VIA ELECTRONIC MAIL

February 03, 2021

Mr. Daniel R. Lanners, P.E.
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7014

Subject: **Indoor Air Sampling Report for Former Manufacturing Building**
Federal-Mogul/Huck Site, Kingston, New York
NYSDEC Site Number V00171

Dear Mr. Lanners:

WSP USA Inc., on behalf of Tenneco Inc. (as successor in interest to Federal-Mogul LLC), has prepared this report to summarize the results of air samples collected on November 17, 2020, at the former Huck manufacturing facility at 85 Grand Street in Kingston, New York. The indoor air sampling event was requested by the New York State Department of Health (NYSDOH) during a telephone conference call on January 24, 2020. The indoor air sampling activities were conducted in accordance with WSP's Indoor Air Sampling Work Plan, dated February 5, 2019, and the New York State Department of Environmental Conservation's (NYSDEC's) conditional approval letter, dated March 4, 2019. In addition, this report recommends performing a sub-slab depressurization pilot test in an area of the building that is not affected by the operation of the Cycle Group 1 soil vapor extraction (SVE) wells and performing a follow-up round of indoor air sampling by the end of March 2021.

BACKGROUND INFORMATION

The site consists of a former manufacturing building and an attached office building, which together occupy approximately 105,000 square feet. The remainder of the property consists mainly of asphalt parking lots and access roads (Figure 1A). The former manufacturing building contains approximately 400 self-storage units and a small office area referred to as the main office complex. The self-storage units have a ceiling constructed of wire mesh and, thus, volatile organic compounds (VOCs) emitted by materials that may be stored in these units would be released to indoor air within the former manufacturing building. The attached office building is used by a moving and truck rental company. Portions of the former manufacturing building are leased to other entities.

Tenneco previously performed indoor air sampling at the site on eight occasions from April 2003 to August 2008 (Figures 1A and 1B). The initial round of indoor air samples was collected from the main office complex and the former Scheffel Furniture space in April 2003 to evaluate indoor air quality in portions of the building that were occupied on a routine basis (Figure 1A). Based on the results of the April 2003 sampling event, an expanded sampling event was performed in August 2003 that included 12 locations in the former manufacturing building (Figure 1A).

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In March 2004, two interim remedial measures (IRMs) were installed at the site (the former Scheffel Furniture space is now used to house treatment equipment). A trench SVE system was installed primarily along the eastern and southern property lines to address VOCs in shallow soil, prevent the offsite migration of VOCs in soil vapor, and address VOCs in soil gas in the vicinity of the former metal finish and chemical storage area and main office complex (Figure 2). In addition, a sub-slab depressurization system was installed in the attached office building in the southeastern portion of the site (Figure 2). Following startup of the sub-slab depressurization system, indoor air samples were collected from the basement and first floor of the attached office building in April 2004 and January 2005. The results from the January 2005 sampling event indicated non-detectable levels of trichloroethene (TCE) on the first floor and less than 1 microgram per cubic meter ($\mu g/m^3$) of TCE in the basement (Figure 1A).

Following startup of the SVE system, indoor air samples were collected in the former manufacturing building in April 2004, July 2004, and January 2005 to evaluate the performance of the SVE system (Figure 1A). The performance monitoring samples were collected at five locations that exhibited the highest TCE concentrations during the August 2003 sampling event, while also targeting occupied spaces near, and downgradient from, the groundwater source areas in the former metal finish and chemical storage area and former degreaser area. Additional indoor air samples were collected in the main office complex in June, July, and August 2008 to verify that pulsed operation of the trench SVE system would not negatively affect indoor air quality within the building. The results from the June, July, and August 2008 samples collected in the main office complex indicated the presence of TCE at concentrations of 4, 3.4 and 1.79 parts per billion by volume, respectively (Figure 1B). These concentrations are equivalent to 22, 18, and 9.6 $\mu g/m^3$ (Figure 1B).

In 2014, WSP installed an air sparging (AS)/SVE system as an IRM to reduce VOC mass in groundwater and vadose zone soils in select areas of the site. The AS/SVE system consists of 12 SVE wells and 9 AS wells divided into two cycle groups to provide for cycled operation of the system (Figure 2). The cycle groups are alternated on an approximately monthly basis[1]. Cycle Group 1 includes SVE and AS wells inside the building in the two groundwater source areas. Cycle Group 2 is comprised of AS and SVE wells located west and southwest of the building.

In March and April 2019, six indoor air samples were collected from the former Family Services space, the Klomm Construction space, the main office complex, and from three locations in the self-storage portion of the main building (Figure 3). The former Family Services space was vacant and used by Allways Moving (the storage facility operator) to store moving carts. The Klomm Construction space was used primarily for the storage of construction supplies, including paints, roofing materials, motor and transmission oils, grease, gas-powered equipment, and coatings and sealants, and appears to be occupied only at the beginning and end of each work day to load and unload supplies. The Klomm Construction space is fully-enclosed and separate from the self-storage portion of the building and has its own entrance from the parking lot. The main office complex is a free-standing enclosure with a drop-tile ceiling and consists of an office area, break room, bathroom, and storage area. Openings in the drop-tile ceiling allow air circulation between the office complex and the surrounding self-storage portion of the building. In addition, the door to the main office complex opens into the self-storage area, which allows further mixing of indoor air between the two spaces[2]. The storage area contains paints, stains, primers, caulks, and materials used to maintain the building. The office area is generally occupied by an attendant during normal working hours, including weekends. Based on WSP's observations, tenants access the self-storage portion of the building on an infrequent basis.

In accordance with the approved work plan, the March 19, 2019, indoor air sampling event was performed while the AS/SVE wells located within the building (i.e., Cycle Group 1) were inactive, as a conservative measure. On March 22, 2019, the Cycle Group 1 SVE wells were re-activated as part of the normal AS/SVE system operating schedule. However, the vacuum applied to the SVE wells was reduced in January 2019 due to groundwater entrainment, and the air compressor was turned off in February 2019 to further limit groundwater entrainment due to mounding of the groundwater table, and to eliminate the possibility that VOCs released from groundwater by sparging would not be captured by the reduced radius of influence of the SVE wells. The April 2, 2019, indoor air

[1] Since completion of the system optimization activities in February 2020, the Cycle Group 1 SVE wells and SV-12 (at reduced vacuum) have been operating at the request of the NYSDEC and NYSDOH. The air compressor was restarted in July 2020 and the Cycle Group 1 AS wells were reactivated.
[2] The mixing of air between the main office complex and surrounding self-storage area is evident from the similarity in the indoor air sample results collected at locations IA-1 and IA-2 during the March and April 2019 and November 2020 sampling events.

samples were collected with the Cycle Group 1 SVE wells operating to evaluate the effect of system operation on indoor air quality. The results of the March and April 2019 sampling events were provided to the NYSDEC and NYSDOH in correspondence, dated April 30, 2019 and are summarized on Table 1 and Figure 3.

A comparison of the March and April 2019 indoor air results to the pre-remediation indoor air results (Figure 3) indicates that the operation of the IRMs has significantly reduced the concentration of TCE in indoor air in the main office complex and throughout the former manufacturing building. For example, a comparison of the TCE concentrations detected in the main office complex in March and April 2019, as compared to the pre-remediation concentration detected in August 2003, indicates a 94 percent reduction. The observed reduction in TCE concentrations at other sample locations within the building, as compared to pre-remediation concentrations, are 98 percent in the former metal finish and chemical storage area (IA-1), 96 percent in the former heat treat area (IA-3), 96 percent in the central portion of the building (IA-5), and 99 percent in the former Family Services space (IA-6).

Although the March and April 2019 indoor air sample results indicated that the operation of the IRMs had substantially improved indoor air quality within the main office complex and throughout the former manufacturing building, the potential ongoing impact on indoor air quality from materials in the self-storage units could not be evaluated. As noted above, the self-storage units have a wire mesh ceiling and VOCs emitted from materials within the storage units would be released directly to indoor air within the former manufacturing building. Furthermore, cracks and other openings in the concrete slab were observed during the building inspection, including in the main office complex; these openings could provide pathways for VOCs in soil vapor to enter the former manufacturing building. The indoor air results from the March and April 2019 sampling events indicated similar concentrations, which confirmed that the pulse schedule for the SVE system and alternating of AS/SVE cycle groups monthly does not have a significant effect on indoor air quality within the building.

Based on the March and April 2019 sampling results, WSP recommended short-term actions to potentially improve indoor air quality in the main office complex and throughout the building. The actions implemented at the site included sealing openings and cracks in the concrete slab in accessible portions of the main building, including the main office complex, hallways throughout the self-storage area, and in storage units that were not being rented[3]; permanently sealing a floor drain with concrete in the northeast corner of the main building along Grand Street[4]; and evaluating the operation of the IRMs to determine if adjustments could be made to enhance the performance of the systems in a manner that would benefit indoor air quality throughout the main building.

During a conference call on January 24, 2020, the NYSDOH requested that Tenneco collect an additional round of indoor air samples from the former manufacturing building at locations that contained TCE at concentrations above 2 µg/m^3 during the March 2019 sampling event. Therefore, the Klomm Construction space was not included in the November 2020 sampling event. In addition, the NYSDEC requested that the sampling be conducted with Cycle Group 1 of the AS/SVE system operating at full vacuum and with the air compressor turned on. To meet these requirements, system optimization activities were performed in February 2020, which restored full vacuum to the SVE wells and generally increased the sub-slab vacuum field associated with the operation of Cycle Group 1. After the optimization activities, Cycle Group 1 SVE wells and SVE well SV-12 (at reduced vacuum) were left in operation in preparation for the planned indoor air sampling event in March 2020; however, the air compressor was not restarted until July 28, 2020, due to delays in changing the programmable logic controller software and travel restrictions associated with COVID-19. Descriptions of the short-term actions described above, and the system optimization activities, were provided to the NYSDEC and NYSDOH in quarterly progress reports for the site.

Tenneco performed a pre-sampling site inspection and prepared material inventories on March 27, 2020, in preparation for indoor air sampling. However, the sampling event was ultimately postponed due to the COVID-19 outbreak. During a conference call with the NYSDEC and the NYSDOH on April 2, 2020, the agencies requested that the AS/SVE system continue to operate in its current configuration until after the indoor air sampling could be completed and the results were evaluated.

[3] WSP sealed floor cracks in 28 self-storage units over three field events in June 2019 and March and October 2020.
[4] The floor drain had previously been sealed with an expandable plug.

SCOPE OF WORK

The November 2020 indoor air sampling event consisted of performing a building inspection and material inventory, collecting five indoor air samples within the former manufacturing building, and collecting two ambient outdoor air samples at upwind locations selected on the day of sampling to evaluate potential background sources for VOCs in outdoor air. The November 2020 indoor air samples were collected from the former Family Services space, the main office complex, and in the self-storage portion of the main building (Figure 3). The former Family Services space had been used for storage during the March and April 2019 sampling events; however, the space was being used as a recording studio during the November 2020 sampling event. As described above, the AS/SVE system was operating Cycle Group 1 AS and SVE wells (at full vacuum) during the sampling event. In addition, SVE well SV-12 was operating at a reduced vacuum.

Sampling activities were conducted in accordance with the approved work plan and the NYSDOH's Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006, and associated updates. A description of the sampling activities is provided below.

BUILDING INSPECTION AND MATERIAL INVENTORY

WSP performed a pre-sampling site inspection and completed material inventories on November 13, 2020, before the sampling activities on November 17, 2020. During the inspection, WSP completed material inventories forms for the former Family Services space, main office complex, and the self-storage area of the main building. In general, the volatile ingredients of each material, if available, were photographed or recorded on the inventory form, and the containers were scanned with a photoionization detector (RAE Systems ppbRAE) for potential vapor emissions.

The target site-related VOCs (i.e., TCE, tetrachloroethene [PCE], and cis-1,2-dichloroethene [cis-1,2-DCE]) are found in many household and commercial products. While WSP attempted to limit the potential for these background sources to affect the indoor air results by performing material inventories in the areas sampled and eliminating potential sources for these VOCs, the interior of the former manufacturing building contains over 400 self-storage units (with wire mesh ceilings) that were not accessible to WSP. Therefore, WSP could not control or eliminate any potential impacts to indoor quality resulting from VOC-containing materials that may be stored in these units.

INDOOR AIR SAMPLING PROCEDURES

On November 17, 2020, indoor air samples were collected from five indoor air locations (IA-1, IA-2, IA-3, IA-5, and IA-6) that were sampled in March and April 2019 (Figure 3). Samples were collected using evacuated 6-liter SUMMA™-style canisters with flow controllers and particulate filters installed. Each of the indoor air sample canisters were placed approximately 3 to 5 feet above the floor to be representative of the breathing zone. Physical and visual barriers were placed around the canisters, if necessary, so that they would not be disturbed during sample collection. The flow regulators were pre-set by the laboratory to collect the samples over an approximately 8-hour period. The flow regulator was connected to the canister and opened to initiate sample collection. After approximately 8 hours, the flow regulator was closed to complete the sample collection. The sample name, location, time and date of sample collection, final canister vacuum, canister and regulator number, and the analytical method to be used were recorded on the chain-of-custody form and in the field log book.

AMBIENT OUTDOOR AIR SAMPLING PROCEDURES

On November 17, 2020, ambient (outdoor) air samples were collected from two locations (AA-1 and AA-2) upwind of the facility concurrently with indoor air sample collection. The outdoor air samples were collected west of the former manufacturing building (Figure 3). The outdoor air samples were collected with evacuated 6-liter SUMMA™-style canisters and dedicated flow controllers over an approximately 8-hour period using the same procedures described above for the indoor air samples. Site conditions, including temperature, wind direction and velocity, barometric pressure, and the occurrence of precipitation were documented before initiating the sampling activities.

SAMPLE ANALYSIS AND QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance/quality control procedures were followed to ensure that controls were initiated and maintained throughout sampling and analysis. The canisters were submitted under ambient conditions to an offsite laboratory, ALS Environmental of Simi Valley, California, under strict chain-of-custody procedures. ALS Environmental – Simi Valley is accredited under the NYSDOH Environmental Laboratory Approval Program (ID 11221). As specified in the work plan, the indoor and outdoor air samples were analyzed for site-related VOCs (i.e., TCE, PCE, and cis-1,2-DCE) using US Environmental Protection Agency (EPA) Method TO-15. The sample results were validated by a third-party contractor (Laboratory Data Consultants, Inc., in Carlsbad, California).

The canisters used for the sampling activities were 100-percent individually certified-clean by the laboratory by analyzing the ambient air inside a clean canister by EPA Method TO-15. If no target compounds were detected at concentrations above the reporting limits, then the canister was evacuated again, and the canister was available for sampling. If target compounds were detected at concentrations above the reporting limits, then the canister was re-cleaned and reanalyzed for the target compounds.

A duplicate indoor air sample was collected from sample location IA-2. The duplicate sample was collected at the same time and from the same sample location using a sample tee. The field duplicate identity was not provided to the laboratory. The field duplicate is useful in documenting the precision of the sampling process. In addition, a laboratory-prepared trip blank accompanied the sample canisters from the laboratory to the field and from the field to the laboratory. The trip blank was used to evaluate the potential for contamination during shipment.

SAMPLING RESULTS

The site-related VOCs detected in indoor and outdoor air samples for the November 2020 sampling event are provided on Table 1 and Figure 3, and the analytical data and data validation report are in Enclosure A. For comparison, Table 1 and Figure 3 also include the results from the March and April 2019 sampling events.

The November 2020 indoor air sample from the former Family Services space (IA-6) contained 4.1 µg/m^3 of TCE and 0.44 µg/m^3 of PCE. No cis-1,2-DCE was detected. The November 2020 indoor air sample from the main office complex (IA-2) contained 6.3 µg/m^3 of TCE, 1.5 µg/m^3 of PCE, and 0.22 µg/m^3 of cis-1,2-DCE. Three indoor air samples (IA-1, IA-3, and IA-5) were collected from the self-storage portion of the main building. The indoor air sample for IA-1 contained 6.2 µg/m^3 of TCE, 1.7 µg/m^3 of PCE, and 0.19 µg/m^3 of cis-1,2-DCE. The indoor air sample for IA-5 contained 3.8 µg/m^3 of TCE, 1.4 µg/m^3 of PCE, and an estimated 0.11 µg/m^3 of cis-1,2-DCE. ALS Environmental reported to WSP that sample IA-3 could not be analyzed due to a malfunction of the canister.

The November 2020 outdoor air samples contained only PCE at estimated concentrations of 0.12 µg/m^3 at sample location AA-1 and 0.093 µg/m^3 at sample location AA-2. TCE and cis-1,2-DCE were not detected in the outdoor air samples.

CONCLUSIONS AND RECOMMENDATIONS

The indoor air results from November 2020 are similar to the March and April 2019 sample results and indicate that operation of Cycle Group 1 AS and SVE wells (at full vacuum) does not negatively affect indoor air quality. As reported in the First Quarter 2020 Progress Report for the site, dated May 15, 2020, operation of the AS/SVE system in its current configuration produces a sub-slab vacuum under a large portion of the building that includes the former degreaser area, the former metal finish and chemical storage area, and the main office complex (Figure 4). Therefore, VOCs detected in indoor air are potentially entering the building in areas where there is no sub-slab vacuum; however, the potential for ongoing impacts on indoor air quality from materials stored in the self-storage units cannot be discounted.

To identify the area(s) of the building that could potentially be contributing VOCs to indoor air through vapor intrusion, WSP calculated the expected concentration of site-related VOCs in sub-slab vapor at each monitoring well location using the December 2020 quarterly groundwater sampling results (Table 2; Figure 5). The expected (calculated) site-related VOC concentrations in sub-slab vapor were then used to determine the percentage of each site-related VOC as a function of the total site-related VOC

concentration at each location. For comparison, WSP also calculated the percentage of each site-related VOC detected in the November 2020 indoor air samples as a function of the total site-related VOC concentration (Table 3; Figure 5).

Theoretically, if sub-slab vapor under a portion of a building is the source of VOCs detected in indoor air, the percentages of each site-related VOC in sub-slab vapor should closely match the percentages detected in indoor air, as degradation is not expected to occur during vapor intrusion. As shown on Figure 5, the percentage of site-related VOCs in indoor air samples from the interconnected portions of the main building (i.e., samples IA-1, IA-2, and IA-5) were similar and closely match the expected percentages in sub-slab vapor at MW-8 and MW-17 (i.e., range of cis-1,2-DCE is 1-3% of the total site-related VOCs; range of TCE is 72-79% of the total site-related VOCs; and range of PCE is 19-26% of total site-related VOCs). Similarly, the percentages in sub-slab vapor at MW-4 (39% cis-1,2-DCE; 16% TCE; 45% PCE), MW-14 (20% cis-1,2-DCE; 54% TCE; 27% PCE), and MW-15 (2% cis-1,2-DCE; 43% TCE; 55% PCE) do not match the indoor air sample percentages from IA-1, IA-2, and IA-5 because these wells are in areas of the building that are under sub-slab vacuum. Therefore, based on this analysis, the portion of the building wing that parallels Grand Street that is not under vacuum (and includes MW-8) is the most likely area where sub-slab VOCs could be entering indoor air (see blue shaded area on Figure 4). To address the potential for vapor intrusion in this area, Tenneco is proposing to conduct a sub-slab depressurization pilot test to create a vacuum below the slab. The proposed pilot test scope of work is presented below.

PROPOSED SUB-SLAB DEPRESSURIZATION PILOT TEST SCOPE OF WORK

Tenneco is proposing to perform a sub-slab depressurization pilot test with the goal of producing a sub-slab vacuum in the northern portion of the building wing that parallels Grand Street, which is not influenced by the operation of Cycle Group 1 SVE wells. The portion of the building that will be targeted during the pilot test is shown on Figure 4. The proposed scope of work will include installing a minimum of one vapor extraction point, performing stepped-rate and constant-rate tests, and restoring the site. At the conclusion of the pilot test, the extraction point(s) will remain operating. All work conducted by WSP and its subcontractors will be in accordance with a site-specific health and safety plan and WSP's standard operating procedures. A utility location survey will be completed, as necessary, before any intrusive work begins due to the potential presence of underground utilities and structures at this site.

EXTRACTION POINT INSTALLATION

A minimum of one vapor extraction point will be installed at the approximate location designated SSD-TP1 on Figure 6. The location of the suction point may be adjusted in the field due to access limitations or other site conditions. The extraction point will be constructed by wet coring through the concrete slab and excavating an approximately 12-inch-diameter by 12-inch-deep pit into the subgrade below the slab. To promote the efficient air flow through the subgrade material, the excavated pit will first be filled to the base of the slab with washed gravel consisting of ½ to ¾-inch aggregate. The removed soil will be classified by soil type and noted in a field book.

A 3-foot section of 4-inch-diameter polyvinyl chloride (PVC) pipe will be placed in the hole on top of the gravel layer. The pipe will be temporarily sealed in place with a non-VOC-containing adhesive caulk, or equivalent. The pipe will be plumbed to a pilot test manifold with an air dilution valve, sampling port, and temperature, pressure, and flow measuring instruments. The pilot testing activities will use temporary vacuum monitoring points consisting of 5/8-inch-diameter holes drilled through the concrete slab at varying distances from the extraction point.

The existing 25 horsepower SVE blower (B201) will be used as the vacuum source for the pilot testing activities. In the immediate area of the extraction point, an SVE conveyance line associated with a Cycle Group 2 SVE well will be tapped by cutting out a short section of the PVC pipe and installing a PVC tee and a butterfly valve on the upstream side of the tee to prevent the application of vacuum to the SVE well during the test. A temporary coupling (e.g., cam fitting) will connect the tee to a flexible hose connected to the pilot testing manifold; the pilot test manifold will be connected to the extraction point. By using the existing SVE infrastructure for pilot testing activities, extracted soil vapor will be treated using the system's vapor-phase granular activated carbon before being discharged and the vacuum applied to the extraction point can be adjusted with the butterfly valves at the SVE manifold.

STEPPED-RATE TEST

The pilot test will begin with a stepped-rate test to determine the applied vacuum level that achieves the largest radius of influence, while optimizing the flow rate. The stepped-rate test will consist of applying incrementally higher vacuums and measuring the stabilized vapor flow rate corresponding to each vacuum level. The vacuum levels achieved at each monitoring point will be measured using a digital micromanometer during each step and recorded in a field book. WSP anticipates using incremental steps lasting approximately 15 minutes each.

The stepped-rate test will consist of the following:

- The SVE system manifold valve for the selected vacuum conveyance line will be used to adjust the applied vacuum to the extraction point.
- Vacuum levels in each of the outlying vacuum monitoring locations will be measured quantitatively using a digital micro-manometer. Vacuum readings will be recorded in a field book.
- The applied vacuum will be increased incrementally and the process repeated until a full range of vacuum levels has been tested.

CONSTANT-RATE TEST

After the stepped-rate tests have been completed, a suitable applied vacuum will be selected for the constant-rate test. The constant-rate test will apply the selected optimal vacuum level and flow rate to the extraction point for a minimum of 1 hour. The constant-rate test will consist of the following:

- A vacuum will be applied to the subsurface at the extraction point. The vacuum will be set to a fixed rate using the vacuum control methods discussed above, based on the results of the stepped-rate test.
- Measurements will be collected and recorded at intervals of every 15 minutes, depending on the variability of measurements observed. These measurements will include vacuum levels at the monitoring points, as well as applied vacuum/pressure, and vapor extraction flow rate.

Upon completion of pilot test activities, the vacuum and flow to the Cycle Group 1 SVE wells will be rebalanced, if necessary.

SITE RESTORATION

After the completion of the pilot test activities, all pilot test equipment will be dismantled and removed from the site, and the holes for the temporary monitoring points will either be sealed with a non-VOC-containing adhesive caulk or completed with semi-permanent Colvin Cox® Vapor Pin™ sub-slab soil vapor probes. In addition, the pilot test manifold will be removed and the flexible hose will be connected directly to the extraction point. All removed soil and concrete will be placed in US Department of Transportation–compliant, 55-gallon steel drums for characterization and offsite disposal. The drums will be closed/sealed per the manufacturer's recommendations, labeled, and moved to a staging area.

SCHEDULE AND REPORTING

Tenneco anticipates completing the pilot test activities by late February or early March 2021, and collecting another round of indoor air samples from the main manufacturing building before the end of March 2021. The proposed sample locations would match the November 2020 sampling event. The indoor air samples will be collected with Cycle Group 1 AS and SVE wells, SV-12 (at reduced vacuum), and the pilot test extraction point(s) operating. The results of the pilot test activities will be included in the First Quarter 2021 progress report for the site.

If you have any questions or comments regarding this report, please feel free to contact Mark Bauer of Tenneco at (248) 354-8912, or me at (315) 655-3900.

Sincerely,

Brian Silfer, P.G.
Practice Leader

BES:rlo
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cc: Kristin Kulow, New York State Department of Health
Mark T. Bauer, Federal-Mogul Powertrain LLC

Enclosures

FIGURES

LEGEND

- PROPERTY LINE AND INSTITUTIONAL CONTROL BOUNDARY
- FENCE LINE
- SELF STORAGE UNITS
- STORM SEWER GRATE
- MANHOLE COVER
- FLOOR DRAIN (SEALED)
- INDOOR AIR SAMPLE LOCATION (APRIL 2003)
- INDOOR AIR SAMPLE LOCATION (AUGUST 2003)
- INDOOR AIR SAMPLE LOCATION (APRIL 2004 | JULY 2004 | JANUARY 2005)

I-21	IA-25	IA-31	SAMPLE ID
6.2	2.5	5.2	TCE CONCENTRATION IN ppbv
[33]	[13]	[28]	TCE CONCENTRATION IN ug/m³

NS	NOT SAMPLED
ND	NOT DETECTED
TCE	TRICHLOROETHENE
ppbv	PARTS PER BILLION BY VOLUME
ug/m³	MICROGRAMS PER CUBIC METER

CSX TRANSPORTATION, INC. TRACKS

SUSPECTED ONSITE DISPOSAL AREA

FORMER 3,000-GALLON HEATING OIL UNDERGROUND STORAGE TANK AREA

FORMER FUEL OIL UNDERGROUND STORAGE TANK AREA

COVERED STORAGE AREAS

FORMER HEAT TREAT AREA

FORMER HEAT TREAT TRANSFORMER AREA

FORMER 8,000-GAL. AST

FORMER FAMILY SERVICES

KLOMM CONSTRUCTION (STORAGE)

FORMER MANUFACTURING BUILDING (MAIN BUILDING)

FORMER DEGREASER AREA

BROWN SECURITY (STORAGE)

KLOMM CONSTRUCTION (STORAGE)

FORMER SCHEFFEL FURNITURE

EASTERN PARKING LOT

FORMER EASTERN PARKING LOT TRANSFORMER AREA

MAIN OFFICE COMPLEX

FORMER METAL FINISH AREA

OFFICE BUILDING

WAREHOUSE

BOTTLE RETURN CENTER

SOUTHERN PARKING LOT

SMITH AVENUE

TENBROECK AVENUE

GRAND STREET

IA-13	10	[54]	
IA-14	13	[70]	
IA-10	20	[107]	
IA-12	24	[129]	
I-19	IA-28	IA-32	
14	10	9.6	
[75]	[54]	[52]	
IA-11	20	[107]	
I-18	IA-27	IA-30	
12	16	7	
[84]	[86]	[38]	
IA-16	35	[188]	
IA-4	11	[59]	
IA-2	10	[54]	
IA-3	14	[75]	
I-21	IA-25	IA-31	
6.2	2.5	5.2	
[33]	[13]	[28]	
IA-8	48	[258]	
I-17	IA-24	IA-29	
6.3	3.1	7.9	
[34]	[17]	[42]	

SOUTHERN PARKING LOT			
First Floor	I-23	NS	IA-34
	0.73	-	ND
	[3.9]	-	[ND]
Basement	I-22	NS	IA-35
	0.91	-	0.15
	[4.9]	-	[0.81]
IA-6	IA-7		
18	31		
[97]	[167]		

IA-9	15	[81]	
I-20	IA-26	IA-33	
ND	ND	ND	
[ND]	[ND]	[ND]	
IA-15	19	[102]	
IA-1	1.7	[9.1]	
IA-5	3.3	[18]	

0 60 120

SCALE IN FEET

B

R:\ACAD\CADD_CLIENT\Federal Mogul\NY_Kingston\31401678.006\CAD\314V1678.006-007.dwg 12/17/2020 9:01 AM USEC01012

Drawn By: EGC
Checked:
Approved: AMR 12/17/2020
DWG Name: 314V1678.006-007

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK

PREPARED FOR
FEDERAL-MOGUL LLC

Figure 1A

HISTORICAL INDOOR AIR RESULTS
(2003 THROUGH 2005)

WSP USA Inc.
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FAYETTEVILLE, NY 13066
TEL: +1 315.655.3900

LEGEND

- PROPERTY LINE AND INSTITUTIONAL CONTROL BOUNDARY
- FENCE LINE
- SELF STORAGE UNITS
- STORM SEWER GRATE
- MANHOLE COVER
- FLOOR DRAIN (SEALED)
- INDOOR AIR SAMPLE LOCATION

6/5/2008	7/8/2008	8/13/2008	SAMPLE COLLECTION DATE
4	*3.4*	*1.79*	TCE CONCENTRATION IN ppbv
[22]	*[18]*	*[9.6]*	TCE CONCENTRATION IN ug/m^3

TCE — TRICHLOROETHENE
ppbv — PARTS PER BILLION BY VOLUME
ug/m^3 — MICROGRAMS PER CUBIC METER

CSX TRANSPORTATION, INC. TRACKS

SUSPECTED ONSITE DISPOSAL AREA

FORMER 3,000-GALLON HEATING OIL UNDERGROUND STORAGE TANK AREA

FORMER FUEL OIL UNDERGROUND STORAGE TANK AREA

COVERED STORAGE AREAS

FORMER HEAT TREAT AREA

FORMER HEAT TREAT TRANSFORMER AREA

FORMER 8,000-GAL. AST

FORMER FAMILY SERVICES

KLOMM CONSTRUCTION (STORAGE)

FORMER MANUFACTURING BUILDING (MAIN BUILDING)

FORMER DEGREASER AREA

BROWN SECURITY (STORAGE)

KLOMM CONSTRUCTION (STORAGE)

FORMER SCHEFFEL FURNITURE

MAIN OFFICE COMPLEX

6/5/2008	7/8/2008	8/13/2008
4	*3.4*	*1.79*
[22]	*[18]*	*[9.6]*

WAREHOUSE

SOUTHERN PARKING LOT

OFFICE BUILDING

EASTERN PARKING LOT

FORMER EASTERN PARKING LOT TRANSFORMER AREA

FORMER METAL FINISH AREA

BOTTLE RETURN CENTER

SMITH AVENUE

TENBROECK AVENUE

GRAND STREET

0 60 120
SCALE IN FEET

B

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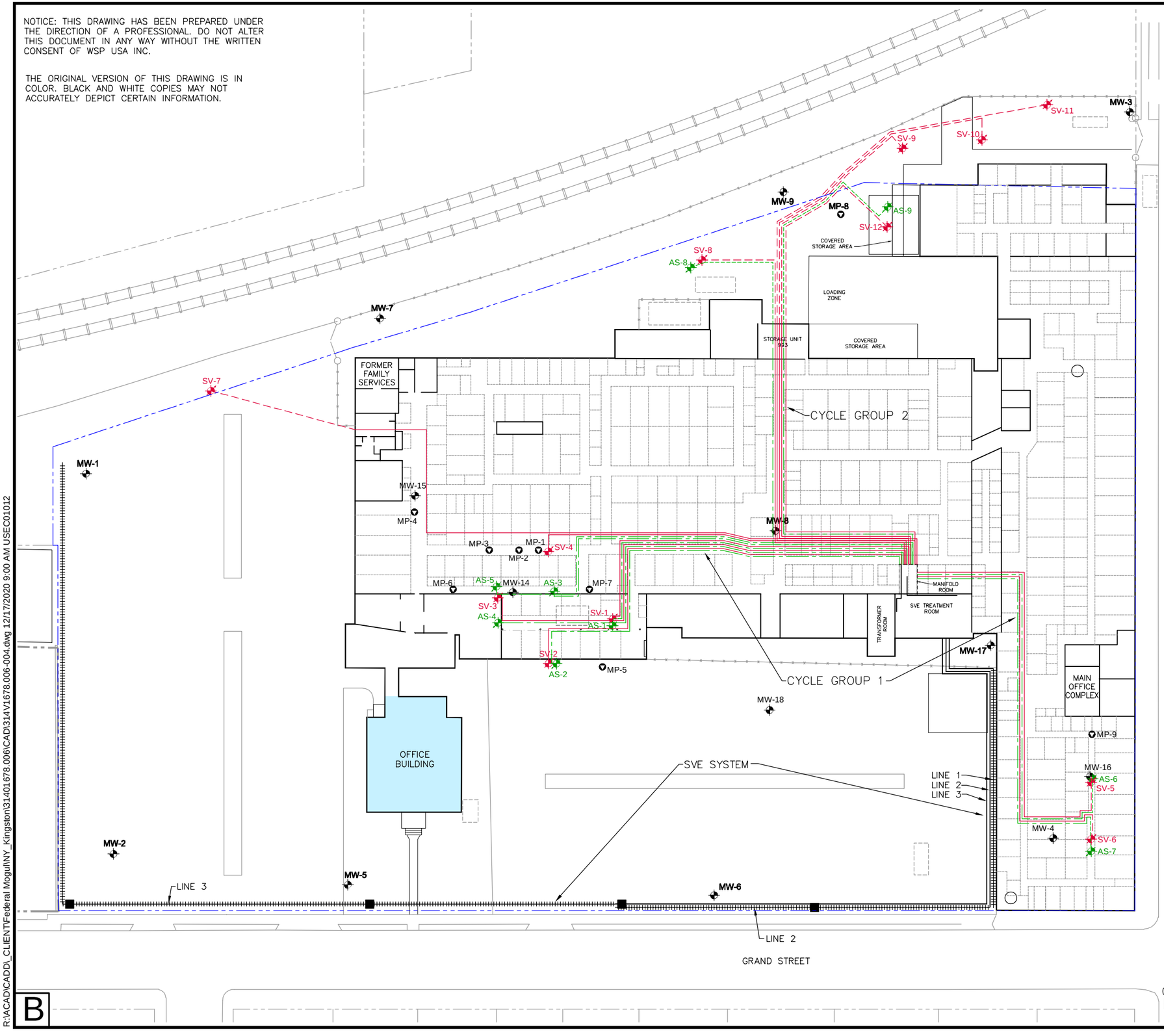
Drawn By: EGC
Checked:
Approved: AMR 12/17/2020
DWG Name: 314V1678.006-008

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL LLC

Figure 1B
HISTORICAL INDOOR AIR RESULTS
(2008)

WSP USA Inc.
7000 E. GENESEE STREET
BUILDING D, 2nd FLOOR
FAYETTEVILLE, NY 13066
TEL: +1 315.655.3900



LEGEND

- PROPERTY BOUNDARY/SITE BOUNDARY
- MONITORING WELL
- SUBSLAB DEPRESSURIZATION SYSTEM

AS/SVE SYSTEM COMPONENTS:

- MP-1 VACUUM MONITORING LOCATION
- AIR SPARGING WELL
- SVE WELL
- 1.5"ø AS PIPING (HUNG IN BUILDING INTERIOR)
- 4"ø SVE PIPING (HUNG IN BUILDING INTERIOR)
- 1.5"ø AS PIPING (BURIED)
- 4"ø SVE PIPING (BURIED)

SVE SYSTEM COMPONENTS:

- 6"ø EXTRACTION SCREEN
- 6"ø EXTRACTION CONVEYANCE PIPING
- VALVE BOX

NOTES:

1. SELF STORAGE UNIT LOCATIONS ARE APPROXIMATE.
2. SVE SYSTEM INSTALLED IN FEBRUARY 2004.
3. SUBSLAB DEPRESSURIZATION SYSTEM INSTALLED IN MARCH 2004.
4. AS/SVE SYSTEM INSTALLED IN APRIL 2014.

0 50 100
SCALE IN FEET

Drawn By: EGC
Checked:
Approved: RES 12/17/2020
DWG Name: 314V1678.006-004

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL LLC

Figure 2
INTERIM REMEDIAL MEASURES

WSP USA Inc.
5 SULLIVAN STREET
CAZENOVIA, NY 13035
TEL: +1 315.655.3900

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LEGEND

- STORM SEWER GRATE
- MANHOLE COVER
- PROPERTY LINE AND INSTITUTIONAL CONTROL BOUNDARY
- FENCE LINE
- SELF STORAGE UNITS
- FLOOR DRAIN (SEALED)
- INDOOR AIR SAMPLE LOCATION
- OUTDOOR AIR SAMPLE LOCATION

VOC (µg/m³)	IA-1
	3/19/19
cis-1,2-DCE	0.14 J
TCE	5.2
PCE	0.77

SAMPLE LOCATION
SAMPLE COLLECTION DATE
SAMPLE RESULTS
CONSTITUENT

DCE	DICHLOROETHENE
TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE
VOC	VOLATILE ORGANIC COMPOUNDS
(µg/m³)	MICROGRAMS PER CUBIC METER
J	ESTIMATED CONCENTRATION
ND	NOT DETECTED
NS	NOT SAMPLED FOR THIS EVENT
NA	NOT ANALYZED DUE TO CANISTER MALFUNCTION

NOTE:

A BLIND DUPLICATE SAMPLE WAS COLLECTED AT IA-2 ON MARCH 19, APRIL 4, 2019, AND NOVEMBER 17, 2020. THE HIGHEST REPORTED RESULT FOR EACH SAMPLING EVENT IS PRESENTED.

VOC (µg/m³)	AA-2
	11/17/20
cis-1,2-DCE	ND
TCE	ND
PCE	0.093 J

VOC (µg/m³)	AA-2
	3/19/19
cis-1,2-DCE	ND
TCE	ND
PCE	0.11 J

VOC (µg/m³)	AA-1
	3/19/19
cis-1,2-DCE	ND
TCE	ND
PCE	0.11 J

VOC (µg/m³)	AA-1
	11/17/20
cis-1,2-DCE	ND
TCE	ND
PCE	0.12 J

VOC (µg/m³)	IA-6		
	3/19/19	4/2/19	11/17/20
cis-1,2-DCE	ND	0.029 J	ND
TCE	2.2	1.6	4.1
PCE	0.59	0.23	0.44

VOC (µg/m³)	IA-5		
	3/19/19	4/2/19	11/17/20
cis-1,2-DCE	0.16	0.25	0.11 J
TCE	4.5	4.6	3.8
PCE	1.2	0.73	1.4

VOC (µg/m³)	IA-3		
	3/19/19	4/2/19	11/17/20
cis-1,2-DCE	0.14 J	0.35	NA
TCE	4.3	6.8	NA
PCE	0.92	1.4	NA

VOC (µg/m³)	IA-4		
	3/19/19	4/2/19	11/17/20
cis-1,2-DCE	ND	0.016 J	NS
TCE	0.81	0.29	NS
PCE	0.81	0.30	NS

VOC (µg/m³)	IA-2		
	3/19/19	4/2/19	11/17/20
cis-1,2-DCE	0.13 J	0.20	0.22
TCE	4.8	5.5	6.3
PCE	0.79	0.98	1.5

VOC (µg/m³)	IA-1		
	3/19/19	4/2/19	11/17/20
cis-1,2-DCE	0.14 J	0.23	0.19
TCE	5.2	6.2	6.2
PCE	0.77	1.1	1.7

VOC (µg/m³)	AA-1
	4/2/19
cis-1,2-DCE	ND
TCE	ND
PCE	0.078 J

VOC (µg/m³)	AA-2
	4/2/19
cis-1,2-DCE	ND
TCE	0.020 J
PCE	0.070 J

CSX TRANSPORTATION, INC. TRACKS
SUSPECTED ONSITE DISPOSAL AREA
FORMER 3,000-GALLON HEATING OIL UNDERGROUND STORAGE TANK AREA
FORMER FUEL OIL UNDERGROUND STORAGE TANK AREA
FORMER 8,000-GAL. AST
COVERED STORAGE AREAS
FORMER HEAT TREAT TRANSFORMER AREA
FORMER HEAT TREAT AREA
FORMER FAMILY SERVICES
KLOMM CONSTRUCTION (STORAGE)
FORMER MANUFACTURING BUILDING (MAIN BUILDING)
FORMER DEGREASER AREA
WAREHOUSE
SOUTHERN PARKING LOT
BOTTLE RETURN CENTER
OFFICE BUILDING
EASTERN PARKING LOT
FORMER EASTERN PARKING LOT TRANSFORMER AREA
MAIN OFFICE COMPLEX
FORMER METAL FINISH AREA
SMITH AVENUE
TENBROECK AVENUE
GRAND STREET
AA-1
AA-2
IA-1
IA-2
IA-3
IA-4
IA-5
IA-6

0 60 120
SCALE IN FEET

B

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Drawn By: EGC
Checked:
Approved: AMR 12/17/2020
DWG Name: 314V1678.006-024

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL LLC

Figure 3
INDOOR AND OUTDOOR AIR SAMPLING RESULTS

WSP USA Inc.
7000 E. GENESEE STREET
BUILDING D, 2nd FLOOR
FAYETTEVILLE, NY 13066
TEL: +1 315.655.3900

LEGEND

- MW-8 MONITORING WELL
- MP-1 AS/SVE VACUUM MONITORING POINT
- VM-1 SVE TRENCH VACUUM MONITORING POINT
- TVP-1 TEMPORARY SUB-SLAB VACUUM MONITORING POINT
- AS-9 AIR SPARGING WELL
- SV-8 SVE WELL
- VP-02 VAPOR PIN
- ASP-1 AIR SPARGE PILOT TEST WELL
- SVE TRENCH VALVE BOX
- STORM SEWER GRATE
- FENCE
- SELF STORAGE UNITS
- SVE TRENCH 6" CONVEYANCE PIPING
- SVE TRENCH 6" SCREENED PIPING
- VACUUM MONITORING POINT DESIGNATION
- SYSTEM CONFIGURATION: BASELINE (B101); FINAL STEPPED-RATE (B201)
- AREA TO BE TARGETED DURING SUB-SLAB DEPRESSURIZATION PILOT TEST

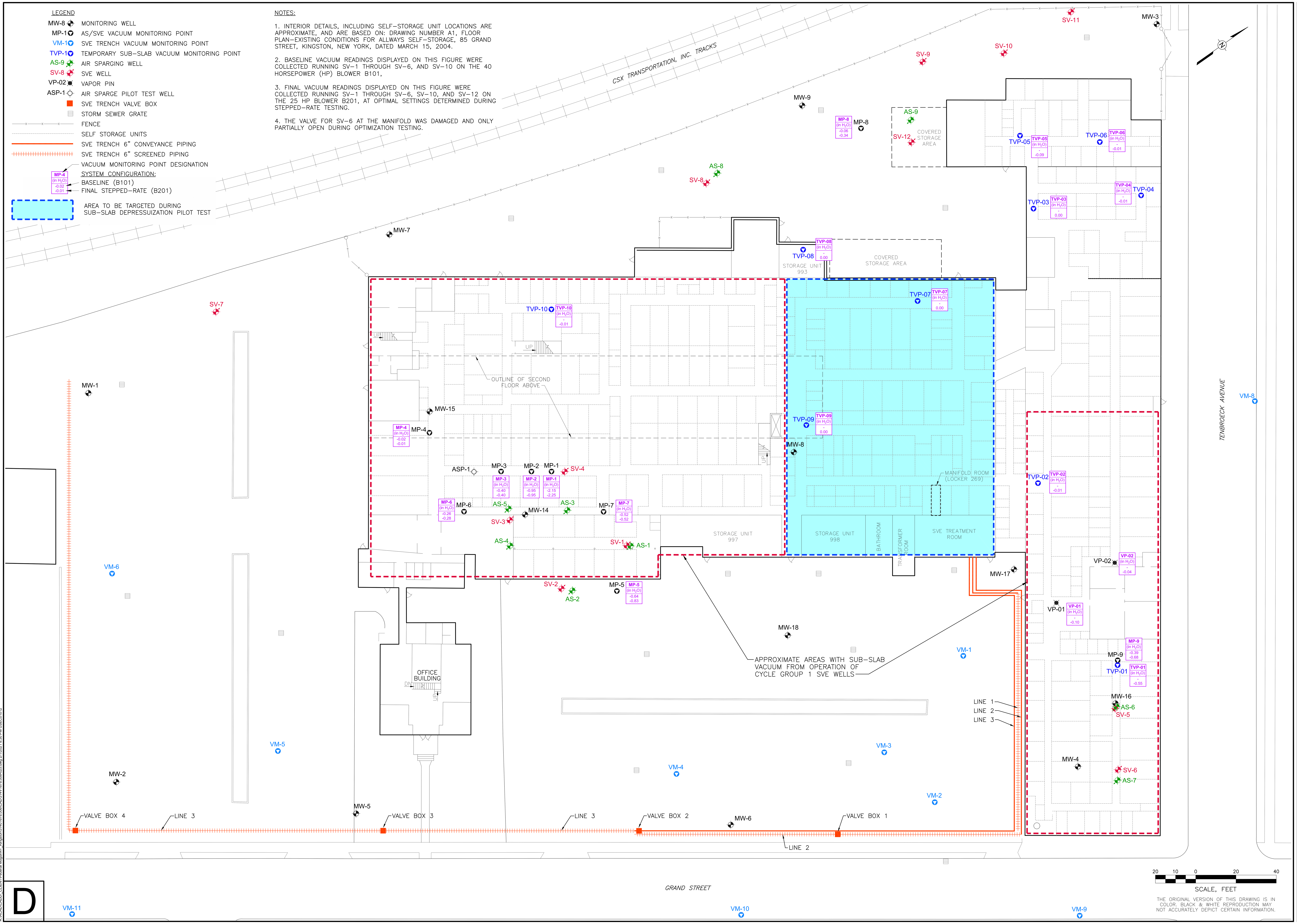
NOTES:

1. INTERIOR DETAILS, INCLUDING SELF-STORAGE UNIT LOCATIONS ARE APPROXIMATE, AND ARE BASED ON: DRAWING NUMBER A1, FLOOR PLAN-EXISTING CONDITIONS FOR ALLWAYS SELF-STORAGE, 85 GRAND STREET, KINGSTON, NEW YORK, DATED MARCH 15, 2004.

2. BASELINE VACUUM READINGS DISPLAYED ON THIS FIGURE WERE COLLECTED RUNNING SV-1 THROUGH SV-6, AND SV-10 ON THE 40 HORSEPOWER (HP) BLOWER B101.

3. FINAL VACUUM READINGS DISPLAYED ON THIS FIGURE WERE COLLECTED RUNNING SV-1 THROUGH SV-6, SV-10, AND SV-12 ON THE 25 HP BLOWER B201, AT OPTIMAL SETTINGS DETERMINED DURING STEPPED-RATE TESTING.

4. THE VALVE FOR SV-6 AT THE MANIFOLD WAS DAMAGED AND ONLY PARTIALLY OPEN DURING OPTIMIZATION TESTING.



THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK & WHITE REPRODUCTION MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

REVISIONS

AS/SVE OPTIMIZATION TESTING VACUUM READINGS

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK

PREPARED FOR
TENNECO INC.
SOUTHFIELD, MICHIGAN

WSP USA Inc.
7000 E. GENESEE ST. BLDG. D, 2ND FLOOR
FAYETTEVILLE, NY 13066
TEL: +1 315.655.3900

FIGURE 4

Drawing Number 314V1678.006-025

LEGEND

- STORM SEWER GRATE
- MANHOLE COVER
- PROPERTY LINE AND INSTITUTIONAL CONTROL BOUNDARY
- FENCE LINE
- SELF STORAGE UNITS
- FLOOR DRAIN (SEALED)
- MONITORING WELL
- INDOOR AIR SAMPLE LOCATION

IA	INDOOR AIR
SSV	SUB–SLAB VAPOR
DCE	DICHLOROETHENE
TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE
VOC	VOLATILE ORGANIC COMPOUNDS

NOTES:

1. PERCENTAGES OF SITE–RELATED VOCS IN SUB–SLAB SOIL VAPOR WERE CALCULATED BASED ON SITE–RELATED VOCS IN GROUNDWATER SAMPLES COLLECTED ON DECEMBER 22, 2020.
2. PERCENTAGES OF SITE–RELATED VOCS IN INDOOR AIR WERE BASED ON SITE–RELATED VOCS IN INDOOR AIR SAMPLES COLLECTED ON NOVEMBER 11, 2020.

IA-6	
VOC	% of Total VOCs in IA
cis-1,2-DCE	2
TCE	88
PCE	9

IA-5	
VOC	% of Total VOCs in IA
cis-1,2-DCE	2
TCE	72
PCE	26

MW-15	
VOC	% of Total VOCs in SSV
cis-1,2-DCE	2
TCE	43
PCE	55

MW-14	
VOC	% of Total VOCs in SSV
cis-1,2-DCE	20
TCE	54
PCE	27

MW-8	
VOC	% of Total VOCs in SSV
cis-1,2-DCE	1
TCE	77
PCE	22

MW-17	
VOC	% of Total VOCs in SSV
cis-1,2-DCE	3
TCE	72
PCE	26

IA-2	
VOC	% of Total VOCs in IA
cis-1,2-DCE	3
TCE	79
PCE	19

MW-4	
VOC	% of Total VOCs in SSV
cis-1,2-DCE	39
TCE	16
PCE	45

IA-1	
VOC	% of Total VOCs in IA
cis-1,2-DCE	2
TCE	77
PCE	21

CSX TRANSPORTATION, INC. TRACKS
SUSPECTED ONSITE DISPOSAL AREA
FORMER 3,000–GALLON HEATING OIL UNDERGROUND STORAGE TANK AREA
FORMER FUEL OIL UNDERGROUND STORAGE TANK AREA
COVERED STORAGE AREAS
FORMER HEAT TREAT AREA
FORMER HEAT TREAT TRANSFORMER AREA
FORMER 8,000–GAL. AST
FORMER FAMILY SERVICES
KLOMM CONSTRUCTION (STORAGE)
FORMER MANUFACTURING BUILDING (MAIN BUILDING)
FORMER DEGREASER AREA
TENBROECK AVENUE
WAREHOUSE
SOUTHERN PARKING LOT
SMITH AVENUE
BOTTLE RETURN CENTER
OFFICE BUILDING
EASTERN PARKING LOT
FORMER EASTERN PARKING LOT TRANSFORMER AREA
MAIN OFFICE COMPLEX
FORMER METAL FINISH AREA
GRAND STREET
MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-14 MW-15 MW-16 MW-17 MW-18
IA-1 IA-2 IA-5 IA-6

0 60 120
SCALE IN FEET

FIGURE 5
PERCENTAGE OF SITE–RELATED VOCs IN SUB–SLAB VAPOR AND INDOOR AIR

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL–MOGUL LLC

Drawn By: EGC
Checked:
Approved: RES 1/28/2021
DWG Name: 314V1678.006–026

WSP USA Inc.
7000 E. GENESEE STREET
BUILDING D, 2nd FLOOR
FAYETTEVILLE, NY 13066
TEL: +1 315.655.3900

B

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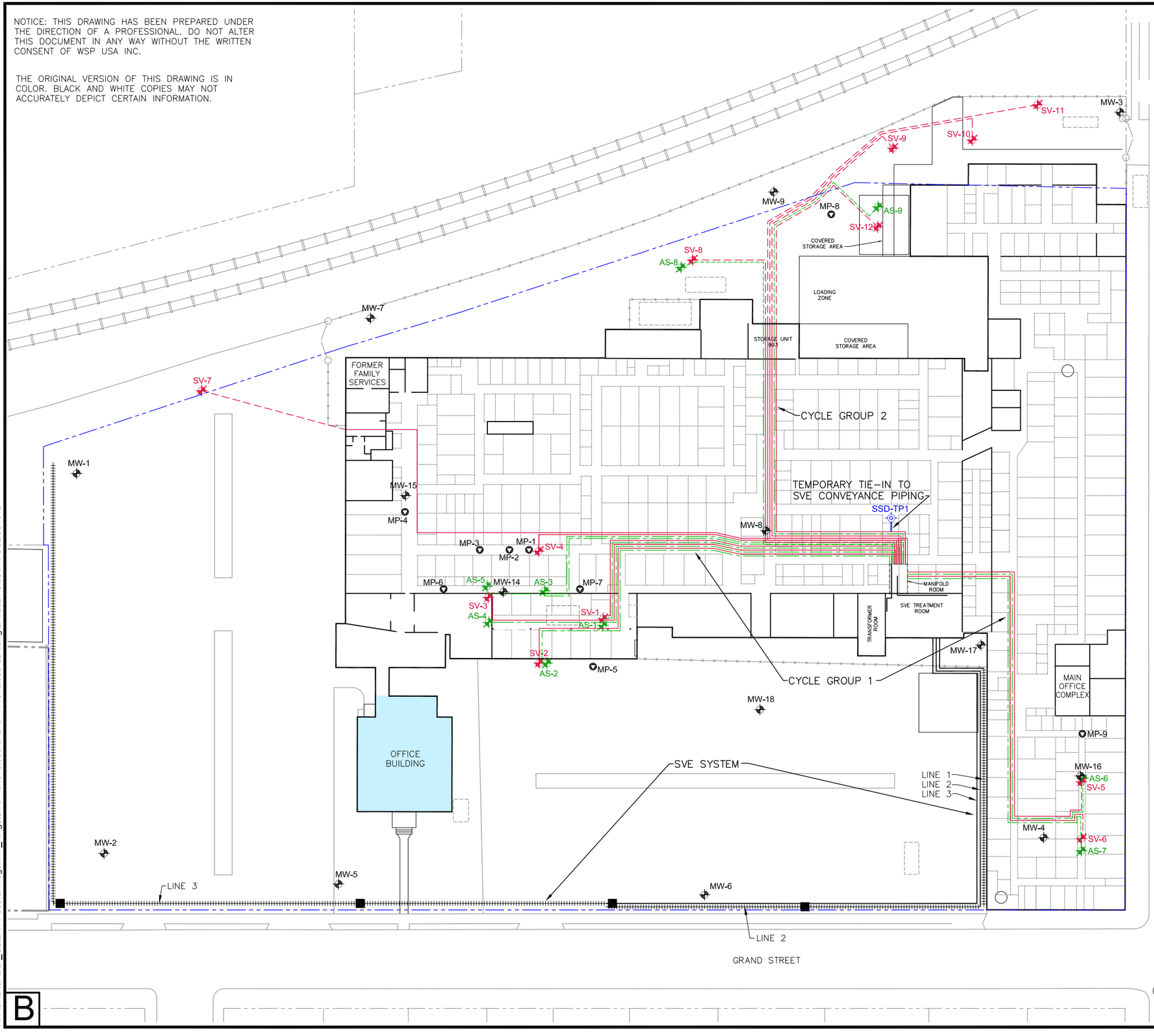

LEGEND

- PROPERTY BOUNDARY/SITE BOUNDARY
- MONITORING WELL
- SUBSLAB DEPRESSURIZATION SYSTEM
- PROPOSED PILOT TEST EXTRACTION POINT

AS/SVE SYSTEM COMPONENTS:

- MP-1 VACUUM MONITORING LOCATION
- AIR SPARGING WELL
- SVE WELL
- 1.5"ø AS PIPING (HUNG IN BUILDING INTERIOR)
- 4"ø SVE PIPING (HUNG IN BUILDING INTERIOR)
- 1.5"ø AS PIPING (BURIED)
- 4"ø SVE PIPING (BURIED)

SVE SYSTEM COMPONENTS:

- 6"ø EXTRACTION SCREEN
- 6"ø EXTRACTION CONVEYANCE PIPING
- VALVE BOX

NOTES:

1. SELF STORAGE UNIT LOCATIONS ARE APPROXIMATE.
2. SVE SYSTEM INSTALLED IN FEBRUARY 2004.
3. SUBSLAB DEPRESSURIZATION SYSTEM INSTALLED IN MARCH 2004.
4. AS/SVE SYSTEM INSTALLED IN APRIL 2014.

Drawn By: EGC
Checked:
Approved: BES 2/1/2021
DWG Name: 314V1678.006-027

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL LLC

FIGURE 6
PROPOSED PILOT TEST
EXTRACTION POINT LOCATION

WSP USA Inc.
5 SULLIVAN STREET
CAZENOVIA, NY 13035
TEL: +1 315.655.3900

B

TABLES

Table 1

Indoor and Outdoor Air Sampling Results
Former Huck Manufacturing Building
Kingston, NY (a)

Location (b)	Sample ID	Sample Date	Compound (µg/m^3)		
			cis-1,2-Dichloroethene	Trichloroethene	Tetrachloroethene
IA- 1	HUCKIAF031919-1	3/19/2019	0.14 J	5.2	0.77
	HUCKIAF040219-1	4/2/2019	0.23	6.2	1.1
	HUCKIAF111720-1	11/17/2020	0.19	6.2	1.7
IA-2	HUCKIAF031919-2	3/19/2019	0.13 J	4.8	0.79
	HUCKIAFR031919-2 (c)	3/19/2019	0.12 J	4.8	0.79
	HUCKIAF040219-2	4/2/2019	0.20	5.5	0.98
	HUCKIAFR040219-2 (d)	4/2/2019	0.20	5.4	0.97
	HUCKIAF111720-2	11/17/2020	0.19	5.9	1.5
	HUCKIAFR111720-2 (e)	11/17/2020	0.22	6.3	1.5
IA- 3	HUCKIAF031919-3	3/19/2019	0.14 J	4.3	0.92
	HUCKIAF040219-3	4/2/2019	0.35	6.8	1.4
	HUCKIAF111720-3	11/17/2020	NA	NA	NA
IA- 4	HUCKIAF031919-4	3/19/2019	0.11 U	0.81	0.81
	HUCKIAF040219-4	4/2/2019	0.016 J	0.29	0.30
	NS	11/17/2020	NS	NS	NS
IA- 5	HUCKIAF031919-5	3/19/2019	0.16	4.5	1.2
	HUCKIAF040219-5	4/2/2019	0.25	4.6	0.73
	HUCKIAF111720-5	11/17/2020	0.11 J	3.8	1.4
IA - 6	HUCKIAF031919-6	3/19/2019	0.11 U	2.2	0.59
	HUCKIAF040219-6	4/2/2019	0.029 J	1.6	0.23
	HUCKIAF111720-6	11/17/2020	0.11 U	4.1	0.44
AA-1	HUCKAA031919-1	3/19/2019	0.10 U	0.099 U	0.11 J
	HUCKAA040219-1	4/2/2019	0.014 U	0.16 U	0.078 J
	HUCKAA111729-1	11/17/2020	0.10 U	0.098 U	0.12 J
AA-2	HUCKAA031919-2	3/19/2019	0.11 U	0.10 U	0.11 J
	HUCKAA040219-2	4/2/2019	0.014 U	0.020 J	0.070 J
	HUCKAA111729-2	11/17/2020	0.10 U	0.096 U	0.093 J

a/ U = Compound was analyzed for, but not detected above the laboratory detection limit;
J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
NA = not analyzed due to a canister malfunction.
NS = not sampled for this event.

b/ Location: IA = indoor air; AA = outdoor air. (Outdoor air samples were placed in different locations for each sampling event. See Figure 3.)

c/ Duplicate sample of HUCKIAF031919-2.

d/ Duplicate sample of HUCKIAF040219-2.

e/ Duplicate sample of HUCKIAF111720-2.

Table 2

Calculated Sub-Slab Vapor Concentrations Derived from Groundwater Concentrations
Former Huck Manufacturing Building
Kingston, New York

Well ID:		MW-4			MW-8			MW-14		
Site-Related VOC	**Dimensionless Henry's Law Constant at 9.5 deg C (unitless)**	**Groundwater (µg/l) (b)**	**Calculated Sub-slab Vapor (µg/m^3) (c)**	**Percent of Total VOCs in Sub-slab Vapor (d)**	**Groundwater (µg/l) (b)**	**Calculated Sub-slab Vapor (µg/m^3) (c)**	**Percent of Total VOCs in Sub-slab Vapor (d)**	**Groundwater (µg/l) (b)**	**Calculated Sub-slab Vapor (µg/m^3) (c)**	**Percent of Total VOCs in Sub-slab Vapor (d)**
cis-1,2-Dichloroethene	8.55E-02	2.9	8.3	39	0.51	1.5	1	637	1815	20
Trichloroethene	1.96E-01	0.53	3.5	16	19	124	77	751	4907	54
Tetrachloroethene	3.15E-01	0.90	9.5	45	3.3	35	22	231	2426	27

Well ID:		MW-15			MW-17		
Site-Related VOC	**Dimensionless Henry's Law Constant at 9.5 deg C (unitless)**	**Groundwater (µg/l) (b)**	**Calculated Sub-slab Vapor (µg/m^3) (c)**	**Percent of Total VOCs in Sub-slab Vapor (d)**	**Groundwater (µg/l) (b)**	**Calculated Sub-slab Vapor (µg/m^3) (c)**	**Percent of Total VOCs in Sub-slab Vapor (d)**
cis-1,2-Dichloroethene	8.55E-02	14.7	42	2	0.51	1.5	3
Trichloroethene	1.96E-01	110	719	43	6.3	41	72
Tetrachloroethene	3.15E-01	88.4	928	55	1.4	15	26

a/ VOC = volatile organic compound

b/ Groundwater samples were collected on December 22, 2020; nondetected values were reported at the detection limit.

c/ Calculated Sub-slab vapor (µg/m^3) = $\frac{\text{(Groundwater (µg/l) x Groundwater-to-Indoor Air Attenuation factor (0.001) x 1000 L/m}^3\text{ x Dimensionless Henry's Law Constant at 9.5 deg C)}}{\text{(Sub-slab Vapor-to-Indoor Air Attenuation factor (0.03))}}$

d/ Value in **red** denotes VOC present at highest percentage.

Table 3

Percentage of Site-Related VOCs in Indoor Air
Former Huck Manufacturing Building
Kingston, New York (a)

Indoor Air Sample Location:	IA- 1		IA-2		IA- 5		IA - 6	
Site-Related VOC	**Indoor Air ($\mu g/m^3$) (b)**	**Percent of Total VOCs (c)**	**Indoor Air ($\mu g/m^3$) (b)**	**Percent of Total VOCs (c)**	**Indoor Air ($\mu g/m^3$) (b)**	**Percent of Total VOCs (c)**	**Indoor Air ($\mu g/m^3$) (b)**	**Percent of Total VOCs (c)**
cis-1,2-Dichloroethene	0.19	2	0.22	3	0.11	2	0.11	2
Trichloroethene	6.2	**77**	6.3	**79**	3.8	**72**	4.1	**88**
Tetrachloroethene	1.7	21	1.5	19	1.4	26	0.44	9

a/ VOC = volatile organic compound.

b/ Indoor air samples were collected on November 11, 2020; nondetected values were reported at the detection limit.

c/ Value in red denotes VOC present at highest percentage.

ENCLOSURE A – ANALYTICAL RESULTS AND DATA VALIDATION REPORTS

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

LABORATORY REPORT

December 8, 2020

Brian Silfer
WSP Group
7000 East Genesee St., Building D, 2nd Floor
Fayetteville, NY 13066

RE: Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01

Dear Brian:

Enclosed are the results of the samples submitted to our laboratory on November 19, 2020. For your reference, these analyses have been assigned our service request number P2006561.

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 2:08 pm, Dec 08, 2020

Sue Anderson
Project Manager

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Client: WSP Group
Project: Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01

Service Request No: P2006561
New York Lab ID: 11221

CASE NARRATIVE

The samples were received intact under chain of custody on November 19, 2020 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.

The analysis for sample HUCKIAF111720-3 (P2006561-006) was cancelled because the threads on the canister were stripped and a proper connection could not be made.

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.

