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MONTHLY MONITORING REPORT SEPTEMBER 2016

DATE: October 28, 2016 (revised Jan 4, 2017 to correct groundwater gradient to southeasterly - see Section 2.0, 3rd line).

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RE: ***September 2016 Plant Influent and Effluent Sampling Results for the Pemaco Superfund Site Treatment Plant, Maywood, California***

1.0 INTRODUCTION

The United States Environmental Protection Agency (U.S. EPA) is currently implementing the Long-Term Response Action (LTRA) at the Pemaco Superfund Site in Maywood, California. Oneida Total Integrated Enterprises, LLC (OTIE) performs monthly monitoring work for the U.S. EPA under contract by the United States Army Corps of Engineers (USACE), Los Angeles District Contract Number W912PL 16-C-0016.

OTIE prepared this Report to summarize the results of monthly influent and effluent water and vapor sampling performed on September 13, 2016 at the Pemaco Superfund Site Treatment Plant (Plant).

The influent and effluent water samples (SP-201 and SP-209, respectively), and influent and effluent vapor samples (SP-104 and SP-106, respectively) were analyzed for volatile organic compounds (VOCs) and 1,4-dioxane. Samples were analyzed in accordance with the *Final Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan), Long-Term Response Action for the Pemaco Remedial Action* (OTIE, 2015).

Monthly water and vapor sampling is performed to demonstrate compliance with Los Angeles County Sanitation District (LACSD) limits and South Coast Air Quality Management District (SCAQMD) guidance; confirm liquid phase granular activated carbon (LGAC) and vapor phase granular activated carbon (VGAC) effectiveness; and summarize data trends necessary for evaluation of remedial progress. The metric for “mass removal” is evaluated in the Quarterly Operations and Maintenance Report.

The groundwater treatment system (GTS) and vapor treatment system (VTS) achieved operational uptimes of approximately 97% and 73%, respectively, during September 2016. The VTS was not operated September 1 through September 6 in accordance with the “pulsed” operational schedule. Additional treatment system shutdowns occurred as follows:

- The VTS was not operated for a portion of September 9 during troubleshooting and flow switch replacement on chiller RC-201 by subcontractor ACCO;
- The VTS was not operated for a portion of September 11 and September 12 due to a low voltage alarm fault on the liquid ring vacuum pump blower;
- The VTS experienced intermittent shutdowns from September 18 through September 20 due to a High/High filter pressure alarm on filter vessel F-401 and filter replacement on blower B-102;
- The GTS was not operated for a portion of September 18 - 19 due to a High/High pressure alarm on filter vessel F-401; and
- The GTS was not operated for a portion of September 26 due to a High/High pressure alarm on filter vessel F-403.

Additional operational details are available in the most recent Operations Summary and the September weekly Quality Control Reports located on the Pemaco SharePoint website. Plant operational details will be summarized in the 2016 Third Quarter Operation and Maintenance Report.

2.0 'A' ZONE GROUNDWATER LEVEL GAUGING

Groundwater elevations and analytical data suggest an off-site contaminant source is located northwest of Maywood Riverfront Park, with significant trichloroethene (TCE) concentrations in the Exposition Aquifer 'A' Zone (OTIE, 2016a). Groundwater extraction from the 'A' Zone may promote a southeasterly migration of contaminants from northwest of the Park toward the former electrical resistance heating (ERH) area. In order to protect the ERH remedy area and discourage potential migration of the off-site source, the 'A' Zone wells were shut down on April 28, 2016 following stakeholder discussion and U.S. EPA approval. Groundwater levels in the 'A' Zone are gauged monthly to monitor gradient changes while the 'A' Zone extraction wells remain inactive.

The September 19, 2016 'A' Zone groundwater gauging event was the fifth groundwater level monitoring task performed since shutdown of 'A' Zone extraction wells in April 2016. Groundwater elevation data for the September 2016 gauging event is provided in Attachment 1. September 2016 groundwater elevations are compared to groundwater elevation data from the December 2015 semiannual groundwater monitoring event. 'A' Zone groundwater elevation changes at individual well locations include both increases and decreases compared to December 2015 values. The 'A' Zone groundwater elevation changes over time are shown in the hydrograph presented in Figure 1 (after text). Groundwater elevations in 'A' Zone wells show some variation between monthly gauging activities; however, additional data is required to evaluate long-term 'A' Zone groundwater elevation trends. Discussion of elevation trends will be included in future monthly monitoring reports following sufficient rounds of monthly gauging.

3.0 PLANT WATER SAMPLING RESULTS

Influent and effluent water grab samples were collected on September 13, 2016 and the detected analytical results are summarized in Table 1. The laboratory analysis was performed by Eurofins CalScience, Inc. The laboratory reports containing the full list of analytes are provided in Attachments 2 and 3. Attachment 2 shows the analytical results for VOCs and 1,4-dioxane in sample SP-201 and for 1,4-dioxane in SP-209. Attachment 3 shows the analytical results for VOCs in sample SP-209, as well as

additional data used for the 3rd Quarter 2016 Industrial Wastewater Self-Monitoring Report for the Pemaco Superfund Site Treatment Plant, Maywood, California prepared for the LACSD (OTIE, 2016b).

The September 2016 influent sample results represent a composite of flow from the following active wells screened in the Perched and Exposition Zones:

- Perched Zone (dual-phase extraction [DPE]): PB-01, PB-02, PB-03, PB-05, PC-06, PD-04, PD-05, PD-06, and PD-07; and
- Exposition Zones (groundwater only [GW]): DB-01, DB-03, DB-04, DB-05, DB-07, and DB-09.

Table 1 Monthly Summary of Detected VOCs in Influent / Effluent Water Samples

Analyte	Method	Sample Locations Sample ID Sample Date SSRL	Unit	SP-201 (Influent) SP-201-20160913 9/13/2016 Results	SP-209 (Effluent) SP-209-20160913 9/13/2016 Results
1,1-Dichloroethane	SW8260B	5	µg/L	**0.33 J**	**1.4****
1,1-Dichloroethene	SW8260B	6	µg/L	**0.54 J**	<0.43
1,4-Dioxane (P-Dioxane)	SW8260SIM	1*	µg/L	**3.1 J**	**3.1 J**
Chloroform	SW8260B	80	µg/L	<0.46	**1.3****
cis-1,2-Dichloroethene	SW8260B	6	µg/L	**11**	**7.7**
Trichloroethene	SW8260B	5	µg/L	**130**	<0.37
Vinyl Chloride	SW8260B	0.5	µg/L	**0.38 J**	**0.35 J**

Notes:

1. * - Indicates value is a "California Notification Level" which is less than the SSRL of 3.0, listed in the ROD (U.S. EPA, 2005);
2. ** - Indicates effluent sample concentration was higher than influent concentration as a result of preferential desorption;
3. **Bold** indicates a sample detection;
4. ID = identification; SSRL = site-specific remediation level; µg/L = micrograms per liter; < = indicates compound was not detected above the method detection limit; and
5. Effluent water quality complied with the LACSD permit limit of 1,000 µg/L for total VOCs.

3.1 Process Water Influent (SP-201) Discussion

The following VOCs are associated with groundwater plumes being monitored as part of the semiannual groundwater monitoring program. Analytical results for samples collected during the September 2016 event for these VOCs are summarized below:

- *Cis*-1,2-dichloroethene (*cis*-1,2-DCE) was detected at a concentration of 11 µg/L for the month of September (Figure 2). The *cis*-1,2-DCE concentration in process water influent shows some variation between monthly samples, although samples from the previous 24 months have not exceeded 17 µg/L. The overall cis-1,2-DCE concentration trend is decreasing for the previous 24 months.
- TCE was detected at a concentration of 130 µg/L, lower than the previous process water influent sample (180 µg/L) and within the typical range for influent TCE concentrations (Figure 3). The TCE concentration in process water influent samples from the previous 24 months shows significant variation between monthly samples, with a decreasing trend over time.

- 1,4-Dioxane was detected at a concentration of 3.1 J µg/L for the month of September (Figure 4). The 1,4-dioxane concentration in process water influent from the previous 24 months shows some variation between monthly samples, with a decreasing trend.

Figure 2 Historical Concentrations of cis-1,2-Dichloroethene in Influent Water

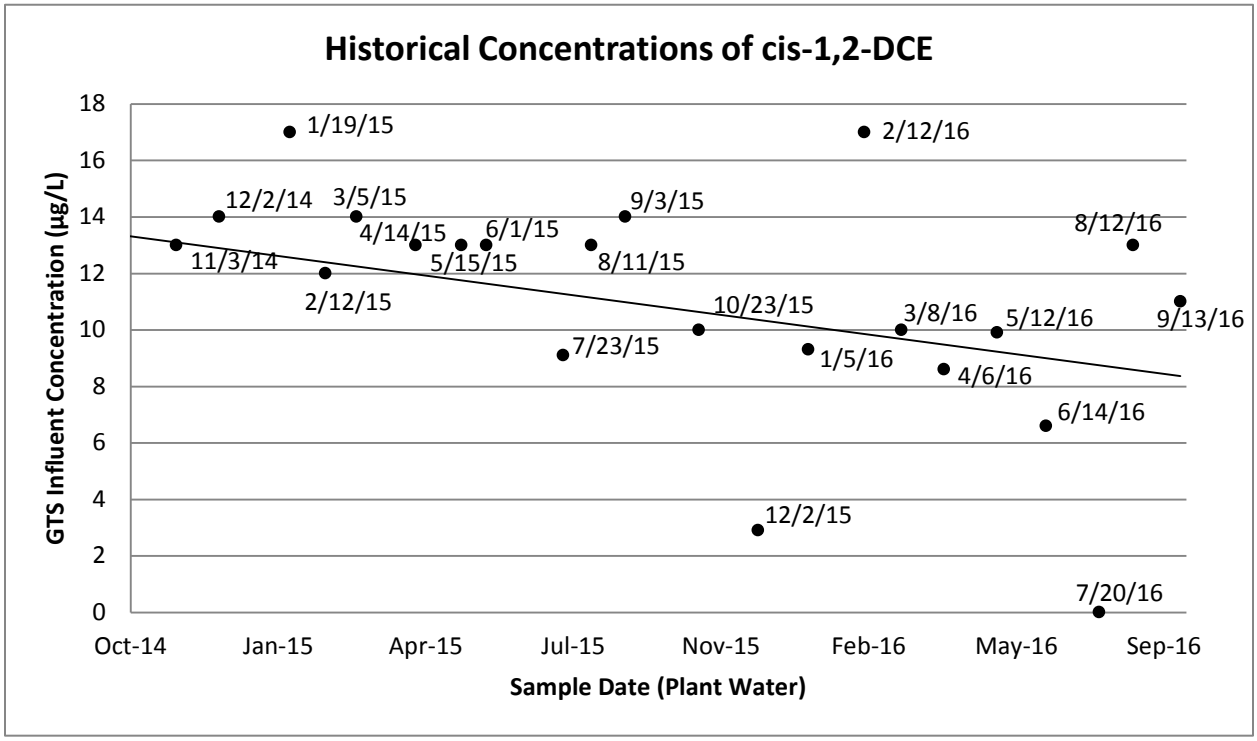


Figure 3 Historical Concentrations of Trichloroethene in Influent Water

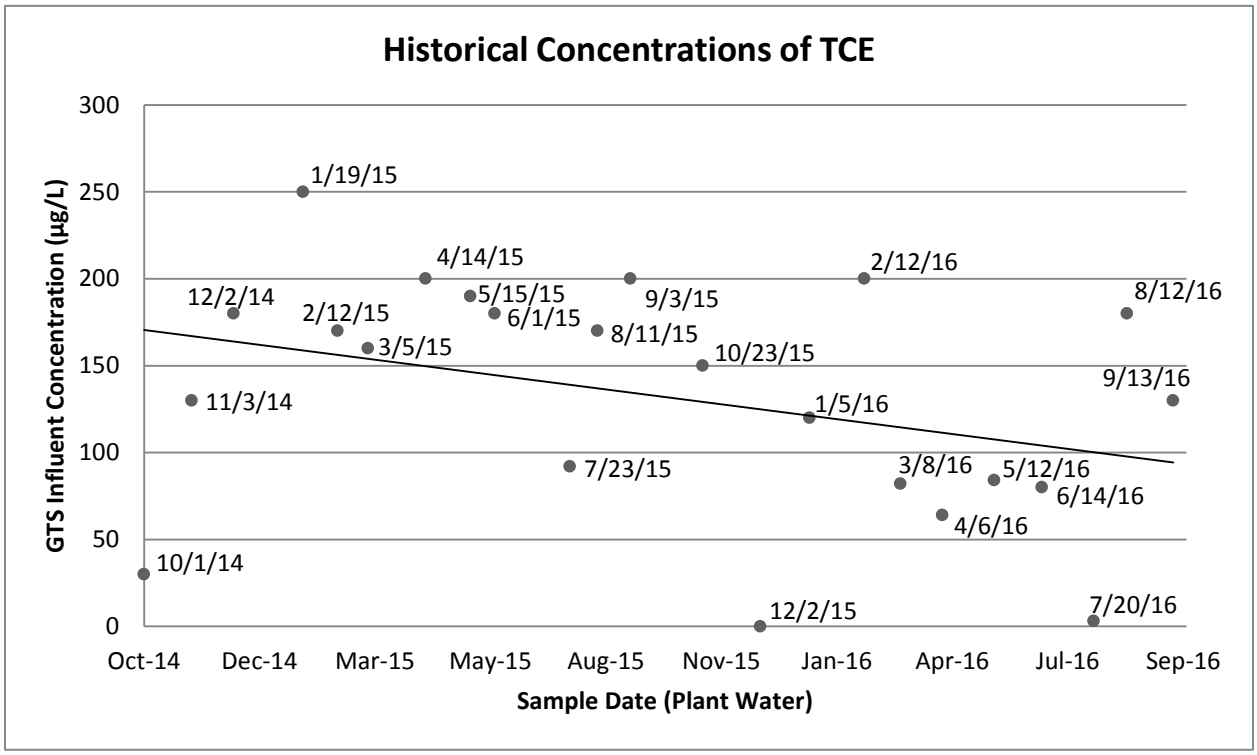
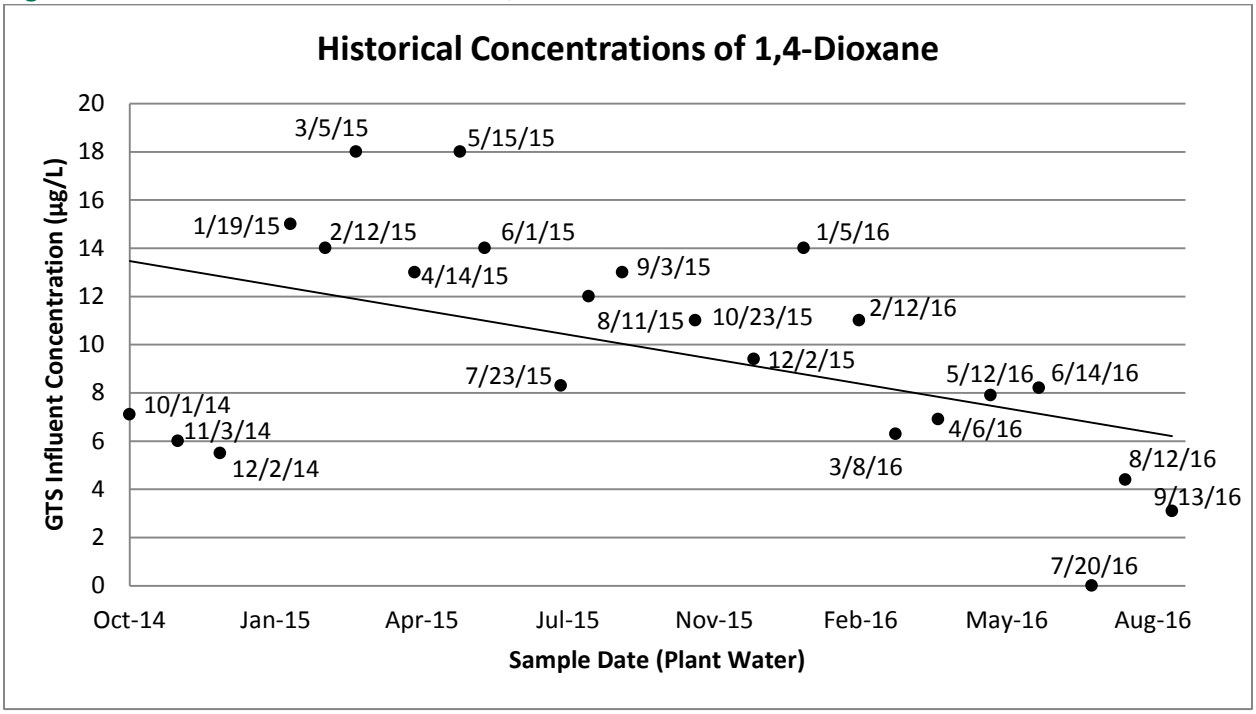


Figure 4 Historical Concentrations of 1,4-Dioxane in Influent Water



Notes for Figures 2, 3, and 4:

1. Data collected over a 24 month period beginning in October 2014. Concentration values reflected on the figure represent samples collected during monthly monitoring events;
2. Values that were below the laboratory detection limit are expressed as concentrations of zero;
3. Plant influent water was not analyzed in November 2015;
4. The trend line represents a linear regression of 23 data points from samples collected during monthly monitoring events. The trend line is a best-fit representation of the data and serves as a forecasting tool; it is not intended to represent the mean value of all samples collected; and
5. GTS = groundwater treatment system; cis-1,2-DCE = cis-1,2-dichloroethene; TCE = trichloroethene ; µg/L = microgram per liter.

3.2 Process Water Effluent (SP-209) Discussion

The water effluent quality satisfied the LACSD permit limit for total VOCs of 1,000 µg/L. VOC concentrations in plant effluent were below their respective site-specific remediation levels (SSRLs), with the exception of 1,4-dioxane (3.1 µg/L), which has a low LGAC adsorptive capacity.

The LGAC performance is satisfactory because the LACSD permit limits were satisfied and filter vessels continue to operate with acceptable head loss.

4.0 PLANT VAPOR SAMPLING RESULTS

The influent and effluent vapor samples were collected in 1-liter SUMMA® canisters on September 13, 2016. The analytical results for this event are summarized in Table 2. The laboratory analysis was performed by ALS Environmental and the laboratory report is provided as Attachment 4. The September 2016 influent vapor sample represents a composite of concentrations from active DPE wells (PB-01, PB-02, PB-03, PB-05, PC-06, PD-04, PD-05, PD-06, and PD-07), all screened in the Perched Zone.

Table 2 Summary of Detected VOCs in Influent and Effluent Vapor Samples

Analyte	Sample Location / Sample ID / Sample Date — Method	Unit	SP-104 (Influent) SP-104-20160913 9/13/2016 Result	SP-106 (Effluent) SP-106-20160913 9/13/2016 Result
1,1,1-Trichloroethane	TO15	µg/m^3	**12**	<0.74
1,1-Dichloroethane	TO15	µg/m^3	**3.5**	<0.70
1,1-Dichloroethene	TO15	µg/m^3	**11**	<0.74
1,2,4-Trimethylbenzene	TO15	µg/m^3	**11**	<0.65
1,3,5-Trimethylbenzene	TO15	µg/m^3	**1.0 J**	<0.70
2-Butanone	TO15	µg/m^3	**9.9 J**	**2.9 J**
2-Propanol	TO15	µg/m^3	**2.0 J**	<1.8
Acetone	TO15	µg/m^3	**150**	**16 J**
Alpha-Pinene	TO15	µg/m^3	**5.3**	<0.61
Benzene	TO15	µg/m^3	**9.5**	<0.70
Chloroform	TO15	µg/m^3	**6.7**	<0.74
Chloromethane	TO15	µg/m^3	<0.65	**1.0 J***
cis-1,2-Dichloroethene	TO15	µg/m^3	**28**	<0.70
Cumene	TO15	µg/m^3	**11**	<0.65
Cyclohexane	TO15	µg/m^3	**140**	<1.3
Dichlorodifluoromethane	TO15	µg/m^3	**1.3 J**	**1.2 J**
Ethanol	TO15	µg/m^3	**10 J**	**32 J***
Ethylbenzene	TO15	µg/m^3	**180**	<0.70
Isopropanol	TO15	µg/m^3	**2.0 J**	<1.8
Isopropylbenzene	TO15	µg/m^3	**11**	<0.65
N-Heptane	TO15	µg/m^3	**40**	<0.74
N-Hexane	TO15	µg/m^3	**78**	<0.65
N-Octane	TO15	µg/m^3	**3.5**	<0.78
N-Propylbenzene	TO15	µg/m^3	**24**	<0.70
o-Xylene	TO15	µg/m^3	**1.1 J**	<0.65
Tetrachloroethene	TO15	µg/m^3	**100**	<0.61
Tetrahydrofuran	TO15	µg/m^3	**2.3**	<0.87
Toluene	TO15	µg/m^3	**0.75 J**	<0.74
Trans-1,2-Dichloroethene	TO15	µg/m^3	**1.6 J**	<0.83
Trichloroethene	TO15	µg/m^3	**420**	<0.61
Trichlorofluoromethane	TO15	µg/m^3	**1.0 J**	<0.74
Vinyl chloride	TO15	µg/m^3	**0.81 J**	<0.74
Xylenes, m & p	TO15	µg/m^3	**1.6 J**	<1.3

Notes:

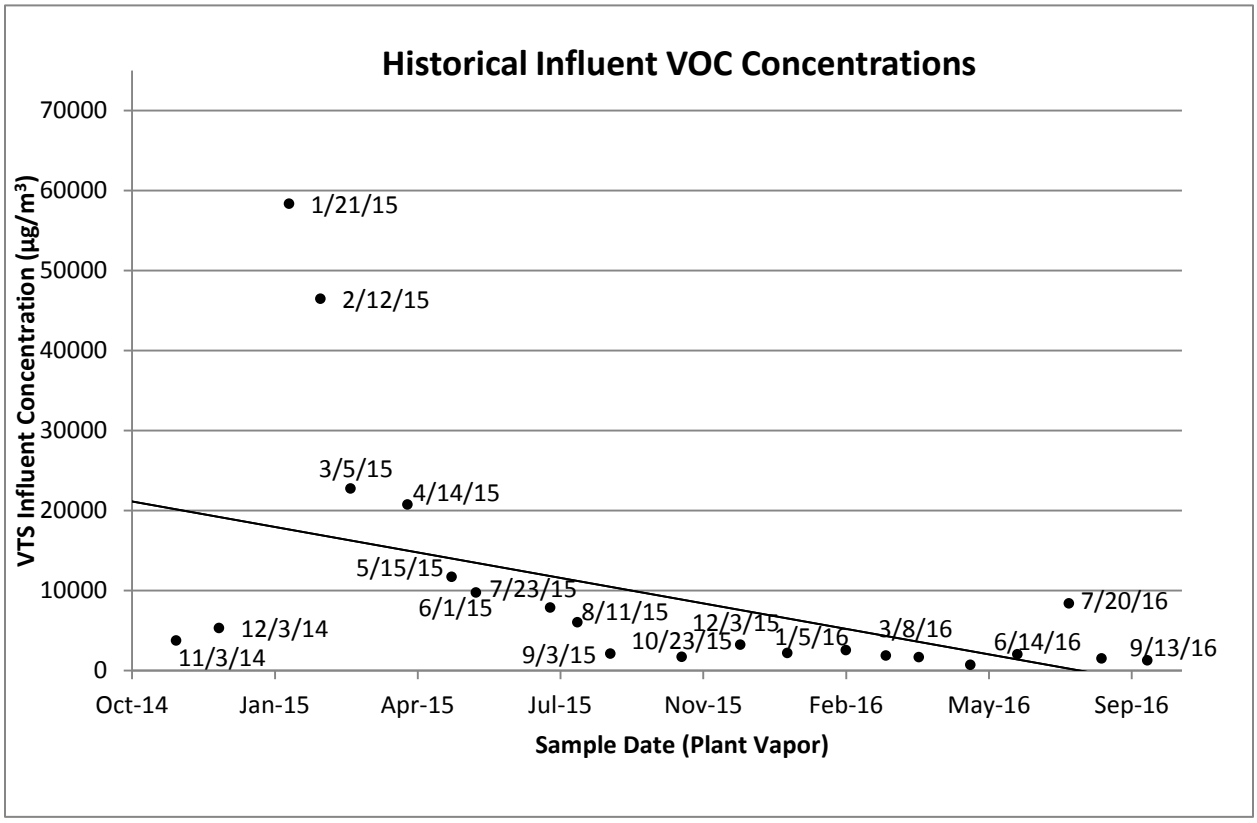
1. * - Indicates a compound detected in effluent sample and not in influent sample as a result of preferential desorption;
2. **Bold** indicates sample detection;
3. ID = identification; J = estimated value; µg/m^3 = micrograms per cubic meter; < = indicates compound was not detected above the method detection limits; and
4. A complete listing of analytes is found in the laboratory report (Attachment 4).

4.1 PROCESS VAPOR INFLUENT (SP-204) DISCUSSION

Influent vapor concentrations over the previous 24 months are presented in Figure 5. The sum of VOCs detected in plant vapor influent shows a decreasing trend. The trend is influenced by the high VOC concentrations detected during the months of January and February 2015. This concentration spike was associated with prolonged shutdown of the VTS system from December 4, 2014 to January 16, 2015 to facilitate removal of the Flameless Thermal Oxidizer. Influent vapor VOC concentrations since the June 2015 sampling event have been consistent with influent vapor VOC concentrations prior to the VTS shutdown (Figure 5).

The COCs with highest concentrations in the vapor influent were: TCE (420 µg/m^3), ethylbenzene (180 µg/m^3), acetone (150 µg/m^3), cyclohexane (140 µg/m^3), and tetrachloroethene (100 µg/m^3).

Figure 5 Historical Influent VOC Concentrations in Vapor



Notes:

1. Monthly data collected over a 24 month period beginning in October 2014. Concentration values reflected on the figure represent samples collected during monthly monitoring events;
2. Plant influent vapor was not analyzed in November 2015;
3. The trend line represents a linear regression of 23 data points from samples collected during monthly monitoring events. The trend line is a best-fit representation of the data and serves as a forecasting tool; it is not intended to represent the mean value of all samples collected; and
4. VTS = vapor treatment system; µg/m^3 = microgram per cubic meter.

4.2 PROCESS VAPOR EFFLUENT (SP-208) DISCUSSION

Plant air effluent is not formally permitted but does comply with SCAQMD permit guidance for human health risk assessment. Tier 2 Screening Risk Assessment for the Pemaco Site was conducted using risk assessment methods prescribed in the 2015 SCAQMD Risk Assessment Procedures[1] (SCAQMD, 2015). A Tier 2 Screening Risk Assessment Report based on the 2015 SCAQMD procedures for September is included in Attachment 5 and demonstrates plant vapor emission compliance with the 2015 SCAQMD permit guidance. The Tier 2 Screening Risk Assessment Report was generated using the SCAQMD Risk Tool (V1.02) Microsoft excel spreadsheet distributed on the SCAQMD website (SCAQMD, 2016).

A summary of the results from the Tier 2 Air Screening Risk Assessment is presented in Table 3. The maximum incremental cancer risk (MICR) associated with potential exposure to toxic air contaminants (TACs) was zero, less than the U.S. EPA acceptable cancer risk of "one in a million" (1×10^{-6}) for residential and worker receptors. Calculated non-cancer hazard indices (chronic hazard index [HIc], acute hazard index [HIa], and 8-hour chronic hazard index [HI8]) associated with potential exposure to TACs are less than the established limit of one.

Table 3 Summary of Tier 2 Screening Risk Assessment Health Risk Values[A]

	Maximum Individual Cancer Risk (MICR)[B]		Chronic Hazard Index (HIc)		Acute Hazard Index (HIa)		8-Hour Chronic Hazard Index (HI8)	
Receptor[1]	Resident	Worker	Resident	Worker	Resident	Worker	Resident	Worker
Maximum Health Risk Value	0.00E-00	0.00E-00	0.00E-00	0.00E-00	3.13E-08	9.04E-08	0.00E-00	0.00E-00

Notes:

[A]Health risk values are calculated for residential receptors at a distance of 75 meters from the plant vapor effluent stack and for commercial (worker) receptors at a distance of 25 meters from the plant vapor effluent stack; and Health risk values were calculated with the SCAQMD Risk Tool (V1.02) (SCAQMD, 2016) using analytical data from the September 13, 2016 vapor effluent sample. The full Tier 2 Screening Risk Assessment Report is provided in Attachment 5.

[B] MICR values were calculated as zero because none of the detected compounds in the vapor effluent had an associated Cancer Potency Factor; i.e. no associated cancer risk. Similarly, none of the detected compounds in the vapor effluent had an associated 8-hour chronic hazard.

Destruction removal efficiency (DRE) is typically calculated to evaluate the performance of the VGAC and the vapor conditioning package. The DRE equals the mass difference between the influent and effluent divided by the total mass in the influent. The sum of VOCs detected in the influent was 1280 µg/m^3; the sum of VOCs detected in the effluent was 53 µg/m^3. The resulting DRE of 96% for September 2016 represents above average performance.

[1] The Pemaco Final Remedial Design Report (TN&A, 2006) indicated that the VTS will meet the substantive requirements of the SCAQMD Risk Assessment Procedures for Rules 1401 and 212, Version 7.0 (SCAQMD, 2005). Monthly plant vapor effluent monitoring is evaluated according to the June 2015 updated SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212, Version 8.0 (SCAQMD, 2015) in order to document that continued operation of the VTS is protective of human health.

5.0 CONCLUSIONS

- During the month of September, the GTS achieved an uptime of 97% and the VTS achieved an uptime of 73%.
- September 'A' Zone groundwater elevation measurements were collected approximately five months following shutdown of the 'A' Zone groundwater extraction wells. There is no discernable elevation trend; however five months is not a significant period of time and continued evaluation via monthly gauging will be performed.
- Results of the September 2016 plant water and vapor sampling conducted on September 13, 2016 confirmed compliance with LACSD permit limits and 2015 SCAQMD permit guidance.
- Concentrations of VOCs in influent water and vapor samples were generally within the range of typical concentrations detected during previous monthly sampling events. Over the last 24 months of monitoring, a generally decreasing trend in the concentration on VOCs in both water and vapor samples is being established.
- The LGAC performance is satisfactory because the LACSD permit limits were achieved and filter vessels continue to operate with acceptable head loss.
- The VGAC performance is satisfactory based on SCAQMD permit guidance and DRE values.

6.0 REFERENCES

Oneida Total Integrated Enterprises (OTIE). 2015. *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Long-Term Response Action for the Pemaco Remedial Action*. September.

_____. 2016a. *Draft Semiannual Groundwater Monitoring Report, December 2015 Monitoring Event for the Pemaco Superfund Site Treatment Plant, Maywood, California*. April.

_____. 2016b. *3rd Quarter 2016 Industrial Wastewater Self-Monitoring Report for the Pemaco Superfund Site Treatment Plant, Maywood, California*. October.

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_____. 2015. Risk Assessment Procedures for Rules 1401, 1401.1 and 212. Version 8.0. June 5.

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United States Environmental Protection Agency (U.S. EPA). 2005. *Record of Decision, Pemaco Maywood Superfund Site, Maywood, California*. EPA ID: CAD980737092. January 13.

FIGURES (AFTER TEXT)

Figure 1 Exposition 'A' Zone Hydrograph

ATTACHMENTS

Attachment 1 September 2016 'A' Zone Groundwater Gauging Results

Attachment 2 Lab Report from Eurofins CalScience, Inc. – SP-201 VOC & 1,4-dioxane analysis; SP-209 1,4-dioxane analysis

Attachment 3 Lab Report from Eurofins CalScience, Inc. – SP-209 VOC analysis

Attachment 4 Lab Report from ALS Environmental

Attachment 5 Tier 2 Screening Risk Assessment Report
(Version 8.0 & Attachment M, Revision March 2016) – Risk Tool (V1.02)

FIGURES

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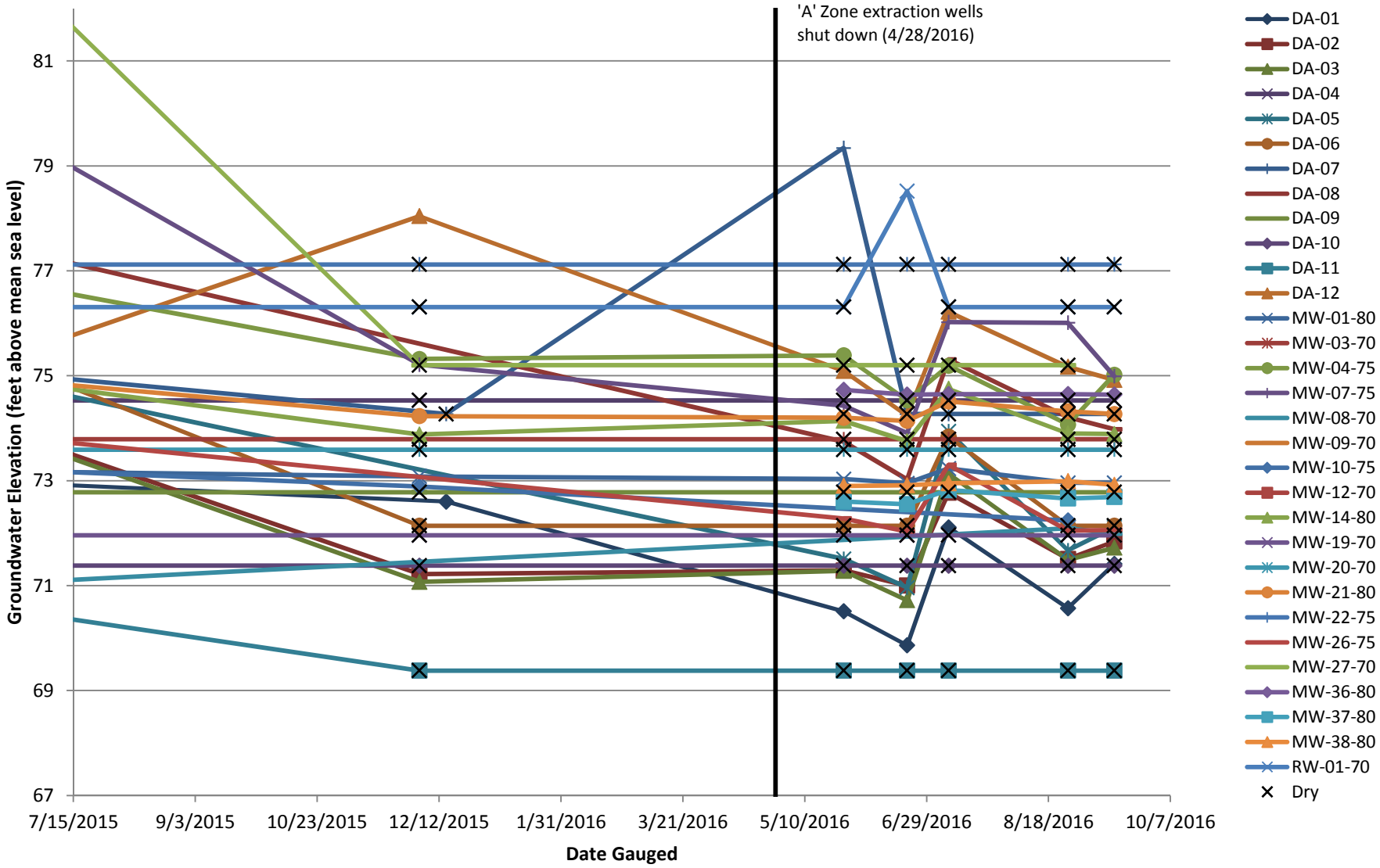
FIGURE 1

Exposition 'A' Zone Hydrograph

Pemaco Superfund Site, Maywood, California



ATTACHMENT 1

September 2016 ‘A’ Zone Groundwater Gauging Results

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Attachment 1
September 2016 'A' Zone Groundwater Gauging Results
Pemaco Superfund Site, Maywood, California

	Well ID	Well Type	Screen Interval (ft btoc)	December 4, 2015[1]		September 19, 2016[2]		Change in GW Elevation
				Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)	
1	MW-01-80	Monitoring	59 - 79	75.48	73.08	75.6	72.96	-0.12
2	MW-03-70	Monitoring	60 - 70	Dry	--	Dry	--	--
3	MW-04-75	Monitoring	65 - 75	70.75	75.32	71.05	75.02	-0.3
4	MW-07-75	Monitoring	65 - 75	64.11	75.21	64.33	74.99	-0.22
5	MW-08-70	Monitoring	63 - 68	*	--	67.05	71.99	--
6	MW-09-70	Monitoring	65 - 70	*	--	NM*	--	--
7	MW-10-75	Monitoring	68 - 73	67.73	72.89	NM**	--	--
8	MW-12-70	Monitoring	65 - 70	*	--	67.25	--	--
9	MW-14-80	Monitoring	76 - 81	75.67	73.88	75.66	73.89	0.01
10	MW-19-70	Monitoring	62 - 67	Dry	--	Dry	--	--
11	MW-20-70	Monitoring	63 - 68	Dry	--	Dry	--	--
12	MW-21-80	Monitoring	68 - 78	74.16	74.23	74.12	74.27	0.04
13	MW-22-75	Monitoring	69 - 74	Dry	--	Dry	--	--
14	MW-26-75	Monitoring	65 - 75	*	--	74.04	72.06	--
15	MW-27-70	Monitoring	60 - 70	Dry	--	Destroyed[3]	--	--
16	RW-01-70	Monitoring	55 - 70	Dry	--	Dry	--	--
17	WW-MW-30A	Monitoring	61 - 66	NM	--	65.72	75.12	--
18	MW-36-80	Monitoring	67.5 - 77.5	69.15	74.83	69.34	74.64	-0.19
19	MW-37-80	Monitoring	68 - 78	69.83	72.61	69.75	72.69	0.08
20	MW-38-80	Monitoring	67.5 - 77.5	69.51	73.02	69.61	72.92	-0.1
21	DA-01	Extraction	61 - 76	68.11	72.60	69.30	71.41	-1.19
22	DA-02	Extraction	72 - 82	67.48	71.22	66.86	71.84	0.62
23	DA-03	Extraction	74 - 84	67.85	71.07	67.2	71.72	0.65
24	DA-04	Extraction	56 - 66	Dry	--	Dry	--	--
25	DA-05	Extraction	68 - 78	*	--	69.2	72.11	--
26	DA-06	Extraction	60 - 70	Dry	--	Dry	--	--
27	DA-07	Extraction	61 - 71	Dry	--	Dry	--	--
28	DA-08	Extraction	65 - 75	*	--	66.65	73.98	--
29	DA-09	Extraction	66 - 76	Dry	--	Dry	--	--
20	DA-10	Extraction	66 - 76	Dry	--	Dry	--	--
21	DA-11	Extraction	64 - 74	NM	--	Dry	--	--
32	DA-12	Extraction	66 - 76	65.58	78.04	68.7	74.92	-3.12
33	MW-32A	Monitoring	57-67	Dry	--	NM	--	--
34	MW-33A	Monitoring	61-71	NM	--	NM	--	--

Notes:

1) Gauging data from the December 2015 semiannual groundwater monitoring event under dynamic (pumping) conditions.

2) Gauging data from September 19, 2016 collected under static (non-pumping) conditions. 'A' Zone groundwater extraction wells were shut down on April 28,2016.

3) MW-27-70 destroyed September 12, 2016.

4) "*" indicates the water level could not be determined due to the presence of an in-well pump.

5) "**" indicates that pump is scheduled to be lowered.

Acronyms: amsl = above mean sea level; btoc = below top of casing; ft = feet; NM = not measured; "--" = not available.

ATTACHMENT 2

Lab Report from Eurofins CalScience, Inc.
SP-201 VOC & 1,4-dioxane Analysis
SP-209 1,4-dioxane Analysis

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eurofins | Calscience

WORK ORDER NUMBER: 16-09-0834

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For
Client: OTIE
Client Project Name: Pemaco - Quarterly
Attention: Orval Osborne
317 East Main Street
Ventura, CA 93001-2624

Approved for release on 09/26/2016 by:
Virendra Patel
Project Manager

ResultLink ▸

Email your PM ▸

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Contents

Client Project Name: Pemaco - Quarterly
Work Order Number: 16-09-0834

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Work Order Narrative

Work Order: 16-09-0834 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/13/16. They were assigned to Work Order 16-09-0834.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	OTIE	Work Order:	16-09-0834
	317 East Main Street	Project Name:	Pemaco - Quarterly
	Ventura, CA 93001-2624	PO Number:	
		Date/Time Received:	09/13/16 12:55
		Number of Containers:	12
Attn:	Orval Osborne		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SP-201-20160913	16-09-0834-1	09/13/16 04:30	10	Aqueous
SP-209-20160913	16-09-0834-2	09/13/16 08:30	2	Aqueous

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QC Association Summary

Work Order: 16-09-0834 Page 1 of 1

Client Sample ID	Method Name	Type	Ext Name	Instrument	MS/MSD/SDP	LCS/LCSD
SP-201-20160913	EPA 8260 SIM 1,4-Dioxane		EPA 5030C	GC/MS T	160923S012	160923L040
SP-201-20160913	EPA 8260B Volatile Organics		EPA 5030C	GC/MS UU	160916S005	160916L003
SP-209-20160913	EPA 8260 SIM 1,4-Dioxane		EPA 5030C	GC/MS T	160923S012	160923L040

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Detections Summary

Client:	OTIE	Work Order:	16-09-0834
	317 East Main Street	Project Name:	Pemaco - Quarterly
	Ventura, CA 93001-2624	Received:	09/13/16
Attn:	Orval Osborne		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SP-201-20160913 (16-09-0834-1)						
1,4-Dioxane	3.1	B	1.0	ug/L	EPA 8260 SIM	EPA 5030C
1,1-Dichloroethane	0.33	J	0.28*	ug/L	EPA 8260B	EPA 5030C
1,1-Dichloroethene	0.54	J	0.43*	ug/L	EPA 8260B	EPA 5030C
c-1,2-Dichloroethene	11		1.0	ug/L	EPA 8260B	EPA 5030C
Trichloroethene	130		1.0	ug/L	EPA 8260B	EPA 5030C
Vinyl Chloride	0.38	J	0.30*	ug/L	EPA 8260B	EPA 5030C
SP-209-20160913 (16-09-0834-2)						
1,4-Dioxane	3.1	B	1.0	ug/L	EPA 8260 SIM	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - Quarterly

Date Received: 09/13/16
Work Order: 16-09-0834
Preparation: EPA 5030C
Method: EPA 8260 SIM
Units: ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-201-20160913	**16-09-0834-1-G**	**09/13/16 04:30**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 14:50**	**160923L040**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
1,4-Dioxane	3.1	1.0	0.35	1.00	B

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Dichlorobutane	97	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-209-20160913	**16-09-0834-2-C**	**09/13/16 08:30**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 15:19**	**160923L040**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
1,4-Dioxane	3.1	1.0	0.35	1.00	B

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Dichlorobutane	98	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-536-113**	**N/A**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 14:21**	**160923L040**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
1,4-Dioxane	0.56	1.0	0.35	1.00	J

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Dichlorobutane	104	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0834
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Pemaco - Quarterly			Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-201-20160913	**16-09-0834-1-A**	**09/13/16 04:30**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 11:43**	**160916L003**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acetone	ND	20	10	1.00	
Benzene	ND	0.50	0.14	1.00	
Bromobenzene	ND	1.0	0.30	1.00	
Bromochloromethane	ND	1.0	0.48	1.00	
Bromodichloromethane	ND	1.0	0.21	1.00	
Bromoform	ND	1.0	0.50	1.00	
Bromomethane	ND	10	3.9	1.00	
2-Butanone	ND	10	4.4	1.00	
n-Butylbenzene	ND	1.0	0.23	1.00	
sec-Butylbenzene	ND	1.0	0.25	1.00	
tert-Butylbenzene	ND	1.0	0.28	1.00	
Carbon Disulfide	ND	10	4.1	1.00	
Carbon Tetrachloride	ND	0.50	0.23	1.00	
Chlorobenzene	ND	1.0	0.17	1.00	
Chloroethane	ND	5.0	2.3	1.00	
Chloroform	ND	1.0	0.46	1.00	
Chloromethane	ND	10	3.5	1.00	
2-Chlorotoluene	ND	1.0	0.24	1.00	
4-Chlorotoluene	ND	1.0	0.13	1.00	
Dibromochloromethane	ND	1.0	0.25	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.2	1.00	
1,2-Dibromoethane	ND	1.0	0.36	1.00	
Dibromomethane	ND	1.0	0.46	1.00	
1,2-Dichlorobenzene	ND	1.0	0.46	1.00	
1,3-Dichlorobenzene	ND	1.0	0.40	1.00	
1,4-Dichlorobenzene	ND	1.0	0.43	1.00	
Dichlorodifluoromethane	ND	1.0	0.46	1.00	
1,1-Dichloroethane	0.33	1.0	0.28	1.00	J
1,2-Dichloroethane	ND	0.50	0.24	1.00	
1,1-Dichloroethene	0.54	1.0	0.43	1.00	J
c-1,2-Dichloroethene	11	1.0	0.48	1.00	
t-1,2-Dichloroethene	ND	1.0	0.37	1.00	
1,2-Dichloropropane	ND	1.0	0.42	1.00	
1,3-Dichloropropane	ND	1.0	0.30	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE	Date Received:	09/13/16
317 East Main Street	Work Order:	16-09-0834
Ventura, CA 93001-2624	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Pemaco - Quarterly		Page 2 of 4

Parameter	Result	RL	MDL	DF	Qualifiers
2,2-Dichloropropane	ND	1.0	0.36	1.00	
1,1-Dichloropropene	ND	1.0	0.46	1.00	
c-1,3-Dichloropropene	ND	0.50	0.25	1.00	
t-1,3-Dichloropropene	ND	0.50	0.25	1.00	
Ethylbenzene	ND	1.0	0.14	1.00	
2-Hexanone	ND	10	4.2	1.00	
Isopropylbenzene	ND	1.0	0.58	1.00	
p-Isopropyltoluene	ND	1.0	0.16	1.00	
Methylene Chloride	ND	10	3.8	1.00	
4-Methyl-2-Pentanone	ND	10	4.4	1.00	
Naphthalene	ND	10	5.0	1.00	
n-Propylbenzene	ND	1.0	0.17	1.00	
Styrene	ND	1.0	0.17	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	0.40	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	0.41	1.00	
Tetrachloroethene	ND	1.0	0.39	1.00	
Toluene	ND	1.0	0.24	1.00	
1,2,3-Trichlorobenzene	ND	1.0	0.51	1.00	
1,2,4-Trichlorobenzene	ND	1.0	0.50	1.00	
1,1,1-Trichloroethane	ND	1.0	0.30	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	3.9	1.00	
1,1,2-Trichloroethane	ND	1.0	0.38	1.00	
Trichloroethene	130	1.0	0.37	1.00	
Trichlorofluoromethane	ND	10	3.3	1.00	
1,2,3-Trichloropropane	ND	5.0	0.64	1.00	
1,2,4-Trimethylbenzene	ND	1.0	0.36	1.00	
1,3,5-Trimethylbenzene	ND	1.0	0.28	1.00	
Vinyl Acetate	ND	10	5.6	1.00	
Vinyl Chloride	0.38	0.50	0.30	1.00	J
p/m-Xylene	ND	1.0	0.30	1.00	
o-Xylene	ND	1.0	0.23	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0.31	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	108	78-126	
1,2-Dichloroethane-d4	102	75-135	
Toluene-d8	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0834
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Pemaco - Quarterly			Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-21368**	**N/A**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 11:04**	**160916L003**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Acetone	ND	20	10	1.00	
Benzene	ND	0.50	0.14	1.00	
Bromobenzene	ND	1.0	0.30	1.00	
Bromochloromethane	ND	1.0	0.48	1.00	
Bromodichloromethane	ND	1.0	0.21	1.00	
Bromoform	ND	1.0	0.50	1.00	
Bromomethane	ND	10	3.9	1.00	
2-Butanone	ND	10	4.4	1.00	
n-Butylbenzene	ND	1.0	0.23	1.00	
sec-Butylbenzene	ND	1.0	0.25	1.00	
tert-Butylbenzene	ND	1.0	0.28	1.00	
Carbon Disulfide	ND	10	4.1	1.00	
Carbon Tetrachloride	ND	0.50	0.23	1.00	
Chlorobenzene	ND	1.0	0.17	1.00	
Chloroethane	ND	5.0	2.3	1.00	
Chloroform	ND	1.0	0.46	1.00	
Chloromethane	ND	10	3.5	1.00	
2-Chlorotoluene	ND	1.0	0.24	1.00	
4-Chlorotoluene	ND	1.0	0.13	1.00	
Dibromochloromethane	ND	1.0	0.25	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.2	1.00	
1,2-Dibromoethane	ND	1.0	0.36	1.00	
Dibromomethane	ND	1.0	0.46	1.00	
1,2-Dichlorobenzene	ND	1.0	0.46	1.00	
1,3-Dichlorobenzene	ND	1.0	0.40	1.00	
1,4-Dichlorobenzene	ND	1.0	0.43	1.00	
Dichlorodifluoromethane	ND	1.0	0.46	1.00	
1,1-Dichloroethane	ND	1.0	0.28	1.00	
1,2-Dichloroethane	ND	0.50	0.24	1.00	
1,1-Dichloroethene	ND	1.0	0.43	1.00	
c-1,2-Dichloroethene	ND	1.0	0.48	1.00	
t-1,2-Dichloroethene	ND	1.0	0.37	1.00	
1,2-Dichloropropane	ND	1.0	0.42	1.00	
1,3-Dichloropropane	ND	1.0	0.30	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE	Date Received:	09/13/16
317 East Main Street	Work Order:	16-09-0834
Ventura, CA 93001-2624	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Pemaco - Quarterly		Page 4 of 4

Parameter	Result	RL	MDL	DF	Qualifiers
2,2-Dichloropropane	ND	1.0	0.36	1.00	
1,1-Dichloropropene	ND	1.0	0.46	1.00	
c-1,3-Dichloropropene	ND	0.50	0.25	1.00	
t-1,3-Dichloropropene	ND	0.50	0.25	1.00	
Ethylbenzene	ND	1.0	0.14	1.00	
2-Hexanone	ND	10	4.2	1.00	
Isopropylbenzene	ND	1.0	0.58	1.00	
p-Isopropyltoluene	ND	1.0	0.16	1.00	
Methylene Chloride	ND	10	3.8	1.00	
4-Methyl-2-Pentanone	ND	10	4.4	1.00	
Naphthalene	ND	10	5.0	1.00	
n-Propylbenzene	ND	1.0	0.17	1.00	
Styrene	ND	1.0	0.17	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	0.40	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	0.41	1.00	
Tetrachloroethene	ND	1.0	0.39	1.00	
Toluene	ND	1.0	0.24	1.00	
1,2,3-Trichlorobenzene	ND	1.0	0.51	1.00	
1,2,4-Trichlorobenzene	ND	1.0	0.50	1.00	
1,1,1-Trichloroethane	ND	1.0	0.30	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	3.9	1.00	
1,1,2-Trichloroethane	ND	1.0	0.38	1.00	
Trichloroethene	ND	1.0	0.37	1.00	
Trichlorofluoromethane	ND	10	3.3	1.00	
1,2,3-Trichloropropane	ND	5.0	0.64	1.00	
1,2,4-Trimethylbenzene	ND	1.0	0.36	1.00	
1,3,5-Trimethylbenzene	ND	1.0	0.28	1.00	
Vinyl Acetate	ND	10	5.6	1.00	
Vinyl Chloride	ND	0.50	0.30	1.00	
p/m-Xylene	ND	1.0	0.30	1.00	
o-Xylene	ND	1.0	0.23	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0.31	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	
Dibromofluoromethane	101	78-126	
1,2-Dichloroethane-d4	101	75-135	
Toluene-d8	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0834
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260 SIM
Project: Pemaco - Quarterly			Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-209-20160913	**Sample**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 15:19**	**160923S012**
SP-209-20160913	**Matrix Spike**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 17:11**	**160923S012**
SP-209-20160913	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 17:40**	**160923S012**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,4-Dioxane	3.142	20.00	19.65	83	19.41	81	70-130	1	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Spike/Spike Duplicate - Surrogate

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - Quarterly

Date Received: 09/13/16
Work Order: 16-09-0834
Preparation: EPA 5030C
Method: EPA 8260 SIM
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-209-20160913	**Sample**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 15:19**	**160923S012**
SP-209-20160913	**Matrix Spike**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 17:11**	**160923S012**
SP-209-20160913	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 17:40**	**160923S012**

Parameter	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	Qualifiers
1,4-Dichlorobutane	8.000	7.694	96	7.500	94	80-120	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - Quarterly

Date Received: 09/13/16
Work Order: 16-09-0834
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-201-20160913	**Sample**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 11:43**	**160916S005**
SP-201-20160913	**Matrix Spike**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 12:10**	**160916S005**
SP-201-20160913	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 12:37**	**160916S005**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	53.41	107	52.19	104	74-122	2	0-21	
Carbon Tetrachloride	ND	50.00	58.78	118	57.54	115	60-144	2	0-21	
Chlorobenzene	ND	50.00	52.36	105	52.30	105	73-120	0	0-22	
1,2-Dibromoethane	ND	50.00	52.37	105	52.31	105	80-122	0	0-20	
1,2-Dichlorobenzene	ND	50.00	53.24	106	53.21	106	70-120	0	0-26	
1,2-Dichloroethane	ND	50.00	51.16	102	50.30	101	64-142	2	0-20	
1,1-Dichloroethene	ND	50.00	54.09	108	52.11	104	52-136	4	0-21	
Ethylbenzene	ND	50.00	52.99	106	53.02	106	77-125	0	0-24	
Toluene	ND	50.00	51.59	103	51.12	102	72-126	1	0-23	
Trichloroethene	131.2	50.00	175.7	89	172.4	82	74-128	2	0-22	
Vinyl Chloride	ND	50.00	43.12	86	42.80	86	67-133	1	0-20	
p/m-Xylene	ND	100.0	105.3	105	105.2	105	63-129	0	0-25	
o-Xylene	ND	50.00	54.06	108	53.38	107	62-128	1	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	45.51	91	44.86	90	68-134	1	0-21	

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RPD: Relative Percent Difference. CL: Control Limits

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Spike/Spike Duplicate - Surrogate

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - Quarterly

Date Received: 09/13/16
Work Order: 16-09-0834
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-201-20160913	**Sample**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 11:43**	**160916S005**
SP-201-20160913	**Matrix Spike**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 12:10**	**160916S005**
SP-201-20160913	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 12:37**	**160916S005**

Parameter	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	Qualifiers
1,4-Bromofluorobenzene	50.00	49.94	100	49.74	99	80-120	
Dibromofluoromethane	50.00	47.12	94	47.27	95	78-126	
1,2-Dichloroethane-d4	50.00	48.48	97	47.27	95	75-135	
Toluene-d8	50.00	50.05	100	49.60	99	80-120	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0834
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260 SIM
Project: Pemaco - Quarterly			Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-536-113	**LCS**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 11:32**	**160923L040**
099-16-536-113	**LCSD**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 12:53**	**160923L040**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,4-Dioxane	20.00	16.71	84	17.75	89	80-120	6	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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LCS/LCSD - Surrogate

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - Quarterly

Date Received: 09/13/16
Work Order: 16-09-0834
Preparation: EPA 5030C
Method: EPA 8260 SIM

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-536-113	**LCS**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 11:32**	**160923L040**
099-16-536-113	**LCSD**	**Aqueous**	**GC/MS T**	**09/23/16**	**09/23/16 12:53**	**160923L040**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	Qualifiers
1,4-Dichlorobutane	8.000	7.148	89	7.978	100	80-120	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0834
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Pemaco - Quarterly			Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-21368	**LCS**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 09:32**	**160916L003**
099-14-001-21368	**LCSD**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 09:58**	**160916L003**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	50.24	100	53.04	106	80-120	73-127	5	0-20	
Carbon Tetrachloride	50.00	56.18	112	57.91	116	67-139	55-151	3	0-20	
Chlorobenzene	50.00	51.48	103	52.89	106	78-120	71-127	3	0-20	
1,2-Dibromoethane	50.00	50.72	101	53.35	107	80-120	73-127	5	0-20	
1,2-Dichlorobenzene	50.00	52.54	105	54.62	109	63-129	52-140	4	0-20	
1,2-Dichloroethane	50.00	49.10	98	51.81	104	70-130	60-140	5	0-20	
1,1-Dichloroethene	50.00	49.59	99	51.15	102	66-126	56-136	3	0-20	
Ethylbenzene	50.00	51.14	102	52.41	105	80-123	73-130	2	0-20	
Toluene	50.00	48.75	98	50.89	102	80-120	73-127	4	0-20	
Trichloroethene	50.00	48.25	96	50.08	100	80-122	73-129	4	0-20	
Vinyl Chloride	50.00	40.32	81	41.58	83	70-130	60-140	3	0-20	
p/m-Xylene	100.0	103.1	103	103.5	104	75-123	67-131	0	0-20	
o-Xylene	50.00	52.27	105	53.85	108	74-122	66-130	3	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	43.56	87	46.17	92	69-129	59-139	6	0-20	

Total number of LCS compounds: 14
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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LCS/LCSD - Surrogate

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - Quarterly

Date Received: 09/13/16
Work Order: 16-09-0834
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-21368	**LCS**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 09:32**	**160916L003**
099-14-001-21368	**LCSD**	**Aqueous**	**GC/MS UU**	**09/16/16**	**09/16/16 09:58**	**160916L003**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	Qualifiers
1,4-Bromofluorobenzene	50.00	49.98	100	49.25	99	80-120	
Dibromofluoromethane	50.00	44.92	90	46.22	92	78-126	
1,2-Dichloroethane-d4	50.00	47.48	95	48.35	97	75-135	
Toluene-d8	50.00	49.07	98	49.29	99	80-120	

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 16-09-0834 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260 SIM	EPA 5030C	486	GC/MS T	2
EPA 8260B	EPA 5030C	996	GC/MS UU	2

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Glossary of Terms and Qualifiers

Work Order: 16-09-0834 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Chain of Custody

OTIE
Oneida Total Integrated Enterprises

OTIE
317 East Main Street
Ventura, CA 93001
Phone: (805) 585-2110
Fax: (805) 585-2111

Report To:

Contact: Orval Osborne
Company: OTIE
Address: 317 East Main Street
Ventura, CA 93001
Phone: (805) 585-4313
Fax: (805) 585-2111
E-Mail: oosborne@otie.com

Bill To:

Contact: _____
Company: _____
Address: _____
Phone: _____
Fax: _____
PO#: _____ Quote: _____

16-09-0834

Shaded Areas For Internal Use Only _1_ of 1__

Lab Lot #

Package Sealed Yes No	Samples Sealed Yes No
Received on Ice Yes No	Samples Intact Yes No
Temperature °C of Cooler	

Sampler Name: Brian Hendron

Signature:

Project Name: Pemaco – Quarterly (not LACSD)

Project Number: 2016160

Project Location: 5973 S. District Blvd, Maywood, CA 90270

Lab PM: Virendra Patel, CalScience 714-895-5494

Date Requested (*without rush surcharge*): email: **end of month**

Within Hold Time Yes No	Preserv. indicated Yes No NA
pH Check ok Yes No NA	Res. Cl_2 Check ok Yes No NA

Sample Labels and COC Agree Yes No COC not present

Laboratory ID	MS MSD	Client Sample ID	Sampling Date	Sampling Time	Refrg #	#/ Cont.	Volume	Preserv	Mtx	Grab	VOC (8260)	1,4-Dioxane (8260-SIM)	Additional Analyses / Remarks
1		SP-201-20160913	9/13/16	0730					W	X	X	X	
2		SP-209-20160913	9/13/16	0830					W	X		X	pH sample collect onsite at 08:30 = 7.33

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
[signature]	OTIE	9/13/16	1130	[signature]	ECI	9/13/16	1130
[signature]	ECI	9/13/16	1255	[signature]	ECI	9/13/16	1255

Matrix Key

WW = Wastewater
W = Water
S = Soil
SL = Sludge
MS = Miscellaneous
OL = Oil
A = Air
SE = Sediment
SO = Solid
DS = Drum Solid
DL = Drum Liquid
L = Leachate
WI = Wipe
O = _____

Container Key

1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other _____

Preservative Key

1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS: OTIE-specific EDDs needed
1,4-Dioxane: 1 ug/L RL

Level 3 data package. Report to MDL (J-flag)

Date Received / /

Courier: Hand Delivered

Bill of Lading:

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WORK ORDER NUMBER: 16-09-0814

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: OTIE

DATE: 09 / 13 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.8 °C (w/ CF): 3.8 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: GTF

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: GTF

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: SMG

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☑ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☑ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☑ VOA (2) ☑ VOAh (10) ☐ VOA**na**$_2$ ☐ 100PJ ☐ 100PJ**na**$_2$ ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** (-2) ☐ 250AGB (1-2) ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na**$_2$ ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® (____) ☐ TerraCores® (____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na**$_2$ = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: SMG

Reviewed by: GTF

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ATTACHMENT 3

Lab Report from Eurofins CalScience, Inc.
SP-209 VOC Analysis

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WORK ORDER NUMBER: 16-09-0835

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For
Client: OTIE
Client Project Name: Pemaco - LACSD
Attention: Orval Osborne
317 East Main Street
Ventura, CA 93001-2624

Approved for release on 09/21/2016 by:
Virendra Patel
Project Manager

ResultLink ▸

Email your PM ▸

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Contents

Client Project Name: Pemaco - LACSD
Work Order Number: 16-09-0835

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Work Order Narrative

Work Order: 16-09-0835 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/13/16. They were assigned to Work Order 16-09-0835.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	OTIE	Work Order:	16-09-0835
	317 East Main Street	Project Name:	Pemaco - LACSD
	Ventura, CA 93001-2624	PO Number:	2014160
		Date/Time Received:	09/13/16 12:55
		Number of Containers:	7
Attn:	Orval Osborne		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SP-209-20160913	16-09-0835-1	09/13/16 08:30	5	Aqueous
SP-209-20160913(comp)	16-09-0835-2	09/13/16 08:30	2	Aqueous

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QC Association Summary

Work Order: 16-09-0835 Page 1 of 1

Client Sample ID	Method Name	Type	Ext Name	Instrument	MS/MSD/SDP	LCS/LCSD
SP-209-20160913	EPA 625 Semi-Volatile Organics		EPA 625	GC/MS SS	*2	160914L07
SP-209-20160913	EPA 8260B Volatile Organics		EPA 5030C	GC/MS V V	160914S006	160914L019
SP-209-20160913	SM 4500 H+ B pH		N/A	PH 1	G0913PHD1	*4
SP-209-20160913(comp)	EPA 410.4 Chemical Oxygen Demand		N/A	UV 4	G0914ODS2	G0914ODB2
SP-209-20160913(comp)	SM 2540 D Total Suspended Solids		N/A	N/A	G0916TSSD1	G0916TSSL1

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2 = Limited sample received, no MS/MSD performed

4 = Per the method, no associated matrix QC

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Detections Summary

Client:	OTIE	Work Order:	16-09-0835
	317 East Main Street	Project Name:	Pemaco - LACSD
	Ventura, CA 93001-2624	Received:	09/13/16
Attn:	Orval Osborne		

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SP-209-20160913 (16-09-0835-1)						
1,1-Dichloroethane	1.4		1.0	ug/L	EPA 8260B	EPA 5030C
Chloroform	1.3		1.0	ug/L	EPA 8260B	EPA 5030C
Vinyl Chloride	0.35	J	0.30*	ug/L	EPA 8260B	EPA 5030C
c-1,2-Dichloroethene	7.7		1.0	ug/L	EPA 8260B	EPA 5030C
pH	7.26	BV,BU	0.01	pH units	SM 4500 H+ B	N/A

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	N/A
		Method:	EPA 410.4
		Units:	mg/L
Project: Pemaco - LACSD			Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-209-20160913(comp)	**16-09-0835-2-A**	**09/13/16 08:30**	**Aqueous**	**UV 4**	**N/A**	**09/14/16 12:00**	**G0914ODB2**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Chemical Oxygen Demand	ND	5.0	3.0	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-243-1677**	**N/A**	**Aqueous**	**UV 4**	**N/A**	**09/14/16 12:00**	**G0914ODB2**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Chemical Oxygen Demand	ND	5.0	3.0	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - LACSD

Date Received: 09/13/16
Work Order: 16-09-0835
Preparation: N/A
Method: SM 2540 D
Units: mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-209-20160913(comp)	**16-09-0835-2-B**	**09/13/16 08:30**	**Aqueous**	**N/A**	**09/16/16**	**09/16/16 14:00**	**G0916TSSL1**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-09-010-7880**	**N/A**	**Aqueous**	**N/A**	**09/16/16**	**09/16/16 14:00**	**G0916TSSL1**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	N/A
		Method:	SM 4500 H+ B
		Units:	pH units
Project: Pemaco - LACSD			Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-209-20160913	**16-09-0835-1-D**	**09/13/16 08:30**	**Aqueous**	**PH 1**	**N/A**	**09/13/16 23:12**	**G0913PHD1**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
pH	7.26	0.01	0.01	1.00	BV,BU

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 625
		Method:	EPA 625
		Units:	ug/L
Project: Pemaco - LACSD			Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-209-20160913	**16-09-0835-1-E**	**09/13/16 08:30**	**Aqueous**	**GC/MS SS**	**09/17/16**	**09/20/16 18:31**	**160914L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
N-Nitrosodimethylamine	ND	9.6	3.1	1.00	
Phenol	ND	9.6	2.0	1.00	
Bis(2-Chloroethyl) Ether	ND	24	2.4	1.00	
2-Chlorophenol	ND	9.6	2.2	1.00	
Bis(2-Chloroisopropyl) Ether	ND	9.6	3.1	1.00	
N-Nitroso-di-n-propylamine	ND	9.6	2.3	1.00	
Hexachloroethane	ND	9.6	2.9	1.00	
Nitrobenzene	ND	24	2.9	1.00	
Isophorone	ND	9.6	2.4	1.00	
2-Nitrophenol	ND	9.6	2.5	1.00	
2,4-Dimethylphenol	ND	9.6	2.3	1.00	
Bis(2-Chloroethoxy) Methane	ND	9.6	2.4	1.00	
2,4-Dichlorophenol	ND	9.6	2.4	1.00	
1,2,4-Trichlorobenzene	ND	9.6	2.7	1.00	
Naphthalene	ND	9.6	2.8	1.00	
Hexachloro-1,3-Butadiene	ND	9.6	2.8	1.00	
4-Chloro-3-Methylphenol	ND	9.6	2.3	1.00	
Hexachlorocyclopentadiene	ND	24	6.7	1.00	
2,4,6-Trichlorophenol	ND	9.6	2.4	1.00	
2-Chloronaphthalene	ND	9.6	2.7	1.00	
Dimethyl Phthalate	ND	9.6	2.5	1.00	
Acenaphthylene	ND	9.6	2.8	1.00	
Acenaphthene	ND	9.6	2.7	1.00	
2,4-Dinitrophenol	ND	48	13	1.00	
4-Nitrophenol	ND	9.6	1.5	1.00	
2,4-Dinitrotoluene	ND	9.6	2.2	1.00	
2,6-Dinitrotoluene	ND	9.6	2.3	1.00	
Diethyl Phthalate	ND	9.6	2.7	1.00	
4-Chlorophenyl-Phenyl Ether	ND	9.6	2.6	1.00	
Fluorene	ND	9.6	2.6	1.00	
4,6-Dinitro-2-Methylphenol	ND	48	14	1.00	
N-Nitrosodiphenylamine	ND	9.6	2.6	1.00	
4-Bromophenyl-Phenyl Ether	ND	9.6	2.6	1.00	
Hexachlorobenzene	ND	9.6	3.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE	Date Received:	09/13/16
317 East Main Street	Work Order:	16-09-0835
Ventura, CA 93001-2624	Preparation:	EPA 625
	Method:	EPA 625
	Units:	ug/L
Project: Pemaco - LACSD		Page 2 of 4

Parameter	Result	RL	MDL	DF	Qualifiers
Pentachlorophenol	ND	24	4.5	1.00	
Phenanthrene	ND	9.6	2.8	1.00	
Anthracene	ND	9.6	2.9	1.00	
Di-n-Butyl Phthalate	ND	9.6	2.8	1.00	
Fluoranthene	ND	9.6	3.0	1.00	
Benzidine	ND	48	6.3	1.00	
Pyrene	ND	9.6	2.9	1.00	
Butyl Benzyl Phthalate	ND	9.6	2.4	1.00	
3,3'-Dichlorobenzidine	ND	24	2.5	1.00	
Benzo (a) Anthracene	ND	9.6	4.5	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	9.6	3.0	1.00	
Chrysene	ND	9.6	2.7	1.00	
Di-n-Octyl Phthalate	ND	9.6	2.4	1.00	
Benzo (k) Fluoranthene	ND	9.6	3.1	1.00	
Benzo (b) Fluoranthene	ND	9.6	2.2	1.00	
Benzo (a) Pyrene	ND	9.6	2.3	1.00	
Benzo (g,h,i) Perylene	ND	9.6	2.4	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	9.6	2.1	1.00	
Dibenz (a,h) Anthracene	ND	9.6	2.4	1.00	
1,2-Diphenylhydrazine	ND	9.6	1.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorophenol	66	15-138	
Phenol-d6	60	17-141	
Nitrobenzene-d5	63	56-123	
2-Fluorobiphenyl	63	45-120	
2,4,6-Tribromophenol	54	32-143	
p-Terphenyl-d14	63	46-133	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 625
		Method:	EPA 625
		Units:	ug/L
Project: Pemaco - LACSD			Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-026-355**	**N/A**	**Aqueous**	**GC/MS SS**	**09/17/16**	**09/20/16 17:13**	**160914L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
N-Nitrosodimethylamine	ND	10	3.2	1.00	
Phenol	ND	10	2.1	1.00	
Bis(2-Chloroethyl) Ether	ND	25	2.5	1.00	
2-Chlorophenol	ND	10	2.3	1.00	
Bis(2-Chloroisopropyl) Ether	ND	10	3.2	1.00	
N-Nitroso-di-n-propylamine	ND	10	2.4	1.00	
Hexachloroethane	ND	10	3.0	1.00	
Nitrobenzene	ND	25	3.0	1.00	
Isophorone	ND	10	2.5	1.00	
2-Nitrophenol	ND	10	2.6	1.00	
2,4-Dimethylphenol	ND	10	2.4	1.00	
Bis(2-Chloroethoxy) Methane	ND	10	2.5	1.00	
2,4-Dichlorophenol	ND	10	2.5	1.00	
1,2,4-Trichlorobenzene	ND	10	2.8	1.00	
Naphthalene	ND	10	2.9	1.00	
Hexachloro-1,3-Butadiene	ND	10	2.9	1.00	
4-Chloro-3-Methylphenol	ND	10	2.4	1.00	
Hexachlorocyclopentadiene	ND	25	6.9	1.00	
2,4,6-Trichlorophenol	ND	10	2.5	1.00	
2-Chloronaphthalene	ND	10	2.8	1.00	
Dimethyl Phthalate	ND	10	2.6	1.00	
Acenaphthylene	ND	10	2.9	1.00	
Acenaphthene	ND	10	2.8	1.00	
2,4-Dinitrophenol	ND	50	13	1.00	
4-Nitrophenol	ND	10	1.6	1.00	
2,4-Dinitrotoluene	ND	10	2.3	1.00	
2,6-Dinitrotoluene	ND	10	2.4	1.00	
Diethyl Phthalate	ND	10	2.8	1.00	
4-Chlorophenyl-Phenyl Ether	ND	10	2.7	1.00	
Fluorene	ND	10	2.7	1.00	
4,6-Dinitro-2-Methylphenol	ND	50	14	1.00	
N-Nitrosodiphenylamine	ND	10	2.8	1.00	
4-Bromophenyl-Phenyl Ether	ND	10	2.7	1.00	
Hexachlorobenzene	ND	10	3.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE	Date Received:	09/13/16
317 East Main Street	Work Order:	16-09-0835
Ventura, CA 93001-2624	Preparation:	EPA 625
	Method:	EPA 625
	Units:	ug/L
Project: Pemaco - LACSD		Page 4 of 4

