D.		
91) d-Limonene	19.37	68	200	N.D.		
92) 1,2-Dibromo-3-Chloropr...	19.80	157	203	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	1031	N.D.		
95) Naphthalene	21.56	128	3154	N.D.		
96) n-Dodecane	18.82	57	1041	No Calib	#	
97) Hexachlorobutadiene	21.99	225	140	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	19.72	91	186	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data File : I:\MS13\DATA\2022_06\14\06142210.D
Acq On : 14 Jun 2022 14:18
Sample : P2202553-001 (1000mL)
Misc : S35-06022211

Vial: 13
Operator: TZ
Inst : GCMS13

Quant Time: Jun 16 11:36:40 2022

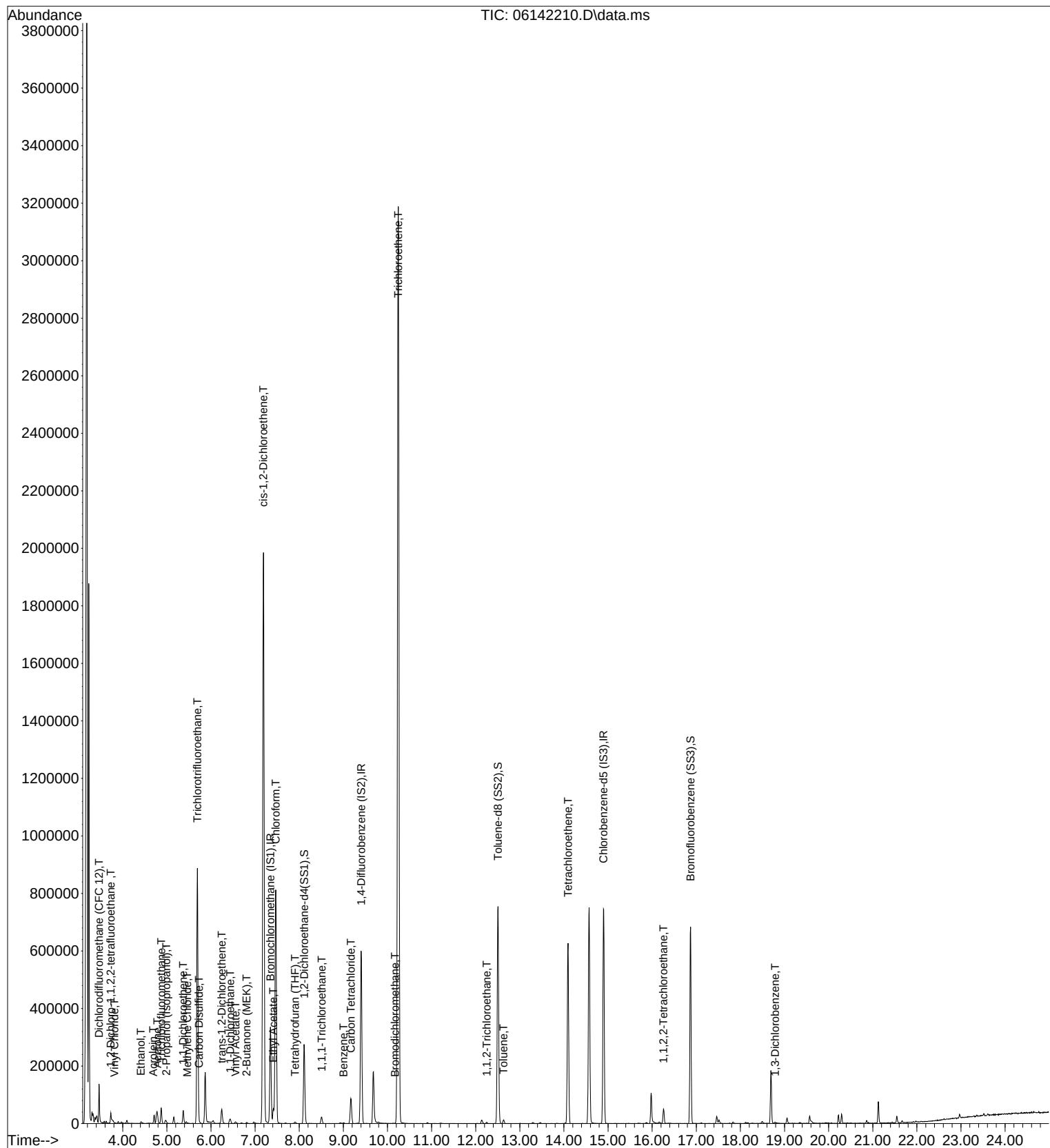
Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



T2 6/16/22

Data File : I:\MS13\DATA\2022_06\14\06142210.D
 Acq On : 14 Jun 2022 14:18
 Sample : P2202553-001 (1000mL)
 Misc : S35-06022211

Vial: 13
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 16 11:36:40 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 08:41:22 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.35	130	137942	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.40	114	568433	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.90	54	111307	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	228220	12.381	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.04%
57) Toluene-d8 (SS2)	12.51	98	635176	11.028	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	88.24%
73) Bromofluorobenzene (SS3)	16.87	174	241267	11.804	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	94.40%

Target Compounds

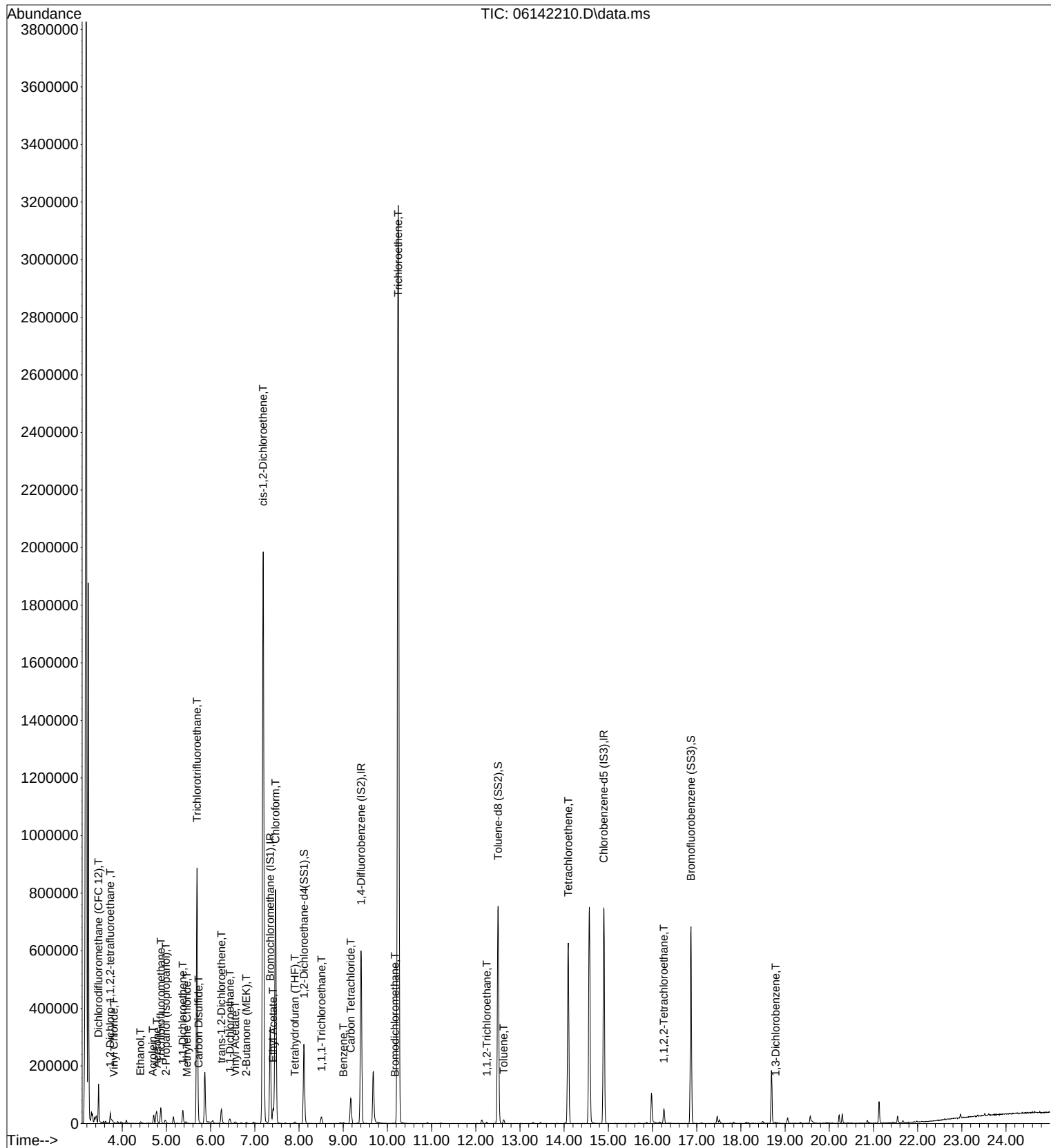
	R.T.	QIon	Response	Conc	Units	Qvalue
3) Dichlorodifluoromethan...	3.46	85	88212	3.028	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.73	135	1300	0.094	ng	98
6) Vinyl Chloride	3.82	62	2289	0.162	ng	100
10) Ethanol	4.41	45	8014	0.998	ng	95
12) Acrolein	4.69	56	979	0.149	ng	86
13) Acetone	4.79	58	9270	1.227	ng	# 50
14) Trichlorofluoromethane	4.87	101	37531	1.448	ng	99
15) 2-Propanol (Isopropanol)	4.99	45	9573	0.367	ng	99
17) 1,1-Dichloroethene	5.37	96	15756	1.336	ng	91
19) Methylene Chloride	5.47	84	966	0.078	ng	88
21) Trichlorotrifluoroethane	5.69	151	297712	23.851	ng	99
22) Carbon Disulfide	5.73	76	13879	0.298	ng	# 1
23) trans-1,2-Dichloroethene	6.25	61	29685	1.672	ng	99
24) 1,1-Dichloroethane	6.44	63	12565	0.615	ng	98
26) Vinyl Acetate	6.56	86	732	0.419	ng	# 75
27) 2-Butanone (MEK)	6.81	72	1208	0.171	ng	# 69
28) cis-1,2-Dichloroethene	7.19	61	1319426	78.635	ng	95
30) Ethyl Acetate	7.41	61	9404	2.313	ng	97
32) Chloroform	7.47	83	664470	29.342	ng	99
34) Tetrahydrofuran (THF)	7.91	72	1736	0.241	ng	92
38) 1,1,1-Trichloroethane	8.51	97	16367	0.761	ng	97
41) Benzene	9.01	78	3097	0.070	ng	94
42) Carbon Tetrachloride	9.17	117	59595	3.052	ng	97
46) Bromodichloromethane	10.17	83	1002	0.058	ng	89
47) Trichloroethene	10.25	130	1287217	92.862	ng	100
55) 1,1,2-Trichloroethane	12.25	97	1956	0.167	ng	93
58) Toluene	12.63	91	12215	0.223	ng	98
64) Tetrachloroethene	14.09	166	220164	11.744	ng	100
72) 1,1,2,2-Tetrachloroethane	16.26	83	26337	1.139	ng	99
85) 1,3-Dichlorobenzene	18.79	146	1978	0.059	ng	96

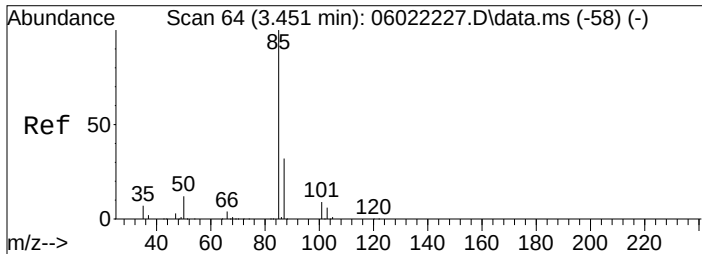
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS13\DATA\2022_06\14\06142210.D
Acq On : 14 Jun 2022 14:18
Sample : P2202553-001 (1000mL)
Misc : S35-06022211

Vial: 13
Operator: TZ
Inst : GCMS13

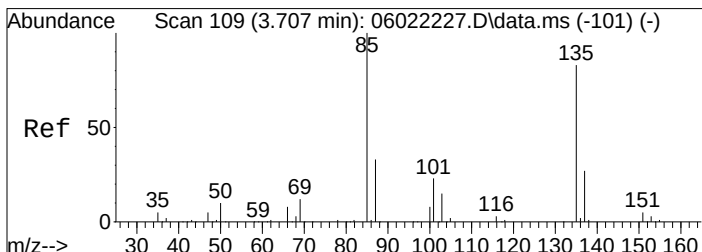
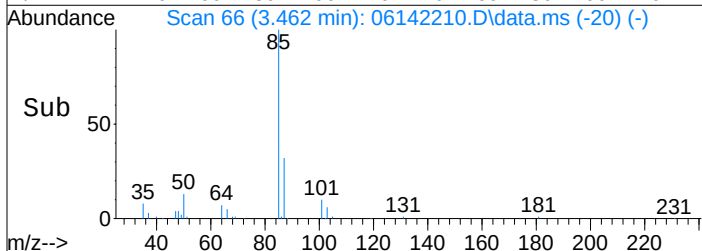
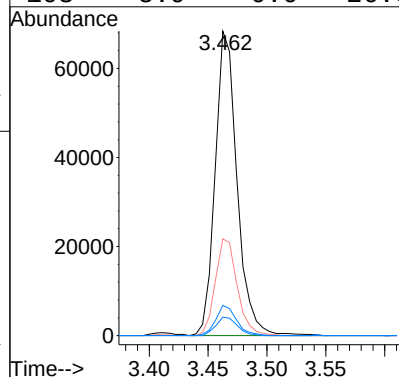
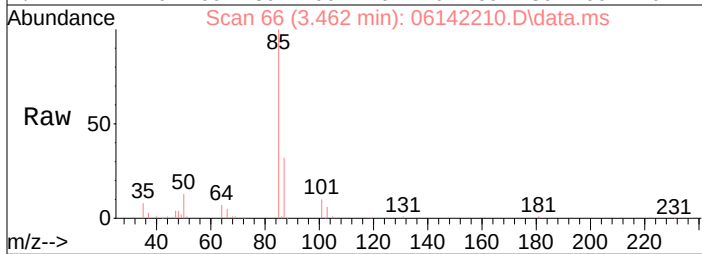
Quant Time: Jun 16 11:36:40 2022
Quant Method : I:\MS13\METHODS\R13060222.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Jun 03 08:41:22 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M





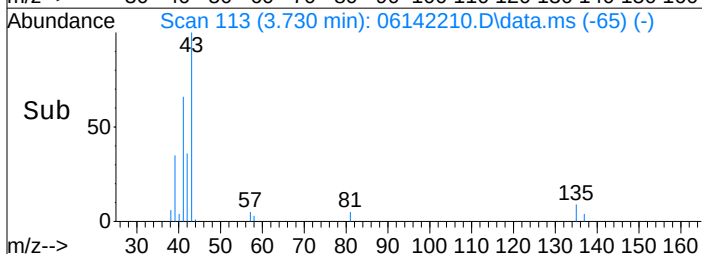
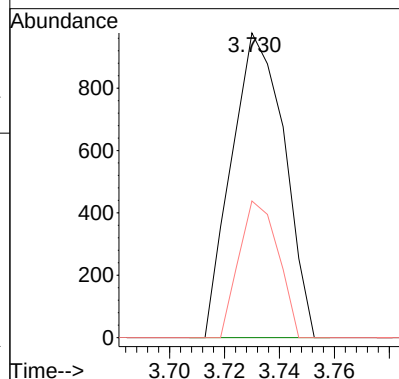
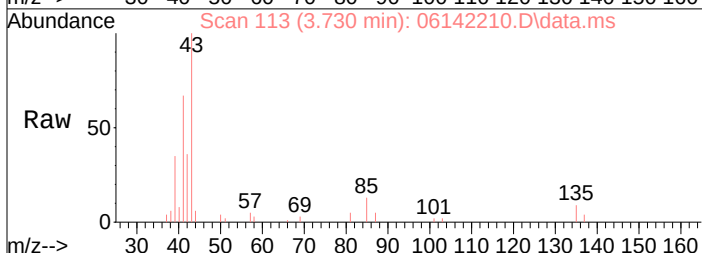
#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 3.03 ng
 RT: 3.46 min Scan# 66
 Delta R.T. 0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

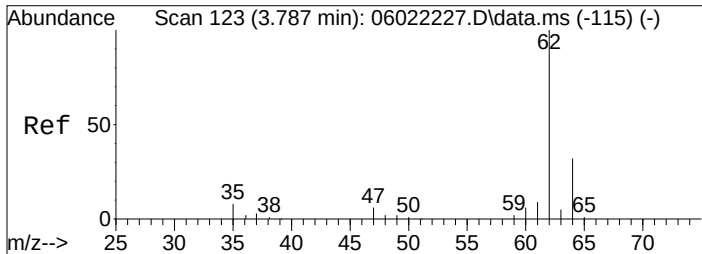
Tgt Ion:	85	Resp:	88212
Ion Ratio	Lower	Upper	
85	100		
87	31.9	12.2	52.2
101	9.4	0.0	29.4
103	5.9	0.0	26.0



#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.09 ng
 RT: 3.73 min Scan# 113
 Delta R.T. 0.023 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

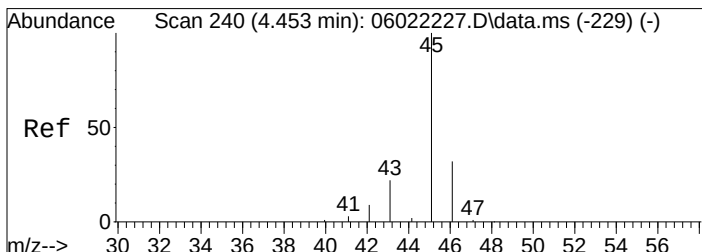
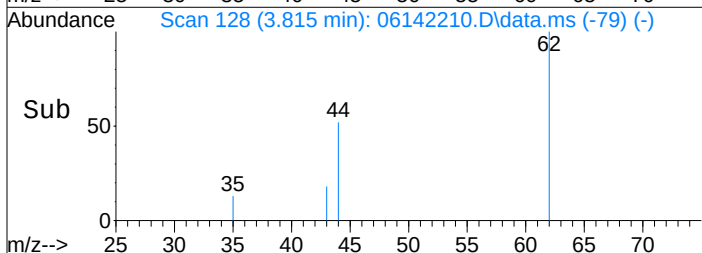
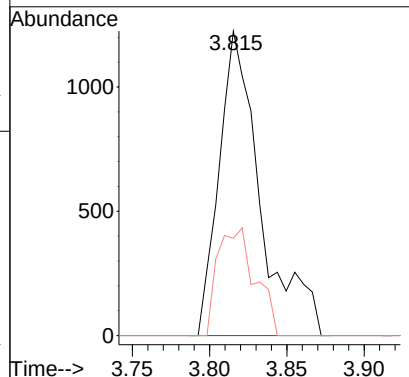
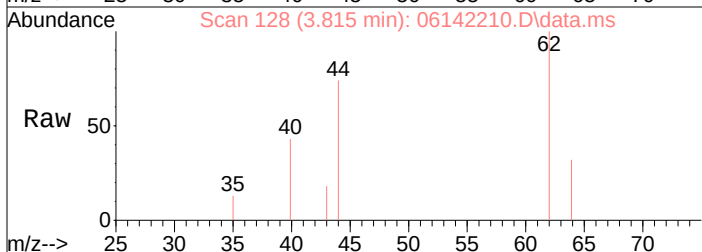
Tgt Ion:	135	Resp:	1300
Ion Ratio	Lower	Upper	
135	100		
137	33.5	12.5	52.5





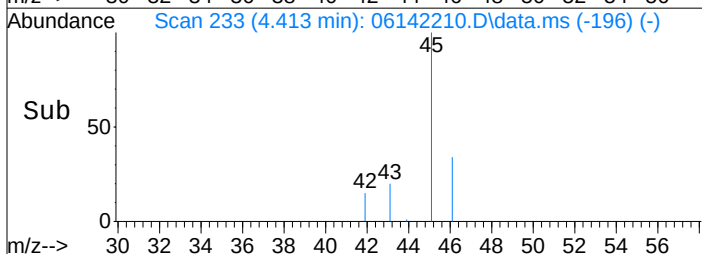
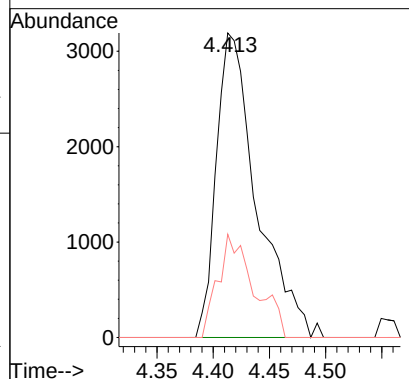
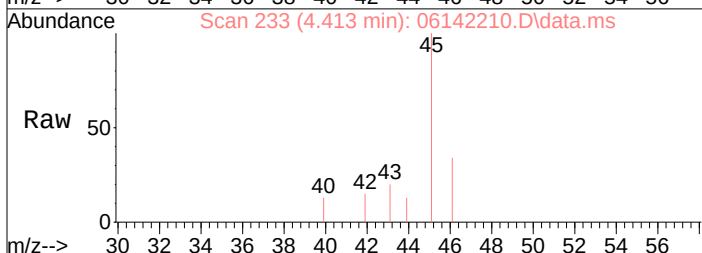
#6
 Vinyl Chloride
 Concen: 0.16 ng
 RT: 3.82 min Scan# 128
 Delta R.T. 0.028 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

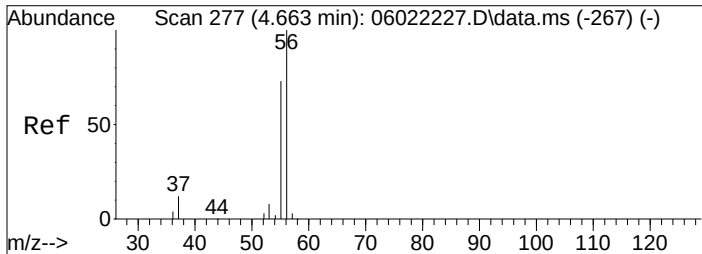
Tgt Ion:	62	Resp:	2289
Ion Ratio	Lower	Upper	
62	100		
64	31.9	11.9	51.9



#10
 Ethanol
 Concen: 1.00 ng
 RT: 4.41 min Scan# 233
 Delta R.T. -0.040 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

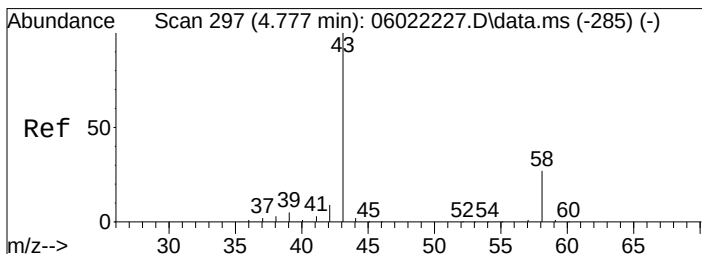
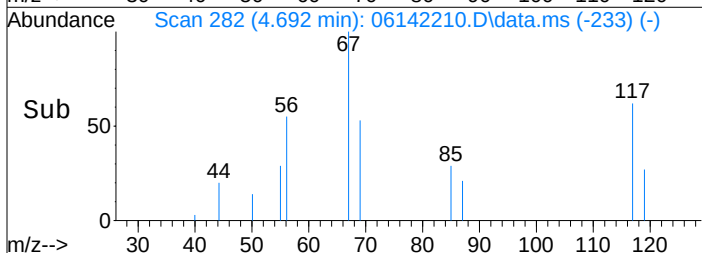
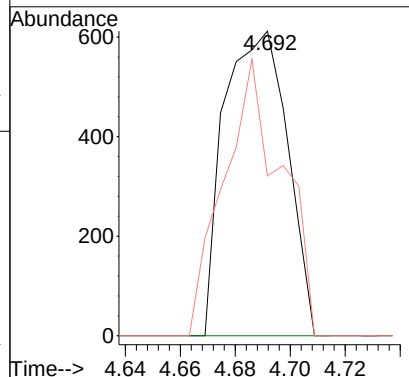
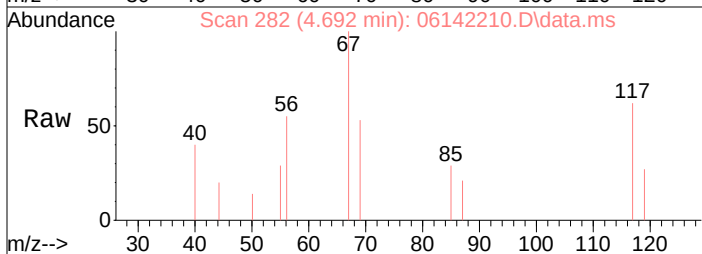
Tgt Ion:	45	Resp:	8014
Ion Ratio	Lower	Upper	
45	100		
46	30.3	13.1	53.1





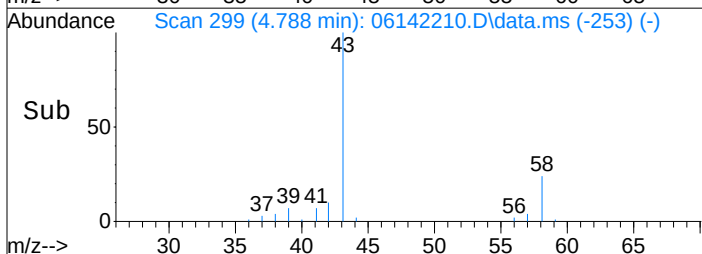
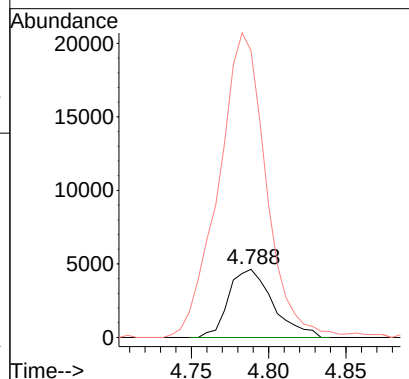
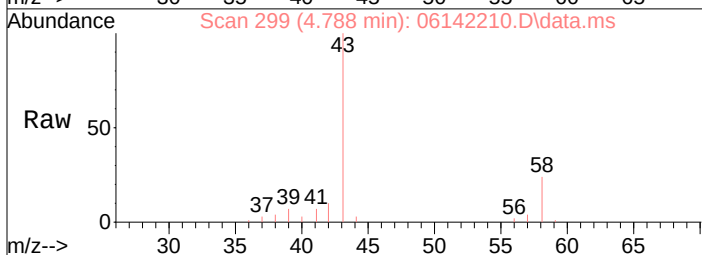
#12
 Acrolein
 Concen: 0.15 ng
 RT: 4.69 min Scan# 282
 Delta R.T. 0.028 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

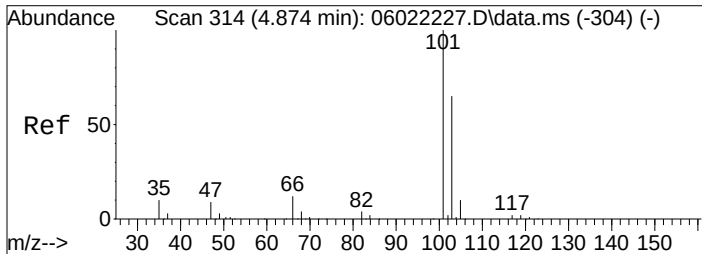
Tgt Ion: 56 Resp: 979
 Ion Ratio Lower Upper
 56 100
 55 83.4 51.7 91.7



#13
 Acetone
 Concen: 1.23 ng
 RT: 4.79 min Scan# 299
 Delta R.T. 0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

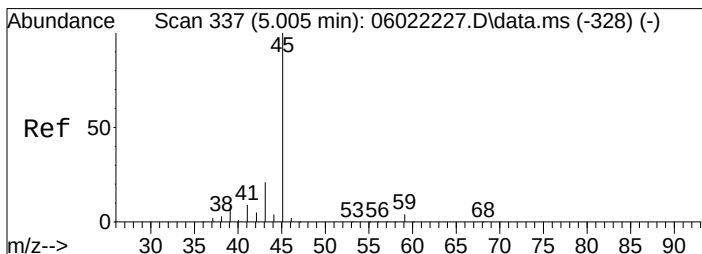
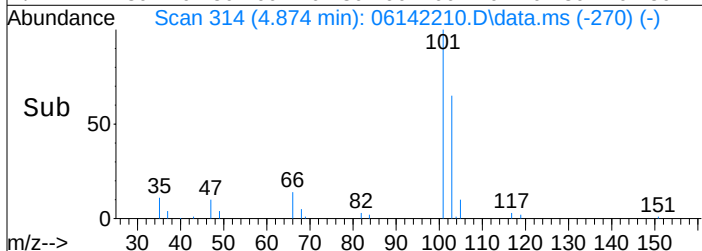
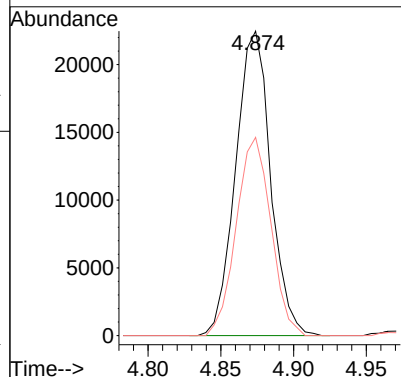
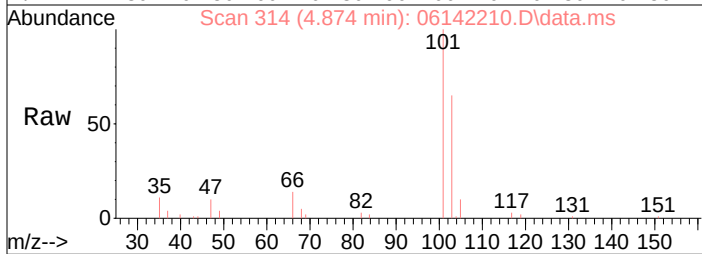
Tgt Ion: 58 Resp: 9270
 Ion Ratio Lower Upper
 58 100
 43 483.5 340.0 400.0#





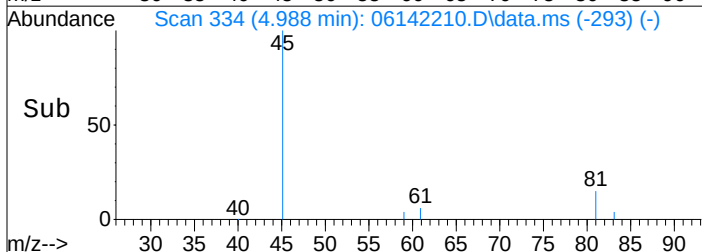
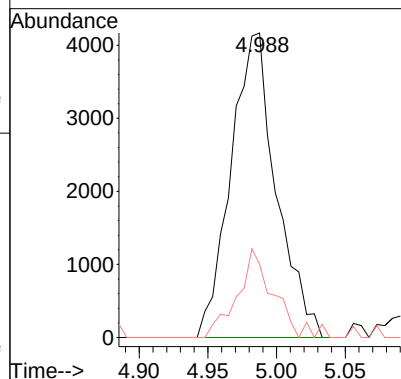
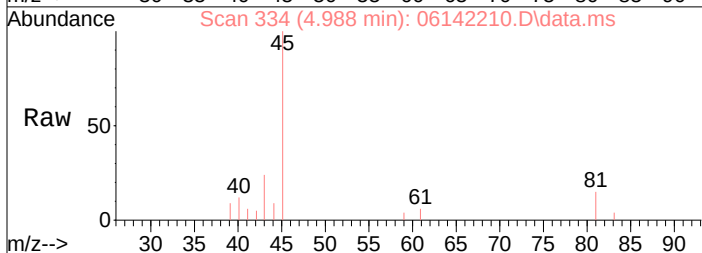
#14
 Trichlorofluoromethane
 Concen: 1.45 ng
 RT: 4.87 min Scan# 314
 Delta R.T. -0.000 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

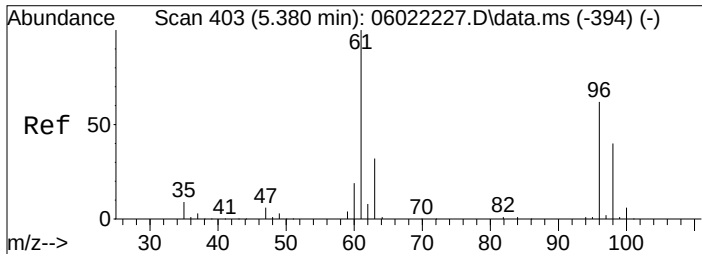
Tgt Ion:	101	Resp:	37531
Ion Ratio	Lower	Upper	
101	100		
103	64.5	45.5	85.5



#15
 2-Propanol (Isopropanol)
 Concen: 0.37 ng
 RT: 4.99 min Scan# 334
 Delta R.T. -0.017 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

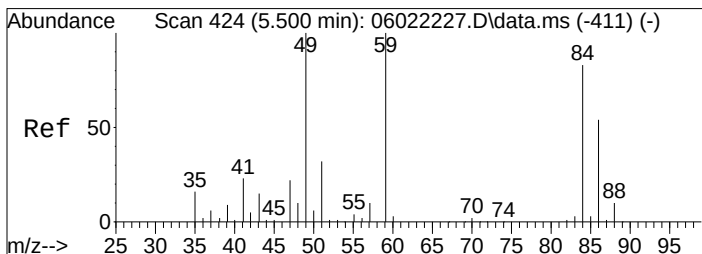
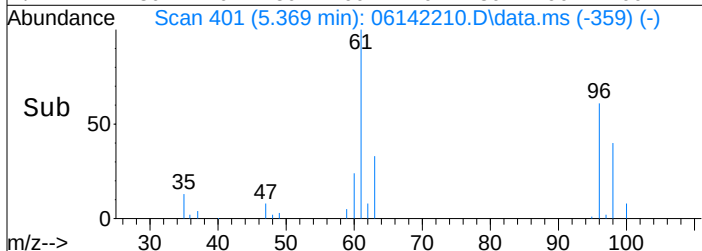
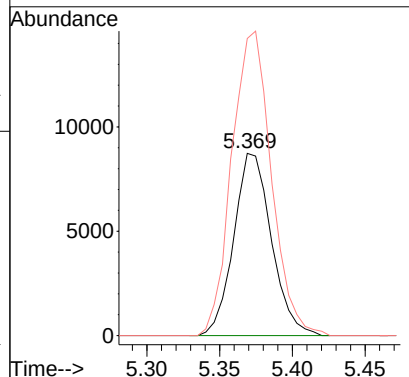
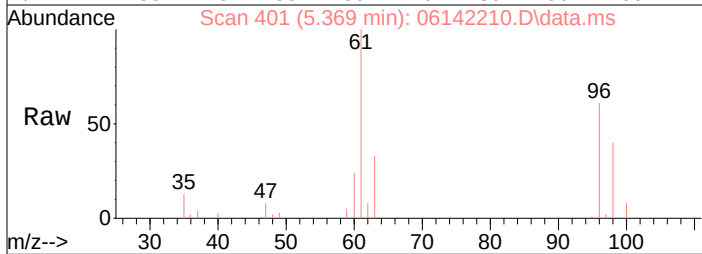
Tgt Ion:	45	Resp:	9573
Ion Ratio	Lower	Upper	
45	100		
43	22.0	1.3	41.3





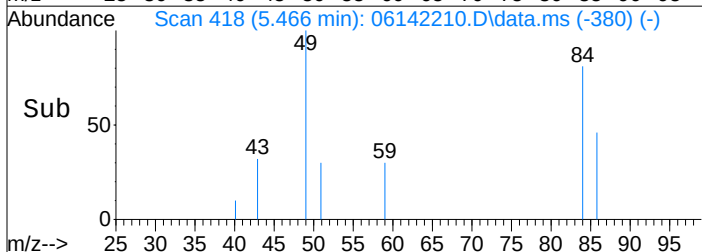
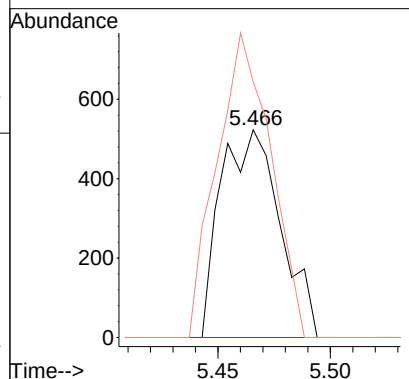
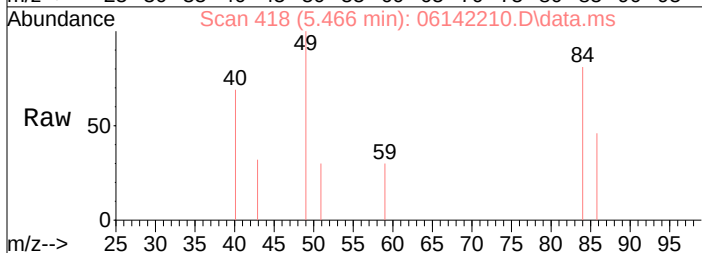
#17
 1,1-Dichloroethene
 Concen: 1.34 ng
 RT: 5.37 min Scan# 401
 Delta R.T. -0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

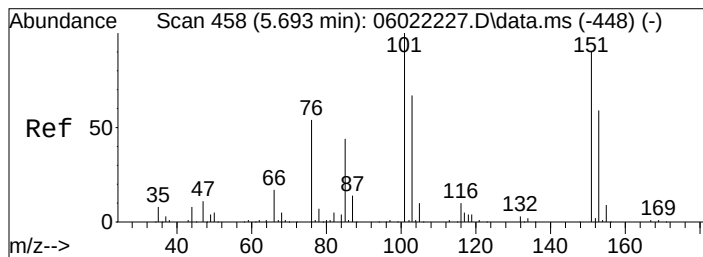
Tgt Ion:	96	Resp:	15756
Ion Ratio	Lower	Upper	
96	100		
61	175.5	143.6	183.6



#19
 Methylene Chloride
 Concen: 0.08 ng
 RT: 5.47 min Scan# 418
 Delta R.T. -0.034 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

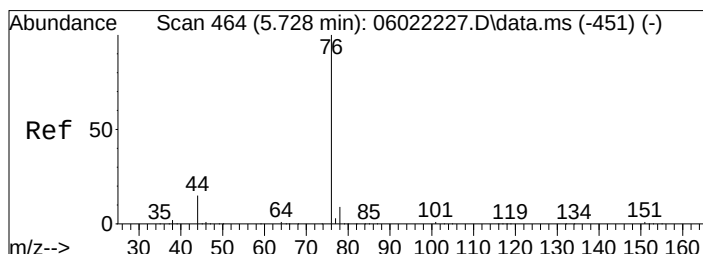
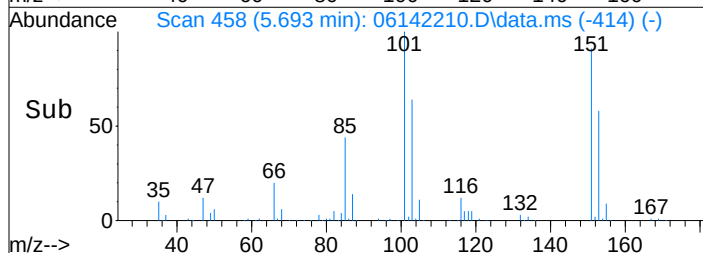
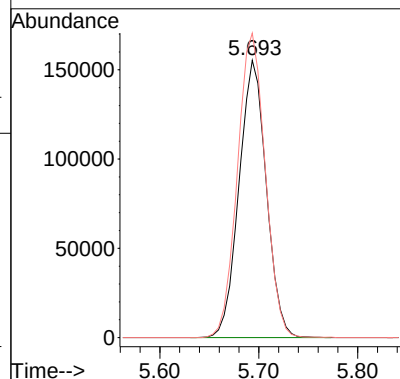
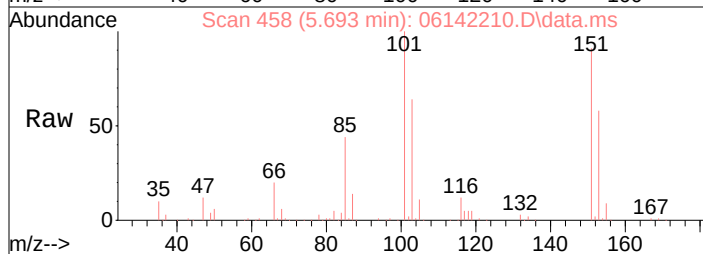
Tgt Ion:	84	Resp:	966
Ion Ratio	Lower	Upper	
84	100		
49	132.5	94.4	144.4





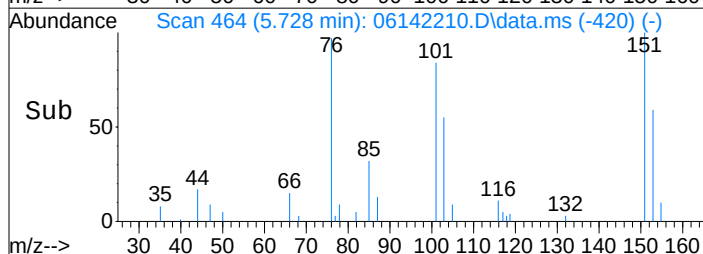
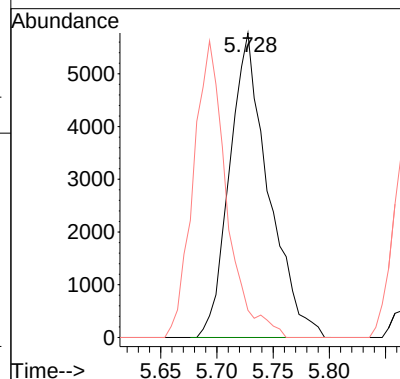
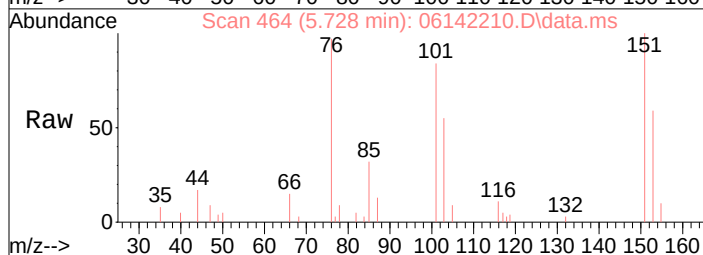
#21
 Trichlorotrifluoroethane
 Concen: 23.85 ng
 RT: 5.69 min Scan# 458
 Delta R.T. -0.000 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

