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TRIP REPORT
FOR JANUARY 2014 MOBILIZATION
REVISION 1
PASSYUNK SOIL GAS SITE
PHILADELPHIA, PENNSYLVANIA
FEBRUARY 2018

U.S. EPA Work Assignment No.: SERAS-219
LEIDOS INNOVATIONS Work Order No.: SER00219
U.S. EPA Contract No.: EP-W-09-031

Submitted to
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SERAS-219-DTRR1-020218

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1.0 BACKGROUND

The Environmental Protection Agency/Environmental Response Team (EPA/ERT) issued Work Assignment (WA) Number SERAS-219, Passyunk Soil Gas Site (Site) in Philadelphia, Pennsylvania (PA) to Lockheed Martin (currently Leidos Innovations) under the Scientific, Engineering, Response, and Analytical Services (SERAS) contract. The purpose of this WA was to assist EPA Region 3 during the performance of a vapor intrusion study. The vapor intrusion study was performed adjacent to the Philadelphia Gas Works (PGW) Passyunk Facility in an effort to determine if a subsurface gas plume exists and if there is a potential indoor impact associated with the subsurface plume at adjacent off-site locations.

The Passyunk Soil Gas Site is located in south Philadelphia. It is a residential neighborhood with a local tavern, a playground and a mummer's hall. There are no daycares or schools. The neighborhood is bounded by the Philadelphia Gas Works (PGW) Passyunk facility on the west, the Sunoco Refinery to the south, and the Schuylkill Expressway to the East/Northeast.

The PGW facility is in the process of voluntary site remediation in general accordance with Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) due to the presence of volatile organic compounds (VOCs), semi-VOCs and metals in soil and groundwater. Additionally, phase separated hydrocarbons (product) have been observed in the groundwater at the PGW facility. PGW is currently operating a product recovery system. PGW completed an environmental investigation of its facility which included an off-site soil vapor study in the Passyunk residential neighborhood. The Pennsylvania Department of Environmental Protection (PADEP) oversaw this investigation. PGW detected elevated levels of chloroform in the soil vapor within the residential neighborhood at levels above standards established by the PADEP. The Agency for Toxics Substances and Disease Registry (ATSDR) assisted the Pennsylvania Department of Health with the review and evaluation of PGW's soil vapor data. ATSDR referred the site to EPA's removal program. State and federal officials agreed that further investigation of the chloroform and the potential for vapor intrusion is warranted in the local area. Since chloroform is unrelated to PGWs operations, the United States EPA conducted the follow-up vapor intrusion investigation under the authority of the federal "Superfund" law (more formally called the Comprehensive Environmental Response, Compensation, and Liability Act.

2.0 MOBILIZATION ACTIVITIES/METHODOLOGY

The January 2014 scope of work included the evaluation of sub-slab soil gas, basement air, first floor indoor air and outdoor ambient air quality at residential and commercial units in the vicinity of the Site. Activities included cleaning out lifestyle products that may potentially interfere with the analysis of target compounds, installation of sub-slab soil gas probes at locations chosen by the Work Assignment Manager (WAM), on-site collection and analysis of sub-slab soil gas samples using Tedlar® bags, indoor air monitoring using the Trace Atmospheric Gas Analyzer (TAGA) Mass Spectrometer/Mass Spectrometer (MS/MS), and collection of sub-slab soil gas, indoor air and outdoor ambient air samples using SUMMA® canisters.

2.1 Cleaning Out of Residential and Commercial Units

On 21 January 2014, SERAS personnel collected potential lifestyle products that may interfere with the analysis of target compounds from four residential and two commercial units. Potential lifestyle products were removed from the residential and commercial units 24 hours prior to any TAGA MS/MS indoor air monitoring event or sample collection using Tedlar® bags or SUMMA® canisters.

2.2 Installation of Sub-Slab Soil Gas Probes

On 21 January 2014, SERAS personnel installed a sub-slab soil gas probe at each of the four residential and two commercial units being investigated. Sub-slab soil gas probes were installed at locations designated by the WAM in accordance with SERAS Standard Operating Procedure

(SOP) #2082, *Construction and Installation of Permanent Sub-Slab Soil Gas Wells*. Each sub-slab soil gas probe was installed flush with the basement slab 24 hours prior to sub-slab soil gas sampling and capped with a Teflon® plug, which was removed during the Tedlar® bag and SUMMA® canister sampling events.

2.3 Collection of Sub-Slab Soil Gas Samples in Tedlar® Bags and On-Site GC/MS Analysis

On 21 January 2014, SERAS personnel collected one soil gas sample in a 1-liter (L) Tedlar® bag in accordance with SERAS SOP #2102, *Tedlar® Bag Sampling* from a pre-existing outdoor port. Further sampling that day was postponed due to inclement weather. On 22 January 2014, five sub-slab soil gas samples were collected in Tedlar® bags from Units 84, 50, 34, 70 and 175. Sample collection from Unit 116 was attempted, however, the sample failed to collect. On 23 January 2014, eight soil gas samples were collected from pre-existing outdoor ports. The nine soil gas and five sub-slab soil gas samples collected in Tedlar® bags were analyzed on-site by Gas Chromatography/Mass Spectrometry (GC/MS) in accordance with SERAS SOP #1741, *Field Analysis of VOCs in Gaseous Phase Samples by GC/MS Loop Injection.*

All samples collected in Tedlar® bags were hand delivered to TAGA Bus 1693. All samples collected in Tedlar® bags were analyzed on-site for tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), vinyl chloride (VCL), methyl tert butyl ether (MTBE), chloroform (HCCL3), 1,1,1-trichloroethane (1,1,1-TCA) and benzene, toluene, ethyl benzene, m&p-xylenes, and o-xylene (BTEX). Preliminary data were presented to the WAM after analysis of the samples on 21 January 2014 through 23 January 2014.

2.4 Indoor Air Monitoring using TAGA MS/MS

On 22 January 2014, SERAS personnel performed indoor air monitoring within six residential units in accordance with SERAS SOP #1711, *Trace Atmospheric Gas Analyzer (TAGA) IIE Operation.* All residential units were monitored for PCE, TCE, DCE (total), VCL, HCCL3, benzene and toluene. All preliminary TAGA MS/MS results were presented to the WAM in "real-time" and preliminary printouts were provided following an initial review of the data by the TAGA MS/MS operator.

2.5 Collection of Sub-Slab Soil Gas, Basement Air, First Floor Indoor Air and Outdoor Ambient Air Samples using SUMMA® Canisters

On 23 January 2014, SERAS personnel collected six sub-slab soil gas samples, six basement air samples, six first floor indoor air samples, one collocated first floor indoor air sample and two outdoor ambient air samples using SUMMA® canisters from locations chosen by the WAM. All sub-slab soil gas samples collected in SUMMA® canisters were collected after sub-slab soil gas samples were collected in 1-L Tedlar® bags. Air sampling using SUMMA® canisters was conducted in accordance with SERAS SOP #1704, *SUMMA® Canister Sampling.* A trip blank was also collected.

All air samples collected using SUMMA® canisters were shipped via FedEx to ConTest Analytical Laboratory and analyzed in accordance with EPA Toxic Organic Method TO-15, *Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)*. ConTest Analytical Laboratory is certified by the National Environmental Laboratory Accreditation Program (NELAP) for VOC analysis. All air samples collected using SUMMA® canisters were analyzed for the full TO-15 target compound list.

3.0 DISCUSSION OF RESULTS

Table 1 is a summary of the January 2014 Tedlar® bag sampling events that occurred at the Site. Table 2 is a summary of results of the five sub-slab soil gas samples from Units 84, 50, 34, 70 and 175 and the nine soil gas samples collected using Tedlar® bags and analyzed on site by a GC/MS. HCCL3 was detected in two of the sub-slab soil gas samples; 1.0 part per billion by volume (ppbv) in sample 219-T-004 (Unit 34) and 0.71 ppbv in sample 219-T-003 (Unit 50). HCCL3 was detected in eight of the nine soil gas samples, the highest concentration of which was detected in sample 219-T-008 (V15) at 16 ppbv. Of the five sub-slab soil gas samples, PCE was detected in sample 219-T-004 (Unit 34) at 1.1 ppbv and TCE was detected in sample 219-T-006 (Unit 175) at 2.7 ppbv. In the soil gas samples, the highest reportable concentration for PCE and 1,1,1-TCA were 2.6 ppbv (sample 219-T-011 at V04) and 0.73 ppbv (sample 219-T-014 at V01), respectively. 1,1-DCA, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, VCL and BTEX were not detected above their reporting limits (RLs) at any of the sampling locations. Figure 1 presents the analytical results for sub-slab soil gas samples collected in Tedlar® bags. The Final GC/MS Analytical Report, SERAS-219-DFA-022614-GC/MS, is included in Appendix A.

Table 3 is a summary of the January 2014 SUMMA® canister sampling events that occurred at the Site. Six sub-slab soil gas samples, six basement indoor air samples, six first floor indoor air samples, one collocated first floor indoor air sample and two outdoor ambient air samples were collected using SUMMA® canisters and sent to ConTest Analytical Laboratory for EPA TO-15 analysis. Tables 4 and 5 summarize the results for the target compounds in the air samples collected using SUMMA® canisters in ppbv and micrograms per cubic meter ($\mu g/m^3$), respectively. Figure 1 presents the analytical results for samples collected in SUMMA® canisters and Tedlar® bags.

Of the 21 samples and one trip blank collected using SUMMA® canisters on 23 January 2014, sample numbers 219-SS-019 (Unit 34) and 219-IA-012 (Unit 175) have the highest reportable results for HCCL3 at 0.74 ppbv (3.6 $\mu g/m^3$) and 0.53 ppbv (2.6 $\mu g/m^3$), respectively. Sample numbers 219-SS-019 (Unit 34) and 219-SS-020 (Unit 70) have the highest reportable results for PCE at 0.57 ppbv (3.8 $\mu g/m^3$) and 0.23 ppbv (1.5 $\mu g/m^3$), respectively. Sample numbers 219-SS-022 (Unit 175) and 219-SS-018 (Unit 50) have the highest reportable results for TCE at 1.6 ppbv (8.4 $\mu g/m^3$) and 0.10 ppbv (0.55 $\mu g/m^3$), respectively. The analytical results for the remaining target compounds are reported in the Final Analytical Report, SERAS-219-DAR-031814, which is included in Appendix B.

Table 6 is a comparison of analytical results between sub-slab soil gas samples collected and analyzed on-site using Tedlar® bags and sub-slab soil gas samples collected and analyzed off-site using SUMMA® canisters. Relative percent differences (RPDs) between comparable results ranged from 29.9% to 63.5%. The largest RPD was from samples collected at Unit 34, which had a Tedlar® bag (sample number 219-T-004) result for HCCL3 at 1.1 ppbv and a SUMMA® canister (sample number 219-SS-019) result at 0.57 ppbv, resulting in a RPD of 63.5%.

Tables 7 through 11 are the January 2014 TAGA target compound summaries for the indoor air monitoring events that occurred at the four residential and two commercial units at the Site. During each indoor air monitoring event, a one-minute average was measured in each room, or at various locations within a room. The highest average concentrations above the quantitation limits (QLs) for the eight target compounds are reported below.

Unit 116 and 84 were surveyed on 22 January 2014 at 10:37:01 and is represented in Table 7. The average wind speed and direction at the airport for the five-minute period ending at 09:54 were 21 miles per hour (mph) from 330 degrees. There was no precipitation during the preceding hour. The average concentrations of PCE, TCE, total dichloroethene, VCL, HCCL3, benzene, toluene, and total xylenes were not detected above their QLs at any of the monitoring locations.

Unit 50 was surveyed on 22 January 2014 at 11:03:26 and is represented in Table 8. The average wind speed and direction at the airport for the five-minute period ending at 10:54 were 20 mph from 340 degrees. There was no precipitation during the preceding hour. The average concentrations of PCE, TCE, total

dichloroethene, VCL, benzene, and toluene were not detected above their QLs at any of the monitoring locations. The highest average concentrations of HCCL3 were 6.6 ppbv and 6.2 ppbv in the basement between flags G and H and in the trench between flags I and J, respectively. The highest average concentration of total xylenes was 2.4 ppbv in the crawl space between flags M and N.

Unit 34 was surveyed on 22 January 2014 at 11:40:54 and is represented in Table 9. The average wind speed and direction at the airport for the five-minute period ending at 10:54 were 20 mph from 340 degrees. There was no precipitation during the preceding hour. The average concentrations of tetrachloroethene, trichloroethene, total dichloroethene, vinyl chloride and benzene were not detected above their QLs at any of the monitoring locations. The highest average concentrations of chloroform, toluene, and total xylenes were 39 ppbv, 81 ppbv, and 260 ppbv, respectively, from the storage bin between flags P and Q.

Unit 70 was surveyed on 22 January 2014 at 12:30:01 and is represented in Table 10. The average wind speed and direction at the airport for the five-minute period ending at 11:54 were 18 mph from 330 degrees. There was no precipitation during the preceding hour. The average concentrations of PCE, TCE, total dichloroethene, VCL, HCCL3, benzene, toluene, and total xylenes were not detected above their QLs at any of the monitoring locations.

Unit 175 was surveyed on 22 January 2014 at 14:22:44 and is represented in Table 11. The average wind speed and direction at the airport for the five-minute period ending at 13:54 were 16 mph from 300 degrees. There was no precipitation during the preceding hour. The average concentrations of PCE, TCE, total dichloroethene, VCL, HCCL3, benzene, and toluene were not detected above their QLs at any of the monitoring locations. The highest average concentrations of total xylenes were 3.6 ppbv and 3.5 ppbv in the crack in the wall between flags M and N and in the basement between flags I and J, respectively.

On 22 January 2014, the TAGA MS/MS End of Day Transport Efficiency for benzene, toluene and xylene were lower than the 85% acceptance criteria at 76.1%, 83.1% and 69.1%, respectively. Data for these compounds should be used with caution and may be biased low. The Final TAGA Analytical Report, SERAS-219-DFA-020714-TAGA, is included in Appendix C.

All field sampling data worksheets generated during the January 2014 mobilization for the collection of SUMMA® canisters are included in Appendix D.

Tables that compare the analytical results of individual unit to risk levels are presented in Appendix E.

TABLES

Summary of Abbreviation used in Tables

T = Tedlar® Bag
AA = Ambient Air
SS = Sub-slab
IA = Indoor Air
CO = Collocated
DL = Detection Limit
J = Result is considered estimated
NA = Not Applicable
NC = Not Calculable
ppbv = part per billion by volume
QL = Quantitation Limit
RPD = Relative Percent Difference
U = Undetected below Reporting Limit (RL)
$\mu g/m^3$ = micrograms per cubic meter
% = Percentage

TABLE 1
Summary of January 2014 Tedlar® Bag Sampling Events
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	Location	Sub Location	Sample Type	Media	Start Date	Stop Date
219-T-001	Unit 84	Sub-Slab	Sub-slab	Tedlar Bag	1/22/2014	1/22/2014
219-T-003	Unit 50	Sub-Slab	Sub-slab	Tedlar Bag	1/22/2014	1/22/2014
219-T-004	Unit 34	Sub-Slab	Sub-slab	Tedlar Bag	1/22/2014	1/22/2014
219-T-005	Unit 70	Sub-Slab	Sub-slab	Tedlar Bag	1/22/2014	1/22/2014
219-T-006	Unit 175	Sub-Slab	Sub-slab	Tedlar Bag	1/22/2014	1/22/2014
219-T-007	V12	Ernst Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014
219-T-008	V15	Newkirk Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014
219-T-009	V14	Ernst Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014
219-T-010	V05	Porter Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014
219-T-011	V04	Porter Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014
219-T-012	V12	Ernst Street	Soil Gas	Tedlar Bag	1/21/2014	1/21/2014
219-T-013	V06	Porter Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014
219-T-014	V01	28th Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014
219-T-015	V02	28th Street	Soil Gas	Tedlar Bag	1/23/2014	1/23/2014

TABLE 2
Summary of Results for VOC Analysis of Samples Collected using Tedlar® Bags in ppbv
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-T-001		219-T-003		219-T-004		219-T-005		219-T-006		219-T-007		219-T-008	
Location	**Unit 84**		**Unit 50**		**Unit 34**		**Unit 70**		**Unit 175**		**V12**		**V15**	
Sub-Location	**Basement**		**Basement**		**Basement**		**Basement**		**Basement**		**Ernst Street**		**Newkirk Street**	
Sample Type	**Sub-Slab**		**Sub-Slab**		**Sub-Slab**		**Sub-Slab**		**Sub-Slab**		**Soil Gas**		**Soil Gas**	
Result Units	**ppbv**		**ppbv**		**ppbv**		**ppbv**		**ppbv**		**ppbv**		**ppbv**	
1,1,1-Trichloroethane	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
1,1-Dichloroethane	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U
1,1-Dichloroethene	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U
Benzene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
Chloroform	0.52	U	0.71		1.0		0.52	U	0.52	U	5.0		16	
cis-1,2-Dichloroethene	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
Ethyl Benzene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
m,p-Xylene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
Methyl Tert Butyl Ether	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
o-Xylene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
Tetrachloroethene	0.51	U	0.51	U	1.1		0.51	U	0.51	U	1.8		0.51	U
Toluene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
trans-1,2-Dichloroethene	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
Trichloroethene	0.50	U	0.50	U	0.50	U	0.50	U	2.7		0.50	U	0.50	U
Vinyl Chloride	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U

TABLE 2 (continued)
Summary of Results for VOC Analysis of Samples Collected using Tedlar® Bags in ppbv
Passyunk Vapor Intrusion Site
Philadelphia, PA
February 2018

Sample Number	219-T-009		219-T-010		219-T-011		219-T-012		219-T-013		219-T-014		219-T-015	
Location	**V14**		**V05**		**V04**		**V12**		**V06**		**V01**		**V02**	
Sub-Location	**Ernst Street**		**Porter Street**		**Porter Street**		**Ernst Street**		**Porter Street**		**28th Street**		**28th Street**	
Sample Type	**Soil Gas**		**Soil Gas**		**Soil Gas**		**Soil Gas**		**Soil Gas**		**Soil Gas**		**Soil Gas**	
Result Units	**ppbv**		**ppbv**		**ppbv**		**ppbv**		**ppbv**		**ppbv**		**ppbv**	
1,1,1-Trichloroethane	0.50	U	0.55		0.62		0.50	U	0.50	U	0.73		0.50	U
1,1-Dichloroethane	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U
1,1-Dichloroethene	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U
Benzene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
Chloroform	0.52	U	2.4		0.93		4.8		8.9		0.52		2.0	
cis-1,2-Dichloroethene	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
Ethyl Benzene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
m,p-Xylene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
Methyl Tert Butyl Ether	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
o-Xylene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
Tetrachloroethene	0.99		1.9		2.6		1.7		0.51	U	1.6		1.7	
Toluene	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U
trans-1,2-Dichloroethene	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
Trichloroethene	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Vinyl Chloride	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U

TABLE 3
Summary of January 2014 SUMMA® Canister Sampling Events
Passyunk Vapor Intrusion Site
Philadelphia, PA
February 2018

Sample Number	Location	Sub-Location	Sample Type	Media	SUMMA Number	Start Date	Start Time	Stop Date	Stop Time	Remarks
219-IA-001	Unit 84	Basement	Indoor Air	SUMMA Canister	1035	1/22/2014	11:49:00 AM	1/23/2014	10:40:00 AM	
219-IA-002	Unit 116	Basement	Indoor Air	SUMMA Canister	1071	1/22/2014	11:48:00 AM	1/23/2014	10:45:00 AM	
219-IA-003	Unit 116	1st Floor	Indoor Air	SUMMA Canister	1048	1/22/2014	11:51:00 AM	1/23/2014	10:34:00 AM	Dining area
219-IA-004	Unit 84	1st Floor	Indoor Air	SUMMA Canister	1085	1/22/2014	11:51:00 AM	1/23/2014	10:37:00 AM	On bar
219-IA-005	Unit 50	1st Floor	Indoor Air	SUMMA Canister	1135	1/22/2014	12:09:00 PM	1/23/2014	11:32:00 AM	Toward front
219-IA-006	Unit 50	Basement	Indoor Air	SUMMA Canister	1152	1/22/2014	12:13:00 PM	1/23/2014	11:25:00 AM	
219-IA-007	Unit 34	Basement	Indoor Air	SUMMA Canister	1087	1/22/2014	12:41:00 PM	1/23/2014	11:01:00 AM	
219-IA-008	Unit 34	1st Floor	Indoor Air	SUMMA Canister	1018	1/22/2014	12:44:00 PM	1/23/2014	11:04:00 AM	Dining area
219-IA-009	Unit 34	1st Floor CO	Indoor Air	SUMMA Canister	1105	1/22/2014	12:44:00 PM	1/23/2014	11:04:00 AM	Dining area - Collocated
219-IA-010	Unit 70	1st Floor	Indoor Air	SUMMA Canister	1701	1/22/2014	1:00:00 PM	1/23/2014	11:17:00 AM	Dining area
219-IA-011	Unit 70	Basement	Indoor Air	SUMMA Canister	1720	1/22/2014	1:00:00 PM	1/23/2014	11:11:00 AM	
219-IA-012	Unit 175	Basement	Indoor Air	SUMMA Canister	1669	1/22/2014	2:59:00 PM	1/23/2014	1:34:00 PM	Toward back
219-IA-013	Unit 175	1st Floor	Indoor Air	SUMMA Canister	1640	1/22/2014	3:02:00 PM	1/23/2014	1:45:00 PM	Kitchen
219-AA-014	Unit 175	Behind House	Ambient Air	SUMMA Canister	1156	1/22/2014	3:04:00 PM	1/23/2014	1:48:00 PM	On fence behind home
219-AA-015	Unit 116	Ernst Street	Ambient Air	SUMMA Canister	1173	1/22/2014	3:12:00 PM	1/23/2014	2:05:00 PM	On gate behind Unit 116
219-SS-016	Unit 84	Basement	Sub-slab	SUMMA Canister	1509	1/22/2014	11:31:00 AM	1/23/2014	10:41:00 AM	Toward front
219-SS-017	Unit 116	Basement	Sub-slab	SUMMA Canister	1493	1/22/2014	11:48:00 AM	1/23/2014	10:45:00 AM	Near stairs
219-SS-018	Unit 50	Basement	Sub-slab	SUMMA Canister	1670	1/22/2014	12:14:00 PM	1/23/2014	11:25:00 AM	
219-SS-019	Unit 34	Basement	Sub-slab	SUMMA Canister	1851	1/22/2014	12:41:00 PM	1/23/2014	10:59:00 AM	
219-SS-020	Unit 70	Basement	Sub-slab	SUMMA Canister	1846	1/22/2014	1:00:00 PM	1/23/2014	11:11:00 AM	
219-TB-021	Trip Blank	NA	Blank	SUMMA Canister	1188	1/22/2014	12:30:00 PM	1/22/2014	--	
219-SS-022	Unit 175	Basement	Sub-slab	SUMMA Canister	1879	1/22/2014	3:00:00 PM	1/23/2014	1:34:00 PM	

TABLE 4
Summary of Results for VOC Analysis of Samples Collected using SUMMA® Canisters in ppbv
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-IA-001		219-IA-002		219-IA-003		219-IA-004		219-IA-005		219-IA-006		219-IA-007	
Location	Unit 84		Unit 116		Unit 116		Unit 84		Unit 50		Unit 50		Unit 34	
Sub-Location	Basement		Basement		1st Floor		1st Floor		1st Floor		Basement		Basement	
Sample Type	Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air	
Result Units	ppbv		ppbv		ppbv		ppbv		ppbv		ppbv		ppbv	
1,1,1-Trichloroethane	0.018	U	0.020		0.019		0.018	U	0.018	U	0.018	U	0.018	U
1,1,2,2-Tetrachloroethane	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.059		0.066		0.064		0.067		0.067		0.069		0.071	
1,1,2-Trichloroethane	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
1,1-Dichloroethane	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
1,1-Dichloroethylene	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
1,2,4-Trimethylbenzene	0.042		0.041		0.039		0.055		0.28		0.33		0.19	
1,2-Dibromoethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichloroethane	0.018	U	0.018	U	0.032		0.020		0.018	U	0.018	U	0.046	
1,2-Dichloropropane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,3,5-Trimethylbenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.12		0.14		0.053	
1,3-Butadiene	0.036		0.066		0.084		0.076		0.10		0.087		0.037	
1,3-Dichlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,4-Dichlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,4-Dioxane	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U
2-Butanone (MEK)	1.4	U	1.4	U	1.4	U	1.4	U	2.8		3.6		1.4	U
2-Hexanone (MBK)	0.053		0.035	U	0.065		0.079		0.12		0.094		0.12	
4-Ethyltoluene	0.035	U	0.035	U	0.035	U	0.035	U	0.061		0.069		0.042	
Methyl Isobutyl Ketone	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Acetone	5.5	J	3.7	J	12	J	6.6	J	19	J	23	J	12	J
Benzene	0.22		0.24		0.35		0.30		0.71		0.26		0.21	
Bromoform	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Bromomethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Carbon Tetrachloride	0.057		0.065		0.018	U	0.018	U	0.018	U	0.066		0.059	
Chlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Chloroethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.051		0.035	U
Chloroform	0.035		0.042		0.046		0.044		0.039		0.044		0.084	
Chloromethane	0.36		0.45		0.53		0.52		0.46		0.54		0.36	
cis-1,2-Dichloroethylene	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
cis-1,3-Dichloropropene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Cyclohexane	0.058		0.12		0.051		0.061		0.12		0.083		0.046	
Dibromochloromethane	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Dichlorodifluoromethane	0.23		0.25		0.26		0.27		0.24		0.24		0.25	
Ethyl Acetate	0.12		0.26		0.45		0.23		0.11		0.11		0.14	
Ethylbenzene	0.037		0.038		0.051		0.055		0.10		0.11		0.042	
Heptane	0.13		0.17		0.50		0.50		0.31		0.19		0.060	
Hexane	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Isopropanol	1.4	U	1.4	U	1.4	U	1.4	U	5.7		5.0		12	
m&p-Xylene	0.11		0.11		0.14		0.16		0.38		0.40		0.13	
MTBE	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Methylene Chloride	0.36	U	0.66	U	0.40	U	0.63	U	4.2		5.6		0.43	U
o-Xylene	0.045		0.047		0.055		0.060		0.15		0.16		0.061	
Propene	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Styrene	0.046		0.035	U	0.035	U	0.043		0.041		0.035	U	0.035	U
Tetrachloroethylene	0.018	U	0.019		0.018	U	0.018	U	0.018	U	0.066		0.081	
Tetrahydrofuran	0.035	U	0.035	U	0.062		0.080		2.9		4.8		0.14	
Toluene	0.32		0.38		0.39		0.38		0.52		0.51		0.29	
trans-1,2-Dichloroethylene	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
trans-1,3-Dichloropropene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Trichloroethylene	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Trichlorofluoromethane	0.19		0.21		0.21		0.22		0.21		0.22		0.20	
Vinyl Acetate	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ
Vinyl Chloride	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U

TABLE 4 (continued)
Summary of Results for VOC Analysis of Samples Collected using SUMMA® Canisters in ppbv
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-IA-008		219-IA-009		219-IA-010		219-IA-011		219-IA-012		219-IA-013		219-AA-014	
Location	Unit 34		Unit 34		Unit 70		Unit 70		Unit 175		Unit 175		Unit 175	
Sub-Location	1st Floor		1st Floor CO		1st Floor		Basement		Basement		1st Floor		Behind House	
Sample Type	Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air		Ambient Air	
Result Units	ppbv		ppbv		ppbv		ppbv		ppbv		ppbv		ppbv	
1,1,1-Trichloroethane	0.018	U	0.018	U	0.018	U	0.035	U	0.11		0.062		0.018	U
1,1,2,2-Tetrachloroethane	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.074		0.070		0.072		0.072		0.11		0.077		0.069	
1,1,2-Trichloroethane	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
1,1-Dichloroethane	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
1,1-Dichloroethylene	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
1,2,4-Trimethylbenzene	0.24		0.22		0.050		0.052		0.11		0.088		0.050	
1,2-Dibromoethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichloroethane	0.051		0.048		0.037		0.036		0.035	U	0.035	U	0.015	J
1,2-Dichloropropane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,3,5-Trimethylbenzene	0.073		0.066		0.035	U	0.035	U	0.035		0.035	U	0.035	U
1,3-Butadiene	0.063		0.035	U	0.042		0.051		0.057		0.095		0.065	
1,3-Dichlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,4-Dichlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,4-Dioxane	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U
2-Butanone (MEK)	1.4	U	1.4	U	1.4	U	1.4	U	2.1		1.4	U	1.4	U
2-Hexanone (MBK)	0.070		0.035	U	0.073		0.13	J	0.06	J	0.035	UJ	0.065	
4-Ethyltoluene	0.060		0.056		0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Methyl Isobutyl Ketone	0.035	U	0.035	U	0.053		0.057	J	0.035	UJ	0.035	UJ	0.035	U
Acetone	24	J	20	J	65	J	56	J	18	J	9.5	J	4.2	J
Benzene	0.24		0.22		0.23		0.23		0.4		0.42		0.32	
Bromoform	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Bromomethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Carbon Tetrachloride	0.11		0.018	U	0.065		0.055		0.088		0.062		0.053	
Chlorobenzene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Chloroethane	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Chloroform	0.11		0.10		0.039		0.038		0.53		0.19		0.035	U
Chloromethane	0.46		0.46		0.40		0.41		0.60		0.41		0.46	
cis-1,2-Dichloroethylene	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
cis-1,3-Dichloropropene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Cyclohexane	0.069		0.064		0.036		0.039		0.062		0.093		0.039	
Dibromochloromethane	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
Dichlorodifluoromethane	0.26		0.23		0.25		0.28		0.65		0.42		0.25	
Ethyl Acetate	0.85		0.90		0.14		0.17		0.40		0.20		0.035	U
Ethylbenzene	0.072		0.066		0.058		0.058		0.57		0.21		0.045	
Heptane	0.098		0.091		0.057		0.061		0.089		0.24		0.064	
Hexane	1.4	U	1.4	U	1.4	U	1.4	U	8.0		1.4	U	1.4	U
Isopropanol	130		93		1.7		1.4	U	1.4		2.7		1.4	U
m&p-Xylene	0.21		0.19		0.15		0.14		1.8		0.75		0.14	
MTBE	0.062		0.059		0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Methylene Chloride	1.3	U	1.3	U	0.43	U	0.62	U	18		0.67	U	1.2	U
o-Xylene	0.088		0.081		0.058		0.056		0.47		0.25		0.060	
Propene	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Styrene	0.038		0.046		0.065		0.038		0.035	U	0.035	U	0.035	U
Tetrachloroethylene	0.086		0.081		0.018	U	0.035	U	0.046		0.035	U	0.018	U
Tetrahydrofuran	0.066		0.062		0.035	U	0.046		0.27		0.079		0.035	U
Toluene	0.63		0.60		0.39		0.37		2.0		0.87		0.34	
trans-1,2-Dichloroethylene	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
trans-1,3-Dichloropropene	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Trichloroethylene	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.018	U
Trichlorofluoromethane	0.22		0.21		0.20		0.21		2.0		0.81		0.20	
Vinyl Acetate	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ	0.70	UJ
Vinyl Chloride	0.018	U	0.018	U	0.018	U	0.035	U	0.035	U	0.035	U	0.051	

TABLE 4 (continued)
Summary of Results for VOC Analysis of Samples Collected using SUMMA® Canisters in ppbv
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-AA-015		219-SS-016		219-SS-017		219-SS-018		219-SS-019		219-SS-020		219-TB-021		219-SS-022	
Location	Unit 116		Unit 84		Unit 116		Unit 50		Unit 34		Unit 70		Trip Blank		Unit 175	
Sub-Location	Ernst Street		Basement		Basement		Basement		Basement		Basement		NA		Basement	
Sample Type	Ambient Air		Sub-Slab		Sub-Slab		Sub-Slab		Sub-Slab		Sub-Slab		Blank		Sub-Slab	
Result Units	ppbv		ppbv		ppbv		ppbv		ppbv		ppbv		ppbv		ppbv	
1,1,1-Trichloroethane	0.018	U	0.10	U	0.10	U	0.10	U	0.11		0.10	U	0.018	U	0.32	
1,1,2,2-Tetrachloroethane	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.066		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,1,2-Trichloroethane	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
1,1-Dichloroethane	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
1,1-Dichloroethylene	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
1,2,4-Trimethylbenzene	0.04		0.16		0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,2-Dibromoethane	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,2-Dichlorobenzene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,2-Dichloroethane	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
1,2-Dichloropropane	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,3,5-Trimethylbenzene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,3-Butadiene	0.035	U	0.10	U	0.23		0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,3-Dichlorobenzene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,4-Dichlorobenzene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
1,4-Dioxane	0.35	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	0.35	U	1.0	U
2-Butanone (MEK)	1.4	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	1.4	U	4.0	U
2-Hexanone (MBK)	0.063		0.27	J	0.21	J	0.10	UJ	0.18	J	0.15	J	0.035	U	0.11	J
4-Ethyltoluene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Methyl Isobutyl Ketone	0.035	U	0.10	UJ	0.10	UJ	0.10	UJ	0.10	UJ	0.10	UJ	0.035	U	0.10	UJ
Acetone	4.0	J	50	J	57	J	27	J	41	J	33	J	1.4	U	33	J
Benzene	0.22		0.11		0.38		0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Bromoform	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Bromomethane	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Carbon Tetrachloride	0.046		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
Chlorobenzene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Chloroethane	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Chloroform	0.035	U	0.10	U	0.16		0.49		0.74		0.10	U	0.035	U	0.16	
Chloromethane	0.42		0.45		0.45		0.20	U	0.20	U	0.20	U	0.07	U	0.20	U
cis-1,2-Dichloroethylene	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
cis-1,3-Dichloropropene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Cyclohexane	0.035	U	0.10	U	0.14		0.10	U	0.10	U	0.11		0.035	U	0.10	U
Dibromochloromethane	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
Dichlorodifluoromethane	0.25		0.44		0.37		0.42		0.45		0.39		0.035	U	1.5	
Ethyl Acetate	0.035	U	0.32		0.30		0.10	U	0.21		0.10	U	0.035	U	0.10	U
Ethylbenzene	0.038		0.10	U	0.15		0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Heptane	0.044		0.10	U	0.34		0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Hexane	1.4	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	1.4	U	4.0	U
Isopropanol	1.4	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	1.4	U	4.0	U
m&p-Xylene	0.11		0.20	U	0.30		0.20	U	0.20	U	0.20	U	0.07	U	0.20	U
MTBE	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Methylene Chloride	0.49	U	4.1		3.5		4.3		6.2		1.1	U	0.43		1.0	U
o-Xylene	0.048		0.32		0.35		0.11		0.19		0.10	U	0.035	U	0.15	
Propene	1.4	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	1.4	U	4.0	U
Styrene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Tetrachloroethylene	0.018	U	0.15		0.12		0.10	U	0.57		0.23		0.018	U	0.14	
Tetrahydrofuran	0.035	U	0.10	U	0.1	U	0.29		0.10	U	0.10	U	0.035	U	0.10	U
Toluene	0.25		0.27		0.58		0.11		0.14		0.10	U	0.035	U	0.10	U
trans-1,2-Dichloroethylene	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U
trans-1,3-Dichloropropene	0.035	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.035	U	0.10	U
Trichloroethylene	0.018	U	0.10	U	0.10	U	0.10		0.10	U	0.10	U	0.018	U	1.6	
Trichlorofluoromethane	0.20		0.26		0.25		0.25		0.25		0.22		0.035	U	0.59	
Vinyl Acetate	0.70	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	0.70	UJ	2.0	UJ
Vinyl Chloride	0.018	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.018	U	0.10	U

TABLE 5
Summary of Results for VOC Analysis of Samples Collected using SUMMA® Canisters in µg/m³
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-IA-001		219-IA-002		219-IA-003		219-IA-004		219-IA-005		219-IA-006		219-IA-007	
Location	Unit 84		Unit 116		Unit 116		Unit 84		Unit 50		Unit 50		Unit 34	
Sub-Location	Basement		Basement		1st Floor		1st Floor		1st Floor		Basement		Basement	
Sample Type	Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air		Indoor Air	
Result Units	ug/m³		ug/m³		ug/m³		ug/m³		ug/m³		ug/m³		ug/m³	
1,1,1-Trichloroethane	0.098	U	0.11		0.10		0.098	U	0.098	U	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.45		0.51		0.49		0.51		0.52		0.53		0.54	
1,1,2-Trichloroethane	0.098	U	0.098	U	0.098	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1-Dichloroethane	0.073	U	0.073	U	0.073	U	0.073	U	0.073	U	0.073	U	0.073	U
1,1-Dichloroethylene	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	0.21		0.20		0.19		0.27		1.4		1.6		0.91	
1,2-Dibromoethane	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	0.073	U	0.073	U	0.13		0.082		0.073	U	0.073	U	0.18	
1,2-Dichloropropane	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	0.17	U	0.17	U	0.17	U	0.17	U	0.59		0.70		0.26	
1,3-Butadiene	0.081		0.15		0.19		0.17		0.23		0.19		0.082	
1,3-Dichlorobenzene	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dioxane	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
2-Butanone (MEK)	4.1	U	4.1	U	4.1	U	4.1	U	8.1		11		4.1	U
2-Hexanone (MBK)	0.22		0.14	U	0.27		0.32		0.48		0.39		0.49	
4-Ethyltoluene	0.17	U	0.17	U	0.17	U	0.17	U	0.3		0.34		0.21	
Methyl Isobutyl Ketone	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
Acetone	13	J	8.8	J	28	J	16	J	44	J	56	J	28	J
Benzene	0.70		0.78		1.1		0.94		2.3		0.84		0.67	
Bromoform	0.36	U	0.36	U	0.36	U	0.36	U	0.36	U	0.36	U	0.36	U
Bromomethane	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	0.36		0.41		0.11	U	0.11	U	0.11	U	0.41		0.37	
Chlorobenzene	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
Chloroethane	0.092	U	0.092	U	0.092	U	0.092	U	0.092	U	0.14		0.092	U
Chloroform	0.17		0.21		0.22		0.22		0.19		0.22		0.41	
Chloromethane	0.74		0.94		1.1		1.1		0.95		1.1		0.75	
cis-1,2-Dichloroethylene	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U
cis-1,3-Dichloropropene	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
Cyclohexane	0.20		0.41		0.17		0.21		0.4		0.29		0.16	
Dibromochloromethane	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
Dichlorodifluoromethane	1.2		1.2		1.3		1.3		1.2		1.2		1.3	
Ethyl Acetate	0.44		0.93		1.6		0.83		0.38		0.39		0.50	
Ethylbenzene	0.16		0.16		0.22		0.24		0.44		0.47		0.18	
Heptane	0.54		0.68		2.0		2.0		1.3		0.77		0.24	
Hexane	4.9	U	4.9	U	4.9	U	4.9	U	4.9	U	4.9	U	4.9	U
Isopropanol	3.4	U	3.4	U	3.4	U	3.4	U	14		12		29	
m&p-Xylene	0.48		0.48		0.63		0.68		1.6		1.7		0.57	
MTBE	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
Methylene Chloride	1.2	U	2.3	U	1.4	U	2.2	U	15		20		1.5	U
o-Xylene	0.20		0.20		0.24		0.26		0.63		0.70		0.27	
Propene	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
Styrene	0.19		0.15	U	0.15	U	0.18		0.18		0.15	U	0.15	U
Tetrachloroethylene	0.12	U	0.13		0.12	U	0.12	U	0.12	U	0.45		0.55	
Tetrahydrofuran	0.10	U	0.10	U	0.18		0.24		8.5		14		0.42	
Toluene	1.2		1.4		1.5		1.4		2.0		1.9		1.1	
trans-1,2-Dichloroethylene	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
Trichloroethylene	0.097	U	0.097	U	0.097	U	0.097	U	0.097	U	0.097	U	0.097	U
Trichlorofluoromethane	1.1		1.2		1.2		1.2		1.2		1.2		1.1	
Vinyl Acetate	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	0.046	U	0.046	U	0.046	U	0.046	U	0.046	U	0.046	U	0.046	U

TABLE 5 (continued)
Summary of Results for VOC Analysis of Samples Collected using SUMMA® Canisters in µg/m³
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-IA-008	219-IA-009	219-IA-010	219-IA-011	219-IA-012	219-IA-013	219-AA-014
Location	Unit 34	Unit 34	Unit 70	Unit 70	Unit 175	Unit 175	Unit 175
Sub-Location	1st Floor	1st Floor CO	1st Floor	Basement	Basement	1st Floor	Behind House
Sample Type	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Ambient Air
Result Units	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³
1,1,1-Trichloroethane	0.098 U	0.098 U	0.098 U	0.19 U	0.60	0.34	0.098 U
1,1,2,2-Tetrachloroethane	0.12 U	0.12 U	0.12 U	0.24 U	0.24 U	0.24 U	0.12 U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.57	0.54	0.55	0.55	0.83	0.59	0.53
1,1,2-Trichloroethane	0.098 U	0.098 U	0.098 U	0.19 U	0.19 U	0.19 U	0.098 U
1,1-Dichloroethane	0.073 U	0.073 U	0.073 U	0.14 U	0.14 U	0.14 U	0.073 U
1,1-Dichloroethylene	0.071 U	0.071 U	0.071 U	0.14 U	0.14 U	0.14 U	0.071 U
1,2,4-Trimethylbenzene	1.2	1.1	0.24	0.26	0.54	0.43	0.24
1,2-Dibromoethane	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,2-Dichlorobenzene	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	0.21	0.20	0.15	0.15	0.14 U	0.14 U	0.062 J
1,2-Dichloropropane	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
1,3,5-Trimethylbenzene	0.36	0.32	0.17 U	0.17 U	0.17	0.17 U	0.17 U
1,3-Butadiene	0.14	0.077 U	0.093	0.11	0.13	0.21	0.14
1,3-Dichlorobenzene	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,4-Dichlorobenzene	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,4-Dioxane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
2-Butanone (MEK)	4.1 U	4.1 U	4.1 U	4.1 U	6.1	4.1 U	4.1 U
2-Hexanone (MBK)	0.29	0.14 U	0.30	0.53 J	0.24 J	0.14 UJ	0.27
4-Ethyltoluene	0.3	0.28	0.17 U	0.17 U	0.17 U	0.12 J	0.17 U
Methyl Isobutyl Ketone	0.14 U	0.14 U	0.22	0.23 J	0.14 UJ	0.14 U	0.14 U
Acetone	56 J	48 J	160 J	130 J	43 J	23 J	10 J
Benzene	0.76	0.72	0.72	0.75	1.3	1.3	1.0
Bromoform	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Bromomethane	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Carbon Tetrachloride	0.72	0.11 U	0.41	0.35	0.55	0.39	0.34
Chlorobenzene	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chloroethane	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U
Chloroform	0.53	0.49	0.19	0.19	2.6	0.95	0.17 U
Chloromethane	0.94	0.95	0.82	0.85	1.2	0.85	0.95
cis-1,2-Dichloroethylene	0.071 U	0.071 U	0.071 U	0.14 U	0.14 U	0.14 U	0.071 U
cis-1,3-Dichloropropene	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	0.24	0.22	0.13	0.13	0.21	0.32	0.13
Dibromochloromethane	0.15 U	0.15 U	0.15 U	0.3 U	0.3 U	0.3 U	0.15 U
Dichlorodifluoromethane	1.3	1.1	1.3	1.4	3.2	2.1	1.2
Ethyl Acetate	3.1	3.3	0.51	0.61	1.4	0.73	0.13 U
Ethylbenzene	0.31	0.29	0.25	0.25	2.5	0.93	0.20
Heptane	0.40	0.37	0.23	0.25	0.37	0.99	0.26
Hexane	4.9 U	4.9 U	4.9 U	4.9 U	28	4.9 U	4.9 U
Isopropanol	320	230	4.2	3.4 U	3.5	6.7	3.4 U
m&p-Xylene	0.90	0.84	0.63	0.61	7.9	3.3	0.63
MTBE	0.22	0.21	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Methylene Chloride	4.4 U	4.5 U	1.5 U	2.1 U	61	2.3 U	4.2 U
o-Xylene	0.38	0.35	0.25	0.24	2.0	1.1	0.26
Propene	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
Styrene	0.16	0.19	0.28	0.16	0.15 U	0.15 U	0.15 U
Tetrachloroethylene	0.58	0.55	0.12 U	0.24 U	0.31	0.24 U	0.12 U
Tetrahydrofuran	0.19	0.18	0.1 U	0.14	0.81	0.23	0.1 U
Toluene	2.4	2.3	1.5	1.4	7.5	3.3	1.3
trans-1,2-Dichloroethylene	0.071 U	0.071 U	0.071 U	0.14 U	0.14 U	0.14 U	0.071 U
trans-1,3-Dichloropropene	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Trichloroethylene	0.097 U	0.097 U	0.097 U	0.19 U	0.19 U	0.19 U	0.097 U
Trichlorofluoromethane	1.2	1.2	1.2	1.2	11	4.6	1.1
Vinyl Acetate	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
Vinyl Chloride	0.046 U	0.046 U	0.046 U	0.089 U	0.089 U	0.089 U	0.13

TABLE 5 (continued)
Summary of Results for VOC Analysis of Samples Collected using SUMMA® Canisters in µg/m³
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-AA-015		219-SS-016		219-SS-017		219-SS-018		219-SS-019		219-SS-020		219-TB-021		219-SS-022	
Location	Unit 116		Unit 84		Unit 116		Unit 50		Unit 34		Unit 70		Trip Blank		Unit 175	
Sub-Location	Ernst Street		Basement		Basement		Basement		Basement		Basement		NA		Basement	
Sample Type	Ambient Air		Sub-Slab		Sub-Slab		Sub-Slab		Sub-Slab		Sub-Slab		Blank		Sub-Slab	
Result Units	ug/m³		ug/m³		ug/m³		ug/m³		ug/m³		ug/m³		ug/m³		ug/m³	
1,1,1-Trichloroethane	0.098	U	0.55	U	0.55	U	0.55	U	0.58		0.55	U	0.098	U	1.8	
1,1,2,2-Tetrachloroethane	0.12	U	0.69	U	0.69	U	0.69	U	0.69	U	0.69	U	0.12	U	0.69	U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.51		0.77	U	0.77	U	0.77	U	0.77	U	0.77	U	0.27	U	0.77	U
1,1,2-Trichloroethane	0.098	U	0.55	U	0.55	U	0.55	U	0.55	U	0.55	U	0.098	U	0.55	U
1,1-Dichloroethane	0.073	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.073	U	0.40	U
1,1-Dichloroethylene	0.071	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.071	U	0.40	U
1,2,4-Trimethylbenzene	0.20		0.79		0.49	U	0.49	U	0.49	U	0.49	U	0.17	U	0.49	U
1,2-Dibromoethane	0.27	U	0.77	U	0.77	U	0.77	U	0.77	U	0.77	U	0.27	U	0.77	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24	U	0.70	U	0.70	U	0.70	U	0.70	U	0.70	U	0.24	U	0.70	U
1,2-Dichlorobenzene	0.21	U	0.60	U	0.60	U	0.60	U	0.60	U	0.60	U	0.21	U	0.60	U
1,2-Dichloroethane	0.073	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.073	U	0.40	U
1,2-Dichloropropane	0.16	U	0.46	U	0.46	U	0.46	U	0.46	U	0.46	U	0.16	U	0.46	U
1,3,5-Trimethylbenzene	0.17	U	0.49	U	0.49	U	0.49	U	0.49	U	0.49	U	0.17	U	0.49	U
1,3-Butadiene	0.077	U	0.22	U	0.50		0.22	U	0.22	U	0.22	U	0.077	U	0.22	U
1,3-Dichlorobenzene	0.21	U	0.60	U	0.60	U	0.60	U	0.60	U	0.60	U	0.21	U	0.60	U
1,4-Dichlorobenzene	0.21	U	0.60	U	0.60	U	0.60	U	0.60	U	0.60	U	0.21	U	0.60	U
1,4-Dioxane	1.3	U	3.6	U	3.6	U	3.6	U	3.6	U	3.6	U	1.3	U	3.6	U
2-Butanone (MEK)	4.1	U	12	U	12	U	12	U	12	U	12	U	4.1	U	12	U
2-Hexanone (MBK)	0.26		1.1	J	0.86	J	0.41	UJ	0.72	J	0.61	J	0.14	U	0.47	J
4-Ethyltoluene	0.17	U	0.49	U	0.49	U	0.49	U	0.49	U	0.49	U	0.17	U	0.49	U
Methyl Isobutyl Ketone	0.14	U	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.14	U	0.41	UJ
Acetone	9.6	J	120	J	140	J	64	J	98	J	77	J	3.3	U	79	J
Benzene	0.71		0.34		1.2		0.32	U	0.32	U	0.32	U	0.11	U	0.32	U
Bromoform	0.36	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	0.36	U	1.0	U
Bromomethane	0.14	U	0.39	U	0.39	U	0.39	U	0.39	U	0.39	U	0.14	U	0.39	U
Carbon Tetrachloride	0.29		0.63	U	0.63	U	0.63	U	0.63	U	0.63	U	0.11	U	0.63	U
Chlorobenzene	0.16	U	0.46	U	0.46	U	0.46	U	0.46	U	0.46	U	0.16	U	0.46	U
Chloroethane	0.092	U	0.26	U	0.26	U	0.26	U	0.26	U	0.26	U	0.092	U	0.26	U
Chloroform	0.17	U	0.49	U	0.77		2.4		3.6		0.49	U	0.17	U	0.78	
Chloromethane	0.87		0.93		0.94		0.41	U	0.41	U	0.41	U	0.14	U	0.41	U
cis-1,2-Dichloroethylene	0.071	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.071	U	0.40	U
cis-1,3-Dichloropropene	0.16	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.16	U	0.45	U
Cyclohexane	0.12	U	0.34	U	0.5		0.34	U	0.34	U	0.36		0.12	U	0.34	U
Dibromochloromethane	0.15	U	0.85	U	0.85	U	0.85	U	0.85	U	0.85	U	0.15	U	0.85	U
Dichlorodifluoromethane	1.2		2.2		1.8		2.1		2.2		1.9		0.17	U	7.5	
Ethyl Acetate	0.13	U	1.1		1.1		0.36	U	0.75		0.36	U	0.13	U	0.36	U
Ethylbenzene	0.16		0.43	U	0.65		0.43	U	0.43	U	0.43	U	0.15	U	0.43	U
Heptane	0.18		0.41	U	1.4		0.41	U	0.41	U	0.41	U	0.14	U	0.41	U
Hexane	4.9	U	14	U	14	U	14	U	14	U	14	U	4.9	U	14	U
Isopropanol	3.4	U	9.8	U	9.8	U	9.8	U	9.8	U	9.8	U	3.4	U	9.8	U
m&p-Xylene	0.48		0.87	U	1.3		0.87	U	0.87	U	0.87	U	0.3	U	0.87	U
MTBE	0.13	U	0.36	U	0.36	U	0.36	U	0.36	U	0.36	U	0.13	U	0.36	U
Methylene Chloride	1.7	U	14		12		15		22		3.8	U	1.5	U	3.5	U
o-Xylene	0.21		1.4		1.5		0.48		0.82		0.43	U	0.15	U	0.63	
Propene	2.4	U	6.9	U	6.9	U	6.9	U	6.9	U	6.9	U	2.4	U	6.9	U
Styrene	0.15	U	0.43	U	0.43	U	0.43	U	0.43	U	0.43	U	0.15	U	0.43	U
Tetrachloroethylene	0.12	U	1.0		0.81		0.68	U	3.8		1.5		0.12	U	0.92	
Tetrahydrofuran	0.1	U	0.29	U	0.29	U	0.87		0.29	U	0.29	U	0.1	U	0.29	U
Toluene	0.96		1.0		2.2		0.41		0.51		0.38	U	0.13	U	0.38	U
trans-1,2-Dichloroethylene	0.071	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.071	U	0.40	U
trans-1,3-Dichloropropene	0.16	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.16	U	0.45	U
Trichloroethylene	0.097	U	0.54	U	0.54	U	0.55		0.54	U	0.54	U	0.097	U	8.4	
Trichlorofluoromethane	1.1		1.4		1.4		1.4		1.4		1.2		0.2	U	3.3	
Vinyl Acetate	2.5	UJ	7.0	UJ	7.0	UJ	7.0	UJ	7.0	UJ	7.0	UJ	2.5	UJ	7.0	UJ
Vinyl Chloride	0.046	U	0.26	U	0.26	U	0.26	U	0.26	U	0.26	U	0.046	U	0.26	U

TABLE 6
Comparison of Results for Samples Collected using Tedlar® Bags versus SUMMA® Canisters in ppbv
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

Sample Number	219-SS-016	219-T-001		219-SS-018	219-T-003		219-SS-019	219-T-004		219-SS-020	219-T-005		219-SS-022	219-T-006	
Location	Unit 84	Unit 84		Unit 50	Unit 50		Unit 34	Unit 34		Unit 70	Unit 70		Unit 175	Unit 175	
Sample Type	Sub-Slab	Sub-Slab		Sub-Slab	Sub-Slab		Sub-Slab	Sub-Slab		Sub-Slab	Sub-Slab		Sub-Slab	Sub-Slab	
Media	SUMMA	Tedlar		SUMMA	Tedlar		SUMMA	Tedlar		SUMMA	Tedlar		SUMMA	Tedlar	
Results Units	ppbv	ppbv	RPD (%)	ppbv	ppbv	RPD (%)	ppbv	ppbv	RPD (%)	ppbv	ppbv	RPD (%)	ppbv	ppbv	RPD (%)
1,1,1-Trichloroethane	0.10 U	0.50 U	NC	0.10 U	0.50 U	NC	0.11	0.50 U	NC	0.10 U	0.50 U	NC	0.32	0.50 U	NC
1,1-Dichloroethane	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC
1,1-Dichloroethene	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC
Benzene	0.11	0.52 U	NC	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC
Chloroform	0.10 U	0.52 U	NC	0.49	0.71	36.7	0.74	1.0	29.9	0.10 U	0.52 U	NC	0.16	0.52 U	NC
cis-1,2-Dichloroethene	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC
Ethyl Benzene	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC
m,p-Xylene	0.20 U	0.52 U	NC	0.20 U	0.52 U	NC	0.20 U	0.52 U	NC	0.20 U	0.52 U	NC	0.20 U	0.52 U	NC
Methyl Tert Butyl Ether	0.10 U	0.50 U	NC	0.10 U	0.50 U	NC	0.10 U	0.50 U	NC	0.10 U	0.50 U	NC	0.10 U	0.50 U	NC
o-Xylene	0.32	0.52 U	NC	0.11	0.52 U	NC	0.19	0.52 U	NC	0.10 U	0.52 U	NC	0.15	0.52 U	NC
Tetrachloroethene	0.15	0.51 U	NC	0.10 U	0.51 U	NC	0.57	1.1	63.5	0.23	0.51 U	NC	0.14	0.51 U	NC
Toluene	0.27	0.52 U	NC	0.11	0.52 U	NC	0.14	0.52 U	NC	0.10 U	0.52 U	NC	0.10 U	0.52 U	NC
trans-1,2-Dichloroethene	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC	0.10 U	0.53 U	NC
Trichloroethene	0.10 U	0.50 U	NC	0.10	0.50 U	NC	0.10 U	0.50 U	NC	0.10 U	0.50 U	NC	1.6	2.7	51.2
Vinyl Chloride	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC	0.10 U	0.51 U	NC

TABLE 7
TAGA Target Compound Summary for Units 116 and 84
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

TAGA Target Compound Summary for Unit 116 and 84									
File: 93MSMS477 Acquired on 22 January 2014 at 10:37:01									
		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
Detection Limits - DL:		0.07	0.033	0.037	6.5	1.1	1.1	1.7	0.65
Quantitation Limits - QL:		0.23	0.11	0.12	22	3.7	3.7	5.5	2.2
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.85J
D - E	Bar	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
F - G	Men's room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	1.3J	DL=1.1	DL=1.7	0.82J
H - I	Women's room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.91J
J - K	Kitchen	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.90J
L - M	Pantry	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.99J
O - P	Basement room one	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
Q - R	Basement room two	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
T - U	Dining room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
W - X	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
Y - Z	30 mL/min spike	9.4	10	11	11.J	12	17	10	33

TABLE 8
TAGA Target Compound Summary for Unit 50
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

TAGA Target Compound Summary for Unit 50									
File: 93MSMS478 Acquired on 22 January 2014 at 11:03:26									
		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
	Detection Limits - DL:	0.07	0.033	0.037	6.5	1.1	1.1	1.7	0.65
	Quantitation Limits - QL:	0.23	0.11	0.12	22	3.7	3.7	5.5	2.2
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
D - E	Room one under construction	DL=0.070	DL=0.033	DL=0.037	DL=6.5	4.6	DL=1.1	DL=1.7	1.9J
G - H	Basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	6.6	DL=1.1	DL=1.7	2.0J
I - J	Trench	DL=0.070	DL=0.033	DL=0.037	DL=6.5	6.2	DL=1.1	DL=1.7	1.3J
K - L	Sewer pipe	DL=0.070	DL=0.033	DL=0.037	DL=6.5	3.6J	DL=1.1	DL=1.7	1.6J
M - N	Crawl space	DL=0.070	DL=0.033	DL=0.037	DL=6.5	4.8	DL=1.1	DL=1.7	2.4
O - P	Can of PVC cement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	5.5	DL=1.1	DL=1.7	1.7J
S - T	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
U - V	30 mL/min spike	9	9.2	10	9.2J	12	17	10	29

TABLE 9
TAGA Target Compound Summary for Unit 34
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

TAGA Target Compound Summary for Unit 34									
File: 93MSMS479 Acquired on 22 January 2014 at 11:40:54									
		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
	Detection Limits - DL:	0.07	0.033	0.037	6.5	1.1	1.1	1.7	0.65
	Quantitation Limits - QL:	0.23	0.11	0.12	22	3.7	3.7	5.5	2.2
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
D - E	Living room / dining room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	1.5J	DL=1.1	DL=1.7	1.6J
F - G	Kitchen	DL=0.070	DL=0.033	DL=0.037	DL=6.5	1.3J	DL=1.1	1.7J	1.6J
I - J	Front of the basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.94J
K - L	Back of the basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.98J
N - O	Area under the sink	DL=0.070	DL=0.033	DL=0.037	DL=6.5	2.8J	DL=1.1	DL=1.7	2.1J
P - Q	Storage bin	DL=0.070	0.036J	DL=0.037	DL=6.5	39	3.0J	81	260
R - S	Liquid nail glue	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	2.6
U - V	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
W - X	30 mL/min spike	7.8	7.5	9	7.0J	9.8	13	8.9	22

TABLE 10
TAGA Target Compound Summary for Unit 70
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

TAGA Target Compound Summary for Unit 70									
File: 93MSMS480 Acquired on 22 January 2014 at 12:30:01									
		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
Detection Limits - DL:		0.07	0.033	0.037	6.5	1.1	1.1	1.7	0.65
Quantitation Limits - QL:		0.23	0.11	0.12	22	3.7	3.7	5.5	2.2
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
D - E	Living room / kitchen	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.73J
G - H	Basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.70J
K - L	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
M - N	30 mL/min spike	7.6	7.4	8.6	8.9J	10	13	9	22

TABLE 11
TAGA Target Compound Summary for Unit 175
Passyunk Soil Gas Site
Philadelphia, PA
February 2018

TAGA Target Compound Summary for Unit 175									
File: 93MSMS482 Acquired on 22 January 2014 at 14:22:44									
		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
	Detection Limits - DL:	0.068	0.048	0.029	6.1	1.5	1.7	2.1	0.63
	Quantitation Limits - QL:	0.23	0.16	0.096	20	4.9	5.7	7.1	2.1
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	DL=0.63
D - E	Living room / dining room	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	1.9J
F - G	Kitchen	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	1.7J
I - J	Basement	DL=0.068	DL=0.048	DL=0.029	DL=6.1	2.7J	DL=1.7	2.5J	3.5
K - L	Floor drain	DL=0.068	DL=0.048	DL=0.029	DL=6.1	2.1J	DL=1.7	DL=2.1	3
M - N	Crack in the wall	DL=0.068	DL=0.048	DL=0.029	DL=6.1	2.1J	DL=1.7	2.3J	3.6
O - P	Hole one in the wall	DL=0.068	DL=0.048	DL=0.029	DL=6.1	4.9J	DL=1.7	DL=2.1	3.1
Q - R	Hole two in the wall	DL=0.068	DL=0.048	DL=0.029	DL=6.1	1.9J	DL=1.7	DL=2.1	3
U - V	Post-exit ambient	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	DL=0.63
W - X	30 mL/min spike	6.2	6.2	6.9	DL=6.1	5.8	6.6	6.8J	10

FIGURES

V05

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-010	Soil Gas	1.9/13	ND	2.4/12

V04

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-011	Soil Gas	2.6/18	ND	0.93/4.5

Unit 70

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-005	Sub-Slab	ND	ND	ND
219-SS-020	Sub-Slab	0.23/1.5	ND	ND
219-IA-011	Basement	ND	ND	0.038/0.19
219-IA-010	1st Floor	ND	ND	0.036/0.19

V12

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-007	Soil Gas	1.8/12	ND	5.0/24
219-T-012	Soil Gas	1.7/11	ND	4.8/23

V14

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-009	Soil Gas	0.99/6.7	ND	ND

V15

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-008	Soil Gas	ND	ND	16/78

Unit 50

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-003	Sub-Slab	ND	ND	0.71/3.5
219-SS-018	Sub-Slab	ND	0.10/0.55	0.49/2.4
219-IA-006	Basement	0.066/0.45	ND	0.044/0.22
219-IA-005	1st Floor	ND	ND	0.039/0.19

V01

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-014	Soil Gas	1.6/11	ND	0.52/2.5

V02

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-015	Soil Gas	1.7/11	ND	2.0/9.8

Unit 175

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-006	Sub-Slab	ND	2.7/14.5	ND
219-IA-012	Basement	0.046/0.31	ND	0.53/2.6
219-IA-013	1st Floor	ND	ND	0.19/0.95
219-AA-014	Ambient	ND	ND	ND
219-SS-022	Sub-Slab	0.14/0.92	1.6/8.4	0.16/0.78

V06

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-013	Soil Gas	ND	ND	8.9/43

Unit 34

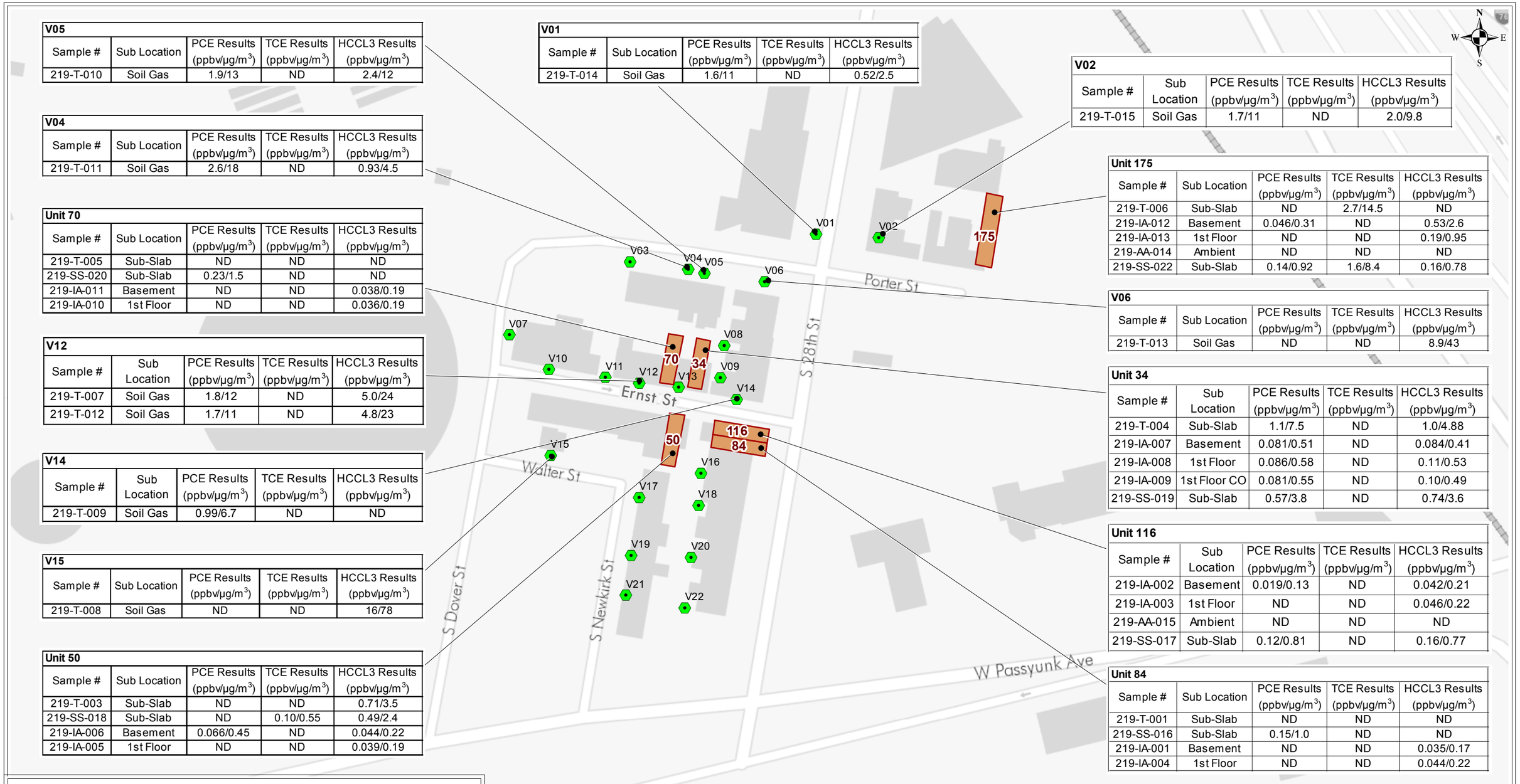
Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-004	Sub-Slab	1.1/7.5	ND	1.0/4.88
219-IA-007	Basement	0.081/0.51	ND	0.084/0.41
219-IA-008	1st Floor	0.086/0.58	ND	0.11/0.53
219-IA-009	1st Floor CO	0.081/0.55	ND	0.10/0.49
219-SS-019	Sub-Slab	0.57/3.8	ND	0.74/3.6

Unit 116

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-IA-002	Basement	0.019/0.13	ND	0.042/0.21
219-IA-003	1st Floor	ND	ND	0.046/0.22
219-AA-015	Ambient	ND	ND	ND
219-SS-017	Sub-Slab	0.12/0.81	ND	0.16/0.77

Unit 84

Sample #	Sub Location	PCE Results (ppbv/µg/m^3)	TCE Results (ppbv/µg/m^3)	HCCL3 Results (ppbv/µg/m^3)
219-T-001	Sub-Slab	ND	ND	ND
219-SS-016	Sub-Slab	0.15/1.0	ND	ND
219-IA-001	Basement	ND	ND	0.035/0.17
219-IA-004	1st Floor	ND	ND	0.044/0.22



Legend

	Soil Vapor Well	TCE	Trichloroethene
	Sampled Units	PCE	Tetrachloroethene
µg/m^3	micrograms per cubic meter	HCCL3	Chloroform
ppbv	parts per billion by volume	ND	Not Detected

U.S. EPA Environmental Response Team
Scientific, Engineering, Response and Analytical Services
EP-W-09-031
W.A.# 0-219

Figure 1
Map of Tetrachloroethene, Trichloroethene and Chloroform
Tedlar Bag and SUMMA Canister Results
Passyunk Soil Gas Site
Philadelphia, Pennsylvania

APPENDIX A

Final GC/MS Analytical Report for Samples Collected in Tedlar® Bags

Passyunk Soil Gas Site

Trip Report

February 2018

GC/MS ANALYTICAL REPORT
PASSYUNK SOIL GAS SITE
PHILADELPHIA, PENNSYLVANIA
FEBRUARY 2014

U.S. EPA Work Assignment No.: SERAS-219
LOCKHEED MARTIN Work Order No.: SER00219
U.S. EPA Contract No.: EP-W-09-031

Submitted to
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APPENDICES

Appendix A Chain of Custody Records
Appendix B Certificates of Analysis
Appendix C Calibration Data
Appendix D Quantitation Reports

1.0 INTRODUCTION

The Environmental Protection Agency/Environmental Response Team (EPA/ERT) issued Work Assignment # SERAS-219 to Lockheed Martin under the Scientific, Engineering, Response, and Analytical Services (SERAS) contract to conduct a vapor intrusion study at the Passyunk Soil Gas Site (Site) located in Philadelphia, Pennsylvania (PA).

An Agilent®7890 gas chromatograph and 5975C Triple Axis mass spectrometer (GC/MS) were used to perform volatile organic compound (VOC) analysis on sub-slab soil gas samples collected in one-liter (L) Tedlar® bags. The following analytes comprised the target compound list: tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), vinyl chloride (VCL), methyl tert butyl ether (MTBE), chloroform ($HCCL_3$), 1,1,1-trichloroethane (1,1,1-TCA) and benzene, ethyl benzene, toluene, m&p-xylenes, and o-xylene (BETX).

On-site GC/MS analyses occurred from 21 January 2014 to 23 January 2014 on 14 samples, five sub-slab soil gas samples and nine soil gas samples collected in Tedlar® bags by SERAS personnel at the Site. Analysis was performed in accordance with SERAS Standard Operating Procedure (SOP) #1741, *Field Analysis of VOCs in Gaseous Phase Samples by GC/MSD Loop Injection.* The analytical data meets definitive data (DD) requirements as per EPA Method TO-15 modified for Tedlar® bag samples. Table 1 details the samples by chain of custody (COC) record, number of samples, sampled and received dates, sample matrix, and analysis. A copy of the COC record is included in Appendix A.

2.0 PROCEDURES

A Tedlar® bag was attached to the sample introduction port of the heated dual loop injection apparatus. One of the loops was filled with a sample and the other loop with internal standard. The contents of both loops were simultaneously injected onto the head of the column for subsequent analysis by GC/MS. The Agilent ChemStation® data system was used to evaluate and process the data. Table 2 lists the operating conditions of the dual loop injection apparatus and the GC/MS instrument.

2.1 Analysis

An aliquant of sample was directly introduced into the first loop of the injection apparatus from a Tedlar® bag using the sample introduction port. The second loop was filled from a SUMMA® canister containing the internal standard. The loops were switched in line with the carrier gas to inject the sample and internal standard into the GC/MS instrument.

The GC oven was temperature programmed to focus the sample on the head of the column and to achieve quick separation of the VOCs in the sample, which were then detected by the MS detector. Comparing their retention times and mass spectra with those of the 500 parts per billion by volume (ppbv) reference standard permits identification of the VOCs in the sample.

2.2 Tuning and Calibration Standards

All certified standards were obtained from commercial vendors and the certificates of analysis (COAs) are presented in Appendix B. The standards' cylinder numbers, concentrations, and compound quantitation ions used are presented in Table 3.

Mass spectrometer tuning was checked daily and re-tuned as needed. Five milliliters (mL) of p-bromofluorobenzene (BFB) at one part per million by volume (ppmv) were analyzed to validate the mass spectrometer tuning parameters.

The primary and secondary loop GC/MS standards both contained 15 target compounds in a balance of nitrogen. The primary and secondary chloroform standards both contained 1 target compound in a balance of nitrogen. The concentrations in the calibrations were based on the

actual concentrations in the standards.

The internal standard mix consists of bromochloromethane, 1,4-difluorobenzene, and chlorobenzene-d_5 each at approximately one ppmv. Fifty microliters (µL) of the internal standard, equivalent to 10 ppbv in a 5-mL injection were co-injected with all standards, blanks, and samples. After the instrument performance check standard criteria were met, the GC/MS was calibrated with a minimum of five concentrations that spanned the monitoring range of interest in an initial calibration sequence to determine the sensitivity and linearity of the instrument's response for the target compounds.

The continuing calibration verification (CCV) standard at the mid-point concentration and the low level continuing calibration verification (LLCCV) standard at the low-point concentration, were analyzed as daily calibration check standards. Samples were analyzed in the 24-hour period after meeting the acceptance criteria for the CCV and LLCCV.

2.3 Compound Identification and Quantitation

VOCs in the samples were identified and quantitated using the Agilent EnviroQuant® software. The software uses mass spectra reference libraries and extracted ion chromatograms matched with retention time windows to identify and quantify target compounds. The report format prints the internal standards, identified compound, calculated concentration, mass spectra (both raw and background subtracted), quantitation, and qualifier ion chromatograms.

The Reporting Limit (RL) for each compound was calculated using the following equation:

$$RL\ (ppbv) = Lowest\ Calibration\ Standard\ (ppbv) \times Dilution\ Factor\ (DF)$$

Dilution of a sample was performed when target compounds exceeded the upper range of the initial calibration. The dilution was documented in the injection logbook and the dilution factor was calculated using the following equation:

$$DF = \frac{Final\ Sample\ Volume\ (mL)}{Initial\ Sample\ Volume\ (mL)}$$

The target compound results were calculated using the following equation:

$$Concentration\ (ppbv) = Analytical\ Concentration\ of\ Compound\ (ppbv) \times DF$$

2.4 Quality Assurance/Quality Control

The following Quality Assurance/Quality Control (QA/QC) procedures were performed for this assignment:

- The GC/MS was tuned, as needed, with perfluorotributylamine (PFTBA) to meet ion abundance criteria for BFB, as listed in the BFB report included in the calibration data section (Appendix C).

- A six-point initial calibration or continuing calibration standards were prepared, analyzed, and acceptance criteria verified prior to sample analysis. Evaluations for the initial calibration standards (ICAL STD) or continuing calibration verification (CCV) and low level continuing calibration verification (LLCCV) standards are in the calibration data section (Appendix C).

- Immediately following the six-point initial calibration, the initial calibration verification

(ICV) standard was prepared from the secondary source standard, analyzed, and acceptance criteria verified. Evaluation of the ICV standard is in the calibration data section (Appendix C).

- Method blanks were analyzed after the calibration standard(s) and before samples were analyzed to assess possible laboratory contamination and/or carryover. When necessary, method blanks were analyzed to minimize carryover from standards or samples with high levels of target or non-target VOCs.

- During the 24-hour analytical period, at least one laboratory control sample (LCS) was prepared from the secondary standard, analyzed, and acceptance criteria verified. Table 5 lists the summary of the LCS results for VOCs. Evaluations for the LCS results are in the calibration data section (Appendix C).

- Internal standards from all standards, method blanks and samples were evaluated and acceptance criteria verified. Evaluations for the internal standards are in the calibration data section (Appendix C).

- During the 24-hour analytical period, at least one replicate sample (REP) was analyzed and acceptance criteria verified. Table 6 lists the replicate sample summary for VOCs in sub-slab soil gas samples. Evaluations for the replicate sample results are in the quantitation reports section (Appendix D).

- The lowest calibration standard used in the initial calibration was used for the RL.

- The following is a list of the QA/QC flags used in qualifying the results:

  U - None detected at or above the RL.

All applicable data qualifiers were inserted into the results table.

3.0 RESULTS

All results are reported in ppbv to two significant figures. Target compound results are presented in Table 4. Results for the LCS are presented in Table 5. Results for the replicate samples are presented in Table 6.

The COC record is found in Appendix A. The COAs, for all standards used, are found in Appendix B. The calibration package for each day of analysis is included in Appendix C. This package includes copies of the injection logbook # SERAS-L-0365, BFB tune reports, air and water check reports, initial calibration and continuing calibration reports, ICV and LCS evaluation reports, all standard quantitation reports and internal standard evaluations. Quantitation reports for all method blanks, soil gas samples and sub-slab soil gas samples are included in Appendix D.

All quantitation reports list the retention times, quantitation ions, peak areas, and concentrations of target compounds in ppbv. Calculated concentrations are generated using the average relative response factor from the initial calibration curve for each target compound.

4.0 DISCUSSION OF RESULTS

On 13 January 2014, five mL of BFB was analyzed and six ICAL STDs were prepared, analyzed, reviewed, and found to be acceptable. The ICV standard, method blank and LCS on 13 January 2014 were prepared, analyzed, reviewed and found to meet acceptance criteria.

On 21 January 2014, the BFB, CCV standard, LLCCV standard, method blank and LCS were prepared, analyzed, reviewed, and found to meet acceptance criteria. One soil gas sample was collected and analyzed

on-site by SERAS personnel. The internal standard result for the soil gas sample analyzed on 21 January 2014 was reviewed and found to be within the acceptable range. The LCS sample analyzed on 21 January 2014 was reviewed and found to meet acceptance criteria. No replicate sample (REP) was analyzed on 21 January 2014 due to an abrupt shutdown of field operations caused by severe weather. The preliminary result was reported on-site to the Work Assignment Manager (WAM). Sample Location V12 (sample number 219-T-012) had reported results for tetrachloroethene and chloroform at 4.8 ppbv and 1.7 ppbv, respectively.

On 22 January 2014, the BFB, CCV standard, LLCCV standard, method blank and LCS were prepared, analyzed, reviewed, and found to meet acceptance criteria. Five sub-slab soil gas samples were collected and analyzed on-site by SERAS personnel. The internal standard results for the sub-slab soil gas samples analyzed on 22 January 2014 were reviewed and found to be within the acceptable range. The replicate sample analyzed on 22 January 2014 was reviewed and found to meet acceptance criteria. The preliminary results were reported on-site to the WAM.

Of the five sub-slab soil gas samples collected and analyzed on 22 January 2014, sample number 219-T-004 (Unit 34) and sample number 219-T-003 (Unit 50) have the highest reportable results for chloroform at 1.0 ppbv and 0.71 ppbv, respectively. Sample number 219-T-004 (Unit 34) had a reportable result for tetrachloroethene at 1.1 ppbv. Sample number 219-T-006 (Unit 175) had a reportable result for trichloroethene at 2.7 ppbv. All other targeted compounds were not detected in any of the remaining sub-slab soil gas samples collected in Tedlar® bags on 22 January 2014.

On 23 January 2014, the BFB, CCV standard, LLCCV standard, method blank and LCS were prepared, analyzed, reviewed, and found to meet acceptance criteria. Nine soil gas samples were collected and analyzed on site by SERAS personnel. The internal standard results for the soil gas samples analyzed on 23 January 2014 were reviewed and found to be within the acceptable range. The replicate sample analyzed on 23 January 2014 was reviewed and found to meet acceptance criteria. The preliminary results were reported on-site to the WAM.

Of the eight soil gas samples collected and analyzed on 23 January 2014, sample number 219-T-008 (V15) and sample number 219-T-013 (V06) have the highest reportable results for chloroform at 16 ppbv and 8.9 ppbv, respectively. Sample number 219-T-011 (V04) and sample number 219-T-010 (V05) have the highest reportable results for tetrachloroethene at 2.6 ppbv and 1.9 ppbv, respectively. Sample number 219-T-014 (V01) and sample number 219-T-011 (V04) have the highest reportable results for 1,1,1-trichloroethane at 0.73 ppbv and 0.62 ppbv, respectively. All other targeted compounds were not detected in any of the remaining soil gas samples collected in Tedlar® bags on 23 January 2014.

TABLES

TABLE 1
Summary of Chain of Custody Records
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

COC #	Number of Samples	Date Sampled	Date Received	Matrix	Analysis
3-012714-115122-0008	1	01/21/2014	01/21/2014	Soil Gas	VOC / Loop GC/MS
	5	01/22/2014	01/22/2014		
	8	01/23/2014	01/23/2014		

TABLE 2
Instrument Conditions for Analysis of Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

AGILENT® GC	
Sample Loop	
Loop Volume	5 mL
Loop Temperature	160°C
Internal Standard Loop	
Loop Volume	50 µL (equivalent to 10ppbv)
Loop Temperature	160°C
GC Inlet	
Gas Type	Helium
Mode	Pulsed Splitless
Temperature	190°C
Pressure	23.099 psi
Pulsed Pressure	50.0 psi
Pulsed Time	0.50 minute
Purge Flow	30.0 mL/minute
Purge Time	0.00 minute
Septum Purge Flow	3 mL/minute
Total Flow	34.5 mL/ minute
GC Oven	
Column	Rtx-Volatiles, 20 m x 0.18 mm ID x 2.0 µm df
Mode	Constant Flow
Flow Rate	1.5 mL/ minute
Cryo (CO_2)	On
Quick Cryo Cooling	On
Initial Temperature	-10°C
Initial Temperature Hold Time	0.50 minute
Temperature Ramp Program	25°C/ minute
Final Temperature	160°C
Hold Time	0.50 minute
Total Run Time	7.80 minute
AGILENT® MS	
MS Temperatures	
MS Quadrupole	150°C
MS Ion Source	230°C
MS Transfer Line	200°C
MS Tune File	bfb.u
MS Acquisition Mode	SCAN/SIM
Solvent Delay	1.50 minute

TABLE 2 (continued)
Instrument Conditions for Analysis of Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

SIMS Parameters	
Group 1 Start Time	1.50 min
Ions/Dwell in Group 1	(27/100) (62/100) (64/100)
Group 2 Start Time	3.00 min
Ions/Dwell in Group 2	(61/40) (63/40) (96/40)
Group 3 Start Time	3.60 min
Ions/Dwell in Group 3	(27/25) (41/25) (53/25) (61/25) (63/25) (65/25) (73/25) (96/25) (98/25)
Group 4 Start Time	4.35 min
Ions/Dwell in Group 4	(47/20) (49/20) (61/20) (83/20) (85/20) (93/20) (96/20) (98/20) (128/20) (130/20)
Group 5 Start Time	4.68 min
Ions/Dwell in Group 5	(61/40) (97/40) (99/40)
Group 6 Start Time	4.90 min
Ions/Dwell in Group 6	(50/40) (63/40) (77/40) (78/40) (88/40) (114/40)
Group 7 Start Time	5.22 min
Ions/Dwell in Group 7	(95/40) (130/40) (132/40)
Group 8 Start Time	5.80 min
Ions/Dwell in Group 8	(91/40) (92/40)
Group 9 Start Time	6.30 min
Ions/Dwell in Group 9	(131/40) (164/40) (166/40)
Group 10 Start Time	6.65 min
Ions/Dwell in Group 10	(82/40) (91/40) (105/40) (106/40) (117/40) (119/40)

TABLE 3
Concentrations and Quantitation Ions for Air Toxic Standards
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Linde, Custom Class Calibration Standard
Cylinder Number: CC-82181
Certification Date: 09 September 2013
Expiration Date: 09 September 2014

BFB Compound	Quant Ion	Concentration
4-Bromofluorobenzene	N/A	0.99 ppm

Linde, Custom Class Calibration Standard
Cylinder Number: CC-256139
Certification Date: 22 August 2013
Expiration Date: 22 August 2014

Internal Standard	Quant Ion	Concentration
Bromochloromethane	49	0.96 ppm
1,4-Difluorobenzene	114	1.01 ppm
Chlorobenzene-d_5	117	1.05 ppm

Linde, Custom Class Calibration Standard
Cylinder Number: CC-106676
Certification Date: 16 April 2013
Expiration Date: 16 April 2014

Volatile Organic Compound	Quant Ion	Concentration
Vinyl chloride	62	20.5 ppm
1,1-Dichloroethene	61	20.4 ppm
trans-1,2-Dichloroethene	61	21.0 ppm
1,1-Dichloroethane	63	20.5 ppm
Methyl tert-Butyl Ether	73	20.1 ppm
cis-1,2-Dichloroethene	61	21.0 ppm
1,1,1-Trichloroethane	97	20.0 ppm
Benzene	78	20.9 ppm
Trichloroethene	130	20.1 ppm
Toluene	91	20.6 ppm
Tetrachloroethene	166	20.2 ppm
Ethylbenzene	91	20.7 ppm
m-Xylene	91	10.4 ppm
p-Xylene	91	10.4 ppm
o-Xylene	91	20.7 ppm

TABLE 3 (continued)
Concentrations and Quantitation Ions for Air Toxic Standards
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Linde, Custom Class Calibration Standard
Cylinder Number: CC-136210
Certification Date: 20 March 2013
Expiration Date: 20 March 2014

Volatile Organic Compound	Quant Ion	Concentration
Vinyl chloride	62	19.9 ppm
1,1-Dichloroethene	61	20.7 ppm
trans-1,2-Dichloroethene	61	20.8 ppm
1,1-Dichloroethane	63	20.3 ppm
Methyl tert-Butyl Ether	73	19.5 ppm
cis-1,2-Dichloroethene	61	20.9 ppm
1,1,1-Trichloroethane	97	19.7 ppm
Benzene	78	20.5 ppm
Trichloroethene	130	19.9 ppm
Toluene	91	20.2 ppm
Tetrachloroethene	166	20.0 ppm
Ethylbenzene	91	20.2 ppm
m-Xylene	91	10.1 ppm
p-Xylene	91	10.1 ppm
o-Xylene	91	20.2 ppm

Linde, Custom Class Calibration Standard
Cylinder Number: CC-128284
Certification Date: 22 November 2013
Expiration Date: 22 November 2014

Volatile Organic Compound	Quant Ion	Concentration
Chloroform	83	20.6 ppm

Linde, Custom Class Calibration Standard
Cylinder Number: CC-197345
Certification Date: 13 December 2013
Expiration Date: 13 December 2014

Volatile Organic Compound	Quant Ion	Concentration
Chloroform	83	21.2 ppm

TABLE 4
Results of Target Compounds for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:	93GCMS2014-058	93GCMS2014-060	93GCMS2014-064	93GCMS2014-066
Sample Number:	20140121-MB	219-T-012	20140122-MB	219-T-001
Sample Location:	Method Blank	V12	Method Blank	Unit 84
Sample Volume (ml):	5	5	5	5
Dilution multiplier:	1	1	1	1
Date Sampled:	21 Jan 2014	21 Jan 2014	22 Jan 2014	22 Jan 2014
Date Analyzed:	21 Jan 2014	21 Jan 2014	22 Jan 2014	22 Jan 2014

Compound	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL
Vinyl Chloride	U	0.51	U	0.51	U	0.51	U	0.51
1,1-Dichloroethene	U	0.51	U	0.51	U	0.51	U	0.51
Methyl Tert Butyl Ether	U	0.50	U	0.50	U	0.50	U	0.50
trans-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
1,1-Dichloroethane	U	0.51	U	0.51	U	0.51	U	0.51
cis-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
Chloroform	U	0.52	4.8	0.52	U	0.52	U	0.52
1,1,1-Trichloroethane	U	0.50	U	0.50	U	0.50	U	0.50
Benzene	U	0.52	U	0.52	U	0.52	U	0.52
Trichloroethene	U	0.50	U	0.50	U	0.50	U	0.50
Toluene	U	0.52	U	0.52	U	0.52	U	0.52
Tetrachloroethene	U	0.51	1.7	0.51	U	0.51	U	0.51
Ethyl Benzene	U	0.52	U	0.52	U	0.52	U	0.52
m,p-Xylene	U	0.52	U	0.52	U	0.52	U	0.52
o-Xylene	U	0.52	U	0.52	U	0.52	U	0.52

Results are in part per billion by volume (ppbv)
RL = Reporting Limit
U = None detected at or above the RL

TABLE 4 (continued)
Results of Target Compounds for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:	93GCMS2014-067	93GCMS2014-068	93GCMS2014-071	93GCMS2014-072
Sample Number:	219-T-003	219-T-004	219-T-005	219-T-006
Sample Location:	Unit 50	Unit 34	Unit 70	Unit 175
Sample Volume (ml):	5	5	5	5
Dilution multiplier:	1	1	1	1
Date Sampled:	22 Jan 2014	22 Jan 2014	22 Jan 2014	22 Jan 2014
Date Analyzed:	22 Jan 2014	22 Jan 2014	22 Jan 2014	22 Jan 2014

Compound	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL
Vinyl Chloride	U	0.51	U	0.51	U	0.51	U	0.51
1,1-Dichloroethene	U	0.51	U	0.51	U	0.51	U	0.51
Methyl Tert Butyl Ether	U	0.50	U	0.50	U	0.50	U	0.50
trans-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
1,1-Dichloroethane	U	0.51	U	0.51	U	0.51	U	0.51
cis-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
Chloroform	0.71	0.52	1.0	0.52	U	0.52	U	0.52
1,1,1-Trichloroethane	U	0.50	U	0.50	U	0.50	U	0.50
Benzene	U	0.52	U	0.52	U	0.52	U	0.52
Trichloroethene	U	0.50	U	0.50	U	0.50	2.7	0.50
Toluene	U	0.52	U	0.52	U	0.52	U	0.52
Tetrachloroethene	U	0.51	1.1	0.51	U	0.51	U	0.51
Ethyl Benzene	U	0.52	U	0.52	U	0.52	U	0.52
m,p-Xylene	U	0.52	U	0.52	U	0.52	U	0.52
o-Xylene	U	0.52	U	0.52	U	0.52	U	0.52

Results are in part per billion by volume (ppbv)
RL = Reporting Limit
U = None detected at or above the RL

TABLE 4 (continued)
Results of Target Compounds for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:	93GCMS2014-076	93GCMS2014-078	93GCMS2014-079	93GCMS2014-081
Sample Number:	20140123-MB	219-T-007	219-T-008	219-T-009
Sample Location:	Method Blank	V12	V15	V14
Sample Volume (ml):	5	5	5	5
Dilution multiplier:	1	1	1	1
Date Sampled:	23 Jan 2014	23 Jan 2014	23 Jan 2014	23 Jan 2014
Date Analyzed:	23 Jan 2014	23 Jan 2014	23 Jan 2014	23 Jan 2014

Compound	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL
Vinyl Chloride	U	0.51	U	0.51	U	0.51	U	0.51
1,1-Dichloroethene	U	0.51	U	0.51	U	0.51	U	0.51
Methyl Tert Butyl Ether	U	0.50	U	0.50	U	0.50	U	0.50
trans-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
1,1-Dichloroethane	U	0.51	U	0.51	U	0.51	U	0.51
cis-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
Chloroform	U	0.52	5.0	0.52	16	0.52	U	0.52
1,1,1-Trichloroethane	U	0.50	U	0.50	U	0.50	U	0.50
Benzene	U	0.52	U	0.52	U	0.52	U	0.52
Trichloroethene	U	0.50	U	0.50	U	0.50	U	0.50
Toluene	U	0.52	U	0.52	U	0.52	U	0.52
Tetrachloroethene	U	0.51	1.8	0.51	U	0.51	0.99	0.51
Ethyl Benzene	U	0.52	U	0.52	U	0.52	U	0.52
m,p-Xylene	U	0.52	U	0.52	U	0.52	U	0.52
o-Xylene	U	0.52	U	0.52	U	0.52	U	0.52

Results are in part per billion by volume (ppbv)
RL = Reporting Limit
U = None detected at or above the RL

TABLE 4 (continued)
Results of Target Compounds for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:	93GCMS2014-082	93GCMS2014-083	93GCMS2014-084	93GCMS2014-085
Sample Number:	219-T-010	219-T-011	219-T-013	219-T-014
Sample Location:	V05	V04	V06	V01
Sample Volume (ml):	5	5	5	5
Dilution multiplier:	1	1	1	1
Date Sampled:	23 Jan 2014	23 Jan 2014	23 Jan 2014	23 Jan 2014
Date Analyzed:	23 Jan 2014	23 Jan 2014	23 Jan 2014	23 Jan 2014

Compound	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL	Results (ppbv)	RL
Vinyl Chloride	U	0.51	U	0.51	U	0.51	U	0.51
1,1-Dichloroethene	U	0.51	U	0.51	U	0.51	U	0.51
Methyl Tert Butyl Ether	U	0.50	U	0.50	U	0.50	U	0.50
trans-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
1,1-Dichloroethane	U	0.51	U	0.51	U	0.51	U	0.51
cis-1,2-Dichloroethene	U	0.53	U	0.53	U	0.53	U	0.53
Chloroform	2.4	0.52	0.93	0.52	8.9	0.52	0.52	0.52
1,1,1-Trichloroethane	0.55	0.50	0.62	0.50	U	0.50	0.73	0.50
Benzene	U	0.52	U	0.52	U	0.52	U	0.52
Trichloroethene	U	0.50	U	0.50	U	0.50	U	0.50
Toluene	U	0.52	U	0.52	U	0.52	U	0.52
Tetrachloroethene	1.9	0.51	2.6	0.51	U	0.51	1.6	0.51
Ethyl Benzene	U	0.52	U	0.52	U	0.52	U	0.52
m,p-Xylene	U	0.52	U	0.52	U	0.52	U	0.52
o-Xylene	U	0.52	U	0.52	U	0.52	U	0.52

Results are in part per billion by volume (ppbv)
RL = Reporting Limit
U = None detected at or above the RL

TABLE 4 (continued)
Results of Target Compounds for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:	93GCMS2014-086
Sample Number:	219-T-015
Sample Location:	V02
Sample Volume (ml):	5
Dilution multiplier:	1
Date Sampled:	23 Jan 2014
Date Analyzed:	23 Jan 2014

Compound	Results (ppbv)	RL
Vinyl Chloride	U	0.51
1,1-Dichloroethene	U	0.51
Methyl Tert Butyl Ether	U	0.50
trans-1,2-Dichloroethene	U	0.53
1,1-Dichloroethane	U	0.51
cis-1,2-Dichloroethene	U	0.53
Chloroform	2.0	0.52
1,1,1-Trichloroethane	U	0.50
Benzene	U	0.52
Trichloroethene	U	0.50
Toluene	U	0.52
Tetrachloroethene	1.7	0.51
Ethyl Benzene	U	0.52
m,p-Xylene	U	0.52
o-Xylene	U	0.52

Results are in part per billion by volume (ppbv)
RL = Reporting Limit
U = None detected at or above the RL

TABLE 5
Summary of Laboratory Control Samples for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:			93GCMS2014-044.d	
Sample Number:			20140113-LCS	
Sample Volume (mL)			5	
Date Prepared:			13-Jan-2014	
Date Analyzed:			13-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140113-LCS 500 ppbv LCS (ppbv)	20140113-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	564.10	113.39
1,1-Dichloroethene	20.7	517.50	569.01	109.95
Methyl Tert Butyl Ether	19.5	487.50	552.27	113.29
trans-1,2-Dichloroethene	20.8	520.00	570.10	109.63
1,1-Dichloroethane	20.3	507.50	566.59	111.64
cis-1,2-Dichloroethene	20.9	522.50	570.66	109.22
Chloroform	20.6	515.00	557.37	108.23
1,1,1-Trichloroethane	19.7	492.50	555.23	112.74
Benzene	20.5	512.50	532.23	103.85
Trichloroethene	19.9	497.50	520.81	104.69
Toluene	20.2	505.00	515.30	102.04
Tetrachloroethene	20.0	500.00	529.58	105.92
Ethyl Benzene	20.0	500.00	556.69	111.34
m&p-Xylene	20.2	505.00	540.59	107.05
o-Xylene	20.2	505.00	557.29	110.35

ppmv = part per million by volume
Results are in part per billion by volume (ppbv)
% = Percentage

TABLE 5 (continued)
Summary of Laboratory Control Samples for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:			93GCMS2014-059.d	
Sample Number:			20140121-LCS	
Sample Volume (mL)			5	
Date Prepared:			22-Jan-2014	
Date Analyzed:			22-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140121-LCS 500 ppbv LCS (ppbv)	20140121-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	542.67	109.08
1,1-Dichloroethene	20.7	517.50	555.61	107.36
Methyl Tert Butyl Ether	19.5	487.50	532.63	109.26
trans-1,2-Dichloroethene	20.8	520.00	561.92	108.06
1,1-Dichloroethane	20.3	507.50	551.75	108.72
cis-1,2-Dichloroethene	20.9	522.50	566.06	108.34
Chloroform	20.6	515.00	561.60	109.05
1,1,1-Trichloroethane	19.7	492.50	543.26	110.31
Benzene	20.5	512.50	525.87	102.61
Trichloroethene	19.9	497.50	523.14	105.15
Toluene	20.2	505.00	517.48	102.47
Tetrachloroethene	20.0	500.00	536.45	107.29
Ethyl Benzene	20.0	500.00	565.22	113.04
m&p-Xylene	20.2	505.00	560.77	111.04
o-Xylene	20.2	505.00	569.92	112.86

ppmv = part per million by volume
Results are in part per billion by volume (ppbv)
% = Percentage

TABLE 5 (continued)
Summary of Laboratory Control Samples for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:			93GCMS2014-065.d	
Sample Number:			20140122-LCS	
Sample Volume (mL)			5	
Date Prepared:			22-Jan-2014	
Date Analyzed:			22-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140122-LCS 500 ppbv LCS (ppbv)	20140122-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	542.67	109.08
1,1-Dichloroethene	20.7	517.50	555.61	107.36
Methyl Tert Butyl Ether	19.5	487.50	532.63	109.26
trans-1,2-Dichloroethene	20.8	520.00	561.92	108.06
1,1-Dichloroethane	20.3	507.50	551.75	108.72
cis-1,2-Dichloroethene	20.9	522.50	566.06	108.34
Chloroform	20.6	515.00	561.60	109.05
1,1,1-Trichloroethane	19.7	492.50	543.26	110.31
Benzene	20.5	512.50	525.87	102.61
Trichloroethene	19.9	497.50	523.14	105.15
Toluene	20.2	505.00	517.48	102.47
Tetrachloroethene	20.0	500.00	536.45	107.29
Ethyl Benzene	20.0	500.00	565.22	113.04
m&p-Xylene	20.2	505.00	560.77	111.04
o-Xylene	20.2	505.00	569.92	112.86

ppmv = part per million by volume
Results are in part per billion by volume (ppbv)
% = Percentage

TABLE 5 (continued)
Summary of Laboratory Control Samples for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:			93GCMS2014-077.d	
Sample Number:			20140123-LCS	
Sample Volume (mL)			5	
Date Prepared:			23-Jan-2014	
Date Analyzed:			23-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140123-LCS 500 ppbv LCS (ppbv)	20140123-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	559.82	112.53
1,1-Dichloroethene	20.7	517.50	573.15	110.75
Methyl Tert Butyl Ether	19.5	487.50	546.56	112.11
trans-1,2-Dichloroethene	20.8	520.00	582.57	112.03
1,1-Dichloroethane	20.3	507.50	567.74	111.87
cis-1,2-Dichloroethene	20.9	522.50	586.61	112.27
Chloroform	20.6	515.00	552.71	107.32
1,1,1-Trichloroethane	19.7	492.50	549.19	111.51
Benzene	20.5	512.50	543.30	106.01
Trichloroethene	19.9	497.50	527.94	106.12
Toluene	20.2	505.00	554.86	109.87
Tetrachloroethene	20.0	500.00	553.45	110.69
Ethyl Benzene	20.0	500.00	609.67	121.93
m&p-Xylene	20.2	505.00	595.07	117.84
o-Xylene	20.2	505.00	612.99	121.38

ppmv = part per million by volume
Results are in part per billion by volume (ppbv)
% = Percentage

TABLE 5 (continued)
Summary of Laboratory Control Samples for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:			93GCMS2014-087.d	
Sample Number:			20140123-LCS	
Sample Volume (mL)			5	
Date Prepared:			23-Jan-2014	
Date Analyzed:			23-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140123-LCS 500 ppbv LCS (ppbv)	20140123-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	546.87	109.92
1,1-Dichloroethene	20.7	517.50	544.95	105.30
Methyl Tert Butyl Ether	19.5	487.50	516.97	106.05
trans-1,2-Dichloroethene	20.8	520.00	549.04	105.58
1,1-Dichloroethane	20.3	507.50	540.07	106.42
cis-1,2-Dichloroethene	20.9	522.50	549.98	105.26
Chloroform	20.6	515.00	523.35	101.62
1,1,1-Trichloroethane	19.7	492.50	522.48	106.09
Benzene	20.5	512.50	526.39	102.71
Trichloroethene	19.9	497.50	508.23	102.16
Toluene	20.2	505.00	524.70	103.90
Tetrachloroethene	20.0	500.00	529.10	105.82
Ethyl Benzene	20.0	500.00	574.65	114.93
m&p-Xylene	20.2	505.00	544.77	107.88
o-Xylene	20.2	505.00	567.76	112.43

ppmv = part per million by volume
Results are in part per billion by volume (ppbv)
% = Percentage

TABLE 6
Replicate Sample Summary for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:	93GCMS2014-068.d	93GCMS2014-069.d	
Sample Number:	219-T-004	219-T-004	
Sample Location:	Unit 34	Unit 34 REP	
Sample Volume (mL)	5	5	
Date Prepared:	22-Jan-2014	22-Jan-2014	
Date Analyzed:	22-Jan-2014	22-Jan-2014	
Compound	Results (ppbv)	Results (ppbv)	RPD (%)
Vinyl Chloride	U	U	NC
1,1-Dichloroethene	U	U	NC
Methyl Tert Butyl Ether	U	U	NC
trans-1,2-Dichloroethene	U	U	NC
1,1-Dichloroethane	U	U	NC
cis-1,2-Dichloroethene	U	U	NC
Chloroform	1.00	0.98	2.02
1,1,1-Trichloroethane	U	U	NC
Benzene	U	U	NC
Trichloroethene	U	U	NC
Toluene	U	U	NC
Tetrachloroethene	1.08	1.04	3.77
Ethyl Benzene	U	U	NC
m&p-Xylene	U	U	NC
o-Xylene	U	U	NC

Results are in part per billion by volume (ppbv)
REP = Replicate Sample
U = None detected at or above the Reporting Limit (RL)
NC = Not Calculable
RPD (%) = Relative Percent Difference

TABLE 6 (continued)
Replicate Sample Summary for Volatile Organic Compounds
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Data File:	93GCMS2014-079.d	93GCMS2014-080.d	
Sample Number:	219-T-008	219-T-008	
Sample Location:	V15	V15 REP	
Sample Volume (mL)	5	5	
Date Prepared:	23-Jan-2014	23-Jan-2014	
Date Analyzed:	23-Jan-2014	23-Jan-2014	
Compound	Results (ppbv)	Results (ppbv)	RPD (%)
Vinyl Chloride	U	U	NC
1,1-Dichloroethene	U	U	NC
Methyl Tert Butyl Ether	U	U	NC
trans-1,2-Dichloroethene	U	U	NC
1,1-Dichloroethane	U	U	NC
cis-1,2-Dichloroethene	U	U	NC
Chloroform	15.81	15.31	3.21
1,1,1-Trichloroethane	U	U	NC
Benzene	U	U	NC
Trichloroethene	U	U	NC
Toluene	U	U	NC
Tetrachloroethene	U	U	NC
Ethyl Benzene	U	U	NC
m&p-Xylene	U	U	NC
o-Xylene	U	U	NC

Results are in part per billion by volume (ppbv)
REP = Replicate Sample
U = None detected at or above the Reporting Limit (RL)
NC = Not Calculable
RPD (%) = Relative Percent Difference

APPENDIX A

Chain of Custody Records

Passyunk Soil Gas Site
Philadelphia, Pennsylvania

GC/MS Analytical Report

February 2014

USEPA
DateShipped: 1/23/2014
CarrierName:
AirbillNo:

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012714-115122-0008
Case #: 1
Lab: ERT/SERAS
Lab Phone: 732-321-4200

Lab #	Sample #	Location	Sub Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative
	219-T-001	Unit 84	Sub-Slab	GC/MS	Soil Gas	1/22/2014	11:30	1	Tedlar bag	None
	219-T-003	Unit 50	Sub-Slab	GC/MS	Soil Gas	1/22/2014	12:07	1	Tedlar Bag	None
	219-T-004	Unit 34	Sub-Slab	GC/MS	Soil Gas	1/22/2014	12:35	1	Tedlar Bag	None
	219-T-005	Unit 70	Sub-Slab	GC/MS	Soil Gas	1/22/2014	12:54	1	Tedlar Bag	None
	219-T-006	Unit 175	Sub-Slab	GC/MS	Soil Gas	1/22/2014	14:56	1	Tedlar Bag	None
	219-T-007	V12	Ernst Street	GC/MS	Soil Gas	1/23/2014	10:12	1	Tedlar Bag	None
	219-T-008	V15	Newkirk Street	GC/MS	Soil Gas	1/23/2014	11:00	1	Tedlar Bag	None
	219-T-009	V14	Ernst Street	GC/MS	Soil Gas	1/23/2014	15:15	1	Tedlar Bag	None
	219-T-010	V05	Porter Street	GC/MS	Soil Gas	1/23/2014	15:45	1	Tedlar Bag	None
	219-T-011	V04	Porter Street	GC/MS	Soil Gas	1/23/2014	15:55	1	Tedlar Bag	None
	219-T-012	V12	Ernst Street	GC/MS	Soil Gas	1/21/2014	11:40	1	Tedlar Bag	None
	219-T-013	V06	Porter Street	GC/MS	Soil Gas	1/23/2014	16:00	1	Tedlar Bag	None
	219-T-014	V01	28th Street	GC/MS	Soil Gas	1/23/2014	16:15	1	Tedlar Bag	None
	219-T-015	V02	28th Street	GC/MS	Soil Gas	1/23/2014	16:25	1	Tedlar Bag	None

1/23/14

Special Instructions: Tedlar bag samples for on-site analysis.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
4/1/Analysis		1/23/14		01/23/14							

APPENDIX B

Certificates of Analysis

Passyunk Soil Gas Site
Philadelphia, Pennsylvania

GC/MS Analytical Report

February 2014

ISO 9001:2008 Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

THE LINDE GROUP

Linde

SHIPPED TO: Lockheed Martin
2890 Woodbridge Ave.
Edison, NJ, 08837-3679

PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	110799680	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1270261	**Cylinder # :**	CC-82181
Certification Date:	Sep-09-2013	**Cylinder Pressure:**	2000 psig
P.O.# :	Warranty Replacement	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	24086387	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	4000 Liter
Expiration Date:	Sep-09-2014	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
4-Bromofluorobenzene	460-00-4	1.00 ppm	0.99 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Lou Lorenzetti

DATE: Sep-09-2013

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

ISO 9001:2008

Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

THE LINDE GROUP

Linde

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2890 Woodbridge Ave.
Edison, NJ 08837

PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	110710623	**Cylinder Size:**	2A (8" X 47.5")
Production#:	2898330	**Cylinder # :**	CC-256139
Certification Date:	Aug-22-2013	**Cylinder Pressure:**	1500 psig
P.O.# :	Recert	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	14004551	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	3000 Liter
Expiration Date:	Aug-22-2014	**Blend Tolerance:**	10% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	5% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Bromochloromethane	74-97-5	1.00 ppm	0.96 ppm
1,4-Difluorobenzene	540-36-3	1.00 ppm	1.01 ppm
Chlorobenzene-d5	3114-55-4	1.00 ppm	1.05 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Matthew Booth

DATE: Aug-22-2013

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

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Linde

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Edison, NJ 08837-3679

PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	110224483	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1253177	**Cylinder # :**	CC-106676
Certification Date:	Apr-16-2013	**Cylinder Pressure:**	740 psig
P.O.# :	CC-Charles Shields	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	24086386	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	1480 Liter
Expiration Date:	Apr-16-2014	**Blend Tolerance:**	5% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	2% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Vinyl Chloride	75-01-4	20.0 ppm	20.5 ppm
1,1-Dichloroethene	75-35-4	20.0 ppm	20.4 ppm
Trans-1,2-Dichloroethylene	156-60-5	20.0 ppm	21.0 ppm
1,1-Dichloroethane	75-34-3	20.0 ppm	20.5 ppm
Methyl Tert-Butyl Ether	1634-04-4	20.0 ppm	20.1 ppm
Cis-1,2-Dichloroethylene	156-59-2	20.0 ppm	21.0 ppm
1,1,1-Trichloroethane	71-55-6	20.0 ppm	20.0 ppm
Benzene	71-43-2	20.0 ppm	20.9 ppm
Trichloroethylene	79-01-6	20.0 ppm	20.1 ppm
Toluene	108-88-3	20.0 ppm	20.6 ppm
Tetrachloroethylene	127-18-4	20.0 ppm	20.2 ppm
Ethylbenzene	100-41-4	20.0 ppm	20.7 ppm
p-xylene	106-42-3	10.0 ppm	10.4 ppm
m-xylene	108-38-3	10.0 ppm	10.4 ppm
o-xylene	95-47-6	20.0 ppm	20.7 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Lou Lorenzetti **DATE:** Apr-16-2013

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
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PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	110136570	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1250590	**Cylinder # :**	CC-136210
Certification Date:	Mar-20-2013	**Cylinder Pressure:**	730 psig
P.O.# :	CC- Charles Shields	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	24086386	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	1460 Liter
Expiration Date:	Mar-20-2014	**Blend Tolerance:**	5% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	2% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Vinyl Chloride	75-01-4	20.0 ppm	19.9 ppm
1,1-Dichloroethene	75-35-4	20.0 ppm	20.7 ppm
Trans-1,2-Dichloroethylene	156-60-5	20.0 ppm	20.8 ppm
1,1-Dichloroethane	75-34-3	20.0 ppm	20.3 ppm
Methyl Tert-Butyl Ether	1634-04-4	20.0 ppm	19.5 ppm
Cis-1,2-Dichloroethylene	156-59-2	20.0 ppm	20.9 ppm
1,1,1-Trichloroethane	71-55-6	20.0 ppm	19.7 ppm
Benzene	71-43-2	20.0 ppm	20.5 ppm
Trichloroethylene	79-01-6	20.0 ppm	19.9 ppm
Toluene	108-88-3	20.0 ppm	20.2 ppm
Tetrachloroethylene	127-18-4	20.0 ppm	20.0 ppm
Ethylbenzene	100-41-4	20.0 ppm	20.2 ppm
p-xylene	106-42-3	10.0 ppm	10.1 ppm
m-xylene	108-38-3	10.0 ppm	10.1 ppm
o-xylene	95-47-6	20.0 ppm	20.2 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Lou Lorenzetti **DATE:** Mar-20-2013

Linde Gas North America LLC (908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

ISO 9001:2008 Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

THE LINDE GROUP

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2890 Woodbridge Ave.
Edison, NJ 08837-3679

PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	111074597	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1278990	**Cylinder # :**	CC-128284
Certification Date:	Nov-22-2013	**Cylinder Pressure:**	2000 psig
P.O.# :	Scott Thompson	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	24086389	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	4000 Liter
Expiration Date:	Nov-22-2014	**Blend Tolerance:**	5% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	2% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Chloroform	67-66-3	20.0 ppm	20.6 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Lou Lorenzetti

DATE: Nov-22-2013

Linde Gas North America LLC

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ISO 9001:2008 Linde SPECTRA Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

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Edison, NJ 08837

PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	111091871	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1279441	**Cylinder # :**	CC-197345
Certification Date:	Dec-13-2013	**Cylinder Pressure:**	2000 psig
P.O.# :	Scott Thompson	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	24086389	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	4000 Liter
Expiration Date:	Dec-13-2014	**Blend Tolerance:**	5% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	2% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Chloroform	67-66-3	20.0 ppm	21.2 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Matthew Booth

DATE: Dec-13-2013

Linde Gas North America LLC

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www.Lindeus.com

APPENDIX C

Calibration Data

Passyunk Soil Gas Site
Philadelphia, Pennsylvania

GC/MS Analytical Report

February 2014

01/13/14

+ Reviewed MS Tune File BFB.u w/ GC oven @ 125°C → Good
- Checked for Air & water → ok
- Proposed ICAL\MB\LCS @ 01/13/14 ICV\MB\LCS using HZA in Tedlar Bags

- STD20140113-1\500ppbv ICAL STD
  25mL-1°STD 106676 T010914-02
  25mL-1°STD 128284 T010214-01
  950mL-HZA
- STD20140113-2\5ppbv ICAL STD
  10mL=STD20140113-1(500)
  990mL-HZA
- STD20140113-3\0.5ppbv ICAL STD
  100mL=STD20140113-2(5)
  900mL-HZA
- STD20140113-4\10Kppbv ICAL STD
  500mL-1°STD 106676 T010914-02
  500mL-1°STD 128284 T010214-01
- STD20140113-5\21K ~~ppbv~~ ICAL STD
  100 ~~50~~mL-1°STD 106676 T010914-02
  100 ~~50~~mL-1°STD 128284 T010214-01
  800 ~~900~~ -HZA
- STD20140113-6\100ppbv ICAL STD
  50mL=STD20140113-5(21K)
  950mL-HZA
- STD20140113-7\500ppbv ICV STD
  25mL-2°STD 197345 T010214-02
  25mL-2°STD 136210 T010914-03
  950mL-HZA
- 20140113-MB\method BLANK
  1000-HZA
- 20140113-LCS\500ppbv LCS
  25mL-2°STD 136210 T010914-03
  25mL-2°STD 197340 T010214-02
  950mL HZA
- GC/MS methods: Loop SOP1741+HCCL3; EnviroQuant method Loop20140113-QuantM.
- created DATA location D:\msdchem\1\data\2014\20140113\936CMS2014-xxx.d

Continued on Page 13

K=1,000

Read and Understood By

Scott J. Thompson — Signed — 01/13/14 — Date

Signed — Date

01/13/14 (cont'd)

936CMS2014-035.d	BFB \ 1PPMV STD \ 5mL			PASS	ok
036.d	STD20140113-1 \ 500ppbv ICAL STD \ 5mL				ok
037.d	-2 \ 5ppbv ICAL STD \ 5mL				ok
038.d	-3 \ 0.5ppbv ICAL STD \ 5mL				ok
039.d	-4 \ 10K ppbv ICAL STD \ 5mL				ok
040.d	-5 \ 2K ppbv ICAL STD \ 5mL				ok
041.d	-6 \ 100 ppbv ICAL STD \ 5mL				ok
042.d	STD20140113-7 \ 500ppbv ICV STD			PASS	ok
043.d	20130113-MB \ method BLANK \ 5mL				ok
044.d	20130113-LCS \ 500ppbv LCS \ 5mL			PASS	ok

Loop 20140113-Quant.M

- Review INT STD Report → PASS
- Stored GC oven @ 125°C

01/13/14 EW

01/14/14 SOP#1741 BFB\CCV\LLCCV\MB\LCS

- Reviewed ms Tune File IB.FID & checked for Air & water → good/ok
- Prepared CCV\LLCCV\MB\LCS using HZA in TedLar BAGS
  - STD20140114-1\500ppbv CCV — STD20140114-2\5ppbv — STD20140114-3\0.5ppbv LLCCV
  - 25mL-1°STD 106676 T010914-02 — 10mL-STD20140114-1(500) — 100mL-STD 20140114-2(5)
  - 25mL-1°STD 128284 T010214-01 — 990mL-HZA — 900mL-HZA
  - 20140114-MB — 20140114-LCS \ 500ppbv LCS
    - method BLANK — 25mL-2°STD 136210 T010914-03
    - 1000mL-HZA — 25mL-2°STD 197340 T010214-02
    - 950mL-HZA
- GC/MS method: Loop SOP1741+HCCL3 & LoopBFB3; EnviroQuant: Loop 20140113-Quant.M
- created data location D:\msdchem\1\data\2014\20140114\936CMS2014-xx.d

936CMS2014-045.d	BFB \ 1PPMV STD \ 5mL		PASS	ok
046.d	STD20140114-1 \ 500ppbv CCV \ 5mL		PASS	ok
047.d	STD20140114-3 \ 0.5ppbv LLCCV \ 5mL		PASS	ok
048.d	20140114-MB \ method BLANK \ 5mL			ok
049.d	20140114-LCS \ 500ppbv LCS \ 5mL		PASS	ok

- Reviewed INT STD Report → PASS\ok
- Stored GC oven @ 125°C

Continued on Page 14

K = 1,000

Read and Understood By

Scott J. Thompson

Signed Date Signed Date

01/17/14

- Reviewed MSTune File BFB.u w/GC OVEN @ 125°C & checked for Air & Water → ok
- Prepared CCV\LLCCV\MB\LCS using HZA in Tedlar Bags.
  - STD20140117-1\500ppbV — 25mL-1°STD 106676 — 25mL-1°STD 128284 — 950mL-HZA
  - STD20140117-2\5ppbV — TO10914-02 — 10mL-STD20140117-1 (50C) — 990mL-HZA — TO10214-01
  - STD20140117-3\0.5ppbV LLCCV — 100mL-STD20140117-2(5) — 900mL-HZA
  - 20140117-MB — Method BLANK — 100mL-HZA
  - 20140117-LCS — 25mL-2°STD 136210 TO10914-03 — 25mL-2°STD 197340 TO10214-02 — 950mL-HZA
- GC/MS Methods: LoopBFB.m & LoopSOP1741+HCCL3, EnviroQuant Loop20140113-QUANT.M
- Created DATA Location: D:\msdchem\1\DATA\2014\20140117\936cms2014-xxxx.d

936cms2014-	050.d	BFB \ 1ppmV STD \ 5mL	PASS	ok
	051.d	STD20140117-1 \ 500ppbV CCV \ 5mL	PASS	ok
	052.d	STD20140117-3 \ 0.5ppbV LLCCV \ 5mL	PASS	ok
	053.d	STD20140117-MB \ Method BLANK \ 5mL		ok
	054.d	20140117-LCS \ 500ppbV LCS \ 5mL	PASS	ok

- Reviewed Int STD Report → PASS ok - Stored GC oven @ 125°C — 01/17/14 End

01/21/14 WA# 0-219, Parsyunik Soil Gas Site

- Reviewed MSTune File BFB.u w/GC OVEN @ 125°C → ok
- Checked for Air & WATER → ok
- Prepared CCV\LLCCV\MB\LCS using HZA in Tedlar Bags
  - STD20140121-1\500ppbV CCV — 25mL-1°STD 106676 TO10914-02 — 25mL-1°STD 128284 TO10214-01 — 950mL-HZA
  - STD20140121-2\5ppbV — 10mL-STD20140121-1 (500) — 990mL-HZA
  - STD20140121-3\0.5ppbV LLCCV — 100mL-STD20140121-2(5) — 900mL-HZA
  - 20140121-MB — Method BLANK — 1000mL-HZA
  - 20140121-LCS\500ppbV LCS — 25mL-2°STD 136210 TO10914-03 — 25mL-2°STD 197340 TO10214-02 — 950mL-HZA

Continued on Page 15

Read and Understood By

Scott A. Thompson — 01/21/14 — Signed — Date — Signed — Date

01/21/14 (Con't)

- GC/ms methods: LoopBFB.m & LoopSOP1741 + HCCl3
- Enviro Quant method: Loop20140113-Quant.M
- Created Data Location O:\msdchem\1\data\2014\20140121\936cms2014-xxx.d

936cms-055.d	BFB \ 1ppmv STD \ 5mL	PASS	ok
056 ~~056~~.d	STD20140121-1 \ 500ppbv CCV \ 5mL	PASS	ok
11/21/14 057 ~~057~~.d	STD20140121-3 \ 0.5ppbv LLCCV \ 5mL	PASS	ok
058.d	20140121-MB \ method BLANK \ 5mL		ok
059.d	20140121-LCS \ 500ppbv LCS \ 5mL	PASS	ok
060.d	215-T-012 \ V12 \ 5mL		ok

- No Replicate Sample Run on 20140121 Due to Laboratory Shutdown
- Laboratory Shutdown Due to Severe Whether Storm (Snow) 01/21/14

01/22/14

- TAGA Bus 1693 was Extremely Cold when ~~the~~ we Arrived in The Morning
- Reviewed ms Tune File BFB.u w/ GC oven @ 125 → Low → heated up TAGA Bus and Re-evaluated the ms Tune File → Good.
- Prepared CCV \ LLCCV \ MB \ LCS using HZA in Tedlar Bags
  - STD20140122-1 \ 500ppbv CCV
    - 25mL-1°STD 106676 TO10914-02
    - 25mL-1°STD 128284 TO10914-01
    - 950mL-HZA
  - 20140122-MB
    - method BLANK
    - 1000mL-HZA
  - STD20140122-2 \ 5ppbv
    - 10mL-STD20140122-1 (500)
    - 990mL-HZA
  - 20140122-LCS \ 500ppbv LCS
    - 25mL-2°STD 136210 TO10914-03
    - 25mL-2°STD 197340 TO10214-02
    - 950mL-HZA
  - STD 20140122-3 \ 0.5ppbv LLCCV
    - 100mL-STD20140122-2 (5)
    - 900mL-HZA

- GC/ms methods: LoopBFB.m & LoopSOP1741 + HCCl3
- Enviro Quant method: Loop20140113-Quant.M
- Created DATA Location O:\msdchem\1\data\2014\20140122\

936cms2014-061.d	BFB \ 1ppmv STD \ 5mL	PASS	ok
062.d	STD20140122-1 \ 500ppbv CCV \ 5mL	PASS	ok
063.d	STD20140122-3 \ 0.5ppbv LLCCV \ 5mL	PASS	ok

Continued on Page 16

Read and Understood By

Scott J. Thompson 01/22/14 (Signed / Date) (Signed / Date)

01/22/14 (cont'd)

93GCMS2014-064.d		20140122-MB	\ Method BLANK	\ 5mL		PASS	ok
065.d		20140122-LCS	\ 500 ppbv LCS	\ 5mL		PASS	ok
066.d		219-T-001	\ unit 84	\ 5mL			ok
067.d		219-T-003	\ unit 50	\ 5mL			ok
068.d		219-T-004	\ unit 34	\ 5mL			ok
069.d	R 1/22/14	219-T-004	\ unit 34 REP	\ 5mL			ok
070.d		219-T-005	\ unit 70	\ 5mL		No IS.	ok
071.d		219-T 005	\ unit 70	\ 5mL			ok
072.d		219-T-006	\ unit 175	\ 5mL			ok

- Reviewed Fnt STD Report → Good
- Stored GC OVEN @ 125°C

R 01/22/14 End

01/23/14 WA#0-219, Parsynnic Soil Gas Site

- Reviewed MS Tune File BFB.m w/ GC OVEN @ 125°C
- checked for Air & WATER → ok
- Prepared CCV \ LLCCV \ MB \ LCS
  - STD20140123-1 \ 500 ppbv CCV
  - STD20140123-2 \ 5 ppbv
  - STD20140123-3 \ 0.5 ppbv LLCCV
  - 25mL - 1 STD 106676 T010914-02
  - 10mL = STD20140123-1 (500)
  - 100mL = STD20140123-2 (5)
  - 25mL - 1 STD 128284 T010214-01
  - 990mL - HZA
  - 900mL - HZA
  - 950mL - HZA
  - 20140123-LCS \ 500 ppbv LCS
  - 20140123-MB
  - 25mL - 2 STD 136210 T010914-03
  - Method BLANK
  - 25mL - 2 STD 197340 T010214-02
  - 1000mL - HZA
  - 950mL - HZA
- GC/MS Methods: LoopBFB.M & LoopSOP1741 + HCCL3.M
- ENVIROQUANT Method: Loop20140113-QUANT.M
- Created DATA LOCATION O:\msdchem\1\data\2014\20140123\93GCMS2014-xxx.d

93GCMS2014-073.d		BFB	\ 1 ppmv STD	\ 5mL		PASS	ok
074.d		STD20140123-1	\ 500 ppbv CCV	\ 5mL		PASS	ok
075.d		STD20140123-3	\ 0.5 ppbv LLCCV	\ 5mL		PASS	ok
076.d		20140123-MB	\ Method BLANK	\ 5mL			ok

Continued on Page 17

REP = Replicate Sample

Read and Understood By

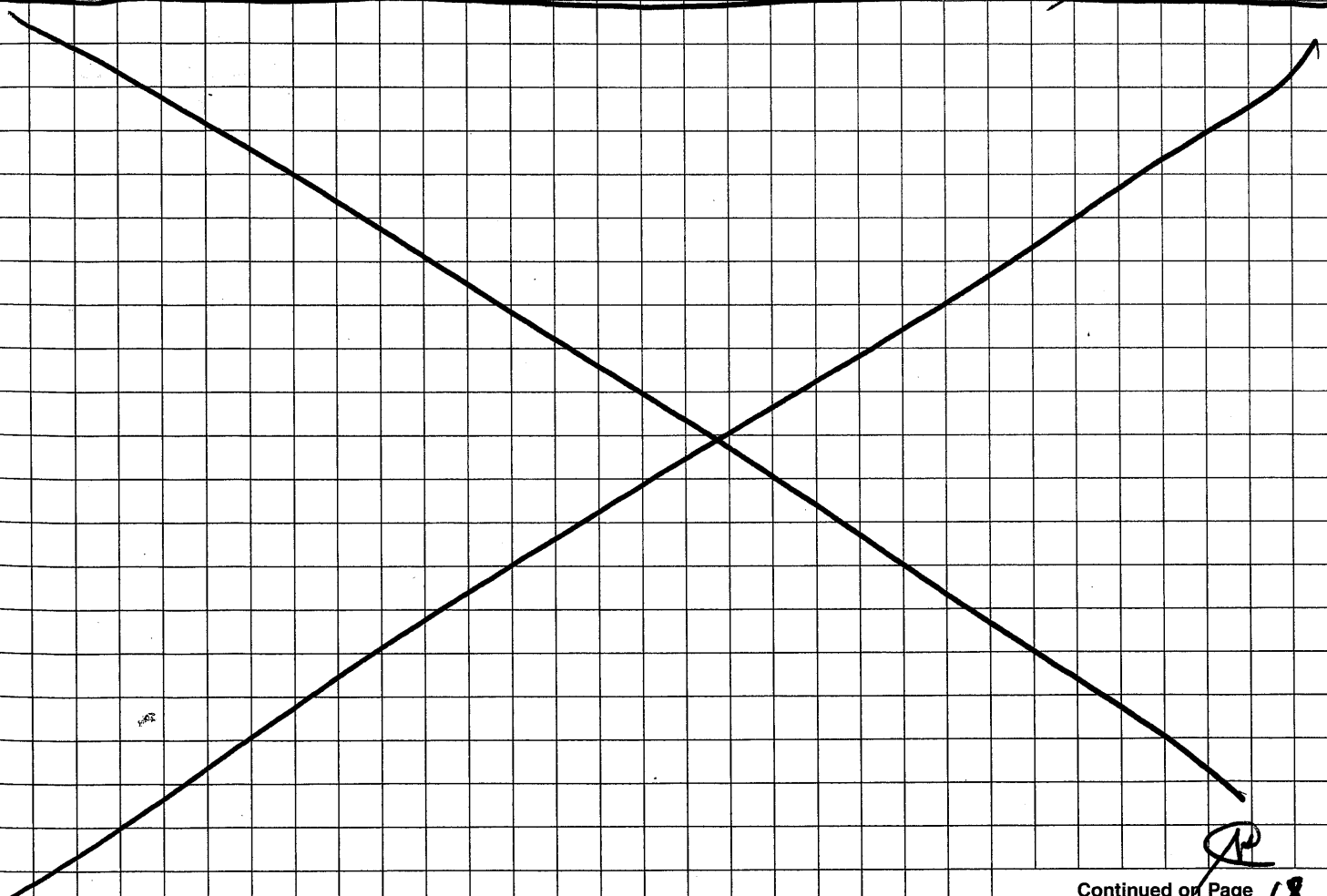
Scott L. Thompson — 01/23/14
Signed — Date — Signed — Date

01/23/14 (cont'd)

936CMS2014-077.d	20140123-LCS	\ 500ppbv LCS	\ 5mL	PASS	ok
-078.d	219-T-007	\ V12	\ 5mL		ok
-079.d	219-T-008	\ V15	\ 5mL		ok
-080.d	219-T-008	\ V15 REP	\ 5mL		ok
-081.d	219-T-009	\ V14	\ 5mL		ok
-082.d	219-T-010	\ V05	\ 5mL		ok
-083.d	219-T-011	\ V04	\ 5mL		ok
-084.d	219-T-013	\ V06	\ 5mL		ok
-085.d	219-T-014	\ V01	\ 5mL		ok
-086.d	219-T-015	\ V02	\ 5mL		ok
-087.d	20140123-LCS	\ 500ppbv LCS	\ 5mL	PASS	ok

- Reviewed Last STD Report →
- Stored GC OVEN @ 125 °C.

01/23/14 End



Continued on Page 18

REP = Replicate Sample

Read and Understood By

Scott Thompson — Signed

01/27/14 — Date

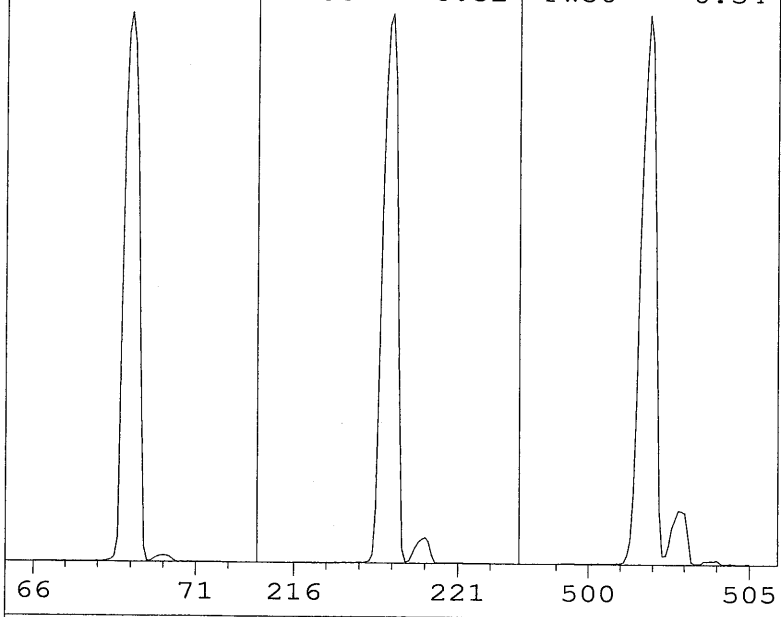
Signed

Date

Mon Jan 13 07:55:32 2014
C:\msdchem\1\5975\bfb.u

Instrument: Instrument 2
US83130668

Mass	69.00	Mass	219.00	Mass	501.90
Ab	806175	Ab	402175	Ab	17904
Pw50	0.54	Pw50	0.52	Pw50	0.54

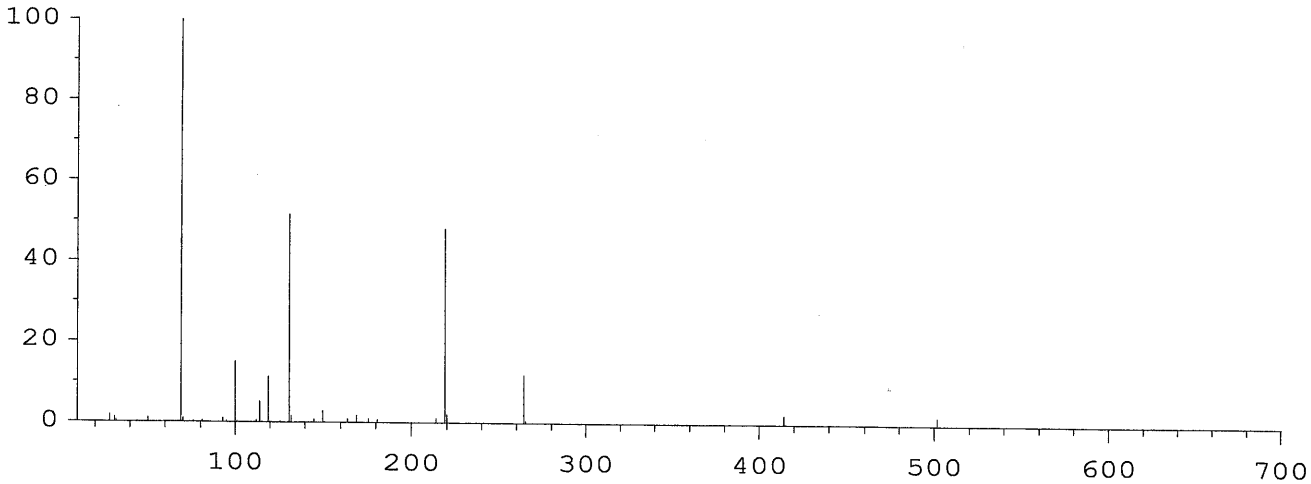


Ion Pol	Pos	MassGain	-973
		MassOffs	-39
Emission	34.6	AmuGain	1186
EIEnrgy	69.9	AmuOffs	125.69
Filament	1	Wid219	-0.016
		DC Pol	Pos
Repeller	19.90		
IonFcus	73.1	HEDEnab	On
EntLens	0.0	EMVolts	1388
EntOffs	Var		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	TurboSpd	100
MS Quad	150	HiVac	1.52e05

Scan: 10.00 - 701.00 Samples: 8 Thresh: 100 Step: 0.10
109 peaks Base: 69.00 Abundance: 784768



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	784768	100.00	70.00	8324	1.06
219.00	376768	48.01	220.00	16616	4.41
501.90	15769	2.01	502.90	1649	10.46

Air/Water Check: H2O~0.19% N2~1.79% O2~0.49% CO2~0.16% N2/H2O~936.61%

Ramp Criteria:

Ion Focus Maximum	90	volts using ion	502;	EM Gain	110912
Repeller Maximum	20	volts using ion	219;	Gain Factor	1.11

MassGain Values(Samples): -964(3) -946(2) -916(1) -870(0) -826(FS)

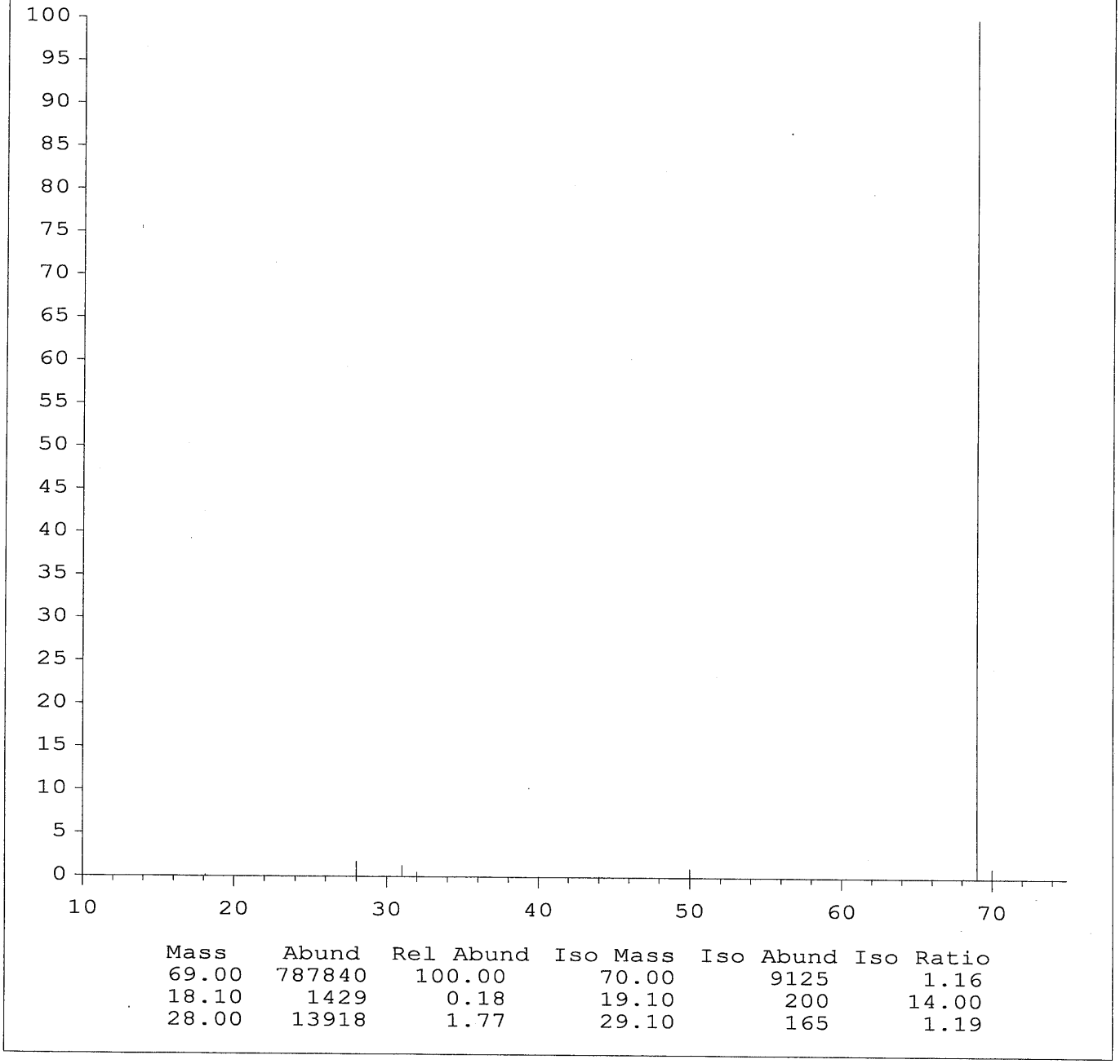
01/13/14

TARGET MASS:	50	69	131	219	414	502	1050
Amu Offset:	125.7	125.7	125.7	125.7	125.7	125.7	125.7
Entrance Lens Offset:	15.3	13.1	15.1	14.8	17.1	18.8	18.8
Target Abund(%):	1.0	100.0	52.0	50.0	2.4	2.0	
Actual Tune Abund(%):	1.1	100.0	51.6	48.0	2.3	2.0	

597x Air and Water Check

Instrument: Instrument 2
Mon Jan 13 07:56:15 2014 C:\msdchem\1\5975\

Scan: 10.00 - 75.00 Samples: 8 Thresh: 0 Step: 0.10
71 peaks Base: 69.00 Abundance: 787840



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	787840	100.00	70.00	9125	1.16
18.10	1429	0.18	19.10	200	14.00
28.00	13918	1.77	29.10	165	1.19

Current Params used: bfb.u

Relative abundances:

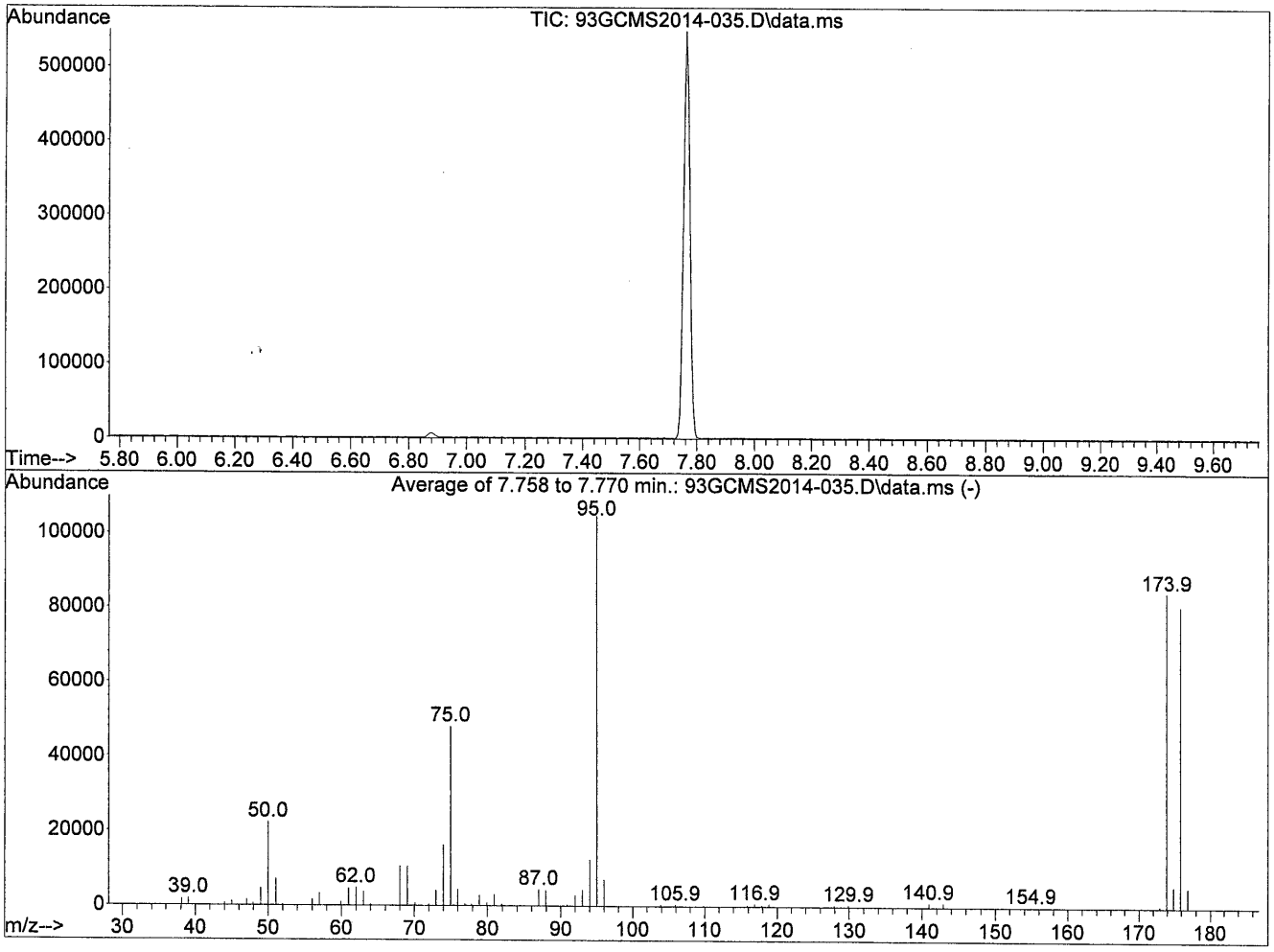
18/69 = 0.18	Water%	(counts=1429)
28/69 = 1.77	Nitrogen%	(counts=13918)
32/69 = 0.50	Oxygen%	(counts=3978)
44/69 = 0.14	Carbon Dioxide%	(counts=1137)
28/18 = 973.97	Nitrogen/Water%	

01/13/14

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-035.D
Acq On : 13 Jan 2014 8:04
Operator : SJT
Sample : BFB \ 1ppmv STD
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\LOOP20140106-QUANT.M
Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 06 11:37
Last Update : Tue Jan 07 08:22:35 2014



AutoFind: Scans 650, 651, 652; Background Corrected with Scan 642

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.3	22291	PASS
75	95	30	66	45.9	48021	PASS
95	95	100	100	100.0	104715	PASS
96	95	5	9	6.8	7139	PASS
173	174	0.00	2	0.5	459	PASS
174	95	50	120	80.4	84243	PASS
175	174	4	9	6.7	5630	PASS
176	174	93	101	95.7	80661	PASS
177	176	5	9	6.5	5255	PASS

01/13/14

Response Factor Report Instrument 2

Method Path : C:\msdchem\1\METHODS\
Method File : LOOP20140113-QUANT.M
Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
Last Update : Mon Jan 13 09:24:10 2014
Response Via : Initial Calibration

Calibration Files
500 =93GCMS2014-036.D 10K =93GCMS2014-039.D 2K =93GCMS2014-040.D
100 =93GCMS2014-041.D 5 =93GCMS2014-037.D 0.5 =93GCMS2014-038.D

	Compound	500	10K	2K	100	5	0.5	Avg	%RSD
1)	ISTDBromochloromethane	ISTD							
2)	Vinyl Chloride	0.534	0.416	0.517	0.499	0.527	0.521	0.502	8.77
3)	1,1-Dichloroet...	0.894	0.695	0.872	0.837	0.862	0.939	0.850	9.82
4)	Methyl Tert Bu...	1.185	0.939	1.170	1.078	1.113	1.148	1.105	8.15
5)	trans-1,2-Dich...	0.813	0.622	0.789	0.761	0.777	0.859	0.770	10.42
6)	1,1-Dichloroet...	0.965	0.745	0.946	0.905	0.916	0.995	0.912	9.66
7)	cis-1,2-Dichlo...	0.773	0.592	0.754	0.718	0.743	0.770	0.725	9.41
8)	Chloroform	1.090	0.850	1.060	1.022	1.057	1.049	1.021	8.48
9)	1,1,1-Trichlor...	1.148	0.901	1.132	1.068	1.079	1.072	1.067	8.24
10)	ISTD1,4-Difluorobenzene	ISTD							
11)	Benzene	0.599	0.600	0.600	0.560	0.567	0.675	0.600	6.81
12)	Trichloroethene	0.325	0.342	0.328	0.303	0.306	0.314	0.320	4.59
13)	ISTDChlorobenzene-d5	ISTD							
14)	Toluene	0.676	0.689	0.683	0.608	0.611	0.857	0.687	13.16
15)	Tetrachloroethene	0.422	0.407	0.384	0.350	0.347	0.326	0.373	10.17
16)	Ethyl Benzene	0.883	0.898	0.898	0.780	0.739	0.761	0.826	8.96
17)	m,p-Xylene	0.650	0.680	0.668	0.586	0.526	0.714	0.637	10.84
18)	o-Xylene	0.684	0.703	0.693	0.621	0.556	0.605	0.643	9.14

(#) = Out of Range

01/13/14

DATA ANALYSIS PARAMETERS

Method Name : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M

Percent Report Settings

Sort By: Retention Time

Output Destination
Screen: Yes
Printer: Yes
File: No

Integration Events: Meth Default

Generate Report During Run Method: No

Signal Correlation Window: 0.020

Qualitative Report Settings

Peak Location of Unknown: Apex

Library to Search	Minimum Quality
\Database\W8N08.L	0

Integration Events: Meth Default

Report Type: Summary

Output Destination
Screen: Yes
Printer: Yes
File: No

Generate Report During Run Method: No

Quantitative Report Settings

Report Type: Detailed

Output Destination
Screen: No
Printer: Yes
File: quant.xls

Generate Report During Run Method: No

01/13/14

Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
Calibration Last Updated: Mon Jan 13 09:24:10 2014

Reference Window: 10.00 Percent
Non-Reference Window: 5.00 Percent

Correlation Window: 0.02 minutes
Default Multiplier: 1.00
Default Sample Concentration: 0.00

Compound Information
---

1) Bromochloromethane (ISTD TR)

Ret. Time 4.622 min., Extract & Integrate from 4.552 to 4.692 min.

Signal	Rel Resp.	Pct. Unc.(rel)	Integration
Tgt 49.00			*** METH DEFAULT ***
Q1 130.00	64.50	20.0	*** METH DEFAULT ***
Q2 93.00	24.50	20.0	*** METH DEFAULT ***
Q3 128.00	52.00	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		10.000	2200
10K		10.000	2753
2K		10.000	2100
100		10.000	2065
5		10.000	2148
0.5		10.000	2108
cc		10.000	-1

Qualifier Peak Analysis ON ISTD conc: 10.000 ppbv
Curve Fit: Avg. RF

---

2) Vinyl Chloride ( )

Ret. Time 1.900 min., Extract & Integrate from 1.650 to 2.150 min.

Signal	Rel Resp.	Pct. Unc.(rel)	Integration
Tgt 62.00			*** METH DEFAULT ***
64.00	31.10	20.0	*** METH DEFAULT ***
27.00	47.20	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		512.500	60194
10K		10250.000	1172781
2K		2050.000	222391
100		102.500	10563
5		5.130	581
0.5		0.510	56
cc		512.500	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

3) 1,1-Dichloroethene ( )

Ret. Time 3.367 min., Extract & Integrate from 3.267 to 3.467 min.

Signal	Rel Resp.	Pct. Unc.(rel)	Integration
Tgt 61.00			*** METH DEFAULT ***
Q1 96.00	60.70	20.0	*** METH DEFAULT ***
Q2 63.00	31.30	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		510.000	100274
10K		10200.000	1951070
2K		2040.000	373584
100		102.000	17633
5		5.100	944
0.5		0.510	101
cc		510.000	-1

Qualifier Peak Analysis OFF

Curve Fit: Avg. RF

---

4) Methyl Tert Butyl Ether ( )

Ret. Time 3.826 min., Extract & Integrate from 3.726 to 3.926 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	73.00			*** METH DEFAULT ***
Q1	53.00	1.40	20.0	*** METH DEFAULT ***
Q2	41.00	28.70	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		502.500	130953
10K		10050.000	2598836
2K		2010.000	493723
100		100.500	22367
5		5.030	1202
0.5		0.500	121
cc		502.500	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

5) trans-1,2-Dichloroethene ( )

Ret. Time 3.889 min., Extract & Integrate from 3.789 to 3.989 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	61.00			*** METH DEFAULT ***
Q1	96.00	70.00	20.0	*** METH DEFAULT ***
Q2	98.00	44.50	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		525.000	93873
10K		10500.000	1797908
		2100.000	347839
		105.000	16495
5		5.250	876
0.5		0.530	96
cc		525.000	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

6) 1,1-Dichloroethane ( )

Ret. Time 4.126 min., Extract & Integrate from 4.026 to 4.226 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	63.00			*** METH DEFAULT ***
Q1	65.00	30.90	20.0	*** METH DEFAULT ***
Q2	27.00	28.30	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		512.500	108846
10K		10250.000	2102932
2K		2050.000	407234
100		102.500	19149
5		5.130	1009
0.5		0.510	107
cc		512.500	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

7) cis-1,2-Dichloroethene ( )

Ret. Time 4.464 min., Extract & Integrate from 4.364 to 4.564 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	61.00			*** METH DEFAULT ***
Q1	96.00	77.10	20.0	*** METH DEFAULT ***
Q2	98.00	49.20	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
[illegible]0		525.000	89321
[illegible]K		10500.000	1711084
2K		2100.000	332614
100		105.000	15576
5		5.250	838
0.5		0.530	86
cc		525.000	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

8) Chloroform ( )

Ret. Time 4.552 min., Extract & Integrate from 4.452 to 4.652 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	83.00			EVENTS.E
Q1	85.00	65.00	20.0	EVENTS.E
Q2	47.00	25.00	20.0	EVENTS.E

Lvl	ID	Conc (ppbv)	Response
500		515.000	123464
10K		10300.000	2411114
2K		2060.000	458705
100		103.000	21731
5		5.150	1169
0.5		0.520	115
cc		515.000	-1

[illegible]alifier Peak Analysis ON
[illegible]rve Fit: Avg. RF

---

9) 1,1,1-Trichloroethane ( )

Ret. Time 4.793 min., Extract & Integrate from 4.693 to 4.893 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	97.00			*** METH DEFAULT ***
Q1	99.00	64.20	20.0	*** METH DEFAULT ***
Q2	61.00	46.70	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		500.000	126250
10K		10000.000	2479866
2K		2000.000	475576
100		100.000	22046
5		5.000	1159
0.5		0.500	113
cc		500.000	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

10) 1,4-Difluorobenzene (ISTD TR)

Ret. Time 5.139 min., Extract & Integrate from 5.069 to 5.209 min.

[illegible]gnal		Rel Resp.	Pct. Unc.(rel)	Integration
[illegible]t	114.00			*** METH DEFAULT ***
Q1	63.00	18.90	20.0	*** METH DEFAULT ***
Q2	88.00	15.00	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		10.000	5584
10K		10.000	5235
2K		10.000	5181
100		10.000	5251
5		10.000	5496
0.5		10.000	5412
		10.000	-1

Qualifier Peak Analysis OFF ISTD conc: 10.000 ppbv
Curve Fit: Avg. RF

---

11) Benzene ( )

Ret. Time 5.010 min., Extract & Integrate from 4.910 to 5.110 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	78.00			*** METH DEFAULT ***
Q1	77.00	23.00	20.0	*** METH DEFAULT ***
Q2	50.00	18.20	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		522.500	174811
10K		10450.000	3283315
2K		2090.000	649431
100		104.500	30722
5		5.230	1629
0.5		0.520	190
cc		522.500	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

12) Trichloroethene ( )

Ret. Time 5.340 min., Extract & Integrate from 5.240 to 5.440 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	130.00			*** METH DEFAULT ***
Q1	132.00	96.30	20.0	*** METH DEFAULT ***
Q2	95.00	91.10	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		502.500	91136
10K		10050.000	1798608
2K		2010.000	341616
100		100.500	16015
5		5.030	845
0.5		0.500	85
cc		502.500	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

13) Chlorobenzene-d5 (ISTD TR)

Ret. Time 6.815 min., Extract & Integrate from 6.715 to 6.895 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	117.00			*** METH DEFAULT ***
Q1	82.00	47.20	20.0	*** METH DEFAULT ***
Q2	119.00	32.00	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		10.000	5860
10K		10.000	5472
2K		10.000	5447
100		10.000	5547
5		10.000	5735

0.5	10.000	5658
cc	10.000	-1

Qualifier Peak Analysis OFF ISTD conc: 10.000 ppbv
Curve Fit: Avg. RF

) Toluene ( )

Ret. Time 6.021 min., Extract & Integrate from 5.921 to 6.121 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	91.00			*** METH DEFAULT ***
Q1	92.00	59.00	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		515.000	203940
10K		10300.000	3883081
2K		2060.000	765894
100		103.000	34734
5		5.150	1805
0.5		0.520	252
cc		515.000	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

15) Tetrachloroethene ( )

Ret. Time 6.400 min., Extract & Integrate from 6.300 to 6.500 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	166.00			*** METH DEFAULT ***
Q1	164.00	78.10	20.0	*** METH DEFAULT ***
Q2	131.00	73.30	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
0		505.000	124982
10K		10100.000	2248622
2K		2020.000	422709
100		101.000	19581
5		5.050	1004
0.5		0.510	94
cc		505.000	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

---

16) Ethyl Benzene ( )

Ret. Time 6.866 min., Extract & Integrate from 6.766 to 6.966 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	91.00			*** METH DEFAULT ***
Q1	106.00	32.00	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		517.500	267751
10K		10350.000	5083694
2K		2070.000	1012289
100		103.500	44770
5		5.180	2195
0.5		0.520	224
cc		517.500	-1

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

17) m,p-Xylene ( )

Ret. Time 6.918 min., Extract & Integrate from 6.818 to 7.018 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	91.00			*** METH DEFAULT ***
Q1	106.00	53.10	20.0	*** METH DEFAULT ***
Q2	105.00	23.20	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		520.000	198082
10K		10400.000	3871461
2K		2080.000	756578
100		104.000	33802
5		5.200	1568
0.5		0.520	210
cc		515.000	-1

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

18) o-Xylene ( )

Ret. Time 7.170 min., Extract & Integrate from 7.070 to 7.270 min.

Signal		Rel Resp.	Pct. Unc.(rel)	Integration
Tgt	91.00			*** METH DEFAULT ***
Q1	106.00	49.10	20.0	*** METH DEFAULT ***
Q2	105.00	19.30	20.0	*** METH DEFAULT ***

Lvl	ID	Conc (ppbv)	Response
500		517.500	207317
10K		10350.000	3979079
2K		2070.000	781829
100		103.500	35625
5		5.180	1651
0.5		0.520	178
[illegible]		517.500	-1

Qualifier Peak Analysis OFF
Curve Fit: Avg. RF

END OF DATA ANALYSIS PARAMETERS

Mon Jan 13 09:24:46 2014

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-036.D
Acq On : 13 Jan 2014 8:16
Operator : SJT
Sample : STD20140113-1 \ 500ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 08:58:00 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

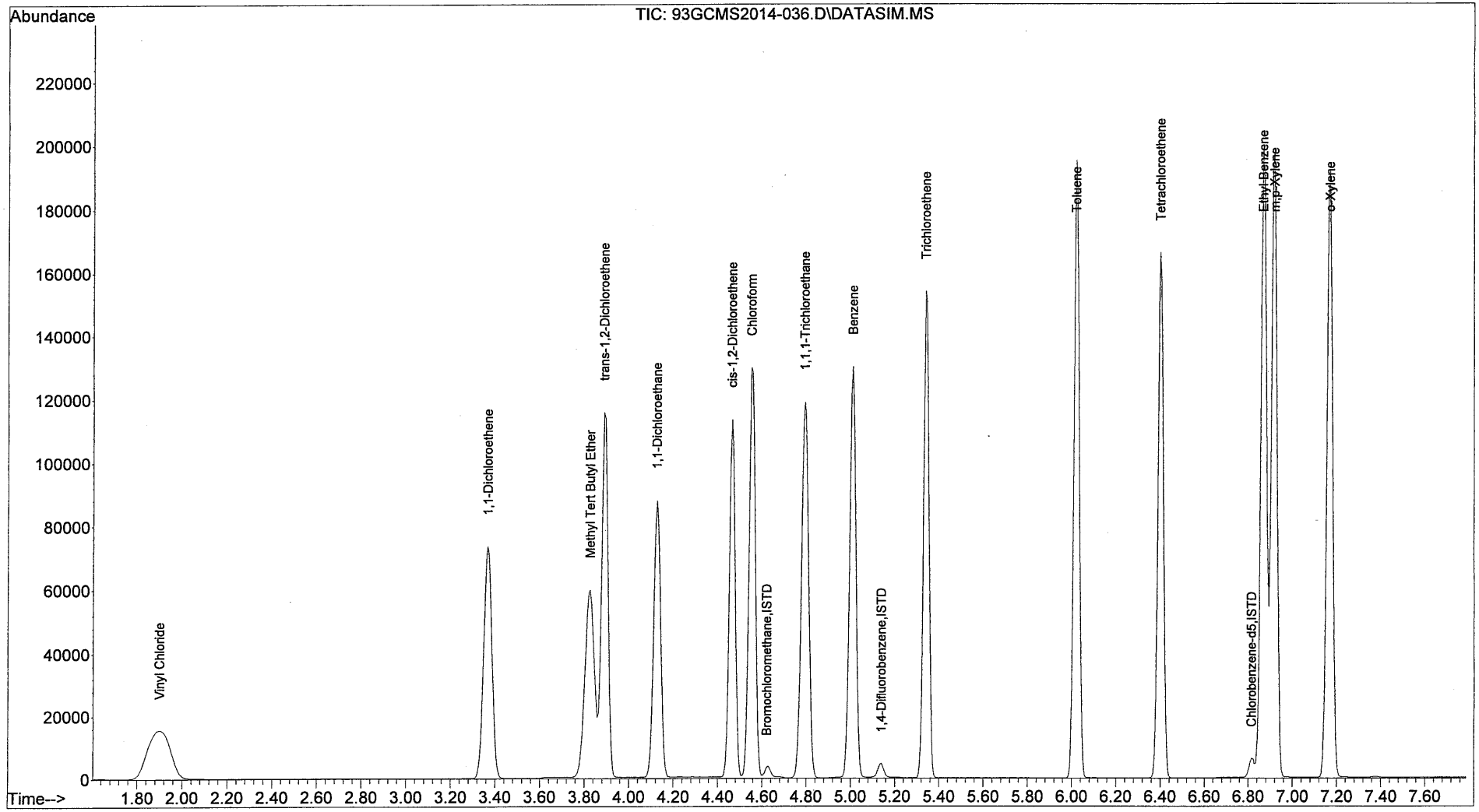
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.622	49	2200	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.139	114	5584	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	5860	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.900	62	60194	512.50	ppbv	98
3) 1,1-Dichloroethene	3.367	61	100274	510.00	ppbv	99
4) Methyl Tert Butyl Ether	3.826	73	130953	502.50	ppbv	95
5) trans-1,2-Dichloroethene	3.889	61	93873	525.00	ppbv	98
6) 1,1-Dichloroethane	4.126	63	108846	512.50	ppbv	98
7) cis-1,2-Dichloroethene	4.464	61	89321	525.00	ppbv	98
8) Chloroform	4.552	83	123464	515.00	ppbv	96
9) 1,1,1-Trichloroethane	4.793	97	126250	500.00	ppbv	99
11) Benzene	5.010	78	174811	522.50	ppbv	99
12) Trichloroethene	5.340	130	91136	502.50	ppbv	99
14) Toluene	6.021	91	203940	515.00	ppbv	100
15) Tetrachloroethene	6.400	166	124982	505.00	ppbv	91
16) Ethyl Benzene	6.866	91	267751	517.50	ppbv	99
17) m,p-Xylene	6.918	91	198082	520.00	ppbv	99
18) o-Xylene	7.170	91	207317	517.50	ppbv	99

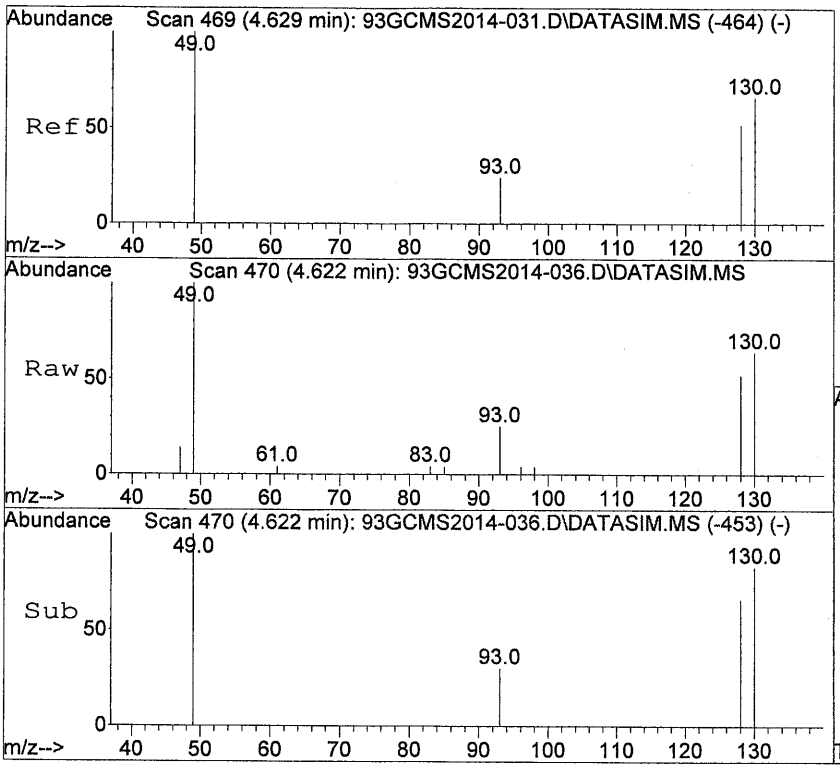
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01/13/14

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-036.D
Acq On : 13 Jan 2014 8:16
Operator : SJT
Sample : STD20140113-1 \ 500ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 08:58:00 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

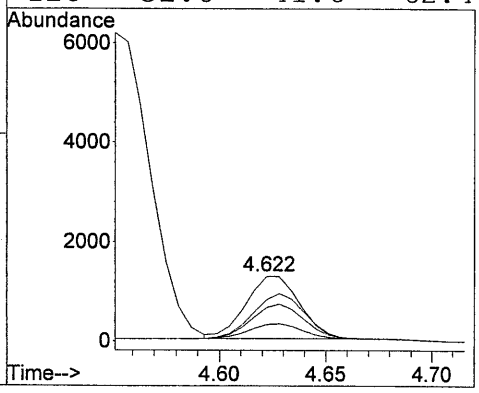


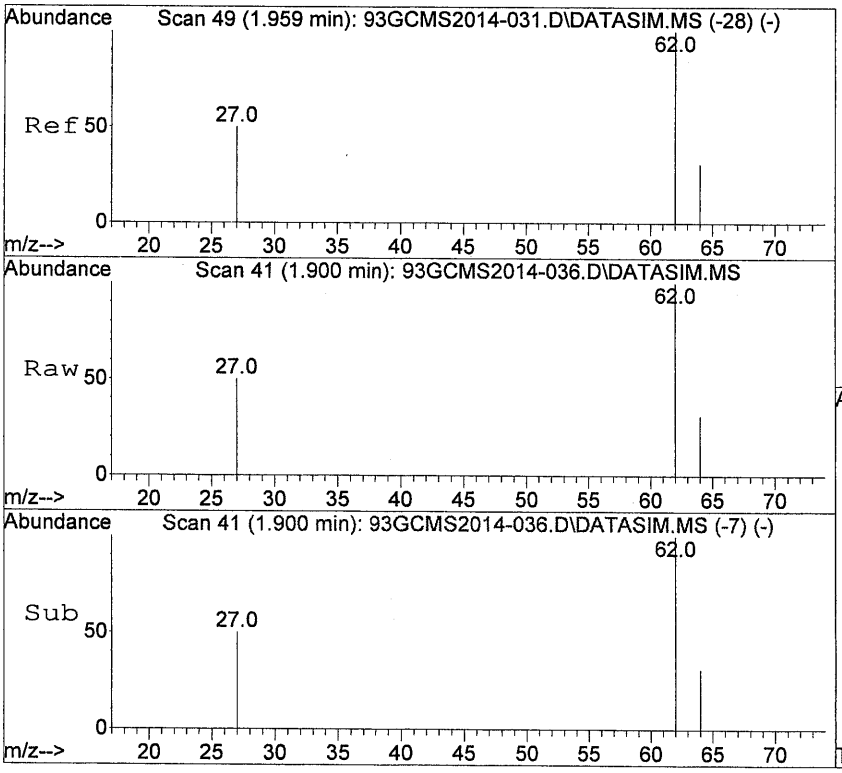


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 470
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 49 Resp: 2200

Ion	Ratio	Lower	Upper
49	100		
130	64.3	51.6	77.4
93	25.4	19.6	29.4
128	52.0	41.6	62.4

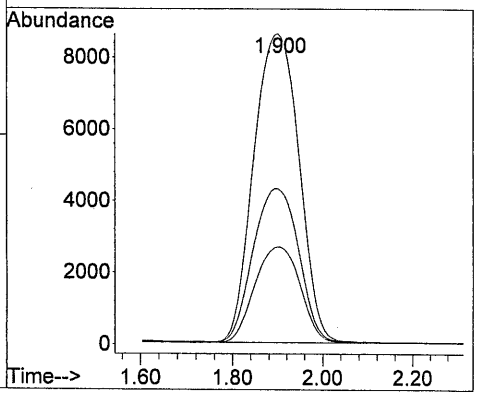


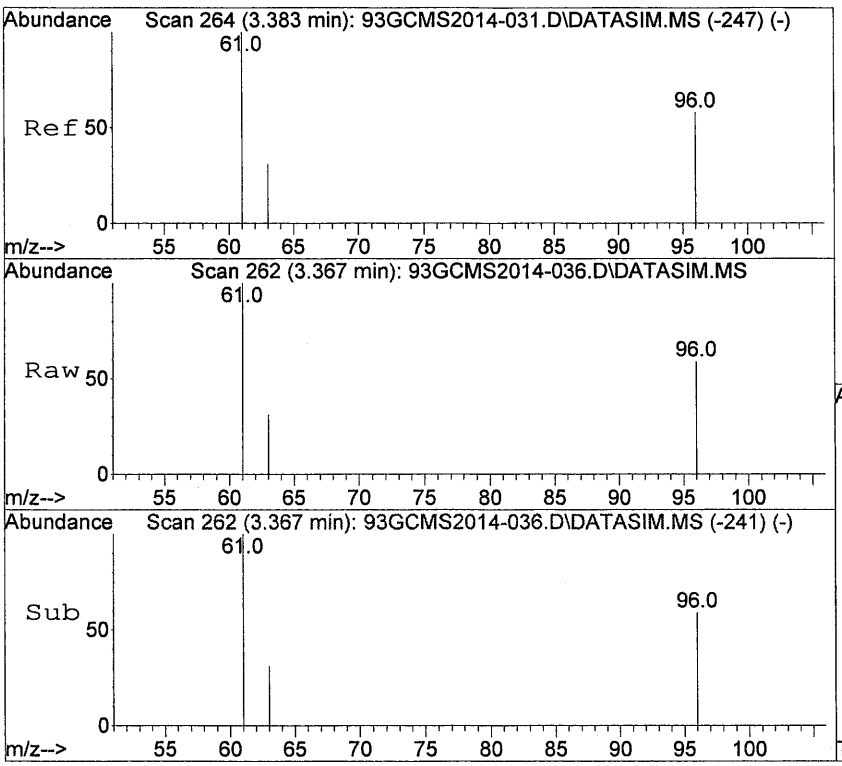


#2
Vinyl Chloride
Concen: 512.50 ppbv
RT: 1.900 min Scan# 41
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 62 Resp: 60194

Ion	Ratio	Lower	Upper
62	100		
64	31.0	24.9	37.3
27	49.8	37.8	56.6

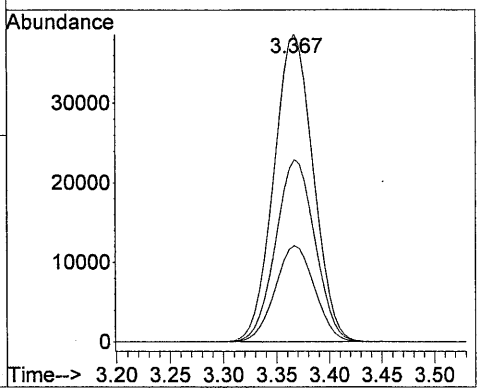


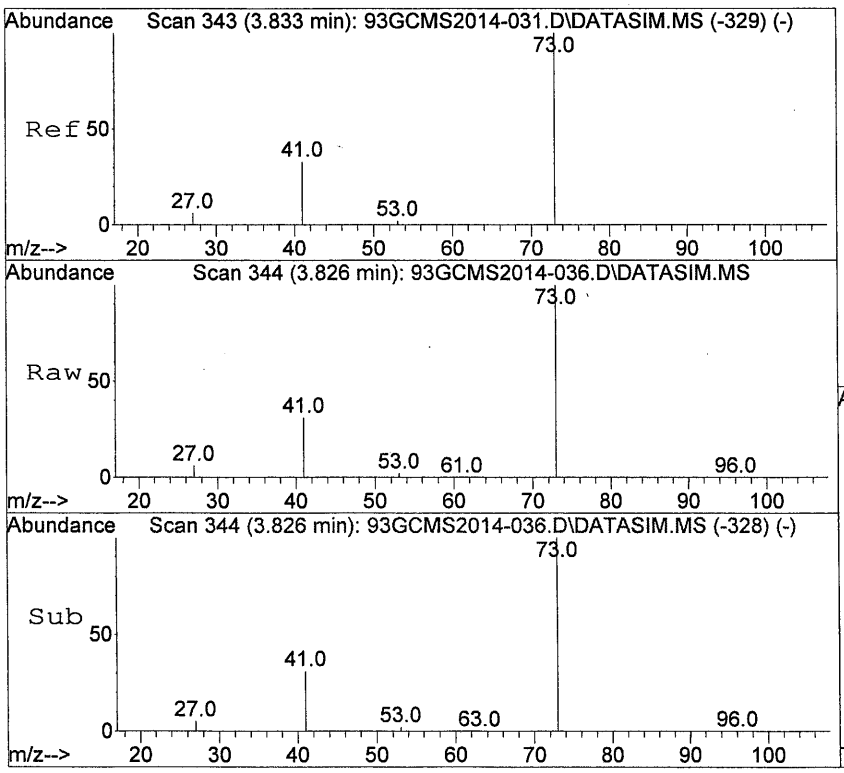


#3
1,1-Dichloroethene
Concen: 510.00 ppbv
RT: 3.367 min Scan# 262
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 61 Resp: 100274

Ion	Ratio	Lower	Upper
61	100		
96	59.1	48.6	72.8
63	31.3	25.0	37.6

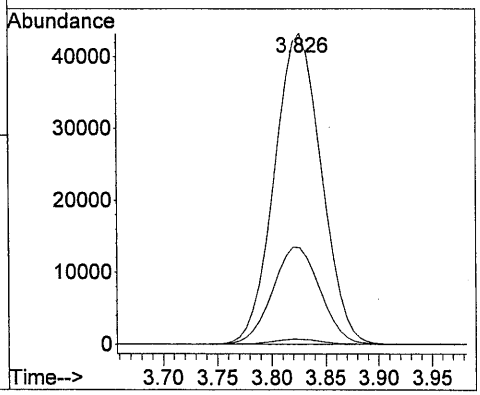


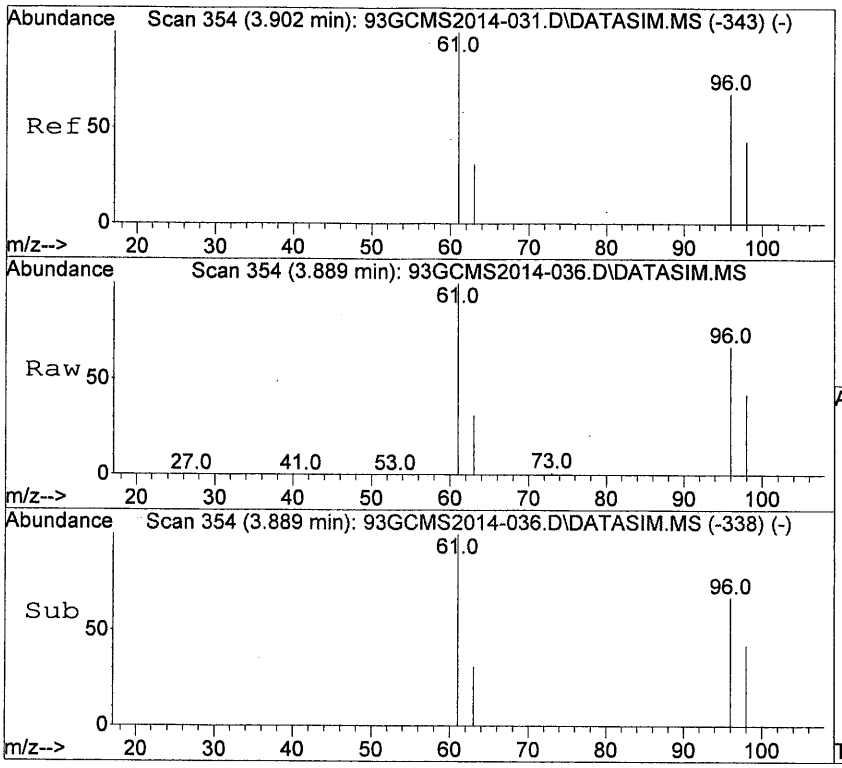


#4
Methyl Tert Butyl Ether
Concen: 502.50 ppbv
RT: 3.826 min Scan# 344
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 73 Resp: 130953

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	31.5	23.0	34.4

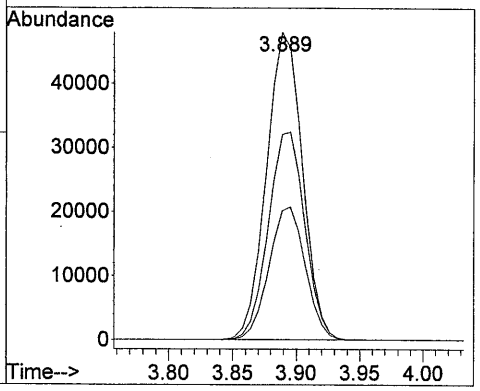


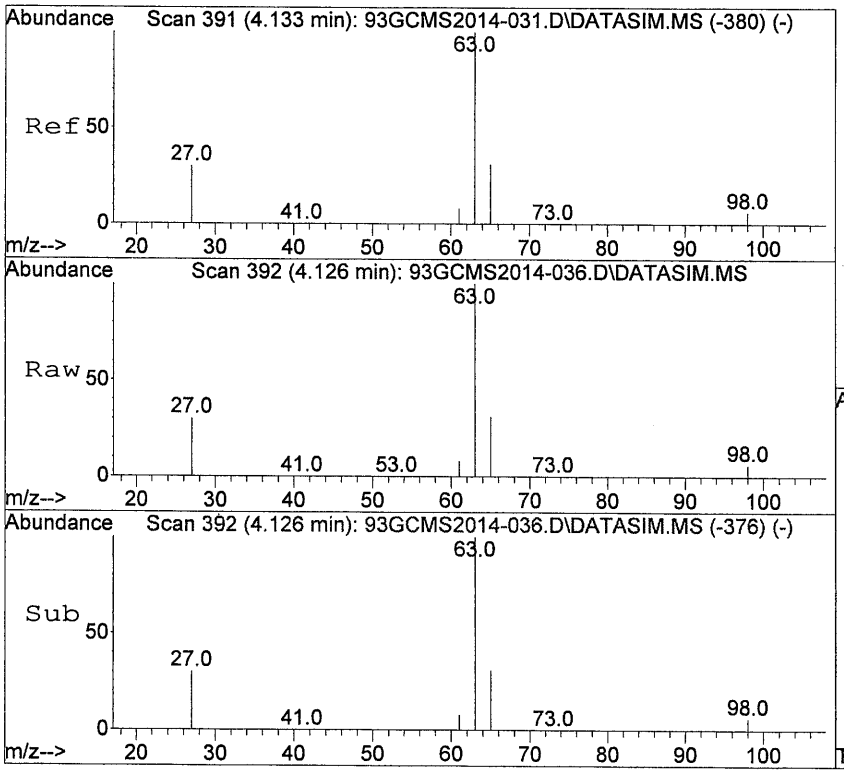


#5
trans-1,2-Dichloroethene
Concen: 525.00 ppbv
RT: 3.889 min Scan# 354
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 61 Resp: 93873

Ion	Ratio	Lower	Upper
61	100		
96	68.6	56.0	84.0
98	43.6	35.6	53.4

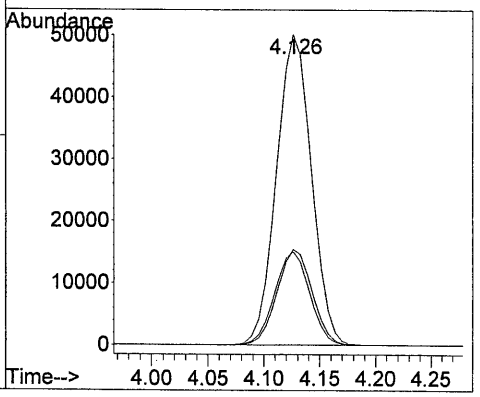


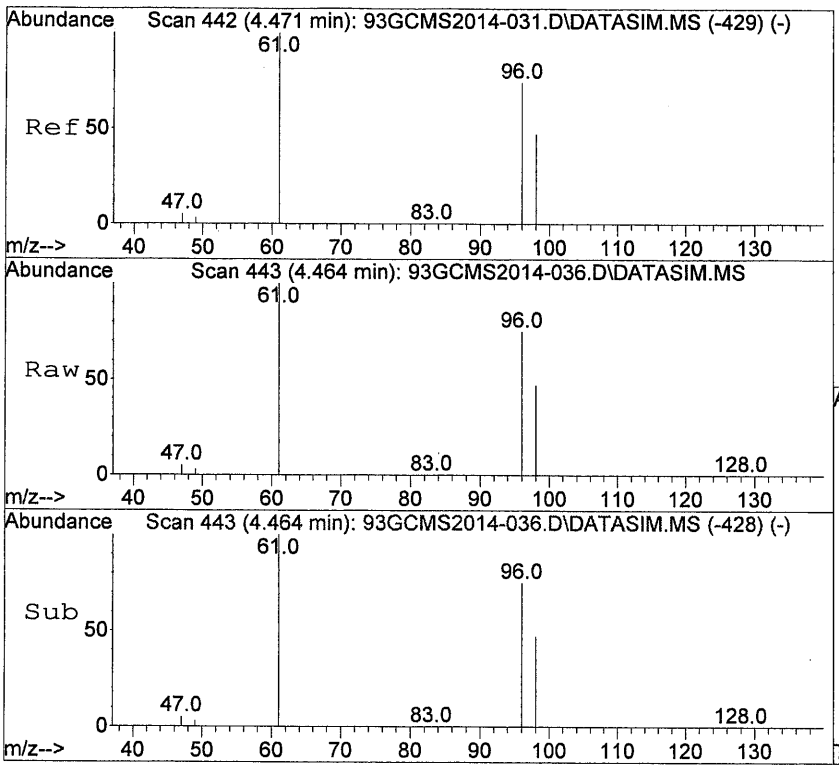


#6
1,1-Dichloroethane
Concen: 512.50 ppbv
RT: 4.126 min Scan# 392
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 63 Resp: 108846

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	29.9	22.6	34.0

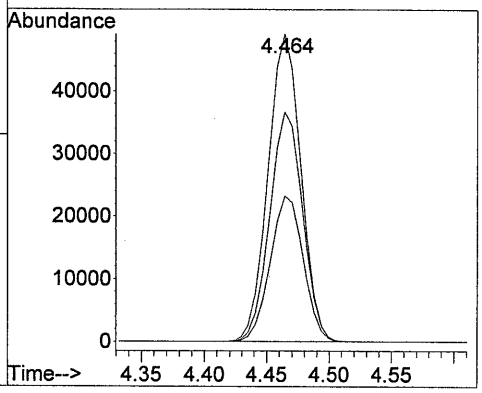


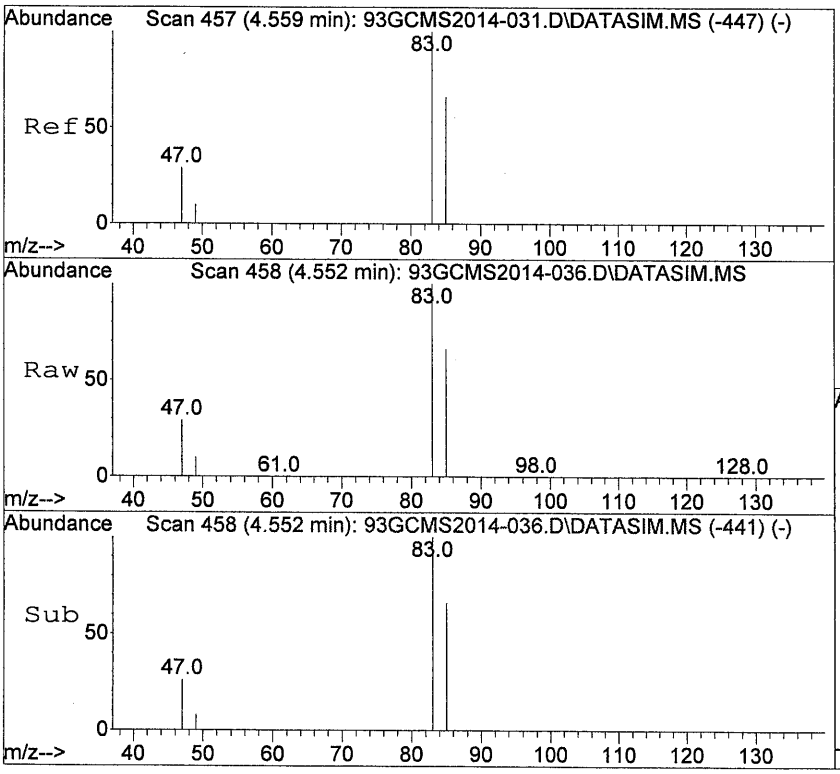


#7
cis-1,2-Dichloroethene
Concen: 525.00 ppbv
RT: 4.464 min Scan# 443
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 61 Resp: 89321

Ion	Ratio	Lower	Upper
61	100		
96	75.0	61.7	92.5
98	47.7	39.4	59.0

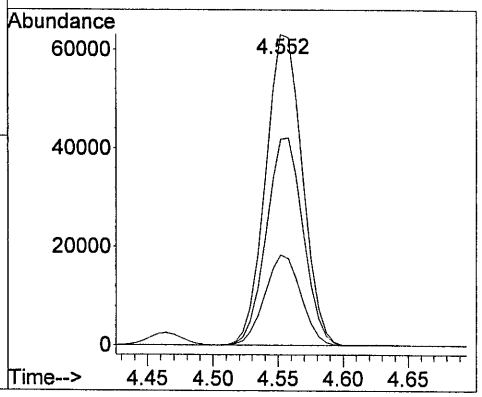


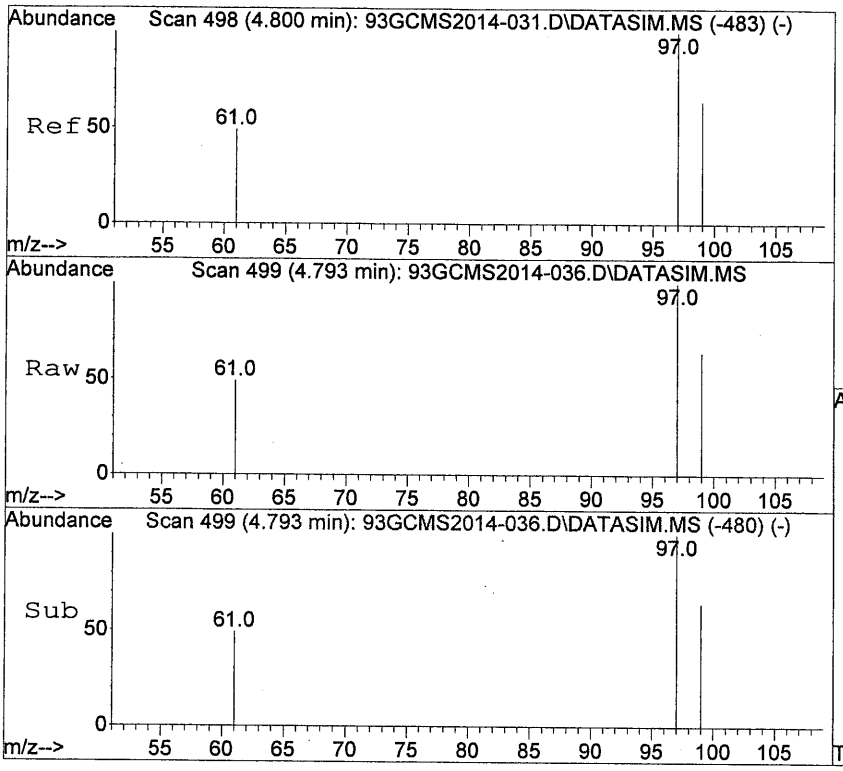


#8
Chloroform
Concen: 515.00 ppbv
RT: 4.552 min Scan# 458
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 83 Resp: 123464

Ion	Ratio	Lower	Upper
83	100		
85	66.8	52.0	78.0
47	28.6	20.0	30.0

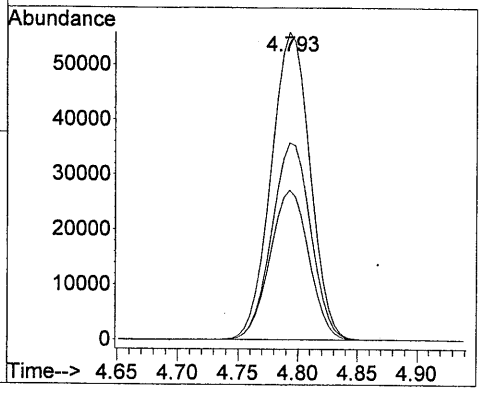


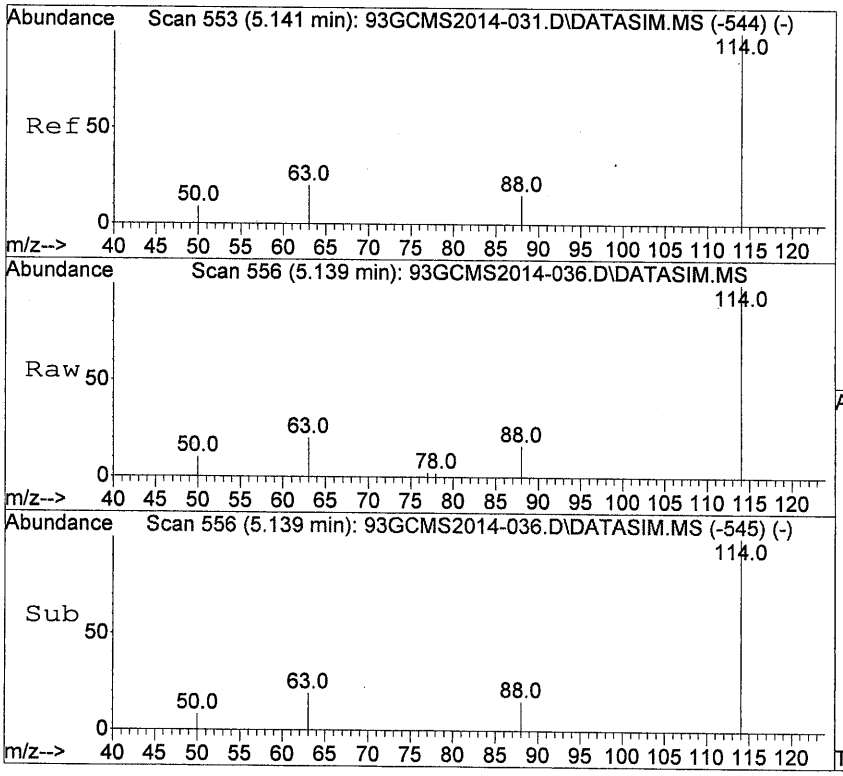


#9
1,1,1-Trichloroethane
Concen: 500.00 ppbv
RT: 4.793 min Scan# 499
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 97 Resp: 126250

Ion	Ratio	Lower	Upper
97	100		
99	64.2	51.4	77.0
61	48.5	37.4	56.0

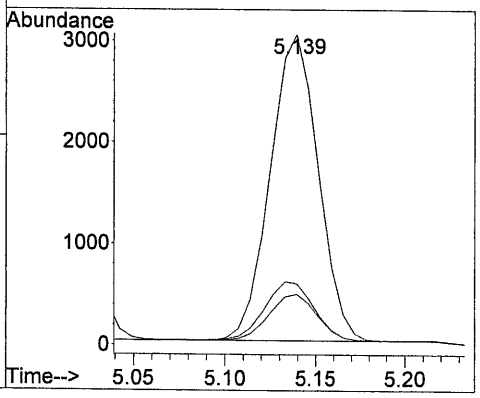


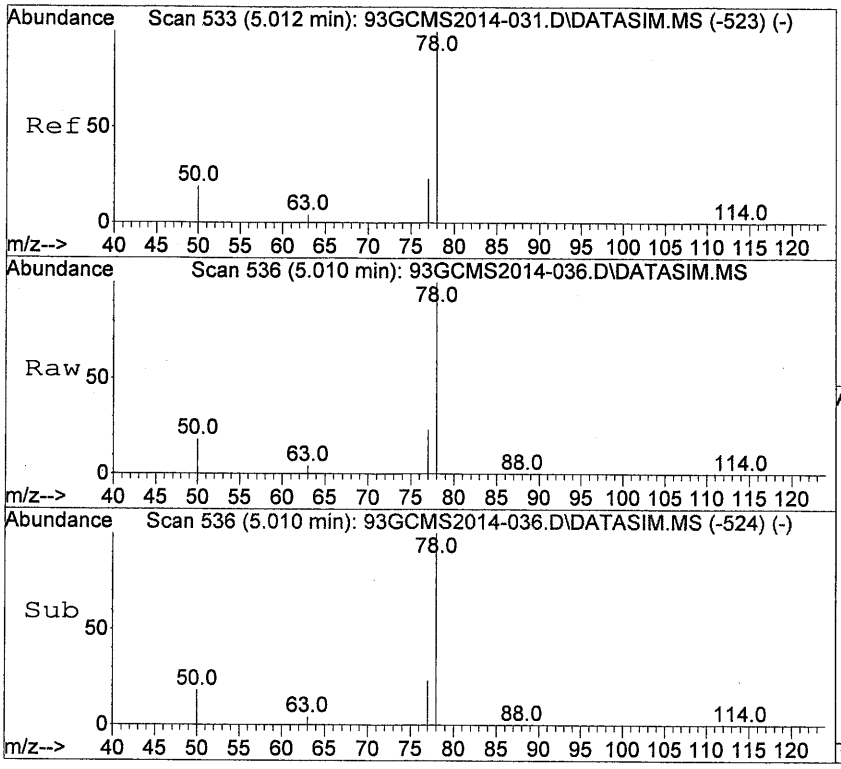


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.139 min Scan# 556
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion:114 Resp: 5584

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.2	12.0	18.0

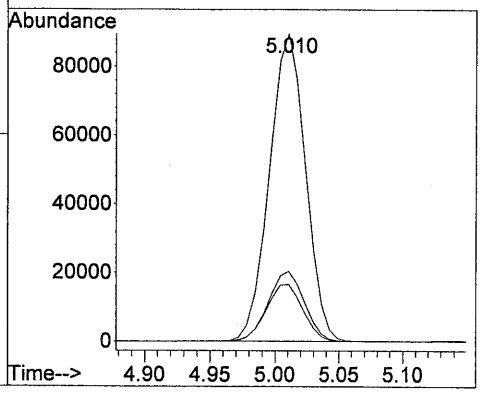


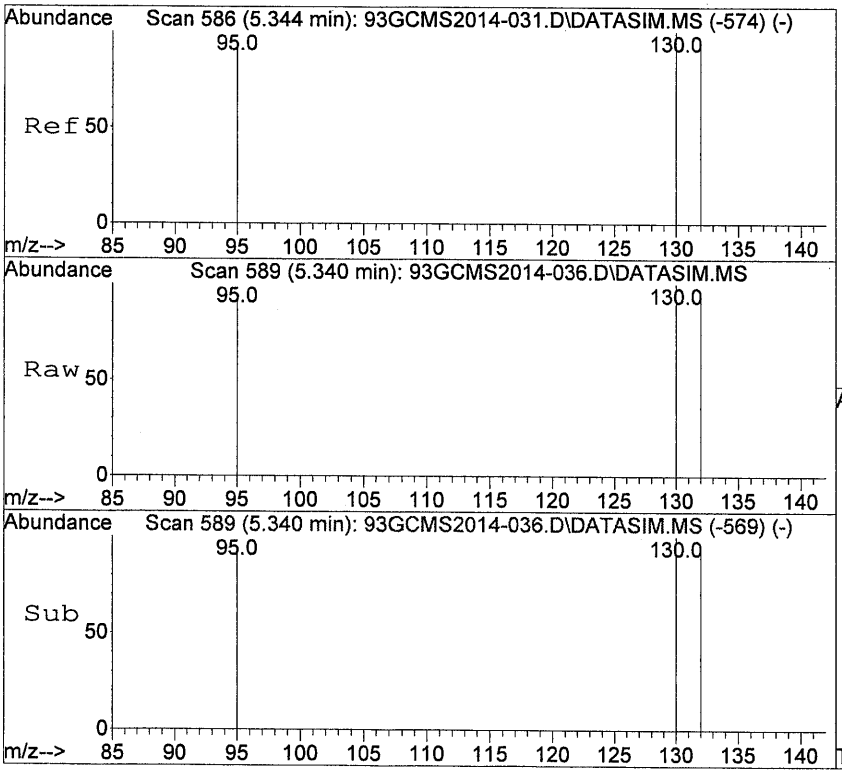


#11
Benzene
Concen: 522.50 ppbv
RT: 5.010 min Scan# 536
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 78 Resp: 174811

Ion	Ratio	Lower	Upper
78	100		
77	22.8	18.4	27.6
50	18.9	14.6	21.8

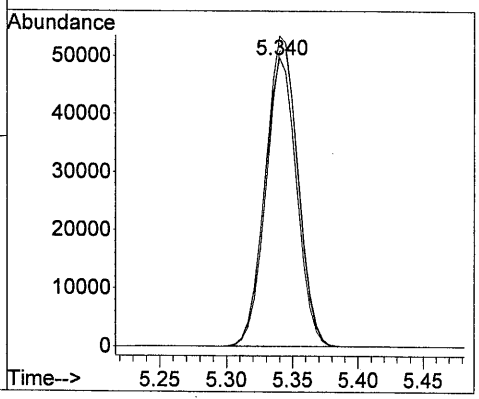


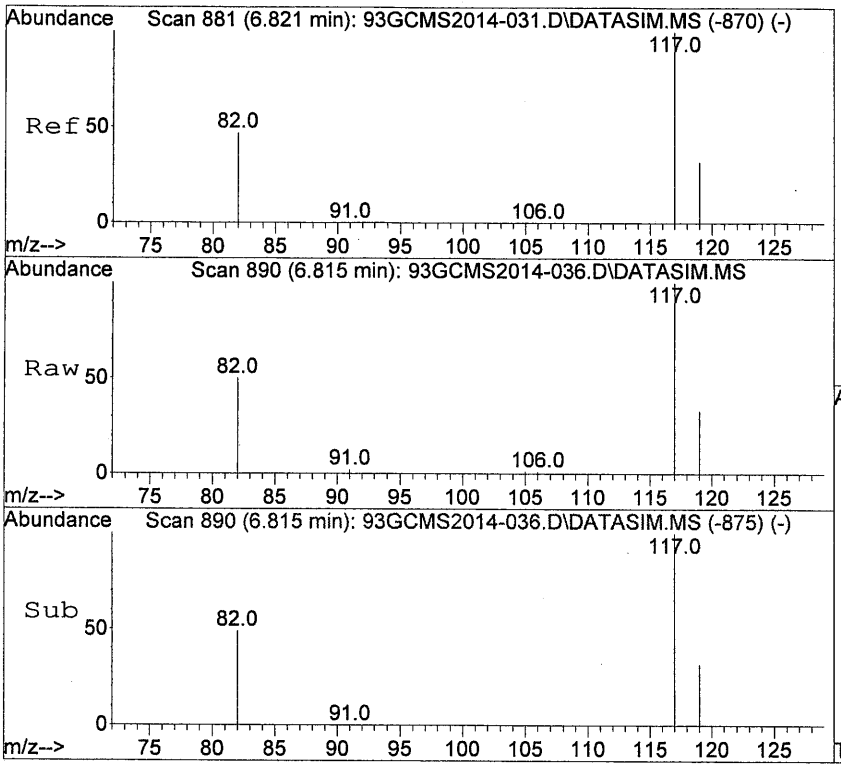


#12
Trichloroethene
Concen: 502.50 ppbv
RT: 5.340 min Scan# 589
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion:130 Resp: 91136