Parameter	Result	RL	MDL	DF	Qualifiers
Pentachlorophenol	ND	25	4.6	1.00	
Phenanthrene	ND	10	2.9	1.00	
Anthracene	ND	10	3.0	1.00	
Di-n-Butyl Phthalate	ND	10	2.9	1.00	
Fluoranthene	ND	10	3.1	1.00	
Benzidine	ND	50	6.5	1.00	
Pyrene	ND	10	3.0	1.00	
Butyl Benzyl Phthalate	ND	10	2.5	1.00	
3,3'-Dichlorobenzidine	ND	25	2.6	1.00	
Benzo (a) Anthracene	ND	10	4.7	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	10	3.2	1.00	
Chrysene	ND	10	2.8	1.00	
Di-n-Octyl Phthalate	ND	10	2.5	1.00	
Benzo (k) Fluoranthene	ND	10	3.2	1.00	
Benzo (b) Fluoranthene	ND	10	2.3	1.00	
Benzo (a) Pyrene	ND	10	2.4	1.00	
Benzo (g,h,i) Perylene	ND	10	2.5	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	10	2.1	1.00	
Dibenz (a,h) Anthracene	ND	10	2.5	1.00	
1,2-Diphenylhydrazine	ND	10	1.8	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorophenol	80	15-138	
Phenol-d6	70	17-141	
Nitrobenzene-d5	72	56-123	
2-Fluorobiphenyl	71	45-120	
2,4,6-Tribromophenol	65	32-143	
p-Terphenyl-d14	72	46-133	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Pemaco - LACSD			Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-209-20160913	**16-09-0835-1-A**	**09/13/16 08:30**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 21:48**	**160914L019**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
1,1,1,2-Tetrachloroethane	ND	1.0	0.40	1.00	
1,1,1-Trichloroethane	ND	1.0	0.30	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	0.41	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	3.9	1.00	
1,1,2-Trichloroethane	ND	1.0	0.38	1.00	
1,1-Dichloroethane	1.4	1.0	0.28	1.00	
1,1-Dichloroethene	ND	1.0	0.43	1.00	
1,1-Dichloropropene	ND	1.0	0.46	1.00	
1,2,3-Trichlorobenzene	ND	1.0	0.51	1.00	
1,2,3-Trichloropropane	ND	5.0	0.64	1.00	
1,2,4-Trichlorobenzene	ND	1.0	0.50	1.00	
1,2,4-Trimethylbenzene	ND	1.0	0.36	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.2	1.00	
1,2-Dibromoethane	ND	1.0	0.36	1.00	
1,2-Dichlorobenzene	ND	1.0	0.46	1.00	
1,2-Dichloroethane	ND	0.50	0.24	1.00	
1,2-Dichloropropane	ND	1.0	0.42	1.00	
1,3,5-Trimethylbenzene	ND	1.0	0.28	1.00	
1,3-Dichlorobenzene	ND	1.0	0.40	1.00	
1,3-Dichloropropane	ND	1.0	0.30	1.00	
1,4-Dichlorobenzene	ND	1.0	0.43	1.00	
2,2-Dichloropropane	ND	1.0	0.36	1.00	
2-Butanone	ND	10	4.4	1.00	
2-Chlorotoluene	ND	1.0	0.24	1.00	
2-Hexanone	ND	10	4.2	1.00	
4-Chlorotoluene	ND	1.0	0.13	1.00	
4-Methyl-2-Pentanone	ND	10	4.4	1.00	
Acetone	ND	20	10	1.00	
Benzene	ND	0.50	0.14	1.00	
Bromobenzene	ND	1.0	0.30	1.00	
Bromochloromethane	ND	1.0	0.48	1.00	
Bromodichloromethane	ND	1.0	0.21	1.00	
Bromoform	ND	1.0	0.50	1.00	
Bromomethane	ND	10	3.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - LACSD

Date Received: 09/13/16
Work Order: 16-09-0835
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon Disulfide	ND	10	4.1	1.00	
Carbon Tetrachloride	ND	0.50	0.23	1.00	
Chlorobenzene	ND	1.0	0.17	1.00	
Chloroethane	ND	5.0	2.3	1.00	
Chloroform	1.3	1.0	0.46	1.00	
Chloromethane	ND	10	3.5	1.00	
Dibromochloromethane	ND	1.0	0.25	1.00	
Dibromomethane	ND	1.0	0.46	1.00	
Dichlorodifluoromethane	ND	1.0	0.46	1.00	
Ethylbenzene	ND	1.0	0.14	1.00	
Isopropylbenzene	ND	1.0	0.58	1.00	
Methylene Chloride	ND	10	3.8	1.00	
Naphthalene	ND	10	5.0	1.00	
Styrene	ND	1.0	0.17	1.00	
Tetrachloroethene	ND	1.0	0.39	1.00	
Toluene	ND	1.0	0.24	1.00	
t-1,2-Dichloroethene	ND	1.0	0.37	1.00	
Trichloroethene	ND	1.0	0.37	1.00	
Trichlorofluoromethane	ND	10	3.3	1.00	
Vinyl Acetate	ND	10	5.6	1.00	
Vinyl Chloride	0.35	0.50	0.30	1.00	J
c-1,3-Dichloropropene	ND	0.50	0.25	1.00	
c-1,2-Dichloroethene	7.7	1.0	0.48	1.00	
n-Butylbenzene	ND	1.0	0.23	1.00	
n-Propylbenzene	ND	1.0	0.17	1.00	
o-Xylene	ND	1.0	0.23	1.00	
p-Isopropyltoluene	ND	1.0	0.16	1.00	
sec-Butylbenzene	ND	1.0	0.25	1.00	
t-1,3-Dichloropropene	ND	0.50	0.25	1.00	
tert-Butylbenzene	ND	1.0	0.28	1.00	
p/m-Xylene	ND	1.0	0.30	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0.31	1.00	
2-Chloroethyl Vinyl Ether	ND	50	16	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	82	80-120	
Dibromofluoromethane	112	78-126	
1,2-Dichloroethane-d4	116	75-135	
Toluene-d8	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Pemaco - LACSD			Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-21348**	**N/A**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 11:34**	**160914L019**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
1,1,1,2-Tetrachloroethane	ND	1.0	0.40	1.00	
1,1,1-Trichloroethane	ND	1.0	0.30	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	0.41	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	3.9	1.00	
1,1,2-Trichloroethane	ND	1.0	0.38	1.00	
1,1-Dichloroethane	ND	1.0	0.28	1.00	
1,1-Dichloroethene	ND	1.0	0.43	1.00	
1,1-Dichloropropene	ND	1.0	0.46	1.00	
1,2,3-Trichlorobenzene	ND	1.0	0.51	1.00	
1,2,3-Trichloropropane	ND	5.0	0.64	1.00	
1,2,4-Trichlorobenzene	ND	1.0	0.50	1.00	
1,2,4-Trimethylbenzene	ND	1.0	0.36	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.2	1.00	
1,2-Dibromoethane	ND	1.0	0.36	1.00	
1,2-Dichlorobenzene	ND	1.0	0.46	1.00	
1,2-Dichloroethane	ND	0.50	0.24	1.00	
1,2-Dichloropropane	ND	1.0	0.42	1.00	
1,3,5-Trimethylbenzene	ND	1.0	0.28	1.00	
1,3-Dichlorobenzene	ND	1.0	0.40	1.00	
1,3-Dichloropropane	ND	1.0	0.30	1.00	
1,4-Dichlorobenzene	ND	1.0	0.43	1.00	
2,2-Dichloropropane	ND	1.0	0.36	1.00	
2-Butanone	ND	10	4.4	1.00	
2-Chlorotoluene	ND	1.0	0.24	1.00	
2-Hexanone	ND	10	4.2	1.00	
4-Chlorotoluene	ND	1.0	0.13	1.00	
4-Methyl-2-Pentanone	ND	10	4.4	1.00	
Acetone	ND	20	10	1.00	
Benzene	ND	0.50	0.14	1.00	
Bromobenzene	ND	1.0	0.30	1.00	
Bromochloromethane	ND	1.0	0.48	1.00	
Bromodichloromethane	ND	1.0	0.21	1.00	
Bromoform	ND	1.0	0.50	1.00	
Bromomethane	ND	10	3.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - LACSD

Date Received: 09/13/16
Work Order: 16-09-0835
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon Disulfide	ND	10	4.1	1.00	
Carbon Tetrachloride	ND	0.50	0.23	1.00	
Chlorobenzene	ND	1.0	0.17	1.00	
Chloroethane	ND	5.0	2.3	1.00	
Chloroform	ND	1.0	0.46	1.00	
Chloromethane	ND	10	3.5	1.00	
Dibromochloromethane	ND	1.0	0.25	1.00	
Dibromomethane	ND	1.0	0.46	1.00	
Dichlorodifluoromethane	ND	1.0	0.46	1.00	
Ethylbenzene	ND	1.0	0.14	1.00	
Isopropylbenzene	ND	1.0	0.58	1.00	
Methylene Chloride	ND	10	3.8	1.00	
Naphthalene	ND	10	5.0	1.00	
Styrene	ND	1.0	0.17	1.00	
Tetrachloroethene	ND	1.0	0.39	1.00	
Toluene	ND	1.0	0.24	1.00	
t-1,2-Dichloroethene	ND	1.0	0.37	1.00	
Trichloroethene	ND	1.0	0.37	1.00	
Trichlorofluoromethane	ND	10	3.3	1.00	
Vinyl Acetate	ND	10	5.6	1.00	
Vinyl Chloride	ND	0.50	0.30	1.00	
c-1,3-Dichloropropene	ND	0.50	0.25	1.00	
c-1,2-Dichloroethene	ND	1.0	0.48	1.00	
n-Butylbenzene	ND	1.0	0.23	1.00	
n-Propylbenzene	ND	1.0	0.17	1.00	
o-Xylene	ND	1.0	0.23	1.00	
p-Isopropyltoluene	ND	1.0	0.16	1.00	
sec-Butylbenzene	ND	1.0	0.25	1.00	
t-1,3-Dichloropropene	ND	0.50	0.25	1.00	
tert-Butylbenzene	ND	1.0	0.28	1.00	
p/m-Xylene	ND	1.0	0.30	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0.31	1.00	
2-Chloroethyl Vinyl Ether	ND	50	16	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	84	80-120	
Dibromofluoromethane	112	78-126	
1,2-Dichloroethane-d4	114	75-135	
Toluene-d8	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	N/A
		Method:	EPA 410.4
Project: Pemaco - LACSD			Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-09-0848-1	**Sample**	**Aqueous**	**UV 4**	**N/A**	**09/14/16 12:00**	**G0914ODS2**
16-09-0848-1	**Matrix Spike**	**Aqueous**	**UV 4**	**N/A**	**09/14/16 12:00**	**G0914ODS2**
16-09-0848-1	**Matrix Spike Duplicate**	**Aqueous**	**UV 4**	**N/A**	**09/14/16 12:00**	**G0914ODS2**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Chemical Oxygen Demand	31.80	20.00	49.55	89	48.50	84	70-130	2	0-25	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Pemaco - LACSD			Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-09-0884-3	**Sample**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 12:02**	**160914S006**
16-09-0884-3	**Matrix Spike**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 12:30**	**160914S006**
16-09-0884-3	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 12:58**	**160914S006**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,1,1,2-Tetrachloroethane	ND	50.00	55.19	110	55.13	110	70-135	0	0-20	
1,1,1-Trichloroethane	ND	50.00	50.00	100	48.60	97	68-140	3	0-20	
1,1,2,2-Tetrachloroethane	ND	50.00	48.97	98	50.88	102	70-137	4	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50.00	62.41	125	57.12	114	21-190	9	0-40	
1,1,2-Trichloroethane	ND	50.00	51.24	102	50.41	101	70-130	2	0-20	
1,1-Dichloroethane	ND	50.00	50.73	101	49.80	100	64-130	2	0-20	
1,1-Dichloroethene	ND	50.00	52.18	104	51.85	104	51-153	1	0-21	
1,1-Dichloropropene	ND	50.00	47.57	95	47.18	94	66-132	1	0-20	
1,2,3-Trichlorobenzene	ND	50.00	53.12	106	54.90	110	64-142	3	0-22	
1,2,3-Trichloropropane	ND	50.00	57.11	114	56.51	113	67-130	1	0-20	
1,2,4-Trichlorobenzene	ND	50.00	50.64	101	53.23	106	60-144	5	0-24	
1,2,4-Trimethylbenzene	ND	50.00	51.72	103	52.60	105	70-133	2	0-20	
1,2-Dibromo-3-Chloropropane	ND	50.00	51.11	102	51.63	103	67-133	1	0-20	
1,2-Dibromoethane	ND	50.00	51.42	103	50.41	101	70-130	2	0-20	
1,2-Dichlorobenzene	ND	50.00	52.27	105	53.01	106	70-130	1	0-20	
1,2-Dichloroethane	ND	50.00	48.28	97	47.88	96	69-135	1	0-20	
1,2-Dichloropropane	ND	50.00	49.17	98	50.18	100	70-130	2	0-20	
1,3,5-Trimethylbenzene	ND	50.00	56.73	113	56.74	113	70-139	0	0-20	
1,3-Dichlorobenzene	ND	50.00	51.23	102	51.75	104	70-130	1	0-20	
1,3-Dichloropropane	ND	50.00	50.36	101	50.28	101	70-130	0	0-20	
1,4-Dichlorobenzene	ND	50.00	49.62	99	50.87	102	70-130	2	0-20	
2,2-Dichloropropane	ND	50.00	52.53	105	51.05	102	37-169	3	0-23	
2-Butanone	ND	50.00	50.86	102	50.15	100	39-159	1	0-21	
2-Chlorotoluene	ND	50.00	56.26	113	55.60	111	70-137	1	0-20	
2-Hexanone	ND	50.00	49.64	99	52.33	105	59-149	5	0-20	
4-Chlorotoluene	ND	50.00	52.21	104	53.59	107	70-130	3	0-20	
4-Methyl-2-Pentanone	ND	50.00	50.55	101	52.40	105	67-139	4	0-20	
Acetone	ND	50.00	55.25	110	61.58	123	22-178	11	0-26	
Benzene	ND	50.00	45.92	92	45.75	92	70-130	0	0-20	
Bromobenzene	ND	50.00	54.15	108	54.09	108	70-130	0	0-20	
Bromochloromethane	ND	50.00	40.90	82	39.08	78	70-132	5	0-20	
Bromodichloromethane	ND	50.00	53.29	107	52.13	104	69-135	2	0-20	
Bromoform	ND	50.00	49.99	100	51.87	104	70-133	4	0-20	
Bromomethane	ND	50.00	53.90	108	56.90	114	11-167	5	0-32	
Carbon Disulfide	ND	50.00	51.03	102	50.41	101	54-138	1	0-23	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Pemaco - LACSD			Page 3 of 5

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon Tetrachloride	ND	50.00	58.06	116	56.57	113	63-153	3	0-22	
Chlorobenzene	ND	50.00	51.61	103	51.66	103	70-130	0	0-20	
Chloroethane	ND	50.00	39.59	79	40.24	80	44-140	2	0-32	
Chloroform	ND	50.00	50.47	101	49.11	98	68-134	3	0-20	
Chloromethane	ND	50.00	38.09	76	39.12	78	20-158	3	0-40	
Dibromochloromethane	ND	50.00	56.50	113	56.39	113	70-133	0	0-20	
Dibromomethane	ND	50.00	48.10	96	48.84	98	70-130	2	0-20	
Dichlorodifluoromethane	ND	50.00	49.83	100	56.55	113	10-190	13	0-40	
Ethylbenzene	ND	50.00	52.43	105	51.72	103	70-134	1	0-24	
Isopropylbenzene	ND	50.00	56.06	112	56.57	113	70-141	1	0-27	
Methylene Chloride	ND	50.00	46.64	93	47.22	94	69-130	1	0-21	
Naphthalene	ND	50.00	46.86	94	51.31	103	61-139	9	0-20	
Styrene	ND	50.00	53.50	107	53.74	107	18-174	0	0-40	
Tetrachloroethene	ND	50.00	47.83	96	47.17	94	33-147	1	0-30	
Toluene	ND	50.00	49.60	99	49.25	99	70-130	1	0-20	
t-1,2-Dichloroethene	ND	50.00	45.75	92	46.27	93	68-134	1	0-20	
Trichloroethene	ND	50.00	45.13	90	45.23	90	42-156	0	0-20	
Trichlorofluoromethane	ND	50.00	53.91	108	52.15	104	54-162	3	0-30	
Vinyl Acetate	ND	50.00	34.50	69	34.91	70	10-190	1	0-40	
Vinyl Chloride	ND	50.00	49.13	98	49.69	99	59-137	1	0-20	
c-1,3-Dichloropropene	ND	50.00	49.11	98	49.00	98	67-139	0	0-20	
c-1,2-Dichloroethene	ND	50.00	49.88	100	49.53	99	56-146	1	0-20	
n-Butylbenzene	ND	50.00	54.14	108	54.82	110	62-152	1	0-28	
n-Propylbenzene	ND	50.00	54.71	109	54.76	110	70-140	0	0-24	
o-Xylene	ND	50.00	56.30	113	56.89	114	70-142	1	0-31	
p-Isopropyltoluene	ND	50.00	54.28	109	54.84	110	65-143	1	0-39	
sec-Butylbenzene	ND	50.00	55.07	110	55.55	111	70-143	1	0-24	
t-1,3-Dichloropropene	ND	50.00	53.00	106	52.77	106	58-136	0	0-20	
tert-Butylbenzene	ND	50.00	54.73	109	56.22	112	70-140	3	0-20	
p/m-Xylene	ND	100.0	111.5	111	110.1	110	67-145	1	0-28	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	49.33	99	50.37	101	69-130	2	0-20	
Diethyl Ether	ND	50.00	47.37	95	46.97	94	64-130	1	0-20	
2-Chloroethyl Vinyl Ether	ND	50.00	1.485	3	1.470	3	10-191	1	0-40	3
Acetonitrile	ND	100.0	90.84	91	90.63	91	54-132	0	0-24	
Acrolein	ND	100.0	137.5	137	115.3	115	16-184	18	0-40	
Acrylonitrile	ND	50.00	45.04	90	47.47	95	46-142	5	0-20	
Hexachloro-1,3-Butadiene	ND	50.00	57.11	114	56.56	113	44-164	1	0-39	
Iodomethane	ND	100.0	99.92	100	107.7	108	10-181	7	0-40	
t-1,4-Dichloro-2-Butene	ND	50.00	66.66	133	68.85	138	11-130	3	0-20	3

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Pemaco - LACSD			Page 4 of 5

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Tetrahydrofuran	ND	50.00	54.94	110	53.07	106	55-139	3	0-20	
Tert-Butyl Alcohol (TBA)	ND	250.0	277.9	111	266.3	107	70-132	4	0-20	
Diisopropyl Ether (DIPE)	ND	50.00	53.21	106	52.90	106	56-140	1	0-25	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	49.70	99	49.68	99	61-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	49.95	100	50.78	102	69-130	2	0-20	
Ethanol	ND	500.0	569.4	114	513.2	103	65-137	10	0-21	
Cyclohexane	ND	50.00	44.62	89	41.00	82	35-185	8	0-34	
Thiophene	ND	50.00	51.11	102	50.32	101	70-130	2	0-20	
1,4-Dioxane	ND	500.0	533.3	107	525.2	105	55-151	2	0-25	
Hexane	ND	50.00	41.14	82	37.33	75	10-190	10	0-40	
1,3-Butadiene	ND	50.00	32.24	64	30.12	60	12-174	7	0-40	
Isopropanol	ND	250.0	268.2	107	298.3	119	19-187	11	0-32	

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RPD: Relative Percent Difference. CL: Control Limits

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Spike/Spike Duplicate - Surrogate

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - LACSD

Date Received: 09/13/16
Work Order: 16-09-0835
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-09-0884-3	**Sample**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 12:02**	**160914S006**
16-09-0884-3	**Matrix Spike**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 12:30**	**160914S006**
16-09-0884-3	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 12:58**	**160914S006**

Parameter	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	Qualifiers
1,4-Bromofluorobenzene	50.00	52.11	104	52.54	105	80-120	
Dibromofluoromethane	50.00	50.04	100	49.80	100	78-126	
1,2-Dichloroethane-d4	50.00	50.89	102	50.10	100	75-135	
Toluene-d8	50.00	50.39	101	50.61	101	80-120	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Sample Duplicate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	N/A
		Method:	SM 2540 D
Project: Pemaco - LACSD			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
16-09-0960-1	**Sample**	**Aqueous**	**N/A**	**09/16/16 00:00**	**09/16/16 14:00**	**G0916TSSD1**
16-09-0960-1	**Sample Duplicate**	**Aqueous**	**N/A**	**09/16/16 00:00**	**09/16/16 14:00**	**G0916TSSD1**

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Suspended	ND	ND	N/A	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Sample Duplicate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	N/A
		Method:	SM 4500 H+ B
Project: Pemaco - LACSD			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
16-09-0848-1	**Sample**	**Aqueous**	**PH 1**	**N/A**	**09/13/16 23:12**	**G0913PHD1**
16-09-0848-1	**Sample Duplicate**	**Aqueous**	**PH 1**	**N/A**	**09/13/16 23:12**	**G0913PHD1**

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
pH	9.540	9.550	0	0-25	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - LACSD

Date Received: 09/13/16
Work Order: 16-09-0835
Preparation: N/A
Method: EPA 410.4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-243-1677	**LCS**	**Aqueous**	**UV 4**	**N/A**	**09/14/16 12:00**	**G0914ODB2**
099-12-243-1677	**LCSD**	**Aqueous**	**UV 4**	**N/A**	**09/14/16 12:00**	**G0914ODB2**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Chemical Oxygen Demand	20.00	18.93	95	18.23	91	80-120	4	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - LACSD

Date Received: 09/13/16
Work Order: 16-09-0835
Preparation: N/A
Method: SM 2540 D

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-09-010-7880	**LCS**	**Aqueous**	**N/A**	**09/16/16**	**09/16/16 14:00**	**G0916TSSL1**
099-09-010-7880	**LCSD**	**Aqueous**	**N/A**	**09/16/16**	**09/16/16 14:00**	**G0916TSSL1**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Suspended	100.0	92.00	92	96.00	96	80-120	4	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 625
		Method:	EPA 625
Project: Pemaco - LACSD			Page 3 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-026-355	**LCS**	**Aqueous**	**GC/MS SS**	**09/17/16**	**09/20/16 17:32**	**160914L07**
099-15-026-355	**LCSD**	**Aqueous**	**GC/MS SS**	**09/17/16**	**09/20/16 17:52**	**160914L07**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Phenol	200.0	129.0	64	134.9	67	12-151	0-174	5	0-23	
2-Chlorophenol	200.0	137.5	69	141.5	71	45-135	30-150	3	0-18	
N-Nitroso-di-n-propylamine	200.0	117.7	59	124.3	62	52-128	39-141	5	0-13	
1,2,4-Trichlorobenzene	200.0	147.2	74	152.7	76	42-120	29-133	4	0-21	
Naphthalene	200.0	135.9	68	139.4	70	21-133	2-152	3	0-20	
4-Chloro-3-Methylphenol	200.0	123.7	62	130.7	65	20-150	0-172	5	0-40	
Dimethyl Phthalate	200.0	134.2	67	133.6	67	0-112	0-131	0	0-20	
Acenaphthylene	200.0	137.0	68	139.2	70	33-145	14-164	2	0-20	
Acenaphthene	200.0	142.5	71	144.7	72	51-137	37-151	2	0-11	
4-Nitrophenol	200.0	121.0	60	121.4	61	20-150	0-172	0	0-40	
2,4-Dinitrotoluene	200.0	131.7	66	132.3	66	25-143	5-163	0	0-36	
Fluorene	200.0	130.7	65	131.6	66	59-121	49-131	1	0-20	
Pentachlorophenol	200.0	71.35	36	72.97	36	20-150	0-172	2	0-40	
Pyrene	200.0	151.5	76	149.1	75	45-135	30-150	2	0-20	
Butyl Benzyl Phthalate	200.0	138.3	69	137.7	69	0-152	0-177	0	0-20	

Total number of LCS compounds: 15
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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LCS/LCSD - Surrogate

OTIE
317 East Main Street
Ventura, CA 93001-2624

Project: Pemaco - LACSD

Date Received: 09/13/16
Work Order: 16-09-0835
Preparation: EPA 625
Method: EPA 625

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-026-355	**LCS**	**Aqueous**	**GC/MS SS**	**09/17/16**	**09/20/16 17:32**	**160914L07**
099-15-026-355	**LCSD**	**Aqueous**	**GC/MS SS**	**09/17/16**	**09/20/16 17:52**	**160914L07**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	Qualifiers
2-Fluorophenol	400.0	155.1	78	152.1	76	15-138	
Phenol-d6	400.0	136.6	68	136.4	68	17-141	
Nitrobenzene-d5	400.0	143.3	72	144.4	72	56-123	
2-Fluorobiphenyl	400.0	142.6	71	143.3	72	45-120	
2,4,6-Tribromophenol	400.0	133.1	67	126.6	63	32-143	
p-Terphenyl-d14	400.0	145.9	73	140.1	70	46-133	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Pemaco - LACSD			Page 5 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-21348	**LCS**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 10:38**	**160914L019**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
1,1-Dichloroethene	50.00	39.54	79	66-126	56-136	
1,2-Dibromoethane	50.00	49.07	98	80-120	73-127	
1,2-Dichlorobenzene	50.00	51.14	102	63-129	52-140	
1,2-Dichloroethane	50.00	46.65	93	70-130	60-140	
Benzene	50.00	42.88	86	80-120	73-127	
Carbon Tetrachloride	50.00	52.10	104	67-139	55-151	
Chlorobenzene	50.00	47.74	95	78-120	71-127	
Ethylbenzene	50.00	49.23	98	80-123	73-130	
Toluene	50.00	46.57	93	80-120	73-127	
Trichloroethene	50.00	43.29	87	80-122	73-129	
Vinyl Chloride	50.00	50.32	101	70-130	60-140	
o-Xylene	50.00	54.09	108	74-122	66-130	
p/m-Xylene	100.0	105.0	105	75-123	67-131	
Methyl-t-Butyl Ether (MTBE)	50.00	50.14	100	69-129	59-139	
Tert-Butyl Alcohol (TBA)	250.0	257.2	103	69-129	59-139	
Diisopropyl Ether (DIPE)	50.00	51.08	102	68-128	58-138	
Ethyl-t-Butyl Ether (ETBE)	50.00	50.56	101	63-135	51-147	
Tert-Amyl-Methyl Ether (TAME)	50.00	50.96	102	67-133	56-144	
Ethanol	500.0	437.0	87	42-168	21-189	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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LCS Only - Surrogate

OTIE		Date Received:	09/13/16
317 East Main Street		Work Order:	16-09-0835
Ventura, CA 93001-2624		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Pemaco - LACSD			Page 6 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-21348	**LCS**	**Aqueous**	**GC/MS V V**	**09/14/16**	**09/14/16 10:38**	**160914L019**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	%Rec. CL	Qualifiers
1,4-Bromofluorobenzene	50.00	52.28	105	80-120	
Dibromofluoromethane	50.00	49.42	99	78-126	
1,2-Dichloroethane-d4	50.00	49.59	99	75-135	
Toluene-d8	50.00	50.62	101	80-120	

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 16-09-0835 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 410.4	N/A	1067	UV 4	1
EPA 625	EPA 625	928	GC/MS SS	1
EPA 8260B	EPA 5030C	1073	GC/MS V V	2
SM 2540 D	N/A	1009	N/A	1
SM 4500 H+ B	N/A	650	PH 1	1

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Glossary of Terms and Qualifiers

Work Order: 16-09-0835 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Chain of Custody

OTIE
Oneida Total Integrated Enterprises

OTIE
317 East Main Street
Ventura, CA 93001
Phone: (805) 585-2110
Fax: (805) 585-2111

Report To:

Contact: Orval Osborne
Company: OTIE
Address: 317 East Main Street
Ventura, CA 93001
Phone: (805) 585-4313
Fax: (805) 585-2111
E-Mail: oosborne@otie.com

Bill To:

Contact: _____
Company: _____
Address: _____
Phone: _____
Fax: _____
PO#: _____ Quote: _____

Shaded Areas For Internal Use Only _1_ of 1__

Lab Lot # 16-09-0835

Package Sealed Yes No	Samples Sealed Yes No
Received on Ice Yes No	Samples Intact Yes No
Temperature °C of Cooler	

Sampler Name: Brian Hendron	Signature: BH	Refrg #													Within Hold Time Yes No		Preserv. indicated Yes No NA	
		#/ Cont.																
Project Name: Pemaco - LACSD	Project Number: 2014160	Volume													pH Check ok Yes No NA		Res. Cl_2 Check ok Yes No NA	
		Preserv																
Project Location: 5973 S. District Blvd, Maywood, CA 90270	Date Requested (*without rush surcharge*): email: **end of month**		M t x	G r a b	VOC (8260) + 2CEVE	SVOC (625)	pH	COD	Total Suspended Solids						Sample Labels and COC Agree Yes No COC not present			
Lab PM: Virendra Patel, CalScience 714-895-5494																		

Laboratory ID	MS MSD	Client Sample ID	Sampling Date	Sampling Time	M t x	G r a b	VOC (8260) + 2CEVE	SVOC (625)	pH	COD	Total Suspended Solids						***Additional Analyses / Remarks***
1		SP-209-20160913	9/13/16	0830	W	X	X	X	X								* See comments for 8260
2		SP-209-20160913(comp)	9/13/16	0830	W					X	X						pH sample collect onsite at 08:30 = 7.33

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Brian Hendron	OTIE	9/13/16	1130	[illegible]	ECI	9/13/16	1120
[illegible]	ECI	9/13/16	1255	[illegible]	ECI	9/13/16	1255

Matrix Key

WW = Wastewater	SE = Sediment
W = Water	SO = Solid
S = Soil	DS = Drum Solid
SL = Sludge	DL = Drum Liquid
MS = Miscellaneous	L = Leachate
OL = Oil	WI = Wipe
A = Air	O = _____

Container Key

1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other _____

Preservative Key

1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS: OTIE-specific EDDs needed
* 8260 to include 2-Chloroethyl vinyl ether.
Unpreserved vials: 7 day holding time!

Level 3 data package. Report to MDL (J-flag)

Date Received / /
Courier: Hand Delivered
Bill of Lading:

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WORK ORDER NUMBER: 16-09- 0835

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: OTIE

DATE: 09 / 13 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 3.8 °C (w/ CF): 3.8 °C; ☐ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: GTP

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: GTP

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present ☐ N/A Checked by: 1069

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☑ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☑	☐
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☑ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☑ VOA (3) ☐ VOAh ☐ VOA**na**$_2$ ☐ 100PJ ☐ 100PJ**na**$_2$ ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☑ 125PB (G1)

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☑ 250CGB**s** (G1) ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (G1)

☐ 500PB ☑ 1AGB (G1) ☐ 1AGB**na**$_2$ ☐ 1AGB**s** ☑ 1PB (G2) ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (G2) (____) ☐ EnCores® (____) ☐ TerraCores® (____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na**$_2$ = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 1069

s = H_2SO_4, **u** = ultra-pure, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: SRO

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ATTACHMENT 4

Lab Report from ALS Environmental

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2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

September 22, 2016

Orval Osborne
Oneida Total Integrated Enterprises (OTIE)
317 E. Main St.
Ventura, CA 93001

RE: Pemaco-Plant Vapor Monitoring

Dear Orval:

Enclosed are the results of the samples submitted to our laboratory on September 13, 2016. For your reference, these analyses have been assigned our service request number P1604380.

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 Kelly Horiuchi at 5:41 pm, Sep 22, 2016

Kelly Horiuchi
Laboratory Director

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Oneida Total Integrated Enterprises (OTIE) Service Request No: P1604380
Project: Pemaco-Plant Vapor Monitoring

CASE NARRATIVE

The samples were received intact under chain of custody on September 13, 2016 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation, however it is not part of the AIHA-LAP, LLC 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. 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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www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA-LAP, LLC	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	977273
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-003
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272016-6
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: Oneida Total Integrated Enterprises (OTIE) Service Request: P1604380

Project ID: Pemaco-Plant Vapor Monitoring

Date Received: 9/13/2016

Time Received: 12:15

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
SP-106-20160913	P1604380-001	Air	9/13/2016	06:30	1SC00465	-0.03	10.89	X
SP-104-20160913	P1604380-002	Air	9/13/2016	07:15	1SC00106	0.12	11.07	X

P1604380

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, CA 93065
TEL: (805) 526-7161 . FAX: (805) 526-7270

CHAIN OF CUSTODY RECORD

DATE: 9/13/2016

PAGE: 1 OF 1

LABORATORY CLIENT: OTIE		CLIENT PROJECT NAME / NUMBER: Pemaco - Plant Vapor Monitoring	P.O. NO.: 2016160
ADDRESS: 317 E. Main Street, Ventura CA 93001		PROJECT CONTACT: Orval Osborne	LAB USE ONLY
TEL: 805.585.4313	FAX: 805.585.2111	E-MAIL: oosborne@otie.com	SAMPLER(S): (SIGNATURE) Brian Hendron
			COELT LOG CODE
			COOLER RECEIPT Temp = °C

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ ☐ ☐

SPECIAL INSTRUCTIONS

Please report EDDs in both ppmv and mg/m3
SP-108 started at -29
SP-104 started at -29

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	Field Point Name	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	VOCs by TO-15	CONTAINER TYPE
01	SP-106-20160913	Vapor SP-106	09/13/16	6:30	air	1	X	Summa 1SC00465
02	SP-104-20160913	Vapor SP-104	09/13/16	7:15	air	1	X	Summa 1SC00106

Relinquished by: (Signature) Brian Hendron	Received by: (Signature) Claudia Lunez	Date: 9/13/16	Time:
Relinquished by: (Signature) CLAUDIA Funez	Received by: (Signature) Claudia Lunez	Date: 9/13/16	Time: 7215
Relinquished by: (Signature)	Received by: (Signature)	Date: 9/13/16	Time:

5 of 132

ALS Environmental

Sample Acceptance Check Form

Client: Oneida Total Integrated Enterprises (OTIE) Work order: P1604380

Project: Pemaco-Plant Vapor Monitoring

Sample(s) received on: 9/13/16 Date opened: 9/13/16 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)? _____ 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
P1604380-001.01	1.0 L Source Can					
P1604380-002.01	1.0 L Source Can					

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **SP-106-20160913** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P1604380-001

Test Code: EPA TO-15 Date Collected: 9/13/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 9/13/16
Analyst: Evelyn Alvarez Date Analyzed: 9/14/16
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00465

Initial Pressure (psig): -0.03 Final Pressure (psig): 10.89

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	2.2	0.61	ND	1.3	0.35	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.2**	2.2	0.74	**0.24**	0.44	0.15	**J**
74-87-3	Chloromethane	**1.0**	2.2	0.65	**0.49**	1.1	0.32	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	2.2	0.83	ND	0.31	0.12	
75-01-4	Vinyl Chloride	ND	2.2	0.74	ND	0.85	0.29	
106-99-0	1,3-Butadiene	ND	2.2	0.96	ND	0.98	0.43	
74-83-9	Bromomethane	ND	2.2	0.83	ND	0.56	0.21	
75-00-3	Chloroethane	ND	2.2	0.74	ND	0.82	0.28	
64-17-5	Ethanol	**32**	22	3.5	**17**	12	1.8	**B**
75-05-8	Acetonitrile	ND	2.2	0.78	ND	1.3	0.47	
107-02-8	Acrolein	ND	8.7	0.74	ND	3.8	0.32	
67-64-1	Acetone	**16**	22	3.3	**6.8**	9.2	1.4	**J**
75-69-4	Trichlorofluoromethane	ND	2.2	0.74	ND	0.39	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	22	1.8	ND	8.9	0.74	
107-13-1	Acrylonitrile	ND	2.2	0.74	ND	1.0	0.34	
75-35-4	1,1-Dichloroethene	ND	2.2	0.74	ND	0.55	0.19	
75-09-2	Methylene Chloride	ND	2.2	0.74	ND	0.63	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.2	0.70	ND	0.70	0.22	
76-13-1	Trichlorotrifluoroethane	ND	2.2	0.74	ND	0.28	0.097	
75-15-0	Carbon Disulfide	ND	22	0.65	ND	7.0	0.21	
156-60-5	trans-1,2-Dichloroethene	ND	2.2	0.83	ND	0.55	0.21	
75-34-3	1,1-Dichloroethane	ND	2.2	0.70	ND	0.54	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	2.2	0.74	ND	0.60	0.21	
108-05-4	Vinyl Acetate	ND	22	2.8	ND	6.2	0.80	
78-93-3	2-Butanone (MEK)	**2.9**	22	0.91	**0.99**	7.4	0.31	**J**

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

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **SP-106-20160913** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P1604380-001

Test Code: EPA TO-15 Date Collected: 9/13/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 9/13/16
Analyst: Evelyn Alvarez Date Analyzed: 9/14/16
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00465

Initial Pressure (psig): -0.03 Final Pressure (psig): 10.89

Canister Dilution Factor: 1.74

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	2.2	0.70	ND	0.55	0.18	
141-78-6	Ethyl Acetate	ND	4.4	1.5	ND	1.2	0.42	
110-54-3	n-Hexane	ND	2.2	0.65	ND	0.62	0.19	
67-66-3	Chloroform	ND	2.2	0.74	ND	0.45	0.15	
109-99-9	Tetrahydrofuran (THF)	ND	2.2	0.87	ND	0.74	0.30	
107-06-2	1,2-Dichloroethane	ND	2.2	0.70	ND	0.54	0.17	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.74	ND	0.40	0.14	
71-43-2	Benzene	ND	2.2	0.70	ND	0.68	0.22	
56-23-5	Carbon Tetrachloride	ND	2.2	0.65	ND	0.35	0.10	
110-82-7	Cyclohexane	ND	4.4	1.3	ND	1.3	0.37	
78-87-5	1,2-Dichloropropane	ND	2.2	0.70	ND	0.47	0.15	
75-27-4	Bromodichloromethane	ND	2.2	0.65	ND	0.32	0.097	
79-01-6	Trichloroethene	ND	2.2	0.61	ND	0.40	0.11	
123-91-1	1,4-Dioxane	ND	2.2	0.70	ND	0.60	0.19	
80-62-6	Methyl Methacrylate	ND	4.4	1.3	ND	1.1	0.33	
142-82-5	n-Heptane	ND	2.2	0.74	ND	0.53	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.61	ND	0.48	0.13	
108-10-1	4-Methyl-2-pentanone	ND	2.2	0.70	ND	0.53	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.70	ND	0.48	0.15	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.70	ND	0.40	0.13	
108-88-3	Toluene	ND	2.2	0.74	ND	0.58	0.20	
591-78-6	2-Hexanone	ND	2.2	0.70	ND	0.53	0.17	
124-48-1	Dibromochloromethane	ND	2.2	0.70	ND	0.26	0.082	
106-93-4	1,2-Dibromoethane	ND	2.2	0.70	ND	0.28	0.091	
123-86-4	n-Butyl Acetate	ND	2.2	0.70	ND	0.46	0.15	

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

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **SP-106-20160913** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P1604380-001

Test Code: EPA TO-15 Date Collected: 9/13/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 9/13/16
Analyst: Evelyn Alvarez Date Analyzed: 9/14/16
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00465

Initial Pressure (psig): -0.03 Final Pressure (psig): 10.89

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	2.2	0.78	ND	0.47	0.17	
127-18-4	Tetrachloroethene	ND	2.2	0.61	ND	0.32	0.090	
108-90-7	Chlorobenzene	ND	2.2	0.70	ND	0.47	0.15	
100-41-4	Ethylbenzene	ND	2.2	0.70	ND	0.50	0.16	
179601-23-1	m,p-Xylenes	ND	4.4	1.3	ND	1.0	0.30	
75-25-2	Bromoform	ND	2.2	0.65	ND	0.21	0.063	
100-42-5	Styrene	ND	2.2	0.65	ND	0.51	0.15	
95-47-6	o-Xylene	ND	2.2	0.65	ND	0.50	0.15	
111-84-2	n-Nonane	ND	2.2	0.65	ND	0.41	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.65	ND	0.32	0.095	
98-82-8	Cumene	ND	2.2	0.65	ND	0.44	0.13	
80-56-8	alpha-Pinene	ND	2.2	0.61	ND	0.39	0.11	
103-65-1	n-Propylbenzene	ND	2.2	0.70	ND	0.44	0.14	
622-96-8	4-Ethyltoluene	ND	2.2	0.70	ND	0.44	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.70	ND	0.44	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.65	ND	0.44	0.13	
100-44-7	Benzyl Chloride	ND	2.2	0.48	ND	0.42	0.092	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.65	ND	0.36	0.11	
106-46-7	1,4-Dichlorobenzene	ND	2.2	0.61	ND	0.36	0.10	
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.65	ND	0.36	0.11	
5989-27-5	d-Limonene	ND	2.2	0.61	ND	0.39	0.11	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.43	ND	0.23	0.045	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.70	ND	0.29	0.094	
91-20-3	Naphthalene	ND	2.2	0.78	ND	0.42	0.15	
87-68-3	Hexachlorobutadiene	ND	2.2	0.61	ND	0.20	0.057	

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **SP-104-20160913** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P1604380-002

Test Code: EPA TO-15 Date Collected: 9/13/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 9/13/16
Analyst: Evelyn Alvarez Date Analyzed: 9/15/16
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00106

Initial Pressure (psig): 0.12 Final Pressure (psig): 11.07

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	2.2	0.61	ND	1.3	0.35	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.3**	2.2	0.74	**0.26**	0.44	0.15	**J**
74-87-3	Chloromethane	ND	2.2	0.65	ND	1.1	0.32	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	2.2	0.83	ND	0.31	0.12	
75-01-4	Vinyl Chloride	**0.81**	2.2	0.74	**0.32**	0.85	0.29	**J**
106-99-0	1,3-Butadiene	ND	2.2	0.96	ND	0.98	0.43	
74-83-9	Bromomethane	ND	2.2	0.83	ND	0.56	0.21	
75-00-3	Chloroethane	ND	2.2	0.74	ND	0.82	0.28	
64-17-5	Ethanol	**10**	22	3.5	**5.3**	12	1.8	**J, B**
75-05-8	Acetonitrile	ND	2.2	0.78	ND	1.3	0.47	
107-02-8	Acrolein	ND	8.7	0.74	ND	3.8	0.32	
67-64-1	Acetone	**150**	22	3.3	**62**	9.2	1.4	
75-69-4	Trichlorofluoromethane	**1.0**	2.2	0.74	**0.18**	0.39	0.13	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**2.0**	22	1.8	**0.80**	8.9	0.74	**J**
107-13-1	Acrylonitrile	ND	2.2	0.74	ND	1.0	0.34	
75-35-4	1,1-Dichloroethene	**11**	2.2	0.74	**2.9**	0.55	0.19	
75-09-2	Methylene Chloride	ND	2.2	0.74	ND	0.63	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.2	0.70	ND	0.70	0.22	
76-13-1	Trichlorotrifluoroethane	ND	2.2	0.74	ND	0.28	0.097	
75-15-0	Carbon Disulfide	ND	22	0.65	ND	7.0	0.21	
156-60-5	trans-1,2-Dichloroethene	**1.6**	2.2	0.83	**0.41**	0.55	0.21	**J**
75-34-3	1,1-Dichloroethane	**3.5**	2.2	0.70	**0.87**	0.54	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	2.2	0.74	ND	0.60	0.21	
108-05-4	Vinyl Acetate	ND	22	2.8	ND	6.2	0.80	
78-93-3	2-Butanone (MEK)	**9.9**	22	0.91	**3.4**	7.4	0.31	**J**

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

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **SP-104-20160913** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P1604380-002

Test Code: EPA TO-15 Date Collected: 9/13/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 9/13/16
Analyst: Evelyn Alvarez Date Analyzed: 9/15/16
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00106

Initial Pressure (psig): 0.12 Final Pressure (psig): 11.07

Canister Dilution Factor: 1.74

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	**28**	2.2	0.70	**7.2**	0.55	0.18	
141-78-6	Ethyl Acetate	ND	4.4	1.5	ND	1.2	0.42	
110-54-3	n-Hexane	**78**	2.2	0.65	**22**	0.62	0.19	
67-66-3	Chloroform	**6.7**	2.2	0.74	**1.4**	0.45	0.15	
109-99-9	Tetrahydrofuran (THF)	**2.3**	2.2	0.87	**0.79**	0.74	0.30	
107-06-2	1,2-Dichloroethane	ND	2.2	0.70	ND	0.54	0.17	
71-55-6	1,1,1-Trichloroethane	**12**	2.2	0.74	**2.2**	0.40	0.14	
71-43-2	Benzene	**9.5**	2.2	0.70	**3.0**	0.68	0.22	
56-23-5	Carbon Tetrachloride	ND	2.2	0.65	ND	0.35	0.10	
110-82-7	Cyclohexane	**140**	4.4	1.3	**39**	1.3	0.37	
78-87-5	1,2-Dichloropropane	ND	2.2	0.70	ND	0.47	0.15	
75-27-4	Bromodichloromethane	ND	2.2	0.65	ND	0.32	0.097	
79-01-6	Trichloroethene	**420**	2.2	0.61	**79**	0.40	0.11	
123-91-1	1,4-Dioxane	ND	2.2	0.70	ND	0.60	0.19	
80-62-6	Methyl Methacrylate	ND	4.4	1.3	ND	1.1	0.33	
142-82-5	n-Heptane	**40**	2.2	0.74	**9.8**	0.53	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.61	ND	0.48	0.13	
108-10-1	4-Methyl-2-pentanone	ND	2.2	0.70	ND	0.53	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.70	ND	0.48	0.15	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.70	ND	0.40	0.13	
108-88-3	Toluene	**0.75**	2.2	0.74	**0.20**	0.58	0.20	**J**
591-78-6	2-Hexanone	ND	2.2	0.70	ND	0.53	0.17	
124-48-1	Dibromochloromethane	ND	2.2	0.70	ND	0.26	0.082	
106-93-4	1,2-Dibromoethane	ND	2.2	0.70	ND	0.28	0.091	
123-86-4	n-Butyl Acetate	ND	2.2	0.70	ND	0.46	0.15	

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

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **SP-104-20160913** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P1604380-002

Test Code: EPA TO-15 Date Collected: 9/13/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 9/13/16
Analyst: Evelyn Alvarez Date Analyzed: 9/15/16
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00106

Initial Pressure (psig): 0.12 Final Pressure (psig): 11.07

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**3.5**	2.2	0.78	**0.75**	0.47	0.17	
127-18-4	Tetrachloroethene	**100**	2.2	0.61	**15**	0.32	0.090	
108-90-7	Chlorobenzene	ND	2.2	0.70	ND	0.47	0.15	
100-41-4	Ethylbenzene	**180**	2.2	0.70	**41**	0.50	0.16	
179601-23-1	m,p-Xylenes	**1.6**	4.4	1.3	**0.38**	1.0	0.30	**J**
75-25-2	Bromoform	ND	2.2	0.65	ND	0.21	0.063	
100-42-5	Styrene	ND	2.2	0.65	ND	0.51	0.15	
95-47-6	o-Xylene	**1.1**	2.2	0.65	**0.25**	0.50	0.15	**J**
111-84-2	n-Nonane	ND	2.2	0.65	ND	0.41	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.65	ND	0.32	0.095	
98-82-8	Cumene	**11**	2.2	0.65	**2.1**	0.44	0.13	
80-56-8	alpha-Pinene	**5.3**	2.2	0.61	**0.95**	0.39	0.11	
103-65-1	n-Propylbenzene	**24**	2.2	0.70	**4.8**	0.44	0.14	
622-96-8	4-Ethyltoluene	ND	2.2	0.70	ND	0.44	0.14	
108-67-8	1,3,5-Trimethylbenzene	**1.0**	2.2	0.70	**0.20**	0.44	0.14	**J**
95-63-6	1,2,4-Trimethylbenzene	**11**	2.2	0.65	**2.2**	0.44	0.13	
100-44-7	Benzyl Chloride	ND	2.2	0.48	ND	0.42	0.092	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.65	ND	0.36	0.11	
106-46-7	1,4-Dichlorobenzene	ND	2.2	0.61	ND	0.36	0.10	
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.65	ND	0.36	0.11	
5989-27-5	d-Limonene	ND	2.2	0.61	ND	0.39	0.11	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.43	ND	0.23	0.045	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.70	ND	0.29	0.094	
91-20-3	Naphthalene	ND	2.2	0.78	ND	0.42	0.15	
87-68-3	Hexachlorobutadiene	ND	2.2	0.61	ND	0.20	0.057	

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

Client: **Oneida Total Integrated Enterprises (OTIE)**

Client Sample ID: **Method Blank** ALS Project ID: P1604380

Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160914-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Evelyn Alvarez Date Analyzed: 9/14/16

Sample Type: 1.0 L Summa 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
115-07-1	Propene	ND	0.50	0.14	ND	0.29	0.081	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	0.17	ND	0.10	0.034	
74-87-3	Chloromethane	ND	0.50	0.15	ND	0.24	0.073	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	0.19	ND	0.072	0.027	
75-01-4	Vinyl Chloride	ND	0.50	0.17	ND	0.20	0.067	
106-99-0	1,3-Butadiene	ND	0.50	0.22	ND	0.23	0.099	
74-83-9	Bromomethane	ND	0.50	0.19	ND	0.13	0.049	
75-00-3	Chloroethane	ND	0.50	0.17	ND	0.19	0.064	
64-17-5	Ethanol	**1.3**	5.0	0.80	**0.70**	2.7	0.42	**J**
75-05-8	Acetonitrile	ND	0.50	0.18	ND	0.30	0.11	
107-02-8	Acrolein	ND	2.0	0.17	ND	0.87	0.074	
67-64-1	Acetone	ND	5.0	0.77	ND	2.1	0.32	
75-69-4	Trichlorofluoromethane	ND	0.50	0.17	ND	0.089	0.030	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	0.42	ND	2.0	0.17	
107-13-1	Acrylonitrile	ND	0.50	0.17	ND	0.23	0.078	
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	ND	0.13	0.043	
75-09-2	Methylene Chloride	ND	0.50	0.17	ND	0.14	0.049	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	0.16	ND	0.16	0.051	
76-13-1	Trichlorotrifluoroethane	ND	0.50	0.17	ND	0.065	0.022	
75-15-0	Carbon Disulfide	ND	5.0	0.15	ND	1.6	0.048	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.19	ND	0.13	0.048	
75-34-3	1,1-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	0.17	ND	0.14	0.047	
108-05-4	Vinyl Acetate	ND	5.0	0.65	ND	1.4	0.18	
78-93-3	2-Butanone (MEK)	ND	5.0	0.21	ND	1.7	0.071	

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

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

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

Client: **Oneida Total Integrated Enterprises (OTIE**)

Client Sample ID: **Method Blank** ALS Project ID: P1604380

Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160914-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Evelyn Alvarez Date Analyzed: 9/14/16

Sample Type: 1.0 L Summa 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	0.50	0.16	ND	0.13	0.040	
141-78-6	Ethyl Acetate	ND	1.0	0.35	ND	0.28	0.097	
110-54-3	n-Hexane	ND	0.50	0.15	ND	0.14	0.043	
67-66-3	Chloroform	ND	0.50	0.17	ND	0.10	0.035	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	0.20	ND	0.17	0.068	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.17	ND	0.092	0.031	
71-43-2	Benzene	ND	0.50	0.16	ND	0.16	0.050	
56-23-5	Carbon Tetrachloride	ND	0.50	0.15	ND	0.080	0.024	
110-82-7	Cyclohexane	ND	1.0	0.29	ND	0.29	0.084	
78-87-5	1,2-Dichloropropane	ND	0.50	0.16	ND	0.11	0.035	
75-27-4	Bromodichloromethane	ND	0.50	0.15	ND	0.075	0.022	
79-01-6	Trichloroethene	ND	0.50	0.14	ND	0.093	0.026	
123-91-1	1,4-Dioxane	ND	0.50	0.16	ND	0.14	0.044	
80-62-6	Methyl Methacrylate	ND	1.0	0.31	ND	0.24	0.076	
142-82-5	n-Heptane	ND	0.50	0.17	ND	0.12	0.041	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	ND	0.11	0.031	
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.16	ND	0.12	0.039	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	ND	0.11	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.16	ND	0.092	0.029	
108-88-3	Toluene	ND	0.50	0.17	ND	0.13	0.045	
591-78-6	2-Hexanone	ND	0.50	0.16	ND	0.12	0.039	
124-48-1	Dibromochloromethane	ND	0.50	0.16	ND	0.059	0.019	
106-93-4	1,2-Dibromoethane	ND	0.50	0.16	ND	0.065	0.021	
123-86-4	n-Butyl Acetate	ND	0.50	0.16	ND	0.11	0.034	

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

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

Client: **Oneida Total Integrated Enterprises (OTIE**)

Client Sample ID: **Method Blank** ALS Project ID: P1604380

Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160914-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Evelyn Alvarez Date Analyzed: 9/14/16

Sample Type: 1.0 L Summa 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
111-65-9	n-Octane	ND	0.50	0.18	ND	0.11	0.039	
127-18-4	Tetrachloroethene	ND	0.50	0.14	ND	0.074	0.021	
108-90-7	Chlorobenzene	ND	0.50	0.16	ND	0.11	0.035	
100-41-4	Ethylbenzene	ND	0.50	0.16	ND	0.12	0.037	
179601-23-1	m,p-Xylenes	ND	1.0	0.30	ND	0.23	0.069	
75-25-2	Bromoform	ND	0.50	0.15	ND	0.048	0.015	
100-42-5	Styrene	ND	0.50	0.15	ND	0.12	0.035	
95-47-6	o-Xylene	ND	0.50	0.15	ND	0.12	0.035	
111-84-2	n-Nonane	ND	0.50	0.15	ND	0.095	0.029	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.15	ND	0.073	0.022	
98-82-8	Cumene	ND	0.50	0.15	ND	0.10	0.031	
80-56-8	alpha-Pinene	ND	0.50	0.14	ND	0.090	0.025	
103-65-1	n-Propylbenzene	ND	0.50	0.16	ND	0.10	0.033	
622-96-8	4-Ethyltoluene	ND	0.50	0.16	ND	0.10	0.033	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.16	ND	0.10	0.033	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.15	ND	0.10	0.031	
100-44-7	Benzyl Chloride	ND	0.50	0.11	ND	0.097	0.021	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.14	ND	0.083	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
5989-27-5	d-Limonene	ND	0.50	0.14	ND	0.090	0.025	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.099	ND	0.052	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.16	ND	0.067	0.022	
91-20-3	Naphthalene	ND	0.50	0.18	ND	0.095	0.034	
87-68-3	Hexachlorobutadiene	ND	0.50	0.14	ND	0.047	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.

Client: **Oneida Total Integrated Enterprises (OTIE)**

Client Sample ID: **Method Blank** ALS Project ID: P1604380

Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160915-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Evelyn Alvarez Date Analyzed: 9/15/16

Sample Type: 1.0 L Summa 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
115-07-1	Propene	ND	0.50	0.14	ND	0.29	0.081	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	0.17	ND	0.10	0.034	
74-87-3	Chloromethane	ND	0.50	0.15	ND	0.24	0.073	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	0.19	ND	0.072	0.027	
75-01-4	Vinyl Chloride	ND	0.50	0.17	ND	0.20	0.067	
106-99-0	1,3-Butadiene	ND	0.50	0.22	ND	0.23	0.099	
74-83-9	Bromomethane	ND	0.50	0.19	ND	0.13	0.049	
75-00-3	Chloroethane	ND	0.50	0.17	ND	0.19	0.064	
64-17-5	Ethanol	**1.4**	5.0	0.80	**0.74**	2.7	0.42	**J**
75-05-8	Acetonitrile	ND	0.50	0.18	ND	0.30	0.11	
107-02-8	Acrolein	ND	2.0	0.17	ND	0.87	0.074	
67-64-1	Acetone	ND	5.0	0.77	ND	2.1	0.32	
75-69-4	Trichlorofluoromethane	ND	0.50	0.17	ND	0.089	0.030	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	0.42	ND	2.0	0.17	
107-13-1	Acrylonitrile	ND	0.50	0.17	ND	0.23	0.078	
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	ND	0.13	0.043	
75-09-2	Methylene Chloride	ND	0.50	0.17	ND	0.14	0.049	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	0.16	ND	0.16	0.051	
76-13-1	Trichlorotrifluoroethane	ND	0.50	0.17	ND	0.065	0.022	
75-15-0	Carbon Disulfide	ND	5.0	0.15	ND	1.6	0.048	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.19	ND	0.13	0.048	
75-34-3	1,1-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	0.17	ND	0.14	0.047	
108-05-4	Vinyl Acetate	ND	5.0	0.65	ND	1.4	0.18	
78-93-3	2-Butanone (MEK)	ND	5.0	0.21	ND	1.7	0.071	

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

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

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

Client: **Oneida Total Integrated Enterprises (OTIE)**

Client Sample ID: **Method Blank** ALS Project ID: P1604380

Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160915-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Evelyn Alvarez Date Analyzed: 9/15/16

Sample Type: 1.0 L Summa 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	0.50	0.16	ND	0.13	0.040	
141-78-6	Ethyl Acetate	ND	1.0	0.35	ND	0.28	0.097	
110-54-3	n-Hexane	ND	0.50	0.15	ND	0.14	0.043	
67-66-3	Chloroform	ND	0.50	0.17	ND	0.10	0.035	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	0.20	ND	0.17	0.068	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.17	ND	0.092	0.031	
71-43-2	Benzene	ND	0.50	0.16	ND	0.16	0.050	
56-23-5	Carbon Tetrachloride	ND	0.50	0.15	ND	0.080	0.024	
110-82-7	Cyclohexane	ND	1.0	0.29	ND	0.29	0.084	
78-87-5	1,2-Dichloropropane	ND	0.50	0.16	ND	0.11	0.035	
75-27-4	Bromodichloromethane	ND	0.50	0.15	ND	0.075	0.022	
79-01-6	Trichloroethene	ND	0.50	0.14	ND	0.093	0.026	
123-91-1	1,4-Dioxane	ND	0.50	0.16	ND	0.14	0.044	
80-62-6	Methyl Methacrylate	ND	1.0	0.31	ND	0.24	0.076	
142-82-5	n-Heptane	ND	0.50	0.17	ND	0.12	0.041	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	ND	0.11	0.031	
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.16	ND	0.12	0.039	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	ND	0.11	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.16	ND	0.092	0.029	
108-88-3	Toluene	ND	0.50	0.17	ND	0.13	0.045	
591-78-6	2-Hexanone	ND	0.50	0.16	ND	0.12	0.039	
124-48-1	Dibromochloromethane	ND	0.50	0.16	ND	0.059	0.019	
106-93-4	1,2-Dibromoethane	ND	0.50	0.16	ND	0.065	0.021	
123-86-4	n-Butyl Acetate	ND	0.50	0.16	ND	0.11	0.034	

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

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

Client: **Oneida Total Integrated Enterprises (OTIE)**

Client Sample ID: **Method Blank** ALS Project ID: P1604380

Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160915-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Evelyn Alvarez Date Analyzed: 9/15/16

Sample Type: 1.0 L Summa 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
111-65-9	n-Octane	ND	0.50	0.18	ND	0.11	0.039	
127-18-4	Tetrachloroethene	ND	0.50	0.14	ND	0.074	0.021	
108-90-7	Chlorobenzene	ND	0.50	0.16	ND	0.11	0.035	
100-41-4	Ethylbenzene	ND	0.50	0.16	ND	0.12	0.037	
179601-23-1	m,p-Xylenes	ND	1.0	0.30	ND	0.23	0.069	
75-25-2	Bromoform	ND	0.50	0.15	ND	0.048	0.015	
100-42-5	Styrene	ND	0.50	0.15	ND	0.12	0.035	
95-47-6	o-Xylene	ND	0.50	0.15	ND	0.12	0.035	
111-84-2	n-Nonane	ND	0.50	0.15	ND	0.095	0.029	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.15	ND	0.073	0.022	
98-82-8	Cumene	ND	0.50	0.15	ND	0.10	0.031	
80-56-8	alpha-Pinene	ND	0.50	0.14	ND	0.090	0.025	
103-65-1	n-Propylbenzene	ND	0.50	0.16	ND	0.10	0.033	
622-96-8	4-Ethyltoluene	ND	0.50	0.16	ND	0.10	0.033	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.16	ND	0.10	0.033	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.15	ND	0.10	0.031	
100-44-7	Benzyl Chloride	ND	0.50	0.11	ND	0.097	0.021	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.14	ND	0.083	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
5989-27-5	d-Limonene	ND	0.50	0.14	ND	0.090	0.025	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.099	ND	0.052	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.16	ND	0.067	0.022	
91-20-3	Naphthalene	ND	0.50	0.18	ND	0.095	0.034	
87-68-3	Hexachlorobutadiene	ND	0.50	0.14	ND	0.047	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.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Project ID: P1604380

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date(s) Collected: 9/13/16
Analyst: Evelyn Alvarez Date(s) Received: 9/13/16
Sample Type: 1.0 L Summa Canister(s) Date(s) Analyzed: 9/14 - 9/15/16
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	P160914-MB	**93**	**102**	**100**	70-130	
Method Blank	P160915-MB	**84**	**104**	**109**	70-130	
Lab Control Sample	P160914-LCS	**94**	**101**	**103**	70-130	
Lab Control Sample	P160915-LCS	**84**	**104**	**111**	70-130	
SP-106-20160913	P1604380-001	**82**	**105**	**112**	70-130	
SP-104-20160913	P1604380-002	**82**	**91**	**101**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160914-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Evelyn Alvarez Date Analyzed: 9/14/16
Sample Type: 1.0 L Summa 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
115-07-1	Propene	196	**185**	**94**	49-131	
75-71-8	Dichlorodifluoromethane (CFC 12)	188	**193**	**103**	65-117	
74-87-3	Chloromethane	200	**203**	**102**	48-132	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	204	**217**	**106**	65-122	
75-01-4	Vinyl Chloride	200	**214**	**107**	65-128	
106-99-0	1,3-Butadiene	206	**268**	**130**	62-143	
74-83-9	Bromomethane	202	**225**	**111**	65-130	
75-00-3	Chloroethane	200	**205**	**103**	69-126	
64-17-5	Ethanol	998	**1110**	**111**	57-126	
75-05-8	Acetonitrile	212	**191**	**90**	51-134	
107-02-8	Acrolein	214	**182**	**85**	55-146	
67-64-1	Acetone	1,080	**1060**	**98**	57-120	
75-69-4	Trichlorofluoromethane	216	**196**	**91**	59-139	
67-63-0	2-Propanol (Isopropyl Alcohol)	418	**430**	**103**	59-129	
107-13-1	Acrylonitrile	212	**215**	**101**	64-136	
75-35-4	1,1-Dichloroethene	216	**236**	**109**	72-123	
75-09-2	Methylene Chloride	222	**230**	**104**	63-117	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	218	**207**	**95**	50-141	
76-13-1	Trichlorotrifluoroethane	220	**228**	**104**	68-118	
75-15-0	Carbon Disulfide	210	**183**	**87**	55-143	
156-60-5	trans-1,2-Dichloroethene	210	**224**	**107**	69-129	
75-34-3	1,1-Dichloroethane	212	**211**	**100**	66-122	
1634-04-4	Methyl tert-Butyl Ether	216	**218**	**101**	55-128	
108-05-4	Vinyl Acetate	1,040	**1130**	**109**	66-140	
78-93-3	2-Butanone (MEK)	220	**237**	**108**	62-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160914-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Evelyn Alvarez Date Analyzed: 9/14/16
Sample Type: 1.0 L Summa 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	218	**227**	**104**	65-125	
141-78-6	Ethyl Acetate	428	**460**	**107**	64-132	
110-54-3	n-Hexane	212	**187**	**88**	58-126	
67-66-3	Chloroform	224	**222**	**99**	68-117	
109-99-9	Tetrahydrofuran (THF)	220	**213**	**97**	64-123	
107-06-2	1,2-Dichloroethane	214	**217**	**101**	63-124	
71-55-6	1,1,1-Trichloroethane	210	**222**	**106**	68-120	
71-43-2	Benzene	226	**232**	**103**	61-110	
56-23-5	Carbon Tetrachloride	230	**230**	**100**	65-137	
110-82-7	Cyclohexane	424	**449**	**106**	68-122	
78-87-5	1,2-Dichloropropane	216	**219**	**101**	67-122	
75-27-4	Bromodichloromethane	218	**237**	**109**	71-124	
79-01-6	Trichloroethene	216	**230**	**106**	71-121	
123-91-1	1,4-Dioxane	210	**254**	**121**	67-122	
80-62-6	Methyl Methacrylate	422	**462**	**109**	76-130	
142-82-5	n-Heptane	216	**222**	**103**	67-125	
10061-01-5	cis-1,3-Dichloropropene	208	**230**	**111**	73-131	
108-10-1	4-Methyl-2-pentanone	220	**233**	**106**	66-132	
10061-02-6	trans-1,3-Dichloropropene	210	**238**	**113**	76-135	
79-00-5	1,1,2-Trichloroethane	216	**239**	**111**	73-121	
108-88-3	Toluene	218	**223**	**102**	67-117	
591-78-6	2-Hexanone	220	**234**	**106**	59-128	
124-48-1	Dibromochloromethane	220	**264**	**120**	73-132	
106-93-4	1,2-Dibromoethane	218	**255**	**117**	73-128	
123-86-4	n-Butyl Acetate	226	**257**	**114**	61-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Oneida Total Integrated Enterprises (OTIE**)
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160914-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Evelyn Alvarez Date Analyzed: 9/14/16
Sample Type: 1.0 L Summa 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**
111-65-9	n-Octane	210	**215**	**102**	67-124	
127-18-4	Tetrachloroethene	202	**223**	**110**	65-126	
108-90-7	Chlorobenzene	220	**238**	**108**	68-120	
100-41-4	Ethylbenzene	218	**238**	**109**	69-123	
179601-23-1	m,p-Xylenes	428	**482**	**113**	67-125	
75-25-2	Bromoform	228	**242**	**106**	68-153	
100-42-5	Styrene	222	**254**	**114**	68-132	
95-47-6	o-Xylene	210	**238**	**113**	67-124	
111-84-2	n-Nonane	204	**198**	**97**	60-130	
79-34-5	1,1,2,2-Tetrachloroethane	210	**235**	**112**	72-128	
98-82-8	Cumene	208	**234**	**113**	67-124	
80-56-8	alpha-Pinene	212	**243**	**115**	67-129	
103-65-1	n-Propylbenzene	204	**230**	**113**	67-125	
622-96-8	4-Ethyltoluene	214	**251**	**117**	66-128	
108-67-8	1,3,5-Trimethylbenzene	214	**242**	**113**	65-125	
95-63-6	1,2,4-Trimethylbenzene	218	**261**	**120**	62-134	
100-44-7	Benzyl Chloride	220	**256**	**116**	74-145	
541-73-1	1,3-Dichlorobenzene	228	**268**	**118**	63-133	
106-46-7	1,4-Dichlorobenzene	208	**253**	**122**	62-129	
95-50-1	1,2-Dichlorobenzene	220	**270**	**123**	62-134	
5989-27-5	d-Limonene	210	**252**	**120**	66-137	
96-12-8	1,2-Dibromo-3-chloropropane	218	**234**	**107**	71-147	
120-82-1	1,2,4-Trichlorobenzene	230	**240**	**104**	60-145	
91-20-3	Naphthalene	218	**241**	**111**	56-158	
87-68-3	Hexachlorobutadiene	230	**232**	**101**	56-139	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160915-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Evelyn Alvarez Date Analyzed: 9/15/16
Sample Type: 1.0 L Summa 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
115-07-1	Propene	196	**154**	**79**	49-131	
75-71-8	Dichlorodifluoromethane (CFC 12)	188	**175**	**93**	65-117	
74-87-3	Chloromethane	200	**174**	**87**	48-132	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	204	**210**	**103**	65-122	
75-01-4	Vinyl Chloride	200	**189**	**95**	65-128	
106-99-0	1,3-Butadiene	206	**241**	**117**	62-143	
74-83-9	Bromomethane	202	**214**	**106**	65-130	
75-00-3	Chloroethane	200	**186**	**93**	69-126	
64-17-5	Ethanol	998	**937**	**94**	57-126	
75-05-8	Acetonitrile	212	**159**	**75**	51-134	
107-02-8	Acrolein	214	**163**	**76**	55-146	
67-64-1	Acetone	1,080	**921**	**85**	57-120	
75-69-4	Trichlorofluoromethane	216	**183**	**85**	59-139	
67-63-0	2-Propanol (Isopropyl Alcohol)	418	**363**	**87**	59-129	
107-13-1	Acrylonitrile	212	**189**	**89**	64-136	
75-35-4	1,1-Dichloroethene	216	**226**	**105**	72-123	
75-09-2	Methylene Chloride	222	**217**	**98**	63-117	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	218	**174**	**80**	50-141	
76-13-1	Trichlorotrifluoroethane	220	**230**	**105**	68-118	
75-15-0	Carbon Disulfide	210	**171**	**81**	55-143	
156-60-5	trans-1,2-Dichloroethene	210	**201**	**96**	69-129	
75-34-3	1,1-Dichloroethane	212	**190**	**90**	66-122	
1634-04-4	Methyl tert-Butyl Ether	216	**200**	**93**	55-128	
108-05-4	Vinyl Acetate	1,040	**1060**	**102**	66-140	
78-93-3	2-Butanone (MEK)	220	**218**	**99**	62-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Oneida Total Integrated Enterprises (OTIE)**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160915-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Evelyn Alvarez Date Analyzed: 9/15/16
Sample Type: 1.0 L Summa 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	218	**202**	**93**	65-125	
141-78-6	Ethyl Acetate	428	**401**	**94**	64-132	
110-54-3	n-Hexane	212	**161**	**76**	58-126	
67-66-3	Chloroform	224	**204**	**91**	68-117	
109-99-9	Tetrahydrofuran (THF)	220	**197**	**90**	64-123	
107-06-2	1,2-Dichloroethane	214	**191**	**89**	63-124	
71-55-6	1,1,1-Trichloroethane	210	**211**	**100**	68-120	
71-43-2	Benzene	226	**216**	**96**	61-110	
56-23-5	Carbon Tetrachloride	230	**221**	**96**	65-137	
110-82-7	Cyclohexane	424	**426**	**100**	68-122	
78-87-5	1,2-Dichloropropane	216	**199**	**92**	67-122	
75-27-4	Bromodichloromethane	218	**220**	**101**	71-124	
79-01-6	Trichloroethene	216	**231**	**107**	71-121	
123-91-1	1,4-Dioxane	210	**243**	**116**	67-122	
80-62-6	Methyl Methacrylate	422	**452**	**107**	76-130	
142-82-5	n-Heptane	216	**206**	**95**	67-125	
10061-01-5	cis-1,3-Dichloropropene	208	**214**	**103**	73-131	
108-10-1	4-Methyl-2-pentanone	220	**209**	**95**	66-132	
10061-02-6	trans-1,3-Dichloropropene	210	**220**	**105**	76-135	
79-00-5	1,1,2-Trichloroethane	216	**230**	**106**	73-121	
108-88-3	Toluene	218	**225**	**103**	67-117	
591-78-6	2-Hexanone	220	**208**	**95**	59-128	
124-48-1	Dibromochloromethane	220	**271**	**123**	73-132	
106-93-4	1,2-Dibromoethane	218	**258**	**118**	73-128	
123-86-4	n-Butyl Acetate	226	**229**	**101**	61-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Oneida Total Integrated Enterprises (OTIE**)
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring** ALS Sample ID: P160915-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Evelyn Alvarez Date Analyzed: 9/15/16
Sample Type: 1.0 L Summa 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**
111-65-9	n-Octane	210	**200**	**95**	67-124	
127-18-4	Tetrachloroethene	202	**239**	**118**	65-126	
108-90-7	Chlorobenzene	220	**243**	**110**	68-120	
100-41-4	Ethylbenzene	218	**236**	**108**	69-123	
179601-23-1	m,p-Xylenes	428	**474**	**111**	67-125	
75-25-2	Bromoform	228	**255**	**112**	68-153	
100-42-5	Styrene	222	**258**	**116**	68-132	
95-47-6	o-Xylene	210	**235**	**112**	67-124	
111-84-2	n-Nonane	204	**176**	**86**	60-130	
79-34-5	1,1,2,2-Tetrachloroethane	210	**229**	**109**	72-128	
98-82-8	Cumene	208	**234**	**113**	67-124	
80-56-8	alpha-Pinene	212	**239**	**113**	67-129	
103-65-1	n-Propylbenzene	204	**226**	**111**	67-125	
622-96-8	4-Ethyltoluene	214	**250**	**117**	66-128	
108-67-8	1,3,5-Trimethylbenzene	214	**242**	**113**	65-125	
95-63-6	1,2,4-Trimethylbenzene	218	**253**	**116**	62-134	
100-44-7	Benzyl Chloride	220	**247**	**112**	74-145	
541-73-1	1,3-Dichlorobenzene	228	**273**	**120**	63-133	
106-46-7	1,4-Dichlorobenzene	208	**257**	**124**	62-129	
95-50-1	1,2-Dichlorobenzene	220	**272**	**124**	62-134	
5989-27-5	d-Limonene	210	**234**	**111**	66-137	
96-12-8	1,2-Dibromo-3-chloropropane	218	**238**	**109**	71-147	
120-82-1	1,2,4-Trichlorobenzene	230	**247**	**107**	60-145	
91-20-3	Naphthalene	218	**241**	**111**	56-158	
87-68-3	Hexachlorobutadiene	230	**237**	**103**	56-139	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Oneida Total Integrated Enterprises (OTIE)** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 09141602.D
Analyst: Evelyn Alvarez Date Analyzed: 9/14/16
Sample Type: 1.0 L Summa Canister(s) Time Analyzed: 05:40
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	149378	10.92	690584	13.06	288999	17.38
	Upper Limit	209129	11.25	966818	13.39	404599	17.71
	Lower Limit	89627	10.59	414350	12.73	173399	17.05
	Client Sample ID						
01	Method Blank	148875	10.91	710900	13.04	290566	17.38
02	Lab Control Sample	148357	10.92	693087	13.06	286626	17.38
03	SP-106-20160913	174531	10.90	815389	13.05	323735	17.38
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Oneida Total Integrated Enterprises (OTIE)** ALS Project ID: P1604380
Client Project ID: **Pemaco-Plant Vapor Monitoring**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 09151602.D
Analyst: Evelyn Alvarez Date Analyzed: 9/15/16
Sample Type: 1.0 L Summa Canister(s) Time Analyzed: 05:40
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	175734	10.92	808249	13.06	316719	17.38
	Upper Limit	246028	11.25	1131549	13.39	443407	17.71
	Lower Limit	105440	10.59	484949	12.73	190031	17.05
	Client Sample ID						
01	Method Blank	164092	10.90	781609	13.05	307649	17.38
02	Lab Control Sample	168789	10.92	775879	13.06	305343	17.38
03	SP-104-20160913	175988	10.91	791171	13.05	369373	17.38
04							
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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.