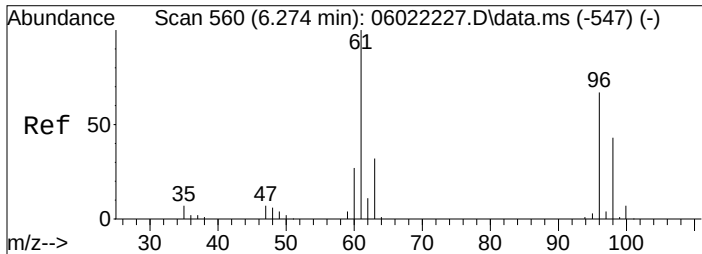
Tgt Ion: 151 Resp: 297712
 Ion Ratio Lower Upper
 151 100
 101 112.1 91.2 131.2



#22
 Carbon Disulfide
 Concen: 0.30 ng
 RT: 5.73 min Scan# 464
 Delta R.T. -0.000 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

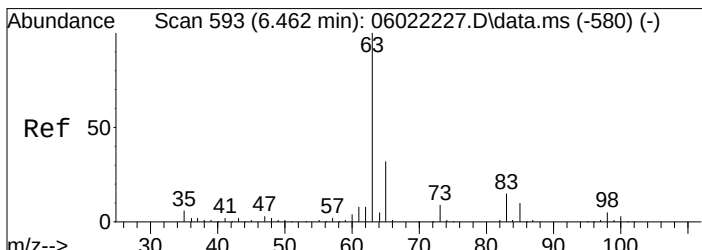
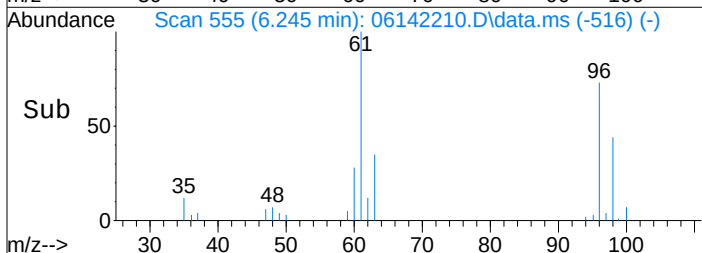
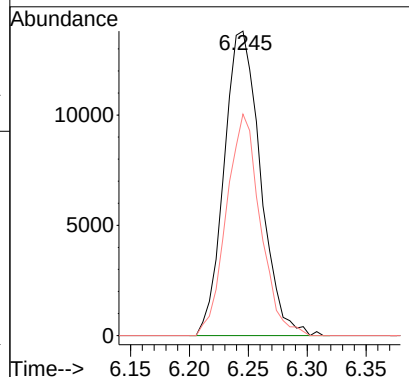
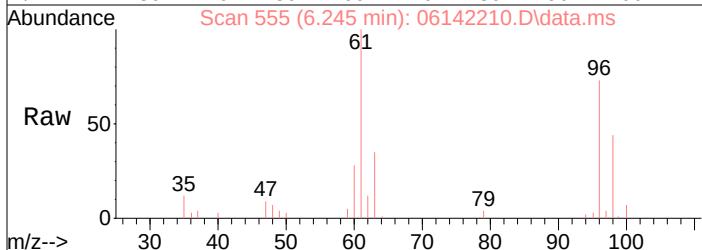
Tgt Ion: 76 Resp: 13879
 Ion Ratio Lower Upper
 76 100
 78 83.4 0.0 29.6#





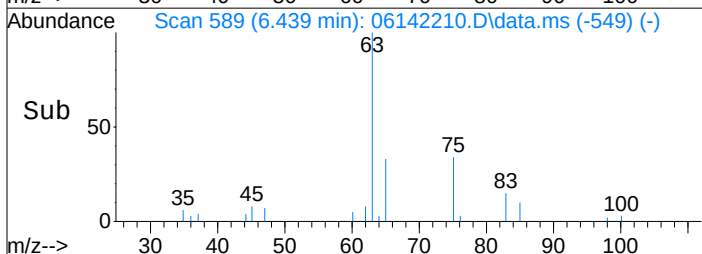
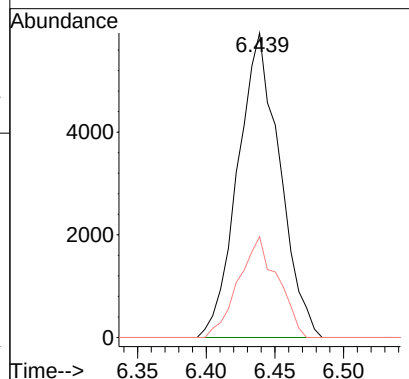
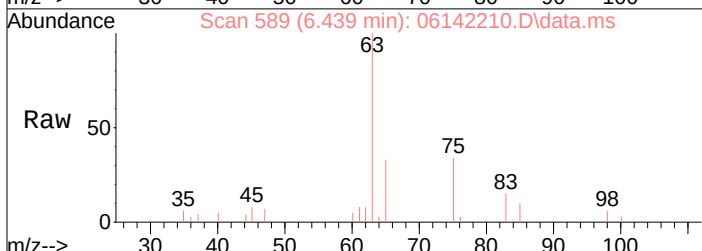
#23
 trans-1,2-Dichloroethene
 Concen: 1.67 ng
 RT: 6.25 min Scan# 555
 Delta R.T. -0.028 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

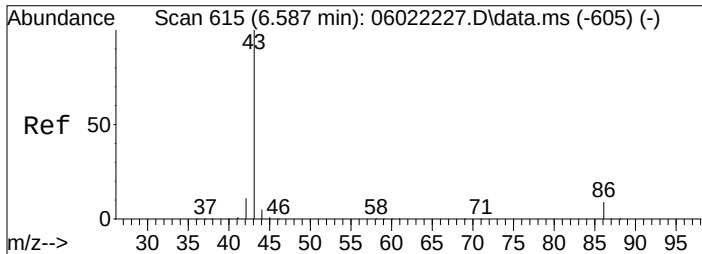
Tgt Ion:	61	Resp:	29685
Ion Ratio		Lower	Upper
61	100		
96	67.9	48.9	88.9



#24
 1,1-Dichloroethane
 Concen: 0.62 ng
 RT: 6.44 min Scan# 589
 Delta R.T. -0.023 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

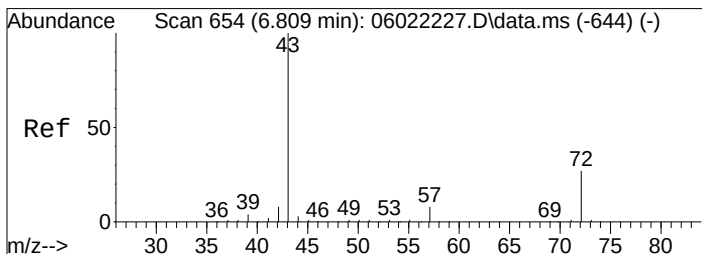
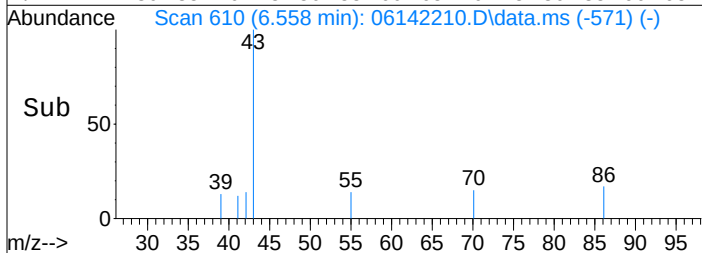
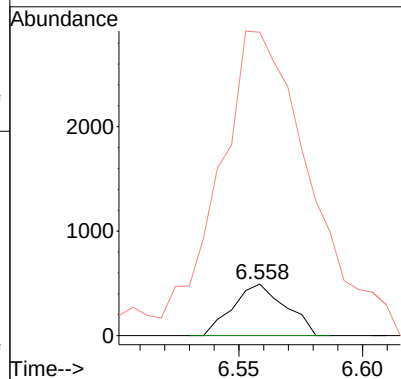
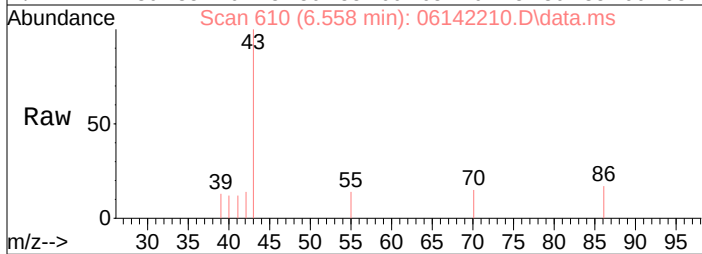
Tgt Ion:	63	Resp:	12565
Ion Ratio		Lower	Upper
63	100		
65	31.0	12.2	52.2





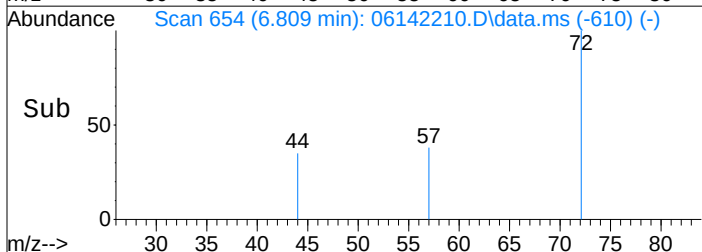
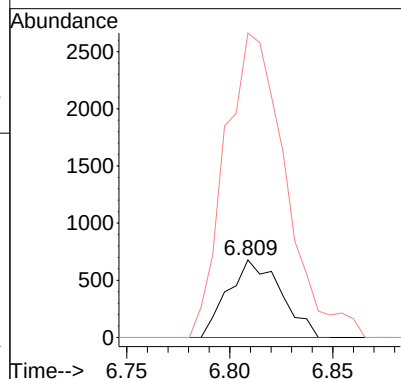
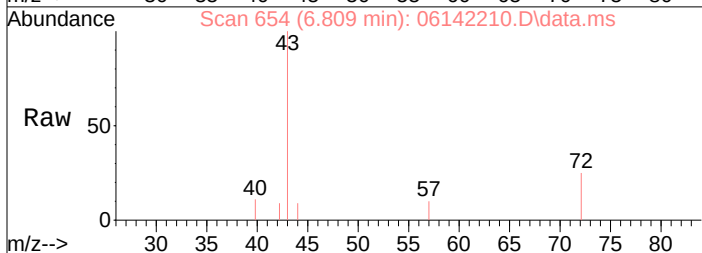
#26
 Vinyl Acetate
 Concen: 0.42 ng
 RT: 6.56 min Scan# 610
 Delta R.T. -0.029 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

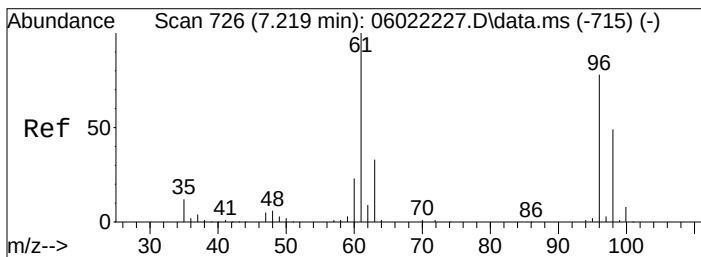
Tgt Ion: 86 Resp: 732
 Ion Ratio Lower Upper
 86 100
 43 1067.5 1171.7 1211.7#



#27
 2-Butanone (MEK)
 Concen: 0.17 ng
 RT: 6.81 min Scan# 654
 Delta R.T. -0.000 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

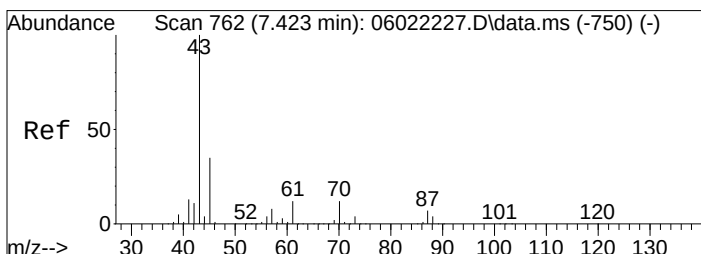
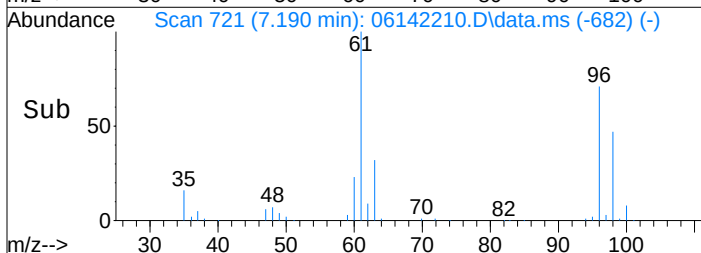
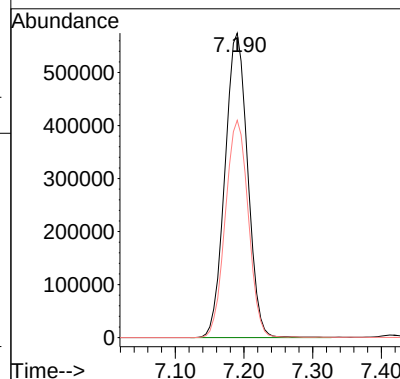
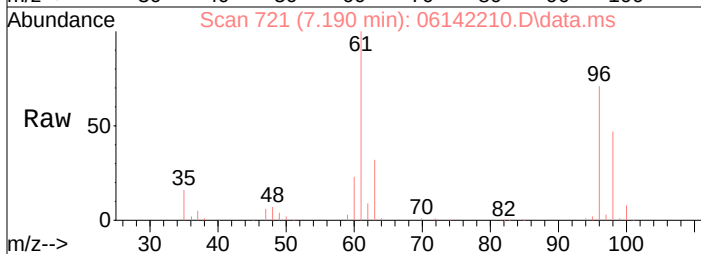
Tgt Ion: 72 Resp: 1208
 Ion Ratio Lower Upper
 72 100
 43 451.2 359.6 399.6#





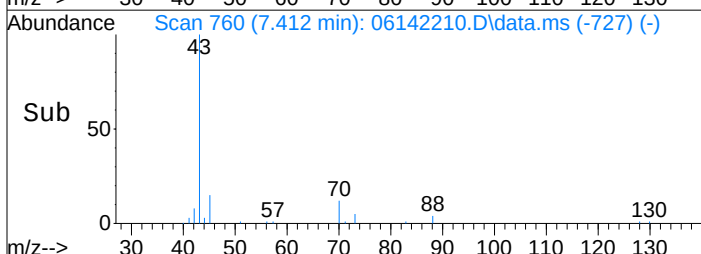
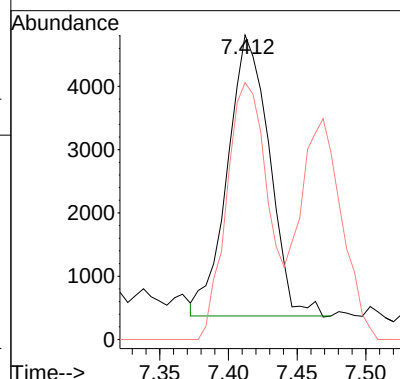
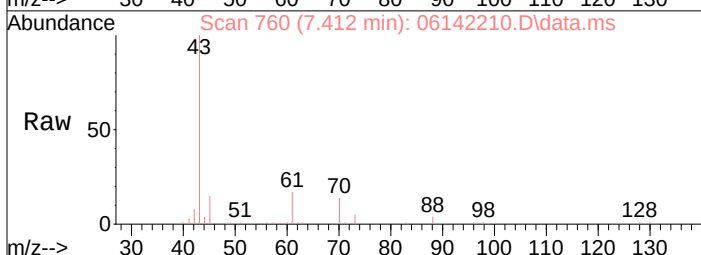
#28
 cis-1,2-Dichloroethene
 Concen: 78.64 ng
 RT: 7.19 min Scan# 721
 Delta R.T. -0.029 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

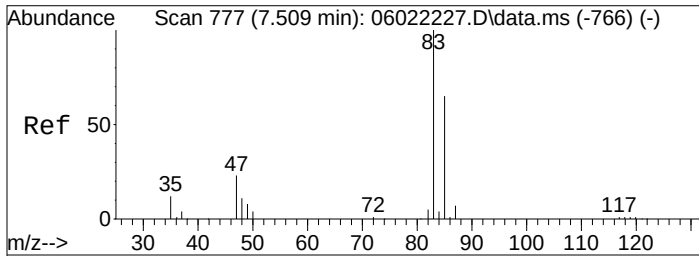
Tgt Ion: 61 Resp: 1319426
 Ion Ratio Lower Upper
 61 100
 96 72.4 56.7 96.7



#30
 Ethyl Acetate
 Concen: 2.31 ng
 RT: 7.41 min Scan# 760
 Delta R.T. -0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

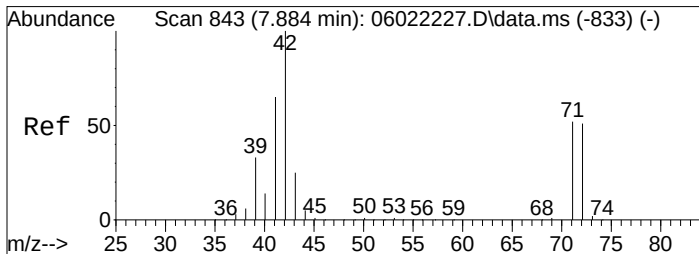
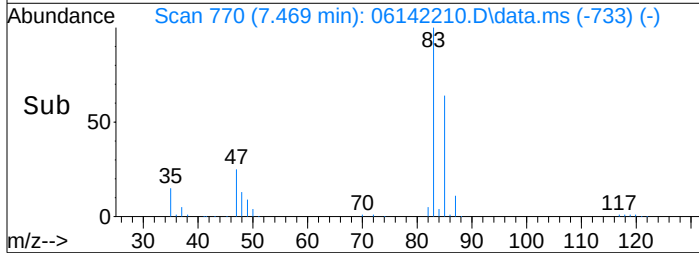
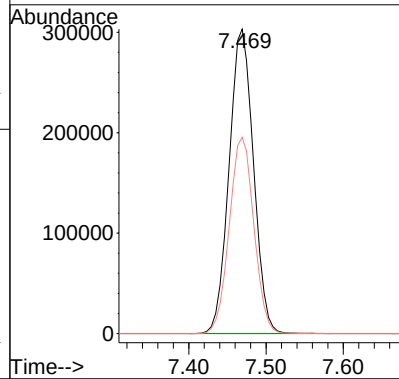
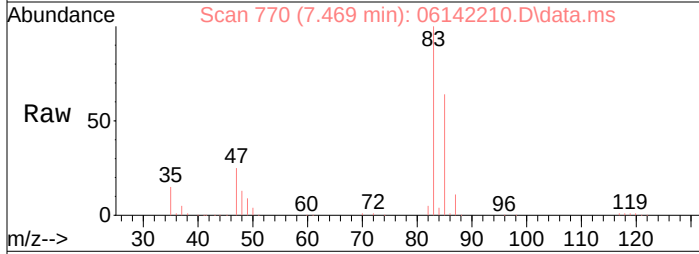
Tgt Ion: 61 Resp: 9404
 Ion Ratio Lower Upper
 61 100
 70 90.8 74.1 114.1





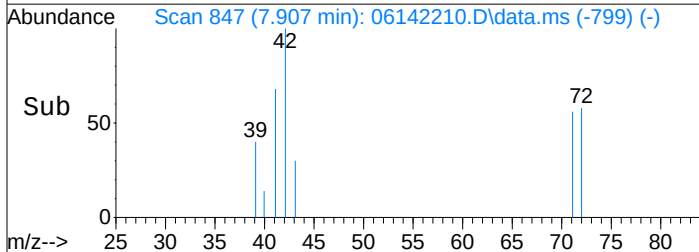
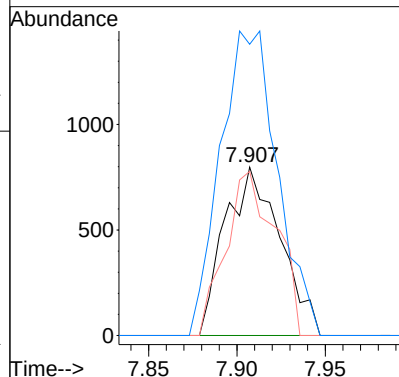
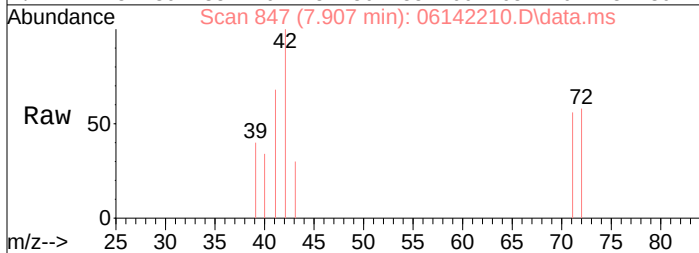
#32
Chloroform
Concen: 29.34 ng
RT: 7.47 min Scan# 770
Delta R.T. -0.040 min
Lab File: 06142210.D
Acq: 14 Jun 2022 14:18

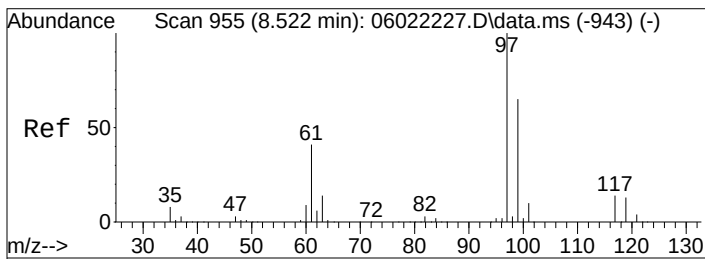
Tgt Ion: 83 Resp: 664470
Ion Ratio Lower Upper
83 100
85 65.1 45.8 85.8



#34
Tetrahydrofuran (THF)
Concen: 0.24 ng
RT: 7.91 min Scan# 847
Delta R.T. 0.023 min
Lab File: 06142210.D
Acq: 14 Jun 2022 14:18

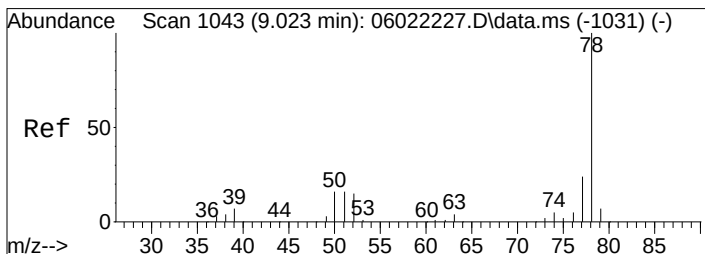
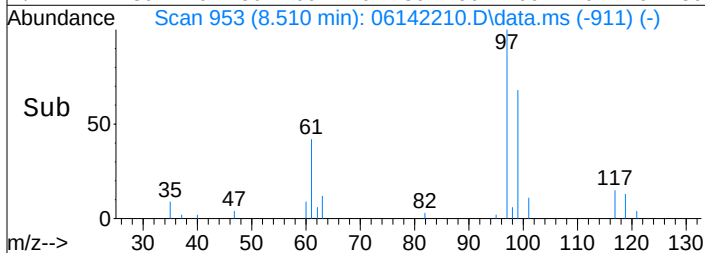
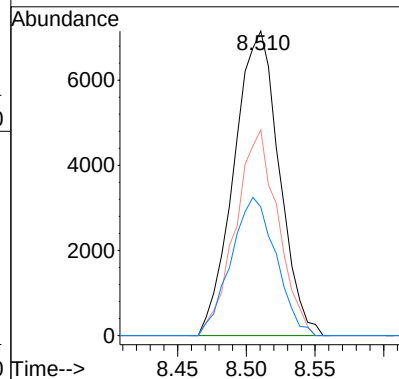
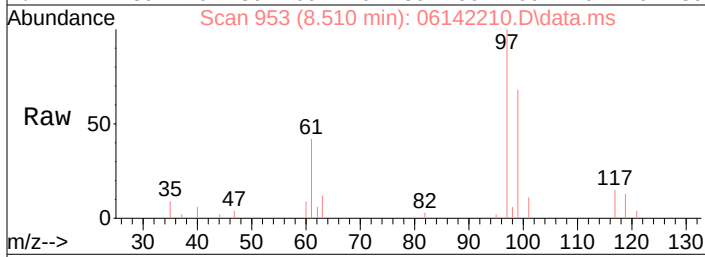
Tgt Ion: 72 Resp: 1736
Ion Ratio Lower Upper
72 100
71 88.5 80.2 120.2
42 186.7 175.8 215.8





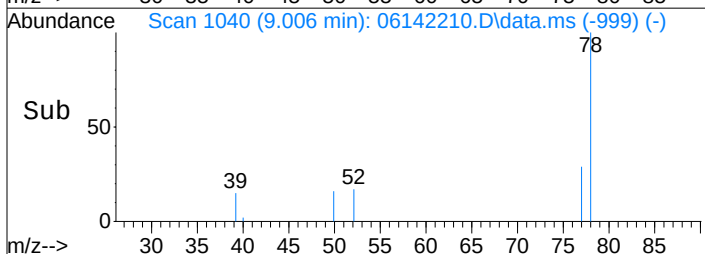
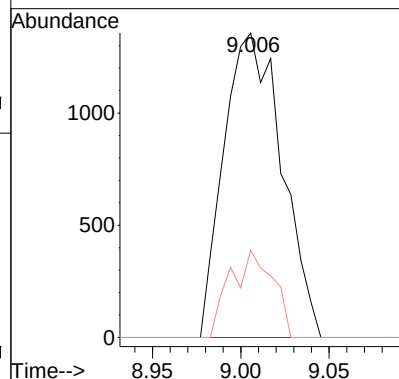
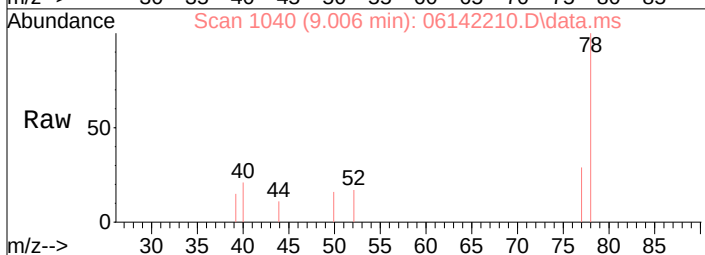
#38
 1,1,1-Trichloroethane
 Concen: 0.76 ng
 RT: 8.51 min Scan# 953
 Delta R.T. -0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

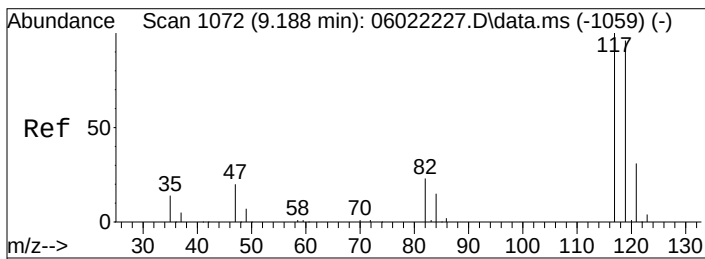
Tgt Ion: 97 Resp: 16367
 Ion Ratio Lower Upper
 97 100
 99 63.3 44.6 84.6
 61 45.1 21.3 61.3



#41
 Benzene
 Concen: 0.07 ng
 RT: 9.01 min Scan# 1040
 Delta R.T. -0.017 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

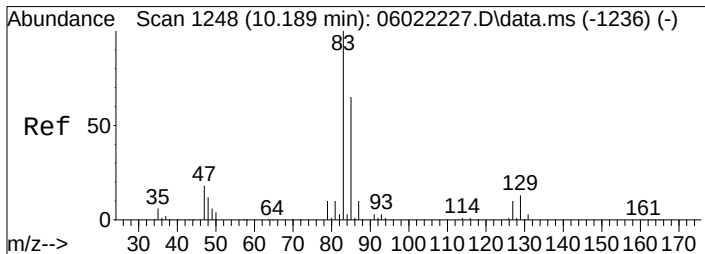
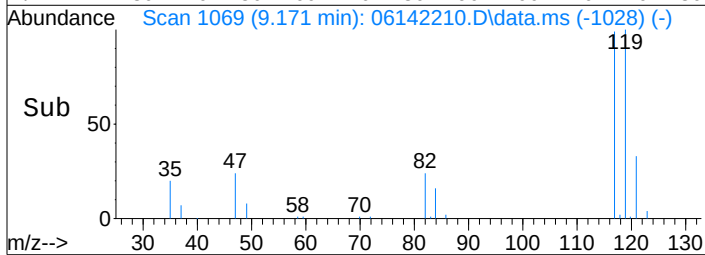
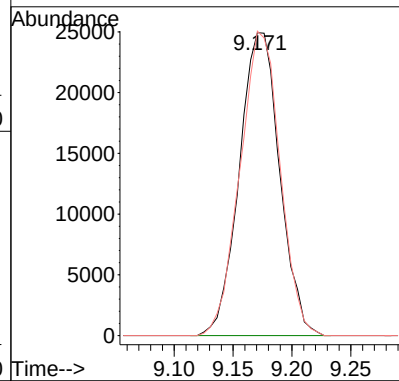
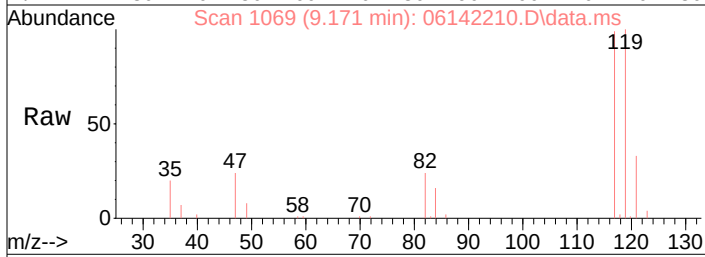
Tgt Ion: 78 Resp: 3097
 Ion Ratio Lower Upper
 78 100
 77 21.1 3.9 43.9





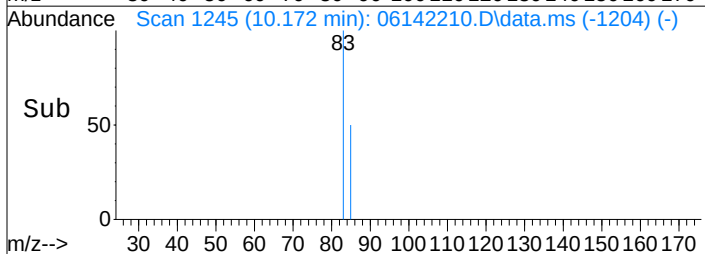
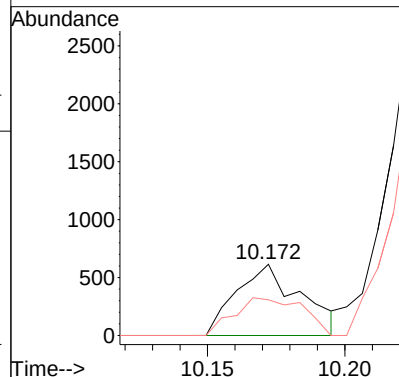
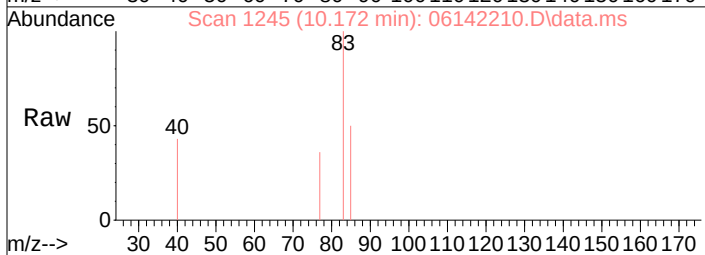
#42
Carbon Tetrachloride
Concen: 3.05 ng
RT: 9.17 min Scan# 1069
Delta R.T. -0.017 min
Lab File: 06142210.D
Acq: 14 Jun 2022 14:18

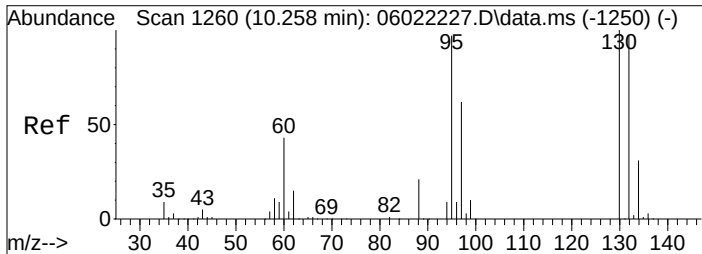
Tgt Ion: 117 Resp: 59595
Ion Ratio Lower Upper
117 100
119 99.6 77.1 117.1



#46
Bromodichloromethane
Concen: 0.06 ng
RT: 10.17 min Scan# 1245
Delta R.T. -0.017 min
Lab File: 06142210.D
Acq: 14 Jun 2022 14:18

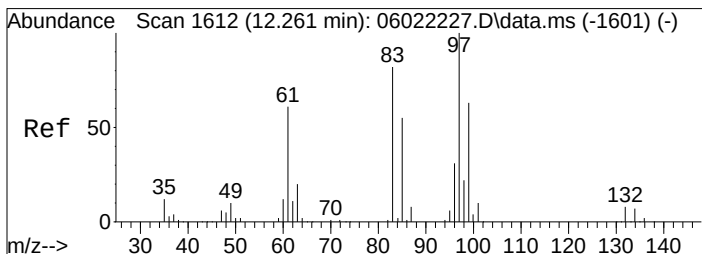
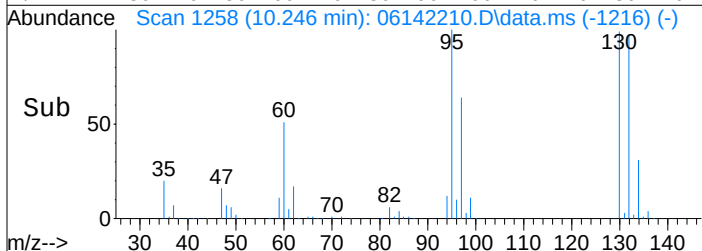
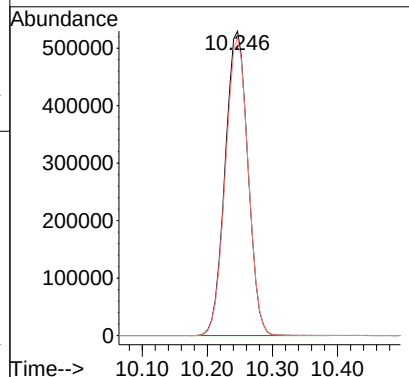
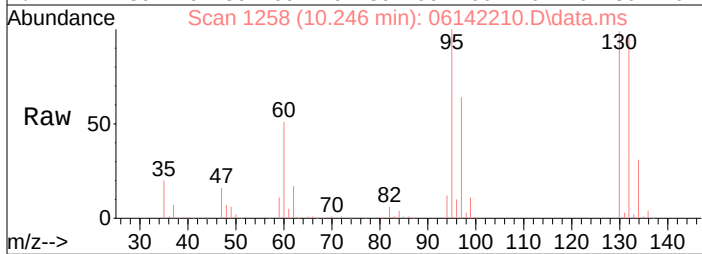
Tgt Ion: 83 Resp: 1002
Ion Ratio Lower Upper
83 100
85 56.5 45.3 85.3





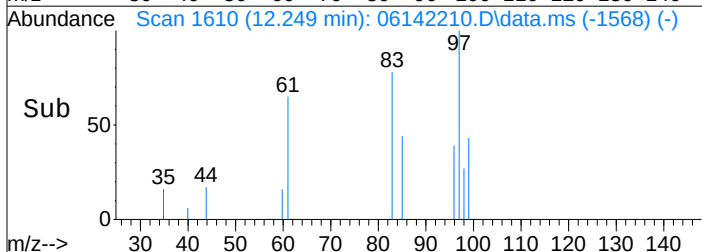
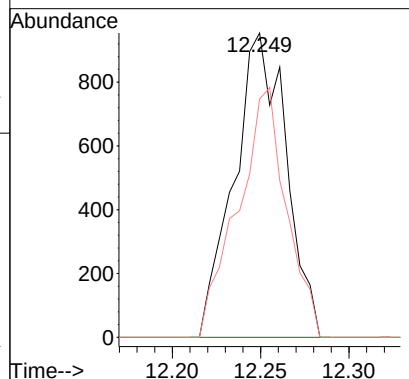
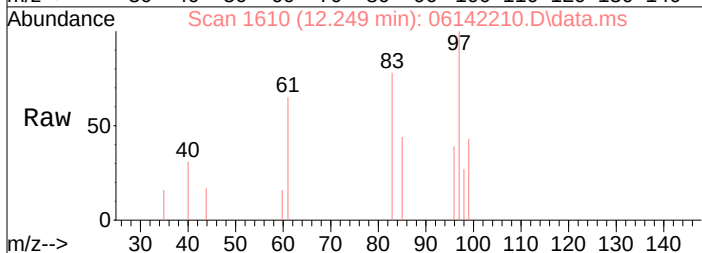
#47
 Trichloroethene
 Concen: 92.86 ng
 RT: 10.25 min Scan# 1258
 Delta R.T. -0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

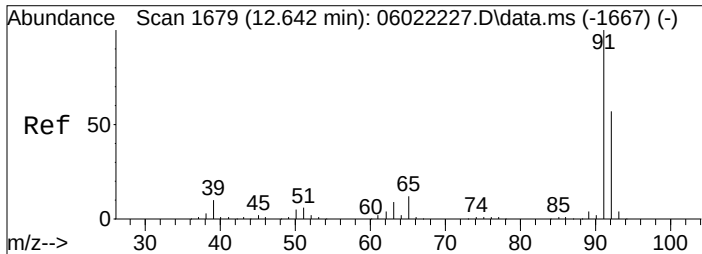
Tgt Ion: 130 Resp: 1287217
 Ion Ratio Lower Upper
 130 100
 132 97.3 77.2 117.2



#55
 1,1,2-Trichloroethane
 Concen: 0.17 ng
 RT: 12.25 min Scan# 1610
 Delta R.T. -0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

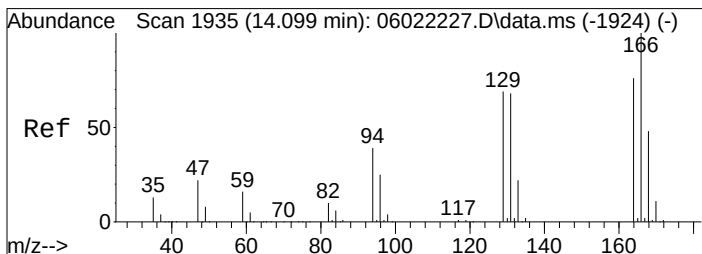
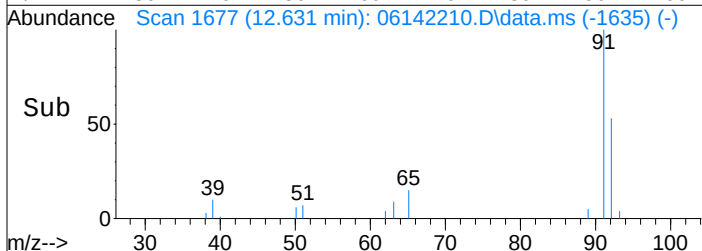
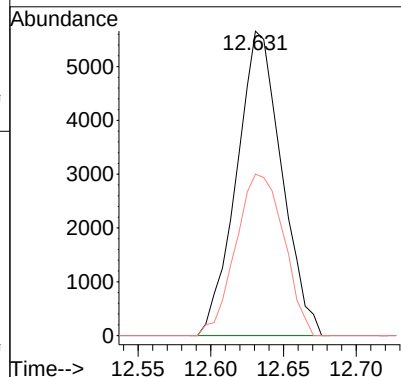
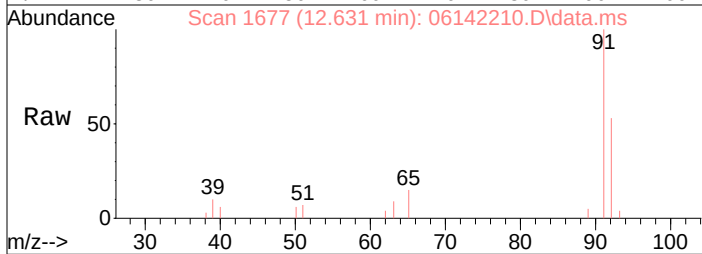
Tgt Ion: 97 Resp: 1956
 Ion Ratio Lower Upper
 97 100
 83 76.7 62.7 102.7





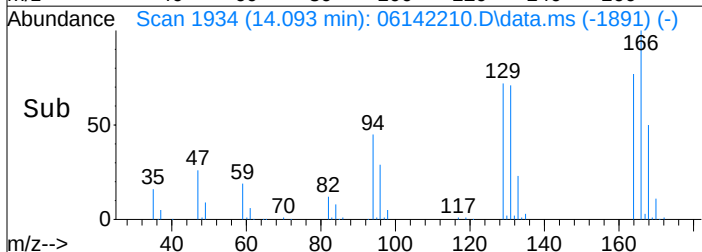
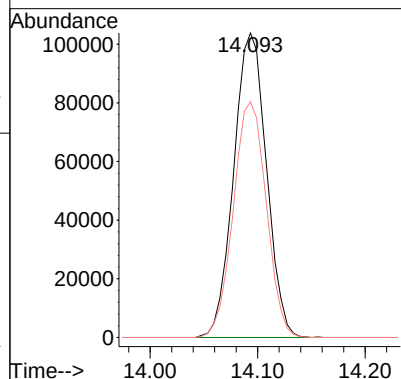
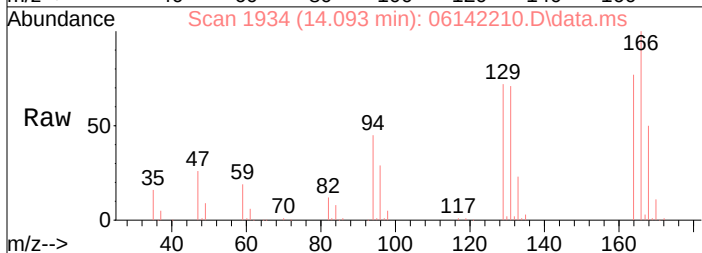
#58
 Toluene
 Concen: 0.22 ng
 RT: 12.63 min Scan# 1677
 Delta R.T. -0.011 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