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	92.2	72.9	109.3

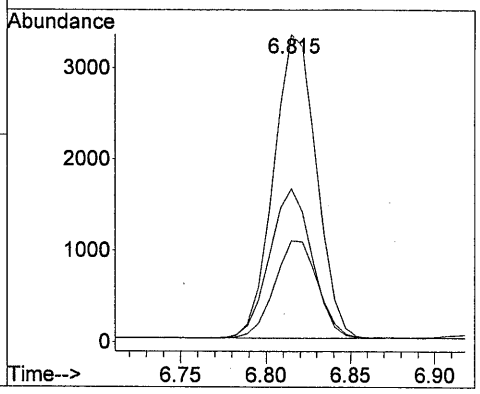


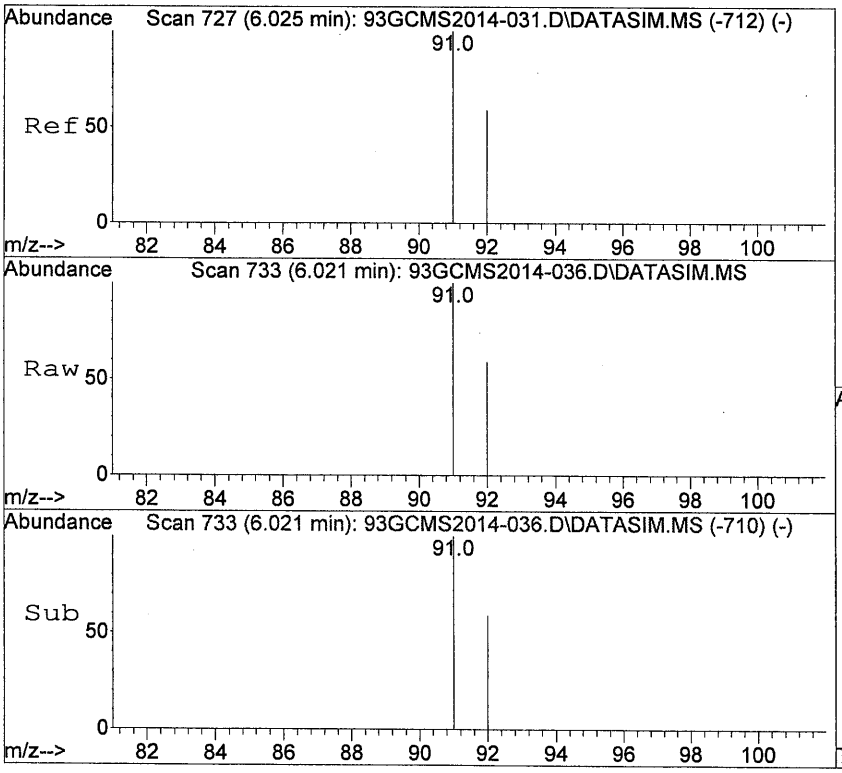


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 890
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion:117 Resp: 5860

Ion	Ratio	Lower	Upper
117	100		
82	48.0	37.8	56.6
119	32.1	25.6	38.4

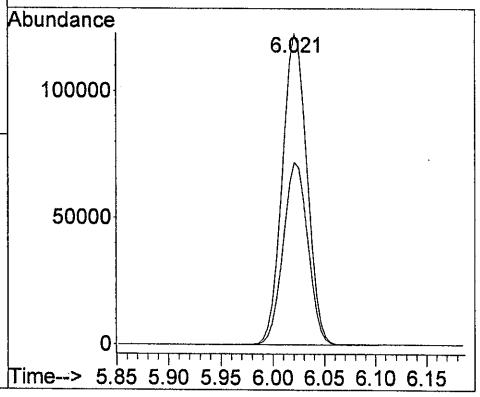


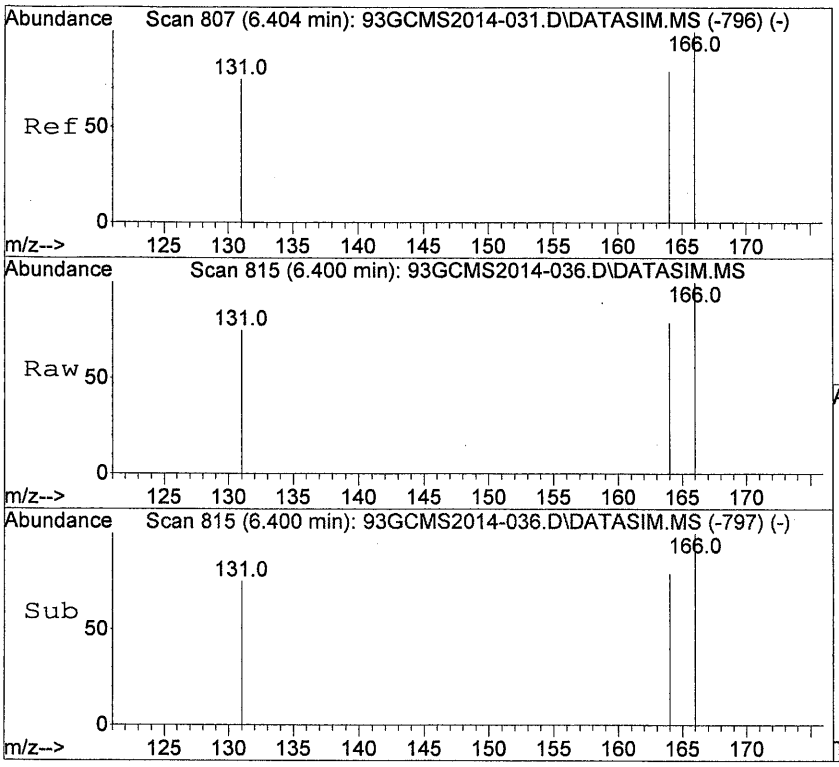


#14
Toluene
Concen: 515.00 ppbv
RT: 6.021 min Scan# 733
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 91 Resp: 203940

Ion	Ratio	Lower	Upper
91	100		
92	58.9	47.2	70.8

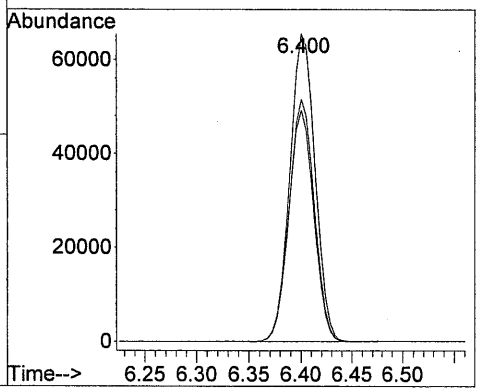


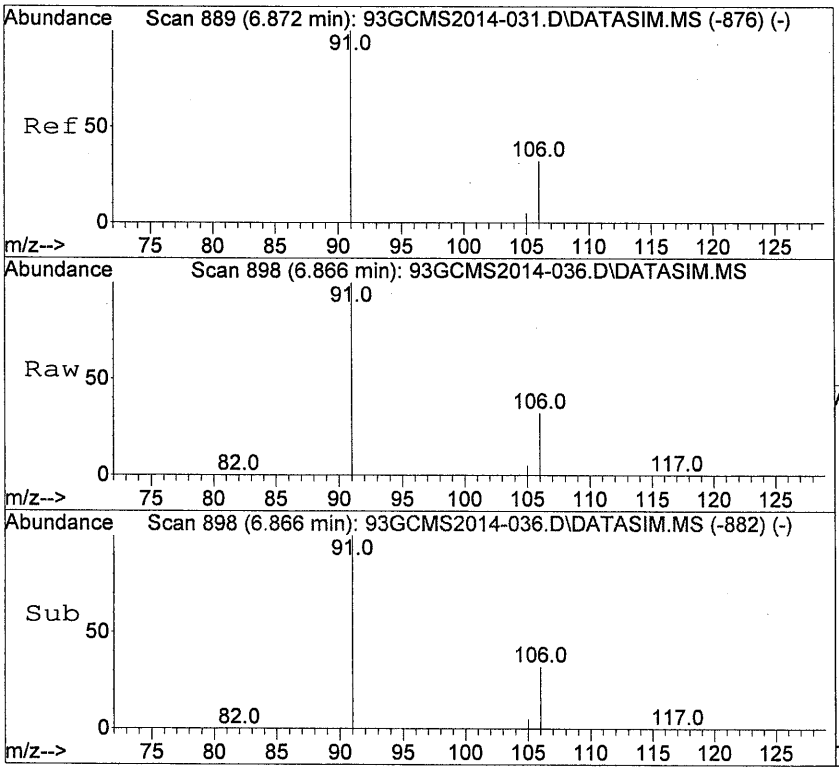


#15
Tetrachloroethene
Concen: 505.00 ppbv
RT: 6.400 min Scan# 815
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion:166 Resp: 124982

Ion	Ratio	Lower	Upper
166	100		
164	69.7	62.5	93.7
131	66.6	58.6	88.0

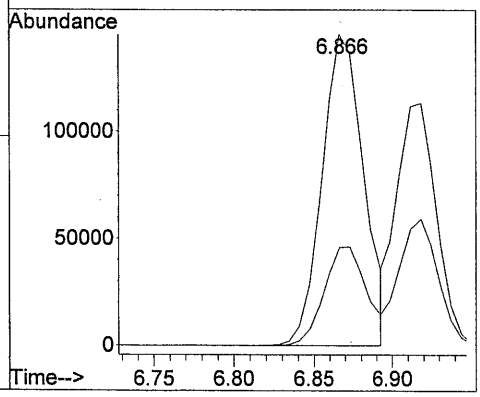


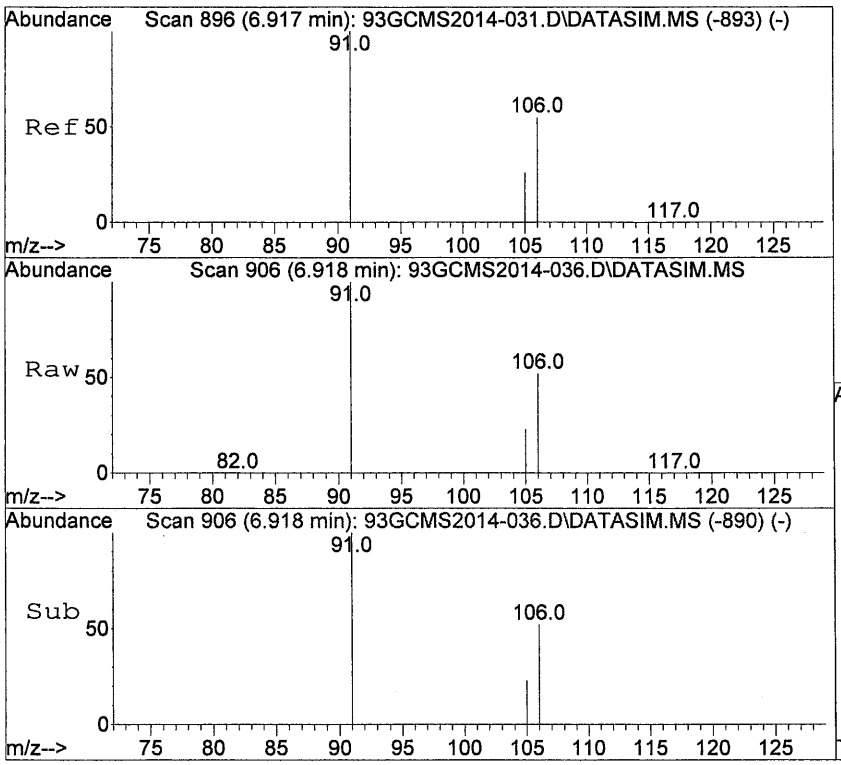


#16
Ethyl Benzene
Concen: 517.50 ppbv
RT: 6.866 min Scan# 898
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 91 Resp: 267751

Ion	Ratio	Lower	Upper
91	100		
106	31.6	25.6	38.4

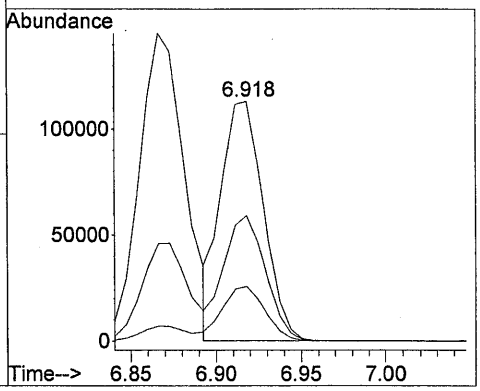


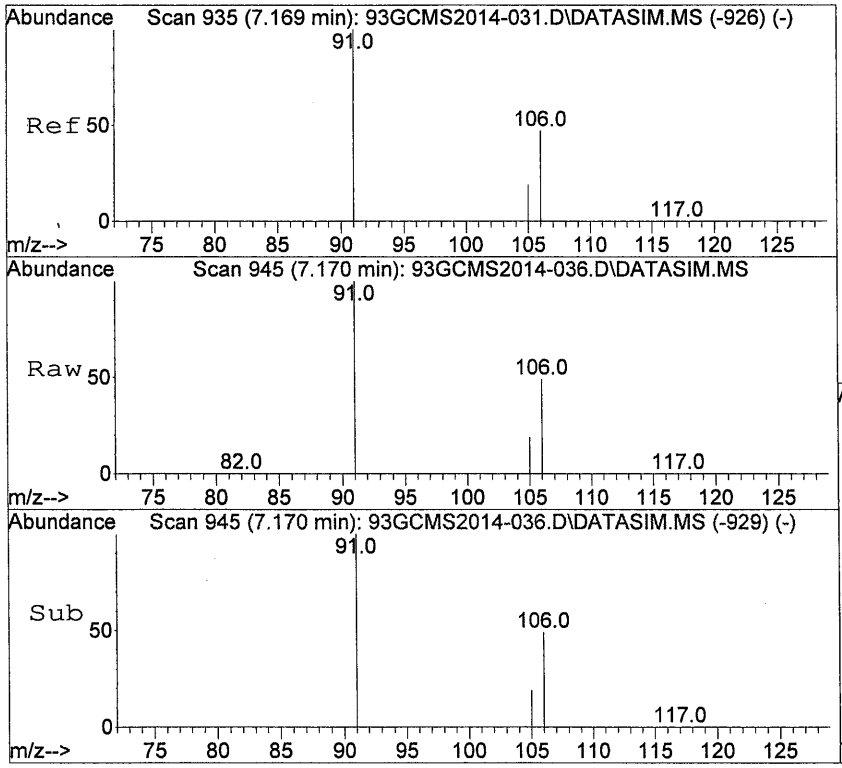


#17
m,p-Xylene
Concen: 520.00 ppbv
RT: 6.918 min Scan# 906
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 91 Resp: 198082

Ion	Ratio	Lower	Upper
91	100		
106	52.2	42.5	63.7
105	22.8	18.6	27.8

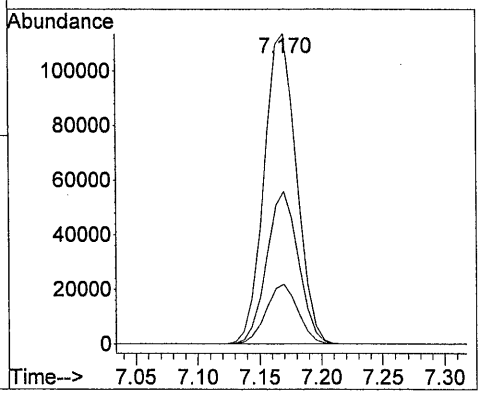




#18
o-Xylene
Concen: 517.50 ppbv
RT: 7.170 min Scan# 945
Delta R.T. 0.000 min
Lab File: 93GCMS2014-036.D
Acq: 13 Jan 2014 8:16

Tgt Ion: 91 Resp: 207317

Ion	Ratio	Lower	Upper
91	100		
106	48.3	39.3	58.9
105	19.0	15.4	23.2



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-037.D
Acq On : 13 Jan 2014 8:28
Operator : SJT
Sample : STD20140113-2 \ 5ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 08:58:51 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

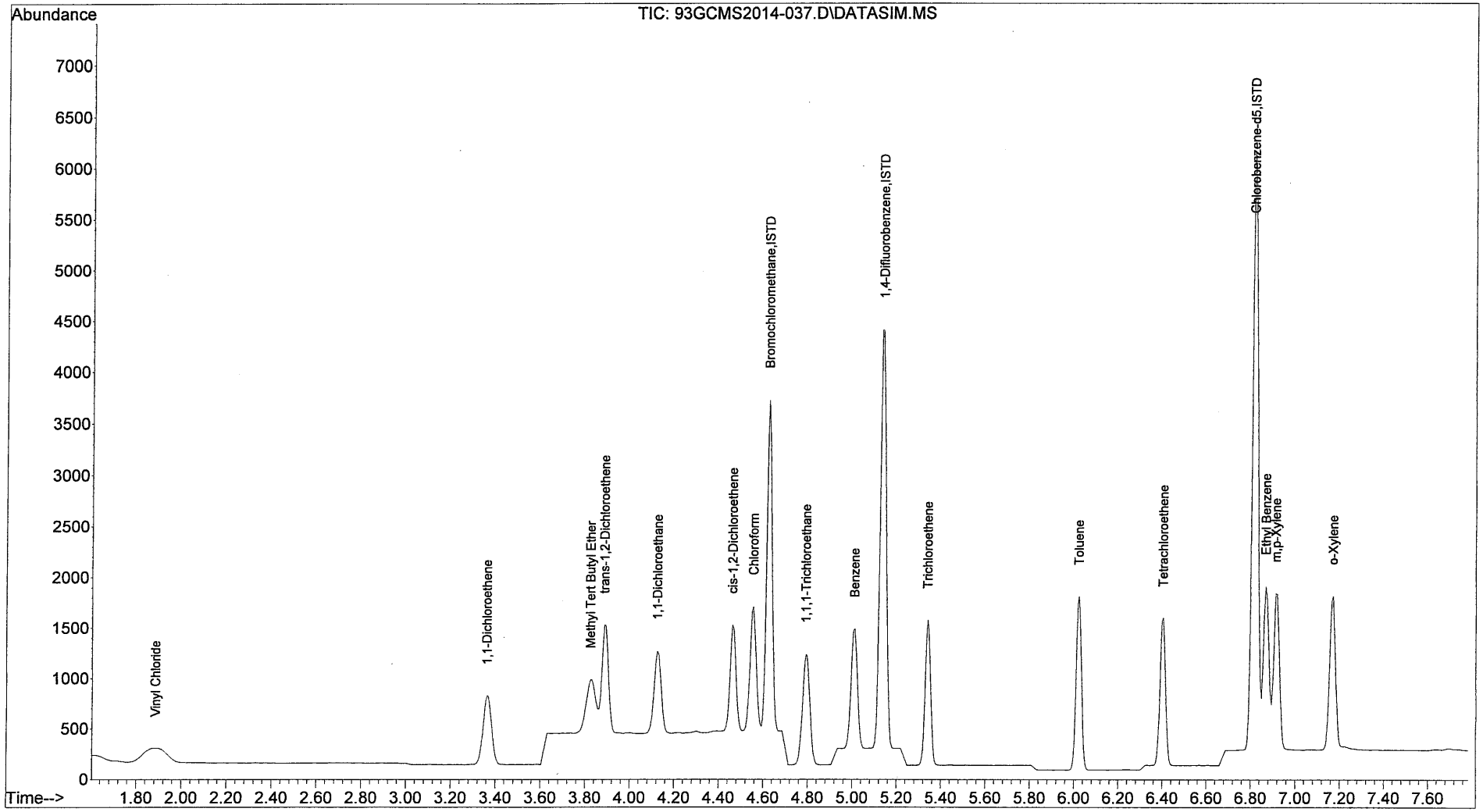
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	4.626	49	2148	10.00	ppbv		0.00
10) 1,4-Difluorobenzene	5.141	114	5496	10.00	ppbv		0.00
13) Chlorobenzene-d5	6.816	117	5735	10.00	ppbv		0.00
System Monitoring Compounds							
Target Compounds							Qvalue
2) Vinyl Chloride	1.885	62	581	5.07	ppbv		92
3) 1,1-Dichloroethene	3.362	61	944	4.92	ppbv		99
4) Methyl Tert Butyl Ether	3.825	73	1202	4.72	ppbv	#	93
5) trans-1,2-Dichloroethene	3.887	61	876	5.02	ppbv		99
6) 1,1-Dichloroethane	4.125	63	1009	4.87	ppbv		95
7) cis-1,2-Dichloroethene	4.463	61	838	5.04	ppbv		99
8) Chloroform	4.556	83	1169	4.99	ppbv		96
9) 1,1,1-Trichloroethane	4.792	97	1159	4.70	ppbv		97
11) Benzene	5.012	78	1629	4.95	ppbv		99
12) Trichloroethene	5.341	130	845	4.73	ppbv		99
14) Toluene	6.023	91	1805	4.66	ppbv		100
15) Tetrachloroethene	6.403	166	1004	4.15	ppbv		98
16) Ethyl Benzene	6.868	91	2195	4.33	ppbv		95
17) m,p-Xylene	6.913	91	1568	4.21	ppbv		97
18) o-Xylene	7.171	91	1651	4.21	ppbv		98

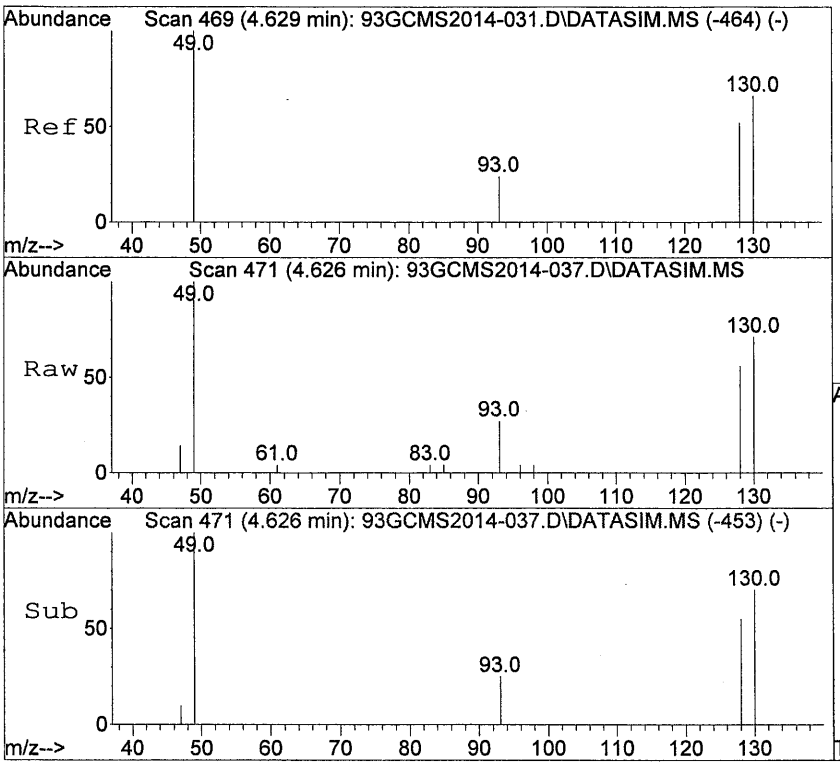
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01/13/14

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-037.D
Acq On : 13 Jan 2014 8:28
Operator : SJT
Sample : STD20140113-2 \ 5ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 08:58:51 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

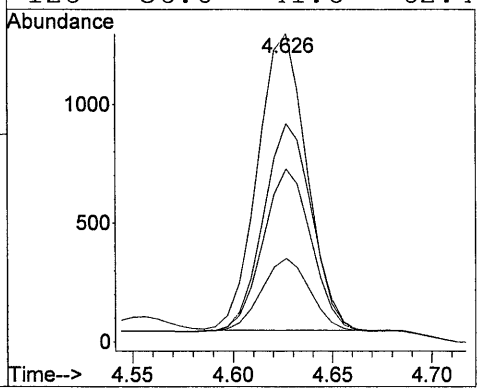


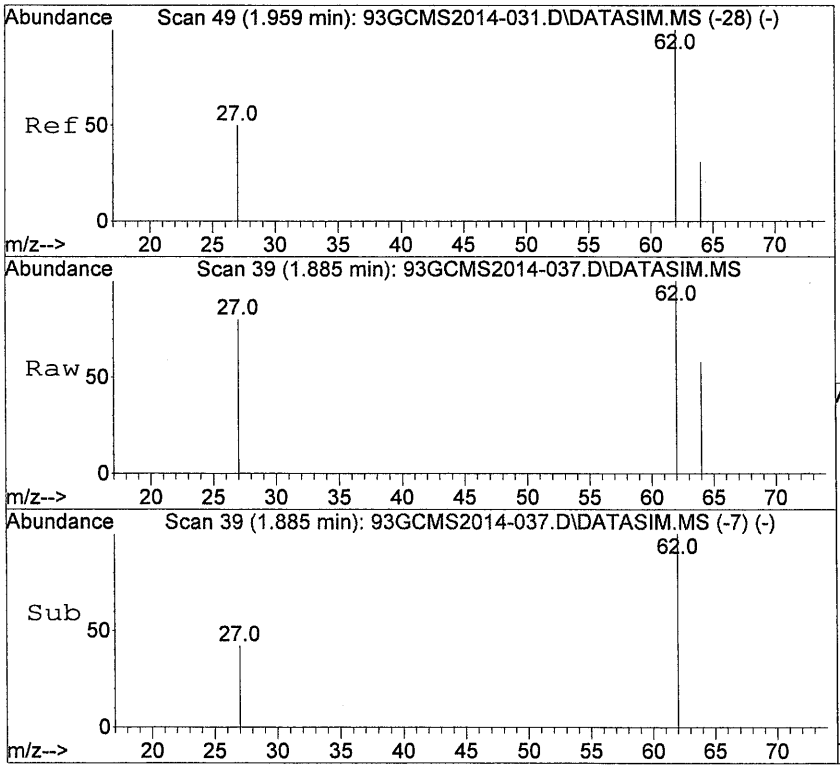


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.626 min Scan# 471
Delta R.T. 0.004 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 49 Resp: 2148

Ion	Ratio	Lower	Upper
49	100		
130	70.8	51.6	77.4
93	27.1	19.6	29.4
128	56.0	41.6	62.4

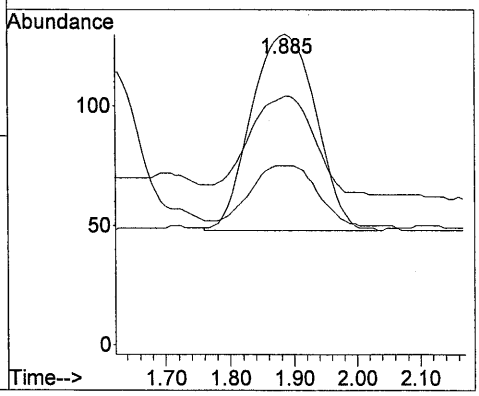


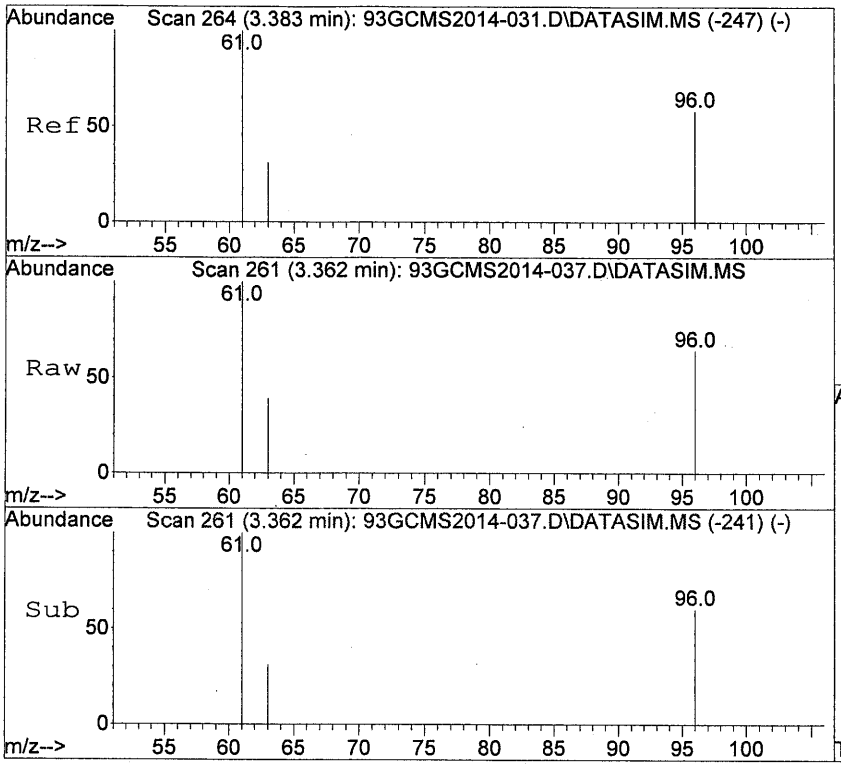


#2
Vinyl Chloride
Concen: 5.07 ppbv
RT: 1.885 min Scan# 39
Delta R.T. -0.015 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 62 Resp: 581

Ion	Ratio	Lower	Upper
62	100		
64	33.9	24.9	37.3
27	53.4	37.8	56.6

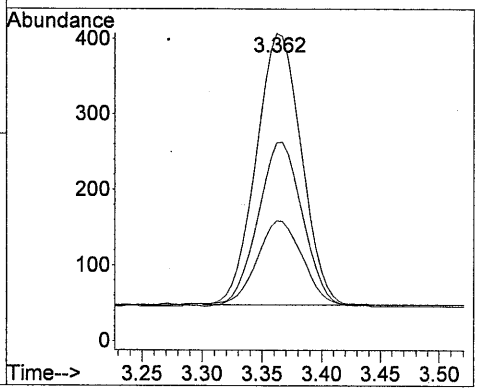


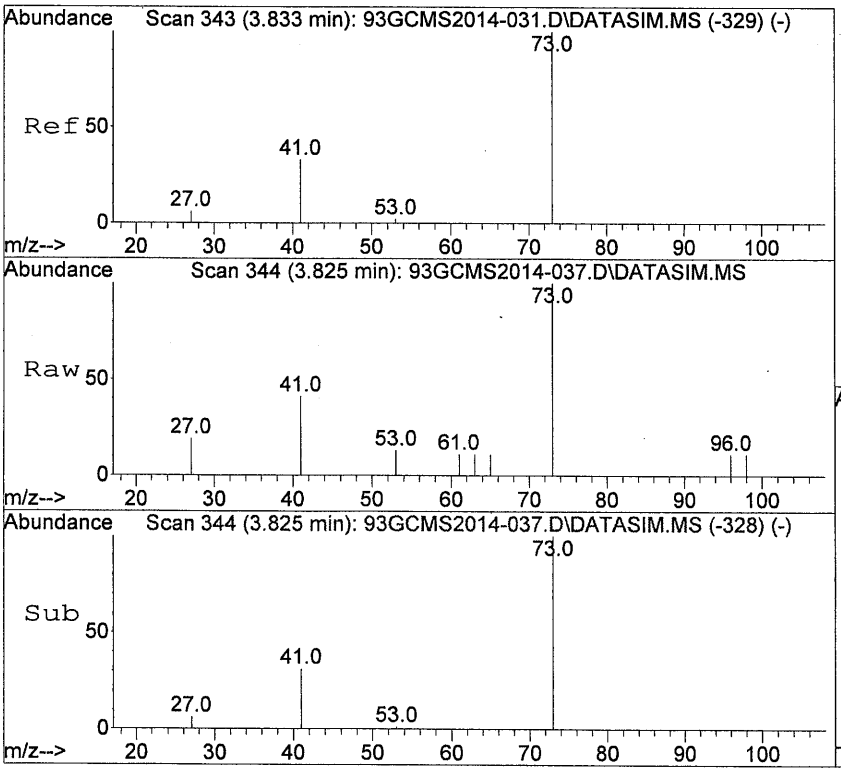


#3
1,1-Dichloroethene
Concen: 4.92 ppbv
RT: 3.362 min Scan# 261
Delta R.T. -0.005 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 61 Resp: 944

Ion	Ratio	Lower	Upper
61	100		
96	59.6	48.6	72.8
63	30.9	25.0	37.6

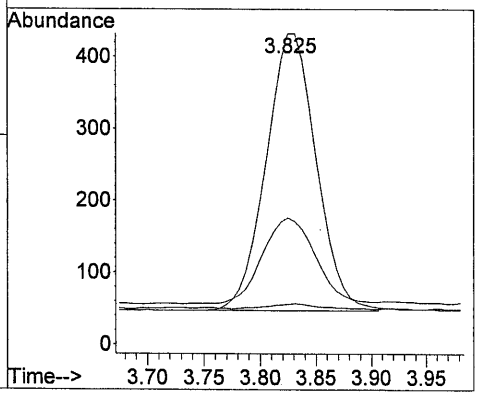


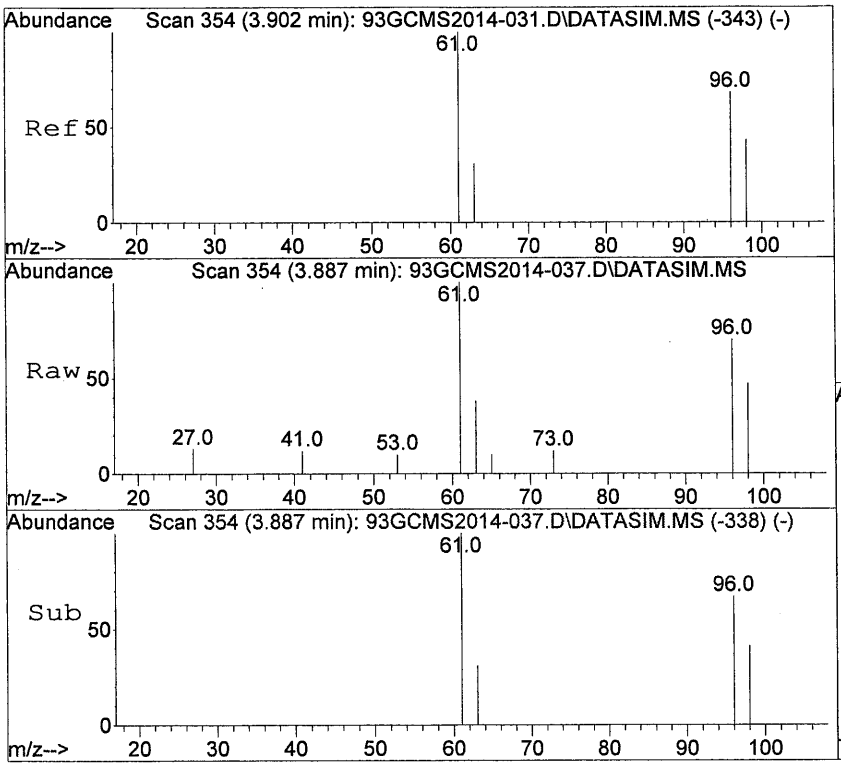


#4
Methyl Tert Butyl Ether
Concen: 4.72 ppbv
RT: 3.825 min Scan# 344
Delta R.T. -0.002 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 73 Resp: 1202

Ion	Ratio	Lower	Upper
73	100		
53	2.1	1.1	1.7#
41	32.4	23.0	34.4

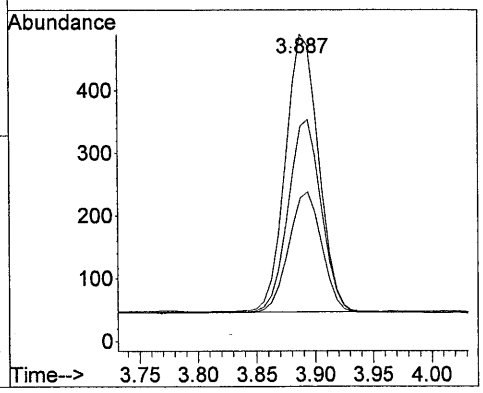


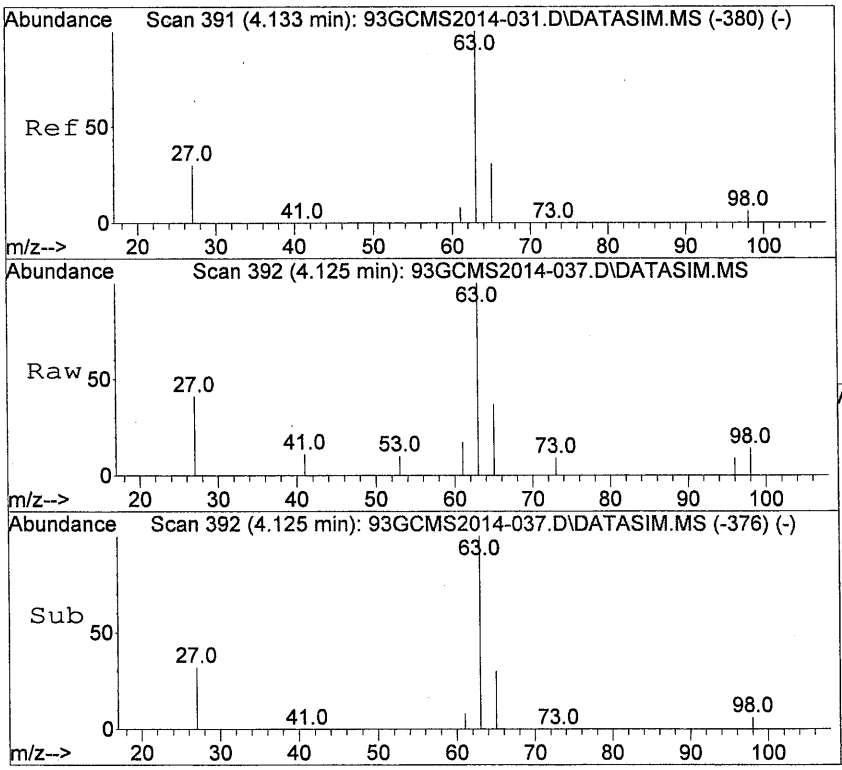


#5
trans-1,2-Dichloroethene
Concen: 5.02 ppbv
RT: 3.887 min Scan# 354
Delta R.T. -0.002 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 61 Resp: 876

Ion	Ratio	Lower	Upper
61	100		
96	69.2	56.0	84.0
98	43.2	35.6	53.4

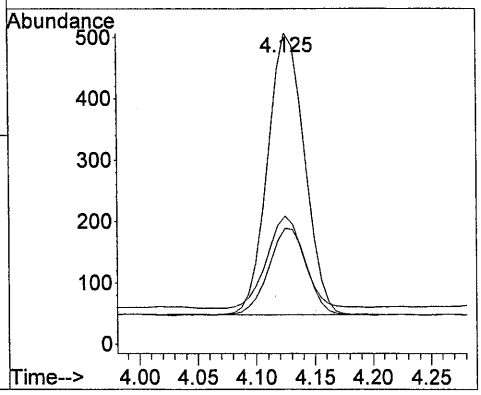


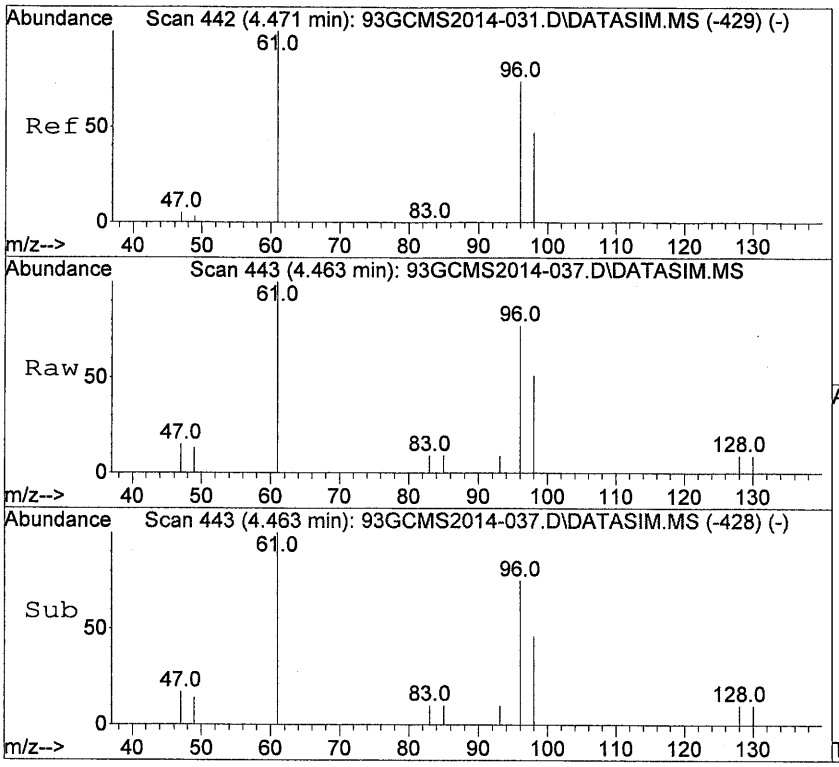


#6
1,1-Dichloroethane
Concen: 4.87 ppbv
RT: 4.125 min Scan# 392
Delta R.T. -0.002 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 63 Resp: 1009

Ion	Ratio	Lower	Upper
63	100		
65	32.4	24.7	37.1
27	32.7	22.6	34.0

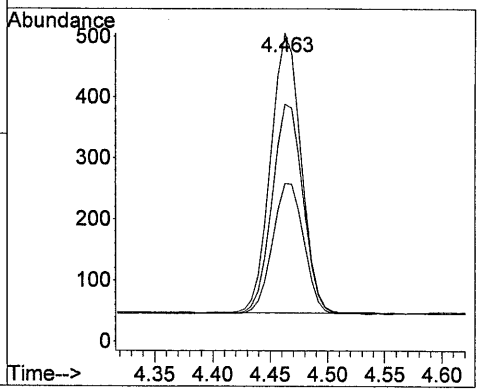


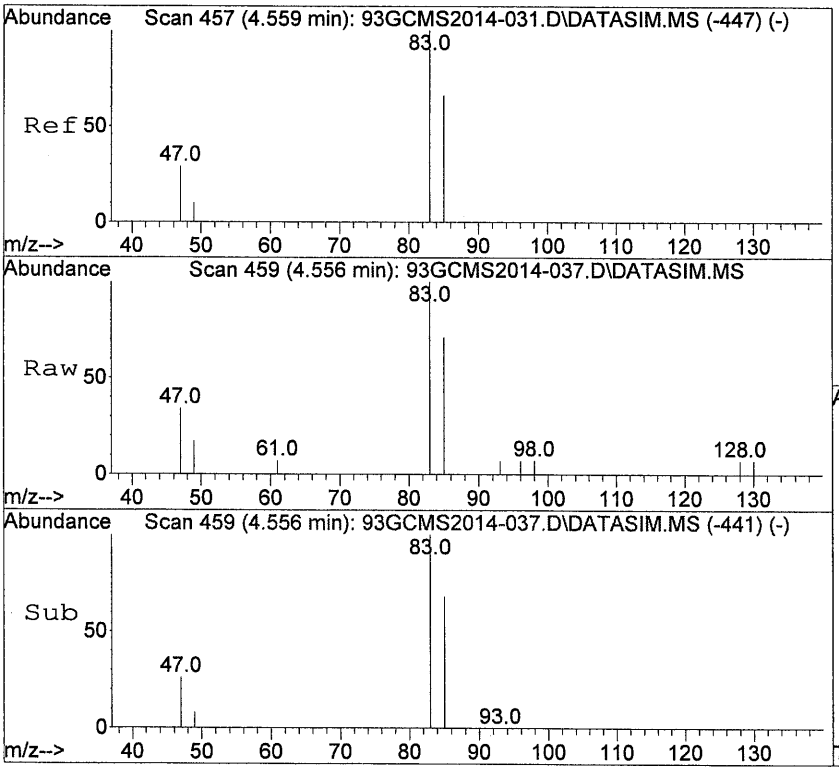


#7
cis-1,2-Dichloroethene
Concen: 5.04 ppbv
RT: 4.463 min Scan# 443
Delta R.T. -0.002 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 61 Resp: 838

Ion	Ratio	Lower	Upper
61	100		
96	76.5	61.7	92.5
98	47.4	39.4	59.0

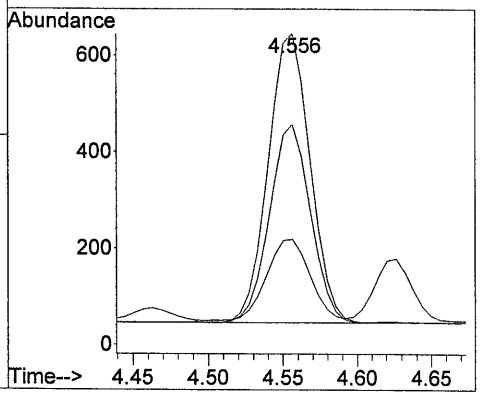


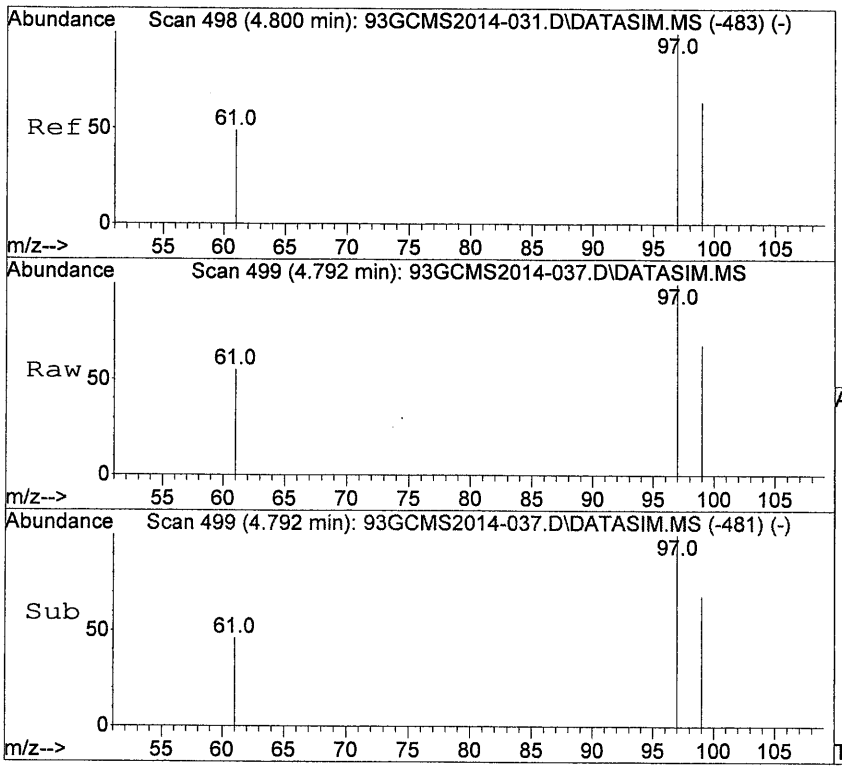


#8
Chloroform
Concen: 4.99 ppbv
RT: 4.556 min Scan# 459
Delta R.T. 0.004 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 83 Resp: 1169

Ion	Ratio	Lower	Upper
83	100		
85	66.6	52.0	78.0
47	29.3	20.0	30.0

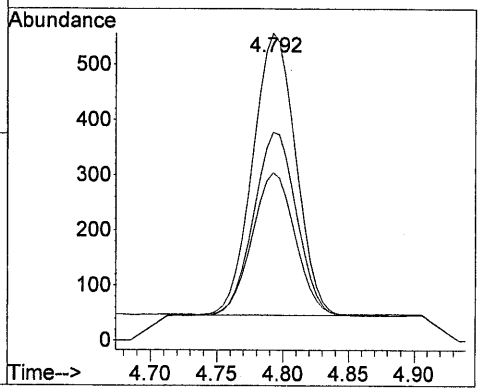


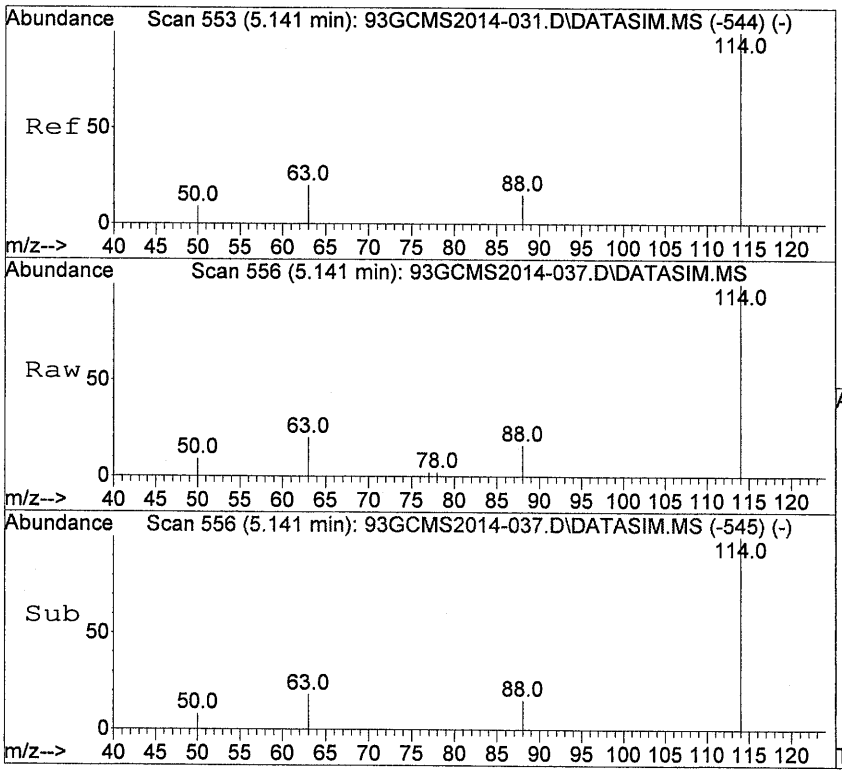


#9
1,1,1-Trichloroethane
Concen: 4.70 ppbv
RT: 4.792 min Scan# 499
Delta R.T. -0.000 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 97 Resp: 1159

Ion	Ratio	Lower	Upper
97	100		
99	64.8	51.4	77.0
61	50.3	37.4	56.0

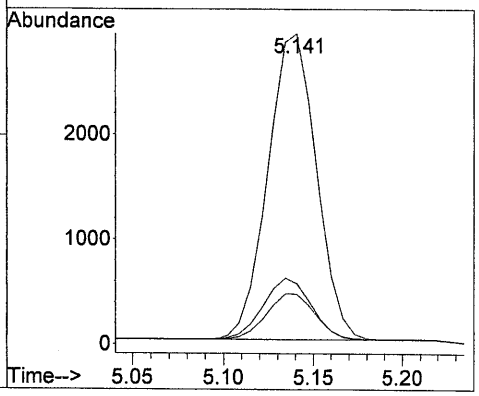


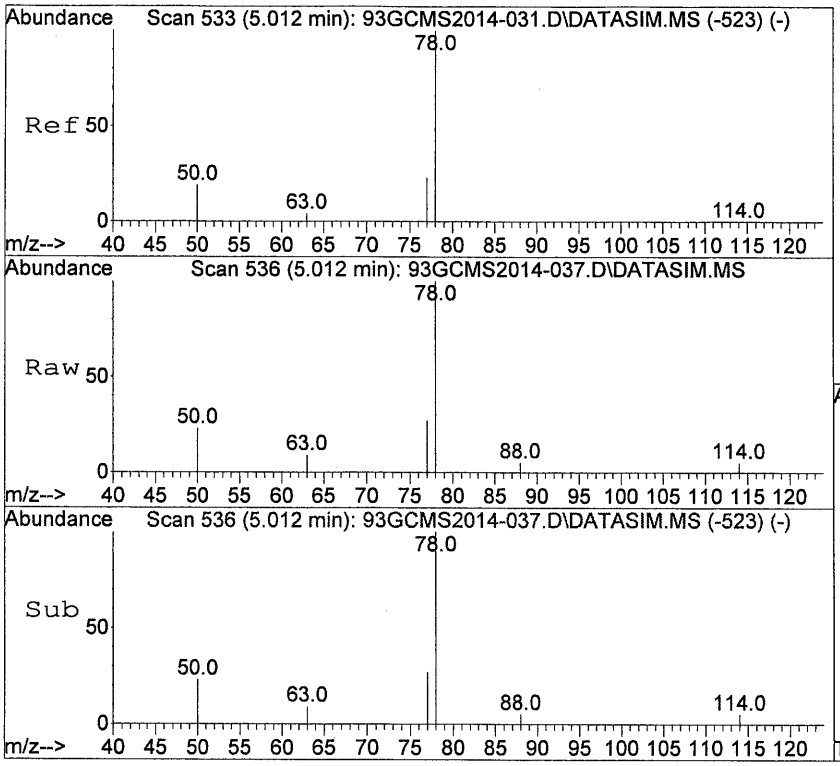


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 556
Delta R.T. 0.001 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion:114 Resp: 5496

Ion	Ratio	Lower	Upper
114	100		
63	19.7	15.1	22.7
88	15.0	12.0	18.0

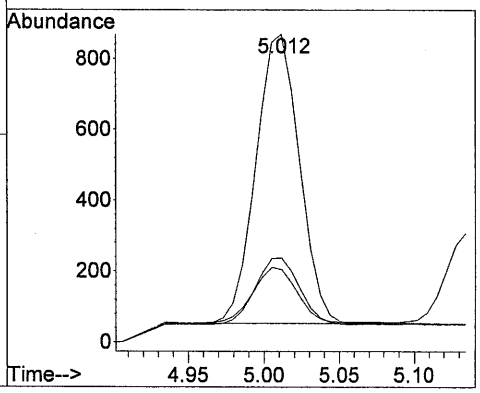


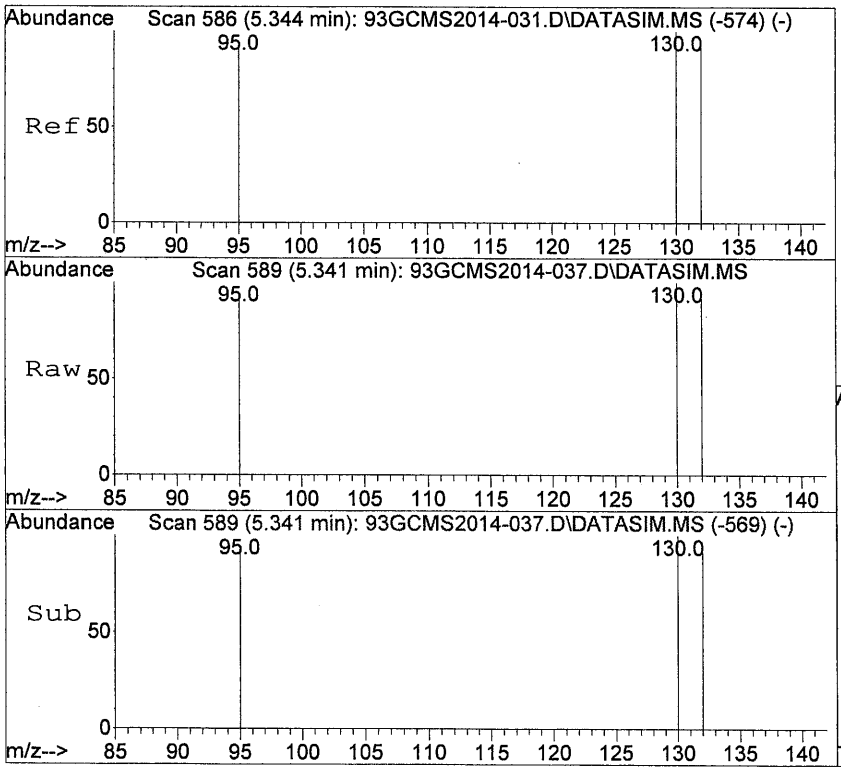


#11
Benzene
Concen: 4.95 ppbv
RT: 5.012 min Scan# 536
Delta R.T. 0.001 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 78 Resp: 1629

Ion	Ratio	Lower	Upper
78	100		
77	23.1	18.4	27.6
50	19.2	14.6	21.8

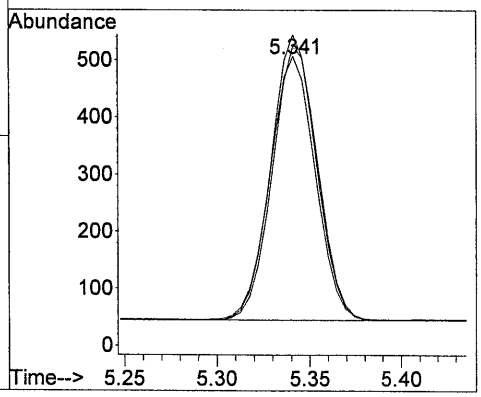


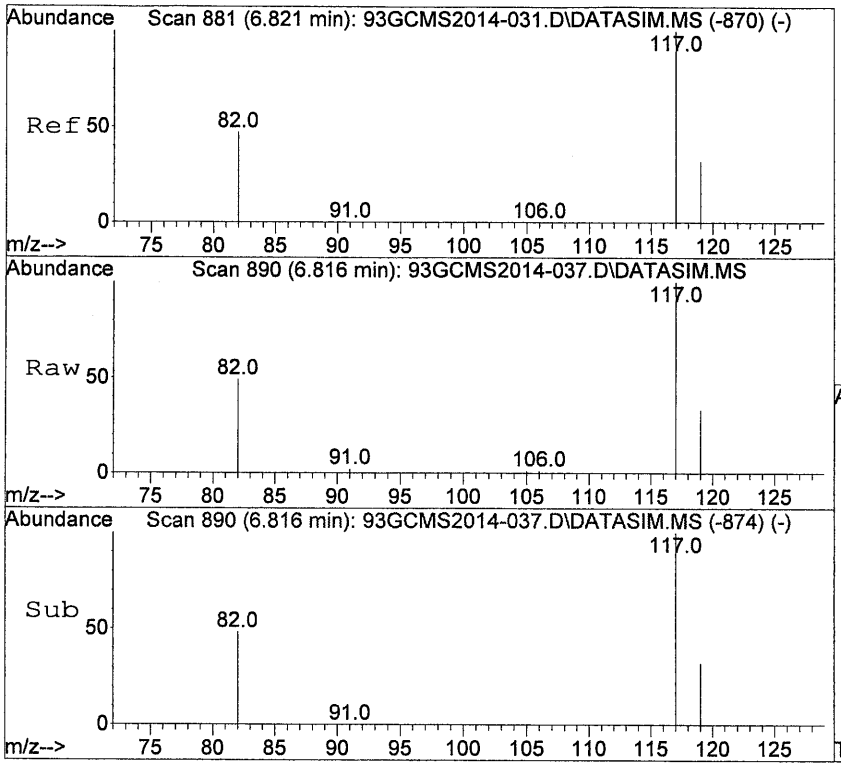


#12
Trichloroethene
Concen: 4.73 ppbv
RT: 5.341 min Scan# 589
Delta R.T. 0.001 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion:130 Resp: 845

Ion	Ratio	Lower	Upper
130	100		
132	96.6	77.0	115.6
95	92.8	72.9	109.3

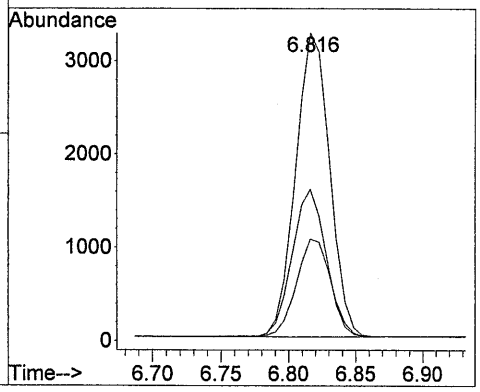


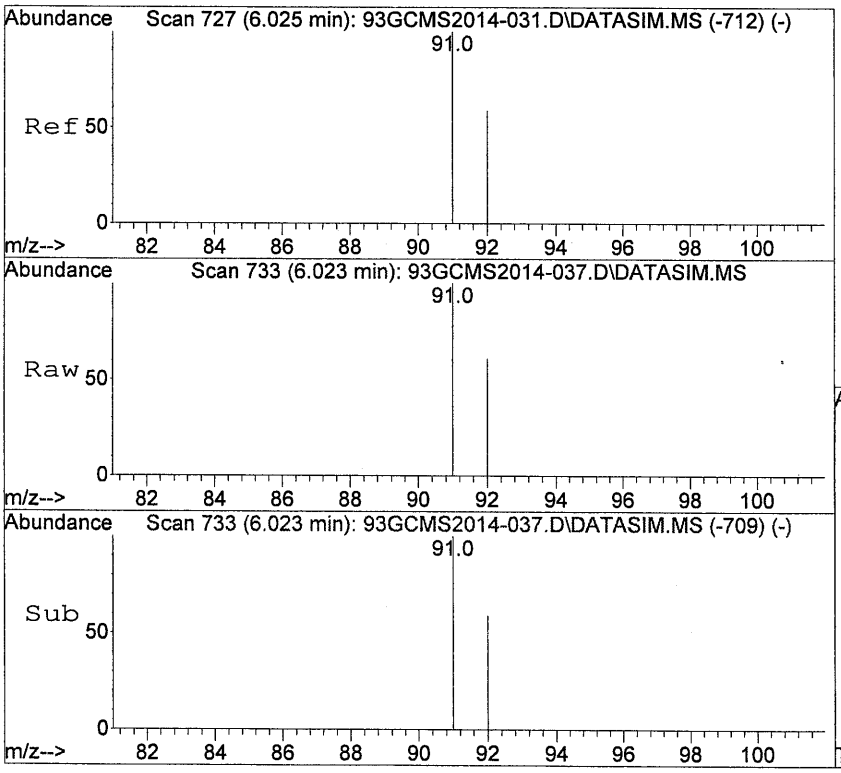


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.816 min Scan# 890
Delta R.T. 0.001 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion:117 Resp: 5735

Ion	Ratio	Lower	Upper
117	100		
82	47.8	37.8	56.6
119	32.4	25.6	38.4

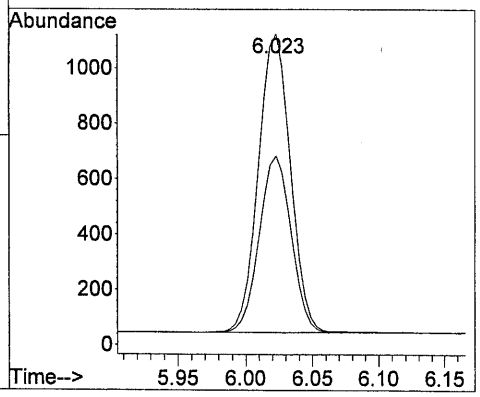


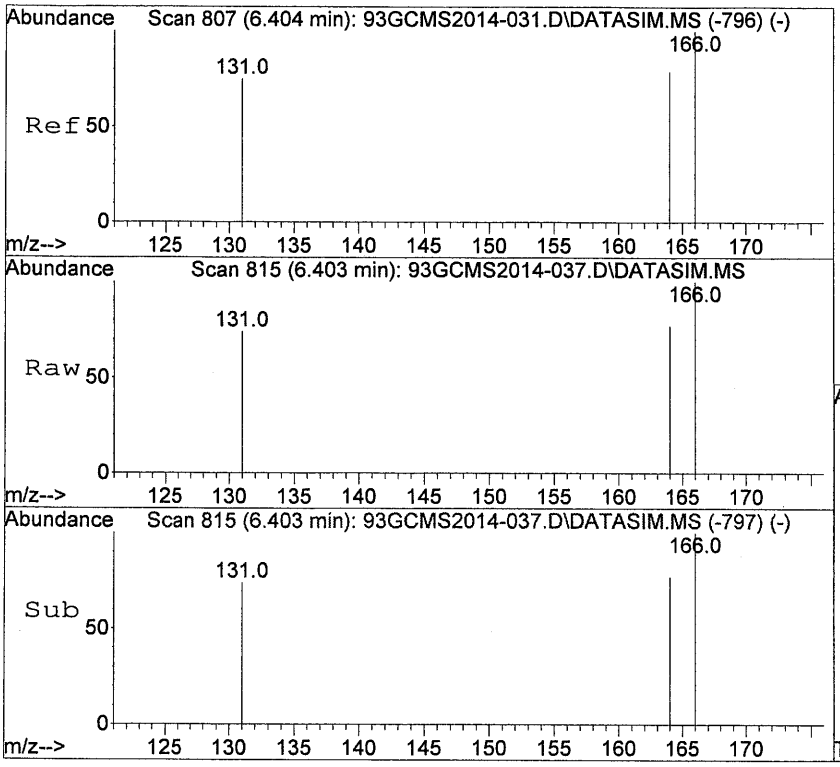


#14
Toluene
Concen: 4.66 ppbv
RT: 6.023 min Scan# 733
Delta R.T. 0.002 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 91 Resp: 1805

Ion	Ratio	Lower	Upper
91	100		
92	58.7	47.2	70.8

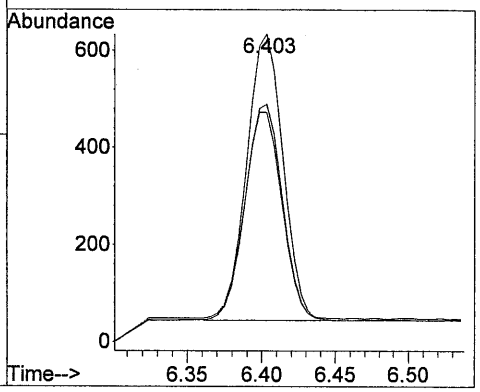


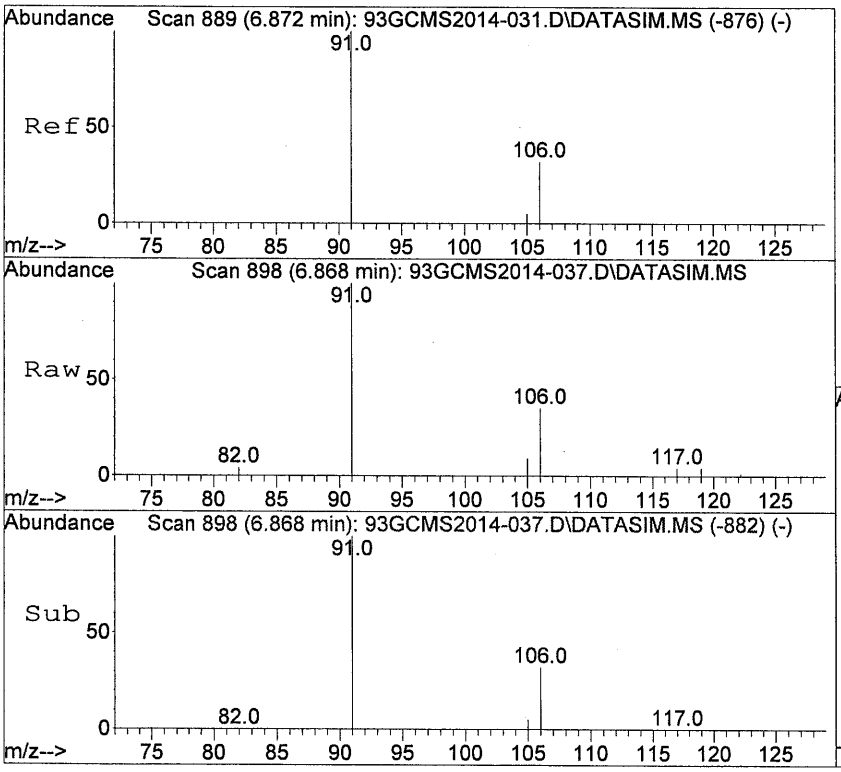


#15
Tetrachloroethene
Concen: 4.15 ppbv
RT: 6.403 min Scan# 815
Delta R.T. 0.003 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion:166 Resp: 1004

Ion	Ratio	Lower	Upper
166	100		
164	76.3	62.5	93.7
131	74.3	58.6	88.0

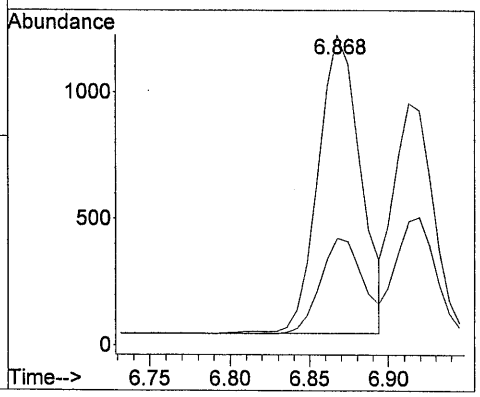


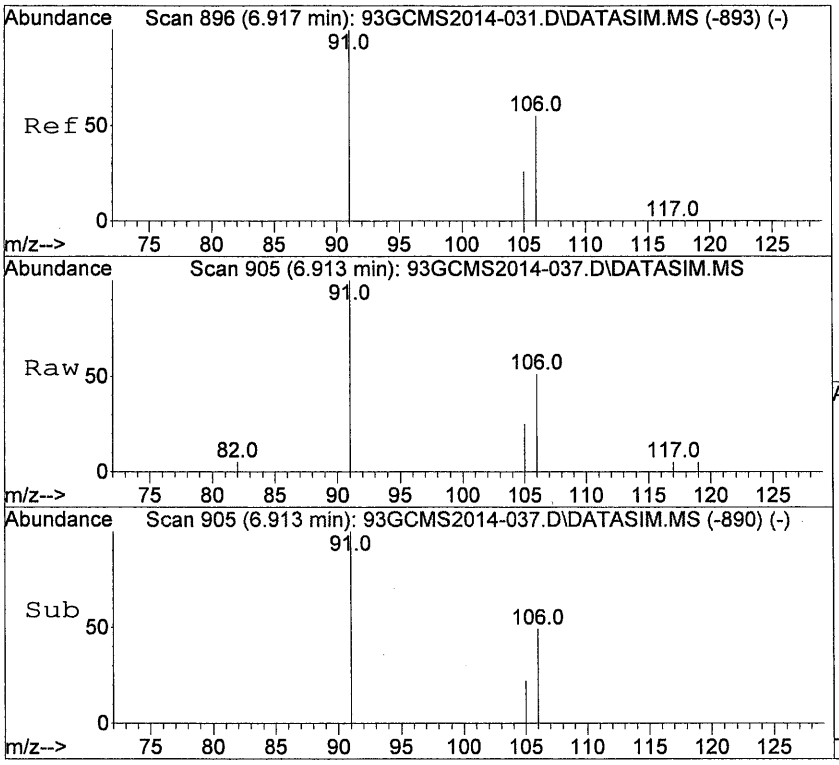


#16
Ethyl Benzene
Concen: 4.33 ppbv
RT: 6.868 min Scan# 898
Delta R.T. 0.001 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 91 Resp: 2195

Ion	Ratio	Lower	Upper
91	100		
106	34.6	25.6	38.4

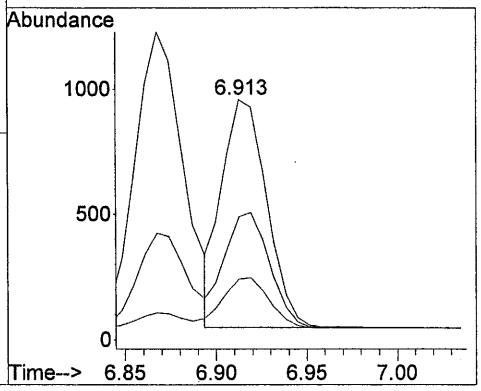


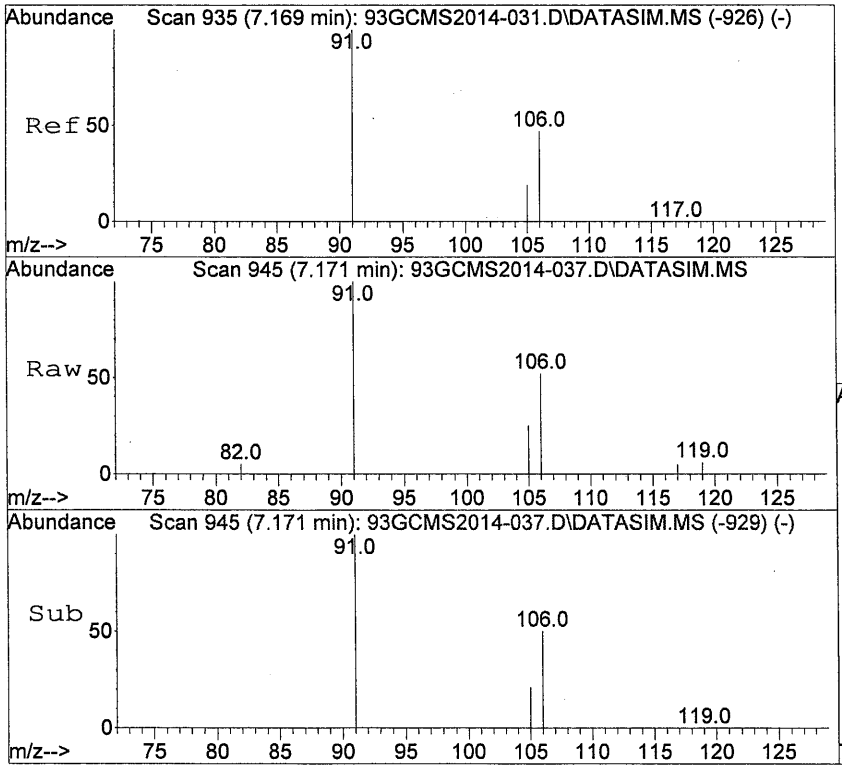


#17
m,p-Xylene
Concen: 4.21 ppbv
RT: 6.913 min Scan# 905
Delta R.T. -0.005 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 91 Resp: 1568

Ion	Ratio	Lower	Upper
91	100		
106	51.2	42.5	63.7
105	25.4	18.6	27.8

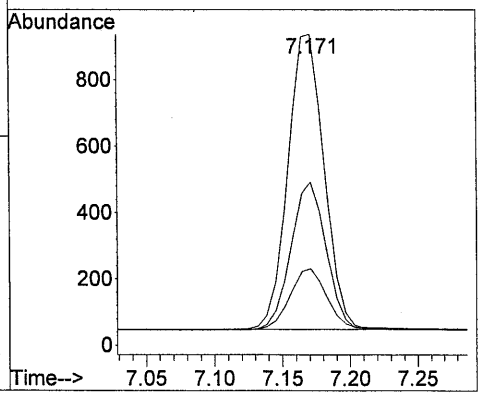




#18
o-Xylene
Concen: 4.21 ppbv
RT: 7.171 min Scan# 945
Delta R.T. 0.001 min
Lab File: 93GCMS2014-037.D
Acq: 13 Jan 2014 8:28

Tgt Ion: 91 Resp: 1651

Ion	Ratio	Lower	Upper
91	100		
106	49.1	39.3	58.9
105	21.9	15.4	23.2



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-038.D
Acq On : 13 Jan 2014 8:42
Operator : SJT
Sample : STD20140113-3 \ 0.5ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:01:35 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

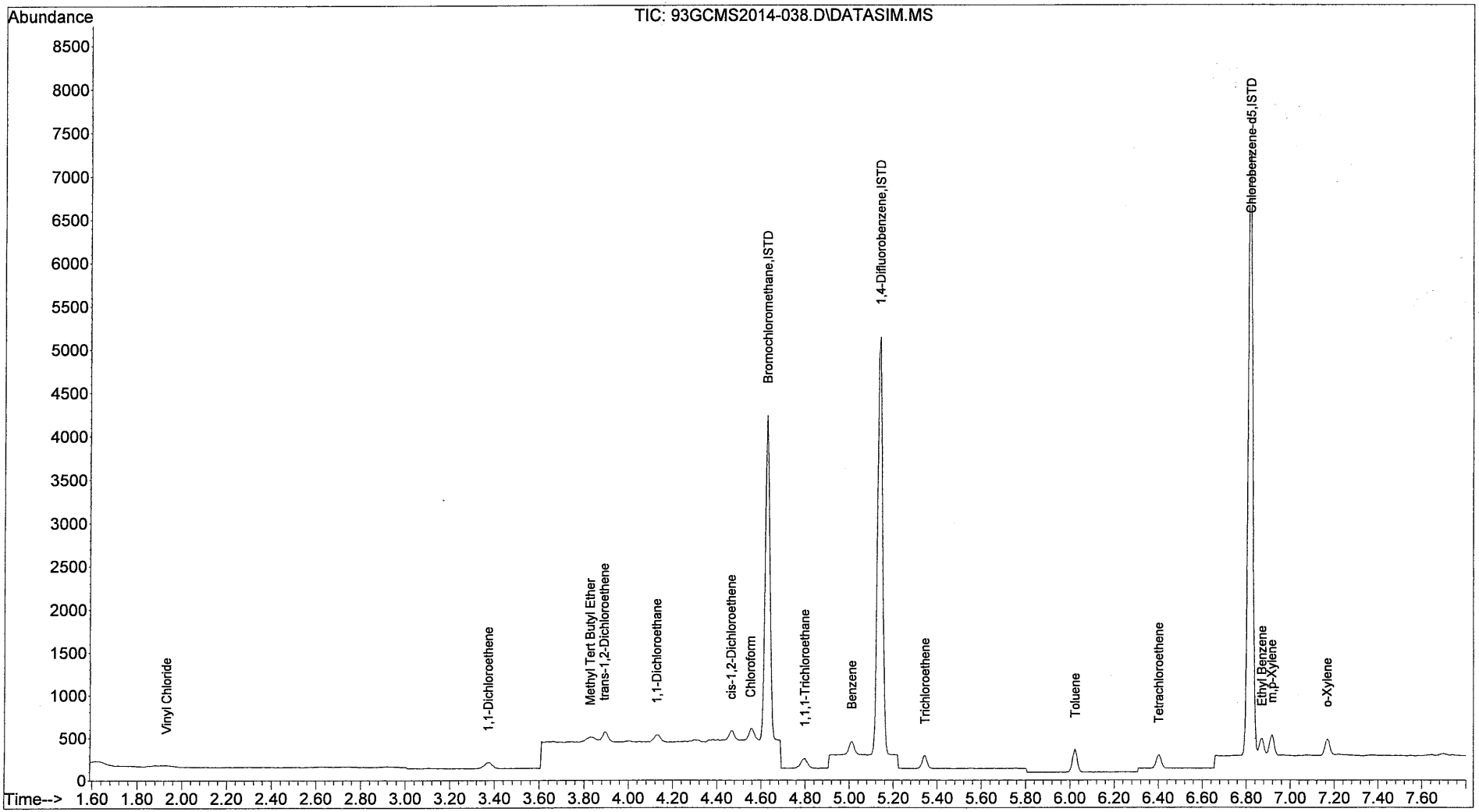
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	4.628	49	2108	10.00	ppbv		0.00
10) 1,4-Difluorobenzene	5.141	114	5412	10.00	ppbv		0.00
13) Chlorobenzene-d5	6.820	117	5658	10.00	ppbv		0.00
System Monitoring Compounds							
Target Compounds							Qvalue
2) Vinyl Chloride	1.930	62	56m	0.50	ppbv		
3) 1,1-Dichloroethene	3.372	61	101	0.54	ppbv		94
4) Methyl Tert Butyl Ether	3.828	73	121	0.48	ppbv	#	65
5) trans-1,2-Dichloroethene	3.891	61	96	0.56	ppbv		91
6) 1,1-Dichloroethane	4.128	63	107	0.53	ppbv	#	79
7) cis-1,2-Dichloroethene	4.465	61	86	0.53	ppbv		97
8) Chloroform	4.552	83	115	0.50	ppbv		92
9) 1,1,1-Trichloroethane	4.798	97	113	0.47	ppbv		95
11) Benzene	5.012	78	190	0.59	ppbv	#	94
12) Trichloroethene	5.344	130	85	0.48	ppbv		97
14) Toluene	6.023	91	252	0.66	ppbv		100
15) Tetrachloroethene	6.402	166	94	0.39	ppbv		93
16) Ethyl Benzene	6.871	91	224	0.45	ppbv	#	68
17) m,p-Xylene	6.917	91	210	0.57	ppbv	#	87
18) o-Xylene	7.168	91	178	0.46	ppbv	#	88

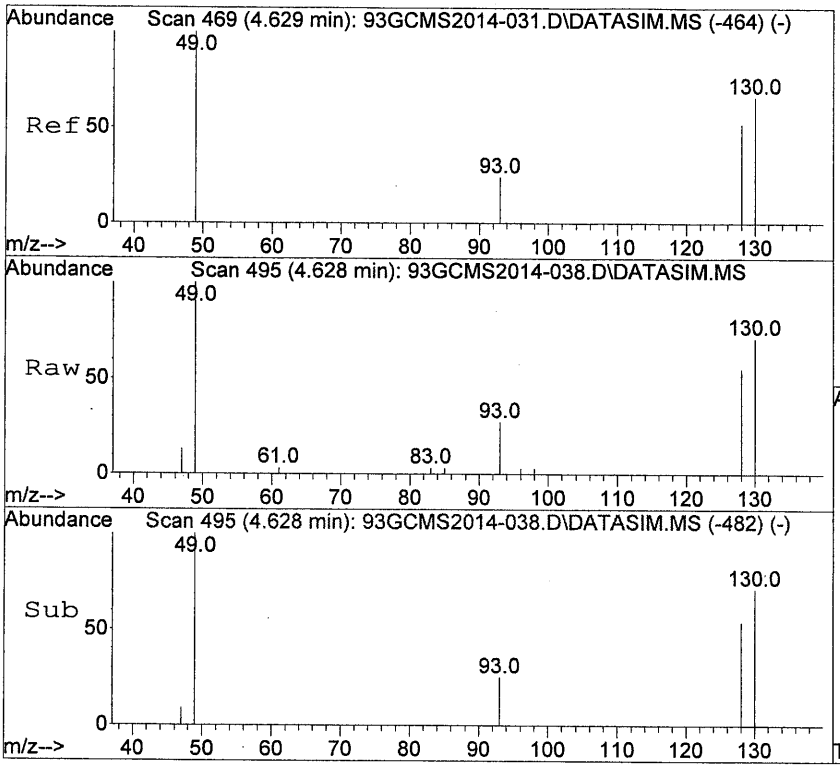
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01/13/14

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-038.D
Acq On : 13 Jan 2014 8:42
Operator : SJT
Sample : STD20140113-3 \ 0.5ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:01:35 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

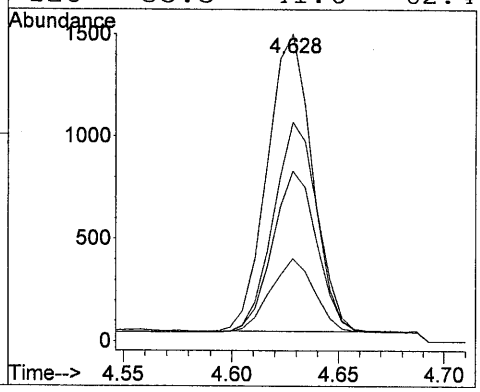


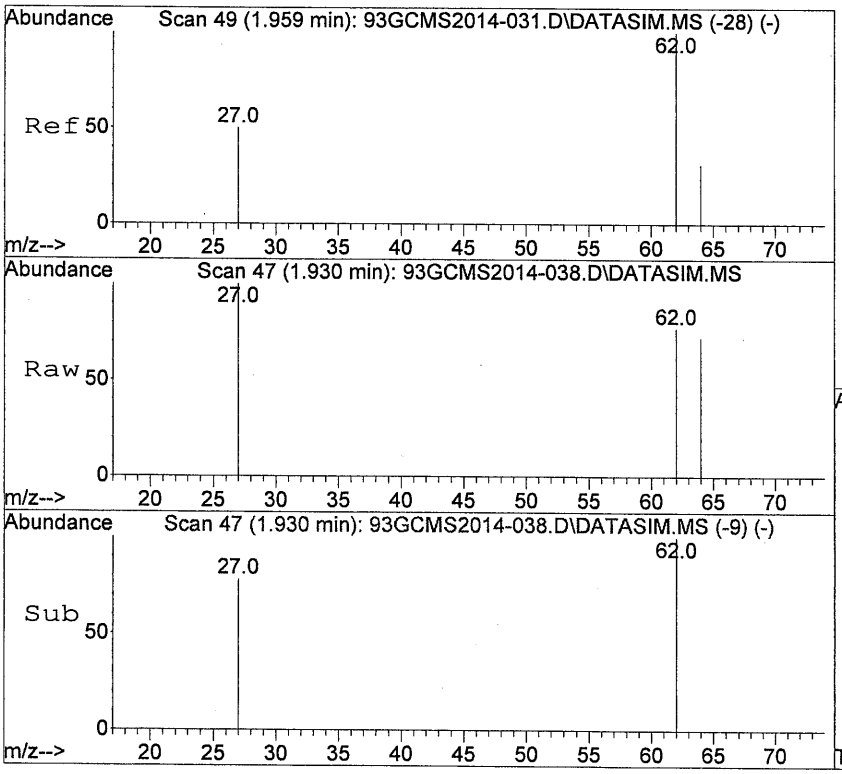


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 49 Resp: 2108

Ion	Ratio	Lower	Upper
49	100		
130	71.3	51.6	77.4
93	26.9	19.6	29.4
128	55.3	41.6	62.4

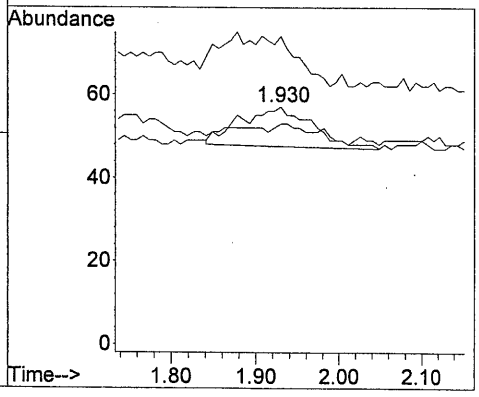


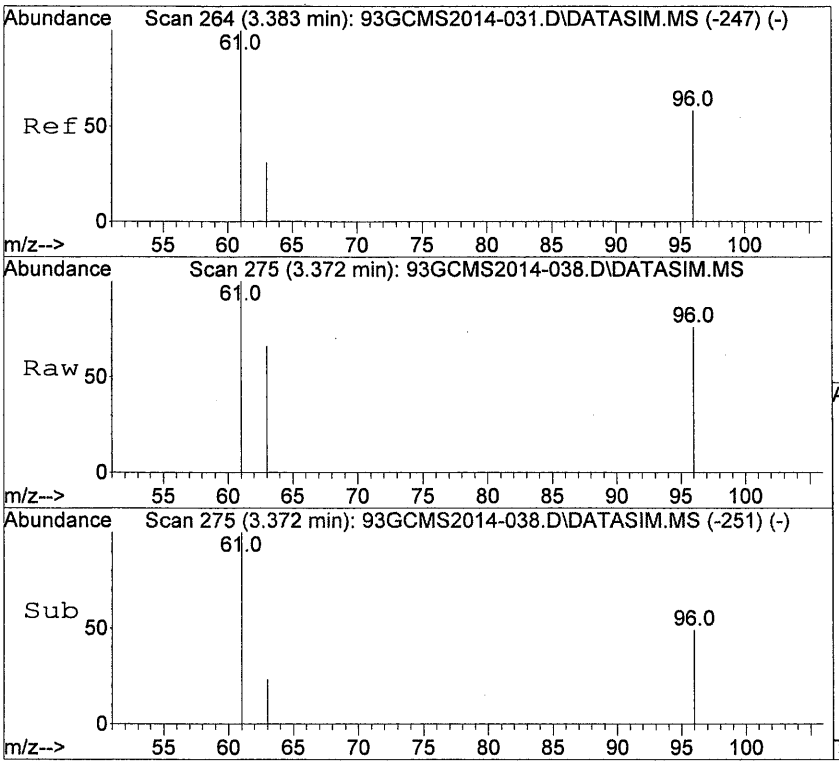


#2
Vinyl Chloride
Concen: 0.50 ppbv m
RT: 1.930 min Scan# 47
Delta R.T. 0.030 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 62 Resp: 56

Ion	Ratio	Lower	Upper
62	100		
64	30.4	24.9	37.3
27	0.0	37.8	56.6#

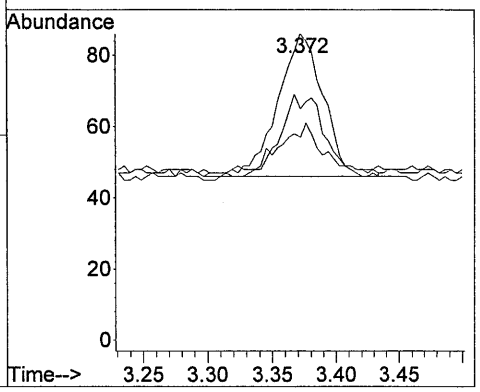


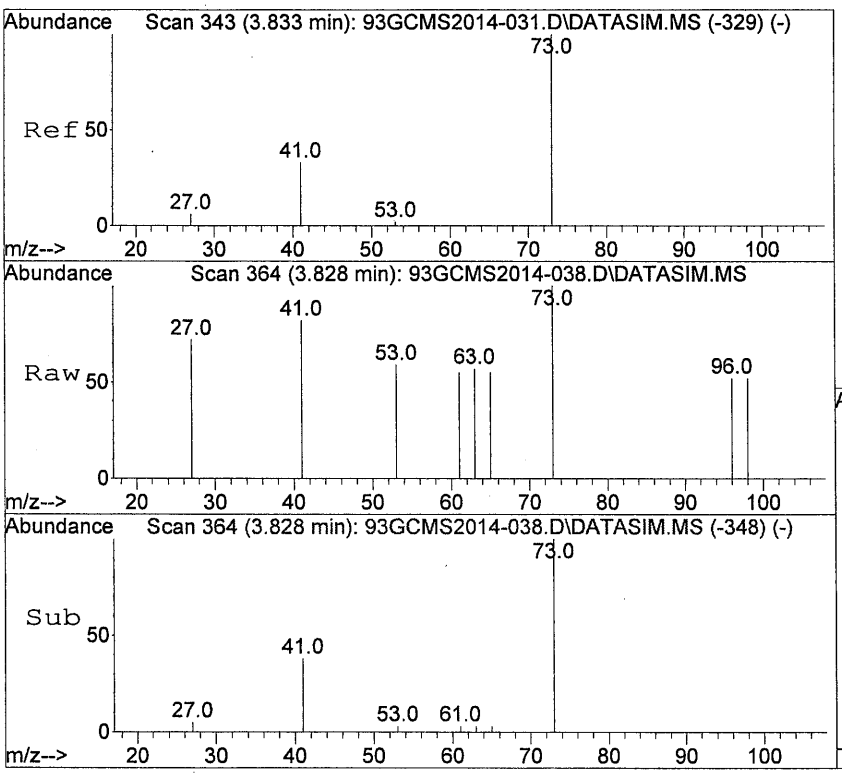


#3
1,1-Dichloroethene
Concen: 0.54 ppbv
RT: 3.372 min Scan# 275
Delta R.T. 0.005 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 61 Resp: 101

Ion	Ratio	Lower	Upper
61	100		
96	56.4	48.6	72.8
63	27.7	25.0	37.6

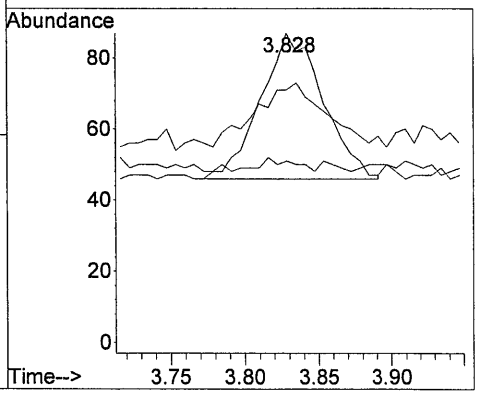


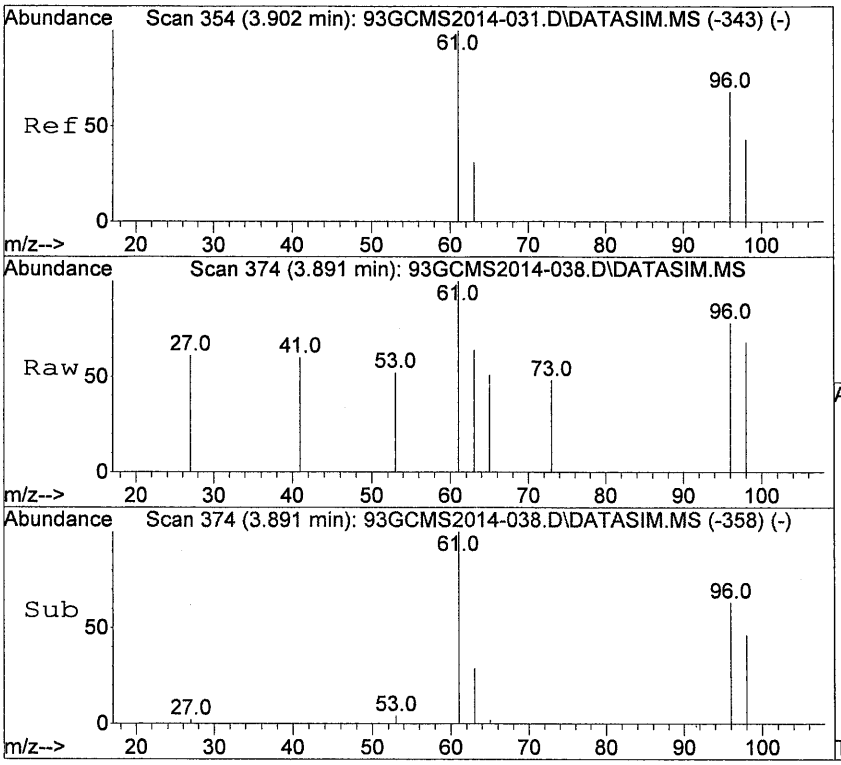


#4
Methyl Tert Butyl Ether
Concen: 0.48 ppbv
RT: 3.828 min Scan# 364
Delta R.T. 0.002 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 73 Resp: 121

Ion	Ratio	Lower	Upper
73	100		
53	4.1	1.1	1.7#
41	47.9	23.0	34.4#

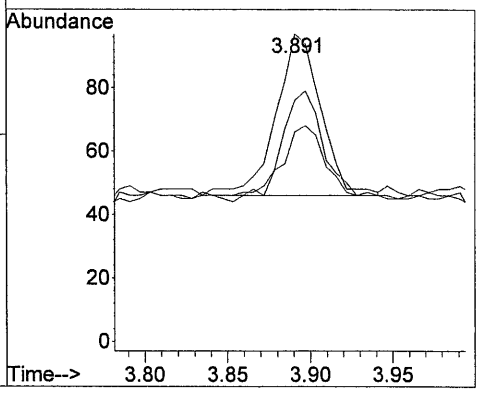


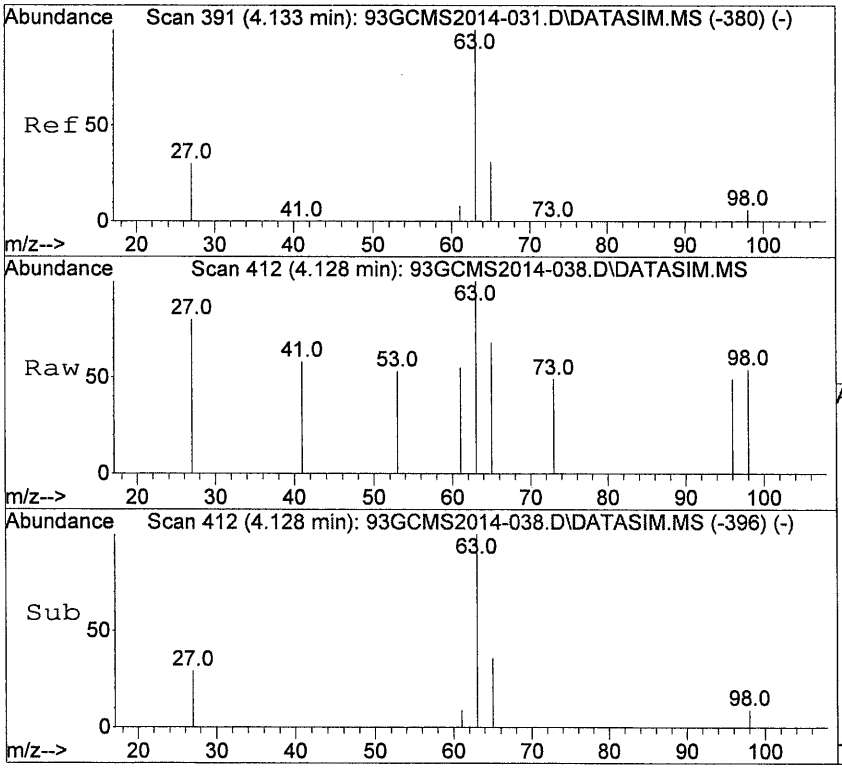


#5
trans-1,2-Dichloroethene
Concen: 0.56 ppbv
RT: 3.891 min Scan# 374
Delta R.T. 0.002 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 61 Resp: 96

Ion	Ratio	Lower	Upper
61	100		
96	62.5	56.0	84.0
98	50.0	35.6	53.4

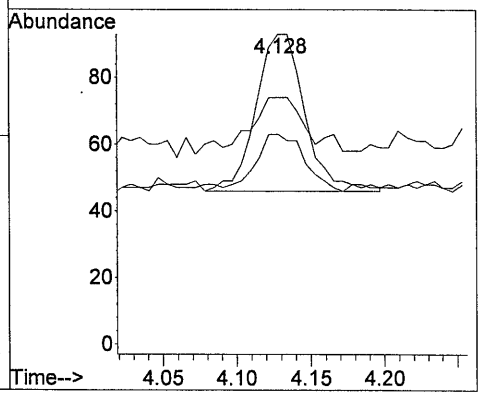


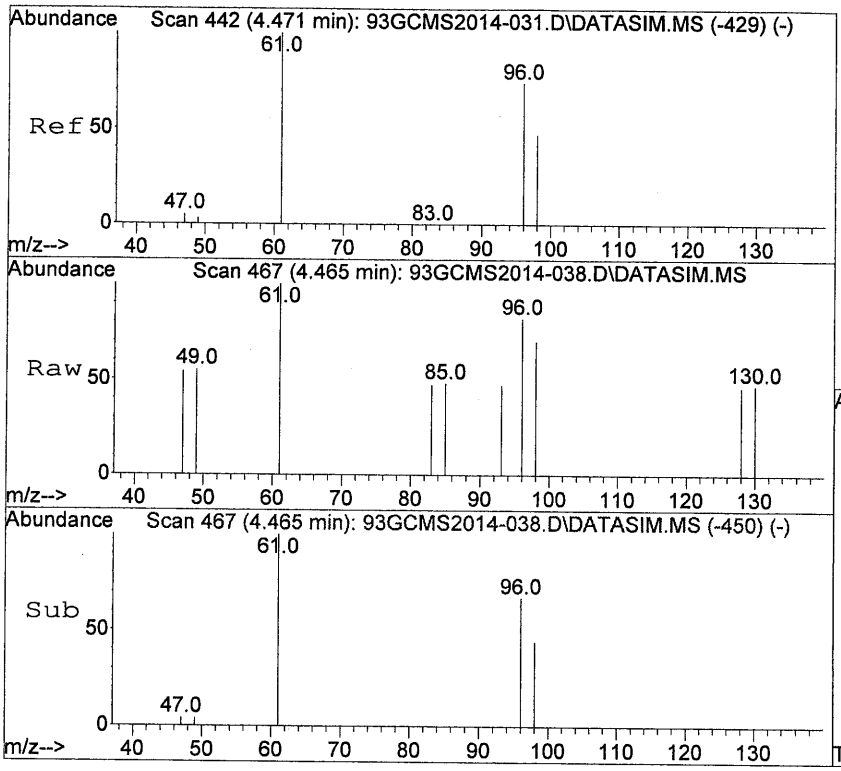


#6
1,1-Dichloroethane
Concen: 0.53 ppbv
RT: 4.128 min Scan# 412
Delta R.T. 0.002 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 63 Resp: 107

Ion	Ratio	Lower	Upper
63	100		
65	35.5	24.7	37.1
27	46.7	22.6	34.0#

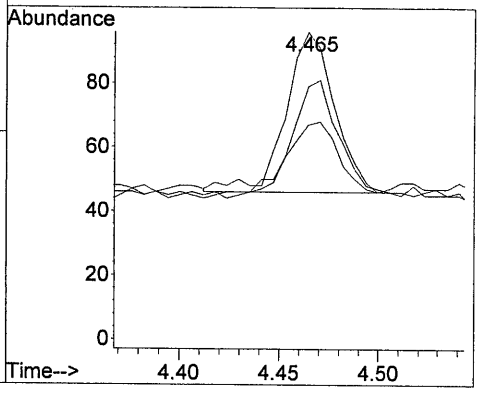


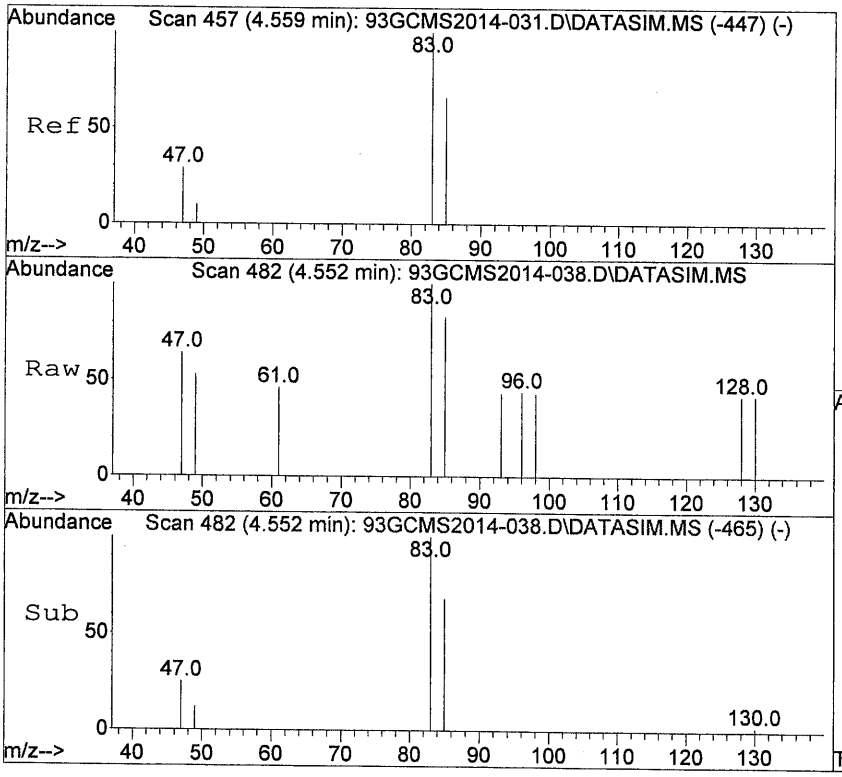


#7
cis-1,2-Dichloroethene
Concen: 0.53 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.000 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 61 Resp: 86

Ion	Ratio	Lower	Upper
61	100		
96	77.9	61.7	92.5
98	53.5	39.4	59.0

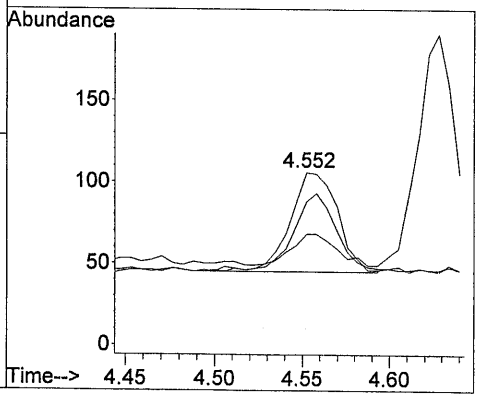


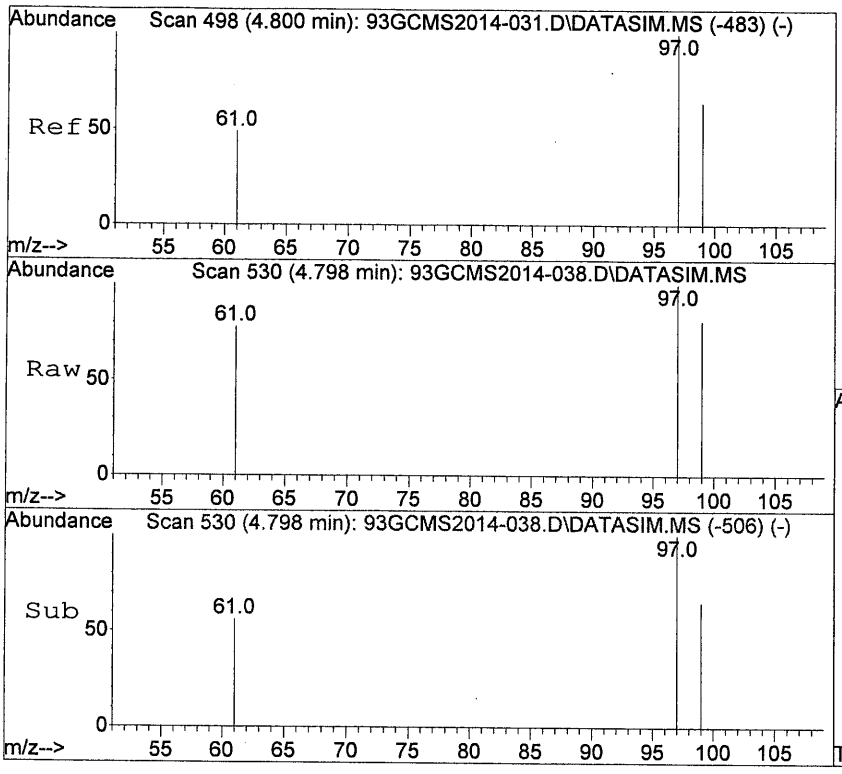


#8
Chloroform
Concen: 0.50 ppbv
RT: 4.552 min Scan# 482
Delta R.T. 0.000 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 83 Resp: 115

Ion	Ratio	Lower	Upper
83	100		
85	70.4	52.0	78.0
47	29.6	20.0	30.0

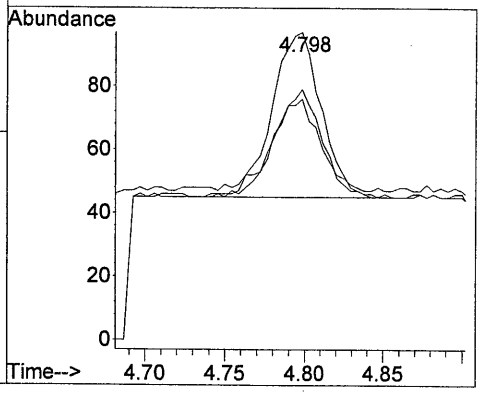


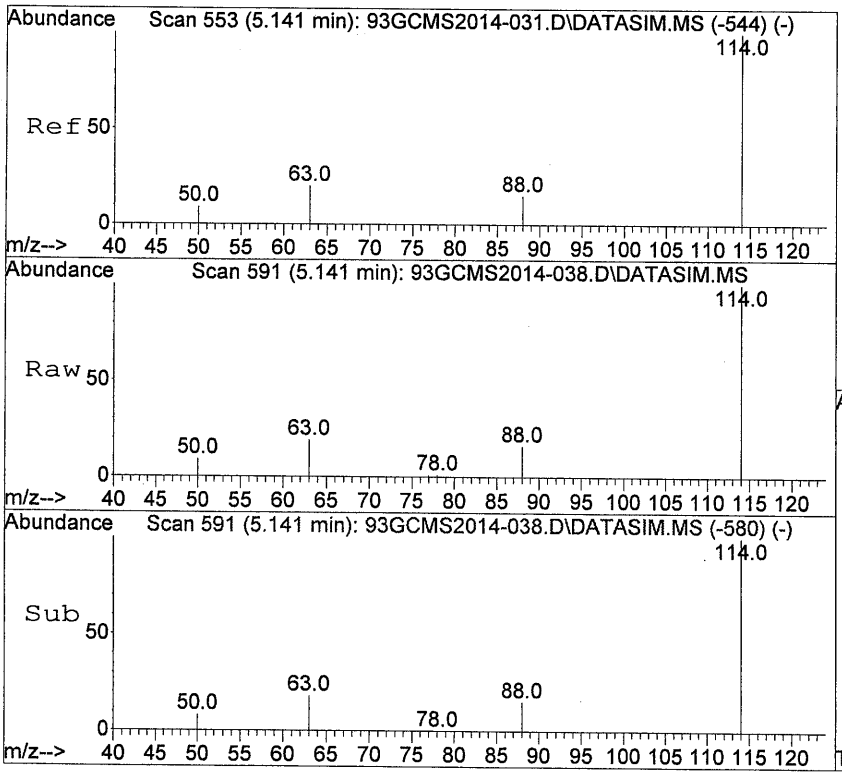


#9
1,1,1-Trichloroethane
Concen: 0.47 ppbv
RT: 4.798 min Scan# 530
Delta R.T. 0.006 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 97 Resp: 113

Ion	Ratio	Lower	Upper
97	100		
99	63.7	51.4	77.0
61	54.0	37.4	56.0

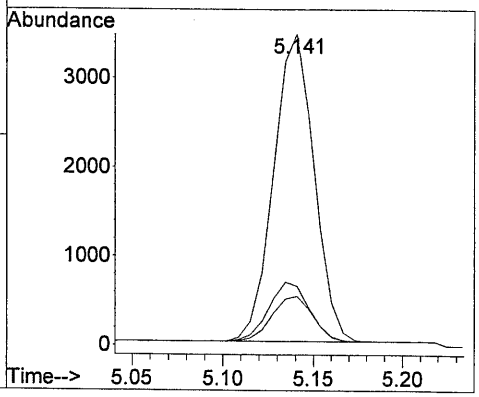


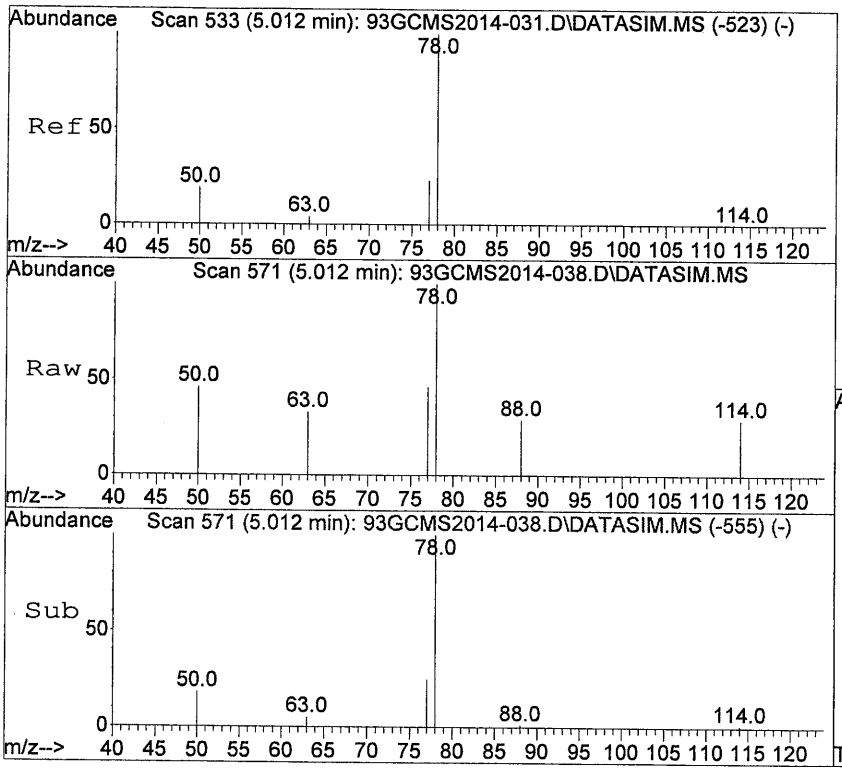


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.001 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion:114 Resp: 5412

Ion	Ratio	Lower	Upper
114	100		
63	19.2	15.1	22.7
88	15.1	12.0	18.0

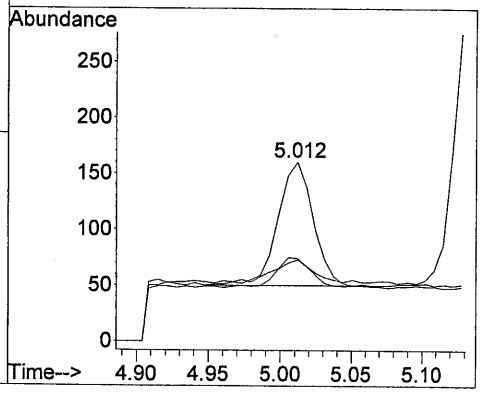


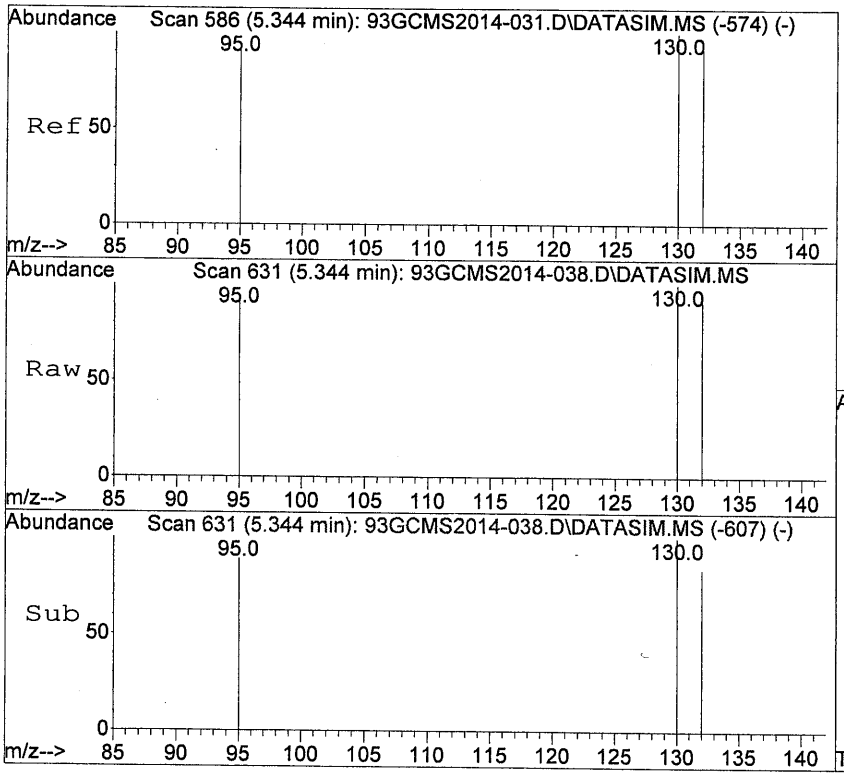


#11
Benzene
Concen: 0.59 ppbv
RT: 5.012 min Scan# 571
Delta R.T. 0.001 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 78 Resp: 190

Ion	Ratio	Lower	Upper
78	100		
77	24.2	18.4	27.6
50	23.2	14.6	21.8#

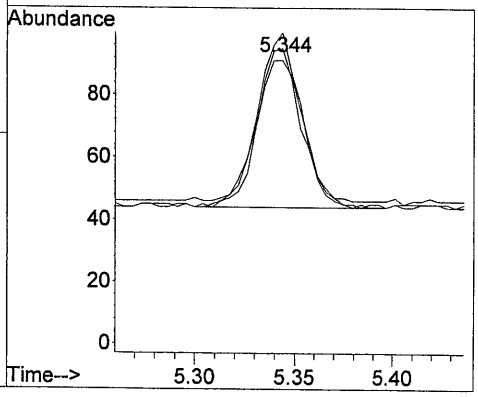


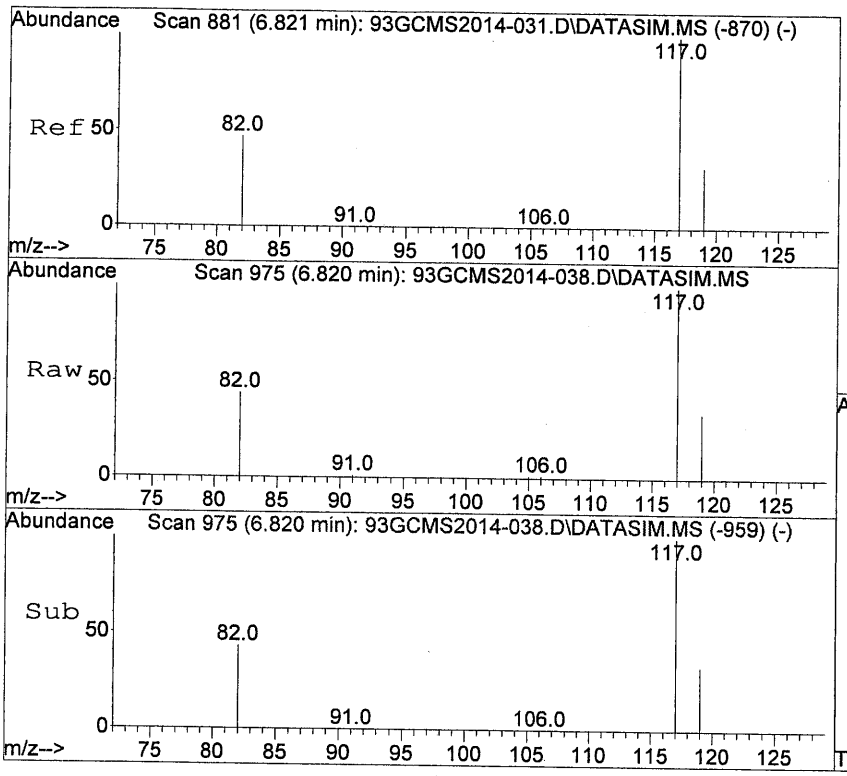


#12
Trichloroethene
Concen: 0.48 ppbv
RT: 5.344 min Scan# 631
Delta R.T. 0.004 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion:130 Resp: 85

Ion	Ratio	Lower	Upper
130	100		
132	91.8	77.0	115.6
95	89.4	72.9	109.3

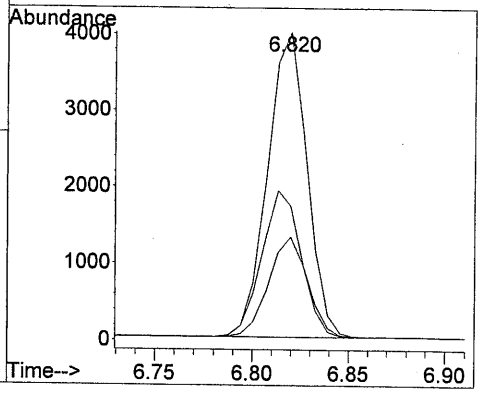


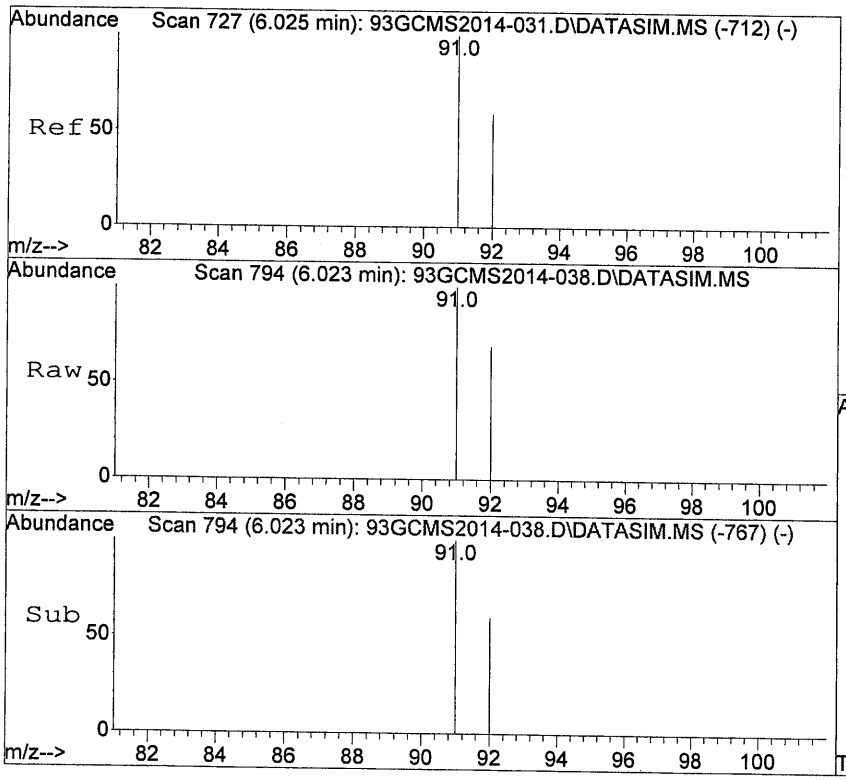


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.820 min Scan# 975
Delta R.T. 0.005 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion:117 Resp: 5658

Ion	Ratio	Lower	Upper
117	100		
82	48.0	37.8	56.6
119	32.2	25.6	38.4

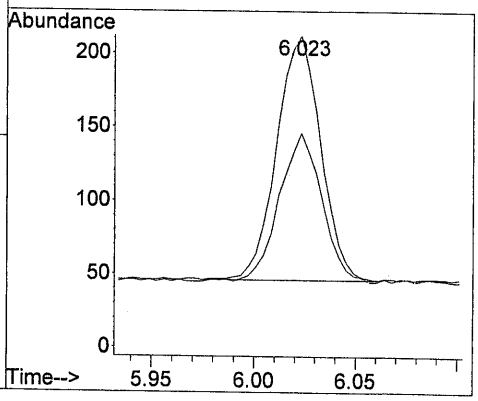


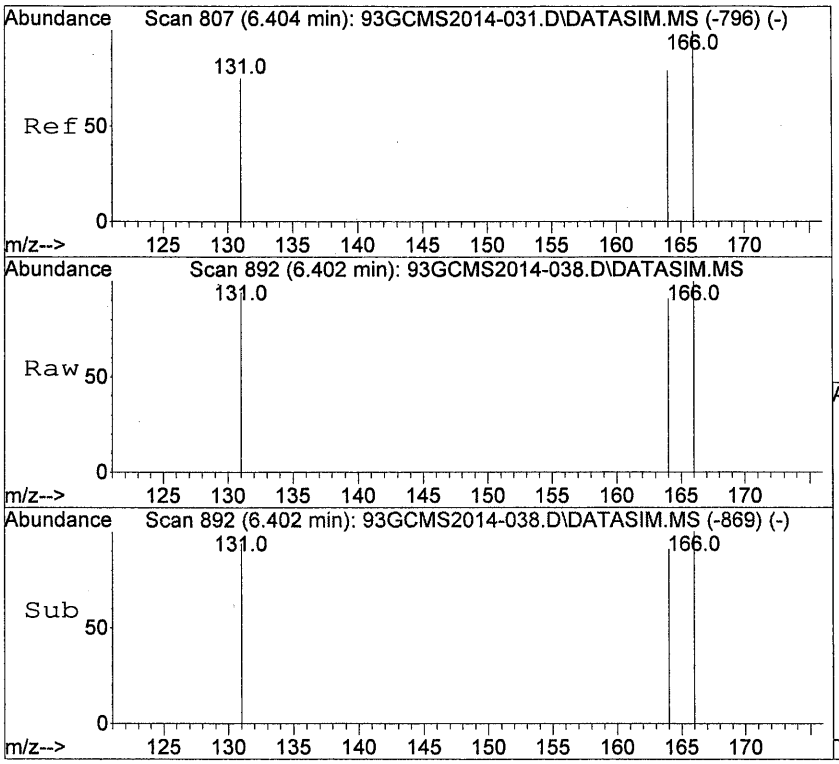


#14
Toluene
Concen: 0.66 ppbv
RT: 6.023 min Scan# 794
Delta R.T. 0.002 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 91 Resp: 252

Ion	Ratio	Lower	Upper
91	100		
92	59.1	47.2	70.8

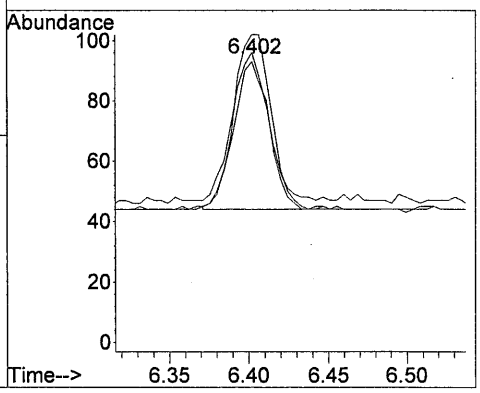


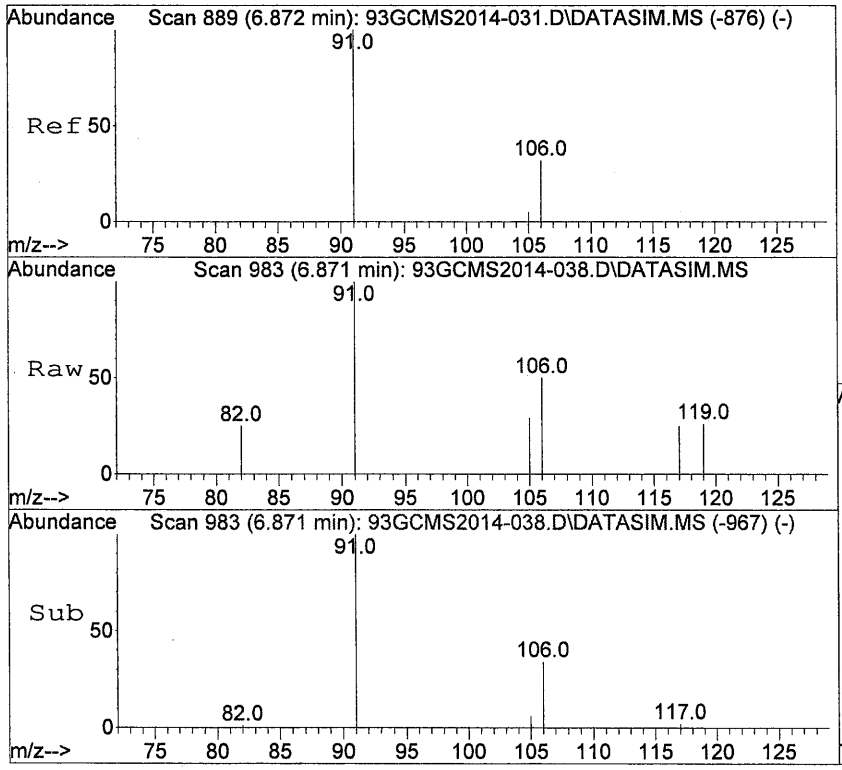


#15
Tetrachloroethene
Concen: 0.39 ppbv
RT: 6.402 min Scan# 892
Delta R.T. 0.002 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion:166 Resp: 94

Ion	Ratio	Lower	Upper
166	100		
164	80.9	62.5	93.7
131	81.9	58.6	88.0

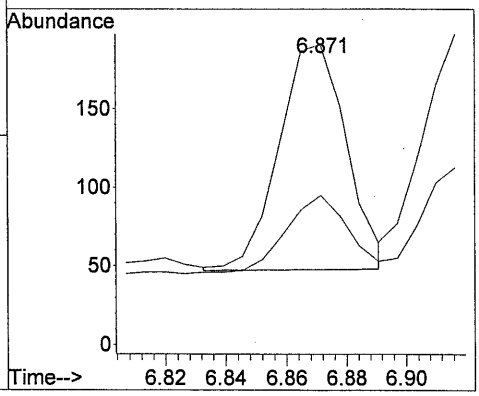


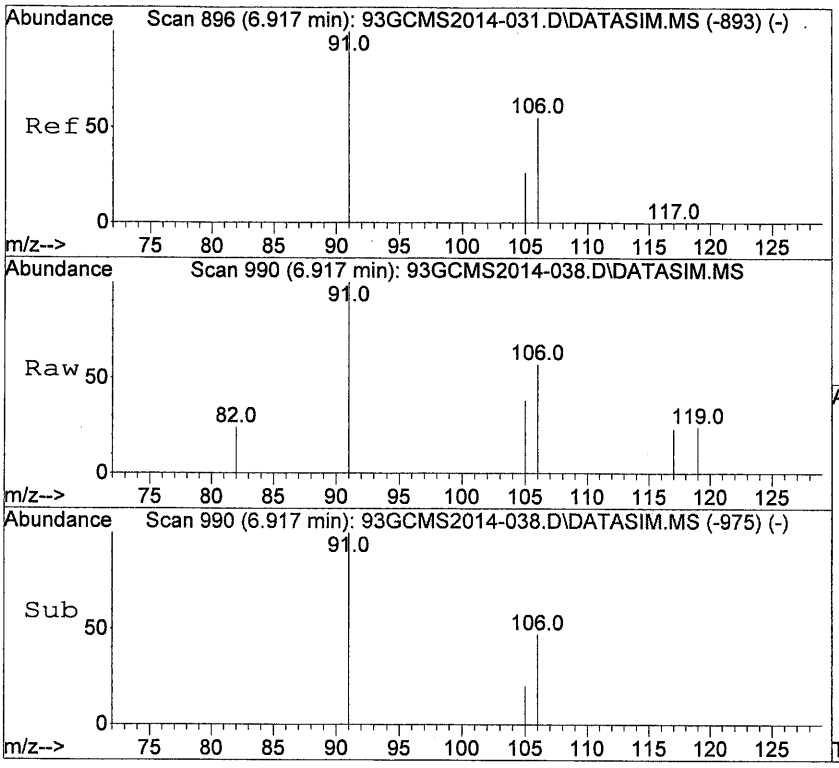


#16
Ethyl Benzene
Concen: 0.45 ppbv
RT: 6.871 min Scan# 983
Delta R.T. 0.005 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 91 Resp: 224

Ion	Ratio	Lower	Upper
91	100		
106	49.7	25.6	38.4#

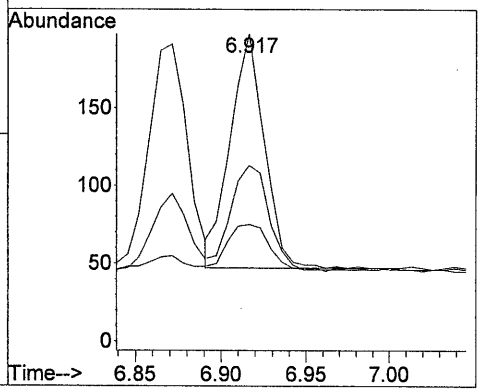


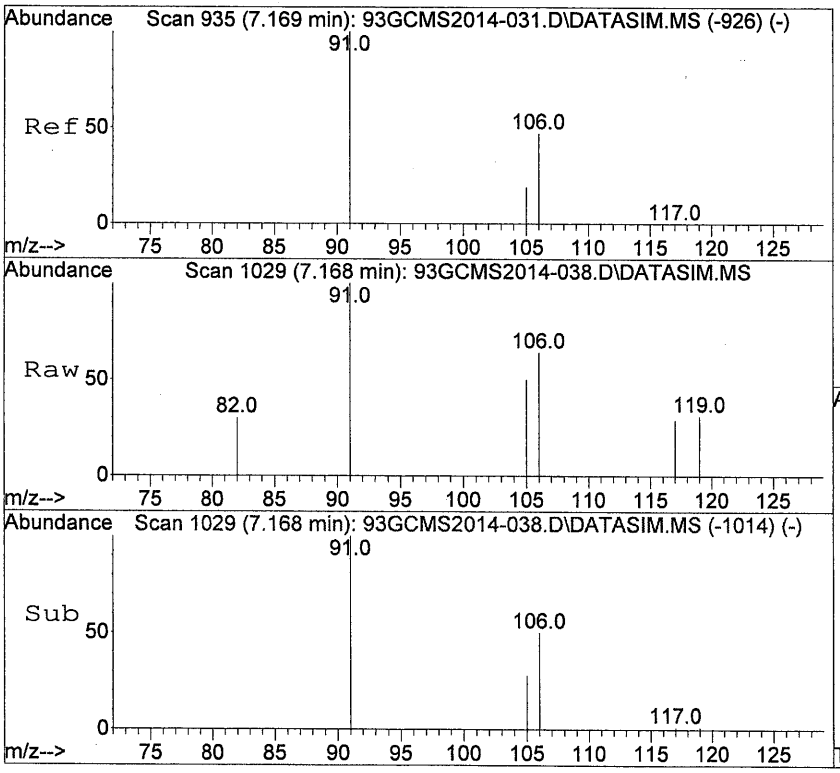


#17
m,p-Xylene
Concen: 0.57 ppbv
RT: 6.917 min Scan# 990
Delta R.T. -0.002 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 91 Resp: 210

Ion	Ratio	Lower	Upper
91	100		
106	57.1	42.5	63.7
105	37.9	18.6	27.8#

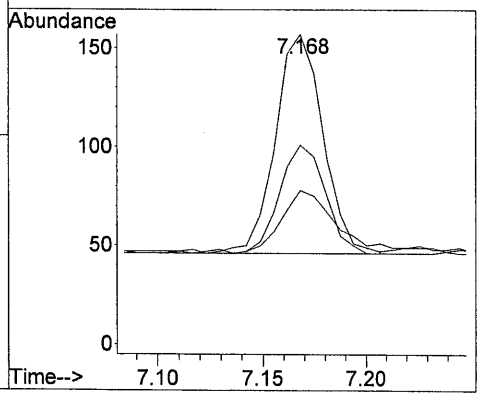




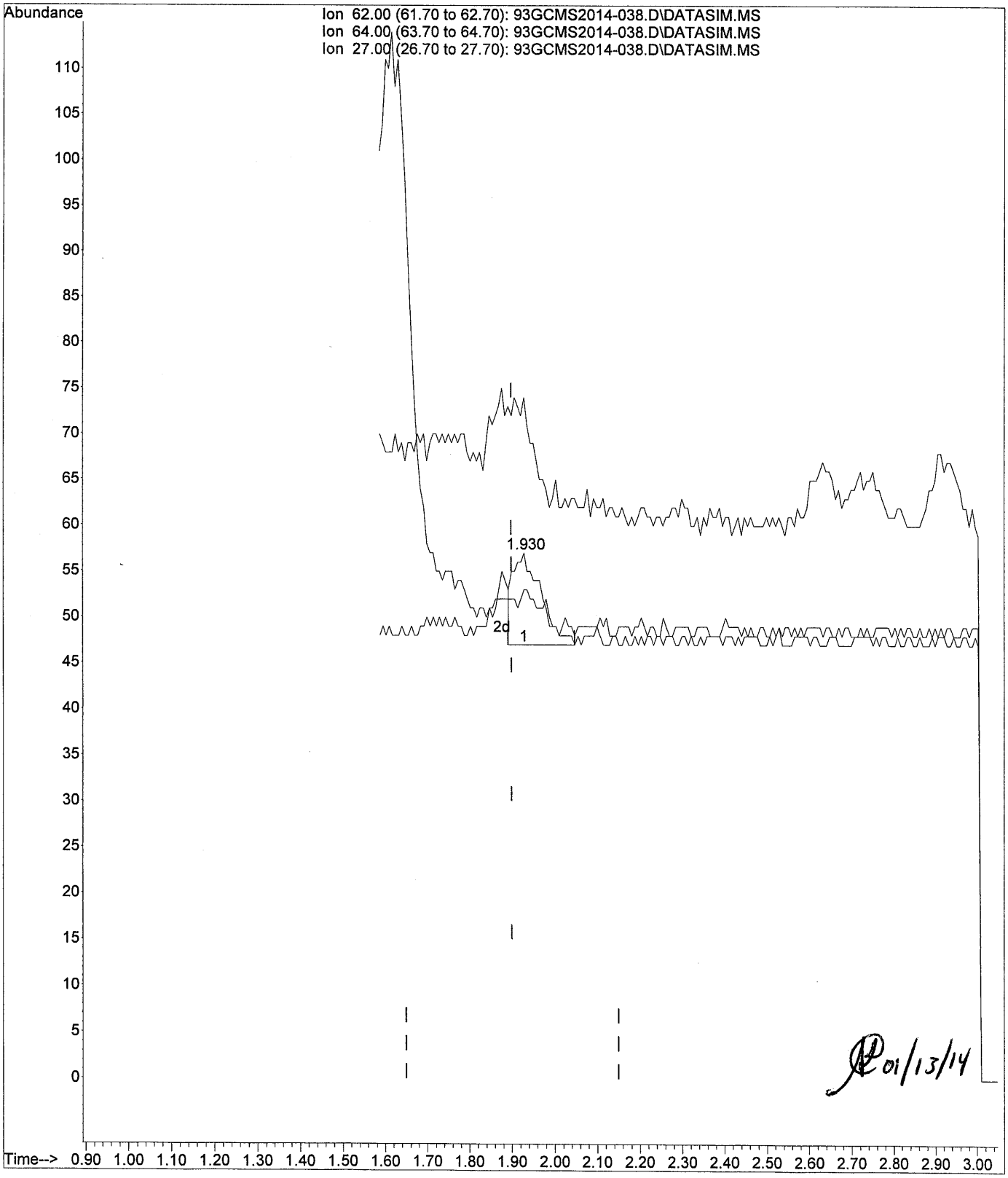
#18
o-Xylene
Concen: 0.46 ppbv
RT: 7.168 min Scan# 1029
Delta R.T. -0.002 min
Lab File: 93GCMS2014-038.D
Acq: 13 Jan 2014 8:42

Tgt Ion: 91 Resp: 178

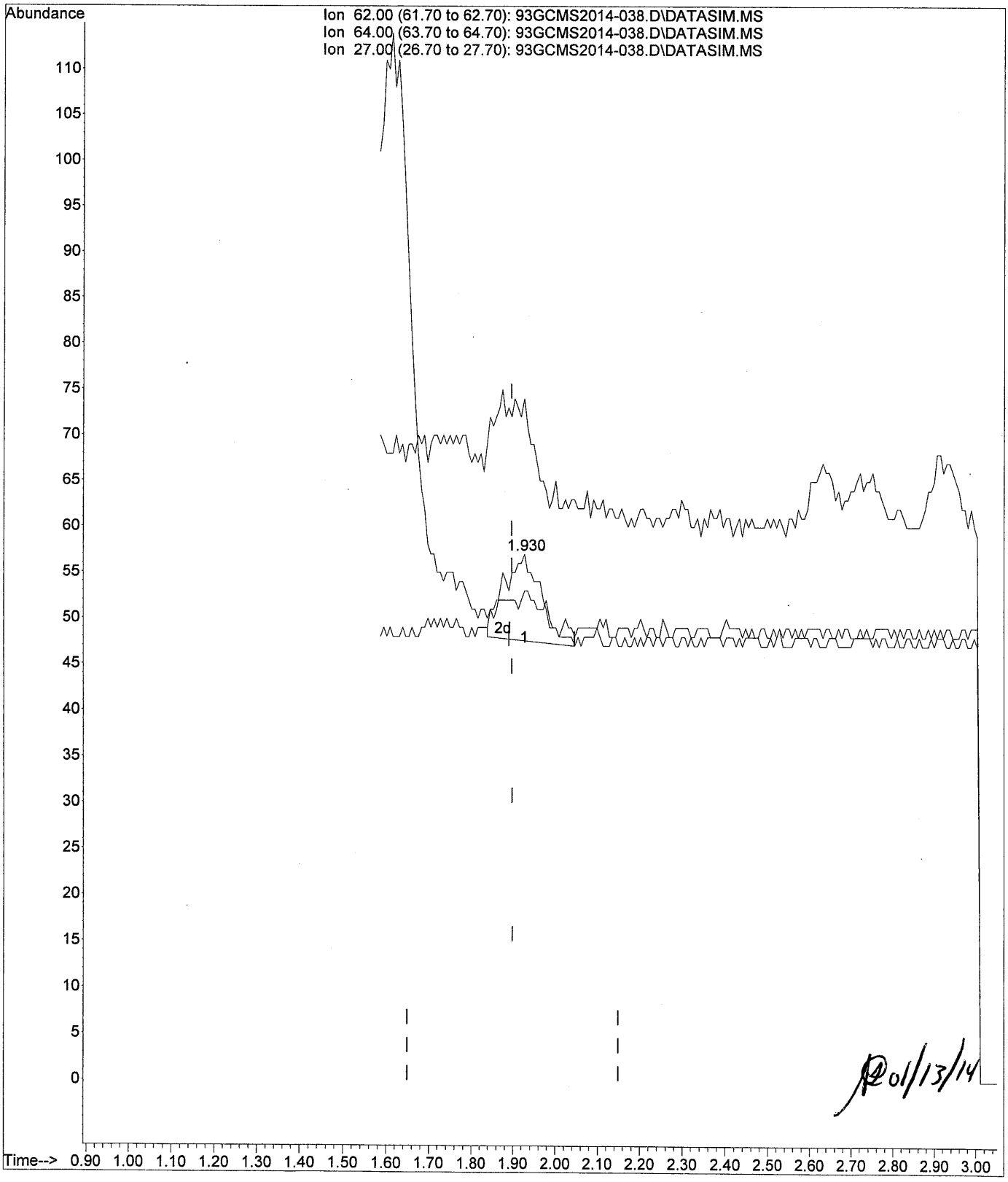
Ion	Ratio	Lower	Upper
91	100		
106	47.2	39.3	58.9
105	36.0	15.4	23.2#



File : D:\msdchem\1\data\2014\20140113\93GCMS2014-038.D
Operator : SJT
Acquired : 13 Jan 2014 8:42 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140113-3 \ 0.5ppbv ICAL
Misc Info : 5mL \ 13 Jan 2014
Vial Number: 1



File : D:\msdchem\1\data\2014\20140113\93GCMS2014-038.D
Operator : SJT
Acquired : 13 Jan 2014 8:42 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140113-3 \ 0.5ppbv ICAL
Misc Info : 5mL \ 13 Jan 2014
Vial Number: 1



01/13/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-039.D
Acq On : 13 Jan 2014 8:53
Operator : SJT
Sample : STD20140113-4 \ 10K ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:02:48 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.622	49	2753	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	5235	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.820	117	5472	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.885	62	1172781	7979.47	ppbv	98
3) 1,1-Dichloroethene	3.363	61	1951070	7929.96	ppbv	99
4) Methyl Tert Butyl Ether	3.822	73	2598836	7969.22	ppbv	99
5) trans-1,2-Dichloroethene	3.891	61	1797908	8035.31	ppbv	100
6) 1,1-Dichloroethane	4.128	63	2102932	7912.67	ppbv	100
7) cis-1,2-Dichloroethene	4.465	61	1711084	8036.99	ppbv	99
8) Chloroform	4.552	83	2411114	8037.13	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	2479866	7848.44	ppbv	99
11) Benzene	5.005	78	3283315	10467.88	ppbv	99
12) Trichloroethene	5.340	130	1798608	10578.19	ppbv	99
14) Toluene	6.019	91	3883081	10501.05	ppbv	98
15) Tetrachloroethene	6.402	166	2248622	9729.98	ppbv	99
16) Ethyl Benzene	6.871	91	5083694	10522.29	ppbv	94
17) m,p-Xylene	6.917	91	3871461	10883.91	ppbv	99
18) o-Xylene	7.168	91	3979079	10636.76	ppbv	99

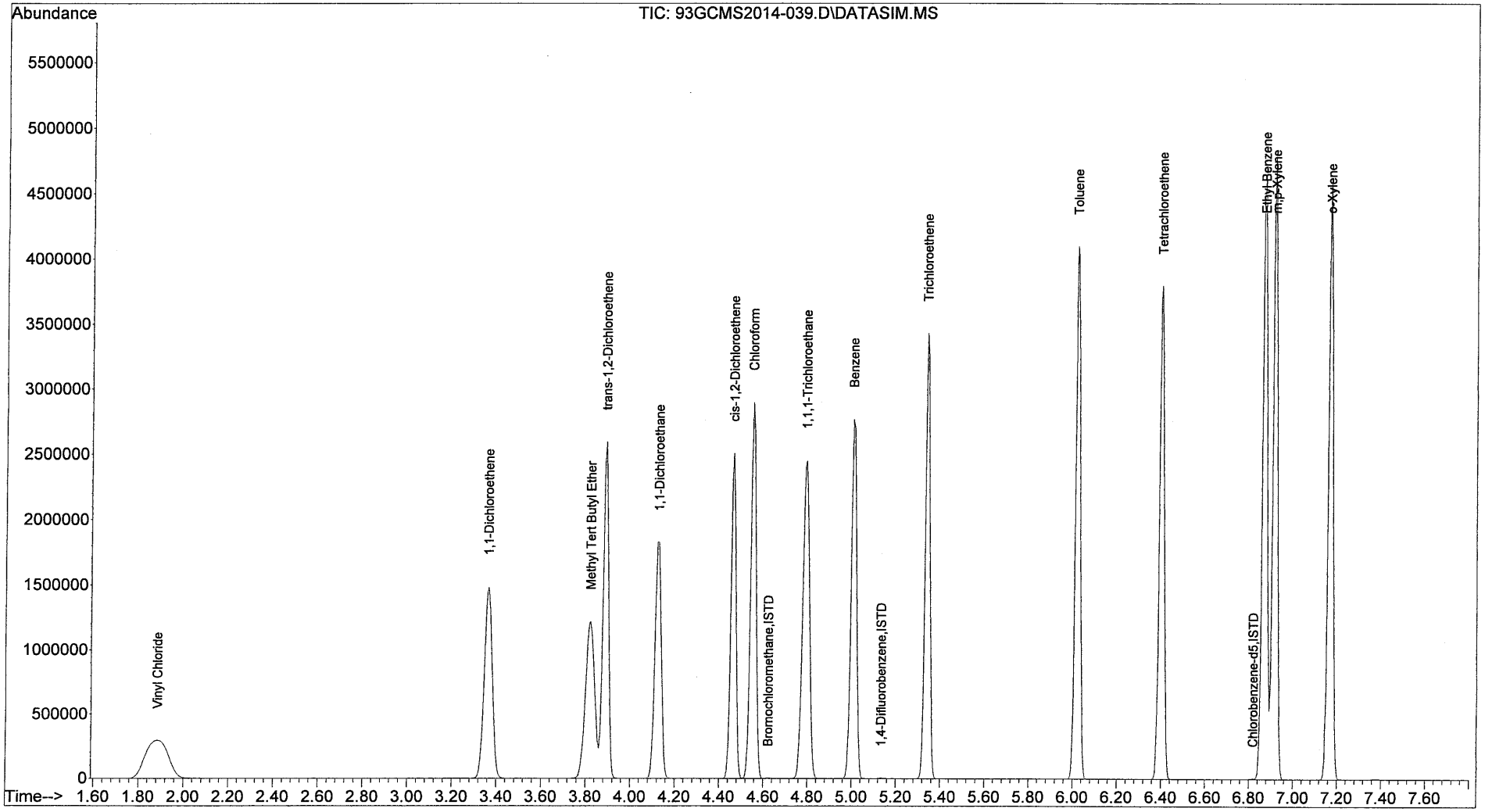
(#) = qualifier out of range (m) = manual integration (+) = signals summed

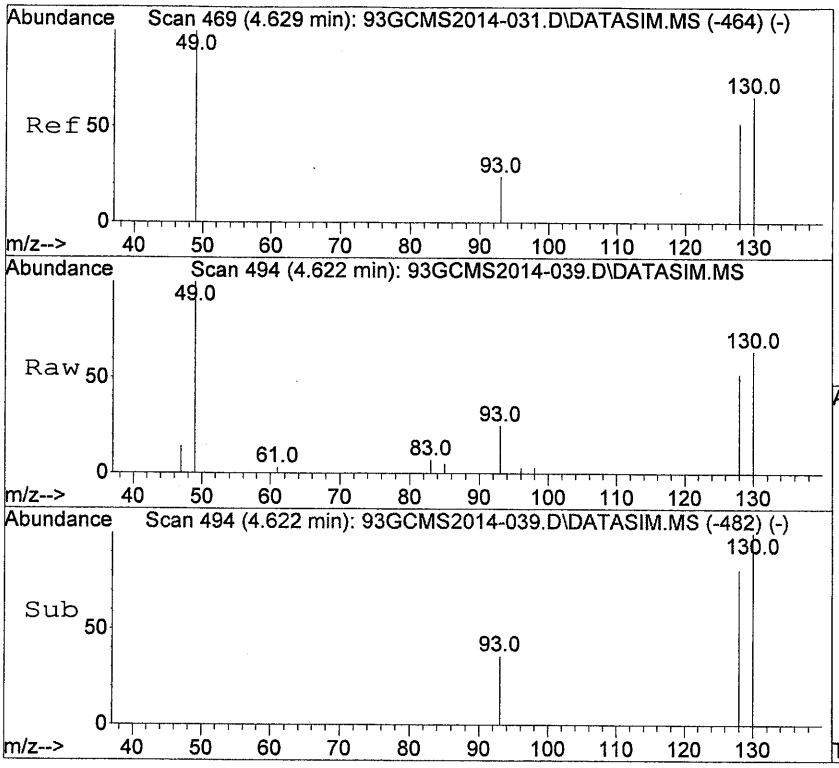
01/13/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-039.D
Acq On : 13 Jan 2014 8:53
Operator : SJT
Sample : STD20140113-4 \ 10K ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:02:48 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

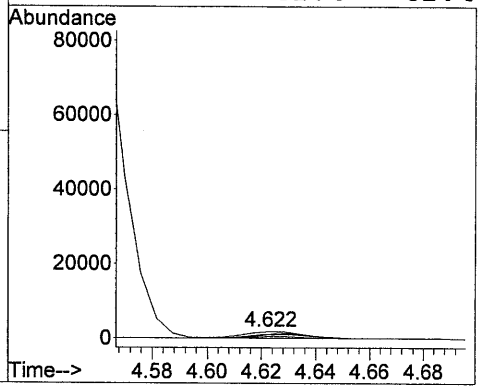


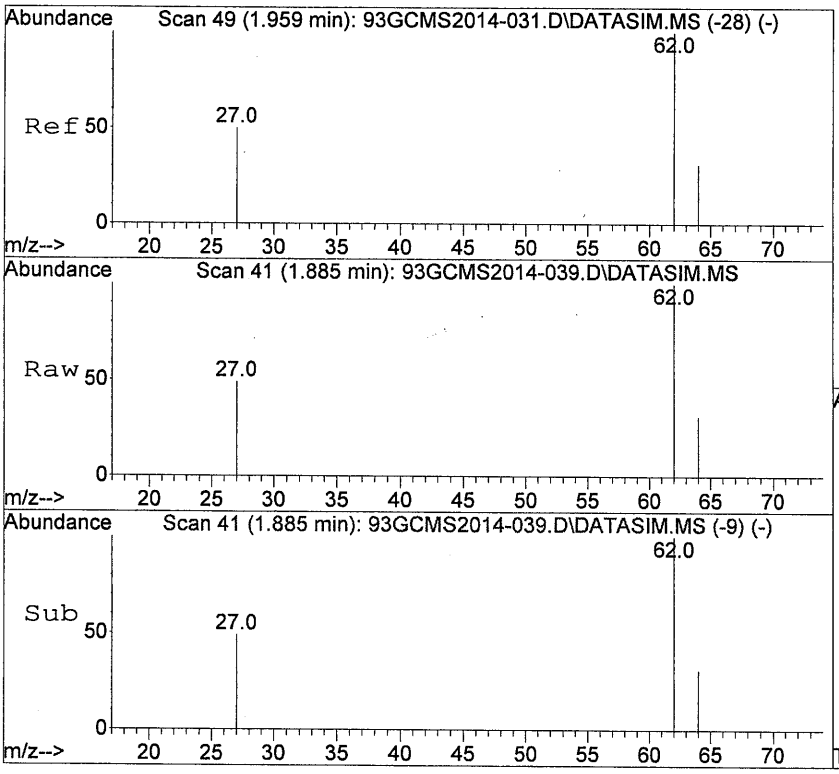


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 494
Delta R.T. 0.000 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 49 Resp: 2753

Ion	Ratio	Lower	Upper
49	100		
130	64.1	51.6	77.4
93	24.6	19.6	29.4
128	52.2	41.6	62.4

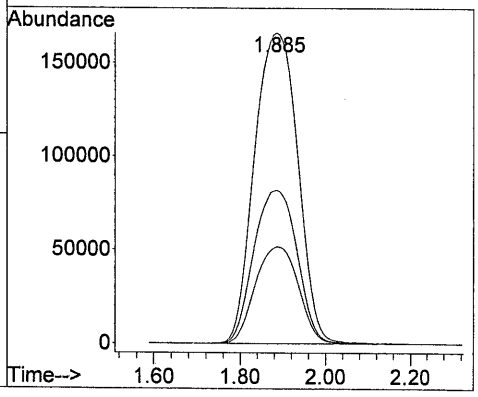


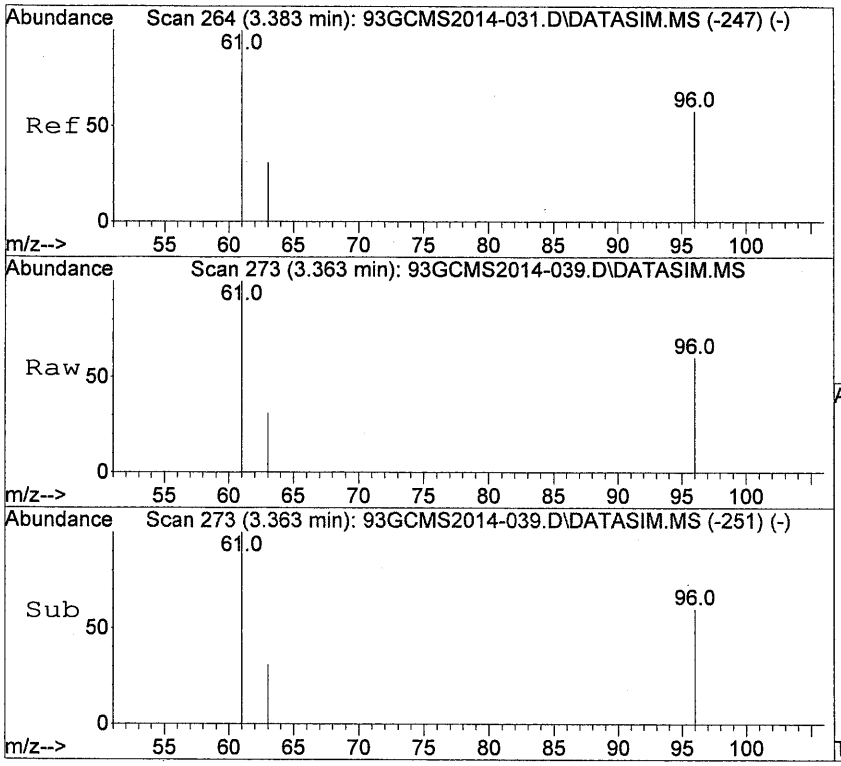


#2
Vinyl Chloride
Concen: 7979.47 ppbv
RT: 1.885 min Scan# 41
Delta R.T. -0.015 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 62 Resp: 1172781

Ion	Ratio	Lower	Upper
62	100		
64	31.0	24.9	37.3
27	49.3	37.8	56.6

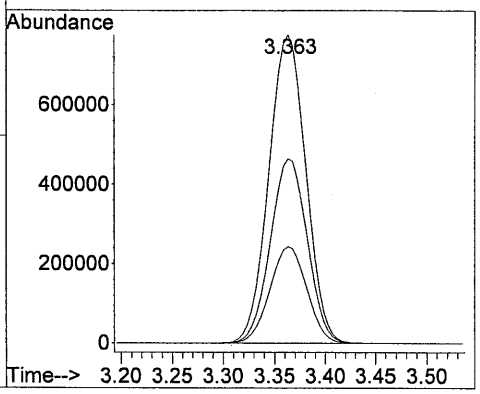


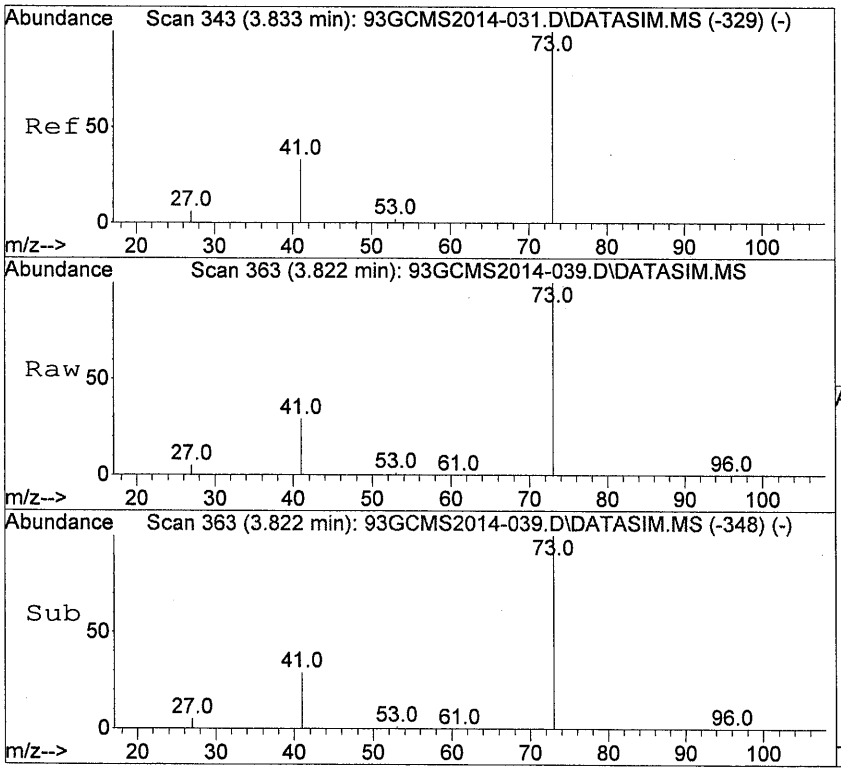


#3
1,1-Dichloroethene
Concen: 7929.96 ppbv
RT: 3.363 min Scan# 273
Delta R.T. -0.004 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 61 Resp: 1951070

Ion	Ratio	Lower	Upper
61	100		
96	59.7	48.6	72.8
63	31.4	25.0	37.6

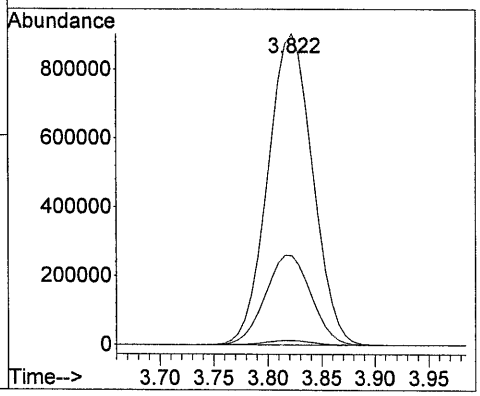


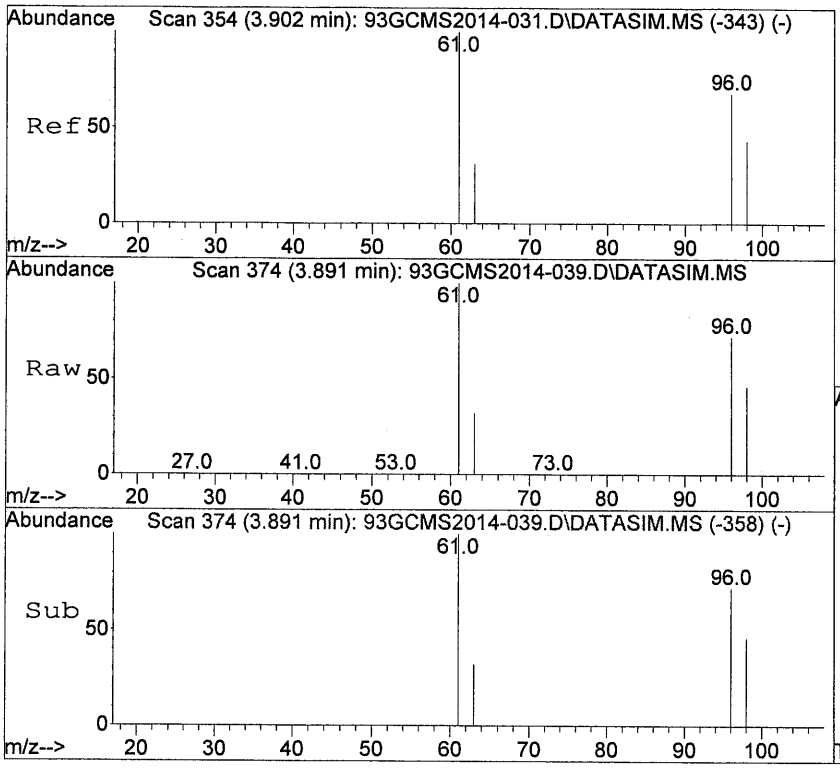


#4
Methyl Tert Butyl Ether
Concen: 7969.22 ppbv
RT: 3.822 min Scan# 363
Delta R.T. -0.004 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 73 Resp: 2598836

Ion	Ratio	Lower	Upper
73	100		
53	1.5	1.1	1.7
41	29.4	23.0	34.4

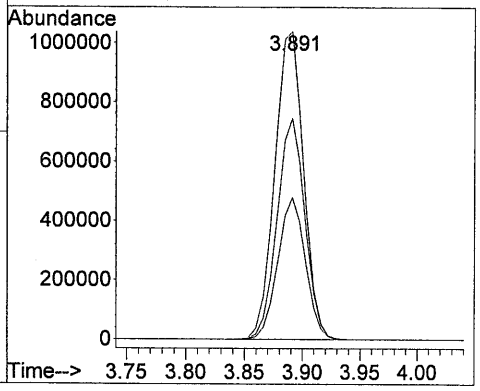


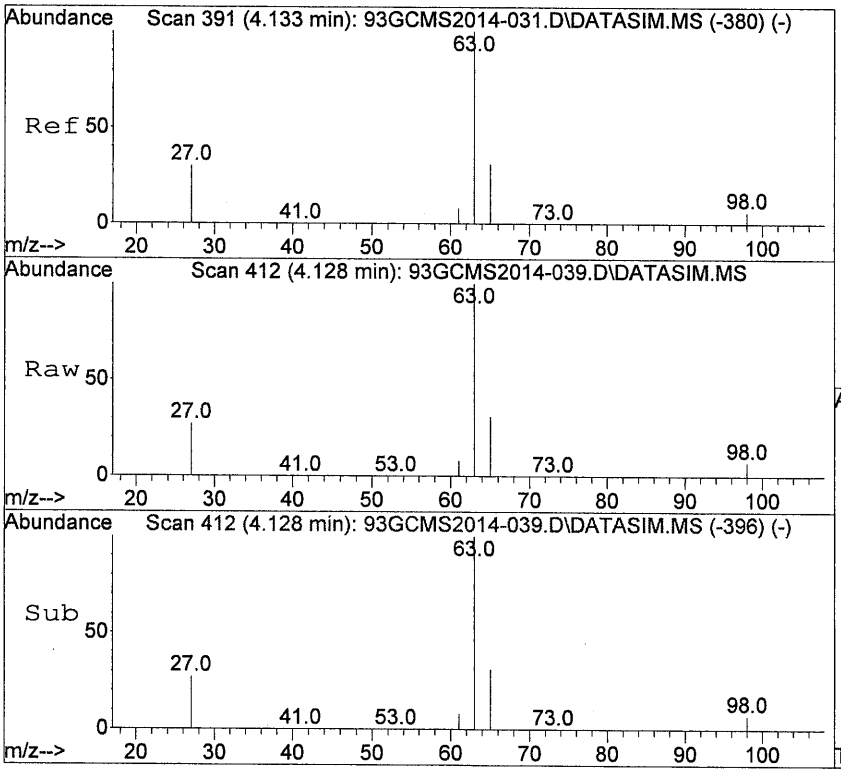


#5
trans-1,2-Dichloroethene
Concen: 8035.31 ppbv
RT: 3.891 min Scan# 374
Delta R.T. 0.002 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 61 Resp: 1797908

Ion	Ratio	Lower	Upper
61	100		
96	69.6	56.0	84.0
98	44.4	35.6	53.4

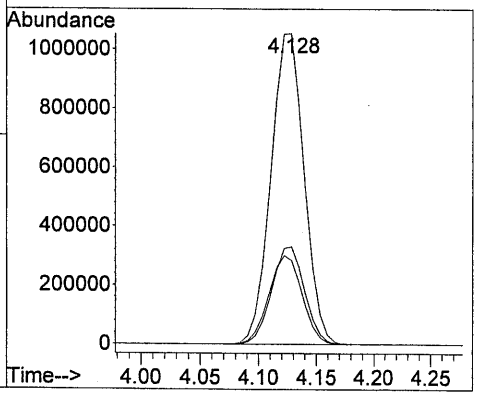


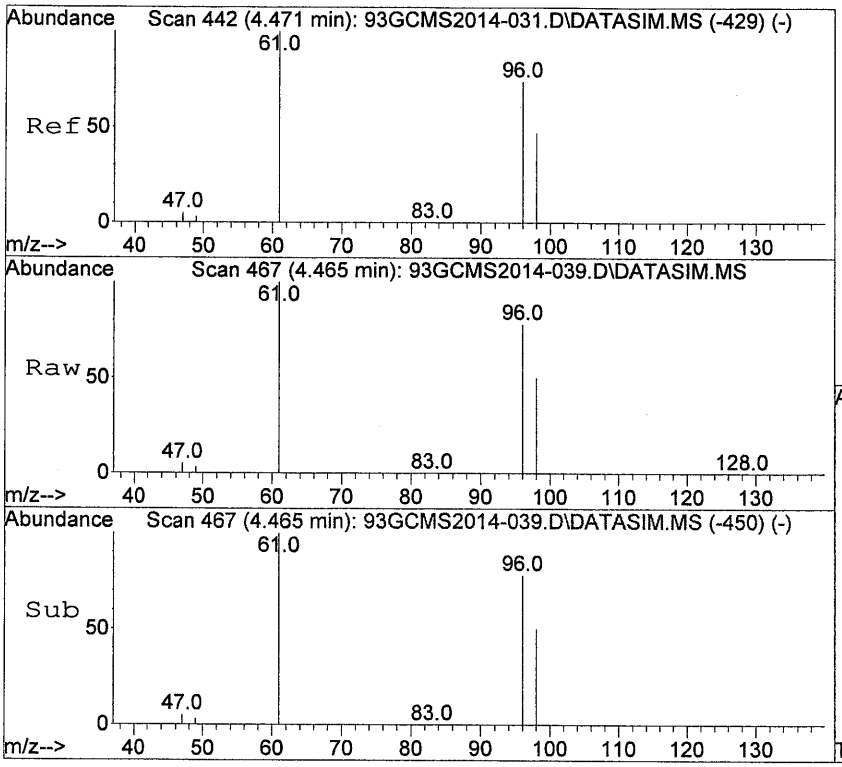


#6
1,1-Dichloroethane
Concen: 7912.67 ppbv
RT: 4.128 min Scan# 412
Delta R.T. 0.002 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 63 Resp: 2102932

Ion	Ratio	Lower	Upper
63	100		
65	31.0	24.7	37.1
27	28.5	22.6	34.0

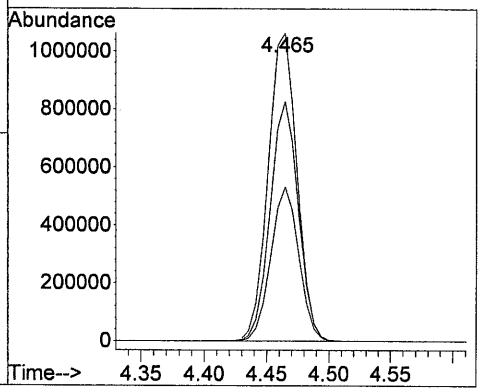


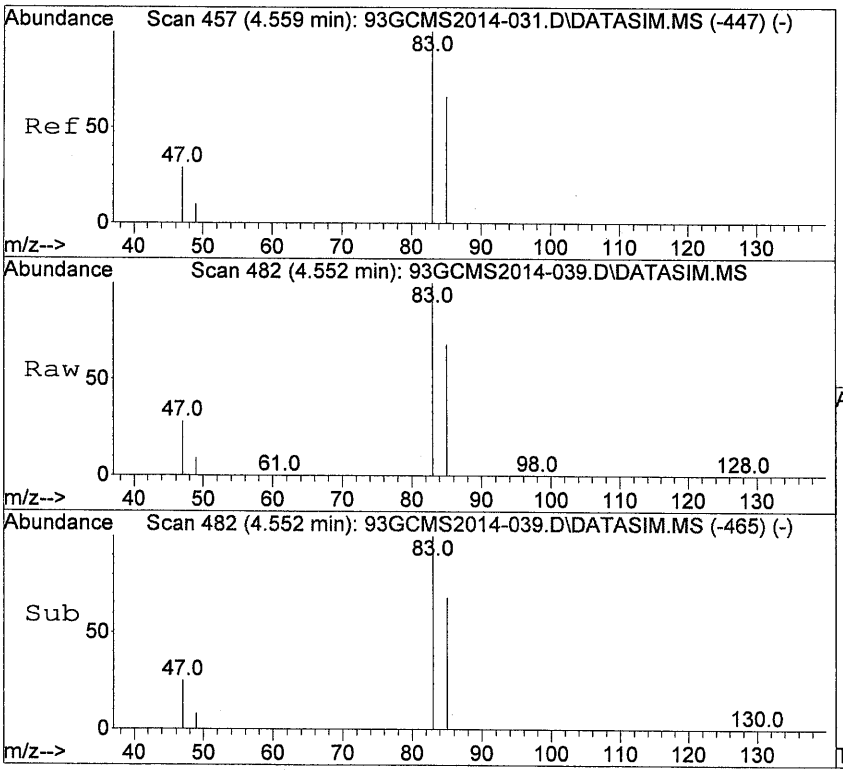


#7
cis-1,2-Dichloroethene
Concen: 8036.99 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.000 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 61 Resp: 1711084

Ion	Ratio	Lower	Upper
61	100		
96	76.0	61.7	92.5
98	48.7	39.4	59.0

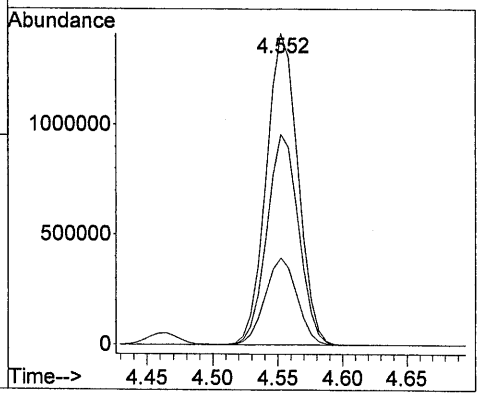


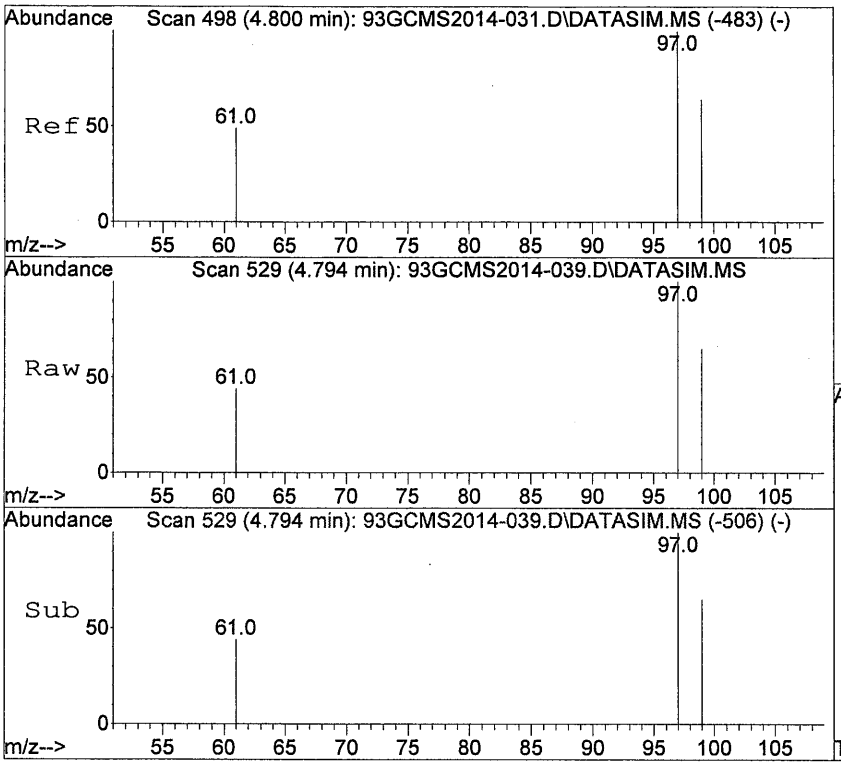


#8
Chloroform
Concen: 8037.13 ppbv
RT: 4.552 min Scan# 482
Delta R.T. 0.000 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 83 Resp: 2411114

Ion	Ratio	Lower	Upper
83	100		
85	67.6	52.0	78.0
47	28.0	20.0	30.0

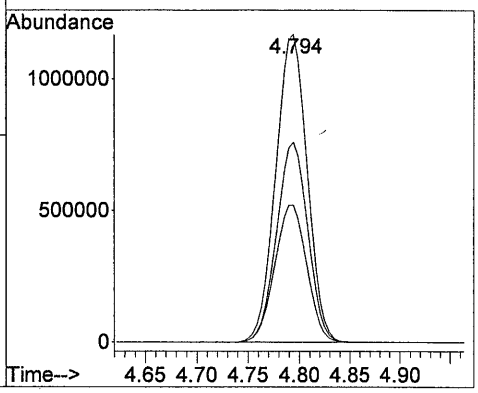


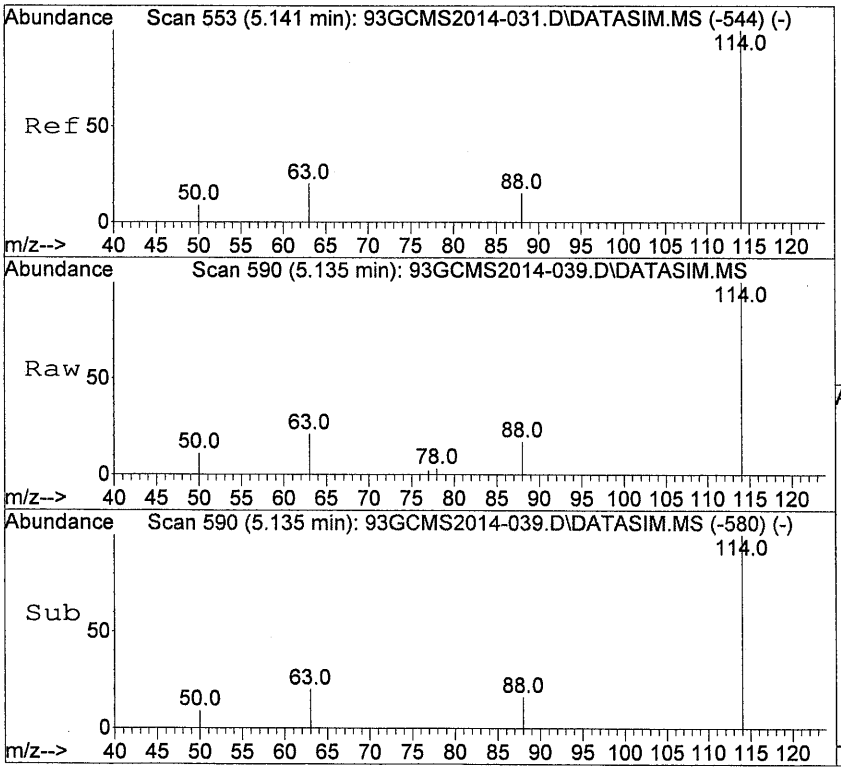


#9
1,1,1-Trichloroethane
Concen: 7848.44 ppbv
RT: 4.794 min Scan# 529
Delta R.T. 0.001 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 97 Resp: 2479866

Ion	Ratio	Lower	Upper
97	100		
99	64.6	51.4	77.0
61	45.4	37.4	56.0

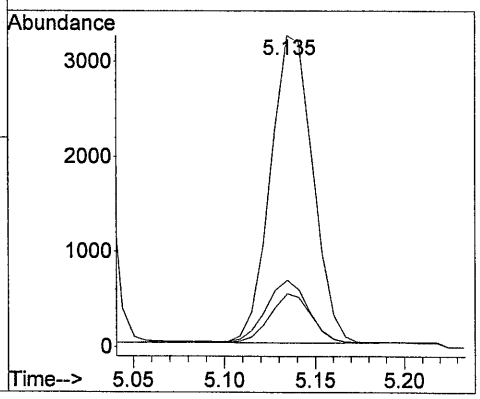


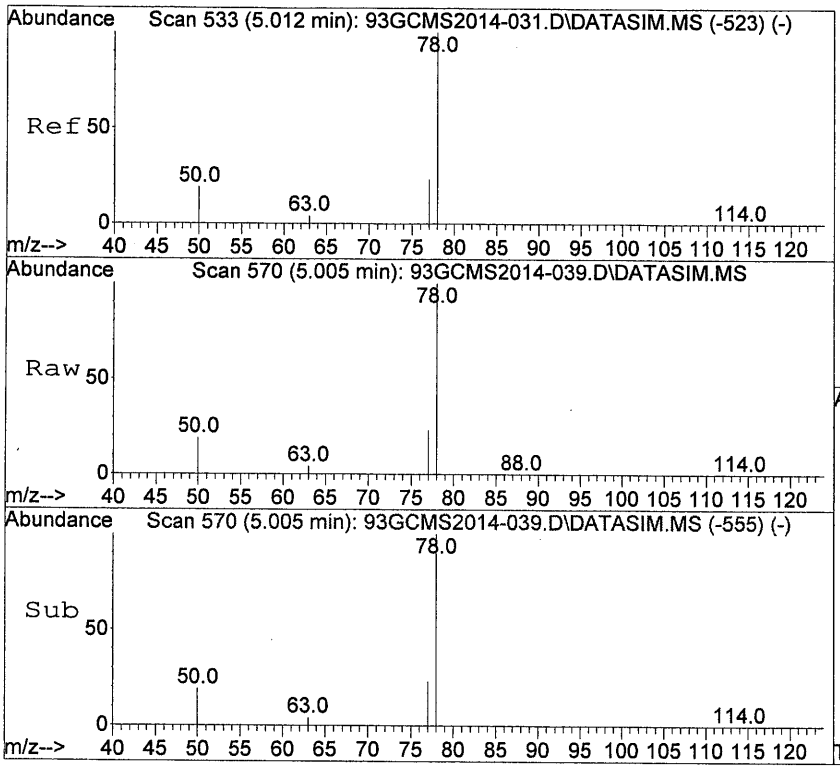


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.005 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion:114 Resp: 5235

Ion	Ratio	Lower	Upper
114	100		
63	19.8	15.1	22.7
88	15.6	12.0	18.0

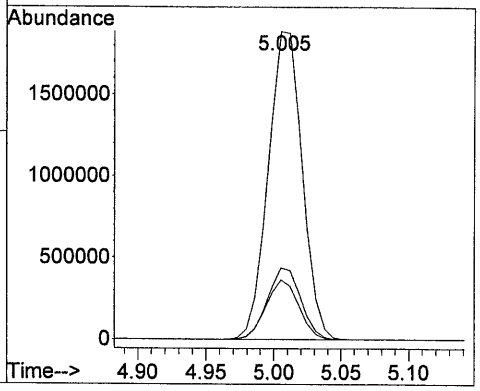


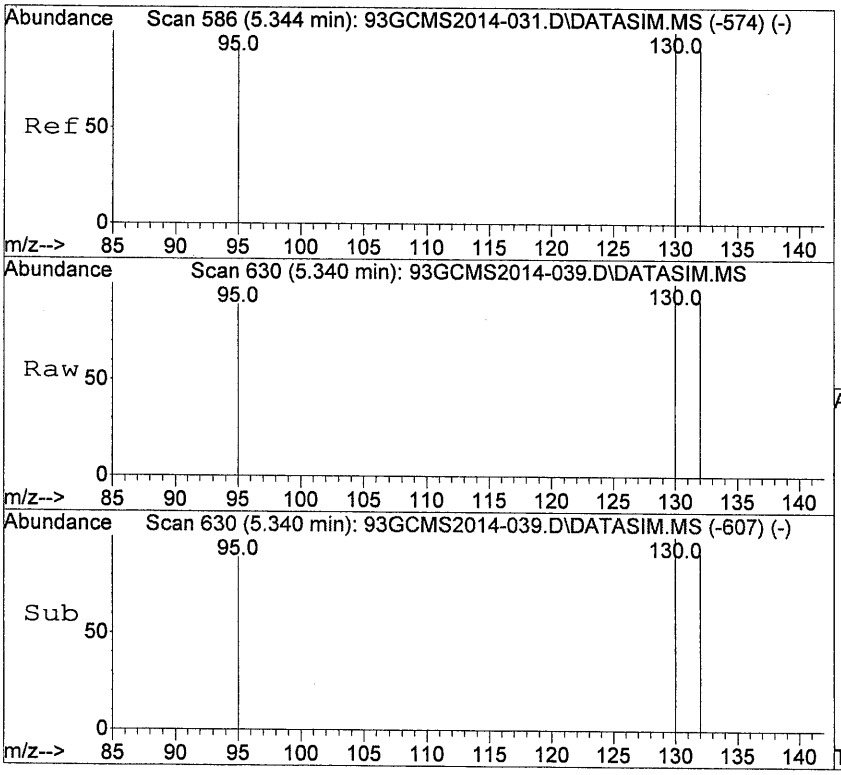


#11
Benzene
Concen: 10467.88 ppbv
RT: 5.005 min Scan# 570
Delta R.T. -0.005 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 78 Resp: 3283315

Ion	Ratio	Lower	Upper
78	100		
77	22.8	18.4	27.6
50	18.7	14.6	21.8

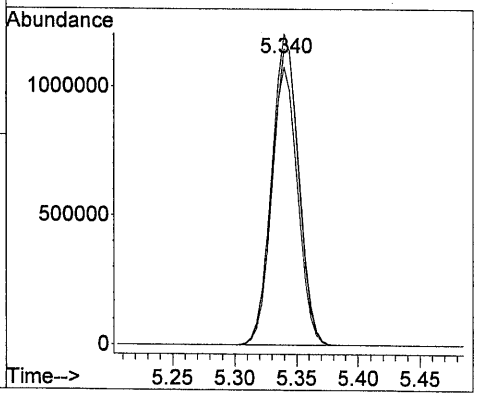


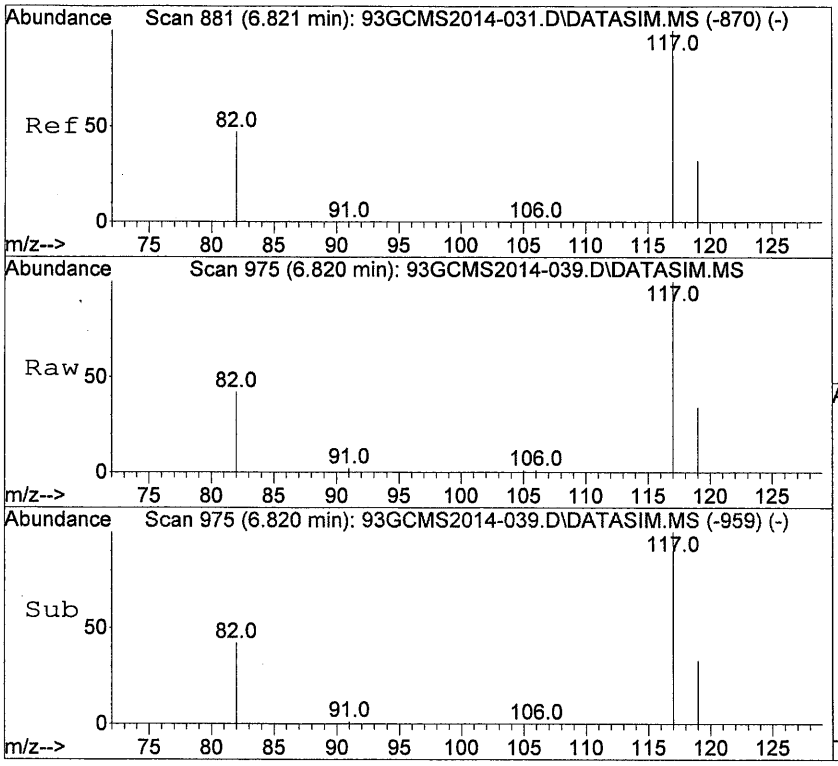


#12
Trichloroethene
Concen: 10578.19 ppbv
RT: 5.340 min Scan# 630
Delta R.T. -0.000 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion:130 Resp: 1798608

Ion	Ratio	Lower	Upper
130	100		
132	96.5	77.0	115.6
95	89.5	72.9	109.3

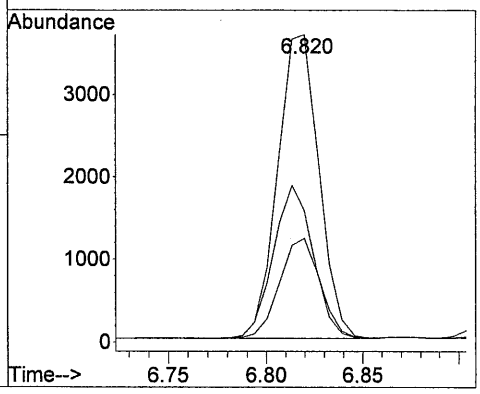


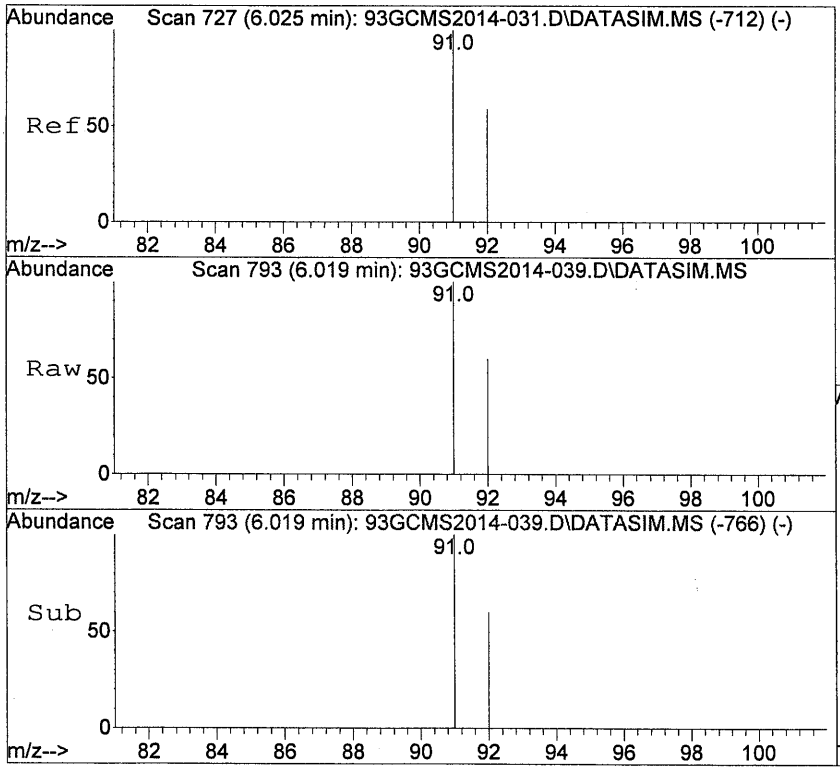


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.820 min Scan# 975
Delta R.T. 0.005 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion:117 Resp: 5472

Ion	Ratio	Lower	Upper
117	100		
82	48.3	37.8	56.6
119	32.2	25.6	38.4

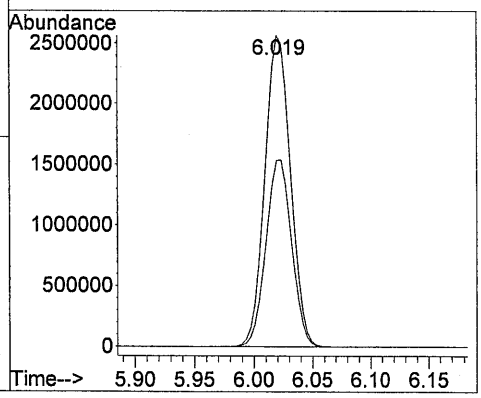


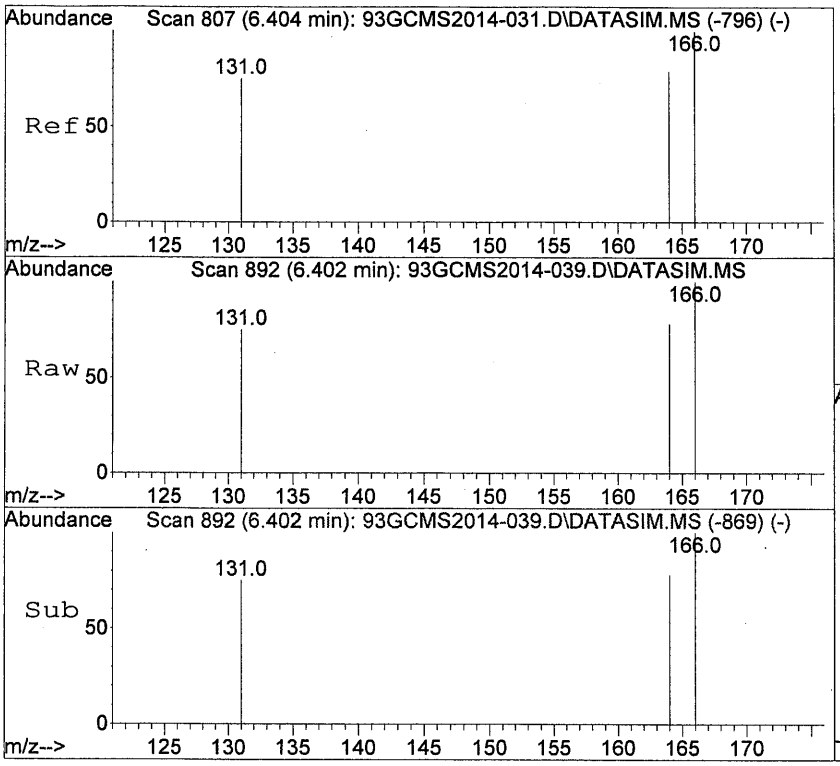


#14
Toluene
Concen: 10501.05 ppbv
RT: 6.019 min Scan# 793
Delta R.T. -0.001 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 91 Resp: 3883081

Ion	Ratio	Lower	Upper
91	100		
92	60.2	47.2	70.8

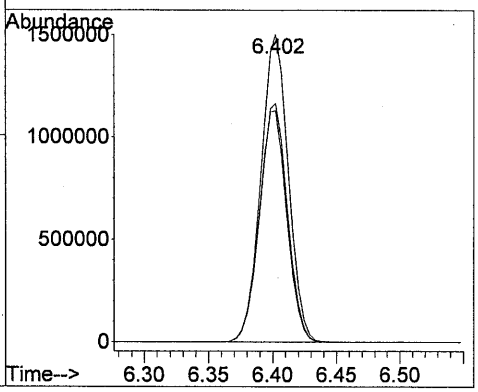


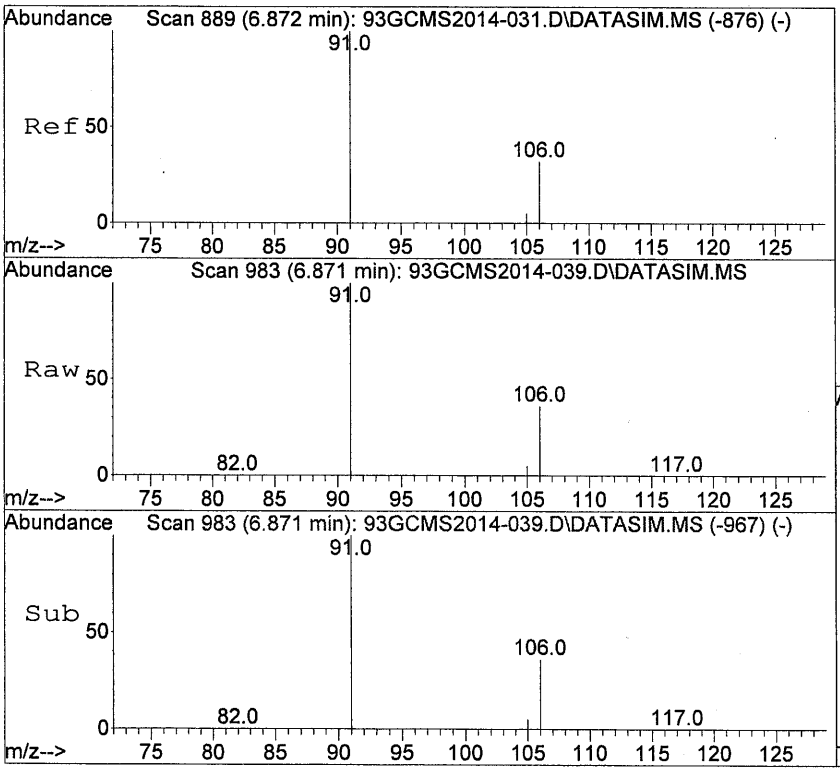


#15
Tetrachloroethene
Concen: 9729.98 ppbv
RT: 6.402 min Scan# 892
Delta R.T. 0.002 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion:166 Resp: 2248622

Ion	Ratio	Lower	Upper
166	100		
164	78.1	62.5	93.7
131	75.8	58.6	88.0

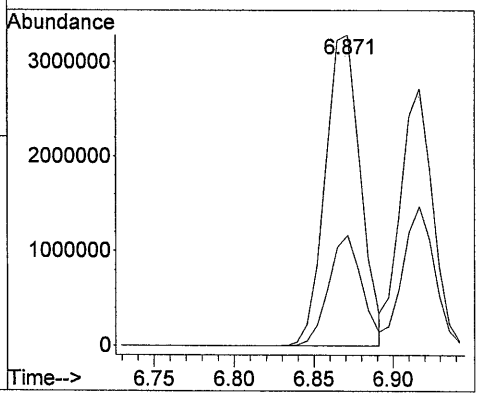


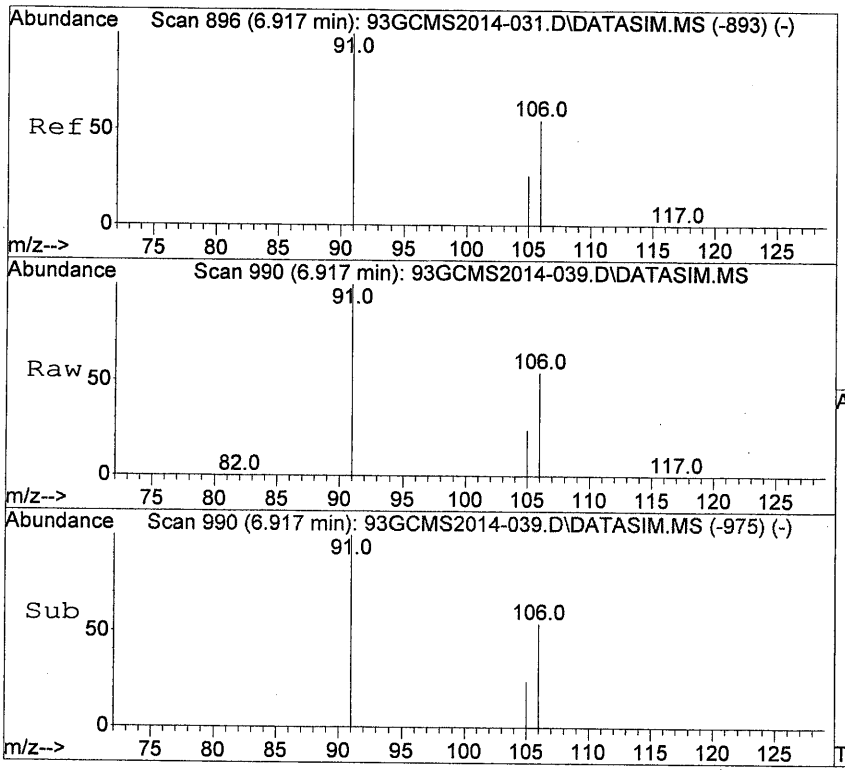


#16
Ethyl Benzene
Concen: 10522.29 ppbv
RT: 6.871 min Scan# 983
Delta R.T. 0.005 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 91 Resp: 5083694