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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	4068-007
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: WSP Group Service Request: P2006561

Project ID: Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01

Date Received: 11/19/2020

Time Received: 10:00

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
HUCKIAF111720-6	P2006561-001	Air	11/17/2020	15:03	SSC00529	-1.42	3.84	X
HUCKIAF111720-5	P2006561-002	Air	11/17/2020	15:13	AS01274	-1.59	4.26	X
HUCKIAF111720-1	P2006561-003	Air	11/17/2020	15:12	AS00852	-1.23	4.06	X
HUCKIAF111720-2	P2006561-004	Air	11/17/2020	15:11	AS00732	-1.72	4.09	X
HUCKIAFR111720-2	P2006561-005	Air	11/17/2020	15:11	AS01266	0.24	3.88	X
HUCKAA111720-1	P2006561-007	Air	11/17/2020	15:06	AC01623	-1.03	3.94	X
HUCKAA111720-2	P2006561-008	Air	11/17/2020	15:07	AS01085	-0.69	3.92	X
TRIP BLANK111720	P2006561-009	Air	11/17/2020	00:00	AC02466	-14.47	3.84	X

ALS Environmental
Sample Acceptance Check Form

Client: WSP Group Work order: P2006561

Project: Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01

Sample(s) received on: 11/19/20 Date opened: 11/19/20 by: ADAVID

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

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

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2006561-001.01	6.0 L Silonite Can					
P2006561-002.01	6.0 L Silonite Can					
P2006561-003.01	6.0 L Silonite Can					
P2006561-004.01	6.0 L Silonite Can					
P2006561-005.01	6.0 L Silonite Can					
P2006561-006.01	6.0 L Source Can					
P2006561-007.01	6.0 L Ambient Can					
P2006561-008.01	6.0 L Silonite Can					
P2006561-009.01	6.0 L Ambient Can					
P2006561-010.01	6.0 L Silonite Can					
P2006561-011.01	6.0 L Source Can					

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

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
HUCKIAF111720-6	P2006561-001	EPA TO-15					
HUCKIAF111720-5	P2006561-002	EPA TO-15					
HUCKIAF111720-1	P2006561-003	EPA TO-15					
HUCKIAF111720-2	P2006561-004	EPA TO-15					
HUCKIAFR111720-2	P2006561-005	EPA TO-15					
HUCKAA111720-1	P2006561-007	EPA TO-15					
HUCKAA111720-2	P2006561-008	EPA TO-15					
TRIP BLANK111720	P2006561-009	EPA TO-15					

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE (VOA)
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
HUCKIAF111720-6	Air	11/17/2020	11/19/20	NA	11/24/20
HUCKIAF111720-5	Air	11/17/2020	11/19/20	NA	11/24/20
HUCKIAF111720-1	Air	11/17/2020	11/19/20	NA	11/25/20
HUCKIAF111720-2	Air	11/17/2020	11/19/20	NA	11/25/20
HUCKIAFR111720-2	Air	11/17/2020	11/19/20	NA	11/25/20
HUCKAA111720-1	Air	11/17/2020	11/19/20	NA	11/25/20
HUCKAA111720-2	Air	11/17/2020	11/19/20	NA	11/25/20
TRIP BLANK111720	Air	11/17/2020	11/19/20	NA	11/24/20

Air - Chain of Custody Record & Analytical Service Request

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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. P2006551

ALS Contact: Sue Anderson

Company Name & Address (Reporting Information): WSP, 7000 E Genesee St, Building D 2nd Floor, Fayetteville, NY 13066	Project Name: Federal-Mogul Former Huck Manufacturing
	Project Number: 31401678.006 02-01
Project Manager: Brian Silfer	P.O. # / Billing Information: WSP, Environmental Accounts Payable, 15530 Dulles Technology Drive, Herndon VA 20171
Phone: 315-655-3900	Fax:
Email Address for Result Reporting: Brian.Silfer@WSP.com	Sampler (Print & Sign): Nate Winston

Analysis Method: TO-15: Trichloroethene, Tetrachloroethene, cis-1,2-Dichloroethene

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	TO-15		Comments e.g. Actual Preservative or specific instructions
HUCKIAF111720-6	1	11/17/20	1503	SSC00529	SFC00163	-29.77	-4	6L			1-WEEK TAT
HUCKIAF111720-5	2		1513	AS01274	SFC00466	-29.54	-3"				
HUCKIAF111720-1	3		1512	AS00852	SFC00180	-27.93	-2"				
HUCKIAF111720-2	4		1511	AS00732	SFC00209	-29.10	-4"				
HUCKIAFR111720-2	5		1511	AS01266	SFC00014	-29.79	-2"				
HUCKIAF111720-3	6		1514	SC01780	SFC00517	-29.05	-5"				
HUCKAA111720-1	7		1506	AC01623	SFC00447	-29.83	-5" hg				[illegible]
HUCKAA111720-2	8		1507	AS01085	~~SFC00466~~ SFC00454	-29.24	-4"				SFC00454
TRIP BLANK 111720	9	—	—	AS02466	—	—	—				

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge X CAT B

EDD required (Yes) / No
Type: EQUIS Units: ug/M3

Chain of Custody Seal: (Circle) (INTACT) BROKEN ABSENT

Project Requirements (MRLs, QAPP): TCE: 0.2 ug/m3; cis-1,2: 0.2 ug/m3; PCE: 1 ug/m3

Relinquished by: (Signature) [signature]	Date: 11/18/20	Time: 1400	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature) [signature]	Date: 11-19-20	Time: 1000

Cooler / Blank Temperature ____ °C

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **WSP Group**

Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Project ID: P2006561

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date(s) Collected: 11/17/20
Analyst: Topacio De Leon Date(s) Received: 11/19/20
Sample Type: 6.0 L Silonite Canister(s) / 6.0 L Summa Canister(s) Date(s) Analyzed: 11/24 - 11/25/20
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P201124-MB	**107**	**98**	**90**	70-130	
Lab Control Sample	P201124-LCS	**111**	**93**	**87**	70-130	
HUCKIAF111720-6	P2006561-001	**107**	**98**	**87**	70-130	
HUCKIAF111720-6	P2006561-001DUP	**108**	**99**	**86**	70-130	
HUCKIAF111720-5	P2006561-002	**107**	**99**	**87**	70-130	
HUCKIAF111720-1	P2006561-003	**108**	**99**	**87**	70-130	
HUCKIAF111720-2	P2006561-004	**108**	**100**	**88**	70-130	
HUCKIAFR111720-2	P2006561-005	**107**	**99**	**89**	70-130	
HUCKAA111720-1	P2006561-007	**108**	**100**	**88**	70-130	
HUCKAA111720-2	P2006561-008	**107**	**100**	**86**	70-130	
TRIP BLANK111720	P2006561-009	**108**	**99**	**88**	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 SUMMARY

Client: **WSP Group**
Client Sample ID: **Lab Control Sample** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P201124-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	208	**237**	**114**	64-120	
79-01-6	Trichloroethene	206	**210**	**102**	70-114	
127-18-4	Tetrachloroethene	206	**182**	**88**	64-120	

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

Client: **WSP Group**
Client Sample ID: **HUCKIAF111720-6** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-001DUP

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00529

Initial Pressure (psig): -1.42 Final Pressure (psig): 3.84

Canister Dilution Factor: 1.40

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result** ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Trichloroethene	4.13	0.770	4.09	0.761	4.11	**1**	25	
Tetrachloroethene	0.441	0.0651	0.431	0.0636	0.436	**2**	25	

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

Client: **WSP Group** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 11242005.D
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 19:24
Test Notes:

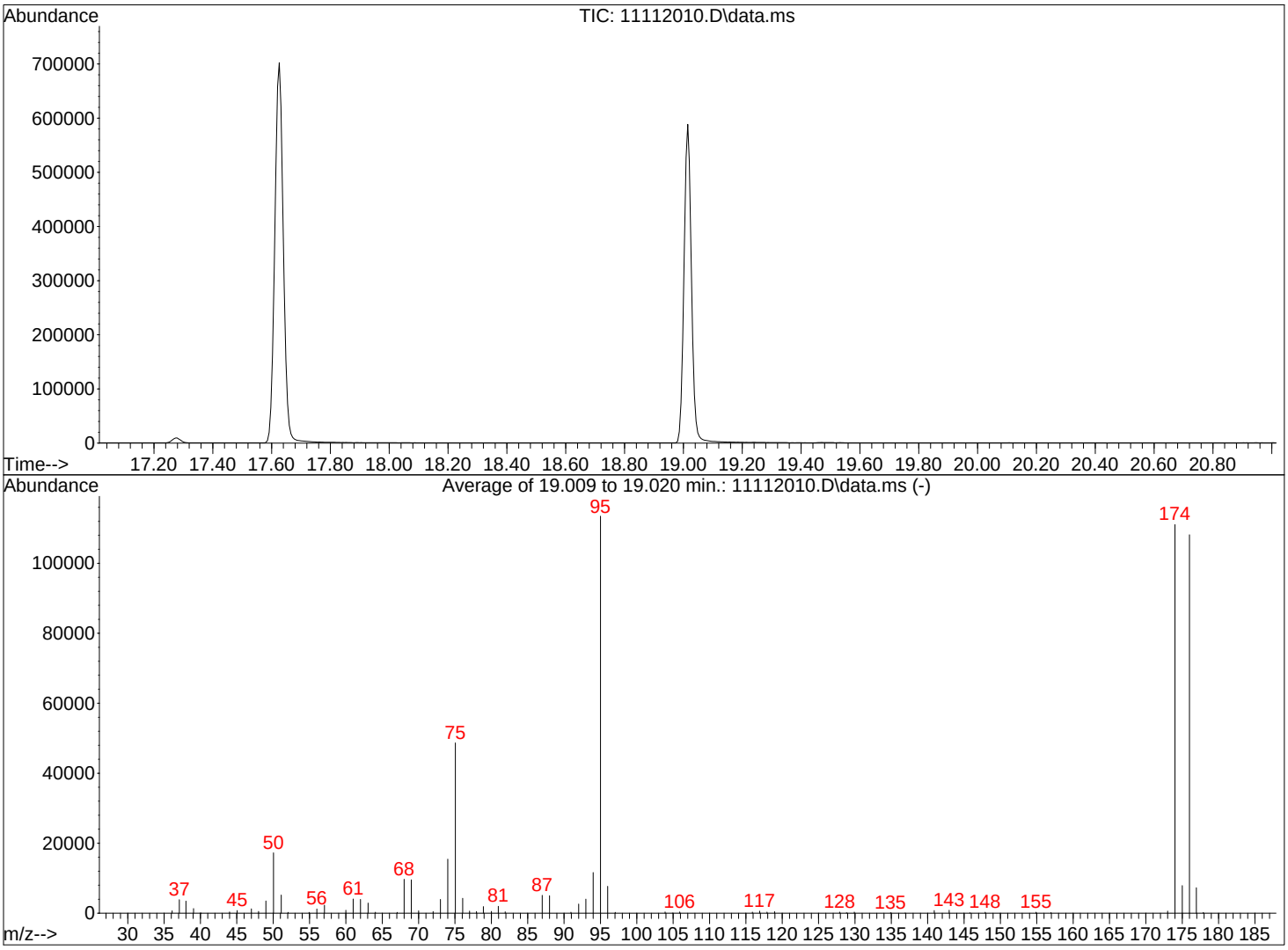
Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P201124-LCS	11242007.D	20:31
TRIP BLANK111720	P2006561-009	11242010.D	22:12
HUCKIAF111720-6	P2006561-001	11242011.D	22:45
HUCKIAF111720-6 (Lab Duplicate)	P2006561-001DUP	11242012.D	23:19
HUCKIAF111720-5	P2006561-002	11242013.D	23:52
HUCKIAF111720-1	P2006561-003	11242014.D	00:26
HUCKIAF111720-2	P2006561-004	11242015.D	01:00
HUCKIAFR111720-2	P2006561-005	11242016.D	01:33
HUCKAA111720-1	P2006561-007	11242017.D	02:07
HUCKAA111720-2	P2006561-008	11242018.D	02:41

BFB

Data Path : I:\MS13\DATA\2020 11\11\
Data File : 11112010.D
Acq On : 11 Nov 2020 19:14
Operator : LH
Sample : R13111120 BFB
Misc : S34-10302004
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13111120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Nov 12 02:54:31 2020



AutoFind: Scans 2704, 2705, 2706; Background Corrected with Scan 2697

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.2	17251	PASS
75	95	30	66	42.9	48688	PASS
95	95	100	100	100.0	113467	PASS
96	95	5	9	6.8	7698	PASS
173	174	0.00	2	0.6	627	PASS
174	95	50	120	97.9	111077	PASS
175	174	4	9	7.1	7886	PASS
176	174	93	101	97.4	108152	PASS
177	176	5	9	6.7	7266	PASS

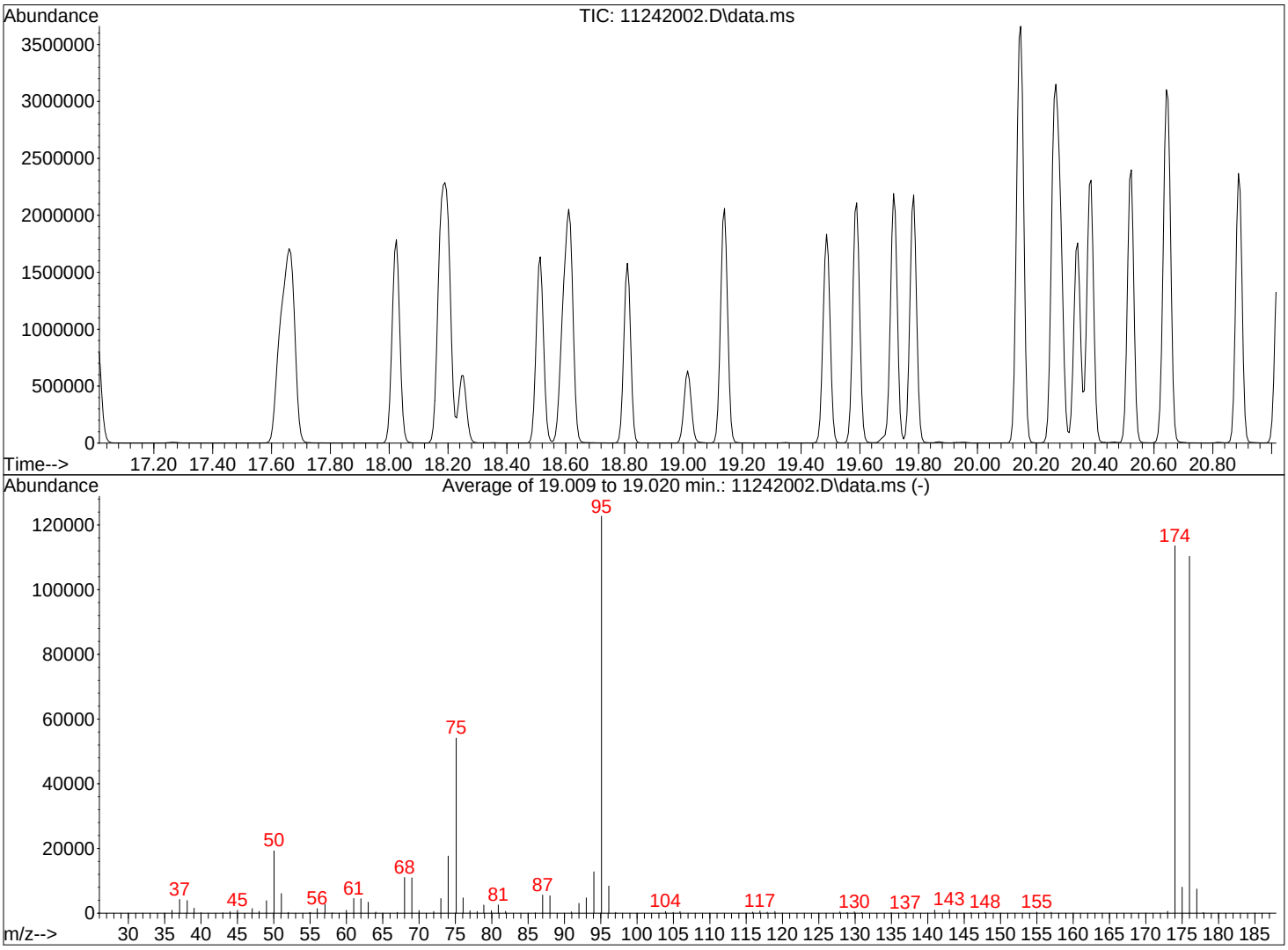
11/12/20

BFB

Data Path : I:\MS13\DATA\2020 11\24\
Data File : 11242002.D
Acq On : 24 Nov 2020 17:19
Operator : TD
Sample : CCV R13112420 25ng
Misc : S34-10302004/S34-11172002 (12/16)
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13111120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Nov 12 05:50:29 2020



AutoFind: Scans 2704, 2705, 2706; Background Corrected with Scan 2697

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.7	19245	PASS
75	95	30	66	44.1	54104	PASS
95	95	100	100	100.0	122757	PASS
96	95	5	9	6.8	8372	PASS
173	174	0.00	2	0.5	594	PASS
174	95	50	120	92.5	113576	PASS
175	174	4	9	7.1	8043	PASS
176	174	93	101	97.2	110344	PASS
177	176	5	9	6.8	7452	PASS

11/25/20

Client: **WSP Group** ALS Project ID: P2006561

Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 11242002.D
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 17:19
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	136589	11.20	586457	13.32	287178	17.63
	Upper Limit	191225	11.53	821040	13.65	402049	17.96
	Lower Limit	81953	10.87	351874	12.99	172307	17.30
	Client Sample ID						
01	Method Blank	127635	11.18	552120	13.31	257871	17.63
02	Lab Control Sample	127629	11.20	558940	13.32	275453	17.63
03	TRIP BLANK111720	123449	11.18	544069	13.31	251704	17.63
04	HUCKIAF111720-6	118696	11.18	521211	13.31	242508	17.63
05	HUCKIAF111720-6 (Lab Duplicate)	117027	11.18	515711	13.31	240507	17.63
06	HUCKIAF111720-5	117382	11.18	514569	13.31	239729	17.63
07	HUCKIAF111720-1	121370	11.18	532247	13.31	246638	17.63
08	HUCKIAF111720-2	123730	11.18	541839	13.31	249103	17.63
09	HUCKIAFR111720-2	126375	11.19	558014	13.31	255686	17.63
10	HUCKAA111720-1	126428	11.18	561634	13.31	254168	17.63
11	HUCKAA111720-2	124187	11.18	547510	13.31	248022	17.63
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 - Simi Valley
Method Detection Limit (MDL) Study

Analytical Method: EPA TO-15 Scan
Matrix: Air
Instrument(s): MS08, MS09, MS13, MS16
Units: ug/m3
Data Date Range: 11/14/17 - 03/20/18

	Spike Level (ug/m3)	Number of Results (n)	Mean	Mean % Rec.	Std Dev	%RSD	MW	MDL_R (ug/m3)	MDL_R (ppbv)
Propene	0.1659	8	0.1684	101.4796	0.0411	24.3989	42.08	0.13	0.076
Dichlorodifluoromethane	0.3144	8	0.2830	90.0127	0.0290	10.2465	120.90	0.087	0.018
Chloromethane	0.3018	8	0.2810	93.1080	0.0285	10.1301	50.49	0.086	0.042
Freon 114	0.3063	8	0.2660	86.8430	0.0277	10.4222	170.90	0.084	0.012
Vinyl Chloride	0.1651	8	0.1508	91.2972	0.0188	12.4796	62.50	0.057	0.022
1,3-Butadiene	0.3177	8	0.2651	83.4514	0.0291	10.9697	54.09	0.088	0.040
Bromomethane	0.2979	8	0.2589	86.9000	0.0245	9.4675	94.94	0.074	0.019
Chloroethane	0.1619	8	0.1513	93.4103	0.0217	14.3716	64.52	0.066	0.025
Ethanol	0.8434	8	0.7743	91.8054	0.1203	15.5431	46.07	0.37	0.20
Acetonitrile	0.3177	8	0.3016	94.9402	0.0432	14.3181	41.05	0.13	0.077
Acrolein	0.3162	8	0.2734	86.4564	0.0491	17.9597	56.06	0.15	0.065
Acetone	NA (MB)	8	0.4159	NA	0.2379	57.2154	58.08	1.2	0.51
Trichlorofluoromethane	0.1682	8	0.1590	94.5528	0.0267	16.8223	137.40	0.081	0.014
Isopropanol	0.6321	8	0.5943	94.0120	0.0712	11.9784	60.10	0.22	0.090
Acrylonitrile	0.3168	8	0.2550	80.4924	0.0357	13.9926	53.06	0.11	0.051
1,1-Dichloroethene	0.1061	8	0.1045	98.4920	0.0245	23.4010	96.94	0.074	0.019
tert-Butanol	0.6360	8	0.5920	93.0818	0.0502	8.4777	74.12	0.16	0.053
Methylene Chloride	NA (MB)	8	0.0930	NA	0.0186	20.0259	84.94	0.15	0.043
Allyl Chloride	0.1686	8	0.1510	89.5398	0.0237	15.7196	76.53	0.072	0.023
Trichlorotrifluoroethane	0.1685	8	0.1606	95.3377	0.0253	15.7496	187.38	0.076	0.0099
Carbon Disulfide	0.3189	8	0.3373	105.7542	0.0515	15.2812	76.14	0.16	0.051
trans-1,2-Dichloroethene	0.1730	8	0.1524	88.0984	0.0245	16.0713	96.94	0.074	0.019
1,1-Dichloroethane	0.3066	8	0.2759	89.9788	0.0257	9.3314	98.96	0.078	0.019
Methyl tert-Butyl Ether	0.3210	8	0.2894	90.1480	0.0209	7.2392	88.15	0.063	0.017
Vinyl Acetate	1.5843	8	1.1704	73.8733	0.3777	32.2735	86.09	1.2	0.34
2-Butanone	0.3156	8	0.2799	88.6803	0.0362	12.9427	72.11	0.11	0.037
cis-1,2-Dichloroethene	0.1707	8	0.1555	91.0848	0.0249	15.9869	96.94	0.075	0.019
Diisopropyl Ether	0.1065	8	0.1039	97.5352	0.0233	22.4032	102.18	0.070	0.017
Ethyl Acetate	0.6408	8	0.5554	86.6690	0.0930	16.7486	88.11	0.28	0.078
n-Hexane	0.1706	8	0.1750	102.6032	0.0341	19.4789	86.17	0.11	0.031
Chloroform	0.1698	8	0.1585	93.3671	0.0234	14.7346	119.40	0.071	0.015
Tetrahydrofuran	0.3192	8	0.3033	95.0031	0.0222	7.3139	72.11	0.067	0.023
Ethyl tert-Butyl Ether	0.3177	8	0.2834	89.1958	0.0212	7.4881	102.18	0.064	0.015
1,2-Dichloroethane	0.1055	8	0.0993	94.0758	0.0195	19.6095	98.96	0.059	0.015
1,1,1-Trichloroethane	0.3231	8	0.2744	84.9195	0.0220	8.0039	133.40	0.066	0.012
Isopropyl Acetate	0.6339	8	0.5565	87.7899	0.0553	9.9425	102.13	0.17	0.041
1-Butanol	0.3382	8	0.2546	75.2794	0.0446	17.5321	74.12	0.14	0.046
Benzene	0.3171	8	0.2785	87.8272	0.0254	9.1343	78.11	0.077	0.024
Carbon Tetrachloride	0.1696	8	0.1463	86.2323	0.0244	16.7077	153.80	0.074	0.012
Cyclohexane	0.6405	8	0.5643	88.0952	0.0471	8.3508	84.16	0.15	0.044
tert-Amyl Methyl Ether	0.3171	8	0.2843	89.6405	0.0217	7.6217	102.18	0.065	0.016
1,2-Dichloropropane	0.3198	8	0.2866	89.6263	0.0219	7.6550	113.00	0.066	0.014
Bromodichloromethane	0.3201	8	0.2633	82.2399	0.0255	9.6714	163.80	0.077	0.011
Trichloroethene	0.1061	8	0.1088	102.4976	0.0239	21.9578	131.40	0.072	0.013
1,4-Dioxane	0.1063	8	0.0878	82.5494	0.0208	23.7155	88.11	0.063	0.017
Isooctane	0.3180	8	0.2870	90.2516	0.0264	9.1979	114.23	0.080	0.017
Methyl Methacrylate	0.6336	8	0.5145	81.2027	0.0624	12.1269	100.12	0.19	0.046
n-Heptane	0.3195	8	0.2828	88.4977	0.0280	9.9095	100.20	0.085	0.021
cis-1,3-Dichloropropene	0.3360	8	0.2754	81.9568	0.0276	10.0148	111.00	0.083	0.018
4-Methyl-2-Pentanone	0.3177	8	0.2708	85.2219	0.0242	8.9447	100.20	0.073	0.018
trans-1,3-Dichloropropene	0.3201	8	0.2346	73.2974	0.0366	15.5902	111.00	0.11	0.024
1,1,2-Trichloroethane	0.3192	8	0.2798	87.6410	0.0178	6.3651	133.40	0.054	0.0099
Toluene	0.3162	8	0.2891	91.4374	0.0214	7.3868	92.14	0.065	0.017
2-Hexanone	0.3180	8	0.2736	86.0456	0.0219	8.0210	100.16	0.066	0.016
Dibromochloromethane	0.3183	8	0.2563	80.5058	0.0231	9.0246	208.30	0.070	0.0082
1,2-Dibromoethane	0.1702	8	0.1443	84.7333	0.0206	14.2542	187.90	0.062	0.0081
Butyl Acetate	0.1709	8	0.1516	88.7319	0.0242	15.9807	116.16	0.073	0.015
n-Octane	0.1696	8	0.1666	98.2459	0.0397	23.8489	114.23	0.12	0.026
Tetrachloroethene	0.1701	8	0.1575	92.6035	0.0228	14.4943	165.80	0.069	0.010
Chlorobenzene	0.1706	8	0.1624	95.2011	0.0234	14.3903	112.60	0.071	0.015
Ethylbenzene	0.1683	8	0.1584	94.0916	0.0250	15.7761	106.20	0.075	0.017
m- & p-Xylene	0.3397	8	0.3140	92.4399	0.0467	14.8637	106.20	0.14	0.032
Bromoform	0.3189	8	0.2293	71.8877	0.0350	15.2890	252.80	0.11	0.011
Styrene	0.1693	8	0.1423	84.0324	0.0286	20.1331	104.10	0.086	0.020
o-Xylene	0.1688	8	0.1553	91.9727	0.0255	16.4319	106.20	0.077	0.018

n-Nonane	0.3162	8	0.2833	89.5794	0.0294	10.3821	128.26	0.089	0.017
1,1,2,2-Tetrachloroethane	0.1691	8	0.1439	85.0727	0.0246	17.0714	167.90	0.074	0.011
Cumene	0.1683	8	0.1565	92.9777	0.0254	16.2190	120.20	0.077	0.016
alpha-Pinene	0.1674	8	0.1505	89.9259	0.0271	17.9876	136.24	0.082	0.015
n-Propylbenzene	0.1702	8	0.1554	91.2682	0.0256	16.4697	120.19	0.077	0.016
3-Ethyltoluene	0.1680	8	0.1544	91.8899	0.0237	15.3835	120.20	0.072	0.015
4-Ethyltoluene	0.3147	8	0.2720	86.4315	0.0282	10.3596	120.20	0.085	0.017
1,3,5-Trimethylbenzene	0.1678	8	0.1541	91.8285	0.0257	16.6521	120.20	0.077	0.016
alpha-Methylstyrene	0.1678	8	0.1346	80.2103	0.0282	20.9832	118.19	0.085	0.018
2-Ethyltoluene	0.1696	8	0.1563	92.1285	0.0226	14.4401	120.20	0.068	0.014
1,2,4-Trimethylbenzene	0.1682	8	0.1545	91.8768	0.0246	15.9071	120.20	0.074	0.015
n-Decane	0.1694	8	0.1566	92.4369	0.0240	15.3306	142.28	0.072	0.012
Benzyl Chloride	0.3222	8	0.1845	57.2626	0.0400	21.6860	126.59	0.12	0.023
1,3-Dichlorobenzene	0.1714	8	0.1545	90.1611	0.0267	17.2638	147.00	0.080	0.013
1,4-Dichlorobenzene	0.1702	8	0.1546	90.8277	0.0271	17.4973	147.00	0.082	0.014
sec-Butylbenzene	0.1688	8	0.1568	92.8614	0.0240	15.3328	134.22	0.073	0.013
p-Isopropyltoluene	0.1642	8	0.1514	92.2119	0.0269	17.7680	134.22	0.081	0.015
1,2,3-Trimethylbenzene	0.1642	8	0.1481	90.2321	0.0241	16.2524	120.19	0.073	0.015
1,2-Dichlorobenzene	0.1733	8	0.1550	89.4506	0.0262	16.9189	147.00	0.079	0.013
d-Limonene	0.1005	8	0.0905	90.0498	0.0345	38.0992	136.24	0.11	0.020
1,2-Dibromo-3-Chloropropane	0.3153	8	0.2146	68.0701	0.0332	15.4650	236.33	0.10	0.010
n-Undecane	0.1685	8	0.1431	84.9507	0.0437	30.5431	156.31	0.14	0.022
1,2,4-Trichlorobenzene	0.3291	8	0.2576	78.2817	0.0426	16.5412	181.50	0.13	0.018
Naphthalene	0.1690	8	0.1259	74.4999	0.0431	34.2029	128.17	0.13	0.025
n-Dodecane	0.1690	8	0.1171	69.3211	0.0494	42.2196	170.34	0.15	0.022
Hexachloro-1,3-butadiene	0.3171	8	0.2688	84.7524	0.0352	13.1114	260.80	0.11	0.010
Cyclohexanone	0.3117	8	0.2625	84.2156	0.0274	10.4566	98.14	0.083	0.021
tert-Butylbenzene	0.3150	8	0.2748	87.2222	0.0265	9.6429	134.22	0.080	0.015
n-Butylbenzene	0.1686	8	0.1515	89.8363	0.0254	16.7543	134.22	0.077	0.014

Note: Method blanks evaluated per 2016 EPA MUR which ammended the MDL procedure in 40 CFR Appendix B. Any compounds with the spike level indicated as "NA (MB)" had a method blank MDL value higher than the calculated spike sample MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **HUCKIAF111720-6** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-001

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00529

Initial Pressure (psig): -1.42 Final Pressure (psig): 3.84

Canister Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.15	0.11	ND	0.039	0.026	
79-01-6	Trichloroethene	**4.1**	0.15	0.10	**0.77**	0.029	0.019	
127-18-4	Tetrachloroethene	**0.44**	0.14	0.097	**0.065**	0.021	0.014	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242011.D Vial: 2
Acq On : 24 Nov 2020 22:45 Operator: TD
Sample : P2006561-001 (1000mL) Inst : MS13
Misc : S34-10302004

TD 11/25/20

Quant Time: Nov 25 10:58:52 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	118696	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	521211	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	242508	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.03	65	170721	13.326	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.64%				
57) Toluene-d8 (SS2)	15.76	98	583761	12.287	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.32%				
73) Bromofluorobenzene (SS3)	19.01	174	172840	10.841	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 86.72%				
Target Compounds							Qvalue
2) Propene	4.17	42	2677m	0.266	ng		
3) Dichlorodifluoromethan...	4.33	85	39323	1.981	ng		99
4) Chloromethane	4.61	50	6260	0.540	ng		94
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	945	0.094	ng	#	64
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	6.05	64	1106	0.158	ng		72
10) Ethanol	6.39	45	128112	20.672	ng		100
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	6.89	56	1066	0.188	ng		81
13) Acetone	7.06	58	44137	6.842	ng		91
14) Trichlorofluoromethane	7.30	101	16920	0.985	ng		99
15) 2-Propanol (Isopropanol)	7.60	45	15180m	0.677	ng		
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	8.47	84	3804	0.383	ng		91
20) 3-Chloro-1-propene (Al...	8.57	41	476	N.D.			
21) Trichlorotrifluoroethane	8.90	151	3176	0.321	ng		83
22) Carbon Disulfide	8.75	76	21413	0.626	ng		95
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	10.55	72	3459	0.587	ng	#	65
28) cis-1,2-Dichloroethene	11.03	61	429	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	11.34	61	4582	1.487	ng	#	79
31) n-Hexane	11.30	57	5561	0.382	ng	#	97
32) Chloroform	11.36	83	1433	0.088	ng		90
34) Tetrahydrofuran (THF)	11.83	72	1956	0.310	ng	#	84
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.	d		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	13.01	56	837	No Calib		#	
41) Benzene	12.92	78	18286	0.455	ng		97
42) Carbon Tetrachloride	13.07	117	4532	0.343	ng		97
43) Cyclohexane	13.21	84	2123	0.136	ng	#	81
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	14.01	83	306	N.D.			
47) Trichloroethene	14.01	130	35736	2.953	ng		99
48) 1,4-Dioxane	14.04	88	1865	0.235	ng		83
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		
50) Methyl Methacrylate	0.00	100	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242011.D Vial: 2
Acq On : 24 Nov 2020 22:45 Operator: TD
Sample : P2006561-001 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 10:58:52 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

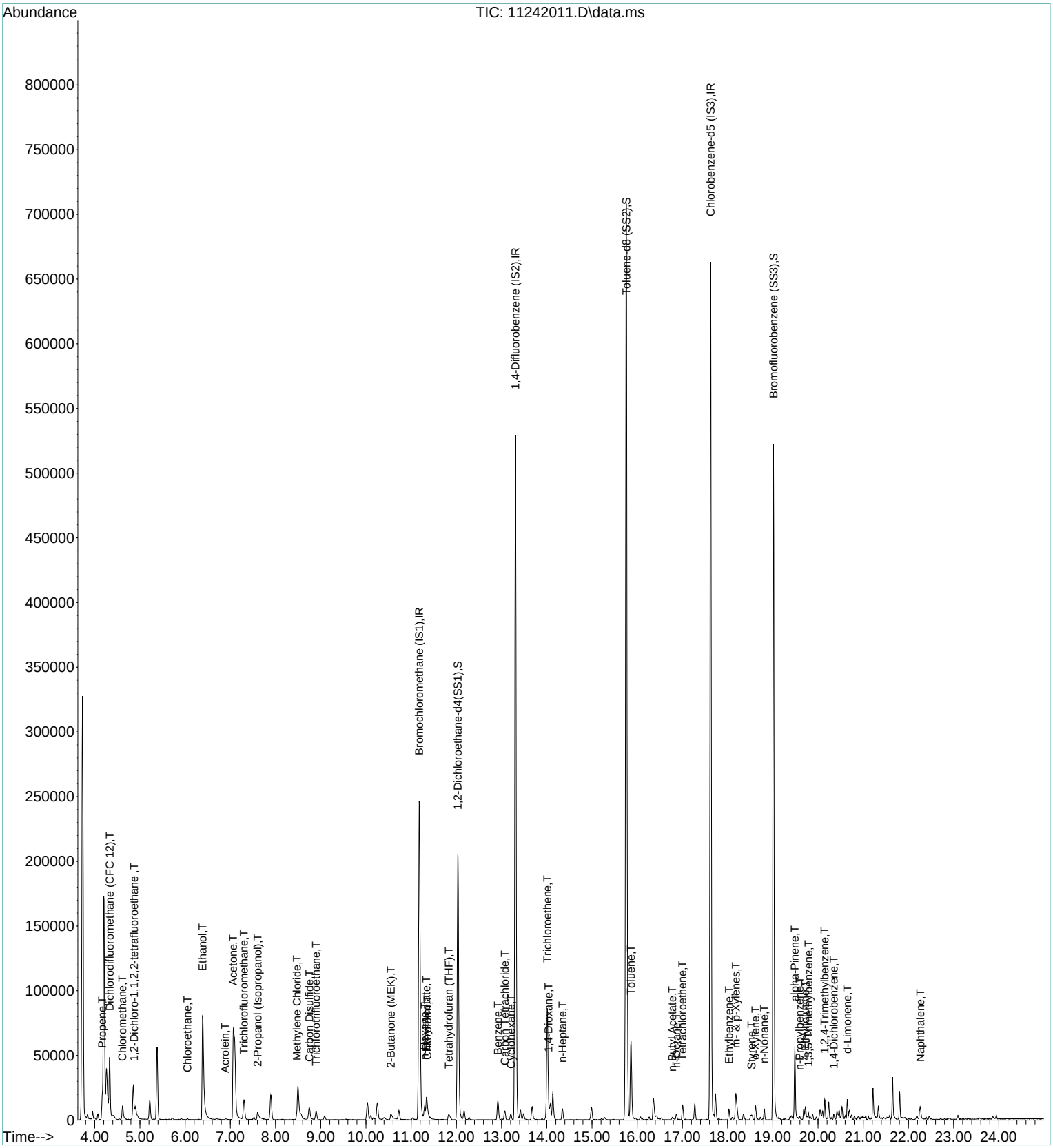
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	2545	0.248 ng		92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D. d		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.86	91	55290	1.245 ng		97
59) 2-Hexanone	16.11	43	561	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.78	43	3027	0.169 ng		89
63) n-Octane	16.87	57	937	0.106 ng	#	77
64) Tetrachloroethene	17.00	166	4445	0.315 ng		96
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	18.03	91	8566	0.172 ng		93
67) m- & p-Xylenes	18.18	91	19541	0.506 ng		97
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.53	104	1750	0.057 ng		87
70) o-Xylene	18.62	91	7078	0.181 ng		94
71) n-Nonane	18.81	43	3090	0.169 ng		87
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	19.15	105	856	N.D.		
75) alpha-Pinene	19.49	93	22550	0.862 ng		79
76) n-Propylbenzene	19.59	91	4110	0.069 ng	#	69
77) 3-Ethyltoluene	19.72	105	3360	No Calib	#	
78) 4-Ethyltoluene	19.72	105	3360	0.069 ng	#	43
79) 1,3,5-Trimethylbenzene	19.79	105	2759	0.062 ng		80
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.96	105	2238	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	7755	0.189 ng		87
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	20.15	91	785	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D. d		
86) 1,4-Dichlorobenzene	20.35	146	1992	0.072 ng		99
87) sec-Butylbenzene	20.39	105	245	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d		
89) 1,2,3-Trimethylbenzene	20.53	105	1788	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.65	68	4065	0.279 ng		92
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.34	57	3954	No Calib		
94) 1,2,4-Trichlorobenzene	22.16	180	668	N.D.		
95) Naphthalene	22.26	128	9839	0.173 ng		89
96) n-Dodecane	22.25	57	2335	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.10	55	438	No Calib	#	
99) tert-Butylbenzene	20.15	119	978	N.D.		
100) n-Butylbenzene	20.90	91	717	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242011.D Vial: 2
Acq On : 24 Nov 2020 22:45 Operator: TD
Sample : P2006561-001 (1000mL) Inst : MS13
Misc : S34-10302004

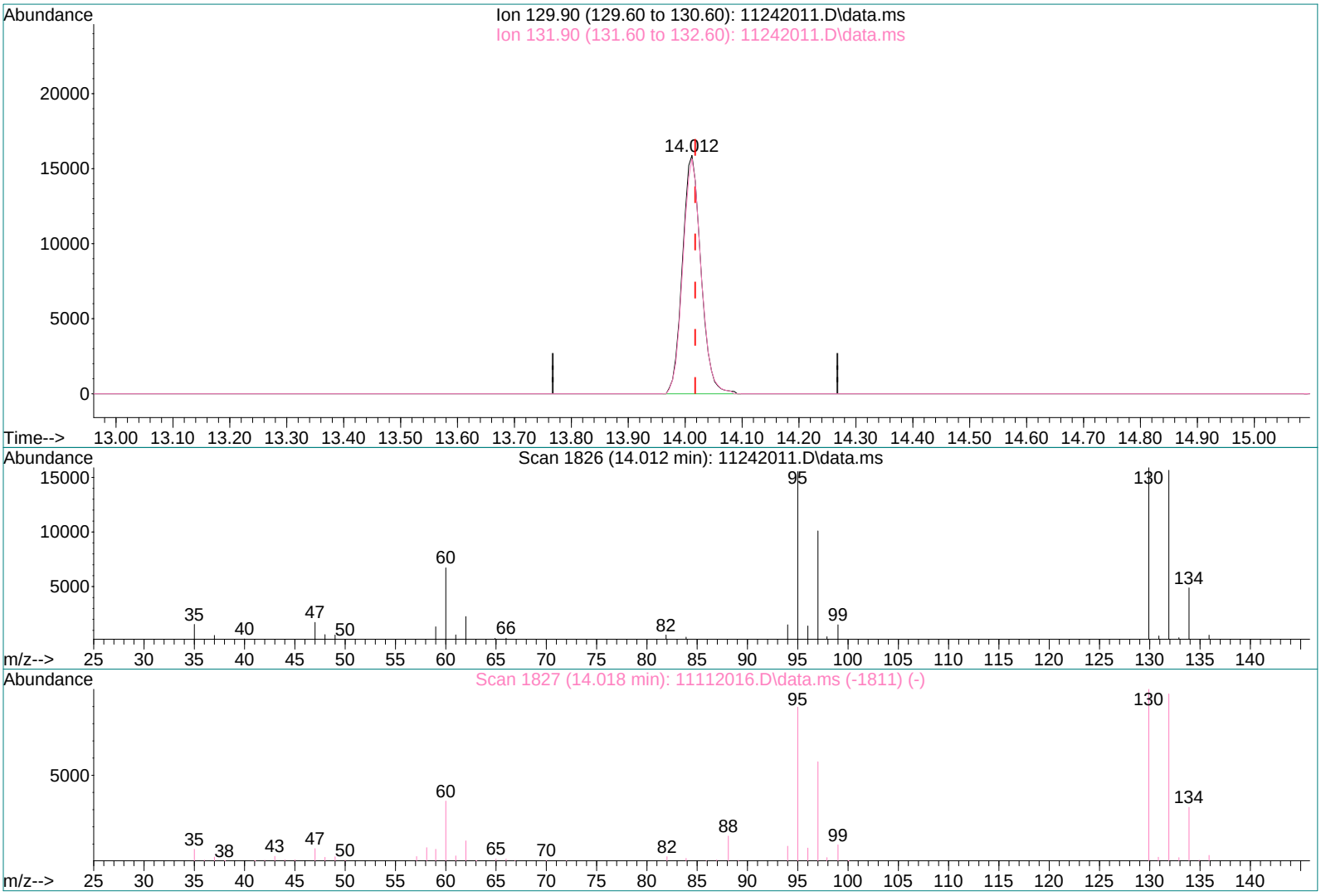
Quant Time: Nov 25 10:58:52 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242011.D Vial: 2
Acq On : 24 Nov 2020 22:45 Operator: TD
Sample : P2006561-001 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:02 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242011.D\data.ms

(47) Trichloroethene (T)

14.012min (-0.006) 2.95ng

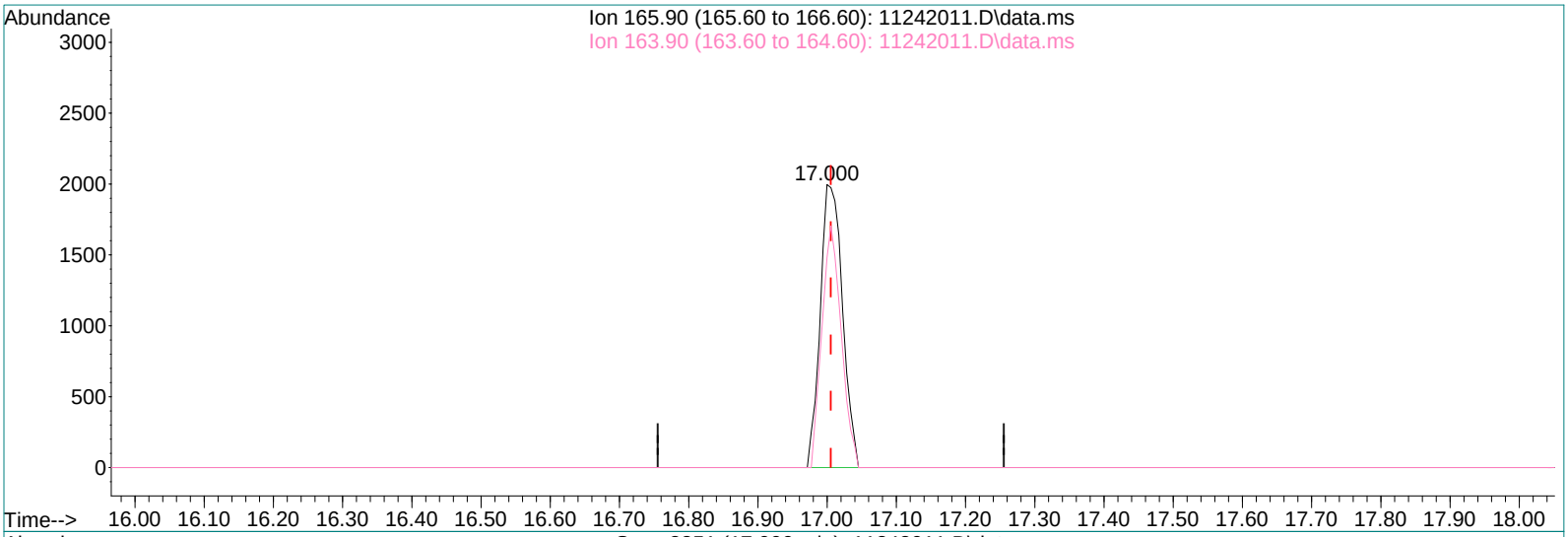
response 35736

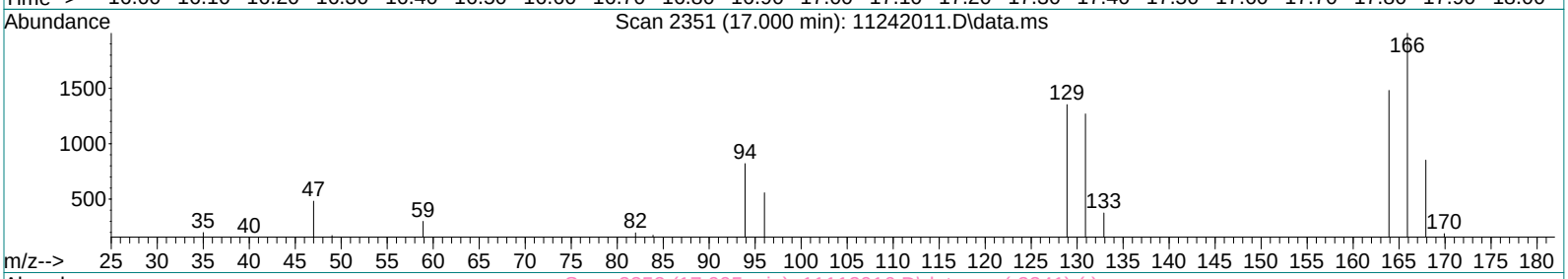
Ion	Exp%	Act%
129.90	100	100
131.90	96.20	97.22
0.00	0.00	0.00
0.00	0.00	0.00

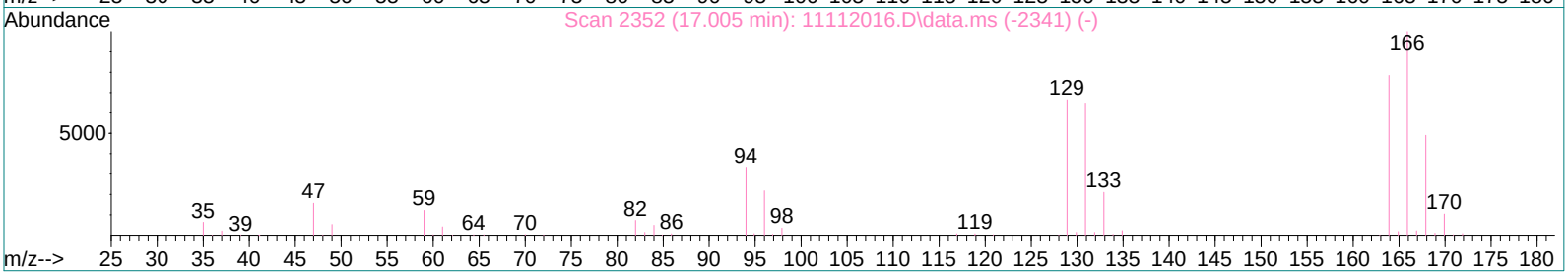
Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242011.D Vial: 2
Acq On : 24 Nov 2020 22:45 Operator: TD
Sample : P2006561-001 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:02 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11242011.D\data.ms

(64) Tetrachloroethene (T)

17.000min (-0.006) 0.32ng

response 4445

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	74.65
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **HUCKIAF111720-5** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-002

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01274

Initial Pressure (psig): -1.59 Final Pressure (psig): 4.26

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**0.11**	0.16	0.11	**0.028**	0.040	0.027	**J**
79-01-6	Trichloroethene	**3.8**	0.16	0.10	**0.70**	0.030	0.019	
127-18-4	Tetrachloroethene	**1.4**	0.15	0.10	**0.21**	0.021	0.015	

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

Quantitation Report (QT Reviewed)

TD 11/25/20

Data File : I:\MS13\DATA\2020 11\24\11242013.D Vial: 3
Acq On : 24 Nov 2020 23:52 Operator: TD
Sample : P2006561-002 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:05:41 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	117382	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	514569	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	239729	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	170198	13.434	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.44%				
57) Toluene-d8 (SS2)	15.76	98	579763	12.344	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.72%				
73) Bromofluorobenzene (SS3)	19.01	174	171837	10.903	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.20%				
Target Compounds							Qvalue
2) Propene	4.17	42	16748	1.681	ng		94
3) Dichlorodifluoromethan...	4.33	85	39213	1.998	ng		100
4) Chloromethane	4.62	50	3269	0.285	ng		93
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	916	0.092	ng	#	42
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	5.30	54	192	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.39	45	110603	18.047	ng		100
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	6.88	56	3538	0.630	ng		93
13) Acetone	7.05	58	133759	20.967	ng		92
14) Trichlorofluoromethane	7.30	101	17963	1.057	ng		100
15) 2-Propanol (Isopropanol)	7.55	45	107768	4.860	ng		96
16) Acrylonitrile	0.00	53	0	N.D.	d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	8.48	84	11962	1.216	ng		91
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	8.90	151	3289	0.336	ng		92
22) Carbon Disulfide	8.74	76	15150	0.448	ng		95
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	10.16	73	573	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	10.52	72	15950	2.739	ng	#	85
28) cis-1,2-Dichloroethene	11.02	61	954	0.076	ng		94
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	11.33	61	13230	4.340	ng		82
31) n-Hexane	11.30	57	27569	1.916	ng		97
32) Chloroform	11.36	83	1813	0.113	ng		94
34) Tetrahydrofuran (THF)	11.81	72	7108	1.138	ng	#	80
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	12.17	62	3378	0.288	ng		95
38) 1,1,1-Trichloroethane	12.44	97	470	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	12.92	56	12844	No Calib			
41) Benzene	12.92	78	31093	0.784	ng		99
42) Carbon Tetrachloride	13.07	117	4552	0.349	ng		98
43) Cyclohexane	13.20	84	9049	0.588	ng	#	84
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	13.77	63	162	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	14.01	130	31119	2.605	ng		100
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		
50) Methyl Methacrylate	0.00	100	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242013.D Vial: 3
Acq On : 24 Nov 2020 23:52 Operator: TD
Sample : P2006561-002 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:05:41 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

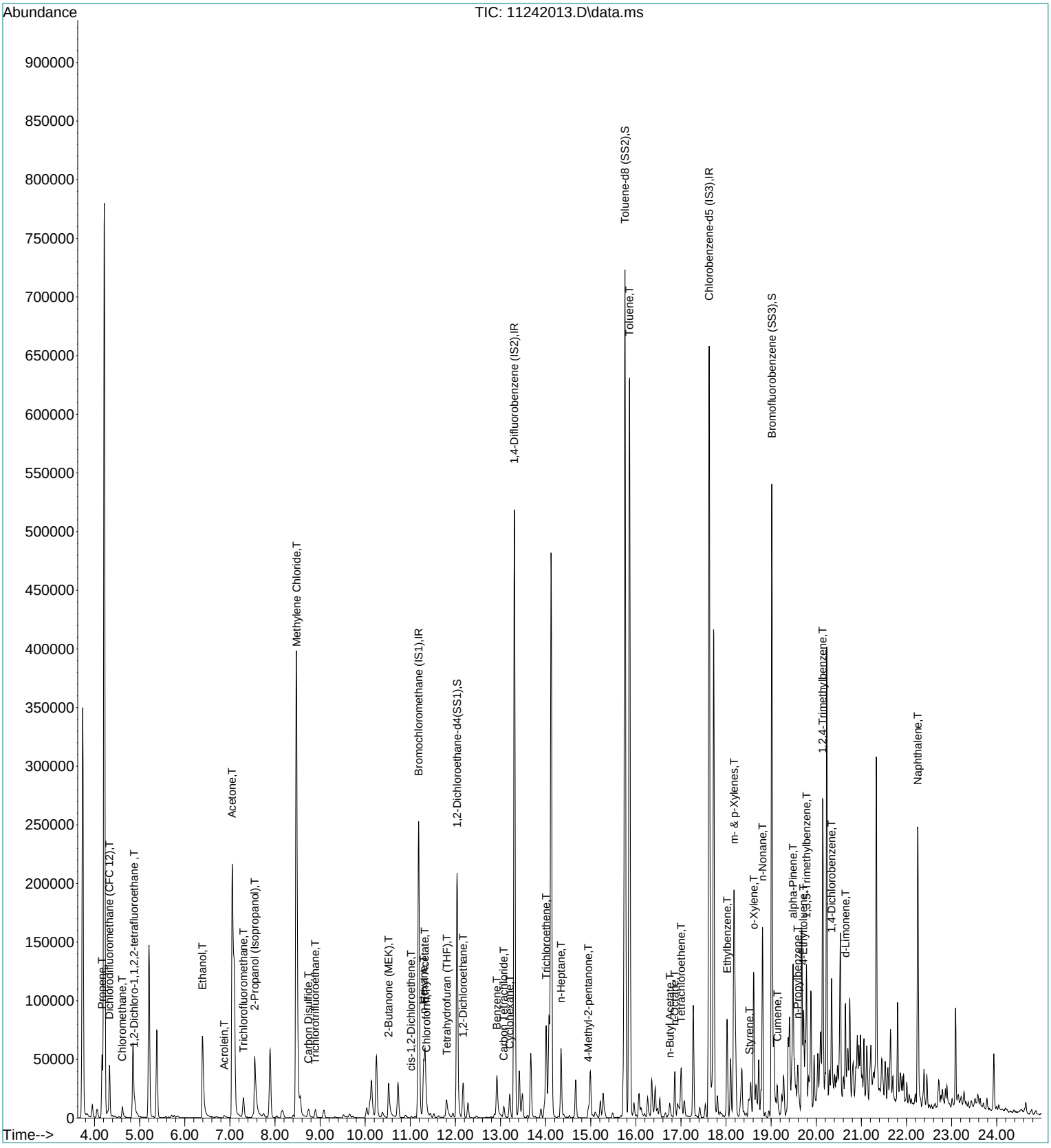
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.34	71	16472	1.624 ng		92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	14.95	58	1914	0.259 ng	#	12
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.86	91	547367	12.469 ng		99
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.76	43	9928	0.561 ng		92
63) n-Octane	16.86	57	8204	0.943 ng		87
64) Tetrachloroethene	17.01	166	13829	0.992 ng		99
65) Chlorobenzene	0.00	112	0	N.D. d		
66) Ethylbenzene	18.02	91	68278	1.388 ng		96
67) m- & p-Xylenes	18.18	91	159866	4.189 ng		97
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.52	104	4666	0.154 ng		97
70) o-Xylene	18.62	91	58439	1.508 ng		97
71) n-Nonane	18.81	43	56590	3.136 ng		92
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D. d		
74) Cumene	19.14	105	7131	0.140 ng		96
75) alpha-Pinene	19.49	93	45849	1.772 ng	#	42
76) n-Propylbenzene	19.59	91	32818	0.556 ng		94
77) 3-Ethyltoluene	19.71	105	35684	No Calib		
78) 4-Ethyltoluene	19.71	105	35281	0.736 ng		97
79) 1,3,5-Trimethylbenzene	19.78	105	30883	0.699 ng		96
80) alpha-Methylstyrene	19.71	118	159	No Calib	#	
81) 2-Ethyltoluene	19.95	105	29787	No Calib		
82) 1,2,4-Trimethylbenzene	20.14	105	104786	2.584 ng		88
83) n-Decane	20.14	58	2346	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D. d		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D. d		
86) 1,4-Dichlorobenzene	20.34	146	35725	1.312 ng		99
87) sec-Butylbenzene	20.39	105	2526	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d		
89) 1,2,3-Trimethylbenzene	20.52	105	20745	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.65	68	17186	1.193 ng		92
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.33	57	88794	No Calib		
94) 1,2,4-Trichlorobenzene	22.15	180	483	N.D.		
95) Naphthalene	22.25	128	122804	2.184 ng		99
96) n-Dodecane	22.25	57	37592	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.16	55	3006	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D. d		
100) n-Butylbenzene	0.00	91	0	N.D. d		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D. d		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242013.D Vial: 3
Acq On : 24 Nov 2020 23:52 Operator: TD
Sample : P2006561-002 (1000mL) Inst : MS13
Misc : S34-10302004

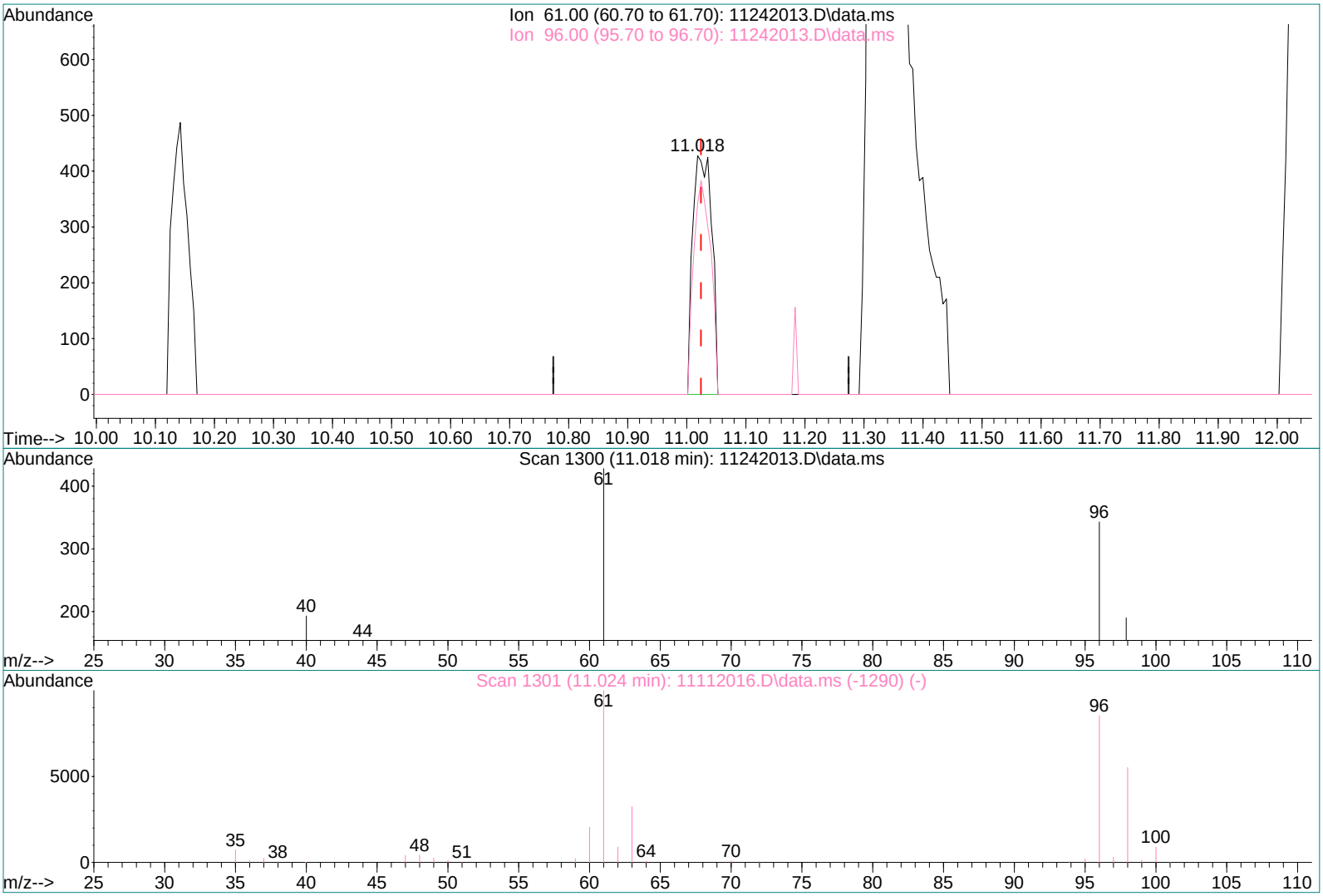
Quant Time: Nov 25 11:05:41 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242013.D Vial: 3
Acq On : 24 Nov 2020 23:52 Operator: TD
Sample : P2006561-002 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:06 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242013.D\data.ms

(28) cis-1,2-Dichloroethene (T)

11.018min (-0.006) 0.08ng

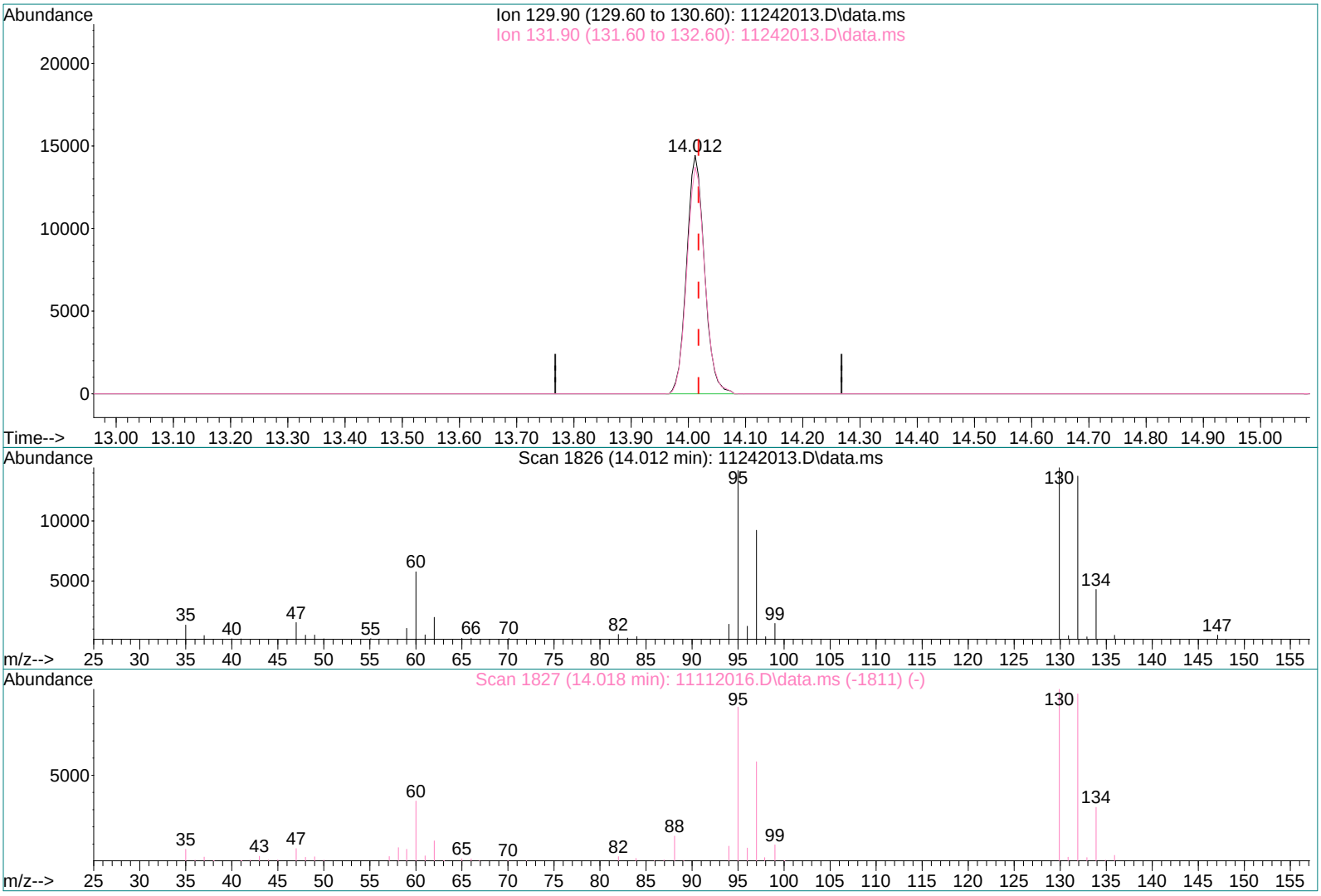
response 954

Ion	Exp%	Act%
61.00	100	100
96.00	85.40	79.77
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242013.D Vial: 3
Acq On : 24 Nov 2020 23:52 Operator: TD
Sample : P2006561-002 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:06 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242013.D\data.ms

(47) Trichloroethene (T)

14.012min (-0.006) 2.60ng

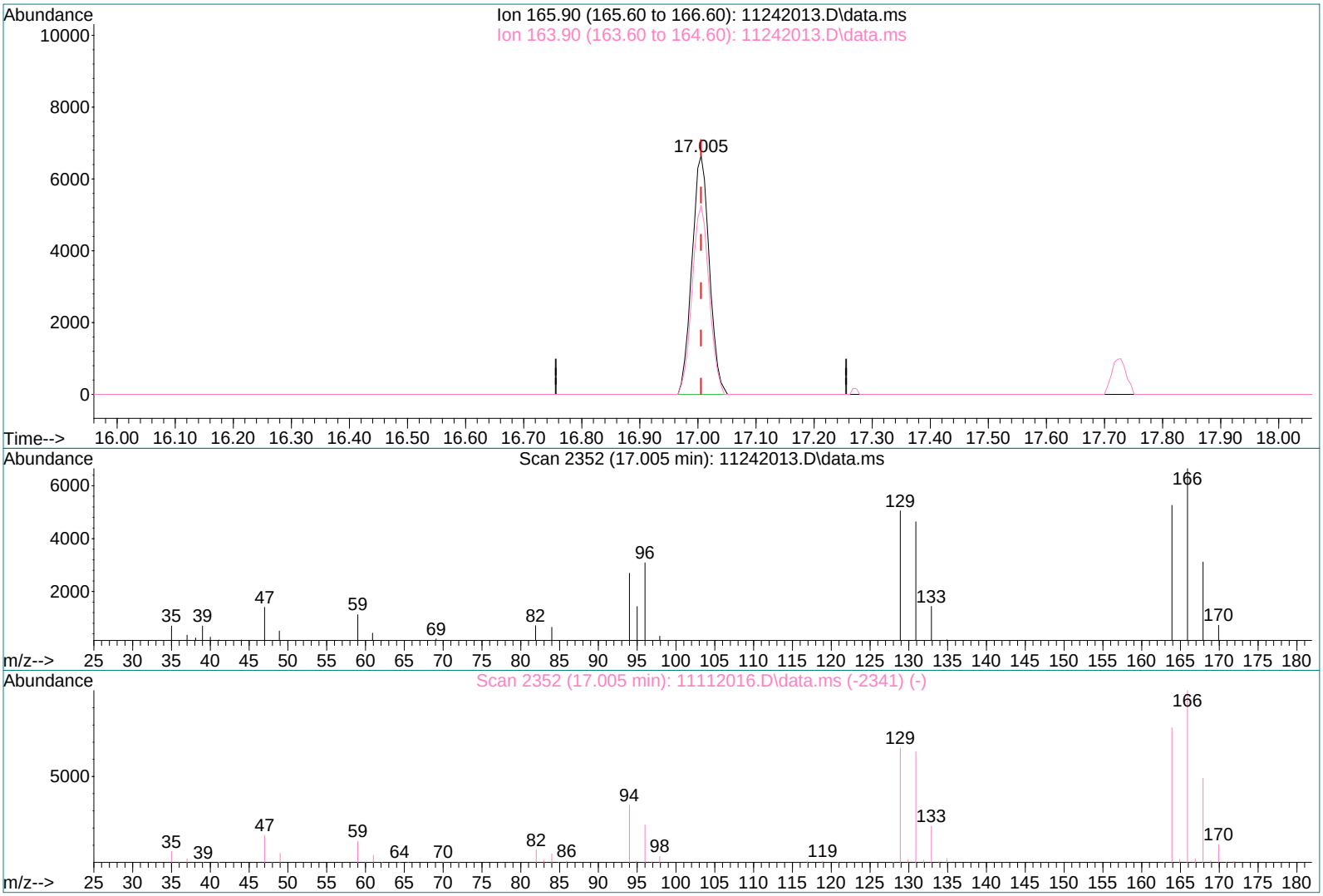
response 31119

Ion	Exp%	Act%
129.90	100	100
131.90	96.20	96.18
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242013.D Vial: 3
Acq On : 24 Nov 2020 23:52 Operator: TD
Sample : P2006561-002 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:06 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242013.D\data.ms

(64) Tetrachloroethene (T)

17.005min (-0.000) 0.99ng

response 13829

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	77.96
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **HUCKIAF111720-1** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-003

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/25/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00852

Initial Pressure (psig): -1.23 Final Pressure (psig): 4.06

Canister Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**0.19**	0.15	0.10	**0.049**	0.039	0.026	
79-01-6	Trichloroethene	**6.2**	0.15	0.10	**1.2**	0.028	0.019	
127-18-4	Tetrachloroethene	**1.7**	0.14	0.096	**0.25**	0.021	0.014	

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

Quantitation Report (QT Reviewed)

TD 11/25/20

Data File : I:\MS13\DATA\2020 11\24\11242014.D Vial: 5
Acq On : 25 Nov 2020 00:26 Operator: TD
Sample : P2006561-003 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:07:50 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	121370	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	532247	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	246638	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	177397	13.542	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.32%				
57) Toluene-d8 (SS2)	15.76	98	599209	12.401	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%				
73) Bromofluorobenzene (SS3)	19.01	174	177341	10.937	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.52%				
Target Compounds							Qvalue
2) Propene	4.16	42	17221	1.671	ng		99
3) Dichlorodifluoromethan...	4.33	85	40631	2.002	ng		99
4) Chloromethane	4.61	50	3331	0.281	ng		92
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	979	0.095	ng	#	64
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	5.30	54	319	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.39	45	171924	27.130	ng		100
11) Acetonitrile	6.69	41	1772	0.113	ng	#	33
12) Acrolein	6.87	56	4229	0.728	ng		96
13) Acetone	7.05	58	169142	25.643	ng		88
14) Trichlorofluoromethane	7.30	101	19157	1.090	ng		99
15) 2-Propanol (Isopropanol)	7.55	45	115063	5.018	ng		95
16) Acrylonitrile	7.75	53	162	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	8.47	84	6353	0.625	ng		91
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	8.90	151	3428	0.339	ng		84
22) Carbon Disulfide	8.74	76	5773	0.165	ng		88
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	10.52	72	12286	2.040	ng	#	82
28) cis-1,2-Dichloroethene	11.02	61	1794	0.139	ng		98
29) Diisopropyl Ether	11.35	87	305	N.D.			
30) Ethyl Acetate	11.33	61	8787	2.788	ng		84
31) n-Hexane	11.30	57	23379	1.571	ng		98
32) Chloroform	11.35	83	4004	0.241	ng		97
34) Tetrahydrofuran (THF)	11.81	72	4930	0.763	ng	#	73
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	12.17	62	3645	0.301	ng		95
38) 1,1,1-Trichloroethane	12.44	97	2245	0.144	ng		98
39) Isopropyl Acetate	12.92	61	249	No Calib		#	
40) 1-Butanol	12.92	56	14320	No Calib			
41) Benzene	12.92	78	31525	0.768	ng		99
42) Carbon Tetrachloride	13.07	117	4949	0.367	ng		96
43) Cyclohexane	13.20	84	8195	0.515	ng	#	83
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	13.77	63	186	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D. d			
47) Trichloroethene	14.01	130	55072	4.456	ng		99
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			
50) Methyl Methacrylate	0.00	100	0	N.D. d			

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242014.D Vial: 5
Acq On : 25 Nov 2020 00:26 Operator: TD
Sample : P2006561-003 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:07:50 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

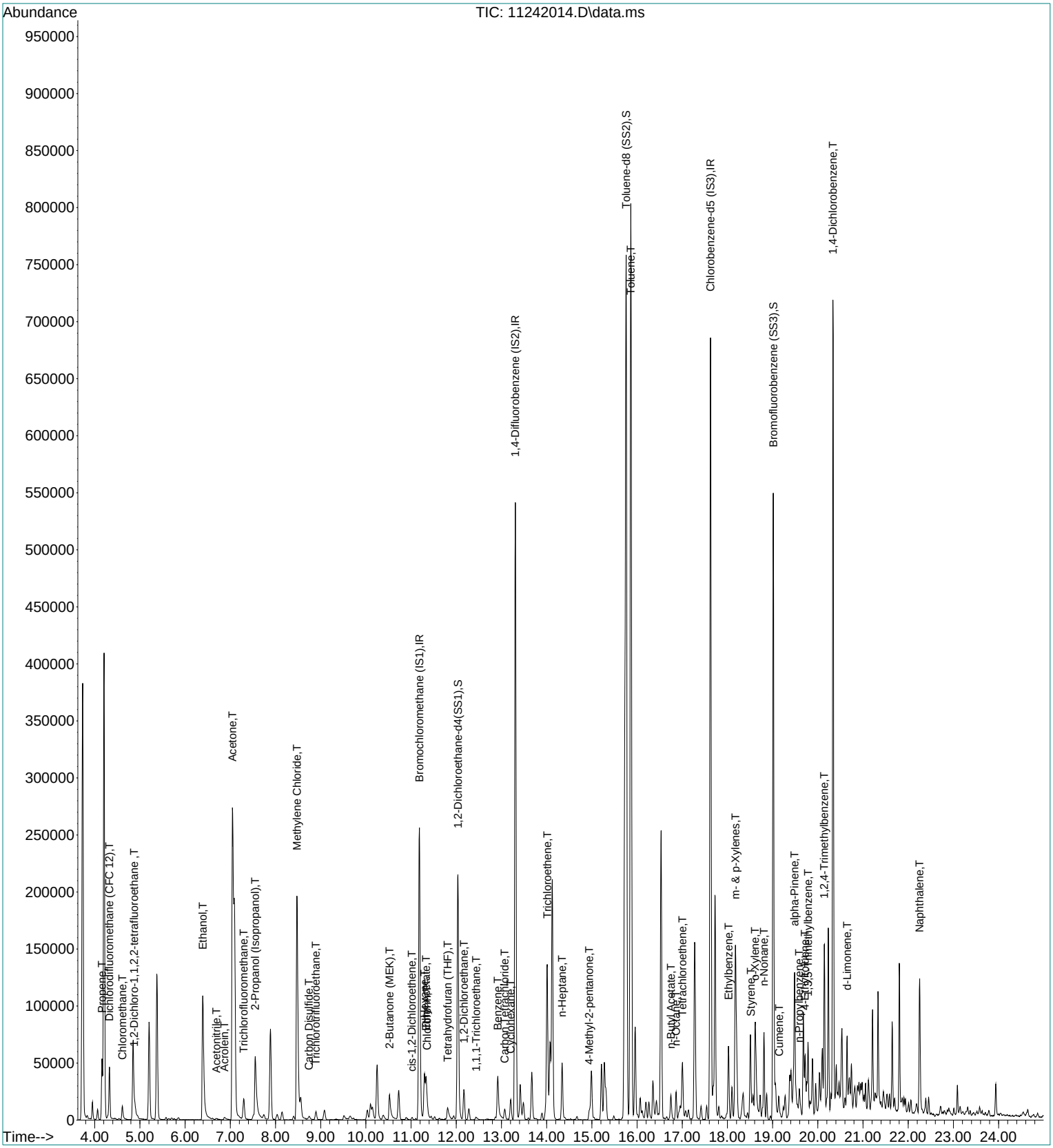
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.34	71	14319	1.365 ng		93
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	14.94	58	2591	0.339 ng	#	33
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.86	91	409524	9.067 ng		99
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.75	43	16691	0.917 ng		95
63) n-Octane	16.86	57	5036	0.563 ng		91
64) Tetrachloroethene	17.01	166	17176	1.197 ng		100
65) Chlorobenzene	0.00	112	0	N.D. d		
66) Ethylbenzene	18.02	91	52131	1.030 ng		96
67) m- & p-Xylenes	18.18	91	127260	3.241 ng		97
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.52	104	7587	0.243 ng		99
70) o-Xylene	18.61	91	46701	1.172 ng		97
71) n-Nonane	18.81	43	26900	1.449 ng		92
72) 1,1,2,2-Tetrachloroethane	18.61	83	505	N.D.		
74) Cumene	19.15	105	5155	0.098 ng		95
75) alpha-Pinene	19.49	93	47913	1.800 ng	#	45
76) n-Propylbenzene	19.59	91	20297	0.334 ng		93
77) 3-Ethyltoluene	19.71	105	22262	No Calib		
78) 4-Ethyltoluene	19.71	105	21862	0.443 ng		97
79) 1,3,5-Trimethylbenzene	19.78	105	19565	0.430 ng		94
80) alpha-Methylstyrene	19.67	118	183	No Calib	#	
81) 2-Ethyltoluene	19.95	105	18740	No Calib		
82) 1,2,4-Trimethylbenzene	20.14	105	66595	1.596 ng		87
83) n-Decane	20.14	58	1412	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D. d		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D. d		
86) 1,4-Dichlorobenzene	20.33	146	308113	11.000 ng		100
87) sec-Butylbenzene	20.39	105	2141	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d		
89) 1,2,3-Trimethylbenzene	20.52	105	14911	No Calib	#	
90) 1,2-Dichlorobenzene	20.64	146	307	N.D.		
91) d-Limonene	20.65	68	15423	1.041 ng		96
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.33	57	30912	No Calib		
94) 1,2,4-Trichlorobenzene	22.16	180	338	N.D.		
95) Naphthalene	22.25	128	74595	1.289 ng		98
96) n-Dodecane	22.25	57	13523	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.15	55	1621	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D. d		
100) n-Butylbenzene	0.00	91	0	N.D. d		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D. d		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242014.D Vial: 5
Acq On : 25 Nov 2020 00:26 Operator: TD
Sample : P2006561-003 (1000mL) Inst : MS13
Misc : S34-10302004