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141621.D Vial: 10
Acq On : 14 Sep 2016 20:24 Operator: EA
Sample : P1604380-001 (400ml) Inst : MS13
Misc : S29-08301601

EA 9/21/16

Quant Time: Sep 21 09:37:56 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.90	130	174531	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.05	114	815389	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	323735	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	193832	10.290	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 82.32%				
57) Toluene-d8 (SS2)	15.50	98	828382	13.085	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
73) Bromofluorobenzene (SS3)	18.86	174	313892	14.002	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.00%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	4.12	85	9651	0.277	ng		99
4) Chloromethane	4.38	50	5912	0.234	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	4.80	62	3684	0.160	ng		98
7) 1,3-Butadiene	4.98	54	538	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	5.79	64	1615	0.142	ng		94
10) Ethanol	6.12	45	77639	7.272	ng		99
11) Acetonitrile	6.41	41	1852	N.D.			
12) Acrolein	6.58	56	1758	0.154	ng		99
13) Acetone	6.78	58	45974m	3.688	ng		
14) Trichlorofluoromethane	7.02	101	314	N.D.			
15) 2-Propanol (Isopropanol)	7.30	45	13584	0.347	ng		88
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	8.18	84	1113	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	8.45	76	7856	0.115	ng		94
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	9.71	63	916	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)	10.25	72	7170	0.673	ng	#	72
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	11.08	61	1571	0.280	ng		91
31) n-Hexane	11.03	57	1717	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	11.55	72	742	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.	d		
41) Benzene	12.65	78	5309	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	13.75	130	1463	N.D.			
48) 1,4-Dioxane	13.80	88	258	N.D.			
49) 2,2,4-Trimethylpentane...	13.82	57	1061	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141621.D Vial: 10
Acq On : 14 Sep 2016 20:24 Operator: EA
Sample : P1604380-001 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 21 09:37:56 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

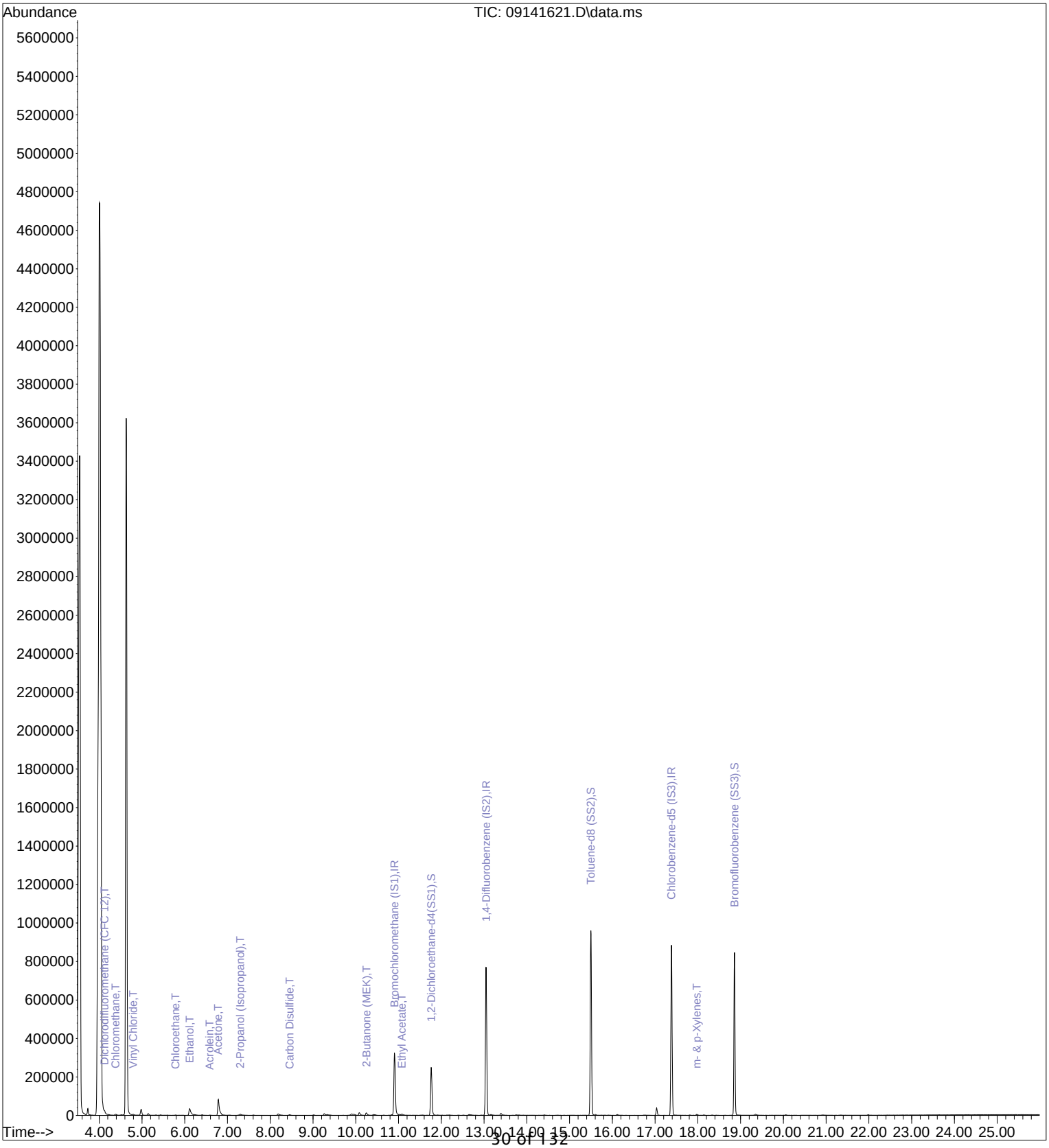
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.60	91	4263	N.D.		
59) 2-Hexanone	15.83	43	785	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.54	43	658	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	17.81	91	2034	N.D.		
67) m- & p-Xylenes	17.98	91	5507	0.104	ng	100
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.34	104	334	N.D.		
70) o-Xylene	18.43	91	846	N.D.		
71) n-Nonane	18.65	43	249	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	19.59	105	457	N.D.		
78) 4-Ethyltoluene	19.59	105	457	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	20.10	105	268	N.D.		
83) n-Decane	0.00	57	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	22.47	128	416	N.D.		
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.14	55	1051	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		

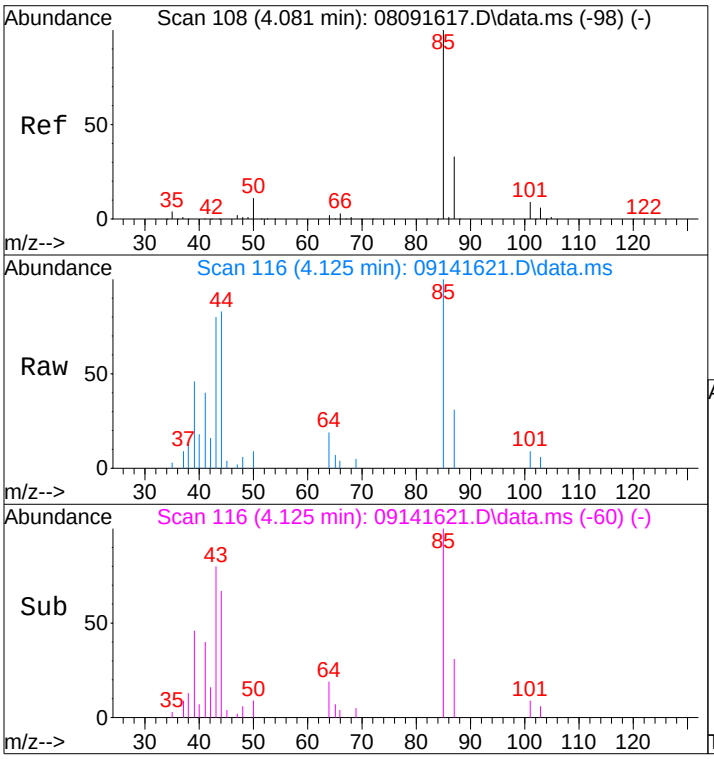
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141621.D Vial: 10
Acq On : 14 Sep 2016 20:24 Operator: EA
Sample : P1604380-001 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 21 09:37:56 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

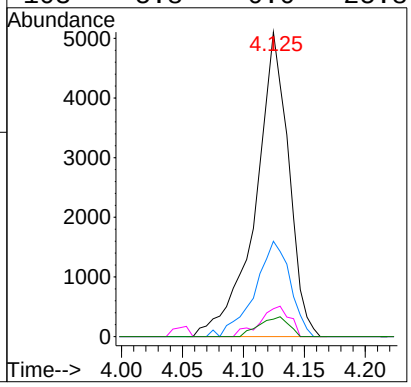


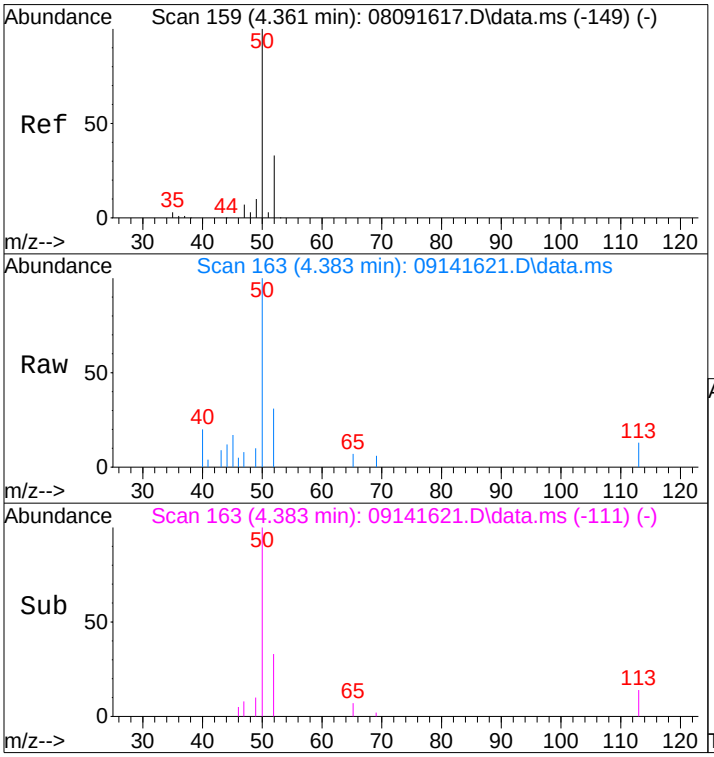


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.28 ng
RT: 4.12 min Scan# 116
Delta R.T. 0.060 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 85 Resp: 9651

Ion	Ratio	Lower	Upper
85	100		
87	33.4	12.8	52.8
101	8.9	0.0	28.9
103	5.8	0.0	25.8

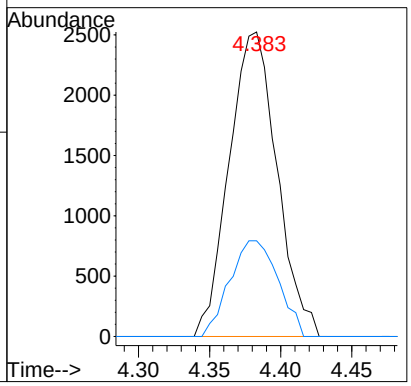


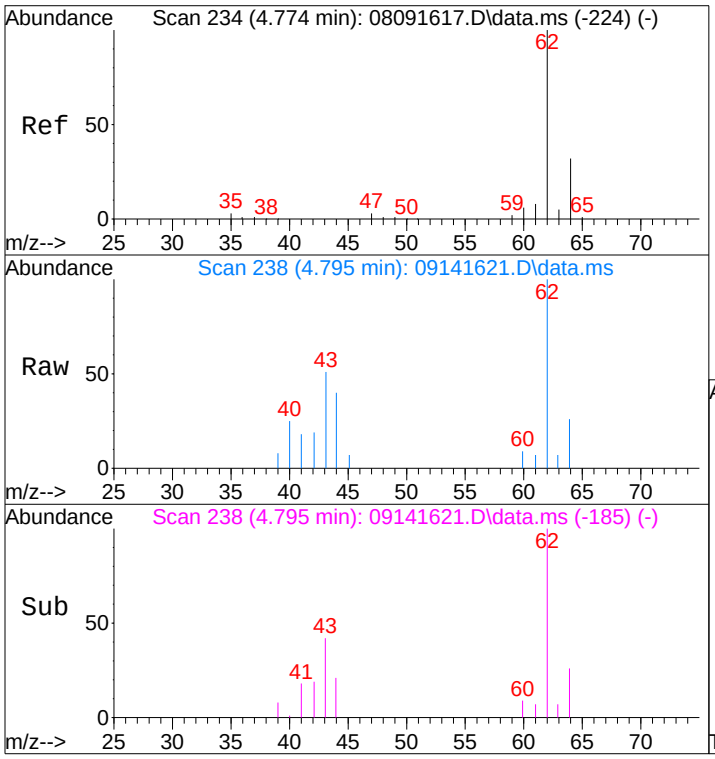


#4
Chloromethane
Concen: 0.23 ng
RT: 4.38 min Scan# 163
Delta R.T. 0.038 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 50 Resp: 5912

Ion	Ratio	Lower	Upper
50	100		
52	31.6	13.1	53.1

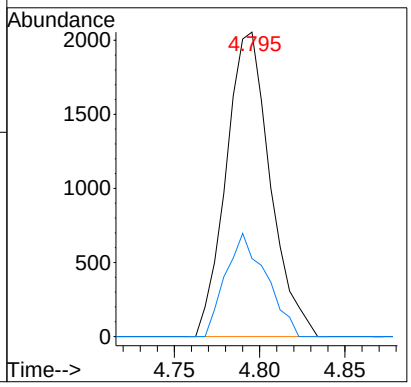


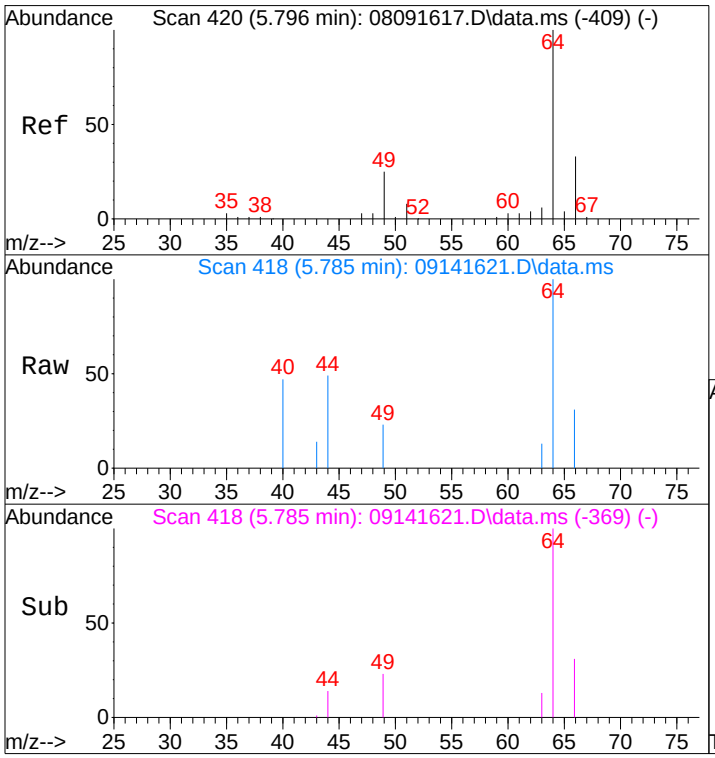


#6
Vinyl Chloride
Concen: 0.16 ng
RT: 4.80 min Scan# 238
Delta R.T. 0.044 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 62 Resp: 3684

Ion	Ratio	Lower	Upper
62	100		
64	31.3	12.2	52.2

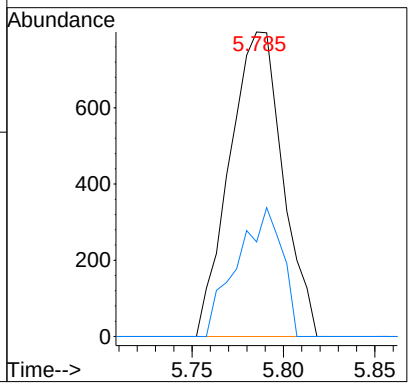


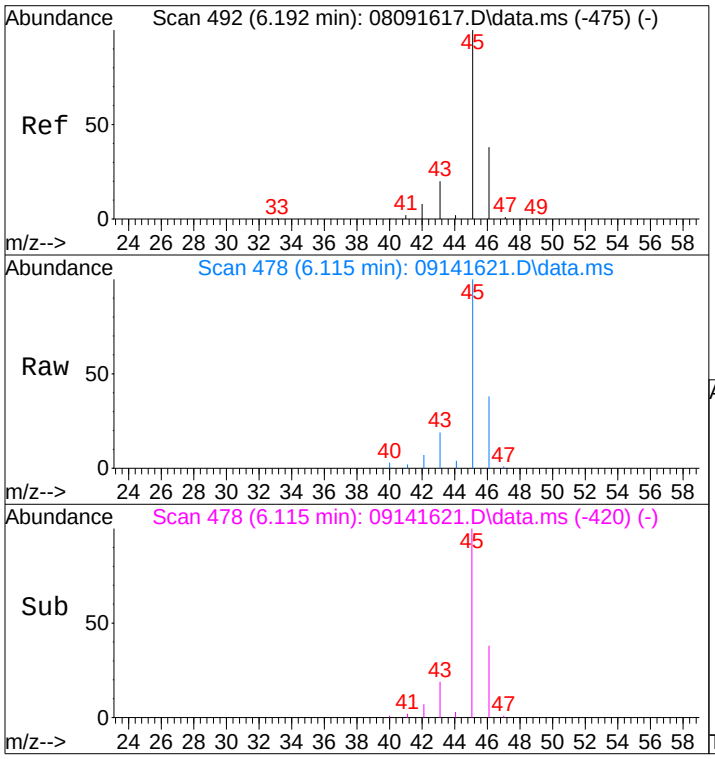


#9
Chloroethane
Concen: 0.14 ng
RT: 5.79 min Scan# 418
Delta R.T. 0.022 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 64 Resp: 1615

Ion	Ratio	Lower	Upper
64	100		
66	36.0	12.8	52.8

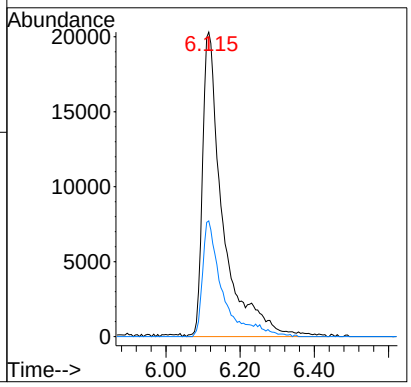


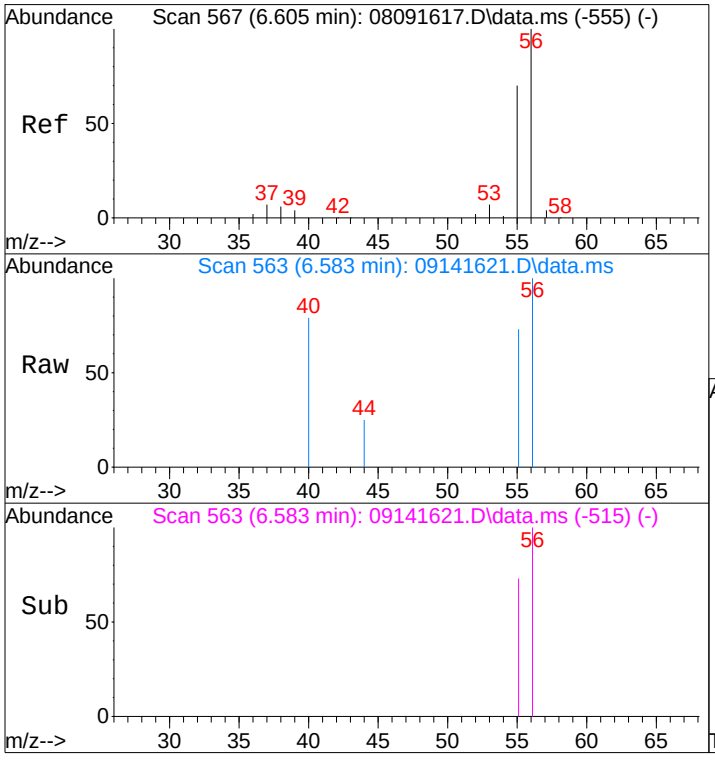


#10
Ethanol
Concen: 7.27 ng
RT: 6.12 min Scan# 478
Delta R.T. -0.033 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 45 Resp: 77639

Ion	Ratio	Lower	Upper
45	100		
46	37.3	17.8	57.8

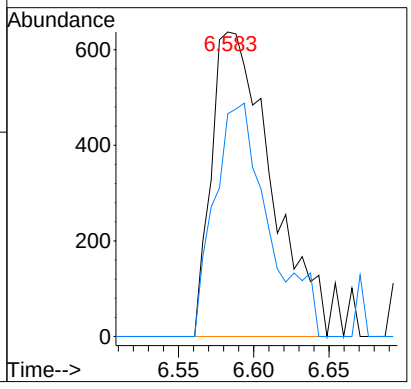


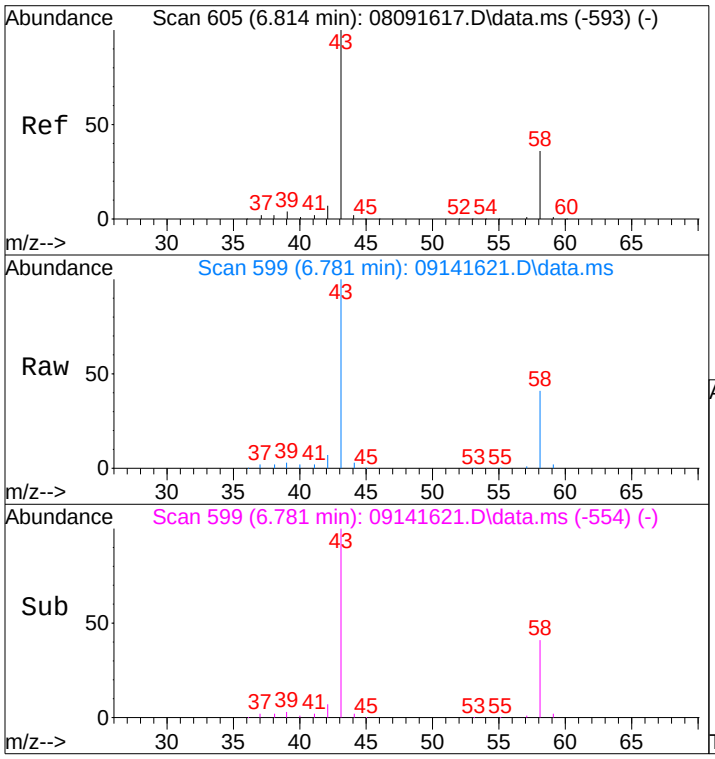


#12
Acrolein
Concen: 0.15 ng
RT: 6.58 min Scan# 563
Delta R.T. 0.016 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 56 Resp: 1758

Ion	Ratio	Lower	Upper
56	100		
55	69.5	48.7	88.7

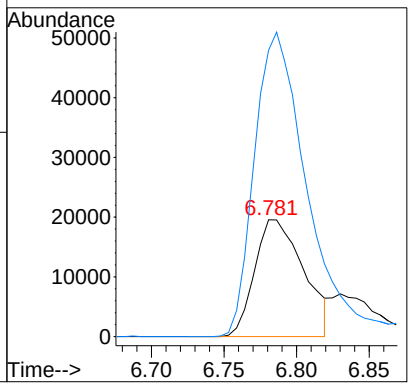


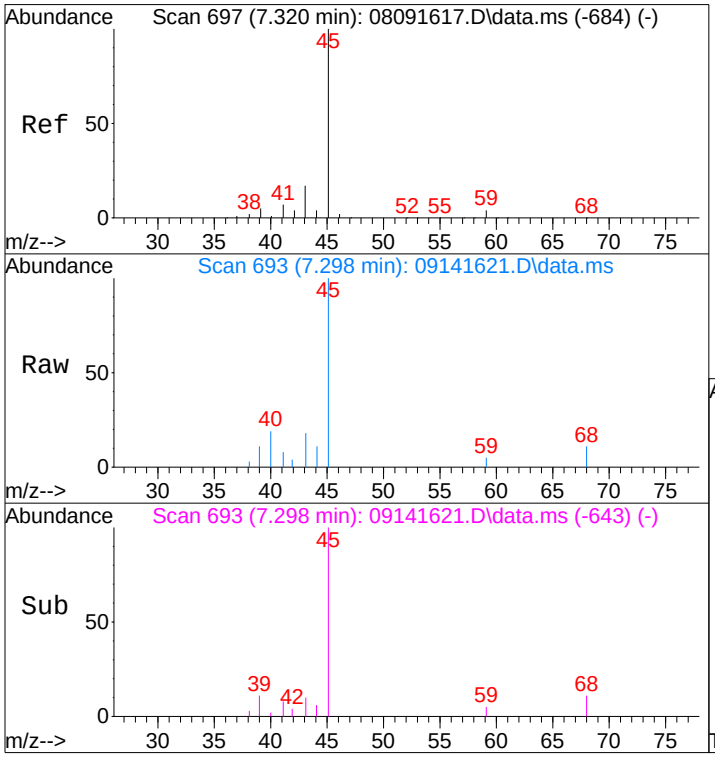


#13
Acetone
Concen: 3.69 ng m
RT: 6.78 min Scan# 599
Delta R.T. -0.000 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 58 Resp: 45974

Ion	Ratio	Lower	Upper
58	100		
43	295.5	246.2	306.2

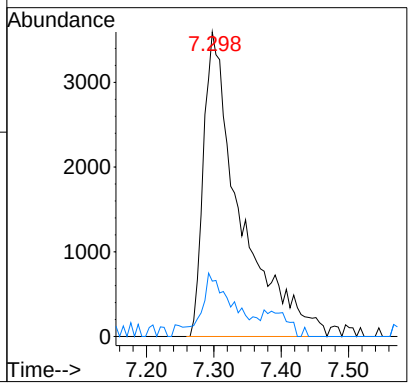


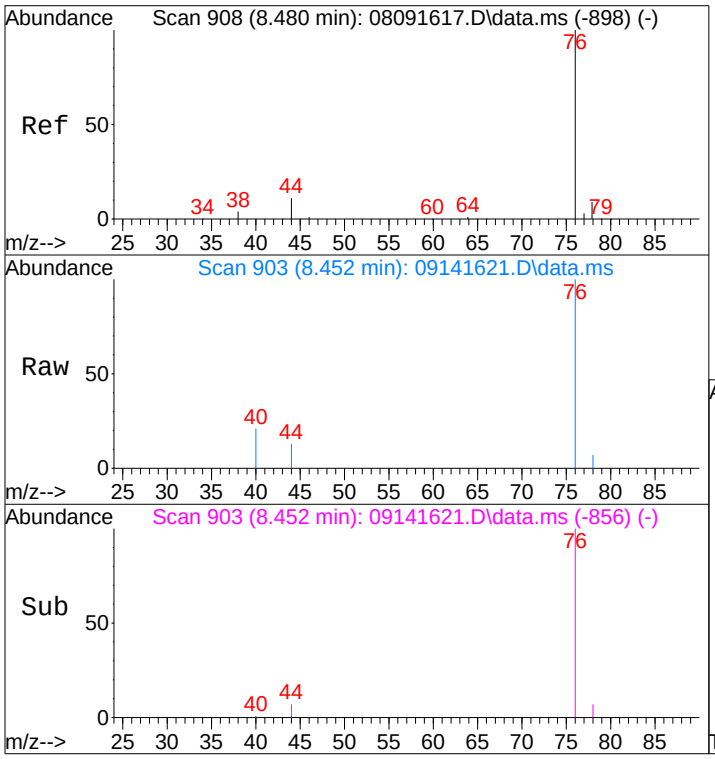


#15
2-Propanol (Isopropanol)
Concen: 0.35 ng
RT: 7.30 min Scan# 693
Delta R.T. 0.027 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 45 Resp: 13584

Ion	Ratio	Lower	Upper
45	100		
43	22.2	0.0	36.9

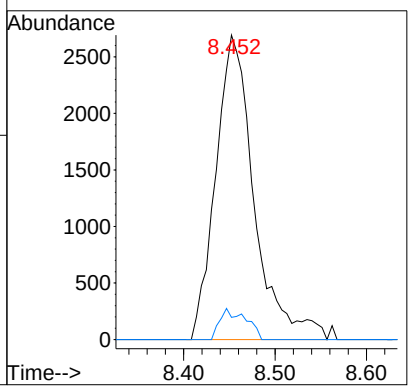


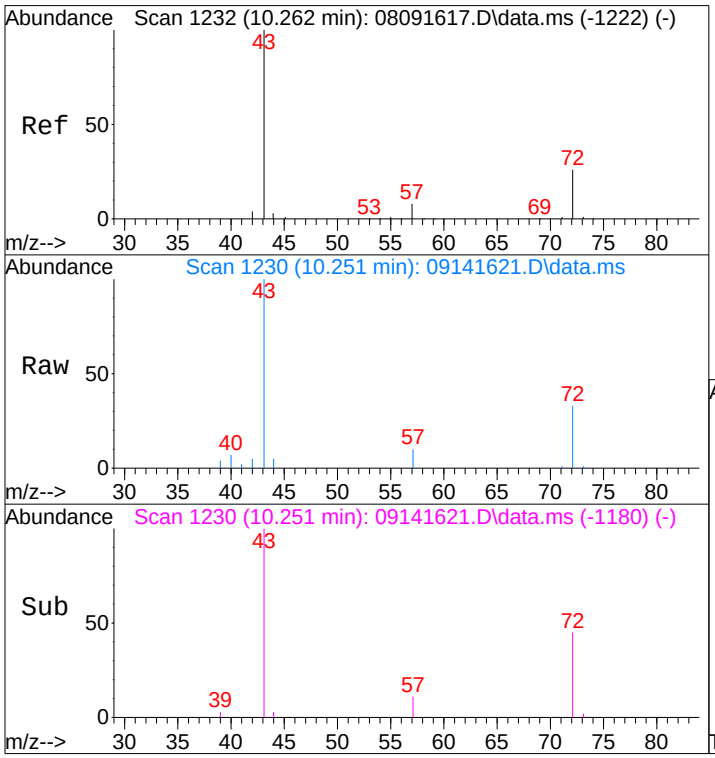


#22
Carbon Disulfide
Concen: 0.11 ng
RT: 8.45 min Scan# 903
Delta R.T. 0.011 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 76 Resp: 7856

Ion	Ratio	Lower	Upper
76	100		
78	6.9	0.0	29.2

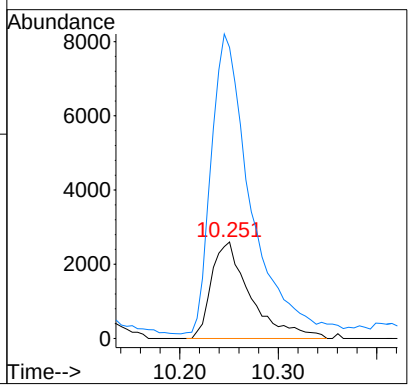


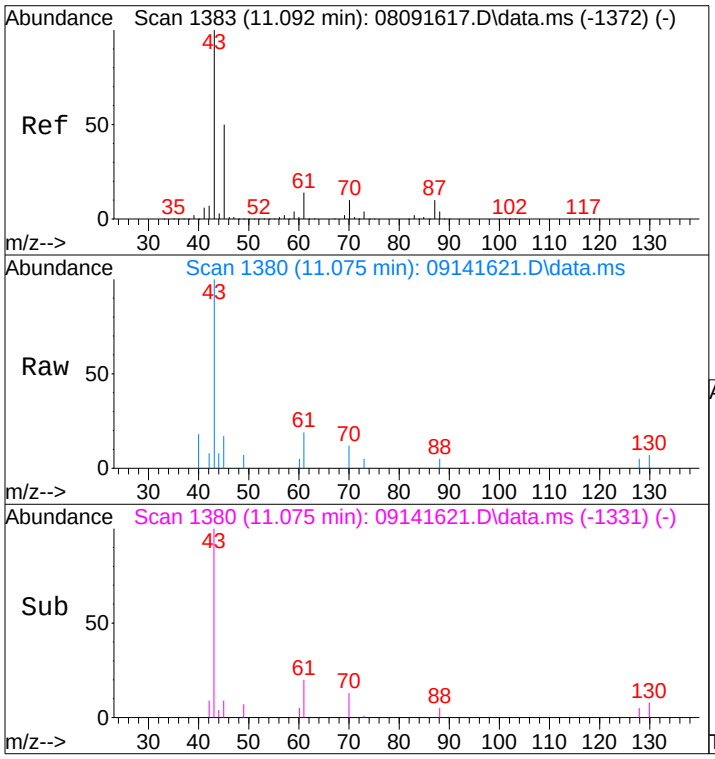


#27
2-Butanone (MEK)
Concen: 0.67 ng
RT: 10.25 min Scan# 1230
Delta R.T. 0.027 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 72 Resp: 7170

Ion	Ratio	Lower	Upper
72	100		
43	315.7	358.9	398.9#

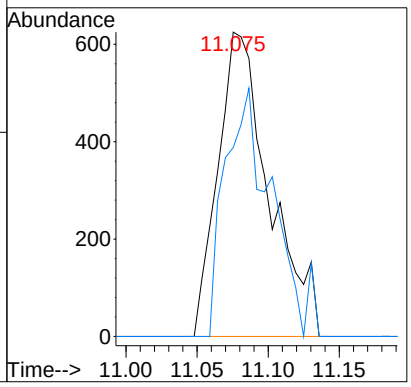


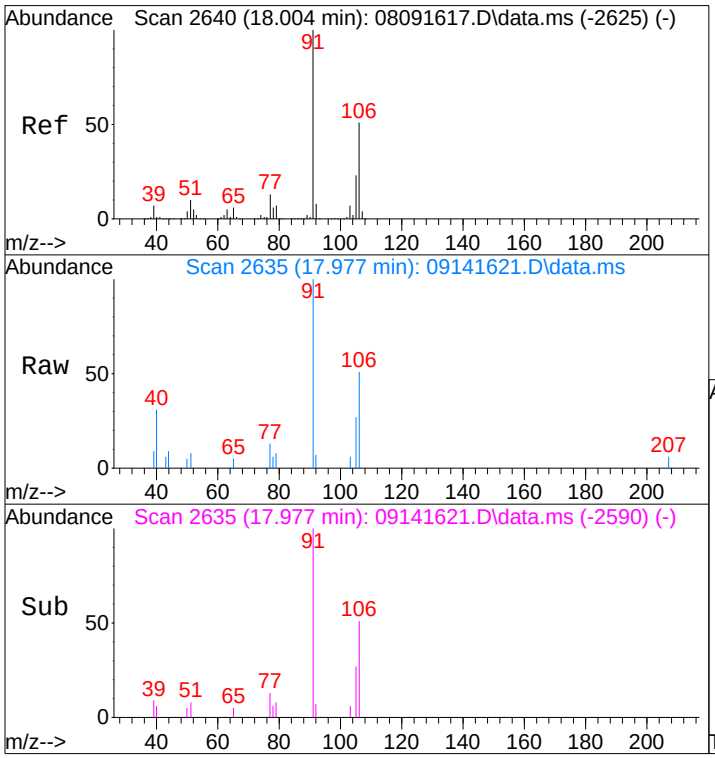


#30
Ethyl Acetate
Concen: 0.28 ng
RT: 11.08 min Scan# 1380
Delta R.T. 0.022 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 61 Resp: 1571

Ion	Ratio	Lower	Upper
61	100		
70	71.6	59.5	99.5

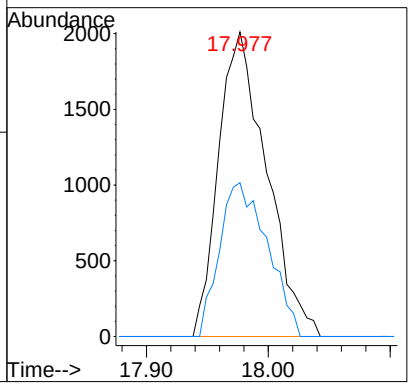




#67
m- & p-Xylenes
Concen: 0.10 ng
RT: 17.98 min Scan# 2635
Delta R.T. -0.000 min
Lab File: 09141621.D
Acq: 14 Sep 2016 20:24

Tgt Ion: 91 Resp: 5507

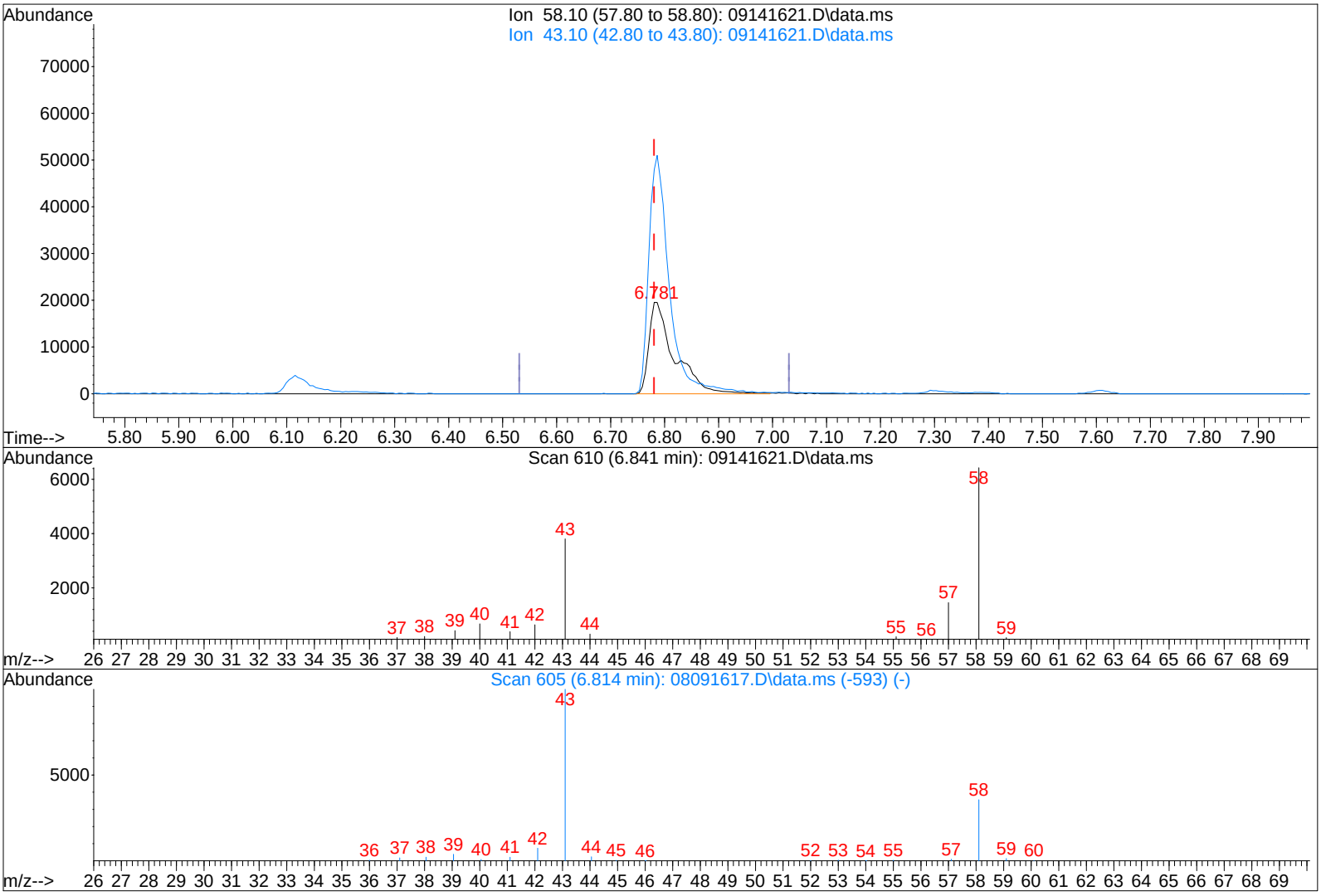
Ion	Ratio	Lower	Upper
91	100		
106	50.4	30.6	70.6



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\14\09141621.D Vial: 10
Acq On : 14 Sep 2016 20:24 Operator: EA
Sample : P1604380-001 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 15 09:40:08 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09141621.D\data.ms

(13) Acetone (T)

6.781min (-0.000) 5.14ng

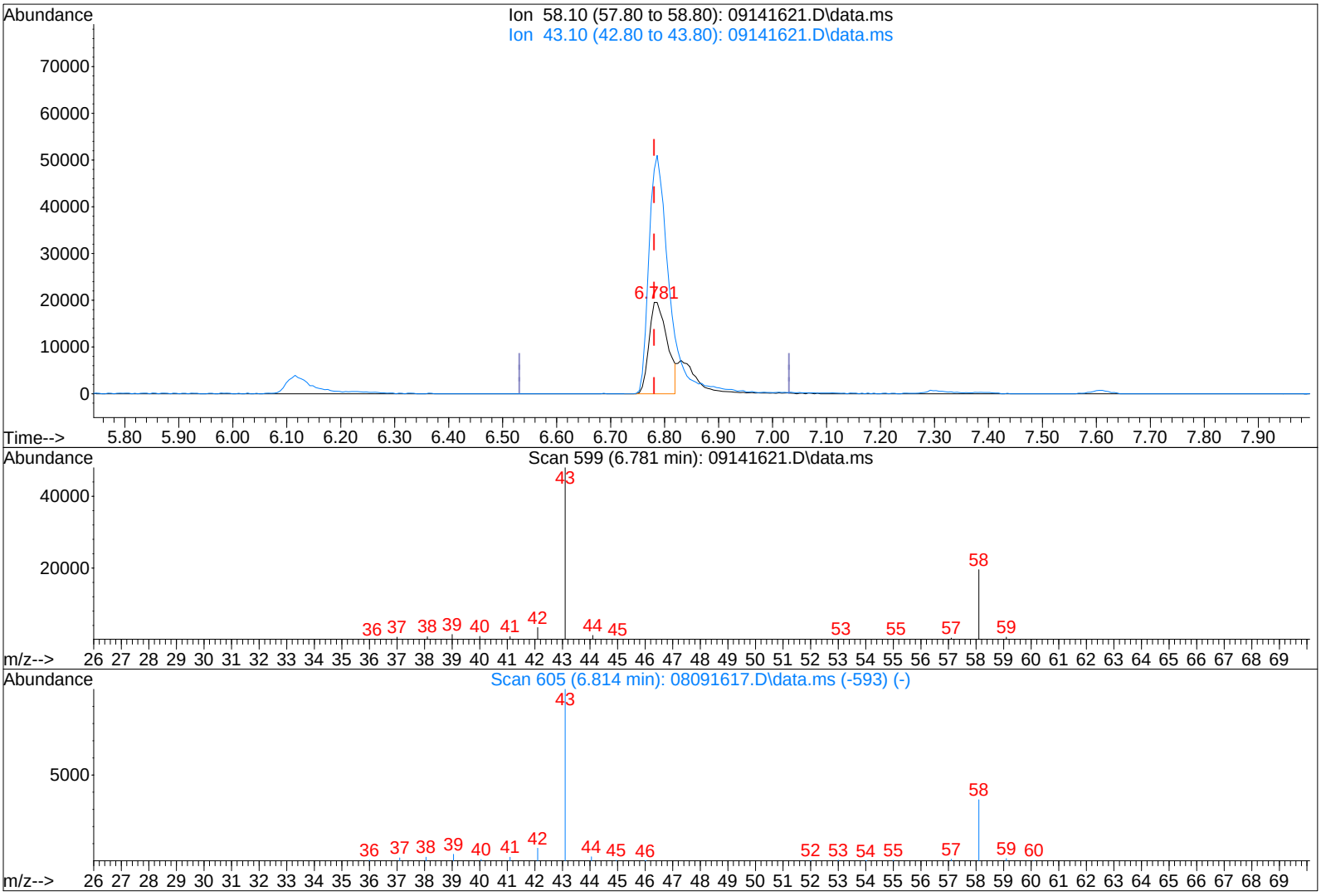
response 64134

Ion	Exp%	Act%
58.10	100	100
43.10	276.20	211.81#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\14\09141621.D Vial: 10
Acq On : 14 Sep 2016 20:24 Operator: EA
Sample : P1604380-001 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 15 09:40:08 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09141621.D\data.ms

(13) Acetone (T)

6.781min (-0.000) 3.69ng m

response 45974

Ion	Exp%	Act%
58.10	100	100
43.10	276.20	295.48
0.00	0.00	0.00
0.00	0.00	0.00

IPC

EA 9/21/16

LH 9/21/16

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151607.D Vial: 11
Acq On : 15 Sep 2016 11:26 Operator: EA
Sample : P1604380-002 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 21 09:47:55 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

EA 9/21/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	175988	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.05	114	791171	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	369373	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	195669	10.302	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 82.40%				
57) Toluene-d8 (SS2)	15.50	98	822232	11.383	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.04%				
73) Bromofluorobenzene (SS3)	18.86	174	322243	12.598	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.80%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	4.12	85	10551	0.300	ng		97
4) Chloromethane	4.38	50	2470	0.097	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	4.63	135	337	N.D.			
6) Vinyl Chloride	4.78	62	4352	0.187	ng		99
7) 1,3-Butadiene	4.98	54	496	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.12	45	24837	2.307	ng		98
11) Acetonitrile	6.41	41	1822	N.D.			
12) Acrolein	6.58	56	1854	0.162	ng		94
13) Acetone	6.76	58	424541m	33.775	ng		
14) Trichlorofluoromethane	7.02	101	6543	0.231	ng		96
15) 2-Propanol (Isopropanol)	7.30	45	17784	0.450	ng	#	61
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	7.97	96	40680	2.620	ng		87
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	8.19	84	1315	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	8.61	151	1701	0.121	ng		95
22) Carbon Disulfide	8.46	76	8060	0.117	ng		97
23) trans-1,2-Dichloroethene	9.46	61	8326	0.378	ng		92
24) 1,1-Dichloroethane	9.71	63	23461	0.805	ng		85
25) Methyl tert-Butyl Ether	9.85	73	732	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	10.23	72	24516	2.282	ng	#	78
28) cis-1,2-Dichloroethene	10.73	61	137943	6.522	ng		88
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	11.04	61	284	N.D.			
31) n-Hexane	11.04	57	491932	17.854	ng		98
32) Chloroform	11.08	83	42360	1.534	ng		94
34) Tetrahydrofuran (THF)	11.52	72	6196	0.533	ng		95
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	12.17	97	61708	2.779	ng		98
39) Isopropyl Acetate	12.64	61	815	N.D.			
40) 1-Butanol	0.00	56	0	N.D. d			
41) Benzene	12.65	78	126852	2.193	ng		100
42) Carbon Tetrachloride	12.80	117	1500	N.D.			
43) Cyclohexane	12.95	84	710406	31.096	ng		92
44) tert-Amyl Methyl Ether	13.23	73	528	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D. d			
46) Bromodichloromethane	0.00	83	0	N.D. d			
47) Trichloroethene	13.75	130	1610076	97.453	ng		100
48) 1,4-Dioxane	0.00	88	0	N.D. d			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			
50) Methyl Methacrylate	0.00	100	0	N.D. d			

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151607.D Vial: 11
Acq On : 15 Sep 2016 11:26 Operator: EA
Sample : P1604380-002 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 21 09:47:55 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

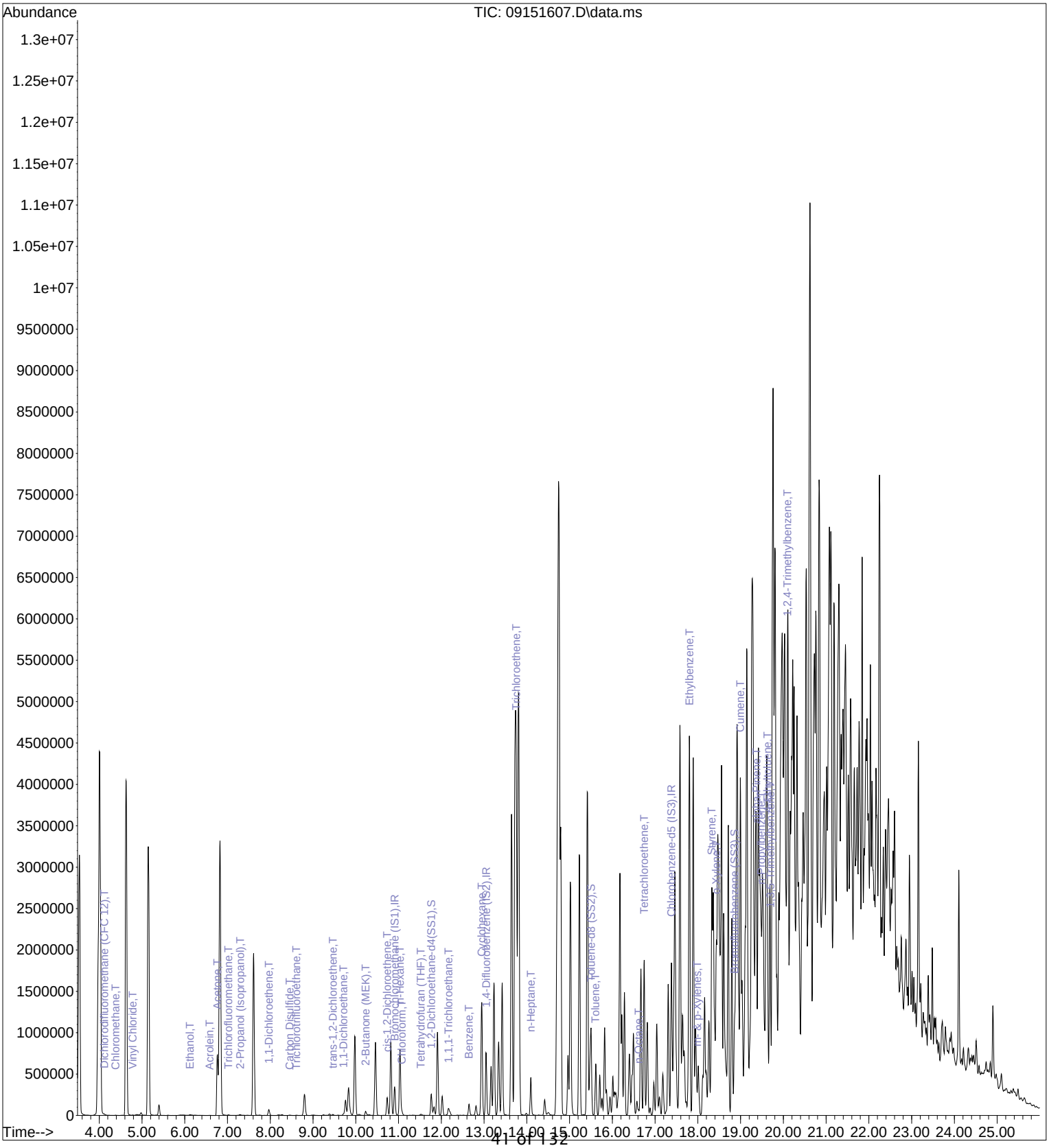
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	137161	9.272	ng	95
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.31	97	211	N.D.		
58) Toluene	15.61	91	12376	0.173	ng	97
59) 2-Hexanone	0.00	43	0	N.D.	d	
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.	d	
63) n-Octane	16.61	57	11805m	0.805	ng	
64) Tetrachloroethene	16.74	166	485819	23.642	ng	100
65) Chlorobenzene	0.00	112	0	N.D.	d	
66) Ethylbenzene	17.81	91	3112948	40.631	ng	97
67) m- & p-Xylenes	17.99	91	22620	0.375	ng	93
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.32	104	6601	0.142	ng	80
70) o-Xylene	18.43	91	15344	0.248	ng	78
71) n-Nonane	0.00	43	0	N.D.	d	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d	
74) Cumene	18.99	105	191096	2.419	ng	99
75) alpha-Pinene	19.37	93	47914	1.215	ng	68
76) n-Propylbenzene	19.48	91	527896	5.423	ng	97
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	19.63	105	6859	0.093	ng	94
79) 1,3,5-Trimethylbenzene	19.70	105	14855	0.231	ng	95
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	20.09	105	155446	2.525	ng	94
83) n-Decane	0.00	57	0	N.D.	d	
84) Benzyl Chloride	0.00	91	0	N.D.	d	
85) 1,3-Dichlorobenzene	20.24	146	536	N.D.		
86) 1,4-Dichlorobenzene	20.31	146	1072	N.D.		
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	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	20.65	146	505	N.D.		
91) d-Limonene	0.00	68	0	N.D.	d	
92) 1,2-Dibromo-3-Chloropr...	21.06	157	279	N.D.		
93) n-Undecane	0.00	57	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	d	
95) Naphthalene	0.00	128	0	N.D.	d	
96) n-Dodecane	0.00	57	0	N.D.	d	
97) Hexachlorobutadiene	22.79	225	256	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	0.00	91	0	N.D.	d	

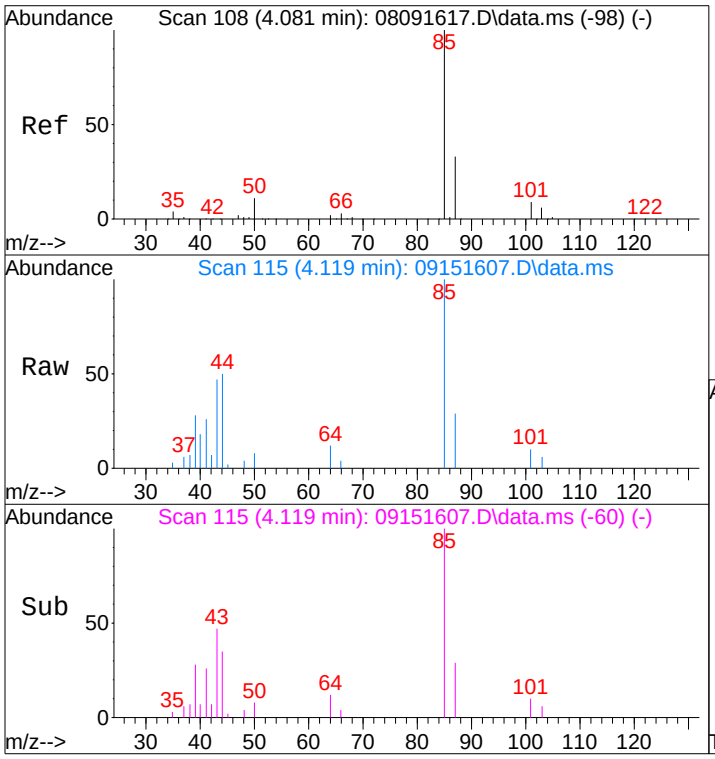
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151607.D Vial: 11
Acq On : 15 Sep 2016 11:26 Operator: EA
Sample : P1604380-002 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 21 09:47:55 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

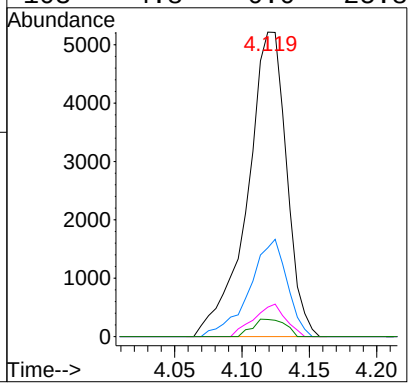


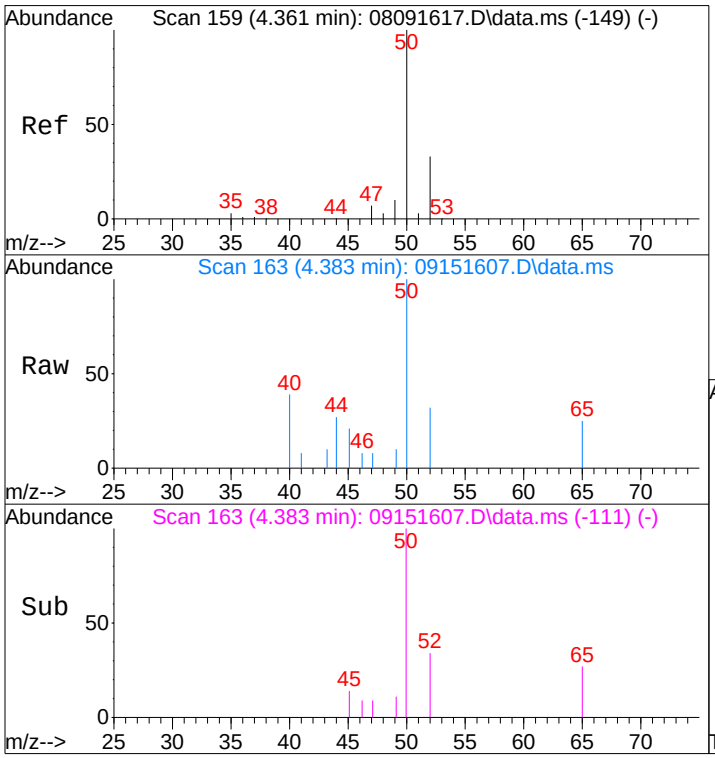


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.30 ng
RT: 4.12 min Scan# 115
Delta R.T. 0.055 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 85 Resp: 10551

Ion	Ratio	Lower	Upper
85	100		
87	30.7	12.8	52.8
101	8.7	0.0	28.9
103	4.8	0.0	25.8

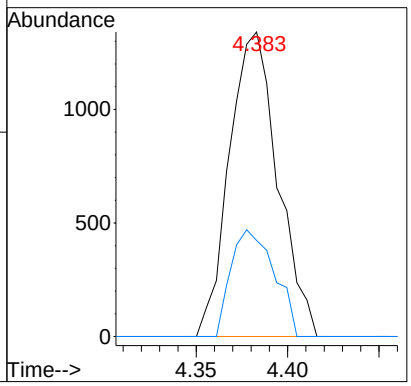


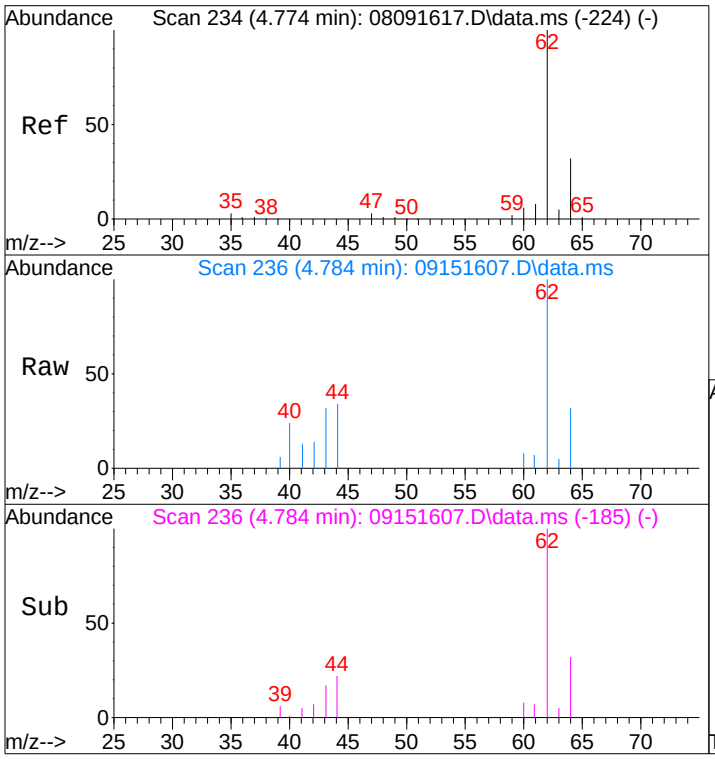


#4
Chloromethane
Concen: 0.10 ng
RT: 4.38 min Scan# 163
Delta R.T. 0.038 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 50 Resp: 2470

Ion	Ratio	Lower	Upper
50	100		
52	31.4	13.1	53.1

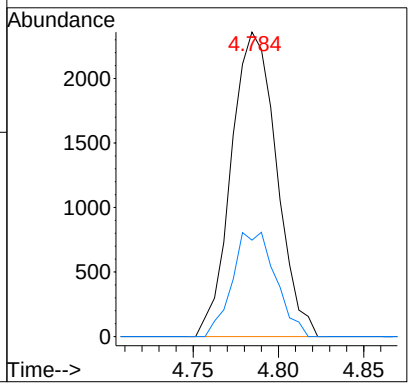


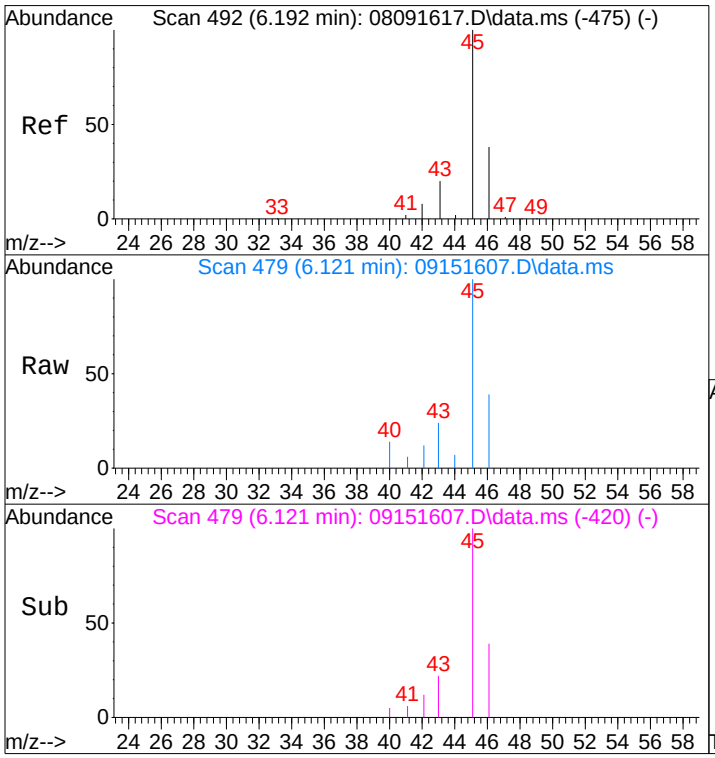


#6
Vinyl Chloride
Concen: 0.19 ng
RT: 4.78 min Scan# 236
Delta R.T. 0.033 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 62 Resp: 4352

Ion	Ratio	Lower	Upper
62	100		
64	32.7	12.2	52.2

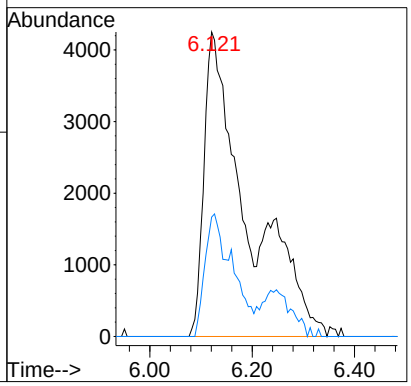


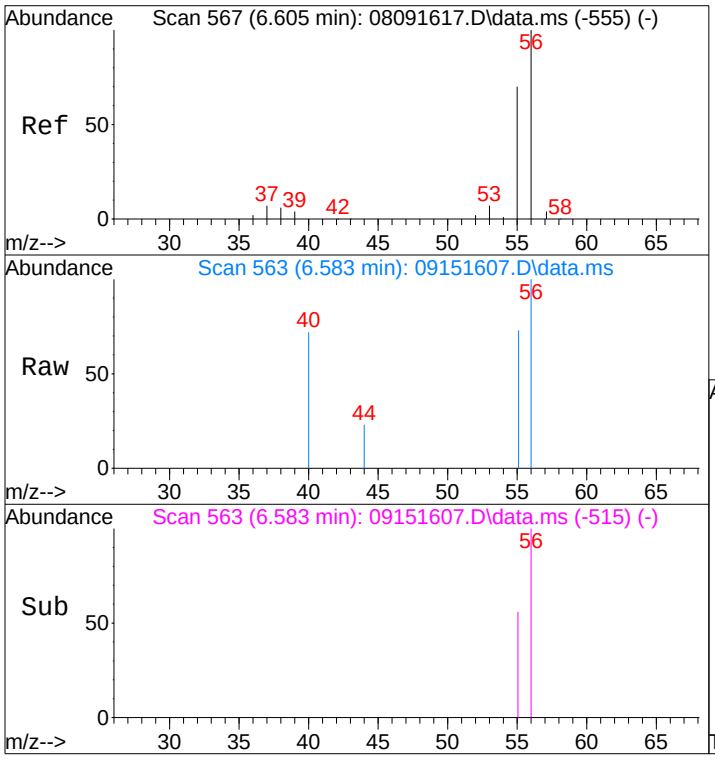


#10
Ethanol
Concen: 2.31 ng
RT: 6.12 min Scan# 479
Delta R.T. -0.028 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 45 Resp: 24837

Ion	Ratio	Lower	Upper
45	100		
46	36.7	17.8	57.8

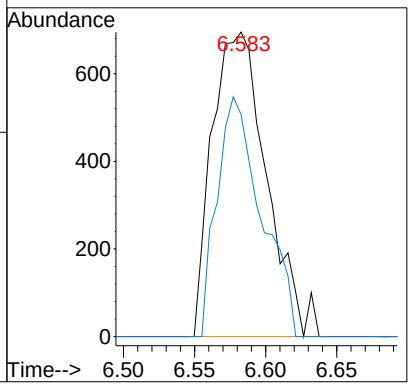


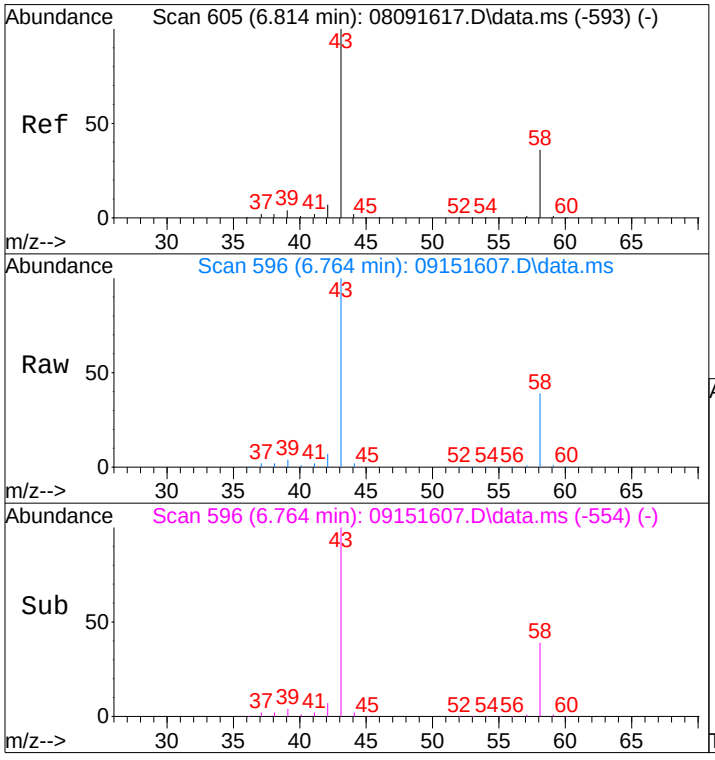


#12
Acrolein
Concen: 0.16 ng
RT: 6.58 min Scan# 563
Delta R.T. 0.016 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 56 Resp: 1854

Ion	Ratio	Lower	Upper
56	100		
55	64.0	48.7	88.7

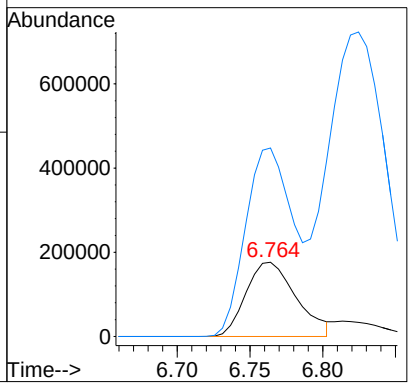


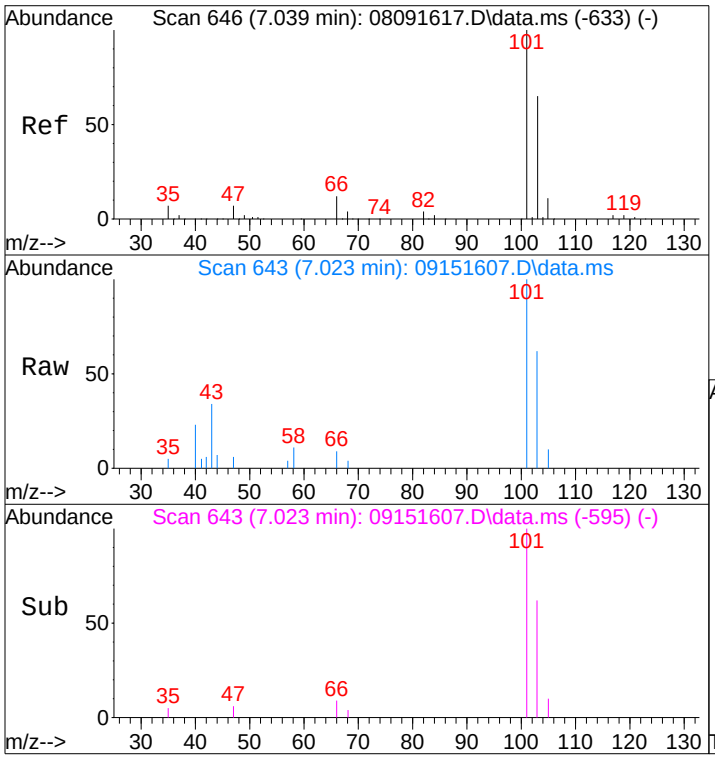


#13
Acetone
Concen: 33.78 ng m
RT: 6.76 min Scan# 596
Delta R.T. -0.017 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 58 Resp: 424541

Ion	Ratio	Lower	Upper
58	100		
43	235.6	246.2	306.2#

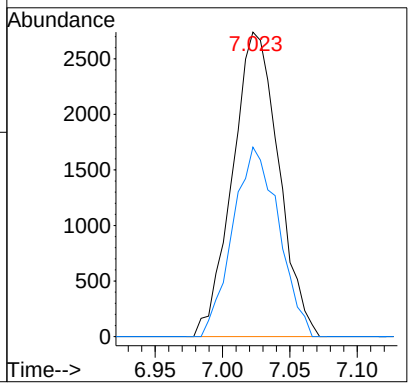


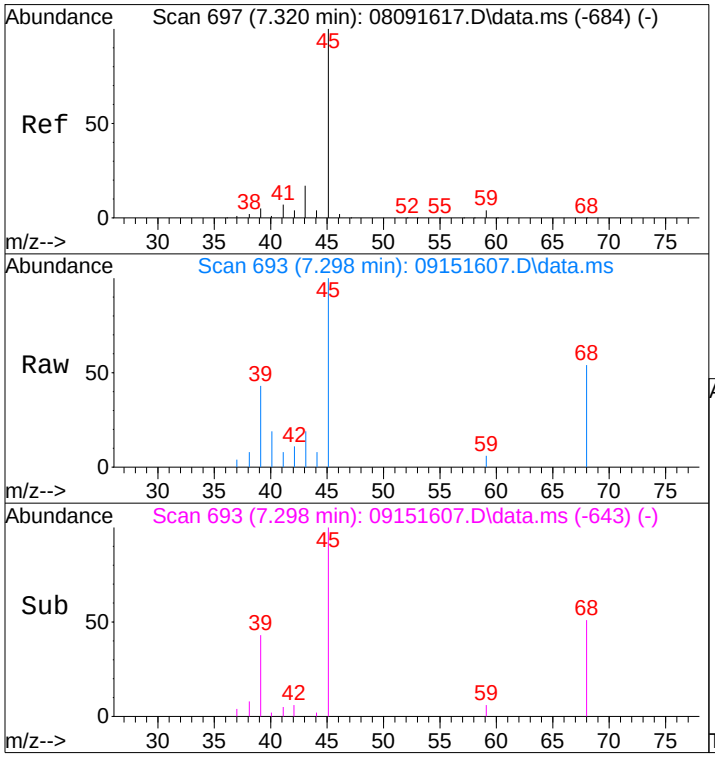


#14
Trichlorofluoromethane
Concen: 0.23 ng
RT: 7.02 min Scan# 643
Delta R.T. 0.016 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:101 Resp: 6543

Ion	Ratio	Lower	Upper
101	100		
103	61.8	44.7	84.7

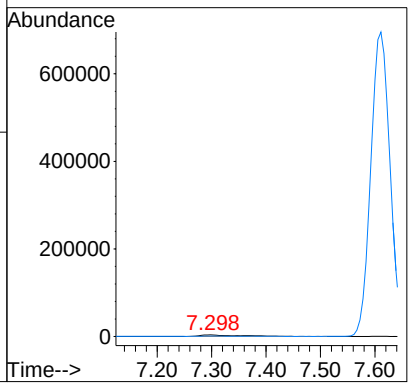


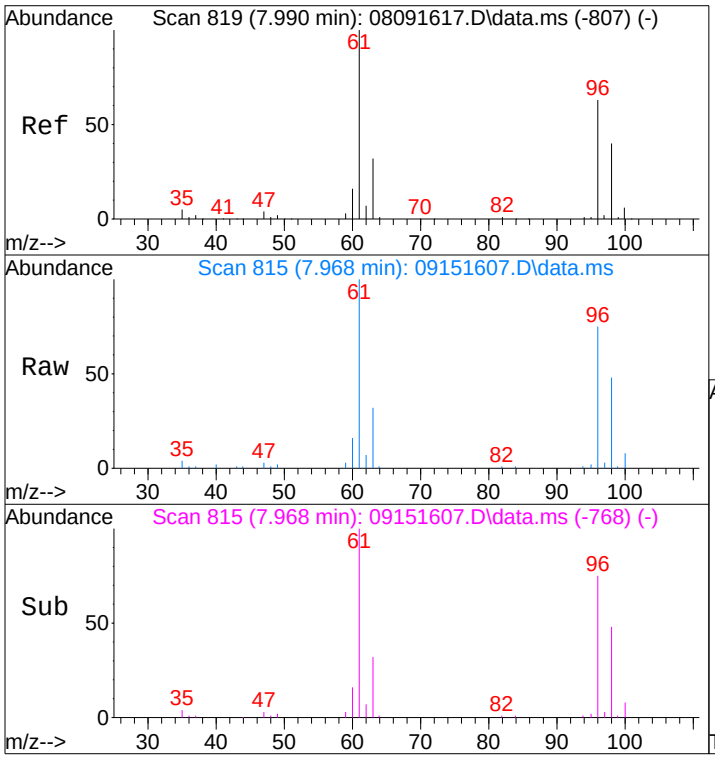


#15
2-Propanol (Isopropanol)
Concen: 0.45 ng
RT: 7.30 min Scan# 693
Delta R.T. 0.027 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 45 Resp: 17784