Ion	Ratio	Lower	Upper
91	100		
106	35.5	25.6	38.4

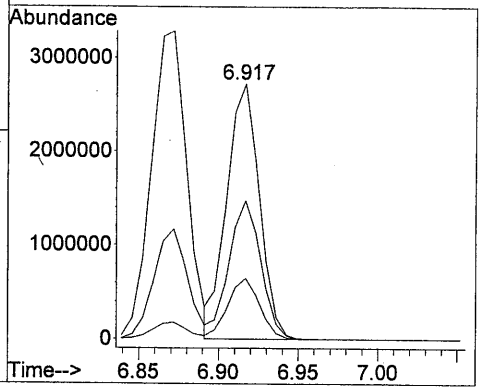


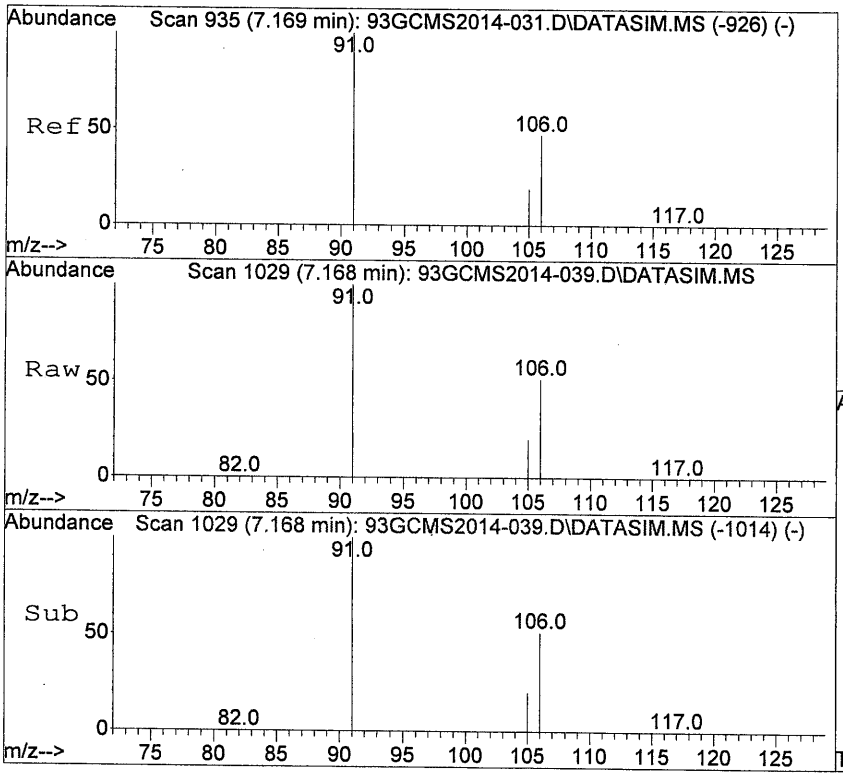


#17
m,p-Xylene
Concen: 10883.91 ppbv
RT: 6.917 min Scan# 990
Delta R.T. -0.001 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 91 Resp: 3871461

Ion	Ratio	Lower	Upper
91	100		
106	54.2	42.5	63.7
105	23.7	18.6	27.8

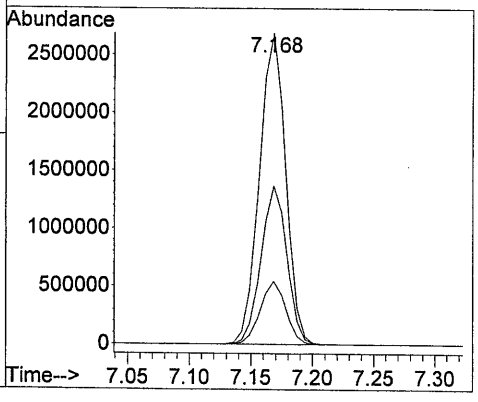




#18
o-Xylene
Concen: 10636.76 ppbv
RT: 7.168 min Scan# 1029
Delta R.T. -0.001 min
Lab File: 93GCMS2014-039.D
Acq: 13 Jan 2014 8:53

Tgt Ion: 91 Resp: 3979079

Ion	Ratio	Lower	Upper
91	100		
106	50.2	39.3	58.9
105	19.7	15.4	23.2



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-040.D
Acq On : 13 Jan 2014 9:05
Operator : SJT
Sample : STD20140113-5 \ 2K ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:12:01 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

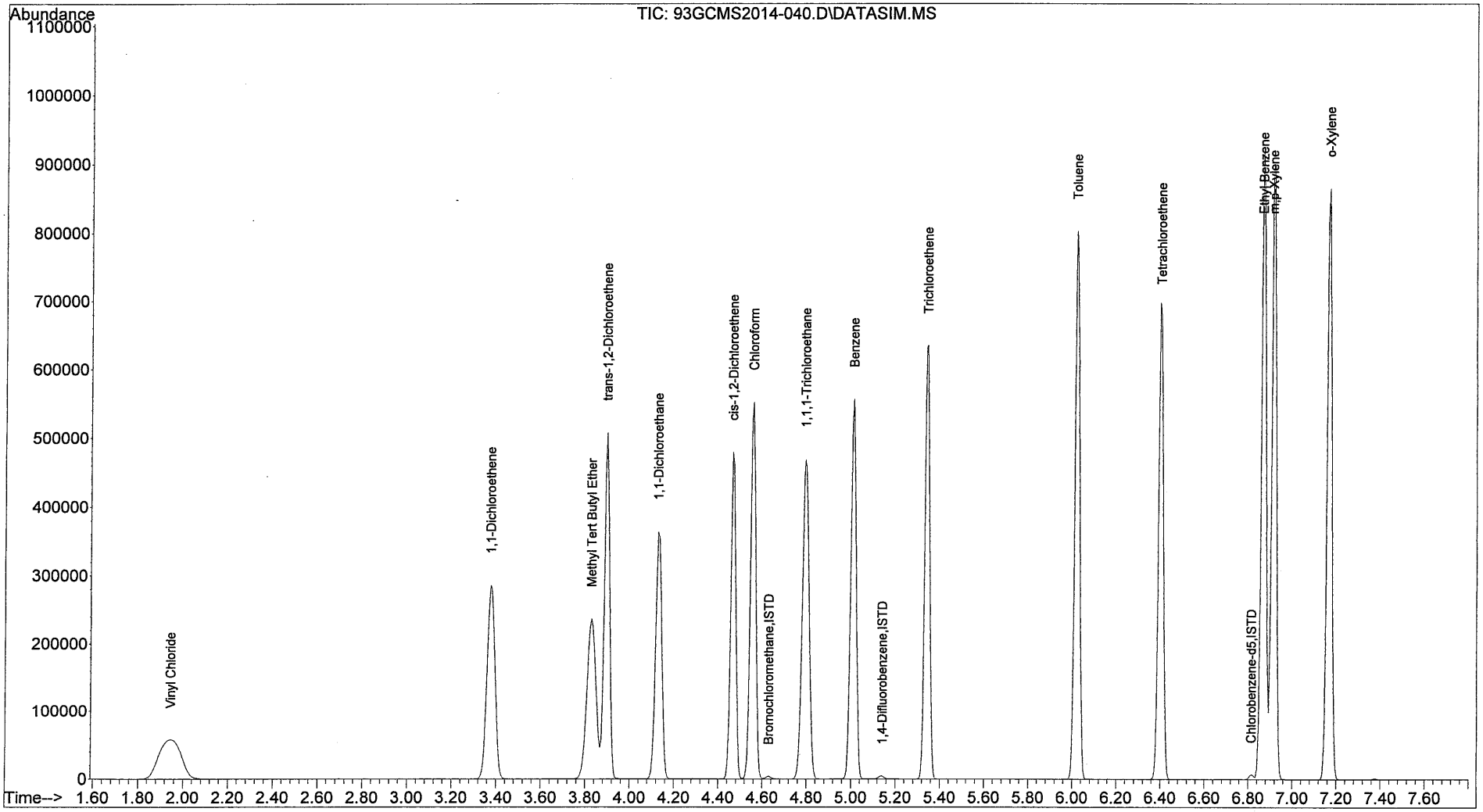
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.629	49	2100	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	5181	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	5447	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.944	62	222391	1983.63	ppbv	98
3) 1,1-Dichloroethene	3.376	61	373584	1990.55	ppbv	99
4) Methyl Tert Butyl Ether	3.828	73	493723	1984.76	ppbv	97
5) trans-1,2-Dichloroethene	3.897	61	347839	2037.98	ppbv	99
6) 1,1-Dichloroethane	4.128	63	407234	2008.76	ppbv	99
7) cis-1,2-Dichloroethene	4.465	61	332614	2048.09	ppbv	98
8) Chloroform	4.558	83	458705	2004.49	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	475576	1973.16	ppbv	100
11) Benzene	5.012	78	649431	2092.10	ppbv	99
12) Trichloroethene	5.344	130	341616	2030.09	ppbv	100
14) Toluene	6.020	91	765894	2080.72	ppbv	100
15) Tetrachloroethene	6.404	166	422709	1837.49	ppbv	99
16) Ethyl Benzene	6.866	91	1012289	2104.86	ppbv	99
17) m,p-Xylene	6.911	91	756578	2136.74	ppbv	95
18) o-Xylene	7.169	91	781829	2099.56	ppbv	99

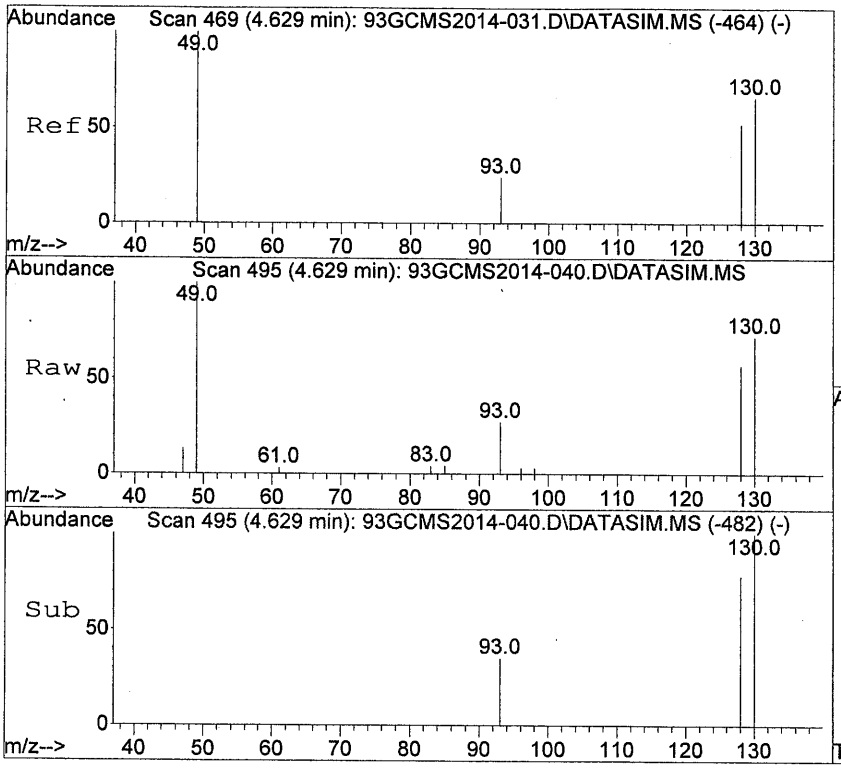
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01/13/14

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-040.D
Acq On : 13 Jan 2014 9:05
Operator : SJT
Sample : STD20140113-5 \ 2K ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:12:01 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 08:57:44 2014
Response via : Initial Calibration

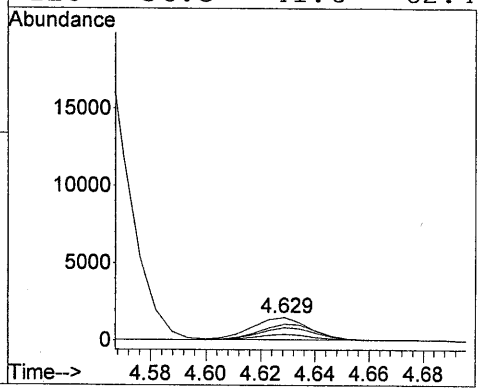


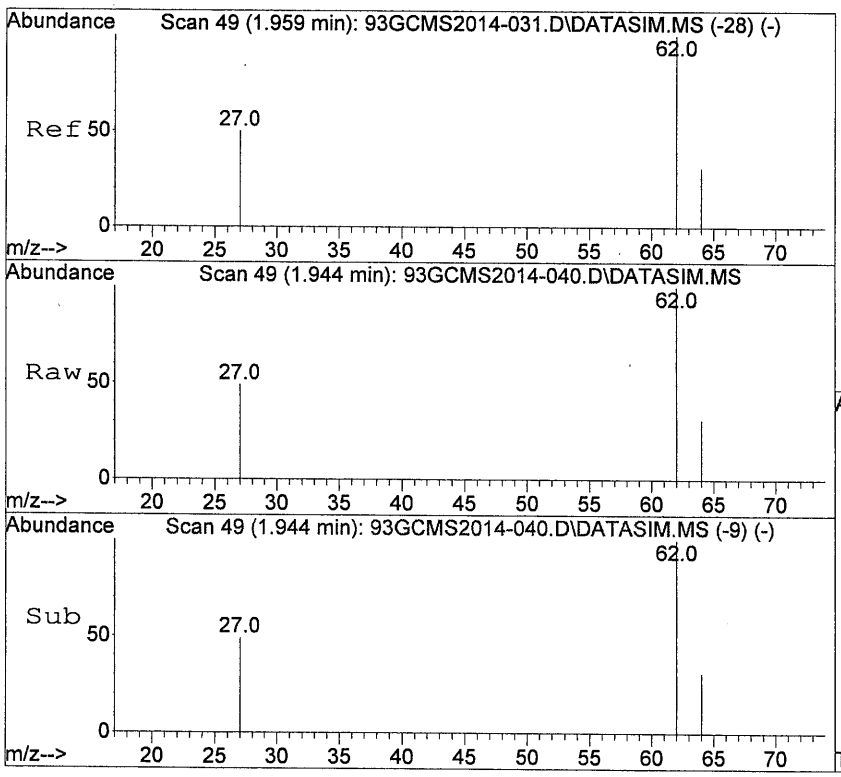


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.629 min Scan# 495
Delta R.T. 0.007 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 49 Resp: 2100

Ion	Ratio	Lower	Upper
49	100		
130	72.1	51.6	77.4
93	27.1	19.6	29.4
128	56.5	41.6	62.4

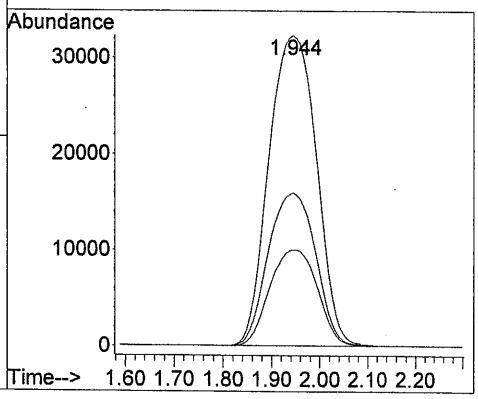


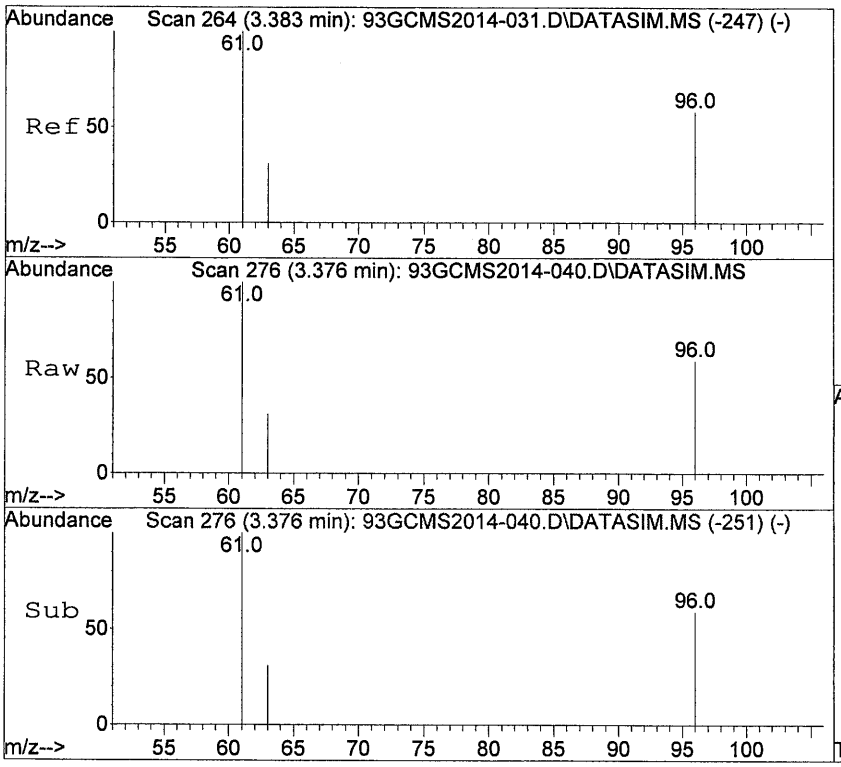


#2
Vinyl Chloride
Concen: 1983.63 ppbv
RT: 1.944 min Scan# 49
Delta R.T. 0.044 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 62 Resp: 222391

Ion	Ratio	Lower	Upper
62	100		
64	31.0	24.9	37.3
27	49.0	37.8	56.6

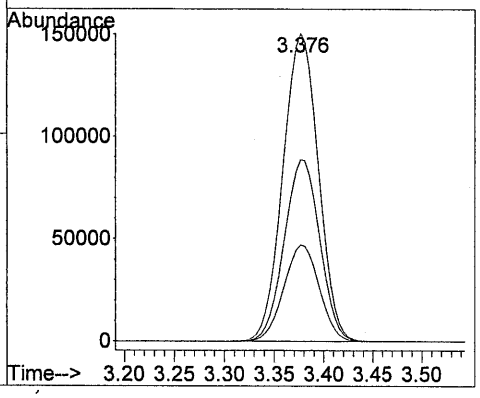


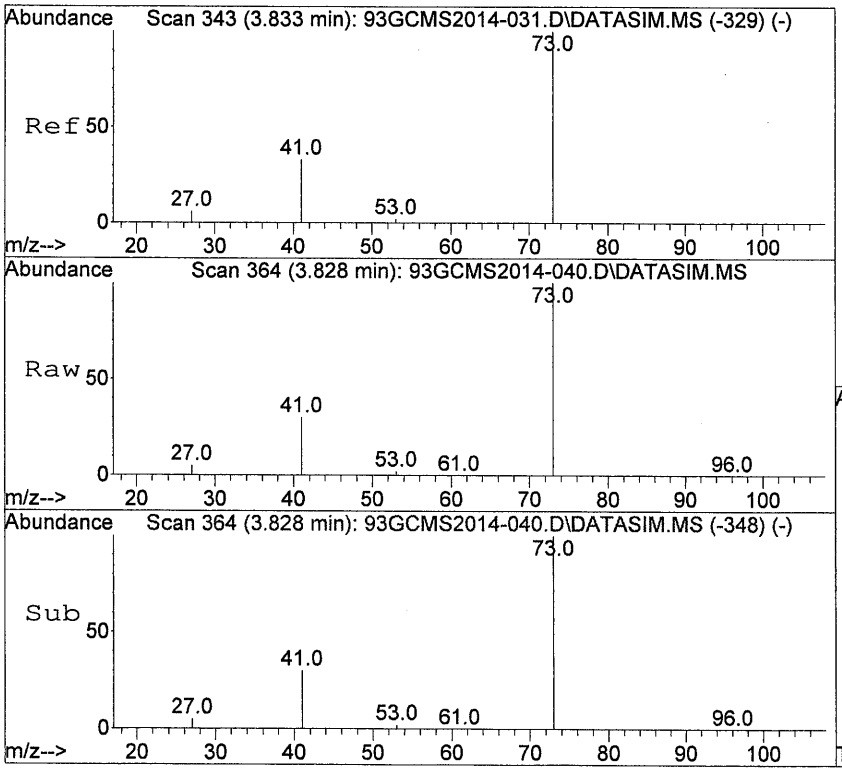


#3
1,1-Dichloroethene
Concen: 1990.55 ppbv
RT: 3.376 min Scan# 276
Delta R.T. 0.009 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 61 Resp: 373584

Ion	Ratio	Lower	Upper
61	100		
96	59.2	48.6	72.8
63	31.3	25.0	37.6

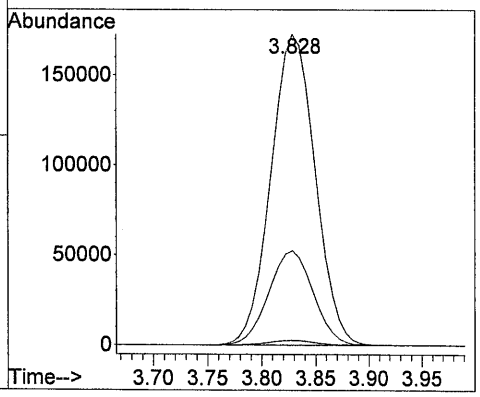


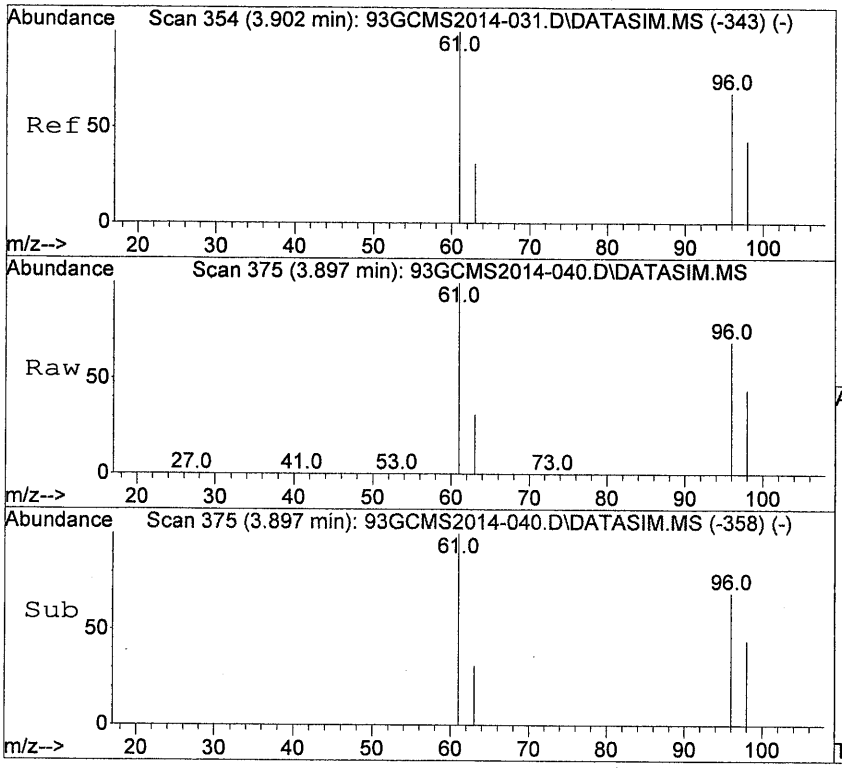


#4
Methyl Tert Butyl Ether
Concen: 1984.76 ppbv
RT: 3.828 min Scan# 364
Delta R.T. 0.002 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 73 Resp: 493723

Ion	Ratio	Lower	Upper
73	100		
53	1.5	1.1	1.7
41	30.4	23.0	34.4

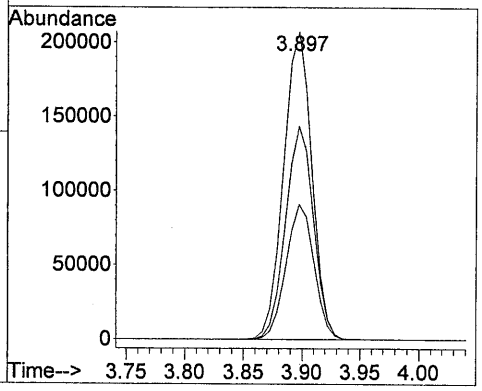


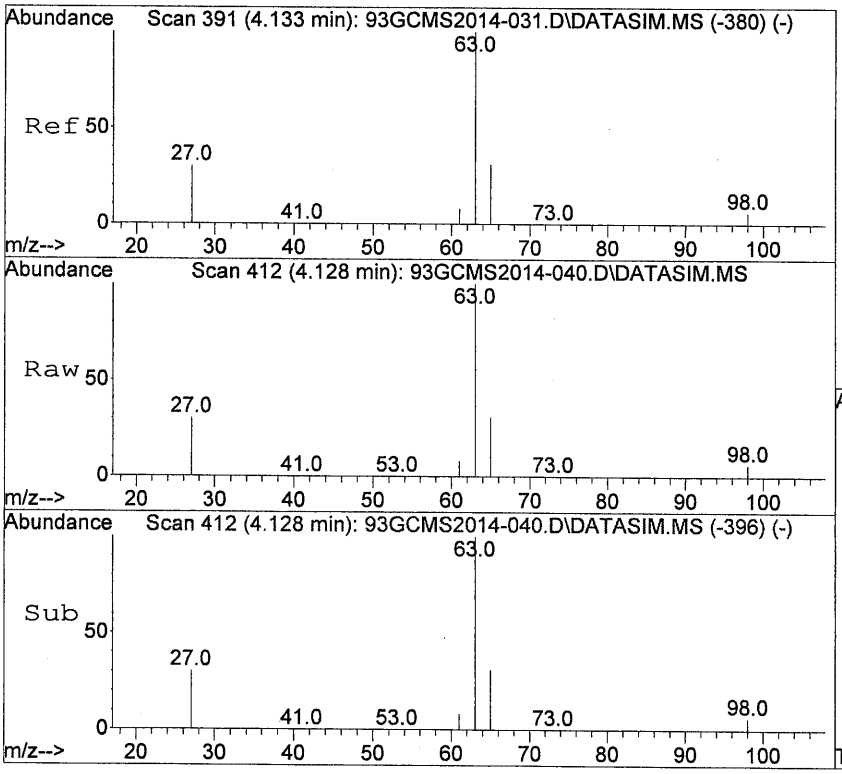


#5
trans-1,2-Dichloroethene
Concen: 2037.98 ppbv
RT: 3.897 min Scan# 375
Delta R.T. 0.008 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 61 Resp: 347839

Ion	Ratio	Lower	Upper
61	100		
96	68.8	56.0	84.0
98	43.8	35.6	53.4

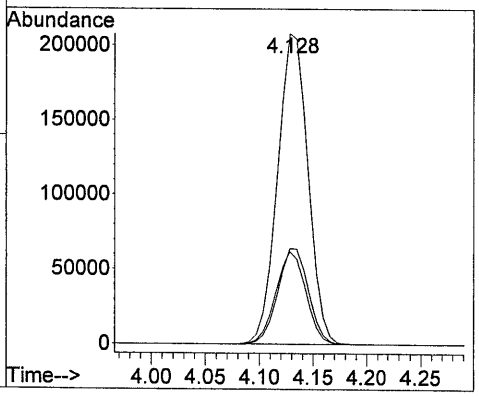


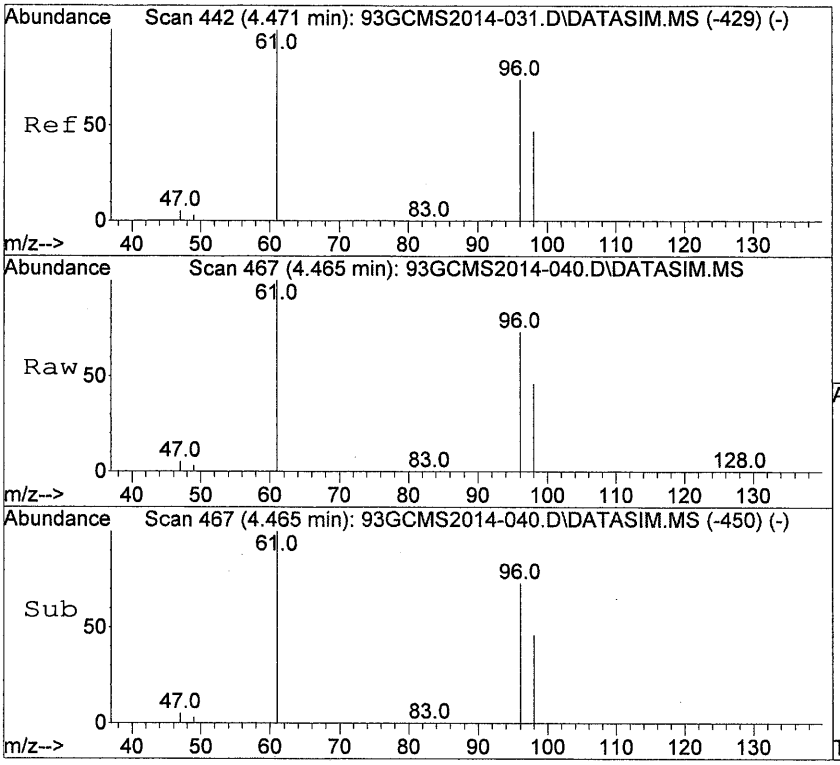


#6
1,1-Dichloroethane
Concen: 2008.76 ppbv
RT: 4.128 min Scan# 412
Delta R.T. 0.002 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 63 Resp: 407234

Ion	Ratio	Lower	Upper
63	100		
65	30.9	24.7	37.1
27	29.3	22.6	34.0

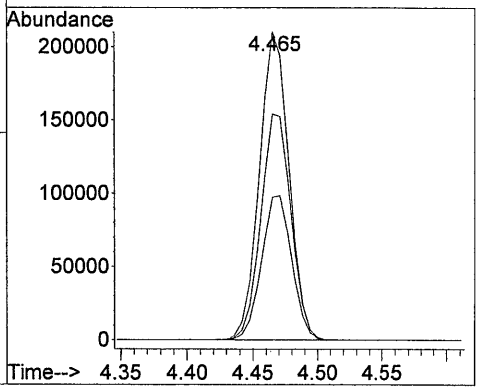


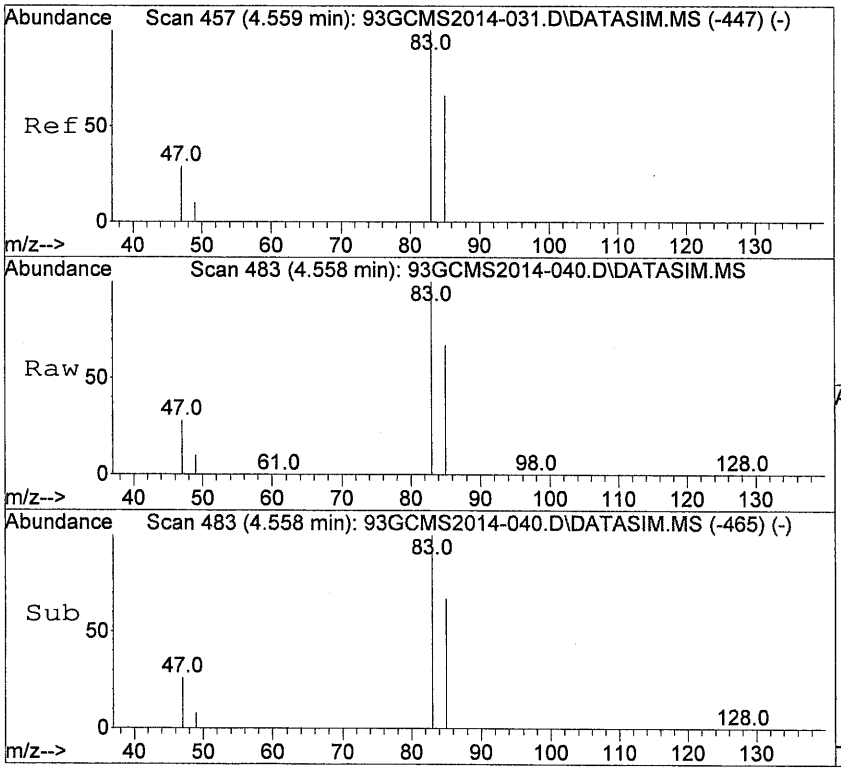


#7
cis-1,2-Dichloroethene
Concen: 2048.09 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.001 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 61 Resp: 332614

Ion	Ratio	Lower	Upper
61	100		
96	75.2	61.7	92.5
98	48.0	39.4	59.0

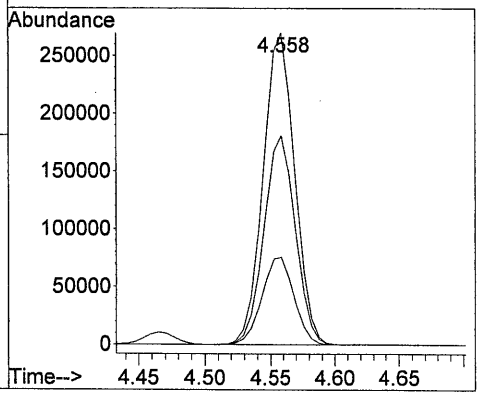


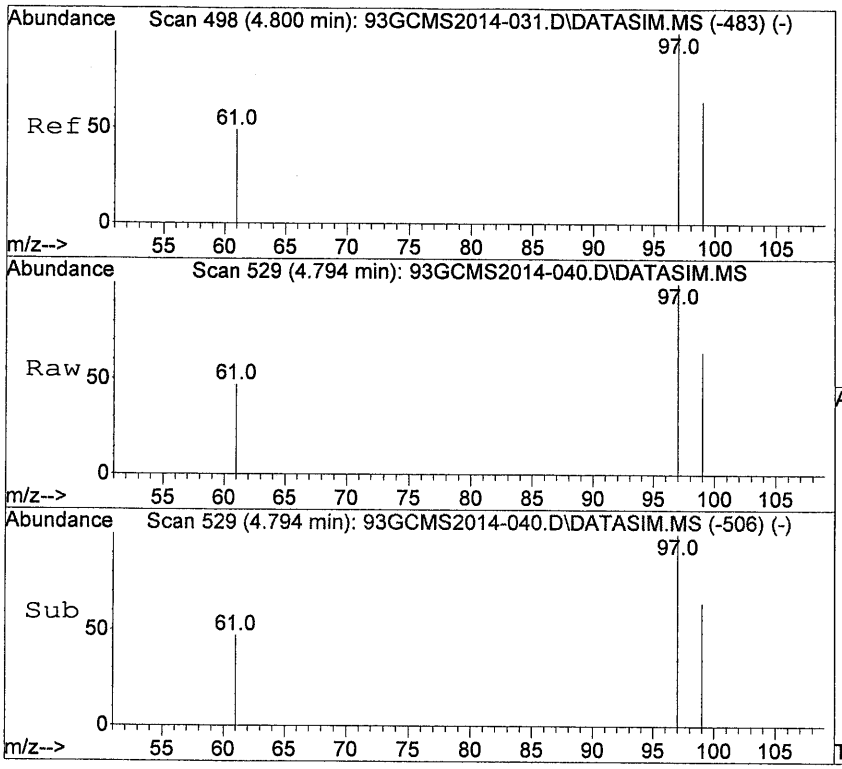


#8
Chloroform
Concen: 2004.49 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.007 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 83 Resp: 458705

Ion	Ratio	Lower	Upper
83	100		
85	66.8	52.0	78.0
47	28.4	20.0	30.0

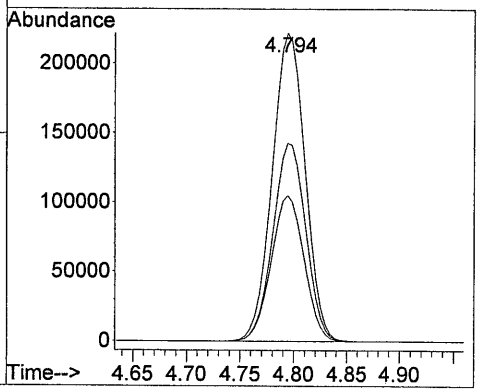


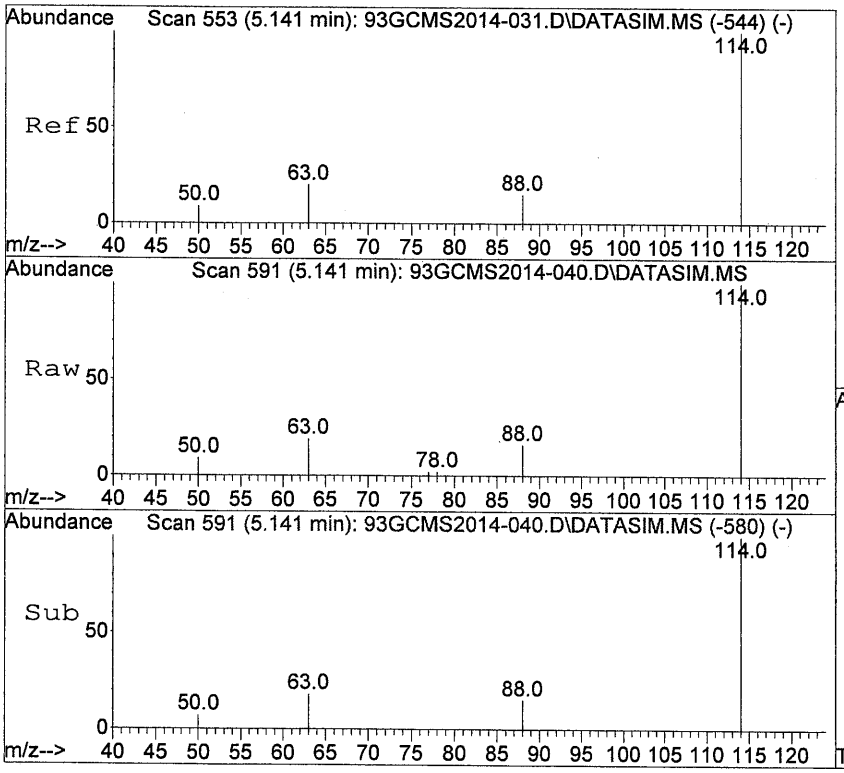


#9
1,1,1-Trichloroethane
Concen: 1973.16 ppbv
RT: 4.794 min Scan# 529
Delta R.T. 0.002 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 97 Resp: 475576

Ion	Ratio	Lower	Upper
97	100		
99	64.2	51.4	77.0
61	47.3	37.4	56.0

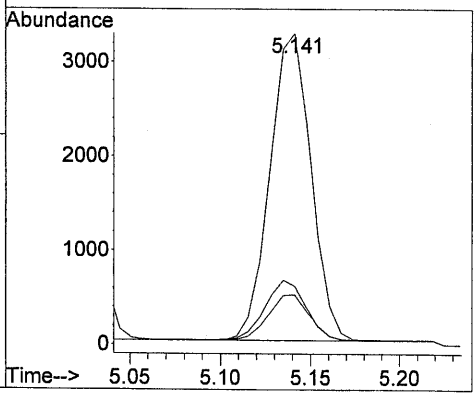


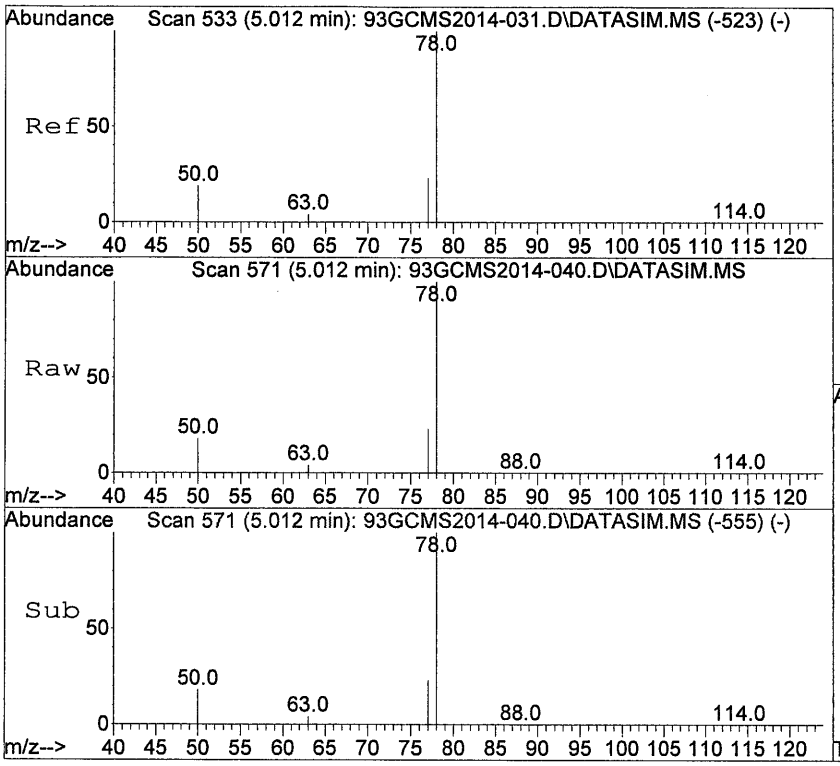


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.002 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion:114 Resp: 5181

Ion	Ratio	Lower	Upper
114	100		
63	19.3	15.1	22.7
88	14.9	12.0	18.0

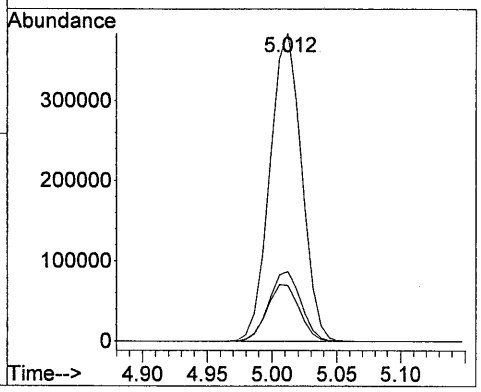


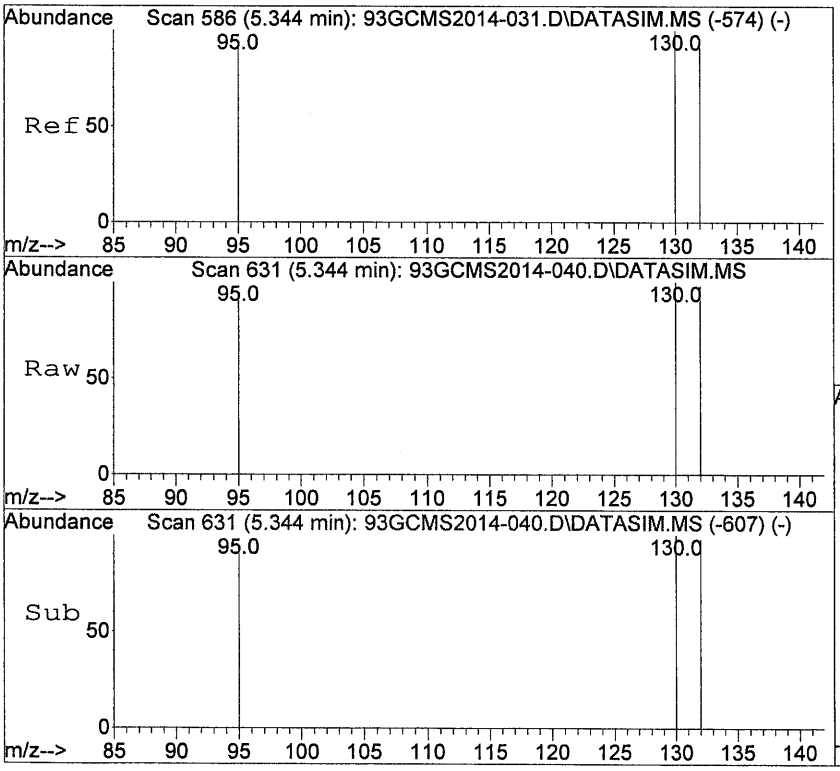


#11
Benzene
Concen: 2092.10 ppbv
RT: 5.012 min Scan# 571
Delta R.T. 0.002 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 78 Resp: 649431

Ion	Ratio	Lower	Upper
78	100		
77	22.8	18.4	27.6
50	18.8	14.6	21.8

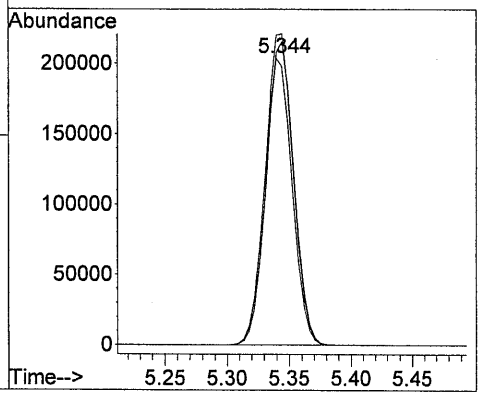


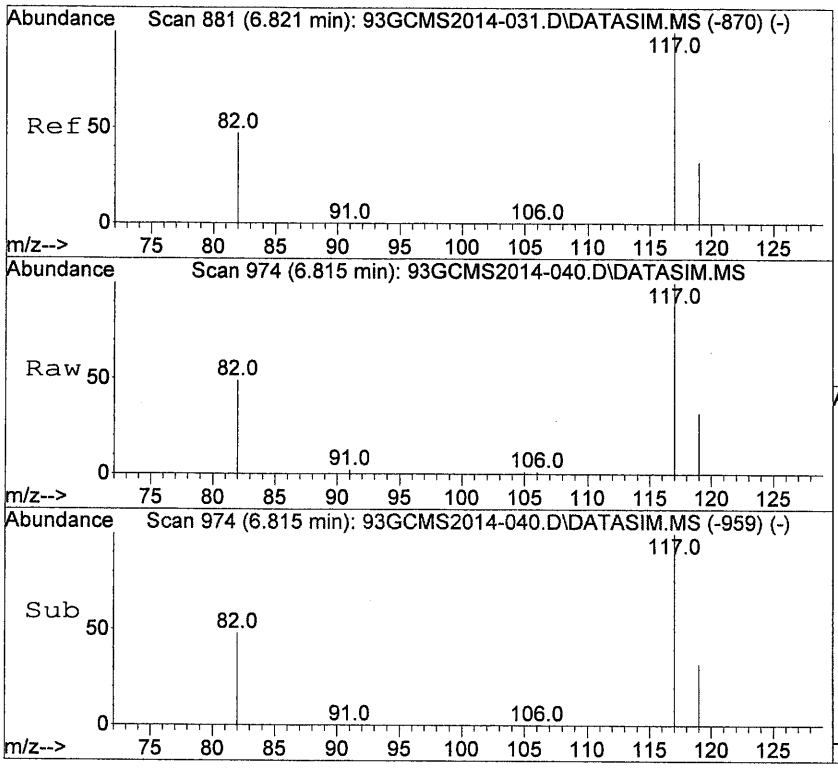


#12
Trichloroethene
Concen: 2030.09 ppbv
RT: 5.344 min Scan# 631
Delta R.T. 0.005 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion:130 Resp: 341616

Ion	Ratio	Lower	Upper
130	100		
132	96.3	77.0	115.6
95	91.5	72.9	109.3

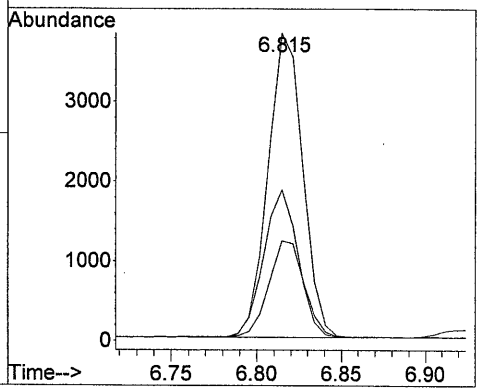


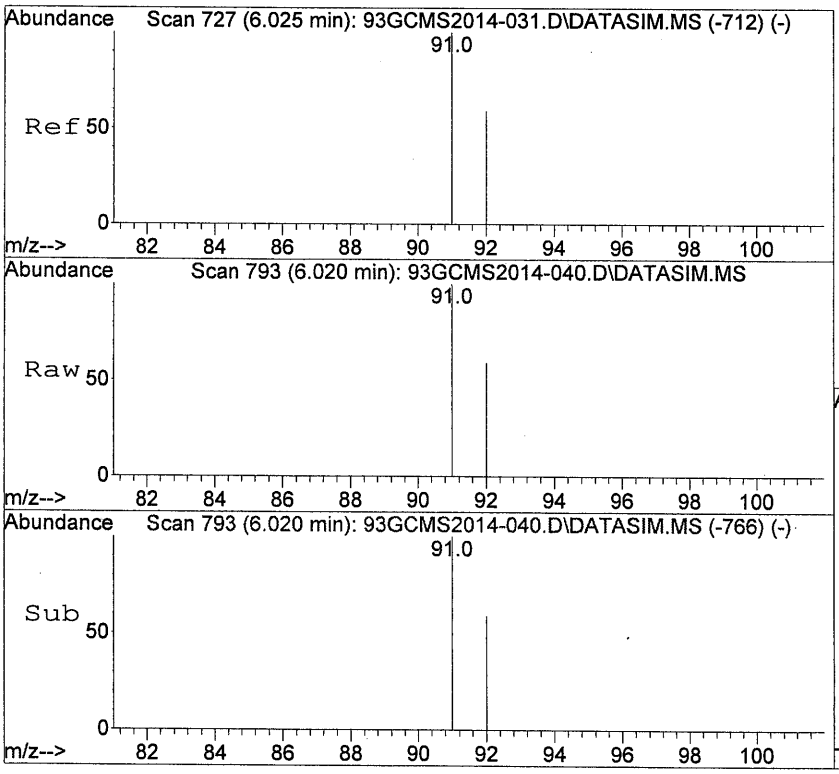


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion:117 Resp: 5447

Ion	Ratio	Lower	Upper
117	100		
82	47.6	37.8	56.6
119	32.5	25.6	38.4

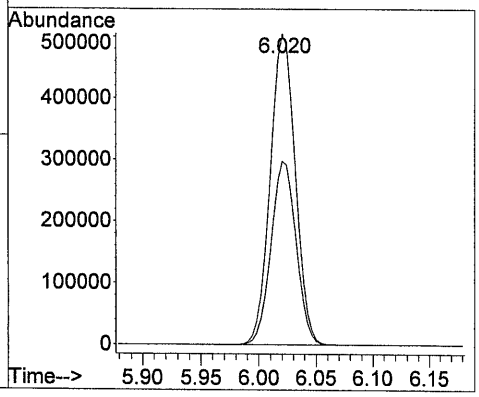


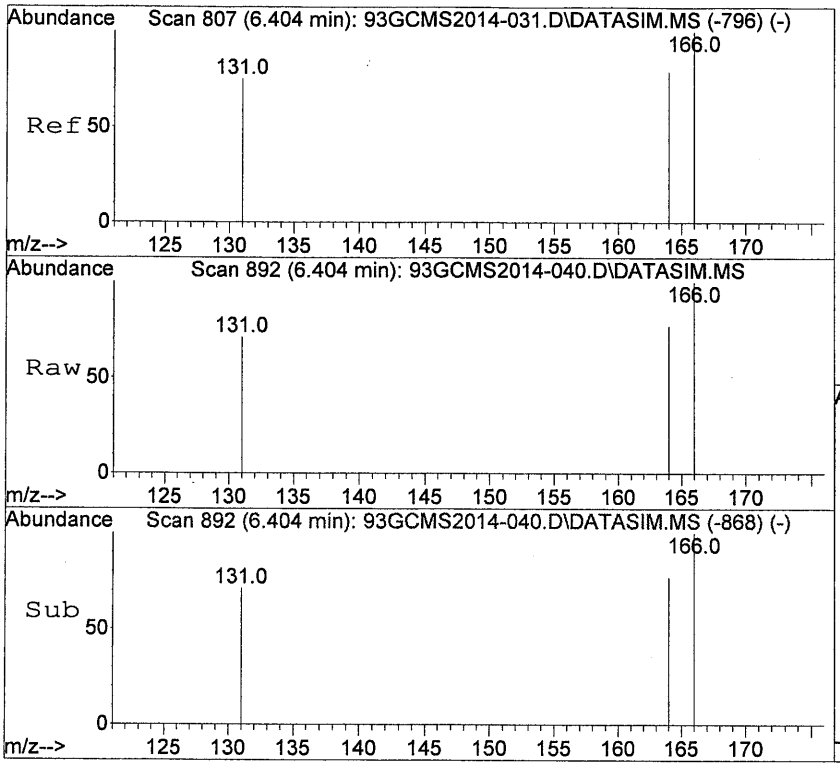


#14
Toluene
Concen: 2080.72 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 91 Resp: 765894

Ion	Ratio	Lower	Upper
91	100		
92	59.1	47.2	70.8

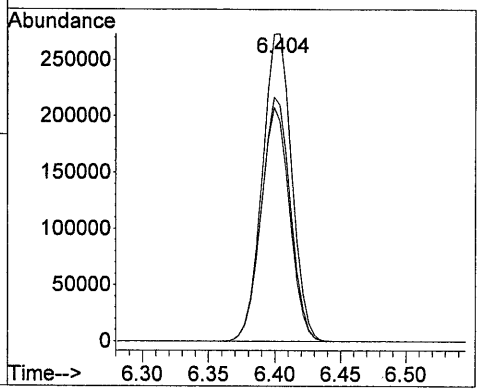


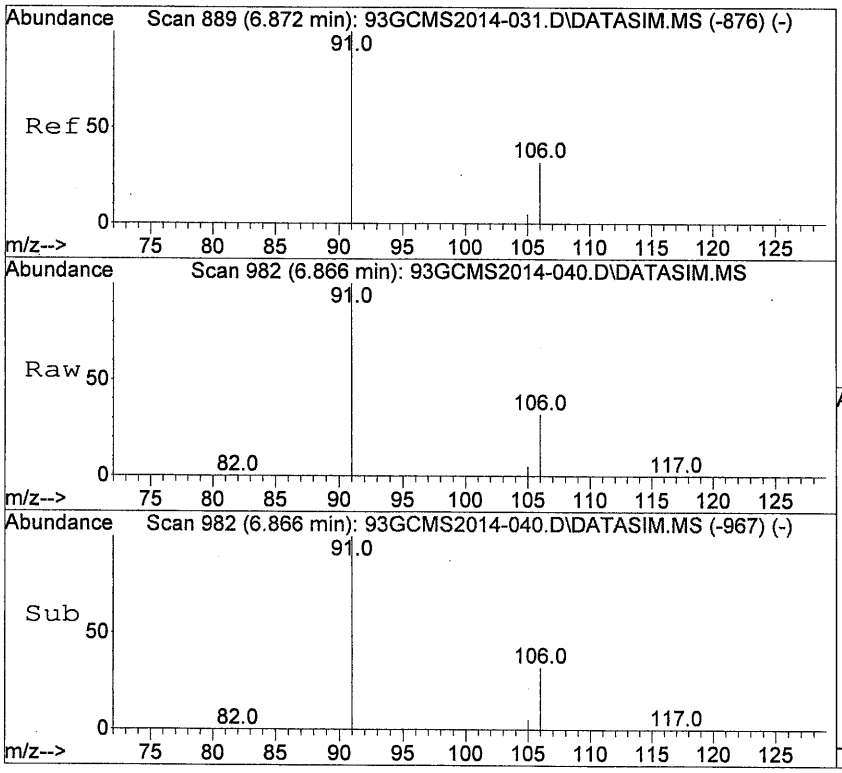


#15
Tetrachloroethene
Concen: 1837.49 ppbv
RT: 6.404 min Scan# 892
Delta R.T. 0.003 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion:166 Resp: 422709

Ion	Ratio	Lower	Upper
166	100		
164	78.1	62.5	93.7
131	74.3	58.6	88.0

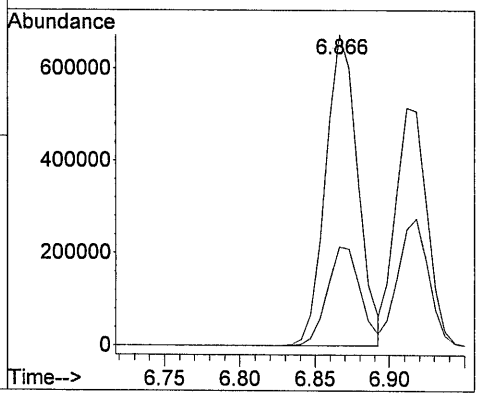


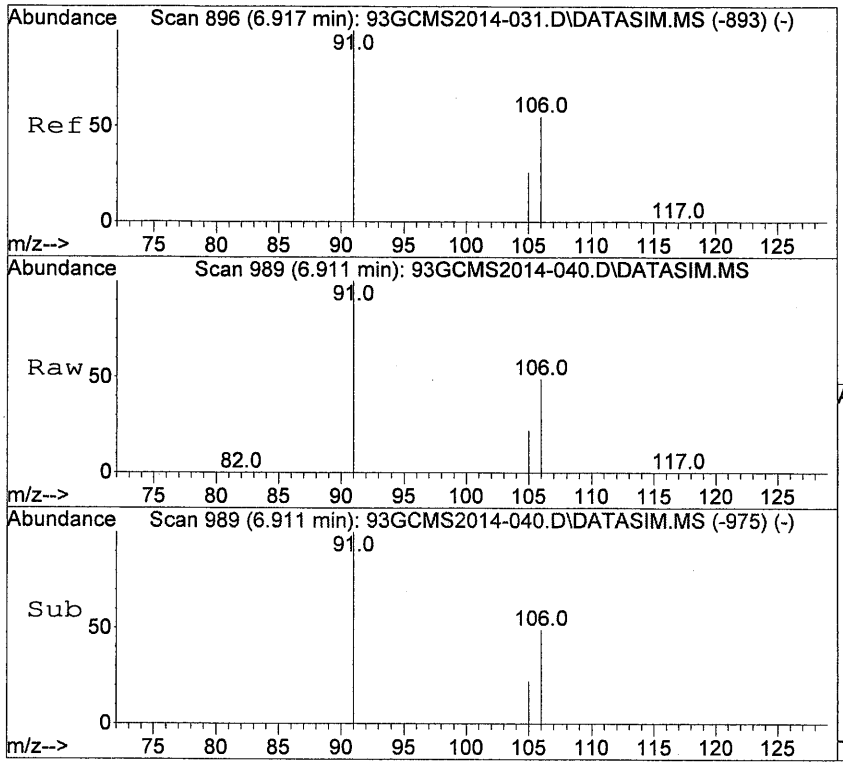


#16
Ethyl Benzene
Concen: 2104.86 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 91 Resp: 1012289

Ion	Ratio	Lower	Upper
91	100		
106	31.7	25.6	38.4

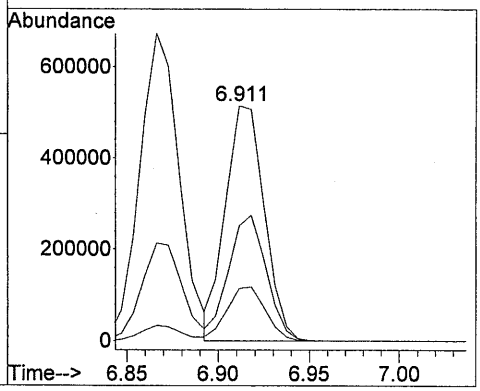


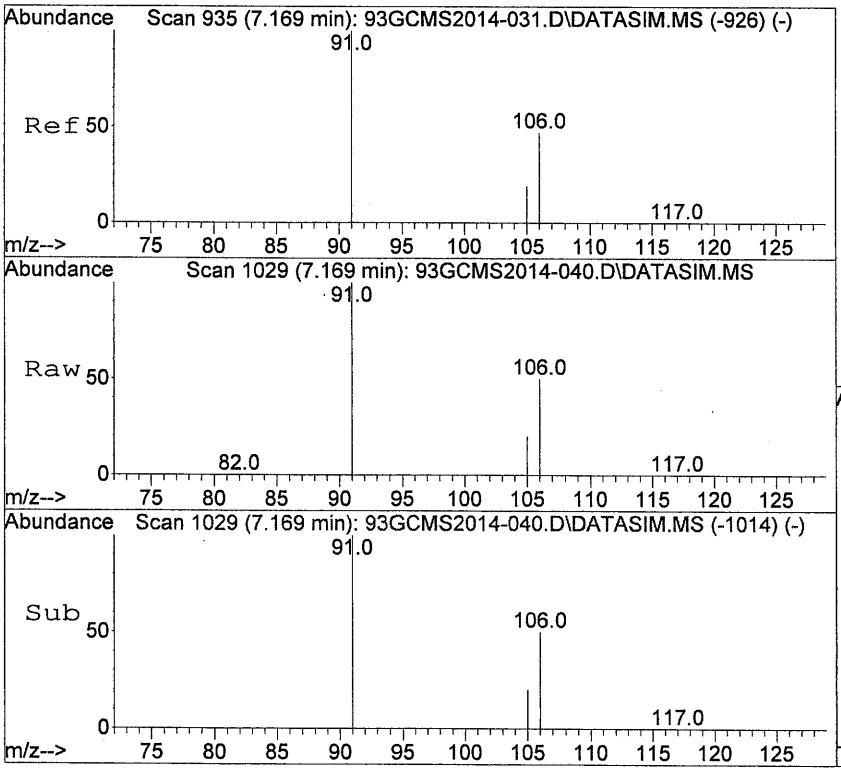


#17
m,p-Xylene
Concen: 2136.74 ppbv
RT: 6.911 min Scan# 989
Delta R.T. -0.007 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 91 Resp: 756578

Ion	Ratio	Lower	Upper
91	100		
106	48.9	42.5	63.7
105	22.3	18.6	27.8

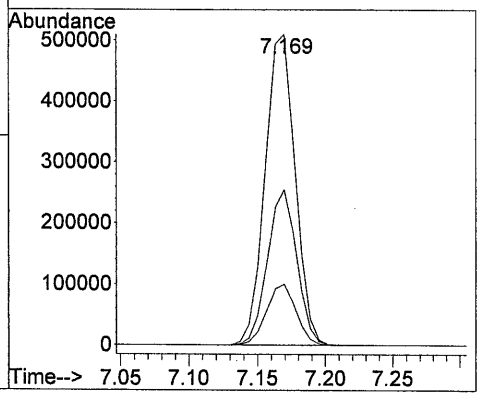




#18
o-Xylene
Concen: 2099.56 ppbv
RT: 7.169 min Scan# 1029
Delta R.T. -0.000 min
Lab File: 93GCMS2014-040.D
Acq: 13 Jan 2014 9:05

Tgt Ion: 91 Resp: 781829

Ion	Ratio	Lower	Upper
91	100		
106	48.6	39.3	58.9
105	19.2	15.4	23.2



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-041.D
Acq On : 13 Jan 2014 9:16
Operator : SJT
Sample : STD20140113-6 \ 100 ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:23:32 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 09:23:02 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	4.623	49	2065	10.00	ppbv		0.00
10) 1,4-Difluorobenzene	5.135	114	5251	10.00	ppbv		0.00
13) Chlorobenzene-d5	6.815	117	5547	10.00	ppbv		0.00
System Monitoring Compounds							
Target Compounds							Qvalue
2) Vinyl Chloride	1.870	62	10563	101.73	ppbv		98
3) 1,1-Dichloroethene	3.359	61	17633	100.18	ppbv		98
4) Methyl Tert Butyl Ether	3.822	73	22367	97.51	ppbv	#	93
5) trans-1,2-Dichloroethene	3.885	61	16495	103.48	ppbv		98
6) 1,1-Dichloroethane	4.122	63	19149	101.51	ppbv		98
7) cis-1,2-Dichloroethene	4.459	61	15576	103.83	ppbv		98
8) Chloroform	4.553	83	21731	103.05	ppbv		96
9) 1,1,1-Trichloroethane	4.790	97	22046	100.11	ppbv		98
11) Benzene	5.006	78	30722	96.20	ppbv		99
12) Trichloroethene	5.340	130	16015	94.45	ppbv		99
14) Toluene	6.020	91	34734	89.07	ppbv		100
15) Tetrachloroethene	6.399	166	19581	93.59	ppbv		99
16) Ethyl Benzene	6.866	91	44770	96.58	ppbv		100
17) m,p-Xylene	6.911	91	33802	94.11	ppbv		95
18) o-Xylene	7.163	91	35625	99.10	ppbv		99

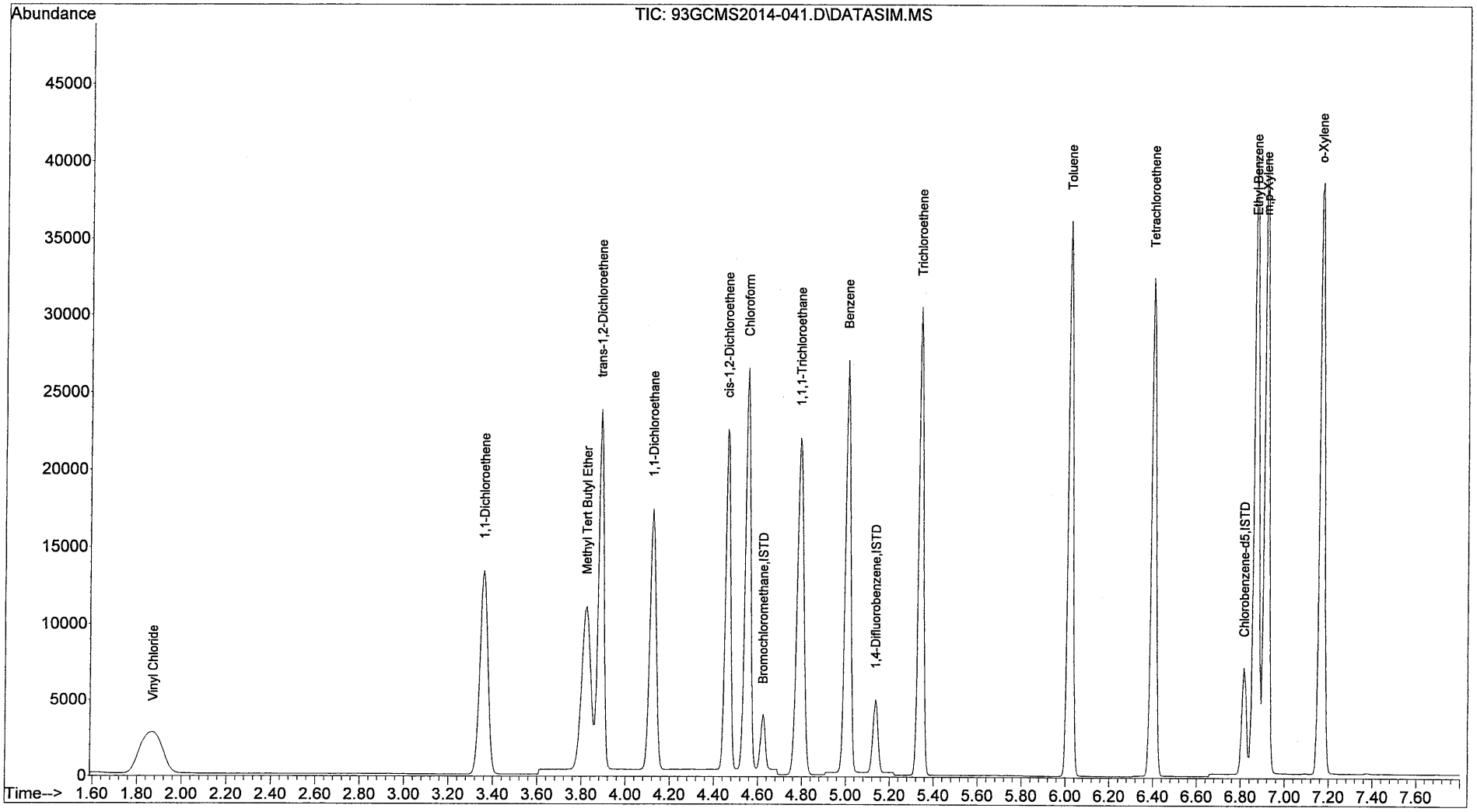
(#) = qualifier out of range (m) = manual integration (+) = signals summed

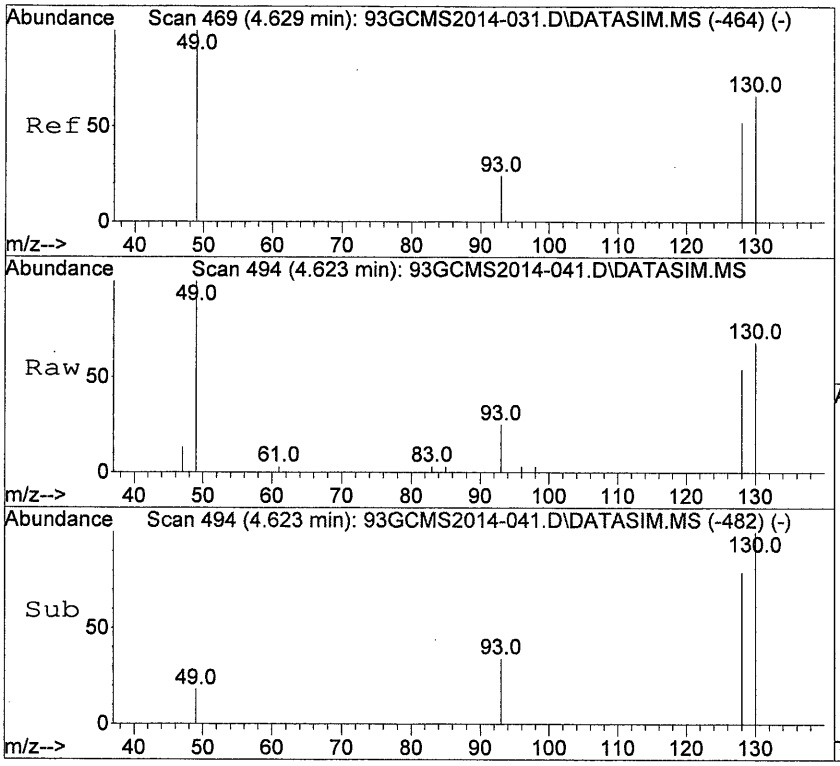
01/13/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-041.D
Acq On : 13 Jan 2014 9:16
Operator : SJT
Sample : STD20140113-6 \ 100 ppbv ICAL
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:23:32 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 08:57:44 2014
QLast Update : Mon Jan 13 09:23:02 2014
Response via : Initial Calibration

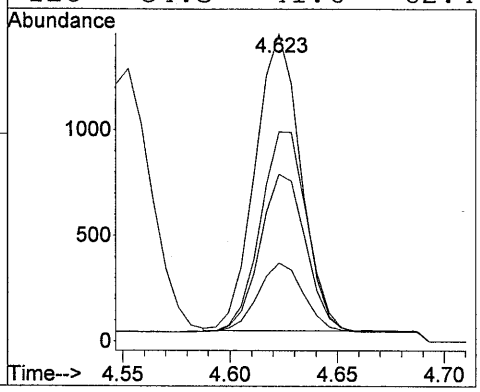


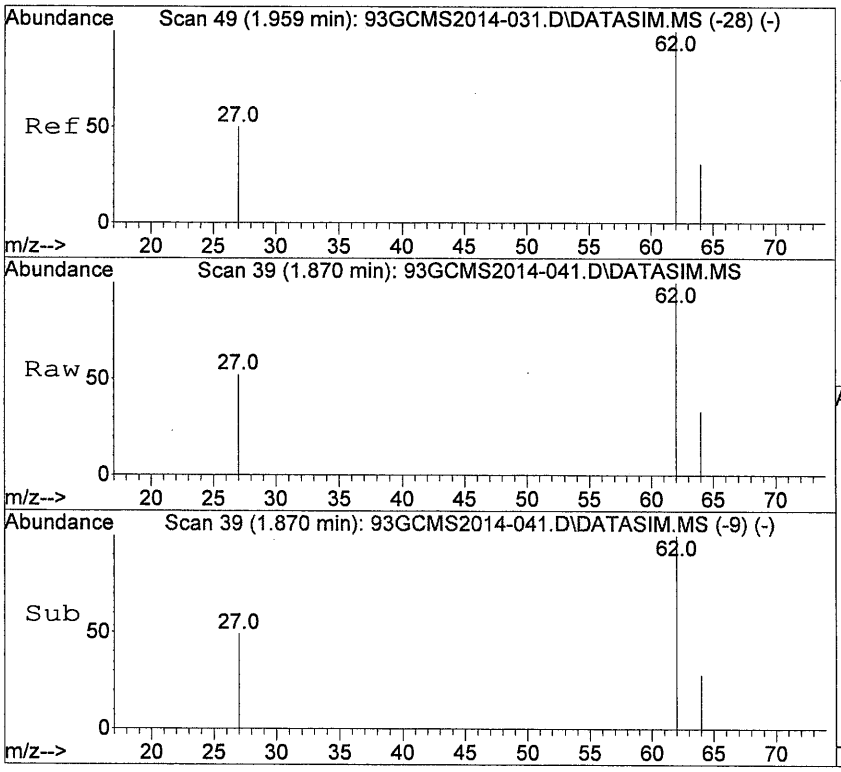


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. 0.001 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 49 Resp: 2065

Ion	Ratio	Lower	Upper
49	100		
130	67.9	51.6	77.4
93	25.4	19.6	29.4
128	54.3	41.6	62.4

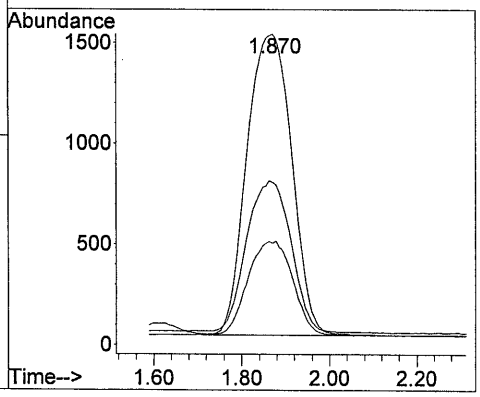


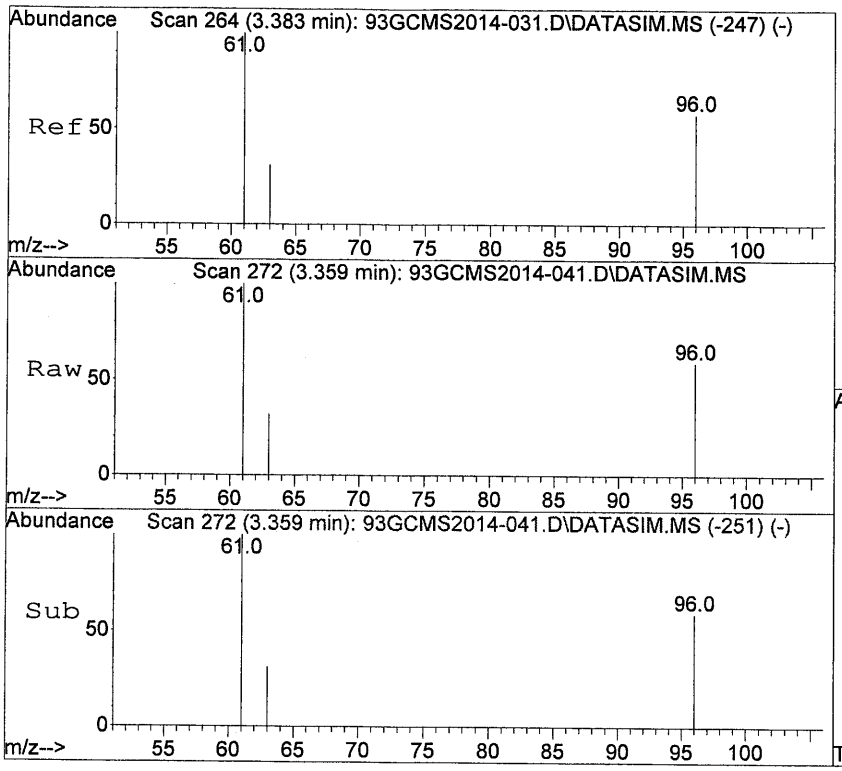


#2
Vinyl Chloride
Concen: 101.73 ppbv
RT: 1.870 min Scan# 39
Delta R.T. -0.030 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 62 Resp: 10563

Ion	Ratio	Lower	Upper
62	100		
64	31.1	24.9	37.3
27	49.9	37.8	56.6

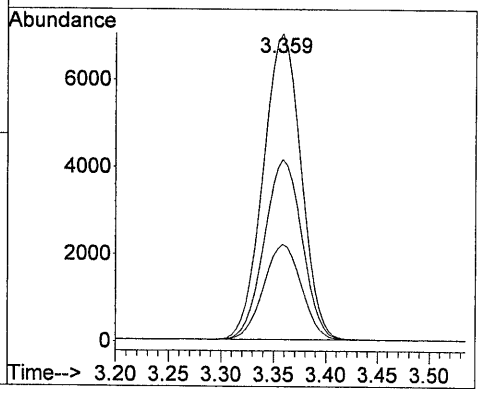


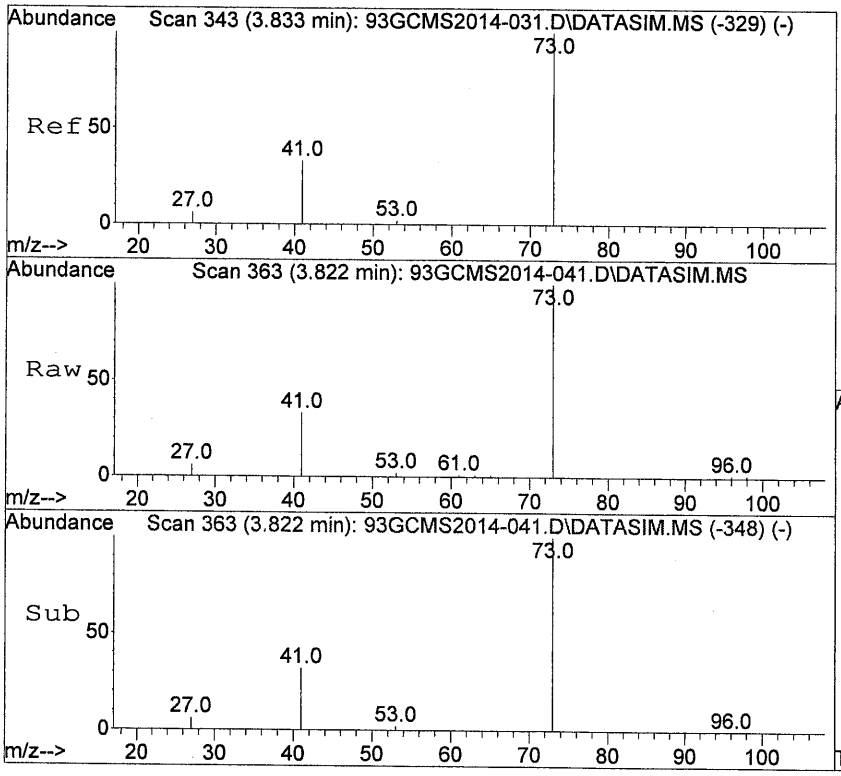


#3
1,1-Dichloroethene
Concen: 100.18 ppbv
RT: 3.359 min Scan# 272
Delta R.T. -0.008 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 61 Resp: 17633

Ion	Ratio	Lower	Upper
61	100		
96	58.9	48.6	72.8
63	31.2	25.0	37.6

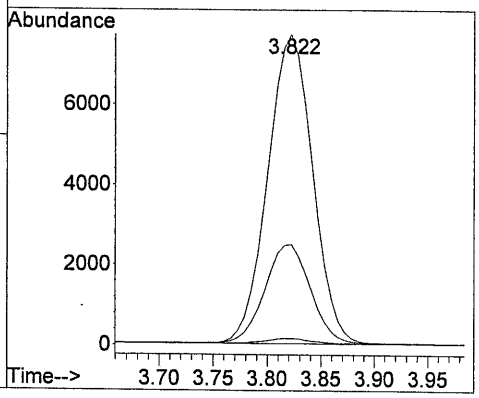


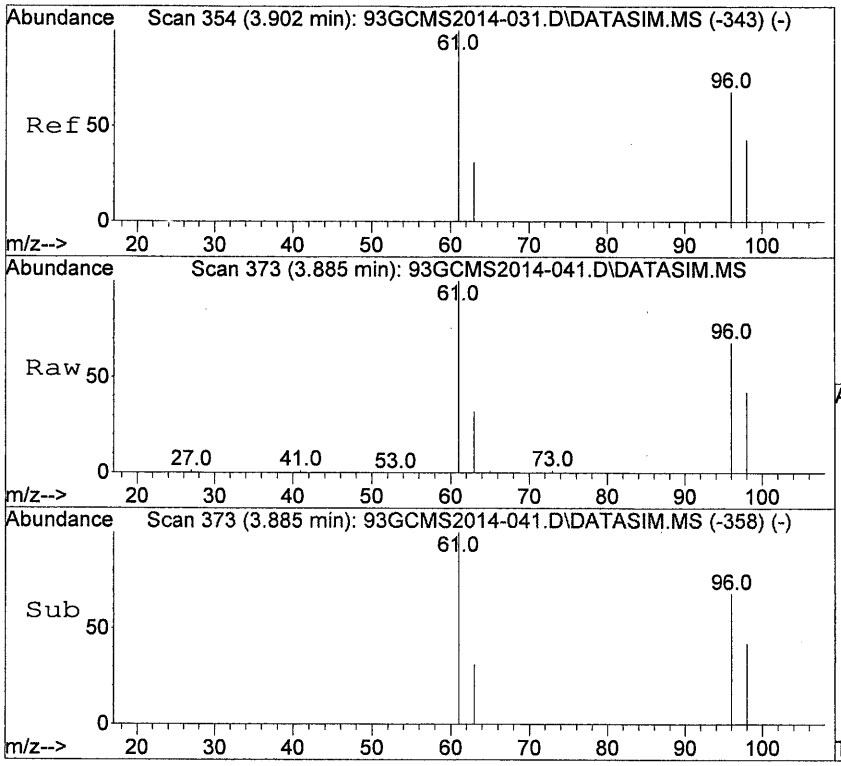


#4
Methyl Tert Butyl Ether
Concen: 97.51 ppbv
RT: 3.822 min Scan# 363
Delta R.T. -0.004 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 73 Resp: 22367

Ion	Ratio	Lower	Upper
73	100		
53	1.7	1.1	1.7#
41	32.4	23.0	34.4

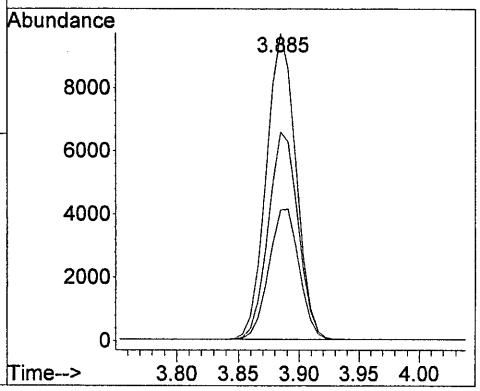


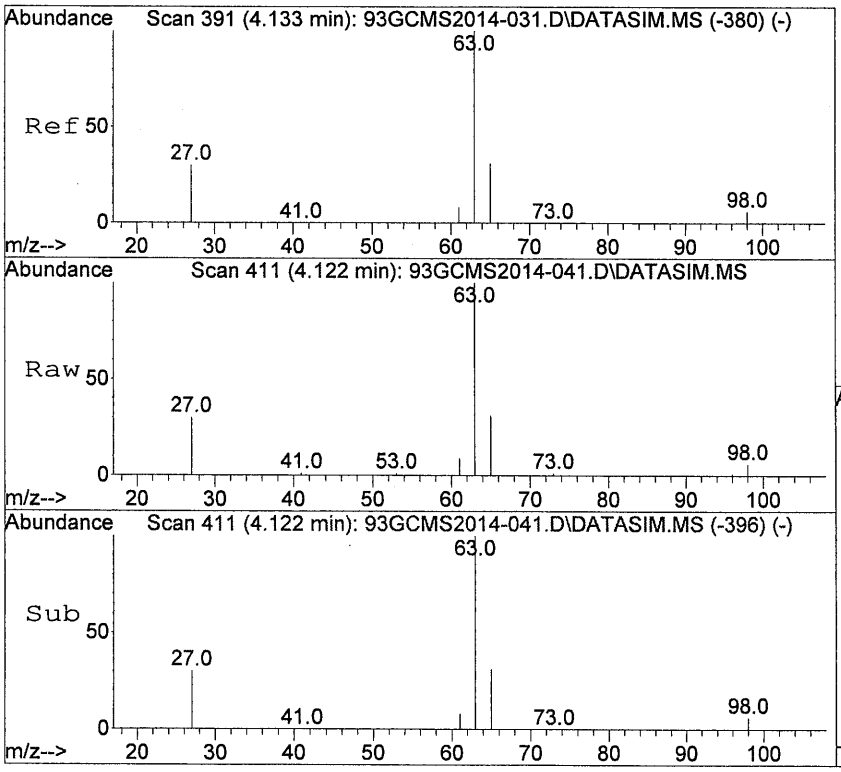


#5
trans-1,2-Dichloroethene
Concen: 103.48 ppbv
RT: 3.885 min Scan# 373
Delta R.T. -0.004 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 61 Resp: 16495

Ion	Ratio	Lower	Upper
61	100		
96	68.2	56.0	84.0
98	43.6	35.6	53.4

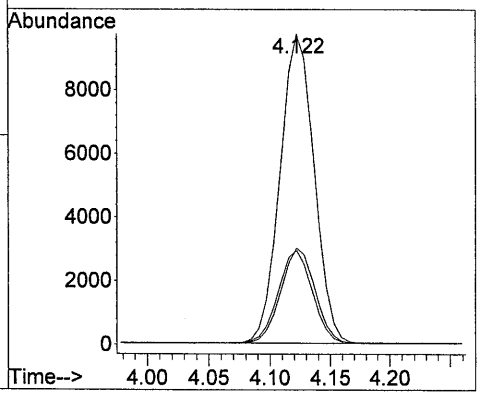


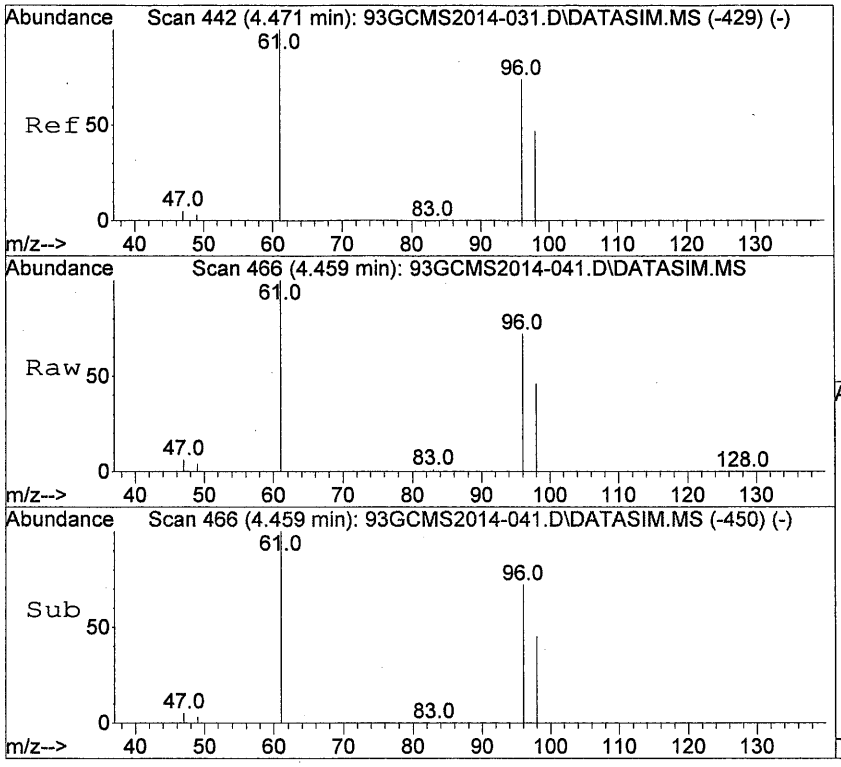


#6
1,1-Dichloroethane
Concen: 101.51 ppbv
RT: 4.122 min Scan# 411
Delta R.T. -0.004 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 63 Resp: 19149

Ion	Ratio	Lower	Upper
63	100		
65	30.7	24.7	37.1
27	29.8	22.6	34.0

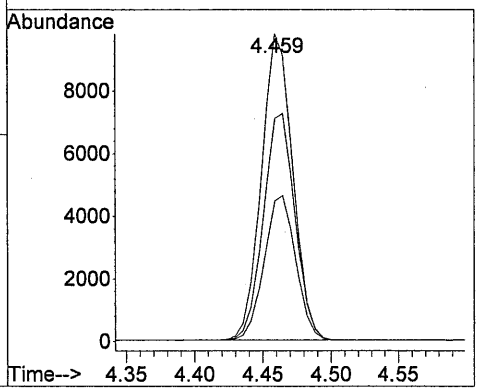


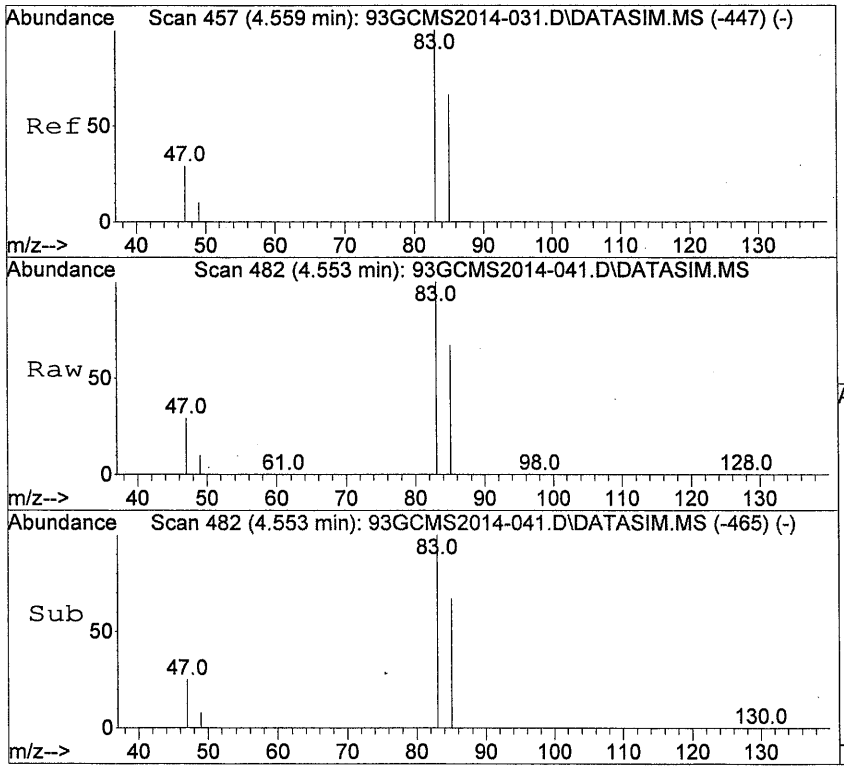


#7
cis-1,2-Dichloroethene
Concen: 103.83 ppbv
RT: 4.459 min Scan# 466
Delta R.T. -0.005 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 61 Resp: 15576

Ion	Ratio	Lower	Upper
61	100		
96	75.0	61.7	92.5
98	47.7	39.4	59.0

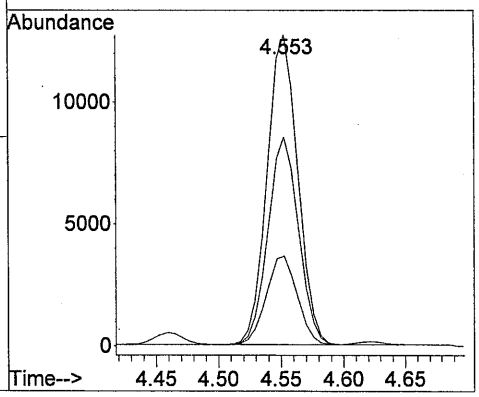


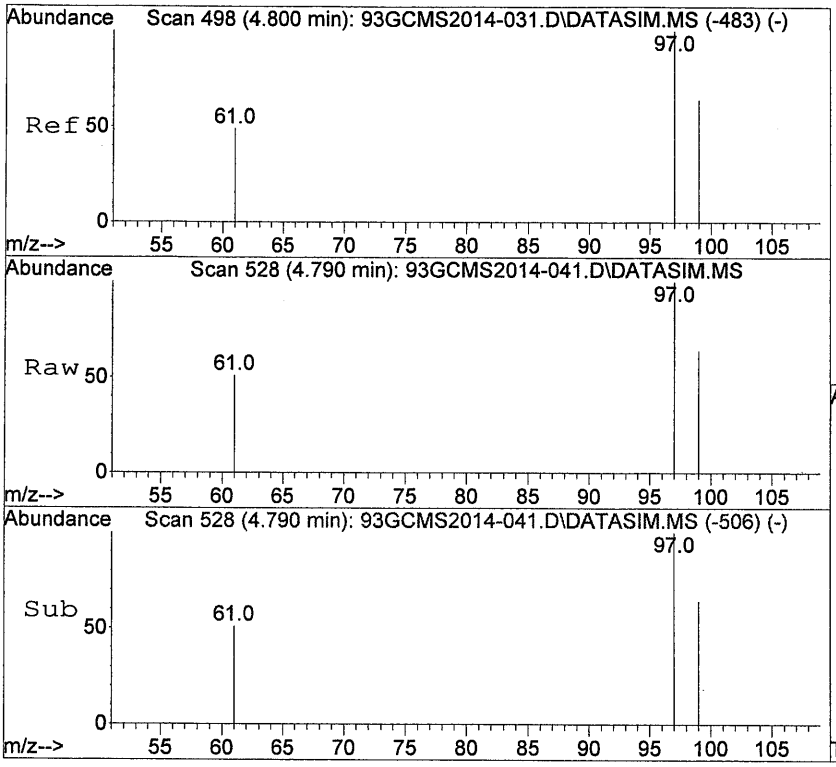


#8
Chloroform
Concen: 103.05 ppbv
RT: 4.553 min Scan# 482
Delta R.T. 0.001 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 83 Resp: 21731

Ion	Ratio	Lower	Upper
83	100		
85	66.7	52.0	78.0
47	29.0	20.0	30.0

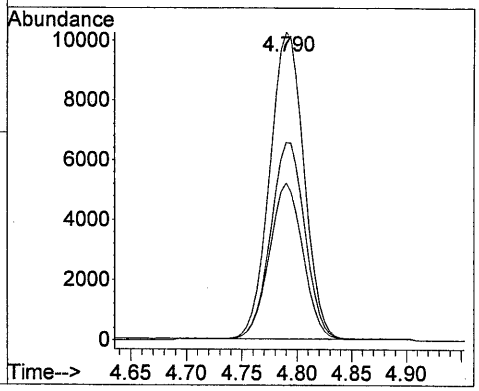


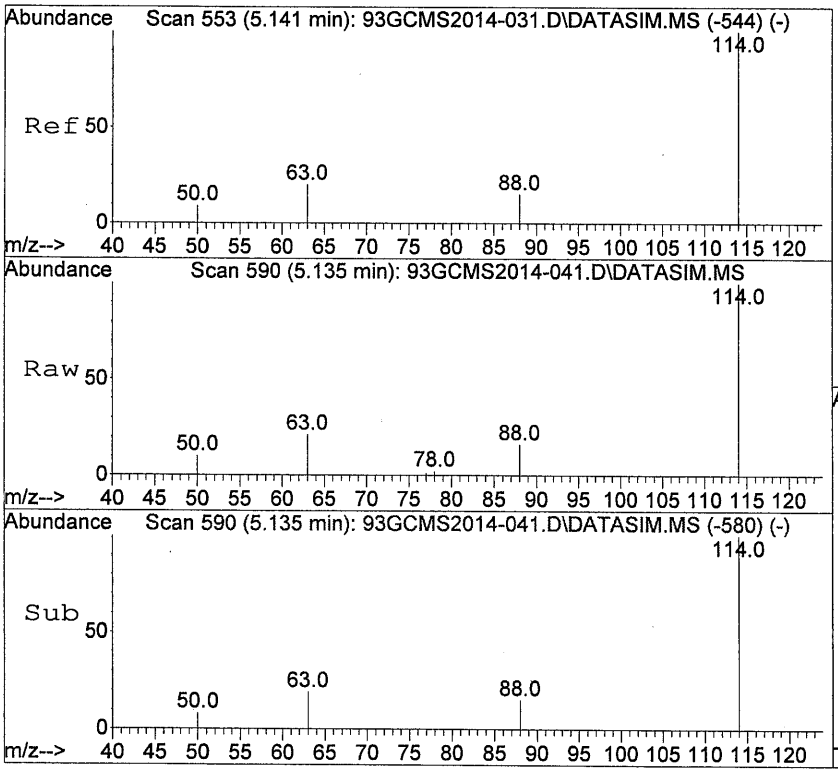


#9
1,1,1-Trichloroethane
Concen: 100.11 ppbv
RT: 4.790 min Scan# 528
Delta R.T. -0.003 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 97 Resp: 22046

Ion	Ratio	Lower	Upper
97	100		
99	64.0	51.4	77.0
61	49.8	37.4	56.0

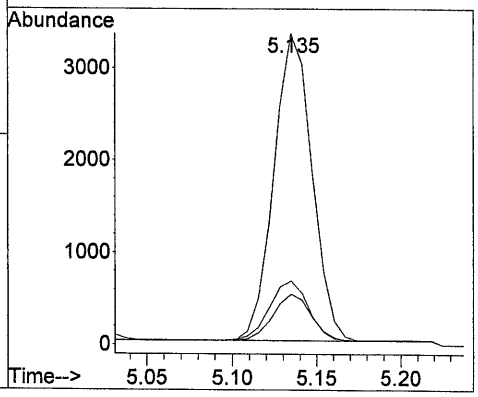


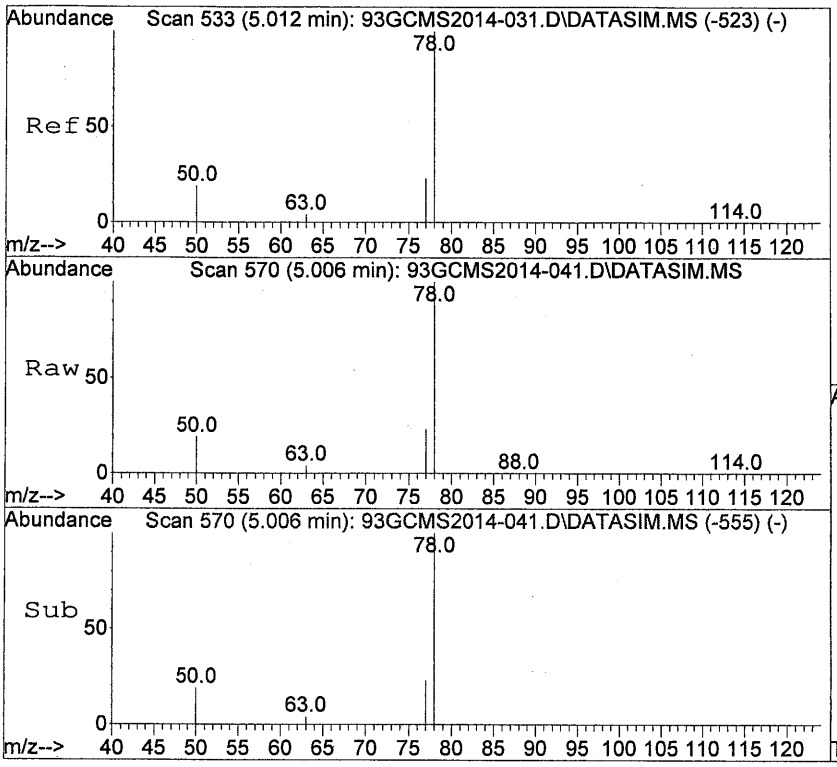


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.005 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion:114 Resp: 5251

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.0	12.0	18.0

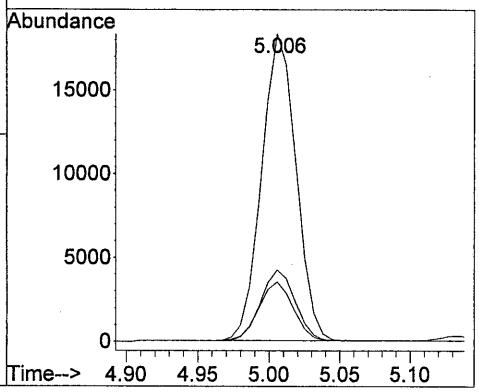


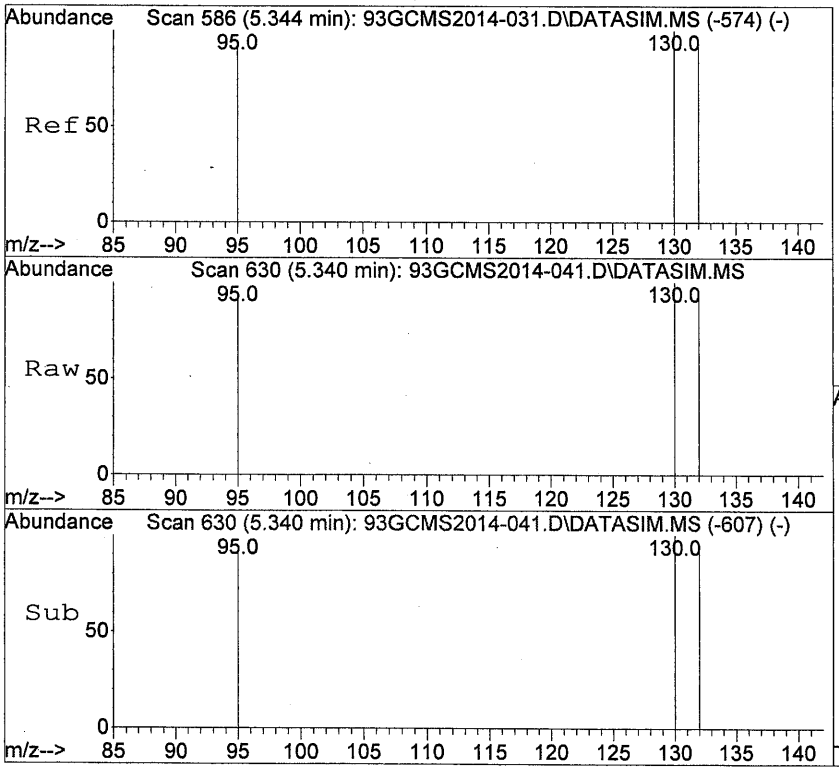


#11
Benzene
Concen: 96.20 ppbv
RT: 5.006 min Scan# 570
Delta R.T. -0.005 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 78 Resp: 30722

Ion	Ratio	Lower	Upper
78	100		
77	23.0	18.4	27.6
50	19.0	14.6	21.8

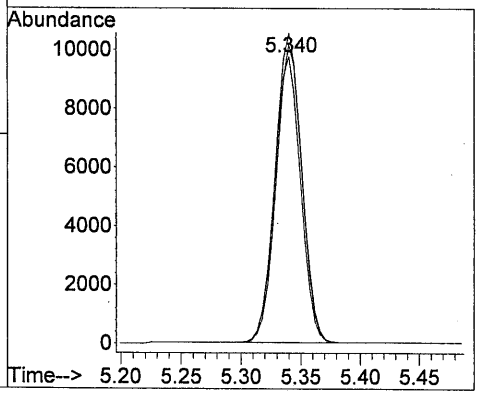


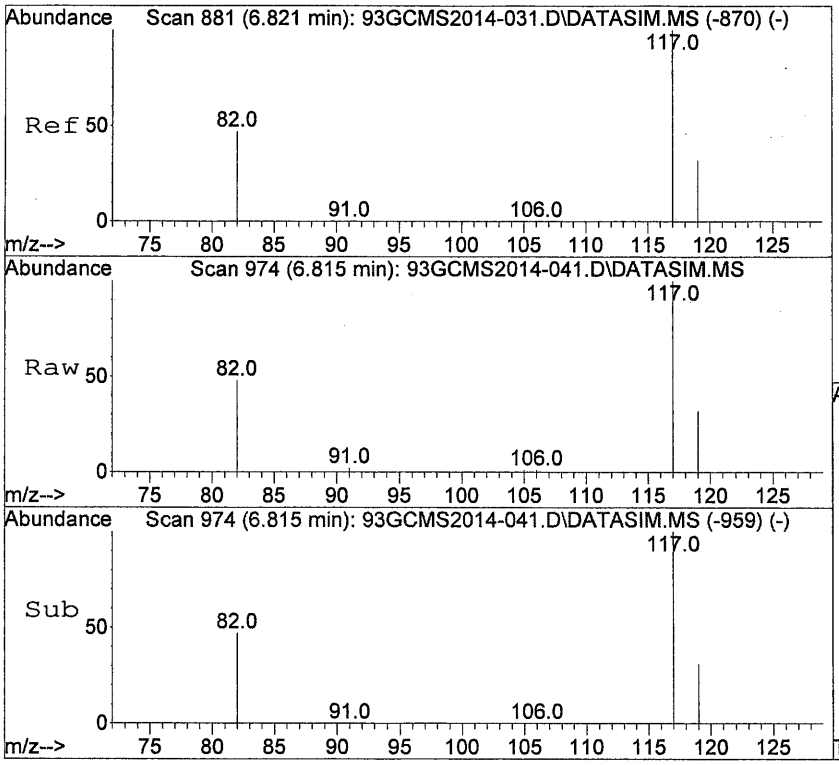


#12
Trichloroethene
Concen: 94.45 ppbv
RT: 5.340 min Scan# 630
Delta R.T. 0.000 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion:130 Resp: 16015

Ion	Ratio	Lower	Upper
130	100		
132	96.0	77.0	115.6
95	92.2	72.9	109.3

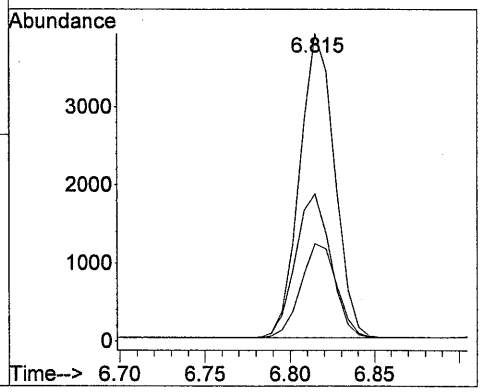


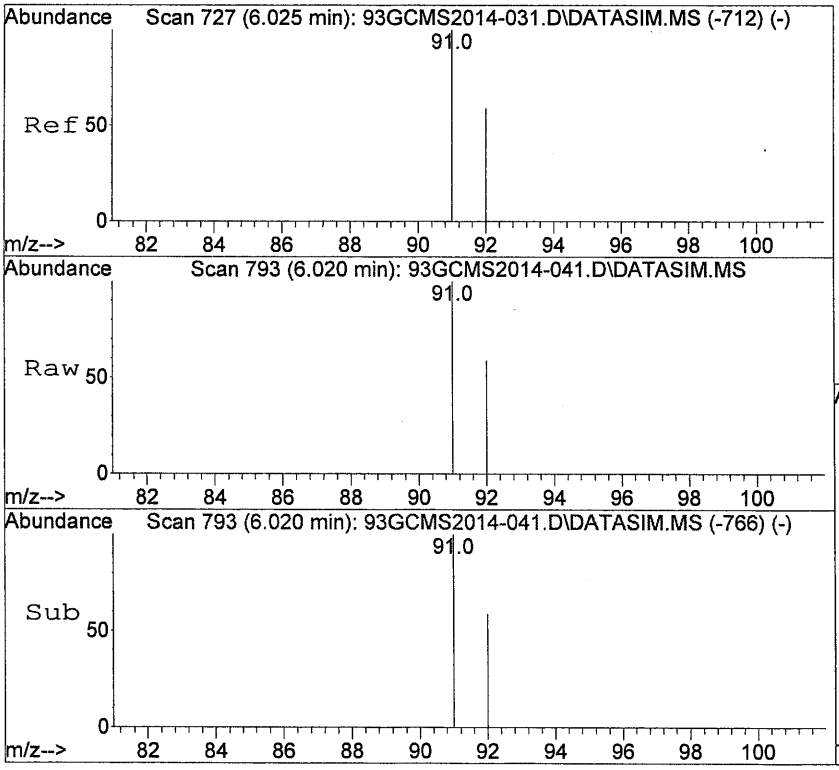


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion:117 Resp: 5547

Ion	Ratio	Lower	Upper
117	100		
82	47.7	37.8	56.6
119	32.1	25.6	38.4

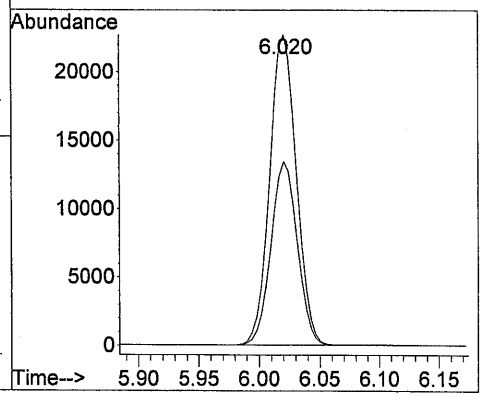


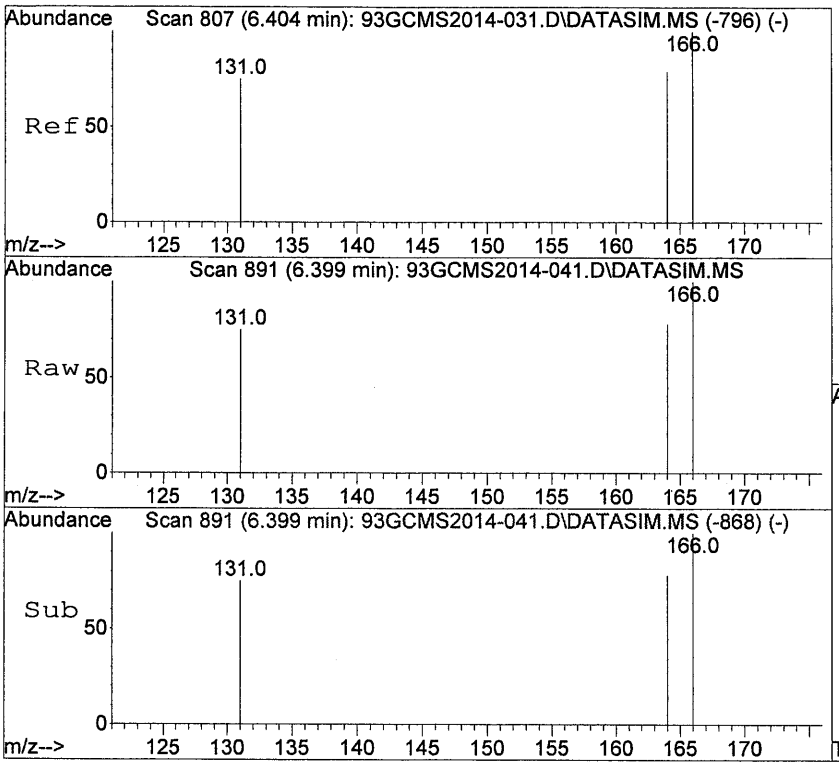


#14
Toluene
Concen: 89.07 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 91 Resp: 34734

Ion	Ratio	Lower	Upper
91	100		
92	58.7	47.2	70.8

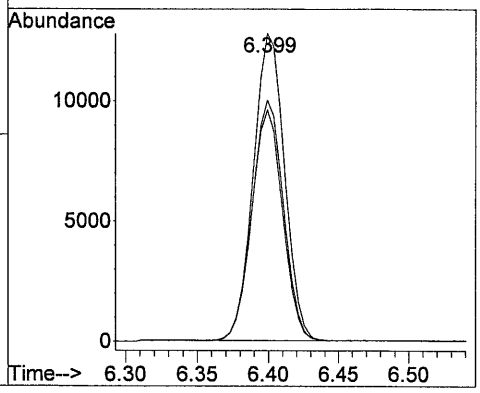


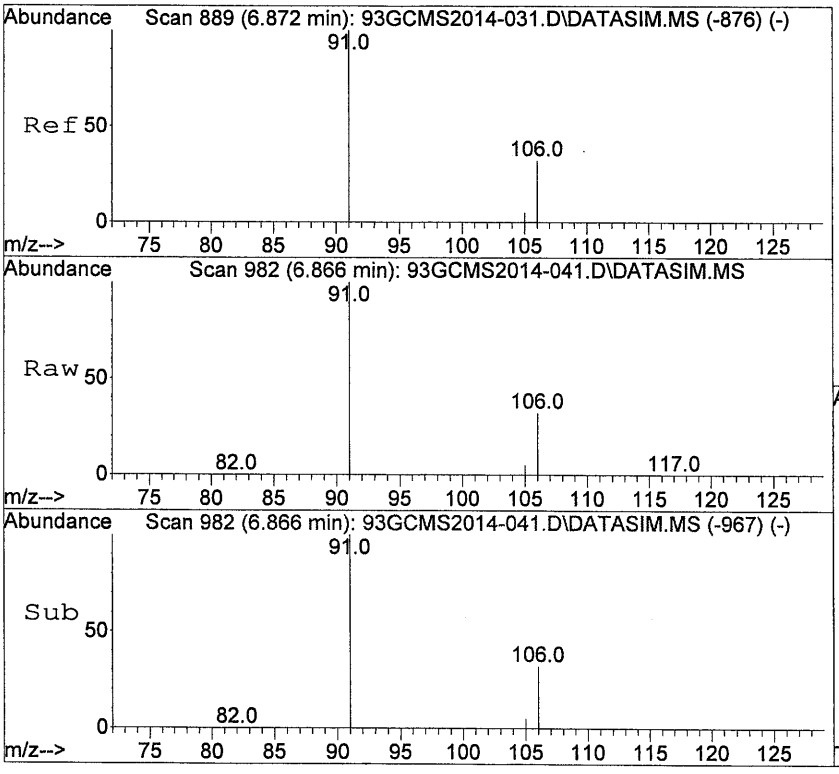


#15
Tetrachloroethene
Concen: 93.59 ppbv
RT: 6.399 min Scan# 891
Delta R.T. -0.001 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion:166 Resp: 19581

Ion	Ratio	Lower	Upper
166	100		
164	78.2	62.5	93.7
131	74.6	58.6	88.0

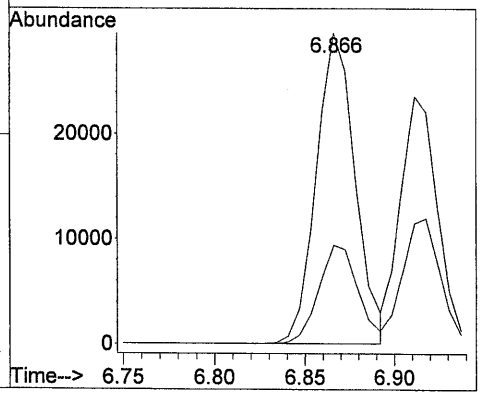


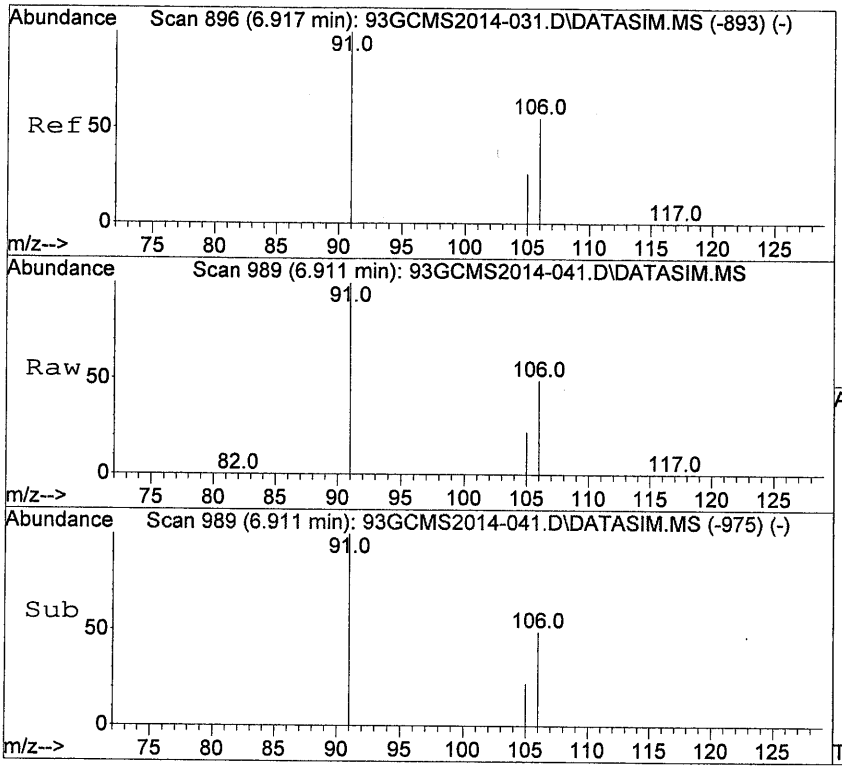


#16
Ethyl Benzene
Concen: 96.58 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 91 Resp: 44770

Ion	Ratio	Lower	Upper
91	100		
106	31.8	25.6	38.4

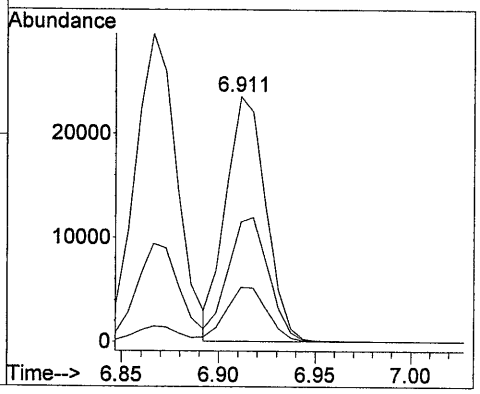


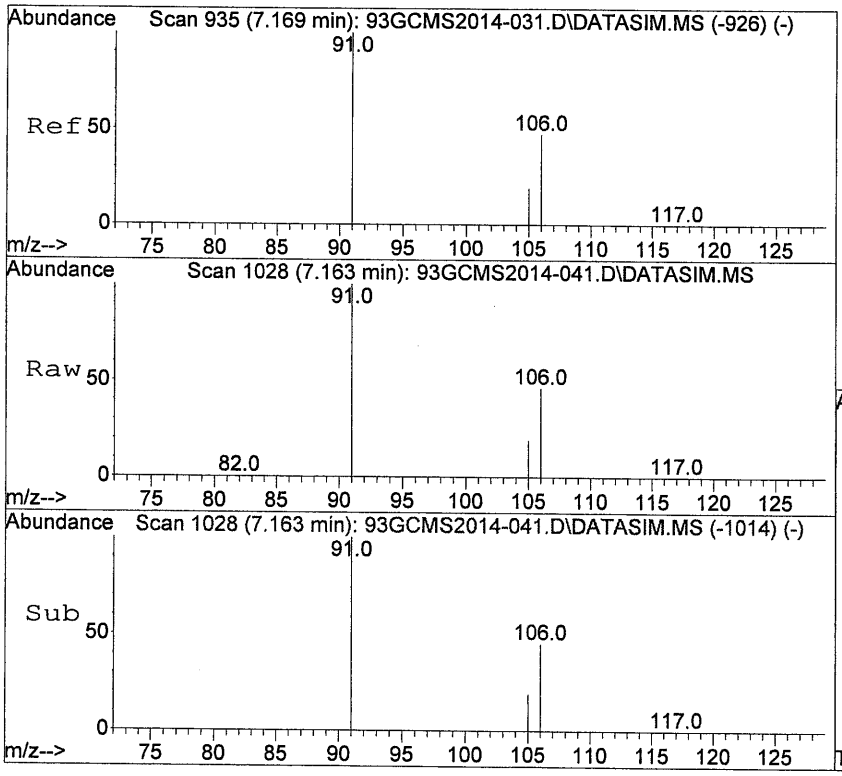


#17
m,p-Xylene
Concen: 94.11 ppbv
RT: 6.911 min Scan# 989
Delta R.T. -0.007 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 91 Resp: 33802

Ion	Ratio	Lower	Upper
91	100		
106	48.8	42.5	63.7
105	22.2	18.6	27.8

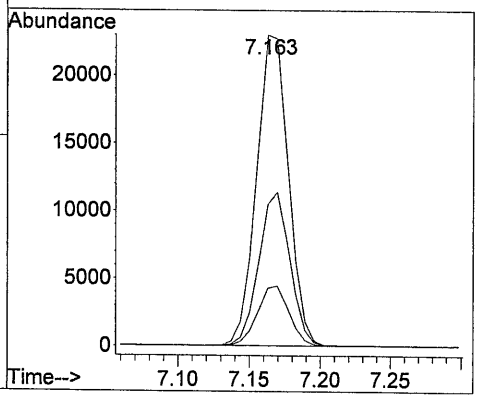




#18
o-Xylene
Concen: 99.10 ppbv
RT: 7.163 min Scan# 1028
Delta R.T. -0.007 min
Lab File: 93GCMS2014-041.D
Acq: 13 Jan 2014 9:16

Tgt Ion: 91 Resp: 35625

Ion	Ratio	Lower	Upper
91	100		
106	48.2	39.3	58.9
105	19.1	15.4	23.2



Data File:	93GCMS2014-042.d
Sample Number:	STD20140113-7
Sample Volume (mL)	5
Date Prepared:	13-Jan-2014
Date Analyzed:	13-Jan-2014

Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations STD20140113-7 500ppbv ICV STD (ppbv)	STD20140113-7 500ppbv ICV STD Results (ppbv)	Percent Difference (% D)
Vinyl Chloride	19.9	497.50	519.23	-4.37
1,1-Dichloroethene	20.7	517.50	531.00	-2.61
Methyl Tert Butyl Ether	19.5	487.50	514.20	-5.48
trans-1,2-Dichloroethene	20.8	520.00	535.26	-2.93
1,1-Dichloroethane	20.3	507.50	527.92	-4.02
cis-1,2-Dichloroethene	20.9	522.50	537.97	-2.96
Chloroform	20.6	515.00	528.13	-2.55
1,1,1-Trichloroethane	19.7	492.50	519.05	-5.39
Benzene	20.5	512.50	498.72	2.69
Trichloroethene	19.9	497.50	489.53	1.60
Toluene	20.2	505.00	485.35	3.89
Tetrachloroethene	20.0	500.00	497.58	0.48
Ethyl Benzene	20.0	500.00	527.39	-5.48
m&p-Xylene	20.2	505.00	515.99	-2.18
o-Xylene	20.2	505.00	534.06	-5.75

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-042.D
Acq On : 13 Jan 2014 9:28
Operator : SJT
Sample : STD20140113-7 \ 500 ppbv ICV
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:35:07 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
QLast Update : Mon Jan 13 09:24:10 2014
Response via : Initial Calibration

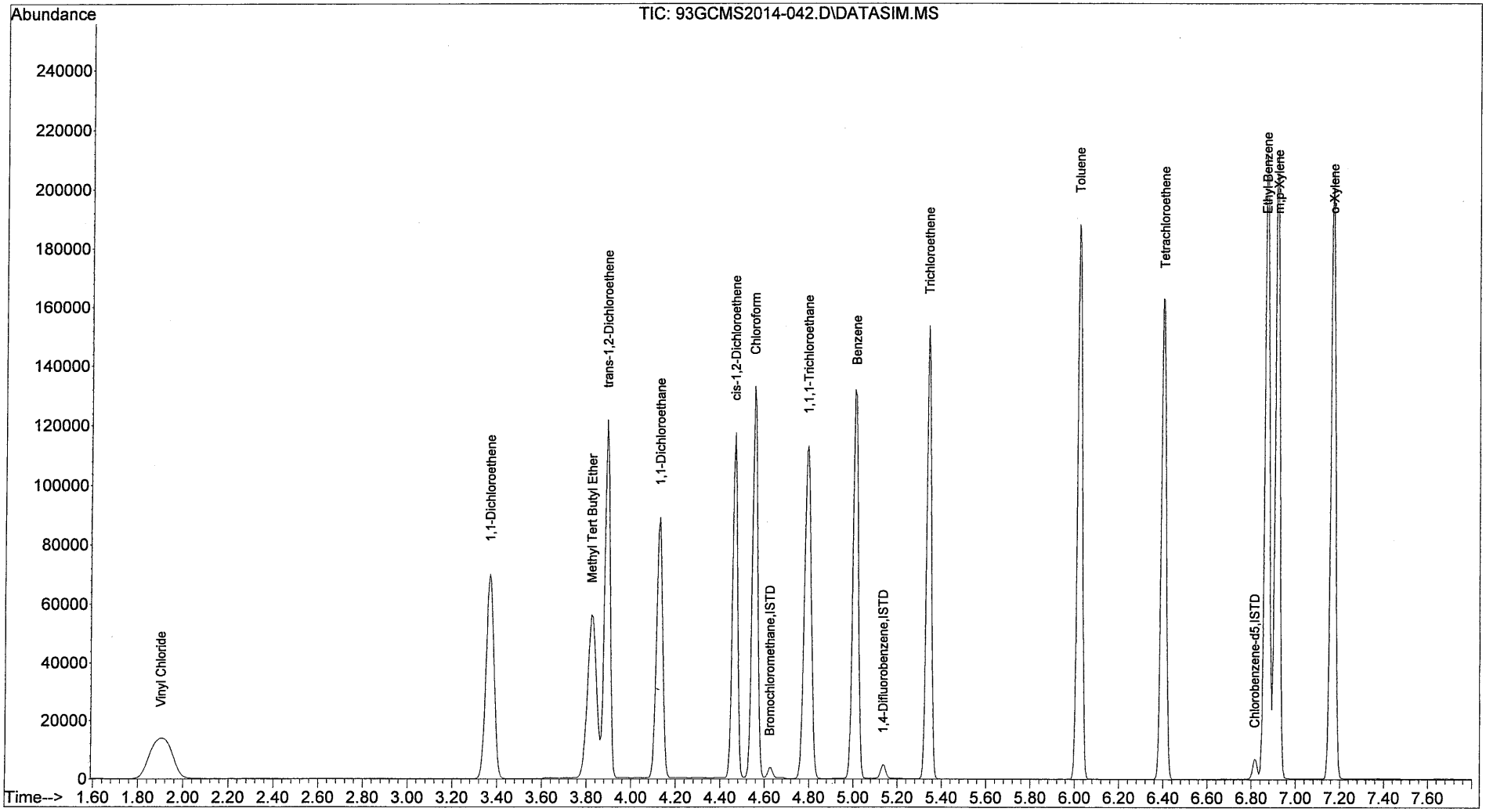
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	2046	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	5208	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	5409	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.900	62	53352	519.23	ppbv	97
3) 1,1-Dichloroethene	3.368	61	92327	531.00	ppbv	98
4) Methyl Tert Butyl Ether	3.822	73	116283	514.20	ppbv	94
5) trans-1,2-Dichloroethene	3.891	61	84332	535.26	ppbv	98
6) 1,1-Dichloroethane	4.128	63	98511	527.92	ppbv	98
7) cis-1,2-Dichloroethene	4.465	61	79813	537.97	ppbv	97
8) Chloroform	4.553	83	110359	528.13	ppbv	96
9) 1,1,1-Trichloroethane	4.795	97	113272	519.05	ppbv	98
11) Benzene	5.012	78	155876	498.72	ppbv	99
12) Trichloroethene	5.340	130	81496	489.53	ppbv	99
14) Toluene	6.020	91	180393	485.35	ppbv	100
15) Tetrachloroethene	6.403	166	100268	497.58	ppbv	99
16) Ethyl Benzene	6.866	91	235741	527.39	ppbv	98
17) m,p-Xylene	6.917	91	177861	515.99	ppbv	99
18) o-Xylene	7.169	91	185886	534.06	ppbv	99

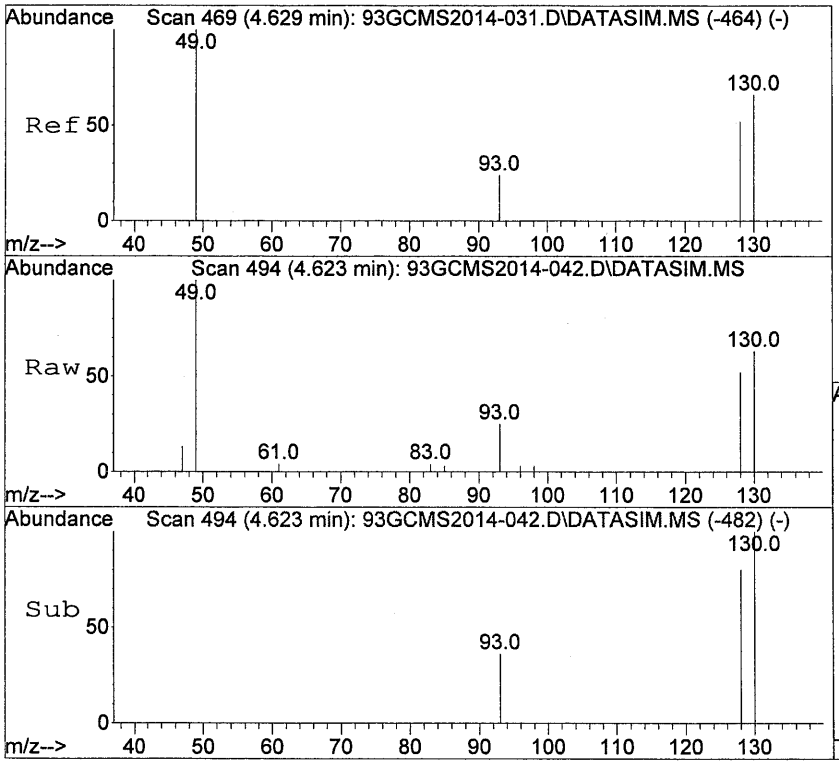
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01/13/14

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-042.D
Acq On : 13 Jan 2014 9:28
Operator : SJT
Sample : STD20140113-7 \ 500 ppbv ICV
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:35:07 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
QLast Update : Mon Jan 13 09:24:10 2014
Response via : Initial Calibration

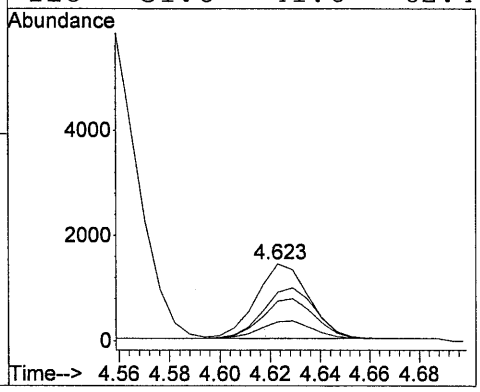


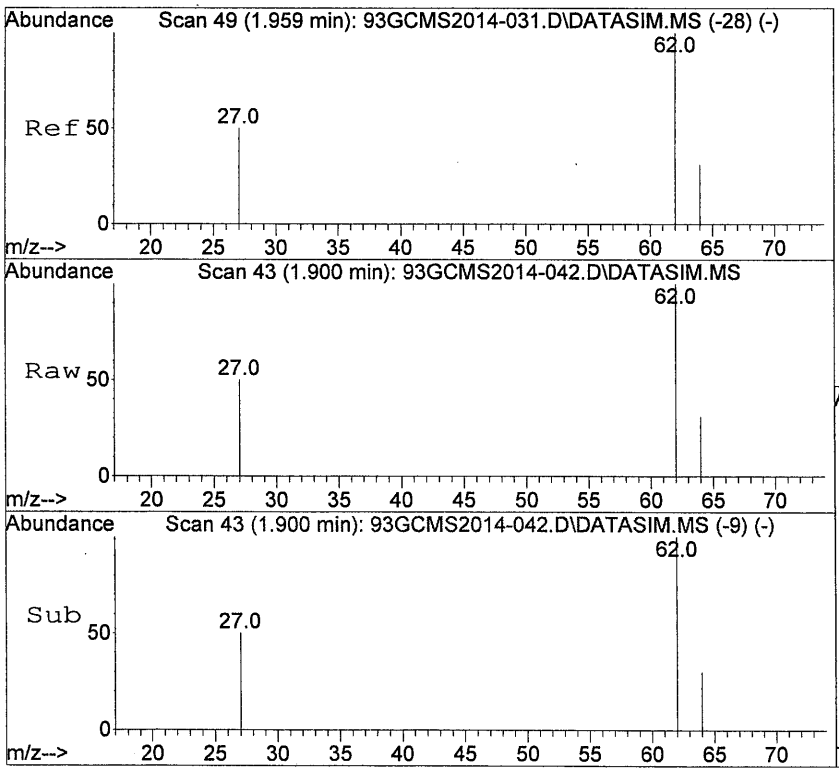


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. 0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 49 Resp: 2046

Ion	Ratio	Lower	Upper
49	100		
130	63.3	51.6	77.4
93	24.9	19.6	29.4
128	51.6	41.6	62.4

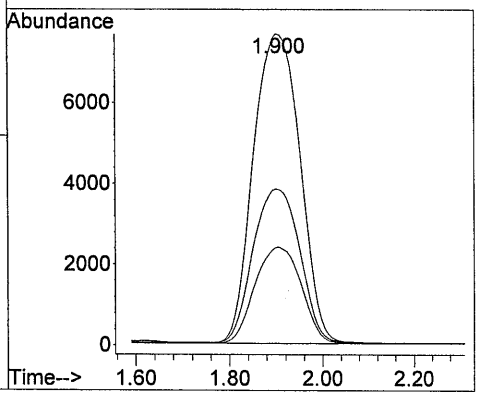


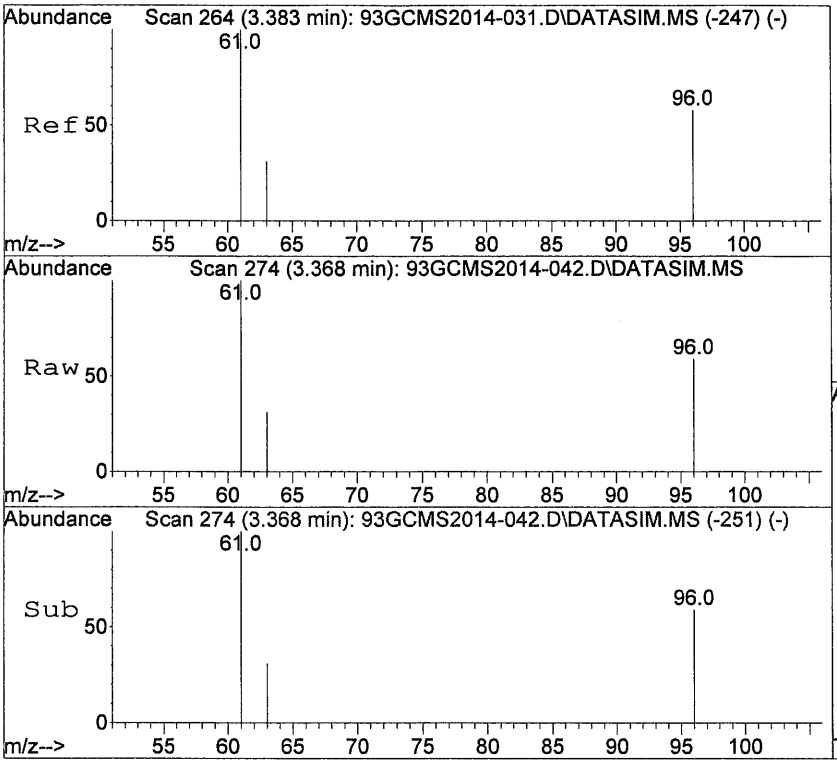


#2
Vinyl Chloride
Concen: 519.23 ppbv
RT: 1.900 min Scan# 43
Delta R.T. 0.000 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 62 Resp: 53352

Ion	Ratio	Lower	Upper
62	100		
64	30.8	24.9	37.3
27	49.8	37.8	56.6

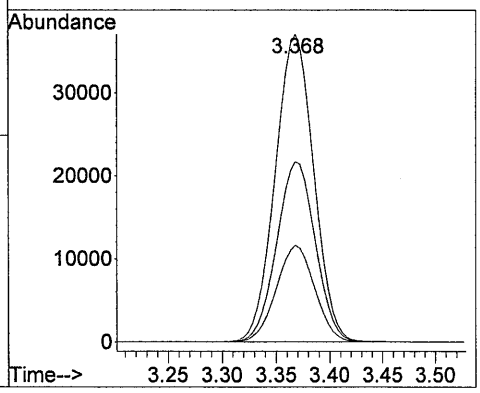


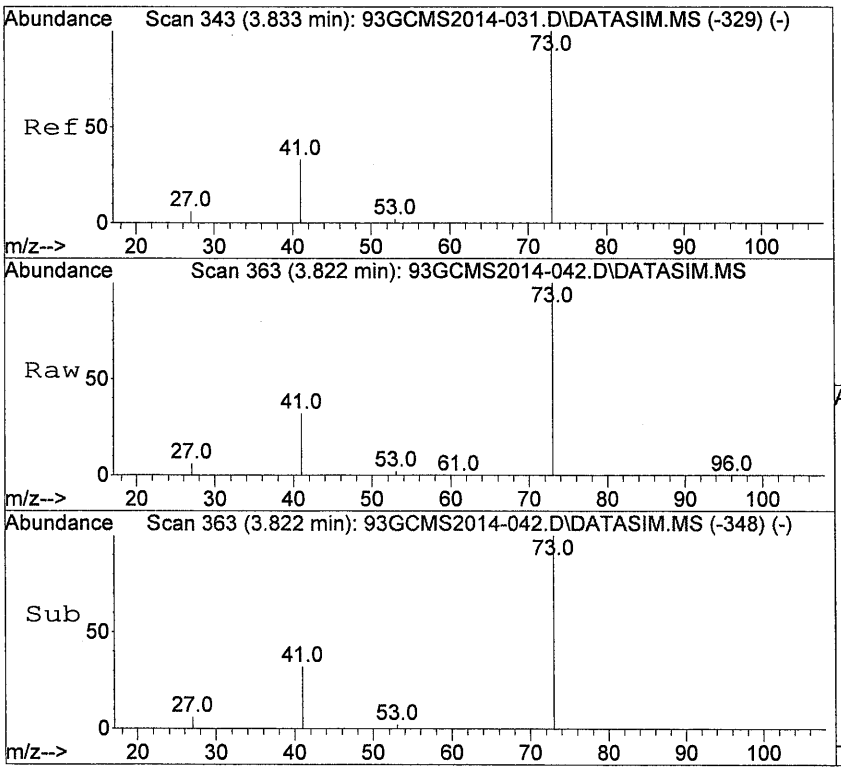


#3
1,1-Dichloroethene
Concen: 531.00 ppbv
RT: 3.368 min Scan# 274
Delta R.T. 0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 61 Resp: 92327

Ion	Ratio	Lower	Upper
61	100		
96	58.8	48.6	72.8
63	31.3	25.0	37.6

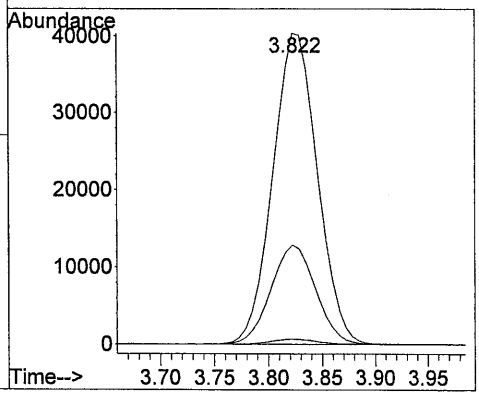


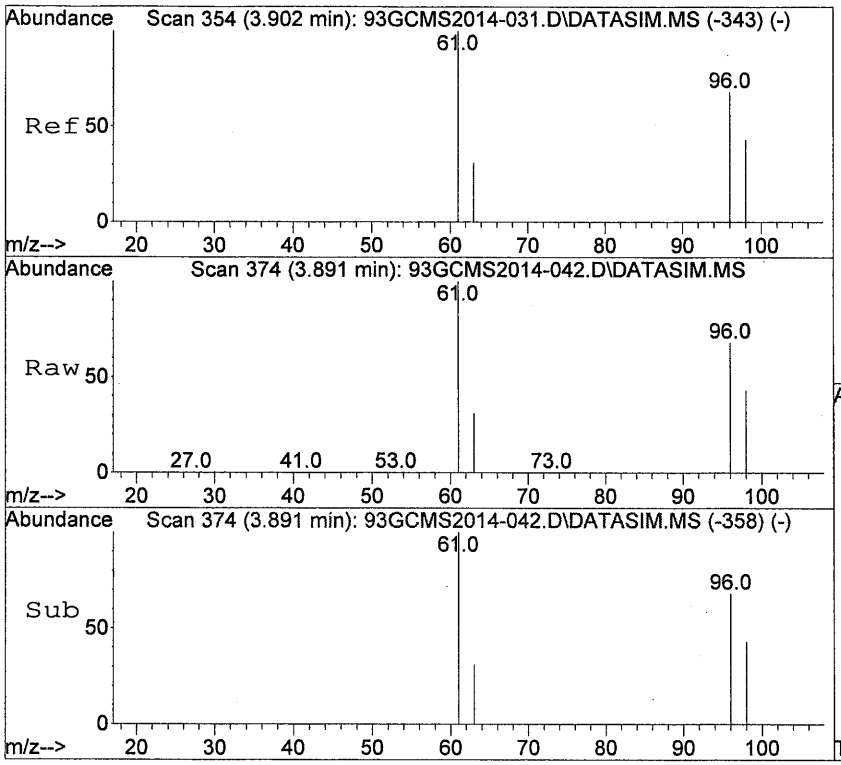


#4
Methyl Tert Butyl Ether
Concen: 514.20 ppbv
RT: 3.822 min Scan# 363
Delta R.T. -0.004 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 73 Resp: 116283

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	31.8	23.0	34.4

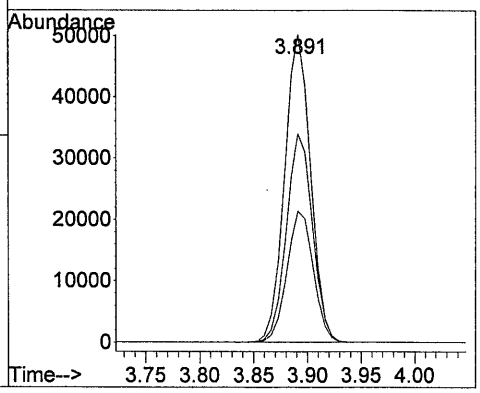


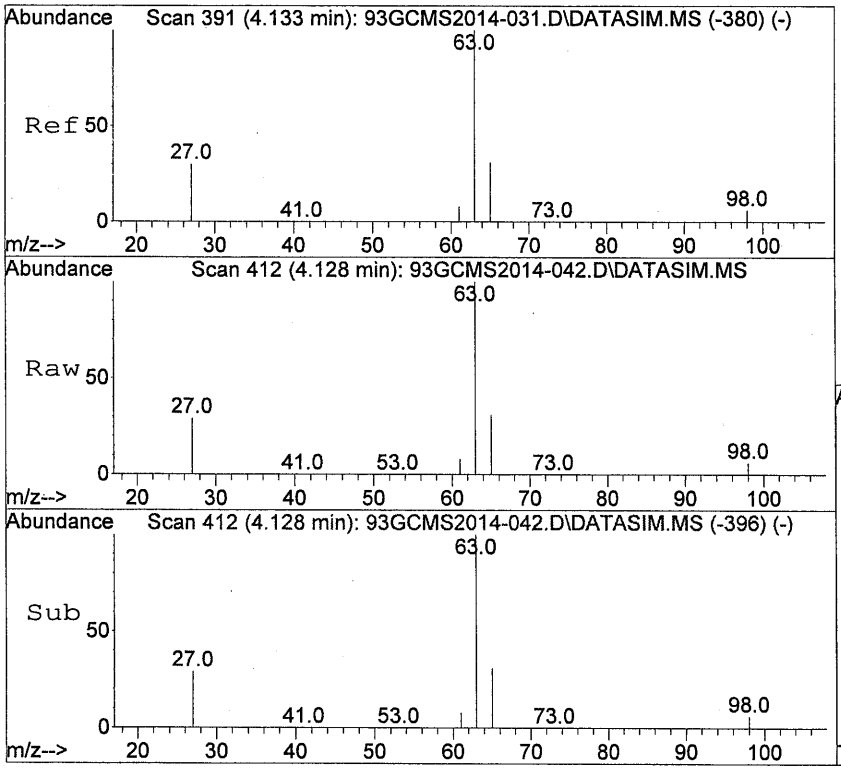


#5
trans-1,2-Dichloroethene
Concen: 535.26 ppbv
RT: 3.891 min Scan# 374
Delta R.T. 0.002 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 61 Resp: 84332

Ion	Ratio	Lower	Upper
61	100		
96	68.1	56.0	84.0
98	43.3	35.6	53.4

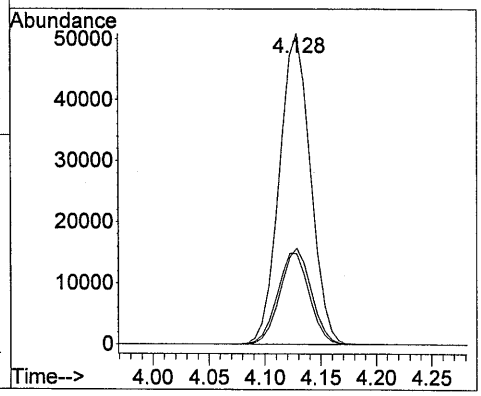


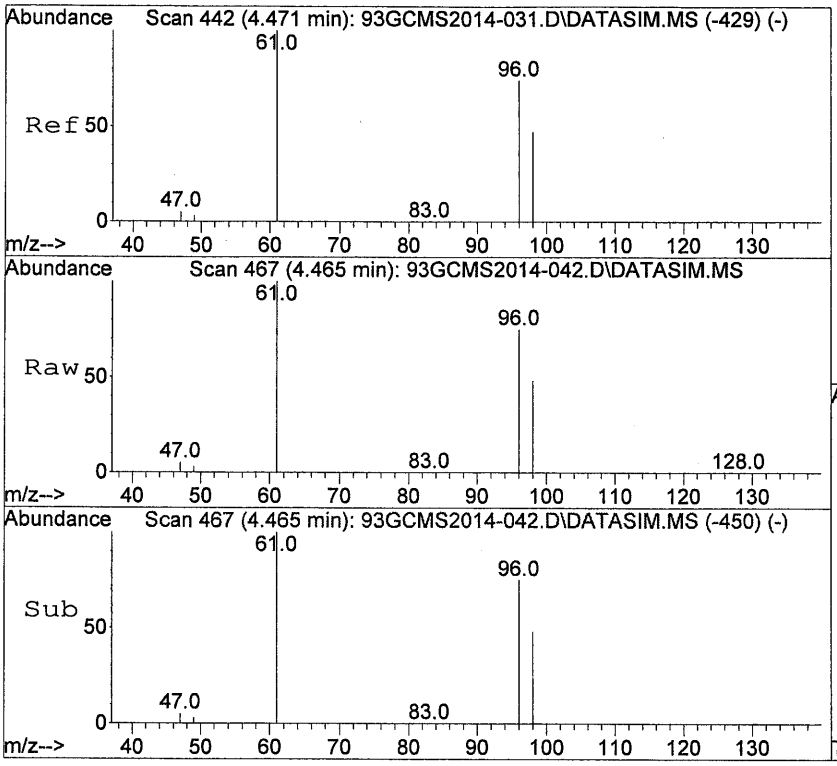


#6
1,1-Dichloroethane
Concen: 527.92 ppbv
RT: 4.128 min Scan# 412
Delta R.T. 0.002 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 63 Resp: 98511

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	30.0	22.6	34.0

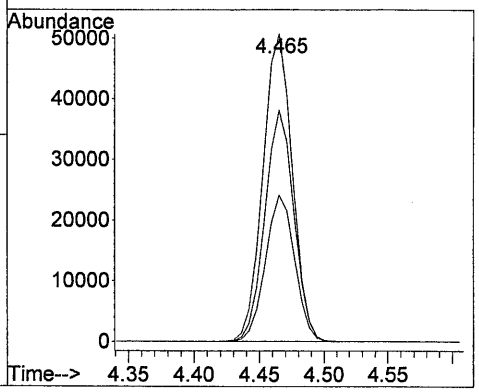


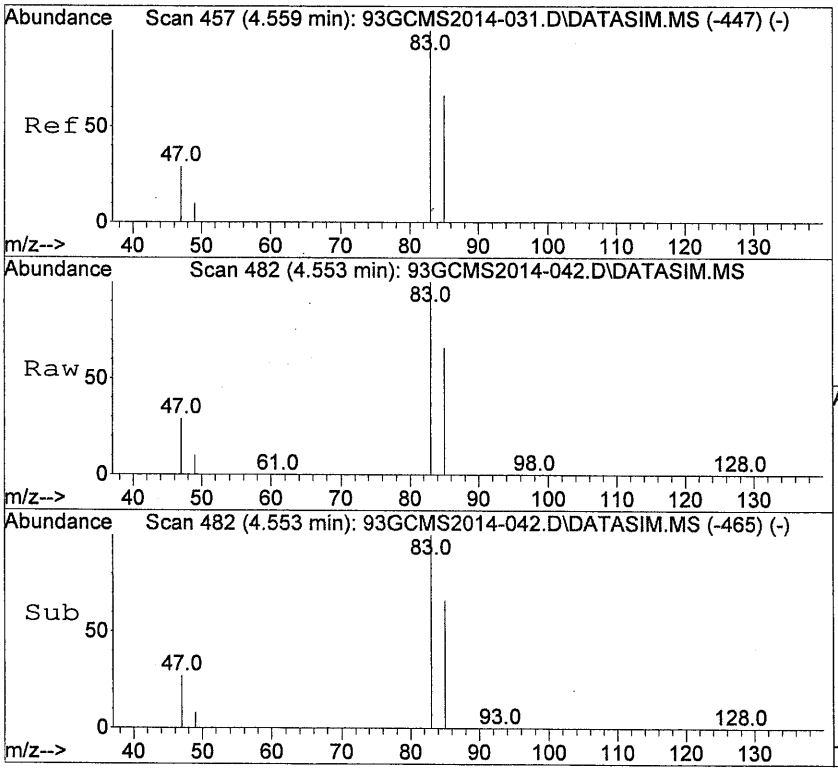


#7
cis-1,2-Dichloroethene
Concen: 537.97 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 61 Resp: 79813

Ion	Ratio	Lower	Upper
61	100		
96	74.4	61.7	92.5
98	47.5	39.4	59.0

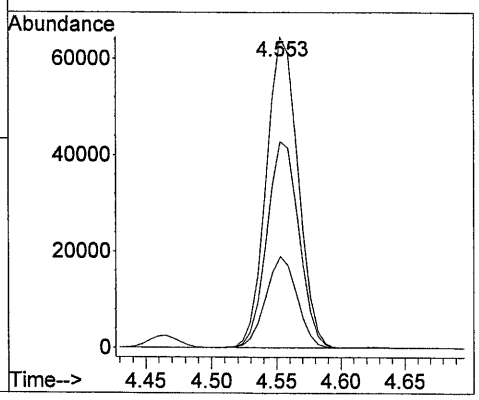


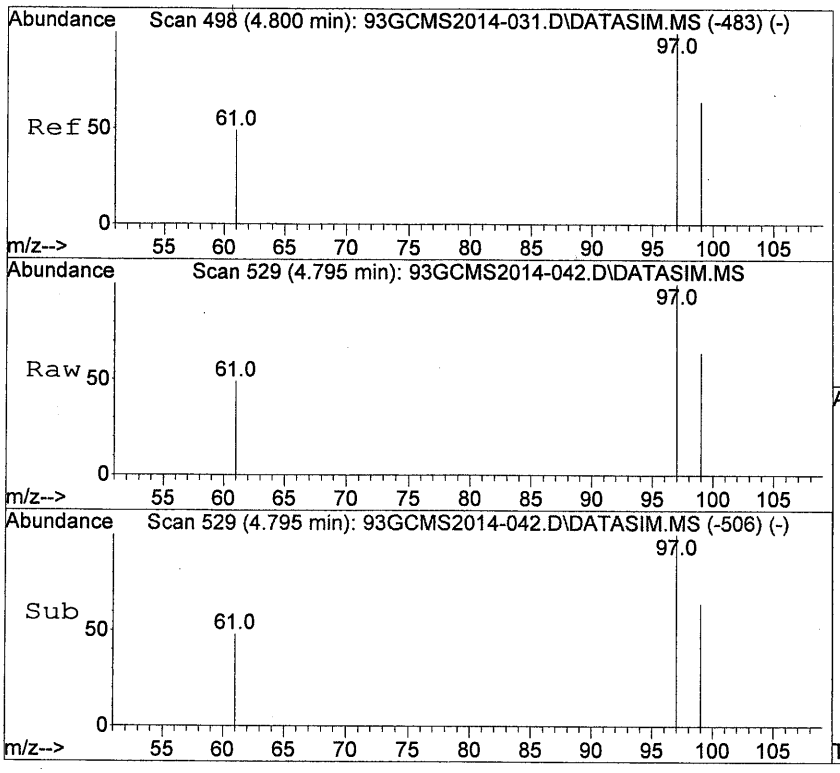


#8
Chloroform
Concen: 528.13 ppbv
RT: 4.553 min Scan# 482
Delta R.T. 0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 83 Resp: 110359

Ion	Ratio	Lower	Upper
83	100		
85	67.0	52.0	78.0
47	28.9	20.0	30.0

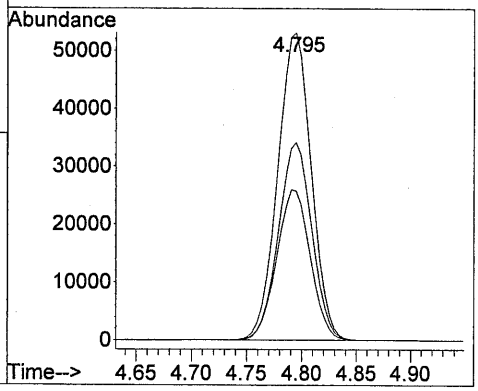


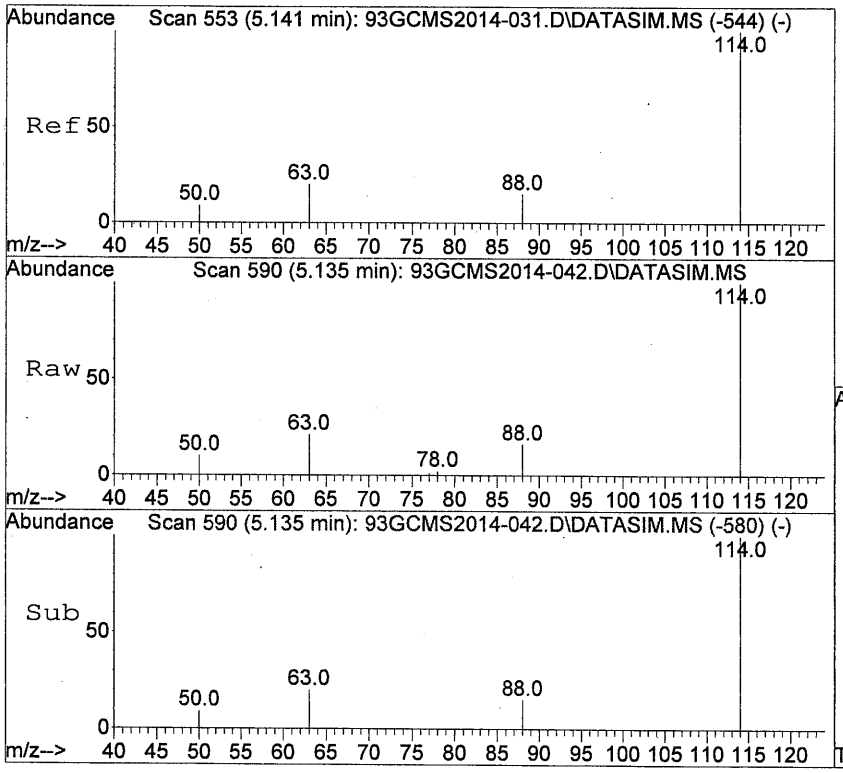


#9
1,1,1-Trichloroethane
Concen: 519.05 ppbv
RT: 4.795 min Scan# 529
Delta R.T. 0.002 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 97 Resp: 113272

Ion	Ratio	Lower	Upper
97	100		
99	64.0	51.4	77.0
61	49.1	37.4	56.0

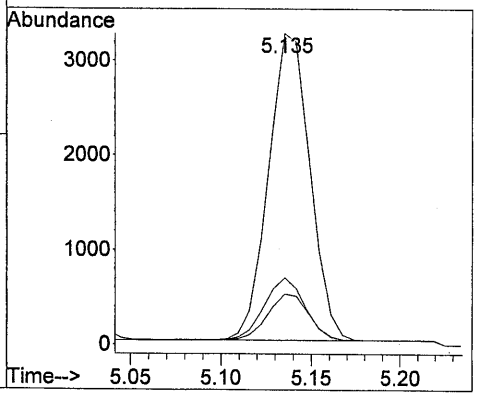


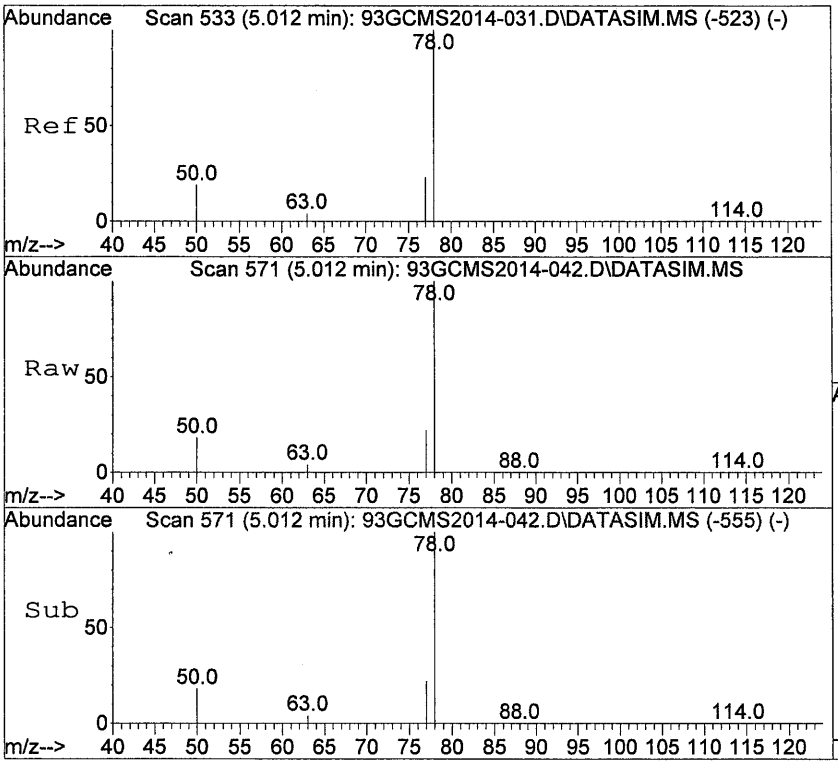


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.004 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion:114 Resp: 5208

Ion	Ratio	Lower	Upper
114	100		
63	19.7	15.1	22.7
88	15.1	12.0	18.0

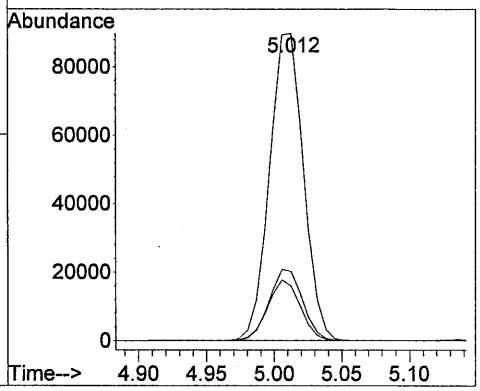


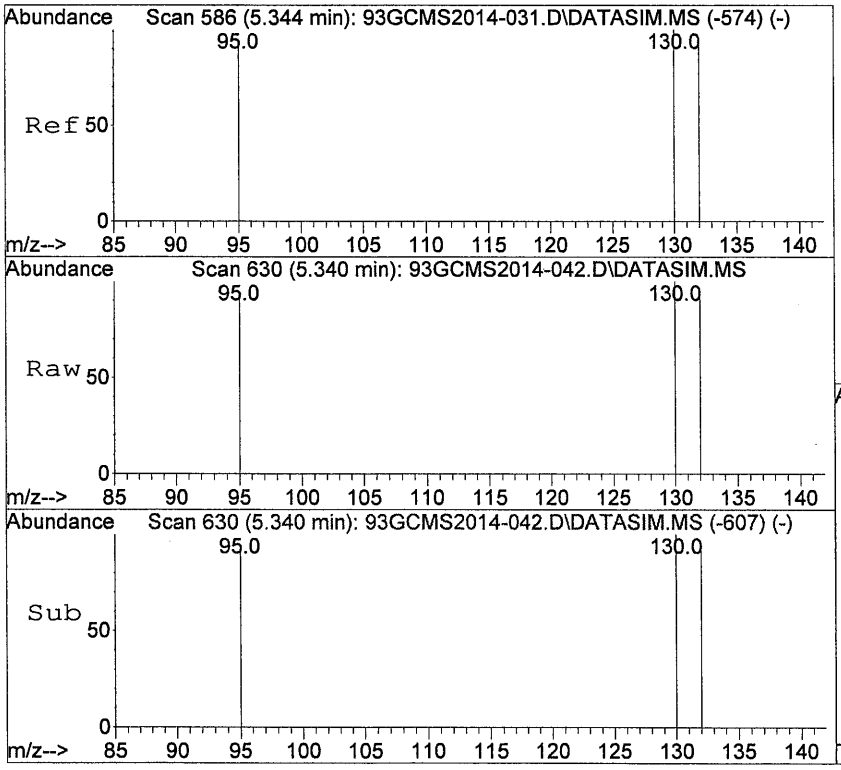


#11
Benzene
Concen: 498.72 ppbv
RT: 5.012 min Scan# 571
Delta R.T. 0.002 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 78 Resp: 155876

Ion	Ratio	Lower	Upper
78	100		
77	22.9	18.4	27.6
50	19.0	14.6	21.8

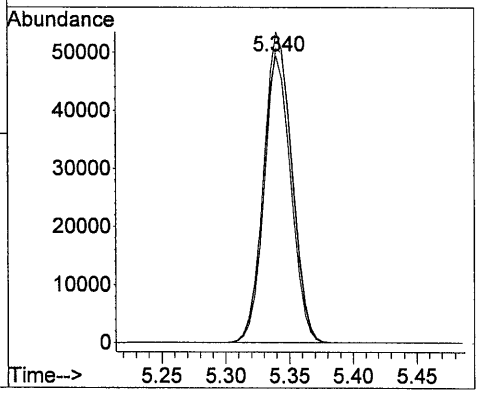


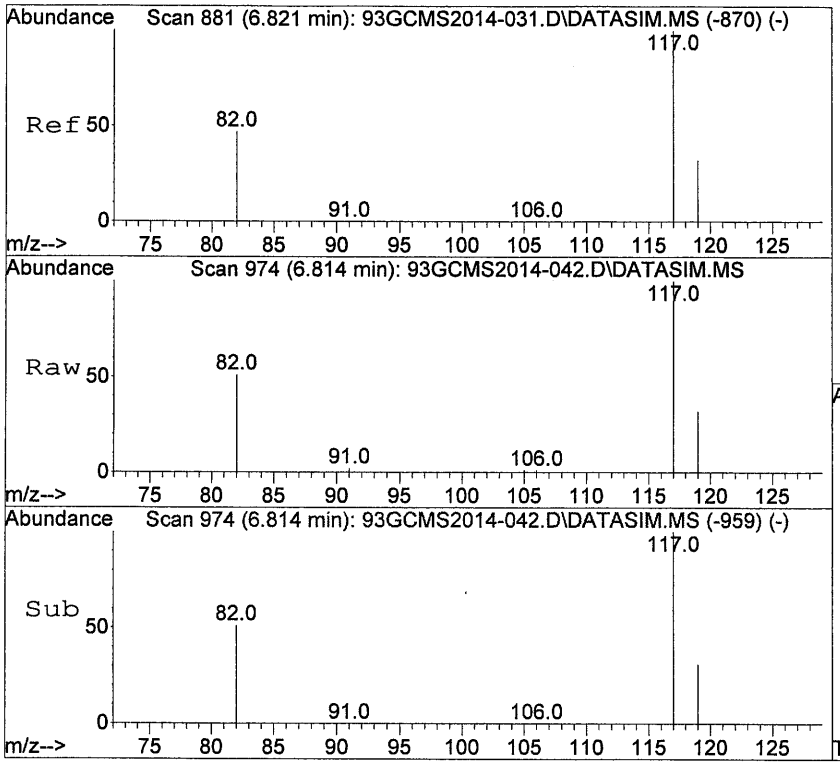


#12
Trichloroethene
Concen: 489.53 ppbv
RT: 5.340 min Scan# 630
Delta R.T. 0.000 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion:130 Resp: 81496

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	92.3	72.9	109.3

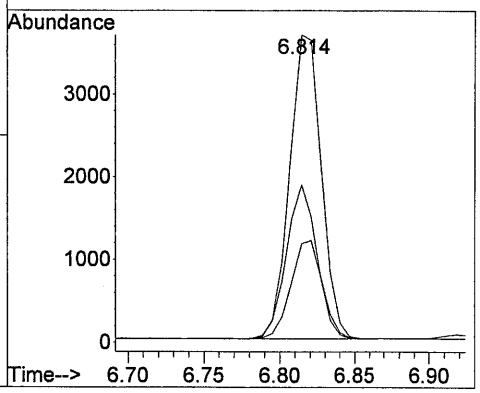


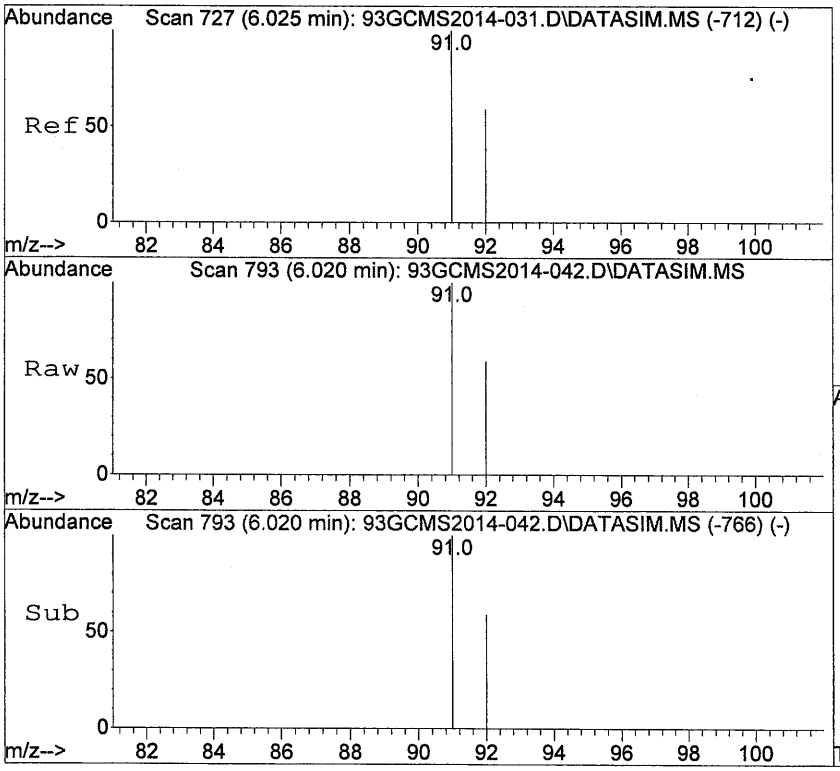


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion:117 Resp: 5409

Ion	Ratio	Lower	Upper
117	100		
82	48.1	37.8	56.6
119	32.0	25.6	38.4

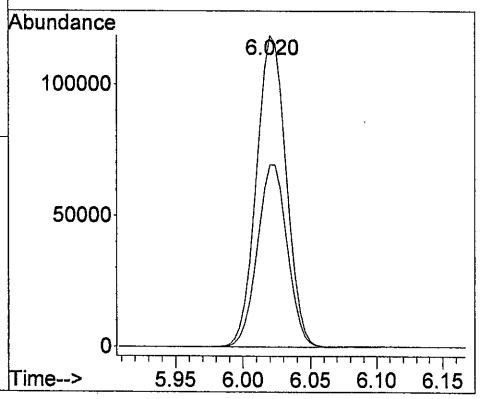


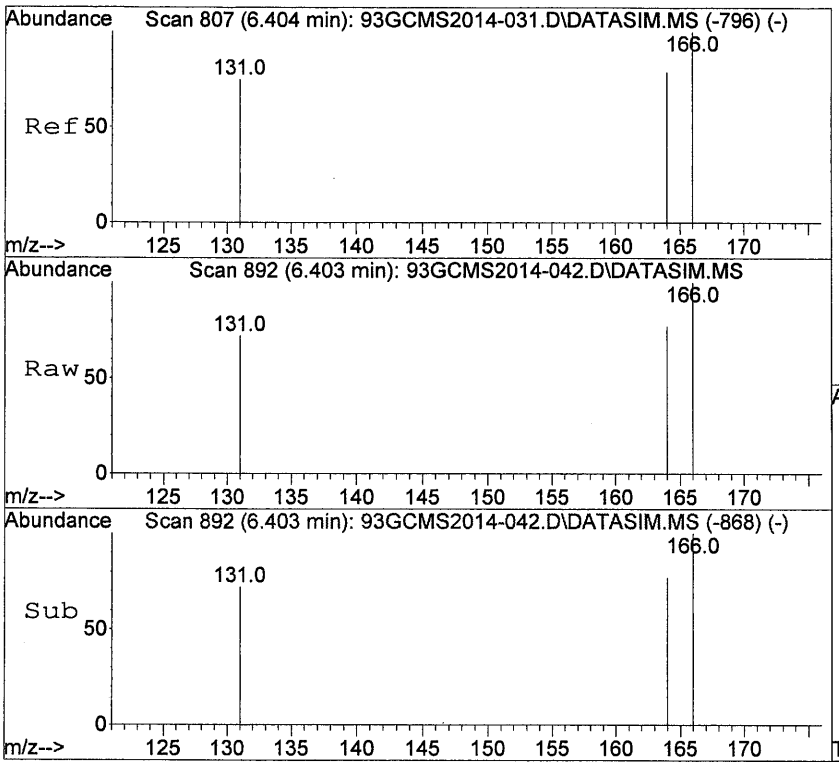


#14
Toluene
Concen: 485.35 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 91 Resp: 180393

Ion	Ratio	Lower	Upper
91	100		
92	58.9	47.2	70.8

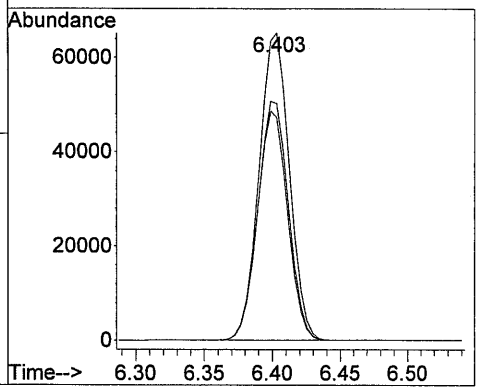


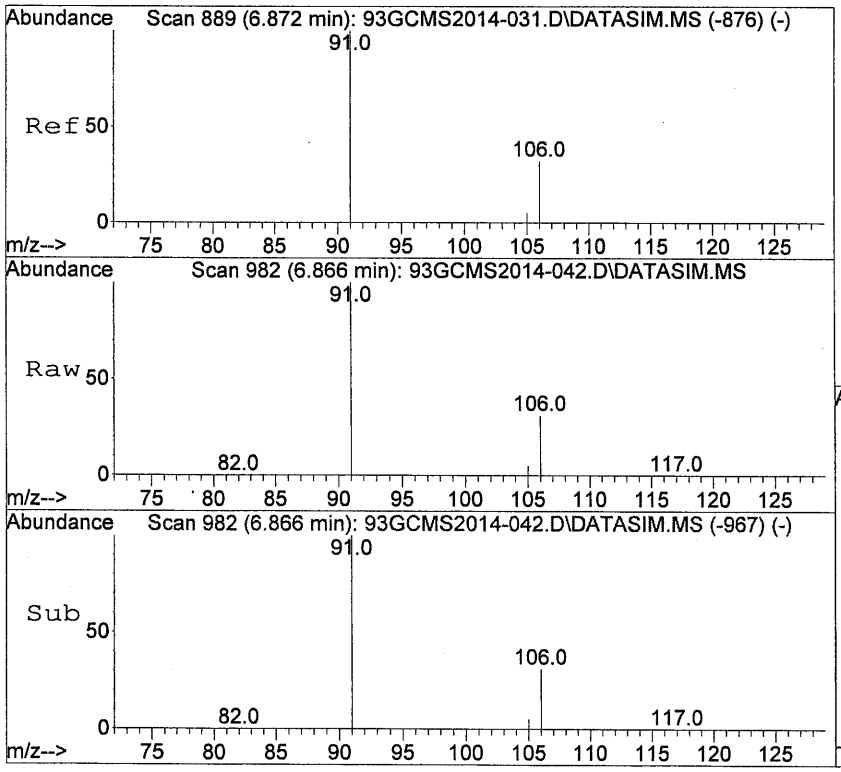


#15
Tetrachloroethene
Concen: 497.58 ppbv
RT: 6.403 min Scan# 892
Delta R.T. 0.003 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion:166 Resp: 100268

Ion	Ratio	Lower	Upper
166	100		
164	78.4	62.5	93.7
131	74.5	58.6	88.0

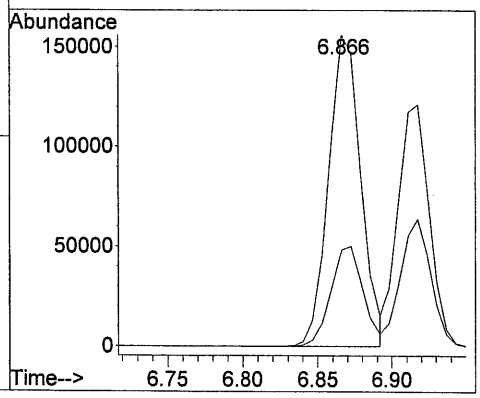


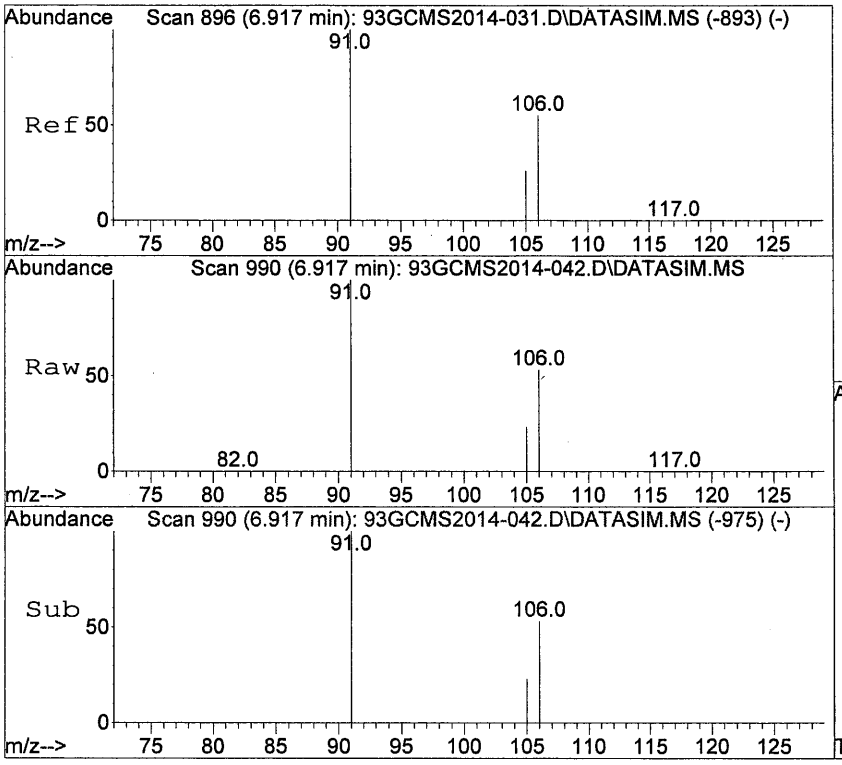


#16
Ethyl Benzene
Concen: 527.39 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 91 Resp: 235741

Ion	Ratio	Lower	Upper
91	100		
106	31.0	25.6	38.4

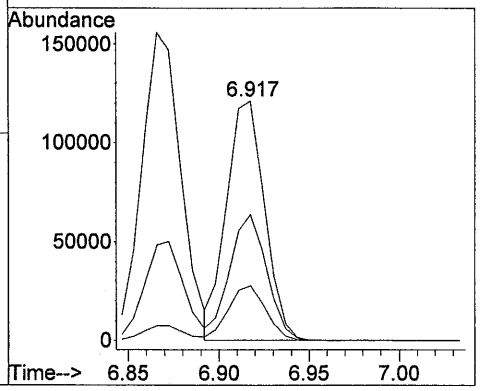


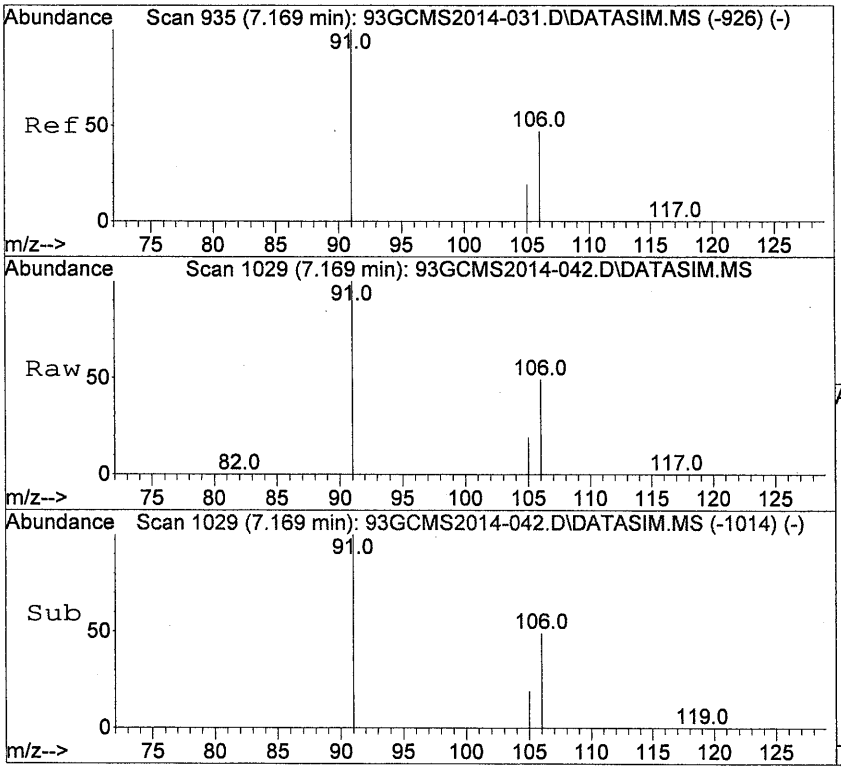


#17
m,p-Xylene
Concen: 515.99 ppbv
RT: 6.917 min Scan# 990
Delta R.T. -0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 91 Resp: 177861

Ion	Ratio	Lower	Upper
91	100		
106	52.7	42.5	63.7
105	23.0	18.6	27.8

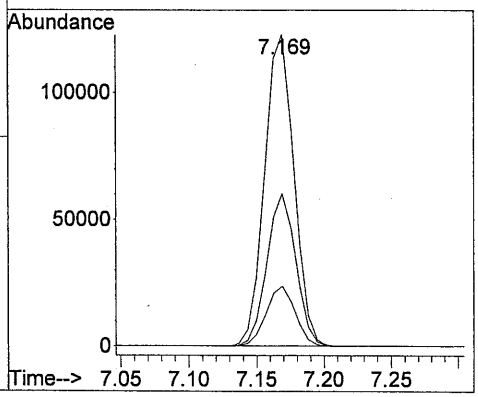




#18
o-Xylene
Concen: 534.06 ppbv
RT: 7.169 min Scan# 1029
Delta R.T. -0.001 min
Lab File: 93GCMS2014-042.D
Acq: 13 Jan 2014 9:28

Tgt Ion: 91 Resp: 185886

Ion	Ratio	Lower	Upper
91	100		
106	48.2	39.3	58.9
105	19.0	15.4	23.2



Data File:			93GCMS2014-044.d	
Sample Number:			20140113-LCS	
Sample Volume (mL)			5	
Date Prepared:			13-Jan-2014	
Date Analyzed:			13-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140113-LCS 500 ppbv LCS (ppbv)	20140113-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	564.10	113.39
1,1-Dichloroethene	20.7	517.50	569.01	109.95
Methyl Tert Butyl Ether	19.5	487.50	552.27	113.29
trans-1,2-Dichloroethene	20.8	520.00	570.10	109.63
1,1-Dichloroethane	20.3	507.50	566.59	111.64
cis-1,2-Dichloroethene	20.9	522.50	570.66	109.22
Chloroform	20.6	515.00	557.37	108.23
1,1,1-Trichloroethane	19.7	492.50	555.23	112.74
Benzene	20.5	512.50	532.23	103.85
Trichloroethene	19.9	497.50	520.81	104.69
Toluene	20.2	505.00	515.30	102.04
Tetrachloroethene	20.0	500.00	529.58	105.92
Ethyl Benzene	20.0	500.00	556.69	111.34
m&p-Xylene	20.2	505.00	540.59	107.05
o-Xylene	20.2	505.00	557.29	110.35

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-044.D
Acq On : 13 Jan 2014 9:52
Operator : SJT
Sample : 20140113-LCS \ 500ppbv LCS
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:58:56 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
QLast Update : Mon Jan 13 09:24:10 2014
Response via : Initial Calibration

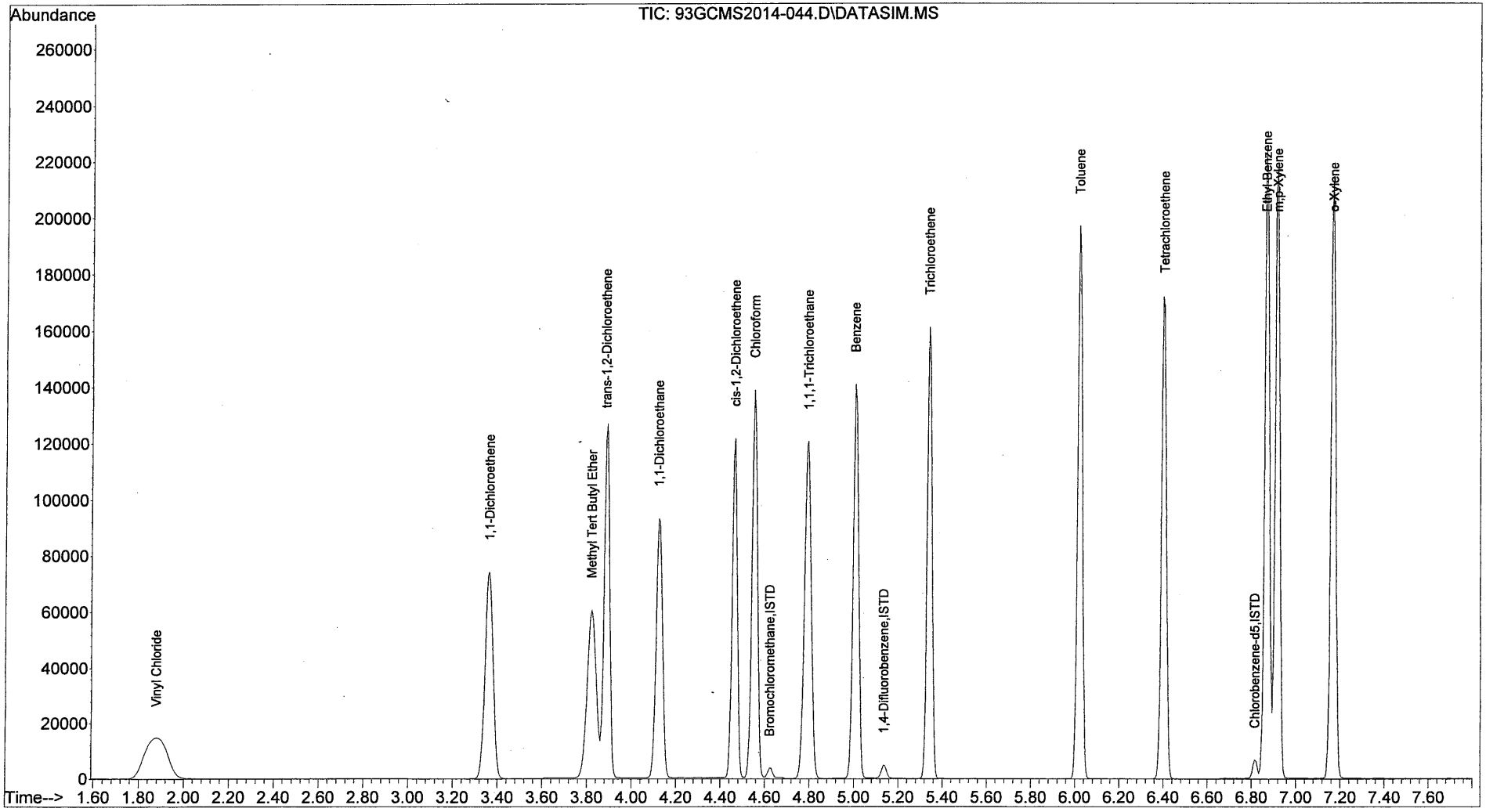
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	2036	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	5151	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	5328	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.878	62	57679	564.10	ppbv	98
3) 1,1-Dichloroethene	3.363	61	98451	569.01	ppbv	98
4) Methyl Tert Butyl Ether	3.822	73	124283	552.27	ppbv	94
5) trans-1,2-Dichloroethene	3.885	61	89381	570.10	ppbv	98
6) 1,1-Dichloroethane	4.122	63	105211	566.59	ppbv	98
7) cis-1,2-Dichloroethene	4.465	61	84250	570.66	ppbv	97
8) Chloroform	4.553	83	115899	557.37	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	120576	555.23	ppbv	98
11) Benzene	5.006	78	164529	532.23	ppbv	99
12) Trichloroethene	5.340	130	85754	520.81	ppbv	99
14) Toluene	6.020	91	188657	515.30	ppbv	100
15) Tetrachloroethene	6.404	166	105120	529.58	ppbv	99
16) Ethyl Benzene	6.866	91	245113	556.69	ppbv	99
17) m,p-Xylene	6.918	91	183551	540.59	ppbv	99
18) o-Xylene	7.170	91	191067	557.29	ppbv	99

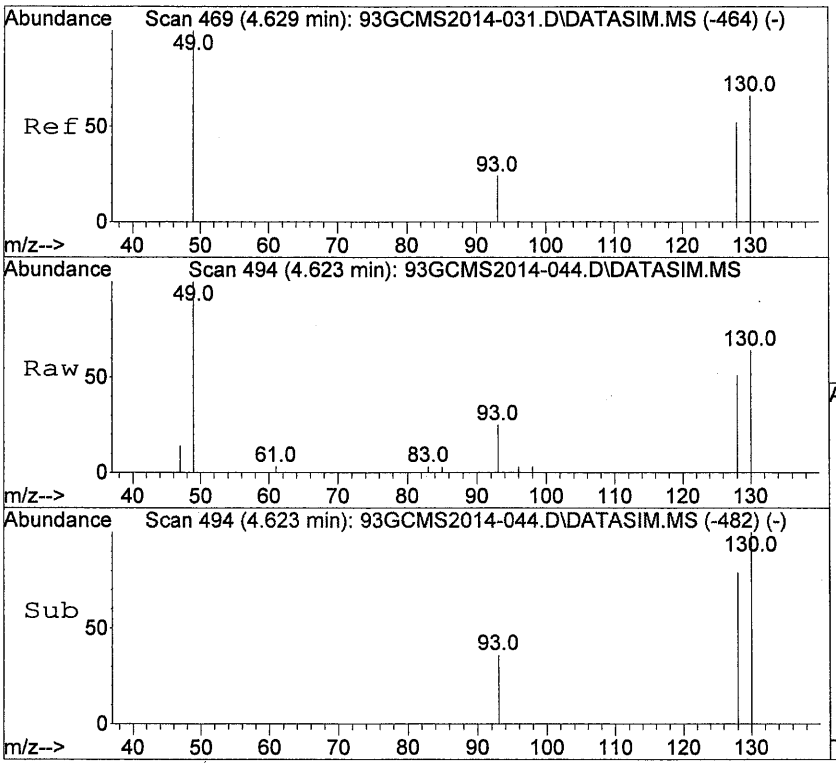
(#) = qualifier out of range (m) = manual integration (+) = signals summed

01/13/14

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-044.D
Acq On : 13 Jan 2014 9:52
Operator : SJT
Sample : 20140113-LCS \ 500ppbv LCS
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:58:56 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
QLast Update : Mon Jan 13 09:24:10 2014
Response via : Initial Calibration

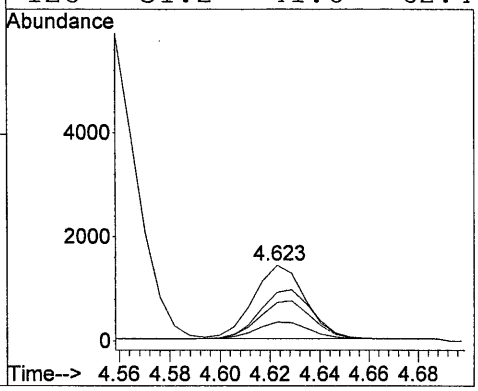


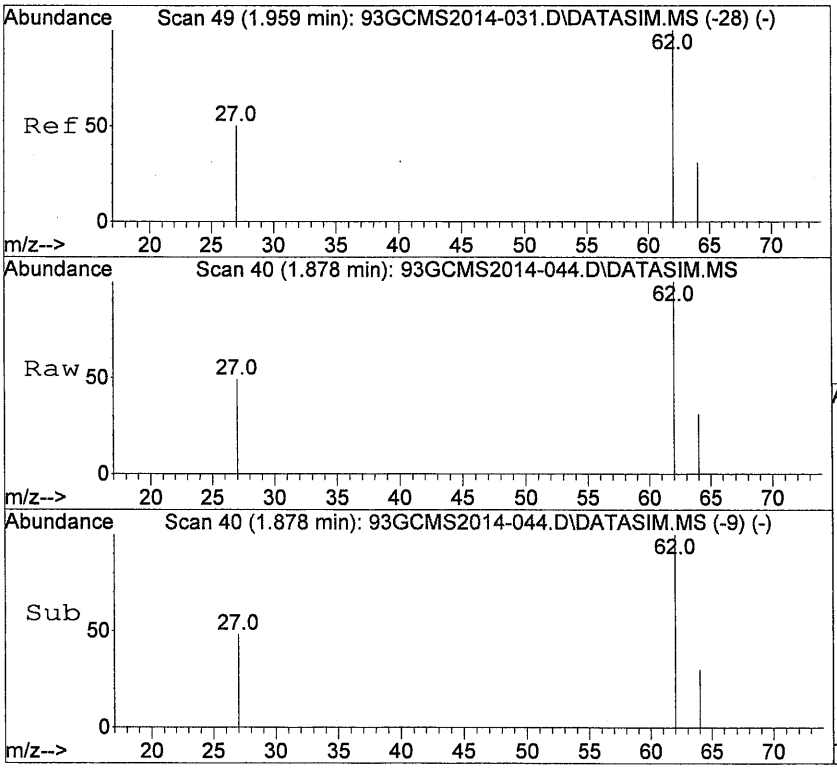


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. 0.001 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 49 Resp: 2036

Ion	Ratio	Lower	Upper
49	100		
130	64.4	51.6	77.4
93	25.3	19.6	29.4
128	51.2	41.6	62.4

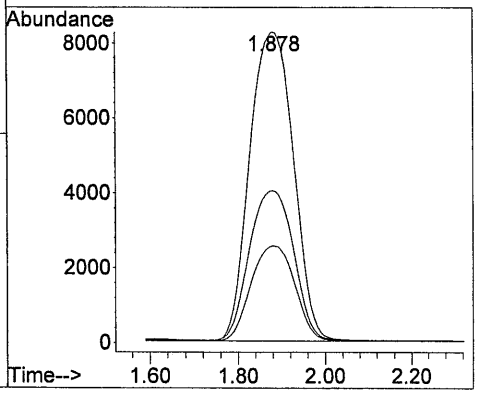


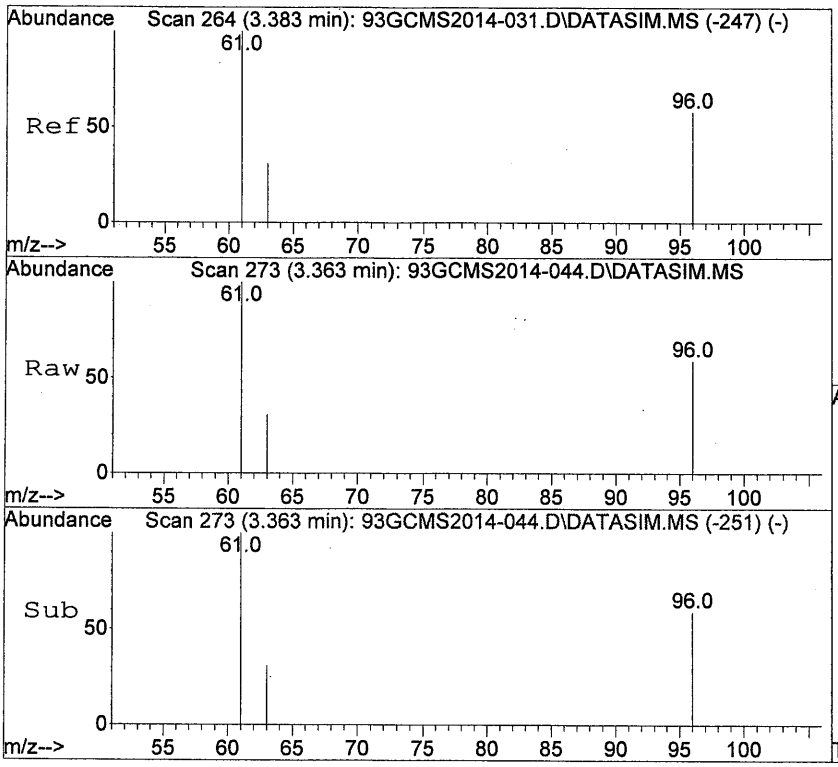


#2
Vinyl Chloride
Concen: 564.10 ppbv
RT: 1.878 min Scan# 40
Delta R.T. -0.022 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 62 Resp: 57679