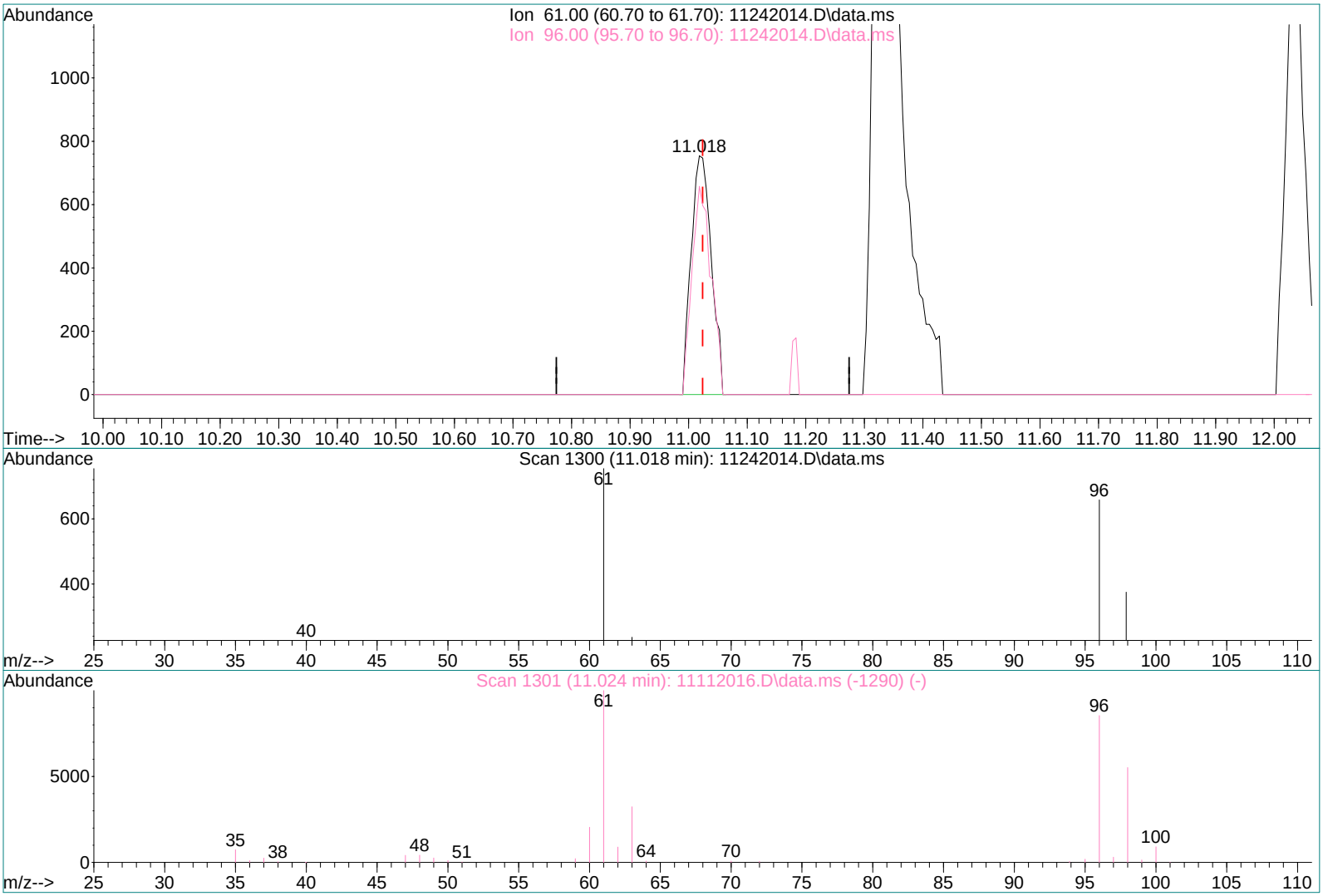
Quant Time: Nov 25 11:07:50 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242014.D Vial: 5
Acq On : 25 Nov 2020 00:26 Operator: TD
Sample : P2006561-003 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:08 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242014.D\data.ms

(28) cis-1,2-Dichloroethene (T)

11.018min (-0.006) 0.14ng

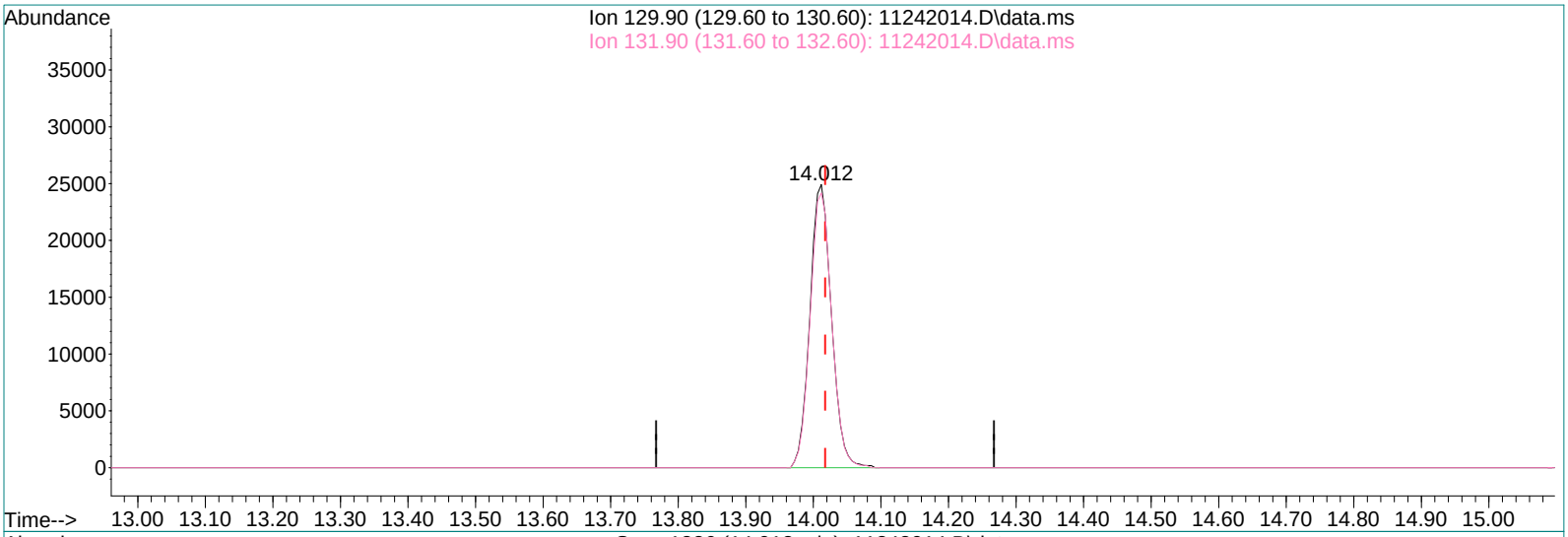
response 1794

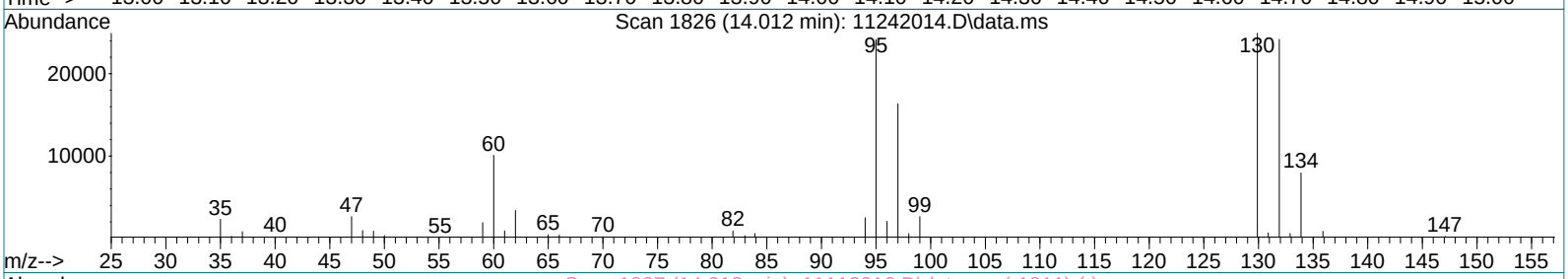
Ion	Exp%	Act%
61.00	100	100
96.00	85.40	83.33
0.00	0.00	0.00
0.00	0.00	0.00

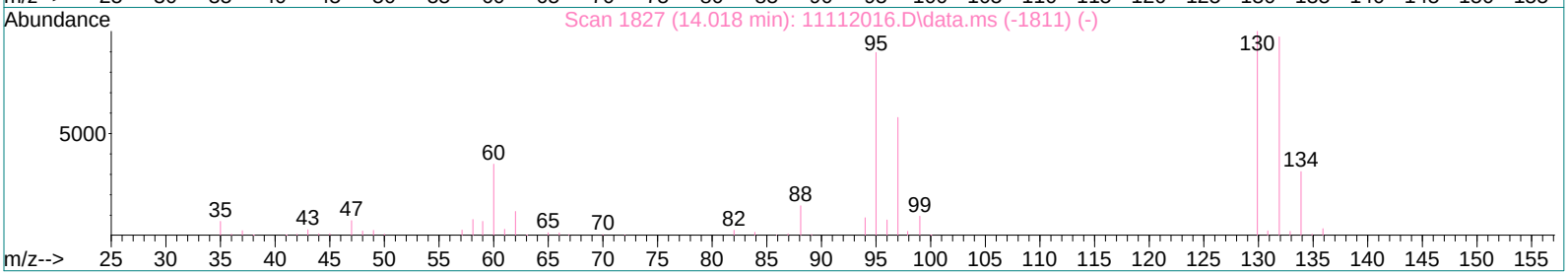
Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242014.D Vial: 5
Acq On : 25 Nov 2020 00:26 Operator: TD
Sample : P2006561-003 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:08 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11242014.D\data.ms

(47) Trichloroethene (T)

14.012min (-0.006) 4.46ng

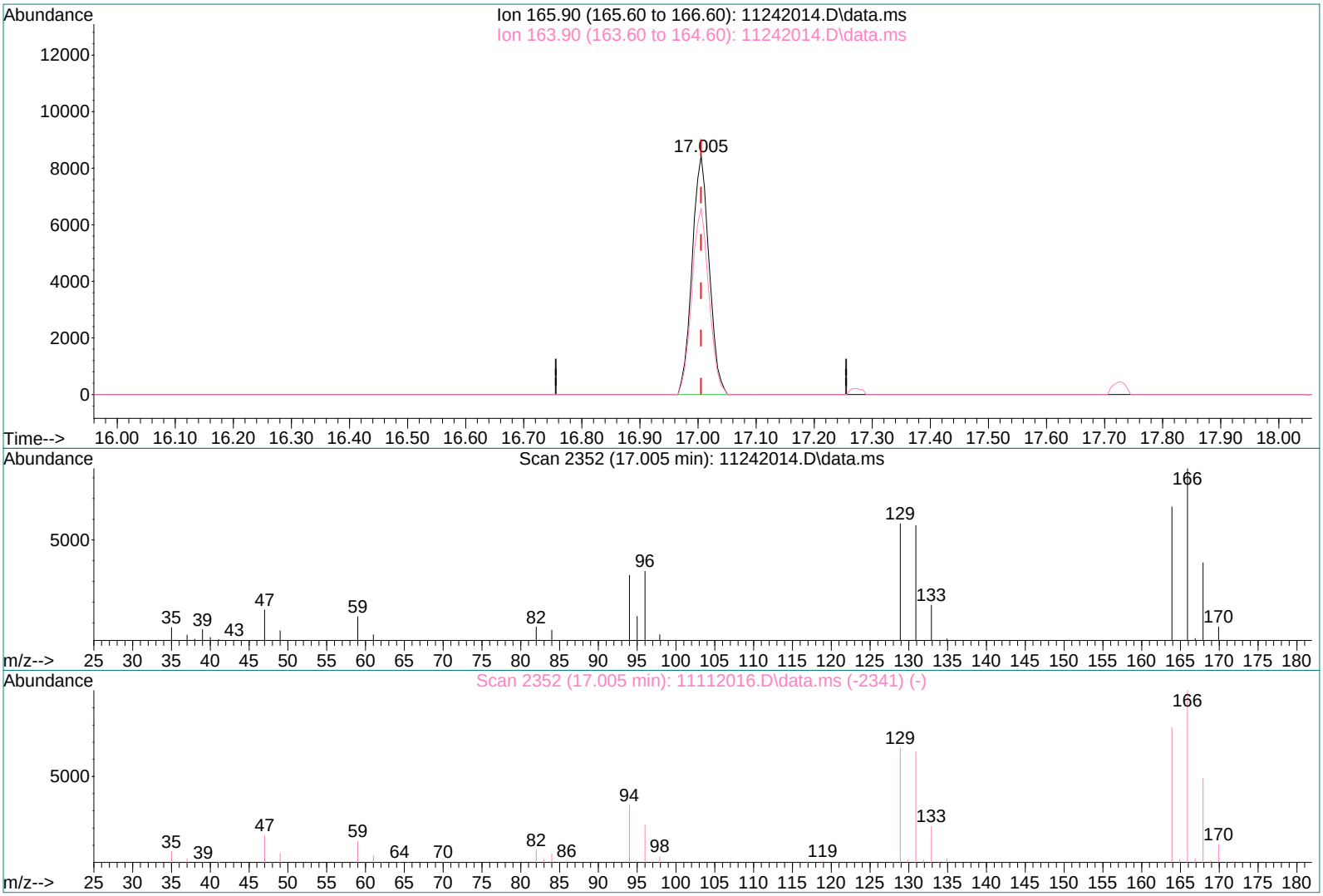
response 55072

Ion	Exp%	Act%
129.90	100	100
131.90	96.20	97.45
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242014.D Vial: 5
Acq On : 25 Nov 2020 00:26 Operator: TD
Sample : P2006561-003 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:08 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242014.D\data.ms

(64) Tetrachloroethene (T)

17.005min (-0.000) 1.20ng

response 17176

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	78.44
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **HUCKIAF111720-2** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-004

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/25/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00732

Initial Pressure (psig): -1.72 Final Pressure (psig): 4.09

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**0.19**	0.16	0.11	**0.048**	0.040	0.027	
79-01-6	Trichloroethene	**5.9**	0.16	0.10	**1.1**	0.030	0.019	
127-18-4	Tetrachloroethene	**1.5**	0.15	0.10	**0.21**	0.021	0.015	

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

Quantitation Report (QT Reviewed)

TD 11/25/20

Data File : I:\MS13\DATA\2020 11\24\11242015.D Vial: 6
Acq On : 25 Nov 2020 1:00 Operator: TD
Sample : P2006561-004 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:09:35 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	123730	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	541839	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	249103	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	179914	13.472	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.76%				
57) Toluene-d8 (SS2)	15.76	98	607614	12.450	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.60%				
73) Bromofluorobenzene (SS3)	19.01	174	179912	10.986	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.92%				
Target Compounds							Qvalue
2) Propene	4.16	42	29200	2.780	ng		93
3) Dichlorodifluoromethan...	4.32	85	42501	2.054	ng		100
4) Chloromethane	4.60	50	3996	0.331	ng		82
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	1128	0.107	ng		69
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	5.30	54	436	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.42	45	1164474	180.254	ng		99
11) Acetonitrile	6.68	41	3126	0.196	ng		76
12) Acrolein	6.87	56	4509	0.761	ng		100
13) Acetone	7.05	58	219390	32.626	ng		88
14) Trichlorofluoromethane	7.30	101	18993	1.060	ng		98
15) 2-Propanol (Isopropanol)	7.56	45	274542	11.746	ng		98
16) Acrylonitrile	7.74	53	53	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	8.47	84	6117	0.590	ng		91
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	8.89	151	3955	0.383	ng		89
22) Carbon Disulfide	8.74	76	5021	0.141	ng		81
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	10.16	73	214	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	10.52	72	13428	2.188	ng	#	84
28) cis-1,2-Dichloroethene	11.02	61	1730	0.131	ng		90
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	11.31	61	44120	13.732	ng		85
31) n-Hexane	11.30	57	23035	1.519	ng		98
32) Chloroform	11.35	83	14460	0.855	ng		100
34) Tetrahydrofuran (THF)	11.79	72	11380	1.729	ng	#	77
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	12.16	62	3716	0.301	ng		98
38) 1,1,1-Trichloroethane	12.44	97	2417	0.152	ng		89
39) Isopropyl Acetate	12.90	61	271	No Calib		#	
40) 1-Butanol	12.91	56	19290	No Calib			
41) Benzene	12.91	78	33717	0.807	ng		100
42) Carbon Tetrachloride	13.07	117	4936	0.359	ng		99
43) Cyclohexane	13.20	84	9972	0.616	ng		85
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	13.77	63	189	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D. d			
47) Trichloroethene	14.01	130	51389	4.085	ng		99
48) 1,4-Dioxane	0.00	88	0	N.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:\MS13\DATA\2020 11\24\11242015.D Vial: 6
Acq On : 25 Nov 2020 1:00 Operator: TD
Sample : P2006561-004 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:09:35 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

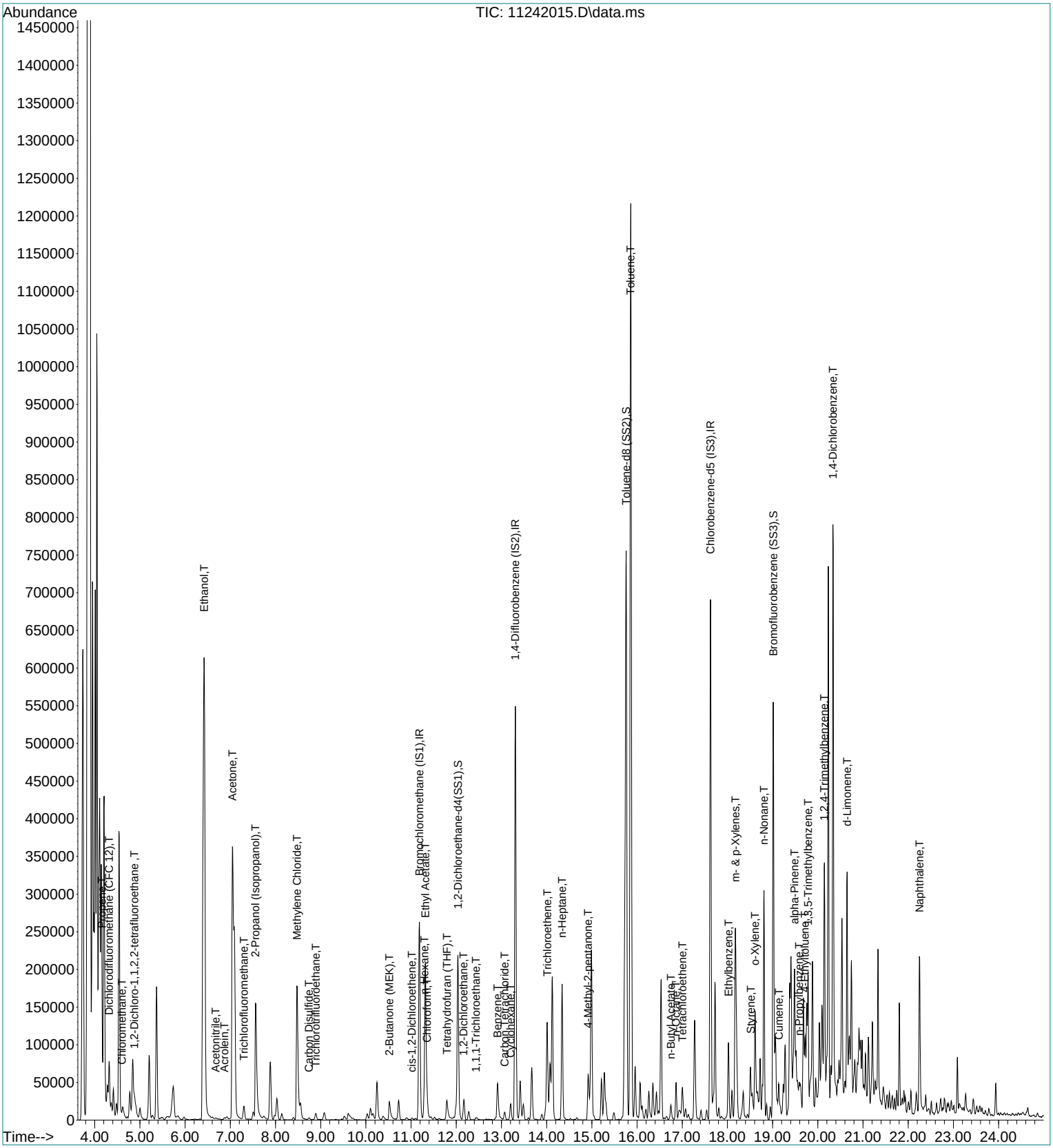
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.34	71	51015	4.776	ng		94
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	14.92	58	23114	2.971	ng		76
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.			
58) Toluene	15.86	91	876778	19.221	ng		99
59) 2-Hexanone	0.00	43	0	N.D.	d		
60) Dibromochloromethane	0.00	129	0	N.D.			
61) 1,2-Dibromoethane	0.00	107	0	N.D.			
62) n-Butyl Acetate	16.75	43	15742	0.856	ng		94
63) n-Octane	16.86	57	10531	1.165	ng		87
64) Tetrachloroethene	17.01	166	14536	1.003	ng		99
65) Chlorobenzene	0.00	112	0	N.D.	d		
66) Ethylbenzene	18.02	91	83702	1.638	ng		96
67) m- & p-Xylenes	18.18	91	212266	5.352	ng		98
68) Bromoform	0.00	173	0	N.D.			
69) Styrene	18.52	104	13502	0.428	ng		100
70) o-Xylene	18.61	91	80332	1.995	ng		97
71) n-Nonane	18.81	43	103481	5.519	ng		93
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d		
74) Cumene	19.14	105	7288	0.138	ng		94
75) alpha-Pinene	19.49	93	67271	2.503	ng		82
76) n-Propylbenzene	19.59	91	24381	0.397	ng		91
77) 3-Ethyltoluene	19.71	105	26259	No Calib			
78) 4-Ethyltoluene	19.71	105	25910	0.520	ng		98
79) 1,3,5-Trimethylbenzene	19.78	105	26068	0.568	ng		96
80) alpha-Methylstyrene	19.68	118	197	No Calib		#	
81) 2-Ethyltoluene	19.95	105	24826	No Calib			
82) 1,2,4-Trimethylbenzene	20.14	105	89424	2.122	ng		88
83) n-Decane	20.14	58	2332	No Calib		#	
84) Benzyl Chloride	0.00	91	0	N.D.	d		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	d		
86) 1,4-Dichlorobenzene	20.33	146	317131	11.210	ng		100
87) sec-Butylbenzene	0.00	105	0	N.D.	d		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	d		
89) 1,2,3-Trimethylbenzene	20.52	105	23468	No Calib		#	
90) 1,2-Dichlorobenzene	20.65	146	274	N.D.			
91) d-Limonene	20.65	68	66225	4.424	ng		98
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.			
93) n-Undecane	21.33	57	61430	No Calib			
94) 1,2,4-Trichlorobenzene	22.16	180	332	N.D.			
95) Naphthalene	22.25	128	108514	1.857	ng		99
96) n-Dodecane	22.25	57	30971	No Calib		#	
97) Hexachlorobutadiene	0.00	225	0	N.D.			
98) Cyclohexanone	18.16	55	2052	No Calib		#	
99) tert-Butylbenzene	0.00	119	0	N.D.	d		
100) n-Butylbenzene	0.00	91	0	N.D.	d		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	d		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242015.D Vial: 6
Acq On : 25 Nov 2020 1:00 Operator: TD
Sample : P2006561-004 (1000mL) Inst : MS13
Misc : S34-10302004

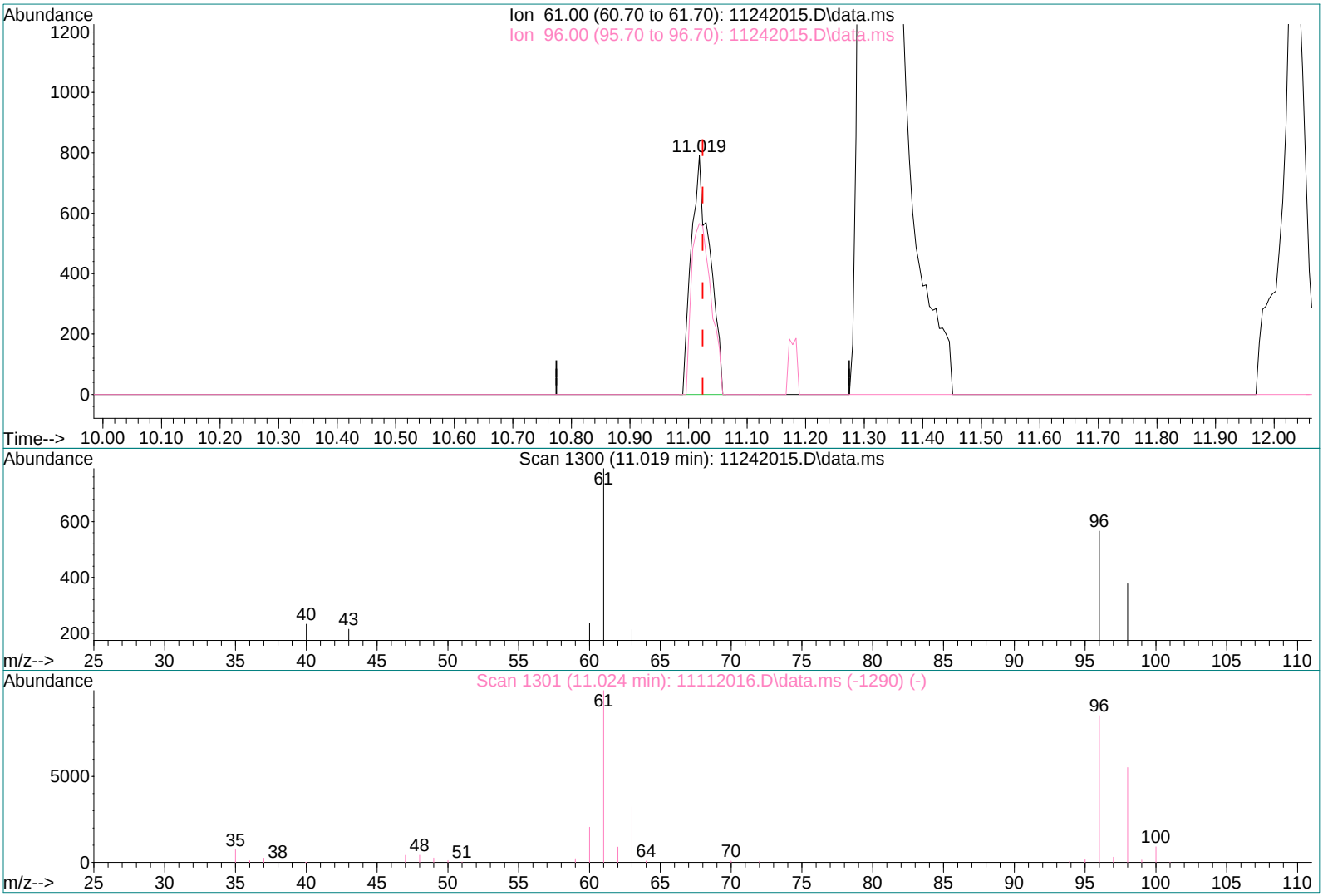
Quant Time: Nov 25 11:09:35 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242015.D Vial: 6
Acq On : 25 Nov 2020 1:00 Operator: TD
Sample : P2006561-004 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:09:35 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242015.D\data.ms

(28) cis-1,2-Dichloroethene (T)

11.019min (-0.006) 0.13ng

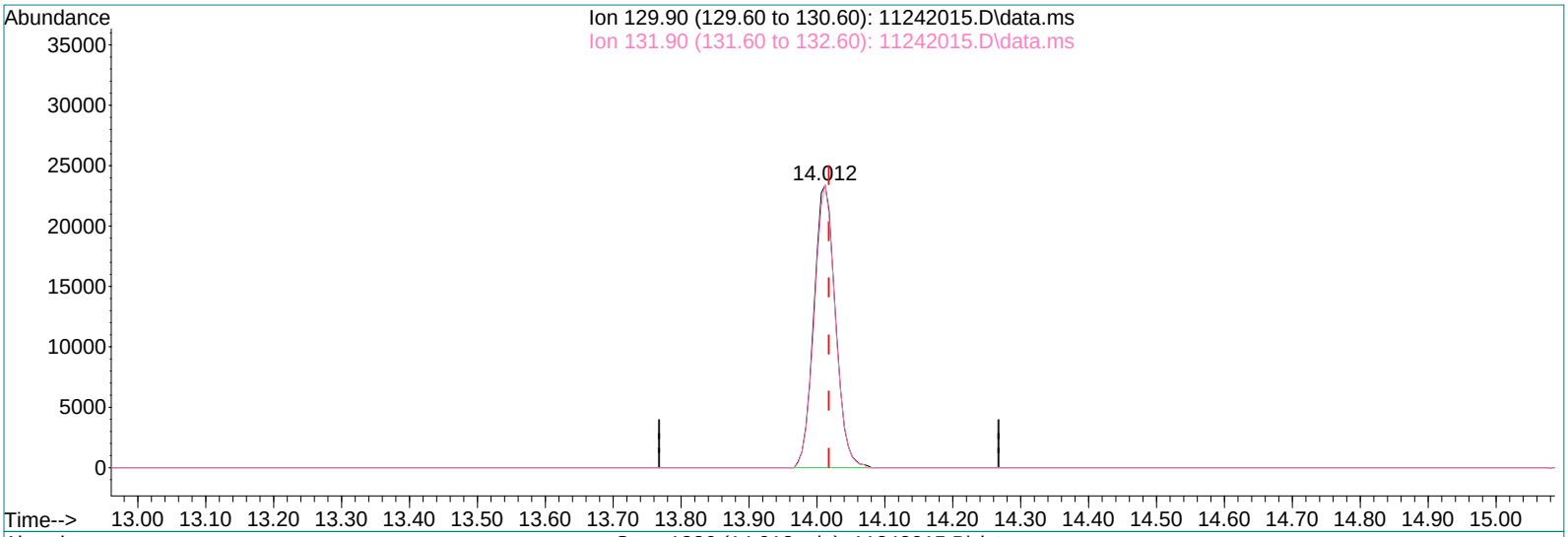
response 1730

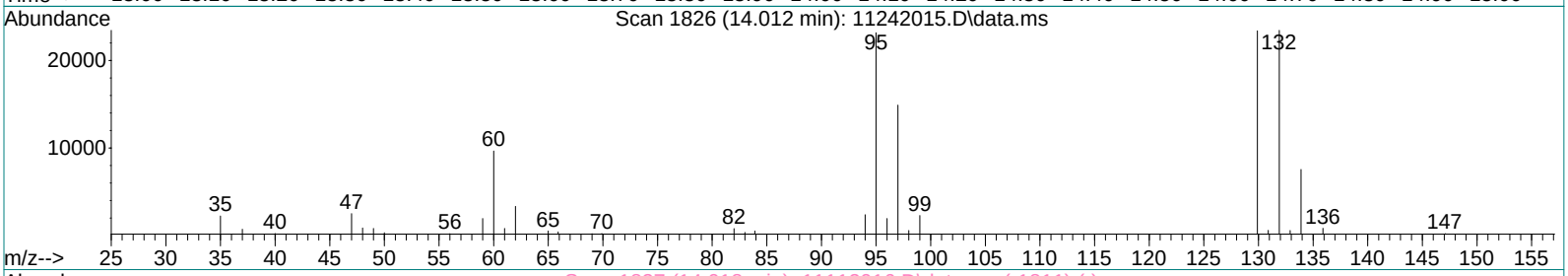
Ion	Exp%	Act%
61.00	100	100
96.00	85.40	76.13
0.00	0.00	0.00
0.00	0.00	0.00

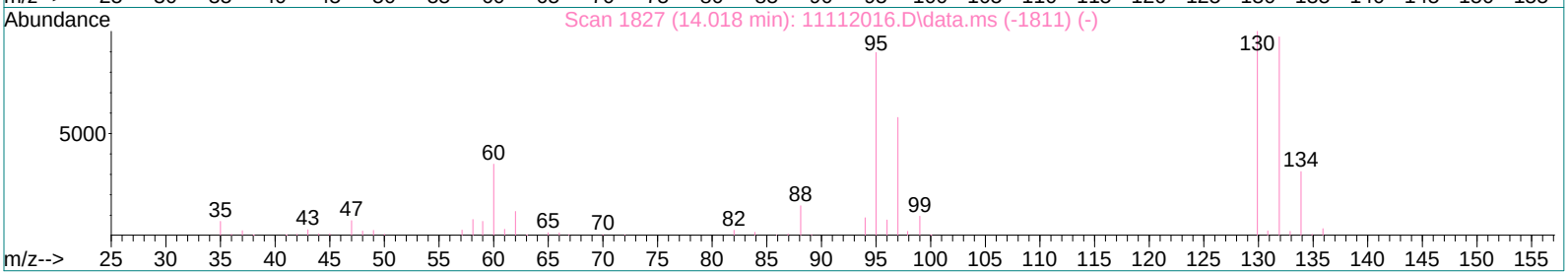
Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242015.D Vial: 6
Acq On : 25 Nov 2020 1:00 Operator: TD
Sample : P2006561-004 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:09:35 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11242015.D\data.ms

(47) Trichloroethene (T)

14.012min (-0.006) 4.08ng

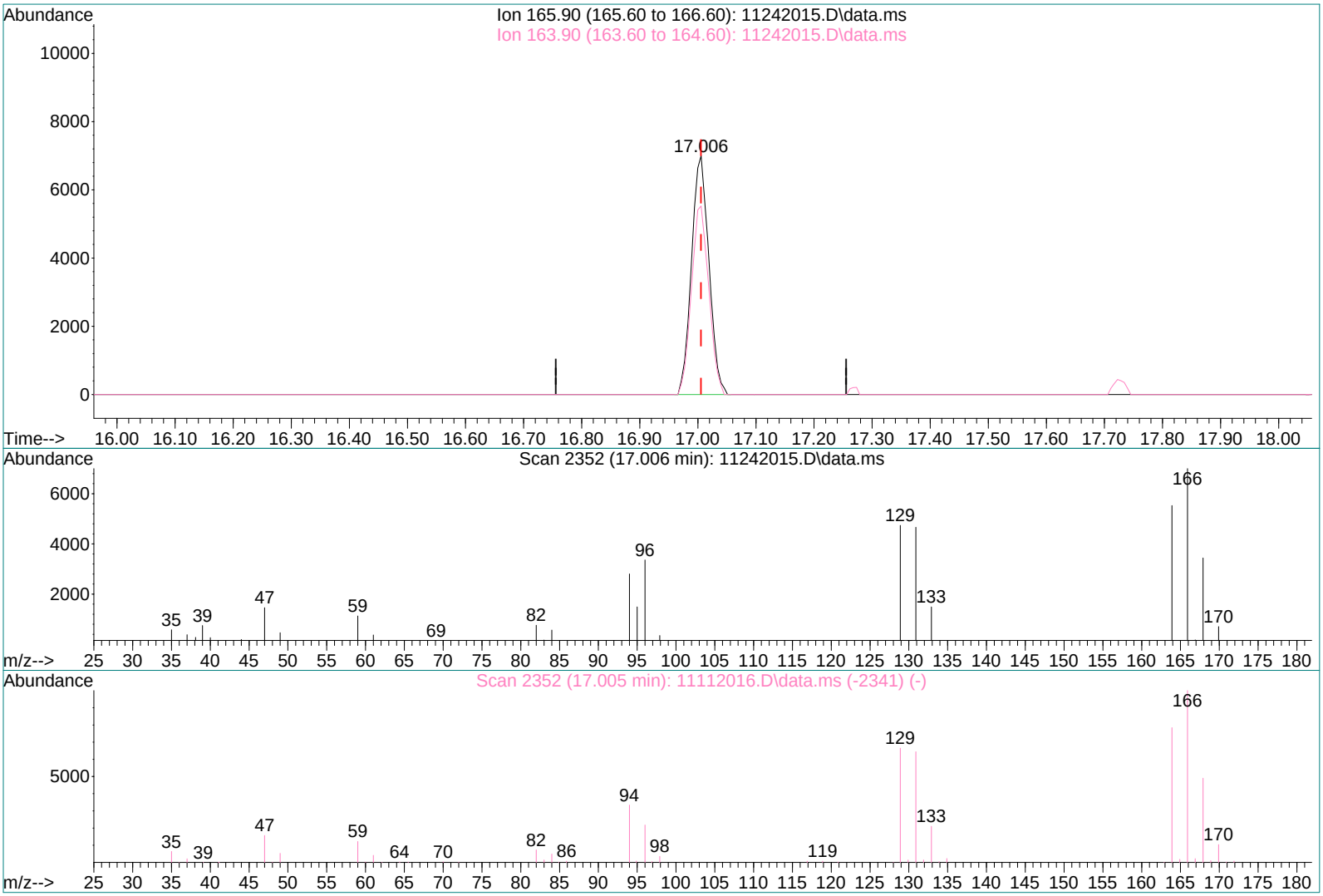
response 51389

Ion	Exp%	Act%
129.90	100	100
131.90	96.20	97.23
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242015.D Vial: 6
Acq On : 25 Nov 2020 1:00 Operator: TD
Sample : P2006561-004 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:09:35 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242015.D\data.ms

(64) Tetrachloroethene (T)

17.006min (+0.000) 1.00ng

response 14536

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	79.10
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **HUCKIAFR111720-2** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-005

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/25/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01266

Initial Pressure (psig): 0.24 Final Pressure (psig): 3.88

Canister Dilution Factor: 1.24

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**0.22**	0.14	0.093	**0.054**	0.034	0.023	
79-01-6	Trichloroethene	**6.3**	0.14	0.089	**1.2**	0.025	0.017	
127-18-4	Tetrachloroethene	**1.5**	0.12	0.086	**0.22**	0.018	0.013	

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

Quantitation Report (QT Reviewed)

TD 11/25/20

Data File : I:\MS13\DATA\2020 11\24\11242016.D Vial: 7
Acq On : 25 Nov 2020 1:33 Operator: TD
Sample : P2006561-005 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:13:13 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.19	130	126375	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.31	114	558014	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	255686	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	183034	13.419	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.36%				
57) Toluene-d8 (SS2)	15.76	98	622983	12.437	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
73) Bromofluorobenzene (SS3)	19.01	174	187757	11.170	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.36%				
Target Compounds							Qvalue
2) Propene	4.17	42	41878	3.903	ng		99
3) Dichlorodifluoromethan...	4.33	85	49472	2.341	ng		99
4) Chloromethane	4.61	50	4307	0.349	ng		90
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	1290	0.120	ng		80
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	5.29	54	212	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.42	45	923161	139.909	ng		99
11) Acetonitrile	6.69	41	2703	0.166	ng	#	25
12) Acrolein	6.87	56	5519	0.912	ng		99
13) Acetone	7.05	58	309640	45.084	ng		89
14) Trichlorofluoromethane	7.30	101	22226	1.215	ng		99
15) 2-Propanol (Isopropanol)	7.56	45	472855	19.807	ng		99
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	8.49	84	6889	0.651	ng		90
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	8.90	151	4422	0.420	ng		89
22) Carbon Disulfide	8.74	76	6834	0.188	ng		91
23) trans-1,2-Dichloroethene	9.76	61	115	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	10.18	73	376	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	10.52	72	16068	2.563	ng	#	85
28) cis-1,2-Dichloroethene	11.02	61	2345	0.174	ng		94
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	11.33	61	8645	2.634	ng		87
31) n-Hexane	11.30	57	22711	1.466	ng		98
32) Chloroform	11.35	83	18129	1.049	ng		100
34) Tetrahydrofuran (THF)	11.79	72	21849	3.249	ng	#	85
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	12.17	62	4158	0.330	ng		97
38) 1,1,1-Trichloroethane	12.44	97	2911	0.178	ng		92
39) Isopropyl Acetate	12.90	61	391	No Calib		#	
40) 1-Butanol	12.91	56	25936	No Calib			
41) Benzene	12.92	78	35348	0.822	ng		98
42) Carbon Tetrachloride	13.07	117	5739	0.406	ng		94
43) Cyclohexane	13.20	84	12125	0.727	ng		84
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	13.77	63	320	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D. d			
47) Trichloroethene	14.01	130	65327	5.042	ng		99
48) 1,4-Dioxane	14.04	88	164	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			
50) Methyl Methacrylate	0.00	100	0	N.D. d			

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242016.D Vial: 7
Acq On : 25 Nov 2020 1:33 Operator: TD
Sample : P2006561-005 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:13:13 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

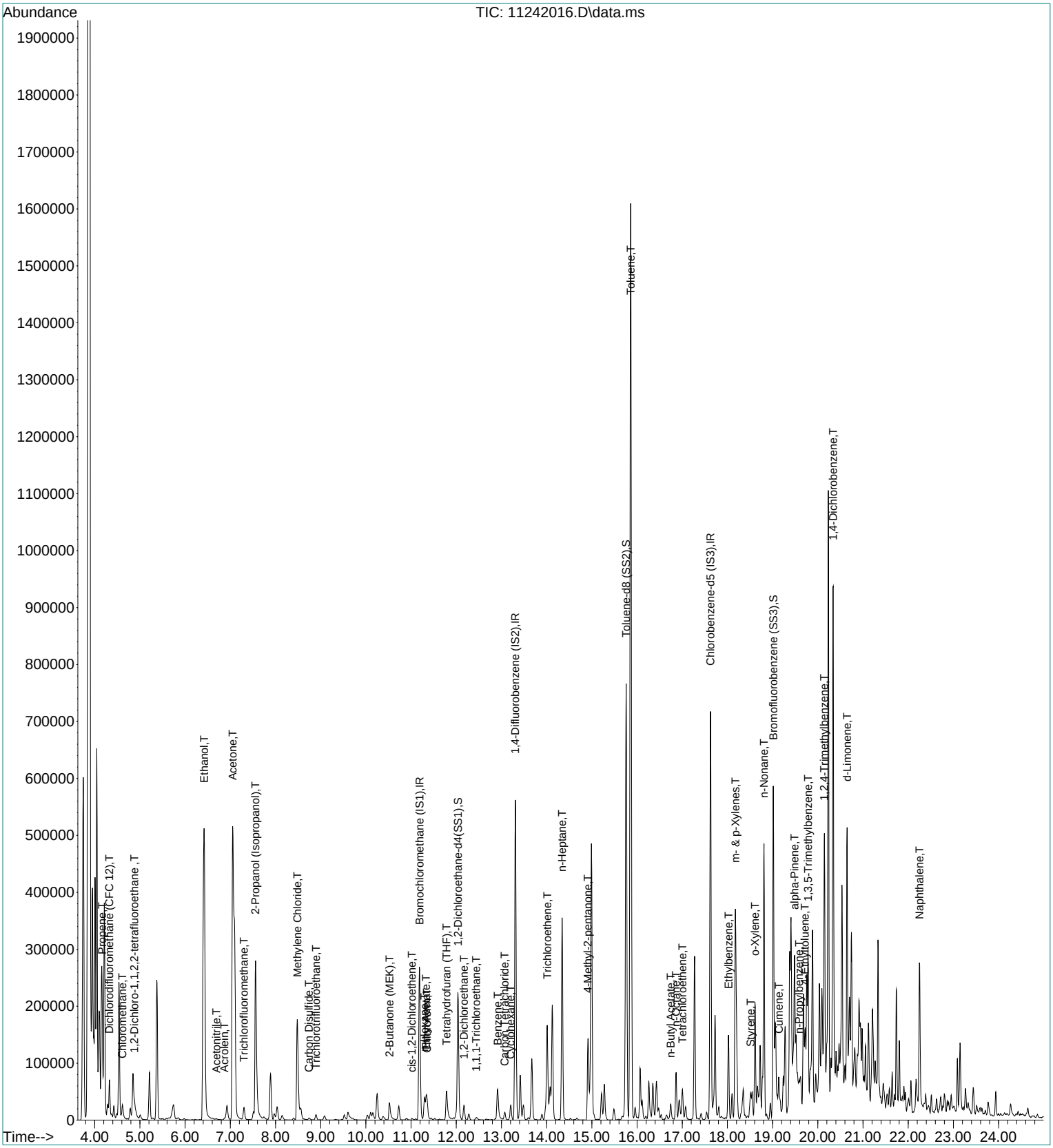
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.34	71	102848	9.349 ng		95
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	14.91	58	53281	6.651 ng		95
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.48	97	275	N.D.		
58) Toluene	15.86	91	1485372	31.724 ng		100
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.74	43	22464	1.190 ng		99
63) n-Octane	16.86	57	17625	1.900 ng		90
64) Tetrachloroethene	17.01	166	18168	1.221 ng		99
65) Chlorobenzene	0.00	112	0	N.D. d		
66) Ethylbenzene	18.02	91	124484	2.374 ng		96
67) m- & p-Xylenes	18.18	91	305940	7.516 ng		98
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.51	104	20661	0.638 ng		99
70) o-Xylene	18.61	91	115914	2.805 ng		97
71) n-Nonane	18.81	43	163240	8.483 ng		94
72) 1,1,2,2-Tetrachloroethane	18.62	83	610	N.D.		
74) Cumene	19.14	105	10826	0.199 ng		96
75) alpha-Pinene	19.49	93	98673	3.576 ng		90
76) n-Propylbenzene	19.59	91	28438	0.451 ng		94
77) 3-Ethyltoluene	19.71	105	31099	No Calib		
78) 4-Ethyltoluene	19.71	105	30988	0.606 ng		98
79) 1,3,5-Trimethylbenzene	19.78	105	33222	0.705 ng		96
80) alpha-Methylstyrene	19.68	118	276	No Calib	#	
81) 2-Ethyltoluene	19.95	105	31589	No Calib		
82) 1,2,4-Trimethylbenzene	20.14	105	112923	2.611 ng		88
83) n-Decane	20.14	58	3356	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D. d		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D. d		
86) 1,4-Dichlorobenzene	20.34	146	375556	12.933 ng		100
87) sec-Butylbenzene	0.00	105	0	N.D. d		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d		
89) 1,2,3-Trimethylbenzene	20.52	105	35454	No Calib	#	
90) 1,2-Dichlorobenzene	20.64	146	353	N.D.		
91) d-Limonene	20.65	68	100118	6.516 ng		95
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.33	57	83895	No Calib		
94) 1,2,4-Trichlorobenzene	22.16	180	361	N.D.		
95) Naphthalene	22.25	128	125317	2.089 ng		98
96) n-Dodecane	22.25	57	38297	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.15	55	1463	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D. d		
100) n-Butylbenzene	0.00	91	0	N.D. d		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D. d		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242016.D Vial: 7
Acq On : 25 Nov 2020 1:33 Operator: TD
Sample : P2006561-005 (1000mL) Inst : MS13
Misc : S34-10302004

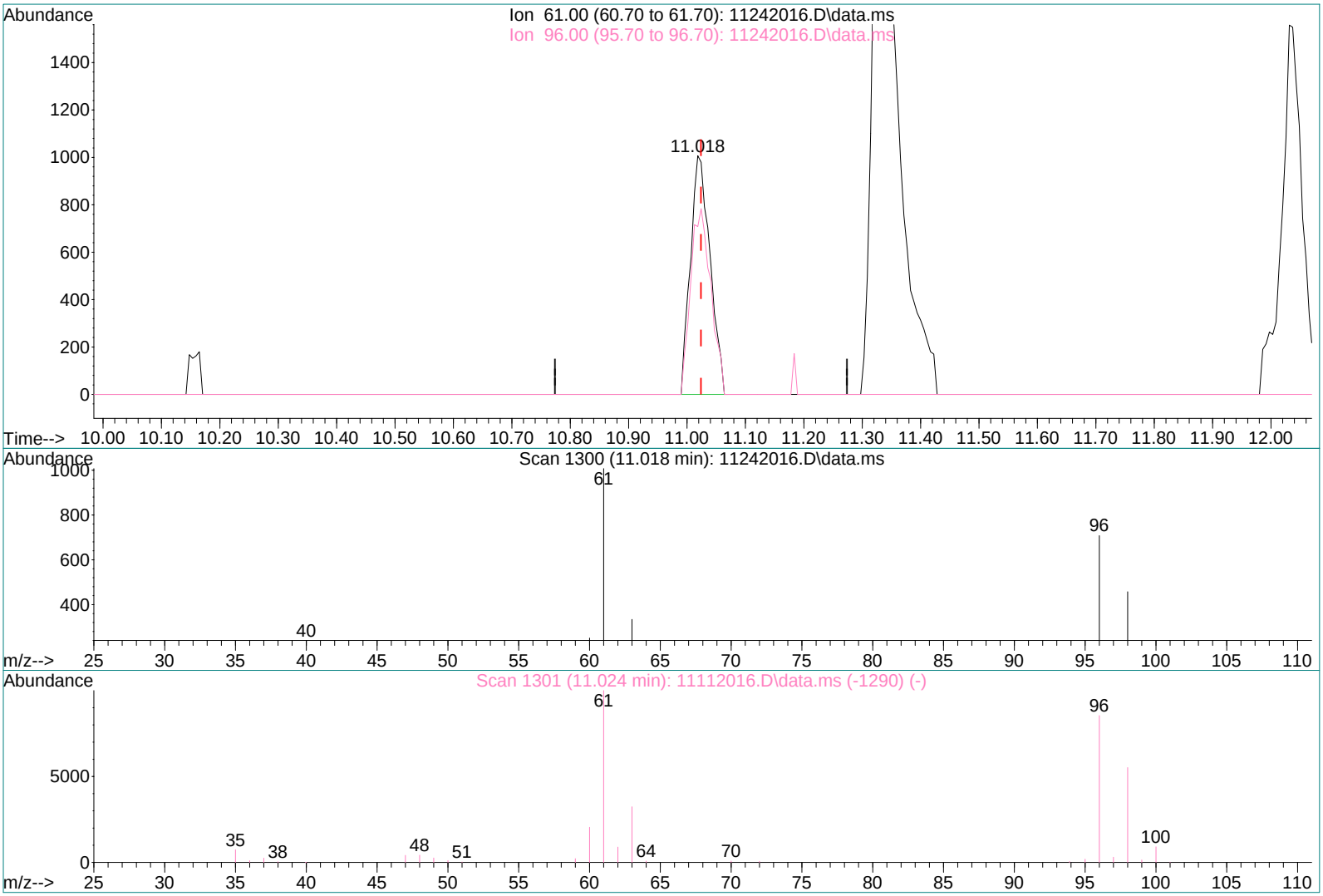
Quant Time: Nov 25 11:13:13 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242016.D Vial: 7
Acq On : 25 Nov 2020 1:33 Operator: TD
Sample : P2006561-005 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:12 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242016.D\data.ms

(28) cis-1,2-Dichloroethene (T)

11.018min (-0.006) 0.17ng

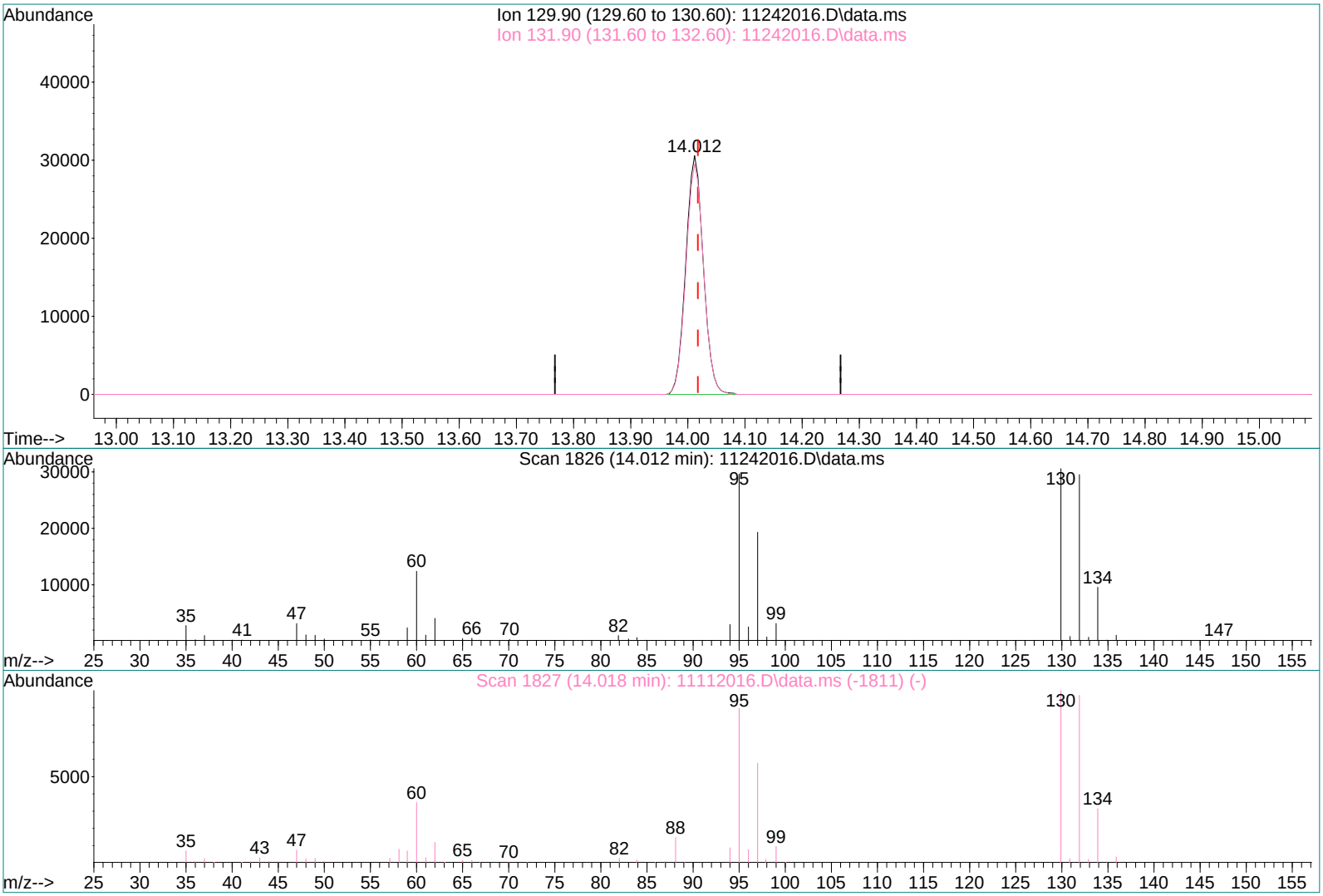
response 2345

Ion	Exp%	Act%
61.00	100	100
96.00	85.40	80.34
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242016.D Vial: 7
Acq On : 25 Nov 2020 1:33 Operator: TD
Sample : P2006561-005 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:12 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242016.D\data.ms

(47) Trichloroethene (T)

14.012min (-0.006) 5.04ng

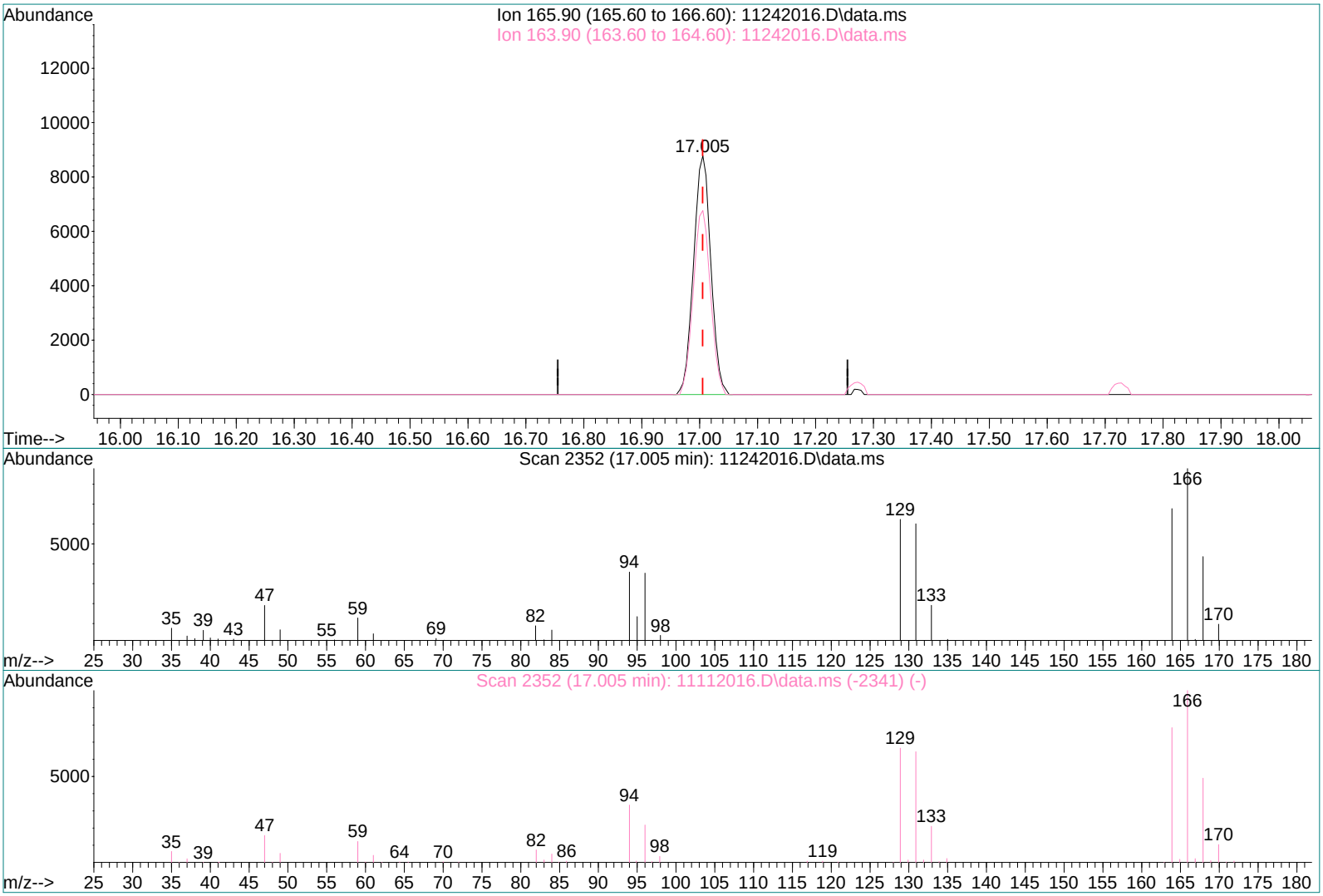
response 65327

Ion	Exp%	Act%
129.90	100	100
131.90	96.20	96.96
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242016.D Vial: 7
Acq On : 25 Nov 2020 1:33 Operator: TD
Sample : P2006561-005 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:12 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242016.D\data.ms

(64) Tetrachloroethene (T)

17.005min (-0.000) 1.22ng

response 18168

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	77.28
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **HUCKAA111720-1** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-007

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/25/20
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01623

Initial Pressure (psig): -1.03 Final Pressure (psig): 3.94

Canister Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.15	0.10	ND	0.038	0.026	
79-01-6	Trichloroethene	ND	0.15	0.098	ND	0.028	0.018	
127-18-4	Tetrachloroethene	**0.12**	0.14	0.094	**0.017**	0.020	0.014	**J**

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

Quantitation Report (QT Reviewed)

TD 11/25/20

Data File : I:\MS13\DATA\2020 11\24\11242017.D Vial: 9
Acq On : 25 Nov 2020 2:07 Operator: TD
Sample : P2006561-007 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:15:33 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	126428	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	561634	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	254168	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.03	65	184778	13.541	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.32%				
57) Toluene-d8 (SS2)	15.76	98	621451	12.480	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
73) Bromofluorobenzene (SS3)	19.01	174	183663	10.991	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.92%				
Target Compounds							Qvalue
2) Propene	4.18	42	6171	0.575	ng	#	52
3) Dichlorodifluoromethan...	4.32	85	43769	2.070	ng		99
4) Chloromethane	4.62	50	4002	0.324	ng		92
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	1051	0.098	ng		72
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	6.40	45	29655	4.492	ng		97
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	6.90	56	1458	0.241	ng		78
13) Acetone	7.08	58	35036	5.099	ng		89
14) Trichlorofluoromethane	7.30	101	18679	1.020	ng		100
15) 2-Propanol (Isopropanol)	7.60	45	15887	0.665	ng		100
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	8.59	59	637	N.D.			
19) Methylene Chloride	8.48	84	3007	0.284	ng		90
20) 3-Chloro-1-propene (Al...	8.56	41	168	N.D.			
21) Trichlorotrifluoroethane	8.90	151	3796	0.360	ng		88
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	10.55	72	3656	0.583	ng	#	57
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	11.32	61	19963	6.081	ng		85
31) n-Hexane	11.30	57	4058	0.262	ng	#	93
32) Chloroform	11.35	83	1401	0.081	ng		94
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.	d		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	12.94	56	7270	No Calib			
41) Benzene	12.92	78	19393	0.448	ng		99
42) Carbon Tetrachloride	13.07	117	4958	0.348	ng		97
43) Cyclohexane	13.20	84	1288	0.077	ng	#	70
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	14.01	130	361	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		
50) Methyl Methacrylate	0.00	100	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242017.D Vial: 9
Acq On : 25 Nov 2020 2:07 Operator: TD
Sample : P2006561-007 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:15:33 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

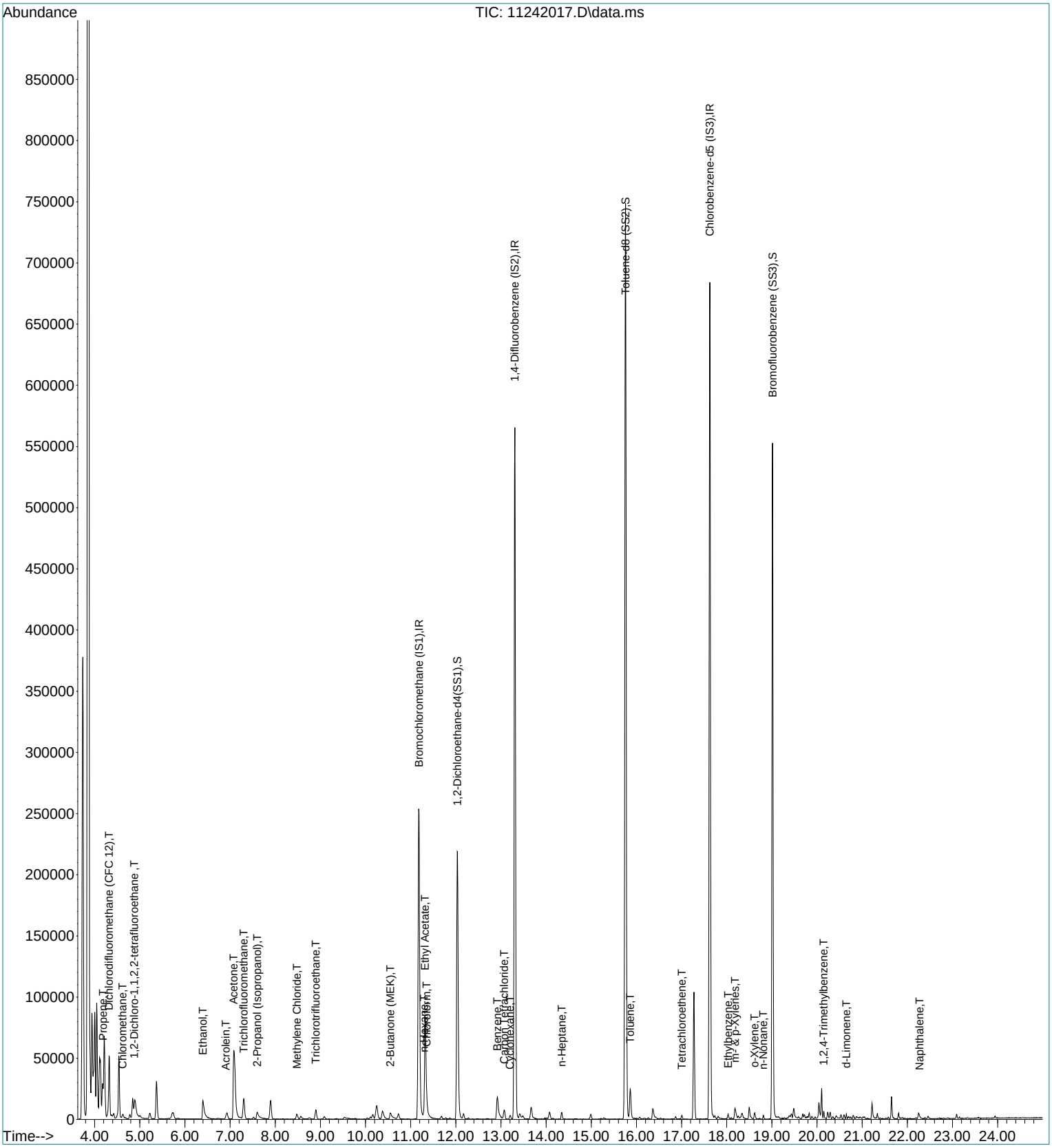
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	1501	0.136 ng		89
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.86	91	22671	0.487 ng		96
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D. d		
63) n-Octane	16.86	57	432	N.D.		
64) Tetrachloroethene	17.01	166	1272	0.086 ng		98
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	18.03	91	4004	0.077 ng		89
67) m- & p-Xylenes	18.18	91	8772	0.217 ng		97
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.54	104	297	N.D.		
70) o-Xylene	18.62	91	3544	0.086 ng		97
71) n-Nonane	18.81	43	1530	0.080 ng	#	76
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	19.15	105	322	N.D.		
75) alpha-Pinene	0.00	93	0	N.D. d		
76) n-Propylbenzene	19.59	91	1223	N.D.		
77) 3-Ethyltoluene	19.72	105	1468	No Calib		
78) 4-Ethyltoluene	19.72	105	1468	N.D.		
79) 1,3,5-Trimethylbenzene	19.79	105	1229	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.96	105	1149	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	3519	0.082 ng		84
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	20.15	91	292	N.D.		
85) 1,3-Dichlorobenzene	20.35	146	1115	N.D.		
86) 1,4-Dichlorobenzene	20.35	146	1115	N.D.		
87) sec-Butylbenzene	20.53	105	786	N.D.		
88) 4-Isopropyltoluene (p-...	20.53	119	862	N.D.		
89) 1,2,3-Trimethylbenzene	20.53	105	786	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.65	68	874	0.057 ng		96
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.34	57	1632	No Calib		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	22.27	128	3864	0.065 ng		86
96) n-Dodecane	22.25	57	1600	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.14	55	110	No Calib	#	
99) tert-Butylbenzene	20.15	119	336	N.D.		
100) n-Butylbenzene	20.88	91	544	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242017.D Vial: 9
Acq On : 25 Nov 2020 2:07 Operator: TD
Sample : P2006561-007 (1000mL) Inst : MS13
Misc : S34-10302004

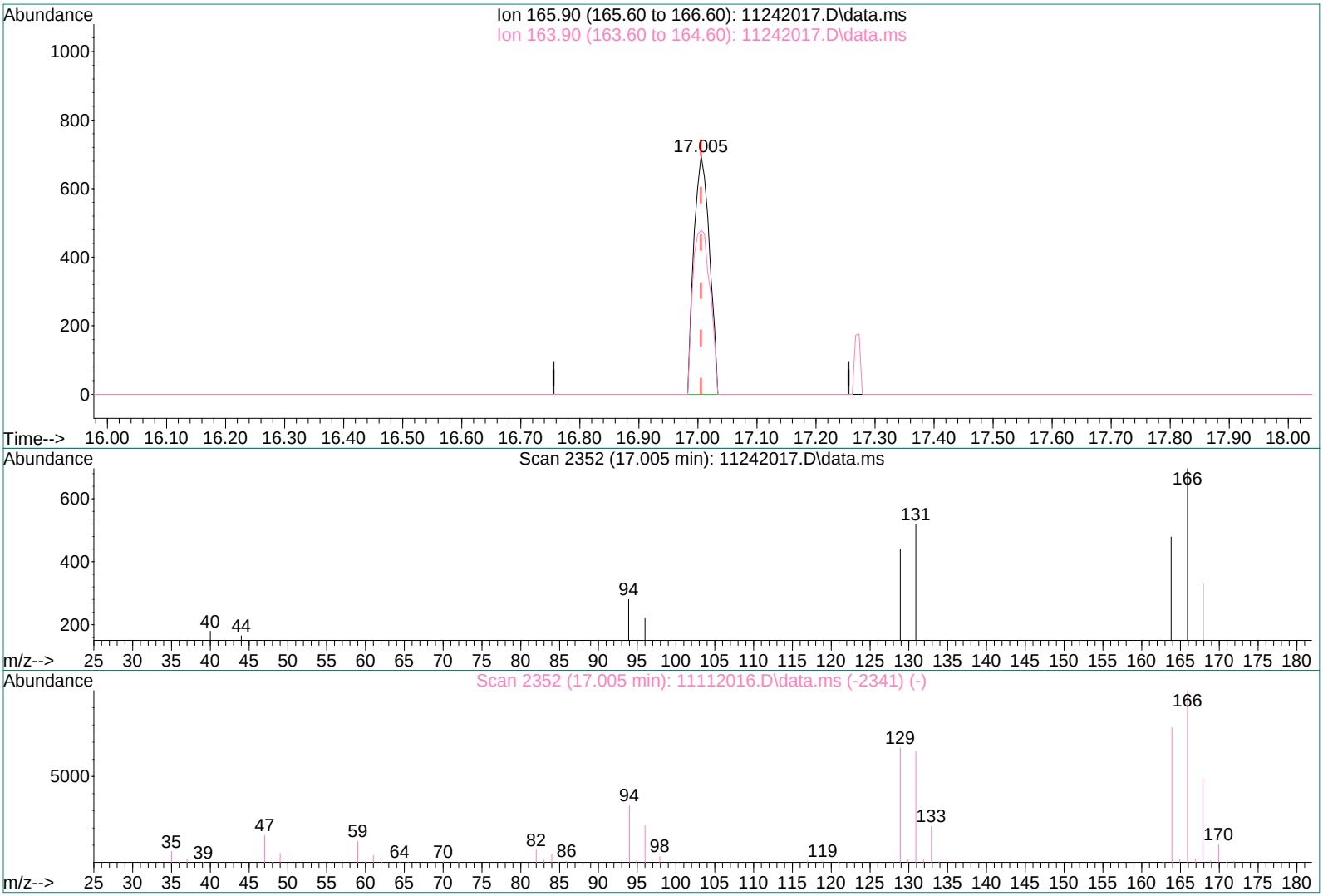
Quant Time: Nov 25 11:15:33 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242017.D Vial: 9
Acq On : 25 Nov 2020 2:07 Operator: TD
Sample : P2006561-007 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:15:33 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242017.D\data.ms