Ion	Ratio	Lower	Upper
45	100		
43	0.0	0.0	36.9

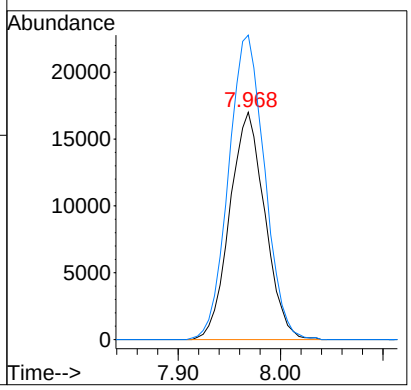


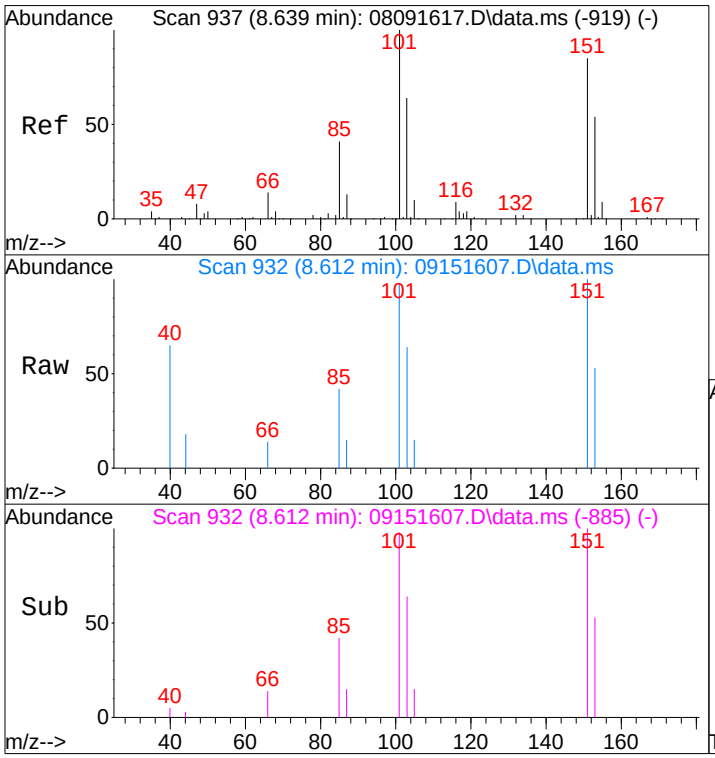


#17
1,1-Dichloroethene
Concen: 2.62 ng
RT: 7.97 min Scan# 815
Delta R.T. 0.011 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 96 Resp: 40680

Ion	Ratio	Lower	Upper
96	100		
61	137.2	133.4	173.4

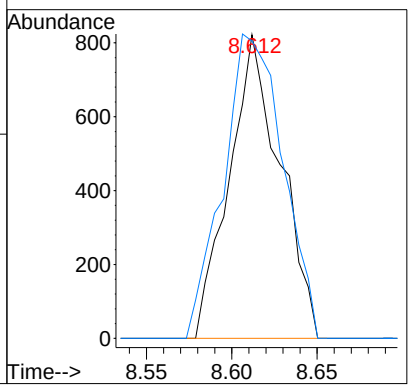


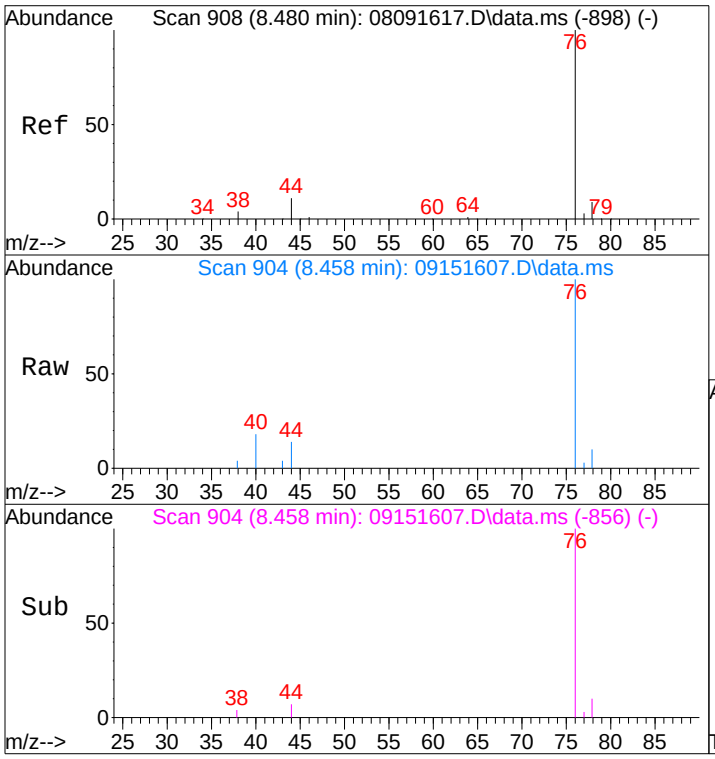


#21
Trichlorotrifluoroethane
Concen: 0.12 ng
RT: 8.61 min Scan# 932
Delta R.T. 0.011 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:151 Resp: 1701

Ion	Ratio	Lower	Upper
151	100		
101	118.0	103.1	143.1

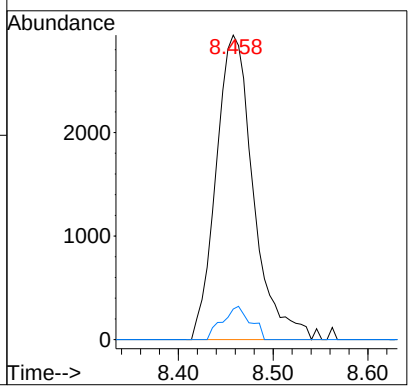


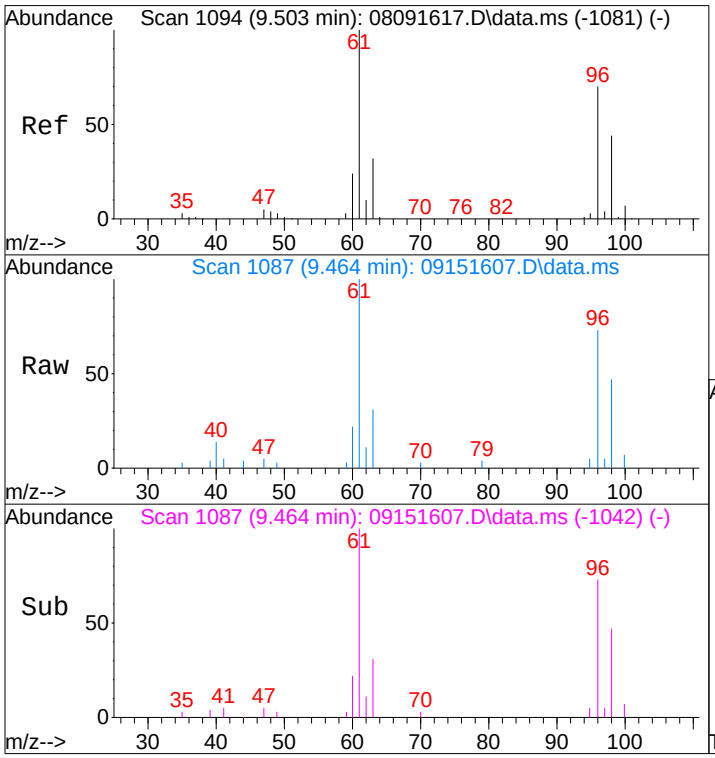


#22
Carbon Disulfide
Concen: 0.12 ng
RT: 8.46 min Scan# 904
Delta R.T. 0.016 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 76 Resp: 8060

Ion	Ratio	Lower	Upper
76	100		
78	8.2	0.0	29.2

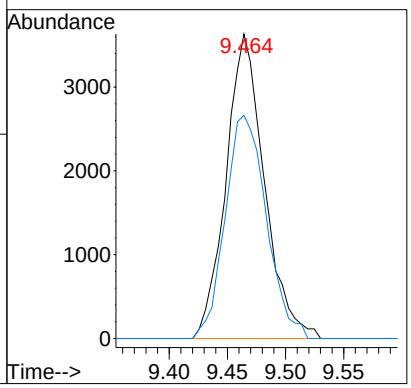


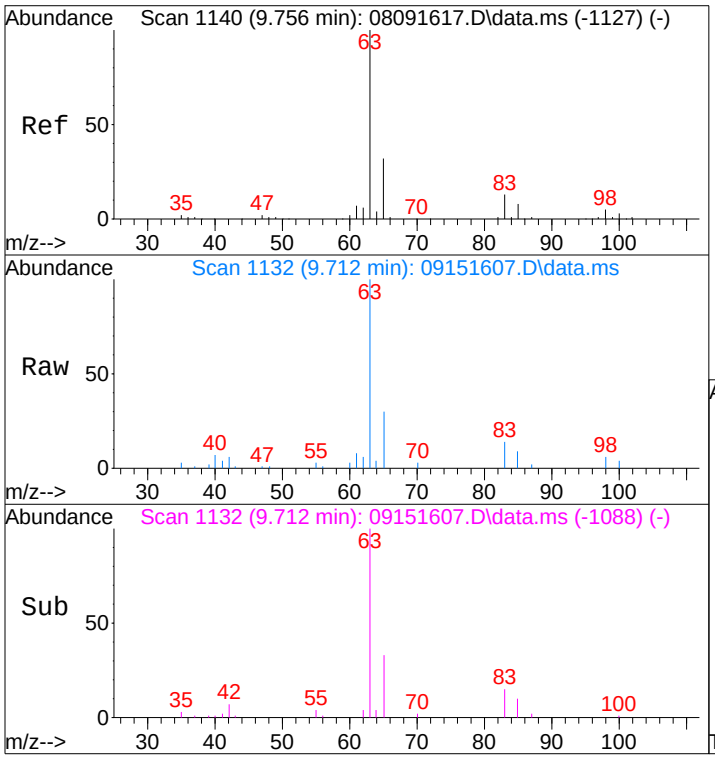


#23
trans-1,2-Dichloroethene
Concen: 0.38 ng
RT: 9.46 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 61 Resp: 8326

Ion	Ratio	Lower	Upper
61	100		
96	78.6	52.3	92.3

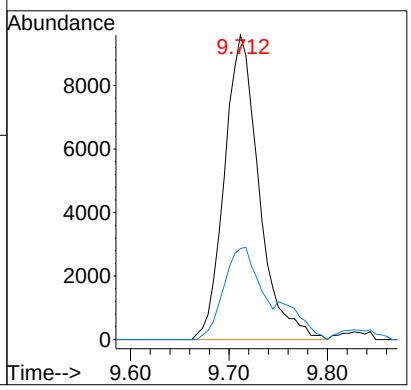


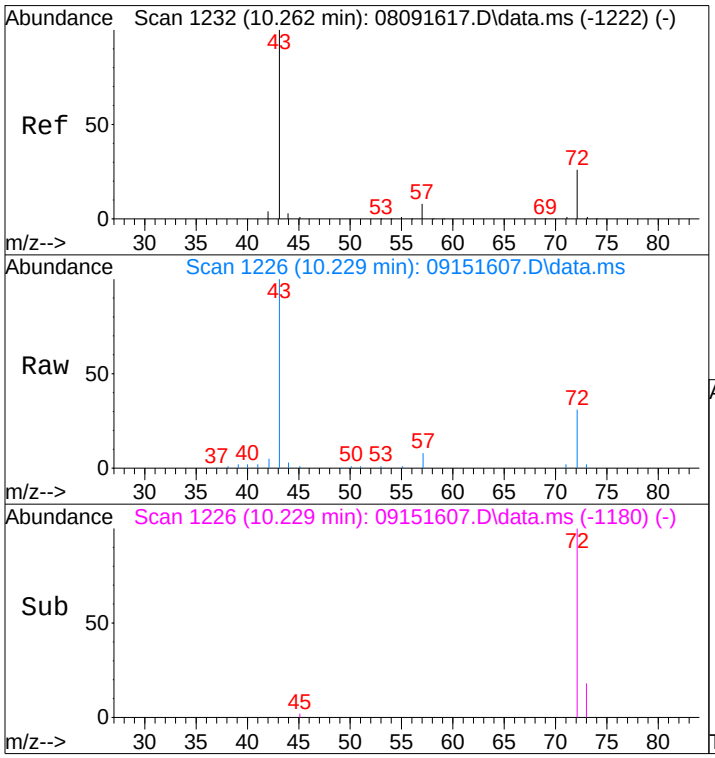


#24
1,1-Dichloroethane
Concen: 0.80 ng
RT: 9.71 min Scan# 1132
Delta R.T. -0.006 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 63 Resp: 23461

Ion	Ratio	Lower	Upper
63	100		
65	40.8	12.3	52.3

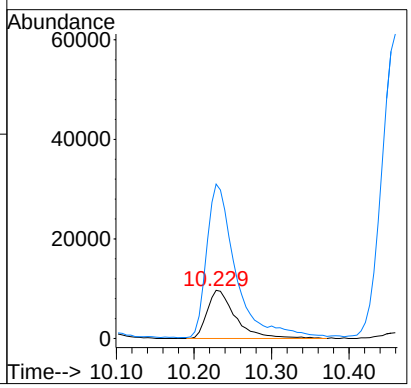


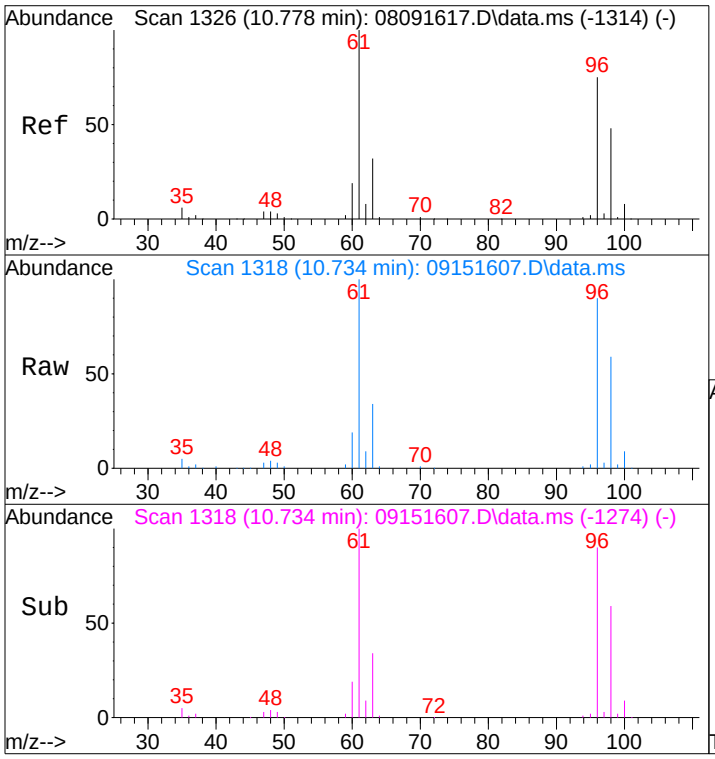


#27
2-Butanone (MEK)
Concen: 2.28 ng
RT: 10.23 min Scan# 1226
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 72 Resp: 24516

Ion	Ratio	Lower	Upper
72	100		
43	329.0	358.9	398.9#

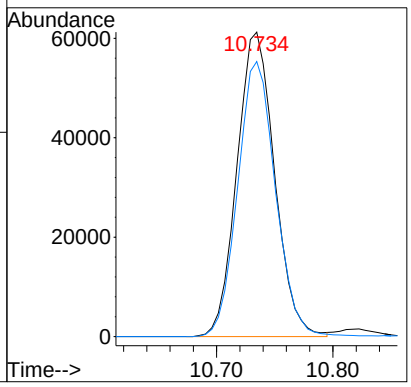


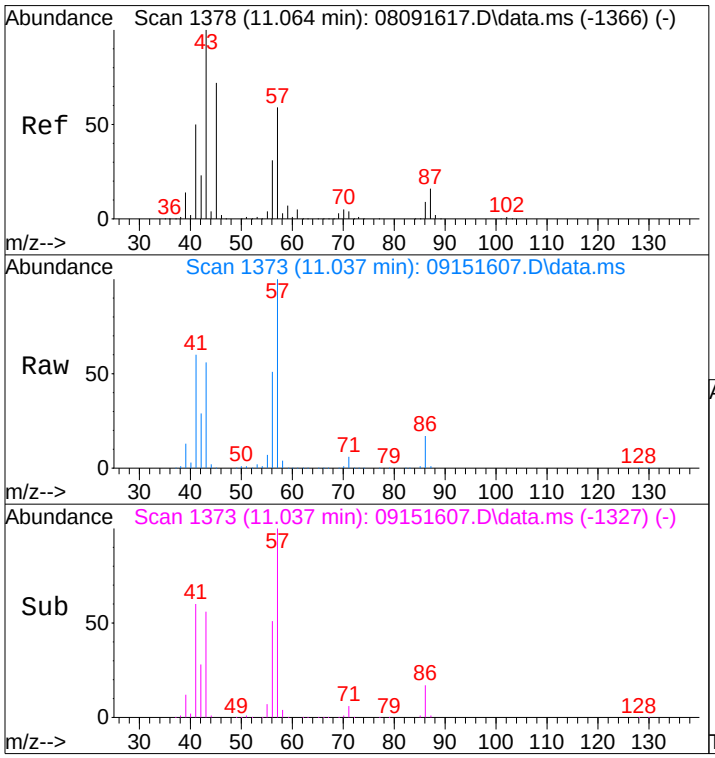


#28
cis-1,2-Dichloroethene
Concen: 6.52 ng
RT: 10.73 min Scan# 1318
Delta R.T. -0.006 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 61 Resp: 137943

Ion	Ratio	Lower	Upper
61	100		
96	91.0	60.7	100.7

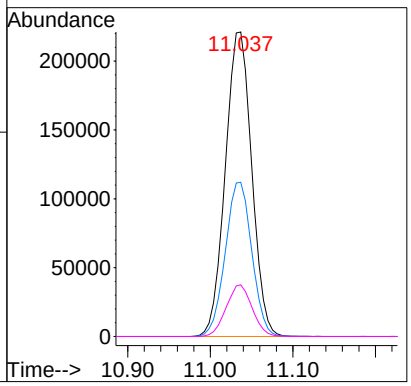


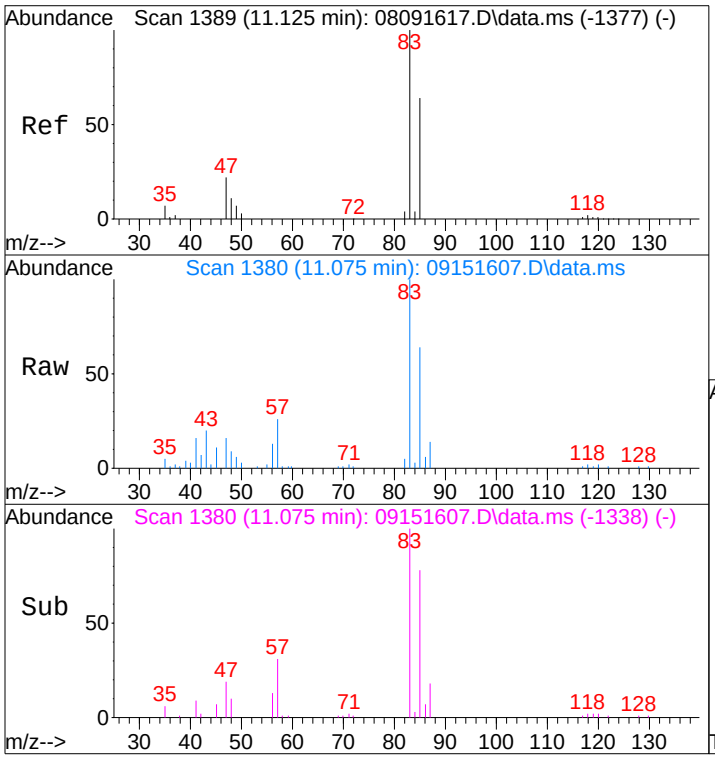


#31
n-Hexane
Concen: 17.85 ng
RT: 11.04 min Scan# 1373
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 57 Resp: 491932

Ion	Ratio	Lower	Upper
57	100		
56	50.8	41.1	61.7
86	16.7	12.2	18.2

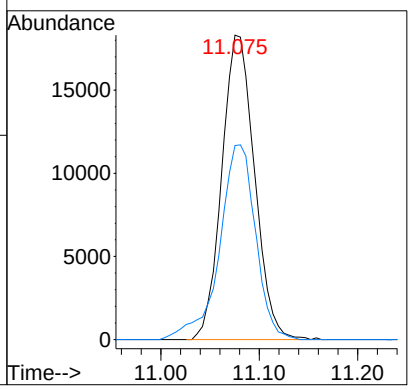


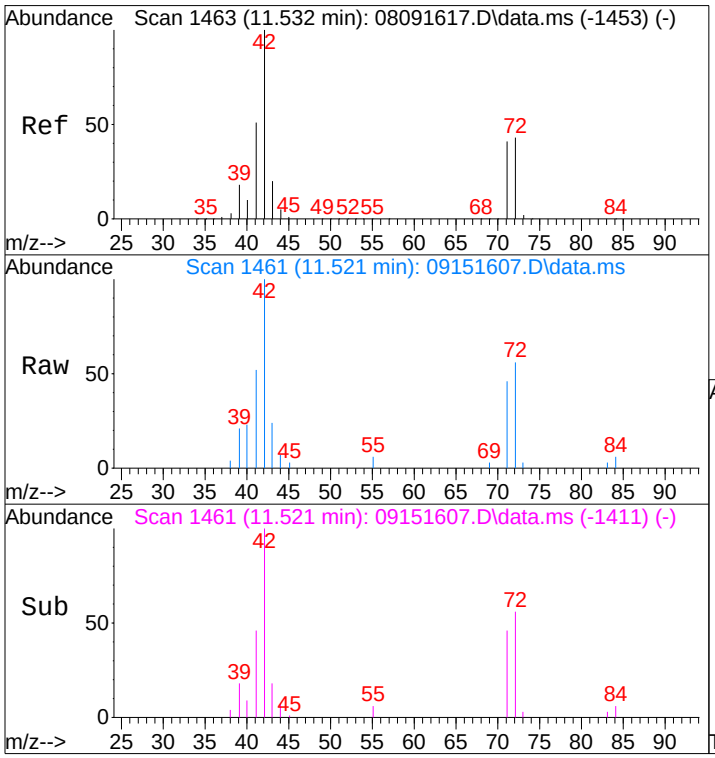


#32
Chloroform
Concen: 1.53 ng
RT: 11.08 min Scan# 1380
Delta R.T. -0.017 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 83 Resp: 42360

Ion	Ratio	Lower	Upper
83	100		
85	70.3	45.3	85.3

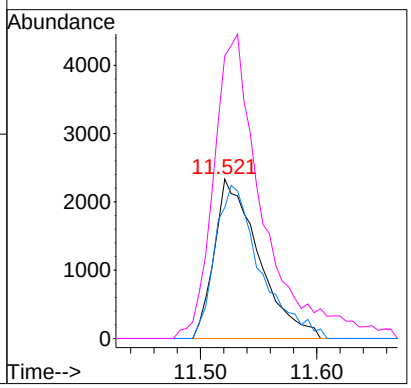


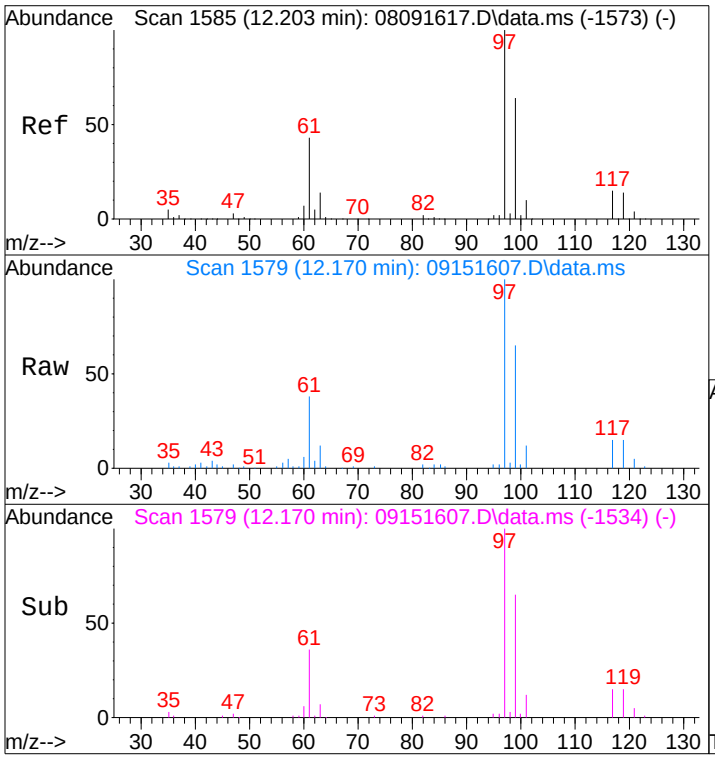


#34
Tetrahydrofuran (THF)
Concen: 0.53 ng
RT: 11.52 min Scan# 1461
Delta R.T. 0.027 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 72 Resp: 6196

Ion	Ratio	Lower	Upper
72	100		
71	97.9	74.6	114.6
42	212.7	201.6	241.6

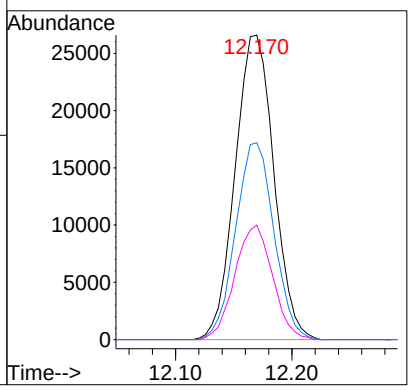


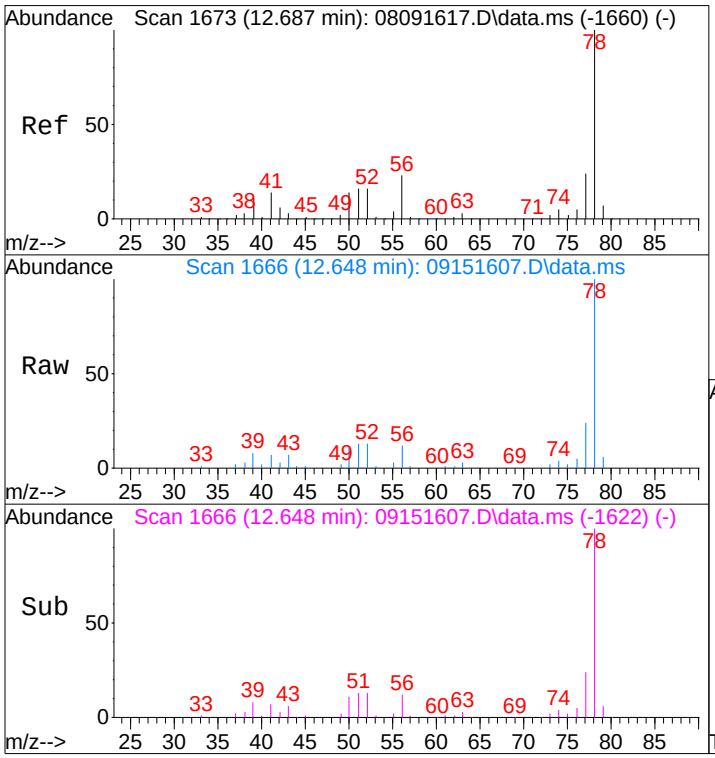


#38
1,1,1-Trichloroethane
Concen: 2.78 ng
RT: 12.17 min Scan# 1579
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 97 Resp: 61708

Ion	Ratio	Lower	Upper
97	100		
99	64.0	44.6	84.6
61	36.5	19.7	59.7

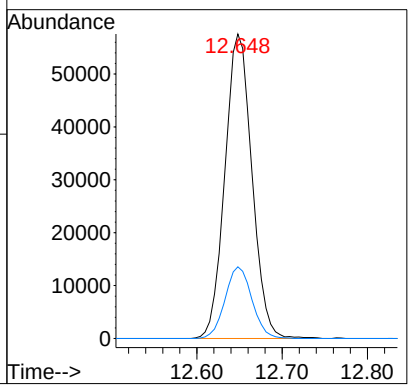


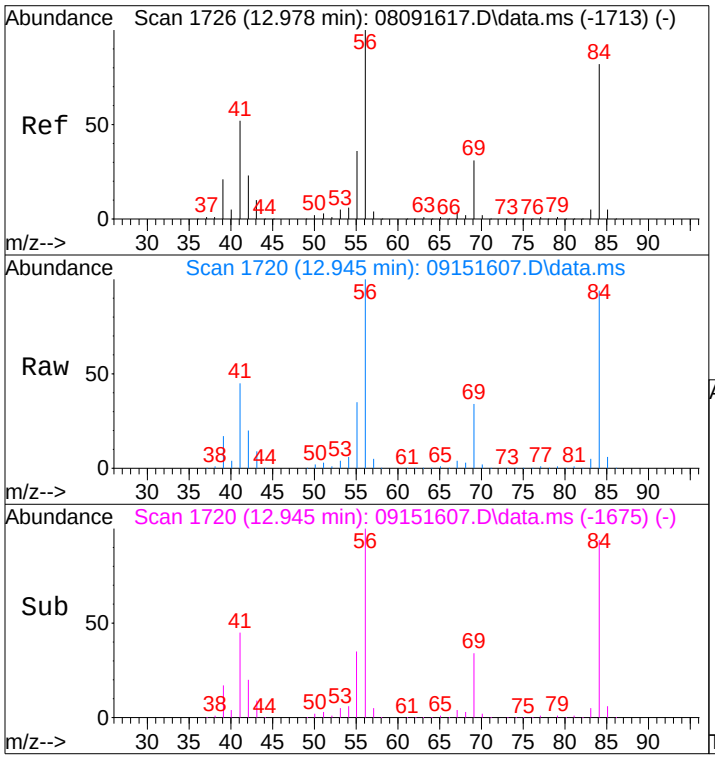


#41
Benzene
Concen: 2.19 ng
RT: 12.65 min Scan# 1666
Delta R.T. -0.006 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 78 Resp: 126852

Ion	Ratio	Lower	Upper
78	100		
77	23.4	3.5	43.5

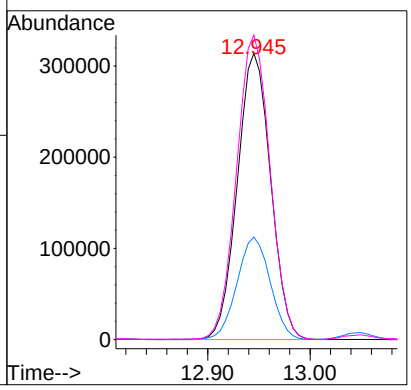


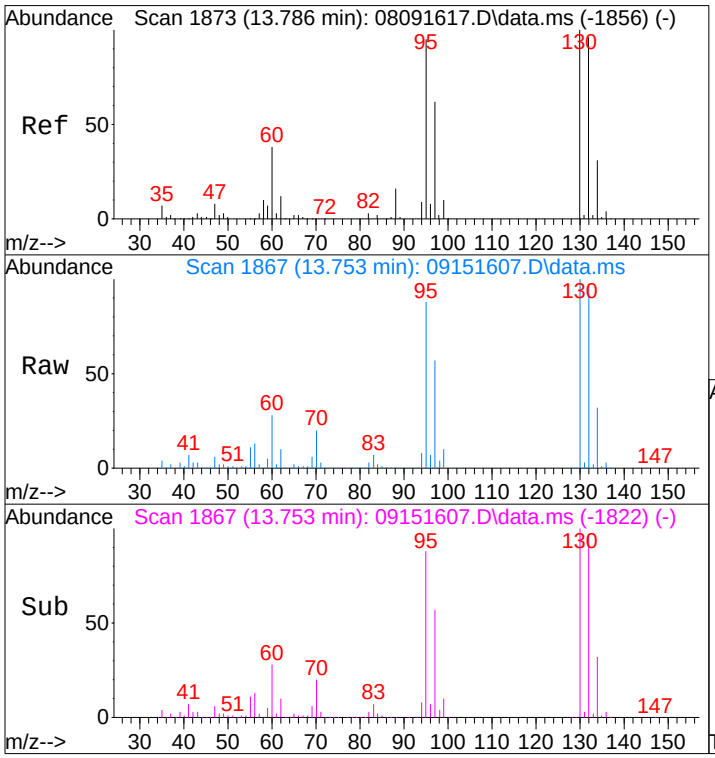


#43
Cyclohexane
Concen: 31.10 ng
RT: 12.95 min Scan# 1720
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 84 Resp: 710406

Ion	Ratio	Lower	Upper
84	100		
69	35.9	17.2	57.2
56	106.8	97.5	137.5

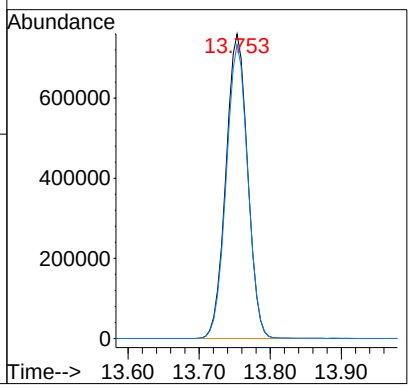


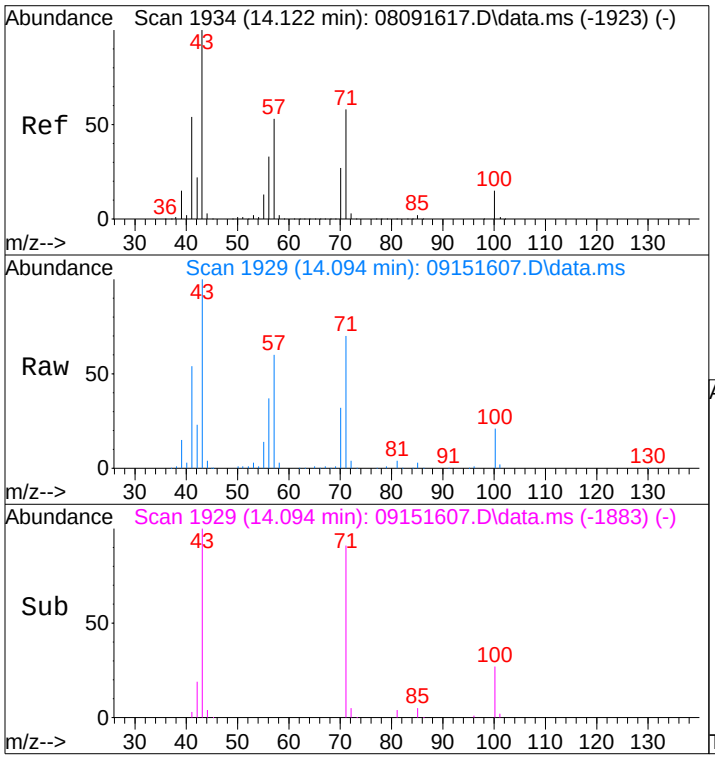


#47
Trichloroethene
Concen: 97.45 ng
RT: 13.75 min Scan# 1867
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:130 Resp: 1610076

Ion	Ratio	Lower	Upper
130	100		
132	96.1	76.6	116.6

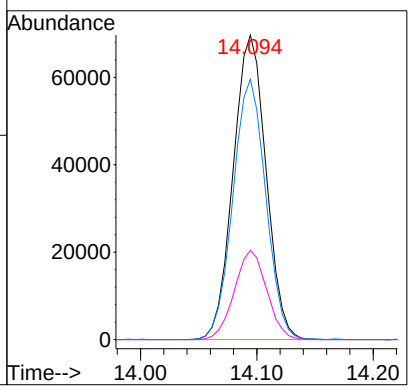


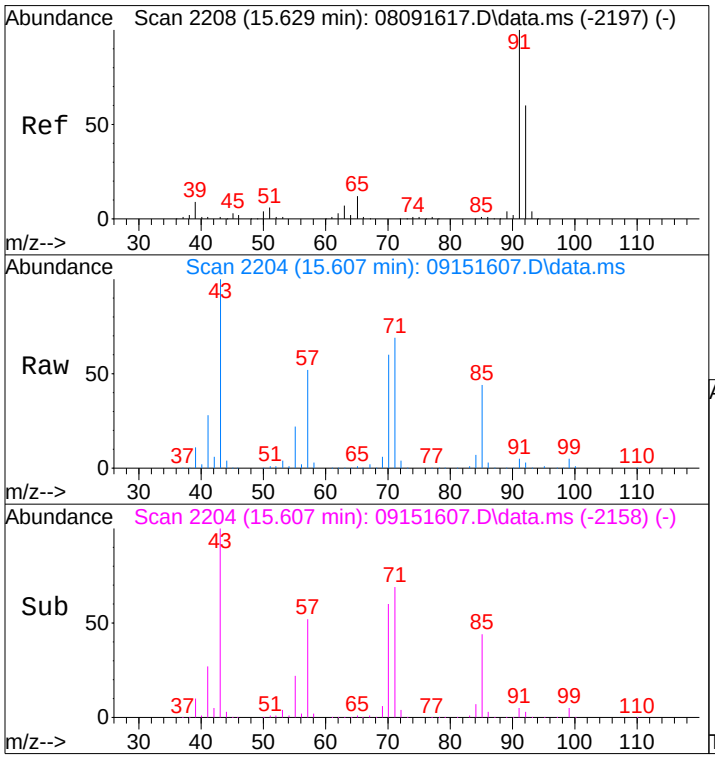


#51
n-Heptane
Concen: 9.27 ng
RT: 14.09 min Scan# 1929
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 71 Resp: 137161

Ion	Ratio	Lower	Upper
71	100		
57	85.4	70.7	110.7
100	28.9	7.4	47.4

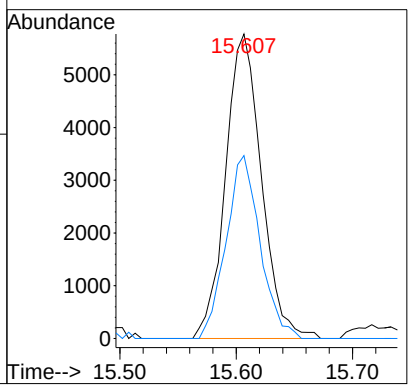


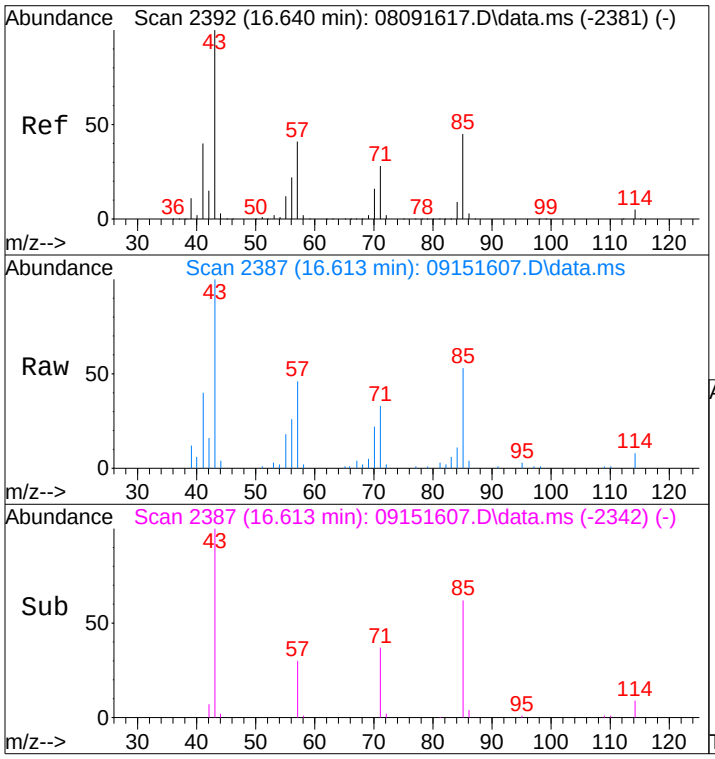


#58
Toluene
Concen: 0.17 ng
RT: 15.61 min Scan# 2204
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 91 Resp: 12376

Ion	Ratio	Lower	Upper
91	100		
92	56.9	39.4	79.4

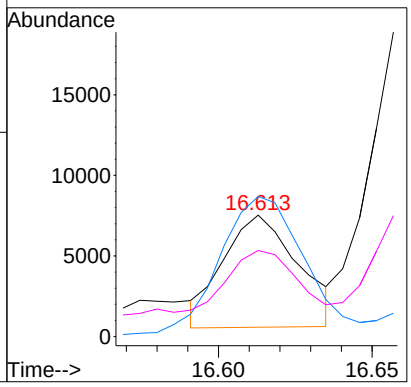


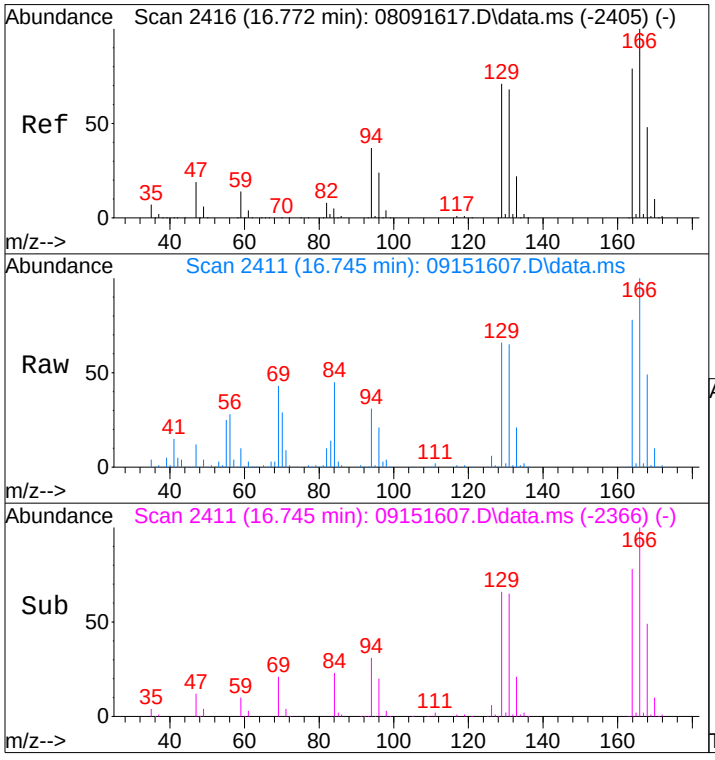


#63
n-Octane
Concen: 0.80 ng m
RT: 16.61 min Scan# 2387
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 57 Resp: 11805

Ion	Ratio	Lower	Upper
57	100		
85	25.2	91.1	136.7#
71	146.6	57.0	85.4#

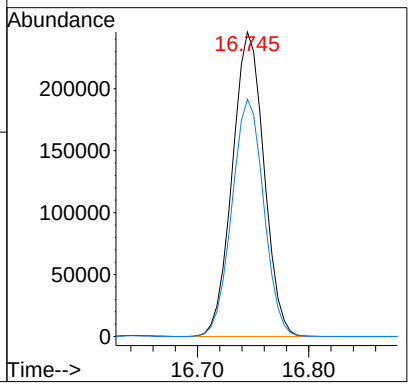


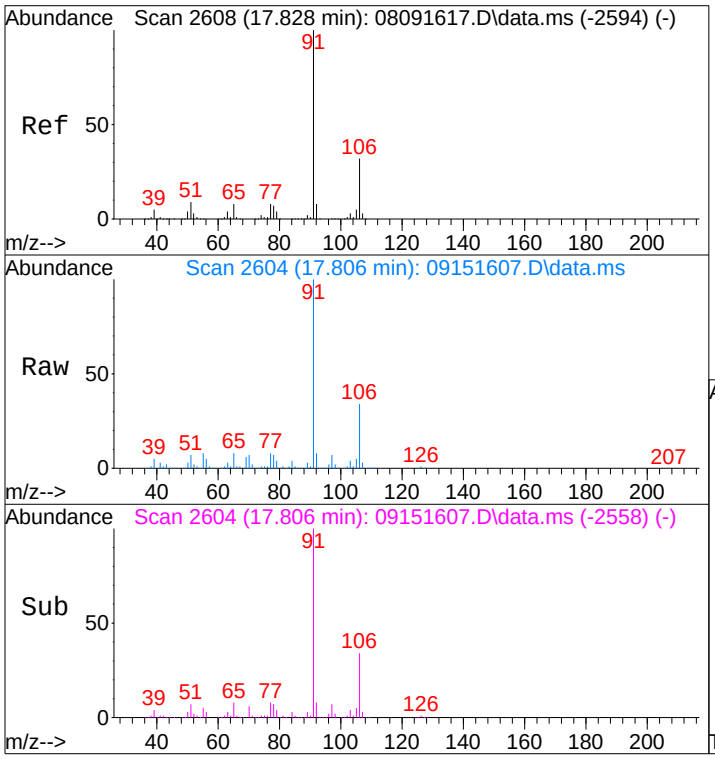


#64
Tetrachloroethene
Concen: 23.64 ng
RT: 16.74 min Scan# 2411
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:166 Resp: 485819

Ion	Ratio	Lower	Upper
166	100		
164	78.4	58.1	98.1

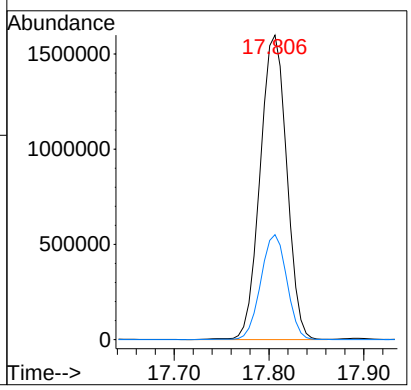


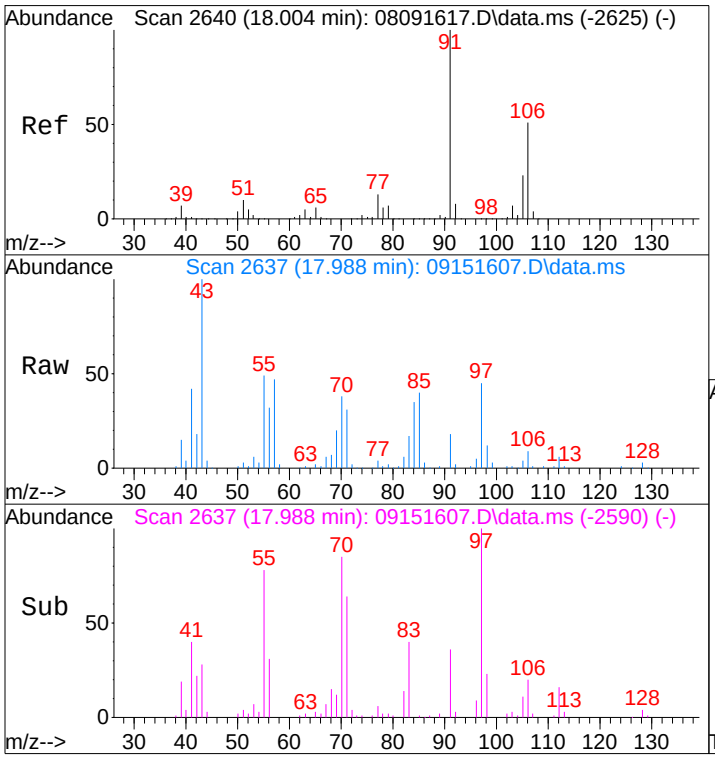


#66
Ethylbenzene
Concen: 40.63 ng
RT: 17.81 min Scan# 2604
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 91 Resp: 3112948

Ion	Ratio	Lower	Upper
91	100		
106	33.8	12.3	52.3

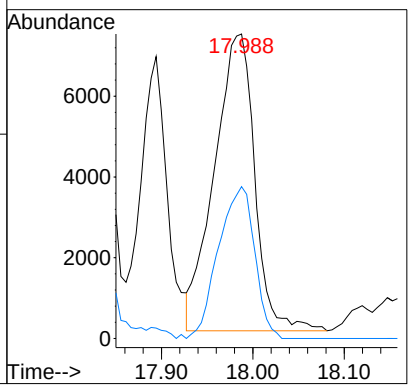


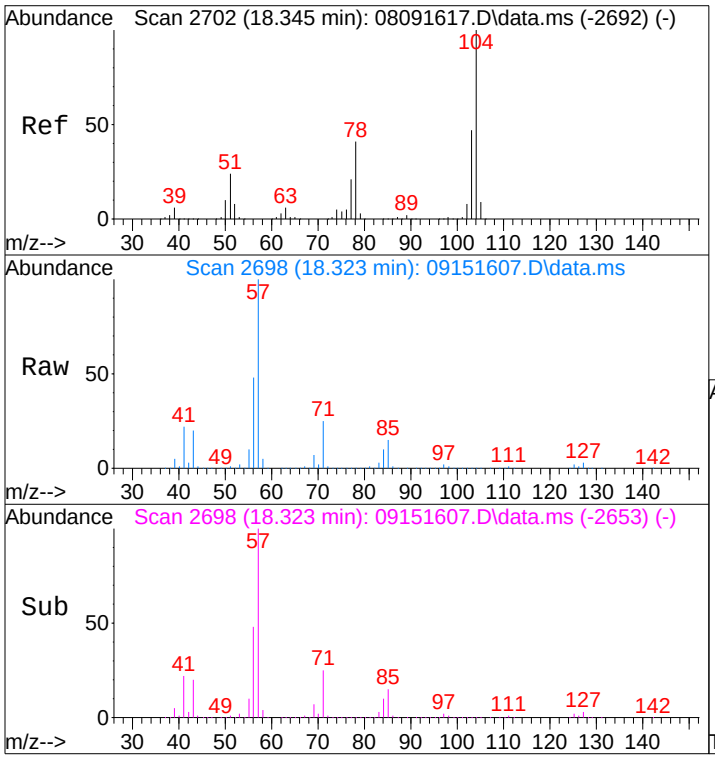


#67
m- & p-Xylenes
Concen: 0.38 ng
RT: 17.99 min Scan# 2637
Delta R.T. 0.011 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 91 Resp: 22620

Ion	Ratio	Lower	Upper
91	100		
106	45.6	30.6	70.6

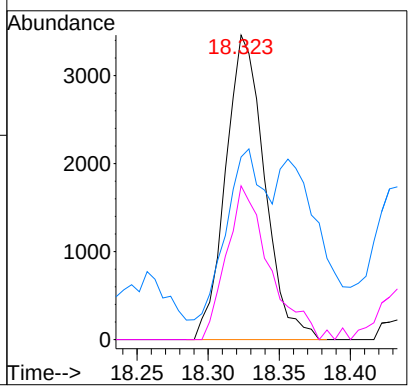


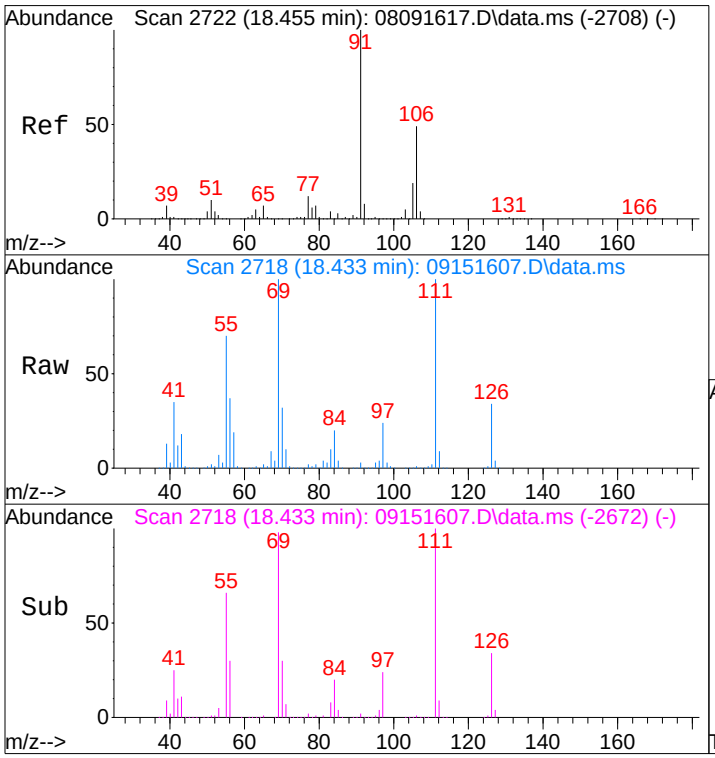


#69
Styrene
Concen: 0.14 ng
RT: 18.32 min Scan# 2698
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:104 Resp: 6601

Ion	Ratio	Lower	Upper
104	100		
78	58.1	20.3	60.3
103	55.7	27.0	67.0

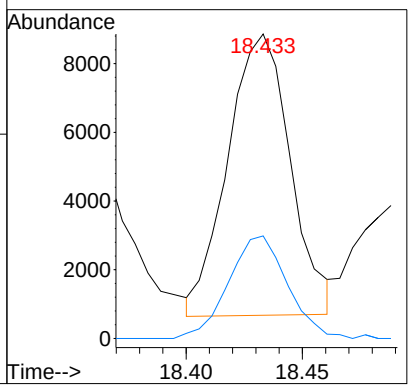


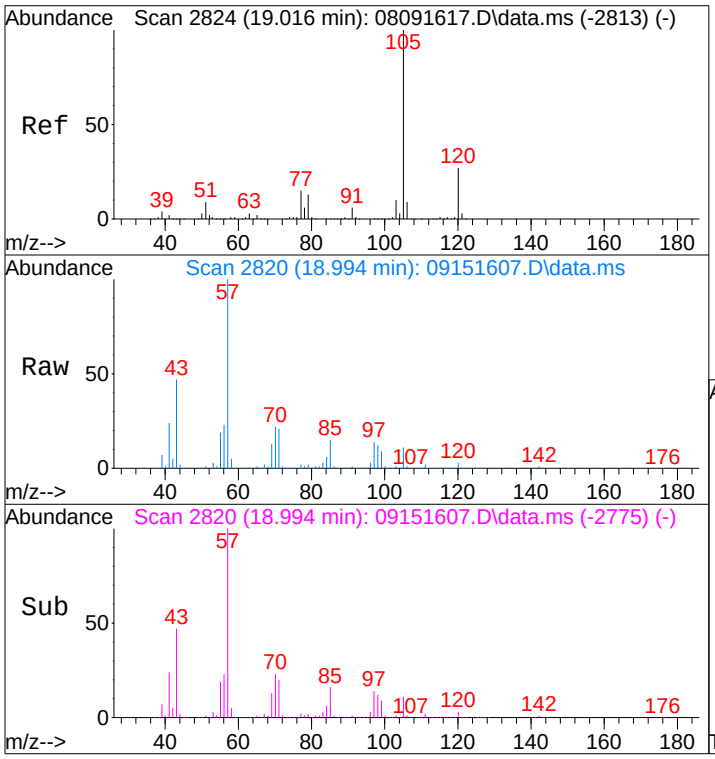


#70
o-Xylene
Concen: 0.25 ng
RT: 18.43 min Scan# 2718
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 91 Resp: 15344

Ion	Ratio	Lower	Upper
91	100		
106	34.4	29.3	69.3

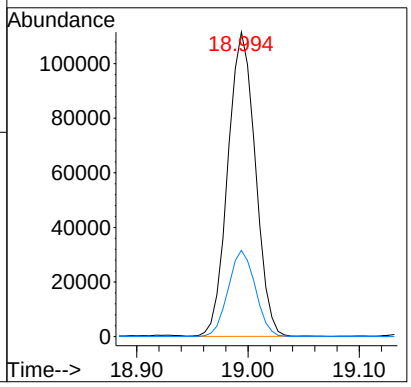


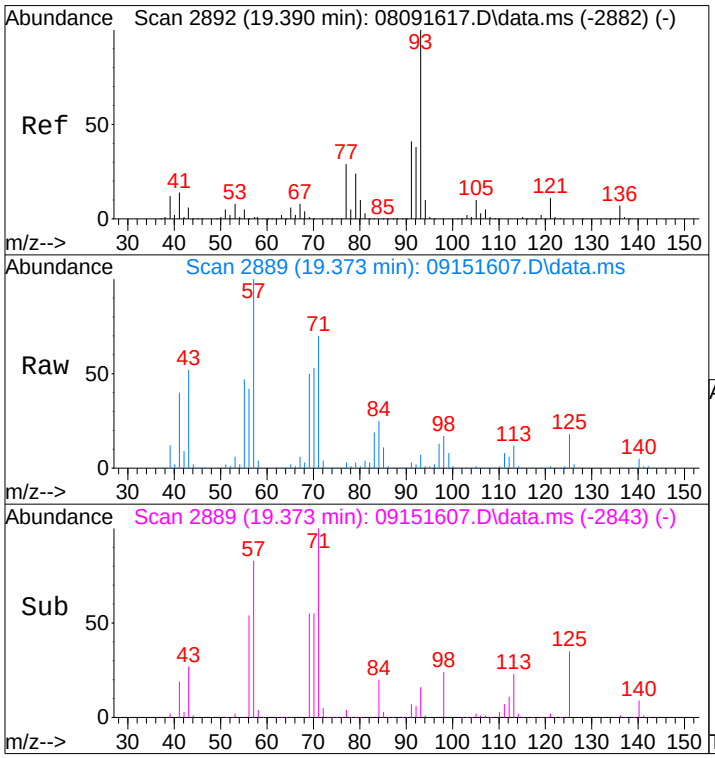


#74
Cumene
Concen: 2.42 ng
RT: 18.99 min Scan# 2820
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:105 Resp: 191096

Ion	Ratio	Lower	Upper
105	100		
120	27.9	7.3	47.3

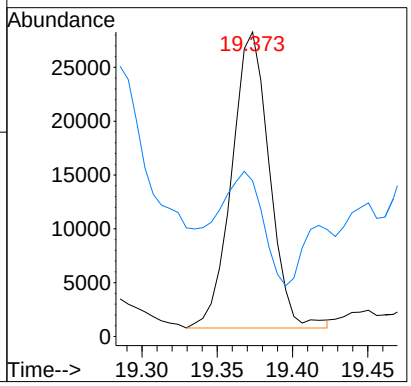


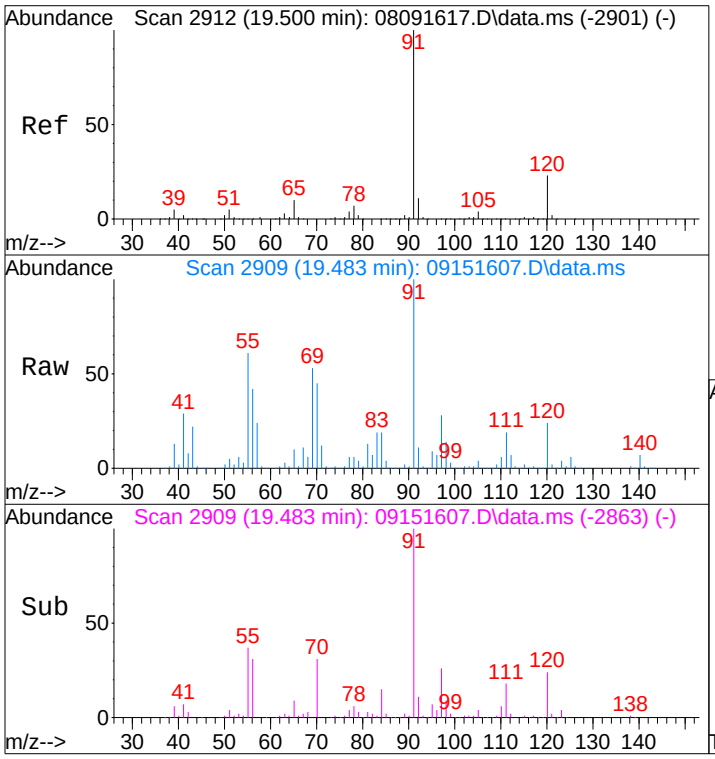


#75
alpha-Pinene
Concen: 1.22 ng
RT: 19.37 min Scan# 2889
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 93 Resp: 47914

Ion	Ratio	Lower	Upper
93	100		
77	46.7	9.4	49.4

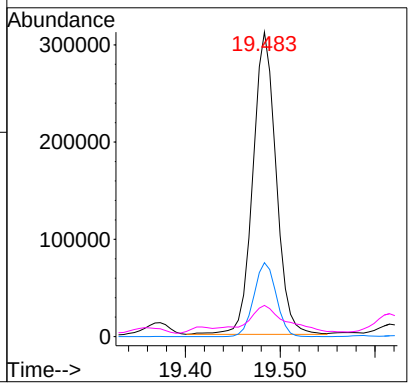


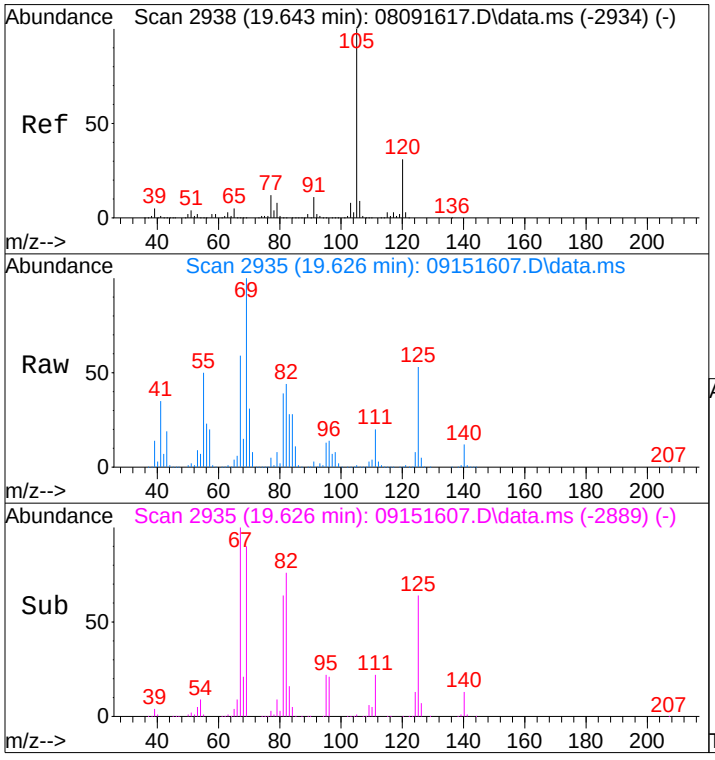


#76
n-Propylbenzene
Concen: 5.42 ng
RT: 19.48 min Scan# 2909
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion: 91 Resp: 527896

Ion	Ratio	Lower	Upper
91	100		
120	23.5	3.7	43.7
65	12.6	0.0	29.3

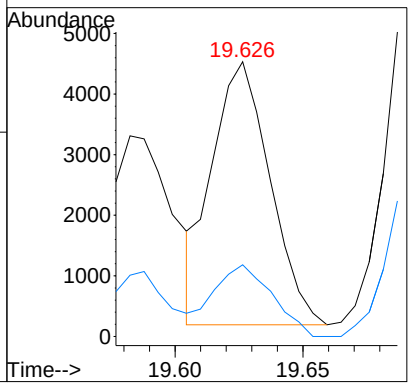


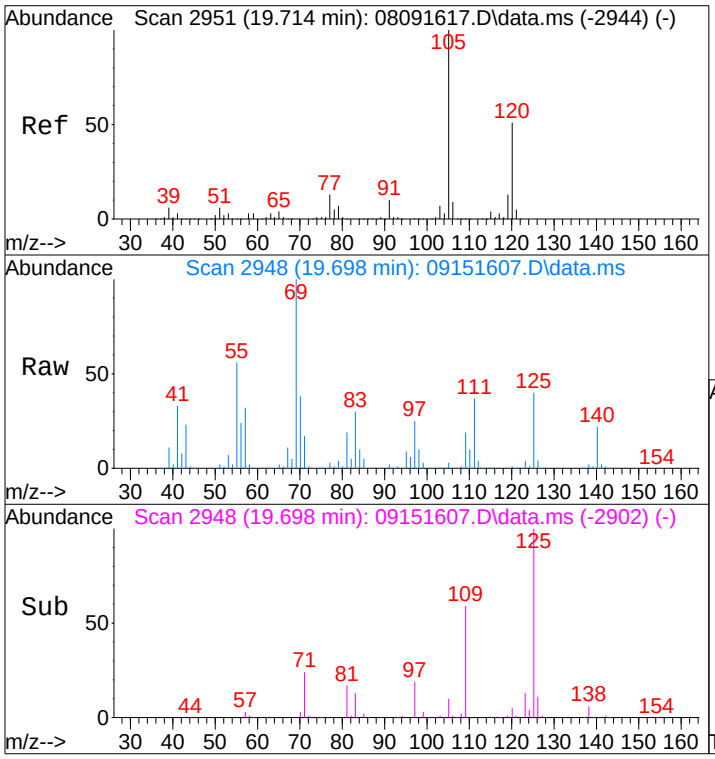


#78
4-Ethyltoluene
Concen: 0.09 ng
RT: 19.63 min Scan# 2935
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:105 Resp: 6859

Ion	Ratio	Lower	Upper
105	100		
120	27.8	11.3	51.3

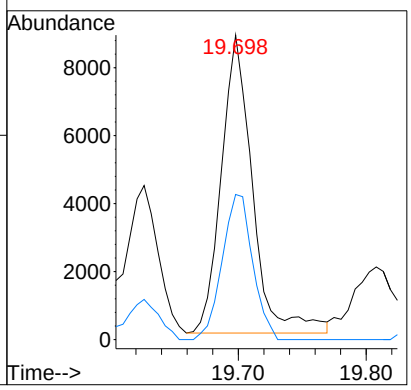


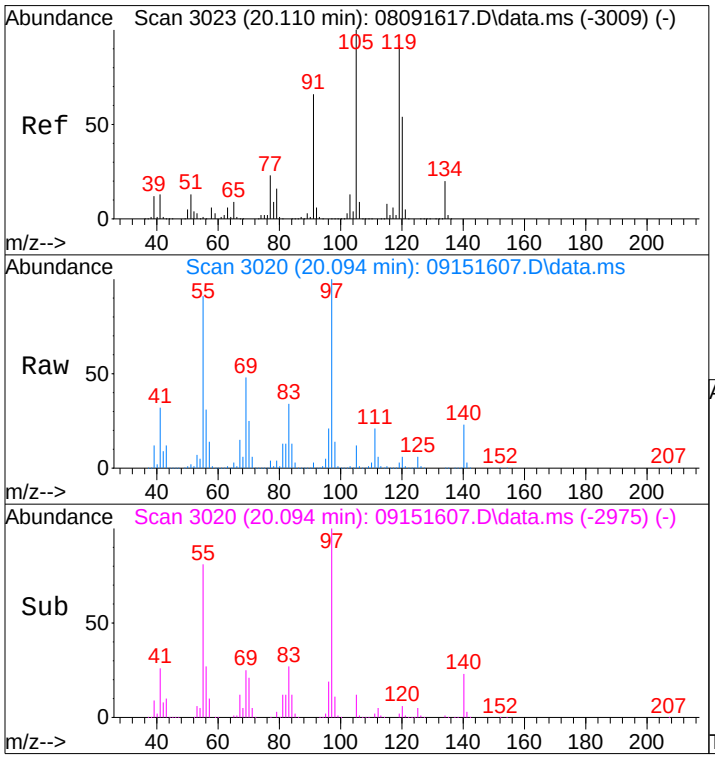


#79
1,3,5-Trimethylbenzene
Concen: 0.23 ng
RT: 19.70 min Scan# 2948
Delta R.T. 0.005 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:105 Resp: 14855

Ion	Ratio	Lower	Upper
105	100		
120	47.5	31.3	71.3

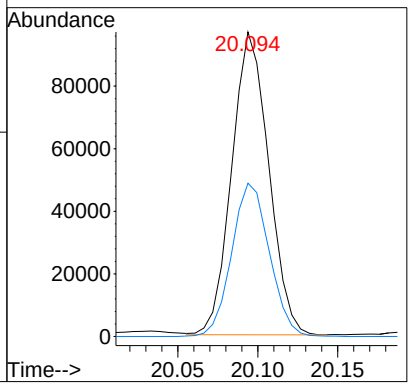




#82
1,2,4-Trimethylbenzene
Concen: 2.52 ng
RT: 20.09 min Scan# 3020
Delta R.T. -0.000 min
Lab File: 09151607.D
Acq: 15 Sep 2016 11:26

Tgt Ion:105 Resp: 155446

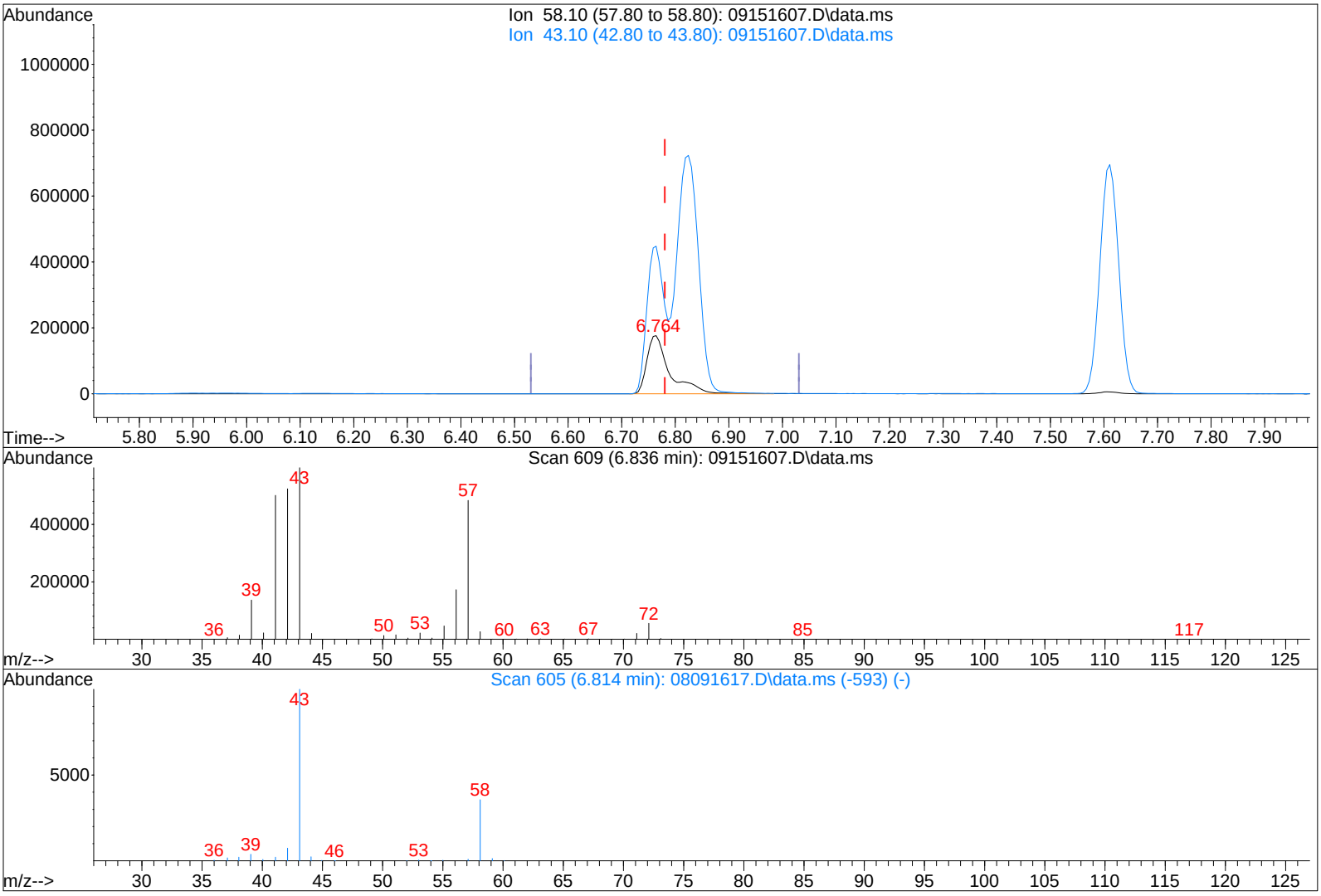
Ion	Ratio	Lower	Upper
105	100		
120	51.7	36.3	76.3



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\15\09151607.D Vial: 11
Acq On : 15 Sep 2016 11:26 Operator: EA
Sample : P1604380-002 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 15 11:51:12 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09151607.D\data.ms

(13) Acetone (T)