Ion	Ratio	Lower	Upper
62	100		
64	30.8	24.9	37.3
27	49.0	37.8	56.6

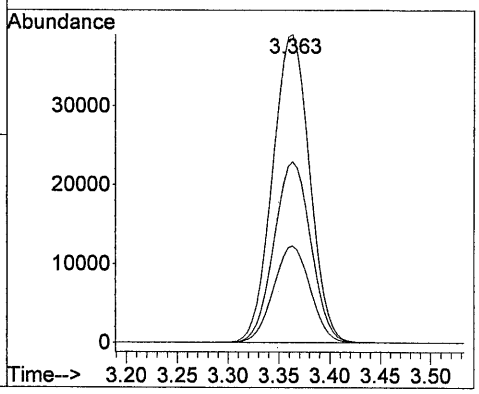


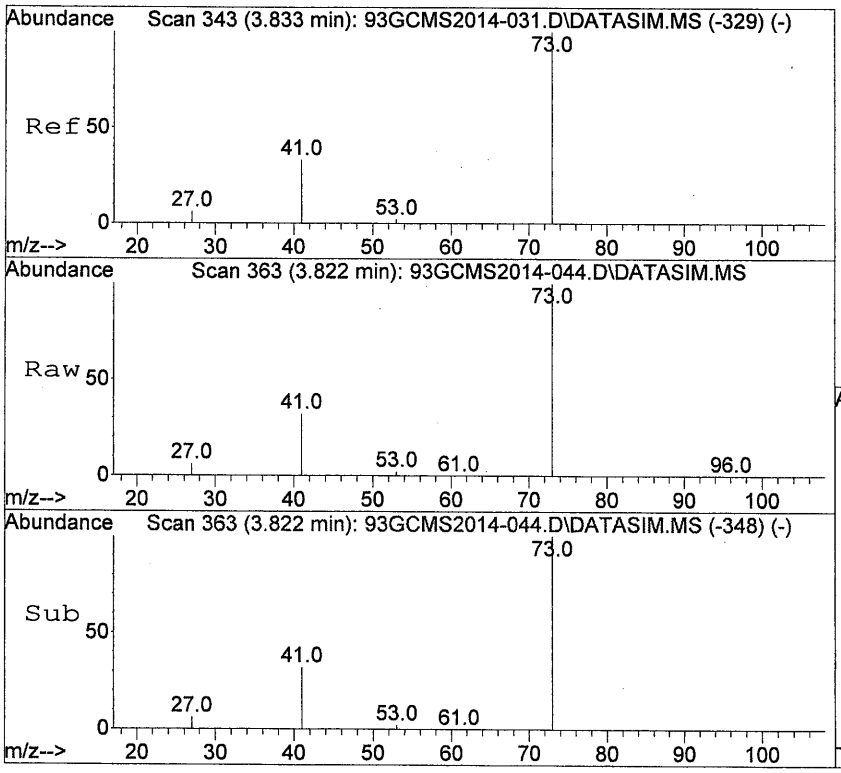


#3
1,1-Dichloroethene
Concen: 569.01 ppbv
RT: 3.363 min Scan# 273
Delta R.T. -0.004 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 61 Resp: 98451

Ion	Ratio	Lower	Upper
61	100		
96	58.5	48.6	72.8
63	31.2	25.0	37.6

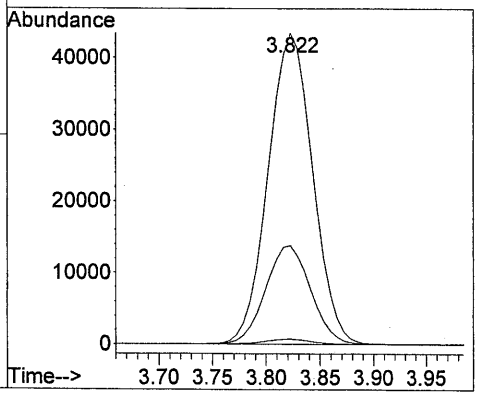


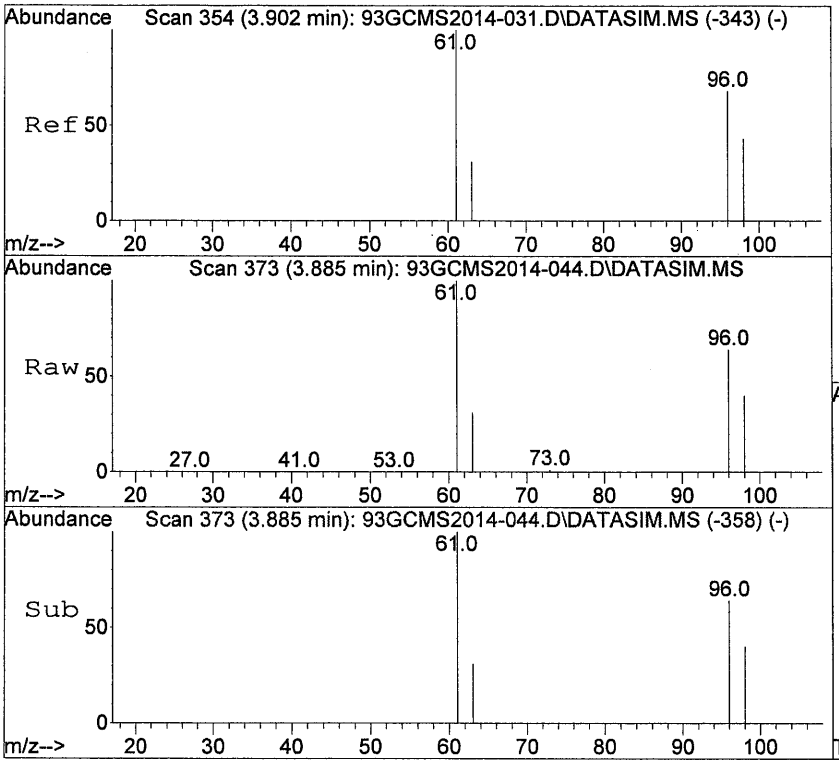


#4
Methyl Tert Butyl Ether
Concen: 552.27 ppbv
RT: 3.822 min Scan# 363
Delta R.T. -0.004 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 73 Resp: 124283

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	32.0	23.0	34.4

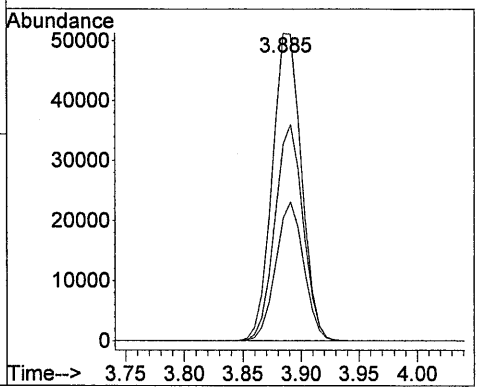


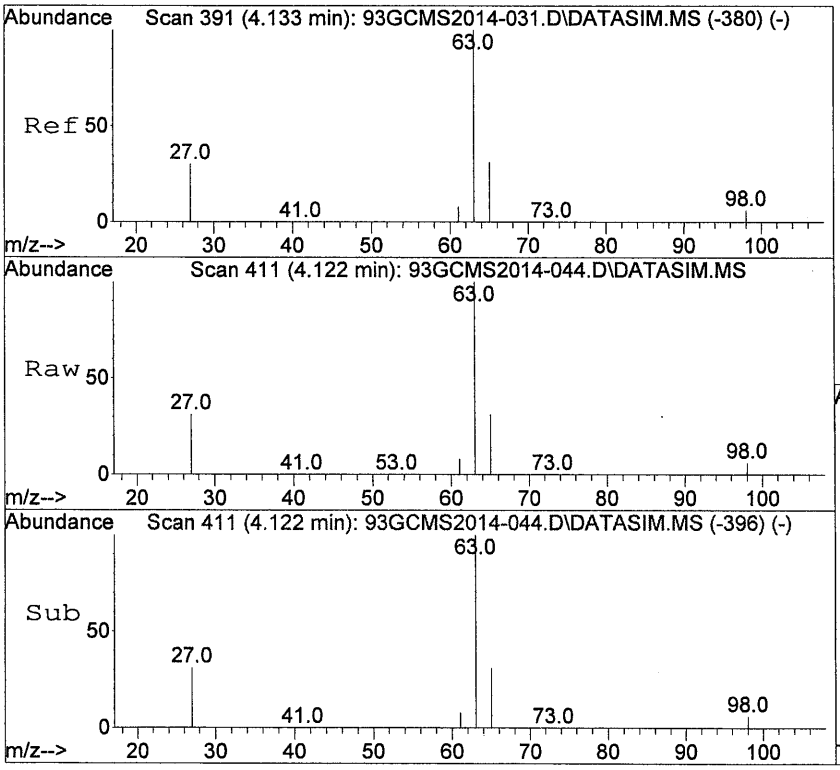


#5
trans-1,2-Dichloroethene
Concen: 570.10 ppbv
RT: 3.885 min Scan# 373
Delta R.T. -0.004 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 61 Resp: 89381

Ion	Ratio	Lower	Upper
61	100		
96	68.2	56.0	84.0
98	43.4	35.6	53.4

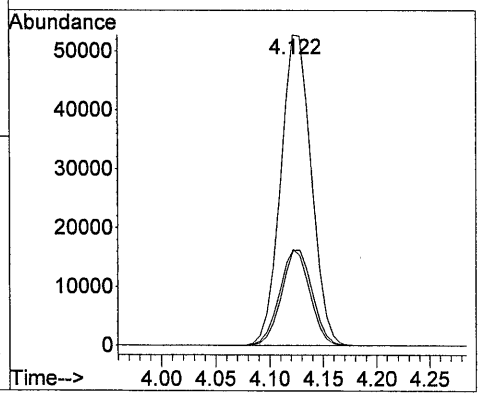


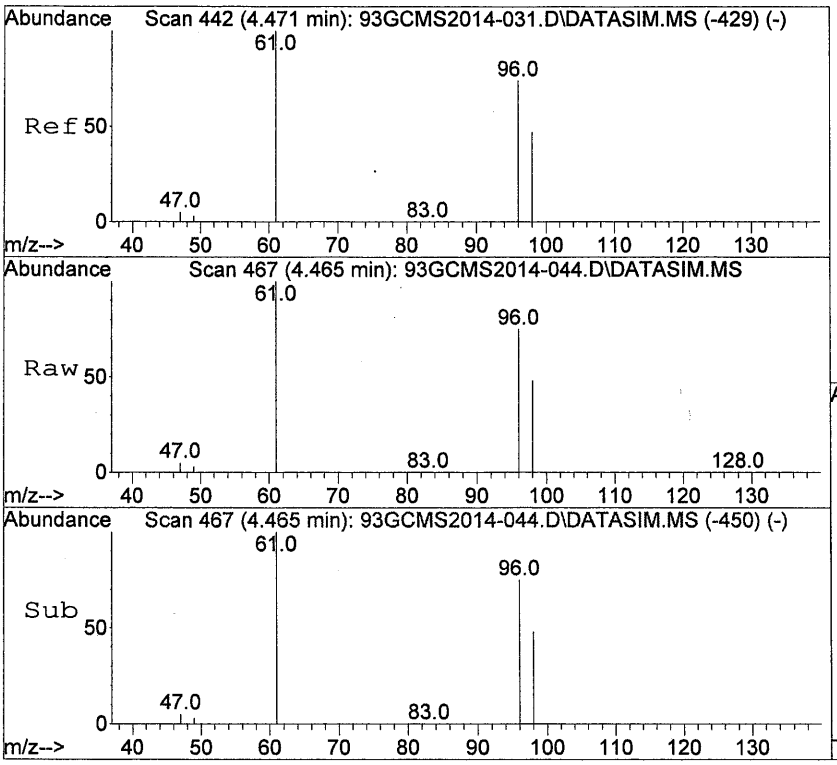


#6
1,1-Dichloroethane
Concen: 566.59 ppbv
RT: 4.122 min Scan# 411
Delta R.T. -0.004 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 63 Resp: 105211

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	30.3	22.6	34.0

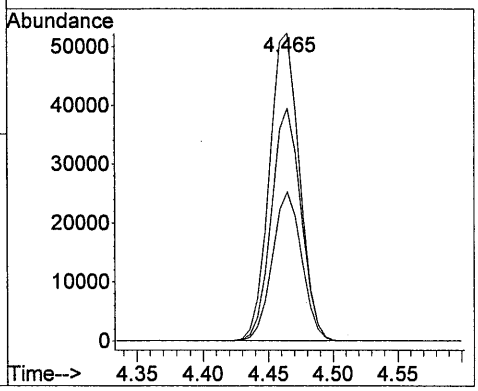


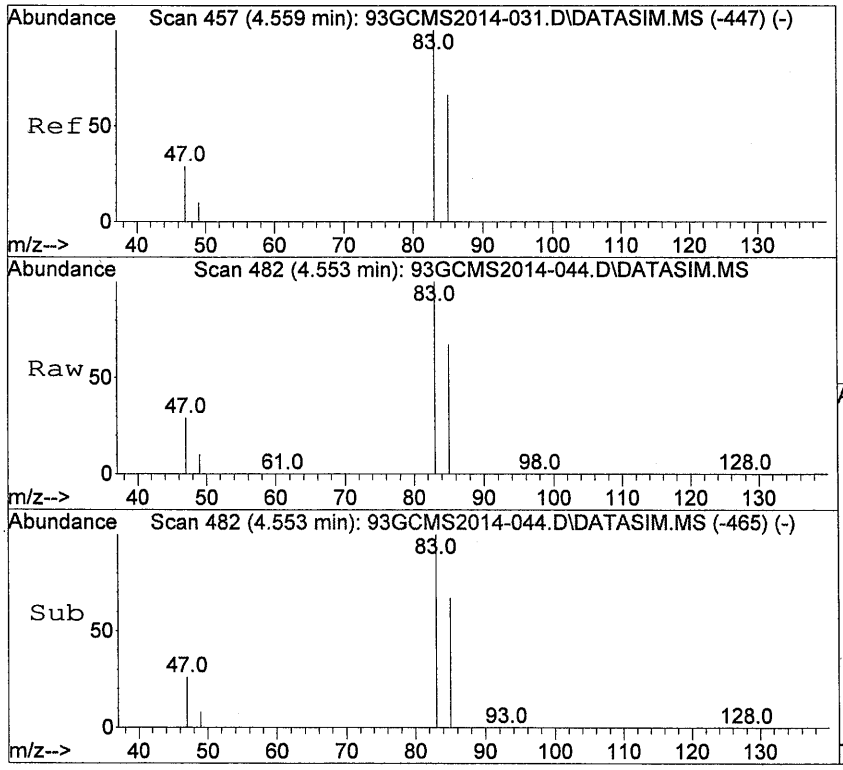


#7
cis-1,2-Dichloroethene
Concen: 570.66 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.001 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 61 Resp: 84250

Ion	Ratio	Lower	Upper
61	100		
96	74.4	61.7	92.5
98	47.4	39.4	59.0

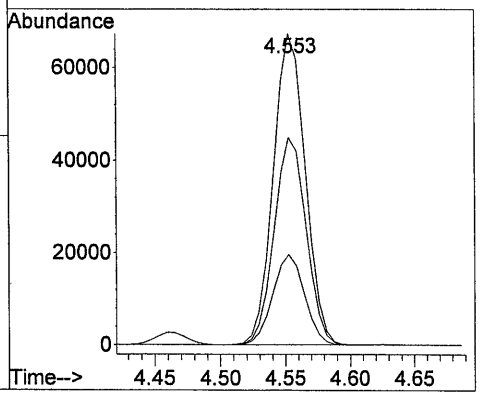


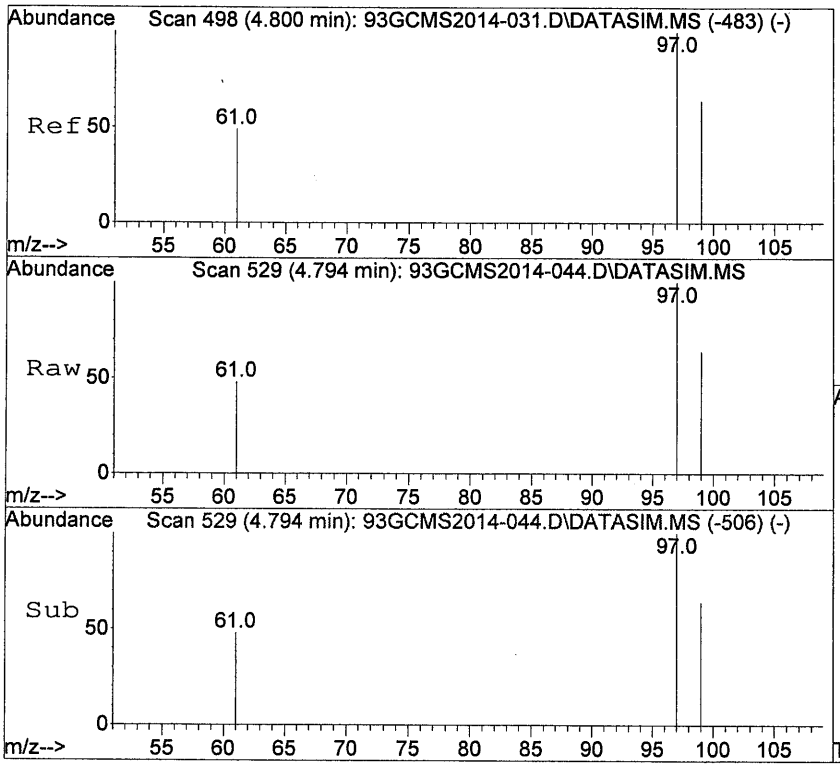


#8
Chloroform
Concen: 557.37 ppbv
RT: 4.553 min Scan# 482
Delta R.T. 0.001 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 83 Resp: 115899

Ion	Ratio	Lower	Upper
83	100		
85	66.8	52.0	78.0
47	29.0	20.0	30.0

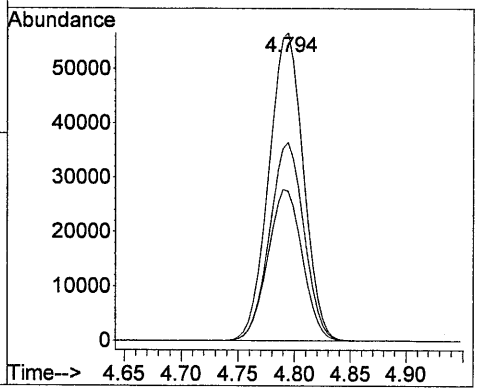


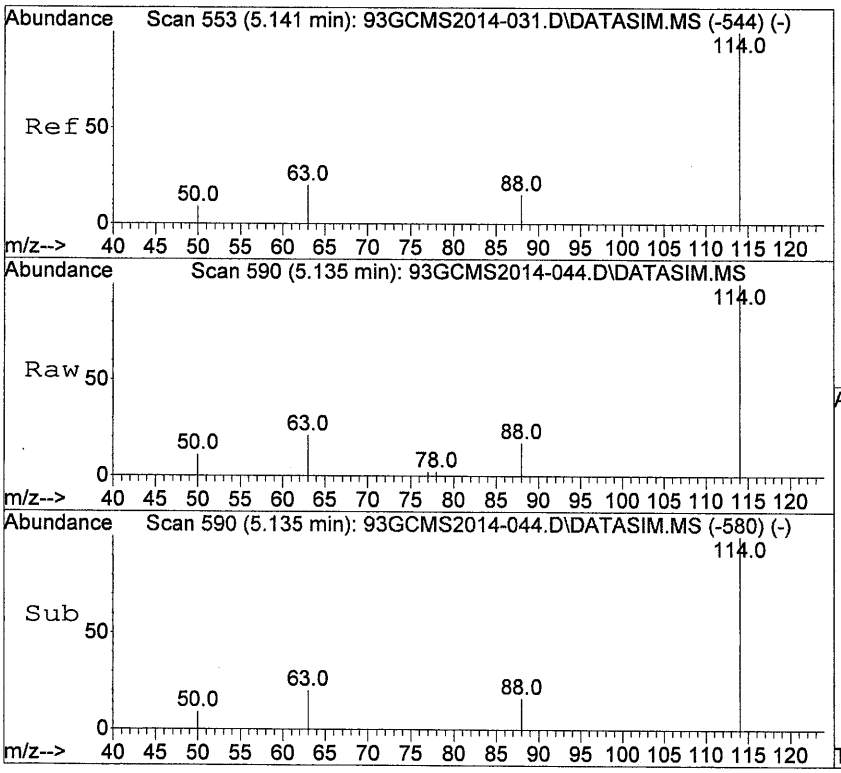


#9
1,1,1-Trichloroethane
Concen: 555.23 ppbv
RT: 4.794 min Scan# 529
Delta R.T. 0.002 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 97 Resp: 120576

Ion	Ratio	Lower	Upper
97	100		
99	64.1	51.4	77.0
61	49.3	37.4	56.0

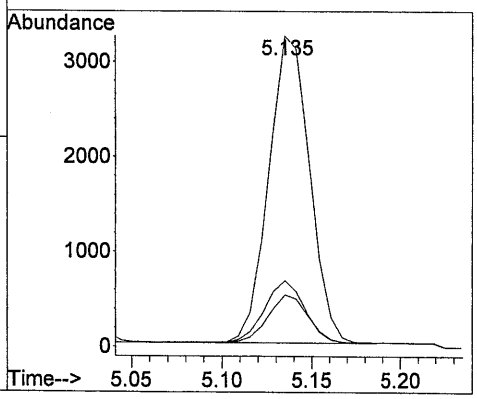


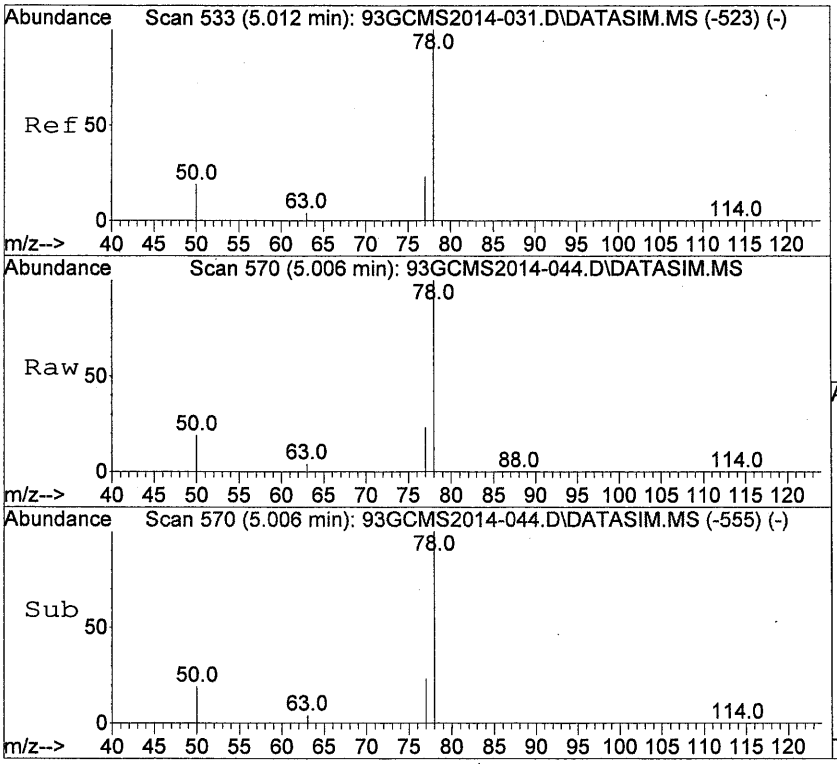


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.005 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion:114 Resp: 5151

Ion	Ratio	Lower	Upper
114	100		
63	19.7	15.1	22.7
88	15.1	12.0	18.0

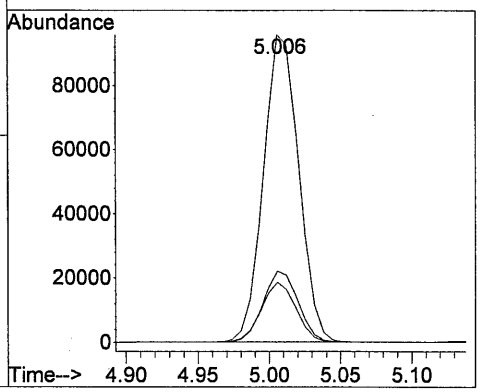


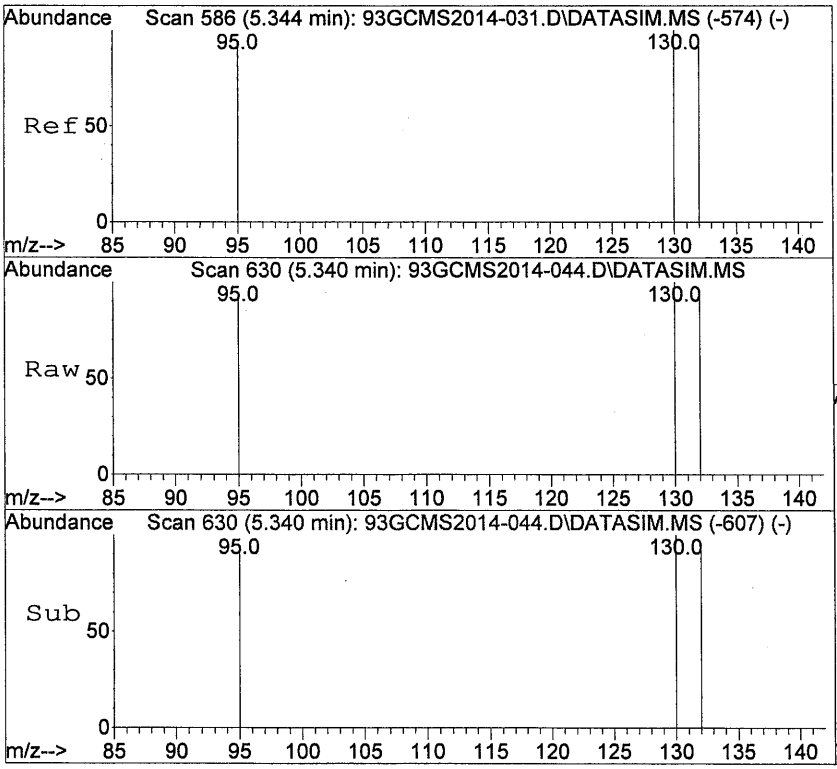


#11
Benzene
Concen: 532.23 ppbv
RT: 5.006 min Scan# 570
Delta R.T. -0.005 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 78 Resp: 164529

Ion	Ratio	Lower	Upper
78	100		
77	22.9	18.4	27.6
50	19.0	14.6	21.8

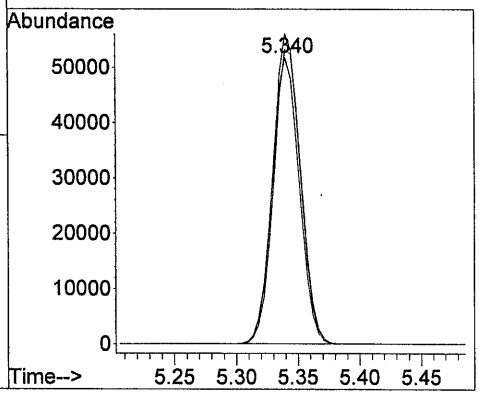


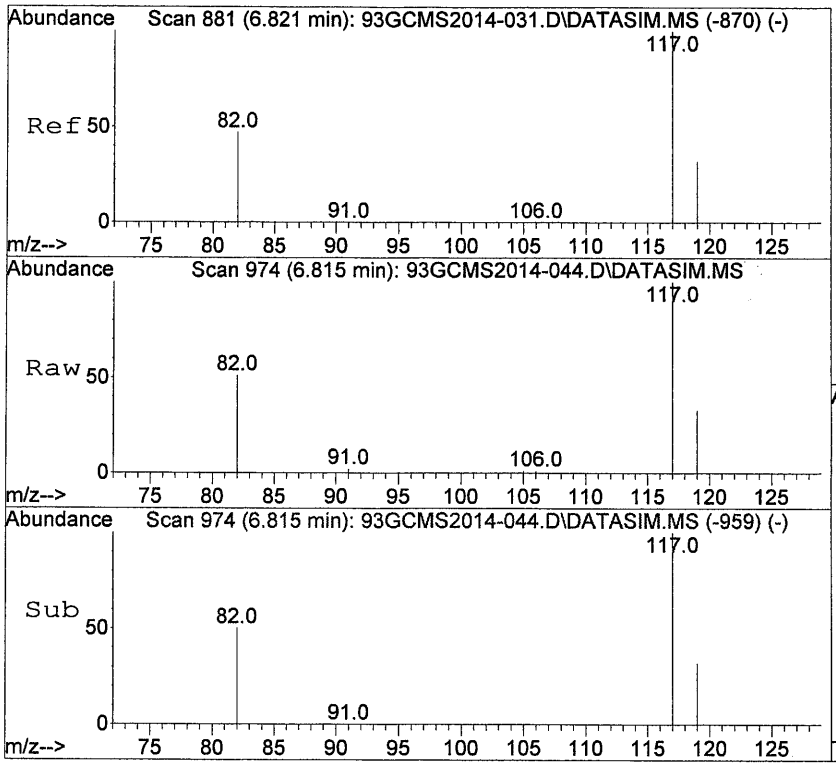


#12
Trichloroethene
Concen: 520.81 ppbv
RT: 5.340 min Scan# 630
Delta R.T. 0.000 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion:130 Resp: 85754

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	92.3	72.9	109.3

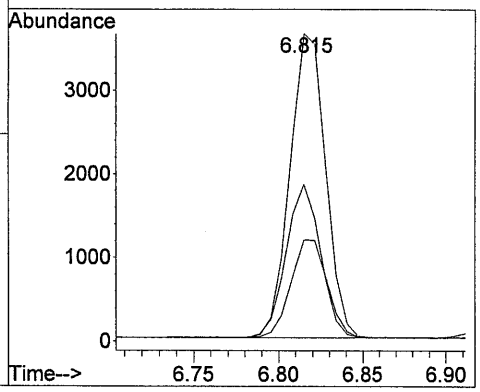


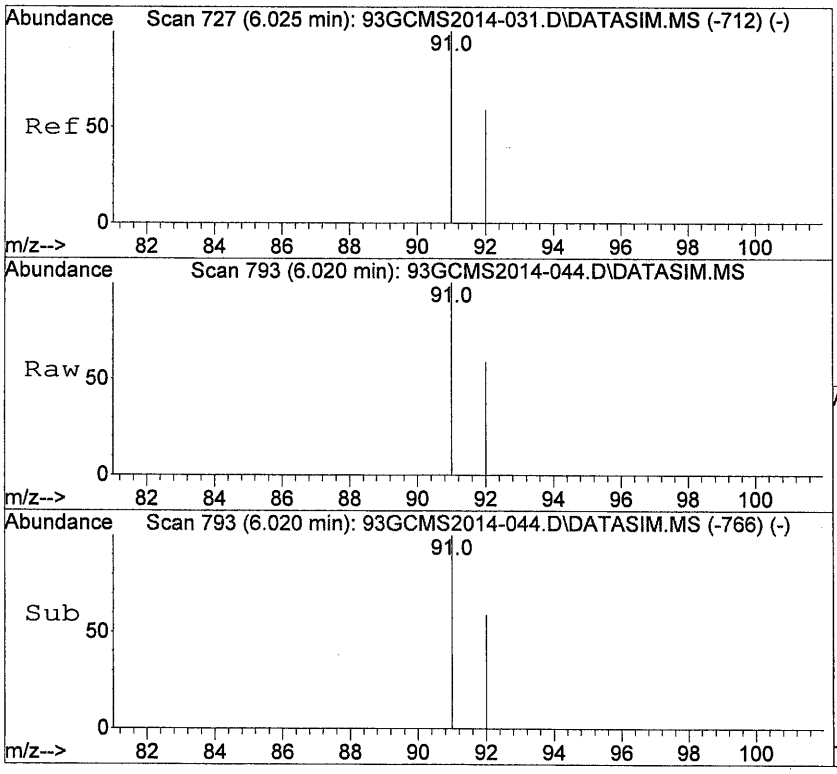


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion:117 Resp: 5328

Ion	Ratio	Lower	Upper
117	100		
82	48.3	37.8	56.6
119	32.6	25.6	38.4

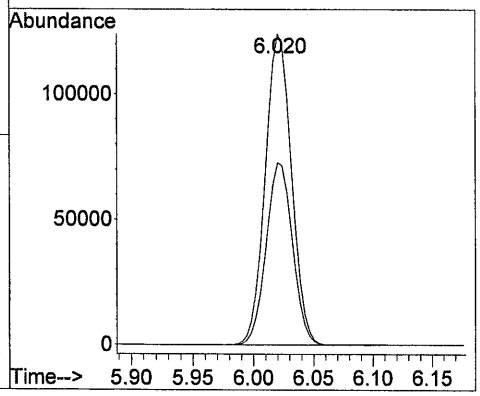


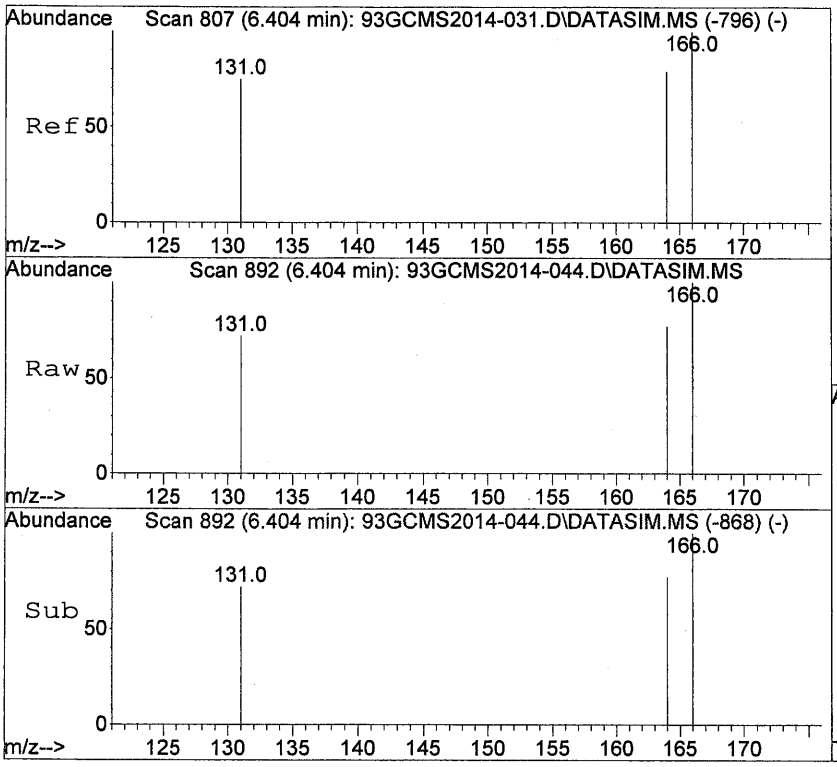


#14
Toluene
Concen: 515.30 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 91 Resp: 188657

Ion	Ratio	Lower	Upper
91	100		
92	58.8	47.2	70.8

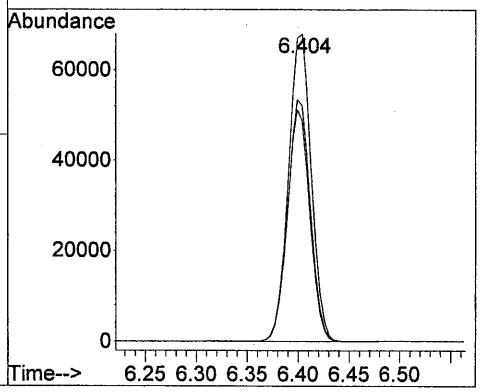


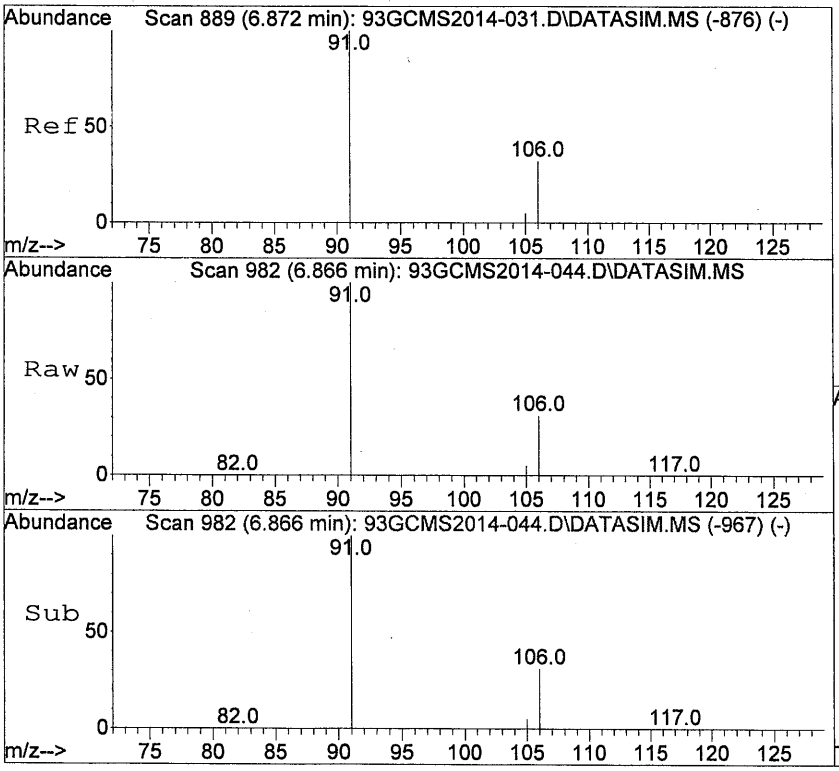


#15
Tetrachloroethene
Concen: 529.58 ppbv
RT: 6.404 min Scan# 892
Delta R.T. 0.003 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion:166 Resp: 105120

Ion	Ratio	Lower	Upper
166	100		
164	78.3	62.5	93.7
131	74.5	58.6	88.0

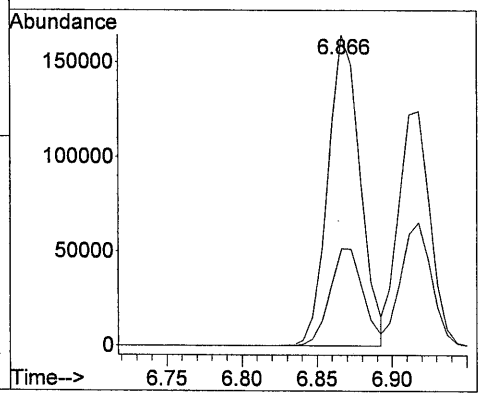


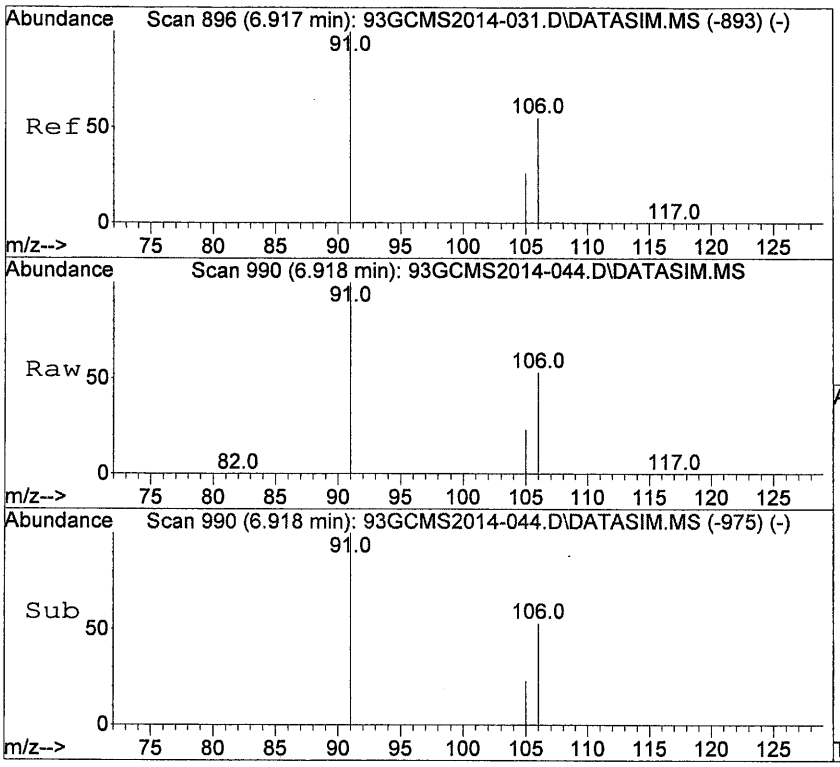


#16
Ethyl Benzene
Concen: 556.69 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 91 Resp: 245113

Ion	Ratio	Lower	Upper
91	100		
106	31.3	25.6	38.4

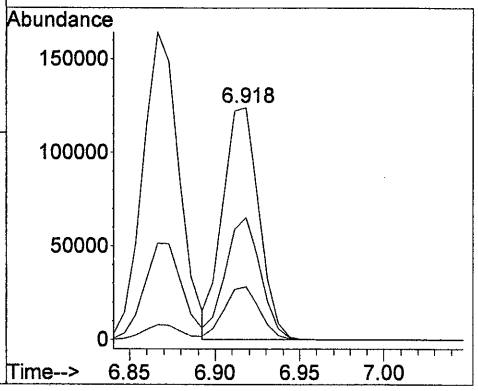


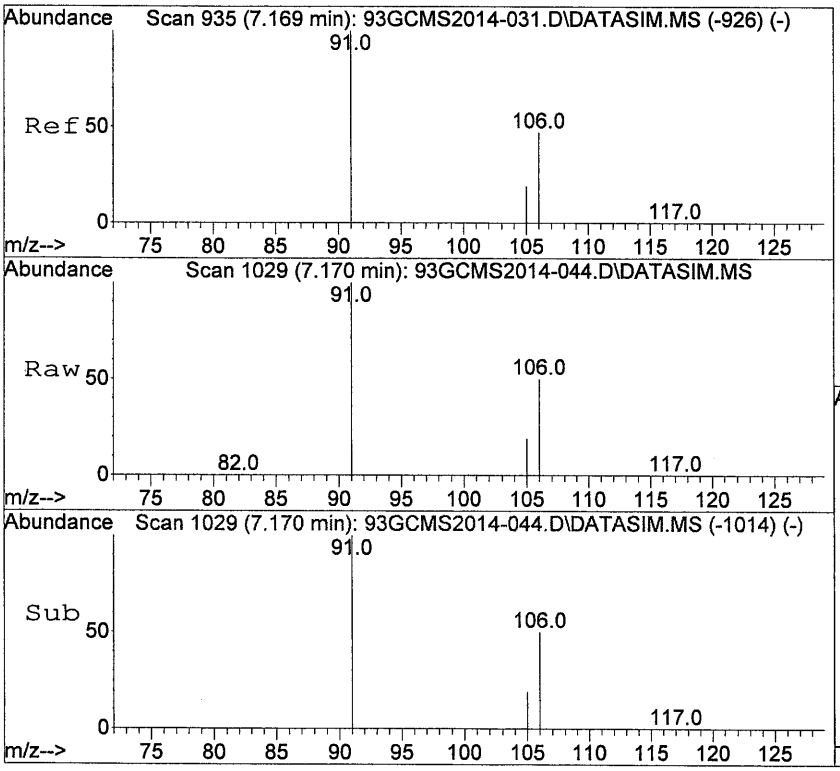


#17
m,p-Xylene
Concen: 540.59 ppbv
RT: 6.918 min Scan# 990
Delta R.T. -0.000 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 91 Resp: 183551

Ion	Ratio	Lower	Upper
91	100		
106	52.6	42.5	63.7
105	22.8	18.6	27.8

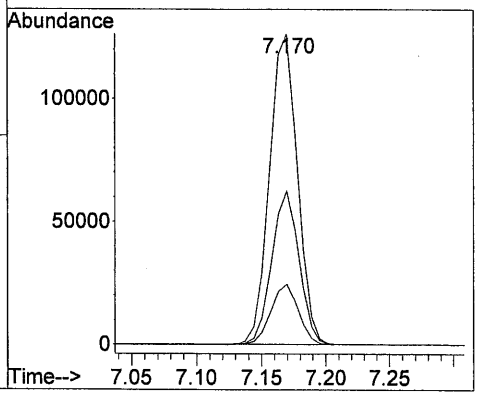




#18
o-Xylene
Concen: 557.29 ppbv
RT: 7.170 min Scan# 1029
Delta R.T. -0.000 min
Lab File: 93GCMS2014-044.D
Acq: 13 Jan 2014 9:52

Tgt Ion: 91 Resp: 191067

Ion	Ratio	Lower	Upper
91	100		
106	48.3	39.3	58.9
105	19.1	15.4	23.2



GC/MS QA-QC Check Report

Tune File : D:\msdchem\1\data\2014\20140113\93GCMS2014-035.D
Tune Time : 13 Jan 2014 8:04

Daily Calibration File : D:\msdchem\1\data\2014\20140107\93GCMS2014-031.D

File	Sample	Internal Standard Responses		
		2084	5217	5536
93GCMS2014-036.D	STD2014011	2200	5584	5860
93GCMS2014-037.D	STD2014011	2148	5496	5735
93GCMS2014-038.D	STD2014011	2108	5412	5658
93GCMS2014-039.D	STD2014011	2753	5235	5472
93GCMS2014-040.D	STD2014011	2100	5181	5447
93GCMS2014-041.D	STD2014011	2065	5251	5547
93GCMS2014-042.D	STD2014011	2046	5208	5409
93GCMS2014-043.D	20140113-M	2071	5123	5337
93GCMS2014-044.D	20140113-L	2036	5151	5328

(fails) - fails 24hr time check * - fails criteria

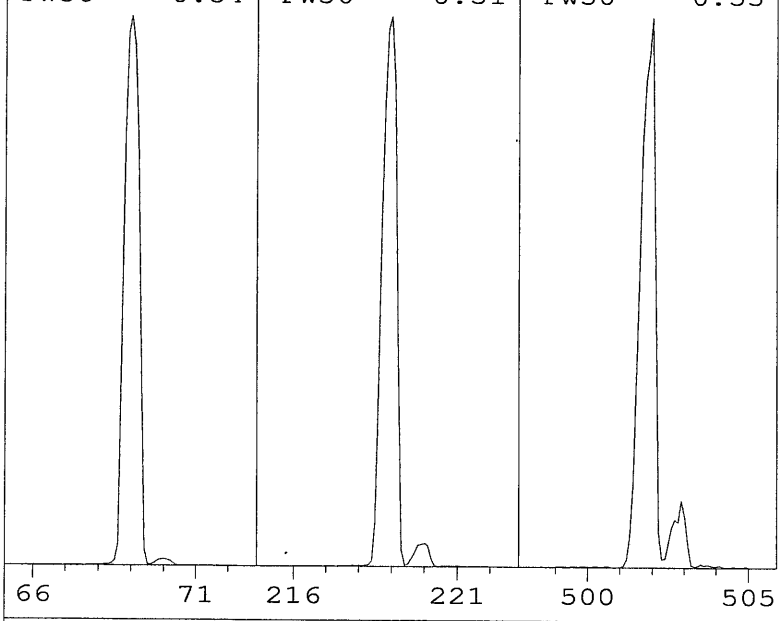
Created: Mon Jan 13 10:01:17 2014 Instrument 2

01/13/14

Tue Jan 21 05:56:16 2014
C:\msdchem\1\5975\bfb.u

Instrument: Instrument 2
US83130668

Mass	69.00	Mass	219.00	Mass	502.00
Ab	550974	Ab	267394	Ab	11816
Pw50	0.54	Pw50	0.51	Pw50	0.53

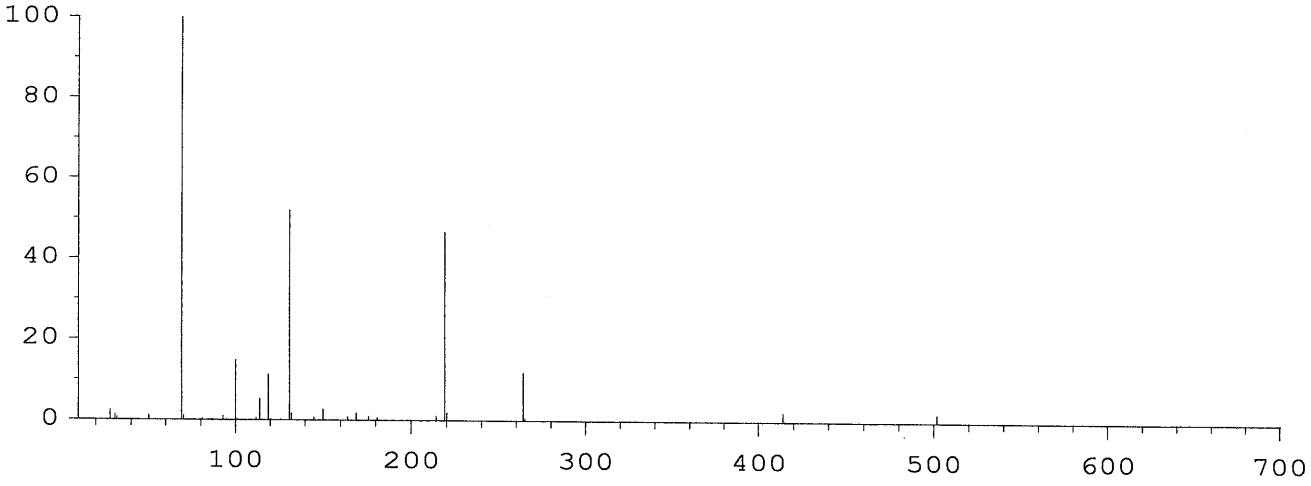


Ion Pol	Pos	MassGain	-973
		MassOffs	-39
Emission	34.6	AmuGain	1186
EIEnrgy	69.9	AmuOffs	125.69
Filament	1	Wid219	-0.016
		DC Pol	Pos
Repeller	19.90		
IonFcus	73.1	HEDEnab	On
EntLens	0.0	EMVolts	1388
EntOffs	Var		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	TurboSpd	100
MS Quad	150	HiVac	1.36e05

Scan: 10.00 - 701.00 Samples: 8 Thresh: 100 Step: 0.10
91 peaks Base: 69.00 Abundance: 530880



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	530880	100.00	70.00	5826	1.10
219.00	247296	46.58	220.00	10586	4.28
501.90	10956	2.06	502.90	1005	9.17

Air/Water Check: H2O~0.19% N2~2.46% O2~0.65% CO2~0.11% N2/H2O~1316.01%

Ramp Criteria:

Ion Focus Maximum	90	volts using ion	502;	EM Gain	109763
Repeller Maximum	20	volts using ion	219;	Gain Factor	1.10

MassGain Values(Samples): -964(3) -946(2) -916(1) -870(0) -826(FS)

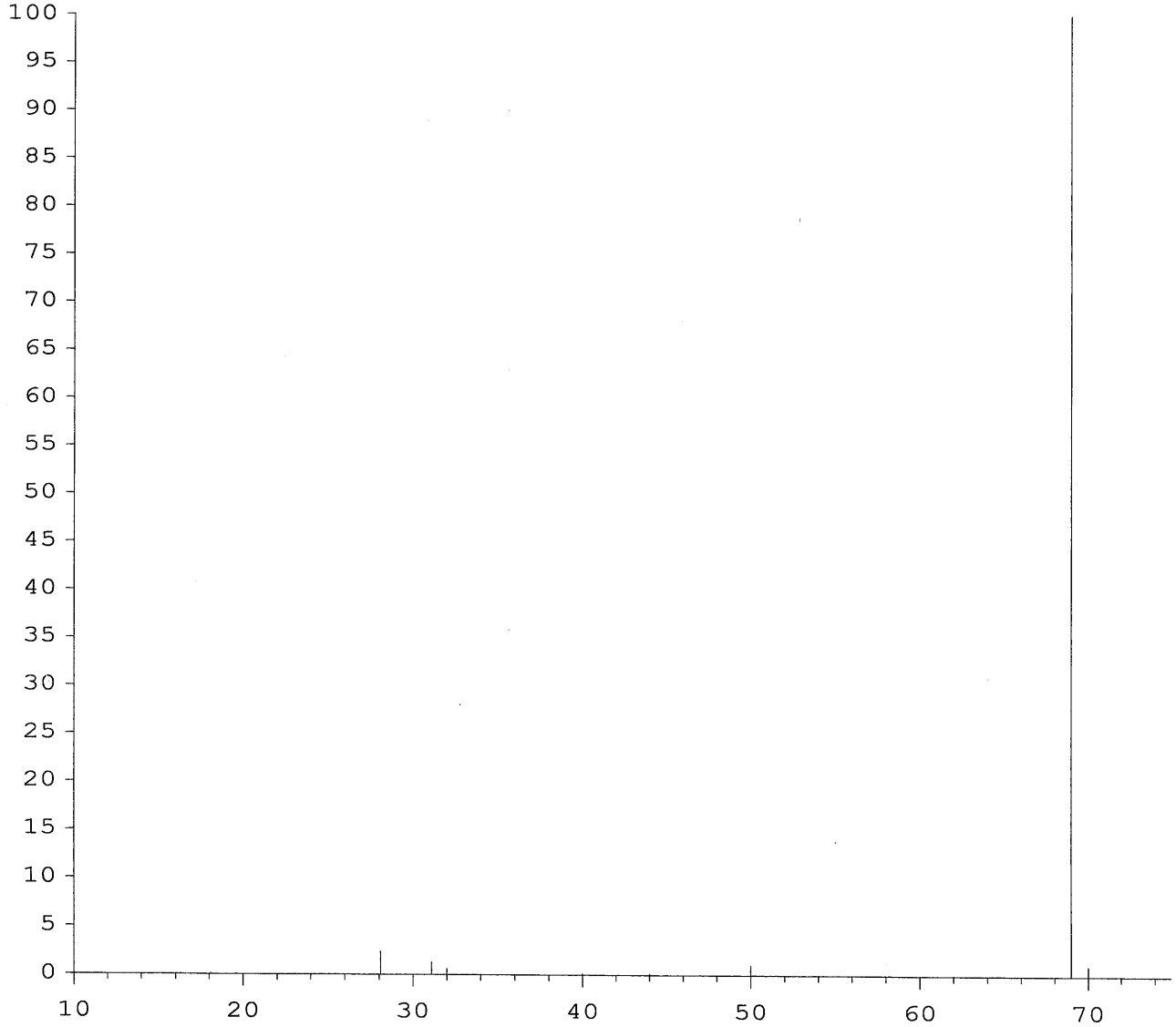
01/21/14

TARGET MASS:	50	69	131	219	414	502	1050
Amu Offset:	125.7	125.7	125.7	125.7	125.7	125.7	125.7
Entrance Lens Offset:	15.3	13.1	15.1	14.8	17.1	18.8	18.8
Target Abund(%):	1.0	100.0	52.0	50.0	2.4	2.0	
Actual Tune Abund(%):	1.1	100.0	52.0	46.6	2.3	2.1	

597x Air and Water Check

Instrument: Instrument 2
Tue Jan 21 05:57:03 2014 C:\msdchem\1\5975\

Scan: 10.00 - 75.00 Samples: 8 Thresh: 0 Step: 0.10
74 peaks Base: 69.00 Abundance: 539392



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	539392	100.00	70.00	5755	1.07
18.10	866	0.16	19.10	196	22.63
28.10	13014	2.41	29.10	147	1.13

Current Params used: bfb.u

Relative abundances:

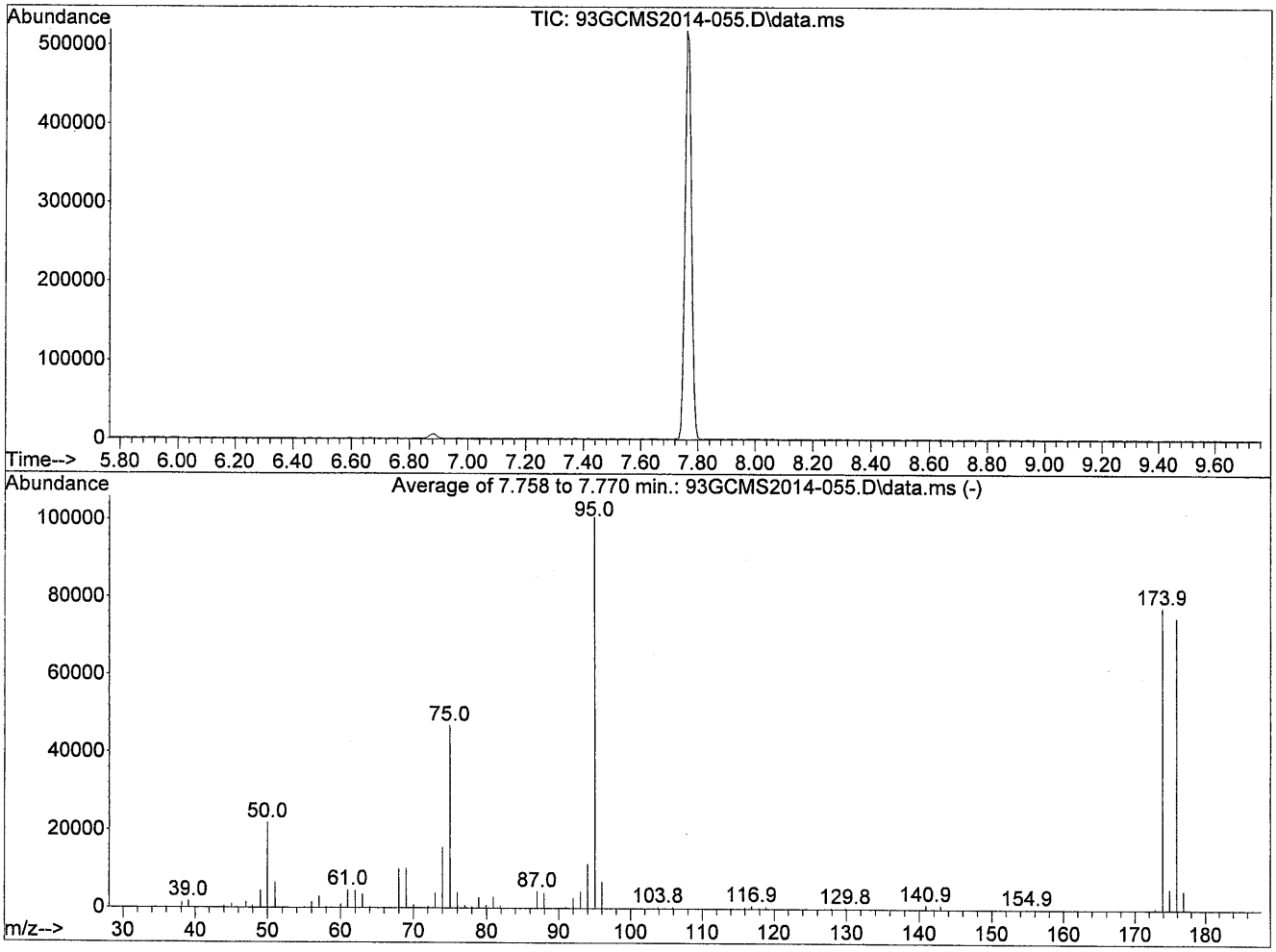
18/69 = 0.16	Water%	(counts=866)
28/69 = 2.41	Nitrogen%	(counts=13014)
32/69 = 0.65	Oxygen%	(counts=3516)
44/69 = 0.15	Carbon Dioxide%	(counts=789)
28/18 = 1502.77	Nitrogen/Water%	

01/21/14

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-055.D
Acq On : 21 Jan 2014 6:04
Operator : SJT
Sample : BFB \ 1ppmv STD
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 14 08:18
Last Update : Tue Jan 14 08:18:09 2014



AutoFind: Scans 650, 651, 652; Background Corrected with Scan 643

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.7	21869	PASS
75	95	30	66	46.5	46867	PASS
95	95	100	100	100.0	100757	PASS
96	95	5	9	6.9	6960	PASS
173	174	0.00	2	0.5	406	PASS
174	95	50	120	77.0	77541	PASS
175	174	4	9	7.0	5444	PASS
176	174	93	101	96.7	75011	PASS
177	176	5	9	6.5	4870	PASS

1/21/14

Continuing Calibration Report Instrument 2

Method Path : C:\msdchem\1\METHODS\
Method File : LOOP20140113-QUANT.M
Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 14 08:18:11 2014
Last Update : Tue Jan 21 06:23:52 2014
Response Via : Initial Calibration

CC Data File: 93GCMS2014-056.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%
1	ISTD	Bromochloromethane	1.000	1.000	0.0	94
2		Vinyl Chloride	0.502	0.555	-10.5	97
3		1,1-Dichloroethene	0.850	0.941	-10.7	99
4		Methyl Tert Butyl Ether	1.105	1.241	-12.2	98
5		trans-1,2-Dichloroethene	0.770	0.856	-11.1	99
6		1,1-Dichloroethane	0.912	1.011	-10.9	98
7		cis-1,2-Dichloroethene	0.725	0.818	-12.9	99
8		Chloroform	1.021	1.116	-9.3	96
9		1,1,1-Trichloroethane	1.067	1.209	-13.3	99
10	ISTD	1,4-Difluorobenzene	1.000	1.000	0.0	95
11		Benzene	0.600	0.624	-3.9	99
12		Trichloroethene	0.320	0.341	-6.6	99
13	ISTD	Chlorobenzene-d5	1.000	1.000	0.0	94
14		Toluene	0.687	0.710	-3.4	99
15		Tetrachloroethene	0.373	0.398	-6.7	88
16		Ethyl Benzene	0.826	0.925	-12.0	98
17		m,p-Xylene	0.637	0.709	-11.2	101
18		o-Xylene	0.643	0.721	-12.0	99

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

01/21/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-056.D
Acq On : 21 Jan 2014 6:16
Operator : SJT
Sample : STD20140121-1 \ 500ppbv CCV
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:23:29 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 14 08:18:11 2014
QLast Update : Tue Jan 14 08:18:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.622	49	2062	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	5289	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	5504	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.893	62	58636m	566.22	ppbv	
3) 1,1-Dichloroethene	3.363	61	98934	564.59	ppbv	99
4) Methyl Tert Butyl Ether	3.822	73	128545	564.01	ppbv	96
5) trans-1,2-Dichloroethene	3.891	61	92635	583.40	ppbv	99
6) 1,1-Dichloroethane	4.128	63	106883	568.34	ppbv	99
7) cis-1,2-Dichloroethene	4.465	61	88596	592.54	ppbv	98
8) Chloroform	4.552	83	118495	562.66	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	124598	566.52	ppbv	99
11) Benzene	5.012	78	172371	543.05	ppbv	99
12) Trichloroethene	5.340	130	90576	535.74	ppbv	99
14) Toluene	6.020	91	201323	532.31	ppbv	100
15) Tetrachloroethene	6.403	166	110522	538.99	ppbv	99
16) Ethyl Benzene	6.866	91	263554	579.43	ppbv	98
17) m,p-Xylene	6.918	91	200899	572.77	ppbv	99
18) o-Xylene	7.169	91	205274	579.59	ppbv	99

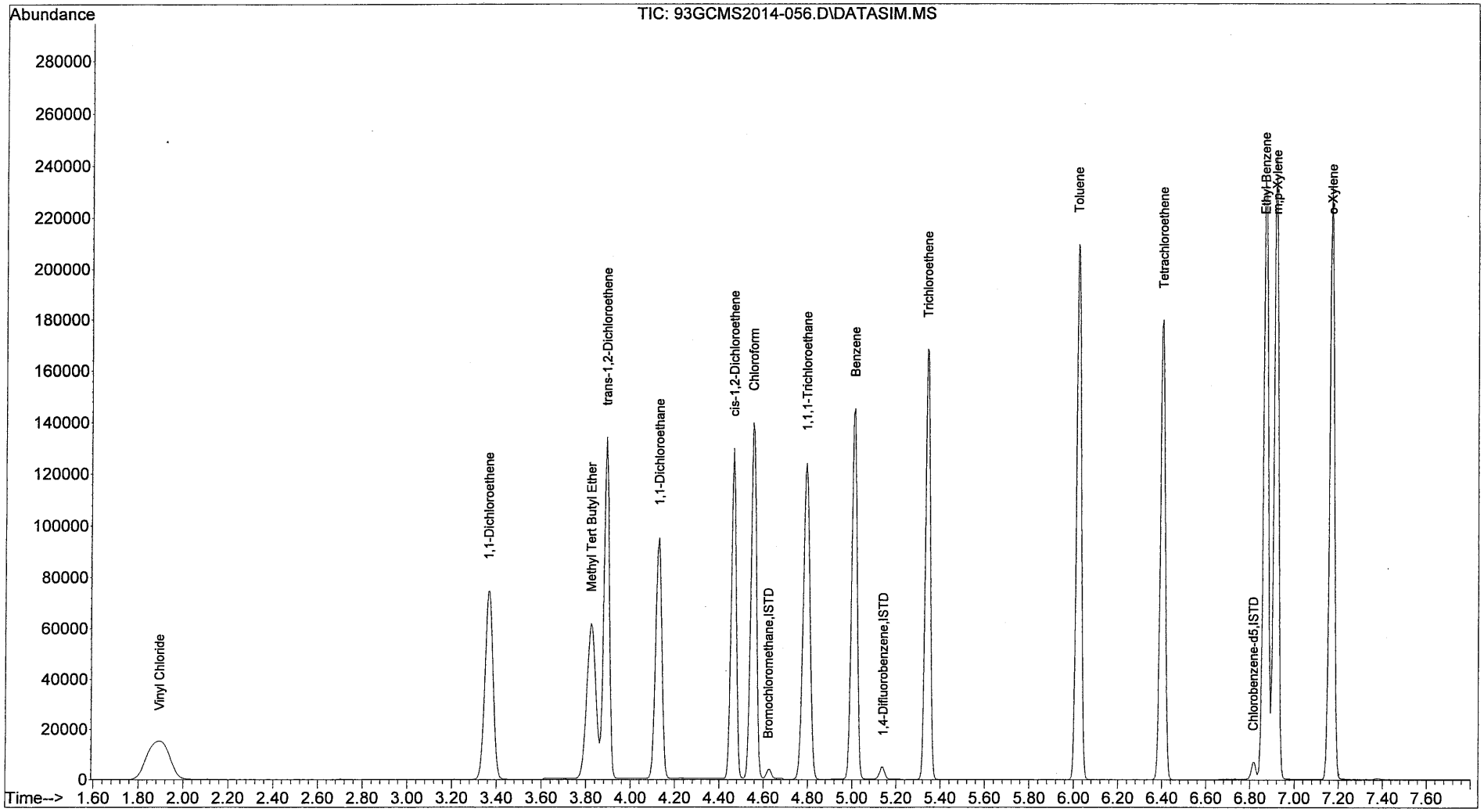
(#) = qualifier out of range (m) = manual integration (+) = signals summed

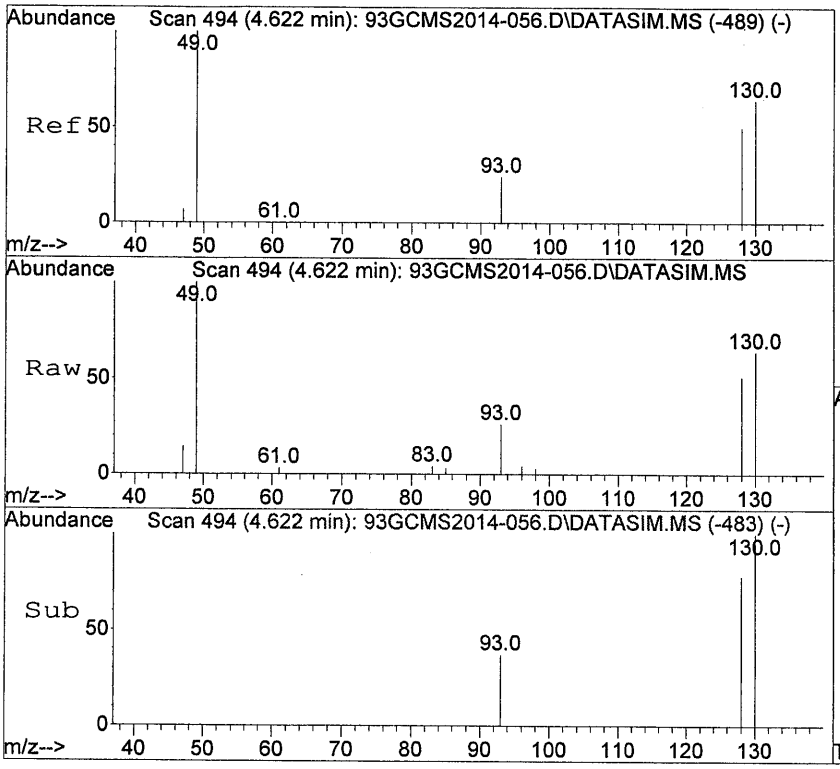
1/21/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-056.D
Acq On : 21 Jan 2014 6:16
Operator : SJT
Sample : STD20140121-1 \ 500ppbv CCV
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:23:29 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 14 08:18:11 2014
QLast Update : Tue Jan 14 08:18:11 2014
Response via : Initial Calibration

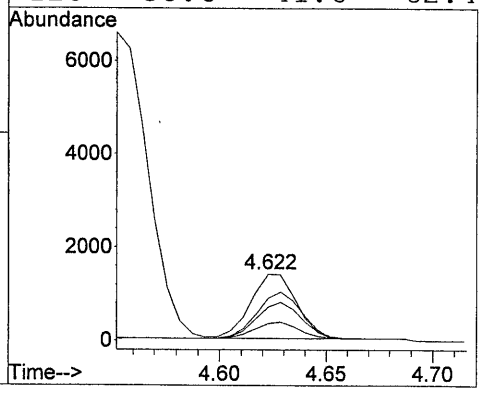


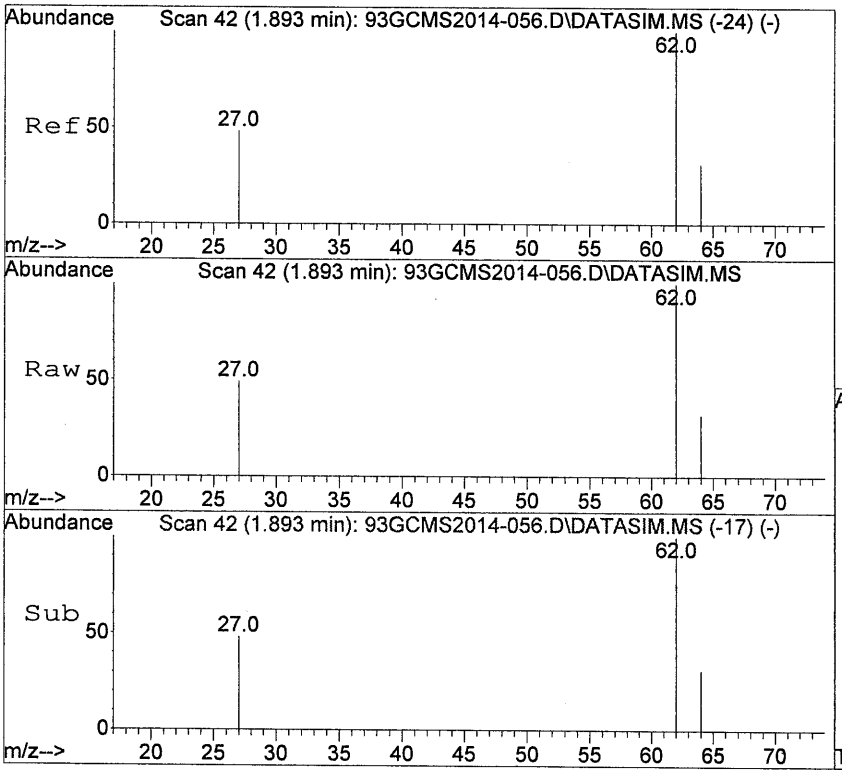


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 494
Delta R.T. -0.006 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 49 Resp: 2062

Ion	Ratio	Lower	Upper
49	100		
130	63.7	51.6	77.4
93	25.8	19.6	29.4
128	50.6	41.6	62.4

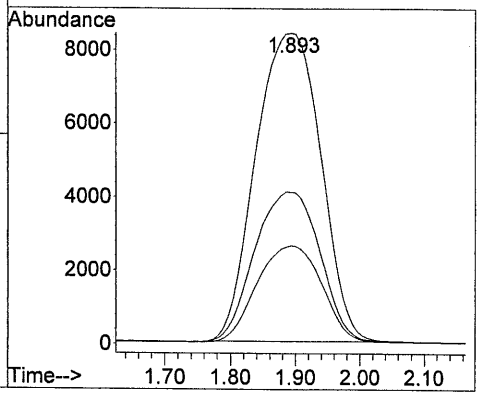


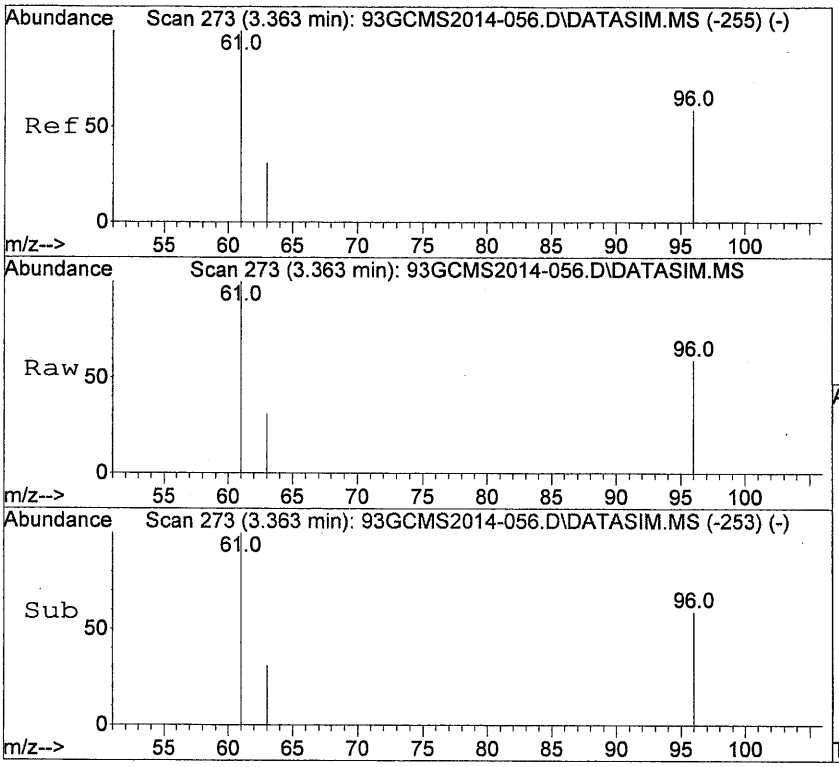


#2
Vinyl Chloride
Concen: 566.22 ppbv m
RT: 1.893 min Scan# 42
Delta R.T. -0.067 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 62 Resp: 58636

Ion	Ratio	Lower	Upper
62	100		
64	0.0	24.9	37.3#
27	0.0	37.8	56.6#

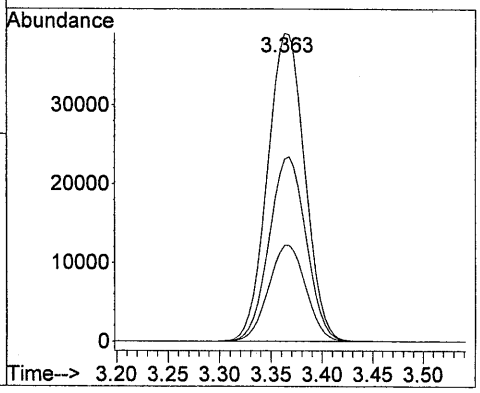


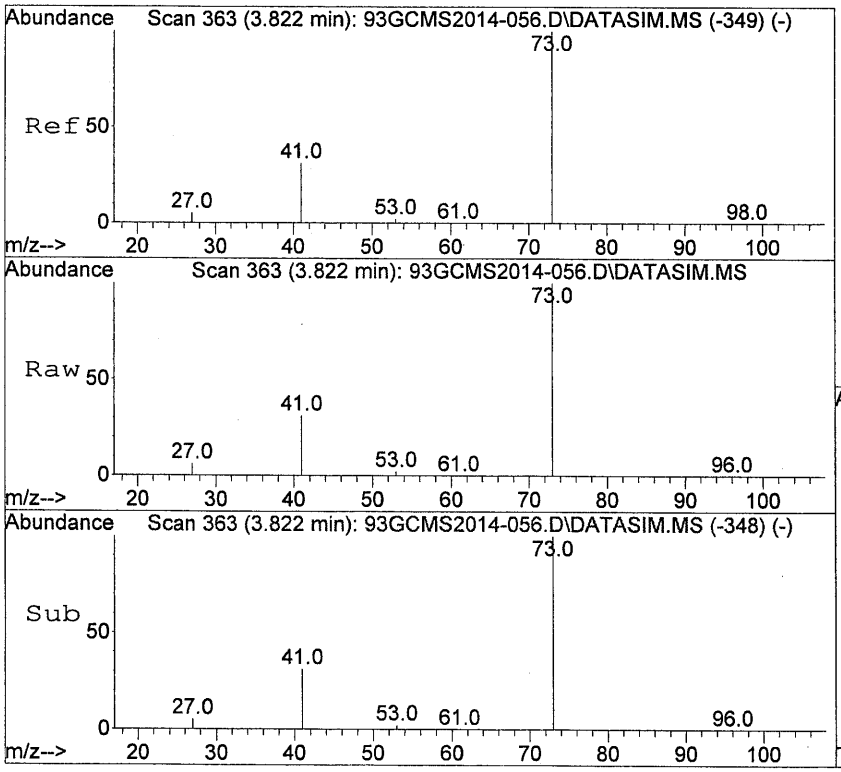


#3
1,1-Dichloroethene
Concen: 564.59 ppbv
RT: 3.363 min Scan# 273
Delta R.T. -0.013 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 61 Resp: 98934

Ion	Ratio	Lower	Upper
61	100		
96	59.4	48.6	72.8
63	31.2	25.0	37.6

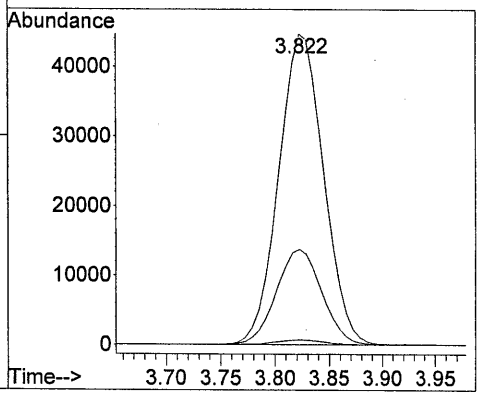


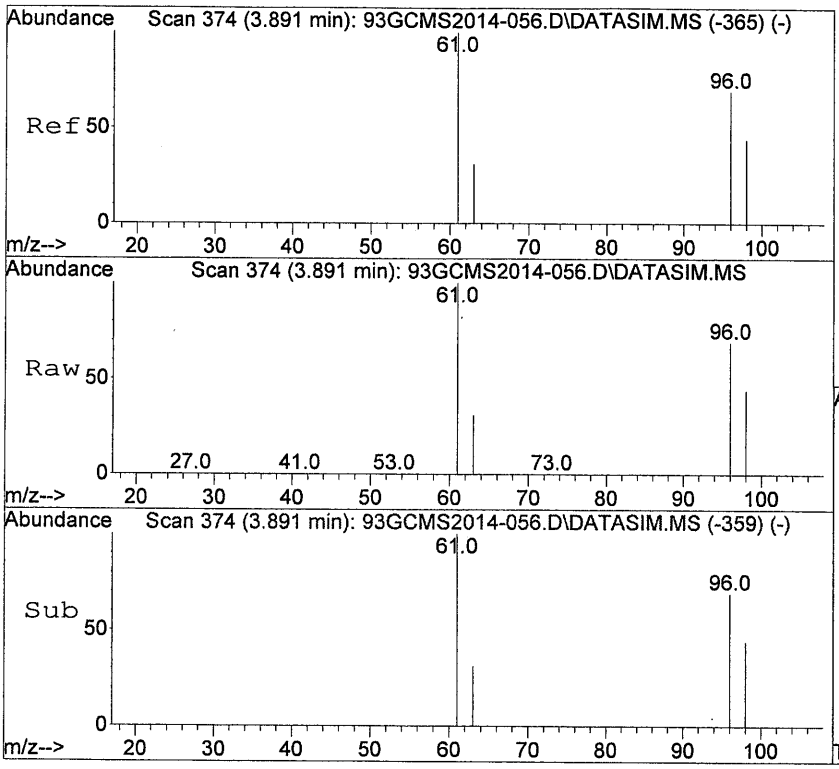


#4
Methyl Tert Butyl Ether
Concen: 564.01 ppbv
RT: 3.822 min Scan# 363
Delta R.T. -0.006 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 73 Resp: 128545

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	31.0	23.0	34.4

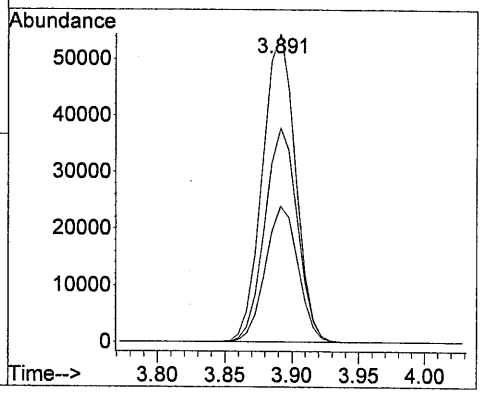


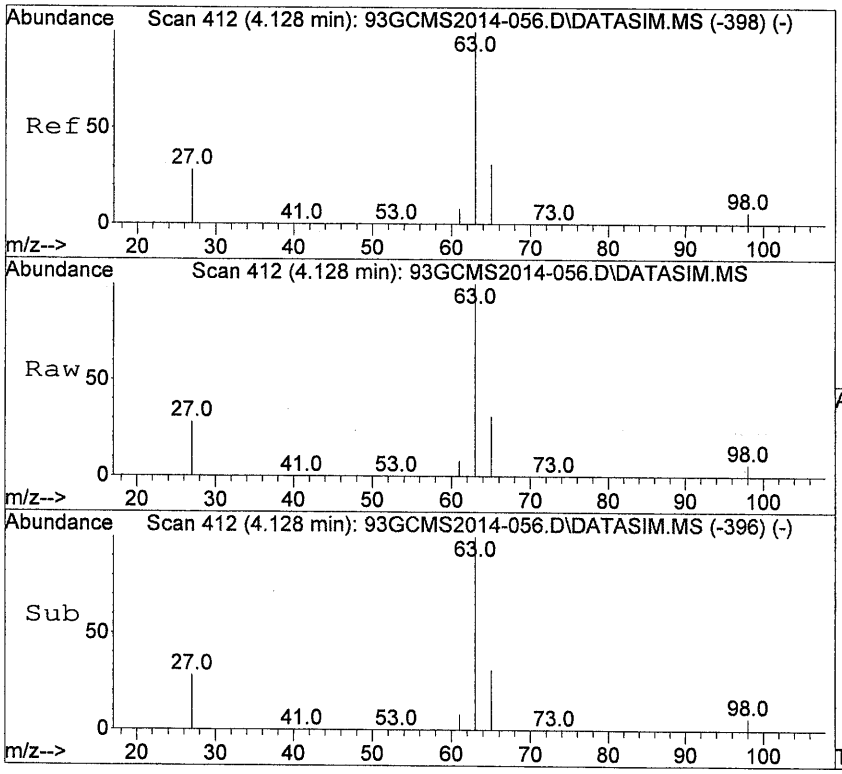


#5
trans-1,2-Dichloroethene
Concen: 583.40 ppbv
RT: 3.891 min Scan# 374
Delta R.T. -0.006 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 61 Resp: 92635

Ion	Ratio	Lower	Upper
61	100		
96	68.9	56.0	84.0
98	43.8	35.6	53.4

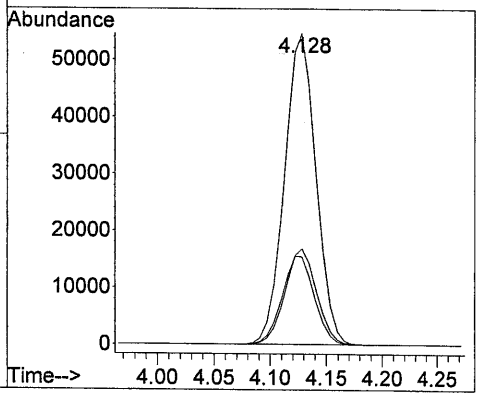


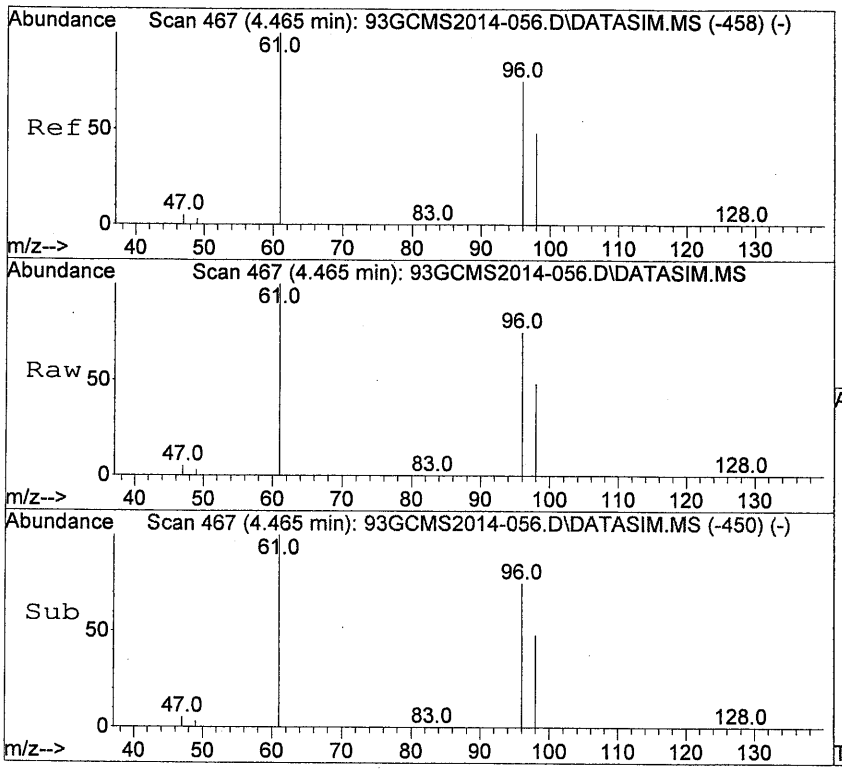


#6
1,1-Dichloroethane
Concen: 568.34 ppbv
RT: 4.128 min Scan# 412
Delta R.T. 0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 63 Resp: 106883

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	28.9	22.6	34.0

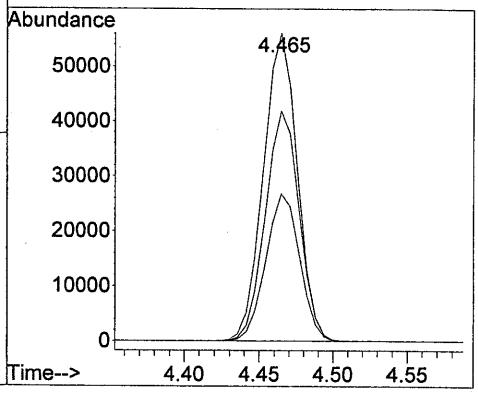


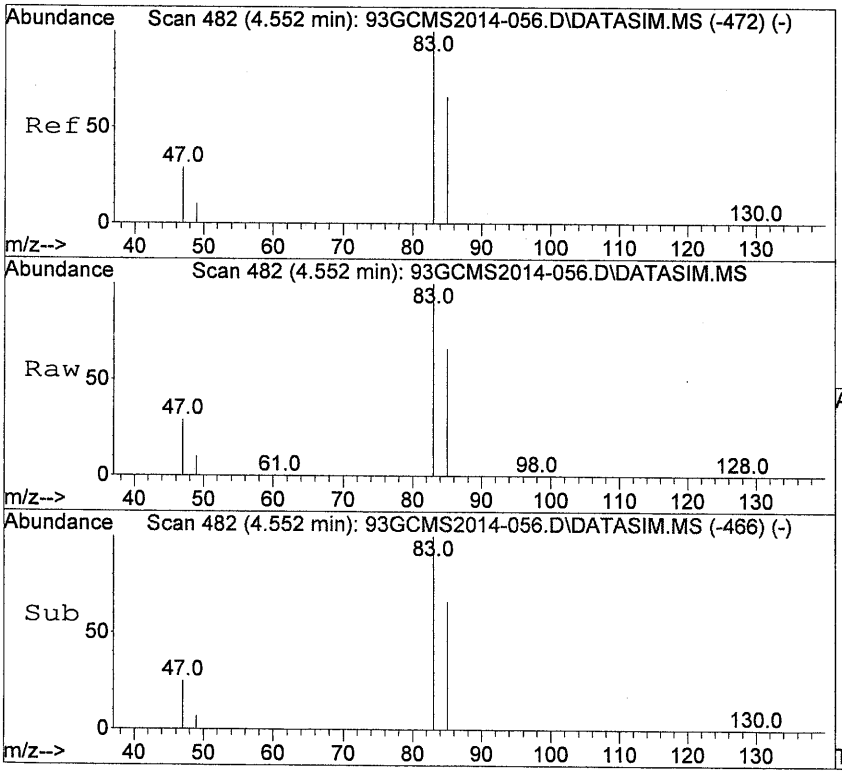


#7
cis-1,2-Dichloroethene
Concen: 592.54 ppbv
RT: 4.465 min Scan# 467
Delta R.T. -0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 61 Resp: 88596

Ion	Ratio	Lower	Upper
61	100		
96	75.1	61.7	92.5
98	48.0	39.4	59.0

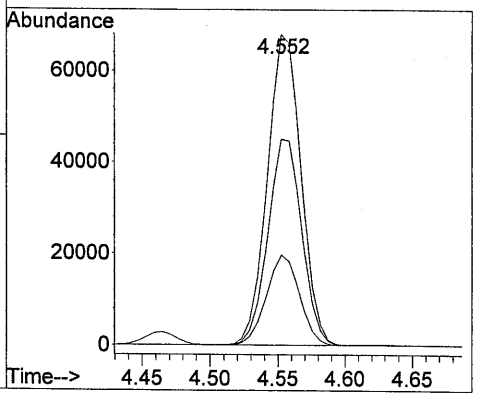


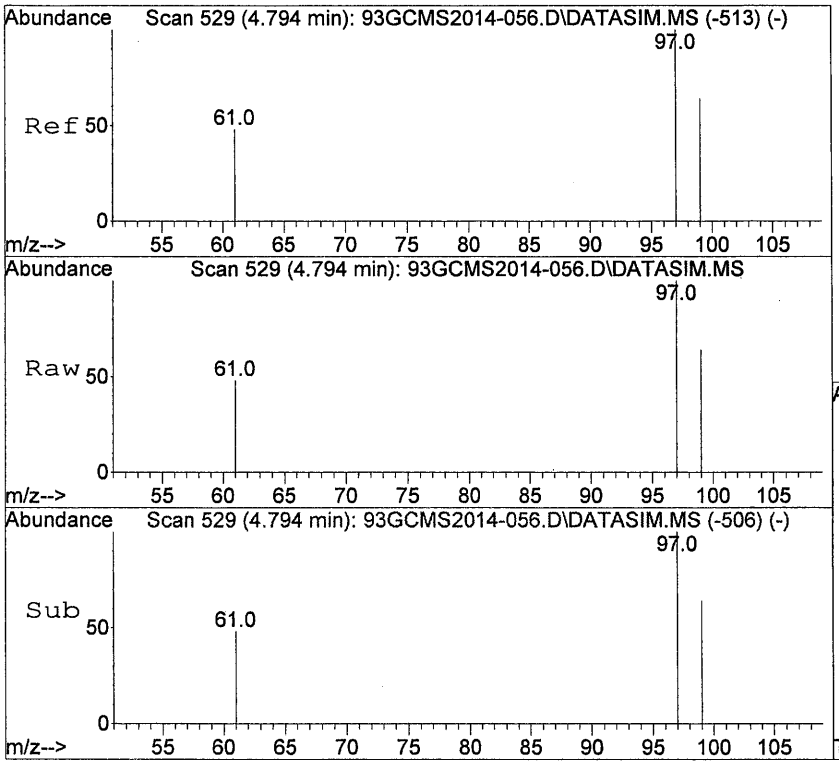


#8
Chloroform
Concen: 562.66 ppbv
RT: 4.552 min Scan# 482
Delta R.T. -0.006 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 83 Resp: 118495

Ion	Ratio	Lower	Upper
83	100		
85	66.7	52.0	78.0
47	28.6	20.0	30.0

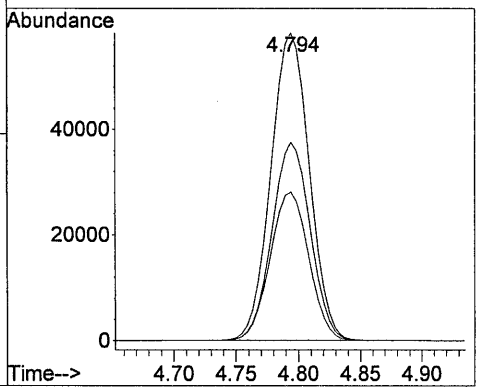


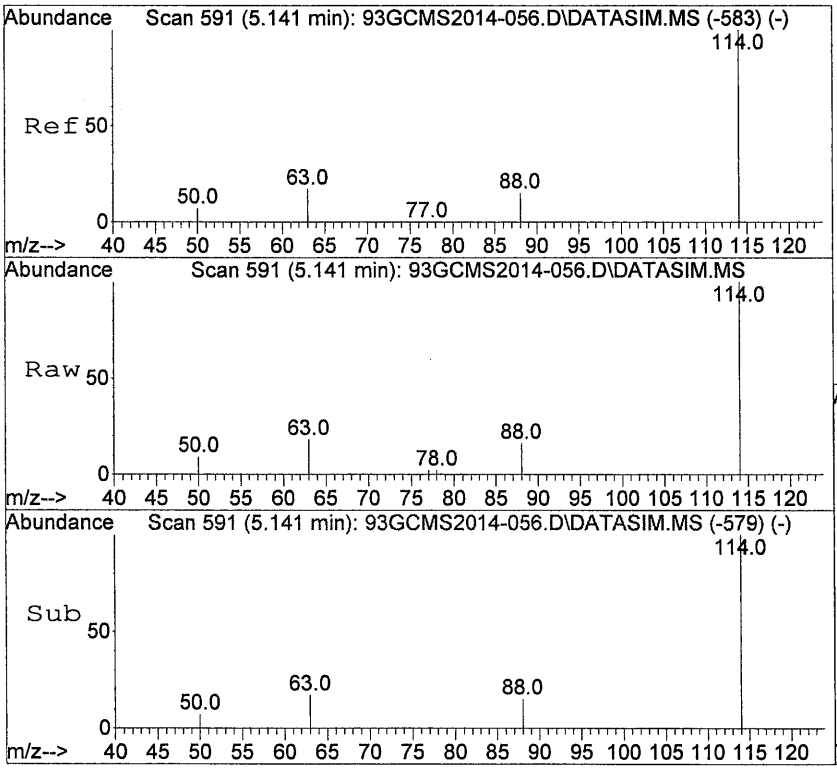


#9
1,1,1-Trichloroethane
Concen: 566.52 ppbv
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 97 Resp: 124598

Ion	Ratio	Lower	Upper
97	100		
99	64.1	51.4	77.0
61	48.5	37.4	56.0

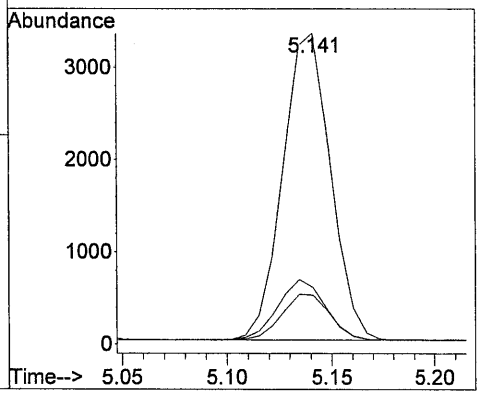


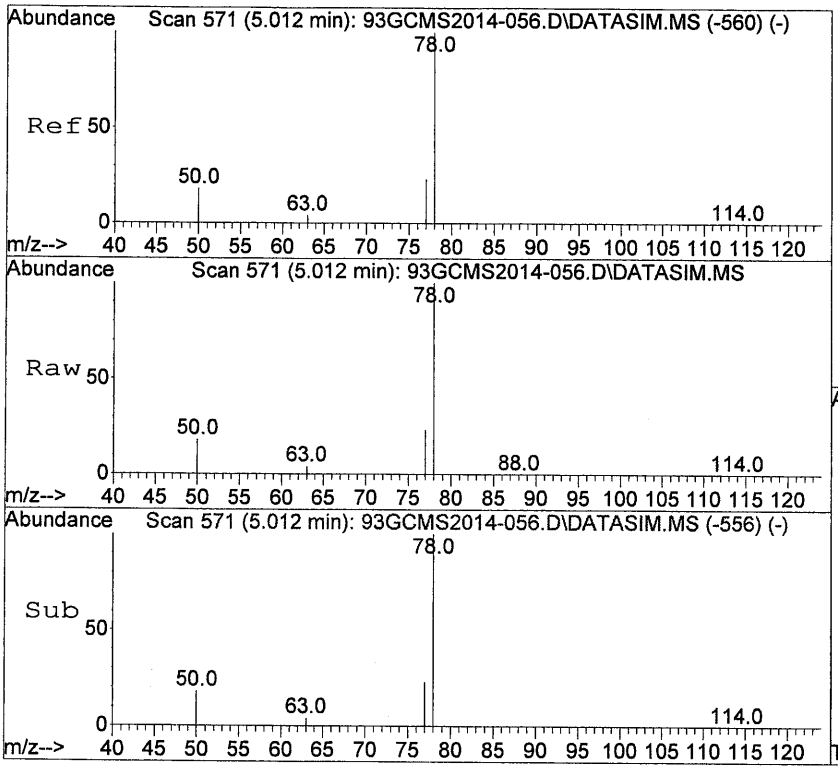


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.006 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion:114 Resp: 5289

Ion	Ratio	Lower	Upper
114	100		
63	19.3	15.1	22.7
88	15.1	12.0	18.0

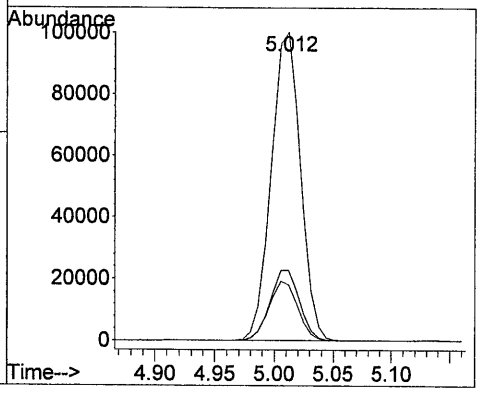


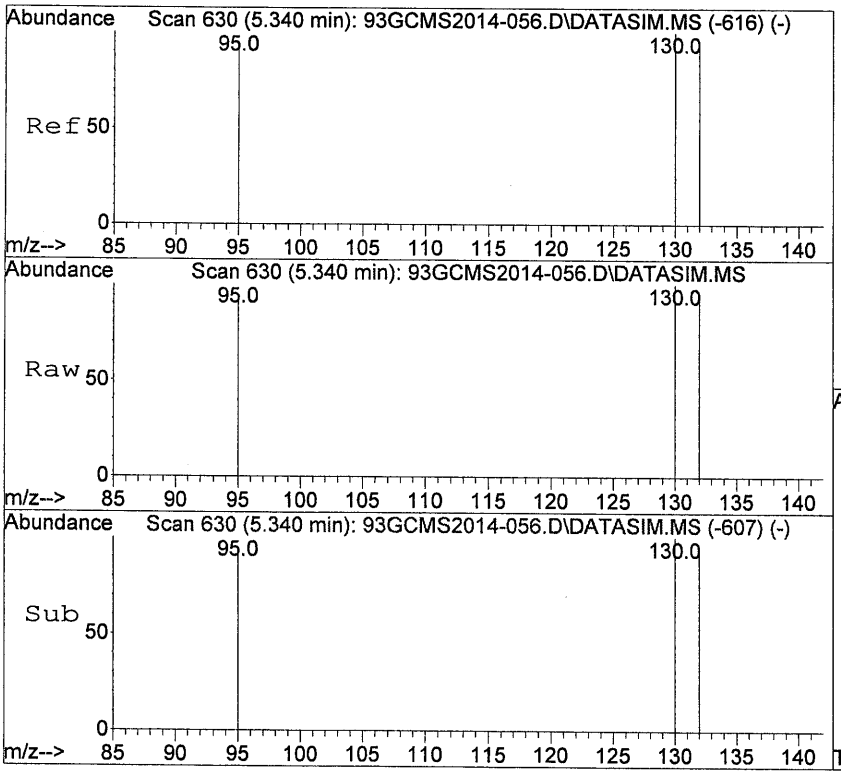


#11
Benzene
Concen: 543.05 ppbv
RT: 5.012 min Scan# 571
Delta R.T. -0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 78 Resp: 172371

Ion	Ratio	Lower	Upper
78	100		
77	22.9	18.4	27.6
50	18.9	14.6	21.8

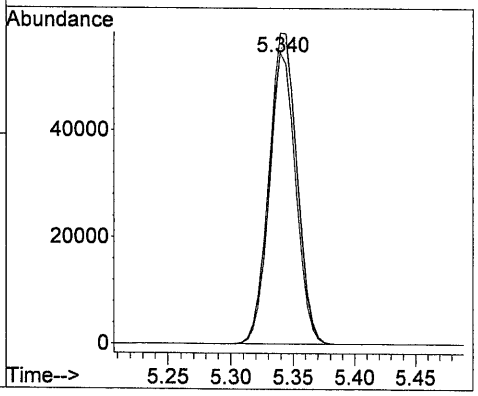


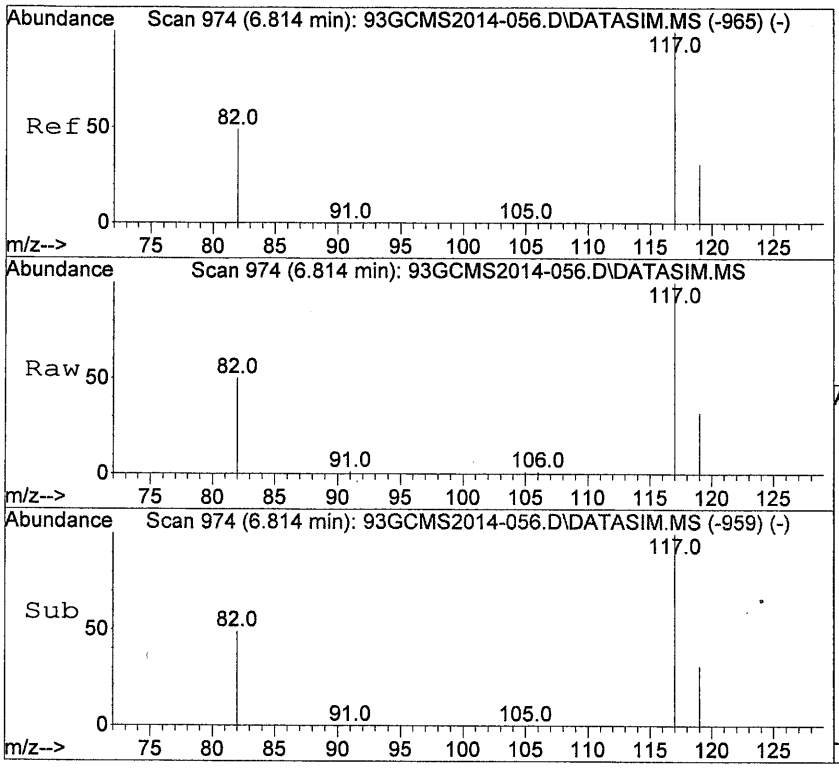


#12
Trichloroethene
Concen: 535.74 ppbv
RT: 5.340 min Scan# 630
Delta R.T. -0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion:130 Resp: 90576

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	92.1	72.9	109.3

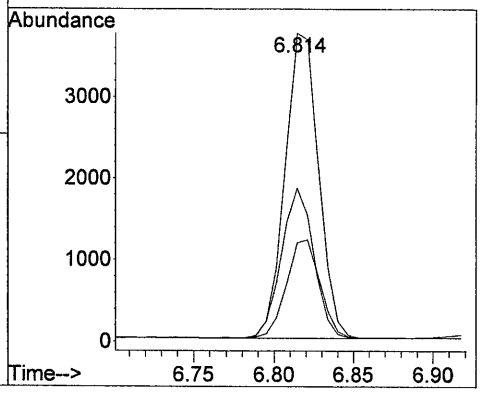


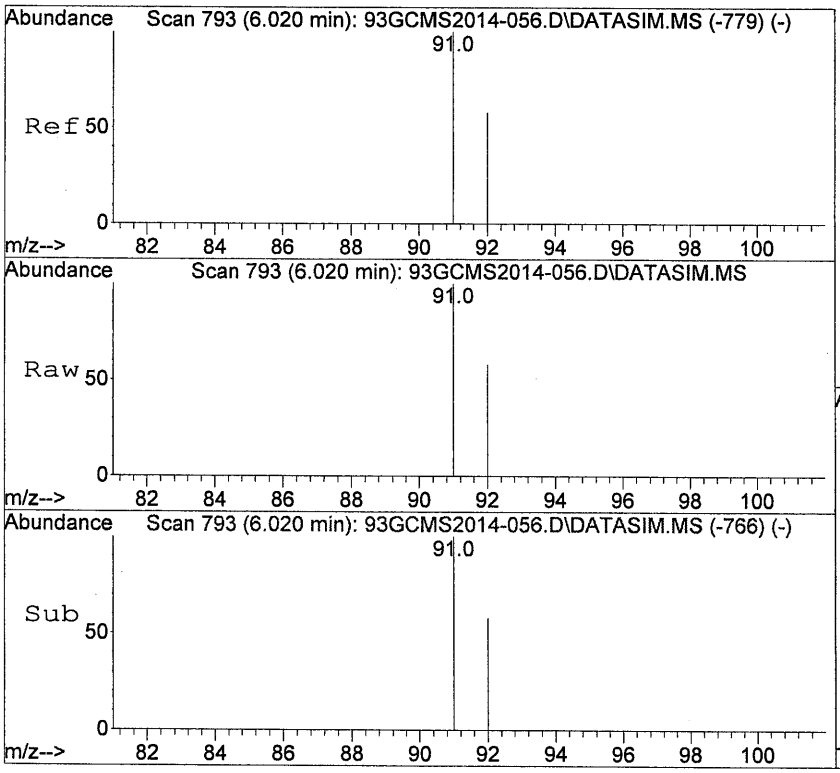


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion:117 Resp: 5504

Ion	Ratio	Lower	Upper
117	100		
82	47.2	37.8	56.6
119	32.0	25.6	38.4

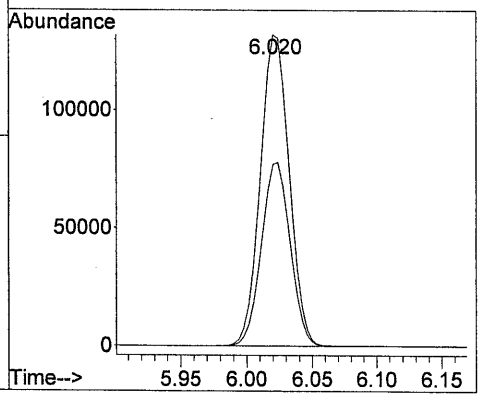


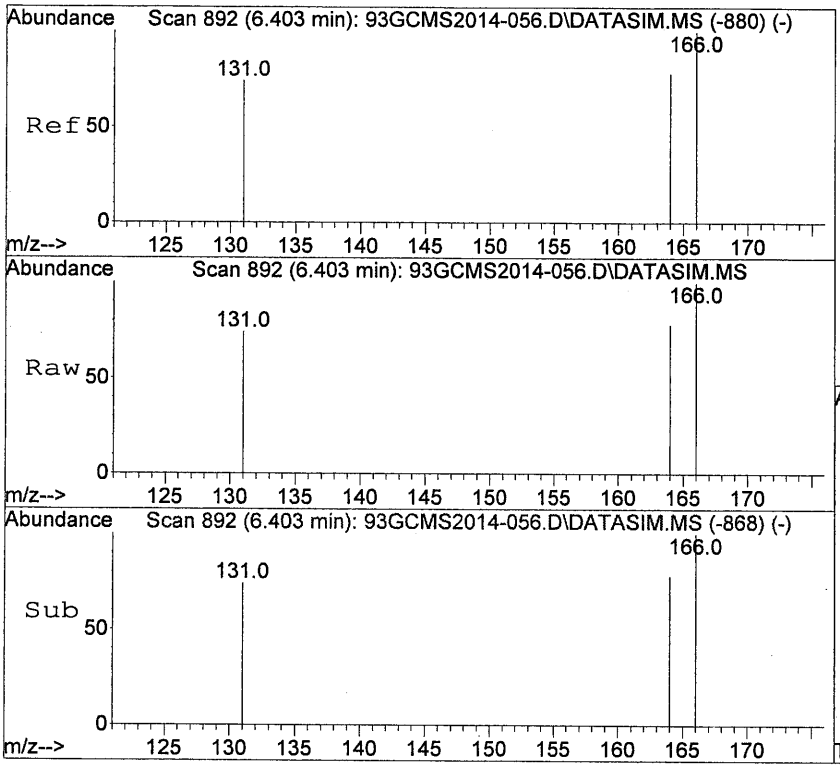


#14
Toluene
Concen: 532.31 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 91 Resp: 201323

Ion	Ratio	Lower	Upper
91	100		
92	58.9	47.2	70.8

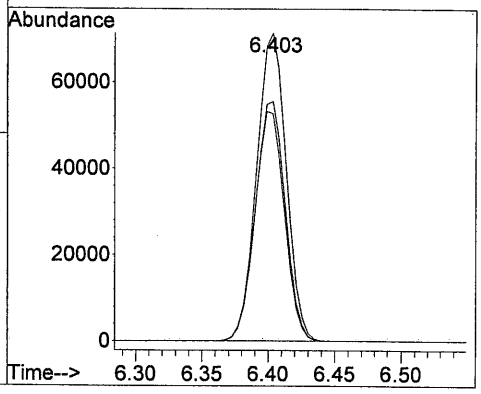


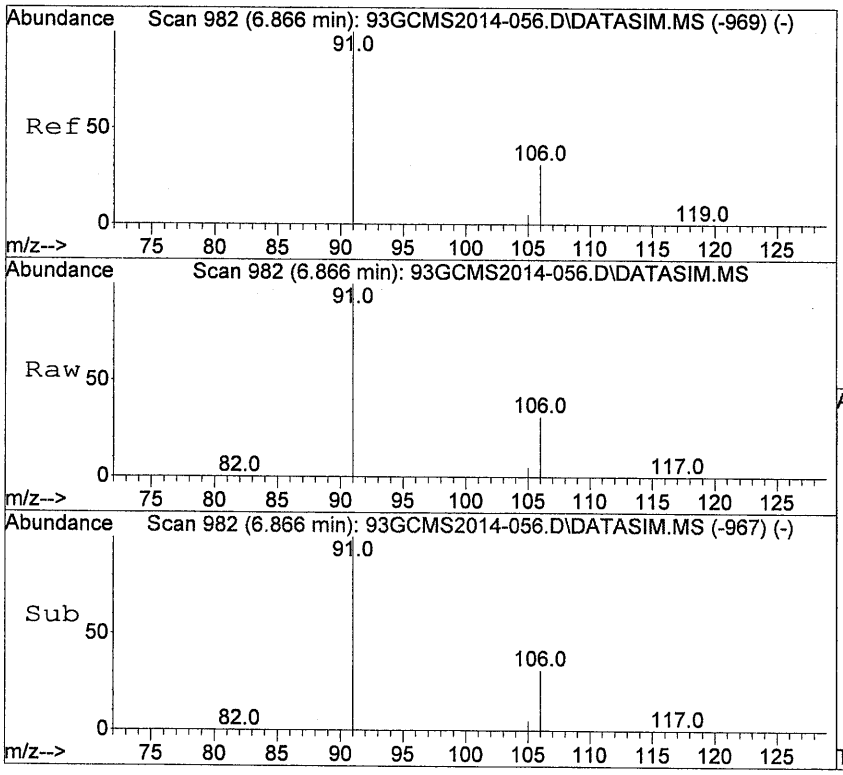


#15
Tetrachloroethene
Concen: 538.99 ppbv
RT: 6.403 min Scan# 892
Delta R.T. 0.004 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion:166 Resp: 110522

Ion	Ratio	Lower	Upper
166	100		
164	78.4	62.5	93.7
131	74.8	58.6	88.0

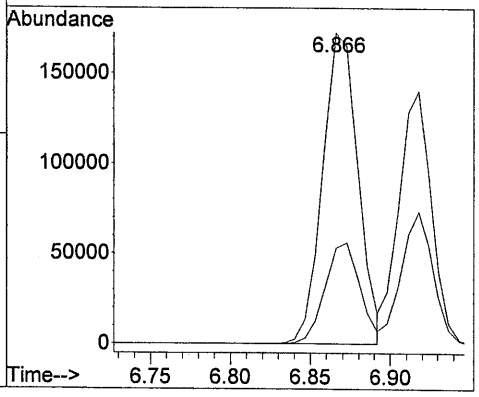


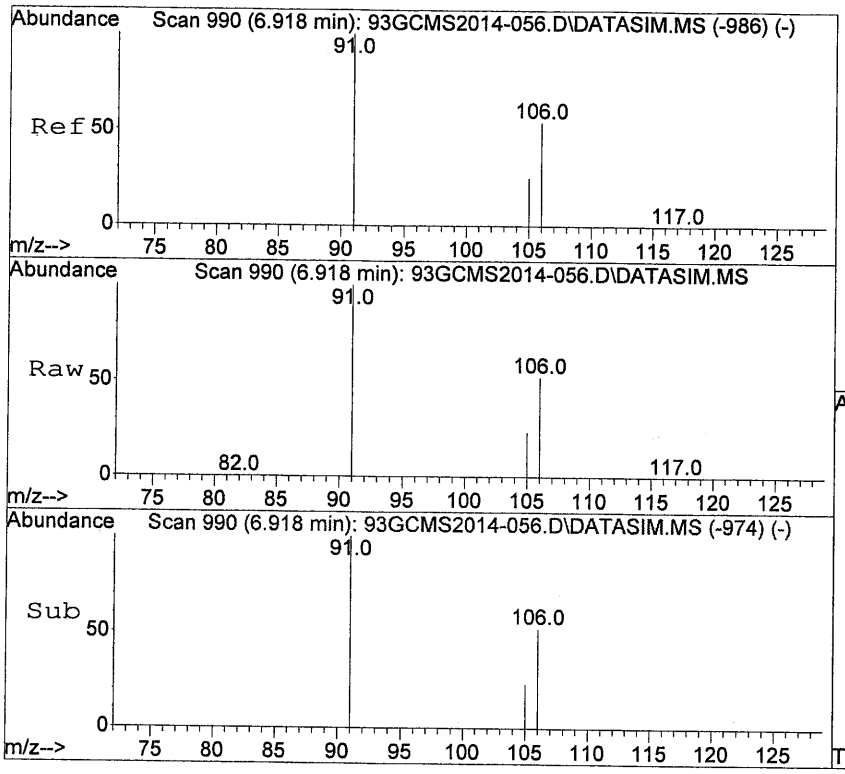


#16
Ethyl Benzene
Concen: 579.43 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 91 Resp: 263554

Ion	Ratio	Lower	Upper
91	100		
106	30.8	25.6	38.4

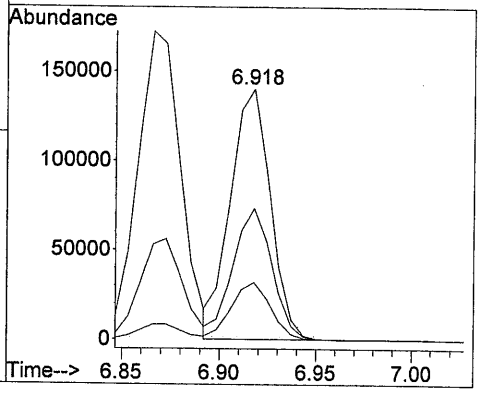


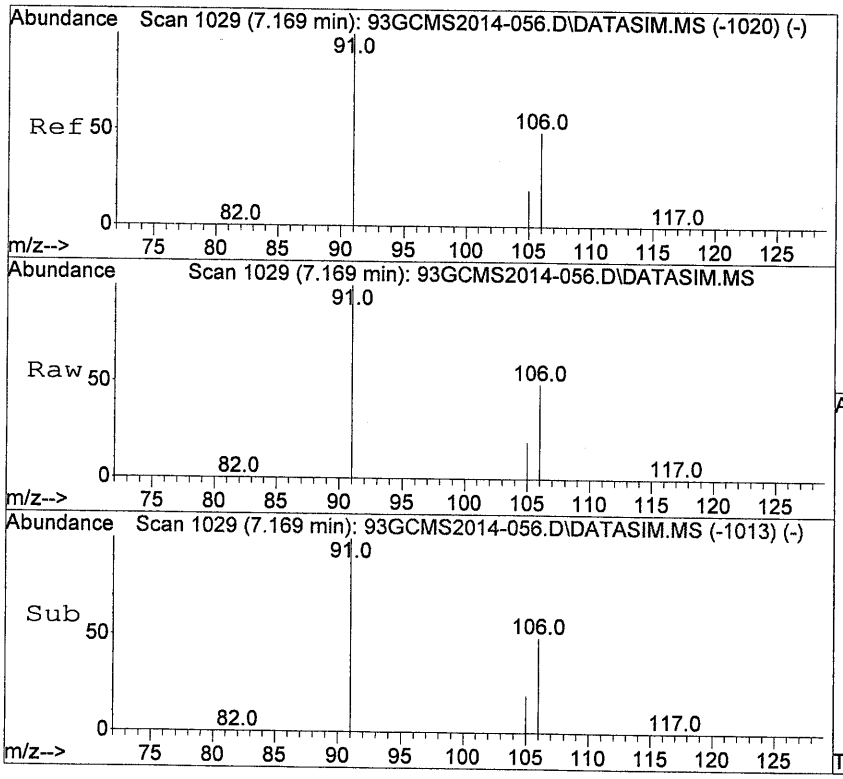


#17
m,p-Xylene
Concen: 572.77 ppbv
RT: 6.918 min Scan# 990
Delta R.T. 0.006 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 91 Resp: 200899

Ion	Ratio	Lower	Upper
91	100		
106	52.3	42.5	63.7
105	22.8	18.6	27.8

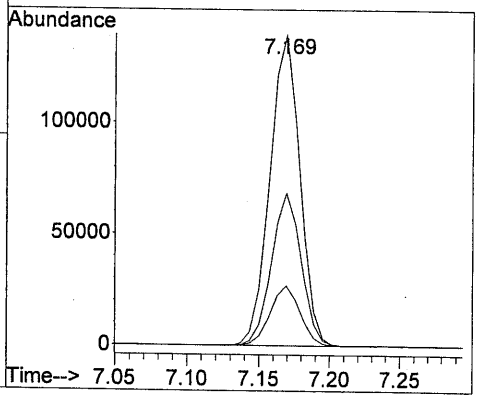




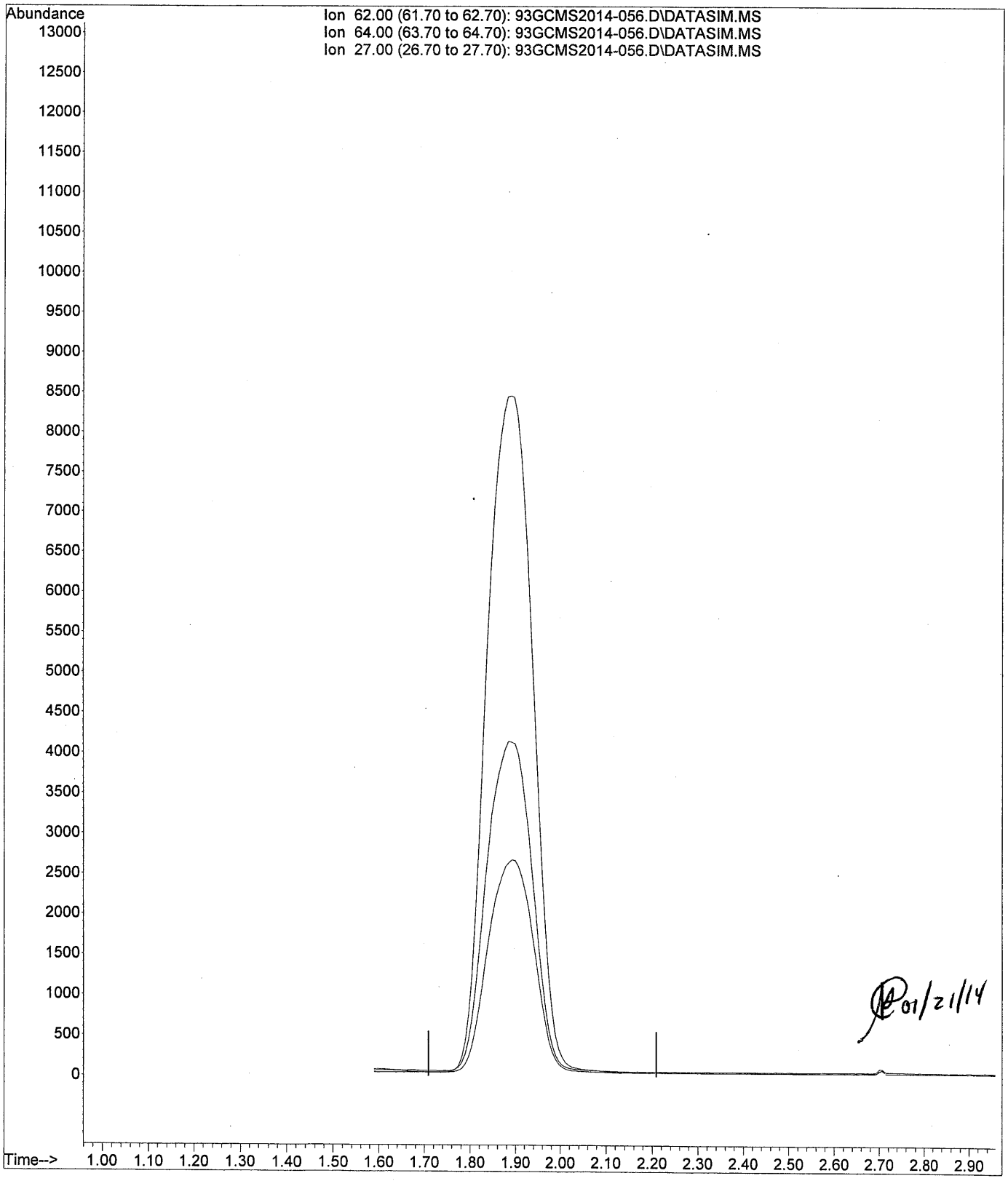
#18
o-Xylene
Concen: 579.59 ppbv
RT: 7.169 min Scan# 1029
Delta R.T. 0.006 min
Lab File: 93GCMS2014-056.D
Acq: 21 Jan 2014 6:16

Tgt Ion: 91 Resp: 205274

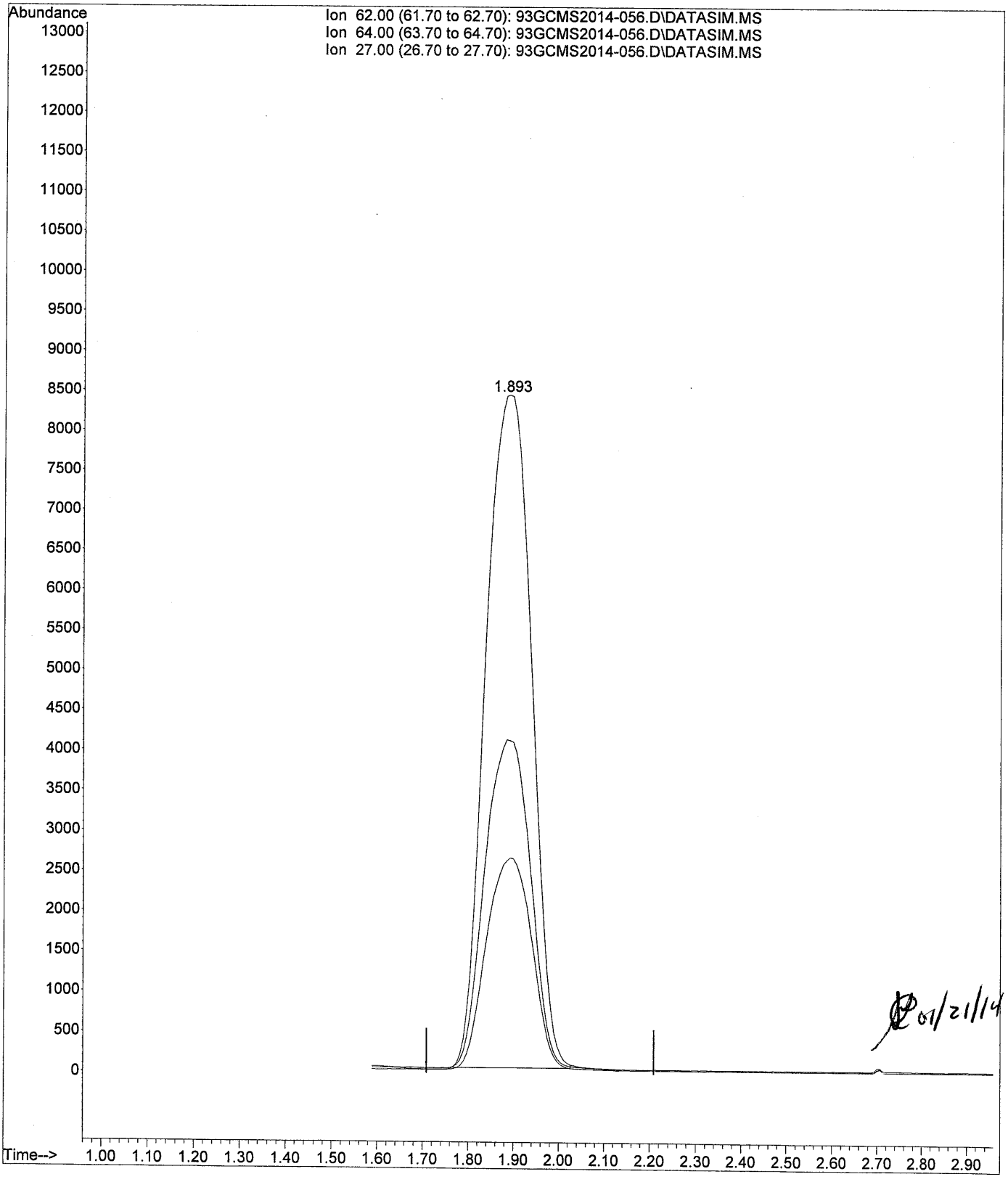
Ion	Ratio	Lower	Upper
91	100		
106	48.5	39.3	58.9
105	19.1	15.4	23.2



File :D:\msdchem\1\data\2014\20140121\93GCMS2014-056.D
Operator : SJT
Acquired : 21 Jan 2014 6:16 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140121-1 \ 500ppbv CCV
Misc Info : 5mL \ 21 Jan 2014
Vial Number: 1



File :D:\msdchem\1\data\2014\20140121\93GCMS2014-056.D
Operator : SJT
Acquired : 21 Jan 2014 6:16 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140121-1 \ 500ppbv CCV
Misc Info : 5mL \ 21 Jan 2014
Vial Number: 1



Data File:	93GCMS2014-057.d
Sample Number:	STD20140121-3
Sample Volume (mL)	5
Date Prepared:	21-Jan-2014
Date Analyzed:	21-Jan-2014

Compound	COA Concentrations CC# 106676 EXP. 03/20/2014 CC# 127284 EXP. 12/13/2014 (ppmv)	Calculated Concentrations STD20140121-3 0.5 ppbv LLCCV (ppbv)	STD20140121-3 0.5 ppbv LLCCV Results (ppbv)	Percent Difference (% D)
Vinyl Chloride	20.5	0.51	0.65	-26.83
1,1-Dichloroethene	20.4	0.51	0.57	-11.76
Methyl Tert Butyl Ether	21.0	0.53	0.54	-2.86
trans-1,2-Dichloroethene	20.5	0.51	0.59	-15.12
1,1-Dichloroethane	20.1	0.50	0.57	-13.43
cis-1,2-Dichloroethene	21.0	0.53	0.55	-4.76
Chloroform	20.6	0.52	0.58	-12.62
1,1,1-Trichloroethane	20.0	0.50	0.53	-6.00
Benzene	20.9	0.52	0.58	-11.00
Trichloroethene	20.1	0.50	0.52	-3.48
Toluene	20.6	0.52	0.60	-16.50
Tetrachloroethene	20.2	0.51	0.56	-10.89
Ethyl Benzene	20.7	0.52	0.54	-4.35
m&p-Xylene	20.8	0.52	0.60	-15.38
o-Xylene	20.7	0.52	0.61	-17.87

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-057.D
Acq On : 21 Jan 2014 6:28
Operator : SJT
Sample : STD20140121-3 \ 0.5ppbv LLCCV
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:36:28 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 14 08:18:11 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	4.622	49	2038	10.00	ppbv		0.00
10) 1,4-Difluorobenzene	5.141	114	5183	10.00	ppbv		0.00
13) Chlorobenzene-d5	6.820	117	5377	10.00	ppbv		0.00
System Monitoring Compounds							
Target Compounds							Qvalue
2) Vinyl Chloride	1.878	62	67	0.65	ppbv	#	63
3) 1,1-Dichloroethene	3.363	61	99	0.57	ppbv		96
4) Methyl Tert Butyl Ether	3.822	73	121	0.54	ppbv	#	67
5) trans-1,2-Dichloroethene	3.885	61	93	0.59	ppbv		96
6) 1,1-Dichloroethane	4.128	63	106	0.57	ppbv	#	78
7) cis-1,2-Dichloroethene	4.464	61	82	0.55	ppbv	#	88
8) Chloroform	4.552	83	120	0.58	ppbv		92
9) 1,1,1-Trichloroethane	4.794	97	116	0.53	ppbv		96
11) Benzene	5.005	78	180	0.58	ppbv	#	89
12) Trichloroethene	5.344	130	86	0.52	ppbv		95
14) Toluene	6.024	91	220	0.60	ppbv		98
15) Tetrachloroethene	6.403	166	112	0.56	ppbv		98
16) Ethyl Benzene	6.872	91	241	0.54	ppbv	#	67
17) m,p-Xylene	6.917	91	207m	0.60	ppbv		
18) o-Xylene	7.169	91	210	0.61	ppbv	#	92

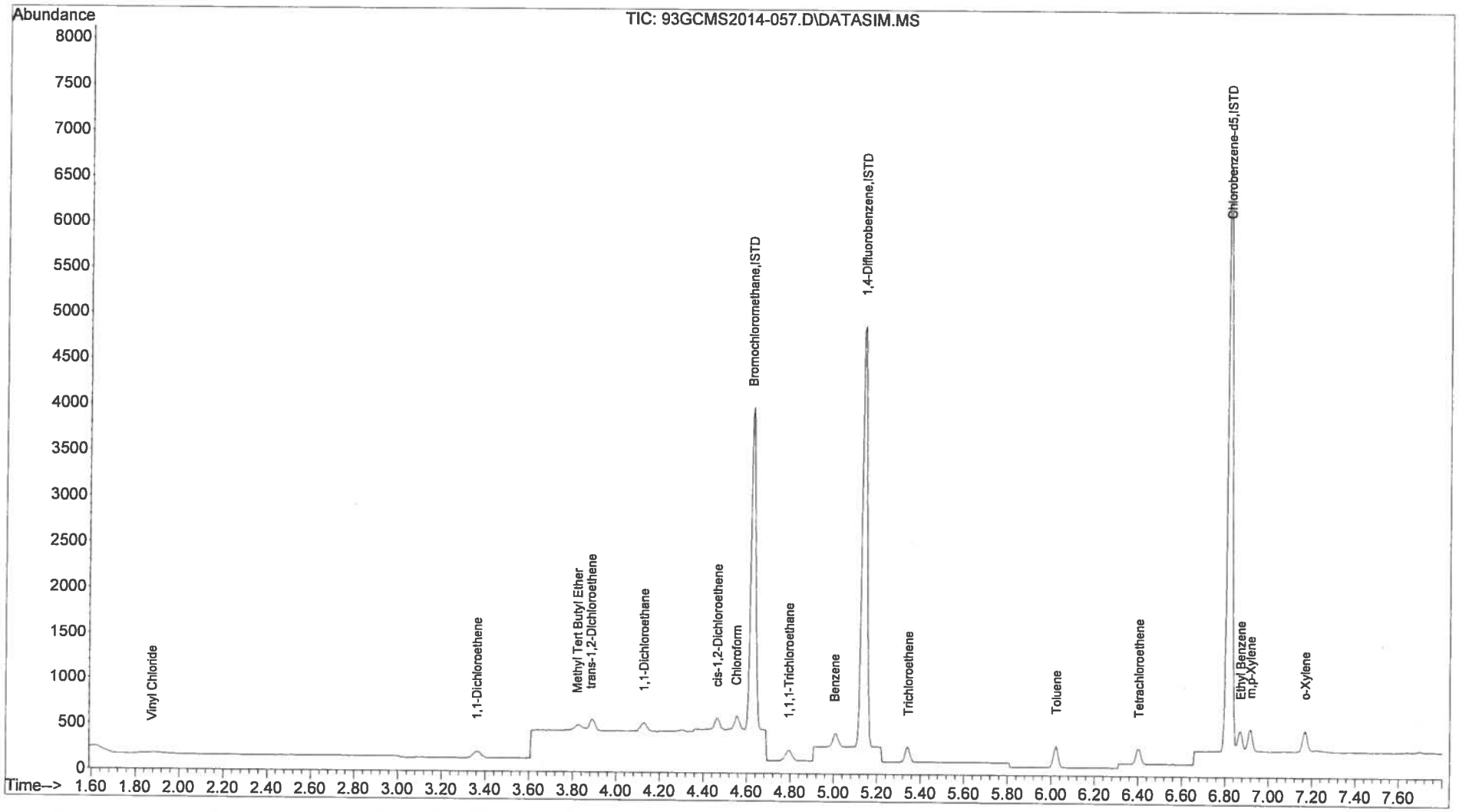
(#) = qualifier out of range (m) = manual integration (+) = signals summed

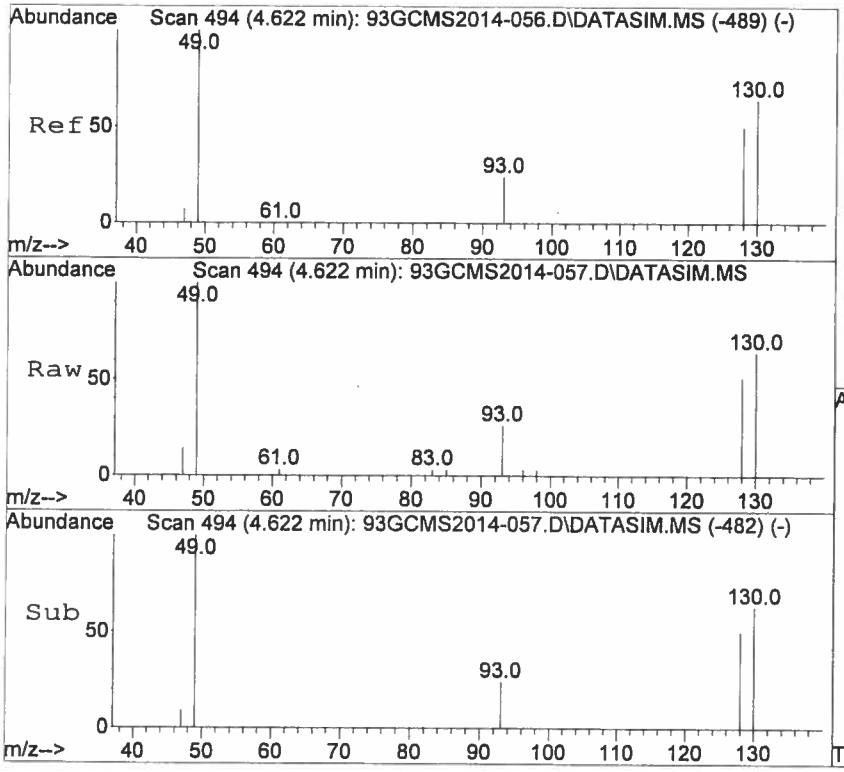
01/21/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-057.D
Acq On : 21 Jan 2014 6:28
Operator : SJT
Sample : STD20140121-3 \ 0.5ppbv LLCCV
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:36:28 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 14 08:18:11 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

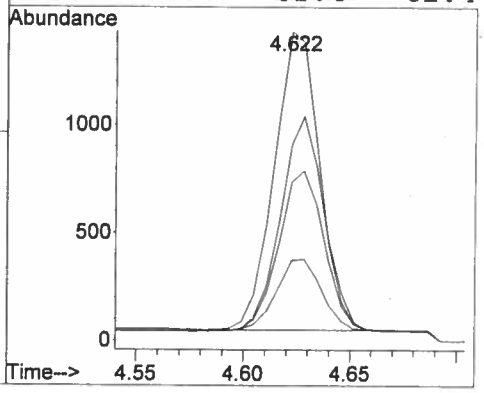


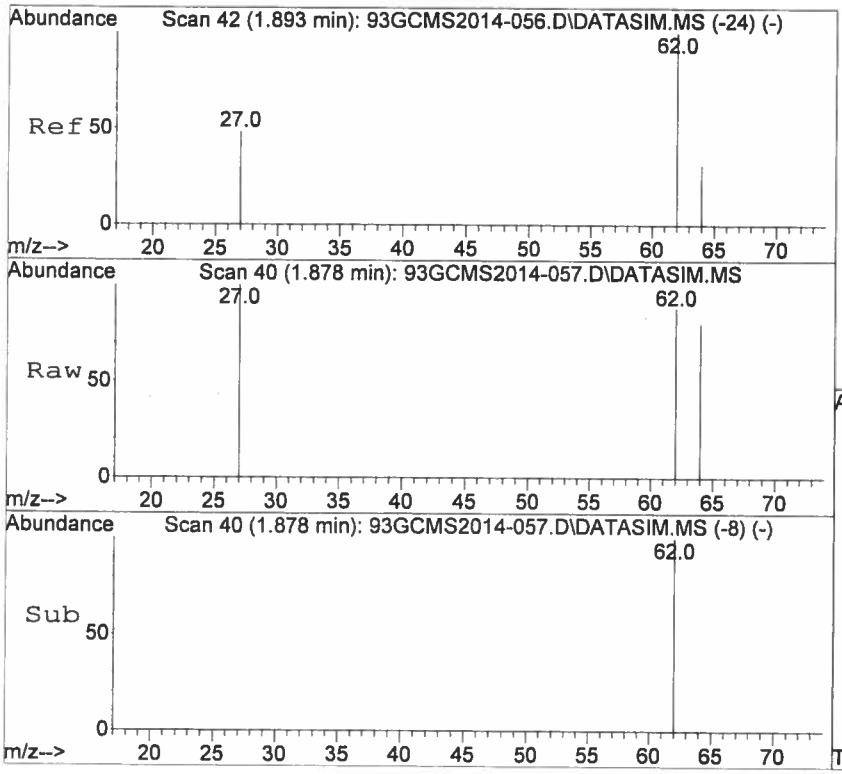


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 494
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 49 Resp: 2038

Ion	Ratio	Lower	Upper
49	100		
130	63.5	51.6	77.4
93	25.9	19.6	29.4
128	51.4	41.6	62.4

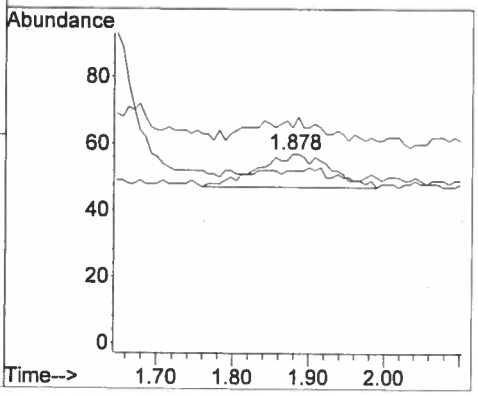


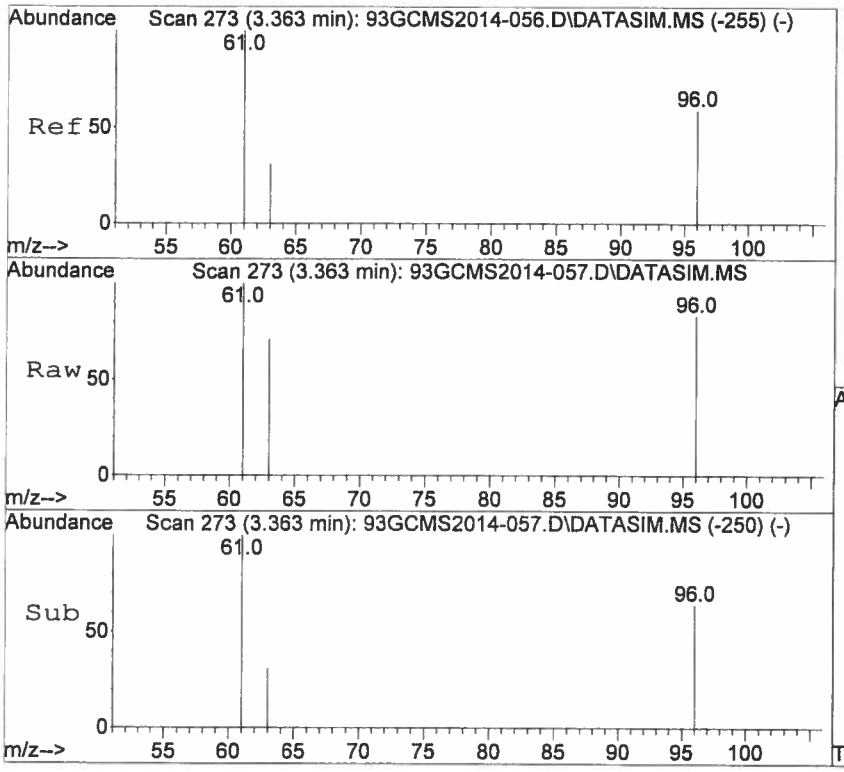


#2
Vinyl Chloride
Concen: 0.65 ppbv
RT: 1.878 min Scan# 40
Delta R.T. -0.015 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 62 Resp: 67

Ion	Ratio	Lower	Upper
62	100		
64	0.0	24.9	37.3#
27	31.3	37.8	56.6#

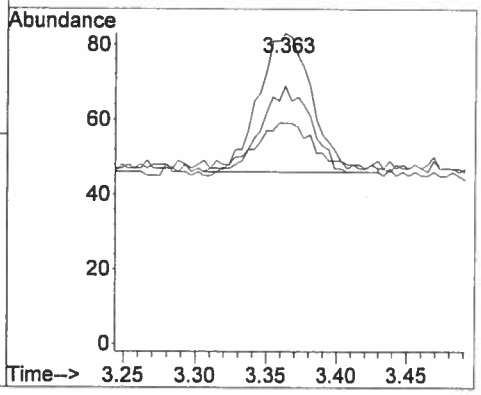


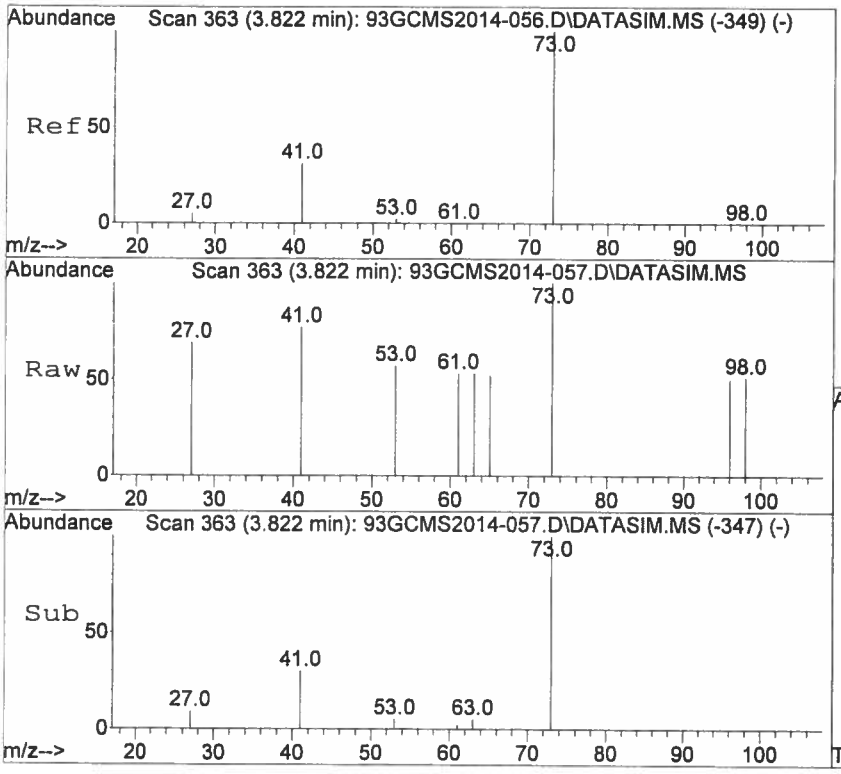


#3
1,1-Dichloroethene
Concen: 0.57 ppbv
RT: 3.363 min Scan# 273
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 61 Resp: 99

Ion	Ratio	Lower	Upper
61	100		
96	62.6	48.6	72.8
63	35.4	25.0	37.6

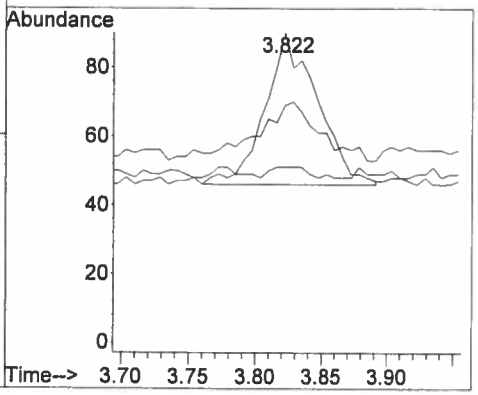


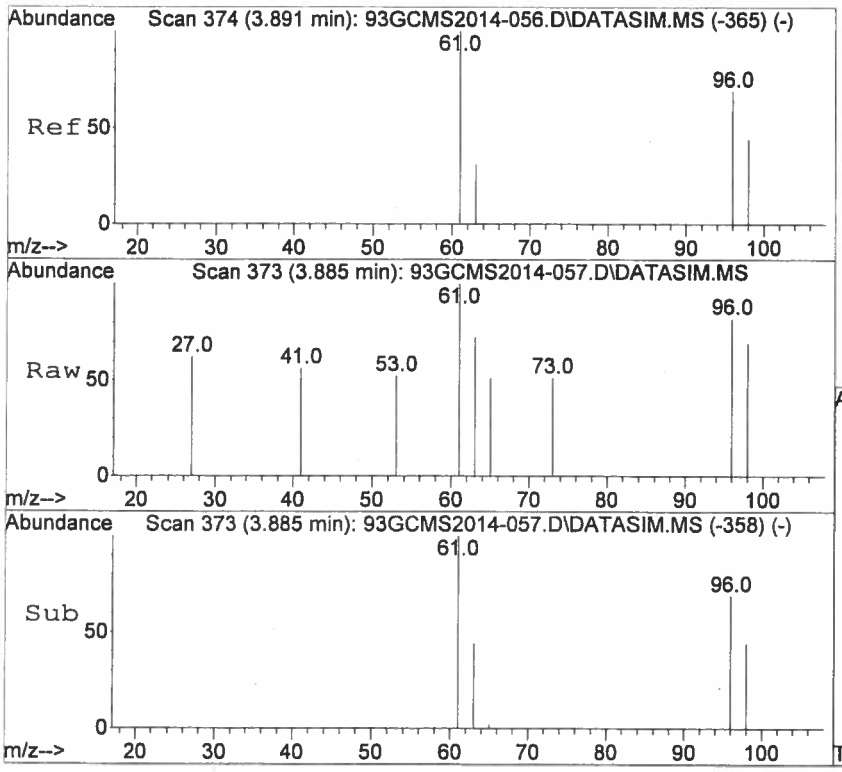


#4
Methyl Tert Butyl Ether
Concen: 0.54 ppbv
RT: 3.822 min Scan# 363
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 73 Resp: 121

Ion	Ratio	Lower	Upper
73	100		
53	5.0	1.1	1.7#
41	47.1	23.0	34.4#

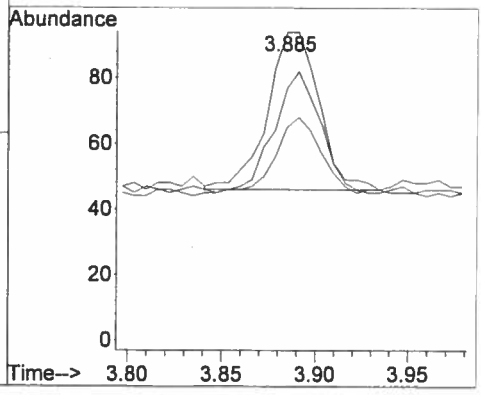


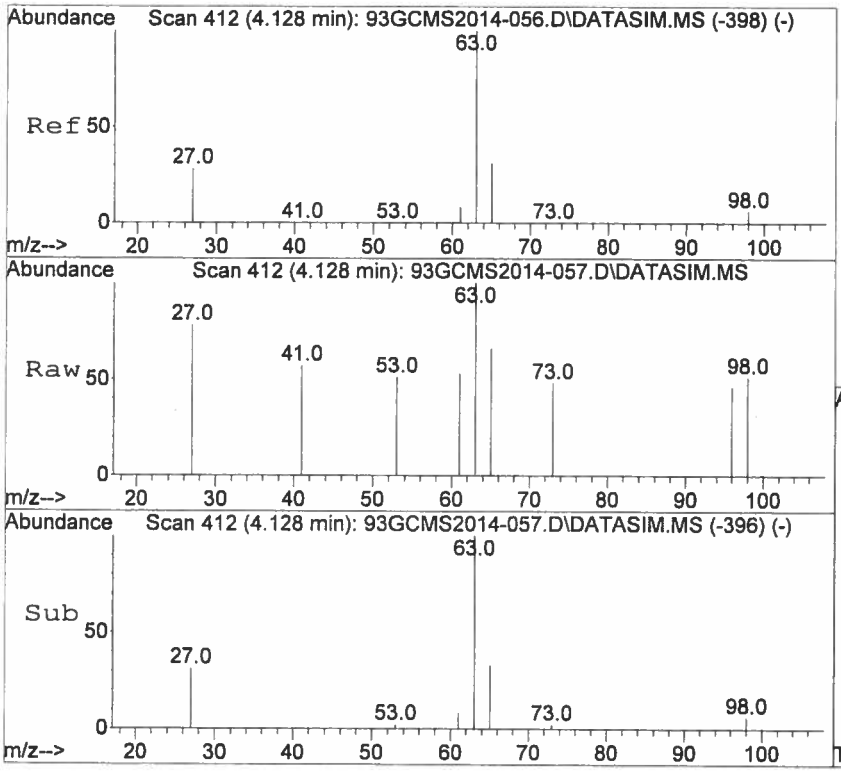


#5
trans-1,2-Dichloroethene
Concen: 0.59 ppbv
RT: 3.885 min Scan# 373
Delta R.T. -0.006 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 61 Resp: 93

Ion	Ratio	Lower	Upper
61	100		
96	68.8	56.0	84.0
98	49.5	35.6	53.4

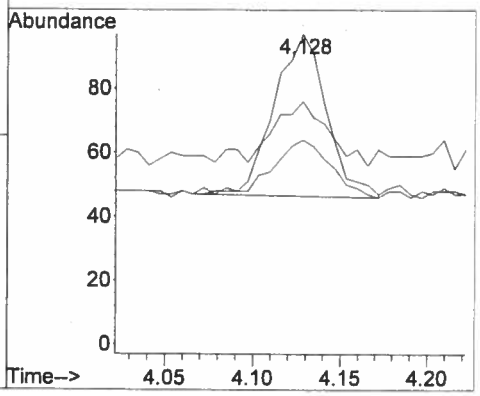


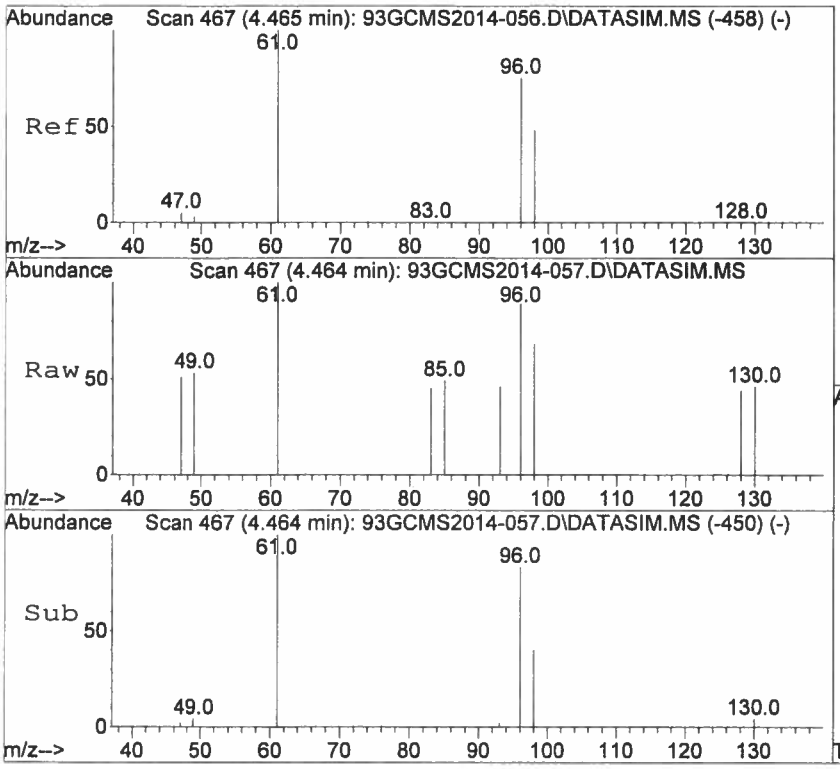


#6
1,1-Dichloroethane
Concen: 0.57 ppbv
RT: 4.128 min Scan# 412
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 63 Resp: 106

Ion	Ratio	Lower	Upper
63	100		
65	39.6	24.7	37.1#
27	43.4	22.6	34.0#

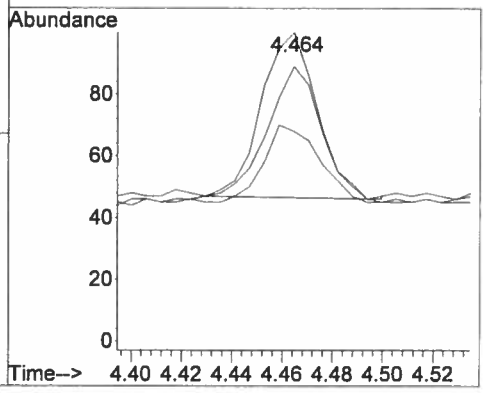


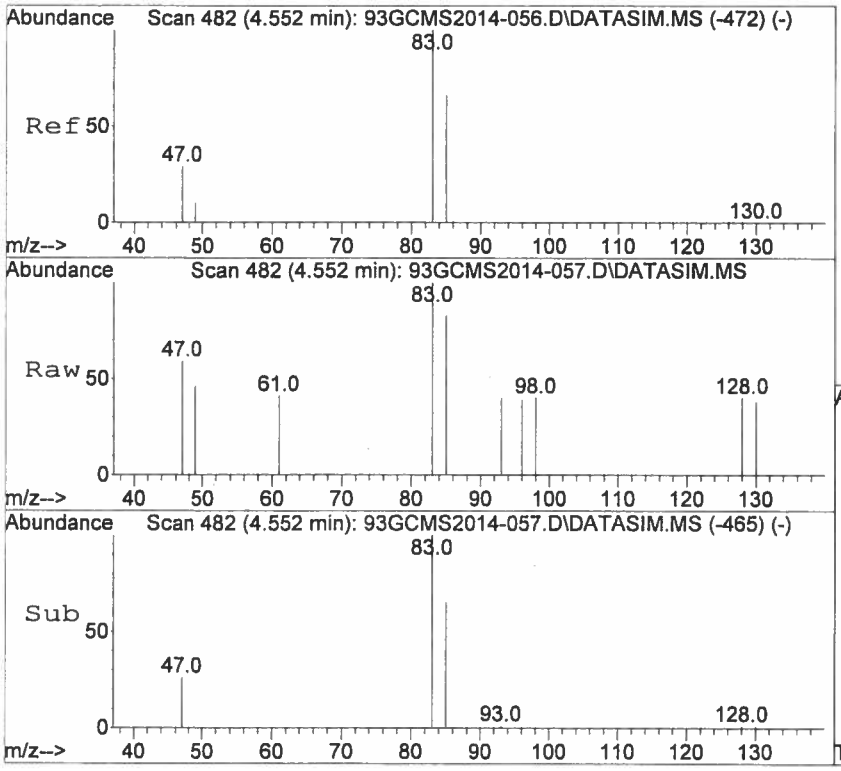


#7
cis-1,2-Dichloroethene
Concen: 0.55 ppbv
RT: 4.464 min Scan# 467
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 61 Resp: 82

Ion	Ratio	Lower	Upper
61	100		
96	93.9	61.7	92.5#
98	48.8	39.4	59.0

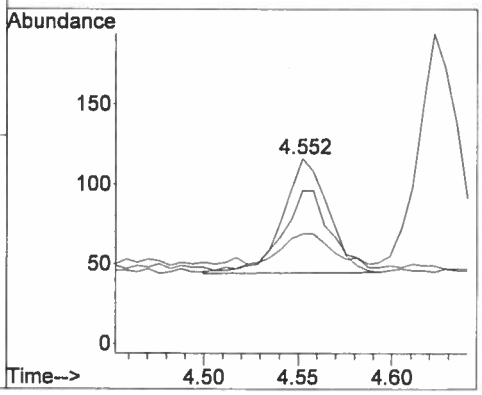


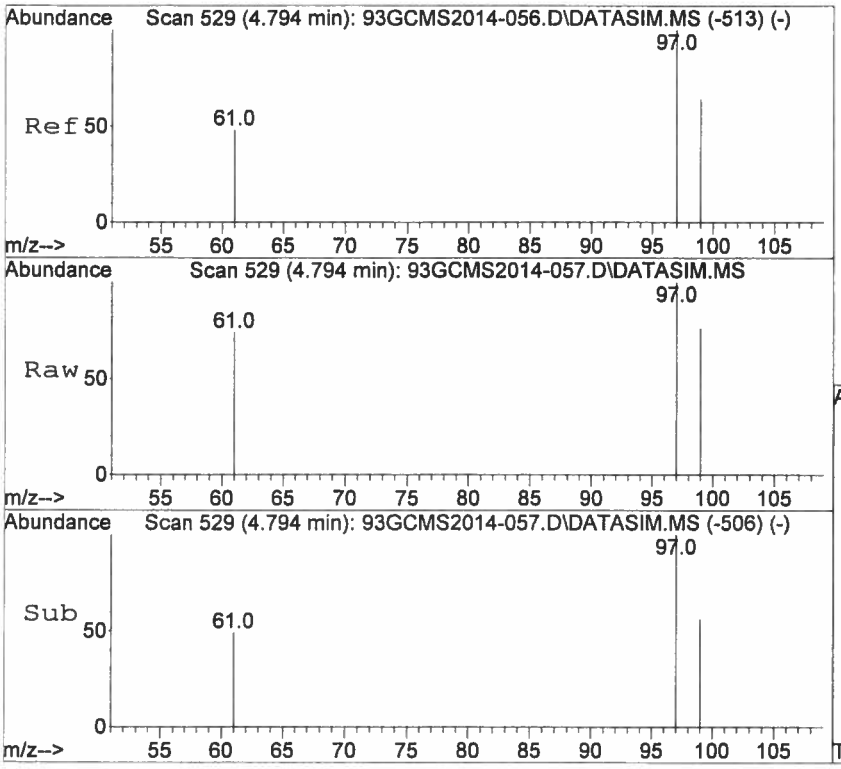


#8
Chloroform
Concen: 0.58 ppbv
RT: 4.552 min Scan# 482
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 83 Resp: 120

Ion	Ratio	Lower	Upper
83	100		
85	72.5	52.0	78.0
47	27.5	20.0	30.0

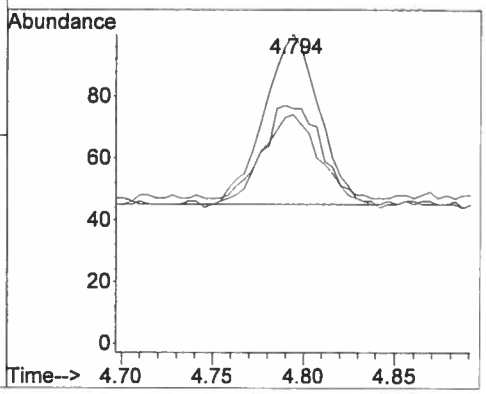


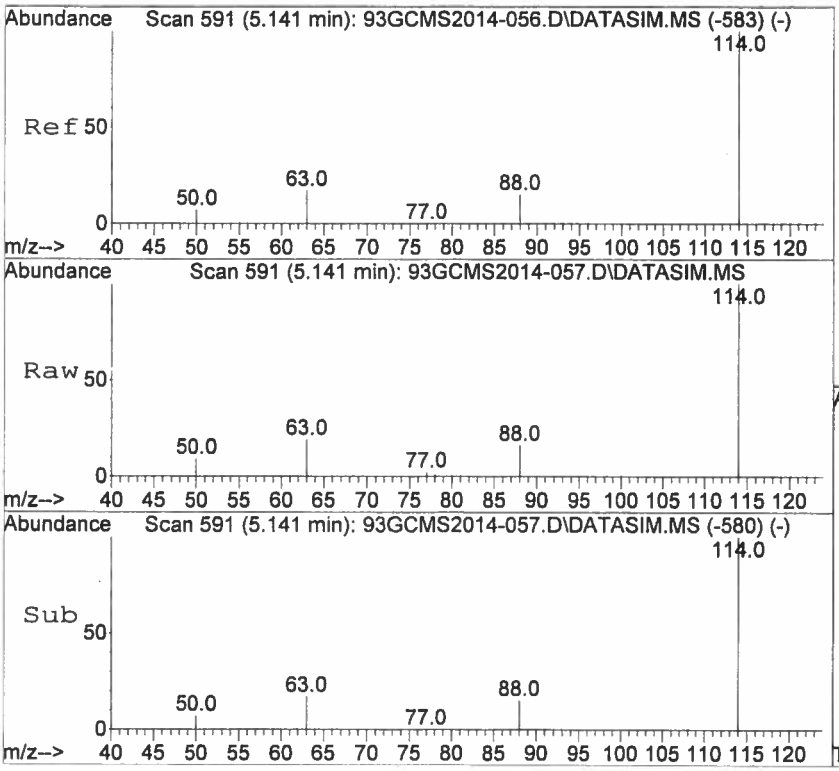


#9
1,1,1-Trichloroethane
Concen: 0.53 ppbv
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 97 Resp: 116

Ion	Ratio	Lower	Upper
97	100		
99	67.2	51.4	77.0
61	49.1	37.4	56.0

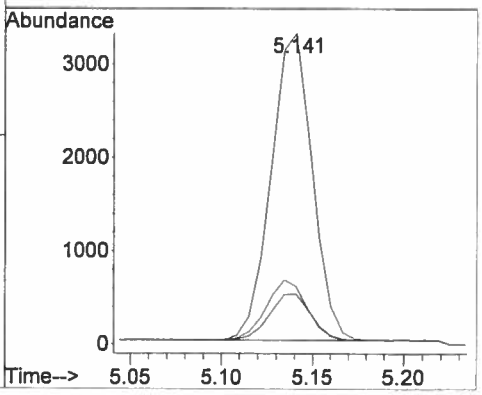


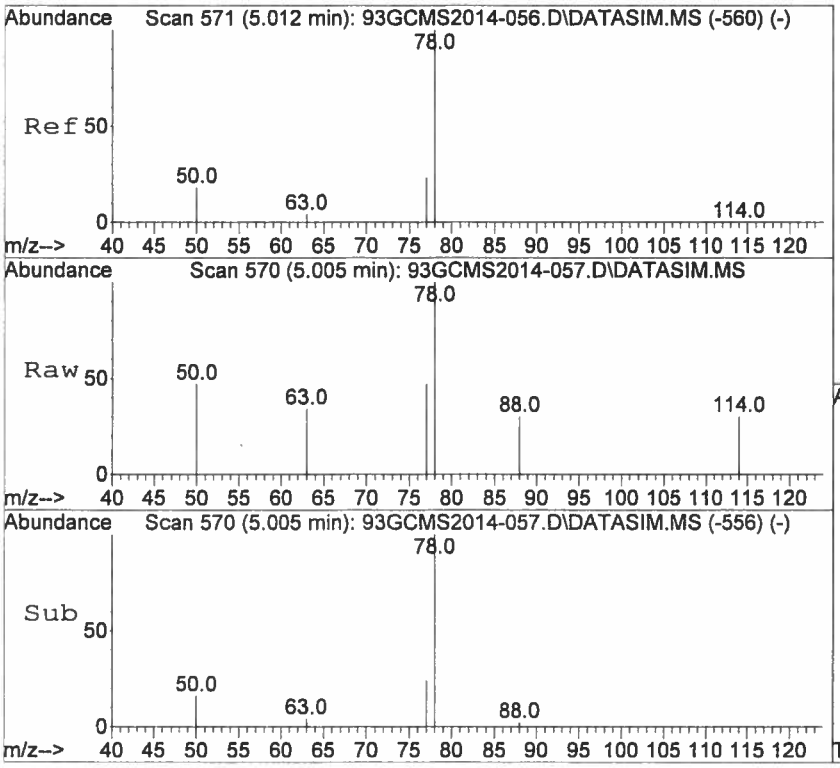


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion:114 Resp: 5183

Ion	Ratio	Lower	Upper
114	100		
63	19.1	15.1	22.7
88	15.2	12.0	18.0

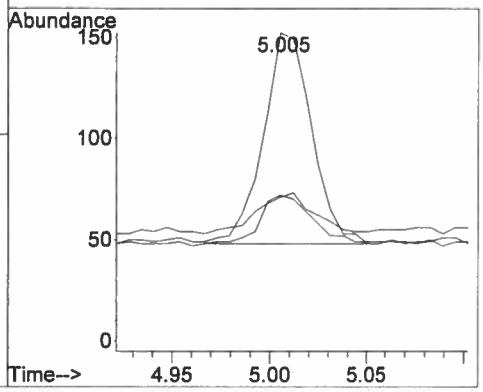


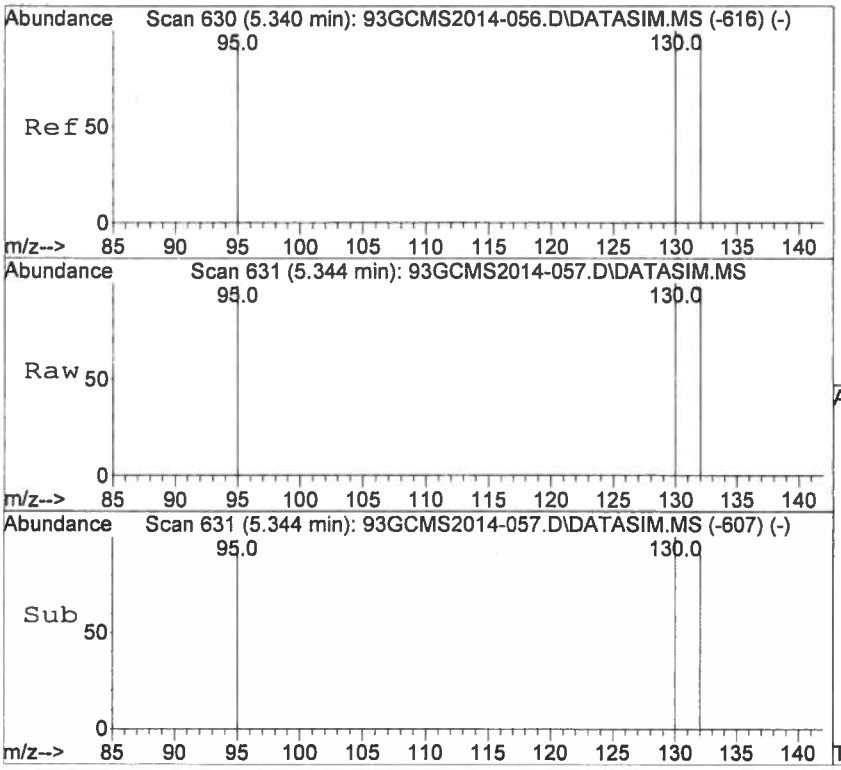


#11
Benzene
Concen: 0.58 ppbv
RT: 5.005 min Scan# 570
Delta R.T. -0.007 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 78 Resp: 180

Ion	Ratio	Lower	Upper
78	100		
77	28.9	18.4	27.6#
50	22.2	14.6	21.8#

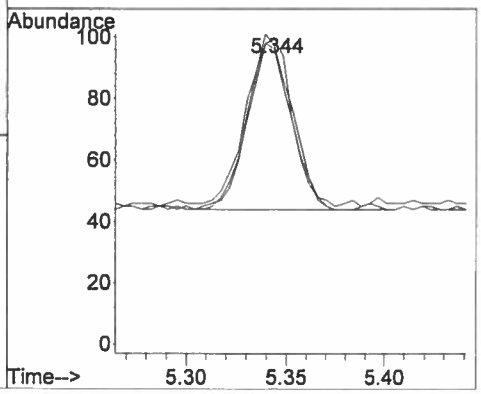


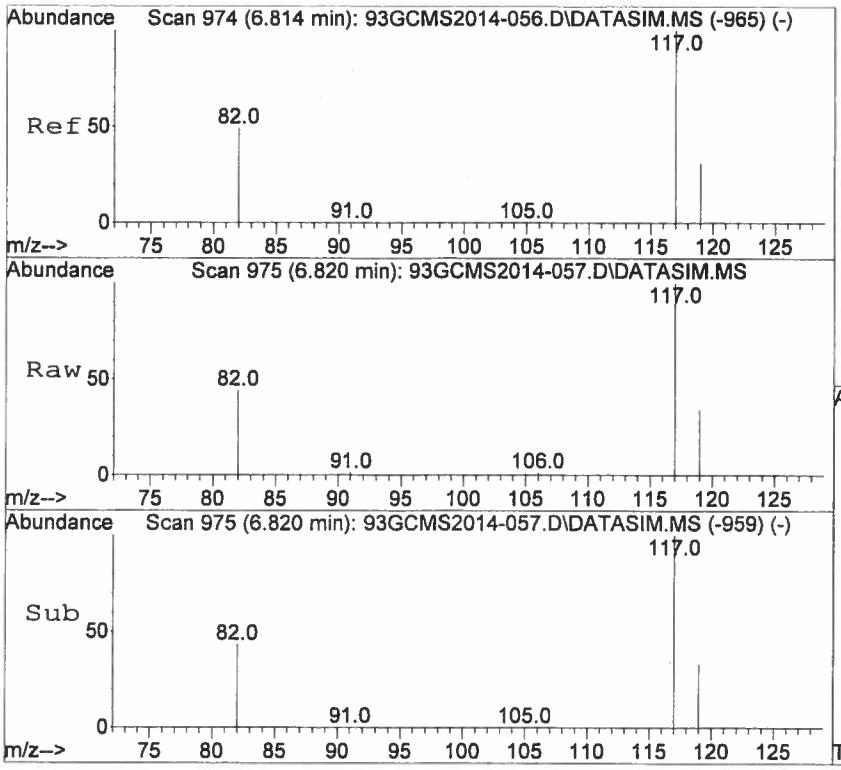


#12
Trichloroethene
Concen: 0.52 ppbv
RT: 5.344 min Scan# 631
Delta R.T. 0.004 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion:130 Resp: 86

Ion	Ratio	Lower	Upper
130	100		
132	100.0	77.0	115.6
95	96.5	72.9	109.3

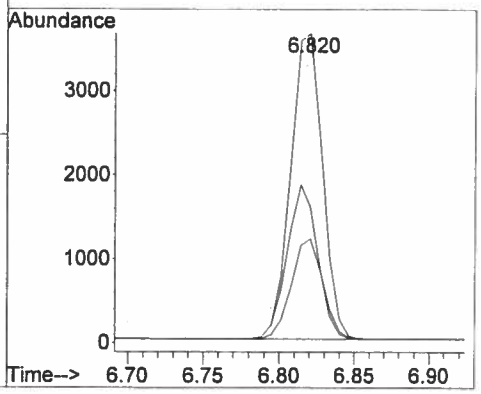


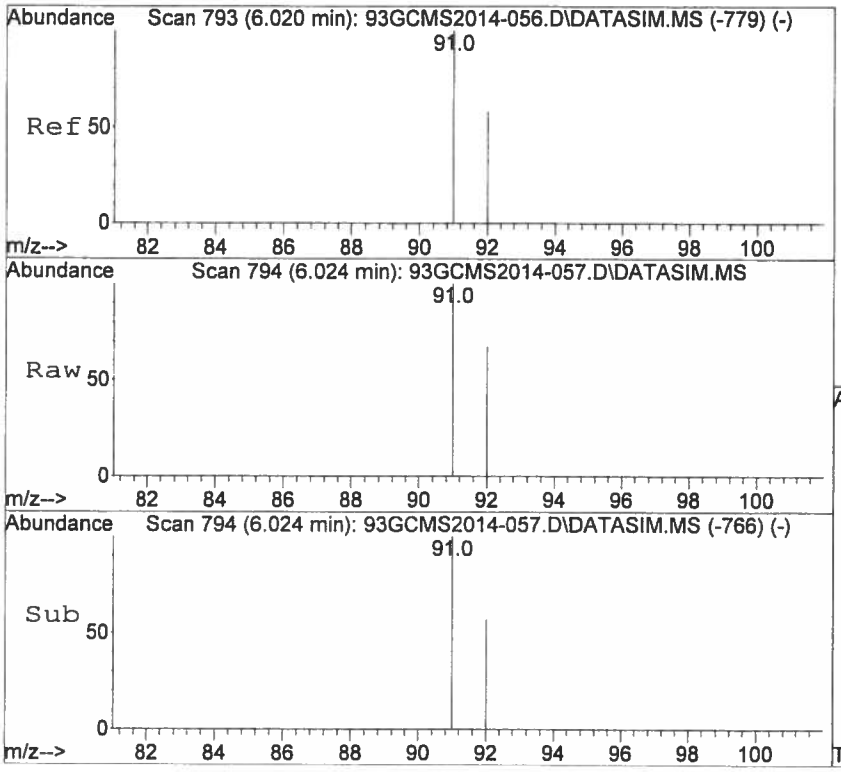


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.820 min Scan# 975
Delta R.T. 0.006 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion:117 Resp: 5377

Ion	Ratio	Lower	Upper
117	100		
82	48.2	37.8	56.6
119	32.3	25.6	38.4

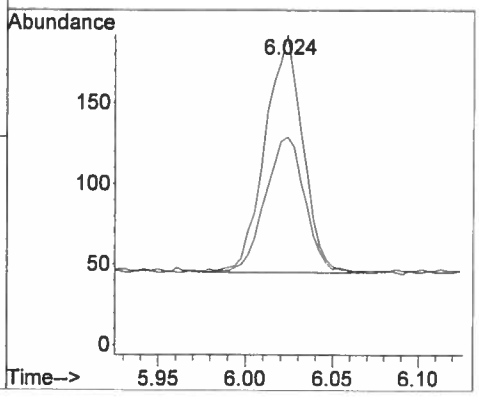


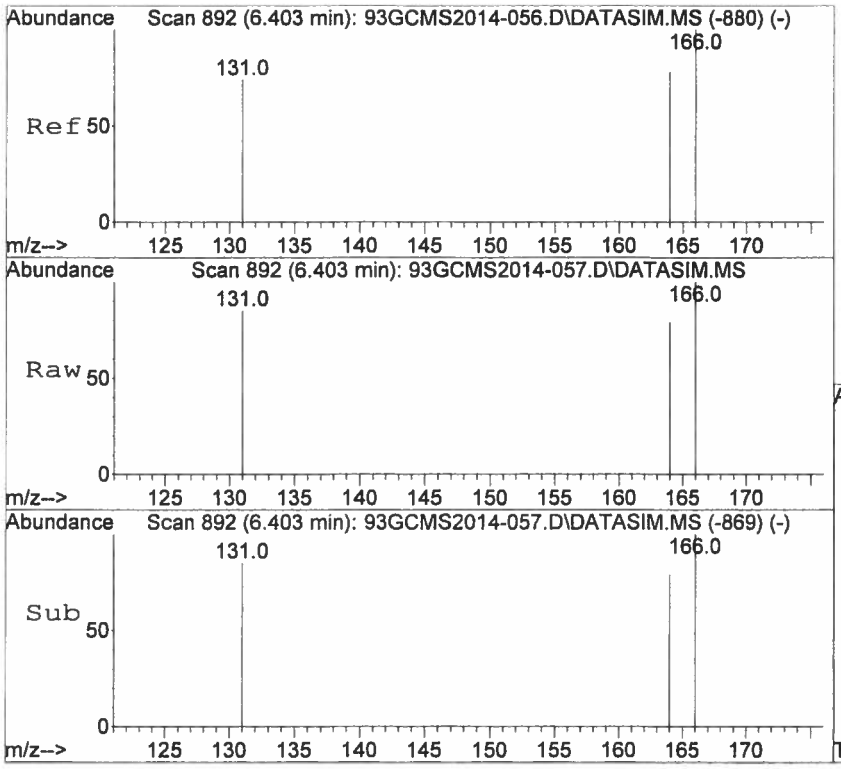


#14
Toluene
Concen: 0.60 ppbv
RT: 6.024 min Scan# 794
Delta R.T. 0.004 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 91 Resp: 220

Ion	Ratio	Lower	Upper
91	100		
92	60.5	47.2	70.8

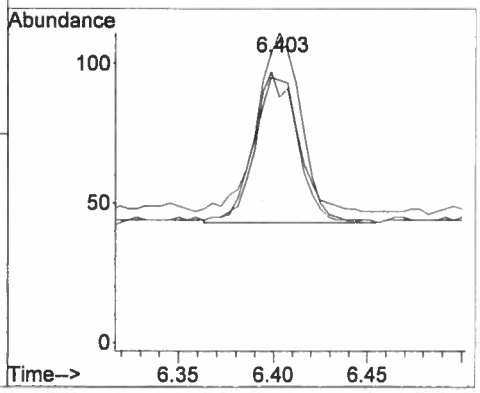


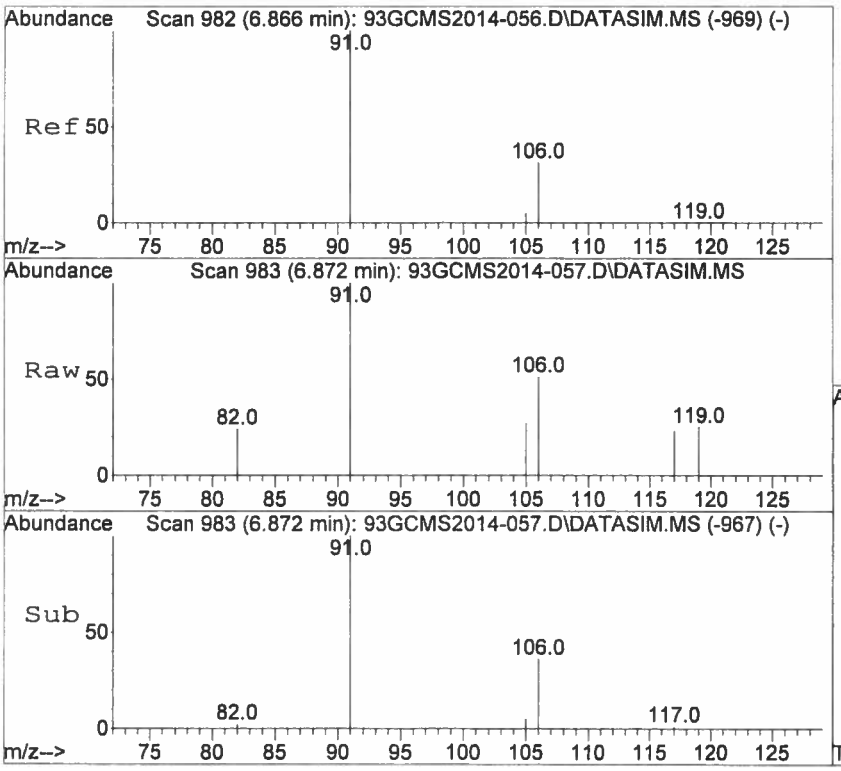


#15
Tetrachloroethene
Concen: 0.56 ppbv
RT: 6.403 min Scan# 892
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion:166 Resp: 112

Ion	Ratio	Lower	Upper
166	100		
164	76.8	62.5	93.7
131	75.9	58.6	88.0

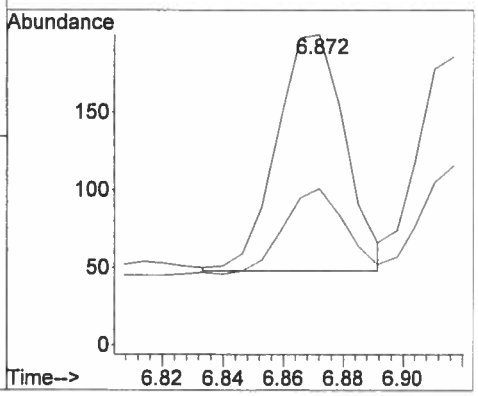


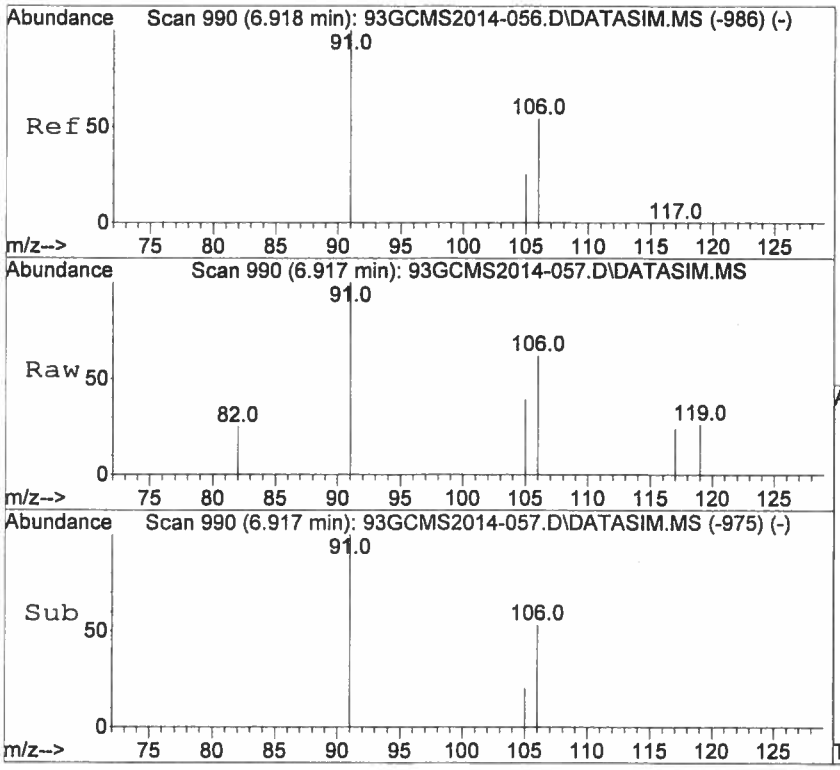


#16
Ethyl Benzene
Concen: 0.54 ppbv
RT: 6.872 min Scan# 983
Delta R.T. 0.006 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 91 Resp: 241

Ion	Ratio	Lower	Upper
91	100		
106	50.5	25.6	38.4#

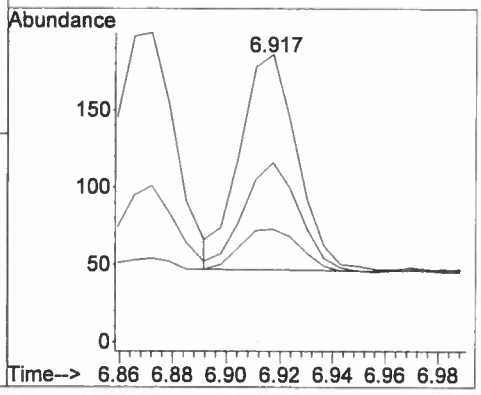


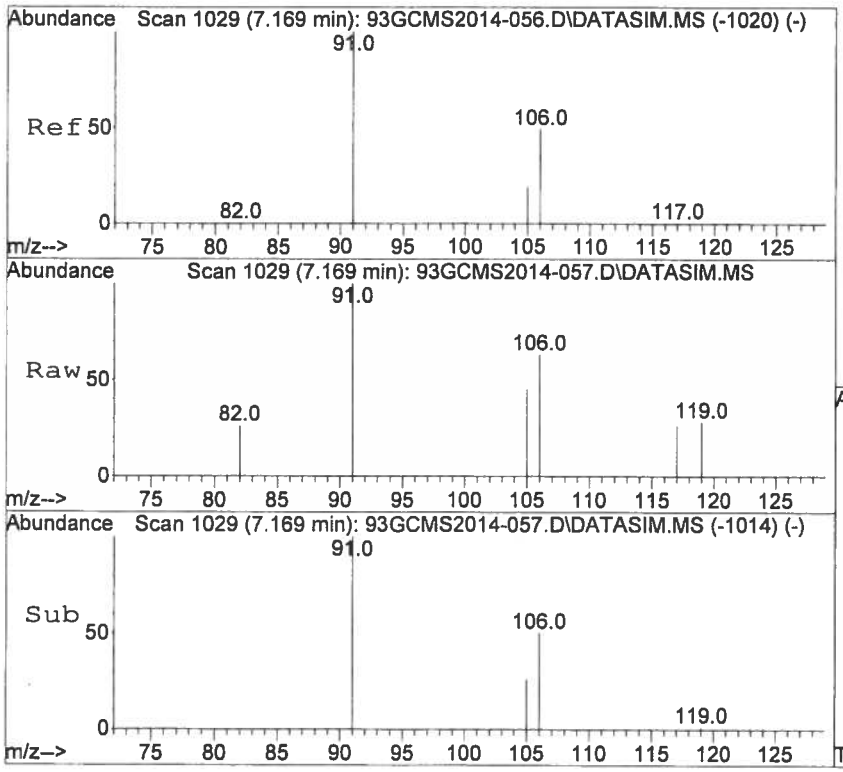


#17
m,p-Xylene
Concen: 0.60 ppbv m
RT: 6.917 min Scan# 990
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 91 Resp: 207

Ion	Ratio	Lower	Upper
91	100		
106	62.4	42.5	63.7
105	39.2	18.6	27.8#

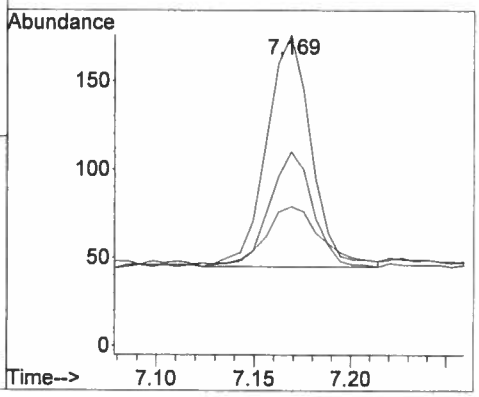




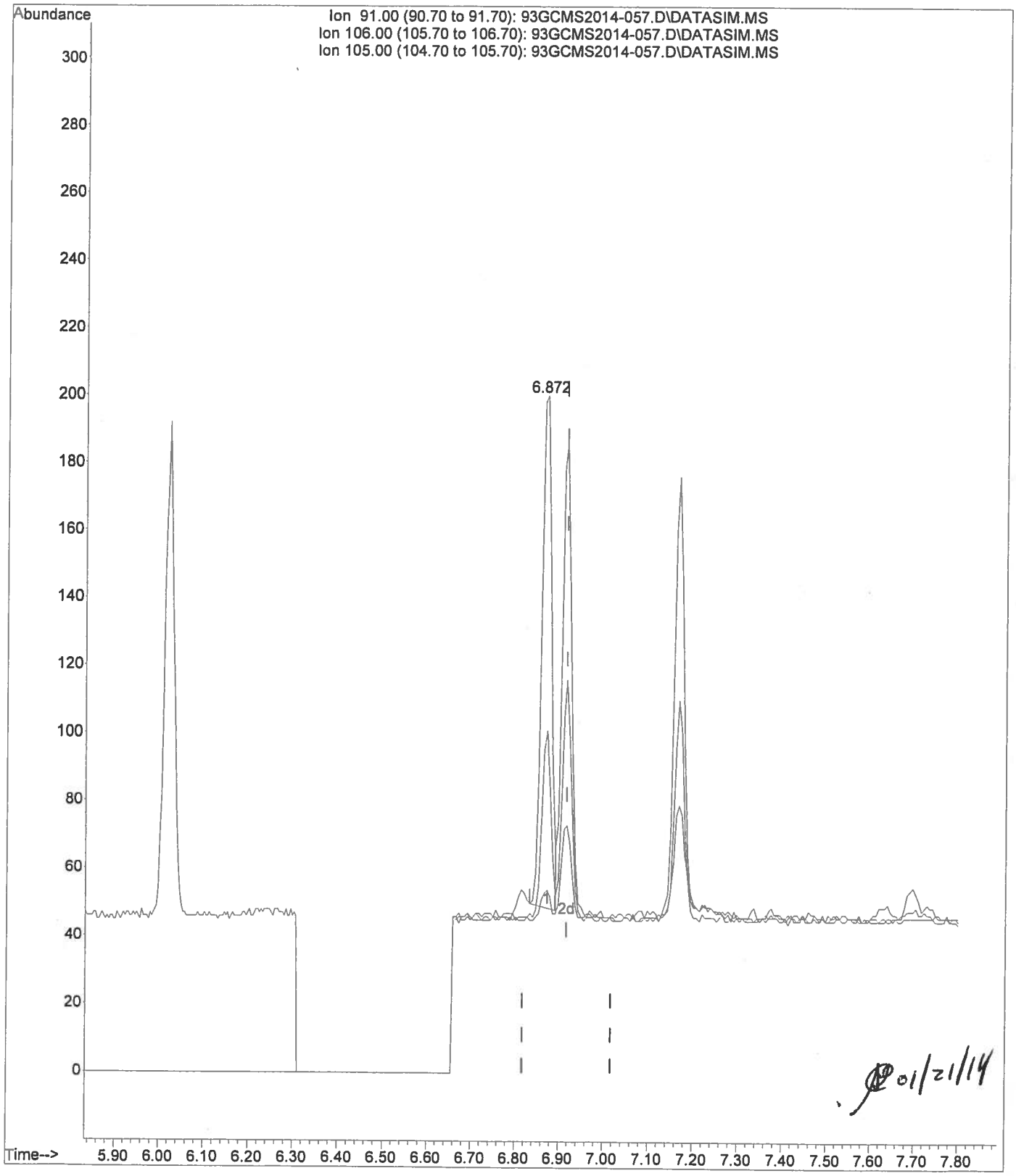
#18
o-Xylene
Concen: 0.61 ppbv
RT: 7.169 min Scan# 1029
Delta R.T. -0.000 min
Lab File: 93GCMS2014-057.D
Acq: 21 Jan 2014 6:28

Tgt Ion: 91 Resp: 210

Ion	Ratio	Lower	Upper
91	100		
106	48.1	39.3	58.9
105	31.0	15.4	23.2#



File : D:\msdchem\1\data\2014\20140121\93GCMS2014-057.D
Operator : SJT
Acquired : 21 Jan 2014 6:28 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140121-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 21 Jan 2014
Vial Number: 1



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File        :D:\msdchem\1\data\2014\20140121\93GCMS2014-057.D
Operator    : SJT
Acquired    : 21 Jan 2014    6:28      using AcqMethod LOOPSOP1741+HCCL3.M
Instrument :    Instrument 2
Sample Name: STD20140121-3 \ 0.5ppbv LLCCV
Misc Info   : 5mL \ 21 Jan 2014
Vial Number: 1
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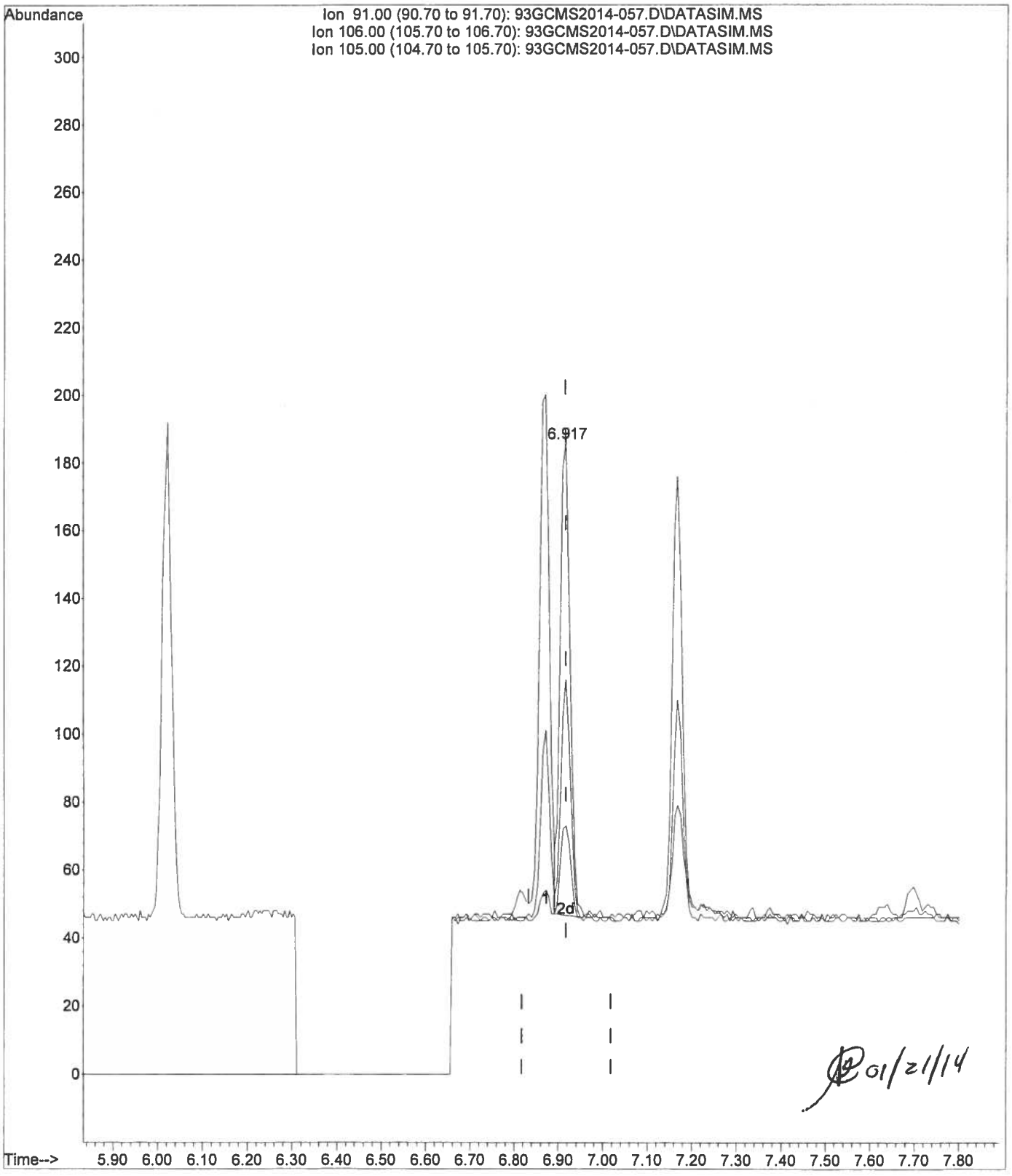