(64) Tetrachloroethene (T)

17.005min (-0.000) 0.09ng

response 1272

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	76.65
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **HUCKAA111720-2** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-008

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/25/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01085

Initial Pressure (psig): -0.69 Final Pressure (psig): 3.92

Canister Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.15	0.10	ND	0.037	0.025	
79-01-6	Trichloroethene	ND	0.15	0.096	ND	0.027	0.018	
127-18-4	Tetrachloroethene	**0.093**	0.13	0.092	**0.014**	0.020	0.014	**J**

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

Quantitation Report (QT Reviewed)

TD 11/25/20

Data File : I:\MS13\DATA\2020 11\24\11242018.D Vial: 10
Acq On : 25 Nov 2020 2:41 Operator: TD
Sample : P2006561-008 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:18:39 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	124187	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	547510	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	248022	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.03	65	179618	13.401	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.20%				
57) Toluene-d8 (SS2)	15.76	98	610185	12.558	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	19.01	174	175573	10.768	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 86.16%				
Target Compounds							Qvalue
2) Propene	4.17	42	5617	0.533	ng	#	1
3) Dichlorodifluoromethan...	4.31	85	44170	2.127	ng		99
4) Chloromethane	4.62	50	3783	0.312	ng		89
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	1089	0.103	ng	#	62
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	6.40	45	22109	3.410	ng		98
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	6.91	56	162	N.D.			
13) Acetone	7.08	58	26290	3.895	ng		86
14) Trichlorofluoromethane	7.30	101	18911	1.052	ng		98
15) 2-Propanol (Isopropanol)	7.51	45	185	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.	d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	8.57	59	65	N.D.			
19) Methylene Chloride	8.47	84	3180	0.306	ng		84
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	8.90	151	3860	0.373	ng		89
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)	10.57	72	1430m	0.232	ng		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	11.32	61	17325	5.372	ng		83
31) n-Hexane	11.30	57	4745	0.312	ng	#	95
32) Chloroform	11.35	83	1303	0.077	ng		90
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.	d		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	13.03	56	1170	No Calib		#	
41) Benzene	12.91	78	18817	0.446	ng		98
42) Carbon Tetrachloride	13.07	117	4868	0.351	ng		98
43) Cyclohexane	13.20	84	3821	0.233	ng	#	82
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.	d		
50) Methyl Methacrylate	0.00	100	0	N.D.	d		

Data File : I:\MS13\DATA\2020 11\24\11242018.D Vial: 10
Acq On : 25 Nov 2020 2:41 Operator: TD
Sample : P2006561-008 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:18:39 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

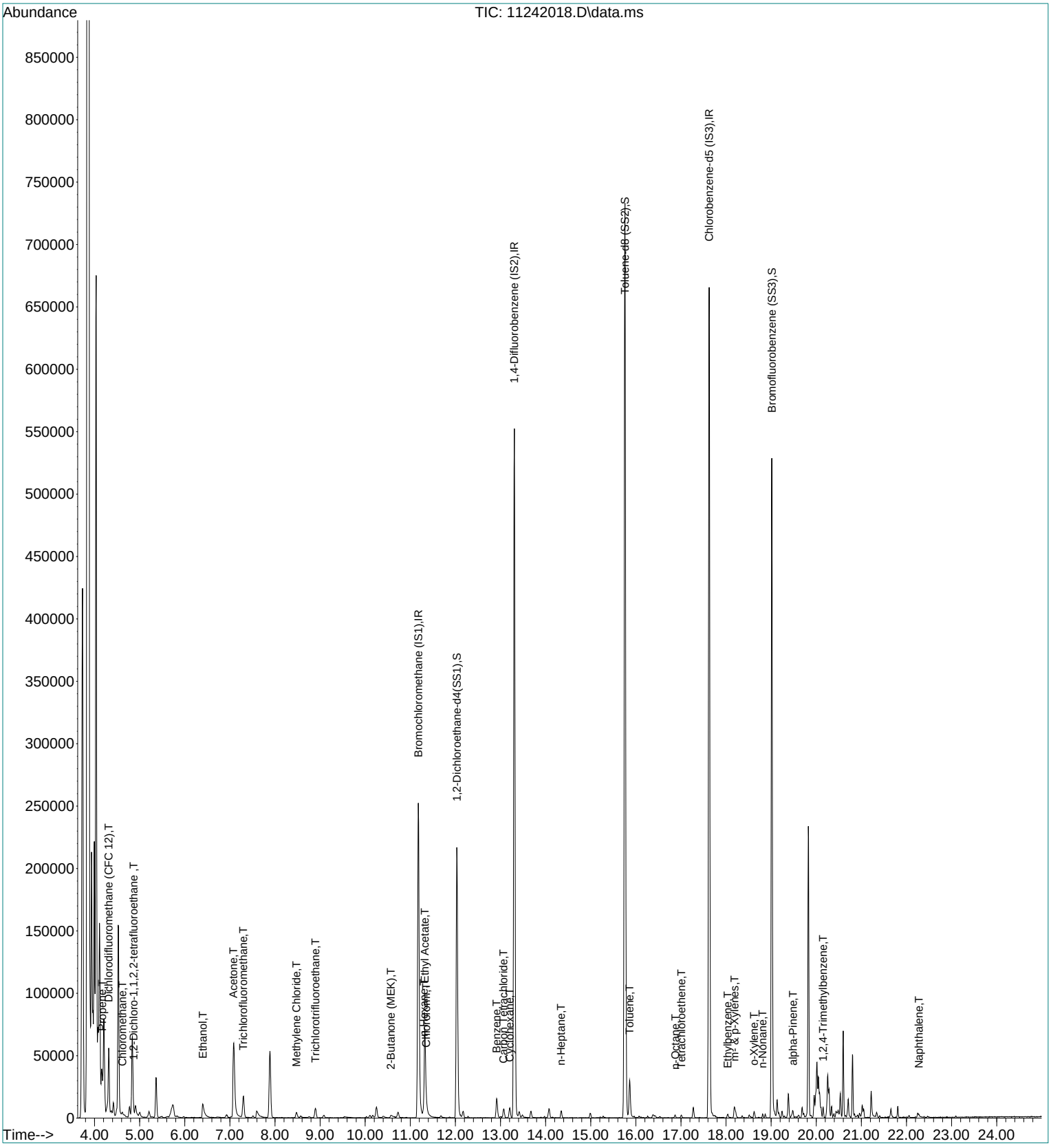
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.34	71	1606	0.149 ng		87
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.86	91	27892	0.614 ng		96
59) 2-Hexanone	16.12	43	491	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D. d		
63) n-Octane	16.87	57	458	0.051 ng	#	74
64) Tetrachloroethene	17.01	166	1016	0.070 ng		97
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	18.04	91	4222	0.083 ng		90
67) m- & p-Xylenes	18.19	91	9941	0.252 ng		95
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.55	104	197	N.D.		
70) o-Xylene	18.62	91	3958	0.099 ng		97
71) n-Nonane	18.81	43	1460	0.078 ng	#	76
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	19.15	105	695	N.D.		
75) alpha-Pinene	19.49	93	1737	0.065 ng		96
76) n-Propylbenzene	19.59	91	1136	N.D.		
77) 3-Ethyltoluene	19.73	105	1673	No Calib	#	
78) 4-Ethyltoluene	19.73	105	1673	N.D.		
79) 1,3,5-Trimethylbenzene	19.79	105	1241	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.96	105	1256	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	3580	0.085 ng		83
83) n-Decane	20.05	58	1099	No Calib	#	
84) Benzyl Chloride	20.16	91	276	N.D.		
85) 1,3-Dichlorobenzene	20.36	146	252	N.D.		
86) 1,4-Dichlorobenzene	20.36	146	252	N.D.		
87) sec-Butylbenzene	20.53	105	841	N.D.		
88) 4-Isopropyltoluene (p-...	20.53	119	713	N.D.		
89) 1,2,3-Trimethylbenzene	20.53	105	841	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.65	68	665	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.34	57	2108	No Calib		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	22.28	128	4731	0.081 ng		81
96) n-Dodecane	22.25	57	1423	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.36	55	497	No Calib	#	
99) tert-Butylbenzene	20.15	119	309	N.D.		
100) n-Butylbenzene	20.89	91	165	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242018.D Vial: 10
Acq On : 25 Nov 2020 2:41 Operator: TD
Sample : P2006561-008 (1000mL) Inst : MS13
Misc : S34-10302004

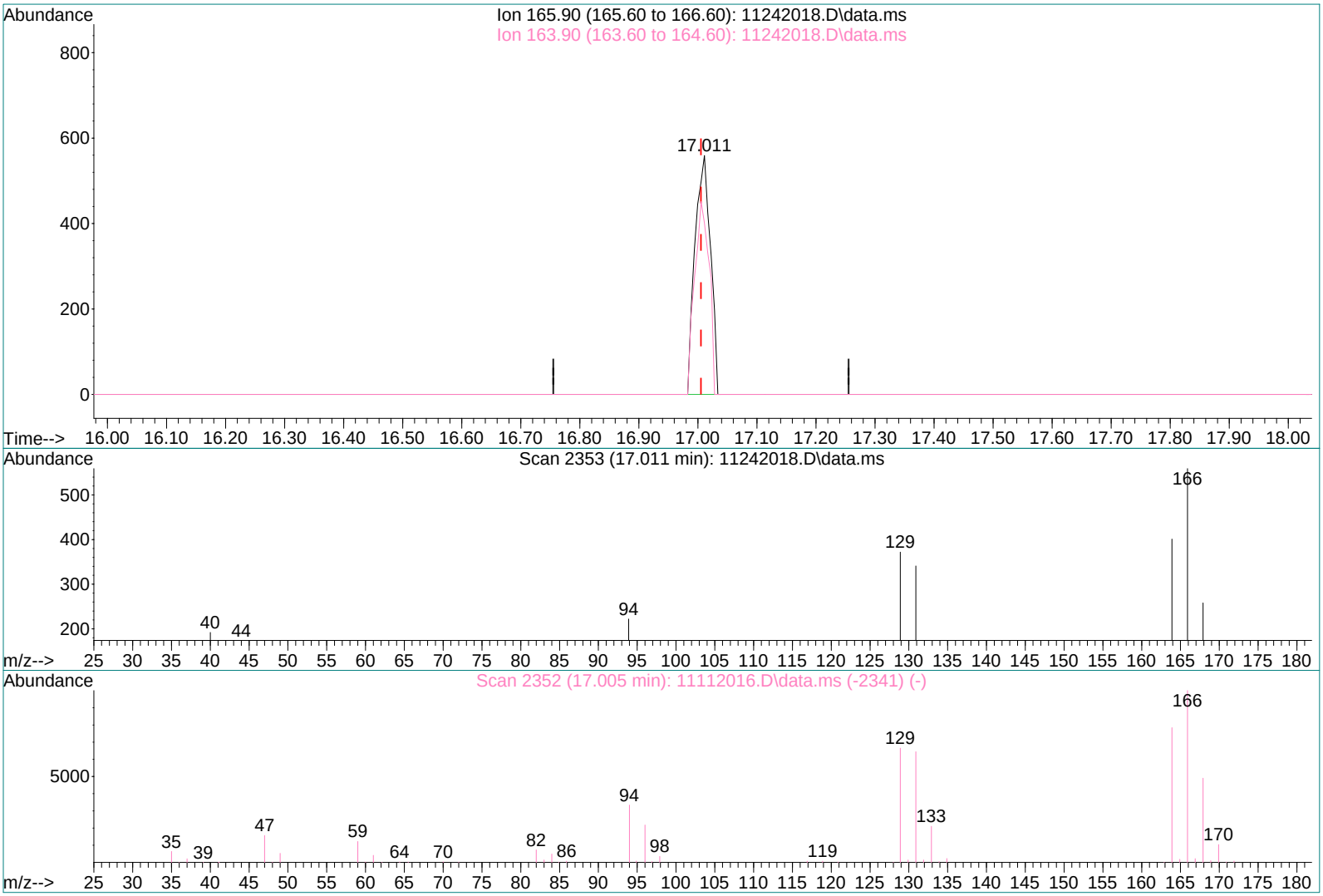
Quant Time: Nov 25 11:18:39 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242018.D Vial: 10
Acq On : 25 Nov 2020 2:41 Operator: TD
Sample : P2006561-008 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:18:39 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242018.D\data.ms

(64) Tetrachloroethene (T)

17.011min (+0.006) 0.07ng

response 1016

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	75.69
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**
Client Sample ID: **TRIP BLANK111720** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-009

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02466

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.11	0.075	ND	0.028	0.019	
79-01-6	Trichloroethene	ND	0.11	0.072	ND	0.020	0.013	
127-18-4	Tetrachloroethene	ND	0.10	0.069	ND	0.015	0.010	

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

Quantitation Report (QT Reviewed)

TD 11/25/20

Data File : I:\MS13\DATA\2020 11\24\11242010.D Vial: 11
Acq On : 24 Nov 2020 22:12 Operator: TD
Sample : P2006561-009 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 10:54:02 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	123449	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	544069	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	251704	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	12.04	65	179852	13.498	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.00%			
57) Toluene-d8 (SS2)	15.76	98	609449	12.359	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.88%			
73) Bromofluorobenzene (SS3)	19.01	174	182936	11.055	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 88.48%			
Target Compounds						Qvalue
2) Propene	4.23	42	181	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	6.45	45	3155	0.489	ng	81
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	7.13	58	6536	0.974	ng	85
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	8.49	84	106	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)	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	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242010.D Vial: 11
Acq On : 24 Nov 2020 22:12 Operator: TD
Sample : P2006561-009 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 10:54:02 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

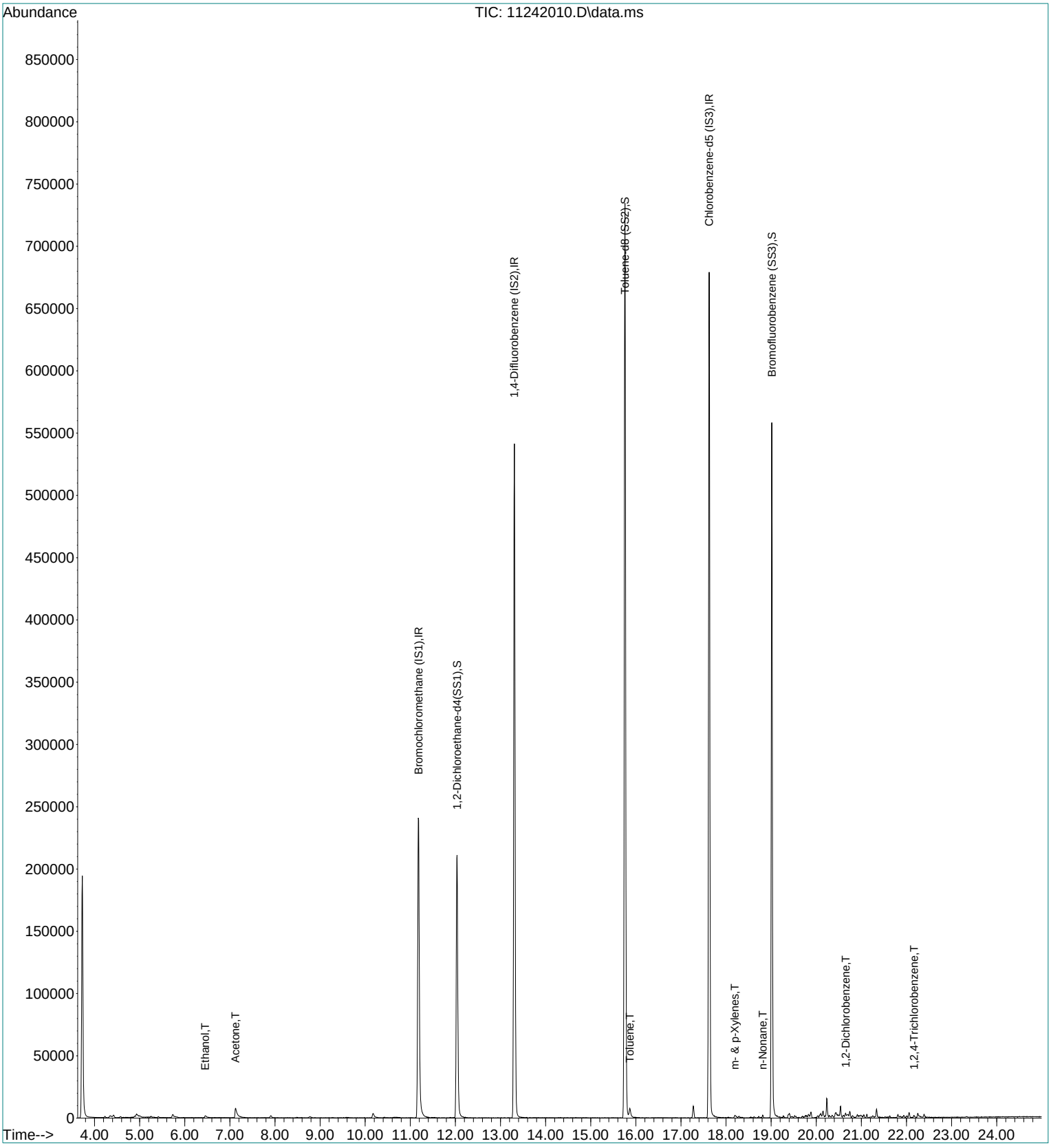
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.87	91	8257	0.179 ng		93
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	17.67	112	122	N.D.		
66) Ethylbenzene	18.05	91	744	N.D.		
67) m- & p-Xylenes	18.19	91	3757	0.094 ng		87
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	18.63	91	895	N.D.		
71) n-Nonane	18.82	43	1082	0.057 ng	#	78
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	19.01	105	116	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	19.61	91	456	N.D.		
77) 3-Ethyltoluene	19.70	105	925	No Calib	#	
78) 4-Ethyltoluene	19.70	105	925	N.D.		
79) 1,3,5-Trimethylbenzene	19.80	105	441	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.96	105	274	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.16	105	1321	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	20.30	91	246	N.D.		
85) 1,3-Dichlorobenzene	20.37	146	187	N.D.		
86) 1,4-Dichlorobenzene	20.37	146	187	N.D.		
87) sec-Butylbenzene	20.53	105	450	N.D.		
88) 4-Isopropyltoluene (p-...	20.53	119	614	N.D.		
89) 1,2,3-Trimethylbenzene	20.53	105	450	No Calib	#	
90) 1,2-Dichlorobenzene	20.65	146	1328	0.053 ng		87
91) d-Limonene	20.65	68	345	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.34	57	2654	No Calib		
94) 1,2,4-Trichlorobenzene	22.17	180	1160	0.060 ng	#	87
95) Naphthalene	0.00	128	0	N.D. d		
96) n-Dodecane	22.25	57	1670	No Calib	#	
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	20.91	91	364	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242010.D Vial: 11
Acq On : 24 Nov 2020 22:12 Operator: TD
Sample : P2006561-009 (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 10:54:02 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Response Factor Report MS13

Method Path : I:\MS13\METHODS\
Method File : R13111120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Nov 12 05:50:29 2020
Response Via : Initial Calibration

Calibration Files
0.1 =11112011.D 0.2 =11112012.D 0.5 =11112013.D 1.0 =11112014.D 5.0 =11112015.D 25 =11112016.D 50 =11112017.D
100 =11112018.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	ISTD	----------							
2)	T	Propene	1.265	1.190	1.030	1.084	1.094	1.053	0.945	0.829	1.061	12.77
3)	T	Dichlorodifluo...	2.339	2.294	1.962	2.092	2.165	2.161	1.982	1.726	2.090	9.48
4)	T	Chloromethane	1.259	1.214	1.131	1.242	1.342	1.286	1.074		1.221	7.53
5)	T	1,2-Dichloro-1...	1.143	1.139	1.001	1.063	1.101	1.105	1.018	0.931	1.063	6.98
6)	T	Vinyl Chloride	1.166	1.227	1.104	1.190	1.276	1.261	1.149	1.029	1.175	7.02
7)	T	1,3-Butadiene	0.996	1.143	1.101	1.200	1.291	1.265	1.128	0.939	1.133	10.77
8)	T	Bromomethane	0.907	0.960	0.866	0.938	1.003	1.021	0.957	0.856	0.938	6.34
9)	T	Chloroethane		0.777	0.694	0.740	0.786	0.789	0.733	0.643	0.737	7.32
10)	T	Ethanol	0.768	0.748	0.703	0.708	0.715	0.624	0.522	0.432	0.653	18.17
11)	T	Acetonitrile		1.676	1.495	1.608	1.690	1.744	1.624	1.462	1.614	6.40
12)	T	Acrolein	0.389	0.637	0.579	0.643	0.697	0.680	0.619	0.542	0.598	16.44
13)	T	Acetone	0.843	0.840	0.703	0.744	0.759	0.644	0.507	0.395	0.679	23.30
14)	T	Trichlorofluor...	1.896	1.908	1.684	1.794	1.849	1.903	1.795	1.651	1.810	5.47
15)	T	2-Propanol (Is...	2.415	2.537	2.331	2.532	2.709	2.547	2.152	1.668	2.361	13.80
16)	T	Acrylonitrile	0.814	1.104	1.096	1.245	1.354	1.324	1.172	0.986	1.137	15.78
17)	T	1,1-Dichloroet...	1.115	1.110	0.994	1.044	1.124	1.147	1.075	0.961	1.071	6.20
18)	T	2-Methyl-2-Pro...	2.308	2.496	2.323	2.539	2.753	2.695	2.295	1.405	2.352	17.88
19)	T	Methylene Chlo...	1.045	1.076	1.001	1.062	1.117	1.139	1.054	0.884	1.047	7.50
20)	T	3-Chloro-1-pro...	1.576	1.523	1.330	1.419	1.465	1.455	1.346	1.189	1.413	8.65
21)	T	Trichlorotrifl...	1.056	1.089	0.986	1.023	1.077	1.105	1.052	0.948	1.042	5.12
22)	T	Carbon Disulfide		4.599	3.783	3.849	3.841	3.629	3.102	2.405	3.601	19.07
23)	T	trans-1,2-Dich...	1.026	1.306	1.246	1.381	1.487	1.517	1.405	1.230	1.325	12.03
24)	T	1,1-Dichloroet...	1.783	1.750	1.649	1.776	1.851	1.852	1.703	1.480	1.731	7.07
25)	T	Methyl tert-Bu...	3.427	3.354	3.034	3.243	3.369	3.397	3.127	2.693	3.206	7.77
26)	T	Vinyl Acetate		0.181	0.199	0.236	0.258	0.231	0.186	0.149	0.206	18.32
27)	T	2-Butanone (MEK)		0.524	0.552	0.662	0.743	0.721	0.630	0.509	0.620	15.20
28)	T	cis-1,2-Dichlo...	1.305	1.371	1.254	1.335	1.435	1.445	1.334	1.165	1.331	6.92
29)	T	Diisopropyl Ether	0.963	1.025	0.922	0.984	0.997	0.757	0.589	0.455	0.836	25.55
30)	T	Ethyl Acetate		0.270	0.346	0.406	0.433	0.342	0.263	0.213	0.325	24.62
31)	T	n-Hexane	1.990	1.869	1.699	1.737	1.696	1.350	1.068	0.850	1.532	26.26
32)	T	Chloroform	1.756	1.748	1.603	1.704	1.789	1.828	1.712	1.533	1.709	5.70
33)	S	1,2-Dichloroet...	1.346	1.351	1.350	1.362	1.337	1.355	1.348	1.342	1.349	0.57
34)	T	Tetrahydrofura...	0.752	0.717	0.655	0.694	0.721	0.694	0.606	0.482	0.665	12.97
35)	T	Ethyl tert-But...	1.345	1.337	1.207	1.326	1.343	1.289	1.107	0.879	1.229	13.36
36)	T	1,2-Dichloroet...	1.197	1.196	1.142	1.228	1.335	1.381	1.310	1.187	1.247	6.76
37)	IR	1,4-Difluorobenzen...	----------	ISTD	----------							
38)	T	1,1,1-Trichlor...	0.374	0.374	0.336	0.358	0.384	0.395	0.374	0.335	0.366	5.94
39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	1.082	1.062	0.946	0.998	1.039	0.994	0.878	0.710	0.964	12.61
42)	T	Carbon Tetrach...	0.303	0.300	0.270	0.284	0.320	0.346	0.412	0.300	0.317	14.14

WJA 11/12/20

Method Path : I:\MS13\METHODS\
Method File : R13111120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

43)	T	Cyclohexane	0.448	0.441	0.384	0.398	0.407	0.370	0.307	0.234	0.374	19.13
44)	T	tert-Amyl Meth...	0.788	0.758	0.681	0.707	0.731	0.668	0.555	0.425	0.664	17.99
45)	T	1,2-Dichloropr...	0.217	0.243	0.220	0.240	0.252	0.245	0.221	0.183	0.228	9.72
46)	T	Bromodichlorom...	0.247	0.276	0.265	0.287	0.325	0.339	0.318	0.278	0.292	10.98
47)	T	Trichloroethene	0.310	0.310	0.273	0.292	0.311	0.311	0.283	0.232	0.290	9.58
48)	T	1,4-Dioxane			0.167	0.190	0.221	0.218	0.194	0.153	0.190	14.15
49)	T	2,2,4-Trimethy...	1.161	1.130	0.994	1.032	1.021	0.944	0.814	0.631	0.966	17.89
50)	T	Methyl Methacr...			0.072	0.094	0.114	0.112	0.098	0.079	0.095	17.71
51)	T	n-Heptane	0.261	0.280	0.246	0.260	0.268	0.255	0.223	0.178	0.246	13.04
52)	T	cis-1,3-Dichlo...		0.312	0.309	0.355	0.405	0.404	0.367	0.308	0.351	12.26
53)	T	4-Methyl-2-pen...		0.181	0.175	0.201	0.220	0.196	0.160	0.123	0.179	17.65
54)	T	trans-1,3-Dich...		0.225	0.251	0.313	0.378	0.396	0.369	0.322	0.322	20.13
55)	T	1,1,2-Trichlor...	0.224	0.246	0.224	0.243	0.259	0.260	0.238	0.201	0.237	8.33
56)	IR	Chlorobenzene-d5 (...	----------	ISTD	----------							
57)	S	Toluene-d8 (SS2)	2.454	2.474	2.471	2.478	2.475	2.442	2.417	2.380	2.449	1.42
58)	T	Toluene	2.710	2.605	2.255	2.389	2.465	2.315	2.002	1.570	2.289	15.83
59)	T	2-Hexanone		0.778	0.807	0.947	1.084	0.965	0.798	0.612	0.856	18.09
60)	T	Dibromochlorom...	0.400	0.464	0.438	0.500	0.612	0.688	0.654	0.573	0.541	19.60
61)	T	1,2-Dibromoethane	0.460	0.548	0.518	0.592	0.665	0.681	0.634	0.548	0.581	13.13
62)	T	n-Butyl Acetate		0.718	0.840	1.030	1.215	1.094	0.893	0.669	0.923	21.68
63)	T	n-Octane	0.514	0.521	0.473	0.494	0.489	0.453	0.386	0.299	0.454	16.68
64)	T	Tetrachloroethene	0.784	0.776	0.678	0.742	0.764	0.771	0.707	0.595	0.727	8.93
65)	T	Chlorobenzene	1.858	1.792	1.543	1.652	1.709	1.626	1.375	1.048	1.575	16.50
66)	T	Ethylbenzene	2.935	2.899	2.558	2.734	2.810	2.622	2.230	1.725	2.564	15.86
67)	T	m- & p-Xylenes	2.362	2.375	2.051	2.165	2.180	1.938	1.600	1.249	1.990	19.56
68)	T	Bromoform			0.306	0.361	0.498	0.603	0.585	0.517	0.478	25.09
69)	T	Styrene	1.624	1.715	1.452	1.646	1.805	1.740	1.502	1.173	1.582	12.84
70)	T	o-Xylene	2.372	2.339	2.065	2.165	2.186	2.035	1.705	1.294	2.020	17.78
71)	T	n-Nonane	1.135	1.093	1.008	1.053	1.035	0.910	0.740	0.552	0.941	21.21
72)	T	1,1,2,2-Tetrac...	0.915	0.963	0.877	0.944	0.990	0.925	0.775	0.582	0.871	15.38
73)	S	Bromofluoroben...	0.815	0.821	0.822	0.831	0.835	0.829	0.818	0.803	0.822	1.21
74)	T	Cumene	3.204	3.069	2.683	2.839	2.870	2.652	2.225	1.692	2.654	18.38
75)	T	alpha-Pinene	1.608	1.560	1.345	1.453	1.426	1.362	1.152	0.885	1.349	17.33
76)	T	n-Propylbenzene	3.663	3.536	3.153	3.347	3.381	3.081	2.555	1.926	3.080	18.70
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	2.652	2.770	2.487	2.745	2.818	2.624	2.201	1.694	2.499	15.22
79)	T	1,3,5-Trimethy...	2.949	2.728	2.401	2.424	2.381	2.220	1.882	1.452	2.305	20.33
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	2.464	2.412	2.292	2.411	2.422	2.070	1.639	1.204	2.114	21.77
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride			1.367	1.629	1.937	1.792	1.404	1.006	1.523	22.00
85)	T	1,3-Dichlorobe...	1.324	1.395	1.267	1.387	1.455	1.364	1.108	0.818	1.265	16.53
86)	T	1,4-Dichlorobe...	1.608	1.585	1.386	1.463	1.523	1.484	1.298	1.011	1.420	13.64
87)	T	sec-Butylbenzene	3.638	3.629	3.093	3.269	3.233	2.863	2.442	1.825	2.999	20.52
88)	T	4-Isopropyltol...	2.888	2.964	2.684	2.845	2.854	2.643	2.183	1.657	2.590	17.34
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	1.340	1.476	1.272	1.358	1.413	1.307	1.067	0.794	1.253	17.64
91)	T	d-Limonene	0.816	0.888	0.802	0.873	0.865	0.746	0.583	0.435	0.751	21.43
92)	T	1,2-Dibromo-3-...			0.369	0.445	0.532	0.553	0.471		0.474	15.42
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	0.832	0.793	0.968	1.088	1.195	1.153	0.942	0.677	0.956	19.08

Method Path : I:\MS13\METHODS\
Method File : R13111120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

95)	T	Naphthalene			2.408	2.934	3.402	3.560	3.024	2.267	2.933	17.65
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	0.827	0.800	0.639	0.680	0.706	0.764	0.709	0.589	0.714	11.24
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	2.661	2.630	2.265	2.405	2.352	1.974	1.562	1.149	2.125	25.06
100)	T	n-Butylbenzene	2.350	2.523	2.382	2.580	2.564	2.365	1.956	1.454	2.272	16.96
101)	T	1,1,1,2-Tetrac...	0.481	0.491	0.454	0.502	0.555	0.573	0.508	0.406	0.496	10.68

(#) = Out of Range

Primary Source Standards Concentrations (Working & Initial Calibration)

11/16/20

1ng/L Std. ID:		40ng/L Std. ID:	
4ng/L Std. ID:	S34-11102006	200ng/L Std. ID:	S34-10292002
20ng/L Std. ID:	S34-11102005	1000ng/L Std. ID:	

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	200	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.025	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	1.04	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
Chloromethane	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
Freon-114	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
Vinyl 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
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	1.04	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
Chloroethane	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
Ethanol	5.28	5280	1056	211.2	105.6	21.12	5.28		0.528	1.056	2.640	5.28	26.40	132.00	264.0	528
Acetonitrile	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
Acrolein	2.18	2180	436	87.2	43.6	8.72	2.18		0.218	0.436	1.090	2.18	10.90	54.50	109.0	218
Acetone	5.16	5160	1032	206.4	103.2	20.64	5.16		0.516	1.032	2.580	5.16	25.80	129.00	258.0	516
Trichlorofluoromethane	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
Isopropanol	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
Acrylonitrile	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
1,1-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
tert-Butanol	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
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	1.04	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
Trichlorotrifluoroethane	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
Carbon Disulfide	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-1,2-Dichloroethene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,1-Dichloroethane	1.07	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
Methyl tert-Butyl Ether	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
Vinyl Acetate	5.49	5490	1098	219.6	109.8	21.96	5.49		0.549	1.098	2.745	5.49	27.45	137.25	274.5	549
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	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
Ethyl Acetate	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-Hexane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Chloroform	1.05	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
Tetrahydrofuran	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
Ethyl tert-Butyl Ether	2.08	2080	416	83.2	41.6	8.32	2.08		0.208	0.416	1.040	2.08	10.40	52.00	104.0	208
1,2-Dichloroethane	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-Trichloroethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Benzene	1.04	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	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Cyclohexane	2.07	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	2.07	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
1,2-Dichloropropane	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
Bromodichloromethane	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
Trichloroethene	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
1,4-Dioxane	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
Isooctane	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 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	1.03	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

Primary Source Standards Concentrations (Working & Initial Calibration)

11/16/20

1ng/L Std. ID:		40ng/L Std. ID:	
4ng/L Std. ID:	S34-11102006	200ng/L Std. ID:	S34-10292002
20ng/L Std. ID:	S34-11102005	1000ng/L Std. ID:	

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	200	200	200	200
	Source Std.			Primary Working Standards				Injection (L):	0.025	0.050	0.0250	0.050	0.025	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	1.02	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
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	1.04	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
2-Hexanone	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
Dibromochloromethane	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-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	2.07	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
n-Octane	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
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	1.03	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
Ethylbenzene	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
m-&p-Xylene	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
Bromoform	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
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	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
n-Nonane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,1,2,2-Tetrachloroethane	1.05	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
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	1.06	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
n-Propylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
4-Ethyltoluene	1.05	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
1,3,5-Trimethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
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	2.10	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
1,3-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
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	1.03	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
p-Isopropyltoluene	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
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	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
1,2-Dibromo-3-chloropropane	2.00	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	2.00	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
Naphthalene	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
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	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
1,1,1,2-Tetrachloroethane	1.03	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

29 Oct 2020

Calibration Status Report MS13

Method : I:\MS13\METHODS\R13111120.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS13\DATA\2020_11\11\11112011.D
2	0.2	0	13	I:\MS13\DATA\2020_11\11\11112012.D
3	0.5	1	13	I:\MS13\DATA\2020_11\11\11112013.D
4	1.0	1	13	I:\MS13\DATA\2020_11\11\11112014.D
5	5.0	5	13	I:\MS13\DATA\2020_11\11\11112015.D
6	25	26	13	I:\MS13\DATA\2020_11\11\11112016.D
7	50	52	13	I:\MS13\DATA\2020_11\11\11112017.D
8	100	104	13	I:\MS13\DATA\2020_11\11\11112018.D

VOA 11/12/20

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Nov 12 03:13 2020	Nov 12 03:04 2020	11 Nov 2020 19:48
2	0.2	Nov 12 03:13 2020	Nov 12 02:56 2020	11 Nov 2020 20:23
3	0.5	Nov 12 03:14 2020	Nov 12 02:56 2020	11 Nov 2020 20:57
4	1.0	Nov 12 03:15 2020	Nov 12 02:56 2020	11 Nov 2020 21:31
5	5.0	Nov 12 03:15 2020	Nov 12 02:56 2020	11 Nov 2020 22:05
6	25	Nov 12 05:50 2020	Nov 12 02:56 2020	11 Nov 2020 22:39
7	50	Nov 12 03:16 2020	Nov 12 02:56 2020	11 Nov 2020 23:13
8	100	Nov 12 03:17 2020	Nov 12 02:56 2020	11 Nov 2020 23:47

R13111120.M Thu Nov 12 07:01:46 2020

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112011.D Vial: 13
Acq On : 11 Nov 2020 19:48 Operator: LH
Sample : 0.1ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102006 (11/27)

Quant Time: Nov 12 03:04:13 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) 11/12/20
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	133183	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	567218	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	252539	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	179330	12.929	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%				
57) Toluene-d8 (SS2)	15.76	98	619842	12.412	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%				
73) Bromofluorobenzene (SS3)	19.01	174	205936	12.837	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.72%				
Target Compounds							Qvalue
2) Propene	4.22	42	1402	0.091	ng		97
3) Dichlorodifluoromethan...	4.37	85	2592	0.107	ng	#	89
4) Chloromethane	4.66	50	1395	0.085	ng		88
5) 1,2-Dichloro-1,1,2,2-t...	4.90	135	1266	0.095	ng		82
6) Vinyl Chloride	5.08	62	1305	0.075	ng		88
7) 1,3-Butadiene	5.33	54	1104	0.075	ng		97
8) Bromomethane	5.75	94	1005	0.088	ng		99
9) Chloroethane	6.09	64	799	0.085	ng	#	42
10) Ethanol	6.46	45	4323	0.453	ng		83
11) Acetonitrile	6.76	41	2051	0.091	ng		97
12) Acrolein	6.93	56	903	0.108	ng		83
13) Acetone	7.13	58	4632	0.465	ng		97
14) Trichlorofluoromethane	7.33	101	2060	0.094	ng		97
15) 2-Propanol (Isopropanol)	7.67	45	5275	0.176	ng		85
16) Acrylonitrile	7.91	53	1777	0.113	ng	#	63
17) 1,1-Dichloroethene	8.28	96	1236	0.097	ng		97
18) 2-Methyl-2-Propanol (t...	8.55	59	5091	0.191	ng	#	85
19) Methylene Chloride	8.49	84	1158	0.087	ng		92
20) 3-Chloro-1-propene (Al...	8.66	41	1746	0.095	ng	#	68
21) Trichlorotrifluoroethane	8.90	151	1181	0.099	ng		95
22) Carbon Disulfide	8.76	76	11612	0.236	ng		90
23) trans-1,2-Dichloroethene	9.78	61	1148	0.069	ng		99
24) 1,1-Dichloroethane	10.00	63	2033	0.093	ng		87
25) Methyl tert-Butyl Ether	10.17	73	3761	0.106	ng		86
26) Vinyl Acetate	10.31	86	519	0.182	ng	#	1
27) 2-Butanone (MEK)	0.00	72	0	N.D.	d		
28) cis-1,2-Dichloroethene	11.02	61	1446	0.088	ng		98
29) Diisopropyl Ether	11.34	87	2144	0.203	ng	#	39
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	11.30	57	2205	0.110	ng	#	87
32) Chloroform	11.35	83	1964	0.094	ng		90
34) Tetrahydrofuran (THF)	11.84	72	1635	0.194	ng	#	81
35) Ethyl tert-Butyl Ether	11.93	87	2980	0.208	ng	#	88
36) 1,2-Dichloroethane	12.17	62	1326	0.095	ng		74
38) 1,1,1-Trichloroethane	12.44	97	1750	0.095	ng		96
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	13.20	56	3149	No Calib		#	
41) Benzene	12.93	78	5104	0.101	ng		93
42) Carbon Tetrachloride	13.08	117	1401	0.081	ng		100
43) Cyclohexane	13.21	84	4206	0.218	ng		93
44) tert-Amyl Methyl Ether	13.58	73	7405	0.225	ng		96
45) 1,2-Dichloropropane	13.78	63	1025	0.083	ng		86
46) Bromodichloromethane	13.98	83	1165	0.074	ng		84
47) Trichloroethene	14.02	130	1435	0.101	ng		97
48) 1,4-Dioxane	14.10	88	373	N.D.			
49) 2,2,4-Trimethylpentane...	14.08	57	5534	0.107	ng		96
50) Methyl Methacrylate	14.35	100	477	0.097	ng	#	1

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112011.D Vial: 13
Acq On : 11 Nov 2020 19:48 Operator: LH
Sample : 0.1ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102006 (11/27)

Quant Time: Nov 12 03:04:13 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

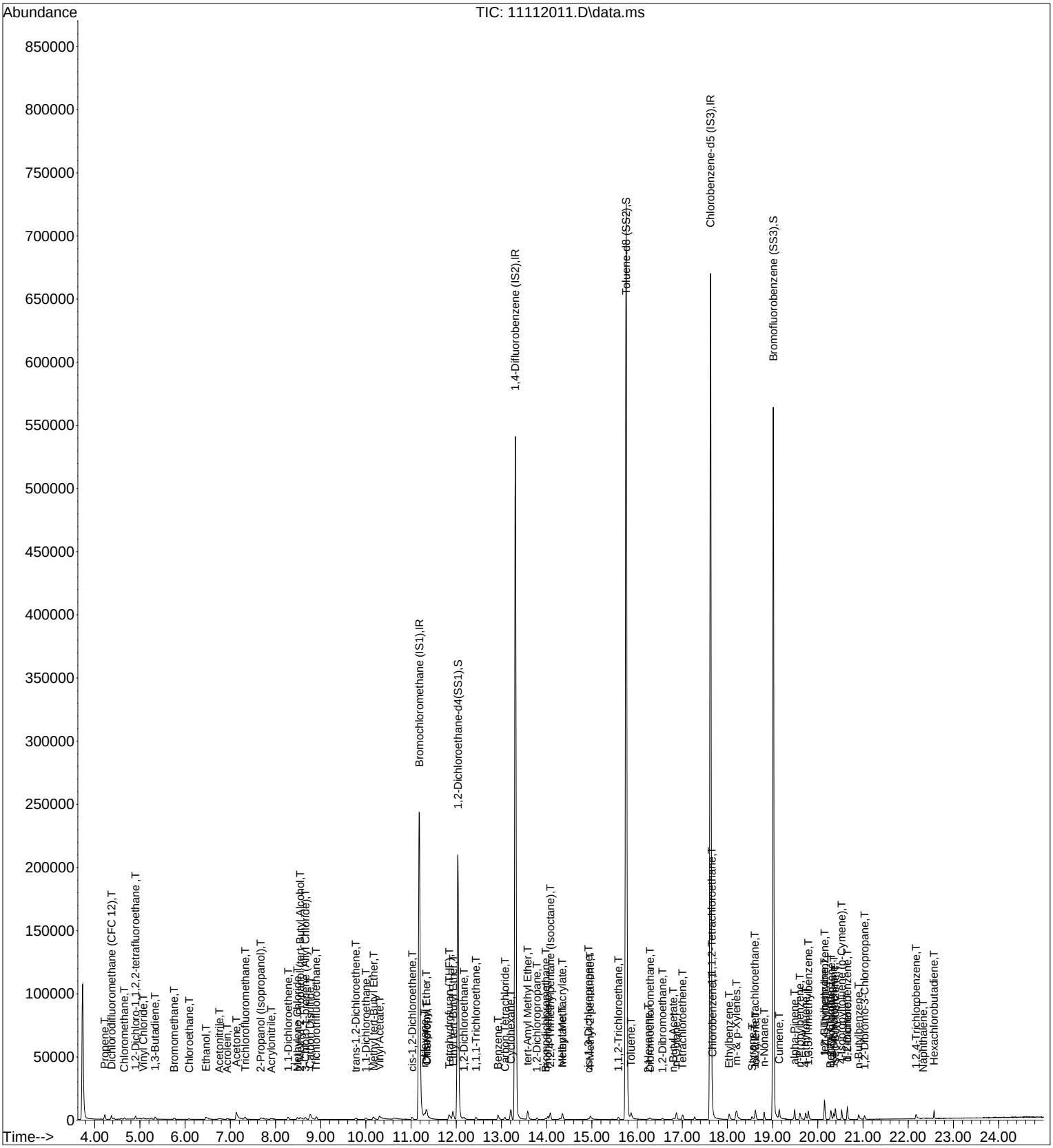
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	1219	0.095 ng		87
52) cis-1,3-Dichloropropene	14.92	75	1242	0.068 ng	#	42
53) 4-Methyl-2-pentanone	14.96	58	1127	0.113 ng	#	19
54) trans-1,3-Dichloropropene	15.45	75	523	N.D.		
55) 1,1,2-Trichloroethane	15.59	97	1059	0.087 ng		97
58) Toluene	15.87	91	5695	0.110 ng		93
59) 2-Hexanone	16.25	43	1976	0.096 ng	#	32
60) Dibromochloromethane	16.29	129	840	0.061 ng		86
61) 1,2-Dibromoethane	16.56	107	967	0.075 ng		93
62) n-Butyl Acetate	16.80	43	1750	0.077 ng	#	83
63) n-Octane	16.87	57	1081	0.104 ng		93
64) Tetrachloroethene	17.01	166	1647	0.106 ng		98
65) Chlorobenzene	17.67	112	3866	0.110 ng		94
66) Ethylbenzene	18.04	91	6166	0.110 ng		94
67) m- & p-Xylenes	18.20	91	9972	0.226 ng		96
68) Bromoform	18.27	173	577	N.D.		
69) Styrene	18.55	104	3380	0.101 ng		79
70) o-Xylene	18.62	91	5032	0.114 ng		95
71) n-Nonane	18.82	43	2407	0.114 ng		90
72) 1,1,2,2-Tetrachloroethane	18.60	83	1940	0.095 ng		96
74) Cumene	19.15	105	6732	0.117 ng		94
75) alpha-Pinene	19.49	93	3444	0.124 ng		97
76) n-Propylbenzene	19.60	91	7697	0.115 ng		89
77) 3-Ethyltoluene	19.73	105	5626	No Calib		
78) 4-Ethyltoluene	19.73	105	5626	0.103 ng		96
79) 1,3,5-Trimethylbenzene	19.79	105	6256	0.128 ng		91
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.79	105	6256	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	5128	0.111 ng		98
83) n-Decane	20.15	58	108	No Calib	#	
84) Benzyl Chloride	20.28	91	5521	0.149 ng		85
85) 1,3-Dichlorobenzene	20.29	146	2809	0.096 ng		99
86) 1,4-Dichlorobenzene	20.35	146	3379	0.107 ng		99
87) sec-Butylbenzene	20.39	105	7571	0.119 ng		88
88) 4-Isopropyltoluene (p-...	20.53	119	5951	0.108 ng		94
89) 1,2,3-Trimethylbenzene	20.52	105	362	No Calib	#	
90) 1,2-Dichlorobenzene	20.65	146	2843	0.099 ng		100
91) d-Limonene	20.65	68	1699	0.107 ng		92
92) 1,2-Dibromo-3-Chloropr...	21.03	157	1373	0.126 ng		84
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.17	180	3361	0.143 ng	#	91
95) Naphthalene	22.33	128	3504	0.054 ng	#	70
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.57	225	1721	0.104 ng		92
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.15	119	5592	0.121 ng		96
100) n-Butylbenzene	20.90	91	4891	0.098 ng	#	83
101) 1,1,1,2-Tetrachloroethane	17.65	131	1001	0.081 ng	#	90

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112011.D Vial: 13
Acq On : 11 Nov 2020 19:48 Operator: LH
Sample : 0.1ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102006 (11/27)

Quant Time: Nov 12 03:04:13 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112012.D Vial: 13
Acq On : 11 Nov 2020 20:23 Operator: LH
Sample : 0.2ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102006 (11/27)

Quant Time: Nov 12 02:56:12 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) 11/12/20
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	131929	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	562039	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	248698	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.03	65	178302	12.977	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.84%				
57) Toluene-d8 (SS2)	15.76	98	615272	12.511	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
73) Bromofluorobenzene (SS3)	19.01	174	204078	12.918	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.36%				
Target Compounds							Qvalue
2) Propene	4.21	42	2613	0.172	ng		98
3) Dichlorodifluoromethan...	4.36	85	5036	0.209	ng	#	95
4) Chloromethane	4.64	50	2664	0.164	ng		93
5) 1,2-Dichloro-1,1,2,2-t...	4.90	135	2501	0.190	ng		95
6) Vinyl Chloride	5.05	62	2720	0.158	ng		100
7) 1,3-Butadiene	5.32	54	2510	0.173	ng		93
8) Bromomethane	5.74	94	2107	0.187	ng		96
9) Chloroethane	6.08	64	1705	0.183	ng		85
10) Ethanol	6.43	45	8338	0.882	ng		91
11) Acetonitrile	6.73	41	3749	0.169	ng		88
12) Acrolein	6.89	56	2933	0.354	ng		96
13) Acetone	7.10	58	9146	0.928	ng		97
14) Trichlorofluoromethane	7.32	101	4108	0.190	ng		100
15) 2-Propanol (Isopropanol)	7.63	45	10978	0.371	ng		99
16) Acrylonitrile	7.87	53	4777	0.307	ng		88
17) 1,1-Dichloroethene	8.27	96	2437	0.192	ng		99
18) 2-Methyl-2-Propanol (t...	8.51	59	10908	0.412	ng		94
19) Methylene Chloride	8.48	84	2363	0.180	ng		96
20) 3-Chloro-1-propene (Al...	8.65	41	3343	0.184	ng		81
21) Trichlorotrifluoroethane	8.91	151	2413	0.203	ng		96
22) Carbon Disulfide	8.76	76	20193	0.414	ng		96
23) trans-1,2-Dichloroethene	9.76	61	2894	0.176	ng		93
24) 1,1-Dichloroethane	9.99	63	3952	0.182	ng		95
25) Methyl tert-Butyl Ether	10.15	73	7292	0.208	ng		95
26) Vinyl Acetate	10.28	86	2097	0.743	ng	#	1
27) 2-Butanone (MEK)	10.57	72	2280	0.285	ng		90
28) cis-1,2-Dichloroethene	11.02	61	3009	0.184	ng		97
29) Diisopropyl Ether	11.33	87	4522	0.432	ng	#	36
30) Ethyl Acetate	11.38	61	1184	0.262	ng		83
31) n-Hexane	11.30	57	4103	0.206	ng	#	95
32) Chloroform	11.35	83	3875	0.186	ng		98
34) Tetrahydrofuran (THF)	11.83	72	3088	0.371	ng	#	79
35) Ethyl tert-Butyl Ether	11.92	87	5872	0.414	ng	#	89
36) 1,2-Dichloroethane	12.17	62	2625	0.190	ng		89
38) 1,1,1-Trichloroethane	12.43	97	3468	0.190	ng		98
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	13.20	56	6095	No Calib		#	
41) Benzene	12.92	78	9929	0.197	ng		97
42) Carbon Tetrachloride	13.07	117	2749	0.161	ng		99
43) Cyclohexane	13.20	84	8207	0.429	ng		96
44) tert-Amyl Methyl Ether	13.57	73	14105	0.433	ng		98
45) 1,2-Dichloropropane	13.78	63	2272	0.185	ng		90
46) Bromodichloromethane	13.97	83	2580	0.167	ng		93
47) Trichloroethene	14.02	130	2840	0.201	ng		98
48) 1,4-Dioxane	14.06	88	1457	0.153	ng	#	59
49) 2,2,4-Trimethylpentane...	14.08	57	10667	0.208	ng		97
50) Methyl Methacrylate	14.25	100	1082	0.223	ng	#	23

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112012.D Vial: 13
Acq On : 11 Nov 2020 20:23 Operator: LH
Sample : 0.2ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102006 (11/27)

Quant Time: Nov 12 02:56:12 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

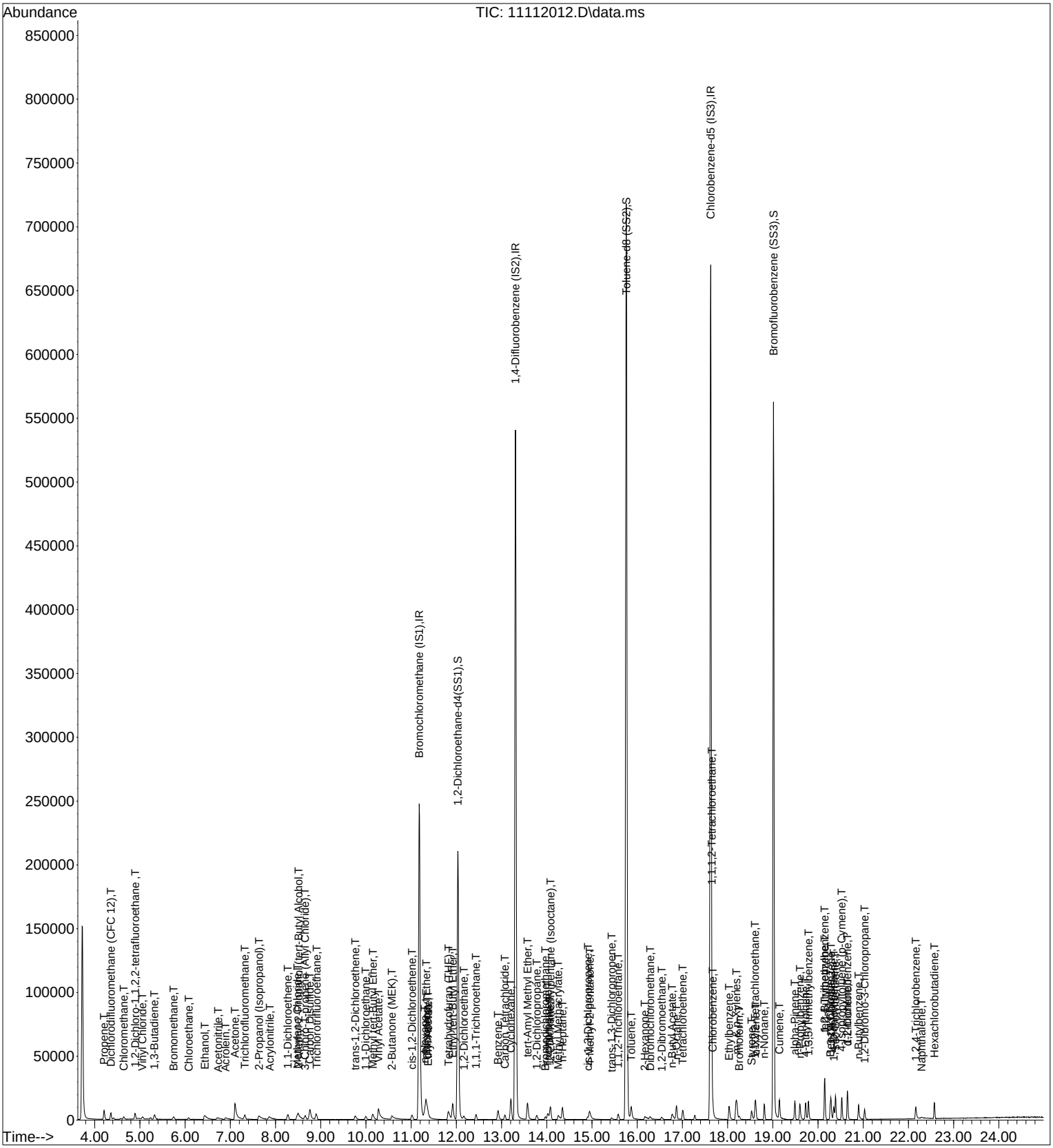
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	2589	0.203 ng		92
52) cis-1,3-Dichloropropene	14.91	75	2943	0.163 ng		86
53) 4-Methyl-2-pentanone	14.95	58	3386	0.344 ng	#	74
54) trans-1,3-Dichloropropene	15.43	75	2066	0.126 ng		69
55) 1,1,2-Trichloroethane	15.58	97	2301	0.192 ng		97
58) Toluene	15.87	91	10782	0.211 ng		96
59) 2-Hexanone	16.17	43	6381	0.313 ng		86
60) Dibromochloromethane	16.29	129	1921	0.141 ng		96
61) 1,2-Dibromoethane	16.54	107	2268	0.177 ng		98
62) n-Butyl Acetate	16.77	43	5912	0.263 ng		95
63) n-Octane	16.87	57	2157	0.211 ng		94
64) Tetrachloroethene	17.01	166	3211	0.211 ng		99
65) Chlorobenzene	17.67	112	7345	0.212 ng		97
66) Ethylbenzene	18.03	91	11995	0.217 ng		96
67) m- & p-Xylenes	18.20	91	19754	0.455 ng		96
68) Bromoform	18.26	173	1309	0.107 ng		93
69) Styrene	18.53	104	7029	0.214 ng		87
70) o-Xylene	18.62	91	9773	0.225 ng		97
71) n-Nonane	18.81	43	4568	0.219 ng		93
72) 1,1,2,2-Tetrachloroethane	18.60	83	4022	0.199 ng		97
74) Cumene	19.15	105	12701	0.225 ng		96
75) alpha-Pinene	19.49	93	6581	0.241 ng		99
76) n-Propylbenzene	19.60	91	14632	0.222 ng		95
77) 3-Ethyltoluene	19.73	105	11574	No Calib		
78) 4-Ethyltoluene	19.73	105	11574	0.215 ng		98
79) 1,3,5-Trimethylbenzene	19.79	105	11400	0.238 ng		93
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.98	105	115	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.15	105	9885	0.217 ng		97
83) n-Decane	20.14	58	536	No Calib	#	
84) Benzyl Chloride	20.27	91	11728	0.322 ng		92
85) 1,3-Dichlorobenzene	20.29	146	5830	0.202 ng		97
86) 1,4-Dichlorobenzene	20.35	146	6558	0.211 ng		96
87) sec-Butylbenzene	20.39	105	14875	0.238 ng		94
88) 4-Isopropyltoluene (p-...	20.52	119	12032	0.221 ng		97
89) 1,2,3-Trimethylbenzene	20.53	105	736	No Calib	#	
90) 1,2-Dichlorobenzene	20.65	146	6167	0.219 ng		95
91) d-Limonene	20.65	68	3640	0.233 ng		93
92) 1,2-Dibromo-3-Chloropr...	21.03	157	3026	0.283 ng		88
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.16	180	6314	0.272 ng		96
95) Naphthalene	22.29	128	6717	0.106 ng	#	70
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	22.58	225	3278	0.201 ng		97
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.15	119	10884	0.240 ng		95
100) n-Butylbenzene	20.90	91	10341	0.211 ng	#	89
101) 1,1,1,2-Tetrachloroethane	17.65	131	2013	0.166 ng		97

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112012.D Vial: 13
Acq On : 11 Nov 2020 20:23 Operator: LH
Sample : 0.2ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102006 (11/27)

Quant Time: Nov 12 02:56:12 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112013.D Vial: 14
Acq On : 11 Nov 2020 20:57 Operator: LH
Sample : 0.5ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102005 (11/27)

Quant Time: Nov 12 05:59:03 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020 11/12/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	130028	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	553675	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	244568	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.03	65	175579	12.511	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
57) Toluene-d8 (SS2)	15.76	98	604209	12.610	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.88%				
73) Bromofluorobenzene (SS3)	19.01	174	201152	12.511	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
Target Compounds							Qvalue
2) Propene	4.20	42	5571	0.505	ng		98
3) Dichlorodifluoromethan...	4.35	85	10611	0.488	ng		98
4) Chloromethane	4.63	50	6116	0.508	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	5415	0.490	ng		99
6) Vinyl Chloride	5.05	62	6028	0.493	ng		96
7) 1,3-Butadiene	5.31	54	5956	0.505	ng		98
8) Bromomethane	5.74	94	4687	0.480	ng		100
9) Chloroethane	6.07	64	3753	0.489	ng		98
10) Ethanol	6.41	45	19297	2.842	ng		96
11) Acetonitrile	6.69	41	8240	0.483	ng		96
12) Acrolein	6.88	56	6569	1.055	ng		98
13) Acetone	7.08	58	18868	2.670	ng		95
14) Trichlorofluoromethane	7.32	101	8935	0.475	ng		99
15) 2-Propanol (Isopropanol)	7.59	45	24855	1.012	ng		98
16) Acrylonitrile	7.83	53	11682	0.988	ng		96
17) 1,1-Dichloroethene	8.27	96	5378	0.483	ng		99
18) 2-Methyl-2-Propanol (t...	8.47	59	25014	1.022	ng		98
19) Methylene Chloride	8.47	84	5412	0.497	ng		97
20) 3-Chloro-1-propene (Al...	8.65	41	7192	0.489	ng		91
21) Trichlorotrifluoroethane	8.90	151	5387	0.497	ng		100
22) Carbon Disulfide	8.75	76	40927	1.034	ng		97
23) trans-1,2-Dichloroethene	9.76	61	6802	0.494	ng		95
24) 1,1-Dichloroethane	9.99	63	9175	0.510	ng		99
25) Methyl tert-Butyl Ether	10.13	73	16252	0.487	ng		97
26) Vinyl Acetate	10.26	86	5685	2.656	ng	#	44
27) 2-Butanone (MEK)	10.55	72	5917	0.917	ng		92
28) cis-1,2-Dichloroethene	11.01	61	6785	0.490	ng		100
29) Diisopropyl Ether	11.33	87	10025	1.152	ng	#	93
30) Ethyl Acetate	11.34	61	3745	1.109	ng		90
31) n-Hexane	11.30	57	9192	0.577	ng		95
32) Chloroform	11.35	83	8754	0.492	ng		99
34) Tetrahydrofuran (THF)	11.80	72	6946	1.004	ng	#	89
35) Ethyl tert-Butyl Ether	11.91	87	13057	1.021	ng		91
36) 1,2-Dichloroethane	12.16	62	6176	0.476	ng		97
38) 1,1,1-Trichloroethane	12.43	97	7654	0.472	ng		99
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	13.20	56	13324	No Calib		#	
41) Benzene	12.92	78	21798	0.511	ng		98
42) Carbon Tetrachloride	13.07	117	6096	0.434	ng		99
43) Cyclohexane	13.20	84	17584	1.063	ng		96
44) tert-Amyl Methyl Ether	13.56	73	31228	1.062	ng		97
45) 1,2-Dichloropropane	13.77	63	5070	0.503	ng		97
46) Bromodichloromethane	13.96	83	6097	0.472	ng		95
47) Trichloroethene	14.02	130	6169	0.480	ng		100
48) 1,4-Dioxane	14.03	88	3801	0.451	ng		81
49) 2,2,4-Trimethylpentane...	14.07	57	23105	0.540	ng		97
50) Methyl Methacrylate	14.24	100	3337	0.794	ng	#	54

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112013.D Vial: 14
Acq On : 11 Nov 2020 20:57 Operator: LH
Sample : 0.5ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102005 (11/27)

Quant Time: Nov 12 05:59:03 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

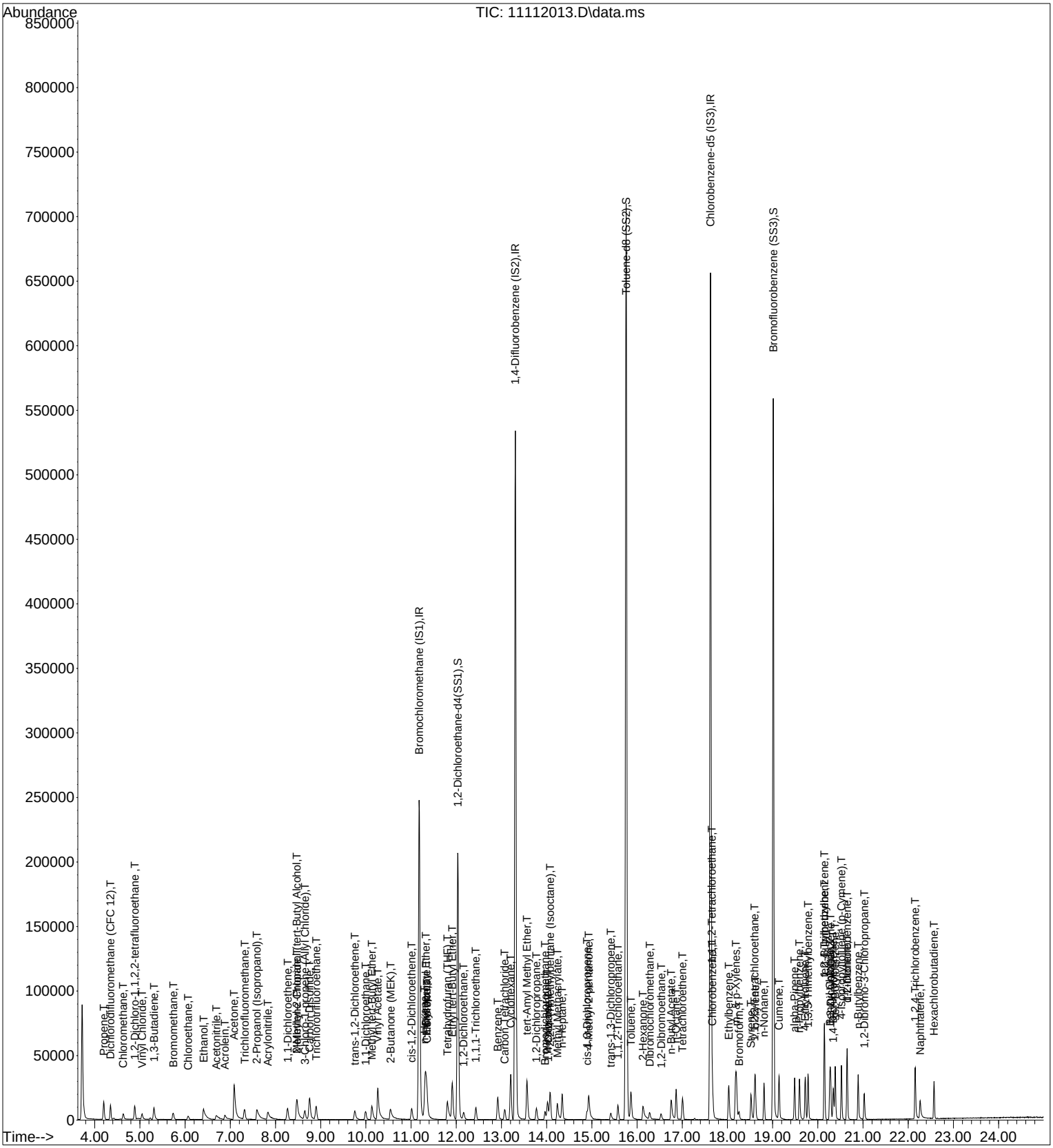
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.34	71	5620	0.515	ng		93
52) cis-1,3-Dichloropropene	14.89	75	7185	0.462	ng		96
53) 4-Methyl-2-pentanone	14.93	58	8065	1.015	ng		84
54) trans-1,3-Dichloropropene	15.42	75	5673	0.398	ng		91
55) 1,1,2-Trichloroethane	15.58	97	5161	0.492	ng		100
58) Toluene	15.86	91	22944	0.512	ng		99
59) 2-Hexanone	16.13	43	16271	0.972	ng		96
60) Dibromochloromethane	16.28	129	4454	0.421	ng		99
61) 1,2-Dibromoethane	16.53	107	5274	0.464	ng		98
62) n-Butyl Acetate	16.76	43	17010	0.942	ng		99
63) n-Octane	16.86	57	4809	0.542	ng		92
64) Tetrachloroethene	17.01	166	6897	0.485	ng		98
65) Chlorobenzene	17.67	112	15544	0.504	ng		99
66) Ethylbenzene	18.03	91	26027	0.519	ng		97
67) m- & p-Xylenes	18.19	91	41944	1.077	ng		98
68) Bromoform	18.26	173	3177	0.339	ng		96
69) Styrene	18.52	104	14634	0.473	ng		98
70) o-Xylene	18.62	91	21207	0.537	ng		99
71) n-Nonane	18.81	43	10349	0.562	ng		94
72) 1,1,2,2-Tetrachloroethane	18.60	83	9011	0.529	ng		99
74) Cumene	19.14	105	27299	0.526	ng		97
75) alpha-Pinene	19.49	93	13948	0.529	ng		99
76) n-Propylbenzene	19.60	91	32081	0.532	ng		96
77) 3-Ethyltoluene	19.72	105	25550	No Calib			
78) 4-Ethyltoluene	19.72	105	25550	0.523	ng		99
79) 1,3,5-Trimethylbenzene	19.78	105	24660	0.547	ng		97
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	19.98	105	328	No Calib		#	
82) 1,2,4-Trimethylbenzene	20.15	105	23095	0.558	ng		100
83) n-Decane	20.15	58	1063	No Calib		#	
84) Benzyl Chloride	20.27	91	28092	0.943	ng		95
85) 1,3-Dichlorobenzene	20.28	146	13011	0.526	ng		100
86) 1,4-Dichlorobenzene	20.34	146	14103	0.508	ng		97
87) sec-Butylbenzene	20.39	105	31161	0.531	ng		95
88) 4-Isopropyltoluene (p-...	20.52	119	26780	0.529	ng		98
89) 1,2,3-Trimethylbenzene	20.52	105	1422	No Calib		#	
90) 1,2-Dichlorobenzene	20.65	146	13061	0.533	ng		99
91) d-Limonene	20.65	68	8083	0.550	ng		93
92) 1,2-Dibromo-3-Chloropr...	21.03	157	7228	0.809	ng		92
93) n-Undecane	0.00	57	0	N.D.			
94) 1,2,4-Trichlorobenzene	22.16	180	18939	1.012	ng		98
95) Naphthalene	22.26	128	24268	0.423	ng		92
96) n-Dodecane	0.00	57	0	N.D.			
97) Hexachlorobutadiene	22.57	225	6440	0.461	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	20.15	119	23041	0.554	ng		98
100) n-Butylbenzene	20.89	91	24000	0.540	ng		94
101) 1,1,1,2-Tetrachloroethane	17.65	131	4572	0.471	ng		98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112013.D Vial: 14
Acq On : 11 Nov 2020 20:57 Operator: LH
Sample : 0.5ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102005 (11/27)