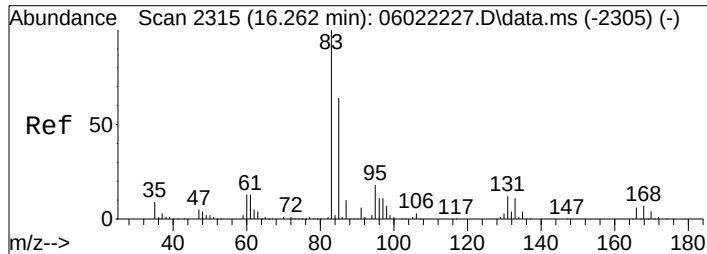
Tgt Ion:	91	Resp:	12215
Ion Ratio	Lower	Upper	
91	100		
92	56.5	38.1	78.1



#64
 Tetrachloroethene
 Concen: 11.74 ng
 RT: 14.09 min Scan# 1934
 Delta R.T. -0.006 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

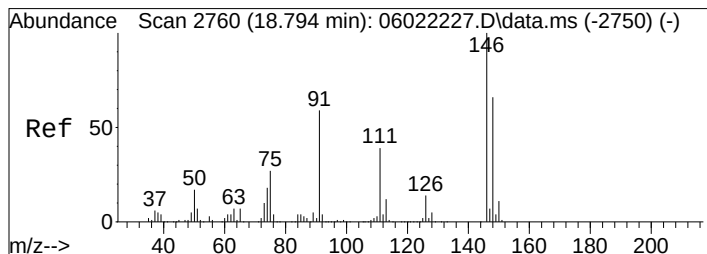
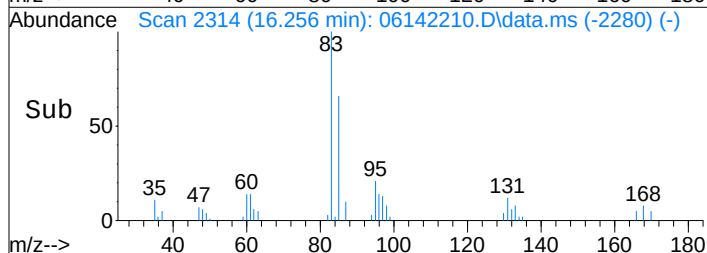
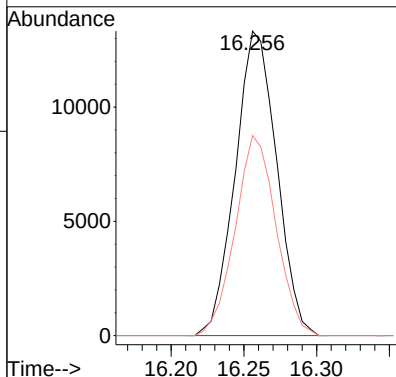
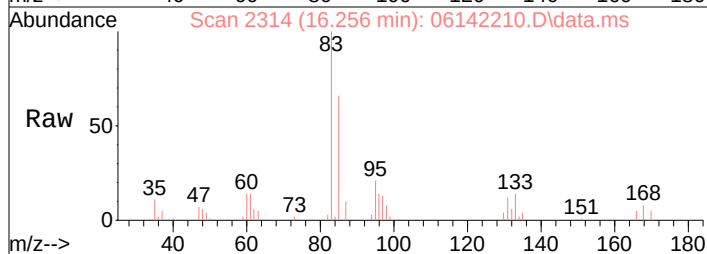
Tgt Ion:	166	Resp:	220164
Ion Ratio	Lower	Upper	
166	100		
164	77.9	57.9	97.9





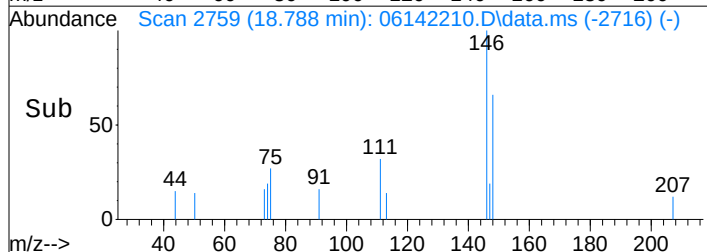
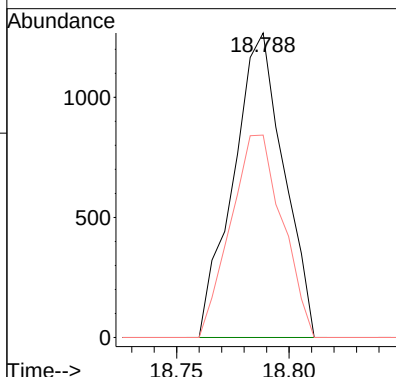
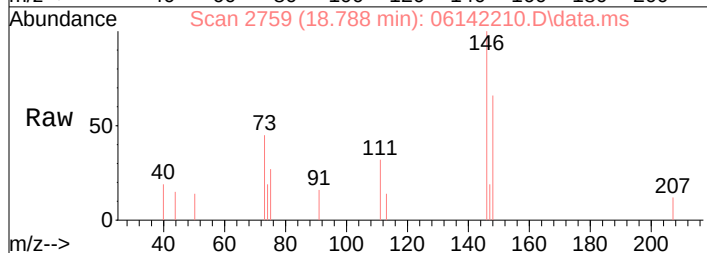
#72
 1,1,2,2-Tetrachloroethane
 Concen: 1.14 ng
 RT: 16.26 min Scan# 2314
 Delta R.T. -0.006 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

Tgt Ion: 83 Resp: 26337
 Ion Ratio Lower Upper
 83 100
 85 64.9 45.6 85.6



#85
 1,3-Dichlorobenzene
 Concen: 0.06 ng
 RT: 18.79 min Scan# 2759
 Delta R.T. -0.006 min
 Lab File: 06142210.D
 Acq: 14 Jun 2022 14:18

Tgt Ion: 146 Resp: 1978
 Ion Ratio Lower Upper
 146 100
 148 68.4 45.0 85.0



Data File : I:\MS13\DATA\2022_06\14\06142204.D
 Acq On : 14 Jun 2022 10:36
 Sample : MB R13061422 1000mL
 Misc : S35-06022211_AC01837

Vial: 1
 Operator: TZ
 Inst : GCMS13

TZ 6/14/22

Quant Time: Jun 14 11:09:12 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 08:41:22 2022
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	135215	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.39	114	560211	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.90	54	108921	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	237050	13.120	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	104.96%
57) Toluene-d8 (SS2)	12.50	98	620630	11.012	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	88.08%
73) Bromofluorobenzene (SS3)	16.87	174	229468	11.473	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	91.76%

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	3.47	50	196	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	4.43	45	197	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.79	58	530	0.072	ng	93
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	5.00	45	122	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	5.48	84	129	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.	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)	7.92	72	200	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	0.00	78	0	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.39	84	620	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.		

Data File : I:\MS13\DATA\2022_06\14\06142204.D
 Acq On : 14 Jun 2022 10:36
 Sample : MB R13061422 1000mL
 Misc : S35-06022211_AC01837

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 14 11:09:12 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

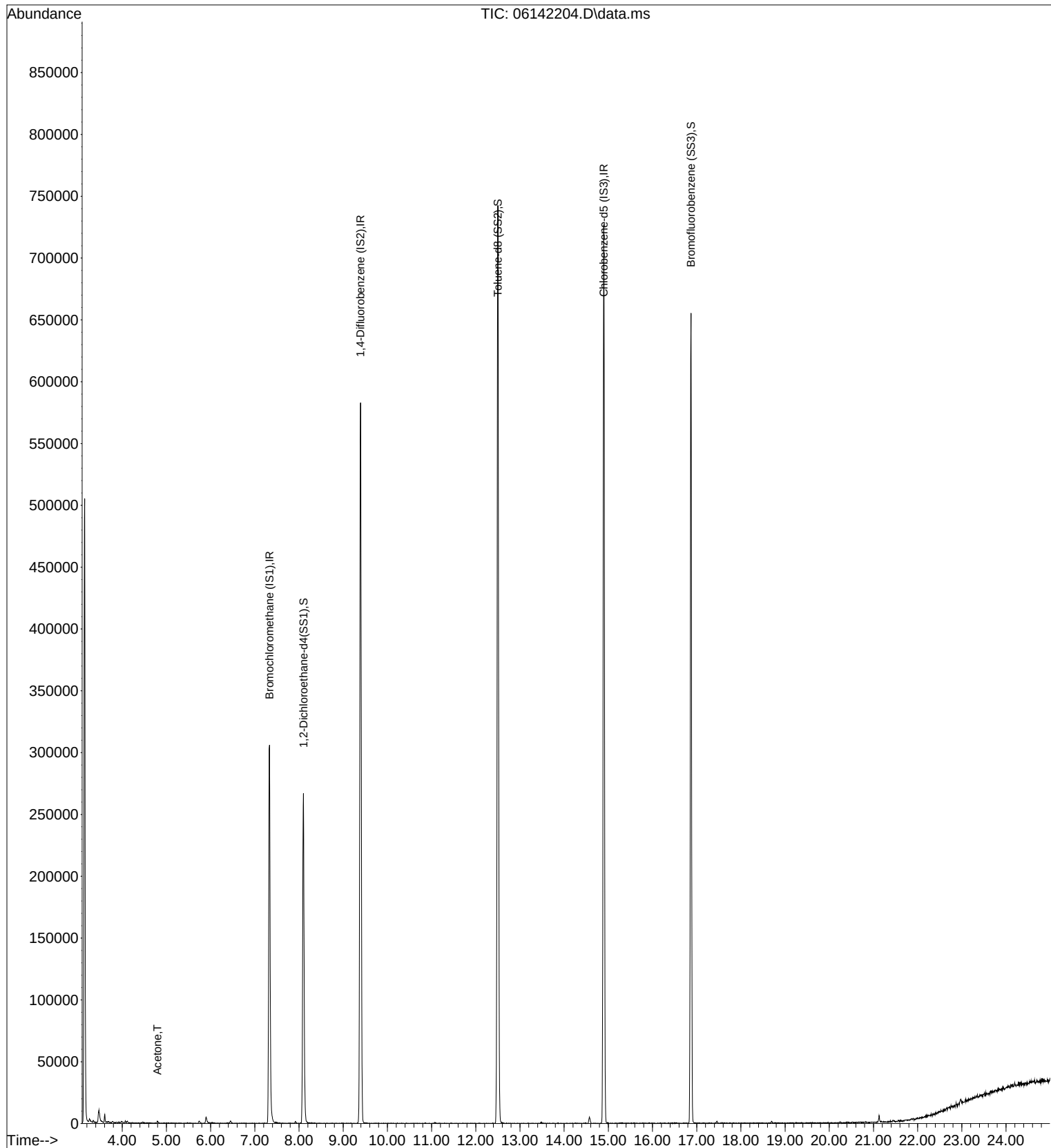
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.62	91	128	N.D.		
59) 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	16.86	118	949	No Calib	#	
81) 2-Ethyltoluene	16.86	105	138	No Calib	#	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	16.86	58	114	No Calib	#	
84) Benzyl Chloride	18.77	91	116	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	21.44	180	572	N.D.		
95) Naphthalene	21.55	128	841	N.D.		
96) n-Dodecane	0.00	57	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 File : I:\MS13\DATA\2022_06\14\06142204.D
Acq On : 14 Jun 2022 10:36
Sample : MB R13061422 1000mL
Misc : S35-06022211_AC01837

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Jun 14 11:09:12 2022
Quant Method : I:\MS13\METHODS\R13060222.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Fri Jun 03 08:41:22 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2022_06\14\06142205.D
 Acq On : 14 Jun 2022 11:15
 Sample : LCS R13061422 25ng
 Misc : S35-06022211/S35-06022203 (7/2)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 14 11:38:20 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

TZ 6/14/22

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.38	130	138107	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	584183	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.90	54	117223	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.14	65	253197	13.720	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	109.76%	
57) Toluene-d8 (SS2)	12.52	98	652001	10.749	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	86.00%	
73) Bromofluorobenzene (SS3)	16.88	174	253855	11.793	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	94.32%	

Target Compounds

						Qvalue
2) Propene	3.38	42	307787	22.328	ng	98
3) Dichlorodifluoromethan...	3.46	85	753377	25.828	ng	99
4) Chloromethane	3.60	50	351280	22.736	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	344801	24.907	ng	99
6) Vinyl Chloride	3.79	62	342462	24.187	ng	100
7) 1,3-Butadiene	3.92	54	248172	23.569	ng	97
8) Bromomethane	4.13	94	243707	21.315	ng	98
9) Chloroethane	4.28	64	165236	21.672	ng	100
10) Ethanol	4.47	45	703788	87.511	ng	99
11) Acetonitrile	4.60	41	373410	18.883	ng	99
12) Acrolein	4.67	56	295478	44.990	ng	98
13) Acetone	4.78	58	760160	100.530	ng	# 85
14) Trichlorofluoromethane	4.88	101	640393	24.671	ng	99
15) 2-Propanol (Isopropanol)	5.02	45	1197409	45.884	ng	95
16) Acrylonitrile	5.16	53	579935	44.114	ng	99
17) 1,1-Dichloroethene	5.38	96	271271	22.981	ng	95
18) 2-Methyl-2-Propanol (t...	5.49	59	1335208	47.271	ng	99
19) Methylene Chloride	5.51	84	261417	21.173	ng	96
20) 3-Chloro-1-propene (Al...	5.59	41	355967	20.772	ng	98
21) Trichlorotrifluoroethane	5.70	151	293312	23.471	ng	99
22) Carbon Disulfide	5.73	76	1870091	40.165	ng	100
23) trans-1,2-Dichloroethene	6.28	61	418936	23.568	ng	97
24) 1,1-Dichloroethane	6.47	63	465882	22.788	ng	100
25) Methyl tert-Butyl Ether	6.50	73	885247	23.595	ng	99
26) Vinyl Acetate	6.59	86	216114	123.507	ng	# 91
27) 2-Butanone (MEK)	6.81	72	315602	44.652	ng	95
28) cis-1,2-Dichloroethene	7.22	61	393015	23.395	ng	96
29) Diisopropyl Ether	7.41	87	384135	44.306	ng	# 70
30) Ethyl Acetate	7.43	61	245681	60.345	ng	97
31) n-Hexane	7.41	57	348933	21.791	ng	100
32) Chloroform	7.51	83	551342	24.317	ng	99
34) Tetrahydrofuran (THF)	7.89	72	309914	42.987	ng	100
35) Ethyl tert-Butyl Ether	7.95	87	664103	47.896	ng	99
36) 1,2-Dichloroethane	8.25	62	475366	26.025	ng	100
38) 1,1,1-Trichloroethane	8.52	97	558030	25.259	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.92	56	4480	No Calib		
41) Benzene	9.02	78	1025465	22.653	ng	100
42) Carbon Tetrachloride	9.19	117	508232	25.323	ng	100
43) Cyclohexane	9.33	84	724693	45.260	ng	100
44) tert-Amyl Methyl Ether	9.71	73	1589798	47.000	ng	98
45) 1,2-Dichloropropane	9.97	63	235803	22.312	ng	99
46) Bromodichloromethane	10.19	83	448613	25.371	ng	100
47) Trichloroethene	10.26	130	336862	23.647	ng	99
48) 1,4-Dioxane	10.23	88	212656	23.453	ng	99
49) 2,2,4-Trimethylpentane...	10.34	57	977602	22.525	ng	93
50) Methyl Methacrylate	10.51	100	220322	50.002	ng	99

Data File : I:\MS13\DATA\2022_06\14\06142205.D
 Acq On : 14 Jun 2022 11:15
 Sample : LCS R13061422 25ng
 Misc : S35-06022211/S35-06022203 (7/2)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 14 11:38:20 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

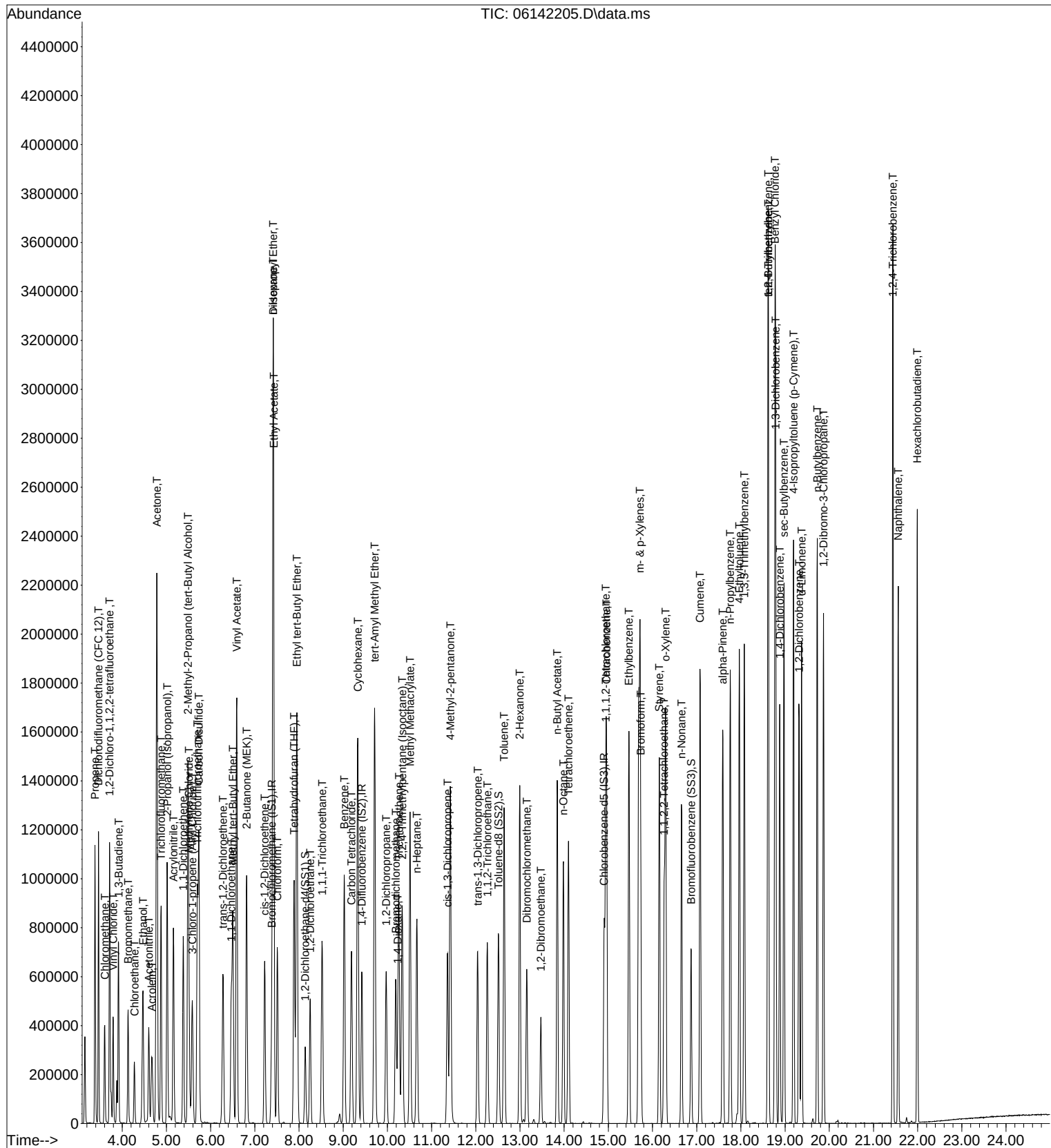
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	240279	23.029	ng	99
52) cis-1,3-Dichloropropene	11.36	75	455193	25.273	ng	100
53) 4-Methyl-2-pentanone	11.42	58	429220	47.991	ng	95
54) trans-1,3-Dichloropropene	12.04	75	454532	25.516	ng	100
55) 1,1,2-Trichloroethane	12.26	97	281261	23.359	ng	99
58) Toluene	12.64	91	1140567	19.778	ng	100
59) 2-Hexanone	12.99	43	1071337	41.945	ng	96
60) Dibromochloromethane	13.15	129	422167	20.934	ng	99
61) 1,2-Dibromoethane	13.47	107	345481	20.310	ng	99
62) n-Butyl Acetate	13.84	43	1185792	42.565	ng	97
63) n-Octane	13.99	57	208336	18.941	ng	98
64) Tetrachloroethene	14.10	166	401200	20.321	ng	100
65) Chlorobenzene	14.96	112	789358	19.827	ng	100
66) Ethylbenzene	15.46	91	1368101	20.422	ng	99
67) m- & p-Xylenes	15.72	91	2294000	42.374	ng	98
68) Bromoform	15.73	173	392245	21.815	ng	100
69) Styrene	16.15	104	825638	21.621	ng	98
70) o-Xylene	16.30	91	1163567	21.324	ng	97
71) n-Nonane	16.65	43	481469	20.481	ng	100
72) 1,1,2,2-Tetrachloroethane	16.26	83	481427	19.764	ng	100
74) Cumene	17.08	105	1414142	20.566	ng	99
75) alpha-Pinene	17.59	93	725318	21.566	ng	96
76) n-Propylbenzene	17.76	91	1673241	20.885	ng	99
77) 3-Ethyltoluene	17.08	105	1414142	No Calib	#	
78) 4-Ethyltoluene	17.96	105	1400250	21.637	ng	100
79) 1,3,5-Trimethylbenzene	18.08	105	1254438	21.626	ng	98
80) alpha-Methylstyrene	16.87	118	1011	No Calib	#	
81) 2-Ethyltoluene	16.88	105	348	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	1229249	21.403	ng	99
83) n-Decane	16.86	58	254	No Calib	#	
84) Benzyl Chloride	18.77	91	2139409	45.791	ng	99
85) 1,3-Dichlorobenzene	18.79	146	721939	20.459	ng	100
86) 1,4-Dichlorobenzene	18.88	146	757578	20.562	ng	99
87) sec-Butylbenzene	18.98	105	1575733	20.707	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	1413289	21.101	ng	97
89) 1,2,3-Trimethylbenzene	17.37	105	112	No Calib	#	
90) 1,2-Dichlorobenzene	19.32	146	733493	20.728	ng	100
91) d-Limonene	19.37	68	394693	21.178	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.87	157	585520	42.577	ng	92
93) n-Undecane	18.07	58	17350	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	1137093	39.238	ng	100
95) Naphthalene	21.56	128	1545012	19.461	ng	100
96) n-Dodecane	18.82	57	902	No Calib	#	
97) Hexachlorobutadiene	21.99	225	474693	20.364	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.62	119	1152291	20.862	ng	100
100) n-Butylbenzene	19.73	91	1291106	21.664	ng	99
101) 1,1,1,2-Tetrachloroethane	14.94	131	335078	20.512	ng	99

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

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Jun 14 11:38:20 2022



Data File : I:\MS13\DATA\2022_06\14\06142206.D
 Acq On : 14 Jun 2022 11:52
 Sample : LCSD R13061422 25ng
 Misc : S35-06022211/S35-06022203 (7/2)

Vial: 1
 Operator: TZ
 Inst : GCMS13

TZ 6/14/22

Quant Time: Jun 14 12:49:58 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.38	130	142386	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.43	114	611420	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.91	54	120714	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.14	65	265711	13.965	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	111.76%
57) Toluene-d8 (SS2)	12.52	98	675163	10.809	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.48%
73) Bromofluorobenzene (SS3)	16.88	174	258586	11.666	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.36%

Target Compounds

						Qvalue
2) Propene	3.38	42	333534	23.469	ng	98
3) Dichlorodifluoromethan...	3.46	85	795069	26.438	ng	100
4) Chloromethane	3.60	50	366267	22.994	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	377063	26.419	ng	100
6) Vinyl Chloride	3.80	62	368908	25.271	ng	99
7) 1,3-Butadiene	3.92	54	264374	24.353	ng	96
8) Bromomethane	4.13	94	281331	23.867	ng	100
9) Chloroethane	4.28	64	177723	22.610	ng	99
10) Ethanol	4.47	45	768275	92.659	ng	99
11) Acetonitrile	4.60	41	410049	20.112	ng	99
12) Acrolein	4.67	56	319756	47.223	ng	99
13) Acetone	4.78	58	820386	105.234	ng	# 86
14) Trichlorofluoromethane	4.88	101	669837	25.030	ng	99
15) 2-Propanol (Isopropanol)	5.02	45	1287687	47.861	ng	96
16) Acrylonitrile	5.16	53	626289	46.209	ng	98
17) 1,1-Dichloroethene	5.38	96	285555	23.464	ng	93
18) 2-Methyl-2-Propanol (t...	5.49	59	1429988	49.106	ng	98
19) Methylene Chloride	5.51	84	278269	21.861	ng	95
20) 3-Chloro-1-propene (Al...	5.59	41	383614	21.713	ng	98
21) Trichlorotrifluoroethane	5.70	151	313849	24.359	ng	100
22) Carbon Disulfide	5.73	76	1996745	41.597	ng	100
23) trans-1,2-Dichloroethene	6.28	61	448153	24.454	ng	96
24) 1,1-Dichloroethane	6.47	63	499050	23.676	ng	100
25) Methyl tert-Butyl Ether	6.50	73	945158	24.435	ng	99
26) Vinyl Acetate	6.59	86	230138	127.569	ng	# 89
27) 2-Butanone (MEK)	6.81	72	335606	46.055	ng	93
28) cis-1,2-Dichloroethene	7.22	61	418179	24.145	ng	96
29) Diisopropyl Ether	7.41	87	406803	45.510	ng	# 72
30) Ethyl Acetate	7.43	61	264882	63.106	ng	99
31) n-Hexane	7.42	57	371005	22.473	ng	99
32) Chloroform	7.51	83	580372	24.828	ng	99
34) Tetrahydrofuran (THF)	7.89	72	328549	44.202	ng	91
35) Ethyl tert-Butyl Ether	7.95	87	701430	49.068	ng	99
36) 1,2-Dichloroethane	8.25	62	498607	26.477	ng	99
38) 1,1,1-Trichloroethane	8.52	97	589408	25.491	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.93	56	5631	No Calib	#	
41) Benzene	9.02	78	1089703	23.000	ng	100
42) Carbon Tetrachloride	9.19	117	529247	25.195	ng	99
43) Cyclohexane	9.33	84	766209	45.722	ng	99
44) tert-Amyl Methyl Ether	9.71	73	1673818	47.280	ng	97
45) 1,2-Dichloropropane	9.97	63	253462	22.915	ng	100
46) Bromodichloromethane	10.19	83	474737	25.653	ng	99
47) Trichloroethene	10.26	130	350377	23.500	ng	100
48) 1,4-Dioxane	10.23	88	223779	23.581	ng	98
49) 2,2,4-Trimethylpentane...	10.34	57	1044279	22.989	ng	93
50) Methyl Methacrylate	10.51	100	230687	50.022	ng	100

Data File : I:\MS13\DATA\2022_06\14\06142206.D
 Acq On : 14 Jun 2022 11:52
 Sample : LCSD R13061422 25ng
 Misc : S35-06022211/S35-06022203 (7/2)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 14 12:49:58 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	252768	23.147	ng	99
52) cis-1,3-Dichloropropene	11.36	75	485372	25.748	ng	99
53) 4-Methyl-2-pentanone	11.42	58	460550	49.200	ng	96
54) trans-1,3-Dichloropropene	12.04	75	476410	25.553	ng	100
55) 1,1,2-Trichloroethane	12.26	97	295839	23.475	ng	100
58) Toluene	12.64	91	1203747	20.270	ng	99
59) 2-Hexanone	12.99	43	1140411	43.359	ng	96
60) Dibromochloromethane	13.15	129	441330	21.251	ng	99
61) 1,2-Dibromoethane	13.47	107	360912	20.603	ng	99
62) n-Butyl Acetate	13.84	43	1259923	43.918	ng	97
63) n-Octane	13.99	57	222242	19.621	ng	100
64) Tetrachloroethene	14.10	166	418091	20.564	ng	100
65) Chlorobenzene	14.96	112	824542	20.111	ng	100
66) Ethylbenzene	15.46	91	1431029	20.744	ng	99
67) m- & p-Xylenes	15.72	91	2401163	43.071	ng	98
68) Bromoform	15.73	173	407015	21.982	ng	99
69) Styrene	16.15	104	863892	21.968	ng	98
70) o-Xylene	16.30	91	1206248	21.467	ng	97
71) n-Nonane	16.65	43	510040	21.068	ng	99
72) 1,1,2,2-Tetrachloroethane	16.26	83	502038	20.014	ng	100
74) Cumene	17.08	105	1483735	20.954	ng	99
75) alpha-Pinene	17.59	93	758078	21.888	ng	96
76) n-Propylbenzene	17.76	91	1758556	21.315	ng	99
77) 3-Ethyltoluene	17.08	105	1483735	No Calib	#	
78) 4-Ethyltoluene	17.96	105	1459795	21.905	ng	100
79) 1,3,5-Trimethylbenzene	18.08	105	1306314	21.869	ng	98
80) alpha-Methylstyrene	16.88	118	1063	No Calib	#	
81) 2-Ethyltoluene	16.86	105	446	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	1274492	21.549	ng	98
83) n-Decane	16.88	58	260	No Calib	#	
84) Benzyl Chloride	18.77	91	2229156	46.332	ng	99
85) 1,3-Dichlorobenzene	18.79	146	756887	20.829	ng	99
86) 1,4-Dichlorobenzene	18.88	146	785246	20.697	ng	100
87) sec-Butylbenzene	18.98	105	1643414	20.972	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	1470915	21.326	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	762270	20.918	ng	100
91) d-Limonene	19.37	68	420552	21.913	ng	98
92) 1,2-Dibromo-3-Chloropr...	19.87	157	610003	43.075	ng	92
93) n-Undecane	18.08	58	18669	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	1187927	39.807	ng	99
95) Naphthalene	21.56	128	1628825	19.923	ng	100
96) n-Dodecane	18.82	57	978	No Calib	#	
97) Hexachlorobutadiene	21.99	225	499249	20.798	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.62	119	1193145	20.977	ng	100
100) n-Butylbenzene	19.73	91	1348044	21.965	ng	99
101) 1,1,1,2-Tetrachloroethane	14.94	131	346701	20.610	ng	99

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

Data File : I:\MS13\DATA\2022_06\14\06142206.D
Acq On : 14 Jun 2022 11:52
Sample : LCSD R13061422 25ng
Misc : S35-06022211/S35-06022203 (7/2)

Method Path : I:\MS13\METHODS\
Method File : R13060222.M
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
Last Update : Fri Jun 03 08:41:22 2022
Response Via : Initial Calibration

7/6/22

Calibration Files

0:1 =06022222.D 0.2 =06022223.D 0.5 =06022224.D 1.0 =06022225.D 5.0 =06022226.D 25 =06022227.D 50 =06022228.D
100 =06022229.D

Compound		0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD

1) IR	Bromochloromethane...	-----ISTD-----									
2) T	Propene	1.420	1.093	1.041	1.052	1.346	1.233	1.350	1.449	1.248	13.39
3) T	Dichlorodifluo...	2.939	2.895	2.538	2.563	2.496	2.594	2.531	2.564	2.640	6.57
4) T	Chloromethane	1.746	1.618	1.522	1.493	1.152	1.475	1.266	0.916	1.398	19.31
5) T	1,2-Dichloro-1...	1.384	1.344	1.201	1.209	1.209	1.254	1.267	1.155	1.253	6.18
6) T	Vinyl Chloride	1.416	1.307	1.147	1.264	1.217	1.291	1.300	1.310	1.282	6.08
7) T	1,3-Butadiene	1.275	0.812	0.938	0.838	0.850	0.924	0.937	1.051	0.953	15.78
8) T	Bromomethane	1.135	1.025	0.971	1.007	0.956	1.074	1.065	1.045	1.035	5.64
9) T	Chloroethane	0.777	0.770	0.630	0.650	0.656	0.690	0.669	0.679	0.690	7.92
10) T	Ethanol	0.954	0.811	0.704	0.691	0.630	0.683	0.671	0.679	0.728	14.43
11) T	Acetonitrile	2.043	1.824	1.588	1.659	1.676	1.782	1.810	1.935	1.790	8.38
12) T	Acrolein	0.641	0.591	0.507	0.553	0.550	0.632	0.630	0.652	0.594	8.88
13) T	Acetone	0.947	0.784	0.672	0.670	0.633	0.617	0.583	0.568	0.684	18.36
14) T	Trichlorofluor...	2.619	2.572	2.239	2.326	2.168	2.256	2.261	2.354	2.349	6.90
15) T	2-Propanol (Is...	3.257	2.856	2.433	2.376	1.901	2.268	1.957	1.848	2.362	20.86
16) T	Acrylonitrile	1.182	1.200	1.097	1.137	1.143	1.245	1.242	1.272	1.190	5.16
17) T	1,1-Dichloroet...	1.206	1.106	1.014	1.040	1.026	1.050	1.039	1.067	1.068	5.83
18) T	2-Methyl-2-Pro...	3.280	3.088	2.593	2.675	2.541	2.650	2.205	1.420	2.556	22.15
19) T	Methylene Chlo...	1.351	1.266	1.063	1.101	1.038	1.060	1.027	1.034	1.117	10.96
20) T	3-Chloro-1-pro...	1.796	1.500	1.417	1.576	1.453	1.509	1.534	1.623	1.551	7.63
21) T	Trichlorotrifl...	1.288	1.234	1.097	1.118	1.082	1.106	1.070	1.053	1.131	7.43
22) T	Carbon Disulfide	5.677	4.873	4.117	3.994	3.814	3.844	3.729	3.664	4.214	16.70
23) T	trans-1,2-Dich...	1.680	1.658	1.525	1.507	1.505	1.637	1.645	1.714	1.609	5.20
24) T	1,1-Dichloroet...	2.152	1.960	1.755	1.806	1.735	1.803	1.791	1.801	1.850	7.52
25) T	Methyl tert-Bu...	3.820	3.488	3.026	3.177	3.309	3.464	3.427	3.455	3.396	6.95
26) T	Vinyl Acetate	0.133	0.154	0.143	0.153	0.160	0.180	0.173	0.170	0.158	10.00
27) T	2-Butanone (MEK)	0.750	0.635	0.595	0.603	0.620	0.655	0.637	0.623	0.640	7.58
28) T	cis-1,2-Dichlo...	1.728	1.499	1.418	1.452	1.405	1.529	1.539	1.594	1.520	6.94
29) T	Diisopropyl Ether	1.037	0.883	0.802	0.803	0.780	0.716	0.646	0.610	0.785	17.28
30) T	Ethyl Acetate	0.466	0.404	0.367	0.371	0.361	0.345	0.320	0.315	0.368	13.18
31) T	n-Hexane	1.770	1.584	1.527	1.552	1.432	1.324	1.215	1.190	1.449	13.69
32) T	Chloroform	2.310	2.213	1.978	2.001	1.855	1.999	2.004	2.058	2.052	6.99
33) S	1,2-Dichloroet...	1.616	1.621	1.590	1.614	1.623	1.656	1.753	1.890	1.670	6.10
34) T	Tetrahydrofura...	0.771	0.760	0.603	0.603	0.616	0.638	0.622	0.608	0.653	10.81
35) T	Ethyl tert-But...	1.357	1.307	1.166	1.252	1.245	1.268	1.227	1.218	1.255	4.62
36) T	1,2-Dichloroet...	1.936	1.632	1.488	1.556	1.522	1.648	1.686	1.760	1.653	8.76

37) IR	1,4-Difluorobenzen...	-----ISTD-----									
38) T	1,1,1-Trichlor...	0.551	0.500	0.485	0.465	0.463	0.467	0.438	0.413	0.473	8.78

[illegible]

92)	T	1,2-Dibromo-3-	1.917	1.604	1.323	1.393	1.430	1.530	1.371	1.162	1.466	15.36
93)	T	n-Undecane								0.000	0.000	-1.00
94)	T	1,2,4-Trichlor	4.271	3.791	2.758	2.878	2.893	3.189	2.749	2.192	3.090	21.23
95)	T	Naphthalene	1.221	0.990	0.657	0.666	0.712	0.936	0.862	0.730	0.847	E1 23.15
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta	3.396	3.095	2.324	2.418	2.378	2.351	2.140	1.783	2.486	20.82
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	7.299	6.834	6.091	6.161	5.989	5.661	4.949	4.134	5.890	17.00
100)	T	n-Butylbenzene	7.528	7.202	6.045	6.259	6.254	6.526	5.916	5.111	6.355	11.86
101)	T	1,1,1,2-Tetrac	2.159	2.021	1.756	1.720	1.711	1.681	1.536	1.351	1.742	14.60

 (#) = Out of Range

72 6/3/22

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S35-06022202 4ng/L Std. ID: S35-06022202 20ng/L Std. ID: S35-06022201										40ng/L Std. ID: S35-06022208 200ng/L Std. ID: S35-06022208 1000ng/L Std. ID: S35-06022201									
Dilution Factors:			1		5		25		50		250		1000		Working STD Conc.(ng/L):				
Compounds	Source Std. mg/m ³	1000ng/L	Primary Working Standards																
			200ng/L	40ng/L	20ng/L	4ng/L	1ng/L												
			0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	200	200								
Propene	1.04	1040	208	41.6	20.8	4.16	1.04	0.105	0.104	0.208	0.520	1.05	1.04	0.105	0.104	0.208	0.520	1.05	1.04
Dichlorodifluoromethane	1.05	1050	210	42.0	21.0	4.20	1.05	1.02	1.08	0.204	0.408	1.02	1.04	1.02	1.04	0.204	0.408	1.02	1.04
Freon-114	1.08	1080	216	43.2	21.6	4.32	1.08	1.04	1.04	208	41.6	20.8	4.16	1.04	1.04	0.208	41.6	20.8	4.16
Vinyl Chloride	1.04	1040	208	41.6	20.8	4.16	1.04	1.02	1.02	204	40.8	20.4	4.08	1.02	1.02	0.204	40.8	20.4	4.08
1,3-Butadiene	1.04	1040	208	41.6	20.8	4.16	1.04	1.02	1.02	204	40.8	20.4	4.08	1.02	1.02	0.204	40.8	20.4	4.08
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02	1.02	1.02	204	40.8	20.4	4.08	1.02	1.02	0.204	40.8	20.4	4.08
Chloroethane	1.02	1020	204	40.8	20.4	4.08	1.02	1.02	1.02	204	40.8	20.4	4.08	1.02	1.02	0.204	40.8	20.4	4.08
Ethanol	3.62	3620	724	144.8	72.4	14.48	3.62	0.93	0.93	186	37.2	18.6	3.72	0.93	0.93	0.186	37.2	18.6	3.72
Acetonitrile	2.00	2000	400	80.0	40.0	8.00	2.00	0.200	0.200	400	80.0	40.0	8.00	2.00	0.200	0.400	80.0	40.0	8.00
Acrolein	5.19	5190	1038	207.6	103.8	20.76	5.19	0.519	0.519	1038	207.6	103.8	20.76	5.19	0.519	1.038	207.6	103.8	20.76
Trichlorofluoromethane	1.03	1030	206	41.2	20.6	4.12	1.03	0.103	0.103	206	41.2	20.6	4.12	1.03	0.103	0.206	41.2	20.6	4.12
Isopropanol	2.02	2020	404	80.8	40.4	8.08	2.02	0.202	0.202	404	80.8	40.4	8.08	2.02	0.202	0.404	80.8	40.4	8.08
Acrylonitrile	2.03	2030	406	81.2	40.6	8.12	2.03	0.203	0.203	406	81.2	40.6	8.12	2.03	0.203	0.406	81.2	40.6	8.12
1,1-Dichloroethene	1.07	1070	214	42.8	21.4	4.28	1.07	0.107	0.107	214	42.8	21.4	4.28	1.07	0.107	0.214	42.8	21.4	4.28
tert-Butanol	2.10	2100	420	84.0	42.0	8.40	2.10	0.210	0.210	420	84.0	42.0	8.40	2.10	0.210	0.420	84.0	42.0	8.40
Methylene Chloride	1.04	1040	208	41.6	20.8	4.16	1.04	0.104	0.104	208	41.6	20.8	4.16	1.04	0.104	0.208	41.6	20.8	4.16
Vinyl Chloride	1.05	1050	210	42.0	21.0	4.20	1.05	0.105	0.105	210	42.0	21.0	4.20	1.05	0.105	0.210	42.0	21.0	4.20
1,1,1-Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	1.08	0.108	0.108	216	43.2	21.6	4.32	1.08	0.108	0.216	43.2	21.6	4.32
Carbon Disulfide	2.10	2100	420	84.0	42.0	8.40	2.10	0.210	0.210	420	84.0	42.0	8.40	2.10	0.210	0.420	84.0	42.0	8.40
trans-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06	0.106	0.106	212	42.4	21.2	4.24	1.06	0.106	0.212	42.4	21.2	4.24
1,1-Dichloroethane	1.05	1050	210	42.0	21.0	4.20	1.05	0.105	0.105	210	42.0	21.0	4.20	1.05	0.105	0.210	42.0	21.0	4.20
Methyl tert-Butyl Ether	1.05	1050	210	42.0	21.0	4.20	1.05	0.105	0.105	210	42.0	21.0	4.20	1.05	0.105	0.210	42.0	21.0	4.20
Vinyl Acetate	3.40	3400	680	136.0	68.0	13.60	3.40	0.340	0.340	680	136.0	68.0	13.60	3.40	0.340	0.680	136.0	68.0	13.60
2-Butanone	2.06	2060	412	82.4	41.2	8.24	2.06	0.206	0.206	412	82.4	41.2	8.24	2.06	0.206	0.412	82.4	41.2	8.24
cis-1,2-Dichloroethene	1.04	1040	208	41.6	20.8	4.16	1.04	0.104	0.104	208	41.6	20.8	4.16	1.04	0.104	0.208	41.6	20.8	4.16
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12	0.212	0.212	424	84.8	42.4	8.48	2.12	0.212	0.424	84.8	42.4	8.48
Ethyl Acetate	4.08	4080	816	163.2	81.6	16.32	4.08	0.408	0.408	816	163.2	81.6	16.32	4.08	0.408	0.816	163.2	81.6	16.32
n-Hexane	1.05	1050	210	42.0	21.0	4.20	1.05	0.105	0.105	210	42.0	21.0	4.20	1.05	0.105	0.210	42.0	21.0	4.20
Chloroform	1.07	1070	214	42.8	21.4	4.28	1.07	0.107	0.107	214	42.8	21.4	4.28	1.07	0.107	0.214	42.8	21.4	4.28
Tetrahydrofuran	1.97	1970	394	78.8	39.4	7.88	1.97	0.197	0.197	394	78.8	39.4	7.88	1.97	0.197	0.394	78.8	39.4	7.88
Ethyl tert-Butyl Ether	2.10	2100	420	84.0	42.0	8.40	2.10	0.210	0.210	420	84.0	42.0	8.40	2.10	0.210	0.420	84.0	42.0	8.40
1,2-Dichloroethane	1.06	1060	212	42.4	21.2	4.24	1.06	0.106	0.106	212	42.4	21.2	4.24	1.06	0.106	0.212	42.4	21.2	4.24
1,1,1-Trichloroethane	1.04	1040	208	41.6	20.8	4.16	1.04	0.104	0.104	208	41.6	20.8	4.16	1.04	0.104	0.208	41.6	20.8	4.16
Benzene	1.04	1040	208	41.6	20.8	4.16	1.04	0.104	0.104	208	41.6	20.8	4.16	1.04	0.104	0.208	41.6	20.8	4.16
Carbon Tetrachloride	1.05	1050	210	42.0	21.0	4.20	1.05	0.105	0.105	210	42.0	21.0	4.20	1.05	0.105	0.210	42.0	21.0	4.20
Cyclohexane	2.07	2070	414	82.8	41.4	8.28	2.07	0.207	0.207	414	82.8	41.4	8.28	2.07	0.207	0.414	82.8	41.4	8.28
tert-Amyl Methyl Ether	2.09	2090	418	83.6	41.8	8.36	2.09	0.209	0.209	418	83.6	41.8	8.36	2.09	0.209	0.418	83.6	41.8	8.36
1,2-Dichloropropane	1.03	1030	206	41.2	20.6	4.12	1.03	0.103	0.103	206	41.2	20.6	4.12	1.03	0.103	0.206	41.2	20.6	4.12
Bromodichloromethane	1.05	1050	210	42.0	21.0	4.20	1.05	0.105	0.105	210	42.0	21.0	4.20	1.05	0.105	0.210	42.0	21.0	4.20
Trichloroethene	1.03	1030	206	41.2	20.6	4.12	1.03	0.103	0.103	206	41.2	20.6	4.12	1.03	0.103	0.206	41.2	20.6	4.12
1,4-Dioxane	1.04	1040	208	41.6	20.8	4.16	1.04	0.104	0.104	208	41.6	20.8	4.16	1.04	0.104	0.208	41.6	20.8	4.16
Isocane	1.06	1060	212	42.4	21.2	4.24	1.06	0.106	0.106	212	42.4	21.2	4.24	1.06	0.106	0.212	42.4	21.2	4.24
Methyl Methacrylate	2.08	2080	416	83.2	41.6	8.32	2.08	0.208	0.208	416	83.2	41.6	8.32	2.08	0.208	0.416	83.2	41.6	8.32
n-Heptane	1.05	1050	210	42.0	21.0	4.20	1.05	0.105	0.105	210	42.0	21.0	4.20	1.05	0.105	0.210	42.0	21.0	4.20