6.764min (-0.017) 41.20ng

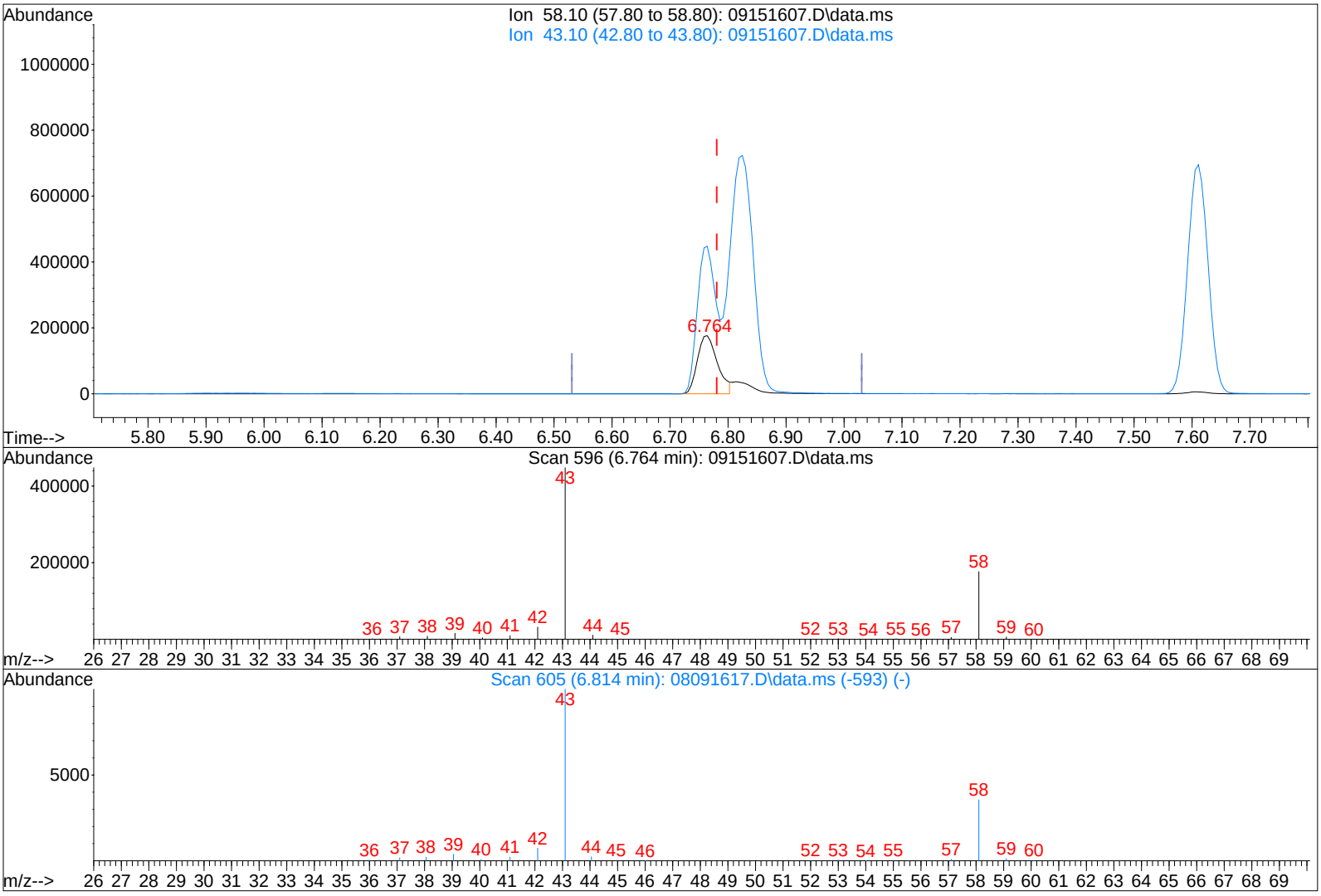
response 517873

Ion	Exp%	Act%
58.10	100	100
43.10	276.20	193.17#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\15\09151607.D Vial: 11
Acq On : 15 Sep 2016 11:26 Operator: EA
Sample : P1604380-002 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 15 11:51:12 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09151607.D\data.ms

(13) Acetone (T)

6.764min (-0.017) 33.78ng m

response 424541

Ion	Exp%	Act%
58.10	100	100
43.10	276.20	235.64#
0.00	0.00	0.00
0.00	0.00	0.00

IPC

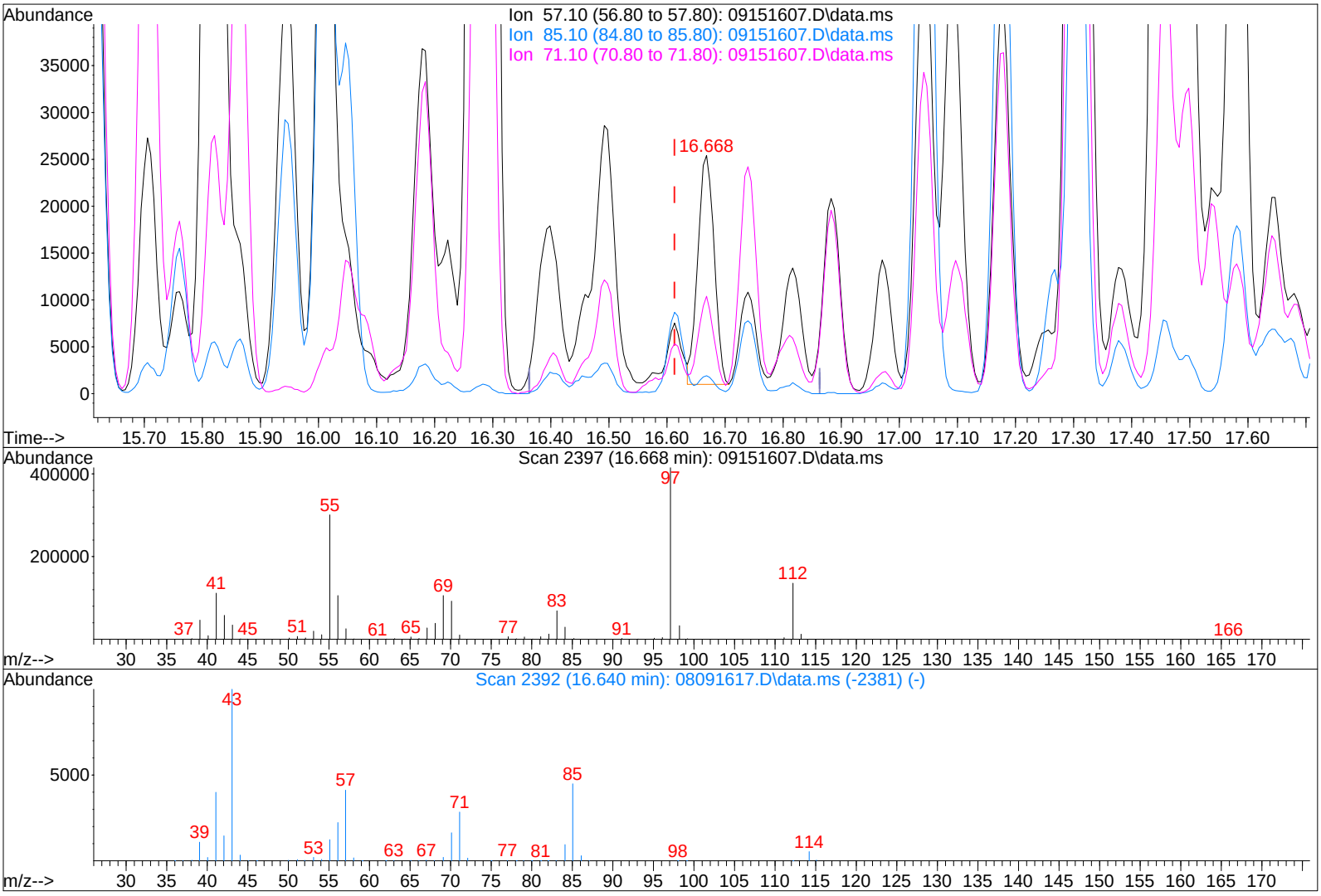
EA 9/21/16

LH 9/21/16

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\15\09151607.D Vial: 11
Acq On : 15 Sep 2016 11:26 Operator: EA
Sample : P1604380-002 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 15 11:51:12 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09151607.D\data.ms

(63) n-Octane (T)

16.668min (+0.055) 3.24ng

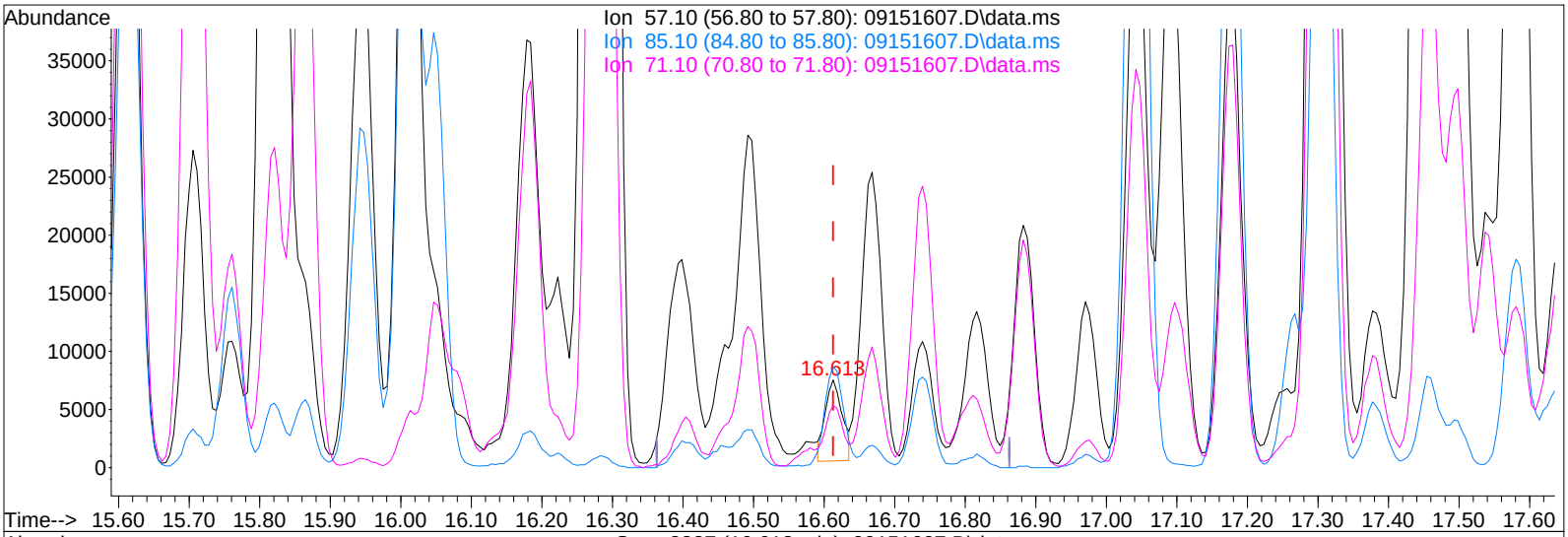
response 47512

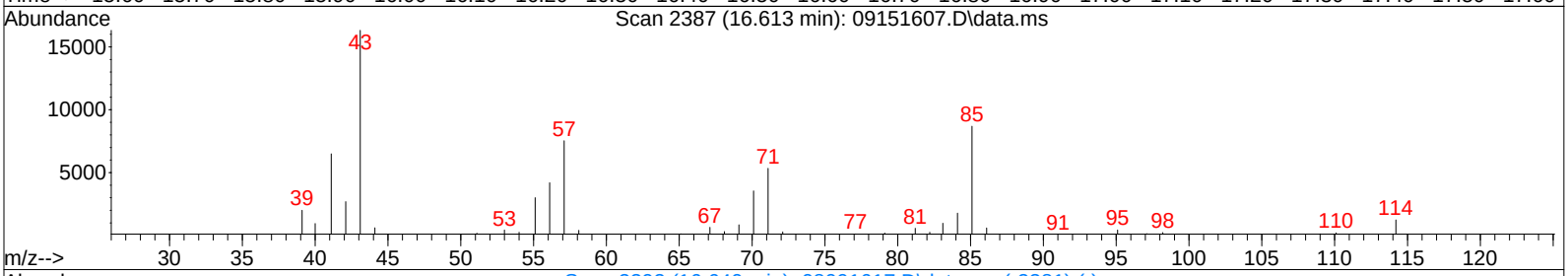
Ion	Exp%	Act%
57.10	100	100
85.10	113.90	6.27#
71.10	71.20	36.42#
0.00	0.00	0.00

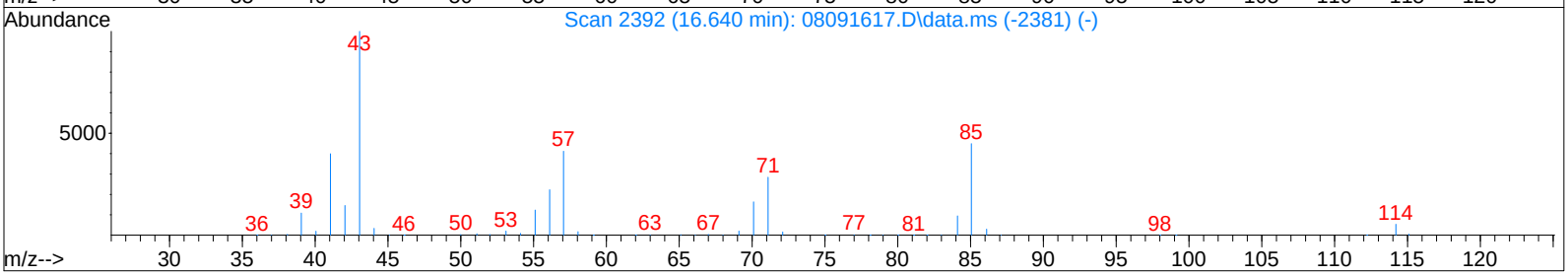
Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\15\09151607.D Vial: 11
Acq On : 15 Sep 2016 11:26 Operator: EA
Sample : P1604380-002 (400ml) Inst : MS13
Misc : S29-08301601

Quant Time: Sep 15 11:51:12 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 09151607.D\data.ms

(63) n-Octane (T)

16.613min (-0.000) 0.80ng m

response 11805

Ion	Exp%	Act%
57.10	100	100
85.10	113.90	25.23#
71.10	71.20	146.59#
0.00	0.00	0.00

WP

EA 9/21/16

LH 9/21/16

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141603.D Vial: 3
Acq On : 14 Sep 2016 6:14 Operator: EA
Sample : MB R13091416_1000mL Inst : MS13
Misc : S29-08301601_AC00880

EA 9/14/16

Quant Time: Sep 14 09:46:00 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	148875	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.04	114	710900	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.38	82	290566	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.76	65	186707	11.620	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.96%			
57) Toluene-d8 (SS2)	15.50	98	727940	12.811	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.48%			
73) Bromofluorobenzene (SS3)	18.86	174	251312	12.490	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.92%			
Target Compounds						Qvalue
2) Propene	3.98	42	484	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	6.14	45	12014	1.319	ng	94
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	6.63	56	133	N.D.		
13) Acetone	6.84	58	2376	0.223	ng	98
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	8.19	84	428	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	8.47	76	2238	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.65	78	3508	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\2016_09\14\09141603.D Vial: 3
Acq On : 14 Sep 2016 6:14 Operator: EA
Sample : MB R13091416_1000mL Inst : MS13
Misc : S29-08301601_AC00880

Quant Time: Sep 14 09:46:00 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

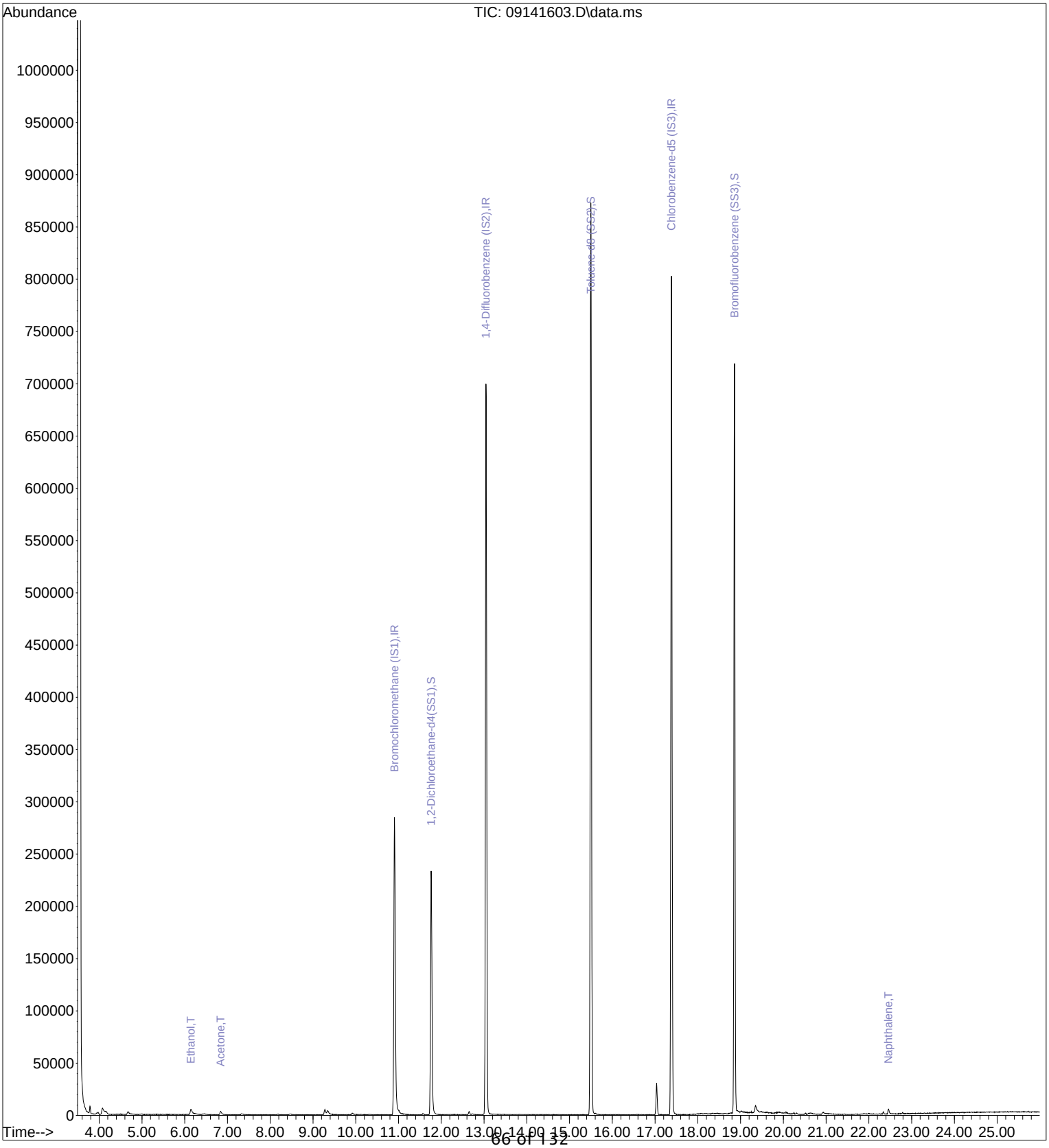
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	15.61	91	1400	N.D.	
59) 2-Hexanone	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	16.57	43	299	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	17.43	112	319	N.D.	
66) Ethylbenzene	17.82	91	635	N.D.	
67) m- & p-Xylenes	17.99	91	812	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	18.35	104	576	N.D.	
70) o-Xylene	18.43	91	469	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	19.02	105	949	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	19.48	91	312	N.D.	
77) 3-Ethyltoluene	19.63	105	646	N.D.	
78) 4-Ethyltoluene	19.63	105	646	N.D.	
79) 1,3,5-Trimethylbenzene	19.70	105	461	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	19.89	105	240	N.D.	
82) 1,2,4-Trimethylbenzene	20.11	105	633	N.D.	
83) n-Decane	0.00	57	0	N.D.	
84) Benzyl Chloride	20.23	91	643	N.D.	
85) 1,3-Dichlorobenzene	20.25	146	756	N.D.	
86) 1,4-Dichlorobenzene	20.31	146	981	N.D.	
87) sec-Butylbenzene	20.36	105	396	N.D.	
88) 4-Isopropyltoluene (p-...	20.51	119	262	N.D.	
89) 1,2,3-Trimethylbenzene	20.52	105	317	N.D.	
90) 1,2-Dichlorobenzene	20.65	146	432	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	21.44	57	239	N.D.	
94) 1,2,4-Trichlorobenzene	22.34	180	1148	N.D.	
95) Naphthalene	22.45	128	6732	0.093 ng	89
96) n-Dodecane	22.47	57	727	N.D.	
97) Hexachlorobutadiene	22.79	225	434	N.D.	
98) Cyclohexanone	18.15	55	316	N.D.	
99) tert-Butylbenzene	20.11	119	314	N.D.	
100) n-Butylbenzene	20.94	91	666	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141603.D Vial: 3
Acq On : 14 Sep 2016 6:14 Operator: EA
Sample : MB R13091416_1000mL Inst : MS13
Misc : S29-08301601_AC00880

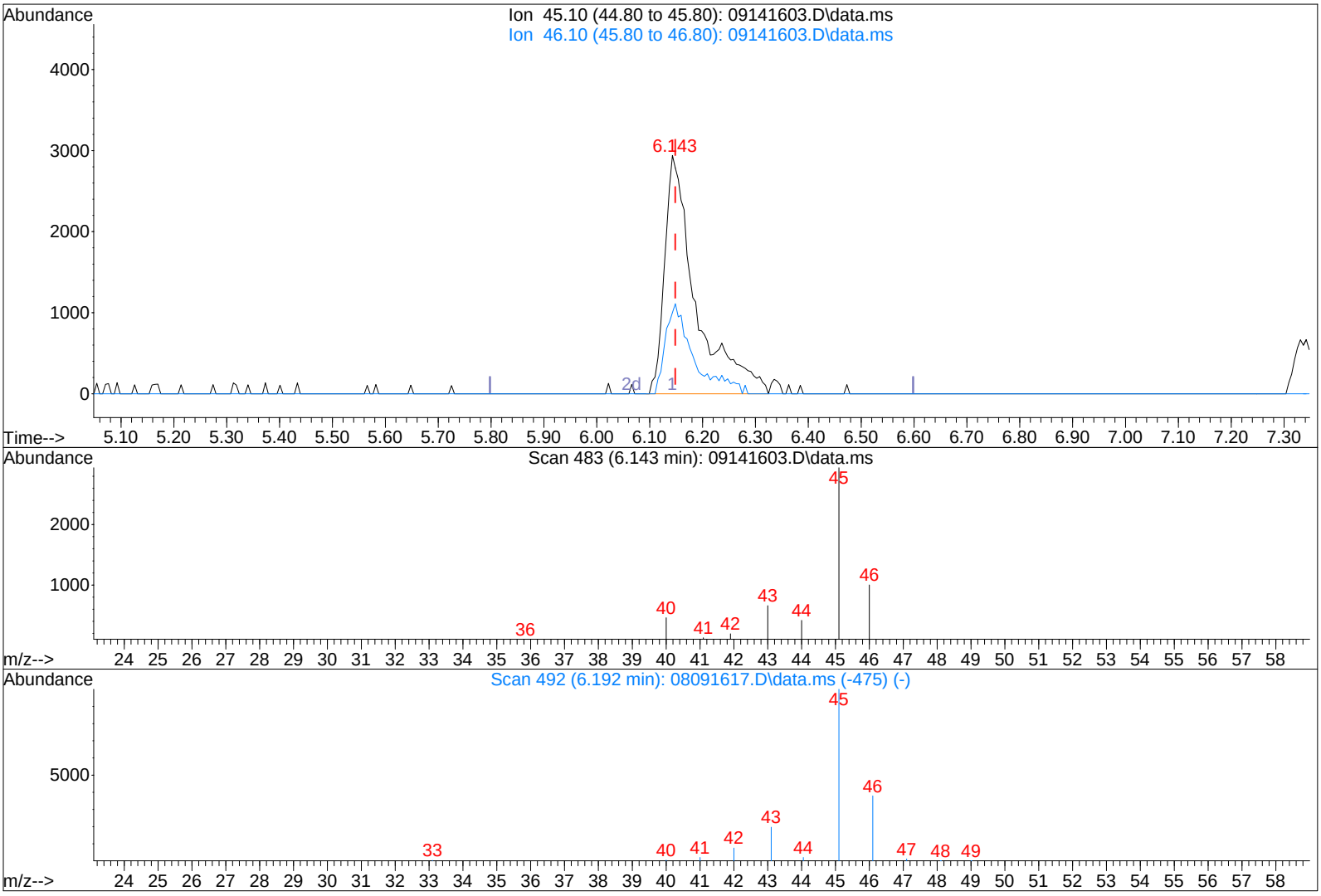
Quant Time: Sep 14 09:46:00 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\14\09141603.D Vial: 3
Acq On : 14 Sep 2016 6:14 Operator: EA
Sample : MB R13091416_1000mL Inst : MS13
Misc : S29-08301601_AC00880

Quant Time: Sep 14 09:46:00 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09141603.D\data.ms

(10) Ethanol (T)

6.143min (-0.005) 1.32ng

response 12014

Ion	Exp%	Act%
45.10	100	100
46.10	37.80	34.04
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151603.D Vial: 3
Acq On : 15 Sep 2016 6:14 Operator: EA
Sample : MB R13091516_1000mL Inst : MS13
Misc : S29-08301601_AC00880

EA 9/15/16

Quant Time: Sep 15 10:56:11 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

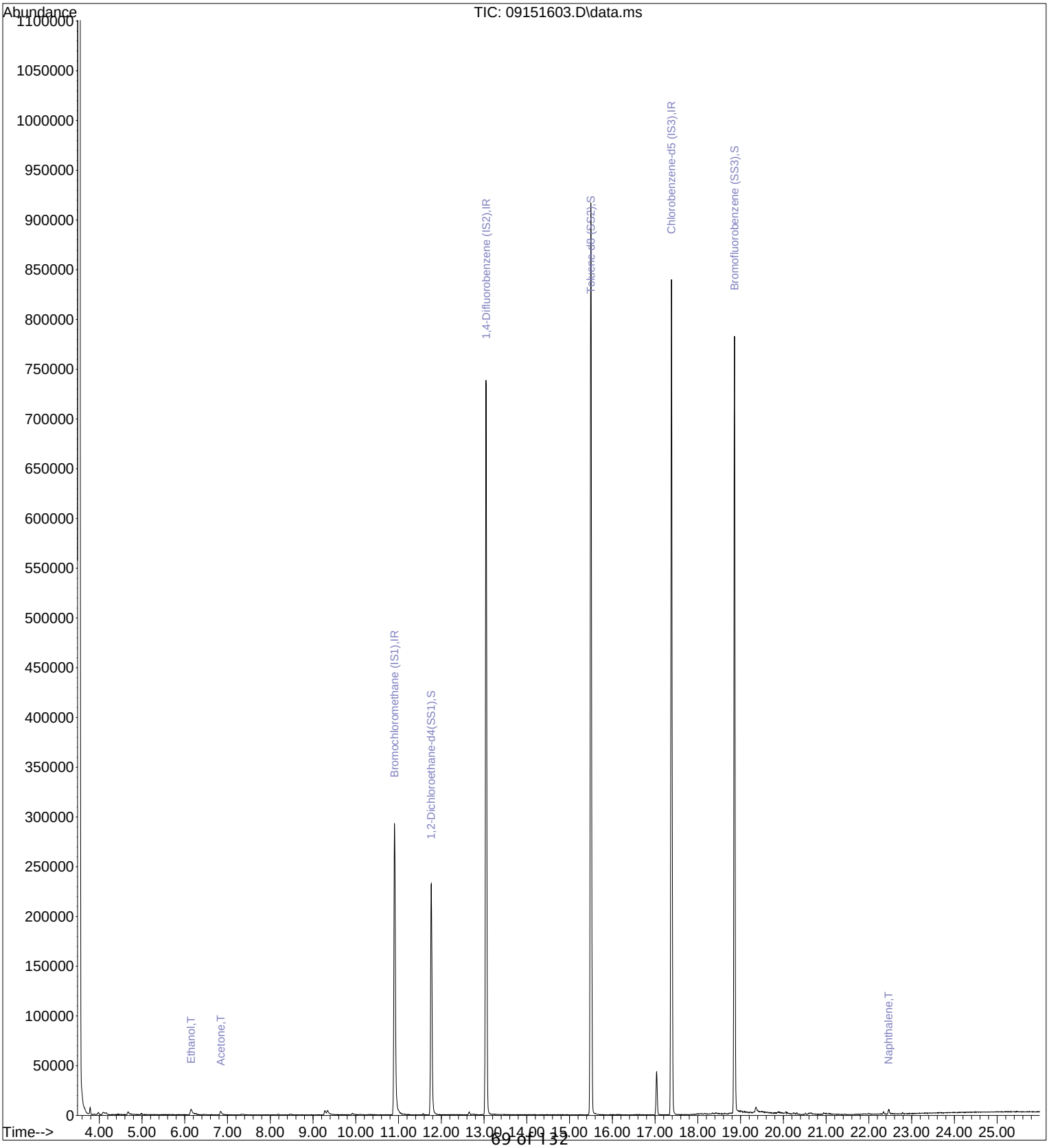
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	10.90	130	164092	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.05	114	781609	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	307649	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.76	65	184995	10.446	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 83.60%			
57) Toluene-d8 (SS2)	15.50	98	784396	13.038	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.32%			
73) Bromofluorobenzene (SS3)	18.86	174	290075	13.616	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.96%			
Target Compounds						Qvalue
10) Ethanol	6.15	45	13902	1.385	ng	99
13) Acetone	6.84	58	2765	0.236	ng	86
95) Naphthalene	22.46	128	7345	0.096	ng	87

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151603.D Vial: 3
Acq On : 15 Sep 2016 6:14 Operator: EA
Sample : MB R13091516_1000mL Inst : MS13
Misc : S29-08301601_AC00880

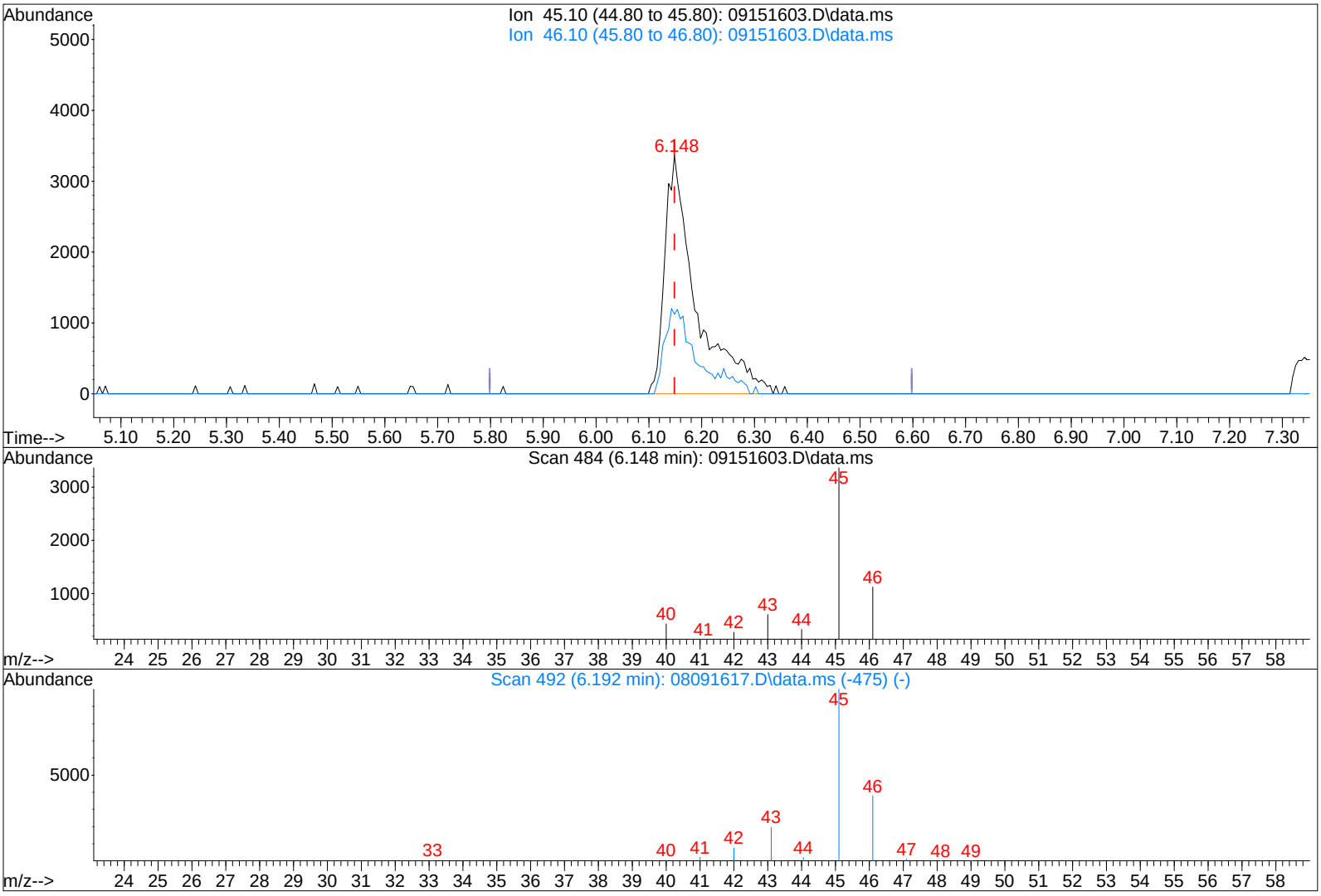
Quant Time: Sep 15 10:56:11 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\15\09151603.D Vial: 3
Acq On : 15 Sep 2016 6:14 Operator: EA
Sample : MB R13091516_1000mL Inst : MS13
Misc : S29-08301601_AC00880

Quant Time: Sep 15 10:56:11 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09151603.D\data.ms

(10) Ethanol (T)

6.148min (-0.000) 1.38ng

response 13902

Ion	Exp%	Act%
45.10	100	100
46.10	37.80	37.35
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141604.D Vial: 3
Acq On : 14 Sep 2016 6:49 Operator: EA
Sample : LCS R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-09061604 (10/5)

EA 9/14/16

Quant Time: Sep 14 09:46:29 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	148357	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.06	114	693087	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	286626	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	188613	11.780	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.24%				
57) Toluene-d8 (SS2)	15.50	98	705803	12.592	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%				
73) Bromofluorobenzene (SS3)	18.86	174	255281	12.862	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
Target Compounds							Qvalue
2) Propene	3.90	42	354928	23.121	ng		100
3) Dichlorodifluoromethan...	4.06	85	715958	24.131	ng		100
4) Chloromethane	4.34	50	544927	25.344	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.60	135	424426	27.177	ng		99
6) Vinyl Chloride	4.75	62	523428	26.721	ng		99
7) 1,3-Butadiene	5.02	54	364729	33.474	ng		97
8) Bromomethane	5.44	94	337457	28.081	ng		99
9) Chloroethane	5.76	64	248316	25.673	ng		99
10) Ethanol	6.15	45	1264290	139.308	ng		100
11) Acetonitrile	6.39	41	675357	23.898	ng		99
12) Acrolein	6.57	56	220527	22.794	ng		100
13) Acetone	6.78	58	1398636	131.996	ng		91
14) Trichlorofluoromethane	7.01	101	586393	24.541	ng		100
15) 2-Propanol (Isopropanol)	7.28	45	1789933	53.760	ng		100
16) Acrylonitrile	7.52	53	505141	26.869	ng		100
17) 1,1-Dichloroethene	7.96	96	385424	29.450	ng		92
18) 2-Methyl-2-Propanol (t...	8.14	59	1790913	57.109	ng		98
19) Methylene Chloride	8.19	84	397275	28.737	ng		91
20) 3-Chloro-1-propene (Al...	8.35	41	527411	25.873	ng		92
21) Trichlorotrifluoroethane	8.61	151	338657	28.530	ng		99
22) Carbon Disulfide	8.44	76	1333650	22.888	ng		100
23) trans-1,2-Dichloroethene	9.46	61	521447	28.058	ng		95
24) 1,1-Dichloroethane	9.72	63	649460	26.424	ng		100
25) Methyl tert-Butyl Ether	9.82	73	1090673	27.208	ng		99
26) Vinyl Acetate	9.99	86	473006	141.613	ng	#	79
27) 2-Butanone (MEK)	10.22	72	268014	29.588	ng	#	88
28) cis-1,2-Dichloroethene	10.75	61	505559	28.357	ng		95
29) Diisopropyl Ether	11.05	87	373107	29.352	ng	#	85
30) Ethyl Acetate	11.05	61	274083	57.533	ng		99
31) n-Hexane	11.03	57	542275	23.347	ng		99
32) Chloroform	11.09	83	646217	27.765	ng		100
34) Tetrahydrofuran (THF)	11.49	72	261336	26.673	ng		92
35) Ethyl tert-Butyl Ether	11.64	87	449101	29.101	ng		95
36) 1,2-Dichloroethane	11.89	62	419301	27.106	ng		100
38) 1,1,1-Trichloroethane	12.17	97	540734	27.796	ng		99
39) Isopropyl Acetate	12.62	61	470205	58.946	ng	#	91
40) 1-Butanol	12.64	56	764774	60.226	ng		95
41) Benzene	12.65	78	1466819	28.949	ng		100
42) Carbon Tetrachloride	12.81	117	456803	28.797	ng		100
43) Cyclohexane	12.95	84	1122453	56.086	ng		96
44) tert-Amyl Methyl Ether	13.30	73	1056347	28.110	ng		98
45) 1,2-Dichloropropane	13.51	63	376566	27.401	ng		100
46) Bromodichloromethane	13.70	83	507356	29.576	ng		100
47) Trichloroethene	13.75	130	415561	28.712	ng		100
48) 1,4-Dioxane	13.73	88	336880	31.722	ng		96
49) 2,2,4-Trimethylpentane...	13.82	57	1526982	26.021	ng		98
50) Methyl Methacrylate	13.97	100	310902	57.750	ng		97

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141604.D Vial: 3
Acq On : 14 Sep 2016 6:49 Operator: EA
Sample : LCS R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-09061604 (10/5)

Quant Time: Sep 14 09:46:29 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

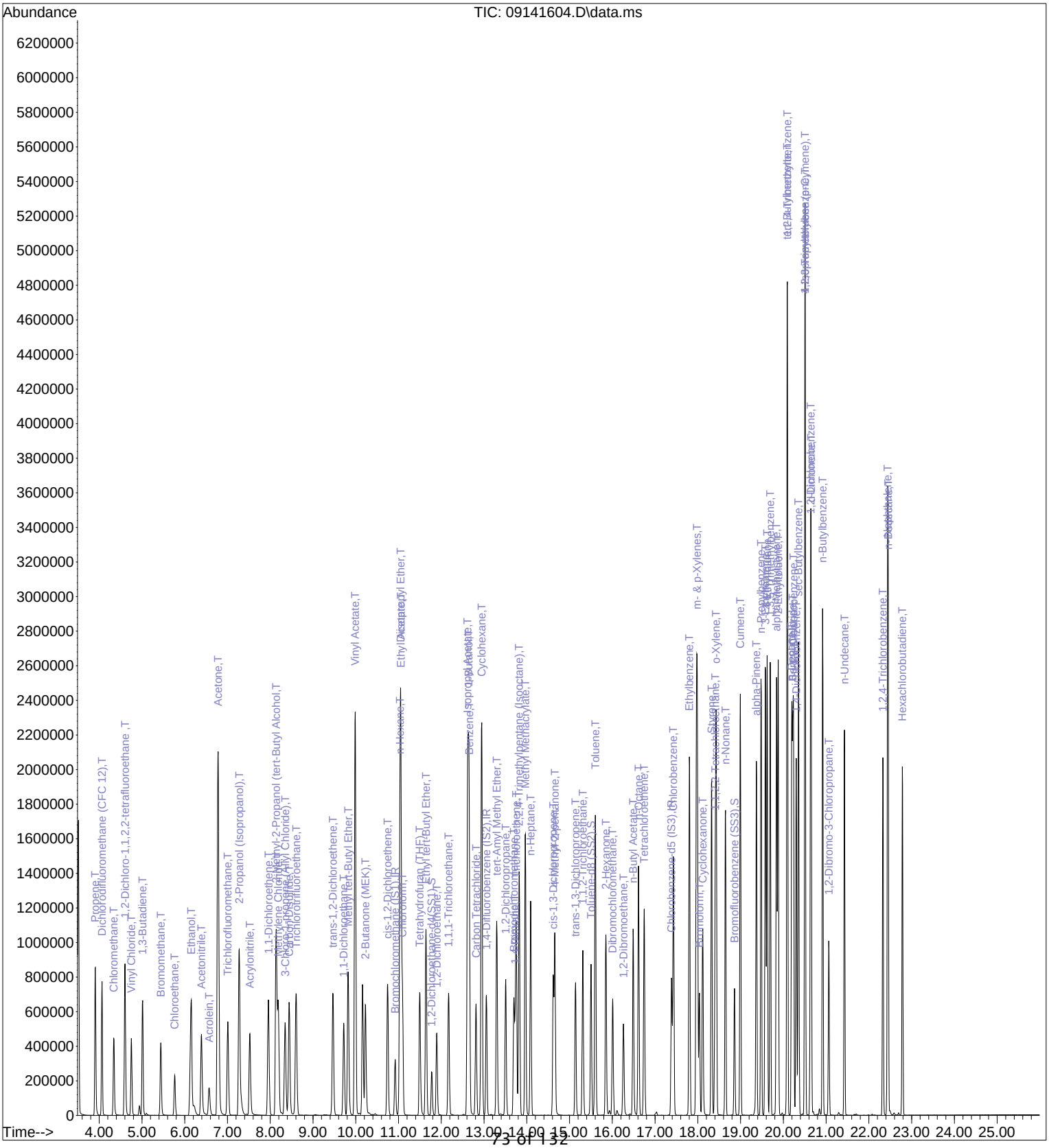
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	359806	27.764	ng	98
52) cis-1,3-Dichloropropene	14.62	75	577548	28.691	ng	100
53) 4-Methyl-2-pentanone	14.66	58	358335	29.079	ng	95
54) trans-1,3-Dichloropropene	15.14	75	522994	29.736	ng	100
55) 1,1,2-Trichloroethane	15.31	97	384329	29.824	ng	99
58) Toluene	15.60	91	1551355	27.908	ng	100
59) 2-Hexanone	15.85	43	790976	29.247	ng	97
60) Dibromochloromethane	16.01	129	448000	33.030	ng	100
61) 1,2-Dibromoethane	16.26	107	449740	31.823	ng	100
62) n-Butyl Acetate	16.49	43	882425	32.161	ng	98
63) n-Octane	16.61	57	305244	26.820	ng	97
64) Tetrachloroethene	16.75	166	445311	27.927	ng	100
65) Chlorobenzene	17.43	112	1037143	29.738	ng	100
66) Ethylbenzene	17.80	91	1771019	29.789	ng	100
67) m- & p-Xylenes	17.98	91	2817242	60.261	ng	100
68) Bromoform	18.04	173	398717	30.248	ng	99
69) Styrene	18.32	104	1150460	31.805	ng	99
70) o-Xylene	18.43	91	1428624	29.792	ng	100
71) n-Nonane	18.65	43	658085	24.777	ng	97
72) 1,1,2,2-Tetrachloroethane	18.41	83	717992	29.327	ng	100
74) Cumene	18.99	105	1793767	29.258	ng	100
75) alpha-Pinene	19.37	93	928204	30.344	ng	100
76) n-Propylbenzene	19.48	91	2174379	28.785	ng	100
77) 3-Ethyltoluene	19.58	105	1802742	30.499	ng	100
78) 4-Ethyltoluene	19.62	105	1795835	31.348	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1512205	30.284	ng	100
80) alpha-Methylstyrene	19.84	118	857443	32.504	ng	100
81) 2-Ethyltoluene	19.88	105	1779603	30.849	ng	100
82) 1,2,4-Trimethylbenzene	20.09	105	1560331	32.659	ng	100
83) n-Decane	20.19	57	765058	27.291	ng	99
84) Benzyl Chloride	20.21	91	1394689	32.014	ng	99
85) 1,3-Dichlorobenzene	20.24	146	968794	33.527	ng	100
86) 1,4-Dichlorobenzene	20.30	146	954002	31.636	ng	100
87) sec-Butylbenzene	20.35	105	2051589	31.171	ng	100
88) 4-Isopropyltoluene (p-...	20.51	119	1858276	31.429	ng	100
89) 1,2,3-Trimethylbenzene	20.51	105	1614723	32.362	ng	100
90) 1,2-Dichlorobenzene	20.64	146	935675	33.692	ng	99
91) d-Limonene	20.65	68	584689	31.492	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.06	157	347413	29.206	ng	96
93) n-Undecane	21.43	57	769301	26.883	ng	99
94) 1,2,4-Trichlorobenzene	22.33	180	699950	29.976	ng	100
95) Naphthalene	22.44	128	2137736	30.088	ng	100
96) n-Dodecane	22.45	57	670860	25.238	ng	99
97) Hexachlorobutadiene	22.78	225	414848	28.948	ng	100
98) Cyclohexanone	18.11	55	529563	31.865	ng	97
99) tert-Butylbenzene	20.09	119	1482850	32.024	ng	100
100) n-Butylbenzene	20.92	91	1658868	32.134	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141604.D Vial: 3
Acq On : 14 Sep 2016 6:49 Operator: EA
Sample : LCS R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-09061604 (10/5)

Quant Time: Sep 14 09:46:29 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151604.D Vial: 3
Acq On : 15 Sep 2016 6:49 Operator: EA
Sample : LCS R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-09061604 (10/5)

EA 9/15/16

Quant Time: Sep 15 10:57:09 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	168789	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.06	114	775879	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	305343	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.78	65	190398	10.452	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 83.60%				
57) Toluene-d8 (SS2)	15.50	98	773800	12.959	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.68%				
73) Bromofluorobenzene (SS3)	18.86	174	293550	13.883	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.04%				
Target Compounds							Qvalue
2) Propene	3.91	42	335579	19.214	ng		99
3) Dichlorodifluoromethan...	4.07	85	736731	21.825	ng		100
4) Chloromethane	4.34	50	533041	21.790	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.60	135	466665	26.264	ng		99
6) Vinyl Chloride	4.76	62	526236	23.612	ng		99
7) 1,3-Butadiene	5.02	54	373784	30.153	ng		94
8) Bromomethane	5.44	94	365626	26.742	ng		99
9) Chloroethane	5.77	64	255415	23.210	ng		99
10) Ethanol	6.15	45	1208890	117.079	ng		100
11) Acetonitrile	6.39	41	638186	19.849	ng		99
12) Acrolein	6.57	56	223995	20.349	ng		100
13) Acetone	6.78	58	1388356	115.165	ng	#	84
14) Trichlorofluoromethane	7.01	101	623370	22.931	ng		100
15) 2-Propanol (Isopropanol)	7.28	45	1718569	45.368	ng		99
16) Acrylonitrile	7.52	53	505542	23.635	ng		99
17) 1,1-Dichloroethene	7.96	96	420971	28.272	ng	#	84
18) 2-Methyl-2-Propanol (t...	8.14	59	1805199	50.596	ng		96
19) Methylene Chloride	8.19	84	426883	27.141	ng		82
20) 3-Chloro-1-propene (Al...	8.35	41	504098	21.735	ng		85
21) Trichlorotrifluoroethane	8.61	151	388694	28.781	ng		93
22) Carbon Disulfide	8.45	76	1414514	21.337	ng		100
23) trans-1,2-Dichloroethene	9.47	61	531103	25.118	ng		89
24) 1,1-Dichloroethane	9.72	63	664294	23.756	ng		100
25) Methyl tert-Butyl Ether	9.82	73	1141157	25.021	ng		97
26) Vinyl Acetate	9.99	86	501144	131.875	ng	#	54
27) 2-Butanone (MEK)	10.23	72	281397	27.305	ng	#	74
28) cis-1,2-Dichloroethene	10.75	61	512792	25.281	ng		89
29) Diisopropyl Ether	11.05	87	395829	27.370	ng	#	65
30) Ethyl Acetate	11.06	61	271614	50.113	ng		95
31) n-Hexane	11.03	57	530771	20.086	ng		99
32) Chloroform	11.09	83	674944	25.489	ng		99
34) Tetrahydrofuran (THF)	11.50	72	274716	24.644	ng	#	84
35) Ethyl tert-Butyl Ether	11.64	87	480782	27.383	ng	#	87
36) 1,2-Dichloroethane	11.89	62	419553	23.839	ng		100
38) 1,1,1-Trichloroethane	12.17	97	575510	26.427	ng		98
39) Isopropyl Acetate	12.62	61	468596	52.476	ng	#	81
40) 1-Butanol	12.64	56	750955	52.827	ng		90
41) Benzene	12.65	78	1531880	27.007	ng		100
42) Carbon Tetrachloride	12.81	117	491081	27.655	ng		99
43) Cyclohexane	12.95	84	1193929	53.291	ng		90
44) tert-Amyl Methyl Ether	13.30	73	1096366	26.062	ng		95
45) 1,2-Dichloropropane	13.51	63	383290	24.914	ng		99
46) Bromodichloromethane	13.70	83	528522	27.522	ng		99
47) Trichloroethene	13.75	130	466856	28.814	ng		99
48) 1,4-Dioxane	13.73	88	360758	30.346	ng		92
49) 2,2,4-Trimethylpentane...	13.82	57	1530883	23.304	ng		95
50) Methyl Methacrylate	13.97	100	340308	56.467	ng	#	88

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151604.D Vial: 3
Acq On : 15 Sep 2016 6:49 Operator: EA
Sample : LCS R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-09061604 (10/5)

Quant Time: Sep 15 10:57:09 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

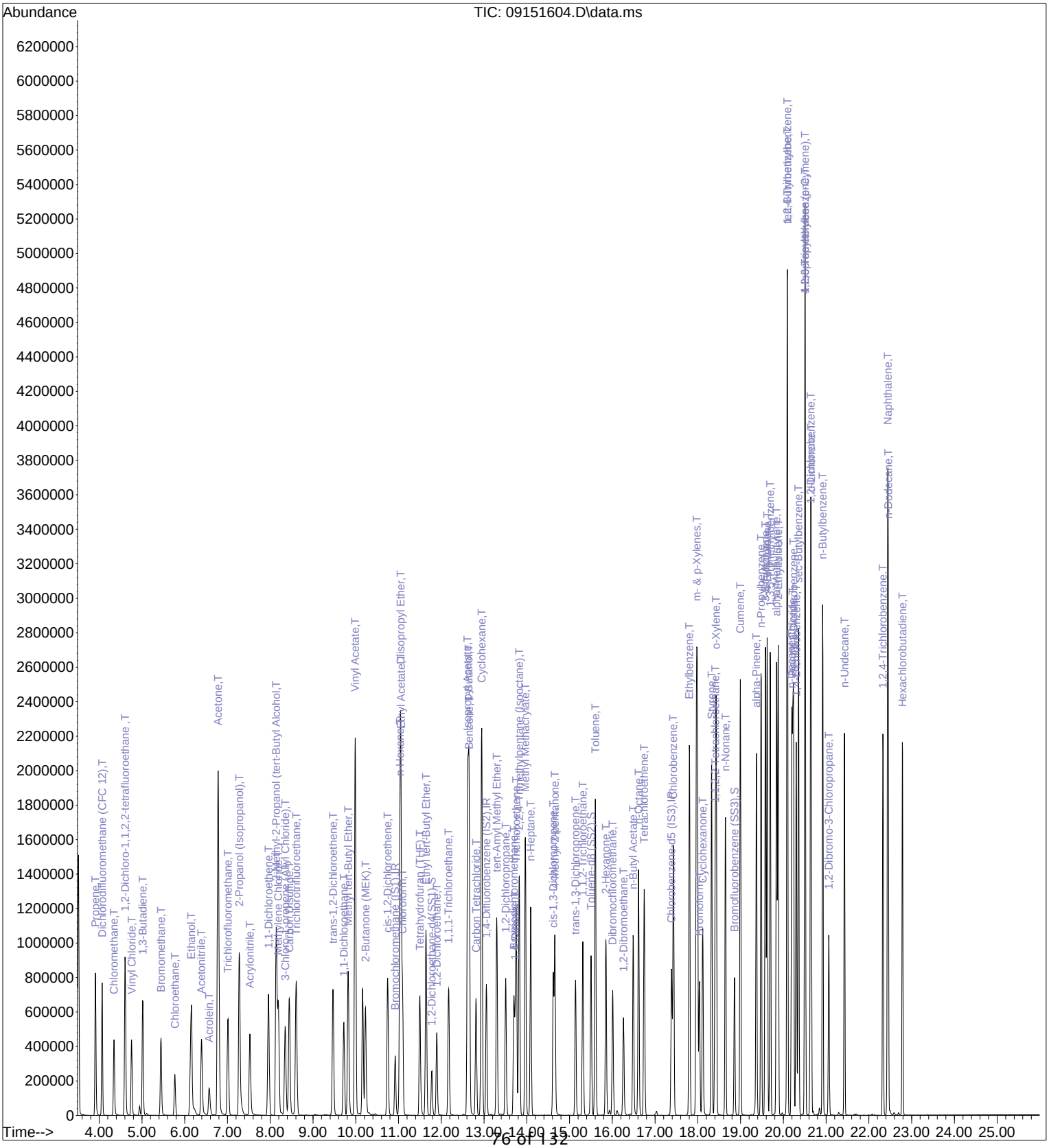
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	373971	25.778	ng	94
52) cis-1,3-Dichloropropene	14.62	75	601852	26.708	ng	100
53) 4-Methyl-2-pentanone	14.66	58	360523	26.134	ng	87
54) trans-1,3-Dichloropropene	15.14	75	540592	27.457	ng	100
55) 1,1,2-Trichloroethane	15.31	97	413971	28.697	ng	97
58) Toluene	15.60	91	1663361	28.089	ng	100
59) 2-Hexanone	15.85	43	747582	25.948	ng	92
60) Dibromochloromethane	16.01	129	489983	33.911	ng	100
61) 1,2-Dibromoethane	16.26	107	485689	32.260	ng	100
62) n-Butyl Acetate	16.49	43	837773	28.662	ng	94
63) n-Octane	16.61	57	303829	25.060	ng	91
64) Tetrachloroethene	16.75	166	507615	29.883	ng	100
65) Chlorobenzene	17.43	112	1130294	30.422	ng	99
66) Ethylbenzene	17.80	91	1869896	29.524	ng	98
67) m- & p-Xylenes	17.98	91	2951064	59.254	ng	98
68) Bromoform	18.04	173	447013	31.833	ng	100
69) Styrene	18.32	104	1241420	32.216	ng	98
70) o-Xylene	18.43	91	1500376	29.370	ng	99
71) n-Nonane	18.65	43	622480	22.000	ng	91
72) 1,1,2,2-Tetrachloroethane	18.41	83	745585	28.588	ng	100
74) Cumene	18.99	105	1909445	29.236	ng	99
75) alpha-Pinene	19.37	93	972266	29.836	ng	99
76) n-Propylbenzene	19.48	91	2269926	28.208	ng	98
77) 3-Ethyltoluene	19.58	105	1893700	30.074	ng	99
78) 4-Ethyltoluene	19.62	105	1903439	31.189	ng	99
79) 1,3,5-Trimethylbenzene	19.69	105	1607742	30.223	ng	99
80) alpha-Methylstyrene	19.84	118	917279	32.641	ng	99
81) 2-Ethyltoluene	19.88	105	1881935	30.624	ng	100
82) 1,2,4-Trimethylbenzene	20.09	105	1609835	31.630	ng	99
83) n-Decane	20.19	57	749329	25.092	ng	97
84) Benzyl Chloride	20.21	91	1434343	30.906	ng	98
85) 1,3-Dichlorobenzene	20.24	146	1049198	34.084	ng	100
86) 1,4-Dichlorobenzene	20.30	146	1033681	32.177	ng	100
87) sec-Butylbenzene	20.35	105	2148508	30.642	ng	99
88) 4-Isopropyltoluene (p-...	20.51	119	1929816	30.638	ng	99
89) 1,2,3-Trimethylbenzene	20.51	105	1663230	31.291	ng	99
90) 1,2-Dichlorobenzene	20.64	146	1004650	33.959	ng	100
91) d-Limonene	20.65	68	578483	29.247	ng	95
92) 1,2-Dibromo-3-Chloropr...	21.06	157	376877	29.740	ng	91
93) n-Undecane	21.43	57	755337	24.777	ng	96
94) 1,2,4-Trichlorobenzene	22.33	180	767923	30.871	ng	100
95) Naphthalene	22.44	128	2276675	30.080	ng	100
96) n-Dodecane	22.45	57	680494	24.032	ng	96
97) Hexachlorobutadiene	22.79	225	453146	29.682	ng	99
98) Cyclohexanone	18.11	55	527041	29.769	ng	93
99) tert-Butylbenzene	20.09	119	1544930	31.320	ng	99
100) n-Butylbenzene	20.92	91	1698977	30.893	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151604.D Vial: 3
Acq On : 15 Sep 2016 6:49 Operator: EA
Sample : LCS R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-09061604 (10/5)

Quant Time: Sep 15 10:57:09 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Response Factor Report MS13

Method Path : I:\MS13\METHODS\
Method File : R13090816.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Sep 09 10:07:12 2016
Response Via : Initial Calibration

EA 9/9/16

Calibration Files
0.08=09081618.D 0.10=09081619.D 0.20=09081620.D 0.40=09081621.D 1.0 =09081622.D 5.0 =09081623.D 25 =09081624.D
50 =09081625.D 100 =09081626.D

		Compound	0.08	0.10	0.20	0.40	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	ISTD	----------								
2)	T	Propene			1.564	1.456	1.397	1.349	1.313	1.060	0.915	1.293	17.61
3)	T	Dichlorodifluo...	2.458	2.406	2.669	2.525	2.735	2.705	2.681	2.321	1.999	2.500	9.52
4)	T	Chloromethane	1.902	1.930	1.844	1.610	2.060	1.966	2.010	1.699	1.283	1.812	13.52
5)	T	1,2-Dichloro-1...	1.310	1.210	1.263	1.312	1.364	1.343	1.424	1.341	1.275	1.316	4.73
6)	T	Vinyl Chloride	1.506	1.595	1.547	1.658	1.783	1.822	1.860	1.642	1.442	1.650	8.81
7)	T	1,3-Butadiene			0.741	0.788	0.921	0.954	1.148	1.002	0.873	0.918	14.85
8)	T	Bromomethane	0.897	0.919	0.997	1.014	1.079	1.061	1.126	1.029	0.990	1.013	7.22
9)	T	Chloroethane	0.770	0.810	0.824	0.818	0.964	0.872	0.861	0.746	0.669	0.815	10.24
10)	T	Ethanol			0.962	0.760	0.982	0.778	0.875	0.551	0.445	0.765	26.50
11)	T	Acetonitrile			2.994	2.884	2.624	2.164	2.492	2.059	1.450	2.381	22.46
12)	T	Acrolein	1.034	0.828	0.851	0.855	0.811	0.821	0.818	0.701	0.619	0.815	13.90
13)	T	Acetone				1.241	0.965	0.966	0.928	0.733	0.524	0.893	27.18
14)	T	Trichlorofluor...	1.981	2.041	2.032	2.056	2.157	2.089	2.073	1.909	1.782	2.013	5.51
15)	T	2-Propanol (Is...	2.573	2.867	2.938	2.852	3.177	3.241	3.150	2.530	1.920	2.805	14.83
16)	T	Acrylonitrile				1.473	1.580	1.763	1.774	1.543	1.371	1.584	10.10
17)	T	1,1-Dichloroet...	0.969	1.145	1.024	1.048	1.154	1.161	1.205	1.142	1.076	1.103	7.00
18)	T	2-Methyl-2-Pro...	2.393	2.515	2.588	2.754	3.007	3.046	3.010	2.522	1.946	2.642	13.55
19)	T	Methylene Chlo...	1.176	1.265	1.176	1.167	1.201	1.189	1.231	1.135	0.944	1.165	7.82
20)	T	3-Chloro-1-pro...	1.544	1.675	1.810	1.750	1.940	1.953	1.903	1.567	1.315	1.718	12.45
21)	T	Trichlorotrifl...	0.864	1.017	0.958	0.982	1.021	0.998	1.057	1.057	1.047	1.000	6.13
22)	T	Carbon Disulfide				5.919	5.178	4.847	5.021	4.519	3.974	4.910	13.31
23)	T	trans-1,2-Dich...	1.377	1.375	1.470	1.579	1.785	1.774	1.787	1.569	1.376	1.566	11.47
24)	T	1,1-Dichloroet...	1.929	2.034	2.118	2.177	2.283	2.241	2.205	1.935	1.715	2.071	8.90
25)	T	Methyl tert-Bu...	3.215	3.507	3.415	3.458	3.585	3.584	3.589	3.213	2.832	3.378	7.45
26)	T	Vinyl Acetate				0.284	0.301	0.310	0.316	0.271	0.207	0.281	14.27
27)	T	2-Butanone (MEK)		0.574	0.729	0.870	0.770	0.827	0.859	0.775	0.702	0.763	12.66
28)	T	cis-1,2-Dichlo...	1.333	1.394	1.557	1.548	1.657	1.661	1.667	1.446	1.258	1.502	10.11
29)	T	Diisopropyl Ether	1.067	1.009	1.017	1.144	1.196	1.176	1.196	1.031	0.803	1.071	11.79
30)	T	Ethyl Acetate				0.408	0.472	0.477	0.459	0.354	0.238	0.401	23.13
31)	T	n-Hexane	2.144	2.295	2.202	2.176	2.197	2.086	1.879	1.493	1.141	1.957	19.94
32)	T	Chloroform	1.855	2.061	2.085	2.134	2.034	2.006	2.054	1.821	1.601	1.961	8.67
33)	S	1,2-Dichloroet...	1.361	1.373	1.414	1.442	1.421	1.430	1.356	1.207	1.137	1.349	7.90
34)	T	Tetrahydrofura...			0.932	0.869	0.855	0.830	0.848	0.760	0.684	0.826	9.74
35)	T	Ethyl tert-But...	1.142	1.151	1.263	1.337	1.392	1.400	1.473	1.338	1.207	1.300	8.96
36)	T	1,2-Dichloroet...	1.177	1.274	1.293	1.382	1.461	1.428	1.424	1.219	1.071	1.303	10.12
37)	IR	1,4-Difluorobenzen...	----------	ISTD	----------								
38)	T	1,1,1-Trichlor...	0.313	0.340	0.336	0.360	0.371	0.367	0.389	0.358	0.324	0.351	6.92
39)	T	Isopropyl Acetate	0.135	0.146	0.146	0.157	0.163	0.163	0.162	0.131	0.093	0.144	15.64
40)	T	1-Butanol			0.224	0.271	0.242	0.269	0.257	0.198	0.142	0.229	20.18
41)	T	Benzene				1.107	1.053	0.975	0.966	0.808	0.574	0.914	21.31
42)	T	Carbon Tetrach...	0.247	0.265	0.264	0.271	0.303	0.302	0.328	0.309	0.285	0.286	9.21

Method Path : I:\MS13\METHODS\
Method File : R13090816.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

43)	T	Cyclohexane	0.354	0.362	0.371	0.368	0.393	0.384	0.400	0.349	0.267	0.361	10.82
44)	T	tert-Amyl Meth...	0.629	0.669	0.664	0.684	0.720	0.720	0.760	0.678	0.576	0.678	7.98
45)	T	1,2-Dichloropr...	0.232	0.251	0.246	0.261	0.272	0.262	0.268	0.236	0.202	0.248	8.82
46)	T	Bromodichlorom...	0.262	0.299	0.293	0.303	0.335	0.332	0.354	0.321	0.285	0.309	9.27
47)	T	Trichloroethene	0.246	0.236	0.257	0.253	0.263	0.259	0.290	0.284	0.261	0.261	6.61
48)	T	1,4-Dioxane	0.163	0.186	0.190	0.191	0.196	0.199	0.221	0.204	0.174	0.192	8.86
49)	T	2,2,4-Trimethy...	1.074	1.110	1.123	1.089	1.157	1.129	1.145	0.958	0.740	1.058	12.58
50)	T	Methyl Methacr...				0.083	0.097	0.101	0.110	0.103	0.089	0.097	10.10
51)	T	n-Heptane	0.202	0.232	0.244	0.247	0.258	0.250	0.254	0.226	0.191	0.234	10.09
52)	T	cis-1,3-Dichlo...	0.299	0.325	0.339	0.366	0.395	0.399	0.427	0.384	0.333	0.363	11.50
53)	T	4-Methyl-2-pen...				0.210	0.239	0.241	0.252	0.215	0.177	0.222	12.36
54)	T	trans-1,3-Dich...	0.247	0.257	0.290	0.319	0.343	0.359	0.385	0.348	0.307	0.317	14.71
55)	T	1,1,2-Trichlor...	0.201	0.213	0.225	0.223	0.246	0.246	0.267	0.248	0.224	0.232	8.81
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------										
57)	S	Toluene-d8 (SS2)	2.439	2.427	2.420	2.420	2.426	2.408	2.413	2.510	2.537	2.444	1.89
58)	T	Toluene	2.737	2.633	2.387	2.326	2.420	2.363	2.475	2.398	2.080	2.424	7.69
59)	T	2-Hexanone		1.132	1.086	1.320	1.322	1.306	1.271	1.107	0.892	1.179	12.94
60)	T	Dibromochlorom...	0.443	0.508	0.508	0.530	0.599	0.615	0.700	0.723	0.696	0.592	16.97
61)	T	1,2-Dibromoethane	0.515	0.516	0.584	0.559	0.640	0.634	0.707	0.712	0.680	0.616	12.43
62)	T	n-Butyl Acetate		0.814	1.063	1.220	1.388	1.443	1.426	1.232	0.986	1.197	18.97
63)	T	n-Octane	0.498	0.486	0.506	0.514	0.552	0.522	0.530	0.477	0.382	0.496	9.79
64)	T	Tetrachloroethene	0.688	0.623	0.620	0.636	0.676	0.662	0.751	0.806	0.795	0.695	10.31
65)	T	Chlorobenzene	1.469	1.494	1.460	1.453	1.543	1.513	1.636	1.634	1.488	1.521	4.61
66)	T	Ethylbenzene	2.571	2.573	2.464	2.537	2.712	2.650	2.841	2.714	2.273	2.593	6.35
67)	T	m- & p-Xylenes	1.982	1.989	1.969	1.985	2.155	2.138	2.293	2.141	1.697	2.039	8.30
68)	T	Bromoform			0.423	0.441	0.512	0.548	0.669	0.720	0.712	0.575	21.83
69)	T	Styrene	1.471	1.443	1.437	1.470	1.607	1.663	1.807	1.768	1.533	1.578	8.96
70)	T	o-Xylene	1.953	1.937	2.006	2.025	2.226	2.238	2.390	2.238	1.808	2.091	9.03
71)	T	n-Nonane	1.207	1.250	1.265	1.205	1.314	1.270	1.209	0.997	0.708	1.158	16.50
72)	T	1,1,2,2-Tetrac...	0.967	1.007	1.004	1.013	1.158	1.152	1.231	1.151	0.926	1.068	9.94
73)	S	Bromofluoroben...	0.846	0.828	0.826	0.819	0.823	0.842	0.895	0.929	0.982	0.866	6.64
74)	T	Cumene	2.459	2.574	2.555	2.545	2.808	2.820	3.063	2.888	2.352	2.674	8.65
75)	T	alpha-Pinene	1.256	1.241	1.249	1.294	1.372	1.405	1.519	1.458	1.211	1.334	8.16
76)	T	n-Propylbenzene	3.071	3.213	3.186	3.223	3.522	3.545	3.751	3.433	2.705	3.294	9.38
77)	T	3-Ethyltoluene	2.303	2.339	2.425	2.380	2.689	2.773	2.962	2.904	2.424	2.578	9.92
78)	T	4-Ethyltoluene	2.327	2.483	2.301	2.451	2.674	2.666	2.912	2.649	2.022	2.498	10.49
79)	T	1,3,5-Trimethy...	2.044	2.133	2.025	2.029	2.273	2.293	2.493	2.368	1.940	2.178	8.59
80)	T	alpha-Methylst...	0.917	0.980	0.991	1.028	1.234	1.314	1.373	1.359	1.157	1.150	15.39
81)	T	2-Ethyltoluene	2.254	2.383	2.363	2.304	2.707	2.721	2.921	2.766	2.224	2.516	10.38
82)	T	1,2,4-Trimethy...	1.896	1.952	1.944	2.001	2.288	2.385	2.530	2.179	1.576	2.084	13.97
83)	T	n-Decane	1.184	1.256	1.227	1.292	1.417	1.387	1.362	1.127	0.751	1.223	16.43
84)	T	Benzyl Chloride				1.548	1.849	2.075	2.272	2.099	1.555	1.900	15.86
85)	T	1,3-Dichlorobe...	1.092	1.112	1.102	1.121	1.287	1.336	1.500	1.518	1.273	1.260	13.32
86)	T	1,4-Dichlorobe...	1.135	1.170	1.148	1.152	1.345	1.392	1.542	1.569	1.383	1.315	13.05
87)	T	sec-Butylbenzene	2.633	2.672	2.677	2.729	3.095	3.159	3.335	3.113	2.420	2.870	10.77
88)	T	4-Isopropyltol...	2.441	2.337	2.380	2.487	2.821	2.983	3.153	2.690	1.914	2.579	14.58
89)	T	1,2,3-Trimethy...	1.939	2.068	2.059	2.101	2.392	2.494	2.639	2.260	1.632	2.176	14.08
90)	T	1,2-Dichlorobe...	1.048	1.013	1.093	1.098	1.262	1.333	1.484	1.448	1.122	1.211	14.56
91)	T	d-Limonene	0.718	0.797	0.794	0.827	0.938	0.986	0.937	0.785	0.506	0.810	17.78
92)	T	1,2-Dibromo-3-...				0.382	0.462	0.511	0.582	0.602	0.574	0.519	16.40
93)	T	n-Undecane	1.200	1.172	1.191	1.277	1.437	1.503	1.424	1.197	0.830	1.248	16.04
94)	T	1,2,4-Trichlor...				0.721	0.912	1.030	1.158	1.196	1.092	1.018	17.36

Method Path : I:\MS13\METHODS\
Method File : R13090816.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

95)	T	Naphthalene				2.364	3.164	3.568	3.719	3.365	2.410	3.098	18.78
96)	T	n-Dodecane				1.076	1.407	1.508	1.346	1.017	0.601	1.159	28.78
97)	T	Hexachlorobuta...				0.486	0.561	0.598	0.694	0.731	0.679	0.625	14.85
98)	T	Cyclohexanone	0.687	0.682	0.715	0.731	0.755	0.762	0.816	0.748	0.626	0.725	7.60
99)	T	tert-Butylbenzene	1.840	1.935	1.898	1.962	2.172	2.240	2.429	2.126	1.573	2.019	12.48
100)	T	n-Butylbenzene	2.017	2.061	2.091	2.134	2.482	2.594	2.637	2.404	1.841	2.251	12.58

(#) = Out of Range

EA 9/9/16

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S29-08311610
4ng/L Std. ID:
20ng/L Std. ID: S29-08311606
200ng/L Std. ID: S29-08311601

Dilution Factors:		5	50	250	1000	Working STD Conc.(ng/L):	1	1	1	1	20	20	200	200	200
	Source Std.	Primary Working Standards				Injection (L):	0.080	0.100	0.200	0.400	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
Propene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Dichlorodifluoromethane	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Chloromethane	0.98	196	19.6	3.92	0.98		0.0784	0.098	0.196	0.392	0.98	4.90	24.50	49.0	98
Freon-114	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Vinyl Chloride	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
1,3-Butadiene	1.06	212	21.2	4.24	1.06		0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
Bromomethane	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Chloroethane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
Ethanol	5.06	1012	101.2	20.24	5.06		0.4048	0.506	1.012	2.024	5.06	25.30	126.50	253.0	506
Acetonitrile	1.02	204	20.4	4.08	1.02		0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
Acrolein	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Acetone	5.37	1074	107.4	21.48	5.37		0.4296	0.537	1.074	2.148	5.37	26.85	134.25	268.5	537
Trichlorofluoromethane	0.99	198	19.8	3.96	0.99		0.0792	0.099	0.198	0.396	0.99	4.95	24.75	49.5	99
Isopropanol	2.09	418	41.8	8.36	2.09		0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
Acrylonitrile	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
1,1-Dichloroethene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
tert-Butanol	2.09	418	41.8	8.36	2.09		0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
Methylene Chloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Allyl Chloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Trichlorotrifluoroethane	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Carbon Disulfide	0.98	196	19.6	3.92	0.98		0.0784	0.098	0.196	0.392	0.98	4.90	24.50	49.0	98
trans-1,2-Dichloroethene	1.06	212	21.2	4.24	1.06		0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
1,1-Dichloroethane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Methyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Vinyl Acetate	5.07	1014	101.4	20.28	5.07		0.4056	0.507	1.014	2.028	5.07	25.35	126.75	253.5	507
2-Butanone	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
cis-1,2-Dichloroethene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Diisopropyl Ether	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Ethyl Acetate	2.12	424	42.4	8.48	2.12		0.1696	0.212	0.424	0.848	2.12	10.60	53.00	106.0	212
n-Hexane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Chloroform	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Tetrahydrofuran	1.02	204	20.4	4.08	1.02		0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
Ethyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,2-Dichloroethane	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,1,1-Trichloroethane	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Isopropyl Acetate	2.21	442	44.2	8.84	2.21		0.1768	0.221	0.442	0.884	2.21	11.05	55.25	110.5	221
1-Butanol	2.26	452	45.2	9.04	2.26		0.1808	0.226	0.452	0.904	2.26	11.30	56.50	113.0	226
Benzene	1.11	222	22.2	4.44	1.11		0.0888	0.111	0.222	0.444	1.11	5.55	27.75	55.5	111
Carbon Tetrachloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Cyclohexane	2.09	418	41.8	8.36	2.09		0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
tert-Amyl Methyl Ether	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2-Dichloropropane	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Bromodichloromethane	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Trichloroethene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
1,4-Dioxane	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Isooctane	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Methyl Methacrylate	2.08	416	41.6	8.32	2.08		0.1664	0.208	0.416	0.832	2.08	10.40	52.00	104.0	208
n-Heptane	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
cis-1,3-Dichloropropene	1.12	224	22.4	4.48	1.12		0.0896	0.112	0.224	0.448	1.12	5.60	28.00	56.0	112

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S29-08311610
4ng/L Std. ID:
20ng/L Std. ID: S29-08311606
200ng/L Std. ID: S29-08311601