Quant Time: Nov 12 05:59:03 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112014.D Vial: 14
Acq On : 11 Nov 2020 21:31 Operator: LH
Sample : 1.0ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102005 (11/27)

Quant Time: Nov 12 02:56:16 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/12/20

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	128580	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	551380	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	242171	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	175111	13.076	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
57) Toluene-d8 (SS2)	15.76	98	600116	12.532	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.24%				
73) Bromofluorobenzene (SS3)	19.01	174	201159	13.076	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
Target Compounds							Qvalue
2) Propene	4.19	42	11594	0.784	ng		99
3) Dichlorodifluoromethan...	4.35	85	22377	0.954	ng		99
4) Chloromethane	4.63	50	13292	0.839	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	11371	0.887	ng		97
6) Vinyl Chloride	5.04	62	12858	0.767	ng		100
7) 1,3-Butadiene	5.30	54	12837	0.909	ng		97
8) Bromomethane	5.73	94	10033	0.914	ng		98
9) Chloroethane	6.06	64	7921	0.871	ng		100
10) Ethanol	6.40	45	38478	4.175	ng		98
11) Acetonitrile	6.68	41	17533	0.809	ng		97
12) Acrolein	6.86	56	14421	1.784	ng		99
13) Acetone	7.07	58	39514	4.112	ng		95
14) Trichlorofluoromethane	7.31	101	18819	0.893	ng		100
15) 2-Propanol (Isopropanol)	7.57	45	53400	1.850	ng		98
16) Acrylonitrile	7.81	53	26247	1.729	ng		99
17) 1,1-Dichloroethene	8.26	96	11166	0.903	ng		97
18) 2-Methyl-2-Propanol (t...	8.44	59	54067	2.096	ng		99
19) Methylene Chloride	8.47	84	11356	0.888	ng		97
20) 3-Chloro-1-propene (Al...	8.64	41	15180	0.855	ng		94
21) Trichlorotrifluoroethane	8.90	151	11052	0.955	ng		96
22) Carbon Disulfide	8.75	76	82361	1.732	ng		98
23) trans-1,2-Dichloroethene	9.74	61	14919	0.932	ng		97
24) 1,1-Dichloroethane	9.99	63	19549	0.924	ng		97
25) Methyl tert-Butyl Ether	10.13	73	34362	1.006	ng		99
26) Vinyl Acetate	10.26	86	13336	4.848	ng	#	63
27) 2-Butanone (MEK)	10.52	72	14028	1.800	ng		96
28) cis-1,2-Dichloroethene	11.01	61	14278	0.898	ng		99
29) Diisopropyl Ether	11.31	87	21150	2.075	ng		95
30) Ethyl Acetate	11.33	61	8601	1.949	ng		93
31) n-Hexane	11.30	57	18577	0.958	ng		97
32) Chloroform	11.35	83	18408	0.909	ng		99
34) Tetrahydrofuran (THF)	11.79	72	14555	1.793	ng		96
35) Ethyl tert-Butyl Ether	11.91	87	28366	2.052	ng		95
36) 1,2-Dichloroethane	12.16	62	13135	0.978	ng		97
38) 1,1,1-Trichloroethane	12.44	97	16254	0.909	ng		99
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	13.20	56	27120	No Calib		#	
41) Benzene	12.92	78	45779	0.928	ng		98
42) Carbon Tetrachloride	13.07	117	12763	0.763	ng		98
43) Cyclohexane	13.20	84	36378	1.937	ng		96
44) tert-Amyl Methyl Ether	13.56	73	64568	2.021	ng		99
45) 1,2-Dichloropropane	13.77	63	11004	0.912	ng		95
46) Bromodichloromethane	13.96	83	13179	0.867	ng		100
47) Trichloroethene	14.02	130	13153	0.951	ng		99
48) 1,4-Dioxane	14.02	88	8635	0.924	ng		90
49) 2,2,4-Trimethylpentane...	14.08	57	47803	0.951	ng		96
50) Methyl Methacrylate	14.23	100	8601	1.803	ng	#	76

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112014.D Vial: 14
Acq On : 11 Nov 2020 21:31 Operator: LH
Sample : 1.0ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102005 (11/27)

Quant Time: Nov 12 02:56:16 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

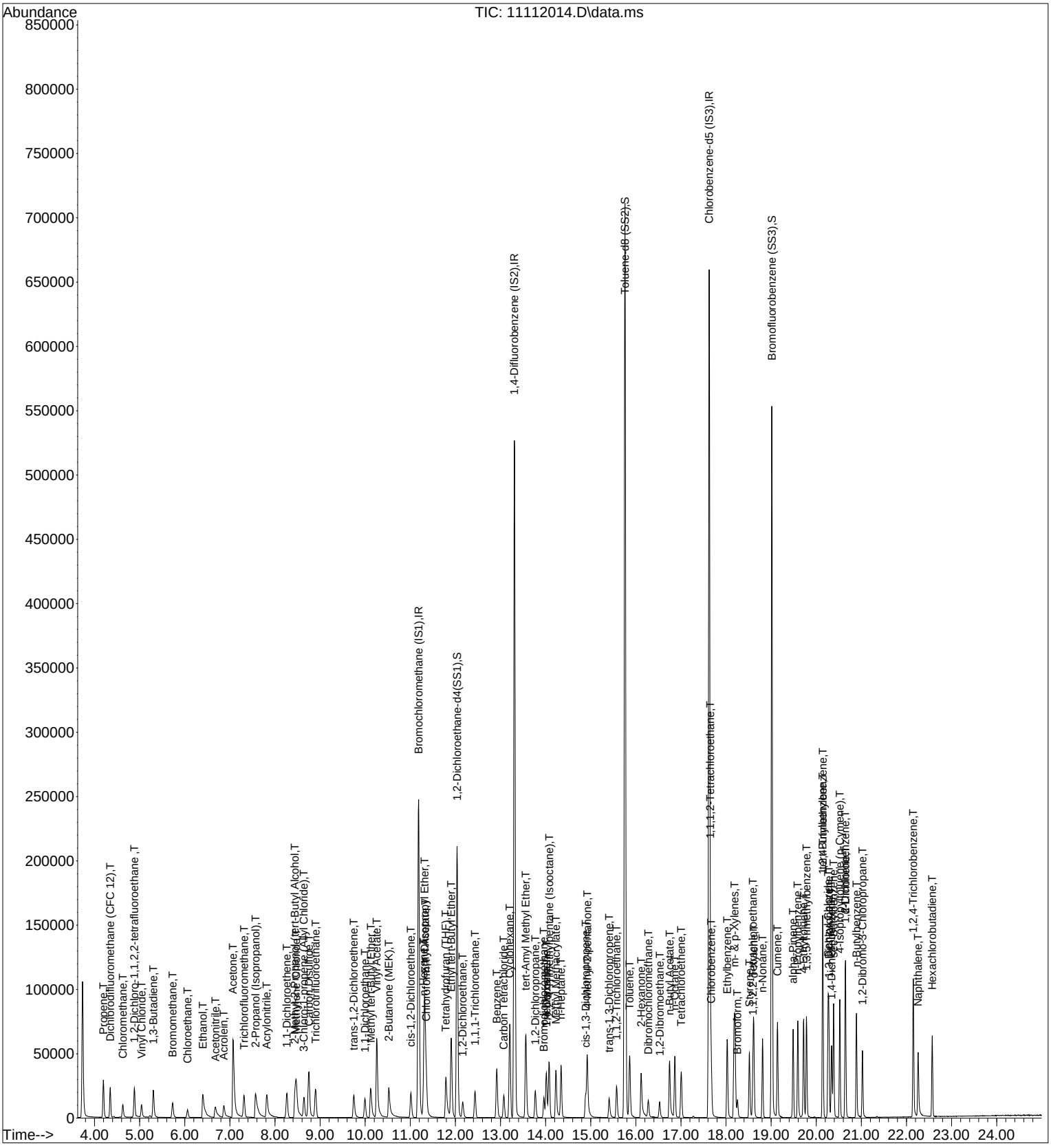
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.34	71	11805	0.943 ng		96
52) cis-1,3-Dichloropropene	14.89	75	16438	0.926 ng		98
53) 4-Methyl-2-pentanone	14.92	58	18412	1.907 ng		92
54) trans-1,3-Dichloropropene	15.41	75	14075	0.874 ng		93
55) 1,1,2-Trichloroethane	15.57	97	11127	0.944 ng		100
58) Toluene	15.86	91	48129	0.968 ng		98
59) 2-Hexanone	16.12	43	37792	1.906 ng		97
60) Dibromochloromethane	16.28	129	10065	0.756 ng		100
61) 1,2-Dibromoethane	16.53	107	11920	0.958 ng		98
62) n-Butyl Acetate	16.75	43	41306	1.889 ng		99
63) n-Octane	16.86	57	9948	0.998 ng		94
64) Tetrachloroethene	17.01	166	14956	1.007 ng		99
65) Chlorobenzene	17.67	112	32975	0.979 ng		97
66) Ethylbenzene	18.02	91	55093	1.026 ng		98
67) m- & p-Xylenes	18.19	91	87678	2.074 ng		99
68) Bromoform	18.25	173	7415	0.624 ng		99
69) Styrene	18.52	104	32844	1.028 ng		97
70) o-Xylene	18.62	91	44038	1.039 ng		99
71) n-Nonane	18.81	43	21424	1.056 ng		95
72) 1,1,2,2-Tetrachloroethane	18.59	83	19208	0.977 ng		100
74) Cumene	19.14	105	57208	1.039 ng		97
75) alpha-Pinene	19.49	93	29833	1.124 ng		99
76) n-Propylbenzene	19.59	91	67429	1.049 ng		97
77) 3-Ethyltoluene	19.72	105	55838	No Calib		
78) 4-Ethyltoluene	19.72	105	55838	1.064 ng		99
79) 1,3,5-Trimethylbenzene	19.78	105	49303	1.056 ng		99
80) alpha-Methylstyrene	19.71	118	195	No Calib	#	
81) 2-Ethyltoluene	19.97	105	666	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.15	105	48107	1.082 ng		98
83) n-Decane	20.14	58	2320	No Calib	#	
84) Benzyl Chloride	20.26	91	66262	1.868 ng		96
85) 1,3-Dichlorobenzene	20.28	146	28224	1.006 ng		99
86) 1,4-Dichlorobenzene	20.34	146	29470	0.973 ng		98
87) sec-Butylbenzene	20.39	105	65232	1.073 ng		96
88) 4-Isopropyltoluene (p-...	20.52	119	56229	1.062 ng		98
89) 1,2,3-Trimethylbenzene	20.52	105	2898	No Calib	#	
90) 1,2-Dichlorobenzene	20.64	146	27622	1.005 ng		100
91) d-Limonene	20.65	68	17414	1.145 ng		93
92) 1,2-Dibromo-3-Chloropr...	21.02	157	17257	1.656 ng		94
93) n-Undecane	21.34	57	321	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.15	180	42160	1.864 ng		99
95) Naphthalene	22.26	128	58544	0.947 ng		96
96) n-Dodecane	22.27	57	164	No Calib	#	
97) Hexachlorobutadiene	22.57	225	13570	0.854 ng		99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.14	119	48461	1.097 ng		98
100) n-Butylbenzene	20.89	91	51485	1.080 ng		95
101) 1,1,1,2-Tetrachloroethane	17.65	131	10022	0.851 ng		97

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112014.D Vial: 14
Acq On : 11 Nov 2020 21:31 Operator: LH
Sample : 1.0ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-11102005 (11/27)

Quant Time: Nov 12 02:56:16 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112015.D Vial: 15
Acq On : 11 Nov 2020 22:05 Operator: LH
Sample : 5.0ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:18 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020 11/12/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.19	130	128756	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.31	114	546148	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.63	82	239897	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	172176	12.840	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.72%				
57) Toluene-d8 (SS2)	15.76	98	593731	12.516	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
73) Bromofluorobenzene (SS3)	19.01	174	200205	13.137	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.12%				
Target Compounds							Qvalue
2) Propene	4.17	42	58601	3.955	ng		98
3) Dichlorodifluoromethan...	4.33	85	115977	4.939	ng		99
4) Chloromethane	4.60	50	71876	4.529	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	58984	4.595	ng		100
6) Vinyl Chloride	5.02	62	68979	4.110	ng		100
7) 1,3-Butadiene	5.28	54	69143	4.891	ng		100
8) Bromomethane	5.71	94	53733	4.886	ng		100
9) Chloroethane	6.04	64	42075	4.622	ng		99
10) Ethanol	6.40	45	194477	21.073	ng		100
11) Acetonitrile	6.66	41	92255	4.252	ng		100
12) Acrolein	6.85	56	78293	9.671	ng		100
13) Acetone	7.06	58	201803	20.972	ng		95
14) Trichlorofluoromethane	7.30	101	97118	4.604	ng		100
15) 2-Propanol (Isopropanol)	7.55	45	286008	9.893	ng		100
16) Acrylonitrile	7.81	53	142995	9.408	ng		100
17) 1,1-Dichloroethene	8.26	96	60231	4.865	ng		99
18) 2-Methyl-2-Propanol (t...	8.42	59	293475	11.361	ng		99
19) Methylene Chloride	8.47	84	59823	4.669	ng		99
20) 3-Chloro-1-propene (Al...	8.63	41	78444	4.412	ng		97
21) Trichlorotrifluoroethane	8.90	151	58244	5.025	ng		100
22) Carbon Disulfide	8.74	76	411500	8.644	ng		99
23) trans-1,2-Dichloroethene	9.75	61	80407	5.014	ng		99
24) 1,1-Dichloroethane	10.00	63	102020	4.815	ng		99
25) Methyl tert-Butyl Ether	10.10	73	178712	5.223	ng		100
26) Vinyl Acetate	10.25	86	72932	26.478	ng	#	81
27) 2-Butanone (MEK)	10.50	72	78794	10.095	ng		96
28) cis-1,2-Dichloroethene	11.01	61	76885	4.826	ng		99
29) Diisopropyl Ether	11.31	87	107281	10.511	ng		96
30) Ethyl Acetate	11.32	61	46350	10.491	ng		94
31) n-Hexane	11.30	57	90839	4.680	ng		98
32) Chloroform	11.36	83	96728	4.768	ng		99
34) Tetrahydrofuran (THF)	11.77	72	75758	9.321	ng		97
35) Ethyl tert-Butyl Ether	11.90	87	143876	10.394	ng		95
36) 1,2-Dichloroethane	12.16	62	71482	5.314	ng		100
38) 1,1,1-Trichloroethane	12.44	97	86389	4.880	ng		100
39) Isopropyl Acetate	12.92	61	1496	No Calib		#	
40) 1-Butanol	13.20	56	155560	No Calib		#	
41) Benzene	12.92	78	236144	4.831	ng		100
42) Carbon Tetrachloride	13.07	117	71416	4.309	ng		99
43) Cyclohexane	13.20	84	184149	9.900	ng		98
44) tert-Amyl Methyl Ether	13.56	73	330641	10.448	ng		99
45) 1,2-Dichloropropane	13.77	63	57210	4.785	ng		99
46) Bromodichloromethane	13.96	83	73760	4.899	ng		99
47) Trichloroethene	14.01	130	69386	5.063	ng		100
48) 1,4-Dioxane	13.99	88	49680	5.368	ng		98
49) 2,2,4-Trimethylpentane...	14.08	57	234243	4.703	ng		98
50) Methyl Methacrylate	14.22	100	51701	10.944	ng		94

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112015.D Vial: 15
Acq On : 11 Nov 2020 22:05 Operator: LH
Sample : 5.0ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:18 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

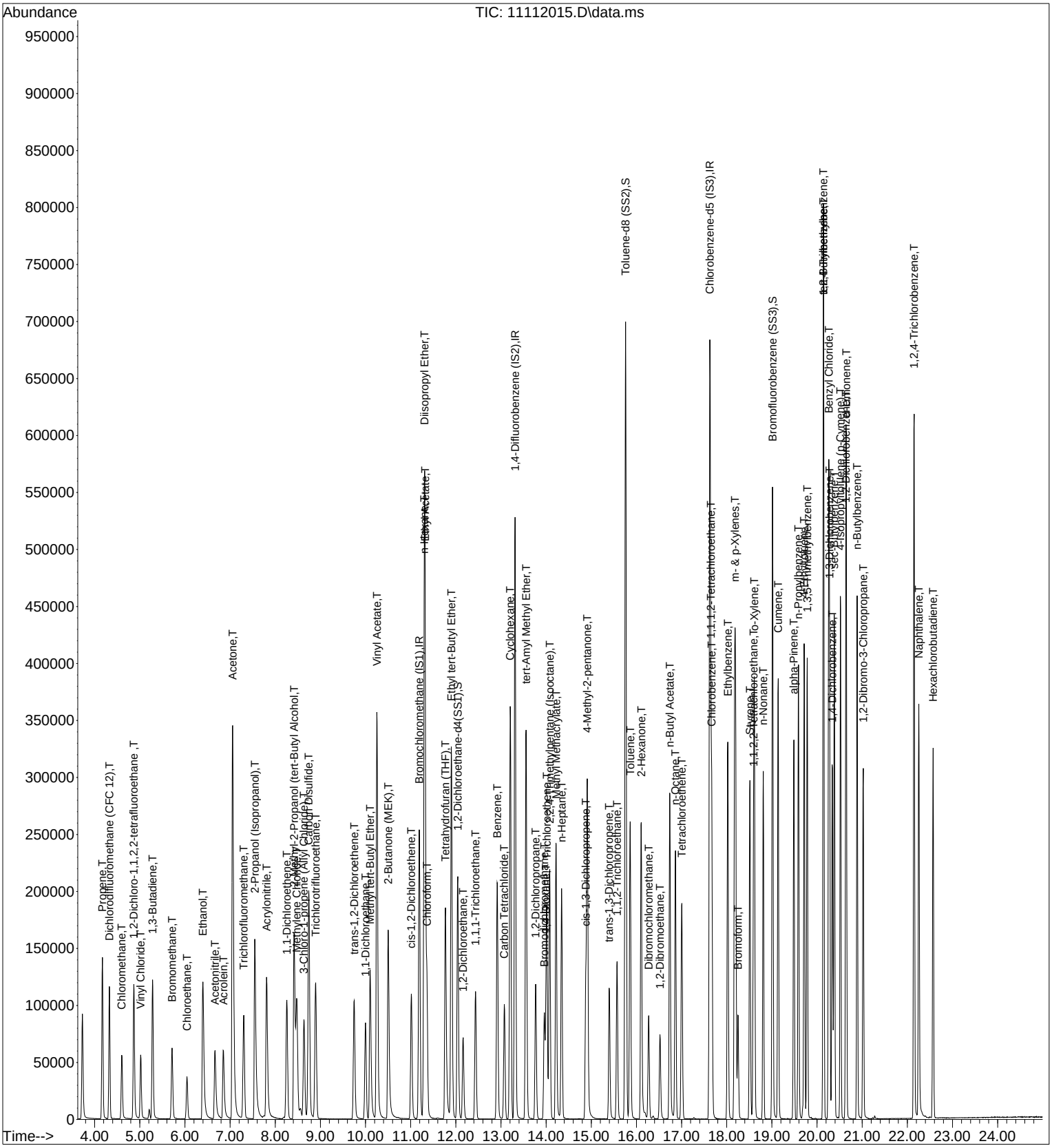
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.34	71	60381	4.870	ng		99
52) cis-1,3-Dichloropropene	14.88	75	92880	5.284	ng		99
53) 4-Methyl-2-pentanone	14.91	58	100025	10.457	ng		97
54) trans-1,3-Dichloropropene	15.39	75	84241	5.280	ng		98
55) 1,1,2-Trichloroethane	15.57	97	58811	5.040	ng		99
58) Toluene	15.86	91	245996	4.997	ng		99
59) 2-Hexanone	16.11	43	214341	10.911	ng		99
60) Dibromochloromethane	16.27	129	61037	4.630	ng		99
61) 1,2-Dibromoethane	16.52	107	66388	5.385	ng		100
62) n-Butyl Acetate	16.74	43	241292	11.141	ng		99
63) n-Octane	16.86	57	48830	4.944	ng		98
64) Tetrachloroethene	17.01	166	76263	5.185	ng		100
65) Chlorobenzene	17.67	112	168895	5.061	ng		99
66) Ethylbenzene	18.02	91	280432	5.271	ng		99
67) m- & p-Xylenes	18.18	91	437238	10.438	ng		99
68) Bromoform	18.25	173	50670	4.306	ng		99
69) Styrene	18.51	104	178381	5.639	ng		99
70) o-Xylene	18.61	91	220294	5.249	ng		100
71) n-Nonane	18.81	43	104268	5.189	ng		97
72) 1,1,2,2-Tetrachloroethane	18.59	83	99784	5.124	ng		100
74) Cumene	19.14	105	286453	5.253	ng		99
75) alpha-Pinene	19.49	93	145014	5.515	ng		98
76) n-Propylbenzene	19.59	91	337385	5.296	ng		98
77) 3-Ethyltoluene	19.71	105	283950	No Calib			
78) 4-Ethyltoluene	19.71	105	283950	5.464	ng		99
79) 1,3,5-Trimethylbenzene	19.78	105	239897	5.185	ng		100
80) alpha-Methylstyrene	19.71	118	1567	No Calib			
81) 2-Ethyltoluene	19.96	105	1178	No Calib		#	
82) 1,2,4-Trimethylbenzene	20.14	105	239408	5.437	ng		98
83) n-Decane	20.14	58	10223	No Calib		#	
84) Benzyl Chloride	20.26	91	390347	11.108	ng		98
85) 1,3-Dichlorobenzene	20.28	146	146581	5.272	ng		100
86) 1,4-Dichlorobenzene	20.34	146	151986	5.067	ng		98
87) sec-Butylbenzene	20.38	105	319516	5.308	ng		98
88) 4-Isopropyltoluene (p-...	20.52	119	279323	5.325	ng		98
89) 1,2,3-Trimethylbenzene	20.52	105	10187	No Calib			
90) 1,2-Dichlorobenzene	20.64	146	142381	5.230	ng		100
91) d-Limonene	20.65	68	85495	5.676	ng		95
92) 1,2-Dibromo-3-Chloropr...	21.02	157	102112	9.893	ng		99
93) n-Undecane	0.00	57	0	N.D.			
94) 1,2,4-Trichlorobenzene	22.15	180	229269	10.234	ng		99
95) Naphthalene	22.25	128	336244	5.489	ng		99
96) n-Dodecane	0.00	57	0	N.D.			
97) Hexachlorobutadiene	22.57	225	69774	4.434	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	20.14	119	234735	5.365	ng		99
100) n-Butylbenzene	20.89	91	253465	5.369	ng		98
101) 1,1,1,2-Tetrachloroethane	17.65	131	54835	4.698	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112015.D Vial: 15
Acq On : 11 Nov 2020 22:05 Operator: LH
Sample : 5.0ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:18 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112016.D Vial: 15
Acq On : 11 Nov 2020 22:39 Operator: LH
Sample : 25ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:20 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

VOA 11/12/20

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.20	130	118358	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.32	114	508912	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.63	82	223991	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	12.05	65	160415	13.014	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.08%			
57) Toluene-d8 (SS2)	15.76	98	547075	12.351	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%			
73) Bromofluorobenzene (SS3)	19.01	174	185756	13.055	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.40%			
Target Compounds						Qvalue
2) Propene	4.16	42	259288	19.036	ng	100
3) Dichlorodifluoromethan...	4.32	85	532084	24.651	ng	100
4) Chloromethane	4.60	50	316626	21.705	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	272093	23.061	ng	100
6) Vinyl Chloride	5.02	62	313364	20.314	ng	100
7) 1,3-Butadiene	5.28	54	311315	23.956	ng	100
8) Bromomethane	5.72	94	251329	24.861	ng	100
9) Chloroethane	6.04	64	194319	23.223	ng	100
10) Ethanol	6.43	45	779537	91.890	ng	100
11) Acetonitrile	6.68	41	437610	21.940	ng	100
12) Acrolein	6.86	56	350707	47.128	ng	100
13) Acetone	7.07	58	786086	88.867	ng	100
14) Trichlorofluoromethane	7.30	101	459431	23.691	ng	100
15) 2-Propanol (Isopropanol)	7.56	45	1235808	46.501	ng	100
16) Acrylonitrile	7.83	53	642504	45.986	ng	100
17) 1,1-Dichloroethene	8.26	96	282464	24.818	ng	100
18) 2-Methyl-2-Propanol (t...	8.43	59	1320619	55.616	ng	100
19) Methylene Chloride	8.49	84	280463	23.813	ng	100
20) 3-Chloro-1-propene (Al...	8.65	41	358298	21.923	ng	100
21) Trichlorotrifluoroethane	8.90	151	274690	25.781	ng	100
22) Carbon Disulfide	8.75	76	1786872	40.833	ng	100
23) trans-1,2-Dichloroethene	9.76	61	377059	25.576	ng	100
24) 1,1-Dichloroethane	10.01	63	469092	24.084	ng	100
25) Methyl tert-Butyl Ether	10.10	73	828358	26.339	ng	100
26) Vinyl Acetate	10.26	86	299795	118.402	ng	100
27) 2-Butanone (MEK)	10.50	72	351767	49.029	ng	100
28) cis-1,2-Dichloroethene	11.02	61	355666	24.288	ng	100
29) Diisopropyl Ether	11.31	87	374375	39.904	ng	100
30) Ethyl Acetate	11.33	61	168294	41.440	ng	100
31) n-Hexane	11.30	57	332411	18.629	ng	100
32) Chloroform	11.37	83	454317	24.360	ng	100
34) Tetrahydrofuran (THF)	11.76	72	335019	44.839	ng	100
35) Ethyl tert-Butyl Ether	11.91	87	634418	49.860	ng	100
36) 1,2-Dichloroethane	12.16	62	340075	27.502	ng	100
38) 1,1,1-Trichloroethane	12.44	97	414414	25.121	ng	100
39) Isopropyl Acetate	12.92	61	8379	No Calib		
40) 1-Butanol	12.99	56	1317	No Calib		
41) Benzene	12.92	78	1052018	23.098	ng	100
42) Carbon Tetrachloride	13.08	117	359469	23.278	ng	100
43) Cyclohexane	13.21	84	779900	44.996	ng	100
44) tert-Amyl Methyl Ether	13.56	73	1406457	47.694	ng	100
45) 1,2-Dichloropropane	13.77	63	259151	23.262	ng	100
46) Bromodichloromethane	13.96	83	358318	25.539	ng	100
47) Trichloroethene	14.02	130	322579	25.261	ng	100
48) 1,4-Dioxane	13.99	88	228184	26.459	ng	100
49) 2,2,4-Trimethylpentane...	14.08	57	1009392	21.750	ng	100
50) Methyl Methacrylate	14.22	100	237256	53.896	ng	100

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112016.D Vial: 15
Acq On : 11 Nov 2020 22:39 Operator: LH
Sample : 25ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:20 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

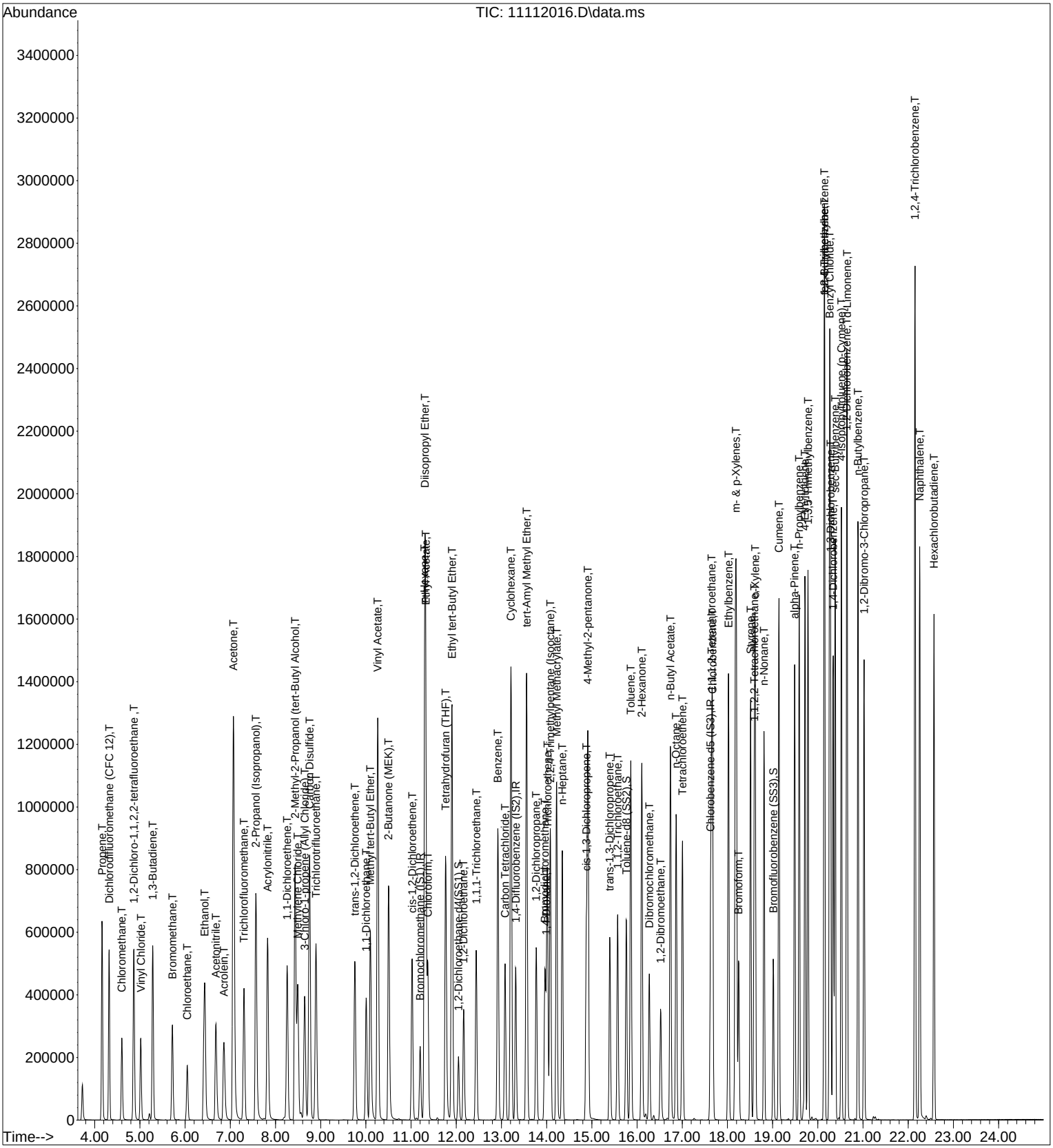
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.35	71	267359	23.140	ng		100
52) cis-1,3-Dichloropropene	14.88	75	431815	26.361	ng		100
53) 4-Methyl-2-pentanone	14.91	58	415778	46.648	ng		100
54) trans-1,3-Dichloropropene	15.39	75	410648	27.622	ng		100
55) 1,1,2-Trichloroethane	15.57	97	275059	25.296	ng		100
58) Toluene	15.86	91	1078489	23.462	ng		100
59) 2-Hexanone	16.11	43	890886	48.571	ng		100
60) Dibromochloromethane	16.27	129	320692	26.052	ng		100
61) 1,2-Dibromoethane	16.52	107	317333	27.568	ng		100
62) n-Butyl Acetate	16.74	43	1014720	50.177	ng		100
63) n-Octane	16.86	57	210852	22.865	ng		100
64) Tetrachloroethene	17.01	166	359432	26.173	ng		100
65) Chlorobenzene	17.67	112	750441	24.085	ng		100
66) Ethylbenzene	18.02	91	1221503	24.590	ng		100
67) m- & p-Xylenes	18.19	91	1814300	46.389	ng		100
68) Bromoform	18.25	173	286384	26.067	ng		100
69) Styrene	18.51	104	802848	27.180	ng		100
70) o-Xylene	18.62	91	957203	24.428	ng		100
71) n-Nonane	18.81	43	428065	22.817	ng		100
72) 1,1,2,2-Tetrachloroethane	18.59	83	434987	23.922	ng		100
74) Cumene	19.14	105	1235532	24.266	ng		100
75) alpha-Pinene	19.49	93	646718	26.342	ng		100
76) n-Propylbenzene	19.59	91	1435354	24.132	ng		100
77) 3-Ethyltoluene	19.71	105	1234126	No Calib			
78) 4-Ethyltoluene	19.71	105	1234126	25.434	ng		100
79) 1,3,5-Trimethylbenzene	19.78	105	1044214	24.171	ng		100
80) alpha-Methylstyrene	19.71	118	7139	No Calib			
81) 2-Ethyltoluene	19.96	105	4349	No Calib			
82) 1,2,4-Trimethylbenzene	20.15	105	955353	23.239	ng		100
83) n-Decane	20.15	58	34147	No Calib		#	
84) Benzyl Chloride	20.26	91	1685903	51.381	ng		100
85) 1,3-Dichlorobenzene	20.28	146	641604	24.716	ng		100
86) 1,4-Dichlorobenzene	20.34	146	691435	24.691	ng		100
87) sec-Butylbenzene	20.39	105	1372541	24.419	ng		100
88) 4-Isopropyltoluene (p-...	20.52	119	1207619	24.656	ng		100
89) 1,2,3-Trimethylbenzene	20.52	105	45782	No Calib			
90) 1,2-Dichlorobenzene	20.64	146	615000	24.194	ng		100
91) d-Limonene	20.65	68	344125	24.471	ng		100
92) 1,2-Dibromo-3-Chloropr...	21.02	157	495426	51.407	ng		100
93) n-Undecane	21.34	57	885	No Calib			
94) 1,2,4-Trichlorobenzene	22.15	180	1033129	49.391	ng		100
95) Naphthalene	22.25	128	1642669	28.721	ng		100
96) n-Dodecane	22.25	57	1464	No Calib			
97) Hexachlorobutadiene	22.57	225	352644	23.999	ng		100
98) Cyclohexanone	18.18	55	1148	No Calib			
99) tert-Butylbenzene	20.15	119	919752	22.516	ng		100
100) n-Butylbenzene	20.89	91	1091454	24.759	ng		100
101) 1,1,1,2-Tetrachloroethane	17.65	131	264374	24.261	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112016.D Vial: 15
Acq On : 11 Nov 2020 22:39 Operator: LH
Sample : 25ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:20 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112017.D Vial: 15
Acq On : 11 Nov 2020 23:13 Operator: LH
Sample : 50ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:22 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020 11/12/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.21	130	121382	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.32	114	522410	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.63	82	232026	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.05	65	163667	12.947	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.60%				
57) Toluene-d8 (SS2)	15.76	98	560758	12.222	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.76%				
73) Bromofluorobenzene (SS3)	19.01	174	189778	12.876	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.04%				
Target Compounds							Qvalue
2) Propene	4.17	42	477186	34.161	ng		99
3) Dichlorodifluoromethan...	4.33	85	1001060	45.222	ng		100
4) Chloromethane	4.60	50	542164	36.240	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	514252	42.500	ng		99
6) Vinyl Chloride	5.03	62	585696	37.022	ng		100
7) 1,3-Butadiene	5.29	54	569831	42.758	ng		99
8) Bromomethane	5.73	94	483170	46.603	ng		100
9) Chloroethane	6.06	64	369962	43.113	ng		100
10) Ethanol	6.47	45	1338605	153.861	ng		100
11) Acetonitrile	6.70	41	835727	40.857	ng		100
12) Acrolein	6.87	56	655142	85.844	ng		100
13) Acetone	7.09	58	1270016	139.999	ng		93
14) Trichlorofluoromethane	7.31	101	888863	44.693	ng		100
15) 2-Propanol (Isopropanol)	7.59	45	2141596	78.576	ng		99
16) Acrylonitrile	7.84	53	1166284	81.395	ng		99
17) 1,1-Dichloroethene	8.27	96	542600	46.487	ng		99
18) 2-Methyl-2-Propanol (t...	8.45	59	2306956	94.734	ng		99
19) Methylene Chloride	8.50	84	532448	44.082	ng		98
20) 3-Chloro-1-propene (Al...	8.66	41	679644	40.550	ng		98
21) Trichlorotrifluoroethane	8.90	151	536435	49.093	ng		98
22) Carbon Disulfide	8.76	76	3132360	69.797	ng		99
23) trans-1,2-Dichloroethene	9.76	61	716235	47.373	ng		99
24) 1,1-Dichloroethane	10.01	63	884808	44.296	ng		100
25) Methyl tert-Butyl Ether	10.10	73	1563649	48.479	ng		100
26) Vinyl Acetate	10.28	86	496578	191.235	ng	#	93
27) 2-Butanone (MEK)	10.51	72	629771	85.590	ng		97
28) cis-1,2-Dichloroethene	11.03	61	673550	44.850	ng		99
29) Diisopropyl Ether	11.31	87	597278	62.077	ng		96
30) Ethyl Acetate	11.33	61	265672	63.788	ng		96
31) n-Hexane	11.30	57	539160	29.463	ng		100
32) Chloroform	11.38	83	873014	45.644	ng		100
34) Tetrahydrofuran (THF)	11.77	72	600258	78.336	ng		97
35) Ethyl tert-Butyl Ether	11.91	87	1117654	85.650	ng		97
36) 1,2-Dichloroethane	12.17	62	661314	52.149	ng		100
38) 1,1,1-Trichloroethane	12.45	97	804471	47.505	ng		100
39) Isopropyl Acetate	12.92	61	16483	No Calib		#	
40) 1-Butanol	12.96	56	4403	No Calib		#	
41) Benzene	12.92	78	1908921	40.829	ng		99
42) Carbon Tetrachloride	13.08	117	706259	44.553	ng		100
43) Cyclohexane	13.22	84	1326178	74.536	ng		98
44) tert-Amyl Methyl Ether	13.56	73	2401183	79.322	ng		98
45) 1,2-Dichloropropane	13.77	63	480411	42.009	ng		100
46) Bromodichloromethane	13.96	83	690881	47.969	ng		100
47) Trichloroethene	14.02	130	602880	45.991	ng		100
48) 1,4-Dioxane	13.99	88	416913	47.093	ng		99
49) 2,2,4-Trimethylpentane...	14.09	57	1785078	37.471	ng		98
50) Methyl Methacrylate	14.22	100	427241	94.545	ng		96

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112017.D Vial: 15
Acq On : 11 Nov 2020 23:13 Operator: LH
Sample : 50ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:22 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

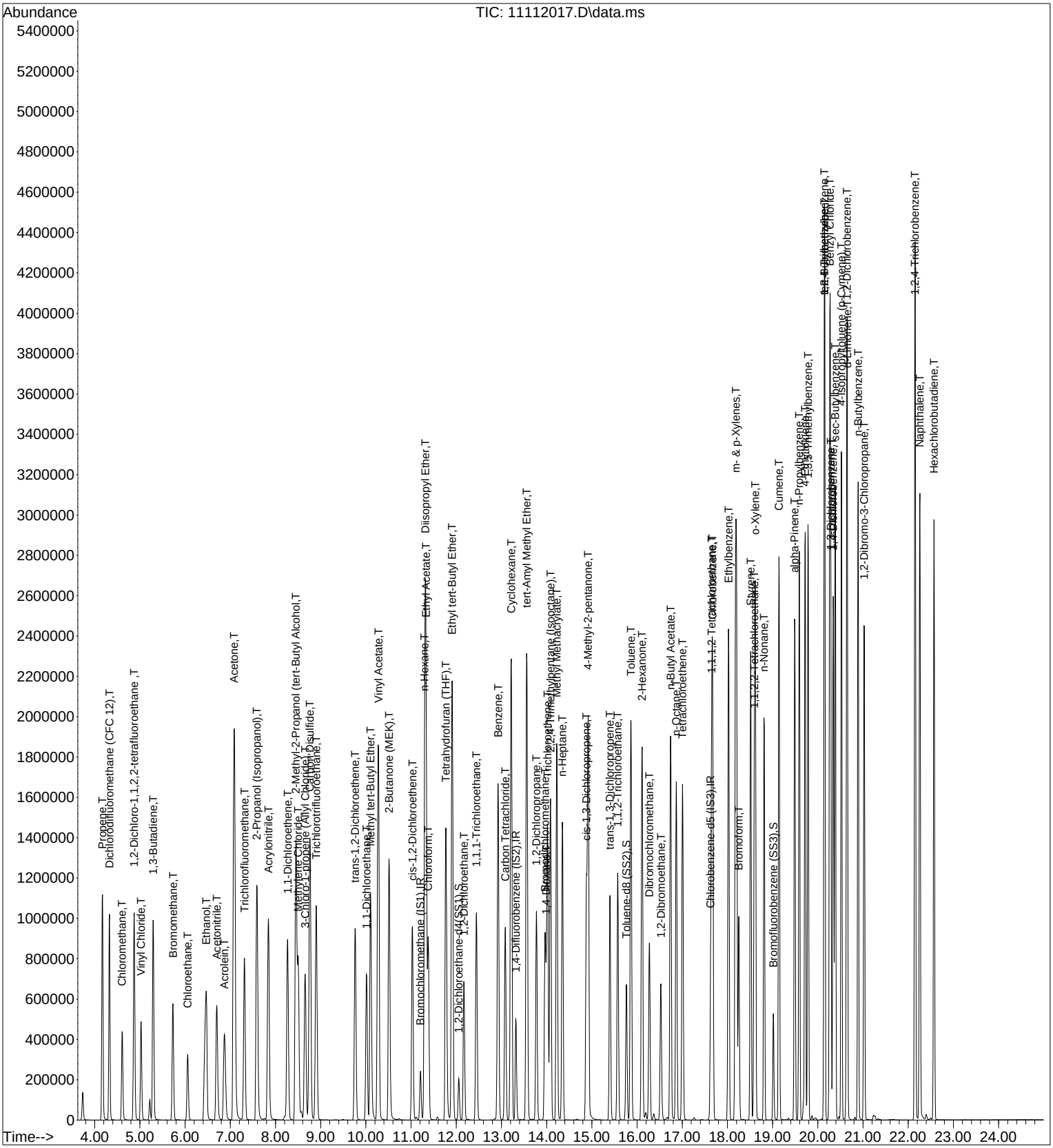
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	480707	40.530 ng		99
52) cis-1,3-Dichloropropene	14.88	75	804687	47.855 ng		99
53) 4-Methyl-2-pentanone	14.92	58	697202	76.201 ng		99
54) trans-1,3-Dichloropropene	15.40	75	785889	51.496 ng		100
55) 1,1,2-Trichloroethane	15.57	97	517772	46.387 ng		100
58) Toluene	15.87	91	1932636	40.588 ng		100
59) 2-Hexanone	16.11	43	1525182	80.274 ng		99
60) Dibromochloromethane	16.27	129	631378	49.515 ng		100
61) 1,2-Dibromoethane	16.53	107	611743	51.304 ng		100
62) n-Butyl Acetate	16.74	43	1715990	81.916 ng		100
63) n-Octane	16.87	57	372333	38.978 ng		98
64) Tetrachloroethene	17.01	166	682824	48.000 ng		100
65) Chlorobenzene	17.67	112	1314388	40.724 ng		99
66) Ethylbenzene	18.02	91	2152122	41.824 ng		99
67) m- & p-Xylenes	18.19	91	3103441	76.603 ng		99
68) Bromoform	18.25	173	575064	50.530 ng		100
69) Styrene	18.51	104	1435461	46.913 ng		98
70) o-Xylene	18.62	91	1661753	40.939 ng		99
71) n-Nonane	18.81	43	721444	37.123 ng		99
72) 1,1,2,2-Tetrachloroethane	18.59	83	755431	40.107 ng		100
74) Cumene	19.14	105	2147633	40.719 ng		99
75) alpha-Pinene	19.49	93	1133317	44.563 ng		98
76) n-Propylbenzene	19.59	91	2466284	40.028 ng		98
77) 3-Ethyltoluene	19.72	105	2144470	No Calib		
78) 4-Ethyltoluene	19.72	105	2144470	42.665 ng		99
79) 1,3,5-Trimethylbenzene	19.78	105	1834462	40.993 ng		100
80) alpha-Methylstyrene	19.71	118	12808	No Calib		
81) 2-Ethyltoluene	19.96	105	7743	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	1566385	36.783 ng		99
83) n-Decane	20.15	58	50804	No Calib	#	
84) Benzyl Chloride	20.27	91	2737012	80.527 ng		99
85) 1,3-Dichlorobenzene	20.29	146	1079611	40.149 ng		99
86) 1,4-Dichlorobenzene	20.34	146	1252480	43.177 ng		100
87) sec-Butylbenzene	20.39	105	2334628	40.098 ng		98
88) 4-Isopropyltoluene (p-...	20.52	119	2066697	40.734 ng		98
89) 1,2,3-Trimethylbenzene	20.52	105	82736	No Calib		
90) 1,2-Dichlorobenzene	20.64	146	1039729	39.486 ng		99
91) d-Limonene	20.65	68	557754	38.288 ng		96
92) 1,2-Dibromo-3-Chloropr...	21.02	157	874066	87.556 ng		97
93) n-Undecane	21.34	57	1997	No Calib		
94) 1,2,4-Trichlorobenzene	22.15	180	1748473	80.695 ng		100
95) Naphthalene	22.26	128	2890703	48.791 ng		99
96) n-Dodecane	22.25	57	3037	No Calib	#	
97) Hexachlorobutadiene	22.57	225	677446	44.507 ng		100
98) Cyclohexanone	18.18	55	2197	No Calib		
99) tert-Butylbenzene	20.15	119	1508052	35.639 ng		100
100) n-Butylbenzene	20.89	91	1869494	40.940 ng		99
101) 1,1,1,2-Tetrachloroethane	17.65	131	485366	42.998 ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112017.D Vial: 15
Acq On : 11 Nov 2020 23:13 Operator: LH
Sample : 50ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:22 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112018.D Vial: 15
Acq On : 11 Nov 2020 23:47 Operator: LH
Sample : 100ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:24 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) 11/12/20
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.21	130	125772	12.500	ng		0.01
37) 1,4-Difluorobenzene (IS2)	13.32	114	541671	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.63	82	244598	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.06	65	168791	12.886	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.12%				
57) Toluene-d8 (SS2)	15.76	98	582190	12.037	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.32%				
73) Bromofluorobenzene (SS3)	19.02	174	196481	12.645	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.20%				
Target Compounds							Qvalue
2) Propene	4.17	42	867019	59.902	ng		97
3) Dichlorodifluoromethan...	4.33	85	1806421	78.755	ng		99
4) Chloromethane	4.61	50	750374	48.407	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	974728	77.743	ng		99
6) Vinyl Chloride	5.03	62	1086851	66.301	ng		99
7) 1,3-Butadiene	5.30	54	982712	71.164	ng		97
8) Bromomethane	5.74	94	895594	83.368	ng		99
9) Chloroethane	6.06	64	672429	75.625	ng		99
10) Ethanol	6.51	45	2297513	254.862	ng		99
11) Acetonitrile	6.72	41	1559121	73.562	ng		100
12) Acrolein	6.88	56	1189583	150.432	ng		99
13) Acetone	7.11	58	2051456	218.247	ng		89
14) Trichlorofluoromethane	7.31	101	1694300	82.218	ng		100
15) 2-Propanol (Isopropanol)	7.62	45	3440944	121.843	ng		97
16) Acrylonitrile	7.87	53	2033260	136.948	ng		99
17) 1,1-Dichloroethene	8.28	96	1005897	83.172	ng		99
18) 2-Methyl-2-Propanol (t...	8.47	59	2925909	115.957	ng		98
19) Methylene Chloride	8.51	84	925185	73.923	ng		96
20) 3-Chloro-1-propene (Al...	8.66	41	1244277	71.646	ng		96
21) Trichlorotrifluoroethane	8.91	151	1001631	88.468	ng		97
22) Carbon Disulfide	8.77	76	5033609	108.247	ng		99
23) trans-1,2-Dichloroethene	9.77	61	1299105	82.926	ng		99
24) 1,1-Dichloroethane	10.02	63	1593464	76.989	ng		99
25) Methyl tert-Butyl Ether	10.11	73	2791269	83.520	ng		99
26) Vinyl Acetate	10.29	86	823393	306.025	ng	#	85
27) 2-Butanone (MEK)	10.53	72	1054425	138.302	ng		94
28) cis-1,2-Dichloroethene	11.04	61	1219482	78.368	ng		99
29) Diisopropyl Ether	11.32	87	956696	95.961	ng		96
30) Ethyl Acetate	11.34	61	445575	103.248	ng		95
31) n-Hexane	11.30	57	889559	46.915	ng		99
32) Chloroform	11.39	83	1619460	81.715	ng		100
34) Tetrahydrofuran (THF)	11.78	72	990017	124.692	ng		95
35) Ethyl tert-Butyl Ether	11.91	87	1840195	136.098	ng		93
36) 1,2-Dichloroethane	12.17	62	1242594	94.566	ng		99
38) 1,1,1-Trichloroethane	12.45	97	1497240	85.271	ng		100
39) Isopropyl Acetate	12.93	61	31073	No Calib			
40) 1-Butanol	12.94	56	9192	No Calib		#	
41) Benzene	12.93	78	3199275	65.994	ng		99
42) Carbon Tetrachloride	13.08	117	1325215	80.625	ng		100
43) Cyclohexane	13.22	84	2102088	113.944	ng		97
44) tert-Amyl Methyl Ether	13.56	73	3811569	121.437	ng		96
45) 1,2-Dichloropropane	13.78	63	826634	69.713	ng		100
46) Bromodichloromethane	13.97	83	1250767	83.755	ng		100
47) Trichloroethene	14.02	130	1024427	75.370	ng		100
48) 1,4-Dioxane	14.00	88	683717	74.484	ng		99
49) 2,2,4-Trimethylpentane...	14.09	57	2872267	58.149	ng		93
50) Methyl Methacrylate	14.23	100	714520	152.496	ng		93

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112018.D Vial: 15
Acq On : 11 Nov 2020 23:47 Operator: LH
Sample : 100ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:24 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

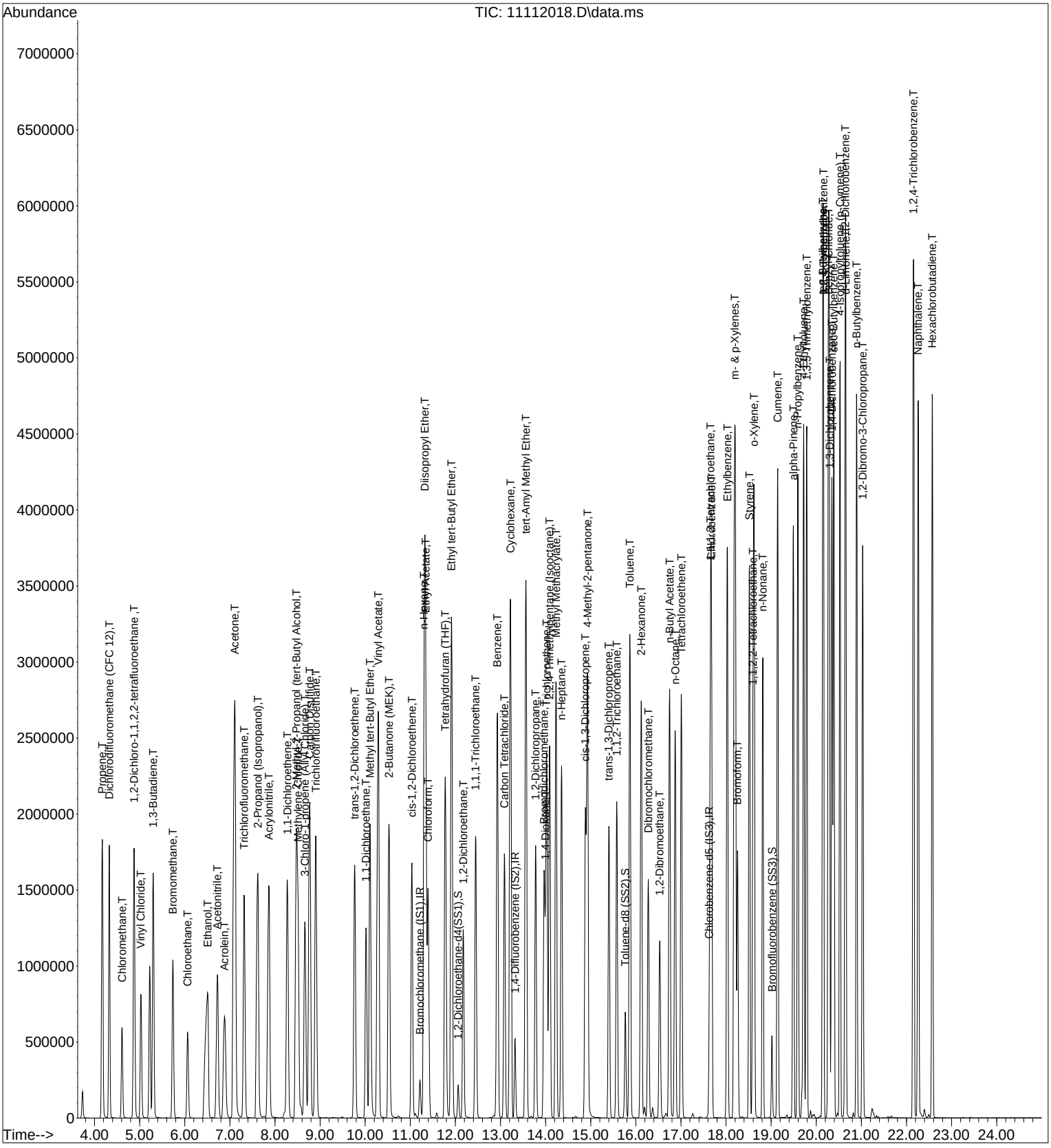
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.35	71	795281	64.668	ng		98
52) cis-1,3-Dichloropropene	14.88	75	1402416	80.436	ng		99
53) 4-Methyl-2-pentanone	14.93	58	1104282	116.401	ng		98
54) trans-1,3-Dichloropropene	15.40	75	1423335	89.949	ng		99
55) 1,1,2-Trichloroethane	15.58	97	906399	78.316	ng		100
58) Toluene	15.87	91	3195861	63.667	ng		99
59) 2-Hexanone	16.12	43	2465052	123.073	ng		98
60) Dibromochloromethane	16.28	129	1166978	86.814	ng		99
61) 1,2-Dibromoethane	16.53	107	1114345	88.652	ng		100
62) n-Butyl Acetate	16.75	43	2710581	122.744	ng		99
63) n-Octane	16.87	57	608228	60.400	ng		96
64) Tetrachloroethene	17.01	166	1210267	80.705	ng		100
65) Chlorobenzene	17.68	112	2111586	62.061	ng		99
66) Ethylbenzene	18.03	91	3510871	64.723	ng		98
67) m- & p-Xylenes	18.20	91	5108245	119.608	ng		97
68) Bromoform	18.25	173	1071977	89.352	ng		100
69) Styrene	18.52	104	2363728	73.280	ng		96
70) o-Xylene	18.62	91	2657923	62.115	ng		99
71) n-Nonane	18.82	43	1135096	55.407	ng		97
72) 1,1,2,2-Tetrachloroethane	18.59	83	1195251	60.196	ng		100
74) Cumene	19.15	105	3443192	61.927	ng		98
75) alpha-Pinene	19.49	93	1835806	68.475	ng		95
76) n-Propylbenzene	19.59	91	3919020	60.337	ng		96
77) 3-Ethyltoluene	19.72	105	3479877	No Calib			
78) 4-Ethyltoluene	19.72	105	3479877	65.675	ng		98
79) 1,3,5-Trimethylbenzene	19.79	105	2983055	63.233	ng		100
80) alpha-Methylstyrene	19.72	118	21920	No Calib			
81) 2-Ethyltoluene	19.95	105	14609	No Calib			
82) 1,2,4-Trimethylbenzene	20.16	105	2426033	54.042	ng		100
83) n-Decane	20.15	58	84046	No Calib		#	
84) Benzyl Chloride	20.27	91	4133084	115.351	ng		99
85) 1,3-Dichlorobenzene	20.30	146	1680059	59.267	ng		99
86) 1,4-Dichlorobenzene	20.35	146	2057182	67.272	ng		99
87) sec-Butylbenzene	20.39	105	3677257	59.912	ng		95
88) 4-Isopropyltoluene (p-...	20.53	119	3306726	61.825	ng		96
89) 1,2,3-Trimethylbenzene	20.53	105	138243	No Calib			
90) 1,2-Dichlorobenzene	20.64	146	1632170	58.799	ng		99
91) d-Limonene	20.65	68	877233	57.125	ng		96
92) 1,2-Dibromo-3-Chloropr...	21.03	157	1440451	136.874	ng		95
93) n-Undecane	21.34	57	4174	No Calib			
94) 1,2,4-Trichlorobenzene	22.16	180	2651440	116.078	ng		99
95) Naphthalene	22.26	128	4569555	73.164	ng		98
96) n-Dodecane	22.24	57	5357	No Calib		#	
97) Hexachlorobutadiene	22.57	225	1187102	73.982	ng		100
98) Cyclohexanone	18.20	55	3349	No Calib			
99) tert-Butylbenzene	20.15	119	2338049	52.414	ng		99
100) n-Butylbenzene	20.89	91	2931262	60.893	ng		97
101) 1,1,1,2-Tetrachloroethane	17.65	131	818764	68.806	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112018.D Vial: 15
Acq On : 11 Nov 2020 23:47 Operator: LH
Sample : 100ng R13111120 ICAL Std Inst : MS13
Misc : S34-10302004/S34-10292002 (11/27)

Quant Time: Nov 12 02:56:24 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 02:54:31 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112020.D Vial: 1
Acq On : 12 Nov 2020 00:55 Operator: LH
Sample : 25ng R13111120 ICV Std Inst : MS13
Misc : S34-10302004/S34-11062001 (12/5)

Quant Time: Nov 12 13:59:47 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) 11/12/20
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.20	130	124345	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.32	114	533837	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.63	82	232539	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.05	65	165357	12.321	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.56%				
57) Toluene-d8 (SS2)	15.76	98	574254	12.605	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.88%				
73) Bromofluorobenzene (SS3)	19.01	174	192343	12.582	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
Target Compounds							Qvalue
2) Propene	4.16	42	266421	25.236	ng		100
3) Dichlorodifluoromethan...	4.31	85	537362	25.844	ng		100
4) Chloromethane	4.59	50	312618	25.737	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.86	135	281382	26.616	ng		100
6) Vinyl Chloride	5.01	62	324235	27.734	ng		100
7) 1,3-Butadiene	5.28	54	321141	28.494	ng		100
8) Bromomethane	5.71	94	253627	27.167	ng		100
9) Chloroethane	6.04	64	195739	26.688	ng		99
10) Ethanol	6.43	45	736209	113.397	ng		100
11) Acetonitrile	6.68	41	448538	27.938	ng		100
12) Acrolein	6.86	56	356898	59.961	ng		100
13) Acetone	7.07	58	823764	121.899	ng		99
14) Trichlorofluoromethane	7.30	101	468723	26.035	ng		100
15) 2-Propanol (Isopropanol)	7.56	45	1253017	53.343	ng		100
16) Acrylonitrile	7.82	53	671374	59.374	ng		100
17) 1,1-Dichloroethene	8.26	96	292217	27.418	ng		99
18) 2-Methyl-2-Propanol (t...	8.43	59	1375634	58.798	ng		100
19) Methylene Chloride	8.49	84	291743	28.004	ng		99
20) 3-Chloro-1-propene (Al...	8.65	41	383522	27.290	ng		99
21) Trichlorotrifluoroethane	8.90	151	284505	27.446	ng		100
22) Carbon Disulfide	8.75	76	1885442	52.631	ng		100
23) trans-1,2-Dichloroethene	9.76	61	389825	29.584	ng		99
24) 1,1-Dichloroethane	10.01	63	471292	27.377	ng		100
25) Methyl tert-Butyl Ether	10.10	73	869418	27.265	ng		100
26) Vinyl Acetate	10.26	86	273547	133.658	ng		98
27) 2-Butanone (MEK)	10.50	72	369757	59.938	ng		99
28) cis-1,2-Dichloroethene	11.02	61	366816	27.715	ng		99
29) Diisopropyl Ether	11.31	87	381512	45.857	ng	#	84
30) Ethyl Acetate	11.33	61	219323	67.923	ng		99
31) n-Hexane	11.30	57	339432	22.268	ng		100
32) Chloroform	11.37	83	463694	27.273	ng		100
34) Tetrahydrofuran (THF)	11.76	72	334343	50.535	ng		100
35) Ethyl tert-Butyl Ether	11.91	87	661968	54.144	ng		100
36) 1,2-Dichloroethane	12.16	62	345514	27.856	ng		100
38) 1,1,1-Trichloroethane	12.44	97	423894	27.095	ng		99
39) Isopropyl Acetate	12.89	61	16151	No Calib		#	
40) 1-Butanol	12.95	56	5956	No Calib		#	
41) Benzene	12.92	78	1067574	25.941	ng		100
42) Carbon Tetrachloride	13.08	117	371964	27.490	ng		99
43) Cyclohexane	13.21	84	803458	50.354	ng		100
44) tert-Amyl Methyl Ether	13.56	73	1470281	51.837	ng		100
45) 1,2-Dichloropropane	13.77	63	263194	27.071	ng		100
46) Bromodichloromethane	13.96	83	367281	29.486	ng		99
47) Trichloroethene	14.02	130	327489	26.422	ng		100
48) 1,4-Dioxane	13.99	88	237361	29.200	ng		100
49) 2,2,4-Trimethylpentane...	14.08	57	1058246	25.653	ng		100
50) Methyl Methacrylate	14.22	100	248119	61.199	ng		99

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112020.D Vial: 1
Acq On : 12 Nov 2020 00:55 Operator: LH
Sample : 25ng R13111120 ICV Std Inst : MS13
Misc : S34-10302004/S34-11062001 (12/5)

Quant Time: Nov 12 13:59:47 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

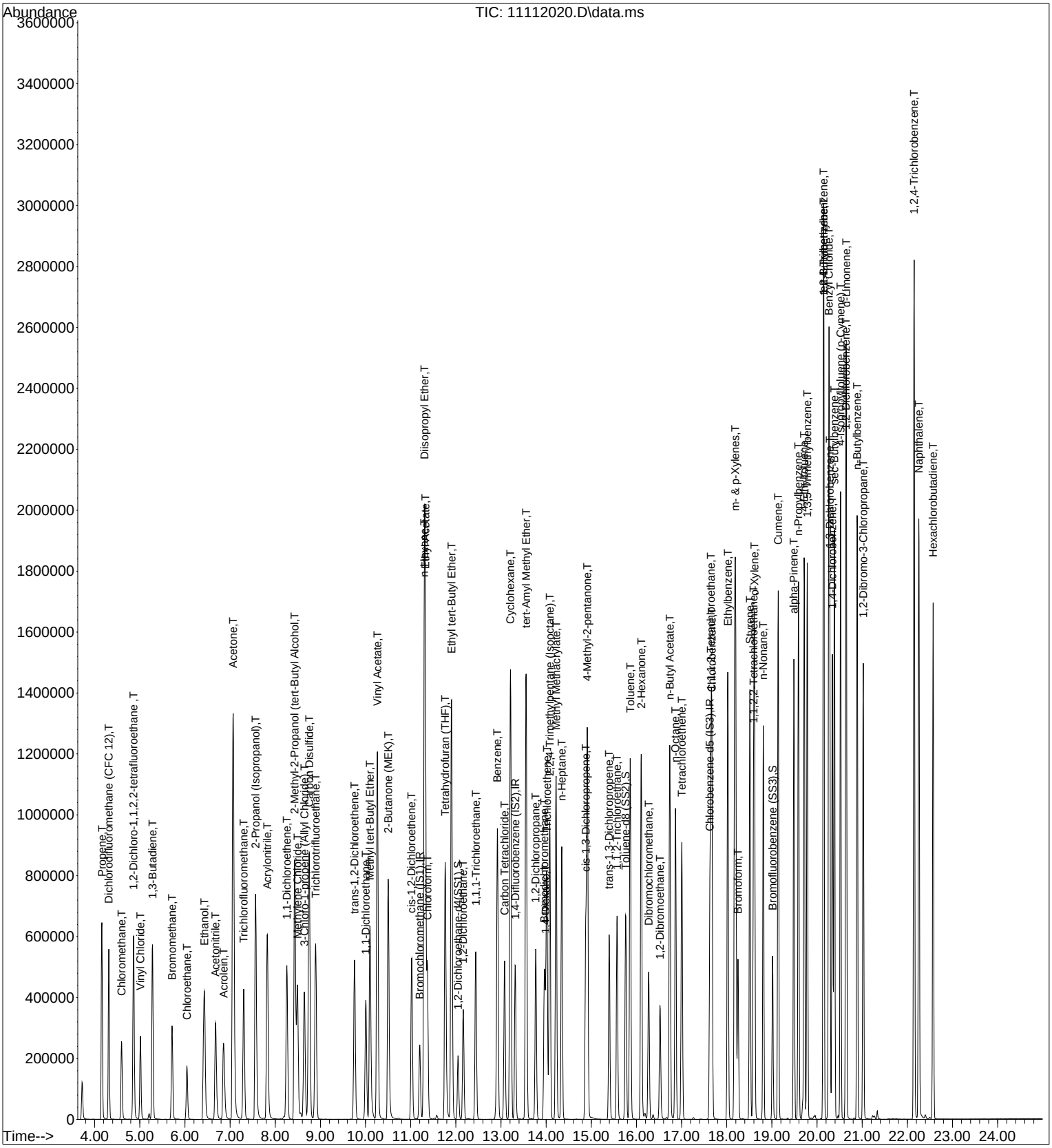
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.35	71	278412	26.455	ng		100
52) cis-1,3-Dichloropropene	14.88	75	443703	29.570	ng		100
53) 4-Methyl-2-pentanone	14.91	58	434656	56.713	ng		99
54) trans-1,3-Dichloropropene	15.40	75	422627	30.739	ng		100
55) 1,1,2-Trichloroethane	15.57	97	282815	27.955	ng		100
58) Toluene	15.86	91	1113172	26.141	ng		100
59) 2-Hexanone	16.11	43	937491	58.875	ng		100
60) Dibromochloromethane	16.27	129	341067	33.883	ng		100
61) 1,2-Dibromoethane	16.52	107	331439	30.678	ng		100
62) n-Butyl Acetate	16.74	43	1049956	61.166	ng		100
63) n-Octane	16.86	57	219914	26.063	ng		100
64) Tetrachloroethene	17.01	166	368582	27.245	ng		100
65) Chlorobenzene	17.67	112	775987	26.478	ng		100
66) Ethylbenzene	18.02	91	1254383	26.298	ng		100
67) m- & p-Xylenes	18.19	91	1913690	51.691	ng		98
68) Bromoform	18.25	173	301000	33.825	ng		100
69) Styrene	18.51	104	843502	28.660	ng		100
70) o-Xylene	18.62	91	980664	26.095	ng		100
71) n-Nonane	18.81	43	439404	25.106	ng		99
72) 1,1,2,2-Tetrachloroethane	18.59	83	448869	27.692	ng		100
74) Cumene	19.14	105	1287394	26.072	ng		100
75) alpha-Pinene	19.49	93	668223	26.630	ng		100
76) n-Propylbenzene	19.59	91	1505274	26.270	ng		100
77) 3-Ethyltoluene	19.71	105	1300844	No Calib			
78) 4-Ethyltoluene	19.71	105	1300844	27.984	ng		100
79) 1,3,5-Trimethylbenzene	19.78	105	1073786	25.045	ng		100
80) alpha-Methylstyrene	19.71	118	7593	No Calib			
81) 2-Ethyltoluene	19.95	105	10956	No Calib			
82) 1,2,4-Trimethylbenzene	20.15	105	982472	24.979	ng		100
83) n-Decane	20.15	58	35870	No Calib		#	
84) Benzyl Chloride	20.26	91	1737179	61.332	ng		100
85) 1,3-Dichlorobenzene	20.28	146	667789	28.382	ng		100
86) 1,4-Dichlorobenzene	20.34	146	721319	27.312	ng		100
87) sec-Butylbenzene	20.39	105	1445209	25.904	ng		100
88) 4-Isopropyltoluene (p-...	20.52	119	1274293	26.450	ng		100
89) 1,2,3-Trimethylbenzene	20.52	105	54164	No Calib		#	
90) 1,2-Dichlorobenzene	20.64	146	645393	27.678	ng		100
91) d-Limonene	20.65	68	356154	25.488	ng		100
92) 1,2-Dibromo-3-Chloropr...	21.02	157	516035	58.504	ng		99
93) n-Undecane	21.34	57	9159	No Calib			
94) 1,2,4-Trichlorobenzene	22.15	180	1081542	60.810	ng		100
95) Naphthalene	22.25	128	1756807	32.203	ng		100
96) n-Dodecane	22.25	57	17019	No Calib		#	
97) Hexachlorobutadiene	22.57	225	373481	28.109	ng		99
98) Cyclohexanone	18.19	55	1234	No Calib			
99) tert-Butylbenzene	20.15	119	955670	24.176	ng		100
100) n-Butylbenzene	20.89	91	1143703	27.060	ng		100
101) 1,1,1,2-Tetrachloroethane	17.65	131	273277	29.603	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\11\11112020.D Vial: 1
Acq On : 12 Nov 2020 00:55 Operator: LH
Sample : 25ng R13111120 ICV Std Inst : MS13
Misc : S34-10302004/S34-11062001 (12/5)

Quant Time: Nov 12 13:59:47 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

11/12/20

Data File Name: **11112020.D** Acq. Method File: **TO15.M**

Data File Path: **I:\MS13\DATA\2020_11\11** Sample Name: **25ng R13111120 ICV Std**