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S35-06022202 4ng/L Std. ID: S35-06022202 20ng/L Std. ID: S35-06022201				40ng/L Std. ID: S35-06022208 200ng/L Std. ID: S35-06022208 1000ng/L Std. ID: S35-06022201								
Dilution Factors:												
Compounds	1		5		25		50		250		1000	
	Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L					
cis-1,3-Dichloropropene	1.05	1050	210	420	210	4.20	1.05					
4-Methyl-2-pentanone	2.08	2080	416	83.2	41.6	8.32	2.08					
trans-1,3-Dichloropropene	1.01	1010	202	40.4	20.2	4.04	1.01					
1,1,2-Trichloroethane	1.04	1040	208	41.6	20.8	4.16	1.04					
Toluene	1.03	1030	206	41.2	20.6	4.12	1.03					
2-Hexanone	2.05	2050	410	82.0	41.0	8.20	2.05					
Dibromochloromethane	1.05	1050	210	42.0	21.0	4.20	1.05					
1,2-Dibromoethane	1.04	1040	208	41.6	20.8	4.16	1.04					
n-Butyl Acetate	2.04	2040	408	81.6	40.8	8.16	2.04					
n-Octane	1.05	1050	210	42.0	21.0	4.20	1.05					
Tetrachloroethene	1.04	1040	208	41.6	20.8	4.16	1.04					
Chlorobenzene	1.04	1040	208	41.6	20.8	4.16	1.04					
Ethylbenzene	1.03	1030	206	41.2	20.6	4.12	1.03					
m-&p-Xylene	2.06	2060	412	82.4	41.2	8.24	2.06					
Bromoform	1.04	1040	208	41.6	20.8	4.16	1.04					
Styrene	1.03	1030	206	41.2	20.6	4.12	1.03					
o-Xylene	1.04	1040	208	41.6	20.8	4.16	1.04					
n-Nonane	1.04	1040	208	41.6	20.8	4.16	1.04					
1,1,1,2,2-Tetrachloroethane	1.04	1040	208	41.6	20.8	4.16	1.04					
2,2,4-Trimethylpentane	1.04	1040	208	41.6	20.8	4.16	1.04					
Alpha-Pinene	1.08	1080	216	43.2	21.6	4.32	1.08					
n-Propylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05					
4-Ethyltoluene	1.06	1060	212	42.4	21.2	4.24	1.06					
1,3,5-Trimethylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04					
1,2,4-Trimethylbenzene	1.03	1030	206	41.2	20.6	4.12	1.03					
Benzyl Chloride	2.06	2060	412	82.4	41.2	8.24	2.06					
1,3-Dichlorobenzene	1.04	1040	208	41.6	20.8	4.16	1.04					
1,4-Dichlorobenzene	1.04	1040	208	41.6	20.8	4.16	1.04					
sec-Butylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04					
p-Isopropyltoluene	1.04	1040	208	41.6	20.8	4.16	1.04					
1,2-Dichlorobenzene	1.05	1050	210	42.0	21.0	4.20	1.05					
d-Limonene	1.05	1050	210	42.0	21.0	4.20	1.05					
1,2-Dibromo-3-chloropropane	2.00	2000	400	80.0	40.0	8.00	2.00					
1,2,4-Trichlorobenzene	2.04	2040	408	81.6	40.8	8.16	2.04					
Naphthalene	1.04	1040	208	41.6	20.8	4.16	1.04					
Hexachloro-1,3-butadiene	1.03	1030	206	41.2	20.6	4.12	1.03					
tert-Butylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04					
n-Butylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04					
1,1,1,2-Tetrachloroethane	1.04	1040	208	41.6	20.8	4.16	1.04					

Working STD Conc.(ng/L):												
Injection (L):												
ICAL Points:												
4	4	20	20	20	20	20	20	20	20	200	200	200
0.025	0.050	0.0250	0.050	0.0250	0.050	0.0250	0.050	0.0250	0.050	0.125	0.25	0.50
0.1ng	0.2ng	0.5ng	1ng	2ng	5ng	10ng	20ng	50ng	100ng	250ng	500ng	1000ng
0.105	0.210	0.525	1.05	2.10	5.25	10.5	21.0	52.5	105	26.25	52.5	105
0.208	0.416	1.040	2.08	4.16	10.40	20.8	41.6	104.0	208	52.00	104.0	208
0.101	0.202	0.505	1.01	2.02	5.05	10.1	20.2	50.5	101	25.25	50.5	101
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.103	0.206	0.515	1.03	2.06	5.15	10.3	20.6	51.5	103	25.75	51.5	103
0.205	0.410	1.025	2.05	4.10	10.25	20.5	41.0	102.5	205	51.25	102.5	205
0.105	0.210	0.525	1.05	2.10	5.25	10.5	21.0	52.5	105	26.25	52.5	105
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.204	0.408	1.020	2.04	4.08	10.20	20.4	40.8	102.0	204	51.00	102.0	204
0.105	0.210	0.525	1.05	2.10	5.25	10.5	21.0	52.5	105	26.25	52.5	105
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.103	0.206	0.515	1.03	2.06	5.15	10.3	20.6	51.5	103	25.75	51.5	103
0.206	0.412	1.030	2.06	4.12	10.30	20.6	41.2	103.0	206	51.50	103.0	206
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.103	0.206	0.515	1.03	2.06	5.15	10.3	20.6	51.5	103	25.75	51.5	103
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.108	0.216	0.540	1.08	2.16	5.40	10.8	21.6	54.0	108	27.00	54.0	108
0.105	0.210	0.525	1.05	2.10	5.25	10.5	21.0	52.5	105	26.25	52.5	105
0.106	0.212	0.530	1.06	2.12	5.30	10.6	21.2	53.0	106	26.50	53.0	106
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.103	0.206	0.515	1.03	2.06	5.15	10.3	20.6	51.5	103	25.75	51.5	103
0.206	0.412	1.030	2.06	4.12	10.30	20.6	41.2	103.0	206	51.50	103.0	206
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00	52.0	104
0.104	0.208	0.520	1.04	2.08	5.20	10.4	20.8	52.0	104	26.00		

Method : I:\MS13\METHODS\R13060222.M (RTE Integrator)
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
Last Update : Fri Jun 03 08:41:22 2022
Response via : Initial Calibration

Tu 6/3/22

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS13\DATA\2022_06\02\06022222.D
2	0.2	0	13	I:\MS13\DATA\2022_06\02\06022223.D
3	0.5	1	13	I:\MS13\DATA\2022_06\02\06022224.D
4	1.0	1	13	I:\MS13\DATA\2022_06\02\06022225.D
5	5.0	5	13	I:\MS13\DATA\2022_06\02\06022226.D
6	25	26	13	I:\MS13\DATA\2022_06\02\06022227.D
7	50	52	13	I:\MS13\DATA\2022_06\02\06022228.D
8	100	104	13	I:\MS13\DATA\2022_06\02\06022229.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Jun 03 08:10 2022	Jun 03 08:08 2022	2 Jun 2022 17:41
2	0.2	Jun 03 07:38 2022	Jun 03 07:37 2022	2 Jun 2022 18:18
3	0.5	Jun 03 07:33 2022	Jun 03 07:27 2022	2 Jun 2022 18:55
4	1.0	Jun 03 07:33 2022	Jun 03 07:27 2022	2 Jun 2022 19:32
5	5.0	Jun 03 07:33 2022	Jun 03 07:27 2022	2 Jun 2022 20:09
6	25	Jun 03 08:41 2022	Jun 03 07:27 2022	2 Jun 2022 20:47
7	50	Jun 03 07:33 2022	Jun 03 07:28 2022	2 Jun 2022 21:25
8	100	Jun 03 07:34 2022	Jun 03 07:28 2022	2 Jun 2022 22:03

Data File : I:\MS13\DATA\2022_06\02\06022222.D
 Acq On : 2 Jun 2022 17:41
 Sample : 0.1ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
 Operator: TZ
 Inst : GCMS13

TZ 6/3/22

Quant Time: Jun 03 08:08:49 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	160094	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.39	114	667210	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.90	54	107766	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	258687	9.619	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	76.96%
57) Toluene-d8 (SS2)	12.50	98	725489	17.295	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	138.32%#
73) Bromofluorobenzene (SS3)	16.87	174	248028	21.529	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	172.24%#

Target Compounds

						Qvalue
2) Propene	3.43	42	1891	0.060	ng	92
3) Dichlorodifluoromethan...	3.50	85	3952	0.127	ng	98
4) Chloromethane	3.64	50	2281	0.075	ng	86
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	1915	0.161	ng	94
6) Vinyl Chloride	3.83	62	1886	0.091	ng	98
7) 1,3-Butadiene	3.95	54	1698	0.086	ng	96
8) Bromomethane	4.16	94	1483	0.108	ng	100
9) Chloroethane	4.29	64	1015	0.079	ng	82
10) Ethanol	4.40	45	4424	0.246	ng	91
11) Acetonitrile	4.57	41	2434	0.046	ng	82
12) Acrolein	4.66	56	1643	0.120	ng	98
13) Acetone	4.77	58	6297	0.437	ng	# 84
14) Trichlorofluoromethane	4.89	101	3455	0.133	ng	94
15) 2-Propanol (Isopropanol)	4.96	45	8425	0.156	ng	98
16) Acrylonitrile	5.11	53	3072	0.110	ng	93
17) 1,1-Dichloroethene	5.38	96	1653	0.114	ng	98
18) 2-Methyl-2-Propanol (t...	5.46	59	8822	0.200	ng	96
19) Methylene Chloride	5.47	84	1800	0.104	ng	99
20) 3-Chloro-1-propene (Al...	5.57	41	2415	0.060	ng	95
21) Trichlorotrifluoroethane	5.70	151	1782	0.161	ng	83
22) Carbon Disulfide	5.74	76	15269	0.222	ng	97
23) trans-1,2-Dichloroethene	6.25	61	2281	0.081	ng	87
24) 1,1-Dichloroethane	6.42	63	2894	0.088	ng	100
25) Methyl tert-Butyl Ether	6.50	73	5137	0.098	ng	97
26) Vinyl Acetate	6.56	86	579	0.225	ng	# 22
27) 2-Butanone (MEK)	6.79	72	1979	0.172	ng	# 90
28) cis-1,2-Dichloroethene	7.17	61	2302	0.086	ng	100
29) Diisopropyl Ether	7.40	87	2817	0.249	ng	# 82
30) Ethyl Acetate	7.40	61	2433	0.321	ng	91
31) n-Hexane	7.40	57	2380	0.078	ng	# 95
32) Chloroform	7.45	83	3165	0.113	ng	95
34) Tetrahydrofuran (THF)	7.89	72	1945	0.167	ng	# 82
35) Ethyl tert-Butyl Ether	7.94	87	3649	0.203	ng	90
36) 1,2-Dichloroethane	8.21	62	2628	0.110	ng	83
38) 1,1,1-Trichloroethane	8.49	97	3057	0.144	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.99	78	6669	0.113	ng	97
42) Carbon Tetrachloride	9.16	117	2781	0.159	ng	100
43) Cyclohexane	9.31	84	4555	0.220	ng	96
44) tert-Amyl Methyl Ether	9.71	73	9924	0.222	ng	97
45) 1,2-Dichloropropane	9.96	63	1340m	0.076	ng	
46) Bromodichloromethane	10.16	83	2383	0.116	ng	90
47) Trichloroethene	10.22	130	2023	0.154	ng	94
48) 1,4-Dioxane	10.25	88	1264	0.110	ng	94
49) 2,2,4-Trimethylpentane...	10.32	57	5899	0.079	ng	98
50) Methyl Methacrylate	10.50	100	1114	0.220	ng	# 84

Data File : I:\MS13\DATA\2022_06\02\06022222.D
 Acq On : 2 Jun 2022 17:41
 Sample : 0.1ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 03 08:08:49 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

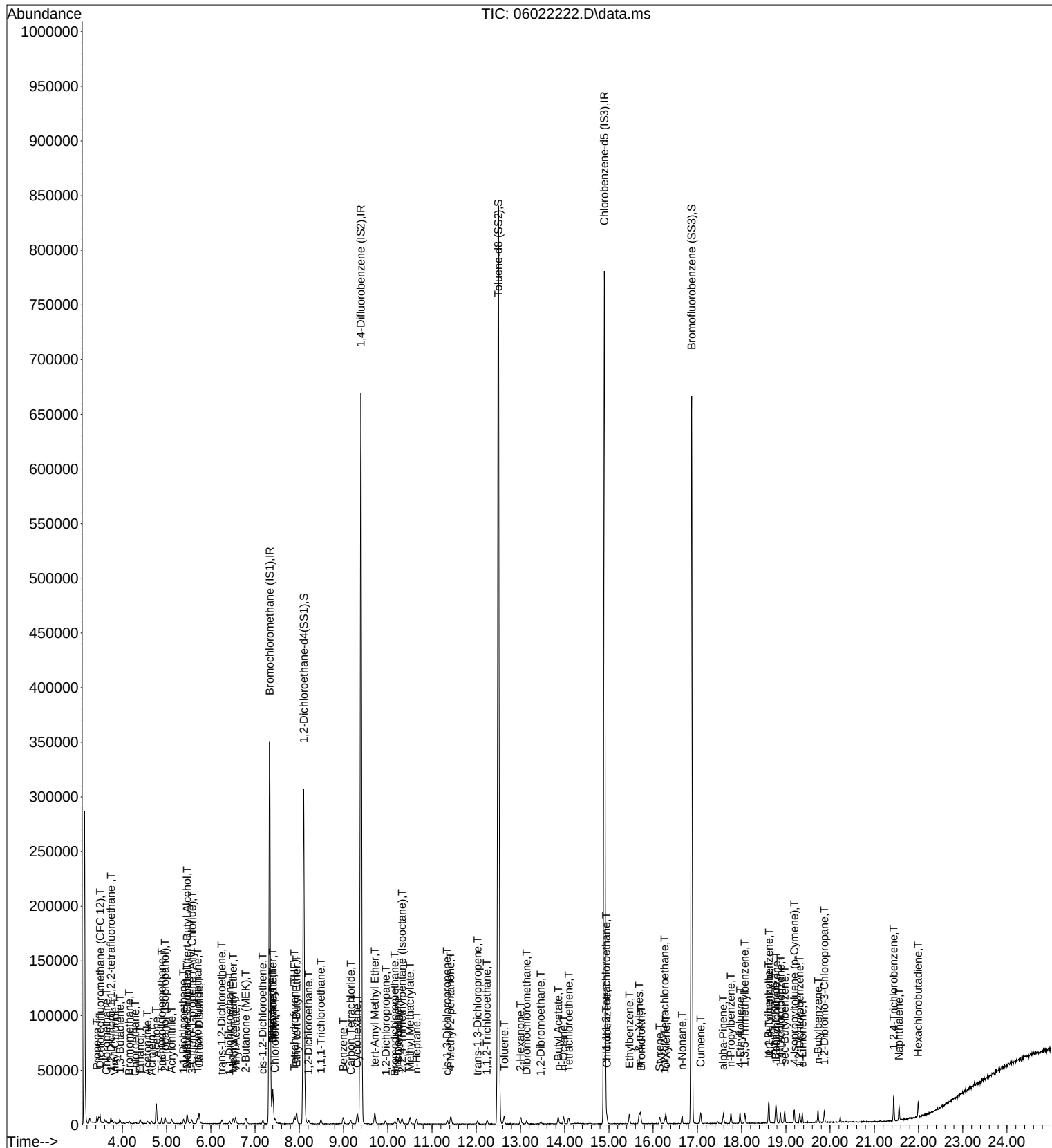
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.65	71	1428	0.093	ng	92
52) cis-1,3-Dichloropropene	11.34	75	2259	0.090	ng	92
53) 4-Methyl-2-pentanone	11.42	58	2316	0.143	ng	84
54) trans-1,3-Dichloropropene	12.03	75	2170	0.092	ng	87
55) 1,1,2-Trichloroethane	12.24	97	1791	0.132	ng	95
58) Toluene	12.63	91	6627	0.177	ng	99
59) 2-Hexanone	13.00	43	5771	0.190	ng	98
60) Dibromochloromethane	13.14	129	2306	0.233	ng	99
61) 1,2-Dibromoethane	13.46	107	1982	0.199	ng	97
62) n-Butyl Acetate	13.85	43	6288	0.188	ng	# 77
63) n-Octane	13.97	57	1352	0.134	ng	86
64) Tetrachloroethene	14.09	166	2325	0.260	ng	97
65) Chlorobenzene	14.95	112	4977	0.219	ng	98
66) Ethylbenzene	15.46	91	8067	0.191	ng	95
67) m- & p-Xylenes	15.68	91	12621	0.378	ng	98
68) Bromoform	15.73	173	2197	0.278	ng	93
69) Styrene	16.15	104	4020	0.168	ng	99
70) o-Xylene	16.29	91	6368	0.191	ng	97
71) n-Nonane	16.65	43	2664	0.096	ng	98
72) 1,1,2,2-Tetrachloroethane	16.26	83	3029	0.178	ng	95
74) Cumene	17.08	105	8110	0.208	ng	100
75) alpha-Pinene	17.58	93	3968	0.191	ng	94
76) n-Propylbenzene	17.76	91	9525	0.188	ng	99
77) 3-Ethyltoluene	17.08	105	8110	No Calib		
78) 4-Ethyltoluene	17.97	105	7514	0.199	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	6773	0.210	ng	98
80) alpha-Methylstyrene	16.87	118	888	No Calib	#	
81) 2-Ethyltoluene	16.87	105	276	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	6752	0.209	ng	95
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	10559	0.364	ng	100
85) 1,3-Dichlorobenzene	18.79	146	4481	0.263	ng	94
86) 1,4-Dichlorobenzene	18.88	146	4533	0.258	ng	92
87) sec-Butylbenzene	18.98	105	9076	0.208	ng	96
88) 4-Isopropyltoluene (p-...	19.19	119	8008	0.226	ng	96
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	4150	0.243	ng	84
91) d-Limonene	19.37	68	2120	0.140	ng	92
92) 1,2-Dibromo-3-Chloropr...	19.87	157	3306	0.516	ng	95
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.44	180	7511	0.594	ng	97
95) Naphthalene	21.56	128	10944	0.277	ng	93
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	21.99	225	3016	0.358	ng	94
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	6544	0.223	ng	100
100) n-Butylbenzene	19.73	91	6750	0.178	ng	97
101) 1,1,1,2-Tetrachloroethane	14.94	131	1936	0.241	ng	94

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

Vial: 13
Operator: TZ
Inst : GCMS13

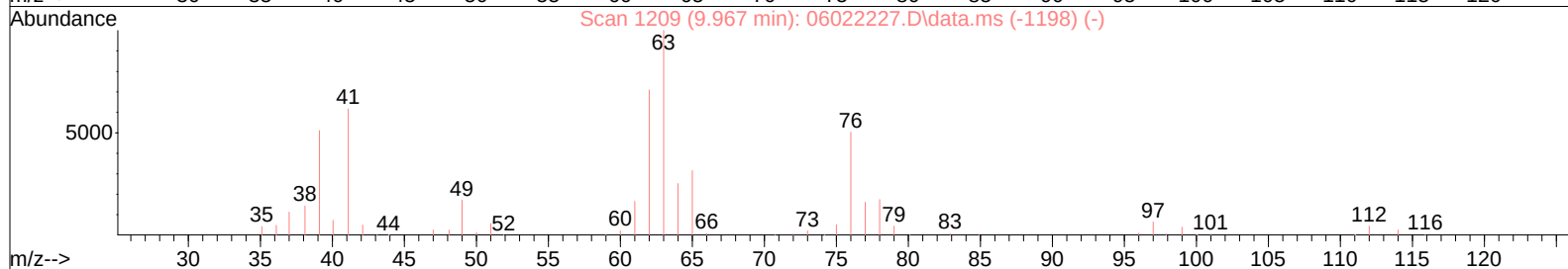
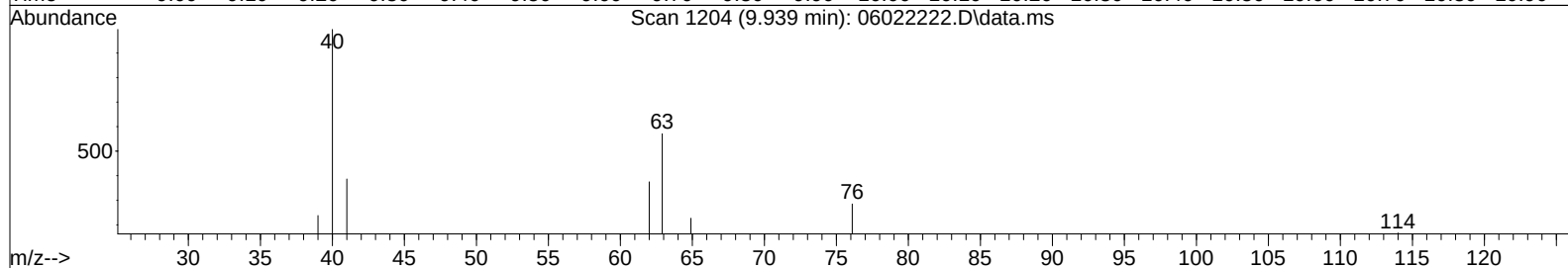
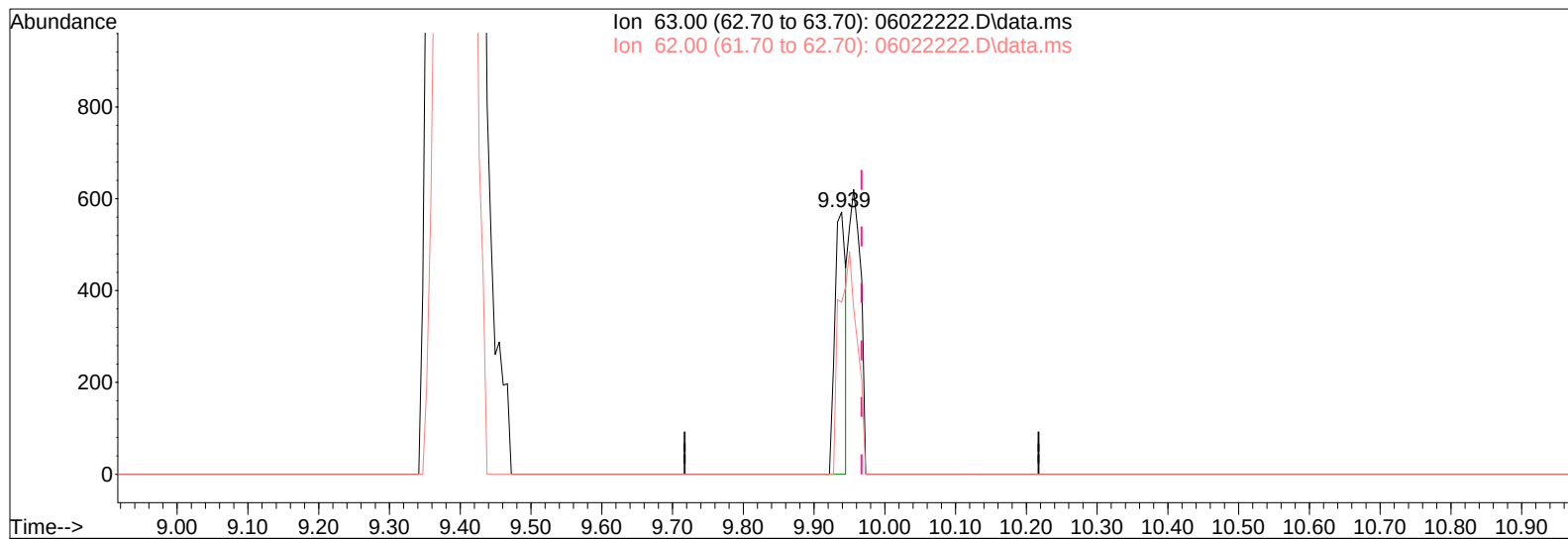
Quant Time: Jun 03 08:08:49 2022



Data File : I:\MS13\DATA\2022_06\02\06022222.D
Acq On : 2 Jun 2022 17:41
Sample : 0.1ng R13060222 ICAL Std.
Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:27:49 2022
Quant Method : I:\MS13\METHODS\R13060222.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Fri Jun 03 07:27:17 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 06022222.D\data.ms

(45) 1,2-Dichloropropane (T)

9.939min (-0.029) 0.04ng

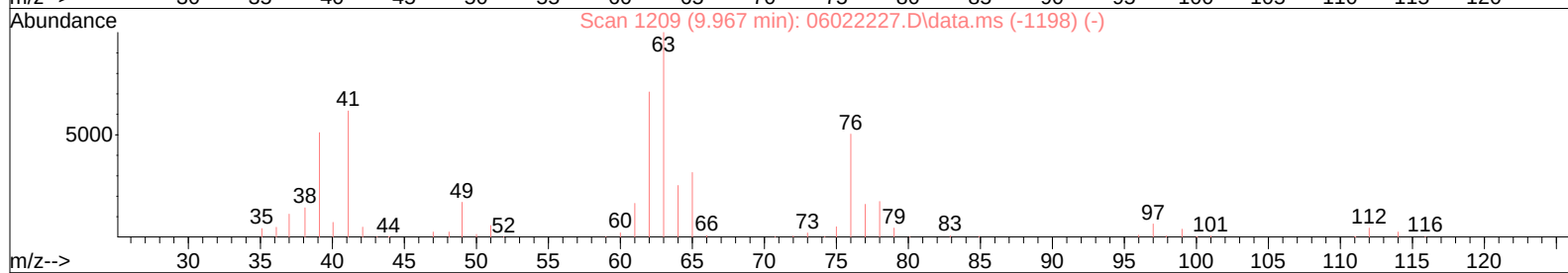
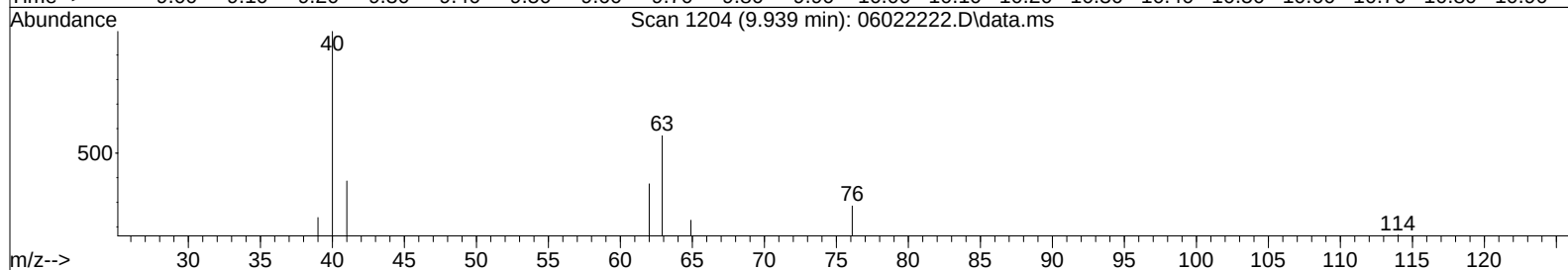
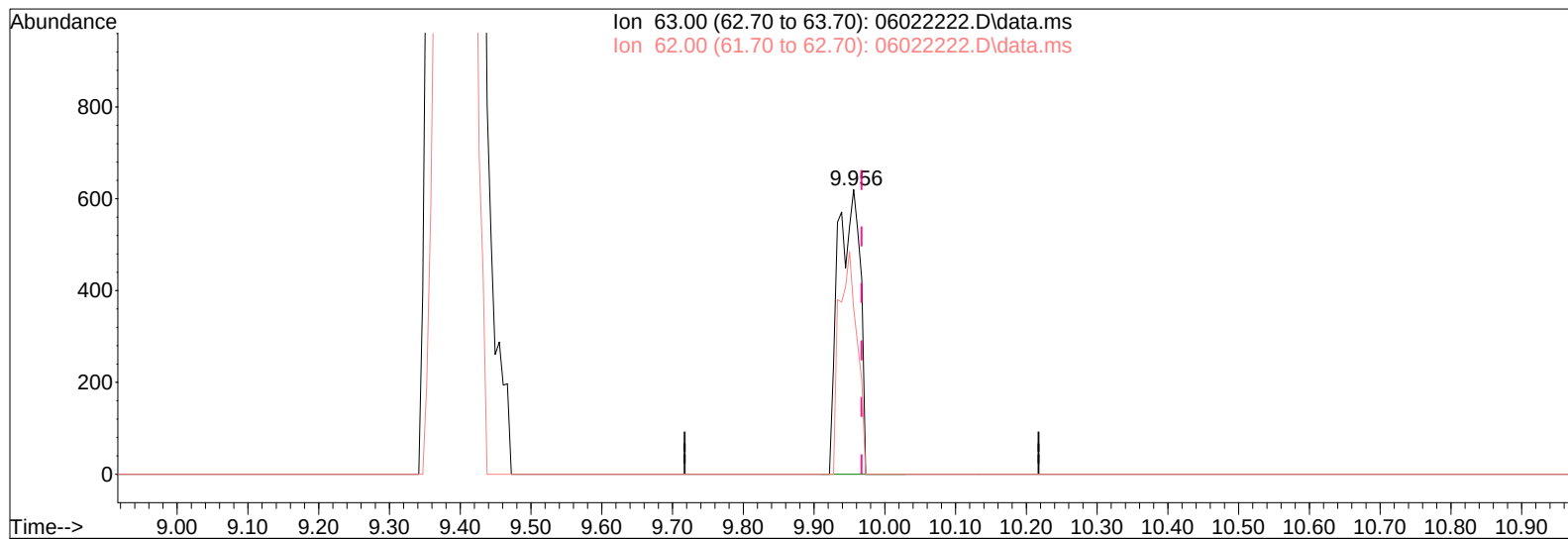
response 617

Ion	Exp%	Act%
63.00	100	100
62.00	72.70	138.25#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS13\DATA\2022_06\02\06022222.D
 Acq On : 2 Jun 2022 17:41
 Sample : 0.1ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 03 07:27:49 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 07:27:17 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M



TIC: 06022222.D\data.ms

(45) 1,2-Dichloropropane (T)

9.956min (-0.011) 0.08ng m

response 1340

Ion Exp% Act%

63.00 100 100

62.00 72.70 63.66

0.00 0.00 0.00

0.00 0.00 0.00

IC-
TZ 6/3/22

6/7/22

Data File : I:\MS13\DATA\2022_06\02\06022223.D
 Acq On : 2 Jun 2022 18:18
 Sample : 0.2ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
 Operator: TZ
 Inst : GCMS13

TZ 6/3/22

Quant Time: Jun 03 07:37:14 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	156516	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.40	114	653804	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.90	54	106251	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	253660	9.648	ng	-0.03
Spiked Amount	12.500	Range 70 - 130	Recovery	=	77.20%	
57) Toluene-d8 (SS2)	12.50	98	705770	17.064	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	136.48%#	
73) Bromofluorobenzene (SS3)	16.87	174	243697	21.455	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	171.60%#	

Target Compounds

						Qvalue
2) Propene	3.42	42	2846	0.093	ng	91
3) Dichlorodifluoromethan...	3.50	85	7612	0.251	ng	96
4) Chloromethane	3.63	50	4132	0.139	ng	90
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	3636	0.313	ng	98
6) Vinyl Chloride	3.82	62	3404	0.168	ng	92
7) 1,3-Butadiene	3.94	54	2114	0.109	ng	# 85
8) Bromomethane	4.15	94	2617	0.195	ng	95
9) Chloroethane	4.30	64	1966	0.156	ng	92
10) Ethanol	4.40	45	7350	0.418	ng	96
11) Acetonitrile	4.57	41	4249	0.081	ng	# 32
12) Acrolein	4.66	56	2959	0.221	ng	96
13) Acetone	4.77	58	10195	0.724	ng	91
14) Trichlorofluoromethane	4.89	101	6633	0.261	ng	93
15) 2-Propanol (Isopropanol)	4.96	45	14448	0.273	ng	97
16) Acrylonitrile	5.11	53	6102	0.223	ng	98
17) 1,1-Dichloroethene	5.39	96	2963	0.209	ng	99
18) 2-Methyl-2-Propanol (t...	5.46	59	16239	0.377	ng	97
19) Methylene Chloride	5.47	84	3298	0.195	ng	100
20) 3-Chloro-1-propene (Al...	5.57	41	3945m	0.100	ng	
21) Trichlorotrifluoroethane	5.70	151	3337	0.308	ng	100
22) Carbon Disulfide	5.73	76	25625	0.380	ng	97
23) trans-1,2-Dichloroethene	6.25	61	4401	0.159	ng	93
24) 1,1-Dichloroethane	6.42	63	5154	0.160	ng	96
25) Methyl tert-Butyl Ether	6.50	73	9171	0.179	ng	99
26) Vinyl Acetate	6.56	86	1309	0.520	ng	# 89
27) 2-Butanone (MEK)	6.79	72	3276	0.291	ng	# 78
28) cis-1,2-Dichloroethene	7.17	61	3904	0.149	ng	95
29) Diisopropyl Ether	7.41	87	4688	0.424	ng	# 95
30) Ethyl Acetate	7.40	61	4125	0.557	ng	99
31) n-Hexane	7.41	57	4165	0.140	ng	98
32) Chloroform	7.46	83	5929	0.217	ng	95
34) Tetrahydrofuran (THF)	7.88	72	3747	0.329	ng	93
35) Ethyl tert-Butyl Ether	7.94	87	6876	0.391	ng	97
36) 1,2-Dichloroethane	8.21	62	4331	0.185	ng	98
38) 1,1,1-Trichloroethane	8.50	97	5444	0.261	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.99	78	11279	0.195	ng	98
42) Carbon Tetrachloride	9.16	117	5206	0.303	ng	92
43) Cyclohexane	9.31	84	7853	0.387	ng	95
44) tert-Amyl Methyl Ether	9.71	73	17394	0.398	ng	97
45) 1,2-Dichloropropane	9.94	63	2710	0.157	ng	94
46) Bromodichloromethane	10.17	83	4236	0.211	ng	94
47) Trichloroethene	10.24	130	3369	0.261	ng	95
48) 1,4-Dioxane	10.23	88	2353	0.210	ng	90
49) 2,2,4-Trimethylpentane...	10.32	57	11279	0.154	ng	97
50) Methyl Methacrylate	10.50	100	2024	0.409	ng	99

Data File : I:\MS13\DATA\2022_06\02\06022223.D
 Acq On : 2 Jun 2022 18:18
 Sample : 0.2ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
 Operator: TZ
 Inst : GCMS13

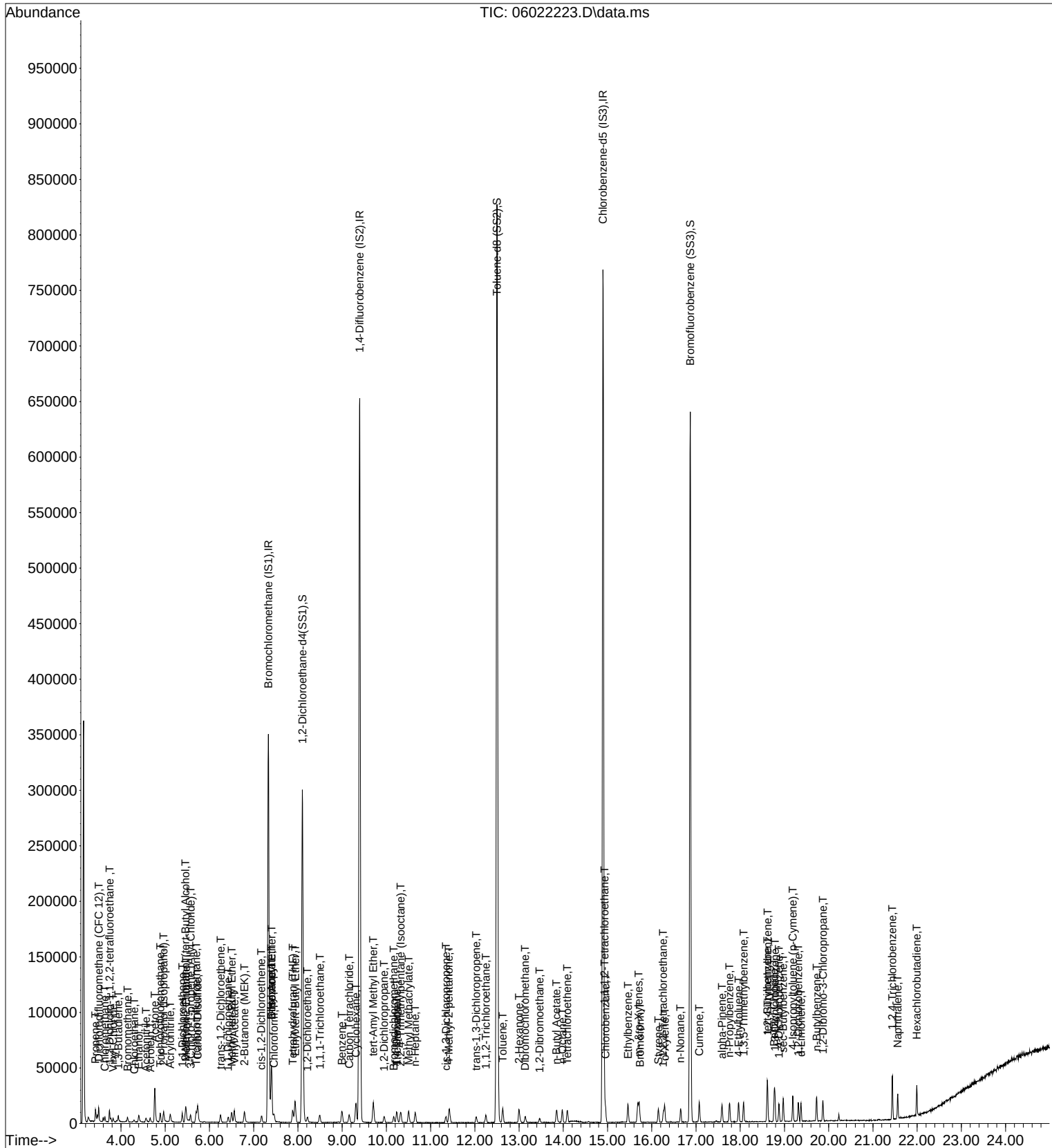
Quant Time: Jun 03 07:37:14 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 07:27:17 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.65	71	2524	0.168	ng	97
52) cis-1,3-Dichloropropene	11.35	75	4362	0.178	ng	96
53) 4-Methyl-2-pentanone	11.41	58	4378	0.276	ng	92
54) trans-1,3-Dichloropropene	12.03	75	3986	0.172	ng	95
55) 1,1,2-Trichloroethane	12.25	97	2900	0.218	ng	99
58) Toluene	12.63	91	12626	0.343	ng	95
59) 2-Hexanone	13.00	43	10590	0.354	ng	99
60) Dibromochloromethane	13.14	129	4124	0.422	ng	98
61) 1,2-Dibromoethane	13.46	107	3476	0.354	ng	99
62) n-Butyl Acetate	13.84	43	11000	0.334	ng	92
63) n-Octane	13.98	57	2350	0.236	ng	92
64) Tetrachloroethene	14.09	166	3993	0.453	ng	90
65) Chlorobenzene	14.95	112	8425	0.376	ng	99
66) Ethylbenzene	15.46	91	13868	0.333	ng	99
67) m- & p-Xylenes	15.70	91	22229	0.675	ng	95
68) Bromoform	15.73	173	3631	0.466	ng	99
69) Styrene	16.15	104	7218	0.306	ng	99
70) o-Xylene	16.30	91	11299	0.343	ng	100
71) n-Nonane	16.65	43	4717	0.172	ng	97
72) 1,1,2,2-Tetrachloroethane	16.26	83	5157	0.308	ng	98
74) Cumene	17.08	105	14378	0.373	ng	98
75) alpha-Pinene	17.59	93	7118	0.347	ng	98
76) n-Propylbenzene	17.76	91	17102	0.343	ng	99
77) 3-Ethyltoluene	17.08	105	14378	No Calib		
78) 4-Ethyltoluene	17.96	105	13613	0.365	ng	99
79) 1,3,5-Trimethylbenzene	18.08	105	12071	0.379	ng	99
80) alpha-Methylstyrene	16.87	118	755	No Calib	#	
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.62	105	12210	0.384	ng	98
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	18313	0.640	ng	98
85) 1,3-Dichlorobenzene	18.79	146	7899	0.470	ng	98
86) 1,4-Dichlorobenzene	18.87	146	7990	0.461	ng	98
87) sec-Butylbenzene	18.97	105	16107	0.374	ng	98
88) 4-Isopropyltoluene (p-...	19.19	119	14041	0.402	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	7930	0.470	ng	98
91) d-Limonene	19.37	68	3913	0.261	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.87	157	5455	0.863	ng	93
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.44	180	13149	1.054	ng	98
95) Naphthalene	21.56	128	17501	0.450	ng	98
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	21.99	225	5420	0.653	ng	95
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	12082	0.417	ng	97
100) n-Butylbenzene	19.73	91	12733	0.341	ng	97
101) 1,1,1,2-Tetrachloroethane	14.93	131	3574	0.451	ng	98