Dilution Factors:		5	50	250	1000	Working STD Conc.(ng/L):	1	1	1	1	20	20	200	200	200
	Source Std.	Primary Working Standards				Injection (L):	0.080	0.100	0.200	0.400	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
4-Methyl-2-pentanone	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
trans-1,3-Dichloropropene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
1,1,2-Trichloroethane	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Toluene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
2-Hexanone	1.11	222	22.2	4.44	1.11		0.0888	0.111	0.222	0.444	1.11	5.55	27.75	55.5	111
Dibromochloromethane	1.10	220	22.0	4.40	1.10		0.0880	0.110	0.220	0.440	1.10	5.50	27.50	55.0	110
1,2-Dibromoethane	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
n-Butyl Acetate	1.11	222	22.2	4.44	1.11		0.0888	0.111	0.222	0.444	1.11	5.55	27.75	55.5	111
n-Octane	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Tetrachloroethene	0.99	198	19.8	3.96	0.99		0.0792	0.099	0.198	0.396	0.99	4.95	24.75	49.5	99
Chlorobenzene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Ethylbenzene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
m-&p-Xylene	2.08	416	41.6	8.32	2.08		0.1664	0.208	0.416	0.832	2.08	10.40	52.00	104.0	208
Bromoform	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Styrene	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
o-Xylene	1.02	204	20.4	4.08	1.02		0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
n-Nonane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
1,1,2,2-Tetrachloroethane	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Cumene	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
alpha-Pinene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
n-Propylbenzene	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
3-Ethyltoluene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
4-Ethyltoluene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,3,5-Trimethylbenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
alpha-Methylstyrene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
2-Ethyltoluene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2,4-Trimethylbenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
n-Decane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
Benzyl Chloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
1,3-Dichlorobenzene	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
1,4-Dichlorobenzene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
sec-Butylbenzene	1.06	212	21.2	4.24	1.06		0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
p-Isopropyltoluene	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
1,2,3-Trimethylbenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2-Dichlorobenzene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
d-Limonene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2-Dibromo-3-chloropropane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
n-Undecane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
1,2,4-Trichlorobenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Naphthalene	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
n-Dodecane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Hexachloro-1,3-butadiene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Methacrylonitrile	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Cyclohexanone	1.12	224	22.4	4.48	1.12		0.0896	0.112	0.224	0.448	1.12	5.60	28.00	56.0	112
tert-Butylbenzene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
n-Butylbenzene	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108

Calibration Status Report MS13

Method : I:\MS13\METHODS\R13090816.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Sep 09 10:07:12 2016
Response via : Initial Calibration

EA 9/9/16

#	ID	Conc	ISTD Conc	Path\File
1	0.08	0	13	I:\MS13\DATA\2016_09\08\09081618.D
2	0.10	0	13	I:\MS13\DATA\2016_09\08\09081619.D
3	0.20	0	13	I:\MS13\DATA\2016_09\08\09081620.D
4	0.40	0	13	I:\MS13\DATA\2016_09\08\09081621.D
5	1.0	1	13	I:\MS13\DATA\2016_09\08\09081622.D
6	5.0	5	13	I:\MS13\DATA\2016_09\08\09081623.D
7	25	26	13	I:\MS13\DATA\2016_09\08\09081624.D
8	50	52	13	I:\MS13\DATA\2016_09\08\09081625.D
9	100	103	13	I:\MS13\DATA\2016_09\08\09081626.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.08	Sep 09 09:49 2016	Sep 09 09:44 2016	8 Sep 2016 21:39
2	0.10	Sep 09 09:56 2016	Sep 09 09:55 2016	8 Sep 2016 22:14
3	0.20	Sep 09 09:59 2016	Sep 09 09:44 2016	8 Sep 2016 22:49
4	0.40	Sep 09 10:00 2016	Sep 09 09:44 2016	8 Sep 2016 23:24
5	1.0	Sep 09 10:01 2016	Sep 09 09:44 2016	8 Sep 2016 23:59
6	5.0	Sep 09 10:03 2016	Sep 09 09:44 2016	9 Sep 2016 00:34
7	25	Sep 09 10:04 2016	Sep 09 09:44 2016	9 Sep 2016 1:09
8	50	Sep 09 10:06 2016	Sep 09 09:44 2016	9 Sep 2016 1:44
9	100	Sep 09 10:07 2016	Sep 09 09:44 2016	9 Sep 2016 2:19

R13090816.M Fri Sep 09 12:47:31 2016

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081619.D Vial: 13
Acq On : 8 Sep 2016 22:14 Operator: EA
Sample : 0.1ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:55:33 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	130152	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.05	114	629617	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	271233	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	178664	12.700	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.60%				
57) Toluene-d8 (SS2)	15.50	98	658409	12.475	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
73) Bromofluorobenzene (SS3)	18.86	174	224449	12.763	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.08%				
Target Compounds							Qvalue
2) Propene	3.98	42	1732	0.112	ng		85
3) Dichlorodifluoromethan...	4.12	85	2505	0.092	ng	#	93
4) Chloromethane	4.41	50	1969	0.094	ng		91
5) 1,2-Dichloro-1,1,2,2-t...	4.65	135	1298	0.089	ng		91
6) Vinyl Chloride	4.82	62	1661	0.078	ng		88
7) 1,3-Butadiene	5.08	54	749	0.062	ng	#	77
8) Bromomethane	5.49	94	957	0.079	ng		87
9) Chloroethane	5.81	64	852	0.076	ng	#	42
10) Ethanol	6.17	45	5385	0.492	ng		91
11) Acetonitrile	6.45	41	3327	0.114	ng		97
12) Acrolein	6.62	56	922	0.100	ng		100
13) Acetone	6.82	58	7744	0.774	ng		98
14) Trichlorofluoromethane	7.03	101	2104	0.094	ng		95
15) 2-Propanol (Isopropanol)	7.34	45	6238	0.181	ng		99
16) Acrylonitrile	7.58	53	840	0.045	ng		94
17) 1,1-Dichloroethene	7.99	96	1276	0.101	ng		95
18) 2-Methyl-2-Propanol (t...	8.22	59	5472m	0.177	ng		
19) Methylene Chloride	8.18	84	1423	0.109	ng		94
20) 3-Chloro-1-propene (Al...	8.36	41	1884	0.104	ng		82
21) Trichlorotrifluoroethane	8.62	151	1144	0.106	ng		95
22) Carbon Disulfide	8.47	76	7511	0.127	ng		89
23) trans-1,2-Dichloroethene	9.47	61	1518	0.086	ng		98
24) 1,1-Dichloroethane	9.71	63	2203	0.092	ng		96
25) Methyl tert-Butyl Ether	9.87	73	3834	0.107	ng		93
26) Vinyl Acetate	10.01	86	1214	0.442	ng	#	30
27) 2-Butanone (MEK)	10.29	72	640	0.073	ng	#	36
28) cis-1,2-Dichloroethene	10.74	61	1553	0.090	ng		93
29) Diisopropyl Ether	11.08	87	1135	0.098	ng	#	67
30) Ethyl Acetate	11.10	61	533	0.116	ng		94
31) n-Hexane	11.04	57	2485	0.107	ng	#	96
32) Chloroform	11.08	83	2296	0.113	ng		95
34) Tetrahydrofuran (THF)	11.55	72	1205	0.129	ng	#	85
35) Ethyl tert-Butyl Ether	11.67	87	1258	0.092	ng	#	83
36) 1,2-Dichloroethane	11.89	62	1393	0.099	ng		87
38) 1,1,1-Trichloroethane	12.17	97	1762	0.103	ng		91
39) Isopropyl Acetate	12.65	61	1622	0.213	ng	#	90
40) 1-Butanol	12.71	56	1218	0.105	ng	#	71
41) Benzene	12.65	78	10169	0.198	ng		98
42) Carbon Tetrachloride	12.81	117	1442	0.101	ng		99
43) Cyclohexane	12.94	84	3814	0.194	ng		88
44) tert-Amyl Methyl Ether	13.32	73	3504	0.101	ng		90
45) 1,2-Dichloropropane	13.51	63	1330	0.097	ng		89
46) Bromodichloromethane	13.70	83	1614	0.104	ng		98
47) Trichloroethene	13.75	130	1222	0.089	ng		96
48) 1,4-Dioxane	13.78	88	1012	0.099	ng	#	73
49) 2,2,4-Trimethylpentane...	13.82	57	5757	0.098	ng		97
50) Methyl Methacrylate	14.00	100	688	0.134	ng	#	51

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081619.D Vial: 13
Acq On : 8 Sep 2016 22:14 Operator: EA
Sample : 0.1ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:55:33 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

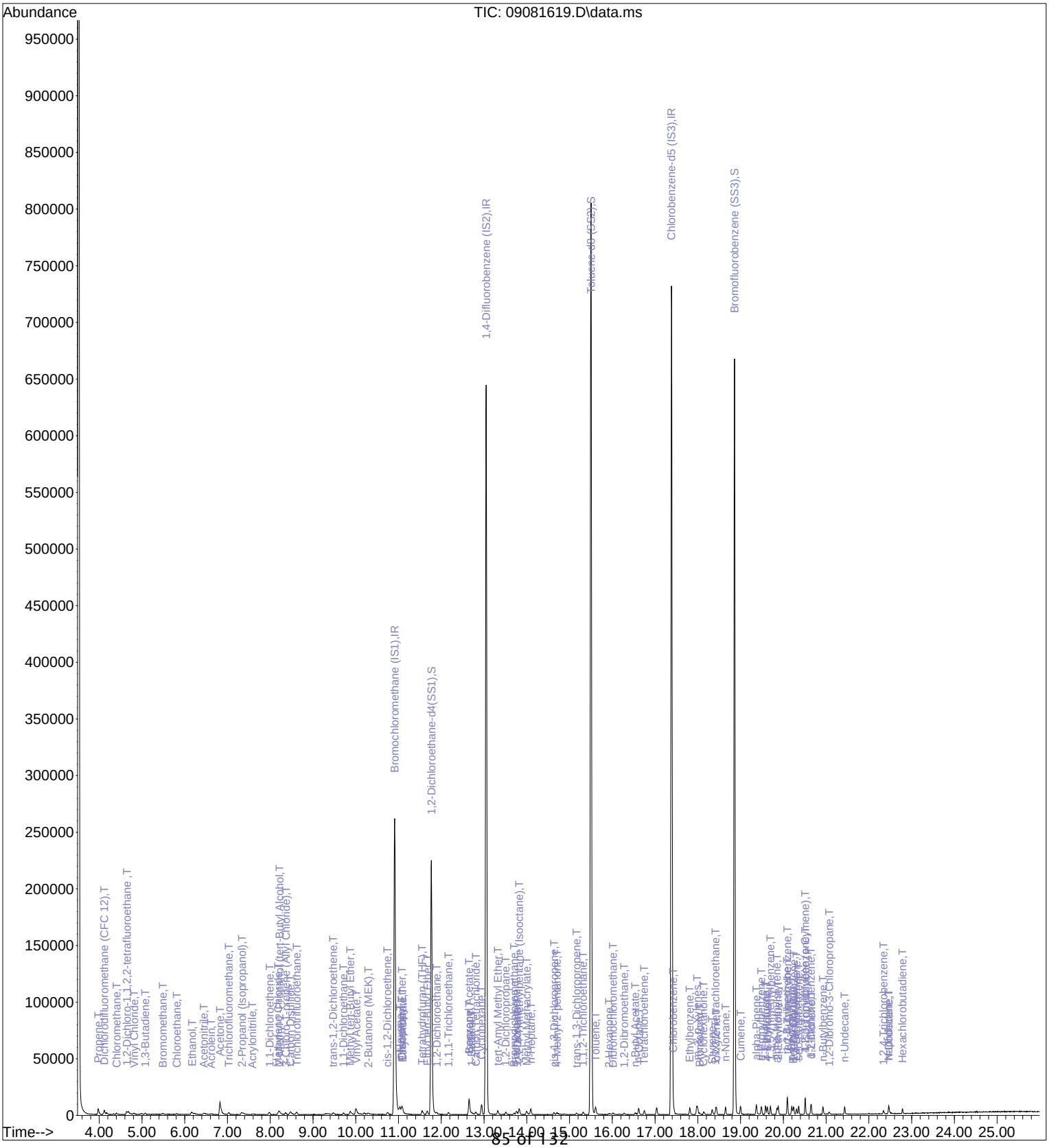
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.10	71	1249	0.095	ng		93
52) cis-1,3-Dichloropropene	14.64	75	1835	0.101	ng		92
53) 4-Methyl-2-pentanone	14.70	58	770	0.060	ng	#	22
54) trans-1,3-Dichloropropene	15.16	75	1385	0.085	ng		88
55) 1,1,2-Trichloroethane	15.32	97	1127	0.095	ng		96
58) Toluene	15.61	91	5999	0.107	ng		99
59) 2-Hexanone	15.93	43	2726	0.096	ng	#	70
60) Dibromochloromethane	16.02	129	1213	0.099	ng		99
61) 1,2-Dibromoethane	16.28	107	1197	0.093	ng		95
62) n-Butyl Acetate	16.54	43	1960	0.061	ng	#	79
63) n-Octane	16.62	57	1086	0.092	ng		93
64) Tetrachloroethene	16.75	166	1339	0.088	ng		91
65) Chlorobenzene	17.43	112	3469	0.102	ng		95
66) Ethylbenzene	17.81	91	5862	0.105	ng		94
67) m- & p-Xylenes	17.98	91	8977	0.205	ng		97
68) Bromoform	18.04	173	964	0.080	ng		90
69) Styrene	18.33	104	3382	0.097	ng		91
70) o-Xylene	18.43	91	4286	0.094	ng		97
71) n-Nonane	18.65	43	2739	0.100	ng		90
72) 1,1,2,2-Tetrachloroethane	18.41	83	2184	0.098	ng		95
74) Cumene	19.00	105	5641	0.097	ng		93
75) alpha-Pinene	19.37	93	2774	0.100	ng	#	1
76) n-Propylbenzene	19.48	91	6971	0.100	ng		93
77) 3-Ethyltoluene	19.58	105	5278	0.095	ng		95
78) 4-Ethyltoluene	19.63	105	5657	0.109	ng		91
79) 1,3,5-Trimethylbenzene	19.70	105	4813	0.103	ng		92
80) alpha-Methylstyrene	19.85	118	2191	0.084	ng	#	88
81) 2-Ethyltoluene	19.88	105	5377	0.099	ng		95
82) 1,2,4-Trimethylbenzene	20.09	105	4404	0.103	ng		96
83) n-Decane	20.19	57	2752	0.100	ng		89
84) Benzyl Chloride	20.23	91	3306	0.092	ng		89
85) 1,3-Dichlorobenzene	20.24	146	2605	0.099	ng		100
86) 1,4-Dichlorobenzene	20.31	146	2665	0.097	ng		98
87) sec-Butylbenzene	20.36	105	6145	0.101	ng		98
88) 4-Isopropyltoluene (p-...	20.51	119	5070	0.096	ng		94
89) 1,2,3-Trimethylbenzene	20.51	105	4666	0.104	ng		96
90) 1,2-Dichlorobenzene	20.64	146	2351	0.094	ng		99
91) d-Limonene	20.65	68	1798	0.096	ng		87
92) 1,2-Dibromo-3-Chloropr...	21.07	157	774	0.077	ng	#	80
93) n-Undecane	21.43	57	2569	0.088	ng		92
94) 1,2,4-Trichlorobenzene	22.34	180	1512	0.075	ng	#	94
95) Naphthalene	22.46	128	4367	0.073	ng		90
96) n-Dodecane	22.46	57	2185	0.090	ng		86
97) Hexachlorobutadiene	22.79	225	1036	0.085	ng		99
98) Cyclohexanone	18.13	55	1658	0.102	ng		93
99) tert-Butylbenzene	20.09	119	4409	0.105	ng		96
100) n-Butylbenzene	20.93	91	4831	0.105	ng		95

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081619.D Vial: 13
Acq On : 8 Sep 2016 22:14 Operator: EA
Sample : 0.1ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

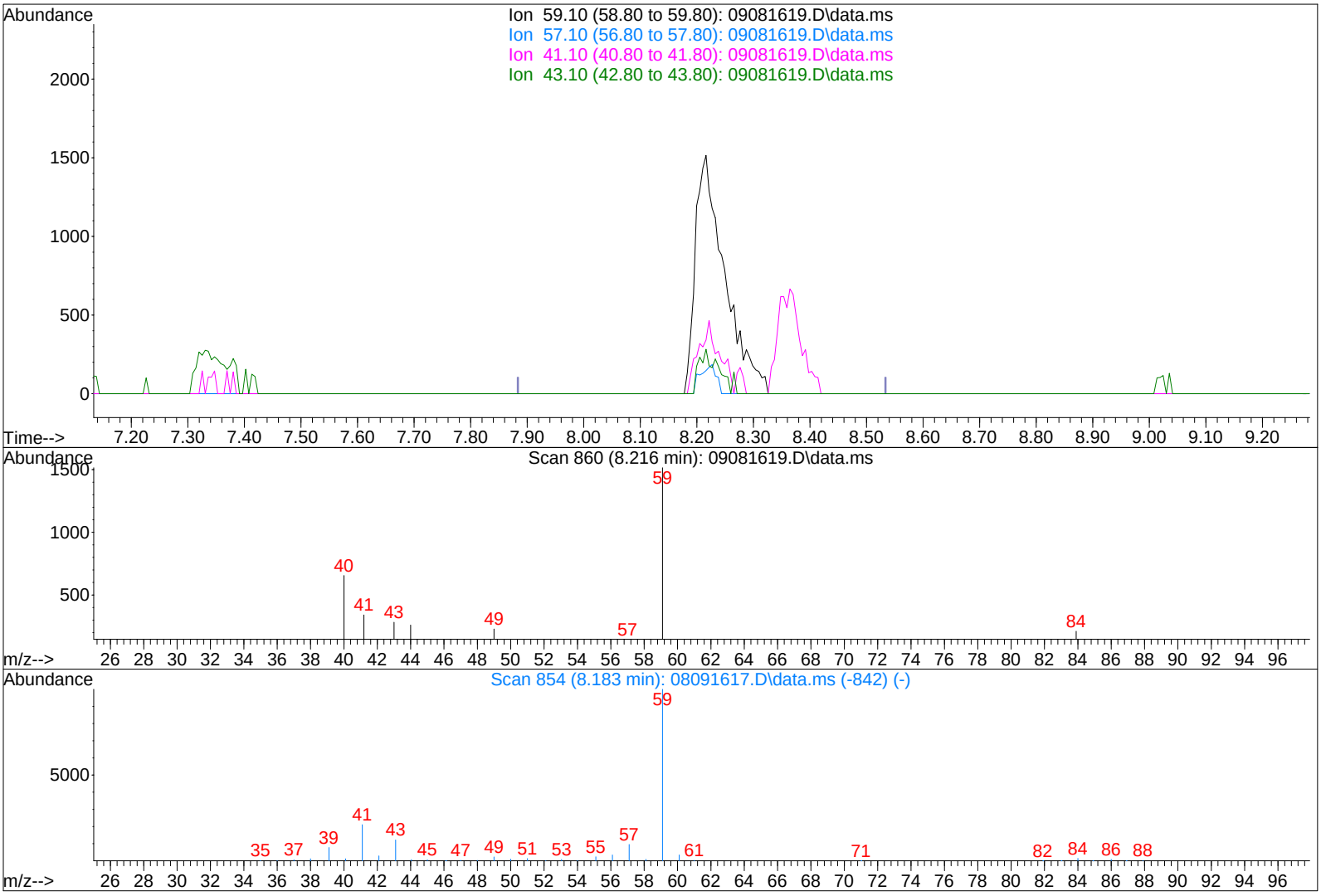
Quant Time: Sep 09 09:55:33 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\08\09081619.D Vial: 13
Acq On : 8 Sep 2016 22:14 Operator: EA
Sample : 0.1ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:45 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 09081619.D\data.ms

(18) 2-Methyl-2-Propanol (tert-Butyl Alcohol (T)

8.133min (-8.133) 0.00ng

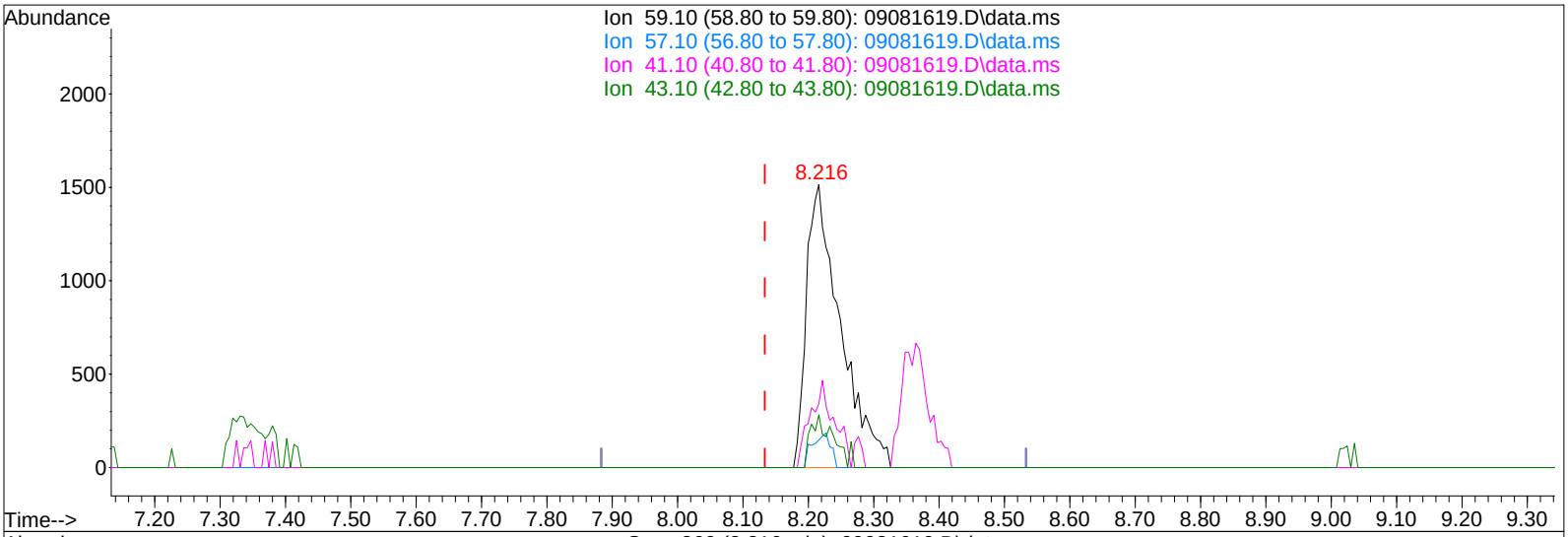
response 0

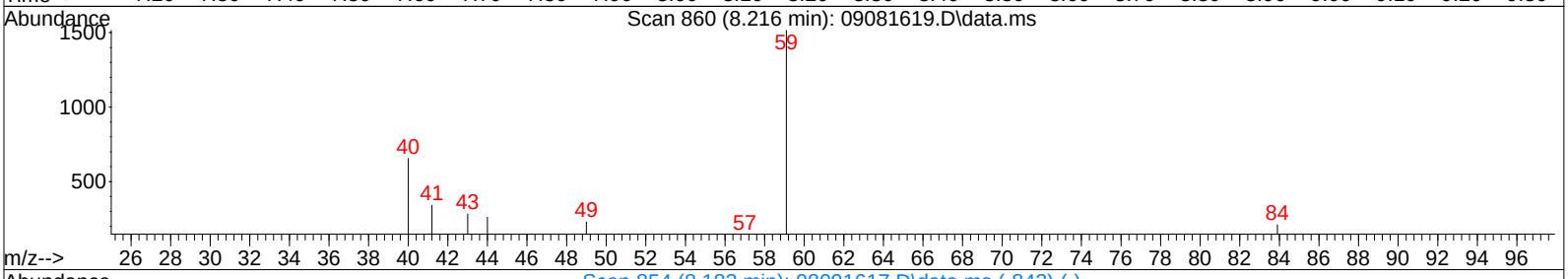
Ion	Exp%	Act%
59.10	100	0.00
57.10	9.40	0.00
41.10	20.70	0.00#
43.10	12.10	0.00

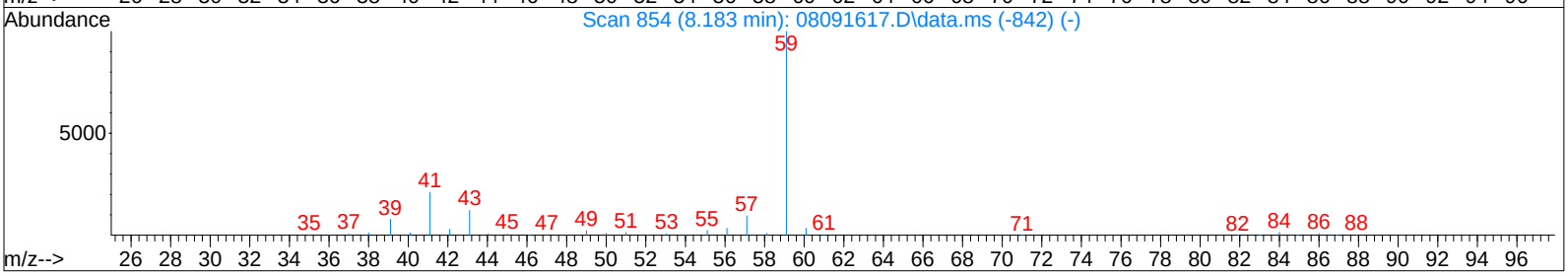
Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2016_09\08\09081619.D Vial: 13
Acq On : 8 Sep 2016 22:14 Operator: EA
Sample : 0.1ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:45 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 09081619.D\data.ms

(18) 2-Methyl-2-Propanol (tert-Butyl Alcohol (T)

8.216min (+0.083) 0.18ng m

response 5472

Ion	Exp%	Act%
59.10	100	100
57.10	9.40	6.58
41.10	20.70	23.98
43.10	12.10	12.66

IPC

EA 9/9/16

9/22/16

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081620.D Vial: 13
Acq On : 8 Sep 2016 22:49 Operator: EA
Sample : 0.2ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:47 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	126238	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.05	114	612643	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	265970	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	178540	13.084	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.64%				
57) Toluene-d8 (SS2)	15.50	98	643631	12.436	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
73) Bromofluorobenzene (SS3)	18.86	174	219770	12.745	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.92%				
Target Compounds							Qvalue
2) Propene	3.97	42	3254	0.217	ng		93
3) Dichlorodifluoromethan...	4.11	85	5391	0.205	ng	#	94
4) Chloromethane	4.39	50	3650	0.180	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.64	135	2628	0.186	ng		97
6) Vinyl Chloride	4.80	62	3124	0.152	ng		99
7) 1,3-Butadiene	5.06	54	1586	0.136	ng		94
8) Bromomethane	5.47	94	2014	0.171	ng		93
9) Chloroethane	5.80	64	1680	0.154	ng		99
10) Ethanol	6.14	45	9832	0.925	ng		92
11) Acetonitrile	6.43	41	6168	0.219	ng		97
12) Acrolein	6.60	56	1839	0.206	ng		88
13) Acetone	6.81	58	14266	1.471	ng		96
14) Trichlorofluoromethane	7.03	101	4063	0.186	ng		98
15) 2-Propanol (Isopropanol)	7.31	45	12402	0.371	ng		94
16) Acrylonitrile	7.56	53	2573	0.141	ng		98
17) 1,1-Dichloroethene	7.97	96	2212	0.181	ng		92
18) 2-Methyl-2-Propanol (t...	8.19	59	10924	0.365	ng		95
19) Methylene Chloride	8.19	84	2566	0.203	ng		93
20) 3-Chloro-1-propene (Al...	8.35	41	3948	0.226	ng		88
21) Trichlorotrifluoroethane	8.61	151	2090	0.199	ng		99
22) Carbon Disulfide	8.47	76	12836	0.223	ng		93
23) trans-1,2-Dichloroethene	9.47	61	3147	0.184	ng		100
24) 1,1-Dichloroethane	9.71	63	4449	0.192	ng		99
25) Methyl tert-Butyl Ether	9.86	73	7243	0.208	ng		100
26) Vinyl Acetate	9.99	86	2421	0.908	ng	#	24
27) 2-Butanone (MEK)	10.27	72	1575	0.186	ng	#	87
28) cis-1,2-Dichloroethene	10.74	61	3365	0.201	ng		91
29) Diisopropyl Ether	11.06	87	2218	0.197	ng	#	55
30) Ethyl Acetate	11.09	61	1436	0.321	ng		95
31) n-Hexane	11.03	57	4625	0.205	ng		98
32) Chloroform	11.08	83	4506	0.229	ng		97
34) Tetrahydrofuran (THF)	11.54	72	1920	0.212	ng	#	85
35) Ethyl tert-Butyl Ether	11.66	87	2679	0.202	ng		93
36) 1,2-Dichloroethane	11.89	62	2743	0.201	ng		97
38) 1,1,1-Trichloroethane	12.16	97	3396	0.204	ng		97
39) Isopropyl Acetate	12.64	61	3168	0.428	ng	#	81
40) 1-Butanol	12.68	56	4972	0.439	ng	#	67
41) Benzene	12.65	78	15219	0.304	ng		99
42) Carbon Tetrachloride	12.81	117	2794	0.201	ng		96
43) Cyclohexane	12.94	84	7596	0.396	ng		92
44) tert-Amyl Methyl Ether	13.31	73	6769	0.200	ng		92
45) 1,2-Dichloropropane	13.51	63	2527	0.190	ng		93
46) Bromodichloromethane	13.69	83	3071	0.204	ng		95
47) Trichloroethene	13.75	130	2593	0.194	ng		95
48) 1,4-Dioxane	13.77	88	2008	0.201	ng		100
49) 2,2,4-Trimethylpentane...	13.82	57	11343	0.198	ng		100
50) Methyl Methacrylate	13.98	100	1521	0.305	ng	#	73

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081620.D Vial: 13
Acq On : 8 Sep 2016 22:49 Operator: EA
Sample : 0.2ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:47 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

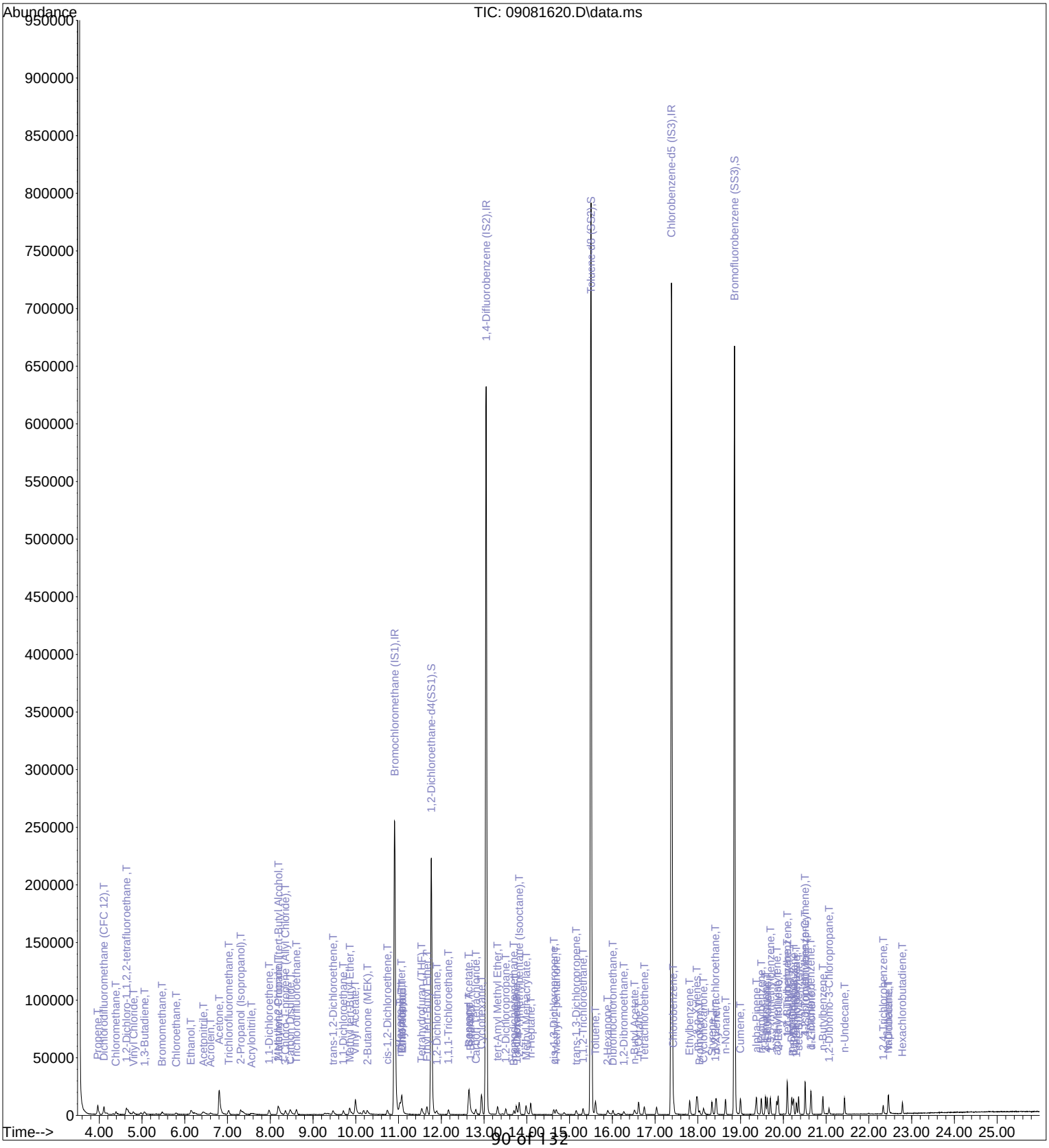
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.09	71	2564	0.201	ng		96
52) cis-1,3-Dichloropropene	14.63	75	3721	0.210	ng		92
53) 4-Methyl-2-pentanone	14.69	58	2026	0.164	ng	#	59
54) trans-1,3-Dichloropropene	15.16	75	3039	0.191	ng		94
55) 1,1,2-Trichloroethane	15.32	97	2312	0.199	ng		96
58) Toluene	15.61	91	10668	0.193	ng		100
59) 2-Hexanone	15.89	43	5132	0.184	ng		90
60) Dibromochloromethane	16.01	129	2379	0.198	ng		95
61) 1,2-Dibromoethane	16.27	107	2661	0.210	ng		98
62) n-Butyl Acetate	16.52	43	5022	0.160	ng		98
63) n-Octane	16.61	57	2218	0.191	ng		94
64) Tetrachloroethene	16.75	166	2614	0.175	ng		98
65) Chlorobenzene	17.43	112	6646	0.200	ng		97
66) Ethylbenzene	17.81	91	11012	0.201	ng		98
67) m- & p-Xylenes	17.97	91	17427	0.407	ng		99
68) Bromoform	18.04	173	1926	0.162	ng		100
69) Styrene	18.33	104	6603	0.193	ng		99
70) o-Xylene	18.43	91	8707	0.194	ng		98
71) n-Nonane	18.65	43	5436	0.201	ng		88
72) 1,1,2,2-Tetrachloroethane	18.41	83	4273	0.196	ng		97
74) Cumene	18.99	105	10981	0.192	ng		97
75) alpha-Pinene	19.37	93	5476	0.202	ng	#	1
76) n-Propylbenzene	19.48	91	13557	0.199	ng		96
77) 3-Ethyltoluene	19.58	105	10734	0.198	ng		97
78) 4-Ethyltoluene	19.63	105	10283	0.202	ng		98
79) 1,3,5-Trimethylbenzene	19.70	105	8964	0.196	ng		97
80) alpha-Methylstyrene	19.85	118	4343	0.170	ng		89
81) 2-Ethyltoluene	19.88	105	10457	0.197	ng		98
82) 1,2,4-Trimethylbenzene	20.09	105	8604	0.205	ng		97
83) n-Decane	20.19	57	5272	0.194	ng		95
84) Benzyl Chloride	20.23	91	6623	0.188	ng		96
85) 1,3-Dichlorobenzene	20.24	146	5064	0.195	ng		96
86) 1,4-Dichlorobenzene	20.30	146	5130	0.189	ng		97
87) sec-Butylbenzene	20.36	105	12074	0.203	ng		97
88) 4-Isopropyltoluene (p-...	20.51	119	10129	0.195	ng		96
89) 1,2,3-Trimethylbenzene	20.51	105	9114	0.208	ng		94
90) 1,2-Dichlorobenzene	20.64	146	4976	0.203	ng		99
91) d-Limonene	20.65	68	3514	0.191	ng		95
92) 1,2-Dibromo-3-Chloropr...	21.07	157	1581	0.160	ng	#	77
93) n-Undecane	21.43	57	5121	0.179	ng		95
94) 1,2,4-Trichlorobenzene	22.34	180	3108	0.157	ng		98
95) Naphthalene	22.45	128	9460	0.161	ng		93
96) n-Dodecane	22.46	57	4541	0.190	ng		91
97) Hexachlorobutadiene	22.78	225	2092	0.176	ng		98
98) Cyclohexanone	18.13	55	3409	0.214	ng		96
99) tert-Butylbenzene	20.09	119	8482	0.206	ng		99
100) n-Butylbenzene	20.92	91	9612	0.214	ng		97

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081620.D Vial: 13
Acq On : 8 Sep 2016 22:49 Operator: EA
Sample : 0.2ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:47 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081621.D Vial: 13
Acq On : 8 Sep 2016 23:24 Operator: EA
Sample : 0.4ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:49 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.90	130	122033	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.05	114	596418	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	258836	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.76	65	176025	13.345	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%				
57) Toluene-d8 (SS2)	15.50	98	626341	12.436	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.52%				
73) Bromofluorobenzene (SS3)	18.86	174	212025	12.634	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.04%				
Target Compounds							Qvalue
2) Propene	3.95	42	5855	0.405	ng		88
3) Dichlorodifluoromethan...	4.10	85	9859	0.387	ng		99
4) Chloromethane	4.38	50	6163	0.314	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	4.63	135	5276	0.386	ng		98
6) Vinyl Chloride	4.78	62	6473	0.326	ng		99
7) 1,3-Butadiene	5.04	54	3261	0.289	ng		90
8) Bromomethane	5.46	94	3961	0.347	ng		95
9) Chloroethane	5.79	64	3228	0.306	ng		96
10) Ethanol	6.13	45	15009	1.461	ng		96
11) Acetonitrile	6.41	41	11487	0.421	ng	#	59
12) Acrolein	6.59	56	3572	0.413	ng		100
13) Acetone	6.79	58	26015	2.774	ng		98
14) Trichlorofluoromethane	7.02	101	7947	0.377	ng		98
15) 2-Propanol (Isopropanol)	7.29	45	23277	0.720	ng		94
16) Acrylonitrile	7.53	53	5924	0.337	ng		95
17) 1,1-Dichloroethene	7.97	96	4380	0.371	ng		91
18) 2-Methyl-2-Propanol (t...	8.18	59	22477	0.776	ng		96
19) Methylene Chloride	8.17	84	4920	0.402	ng		89
20) 3-Chloro-1-propene (Al...	8.35	41	7379	0.436	ng		95
21) Trichlorotrifluoroethane	8.61	151	4142	0.409	ng		97
22) Carbon Disulfide	8.46	76	22650	0.408	ng		95
23) trans-1,2-Dichloroethene	9.46	61	6536	0.395	ng		98
24) 1,1-Dichloroethane	9.71	63	8842	0.394	ng		98
25) Methyl tert-Butyl Ether	9.85	73	14179	0.422	ng		99
26) Vinyl Acetate	9.98	86	5616	2.180	ng	#	62
27) 2-Butanone (MEK)	10.25	72	3635	0.445	ng	#	78
28) cis-1,2-Dichloroethene	10.73	61	6467	0.400	ng		96
29) Diisopropyl Ether	11.06	87	4825	0.443	ng	#	71
30) Ethyl Acetate	11.07	61	3381	0.783	ng		92
31) n-Hexane	11.03	57	8837	0.405	ng		98
32) Chloroform	11.08	83	8915	0.469	ng		99
34) Tetrahydrofuran (THF)	11.53	72	3462	0.396	ng		93
35) Ethyl tert-Butyl Ether	11.65	87	5481	0.428	ng		95
36) 1,2-Dichloroethane	11.89	62	5666	0.429	ng		99
38) 1,1,1-Trichloroethane	12.16	97	7069	0.435	ng		98
39) Isopropyl Acetate	12.63	61	6609	0.917	ng	#	82
40) 1-Butanol	12.66	56	11694	1.062	ng		94
41) Benzene	12.65	78	23447	0.481	ng		99
42) Carbon Tetrachloride	12.81	117	5586	0.413	ng		98
43) Cyclohexane	12.94	84	14683	0.787	ng		93
44) tert-Amyl Methyl Ether	13.31	73	13577	0.412	ng		94
45) 1,2-Dichloropropane	13.51	63	5228	0.403	ng		99
46) Bromodichloromethane	13.70	83	6196	0.423	ng		99
47) Trichloroethene	13.75	130	4964	0.381	ng		100
48) 1,4-Dioxane	13.76	88	3934	0.405	ng		100
49) 2,2,4-Trimethylpentane...	13.82	57	21410	0.383	ng		96
50) Methyl Methacrylate	13.97	100	3292	0.679	ng	#	81

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081621.D Vial: 13
Acq On : 8 Sep 2016 23:24 Operator: EA
Sample : 0.4ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:49 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

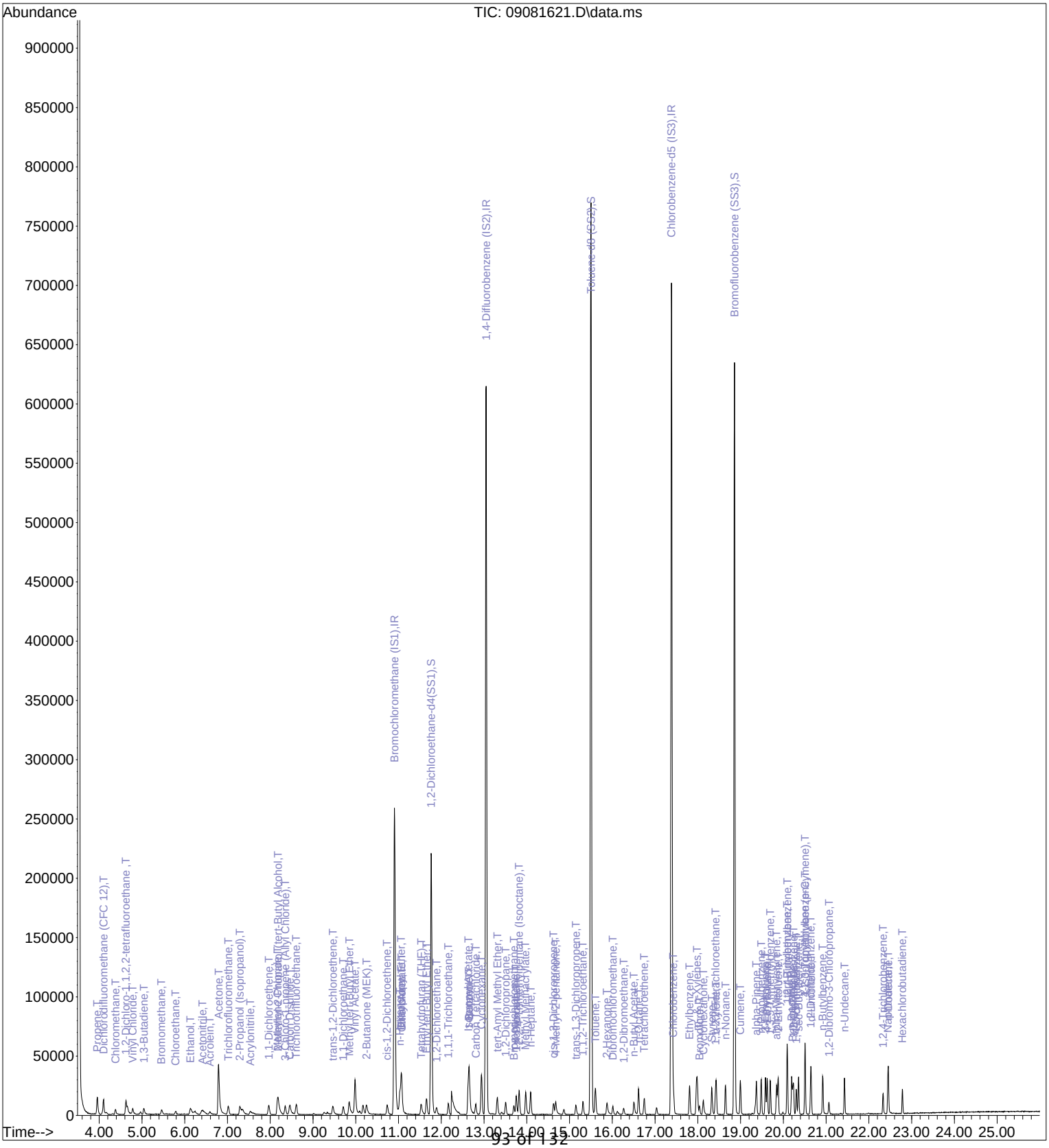
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.09	71	5037	0.405	ng		94
52) cis-1,3-Dichloropropene	14.62	75	7834	0.454	ng		98
53) 4-Methyl-2-pentanone	14.68	58	4323	0.358	ng	#	71
54) trans-1,3-Dichloropropene	15.15	75	6517	0.421	ng		97
55) 1,1,2-Trichloroethane	15.31	97	4467	0.395	ng		97
58) Toluene	15.61	91	20228	0.377	ng		99
59) 2-Hexanone	15.87	43	12137	0.447	ng		85
60) Dibromochloromethane	16.01	129	4829	0.413	ng		98
61) 1,2-Dibromoethane	16.27	107	4957	0.402	ng		95
62) n-Butyl Acetate	16.50	43	11221	0.368	ng		99
63) n-Octane	16.61	57	4384	0.388	ng		96
64) Tetrachloroethene	16.74	166	5216	0.360	ng		99
65) Chlorobenzene	17.43	112	12873	0.398	ng		99
66) Ethylbenzene	17.81	91	22060	0.413	ng		97
67) m- & p-Xylenes	17.98	91	34203	0.820	ng		98
68) Bromoform	18.04	173	3906	0.339	ng		99
69) Styrene	18.33	104	13153	0.395	ng		99
70) o-Xylene	18.43	91	17112	0.392	ng		97
71) n-Nonane	18.65	43	10083	0.384	ng		94
72) 1,1,2,2-Tetrachloroethane	18.41	83	8390	0.395	ng		100
74) Cumene	18.99	105	21288	0.383	ng		99
75) alpha-Pinene	19.37	93	11042	0.419	ng	#	37
76) n-Propylbenzene	19.48	91	26698	0.403	ng		97
77) 3-Ethyltoluene	19.58	105	20505	0.389	ng		97
78) 4-Ethyltoluene	19.62	105	21314	0.431	ng		99
79) 1,3,5-Trimethylbenzene	19.69	105	17482	0.393	ng		99
80) alpha-Methylstyrene	19.84	118	8766	0.352	ng		92
81) 2-Ethyltoluene	19.88	105	19847	0.385	ng		100
82) 1,2,4-Trimethylbenzene	20.09	105	17241	0.421	ng		99
83) n-Decane	20.19	57	10809	0.410	ng		95
84) Benzyl Chloride	20.22	91	13850	0.405	ng		93
85) 1,3-Dichlorobenzene	20.24	146	10030	0.398	ng		98
86) 1,4-Dichlorobenzene	20.30	146	10020	0.380	ng		99
87) sec-Butylbenzene	20.36	105	23962	0.414	ng		97
88) 4-Isopropyltoluene (p-...	20.51	119	20603	0.408	ng		96
89) 1,2,3-Trimethylbenzene	20.51	105	18102	0.424	ng		97
90) 1,2-Dichlorobenzene	20.64	146	9728	0.408	ng		99
91) d-Limonene	20.65	68	7122	0.397	ng		90
92) 1,2-Dibromo-3-Chloropr...	21.07	157	3287	0.341	ng		80
93) n-Undecane	21.43	57	10686	0.384	ng		93
94) 1,2,4-Trichlorobenzene	22.33	180	6215	0.323	ng		99
95) Naphthalene	22.44	128	19583	0.343	ng		96
96) n-Dodecane	22.45	57	9272	0.400	ng		94
97) Hexachlorobutadiene	22.78	225	4310	0.372	ng		99
98) Cyclohexanone	18.13	55	6782	0.437	ng		94
99) tert-Butylbenzene	20.09	119	17061	0.426	ng		98
100) n-Butylbenzene	20.92	91	19089	0.436	ng		96

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081621.D Vial: 13
Acq On : 8 Sep 2016 23:24 Operator: EA
Sample : 0.4ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:49 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081618.D Vial: 13
Acq On : 8 Sep 2016 21:39 Operator: EA
Sample : 0.08ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:44 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	141653	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.05	114	687237	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	294005	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	192803	12.592	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%				
57) Toluene-d8 (SS2)	15.50	98	716990	12.533	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.24%				
73) Bromofluorobenzene (SS3)	18.86	174	248594	13.042	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.32%				
Target Compounds							Qvalue
2) Propene	3.98	42	1704	0.101	ng		89
3) Dichlorodifluoromethan...	4.12	85	2228	0.075	ng	#	90
4) Chloromethane	4.40	50	1690	0.074	ng		89
5) 1,2-Dichloro-1,1,2,2-t...	4.65	135	1223	0.077	ng		94
6) Vinyl Chloride	4.81	62	1365	0.059	ng		89
7) 1,3-Butadiene	5.07	54	707	0.054	ng		81
8) Bromomethane	5.49	94	813	0.061	ng		92
9) Chloroethane	5.81	64	705	0.058	ng	#	42
10) Ethanol	6.16	45	4645	0.390	ng		100
11) Acetonitrile	6.45	41	2958	0.093	ng	#	62
12) Acrolein	6.63	56	1003	0.100	ng		81
13) Acetone	6.82	58	6813	0.626	ng		94
14) Trichlorofluoromethane	7.03	101	1778	0.073	ng		99
15) 2-Propanol (Isopropanol)	7.34	45	4876	0.130	ng		91
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	7.97	96	940	0.069	ng		99
18) 2-Methyl-2-Propanol (t...	8.22	59	4534	0.135	ng	#	86
19) Methylene Chloride	8.19	84	1151	0.081	ng		99
20) 3-Chloro-1-propene (Al...	8.35	41	1512	0.077	ng		85
21) Trichlorotrifluoroethane	8.62	151	846	0.072	ng		99
22) Carbon Disulfide	8.47	76	6717	0.104	ng		91
23) trans-1,2-Dichloroethene	9.48	61	1323	0.069	ng		94
24) 1,1-Dichloroethane	9.71	63	1819	0.070	ng		88
25) Methyl tert-Butyl Ether	9.87	73	3060	0.078	ng		90
26) Vinyl Acetate	10.01	86	857	0.287	ng	#	1
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	10.74	61	1293	0.069	ng		99
29) Diisopropyl Ether	11.07	87	1045	0.083	ng	#	77
30) Ethyl Acetate	11.10	61	338	0.067	ng	#	10
31) n-Hexane	11.03	57	2021	0.080	ng	#	89
32) Chloroform	11.09	83	1799	0.082	ng		100
34) Tetrahydrofuran (THF)	11.56	72	986	0.097	ng	#	83
35) Ethyl tert-Butyl Ether	11.68	87	1087	0.073	ng		97
36) 1,2-Dichloroethane	11.89	62	1120	0.073	ng		88
38) 1,1,1-Trichloroethane	12.17	97	1418	0.076	ng		93
39) Isopropyl Acetate	12.64	61	1312	0.158	ng	#	83
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	12.65	78	10570	0.188	ng		96
42) Carbon Tetrachloride	12.80	117	1172	0.075	ng		98
43) Cyclohexane	12.94	84	3254	0.151	ng		95
44) tert-Amyl Methyl Ether	13.33	73	2879	0.076	ng		90
45) 1,2-Dichloropropane	13.51	63	1072	0.072	ng		93
46) Bromodichloromethane	13.70	83	1232	0.073	ng		100
47) Trichloroethene	13.75	130	1114	0.074	ng		91
48) 1,4-Dioxane	13.78	88	773	0.069	ng		94
49) 2,2,4-Trimethylpentane...	13.82	57	4866	0.076	ng		96
50) Methyl Methacrylate	14.01	100	527	0.094	ng	#	35

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081618.D Vial: 13
Acq On : 8 Sep 2016 21:39 Operator: EA
Sample : 0.08ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:44 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

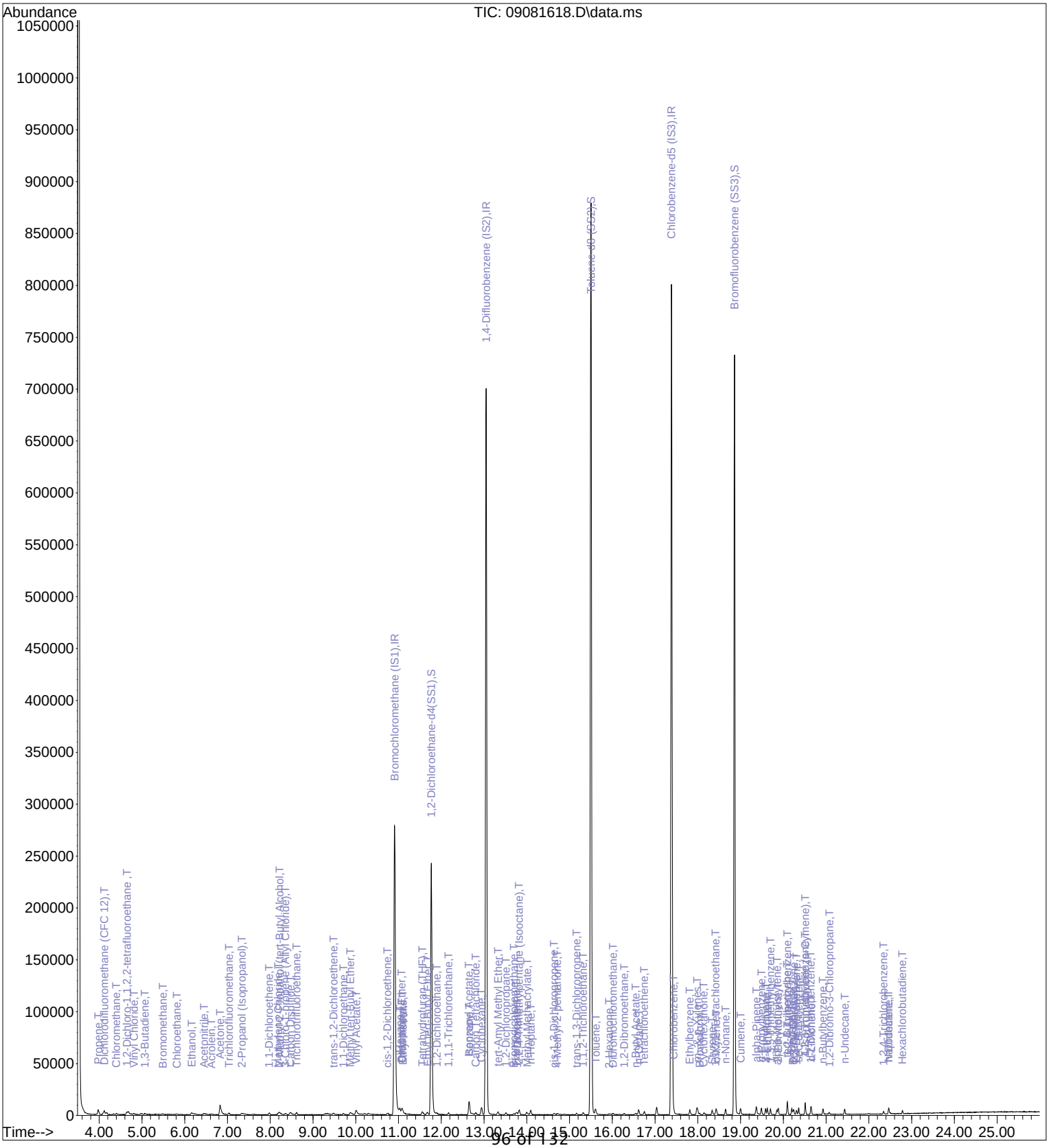
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.09	71	949	0.066	ng		84
52) cis-1,3-Dichloropropene	14.63	75	1471	0.074	ng		91
53) 4-Methyl-2-pentanone	14.71	58	594	0.043	ng	#	41
54) trans-1,3-Dichloropropene	15.16	75	1163	0.065	ng		95
55) 1,1,2-Trichloroethane	15.32	97	928	0.071	ng		93
58) Toluene	15.61	91	5407	0.089	ng		95
59) 2-Hexanone	15.93	43	1260	0.041	ng	#	44
60) Dibromochloromethane	16.02	129	916	0.069	ng		86
61) 1,2-Dibromoethane	16.28	107	1037	0.074	ng		96
62) n-Butyl Acetate	16.55	43	1598	0.046	ng	#	75
63) n-Octane	16.62	57	966	0.075	ng		87
64) Tetrachloroethene	16.75	166	1282	0.078	ng		92
65) Chlorobenzene	17.43	112	2958	0.081	ng		94
66) Ethylbenzene	17.81	91	5079	0.084	ng		95
67) m- & p-Xylenes	17.98	91	7757	0.164	ng		98
68) Bromoform	18.04	173	683	0.052	ng		97
69) Styrene	18.33	104	2989	0.079	ng		97
70) o-Xylene	18.43	91	3749	0.076	ng		95
71) n-Nonane	18.65	43	2294	0.077	ng		86
72) 1,1,2,2-Tetrachloroethane	18.41	83	1820	0.075	ng		95
74) Cumene	19.00	105	4673	0.074	ng		95
75) alpha-Pinene	19.37	93	2435	0.081	ng	#	1
76) n-Propylbenzene	19.49	91	5778	0.077	ng		97
77) 3-Ethyltoluene	19.59	105	4507	0.075	ng		99
78) 4-Ethyltoluene	19.63	105	4598	0.082	ng		96
79) 1,3,5-Trimethylbenzene	19.70	105	3999	0.079	ng		89
80) alpha-Methylstyrene	19.85	118	1778	0.063	ng		83
81) 2-Ethyltoluene	19.88	105	4411	0.075	ng		96
82) 1,2,4-Trimethylbenzene	20.09	105	3710	0.080	ng		99
83) n-Decane	20.20	57	2250	0.075	ng		92
84) Benzyl Chloride	20.23	91	2708	0.070	ng		87
85) 1,3-Dichlorobenzene	20.24	146	2220	0.077	ng		99
86) 1,4-Dichlorobenzene	20.31	146	2242	0.075	ng		95
87) sec-Butylbenzene	20.36	105	5252	0.080	ng		95
88) 4-Isopropyltoluene (p-...	20.51	119	4593	0.080	ng		94
89) 1,2,3-Trimethylbenzene	20.51	105	3795	0.078	ng		100
90) 1,2-Dichlorobenzene	20.64	146	2110	0.078	ng		99
91) d-Limonene	20.65	68	1406	0.069	ng		91
92) 1,2-Dibromo-3-Chloropr...	21.08	157	564	0.051	ng	#	71
93) n-Undecane	21.44	57	2280	0.072	ng		85
94) 1,2,4-Trichlorobenzene	22.34	180	1283	0.059	ng	#	94
95) Naphthalene	22.46	128	4247	0.065	ng		87
96) n-Dodecane	22.46	57	1725	0.065	ng		88
97) Hexachlorobutadiene	22.78	225	894	0.068	ng		94
98) Cyclohexanone	18.14	55	1448	0.082	ng	#	92
99) tert-Butylbenzene	20.09	119	3635	0.080	ng		97
100) n-Butylbenzene	20.92	91	4099	0.082	ng		95

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081618.D Vial: 13
Acq On : 8 Sep 2016 21:39 Operator: EA
Sample : 0.08ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311610 (9/29)

Quant Time: Sep 09 09:44:44 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081622.D Vial: 14
Acq On : 8 Sep 2016 23:59 Operator: EA
Sample : 1.0ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311606 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:51 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	134529	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.05	114	647165	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	279604	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	191202	13.149	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.20%				
57) Toluene-d8 (SS2)	15.50	98	678182	12.465	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
73) Bromofluorobenzene (SS3)	18.86	174	230091	12.693	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.52%				
Target Compounds							Qvalue
2) Propene	3.95	42	15484	0.970	ng		96
3) Dichlorodifluoromethan...	4.10	85	29439	1.049	ng		98
4) Chloromethane	4.38	50	21725	1.003	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.62	135	15120	1.003	ng		98
6) Vinyl Chloride	4.78	62	19186	0.875	ng		99
7) 1,3-Butadiene	5.04	54	10512	0.846	ng		95
8) Bromomethane	5.46	94	11613	0.923	ng		100
9) Chloroethane	5.79	64	10482	0.902	ng		96
10) Ethanol	6.12	45	53475	4.722	ng		97
11) Acetonitrile	6.39	41	28810	0.959	ng		94
12) Acrolein	6.58	56	9341	0.980	ng		93
13) Acetone	6.78	58	55756	5.394	ng		86
14) Trichlorofluoromethane	7.02	101	22980	0.989	ng		100
15) 2-Propanol (Isopropanol)	7.27	45	71454	2.006	ng		96
16) Acrylonitrile	7.52	53	17516	0.903	ng		99
17) 1,1-Dichloroethene	7.96	96	13293	1.023	ng		95
18) 2-Methyl-2-Propanol (t...	8.14	59	67641	2.119	ng		97
19) Methylene Chloride	8.18	84	13955	1.035	ng		95
20) 3-Chloro-1-propene (Al...	8.35	41	22553	1.210	ng		94
21) Trichlorotrifluoroethane	8.61	151	11862	1.062	ng		97
22) Carbon Disulfide	8.46	76	54617	0.892	ng		99
23) trans-1,2-Dichloroethene	9.46	61	20367	1.118	ng		93
24) 1,1-Dichloroethane	9.71	63	25554	1.034	ng		99
25) Methyl tert-Butyl Ether	9.84	73	40513	1.093	ng		100
26) Vinyl Acetate	9.98	86	16420	5.782	ng	#	59
27) 2-Butanone (MEK)	10.24	72	8870	0.984	ng	#	89
28) cis-1,2-Dichloroethene	10.74	61	19078	1.070	ng		96
29) Diisopropyl Ether	11.05	87	13902	1.158	ng	#	72
30) Ethyl Acetate	11.06	61	10760	2.260	ng		96
31) n-Hexane	11.03	57	24593	1.023	ng		99
32) Chloroform	11.08	83	23419	1.119	ng		99
34) Tetrahydrofuran (THF)	11.52	72	9385	0.974	ng		93
35) Ethyl tert-Butyl Ether	11.65	87	15730	1.114	ng		93
36) 1,2-Dichloroethane	11.89	62	16511	1.134	ng		100
38) 1,1,1-Trichloroethane	12.17	97	19789	1.123	ng		98
39) Isopropyl Acetate	12.62	61	18639	2.384	ng	#	85
40) 1-Butanol	12.64	56	28341	2.371	ng		89
41) Benzene	12.65	78	60534	1.145	ng		100
42) Carbon Tetrachloride	12.81	117	16960	1.156	ng		99
43) Cyclohexane	12.95	84	42513	2.099	ng		97
44) tert-Amyl Methyl Ether	13.30	73	38757	1.085	ng		96
45) 1,2-Dichloropropane	13.51	63	14779	1.051	ng		99
46) Bromodichloromethane	13.70	83	18571	1.167	ng		96
47) Trichloroethene	13.75	130	14045	0.994	ng		100
48) 1,4-Dioxane	13.74	88	10933	1.038	ng		97
49) 2,2,4-Trimethylpentane...	13.82	57	61721	1.018	ng		98
50) Methyl Methacrylate	13.97	100	10454	1.986	ng	#	83

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081622.D Vial: 14
Acq On : 8 Sep 2016 23:59 Operator: EA
Sample : 1.0ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311606 (9/29)

Quant Time: Sep 09 09:44:51 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

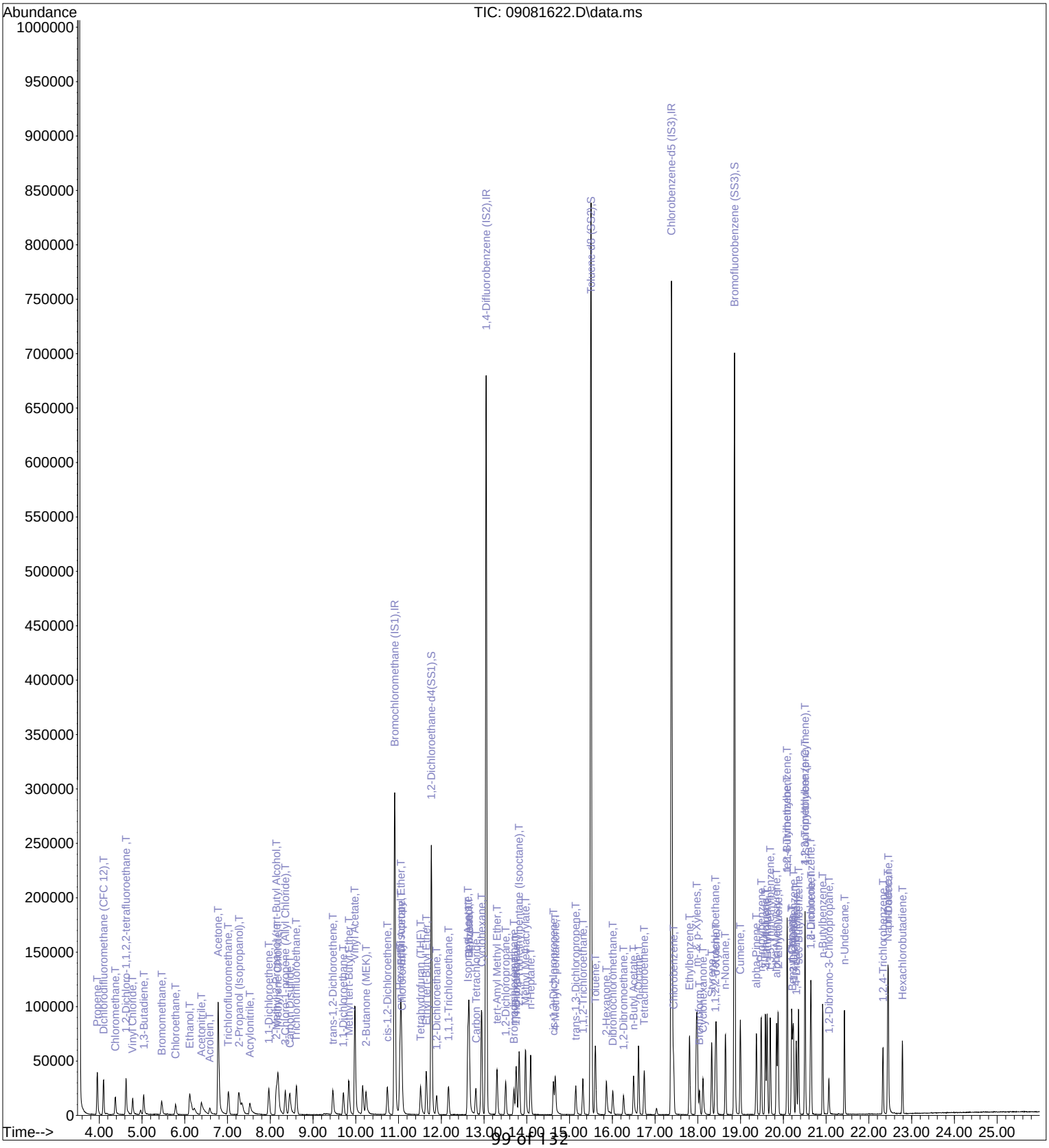
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	14287	1.058	ng	99
52) cis-1,3-Dichloropropene	14.62	75	22910	1.223	ng	100
53) 4-Methyl-2-pentanone	14.67	58	13347	1.020	ng	90
54) trans-1,3-Dichloropropene	15.14	75	18974	1.131	ng	99
55) 1,1,2-Trichloroethane	15.32	97	13357	1.090	ng	99
58) Toluene	15.61	91	56834	0.980	ng	100
59) 2-Hexanone	15.86	43	32830	1.119	ng	89
60) Dibromochloromethane	16.01	129	14749	1.169	ng	100
61) 1,2-Dibromoethane	16.26	107	15325	1.151	ng	99
62) n-Butyl Acetate	16.50	43	34455	1.045	ng	98
63) n-Octane	16.61	57	12715	1.042	ng	95
64) Tetrachloroethene	16.74	166	14973	0.955	ng	100
65) Chlorobenzene	17.43	112	36927	1.058	ng	100
66) Ethylbenzene	17.81	91	63691	1.103	ng	97
67) m- & p-Xylenes	17.98	91	100270	2.225	ng	97
68) Bromoform	18.04	173	12249	0.983	ng	100
69) Styrene	18.32	104	38812	1.079	ng	99
70) o-Xylene	18.43	91	50779	1.078	ng	97
71) n-Nonane	18.64	43	29694	1.047	ng	92
72) 1,1,2,2-Tetrachloroethane	18.41	83	25906	1.129	ng	99
74) Cumene	18.99	105	63439	1.056	ng	99
75) alpha-Pinene	19.37	93	31621	1.110	ng	85
76) n-Propylbenzene	19.48	91	78791	1.102	ng	97
77) 3-Ethyltoluene	19.58	105	62547	1.098	ng	98
78) 4-Ethyltoluene	19.62	105	62807	1.174	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	52880	1.101	ng	97
80) alpha-Methylstyrene	19.84	118	28436	1.056	ng	99
81) 2-Ethyltoluene	19.88	105	62964	1.129	ng	97
82) 1,2,4-Trimethylbenzene	20.09	105	53235	1.204	ng	99
83) n-Decane	20.19	57	32018	1.123	ng	96
84) Benzyl Chloride	20.21	91	44669	1.208	ng	95
85) 1,3-Dichlorobenzene	20.24	146	31093	1.141	ng	99
86) 1,4-Dichlorobenzene	20.30	146	31599	1.110	ng	98
87) sec-Butylbenzene	20.36	105	73389	1.174	ng	99
88) 4-Isopropyltoluene (p-...	20.51	119	63109	1.156	ng	98
89) 1,2,3-Trimethylbenzene	20.51	105	55638	1.206	ng	96
90) 1,2-Dichlorobenzene	20.64	146	30197	1.171	ng	99
91) d-Limonene	20.65	68	21818	1.127	ng	95
92) 1,2-Dibromo-3-Chloropr...	21.07	157	10737	1.031	ng	84
93) n-Undecane	21.43	57	32458	1.079	ng	95
94) 1,2,4-Trichlorobenzene	22.33	180	21206	1.019	ng	100
95) Naphthalene	22.44	128	70782	1.147	ng	97
96) n-Dodecane	22.45	57	32742	1.307	ng	94
97) Hexachlorobutadiene	22.79	225	13428	1.074	ng	97
98) Cyclohexanone	18.12	55	18916	1.129	ng	95
99) tert-Butylbenzene	20.09	119	51004	1.179	ng	98
100) n-Butylbenzene	20.92	91	59969	1.269	ng	97

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081622.D Vial: 14
Acq On : 8 Sep 2016 23:59 Operator: EA
Sample : 1.0ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311606 (9/29)

Quant Time: Sep 09 09:44:51 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081623.D Vial: 14
Acq On : 9 Sep 2016 00:34 Operator: EA
Sample : 5.0ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311606 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:53 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	124298	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.05	114	596548	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	259302	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	177754	13.230	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%				
57) Toluene-d8 (SS2)	15.50	98	624347	12.374	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.96%				
73) Bromofluorobenzene (SS3)	18.86	174	218435	12.993	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.92%				
Target Compounds							Qvalue
2) Propene	3.93	42	69081	4.686	ng		99
3) Dichlorodifluoromethan...	4.08	85	134509	5.187	ng		99
4) Chloromethane	4.35	50	95773	4.785	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	68797	4.939	ng		100
6) Vinyl Chloride	4.76	62	90610	4.474	ng		99
7) 1,3-Butadiene	5.02	54	50276	4.379	ng		97
8) Bromomethane	5.44	94	52743	4.535	ng		99
9) Chloroethane	5.77	64	43800	4.080	ng		100
10) Ethanol	6.11	45	195737	18.708	ng		99
11) Acetonitrile	6.37	41	109727	3.952	ng		100
12) Acrolein	6.57	56	43664	4.959	ng		100
13) Acetone	6.76	58	257911	27.002	ng		92
14) Trichlorofluoromethane	7.01	101	102810	4.791	ng		100
15) 2-Propanol (Isopropanol)	7.25	45	336803	10.235	ng		98
16) Acrylonitrile	7.51	53	90310	5.041	ng		99
17) 1,1-Dichloroethene	7.96	96	61783	5.144	ng		97
18) 2-Methyl-2-Propanol (t...	8.12	59	316521	10.731	ng		99
19) Methylene Chloride	8.17	84	63844	5.127	ng		94
20) 3-Chloro-1-propene (Al...	8.34	41	104892	6.091	ng		96
21) Trichlorotrifluoroethane	8.60	151	53582	5.190	ng		97
22) Carbon Disulfide	8.44	76	236157	4.176	ng		99
23) trans-1,2-Dichloroethene	9.46	61	93504	5.554	ng		96
24) 1,1-Dichloroethane	9.71	63	115891	5.073	ng		99
25) Methyl tert-Butyl Ether	9.82	73	187127	5.466	ng		100
26) Vinyl Acetate	9.98	86	78258	29.824	ng	#	65
27) 2-Butanone (MEK)	10.23	72	44000	5.285	ng	#	88
28) cis-1,2-Dichloroethene	10.73	61	88354	5.363	ng		96
29) Diisopropyl Ether	11.05	87	63140	5.693	ng	#	73
30) Ethyl Acetate	11.05	61	50314	11.438	ng		97
31) n-Hexane	11.03	57	107883	4.856	ng		100
32) Chloroform	11.08	83	106710	5.516	ng		100
34) Tetrahydrofuran (THF)	11.50	72	42092	4.727	ng		94
35) Ethyl tert-Butyl Ether	11.64	87	73074	5.600	ng		94
36) 1,2-Dichloroethane	11.89	62	74559	5.542	ng		99
38) 1,1,1-Trichloroethane	12.17	97	90206	5.553	ng		100
39) Isopropyl Acetate	12.62	61	86008	11.933	ng	#	86
40) 1-Butanol	12.63	56	144911	13.154	ng		95
41) Benzene	12.65	78	258205	5.298	ng		99
42) Carbon Tetrachloride	12.81	117	77935	5.763	ng		100
43) Cyclohexane	12.94	84	191395	10.251	ng		95
44) tert-Amyl Methyl Ether	13.30	73	178777	5.429	ng		98
45) 1,2-Dichloropropane	13.51	63	65735	5.069	ng		100
46) Bromodichloromethane	13.70	83	84721	5.777	ng		100
47) Trichloroethene	13.75	130	63676	4.889	ng		99
48) 1,4-Dioxane	13.73	88	51409	5.295	ng		96
49) 2,2,4-Trimethylpentane...	13.82	57	277511	4.968	ng		98
50) Methyl Methacrylate	13.97	100	50126	10.333	ng		92