Operator: **LH** Misc Info: **S34-10302004/S34-11062001 (**

Date Acquired: **11/12/2020 0:55** Instrument Name: **MS13**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	**Propene**	**4.16**	**25.2**	26.25	96	**51**	**133**	*	*
3)	**Dichlorodifluoromethane (CFC 1**	**4.31**	**25.8**	**26.25**	98	**64**	**115**	*	*
4)	**Chloromethane**	**4.59**	**25.7**	**25.75**	100	**49**	**127**	*	*
5)	**1,2-Dichloro-1,1,2,2-tetrafluoroet**	**4.86**	**26.6**	**27.00**	99	**65**	**114**	*	*
6)	**Vinyl Chloride**	**5.01**	**27.7**	**26.00**	107	**61**	**129**	*	*
7)	**1,3-Butadiene**	**5.28**	**28.5**	**26.25**	109	**54**	**140**	*	*
8)	**Bromomethane**	**5.71**	**27.2**	**25.50**	107	**68**	**120**	*	*
9)	**Chloroethane**	**6.04**	**26.7**	**25.50**	105	**63**	**123**	*	*
10)	**Ethanol**	**6.43**	**113**	**124.75**	91	**49**	**134**	*	*
11)	**Acetonitrile**	**6.68**	**27.9**	**25.25**	110	**50**	**137**	*	*
12)	**Acrolein**	**6.86**	**60.0**	**54.50**	110	**62**	**128**	*	*
13)	**Acetone**	**7.07**	**122**	**129.00**	95	**56**	**125**	*	*
14)	**Trichlorofluoromethane**	**7.30**	**26.0**	**25.50**	102	**64**	**115**	*	*
15)	**2-Propanol (Isopropanol)**	**7.56**	**53.3**	**51.00**	105	**57**	**133**	*	*
16)	**Acrylonitrile**	**7.82**	**59.4**	**51.25**	116	**64**	**136**	*	*
17)	**1,1-Dichloroethene**	**8.26**	**27.4**	**26.50**	103	**68**	**115**	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	8.43	58.8	52.25	113	56	132	*	*
19)	**Methylene Chloride**	**8.49**	**28.0**	**26.00**	108	**68**	**114**	*	*
20)	**3-Chloro-1-propene (Allyl Chloric**	**8.65**	**27.3**	**26.25**	104	**55**	**139**	*	*
21)	**Trichlorotrifluoroethane**	**8.90**	**27.4**	**26.75**	102	**65**	**115**	*	*
22)	**Carbon Disulfide**	**8.75**	**52.6**	**53.50**	98	**68**	**113**	*	*
23)	**trans-1,2-Dichloroethene**	**9.76**	**29.6**	**26.50**	112	**65**	**122**	*	*
24)	**1,1-Dichloroethane**	**10.01**	**27.4**	**26.50**	103	**63**	**118**	*	*
25)	**Methyl tert-Butyl Ether**	**10.10**	**27.3**	**26.50**	103	**57**	**131**	*	*
26)	**Vinyl Acetate**	**10.26**	**134**	**137.50**	97	**71**	**128**	*	*
27)	**2-Butanone (MEK)**	**10.50**	**59.9**	**51.50**	116	**67**	**123**	*	*
28)	**cis-1,2-Dichloroethene**	**11.02**	**27.7**	**26.00**	107	**64**	**120**	*	*
29)	Diisopropyl Ether	11.31	45.9	53.00	87	62	121	*	*
30)	**Ethyl Acetate**	**11.33**	**67.9**	**52.75**	129	**64**	**131**	*	*
31)	**n-Hexane**	**11.30**	**22.3**	**26.50**	84	**58**	**125**	*	*
32)	**Chloroform**	**11.37**	**27.3**	**26.75**	102	**65**	**114**	*	*
34)	**Tetrahydrofuran (THF)**	**11.76**	**50.5**	**50.00**	101	**65**	**115**	*	*
35)	Ethyl tert-Butyl Ether	11.91	54.1	52.50	103	61	130	*	*
36)	**1,2-Dichloroethane**	**12.16**	**27.9**	**26.00**	107	**59**	**120**	*	*
38)	**1,1,1-Trichloroethane**	**12.44**	**27.1**	**25.75**	105	**66**	**115**	*	*
41)	**Benzene**	**12.92**	**25.9**	**25.50**	102	**66**	**109**	*	*
42)	**Carbon Tetrachloride**	**13.08**	**27.5**	**26.25**	105	**66**	**119**	*	*
43)	**Cyclohexane**	**13.21**	**50.4**	**52.00**	97	**67**	**117**	*	*
44)	tert-Amyl Methyl Ether	13.56	51.8	**52.25**	99	62	133	*	*
45)	**1,2-Dichloropropane**	**13.77**	**27.1**	**25.75**	105	**66**	**119**	*	*
46)	**Bromodichloromethane**	**13.96**	**29.5**	**26.25**	112	**71**	**119**	*	*
47)	**Trichloroethene**	**14.02**	**26.4**	**25.75**	103	**70**	**114**	*	*
48)	**1,4-Dioxane**	**13.99**	**29.2**	**26.00**	112	**71**	**117**	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	14.08	25.7	26.50	97	61	122	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **11112020.D** **TO15.M**
Data File Path: **I:\MS13\DATA\2020_11\11** Sample Name: **25ng R13111120 ICV Std**
Operator: **LH** Misc Info: **S34-10302004/S34-11062001 (**
Date Acquired: **11/12/2020 0:55** Instrument Name: **MS13**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	**Methyl Methacrylate**	**14.22**	**61.2**	**52.00**	118	**76**	**121**	*	*
51)	**n-Heptane**	**14.35**	**26.5**	**26.25**	101	**66**	**119**	*	*
52)	**cis-1,3-Dichloropropene**	**14.88**	**29.6**	**26.25**	113	**72**	**125**	*	*
53)	**4-Methyl-2-pentanone**	**14.91**	**56.7**	**52.00**	109	**68**	**130**	*	*
54)	**trans-1,3-Dichloropropene**	**15.40**	**30.7**	**25.25**	122	**71**	**132**	*	*
55)	**1,1,2-Trichloroethane**	**15.57**	**28.0**	**25.75**	109	**70**	**117**	*	*
58)	**Toluene**	**15.86**	**26.1**	**25.75**	101	**67**	**113**	*	*
59)	**2-Hexanone**	**16.11**	**58.9**	**50.50**	117	**62**	**135**	*	*
60)	**Dibromochloromethane**	**16.27**	**33.9**	**26.25**	129	**73**	**126**	**FAIL**	*
61)	**1,2-Dibromoethane**	**16.52**	**30.7**	**26.00**	118	**71**	**122**	*	*
62)	**n-Butyl Acetate**	**16.74**	**61.2**	**50.75**	121	**65**	**134**	*	*
63)	**n-Octane**	**16.86**	**26.1**	**26.25**	99	**63**	**120**	*	*
64)	**Tetrachloroethene**	**17.01**	**27.2**	**25.75**	106	**64**	**120**	*	*
65)	**Chlorobenzene**	**17.67**	**26.5**	**25.75**	103	**65**	**116**	*	*
66)	**Ethylbenzene**	**18.02**	**26.3**	**25.75**	102	**65**	**117**	*	*
67)	**m- & p-Xylenes**	**18.19**	**51.7**	**51.50**	100	**64**	**121**	*	*
68)	**Bromoform**	**18.25**	**33.8**	**26.00**	130	**72**	**130**	*	*
69)	**Styrene**	**18.51**	**28.7**	**25.75**	111	**72**	**126**	*	*
70)	**o-Xylene**	**18.62**	**26.1**	**25.75**	101	**64**	**120**	*	*
71)	**n-Nonane**	**18.81**	**25.1**	**26.00**	97	**56**	**132**	*	*
72)	**1,1,2,2-Tetrachloroethane**	**18.59**	**27.7**	**25.75**	108	**66**	**122**	*	*
74)	**Cumene**	**19.14**	**26.1**	**26.00**	100	**64**	**121**	*	*
75)	**alpha-Pinene**	**19.49**	**26.6**	**26.75**	99	**62**	**136**	*	*
76)	**n-Propylbenzene**	**19.59**	**26.3**	**26.00**	101	**65**	**123**	*	*
78)	**4-Ethyltoluene**	**19.71**	**28.0**	**26.25**	**107**	**71**	**126**	*	*
79)	**1,3,5-Trimethylbenzene**	**19.78**	**25.0**	**25.75**	**97**	**65**	**120**	*	*
82)	**1,2,4-Trimethylbenzene**	**20.15**	**25.0**	**25.50**	**98**	**63**	**129**	*	*
84)	**Benzyl Chloride**	**20.26**	**61.3**	**50.25**	**122**	**66**	**138**	*	*
85)	**1,3-Dichlorobenzene**	**20.28**	**28.4**	**25.75**	**110**	**65**	**127**	*	*
86)	**1,4-Dichlorobenzene**	**20.34**	**27.3**	**25.50**	**107**	**66**	**125**	*	*
87)	sec-Butylbenzene	20.39	25.9	25.75	**101**	68	123	*	*
88)	4-Isopropyltoluene (p-Cymene)	20.52	26.4	25.75	**103**	61	129	*	*
90)	**1,2-Dichlorobenzene**	**20.64**	**27.7**	**25.75**	**108**	**67**	**128**	*	*
91)	**d-Limonene**	**20.65**	**25.5**	**26.00**	**98**	**65**	**136**	*	*
92)	**1,2-Dibromo-3-Chloropropane**	**21.02**	**58.5**	**46.25**	**126**	**73**	**133**	*	*
94)	**1,2,4-Trichlorobenzene**	**22.15**	**60.8**	**48.50**	**125**	**62**	**140**	*	*
95)	**Naphthalene**	**22.25**	**32.2**	**24.75**	**130**	**57**	**149**	*	*
97)	**Hexachlorobutadiene**	**22.57**	**28.1**	**26.25**	**107**	57	129	*	*
99)	tert-Butylbenzene	20.15	24.2	25.75	94	62	130	*	*
100)	n-Butylbenzene	20.89	27.1	25.75	105	67	124	*	*
101)	1,1,1,2-Tetrachloroethane	17.65	29.6	25.75	115	70	130	*	*

Bold = 75 Compound List
*** = Pass**

Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2020 11\24\11242002.D Vial: 1
Acq On : 24 Nov 2020 17:19 Operator: TD
Sample : CCV R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11172002 (12/16)

Quant Time: Nov 25 04:30:44 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/25/20

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	115	0.00
2	T	Propene	1.061	1.168	-10.1	128	0.00
3	T	Dichlorodifluoromethane (CF	2.090	2.232	-6.8	119	0.00
4	T	Chloromethane	1.221	1.459	-19.5	131	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.063	1.216	-14.4	127	0.00
6	T	Vinyl Chloride	1.175	1.471	-25.2	135	0.00
7	T	1,3-Butadiene	1.133	1.403	-23.8	128	0.00
8	T	Bromomethane	0.938	1.031	-9.9	117	0.00
9	T	Chloroethane	0.737	0.812	-10.2	119	0.00
10	T	Ethanol	0.653	0.686	-5.1	127	0.00
11	T	Acetonitrile	1.614	1.886	-16.9	125	0.00
12	T	Acrolein	0.598	0.742	-24.1	126	0.00
13	T	Acetone	0.679	0.763	-12.4	137	0.00
14	T	Trichlorofluoromethane	1.810	1.983	-9.6	120	0.00
15	T	2-Propanol (Isopropanol)	2.361	2.771	-17.4	126	0.00
16	T	Acrylonitrile	1.137	1.472	-29.5	128	0.00
17	T	1,1-Dichloroethene	1.071	1.161	-8.4	117	0.00
18	T	2-Methyl-2-Propanol (tert-B	2.352	2.858	-21.5	122	0.00
19	T	Methylene Chloride	1.047	1.192	-13.8	121	0.00
20	T	3-Chloro-1-propene (Allyl C	1.413	1.567	-10.9	124	0.00
21	T	Trichlorotrifluoroethane	1.042	1.052	-1.0	110	0.00
22	T	Carbon Disulfide	3.601	3.923	-8.9	125	0.00
23	T	trans-1,2-Dichloroethene	1.325	1.572	-18.6	120	0.00
24	T	1,1-Dichloroethane	1.731	1.922	-11.0	120	0.00
25	T	Methyl tert-Butyl Ether	3.206	3.479	-8.5	118	0.00
26	T	Vinyl Acetate	0.206	0.264	-28.2	132	0.00
27	T	2-Butanone (MEK)	0.620	0.799	-28.9	128	0.00
28	T	cis-1,2-Dichloroethene	1.331	1.509	-13.4	121	0.00
29	T	Diisopropyl Ether	0.836	0.879	-5.1	134	0.00
30	T	Ethyl Acetate	0.325	0.416	-28.0	141	0.00
31	T	n-Hexane	1.532	1.561	-1.9	133	0.00
32	T	Chloroform	1.709	1.939	-13.5	122	0.00
33	S	1,2-Dichloroethane-d4(SS1)	1.349	1.462	-8.4	124	0.00
34	T	Tetrahydrofuran (THF)	0.665	0.753	-13.2	125	0.00
35	T	Ethyl tert-Butyl Ether	1.229	1.389	-13.0	124	0.00
36	T	1,2-Dichloroethane	1.247	1.414	-13.4	118	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	115	0.00
38	T	1,1,1-Trichloroethane	0.366	0.409	-11.7	119	0.00
39	T	Isopropyl Acetate	0.000	0.000	0.0	124	0.00
40	T	1-Butanol	0.000	0.000	0.0	188	-0.01
41	T	Benzene	0.964	1.049	-8.8	122	0.00
42	T	Carbon Tetrachloride	0.317	0.355	-12.0	118	0.00
43	T	Cyclohexane	0.374	0.398	-6.4	124	0.00
44	T	tert-Amyl Methyl Ether	0.664	0.728	-9.6	126	0.00
45	T	1,2-Dichloropropane	0.228	0.261	-14.5	123	0.00
46	T	Bromodichloromethane	0.292	0.359	-22.9	122	0.00
47	T	Trichloroethene	0.290	0.311	-7.2	115	0.00
48	T	1,4-Dioxane	0.190	0.234	-23.2	124	0.00
49	T	2,2,4-Trimethylpentane (Iso	0.966	1.025	-6.1	125	0.00
50	T	Methyl Methacrylate	0.095	0.117	-23.2	120	0.00
51	T	n-Heptane	0.246	0.276	-12.2	125	0.00
52	T	cis-1,3-Dichloropropene	0.351	0.422	-20.2	120	0.00
53	T	4-Methyl-2-pentanone	0.179	0.225	-25.7	132	0.00
54	T	trans-1,3-Dichloropropene	0.322	0.402	-24.8	117	0.00
55	T	1,1,2-Trichloroethane	0.237	0.265	-11.8	118	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2020 11\24\11242002.D Vial: 1
Acq On : 24 Nov 2020 17:19 Operator: TD
Sample : CCV R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11172002 (12/16)

Quant Time: Nov 25 04:30:44 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
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	128	0.00
57	S	Toluene-d8 (SS2)	2.449	2.296	6.2	121	0.00
58	T	Toluene	2.289	2.186	4.5	121	0.00
59	T	2-Hexanone	0.856	0.996	-16.4	132	0.00
60	T	Dibromochloromethane	0.541	0.631	-16.6	117	0.00
61	T	1,2-Dibromoethane	0.581	0.620	-6.7	117	0.00
62	T	n-Butyl Acetate	0.923	1.110	-20.3	130	0.00
63	T	n-Octane	0.454	0.447	1.5	127	0.00
64	T	Tetrachloroethene	0.727	0.664	8.7	110	0.00
65	T	Chlorobenzene	1.575	1.506	4.4	119	0.00
66	T	Ethylbenzene	2.564	2.468	3.7	121	0.00
67	T	m- & p-Xylenes	1.990	1.874	5.8	124	0.00
68	T	Bromoform	0.478	0.543	-13.6	115	0.00
69	T	Styrene	1.582	1.591	-0.6	117	0.00
70	T	o-Xylene	2.020	1.946	3.7	123	0.00
71	T	n-Nonane	0.941	0.909	3.4	128	0.00
72	T	1,1,2,2-Tetrachloroethane	0.871	0.921	-5.7	128	0.00
73	S	Bromofluorobenzene (SS3)	0.822	0.736	10.5	114	0.00
74	T	Cumene	2.654	2.462	7.2	119	0.00
75	T	alpha-Pinene	1.349	1.273	5.6	120	0.00
76	T	n-Propylbenzene	3.080	2.935	4.7	122	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	119	0.00
78	T	4-Ethyltoluene	2.499	2.429	2.8	119	0.00
79	T	1,3,5-Trimethylbenzene	2.305	2.058	10.7	119	0.00
80	T	alpha-Methylstyrene	0.000	0.000	0.0	121	0.00
81	T	2-Ethyltoluene	0.000	0.000	0.0	133	0.00
82	T	1,2,4-Trimethylbenzene	2.114	1.989	5.9	123	0.00
83	T	n-Decane	0.000	0.000	0.0	135	0.00
84	T	Benzyl Chloride	1.523	1.686	-10.7	121	0.00
85	T	1,3-Dichlorobenzene	1.265	1.278	-1.0	120	0.00
86	T	1,4-Dichlorobenzene	1.420	1.306	8.0	113	0.00
87	T	sec-Butylbenzene	2.999	2.681	10.6	120	0.00
88	T	4-Isopropyltoluene (p-Cymen	2.590	2.403	7.2	117	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	121	0.00
90	T	1,2-Dichlorobenzene	1.253	1.209	3.5	119	0.00
91	T	d-Limonene	0.751	0.740	1.5	127	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.474	0.480	-1.3	111	0.00
93	T	n-Undecane	0.000	0.000	0.0	221#	0.00
94	T	1,2,4-Trichlorobenzene	0.956	0.979	-2.4	109	0.00
95	T	Naphthalene	2.933	2.846	3.0	102	0.00
96	T	n-Dodecane	0.000	0.000	0.0	245#	0.00
97	T	Hexachlorobutadiene	0.714	0.597	16.4	100	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	133	0.00
99	T	tert-Butylbenzene	2.125	1.873	11.9	122	0.00
100	T	n-Butylbenzene	2.272	2.220	2.3	120	0.00
101	T	1,1,1,2-Tetrachloroethane	0.496	0.536	-8.1	120	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242002.D Vial: 1
Acq On : 24 Nov 2020 17:19 Operator: TD
Sample : CCV R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11172002 (12/16)

Quant Time: Nov 25 04:30:44 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

11/25/20

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	11.20	130	136589	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.32	114	586457	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	17.63	82	287178	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	12.05	65	199649	13.543 ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.32%		
57) Toluene-d8 (SS2)	15.76	98	659271	11.718 ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.76%		
73) Bromofluorobenzene (SS3)	19.01	174	211227	11.188 ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.52%		
Target Compounds					Qvalue
2) Propene	4.17	42	331732	28.606 ng	97
3) Dichlorodifluoromethan...	4.33	85	634050	27.760 ng	100
4) Chloromethane	4.60	50	414496	31.066 ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	345584	29.758 ng	100
6) Vinyl Chloride	5.03	62	421923	32.855 ng	100
7) 1,3-Butadiene	5.29	54	398597	32.197 ng	98
8) Bromomethane	5.73	94	293033	28.575 ng	99
9) Chloroethane	6.05	64	230826	28.651 ng	100
10) Ethanol	6.44	45	988788	138.649 ng	99
11) Acetonitrile	6.69	41	546227	30.972 ng	99
12) Acrolein	6.86	56	441837	67.577 ng	99
13) Acetone	7.07	58	1074833	144.794 ng	88
14) Trichlorofluoromethane	7.31	101	552626	27.944 ng	99
15) 2-Propanol (Isopropanol)	7.57	45	1551836	60.142 ng	99
16) Acrylonitrile	7.83	53	824381	66.370 ng	99
17) 1,1-Dichloroethene	8.26	96	329899	28.179 ng	97
18) 2-Methyl-2-Propanol (t...	8.43	59	1615965	62.879 ng	100
19) Methylene Chloride	8.50	84	338758	29.602 ng	94
20) 3-Chloro-1-propene (Al...	8.65	41	445076	28.831 ng	97
21) Trichlorotrifluoroethane	8.90	151	301807	26.505 ng	92
22) Carbon Disulfide	8.75	76	2229197	56.648 ng	100
23) trans-1,2-Dichloroethene	9.76	61	450834	31.147 ng	98
24) 1,1-Dichloroethane	10.01	63	561752	29.707 ng	100
25) Methyl tert-Butyl Ether	10.10	73	978773	27.943 ng	99
26) Vinyl Acetate	10.27	86	396452	176.346 ng	99
27) 2-Butanone (MEK)	10.51	72	449646	66.355 ng	98
28) cis-1,2-Dichloroethene	11.02	61	428614	29.481 ng	97
29) Diisopropyl Ether	11.31	87	501658	54.893 ng	99
30) Ethyl Acetate	11.33	61	236513	66.681 ng	96
31) n-Hexane	11.30	57	443535	26.489 ng	99
32) Chloroform	11.37	83	556277	29.786 ng	100
34) Tetrahydrofuran (THF)	11.77	72	419501	57.722 ng	97
35) Ethyl tert-Butyl Ether	11.91	87	789056	58.754 ng	98
36) 1,2-Dichloroethane	12.17	62	401633	29.478 ng	100
38) 1,1,1-Trichloroethane	12.44	97	494312	28.762 ng	100
39) Isopropyl Acetate	12.92	61	10354	No Calib	
40) 1-Butanol	12.98	56	2482	No Calib #	
41) Benzene	12.93	78	1279330	28.298 ng	100
42) Carbon Tetrachloride	13.08	117	424668	28.569 ng	99
43) Cyclohexane	13.21	84	967022	55.167 ng	97
44) tert-Amyl Methyl Ether	13.56	73	1767169	56.714 ng	99
45) 1,2-Dichloropropane	13.77	63	318350	29.806 ng	99
46) Bromodichloromethane	13.96	83	438262	32.028 ng	100
47) Trichloroethene	14.02	130	371730	27.300 ng	100
48) 1,4-Dioxane	13.99	88	282377	31.621 ng	98
49) 2,2,4-Trimethylpentane...	14.08	57	1262427	27.857 ng	98
50) Methyl Methacrylate	14.22	100	284761	63.934 ng	90

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242002.D Vial: 1
Acq On : 24 Nov 2020 17:19 Operator: TD
Sample : CCV R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11172002 (12/16)

Quant Time: Nov 25 04:30:44 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

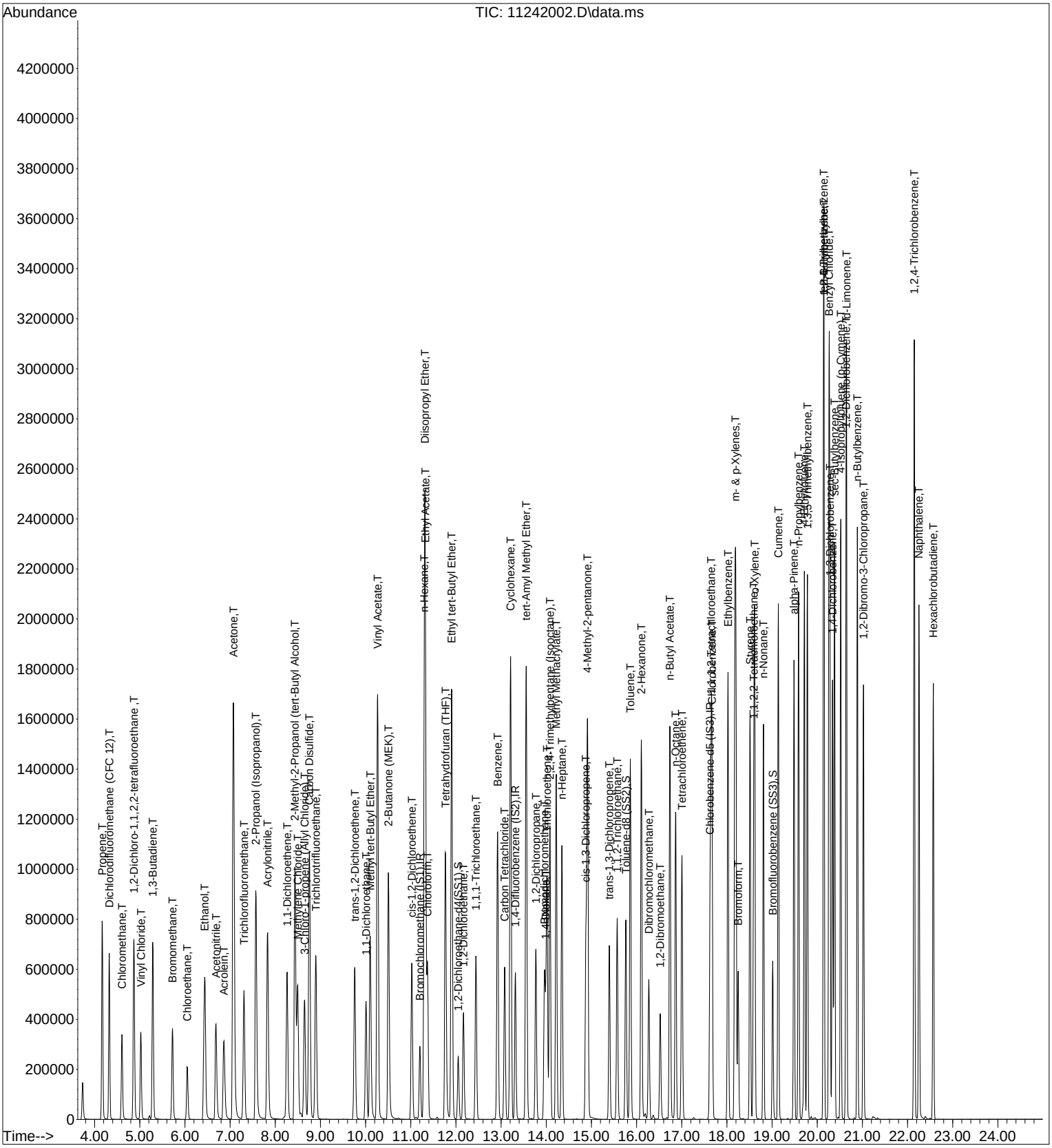
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	332897	28.794 ng		97
52) cis-1,3-Dichloropropene	14.88	75	520120	31.552 ng		100
53) 4-Methyl-2-pentanone	14.91	58	549992	65.322 ng		97
54) trans-1,3-Dichloropropene	15.40	75	480992	31.845 ng		100
55) 1,1,2-Trichloroethane	15.57	97	323746	29.129 ng		97
58) Toluene	15.86	91	1305980	24.834 ng		100
59) 2-Hexanone	16.11	43	1178951	59.952 ng		99
60) Dibromochloromethane	16.27	129	376792	30.310 ng		100
61) 1,2-Dibromoethane	16.52	107	370497	27.769 ng		99
62) n-Butyl Acetate	16.74	43	1319952	62.265 ng		100
63) n-Octane	16.86	57	267046	25.627 ng		96
64) Tetrachloroethene	17.01	166	396599	23.738 ng		100
65) Chlorobenzene	17.67	112	890824	24.613 ng		100
66) Ethylbenzene	18.02	91	1474402	25.029 ng		99
67) m- & p-Xylenes	18.19	91	2249559	49.202 ng		100
68) Bromoform	18.25	173	330434	30.068 ng		99
69) Styrene	18.51	104	941064	25.891 ng		100
70) o-Xylene	18.62	91	1173798	25.292 ng		100
71) n-Nonane	18.81	43	547974	25.353 ng		99
72) 1,1,2,2-Tetrachloroethane	18.59	83	555726	27.761 ng		100
74) Cumene	19.14	105	1470832	24.119 ng		100
75) alpha-Pinene	19.49	93	775017	25.009 ng		98
76) n-Propylbenzene	19.59	91	1752887	24.771 ng		99
77) 3-Ethyltoluene	19.71	105	1465053	No Calib		
78) 4-Ethyltoluene	19.71	105	1465053	25.520 ng		100
79) 1,3,5-Trimethylbenzene	19.78	105	1241224	23.443 ng		100
80) alpha-Methylstyrene	19.71	118	8620	No Calib		
81) 2-Ethyltoluene	19.95	105	5792	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	1176434	24.220 ng		100
83) n-Decane	20.15	58	46065	No Calib	#	
84) Benzyl Chloride	20.26	91	2032974	58.119 ng		100
85) 1,3-Dichlorobenzene	20.28	146	770875	26.530 ng		100
86) 1,4-Dichlorobenzene	20.34	146	780018	23.916 ng		100
87) sec-Butylbenzene	20.39	105	1647807	23.916 ng		99
88) 4-Isopropyltoluene (p-...	20.52	119	1407628	23.659 ng		99
89) 1,2,3-Trimethylbenzene	20.52	105	55365	No Calib		
90) 1,2-Dichlorobenzene	20.64	146	729135	25.320 ng		100
91) d-Limonene	20.65	68	437811	25.371 ng		97
92) 1,2-Dibromo-3-Chloropr...	21.02	157	551675	50.645 ng		96
93) n-Undecane	21.34	57	1955	No Calib		
94) 1,2,4-Trichlorobenzene	22.15	180	1124877	51.213 ng		99
95) Naphthalene	22.25	128	1683558	24.988 ng		100
96) n-Dodecane	22.25	57	3584	No Calib	#	
97) Hexachlorobutadiene	22.57	225	353166	21.523 ng		100
98) Cyclohexanone	18.19	55	1532	No Calib		
99) tert-Butylbenzene	20.15	119	1118876	22.920 ng		99
100) n-Butylbenzene	20.89	91	1313536	25.166 ng		99
101) 1,1,1,2-Tetrachloroethane	17.65	131	316998	27.805 ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242002.D Vial: 1
Acq On : 24 Nov 2020 17:19 Operator: TD
Sample : CCV R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11172002 (12/16)

Quant Time: Nov 25 04:30:44 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Client: **WSP Group** ALS Project ID: P2006561

Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 11242002.D
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 17:19
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	#	RT	#	AREA	#	RT	#	AREA	#	RT	#
	24 Hour Standard	136589		11.20		586457		13.32		287178		17.63	
	Upper Limit	191225		11.53		821040		13.65		402049		17.96	
	Lower Limit	81953		10.87		351874		12.99		172307		17.30	
	Client Sample ID												
01	Method Blank	127635		11.18		552120		13.31		257871		17.63	
02	Lab Control Sample	127629		11.20		558940		13.32		275453		17.63	
03	TRIP BLANK111720	123449		11.18		544069		13.31		251704		17.63	
04	HUCKIAF111720-6	118696		11.18		521211		13.31		242508		17.63	
05	HUCKIAF111720-6 (Lab Duplicate)	117027		11.18		515711		13.31		240507		17.63	
06	HUCKIAF111720-5	117382		11.18		514569		13.31		239729		17.63	
07	HUCKIAF111720-1	121370		11.18		532247		13.31		246638		17.63	
08	HUCKIAF111720-2	123730		11.18		541839		13.31		249103		17.63	
09	HUCKIAFR111720-2	126375		11.19		558014		13.31		255686		17.63	
10	HUCKAA111720-1	126428		11.18		561634		13.31		254168		17.63	
11	HUCKAA111720-2	124187		11.18		547510		13.31		248022		17.63	
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

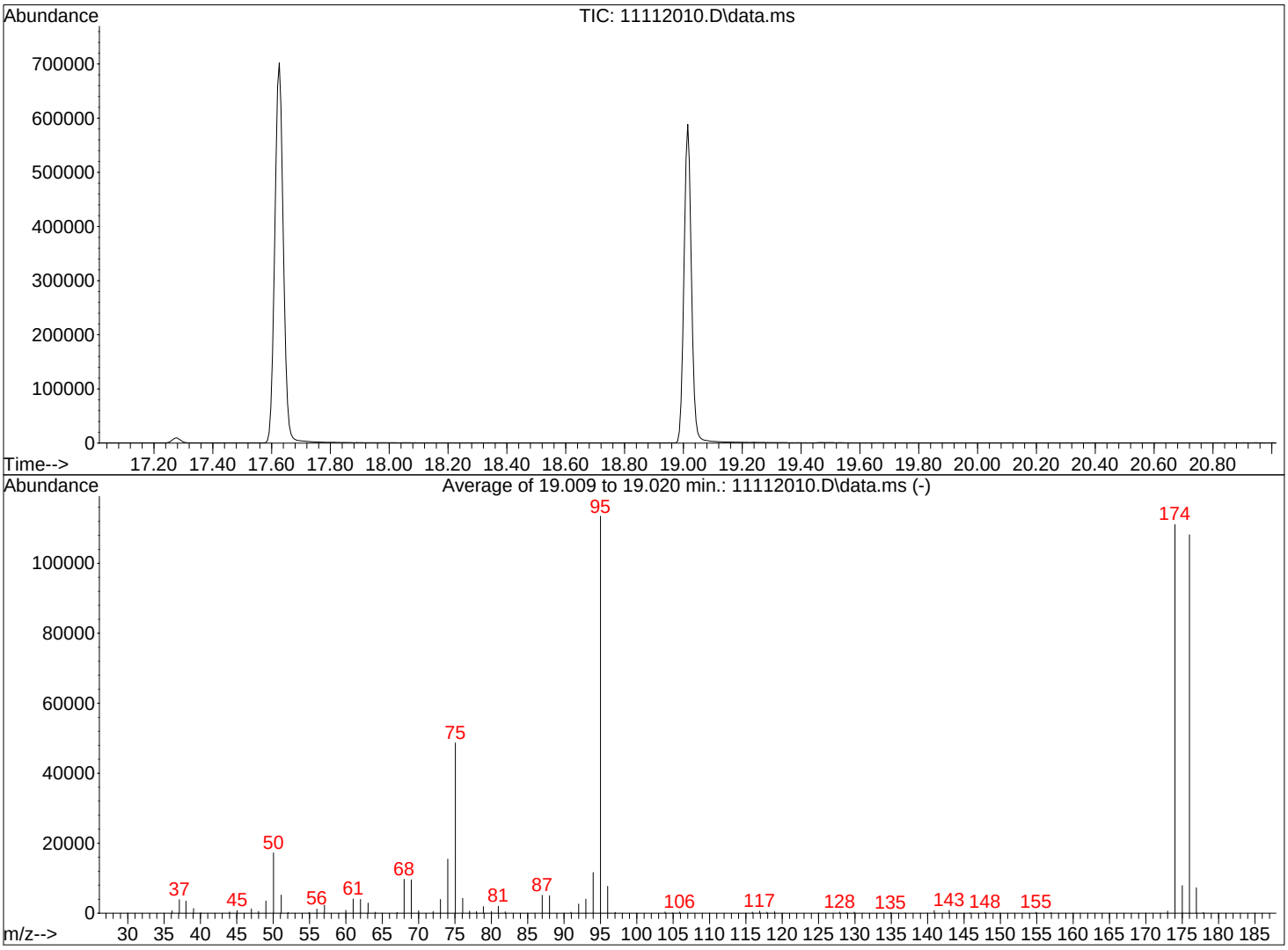
# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

BFB

Data Path : I:\MS13\DATA\2020 11\11\
Data File : 11112010.D
Acq On : 11 Nov 2020 19:14
Operator : LH
Sample : R13111120 BFB
Misc : S34-10302004
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13111120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Nov 12 02:54:31 2020



AutoFind: Scans 2704, 2705, 2706; Background Corrected with Scan 2697

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.2	17251	PASS
75	95	30	66	42.9	48688	PASS
95	95	100	100	100.0	113467	PASS
96	95	5	9	6.8	7698	PASS
173	174	0.00	2	0.6	627	PASS
174	95	50	120	97.9	111077	PASS
175	174	4	9	7.1	7886	PASS
176	174	93	101	97.4	108152	PASS
177	176	5	9	6.7	7266	PASS

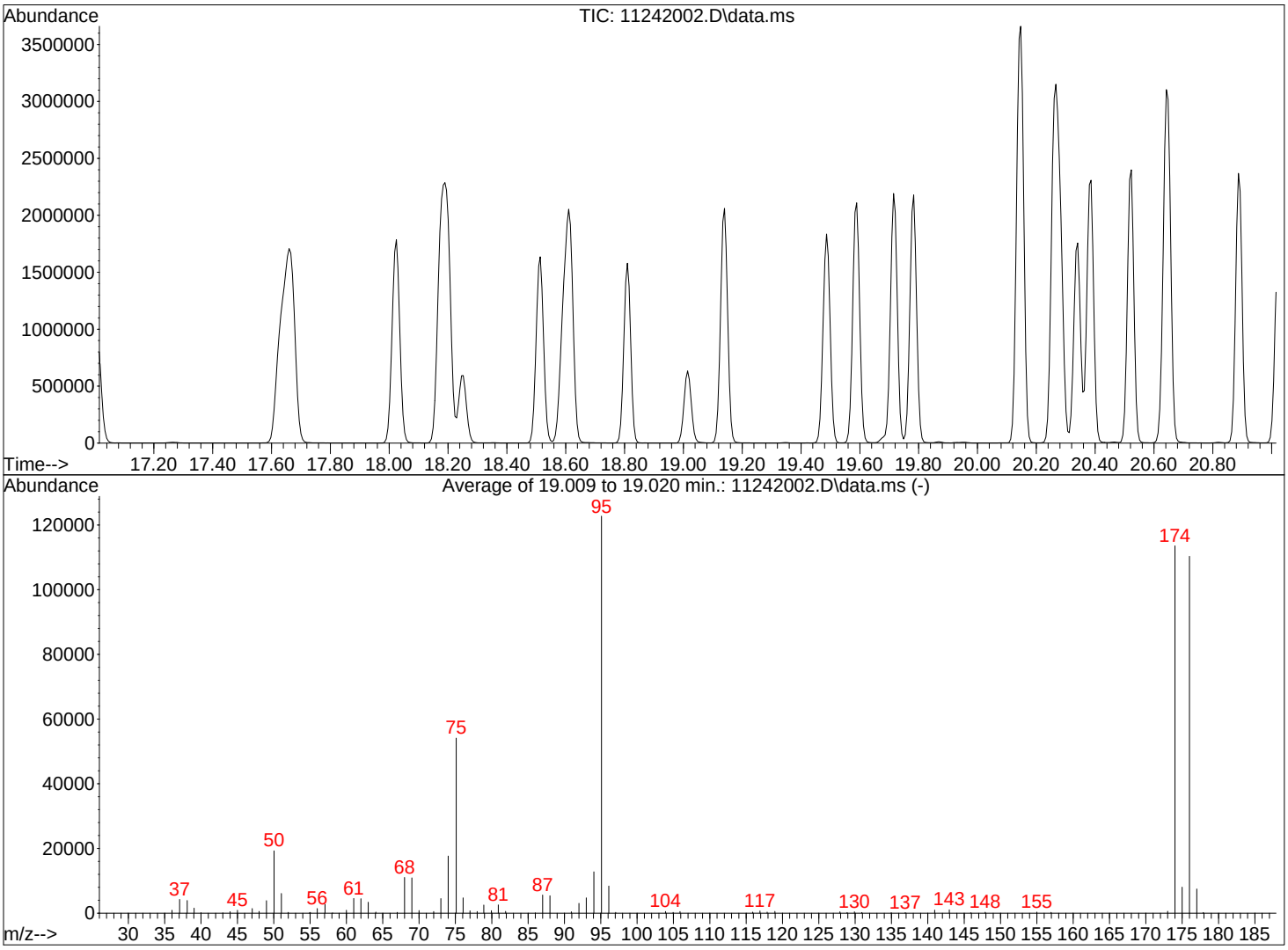
11/12/20

BFB

Data Path : I:\MS13\DATA\2020 11\24\
Data File : 11242002.D
Acq On : 24 Nov 2020 17:19
Operator : TD
Sample : CCV R13112420 25ng
Misc : S34-10302004/S34-11172002 (12/16)
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13111120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Nov 12 05:50:29 2020



AutoFind: Scans 2704, 2705, 2706; Background Corrected with Scan 2697

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.7	19245	PASS
75	95	30	66	44.1	54104	PASS
95	95	100	100	100.0	122757	PASS
96	95	5	9	6.8	8372	PASS
173	174	0.00	2	0.5	594	PASS
174	95	50	120	92.5	113576	PASS
175	174	4	9	7.1	8043	PASS
176	174	93	101	97.2	110344	PASS
177	176	5	9	6.8	7452	PASS

11/25/20

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **WSP Group**

Client Sample ID: **Method Blank** ALS Project ID: P2006561

Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P201124-MB

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13	Date Received:	NA
Analyst:	Topacio De Leon	Date Analyzed:	11/24/20
Sample Type:	6.0 L Silonite Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.11	0.075	ND	0.028	0.019	
79-01-6	Trichloroethene	ND	0.11	0.072	ND	0.020	0.013	
127-18-4	Tetrachloroethene	ND	0.10	0.069	ND	0.015	0.010	

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

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242005.D Vial: 1
Acq On : 24 Nov 2020 19:24 Operator: TD
Sample : MB R13112420 1000mL Inst : MS13
Misc : S34-10302004/AC01837

Quant Time: Nov 25 04:35:21 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020 11/25/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	127635	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	552120	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	257871	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	184195	13.371	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.96%				
57) Toluene-d8 (SS2)	15.76	98	620513	12.282	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
73) Bromofluorobenzene (SS3)	19.01	174	189695	11.189	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.52%				
Target Compounds							Qvalue
2) Propene	4.23	42	177	N.D.			
3) Dichlorodifluoromethan...	4.37	85	281	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	6.47	45	2363	0.355	ng		88
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	7.18	58	1531	0.221	ng	#	68
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	8.50	84	377	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	11.31	57	371	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	12.93	78	642	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	13.30	84	106	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...	14.08	57	578	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Data File : I:\MS13\DATA\2020 11\24\11242005.D Vial: 1
Acq On : 24 Nov 2020 19:24 Operator: TD
Sample : MB R13112420 1000mL Inst : MS13
Misc : S34-10302004/AC01837

Quant Time: Nov 25 04:35:21 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

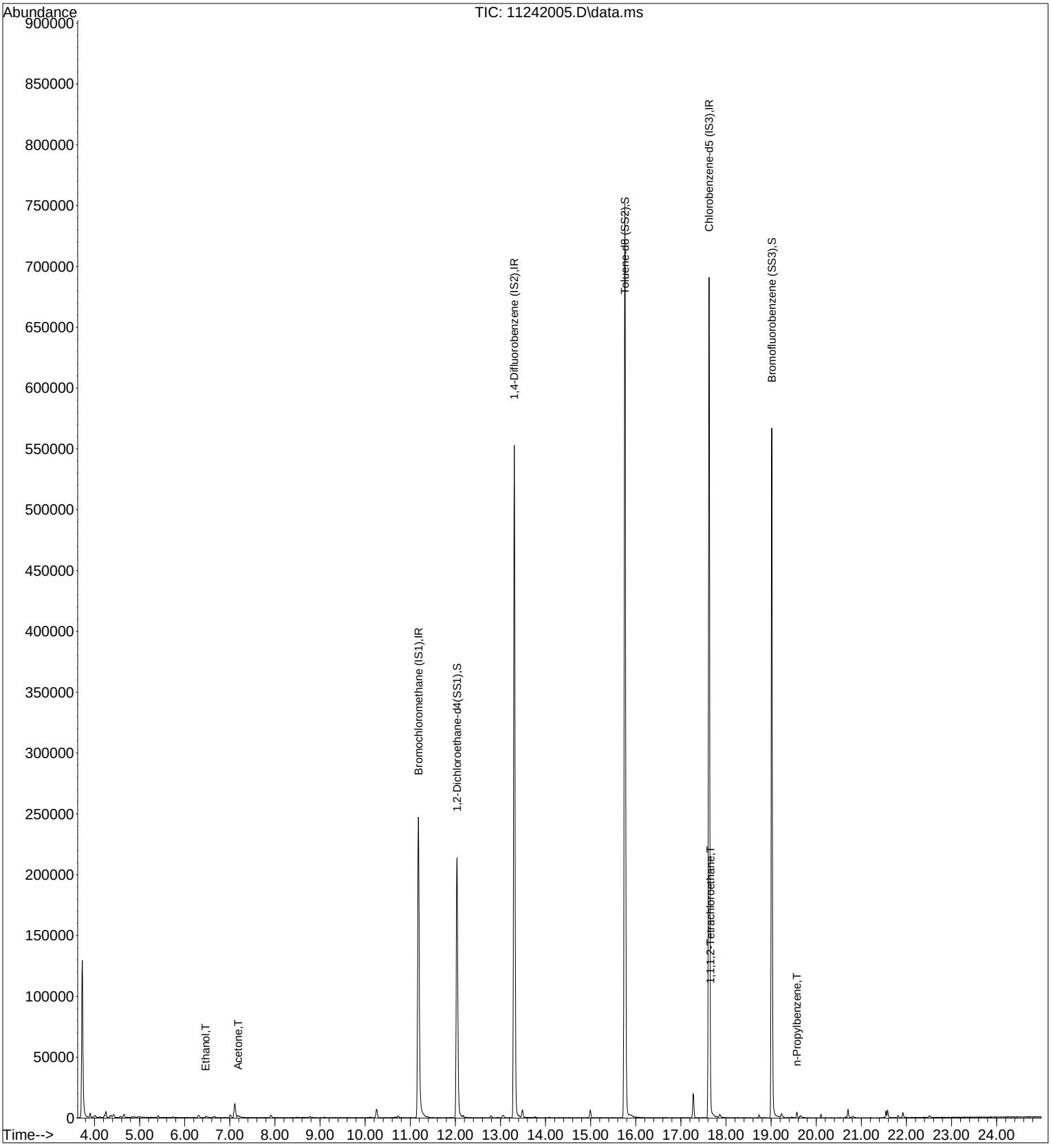
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	15.87	91	2092	N.D.	
59) 2-Hexanone	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	17.86	91	1691	N.D.	
67) m- & p-Xylenes	18.22	91	111	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	19.01	105	107	N.D.	
75) alpha-Pinene	19.49	93	107	N.D.	
76) n-Propylbenzene	19.57	91	4395	0.069 ng #	60
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-...	20.53	119	166	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	20.65	68	403	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	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	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	20.70	91	729	N.D.	
101) 1,1,1,2-Tetrachloroethane	17.65	131	1061	0.104 ng #	86

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242005.D Vial: 1
Acq On : 24 Nov 2020 19:24 Operator: TD
Sample : MB R13112420 1000mL Inst : MS13
Misc : S34-10302004/AC01837

Quant Time: Nov 25 04:35:21 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **WSP Group**
Client Sample ID: **Lab Control Sample** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P201124-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
156-59-2	cis-1,2-Dichloroethene	208	**237**	**114**	64-120	
79-01-6	Trichloroethene	206	**210**	**102**	70-114	
127-18-4	Tetrachloroethene	206	**182**	**88**	64-120	

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.

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242007.D Vial: 1
Acq On : 24 Nov 2020 20:31 Operator: TD
Sample : LCS R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11062001 (12/5)

Quant Time: Nov 25 04:30:54 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020 11/25/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.20	130	127629	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.32	114	558940	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.63	82	275453	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.05	65	191985	13.937	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.52%				
57) Toluene-d8 (SS2)	15.76	98	629677	11.668	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.36%				
73) Bromofluorobenzene (SS3)	19.01	174	197433	10.903	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.20%				
Target Compounds							Qvalue
2) Propene	4.16	42	315766	29.141	ng		97
3) Dichlorodifluoromethan...	4.32	85	591777	27.728	ng		100
4) Chloromethane	4.60	50	349279	28.016	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.87	135	324421	29.897	ng		100
6) Vinyl Chloride	5.01	62	382640	31.888	ng		100
7) 1,3-Butadiene	5.28	54	372211	32.176	ng		98
8) Bromomethane	5.72	94	265661	27.724	ng		100
9) Chloroethane	6.05	64	210858	28.010	ng		100
10) Ethanol	6.43	45	865946	129.949	ng		99
11) Acetonitrile	6.68	41	514492	31.221	ng		99
12) Acrolein	6.86	56	409927	67.098	ng		99
13) Acetone	7.07	58	1009927	145.601	ng		89
14) Trichlorofluoromethane	7.30	101	513416	27.784	ng		100
15) 2-Propanol (Isopropanol)	7.56	45	1418319	58.826	ng		99
16) Acrylonitrile	7.83	53	785607	67.688	ng		99
17) 1,1-Dichloroethene	8.26	96	304615	27.846	ng		95
18) 2-Methyl-2-Propanol (t...	8.43	59	1514857	63.083	ng		100
19) Methylene Chloride	8.49	84	316272	29.577	ng		93
20) 3-Chloro-1-propene (Al...	8.65	41	434307	30.109	ng		97
21) Trichlorotrifluoroethane	8.90	151	278367	26.163	ng		91
22) Carbon Disulfide	8.75	76	2149995	58.471	ng		100
23) trans-1,2-Dichloroethene	9.76	61	426392	31.526	ng		98
24) 1,1-Dichloroethane	10.01	63	515904	29.198	ng		100
25) Methyl tert-Butyl Ether	10.10	73	932592	28.494	ng		98
26) Vinyl Acetate	10.26	86	321902	153.238	ng		95
27) 2-Butanone (MEK)	10.50	72	426134	67.300	ng		96
28) cis-1,2-Dichloroethene	11.02	61	402577	29.634	ng		96
29) Diisopropyl Ether	11.31	87	460736	53.955	ng	#	83
30) Ethyl Acetate	11.33	61	277690	83.787	ng		96
31) n-Hexane	11.30	57	411851	26.323	ng		99
32) Chloroform	11.37	83	519635	29.777	ng		100
34) Tetrahydrofuran (THF)	11.76	72	380705	56.061	ng		96
35) Ethyl tert-Butyl Ether	11.91	87	745091	59.375	ng		97
36) 1,2-Dichloroethane	12.16	62	378752	29.750	ng		100
38) 1,1,1-Trichloroethane	12.44	97	459309	28.041	ng		100
39) Isopropyl Acetate	12.89	61	16971	No Calib		#	
40) 1-Butanol	12.95	56	5651	No Calib		#	
41) Benzene	12.92	78	1178452	27.350	ng		100
42) Carbon Tetrachloride	13.08	117	402350	28.400	ng		100
43) Cyclohexane	13.21	84	915106	54.776	ng		97
44) tert-Amyl Methyl Ether	13.56	73	1679623	56.558	ng		99
45) 1,2-Dichloropropane	13.77	63	295711	29.049	ng		100
46) Bromodichloromethane	13.96	83	409622	31.408	ng		99
47) Trichloroethene	14.02	130	339884	26.190	ng		100
48) 1,4-Dioxane	13.99	88	262425	30.834	ng		97
49) 2,2,4-Trimethylpentane...	14.08	57	1218333	28.208	ng		98
50) Methyl Methacrylate	14.22	100	266255	62.722	ng		88

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242007.D Vial: 1
Acq On : 24 Nov 2020 20:31 Operator: TD
Sample : LCS R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11062001 (12/5)

Quant Time: Nov 25 04:30:54 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

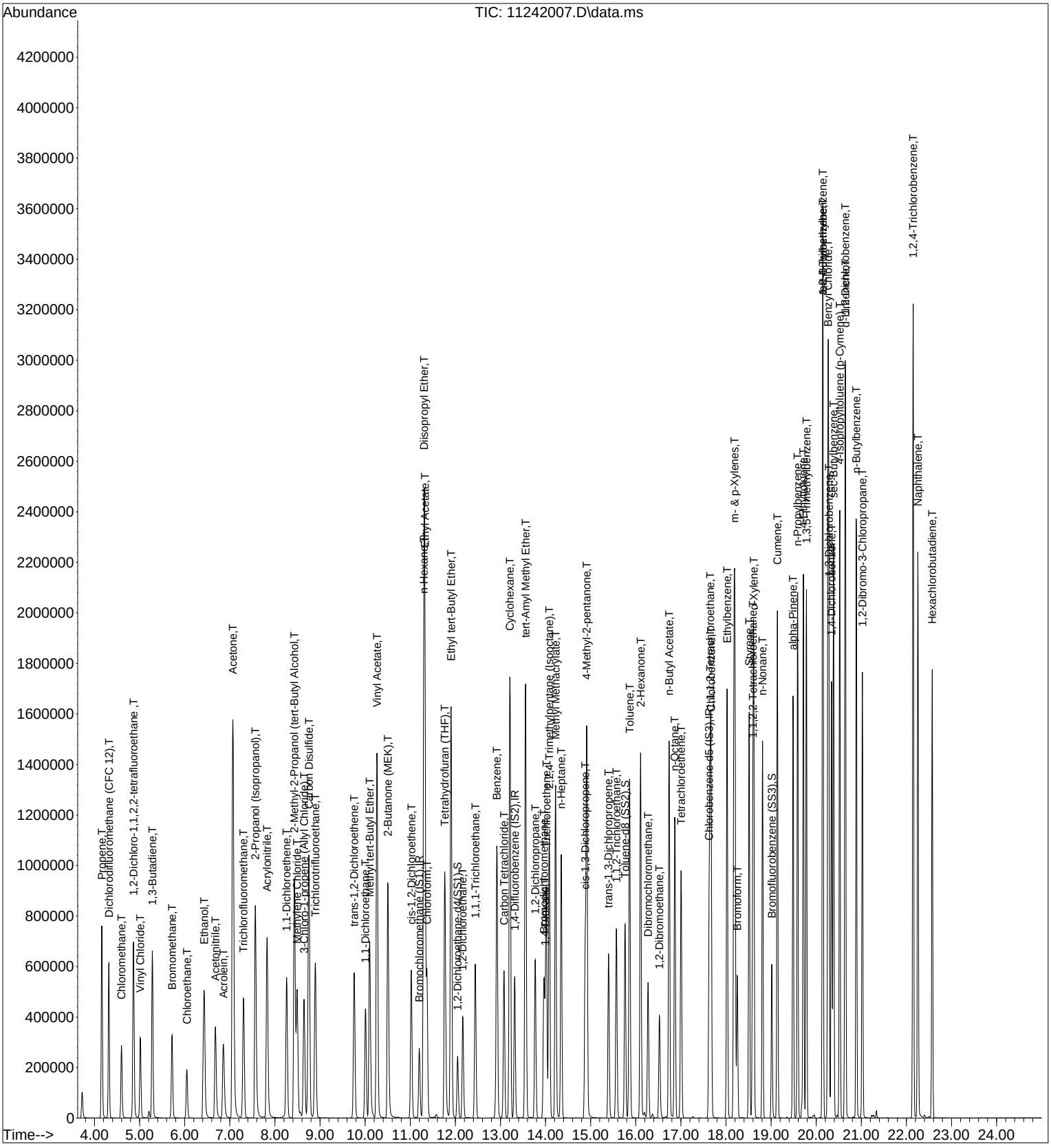
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	316653	28.737 ng		97
52) cis-1,3-Dichloropropene	14.88	75	486492	30.965 ng		100
53) 4-Methyl-2-pentanone	14.91	58	526219	65.576 ng		97
54) trans-1,3-Dichloropropene	15.39	75	452854	31.458 ng		100
55) 1,1,2-Trichloroethane	15.57	97	303083	28.613 ng		97
58) Toluene	15.86	91	1220358	24.194 ng		100
59) 2-Hexanone	16.11	43	1131218	59.973 ng		99
60) Dibromochloromethane	16.27	129	361227	30.295 ng		99
61) 1,2-Dibromoethane	16.52	107	351835	27.493 ng		100
62) n-Butyl Acetate	16.74	43	1256653	61.802 ng		100
63) n-Octane	16.86	57	257135	25.726 ng		95
64) Tetrachloroethene	17.01	166	365497	22.808 ng		100
65) Chlorobenzene	17.67	112	845660	24.360 ng		100
66) Ethylbenzene	18.02	91	1389302	24.589 ng		100
67) m- & p-Xylenes	18.19	91	2125697	48.472 ng		100
68) Bromoform	18.25	173	308927	29.308 ng		100
69) Styrene	18.51	104	911405	26.142 ng		100
70) o-Xylene	18.62	91	1110635	24.949 ng		100
71) n-Nonane	18.81	43	525854	25.365 ng		98
72) 1,1,2,2-Tetrachloroethane	18.59	83	530868	27.648 ng		100
74) Cumene	19.14	105	1408118	24.074 ng		100
75) alpha-Pinene	19.49	93	701596	23.604 ng		98
76) n-Propylbenzene	19.59	91	1699978	25.046 ng		99
77) 3-Ethyltoluene	19.71	105	1432569	No Calib		
78) 4-Ethyltoluene	19.71	105	1432569	26.016 ng		100
79) 1,3,5-Trimethylbenzene	19.78	105	1180487	23.244 ng		100
80) alpha-Methylstyrene	19.71	118	8484	No Calib		
81) 2-Ethyltoluene	19.95	105	9737	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	1134645	24.354 ng		99
83) n-Decane	20.15	58	44859	No Calib	#	
84) Benzyl Chloride	20.26	91	1996399	59.503 ng		100
85) 1,3-Dichlorobenzene	20.28	146	742682	26.648 ng		100
86) 1,4-Dichlorobenzene	20.34	146	754354	24.113 ng		100
87) sec-Butylbenzene	20.39	105	1610357	24.367 ng		99
88) 4-Isopropyltoluene (p-...	20.52	119	1387718	24.317 ng		99
89) 1,2,3-Trimethylbenzene	20.52	105	60872	No Calib	#	
90) 1,2-Dichlorobenzene	20.64	146	717411	25.973 ng		100
91) d-Limonene	20.65	68	412666	24.932 ng		97
92) 1,2-Dibromo-3-Chloropr...	21.02	157	551234	52.758 ng		96
93) n-Undecane	21.34	57	9250	No Calib		
94) 1,2,4-Trichlorobenzene	22.15	180	1141222	54.169 ng		100
95) Naphthalene	22.25	128	1811440	28.031 ng		100
96) n-Dodecane	22.25	57	18767	No Calib	#	
97) Hexachlorobutadiene	22.57	225	354086	22.497 ng		100
98) Cyclohexanone	18.18	55	1482	No Calib	#	
99) tert-Butylbenzene	20.15	119	1088081	23.238 ng		99
100) n-Butylbenzene	20.89	91	1298125	25.929 ng		99
101) 1,1,1,2-Tetrachloroethane	17.65	131	301952	27.613 ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242007.D Vial: 1
Acq On : 24 Nov 2020 20:31 Operator: TD
Sample : LCS R13112420 25ng Inst : MS13
Misc : S34-10302004/S34-11062001 (12/5)

Quant Time: Nov 25 04:30:54 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **WSP Group**
Client Sample ID: **HUCKIAF111720-6** ALS Project ID: P2006561
Client Project ID: **Federal-Mogul FORMER HUCK MANUFACTURING / 31401678.006 02-01** ALS Sample ID: P2006561-001DUP

Test Code: EPA TO-15 Date Collected: 11/17/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 11/19/20
Analyst: Topacio De Leon Date Analyzed: 11/24/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00529

Initial Pressure (psig): -1.42 Final Pressure (psig): 3.84

Canister Dilution Factor: 1.40

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result** ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Trichloroethene	4.13	0.770	4.09	0.761	4.11	**1**	25	
Tetrachloroethene	0.441	0.0651	0.431	0.0636	0.436	**2**	25	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242012.D Vial: 2
Acq On : 24 Nov 2020 23:19 Operator: TD
Sample : P2006561-001dup (1000mL) Inst : MS13
Misc : S34-10302004

TD 11/25/20

Quant Time: Nov 25 11:21:16 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.18	130	117027	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.31	114	515711	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.63	82	240507	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.04	65	170256	13.479	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.84%				
57) Toluene-d8 (SS2)	15.76	98	582085	12.354	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%				
73) Bromofluorobenzene (SS3)	19.01	174	170613	10.790	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 86.32%				
Target Compounds							Qvalue
2) Propene	4.18	42	2252m	0.227	ng		
3) Dichlorodifluoromethan...	4.34	85	38282	1.956	ng		99
4) Chloromethane	4.62	50	5203	0.455	ng		95
5) 1,2-Dichloro-1,1,2,2-t...	4.88	135	846	0.085	ng		65
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	5.23	54	128	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	6.06	64	1209	0.175	ng		78
10) Ethanol	6.39	45	128560	21.040	ng		100
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	6.90	56	1056	0.189	ng	#	55
13) Acetone	7.07	58	43764	6.881	ng		90
14) Trichlorofluoromethane	7.31	101	16923	0.999	ng		99
15) 2-Propanol (Isopropanol)	7.60	45	15289m	0.692	ng		
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	8.47	84	3642	0.371	ng		86
20) 3-Chloro-1-propene (Al...	8.57	41	356	N.D.			
21) Trichlorotrifluoroethane	8.90	151	3240	0.332	ng		89
22) Carbon Disulfide	8.75	76	21114	0.626	ng		95
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	10.55	72	3384	0.583	ng	#	49
28) cis-1,2-Dichloroethene	11.04	61	327	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	11.34	61	4617	1.519	ng		81
31) n-Hexane	11.30	57	5684	0.396	ng	#	95
32) Chloroform	11.36	83	1385	0.087	ng		92
34) Tetrahydrofuran (THF)	11.83	72	1754	0.282	ng	#	74
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.	d		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	13.01	56	509	No Calib		#	
41) Benzene	12.92	78	18080	0.455	ng		98
42) Carbon Tetrachloride	13.07	117	4302	0.329	ng		99
43) Cyclohexane	13.20	84	2055	0.133	ng	#	77
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	14.01	83	247	N.D.			
47) Trichloroethene	14.01	130	34956	2.919	ng		100
48) 1,4-Dioxane	14.04	88	1825	0.232	ng	#	45
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		
50) Methyl Methacrylate	0.00	100	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242012.D Vial: 2
Acq On : 24 Nov 2020 23:19 Operator: TD
Sample : P2006561-001dup (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 11:21:16 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

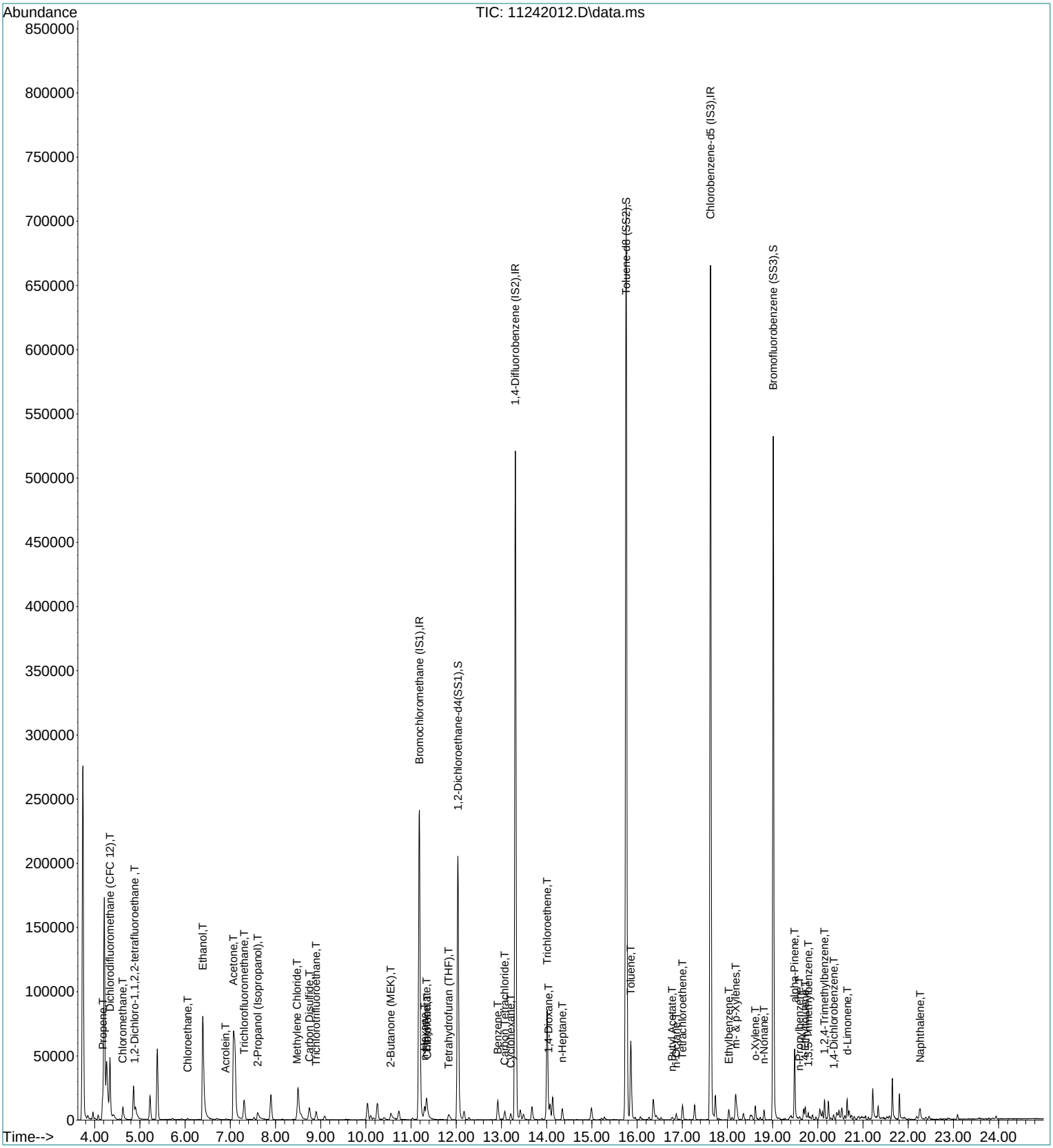
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.35	71	2462	0.242 ng		85
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	14.97	58	336	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.86	91	54410	1.235 ng		98
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.78	43	2888	0.163 ng		88
63) n-Octane	16.87	57	932	0.107 ng	#	71
64) Tetrachloroethene	17.01	166	4310	0.308 ng		96
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	18.03	91	8509	0.172 ng		94
67) m- & p-Xylenes	18.18	91	19303	0.504 ng		96
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.54	104	1429	N.D.		
70) o-Xylene	18.62	91	7176	0.185 ng		94
71) n-Nonane	18.81	43	3119	0.172 ng		80
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	19.15	105	760	N.D.		
75) alpha-Pinene	19.49	93	22224	0.856 ng		76
76) n-Propylbenzene	19.59	91	3619	0.061 ng	#	72
77) 3-Ethyltoluene	19.72	105	3380	No Calib		
78) 4-Ethyltoluene	19.72	105	3380	0.070 ng		86
79) 1,3,5-Trimethylbenzene	19.79	105	2611	0.059 ng		85
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.96	105	2275	No Calib		
82) 1,2,4-Trimethylbenzene	20.15	105	7582	0.186 ng		85
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	20.15	91	751	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D. d		
86) 1,4-Dichlorobenzene	20.35	146	2011	0.074 ng		90
87) sec-Butylbenzene	20.39	105	196	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d		
89) 1,2,3-Trimethylbenzene	20.53	105	1701	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.65	68	4087	0.283 ng		93
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.34	57	3606	No Calib		
94) 1,2,4-Trichlorobenzene	22.16	180	381	N.D.		
95) Naphthalene	22.26	128	8861	0.157 ng		89
96) n-Dodecane	22.25	57	2358	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.10	55	483	No Calib	#	
99) tert-Butylbenzene	20.15	119	841	N.D.		
100) n-Butylbenzene	20.90	91	518	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2020 11\24\11242012.D Vial: 2
Acq On : 24 Nov 2020 23:19 Operator: TD
Sample : P2006561-001dup (1000mL) Inst : MS13
Misc : S34-10302004

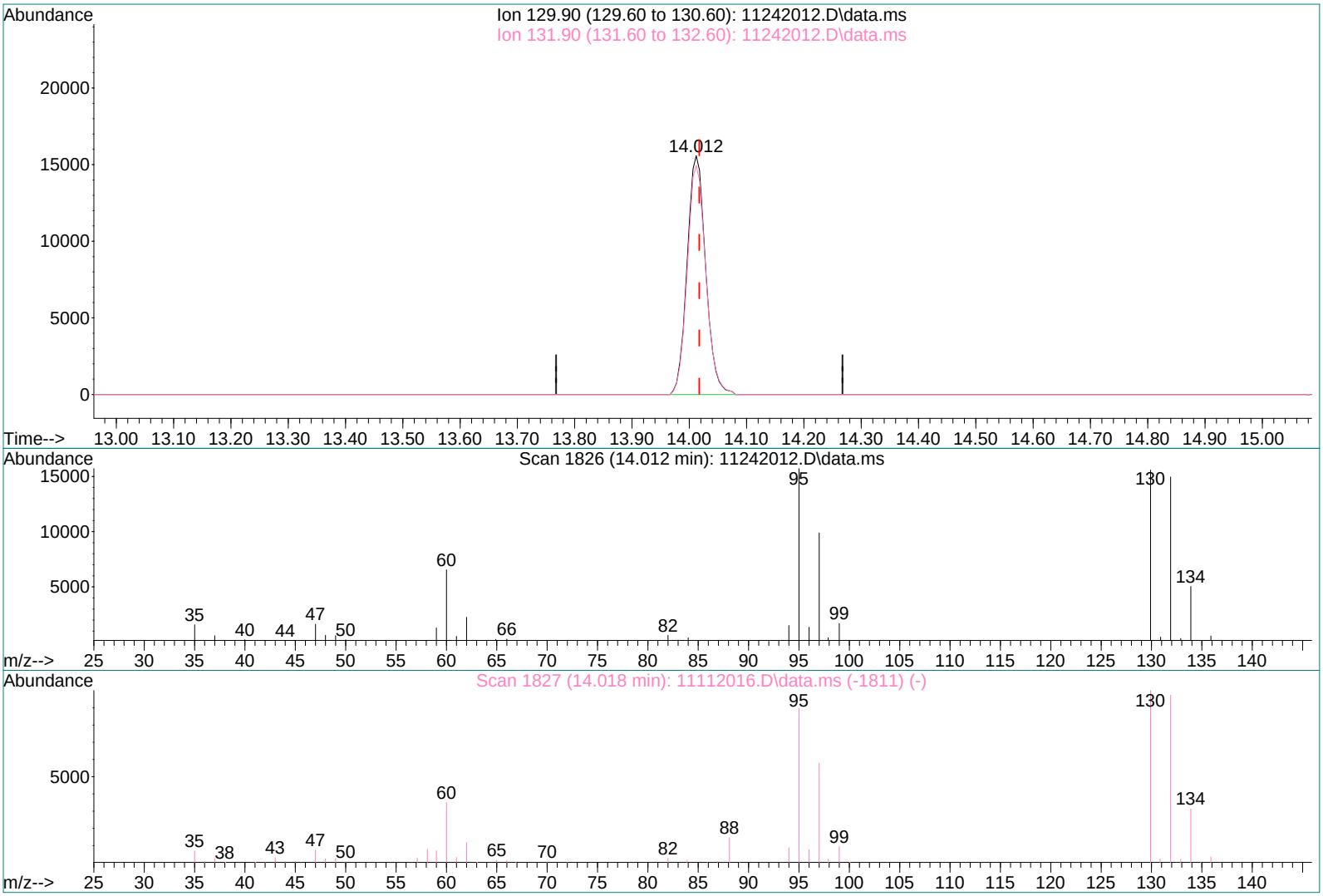
Quant Time: Nov 25 11:21:16 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242012.D Vial: 2
Acq On : 24 Nov 2020 23:19 Operator: TD
Sample : P2006561-001dup (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:04 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242012.D\data.ms

(47) Trichloroethene (T)

14.012min (-0.006) 2.92ng

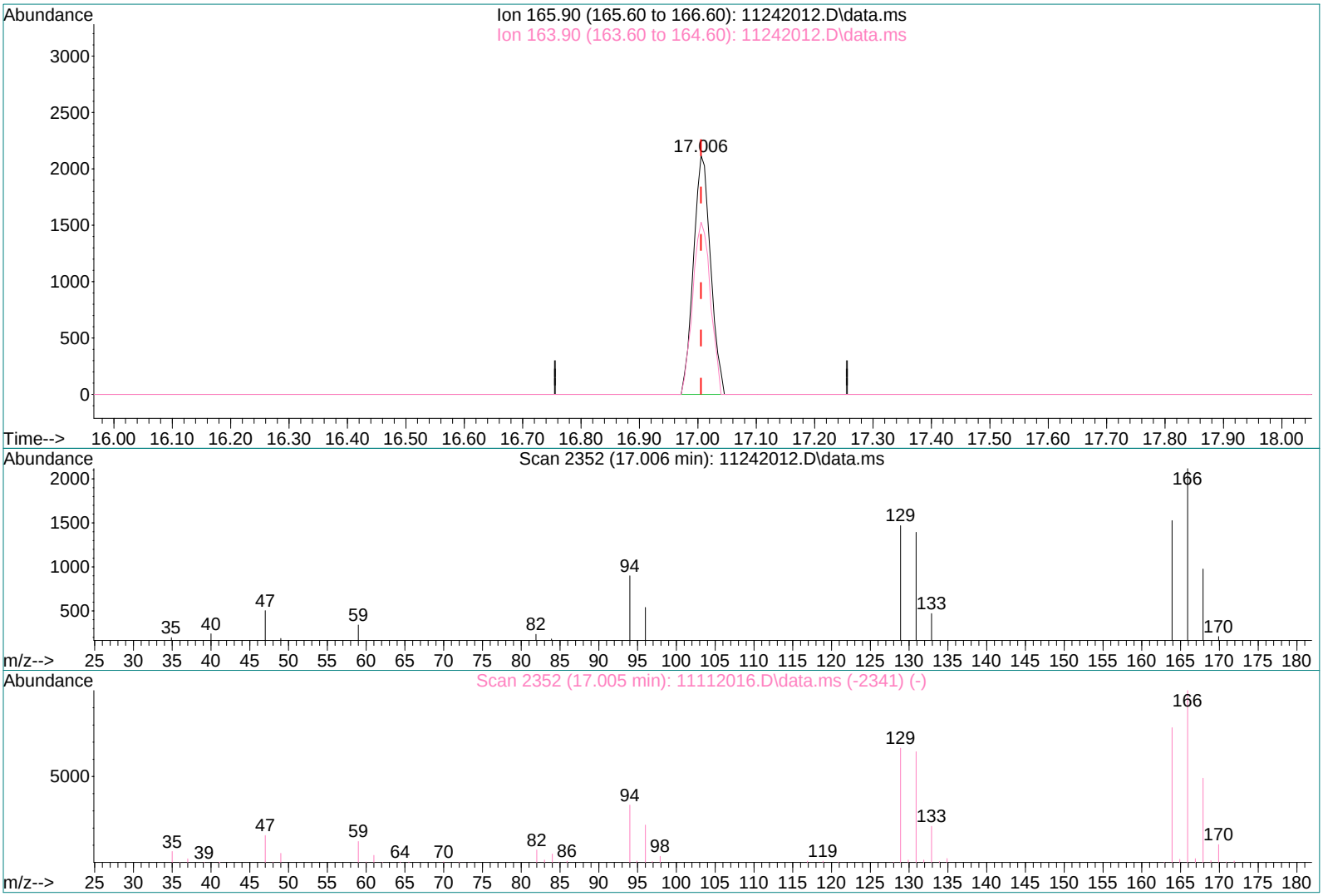
response 34956

Ion	Exp%	Act%
129.90	100	100
131.90	96.20	95.93
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2020 11\24\11242012.D Vial: 2
Acq On : 24 Nov 2020 23:19 Operator: TD
Sample : P2006561-001dup (1000mL) Inst : MS13
Misc : S34-10302004

Quant Time: Nov 25 04:31:04 2020
Quant Method : I:\MS13\METHODS\R13111120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 12 05:50:29 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 11242012.D\data.ms

(64) Tetrachloroethene (T)

17.006min (+0.000) 0.31ng

response 4310

Ion	Exp%	Act%
165.90	100	100
163.90	78.40	74.69
0.00	0.00	0.00
0.00	0.00	0.00

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Instructions for Data Validation-Method TO-15 (SCAN)

1. **Determination of Pressure Dilution Factor**

Upon receipt at the laboratory the pressure or vacuum of the sample canisters is measured using a digital pressure gauge. The canisters are then pressurized with humidified zero air to approximately +3.5 psig (pounds per square inch gauge).