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

Vial: 13
Operator: TZ
Inst : GCMS13

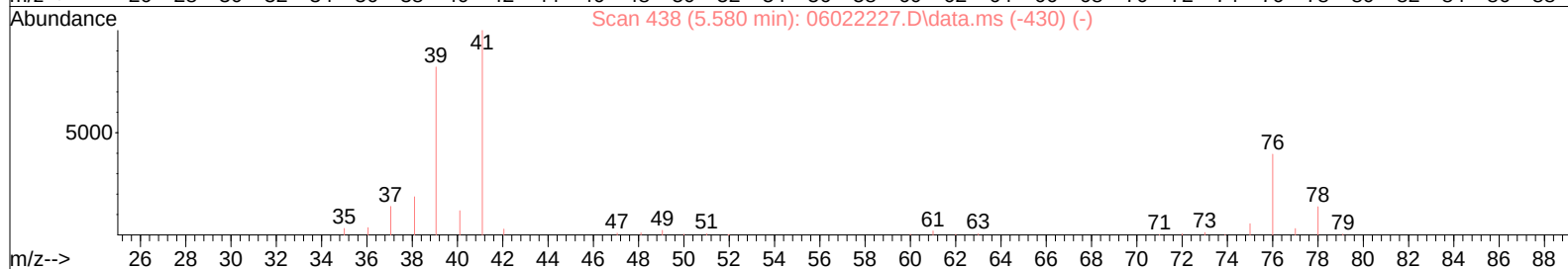
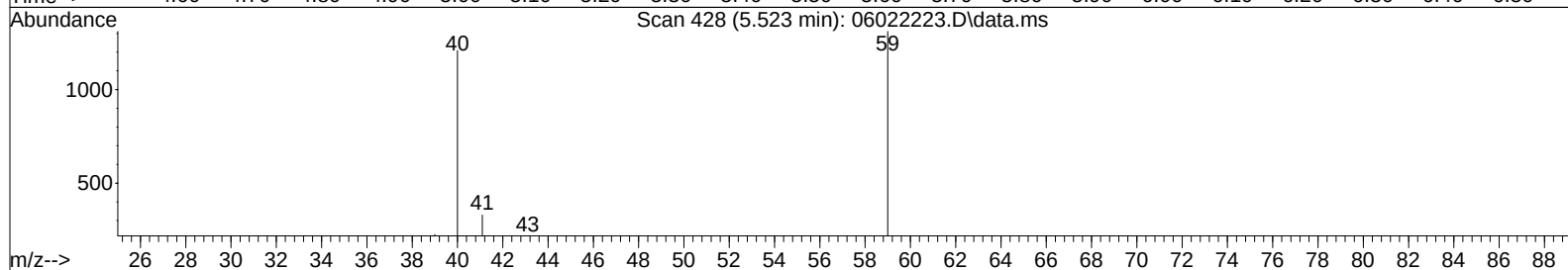
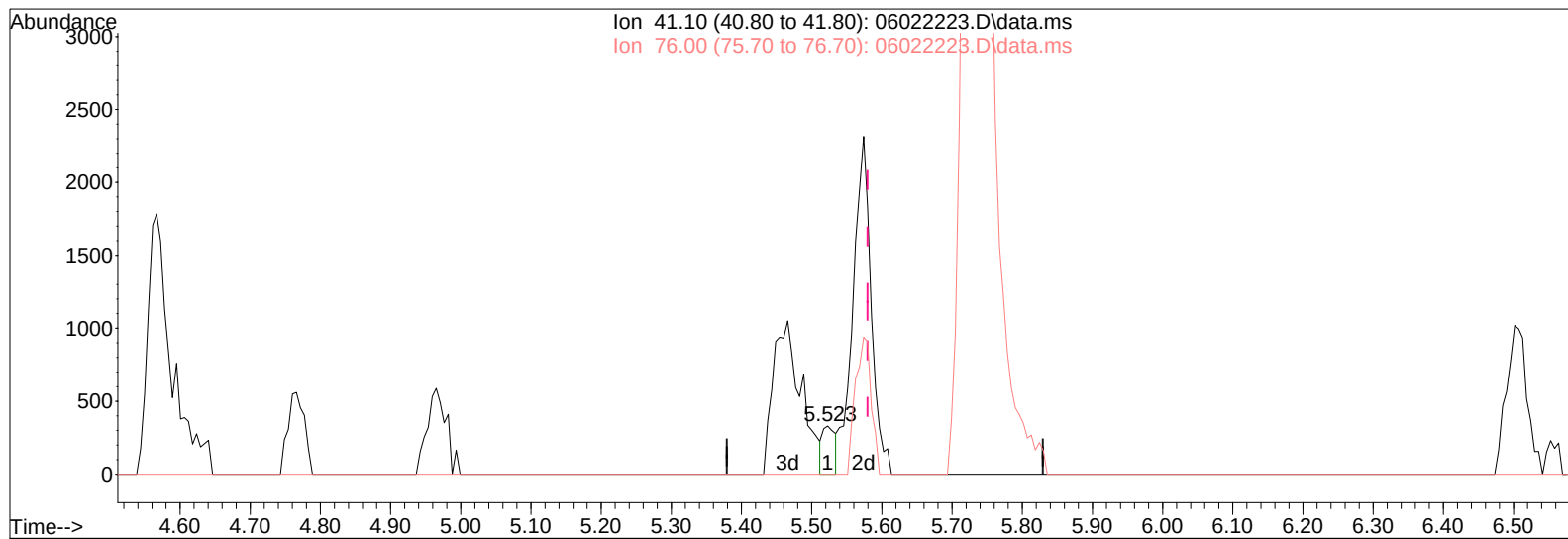
Quant Time: Jun 03 07:37:14 2022



Data File : I:\MS13\DATA\2022_06\02\06022223.D
Acq On : 2 Jun 2022 18:18
Sample : 0.2ng R13060222 ICAL Std.
Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:27:51 2022
Quant Method : I:\MS13\METHODS\R13060222.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Fri Jun 03 07:27:17 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 06022223.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.523min (-0.057) 0.01ng

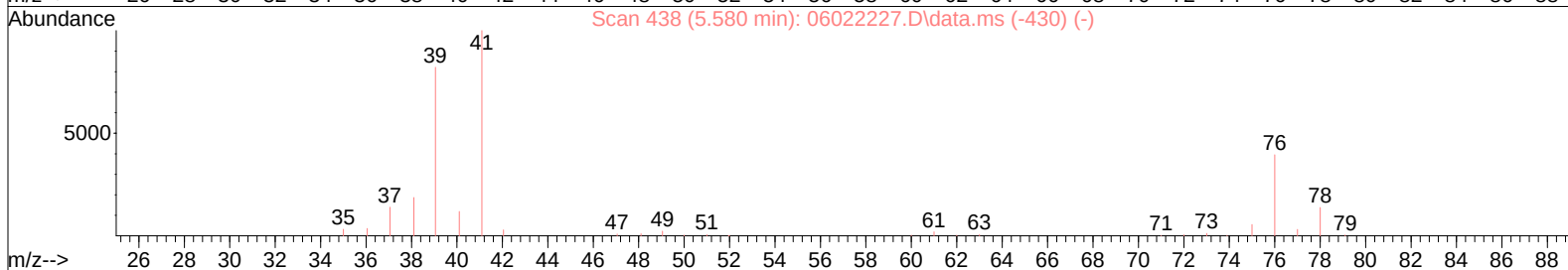
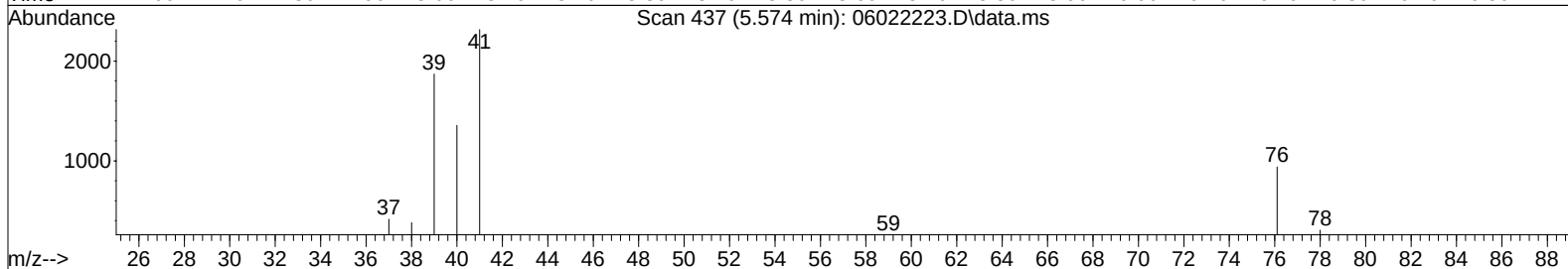
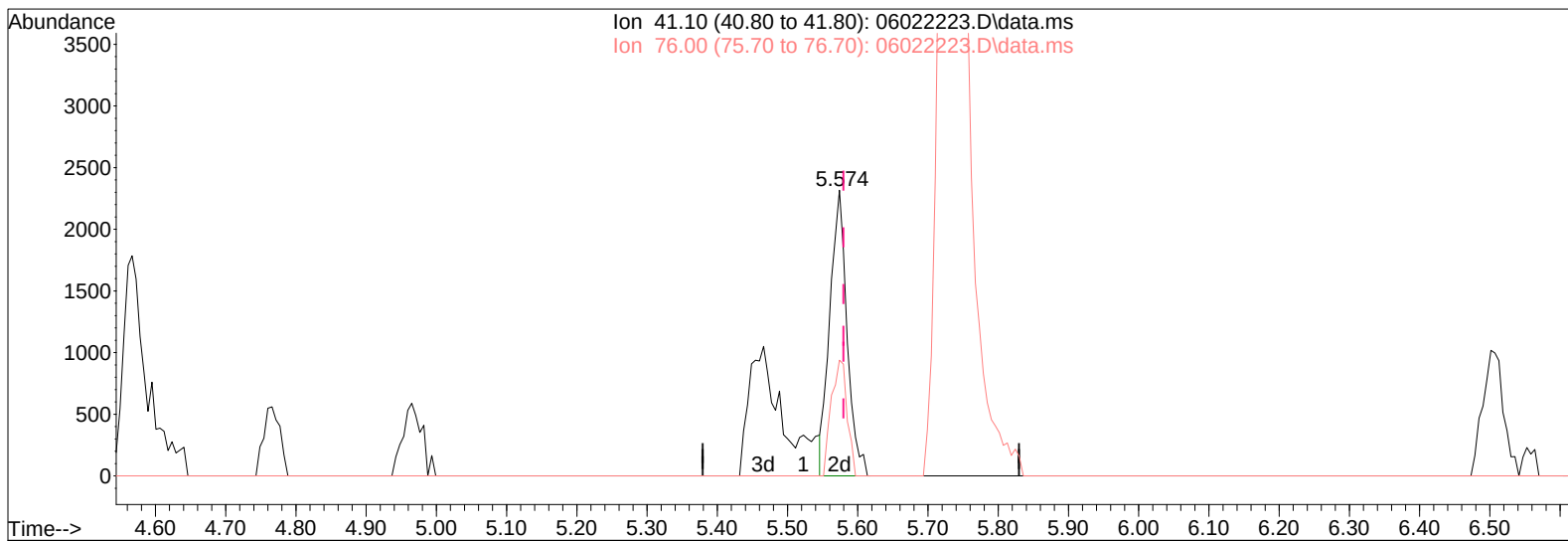
response 417

Ion	Exp%	Act%
41.10	100	100
76.00	38.60	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS13\DATA\2022_06\02\06022223.D
Acq On : 2 Jun 2022 18:18
Sample : 0.2ng R13060222 ICAL Std.
Misc : S35-06022211/S35-06022202 (7/2)

Vial: 13
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:27:51 2022
Quant Method : I:\MS13\METHODS\R13060222.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 03 07:27:17 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 06022223.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.574min (-0.006) 0.10ng m

response 3945

WP

Ion	Exp%	Act%

TZ 6/3/22

41.10	100	100

76.00	38.60	37.34

6/7/22

0.00	0.00	0.00

0.00	0.00	0.00

Data File : I:\MS13\DATA\2022_06\02\06022224.D
 Acq On : 2 Jun 2022 18:55
 Sample : 0.5ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022201 (7/2)

Vial: 14
 Operator: TZ
 Inst : GCMS13

T 6/3/22

Quant Time: Jun 03 07:27:52 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	159360	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.40	114	648147	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.90	54	108064	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	253306	9.462	ng	-0.03
Spiked Amount	12.500	Range 70 - 130	Recovery	=	75.68%	
57) Toluene-d8 (SS2)	12.50	98	707248	16.813	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	134.48%#	
73) Bromofluorobenzene (SS3)	16.87	174	248699	21.528	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	172.24%#	

Target Compounds

						Qvalue
2) Propene	3.42	42	6900	0.220	ng	98
3) Dichlorodifluoromethan...	3.50	85	16988	0.550	ng	99
4) Chloromethane	3.63	50	9895	0.327	ng	91
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	8266	0.700	ng	100
6) Vinyl Chloride	3.82	62	7602	0.368	ng	95
7) 1,3-Butadiene	3.93	54	6217	0.316	ng	96
8) Bromomethane	4.14	94	6311	0.461	ng	99
9) Chloroethane	4.29	64	4093	0.319	ng	97
10) Ethanol	4.41	45	16256	0.907	ng	97
11) Acetonitrile	4.57	41	9415	0.177	ng	88
12) Acrolein	4.66	56	6464	0.474	ng	99
13) Acetone	4.76	58	22237	1.551	ng	92
14) Trichlorofluoromethane	4.89	101	14701	0.568	ng	99
15) 2-Propanol (Isopropanol)	4.96	45	31334	0.582	ng	93
16) Acrylonitrile	5.12	53	14199	0.509	ng	98
17) 1,1-Dichloroethene	5.39	96	6913	0.479	ng	95
18) 2-Methyl-2-Propanol (t...	5.45	59	34713	0.790	ng	99
19) Methylene Chloride	5.47	84	7044	0.410	ng	98
20) 3-Chloro-1-propene (Al...	5.57	41	9486	0.237	ng	95
21) Trichlorotrifluoroethane	5.70	151	7554	0.685	ng	99
22) Carbon Disulfide	5.73	76	55115	0.803	ng	100
23) trans-1,2-Dichloroethene	6.25	61	10301	0.366	ng	98
24) 1,1-Dichloroethane	6.43	63	11749	0.359	ng	99
25) Methyl tert-Butyl Ether	6.50	73	20256	0.389	ng	98
26) Vinyl Acetate	6.56	86	3107	1.212	ng	# 89
27) 2-Butanone (MEK)	6.79	72	7812	0.682	ng	91
28) cis-1,2-Dichloroethene	7.18	61	9399	0.353	ng	99
29) Diisopropyl Ether	7.39	87	10833	0.962	ng	# 90
30) Ethyl Acetate	7.40	61	9551	1.267	ng	97
31) n-Hexane	7.41	57	10223	0.337	ng	98
32) Chloroform	7.47	83	13490	0.485	ng	96
34) Tetrahydrofuran (THF)	7.88	72	7572	0.654	ng	# 90
35) Ethyl tert-Butyl Ether	7.94	87	15608	0.872	ng	95
36) 1,2-Dichloroethane	8.22	62	10052	0.422	ng	100
38) 1,1,1-Trichloroethane	8.49	97	13085	0.633	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	9.00	78	25913	0.451	ng	98
42) Carbon Tetrachloride	9.16	117	11511	0.676	ng	98
43) Cyclohexane	9.32	84	18342	0.911	ng	98
44) tert-Amyl Methyl Ether	9.70	73	38634	0.891	ng	98
45) 1,2-Dichloropropane	9.96	63	5869	0.343	ng	97
46) Bromodichloromethane	10.17	83	9926	0.499	ng	99
47) Trichloroethene	10.24	130	8540	0.668	ng	91
48) 1,4-Dioxane	10.23	88	4796	0.431	ng	97
49) 2,2,4-Trimethylpentane...	10.33	57	25032	0.344	ng	99
50) Methyl Methacrylate	10.50	100	4729	0.963	ng	95

Data File : I:\MS13\DATA\2022_06\02\06022224.D
 Acq On : 2 Jun 2022 18:55
 Sample : 0.5ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022201 (7/2)

Vial: 14
 Operator: TZ
 Inst : GCMS13

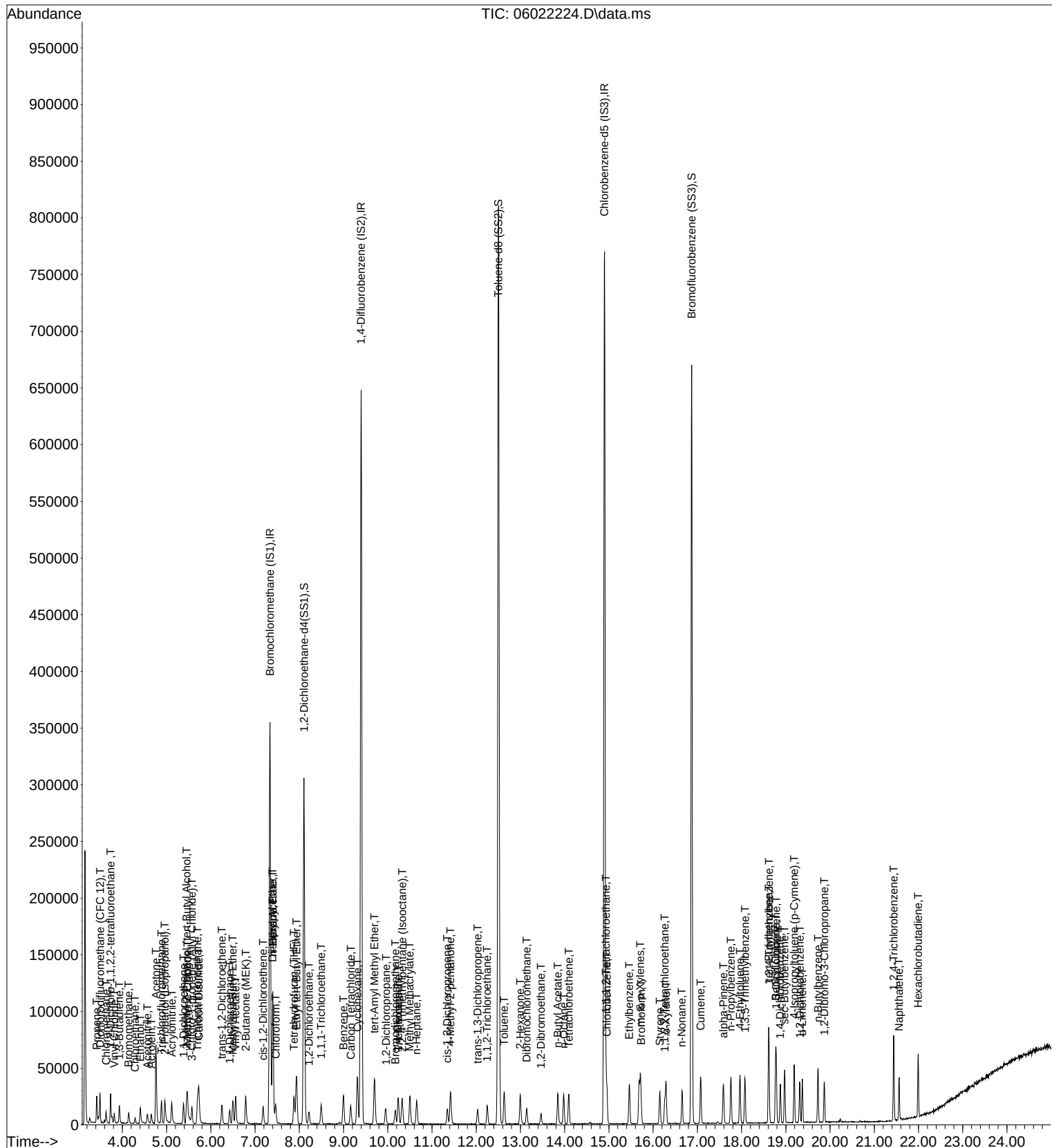
Quant Time: Jun 03 07:27:52 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 07:27:17 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.65	71	6152	0.413	ng	96
52) cis-1,3-Dichloropropene	11.34	75	9628	0.397	ng	98
53) 4-Methyl-2-pentanone	11.42	58	9655	0.615	ng	97
54) trans-1,3-Dichloropropene	12.03	75	9173	0.400	ng	99
55) 1,1,2-Trichloroethane	12.24	97	6630	0.502	ng	95
58) Toluene	12.63	91	26674	0.712	ng	98
59) 2-Hexanone	12.99	43	21434	0.705	ng	99
60) Dibromochloromethane	13.14	129	9434	0.950	ng	99
61) 1,2-Dibromoethane	13.46	107	7536	0.754	ng	96
62) n-Butyl Acetate	13.84	43	23575	0.703	ng	96
63) n-Octane	13.98	57	5207	0.514	ng	97
64) Tetrachloroethene	14.09	166	9953	1.110	ng	99
65) Chlorobenzene	14.95	112	19113	0.838	ng	100
66) Ethylbenzene	15.46	91	30585	0.722	ng	98
67) m- & p-Xylenes	15.71	91	50454	1.506	ng	98
68) Bromoform	15.73	173	8418	1.063	ng	97
69) Styrene	16.15	104	16492	0.687	ng	98
70) o-Xylene	16.29	91	26189	0.782	ng	97
71) n-Nonane	16.65	43	11088	0.398	ng	96
72) 1,1,2,2-Tetrachloroethane	16.26	83	11552	0.677	ng	96
74) Cumene	17.08	105	32672	0.834	ng	100
75) alpha-Pinene	17.59	93	16323	0.783	ng	100
76) n-Propylbenzene	17.76	91	37016	0.730	ng	99
77) 3-Ethyltoluene	17.08	105	32672	No Calib		
78) 4-Ethyltoluene	17.96	105	30268	0.799	ng	97
79) 1,3,5-Trimethylbenzene	18.08	105	26353	0.813	ng	96
80) alpha-Methylstyrene	16.87	118	901	No Calib	#	
81) 2-Ethyltoluene	16.87	105	143	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	27226	0.841	ng	99
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	41559	1.429	ng	99
85) 1,3-Dichlorobenzene	18.78	146	16791	0.982	ng	99
86) 1,4-Dichlorobenzene	18.87	146	16740	0.949	ng	98
87) sec-Butylbenzene	18.97	105	35118	0.803	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	30863	0.869	ng	99
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.32	146	16508	0.962	ng	100
91) d-Limonene	19.37	68	8212	0.539	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.87	157	11439	1.780	ng	98
93) n-Undecane	18.07	58	219	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.44	180	24324	1.918	ng	99
95) Naphthalene	21.56	128	29529	0.746	ng	98
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	21.99	225	10346	1.225	ng	97
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	27384	0.930	ng	99
100) n-Butylbenzene	19.73	91	27175	0.716	ng	98
101) 1,1,1,2-Tetrachloroethane	14.94	131	7893	0.979	ng	98

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

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:27:52 2022



Data File : I:\MS13\DATA\2022_06\02\06022225.D
 Acq On : 2 Jun 2022 19:32
 Sample : 1.0ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022201 (7/2)

Vial: 14
 Operator: TZ
 Inst : GCMS13

TZ 6/3/22

Quant Time: Jun 03 07:27:54 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	153766	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.40	114	636550	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.90	54	106256	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	248127	9.606	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	76.88%
57) Toluene-d8 (SS2)	12.50	98	692542	16.744	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	133.92%#
73) Bromofluorobenzene (SS3)	16.87	174	245364	21.600	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	172.80%#

Target Compounds

						Qvalue
2) Propene	3.41	42	13454	0.446	ng	96
3) Dichlorodifluoromethan...	3.48	85	33110	1.110	ng	99
4) Chloromethane	3.61	50	18727	0.640	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	16062	1.409	ng	99
6) Vinyl Chloride	3.80	62	16173	0.810	ng	99
7) 1,3-Butadiene	3.92	54	10725	0.564	ng	93
8) Bromomethane	4.13	94	12638	0.956	ng	95
9) Chloroethane	4.27	64	8152	0.658	ng	95
10) Ethanol	4.40	45	30754	1.779	ng	97
11) Acetonitrile	4.56	41	18982	0.370	ng	97
12) Acrolein	4.64	56	13608	1.033	ng	97
13) Acetone	4.74	58	42793	3.093	ng	92
14) Trichlorofluoromethane	4.87	101	29469	1.181	ng	98
15) 2-Propanol (Isopropanol)	4.95	45	59044	1.136	ng	91
16) Acrylonitrile	5.11	53	28399	1.054	ng	99
17) 1,1-Dichloroethene	5.37	96	13694	0.984	ng	97
18) 2-Methyl-2-Propanol (t...	5.44	59	69091	1.631	ng	98
19) Methylene Chloride	5.45	84	14081	0.849	ng	96
20) 3-Chloro-1-propene (Al...	5.56	41	20353	0.527	ng	93
21) Trichlorotrifluoroethane	5.69	151	14857	1.395	ng	97
22) Carbon Disulfide	5.71	76	103174	1.558	ng	100
23) trans-1,2-Dichloroethene	6.24	61	19653	0.724	ng	99
24) 1,1-Dichloroethane	6.42	63	23322	0.738	ng	100
25) Methyl tert-Butyl Ether	6.48	73	41033	0.817	ng	97
26) Vinyl Acetate	6.55	86	6400	2.588	ng	# 92
27) 2-Butanone (MEK)	6.78	72	15288	1.383	ng	96
28) cis-1,2-Dichloroethene	7.18	61	18571	0.724	ng	99
29) Diisopropyl Ether	7.39	87	20954	1.928	ng	# 93
30) Ethyl Acetate	7.39	61	18622	2.561	ng	97
31) n-Hexane	7.41	57	20048	0.685	ng	98
32) Chloroform	7.46	83	26334	0.982	ng	99
34) Tetrahydrofuran (THF)	7.87	72	14610	1.308	ng	# 88
35) Ethyl tert-Butyl Ether	7.93	87	32349	1.874	ng	99
36) 1,2-Dichloroethane	8.21	62	20288	0.883	ng	99
38) 1,1,1-Trichloroethane	8.49	97	24620	1.213	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.94	56	167	No Calib	#	
41) Benzene	8.99	78	50857	0.902	ng	99
42) Carbon Tetrachloride	9.16	117	22408	1.340	ng	99
43) Cyclohexane	9.31	84	37634	1.904	ng	99
44) tert-Amyl Methyl Ether	9.69	73	76418	1.795	ng	98
45) 1,2-Dichloropropane	9.95	63	11873	0.707	ng	98
46) Bromodichloromethane	10.17	83	20342	1.040	ng	98
47) Trichloroethene	10.24	130	16148	1.286	ng	98
48) 1,4-Dioxane	10.23	88	9857	0.902	ng	98
49) 2,2,4-Trimethylpentane...	10.32	57	49737	0.696	ng	100
50) Methyl Methacrylate	10.50	100	10100	2.095	ng	95

Data File : I:\MS13\DATA\2022_06\02\06022225.D
 Acq On : 2 Jun 2022 19:32
 Sample : 1.0ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022201 (7/2)

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 03 07:27:54 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

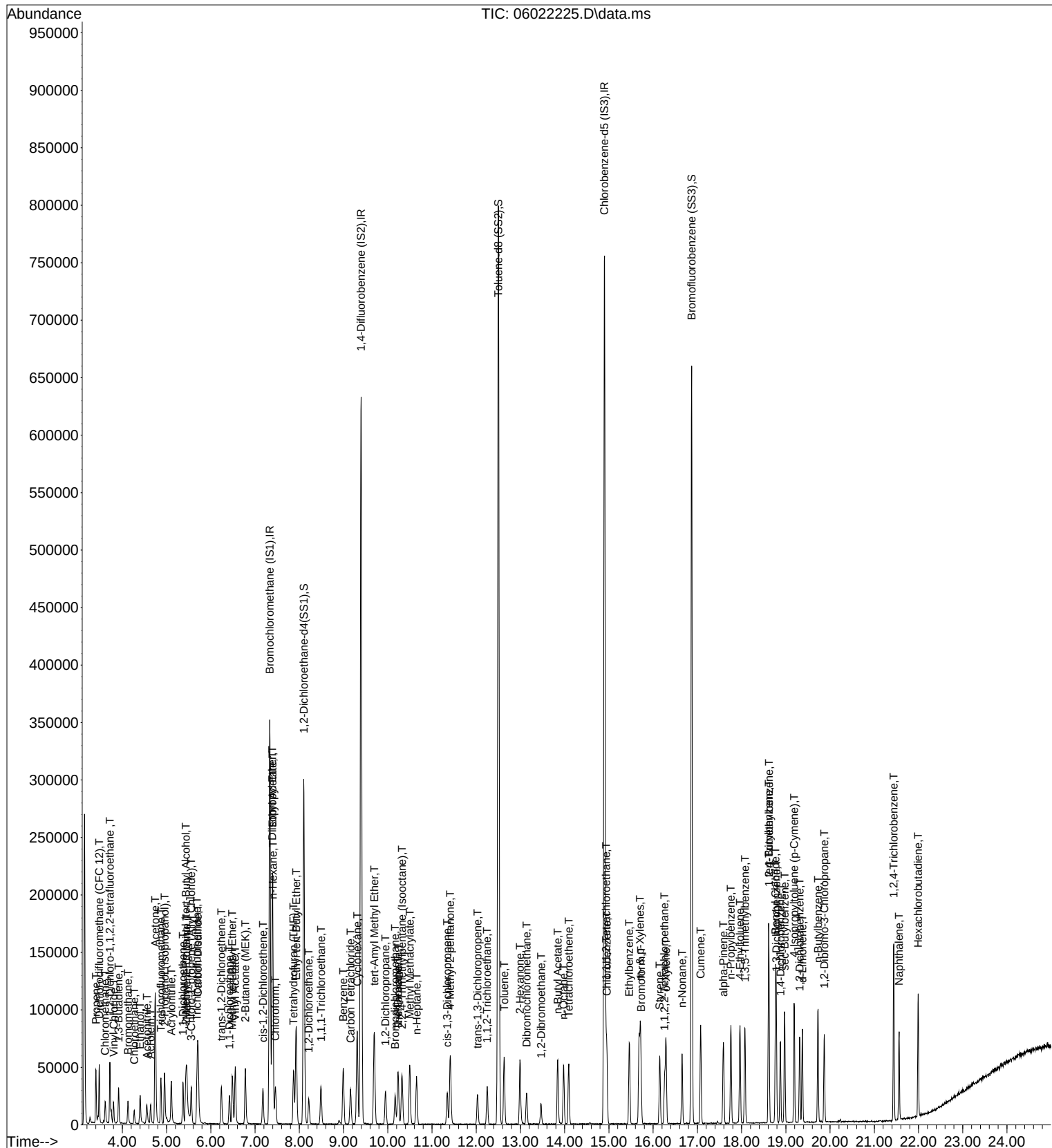
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	11881	0.811	ng	97
52) cis-1,3-Dichloropropene	11.34	75	19763	0.829	ng	100
53) 4-Methyl-2-pentanone	11.41	58	19957	1.294	ng	96
54) trans-1,3-Dichloropropene	12.03	75	17732	0.787	ng	100
55) 1,1,2-Trichloroethane	12.24	97	13400	1.033	ng	100
58) Toluene	12.63	91	52663	1.429	ng	97
59) 2-Hexanone	12.99	43	45154	1.511	ng	100
60) Dibromochloromethane	13.14	129	18876	1.934	ng	99
61) 1,2-Dibromoethane	13.47	107	15640	1.592	ng	99
62) n-Butyl Acetate	13.84	43	49411	1.499	ng	99
63) n-Octane	13.97	57	10435	1.048	ng	97
64) Tetrachloroethene	14.09	166	18594	2.110	ng	97
65) Chlorobenzene	14.95	112	37680	1.681	ng	100
66) Ethylbenzene	15.46	91	61273	1.471	ng	99
67) m- & p-Xylenes	15.70	91	102321	3.106	ng	99
68) Bromoform	15.73	173	16218	2.083	ng	100
69) Styrene	16.15	104	34632	1.468	ng	97
70) o-Xylene	16.29	91	50868	1.544	ng	100
71) n-Nonane	16.65	43	21894	0.800	ng	99
72) 1,1,2,2-Tetrachloroethane	16.26	83	22641	1.350	ng	100
74) Cumene	17.08	105	64973	1.687	ng	99
75) alpha-Pinene	17.59	93	32840	1.602	ng	99
76) n-Propylbenzene	17.76	91	76264	1.530	ng	99
77) 3-Ethyltoluene	17.08	105	64973	No Calib		
78) 4-Ethyltoluene	17.96	105	61001	1.637	ng	98
79) 1,3,5-Trimethylbenzene	18.08	105	54306	1.704	ng	99
80) alpha-Methylstyrene	16.87	118	826	No Calib	#	
81) 2-Ethyltoluene	16.88	105	111	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	54632	1.717	ng	98
83) n-Decane	16.87	58	108	No Calib	#	
84) Benzyl Chloride	18.77	91	84047	2.938	ng	100
85) 1,3-Dichlorobenzene	18.79	146	34253	2.038	ng	100
86) 1,4-Dichlorobenzene	18.88	146	33266	1.917	ng	97
87) sec-Butylbenzene	18.98	105	72551	1.686	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	62584	1.792	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	33315	1.975	ng	100
91) d-Limonene	19.37	68	16767	1.119	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.87	157	23682	3.747	ng	99
93) n-Undecane	18.08	58	1030	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.44	180	49916	4.002	ng	99
95) Naphthalene	21.56	128	58880	1.513	ng	98
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	21.99	225	21170	2.549	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	54468	1.882	ng	99
100) n-Butylbenzene	19.73	91	55337	1.483	ng	98
101) 1,1,1,2-Tetrachloroethane	14.94	131	15205	1.918	ng	98

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

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:27:54 2022



Data File : I:\MS13\DATA\2022_06\02\06022226.D
 Acq On : 2 Jun 2022 20:09
 Sample : 5.0ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022201 (7/2)

Vial: 14
 Operator: TZ
 Inst : GCMS13

Tz 6/3/22

Quant Time: Jun 03 07:27:56 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.35	130	155157	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.41	114	640744	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.90	54	108437	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.12	65	251884	9.664	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	77.28%	
57) Toluene-d8 (SS2)	12.51	98	702767	16.649	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	133.20%#	
73) Bromofluorobenzene (SS3)	16.87	174	249934	21.560	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	172.48%#	

Target Compounds

						Qvalue
2) Propene	3.39	42	86851	2.850	ng	98
3) Dichlorodifluoromethan...	3.47	85	162665	5.405	ng	99
4) Chloromethane	3.60	50	72931	2.472	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	81065	7.048	ng	98
6) Vinyl Chloride	3.80	62	78571	3.901	ng	99
7) 1,3-Butadiene	3.91	54	54840	2.859	ng	97
8) Bromomethane	4.13	94	60538	4.540	ng	100
9) Chloroethane	4.27	64	41530	3.322	ng	100
10) Ethanol	4.43	45	141446	8.107	ng	100
11) Acetonitrile	4.57	41	96742	1.867	ng	100
12) Acrolein	4.65	56	68229	5.134	ng	99
13) Acetone	4.76	58	203868	14.602	ng	93
14) Trichlorofluoromethane	4.87	101	138590	5.502	ng	99
15) 2-Propanol (Isopropanol)	4.98	45	238308	4.545	ng	97
16) Acrylonitrile	5.13	53	143960	5.296	ng	99
17) 1,1-Dichloroethene	5.37	96	68154	4.853	ng	99
18) 2-Methyl-2-Propanol (t...	5.45	59	331180	7.746	ng	99
19) Methylene Chloride	5.48	84	67025	4.003	ng	100
20) 3-Chloro-1-propene (Al...	5.57	41	94663	2.431	ng	98
21) Trichlorotrifluoroethane	5.69	151	72497	6.748	ng	99
22) Carbon Disulfide	5.72	76	497137	7.442	ng	100
23) trans-1,2-Dichloroethene	6.26	61	99010	3.615	ng	99
24) 1,1-Dichloroethane	6.44	63	113095	3.547	ng	99
25) Methyl tert-Butyl Ether	6.49	73	215639	4.255	ng	100
26) Vinyl Acetate	6.56	86	33863	13.568	ng	100
27) 2-Butanone (MEK)	6.80	72	79229	7.101	ng	100
28) cis-1,2-Dichloroethene	7.20	61	90715	3.504	ng	99
29) Diisopropyl Ether	7.40	87	102648	9.358	ng	# 89
30) Ethyl Acetate	7.41	61	91292	12.442	ng	98
31) n-Hexane	7.41	57	93315	3.158	ng	99
32) Chloroform	7.49	83	123198	4.552	ng	100
34) Tetrahydrofuran (THF)	7.87	72	75267	6.677	ng	93
35) Ethyl tert-Butyl Ether	7.94	87	162232	9.314	ng	99
36) 1,2-Dichloroethane	8.24	62	100098	4.315	ng	99
38) 1,1,1-Trichloroethane	8.50	97	123479	6.046	ng	100
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.91	56	2379	No Calib		
41) Benzene	9.01	78	247101	4.354	ng	100
42) Carbon Tetrachloride	9.17	117	110245	6.552	ng	100
43) Cyclohexane	9.32	84	185831	9.340	ng	100
44) tert-Amyl Methyl Ether	9.70	73	387362	9.040	ng	99
45) 1,2-Dichloropropane	9.96	63	59247	3.507	ng	99
46) Bromodichloromethane	10.18	83	99714	5.067	ng	99
47) Trichloroethene	10.25	130	79065	6.256	ng	99
48) 1,4-Dioxane	10.23	88	51486	4.679	ng	99
49) 2,2,4-Trimethylpentane...	10.33	57	254596	3.538	ng	99
50) Methyl Methacrylate	10.50	100	52464	10.810	ng	99

Data File : I:\MS13\DATA\2022_06\02\06022226.D
 Acq On : 2 Jun 2022 20:09
 Sample : 5.0ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022201 (7/2)

Vial: 14
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 03 07:27:56 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

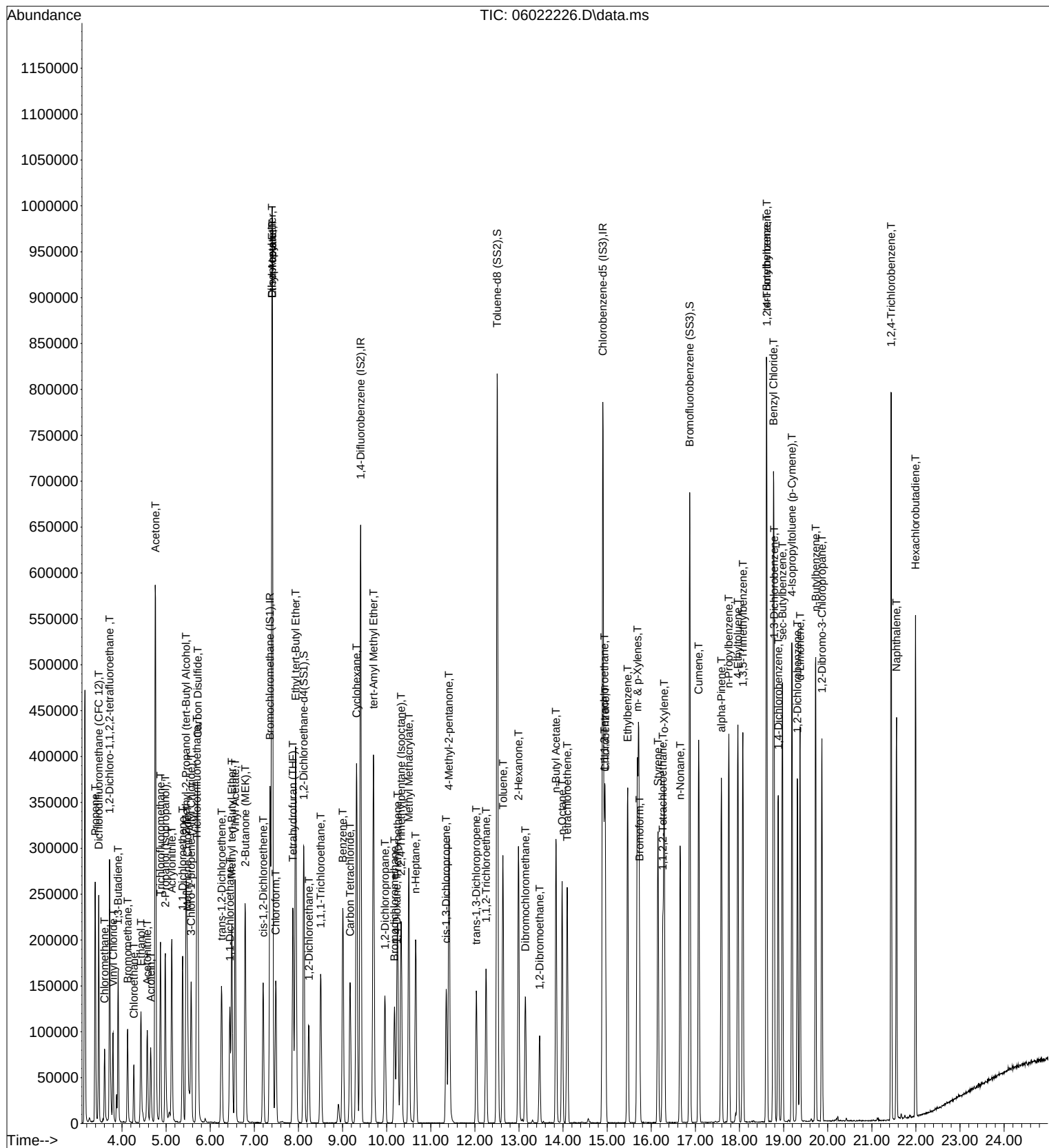
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	60340	4.093	ng	99
52) cis-1,3-Dichloropropene	11.35	75	101576	4.233	ng	100
53) 4-Methyl-2-pentanone	11.41	58	106481	6.857	ng	98
54) trans-1,3-Dichloropropene	12.03	75	96898	4.272	ng	99
55) 1,1,2-Trichloroethane	12.25	97	67568	5.175	ng	98
58) Toluene	12.64	91	263300	7.002	ng	100
59) 2-Hexanone	12.99	43	236729	7.761	ng	100
60) Dibromochloromethane	13.15	129	95783	9.615	ng	99
61) 1,2-Dibromoethane	13.47	107	78547	7.835	ng	99
62) n-Butyl Acetate	13.84	43	260262	7.739	ng	99
63) n-Octane	13.98	57	52642	5.178	ng	100
64) Tetrachloroethene	14.09	166	94538	10.510	ng	100
65) Chlorobenzene	14.96	112	181962	7.955	ng	100
66) Ethylbenzene	15.46	91	310696	7.310	ng	100
67) m- & p-Xylenes	15.69	91	509190	15.145	ng	99
68) Bromoform	15.73	173	83850	10.555	ng	100
69) Styrene	16.15	104	183779	7.634	ng	99
70) o-Xylene	16.29	91	257240	7.652	ng	99
71) n-Nonane	16.65	43	114089	4.084	ng	99
72) 1,1,2,2-Tetrachloroethane	16.26	83	112960	6.601	ng	99
74) Cumene	17.08	105	328650	8.363	ng	99
75) alpha-Pinene	17.59	93	172646	8.254	ng	99
76) n-Propylbenzene	17.76	91	385021	7.568	ng	100
77) 3-Ethyltoluene	17.08	105	328650	No Calib		
78) 4-Ethyltoluene	17.96	105	317836	8.360	ng	99
79) 1,3,5-Trimethylbenzene	18.08	105	275761	8.480	ng	99
80) alpha-Methylstyrene	16.88	118	848	No Calib	#	
81) 2-Ethyltoluene	16.88	105	183	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	272259	8.385	ng	98
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	441231	15.115	ng	98
85) 1,3-Dichlorobenzene	18.79	146	165786	9.665	ng	99
86) 1,4-Dichlorobenzene	18.88	146	169400	9.567	ng	100
87) sec-Butylbenzene	18.98	105	360854	8.219	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	320407	8.990	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	164959	9.585	ng	100
91) d-Limonene	19.37	68	91503	5.984	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.87	157	124071	19.236	ng	98
93) n-Undecane	18.07	58	4224	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	255956	20.110	ng	100
95) Naphthalene	21.56	128	321207	8.087	ng	100
96) n-Dodecane	18.82	57	718	No Calib	#	
97) Hexachlorobutadiene	21.99	225	106238	12.534	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	270156	9.146	ng	99
100) n-Butylbenzene	19.73	91	282106	7.407	ng	100
101) 1,1,1,2-Tetrachloroethane	14.94	131	77188	9.541	ng	99

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

Vial: 14
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:27:56 2022



Data File : I:\MS13\DATA\2022_06\02\06022227.D

Vial: 15

Acq On : 2 Jun 2022 20:47

Operator: TZ

Sample : 25ng R13060222 ICAL Std.