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081623.D Vial: 14
Acq On : 9 Sep 2016 00:34 Operator: EA
Sample : 5.0ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311606 (9/29)

Quant Time: Sep 09 09:44:53 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

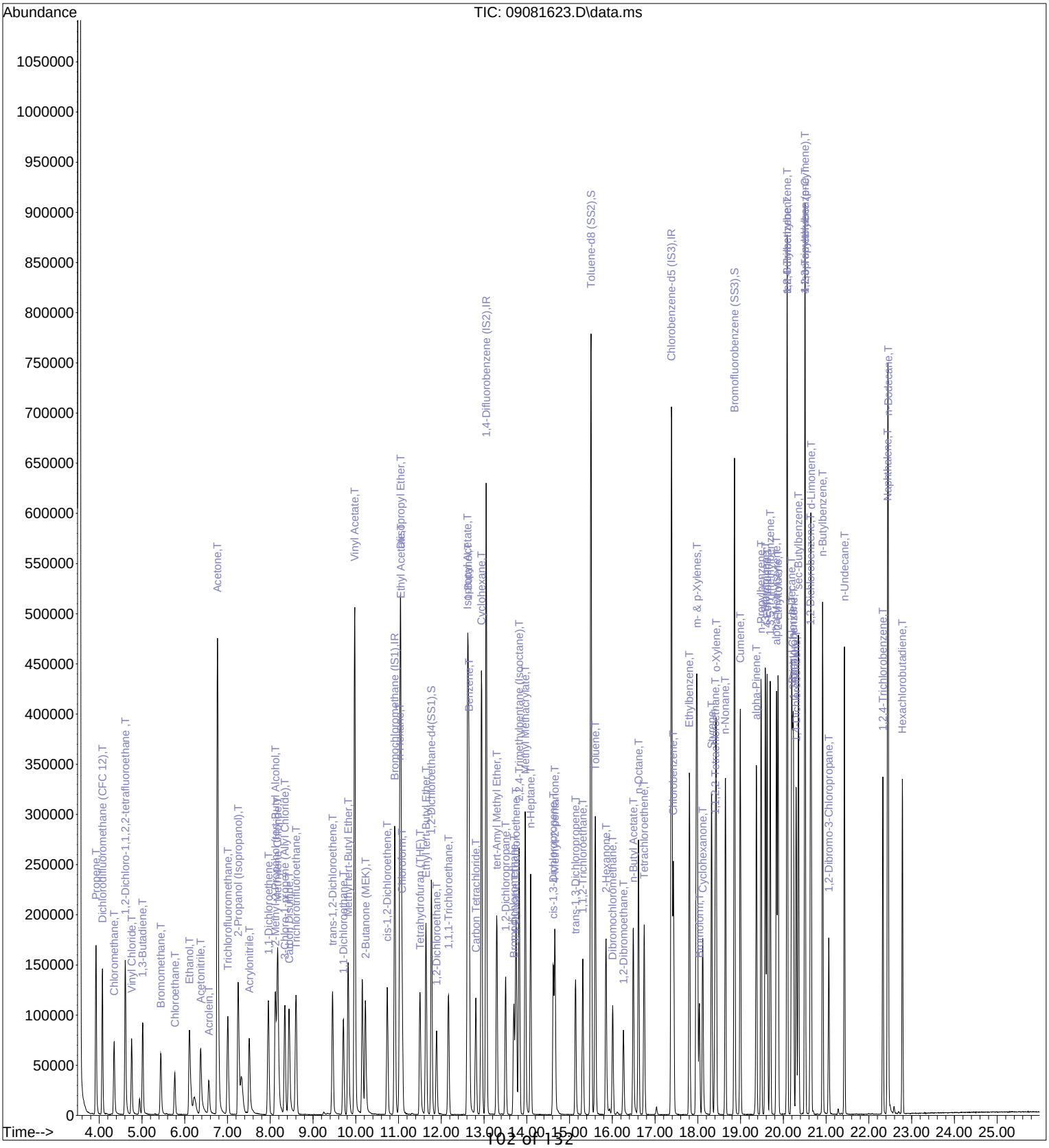
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	63797	5.126	ng	98
52) cis-1,3-Dichloropropene	14.62	75	106607	6.175	ng	100
53) 4-Methyl-2-pentanone	14.66	58	61991	5.139	ng	91
54) trans-1,3-Dichloropropene	15.14	75	91725	5.931	ng	99
55) 1,1,2-Trichloroethane	15.31	97	61531	5.446	ng	100
58) Toluene	15.60	91	257338	4.786	ng	99
59) 2-Hexanone	15.85	43	150305	5.523	ng	95
60) Dibromochloromethane	16.01	129	70206	6.000	ng	100
61) 1,2-Dibromoethane	16.26	107	70338	5.697	ng	99
62) n-Butyl Acetate	16.49	43	166148	5.435	ng	97
63) n-Octane	16.61	57	55781	4.929	ng	97
64) Tetrachloroethene	16.75	166	68012	4.680	ng	99
65) Chlorobenzene	17.43	112	167898	5.185	ng	100
66) Ethylbenzene	17.80	91	288657	5.393	ng	99
67) m- & p-Xylenes	17.98	91	461331	11.038	ng	98
68) Bromoform	18.04	173	60780	5.259	ng	99
69) Styrene	18.32	104	186238	5.585	ng	99
70) o-Xylene	18.43	91	236784	5.421	ng	98
71) n-Nonane	18.64	43	133027	5.056	ng	94
72) 1,1,2,2-Tetrachloroethane	18.41	83	119515	5.618	ng	99
74) Cumene	18.99	105	295411	5.302	ng	98
75) alpha-Pinene	19.37	93	150073	5.683	ng	95
76) n-Propylbenzene	19.48	91	367673	5.544	ng	98
77) 3-Ethyltoluene	19.58	105	299138	5.661	ng	98
78) 4-Ethyltoluene	19.62	105	290354	5.854	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	247378	5.554	ng	99
80) alpha-Methylstyrene	19.84	118	140416	5.623	ng	100
81) 2-Ethyltoluene	19.87	105	293550	5.678	ng	98
82) 1,2,4-Trimethylbenzene	20.09	105	257257	6.275	ng	98
83) n-Decane	20.19	57	145263	5.495	ng	97
84) Benzyl Chloride	20.21	91	232411	6.776	ng	97
85) 1,3-Dichlorobenzene	20.24	146	149688	5.923	ng	99
86) 1,4-Dichlorobenzene	20.30	146	151569	5.742	ng	100
87) sec-Butylbenzene	20.35	105	347286	5.990	ng	99
88) 4-Isopropyltoluene (p-...	20.51	119	309376	6.110	ng	99
89) 1,2,3-Trimethylbenzene	20.51	105	268998	6.285	ng	98
90) 1,2-Dichlorobenzene	20.63	146	147988	6.190	ng	100
91) d-Limonene	20.65	68	106351	5.923	ng	96
92) 1,2-Dibromo-3-Chloropr...	21.06	157	55156	5.708	ng	91
93) n-Undecane	21.43	57	157405	5.641	ng	97
94) 1,2,4-Trichlorobenzene	22.33	180	111156	5.762	ng	99
95) Naphthalene	22.44	128	370079	6.468	ng	99
96) n-Dodecane	22.45	57	162622	6.997	ng	95
97) Hexachlorobutadiene	22.78	225	66358	5.722	ng	100
98) Cyclohexanone	18.11	55	88557	5.698	ng	96
99) tert-Butylbenzene	20.09	119	243940	6.081	ng	98
100) n-Butylbenzene	20.92	91	290552	6.630	ng	97

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081623.D Vial: 14
Acq On : 9 Sep 2016 00:34 Operator: EA
Sample : 5.0ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311606 (9/29)

Quant Time: Sep 09 09:44:53 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081624.D Vial: 3
Acq On : 9 Sep 2016 1:09 Operator: EA
Sample : 25ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:55 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	140683	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.06	114	657374	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	286959	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.78	65	190754	12.544	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%			
57) Toluene-d8 (SS2)	15.50	98	692537	12.403	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%			
73) Bromofluorobenzene (SS3)	18.86	174	256857	13.806	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.48%			
Target Compounds						Qvalue
2) Propene	3.91	42	380475	22.802	ng	100
3) Dichlorodifluoromethan...	4.06	85	754263	25.698	ng	100
4) Chloromethane	4.34	50	554188	24.462	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.60	135	412628	26.174	ng	100
6) Vinyl Chloride	4.75	62	523273	22.827	ng	100
7) 1,3-Butadiene	5.02	54	342350	26.345	ng	100
8) Bromomethane	5.44	94	316797	24.067	ng	100
9) Chloroethane	5.76	64	244547	20.125	ng	100
10) Ethanol	6.15	45	1245545	105.180	ng	100
11) Acetonitrile	6.39	41	715124	22.758	ng	100
12) Acrolein	6.57	56	246359	24.721	ng	100
13) Acetone	6.78	58	1402883	129.771	ng	100
14) Trichlorofluoromethane	7.01	101	577485	23.775	ng	100
15) 2-Propanol (Isopropanol)	7.27	45	1852394	49.733	ng	100
16) Acrylonitrile	7.52	53	514200	25.359	ng	100
17) 1,1-Dichloroethene	7.96	96	362733	26.685	ng	100
18) 2-Methyl-2-Propanol (t...	8.13	59	1770122	53.021	ng	100
19) Methylene Chloride	8.19	84	374062	26.542	ng	100
20) 3-Chloro-1-propene (Al...	8.35	41	578240	29.669	ng	100
21) Trichlorotrifluoroethane	8.60	151	321278	27.496	ng	100
22) Carbon Disulfide	8.44	76	1384490	21.629	ng	100
23) trans-1,2-Dichloroethene	9.46	61	533102	27.975	ng	100
24) 1,1-Dichloroethane	9.72	63	645133	24.952	ng	100
25) Methyl tert-Butyl Ether	9.82	73	1060310	27.365	ng	100
26) Vinyl Acetate	9.99	86	450633	151.735	ng	100
27) 2-Butanone (MEK)	10.22	72	258530	27.437	ng	100
28) cis-1,2-Dichloroethene	10.74	61	501852	26.912	ng	100
29) Diisopropyl Ether	11.05	87	363301	28.940	ng	100
30) Ethyl Acetate	11.05	61	274030	55.041	ng	100
31) n-Hexane	11.03	57	549783	21.866	ng	100
32) Chloroform	11.09	83	618234	28.237	ng	100
34) Tetrahydrofuran (THF)	11.49	72	243370	24.145	ng	100
35) Ethyl tert-Butyl Ether	11.64	87	435313	29.473	ng	100
36) 1,2-Dichloroethane	11.89	62	420788	27.636	ng	100
38) 1,1,1-Trichloroethane	12.17	97	526272	29.397	ng	100
39) Isopropyl Acetate	12.62	61	469298	59.088	ng	100
40) 1-Butanol	12.64	56	762419	62.805	ng	100
41) Benzene	12.65	78	1409379	26.243	ng	100
42) Carbon Tetrachloride	12.81	117	465968	31.268	ng	100
43) Cyclohexane	12.95	84	1099919	53.462	ng	100
44) tert-Amyl Methyl Ether	13.30	73	1038863	28.626	ng	100
45) 1,2-Dichloropropane	13.51	63	369621	25.866	ng	100
46) Bromodichloromethane	13.70	83	498199	30.828	ng	100
47) Trichloroethene	13.75	130	393101	27.392	ng	100
48) 1,4-Dioxane	13.73	88	314429	29.388	ng	100
49) 2,2,4-Trimethylpentane...	13.82	57	1549898	25.177	ng	100
50) Methyl Methacrylate	13.97	100	300276	56.172	ng	100

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081624.D Vial: 3
Acq On : 9 Sep 2016 1:09 Operator: EA
Sample : 25ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 09 09:44:55 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

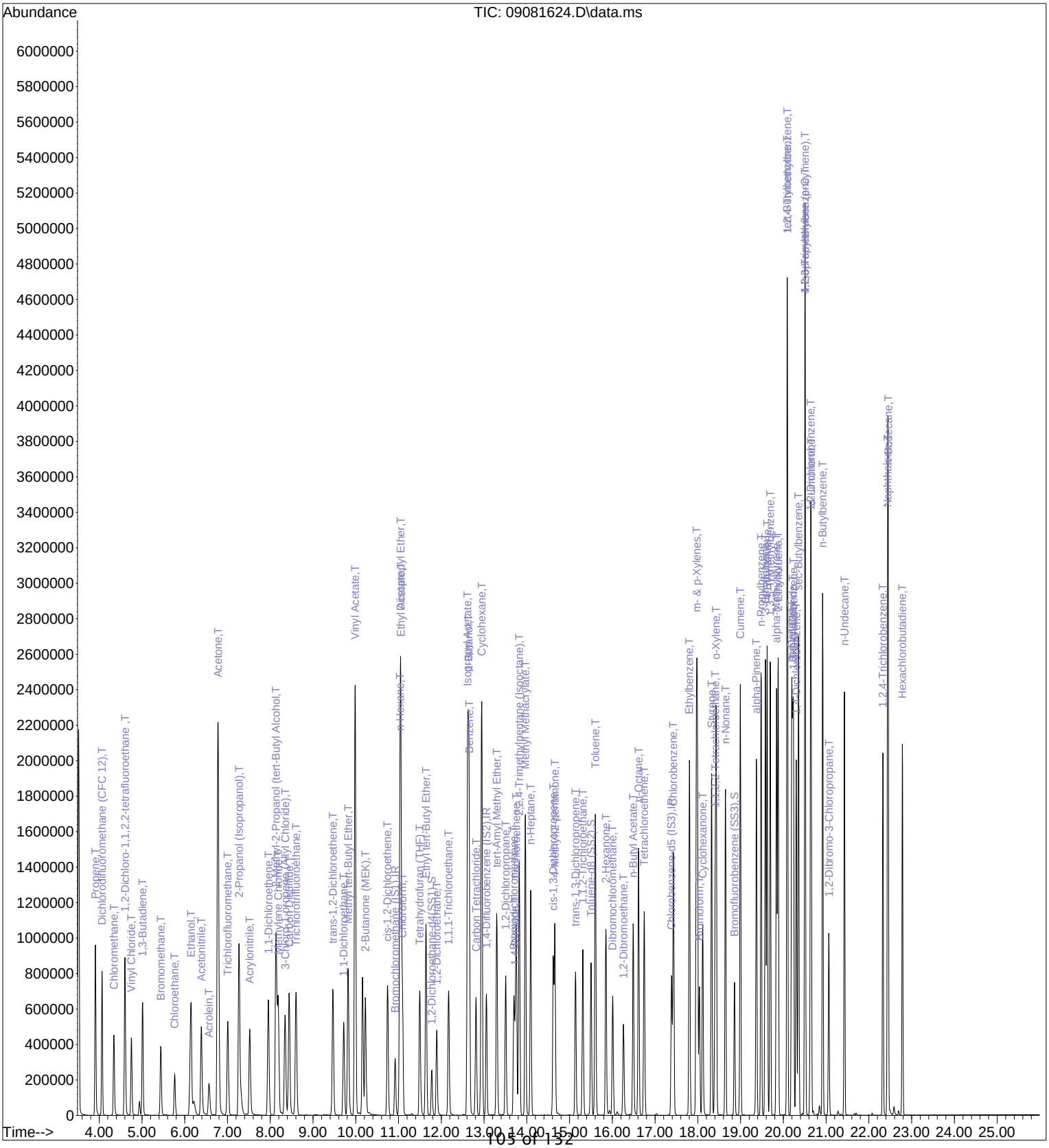
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	357139	26.043	ng	100
52) cis-1,3-Dichloropropene	14.62	75	629100	33.065	ng	100
53) 4-Methyl-2-pentanone	14.66	58	358125	26.942	ng	100
54) trans-1,3-Dichloropropene	15.14	75	542293	31.820	ng	100
55) 1,1,2-Trichloroethane	15.31	97	368363	29.587	ng	100
58) Toluene	15.60	91	1491561	25.065	ng	100
59) 2-Hexanone	15.85	43	809444	26.876	ng	100
60) Dibromochloromethane	16.01	129	442075	34.141	ng	100
61) 1,2-Dibromoethane	16.26	107	433867	31.755	ng	100
62) n-Butyl Acetate	16.49	43	908618	26.856	ng	100
63) n-Octane	16.61	57	313182	25.006	ng	100
64) Tetrachloroethene	16.74	166	426760	26.534	ng	100
65) Chlorobenzene	17.43	112	1004450	28.030	ng	100
66) Ethylbenzene	17.80	91	1711960	28.900	ng	100
67) m- & p-Xylenes	17.98	91	2737565	59.188	ng	100
68) Bromoform	18.04	173	410785	32.120	ng	100
69) Styrene	18.32	104	1119808	30.342	ng	100
70) o-Xylene	18.43	91	1399177	28.946	ng	100
71) n-Nonane	18.65	43	700651	24.062	ng	100
72) 1,1,2,2-Tetrachloroethane	18.41	83	706576	30.014	ng	100
74) Cumene	18.99	105	1775650	28.800	ng	100
75) alpha-Pinene	19.37	93	897804	30.720	ng	100
76) n-Propylbenzene	19.48	91	2152964	29.336	ng	100
77) 3-Ethyltoluene	19.58	105	1768118	30.234	ng	100
78) 4-Ethyltoluene	19.62	105	1754713	31.971	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1487944	30.186	ng	100
80) alpha-Methylstyrene	19.84	118	811604	29.367	ng	100
81) 2-Ethyltoluene	19.88	105	1743184	30.466	ng	100
82) 1,2,4-Trimethylbenzene	20.09	105	1510193	33.287	ng	100
83) n-Decane	20.19	57	789757	26.994	ng	100
84) Benzyl Chloride	20.21	91	1408549	37.111	ng	100
85) 1,3-Dichlorobenzene	20.24	146	929946	33.252	ng	100
86) 1,4-Dichlorobenzene	20.30	146	929148	31.806	ng	100
87) sec-Butylbenzene	20.35	105	2029067	31.624	ng	100
88) 4-Isopropyltoluene (p-...	20.51	119	1809599	32.292	ng	100
89) 1,2,3-Trimethylbenzene	20.51	105	1574950	33.250	ng	100
90) 1,2-Dichlorobenzene	20.64	146	911175	34.438	ng	100
91) d-Limonene	20.65	68	559124	28.137	ng	100
92) 1,2-Dibromo-3-Chloropr...	21.07	157	347495	32.498	ng	100
93) n-Undecane	21.43	57	825675	26.741	ng	100
94) 1,2,4-Trichlorobenzene	22.33	180	690887	32.360	ng	100
95) Naphthalene	22.44	128	2134544	33.713	ng	100
96) n-Dodecane	22.45	57	803202	31.229	ng	100
97) Hexachlorobutadiene	22.78	225	426413	33.223	ng	100
98) Cyclohexanone	18.11	55	524297	30.485	ng	100
99) tert-Butylbenzene	20.09	119	1463793	32.971	ng	100
100) n-Butylbenzene	20.92	91	1634665	33.708	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081624.D Vial: 3
Acq On : 9 Sep 2016 1:09 Operator: EA
Sample : 25ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 09 09:44:55 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081625.D Vial: 3
Acq On : 9 Sep 2016 1:44 Operator: EA
Sample : 50ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:57 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.93	130	161075	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.06	114	739641	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.39	82	299955	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.78	65	194412	11.166	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.36%				
57) Toluene-d8 (SS2)	15.51	98	752919	12.900	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.20%				
73) Bromofluorobenzene (SS3)	18.86	174	278702	14.331	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.64%				
Target Compounds							Qvalue
2) Propene	3.91	42	703460	36.822	ng		99
3) Dichlorodifluoromethan...	4.07	85	1495347	44.498	ng		100
4) Chloromethane	4.34	50	1073059	41.369	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	890100	49.313	ng		99
6) Vinyl Chloride	4.76	62	1058116	40.315	ng		99
7) 1,3-Butadiene	5.02	54	684161	45.983	ng		97
8) Bromomethane	5.45	94	663162	44.002	ng		100
9) Chloroethane	5.77	64	485444	34.892	ng		100
10) Ethanol	6.18	45	1797464	132.570	ng		99
11) Acetonitrile	6.41	41	1353470	37.619	ng		100
12) Acrolein	6.58	56	482947	42.326	ng		100
13) Acetone	6.79	58	2537106	204.978	ng		89
14) Trichlorofluoromethane	7.01	101	1217885	43.793	ng		100
15) 2-Propanol (Isopropanol)	7.29	45	3407026	79.892	ng		100
16) Acrylonitrile	7.53	53	1023874	44.102	ng		99
17) 1,1-Dichloroethene	7.96	96	786987	50.566	ng		91
18) 2-Methyl-2-Propanol (t...	8.16	59	3396119	88.846	ng		98
19) Methylene Chloride	8.19	84	789710	48.941	ng		89
20) 3-Chloro-1-propene (Al...	8.35	41	1090615	48.874	ng		92
21) Trichlorotrifluoroethane	8.61	151	735718	54.994	ng		94
22) Carbon Disulfide	8.45	76	2853234	38.931	ng		100
23) trans-1,2-Dichloroethene	9.47	61	1071305	49.101	ng		93
24) 1,1-Dichloroethane	9.72	63	1296844	43.808	ng		99
25) Methyl tert-Butyl Ether	9.82	73	2173501	48.993	ng		99
26) Vinyl Acetate	10.00	86	883708	259.887	ng	#	56
27) 2-Butanone (MEK)	10.23	72	533983	49.495	ng	#	85
28) cis-1,2-Dichloroethene	10.75	61	996660	46.680	ng		93
29) Diisopropyl Ether	11.05	87	717478	49.917	ng	#	65
30) Ethyl Acetate	11.06	61	483029	84.738	ng		94
31) n-Hexane	11.03	57	1000449	34.753	ng		99
32) Chloroform	11.10	83	1255731	50.092	ng		100
34) Tetrahydrofuran (THF)	11.50	72	499609	43.292	ng	#	91
35) Ethyl tert-Butyl Ether	11.65	87	905248	53.531	ng		91
36) 1,2-Dichloroethane	11.89	62	824888	47.317	ng		100
38) 1,1,1-Trichloroethane	12.18	97	1091759	54.202	ng		98
39) Isopropyl Acetate	12.62	61	853656	95.527	ng	#	84
40) 1-Butanol	12.65	56	1323305	96.884	ng		94
41) Benzene	12.66	78	2653428	43.912	ng		100
42) Carbon Tetrachloride	12.81	117	986376	58.828	ng		100
43) Cyclohexane	12.95	84	2158595	93.250	ng		92
44) tert-Amyl Methyl Ether	13.30	73	2086088	51.090	ng		97
45) 1,2-Dichloropropane	13.51	63	734577	45.688	ng		100
46) Bromodichloromethane	13.70	83	1015788	55.864	ng		99
47) Trichloroethene	13.76	130	866854	53.685	ng		100
48) 1,4-Dioxane	13.73	88	652100	54.170	ng		94
49) 2,2,4-Trimethylpentane...	13.82	57	2918266	42.132	ng		98
50) Methyl Methacrylate	13.97	100	633653	105.352	ng	#	88

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081625.D Vial: 3
Acq On : 9 Sep 2016 1:44 Operator: EA
Sample : 50ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 09 09:44:57 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

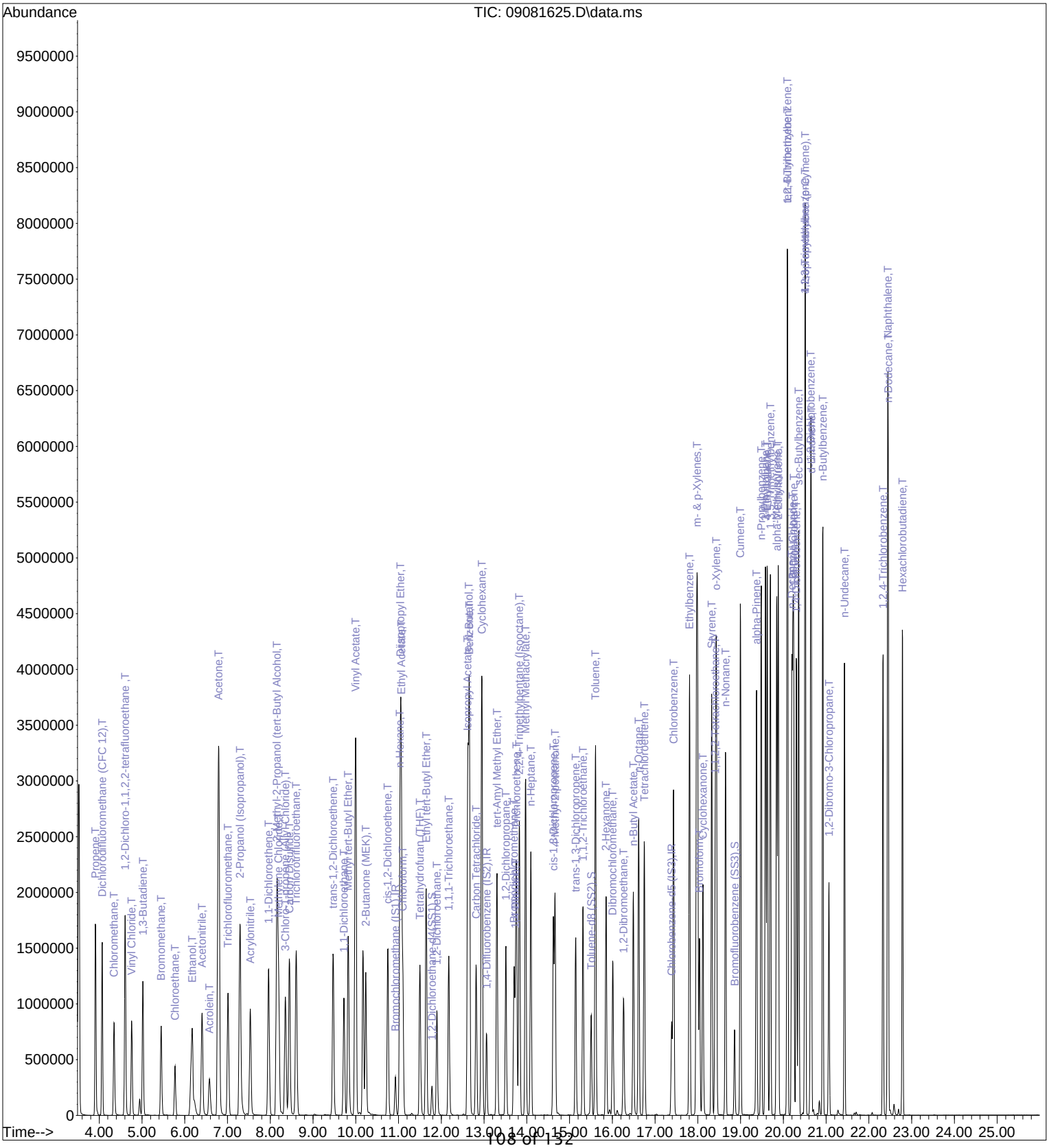
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	716888	46.462	ng	96
52) cis-1,3-Dichloropropene	14.62	75	1271905	59.415	ng	100
53) 4-Methyl-2-pentanone	14.66	58	688531	46.038	ng	91
54) trans-1,3-Dichloropropene	15.14	75	1101041	57.421	ng	100
55) 1,1,2-Trichloroethane	15.32	97	769838	54.956	ng	98
58) Toluene	15.61	91	3020468	48.559	ng	99
59) 2-Hexanone	15.85	43	1473827	46.816	ng	95
60) Dibromochloromethane	16.01	129	954674	70.534	ng	100
61) 1,2-Dibromoethane	16.26	107	914484	64.031	ng	100
62) n-Butyl Acetate	16.49	43	1641010	46.401	ng	96
63) n-Octane	16.62	57	589876	45.057	ng	93
64) Tetrachloroethene	16.75	166	957348	56.944	ng	100
65) Chlorobenzene	17.43	112	2097544	55.998	ng	99
66) Ethylbenzene	17.81	91	3419445	55.224	ng	97
67) m- & p-Xylenes	17.98	91	5342764	110.509	ng	98
68) Bromoform	18.04	173	924525	69.158	ng	100
69) Styrene	18.32	104	2291139	59.391	ng	99
70) o-Xylene	18.43	91	2739385	54.217	ng	98
71) n-Nonane	18.65	43	1208266	39.696	ng	93
72) 1,1,2,2-Tetrachloroethane	18.41	83	1381246	56.130	ng	100
74) Cumene	18.99	105	3499717	54.304	ng	98
75) alpha-Pinene	19.37	93	1802170	58.992	ng	98
76) n-Propylbenzene	19.48	91	4118569	53.687	ng	97
77) 3-Ethyltoluene	19.58	105	3624005	59.285	ng	98
78) 4-Ethyltoluene	19.62	105	3336615	58.159	ng	98
79) 1,3,5-Trimethylbenzene	19.70	105	2955227	57.355	ng	98
80) alpha-Methylstyrene	19.85	118	1679492	58.137	ng	99
81) 2-Ethyltoluene	19.88	105	3451782	57.714	ng	98
82) 1,2,4-Trimethylbenzene	20.09	105	2719371	57.342	ng	98
83) n-Decane	20.20	57	1365367	44.646	ng	96
84) Benzyl Chloride	20.22	91	2720263	68.566	ng	96
85) 1,3-Dichlorobenzene	20.24	146	1967090	67.289	ng	99
86) 1,4-Dichlorobenzene	20.30	146	1976667	64.732	ng	100
87) sec-Butylbenzene	20.36	105	3959261	59.033	ng	98
88) 4-Isopropyltoluene (p-...	20.51	119	3227590	55.100	ng	98
89) 1,2,3-Trimethylbenzene	20.51	105	2819807	56.952	ng	99
90) 1,2-Dichlorobenzene	20.64	146	1858652	67.205	ng	99
91) d-Limonene	20.65	68	979692	47.165	ng	92
92) 1,2-Dibromo-3-Chloropr...	21.07	157	751728	67.257	ng	92
93) n-Undecane	21.43	57	1450806	44.951	ng	96
94) 1,2,4-Trichlorobenzene	22.33	180	1492962	66.898	ng	100
95) Naphthalene	22.44	128	4037090	60.999	ng	99
96) n-Dodecane	22.45	57	1269587	47.224	ng	94
97) Hexachlorobutadiene	22.79	225	938736	69.970	ng	99
98) Cyclohexanone	18.12	55	1005401	55.925	ng	95
99) tert-Butylbenzene	20.09	119	2678200	57.712	ng	98
100) n-Butylbenzene	20.92	91	3115183	61.454	ng	98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081625.D Vial: 3
Acq On : 9 Sep 2016 1:44 Operator: EA
Sample : 50ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 09 09:44:57 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081626.D Vial: 3
Acq On : 9 Sep 2016 2:19 Operator: EA
Sample : 100ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

EA 9/9/16

Quant Time: Sep 09 09:44:59 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.93	130	174655	12.500	ng		0.01
37) 1,4-Difluorobenzene (IS2)	13.06	114	808125	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.39	82	318825	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.79	65	198528	10.516	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 84.16%				
57) Toluene-d8 (SS2)	15.51	98	808995	13.040	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.32%				
73) Bromofluorobenzene (SS3)	18.86	174	313200	15.152	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 121.20%				
Target Compounds							Qvalue
2) Propene	3.92	42	1317333	63.593	ng		100
3) Dichlorodifluoromethan...	4.07	85	2793182	76.655	ng		99
4) Chloromethane	4.35	50	1757425	62.485	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	1835269	93.772	ng		99
6) Vinyl Chloride	4.76	62	2014576	70.788	ng		99
7) 1,3-Butadiene	5.03	54	1292423	80.111	ng		95
8) Bromomethane	5.46	94	1383860	84.682	ng		100
9) Chloroethane	5.78	64	944791	62.627	ng		99
10) Ethanol	6.22	45	3145320	213.943	ng		99
11) Acetonitrile	6.43	41	2067111	52.987	ng		99
12) Acrolein	6.59	56	924700	74.741	ng		100
13) Acetone	6.82	58	3928944	292.747	ng		87
14) Trichlorofluoromethane	7.02	101	2464313	81.723	ng		99
15) 2-Propanol (Isopropanol)	7.33	45	5606534	121.247	ng		100
16) Acrylonitrile	7.55	53	1972366	78.351	ng		99
17) 1,1-Dichloroethene	7.97	96	1608881	95.338	ng	#	83
18) 2-Methyl-2-Propanol (t...	8.19	59	5681844	137.085	ng		96
19) Methylene Chloride	8.21	84	1424321	81.406	ng	#	76
20) 3-Chloro-1-propene (Al...	8.36	41	1984287	82.009	ng		84
21) Trichlorotrifluoroethane	8.61	151	1579605	108.892	ng		89
22) Carbon Disulfide	8.45	76	5441611	68.475	ng		99
23) trans-1,2-Dichloroethene	9.48	61	2038273	86.156	ng		86
24) 1,1-Dichloroethane	9.73	63	2491812	77.630	ng		99
25) Methyl tert-Butyl Ether	9.83	73	4155043	86.376	ng		98
26) Vinyl Acetate	10.02	86	1467088	397.904	ng	#	30
27) 2-Butanone (MEK)	10.25	72	1049453	89.711	ng	#	70
28) cis-1,2-Dichloroethene	10.76	61	1880280	81.218	ng		86
29) Diisopropyl Ether	11.06	87	1212213	77.779	ng	#	40
30) Ethyl Acetate	11.08	61	704907	114.047	ng		84
31) n-Hexane	11.03	57	1658638	53.136	ng	#	97
32) Chloroform	11.11	83	2393321	88.049	ng		100
34) Tetrahydrofuran (THF)	11.50	72	975464	77.954	ng	#	83
35) Ethyl tert-Butyl Ether	11.65	87	1770160	96.538	ng	#	82
36) 1,2-Dichloroethane	11.91	62	1571935	83.158	ng		99
38) 1,1,1-Trichloroethane	12.18	97	2158097	98.063	ng		97
39) Isopropyl Acetate	12.63	61	1330013	136.220	ng	#	76
40) 1-Butanol	12.68	56	2076997	139.178	ng	#	44
41) Benzene	12.66	78	4120739	62.416	ng		100
42) Carbon Tetrachloride	12.82	117	1993123	108.797	ng		100
43) Cyclohexane	12.96	84	3611268	142.784	ng	#	85
44) tert-Amyl Methyl Ether	13.31	73	3869556	86.737	ng		95
45) 1,2-Dichloropropane	13.52	63	1373068	78.162	ng		100
46) Bromodichloromethane	13.70	83	1970910	99.207	ng		99
47) Trichloroethene	13.76	130	1739799	98.616	ng		100
48) 1,4-Dioxane	13.74	88	1214342	92.327	ng		88
49) 2,2,4-Trimethylpentane...	13.83	57	4928065	65.119	ng		98
50) Methyl Methacrylate	13.98	100	1194042	181.699	ng	#	76

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081626.D Vial: 3
Acq On : 9 Sep 2016 2:19 Operator: EA
Sample : 100ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 09 09:44:59 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

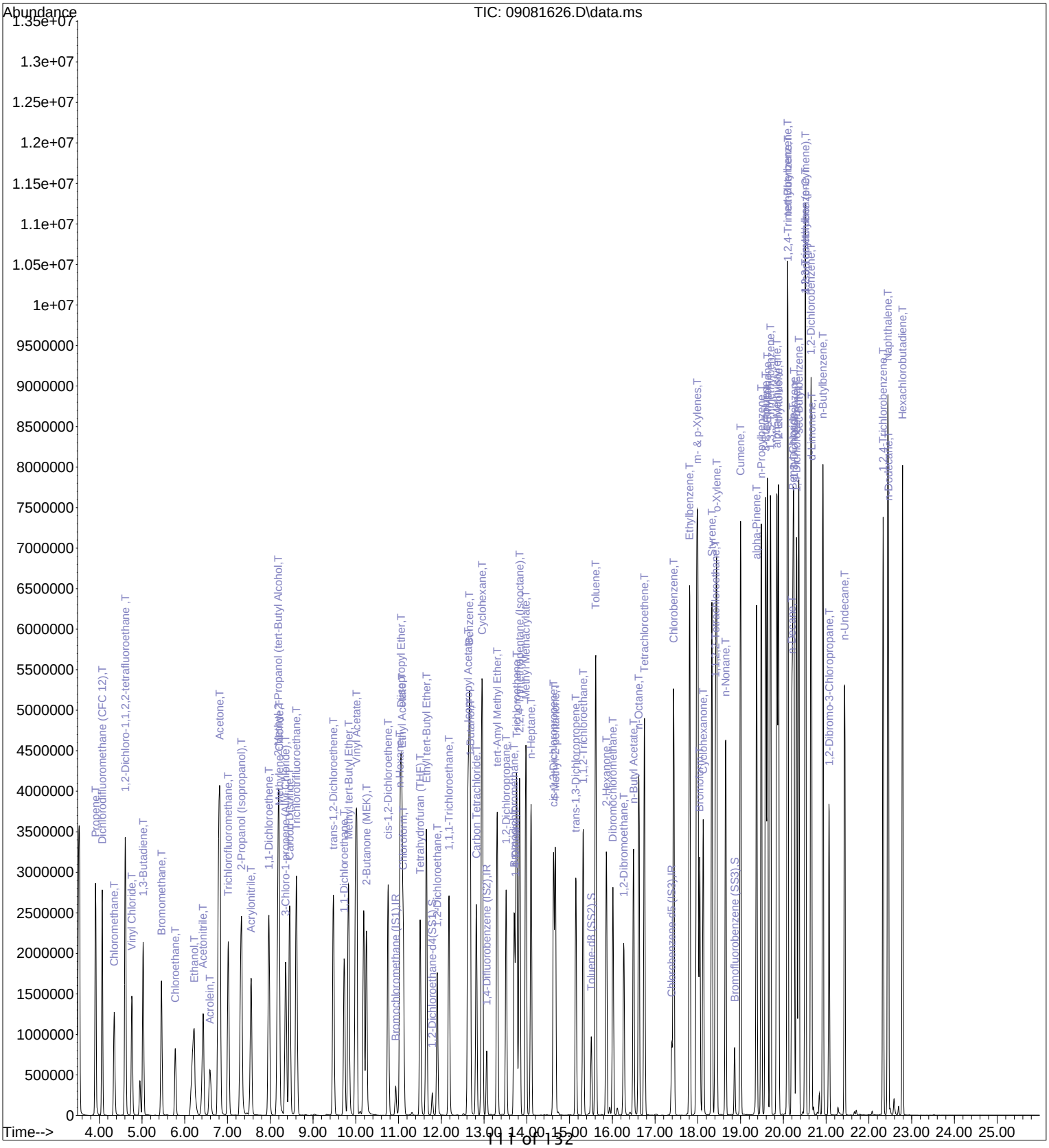
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.10	71	1320851	78.350	ng		92
52) cis-1,3-Dichloropropene	14.63	75	2411578	103.107	ng		99
53) 4-Methyl-2-pentanone	14.67	58	1234492	75.547	ng		84
54) trans-1,3-Dichloropropene	15.14	75	2122208	101.296	ng		99
55) 1,1,2-Trichloroethane	15.32	97	1521818	99.431	ng		96
58) Toluene	15.61	91	5569245	84.236	ng		97
59) 2-Hexanone	15.86	43	2526020	75.489	ng		91
60) Dibromochloromethane	16.01	129	1953452	135.784	ng		99
61) 1,2-Dibromoethane	16.27	107	1855097	122.204	ng		99
62) n-Butyl Acetate	16.50	43	2791499	74.260	ng		92
63) n-Octane	16.62	57	1002702	72.058	ng		85
64) Tetrachloroethene	16.75	166	2007367	112.333	ng		99
65) Chlorobenzene	17.43	112	4061153	102.004	ng		98
66) Ethylbenzene	17.81	91	6086288	92.476	ng		94
67) m- & p-Xylenes	17.99	91	9001905	175.174	ng		97
68) Bromoform	18.04	173	1942612	136.715	ng		99
69) Styrene	18.33	104	4221517	102.953	ng		99
70) o-Xylene	18.44	91	4703839	87.587	ng		96
71) n-Nonane	18.65	43	1824062	56.381	ng		85
72) 1,1,2,2-Tetrachloroethane	18.41	83	2360713	90.255	ng		99
74) Cumene	19.00	105	6058484	88.444	ng		95
75) alpha-Pinene	19.37	93	3180412	97.946	ng		99
76) n-Propylbenzene	19.48	91	6899846	84.619	ng		93
77) 3-Ethyltoluene	19.59	105	6429345	98.952	ng		95
78) 4-Ethyltoluene	19.63	105	5416216	88.819	ng		94
79) 1,3,5-Trimethylbenzene	19.70	105	5147239	93.986	ng		96
80) alpha-Methylstyrene	19.85	118	3040175	99.009	ng		93
81) 2-Ethyltoluene	19.88	105	5898172	92.781	ng		95
82) 1,2,4-Trimethylbenzene	20.10	105	4181700	82.959	ng		98
83) n-Decane	20.20	57	1935873	59.555	ng		90
84) Benzyl Chloride	20.23	91	4284671	101.606	ng		92
85) 1,3-Dichlorobenzene	20.25	146	3505511	112.817	ng		98
86) 1,4-Dichlorobenzene	20.31	146	3705068	114.152	ng		99
87) sec-Butylbenzene	20.36	105	6543192	91.786	ng		94
88) 4-Isopropyltoluene (p-...	20.52	119	4882544	78.420	ng		95
89) 1,2,3-Trimethylbenzene	20.51	105	4330309	82.284	ng		100
90) 1,2-Dichlorobenzene	20.64	146	3063022	104.198	ng		99
91) d-Limonene	20.66	68	1341159	60.745	ng		80
92) 1,2-Dibromo-3-Chloropr...	21.07	157	1521386	128.062	ng		85
93) n-Undecane	21.43	57	2138971	62.350	ng		91
94) 1,2,4-Trichlorobenzene	22.33	180	2897889	122.166	ng		99
95) Naphthalene	22.44	128	6147390	87.387	ng		98
96) n-Dodecane	22.46	57	1593575	55.767	ng		87
97) Hexachlorobutadiene	22.79	225	1853029	129.944	ng		99
98) Cyclohexanone	18.13	55	1788340	93.589	ng	#	90
99) tert-Butylbenzene	20.10	119	4212202	85.395	ng		97
100) n-Butylbenzene	20.92	91	5070614	94.109	ng	#	95

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081626.D Vial: 3
Acq On : 9 Sep 2016 2:19 Operator: EA
Sample : 100ng TO15 ICAL STD Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 09 09:44:59 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 09:43:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081627.D Vial: 3
Acq On : 9 Sep 2016 2:54 Operator: EA
Sample : 25ng TO15 ICV STD Inst : MS13
Misc : S29-08301601/S29-08221603 (9/20)

EA 9/9/16

Quant Time: Sep 09 10:35:35 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 10:07:12 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	178681	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.06	114	810376	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.39	82	315250	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.78	65	194913	10.107	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 80.88%				
57) Toluene-d8 (SS2)	15.50	98	806751	13.086	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.72%				
73) Bromofluorobenzene (SS3)	18.86	174	315004	14.430	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.44%				
Target Compounds							Qvalue
2) Propene	3.92	42	325697	17.616	ng		100
3) Dichlorodifluoromethan...	4.07	85	706678	19.776	ng		100
4) Chloromethane	4.35	50	516761	19.955	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	470216	24.999	ng		99
6) Vinyl Chloride	4.76	62	528535	22.403	ng		99
7) 1,3-Butadiene	5.02	54	329925	25.141	ng		95
8) Bromomethane	5.44	94	368744	25.477	ng		100
9) Chloroethane	5.77	64	265652	22.804	ng		100
10) Ethanol	6.15	45	1158159	105.956	ng		100
11) Acetonitrile	6.39	41	632279	18.577	ng		99
12) Acrolein	6.57	56	220109	18.889	ng		99
13) Acetone	6.78	58	1343433	105.269	ng		85
14) Trichlorofluoromethane	7.01	101	617215	21.447	ng		99
15) 2-Propanol (Isopropanol)	7.27	45	1675859	41.791	ng		99
16) Acrylonitrile	7.52	53	493715	21.805	ng		99
17) 1,1-Dichloroethene	7.96	96	415486	26.359	ng	#	84
18) 2-Methyl-2-Propanol (t...	8.13	59	1752908	46.411	ng		97
19) Methylene Chloride	8.19	84	417148	25.054	ng		81
20) 3-Chloro-1-propene (Al...	8.35	41	501579	20.430	ng		85
21) Trichlorotrifluoroethane	8.61	151	404334	28.282	ng		89
22) Carbon Disulfide	8.45	76	1382349	19.697	ng		100
23) trans-1,2-Dichloroethene	9.47	61	519921	23.228	ng		87
24) 1,1-Dichloroethane	9.72	63	652882	22.055	ng		99
25) Methyl tert-Butyl Ether	9.82	73	1126651	23.335	ng		97
26) Vinyl Acetate	9.99	86	491410	122.155	ng	#	54
27) 2-Butanone (MEK)	10.22	72	274832	25.191	ng	#	74
28) cis-1,2-Dichloroethene	10.75	61	502823	23.417	ng		88
29) Diisopropyl Ether	11.05	87	393302	25.689	ng	#	62
30) Ethyl Acetate	11.05	61	263555	45.934	ng		93
31) n-Hexane	11.03	57	529169	18.916	ng		99
32) Chloroform	11.09	83	658712	23.499	ng		99
34) Tetrahydrofuran (THF)	11.50	72	270803	22.948	ng	#	84
35) Ethyl tert-Butyl Ether	11.64	87	477231	25.676	ng	#	86
36) 1,2-Dichloroethane	11.89	62	414482	22.247	ng		100
38) 1,1,1-Trichloroethane	12.17	97	568994	25.015	ng		97
39) Isopropyl Acetate	12.62	61	459825	49.302	ng	#	81
40) 1-Butanol	12.64	56	724502	48.797	ng		92
41) Benzene	12.65	78	1509910	25.487	ng		100
42) Carbon Tetrachloride	12.81	117	506030	27.284	ng		100
43) Cyclohexane	12.95	84	1184521	50.621	ng		90
44) tert-Amyl Methyl Ether	13.30	73	1079585	24.570	ng		95
45) 1,2-Dichloropropane	13.51	63	378012	23.525	ng		99
46) Bromodichloromethane	13.70	83	516752	25.764	ng		99
47) Trichloroethene	13.75	130	469472	27.742	ng		100
48) 1,4-Dioxane	13.73	88	356767	28.733	ng		91
49) 2,2,4-Trimethylpentane...	13.82	57	1509736	22.004	ng		96
50) Methyl Methacrylate	13.97	100	344079	54.662	ng	#	84

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081627.D Vial: 3
Acq On : 9 Sep 2016 2:54 Operator: EA
Sample : 25ng TO15 ICV STD Inst : MS13
Misc : S29-08301601/S29-08221603 (9/20)

Quant Time: Sep 09 10:35:35 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 10:07:12 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

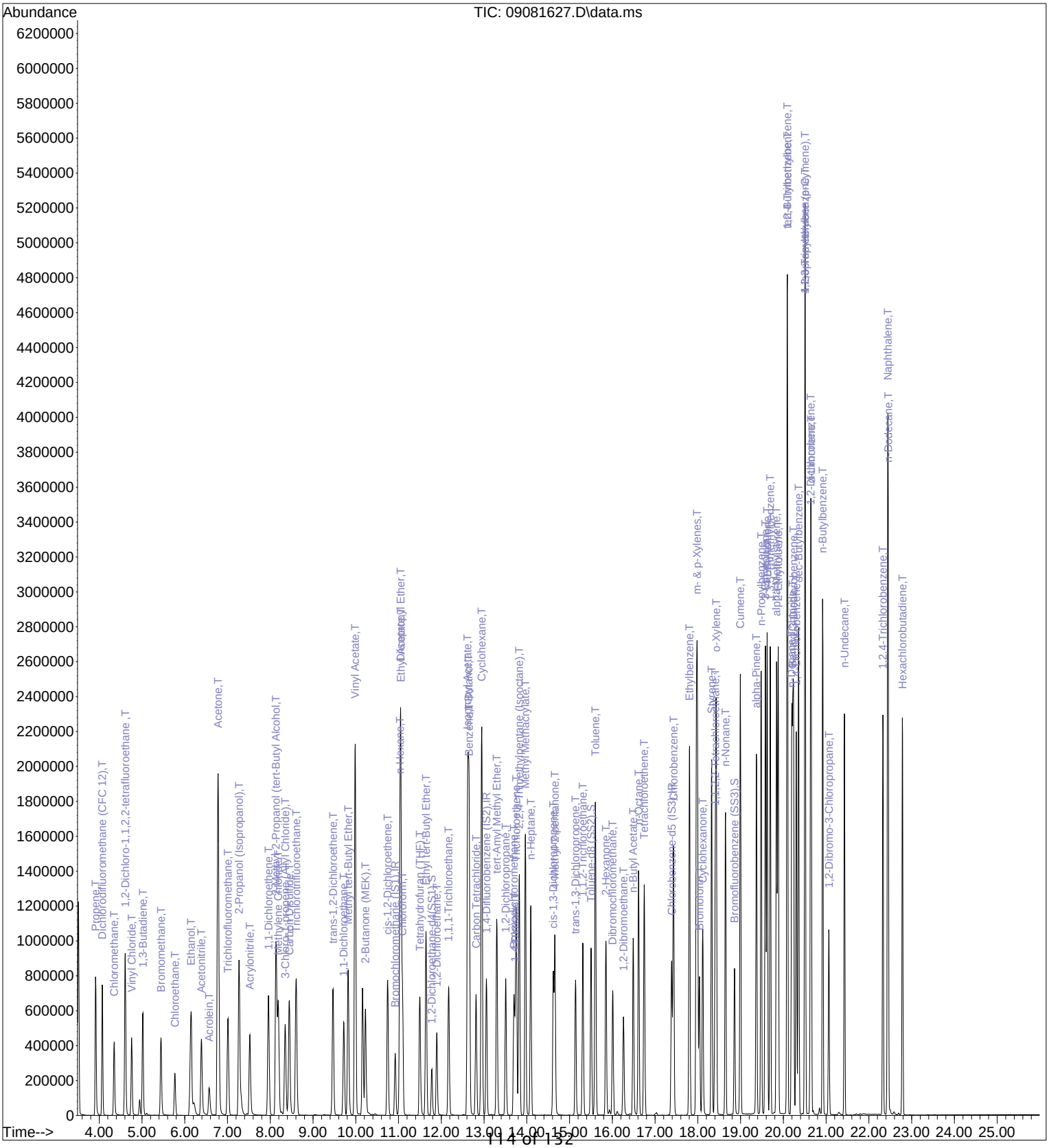
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	375379	24.773	ng	94
52) cis-1,3-Dichloropropene	14.62	75	597031	25.366	ng	100
53) 4-Methyl-2-pentanone	14.66	58	353375	24.526	ng	87
54) trans-1,3-Dichloropropene	15.14	75	537644	26.145	ng	100
55) 1,1,2-Trichloroethane	15.31	97	410394	27.238	ng	96
58) Toluene	15.60	91	1646230	26.926	ng	99
59) 2-Hexanone	15.85	43	737242	24.785	ng	93
60) Dibromochloromethane	16.01	129	494320	33.136	ng	100
61) 1,2-Dibromoethane	16.26	107	480906	30.939	ng	100
62) n-Butyl Acetate	16.49	43	821730	27.229	ng	93
63) n-Octane	16.61	57	301387	24.077	ng	89
64) Tetrachloroethene	16.74	166	521945	29.761	ng	100
65) Chlorobenzene	17.43	112	1145363	29.859	ng	99
66) Ethylbenzene	17.81	91	1863937	28.505	ng	98
67) m- & p-Xylenes	17.98	91	2930413	56.990	ng	98
68) Bromoform	18.04	173	463589	31.976	ng	100
69) Styrene	18.32	104	1242526	31.231	ng	98
70) o-Xylene	18.43	91	1483281	28.123	ng	97
71) n-Nonane	18.65	43	617079	21.123	ng	90
72) 1,1,2,2-Tetrachloroethane	18.41	83	731679	27.173	ng	100
74) Cumene	18.99	105	1915021	28.400	ng	98
75) alpha-Pinene	19.37	93	968500	28.787	ng	97
76) n-Propylbenzene	19.48	91	2237751	26.934	ng	97
77) 3-Ethyltoluene	19.58	105	1895159	29.151	ng	99
78) 4-Ethyltoluene	19.62	105	1909618	30.307	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	1611025	29.333	ng	98
80) alpha-Methylstyrene	19.84	118	924828	31.875	ng	99
81) 2-Ethyltoluene	19.88	105	1876014	29.568	ng	99
82) 1,2,4-Trimethylbenzene	20.09	105	1596354	30.379	ng	98
83) n-Decane	20.19	57	744161	24.136	ng	96
84) Benzyl Chloride	20.21	91	1449780	30.257	ng	97
85) 1,3-Dichlorobenzene	20.24	146	1066437	33.556	ng	100
86) 1,4-Dichlorobenzene	20.30	146	1055682	31.829	ng	100
87) sec-Butylbenzene	20.36	105	2151491	29.721	ng	98
88) 4-Isopropyltoluene (p-...	20.51	119	1934261	29.744	ng	98
89) 1,2,3-Trimethylbenzene	20.51	105	1649303	30.054	ng	98
90) 1,2-Dichlorobenzene	20.64	146	1018457	33.343	ng	99
91) d-Limonene	20.65	68	567024	27.767	ng	95
92) 1,2-Dibromo-3-Chloropr...	21.07	157	394783	30.174	ng	89
93) n-Undecane	21.43	57	783815	24.903	ng	96
94) 1,2,4-Trichlorobenzene	22.33	180	816040	31.775	ng	100
95) Naphthalene	22.44	128	2366091	30.279	ng	100
96) n-Dodecane	22.45	57	768464	26.285	ng	95
97) Hexachlorobutadiene	22.79	225	488930	31.020	ng	100
98) Cyclohexanone	18.11	55	514776	28.163	ng	92
99) tert-Butylbenzene	20.09	119	1548765	30.411	ng	99
100) n-Butylbenzene	20.92	91	1690716	29.777	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\08\09081627.D Vial: 3
Acq On : 9 Sep 2016 2:54 Operator: EA
Sample : 25ng TO15 ICV STD Inst : MS13
Misc : S29-08301601/S29-08221603 (9/20)

Quant Time: Sep 09 10:35:35 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Sep 09 10:07:12 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



INITIAL CALIBRATION VERIFICATION CHECK SHEET

EA 9/9/16

Data File Name: **09081627.D** Acq. Method File: **TO15.M**
Data File Path: **I:\MS13\DATA\2016_09\08** Sample Name: **25ng TO15 ICV STD**
Operator: **EA** Misc Info: **S29-08301601/S29-08221603 (**
Date Acquired: **9/9/2016 2:54** Instrument Name: **MS13**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail
2)	**Propene**	**3.92**	**17.6**	**24.50**	72	**70**	**130**	*
3)	**Dichlorodifluoromethane (CFC 12**	**4.07**	**19.8**	**23.50**	84	**70**	**130**	*
4)	**Chloromethane**	**4.35**	**20.0**	**25.00**	80	**70**	**130**	*
5)	**1,2-Dichloro-1,1,2,2-tetrafluoroetl**	**4.61**	**25.0**	**25.50**	98	**70**	**130**	*
6)	**Vinyl Chloride**	**4.76**	**22.4**	**25.00**	90	**70**	**130**	*
7)	**1,3-Butadiene**	**5.02**	**25.1**	**25.75**	97	**70**	**130**	*
8)	**Bromomethane**	**5.44**	**25.5**	**25.25**	101	**70**	**130**	*
9)	**Chloroethane**	**5.77**	**22.8**	**25.00**	91	**70**	**130**	*
10)	**Ethanol**	**6.15**	**106**	**124.75**	85	**70**	**130**	*
11)	**Acetonitrile**	**6.39**	**18.6**	**26.50**	70	**70**	**130**	*
12)	**Acrolein**	**6.57**	**18.9**	**26.75**	71	**70**	**130**	*
13)	**Acetone**	**6.78**	**105**	**134.75**	78	**70**	**130**	*
14)	**Trichlorofluoromethane**	**7.01**	**21.4**	**27.00**	79	**70**	**130**	*
15)	**2-Propanol (Isopropanol)**	**7.27**	**41.8**	**52.25**	80	**70**	**130**	*
16)	**Acrylonitrile**	**7.52**	**21.8**	**26.50**	82	**70**	**130**	*
17)	**1,1-Dichloroethene**	**7.96**	**26.4**	**27.00**	98	**70**	**130**	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	8.13	46.4	50.00	93	**70**	**130**	*
19)	**Methylene Chloride**	**8.19**	**25.1**	**27.75**	90	**70**	**130**	*
20)	**3-Chloro-1-propene (Allyl Chlorid**	**8.35**	**20.4**	**27.25**	75	**70**	**130**	*
21)	**Trichlorotrifluoroethane**	**8.61**	**28.3**	**27.50**	103	**70**	**130**	*
22)	**Carbon Disulfide**	**8.45**	**19.7**	**26.25**	75	**70**	**130**	*
23)	**trans-1,2-Dichloroethene**	**9.47**	**23.2**	**26.25**	88	**70**	**130**	*
24)	**1,1-Dichloroethane**	**9.72**	**22.1**	**26.50**	83	**70**	**130**	*
25)	**Methyl tert-Butyl Ether**	**9.82**	**23.3**	**27.00**	86	**70**	**130**	*
26)	**Vinyl Acetate**	**9.99**	**122**	**129.75**	94	**70**	**130**	*
27)	**2-Butanone (MEK)**	**10.22**	**25.2**	**27.50**	92	**70**	**130**	*
28)	**cis-1,2-Dichloroethene**	**10.75**	**23.4**	**27.25**	86	**70**	**130**	*
29)	Diisopropyl Ether	11.05	25.7	27.00	95	**70**	**130**	*
30)	**Ethyl Acetate**	**11.05**	**45.9**	**53.50**	86	**70**	**130**	*
31)	**n-Hexane**	**11.03**	**18.9**	**26.50**	71	**70**	**130**	*
32)	**Chloroform**	**11.09**	**23.5**	**28.00**	84	**70**	**130**	*
34)	**Tetrahydrofuran (THF)**	**11.50**	**22.9**	**27.50**	83	**70**	**130**	*
35)	Ethyl tert-Butyl Ether	11.64	25.7	26.75	96	**70**	**130**	*
36)	**1,2-Dichloroethane**	**11.89**	**22.2**	**26.75**	83	**70**	**130**	*
38)	**1,1,1-Trichloroethane**	**12.17**	**25.0**	**26.25**	95	**70**	**130**	*
39)	Isopropyl Acetate	12.62	49.3	57.25	86	**70**	**130**	*
40)	1-Butanol	12.64	48.8	51.25	95	**70**	**130**	*
41)	**Benzene**	**12.65**	**25.5**	**28.25**	90	**70**	**130**	*
42)	**Carbon Tetrachloride**	**12.81**	**27.3**	**28.75**	95	**70**	**130**	*
43)	**Cyclohexane**	**12.95**	**50.6**	**53.00**	95	**70**	**130**	*
44)	tert-Amyl Methyl Ether	13.30	24.6	26.75	92	**70**	**130**	*
45)	**1,2-Dichloropropane**	**13.51**	**23.5**	**27.00**	87	**70**	**130**	*
46)	**Bromodichloromethane**	**13.70**	**25.8**	**27.25**	95	**70**	**130**	*
47)	**Trichloroethene**	**13.75**	**27.7**	**27.00**	103	**70**	**130**	*
48)	**1,4-Dioxane**	**13.73**	**28.7**	**26.25**	109	**70**	**130**	*
49)	2,2,4-Trimethylpentane (Isooctane)	13.82	22.0	26.75	82	**70**	**130**	*

INITIAL CALIBRATION VERIFICATION CHECK SHEET

Data File Name: **09081627.D** Acq. Method File: **TO15.M**
Data File Path: **I:\MS13\DATA\2016_09\08** Sample Name: **25ng TO15 ICV STD**
Operator: **EA** Misc Info: **S29-08301601/S29-08221603 (**
Date Acquired: **9/9/2016 2:54** Instrument Name: **MS13**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail
50)	**Methyl Methacrylate**	**13.97**	**54.7**	**52.75**	104	**70**	**130**	*
51)	**n-Heptane**	**14.09**	**24.8**	**27.00**	92	**70**	**130**	*
52)	**cis-1,3-Dichloropropene**	**14.62**	**25.4**	**26.00**	98	**70**	**130**	*
53)	**4-Methyl-2-pentanone**	**14.66**	**24.5**	**27.50**	89	**70**	**130**	*
54)	**trans-1,3-Dichloropropene**	**15.14**	**26.1**	**26.25**	99	**70**	**130**	*
55)	**1,1,2-Trichloroethane**	**15.31**	**27.2**	**27.00**	101	**70**	**130**	*
58)	**Toluene**	**15.60**	**26.9**	**27.25**	99	**70**	**130**	*
59)	**2-Hexanone**	**15.85**	**24.8**	**27.50**	90	**70**	**130**	*
60)	**Dibromochloromethane**	**16.01**	**33.1**	**27.50**	120	**70**	**130**	*
61)	**1,2-Dibromoethane**	**16.26**	**30.9**	**27.25**	113	**70**	**130**	*
62)	**n-Butyl Acetate**	**16.49**	**27.2**	**28.25**	96	**70**	**130**	*
63)	**n-Octane**	**16.61**	**24.1**	**26.25**	92	**70**	**130**	*
64)	**Tetrachloroethene**	**16.74**	**29.8**	**25.25**	118	**70**	**130**	*
65)	**Chlorobenzene**	**17.43**	**29.9**	**27.50**	109	**70**	**130**	*
66)	**Ethylbenzene**	**17.81**	**28.5**	**27.25**	105	**70**	**130**	*
67)	**m- & p-Xylenes**	**17.98**	**57.0**	**53.50**	107	**70**	**130**	*
68)	**Bromoform**	**18.04**	**32.0**	**28.50**	112	**70**	**130**	*
69)	**Styrene**	**18.32**	**31.2**	**27.75**	112	**70**	**130**	*
70)	**o-Xylene**	**18.43**	**28.1**	**26.25**	107	**70**	**130**	*
71)	**n-Nonane**	**18.65**	**21.1**	**25.50**	83	**70**	**130**	*
72)	**1,1,2,2-Tetrachloroethane**	**18.41**	**27.2**	**26.25**	104	**70**	**130**	*
74)	**Cumene**	**18.99**	**28.4**	**26.00**	109	**70**	**130**	*
75)	**alpha-Pinene**	**19.37**	**28.8**	**26.50**	109	**70**	**130**	*
76)	**n-Propylbenzene**	**19.48**	**26.9**	**25.50**	105	**70**	**130**	*
77)	3-Ethyltoluene	19.58	29.2	26.75	109	**70**	**130**	*
78)	**4-Ethyltoluene**	**19.62**	**30.3**	**26.75**	**113**	**70**	**130**	*
79)	**1,3,5-Trimethylbenzene**	**19.69**	**29.3**	**26.75**	**110**	**70**	**130**	*
80)	alpha-Methylstyrene	19.84	31.9	26.25	**122**	**70**	**130**	*
81)	2-Ethyltoluene	19.88	29.6	26.75	**111**	**70**	**130**	*
82)	**1,2,4-Trimethylbenzene**	**20.09**	**30.4**	**27.25**	**112**	**70**	**130**	*
83)	n-Decane	20.19	24.1	26.25	**92**	**70**	**130**	*
84)	**Benzyl Chloride**	**20.21**	**30.3**	**27.50**	**110**	**70**	**130**	*
85)	**1,3-Dichlorobenzene**	**20.24**	**33.6**	**28.50**	**118**	**70**	**130**	*
86)	**1,4-Dichlorobenzene**	**20.30**	**31.8**	**26.00**	**122**	**70**	**130**	*
87)	sec-Butylbenzene	20.36	29.7	27.25	**109**	**70**	**130**	*
88)	4-Isopropyltoluene (p-Cymene)	20.51	29.7	26.00	**114**	**70**	**130**	*
89)	1,2,3-Trimethylbenzene	20.51	30.1	26.50	**114**	**70**	**130**	*
90)	**1,2-Dichlorobenzene**	**20.64**	**33.3**	**27.50**	**121**	**70**	**130**	*
91)	**d-Limonene**	**20.65**	**27.8**	**26.25**	**106**	**70**	**130**	*
92)	**1,2-Dibromo-3-Chloropropane**	**21.07**	**30.2**	**27.25**	**111**	**70**	**130**	*
93)	n-Undecane	21.43	24.9	25.25	**99**	**70**	**130**	*
94)	**1,2,4-Trichlorobenzene**	**22.33**	**31.8**	**28.75**	**111**	**70**	**130**	*
95)	**Naphthalene**	**22.44**	**30.3**	**27.25**	**111**	**70**	**130**	*
96)	n-Dodecane	22.45	26.3	27.25	**97**	**70**	**130**	*
97)	**Hexachlorobutadiene**	**22.79**	**31.0**	**28.75**	**108**	**70**	**130**	*
98)	Cyclohexanone	18.11	28.2	27.50	103	**70**	**130**	*
99)	tert-Butylbenzene	20.09	30.4	26.75	114	**70**	**130**	*
100)	n-Butylbenzene	20.92	29.8	28.00	106	**70**	**130**	*

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

Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2016_09\14\09141602.D Vial: 3
Acq On : 14 Sep 2016 5:40 Operator: EA
Sample : CCV R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 14 09:45:13 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

EA 9/14/16

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	106	0.00
2	T	Propene	1.293	1.139	11.9	92	0.00
3	T	Dichlorodifluoromethane (CF	2.500	2.461	1.6	97	0.00
4	T	Chloromethane	1.812	1.781	1.7	94	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.316	1.339	-1.7	100	0.00
6	T	Vinyl Chloride	1.650	1.705	-3.3	97	0.00
7	T	1,3-Butadiene	0.918	1.129	-23.0	104	0.00
8	T	Bromomethane	1.013	1.073	-5.9	101	0.00
9	T	Chloroethane	0.815	0.890	-9.2	110	0.00
10	T	Ethanol	0.765	0.789	-3.1	96	0.00
11	T	Acetonitrile	2.381	2.147	9.8	91	0.00
12	T	Acrolein	0.815	0.731	10.3	95	0.00
13	T	Acetone	0.893	0.844	5.5	97	0.00
14	T	Trichlorofluoromethane	2.013	1.977	1.8	101	0.00
15	T	2-Propanol (Isopropanol)	2.805	2.737	2.4	92	0.00
16	T	Acrylonitrile	1.584	1.582	0.1	95	0.00
17	T	1,1-Dichloroethene	1.103	1.144	-3.7	101	0.00
18	T	2-Methyl-2-Propanol (tert-B	2.642	2.689	-1.8	95	0.00
19	T	Methylene Chloride	1.165	1.166	-0.1	101	0.00
20	T	3-Chloro-1-propene (Allyl C	1.718	1.609	6.3	90	0.00
21	T	Trichlorotrifluoroethane	1.000	0.982	1.8	99	0.00
22	T	Carbon Disulfide	4.910	4.697	4.3	99	0.00
23	T	trans-1,2-Dichloroethene	1.566	1.626	-3.8	97	0.00
24	T	1,1-Dichloroethane	2.071	2.014	2.8	97	0.00
25	T	Methyl tert-Butyl Ether	3.378	3.309	2.0	98	0.00
26	T	Vinyl Acetate	0.281	0.296	-5.3	100	0.00
27	T	2-Butanone (MEK)	0.763	0.787	-3.1	97	0.00
28	T	cis-1,2-Dichloroethene	1.502	1.511	-0.6	96	0.00
29	T	Diisopropyl Ether	1.071	1.115	-4.1	99	0.00
30	T	Ethyl Acetate	0.401	0.417	-4.0	96	0.00
31	T	n-Hexane	1.957	1.720	12.1	97	0.00
32	T	Chloroform	1.961	1.904	2.9	98	0.00
33	S	1,2-Dichloroethane-d4(SS1)	1.349	1.276	5.4	100	0.00
34	T	Tetrahydrofuran (THF)	0.826	0.772	6.5	97	0.00
35	T	Ethyl tert-Butyl Ether	1.300	1.358	-4.5	98	0.00
36	T	1,2-Dichloroethane	1.303	1.277	2.0	95	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	105	0.00
38	T	1,1,1-Trichloroethane	0.351	0.362	-3.1	98	0.00
39	T	Isopropyl Acetate	0.144	0.149	-3.5	97	0.00
40	T	1-Butanol	0.229	0.228	0.4	93	0.00
41	T	Benzene	0.914	0.908	0.7	99	0.00
42	T	Carbon Tetrachloride	0.286	0.307	-7.3	98	0.00
43	T	Cyclohexane	0.361	0.374	-3.6	98	0.00
44	T	tert-Amyl Methyl Ether	0.678	0.697	-2.8	96	0.00
45	T	1,2-Dichloropropane	0.248	0.246	0.8	97	0.00
46	T	Bromodichloromethane	0.309	0.330	-6.8	98	0.00
47	T	Trichloroethene	0.261	0.275	-5.4	100	0.00
48	T	1,4-Dioxane	0.192	0.207	-7.8	98	0.00
49	T	2,2,4-Trimethylpentane (Iso	1.058	1.030	2.6	95	0.00
50	T	Methyl Methacrylate	0.097	0.103	-6.2	98	0.00
51	T	n-Heptane	0.234	0.237	-1.3	98	0.00
52	T	cis-1,3-Dichloropropene	0.363	0.392	-8.0	96	0.00
53	T	4-Methyl-2-pentanone	0.222	0.227	-2.3	94	0.00
54	T	trans-1,3-Dichloropropene	0.317	0.353	-11.4	96	0.00
55	T	1,1,2-Trichloroethane	0.232	0.250	-7.8	98	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2016_09\14\09141602.D Vial: 3
Acq On : 14 Sep 2016 5:40 Operator: EA
Sample : CCV R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 14 09:45:13 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
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	101	0.00
57	S	Toluene-d8 (SS2)	2.444	2.466	-0.9	103	0.00
58	T	Toluene	2.424	2.400	1.0	98	0.00
59	T	2-Hexanone	1.179	1.157	1.9	92	0.00
60	T	Dibromochloromethane	0.592	0.678	-14.5	98	0.00
61	T	1,2-Dibromoethane	0.616	0.686	-11.4	98	0.00
62	T	n-Butyl Acetate	1.197	1.293	-8.0	91	0.00
63	T	n-Octane	0.496	0.498	-0.4	95	0.00
64	T	Tetrachloroethene	0.695	0.729	-4.9	98	0.00
65	T	Chlorobenzene	1.521	1.577	-3.7	97	0.00
66	T	Ethylbenzene	2.593	2.742	-5.7	97	0.00
67	T	m- & p-Xylenes	2.039	2.209	-8.3	97	0.00
68	T	Bromoform	0.575	0.643	-11.8	97	0.00
69	T	Styrene	1.578	1.716	-8.7	96	0.00
70	T	o-Xylene	2.091	2.293	-9.7	97	0.00
71	T	n-Nonane	1.158	1.100	5.0	92	0.00
72	T	1,1,2,2-Tetrachloroethane	1.068	1.188	-11.2	97	0.00
73	S	Bromofluorobenzene (SS3)	0.866	0.877	-1.3	99	0.00
74	T	Cumene	2.674	2.917	-9.1	96	0.00
75	T	alpha-Pinene	1.334	1.445	-8.3	96	0.00
76	T	n-Propylbenzene	3.294	3.587	-8.9	96	0.00
77	T	3-Ethyltoluene	2.578	2.836	-10.0	96	0.00
78	T	4-Ethyltoluene	2.498	2.795	-11.9	97	0.00
79	T	1,3,5-Trimethylbenzene	2.178	2.381	-9.3	96	0.00
80	T	alpha-Methylstyrene	1.150	1.284	-11.7	94	0.00
81	T	2-Ethyltoluene	2.516	2.813	-11.8	97	0.00
82	T	1,2,4-Trimethylbenzene	2.084	2.440	-17.1	97	0.00
83	T	n-Decane	1.223	1.280	-4.7	95	0.00
84	T	Benzyl Chloride	1.900	2.153	-13.3	95	0.00
85	T	1,3-Dichlorobenzene	1.260	1.441	-14.4	97	0.00
86	T	1,4-Dichlorobenzene	1.315	1.487	-13.1	97	0.00
87	T	sec-Butylbenzene	2.870	3.214	-12.0	97	0.00
88	T	4-Isopropyltoluene (p-Cymen	2.579	3.049	-18.2	97	0.00
89	T	1,2,3-Trimethylbenzene	2.176	2.553	-17.3	97	0.00
90	T	1,2-Dichlorobenzene	1.211	1.426	-17.8	97	0.00
91	T	d-Limonene	0.810	0.879	-8.5	95	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.519	0.560	-7.9	97	0.00
93	T	n-Undecane	1.248	1.332	-6.7	94	0.00
94	T	1,2,4-Trichlorobenzene	1.018	1.088	-6.9	95	0.00
95	T	Naphthalene	3.098	3.538	-14.2	96	0.00
96	T	n-Dodecane	1.159	1.246	-7.5	93	0.00
97	T	Hexachlorobutadiene	0.625	0.654	-4.6	95	0.00
98	T	Cyclohexanone	0.725	0.750	-3.4	93	0.00
99	T	tert-Butylbenzene	2.019	2.338	-15.8	97	0.00
100	T	n-Butylbenzene	2.251	2.550	-13.3	97	0.00