01/21/14

Data File:			93GCMS2014-059.d	
Sample Number:			20140121-LCS	
Sample Volume (mL)			5	
Date Prepared:			22-Jan-2014	
Date Analyzed:			22-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140121-LCS 500 ppbv LCS (ppbv)	20140121-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	542.67	109.08
1,1-Dichloroethene	20.7	517.50	555.61	107.36
Methyl Tert Butyl Ether	19.5	487.50	532.63	109.26
trans-1,2-Dichloroethene	20.8	520.00	561.92	108.06
1,1-Dichloroethane	20.3	507.50	551.75	108.72
cis-1,2-Dichloroethene	20.9	522.50	566.06	108.34
Chloroform	20.6	515.00	561.60	109.05
1,1,1-Trichloroethane	19.7	492.50	543.26	110.31
Benzene	20.5	512.50	525.87	102.61
Trichloroethene	19.9	497.50	523.14	105.15
Toluene	20.2	505.00	517.48	102.47
Tetrachloroethene	20.0	500.00	536.45	107.29
Ethyl Benzene	20.0	500.00	565.22	113.04
m&p-Xylene	20.2	505.00	560.77	111.04
o-Xylene	20.2	505.00	569.92	112.86

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-059.D
Acq On : 21 Jan 2014 6:51
Operator : SJT
Sample : 20140121-LCS \ 500ppbv LCS
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:58:24 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.629	49	2016	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	5099	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.821	117	5255	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.922	62	54943	542.67	ppbv	99
3) 1,1-Dichloroethene	3.372	61	95189	555.61	ppbv	99
4) Methyl Tert Butyl Ether	3.829	73	118686	532.63	ppbv	94
5) trans-1,2-Dichloroethene	3.897	61	87233	561.92	ppbv	98
6) 1,1-Dichloroethane	4.128	63	101448	551.75	ppbv	99
7) cis-1,2-Dichloroethene	4.465	61	82750	566.06	ppbv	98
8) Chloroform	4.559	83	115633	561.60	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	116816	543.26	ppbv	98
11) Benzene	5.012	78	160921	525.87	ppbv	99
12) Trichloroethene	5.344	130	85268	523.14	ppbv	99
14) Toluene	6.024	91	186861	517.48	ppbv	100
15) Tetrachloroethene	6.404	166	105023	536.45	ppbv	99
16) Ethyl Benzene	6.873	91	245457	565.22	ppbv	97
17) m,p-Xylene	6.918	91	187794	560.77	ppbv	98
18) o-Xylene	7.170	91	192718	569.92	ppbv	99

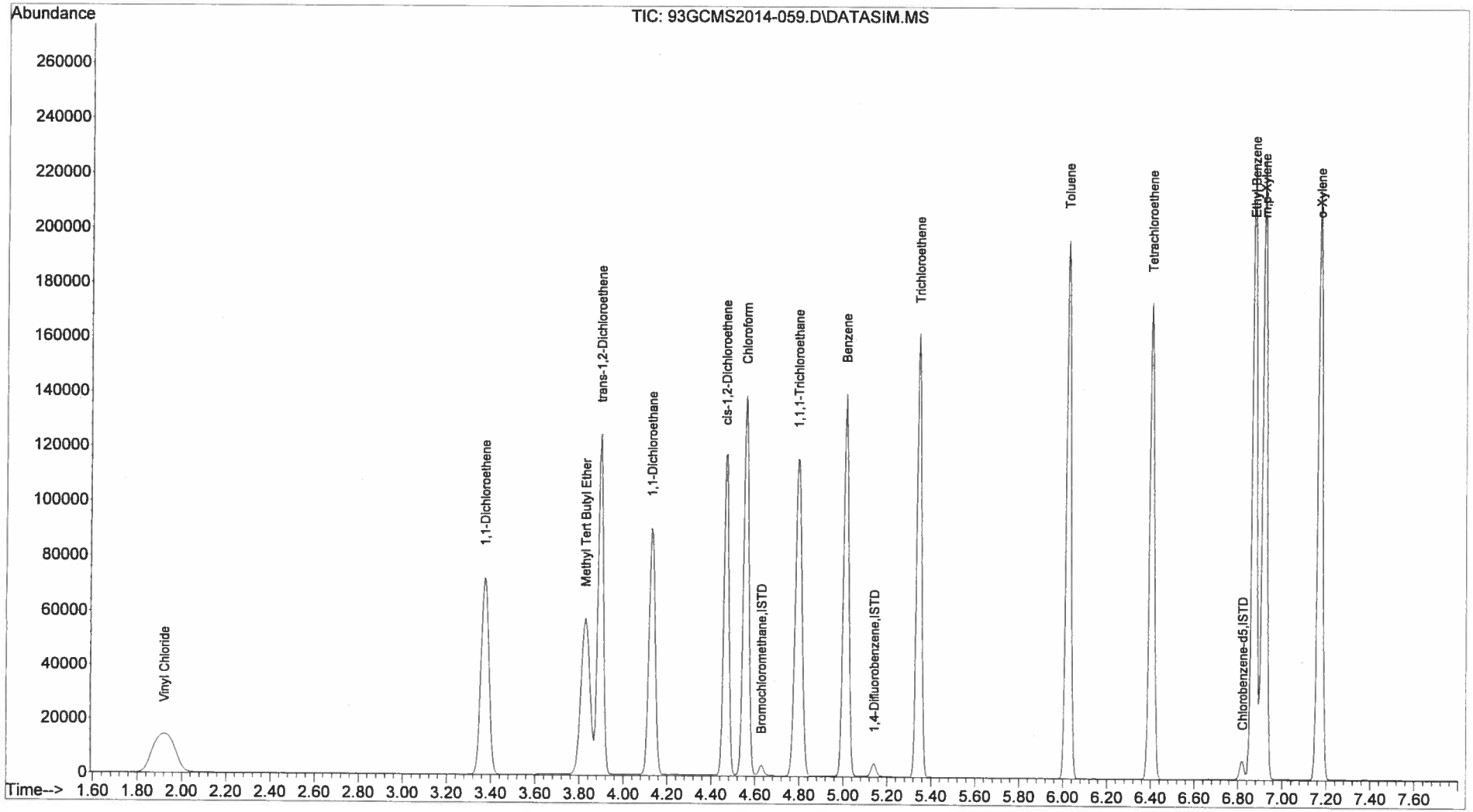
(#) = qualifier out of range (m) = manual integration (+) = signals summed

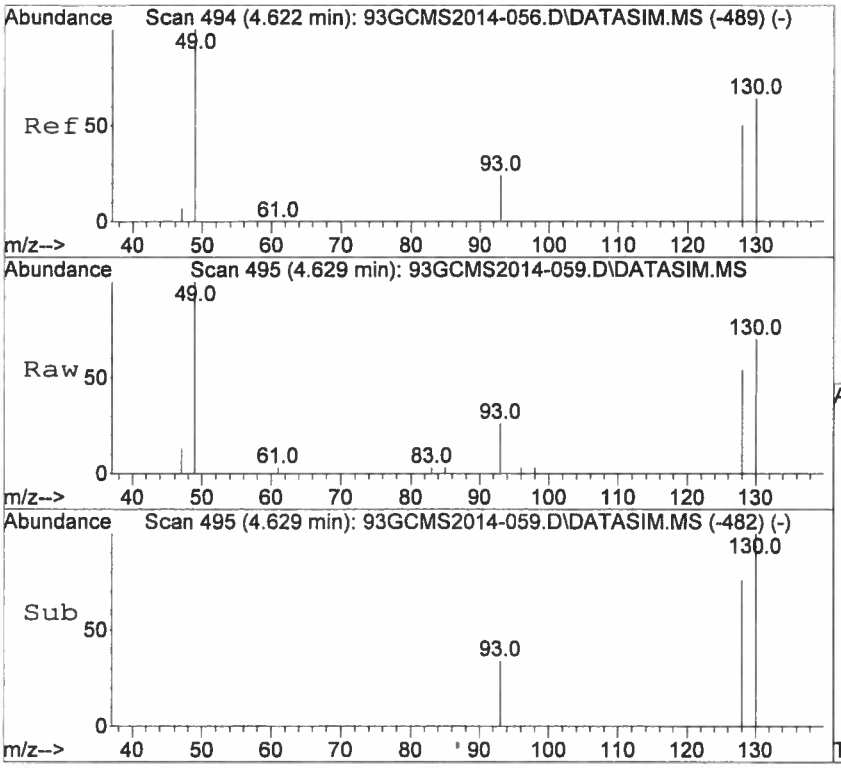
01/21/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-059.D
Acq On : 21 Jan 2014 6:51
Operator : SJT
Sample : 20140121-LCS \ 500ppbv LCS
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:58:24 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

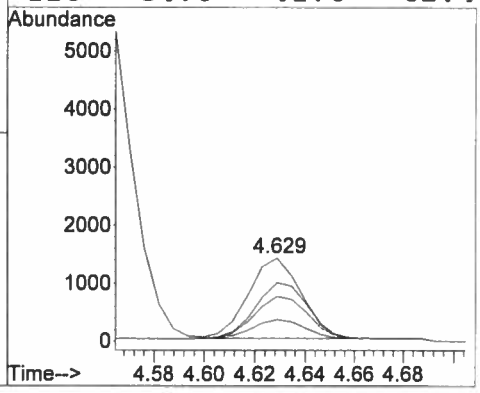


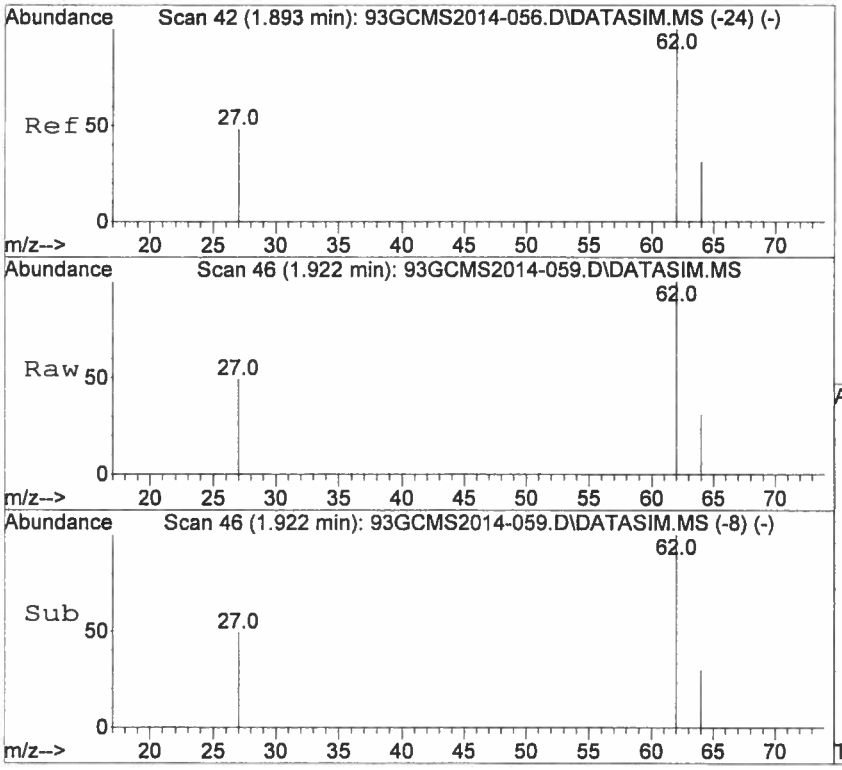


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.629 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 49 Resp: 2016

Ion	Ratio	Lower	Upper
49	100		
130	70.5	51.6	77.4
93	26.2	19.6	29.4
128	54.0	41.6	62.4

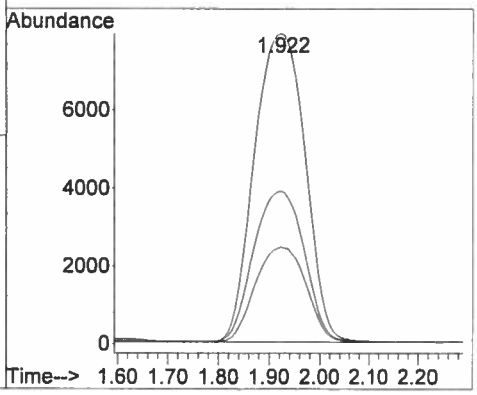


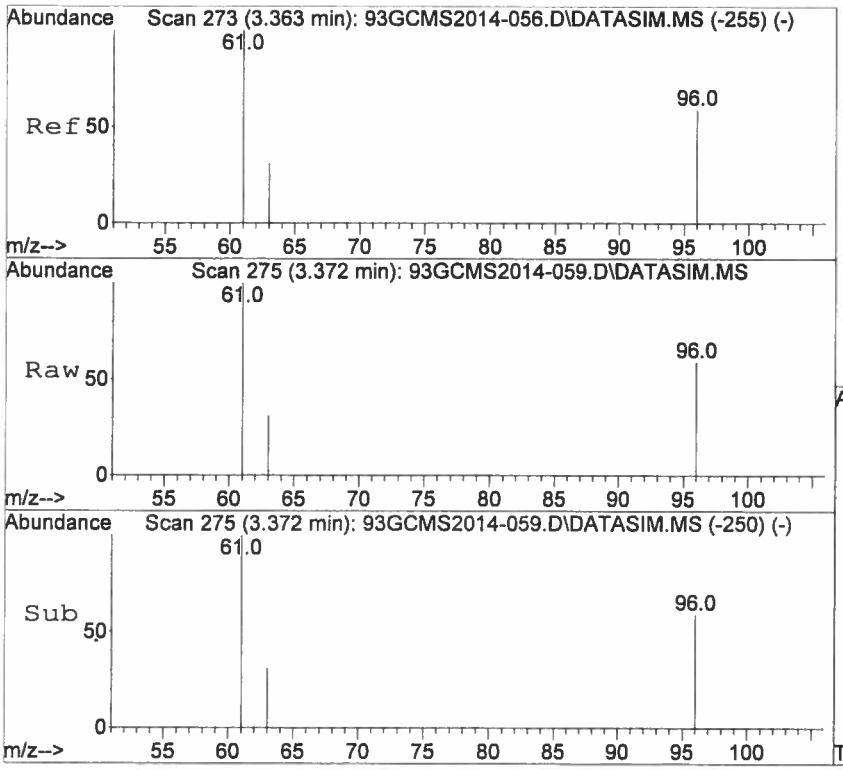


#2
Vinyl Chloride
Concen: 542.67 ppbv
RT: 1.922 min Scan# 46
Delta R.T. 0.030 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 62 Resp: 54943

Ion	Ratio	Lower	Upper
62	100		
64	30.8	24.9	37.3
27	48.6	37.8	56.6

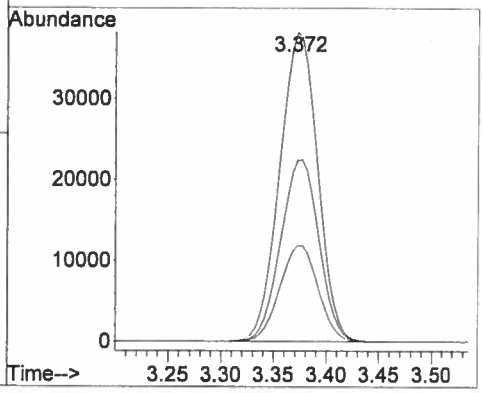


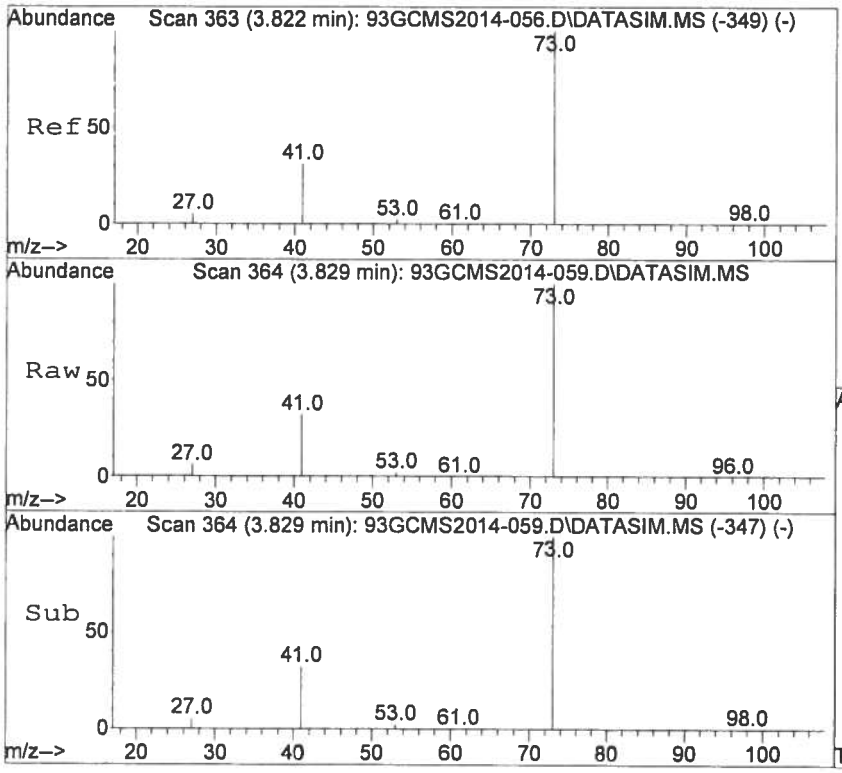


#3
1,1-Dichloroethene
Concen: 555.61 ppbv
RT: 3.372 min Scan# 275
Delta R.T. 0.009 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 61 Resp: 95189

Ion	Ratio	Lower	Upper
61	100		
96	59.2	48.6	72.8
63	31.3	25.0	37.6

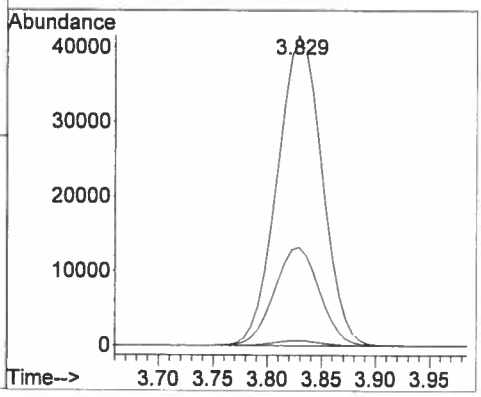


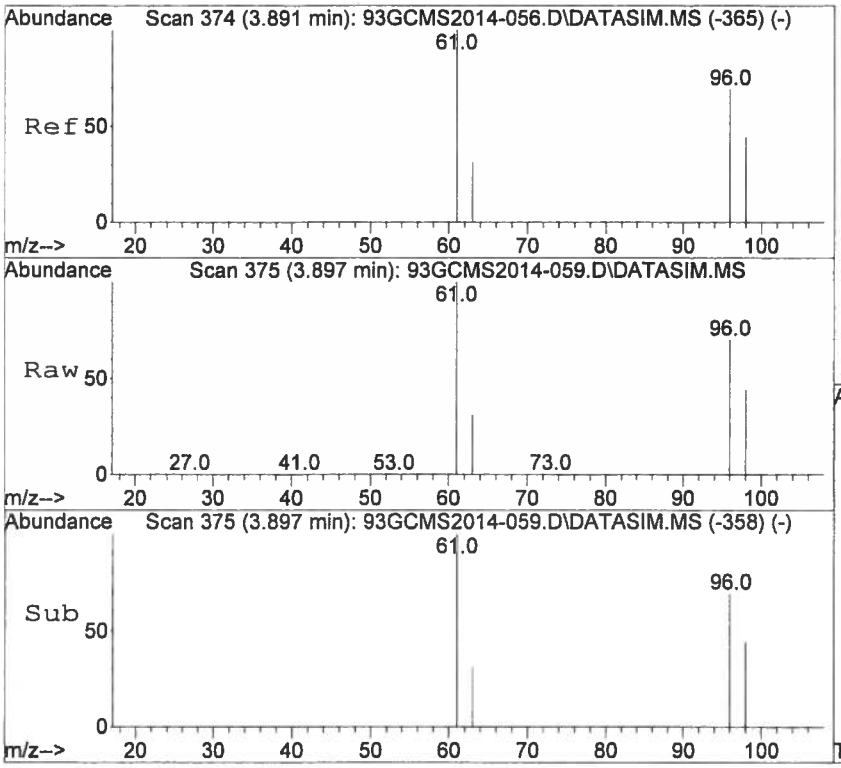


#4
Methyl Tert Butyl Ether
Concen: 532.63 ppbv
RT: 3.829 min Scan# 364
Delta R.T. 0.006 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 73 Resp: 118686

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	32.0	23.0	34.4

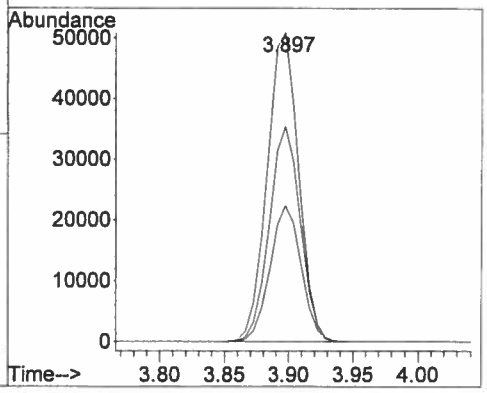


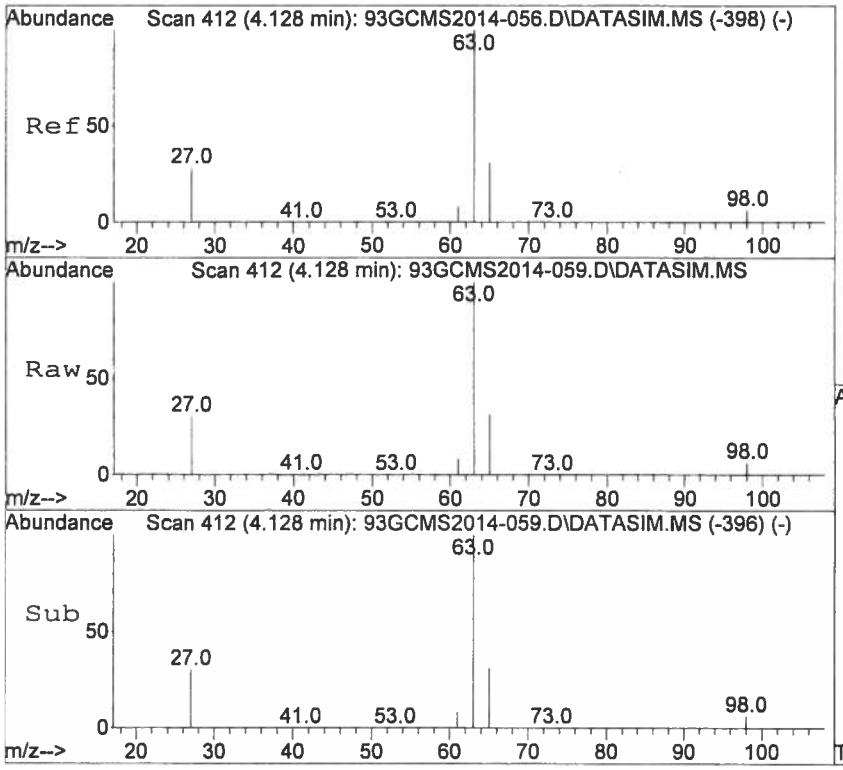


#5
trans-1,2-Dichloroethene
Concen: 561.92 ppbv
RT: 3.897 min Scan# 375
Delta R.T. 0.006 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 61 Resp: 87233

Ion	Ratio	Lower	Upper
61	100		
96	68.7	56.0	84.0
98	43.5	35.6	53.4

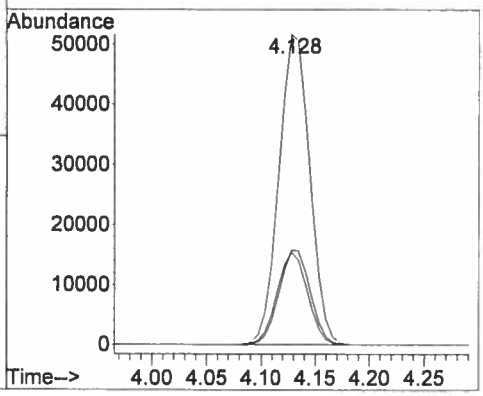


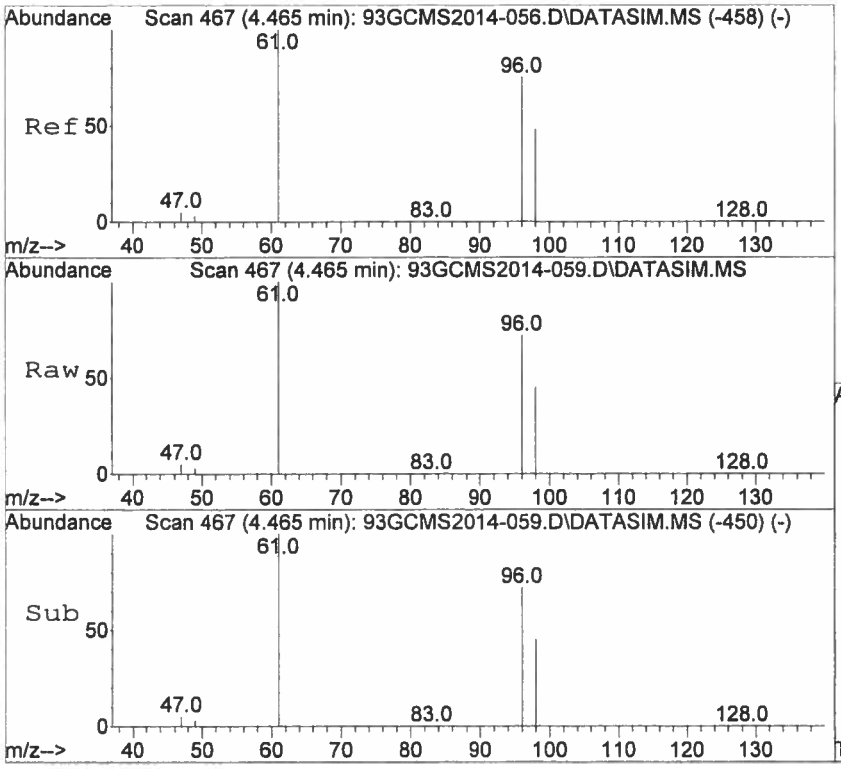


#6
1,1-Dichloroethane
Concen: 551.75 ppbv
RT: 4.128 min Scan# 412
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 63 Resp: 101448

Ion	Ratio	Lower	Upper
63	100		
65	30.9	24.7	37.1
27	29.5	22.6	34.0

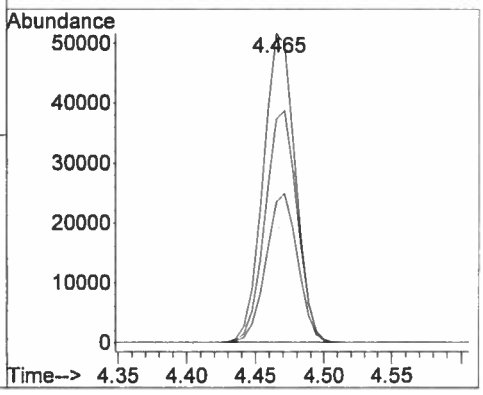


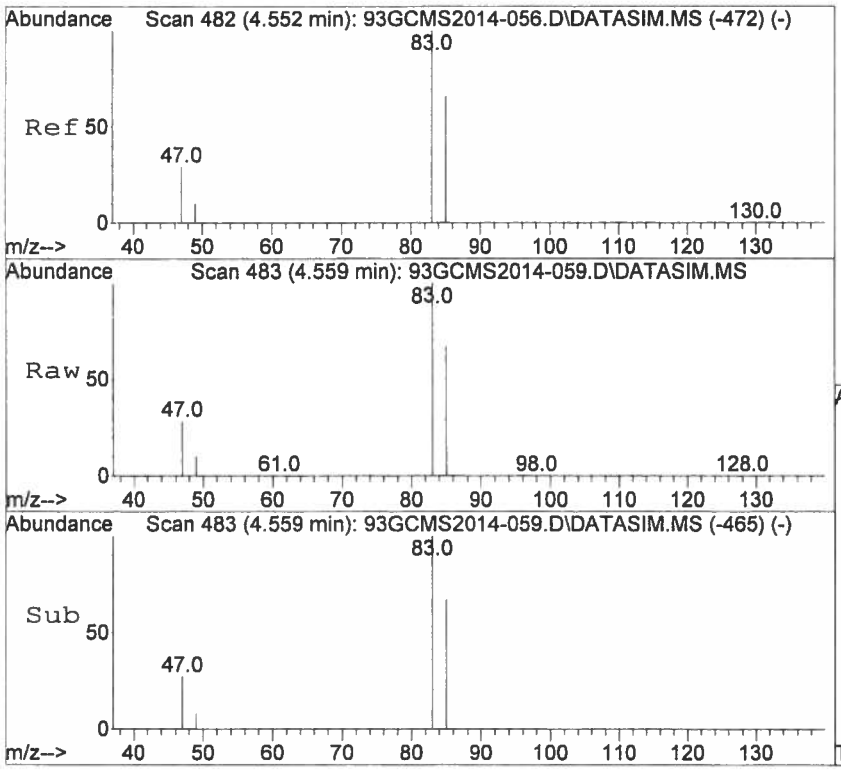


#7
cis-1,2-Dichloroethene
Concen: 566.06 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 61 Resp: 82750

Ion	Ratio	Lower	Upper
61	100		
96	75.0	61.7	92.5
98	47.7	39.4	59.0

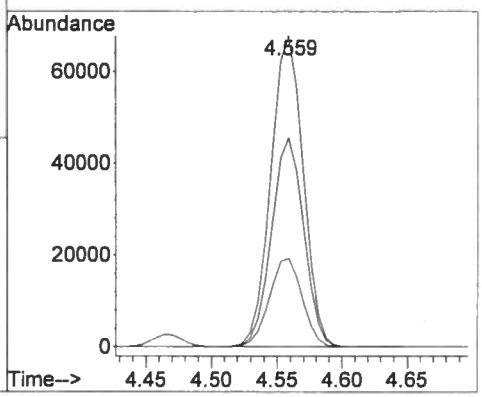


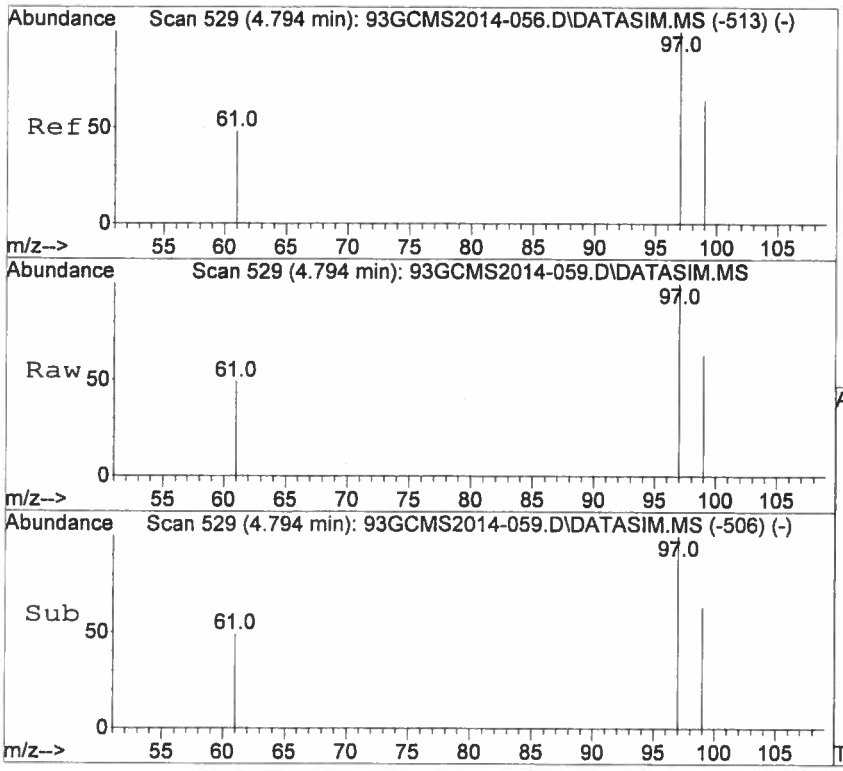


#8
Chloroform
Concen: 561.60 ppbv
RT: 4.559 min Scan# 483
Delta R.T. 0.006 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 83 Resp: 115633

Ion	Ratio	Lower	Upper
83	100		
85	66.8	52.0	78.0
47	28.7	20.0	30.0

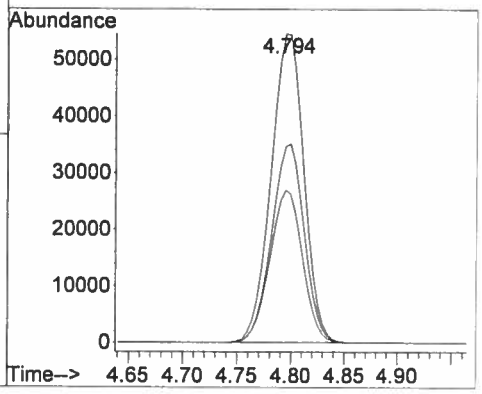


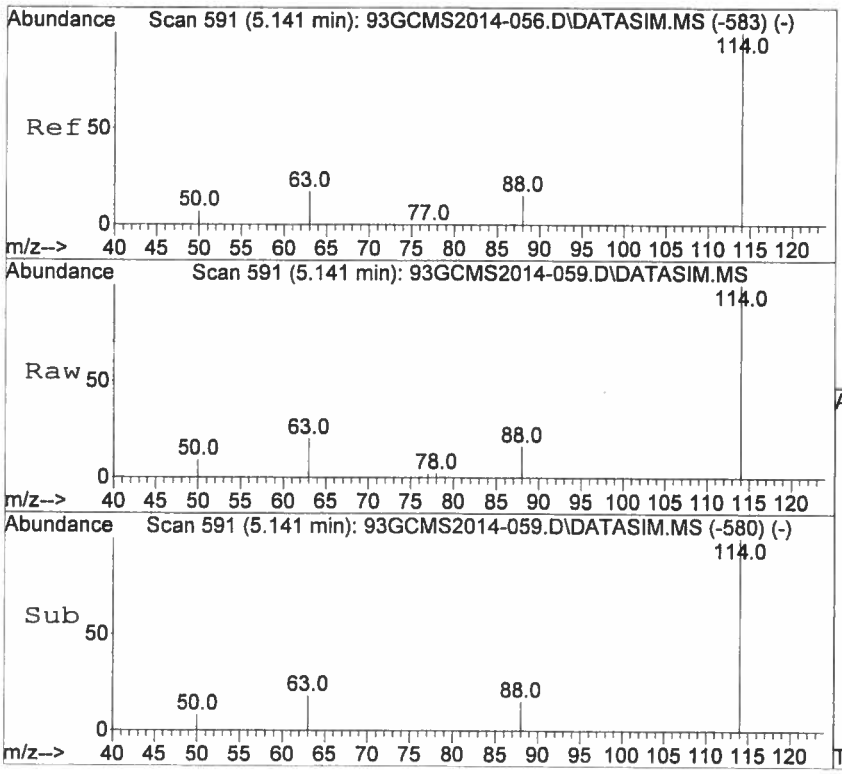


#9
1,1,1-Trichloroethane
Concen: 543.26 ppbv
RT: 4.794 min Scan# 529
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 97 Resp: 116816

Ion	Ratio	Lower	Upper
97	100		
99	64.0	51.4	77.0
61	49.2	37.4	56.0

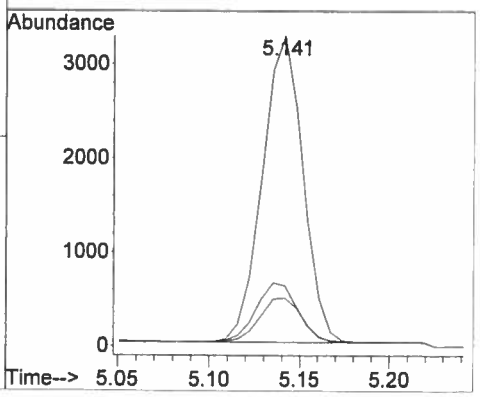


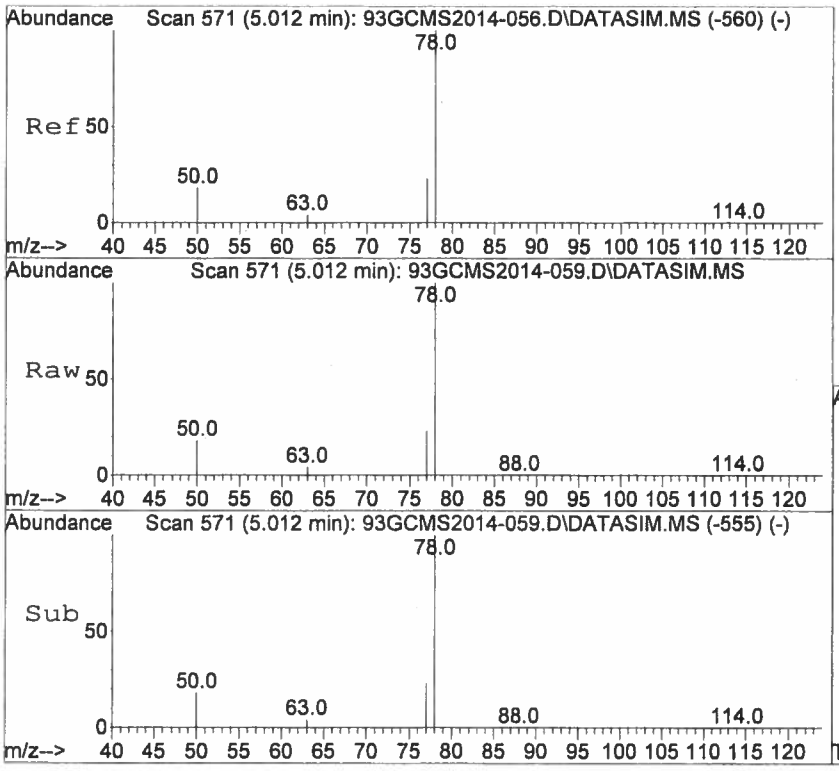


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion:114 Resp: 5099

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.1	12.0	18.0

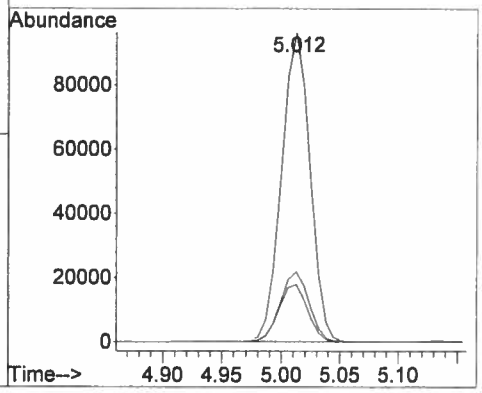


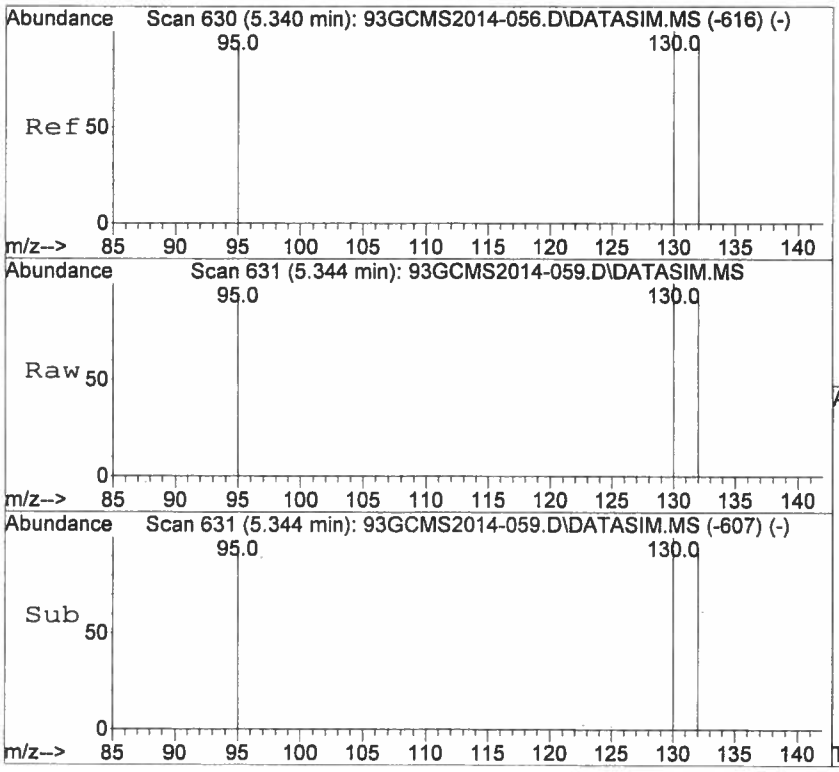


#11
Benzene
Concen: 525.87 ppbv
RT: 5.012 min Scan# 571
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 78 Resp: 160921

Ion	Ratio	Lower	Upper
78	100		
77	22.8	18.4	27.6
50	18.9	14.6	21.8

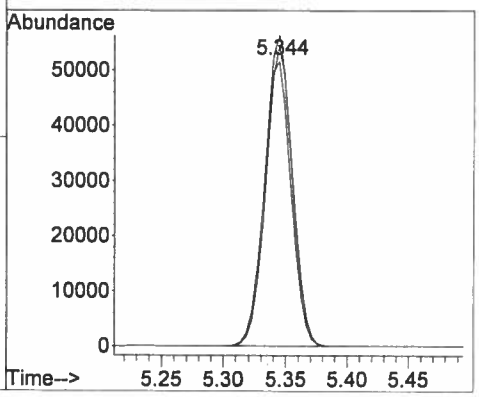


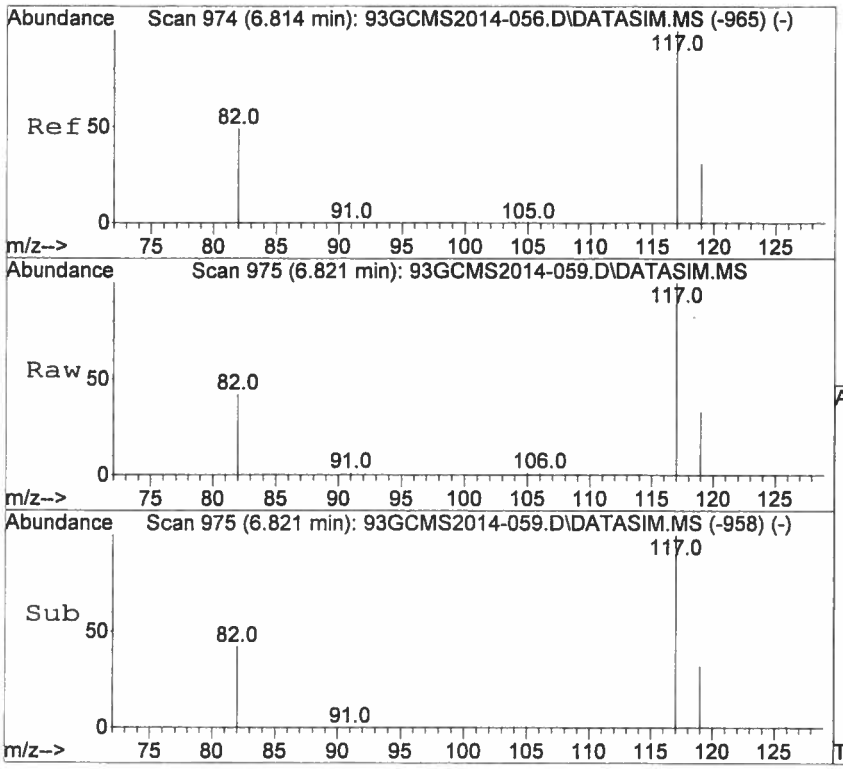


#12
Trichloroethene
Concen: 523.14 ppbv
RT: 5.344 min Scan# 631
Delta R.T. 0.005 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion:130 Resp: 85268

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	92.0	72.9	109.3

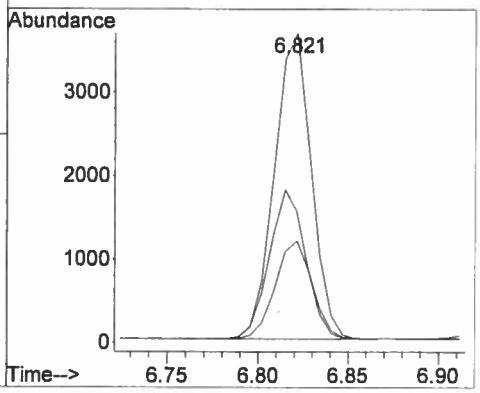


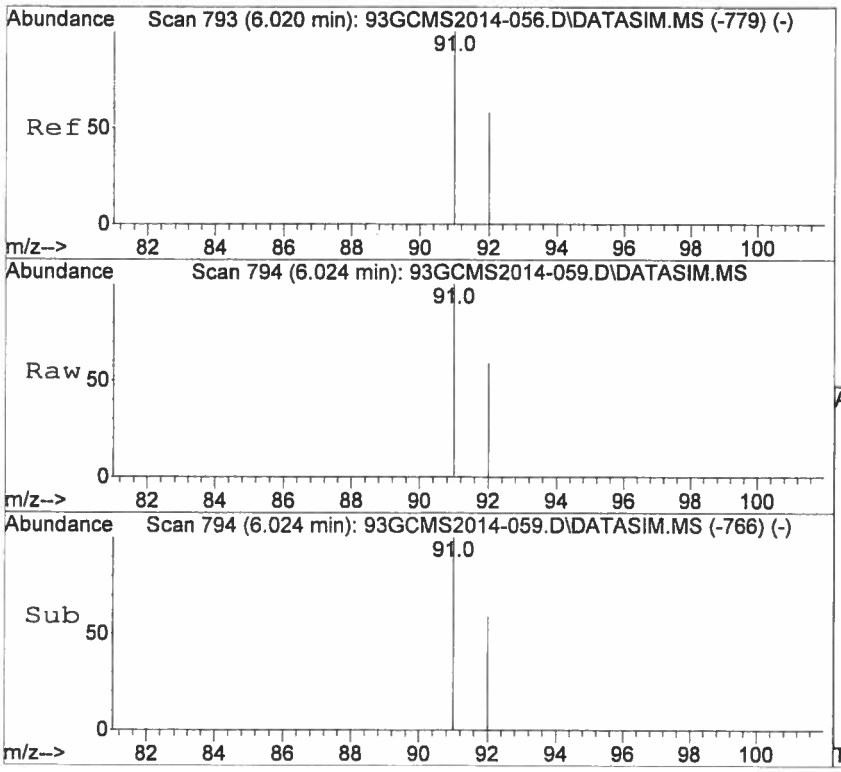


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.821 min Scan# 975
Delta R.T. 0.007 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion:117 Resp: 5255

Ion	Ratio	Lower	Upper
117	100		
82	48.0	37.8	56.6
119	32.2	25.6	38.4

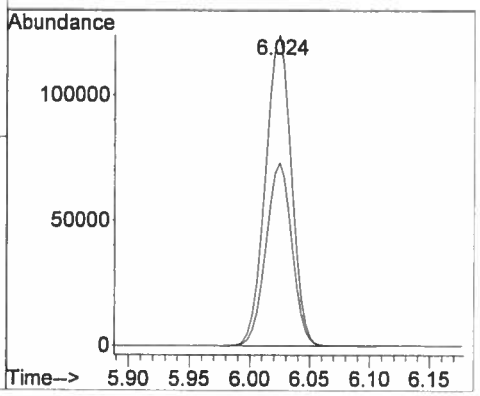


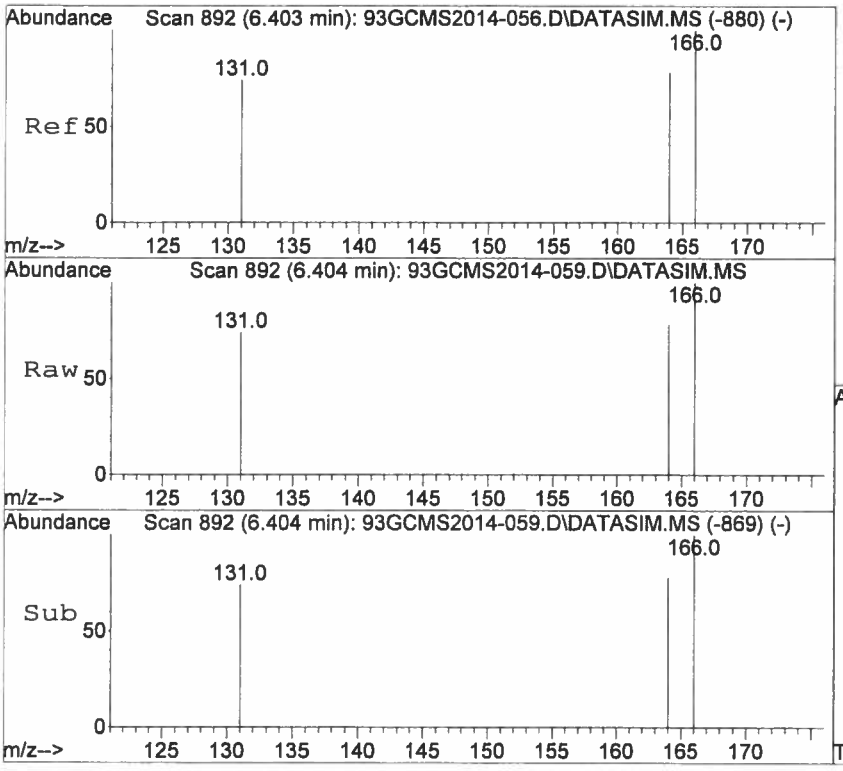


#14
Toluene
Concen: 517.48 ppbv
RT: 6.024 min Scan# 794
Delta R.T. 0.004 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 91 Resp: 186861

Ion	Ratio	Lower	Upper
91	100		
92	58.8	47.2	70.8

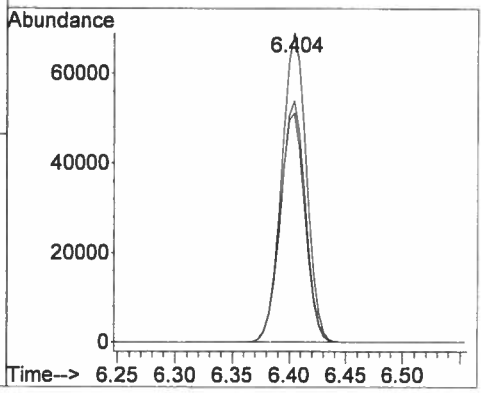


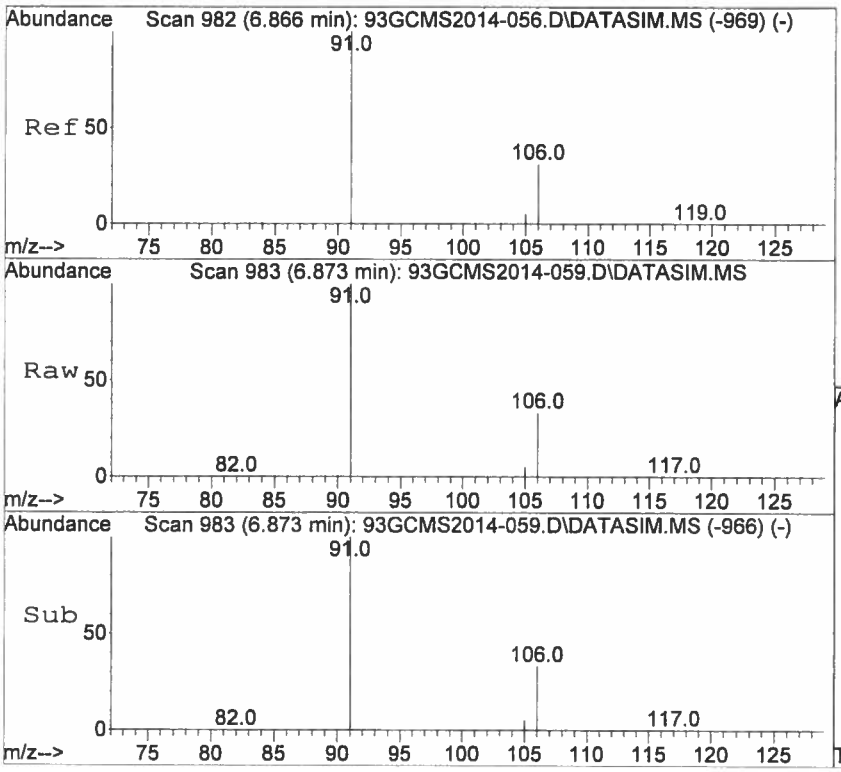


#15
Tetrachloroethene
Concen: 536.45 ppbv
RT: 6.404 min Scan# 892
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion:166 Resp: 105023

Ion	Ratio	Lower	Upper
166	100		
164	78.2	62.5	93.7
131	74.7	58.6	88.0

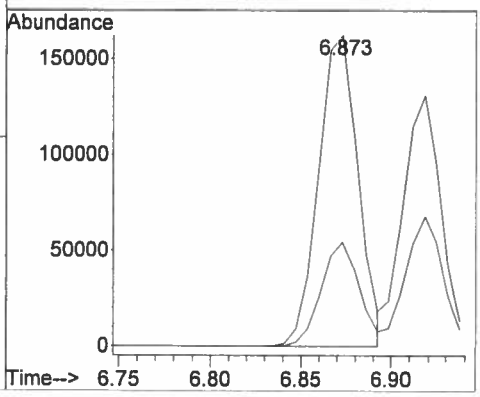


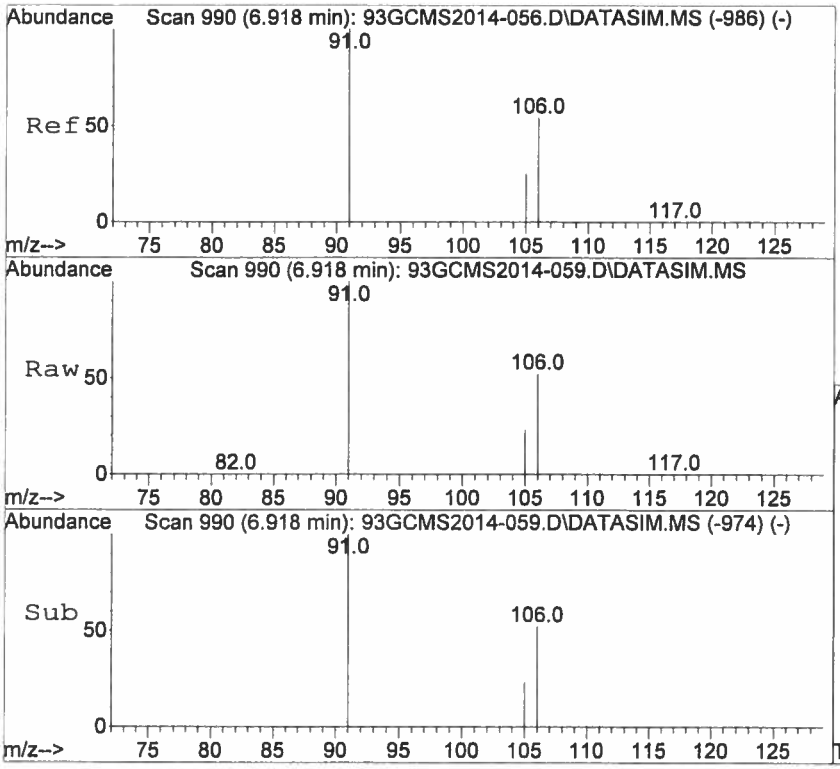


#16
Ethyl Benzene
Concen: 565.22 ppbv
RT: 6.873 min Scan# 983
Delta R.T. 0.007 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 91 Resp: 245457

Ion	Ratio	Lower	Upper
91	100		
106	33.5	25.6	38.4

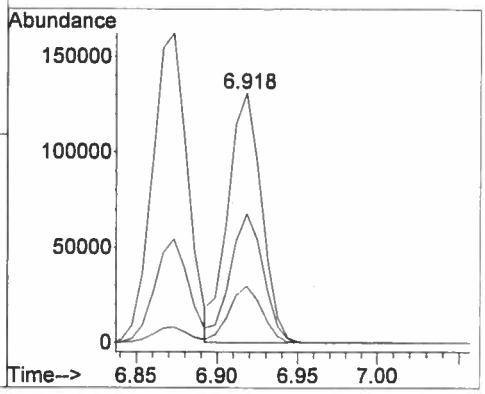


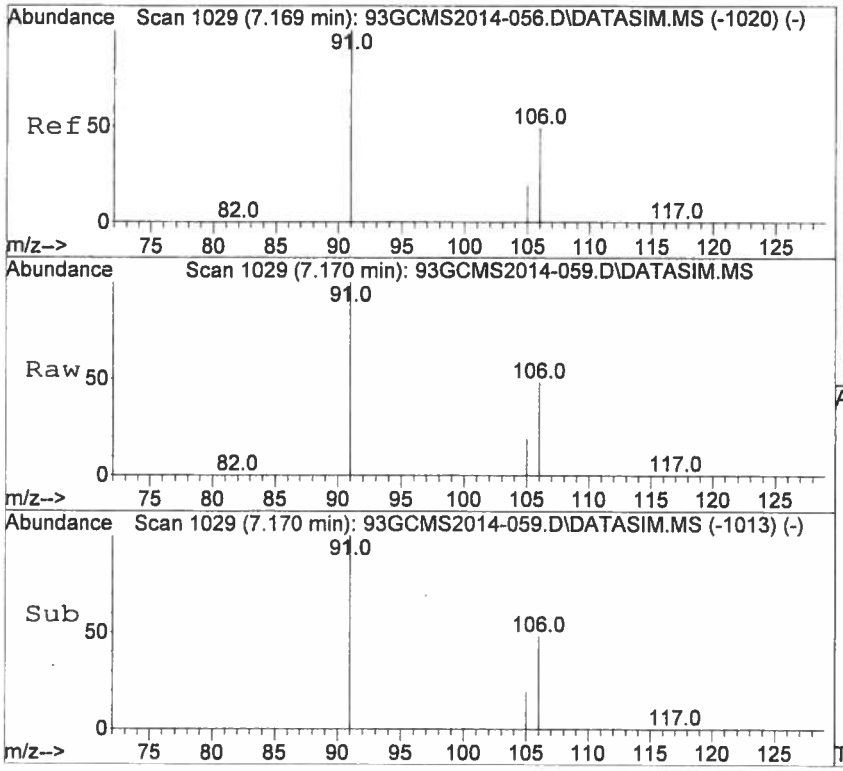


#17
m,p-Xylene
Concen: 560.77 ppbv
RT: 6.918 min Scan# 990
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 91 Resp: 187794

Ion	Ratio	Lower	Upper
91	100		
106	51.7	42.5	63.7
105	22.7	18.6	27.8

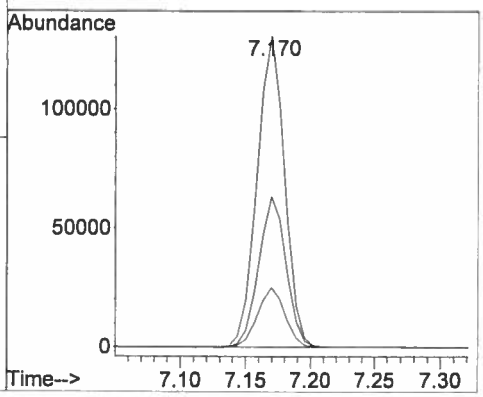




#18
o-Xylene
Concen: 569.92 ppbv
RT: 7.170 min Scan# 1029
Delta R.T. 0.000 min
Lab File: 93GCMS2014-059.D
Acq: 21 Jan 2014 6:51

Tgt Ion: 91 Resp: 192718

Ion	Ratio	Lower	Upper
91	100		
106	48.2	39.3	58.9
105	19.1	15.4	23.2



GC/MS QA-QC Check Report

Tune File : D:\msdchem\1\data\2014\20140121\93GCMS2014-055.D
Tune Time : 21 Jan 2014 6:04

Daily Calibration File : D:\msdchem\1\data\2014\20140121\93GCMS2014-056.D

File	Sample	Internal Standard Responses		
		2062	5289	5504
93GCMS2014-056.D	STD2014012	2062	5289	5504
93GCMS2014-057.D	STD2014012	2038	5183	5377
93GCMS2014-058.D	20140121-M	1949	4868	5056
93GCMS2014-059.D	20140121-L	2016	5099	5255
93GCMS2014-060.D	219-T-012	2070	5180	5369

(fails) - fails 24hr time check * - fails criteria

Created: Thu Jan 23 09:40:23 2014 Instrument 2

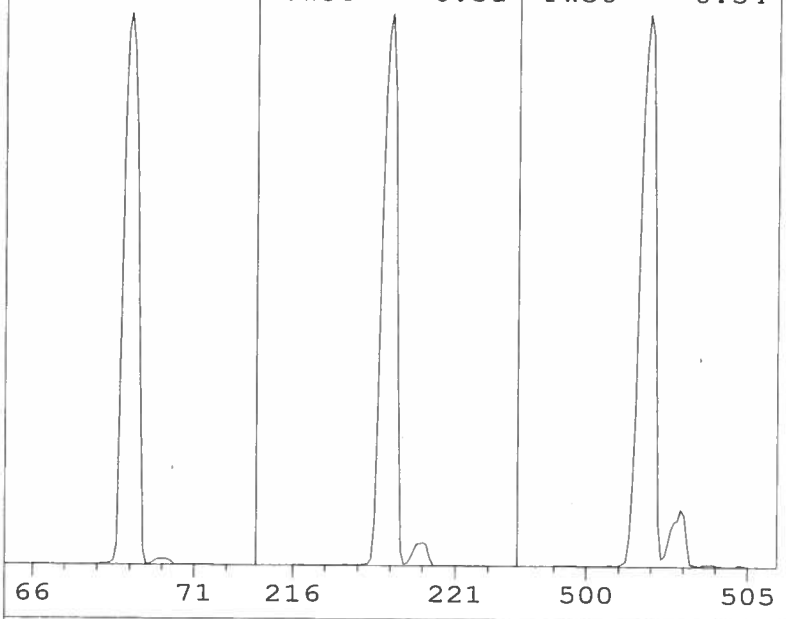
01/21/14

5975

Wed Jan 22 10:57:12 2014
C:\msdchem\1\5975\bfb.u

Instrument: Instrument 2
US83130668

Mass	69.00	Mass	219.00	Mass	501.90
Ab	703708	Ab	336572	Ab	13492
Pw50	0.54	Pw50	0.51	Pw50	0.54

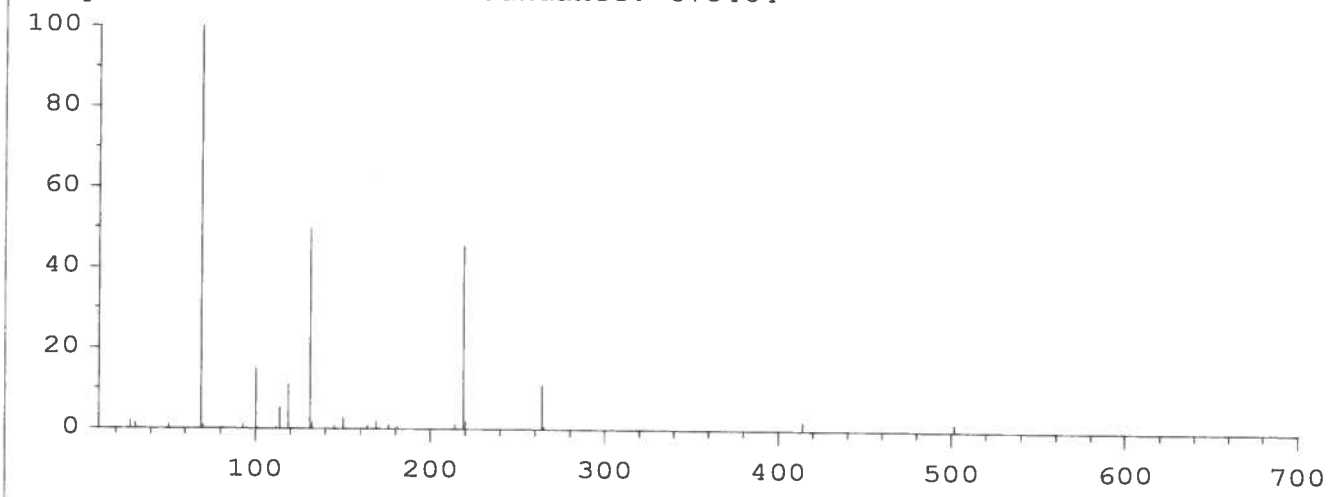


Ion Pol	Pos	MassGain	-973
		MassOffs	-39
Emission	34.6	AmuGain	1186
EIEnrgy	69.9	AmuOffs	125.69
Filament	1	Wid219	-0.016
		DC Pol	Pos
Repeller	19.90		
IonFcus	73.1	HEDEnab	On
EntLens	0.0	EMVolts	1388
EntOffs	Var		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	TurboSpd	100
MS Quad	150	HiVac	1.47e05

Scan: 10.00 - 701.00 Samples: 8 Thresh: 100 Step: 0.10
98 peaks Base: 69.00 Abundance: 678464



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	678464	100.00	70.00	7158	1.06
219.00	308800	45.51	220.00	12760	4.13
501.90	12239	1.80	502.90	1185	9.68

Air/Water Check: H20~0.13% N2~1.91% O2~0.52% CO2~0.11% N2/H2O~1440.65%

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 102631
Repeller Maximum 20 volts using ion 219; Gain Factor 1.03

MassGain Values(Samples): -964(3) -946(2) -916(1) -870(0) -826(FS)

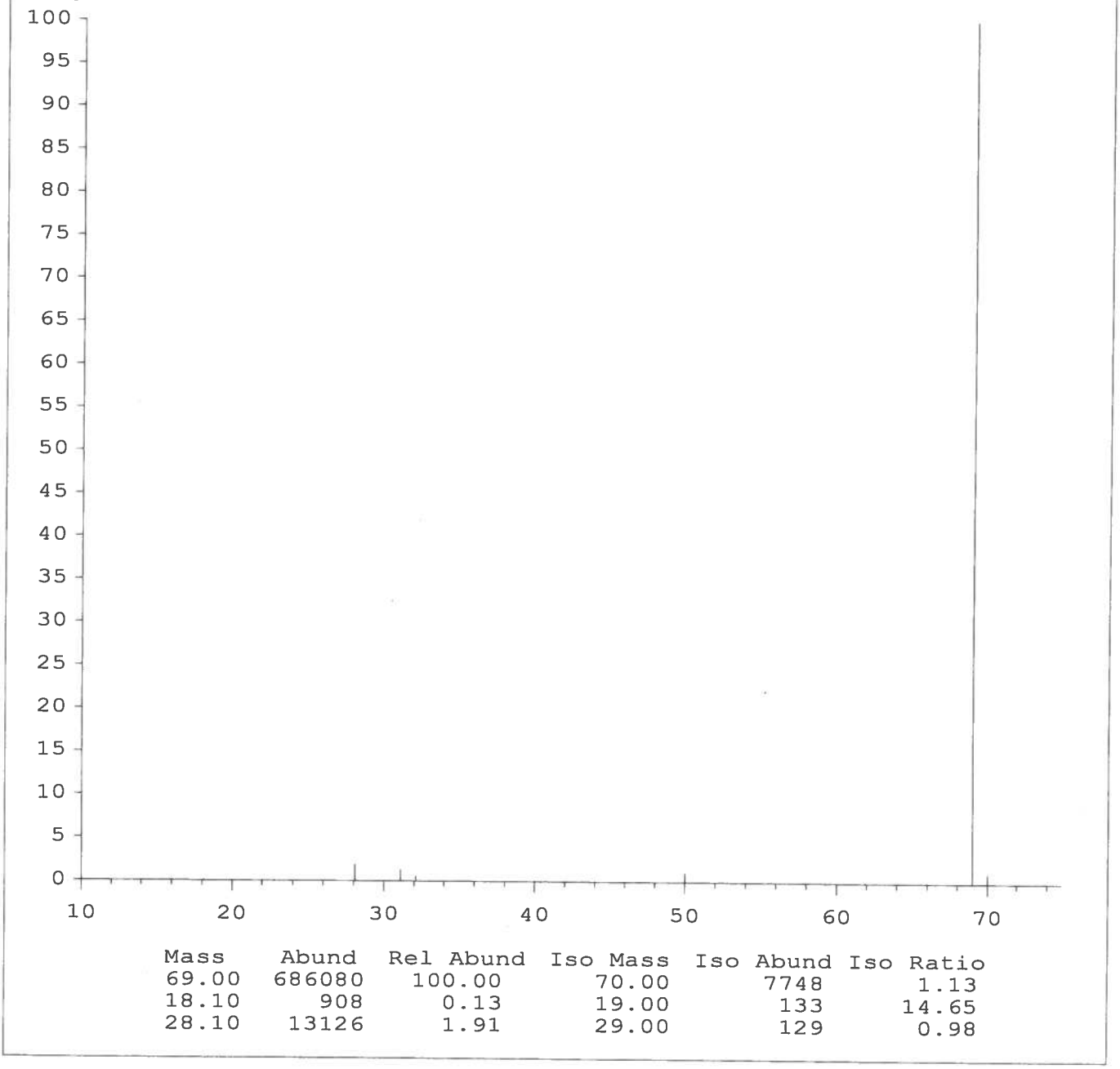
01/22/14

TARGET MASS:	50	69	131	219	414	502	1050
Amu Offset:	125.7	125.7	125.7	125.7	125.7	125.7	125.7
Entrance Lens Offset:	15.3	13.1	15.1	14.8	17.1	18.8	18.8
Target Abund(%):	1.0	100.0	52.0	50.0	2.4	2.0	
Actual Tune Abund(%):	1.0	100.0	49.7	45.5	2.1	1.8	

597x Air and Water Check

Instrument: Instrument 2
Wed Jan 22 10:58:00 2014 C:\msdchem\1\5975\

Scan: 10.00 - 75.00 Samples: 8 Thresh: 0 Step: 0.10
73 peaks Base: 69.00 Abundance: 686080



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	686080	100.00	70.00	7748	1.13
18.10	908	0.13	19.00	133	14.65
28.10	13126	1.91	29.00	129	0.98

Current Params used: bfb.u

Relative abundances:

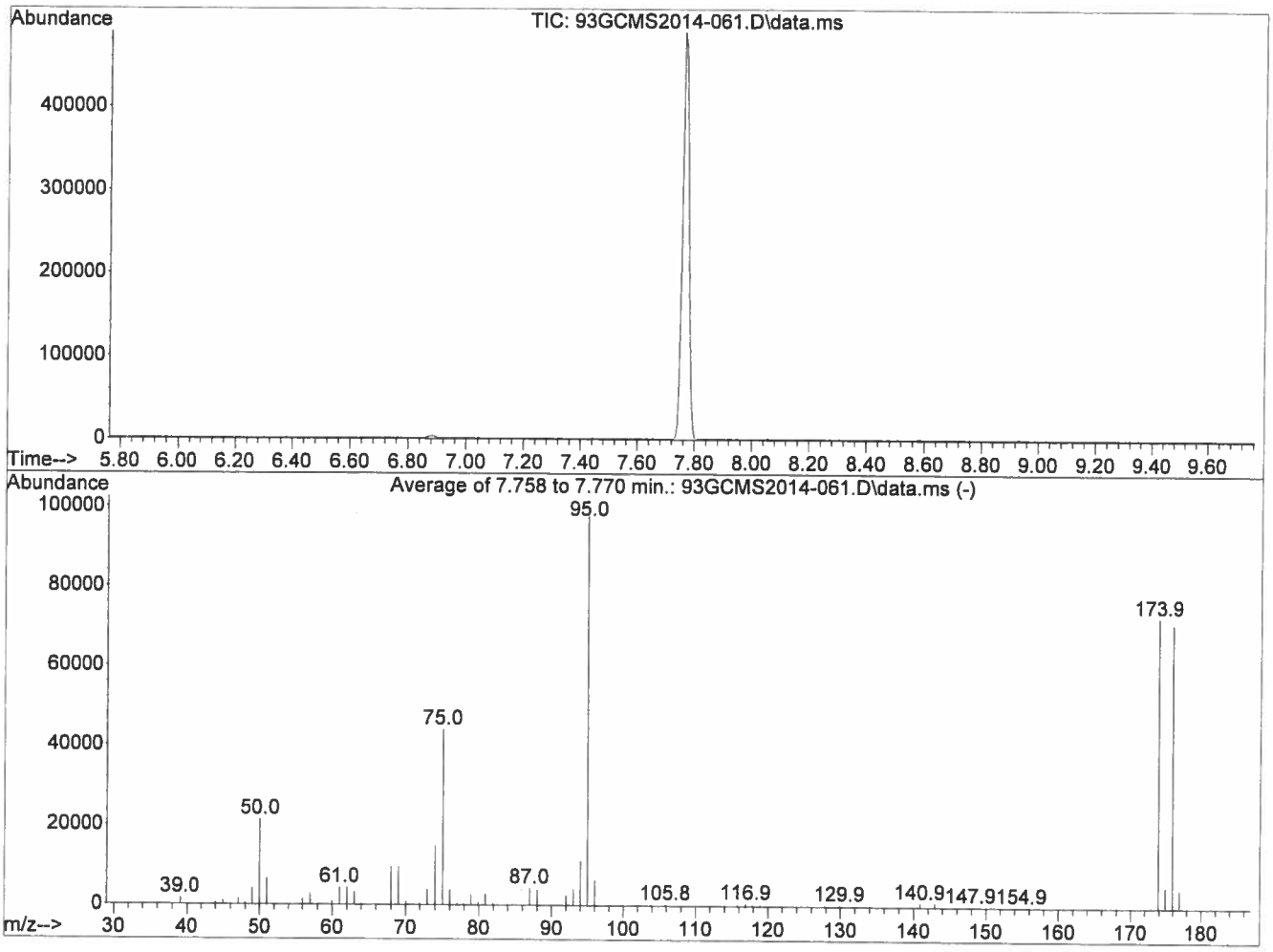
18/69 = 0.13	Water%	(counts=908)
28/69 = 1.91	Nitrogen%	(counts=13126)
32/69 = 0.55	Oxygen%	(counts=3758)
44/69 = 0.11	Carbon Dioxide%	(counts=767)
28/18 = 1445.59	Nitrogen/Water%	

1/22/14

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-061.D
Acq On : 22 Jan 2014 11:32
Operator : SJT
Sample : BFB \ 1ppmv STD
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23
Last Update : Tue Jan 21 06:23:52 2014



AutoFind: Scans 650, 651, 652; Background Corrected with Scan 643

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.9	21325	PASS
75	95	30	66	45.1	43997	PASS
95	95	100	100	100.0	97507	PASS
96	95	5	9	6.5	6329	PASS
173	174	0.00	2	0.6	403	PASS
174	95	50	120	74.4	72515	PASS
175	174	4	9	7.2	5190	PASS
176	174	93	101	97.8	70920	PASS
177	176	5	9	6.4	4556	PASS

1/22/14

Evaluate Continuing Calibration Report

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-062.D
Acq On : 22 Jan 2014 11:48
Operator : SJT
Sample : STD20140122-1 \ 500ppbv CCV
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:21:24 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	ISTD	Bromochloromethane	10.000	10.000	0.0	94	0.00
2		Vinyl Chloride	512.500	559.680	-9.2	97	0.00
3		1,1-Dichloroethene	510.000	549.464	-7.7	97	0.00
4		Methyl Tert Butyl Ether	502.500	546.120	-8.7	96	0.00
5		trans-1,2-Dichloroethene	525.000	572.499	-9.0	98	0.00
6		1,1-Dichloroethane	512.500	553.058	-7.9	96	0.00
7		cis-1,2-Dichloroethene	525.000	582.650	-11.0	98	0.00
8		Chloroform	515.000	546.081	-6.0	94	0.00
9		1,1,1-Trichloroethane	500.000	538.019	-7.6	94	0.00
10	ISTD	1,4-Difluorobenzene	10.000	10.000	0.0	92	0.00
11		Benzene	522.500	550.521	-5.4	97	0.00
12		Trichloroethene	502.500	530.177	-5.5	95	0.00
13	ISTD	Chlorobenzene-d5	10.000	10.000	0.0	90	0.00
14		Toluene	515.000	540.466	-4.9	96	0.00
15		Tetrachloroethene	505.000	527.032	-4.4	83	0.00
16		Ethyl Benzene	517.500	575.196	-11.1	94	0.00
17		m,p-Xylene	520.000	565.167	-8.7	96	0.00
18		o-Xylene	517.500	570.694	-10.3	94	0.00

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

1/22/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-062.D
Acq On : 22 Jan 2014 11:48
Operator : SJT
Sample : STD20140122-1 \ 500ppbv CCV
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:21:24 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.629	49	2078	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	5130	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	5299	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.952	62	58408m	559.68	ppbv	
3) 1,1-Dichloroethene	3.377	61	97031	549.46	ppbv	98
4) Methyl Tert Butyl Ether	3.829	73	125434	546.12	ppbv	95
5) trans-1,2-Dichloroethene	3.898	61	91609	572.50	ppbv	98
6) 1,1-Dichloroethane	4.129	63	104816	553.06	ppbv	98
7) cis-1,2-Dichloroethene	4.465	61	87794	582.65	ppbv	97
8) Chloroform	4.559	83	115895	546.08	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	119248	538.02	ppbv	98
11) Benzene	5.012	78	169489	550.52	ppbv	99
12) Trichloroethene	5.344	130	86941	530.18	ppbv	99
14) Toluene	6.020	91	196794	540.47	ppbv	100
15) Tetrachloroethene	6.404	166	104044	527.03	ppbv	99
16) Ethyl Benzene	6.866	91	251882	575.20	ppbv	98
17) m,p-Xylene	6.918	91	190850	565.17	ppbv	100
18) o-Xylene	7.170	91	194596	570.69	ppbv	99

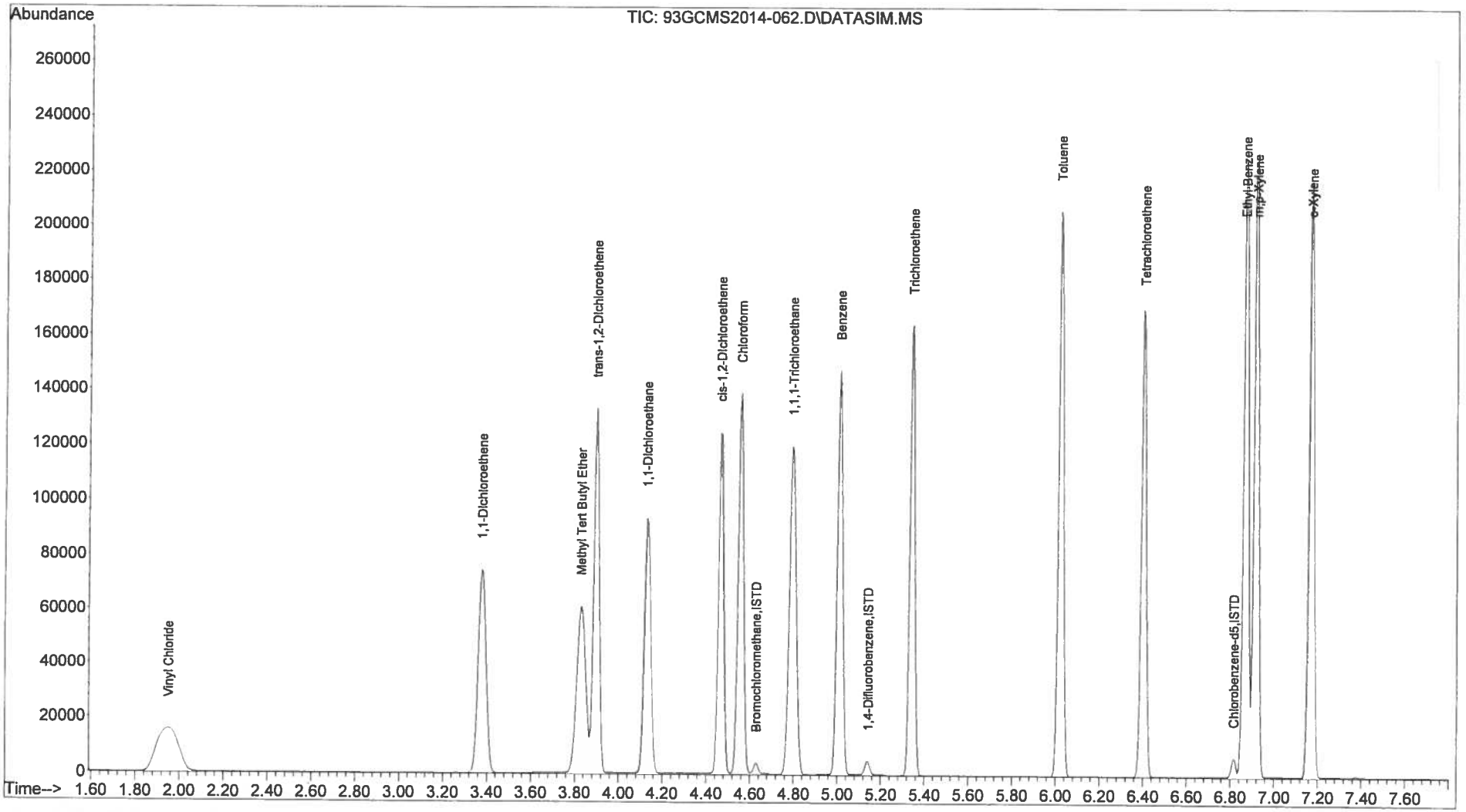
(#) = qualifier out of range (m) = manual integration (+) = signals summed

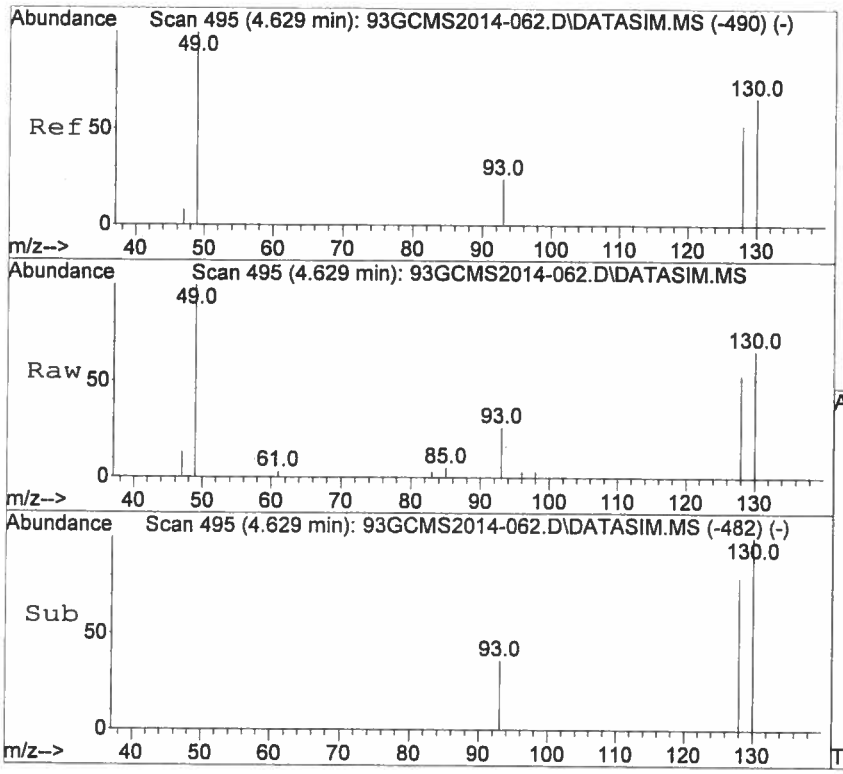
01/22/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-062.D
Acq On : 22 Jan 2014 11:48
Operator : SJT
Sample : STD20140122-1 \ 500ppbv CCV
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:21:24 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

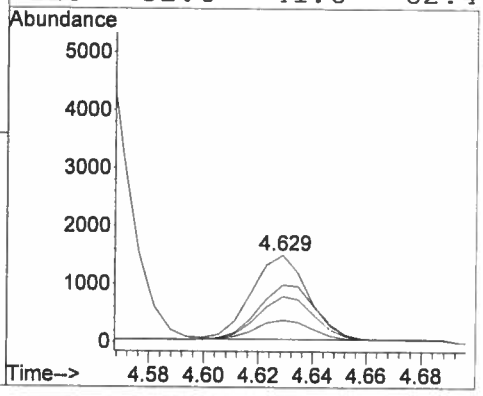


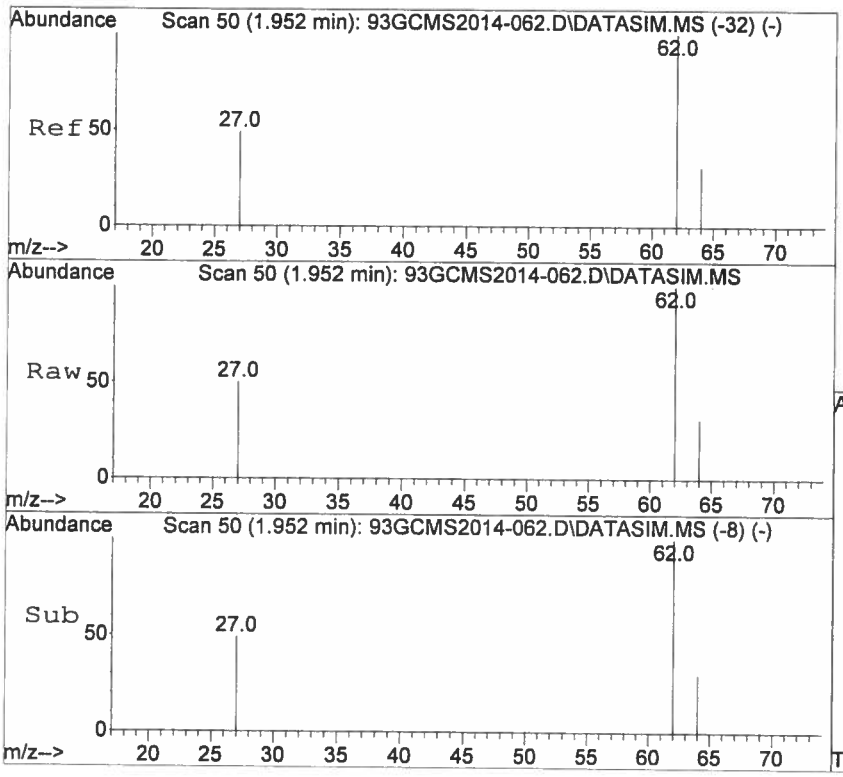


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.629 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 49 Resp: 2078

Ion	Ratio	Lower	Upper
49	100		
130	65.8	51.6	77.4
93	25.7	19.6	29.4
128	52.6	41.6	62.4

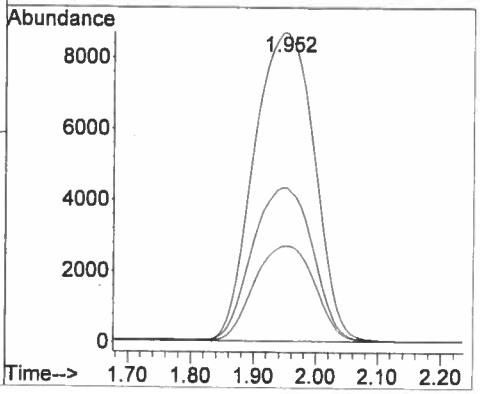


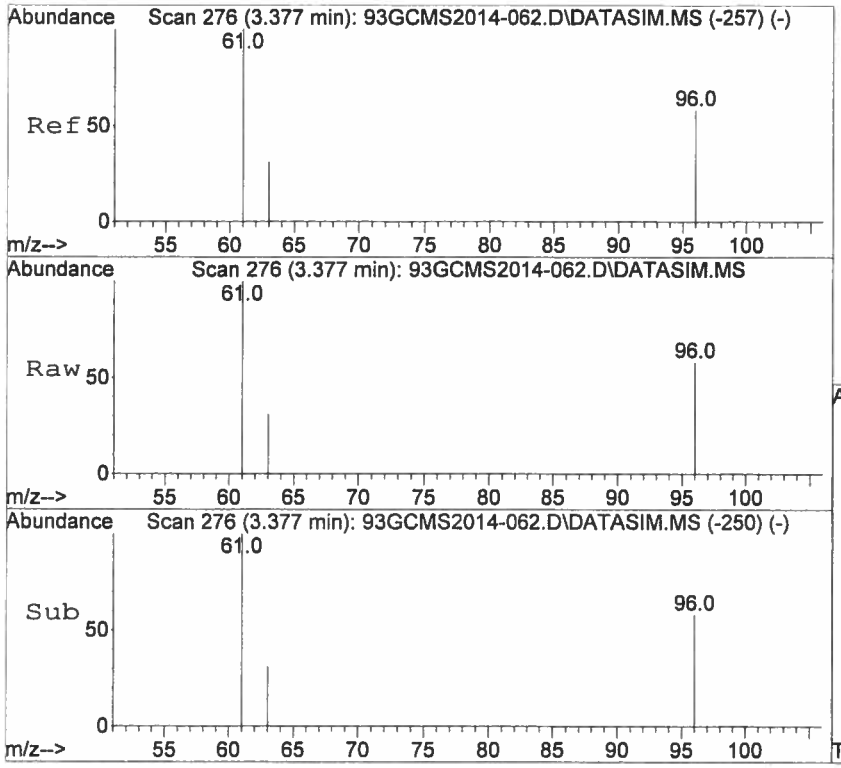


#2
Vinyl Chloride
Concen: 559.68 ppbv m
RT: 1.952 min Scan# 50
Delta R.T. 0.060 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 62 Resp: 58408

Ion	Ratio	Lower	Upper
62	100		
64	0.0	24.9	37.3#
27	0.0	37.8	56.6#

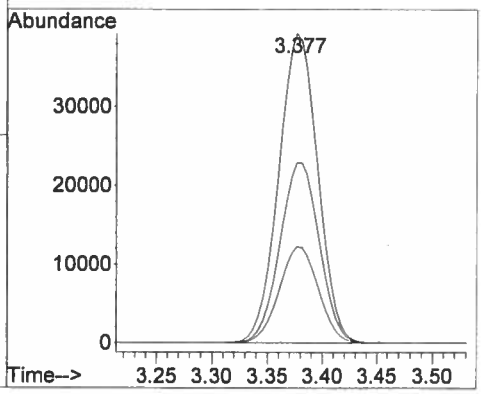


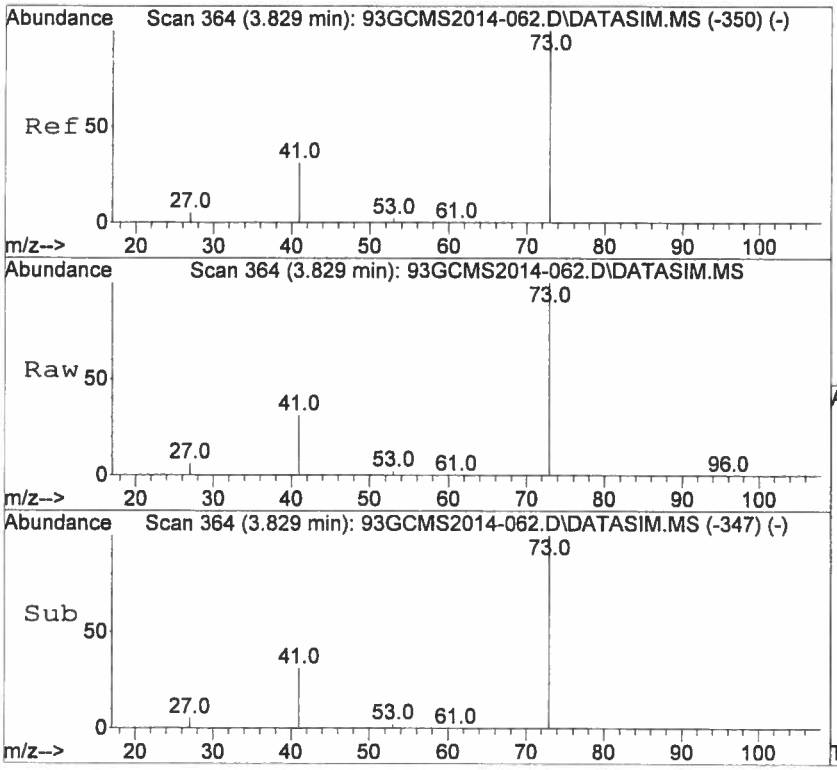


#3
1,1-Dichloroethene
Concen: 549.46 ppbv
RT: 3.377 min Scan# 276
Delta R.T. 0.014 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 61 Resp: 97031

Ion	Ratio	Lower	Upper
61	100		
96	58.8	48.6	72.8
63	31.3	25.0	37.6

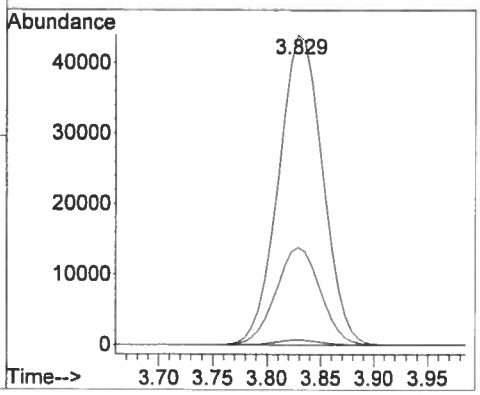


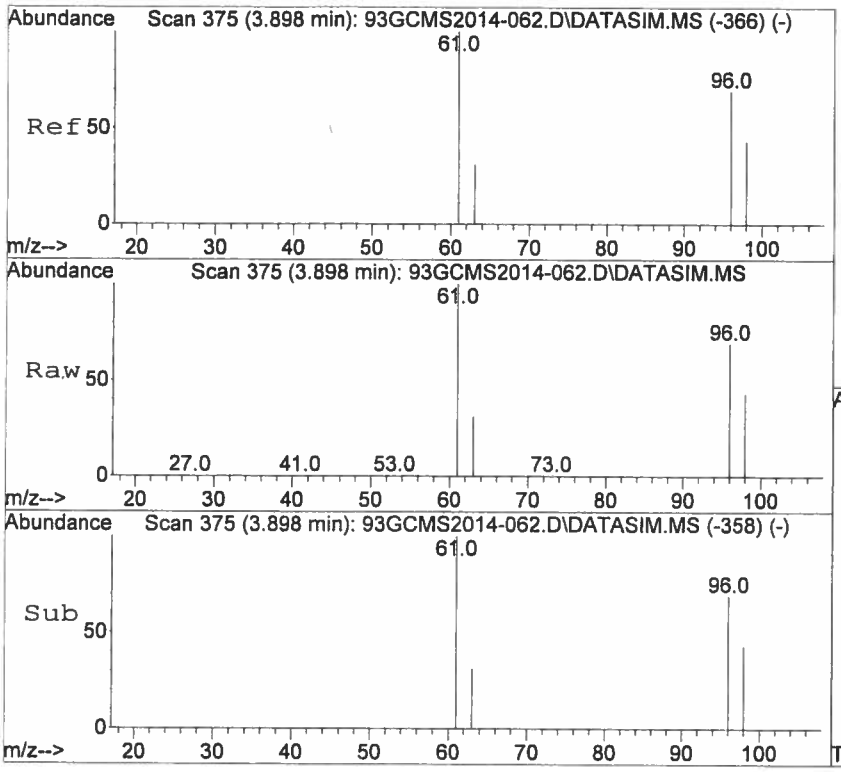


#4
Methyl Tert Butyl Ether
Concen: 546.12 ppbv
RT: 3.829 min Scan# 364
Delta R.T. 0.007 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 73 Resp: 125434

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	31.7	23.0	34.4

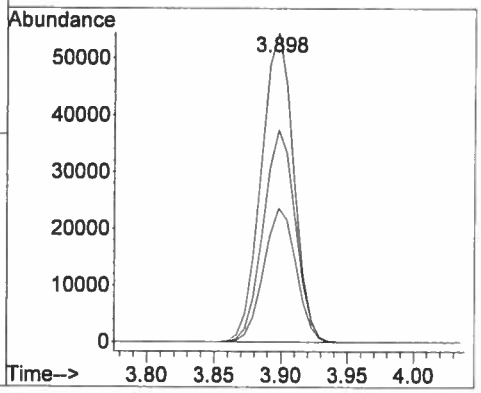


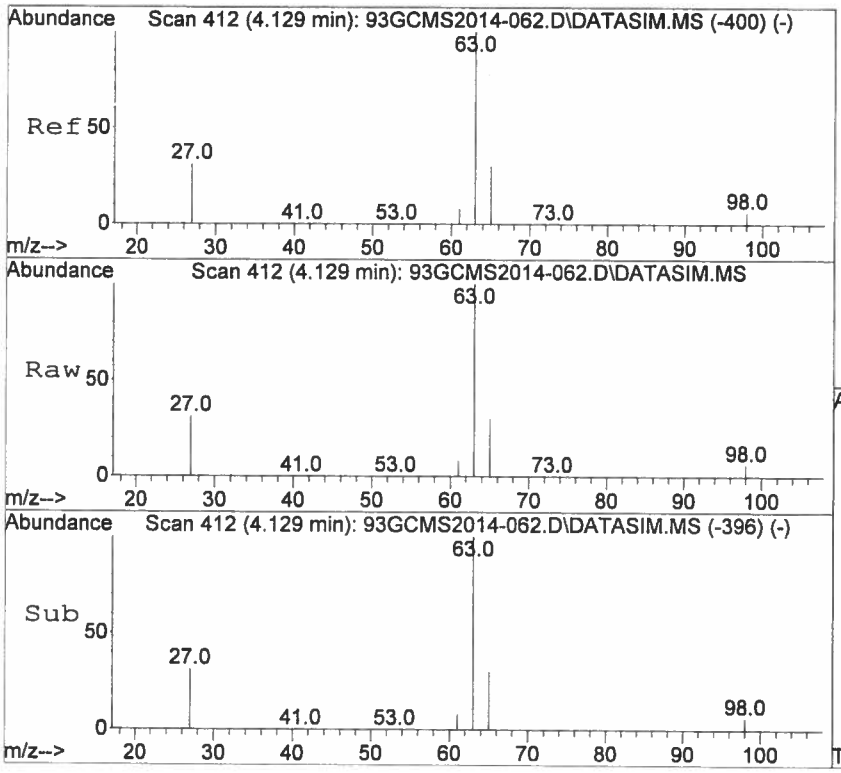


#5
trans-1,2-Dichloroethene
Concen: 572.50 ppbv
RT: 3.898 min Scan# 375
Delta R.T. 0.007 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 61 Resp: 91609

Ion	Ratio	Lower	Upper
61	100		
96	68.3	56.0	84.0
98	43.3	35.6	53.4

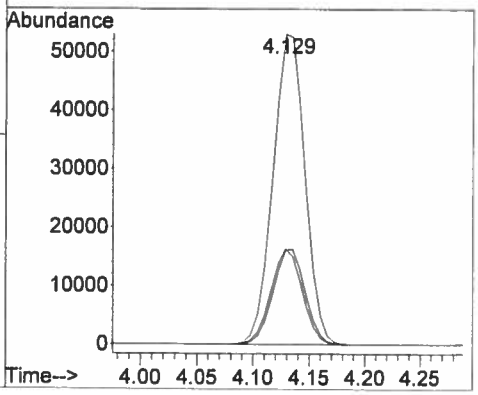


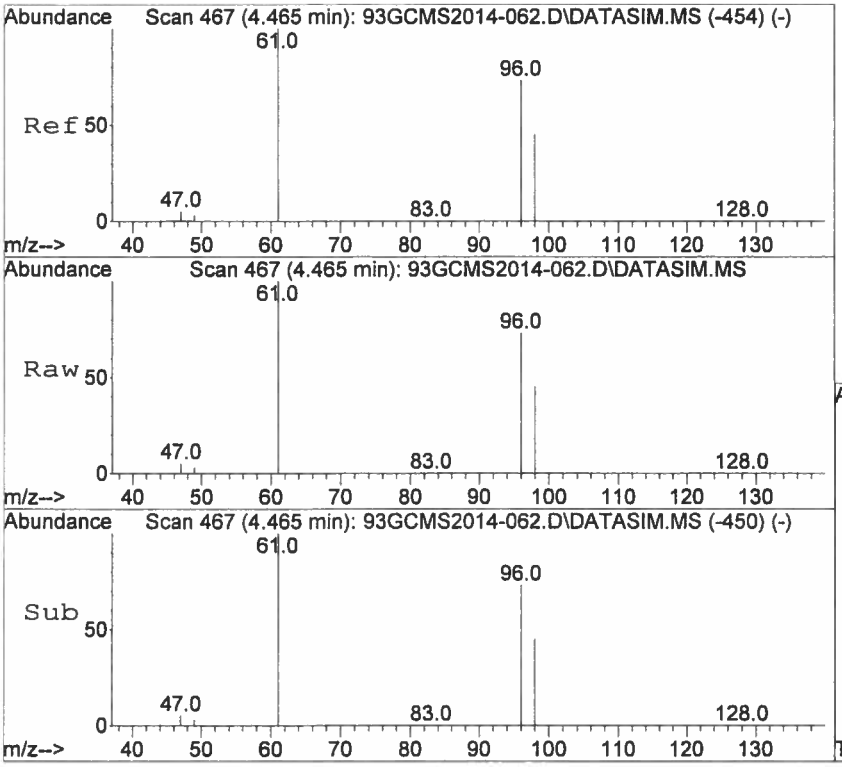


#6
1,1-Dichloroethane
Concen: 553.06 ppbv
RT: 4.129 min Scan# 412
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 63 Resp: 104816

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	30.1	22.6	34.0

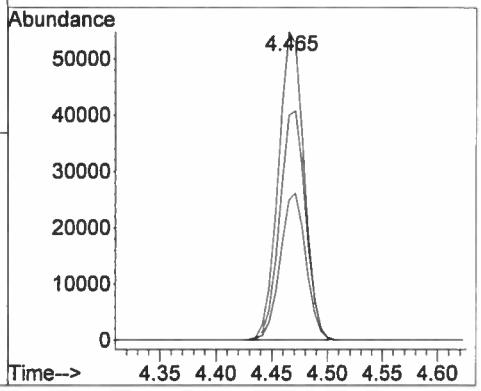


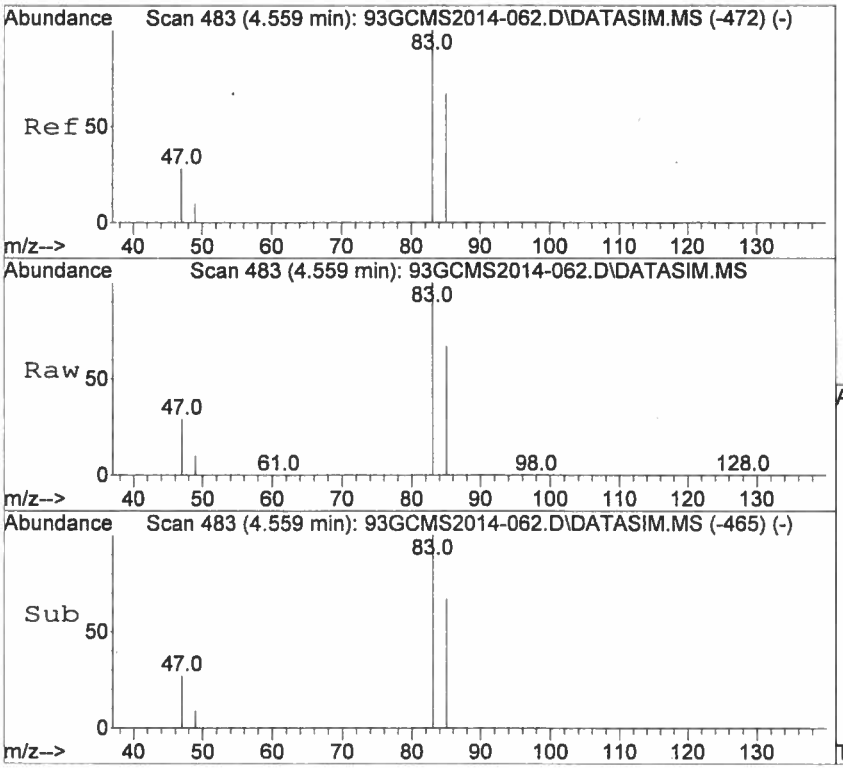


#7
cis-1,2-Dichloroethene
Concen: 582.65 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 61 Resp: 87794

Ion	Ratio	Lower	Upper
61	100		
96	74.8	61.7	92.5
98	47.5	39.4	59.0

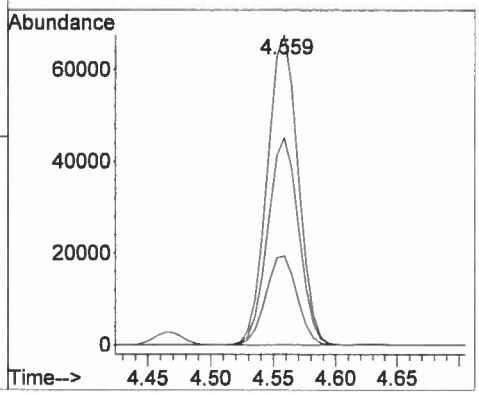


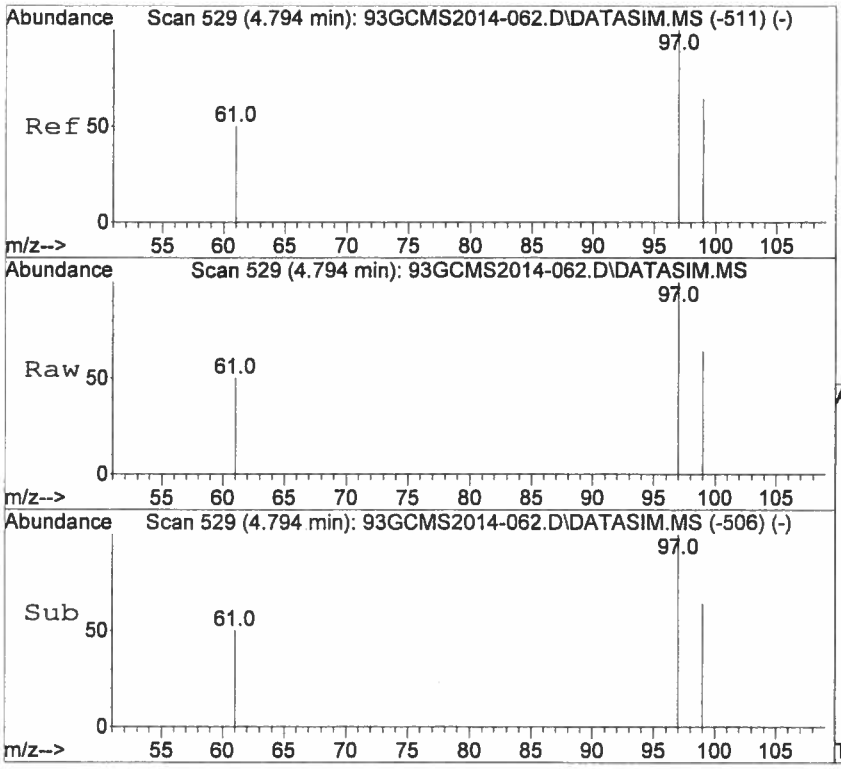


#8
Chloroform
Concen: 546.08 ppbv
RT: 4.559 min Scan# 483
Delta R.T. 0.006 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 83 Resp: 115895

Ion	Ratio	Lower	Upper
83	100		
85	66.8	52.0	78.0
47	29.0	20.0	30.0

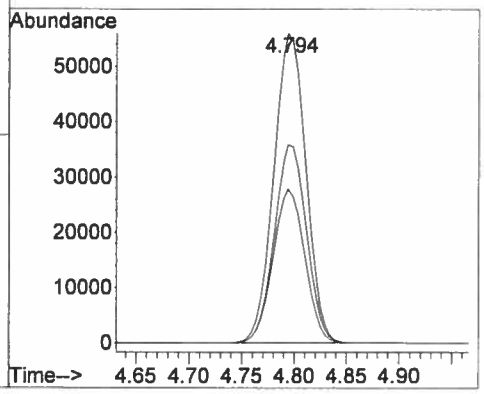


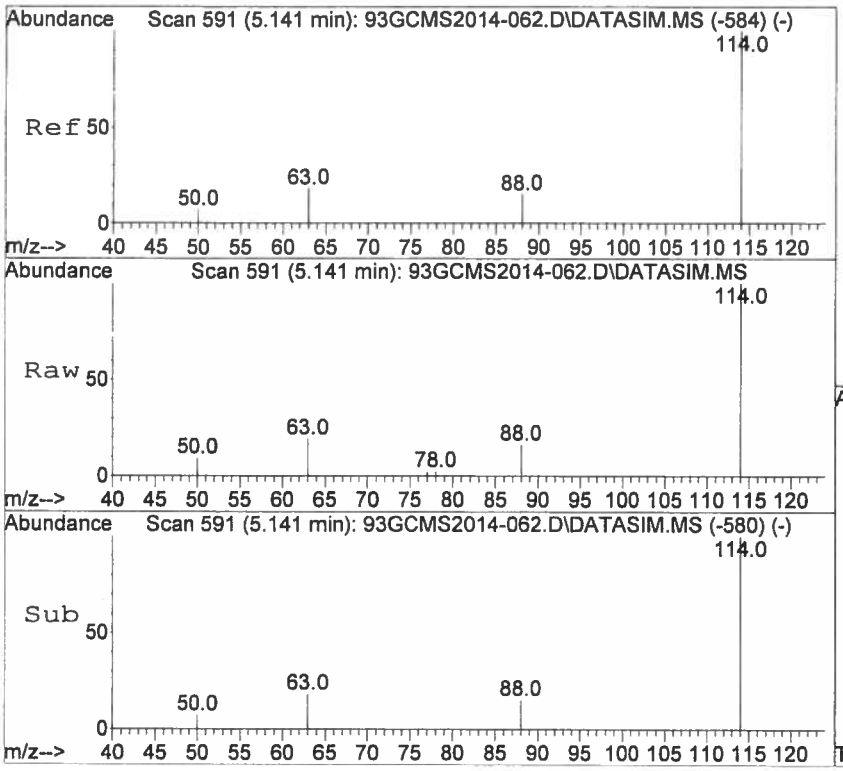


#9
1,1,1-Trichloroethane
Concen: 538.02 ppbv
RT: 4.794 min Scan# 529
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 97 Resp: 119248

Ion	Ratio	Lower	Upper
97	100		
99	64.1	51.4	77.0
61	49.5	37.4	56.0

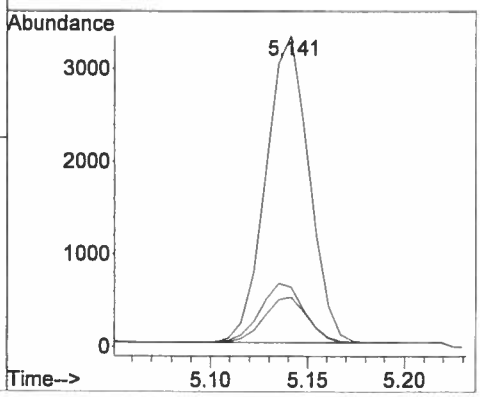


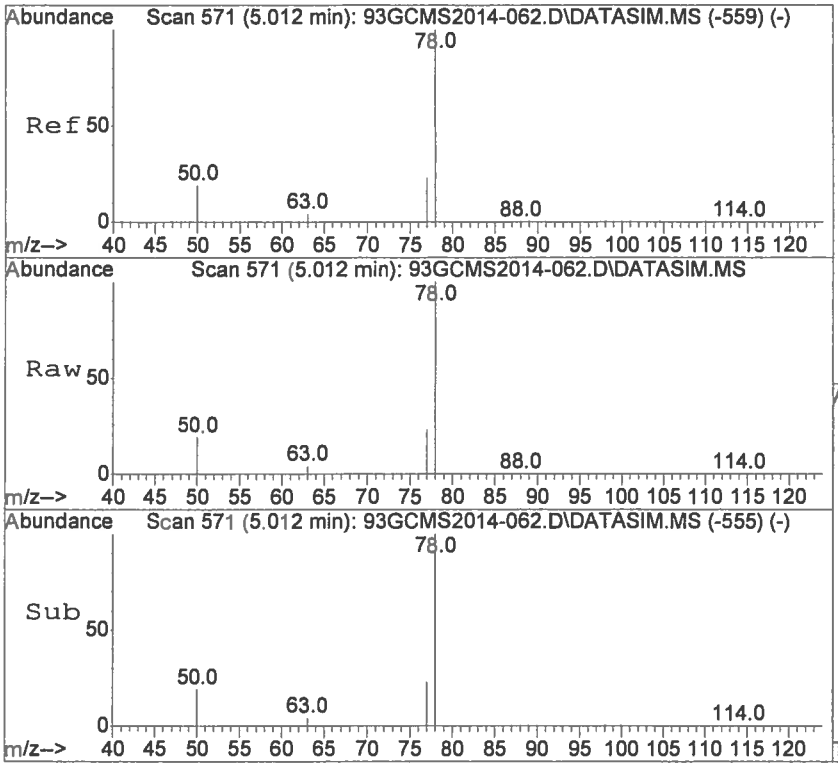


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion:114 Resp: 5130

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.2	12.0	18.0

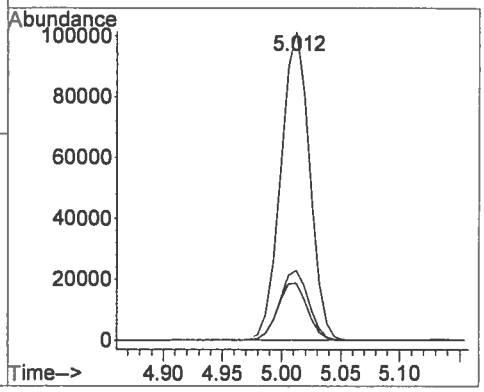


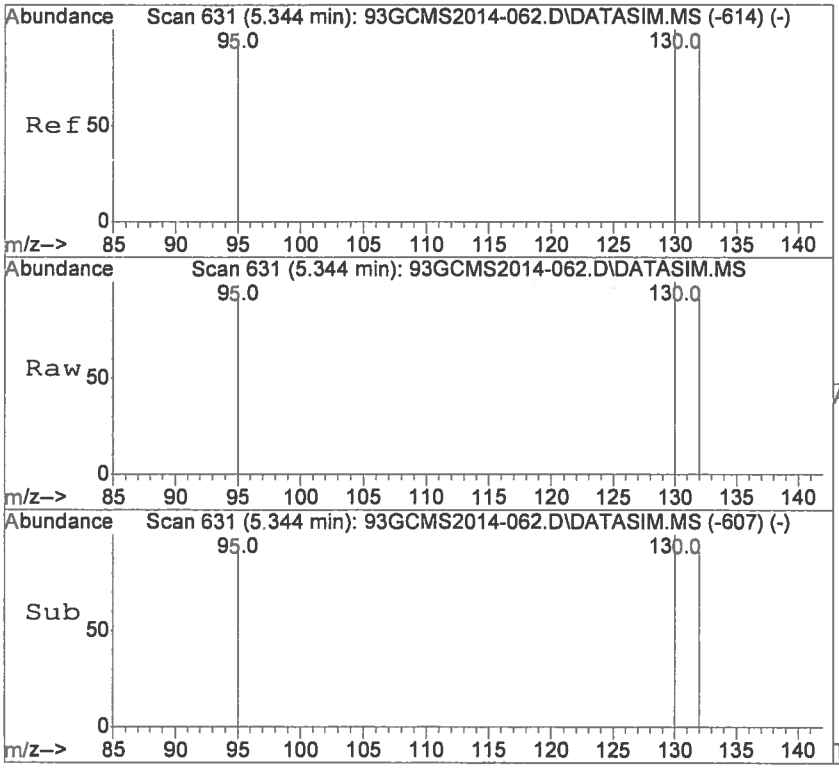


#11
Benzene
Concen: 550.52 ppbv
RT: 5.012 min Scan# 571
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 78 Resp: 169489

Ion	Ratio	Lower	Upper
78	100		
77	22.9	18.4	27.6
50	19.1	14.6	21.8

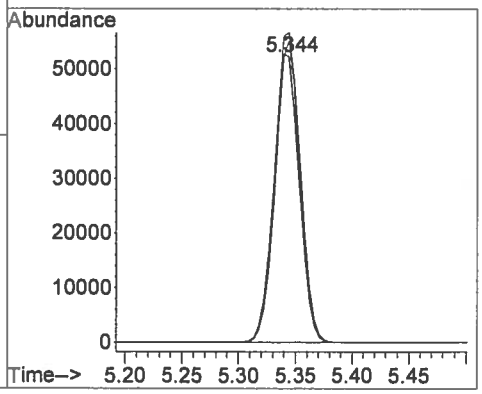


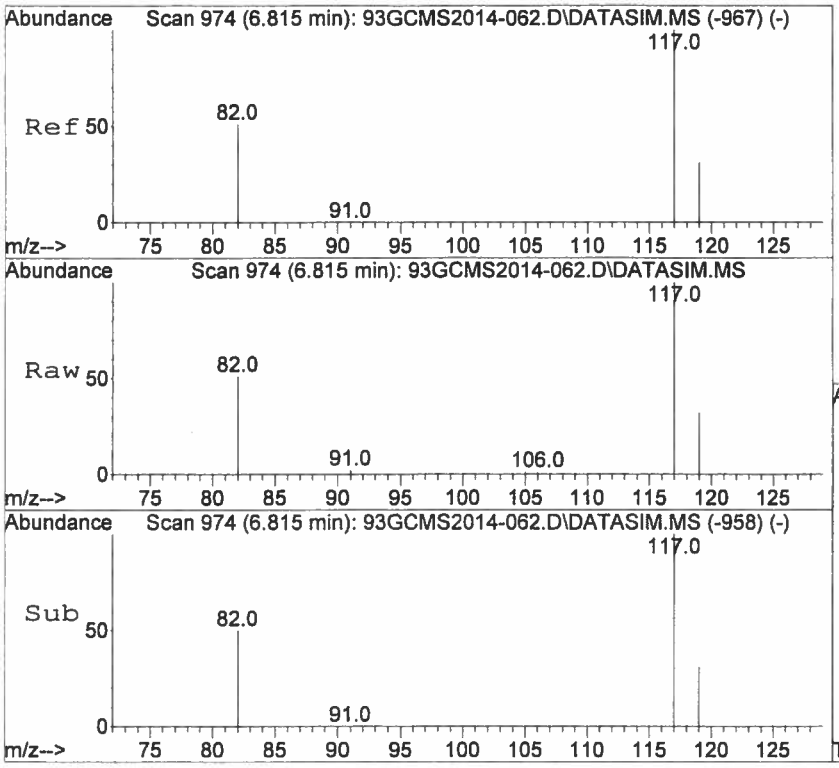


#12
Trichloroethene
Concen: 530.18 ppbv
RT: 5.344 min Scan# 631
Delta R.T. 0.005 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion:130 Resp: 86941

Ion	Ratio	Lower	Upper
130	100		
132	96.2	77.0	115.6
95	93.1	72.9	109.3

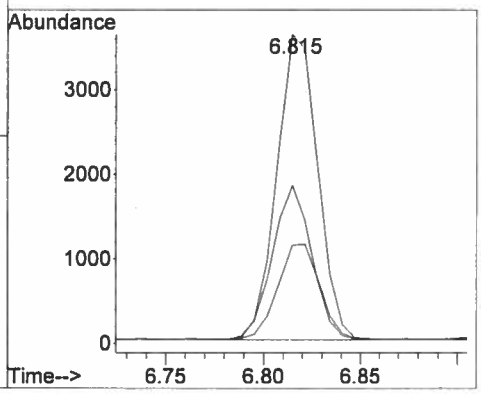


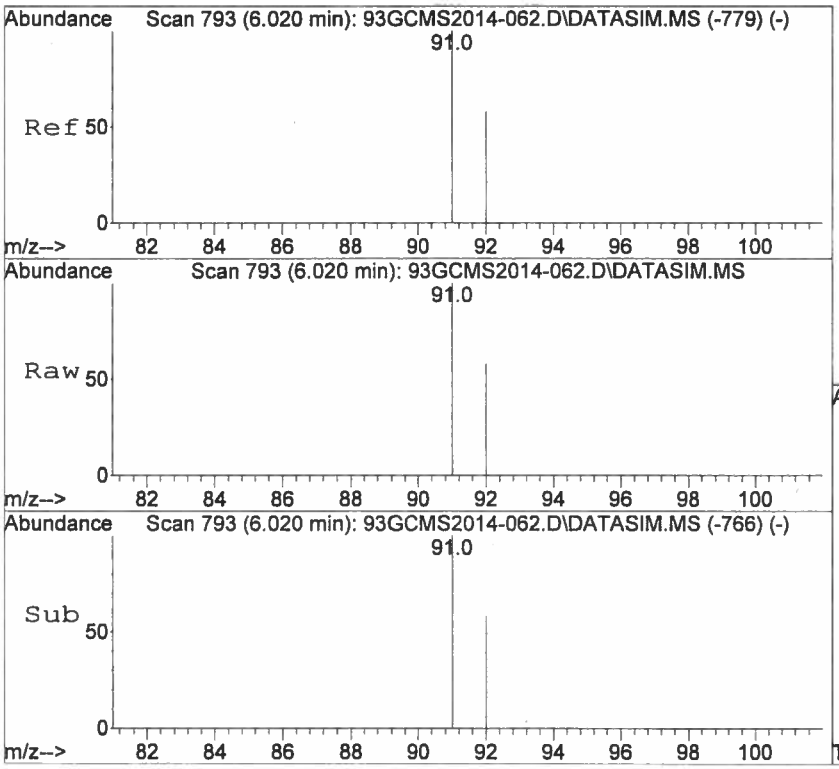


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion:117 Resp: 5299

Ion	Ratio	Lower	Upper
117	100		
82	48.6	37.8	56.6
119	31.9	25.6	38.4

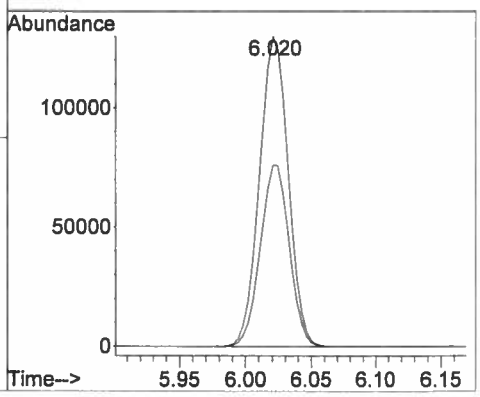


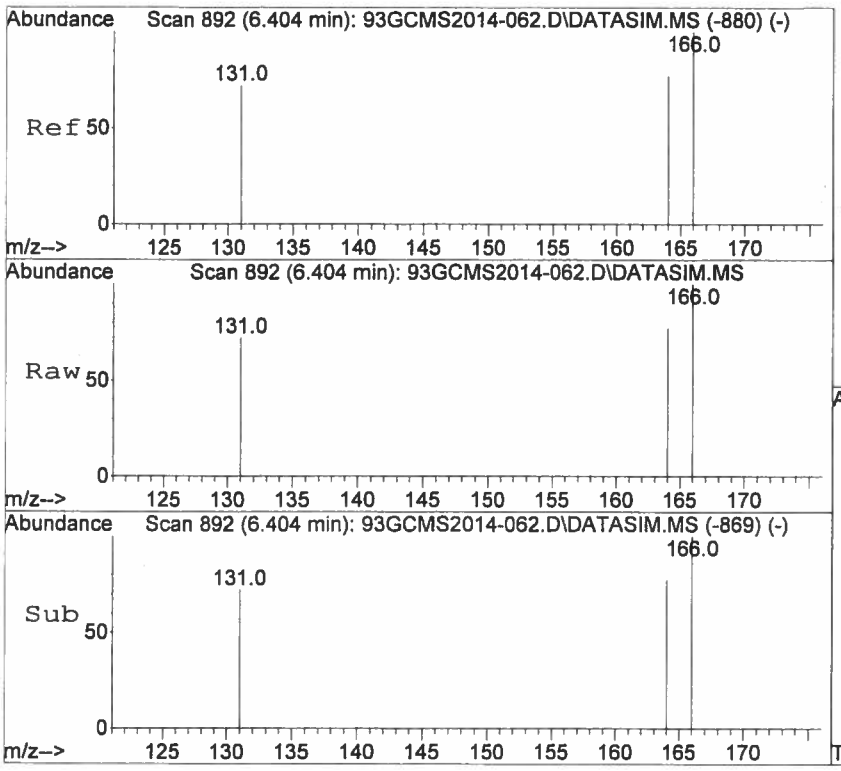


#14
Toluene
Concen: 540.47 ppbv
RT: 6.020 min Scan# 793
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 91 Resp: 196794

Ion	Ratio	Lower	Upper
91	100		
92	58.9	47.2	70.8

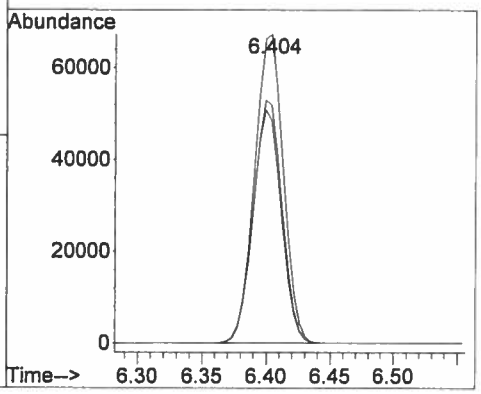


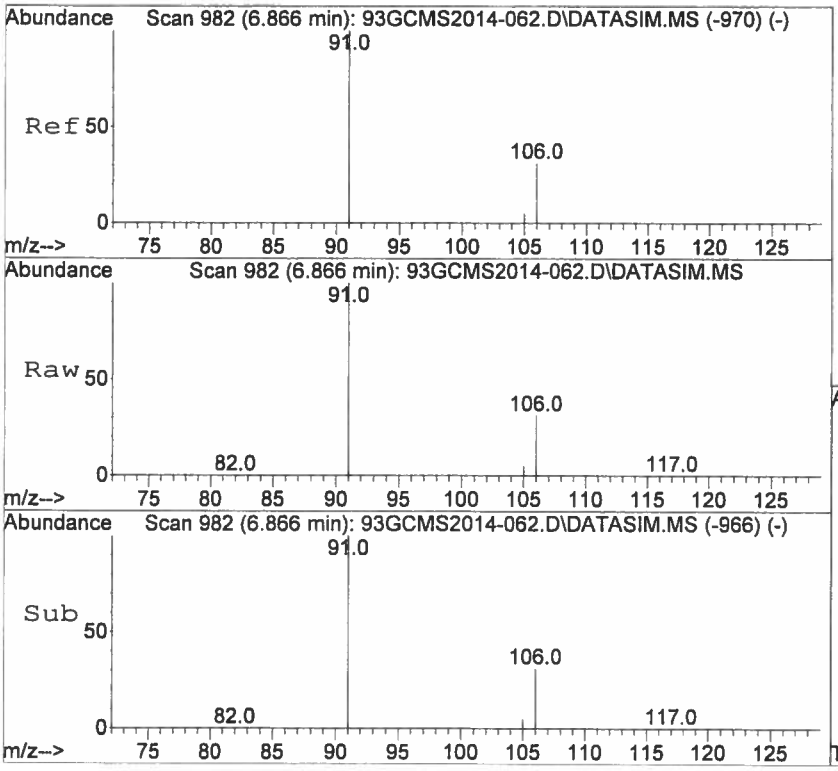


#15
Tetrachloroethene
Concen: 527.03 ppbv
RT: 6.404 min Scan# 892
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion:166 Resp: 104044

Ion	Ratio	Lower	Upper
166	100		
164	78.3	62.5	93.7
131	74.8	58.6	88.0

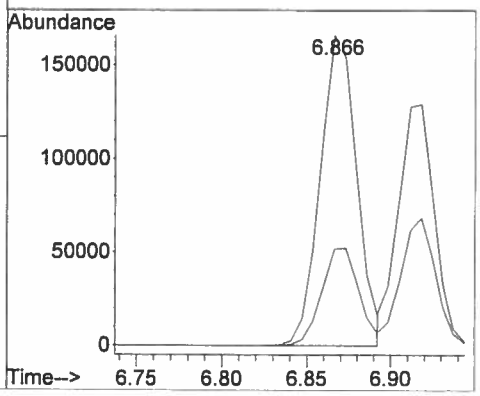


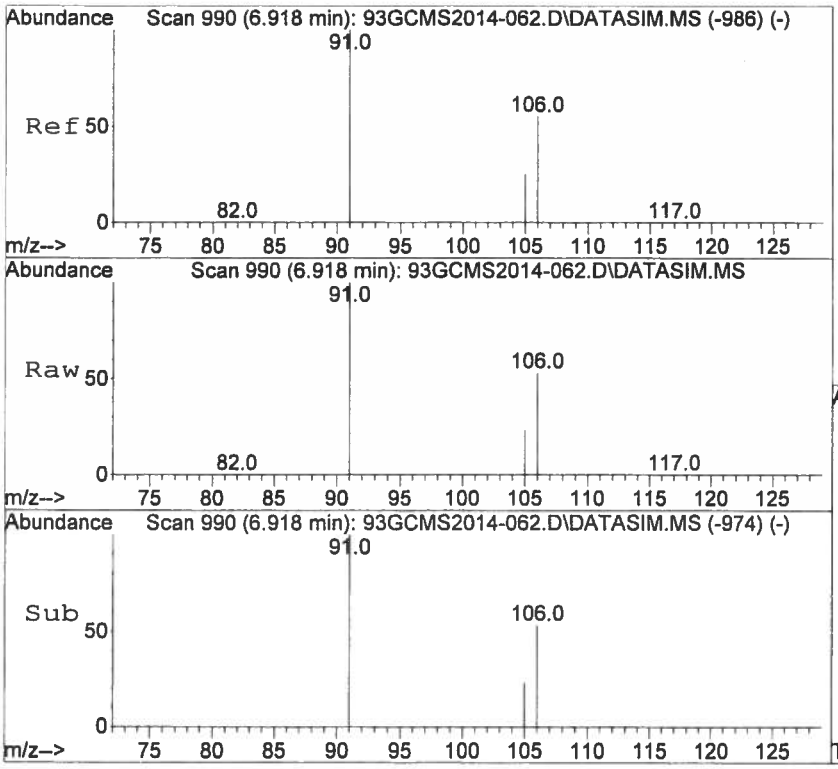


#16
Ethyl Benzene
Concen: 575.20 ppbv
RT: 6.866 min Scan# 982
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 91 Resp: 251882

Ion	Ratio	Lower	Upper
91	100		
106	31.2	25.6	38.4

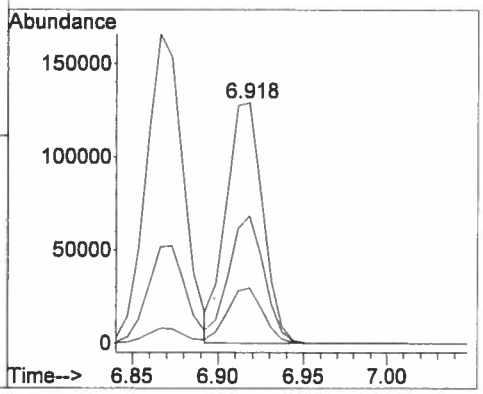


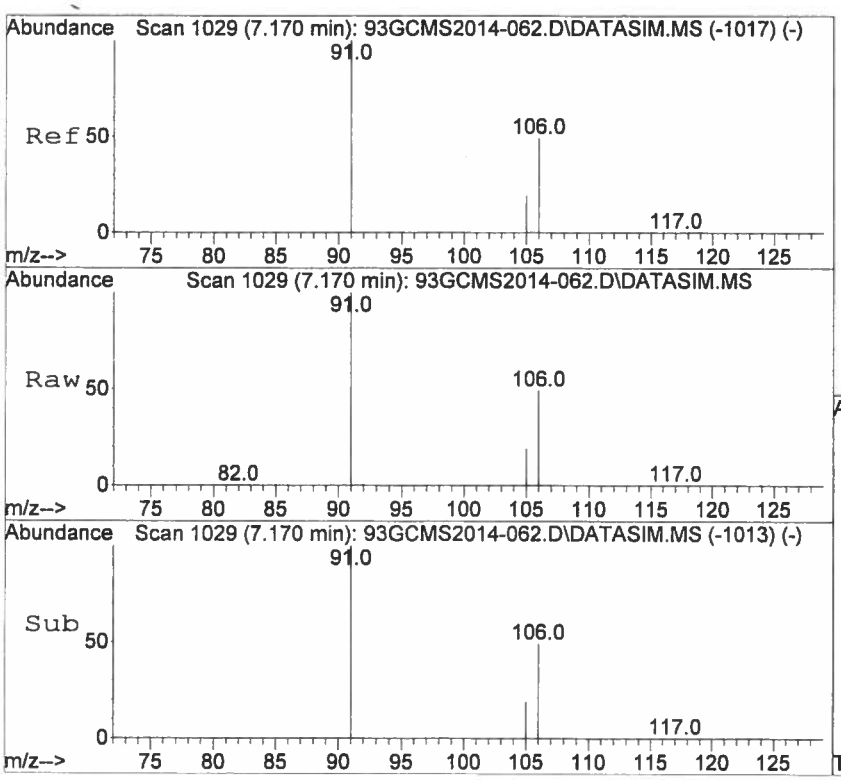


#17
m,p-Xylene
Concen: 565.17 ppbv
RT: 6.918 min Scan# 990
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 91 Resp: 190850

Ion	Ratio	Lower	Upper
91	100		
106	53.0	42.5	63.7
105	23.0	18.6	27.8

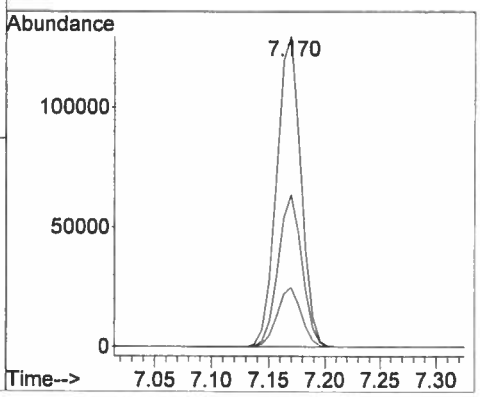




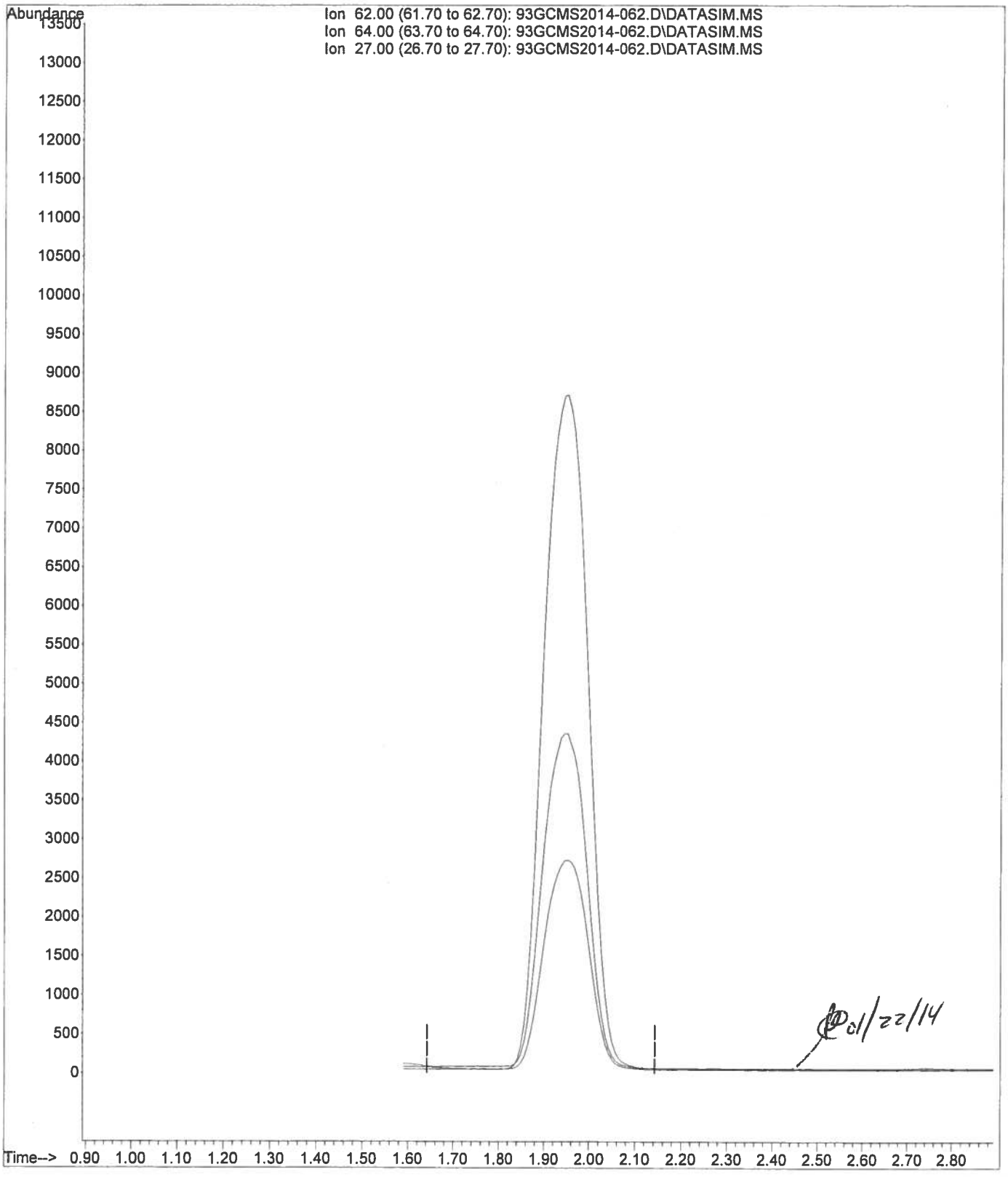
#18
o-Xylene
Concen: 570.69 ppbv
RT: 7.170 min Scan# 1029
Delta R.T. 0.000 min
Lab File: 93GCMS2014-062.D
Acq: 22 Jan 2014 11:48

Tgt Ion: 91 Resp: 194596

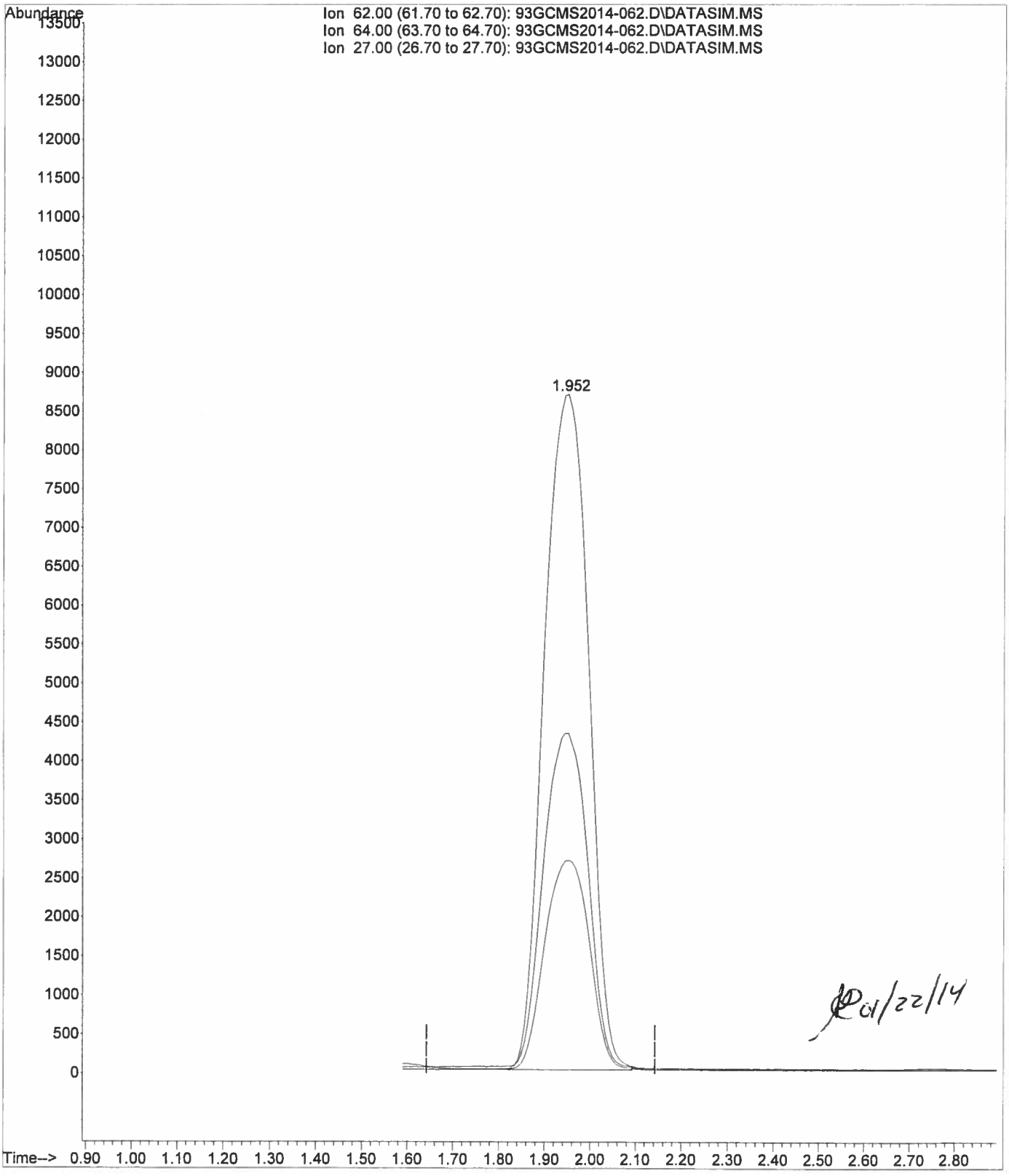
Ion	Ratio	Lower	Upper
91	100		
106	48.2	39.3	58.9
105	19.0	15.4	23.2



File :D:\msdchem\1\data\2014\20140122\93GCMS2014-062.D
Operator : SJT
Acquired : 22 Jan 2014 11:48 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-1 \ 500ppbv CCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1



File :D:\msdchem\1\data\2014\20140122\93GCMS2014-062.D
Operator : SJT
Acquired : 22 Jan 2014 11:48 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-1 \ 500ppbv CCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1



1/22/14

Data File:	93GCMS2014-063.d
Sample Number:	STD20140122-3
Sample Volume (mL)	5
Date Prepared:	22-Jan-2014
Date Analyzed:	22-Jan-2014

Compound	COA Concentrations CC# 106676 EXP. 03/20/2014 CC# 127284 EXP. 12/13/2014 (ppmv)	Calculated Concentrations STD20140122-3 0.5 ppbv LLCCV (ppbv)	STD20140122-3 0.5 ppbv LLCCV Results (ppbv)	Percent Difference (% D)
Vinyl Chloride	20.5	0.51	0.48	6.34
1,1-Dichloroethene	20.4	0.51	0.58	-13.73
Methyl Tert Butyl Ether	21.0	0.53	0.56	-6.67
trans-1,2-Dichloroethene	20.5	0.51	0.65	-26.83
1,1-Dichloroethane	20.1	0.50	0.61	-21.39
cis-1,2-Dichloroethene	21.0	0.53	0.66	-25.71
Chloroform	20.6	0.52	0.59	-14.56
1,1,1-Trichloroethane	20.0	0.50	0.54	-8.00
Benzene	20.9	0.52	0.66	-26.32
Trichloroethene	20.1	0.50	0.54	-7.46
Toluene	20.6	0.52	0.65	-26.21
Tetrachloroethene	20.2	0.51	0.54	-6.93
Ethyl Benzene	20.7	0.52	0.59	-14.01
m&p-Xylene	20.8	0.52	0.69	-32.69
o-Xylene	20.7	0.52	0.67	-29.47

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-063.D
Acq On : 22 Jan 2014 12:04
Operator : SJT
Sample : STD20140122-3 \ 0.5ppbv LLCCV
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:54:39 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	4.623	49	2026	10.00	ppbv		0.00
10) 1,4-Difluorobenzene	5.135	114	5087	10.00	ppbv		0.00
13) Chlorobenzene-d5	6.815	117	5233	10.00	ppbv		0.00
System Monitoring Compounds							
Target Compounds							Qvalue
2) Vinyl Chloride	1.915	62	49m	0.48	ppbv		
3) 1,1-Dichloroethene	3.368	61	99	0.58	ppbv		96
4) Methyl Tert Butyl Ether	3.822	73	126	0.56	ppbv	#	67
5) trans-1,2-Dichloroethene	3.891	61	101m	0.65	ppbv		
6) 1,1-Dichloroethane	4.128	63	112m	0.61	ppbv		
7) cis-1,2-Dichloroethene	4.465	61	97	0.66	ppbv		98
8) Chloroform	4.553	83	122	0.59	ppbv	#	86
9) 1,1,1-Trichloroethane	4.790	97	117	0.54	ppbv	#	90
11) Benzene	5.012	78	203	0.66	ppbv	#	92
12) Trichloroethene	5.344	130	88	0.54	ppbv		96
14) Toluene	6.020	91	235	0.65	ppbv		98
15) Tetrachloroethene	6.399	166	105	0.54	ppbv		97
16) Ethyl Benzene	6.866	91	253	0.59	ppbv	#	77
17) m,p-Xylene	6.911	91	230m	0.69	ppbv		
18) o-Xylene	7.163	91	226	0.67	ppbv	#	89

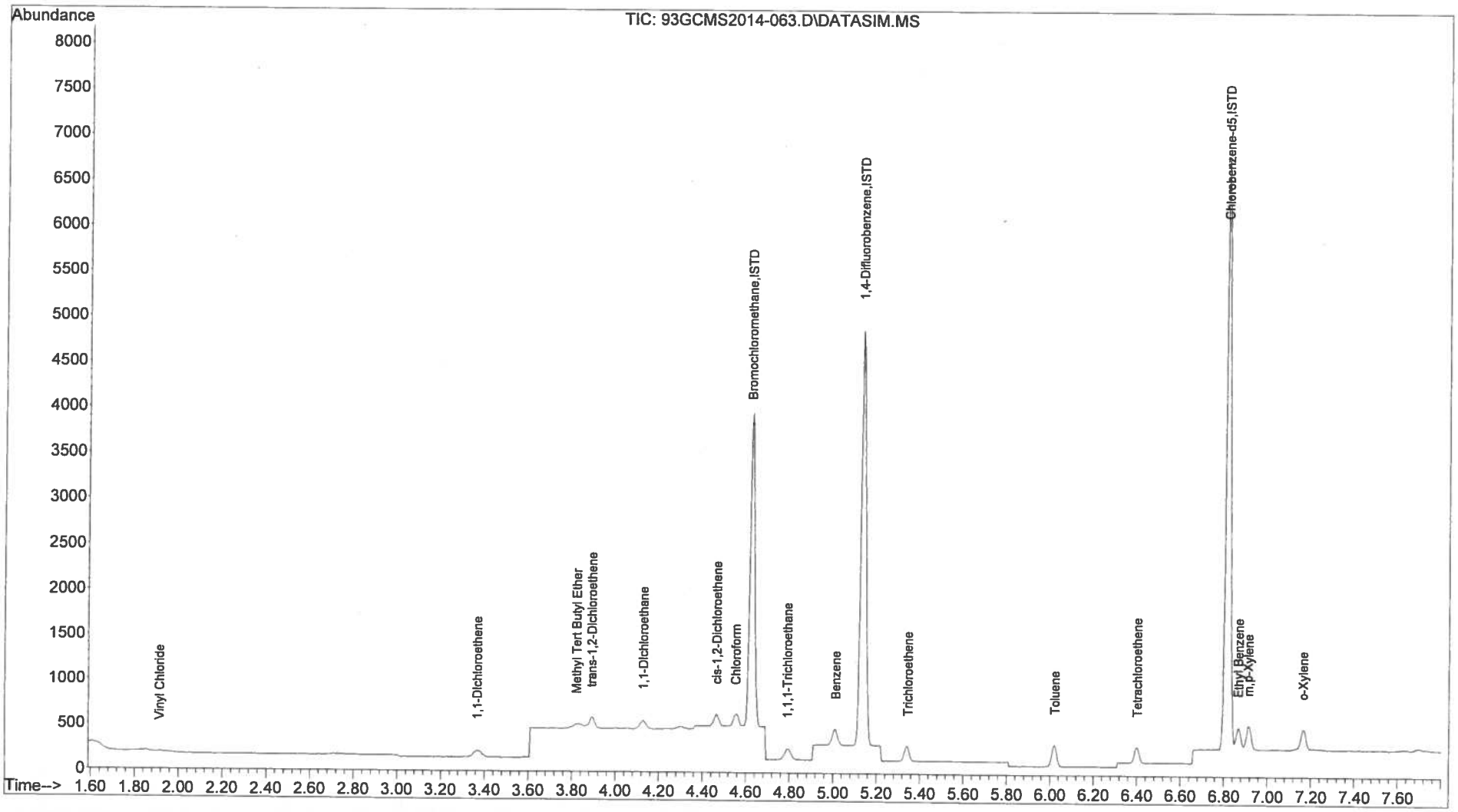
(#) = qualifier out of range (m) = manual integration (+) = signals summed

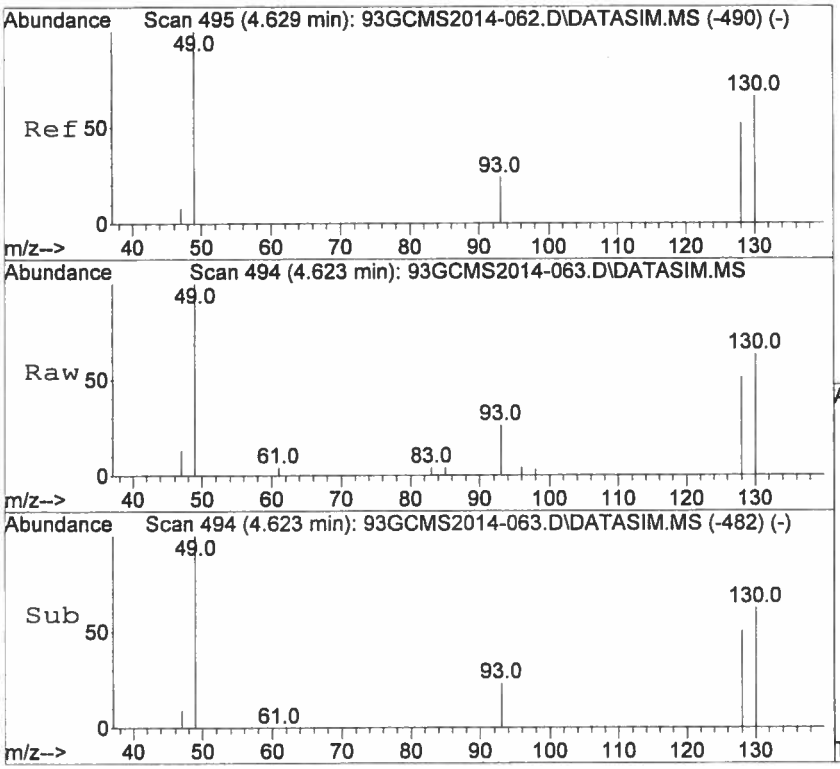
01/22/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-063.D
Acq On : 22 Jan 2014 12:04
Operator : SJT
Sample : STD20140122-3 \ 0.5ppbv LLCCV
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:54:39 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

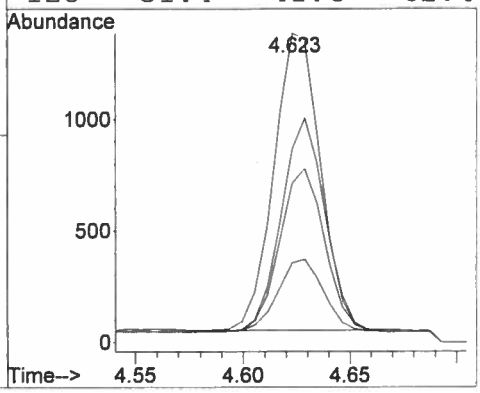


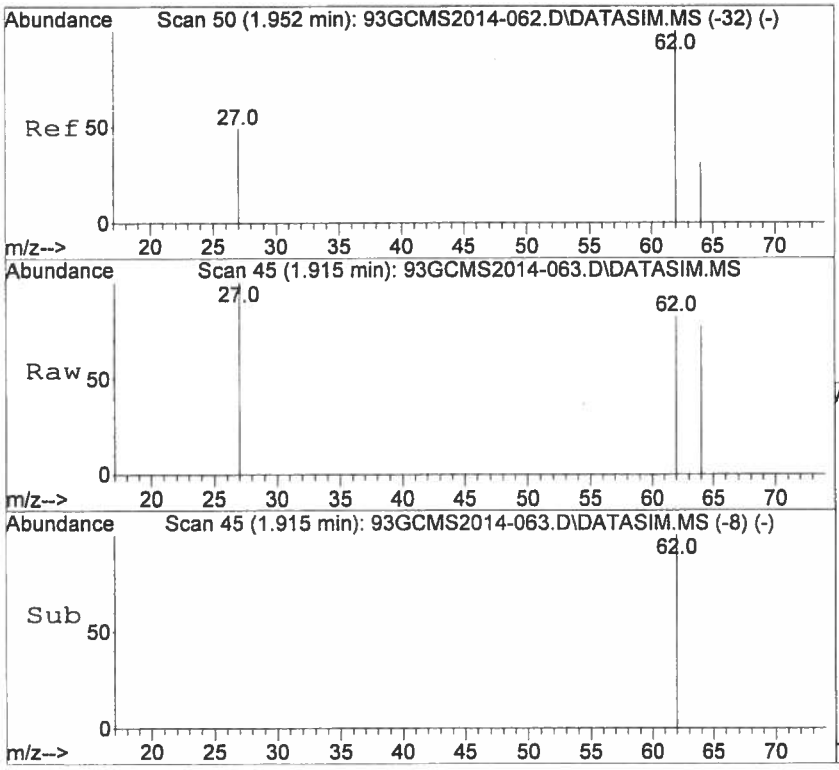


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. 0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 49 Resp: 2026

Ion	Ratio	Lower	Upper
49	100		
130	62.6	51.6	77.4
93	25.6	19.6	29.4
128	51.4	41.6	62.4

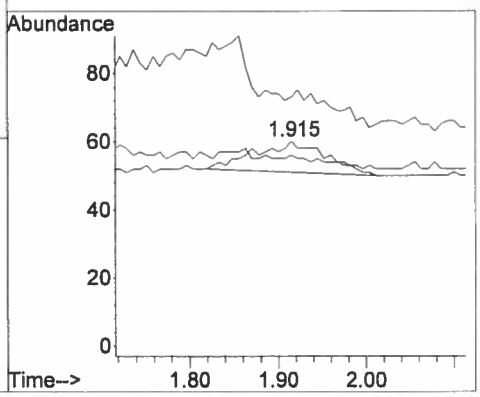


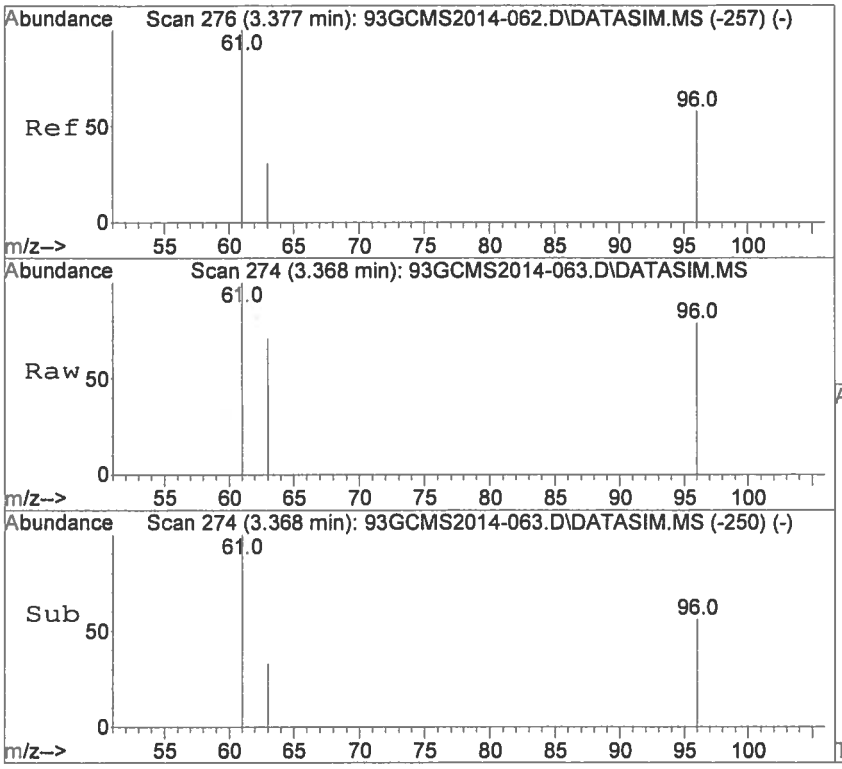


#2
Vinyl Chloride
Concen: 0.48 ppbv m
RT: 1.915 min Scan# 45
Delta R.T. 0.022 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 62 Resp: 49

Ion	Ratio	Lower	Upper
62	100		
64	24.5	24.9	37.3#
27	65.3	37.8	56.6#

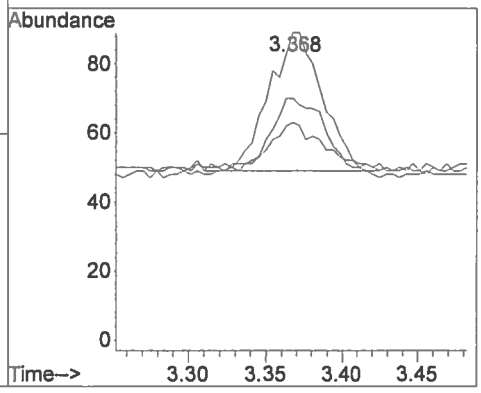


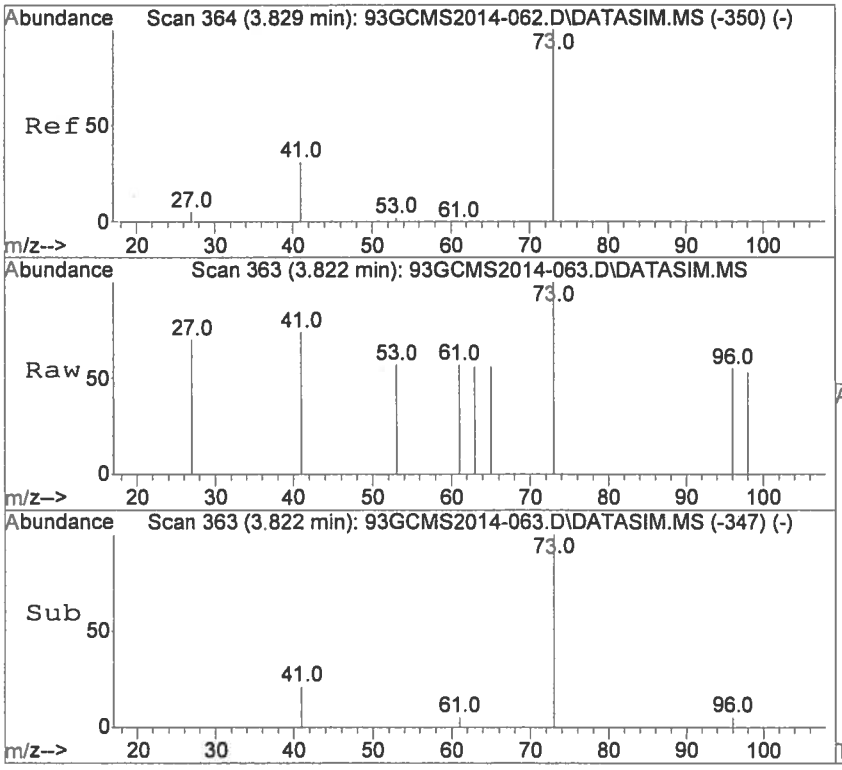


#3
1,1-Dichloroethene
Concen: 0.58 ppbv
RT: 3.368 min Scan# 274
Delta R.T. 0.004 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 61 Resp: 99

Ion	Ratio	Lower	Upper
61	100		
96	62.6	48.6	72.8
63	35.4	25.0	37.6

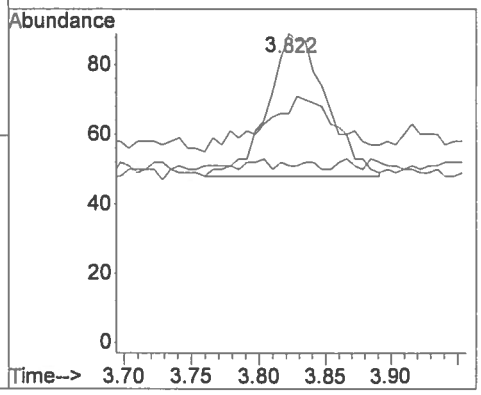


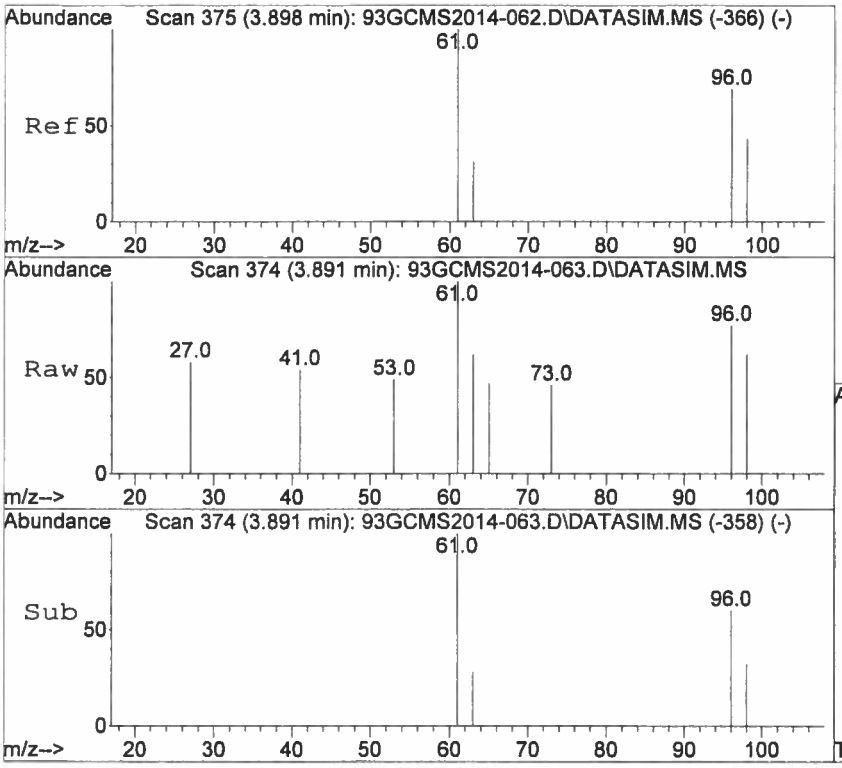


#4
Methyl Tert Butyl Ether
Concen: 0.56 ppbv
RT: 3.822 min Scan# 363
Delta R.T. -0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 73 Resp: 126

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	46.8	23.0	34.4#

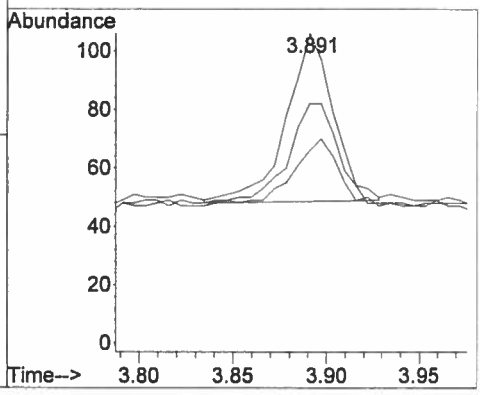


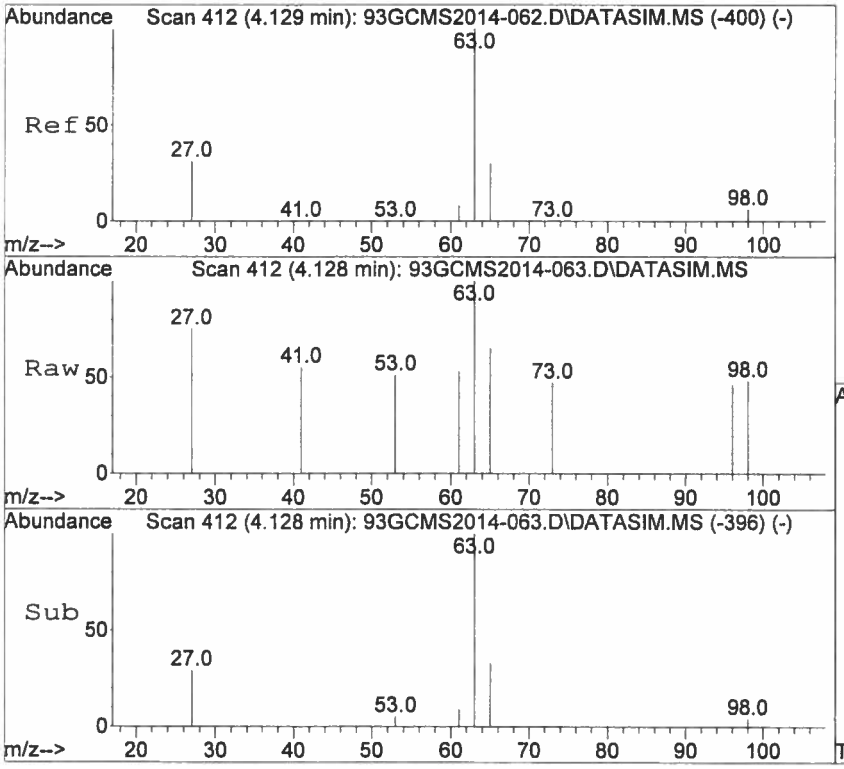


#5
trans-1,2-Dichloroethene
Concen: 0.65 ppbv m
RT: 3.891 min Scan# 374
Delta R.T. -0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 61 Resp: 101

Ion	Ratio	Lower	Upper
61	100		
96	69.3	56.0	84.0
98	40.6	35.6	53.4

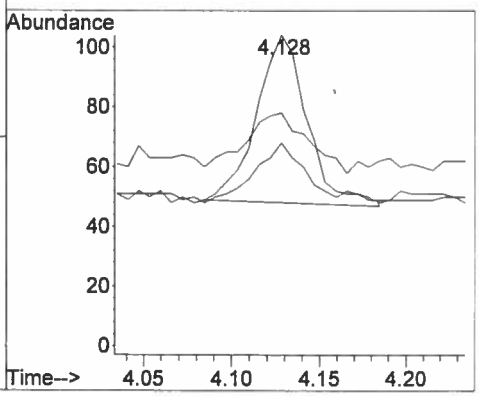


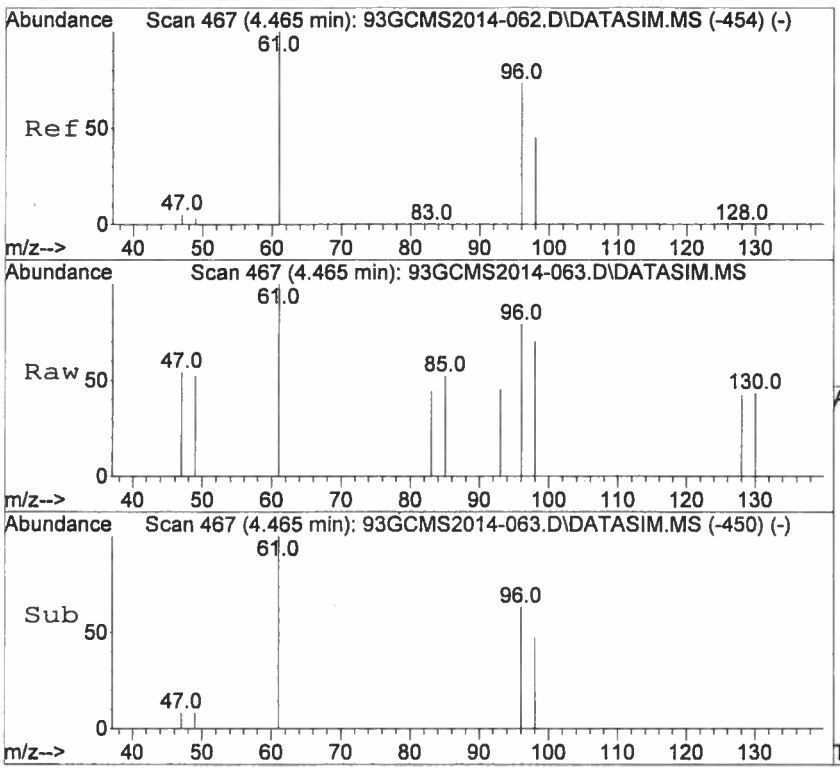


#6
1,1-Dichloroethane
Concen: 0.61 ppbv m
RT: 4.128 min Scan# 412
Delta R.T. -0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 63 Resp: 112

Ion	Ratio	Lower	Upper
63	100		
65	34.8	24.7	37.1
27	44.6	22.6	34.0#

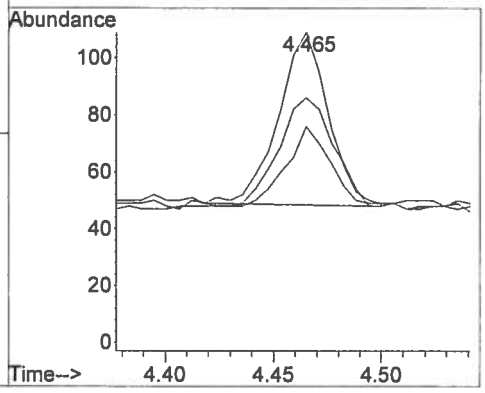


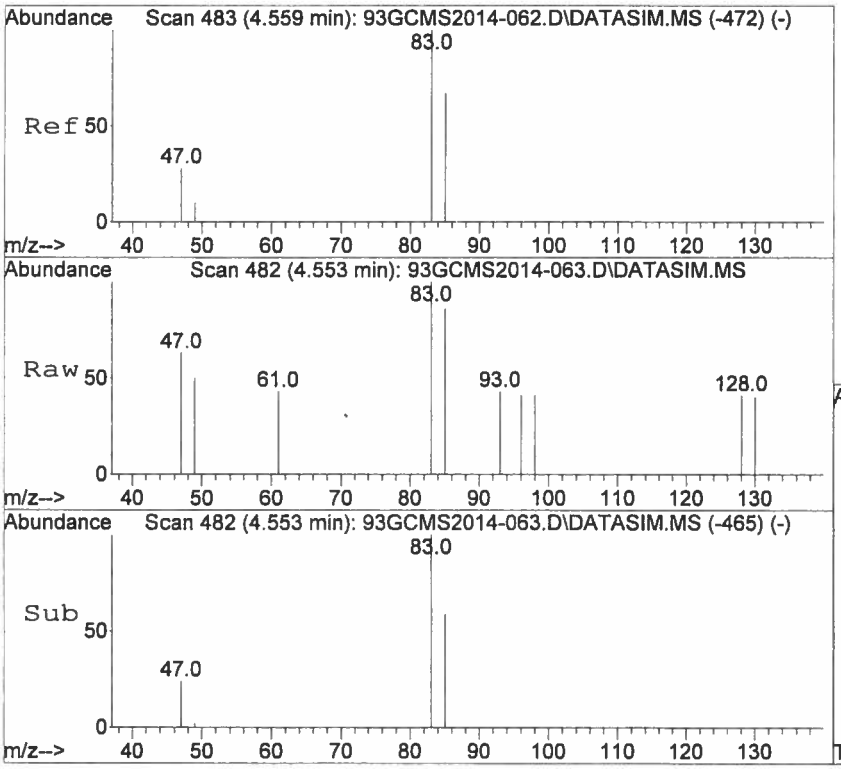


#7
cis-1,2-Dichloroethene
Concen: 0.66 ppbv
RT: 4.465 min Scan# 467
Delta R.T. 0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 61 Resp: 97

Ion	Ratio	Lower	Upper
61	100		
96	74.2	61.7	92.5
98	48.5	39.4	59.0

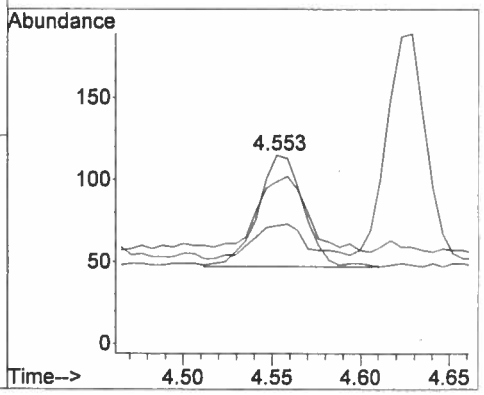


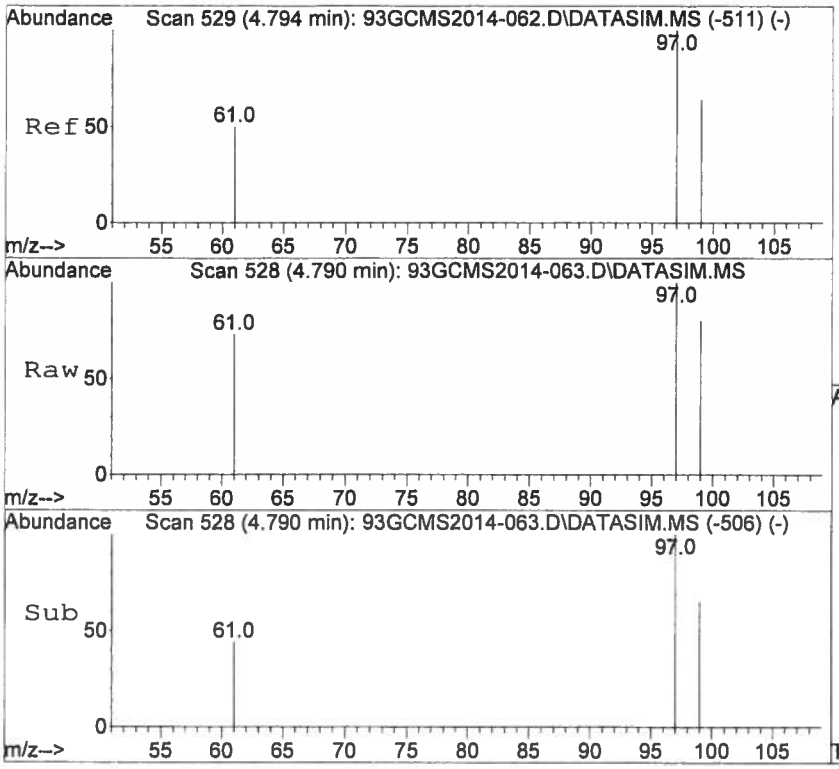


#8
Chloroform
Concen: 0.59 ppbv
RT: 4.553 min Scan# 482
Delta R.T. 0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 83 Resp: 122

Ion	Ratio	Lower	Upper
83	100		
85	73.8	52.0	78.0
47	36.1	20.0	30.0#

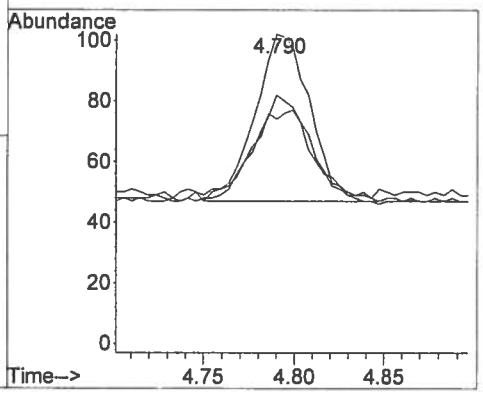


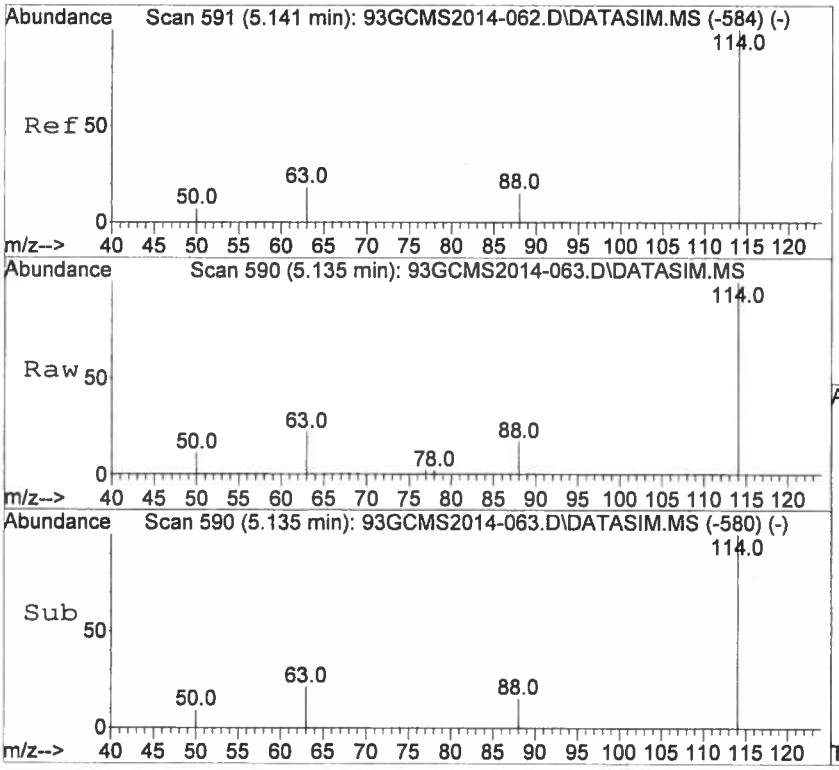


#9
1,1,1-Trichloroethane
Concen: 0.54 ppbv
RT: 4.790 min Scan# 528
Delta R.T. -0.004 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 97 Resp: 117

Ion	Ratio	Lower	Upper
97	100		
99	69.2	51.4	77.0
61	57.3	37.4	56.0#

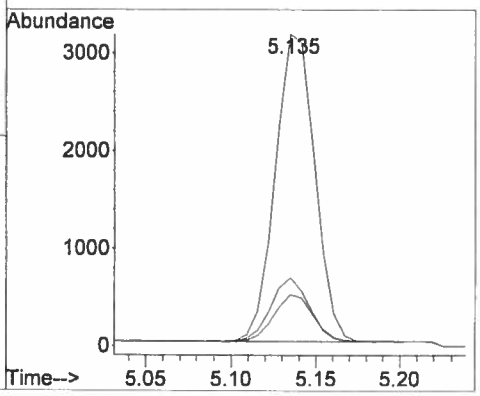


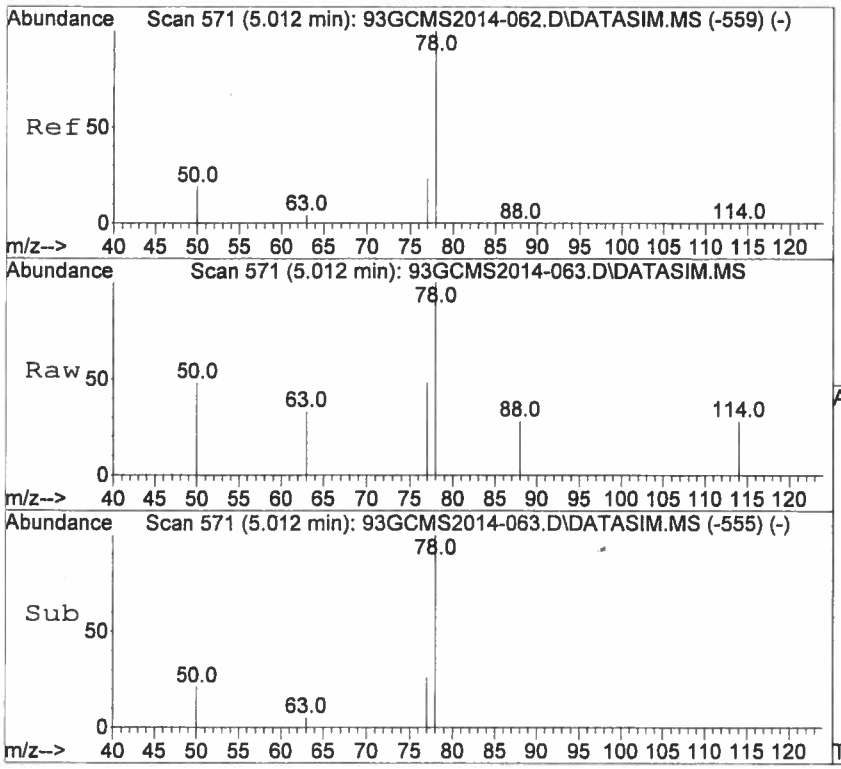


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.006 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion:114 Resp: 5087

Ion	Ratio	Lower	Upper
114	100		
63	19.9	15.1	22.7
88	15.0	12.0	18.0

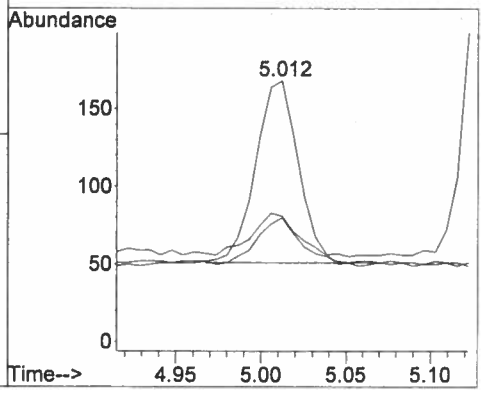


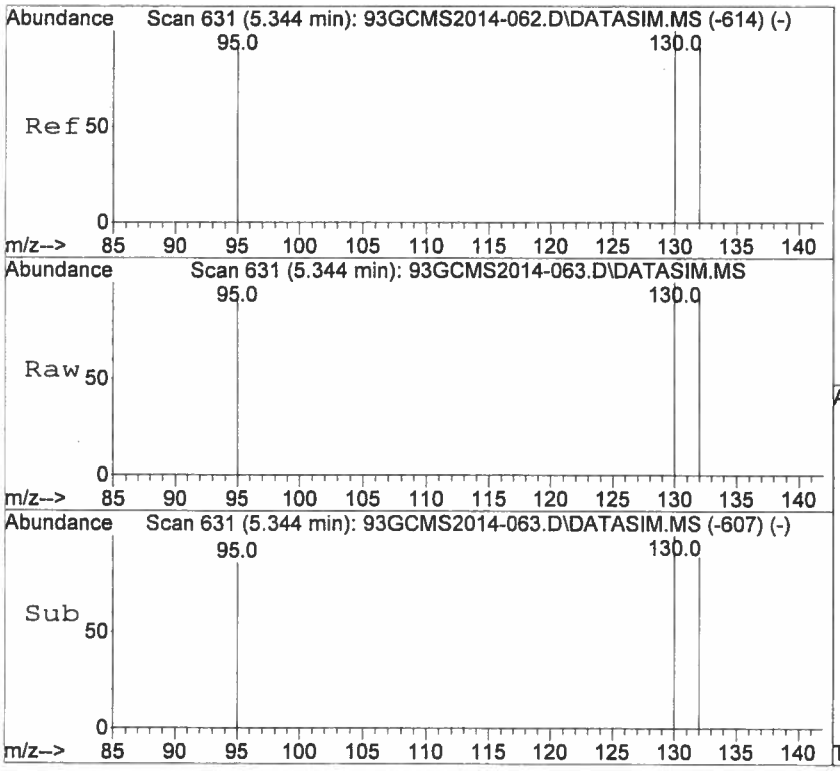


#11
Benzene
Concen: 0.66 ppbv
RT: 5.012 min Scan# 571
Delta R.T. 0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 78 Resp: 203

Ion	Ratio	Lower	Upper
78	100		
77	25.6	18.4	27.6
50	23.2	14.6	21.8#

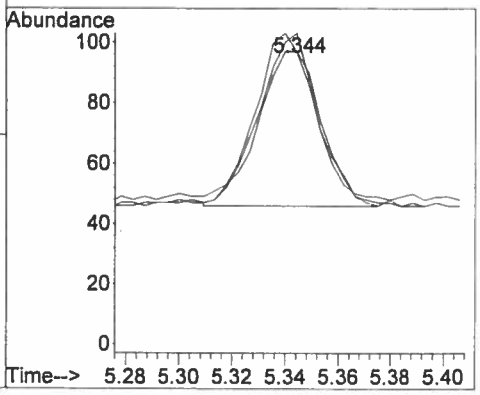


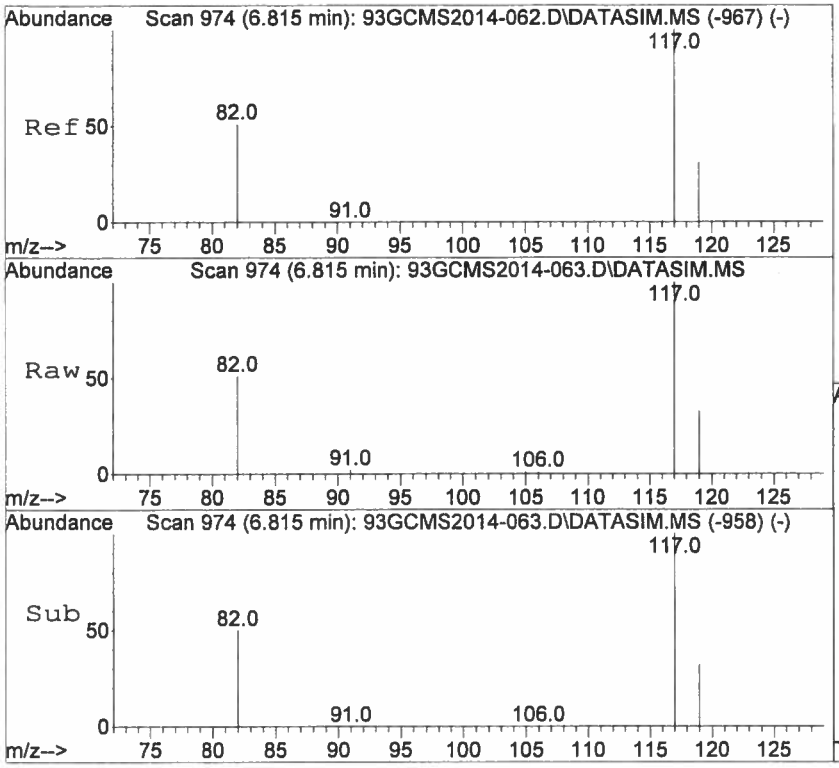


#12
Trichloroethene
Concen: 0.54 ppbv
RT: 5.344 min Scan# 631
Delta R.T. 0.005 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion:130 Resp: 88

Ion	Ratio	Lower	Upper
130	100		
132	98.9	77.0	115.6
95	95.5	72.9	109.3

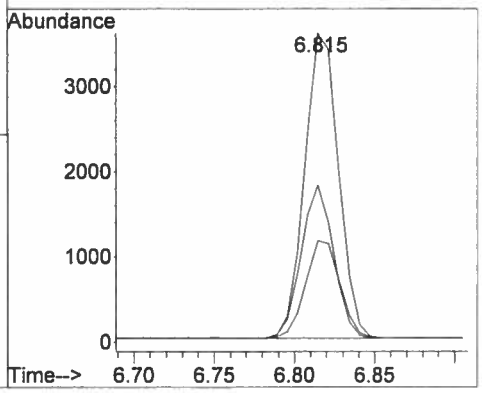


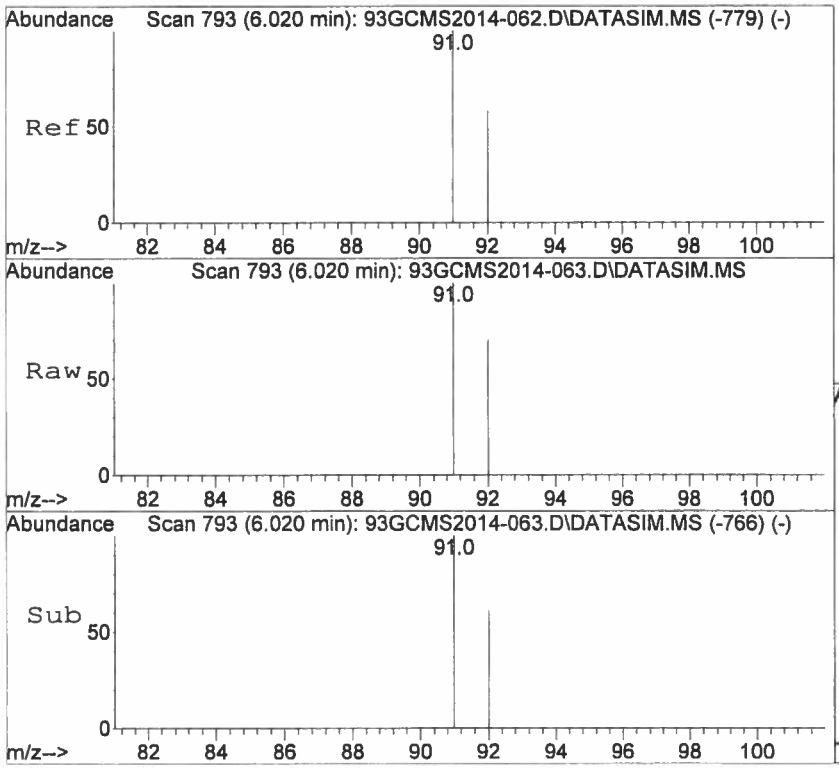


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. 0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion:117 Resp: 5233

Ion	Ratio	Lower	Upper
117	100		
82	47.9	37.8	56.6
119	32.0	25.6	38.4

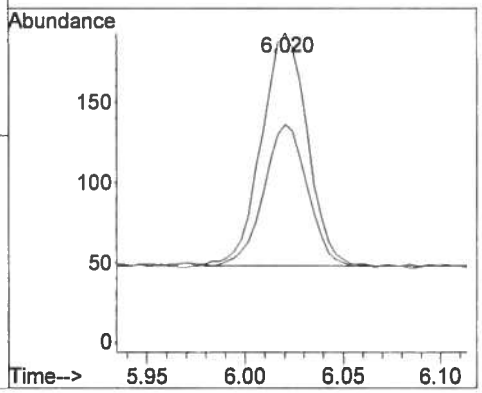


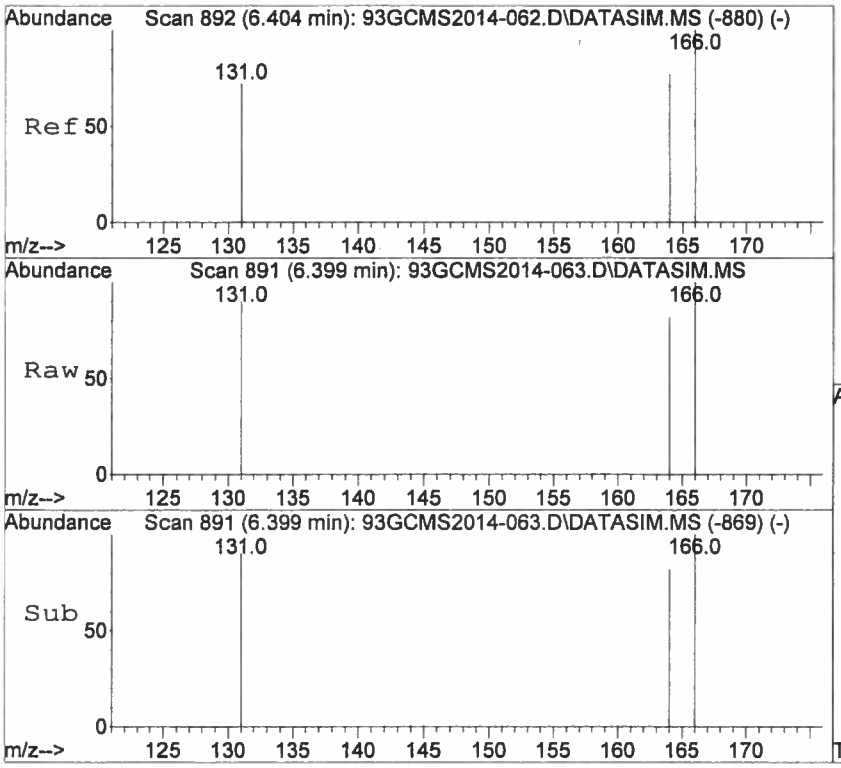


#14
Toluene
Concen: 0.65 ppbv
RT: 6.020 min Scan# 793
Delta R.T. 0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 91 Resp: 235

Ion	Ratio	Lower	Upper
91	100		
92	60.4	47.2	70.8

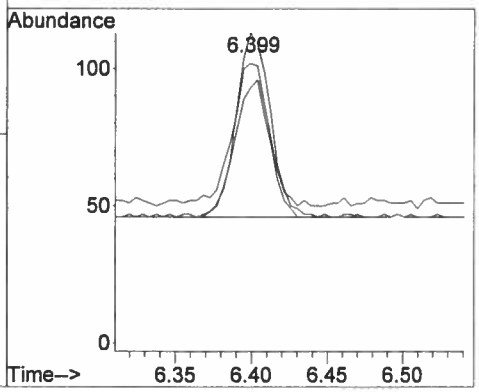


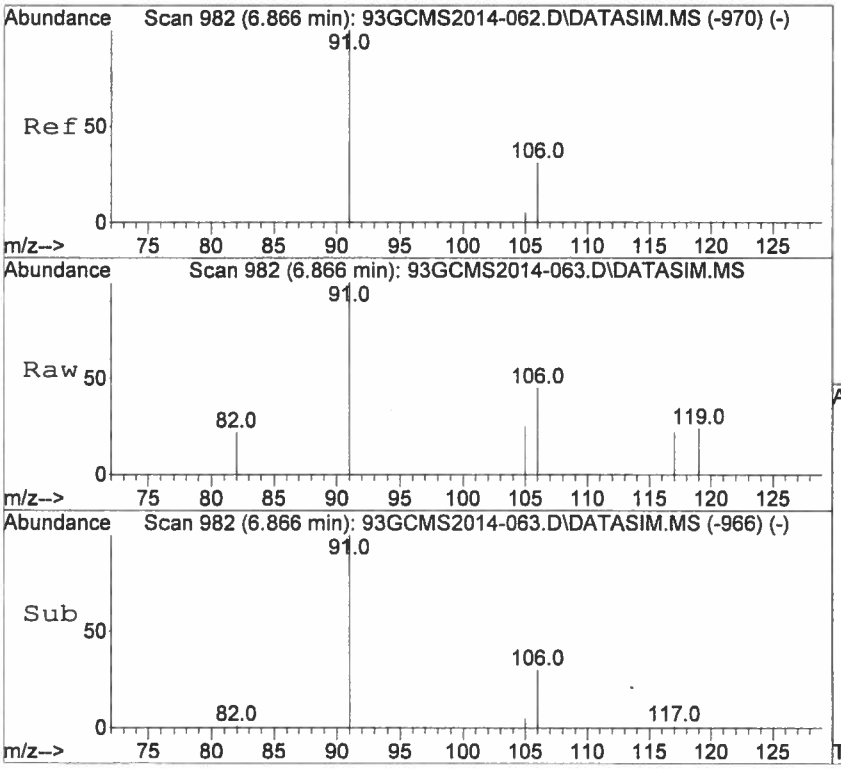


#15
Tetrachloroethene
Concen: 0.54 ppbv
RT: 6.399 min Scan# 891
Delta R.T. -0.004 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion:166 Resp: 105