Inst : GCMS13

Misc : S35-06022211/S35-06022208 (7/2)

Quant Time: Jun 03 07:27:58 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.38	130	153041	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	660298	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.90	54	114003	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.13	65	253508	9.861	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	78.88%	
57) Toluene-d8 (SS2)	12.51	98	722754	16.287	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	130.32%#	
73) Bromofluorobenzene (SS3)	16.88	174	259354	21.280	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	170.24%#	

Target Compounds

						Qvalue
2) Propene	3.37	42	392378	13.054	ng	100
3) Dichlorodifluoromethan...	3.45	85	833745	28.087	ng	100
4) Chloromethane	3.59	50	460564	15.824	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	414557	36.539	ng	100
6) Vinyl Chloride	3.79	62	411001	20.691	ng	100
7) 1,3-Butadiene	3.91	54	293989	15.540	ng	100
8) Bromomethane	4.12	94	335462	25.504	ng	100
9) Chloroethane	4.27	64	215485	17.476	ng	100
10) Ethanol	4.45	45	757237	43.999	ng	100
11) Acetonitrile	4.60	41	507331	9.928	ng	100
12) Acrolein	4.66	56	386767	29.503	ng	100
13) Acetone	4.78	58	979575	71.131	ng	100
14) Trichlorofluoromethane	4.87	101	711214	28.626	ng	100
15) 2-Propanol (Isopropanol)	5.00	45	1402177	27.114	ng	100
16) Acrylonitrile	5.15	53	773822	28.861	ng	100
17) 1,1-Dichloroethene	5.38	96	343822	24.821	ng	100
18) 2-Methyl-2-Propanol (t...	5.48	59	1703481	40.392	ng	100
19) Methylene Chloride	5.50	84	337422	20.430	ng	100
20) 3-Chloro-1-propene (Al...	5.58	41	484928	12.628	ng	100
21) Trichlorotrifluoroethane	5.69	151	365714	34.509	ng	100
22) Carbon Disulfide	5.73	76	2470686	37.496	ng	100
23) trans-1,2-Dichloroethene	6.27	61	531188	19.662	ng	100
24) 1,1-Dichloroethane	6.46	63	579400	18.421	ng	100
25) Methyl tert-Butyl Ether	6.50	73	1113441	22.273	ng	100
26) Vinyl Acetate	6.59	86	187525	76.176	ng	100
27) 2-Butanone (MEK)	6.81	72	412809	37.508	ng	100
28) cis-1,2-Dichloroethene	7.22	61	486794	19.062	ng	100
29) Diisopropyl Ether	7.41	87	464366	42.922	ng	100
30) Ethyl Acetate	7.42	61	430228	59.445	ng	100
31) n-Hexane	7.41	57	425606	14.601	ng	100
32) Chloroform	7.51	83	654824	24.527	ng	100
34) Tetrahydrofuran (THF)	7.88	72	384973	34.622	ng	100
35) Ethyl tert-Butyl Ether	7.95	87	815103	47.441	ng	100
36) 1,2-Dichloroethane	8.25	62	534542	23.363	ng	100
38) 1,1,1-Trichloroethane	8.52	97	641565	30.482	ng	100
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.92	56	13731	No Calib		
41) Benzene	9.02	78	1307746	22.360	ng	100
42) Carbon Tetrachloride	9.19	117	593566	34.229	ng	100
43) Cyclohexane	9.32	84	931677	45.438	ng	100
44) tert-Amyl Methyl Ether	9.71	73	1960382	44.395	ng	100
45) 1,2-Dichloropropane	9.97	63	307830	17.680	ng	100
46) Bromodichloromethane	10.19	83	531978	26.232	ng	100
47) Trichloroethene	10.26	130	412273	31.653	ng	100
48) 1,4-Dioxane	10.23	88	274027	24.167	ng	100
49) 2,2,4-Trimethylpentane...	10.34	57	1293780	17.447	ng	100
50) Methyl Methacrylate	10.51	100	281104	56.207	ng	100

Data File : I:\MS13\DATA\2022_06\02\06022227.D
 Acq On : 2 Jun 2022 20:47
 Sample : 25ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022208 (7/2)

Vial: 15
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 03 07:27:58 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 07:27:17 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	313352	20.625	ng	100
52) cis-1,3-Dichloropropene	11.36	75	580694	23.485	ng	100
53) 4-Methyl-2-pentanone	11.42	58	550130	34.376	ng	100
54) trans-1,3-Dichloropropene	12.04	75	561111	24.006	ng	100
55) 1,1,2-Trichloroethane	12.26	97	352856	26.226	ng	100
58) Toluene	12.64	91	1423696	36.014	ng	100
59) 2-Hexanone	12.99	43	1313592	40.962	ng	100
60) Dibromochloromethane	13.15	129	514741	49.149	ng	100
61) 1,2-Dibromoethane	13.47	107	435459	41.317	ng	100
62) n-Butyl Acetate	13.84	43	1434328	40.570	ng	100
63) n-Octane	13.99	57	268979	25.167	ng	100
64) Tetrachloroethene	14.10	166	484138	51.194	ng	100
65) Chlorobenzene	14.96	112	978596	40.694	ng	100
66) Ethylbenzene	15.46	91	1656012	37.060	ng	100
67) m- & p-Xylenes	15.72	91	2712657	76.745	ng	100
68) Bromoform	15.73	173	465735	55.764	ng	100
69) Styrene	16.15	104	1043069	41.215	ng	100
70) o-Xylene	16.30	91	1366549	38.666	ng	100
71) n-Nonane	16.66	43	598266	20.370	ng	100
72) 1,1,2,2-Tetrachloroethane	16.26	83	593024	32.962	ng	100
74) Cumene	17.08	105	1716954	41.559	ng	100
75) alpha-Pinene	17.59	93	882039	40.112	ng	100
76) n-Propylbenzene	17.76	91	2037310	38.091	ng	100
77) 3-Ethyltoluene	17.08	105	1716954	No Calib		
78) 4-Ethyltoluene	17.96	105	1713161	42.860	ng	100
79) 1,3,5-Trimethylbenzene	18.08	105	1482108	43.351	ng	100
80) alpha-Methylstyrene	16.87	118	948	No Calib	#	
81) 2-Ethyltoluene	16.88	105	308	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	1433531	41.995	ng	100
83) n-Decane	16.92	58	165	No Calib	#	
84) Benzyl Chloride	18.78	91	2542915	82.855	ng	100
85) 1,3-Dichlorobenzene	18.79	146	865909	48.016	ng	100
86) 1,4-Dichlorobenzene	18.88	146	931750	50.050	ng	100
87) sec-Butylbenzene	18.98	105	1911927	41.421	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	1703615	45.469	ng	100
89) 1,2,3-Trimethylbenzene	17.36	105	344	No Calib	#	
90) 1,2-Dichlorobenzene	19.32	146	901191	49.806	ng	100
91) d-Limonene	19.37	68	498602	31.015	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.87	157	697602	102.877	ng	100
93) n-Undecane	18.08	58	22764	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	1483384	110.857	ng	100
95) Naphthalene	21.56	128	2218717	53.133	ng	100
96) n-Dodecane	18.82	57	1065	No Calib		
97) Hexachlorobutadiene	21.99	225	552142	61.961	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.62	119	1342350	43.227	ng	100
100) n-Butylbenzene	19.73	91	1547583	38.648	ng	100
101) 1,1,1,2-Tetrachloroethane	14.94	131	398655	46.869	ng	100

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

Data File : I:\MS13\DATA\2022_06\02\06022227.D
Acq On : 2 Jun 2022 20:47
Sample : 25ng R13060222 ICAL Std.
Misc : S35-06022211/S35-06022208 (7/2)

Vial: 15
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:27:58 2022

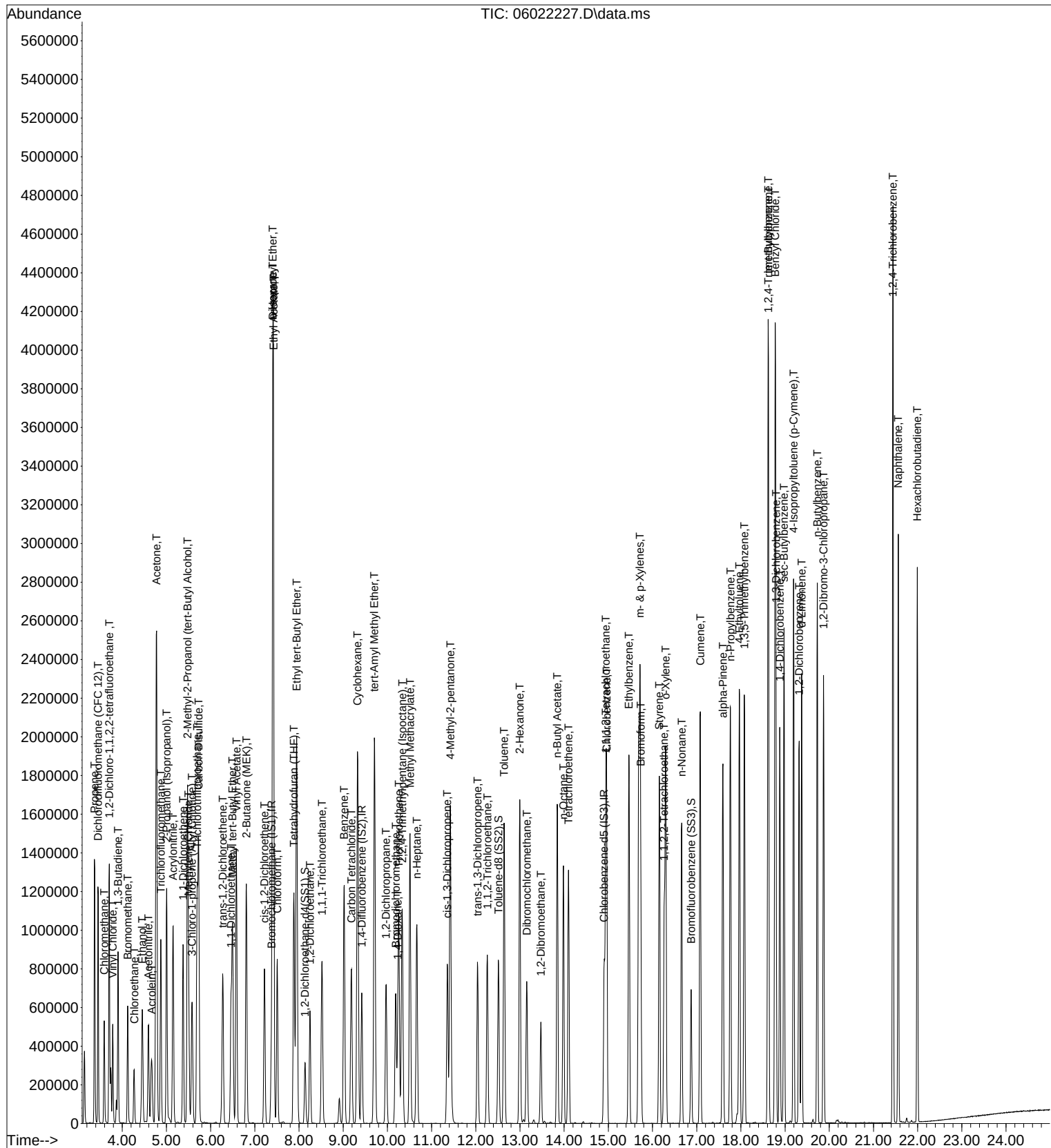
Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2022_06\02\06022228.D
 Acq On : 2 Jun 2022 21:25
 Sample : 50ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022208 (7/2)

Vial: 15
 Operator: TZ
 Inst : GCMS13

Tz 6/3/22

Quant Time: Jun 03 07:28:00 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.39	130	150066	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	9.43	114	690329	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.91	54	119702	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.15	65	263021	10.434	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.44%
57) Toluene-d8 (SS2)	12.52	98	754246	16.187	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	129.52%
73) Bromofluorobenzene (SS3)	16.88	174	273673	21.386	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	171.12%#

Target Compounds

						Qvalue
2) Propene	3.38	42	842520	28.586	ng	99
3) Dichlorodifluoromethan...	3.46	85	1595516	54.814	ng	100
4) Chloromethane	3.59	50	775262	27.165	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	821428	73.835	ng	99
6) Vinyl Chloride	3.79	62	811608	41.668	ng	100
7) 1,3-Butadiene	3.91	54	584886	31.530	ng	99
8) Bromomethane	4.13	94	651939	50.547	ng	100
9) Chloroethane	4.28	64	409794	33.893	ng	99
10) Ethanol	4.48	45	1458850	86.447	ng	99
11) Acetonitrile	4.61	41	1010675	20.170	ng	100
12) Acrolein	4.68	56	755972	58.809	ng	100
13) Acetone	4.79	58	1817364	134.583	ng	93
14) Trichlorofluoromethane	4.88	101	1398185	57.392	ng	99
15) 2-Propanol (Isopropanol)	5.02	45	2372670	46.790	ng	100
16) Acrylonitrile	5.16	53	1513311	57.561	ng	100
17) 1,1-Dichloroethene	5.39	96	667110	49.115	ng	99
18) 2-Methyl-2-Propanol (t...	5.49	59	2779468	67.212	ng	100
19) Methylene Chloride	5.51	84	641232	39.595	ng	98
20) 3-Chloro-1-propene (Al...	5.59	41	966994	25.680	ng	100
21) Trichlorotrifluoroethane	5.70	151	693749	66.761	ng	99
22) Carbon Disulfide	5.74	76	4701144	72.761	ng	100
23) trans-1,2-Dichloroethene	6.29	61	1046580	39.506	ng	99
24) 1,1-Dichloroethane	6.47	63	1129051	36.608	ng	100
25) Methyl tert-Butyl Ether	6.50	73	2159659	44.058	ng	100
26) Vinyl Acetate	6.60	86	353271	146.350	ng	# 92
27) 2-Butanone (MEK)	6.82	72	787933	73.011	ng	96
28) cis-1,2-Dichloroethene	7.23	61	960538	38.359	ng	99
29) Diisopropyl Ether	7.42	87	822279	77.510	ng	# 89
30) Ethyl Acetate	7.43	61	783985	110.471	ng	98
31) n-Hexane	7.42	57	765880	26.795	ng	99
32) Chloroform	7.52	83	1286816	49.155	ng	99
34) Tetrahydrofuran (THF)	7.89	72	735525	67.459	ng	98
35) Ethyl tert-Butyl Ether	7.96	87	1546180	91.776	ng	98
36) 1,2-Dichloroethane	8.26	62	1072940	47.825	ng	100
38) 1,1,1-Trichloroethane	8.53	97	1256550	57.104	ng	99
39) Isopropyl Acetate	9.18	61	151	No Calib	#	
40) 1-Butanol	8.92	56	28932	No Calib		
41) Benzene	9.03	78	2549448	41.694	ng	100
42) Carbon Tetrachloride	9.19	117	1170662	64.572	ng	99
43) Cyclohexane	9.34	84	1747009	81.495	ng	98
44) tert-Amyl Methyl Ether	9.72	73	3758417	81.411	ng	99
45) 1,2-Dichloropropane	9.98	63	609673	33.494	ng	100
46) Bromodichloromethane	10.19	83	1063596	50.165	ng	99
47) Trichloroethene	10.27	130	789760	57.997	ng	99
48) 1,4-Dioxane	10.24	88	527174	44.470	ng	97
49) 2,2,4-Trimethylpentane...	10.34	57	2539269	32.753	ng	99
50) Methyl Methacrylate	10.52	100	534783	102.279	ng	99

Data File : I:\MS13\DATA\2022_06\02\06022228.D
 Acq On : 2 Jun 2022 21:25
 Sample : 50ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022208 (7/2)

Vial: 15
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 03 07:28:00 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	608619	38.318	ng	99
52) cis-1,3-Dichloropropene	11.36	75	1136585	43.968	ng	100
53) 4-Methyl-2-pentanone	11.43	58	1059890	63.349	ng	98
54) trans-1,3-Dichloropropene	12.04	75	1111580	45.487	ng	100
55) 1,1,2-Trichloroethane	12.27	97	685709	48.749	ng	100
58) Toluene	12.65	91	2740165	66.016	ng	100
59) 2-Hexanone	13.01	43	2568751	76.289	ng	98
60) Dibromochloromethane	13.16	129	1014558	92.260	ng	100
61) 1,2-Dibromoethane	13.48	107	858280	77.558	ng	100
62) n-Butyl Acetate	13.85	43	2798693	75.392	ng	99
63) n-Octane	13.99	57	522806	46.587	ng	98
64) Tetrachloroethene	14.10	166	930651	93.724	ng	100
65) Chlorobenzene	14.96	112	1855782	73.497	ng	100
66) Ethylbenzene	15.47	91	3188112	67.951	ng	100
67) m- & p-Xylenes	15.72	91	5135153	138.364	ng	99
68) Bromoform	15.74	173	883544	100.752	ng	100
69) Styrene	16.16	104	2016679	75.891	ng	99
70) o-Xylene	16.30	91	2637413	71.071	ng	98
71) n-Nonane	16.66	43	1155178	37.459	ng	100
72) 1,1,2,2-Tetrachloroethane	16.27	83	1148245	60.783	ng	99
74) Cumene	17.08	105	3269931	75.381	ng	99
75) alpha-Pinene	17.59	93	1705697	73.876	ng	99
76) n-Propylbenzene	17.76	91	3898975	69.427	ng	99
77) 3-Ethyltoluene	17.08	105	3269931	No Calib		
78) 4-Ethyltoluene	17.97	105	3260746	77.695	ng	100
79) 1,3,5-Trimethylbenzene	18.08	105	2839126	79.090	ng	99
80) alpha-Methylstyrene	16.88	118	959	No Calib	#	
81) 2-Ethyltoluene	16.88	105	574	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.63	105	2644091	73.771	ng	99
83) n-Decane	16.92	58	436	No Calib	#	
84) Benzyl Chloride	18.78	91	4756169	147.592	ng	99
85) 1,3-Dichlorobenzene	18.80	146	1572962	83.070	ng	100
86) 1,4-Dichlorobenzene	18.89	146	1782246	91.177	ng	100
87) sec-Butylbenzene	18.98	105	3637703	75.057	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	3224831	81.971	ng	99
89) 1,2,3-Trimethylbenzene	17.37	105	952	No Calib	#	
90) 1,2-Dichlorobenzene	19.32	146	1723457	90.715	ng	100
91) d-Limonene	19.37	68	961291	56.950	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.88	157	1312963	184.408	ng	95
93) n-Undecane	18.08	58	43464	No Calib		
94) 1,2,4-Trichlorobenzene	21.45	180	2684940	191.098	ng	99
95) Naphthalene	21.57	128	4292372	97.899	ng	100
96) n-Dodecane	18.82	57	2486	No Calib	#	
97) Hexachlorobutadiene	21.99	225	1055174	112.773	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.62	119	2464627	75.589	ng	100
100) n-Butylbenzene	19.73	91	2945860	70.064	ng	99
101) 1,1,1,2-Tetrachloroethane	14.94	131	764634	85.617	ng	99

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

Vial: 15
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:28:00 2022

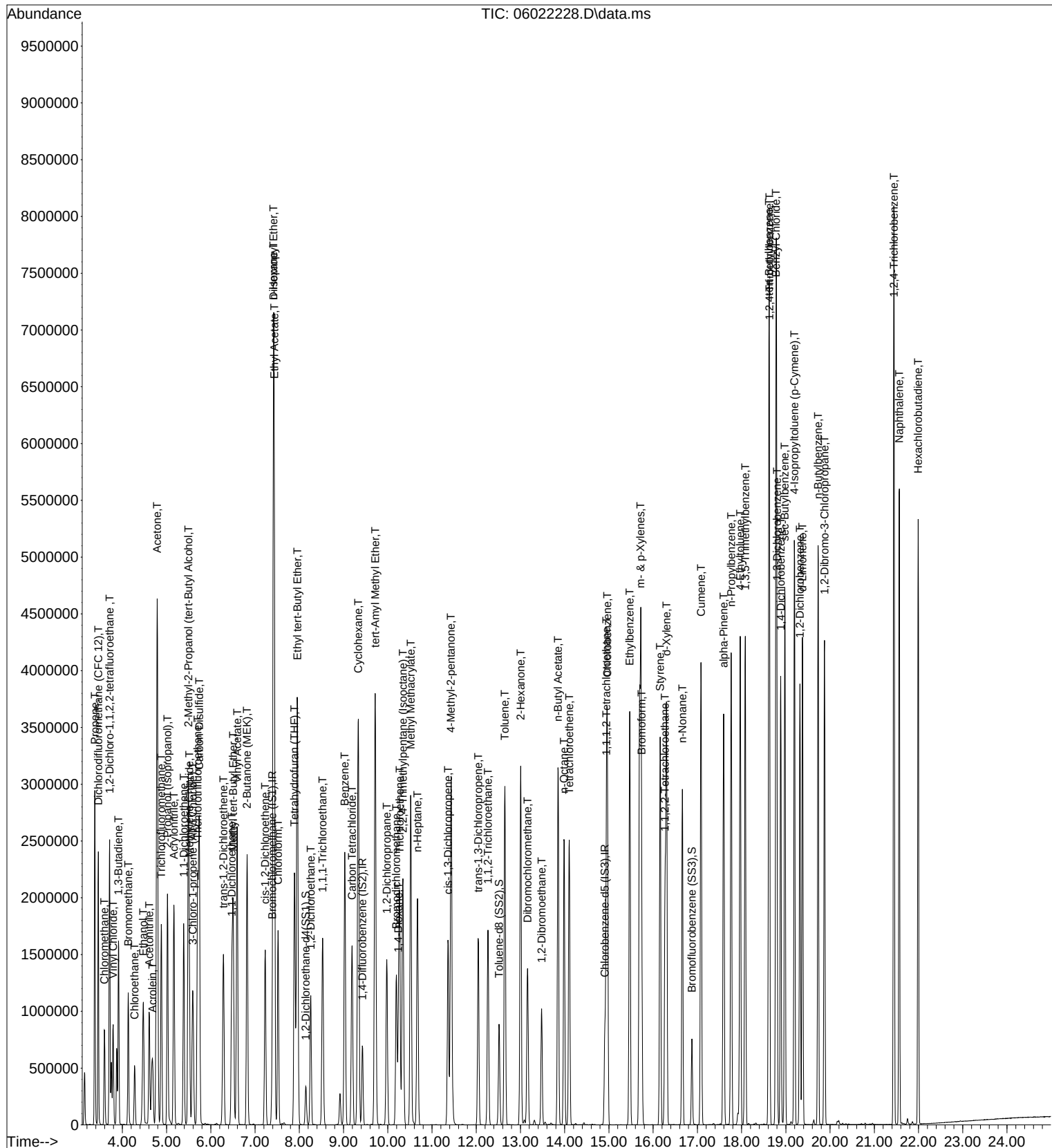
Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2022_06\02\06022229.D

Vial: 15

TZ 6/3/22

Acq On : 2 Jun 2022 22:03

Operator: TZ

Sample : 100ng R13060222 ICAL Std.

Inst : GCMS13

Misc : S35-06022211/S35-06022208 (7/2)

Quant Time: Jun 03 07:28:02 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 07:27:17 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.40	130	140657	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.44	114	715438	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.91	54	126602	12.500	ng	0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.16	65	265891	11.253	ng	0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	90.00%
57) Toluene-d8 (SS2)	12.53	98	783146	15.891	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	127.12%
73) Bromofluorobenzene (SS3)	16.88	174	290027	21.429	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	171.44%#

Target Compounds

						Qvalue
2) Propene	3.39	42	1695230	61.366	ng	98
3) Dichlorodifluoromethan...	3.47	85	3029215	111.031	ng	100
4) Chloromethane	3.61	50	1050839	39.285	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.73	135	1403431	134.588	ng	100
6) Vinyl Chloride	3.81	62	1533052	83.972	ng	100
7) 1,3-Butadiene	3.93	54	1230474	70.769	ng	95
8) Bromomethane	4.16	94	1199922	99.256	ng	100
9) Chloroethane	4.30	64	779482	68.782	ng	100
10) Ethanol	4.50	45	2764909	174.800	ng	99
11) Acetonitrile	4.63	41	2024635	43.109	ng	100
12) Acrolein	4.70	56	1467233	121.775	ng	96
13) Acetone	4.81	58	3317403	262.100	ng	# 85
14) Trichlorofluoromethane	4.90	101	2728520	119.490	ng	100
15) 2-Propanol (Isopropanol)	5.05	45	4200264	88.371	ng	100
16) Acrylonitrile	5.19	53	2906545	117.950	ng	99
17) 1,1-Dichloroethene	5.41	96	1284161	100.869	ng	96
18) 2-Methyl-2-Propanol (t...	5.52	59	3355573	86.571	ng	98
19) Methylene Chloride	5.53	84	1209496	79.680	ng	96
20) 3-Chloro-1-propene (Al...	5.61	41	1917864	54.338	ng	99
21) Trichlorotrifluoroethane	5.72	151	1279611	131.377	ng	98
22) Carbon Disulfide	5.76	76	8659215	142.986	ng	100
23) trans-1,2-Dichloroethene	6.30	61	2044622	82.343	ng	98
24) 1,1-Dichloroethane	6.49	63	2127512	73.597	ng	99
25) Methyl tert-Butyl Ether	6.52	73	4081813	88.840	ng	100
26) Vinyl Acetate	6.62	86	650947	287.707	ng	# 83
27) 2-Butanone (MEK)	6.84	72	1443721	142.727	ng	# 91
28) cis-1,2-Dichloroethene	7.25	61	1865252	79.472	ng	97
29) Diisopropyl Ether	7.43	87	1455669	146.394	ng	# 75
30) Ethyl Acetate	7.46	61	1446797	217.506	ng	96
31) n-Hexane	7.43	57	1405529	52.462	ng	99
32) Chloroform	7.54	83	2477992	100.989	ng	99
34) Tetrahydrofuran (THF)	7.91	72	1347560	131.860	ng	# 89
35) Ethyl tert-Butyl Ether	7.97	87	2877671	182.236	ng	96
36) 1,2-Dichloroethane	8.28	62	2098733	99.806	ng	100
38) 1,1,1-Trichloroethane	8.54	97	2455449	107.671	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.94	56	61373	No Calib		
41) Benzene	9.05	78	4895574	77.253	ng	100
42) Carbon Tetrachloride	9.20	117	2295836	122.190	ng	99
43) Cyclohexane	9.35	84	3203905	144.212	ng	97
44) tert-Amyl Methyl Ether	9.73	73	7050310	147.356	ng	98
45) 1,2-Dichloropropane	9.99	63	1194309	63.309	ng	99
46) Bromodichloromethane	10.21	83	2102480	95.684	ng	99
47) Trichloroethene	10.28	130	1473650	104.422	ng	99
48) 1,4-Dioxane	10.26	88	999382	81.345	ng	96
49) 2,2,4-Trimethylpentane...	10.35	57	4904961	61.047	ng	97
50) Methyl Methacrylate	10.54	100	999916	184.526	ng	96

Data File : I:\MS13\DATA\2022_06\02\06022229.D
 Acq On : 2 Jun 2022 22:03
 Sample : 100ng R13060222 ICAL Std.
 Misc : S35-06022211/S35-06022208 (7/2)

Vial: 15
 Operator: TZ
 Inst : GCMS13

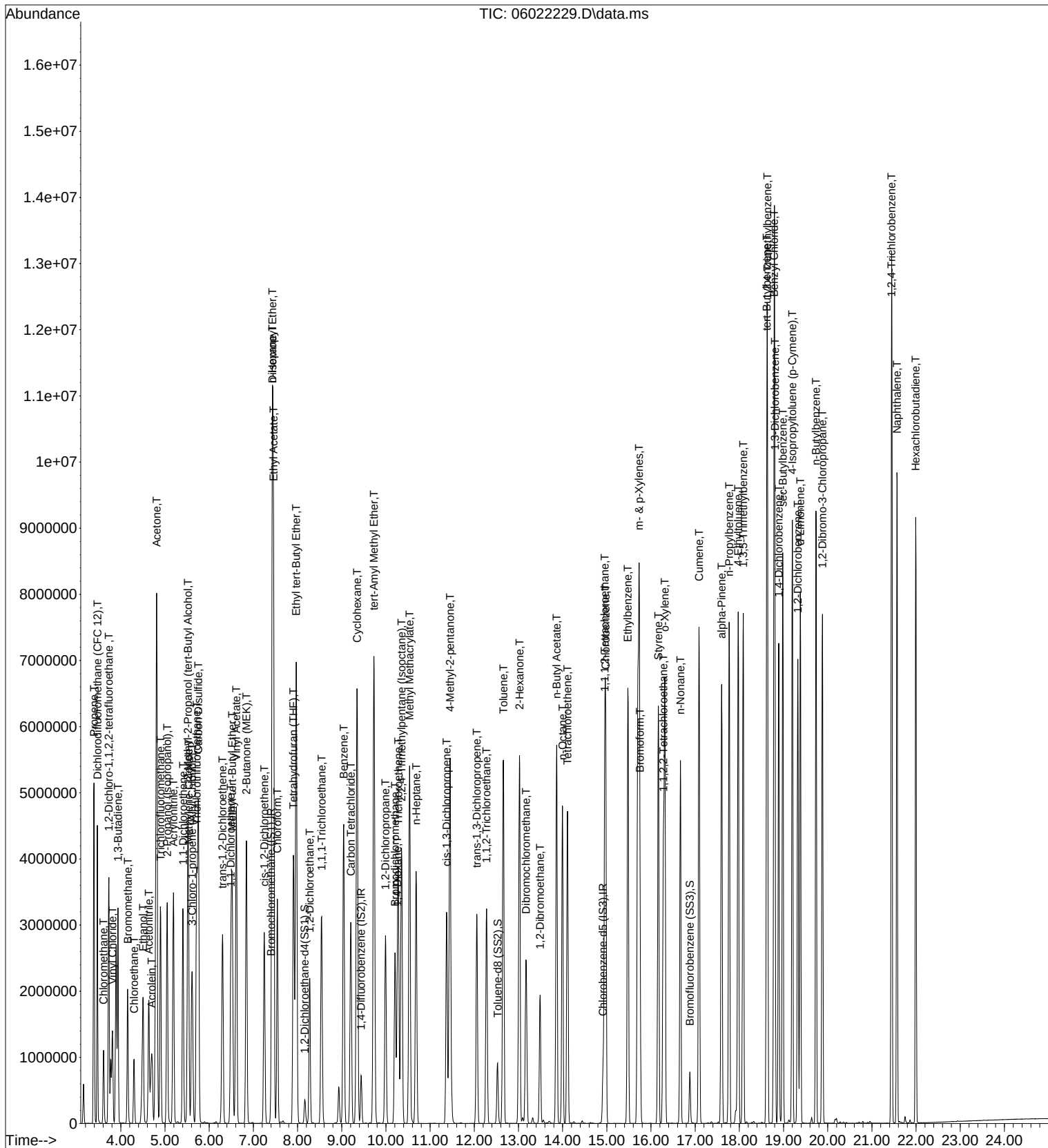
Quant Time: Jun 03 07:28:02 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 07:27:17 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.68	71	1160676	70.510	ng	98
52) cis-1,3-Dichloropropene	11.37	75	2232267	83.323	ng	100
53) 4-Methyl-2-pentanone	11.45	58	2013896	116.144	ng	96
54) trans-1,3-Dichloropropene	12.06	75	2201663	86.932	ng	99
55) 1,1,2-Trichloroethane	12.28	97	1332624	91.415	ng	99
58) Toluene	12.66	91	5219916	118.904	ng	100
59) 2-Hexanone	13.02	43	4951598	139.041	ng	97
60) Dibromochloromethane	13.17	129	2000682	172.019	ng	99
61) 1,2-Dibromoethane	13.49	107	1672677	142.912	ng	99
62) n-Butyl Acetate	13.87	43	5382636	137.097	ng	97
63) n-Octane	14.00	57	997058	84.006	ng	97
64) Tetrachloroethene	14.11	166	1756168	167.222	ng	100
65) Chlorobenzene	14.98	112	3419117	128.031	ng	100
66) Ethylbenzene	15.48	91	6056280	122.047	ng	99
67) m- & p-Xylenes	15.73	91	9470788	241.278	ng	98
68) Bromoform	15.75	173	1611829	173.783	ng	100
69) Styrene	16.16	104	3779651	134.483	ng	98
70) o-Xylene	16.31	91	4965959	126.526	ng	97
71) n-Nonane	16.67	43	2212524	67.835	ng	98
72) 1,1,2,2-Tetrachloroethane	16.28	83	2151995	107.709	ng	100
74) Cumene	17.09	105	6077418	132.466	ng	99
75) alpha-Pinene	17.60	93	3185878	130.464	ng	98
76) n-Propylbenzene	17.77	91	7255171	122.148	ng	99
77) 3-Ethyltoluene	17.09	105	6077418	No Calib		
78) 4-Ethyltoluene	17.97	105	6043152	136.144	ng	99
79) 1,3,5-Trimethylbenzene	18.09	105	5300280	139.604	ng	98
80) alpha-Methylstyrene	16.88	118	872	No Calib	#	
81) 2-Ethyltoluene	16.88	105	812	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.63	105	4698929	123.956	ng	98
83) n-Decane	16.93	58	1206	No Calib	#	
84) Benzyl Chloride	18.79	91	8430476	247.353	ng	97
85) 1,3-Dichlorobenzene	18.81	146	2676970	133.669	ng	99
86) 1,4-Dichlorobenzene	18.89	146	3270622	158.201	ng	100
87) sec-Butylbenzene	18.98	105	6631637	129.374	ng	99
88) 4-Isopropyltoluene (p-...	19.20	119	5853089	140.670	ng	98
89) 1,2,3-Trimethylbenzene	17.37	105	2137	No Calib	#	
90) 1,2-Dichlorobenzene	19.32	146	3165470	157.535	ng	100
91) d-Limonene	19.38	68	1779054	99.652	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.88	157	2354619	312.686	ng	87
93) n-Undecane	18.09	58	79519	No Calib		
94) 1,2,4-Trichlorobenzene	21.45	180	4528876	304.771	ng	100
95) Naphthalene	21.57	128	7684712	165.718	ng	100
96) n-Dodecane	18.82	57	4613	No Calib	#	
97) Hexachlorobutadiene	21.99	225	1860498	188.006	ng	100
98) Cyclohexanone	15.32	55	118	No Calib	#	
99) tert-Butylbenzene	18.62	119	4354391	126.268	ng	99
100) n-Butylbenzene	19.73	91	5383587	121.064	ng	99
101) 1,1,1,2-Tetrachloroethane	14.95	131	1423343	150.687	ng	99

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

Vial: 15
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 07:28:02 2022



Data File : I:\MS13\DATA\2022_06\02\06022231.D
 Acq On : 2 Jun 2022 23:20
 Sample : 25ng R13060222 ICV Std.
 Misc : S35-06022211/S35-05202201 (6/19)

Vial: 1
 Operator: TZ
 Inst : GCMS13

T2 6/3/22

Quant Time: Jun 03 08:43:50 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.38	130	157557	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	684326	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.91	54	121496	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.13	65	266486	12.657	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.28%
57) Toluene-d8 (SS2)	12.51	98	754177	11.996	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.00%
73) Bromofluorobenzene (SS3)	16.88	174	280473	12.572	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.56%

Target Compounds

						Qvalue
2) Propene	3.38	42	406296	25.836	ng	99
3) Dichlorodifluoromethan...	3.46	85	793147	23.834	ng	100
4) Chloromethane	3.60	50	414998	23.545	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	383175	24.262	ng	99
6) Vinyl Chloride	3.79	62	395460	24.482	ng	99
7) 1,3-Butadiene	3.91	54	273532	22.771	ng	98
8) Bromomethane	4.13	94	317368	24.331	ng	99
9) Chloroethane	4.27	64	204924	23.560	ng	99
10) Ethanol	4.46	45	877008	95.588	ng	99
11) Acetonitrile	4.60	41	494847	21.934	ng	100
12) Acrolein	4.66	56	371699	49.609	ng	100
13) Acetone	4.78	58	957099	110.949	ng	99
14) Trichlorofluoromethane	4.87	101	684806	23.125	ng	99
15) 2-Propanol (Isopropanol)	5.00	45	1322745	44.430	ng	99
16) Acrylonitrile	5.15	53	743999	49.608	ng	100
17) 1,1-Dichloroethene	5.38	96	331442	24.612	ng	98
18) 2-Methyl-2-Propanol (t...	5.48	59	1542327	47.863	ng	100
19) Methylene Chloride	5.51	84	326321	23.167	ng	98
20) 3-Chloro-1-propene (Al...	5.58	41	448004	22.916	ng	99
21) Trichlorotrifluoroethane	5.70	151	348850	24.469	ng	99
22) Carbon Disulfide	5.73	76	2339039	44.035	ng	100
23) trans-1,2-Dichloroethene	6.28	61	512470	25.271	ng	99
24) 1,1-Dichloroethane	6.46	63	572714	24.555	ng	100
25) Methyl tert-Butyl Ether	6.50	73	1055037	24.650	ng	99
26) Vinyl Acetate	6.59	86	244485	122.473	ng	# 92
27) 2-Butanone (MEK)	6.81	72	396377	49.157	ng	98
28) cis-1,2-Dichloroethene	7.22	61	474746	24.772	ng	99
29) Diisopropyl Ether	7.41	87	462011	46.710	ng	# 68
30) Ethyl Acetate	7.42	61	303286	65.298	ng	100
31) n-Hexane	7.41	57	430188	23.549	ng	100
32) Chloroform	7.51	83	639070	24.707	ng	99
34) Tetrahydrofuran (THF)	7.88	72	388463	47.231	ng	97
35) Ethyl tert-Butyl Ether	7.95	87	788339	49.837	ng	99
36) 1,2-Dichloroethane	8.25	62	520733	24.989	ng	100
38) 1,1,1-Trichloroethane	8.52	97	614286	23.737	ng	100
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.91	56	10796	No Calib	#	
41) Benzene	9.02	78	1290918	24.344	ng	100
42) Carbon Tetrachloride	9.19	117	540870	23.005	ng	99
43) Cyclohexane	9.33	84	898896	47.925	ng	98
44) tert-Amyl Methyl Ether	9.71	73	1910431	48.214	ng	100
45) 1,2-Dichloropropane	9.97	63	307250	24.818	ng	100
46) Bromodichloromethane	10.19	83	518604	25.038	ng	99
47) Trichloroethene	10.26	130	400899	24.024	ng	100
48) 1,4-Dioxane	10.23	88	267138	25.151	ng	97
49) 2,2,4-Trimethylpentane...	10.33	57	1244889	24.486	ng	100
50) Methyl Methacrylate	10.51	100	266188	51.571	ng	98

Data File : I:\MS13\DATA\2022_06\02\06022231.D
 Acq On : 2 Jun 2022 23:20
 Sample : 25ng R13060222 ICV Std.
 Misc : S35-06022211/S35-05202201 (6/19)