Pressure Dilution factor is calculated as:

$$\text{PDF} = \frac{P_f + 14.7}{P_i + 14.7}$$

P_f final pressure in psig

P_i initial pressure in psig

2. **Validating Initial and Continuing Calibration Results**

GC/MS target compound analysis is performed using internal standard quantitation. Three internal standard compounds (Bromochloromethane, 1,4-Difluorobenzene and Chlorobenzene-d5) are added to each aliquot of sample, blank, standard and duplicate at an amount of 25 nanograms(ng). Internal standard responses are used to calculate RRFs (relative response factors) as follows:

$$\text{RRF} = \frac{A_x C_{is}}{A_{is} C_x}$$

A_x area response of the analyte quantitation ion

A_{is} area response of the corresponding internal standard quantitation ion

C_{is} internal standard concentration, ng

C_x analyte concentration, ng

The percent relative standard deviation (%RSD) for the five or six initial calibration points should be less than 30% (with a maximum of two analytes ≤40%) for the calibration to be considered valid and linear.

$$\%\text{RSD} = \frac{SD}{\overline{RRF}}(100)$$

SD standard deviation

$\overline{RRF}$ average or mean RRF (ICAL)

The initial calibration is verified once per twenty-four hour analytical sequence with the analysis of a continuing calibration standard at one of the initial calibration levels (actual analyte concentrations of the CCV are the same as the corresponding concentrations in the initial calibration). The relative response factor of each target analyte from the daily continuing calibration standard is compared to the average relative response factor from the initial multipoint calibration. The percent difference (%D) of the initial and continuing calibration relative response factors is calculated as follows:

$$\%D = \left(\frac{\overline{RRF} - RRF\ cont}{\overline{RRF}} \right)(100)$$

$\overline{RRF}$	average relative response factor from the initial calibration
$RRF\ cont$	relative response factor from the daily continuing calibration standard

Note: the percent difference (%D) should be less than 30% for an acceptable continuing calibration standard.

3. Validating GC/MS Target Analyte Quantitation Results

Target analytes are measured in nanograms using internal standard quantitation as follows:

$$ng_x = \frac{A_x ng_{is}}{A_{is}\ \overline{RRF}}$$

ng_x	nanogram concentration of analyte *x*
A_x	area response of the analyte's quantitation ion
A_{is}	area response of the corresponding internal standard's quantitation ion
ng_{is}	internal standard amount, in nanograms
$\overline{RRF}$	average or mean RRFs (ICAL)

4. Calculation of µg/m³ (microgram per cubic meter) Results

Target compound results reported on the "Results of Analysis" form in units of µg/m³ are calculated as follows:

$$\mu g/m^3 = \frac{(ng)(PDF)}{L}$$

ng nanograms of analyte (measured on the GC/MS quantitation report)

PDF pressure dilution factor (see equation 1)

L sample aliquot in Liters

5. Conversion to ppb (parts per billion) Volume

$$C_{ppbv} = C_x\left(\frac{24.46}{FW}\right)$$

FW formula weight of the target analytes (i.e. formula weight of Dichloromethane is 84.94; 1,2-Dichloropropane is 113)

24.46 molar volume of ideal gas at 25°C and 1 atmosphere

C_x final analyte concentration calculated in equation 4 (µg/m³)

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092022.D
Acq On : 10 Nov 2020 00:52
Operator : WA/RVT
Sample : SSC00529
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 15 Sample Multiplier: 1

RVT 11/10/20

Quant Time: Nov 10 06:41:16 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.489	130	76065	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.714	114	269423	1000.00	pg	-0.01
56) Chlorobenzene-d5 (IS3)	14.673	54	31297	1000.00	pg	0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.295	65	105577	866.07	pg	0.00
Spiked Amount 1000.000			Recovery = 86.61%			
57) Toluene-d8 (SS2)	12.576	98	189850	1071.02	pg	0.00
Spiked Amount 1000.000			Recovery = 107.10%			
74) Bromofluorobenzene (SS3)	16.121	174	71867	813.88	pg	-0.02
Spiked Amount 1000.000			Recovery = 81.39%			
Target Compounds						Qvalue
2] * Propene	3.504	42	2162	29.48	pg	# 1
3] * Dichlorodifluoromethane	3.547	85	8380	35.05	pg	96
4] * Chloromethane	3.672	50	36591	368.55	pg	98
5] * 1,2-Dichloro-1,1,2,2...	3.749	85	150	1.08	pg	# 59
6) * Vinyl Chloride	0.000		0	N.D.		
7] * 1,3-Butadiene	3.955	54	55	0.74	pg	# 1
8] * Bromomethane	4.171	94	112	1.24	pg	95
9] * Chloroethane	4.306	64	3826	80.74	pg	95
10] * Ethanol	4.385	45	96684	2483.28	pg	100
11] * Acetonitrile	4.561	41	1965	22.36	pg	# 78
12] * Acrolein	4.666	56	744	19.09	pg	86
13] * Acetone	4.775	58	15272	294.75	pg	96
14] * Trichlorofluoromethane	4.912	101	3779	16.12	pg	88
15] * 2-Propanol (Isopropa...	4.978	45	4645	31.46	pg	# 81
16] * Acrylonitrile	5.114	53	63	0.81	pg	99
17] * 1,1-Dichloroethene	5.386	96	303	3.45	pg	# 83
18] tert-Butanol	5.420	59	86	0.74	pg	# 41
19] * Methylene Chloride	5.517	84	17222	187.42	pg	100
20] * 3-Chloro-1-propene (...	5.648	41	126	1.58	pg	92
21] * Trichlorotrifluoroet...	5.760	151	1034	10.98	pg	89
22] * Carbon Disulfide	5.784	76	13194	50.33	pg	100
23) * trans-1,2-Dichloroet...	0.000		0	N.D.		
24] * 1,1-Dichloroethane	6.529	63	62	0.48	pg	# 1
25) * Methyl tert-Butyl Ether	0.000		0	N.D.		
26] * Vinyl Acetate	6.644	86	525	35.32	pg	# 28
27] * 2-Butanone (MEK)	6.910	72	3962	85.37	pg	99
28) * cis-1,2-Dichloroethene	0.000		0	N.D.		
29] DIPE	7.573	45	3216	17.21	pg	# 54
30] * Ethyl Acetate	7.573	61	3626	139.81	pg	96
31] * n-Hexane	7.567	57	783	8.43	pg	# 82
32] * Chloroform	7.619	83	141	0.90	pg	99
34] * Tetrahydrofuran	8.084	71	192	5.44	pg	# 48
35) ETBE	0.000		0	N.D.		
36] * 1,2-Dichloroethane	8.421	62	95	0.74	pg	# 43
38) * 1,1,1-Trichloroethane	0.000		0	N.D.		
39] * Benzene	9.276	78	3565	12.14	pg	98
40) Isopropyl Acetate	0.000		0	N.D.		
41] 1-Butanol	9.229	56	1704	411.03	pg	# 100
42] * Carbon Tetrachloride	9.458	117	1050	8.12	pg	# 41
43] * Cyclohexane	9.615	84	395	4.46	pg	# 43
44) TAME	0.000		0	N.D.		
45) * 1,2-Dichloropropane	0.000		0	N.D.		
46] * Bromodichloromethane	10.515	83	72	0.51	pg	# 18
47] * Trichloroethene	10.570	130	95	0.78	pg	89

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092022.D
Acq On : 10 Nov 2020 00:52
Operator : WA/RVT
Sample : SSC00529
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 15 Sample Multiplier: 1

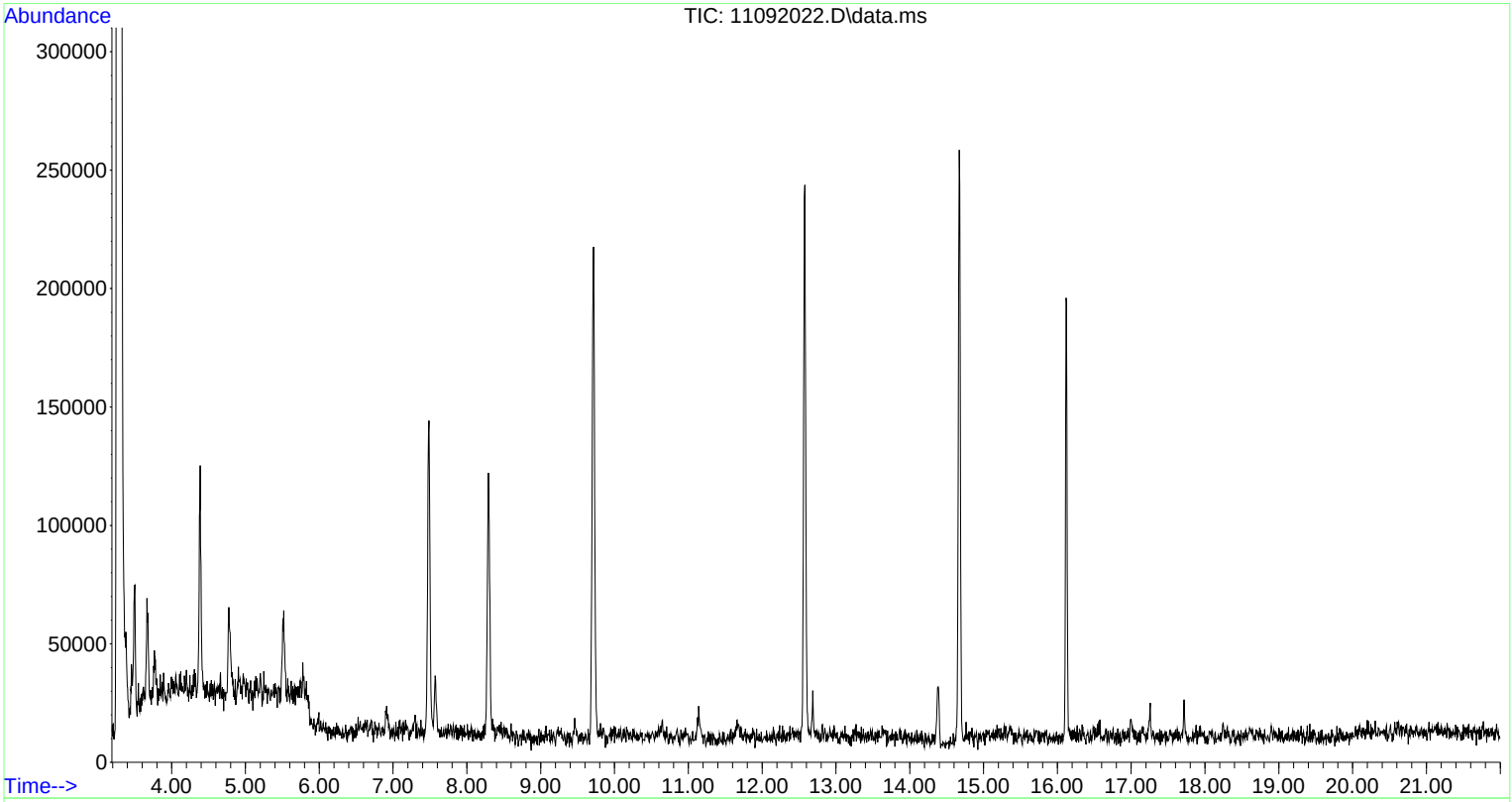
Quant Time: Nov 10 06:41:16 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

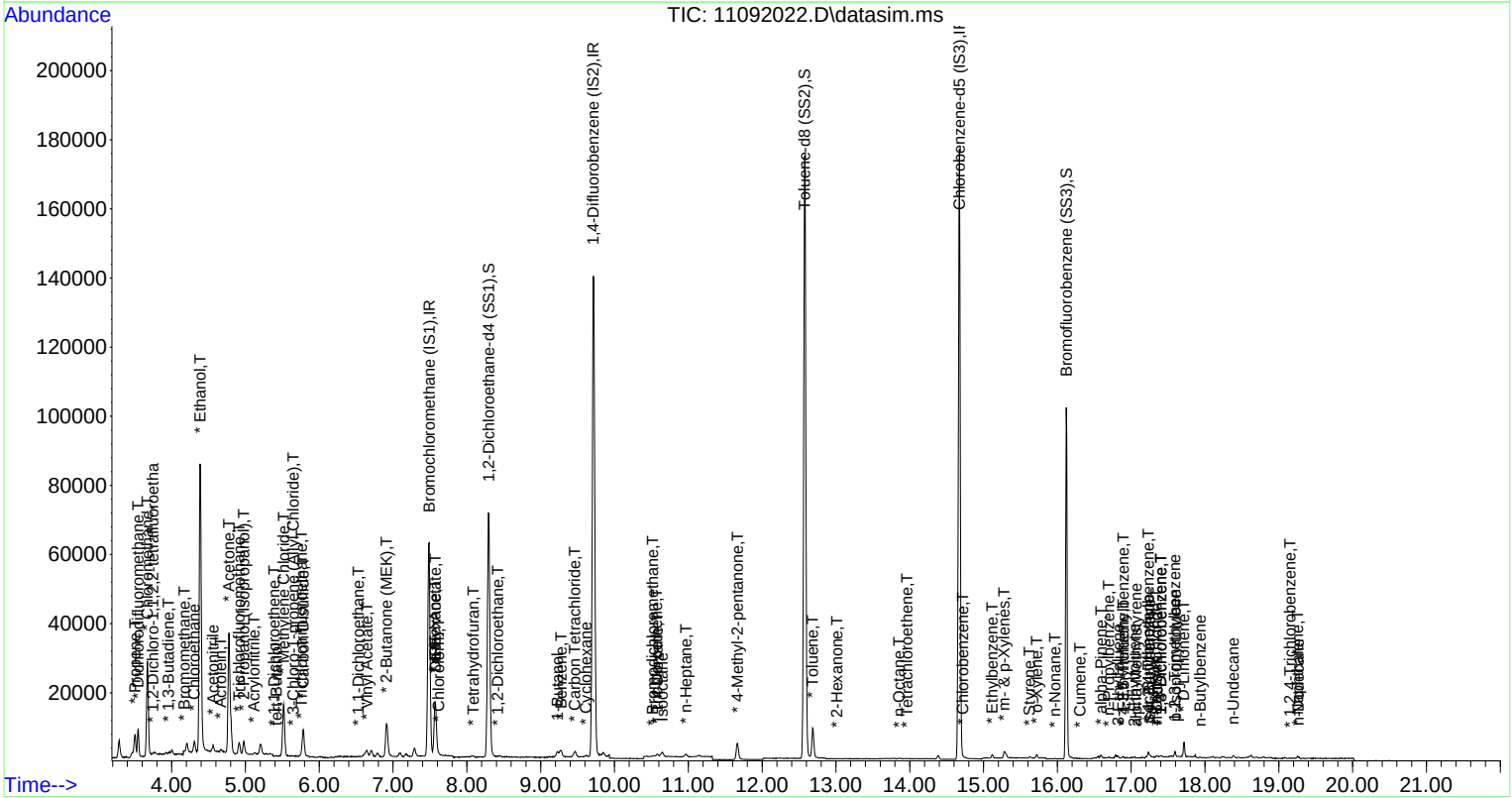
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48]	* 1,4-Dioxane	10.577	88	782	10.58	pg		99
49]	Isooctane	10.646	56	628	5.22	pg		73
50)	* Methyl Methacrylate	0.000		0	N.D.			
51]	* n-Heptane	10.970	71	494	5.96	pg	#	79
52)	* cis-1,3-Dichloropropene	0.000		0	N.D.			
53]	* 4-Methyl-2-pentanone	11.665	58	2664	52.75	pg		98
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	10112	46.64	pg		99
59]	* 2-Hexanone	13.012	58	65	1.56	pg	#	55
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	13.854	85	72	1.81	pg	#	8
64]	* Tetrachloroethene	13.962	166	78	0.91	pg	#	10
65]	* Chlorobenzene	14.719	112	77	0.47	pg	#	42
66]	* Ethylbenzene	15.117	91	1089	5.38	pg		96
67]	* m- & p-Xylenes	15.277	91	2713	16.68	pg		93
68)	* Bromoform	0.000		0	N.D.			
69)	Cyclohexanone	0.000		0	N.D.			
70]	* Styrene	15.624	104	347	2.97	pg		88
71]	* o-Xylene	15.721	91	898	5.31	pg		93
72]	* n-Nonane	15.965	57	186	2.86	pg		92
73)	* 1,1,2,2-Tetrachloroe...	0.000		0	N.D.			
75]	* Cumene	16.307	105	55	0.24	pg	#	48
76]	* alpha-Pinene	16.594	93	595	6.04	pg		89
77]	* n-Propylbenzene	16.696	91	314	1.20	pg		94
78]	3-Ethyltoluene	16.827	105	416	77.75	pg		92
79]	* 4-Ethyltoluene	16.890	105	308	1.56	pg	#	46
80]	* 1,3,5-Trimethylbenzene	16.890	105	308	1.75	pg		86
81]	alpha-Methylstyrene	17.069	118	56	22.03	pg	#	36
82]	2-Ethyltoluene	17.045	105	332	113.50	pg	#	85
83]	tert-Butylbenzene	17.250	134	183	4.25	pg	#	1
84]	* 1,2,4-Trimethylbenzene	17.233	105	1100	6.14	pg		97
85]	* Benzyl Chloride	17.341	126	54	3.73	pg	#	1
86]	* 1,3-Dichlorobenzene	17.401	146	296	2.14	pg	#	66
87]	* 1,4-Dichlorobenzene	17.401	146	296	2.51	pg	#	66
88]	n-Decane	17.347	85	106	14.74	pg	#	1
89]	sec-Butylbenzene	17.233	105	1100	6.14	pg	#	88
90]	1,2,3-Trimethylbenzene	17.590	105	394	30.39	pg	#	12
91]	p-Isopropyltoluene	17.600	134	306	5.33	pg		74
92)	* 1,2-Dichlorobenzene	0.000		0	N.D.			
93]	* D-Limonene	17.714	68	1700	32.24	pg		96
94]	n-Butylbenzene	17.934	134	148	2.86	pg	#	12
95)	* 1,2-Dibromo-3-chloro...	0.000		0	N.D.			
96]	n-Undecane	18.385	85	780	558.97	pg	#	1
97]	* 1,2,4-Trichlorobenzene	19.149	180	83	1.18	pg		96
98]	* Naphthalene	19.253	128	674	4.06	pg	#	90
99]	n-Dodecane	19.267	85	77	36.54	pg	#	1
100)	* Hexachlorobutadiene	0.000		0	N.D.			

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

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092022.D
Acq On : 10 Nov 2020 00:52
Operator : WA/RVT
Sample : SSC00529
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 10 06:41:16 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\08\
Data File : 11082028.D
Acq On : 9 Nov 2020 3:14
Operator : WA/RVT
Sample : AS01274
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 209 Sample Multiplier: 1

RVT 11/10/20

Quant Time: Nov 09 09:51:45 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane (IS1)	7.483	130	70808	1000.00	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.730	114	240256	1000.00	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.661	54	28355	1000.00	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.301	65	101313	892.80	pg		0.00
Spiked Amount 1000.000			Recovery = 89.28%				
57) Toluene-d8 (SS2)	12.572	98	170889	1064.08	pg		0.00
Spiked Amount 1000.000			Recovery = 106.41%				
74) Bromofluorobenzene (SS3)	16.107	174	77067	963.33	pg		-0.03
Spiked Amount 1000.000			Recovery = 96.33%				
Target Compounds							Qvalue
2] * Propene	3.496	42	399	5.85	pg	#	1
3] * Dichlorodifluoromethane	3.547	85	2493	11.20	pg		89
4] * Chloromethane	3.672	50	862	9.33	pg		95
5] * 1,2-Dichloro-1,1,2,2...	3.743	85	71	0.55	pg	#	42
6] * Vinyl Chloride	3.818	62	54	0.56	pg	#	42
7] * 1,3-Butadiene	3.964	54	70	1.01	pg	#	1
8] * Bromomethane	4.165	94	84	1.00	pg		91
9] * Chloroethane	4.342	64	67	1.52	pg	#	1
10] * Ethanol	4.394	45	6476	178.68	pg		99
11] * Acetonitrile	4.566	41	443	5.42	pg		97
12] * Acrolein	4.675	56	491	13.54	pg		90
13] * Acetone	4.779	58	13146	272.55	pg		83
14] * Trichlorofluoromethane	4.912	101	1171	5.37	pg	#	61
15] * 2-Propanol (Isopropa...	4.977	45	3693	26.87	pg	#	76
16] * Acrylonitrile	5.102	53	52	0.72	pg		84
17] * 1,1-Dichloroethene	5.396	96	98	1.20	pg	#	1
18] tert-Butanol	5.430	59	58	0.54	pg	#	1
19] * Methylene Chloride	5.517	84	2093	24.47	pg		95
20] * 3-Chloro-1-propene (...	5.649	41	78	1.05	pg	#	55
21] * Trichlorotrifluoroet...	5.751	151	97	1.11	pg	#	1
22] * Carbon Disulfide	5.780	76	10108	41.42	pg	#	94
23] * trans-1,2-Dichloroet...	6.353	96	90	1.23	pg	#	18
24] * 1,1-Dichloroethane	6.544	63	68	0.57	pg	#	43
25] * Methyl tert-Butyl Ether	6.554	73	64	0.47	pg	#	56
26] * Vinyl Acetate	6.650	86	210	15.18	pg	#	1
27] * 2-Butanone (MEK)	6.916	72	2907	67.29	pg		90
28) * cis-1,2-Dichloroethene	0.000		0	N.D.			
29] DIPE	7.580	45	225	1.29	pg		99
30] * Ethyl Acetate	7.580	61	408	16.90	pg	#	66
31] * n-Hexane	7.567	57	671	7.76	pg		97
32] * Chloroform	7.626	83	102	0.70	pg	#	62
34] * Tetrahydrofuran	8.050	71	64	1.95	pg	#	73
35) ETBE	0.000		0	N.D.			
36] * 1,2-Dichloroethane	8.426	62	70	0.59	pg	#	1
38] * 1,1,1-Trichloroethane	8.753	97	55	0.45	pg	#	18
39] * Benzene	9.287	78	1794	6.85	pg		93
40] Isopropyl Acetate	9.230	61	61	98.25	pg	#	34
41] 1-Butanol	9.240	56	693	187.45	pg	#	100
42] * Carbon Tetrachloride	9.480	117	184	1.60	pg	#	59
43] * Cyclohexane	9.641	84	111	1.41	pg	#	1
44) TAME	0.000		0	N.D.			
45] * 1,2-Dichloropropane	10.311	63	79	0.94	pg	#	80
46] * Bromodichloromethane	10.510	83	122	0.96	pg	#	18
47] * Trichloroethene	10.544	130	59	0.54	pg	#	1

Data Path : I:\MS21\DATA\2020 11\08\
Data File : 11082028.D
Acq On : 9 Nov 2020 3:14
Operator : WA/RVT
Sample : AS01274
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 209 Sample Multiplier: 1

Quant Time: Nov 09 09:51:45 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

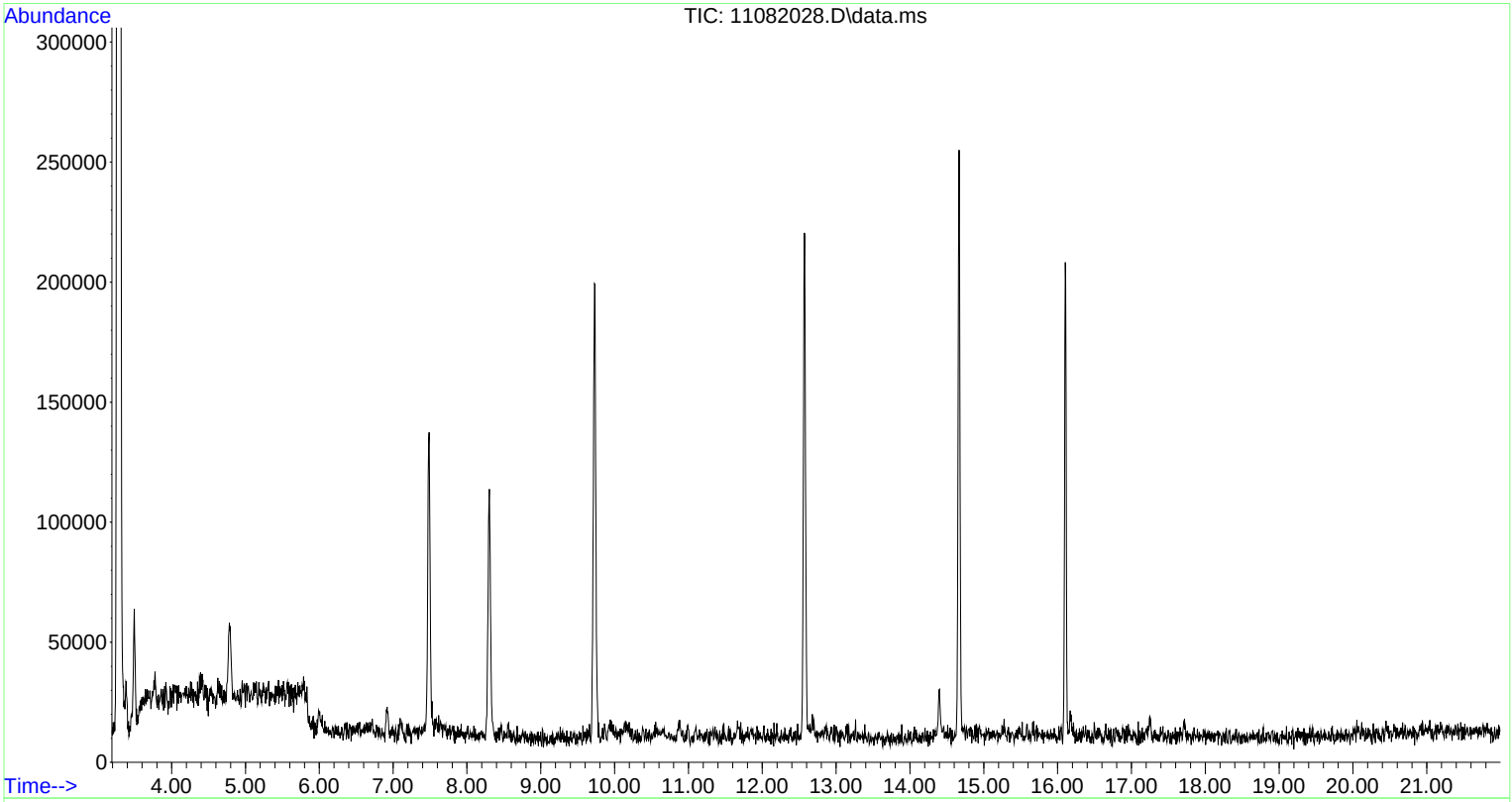
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48]	* 1,4-Dioxane	10.586	88	201	3.05	pg	#	1
49]	Isooctane	10.648	56	758	7.06	pg		76
50]	* Methyl Methacrylate	10.834	69	64	0.84	pg	#	1
51]	* n-Heptane	10.979	71	482	6.52	pg	#	65
52]	* cis-1,3-Dichloropropene	11.521	75	61	0.86	pg	#	43
53]	* 4-Methyl-2-pentanone	11.661	58	1191	26.45	pg		94
54)	* trans-1,3-Dichloropr...	0.000		0	N.D.			
55)	* 1,1,2-Trichloroethane	0.000		0	N.D.			
58]	* Toluene	12.680	91	5069	25.81	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	13.809	56	64	2.14	pg	#	1
63]	* n-Octane	13.876	85	87	2.41	pg	#	78
64)	* Tetrachloroethene	0.000		0	N.D.			
65]	* Chlorobenzene	14.707	112	56	0.37	pg	#	1
66]	* Ethylbenzene	15.101	91	1003	5.46	pg		99
67]	* m- & p-Xylenes	15.261	91	2300	15.61	pg		94
68]	* Bromoform	15.307	173	50	1.02	pg	#	27
69]	Cyclohexanone	15.466	98	79	16.36	pg	#	1
70]	* Styrene	15.603	104	126	1.19	pg		96
71]	* o-Xylene	15.706	91	978	6.38	pg		86
72]	* n-Nonane	16.003	57	72	1.22	pg	#	33
73]	* 1,1,2,2-Tetrachloroe...	15.751	83	53	0.53	pg	#	17
75]	* Cumene	16.236	105	71	0.34	pg	#	48
76]	* alpha-Pinene	16.581	93	210	2.35	pg		91
77]	* n-Propylbenzene	16.683	91	342	1.45	pg		95
78]	3-Ethyltoluene	16.780	105	574	118.41	pg		92
79]	* 4-Ethyltoluene	16.814	105	258	1.44	pg	#	54
80]	* 1,3,5-Trimethylbenzene	16.882	105	258	1.62	pg	#	68
81]	alpha-Methylstyrene	17.008	118	51	22.15	pg	#	35
82]	2-Ethyltoluene	17.042	105	239	90.19	pg	#	58
83]	tert-Butylbenzene	17.251	134	314	8.04	pg	#	1
84]	* 1,2,4-Trimethylbenzene	17.230	105	877	5.40	pg		98
85]	* Benzyl Chloride	17.348	126	54	4.12	pg	#	1
86]	* 1,3-Dichlorobenzene	17.392	146	116	0.92	pg		99
87]	* 1,4-Dichlorobenzene	17.392	146	116	1.09	pg		99
88]	n-Decane	17.359	85	52	7.98	pg	#	61
89]	sec-Butylbenzene	17.230	105	877	5.40	pg	#	72
90]	1,2,3-Trimethylbenzene	17.645	105	55	4.68	pg	#	1
91]	p-Isopropyltoluene	17.591	134	63	1.21	pg	#	1
92)	* 1,2-Dichlorobenzene	0.000		0	N.D.			
93]	* D-Limonene	17.710	68	1044	21.85	pg		98
94]	n-Butylbenzene	17.935	134	104	2.22	pg	#	1
95)	* 1,2-Dibromo-3-chloro...	0.000		0	N.D.			
96]	n-Undecane	18.379	85	80	63.28	pg	#	6
97)	* 1,2,4-Trichlorobenzene	0.000		0	N.D.			
98]	* Naphthalene	19.258	128	182	1.21	pg	#	55
99)	n-Dodecane	0.000		0	N.D.			
100)	* Hexachlorobutadiene	0.000		0	N.D.			

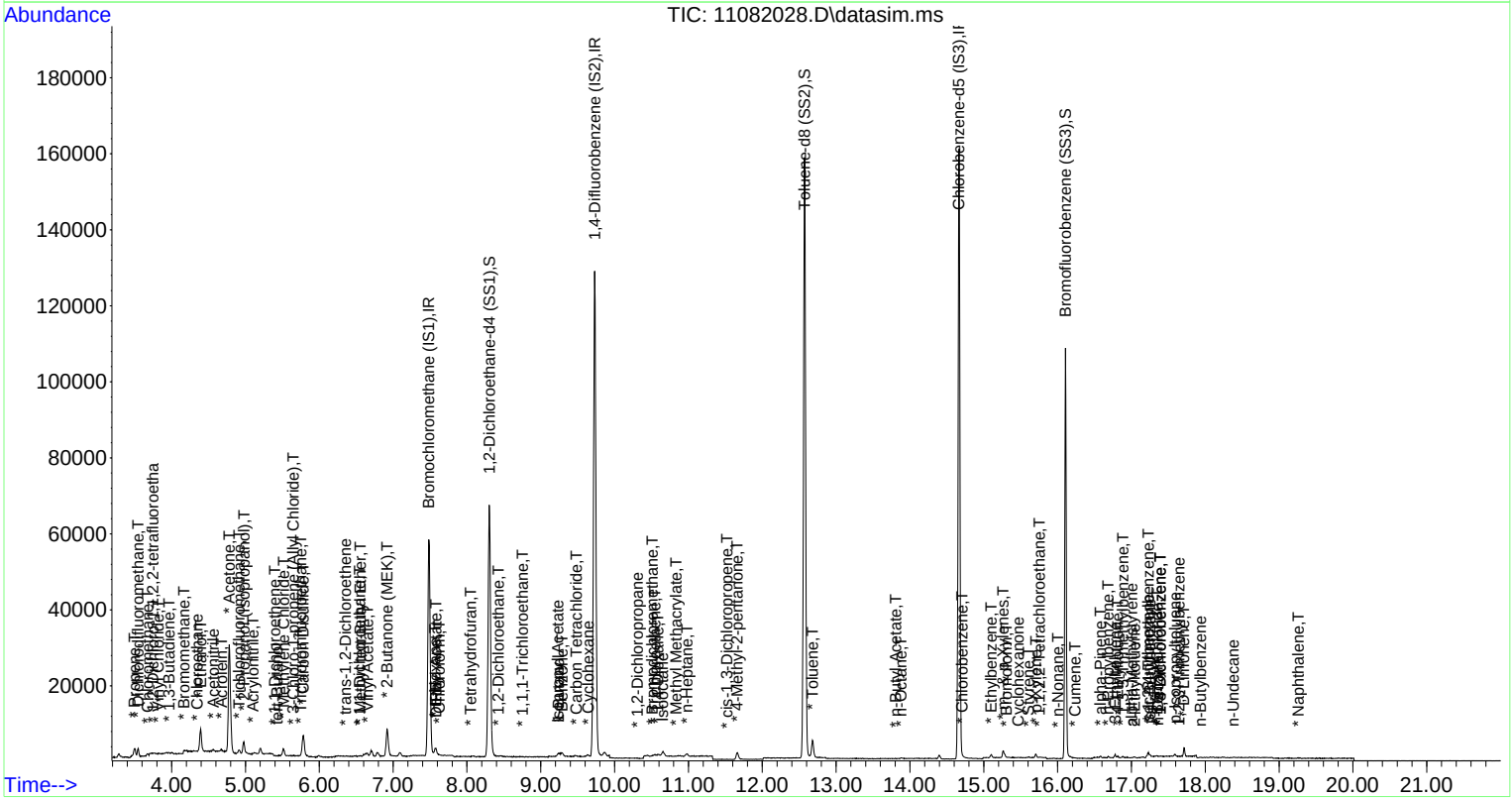
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\08\
Data File : 11082028.D
Acq On : 9 Nov 2020 3:14
Operator : WA/RVT
Sample : AS01274
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 209 Sample Multiplier: 1

Quant Time: Nov 09 09:51:45 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062012.D
Acq On : 6 Nov 2020 20:14
Operator : WA/RVT
Sample : AS00852 SFC00163
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 8 Sample Multiplier: 1

RVT 11/9/20

Quant Time: Nov 08 05:47:23 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.489	130	68848	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.735	114	242905	1000.00	pg	0.01
56) Chlorobenzene-d5 (IS3)	14.667	54	28554	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.306	65	99736	903.92	pg	0.00
Spiked Amount 1000.000			Recovery = 90.39%			
57) Toluene-d8 (SS2)	12.577	98	171122	1058.10	pg	0.00
Spiked Amount 1000.000			Recovery = 105.81%			
74) Bromofluorobenzene (SS3)	16.111	174	79182	982.87	pg	-0.03
Spiked Amount 1000.000			Recovery = 98.29%			
Target Compounds						Qvalue
2] * Propene	3.487	42	319	4.81	pg	# 22
3] * Dichlorodifluoromethane	3.543	85	270	1.25	pg	# 78
4] * Chloromethane	3.676	50	268	2.98	pg	# 78
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	3.954	54	24	0.36	pg	# 1
8] * Bromomethane	4.181	94	68	0.84	pg	# 24
9] * Chloroethane	4.311	64	114	2.66	pg	# 52
10] * Ethanol	4.394	45	4871	138.22	pg	93
11] * Acetonitrile	4.566	41	84	1.06	pg	# 1
12] * Acrolein	4.675	56	744	21.10	pg	# 75
13] * Acetone	4.784	58	8168	174.16	pg	# 60
14] * Trichlorofluoromethane	4.911	101	105	0.49	pg	# 26
15] * 2-Propanol (Isopropa...	4.983	45	3065	22.93	pg	97
16] * Acrylonitrile	5.096	53	93	1.33	pg	89
17] * 1,1-Dichloroethene	5.401	96	363	4.57	pg	# 71
18] tert-Butanol	5.488	59	186	1.76	pg	# 41
19] * Methylene Chloride	5.527	84	367	4.41	pg	84
20] * 3-Chloro-1-propene (...	5.600	41	75	1.04	pg	# 27
21] * Trichlorotrifluoroet...	5.746	151	51	0.60	pg	# 18
22] * Carbon Disulfide	5.785	76	6270	26.42	pg	# 93
23) * trans-1,2-Dichloroet...	0.000		0	N.D.		
24) * 1,1-Dichloroethane	0.000		0	N.D.		
25] * Methyl tert-Butyl Ether	6.564	73	66	0.50	pg	# 56
26] * Vinyl Acetate	6.654	86	327	24.31	pg	74
27] * 2-Butanone (MEK)	6.926	72	1019	24.26	pg	99
28] * cis-1,2-Dichloroethene	7.262	96	76	1.00	pg	# 18
29] DIPE	7.580	45	353	2.09	pg	# 81
30] * Ethyl Acetate	7.586	61	419	17.85	pg	87
31] * n-Hexane	7.567	57	288	3.42	pg	96
32) * Chloroform	0.000		0	N.D.		
34] * Tetrahydrofuran	8.085	71	53	1.66	pg	# 1
35) ETBE	0.000		0	N.D.		
36] * 1,2-Dichloroethane	8.431	62	87	0.75	pg	# 43
38] * 1,1,1-Trichloroethane	8.798	97	53	0.43	pg	# 59
39] * Benzene	9.292	78	1127	4.26	pg	# 76
40] Isopropyl Acetate	9.229	61	96	152.93	pg	# 34
41] 1-Butanol	9.250	56	1618	432.89	pg	# 100
42) * Carbon Tetrachloride	0.000		0	N.D.		
43] * Cyclohexane	9.646	84	60	0.75	pg	91
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	0.000		0	N.D.		

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062012.D
Acq On : 6 Nov 2020 20:14
Operator : WA/RVT
Sample : AS00852 SFC00163
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 08 05:47:23 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

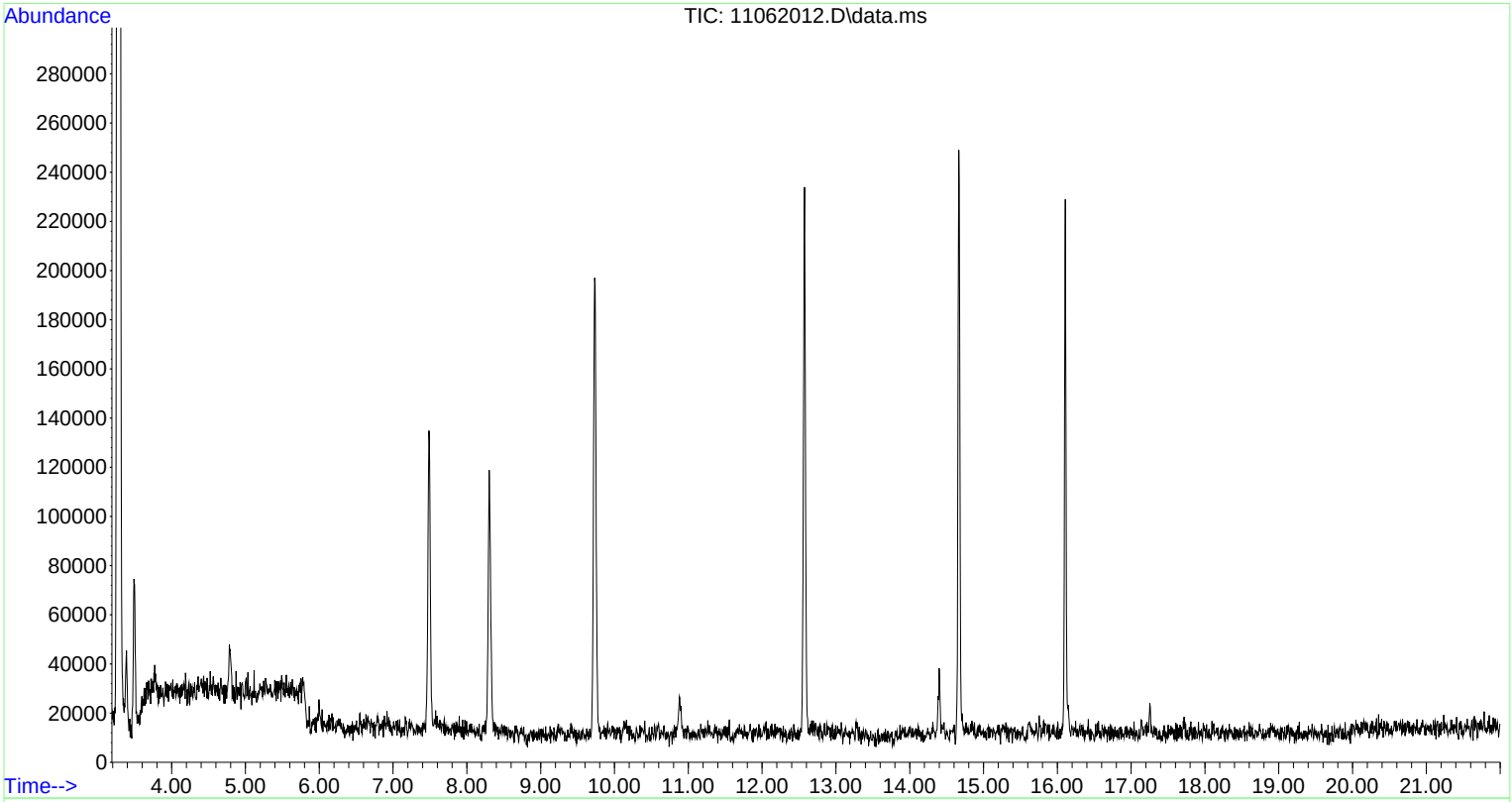
Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
48] * 1,4-Dioxane	10.599	88	429	6.43 pg		94
49] Isooctane	10.675	56	123	1.13 pg	#	1
50] * Methyl Methacrylate	10.875	69	93	1.21 pg	#	46
51] * n-Heptane	10.978	71	201	2.69 pg	#	44
52) * cis-1,3-Dichloropropene	0.000		0	N.D.		
53] * 4-Methyl-2-pentanone	11.666	58	938	20.60 pg	#	87
54] * trans-1,3-Dichloropr...	12.220	75	64	1.02 pg	#	1
55] * 1,1,2-Trichloroethane	12.333	97	75	1.02 pg	#	19
58] * Toluene	12.685	91	1798	9.09 pg		97
59] * 2-Hexanone	13.024	58	111	2.92 pg	#	35
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	13.881	85	64	1.76 pg		94
64) * Tetrachloroethene	0.000		0	N.D.		
65] * Chlorobenzene	14.714	112	50	0.33 pg	#	1
66] * Ethylbenzene	15.101	91	327	1.77 pg	#	73
67] * m- & p-Xylenes	15.266	91	803	5.41 pg		92
68) * Bromoform	0.000		0	N.D.		
69) Cyclohexanone	0.000		0	N.D.		
70] * Styrene	15.608	104	342	3.21 pg		96
71] * o-Xylene	15.705	91	374	2.42 pg		93
72] * n-Nonane	15.951	57	156	2.63 pg		90
73] * 1,1,2,2-Tetrachloroe...	15.762	83	138	1.38 pg	#	17
75) * Cumene	0.000		0	N.D.		
76) * alpha-Pinene	0.000		0	N.D.		
77] * n-Propylbenzene	16.692	91	134	0.56 pg	#	34
78] 3-Ethyltoluene	16.813	105	144	29.50 pg	#	84
79] * 4-Ethyltoluene	16.886	105	102	0.57 pg	#	44
80] * 1,3,5-Trimethylbenzene	16.930	105	67	0.42 pg	#	27
81] alpha-Methylstyrene	17.008	118	53	22.86 pg	#	21
82] 2-Ethyltoluene	17.046	105	71	26.60 pg	#	43
83] tert-Butylbenzene	17.245	134	252	6.41 pg	#	1
84] * 1,2,4-Trimethylbenzene	17.229	105	400	2.45 pg		95
85] * Benzyl Chloride	17.332	126	50	3.79 pg	#	1
86] * 1,3-Dichlorobenzene	17.396	146	131	1.04 pg	#	80
87] * 1,4-Dichlorobenzene	17.396	146	131	1.22 pg	#	80
88) n-Decane	0.000		0	N.D.		
89] sec-Butylbenzene	17.229	105	400	2.45 pg	#	13
90] 1,2,3-Trimethylbenzene	17.580	105	91	7.69 pg	#	65
91] p-Isopropyltoluene	17.591	134	160	3.05 pg		90
92) * 1,2-Dichlorobenzene	0.000		0	N.D.		
93] * D-Limonene	17.715	68	635	13.20 pg		96
94] n-Butylbenzene	17.928	134	52	1.10 pg	#	21
95] * 1,2-Dibromo-3-chloro...	18.058	157	67	1.52 pg	#	15
96] n-Undecane	18.391	85	60	47.13 pg	#	33
97] * 1,2,4-Trichlorobenzene	19.158	180	223	3.48 pg	#	65
98] * Naphthalene	19.257	128	428	2.83 pg	#	82
99] n-Dodecane	19.271	85	59	30.69 pg	#	76
100) * Hexachlorobutadiene	0.000		0	N.D.		

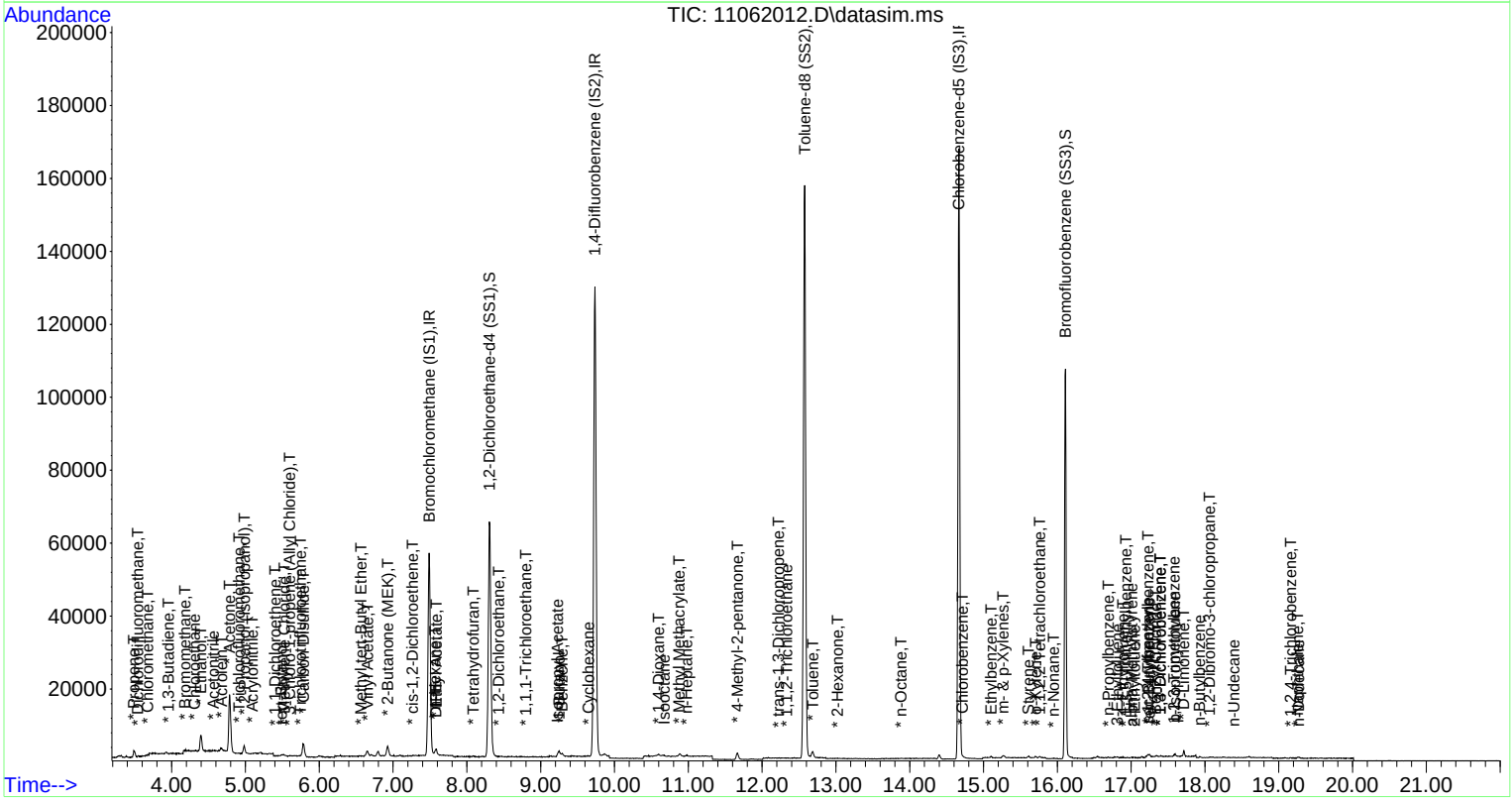
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062012.D
Acq On : 6 Nov 2020 20:14
Operator : WA/RVT
Sample : AS00852 SFC00163
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 08 05:47:23 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062013.D
Acq On : 6 Nov 2020 21:02
Operator : WA/RVT
Sample : AS00732 SFC00454
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 9 Sample Multiplier: 1

RVT 11/9/20

Quant Time: Nov 08 05:47:29 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane (IS1)	7.489	130	81433	1000.00	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.735	114	264898	1000.00	pg		0.01
56) Chlorobenzene-d5 (IS3)	14.667	54	36864	1000.00	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.306	65	109674	840.38	pg		0.00
Spiked Amount 1000.000			Recovery = 84.04%				
57) Toluene-d8 (SS2)	12.572	98	225004	1077.65	pg		0.00
Spiked Amount 1000.000			Recovery = 107.77%				
74) Bromofluorobenzene (SS3)	16.112	174	108860	1046.65	pg		-0.03
Spiked Amount 1000.000			Recovery = 104.67%				
Target Compounds							Qvalue
2] * Propene	3.496	42	55406	705.75	pg	#	1
3] * Dichlorodifluoromethane	3.534	85	352946	1378.81	pg		100
4] * Chloromethane	3.668	50	60705	571.12	pg		99
5] * 1,2-Dichloro-1,1,2,2...	3.753	85	9705	65.10	pg		98
6] * Vinyl Chloride	3.844	62	225	2.02	pg	#	1
7] * 1,3-Butadiene	3.959	54	708	8.93	pg	#	1
8] * Bromomethane	4.170	94	2432	25.25	pg		99
9] * Chloroethane	4.301	64	698	13.76	pg		94
10] * Ethanol	4.379	45	503881	12088.81	pg		100
11] * Acetonitrile	4.556	41	23501	249.83	pg		100
12] * Acrolein	4.670	56	5277	126.50	pg		94
13] * Acetone	4.769	58	1594833	28750.88	pg		100
14] * Trichlorofluoromethane	4.918	101	166776	664.52	pg		99
15] * 2-Propanol (Isopropa...	4.959	45	142509	901.56	pg		93
16] * Acrylonitrile	5.132	53	1024	12.37	pg	#	34
17] * 1,1-Dichloroethene	5.449	96	108	1.15	pg		94
18] tert-Butanol	5.498	59	11901	95.46	pg	#	77
19] * Methylene Chloride	5.527	84	107631	1094.10	pg		100
20] * 3-Chloro-1-propene (...	5.619	41	117	1.37	pg		93
21] * Trichlorotrifluoroet...	5.770	151	36135	358.53	pg		99
22] * Carbon Disulfide	5.785	76	14554	51.86	pg	#	83
23] * trans-1,2-Dichloroet...	6.308	96	92	1.09	pg	#	20
24] * 1,1-Dichloroethane	6.529	63	258	1.88	pg	#	79
25] * Methyl tert-Butyl Ether	6.594	73	264	1.69	pg	#	56
26] * Vinyl Acetate	6.630	86	9566	601.16	pg		85
27] * 2-Butanone (MEK)	6.896	72	442220	8900.75	pg	#	64
28] * cis-1,2-Dichloroethene	7.327	96	290	3.21	pg		99
29] DIPE	7.567	45	8379	41.88	pg		95
30] * Ethyl Acetate	7.567	61	9962	358.80	pg	#	78
31] * n-Hexane	7.574	57	107621	1081.68	pg		97
32] * Chloroform	7.625	83	9468	56.15	pg		98
34] * Tetrahydrofuran	8.060	71	3544	93.78	pg		93
35] ETBE	8.125	87	65	1.16	pg	#	39
36] * 1,2-Dichloroethane	8.431	62	6213	45.24	pg		93
38] * 1,1,1-Trichloroethane	8.738	97	555	4.15	pg	#	52
39] * Benzene	9.292	78	158885	550.30	pg		100
40] Isopropyl Acetate	9.292	61	1156	1688.66	pg	#	41
41] 1-Butanol	9.245	56	7626	1870.91	pg	#	100
42] * Carbon Tetrachloride	9.474	117	36375	286.13	pg		100
43] * Cyclohexane	9.636	84	74354	853.67	pg		95
44) TAME	0.000		0	N.D.			
45] * 1,2-Dichloropropane	10.288	63	1022	11.02	pg		95
46] * Bromodichloromethane	10.537	83	16485	117.93	pg	#	22
47] * Trichloroethene	10.572	130	2430	20.22	pg		99

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062013.D
Acq On : 6 Nov 2020 21:02
Operator : WA/RVT
Sample : AS00732 SFC00454
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 9 Sample Multiplier: 1

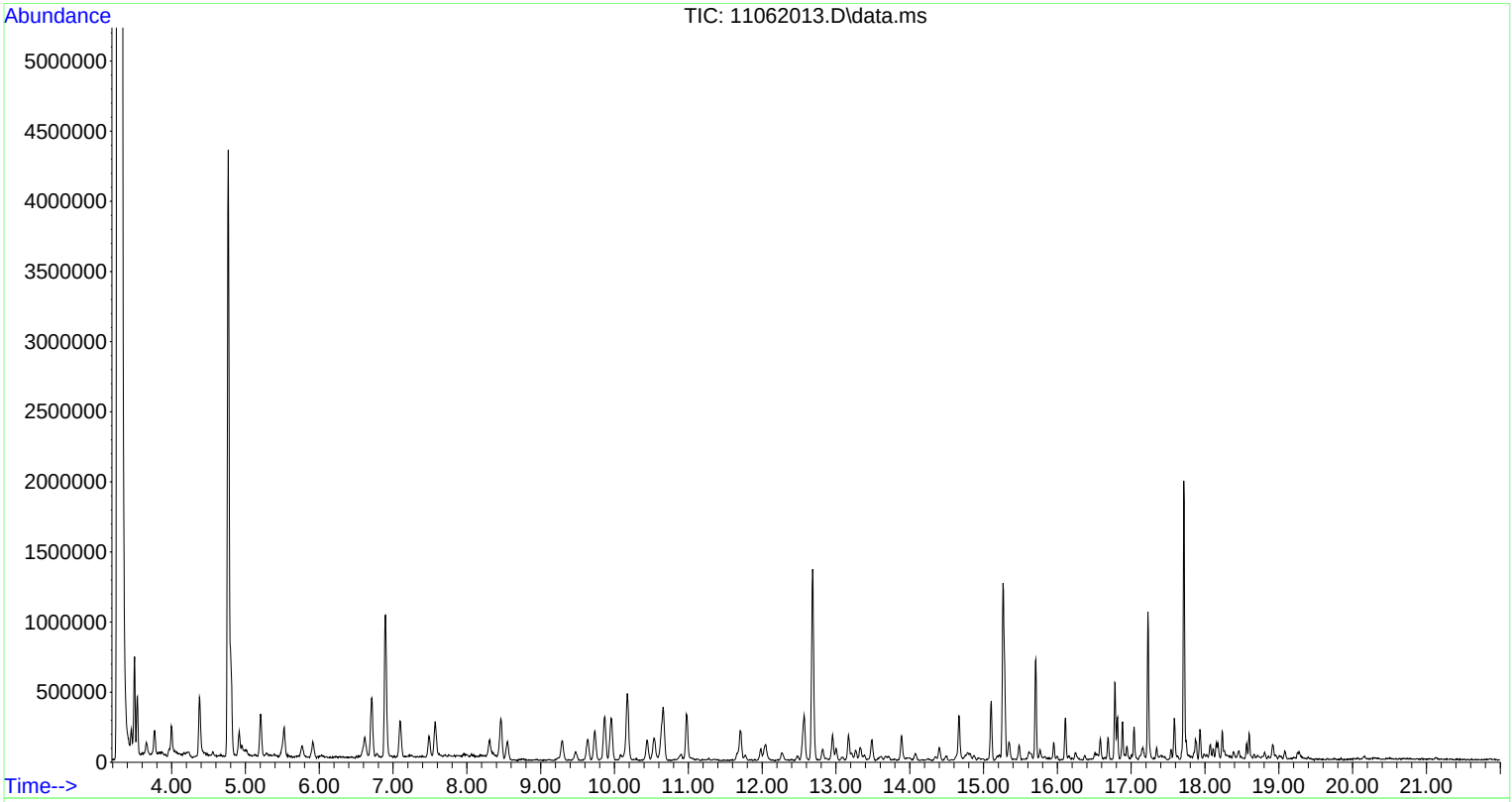
Quant Time: Nov 08 05:47:29 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

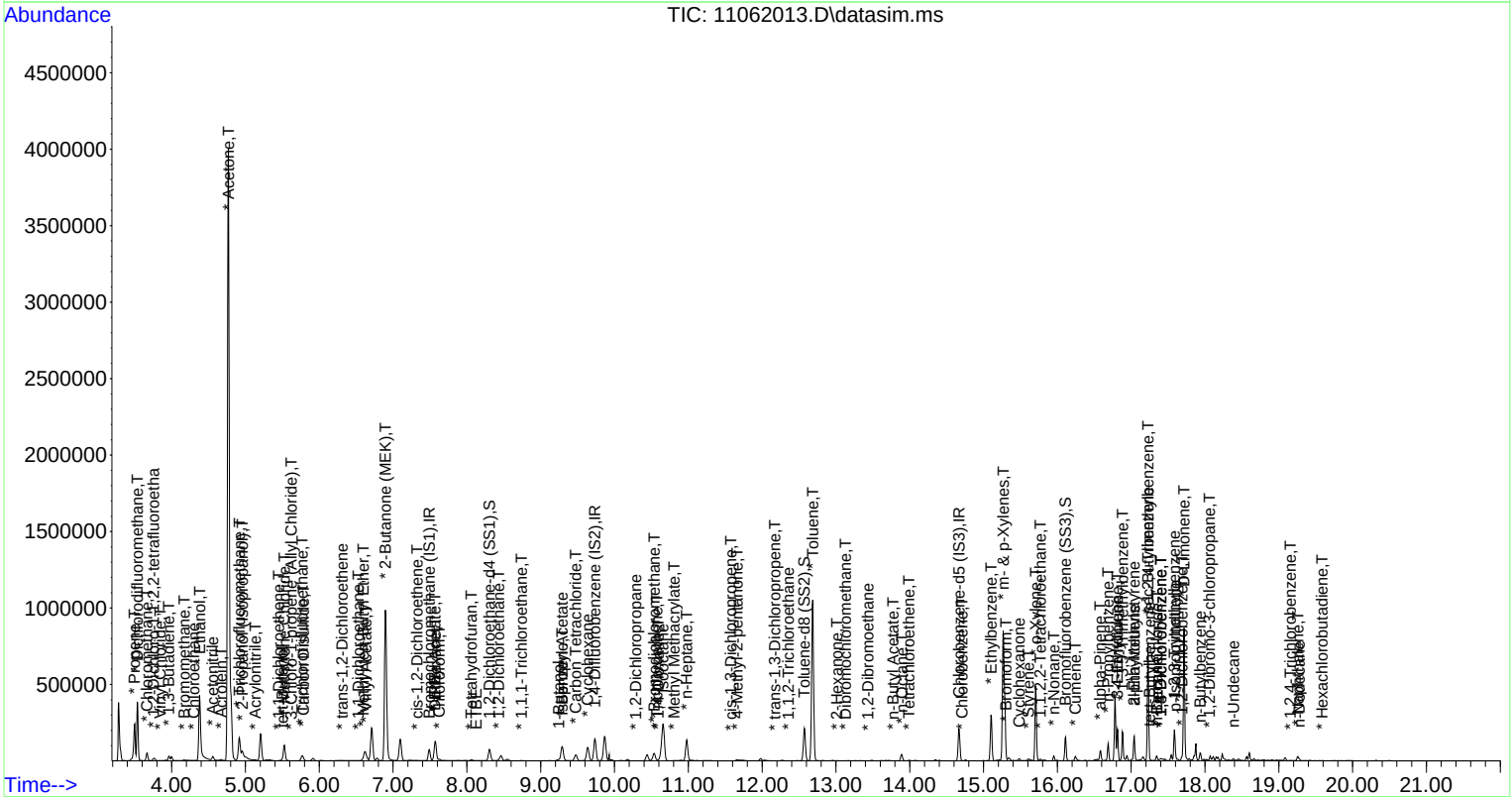
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48]	* 1,4-Dioxane	10.593	88	1011	13.91	pg	#	46
49]	Isooctane	10.655	56	185624	1568.59	pg	#	61
50]	* Methyl Methacrylate	10.806	69	1895	22.55	pg	#	57
51]	* n-Heptane	10.979	71	93203	1143.44	pg		99
52]	* cis-1,3-Dichloropropene	11.577	75	92	1.18	pg	#	1
53]	* 4-Methyl-2-pentanone	11.661	58	3898	78.51	pg		98
54]	* trans-1,3-Dichloropr...	12.172	75	82	1.20	pg	#	1
55]	* 1,1,2-Trichloroethane	12.355	97	166	2.07	pg	#	57
58]	* Toluene	12.686	91	1228320	4810.38	pg		100
59]	* 2-Hexanone	13.014	58	1619	33.01	pg		95
60]	* Dibromochloromethane	13.127	129	237	3.04	pg		89
61]	* 1,2-Dibromoethane	13.432	107	62	0.73	pg		97
62]	* n-Butyl Acetate	13.772	56	1482	38.06	pg		90
63]	* n-Octane	13.891	85	31650	674.14	pg		99
64]	* Tetrachloroethene	13.989	166	2771	27.37	pg		98
65]	* Chlorobenzene	14.707	112	727	3.74	pg	#	83
66]	* Ethylbenzene	15.101	91	318626	1335.33	pg		99
67]	* m- & p-Xylenes	15.267	91	1069460	5583.91	pg		97
68]	* Bromoform	15.306	173	1207	18.88	pg		99
69]	Cyclohexanone	15.483	98	10193	1623.88	pg	#	3
70]	* Styrene	15.609	104	9280	67.40	pg		100
71]	* o-Xylene	15.705	91	446288	2238.46	pg		100
72]	* n-Nonane	15.951	57	27494	359.46	pg		98
73]	* 1,1,2,2-Tetrachloroe...	15.768	83	3958	30.68	pg		96
75]	* Cumene	16.241	105	27650	100.75	pg		98
76]	* alpha-Pinene	16.581	93	42908	369.96	pg		95
77]	* n-Propylbenzene	16.688	91	110148	358.05	pg		100
78]	3-Ethyltoluene	16.814	105	157139	24934.19	pg		98
79]	* 4-Ethyltoluene	16.814	105	156504	674.11	pg		99
80]	* 1,3,5-Trimethylbenzene	16.882	105	126028	609.49	pg		99
81]	alpha-Methylstyrene	17.042	118	2793	932.92	pg	#	1
82]	2-Ethyltoluene	17.042	105	130029	37740.30	pg		98
83]	tert-Butylbenzene	17.251	134	1599	31.51	pg	#	1
84]	* 1,2,4-Trimethylbenzene	17.230	105	539494	2555.50	pg		90
85]	* Benzyl Chloride	17.348	126	115	6.75	pg	#	1
86]	* 1,3-Dichlorobenzene	17.402	146	9394	57.54	pg		99
87]	* 1,4-Dichlorobenzene	17.402	146	9387	67.59	pg		99
88]	n-Decane	17.348	85	8497	1002.79	pg	#	1
89]	sec-Butylbenzene	17.230	105	539370	2554.86	pg	#	54
90]	1,2,3-Trimethylbenzene	17.586	105	121700	7969.78	pg	#	1
91]	p-Isopropyltoluene	17.597	134	13225	195.44	pg	#	64
92]	* 1,2-Dichlorobenzene	17.688	146	214	1.31	pg		93
93]	* D-Limonene	17.715	68	225543	3631.51	pg		82
94]	n-Butylbenzene	17.935	134	35025	574.21	pg	#	1
95]	* 1,2-Dibromo-3-chloro...	18.059	157	80	1.40	pg	#	1
96]	n-Undecane	18.385	85	5114	3111.40	pg	#	43
97]	* 1,2,4-Trichlorobenzene	19.154	180	475	5.75	pg		83
98]	* Naphthalene	19.258	128	34515	176.59	pg		99
99]	n-Dodecane	19.276	85	2697	1086.66	pg	#	1
100]	* Hexachlorobutadiene	19.587	225	241	2.40	pg	#	41

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

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062013.D
Acq On : 6 Nov 2020 21:02
Operator : WA/RVT
Sample : AS00732 SFC00454
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 08 05:47:29 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062015.D
Acq On : 6 Nov 2020 22:28
Operator : WA/RVT
Sample : AS01266 SFC00209
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 11 Sample Multiplier: 1