Ion	Ratio	Lower	Upper
166	100		
164	75.2	62.5	93.7
131	70.5	58.6	88.0

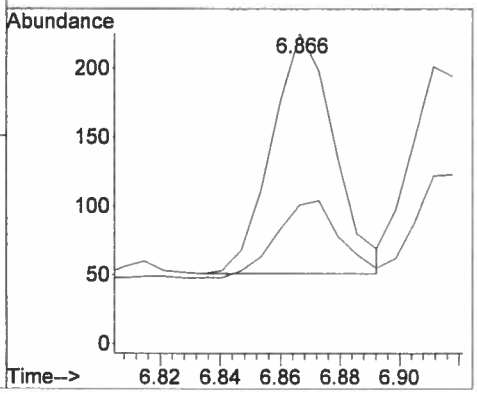


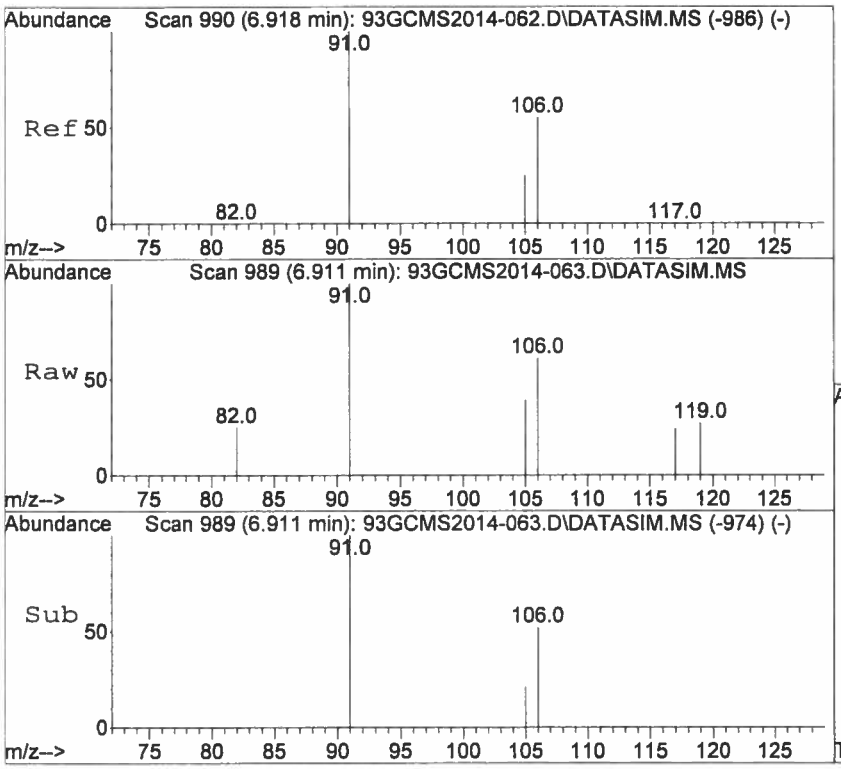


#16
Ethyl Benzene
Concen: 0.59 ppbv
RT: 6.866 min Scan# 982
Delta R.T. 0.000 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 91 Resp: 253

Ion	Ratio	Lower	Upper
91	100		
106	44.9	25.6	38.4#

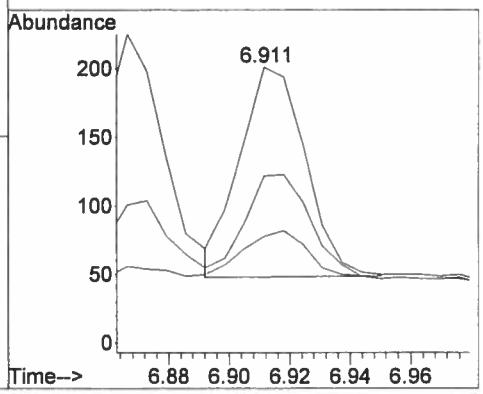


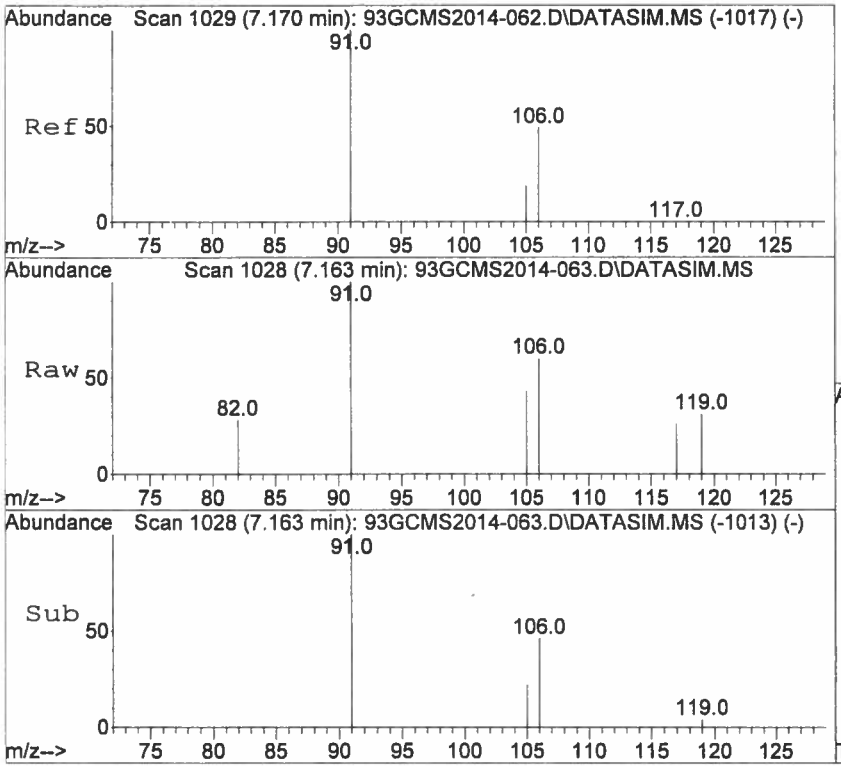


#17
m,p-Xylene
Concen: 0.69 ppbv m
RT: 6.911 min Scan# 989
Delta R.T. -0.006 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 91 Resp: 230

Ion	Ratio	Lower	Upper
91	100		
106	60.7	42.5	63.7
105	38.8	18.6	27.8#

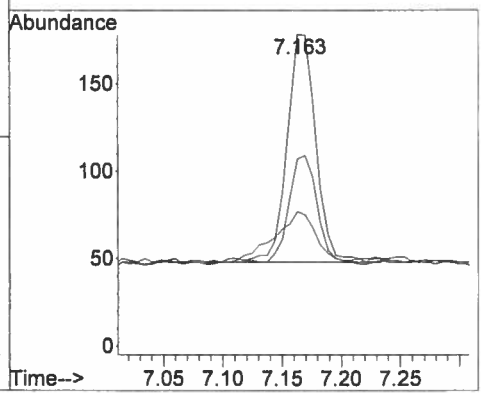




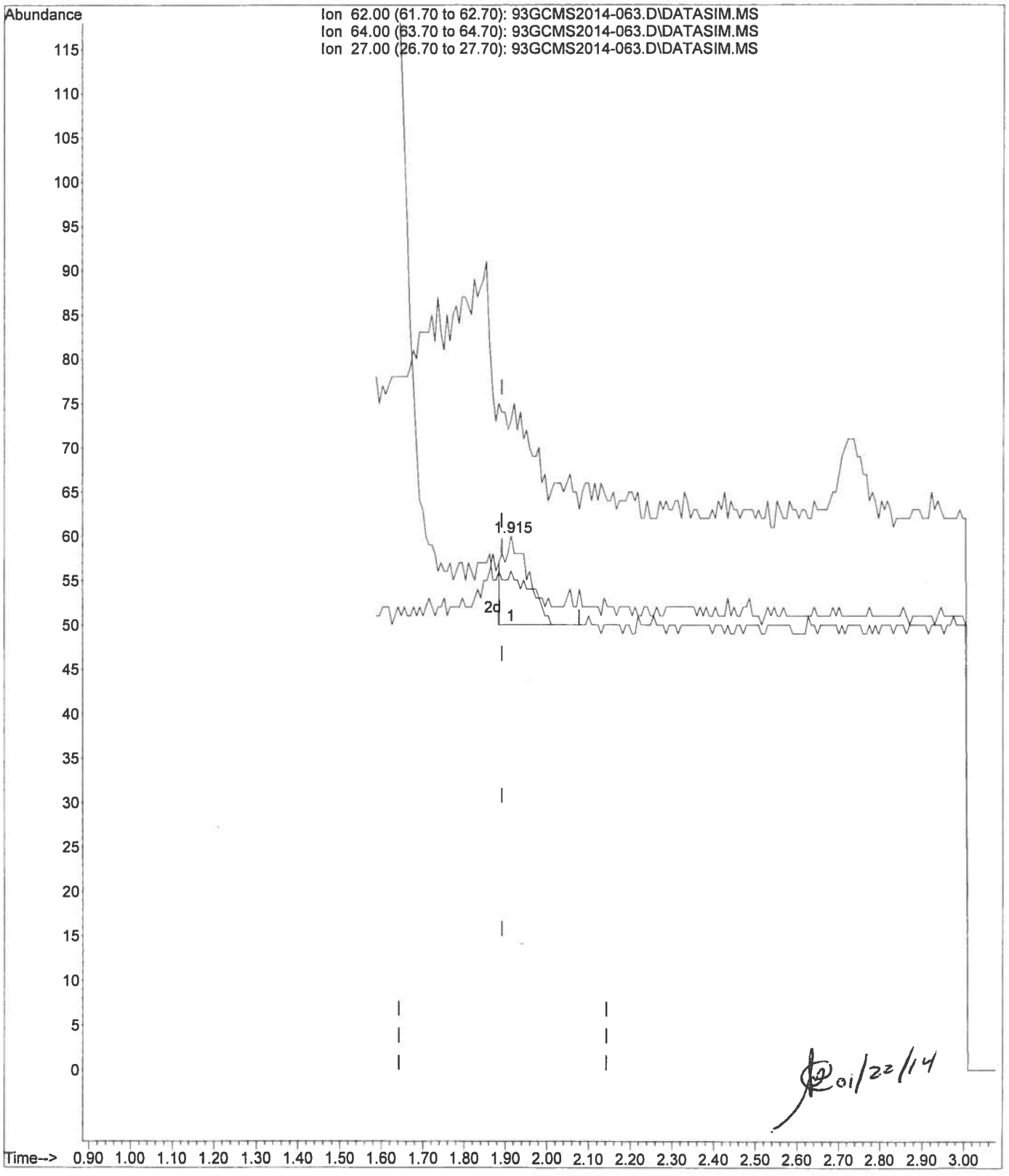
#18
o-Xylene
Concen: 0.67 ppbv
RT: 7.163 min Scan# 1028
Delta R.T. -0.006 min
Lab File: 93GCMS2014-063.D
Acq: 22 Jan 2014 12:04

Tgt Ion: 91 Resp: 226

Ion	Ratio	Lower	Upper
91	100		
106	47.3	39.3	58.9
105	34.1	15.4	23.2#

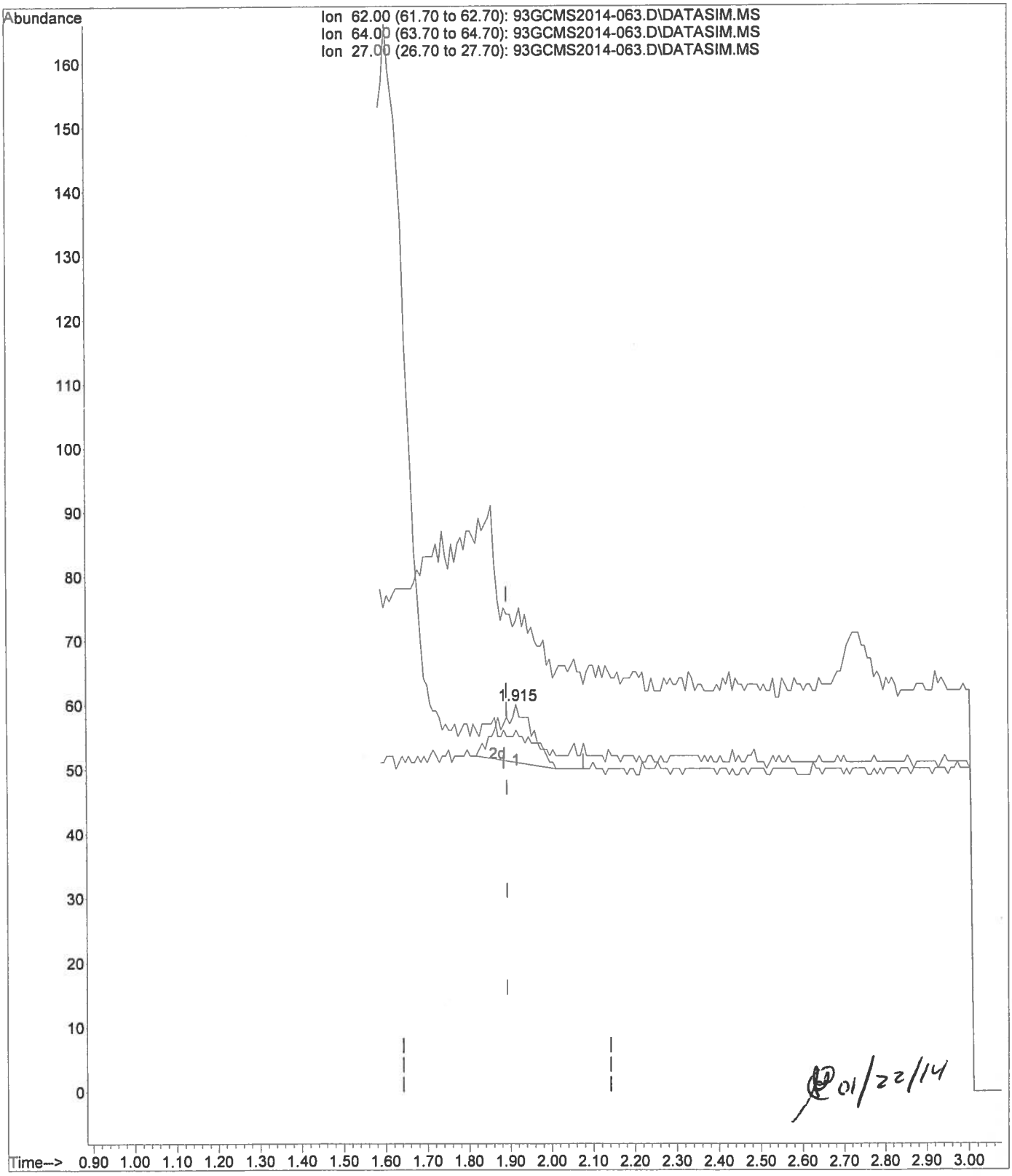


File :D:\msdchem\1\data\2014\20140122\93GCMS2014-063.D
Operator : SJT
Acquired : 22 Jan 2014 12:04 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1



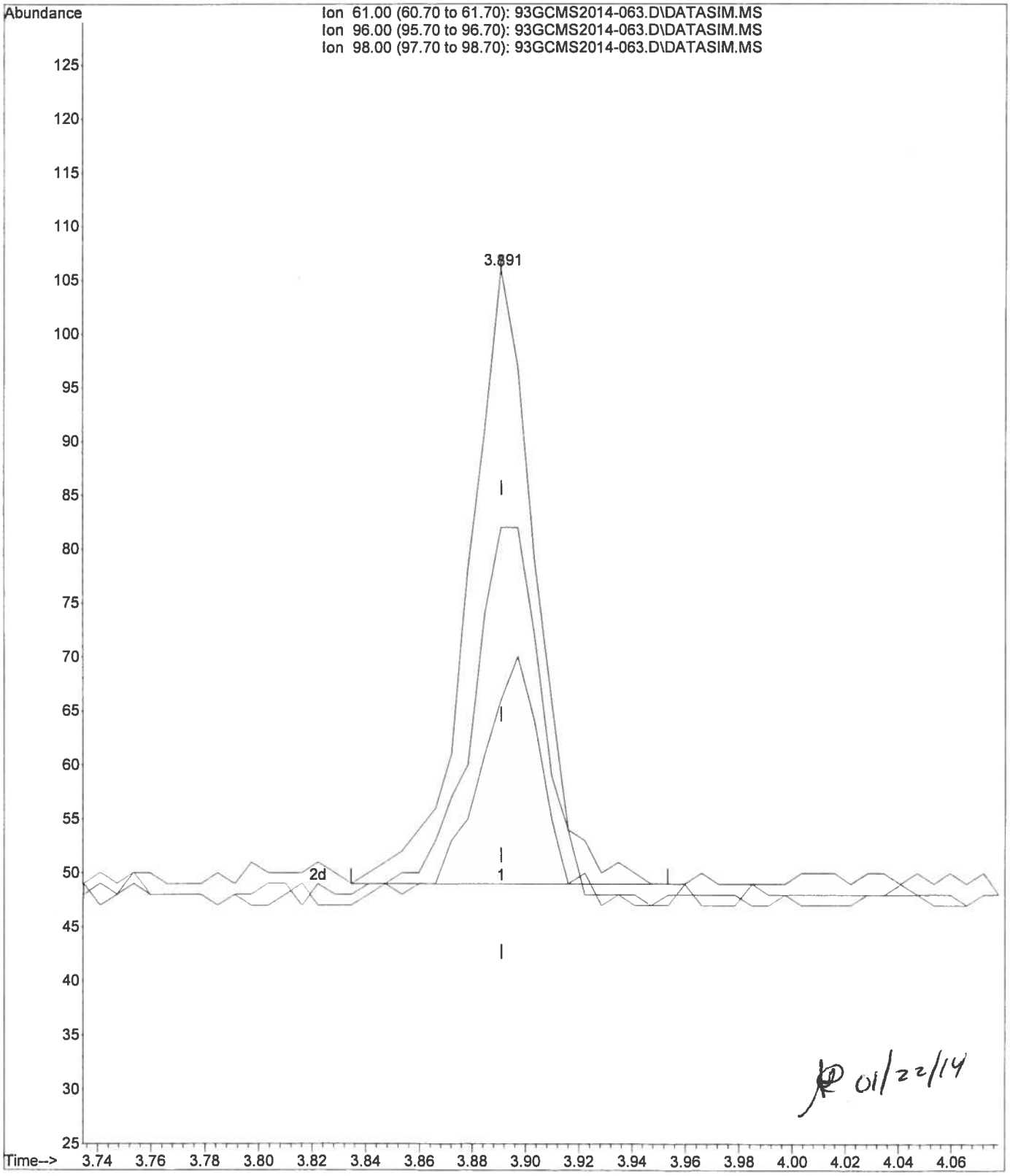
01/22/14

File : D:\msdchem\1\data\2014\20140122\93GCMS2014-063.D
Operator : SJT
Acquired : 22 Jan 2014 12:04 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1

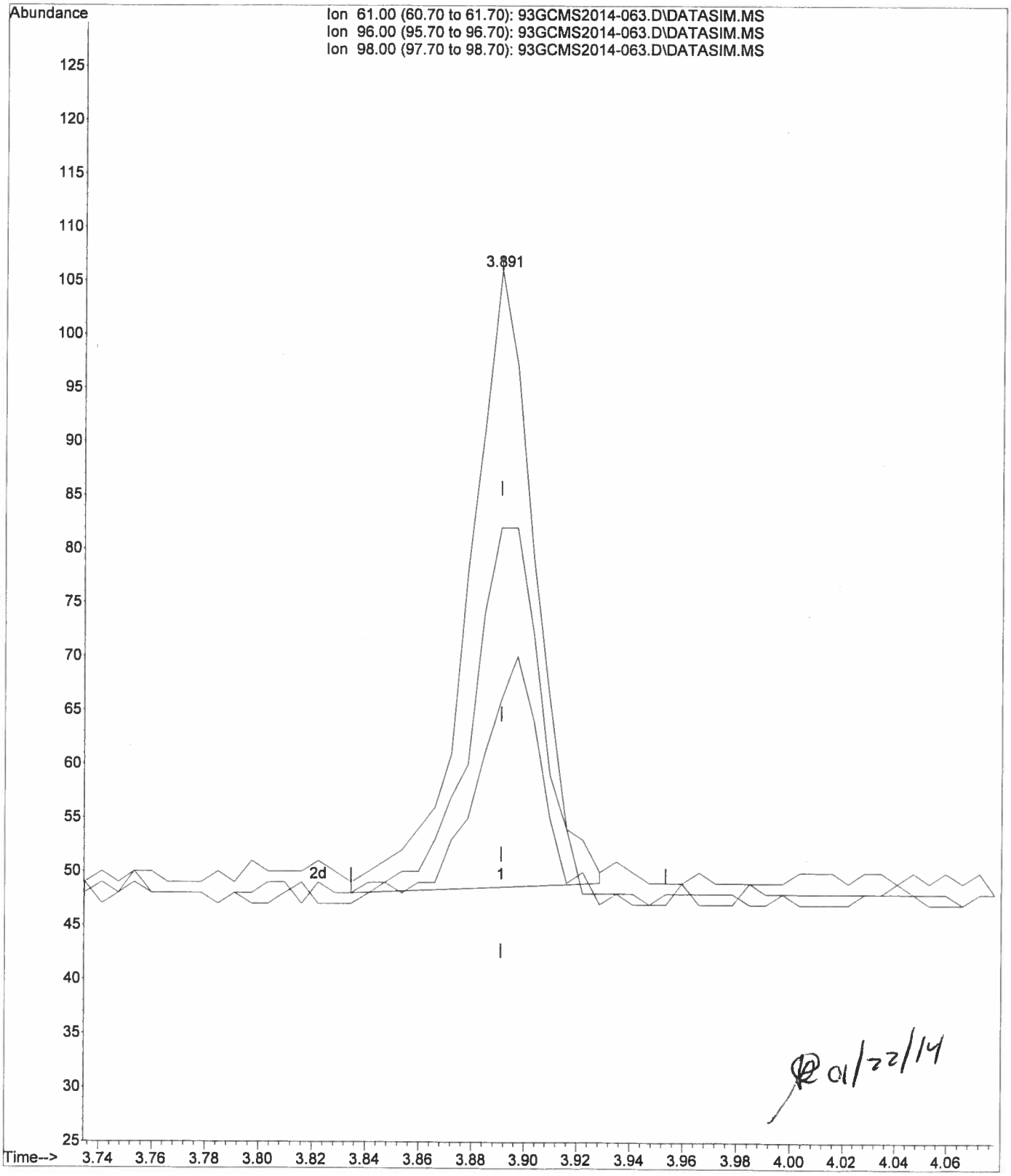


01/22/14

File :D:\msdchem\1\data\2014\20140122\93GCMS2014-063.D
Operator : SJT
Acquired : 22 Jan 2014 12:04 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1

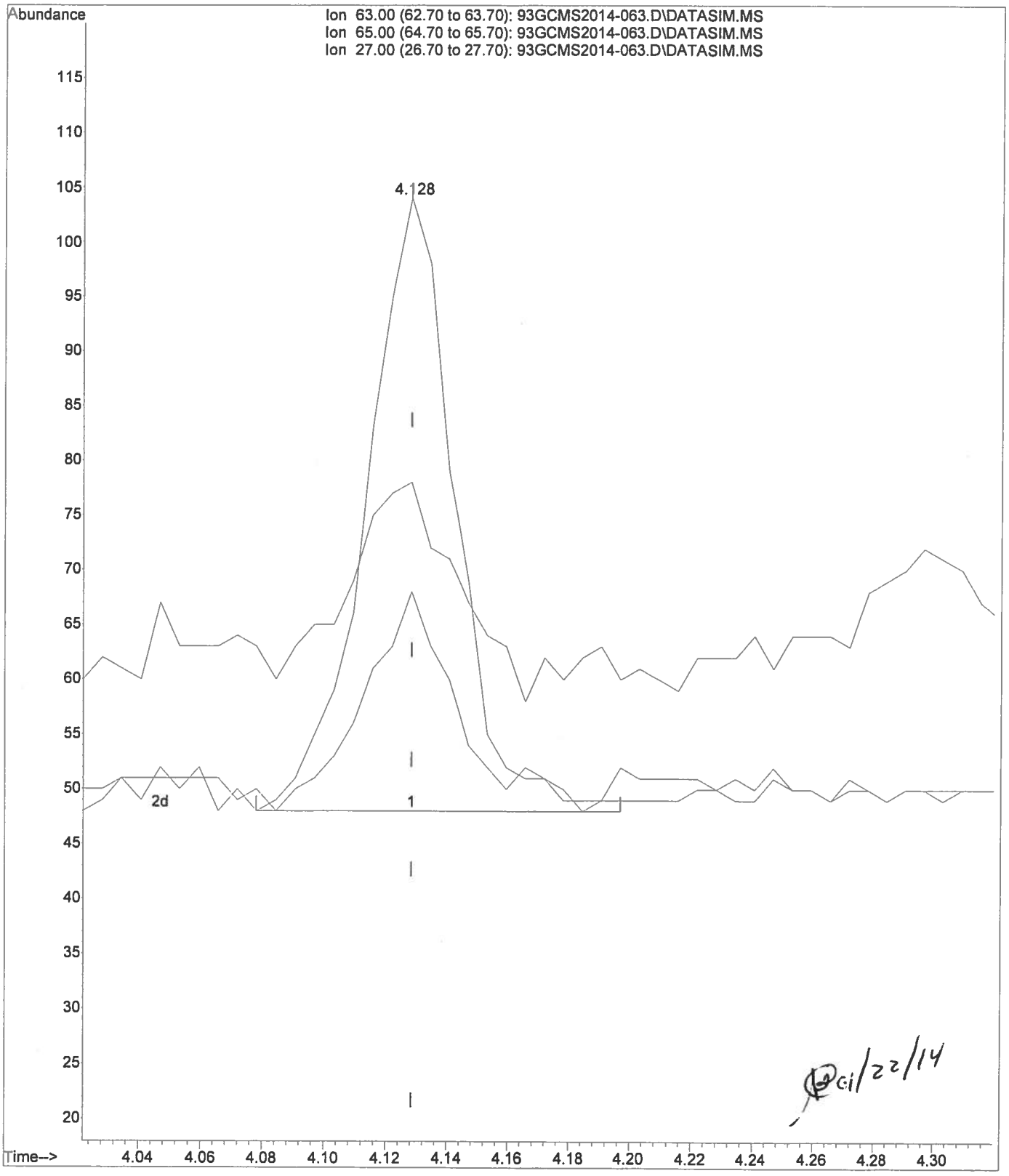


File :D:\msdchem\1\data\2014\20140122\93GCMS2014-063.D
Operator : SJT
Acquired : 22 Jan 2014 12:04 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1



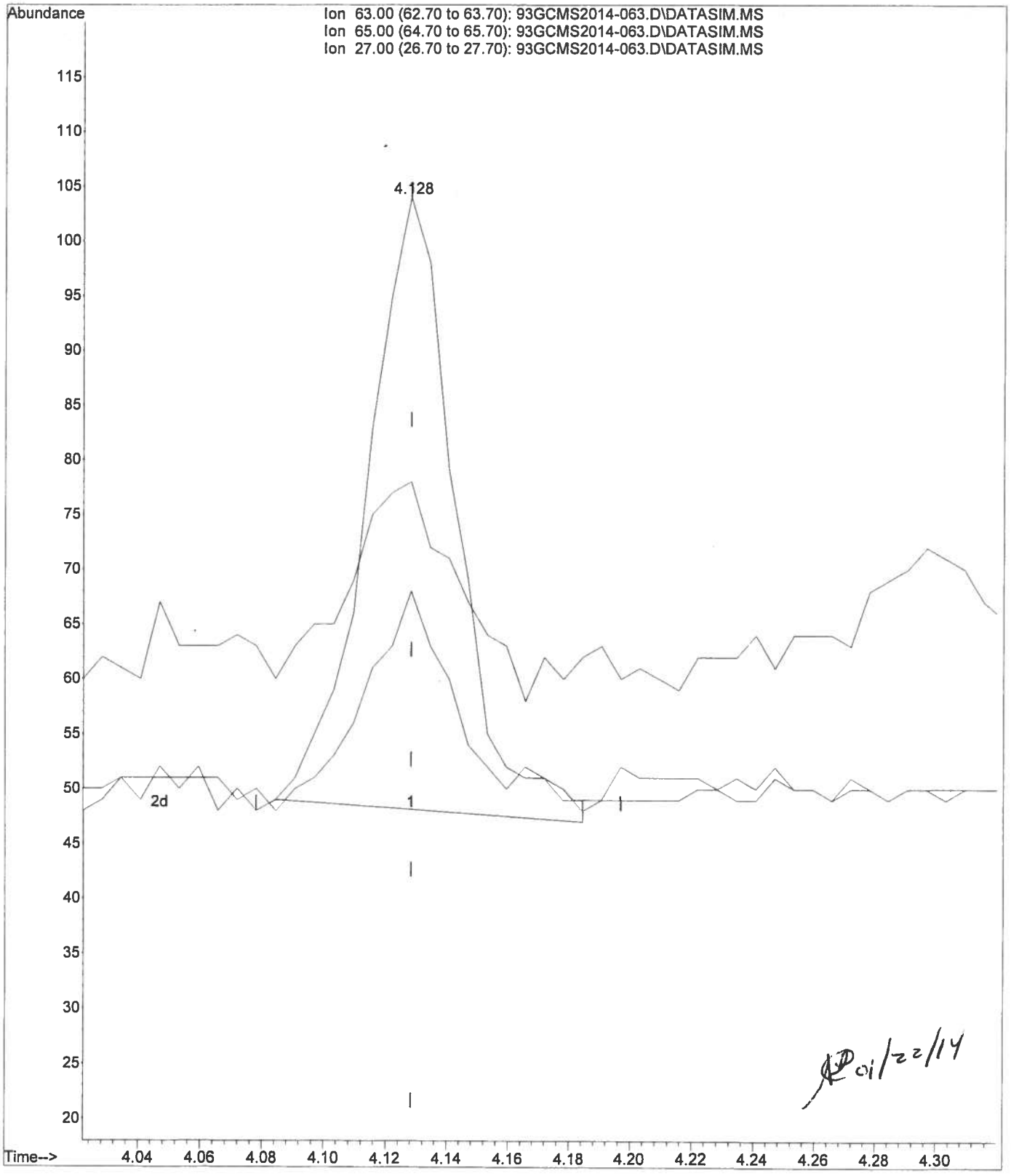
01/22/14

File :D:\msdchem\1\data\2014\20140122\93GCMS2014-063.D
Operator : SJT
Acquired : 22 Jan 2014 12:04 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1



CJ 1/22/14

File :D:\msdchem\1\data\2014\20140122\93GCMS2014-063.D
Operator : SJT
Acquired : 22 Jan 2014 12:04 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1



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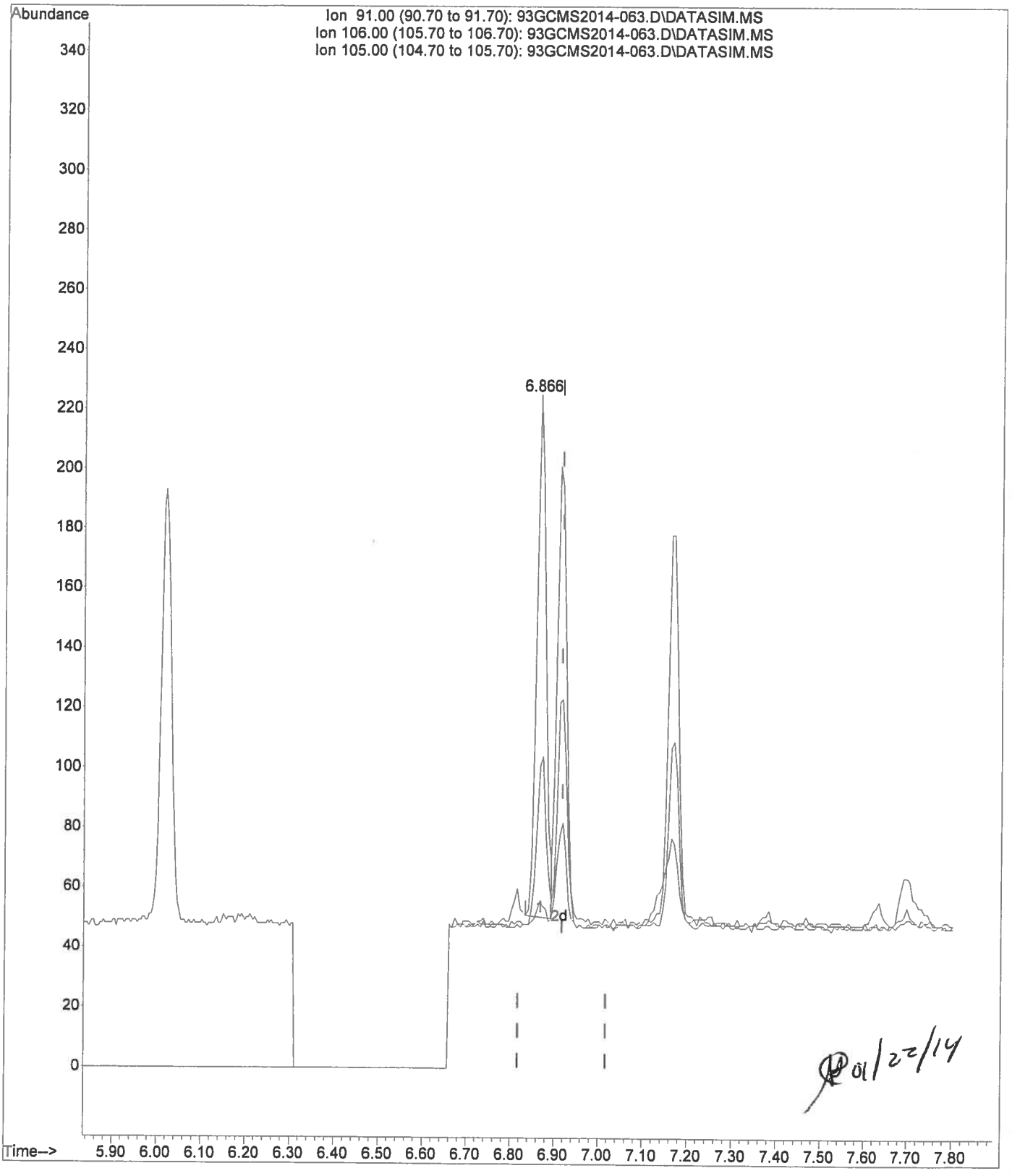
Operator : SJT
Acquired : 22 Jan 2014 12:04 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 22 Jan 2014
Vial Number: 1



01/22/14

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File        :D:\msdchem\1\data\2014\20140122\93GCMS2014-063.D
Operator    : SJT
Acquired    : 22 Jan 2014  12:04      using AcqMethod LOOPSOP1741+HCCL3.M
Instrument :   Instrument 2
Sample Name: STD20140122-3 \ 0.5ppbv LLCCV
Misc Info   : 5mL \ 22 Jan 2014
Vial Number: 1
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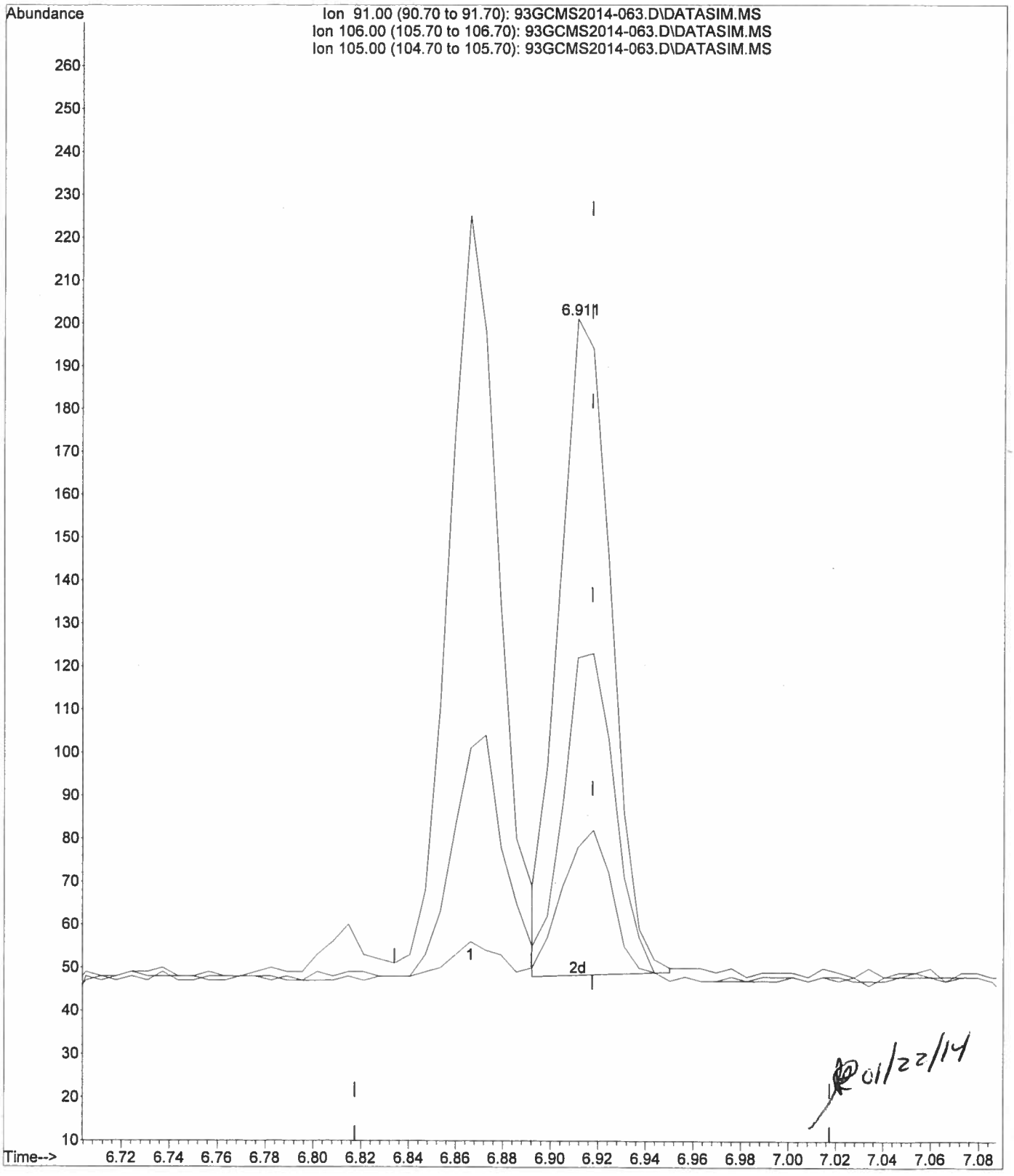


01/22/14

Data File:			93GCMS2014-065.d	
Sample Number:			20140122-LCS	
Sample Volume (mL)			5	
Date Prepared:			22-Jan-2014	
Date Analyzed:			22-Jan-2014	
Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140122-LCS 500 ppbv LCS (ppbv)	20140122-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	563.68	113.30
1,1-Dichloroethene	20.7	517.50	573.73	110.87
Methyl Tert Butyl Ether	19.5	487.50	551.46	113.12
trans-1,2-Dichloroethene	20.8	520.00	584.84	112.47
1,1-Dichloroethane	20.3	507.50	570.30	112.37
cis-1,2-Dichloroethene	20.9	522.50	592.73	113.44
Chloroform	20.6	515.00	548.82	106.57
1,1,1-Trichloroethane	19.7	492.50	551.09	111.90
Benzene	20.5	512.50	557.63	108.81
Trichloroethene	19.9	497.50	541.38	108.82
Toluene	20.2	505.00	550.64	109.04
Tetrachloroethene	20.0	500.00	546.60	109.32
Ethyl Benzene	20.0	500.00	592.12	118.42
m&p-Xylene	20.2	505.00	580.42	114.93
o-Xylene	20.2	505.00	595.74	117.97

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-065.D
Acq On : 22 Jan 2014 12:29
Operator : SJT
Sample : 20140122-LCS \ 500ppbv LCS
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:56:09 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1962	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4880	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	5028	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.959	62	55542	563.68	ppbv	97
3) 1,1-Dichloroethene	3.381	61	95660	573.73	ppbv	98
4) Methyl Tert Butyl Ether	3.829	73	119589	551.46	ppbv	93
5) trans-1,2-Dichloroethene	3.897	61	88360	584.84	ppbv	98
6) 1,1-Dichloroethane	4.135	63	102050	570.30	ppbv	98
7) cis-1,2-Dichloroethene	4.465	61	84327	592.73	ppbv	97
8) Chloroform	4.558	83	109975	548.82	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	115326	551.09	ppbv	98
11) Benzene	5.012	78	163311	557.63	ppbv	99
12) Trichloroethene	5.344	130	84452	541.38	ppbv	99
14) Toluene	6.020	91	190244	550.64	ppbv	100
15) Tetrachloroethene	6.403	166	102388	546.60	ppbv	99
16) Ethyl Benzene	6.866	91	246032	592.12	ppbv	99
17) m,p-Xylene	6.918	91	185978	580.42	ppbv	100
18) o-Xylene	7.169	91	192746	595.74	ppbv	99

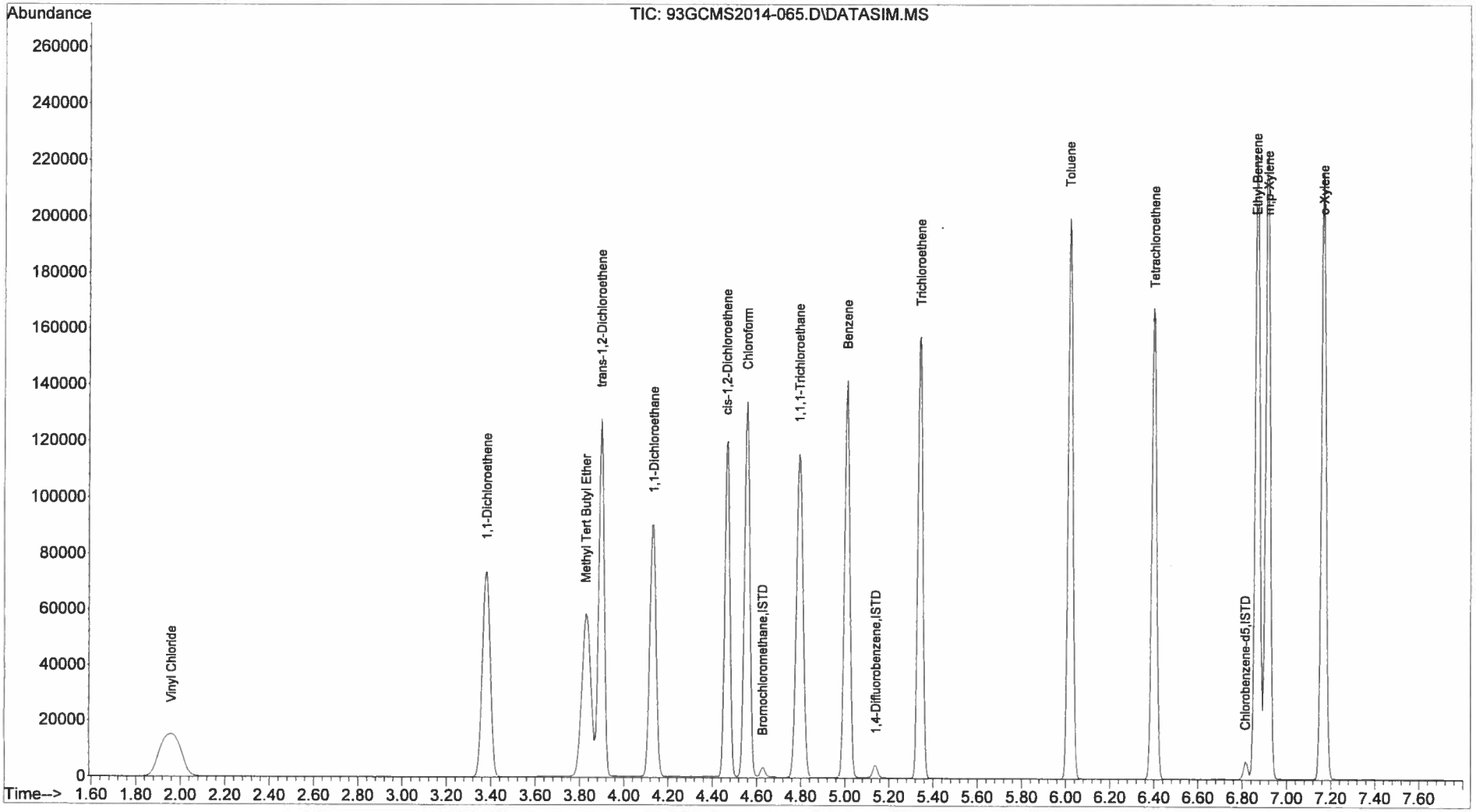
(#) = qualifier out of range (m) = manual integration (+) = signals summed

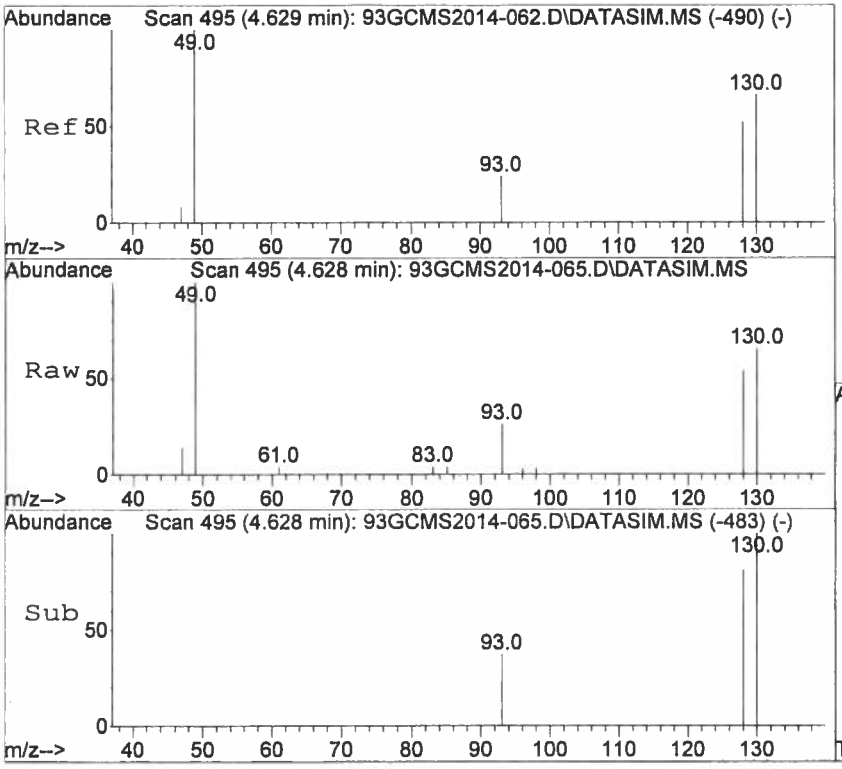
1/22/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-065.D
Acq On : 22 Jan 2014 12:29
Operator : SJT
Sample : 20140122-LCS \ 500ppbv LCS
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:56:09 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

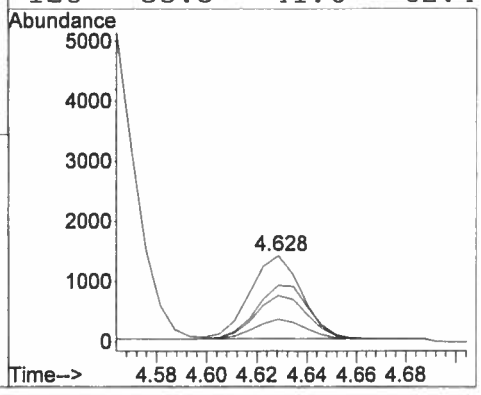


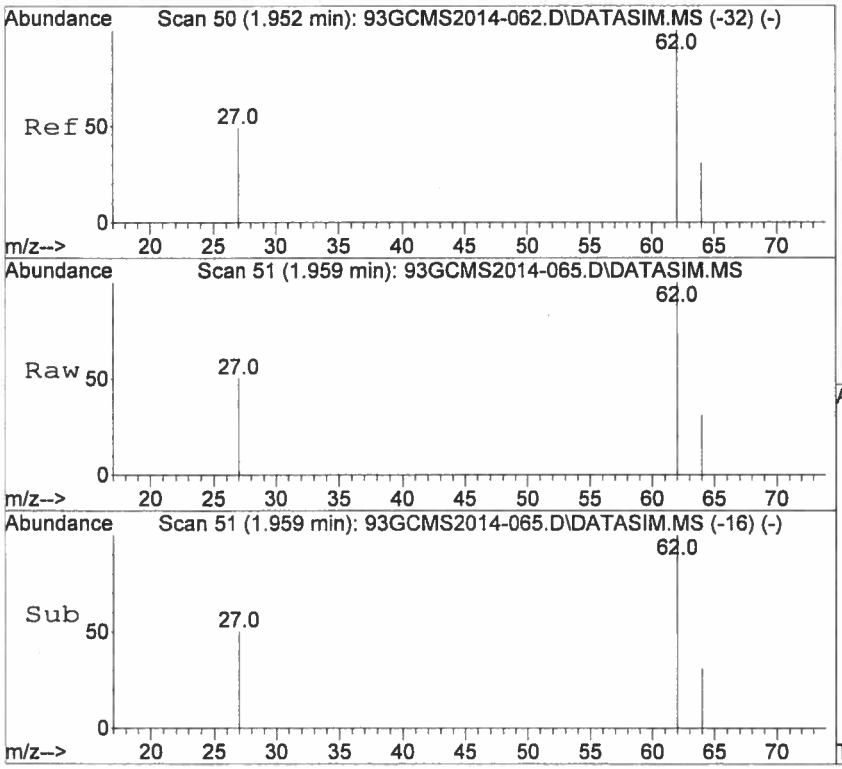


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 49 Resp: 1962

Ion	Ratio	Lower	Upper
49	100		
130	65.4	51.6	77.4
93	26.1	19.6	29.4
128	53.5	41.6	62.4

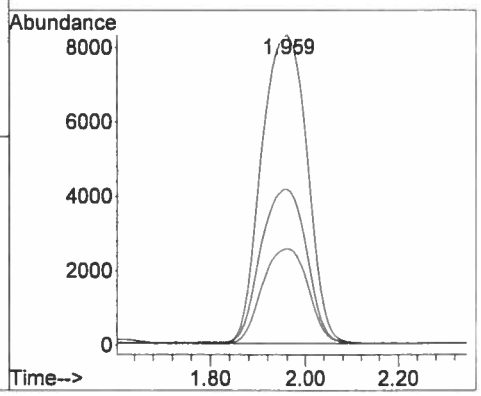


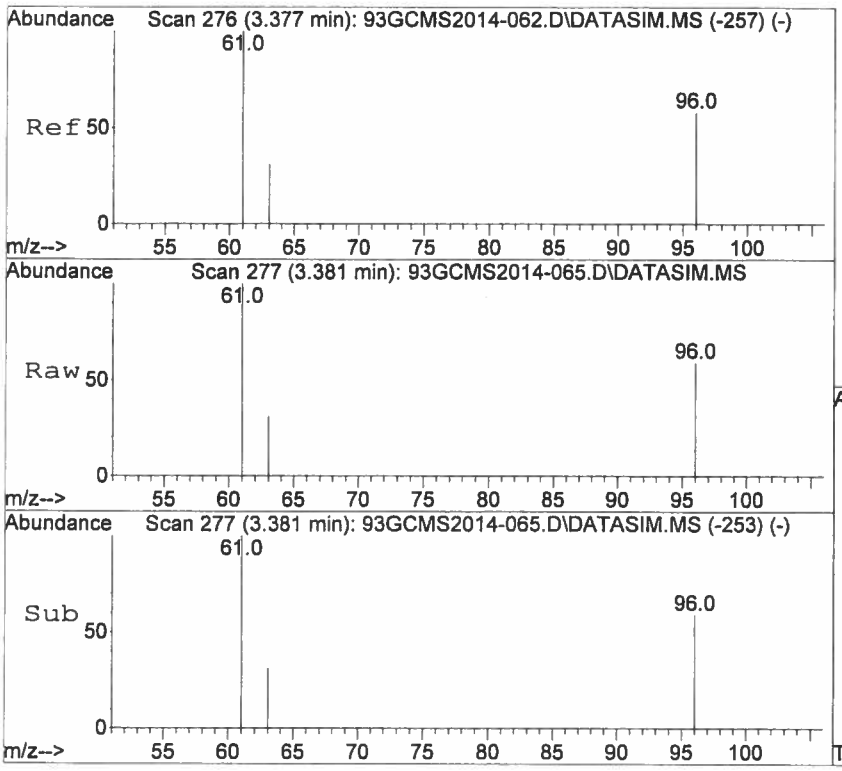


#2
Vinyl Chloride
Concen: 563.68 ppbv
RT: 1.959 min Scan# 51
Delta R.T. 0.007 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 62 Resp: 55542

Ion	Ratio	Lower	Upper
62	100		
64	30.9	24.9	37.3
27	50.0	37.8	56.6

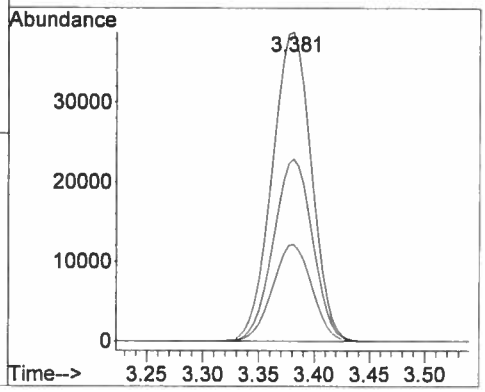


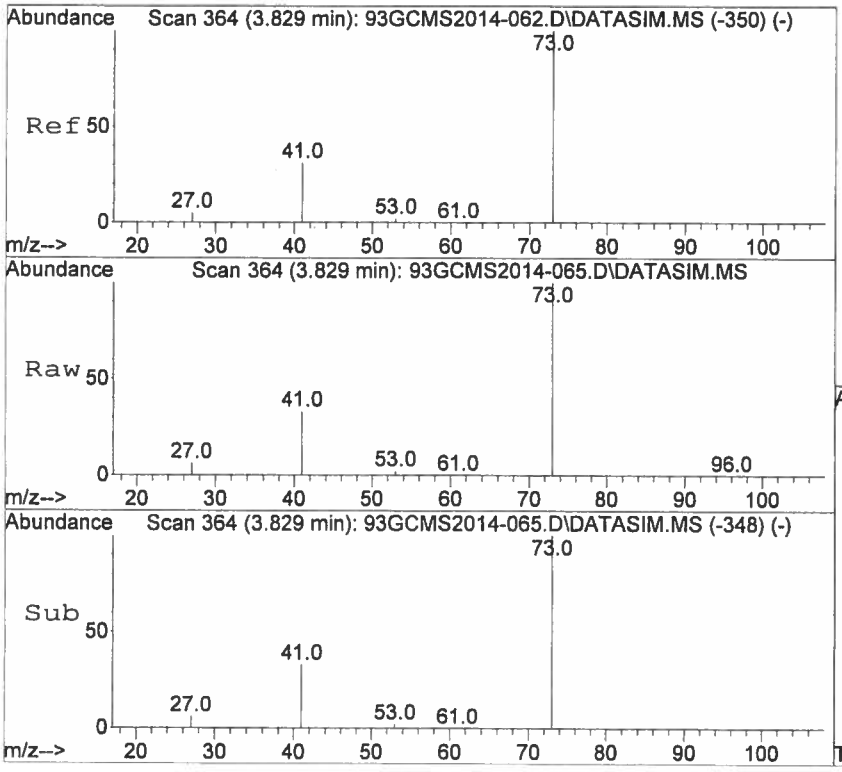


#3
1,1-Dichloroethene
Concen: 573.73 ppbv
RT: 3.381 min Scan# 277
Delta R.T. 0.004 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 61 Resp: 95660

Ion	Ratio	Lower	Upper
61	100		
96	58.8	48.6	72.8
63	31.3	25.0	37.6

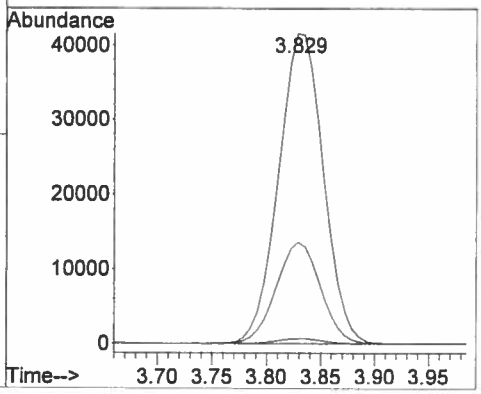


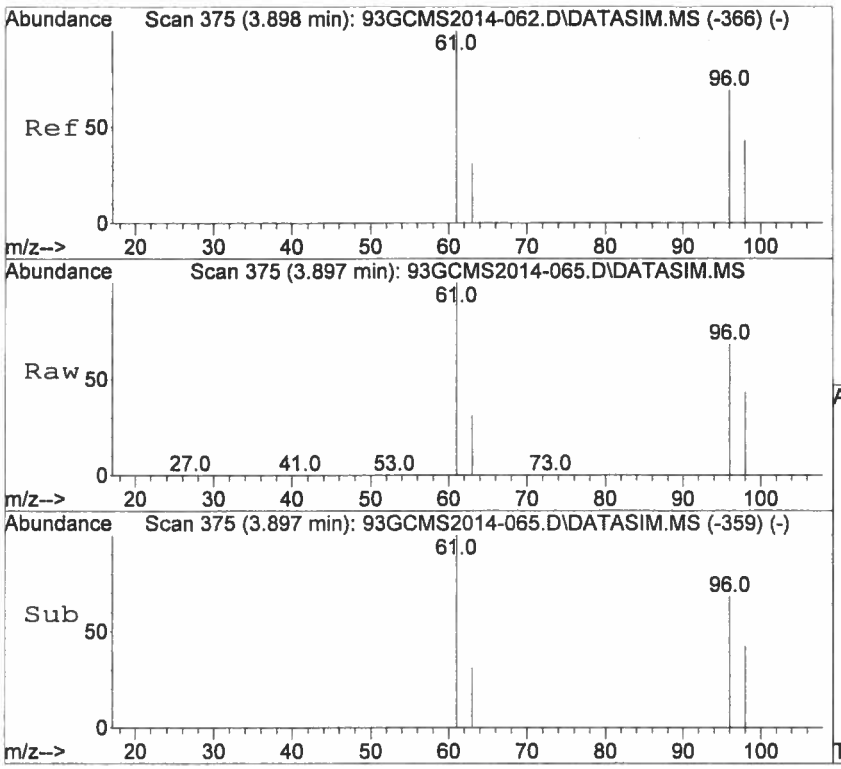


#4
Methyl Tert Butyl Ether
Concen: 551.46 ppbv
RT: 3.829 min Scan# 364
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 73 Resp: 119589

Ion	Ratio	Lower	Upper
73	100		
53	1.7	1.1	1.7
41	32.4	23.0	34.4

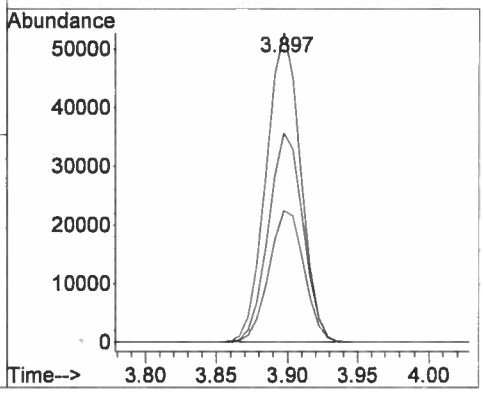


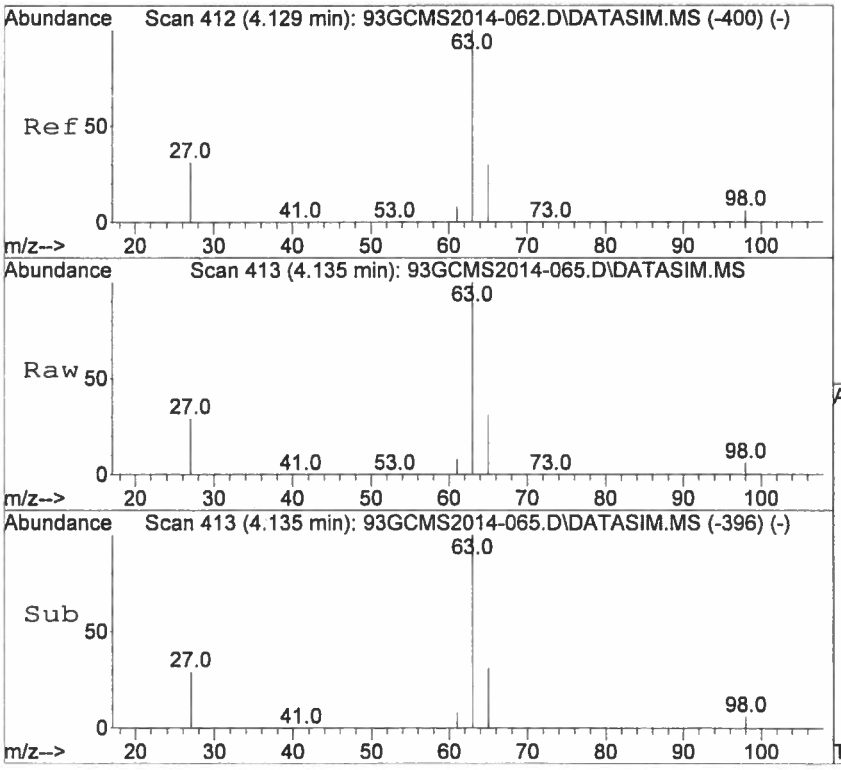


#5
trans-1,2-Dichloroethene
Concen: 584.84 ppbv
RT: 3.897 min Scan# 375
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 61 Resp: 88360

Ion	Ratio	Lower	Upper
61	100		
96	68.1	56.0	84.0
98	43.3	35.6	53.4

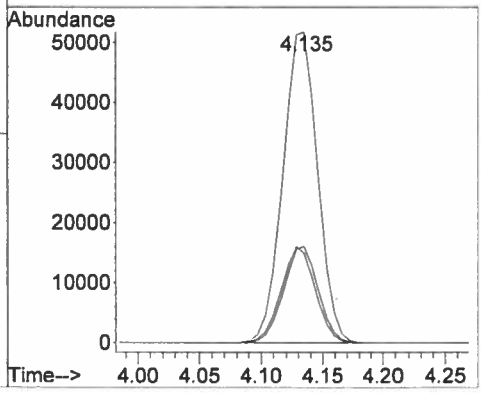


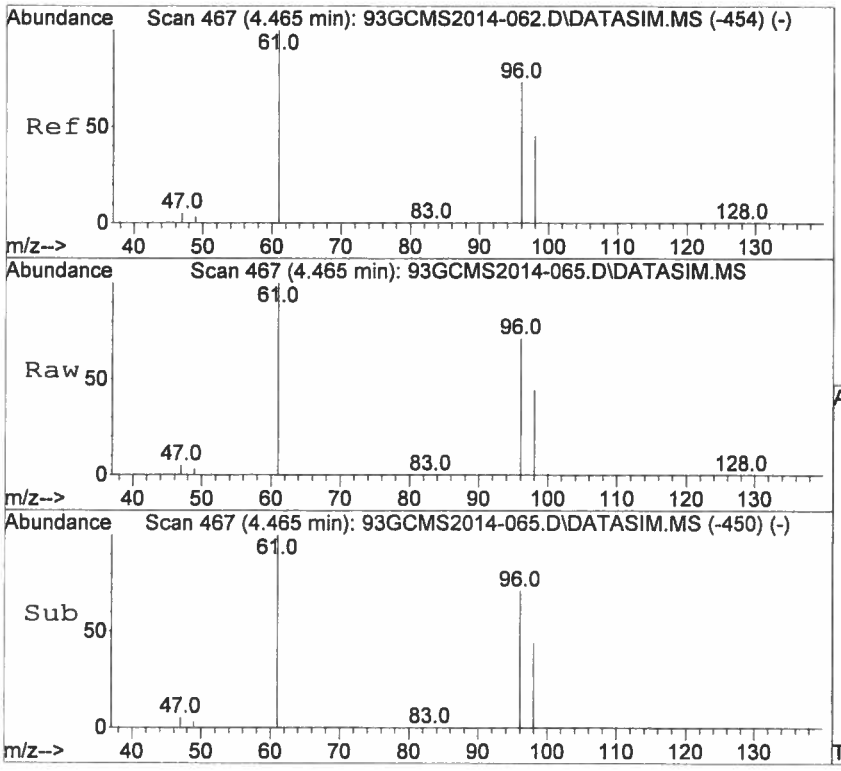


#6
1,1-Dichloroethane
Concen: 570.30 ppbv
RT: 4.135 min Scan# 413
Delta R.T. 0.006 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 63 Resp: 102050

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	30.2	22.6	34.0

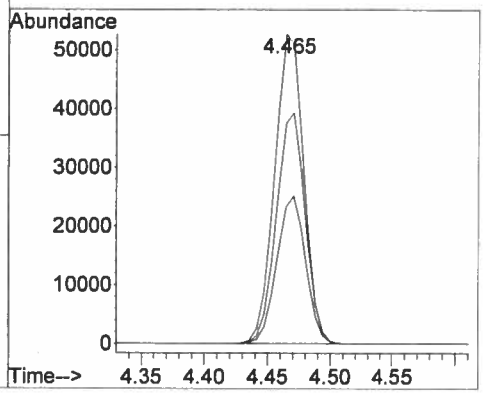


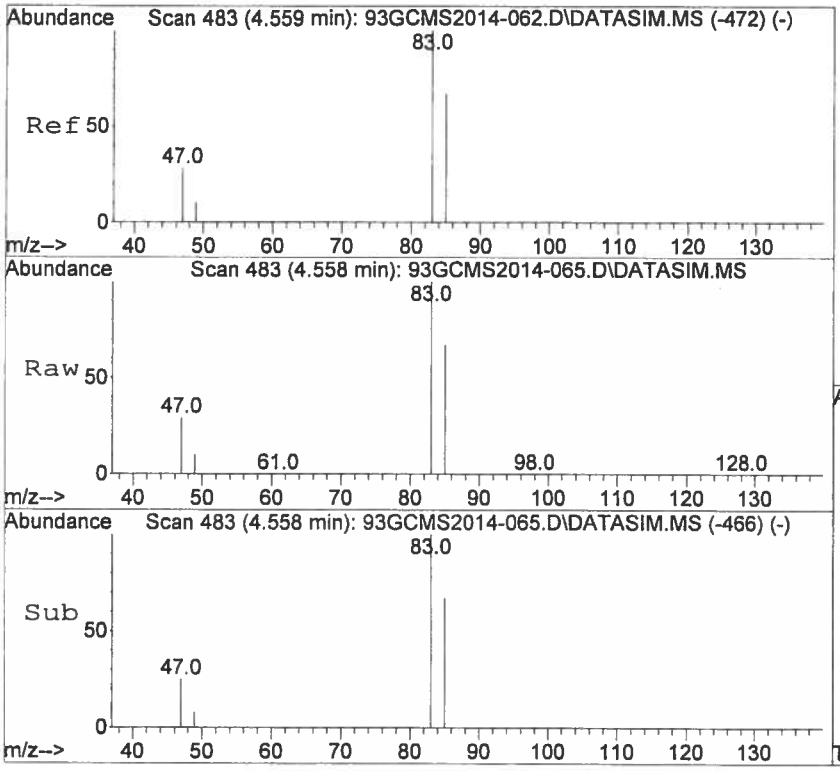


#7
cis-1,2-Dichloroethene
Concen: 592.73 ppbv
RT: 4.465 min Scan# 467
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 61 Resp: 84327

Ion	Ratio	Lower	Upper
61	100		
96	74.2	61.7	92.5
98	47.2	39.4	59.0

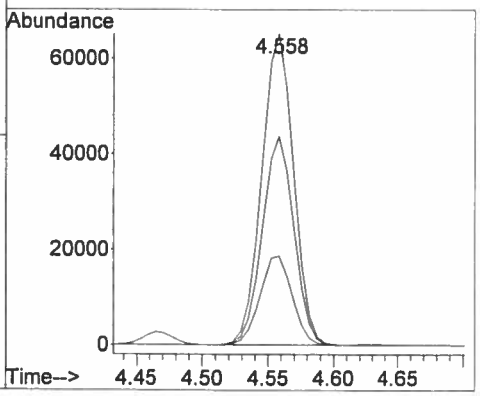


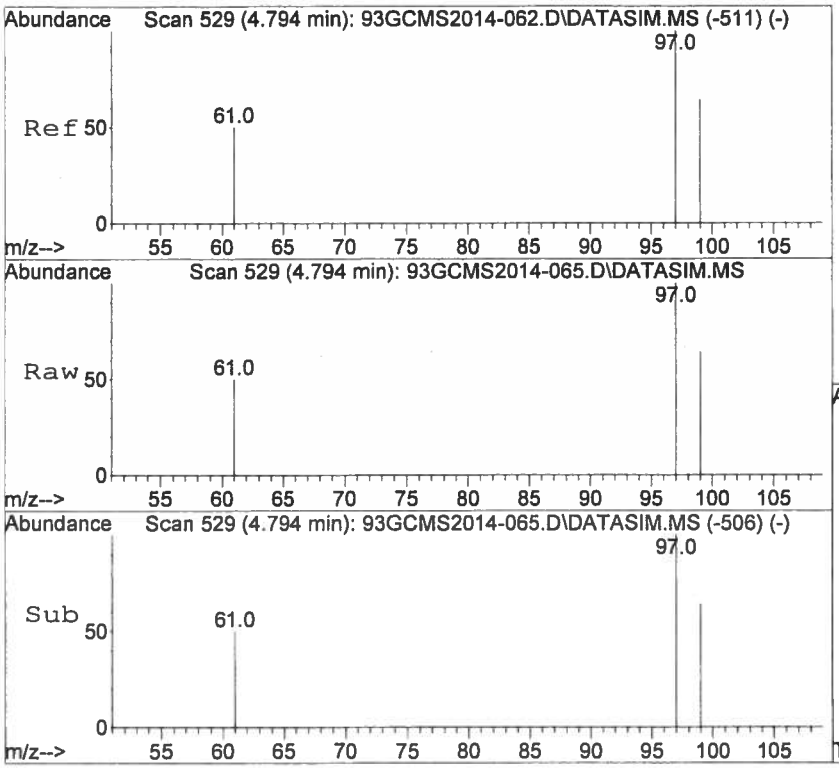


#8
Chloroform
Concen: 548.82 ppbv
RT: 4.558 min Scan# 483
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 83 Resp: 109975

Ion	Ratio	Lower	Upper
83	100		
85	66.8	52.0	78.0
47	29.1	20.0	30.0

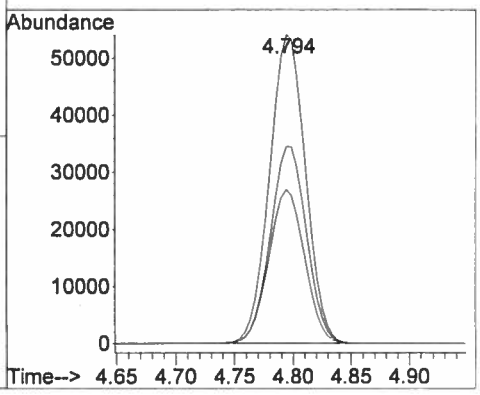


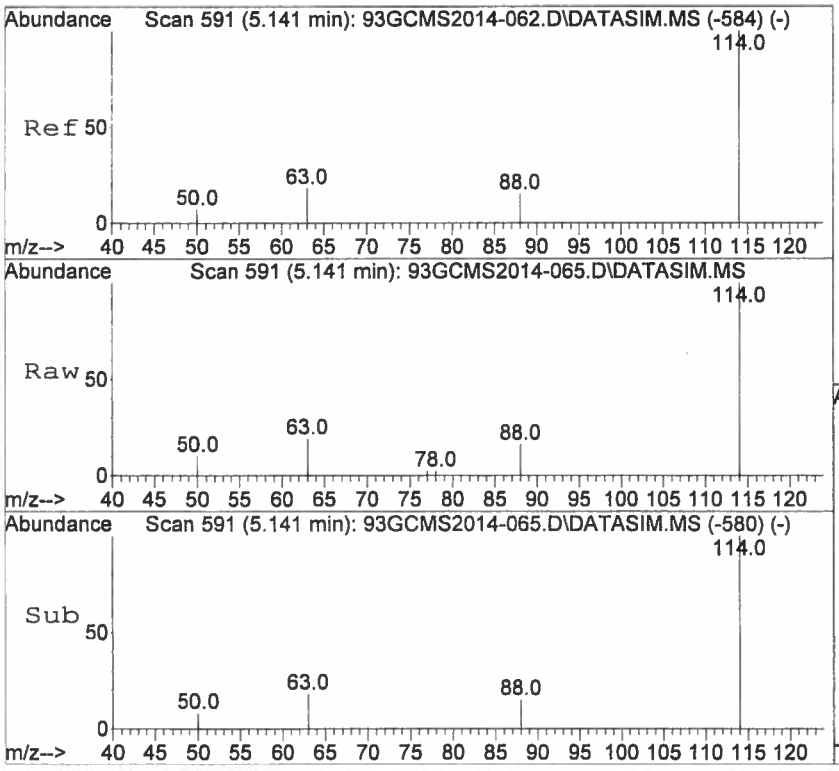


#9
1,1,1-Trichloroethane
Concen: 551.09 ppbv
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 97 Resp: 115326

Ion	Ratio	Lower	Upper
97	100		
99	64.1	51.4	77.0
61	49.8	37.4	56.0

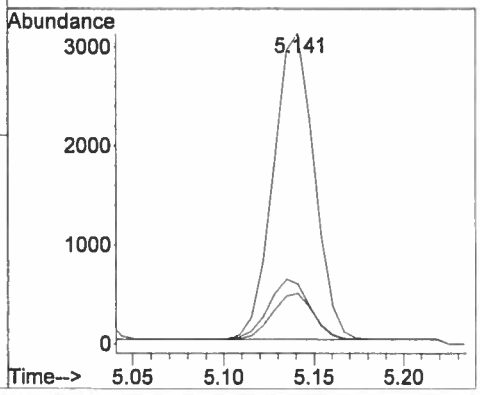


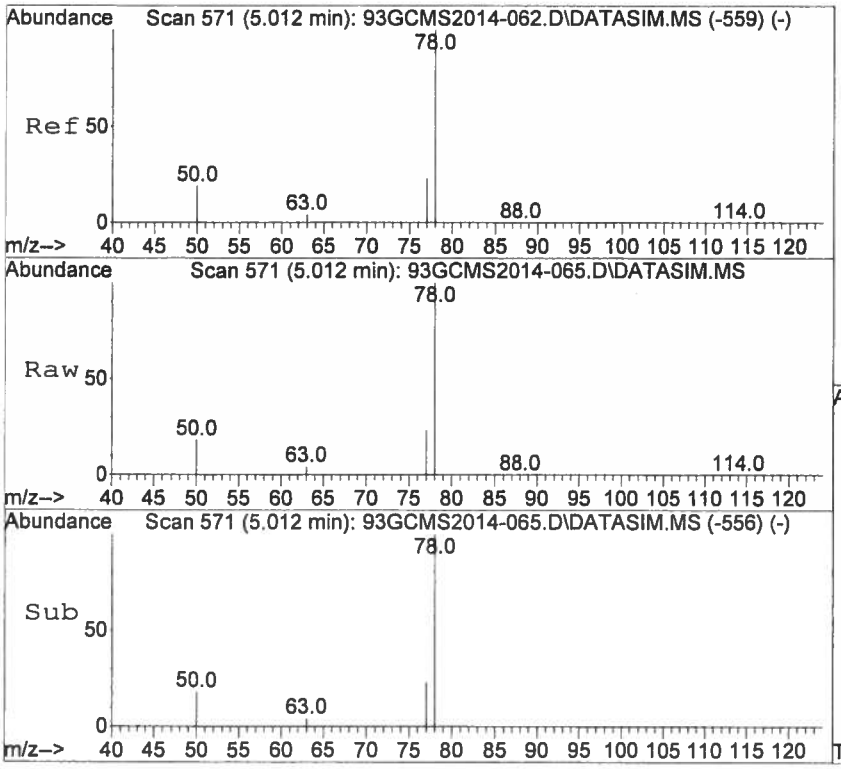


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion:114 Resp: 4880

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.2	12.0	18.0

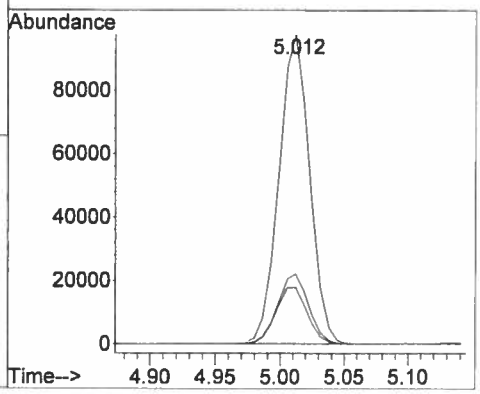


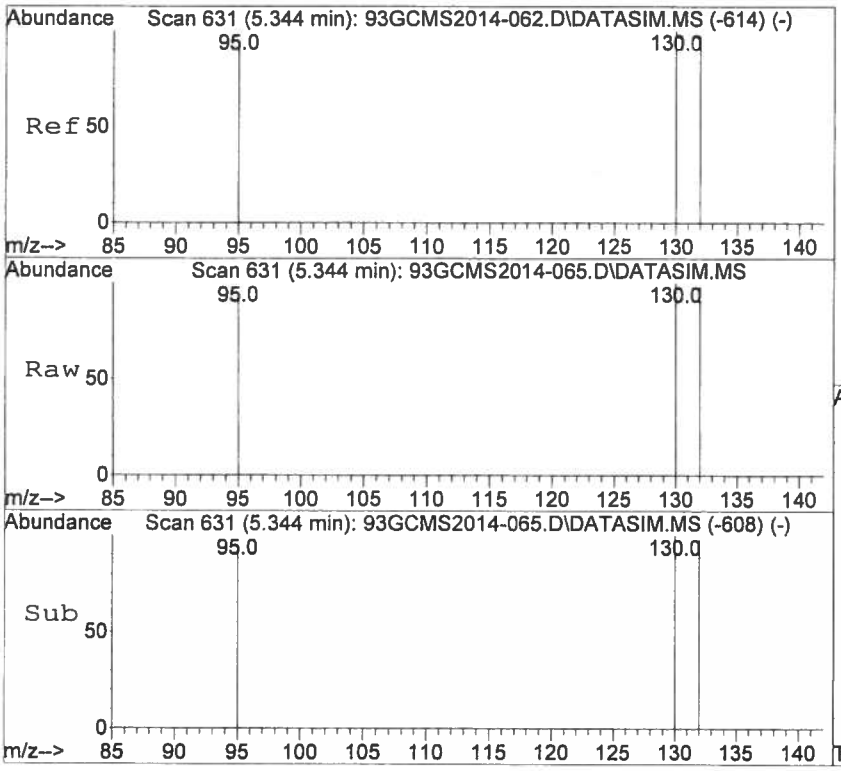


#11
Benzene
Concen: 557.63 ppbv
RT: 5.012 min Scan# 571
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 78 Resp: 163311

Ion	Ratio	Lower	Upper
78	100		
77	22.9	18.4	27.6
50	19.0	14.6	21.8

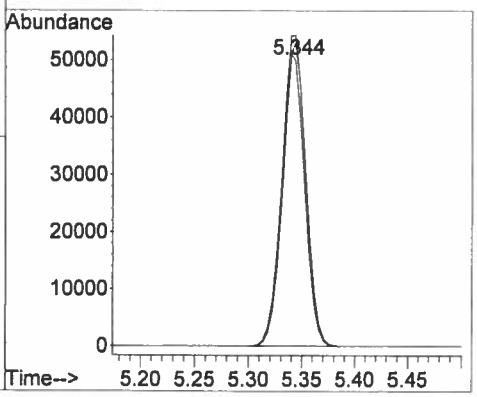


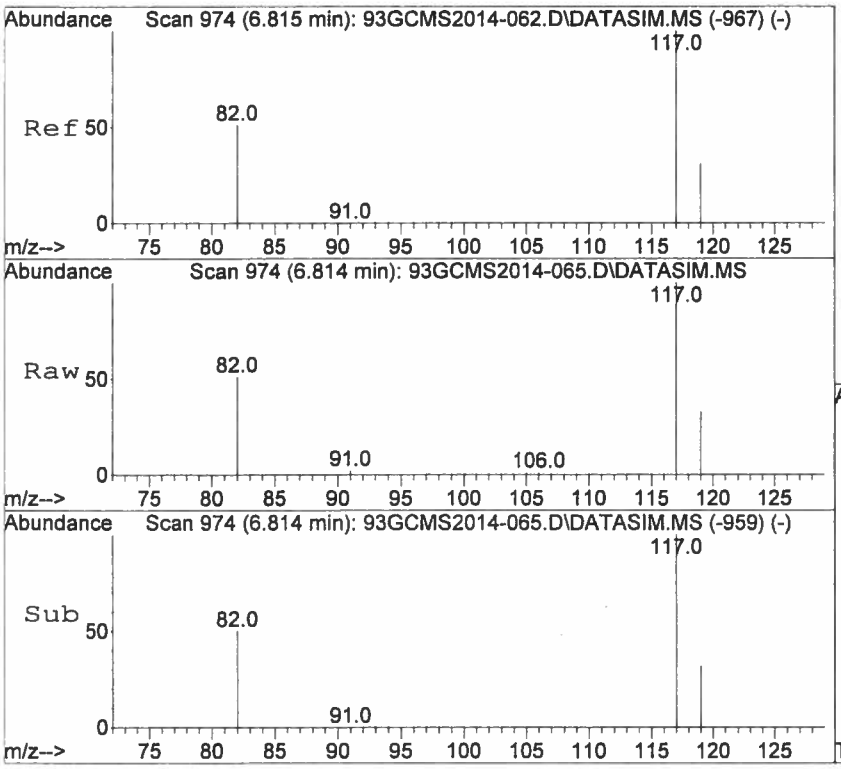


#12
Trichloroethene
Concen: 541.38 ppbv
RT: 5.344 min Scan# 631
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion:130 Resp: 84452

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	93.2	72.9	109.3

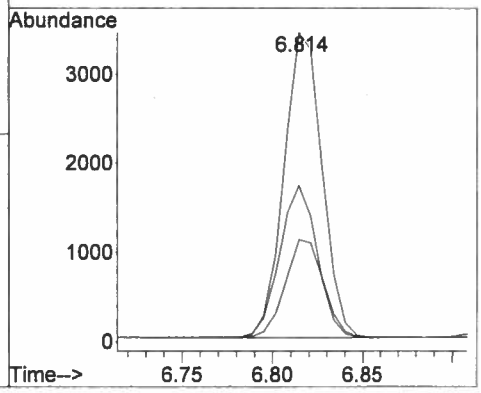


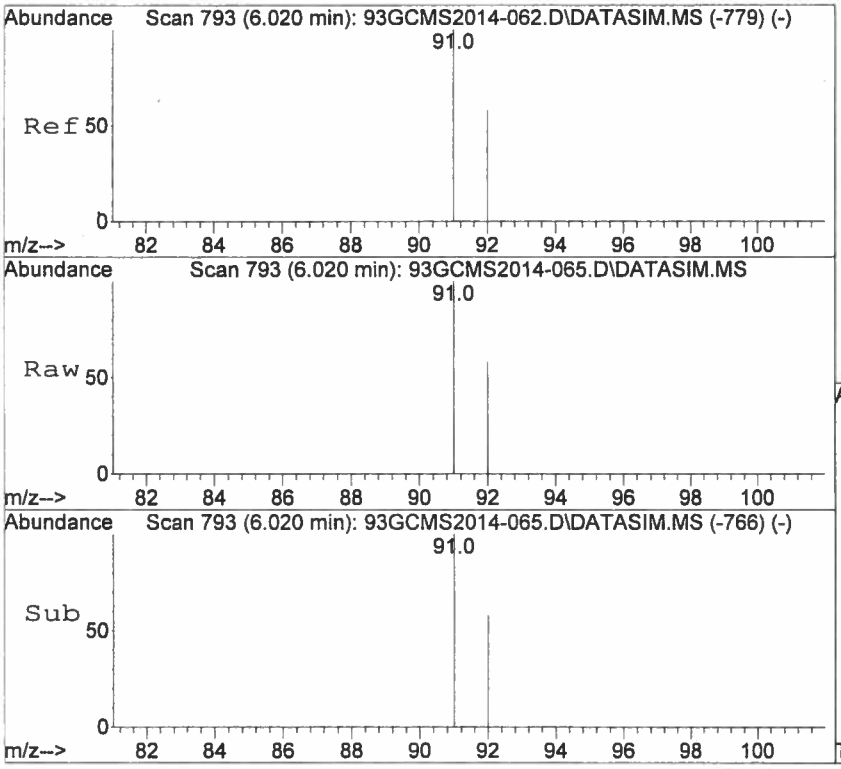


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion:117 Resp: 5028

Ion	Ratio	Lower	Upper
117	100		
82	48.8	37.8	56.6
119	32.1	25.6	38.4

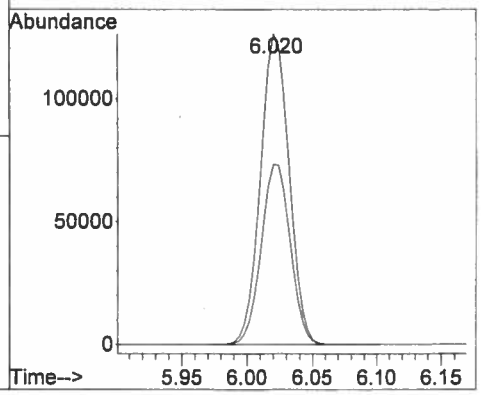


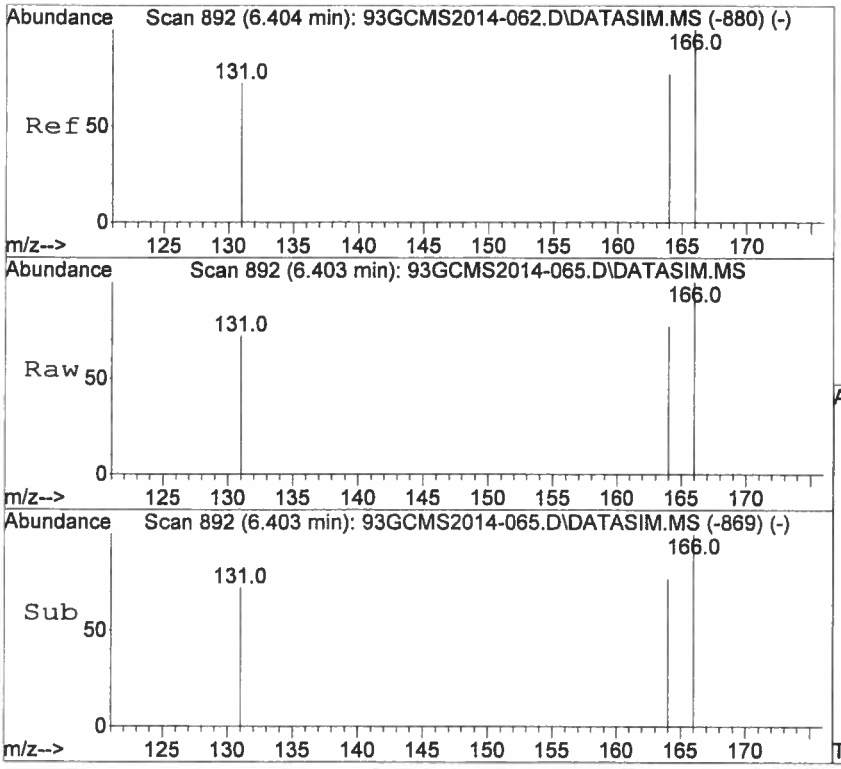


#14
Toluene
Concen: 550.64 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 91 Resp: 190244

Ion	Ratio	Lower	Upper
91	100		
92	58.9	47.2	70.8

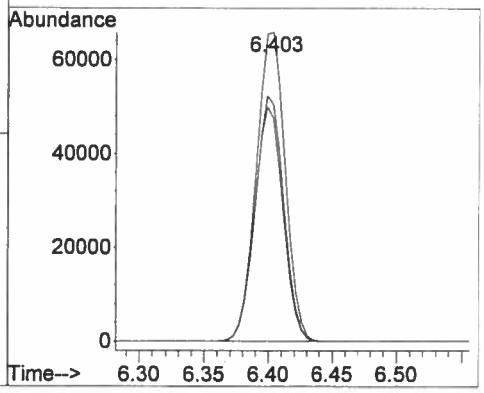


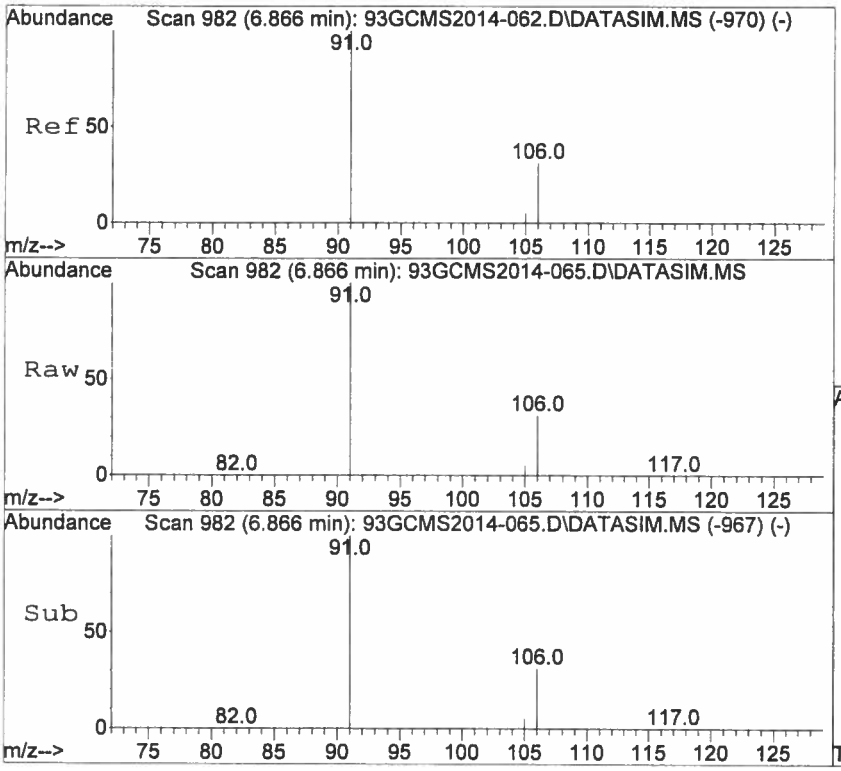


#15
Tetrachloroethene
Concen: 546.60 ppbv
RT: 6.403 min Scan# 892
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion:166 Resp: 102388

Ion	Ratio	Lower	Upper
166	100		
164	78.3	62.5	93.7
131	74.7	58.6	88.0

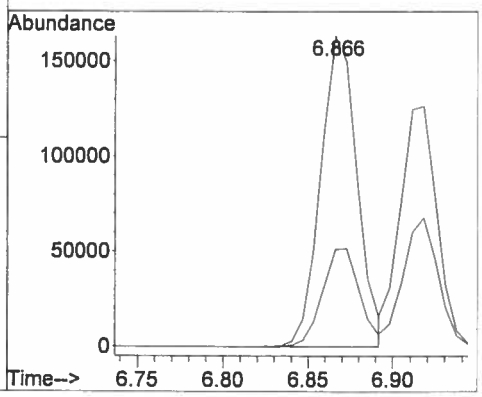


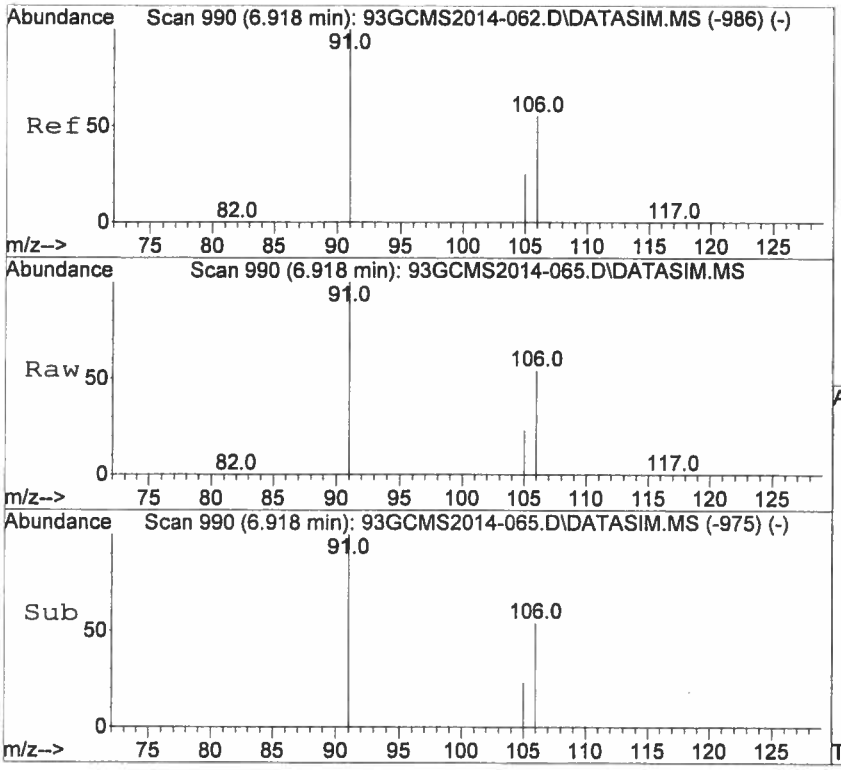


#16
Ethyl Benzene
Concen: 592.12 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 91 Resp: 246032

Ion	Ratio	Lower	Upper
91	100		
106	31.4	25.6	38.4

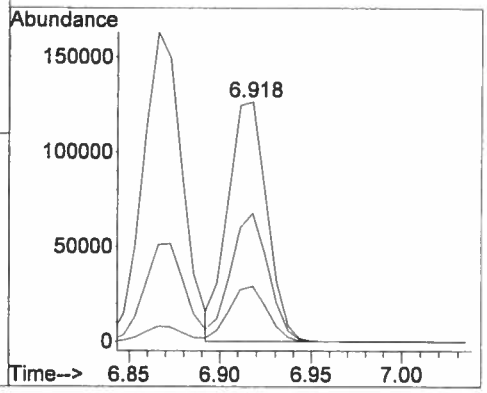


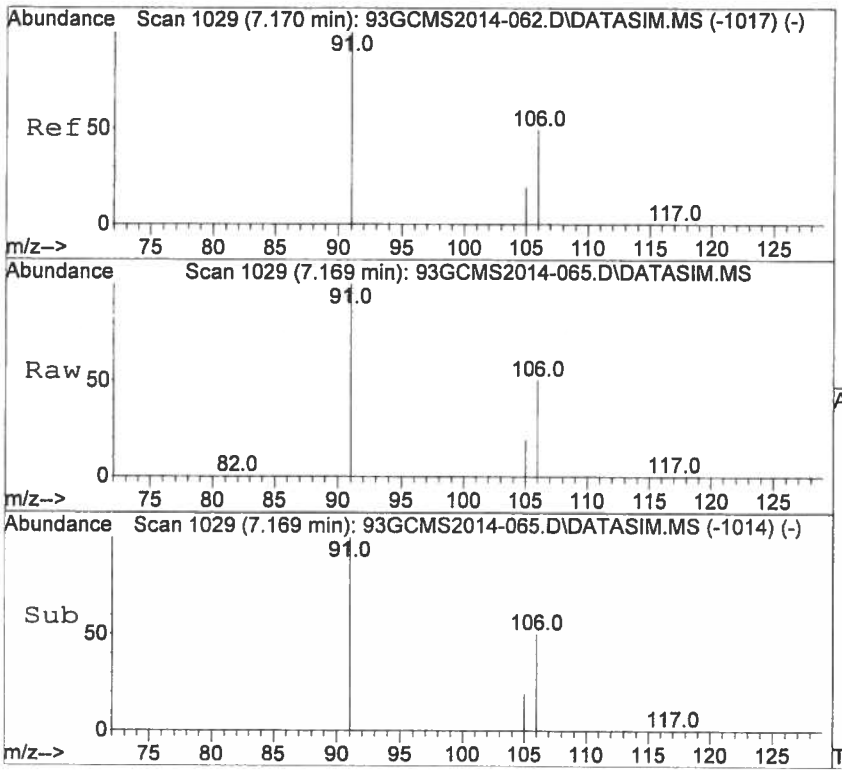


#17
m,p-Xylene
Concen: 580.42 ppbv
RT: 6.918 min Scan# 990
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 91 Resp: 185978

Ion	Ratio	Lower	Upper
91	100		
106	53.5	42.5	63.7
105	23.1	18.6	27.8

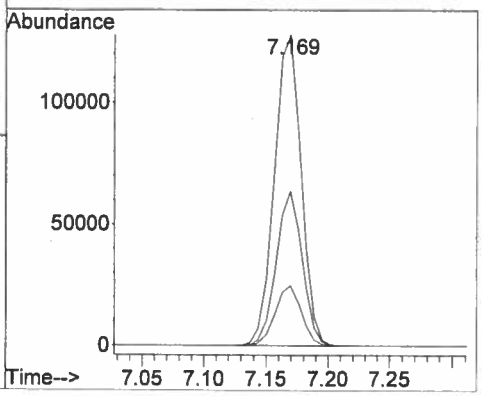




#18
o-Xylene
Concen: 595.74 ppbv
RT: 7.169 min Scan# 1029
Delta R.T. -0.000 min
Lab File: 93GCMS2014-065.D
Acq: 22 Jan 2014 12:29

Tgt Ion: 91 Resp: 192746

Ion	Ratio	Lower	Upper
91	100		
106	48.4	39.3	58.9
105	19.1	15.4	23.2



GC/MS QA-QC Check Report

Tune File : D:\msdchem\1\data\2014\20140122\93GCMS2014-061.D
Tune Time : 22 Jan 2014 11:32

Daily Calibration File : D:\msdchem\1\data\2014\20140122\93GCMS2014-062.D

File	Sample	Internal Standard Responses		
		2078	5130	5299
93GCMS2014-062.D	STD2014012	2078	5130	5299
93GCMS2014-063.D	STD2014012	2026	5087	5233
93GCMS2014-064.D	20140122-M	2017	4975	5123
93GCMS2014-065.D	20140122-L	1962	4880	5028
93GCMS2014-066.D	219-T-001	1990	4947	5057
93GCMS2014-067.D	219-T-003	2016	4981	5119
93GCMS2014-068.D	219-T-004	1995	4859	5083
93GCMS2014-069.D	219-T-004	2003	4894	5091
93GCMS2014-070.D	219-T-005	864*	2010*	2078*
93GCMS2014-071.D	219-T-005	1937	4684	5003
93GCMS2014-072.D	219-T-006	1983	4760	4921

(fails) - fails 24hr time check * - fails criteria

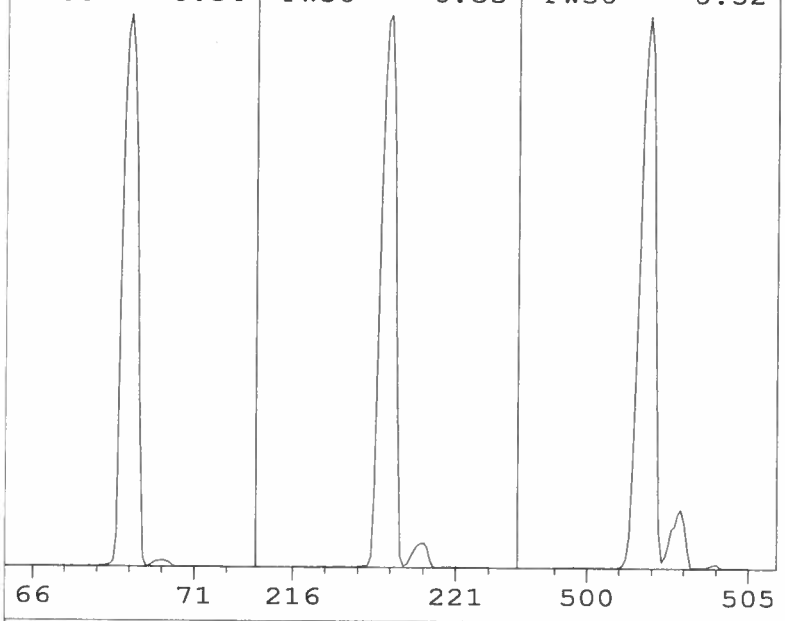
Created: Thu Jan 23 09:42:58 2014 Instrument 2

1/22/14

Thu Jan 23 09:08:20 2014
C:\msdchem\1\5975\bfb.u

Instrument: Instrument 2
US83130668

Mass	69.00	Mass	219.00	Mass	501.90
Ab	1301946	Ab	610105	Ab	25532
Pw50	0.54	Pw50	0.53	Pw50	0.52

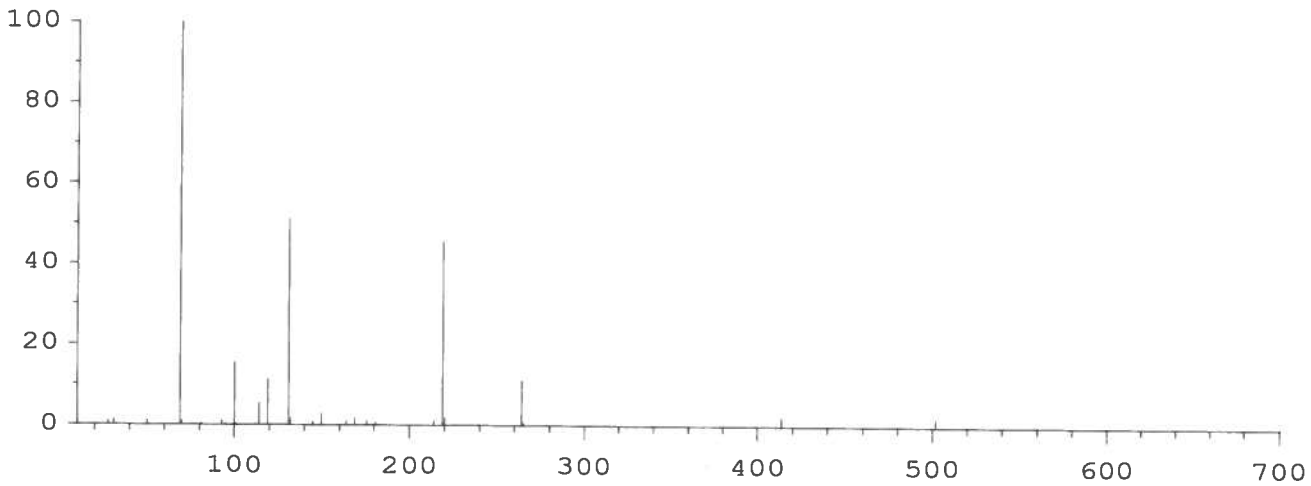


Ion Pol	Pos	MassGain	-973
		MassOffs	-39
Emission	34.6	AmuGain	1186
EIEnrgy	69.9	AmuOffs	125.69
Filament	1	Wid219	-0.016
		DC Pol	Pos
Repeller	19.90		
IonFcus	73.1	HEDEnab	On
EntLens	0.0	EMVolts	1388
EntOffs	Var		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	TurboSpd	100
MS Quad	150	HiVac	1.97e05

Scan: 10.00 - 701.00 Samples: 8 Thresh: 100 Step: 0.10
120 peaks Base: 69.00 Abundance: 1238016



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	1238016	100.00	70.00	13833	1.12
219.00	564544	45.60	220.00	24680	4.37
501.90	22936	1.85	502.90	2181	9.51

Air/Water Check: H20~0.11% N2~1.05% O2~0.30% CO2~0.11% N2/H2O~970.94%

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 106492
Repeller Maximum 20 volts using ion 219; Gain Factor 1.06

MassGain Values(Samples): -964(3) -946(2) -916(1) -870(0) -826(FS)

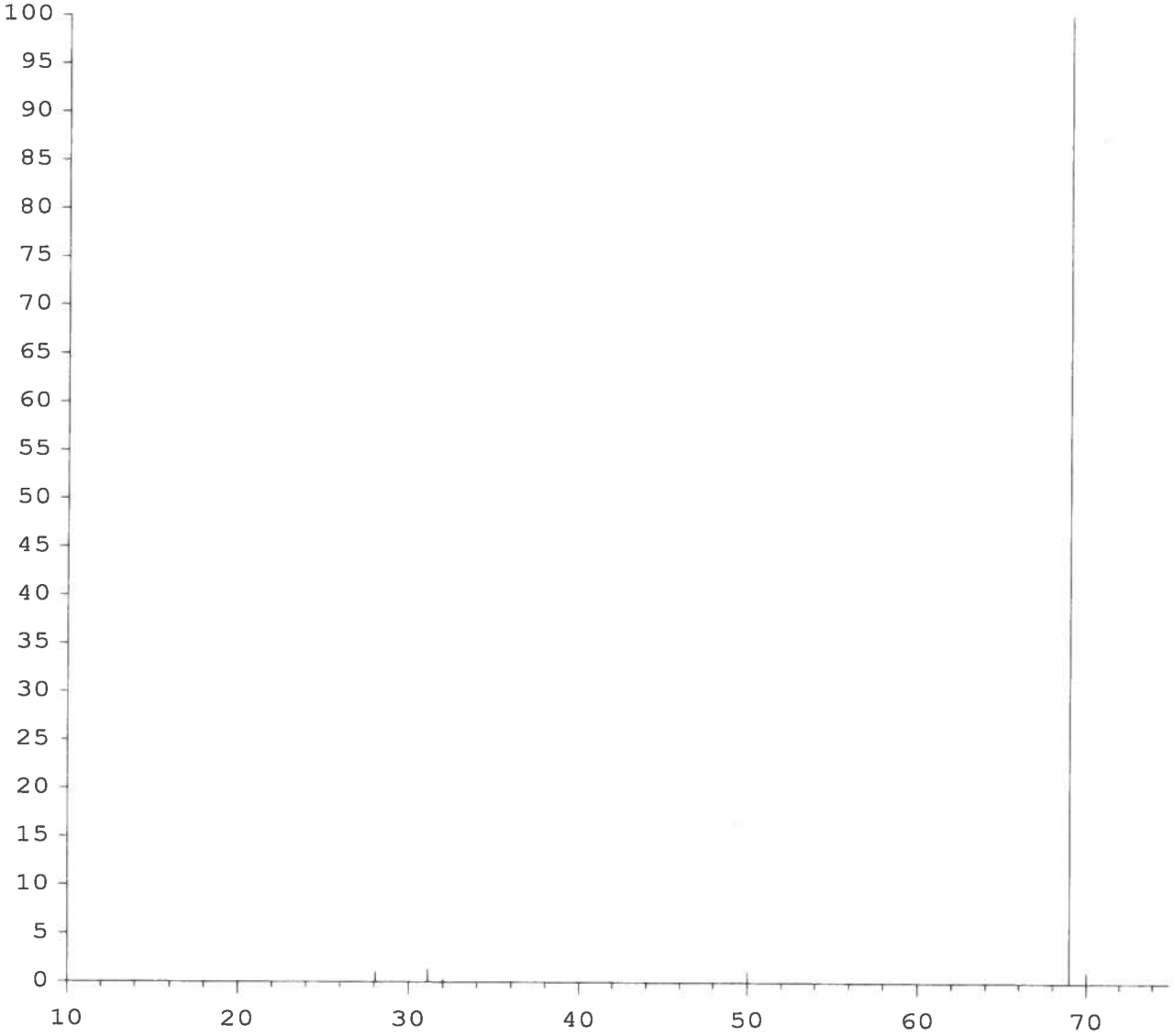
1/23/14

TARGET MASS:	50	69	131	219	414	502	1050
Amu Offset:	125.7	125.7	125.7	125.7	125.7	125.7	125.7
Entrance Lens Offset:	15.3	13.1	15.1	14.8	17.1	18.8	18.8
Target Abund(%):	1.0	100.0	52.0	50.0	2.4	2.0	
Actual Tune Abund(%):	1.1	100.0	51.2	45.6	2.2	1.9	

597x Air and Water Check

Instrument: Instrument 2
Thu Jan 23 09:09:11 2014 C:\msdchem\1\5975\

Scan: 10.00 - 75.00 Samples: 8 Thresh: 0 Step: 0.10
67 peaks Base: 69.00 Abundance: 1260032



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	1260032	100.00	70.00	14005	1.11
18.10	1217	0.10	19.10	214	17.58
28.10	13267	1.05	29.00	142	1.07

Current Params used: bfb.u

Relative abundances:

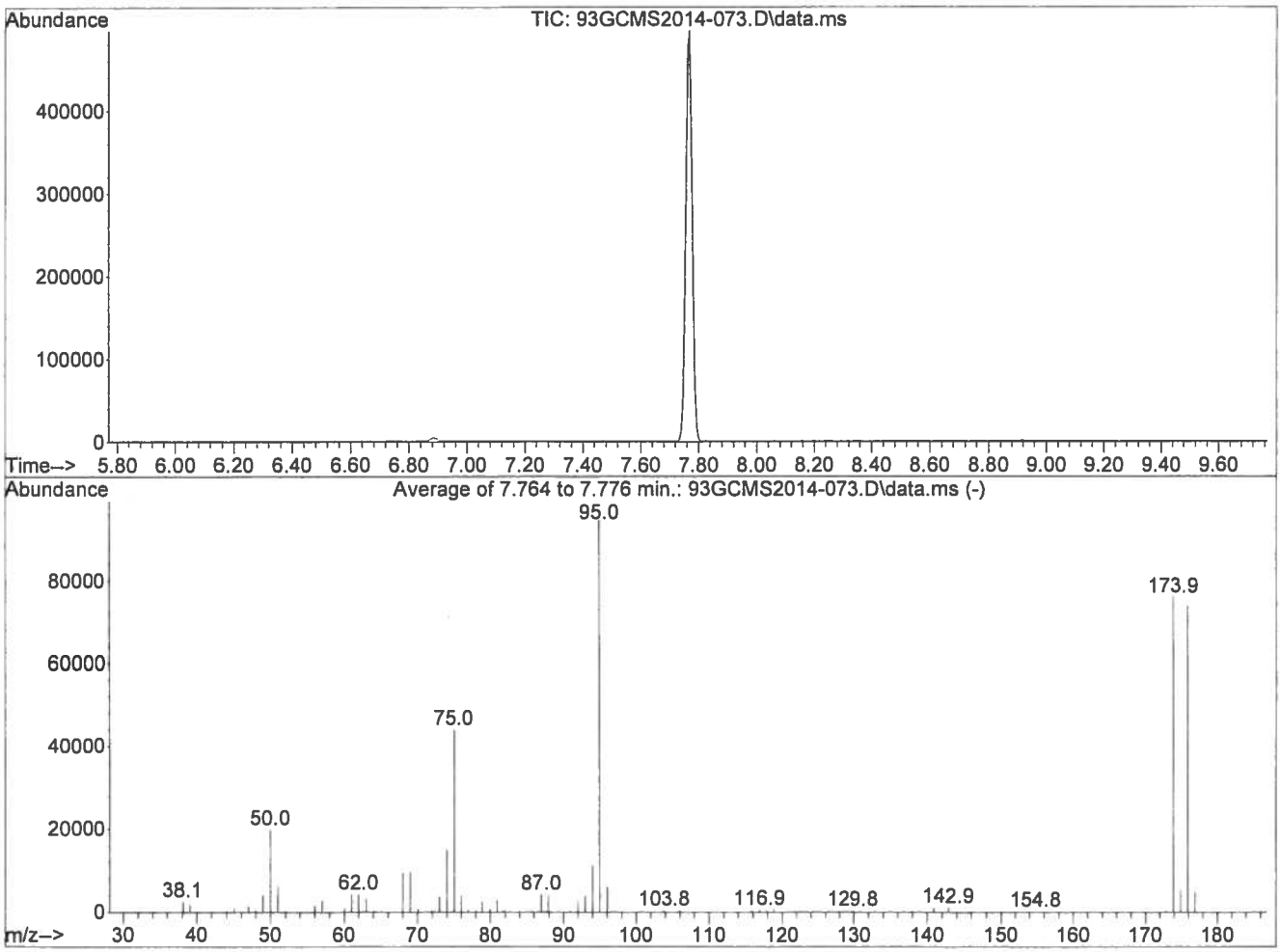
18/69 = 0.10	Water%	(counts=1217)
28/69 = 1.05	Nitrogen%	(counts=13267)
32/69 = 0.29	Oxygen%	(counts=3614)
44/69 = 0.09	Carbon Dioxide%	(counts=1125)
28/18 = 1090.14	Nitrogen/Water%	

01/23/14

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-073.D
Acq On : 23 Jan 2014 9:17
Operator : SJT
Sample : BFB \ 1ppmv STD
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22
Last Update : Wed Jan 22 12:22:10 2014



AutoFind: Scans 651, 652, 653; Background Corrected with Scan 643

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.9	19809	PASS
75	95	30	66	46.3	43861	PASS
95	95	100	100	100.0	94653	PASS
96	95	5	9	6.4	6073	PASS
173	174	0.00	2	0.5	342	PASS
174	95	50	120	80.3	75992	PASS
175	174	4	9	6.9	5267	PASS
176	174	93	101	97.0	73691	PASS
177	176	5	9	6.6	4864	PASS

1/23/14

Continuing Calibration Report Instrument 2

Method Path : C:\msdchem\1\METHODS\
Method File : LOOP20140113-QUANT.M
Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
Last Update : Thu Jan 23 09:43:34 2014
Response Via : Initial Calibration

CC Data File: 93GCMS2014-074.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%
1	ISTD	Bromochloromethane	1.000	1.000	0.0	92
2		Vinyl Chloride	0.502	0.539	-7.3	92
3		1,1-Dichloroethene	0.850	0.910	-7.1	93
4		Methyl Tert Butyl Ether	1.105	1.200	-8.6	93
5		trans-1,2-Dichloroethene	0.770	0.833	-8.2	94
6		1,1-Dichloroethane	0.912	0.980	-7.5	93
7		cis-1,2-Dichloroethene	0.725	0.796	-9.8	94
8		Chloroform	1.021	1.100	-7.7	92
9		1,1,1-Trichloroethane	1.067	1.153	-8.1	92
10	ISTD	1,4-Difluorobenzene	1.000	1.000	0.0	88
11		Benzene	0.600	0.636	-5.9	94
12		Trichloroethene	0.320	0.339	-6.0	92
13	ISTD	Chlorobenzene-d5	1.000	1.000	0.0	86
14		Toluene	0.687	0.743	-8.1	94
15		Tetrachloroethene	0.373	0.404	-8.3	82
16		Ethyl Benzene	0.826	0.976	-18.2	95
17		m,p-Xylene	0.637	0.736	-15.5	96
18		o-Xylene	0.643	0.758	-17.8	95

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

01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-074.D
Acq On : 23 Jan 2014 9:31
Operator : SJT
Sample : STD20140123-1 \ 500ppbv CCV
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 09:38:11 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	2015	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	4922	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	5022	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.922	62	55647	549.90	ppbv	97
3) 1,1-Dichloroethene	3.372	61	93563	546.39	ppbv	98
4) Methyl Tert Butyl Ether	3.828	73	121505	545.55	ppbv	95
5) trans-1,2-Dichloroethene	3.891	61	88144	568.07	ppbv	97
6) 1,1-Dichloroethane	4.128	63	101227	550.82	ppbv	98
7) cis-1,2-Dichloroethene	4.465	61	84219	576.40	ppbv	97
8) Chloroform	4.553	83	114145	554.65	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	116209	540.70	ppbv	98
11) Benzene	5.012	78	163454	553.35	ppbv	99
12) Trichloroethene	5.340	130	83768	532.41	ppbv	99
14) Toluene	6.020	91	192092	556.65	ppbv	100
15) Tetrachloroethene	6.399	166	102344	547.02	ppbv	99
16) Ethyl Benzene	6.866	91	253781	611.50	ppbv	100
17) m,p-Xylene	6.911	91	190342	594.75	ppbv	96
18) o-Xylene	7.163	91	197000	609.61	ppbv	99

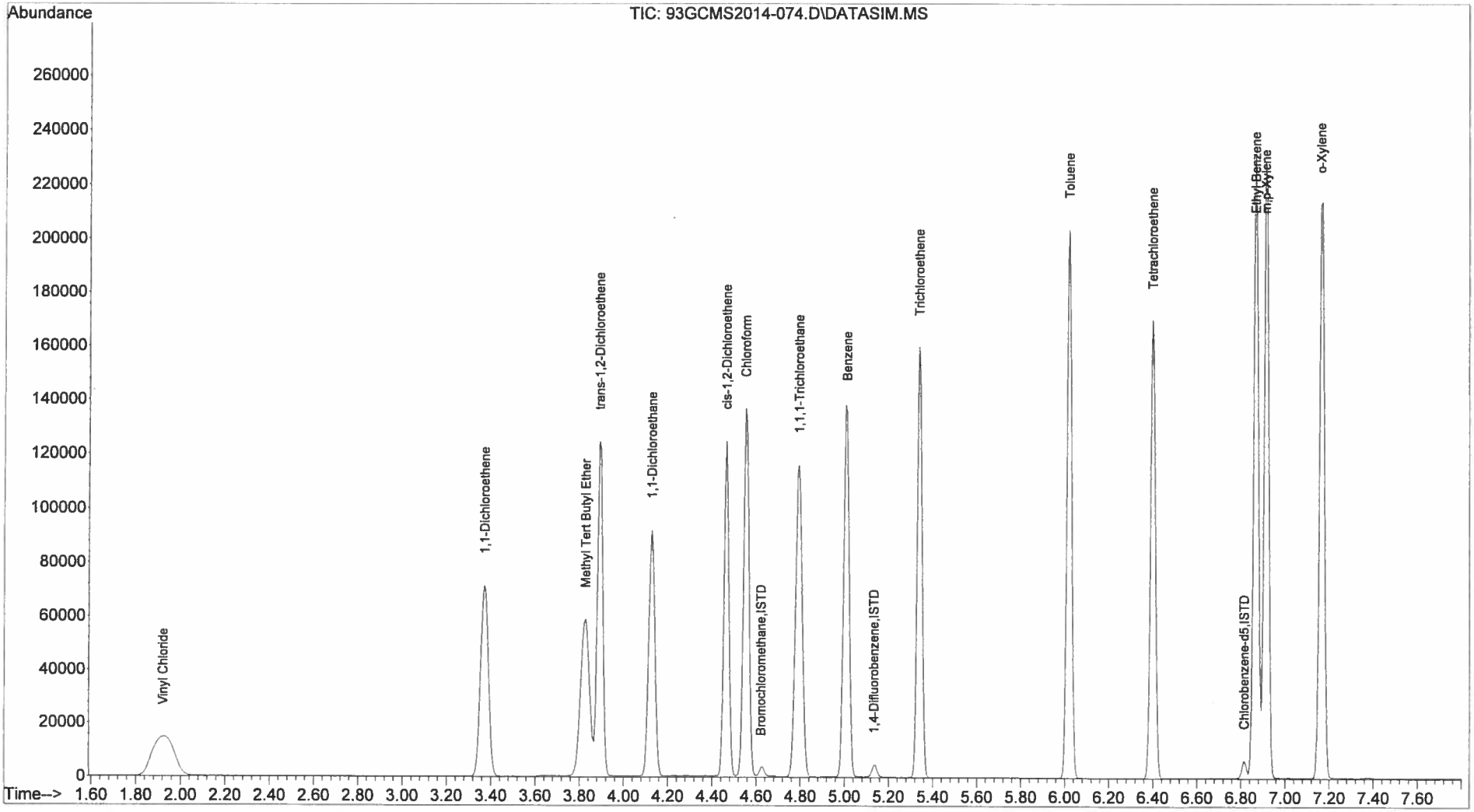
(#) = qualifier out of range (m) = manual integration (+) = signals summed

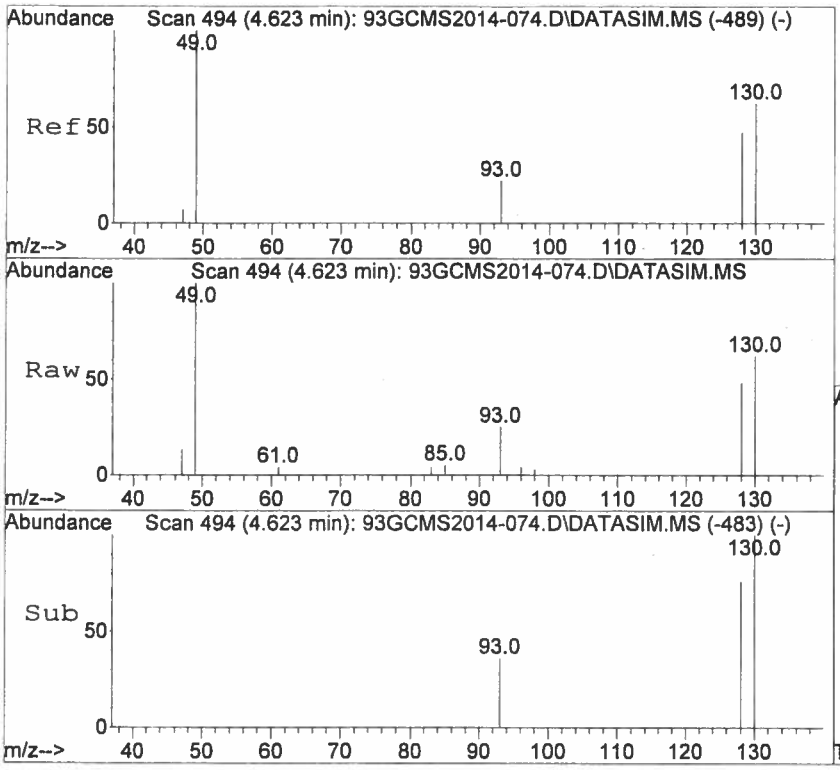
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-074.D
Acq On : 23 Jan 2014 9:31
Operator : SJT
Sample : STD20140123-1 \ 500ppbv CCV
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 09:38:11 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

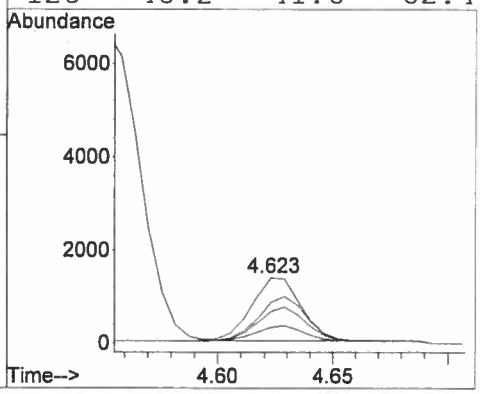


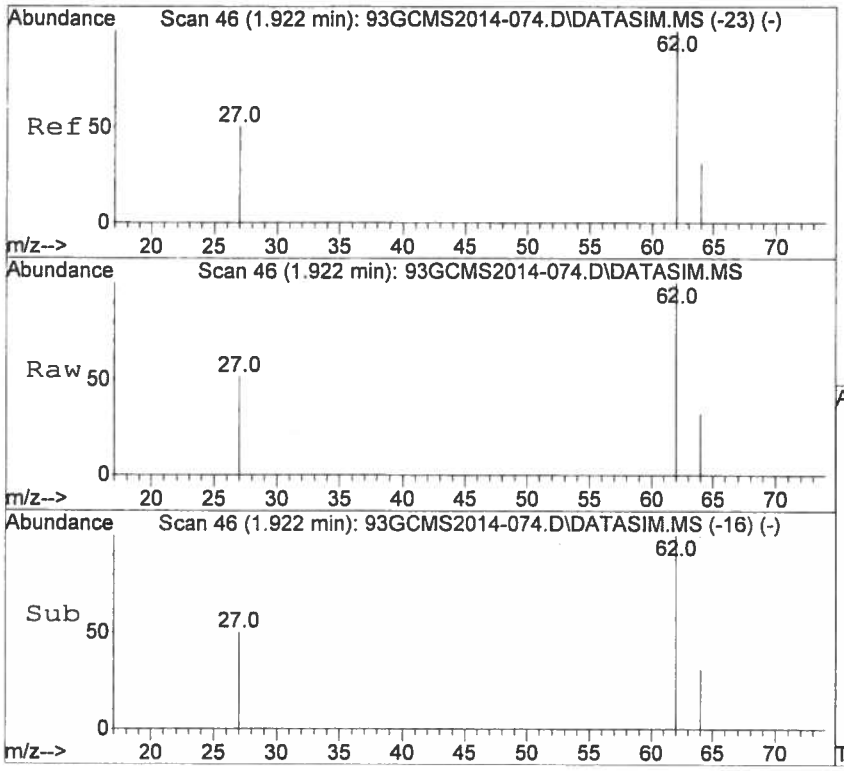


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. -0.006 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 49 Resp: 2015

Ion	Ratio	Lower	Upper
49	100		
130	62.1	51.6	77.4
93	24.6	19.6	29.4
128	48.2	41.6	62.4

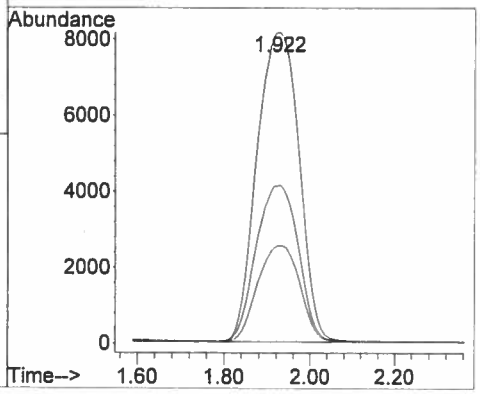


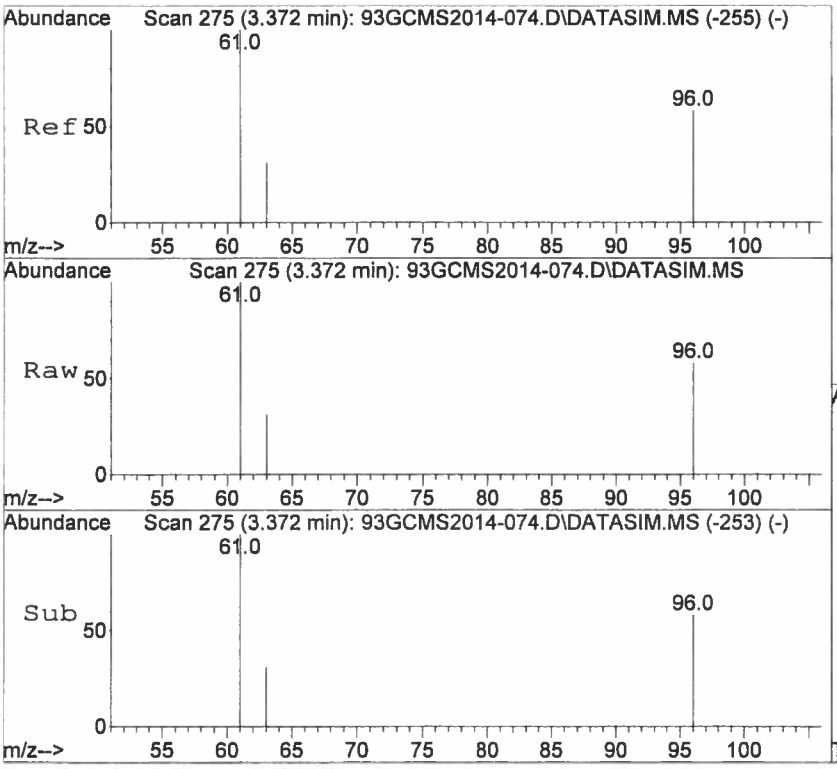


#2
Vinyl Chloride
Concen: 549.90 ppbv
RT: 1.922 min Scan# 46
Delta R.T. -0.030 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 62 Resp: 55647

Ion	Ratio	Lower	Upper
62	100		
64	31.0	24.9	37.3
27	50.3	37.8	56.6

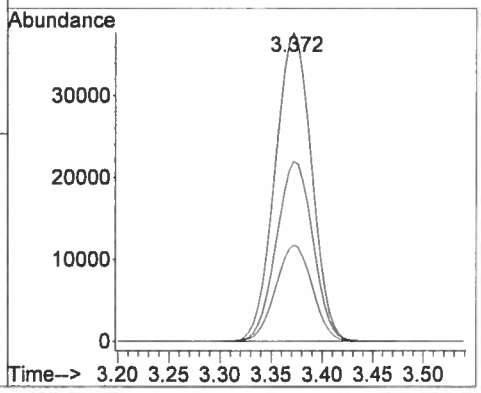


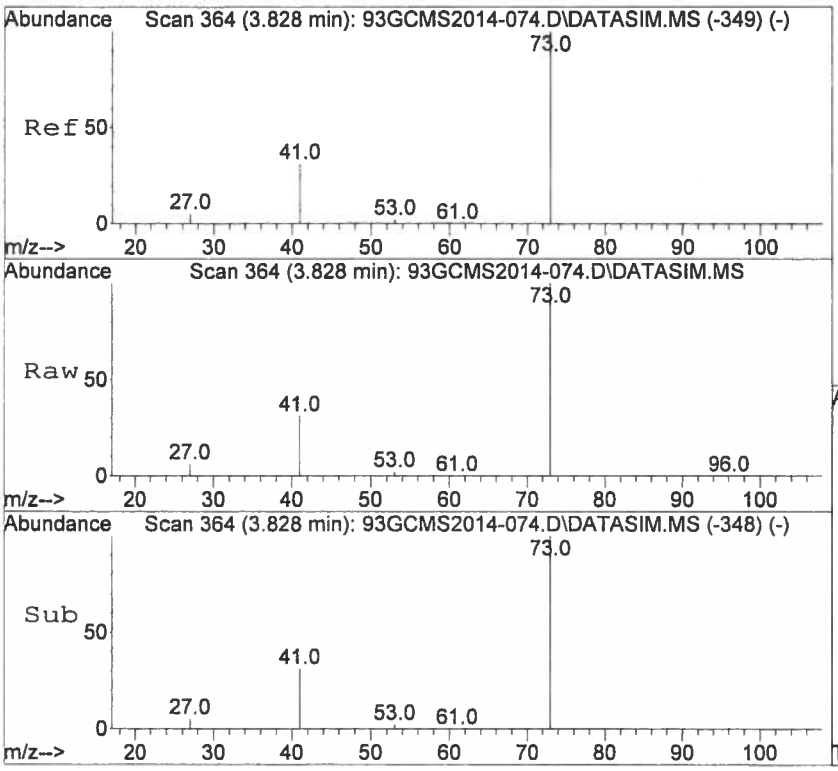


#3
1,1-Dichloroethene
Concen: 546.39 ppbv
RT: 3.372 min Scan# 275
Delta R.T. -0.005 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 61 Resp: 93563

Ion	Ratio	Lower	Upper
61	100		
96	58.3	48.6	72.8
63	31.2	25.0	37.6

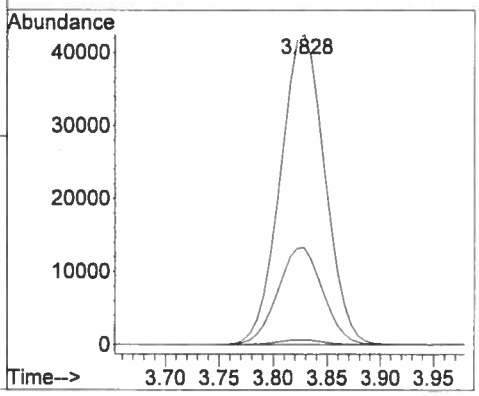


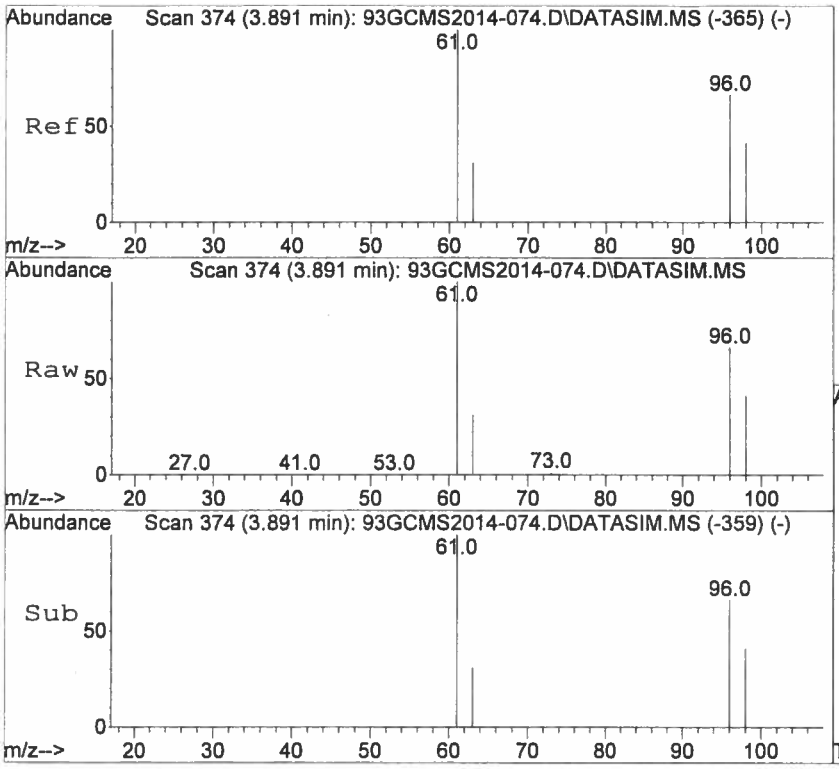


#4
Methyl Tert Butyl Ether
Concen: 545.55 ppbv
RT: 3.828 min Scan# 364
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 73 Resp: 121505

Ion	Ratio	Lower	Upper
73	100		
53	1.6	1.1	1.7
41	31.6	23.0	34.4

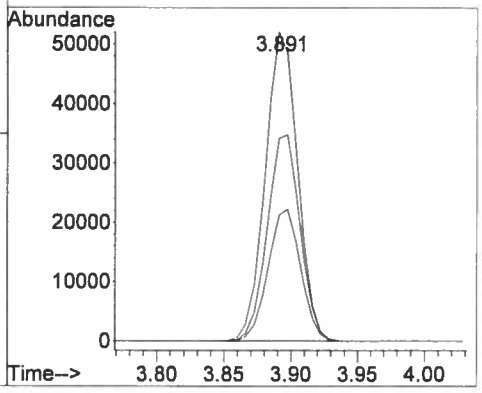


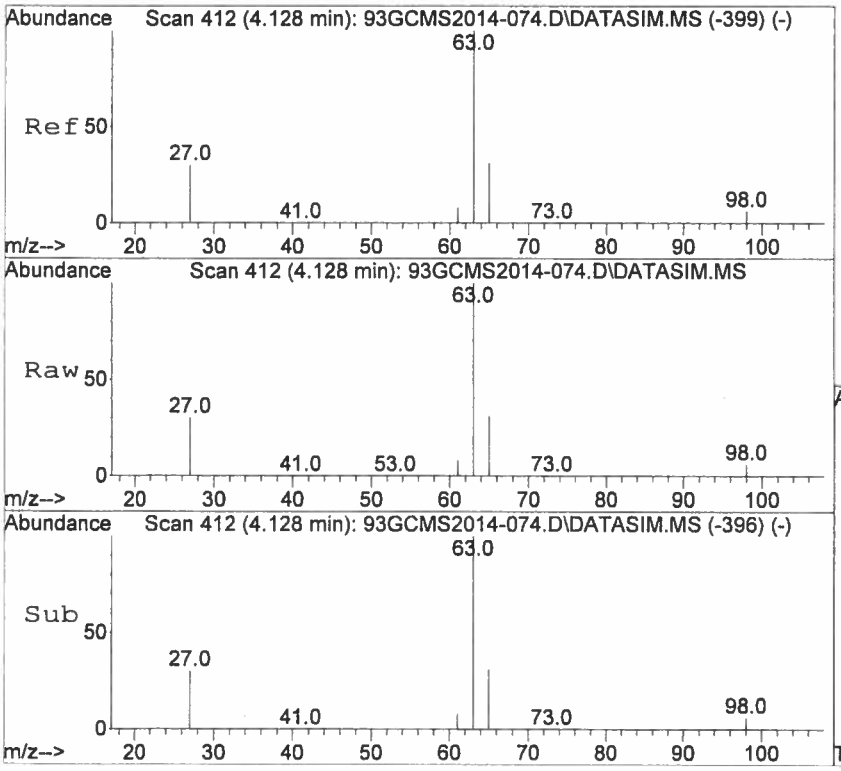


#5
trans-1,2-Dichloroethene
Concen: 568.07 ppbv
RT: 3.891 min Scan# 374
Delta R.T. -0.007 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 61 Resp: 88144

Ion	Ratio	Lower	Upper
61	100		
96	67.7	56.0	84.0
98	43.0	35.6	53.4

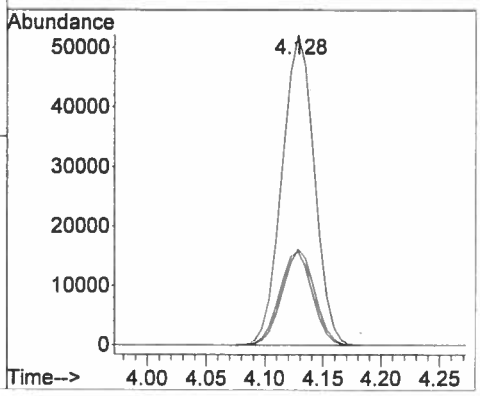


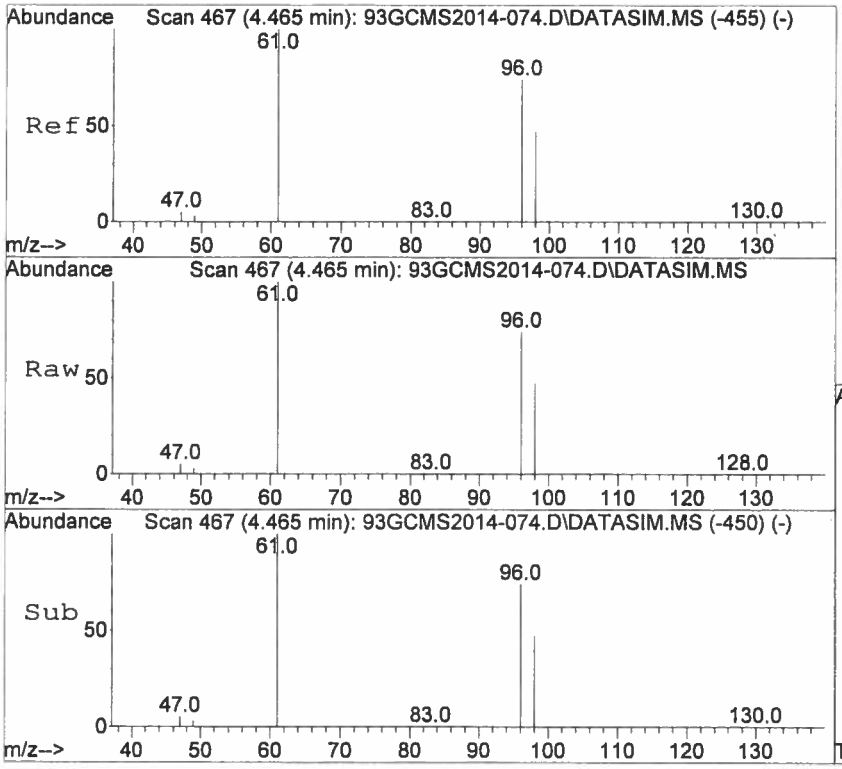


#6
1,1-Dichloroethane
Concen: 550.82 ppbv
RT: 4.128 min Scan# 412
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 63 Resp: 101227

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	30.4	22.6	34.0

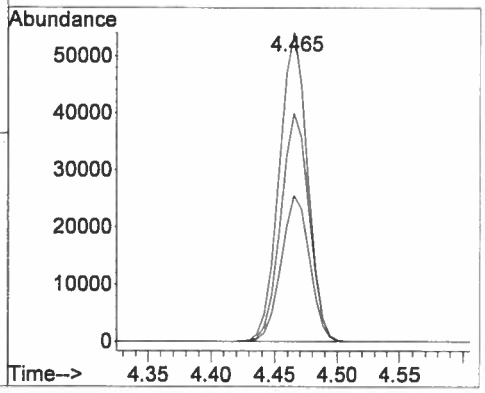


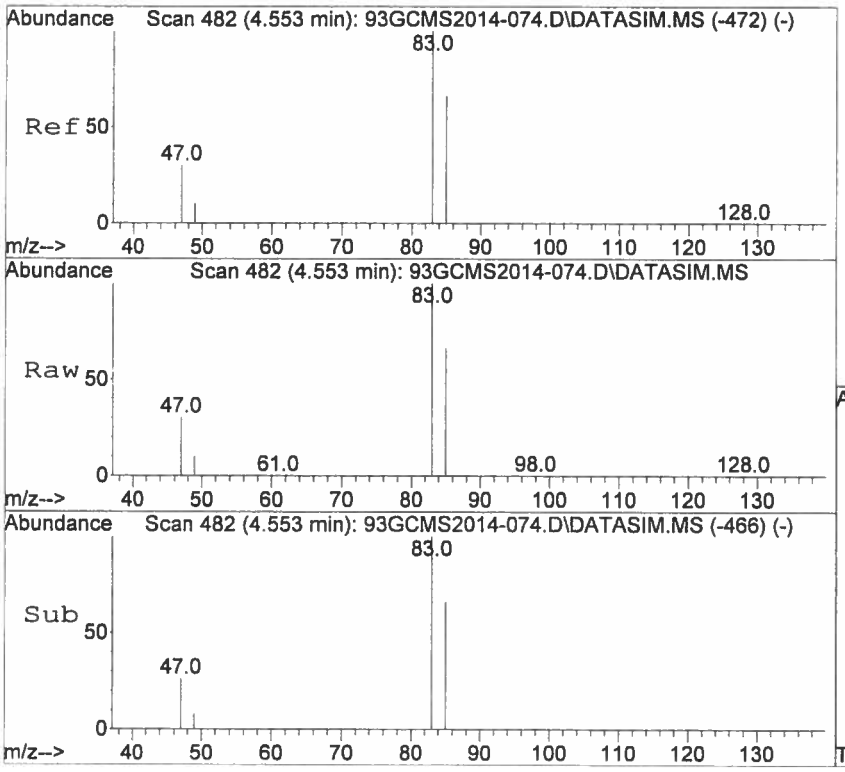


#7
cis-1,2-Dichloroethene
Concen: 576.40 ppbv
RT: 4.465 min Scan# 467
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 61 Resp: 84219

Ion	Ratio	Lower	Upper
61	100		
96	74.2	61.7	92.5
98	47.4	39.4	59.0

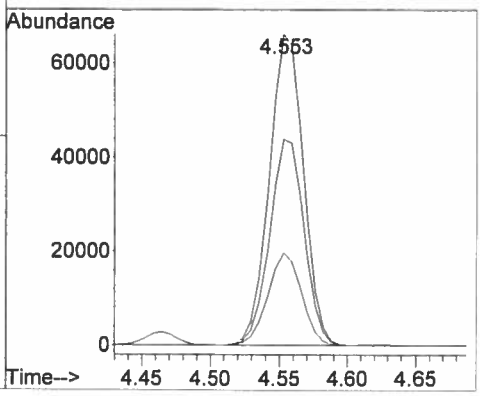


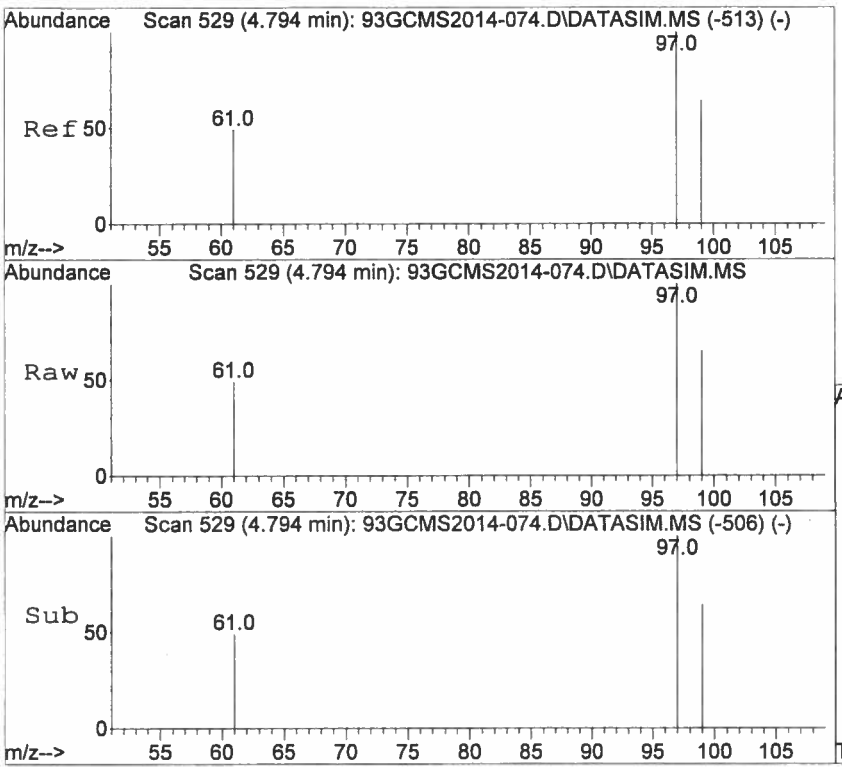


#8
Chloroform
Concen: 554.65 ppbv
RT: 4.553 min Scan# 482
Delta R.T. -0.006 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 83 Resp: 114145

Ion	Ratio	Lower	Upper
83	100		
85	66.7	52.0	78.0
47	29.2	20.0	30.0

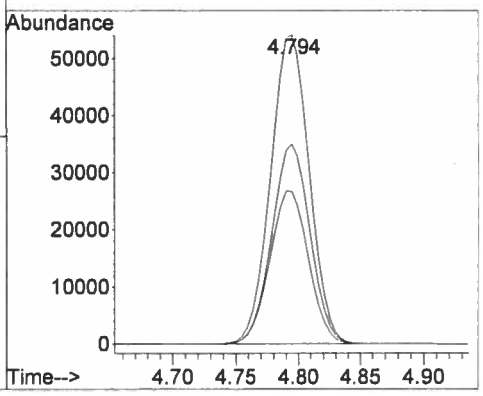


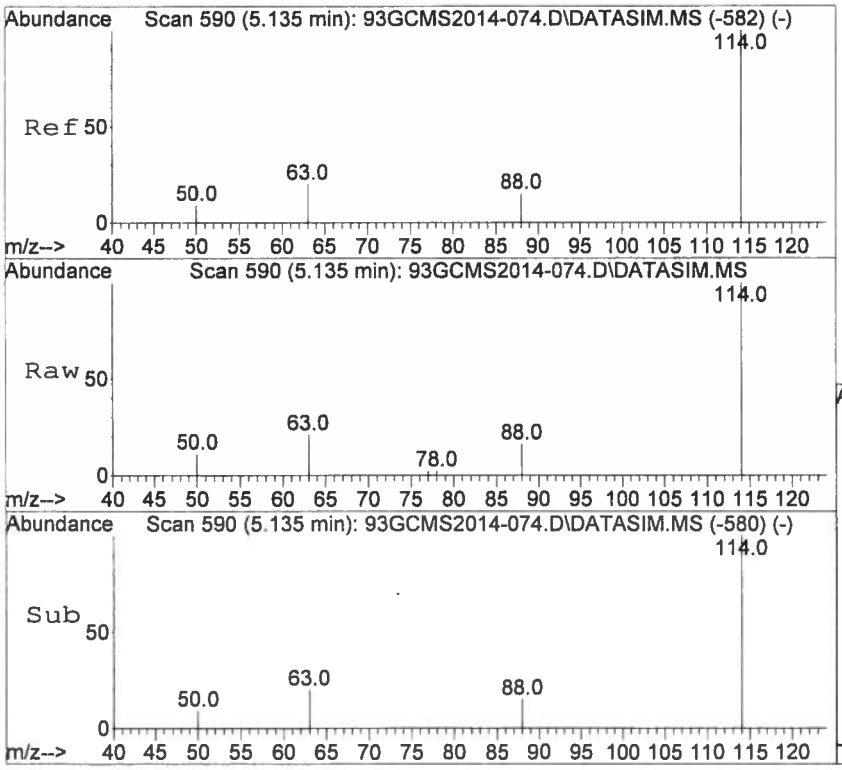


#9
1,1,1-Trichloroethane
Concen: 540.70 ppbv
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 97 Resp: 116209

Ion	Ratio	Lower	Upper
97	100		
99	64.1	51.4	77.0
61	49.6	37.4	56.0

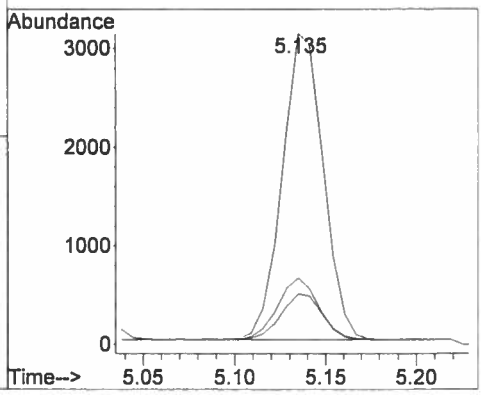


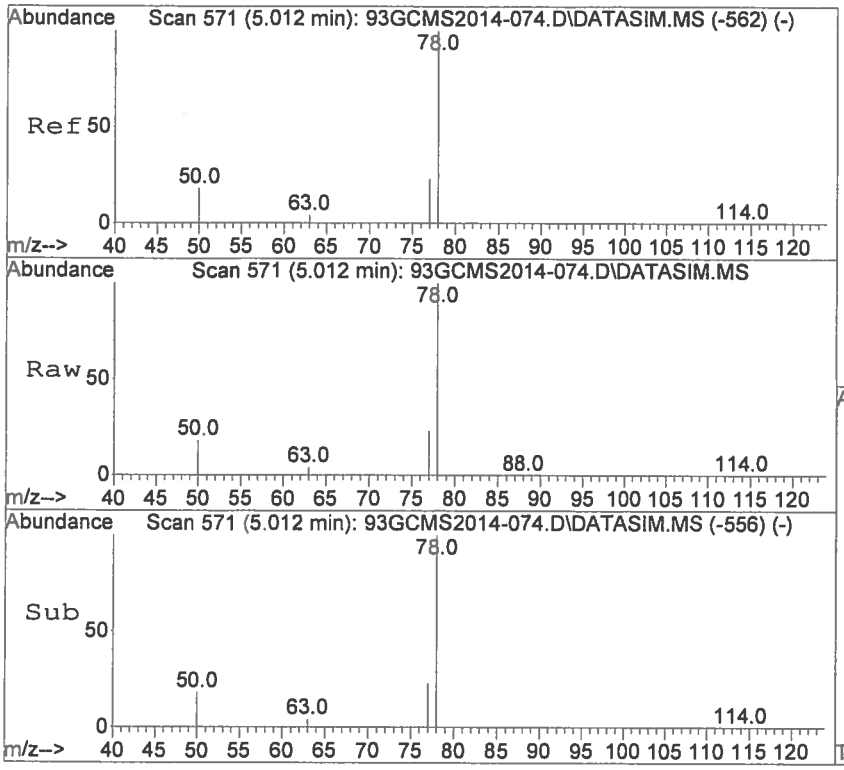


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.006 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion:114 Resp: 4922

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.1	12.0	18.0

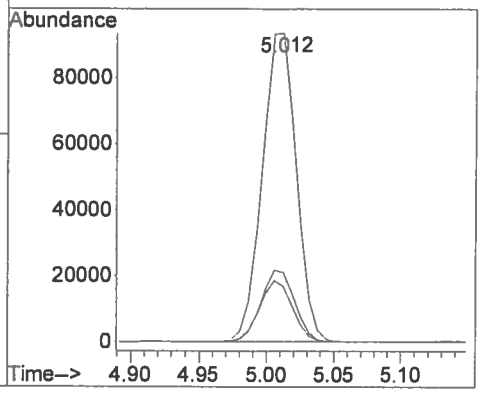


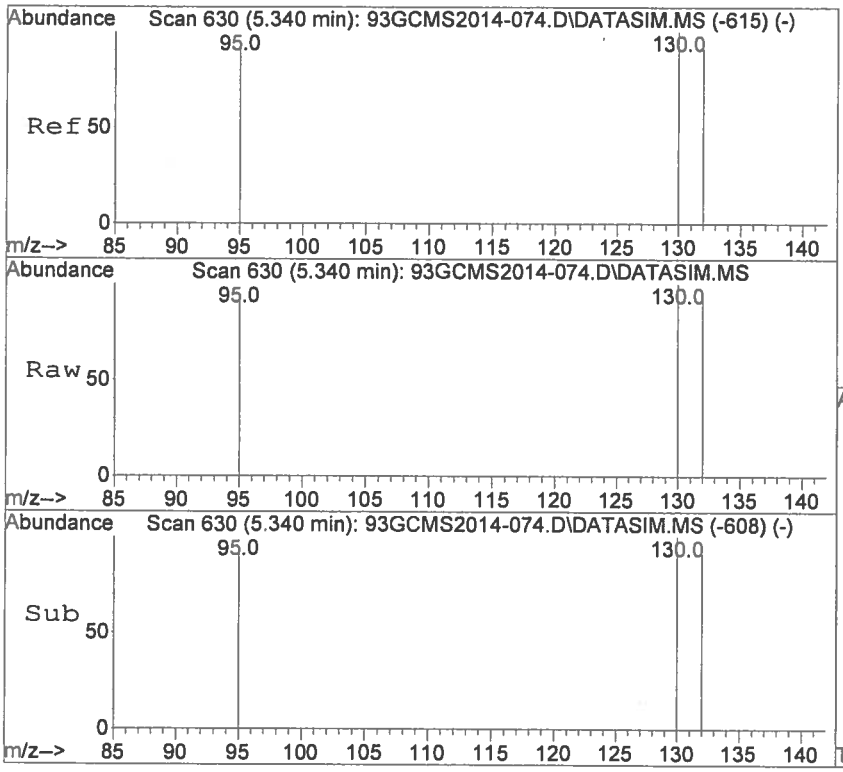


#11
Benzene
Concen: 553.35 ppbv
RT: 5.012 min Scan# 571
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 78 Resp: 163454

Ion	Ratio	Lower	Upper
78	100		
77	23.0	18.4	27.6
50	19.2	14.6	21.8

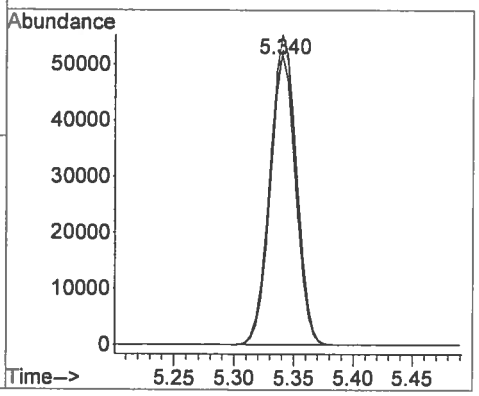


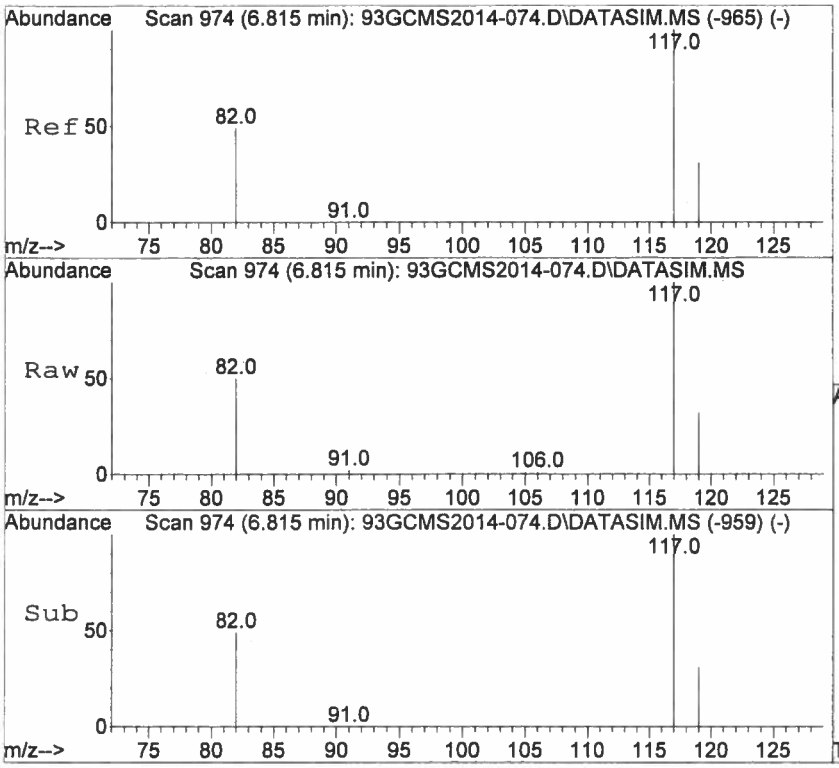


#12
Trichloroethene
Concen: 532.41 ppbv
RT: 5.340 min Scan# 630
Delta R.T. -0.004 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion:130 Resp: 83768

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	93.7	72.9	109.3

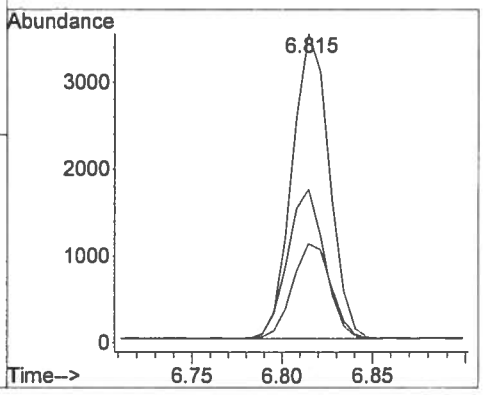


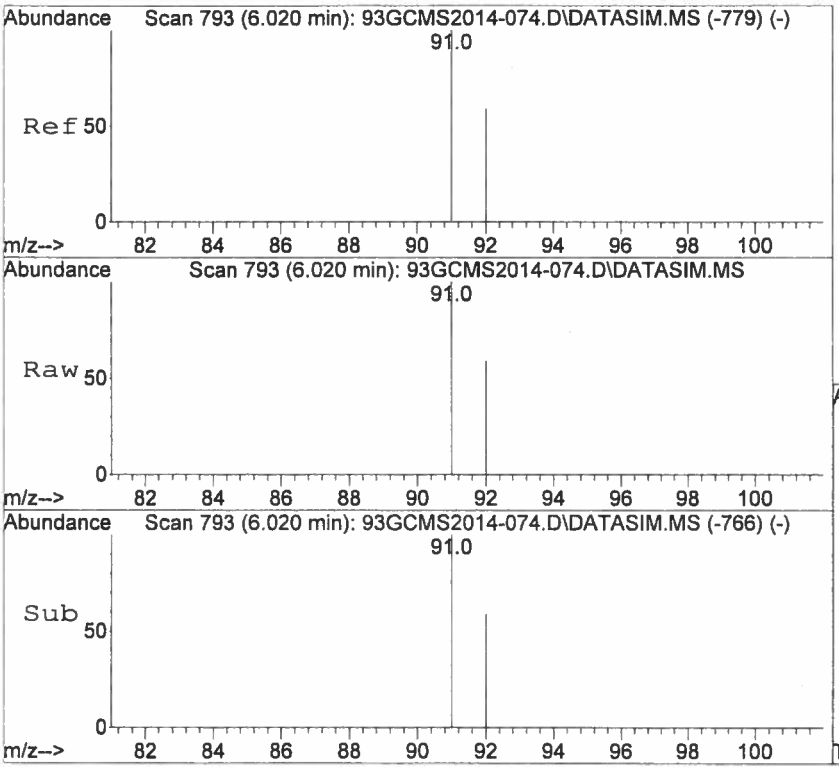


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion:117 Resp: 5022

Ion	Ratio	Lower	Upper
117	100		
82	48.4	37.8	56.6
119	31.9	25.6	38.4

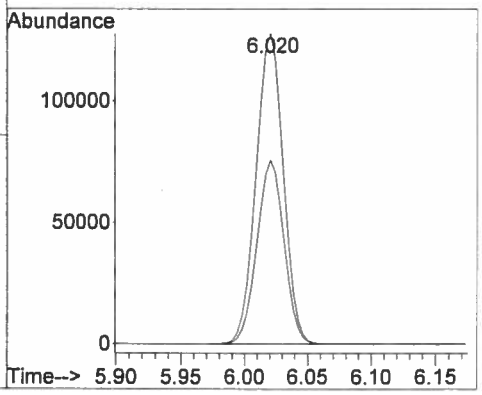


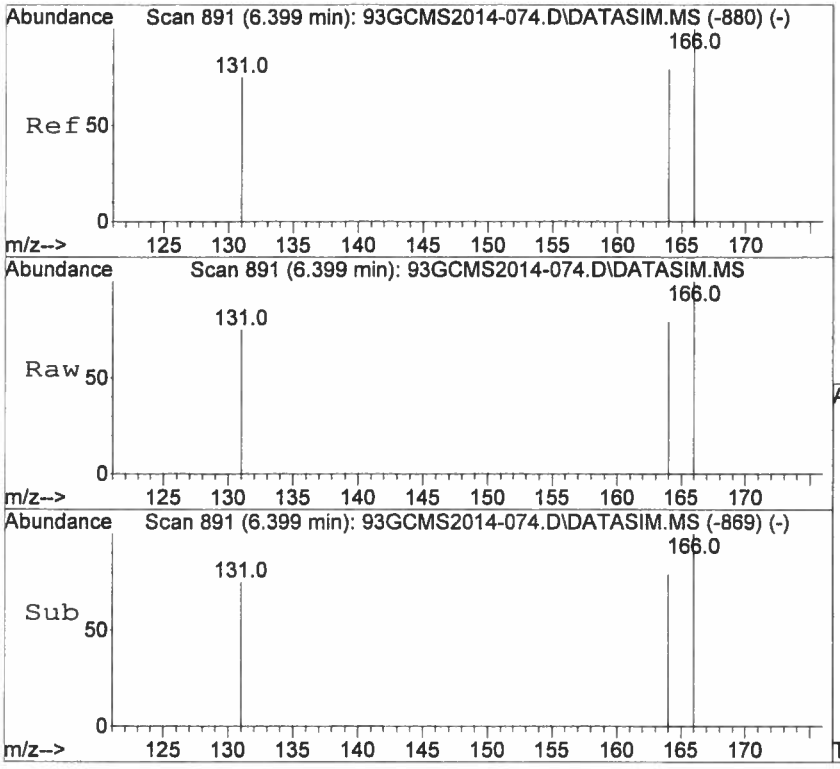


#14
Toluene
Concen: 556.65 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 91 Resp: 192092

Ion	Ratio	Lower	Upper
91	100		
92	58.9	47.2	70.8

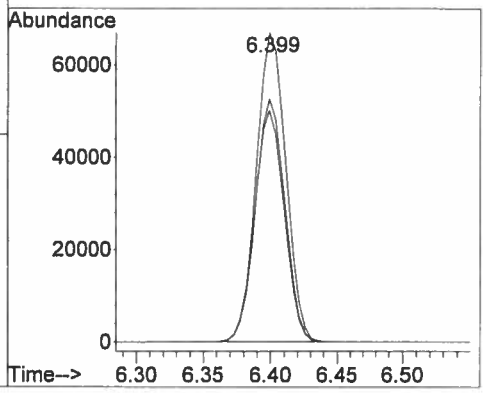


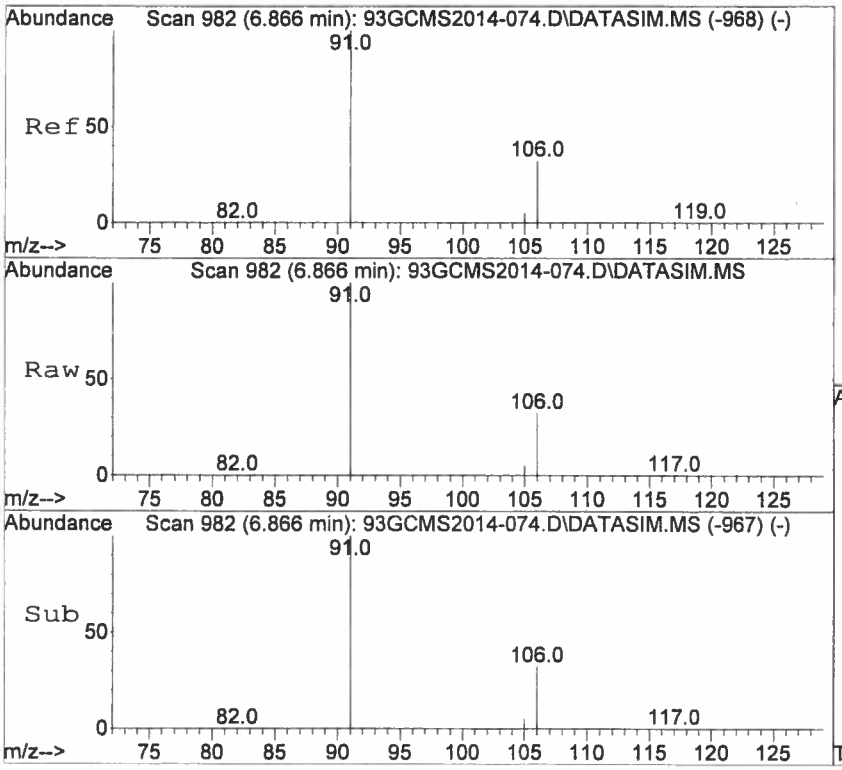


#15
Tetrachloroethene
Concen: 547.02 ppbv
RT: 6.399 min Scan# 891
Delta R.T. -0.004 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion:166 Resp: 102344

Ion	Ratio	Lower	Upper
166	100		
164	78.3	62.5	93.7
131	74.9	58.6	88.0

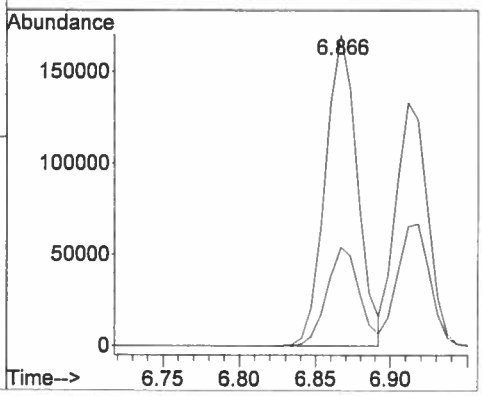


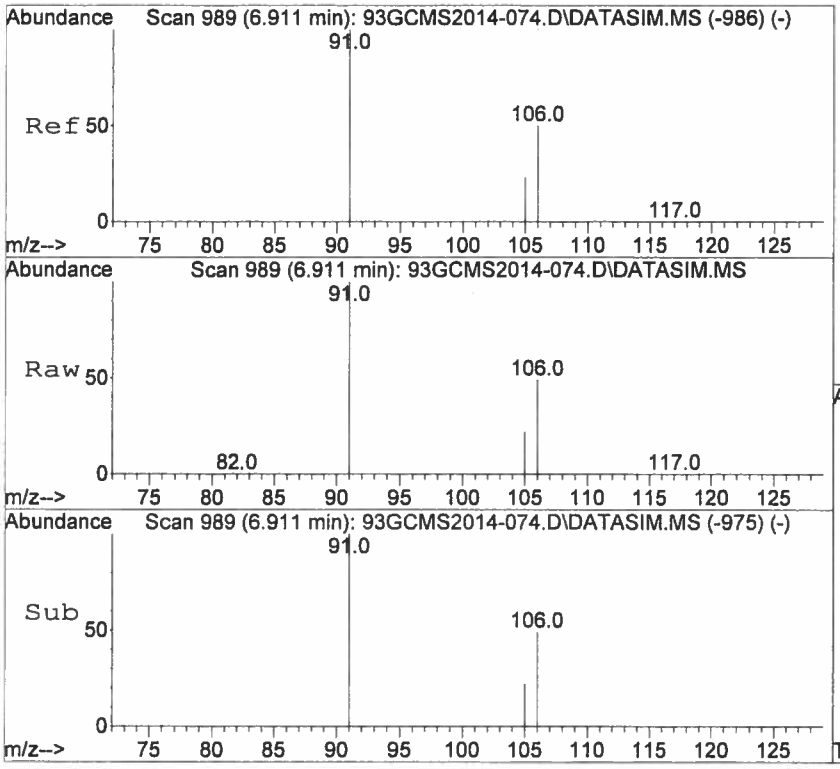


#16
Ethyl Benzene
Concen: 611.50 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 91 Resp: 253781

Ion	Ratio	Lower	Upper
91	100		
106	31.8	25.6	38.4

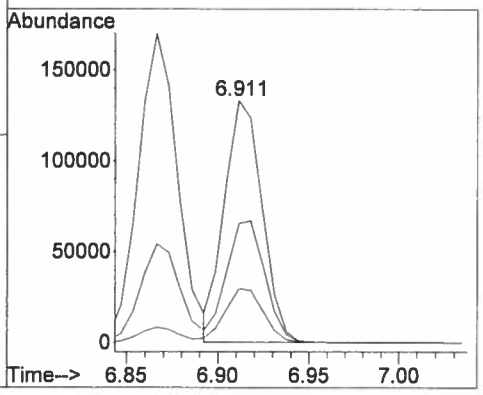


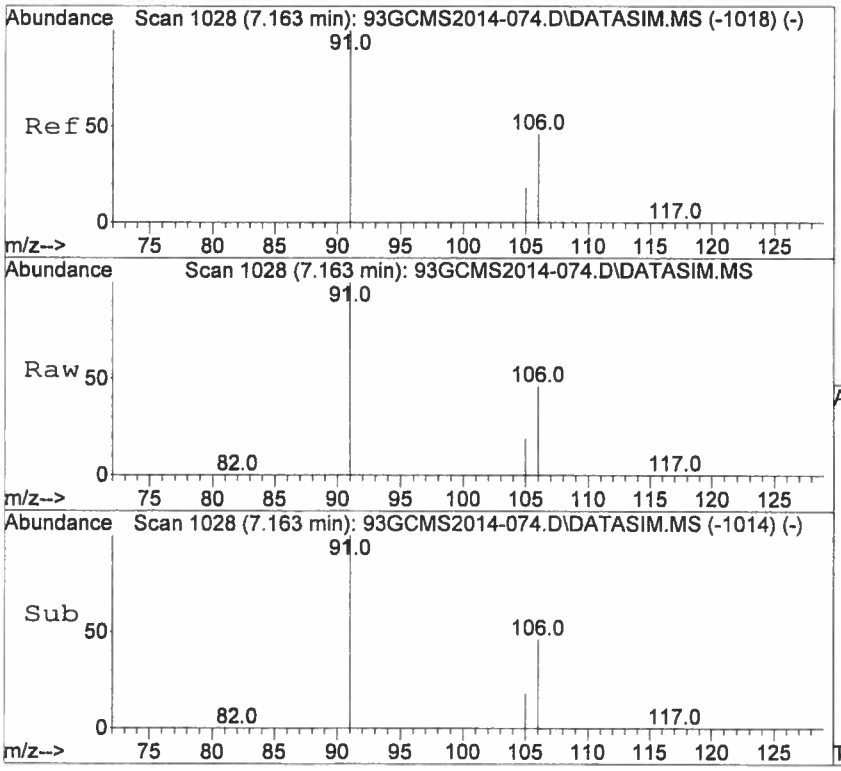


#17
m,p-Xylene
Concen: 594.75 ppbv
RT: 6.911 min Scan# 989
Delta R.T. -0.006 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 91 Resp: 190342

Ion	Ratio	Lower	Upper
91	100		
106	49.2	42.5	63.7
105	22.2	18.6	27.8

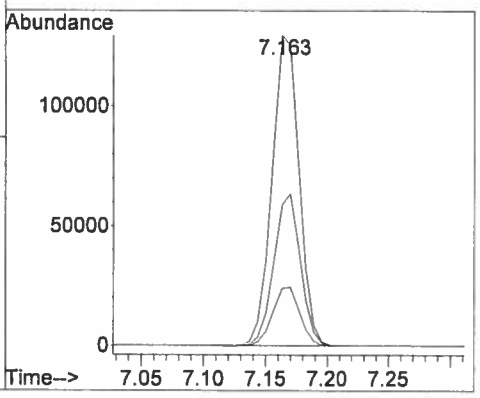




#18
o-Xylene
Concen: 609.61 ppbv
RT: 7.163 min Scan# 1028
Delta R.T. -0.006 min
Lab File: 93GCMS2014-074.D
Acq: 23 Jan 2014 9:31

Tgt Ion: 91 Resp: 197000

Ion	Ratio	Lower	Upper
91	100		
106	48.2	39.3	58.9
105	19.0	15.4	23.2



Data File:	93GCMS2014-075.d
Sample Number:	STD20140123-3
Sample Volume (mL)	5
Date Prepared:	23-Jan-2014
Date Analyzed:	23-Jan-2014

Compound	COA Concentrations CC# 106676 EXP. 03/20/2014 CC# 127284 EXP. 12/13/2014 (ppmv)	Calculated Concentrations STD20140123-3 0.5 ppbv LLCCV (ppbv)	STD20140123-3 0.5 ppbv LLCCV Results (ppbv)	Percent Difference (% D)
Vinyl Chloride	20.5	0.51	0.64	-24.88
1,1-Dichloroethene	20.4	0.51	0.56	-9.80
Methyl Tert Butyl Ether	21.0	0.53	0.52	0.95
trans-1,2-Dichloroethene	20.5	0.51	0.59	-15.12
1,1-Dichloroethane	20.1	0.50	0.57	-13.43
cis-1,2-Dichloroethene	21.0	0.53	0.61	-16.19
Chloroform	20.6	0.52	0.59	-14.56
1,1,1-Trichloroethane	20.0	0.50	0.56	-12.00
Benzene	20.9	0.52	0.60	-14.83
Trichloroethene	20.1	0.50	0.56	-11.44
Toluene	20.6	0.52	0.58	-12.62
Tetrachloroethene	20.2	0.51	0.52	-2.97
Ethyl Benzene	20.7	0.52	0.56	-8.21
m&p-Xylene	20.8	0.52	0.58	-11.54
o-Xylene	20.7	0.52	0.61	-17.87

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-075.D
Acq On : 23 Jan 2014 9:43
Operator : SJT
Sample : STD20140123-3 \ 0.5ppbv LLCCV
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 09:52:53 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	4.628	49	1931	10.00	ppbv		0.00
10) 1,4-Difluorobenzene	5.134	114	4765	10.00	ppbv		0.00
13) Chlorobenzene-d5	6.814	117	4909	10.00	ppbv		0.00
System Monitoring Compounds							
Target Compounds							Qvalue
2) Vinyl Chloride	1.944	62	62	0.64	ppbv	#	81
3) 1,1-Dichloroethene	3.381	61	92	0.56	ppbv		94
4) Methyl Tert Butyl Ether	3.835	73	112	0.52	ppbv	#	59
5) trans-1,2-Dichloroethene	3.897	61	87m	0.59	ppbv		
6) 1,1-Dichloroethane	4.128	63	100m	0.57	ppbv		
7) cis-1,2-Dichloroethene	4.465	61	85m	0.61	ppbv		
8) Chloroform	4.558	83	116	0.59	ppbv	#	81
9) 1,1,1-Trichloroethane	4.794	97	116	0.56	ppbv		96
11) Benzene	5.005	78	171	0.60	ppbv	#	90
12) Trichloroethene	5.340	130	86m	0.56	ppbv		
14) Toluene	6.020	91	197	0.58	ppbv		97
15) Tetrachloroethene	6.399	166	95m	0.52	ppbv		
16) Ethyl Benzene	6.866	91	226	0.56	ppbv	#	76
17) m,p-Xylene	6.911	91	181m	0.58	ppbv		
18) o-Xylene	7.163	91	192	0.61	ppbv	#	85

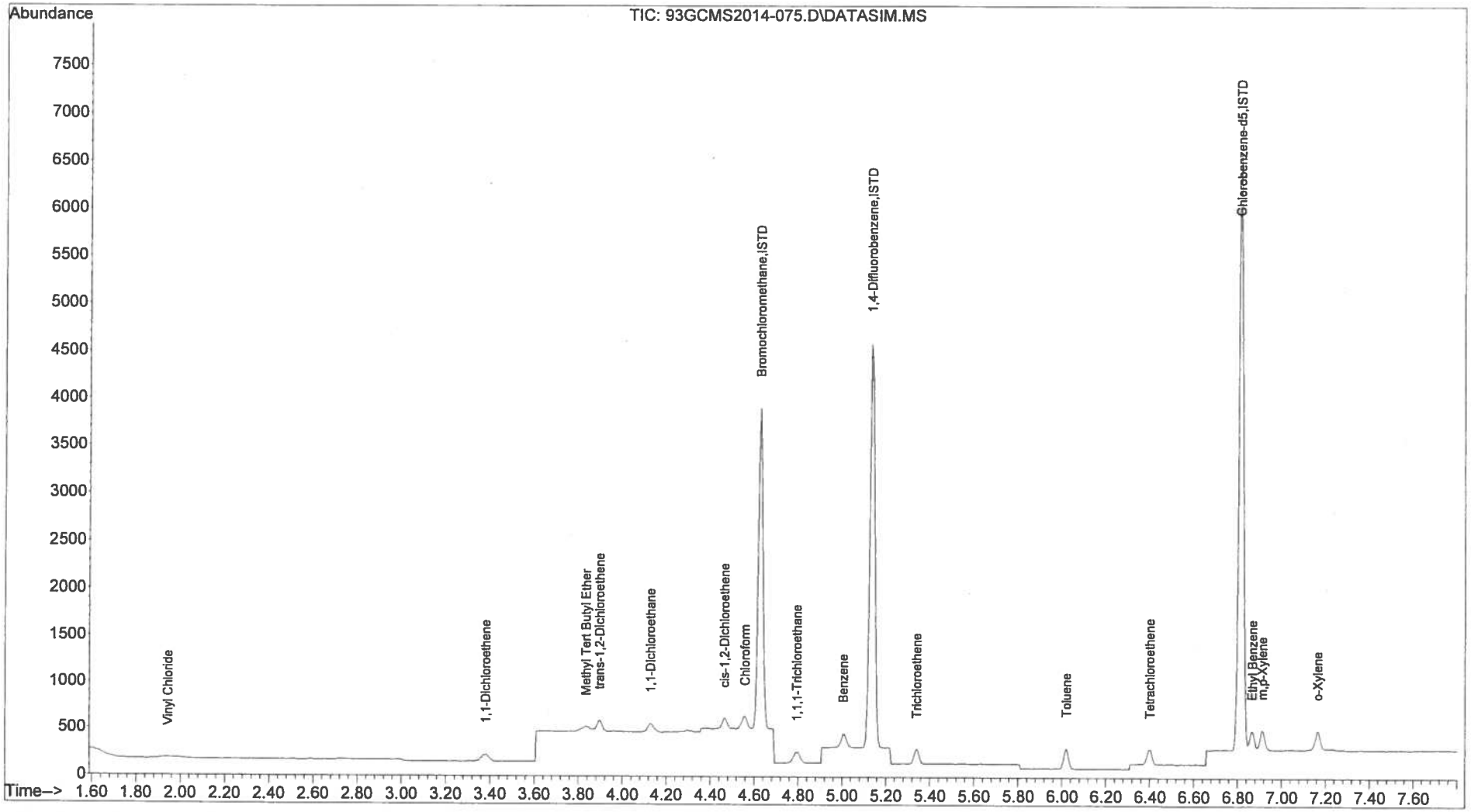
(#) = qualifier out of range (m) = manual integration (+) = signals summed

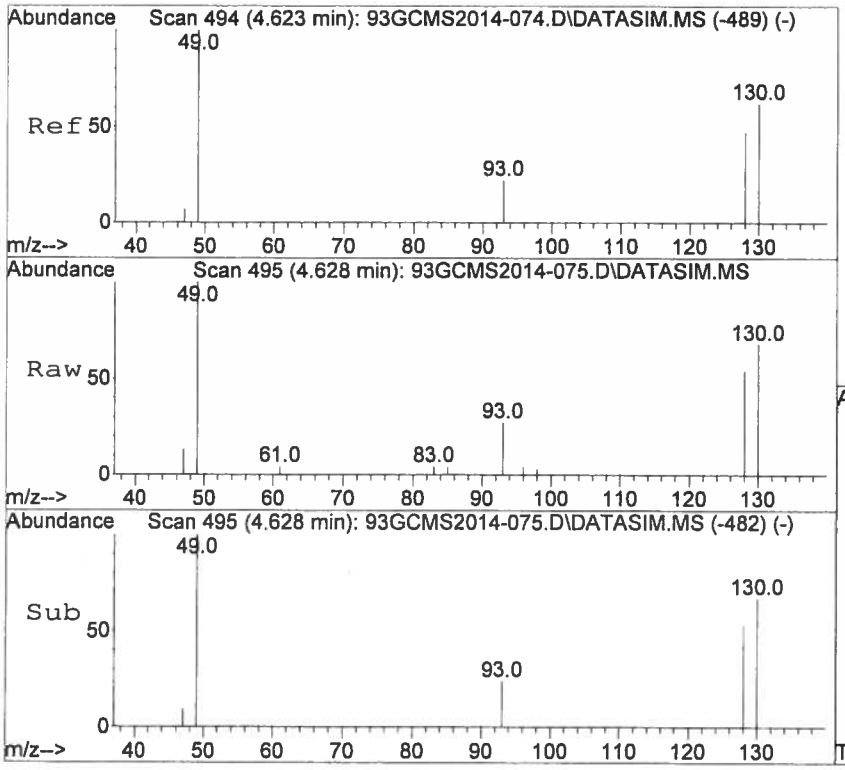
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-075.D
Acq On : 23 Jan 2014 9:43
Operator : SJT
Sample : STD20140123-3 \ 0.5ppbv LLCCV
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 09:52:53 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

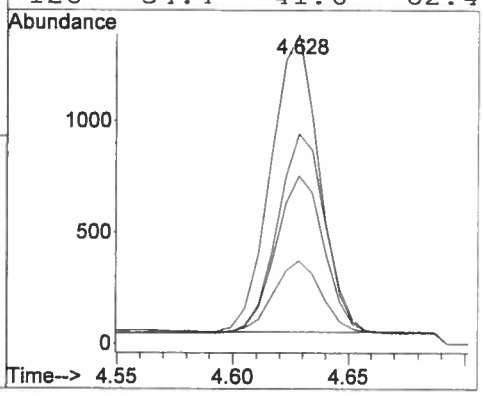


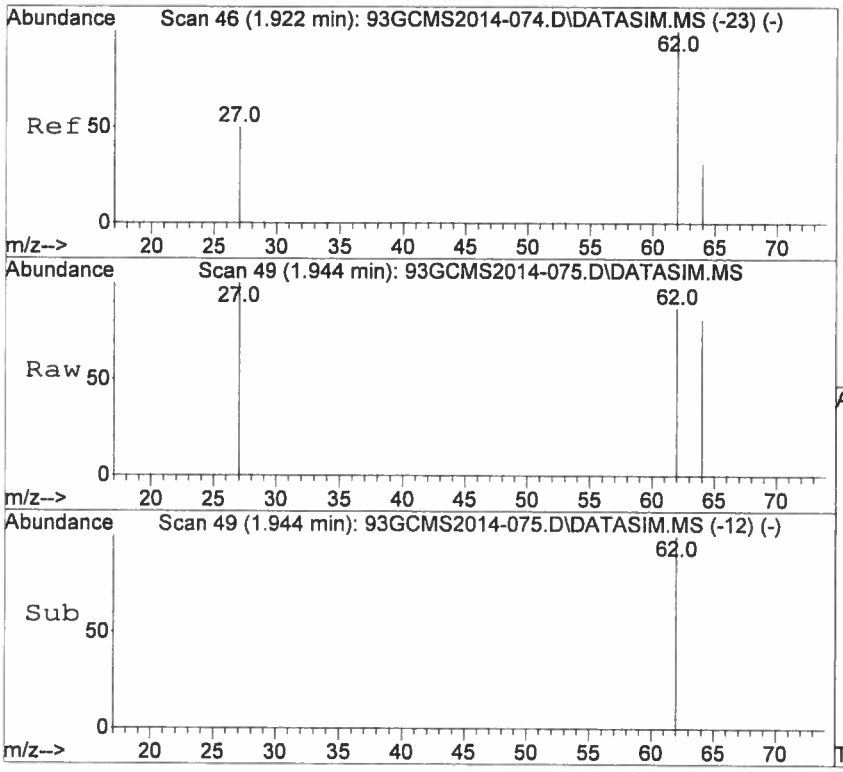


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.005 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 49 Resp: 1931

Ion	Ratio	Lower	Upper
49	100		
130	67.9	51.6	77.4
93	26.8	19.6	29.4
128	54.4	41.6	62.4

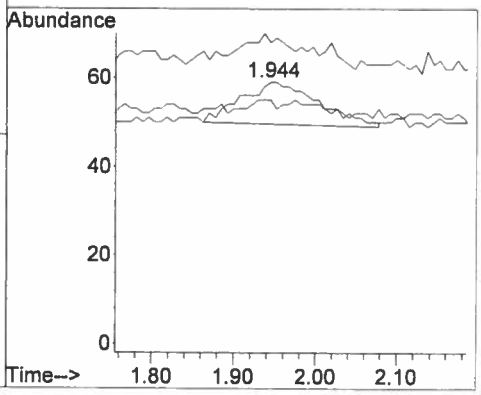


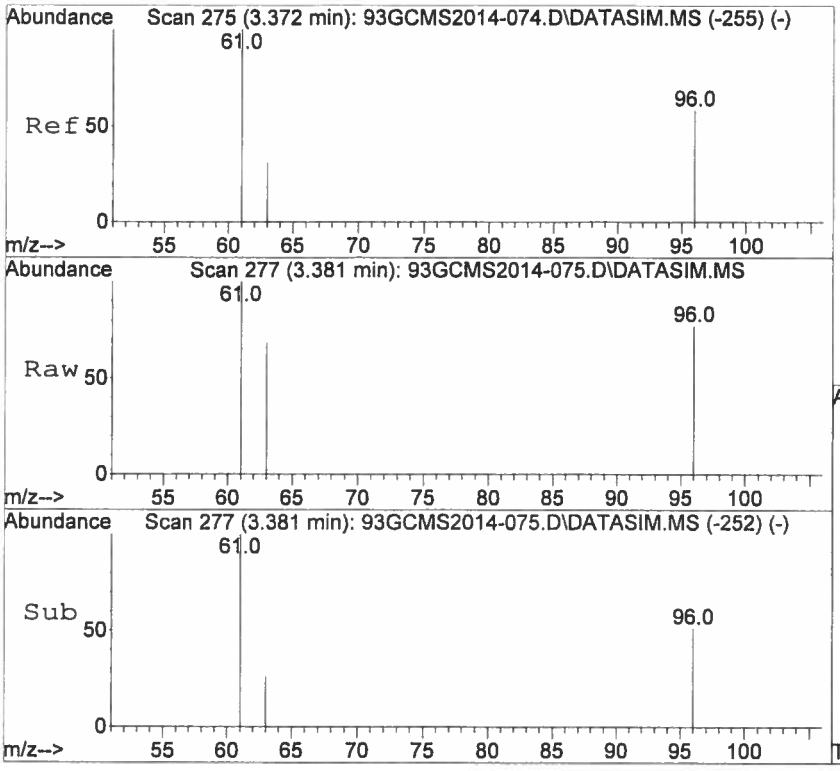


#2
Vinyl Chloride
Concen: 0.64 ppbv
RT: 1.944 min Scan# 49
Delta R.T. 0.022 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 62 Resp: 62

Ion	Ratio	Lower	Upper
62	100		
64	9.7	24.9	37.3#
27	51.6	37.8	56.6

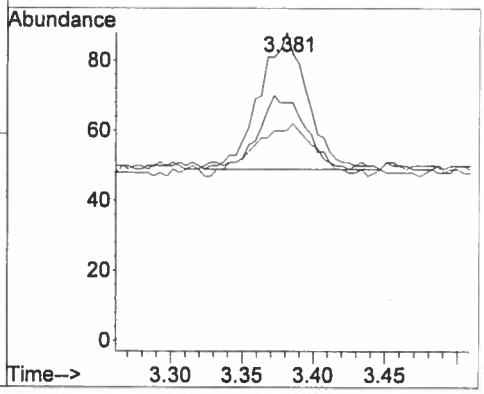


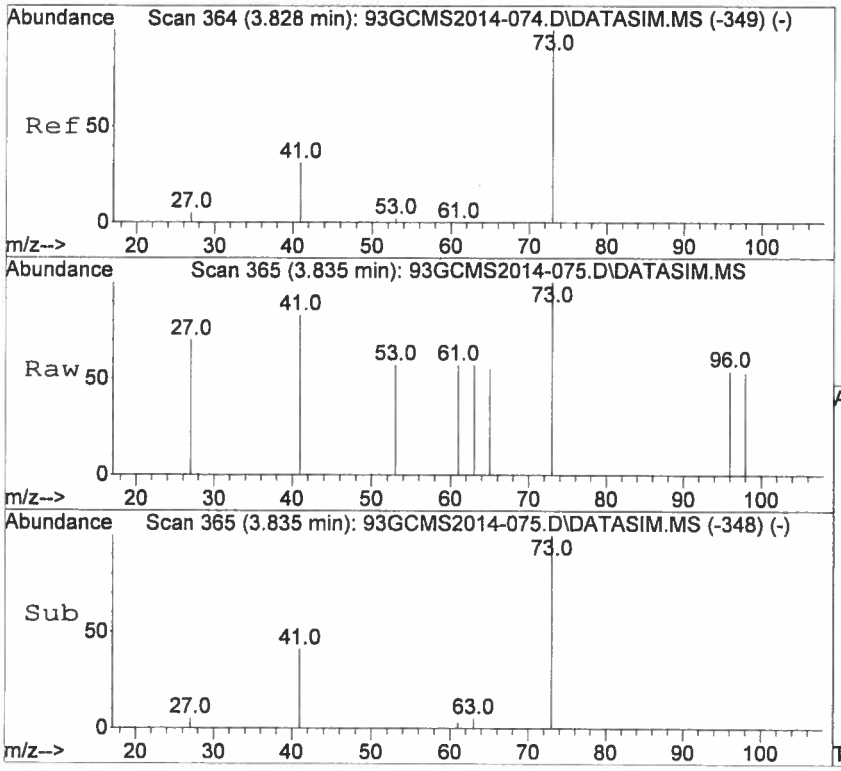


#3
1,1-Dichloroethene
Concen: 0.56 ppbv
RT: 3.381 min Scan# 277
Delta R.T. 0.009 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 61 Resp: 92

Ion	Ratio	Lower	Upper
61	100		
96	64.1	48.6	72.8
63	35.9	25.0	37.6

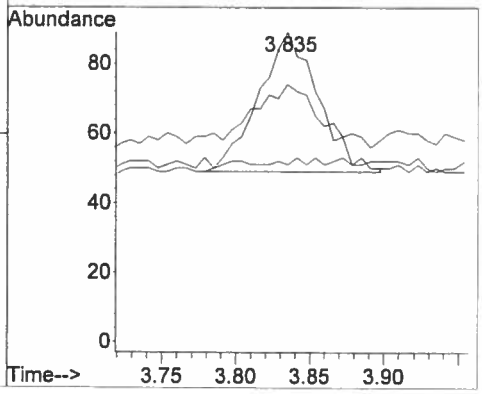


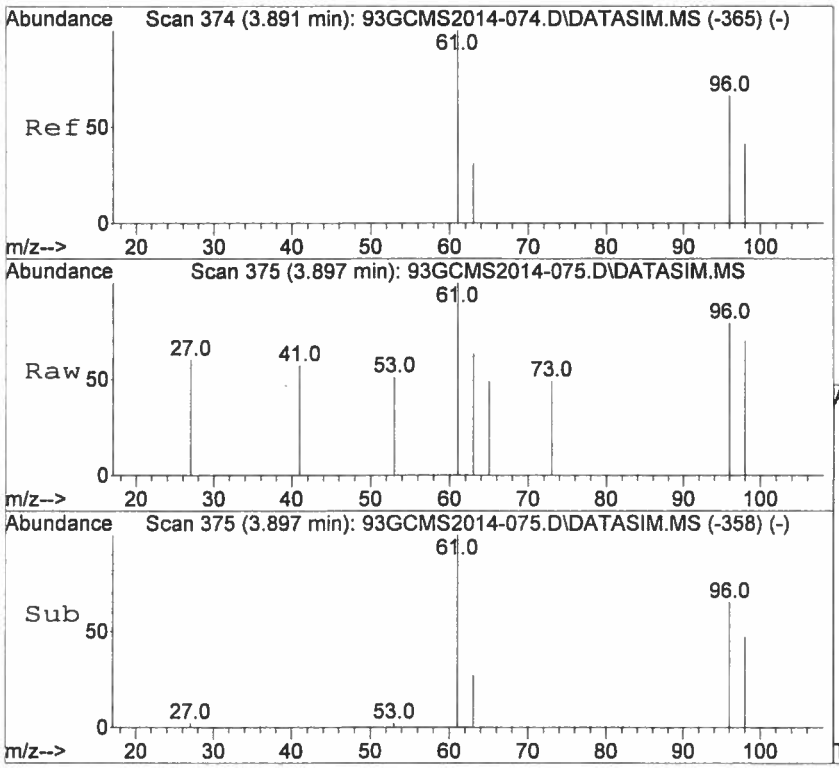


#4
Methyl Tert Butyl Ether
Concen: 0.52 ppbv
RT: 3.835 min Scan# 365
Delta R.T. 0.006 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 73 Resp: 112