Vial: 1
 Operator: TZ
 Inst : GCMS13

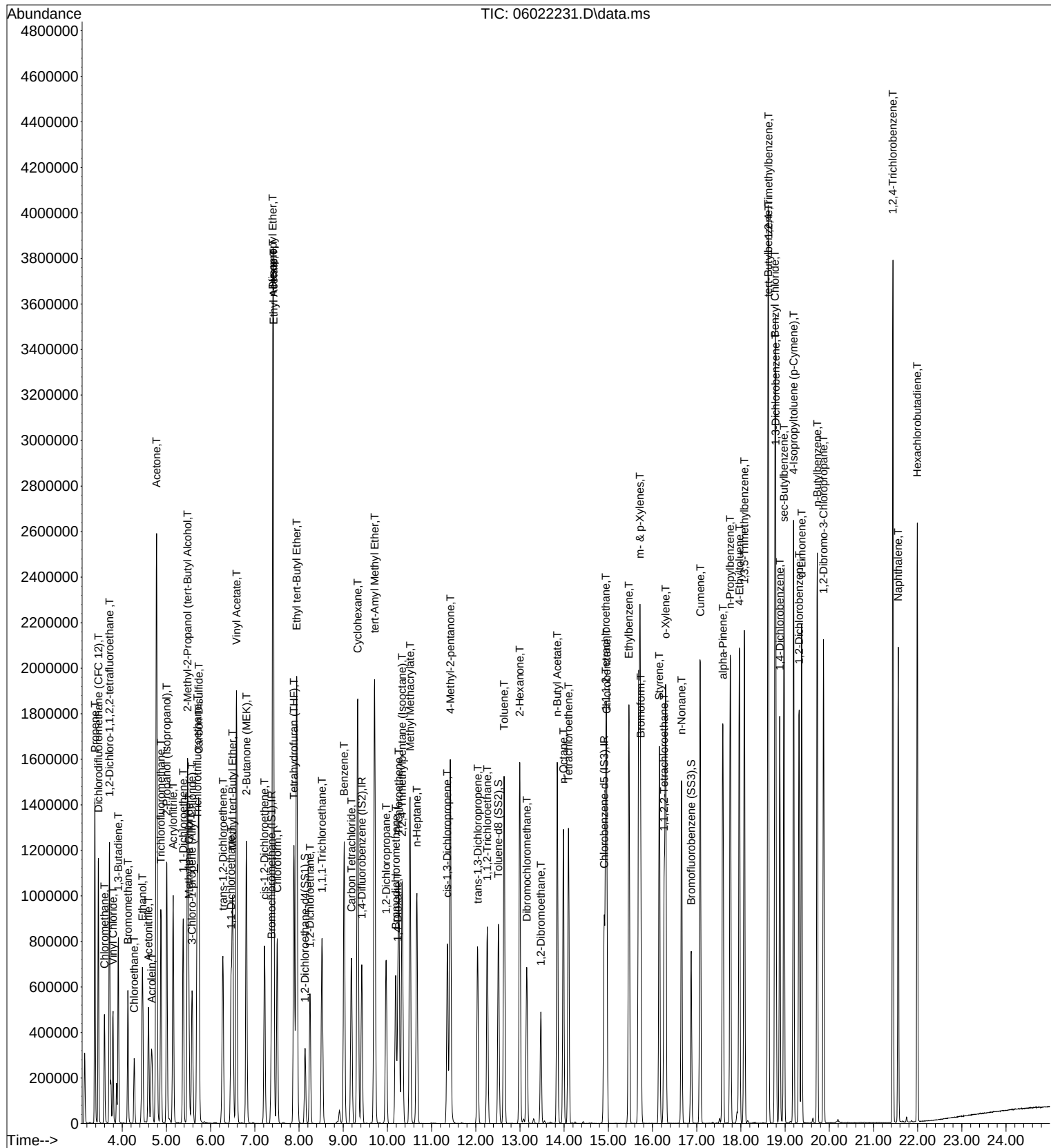
Quant Time: Jun 03 08:43:50 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Fri Jun 03 08:41:22 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	302856	24.779	ng	99
52) cis-1,3-Dichloropropene	11.36	75	552148	26.170	ng	99
53) 4-Methyl-2-pentanone	11.42	58	534187	50.987	ng	99
54) trans-1,3-Dichloropropene	12.04	75	520564	24.947	ng	100
55) 1,1,2-Trichloroethane	12.26	97	343580	24.359	ng	100
58) Toluene	12.64	91	1377277	23.043	ng	100
59) 2-Hexanone	13.00	43	1242182	46.924	ng	99
60) Dibromochloromethane	13.15	129	479898	22.960	ng	99
61) 1,2-Dibromoethane	13.47	107	406896	23.079	ng	100
62) n-Butyl Acetate	13.84	43	1359509	47.084	ng	100
63) n-Octane	13.99	57	258776	22.699	ng	99
64) Tetrachloroethene	14.10	166	469983	22.968	ng	100
65) Chlorobenzene	14.96	112	933994	22.635	ng	100
66) Ethylbenzene	15.46	91	1606336	23.135	ng	100
67) m- & p-Xylenes	15.72	91	2624625	46.776	ng	100
68) Bromoform	15.73	173	430315	23.091	ng	99
69) Styrene	16.15	104	949331	23.986	ng	100
70) o-Xylene	16.30	91	1331725	23.547	ng	99
71) n-Nonane	16.65	43	587566	24.115	ng	99
72) 1,1,2,2-Tetrachloroethane	16.26	83	576512	22.835	ng	99
74) Cumene	17.08	105	1639880	23.011	ng	100
75) alpha-Pinene	17.59	93	840845	24.122	ng	100
76) n-Propylbenzene	17.76	91	1919784	23.120	ng	100
77) 3-Ethyltoluene	17.08	105	1639880	No Calib		
78) 4-Ethyltoluene	17.97	105	1605888	23.942	ng	100
79) 1,3,5-Trimethylbenzene	18.08	105	1421034	23.637	ng	100
80) alpha-Methylstyrene	16.87	118	1022	No Calib	#	
81) 2-Ethyltoluene	16.88	105	570	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	1372582	23.058	ng	100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	2155985	44.523	ng	100
85) 1,3-Dichlorobenzene	18.79	146	789001	21.573	ng	100
86) 1,4-Dichlorobenzene	18.88	146	814807	21.338	ng	100
87) sec-Butylbenzene	18.98	105	1804360	22.878	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	1601084	23.064	ng	100
89) 1,2,3-Trimethylbenzene	17.35	105	390	No Calib	#	
90) 1,2-Dichlorobenzene	19.32	146	821998	22.412	ng	100
91) d-Limonene	19.37	68	470884	24.378	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.87	157	630783	44.256	ng	99
93) n-Undecane	18.08	58	22960	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	1180831	39.314	ng	100
95) Naphthalene	21.56	128	1510916	18.362	ng	100
96) n-Dodecane	18.82	57	1243	No Calib	#	
97) Hexachlorobutadiene	21.99	225	511150	21.157	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.62	119	1287553	22.491	ng	100
100) n-Butylbenzene	19.73	91	1435562	23.240	ng	100
101) 1,1,1,2-Tetrachloroethane	14.94	131	381570	22.537	ng	99

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

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Jun 03 08:43:50 2022



Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: 06022231.D

Acq. Method File: TO15.M

Data File Path: I:\MS13\DATA\2022_06\02\

Sample Name: 25ng R13060222 ICV Std.

Operator: TZ

Misc Info: S35-06022211/S35-05202201 (

Date Acquired: 6/2/2022

23:20

Instrument Name: GCMS13

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	Propene	3.38	25.8	25.75	100	56	128	*	*
3)	Dichlorodifluoromethane (CFC 12)	3.46	23.8	26.00	92	71	112	*	*
4)	Chloromethane	3.60	23.5	25.75	91	53	126	*	*
5)	1,2-Dichloro-1,1,2,2-tetrafluoroethane	3.71	24.3	26.00	93	62	121	*	*
6)	Vinyl Chloride	3.79	24.5	26.00	94	63	123	*	*
7)	1,3-Butadiene	3.91	22.8	25.75	89	63	135	*	*
8)	Bromomethane	4.13	24.3	25.75	94	71	112	*	*
9)	Chloroethane	4.27	23.6	25.75	92	66	117	*	*
10)	Ethanol	4.46	96	104.00	92	57	117	*	*
11)	Acetonitrile	4.60	21.9	25.25	87	59	131	*	*
12)	Acrolein	4.66	49.6	52.00	95	71	123	*	*
13)	Acetone	4.78	111	128.00	87	60	117	*	*
14)	Trichlorofluoromethane	4.87	23.1	25.25	91	71	114	*	*
15)	2-Propanol (Isopropanol)	5.00	44.4	50.00	89	61	124	*	*
16)	Acrylonitrile	5.15	49.6	50.25	99	65	130	*	*
17)	1,1-Dichloroethene	5.38	24.6	26.25	94	74	114	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alcohol)	5.48	47.9	51.00	94	56	135	*	*
19)	Methylene Chloride	5.51	23.2	26.00	89	75	112	*	*
20)	3-Chloro-1-propene (Allyl Chloride)	5.58	22.9	25.50	90	57	127	*	*
21)	Trichlorotrifluoroethane	5.70	24.5	27.00	91	73	114	*	*
22)	Carbon Disulfide	5.73	44.0	51.75	85	70	113	*	*
23)	trans-1,2-Dichloroethene	6.28	25.3	26.00	97	76	119	*	*
24)	1,1-Dichloroethane	6.46	24.6	26.75	92	70	114	*	*
25)	Methyl tert-Butyl Ether	6.50	24.6	25.75	96	72	118	*	*
26)	Vinyl Acetate	6.59	122	117.75	104	56	137	*	*
27)	2-Butanone (MEK)	6.81	49.2	51.00	96	74	121	*	*
28)	cis-1,2-Dichloroethene	7.22	24.8	25.75	96	73	117	*	*
29)	Diisopropyl Ether	7.41	46.7	52.25	89	58	124	*	*
30)	Ethyl Acetate	7.42	65.3	72.50	90	59	161	*	*
31)	n-Hexane	7.41	23.5	26.00	90	55	130	*	*
32)	Chloroform	7.51	24.7	26.25	94	71	114	*	*
34)	Tetrahydrofuran (THF)	7.88	47.2	50.50	93	73	114	*	*
35)	Ethyl tert-Butyl Ether	7.95	49.8	51.75	96	76	119	*	*
36)	1,2-Dichloroethane	8.25	25.0	26.25	95	71	119	*	*
38)	1,1,1-Trichloroethane	8.52	23.7	26.00	91	73	119	*	*
41)	Benzene	9.02	24.3	26.00	93	72	113	*	*
42)	Carbon Tetrachloride	9.19	23.0	25.25	91	67	123	*	*
43)	Cyclohexane	9.33	47.9	51.50	93	70	119	*	*
44)	tert-Amyl Methyl Ether	9.71	48.2	51.50	94	74	120	*	*
45)	1,2-Dichloropropane	9.97	24.8	25.75	96	70	118	*	*
46)	Bromodichloromethane	10.19	25.0	26.00	96	74	119	*	*
47)	Trichloroethene	10.26	24.0	25.50	94	74	115	*	*
48)	1,4-Dioxane	10.23	25.2	25.75	98	77	124	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	10.33	24.5	26.25	93	65	120	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: 06022231.D

Data File Path: I:\MS13\DATA\2022_06\02\

Operator: TZ

Date Acquired: 6/2/2022

23:20

TO15.M

Sample Name: 25ng R13060222 ICV Std.

Misc Info: S35-06022211/S35-05202201 (

Instrument Name: GCMS13

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	Methyl Methacrylate	10.51	51.6	51.25	101	78	126	*	*
51)	n-Heptane	10.67	24.8	25.75	96	70	119	*	*
52)	cis-1,3-Dichloropropene	11.36	26.2	26.00	101	81	126	*	*
53)	4-Methyl-2-pentanone	11.42	51.0	51.50	99	73	129	*	*
54)	trans-1,3-Dichloropropene	12.04	24.9	25.00	100	80	127	*	*
55)	1,1,2-Trichloroethane	12.26	24.4	26.00	94	78	117	*	*
58)	Toluene	12.64	23.0	25.75	89	70	118	*	*
59)	2-Hexanone	13.00	46.9	50.75	92	74	132	*	*
60)	Dibromochloromethane	13.15	23.0	26.25	88	69	137	*	*
61)	1,2-Dibromoethane	13.47	23.1	26.00	89	76	128	*	*
62)	n-Butyl Acetate	13.84	47.1	50.75	93	75	134	*	*
63)	n-Octane	13.99	22.7	26.00	87	68	120	*	*
64)	Tetrachloroethene	14.10	23.0	26.50	87	63	130	*	*
65)	Chlorobenzene	14.96	22.6	25.75	88	70	118	*	*
66)	Ethylbenzene	15.46	23.1	25.75	90	71	123	*	*
67)	m- & p-Xylenes	15.72	46.8	52.00	90	67	127	*	*
68)	Bromoform	15.73	23.1	26.25	88	65	149	*	*
69)	Styrene	16.15	24.0	25.25	95	76	132	*	*
70)	o-Xylene	16.30	23.5	26.00	90	69	124	*	*
71)	n-Nonane	16.65	24.1	26.00	93	64	127	*	*
72)	1,1,2,2-Tetrachloroethane	16.26	22.8	26.00	88	69	128	*	*
74)	Cumene	17.08	23.0	25.75	89	69	125	*	*
75)	alpha-Pinene	17.59	24.1	26.25	92	68	129	*	*
76)	n-Propylbenzene	17.76	23.1	26.00	89	70	127	*	*
78)	4-Ethyltoluene	17.97	23.9	26.00	92	69	127	*	*
79)	1,3,5-Trimethylbenzene	18.08	23.6	26.00	91	66	129	*	*
82)	1,2,4-Trimethylbenzene	18.62	23.1	25.75	90	63	142	*	*
84)	Benzyl Chloride	18.77	44.5	52.00	86	73	145	*	*
85)	1,3-Dichlorobenzene	18.79	21.6	26.00	83	67	136	*	*
86)	1,4-Dichlorobenzene	18.88	21.3	26.25	81	63	134	*	*
87)	sec-Butylbenzene	18.98	22.9	25.50	90	68	130	*	*
88)	4-Isopropyltoluene (p-Cymene)	19.19	23.1	25.75	90	60	139	*	*
90)	1,2-Dichlorobenzene	19.32	22.4	26.25	85	64	139	*	*
91)	d-Limonene	19.37	24.4	25.75	95	63	137	*	*
92)	1,2-Dibromo-3-Chloropropane	19.87	44.3	50.50	88	72	145	*	*
94)	1,2,4-Trichlorobenzene	21.44	39.3	52.50	75	62	154	*	*
95)	Naphthalene	21.56	18.4	26.25	70	62	156	*	*
97)	Hexachlorobutadiene	21.99	21.2	26.50	80	55	142	*	*
99)	tert-Butylbenzene	18.62	22.5	25.75	87	61	140	*	*
100)	n-Butylbenzene	19.73	23.2	26.00	89	70	131	*	*
101)	1,1,1,2-Tetrachloroethane	14.94	22.5	25.75	87	70	130	*	*

Bold = 75 Compound List

* = Pass

Data File : I:\MS13\DATA\2022_06\14\06142201.D

Vial: 1

Acq On : 14 Jun 2022 8:41

Operator: TZ

Sample : CCV R13061422 25ng

Inst : GCMS13

Misc : S35-06022211/S35-06022209 (7/2)

TZ 6/14/22

Quant Time: Jun 14 09:06:03 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

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 (IS1)	1.000	1.000	0.0	92	0.00
2 T	Propene	1.248	1.173	6.0	88	0.01
3 T	Dichlorodifluoromethane (CF	2.640	2.818	-6.7	100	0.01
4 T	Chloromethane	1.398	1.321	5.5	83	0.01
5 T	1,2-Dichloro-1,1,2,2-tetra	1.253	1.260	-0.6	93	0.01
6 T	Vinyl Chloride	1.282	1.283	-0.1	92	0.00
7 T	1,3-Butadiene	0.953	0.932	2.2	93	0.01
8 T	Bromomethane	1.035	0.994	4.0	86	0.01
9 T	Chloroethane	0.690	0.635	8.0	85	0.00
10 T	Ethanol	0.728	0.647	11.1	87	0.01
11 T	Acetonitrile	1.790	1.647	8.0	85	0.00
12 T	Acrolein	0.594	0.564	5.1	82	0.00
13 T	Acetone	0.684	0.593	13.3	89	0.00
14 T	Trichlorofluoromethane	2.349	2.404	-2.3	99	0.00
15 T	2-Propanol (Isopropanol)	2.362	2.279	3.5	93	0.01
16 T	Acrylonitrile	1.190	1.160	2.5	86	0.00
17 T	1,1-Dichloroethene	1.068	0.987	7.6	87	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.556	2.512	1.7	88	0.00
19 T	Methylene Chloride	1.117	1.001	10.4	87	0.01
20 T	3-Chloro-1-propene (Allyl C	1.551	1.450	6.5	89	0.00
21 T	Trichlorotrifluoroethane	1.131	1.069	5.5	89	0.00
22 T	Carbon Disulfide	4.214	3.613	14.3	87	0.00
23 T	trans-1,2-Dichloroethene	1.609	1.598	0.7	90	0.01
24 T	1,1-Dichloroethane	1.850	1.732	6.4	89	0.00
25 T	Methyl tert-Butyl Ether	3.396	3.429	-1.0	92	0.00
26 T	Vinyl Acetate	0.158	0.167	-5.7	86	0.00
27 T	2-Butanone (MEK)	0.640	0.615	3.9	87	0.00
28 T	cis-1,2-Dichloroethene	1.520	1.493	1.8	90	0.00
29 T	Diisopropyl Ether	0.785	0.704	10.3	91	0.00
30 T	Ethyl Acetate	0.368	0.336	8.7	90	0.00
31 T	n-Hexane	1.449	1.306	9.9	91	0.00
32 T	Chloroform	2.052	2.022	1.5	93	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.670	1.868	-11.9	104	0.00
34 T	Tetrahydrofuran (THF)	0.653	0.606	7.2	88	0.00
35 T	Ethyl tert-Butyl Ether	1.255	1.257	-0.2	92	0.00
36 T	1,2-Dichloroethane	1.653	1.759	-6.4	99	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	93	0.00
38 T	1,1,1-Trichloroethane	0.473	0.486	-2.7	96	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	0#	-9.18#
40 T	1-Butanol	0.000	0.000	0.0	79	0.00
41 T	Benzene	0.969	0.890	8.2	87	0.00
42 T	Carbon Tetrachloride	0.429	0.454	-5.8	98	0.00
43 T	Cyclohexane	0.343	0.319	7.0	87	0.00
44 T	tert-Amyl Methyl Ether	0.724	0.702	3.0	91	0.00
45 T	1,2-Dichloropropane	0.226	0.210	7.1	86	0.00
46 T	Bromodichloromethane	0.378	0.387	-2.4	93	0.00
47 T	Trichloroethene	0.305	0.293	3.9	89	0.00
48 T	1,4-Dioxane	0.194	0.190	2.1	88	0.00
49 T	2,2,4-Trimethylpentane (Iso	0.929	0.864	7.0	87	0.00
50 T	Methyl Methacrylate	0.094	0.096	-2.1	87	0.00
51 T	n-Heptane	0.223	0.211	5.4	86	0.00
52 T	cis-1,3-Dichloropropene	0.385	0.399	-3.6	88	0.00
53 T	4-Methyl-2-pentanone	0.191	0.194	-1.6	90	0.00
54 T	trans-1,3-Dichloropropene	0.381	0.414	-8.7	91	0.00
55 T	1,1,2-Trichloroethane	0.258	0.245	5.0	88	0.00

Data File : I:\MS13\DATA\2022_06\14\06142201.D
 Acq On : 14 Jun 2022 8:41
 Sample : CCV R13061422 25ng
 Misc : S35-06022211/S35-06022209 (7/2)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 14 09:06:03 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 08:41:22 2022
 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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	104	0.00
57	S Toluene-d8 (SS2)	6.468	5.751	11.1	94	0.00
58	T Toluene	6.149	5.158	16.1	88	0.00
59	T 2-Hexanone	2.724	2.509	7.9	93	0.00
60	T Dibromochloromethane	2.150	1.949	9.3	94	0.00
61	T 1,2-Dibromoethane	1.814	1.576	13.1	89	0.00
62	T n-Butyl Acetate	2.971	2.731	8.1	92	0.00
63	T n-Octane	1.173	0.958	18.3	89	0.00
64	T Tetrachloroethene	2.105	1.775	15.7	90	0.00
65	T Chlorobenzene	4.245	3.549	16.4	89	0.00
66	T Ethylbenzene	7.144	6.160	13.8	91	0.00
67	T m- & p-Xylenes	5.773	5.139	11.0	92	0.00
68	T Bromoform	1.917	1.765	7.9	93	0.00
69	T Styrene	4.072	3.775	7.3	88	0.00
70	T o-Xylene	5.819	5.155	11.4	93	0.00
71	T n-Nonane	2.507	2.210	11.8	91	0.00
72	T 1,1,2,2-Tetrachloroethane	2.597	2.136	17.8	89	0.00
73	S Bromofluorobenzene (SS3)	2.295	2.197	4.3	100	0.00
74	T Cumene	7.332	6.389	12.9	92	0.00
75	T alpha-Pinene	3.586	3.211	10.5	93	0.00
76	T n-Propylbenzene	8.543	7.577	11.3	92	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	92	0.00
78	T 4-Ethyltoluene	6.901	6.261	9.3	92	0.00
79	T 1,3,5-Trimethylbenzene	6.185	5.606	9.4	93	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	104	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	138	0.00
82	T 1,2,4-Trimethylbenzene	6.124	5.532	9.7	94	0.00
83	T n-Decane	0.000	0.000	0.0	63	0.00
84	T Benzyl Chloride	4.982	4.812	3.4	92	0.00
85	T 1,3-Dichlorobenzene	3.763	3.200	15.0	91	0.00
86	T 1,4-Dichlorobenzene	3.929	3.374	14.1	89	0.00
87	T sec-Butylbenzene	8.114	7.146	11.9	92	0.00
88	T 4-Isopropyltoluene (p-Cymen	7.142	6.426	10.0	93	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	39#	0.00
90	T 1,2-Dichlorobenzene	3.773	3.299	12.6	91	0.00
91	T d-Limonene	1.987	1.780	10.4	89	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.466	1.338	8.7	91	0.00
93	T n-Undecane	0.000	0.000	0.0	84	0.00
94	T 1,2,4-Trichlorobenzene	3.090	2.713	12.2	88	0.00
95	T Naphthalene	8.466	7.469	11.8	83	0.00
96	T n-Dodecane	0.000	0.000	0.0	91	0.00
97	T Hexachlorobutadiene	2.486	2.172	12.6	96	0.00
98	T Cyclohexanone	0.000	0.000	0.0	0#	-15.32#
99	T tert-Butylbenzene	5.890	5.156	12.5	95	0.00
100	T n-Butylbenzene	6.355	5.863	7.7	93	0.00
101	T 1,1,1,2-Tetrachloroethane	1.742	1.509	13.4	93	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS13\DATA\2022_06\14\06142201.D
 Acq On : 14 Jun 2022 8:41
 Sample : CCV R13061422 25ng
 Misc : S35-06022211/S35-06022209 (7/2)

Vial: 1
 Operator: TZ
 Inst : GCMS13

TZ 6/14/22

Quant Time: Jun 14 09:06:03 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.38	130	141470	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	611529	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.90	54	118379	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.14	65	264278	13.980	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	111.84%	
57) Toluene-d8 (SS2)	12.51	98	680779	11.114	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	88.88%	
73) Bromofluorobenzene (SS3)	16.88	174	260109	11.966	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	95.76%	

Target Compounds

						Qvalue
2) Propene	3.38	42	345108	24.440	ng	97
3) Dichlorodifluoromethan...	3.46	85	837251	28.021	ng	99
4) Chloromethane	3.60	50	381125	24.082	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	385083	27.155	ng	99
6) Vinyl Chloride	3.79	62	377540	26.030	ng	100
7) 1,3-Butadiene	3.92	54	274279	25.429	ng	96
8) Bromomethane	4.13	94	286846	24.492	ng	100
9) Chloroethane	4.28	64	183401	23.483	ng	99
10) Ethanol	4.46	45	662337	80.399	ng	99
11) Acetonitrile	4.60	41	433317	21.391	ng	99
12) Acrolein	4.67	56	319081	47.429	ng	99
13) Acetone	4.78	58	871176	112.473	ng	# 86
14) Trichlorofluoromethane	4.88	101	700627	26.350	ng	100
15) 2-Propanol (Isopropanol)	5.02	45	1302676	48.732	ng	95
16) Acrylonitrile	5.16	53	666262	49.476	ng	99
17) 1,1-Dichloroethene	5.39	96	298706	24.703	ng	93
18) 2-Methyl-2-Propanol (t...	5.48	59	1492858	51.596	ng	99
19) Methylene Chloride	5.51	84	294580	23.292	ng	96
20) 3-Chloro-1-propene (Al...	5.59	41	430741	24.538	ng	98
21) Trichlorotrifluoroethane	5.70	151	326782	25.528	ng	100
22) Carbon Disulfide	5.73	76	2146524	45.006	ng	100
23) trans-1,2-Dichloroethene	6.29	61	479212	26.318	ng	96
24) 1,1-Dichloroethane	6.47	63	514472	24.566	ng	100
25) Methyl tert-Butyl Ether	6.50	73	1018808	26.510	ng	99
26) Vinyl Acetate	6.59	86	160827	89.726	ng	# 91
27) 2-Butanone (MEK)	6.81	72	358304	49.489	ng	94
28) cis-1,2-Dichloroethene	7.22	61	439232	25.525	ng	96
29) Diisopropyl Ether	7.41	87	422198	47.538	ng	# 92
30) Ethyl Acetate	7.42	61	387377	92.888	ng	99
31) n-Hexane	7.41	57	388078	23.660	ng	99
32) Chloroform	7.51	83	612072	26.354	ng	99
34) Tetrahydrofuran (THF)	7.89	72	337729	45.731	ng	100
35) Ethyl tert-Butyl Ether	7.95	87	746687	52.572	ng	98
36) 1,2-Dichloroethane	8.25	62	527600	28.198	ng	100
38) 1,1,1-Trichloroethane	8.52	97	617766	26.713	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.92	56	10863	No Calib	#	
41) Benzene	9.02	78	1131904	23.887	ng	99
42) Carbon Tetrachloride	9.19	117	583437	27.770	ng	99
43) Cyclohexane	9.33	84	808748	48.251	ng	100
44) tert-Amyl Methyl Ether	9.71	73	1793478	50.651	ng	97
45) 1,2-Dichloropropane	9.97	63	264750	23.931	ng	100
46) Bromodichloromethane	10.19	83	497375	26.871	ng	99
47) Trichloroethene	10.26	130	368763	24.728	ng	98
48) 1,4-Dioxane	10.24	88	241297	25.422	ng	97
49) 2,2,4-Trimethylpentane...	10.34	57	1119738	24.646	ng	93
50) Methyl Methacrylate	10.51	100	245218	53.164	ng	100

Data File : I:\MS13\DATA\2022_06\14\06142201.D

Vial: 1

Acq On : 14 Jun 2022 8:41

Operator: TZ

Sample : CCV R13061422 25ng

Inst : GCMS13

Misc : S35-06022211/S35-06022209 (7/2)

Quant Time: Jun 14 09:06:03 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	270832	24.797	ng	99
52) cis-1,3-Dichloropropene	11.36	75	512493	27.182	ng	100
53) 4-Methyl-2-pentanone	11.42	58	492878	52.644	ng	96
54) trans-1,3-Dichloropropene	12.04	75	510997	27.403	ng	100
55) 1,1,2-Trichloroethane	12.26	97	311058	24.678	ng	99
58) Toluene	12.64	91	1257783	21.598	ng	100
59) 2-Hexanone	12.99	43	1217663	47.209	ng	97
60) Dibromochloromethane	13.15	129	484412	23.786	ng	99
61) 1,2-Dibromoethane	13.47	107	388108	22.593	ng	99
62) n-Butyl Acetate	13.84	43	1318947	46.882	ng	97
63) n-Octane	13.99	57	238052	21.431	ng	99
64) Tetrachloroethene	14.10	166	436966	21.916	ng	100
65) Chlorobenzene	14.96	112	873869	21.735	ng	99
66) Ethylbenzene	15.46	91	1502137	22.204	ng	99
67) m- & p-Xylenes	15.72	91	2506357	45.844	ng	98
68) Bromoform	15.73	173	434505	23.930	ng	100
69) Styrene	16.15	104	920487	23.869	ng	98
70) o-Xylene	16.30	91	1269339	23.035	ng	98
71) n-Nonane	16.65	43	544237	22.924	ng	99
72) 1,1,2,2-Tetrachloroethane	16.26	83	525931	21.380	ng	99
74) Cumene	17.08	105	1573145	22.655	ng	99
75) alpha-Pinene	17.59	93	820975	24.172	ng	97
76) n-Propylbenzene	17.76	91	1883711	23.283	ng	99
77) 3-Ethyltoluene	17.08	105	1573145	No Calib	#	
78) 4-Ethyltoluene	17.96	105	1571285	24.043	ng	100
79) 1,3,5-Trimethylbenzene	18.08	105	1380262	23.563	ng	99
80) alpha-Methylstyrene	16.87	118	989	No Calib	#	
81) 2-Ethyltoluene	16.87	105	425	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	1349055	23.259	ng	98
83) n-Decane	16.92	58	104	No Calib	#	
84) Benzyl Chloride	18.77	91	2346973	49.743	ng	98
85) 1,3-Dichlorobenzene	18.79	146	787909	22.111	ng	100
86) 1,4-Dichlorobenzene	18.88	146	830877	22.331	ng	100
87) sec-Butylbenzene	18.98	105	1759576	22.898	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	1582195	23.392	ng	98
89) 1,2,3-Trimethylbenzene	17.36	105	134	No Calib	#	
90) 1,2-Dichlorobenzene	19.32	146	820054	22.948	ng	100
91) d-Limonene	19.37	68	442391	23.506	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.87	157	633443	45.612	ng	91
93) n-Undecane	18.08	58	19122	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	1310509	44.780	ng	99
95) Naphthalene	21.56	128	1839182	22.940	ng	100
96) n-Dodecane	18.82	57	973	No Calib	#	
97) Hexachlorobutadiene	21.99	225	529554	22.496	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.62	119	1269676	22.763	ng	99
100) n-Butylbenzene	19.73	91	1443530	23.985	ng	99
101) 1,1,1,2-Tetrachloroethane	14.94	131	371632	22.528	ng	100

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

Data File : I:\MS13\DATA\2022_06\14\06142201.D
Acq On : 14 Jun 2022 8:41
Sample : CCV R13061422 25ng
Misc : S35-06022211/S35-06022209 (7/2)

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Jun 14 09:06:03 2022

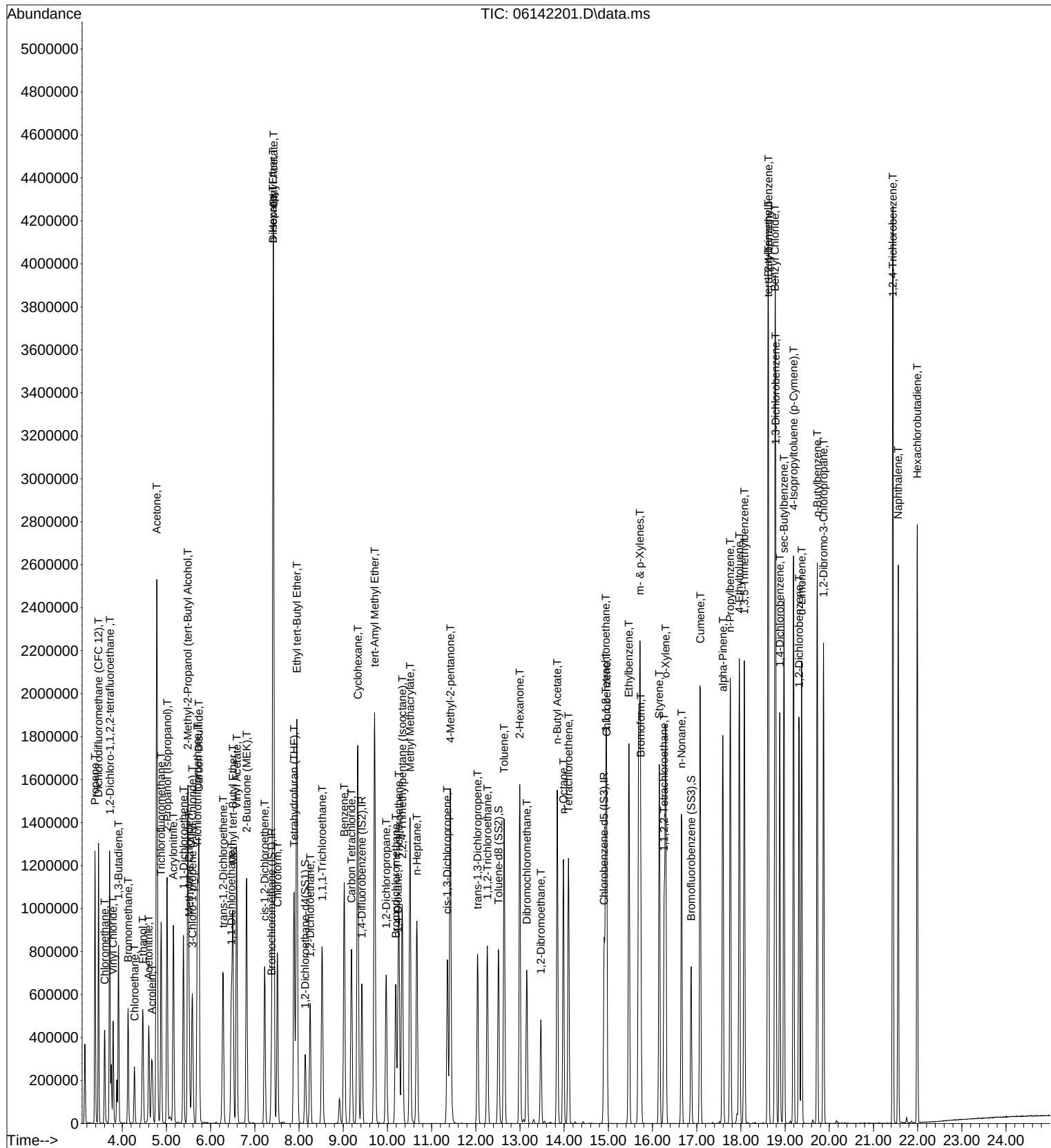
Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2022_06\14\06142229.D

Vial: 1

Acq On : 15 Jun 2022 2:49

Operator: TZ

TZ 6/15/22

Sample : CCVend R13061422_25ng

Inst : GCMS13

Misc : S35-06022211/S35-06022209 (7/2)

Quant Time: Jun 15 07:21:11 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.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 (IS1)	1.000	1.000	0.0	88	0.00
2 T	Propene	1.248	1.163	6.8	83	0.00
3 T	Dichlorodifluoromethane (CF	2.640	2.815	-6.6	95	0.00
4 T	Chloromethane	1.398	1.315	5.9	78	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.253	1.215	3.0	85	0.00
6 T	Vinyl Chloride	1.282	1.246	2.8	84	0.00
7 T	1,3-Butadiene	0.953	0.946	0.7	90	0.00
8 T	Bromomethane	1.035	0.742	28.3	60	0.00
9 T	Chloroethane	0.690	0.616	10.7	78	0.00
10 T	Ethanol	0.728	0.627	13.9	80	0.00
11 T	Acetonitrile	1.790	1.555	13.1	76	0.00
12 T	Acrolein	0.594	0.553	6.9	77	0.00
13 T	Acetone	0.684	0.575	15.9	82	0.00
14 T	Trichlorofluoromethane	2.349	2.409	-2.6	93	0.00
15 T	2-Propanol (Isopropanol)	2.362	2.215	6.2	85	0.00
16 T	Acrylonitrile	1.190	1.115	6.3	78	0.00
17 T	1,1-Dichloroethene	1.068	0.967	9.5	81	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.556	2.486	2.7	82	0.00
19 T	Methylene Chloride	1.117	0.974	12.8	80	0.00
20 T	3-Chloro-1-propene (Allyl C	1.551	1.406	9.3	82	0.00
21 T	Trichlorotrifluoroethane	1.131	1.063	6.0	84	0.00
22 T	Carbon Disulfide	4.214	3.529	16.3	80	0.00
23 T	trans-1,2-Dichloroethene	1.609	1.547	3.9	83	0.00
24 T	1,1-Dichloroethane	1.850	1.679	9.2	81	0.00
25 T	Methyl tert-Butyl Ether	3.396	3.371	0.7	85	0.00
26 T	Vinyl Acetate	0.158	0.163	-3.2	79	0.00
27 T	2-Butanone (MEK)	0.640	0.595	7.0	80	0.00
28 T	cis-1,2-Dichloroethene	1.520	1.453	4.4	83	0.00
29 T	Diisopropyl Ether	0.785	0.700	10.8	86	0.00
30 T	Ethyl Acetate	0.368	0.330	10.3	84	0.00
31 T	n-Hexane	1.449	1.266	12.6	84	0.00
32 T	Chloroform	2.052	1.982	3.4	87	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.670	1.861	-11.4	98	0.00
34 T	Tetrahydrofuran (THF)	0.653	0.587	10.1	80	0.00
35 T	Ethyl tert-Butyl Ether	1.255	1.229	2.1	85	0.00
36 T	1,2-Dichloroethane	1.653	1.745	-5.6	93	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	86	0.00
38 T	1,1,1-Trichloroethane	0.473	0.492	-4.0	91	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	0#	-9.18#
40 T	1-Butanol	0.000	0.000	0.0	83	0.00
41 T	Benzene	0.969	0.883	8.9	80	0.00
42 T	Carbon Tetrachloride	0.429	0.463	-7.9	93	0.00
43 T	Cyclohexane	0.343	0.320	6.7	81	0.00
44 T	tert-Amyl Methyl Ether	0.724	0.705	2.6	86	0.00
45 T	1,2-Dichloropropane	0.226	0.207	8.4	79	0.00
46 T	Bromodichloromethane	0.378	0.392	-3.7	88	0.00
47 T	Trichloroethene	0.305	0.291	4.6	83	0.00
48 T	1,4-Dioxane	0.194	0.191	1.5	82	0.00
49 T	2,2,4-Trimethylpentane (Iso	0.929	0.854	8.1	80	0.00
50 T	Methyl Methacrylate	0.094	0.096	-2.1	81	0.00
51 T	n-Heptane	0.223	0.209	6.3	80	0.00
52 T	cis-1,3-Dichloropropene	0.385	0.398	-3.4	82	0.00
53 T	4-Methyl-2-pentanone	0.191	0.191	0.0	82	0.00
54 T	trans-1,3-Dichloropropene	0.381	0.414	-8.7	85	0.00
55 T	1,1,2-Trichloroethane	0.258	0.245	5.0	82	0.00

Data File : I:\MS13\DATA\2022_06\14\06142229.D
 Acq On : 15 Jun 2022 2:49
 Sample : CCVend R13061422_25ng
 Misc : S35-06022211/S35-06022209 (7/2)

Vial: 1
 Operator: TZ
 Inst : GCMS13

Quant Time: Jun 15 07:21:11 2022
 Quant Method : I:\MS13\METHODS\R13060222.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 03 08:41:22 2022
 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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	100	0.00
57	S Toluene-d8 (SS2)	6.468	5.611	13.2	88	0.00
58	T Toluene	6.149	5.029	18.2	83	0.00
59	T 2-Hexanone	2.724	2.438	10.5	86	0.00
60	T Dibromochloromethane	2.150	1.911	11.1	89	0.00
61	T 1,2-Dibromoethane	1.814	1.539	15.2	83	0.00
62	T n-Butyl Acetate	2.971	2.615	12.0	84	0.00
63	T n-Octane	1.173	0.916	21.9	81	0.00
64	T Tetrachloroethene	2.105	1.748	17.0	85	0.00
65	T Chlorobenzene	4.245	3.476	18.1	84	0.00
66	T Ethylbenzene	7.144	6.023	15.7	85	0.00
67	T m- & p-Xylenes	5.773	5.031	12.9	87	0.00
68	T Bromoform	1.917	1.738	9.3	88	0.00
69	T Styrene	4.072	3.684	9.5	83	0.00
70	T o-Xylene	5.819	5.055	13.1	87	0.00
71	T n-Nonane	2.507	2.125	15.2	84	0.00
72	T 1,1,2,2-Tetrachloroethane	2.597	2.078	20.0	83	0.00
73	S Bromofluorobenzene (SS3)	2.295	2.217	3.4	97	0.00
74	T Cumene	7.332	6.241	14.9	86	0.00
75	T alpha-Pinene	3.586	3.084	14.0	86	0.00
76	T n-Propylbenzene	8.543	7.366	13.8	86	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	86	0.00
78	T 4-Ethyltoluene	6.901	6.140	11.0	86	0.00
79	T 1,3,5-Trimethylbenzene	6.185	5.486	11.3	87	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	108	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	163	0.00
82	T 1,2,4-Trimethylbenzene	6.124	5.452	11.0	89	0.00
83	T n-Decane	0.000	0.000	0.0	0#	-16.92#
84	T Benzyl Chloride	4.982	4.694	5.8	86	0.00
85	T 1,3-Dichlorobenzene	3.763	3.176	15.6	87	0.00
86	T 1,4-Dichlorobenzene	3.929	3.313	15.7	84	0.00
87	T sec-Butylbenzene	8.114	7.001	13.7	86	0.00
88	T 4-Isopropyltoluene (p-Cymen	7.142	6.335	11.3	88	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	0#	-17.36#
90	T 1,2-Dichlorobenzene	3.773	3.225	14.5	85	0.00
91	T d-Limonene	1.987	1.723	13.3	82	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.466	1.332	9.1	87	0.00
93	T n-Undecane	0.000	0.000	0.0	77	0.00
94	T 1,2,4-Trichlorobenzene	3.090	2.684	13.1	84	0.00
95	T Naphthalene	8.466	7.393	12.7	79	0.00
96	T n-Dodecane	0.000	0.000	0.0	90	0.01
97	T Hexachlorobutadiene	2.486	2.166	12.9	92	0.00
98	T Cyclohexanone	0.000	0.000	0.0	0#	-15.32#
99	T tert-Butylbenzene	5.890	5.044	14.4	89	0.00
100	T n-Butylbenzene	6.355	5.743	9.6	88	0.00
101	T 1,1,1,2-Tetrachloroethane	1.742	1.492	14.4	88	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS13\DATA\2022_06\14\06142229.D