RVT 11/9/20

Quant Time: Nov 08 05:47:41 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane (IS1)	7.489	130	71614	1000.00	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.735	114	232741	1000.00	pg		0.01
56) Chlorobenzene-d5 (IS3)	14.667	54	30040	1000.00	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.306	65	102299	891.34	pg		0.00
Spiked Amount 1000.000			Recovery = 89.13%				
57) Toluene-d8 (SS2)	12.577	98	174289	1024.37	pg		0.00
Spiked Amount 1000.000			Recovery = 102.44%				
74) Bromofluorobenzene (SS3)	16.111	174	85540	1009.27	pg		-0.03
Spiked Amount 1000.000			Recovery = 100.93%				
Target Compounds							Qvalue
2] * Propene	3.500	42	3777	54.71	pg	#	1
3] * Dichlorodifluoromethane	3.543	85	19756	87.76	pg		97
4] * Chloromethane	3.668	50	4661	49.86	pg		97
5] * 1,2-Dichloro-1,1,2,2...	3.753	85	686	5.23	pg	#	76
6] * Vinyl Chloride	3.798	62	52	0.53	pg	#	1
7] * 1,3-Butadiene	3.959	54	33	0.47	pg	#	1
8] * Bromomethane	4.181	94	298	3.52	pg		85
9] * Chloroethane	4.342	64	135	3.03	pg	#	46
10] * Ethanol	4.389	45	85738	2339.01	pg		99
11] * Acetonitrile	4.561	41	4826	58.34	pg		97
12] * Acrolein	4.670	56	1057	28.81	pg		91
13] * Acetone	4.774	58	121852	2497.88	pg		92
14] * Trichlorofluoromethane	4.917	101	10199	46.21	pg		99
15] * 2-Propanol (Isopropa...	4.977	45	19541	140.57	pg		90
16] * Acrylonitrile	5.197	53	234	3.21	pg		87
17] * 1,1-Dichloroethene	5.391	96	392	4.74	pg		98
18] tert-Butanol	5.493	59	1319	12.03	pg	#	81
19] * Methylene Chloride	5.517	84	14314	165.46	pg		100
20] * 3-Chloro-1-propene (...	5.580	41	93	1.24	pg	#	82
21] * Trichlorotrifluoroet...	5.760	151	2097	23.66	pg		86
22] * Carbon Disulfide	5.785	76	7266	29.44	pg		97
23) * trans-1,2-Dichloroet...	0.000		0	N.D.			
24] * 1,1-Dichloroethane	6.524	63	50	0.41	pg	#	43
25) * Methyl tert-Butyl Ether	0.000		0	N.D.			
26] * Vinyl Acetate	6.654	86	990	70.75	pg	#	38
27] * 2-Butanone (MEK)	6.911	72	17151	392.54	pg		90
28) * cis-1,2-Dichloroethene	0.000		0	N.D.			
29] DIPE	7.573	45	12952	73.60	pg	#	57
30] * Ethyl Acetate	7.573	61	13713	561.62	pg		96
31] * n-Hexane	7.573	57	2160	24.69	pg	#	86
32] * Chloroform	7.619	83	581	3.92	pg		88
34] * Tetrahydrofuran	8.069	71	236	7.10	pg	#	1
35) ETBE	0.000		0	N.D.			
36] * 1,2-Dichloroethane	8.426	62	79	0.65	pg	#	1
38] * 1,1,1-Trichloroethane	8.763	97	62	0.53	pg	#	60
39] * Benzene	9.292	78	7197	28.37	pg		95
40) Isopropyl Acetate	0.000		0	N.D.			
41] 1-Butanol	9.245	56	3245	906.10	pg	#	100
42] * Carbon Tetrachloride	9.474	117	2273	20.35	pg		92
43] * Cyclohexane	9.636	84	898	11.73	pg		87
44] TAME	10.061	87	54	1.63	pg	#	1
45] * 1,2-Dichloropropane	10.270	63	61	0.75	pg	#	27
46] * Bromodichloromethane	10.489	83	97	0.79	pg	#	18
47] * Trichloroethene	10.503	130	118	1.12	pg		85

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062015.D
Acq On : 6 Nov 2020 22:28
Operator : WA/RVT
Sample : AS01266 SFC00209
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 11 Sample Multiplier: 1

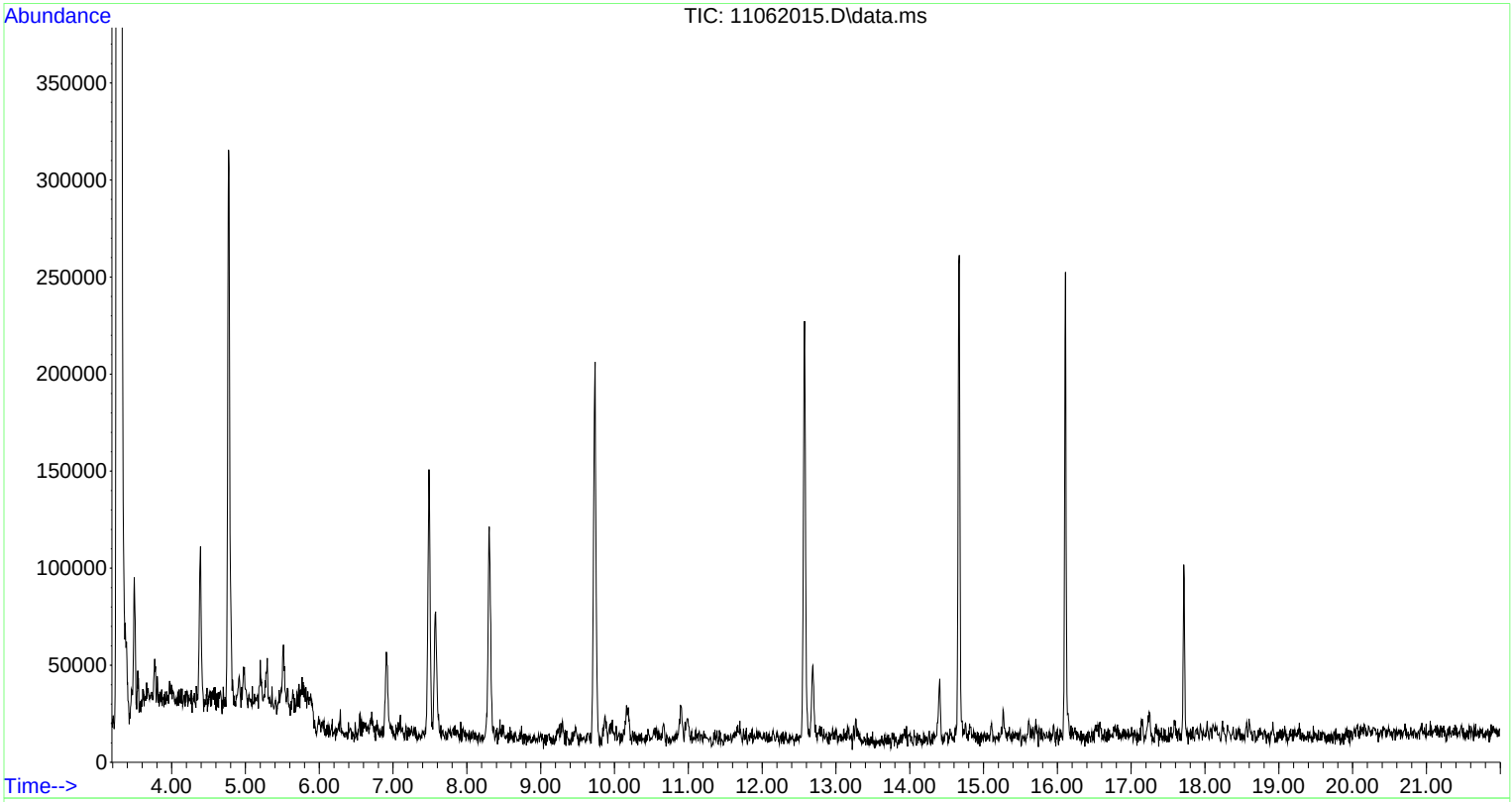
Quant Time: Nov 08 05:47:41 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

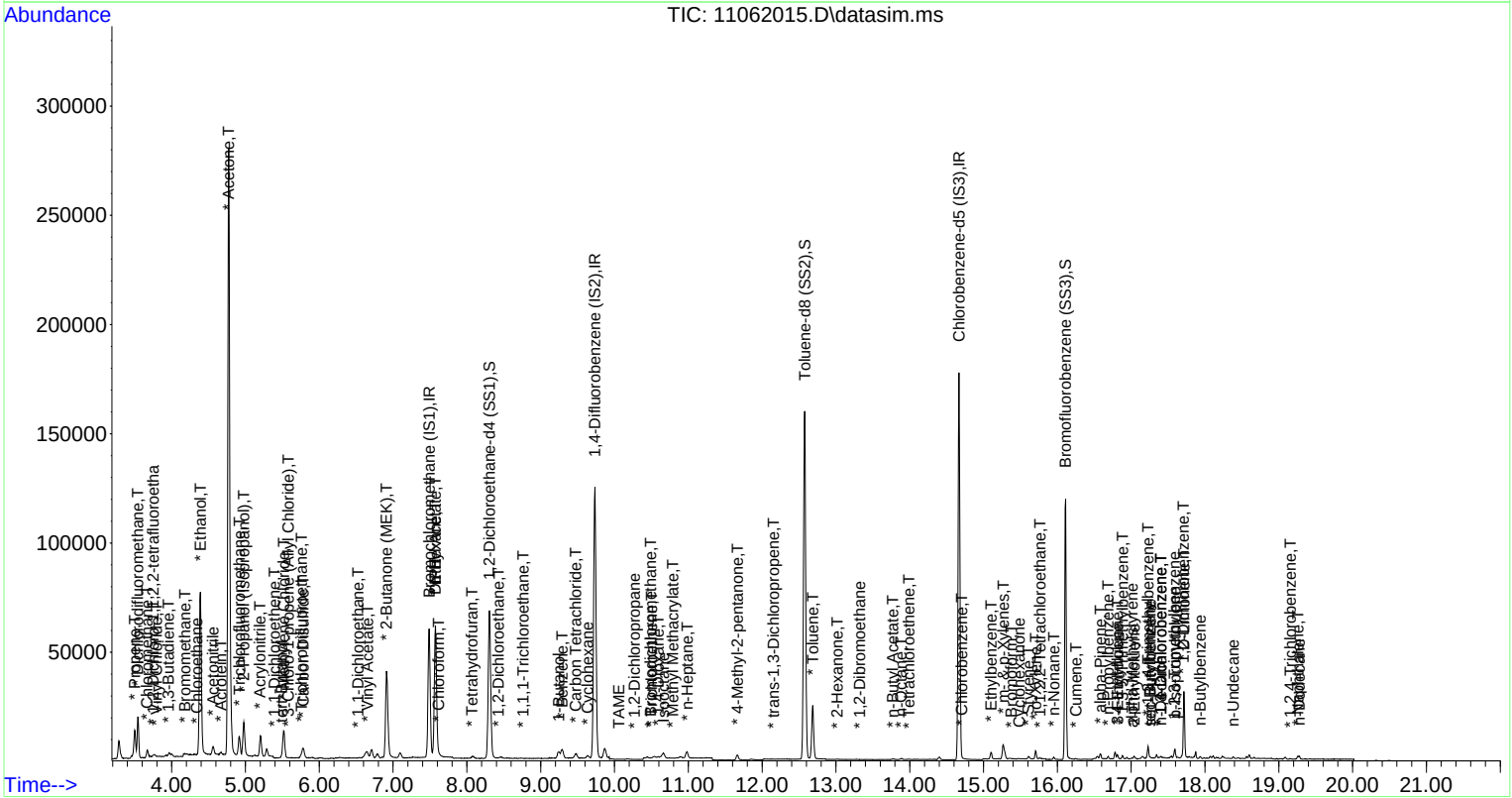
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48]	* 1,4-Dioxane	10.592	88	582	9.11	pg		92
49]	Isooctane	10.661	56	1794	17.25	pg	#	61
50]	* Methyl Methacrylate	10.792	69	107	1.45	pg	#	49
51]	* n-Heptane	10.985	71	2093	29.23	pg	#	76
52)	* cis-1,3-Dichloropropene	0.000		0	N.D.			
53]	* 4-Methyl-2-pentanone	11.666	58	1189	27.26	pg		99
54]	* trans-1,3-Dichloropr...	12.155	75	51	0.85	pg	#	43
55)	* 1,1,2-Trichloroethane	0.000		0	N.D.			
58]	* Toluene	12.685	91	28859	138.69	pg		100
59]	* 2-Hexanone	13.018	58	277	6.93	pg	#	55
60)	* Dibromochloromethane	0.000		0	N.D.			
61]	* 1,2-Dibromoethane	13.323	107	69	0.99	pg	#	79
62]	* n-Butyl Acetate	13.767	56	438	13.81	pg	#	63
63]	* n-Octane	13.881	85	355	9.28	pg	#	63
64]	* Tetrachloroethene	13.989	166	145	1.76	pg	#	10
65]	* Chlorobenzene	14.707	112	116	0.73	pg	#	42
66]	* Ethylbenzene	15.101	91	3326	17.11	pg		98
67]	* m- & p-Xylenes	15.266	91	8566	54.89	pg		96
68]	* Bromoform	15.375	173	54	1.04	pg	#	40
69]	Cyclohexanone	15.483	98	98	19.16	pg	#	25
70]	* Styrene	15.608	104	663	5.91	pg		94
71]	* o-Xylene	15.705	91	3194	19.66	pg		94
72]	* n-Nonane	15.951	57	946	15.18	pg		92
73]	* 1,1,2,2-Tetrachloroe...	15.762	83	117	1.11	pg	#	17
75]	* Cumene	16.251	105	300	1.34	pg		94
76]	* alpha-Pinene	16.585	93	1663	17.60	pg		98
77]	* n-Propylbenzene	16.687	91	1142	4.56	pg		99
78]	3-Ethyltoluene	16.818	105	1241	241.65	pg		97
79]	* 4-Ethyltoluene	16.818	105	1208	6.39	pg		91
80]	* 1,3,5-Trimethylbenzene	16.881	105	996	5.91	pg		97
81]	alpha-Methylstyrene	17.012	118	178	72.96	pg	#	59
82]	2-Ethyltoluene	17.041	105	1152	410.32	pg		96
83]	tert-Butylbenzene	17.256	134	283	6.84	pg	#	34
84]	* 1,2,4-Trimethylbenzene	17.229	105	3875	22.52	pg		91
85)	* Benzyl Chloride	0.000		0	N.D.			
86]	* 1,3-Dichlorobenzene	17.402	146	606	4.56	pg		98
87]	* 1,4-Dichlorobenzene	17.402	146	605	5.35	pg		98
88]	n-Decane	17.402	85	51	7.39	pg	#	1
89]	sec-Butylbenzene	17.262	105	79	0.46	pg	#	1
90]	1,2,3-Trimethylbenzene	17.585	105	1510	121.35	pg	#	1
91]	p-Isopropyltoluene	17.596	134	676	12.26	pg		97
92]	* 1,2-Dichlorobenzene	17.710	146	66	0.50	pg	#	18
93]	* D-Limonene	17.715	68	11586	228.93	pg		98
94]	n-Butylbenzene	17.934	134	611	12.29	pg	#	1
95)	* 1,2-Dibromo-3-chloro...	0.000		0	N.D.			
96]	n-Undecane	18.385	85	324	241.90	pg	#	57
97]	* 1,2,4-Trichlorobenzene	19.158	180	126	1.87	pg		95
98]	* Naphthalene	19.257	128	1739	10.92	pg	#	92
99]	n-Dodecane	19.276	85	320	158.22	pg	#	4
100)	* Hexachlorobutadiene	0.000		0	N.D.			

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

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062015.D
Acq On : 6 Nov 2020 22:28
Operator : WA/RVT
Sample : AS01266 SFC00209
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 08 05:47:41 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092019.D
Acq On : 9 Nov 2020 22:26
Operator : WA/RVT
Sample : SC01780
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

RVT 11/10/20

Quant Time: Nov 10 06:40:55 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane (IS1)	7.489	130	78930	1000.00	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.725	114	276880	1000.00	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.674	54	34313	1000.00	pg		0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.301	65	109952	869.22	pg		0.00
Spiked Amount 1000.000			Recovery = 86.92%				
57) Toluene-d8 (SS2)	12.577	98	203227	1045.71	pg		0.00
Spiked Amount 1000.000			Recovery = 104.57%				
74) Bromofluorobenzene (SS3)	16.122	174	78626	812.16	pg		-0.02
Spiked Amount 1000.000			Recovery = 81.22%				
Target Compounds							Qvalue
2] * Propene	3.504	42	2234	29.36	pg	#	1
3] * Dichlorodifluoromethane	3.547	85	9352	37.69	pg		100
4] * Chloromethane	3.681	50	1918	18.62	pg		97
5] * 1,2-Dichloro-1,1,2,2...	3.758	85	393	2.72	pg	#	78
6] * Vinyl Chloride	3.803	62	102	0.94	pg	#	39
7] * 1,3-Butadiene	3.954	54	24	0.31	pg	#	1
8] * Bromomethane	4.165	94	118	1.26	pg	#	2
9) * Chloroethane	0.000		0	N.D.			
10] * Ethanol	4.389	45	60361	1494.07	pg		99
11] * Acetonitrile	4.561	41	2926	32.09	pg		91
12] * Acrolein	4.670	56	711	17.58	pg		98
13] * Acetone	4.779	58	51540	958.60	pg		94
14] * Trichlorofluoromethane	4.918	101	4739	19.48	pg		99
15] * 2-Propanol (Isopropa...	4.977	45	34438	224.78	pg		89
16] * Acrylonitrile	5.138	53	75	0.93	pg	#	7
17] * 1,1-Dichloroethene	5.459	96	54	0.59	pg	#	1
18] tert-Butanol	5.488	59	1641	13.58	pg		91
19] * Methylene Chloride	5.517	84	17838	187.08	pg		99
20] * 3-Chloro-1-propene (...	5.566	41	100	1.21	pg	#	27
21] * Trichlorotrifluoroet...	5.770	151	1096	11.22	pg		90
22] * Carbon Disulfide	5.785	76	37017	136.08	pg		98
23) * trans-1,2-Dichloroet...	0.000		0	N.D.			
24] * 1,1-Dichloroethane	6.519	63	89	0.67	pg	#	6
25] * Methyl tert-Butyl Ether	6.544	73	907	5.98	pg	#	76
26] * Vinyl Acetate	6.650	86	2548	165.20	pg	#	6
27] * 2-Butanone (MEK)	6.911	72	22029	457.45	pg		90
28] * cis-1,2-Dichloroethene	7.379	96	59	0.67	pg	#	18
29] DIPE	7.574	45	6370	32.84	pg	#	53
30] * Ethyl Acetate	7.574	61	6079	225.89	pg		94
31] * n-Hexane	7.567	57	935	9.70	pg		100
32] * Chloroform	7.626	83	319	1.95	pg	#	75
34] * Tetrahydrofuran	8.070	71	215	5.87	pg	#	26
35] ETBE	8.150	87	50	0.92	pg	#	25
36] * 1,2-Dichloroethane	8.426	62	113	0.85	pg	#	59
38) * 1,1,1-Trichloroethane	0.000		0	N.D.			
39] * Benzene	9.282	78	3939	13.05	pg		96
40) Isopropyl Acetate	0.000		0	N.D.			
41] 1-Butanol	9.224	56	39041	9163.56	pg	#	100
42] * Carbon Tetrachloride	9.469	117	927	6.98	pg		90
43] * Cyclohexane	9.641	84	107	1.18	pg	#	1
44] TAME	10.090	87	109	2.77	pg	#	1
45) * 1,2-Dichloropropane	0.000		0	N.D.			
46] * Bromodichloromethane	10.538	83	105	0.72	pg	#	18
47) * Trichloroethene	0.000		0	N.D.			

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092019.D
Acq On : 9 Nov 2020 22:26
Operator : WA/RVT
Sample : SC01780
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 10 06:40:55 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

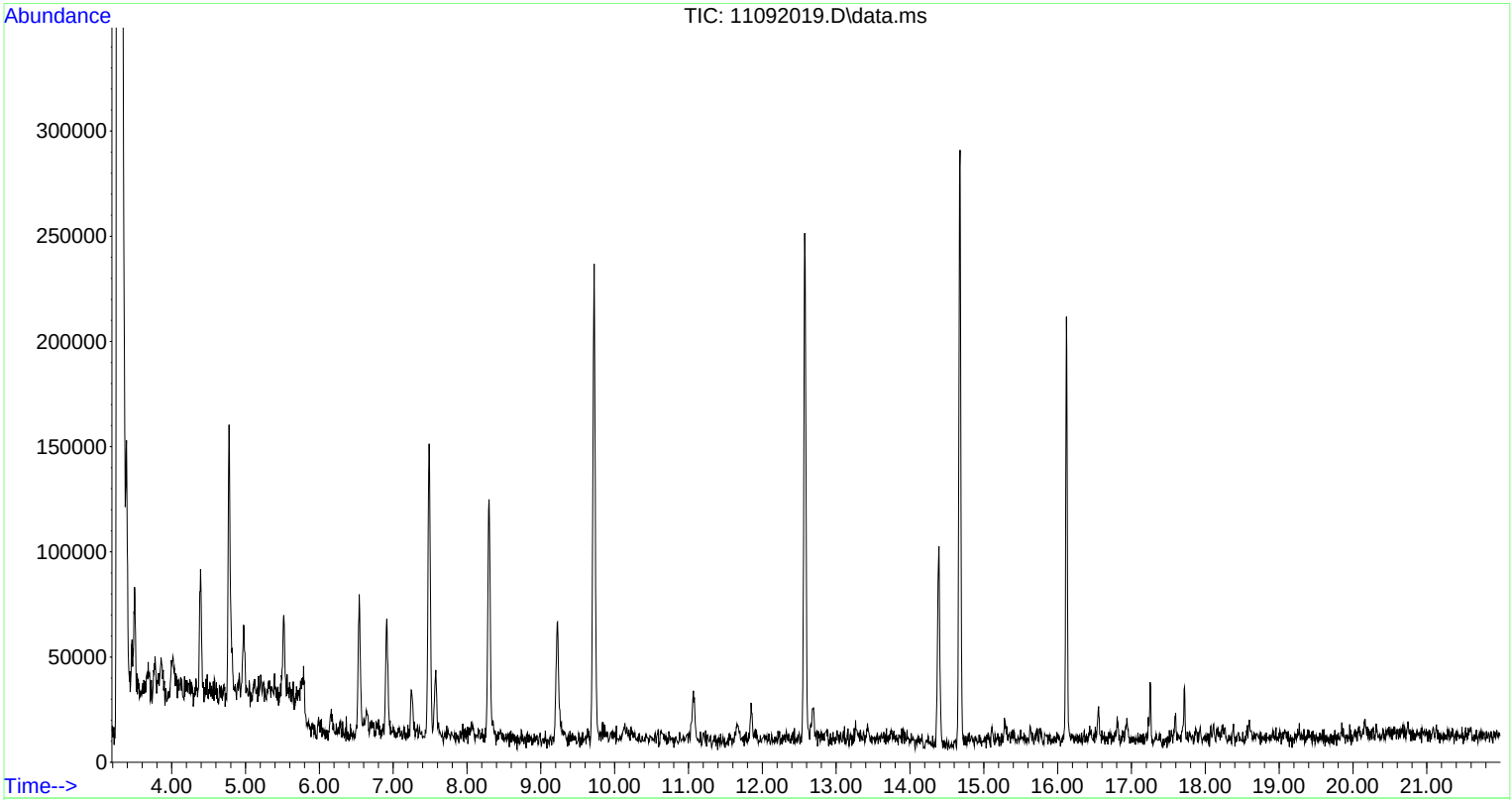
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48] * 1,4-Dioxane	10.593	88	620	8.16	pg	#	66
49] Isooctane	10.662	56	337	2.72	pg	#	1
50] * Methyl Methacrylate	10.841	69	55	0.63	pg	#	1
51] * n-Heptane	10.965	71	469	5.50	pg	#	78
52) * cis-1,3-Dichloropropene	0.000		0	N.D.			
53] * 4-Methyl-2-pentanone	11.661	58	2378	45.82	pg		94
54) * trans-1,3-Dichloropr...	0.000		0	N.D.			
55) * 1,1,2-Trichloroethane	0.000		0	N.D.			
58] * Toluene	12.686	91	14423	60.68	pg		100
59] * 2-Hexanone	13.019	58	842	18.44	pg	#	75
60] * Dibromochloromethane	13.117	129	104	1.43	pg	#	11
61) * 1,2-Dibromoethane	0.000		0	N.D.			
62] * n-Butyl Acetate	13.747	56	969	26.74	pg		94
63] * n-Octane	13.891	85	54	1.24	pg	#	8
64] * Tetrachloroethene	13.958	166	78	0.83	pg		86
65] * Chlorobenzene	14.714	112	54	0.30	pg	#	1
66] * Ethylbenzene	15.118	91	2480	11.17	pg		94
67] * m- & p-Xylenes	15.284	91	5805	32.56	pg		94
68) * Bromoform	0.000		0	N.D.			
69) Cyclohexanone	0.000		0	N.D.			
70] * Styrene	15.626	104	988	7.71	pg		90
71] * o-Xylene	15.723	91	2036	10.97	pg		96
72] * n-Nonane	15.962	57	229	3.22	pg		91
73) * 1,1,2,2-Tetrachloroe...	0.000		0	N.D.			
75] * Cumene	16.293	105	104	0.41	pg	#	48
76] * alpha-Pinene	16.586	93	213	1.97	pg	#	60
77] * n-Propylbenzene	16.697	91	834	2.91	pg	#	89
78] 3-Ethyltoluene	16.819	105	1010	172.18	pg		95
79] * 4-Ethyltoluene	16.819	105	1010	4.67	pg		99
80] * 1,3,5-Trimethylbenzene	16.891	105	908	4.72	pg		94
81] alpha-Methylstyrene	17.042	118	68	24.40	pg	#	1
82] 2-Ethyltoluene	17.047	105	835	260.37	pg	#	88
83] tert-Butylbenzene	17.251	134	356	7.54	pg	#	1
84] * 1,2,4-Trimethylbenzene	17.230	105	3388	17.24	pg		94
85) * Benzyl Chloride	0.000		0	N.D.			
86] * 1,3-Dichlorobenzene	17.408	146	723	4.76	pg		99
87] * 1,4-Dichlorobenzene	17.408	146	723	5.59	pg		99
88] n-Decane	17.354	85	186	23.58	pg	#	1
89] sec-Butylbenzene	17.230	105	3388	17.24	pg	#	76
90] 1,2,3-Trimethylbenzene	17.651	105	57	4.01	pg	#	22
91] p-Isopropyltoluene	17.597	134	1310	20.80	pg		99
92] * 1,2-Dichlorobenzene	17.688	146	64	0.42	pg	#	18
93] * D-Limonene	17.715	68	3104	53.69	pg		92
94] n-Butylbenzene	17.935	134	570	10.04	pg	#	1
95) * 1,2-Dibromo-3-chloro...	0.000		0	N.D.			
96] n-Undecane	18.385	85	329	215.05	pg	#	18
97) * 1,2,4-Trichlorobenzene	0.000		0	N.D.			
98] * Naphthalene	19.253	128	1783	9.80	pg		97
99] n-Dodecane	19.277	85	359	155.40	pg	#	13
100) * Hexachlorobutadiene	0.000		0	N.D.			

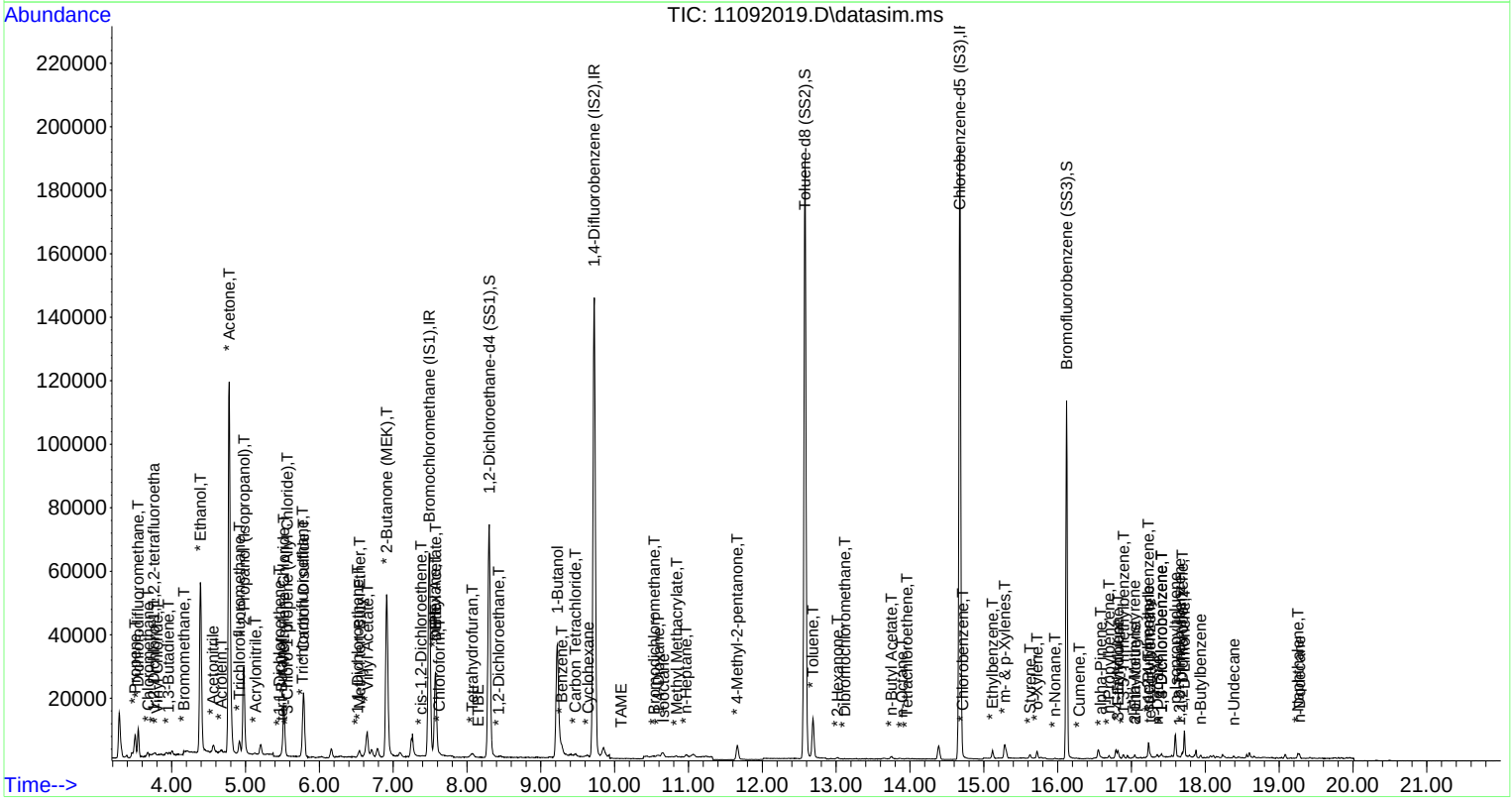
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092019.D
Acq On : 9 Nov 2020 22:26
Operator : WA/RVT
Sample : SC01780
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 10 06:40:55 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092023.D
Acq On : 10 Nov 2020 1:41
Operator : WA/RVT
Sample : AC01623
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 201 Sample Multiplier: 1

RVT 11/10/20

Quant Time: Nov 10 06:41:23 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.483	130	75310	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.719	114	255786	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.654	54	32027	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.296	65	104001	861.70	pg	0.00
Spiked Amount 1000.000			Recovery = 86.17%			
57) Toluene-d8 (SS2)	12.577	98	185451	1022.35	pg	0.00
Spiked Amount 1000.000			Recovery = 102.24%			
74) Bromofluorobenzene (SS3)	16.122	174	72108	798.00	pg	-0.02
Spiked Amount 1000.000			Recovery = 79.80%			
Target Compounds						Qvalue
2] * Propene	3.470	42	55	0.76	pg	# 1
3] * Dichlorodifluoromethane	3.539	85	146	0.62	pg	# 42
4] * Chloromethane	3.681	50	203	2.07	pg	99
5] * 1,2-Dichloro-1,1,2,2...	3.668	85	58	0.42	pg	# 1
6] * Vinyl Chloride	3.813	62	52	0.50	pg	# 1
7] * 1,3-Butadiene	3.949	54	29	0.40	pg	# 1
8] * Bromomethane	4.176	94	92	1.03	pg	# 77
9] * Chloroethane	4.316	64	89	1.90	pg	# 1
10] * Ethanol	4.389	45	1109	28.77	pg	95
11] * Acetonitrile	4.561	41	293	3.37	pg	# 12
12] * Acrolein	4.670	56	1100	28.51	pg	87
13] * Acetone	4.779	58	13735	267.74	pg	# 50
14] * Trichlorofluoromethane	4.918	101	524	2.26	pg	# 40
15) * 2-Propanol (Isopropa...	0.000		0	N.D.		
16] * Acrylonitrile	5.143	53	156	2.04	pg	90
17] * 1,1-Dichloroethene	5.425	96	134	1.54	pg	# 65
18] tert-Butanol	5.493	59	206	1.79	pg	# 27
19] * Methylene Chloride	5.522	84	736	8.09	pg	91
20] * 3-Chloro-1-propene (...	5.581	41	87	1.10	pg	86
21] * Trichlorotrifluoroet...	5.746	151	57	0.61	pg	# 18
22] * Carbon Disulfide	5.785	76	6791	26.16	pg	98
23) * trans-1,2-Dichloroet...	0.000		0	N.D.		
24] * 1,1-Dichloroethane	6.514	63	97	0.77	pg	# 61
25) * Methyl tert-Butyl Ether	0.000		0	N.D.		
26] * Vinyl Acetate	6.640	86	1028	69.86	pg	57
27] * 2-Butanone (MEK)	6.916	72	1456	31.69	pg	83
28) * cis-1,2-Dichloroethene	0.000		0	N.D.		
29] DIPE	7.574	45	153	0.83	pg	# 50
30] * Ethyl Acetate	7.535	61	75	2.92	pg	# 11
31] * n-Hexane	7.574	57	133	1.45	pg	# 1
32] * Chloroform	7.632	83	57	0.37	pg	# 29
34) * Tetrahydrofuran	0.000		0	N.D.		
35) ETBE	0.000		0	N.D.		
36] * 1,2-Dichloroethane	8.416	62	54	0.43	pg	# 1
38] * 1,1,1-Trichloroethane	8.748	97	52	0.40	pg	# 54
39] * Benzene	9.271	78	1033	3.71	pg	100
40] Isopropyl Acetate	9.224	61	70	105.90	pg	# 34
41] 1-Butanol	9.245	56	389	98.83	pg	# 100
42] * Carbon Tetrachloride	9.454	117	95	0.77	pg	# 64
43) * Cyclohexane	0.000		0	N.D.		
44) TAME	0.000		0	N.D.		
45] * 1,2-Dichloropropane	10.265	63	54	0.60	pg	# 27
46) * Bromodichloromethane	0.000		0	N.D.		
47] * Trichloroethene	10.558	130	57	0.49	pg	# 1

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092023.D
Acq On : 10 Nov 2020 1:41
Operator : WA/RVT
Sample : AC01623
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 201 Sample Multiplier: 1

Quant Time: Nov 10 06:41:23 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

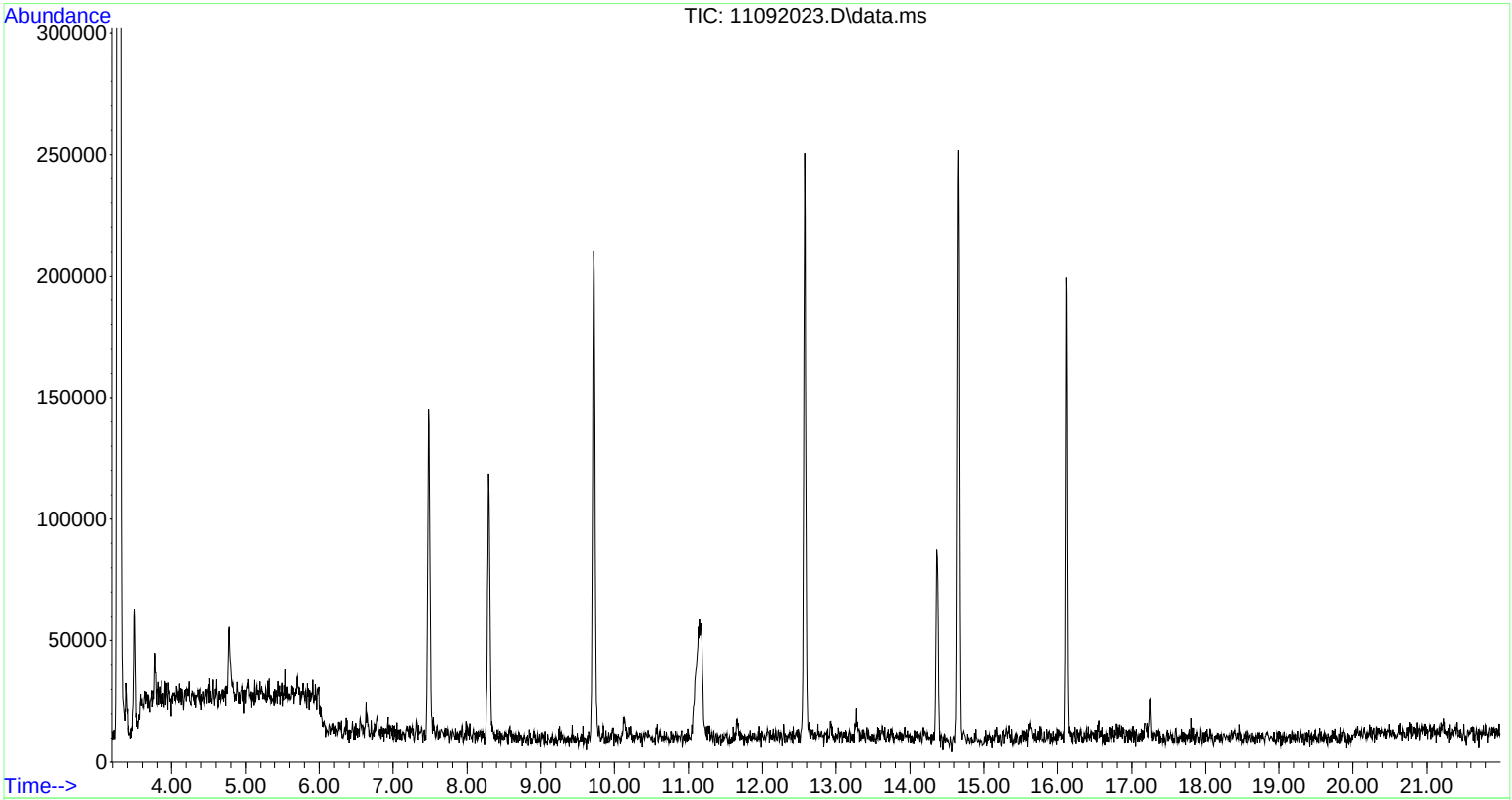
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48] * 1,4-Dioxane	10.558	88	95	1.35	pg	#	73
49] Isooctane	10.648	56	117	1.02	pg		92
50] * Methyl Methacrylate	10.793	69	71	0.88	pg	#	37
51] * n-Heptane	10.937	71	106	1.35	pg	#	44
52) * cis-1,3-Dichloropropene	0.000		0	N.D.			
53] * 4-Methyl-2-pentanone	11.661	58	1361	28.39	pg		94
54) * trans-1,3-Dichloropr...	0.000		0	N.D.			
55) * 1,1,2-Trichloroethane	0.000		0	N.D.			
58] * Toluene	12.686	91	956	4.31	pg		90
59] * 2-Hexanone	13.014	58	62	1.46	pg	#	55
60) * Dibromochloromethane	0.000		0	N.D.			
61) * 1,2-Dibromoethane	0.000		0	N.D.			
62] * n-Butyl Acetate	13.736	56	55	1.63	pg	#	32
63) * n-Octane	0.000		0	N.D.			
64] * Tetrachloroethene	13.953	166	78	0.89	pg	#	10
65] * Chlorobenzene	14.707	112	95	0.56	pg	#	33
66] * Ethylbenzene	15.113	91	123	0.59	pg	#	58
67] * m- & p-Xylenes	15.284	91	449	2.70	pg	#	84
68] * Bromoform	15.255	173	60	1.08	pg	#	1
69) Cyclohexanone	0.000		0	N.D.			
70] * Styrene	15.620	104	156	1.30	pg		92
71] * o-Xylene	15.728	91	106	0.61	pg	#	1
72] * n-Nonane	15.977	57	59	0.89	pg	#	33
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	16.697	91	57	0.21	pg	#	52
78] 3-Ethyltoluene	16.790	105	188	34.34	pg		95
79] * 4-Ethyltoluene	16.790	105	188	0.93	pg		91
80] * 1,3,5-Trimethylbenzene	16.882	105	72	0.40	pg	#	27
81) alpha-Methylstyrene	0.000		0	N.D.			
82] 2-Ethyltoluene	17.052	105	104	34.74	pg	#	43
83] tert-Butylbenzene	17.262	134	258	5.85	pg	#	1
84] * 1,2,4-Trimethylbenzene	17.230	105	284	1.55	pg	#	65
85] * Benzyl Chloride	17.354	126	51	3.44	pg	#	1
86] * 1,3-Dichlorobenzene	17.354	146	110	0.78	pg	#	43
87] * 1,4-Dichlorobenzene	17.408	146	238	1.97	pg	#	63
88] n-Decane	17.440	85	63	8.56	pg	#	1
89] sec-Butylbenzene	17.230	105	307	1.67	pg	#	54
90] 1,2,3-Trimethylbenzene	17.591	105	66	4.97	pg	#	1
91] p-Isopropyltoluene	17.591	134	90	1.53	pg		98
92] * 1,2-Dichlorobenzene	17.688	146	109	0.77	pg		98
93] * D-Limonene	17.796	68	62	1.15	pg		84
94] n-Butylbenzene	17.928	134	62	1.17	pg	#	23
95) * 1,2-Dibromo-3-chloro...	0.000		0	N.D.			
96) n-Undecane	0.000		0	N.D.			
97] * 1,2,4-Trichlorobenzene	19.159	180	155	2.16	pg		84
98] * Naphthalene	19.253	128	639	3.76	pg	#	84
99] n-Dodecane	19.267	85	61	28.29	pg	#	69
100] * Hexachlorobutadiene	19.583	225	60	0.69	pg	#	41

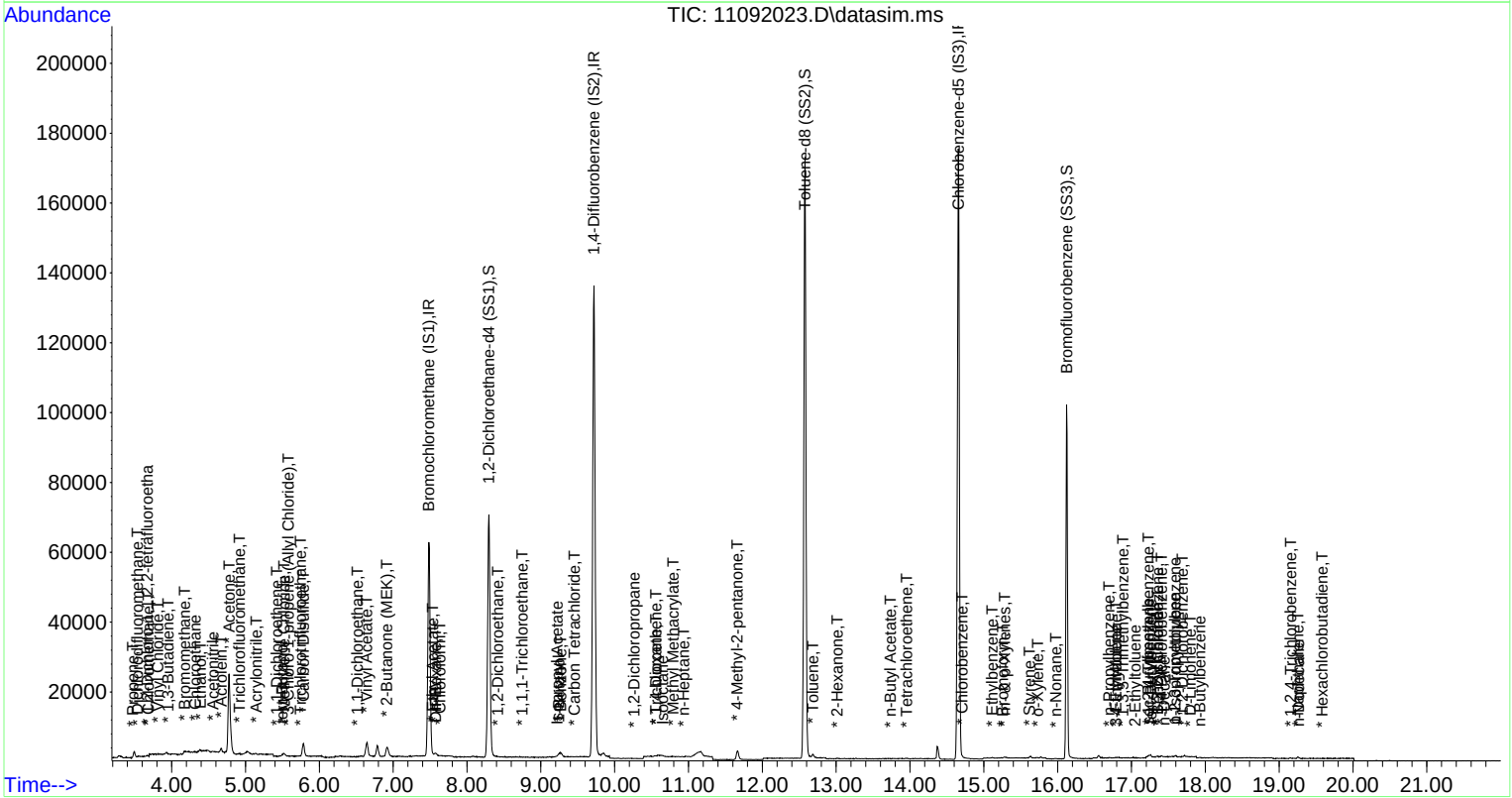
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\09\
Data File : 11092023.D
Acq On : 10 Nov 2020 1:41
Operator : WA/RVT
Sample : AC01623
Misc : 112262 (Sig #1); S34-11092001 (Sig #2)
ALS Vial : 201 Sample Multiplier: 1

Quant Time: Nov 10 06:41:23 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062016.D
Acq On : 6 Nov 2020 23:10
Operator : WA/RVT
Sample : AS01085 SFC00180
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

RVT 11/9/20

Quant Time: Nov 08 05:47:47 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane (IS1)	7.489	130	68662	1000.00	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.735	114	234265	1000.00	pg		0.01
56) Chlorobenzene-d5 (IS3)	14.667	54	28580	1000.00	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.306	65	100312	911.60	pg		0.00
Spiked Amount 1000.000			Recovery = 91.16%				
57) Toluene-d8 (SS2)	12.577	98	171082	1056.89	pg		0.00
Spiked Amount 1000.000			Recovery = 105.69%				
74) Bromofluorobenzene (SS3)	16.111	174	81617	1012.17	pg		-0.03
Spiked Amount 1000.000			Recovery = 101.22%				
Target Compounds							Qvalue
2] * Propene	3.500	42	6480	97.89	pg	#	1
3] * Dichlorodifluoromethane	3.543	85	16187	75.00	pg		98
4] * Chloromethane	3.676	50	3803	42.43	pg		94
5] * 1,2-Dichloro-1,1,2,2...	3.753	85	636	5.06	pg	#	61
6] * Vinyl Chloride	3.818	62	99	1.05	pg	#	1
7] * 1,3-Butadiene	3.944	54	51	0.76	pg	#	1
8] * Bromomethane	4.217	94	77	0.95	pg		95
9) * Chloroethane	0.000		0	N.D.			
10] * Ethanol	4.389	45	68474	1948.34	pg		99
11] * Acetonitrile	4.566	41	2880	36.31	pg		91
12] * Acrolein	4.670	56	913	25.96	pg		100
13] * Acetone	4.774	58	181462	3879.77	pg		97
14] * Trichlorofluoromethane	4.917	101	7891	37.29	pg		94
15] * 2-Propanol (Isopropa...	4.977	45	52829	396.38	pg		96
16] * Acrylonitrile	5.137	53	115	1.65	pg		89
17] * 1,1-Dichloroethene	5.381	96	349	4.40	pg		86
18] tert-Butanol	5.498	59	1469	13.97	pg	#	79
19] * Methylene Chloride	5.517	84	16309	196.62	pg		98
20] * 3-Chloro-1-propene (...	5.614	41	91	1.27	pg	#	74
21] * Trichlorotrifluoroet...	5.765	151	1660	19.53	pg		97
22] * Carbon Disulfide	5.785	76	7231	30.56	pg		98
23) * trans-1,2-Dichloroet...	0.000		0	N.D.			
24) * 1,1-Dichloroethane	0.000		0	N.D.			
25] * Methyl tert-Butyl Ether	6.574	73	70	0.53	pg	#	56
26] * Vinyl Acetate	6.655	86	402	29.96	pg	#	1
27] * 2-Butanone (MEK)	6.911	72	25018	597.21	pg		92
28] * cis-1,2-Dichloroethene	7.301	96	72	0.95	pg	#	42
29] DIPE	7.574	45	8713	51.64	pg	#	58
30] * Ethyl Acetate	7.574	61	9086	388.12	pg		95
31] * n-Hexane	7.574	57	2982	35.55	pg		97
32] * Chloroform	7.625	83	643	4.52	pg		86
34] * Tetrahydrofuran	8.080	71	328	10.29	pg		84
35] ETBE	8.054	87	67	1.42	pg	#	18
36] * 1,2-Dichloroethane	8.436	62	72	0.62	pg	#	1
38) * 1,1,1-Trichloroethane	0.000		0	N.D.			
39] * Benzene	9.292	78	8057	31.55	pg		98
40] Isopropyl Acetate	9.281	61	111	183.35	pg	#	86
41] 1-Butanol	9.250	56	2730	757.34	pg	#	100
42] * Carbon Tetrachloride	9.474	117	1814	16.13	pg	#	51
43] * Cyclohexane	9.646	84	1441	18.71	pg		99
44) TAME	0.000		0	N.D.			
45] * 1,2-Dichloropropane	10.288	63	63	0.77	pg	#	27
46] * Bromodichloromethane	10.454	83	136	1.10	pg	#	18
47] * Trichloroethene	10.592	130	53	0.50	pg		99

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062016.D
Acq On : 6 Nov 2020 23:10
Operator : WA/RVT
Sample : AS01085 SFC00180
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 08 05:47:47 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

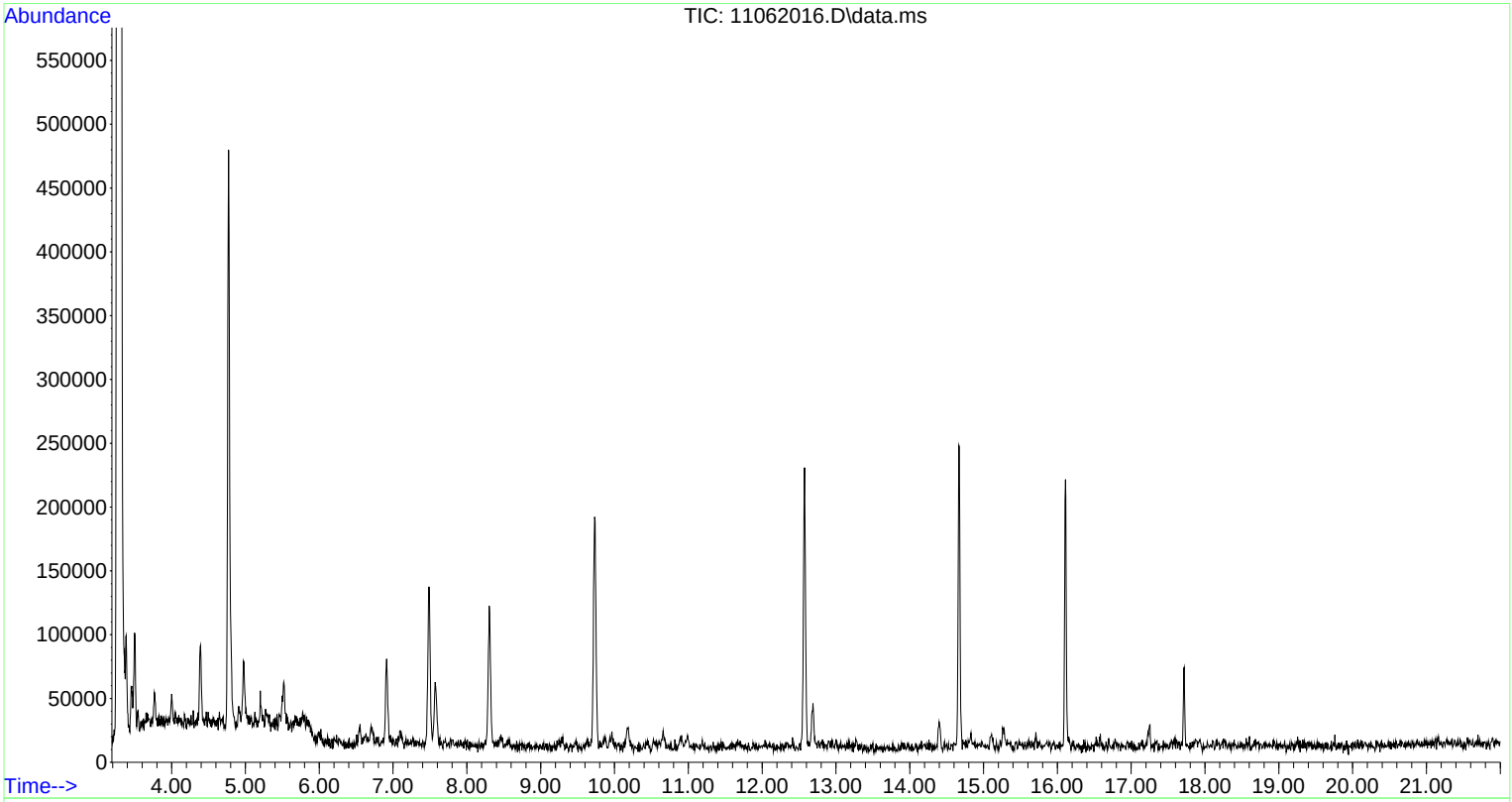
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48]	* 1,4-Dioxane	10.585	88	294	4.57	pg	#	1
49]	Isooctane	10.654	56	3697	35.33	pg	#	67
50]	* Methyl Methacrylate	10.875	69	79	1.06	pg	#	1
51]	* n-Heptane	10.985	71	2086	28.94	pg		92
52)	* cis-1,3-Dichloropropene	0.000		0	N.D.			
53]	* 4-Methyl-2-pentanone	11.661	58	1251	28.49	pg	#	83
54]	* trans-1,3-Dichloropr...	12.166	75	72	1.19	pg	#	43
55)	* 1,1,2-Trichloroethane	0.000		0	N.D.			
58]	* Toluene	12.685	91	26217	132.43	pg		99
59)	* 2-Hexanone	0.000		0	N.D.			
60]	* Dibromochloromethane	13.127	129	75	1.24	pg		97
61]	* 1,2-Dibromoethane	13.411	107	53	0.80	pg	#	2
62]	* n-Butyl Acetate	13.767	56	254	8.41	pg	#	72
63]	* n-Octane	13.891	85	412	11.32	pg	#	81
64]	* Tetrachloroethene	13.984	166	181	2.31	pg		97
65]	* Chlorobenzene	14.707	112	52	0.34	pg	#	42
66]	* Ethylbenzene	15.107	91	4329	23.40	pg		98
67]	* m- & p-Xylenes	15.266	91	10393	69.99	pg		96
68)	* Bromoform	0.000		0	N.D.			
69]	Cyclohexanone	15.483	98	172	35.34	pg	#	1
70]	* Styrene	15.608	104	754	7.06	pg		90
71]	* o-Xylene	15.705	91	3900	25.23	pg		95
72]	* n-Nonane	16.008	57	51	0.86	pg	#	33
73]	* 1,1,2,2-Tetrachloroe...	15.762	83	51	0.51	pg	#	29
75]	* Cumene	16.246	105	382	1.80	pg		94
76]	* alpha-Pinene	16.585	93	1833	20.39	pg	#	82
77]	* n-Propylbenzene	16.687	91	1224	5.13	pg		94
78]	3-Ethyltoluene	16.818	105	1296	265.25	pg		99
79]	* 4-Ethyltoluene	16.818	105	1296	7.20	pg		98
80]	* 1,3,5-Trimethylbenzene	16.886	105	904	5.64	pg		98
81]	alpha-Methylstyrene	17.022	118	57	24.56	pg	#	1
82]	2-Ethyltoluene	17.037	105	1062	397.58	pg	#	87
83]	tert-Butylbenzene	17.256	134	371	9.43	pg	#	1
84]	* 1,2,4-Trimethylbenzene	17.229	105	3379	20.65	pg		95
85)	* Benzyl Chloride	0.000		0	N.D.			
86]	* 1,3-Dichlorobenzene	17.402	146	442	3.49	pg		95
87]	* 1,4-Dichlorobenzene	17.402	146	442	4.10	pg		95
88]	n-Decane	17.391	85	58	8.83	pg	#	1
89]	sec-Butylbenzene	17.229	105	3379	20.64	pg	#	77
90]	1,2,3-Trimethylbenzene	17.650	105	50	4.22	pg	#	1
91]	p-Isopropyltoluene	17.596	134	564	10.75	pg		75
92]	* 1,2-Dichlorobenzene	17.677	146	50	0.39	pg	#	18
93]	* D-Limonene	17.715	68	7961	165.34	pg		97
94]	n-Butylbenzene	17.935	134	488	10.32	pg	#	1
95)	* 1,2-Dibromo-3-chloro...	0.000		0	N.D.			
96]	n-Undecane	18.391	85	232	182.06	pg	#	44
97]	* 1,2,4-Trichlorobenzene	19.154	180	125	1.95	pg	#	67
98]	* Naphthalene	19.257	128	3105	20.49	pg		97
99]	n-Dodecane	19.276	85	159	82.63	pg	#	1
100)	* Hexachlorobutadiene	0.000		0	N.D.			

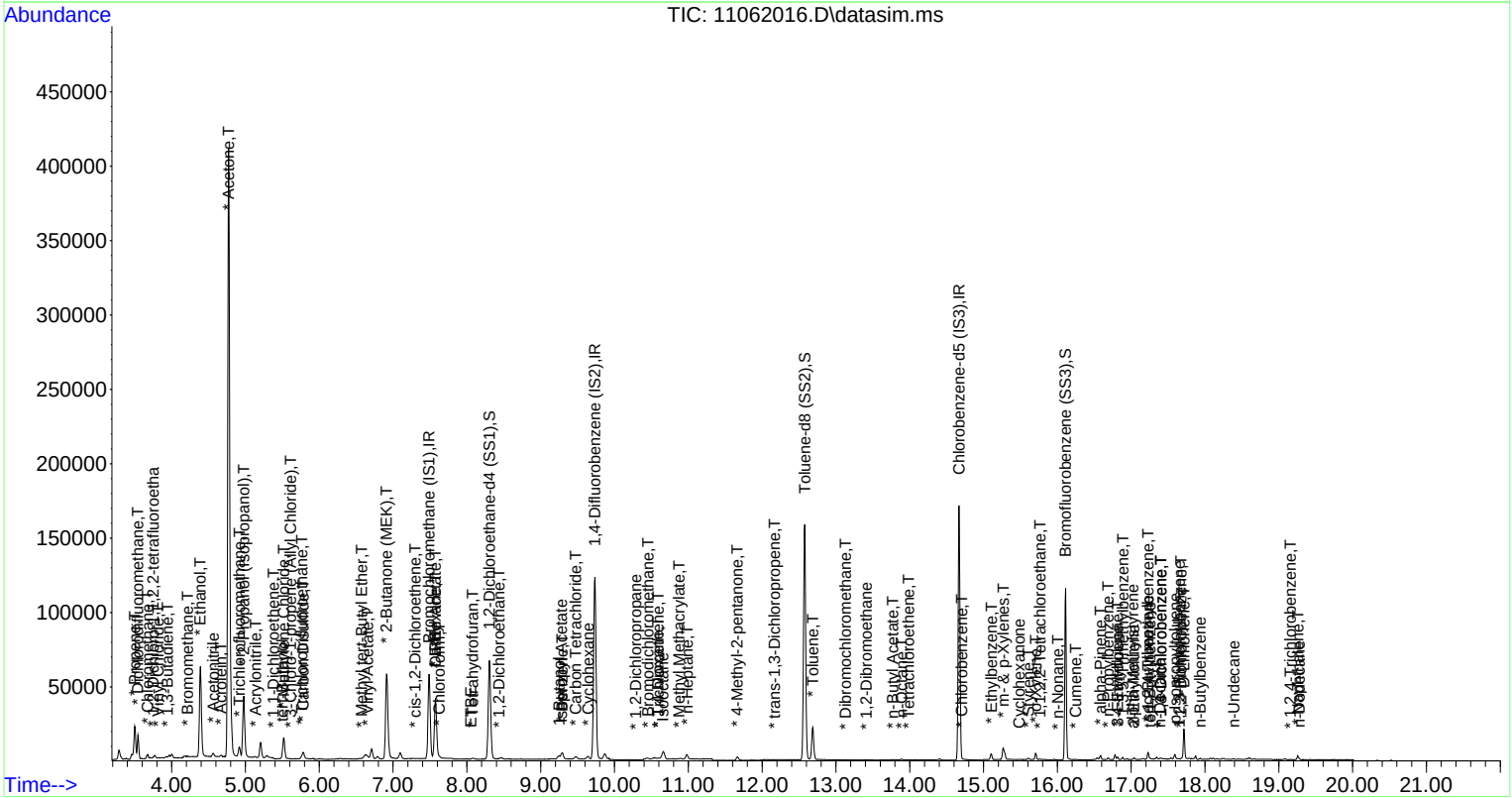
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\06\
Data File : 11062016.D
Acq On : 6 Nov 2020 23:10
Operator : WA/RVT
Sample : AS01085 SFC00180
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 08 05:47:47 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2020 11\08\
Data File : 11082031.D
Acq On : 9 Nov 2020 5:19
Operator : WA/RVT
Sample : AC02466
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 212 Sample Multiplier: 1

RVT 11/10/20

Quant Time: Nov 09 09:52:06 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane (IS1)	7.483	130	74822	1000.00	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.729	114	256432	1000.00	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.659	54	28887	1000.00	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.301	65	105911	883.25	pg		0.00
Spiked Amount 1000.000			Recovery = 88.33%				
57) Toluene-d8 (SS2)	12.570	98	179275	1095.73	pg		0.00
Spiked Amount 1000.000			Recovery = 109.57%				
74) Bromofluorobenzene (SS3)	16.105	174	78723	965.91	pg		-0.04
Spiked Amount 1000.000			Recovery = 96.59%				
Target Compounds							Qvalue
2] * Propene	3.500	42	1505	20.86	pg	#	1
3] * Dichlorodifluoromethane	3.547	85	3746	15.93	pg		93
4] * Chloromethane	3.668	50	745	7.63	pg		95
5] * 1,2-Dichloro-1,1,2,2...	3.758	85	144	1.05	pg	#	63
6] * Vinyl Chloride	3.828	62	124	1.21	pg	#	1
7] * 1,3-Butadiene	3.964	54	59	0.81	pg	#	1
8] * Bromomethane	4.165	94	128	1.45	pg	#	75
9] * Chloroethane	4.306	64	80	1.72	pg	#	46
10] * Ethanol	4.389	45	22086	576.69	pg		99
11] * Acetonitrile	4.566	41	1001	11.58	pg		99
12] * Acrolein	4.670	56	741	19.33	pg		98
13] * Acetone	4.779	58	29102	570.99	pg		89
14] * Trichlorofluoromethane	4.917	101	1801	7.81	pg		87
15] * 2-Propanol (Isopropa...	4.977	45	9956	68.55	pg		90
16] * Acrylonitrile	5.120	53	106	1.39	pg	#	80
17] * 1,1-Dichloroethene	5.473	96	69	0.80	pg	#	61
18] tert-Butanol	5.488	59	438	3.82	pg	#	1
19] * Methylene Chloride	5.512	84	3843	42.52	pg		96
20] * 3-Chloro-1-propene (...	5.624	41	61	0.78	pg	#	15
21] * Trichlorotrifluoroet...	5.760	151	154	1.66	pg	#	1
22] * Carbon Disulfide	5.785	76	7810	30.29	pg		98
23) * trans-1,2-Dichloroet...	0.000		0	N.D.			
24] * 1,1-Dichloroethane	6.524	63	97	0.77	pg	#	43
25] * Methyl tert-Butyl Ether	6.609	73	67	0.47	pg	#	56
26] * Vinyl Acetate	6.660	86	241	16.48	pg		69
27] * 2-Butanone (MEK)	6.916	72	7943	174.00	pg		90
28] * cis-1,2-Dichloroethene	7.321	96	73	0.88	pg		91
29] DIPE	7.574	45	867	4.72	pg	#	62
30] * Ethyl Acetate	7.574	61	834	32.69	pg		87
31] * n-Hexane	7.567	57	684	7.48	pg	#	71
32] * Chloroform	7.619	83	207	1.34	pg		87
34] * Tetrahydrofuran	8.024	71	52	1.50	pg	#	1
35] ETBE	8.120	87	63	1.22	pg	#	1
36] * 1,2-Dichloroethane	8.416	62	63	0.50	pg	#	43
38) * 1,1,1-Trichloroethane	0.000		0	N.D.			
39] * Benzene	9.287	78	2208	7.90	pg	#	85
40) Isopropyl Acetate	0.000		0	N.D.			
41] 1-Butanol	9.234	56	1566	396.88	pg	#	100
42] * Carbon Tetrachloride	9.474	117	298	2.42	pg	#	27
43] * Cyclohexane	9.630	84	142	1.68	pg	#	1
44) TAME	0.000		0	N.D.			
45) * 1,2-Dichloropropane	0.000		0	N.D.			
46] * Bromodichloromethane	10.481	83	103	0.76	pg	#	18
47] * Trichloroethene	10.557	130	130	1.12	pg	#	1

Data Path : I:\MS21\DATA\2020 11\08\
Data File : 11082031.D
Acq On : 9 Nov 2020 5:19
Operator : WA/RVT
Sample : AC02466
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 212 Sample Multiplier: 1

Quant Time: Nov 09 09:52:06 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
48] * 1,4-Dioxane	10.591	88	586	8.33	pg		97
49] Isooctane	10.653	56	1227	10.71	pg	#	42
50] * Methyl Methacrylate	10.805	69	130	1.60	pg	#	61
51] * n-Heptane	10.970	71	480	6.08	pg	#	86
52) * cis-1,3-Dichloropropene	0.000		0	N.D.			
53] * 4-Methyl-2-pentanone	11.660	58	998	20.76	pg	#	81
54) * trans-1,3-Dichloropr...	0.000		0	N.D.			
55) * 1,1,2-Trichloroethane	0.000		0	N.D.			
58] * Toluene	12.679	91	10442	52.19	pg		100
59] * 2-Hexanone	13.012	58	103	2.68	pg	#	1
60] * Dibromochloromethane	13.115	129	55	0.90	pg	#	11
61) * 1,2-Dibromoethane	0.000		0	N.D.			
62) * n-Butyl Acetate	0.000		0	N.D.			
63] * n-Octane	13.885	85	125	3.40	pg	#	52
64] * Tetrachloroethene	13.978	166	52	0.66	pg	#	11
65] * Chlorobenzene	14.706	112	263	1.72	pg		92
66] * Ethylbenzene	15.100	91	1558	8.33	pg		95
67] * m- & p-Xylenes	15.265	91	4354	29.01	pg		90
68] * Bromoform	15.316	173	61	1.22	pg	#	32
69) Cyclohexanone	0.000		0	N.D.			
70] * Styrene	15.607	104	368	3.41	pg		92
71] * o-Xylene	15.704	91	1381	8.84	pg		92
72] * n-Nonane	15.945	57	457	7.62	pg		100
73) * 1,1,2,2-Tetrachloroe...	0.000		0	N.D.			
75] * Cumene	16.240	105	204	0.95	pg	#	48
76] * alpha-Pinene	16.579	93	445	4.90	pg	#	80
77] * n-Propylbenzene	16.686	91	525	2.18	pg	#	89
78] 3-Ethyltoluene	16.778	105	1371	277.62	pg		97
79] * 4-Ethyltoluene	16.812	105	519	2.85	pg	#	62
80] * 1,3,5-Trimethylbenzene	16.880	105	596	3.68	pg		86
81] alpha-Methylstyrene	17.045	118	72	30.69	pg	#	21
82] 2-Ethyltoluene	17.031	105	601	222.61	pg		94
83] tert-Butylbenzene	17.244	134	67	1.68	pg	#	49
84] * 1,2,4-Trimethylbenzene	17.223	105	2049	12.39	pg	#	83
85) * Benzyl Chloride	0.000		0	N.D.			
86] * 1,3-Dichlorobenzene	17.401	146	276	2.16	pg		88
87] * 1,4-Dichlorobenzene	17.401	146	276	2.54	pg		88
88] n-Decane	17.341	85	624	93.98	pg	#	1
89] sec-Butylbenzene	17.223	105	2049	12.39	pg	#	60
90] 1,2,3-Trimethylbenzene	17.584	105	949	79.31	pg	#	1
91] p-Isopropyltoluene	17.590	134	405	7.64	pg		98
92] * 1,2-Dichlorobenzene	17.687	146	1021	7.97	pg		92
93] * D-Limonene	17.714	68	2909	59.77	pg		99
94] n-Butylbenzene	17.928	134	298	6.23	pg	#	1
95) * 1,2-Dibromo-3-chloro...	0.000		0	N.D.			
96] n-Undecane	18.385	85	585	454.20	pg		76
97) * 1,2,4-Trichlorobenzene	0.000		0	N.D.			
98] * Naphthalene	19.253	128	554	3.62	pg	#	68
99] n-Dodecane	19.281	85	236	121.35	pg	#	1
100) * Hexachlorobutadiene	0.000		0	N.D.			

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

Data Path : I:\MS21\DATA\2020 11\08\
Data File : 11082031.D
Acq On : 9 Nov 2020 5:19
Operator : WA/RVT
Sample : AC02466
Misc : 112262 (Sig #1); S34-10082001 (Sig #2)
ALS Vial : 212 Sample Multiplier: 1

Quant Time: Nov 09 09:52:06 2020
Quant Method : I:\MS21\Methods\F21103120.M
Quant Title : EPA TO-15
QLast Update : Mon Nov 02 07:44:09 2020
Response via : Initial Calibration