Ion	Ratio	Lower	Upper
73	100		
53	1.8	1.1	1.7#
41	51.8	23.0	34.4#

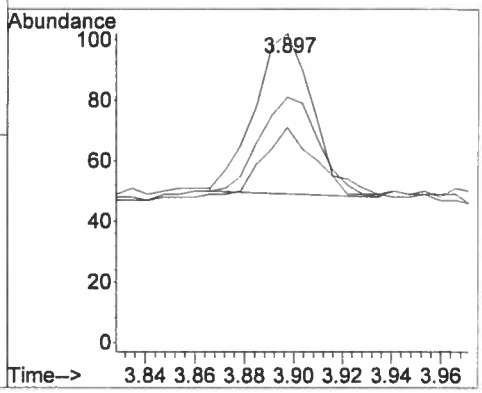


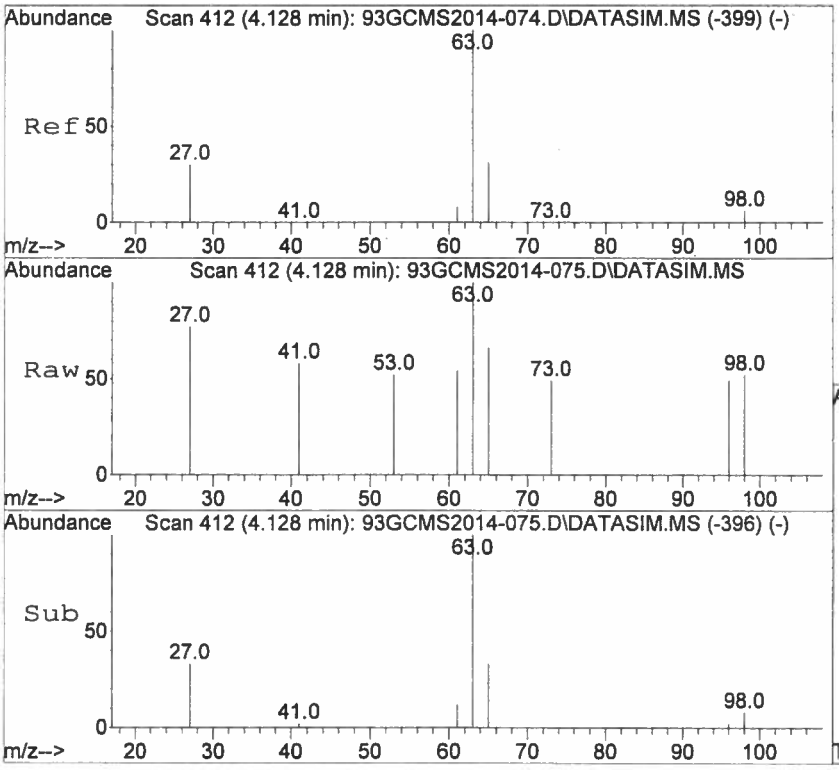


#5
trans-1,2-Dichloroethene
Concen: 0.59 ppbv m
RT: 3.897 min Scan# 375
Delta R.T. 0.006 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 61 Resp: 87

Ion	Ratio	Lower	Upper
61	100		
96	74.7	56.0	84.0
98	48.3	35.6	53.4

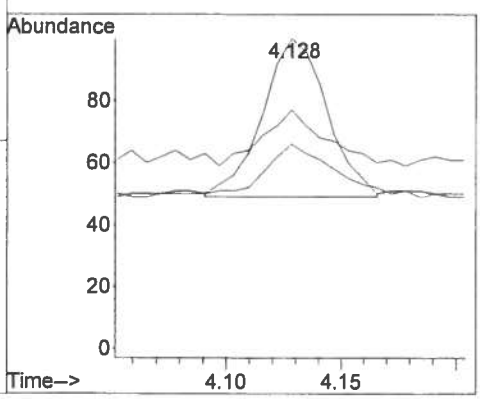


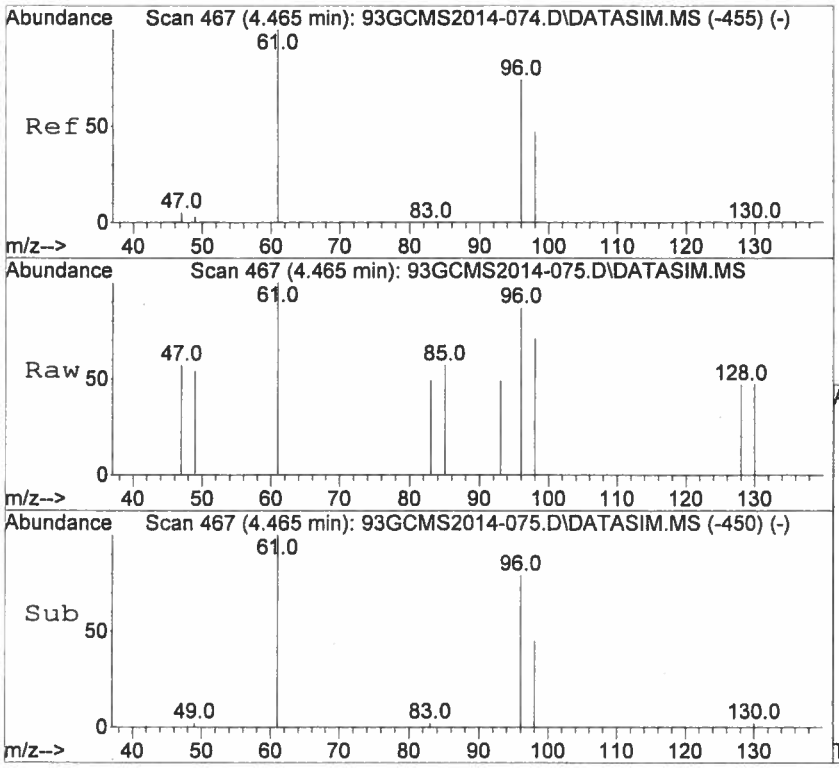


#6
1,1-Dichloroethane
Concen: 0.57 ppbv m
RT: 4.128 min Scan# 412
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 63 Resp: 100

Ion	Ratio	Lower	Upper
63	100		
65	36.0	24.7	37.1
27	34.0	22.6	34.0#

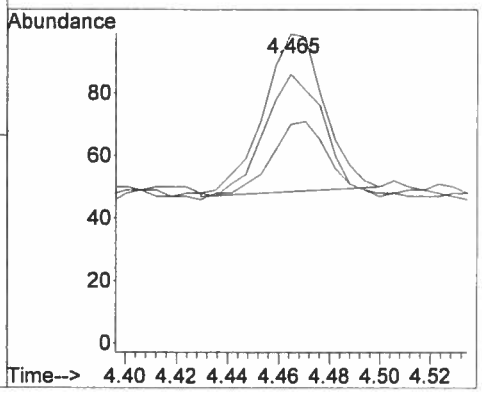


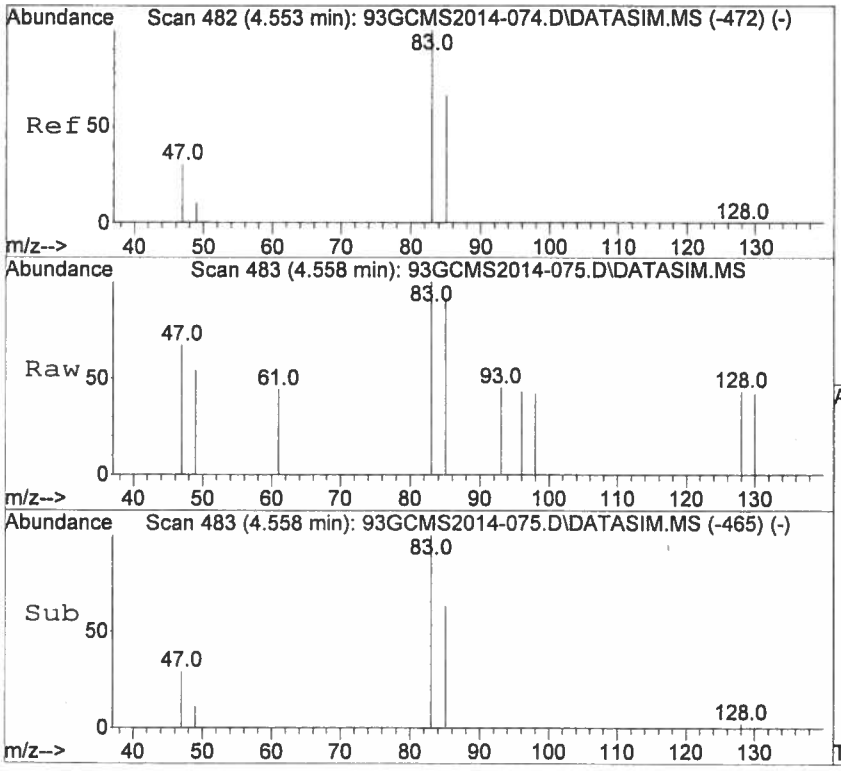


#7
cis-1,2-Dichloroethene
Concen: 0.61 ppbv m
RT: 4.465 min Scan# 467
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 61 Resp: 85

Ion	Ratio	Lower	Upper
61	100		
96	76.5	61.7	92.5
98	49.4	39.4	59.0

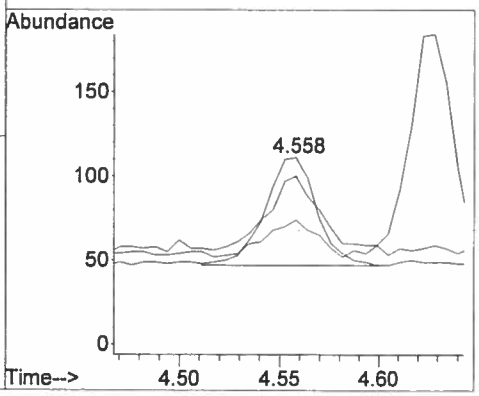


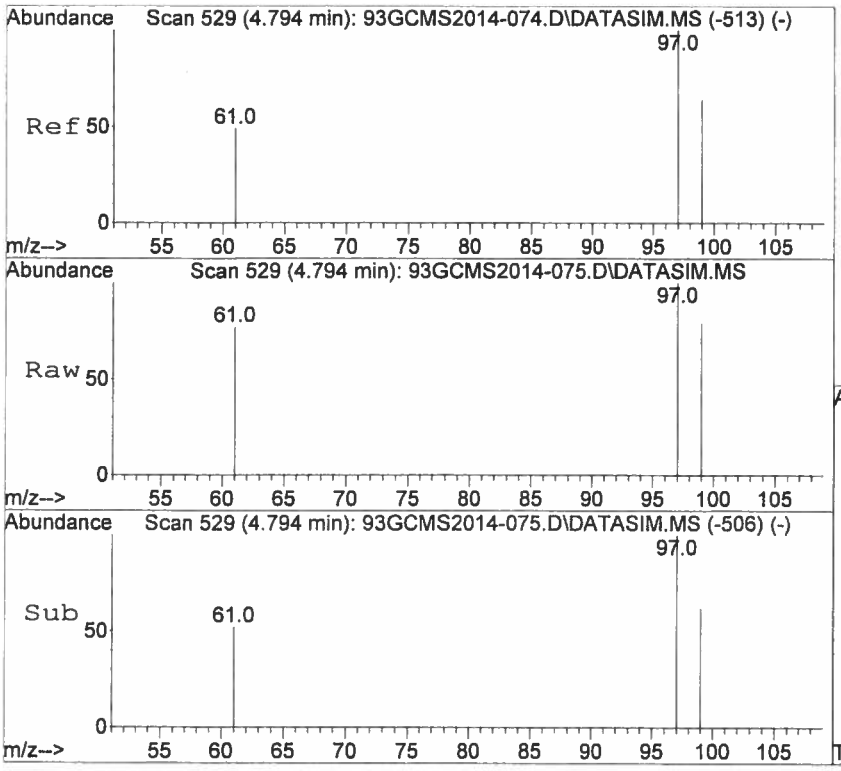


#8
Chloroform
Concen: 0.59 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.005 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 83 Resp: 116

Ion	Ratio	Lower	Upper
83	100		
85	81.0	52.0	78.0#
47	33.6	20.0	30.0#

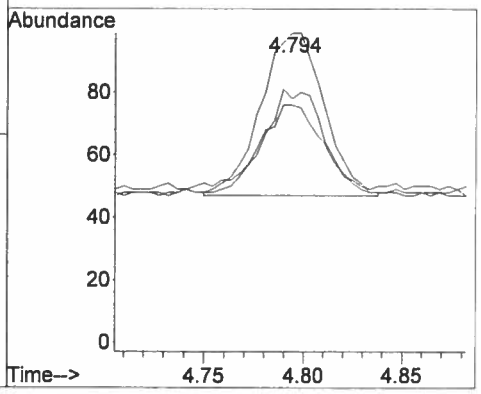


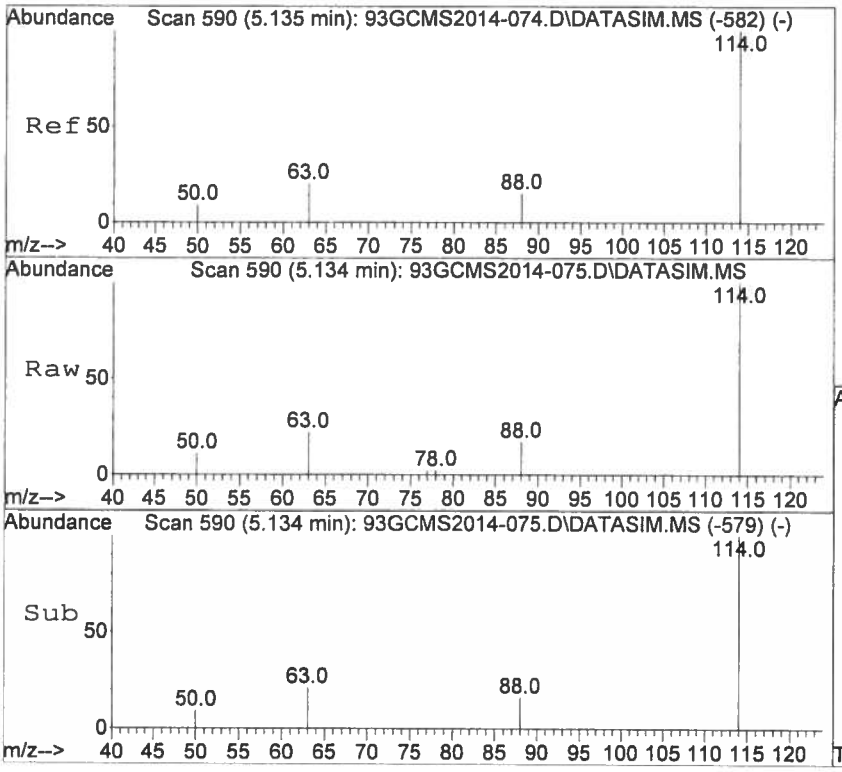


#9
1,1,1-Trichloroethane
Concen: 0.56 ppbv
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 97 Resp: 116

Ion	Ratio	Lower	Upper
97	100		
99	62.9	51.4	77.0
61	50.9	37.4	56.0

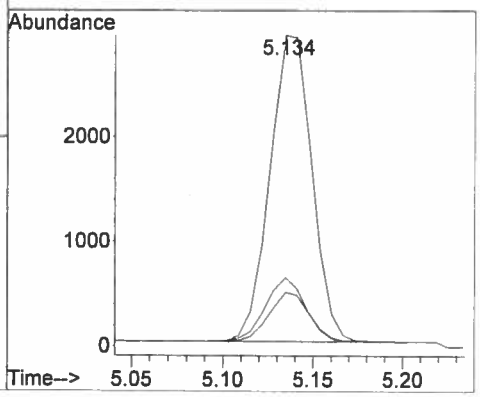


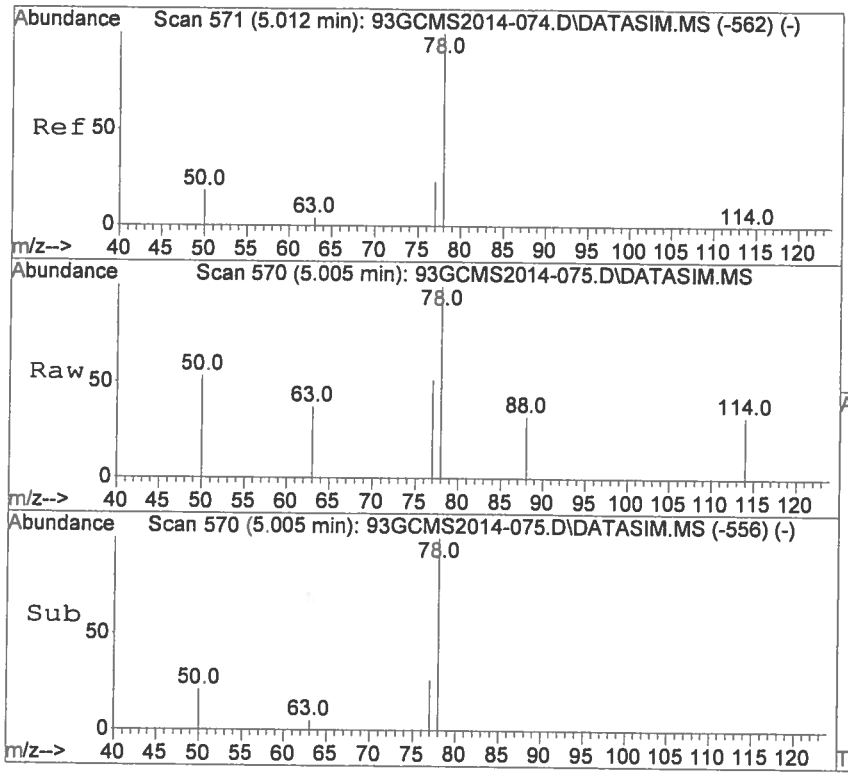


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.134 min Scan# 590
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion:114 Resp: 4765

Ion	Ratio	Lower	Upper
114	100		
63	19.8	15.1	22.7
88	15.5	12.0	18.0

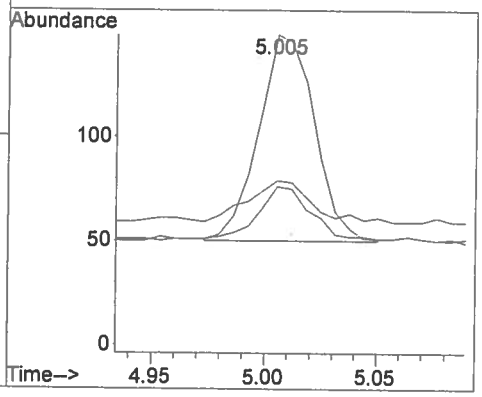


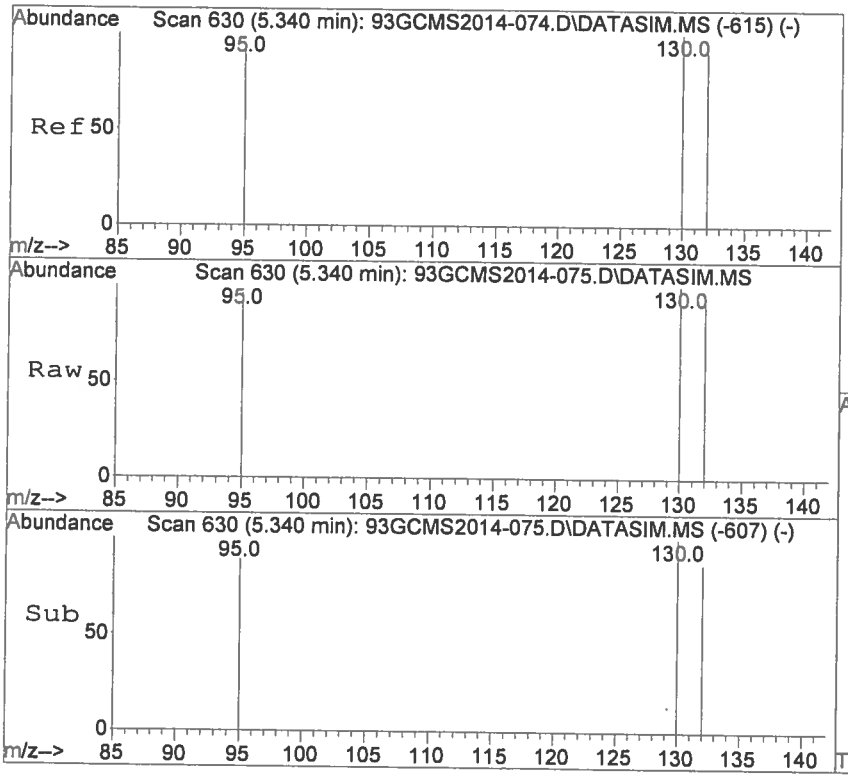


#11
Benzene
Concen: 0.60 ppbv
RT: 5.005 min Scan# 570
Delta R.T. -0.007 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 78 Resp: 171

Ion	Ratio	Lower	Upper
78	100		
77	27.5	18.4	27.6
50	22.8	14.6	21.8#

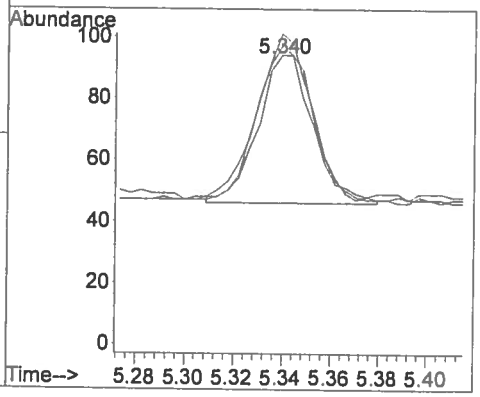


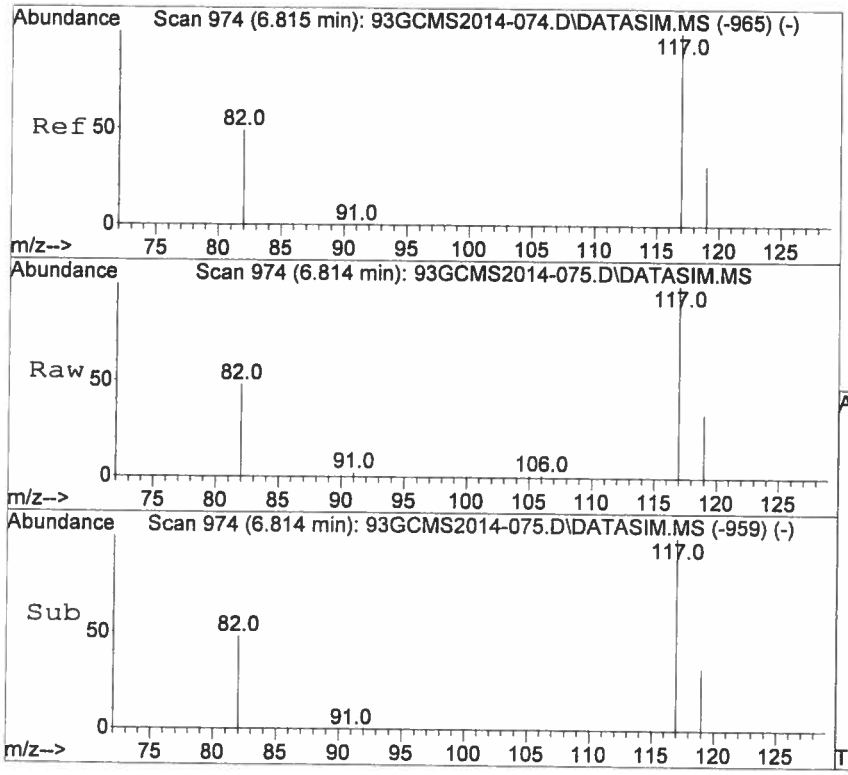


#12
Trichloroethene
Concen: 0.56 ppbv m
RT: 5.340 min Scan# 630
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion:130 Resp: 86

Ion	Ratio	Lower	Upper
130	100		
132	87.2	77.0	115.6
95	91.9	72.9	109.3

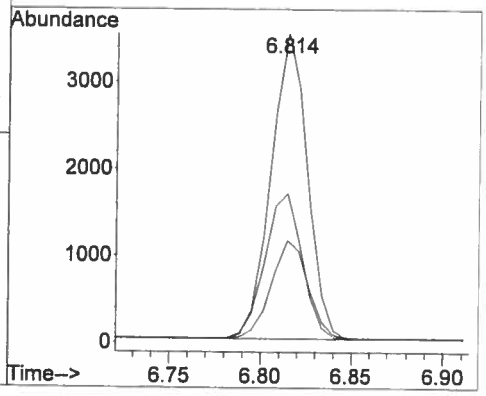


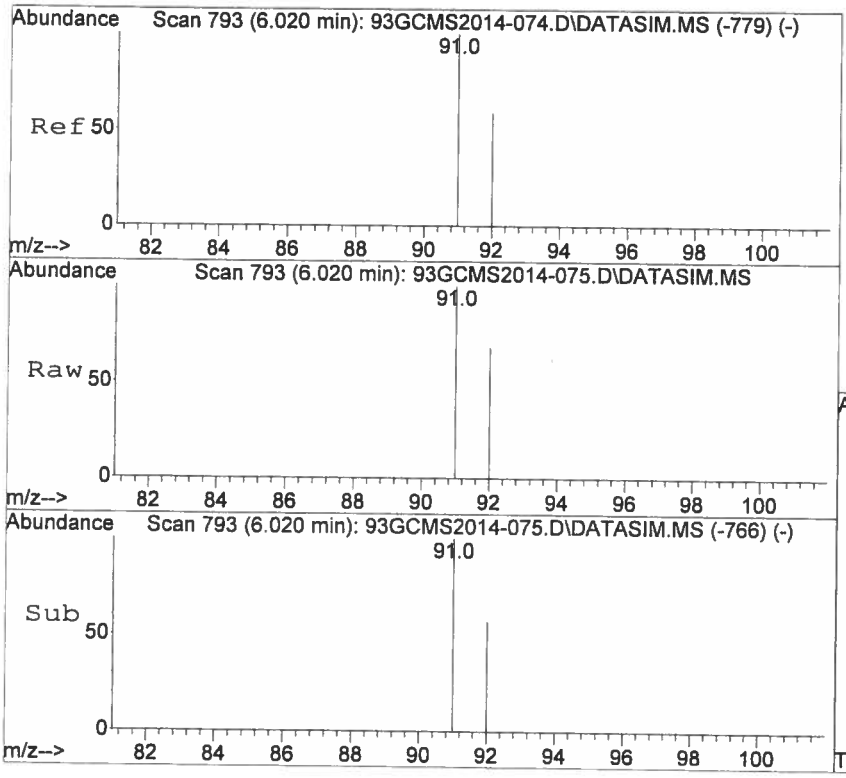


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion:117 Resp: 4909

Ion	Ratio	Lower	Upper
117	100		
82	48.6	37.8	56.6
119	32.3	25.6	38.4

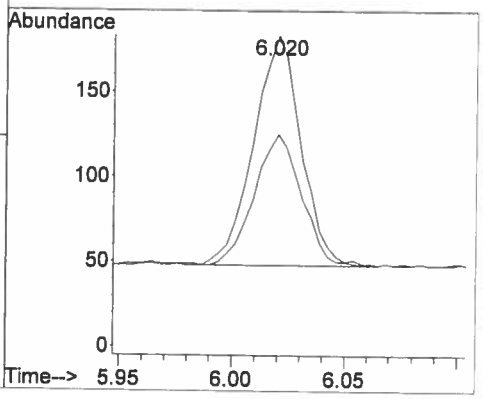


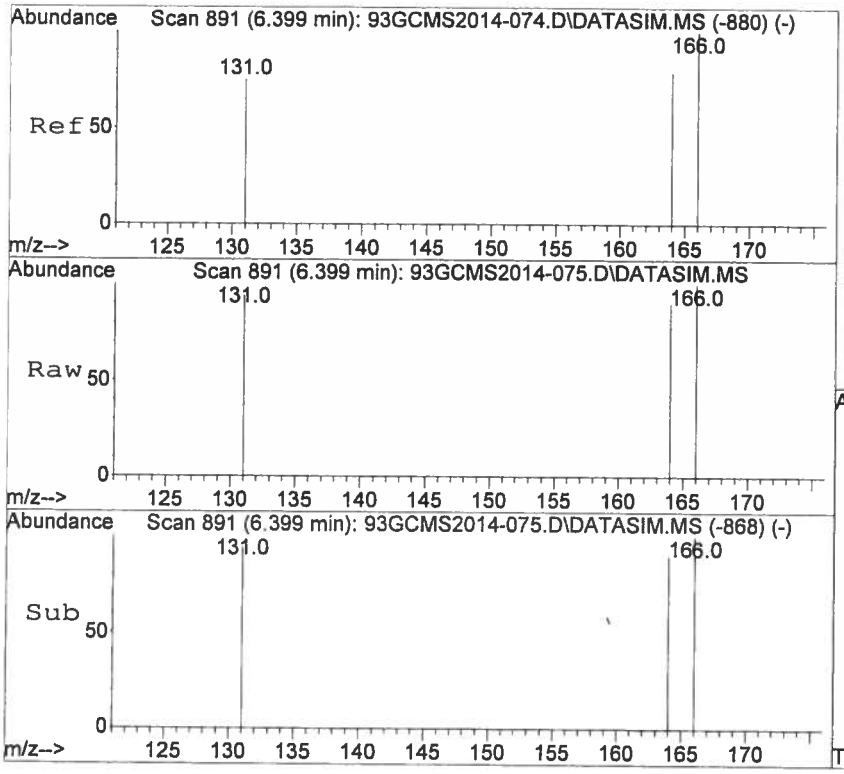


#14
Toluene
Concen: 0.58 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 91 Resp: 197

Ion	Ratio	Lower	Upper
91	100		
92	56.9	47.2	70.8

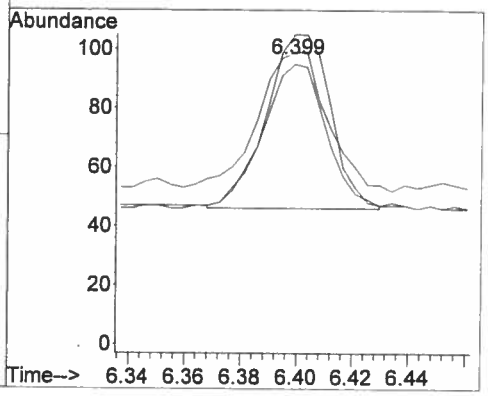


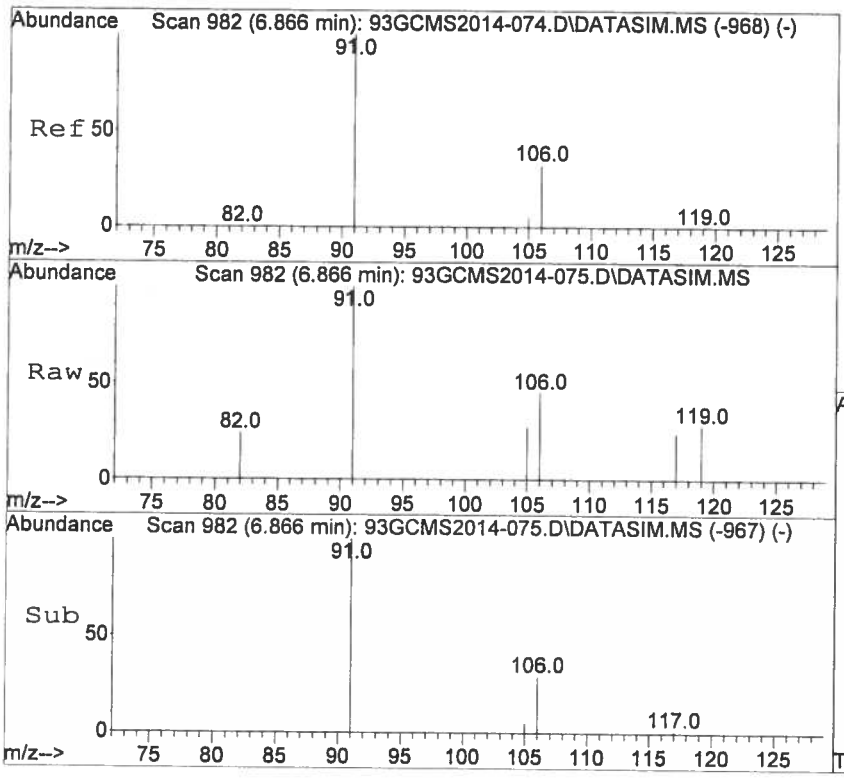


#15
Tetrachloroethene
Concen: 0.52 ppbv m
RT: 6.399 min Scan# 891
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion:166 Resp: 95

Ion	Ratio	Lower	Upper
166	100		
164	184.2	62.5	93.7#
131	203.2	58.6	88.0#

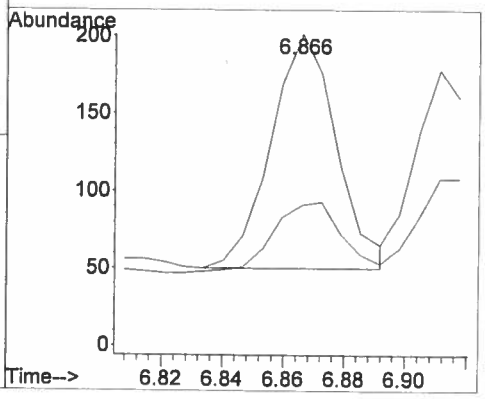


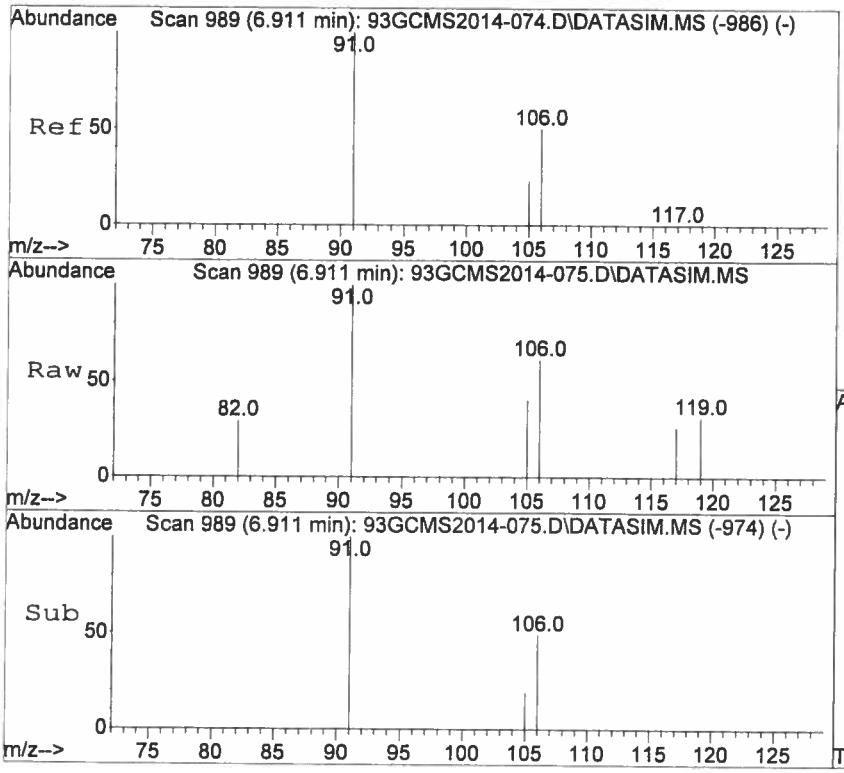


#16
Ethyl Benzene
Concen: 0.56 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 91 Resp: 226

Ion	Ratio	Lower	Upper
91	100		
106	45.3	25.6	38.4#

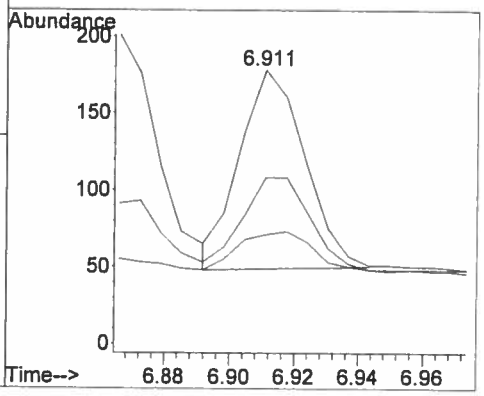


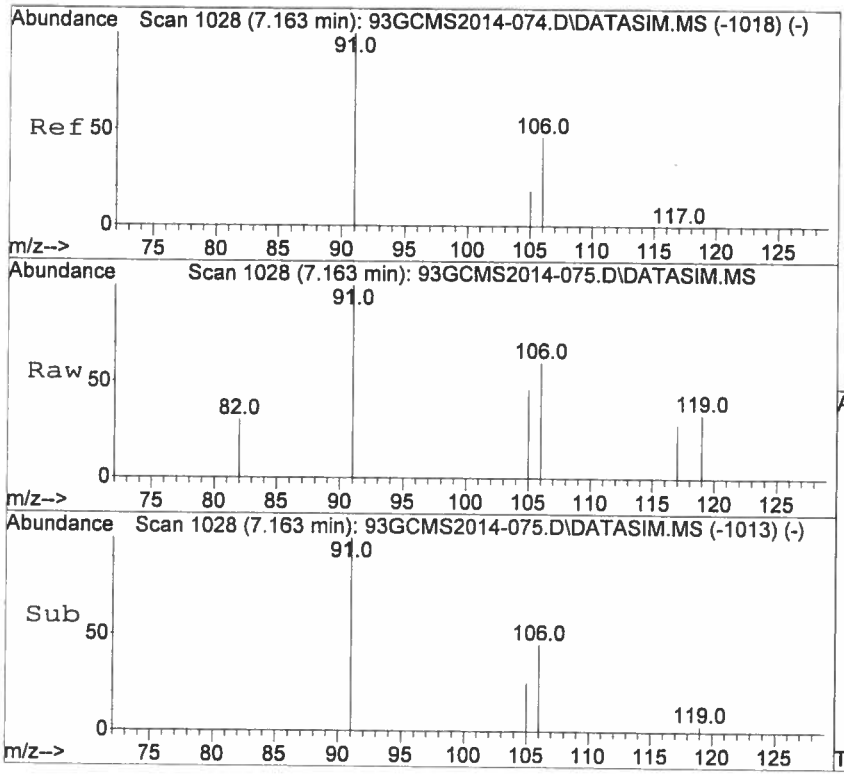


#17
m,p-Xylene
Concen: 0.58 ppbv m
RT: 6.911 min Scan# 989
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 91 Resp: 181

Ion	Ratio	Lower	Upper
91	100		
106	60.7	42.5	63.7
105	39.9	18.6	27.8#

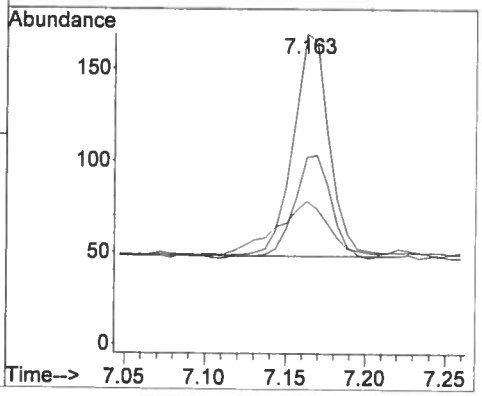




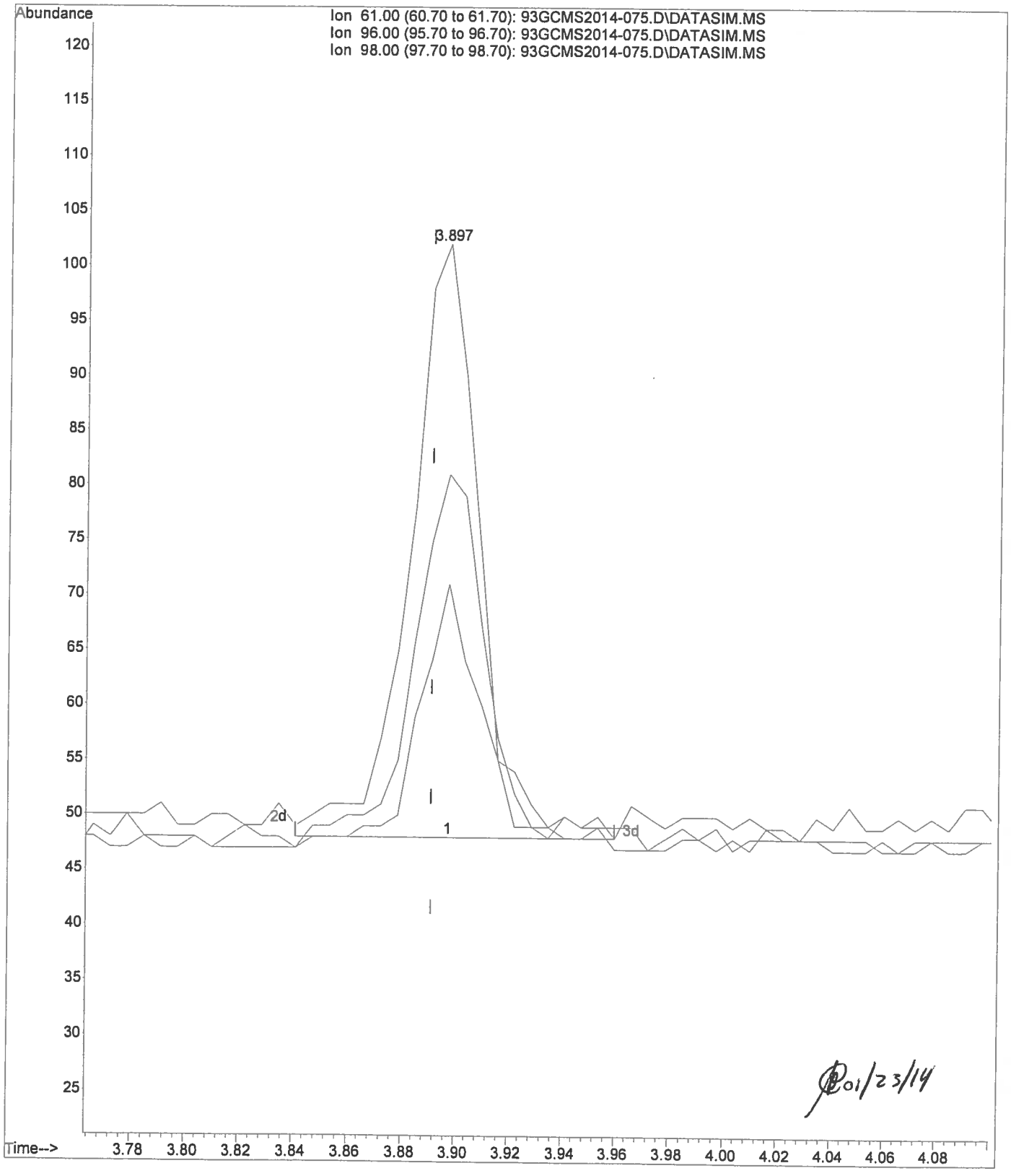
#18
o-Xylene
Concen: 0.61 ppbv
RT: 7.163 min Scan# 1028
Delta R.T. -0.000 min
Lab File: 93GCMS2014-075.D
Acq: 23 Jan 2014 9:43

Tgt Ion: 91 Resp: 192

Ion	Ratio	Lower	Upper
91	100		
106	47.4	39.3	58.9
105	41.1	15.4	23.2#

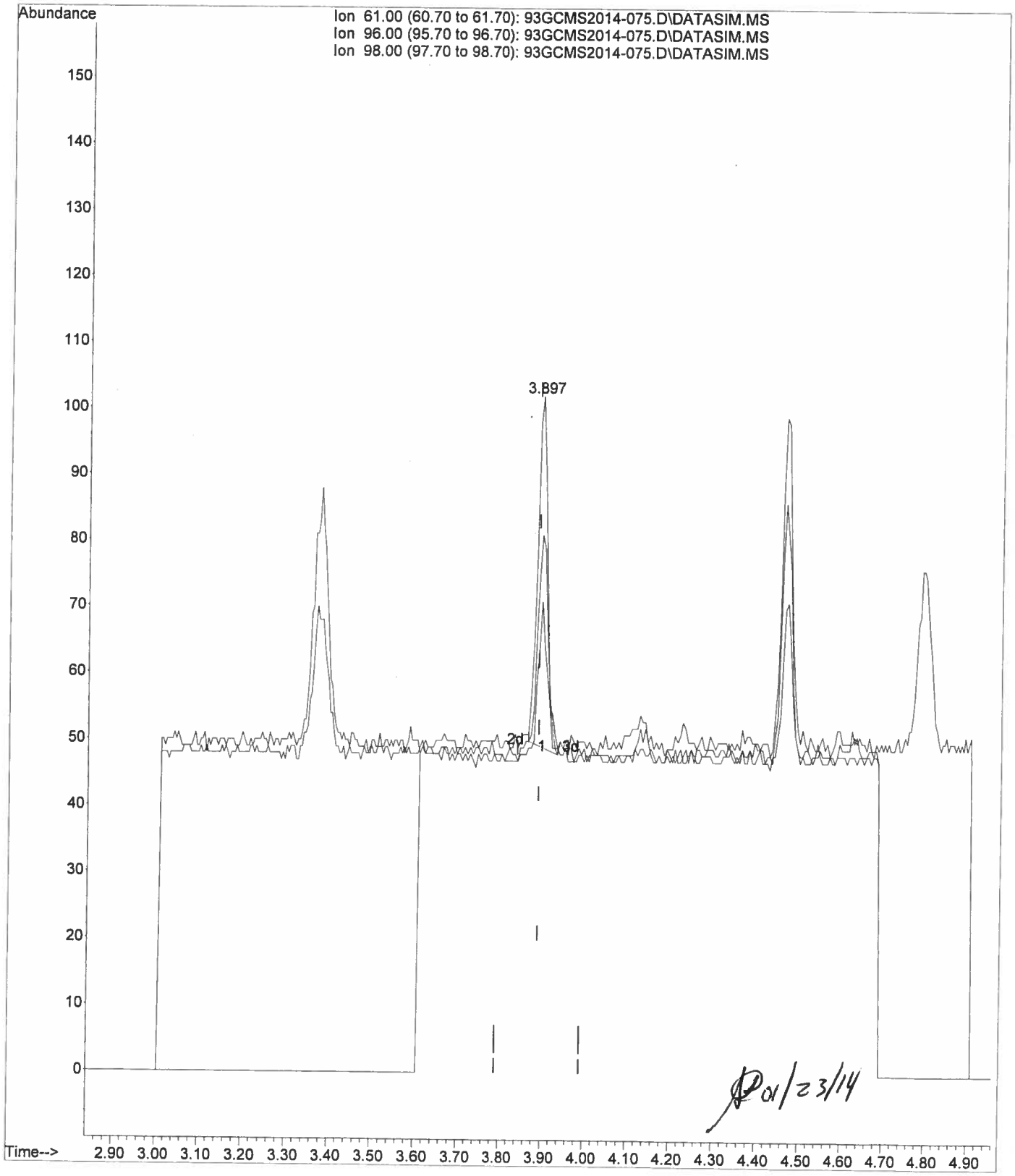


File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



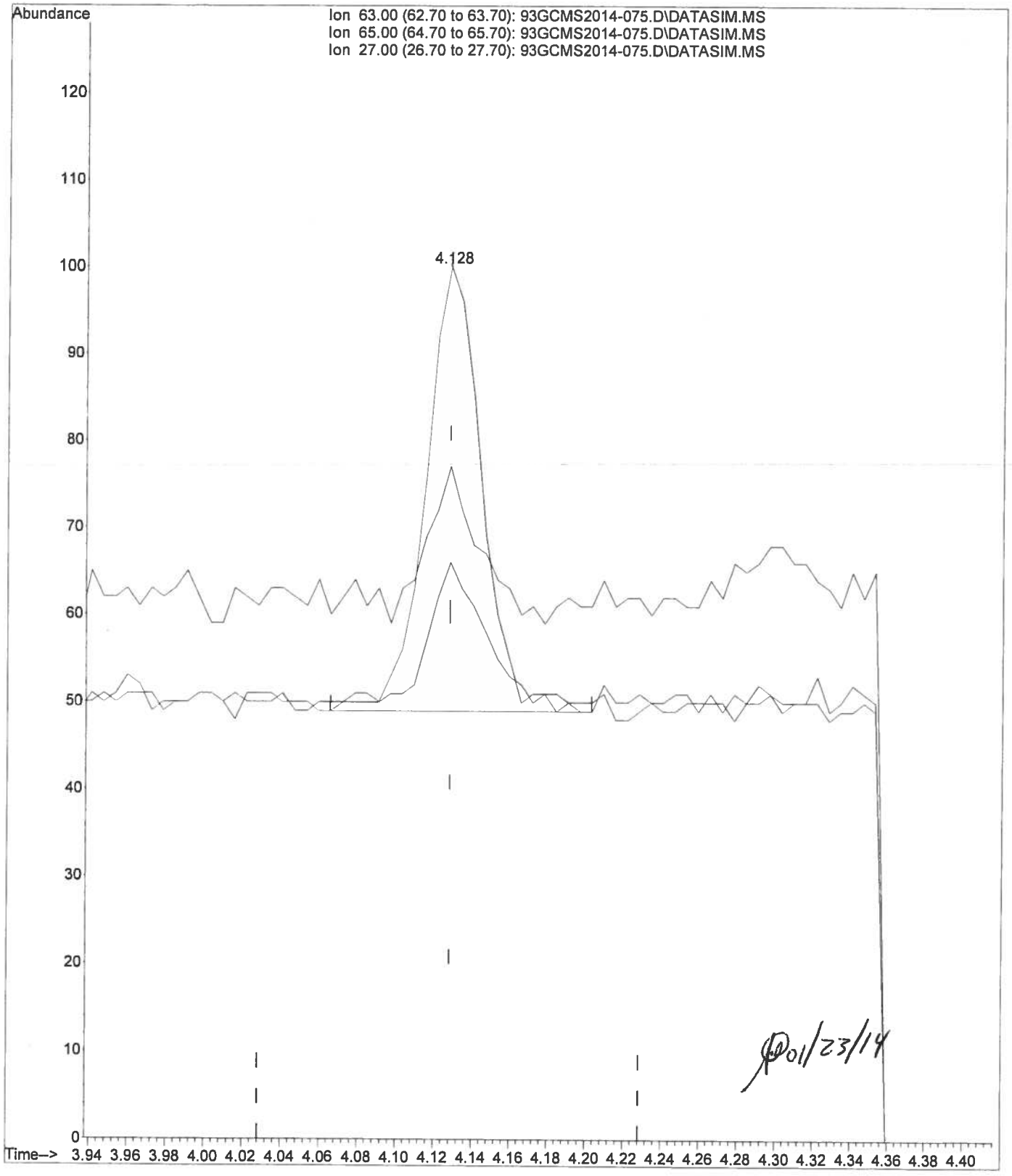
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



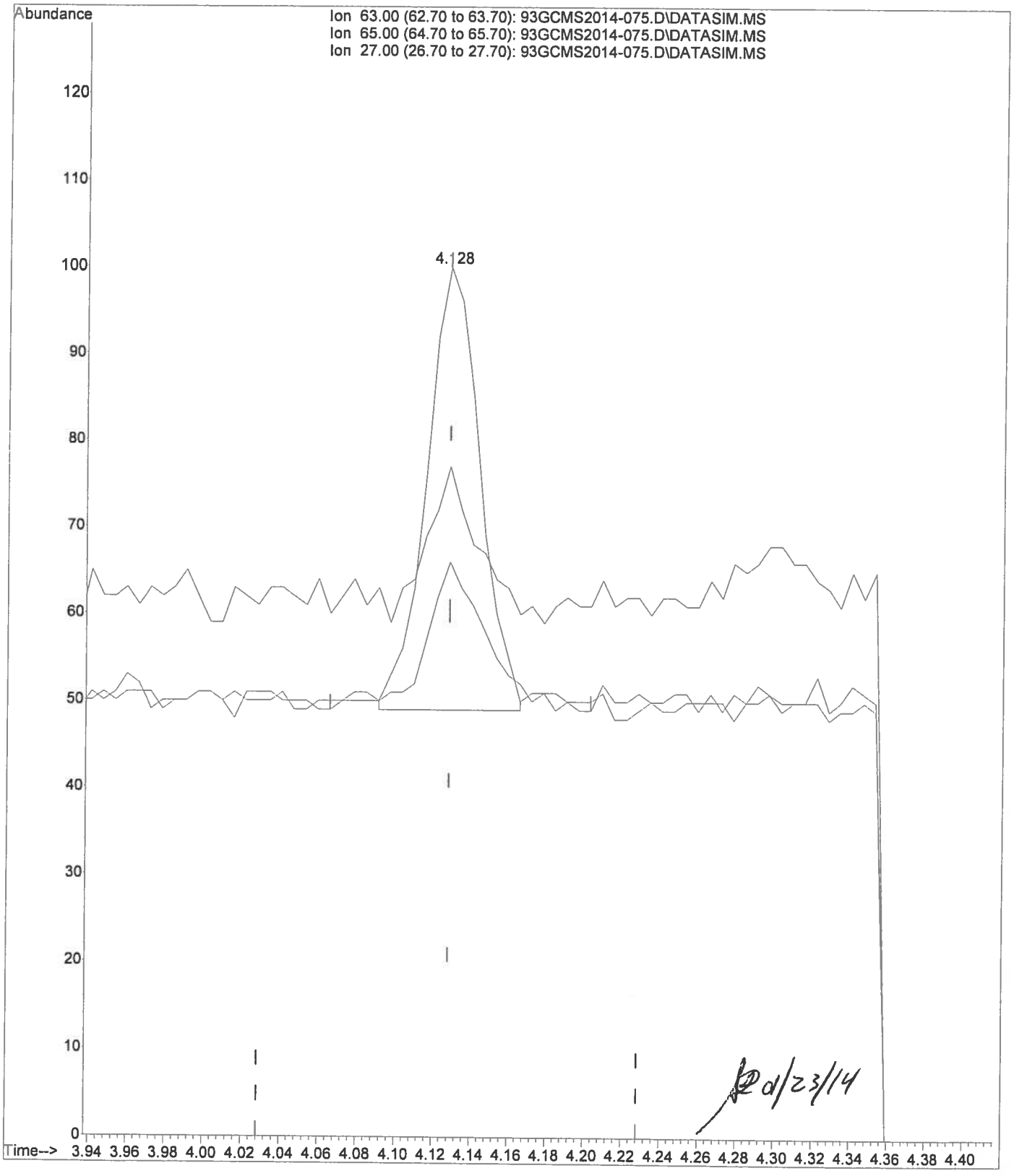
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1

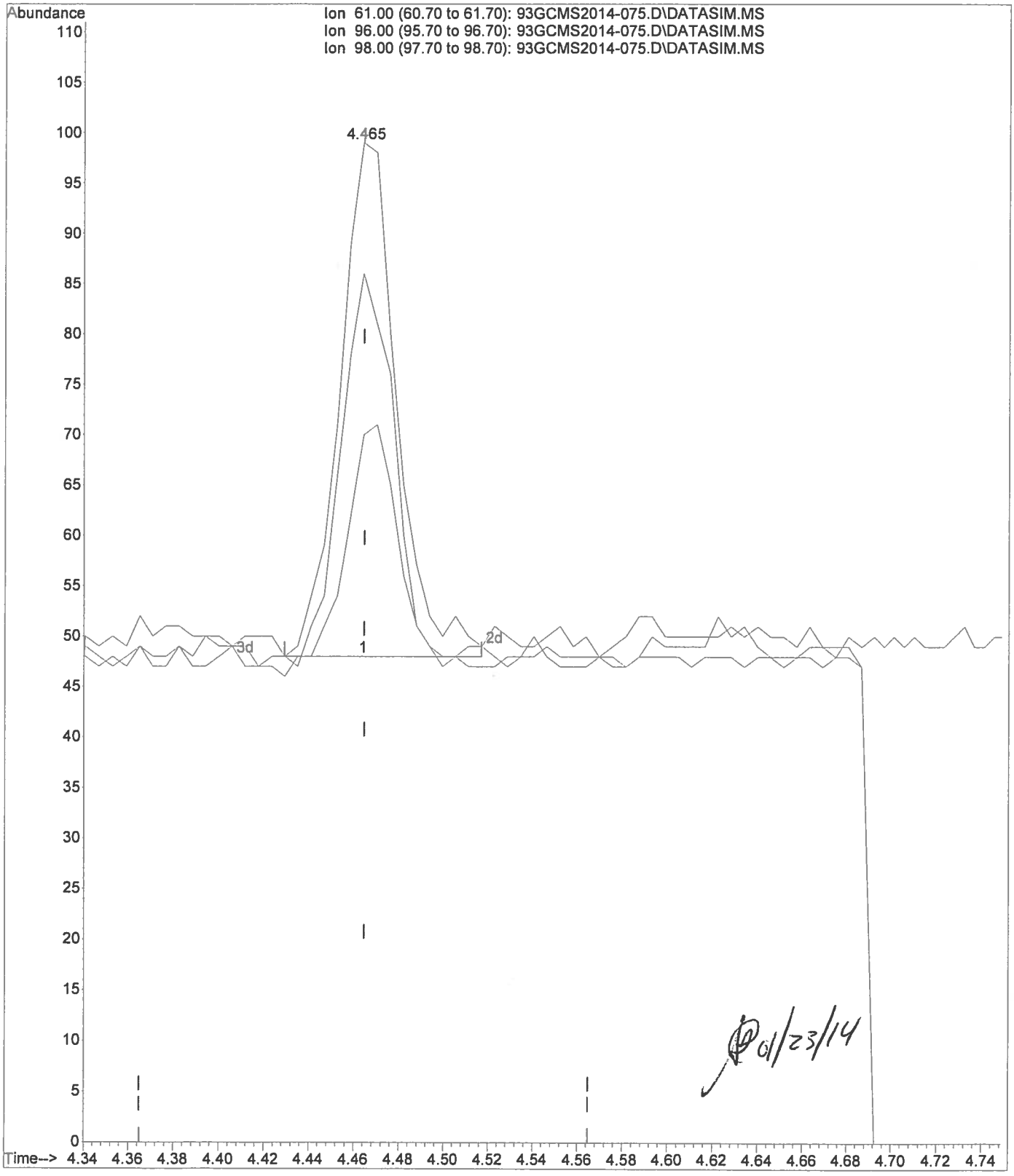


01/23/14

File : D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1

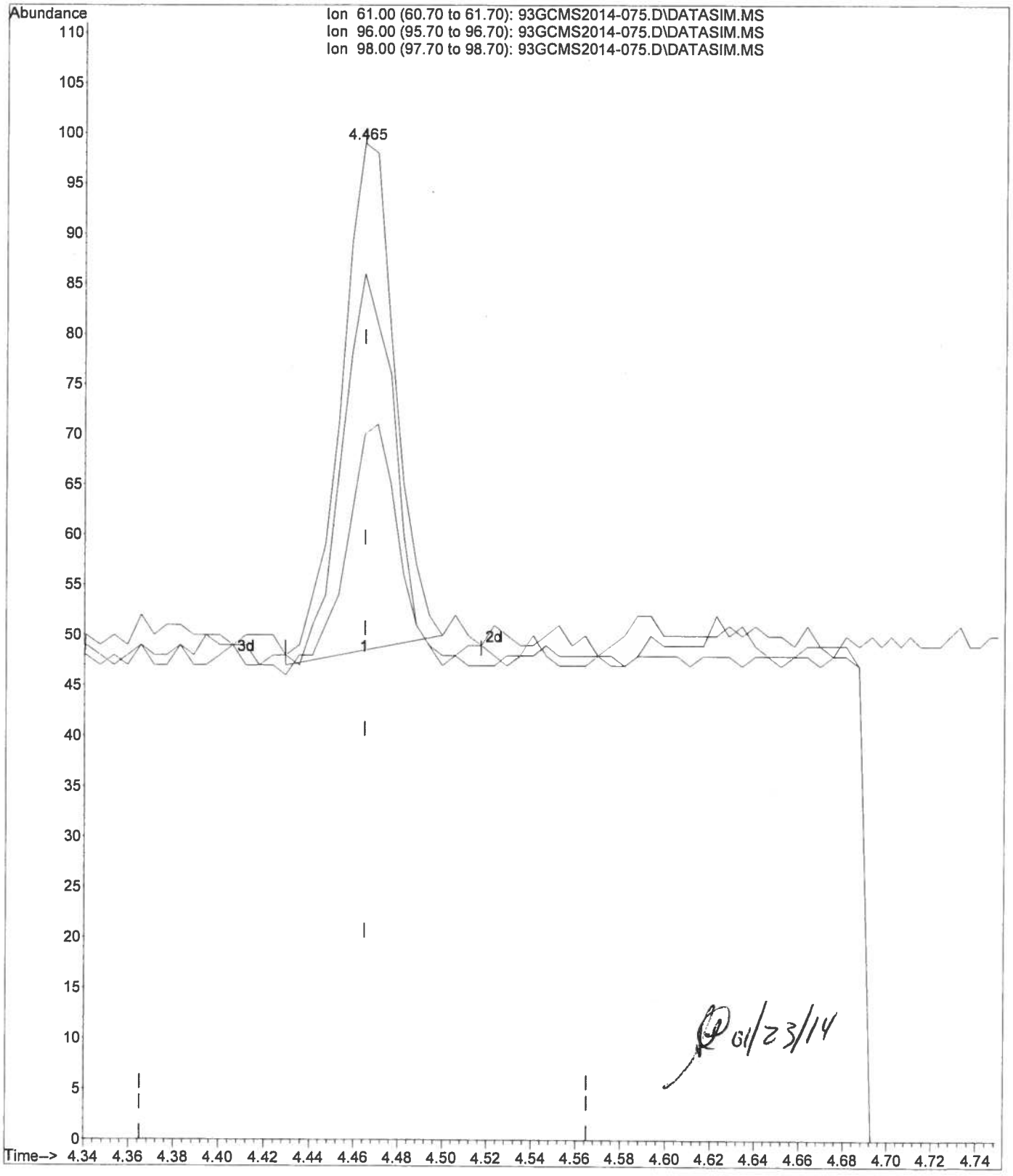


File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



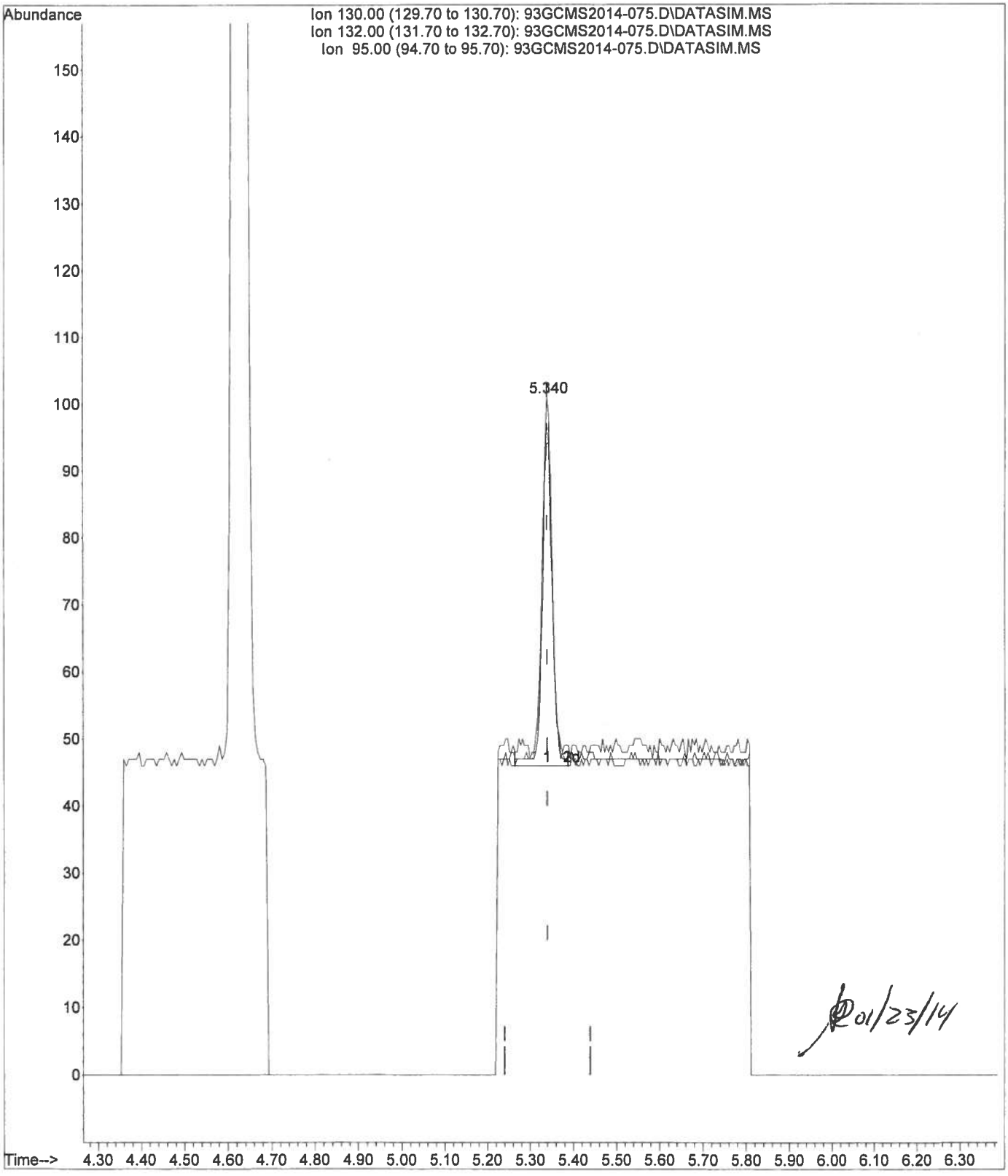
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



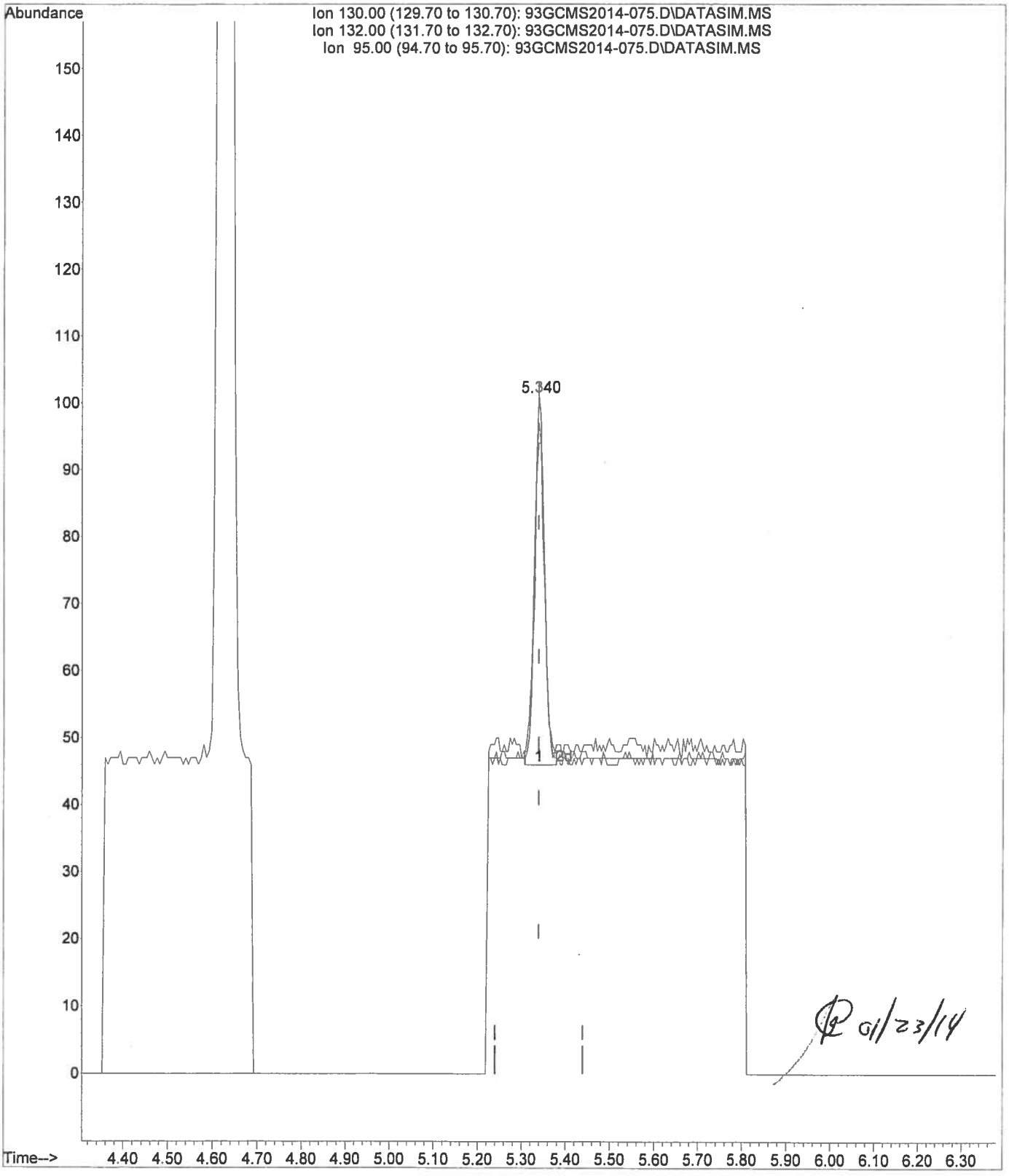
61/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



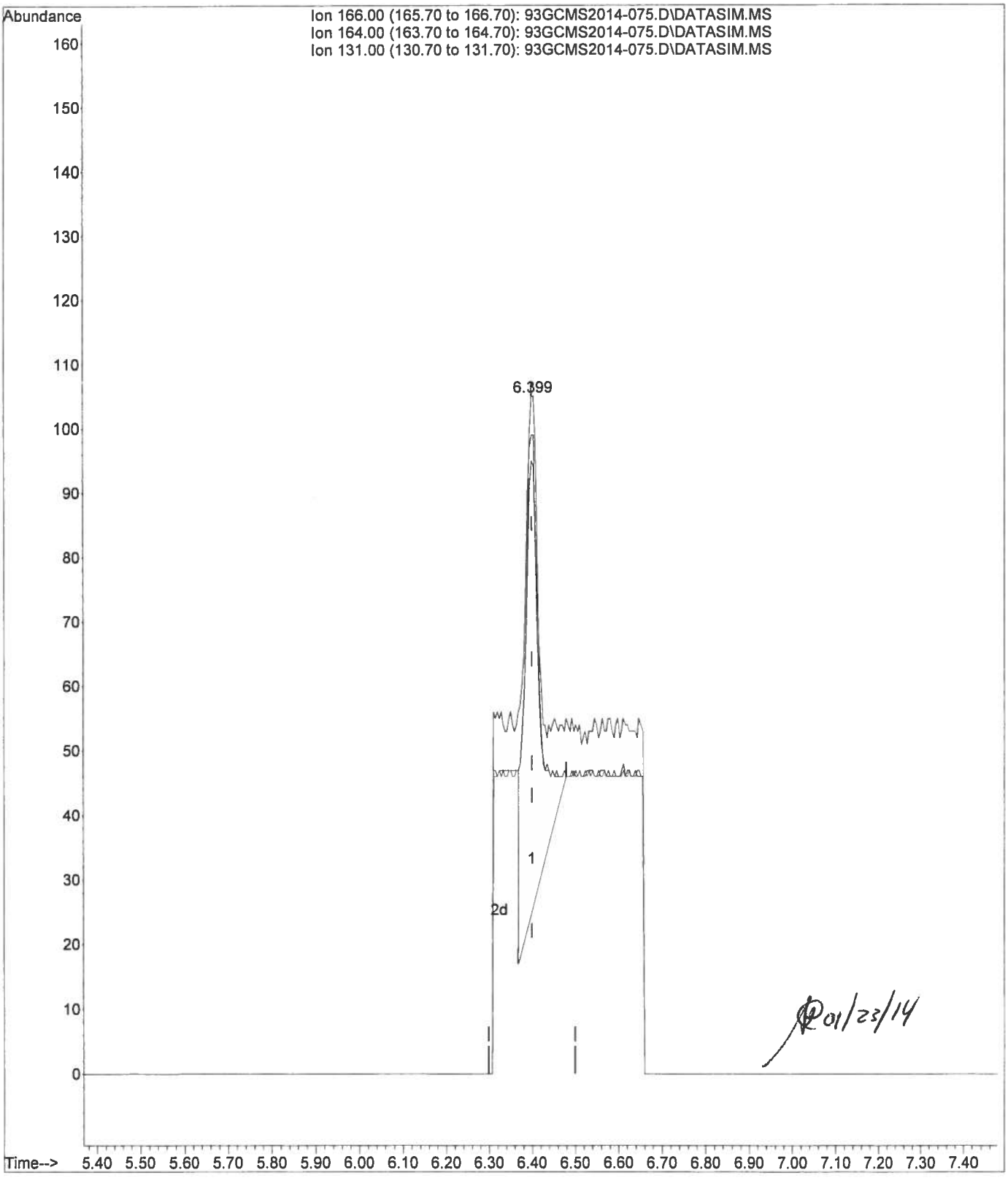
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



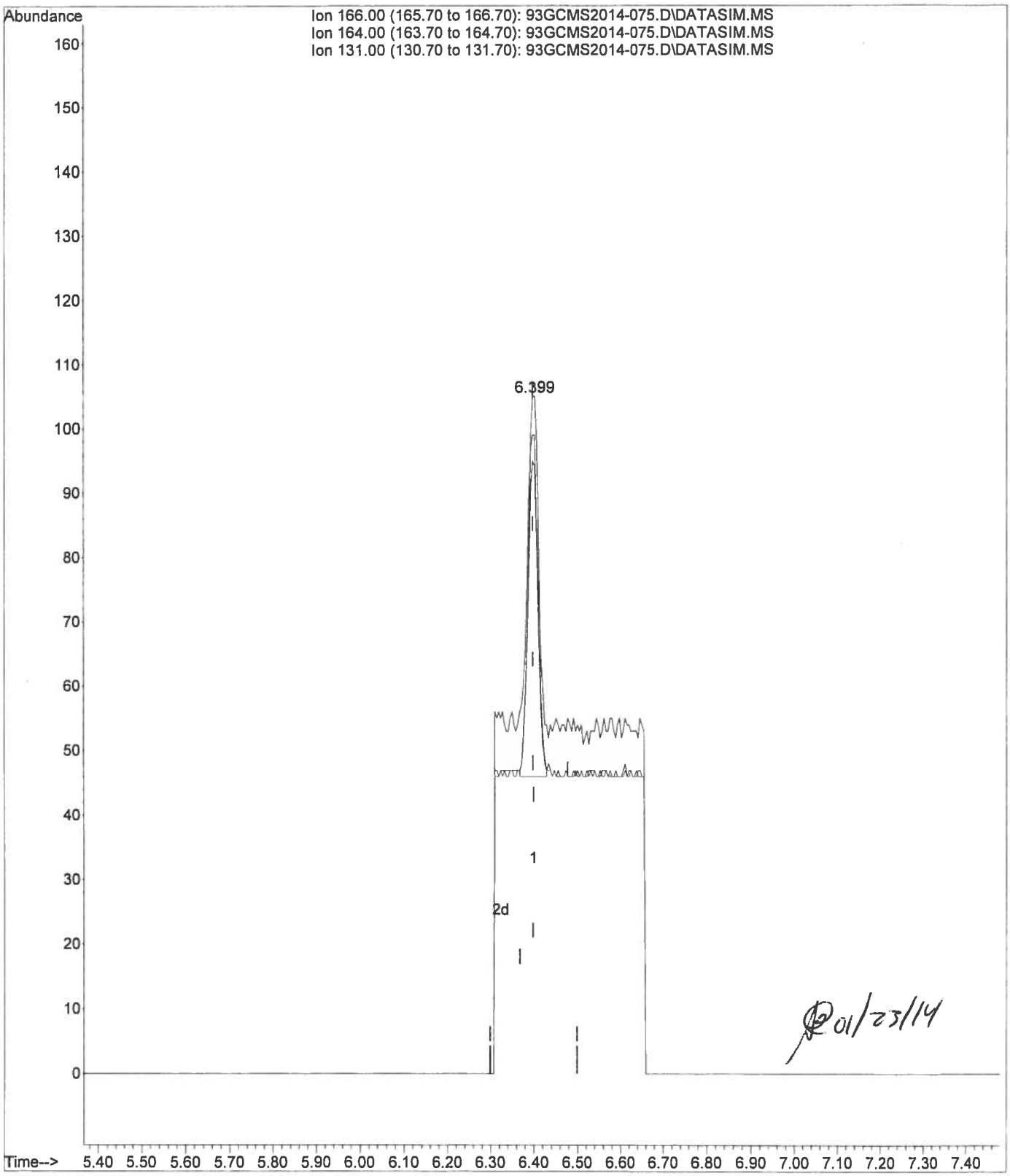
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



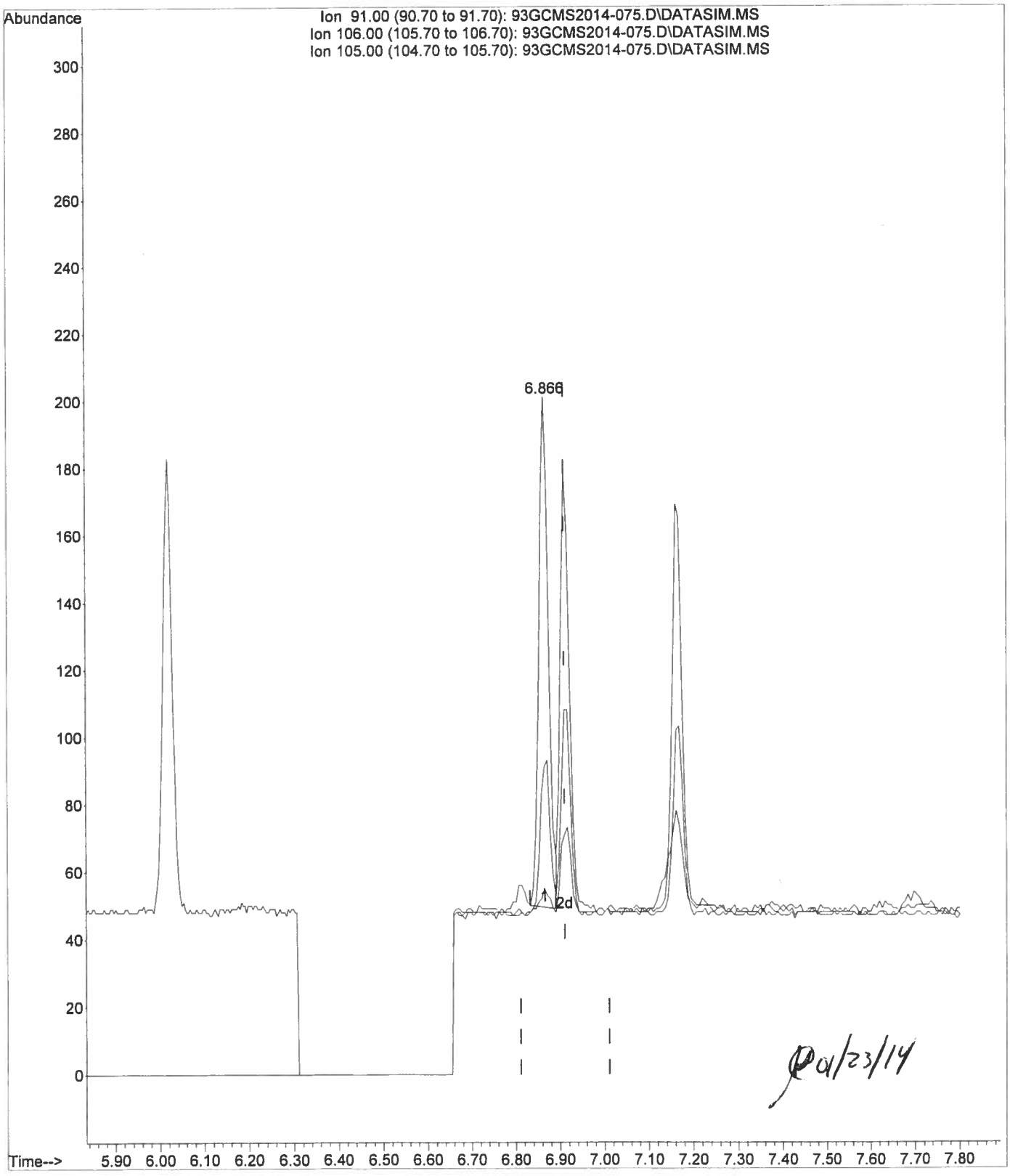
01/23/14

File : D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



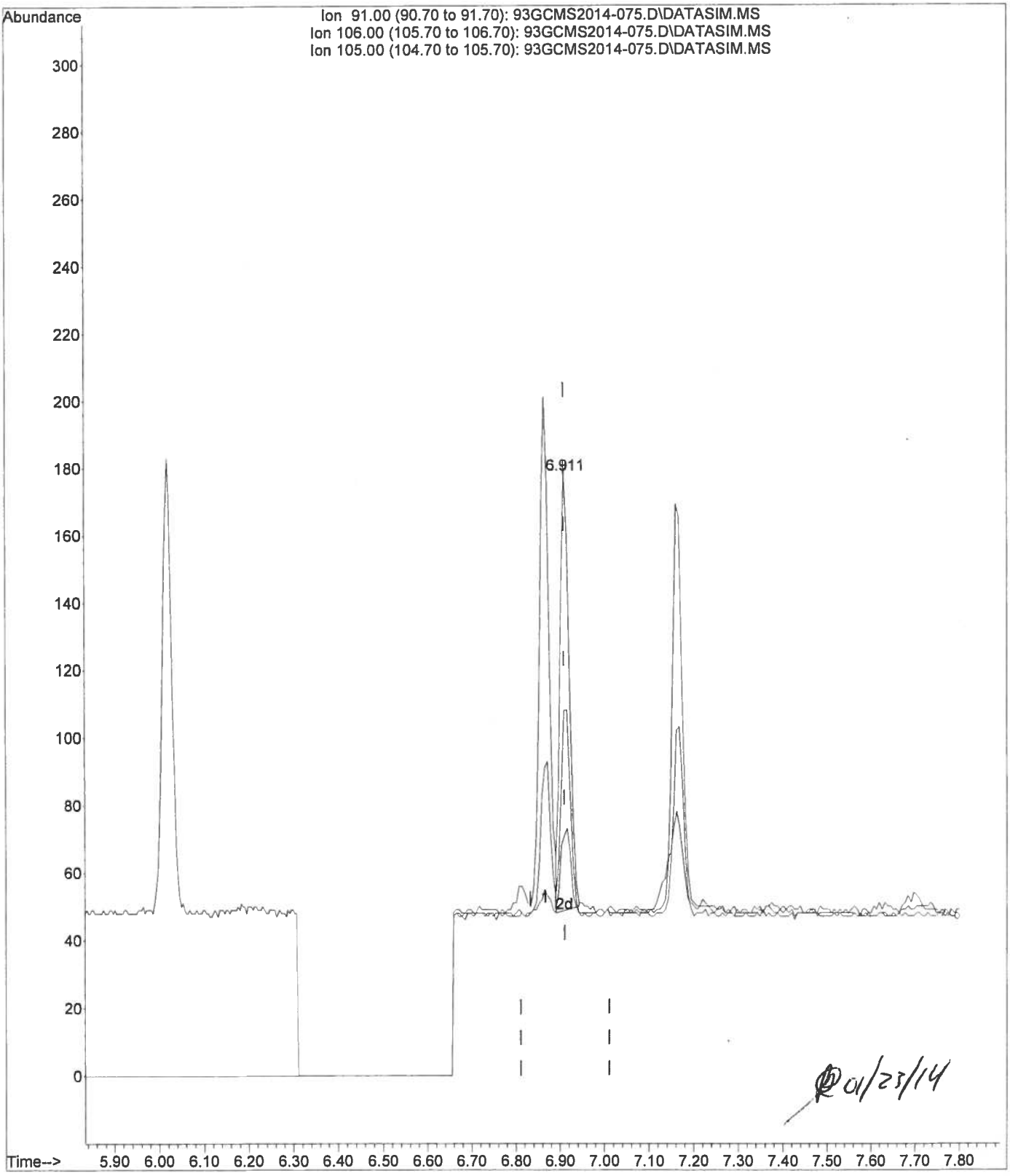
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



1/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-075.D
Operator : SJT
Acquired : 23 Jan 2014 9:43 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: STD20140123-3 \ 0.5ppbv LLCCV
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



01/23/14

Data File:	93GCMS2014-077.d
Sample Number:	20140123-LCS
Sample Volume (mL)	5
Date Prepared:	23-Jan-2014
Date Analyzed:	23-Jan-2014

Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140123-LCS 500 ppbv LCS (ppbv)	20140123-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	559.82	112.53
1,1-Dichloroethene	20.7	517.50	573.15	110.75
Methyl Tert Butyl Ether	19.5	487.50	546.56	112.11
trans-1,2-Dichloroethene	20.8	520.00	582.57	112.03
1,1-Dichloroethane	20.3	507.50	567.74	111.87
cis-1,2-Dichloroethene	20.9	522.50	586.61	112.27
Chloroform	20.6	515.00	552.71	107.32
1,1,1-Trichloroethane	19.7	492.50	549.19	111.51
Benzene	20.5	512.50	543.30	106.01
Trichloroethene	19.9	497.50	527.94	106.12
Toluene	20.2	505.00	554.86	109.87
Tetrachloroethene	20.0	500.00	553.45	110.69
Ethyl Benzene	20.0	500.00	609.67	121.93
m&p-Xylene	20.2	505.00	595.07	117.84
o-Xylene	20.2	505.00	612.99	121.38

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-077.D
Acq On : 23 Jan 2014 10:07
Operator : SJT
Sample : 20140123-LCS \ 500ppbv LCS
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 10:14:43 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1925	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4859	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4871	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
2) Vinyl Chloride	1.952	62	54121	559.82	ppbv	97
3) 1,1-Dichloroethene	3.376	61	93761	573.15	ppbv	98
4) Methyl Tert Butyl Ether	3.829	73	116291	546.56	ppbv	93
5) trans-1,2-Dichloroethene	3.897	61	86357	582.57	ppbv	97
6) 1,1-Dichloroethane	4.128	63	99677	567.74	ppbv	98
7) cis-1,2-Dichloroethene	4.465	61	81883	586.61	ppbv	97
8) Chloroform	4.558	83	108666	552.71	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	112762	549.19	ppbv	98
11) Benzene	5.012	78	158431	543.30	ppbv	99
12) Trichloroethene	5.340	130	82000	527.94	ppbv	99
14) Toluene	6.020	91	185716	554.86	ppbv	100
15) Tetrachloroethene	6.399	166	100435	553.45	ppbv	99
16) Ethyl Benzene	6.866	91	245415	609.67	ppbv	99
17) m,p-Xylene	6.911	91	184716	595.07	ppbv	94
18) o-Xylene	7.169	91	192137	612.99	ppbv	99

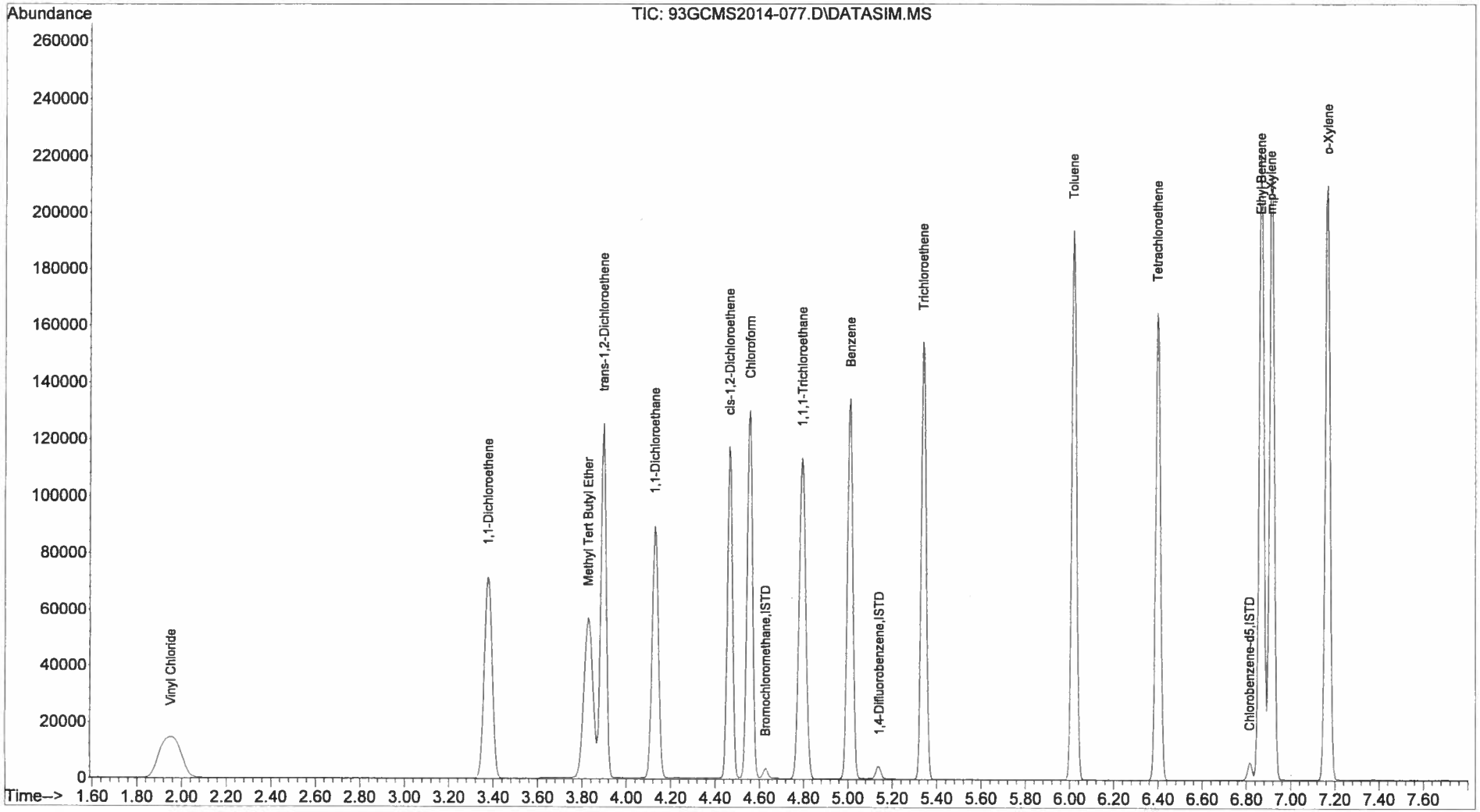
(#) = qualifier out of range (m) = manual integration (+) = signals summed

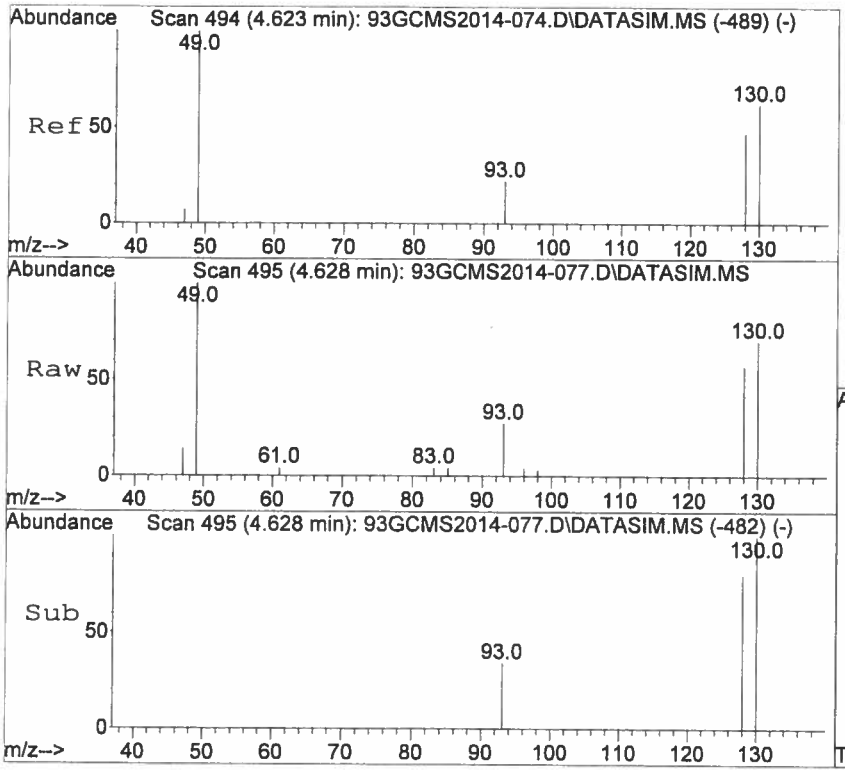
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-077.D
Acq On : 23 Jan 2014 10:07
Operator : SJT
Sample : 20140123-LCS \ 500ppbv LCS
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 10:14:43 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

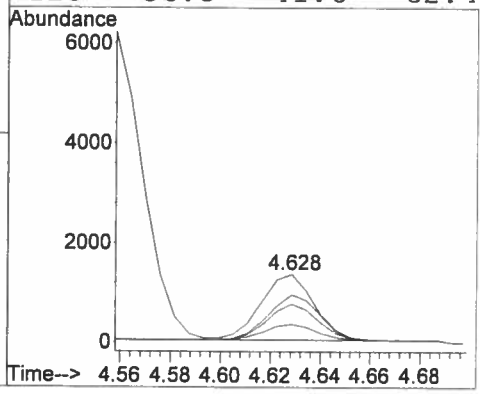


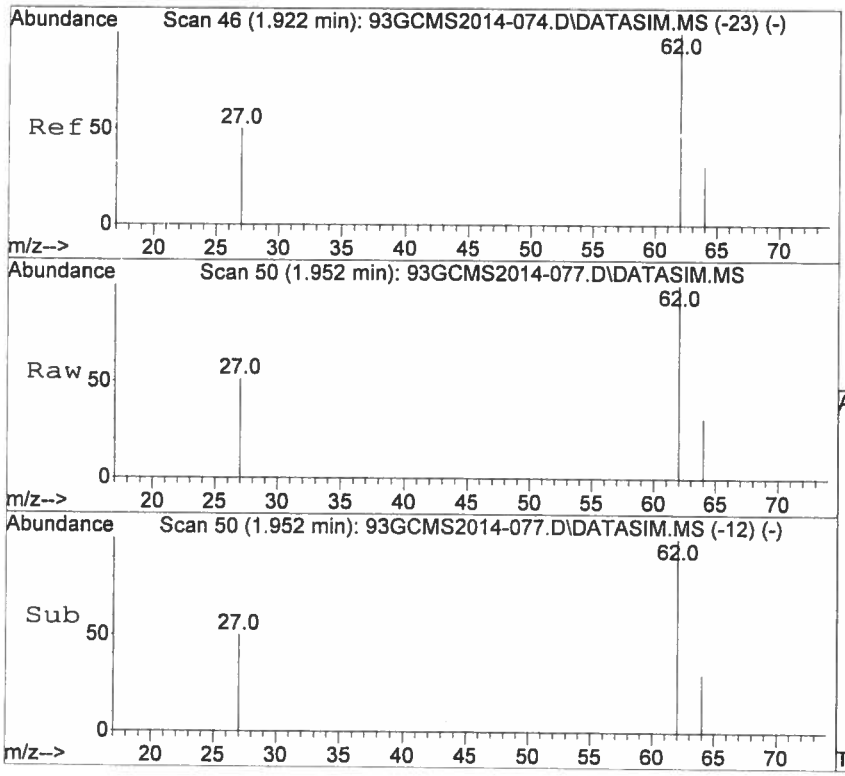


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 49 Resp: 1925

Ion	Ratio	Lower	Upper
49	100		
130	70.2	51.6	77.4
93	26.6	19.6	29.4
128	56.8	41.6	62.4

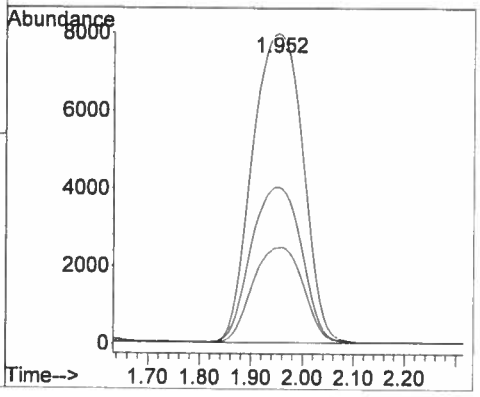


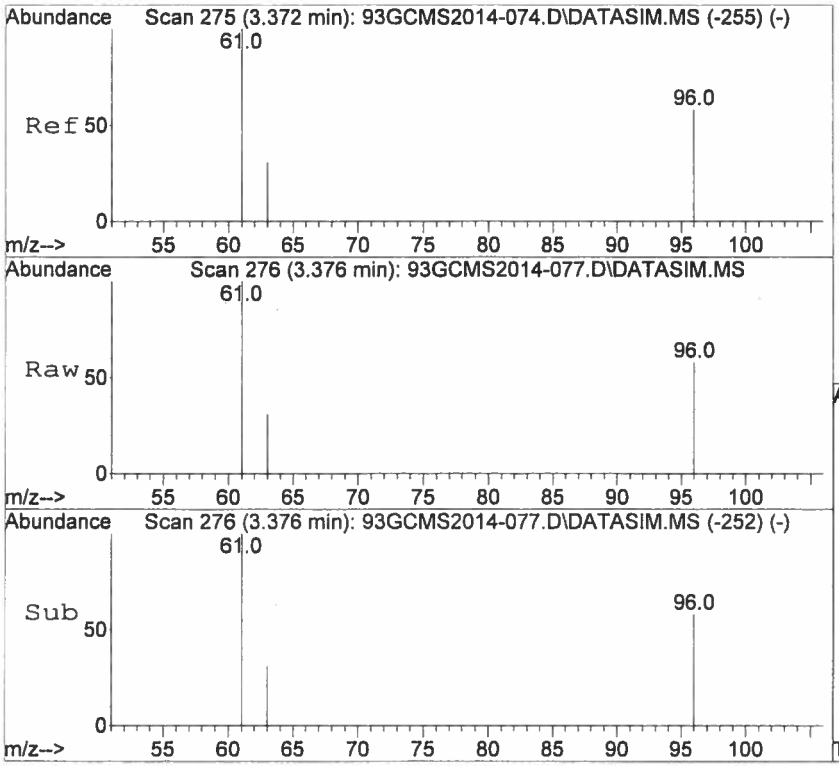


#2
Vinyl Chloride
Concen: 559.82 ppbv
RT: 1.952 min Scan# 50
Delta R.T. 0.030 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 62 Resp: 54121

Ion	Ratio	Lower	Upper
62	100		
64	30.8	24.9	37.3
27	49.9	37.8	56.6

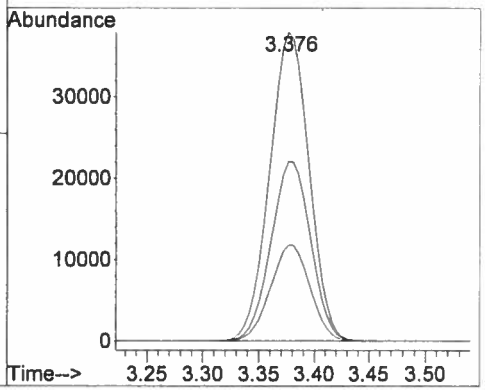


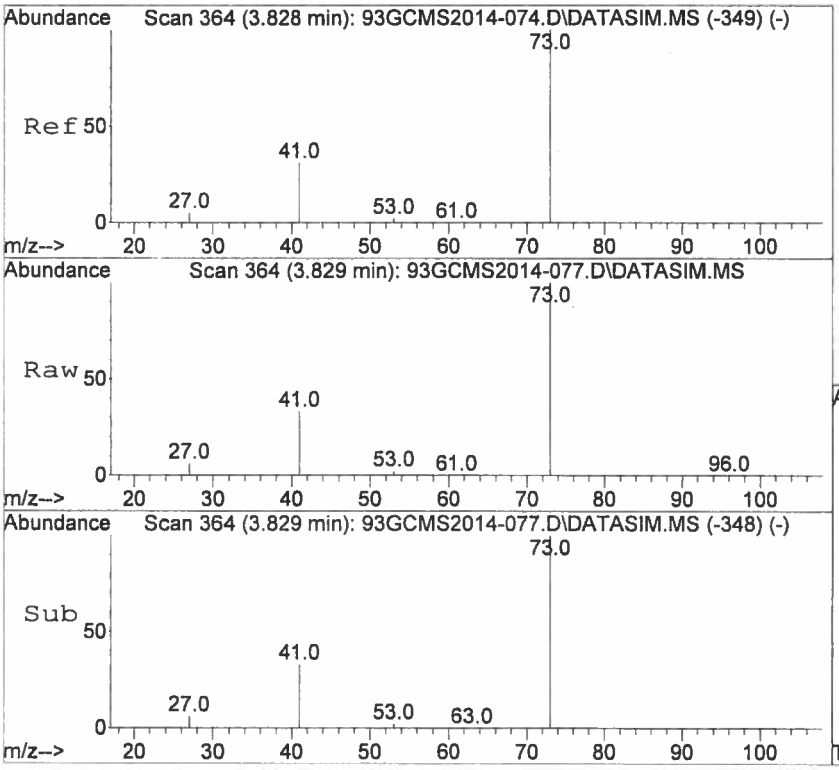


#3
1,1-Dichloroethene
Concen: 573.15 ppbv
RT: 3.376 min Scan# 276
Delta R.T. 0.005 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 61 Resp: 93761

Ion	Ratio	Lower	Upper
61	100		
96	58.5	48.6	72.8
63	31.2	25.0	37.6

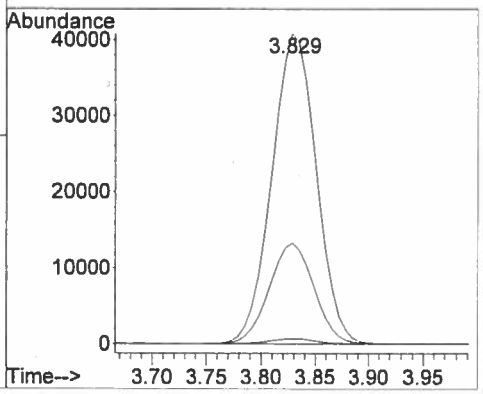


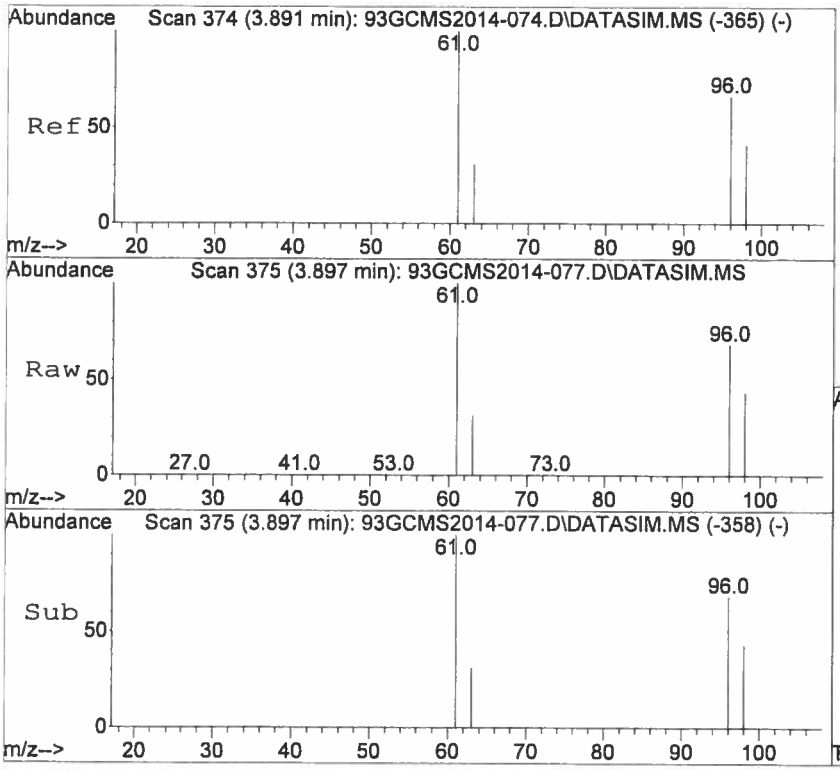


#4
Methyl Tert Butyl Ether
Concen: 546.56 ppbv
RT: 3.829 min Scan# 364
Delta R.T. 0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 73 Resp: 116291

Ion	Ratio	Lower	Upper
73	100		
53	1.7	1.1	1.7
41	32.7	23.0	34.4

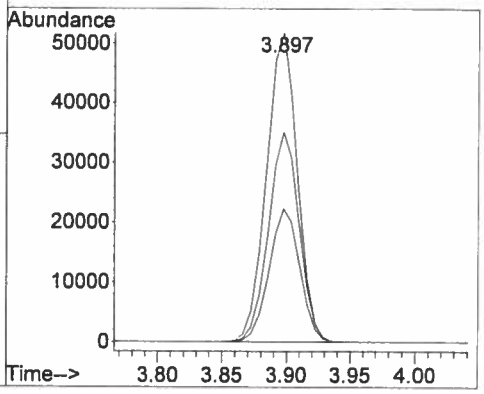


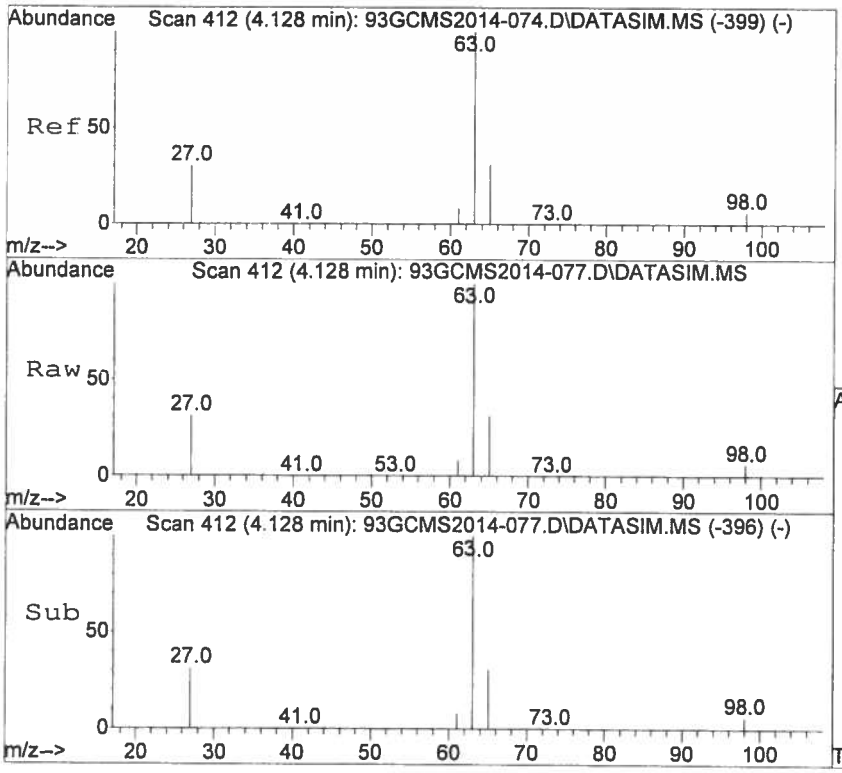


#5
trans-1,2-Dichloroethene
Concen: 582.57 ppbv
RT: 3.897 min Scan# 375
Delta R.T. 0.006 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 61 Resp: 86357

Ion	Ratio	Lower	Upper
61	100		
96	67.7	56.0	84.0
98	43.0	35.6	53.4

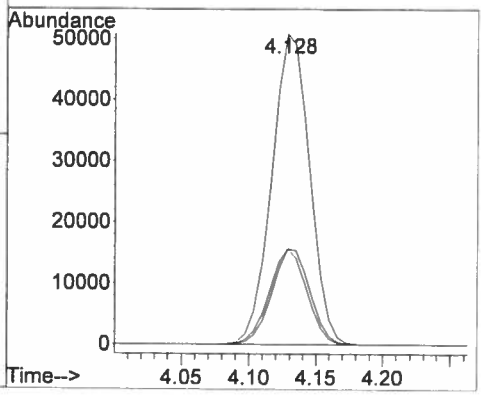


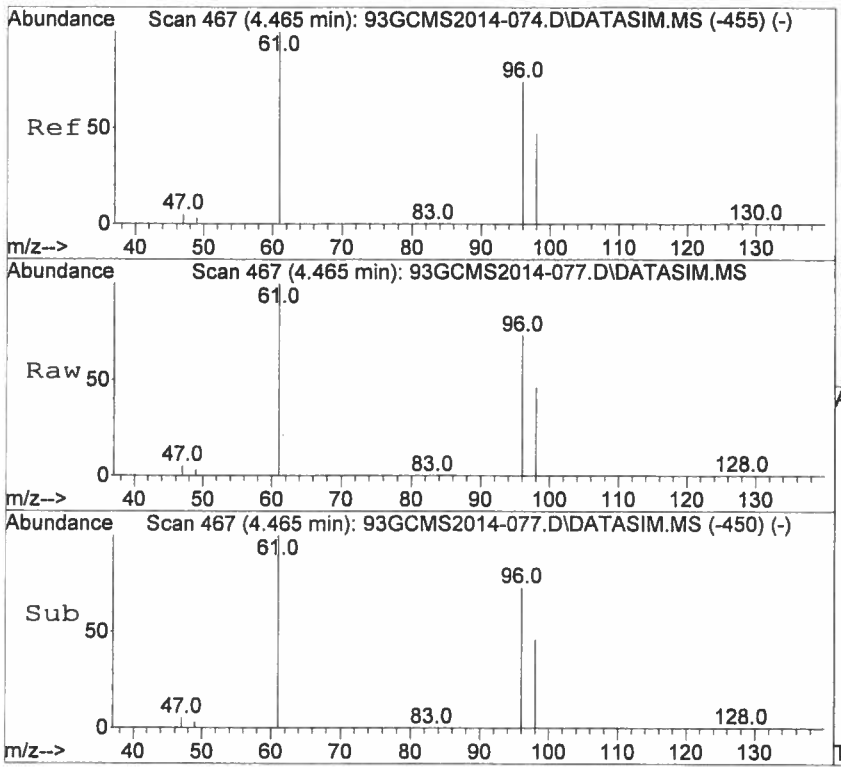


#6
1,1-Dichloroethane
Concen: 567.74 ppbv
RT: 4.128 min Scan# 412
Delta R.T. 0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 63 Resp: 99677

Ion	Ratio	Lower	Upper
63	100		
65	30.9	24.7	37.1
27	30.3	22.6	34.0

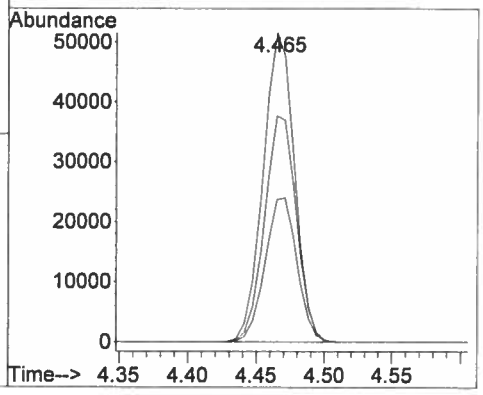


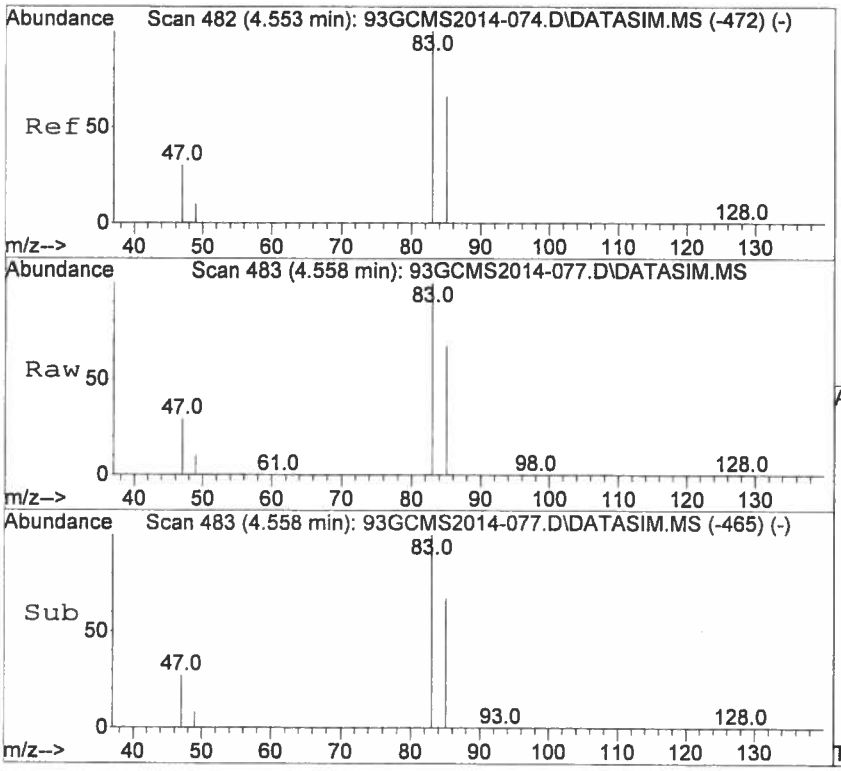


#7
cis-1,2-Dichloroethene
Concen: 586.61 ppbv
RT: 4.465 min Scan# 467
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 61 Resp: 81883

Ion	Ratio	Lower	Upper
61	100		
96	74.4	61.7	92.5
98	47.5	39.4	59.0

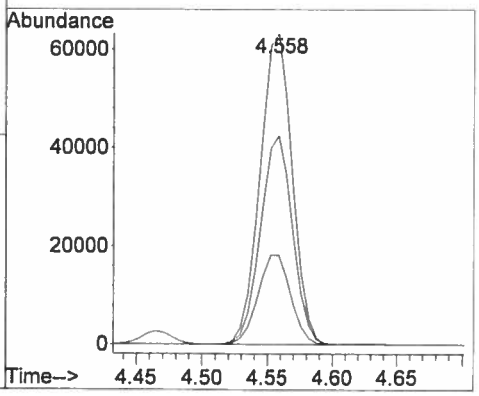


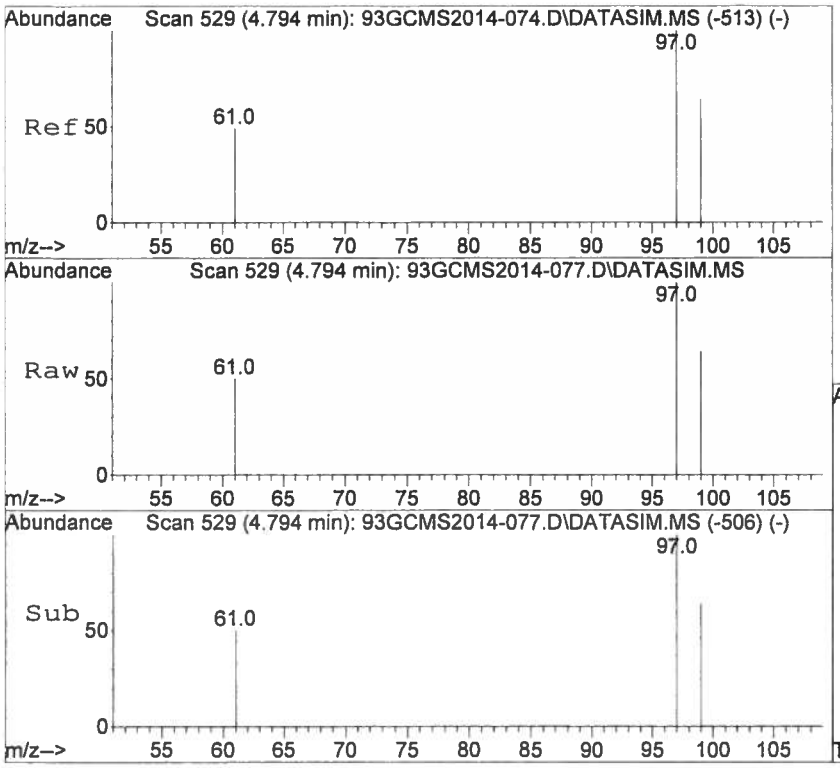


#8
Chloroform
Concen: 552.71 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.006 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 83 Resp: 108666

Ion	Ratio	Lower	Upper
83	100		
85	66.9	52.0	78.0
47	29.3	20.0	30.0

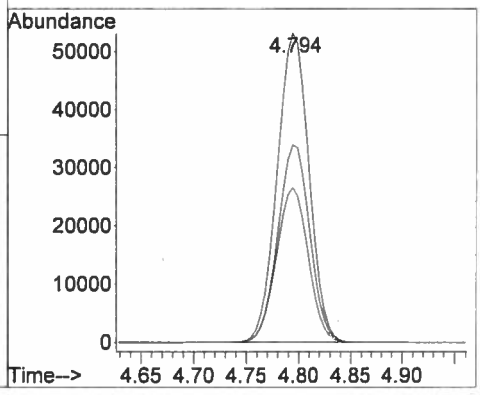


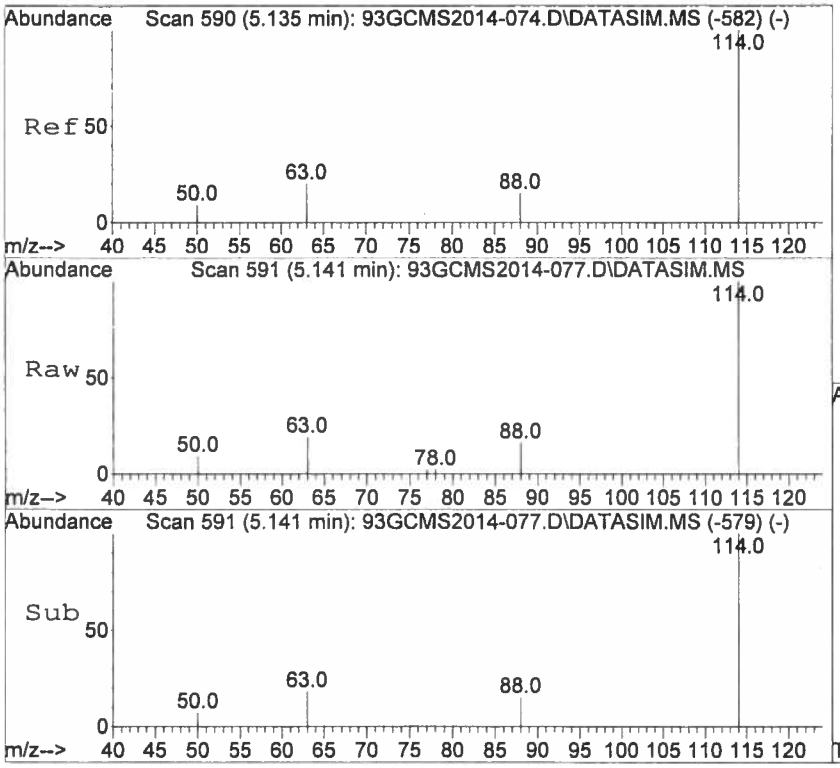


#9
1,1,1-Trichloroethane
Concen: 549.19 ppbv
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 97 Resp: 112762

Ion	Ratio	Lower	Upper
97	100		
99	64.1	51.4	77.0
61	50.1	37.4	56.0

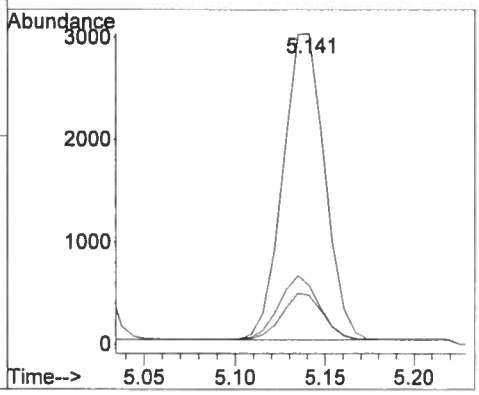


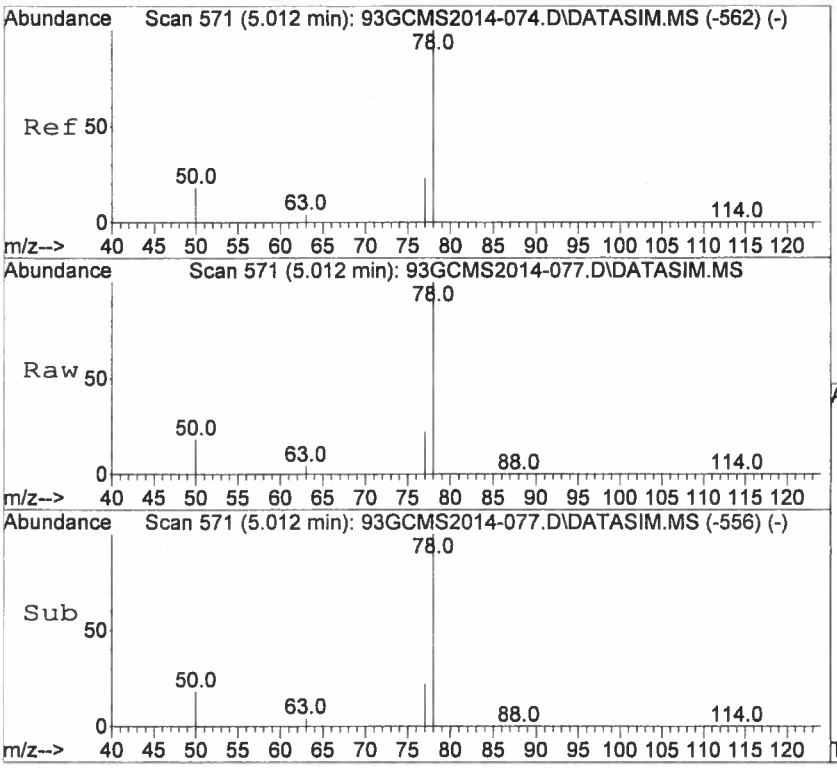


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.006 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion:114 Resp: 4859

Ion	Ratio	Lower	Upper
114	100		
63	19.9	15.1	22.7
88	15.0	12.0	18.0

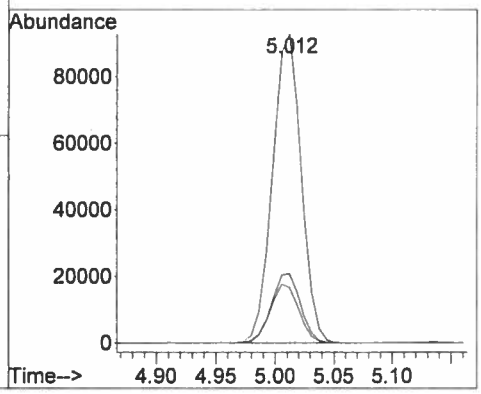


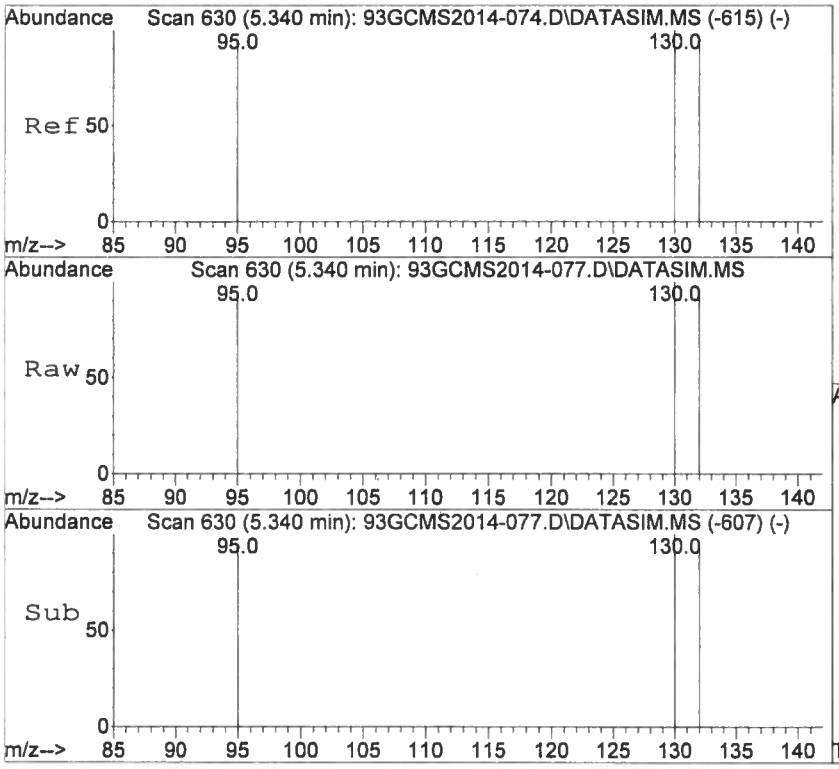


#11
Benzene
Concen: 543.30 ppbv
RT: 5.012 min Scan# 571
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 78 Resp: 158431

Ion	Ratio	Lower	Upper
78	100		
77	22.8	18.4	27.6
50	19.1	14.6	21.8

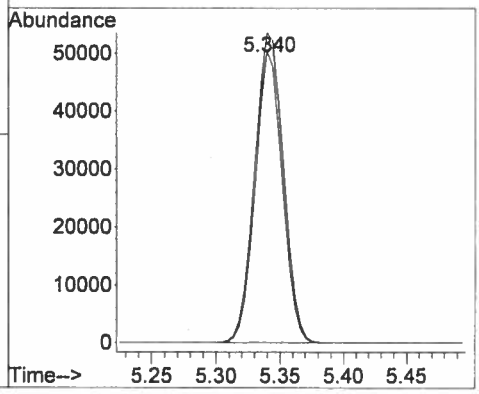


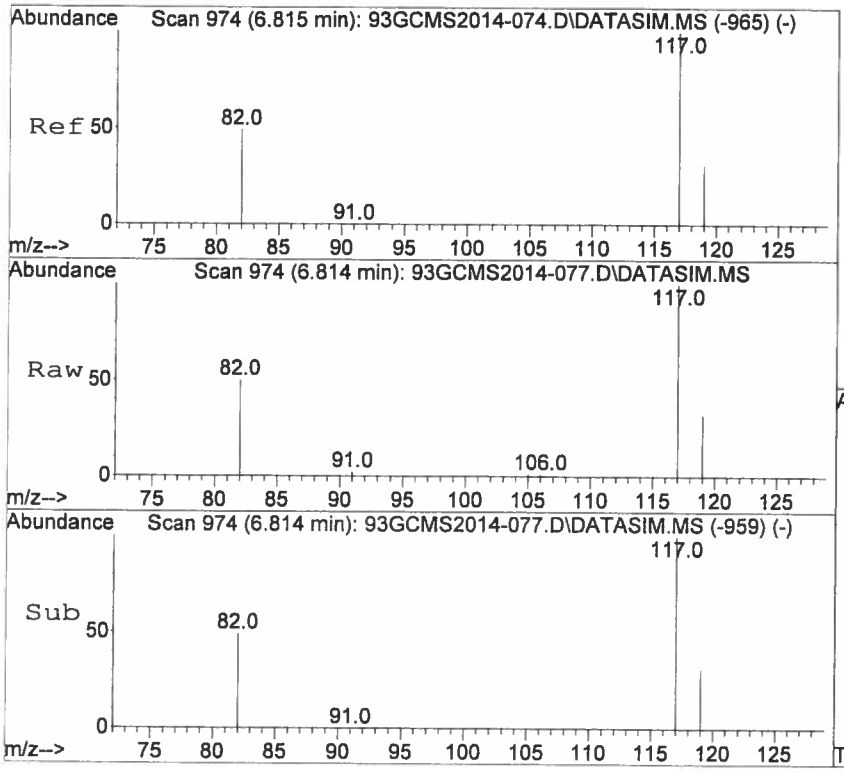


#12
Trichloroethene
Concen: 527.94 ppbv
RT: 5.340 min Scan# 630
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion:130 Resp: 82000

Ion	Ratio	Lower	Upper
130	100		
132	96.1	77.0	115.6
95	93.3	72.9	109.3

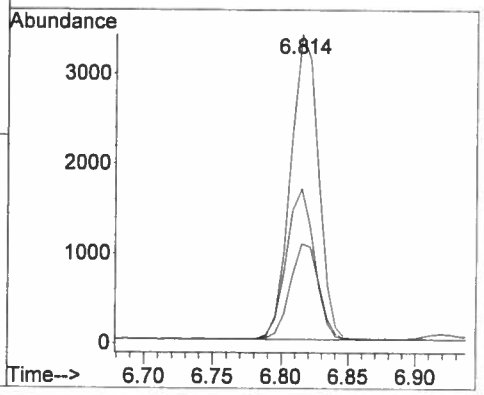


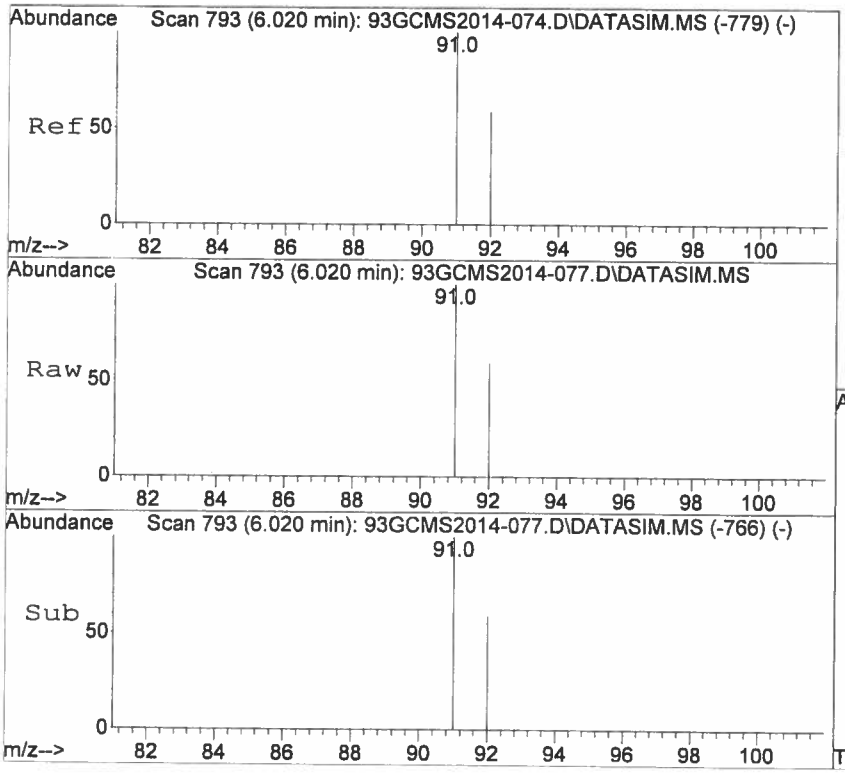


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion:117 Resp: 4871

Ion	Ratio	Lower	Upper
117	100		
82	49.1	37.8	56.6
119	32.5	25.6	38.4

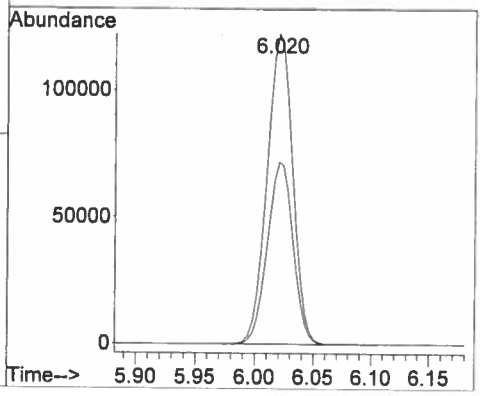


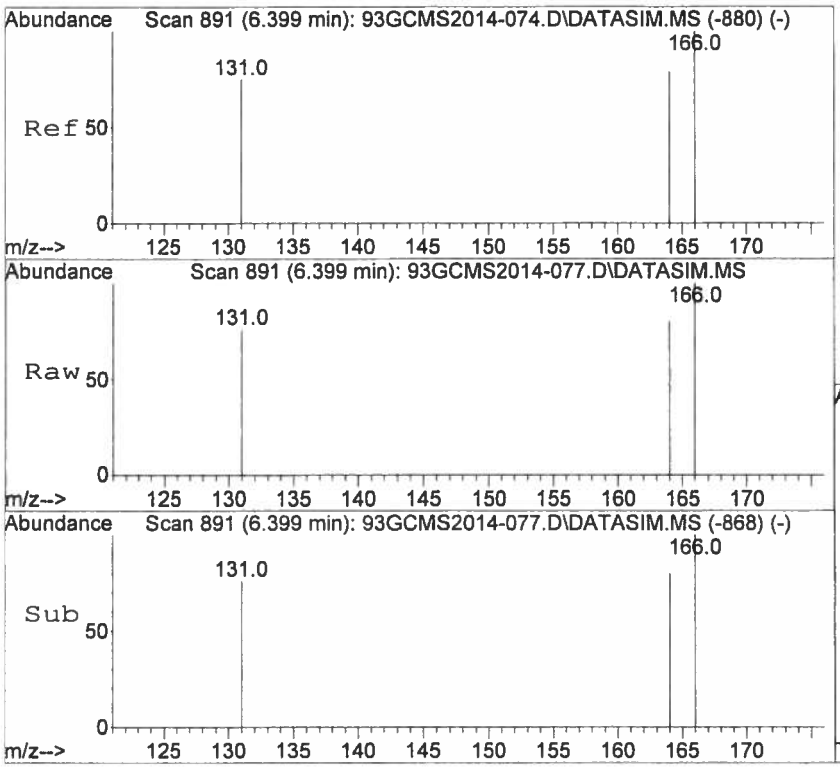


#14
Toluene
Concen: 554.86 ppbv
RT: 6.020 min Scan# 793
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 91 Resp: 185716

Ion	Ratio	Lower	Upper
91	100		
92	58.8	47.2	70.8

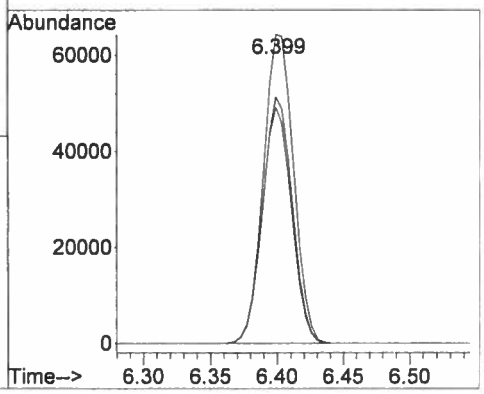


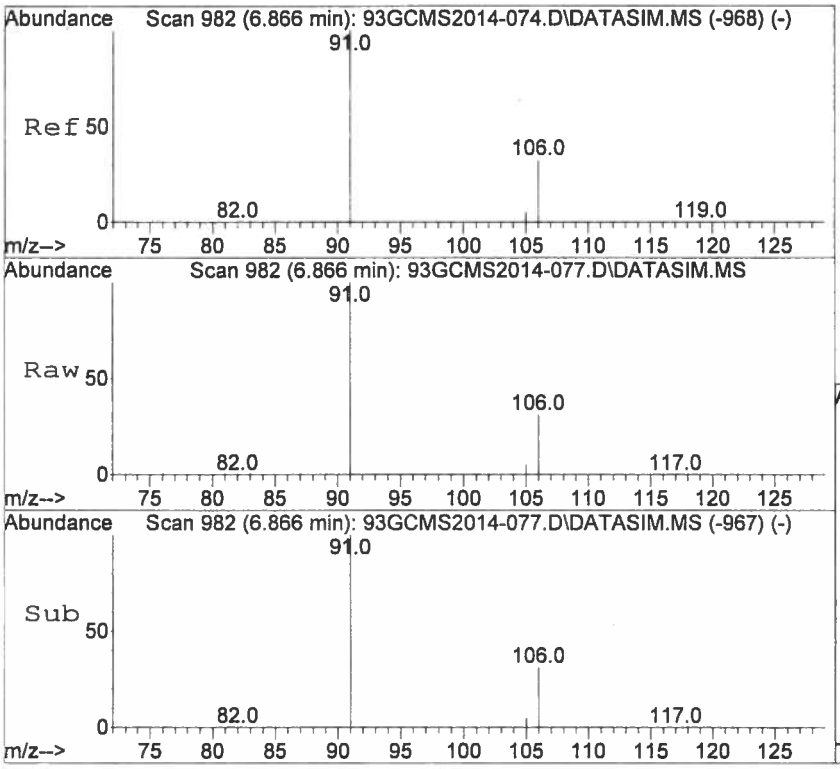


#15
Tetrachloroethene
Concen: 553.45 ppbv
RT: 6.399 min Scan# 891
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion:166 Resp: 100435

Ion	Ratio	Lower	Upper
166	100		
164	78.2	62.5	93.7
131	75.0	58.6	88.0

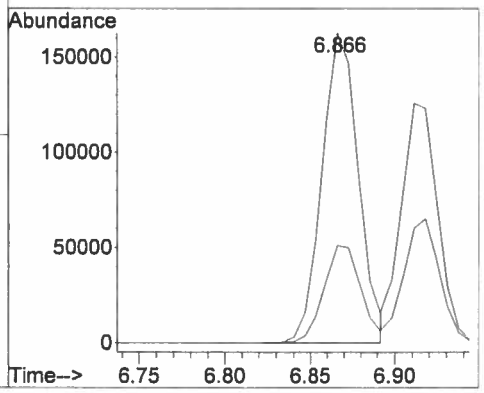


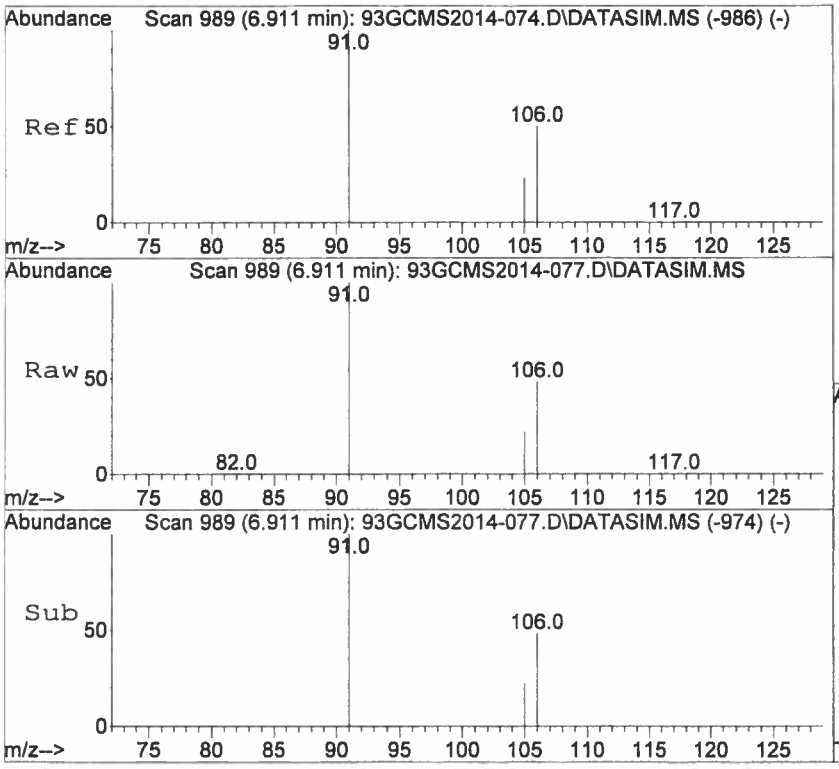


#16
Ethyl Benzene
Concen: 609.67 ppbv
RT: 6.866 min Scan# 982
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 91 Resp: 245415

Ion	Ratio	Lower	Upper
91	100		
106	31.5	25.6	38.4

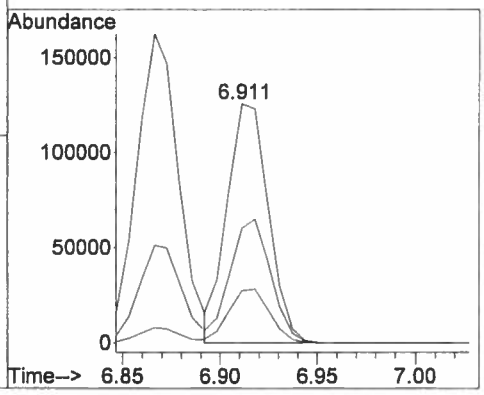


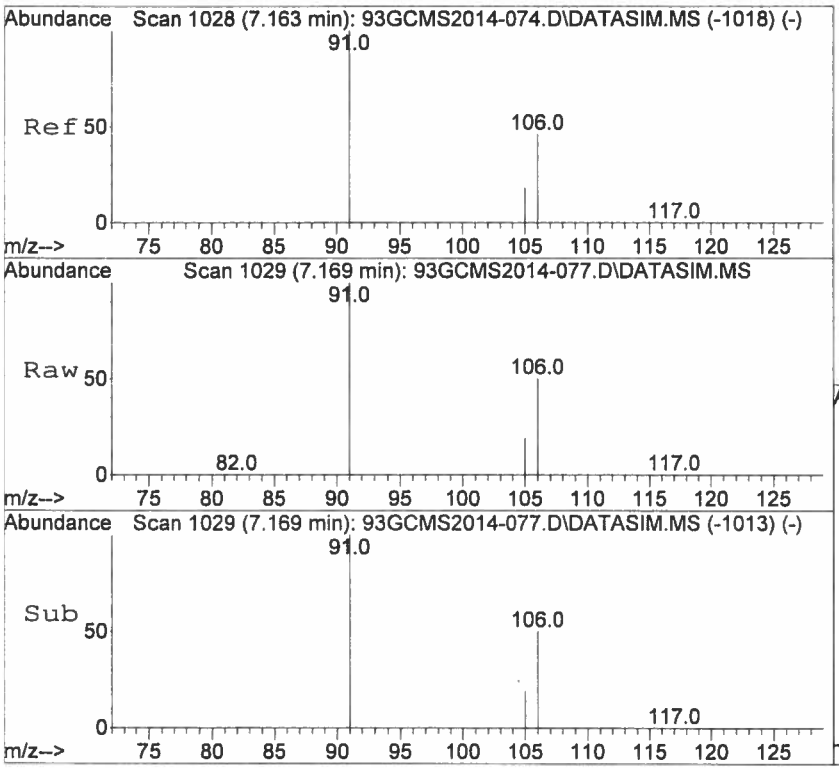


#17
m,p-Xylene
Concen: 595.07 ppbv
RT: 6.911 min Scan# 989
Delta R.T. -0.000 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 91 Resp: 184716

Ion	Ratio	Lower	Upper
91	100		
106	47.9	42.5	63.7
105	21.8	18.6	27.8

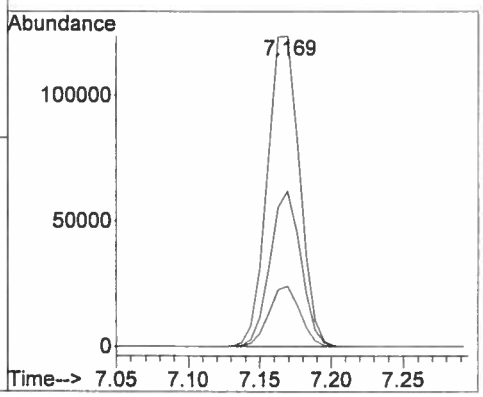




#18
o-Xylene
Concen: 612.99 ppbv
RT: 7.169 min Scan# 1029
Delta R.T. 0.006 min
Lab File: 93GCMS2014-077.D
Acq: 23 Jan 2014 10:07

Tgt Ion: 91 Resp: 192137

Ion	Ratio	Lower	Upper
91	100		
106	48.1	39.3	58.9
105	19.0	15.4	23.2



Data File:	93GCMS2014-087.d
Sample Number:	20140123-LCS
Sample Volume (mL)	5
Date Prepared:	23-Jan-2014
Date Analyzed:	23-Jan-2014

Compound	COA Concentrations CC# 136210 EXP. 03/20/2014 CC# 197345 EXP. 12/13/2014 (ppmv)	Calculated Concentrations 20140123-LCS 500 ppbv LCS (ppbv)	20140123-LCS 500 ppbv LCS Results (ppbv)	Percent Recovery (% R)
Vinyl Chloride	19.9	497.50	546.87	109.92
1,1-Dichloroethene	20.7	517.50	544.95	105.30
Methyl Tert Butyl Ether	19.5	487.50	516.97	106.05
trans-1,2-Dichloroethene	20.8	520.00	549.04	105.58
1,1-Dichloroethane	20.3	507.50	540.07	106.42
cis-1,2-Dichloroethene	20.9	522.50	549.98	105.26
Chloroform	20.6	515.00	523.35	101.62
1,1,1-Trichloroethane	19.7	492.50	522.48	106.09
Benzene	20.5	512.50	526.39	102.71
Trichloroethene	19.9	497.50	508.23	102.16
Toluene	20.2	505.00	524.70	103.90
Tetrachloroethene	20.0	500.00	529.10	105.82
Ethyl Benzene	20.0	500.00	574.65	114.93
m&p-Xylene	20.2	505.00	544.77	107.88
o-Xylene	20.2	505.00	567.76	112.43

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-087.D
Acq On : 23 Jan 2014 16:48
Operator : SJT
Sample : 20140123-LCS \ 500ppbv LCS
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:55:47 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Bromochloromethane	4.623	49	1983	10.00	ppbv		0.00
10) 1,4-Difluorobenzene	5.135	114	4863	10.00	ppbv		0.00
13) Chlorobenzene-d5	6.815	117	4889	10.00	ppbv		0.00
System Monitoring Compounds							
Target Compounds							Qvalue
2) Vinyl Chloride	1.856	62	54462m	546.87	ppbv		
3) 1,1-Dichloroethene	3.354	61	91835	544.95	ppbv		98
4) Methyl Tert Butyl Ether	3.816	73	113310	516.97	ppbv	#	92
5) trans-1,2-Dichloroethene	3.885	61	83839	549.04	ppbv		97
6) 1,1-Dichloroethane	4.122	63	97675	540.07	ppbv		98
7) cis-1,2-Dichloroethene	4.459	61	79083	549.98	ppbv		97
8) Chloroform	4.547	83	105992	523.35	ppbv		96
9) 1,1,1-Trichloroethane	4.790	97	110509	522.48	ppbv		97
11) Benzene	5.006	78	153624	526.39	ppbv		99
12) Trichloroethene	5.336	130	79005	508.23	ppbv		99
14) Toluene	6.017	91	176282	524.73	ppbv		100
15) Tetrachloroethene	6.399	166	96370	529.10	ppbv		99
16) Ethyl Benzene	6.866	91	232174	574.65	ppbv		100
17) m,p-Xylene	6.912	91	169730	544.77	ppbv		96
18) o-Xylene	7.163	91	178617	567.76	ppbv		99

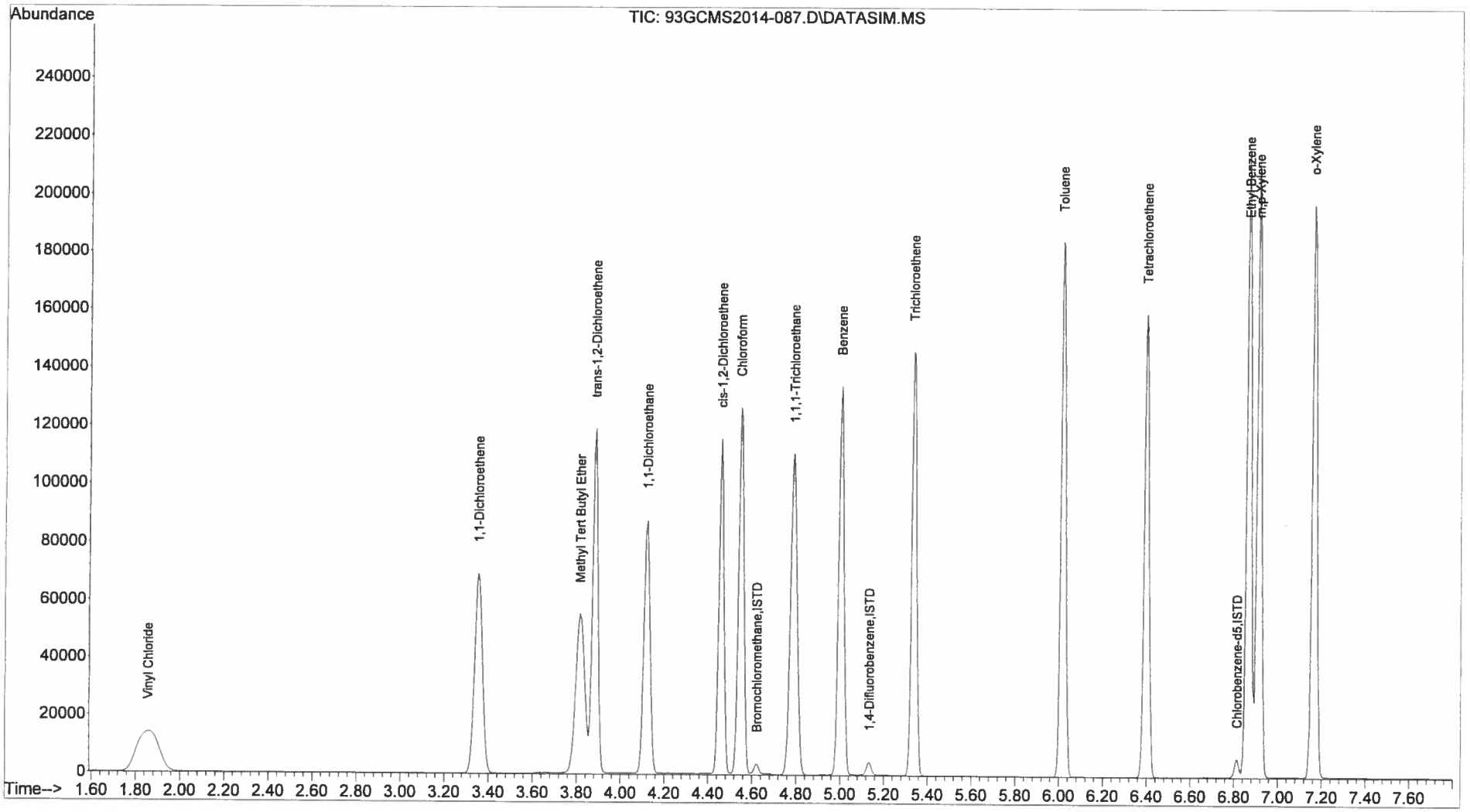
(#) = qualifier out of range (m) = manual integration (+) = signals summed

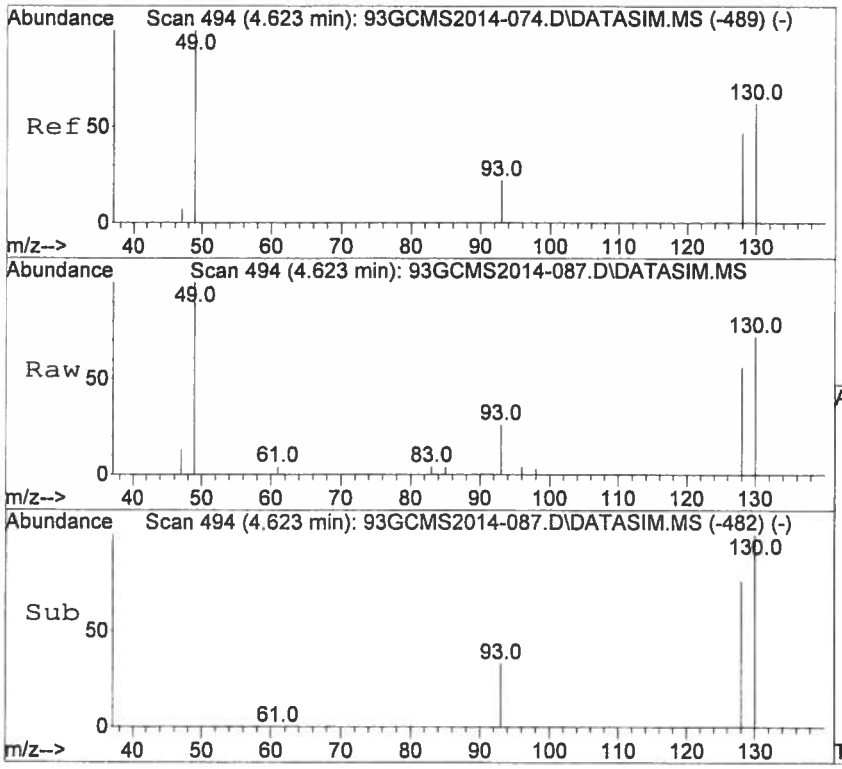
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-087.D
Acq On : 23 Jan 2014 16:48
Operator : SJT
Sample : 20140123-LCS \ 500ppbv LCS
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:55:47 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

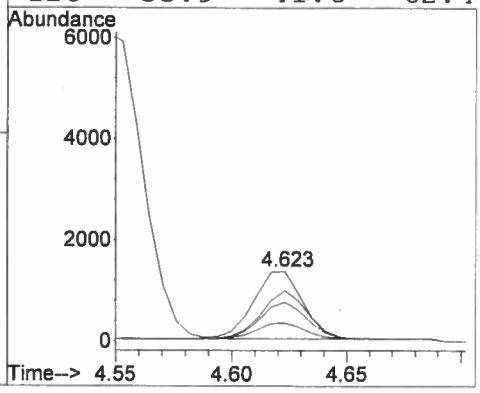


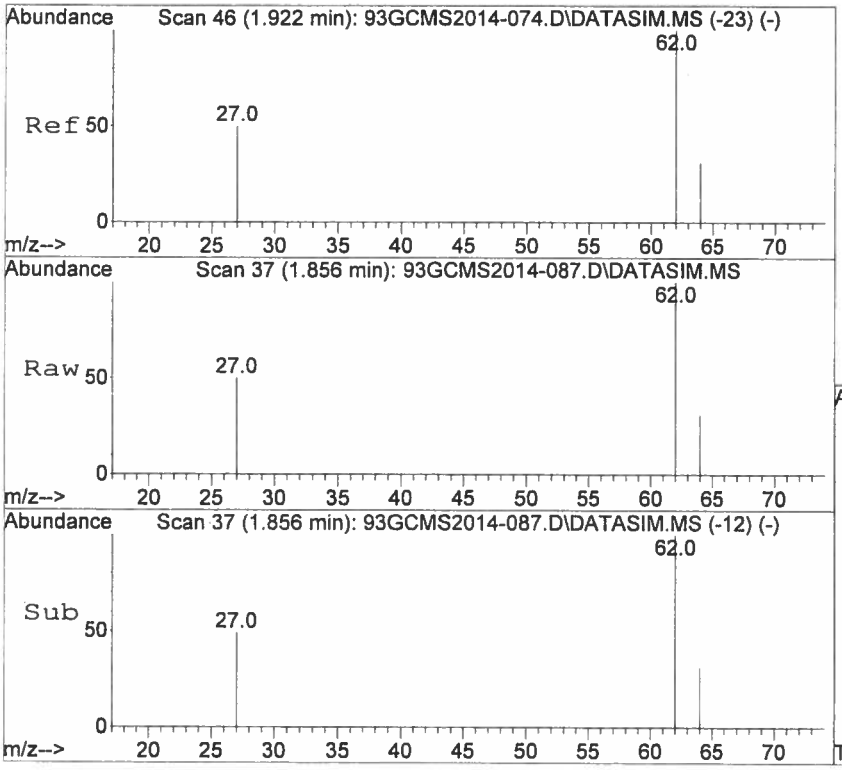


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. 0.000 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 49 Resp: 1983

Ion	Ratio	Lower	Upper
49	100		
130	72.3	51.6	77.4
93	25.9	19.6	29.4
128	55.9	41.6	62.4

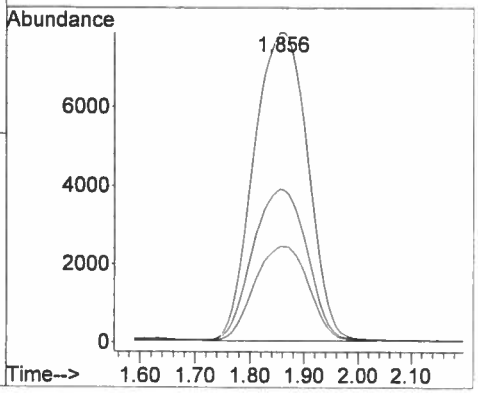


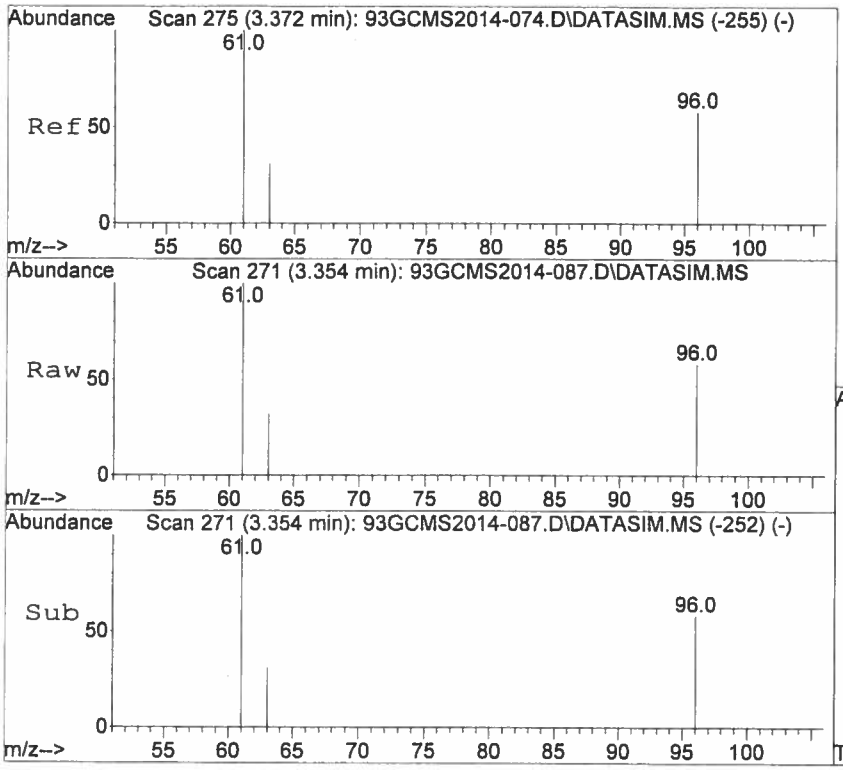


#2
Vinyl Chloride
Concen: 546.87 ppbv m
RT: 1.856 min Scan# 37
Delta R.T. -0.066 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 62 Resp: 54462

Ion	Ratio	Lower	Upper
62	100		
64	0.0	24.9	37.3#
27	0.0	37.8	56.6#

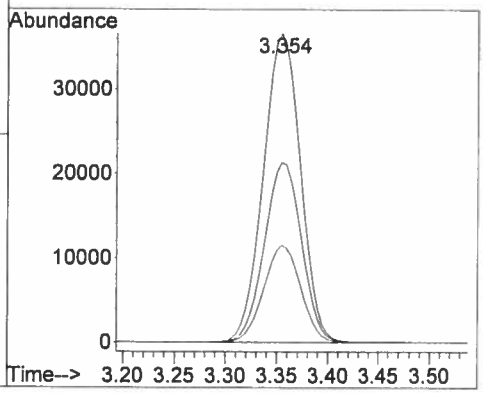


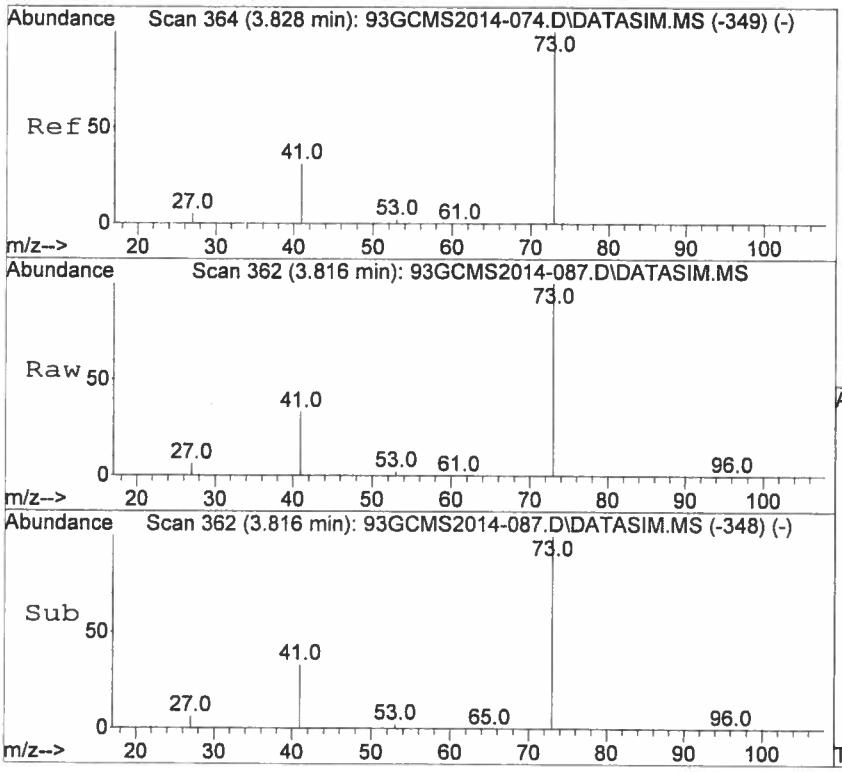


#3
1,1-Dichloroethene
Concen: 544.95 ppbv
RT: 3.354 min Scan# 271
Delta R.T. -0.017 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 61 Resp: 91835

Ion	Ratio	Lower	Upper
61	100		
96	58.3	48.6	72.8
63	31.3	25.0	37.6

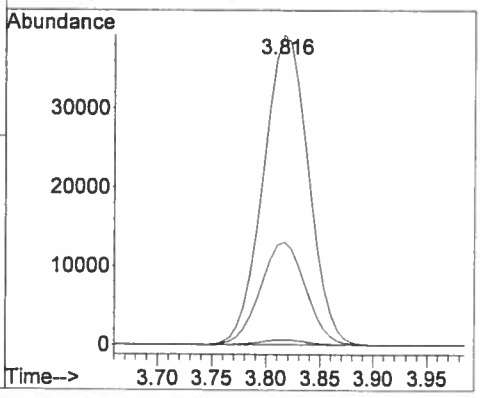


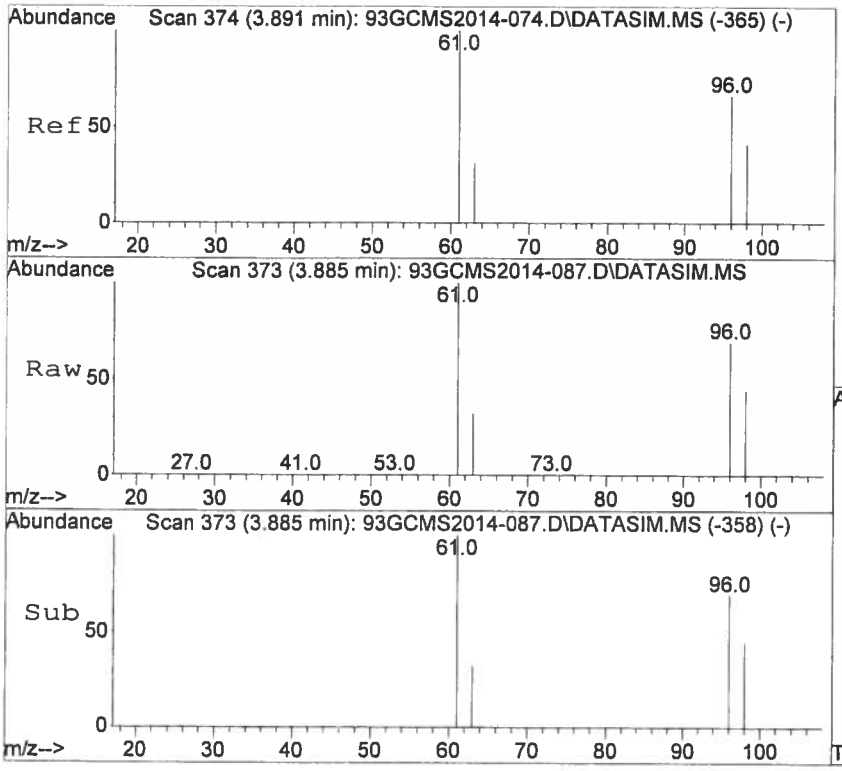


#4
Methyl Tert Butyl Ether
Concen: 516.97 ppbv
RT: 3.816 min Scan# 362
Delta R.T. -0.012 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 73 Resp: 113310

Ion	Ratio	Lower	Upper
73	100		
53	1.7	1.1	1.7#
41	33.3	23.0	34.4

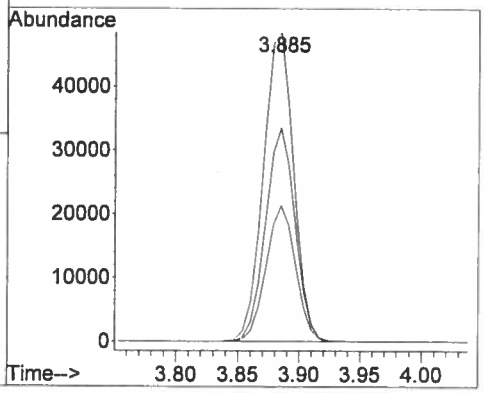


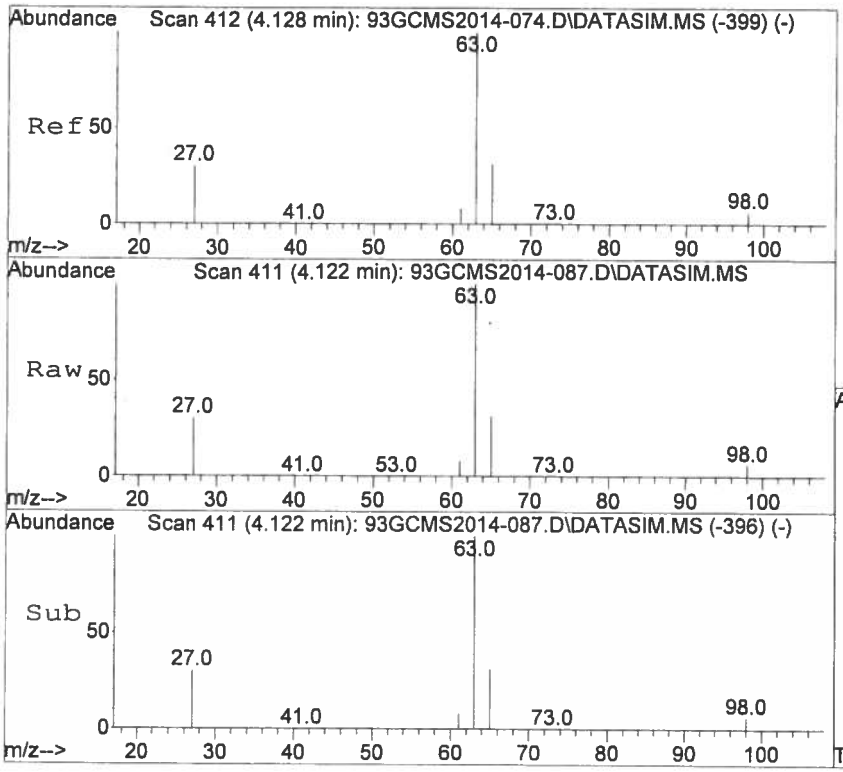


#5
trans-1,2-Dichloroethene
Concen: 549.04 ppbv
RT: 3.885 min Scan# 373
Delta R.T. -0.006 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 61 Resp: 83839

Ion	Ratio	Lower	Upper
61	100		
96	67.5	56.0	84.0
98	42.9	35.6	53.4

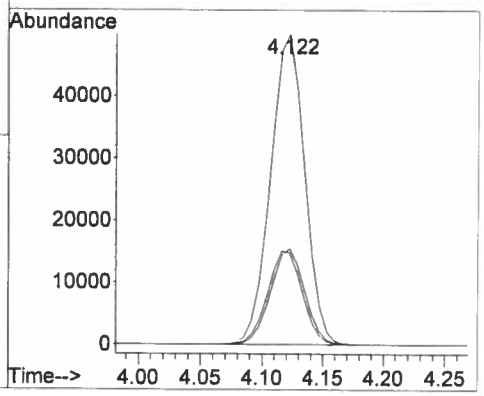


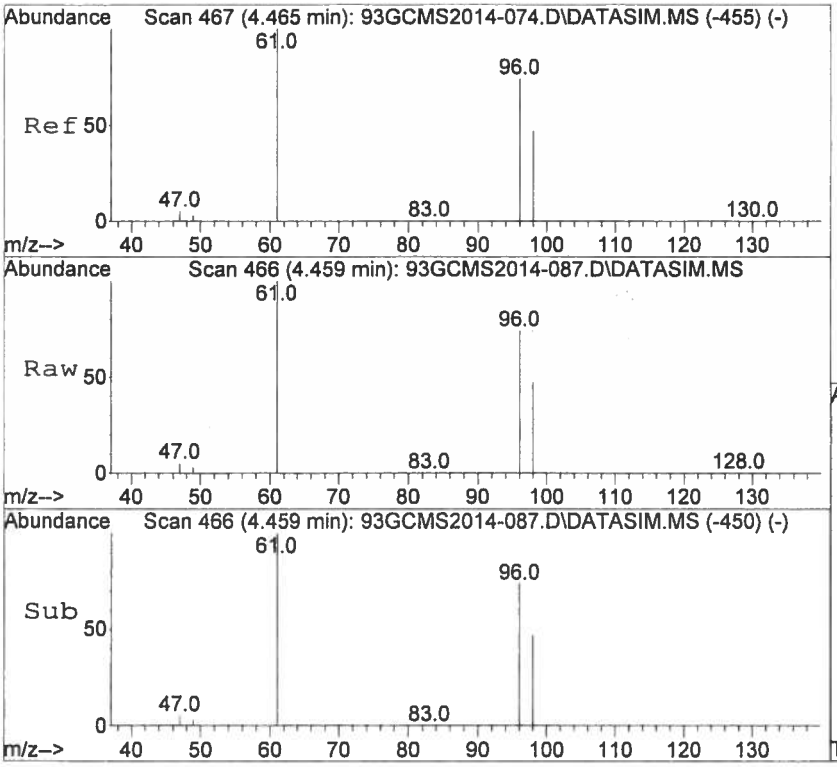


#6
1,1-Dichloroethane
Concen: 540.07 ppbv
RT: 4.122 min Scan# 411
Delta R.T. -0.006 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 63 Resp: 97675

Ion	Ratio	Lower	Upper
63	100		
65	30.8	24.7	37.1
27	30.6	22.6	34.0

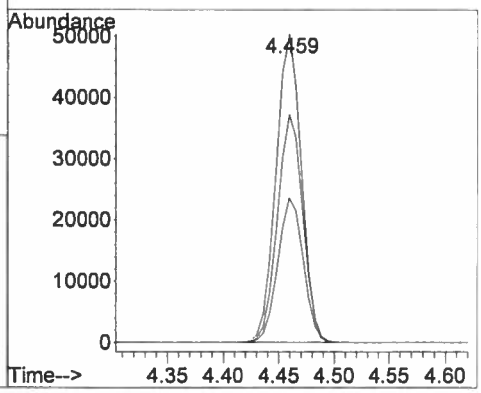


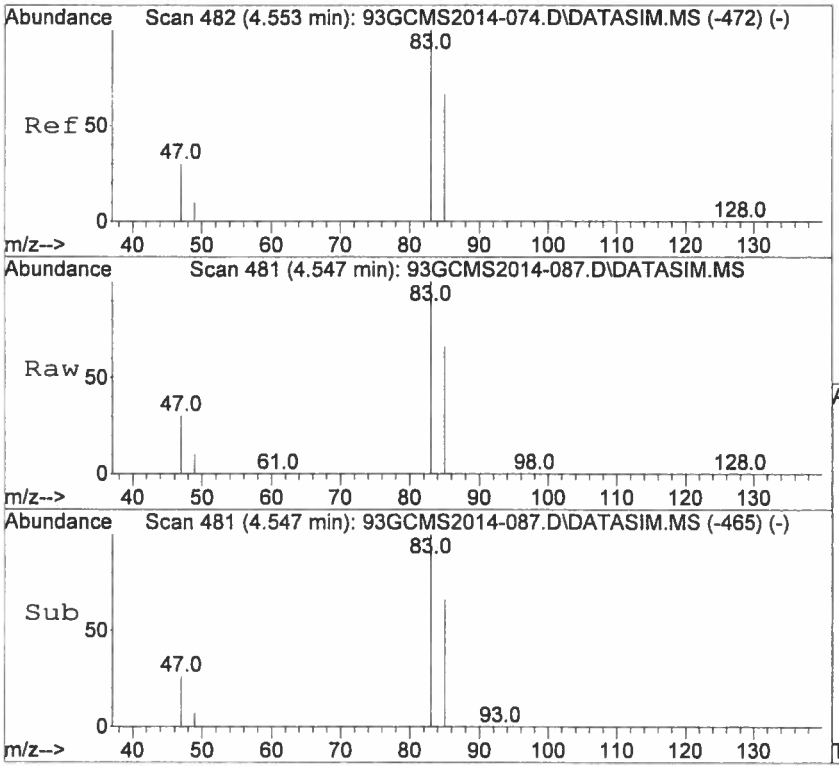


#7
cis-1,2-Dichloroethene
Concen: 549.98 ppbv
RT: 4.459 min Scan# 466
Delta R.T. -0.006 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 61 Resp: 79083

Ion	Ratio	Lower	Upper
61	100		
96	74.2	61.7	92.5
98	47.2	39.4	59.0

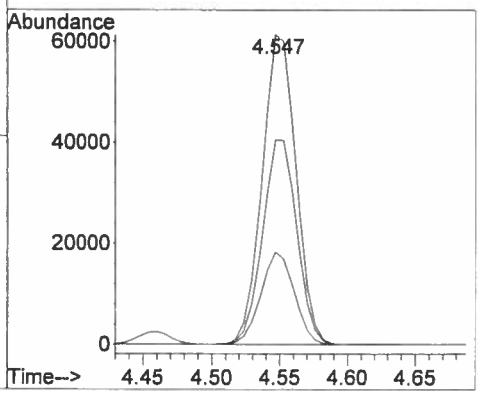


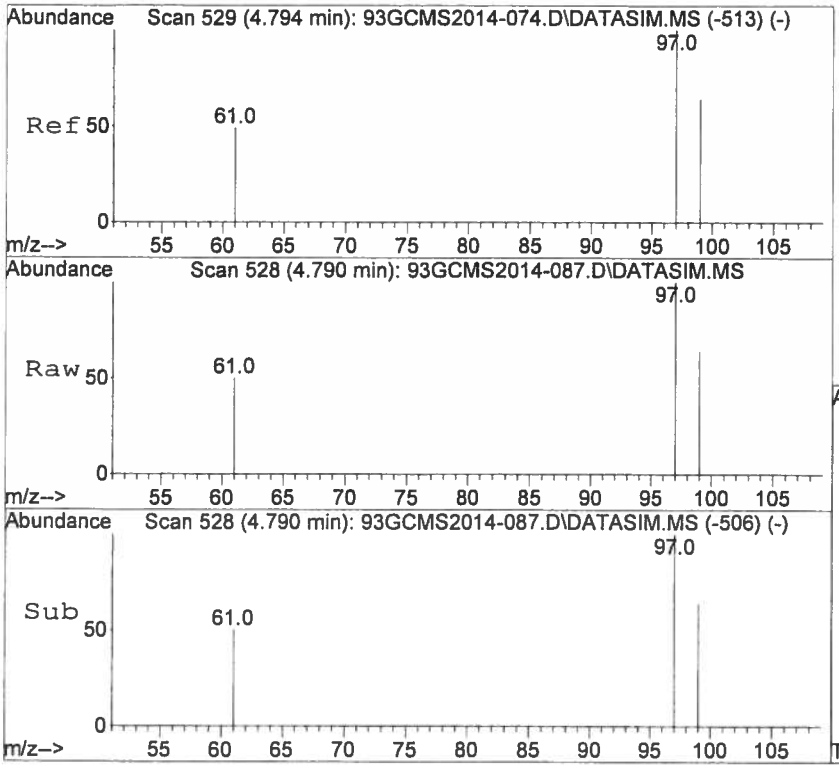


#8
Chloroform
Concen: 523.35 ppbv
RT: 4.547 min Scan# 481
Delta R.T. -0.006 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 83 Resp: 105992

Ion	Ratio	Lower	Upper
83	100		
85	66.7	52.0	78.0
47	29.4	20.0	30.0

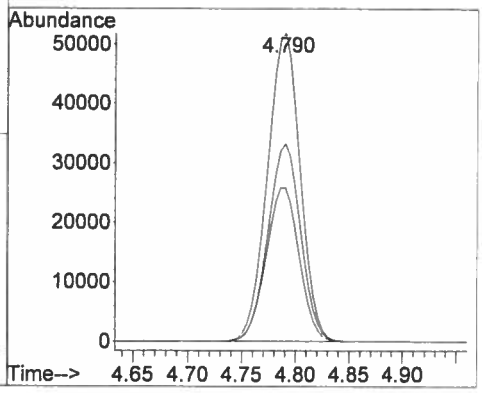


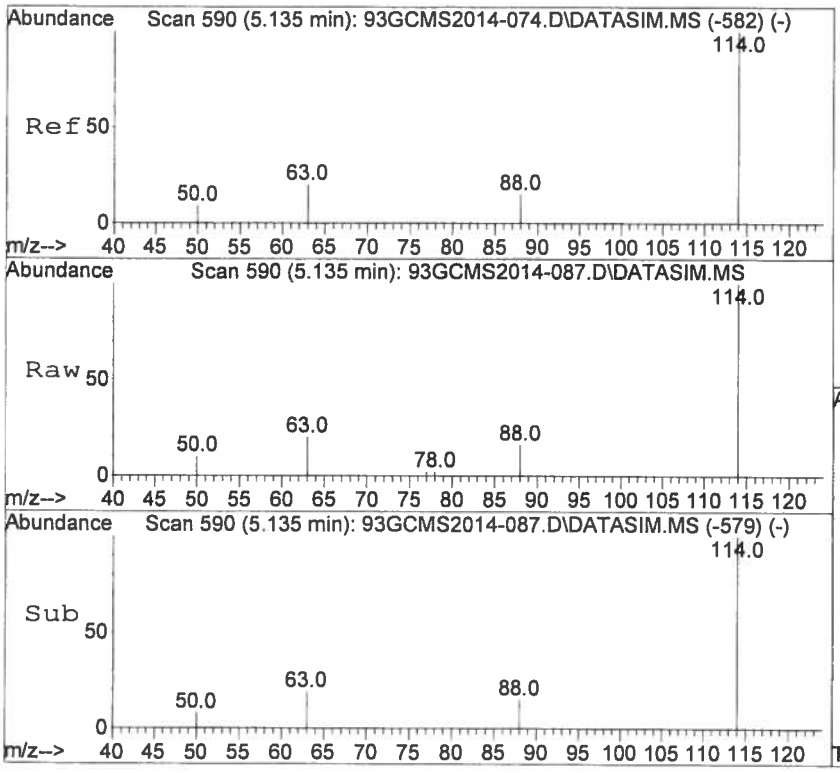


#9
1,1,1-Trichloroethane
Concen: 522.48 ppbv
RT: 4.790 min Scan# 528
Delta R.T. -0.004 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 97 Resp: 110509

Ion	Ratio	Lower	Upper
97	100		
99	64.0	51.4	77.0
61	50.5	37.4	56.0

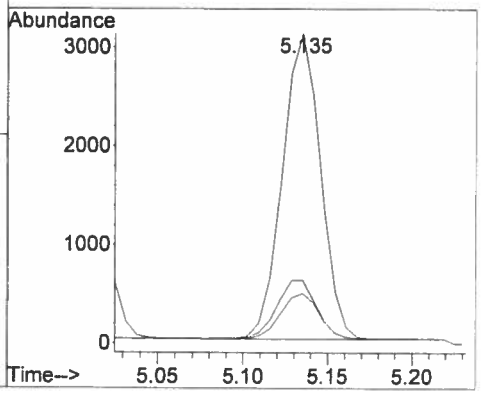


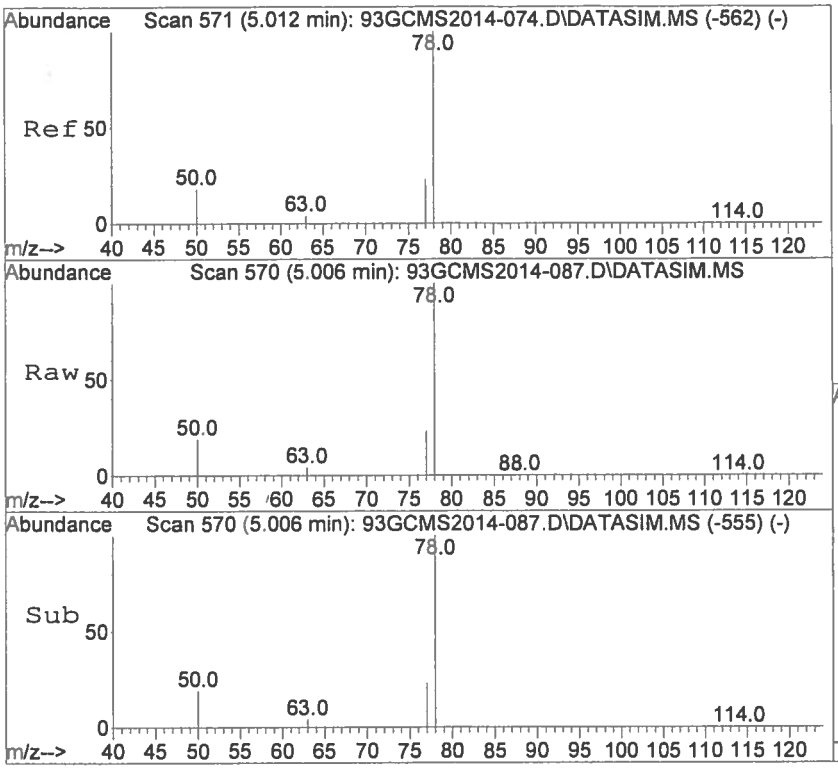


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. 0.000 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion:114 Resp: 4863

Ion	Ratio	Lower	Upper
114	100		
63	19.8	15.1	22.7
88	15.1	12.0	18.0

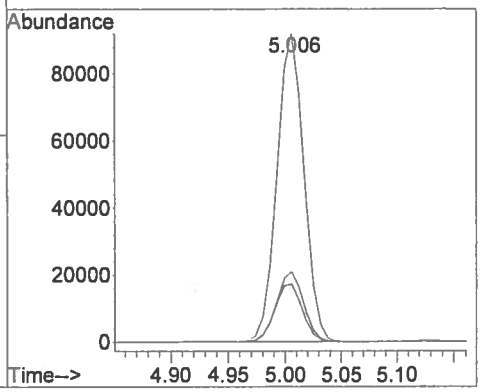


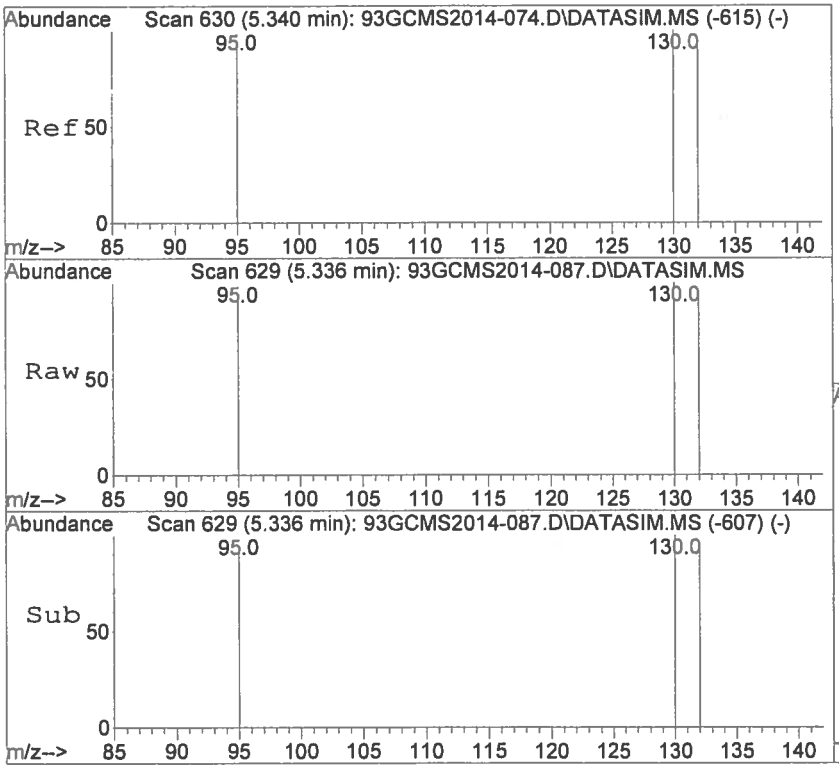


#11
Benzene
Concen: 526.39 ppbv
RT: 5.006 min Scan# 570
Delta R.T. -0.006 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 78 Resp: 153624

Ion	Ratio	Lower	Upper
78	100		
77	22.9	18.4	27.6
50	19.2	14.6	21.8

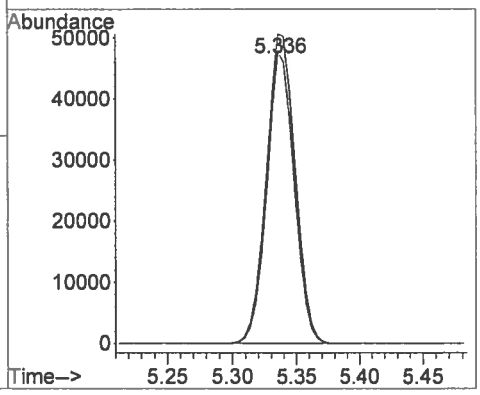


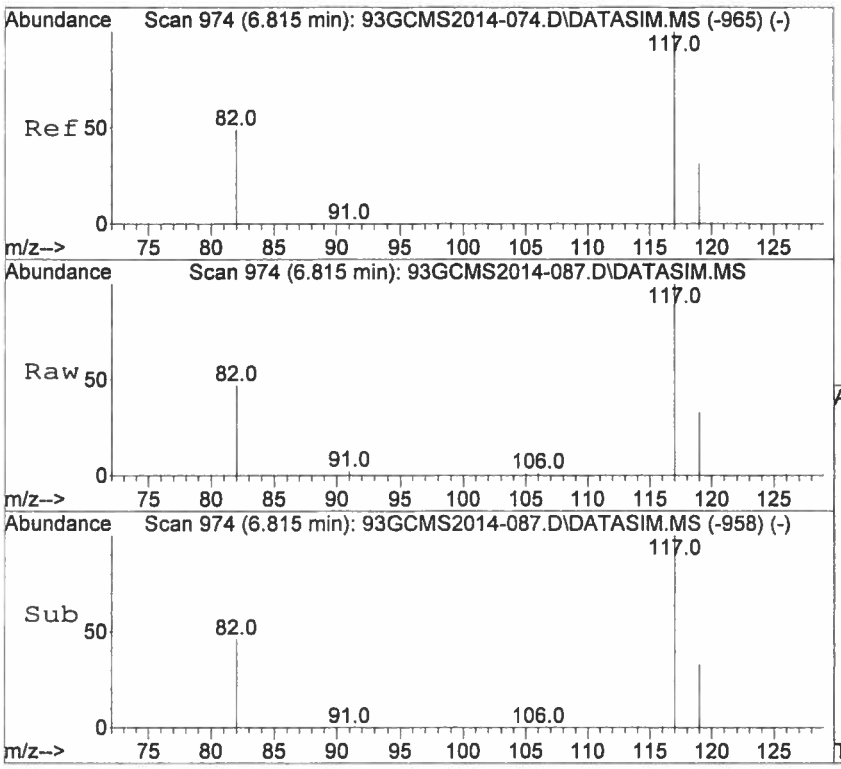


#12
Trichloroethene
Concen: 508.23 ppbv
RT: 5.336 min Scan# 629
Delta R.T. -0.004 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion:130 Resp: 79005

Ion	Ratio	Lower	Upper
130	100		
132	96.2	77.0	115.6
95	93.3	72.9	109.3

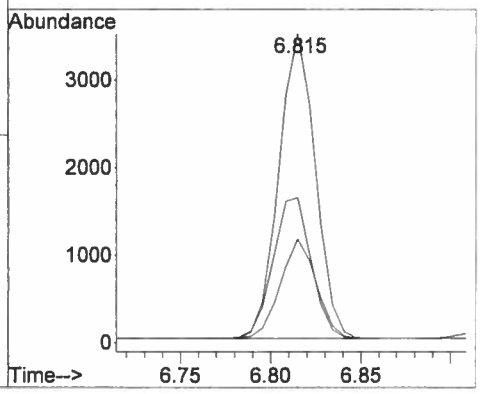


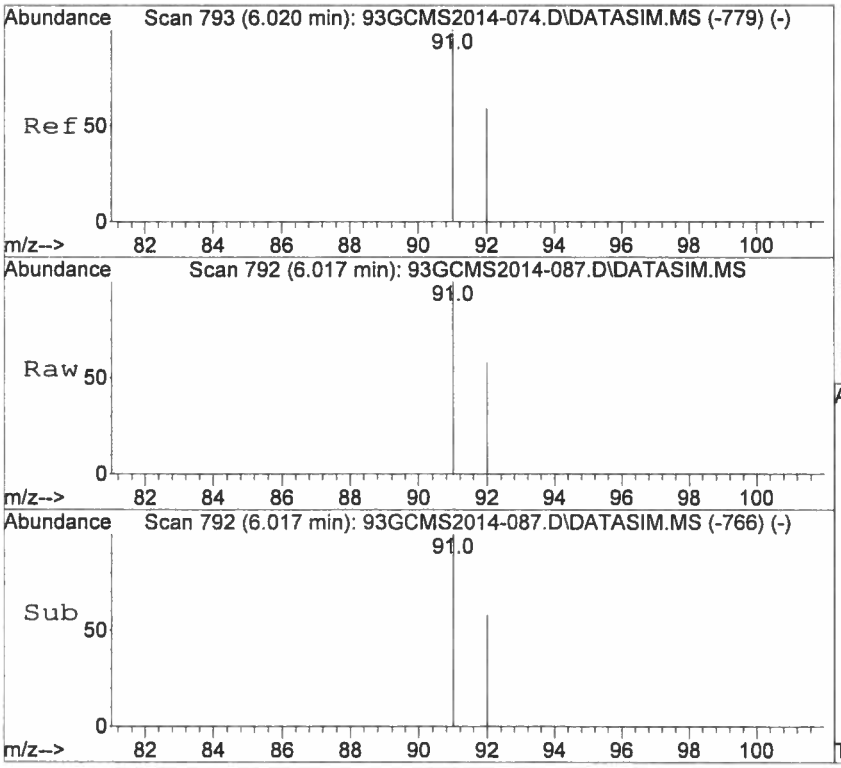


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. 0.000 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion:117 Resp: 4889

Ion	Ratio	Lower	Upper
117	100		
82	48.3	37.8	56.6
119	32.1	25.6	38.4

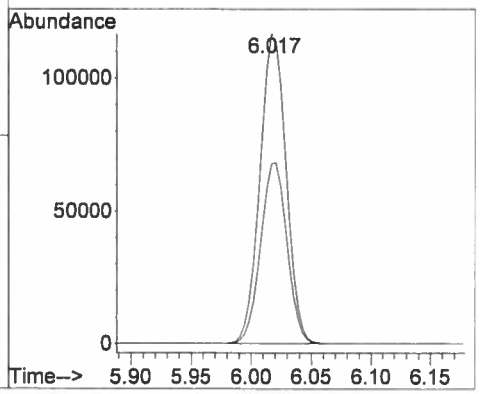


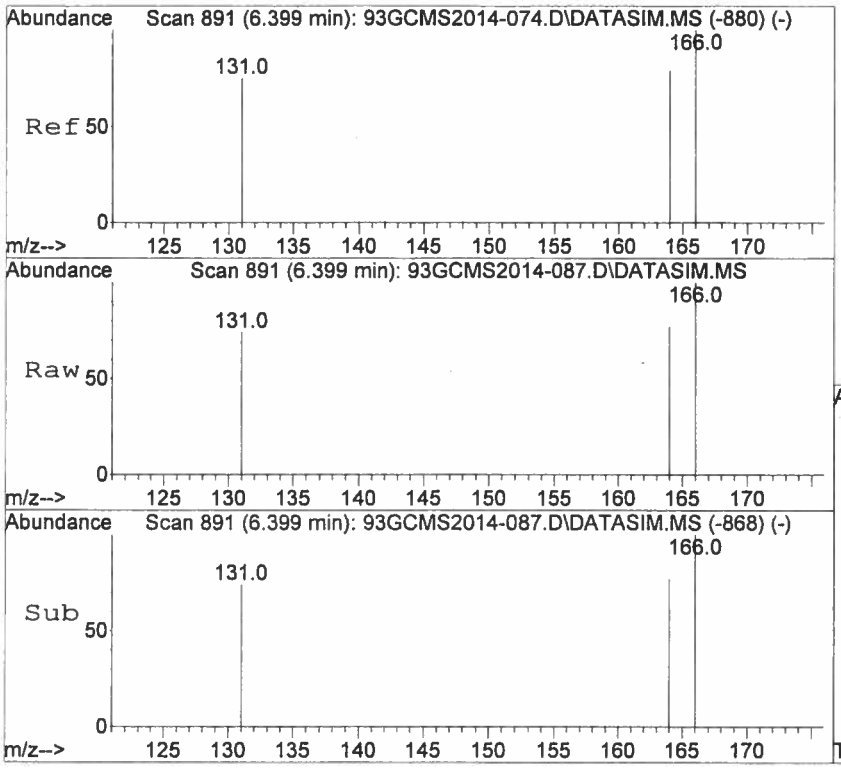


#14
Toluene
Concen: 524.73 ppbv
RT: 6.017 min Scan# 792
Delta R.T. -0.004 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 91 Resp: 176282

Ion	Ratio	Lower	Upper
91	100		
92	58.8	47.2	70.8

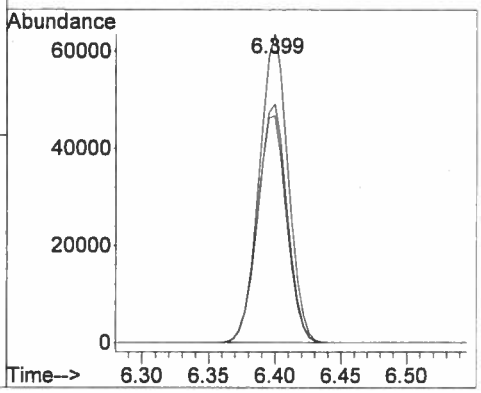


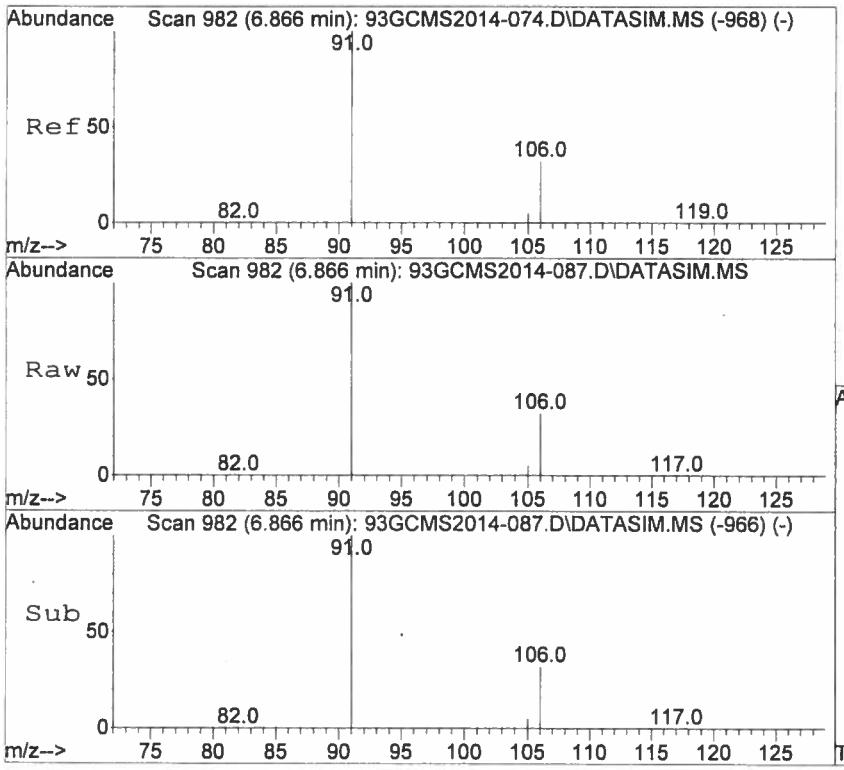


#15
Tetrachloroethene
Concen: 529.10 ppbv
RT: 6.399 min Scan# 891
Delta R.T. 0.000 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion:166 Resp: 96370