Vial: 1

Acq On : 15 Jun 2022 2:49

Operator: TZ

Sample : CCVend R13061422_25ng

Inst : GCMS13

Misc : S35-06022211/S35-06022209 (7/2)

TZ 6/15/22

Quant Time: Jun 15 07:21:11 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.37	130	133940	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	569163	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.90	54	113572	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.13	65	249298	13.929	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	111.44%
57) Toluene-d8 (SS2)	12.51	98	637245	10.844	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.72%
73) Bromofluorobenzene (SS3)	16.88	174	251818	12.075	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.56%

Target Compounds

						Qvalue
2) Propene	3.37	42	323980	24.234	ng	98
3) Dichlorodifluoromethan...	3.45	85	791706	27.986	ng	100
4) Chloromethane	3.59	50	359202	23.972	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	351370	26.171	ng	100
6) Vinyl Chloride	3.79	62	347082	25.275	ng	99
7) 1,3-Butadiene	3.91	54	263501	25.804	ng	99
8) Bromomethane	4.12	94	202787	18.288	ng	99
9) Chloroethane	4.26	64	168433	22.779	ng	100
10) Ethanol	4.45	45	608327	77.995	ng	100
11) Acetonitrile	4.59	41	387306	20.195	ng	98
12) Acrolein	4.66	56	296232	46.508	ng	99
13) Acetone	4.77	58	799369	109.004	ng	# 85
14) Trichlorofluoromethane	4.87	101	664800	26.408	ng	100
15) 2-Propanol (Isopropanol)	5.00	45	1198449	47.353	ng	96
16) Acrylonitrile	5.15	53	606151	47.543	ng	99
17) 1,1-Dichloroethene	5.37	96	277190	24.213	ng	93
18) 2-Methyl-2-Propanol (t...	5.47	59	1398236	51.043	ng	98
19) Methylene Chloride	5.50	84	271255	22.653	ng	95
20) 3-Chloro-1-propene (Al...	5.58	41	395516	23.798	ng	99
21) Trichlorotrifluoroethane	5.69	151	307676	25.386	ng	99
22) Carbon Disulfide	5.73	76	1985085	43.961	ng	100
23) trans-1,2-Dichloroethene	6.27	61	439242	25.479	ng	97
24) 1,1-Dichloroethane	6.46	63	472155	23.813	ng	100
25) Methyl tert-Butyl Ether	6.49	73	948090	26.057	ng	99
26) Vinyl Acetate	6.58	86	148871	87.725	ng	# 93
27) 2-Butanone (MEK)	6.80	72	328464	47.918	ng	93
28) cis-1,2-Dichloroethene	7.21	61	404913	24.853	ng	96
29) Diisopropyl Ether	7.41	87	397470	47.270	ng	# 95
30) Ethyl Acetate	7.42	61	360781	91.374	ng	98
31) n-Hexane	7.41	57	356005	22.925	ng	99
32) Chloroform	7.50	83	568021	25.832	ng	99
34) Tetrahydrofuran (THF)	7.88	72	309633	44.284	ng	98
35) Ethyl tert-Butyl Ether	7.94	87	691100	51.394	ng	98
36) 1,2-Dichloroethane	8.24	62	495458	27.969	ng	100
38) 1,1,1-Trichloroethane	8.52	97	582348	27.056	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.91	56	11444	No Calib		
41) Benzene	9.02	78	1045674	23.709	ng	100
42) Carbon Tetrachloride	9.18	117	553959	28.329	ng	100
43) Cyclohexane	9.32	84	753089	48.275	ng	100
44) tert-Amyl Methyl Ether	9.71	73	1676899	50.883	ng	97
45) 1,2-Dichloropropane	9.97	63	242756	23.576	ng	98
46) Bromodichloromethane	10.18	83	468597	27.201	ng	99
47) Trichloroethene	10.26	130	341723	24.621	ng	100
48) 1,4-Dioxane	10.23	88	225997	25.582	ng	99
49) 2,2,4-Trimethylpentane...	10.33	57	1030320	24.366	ng	92
50) Methyl Methacrylate	10.51	100	227291	52.945	ng	99

Data File : I:\MS13\DATA\2022_06\14\06142229.D

Vial: 1

Acq On : 15 Jun 2022 2:49

Operator: TZ

Sample : CCVend R13061422_25ng

Inst : GCMS13

Misc : S35-06022211/S35-06022209 (7/2)

Quant Time: Jun 15 07:21:11 2022

Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	249802	24.574	ng	99
52) cis-1,3-Dichloropropene	11.36	75	475457	27.094	ng	100
53) 4-Methyl-2-pentanone	11.42	58	452528	51.932	ng	95
54) trans-1,3-Dichloropropene	12.04	75	476512	27.456	ng	100
55) 1,1,2-Trichloroethane	12.26	97	290141	24.732	ng	98
58) Toluene	12.64	91	1176487	21.057	ng	99
59) 2-Hexanone	12.99	43	1135173	45.873	ng	96
60) Dibromochloromethane	13.15	129	455851	23.331	ng	98
61) 1,2-Dibromoethane	13.47	107	363604	22.062	ng	99
62) n-Butyl Acetate	13.84	43	1211772	44.896	ng	97
63) n-Octane	13.98	57	218569	20.510	ng	98
64) Tetrachloroethene	14.10	166	412904	21.586	ng	99
65) Chlorobenzene	14.96	112	821200	21.290	ng	100
66) Ethylbenzene	15.46	91	1409040	21.709	ng	99
67) m- & p-Xylenes	15.72	91	2354250	44.885	ng	98
68) Bromoform	15.73	173	410595	23.570	ng	99
69) Styrene	16.15	104	861825	23.294	ng	98
70) o-Xylene	16.30	91	1194186	22.589	ng	98
71) n-Nonane	16.65	43	502022	22.041	ng	98
72) 1,1,2,2-Tetrachloroethane	16.26	83	490973	20.804	ng	100
74) Cumene	17.08	105	1474226	22.129	ng	99
75) alpha-Pinene	17.59	93	756627	23.220	ng	96
76) n-Propylbenzene	17.76	91	1756842	22.634	ng	99
77) 3-Ethyltoluene	17.08	105	1474226	No Calib		
78) 4-Ethyltoluene	17.96	105	1478422	23.579	ng	99
79) 1,3,5-Trimethylbenzene	18.08	105	1296050	23.062	ng	98
80) alpha-Methylstyrene	16.88	118	1024	No Calib	#	
81) 2-Ethyltoluene	16.88	105	502	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	1275581	22.923	ng	98
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	2196612	48.527	ng	99
85) 1,3-Dichlorobenzene	18.79	146	750375	21.949	ng	99
86) 1,4-Dichlorobenzene	18.88	146	782612	21.924	ng	100
87) sec-Butylbenzene	18.98	105	1653732	22.431	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	1496496	23.061	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	769229	22.436	ng	100
91) d-Limonene	19.37	68	411033	22.764	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.87	157	605271	45.429	ng	92
93) n-Undecane	18.08	58	17570	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.44	180	1243521	44.290	ng	99
95) Naphthalene	21.56	128	1746452	22.705	ng	100
96) n-Dodecane	18.83	57	963	No Calib	#	
97) Hexachlorobutadiene	21.99	225	506667	22.434	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.62	119	1191470	22.265	ng	99
100) n-Butylbenzene	19.73	91	1356673	23.495	ng	99
101) 1,1,1,2-Tetrachloroethane	14.94	131	352442	22.269	ng	100

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

Data File : I:\MS13\DATA\2022_06\14\06142229.D
Acq On : 15 Jun 2022 2:49
Sample : CCVend R13061422_25ng
Misc : S35-06022211/S35-06022209 (7/2)

Vial: 1
Operator: TZ
Inst : GCMS13

Quant Time: Jun 15 07:21:11 2022

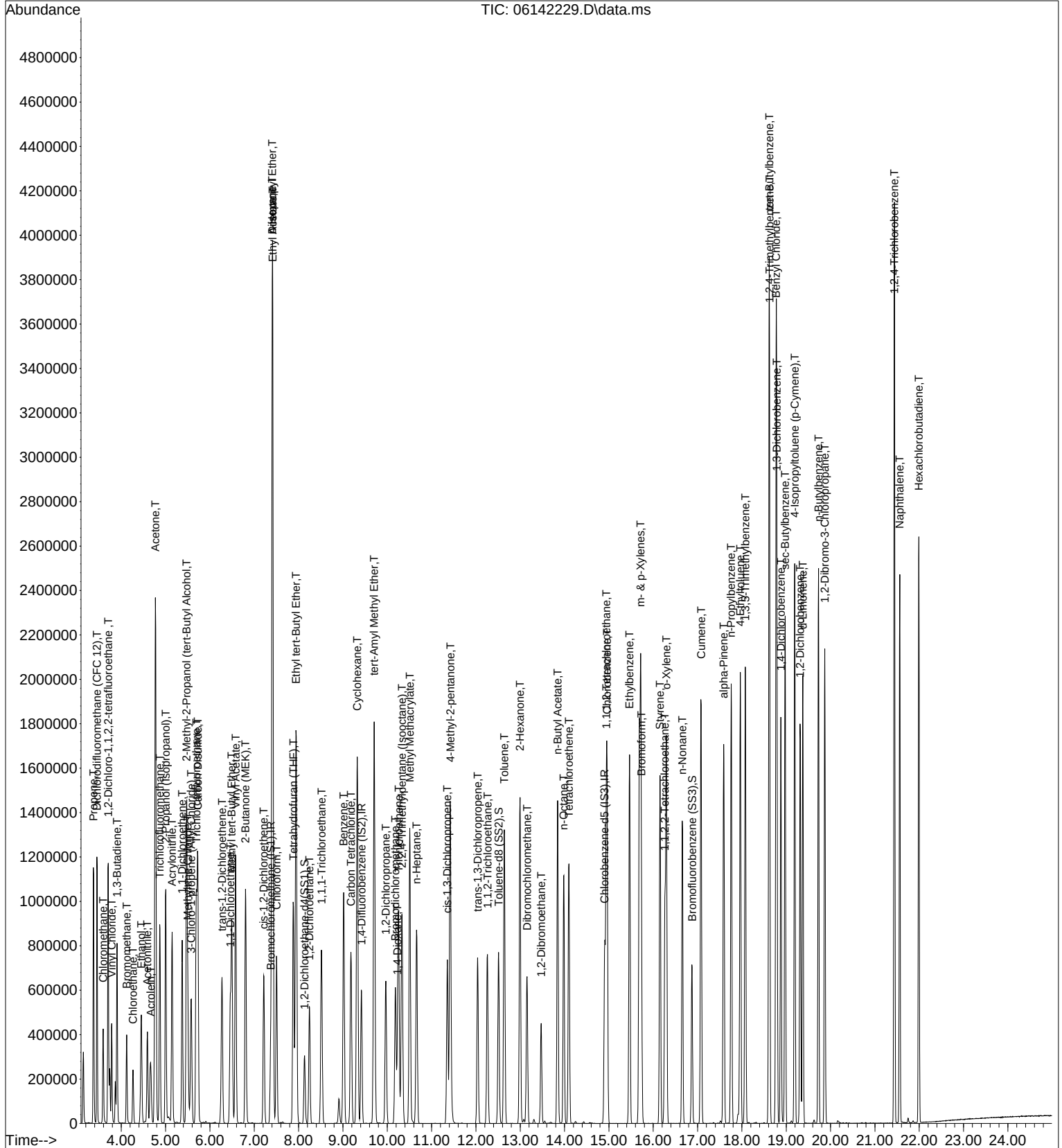
Quant Method : I:\MS13\METHODS\R13060222.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 03 08:41:22 2022

Response via : Initial Calibration

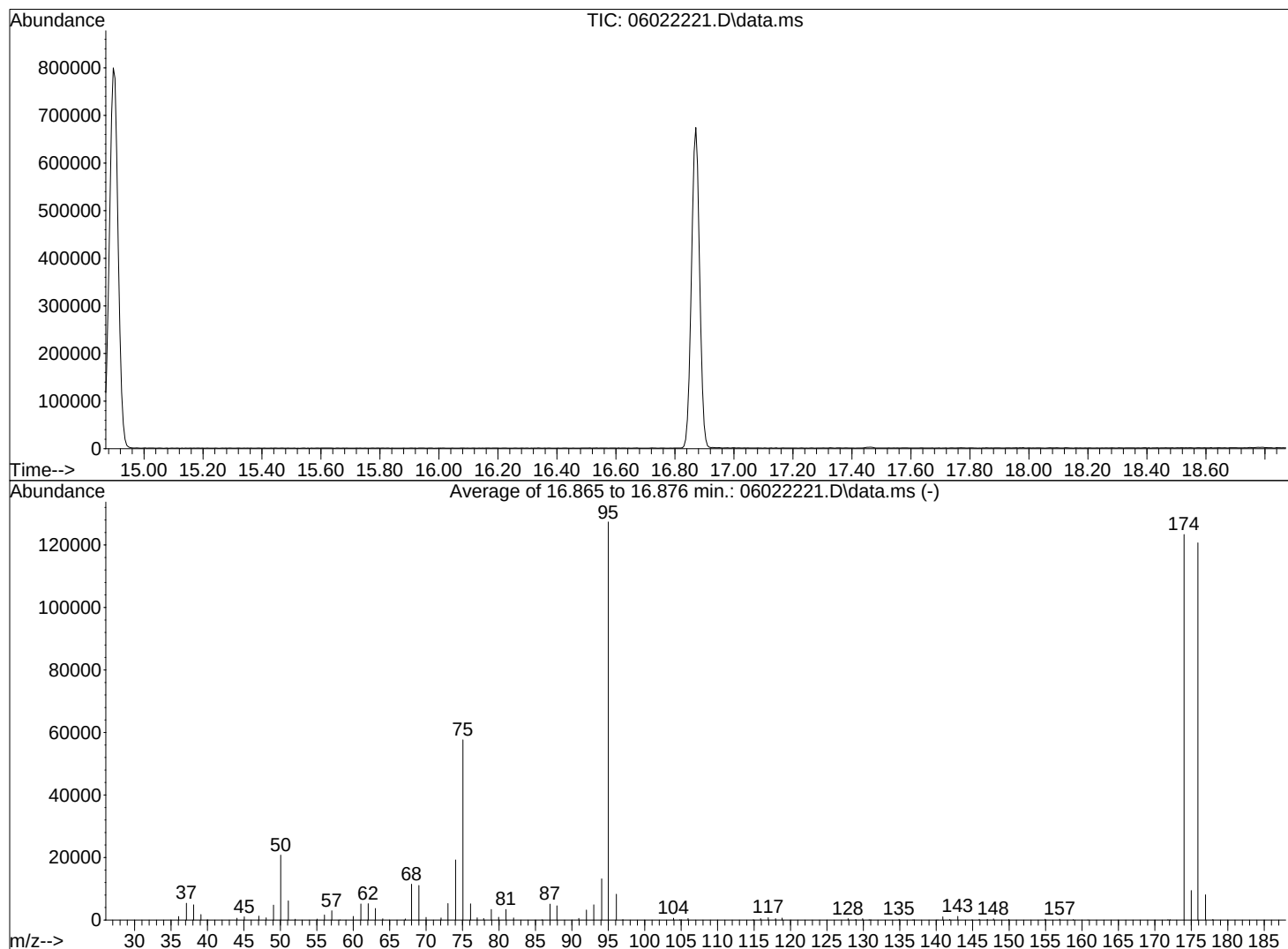
DataAcq Meth:T015.M



Data Path : I:\MS13\DATA\2022_06\02\
 Data File : 06022221.D
 Acq On : 2 Jun 2022 17:04
 Operator : TZ
 Sample : T0-15 BFB Std.
 Misc : S35-06022211
 ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13060222.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Fri Jun 03 07:34:02 2022



AutoFind: Scans 2421, 2422, 2423; Background Corrected with Scan 2413

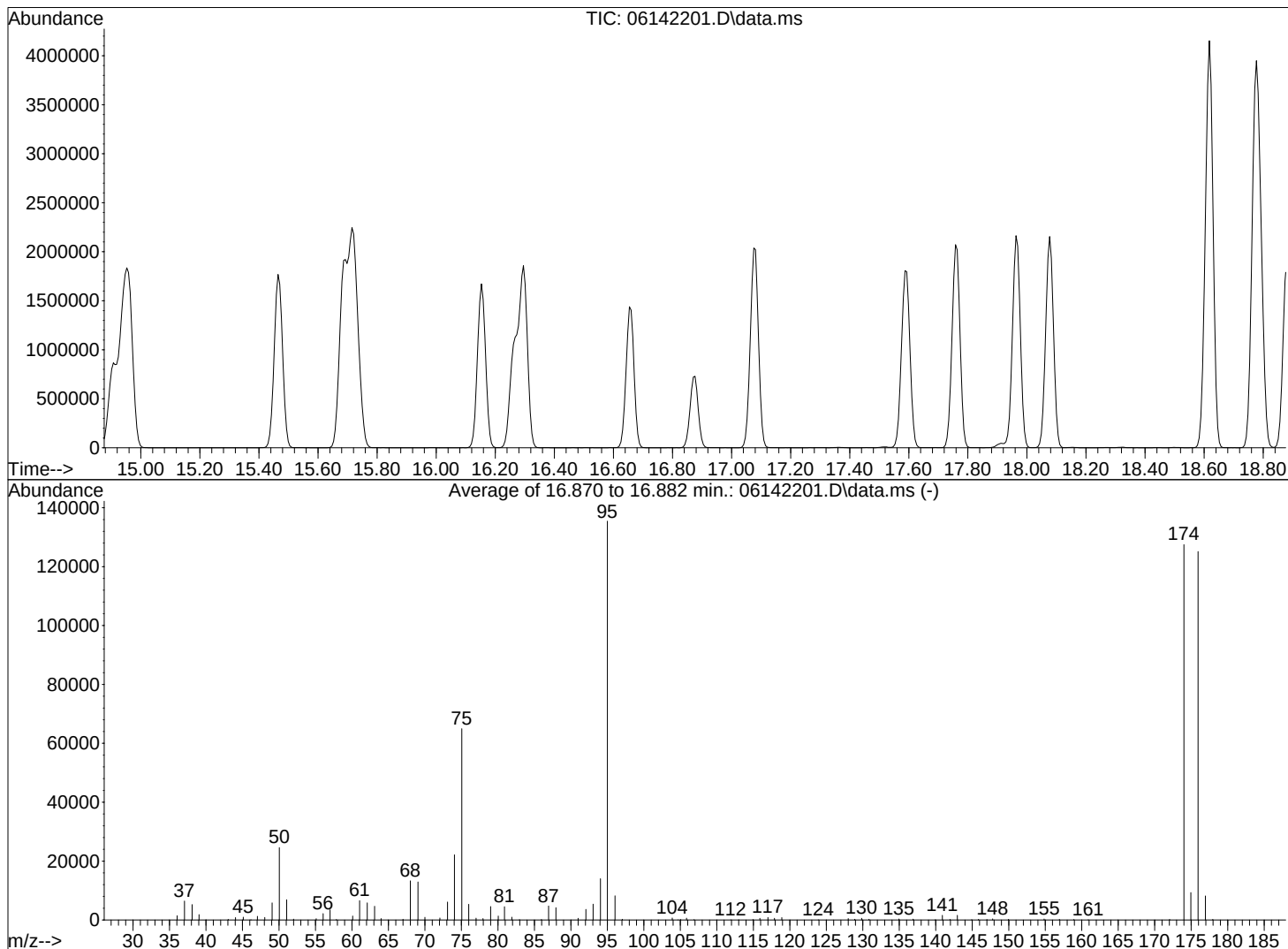
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.3	20752	PASS
75	95	30	66	45.3	57667	PASS
95	95	100	100	100.0	127365	PASS
96	95	5	9	6.5	8265	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	96.9	123355	PASS
175	174	4	9	7.6	9429	PASS
176	174	93	101	97.8	120693	PASS
177	176	5	9	6.7	8071	PASS

TZ 6/3/22

Data Path : I:\MS13\DATA\2022_06\14\
Data File : 06142201.D
Acq On : 14 Jun 2022 8:41
Operator : TZ
Sample : CCV R13061422 25ng
Misc : S35-06022211/S35-06022209 (7/2)
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13060222.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Jun 03 08:41:22 2022



AutoFind: Scans 2422, 2423, 2424; Background Corrected with Scan 2413

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.2	24595	PASS
75	95	30	66	48.0	64952	PASS
95	95	100	100	100.0	135453	PASS
96	95	5	9	6.1	8239	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	94.1	127496	PASS
175	174	4	9	7.3	9323	PASS
176	174	93	101	98.1	125128	PASS
177	176	5	9	6.5	8189	PASS

TZ 6/14/22

Injection Log

Directory: J:\MS13\DATA\2022_06\02\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	6/2/22 17:04	06022221.D	TO-15 BFB Std.	S35-06022211	TZ	1	passed
2	6/2/22 17:41	06022222.D	0.1ng R13060222 ICAL Std.	S35-06022211/S35-06022202 (7/2)	TZ	13	R13060222.M
3	6/2/22 18:18	06022223.D	0.2ng R13060222 ICAL Std.	S35-06022211/S35-06022202 (7/2)	TZ	13	
4	6/2/22 18:55	06022224.D	0.5ng R13060222 ICAL Std.	S35-06022211/S35-06022201 (7/2)	TZ	14	
5	6/2/22 19:32	06022225.D	1.0ng R13060222 ICAL Std.	S35-06022211/S35-06022201 (7/2)	TZ	14	
6	6/2/22 20:09	06022226.D	5.0ng R13060222 ICAL Std.	S35-06022211/S35-06022201 (7/2)	TZ	14	
7	6/2/22 20:47	06022227.D	25ng R13060222 ICAL Std.	S35-06022211/S35-06022208 (7/2)	TZ	15	
8	6/2/22 21:25	06022228.D	50ng R13060222 ICAL Std.	S35-06022211/S35-06022208 (7/2)	TZ	15	
9	6/2/22 22:03	06022229.D	100ng R13060222 ICAL Std.	S35-06022211/S35-06022208 (7/2)	TZ	15	
10	6/2/22 22:41	06022230.D	Blank	S35-06022211	TZ	1	
11	6/2/22 23:20	06022231.D	25ng R13060222 ICV Std.	S35-06022211/S35-05202201 (6/19)	TZ	1	passed
12	6/2/22 23:59	06022232.D	25ng R13060222 ICV Std.	S35-06022211/S35-05202201 (6/19)	TZ	1	not used
R13060222.M ranges from 0.1ng-->100ng							

Injection Log

Directory: I:\MS13\DATA\2022_06\15\

TZ 6/15/22

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	6/14/22 8:41	06142201.D	CCV R13061422 25ng	S35-06022211/S35-06022209 (7/2)	TZ	1	passed
2	6/14/22 9:18	06142202.D	CCV C13061422 25ng	S35-06022211/S35-05272207 (6/26)	TZ	1	passed
3	6/14/22 9:59	06142203.D	Blank	S35-06022211	TZ	1	
4	6/14/22 10:36	06142204.D	MB R13061422 1000mL	S35-06022211_AC01837	TZ	1	passed
5	6/14/22 11:15	06142205.D	LCS R13061422 25ng	S35-06022211/S35-06022203 (7/2)	TZ	1	passed
6	6/14/22 11:52	06142206.D	LCSD R13061422 25ng	S35-06022211/S35-06022203 (7/2)	TZ	1	passed
7	6/14/22 12:29	06142207.D	P2202561-001dil (100mL)	S35-06022211	TZ	9	
8	6/14/22 13:05	06142208.D	P2202561-002dil (100mL)	S35-06022211	TZ	10	
9	6/14/22 13:41	06142209.D	P2202561-003dil (100mL)	S35-06022211	TZ	11	
10	6/14/22 14:18	06142210.D	P2202553-001 (1000mL)	S35-06022211	TZ	13	
11	6/14/22 14:55	06142211.D	P2202032-001 (150mL)	S35-06022211	TZ	14	
12	6/14/22 15:32	06142212.D	P2202032-001dil (50mL)	S35-06022211	TZ	14	
13	6/14/22 16:41	06142213.D	P2202077-001 (1000mL)	S35-06022211	TZ	2	
14	6/14/22 17:18	06142214.D	P2202077-004 (1000mL)	S35-06022211	TZ	3	
15	6/14/22 17:56	06142215.D	P2202614-001 (1000mL)	S35-06022211	TZ	4	
16	6/14/22 18:33	06142216.D	P2202614-002 (1000mL)	S35-06022211	TZ	5	
17	6/14/22 19:10	06142217.D	P2202614-003 (1000mL)	S35-06022211	TZ	6	
18	6/14/22 19:46	06142218.D	P2202614-004 (1000mL)	S35-06022211	TZ	7	
19	6/14/22 20:24	06142219.D	P2202614-005 (1000mL)	S35-06022211	TZ	14	
20	6/14/22 21:02	06142220.D	System	S35-06022211/S35-06022209 (7/2)	TZ	1	
21	6/14/22 21:41	06142221.D	RL R13061422 0.5ng	S35-06022211/S35-06072202 (7/7)	TZ	15	not needed
22	6/14/22 22:20	06142222.D	P2202604-001 (1000mL)	S35-06022211	TZ	8	
23	6/14/22 22:58	06142223.D	P2202604-002 (1000mL)	S35-06022211	TZ	9	
24	6/14/22 23:37	06142224.D	P2202604-003 (1000mL)	S35-06022211	TZ	10	
25	6/15/22 0:16	06142225.D	P2202604-004 (1000mL)	S35-06022211	TZ	11	
26	6/15/22 0:55	06142226.D	P2202587-001 (1000mL)	S35-06022211	TZ	12	
27	6/15/22 1:33	06142227.D	P2202587-002 (1000mL)	S35-06022211	TZ	13	
28	6/15/22 2:11	06142228.D	P2202587-002dup (1000mL)	S35-06022211	TZ	13	passed
29	6/15/22 2:49	06142229.D	CCVend R13061422_25ng	S35-06022211/S35-06022209 (7/2)	TZ	1	passed

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-03

Cycles: 30

Batch: 29397

Batch Started By: on 5/17/22 0400
Finished Cleaning By: ALESAICHERRE on 5/19/22 0516

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum		Final Vacuum		Comments
				Vacuum	Date/Time	Vacuum	Date/Time	
AS01468	5/17/22	5/18/22	Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE		ms21-05/18/22
AC00812	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AS00754	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AC01851	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AC02228	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AS01278	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AC00641	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AS01398	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AS01654	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AC01947	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AC01183	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AC01217	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AS00356	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	
AS01302	5/17/22		Pass w/ Conditions	-14.3	5/19/22 0516	ALESAICHERRE	-14.0	

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

* QC Canister

Data Path : I:\MS21\DATA\2022_05\18\

Data File : 05182213.D

Acq On : 18 May 2022 18:52

Operator : RVT/KM

Sample : 051822_AS01468_29397 (Sig #1); 051822_AS0146829397 (Sig #2)

Misc : SIM + TICS (Sig #1); S35-04152201 (Sig #2)

APL 5/19/22

ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 04:36:53 2022

Quant Method : I:\MS21\Methods\F21040822.M

Quant Title : EPA T0-15

QLast Update : Mon Apr 11 07:46:15 2022

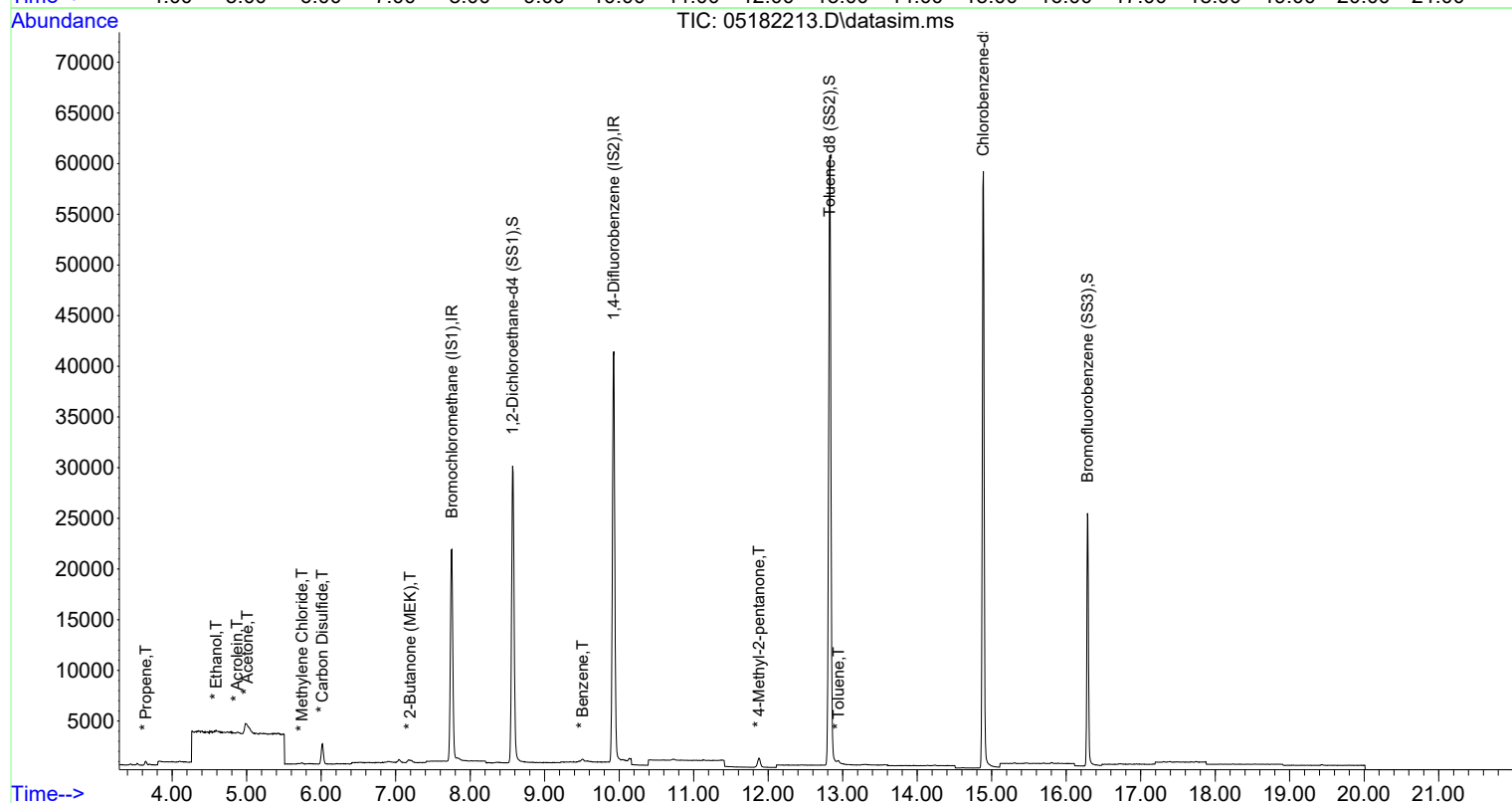
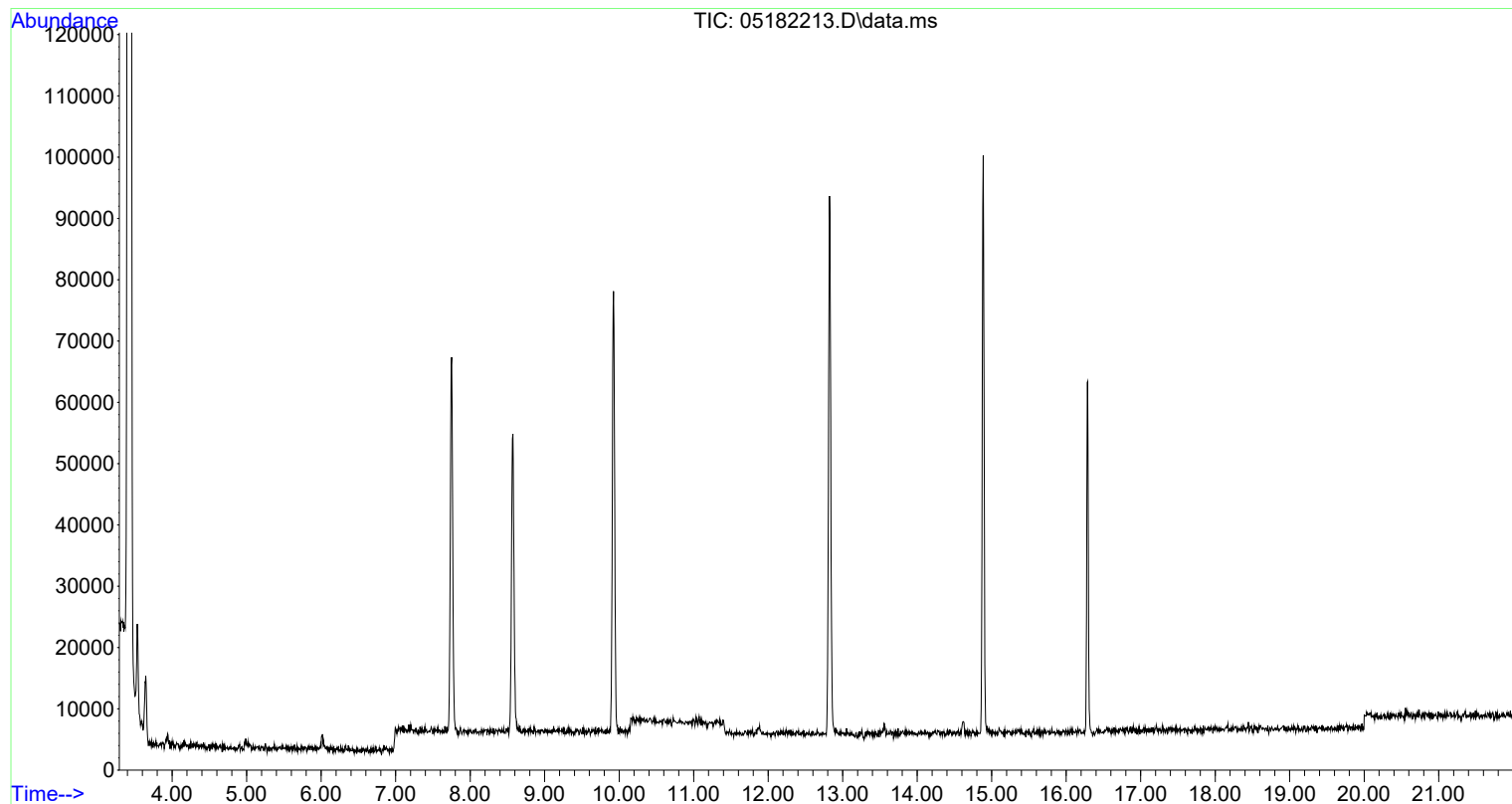
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.75	130	27101	1000.000	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.93	114	74247	1000.000	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	12419	1000.000	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.57	65	44507	924.160	pg	0.00
Spiked Amount 1000.000			Recovery	=	92.42%	
57) Toluene-d8 (SS2)	12.83	98	72852	1139.767	pg	0.00
Spiked Amount 1000.000			Recovery	=	113.98%	
74) Bromofluorobenzene (SS3)	16.29	174	19009	911.852	pg	0.00
Spiked Amount 1000.000			Recovery	=	91.19%	
Target Compounds						
2) * Propene	3.65	42	229	5.504	pg	Qvalue 98
10) * Ethanol	4.59	45	537	25.146	pg	98
12) * Acrolein	4.87	56	121	5.666	pg	# 80
13) * Acetone	5.01	58	1282	37.715	pg	# 50
19) * Methylene Chloride	5.74	84	138	3.367	pg	93
22) * Carbon Disulfide	6.02	76	3753	23.934	pg	99
27) * 2-Butanone (MEK)	7.19	72	298	15.887	pg	# 27
39) * Benzene	9.51	78	481	4.606	pg	96
53) * 4-Methyl-2-pentanone	11.88	58	590	31.680	pg	97
58) * Toluene	12.95	91	307	3.930	pg	96

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

Data Path : I:\MS21\DATA\2022_05\18\
Data File : 05182213.D
Acq On : 18 May 2022 18:52
Operator : RVT/KM
Sample : 051822_AS01468_29397 (Sig #1); 051822_AS0146829397 (Sig #2)
Misc : SIM + TICS (Sig #1); S35-04152201 (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 19 04:36:53 2022
Quant Method : I:\MS21\Methods\F21040822.M
Quant Title : EPA T0-15
QLast Update : Mon Apr 11 07:46:15 2022
Response via : Initial Calibration



Appendix F Data Quality Evaluation

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y11Q1
Project/Task Number: 10233988-2
Sample Data Package: P2105399
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 12 October 2021
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y11Q1	P2105399-001	X
ODSVE-DUP1-Y11Q1	P2105399-002	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The samples were collected in 6-liter Summa canisters. The samples were received in good condition. The canisters' initial field pressures (vacuums) of -29 inches mercury were within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met. No qualification was required.

SECOND SOURCE STANDARDS

All analytes had percent difference (%D) values of less than 30%. No qualification was required.

CONTINUING CALIBRATIONS

Three analytes had percent difference (%D) values greater than 30%, and the associated sample results have been qualified as shown in the table below.

CCV	Analyte	%D	Associated samples	Qualifier
10/26/21 03:57	Propene	+35.8%	ODSVE-EFF-Y11Q1 ODSVE-DUP1-Y11Q1	None – ND J+
10/26/21 03:57 10/26/21 14:21	Chloromethane	+35.6% +32.9%	ODSVE-EFF-Y11Q1 ODSVE-DUP1-Y11Q1	None – ND None – ND
10/26/21 14:21	Hexachlorobutadiene	-33.6%	ODSVE-EFF-Y11Q1 ODSVE-DUP1-Y11Q1	UJ UJ

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several analytes were detected in one canister batch blank. Associated sample results were qualified as shown in the table below. Most analytes did not require qualification, as the sample result was either well above the blank results or was non-detect.

Canister blank	Analyte	Blank result	Sample result	Qualifier
Batch 28377	1,2-Dichloro-1,1,2,2-tetrafluoroethane	41.5 pg	84 pg	U
	Tetrahydrofuran (THF)	35 pg	109 pg	U

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

Four analytes had one or both recoveries of the LCS/LCSD above the control limits, and associated sample results have been qualified as shown in the table below.

Analyte	Recoveries	Control Limits	Associated samples	Qualifier
Propene	139%, OK	57-136%	ODSVE-EFF-Y11Q1 ODSVE-DUP1-Y11Q1	None – ND J+
Chloromethane	142%, 137%	59-132%	ODSVE-EFF-Y11Q1 ODSVE-DUP1-Y11Q1	None – ND None – ND
1,2-Dichloro-1,1,2,2-tetrafluoroethane	OK, 122%	63-121%	ODSVE-EFF-Y11Q1 ODSVE-DUP1-Y11Q1	None – ND J+
Vinyl chloride	131%, 128%	64-127%	ODSVE-EFF-Y11Q1 ODSVE-DUP1-Y11Q1	J+ J+

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was run on sample ODSVE-DUP1-Y11Q1. All results were within the control limit of 25% RPD. No qualification was required.

X. FIELD DUPLICATES

ODSVE-DUP1-Y11Q1 was collected as a field duplicate of ODSVE-EFF-Y11Q1. Several analytes had results outside the control limits and were qualified as shown in the table below.

Analyte	Results	RPD	Control Limit	Qualifier
Propene	ND / >RL	--	--	UJ / J
Ethanol	0.71 / 14 ppbv	181%	25%	J / J
2-Propanol	ND / >RL	--	--	UJ / J
Carbon disulfide	ND / >RL	--	--	UJ / J
2-Butanone (MEK)	0.078 / 0.57 ppbv	149%	25%	J / J

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for the project.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y11Q2
Project/Task Number: 10233988-2
Sample Data Package: P2106529
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 13 December 2021
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y11Q2	P2106529-001	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The sample was collected in a 6-liter Summa canister. The sample was received in good condition. The canister's initial field pressure (vacuum) of -30 inches mercury was within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met. No qualification was required.

SECOND SOURCE STANDARDS

All analytes had percent difference (%D) values of less than 30%. No qualification was required.

CONTINUING CALIBRATIONS

All analytes had percent difference (%D) values of less than 30%. No qualification was required.

VI. BLANKS

METHOD BLANKS

Ethanol was detected at a trace level in the method blank. The sample result was greater than 10 times the blank concentration. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several analytes were detected at trace levels in the canister batch blank. Associated sample results were at least 10 times the blank level (acetone) or non-detect. No qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

All results were within control limits. No qualification was required.

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was not performed on this sample. No qualification was required.

X. FIELD DUPLICATES

A field duplicate sample was not collected. No qualification was required.

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for the project.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y11Q3
Project/Task Number: 10233988-2
Sample Data Package: P2201515
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 05 April 2022
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y11Q3*	P2201515-001	X

*Incorrectly listed on the chain of custody as ODSVE-EFF-Y11Q4

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The sample was collected in a 6-liter Summa canister. The sample was received in good condition. The canister's initial field pressure (vacuum) of -29.0 inches mercury was within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

The sample ID was incorrect on the COC as ODSVE-EFF-YQ11Q4. The correct ID was ODSVE-EFF-Y11Q3. The lab was requested to correct the sample ID in the data packages and EDD, which they did, in revised files.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met. No qualification was required.

SECOND SOURCE STANDARDS

All analytes had percent difference (%D) values of less than 35%. No qualification was required.

CONTINUING CALIBRATIONS

All analytes had percent difference (%D) values of less than 35%. No qualification was required.

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Target analytes were not detected in the batch certification blank. No qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

All recoveries and relative percent differences (RPDs) were within control limits. No qualification was required.

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was run on this sample. RPDs were within the control limit. No qualification was required.

X. FIELD DUPLICATES

A field duplicate sample was not collected.

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for the project.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y11Q4
Project/Task Number: 10233988-5
Sample Data Package: P2202553
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 07 June 2022
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y11Q4	P2202553-001	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The sample was collected in a 6-liter Summa canister. The sample was received in good condition. The canister's initial field pressure (vacuum) of -28 inches mercury was within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met. No qualification was required.

SECOND SOURCE STANDARDS

All analytes had percent difference (%D) values of less than 30%. No qualification was required.

CONTINUING CALIBRATIONS

All analytes had percent difference (%D) values of less than 30%. No qualification was required.

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several target analytes were detected in the batch certification blank but were either non-detect or at least 10 times as high in the sample. No qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

All recoveries and relative percent differences (RPDs) were within control limits. No qualification was required.

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was not run on this sample. No qualification was required.

X. FIELD DUPLICATES

A field duplicate sample was not collected. No qualification was required.

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for the project.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).