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141602.D Vial: 3
Acq On : 14 Sep 2016 5:40 Operator: EA
Sample : CCV R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

EA 9/14/16

Quant Time: Sep 14 09:45:13 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	149378	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.06	114	690584	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	288999	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.78	65	190575	11.821	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.56%				
57) Toluene-d8 (SS2)	15.50	98	712815	12.613	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.88%				
73) Bromofluorobenzene (SS3)	18.86	174	253570	12.670	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.36%				
Target Compounds							Qvalue
2) Propene	3.92	42	350542	22.679	ng		100
3) Dichlorodifluoromethan...	4.07	85	735167	24.609	ng		100
4) Chloromethane	4.35	50	521528	24.090	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	411974	26.199	ng		99
6) Vinyl Chloride	4.76	62	509420	25.828	ng		99
7) 1,3-Butadiene	5.02	54	357544	32.591	ng		98
8) Bromomethane	5.44	94	320686	26.503	ng		99
9) Chloroethane	5.77	64	268561	27.576	ng		100
10) Ethanol	6.15	45	1193374	130.595	ng		100
11) Acetonitrile	6.39	41	654324	22.995	ng		100
12) Acrolein	6.57	56	233820	24.002	ng		100
13) Acetone	6.78	58	1354246	126.933	ng		93
14) Trichlorofluoromethane	7.01	101	584644	24.301	ng		100
15) 2-Propanol (Isopropanol)	7.28	45	1708958	50.977	ng		99
16) Acrylonitrile	7.52	53	486915	25.723	ng		100
17) 1,1-Dichloroethene	7.96	96	365577	27.742	ng		94
18) 2-Methyl-2-Propanol (t...	8.14	59	1679221	53.181	ng		99
19) Methylene Chloride	8.19	84	376231	27.029	ng		93
20) 3-Chloro-1-propene (Al...	8.35	41	519066	25.289	ng		94
21) Trichlorotrifluoroethane	8.61	151	316855	26.511	ng		99
22) Carbon Disulfide	8.45	76	1375300	23.441	ng		100
23) trans-1,2-Dichloroethene	9.47	61	514995	27.522	ng		96
24) 1,1-Dichloroethane	9.72	63	625854	25.289	ng		100
25) Methyl tert-Butyl Ether	9.82	73	1037874	25.714	ng		99
26) Vinyl Acetate	9.99	86	448627	133.396	ng	#	84
27) 2-Butanone (MEK)	10.23	72	251645	27.591	ng	#	91
28) cis-1,2-Dichloroethene	10.75	61	483038	26.908	ng		97
29) Diisopropyl Ether	11.05	87	359686	28.102	ng	#	88
30) Ethyl Acetate	11.05	61	264409	55.123	ng		99
31) n-Hexane	11.03	57	534470	22.854	ng		99
32) Chloroform	11.09	83	608772	25.977	ng		100
34) Tetrahydrofuran (THF)	11.50	72	235206	23.842	ng		94
35) Ethyl tert-Butyl Ether	11.64	87	425847	27.406	ng		97
36) 1,2-Dichloroethane	11.89	62	400456	25.711	ng		100
38) 1,1,1-Trichloroethane	12.18	97	515364	26.588	ng		99
39) Isopropyl Acetate	12.62	61	456121	57.388	ng	#	92
40) 1-Butanol	12.63	56	712584	56.319	ng		97
41) Benzene	12.65	78	1391296	27.558	ng		100
42) Carbon Tetrachloride	12.81	117	458362	29.000	ng		100
43) Cyclohexane	12.95	84	1079897	54.155	ng		97
44) tert-Amyl Methyl Ether	13.30	73	1001669	26.751	ng		98
45) 1,2-Dichloropropane	13.51	63	356994	26.071	ng		99
46) Bromodichloromethane	13.70	83	487690	28.533	ng		100
47) Trichloroethene	13.75	130	391862	27.173	ng		99
48) 1,4-Dioxane	13.73	88	308804	29.184	ng		97
49) 2,2,4-Trimethylpentane...	13.83	57	1465581	25.065	ng		98
50) Methyl Methacrylate	13.97	100	295163	55.025	ng		98

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141602.D Vial: 3
Acq On : 14 Sep 2016 5:40 Operator: EA
Sample : CCV R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 14 09:45:13 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

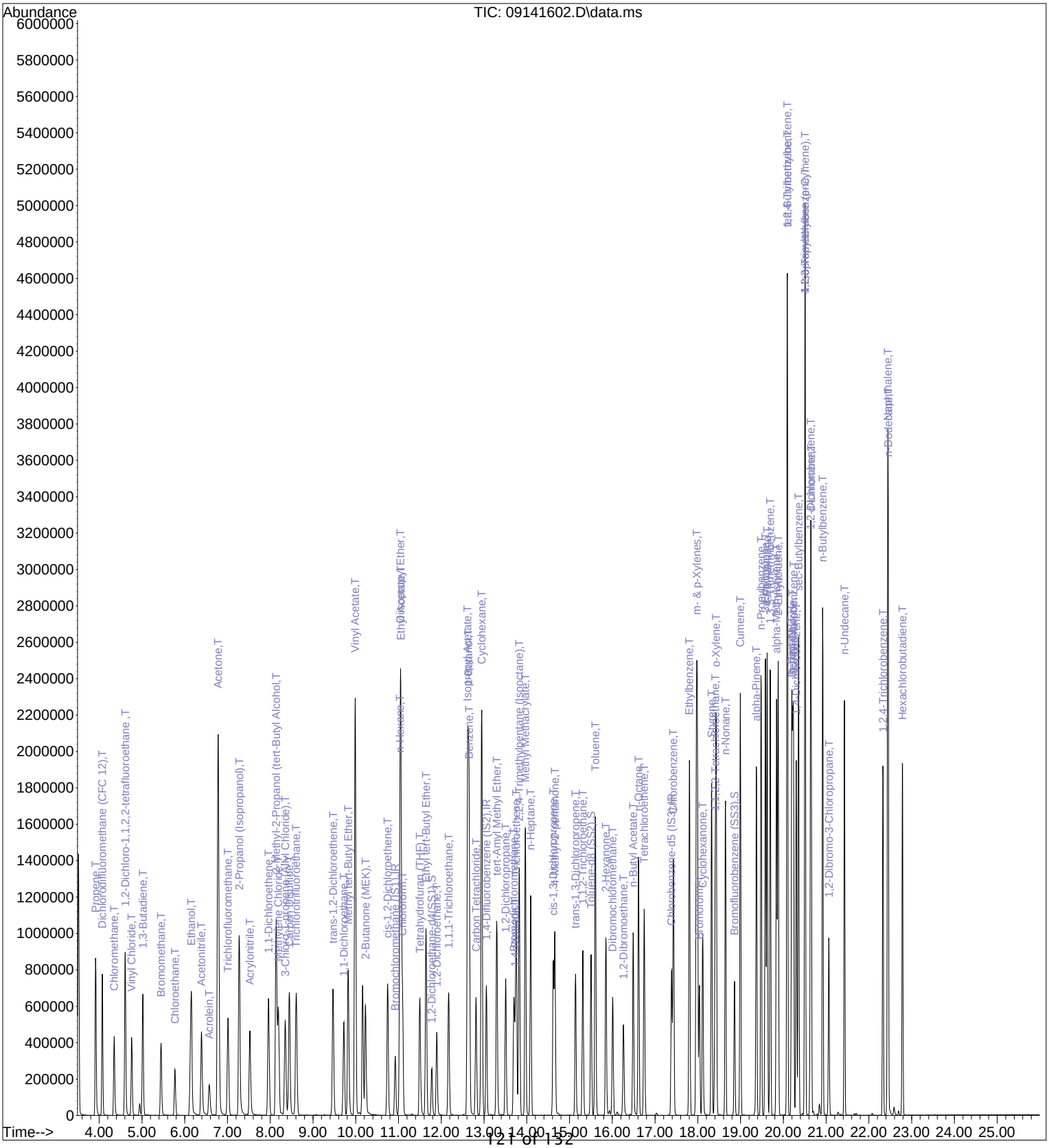
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	349956	27.102	ng	98
52) cis-1,3-Dichloropropene	14.62	75	606359	30.231	ng	100
53) 4-Methyl-2-pentanone	14.66	58	338285	27.551	ng	96
54) trans-1,3-Dichloropropene	15.14	75	521330	29.749	ng	100
55) 1,1,2-Trichloroethane	15.31	97	362303	28.217	ng	99
58) Toluene	15.60	91	1456763	25.991	ng	100
59) 2-Hexanone	15.85	43	742396	27.225	ng	98
60) Dibromochloromethane	16.01	129	431168	31.528	ng	100
61) 1,2-Dibromoethane	16.26	107	424568	29.795	ng	99
62) n-Butyl Acetate	16.49	43	829489	29.983	ng	98
63) n-Octane	16.61	57	296308	25.821	ng	98
64) Tetrachloroethene	16.75	166	416971	25.935	ng	100
65) Chlorobenzene	17.43	112	975084	27.729	ng	99
66) Ethylbenzene	17.80	91	1664289	27.764	ng	100
67) m- & p-Xylenes	17.98	91	2655678	56.339	ng	100
68) Bromoform	18.04	173	397946	29.942	ng	100
69) Styrene	18.32	104	1070891	29.362	ng	100
70) o-Xylene	18.43	91	1351566	27.954	ng	100
71) n-Nonane	18.65	43	642389	23.987	ng	98
72) 1,1,2,2-Tetrachloroethane	18.41	83	686842	27.825	ng	100
74) Cumene	18.99	105	1702988	27.549	ng	100
75) alpha-Pinene	19.37	93	860245	27.892	ng	100
76) n-Propylbenzene	19.48	91	2073095	27.219	ng	100
77) 3-Ethyltoluene	19.58	105	1705065	28.610	ng	100
78) 4-Ethyltoluene	19.62	105	1696493	29.370	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1431373	28.429	ng	100
80) alpha-Methylstyrene	19.84	118	764670	28.749	ng	100
81) 2-Ethyltoluene	19.88	105	1690741	29.068	ng	99
82) 1,2,4-Trimethylbenzene	20.09	105	1466796	30.449	ng	100
83) n-Decane	20.19	57	747312	26.439	ng	99
84) Benzyl Chloride	20.21	91	1344128	30.600	ng	100
85) 1,3-Dichlorobenzene	20.24	146	899555	30.876	ng	100
86) 1,4-Dichlorobenzene	20.30	146	902387	29.678	ng	100
87) sec-Butylbenzene	20.36	105	1968919	29.669	ng	100
88) 4-Isopropyltoluene (p-...	20.51	119	1762207	29.560	ng	100
89) 1,2,3-Trimethylbenzene	20.51	105	1534434	30.500	ng	100
90) 1,2-Dichlorobenzene	20.64	146	881652	31.486	ng	100
91) d-Limonene	20.65	68	528548	28.234	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.07	157	336661	28.069	ng	98
93) n-Undecane	21.43	57	777847	26.958	ng	99
94) 1,2,4-Trichlorobenzene	22.33	180	653780	27.769	ng	99
95) Naphthalene	22.44	128	2044874	28.545	ng	100
96) n-Dodecane	22.45	57	749280	27.957	ng	99
97) Hexachlorobutadiene	22.79	225	404503	27.995	ng	100
98) Cyclohexanone	18.11	55	485752	28.989	ng	98
99) tert-Butylbenzene	20.09	119	1419114	30.396	ng	100
100) n-Butylbenzene	20.92	91	1591883	30.583	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\14\09141602.D Vial: 3
Acq On : 14 Sep 2016 5:40 Operator: EA
Sample : CCV R13091416_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 14 09:45:13 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2016_09\15\09151602.D Vial: 3
Acq On : 15 Sep 2016 5:40 Operator: EA
Sample : CCV R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

EA 9/15/16

Quant Time: Sep 15 10:55:21 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	125	0.00
2	T	Propene	1.293	0.916	29.2	87	0.00
3	T	Dichlorodifluoromethane (CF	2.500	2.201	12.0	103	0.00
4	T	Chloromethane	1.812	1.480	18.3	92	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.316	1.305	0.8	115	0.00
6	T	Vinyl Chloride	1.650	1.479	10.4	99	0.00
7	T	1,3-Butadiene	0.918	1.039	-13.2	113	0.00
8	T	Bromomethane	1.013	1.027	-1.4	114	0.00
9	T	Chloroethane	0.815	0.812	0.4	118	0.00
10	T	Ethanol	0.765	0.651	14.9	93	0.00
11	T	Acetonitrile	2.381	1.726	27.5	87	0.00
12	T	Acrolein	0.815	0.640	21.5	98	0.00
13	T	Acetone	0.893	0.717	19.7	96	0.00
14	T	Trichlorofluoromethane	2.013	1.810	10.1	109	0.00
15	T	2-Propanol (Isopropanol)	2.805	2.237	20.2	89	0.00
16	T	Acrylonitrile	1.584	1.354	14.5	95	0.00
17	T	1,1-Dichloroethene	1.103	1.094	0.8	113	0.00
18	T	2-Methyl-2-Propanol (tert-B	2.642	2.276	13.9	94	0.00
19	T	Methylene Chloride	1.165	1.091	6.4	111	0.00
20	T	3-Chloro-1-propene (Allyl C	1.718	1.291	24.9	85	0.00
21	T	Trichlorotrifluoroethane	1.000	1.009	-0.9	119	0.00
22	T	Carbon Disulfide	4.910	4.276	12.9	106	0.00
23	T	trans-1,2-Dichloroethene	1.566	1.421	9.3	99	0.00
24	T	1,1-Dichloroethane	2.071	1.767	14.7	100	0.00
25	T	Methyl tert-Butyl Ether	3.378	3.001	11.2	104	0.00
26	T	Vinyl Acetate	0.281	0.272	3.2	108	0.00
27	T	2-Butanone (MEK)	0.763	0.718	5.9	104	0.00
28	T	cis-1,2-Dichloroethene	1.502	1.309	12.8	98	0.00
29	T	Diisopropyl Ether	1.071	1.027	4.1	107	0.00
30	T	Ethyl Acetate	0.401	0.356	11.2	97	0.00
31	T	n-Hexane	1.957	1.439	26.5	96	0.00
32	T	Chloroform	1.961	1.724	12.1	105	0.00
33	S	1,2-Dichloroethane-d4(SS1)	1.349	1.117	17.2	103	0.00
34	T	Tetrahydrofuran (THF)	0.826	0.707	14.4	104	0.00
35	T	Ethyl tert-Butyl Ether	1.300	1.265	2.7	107	0.00
36	T	1,2-Dichloroethane	1.303	1.094	16.0	96	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	123	0.00
38	T	1,1,1-Trichloroethane	0.351	0.336	4.3	106	0.00
39	T	Isopropyl Acetate	0.144	0.128	11.1	97	0.00
40	T	1-Butanol	0.229	0.192	16.2	92	0.00
41	T	Benzene	0.914	0.829	9.3	106	0.00
42	T	Carbon Tetrachloride	0.286	0.288	-0.7	108	0.00
43	T	Cyclohexane	0.361	0.347	3.9	107	0.00
44	T	tert-Amyl Methyl Ether	0.678	0.634	6.5	103	0.00
45	T	1,2-Dichloropropane	0.248	0.218	12.1	100	0.00
46	T	Bromodichloromethane	0.309	0.300	2.9	104	0.00
47	T	Trichloroethene	0.261	0.275	-5.4	116	0.00
48	T	1,4-Dioxane	0.192	0.194	-1.0	108	0.00
49	T	2,2,4-Trimethylpentane (Iso	1.058	0.890	15.9	96	0.00
50	T	Methyl Methacrylate	0.097	0.099	-2.1	111	0.00
51	T	n-Heptane	0.234	0.214	8.5	104	0.00
52	T	cis-1,3-Dichloropropene	0.363	0.356	1.9	102	0.00
53	T	4-Methyl-2-pentanone	0.222	0.197	11.3	96	0.00
54	T	trans-1,3-Dichloropropene	0.317	0.319	-0.6	102	0.00
55	T	1,1,2-Trichloroethane	0.232	0.236	-1.7	109	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2016_09\15\09151602.D Vial: 3
Acq On : 15 Sep 2016 5:40 Operator: EA
Sample : CCV R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 15 10:55:21 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
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	110	0.00
57	S	Toluene-d8 (SS2)	2.444	2.553	-4.5	117	0.00
58	T	Toluene	2.424	2.404	0.8	107	0.00
59	T	2-Hexanone	1.179	0.998	15.4	87	0.00
60	T	Dibromochloromethane	0.592	0.701	-18.4	110	0.00
61	T	1,2-Dibromoethane	0.616	0.699	-13.5	109	0.00
62	T	n-Butyl Acetate	1.197	1.114	6.9	86	0.00
63	T	n-Octane	0.496	0.456	8.1	95	0.00
64	T	Tetrachloroethene	0.695	0.791	-13.8	116	0.00
65	T	Chlorobenzene	1.521	1.620	-6.5	109	0.00
66	T	Ethylbenzene	2.593	2.704	-4.3	105	0.00
67	T	m- & p-Xylenes	2.039	2.167	-6.3	104	0.00
68	T	Bromoform	0.575	0.685	-19.1	113	0.00
69	T	Styrene	1.578	1.736	-10.0	106	0.00
70	T	o-Xylene	2.091	2.245	-7.4	104	0.00
71	T	n-Nonane	1.158	0.947	18.2	86	0.00
72	T	1,1,2,2-Tetrachloroethane	1.068	1.144	-7.1	103	0.00
73	S	Bromofluorobenzene (SS3)	0.866	0.966	-11.5	119	0.00
74	T	Cumene	2.674	2.907	-8.7	105	0.00
75	T	alpha-Pinene	1.334	1.419	-6.4	103	0.00
76	T	n-Propylbenzene	3.294	3.490	-6.0	103	0.00
77	T	3-Ethyltoluene	2.578	2.804	-8.8	104	0.00
78	T	4-Ethyltoluene	2.498	2.760	-10.5	105	0.00
79	T	1,3,5-Trimethylbenzene	2.178	2.355	-8.1	104	0.00
80	T	alpha-Methylstyrene	1.150	1.287	-11.9	103	0.00
81	T	2-Ethyltoluene	2.516	2.765	-9.9	104	0.00
82	T	1,2,4-Trimethylbenzene	2.084	2.342	-12.4	102	0.00
83	T	n-Decane	1.223	1.152	5.8	93	0.00
84	T	Benzyl Chloride	1.900	2.049	-7.8	100	0.00
85	T	1,3-Dichlorobenzene	1.260	1.461	-16.0	107	0.00
86	T	1,4-Dichlorobenzene	1.315	1.507	-14.6	108	0.00
87	T	sec-Butylbenzene	2.870	3.127	-9.0	103	0.00
88	T	4-Isopropyltoluene (p-Cymen	2.579	2.939	-14.0	103	0.00
89	T	1,2,3-Trimethylbenzene	2.176	2.433	-11.8	102	0.00
90	T	1,2-Dichlorobenzene	1.211	1.432	-18.2	107	0.00
91	T	d-Limonene	0.810	0.804	0.7	95	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.519	0.565	-8.9	107	0.00
93	T	n-Undecane	1.248	1.189	4.7	92	0.00
94	T	1,2,4-Trichlorobenzene	1.018	1.100	-8.1	105	0.00
95	T	Naphthalene	3.098	3.417	-10.3	101	0.00
96	T	n-Dodecane	1.159	1.103	4.8	90	0.00
97	T	Hexachlorobutadiene	0.625	0.654	-4.6	104	0.00
98	T	Cyclohexanone	0.725	0.687	5.2	93	0.00
99	T	tert-Butylbenzene	2.019	2.283	-13.1	104	0.00
100	T	n-Butylbenzene	2.251	2.414	-7.2	101	0.00

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151602.D Vial: 3
Acq On : 15 Sep 2016 5:40 Operator: EA
Sample : CCV R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

EA 9/15/16

Quant Time: Sep 15 10:55:21 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	175734	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.06	114	808249	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	316719	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.78	65	196381	10.354	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 82.80%				
57) Toluene-d8 (SS2)	15.50	98	808578	13.055	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.40%				
73) Bromofluorobenzene (SS3)	18.86	174	305962	13.950	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.60%				
Target Compounds							Qvalue
2) Propene	3.92	42	331667	18.240	ng		99
3) Dichlorodifluoromethan...	4.07	85	773429	22.007	ng		100
4) Chloromethane	4.35	50	509773	20.016	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	472482	25.541	ng		99
6) Vinyl Chloride	4.76	62	519702	22.398	ng		99
7) 1,3-Butadiene	5.02	54	387249	30.004	ng		94
8) Bromomethane	5.44	94	361023	25.362	ng		100
9) Chloroethane	5.77	64	288193	25.154	ng		100
10) Ethanol	6.15	45	1158013	107.720	ng		100
11) Acetonitrile	6.39	41	618744	18.484	ng		100
12) Acrolein	6.57	56	240872	21.018	ng		100
13) Acetone	6.78	58	1352875	107.787	ng	#	84
14) Trichlorofluoromethane	7.01	101	629832	22.253	ng		99
15) 2-Propanol (Isopropanol)	7.27	45	1643013	41.659	ng		99
16) Acrylonitrile	7.52	53	490210	22.013	ng		99
17) 1,1-Dichloroethene	7.96	96	411244	26.527	ng	#	84
18) 2-Methyl-2-Propanol (t...	8.13	59	1672235	45.017	ng		97
19) Methylene Chloride	8.19	84	413953	25.279	ng		81
20) 3-Chloro-1-propene (Al...	8.35	41	489944	20.290	ng		84
21) Trichlorotrifluoroethane	8.61	151	383067	27.244	ng		92
22) Carbon Disulfide	8.45	76	1472872	21.339	ng		100
23) trans-1,2-Dichloroethene	9.46	61	529297	24.044	ng		88
24) 1,1-Dichloroethane	9.72	63	645863	22.184	ng		100
25) Methyl tert-Butyl Ether	9.82	73	1107390	23.321	ng		97
26) Vinyl Acetate	9.99	86	485276	122.653	ng	#	53
27) 2-Butanone (MEK)	10.23	72	269881	25.152	ng	#	73
28) cis-1,2-Dichloroethene	10.75	61	492271	23.310	ng		88
29) Diisopropyl Ether	11.05	87	389679	25.880	ng	#	63
30) Ethyl Acetate	11.05	61	264948	46.951	ng		95
31) n-Hexane	11.03	57	525985	19.118	ng		98
32) Chloroform	11.09	83	648417	23.519	ng		100
34) Tetrahydrofuran (THF)	11.50	72	253631	21.854	ng	#	83
35) Ethyl tert-Butyl Ether	11.64	87	466781	25.535	ng	#	88
36) 1,2-Dichloroethane	11.89	62	403619	22.027	ng		100
38) 1,1,1-Trichloroethane	12.17	97	559602	24.667	ng		97
39) Isopropyl Acetate	12.62	61	456937	49.121	ng	#	80
40) 1-Butanol	12.63	56	700053	47.274	ng		91
41) Benzene	12.65	78	1487709	25.178	ng		100
42) Carbon Tetrachloride	12.81	117	503009	27.192	ng		99
43) Cyclohexane	12.95	84	1173287	50.273	ng		90
44) tert-Amyl Methyl Ether	13.30	73	1066291	24.331	ng		95
45) 1,2-Dichloropropane	13.51	63	370170	23.098	ng		100
46) Bromodichloromethane	13.70	83	518893	25.939	ng		100
47) Trichloroethene	13.75	130	457092	27.082	ng		99
48) 1,4-Dioxane	13.73	88	339221	27.391	ng		91
49) 2,2,4-Trimethylpentane...	13.82	57	1481119	21.643	ng		95
50) Methyl Methacrylate	13.97	100	333718	53.156	ng	#	87

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151602.D Vial: 3
Acq On : 15 Sep 2016 5:40 Operator: EA
Sample : CCV R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 15 10:55:21 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

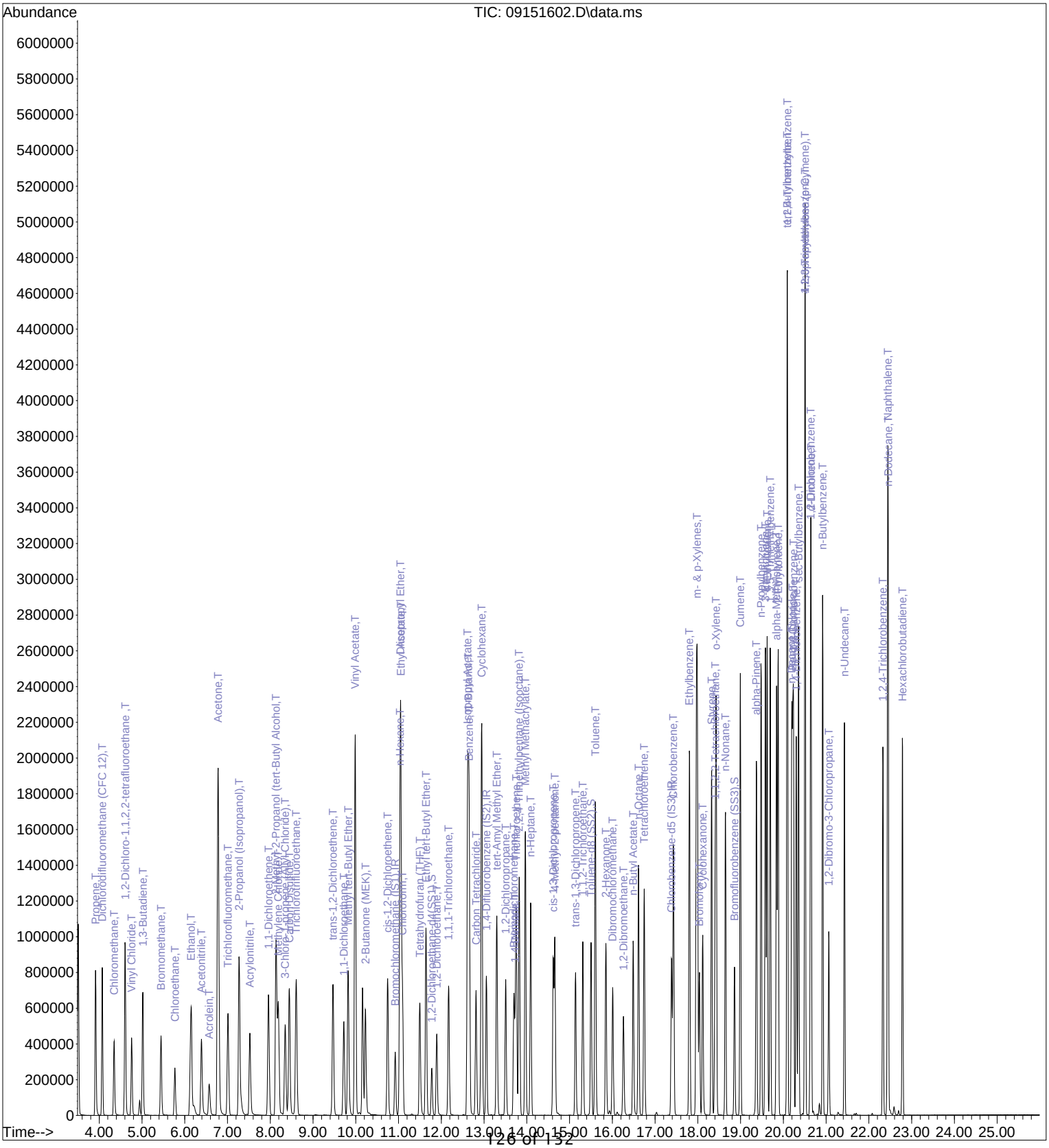
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	370568	24.520	ng	94
52) cis-1,3-Dichloropropene	14.62	75	644389	27.450	ng	100
53) 4-Methyl-2-pentanone	14.66	58	344420	23.967	ng	87
54) trans-1,3-Dichloropropene	15.14	75	551395	26.884	ng	100
55) 1,1,2-Trichloroethane	15.31	97	400785	26.670	ng	97
58) Toluene	15.60	91	1598808	26.029	ng	100
59) 2-Hexanone	15.85	43	701373	23.470	ng	92
60) Dibromochloromethane	16.01	129	488167	32.572	ng	99
61) 1,2-Dibromoethane	16.26	107	473552	30.324	ng	99
62) n-Butyl Acetate	16.49	43	783052	25.827	ng	93
63) n-Octane	16.61	57	297684	23.671	ng	90
64) Tetrachloroethene	16.74	166	496073	28.154	ng	100
65) Chlorobenzene	17.43	112	1097915	28.490	ng	100
66) Ethylbenzene	17.80	91	1798493	27.377	ng	99
67) m- & p-Xylenes	17.98	91	2854899	55.264	ng	99
68) Bromoform	18.04	173	464006	31.856	ng	100
69) Styrene	18.32	104	1187289	29.705	ng	98
70) o-Xylene	18.43	91	1450380	27.372	ng	98
71) n-Nonane	18.64	43	605880	20.644	ng	90
72) 1,1,2,2-Tetrachloroethane	18.41	83	724707	26.789	ng	100
74) Cumene	18.99	105	1859741	27.452	ng	99
75) alpha-Pinene	19.37	93	925790	27.390	ng	98
76) n-Propylbenzene	19.48	91	2211002	26.489	ng	98
77) 3-Ethyltoluene	19.58	105	1847463	28.286	ng	99
78) 4-Ethyltoluene	19.62	105	1835552	28.997	ng	99
79) 1,3,5-Trimethylbenzene	19.69	105	1551220	28.113	ng	99
80) alpha-Methylstyrene	19.84	118	839885	28.813	ng	99
81) 2-Ethyltoluene	19.88	105	1821269	28.572	ng	100
82) 1,2,4-Trimethylbenzene	20.09	105	1542575	29.219	ng	99
83) n-Decane	20.19	57	736846	23.788	ng	96
84) Benzyl Chloride	20.21	91	1401956	29.124	ng	97
85) 1,3-Dichlorobenzene	20.24	146	999402	31.300	ng	100
86) 1,4-Dichlorobenzene	20.30	146	1002580	30.088	ng	100
87) sec-Butylbenzene	20.36	105	2099878	28.873	ng	99
88) 4-Isopropyltoluene (p-...	20.51	119	1861437	28.491	ng	99
89) 1,2,3-Trimethylbenzene	20.51	105	1602655	29.068	ng	100
90) 1,2-Dichlorobenzene	20.64	146	970674	31.632	ng	100
91) d-Limonene	20.65	68	529380	25.804	ng	96
92) 1,2-Dibromo-3-Chloropr...	21.06	157	371883	28.292	ng	90
93) n-Undecane	21.43	57	760958	24.065	ng	96
94) 1,2,4-Trichlorobenzene	22.33	180	724793	28.091	ng	100
95) Naphthalene	22.44	128	2164197	27.567	ng	100
96) n-Dodecane	22.45	57	726616	24.739	ng	96
97) Hexachlorobutadiene	22.79	225	443195	27.988	ng	100
98) Cyclohexanone	18.11	55	487134	26.527	ng	92
99) tert-Butylbenzene	20.09	119	1518503	29.678	ng	99
100) n-Butylbenzene	20.92	91	1651502	28.952	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2016_09\15\09151602.D Vial: 3
Acq On : 15 Sep 2016 5:40 Operator: EA
Sample : CCV R13091516_25ng Inst : MS13
Misc : S29-08301601/S29-08311601 (9/29)

Quant Time: Sep 15 10:55:21 2016
Quant Method : I:\MS13\METHODS\R13090816.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 12 15:30:59 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

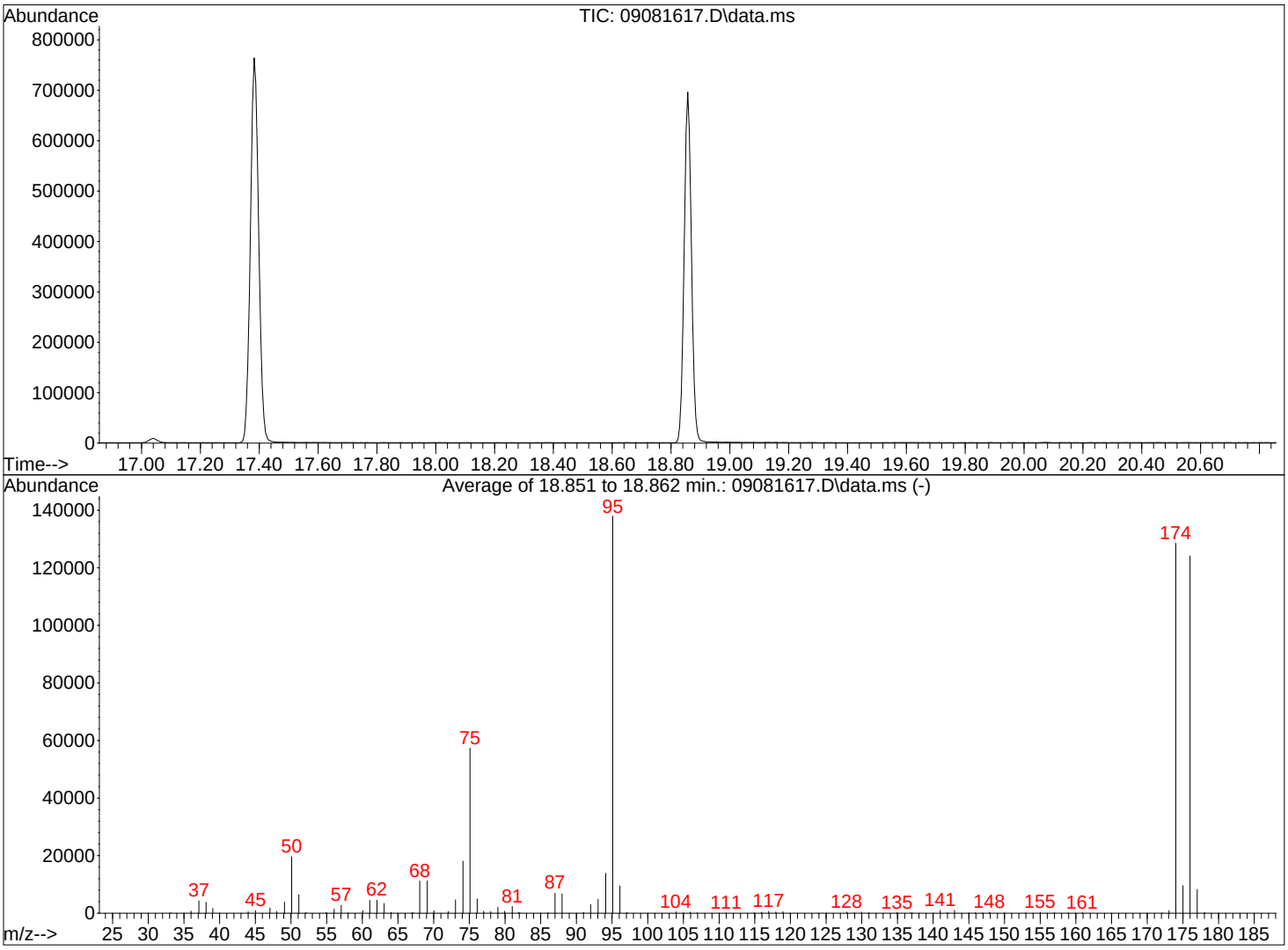


Data Path : I:\MS13\DATA\2016_09\08\
Data File : 09081617.D
Acq On : 8 Sep 2016 21:05
Operator : EA
Sample : 12.5ng TO15 BFB STD
Misc : S29-08301601
ALS Vial : 3 Sample Multiplier: 1

EA 9/9/16

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13090816.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Sep 09 09:43:51 2016



AutoFind: Scans 2794, 2795, 2796; Background Corrected with Scan 2786

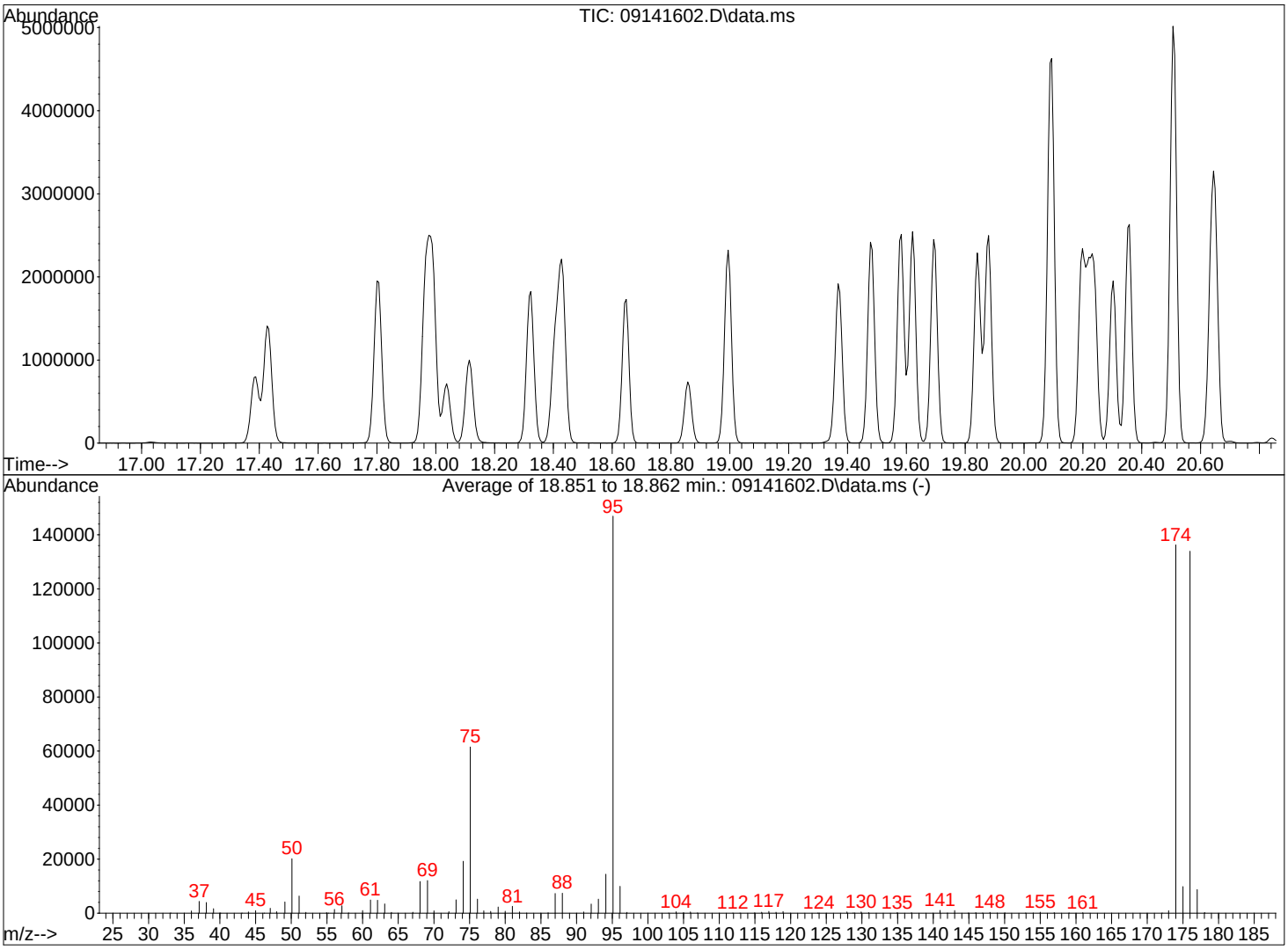
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	14.2	19619	PASS
75	95	30	66	41.6	57347	PASS
95	95	100	100	100.0	137925	PASS
96	95	5	9	6.9	9479	PASS
173	174	0.00	2	0.7	940	PASS
174	95	50	120	93.2	128549	PASS
175	174	4	9	7.5	9601	PASS
176	174	93	101	96.6	124128	PASS
177	176	5	9	6.6	8235	PASS

Data Path : I:\MS13\DATA\2016_09\14\
Data File : 09141602.D
Acq On : 14 Sep 2016 5:40
Operator : EA
Sample : CCV R13091416_25ng
Misc : S29-08301601/S29-08311601 (9/29)
ALS Vial : 3 Sample Multiplier: 1

EA 9/14/16

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13090816.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Sep 12 15:30:59 2016



AutoFind: Scans 2794, 2795, 2796; Background Corrected with Scan 2786

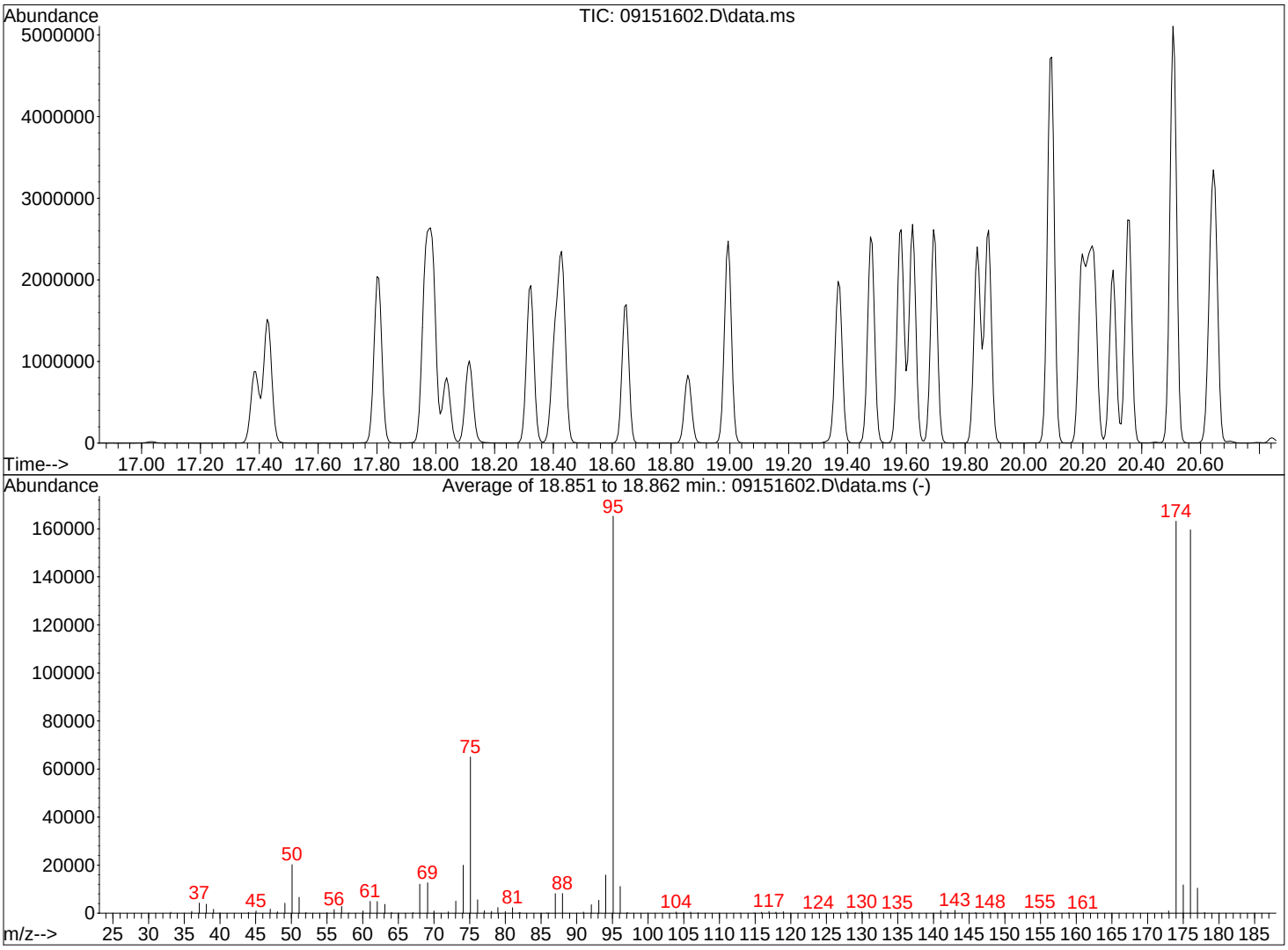
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	13.7	20149	PASS
75	95	30	66	41.9	61501	PASS
95	95	100	100	100.0	146901	PASS
96	95	5	9	6.8	9930	PASS
173	174	0.00	2	0.7	951	PASS
174	95	50	120	92.8	136275	PASS
175	174	4	9	7.2	9849	PASS
176	174	93	101	98.3	133912	PASS
177	176	5	9	6.5	8751	PASS

Data Path : I:\MS13\DATA\2016_09\15\
Data File : 09151602.D
Acq On : 15 Sep 2016 5:40
Operator : EA
Sample : CCV R13091516_25ng
Misc : S29-08301601/S29-08311601 (9/29)
ALS Vial : 3 Sample Multiplier: 1

EA 9/15/16

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13090816.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Sep 12 15:30:59 2016



AutoFind: Scans 2794, 2795, 2796; Background Corrected with Scan 2786

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	12.2	20235	PASS
75	95	30	66	39.4	65027	PASS
95	95	100	100	100.0	165248	PASS
96	95	5	9	6.8	11162	PASS
173	174	0.00	2	0.6	923	PASS
174	95	50	120	98.7	163136	PASS
175	174	4	9	7.2	11796	PASS
176	174	93	101	97.8	159595	PASS
177	176	5	9	6.5	10428	PASS

Injection Log

Directory: J:\MS13\DATA\2016_09\08\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	9/8/16 9:58	09081601.D	BLANK	S29-08301601	EA	4	
2	9/8/16 10:32	09081602.D	CCV R13090816_25ng	S29-08301601/S29-08311601 (9/29)	EA	3	Passed w/ exception
3	9/8/16 12:02	09081603.D	SC01736-FCA00692	0.5 + tics	EA	5	x
4	9/8/16 12:37	09081604.D	SC02039-FCA01063	0.5 + tics	EA	6	x
5	9/8/16 13:12	09081605.D	SSC00019-FCS00094	0.5 no tics	EA	7	x
6	9/8/16 13:47	09081606.D	SC00699-FCA00541	0.5 no tics	EA	8	x
7	9/8/16 14:32	09081607.D	MRL R13090816_0.4ng	S29-08301601	EA	12	
8	9/8/16 15:07	09081608.D	100ng test	S29-08301601	EA	16	
9	9/8/16 16:28	09081609.D	SC01599 (1000ml)	S29-08301601	EA	5	
10	9/8/16 17:03	09081610.D	0.1ng test	S29-08301601	EA	13	
11	9/8/16 17:38	09081611.D	100ng test	S29-08301601	EA	16	
12	9/8/16 18:11	09081612.D	SC01915 (1000ml)	S29-08301601	EA	6	
13	9/8/16 18:46	09081613.D	SC01693 (1000ml)	S29-08301601	EA	7	
14	9/8/16 19:21	09081614.D	SC01804 (1000ml)	S29-08301601	EA	8	
15	9/8/16 19:55	09081615.D	SC01980 (1000ml)	S29-08301601	EA	9	
16	9/8/16 20:30	09081616.D	SC00282 (1000ml)	S29-08301601	EA	10	
17	9/8/16 21:05	09081617.D	12.5ng TO15 BFB STD	S29-08301601	EA	3	BFB passed
18	9/8/16 21:39	09081618.D	0.08ng TO15 ICAL STD	S29-08301601/S29-08311610 (9/29)	EA	13	
19	9/8/16 22:14	09081619.D	0.1ng TO15 ICAL STD	S29-08301601/S29-08311610 (9/29)	EA	13	
20	9/8/16 22:49	09081620.D	0.2ng TO15 ICAL STD	S29-08301601/S29-08311610 (9/29)	EA	13	
21	9/8/16 23:24	09081621.D	0.4ng TO15 ICAL STD	S29-08301601/S29-08311610 (9/29)	EA	13	
22	9/8/16 23:59	09081622.D	1.0ng TO15 ICAL STD	S29-08301601/S29-08311606 (9/29)	EA	14	ICAL saved as
23	9/9/16 0:34	09081623.D	5.0ng TO15 ICAL STD	S29-08301601/S29-08311606 (9/29)	EA	14	R13090816.M
24	9/9/16 1:09	09081624.D	25ng TO15 ICAL STD	S29-08301601/S29-08311601 (9/29)	EA	3	
25	9/9/16 1:44	09081625.D	50ng TO15 ICAL STD	S29-08301601/S29-08311601 (9/29)	EA	3	
26	9/9/16 2:19	09081626.D	100ng TO15 ICAL STD	S29-08301601/S29-08311601 (9/29)	EA	3	
27	9/9/16 2:54	09081627.D	25ng TO15 ICV STD	S29-08301601/S29-08221603 (9/20)	EA	3	passed
28	9/9/16 3:28	09081628.D	25ng TO15 ICV STD	S29-08301601/S29-08221603 (9/20)	EA	3	not used
29							
30							
31							
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43							

EA 9/9/16

Injection Log

Directory: I:\MS13\DATA\2016_09\14\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	9/14/16 5:05	09141601.D	CCV M13091416_25ng	S29-08301601/S29-08151602 (10/12)	EA	15	not used
2	9/14/16 5:40	09141602.D	CCV R13091416_25ng	S29-08301601/S29-08311601 (9/29)	EA	3	Passed
3	9/14/16 6:14	09141603.D	MB R13091416_1000mL	S29-08301601_AC00880	EA	3	Passed
4	9/14/16 6:49	09141604.D	LCS R13091416_25ng	S29-08301601/S29-09061604 (10/5)	EA	3	Passed
5	9/14/16 7:24	09141605.D	LCSD R13091416_25ng	S29-08301601/S29-09061604 (10/5)	EA	3	Passed
6	9/14/16 7:59	09141606.D	lab air (1000ml)	S29-08301601	EA	2	
7	9/14/16 9:47	09141607.D	P1604358-003dil (5.0ml)	S29-08301601	EA	4	
8	9/14/16 11:08	09141608.D	P1604393-001 (2.0ml)	S29-08301601	EA	4	
9	9/14/16 11:43	09141609.D	P1604394-001 (1.0ml)	S29-08301601	EA	4	
10	9/14/16 12:22	09141610.D	SSC00106-OA01263 (1000mL)	73409	EA	5	
11	9/14/16 12:57	09141611.D	SSC00121-OA02072 (1000mL)	73409	EA	6	
12	9/14/16 13:32	09141612.D	SC00980-OA01458 (1000mL)	73409	EA	7	
13	9/14/16 15:43	09141613.D	P1604364-001 (700ml)	S29-08301601	EA	5	
14	9/14/16 16:18	09141614.D	P1604364-002 (25ml)	S29-08301601	EA	6	
15	9/14/16 16:53	09141615.D	P1604364-003 (30ml)	S29-08301601	EA	12	
16	9/14/16 17:27	09141616.D	P1604364-004 (40ml)	S29-08301601	EA	8	
17	9/14/16 18:04	09141617.D	SSC00136-OA00772 (1000mL)	73409	EA	5	
18	9/14/16 18:39	09141618.D	SC00925-OA01876 (1000mL)	73409	EA	6	
19	9/14/16 19:14	09141619.D	SC00907-OA02091 (1000mL)	73409	EA	7	
20	9/14/16 19:49	09141620.D	P1604364-005 (1000ml)	S29-08301601	EA	9	
21	9/14/16 20:24	09141621.D	P1604380-001 (400ml)	S29-08301601	EA	10	
22	9/14/16 20:59	09141622.D	xP1604380-002 (20ml)	S29-08301601	EA	11	overdilute
23	9/14/16 21:34	09141623.D	xP1604380-002dup (20ml)	S29-08301601	EA	11	overdilute
24	9/14/16 22:09	09141624.D	SSC00361-OA01576 (1000mL)	73409	EA	13	
25	9/14/16 22:44	09141625.D	SC00659-OA00765 (1000mL)	73409	EA	14	
26	9/14/16 23:19	09141626.D	SSC00122-OA00754 (1000mL)	73409	EA	1	
27	9/14/16 23:54	09141627.D	P1604364-004dup (40ml)	S29-08301601	EA	8	pass as dup

EA 9/15/16

Injection Log

Directory: I:\MS13\DATA\2016_09\15\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	9/15/16 5:05	09151601.D	CCV M13091516_25ng	S29-08301601/S29-08151602 (10/12)	EA	15	not used
2	9/15/16 5:40	09151602.D	CCV R13091516_25ng	S29-08301601/S29-08311601 (9/29)	EA	3	Passed
3	9/15/16 6:14	09151603.D	MB R13091516_1000mL	S29-08301601_AC00880	EA	3	Passed
4	9/15/16 6:49	09151604.D	LCS R13091516_25ng	S29-08301601/S29-09061604 (10/5)	EA	3	Passed
5	9/15/16 7:24	09151605.D	LCSD R13091516_25ng	S29-08301601/S29-09061604 (10/5)	EA	3	Passed
6	9/15/16 7:59	09151606.D	lab air (1000ml)	S29-08301601	EA	2	
7	9/15/16 11:26	09151607.D	P1604380-002 (400ml)	S29-08301601	EA	11	
8	9/15/16 12:11	09151608.D	P1604406-001 (100ml)	S29-08301601	EA	7	
9	9/15/16 13:04	09151609.D	P1604408-001 (7.0ml)	S29-08301601	EA	4	
10	9/15/16 13:39	09151610.D	xP1604408-002 (35ml)	can closed	EA	5	not used
11	9/15/16 14:13	09151611.D	xP1604398-001 (1000ml)	can closed	EA	6	not used
12	9/15/16 14:58	09151612.D	P1604408-001dil (1.0ml)	S29-08301601	EA	4	
13	9/15/16 15:33	09151613.D	P1604408-002 (35ml)	S29-08301601	EA	5	
14	9/15/16 16:08	09151614.D	P1604398-001 (1000ml)	S29-08301601	EA	6	
15	9/15/16 16:43	09151615.D	P1604398-002 (1000ml)	S29-08301601	EA	7	
16	9/15/16 17:18	09151616.D	P1604398-003 (1000ml)	S29-08301601	EA	8	
17	9/15/16 17:52	09151617.D	SC01889-OA01562 (1000mL)	S29-08301601	EA	9	
18	9/15/16 18:27	09151618.D	P1604398-003dil (1000ml)	S29-08301601	EA	8	
19	9/15/16 19:02	09151619.D	SSC00354-OA01210 (1000mL)	S29-08301601	EA	10	
20	9/15/16 19:37	09151620.D	SSC00280-OA00505 (1000mL)	S29-08301601	EA	11	
21	9/15/16 20:12	09151621.D	P1604408-002dup (35ml)	S29-08301601	EA	5	pass as dup
22	9/15/16 20:47	09151622.D	AS01147-OA01123 (1000mL)	S29-08301601	EA	12	
23	9/15/16 21:22	09151623.D	SC01958-OA01178 (1000mL)	S29-08301601	EA	13	
24	9/15/16 21:56	09151624.D	SSC00211-OA00996 (1000mL)	S29-08301601	EA	14	

EA 9/16/16

ATTACHMENT 5

Tier 2 Screening Risk Assessment Report
(Version 8.0 & Attachment M, Revision March 2016) – Risk Tool (V1.02)

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GLOSSARY – SCAQMD TIER 2 SCREENING RISK ASSESSMENT REPORT

CEF	Combined Exposure Factor. The CEF for each exposure type (residential, worker) combines the default exposure parameters for Daily Breathing Rate, Age Sensitivity Factor, Exposure Duration, Fraction of Time Spent at Home, Exposure Frequency, and Averaging Time into a single value.
CP	Cancer Potency. The CP factors are developed as estimates of cancer risk from exposure to a lifetime dose (i.e., 70 years) of a carcinogen.
HIA	Acute Hazard Index. Total non-cancer health risk due to short term exposures (based upon a maximum one-hour emission level).
HIC	Chronic Hazard Index. Total non-cancer health risk due to long term exposures (based upon an annual average emission per year).
HIC 8-hr	8-Hour Chronic Hazard Index. Total non-cancer health risk due to chronic daily 8-hour exposures (e.g., a typical worker or resident exposed to a facility that operates equal to or more than 8 hours per day and 5 days per week); based upon the daily average 8-hour exposure only for those chemicals with 8-hour RELs. There are currently only a limited number of substances with an 8-hour inhalation REL.
MICR	Maximum Individual Cancer Risk – estimate of the increased risk of cancer for an individual exposed to the maximum predicted long-term toxic air contaminant concentration.
MP	Multi-Pathway Adjustment Factor – used for substances that may contribute to risk from exposure pathways other than inhalation. These substances deposit on the ground in particulate form and contribute to risk through ingestion of soil or backyard garden vegetables or through other routes.
MWAF	Molecular Weight Adjustment Factor. The MWAF ensures that the cancer potency factor is applied only to the fraction of the overall weight of the emissions that are associated with health effects of particular metals.
Q(lb/hr)	maximum hourly emission rate, used for calculation of acute exposure
Q(ton/yr)	maximum yearly emission rate, used for calculation of chronic exposure
R1	uncontrolled emission rate (pounds/hour)
R2	controlled emission rate (pounds/hour) calculated based on the Control Efficiency entered in the Emissions Worksheet
REL	Reference Exposure Level – a concentration level ($\mu g/m^3$) or dose (mg/kg-day) at which no adverse health effects are anticipated.
X/Q	Chronic dispersion factor. Dispersion factors are numerical estimates of the amount of dispersion that occurs under specific conditions. The dispersion factor is calculated in the model based on the chosen meteorological station, source characteristics (i.e., stack height) and the receptor distance.
X/Qmax	Peak hourly dispersion factor. Dispersion factors are numerical estimates of the amount of dispersion that occurs under specific conditions. The dispersion factor is calculated in the model based on the chosen meteorological station, source characteristics (i.e., stack height) and the receptor distance.

T-BACT	Best Available Control Technology for Toxics – is not required if the MICR is less than or equal to one in one million. If cancer risk is greater than one in a million, T-BACT is required and must reduce risk to less than or equal to 10 in a million.
WAF	Worker Adjustment Factor – the ratio between residential exposure and facility schedule, used to model a non-continuously emitting source. For screening purposes, the offsite worker schedule is assumed to always overlap with the facility's operating schedule.

TIER 2 SCREENING RISK ASSESSMENT REPORT

(Version 8.0 & Attachment M, Revision Mar 2016) - RiskTool (V1.02)

A/N: 123456 **Application deemed complete date:** 4/1/2016

Fac: maco Superfund Site

2. Tier 2 Data

Equipment Type	Other		No T-BACT			
Operation Schedule	24	hours/day;	7	days/week;	52	weeks/year
Stack Height	25	ft				
Distance - Residential	75	m				
Distance - Commercial	25	m				
Meteorological Station	Pico Rivera					

Dispersion Factors tables	Point Source
For Chronic X/Q	Table 3
For Acute X/Q max	Table 6

Dilution Factors

Receptor	X/Q (µg/m³)/(tons/yr)	X/Qmax (µg/m³)/(lbs/hr)
Residential	5.234	175.963
Commercial - Worker	25.453	507.650

Adjustment and Intake Factors

	Residential	Worker
Year of Exposure	30	
Combined Exposure Factor (CEF) - Table 9.1 & 9.2	676.63	56.26
Worker Adjustment Factor (WAF) - Table 10	1	1.00

3. Rule 1401 Compound Data

Compound	R1 - Uncontrolled (lbs/hr)	R2 - Controlled (lbs/hr)	CP (mg/kg-day)$^{-1}$	MP MICR Resident	MP MICR Worker	MP Chronic Resident	MP Chronic Worker	REL Chronic (µg/m³)	REL 8-hr Chronic (µg/m³)	REL Acute (µg/m³)	MWAF
Methyl Chloroform (1,1,1-Trichloroethane)				1.00	1.00	1.00	1.00	1.00E+03		6.80E+04	1
1,1,-Dichloroethane (Ethylidene Dichloride)			5.70E-03	1.00	1.00	1.00	1.00				1
Vinylidene Chloride (1,1-Dichloroethylene)				1.00	1.00	1.00	1.00	7.00E+01			1
Ethylene Dichloride (1,2-Dichloroethane)			7.20E-02	1.00	1.00	1.00	1.00	4.00E+02			1
p-Dichlorobenzene			4.00E-02	1.00	1.00	1.00	1.00	8.00E+02			1
1,4-Dioxane (1,4-Diethylene Dioxide)			2.70E-02	1.00	1.00	1.00	1.00	3.00E+03		3.00E+03	1
Methyl Ethyl Ketone (2-Butanone)	2.31E-06	2.31E-06		1.00	1.00	1.00	1.00			1.30E+04	1
Acrolein				1.00	1.00	1.00	1.00	3.50E-01	7.00E-01	2.50E+00	1
Benzene			1.00E-01	1.00	1.00	1.00	1.00	3.00E+00	3.00E+00	2.70E+01	1
Carbon Disulfide				1.00	1.00	1.00	1.00	8.00E+02		6.20E+03	1
Carbon Tetrachloride (Tetrachloromethane)			1.50E-01	1.00	1.00	1.00	1.00	4.00E+01		1.90E+03	1
Chloroform			1.90E-02	1.00	1.00	1.00	1.00	3.00E+02		1.50E+02	1
Ethyl Benzene			8.70E-03	1.00	1.00	1.00	1.00	2.00E+03			1
Methylene Chloride (Dichloromethane)			3.50E-03	1.00	1.00	1.00	1.00	4.00E+02		1.40E+04	1
n-Hexane				1.00	1.00	1.00	1.00	7.00E+03			1
Naphthalene			1.20E-01	1.00	1.00	1.00	1.00	9.00E+00			1
Propylene (Propene)				1.00	1.00	1.00	1.00	3.00E+03			1
Styrene				1.00	1.00	1.00	1.00	9.00E+02		2.10E+04	1
Perchloroethylene (Tetrachloroethylene)			2.10E-02	1.00	1.00	1.00	1.00	3.50E+01		2.00E+04	1
Toluene				1.00	1.00	1.00	1.00	3.00E+02		3.70E+04	1
Trichloroethylene			7.00E-03	1.00	1.00	1.00	1.00	6.00E+02			1
Vinyl Acetate				1.00	1.00	1.00	1.00	2.00E+02			1
Vinyl Chloride (Chloroethylene)			2.70E-01	1.00	1.00	1.00	1.00			1.80E+05	1
o-Xylene				1.00	1.00	1.00	1.00	7.00E+02		2.20E+04	1
Xylenes (Mixed Isomers)				1.00	1.00	1.00	1.00	7.00E+02		2.20E+04	1
Isopropyl Alcohol (Isopropanol)				1.00	1.00	1.00	1.00	7.00E+03		3.20E+03	1

4. Emission Calculations

Compound	R1 (lbs/hr)	R2 (lbs/hr)	R2 (lbs/yr)	R2 (tons/yr)
Methyl Chloroform (1,1,1-Trichloroethane)				
1,1,-Dichloroethane (Ethylidene Dichloride)				
Vinylidene Chloride (1,1-Dichloroethylene)				
Ethylene Dichloride (1,2-Dichloroethane)				
p-Dichlorobenzene				
1,4-Dioxane (1,4-Diethylene Dioxide)				
Methyl Ethyl Ketone (2-Butanone)	2.31E-06	2.31E-06	2.02E-02	1.01E-05
Acrolein				
Benzene				
Carbon Disulfide				
Carbon Tetrachloride (Tetrachloromethane)				
Chloroform				
Ethyl Benzene				
Methylene Chloride (Dichloromethane)				
n-Hexane				
Naphthalene				
Propylene (Propene)				
Styrene				
Perchloroethylene (Tetrachloroethylene)				
Toluene				
Trichloroethylene				
Vinyl Acetate				
Vinyl Chloride (Chloroethylene)				
o-Xylene				
Xylenes (Mixed Isomers)				
Isopropyl Alcohol (Isopropanol)				
Total	**2.31E-06**	**2.31E-06**	**2.02E-02**	**1.01E-05**

TIER 2 RESULTS **A/N:** 123456 **Application deemed complete date:** 04/01/16

5a. MICR

MICR Resident = CP (mg/(kg-day))^-1 * Q (ton/yr) * (X/Q) Resident * CEF Resident * MP Resident * 1e-6 * MWAF

MICR Worker = CP (mg/(kg-day))^-1 * Q (ton/yr) * (X/Q) Worker * CEF Worker* MP Worker* WAF Worker* 1e-6 * MWAF

Compound	Residential	Commercial
Methyl Chloroform (1,1,1-Trichloroethane)		
1,1,-Dichloroethane (Ethylidene Dichloride)		
Vinylidene Chloride (1,1-Dichloroethylene)		
Ethylene Dichloride (1,2-Dichloroethane)		
p-Dichlorobenzene		
1,4-Dioxane (1,4-Diethylene Dioxide)		
Methyl Ethyl Ketone (2-Butanone)		
Acrolein		
Benzene		
Carbon Disulfide		
Carbon Tetrachloride (Tetrachloromethane)		
Chloroform		
Ethyl Benzene		
Methylene Chloride (Dichloromethane)		
n-Hexane		
Naphthalene		
Propylene (Propene)		
Styrene		
Perchloroethylene (Tetrachloroethylene)		
Toluene		
Trichloroethylene		
Vinyl Acetate		
Vinyl Chloride (Chloroethylene)		
o-Xylene		
Xylenes (Mixed Isomers)		
Isopropyl Alcohol (Isopropanol)		
Total		
	No Cancer Risk	**No Cancer Risk**

No Cancer Burden, MICR<1.0E-6

5b. Cancer Burden Calculation?	**NO**

6. Hazard Index **A/N:** 123456 **Application deemed complete date:** 04/01/16

HIA = [Q(lb/hr) * (X/Q)max * MWAF]/ Acute REL
HIC = [Q(ton/yr) * (X/Q) * MP * MWAF] / Chronic REL
HIC 8-hr= [Q(ton/yr) * (X/Q) * WAF * MWAF] / 8-hr Chronic REL

Target Organs	Acute	Chronic	8-hr Chronic	Acute Pass/Fail	Chronic Pass/Fail	8-hr Chronic Pass/Fail
Alimentary system (liver) - AL				Pass	Pass	Pass
Bones and teeth - BN				Pass	Pass	Pass
Cardiovascular system - CV				Pass	Pass	Pass
Developmental - DEV				Pass	Pass	Pass
Endocrine system - END				Pass	Pass	Pass
Eye	9.04E-08			Pass	Pass	Pass
Hematopoietic system - HEM				Pass	Pass	Pass
Immune system - IMM				Pass	Pass	Pass
Kidney - KID				Pass	Pass	Pass
Nervous system - NS				Pass	Pass	Pass
Reproductive system - REP				Pass	Pass	Pass
Respiratory system - RES	9.04E-08			Pass	Pass	Pass
Skin				Pass	Pass	Pass

6a. Hazard Index Acute - Resident

HIA = [Q(lb/hr) * (X/Q)max resident * MWAF] / Acute REL

	HIA - Residential									
Compound	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Methyl Chloroform (1,1,1-Trichloroethane)										
1,1,-Dichloroethane (Ethylidene Dichloride)										
Vinylidene Chloride (1,1-Dichloroethylene)										
Ethylene Dichloride (1,2-Dichloroethane)										
p-Dichlorobenzene										
1,4-Dioxane (1,4-Diethylene Dioxide)										
Methyl Ethyl Ketone (2-Butanone)				3.13E-08					3.13E-08	
Acrolein										
Benzene										
Carbon Disulfide										
Carbon Tetrachloride (Tetrachloromethane)										
Chloroform										
Ethyl Benzene										
Methylene Chloride (Dichloromethane)										
n-Hexane										
Naphthalene										
Propylene (Propene)										
Styrene										
Perchloroethylene (Tetrachloroethylene)										
Toluene										
Trichloroethylene										
Vinyl Acetate										
Vinyl Chloride (Chloroethylene)										
o-Xylene										
Xylenes (Mixed Isomers)										
Isopropyl Alcohol (Isopropanol)										
Total				3.13E-08					3.13E-08	

6a. Hazard Index Acute - Worker **A/N:** 123456 **Application deemed complete date:** 04/01/16

HIA = [Q(lb/hr) * (X/Q)max Worker * MWAF] / Acute REL

	HIA - Commercial									
Compound	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Methyl Chloroform (1,1,1-Trichloroethane)										
1,1,-Dichloroethane (Ethylidene Dichloride)										
Vinylidene Chloride (1,1-Dichloroethylene)										
Ethylene Dichloride (1,2-Dichloroethane)										
p-Dichlorobenzene										
1,4-Dioxane (1,4-Diethylene Dioxide)										
Methyl Ethyl Ketone (2-Butanone)				9.04E-08					9.04E-08	
Acrolein										
Benzene										
Carbon Disulfide										
Carbon Tetrachloride (Tetrachloromethane)										
Chloroform										
Ethyl Benzene										
Methylene Chloride (Dichloromethane)										
n-Hexane										
Naphthalene										
Propylene (Propene)										
Styrene										
Perchloroethylene (Tetrachloroethylene)										
Toluene										
Trichloroethylene										
Vinyl Acetate										
Vinyl Chloride (Chloroethylene)										
o-Xylene										
Xylenes (Mixed Isomers)										
Isopropyl Alcohol (Isopropanol)										
Total				9.04E-08					9.04E-08	

6b. Hazard Index Chronic - Resident

HIC = [Q(ton/yr) * (X/Q) Resident * MP Chronic Resident * MWAF] / Chronic REL

	HIC - Residential												
Compound	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Methyl Chloroform (1,1,1-Trichloroethane)													
1,1,-Dichloroethane (Ethylidene Dichloride)													
Vinylidene Chloride (1,1-Dichloroethylene)													
Ethylene Dichloride (1,2-Dichloroethane)													
p-Dichlorobenzene													
1,4-Dioxane (1,4-Diethylene Dioxide)													
Methyl Ethyl Ketone (2-Butanone)													
Acrolein													
Benzene													
Carbon Disulfide													
Carbon Tetrachloride (Tetrachloromethane)													
Chloroform													
Ethyl Benzene													
Methylene Chloride (Dichloromethane)													
n-Hexane													
Naphthalene													
Propylene (Propene)													
Styrene													
Perchloroethylene (Tetrachloroethylene)													
Toluene													
Trichloroethylene													
Vinyl Acetate													
Vinyl Chloride (Chloroethylene)													
o-Xylene													
Xylenes (Mixed Isomers)													
Isopropyl Alcohol (Isopropanol)													
Total													

6b. Hazard Index Chronic - Worker

HIC = [Q(ton/yr) * (X/Q) * MP Chronic Worker * MWAF] / Chronic REL

	HIC - Commercial												
Compound	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Methyl Chloroform (1,1,1-Trichloroethane)													
1,1,-Dichloroethane (Ethylidene Dichloride)													
Vinylidene Chloride (1,1-Dichloroethylene)													
Ethylene Dichloride (1,2-Dichloroethane)													
p-Dichlorobenzene													
1,4-Dioxane (1,4-Diethylene Dioxide)													
Methyl Ethyl Ketone (2-Butanone)													
Acrolein													
Benzene													
Carbon Disulfide													
Carbon Tetrachloride (Tetrachloromethane)													
Chloroform													
Ethyl Benzene													
Methylene Chloride (Dichloromethane)													
n-Hexane													
Naphthalene													
Propylene (Propene)													
Styrene													
Perchloroethylene (Tetrachloroethylene)													
Toluene													
Trichloroethylene													
Vinyl Acetate													
Vinyl Chloride (Chloroethylene)													
o-Xylene													
Xylenes (Mixed Isomers)													
Isopropyl Alcohol (Isopropanol)													
Total													

6c. 8-hour Hazard Index Chronic - Resident **A/N:** 123456 **Application deemed complete date:** 04/01/16

HIC 8-hr = [Q(ton/yr) * (X/Q) Resident * WAF Resident * MWAF] / 8-hr Chronic REL

	HIC - Residential												
Compound	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Methyl Chloroform (1,1,1-Trichloroethane)													
1,1,-Dichloroethane (Ethylidene Dichloride)													
Vinylidene Chloride (1,1-Dichloroethylene)													
Ethylene Dichloride (1,2-Dichloroethane)													
p-Dichlorobenzene													
1,4-Dioxane (1,4-Diethylene Dioxide)													
Methyl Ethyl Ketone (2-Butanone)													
Acrolein													
Benzene													
Carbon Disulfide													
Carbon Tetrachloride (Tetrachloromethane)													
Chloroform													
Ethyl Benzene													
Methylene Chloride (Dichloromethane)													
n-Hexane													
Naphthalene													
Propylene (Propene)													
Styrene													
Perchloroethylene (Tetrachloroethylene)													
Toluene													
Trichloroethylene													
Vinyl Acetate													
Vinyl Chloride (Chloroethylene)													
o-Xylene													
Xylenes (Mixed Isomers)													
Isopropyl Alcohol (Isopropanol)													
Total													

6c. 8-hour Hazard Index Chronic - Worker

HIC 8-hr = [Q(ton/yr) * (X/Q) Worker * WAF Worker * MWAF] / 8-hr Chronic REL

	HIC - Commercial												
Compound	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Methyl Chloroform (1,1,1-Trichloroethane)													
1,1,-Dichloroethane (Ethylidene Dichloride)													
Vinylidene Chloride (1,1-Dichloroethylene)													
Ethylene Dichloride (1,2-Dichloroethane)													
p-Dichlorobenzene													
1,4-Dioxane (1,4-Diethylene Dioxide)													
Methyl Ethyl Ketone (2-Butanone)													
Acrolein													
Benzene													
Carbon Disulfide													
Carbon Tetrachloride (Tetrachloromethane)													
Chloroform													
Ethyl Benzene													
Methylene Chloride (Dichloromethane)													
n-Hexane													
Naphthalene													
Propylene (Propene)													
Styrene													
Perchloroethylene (Tetrachloroethylene)													
Toluene													
Trichloroethylene													
Vinyl Acetate													
Vinyl Chloride (Chloroethylene)													
o-Xylene													
Xylenes (Mixed Isomers)													
Isopropyl Alcohol (Isopropanol)													
Total													