Ion	Ratio	Lower	Upper
166	100		
164	78.2	62.5	93.7
131	75.0	58.6	88.0

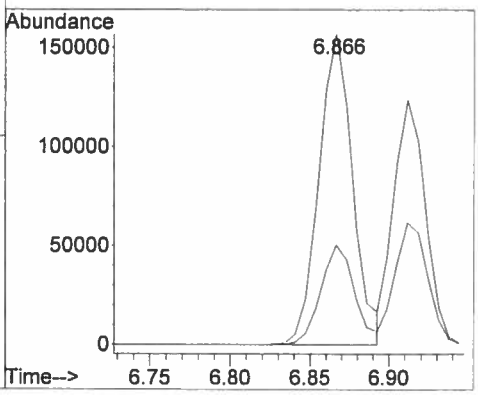


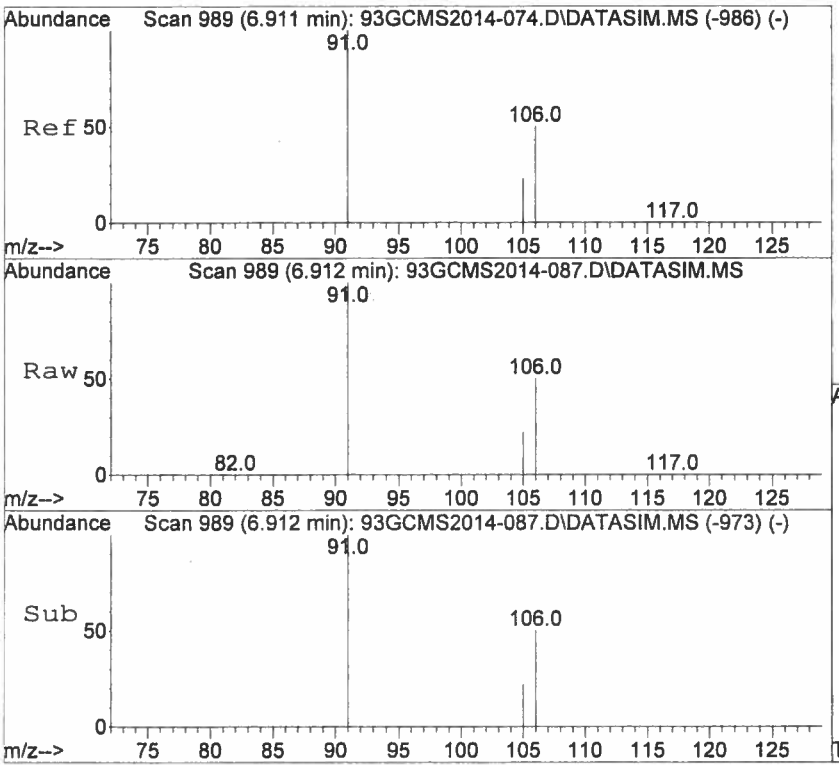


#16
Ethyl Benzene
Concen: 574.65 ppbv
RT: 6.866 min Scan# 982
Delta R.T. 0.000 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 91 Resp: 232174

Ion	Ratio	Lower	Upper
91	100		
106	32.2	25.6	38.4

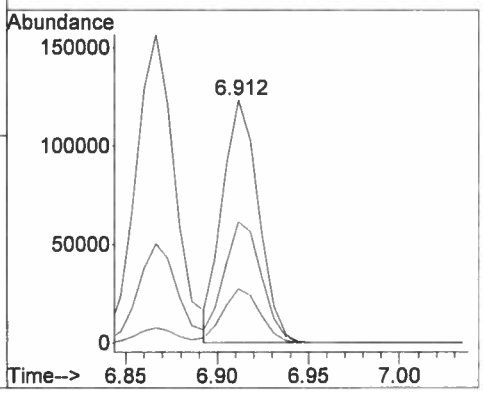


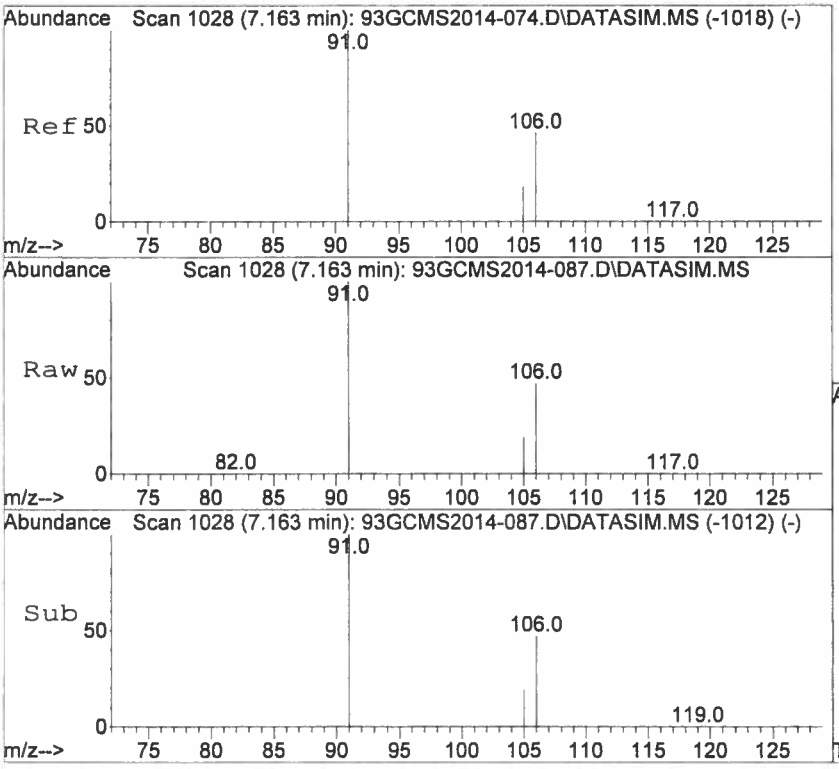


#17
m,p-Xylene
Concen: 544.77 ppbv
RT: 6.912 min Scan# 989
Delta R.T. 0.000 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 91 Resp: 169730

Ion	Ratio	Lower	Upper
91	100		
106	49.9	42.5	63.7
105	22.3	18.6	27.8

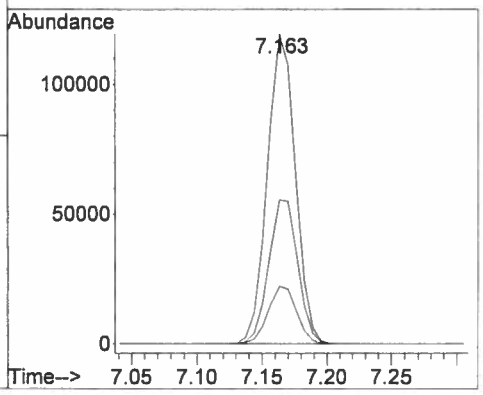




#18
o-Xylene
Concen: 567.76 ppbv
RT: 7.163 min Scan# 1028
Delta R.T. 0.000 min
Lab File: 93GCMS2014-087.D
Acq: 23 Jan 2014 16:48

Tgt Ion: 91 Resp: 178617

Ion	Ratio	Lower	Upper
91	100		
106	48.2	39.3	58.9
105	19.0	15.4	23.2



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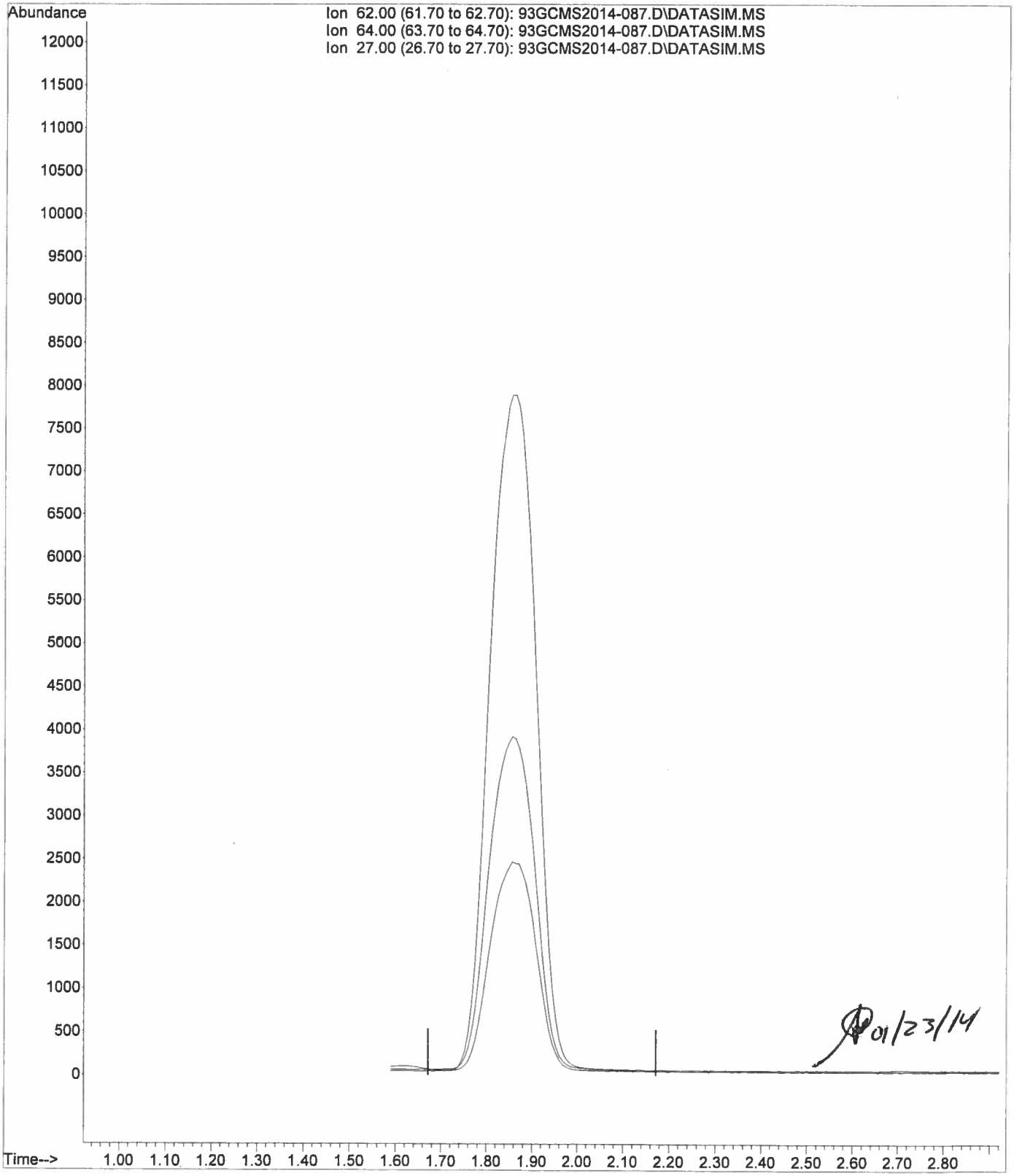
Operator : SJT
Acquired : 23 Jan 2014 16:48 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 20140123-LCS \ 500ppbv LCS
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



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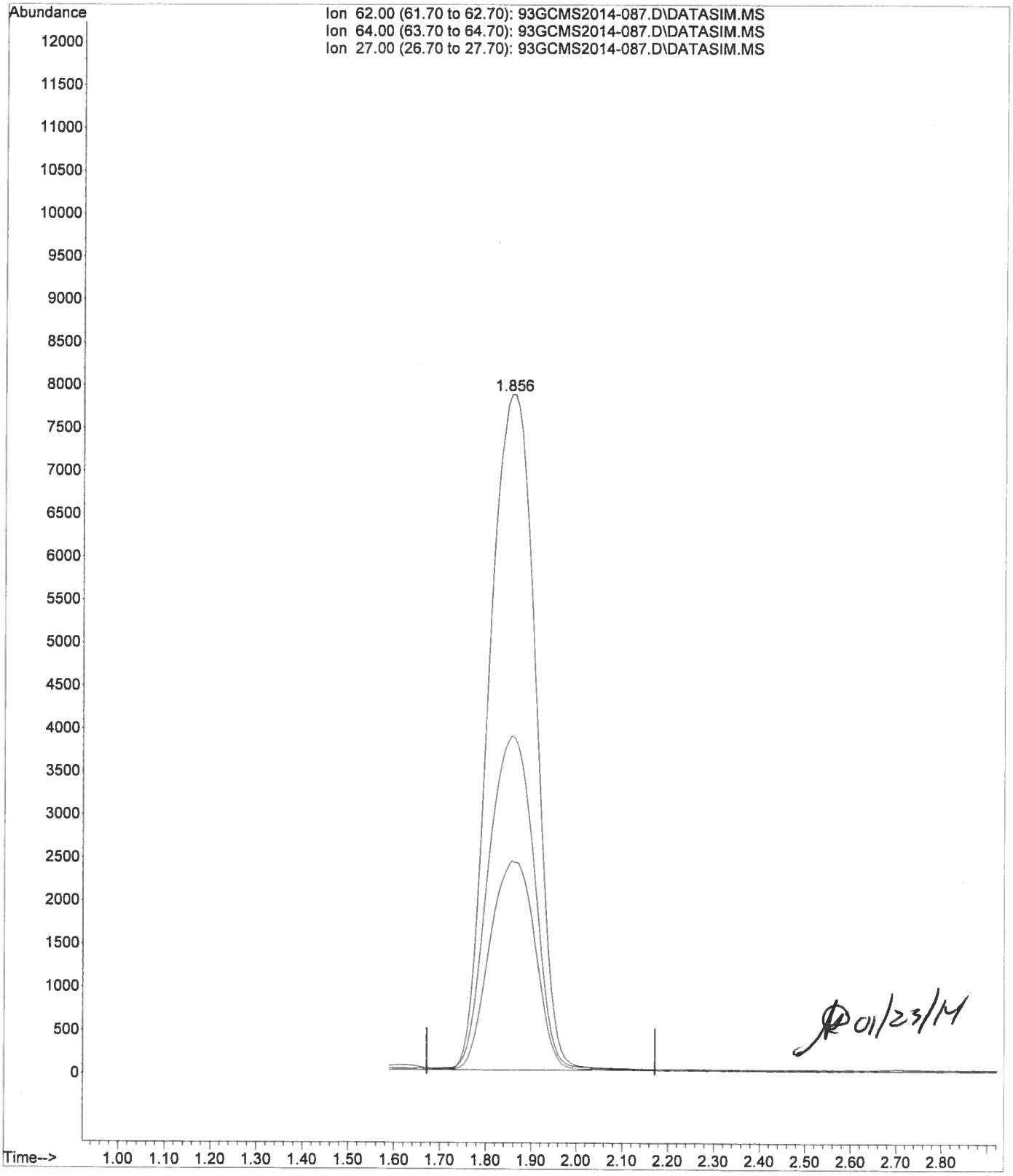
Operator : SJT
Acquired : 23 Jan 2014 16:48 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 20140123-LCS \ 500ppbv LCS
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



01/23/14

GC/MS QA-QC Check Report

Tune File : D:\msdchem\1\data\2014\20140123\93GCMS2014-073.D
Tune Time : 23 Jan 2014 9:17

Daily Calibration File : D:\msdchem\1\data\2014\20140123\93GCMS2014-074.D

File	Sample	Internal Standard Responses		
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93GCMS2014-075.D	STD2014012	1931	4765	4909
93GCMS2014-076.D	20140123-M	1973	4848	4958
93GCMS2014-077.D	20140123-L	1925	4859	4871
93GCMS2014-078.D	219-T-007	1960	4826	4870
93GCMS2014-079.D	219-T-008	1964	4820	4897
93GCMS2014-080.D	219-T-008	2005	4866	4964
93GCMS2014-081.D	219-T-009	1985	4845	4956
93GCMS2014-082.D	219-T-010	1927	4747	4768
93GCMS2014-083.D	219-T-011	1990	4794	4828
93GCMS2014-084.D	219-T-013	1889	4558	4624
93GCMS2014-085.D	219-T-014	1995	4810	4863
93GCMS2014-086.D	219-T-015	1966	4762	4829
93GCMS2014-087.D	20140123-L	1983	4863	4889

(fails) - fails 24hr time check * - fails criteria

Created: Thu Jan 23 16:57:24 2014 Instrument 2

1/23/14

APPENDIX D

Quantitation Reports

Passyunk Soil Gas Site
Philadelphia, Pennsylvania

GC/MS Analytical Report

February 2014

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-043.D
Acq On : 13 Jan 2014 9:40
Operator : SJT
Sample : 20140113-MB \ Method Blank
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:48:32 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
QLast Update : Mon Jan 13 09:24:10 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	2071	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	5123	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.820	117	5337	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue

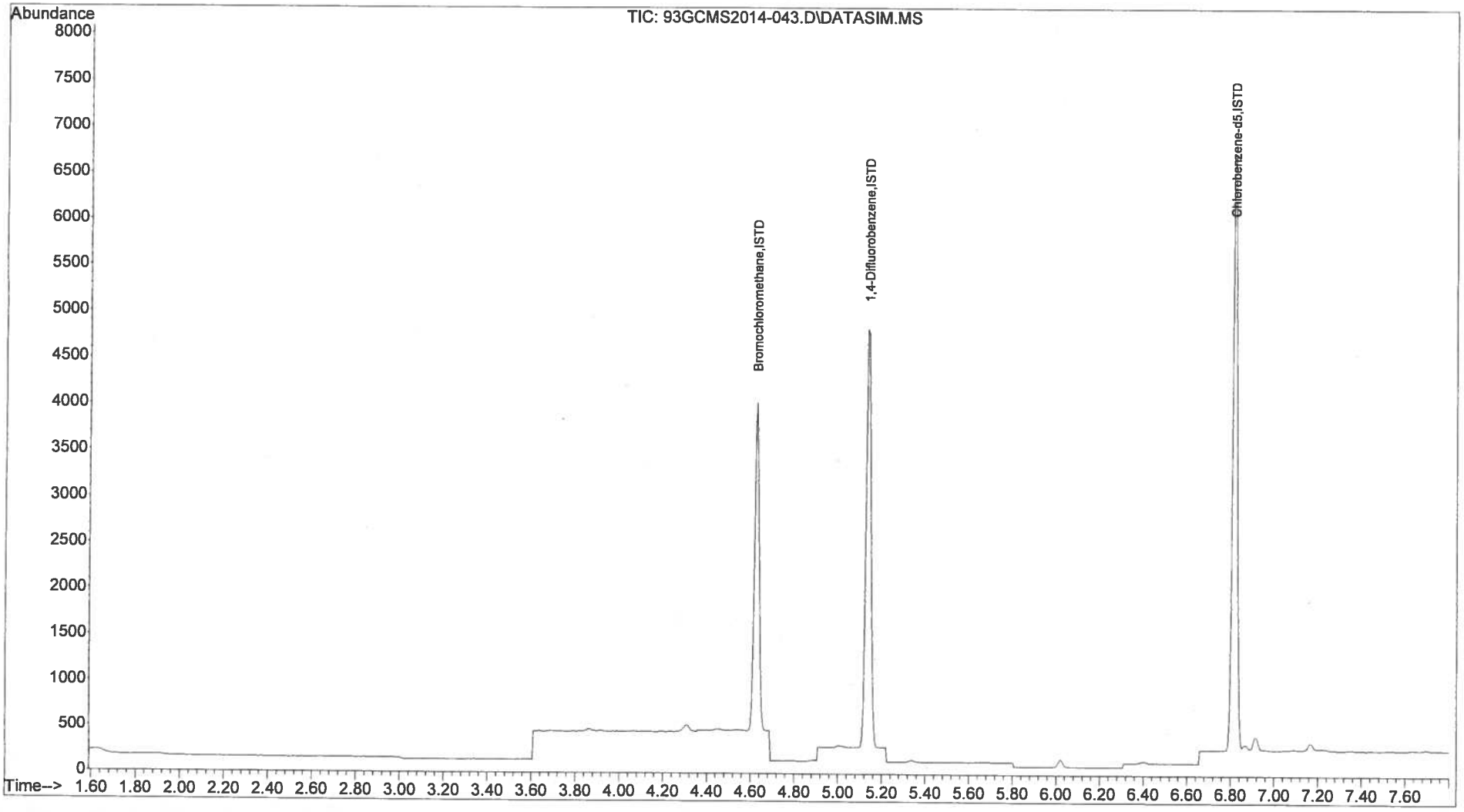
(#) = qualifier out of range (m) = manual integration (+) = signals summed

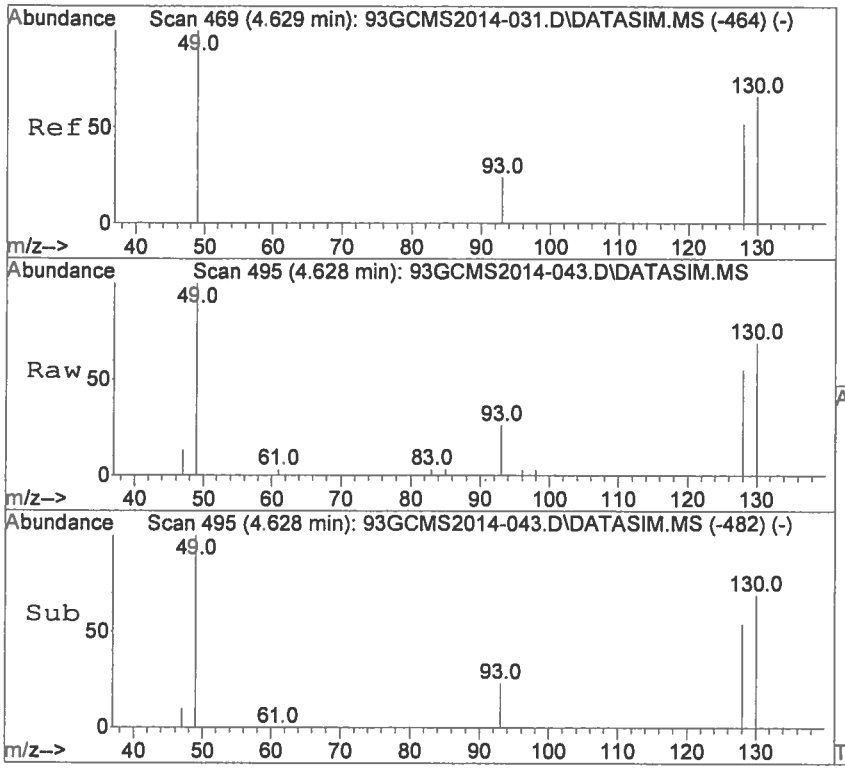
01/13/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140113\
Data File : 93GCMS2014-043.D
Acq On : 13 Jan 2014 9:40
Operator : SJT
Sample : 20140113-MB \ Method Blank
Misc : 5mL \ 13 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 13 09:48:32 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjMon Jan 13 09:24:10 2014
QLast Update : Mon Jan 13 09:24:10 2014
Response via : Initial Calibration

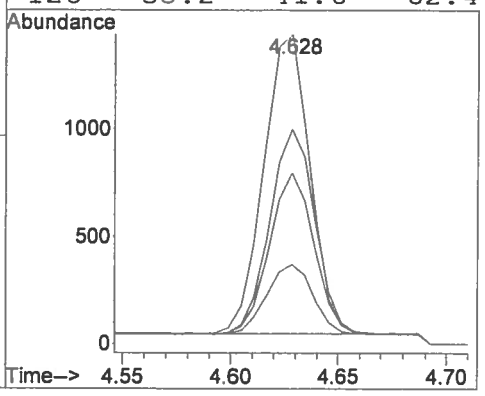


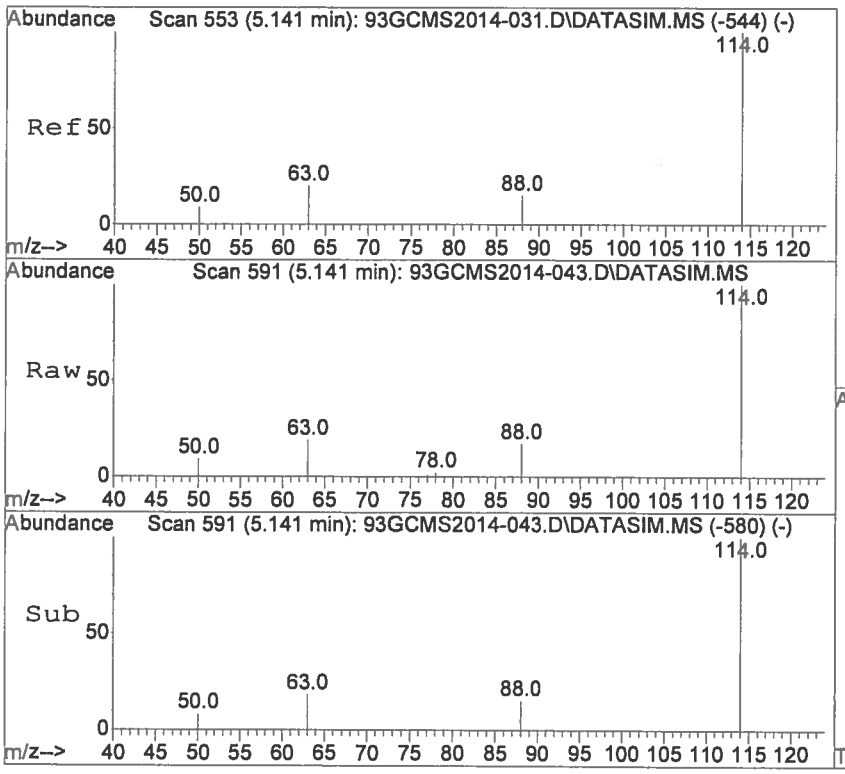


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-043.D
Acq: 13 Jan 2014 9:40

Tgt Ion: 49 Resp: 2071

Ion	Ratio	Lower	Upper
49	100		
130	69.3	51.6	77.4
93	25.6	19.6	29.4
128	55.2	41.6	62.4

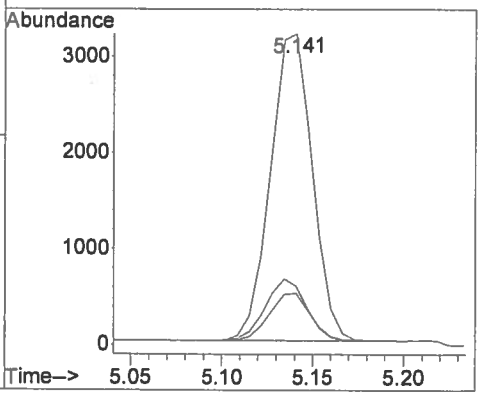


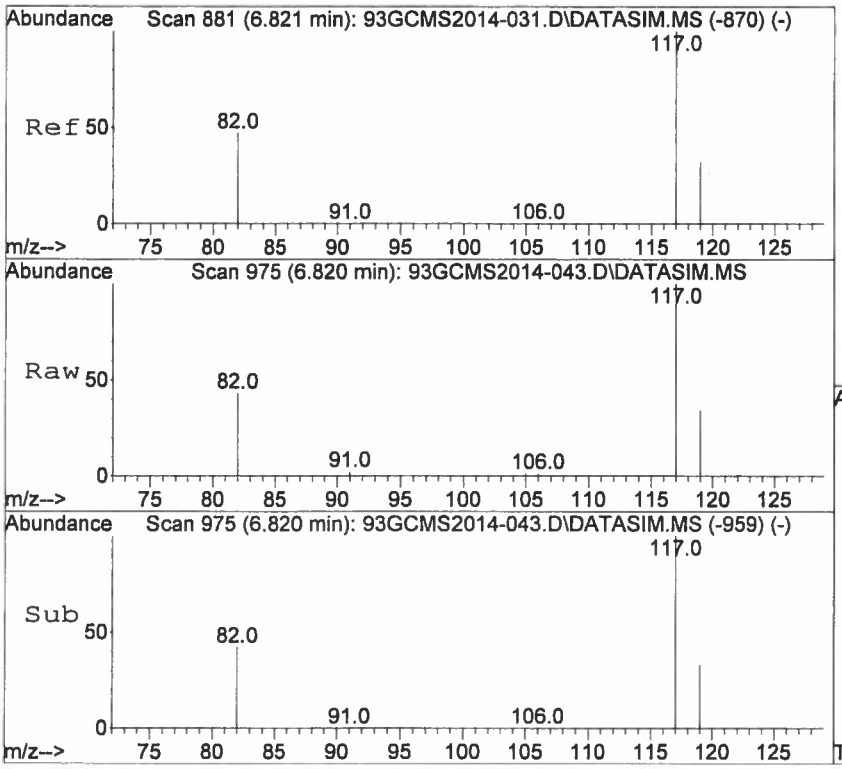


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.001 min
Lab File: 93GCMS2014-043.D
Acq: 13 Jan 2014 9:40

Tgt Ion:114 Resp: 5123

Ion	Ratio	Lower	Upper
114	100		
63	19.5	15.1	22.7
88	15.2	12.0	18.0

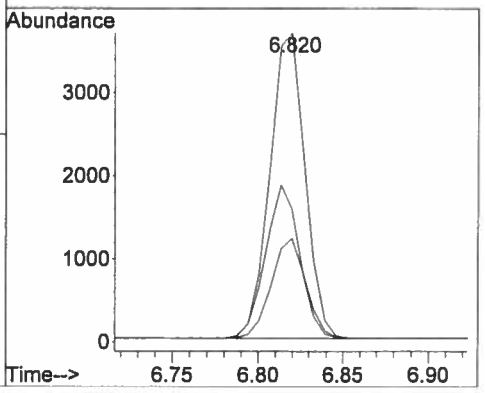




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.820 min Scan# 975
Delta R.T. 0.005 min
Lab File: 93GCMS2014-043.D
Acq: 13 Jan 2014 9:40

Tgt Ion:117 Resp: 5337

Ion	Ratio	Lower	Upper
117	100		
82	48.6	37.8	56.6
119	32.2	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-058.D
Acq On : 21 Jan 2014 6:40
Operator : SJT
Sample : 20140121-MB \ Method Blank
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:47:08 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06 23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1949	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4868	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.820	117	5056	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue

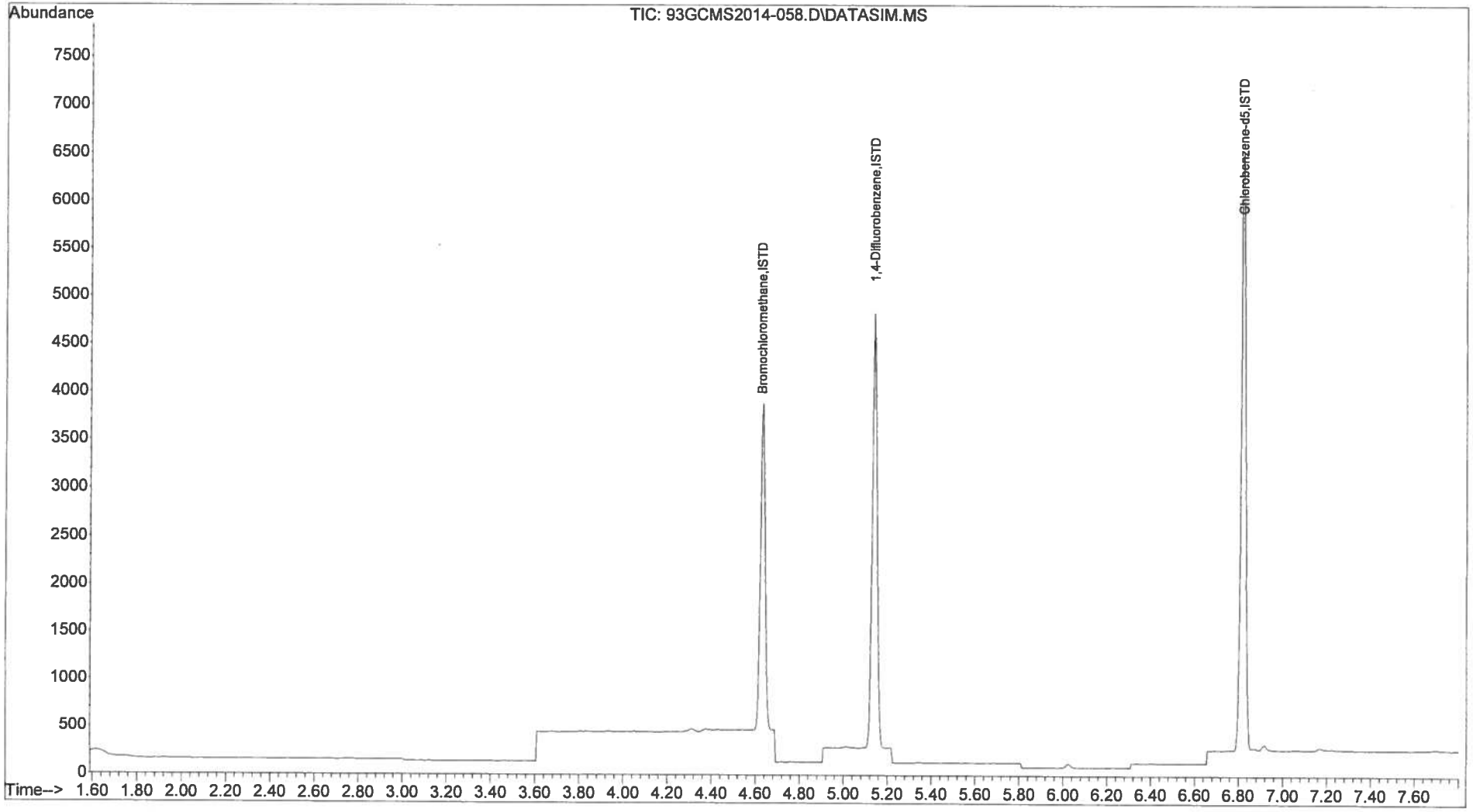
(#) = qualifier out of range (m) = manual integration (+) = signals summed

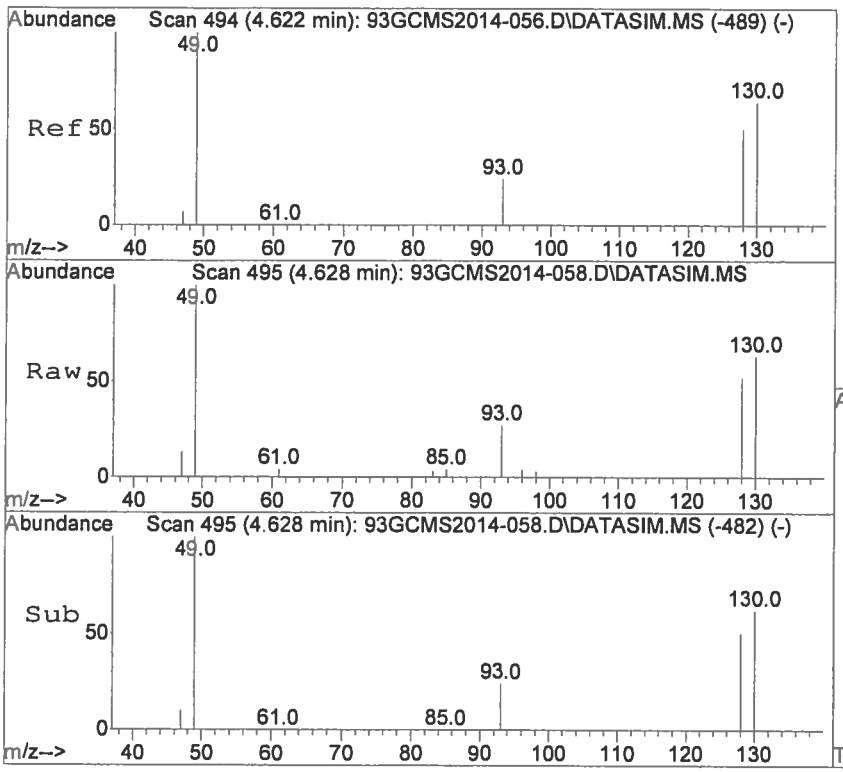
01/21/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-058.D
Acq On : 21 Jan 2014 6:40
Operator : SJT
Sample : 20140121-MB \ Method Blank
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 06:47:08 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

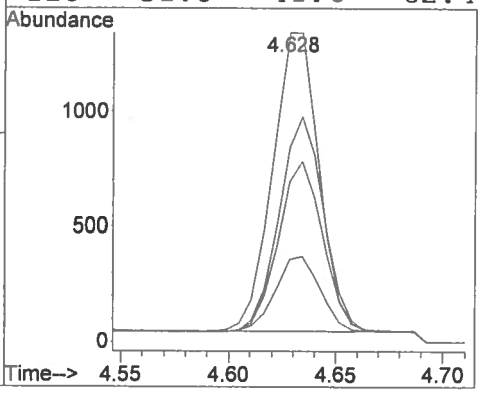


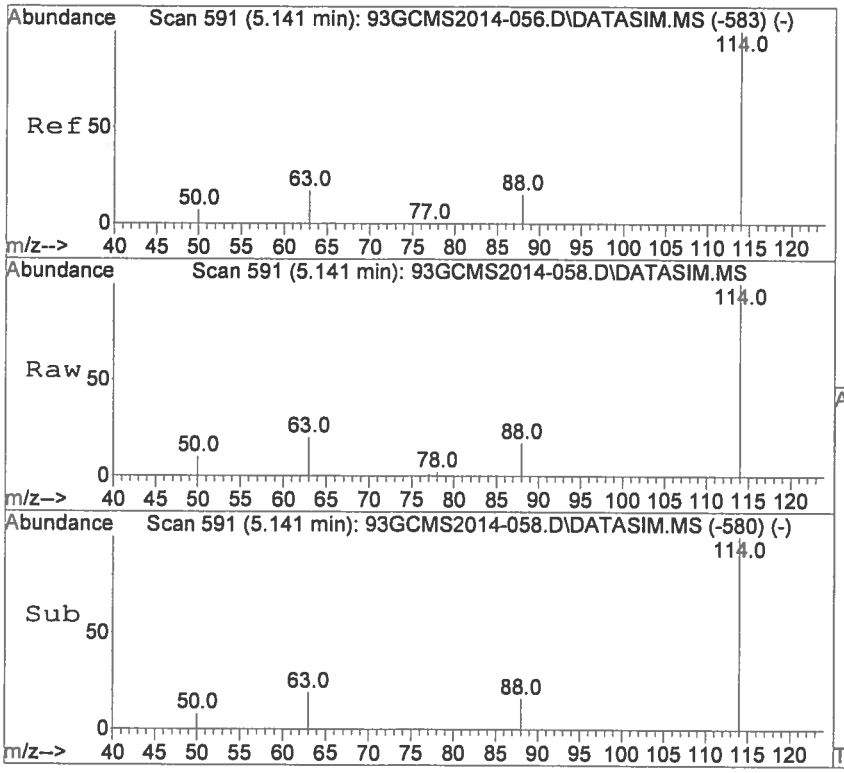


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-058.D
Acq: 21 Jan 2014 6:40

Tgt Ion: 49 Resp: 1949

Ion	Ratio	Lower	Upper
49	100		
130	62.8	51.6	77.4
93	26.7	19.6	29.4
128	51.8	41.6	62.4

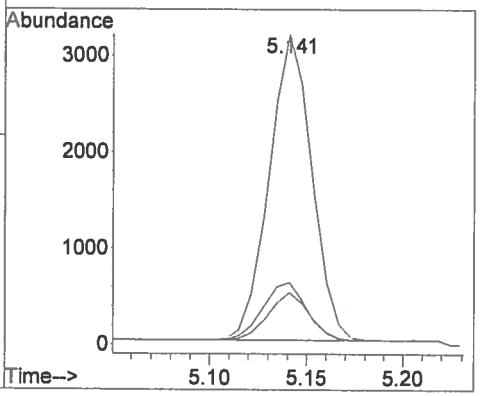


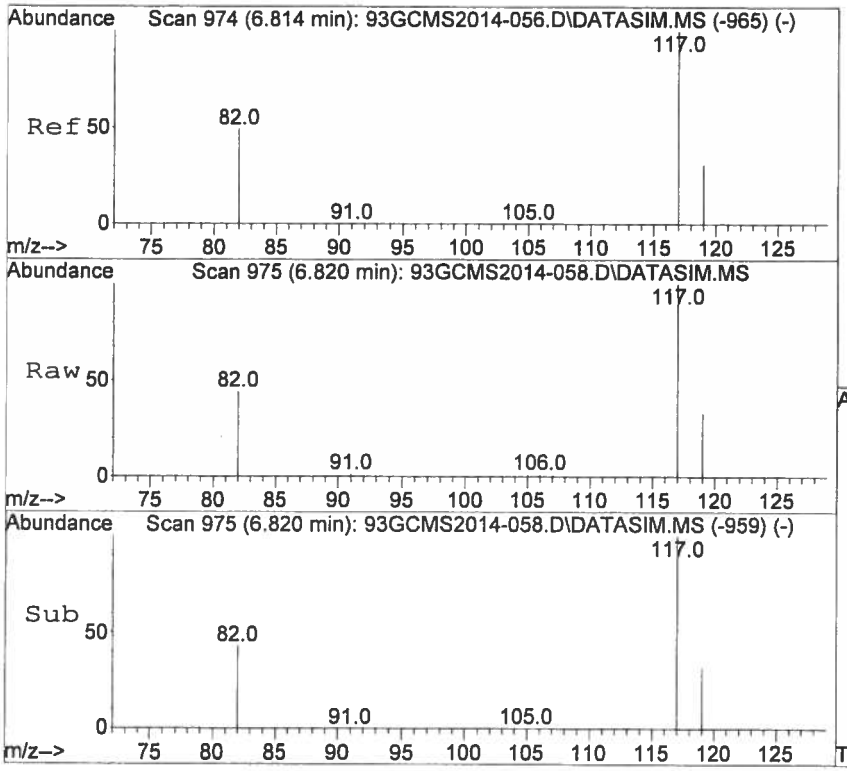


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. -0.000 min
Lab File: 93GCMS2014-058.D
Acq: 21 Jan 2014 6:40

Tgt Ion:114 Resp: 4868

Ion	Ratio	Lower	Upper
114	100		
63	19.3	15.1	22.7
88	15.2	12.0	18.0

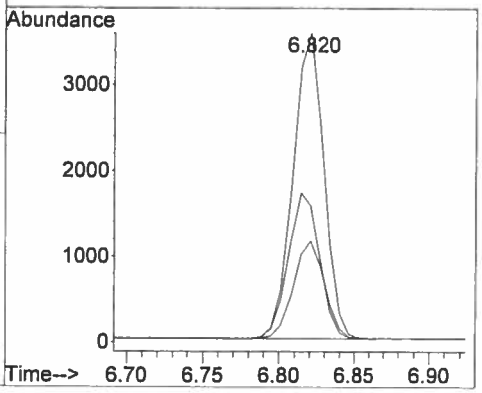




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.820 min Scan# 975
Delta R.T. 0.006 min
Lab File: 93GCMS2014-058.D
Acq: 21 Jan 2014 6:40

Tgt Ion:117 Resp: 5056

Ion	Ratio	Lower	Upper
117	100		
82	48.2	37.8	56.6
119	32.0	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-060.D
Acq On : 21 Jan 2014 11:51
Operator : SJT
Sample : 219-T-012 \ V12
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 11:58:13 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06 23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	2070	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	5180	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	5369	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.553	83	1024	4.84	ppbv	97
15) Tetrachloroethene	6.399	166	340	1.70	ppbv	96

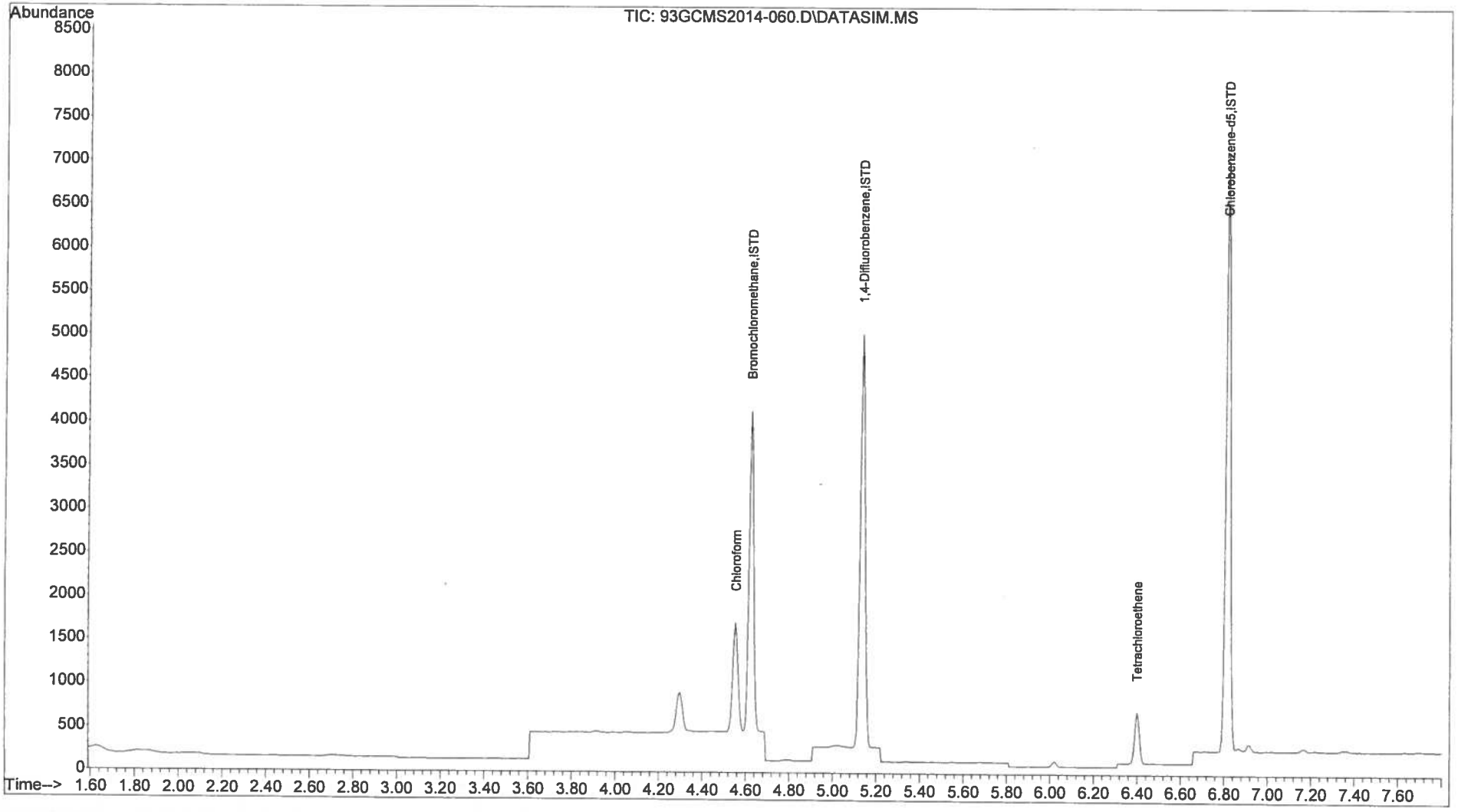
(#) = qualifier out of range (m) = manual integration (+) = signals summed

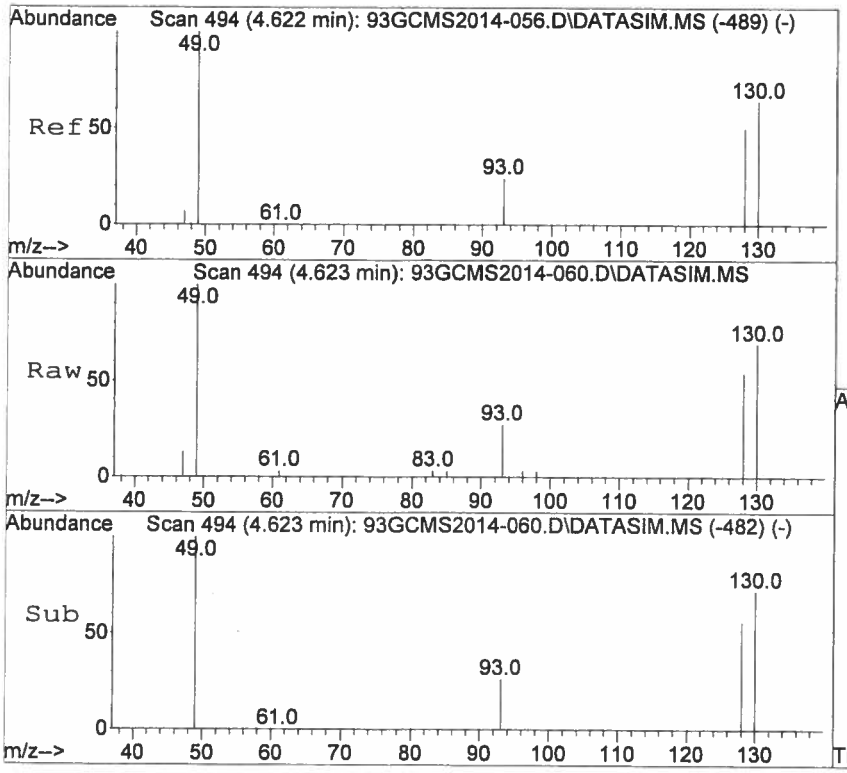
01/21/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140121\
Data File : 93GCMS2014-060.D
Acq On : 21 Jan 2014 11:51
Operator : SJT
Sample : 219-T-012 \ V12
Misc : 5mL \ 21 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 21 11:58:13 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjTue Jan 21 06:23:54 2014
QLast Update : Tue Jan 21 06:23:54 2014
Response via : Initial Calibration

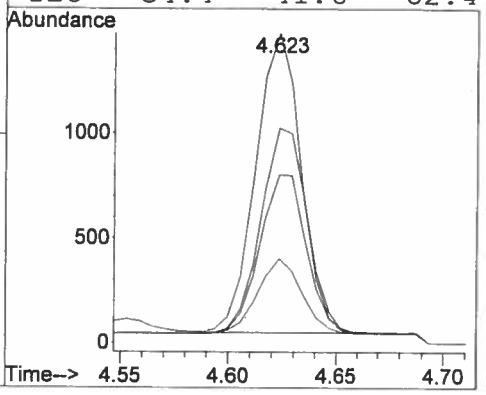


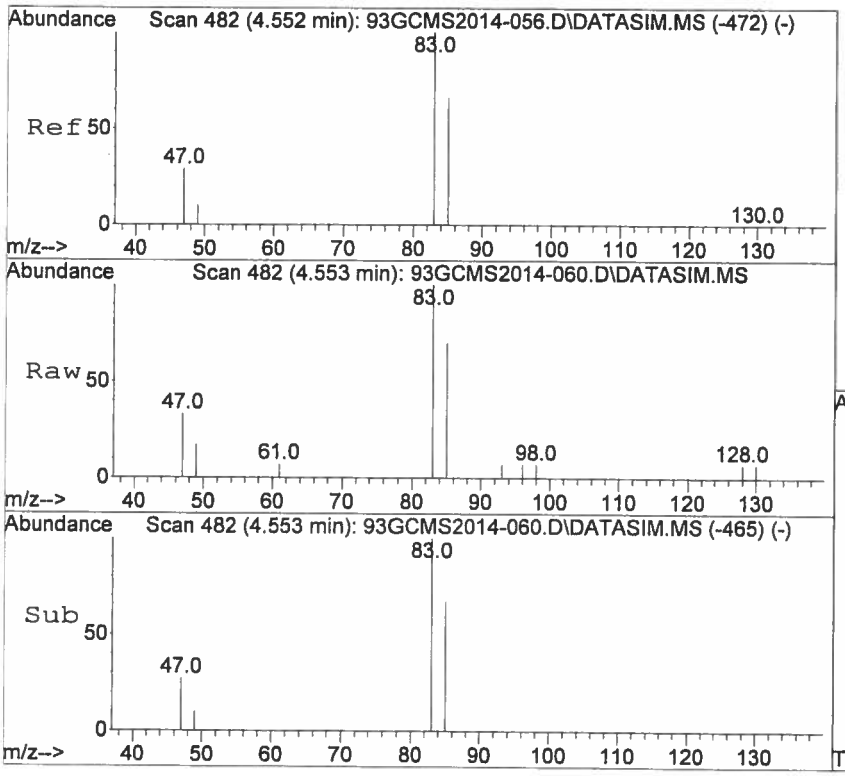


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. 0.000 min
Lab File: 93GCMS2014-060.D
Acq: 21 Jan 2014 11:51

Tgt Ion: 49 Resp: 2070

Ion	Ratio	Lower	Upper
49	100		
130	69.4	51.6	77.4
93	27.2	19.6	29.4
128	54.4	41.6	62.4

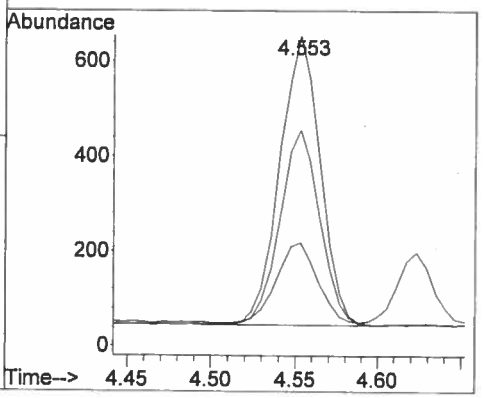


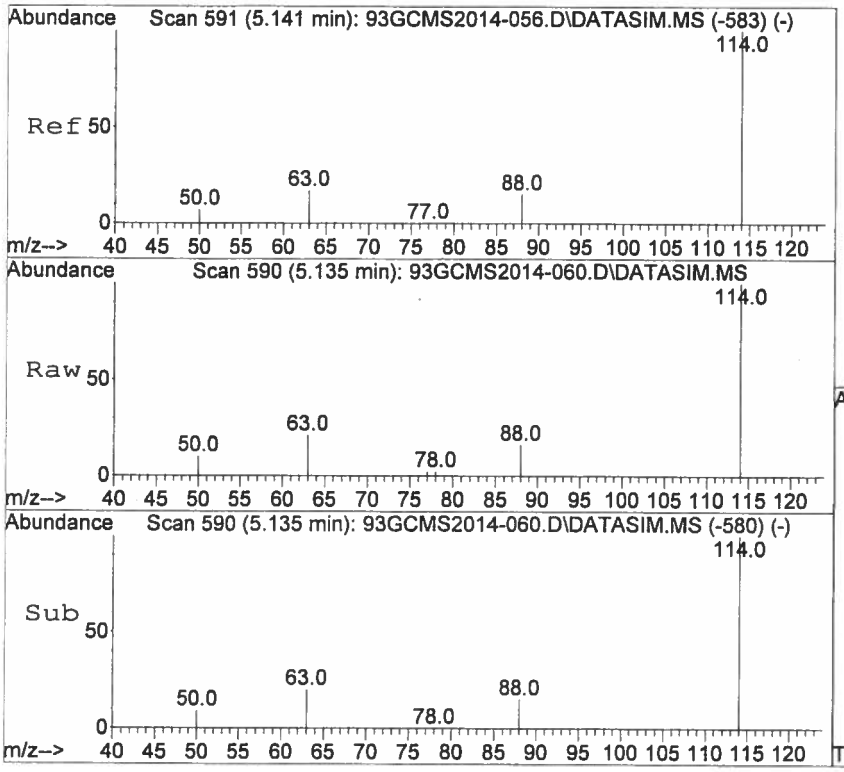


#8
Chloroform
Concen: 4.84 ppbv
RT: 4.553 min Scan# 482
Delta R.T. 0.000 min
Lab File: 93GCMS2014-060.D
Acq: 21 Jan 2014 11:51

Tgt Ion: 83 Resp: 1024

Ion	Ratio	Lower	Upper
83	100		
85	66.9	52.0	78.0
47	28.1	20.0	30.0

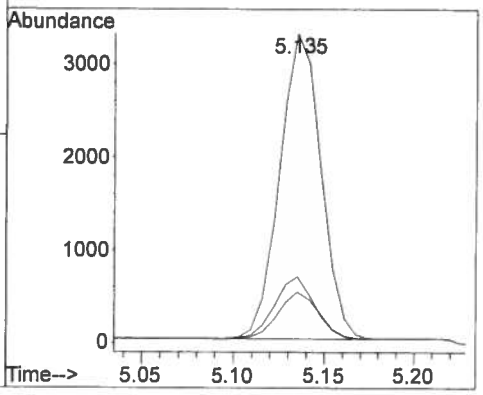


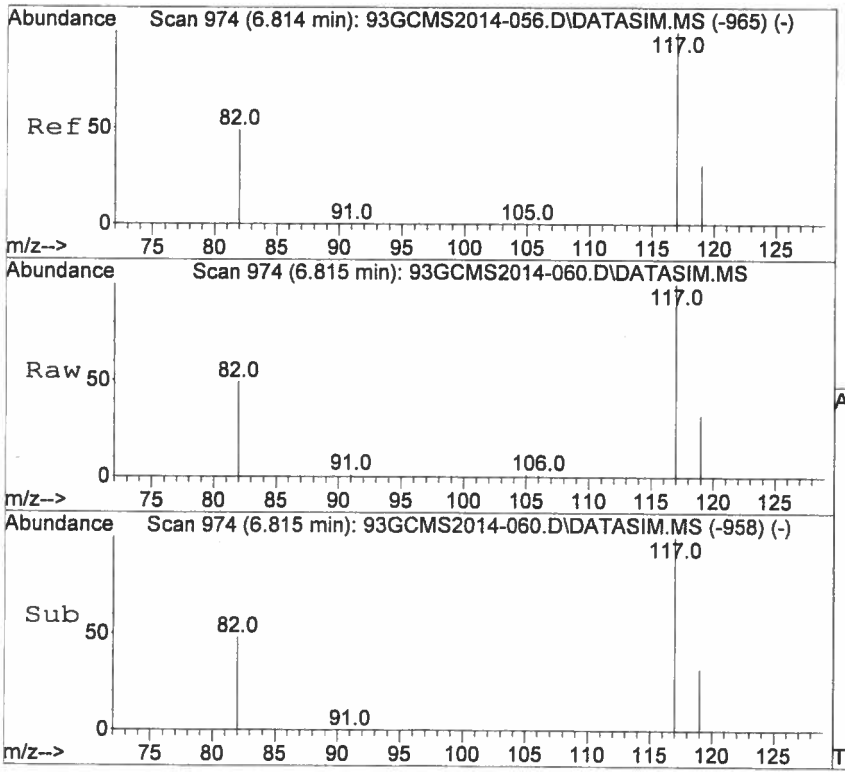


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.006 min
Lab File: 93GCMS2014-060.D
Acq: 21 Jan 2014 11:51

Tgt Ion:114 Resp: 5180

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.1	12.0	18.0

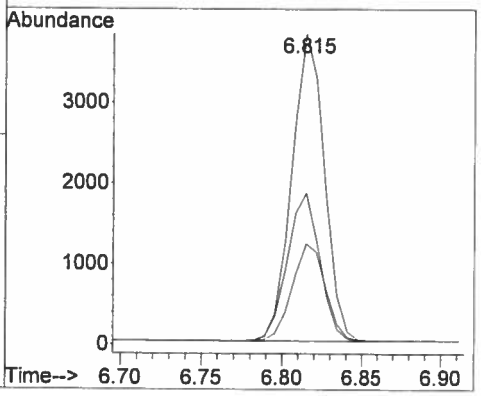


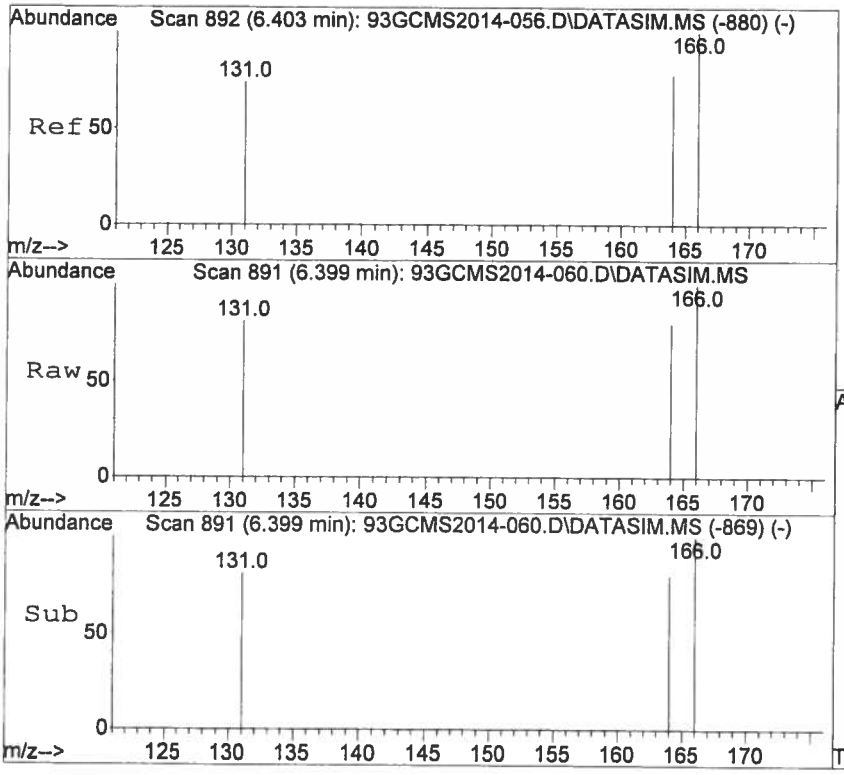


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. 0.000 min
Lab File: 93GCMS2014-060.D
Acq: 21 Jan 2014 11:51

Tgt Ion:117 Resp: 5369

Ion	Ratio	Lower	Upper
117	100		
82	47.9	37.8	56.6
119	32.3	25.6	38.4

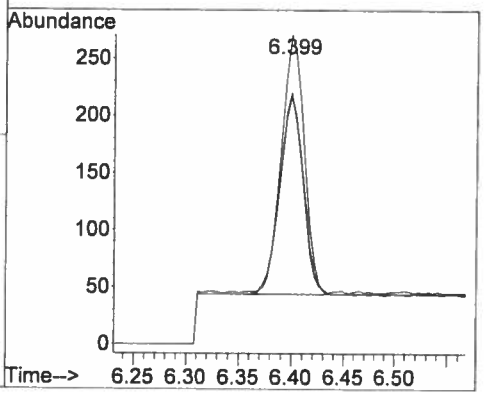




#15
Tetrachloroethene
Concen: 1.70 ppbv
RT: 6.399 min Scan# 891
Delta R.T. -0.004 min
Lab File: 93GCMS2014-060.D
Acq: 21 Jan 2014 11:51

Tgt Ion:166 Resp: 340

Ion	Ratio	Lower	Upper
166	100		
164	80.6	62.5	93.7
131	77.9	58.6	88.0



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-064.D
Acq On : 22 Jan 2014 12:17
Operator : SJT
Sample : 20140122-MB \ Method Blank
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:55:19 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	2017	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4975	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	5123	10.00	ppbv	0.00

System Monitoring Compounds

Target Compounds Qvalue

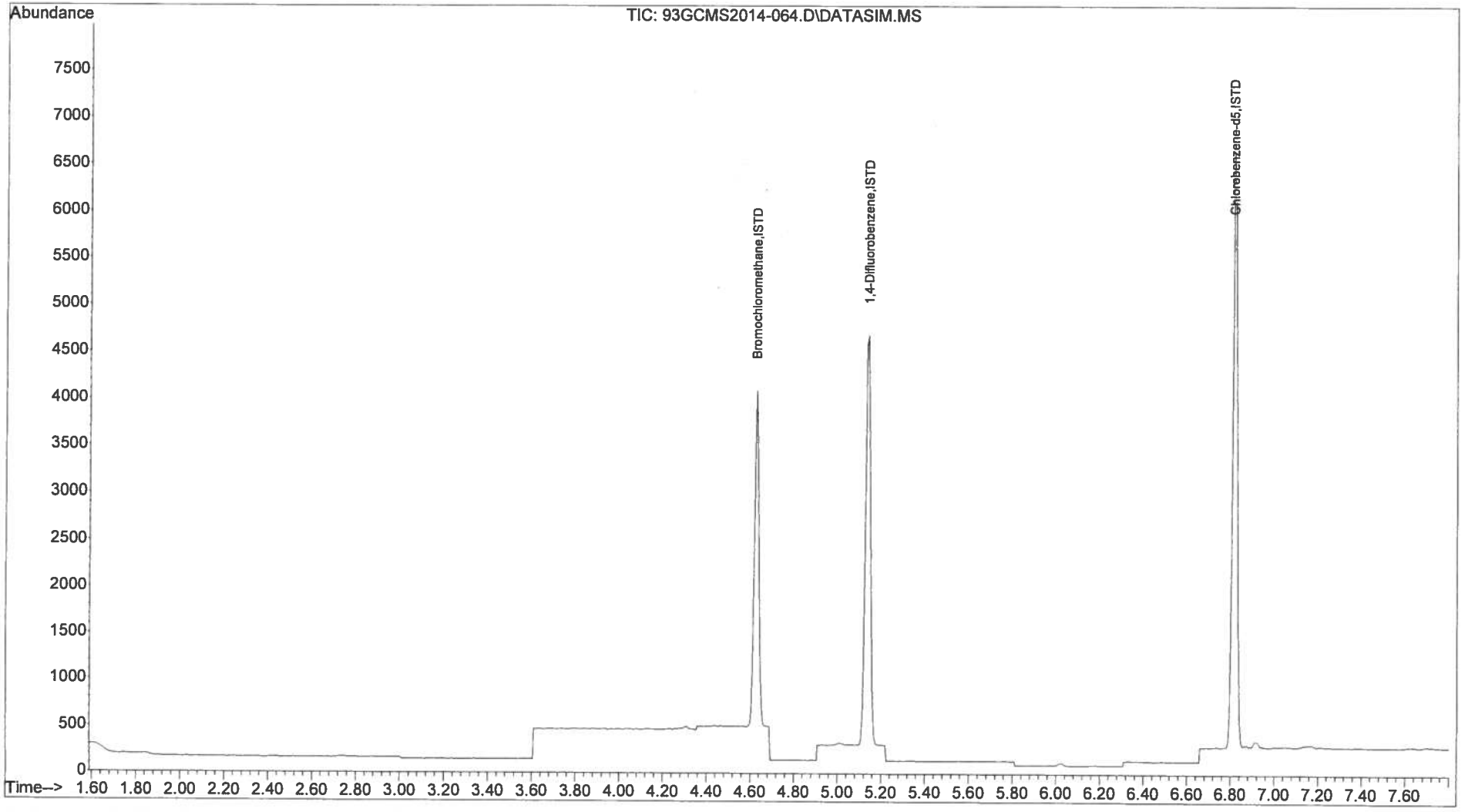
(#) = qualifier out of range (m) = manual integration (+) = signals summed

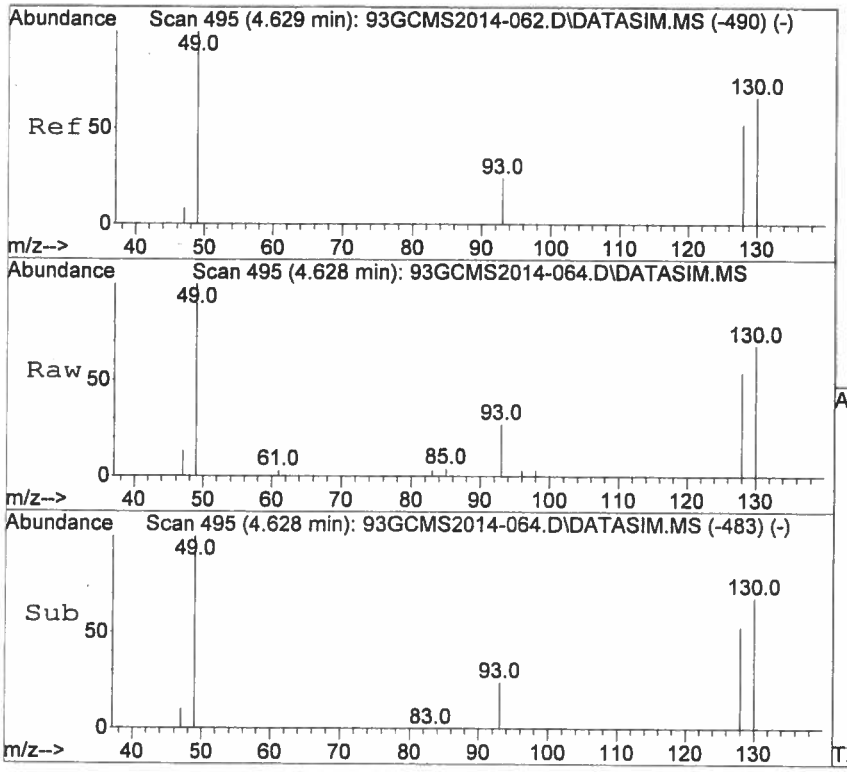
01/22/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-064.D
Acq On : 22 Jan 2014 12:17
Operator : SJT
Sample : 20140122-MB \ Method Blank
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:55:19 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

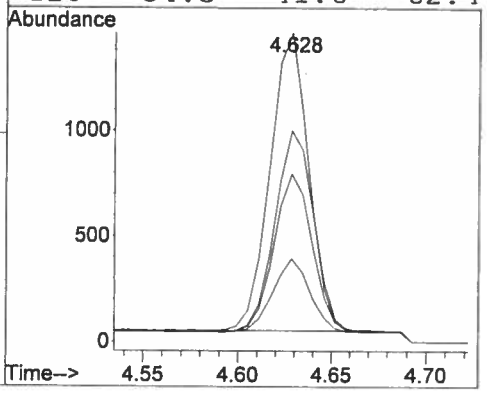


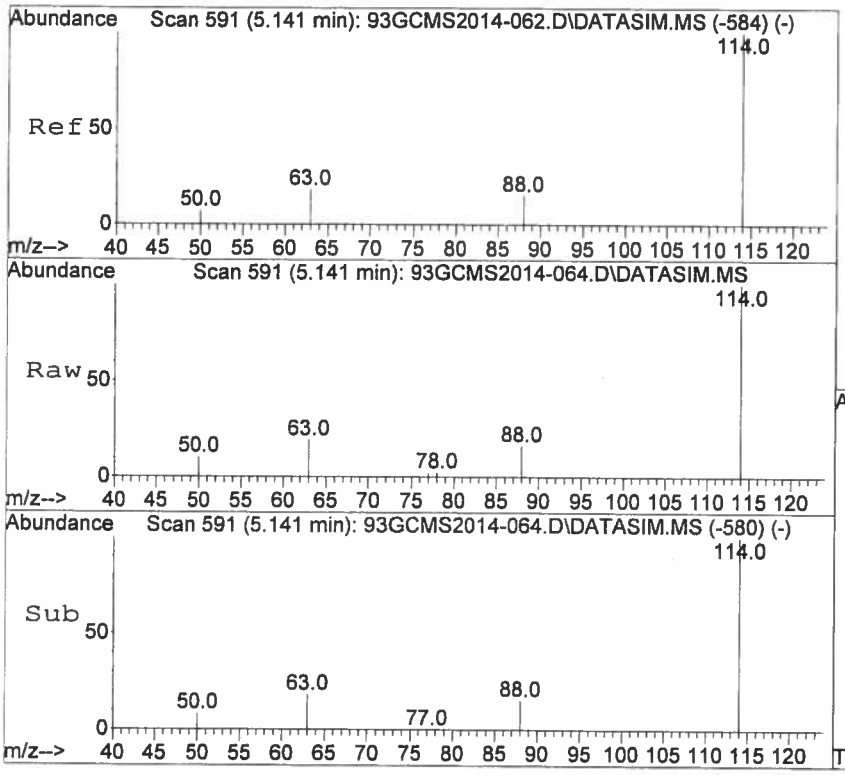


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. -0.000 min
Lab File: 93GCMS2014-064.D
Acq: 22 Jan 2014 12:17

Tgt Ion: 49 Resp: 2017

Ion	Ratio	Lower	Upper
49	100		
130	68.3	51.6	77.4
93	26.9	19.6	29.4
128	54.3	41.6	62.4

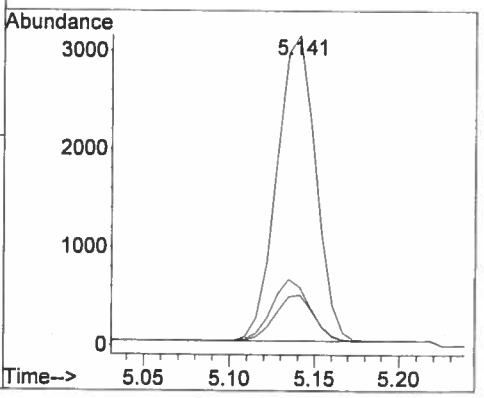


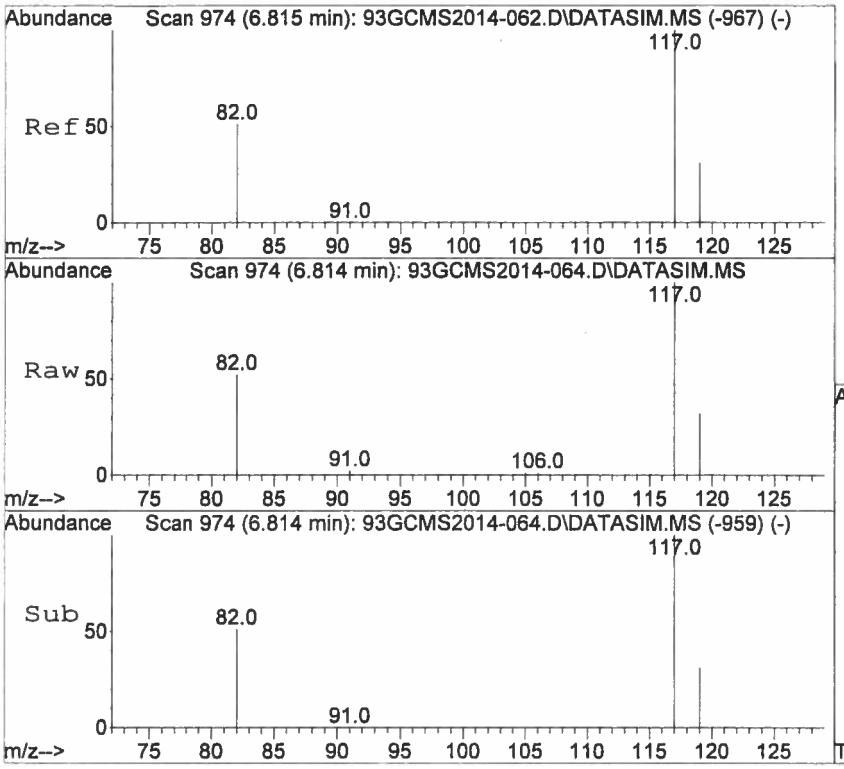


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. -0.000 min
Lab File: 93GCMS2014-064.D
Acq: 22 Jan 2014 12:17

Tgt Ion:114 Resp: 4975

Ion	Ratio	Lower	Upper
114	100		
63	19.4	15.1	22.7
88	15.1	12.0	18.0

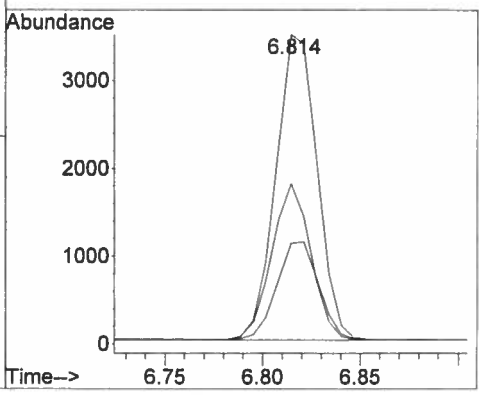




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-064.D
Acq: 22 Jan 2014 12:17

Tgt Ion:117 Resp: 5123

Ion	Ratio	Lower	Upper
117	100		
82	48.5	37.8	56.6
119	32.4	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-066.D
Acq On : 22 Jan 2014 12:41
Operator : SJT
Sample : 219-T-001 \ Unit 84
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:57:37 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12 22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1990	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4947	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	5057	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue

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

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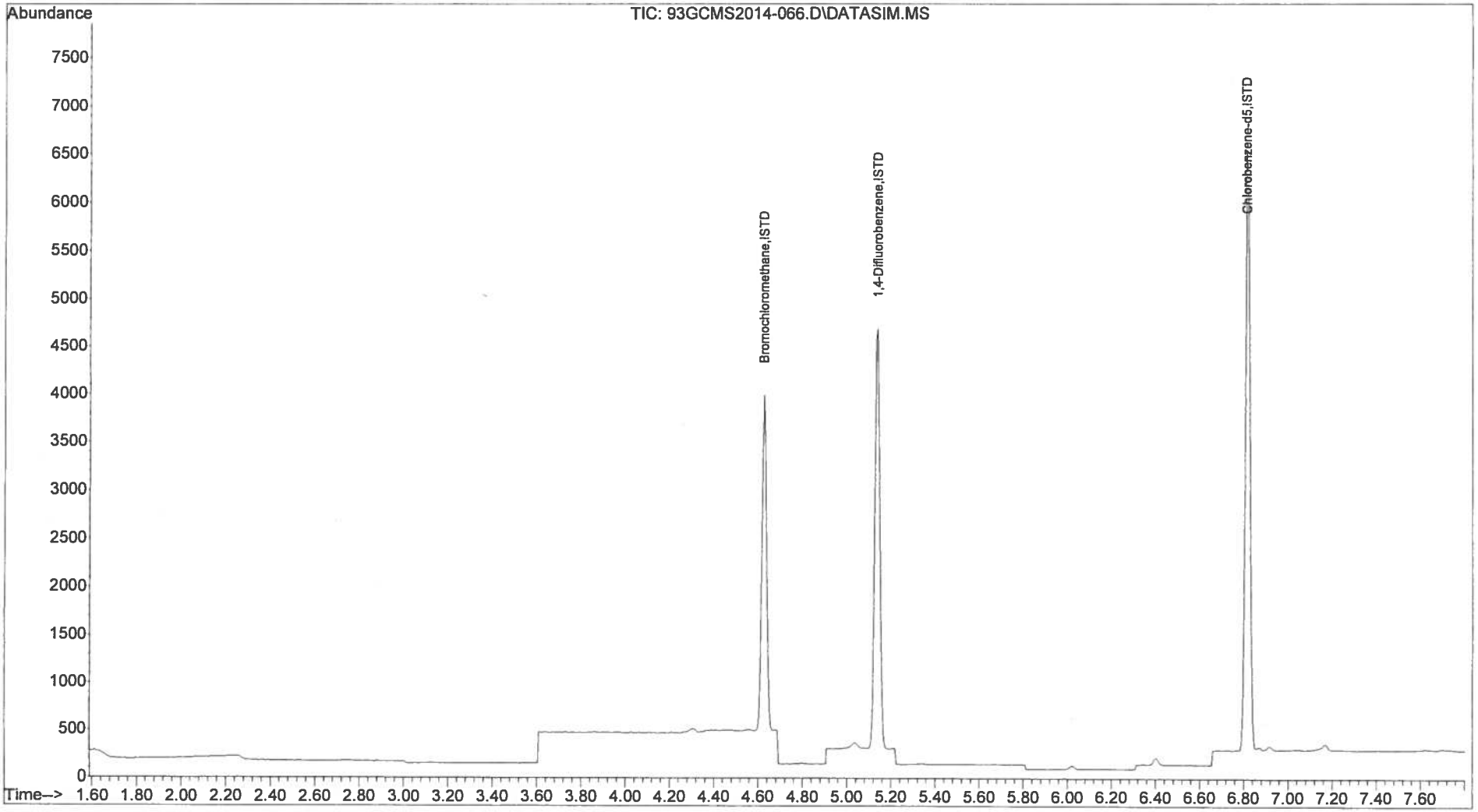
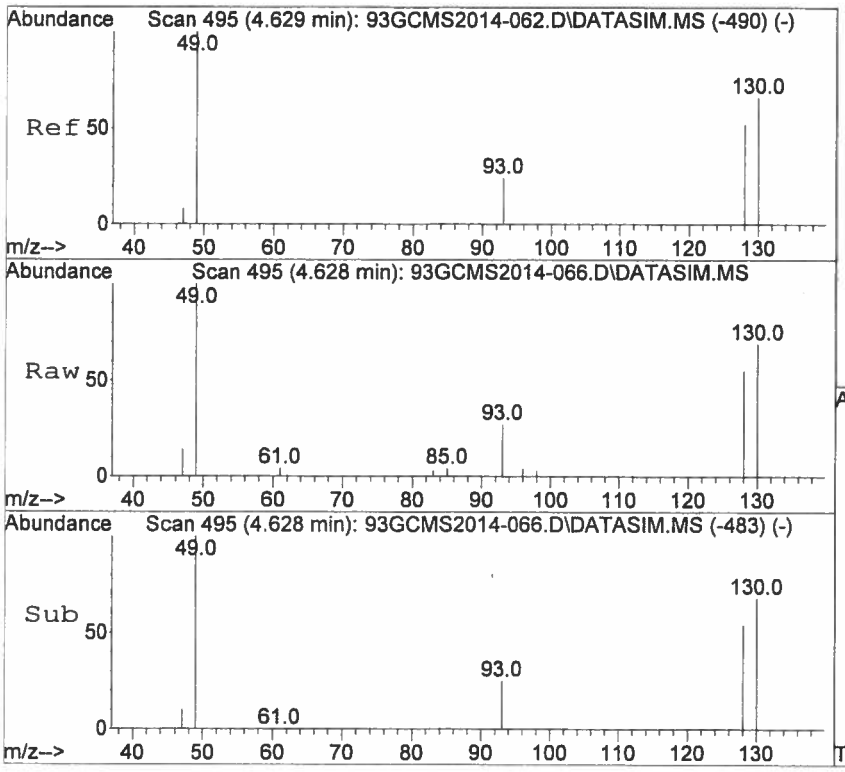
Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-066.D
Acq On : 22 Jan 2014 12:41
Operator : SJT
Sample : 219-T-001 \ Unit 84
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 12:57:37 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

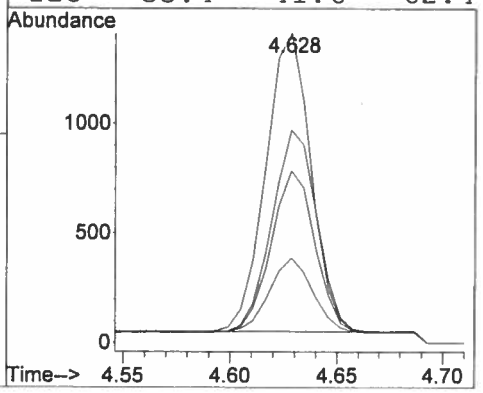


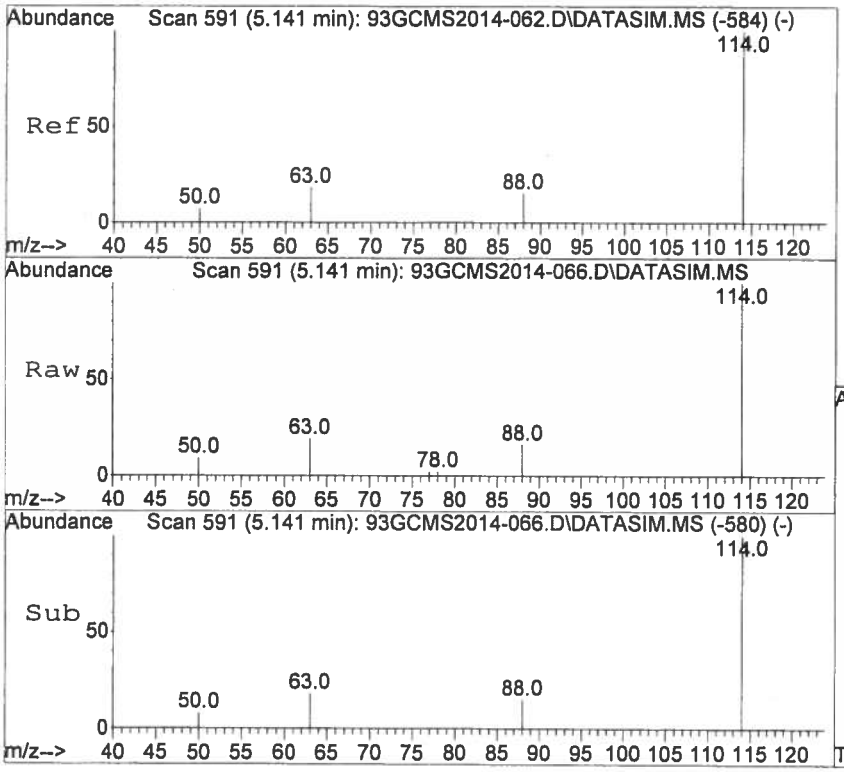


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. -0.000 min
Lab File: 93GCMS2014-066.D
Acq: 22 Jan 2014 12:41

Tgt Ion: 49 Resp: 1990

Ion	Ratio	Lower	Upper
49	100		
130	68.6	51.6	77.4
93	27.3	19.6	29.4
128	55.4	41.6	62.4

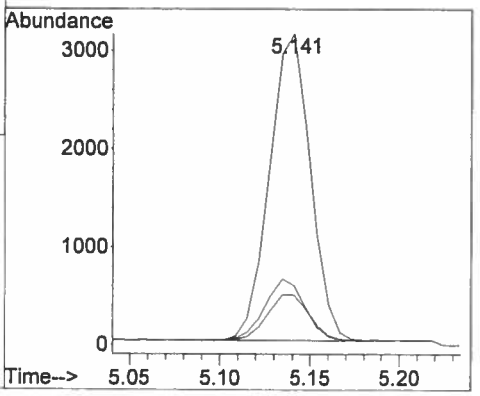


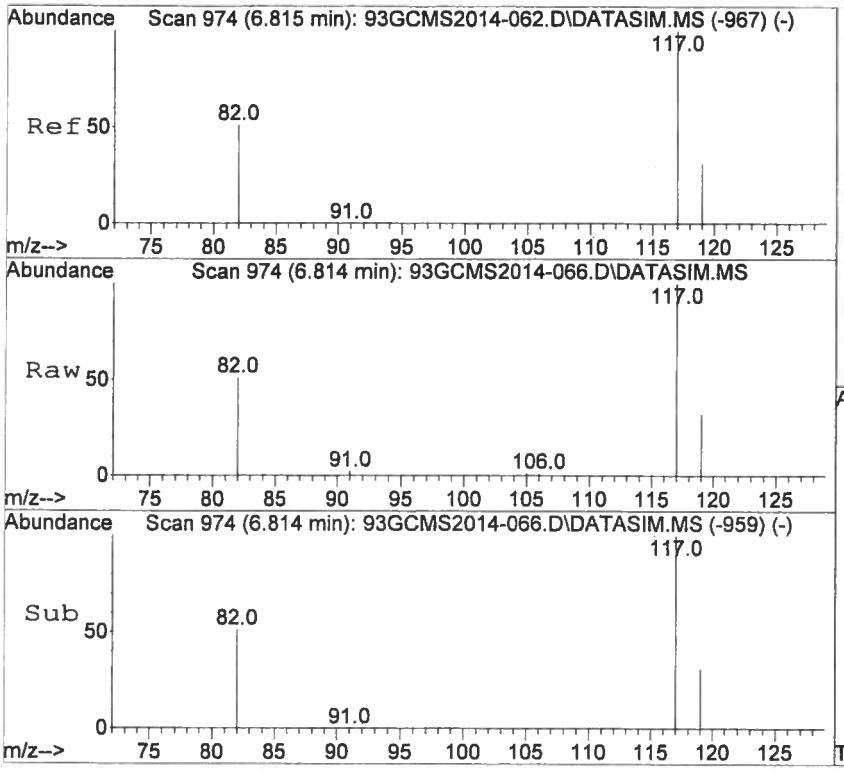


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. -0.000 min
Lab File: 93GCMS2014-066.D
Acq: 22 Jan 2014 12:41

Tgt Ion:114 Resp: 4947

Ion	Ratio	Lower	Upper
114	100		
63	19.4	15.1	22.7
88	15.3	12.0	18.0

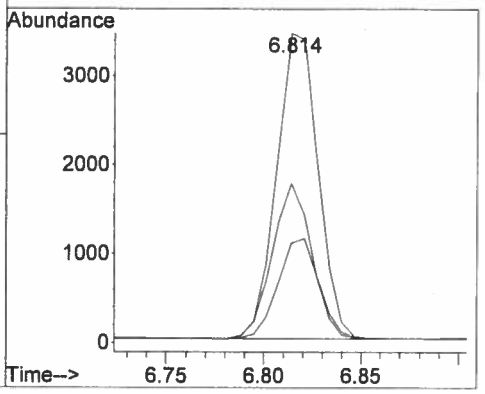




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.001 min
Lab File: 93GCMS2014-066.D
Acq: 22 Jan 2014 12:41

Tgt Ion:117 Resp: 5057

Ion	Ratio	Lower	Upper
117	100		
82	48.2	37.8	56.6
119	32.3	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-067.D
Acq On : 22 Jan 2014 12:53
Operator : SJT
Sample : 219-T-003 \ Unit 50
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 13:00:47 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12 22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	2016	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	4981	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	5119	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.552	83	146	0.71	ppbv	88

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

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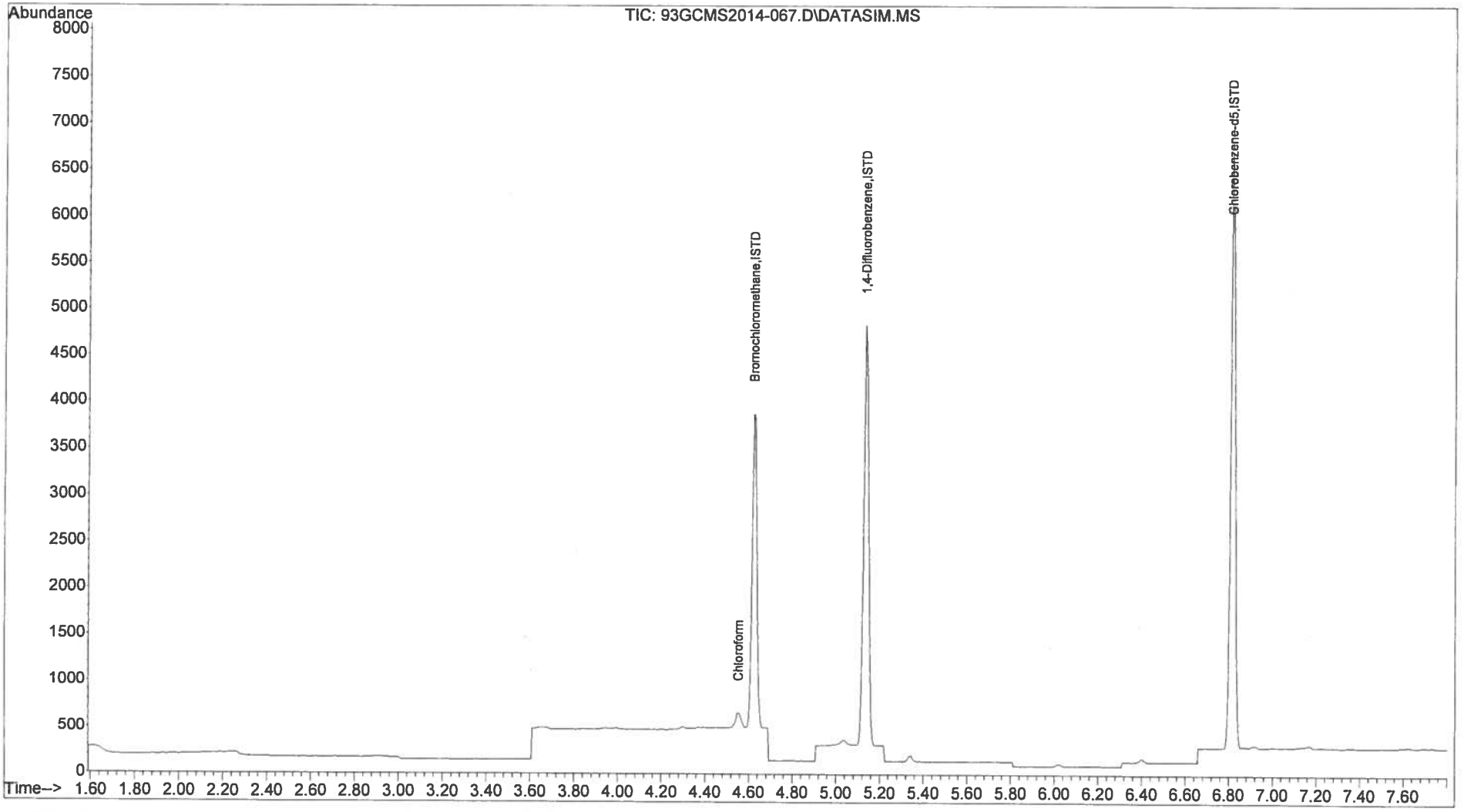
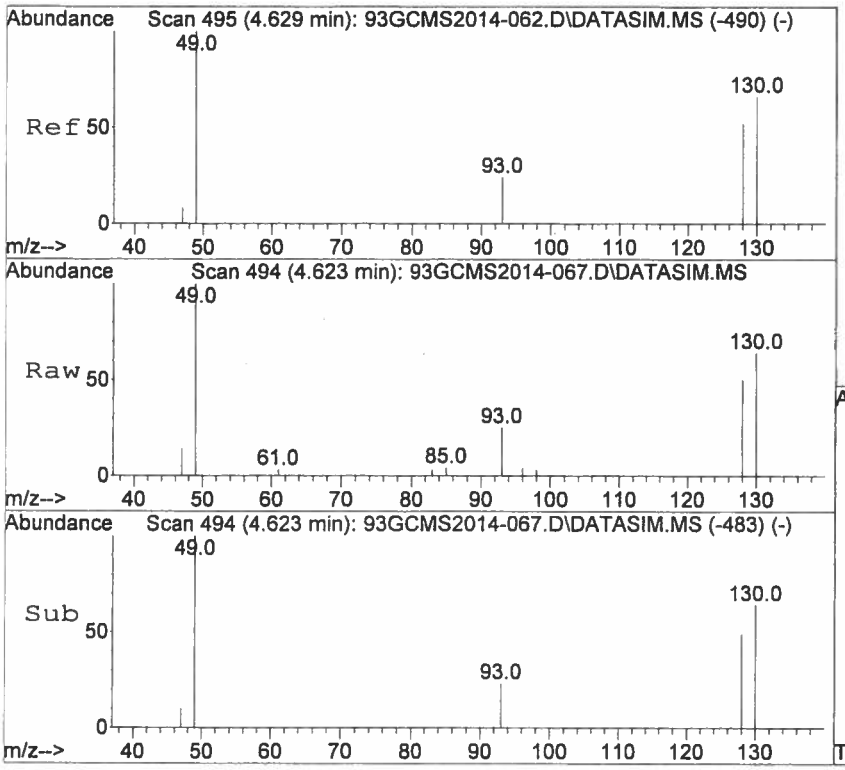
Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-067.D
Acq On : 22 Jan 2014 12:53
Operator : SJT
Sample : 219-T-003 \ Unit 50
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 13:00:47 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

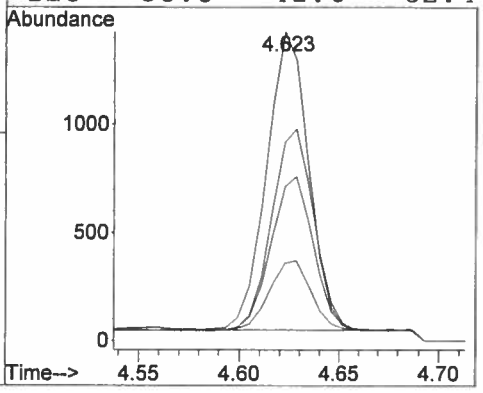


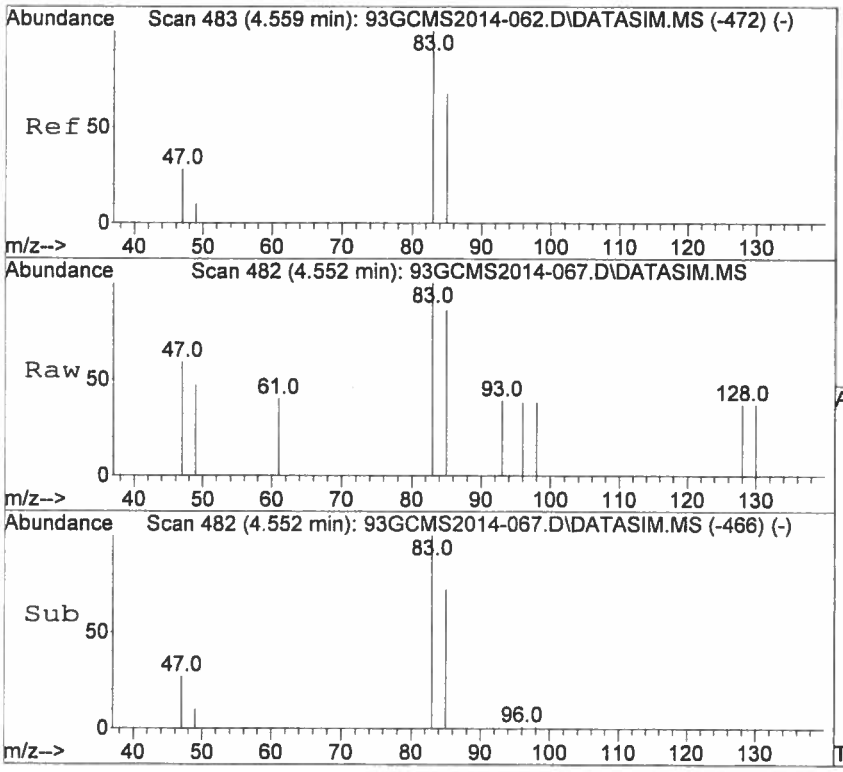


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. -0.006 min
Lab File: 93GCMS2014-067.D
Acq: 22 Jan 2014 12:53

Tgt Ion: 49 Resp: 2016

Ion	Ratio	Lower	Upper
49	100		
130	64.4	51.6	77.4
93	25.2	19.6	29.4
128	50.0	41.6	62.4

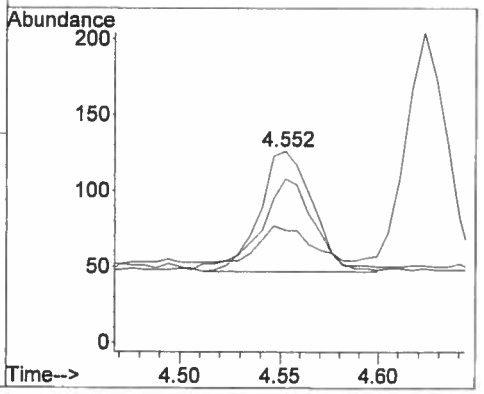


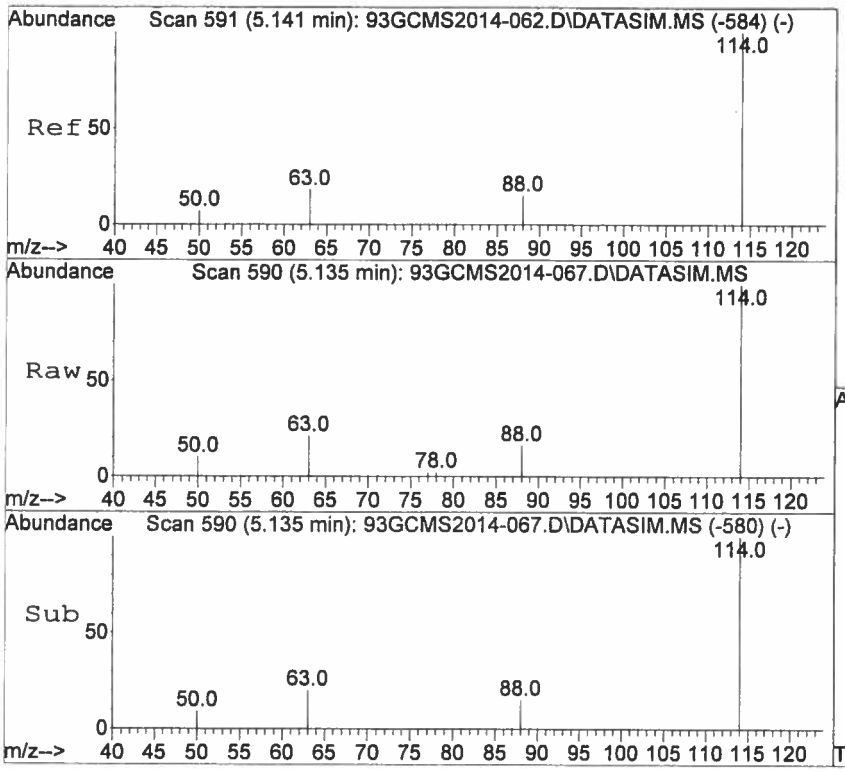


#8
Chloroform
Concen: 0.71 ppbv
RT: 4.552 min Scan# 482
Delta R.T. -0.006 min
Lab File: 93GCMS2014-067.D
Acq: 22 Jan 2014 12:53

Tgt Ion: 83 Resp: 146

Ion	Ratio	Lower	Upper
83	100		
85	76.0	52.0	78.0
47	28.1	20.0	30.0

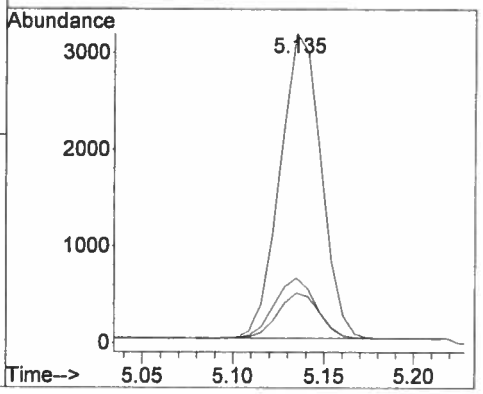


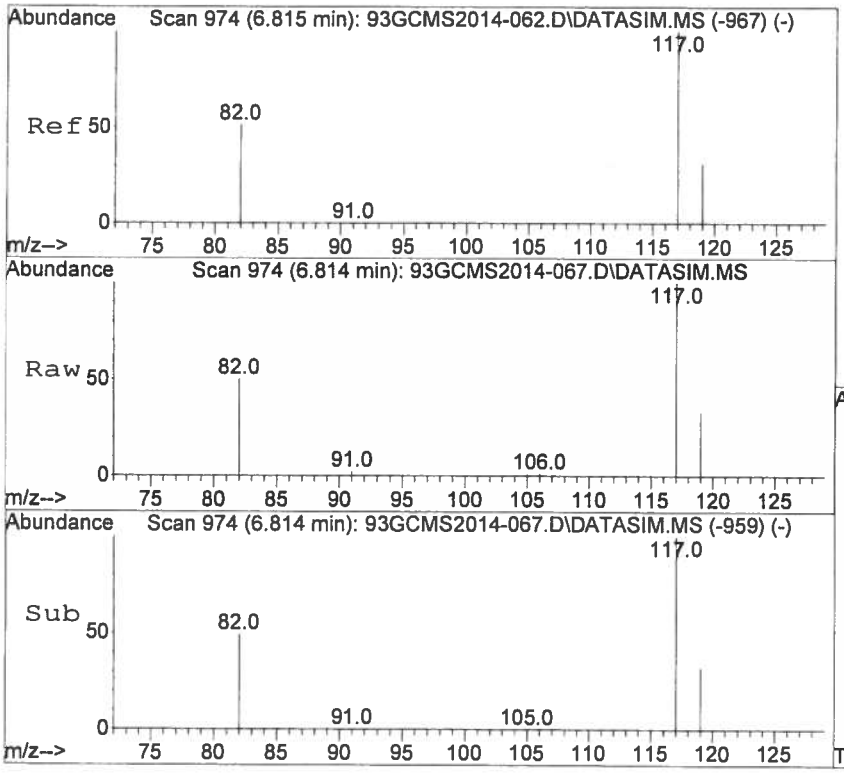


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.007 min
Lab File: 93GCMS2014-067.D
Acq: 22 Jan 2014 12:53

Tgt Ion:114 Resp: 4981

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.2	12.0	18.0

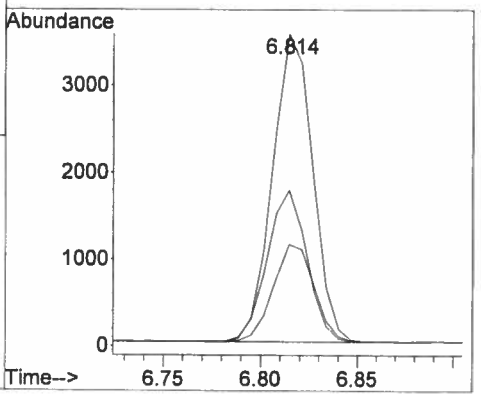




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-067.D
Acq: 22 Jan 2014 12:53

Tgt Ion:117 Resp: 5119

Ion	Ratio	Lower	Upper
117	100		
82	48.6	37.8	56.6
119	32.3	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-068.D
Acq On : 22 Jan 2014 13:06
Operator : SJT
Sample : 219-T-004 \ Unit 34
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 13:13:01 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1995	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4859	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.821	117	5083	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.558	83	203	1.00	ppbv	98
15) Tetrachloroethene	6.399	166	205	1.08	ppbv	97

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

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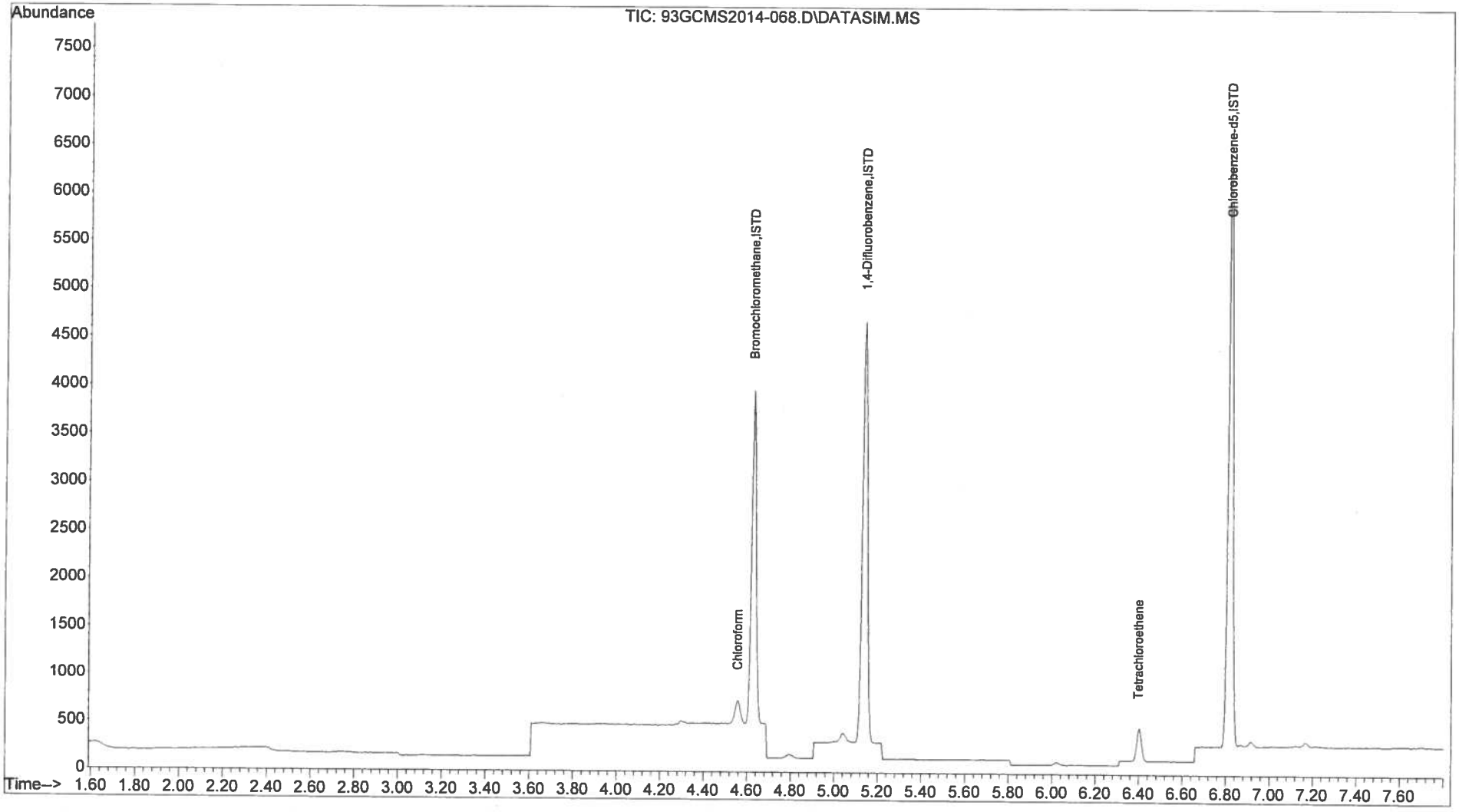
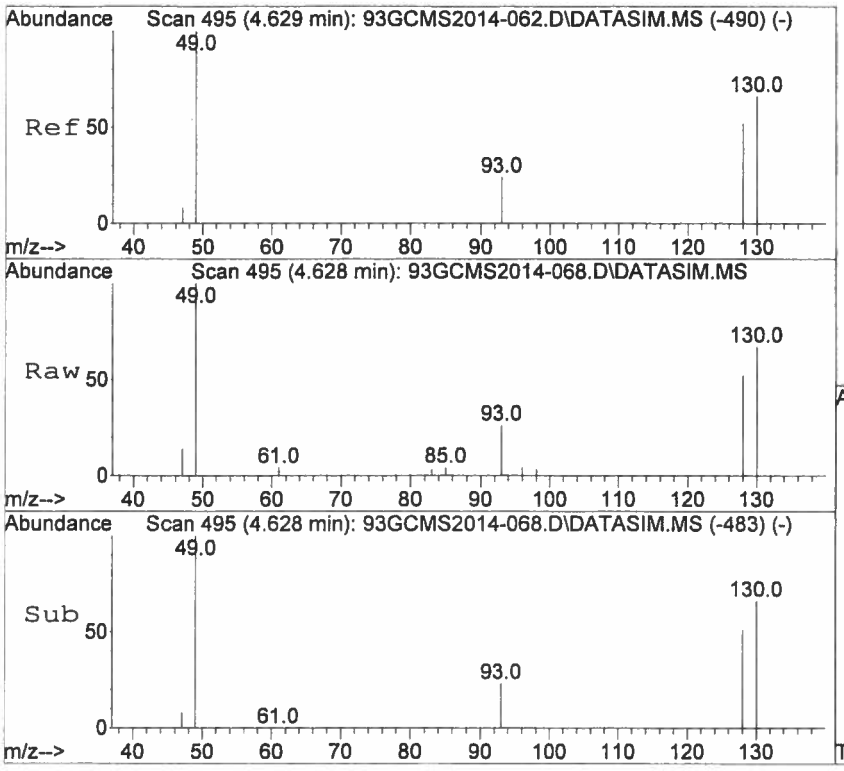
Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-068.D
Acq On : 22 Jan 2014 13:06
Operator : SJT
Sample : 219-T-004 \ Unit 34
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 13:13:01 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

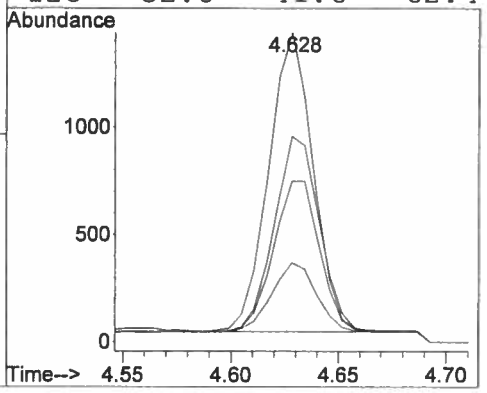


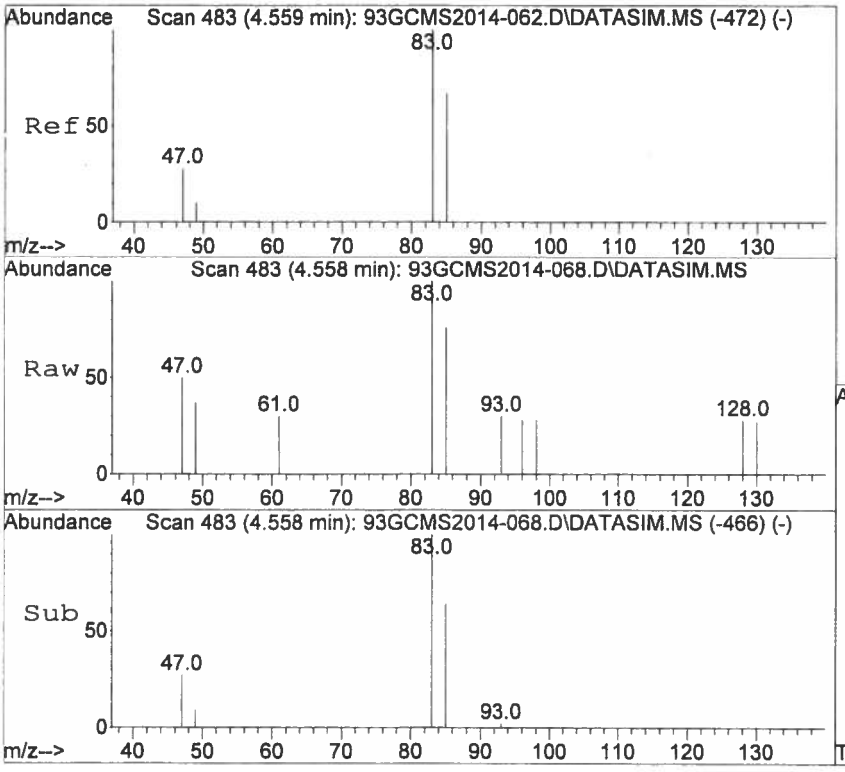


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. -0.000 min
Lab File: 93GCMS2014-068.D
Acq: 22 Jan 2014 13:06

Tgt Ion: 49 Resp: 1995

Ion	Ratio	Lower	Upper
49	100		
130	66.5	51.6	77.4
93	25.6	19.6	29.4
128	52.0	41.6	62.4

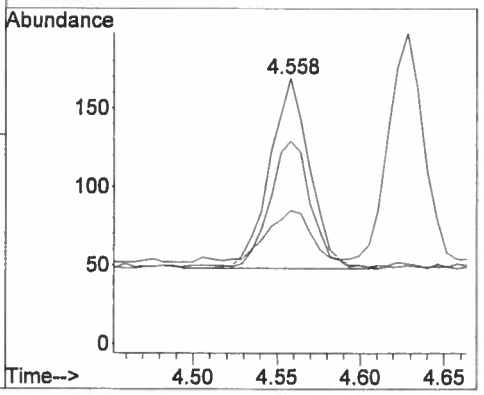


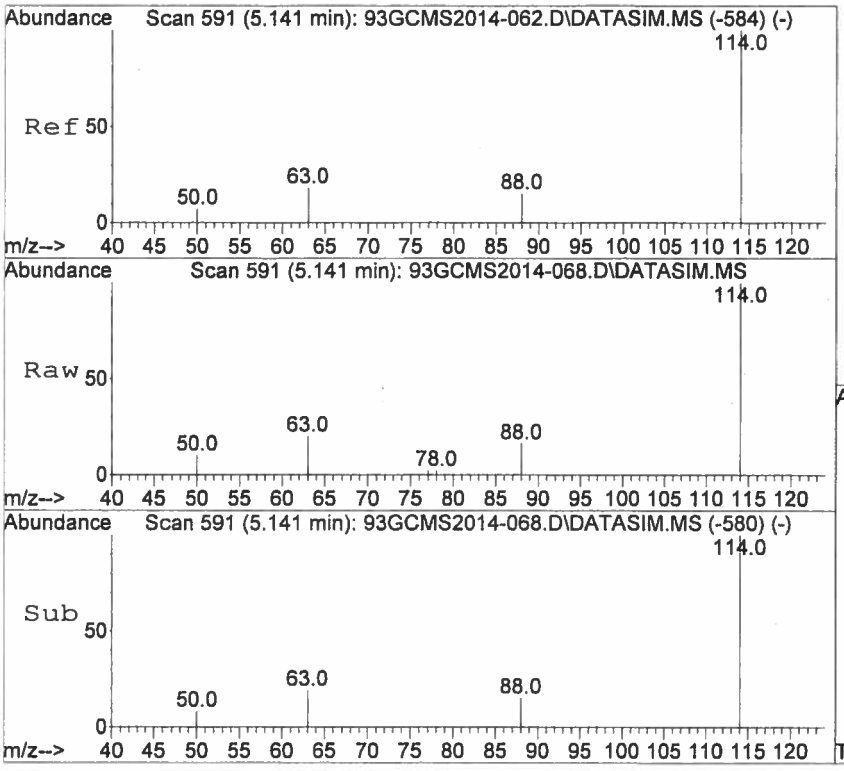


#8
Chloroform
Concen: 1.00 ppbv
RT: 4.558 min Scan# 483
Delta R.T. -0.000 min
Lab File: 93GCMS2014-068.D
Acq: 22 Jan 2014 13:06

Tgt Ion: 83 Resp: 203

Ion	Ratio	Lower	Upper
83	100		
85	66.0	52.0	78.0
47	27.6	20.0	30.0

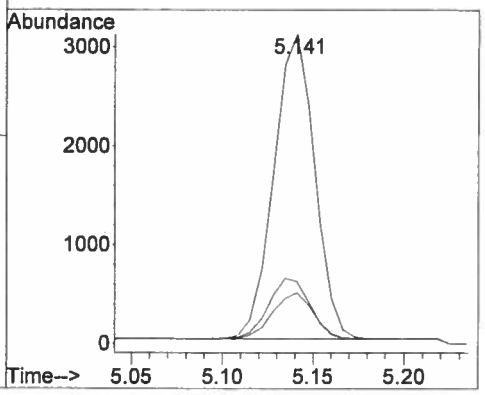


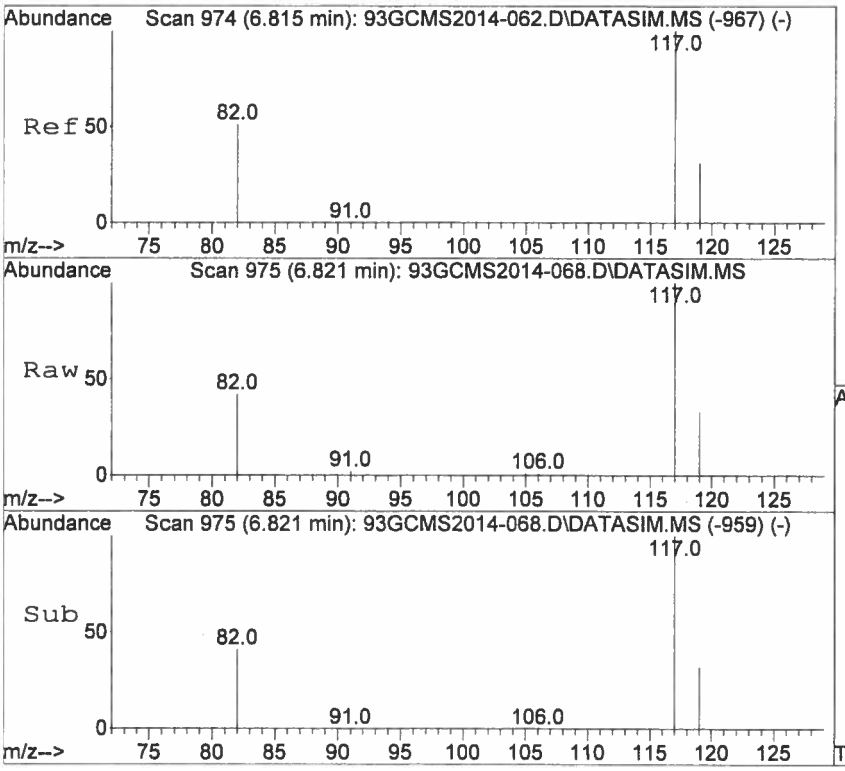


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. -0.000 min
Lab File: 93GCMS2014-068.D
Acq: 22 Jan 2014 13:06

Tgt Ion:114 Resp: 4859

Ion	Ratio	Lower	Upper
114	100		
63	19.9	15.1	22.7
88	15.1	12.0	18.0

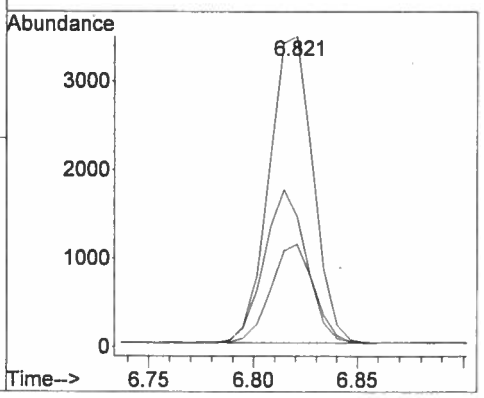


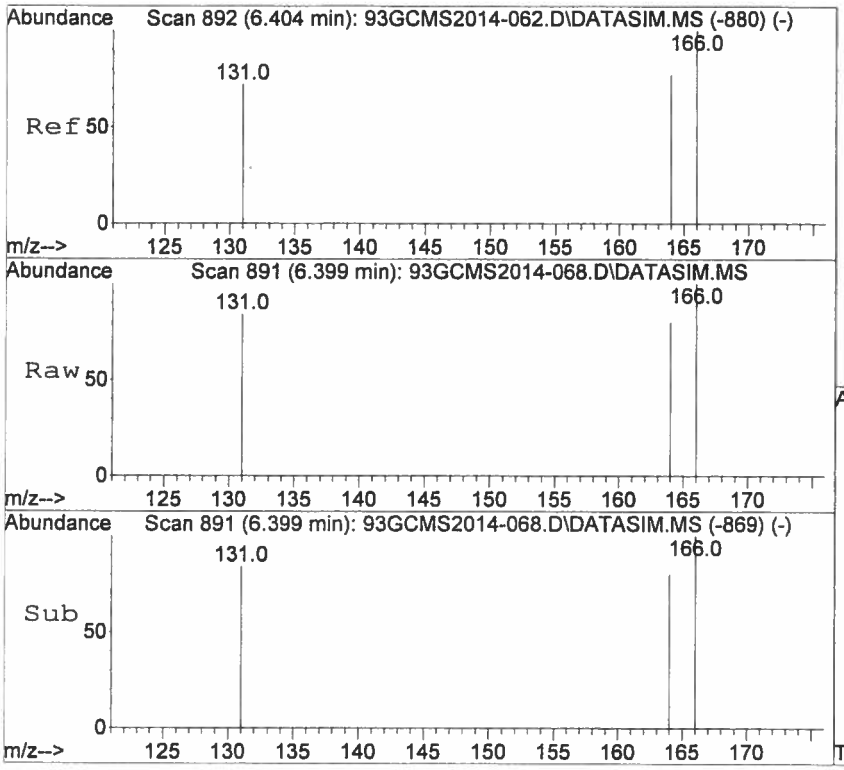


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.821 min Scan# 975
Delta R.T. 0.006 min
Lab File: 93GCMS2014-068.D
Acq: 22 Jan 2014 13:06

Tgt Ion:117 Resp: 5083

Ion	Ratio	Lower	Upper
117	100		
82	47.7	37.8	56.6
119	31.6	25.6	38.4

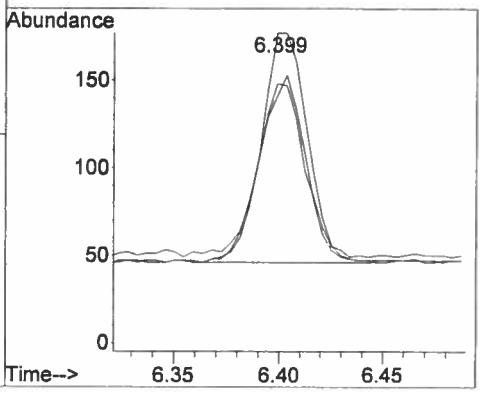




#15
Tetrachloroethene
Concen: 1.08 ppbv
RT: 6.399 min Scan# 891
Delta R.T. -0.005 min
Lab File: 93GCMS2014-068.D
Acq: 22 Jan 2014 13:06

Tgt Ion:166 Resp: 205

Ion	Ratio	Lower	Upper
166	100		
164	80.5	62.5	93.7
131	76.6	58.6	88.0



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-069.D
Acq On : 22 Jan 2014 13:18
Operator : SJT
Sample : 219-T-004 \ Unit 34 REP
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 13:25:44 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12 22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	2003	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4894	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	5091	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.553	83	201	0.98	ppbv #	93
15) Tetrachloroethene	6.404	166	198	1.04	ppbv	97

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

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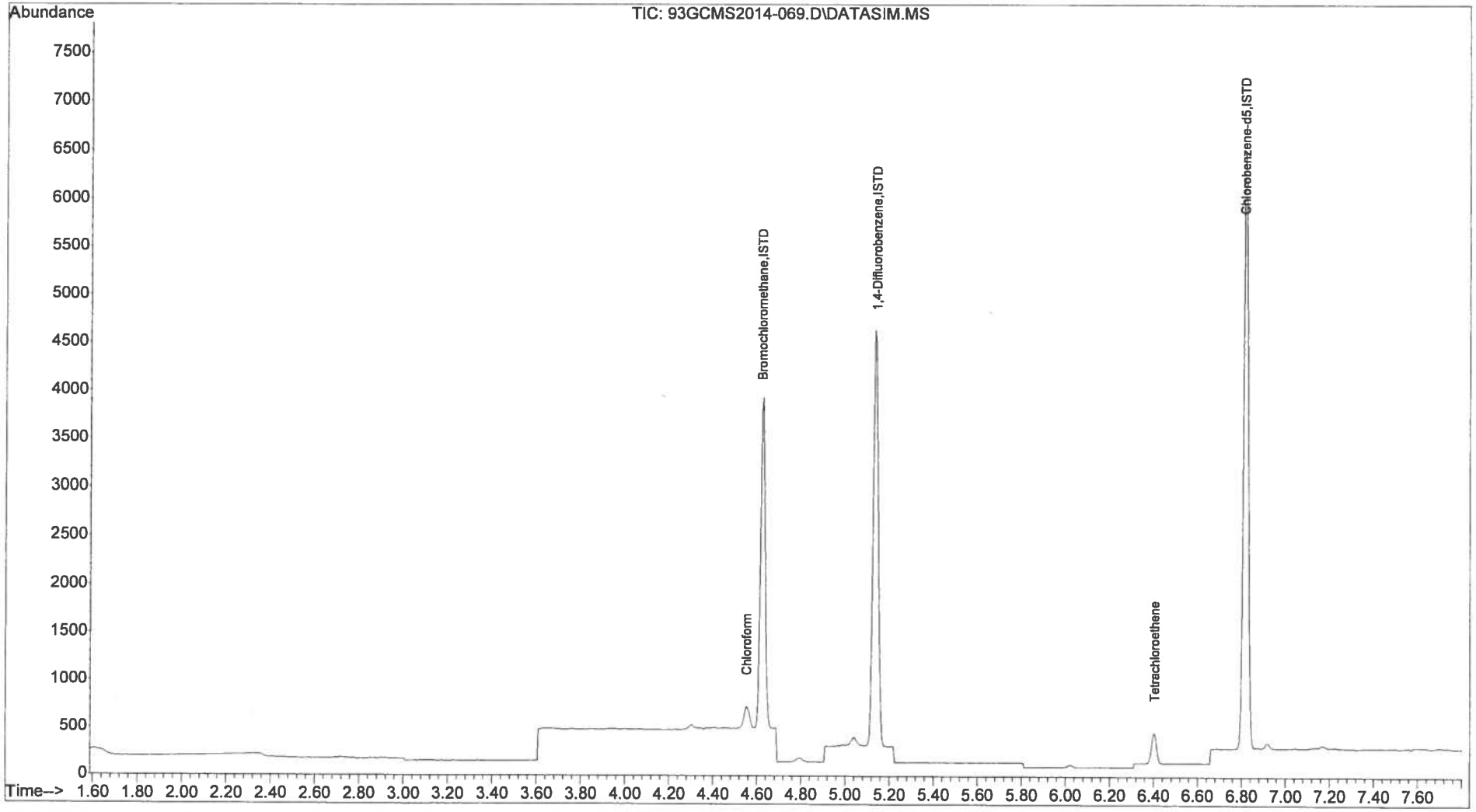
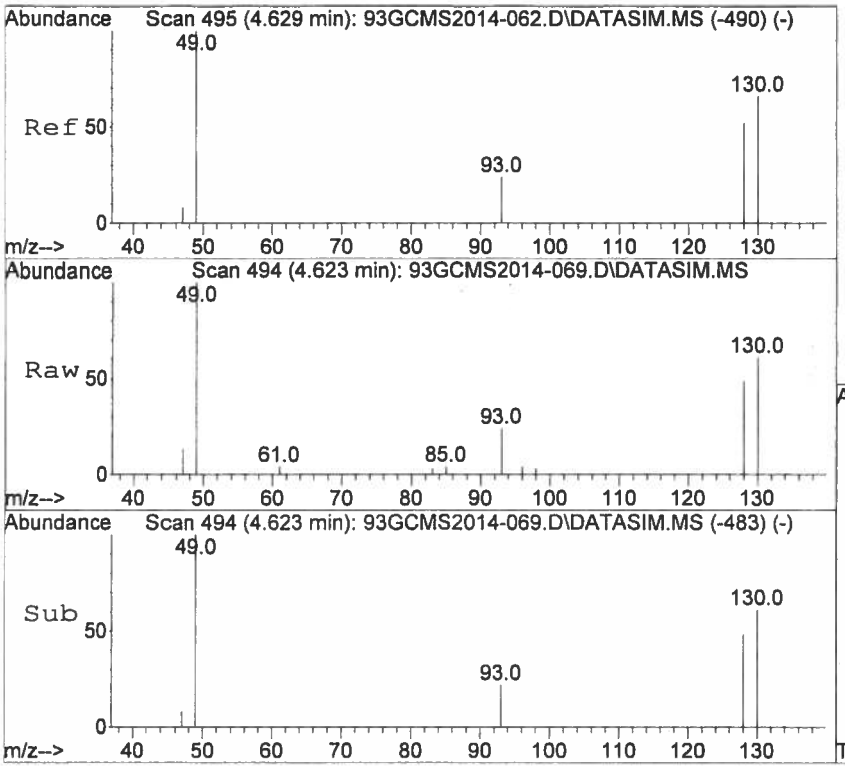
Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-069.D
Acq On : 22 Jan 2014 13:18
Operator : SJT
Sample : 219-T-004 \ Unit 34 REP
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 13:25:44 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

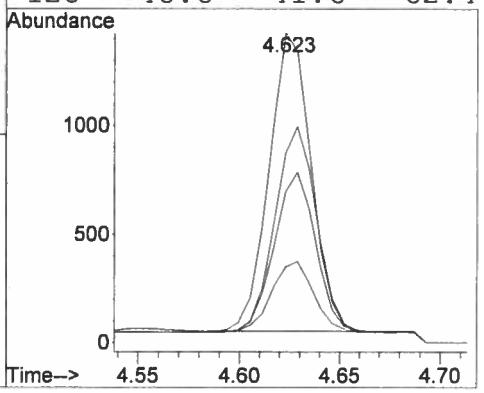


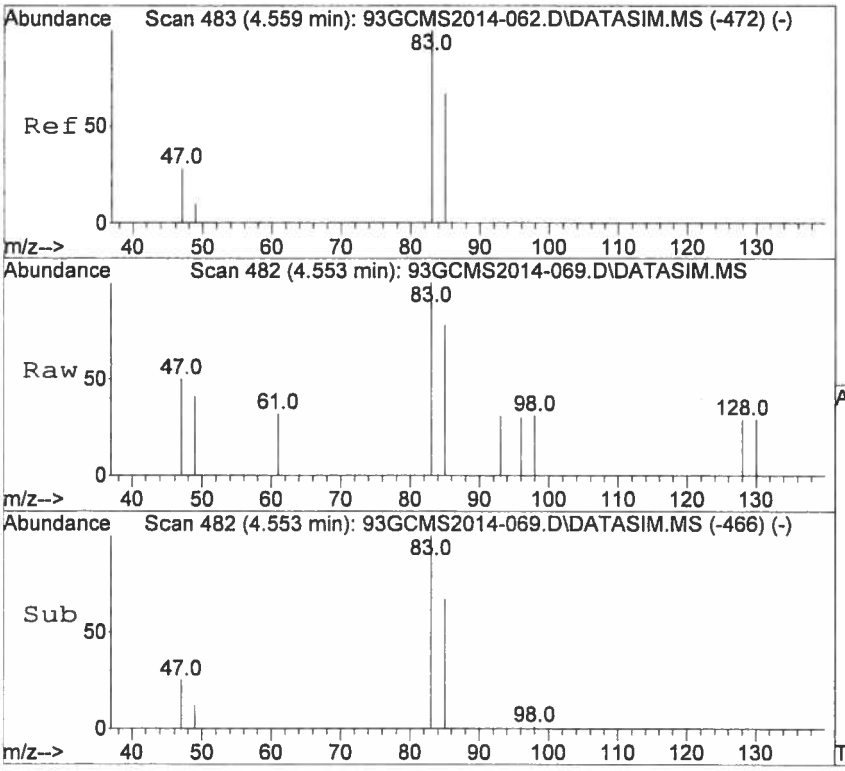


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. -0.006 min
Lab File: 93GCMS2014-069.D
Acq: 22 Jan 2014 13:18

Tgt Ion: 49 Resp: 2003

Ion	Ratio	Lower	Upper
49	100		
130	61.2	51.6	77.4
93	24.5	19.6	29.4
128	48.8	41.6	62.4

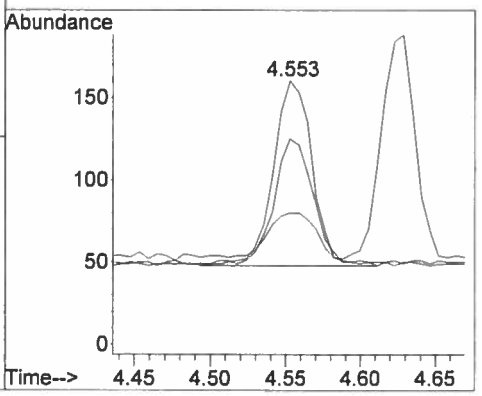


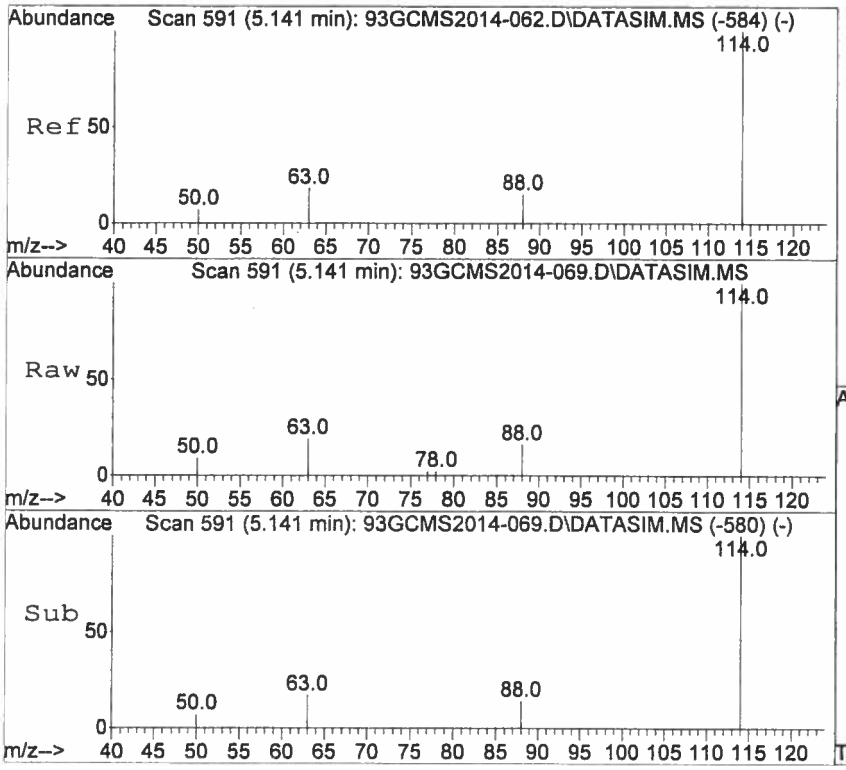


#8
Chloroform
Concen: 0.98 ppbv
RT: 4.553 min Scan# 482
Delta R.T. -0.006 min
Lab File: 93GCMS2014-069.D
Acq: 22 Jan 2014 13:18

Tgt Ion: 83 Resp: 201

Ion	Ratio	Lower	Upper
83	100		
85	69.2	52.0	78.0
47	31.3	20.0	30.0#

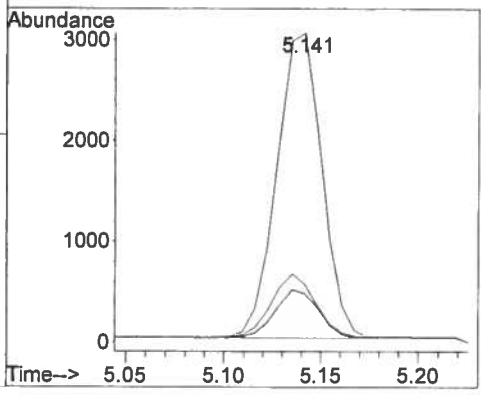


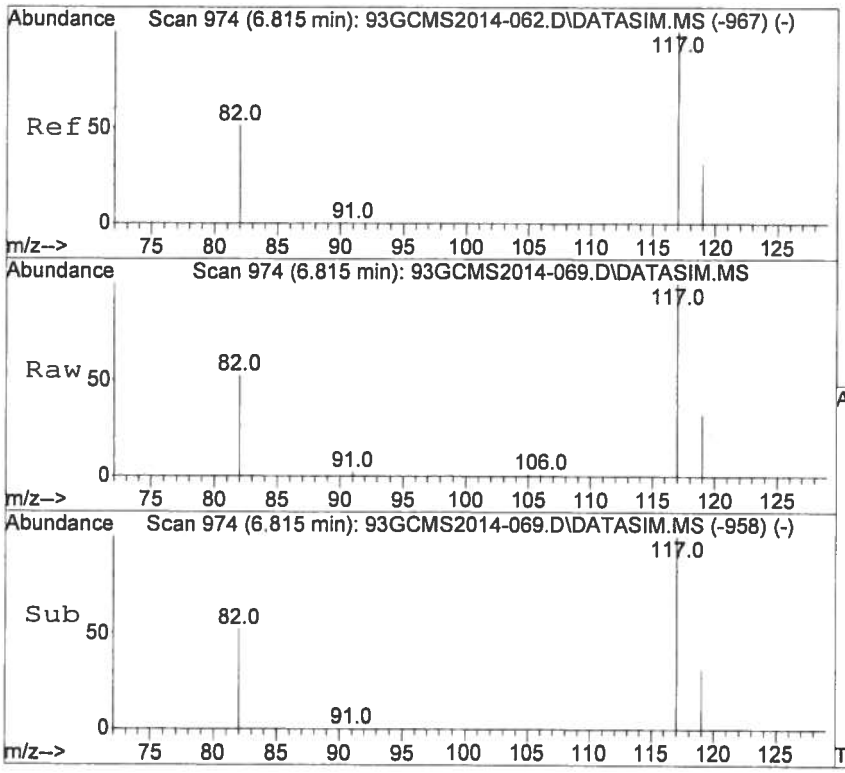


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.000 min
Lab File: 93GCMS2014-069.D
Acq: 22 Jan 2014 13:18

Tgt Ion:114 Resp: 4894

Ion	Ratio	Lower	Upper
114	100		
63	19.9	15.1	22.7
88	15.3	12.0	18.0

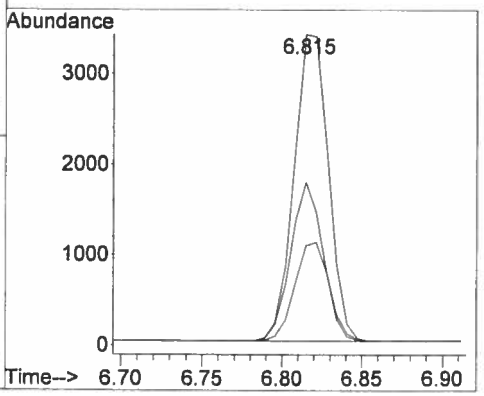


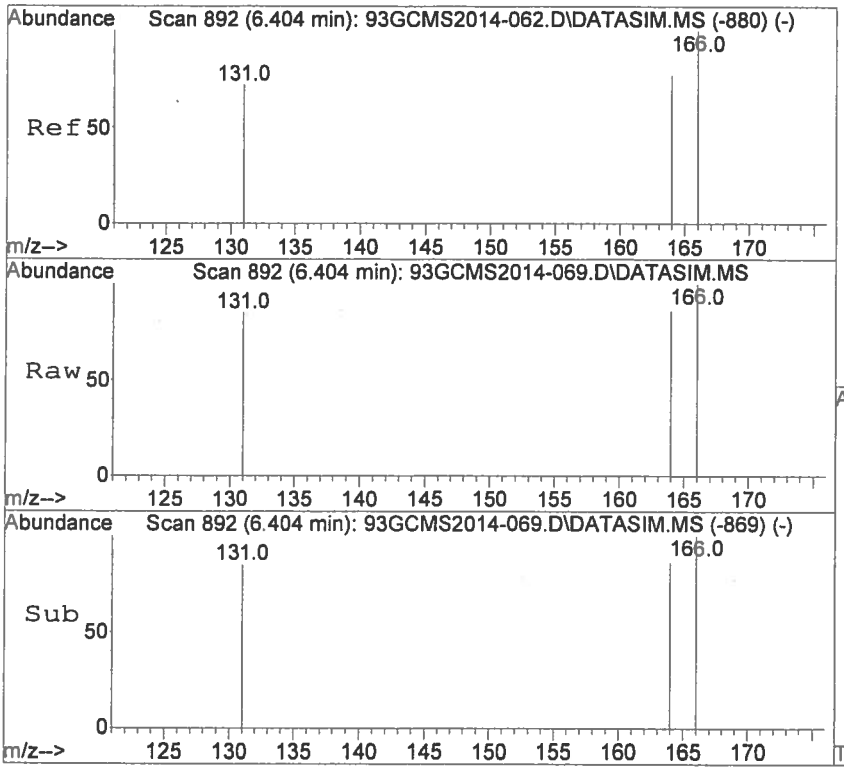


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. 0.000 min
Lab File: 93GCMS2014-069.D
Acq: 22 Jan 2014 13:18

Tgt Ion:117 Resp: 5091

Ion	Ratio	Lower	Upper
117	100		
82	48.6	37.8	56.6
119	32.3	25.6	38.4

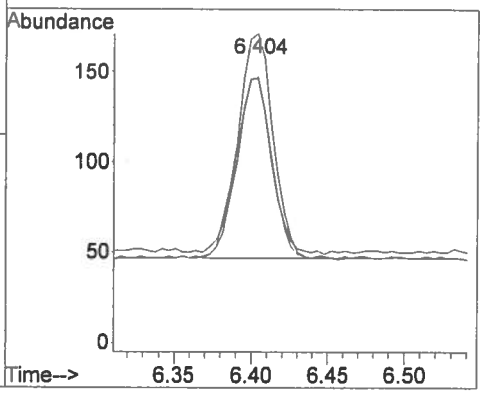




#15
Tetrachloroethene
Concen: 1.04 ppbv
RT: 6.404 min Scan# 892
Delta R.T. 0.000 min
Lab File: 93GCMS2014-069.D
Acq: 22 Jan 2014 13:18

Tgt Ion:166 Resp: 198

Ion	Ratio	Lower	Upper
166	100		
164	79.3	62.5	93.7
131	76.8	58.6	88.0



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-071.D
Acq On : 22 Jan 2014 13:56
Operator : SJT
Sample : 219-T-005 \ Unit 70
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 14:03:39 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:
22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1937	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4684	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	5003	10.00	ppbv	0.00

System Monitoring Compounds

Target Compounds Qvalue

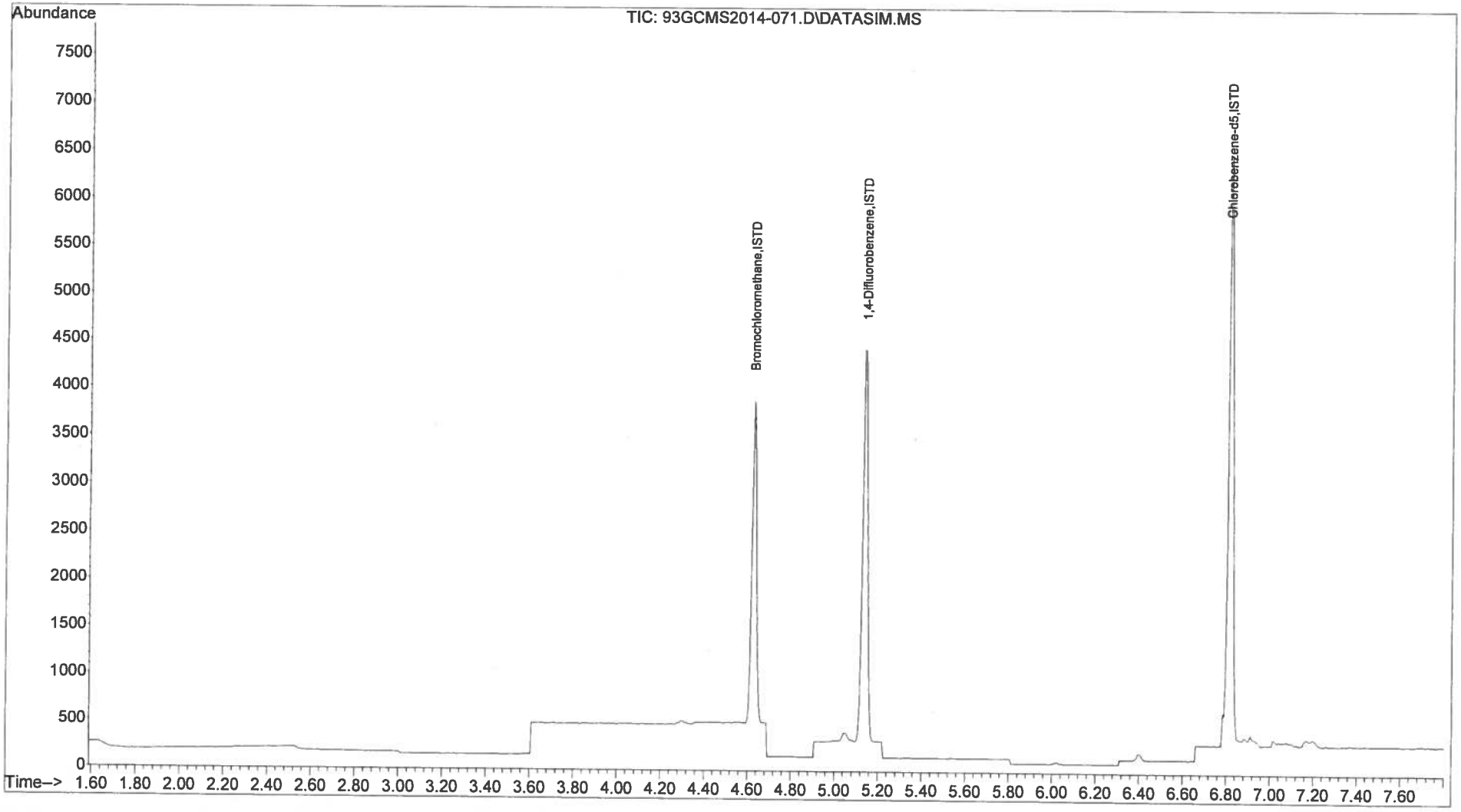
(#) = qualifier out of range (m) = manual integration (+) = signals summed

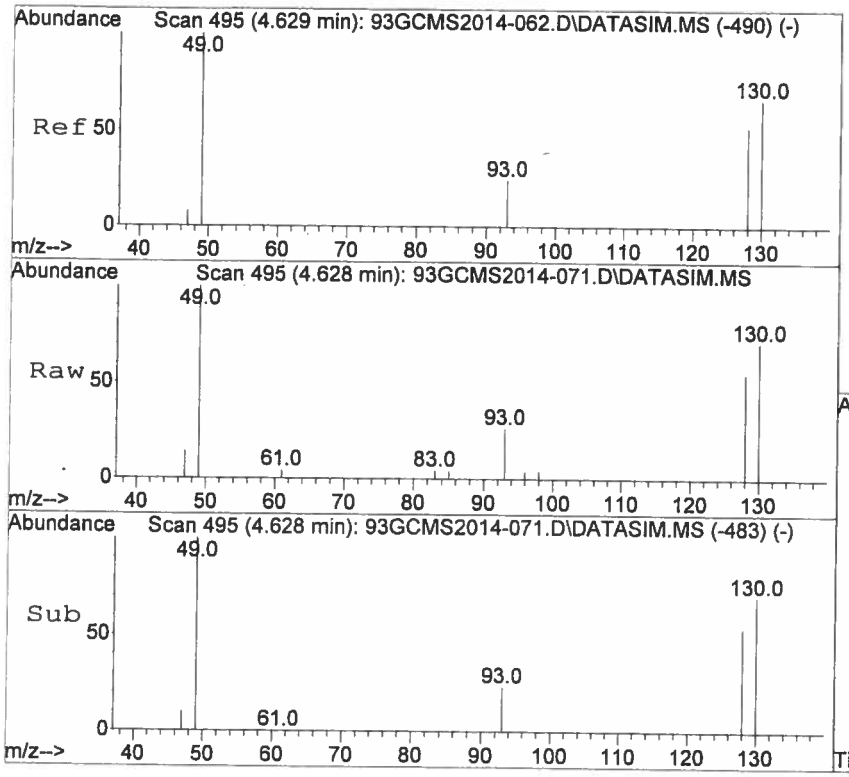
01/22/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-071.D
Acq On : 22 Jan 2014 13:56
Operator : SJT
Sample : 219-T-005 \ Unit 70
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 14:03:39 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

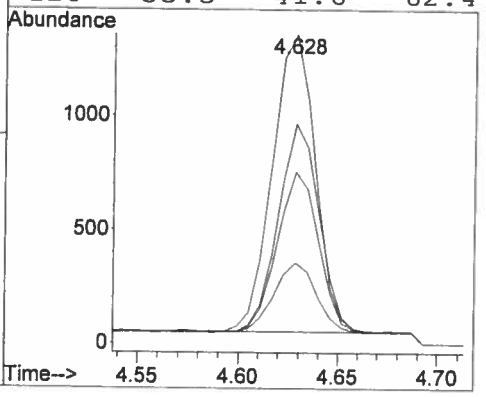


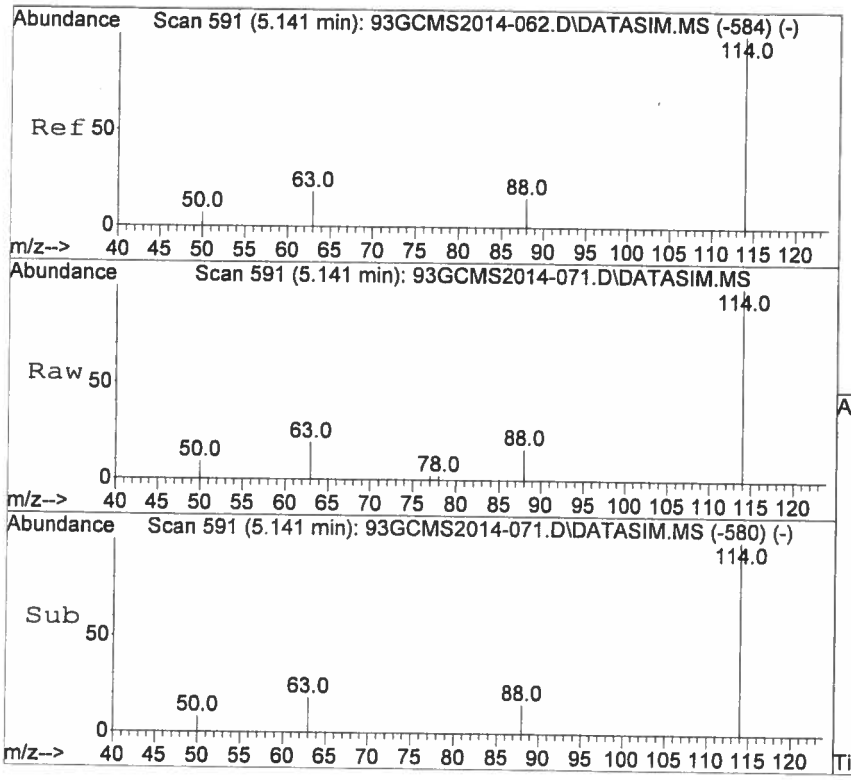


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. -0.000 min
Lab File: 93GCMS2014-071.D
Acq: 22 Jan 2014 13:56

Tgt Ion: 49 Resp: 1937

Ion	Ratio	Lower	Upper
49	100		
130	71.0	51.6	77.4
93	26.1	19.6	29.4
128	55.5	41.6	62.4

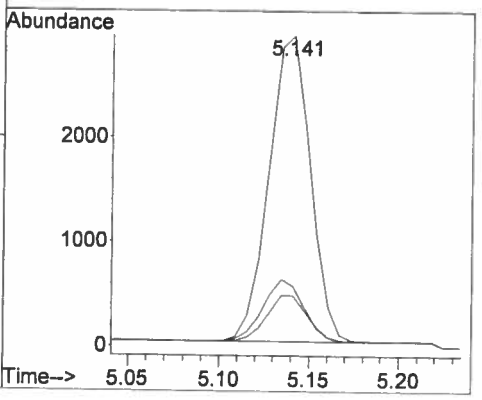


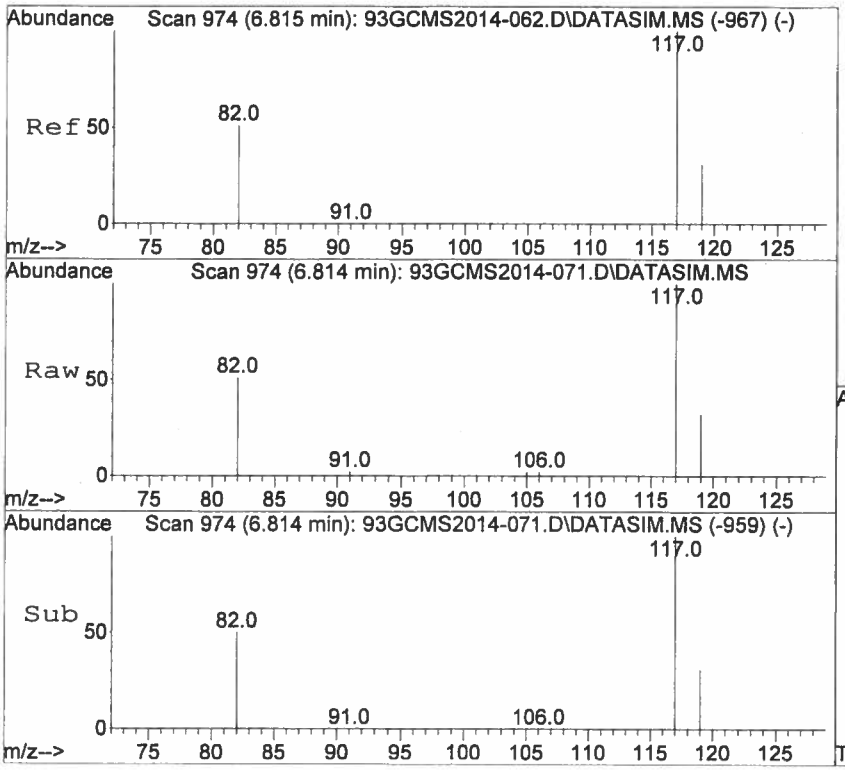


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. -0.000 min
Lab File: 93GCMS2014-071.D
Acq: 22 Jan 2014 13:56

Tgt Ion:114 Resp: 4684

Ion	Ratio	Lower	Upper
114	100		
63	19.8	15.1	22.7
88	15.1	12.0	18.0

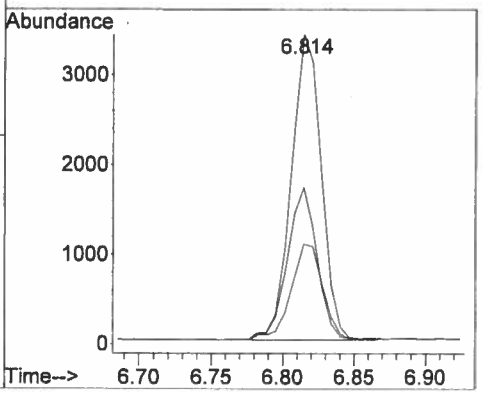




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-071.D
Acq: 22 Jan 2014 13:56

Tgt Ion:117 Resp: 5003

Ion	Ratio	Lower	Upper
117	100		
82	48.9	37.8	56.6
119	33.7	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-072.D
Acq On : 22 Jan 2014 15:08
Operator : SJT
Sample : 219-T-006 \ Unit 175
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 15:24:16 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12 22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	1983	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	4760	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4921	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
12) Trichloroethene	5.340	130	416	2.73	ppbv	98

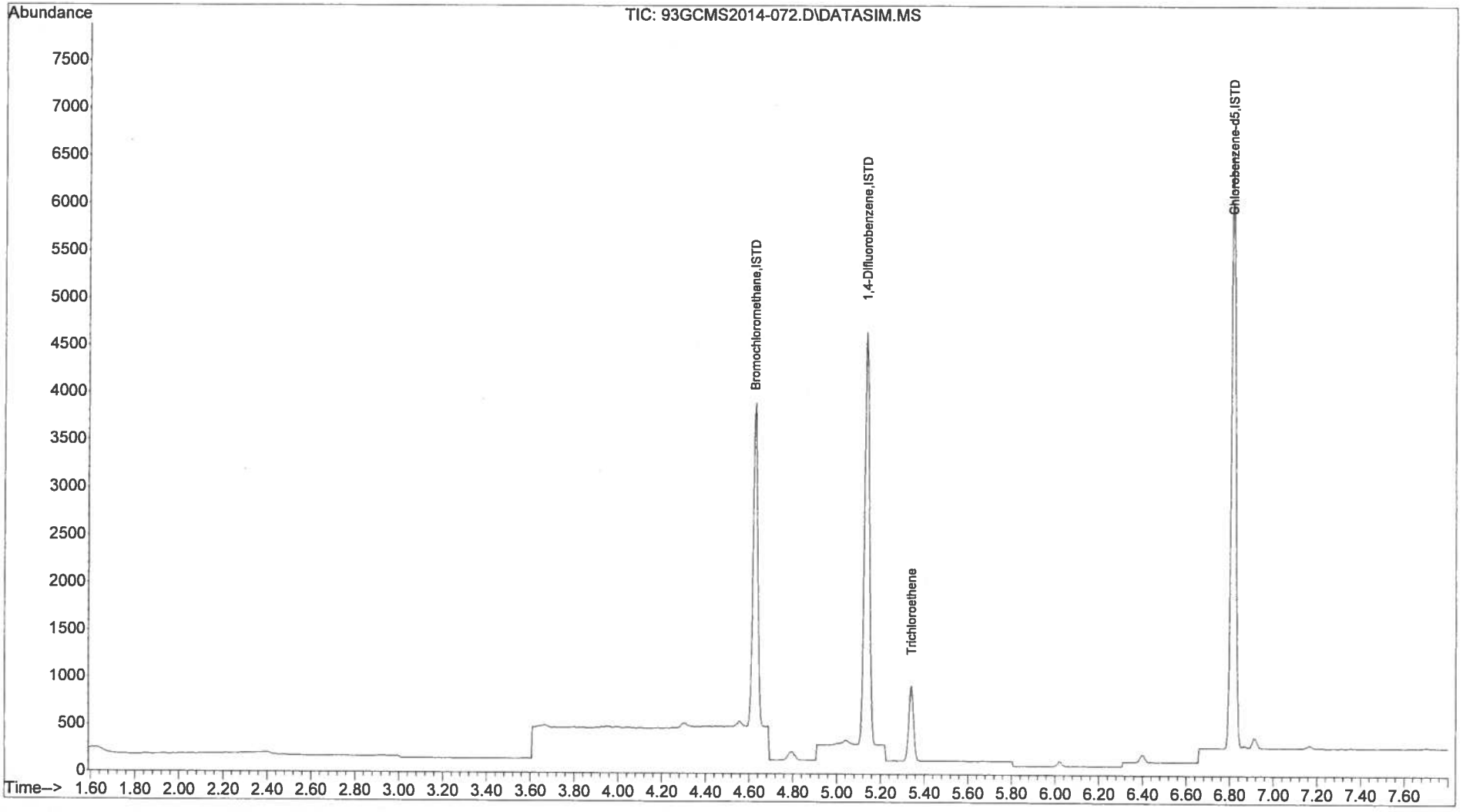
(#) = qualifier out of range (m) = manual integration (+) = signals summed

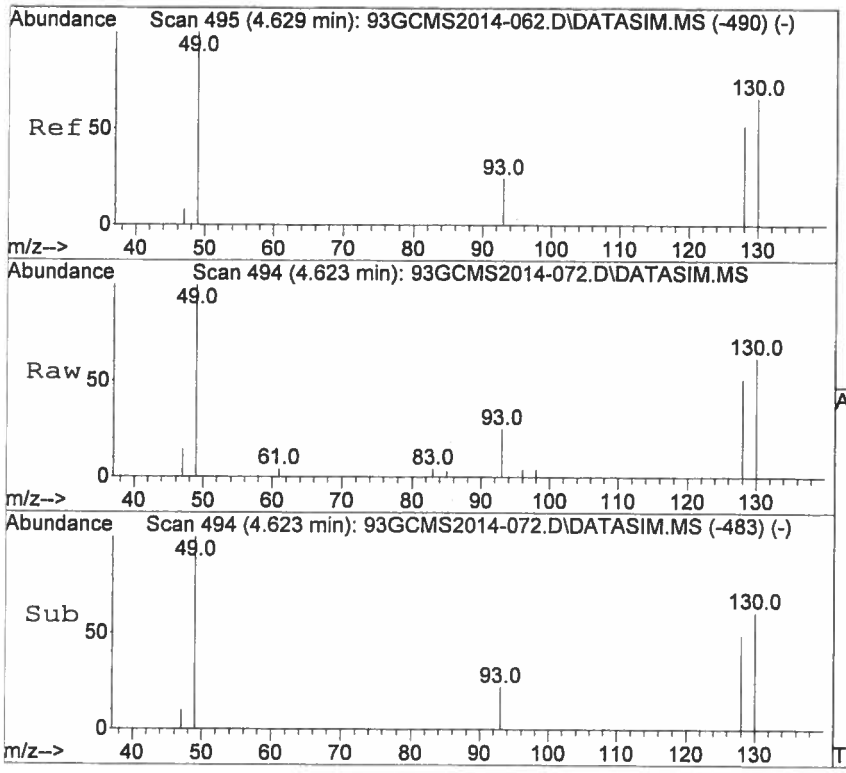
01/22/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140122\
Data File : 93GCMS2014-072.D
Acq On : 22 Jan 2014 15:08
Operator : SJT
Sample : 219-T-006 \ Unit 175
Misc : 5mL \ 22 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 22 15:24:16 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjWed Jan 22 12:22:11 2014
QLast Update : Wed Jan 22 12:22:11 2014
Response via : Initial Calibration

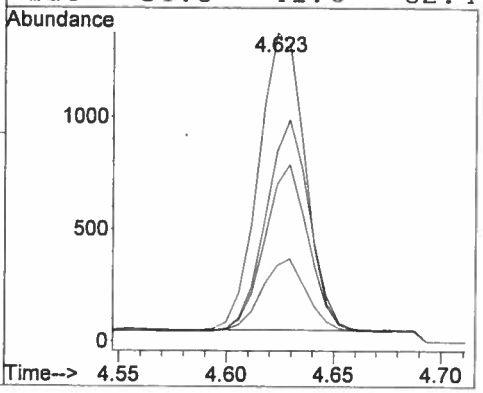


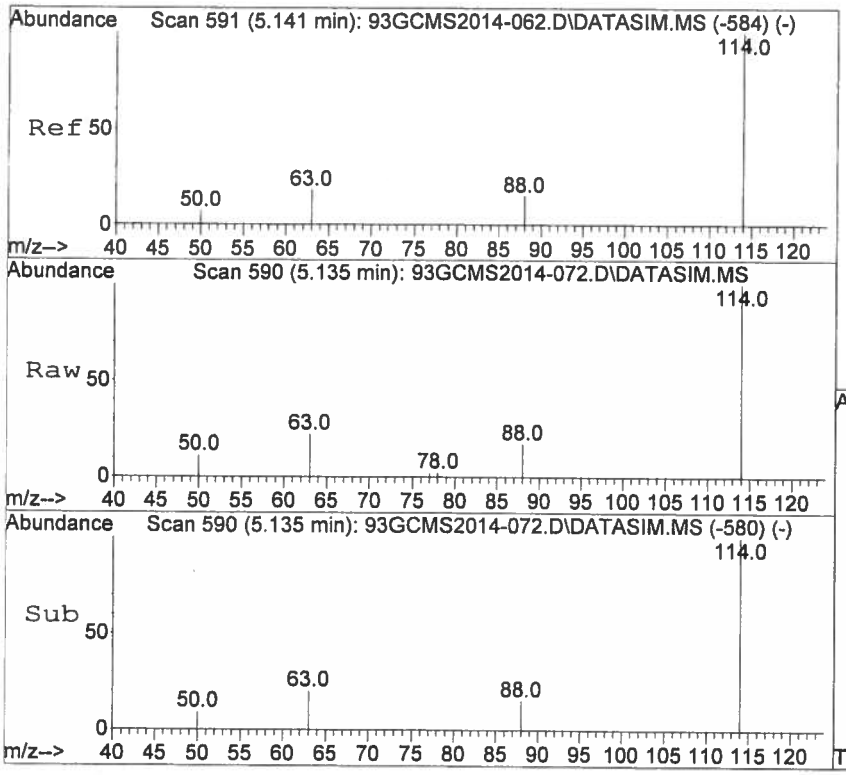


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. -0.006 min
Lab File: 93GCMS2014-072.D
Acq: 22 Jan 2014 15:08

Tgt Ion: 49 Resp: 1983

Ion	Ratio	Lower	Upper
49	100		
130	61.5	51.6	77.4
93	24.6	19.6	29.4
128	50.8	41.6	62.4

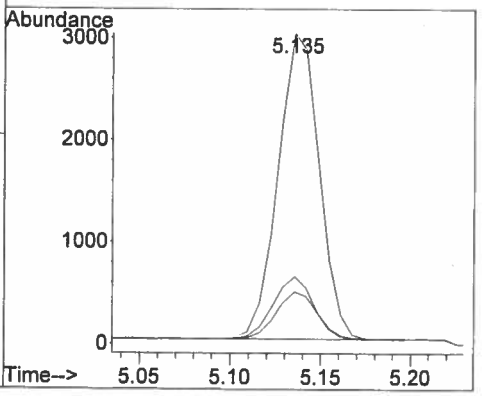


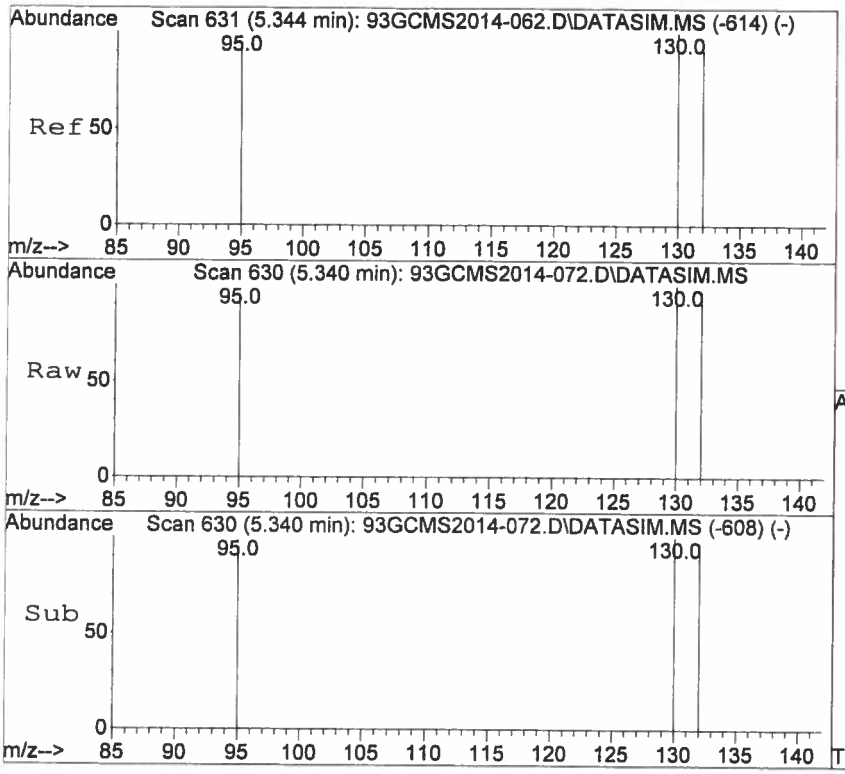


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.006 min
Lab File: 93GCMS2014-072.D
Acq: 22 Jan 2014 15:08

Tgt Ion:114 Resp: 4760

Ion	Ratio	Lower	Upper
114	100		
63	19.8	15.1	22.7
88	15.4	12.0	18.0

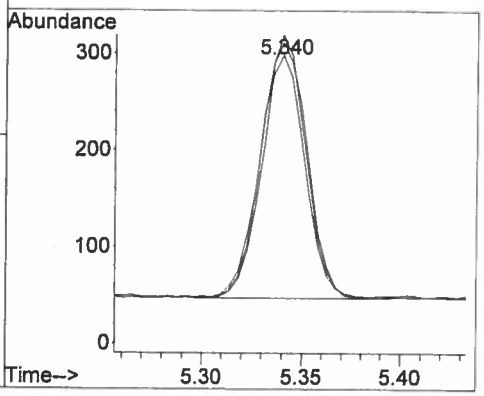


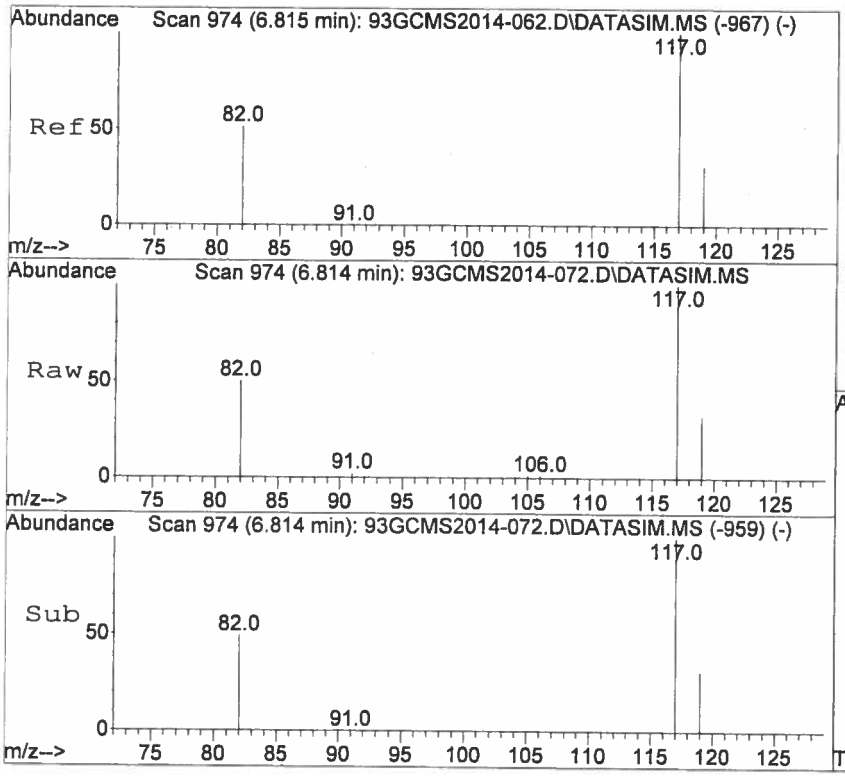


#12
Trichloroethene
Concen: 2.73 ppbv
RT: 5.340 min Scan# 630
Delta R.T. -0.004 min
Lab File: 93GCMS2014-072.D
Acq: 22 Jan 2014 15:08

Tgt Ion:130 Resp: 416

Ion	Ratio	Lower	Upper
130	100		
132	97.8	77.0	115.6
95	94.0	72.9	109.3

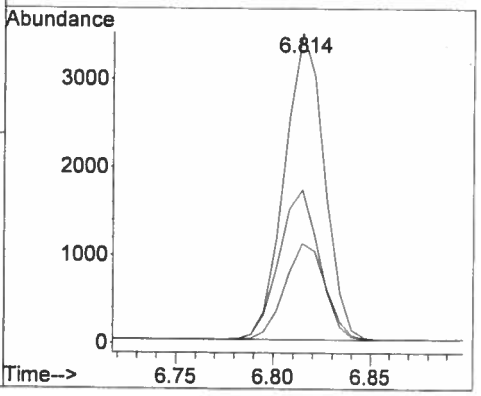




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-072.D
Acq: 22 Jan 2014 15:08

Tgt Ion:117 Resp: 4921

Ion	Ratio	Lower	Upper
117	100		
82	49.0	37.8	56.6
119	32.1	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-076.D
Acq On : 23 Jan 2014 9:55
Operator : SJT
Sample : 20140123-MB \ Method Blank
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 10:03:26 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	1973	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	4848	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	4958	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue

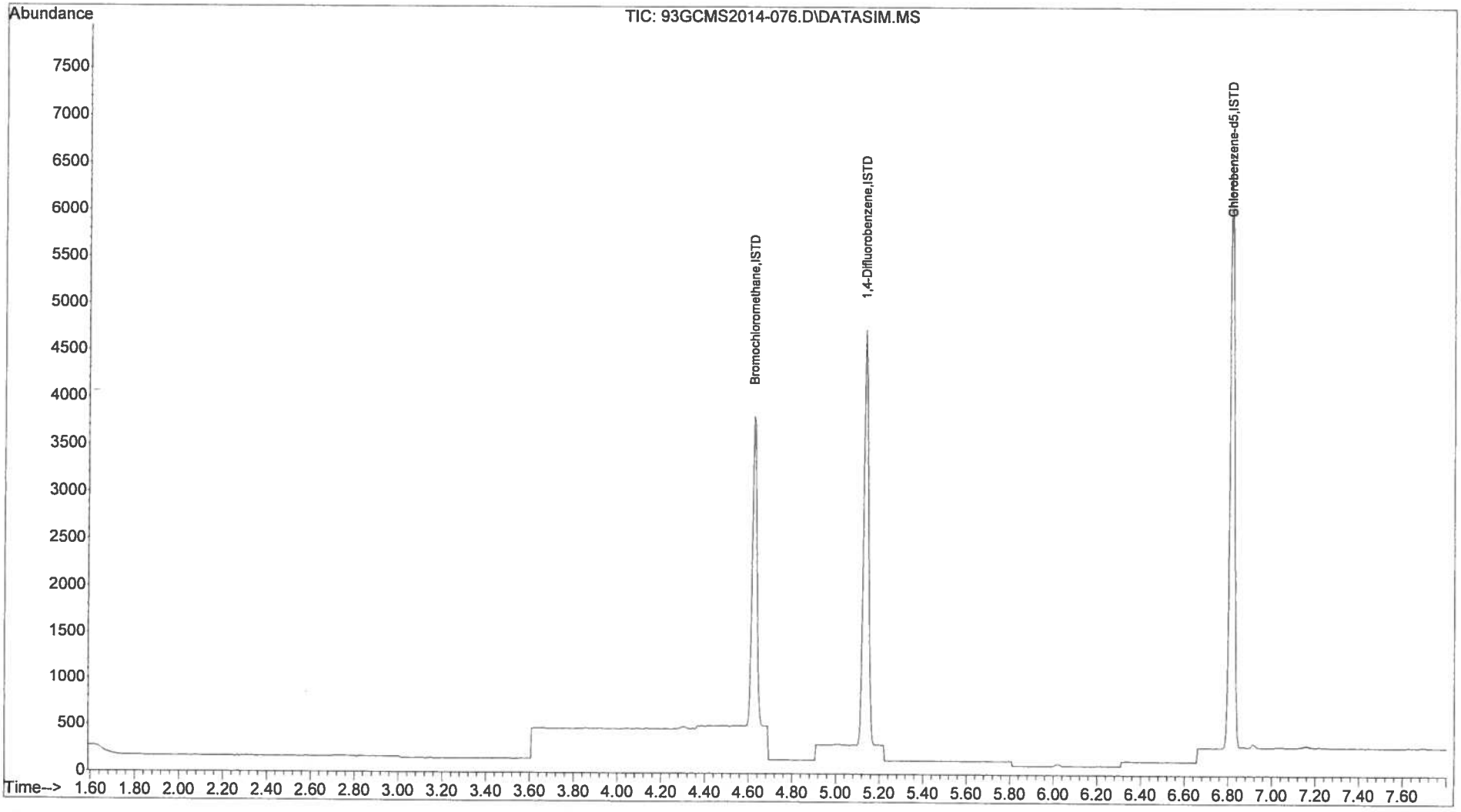
(#) = qualifier out of range (m) = manual integration (+) = signals summed

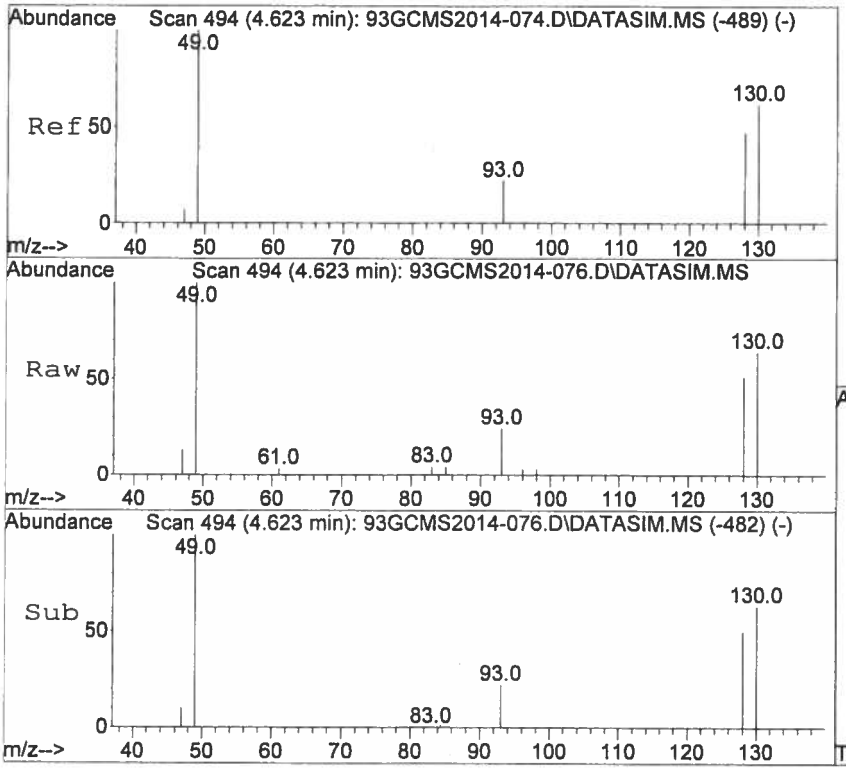
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-076.D
Acq On : 23 Jan 2014 9:55
Operator : SJT
Sample : 20140123-MB \ Method Blank
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 10:03:26 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

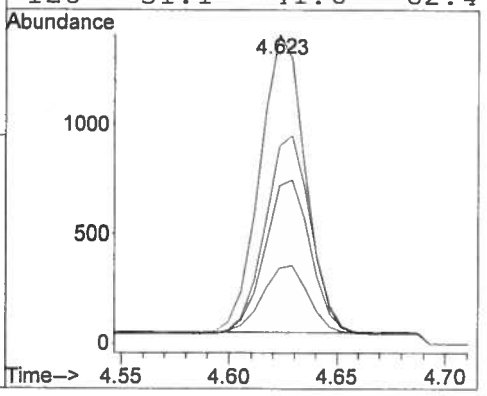


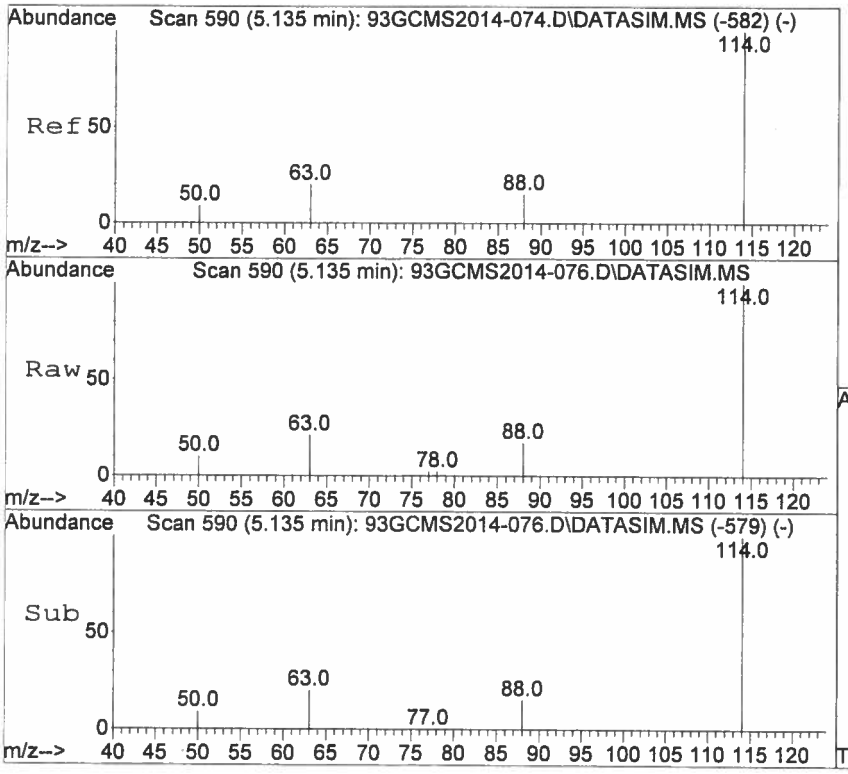


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. -0.000 min
Lab File: 93GCMS2014-076.D
Acq: 23 Jan 2014 9:55

Tgt Ion: 49 Resp: 1973

Ion	Ratio	Lower	Upper
49	100		
130	63.9	51.6	77.4
93	24.4	19.6	29.4
128	51.1	41.6	62.4

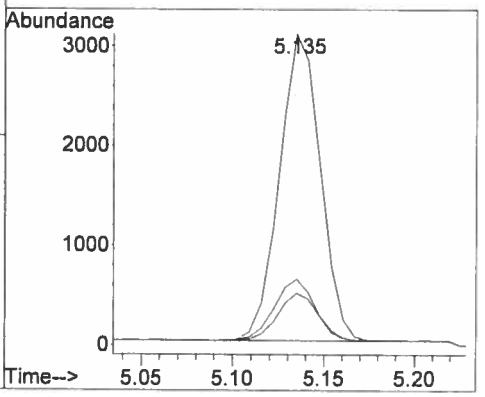


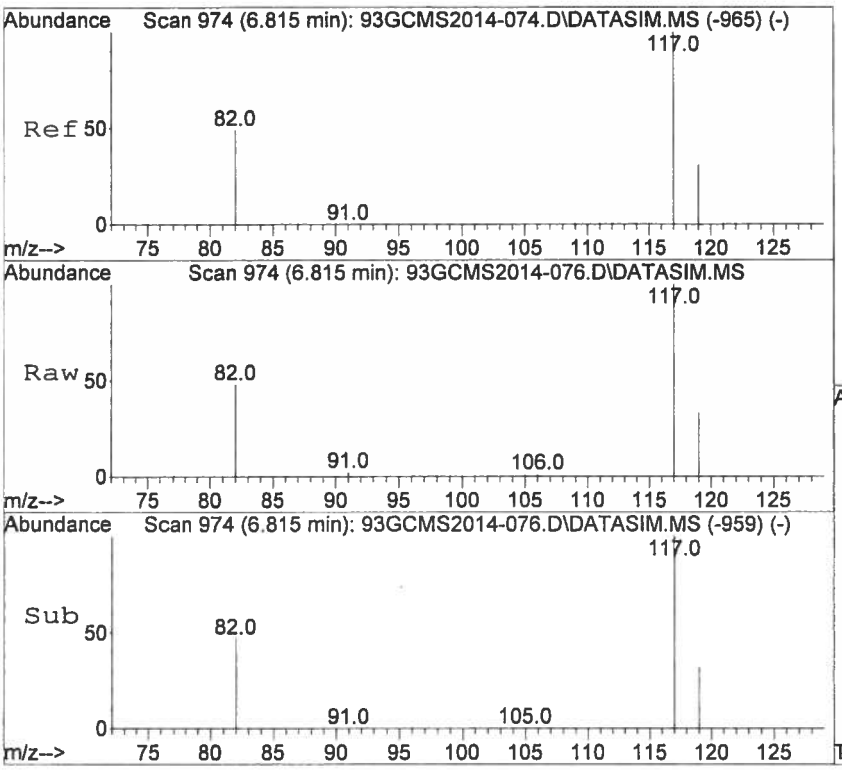


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.000 min
Lab File: 93GCMS2014-076.D
Acq: 23 Jan 2014 9:55

Tgt Ion:114 Resp: 4848

Ion	Ratio	Lower	Upper
114	100		
63	19.5	15.1	22.7
88	15.3	12.0	18.0

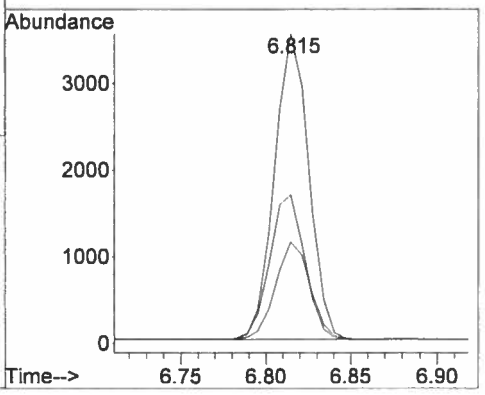




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-076.D
Acq: 23 Jan 2014 9:55

Tgt Ion:117 Resp: 4958

Ion	Ratio	Lower	Upper
117	100		
82	48.4	37.8	56.6
119	31.9	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-078.D
Acq On : 23 Jan 2014 10:30
Operator : SJT
Sample : 219-T-007 \ V12
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 10:38:01 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09 43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.622	49	1960	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4826	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4870	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.558	83	1000	5.00	ppbv	# 93
15) Tetrachloroethene	6.403	166	325m	1.79	ppbv	

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

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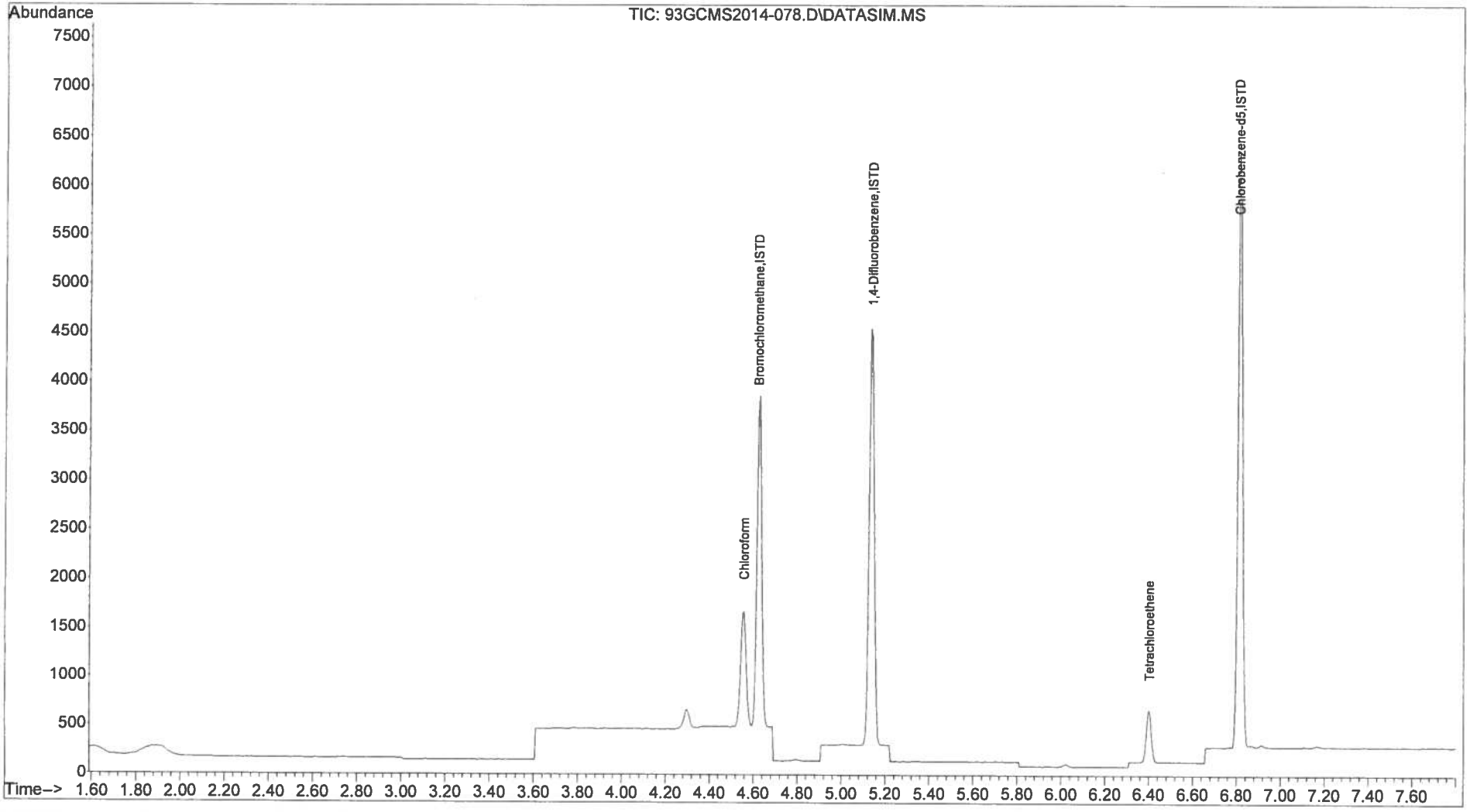
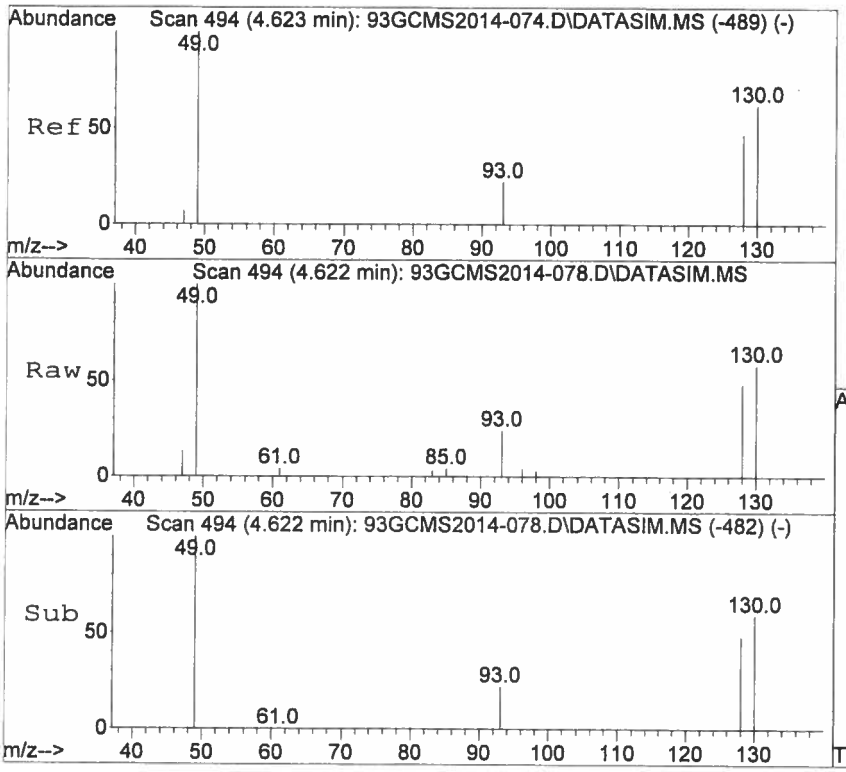
Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-078.D
Acq On : 23 Jan 2014 10:30
Operator : SJT
Sample : 219-T-007 \ V12
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 10:38:01 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

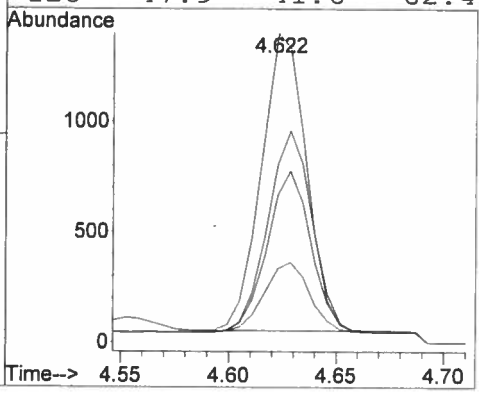


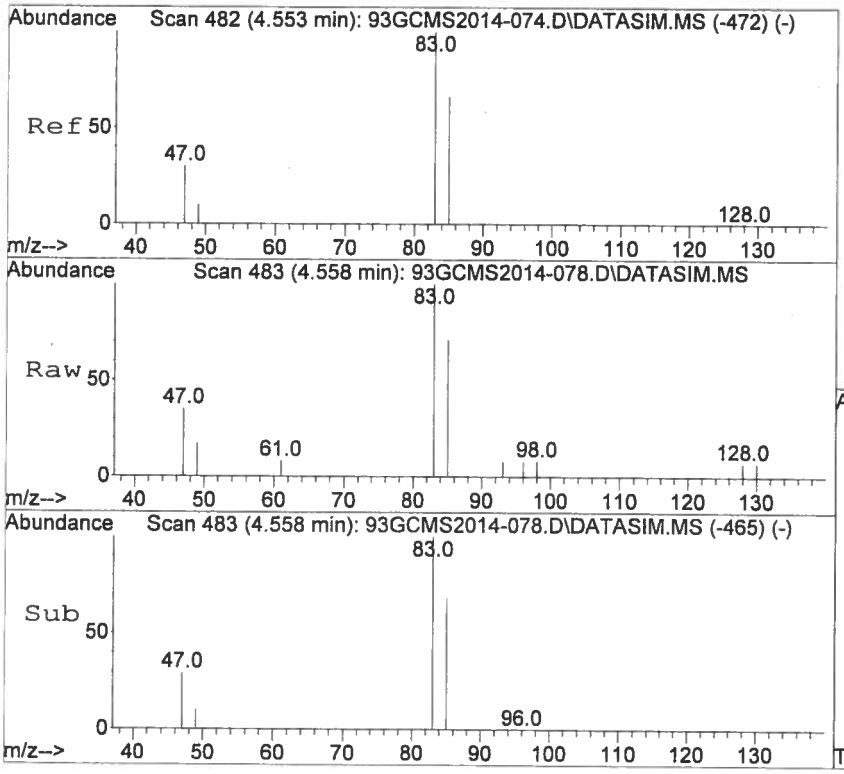


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 494
Delta R.T. -0.000 min
Lab File: 93GCMS2014-078.D
Acq: 23 Jan 2014 10:30

Tgt Ion: 49 Resp: 1960

Ion	Ratio	Lower	Upper
49	100		
130	57.8	51.6	77.4
93	23.9	19.6	29.4
128	47.9	41.6	62.4

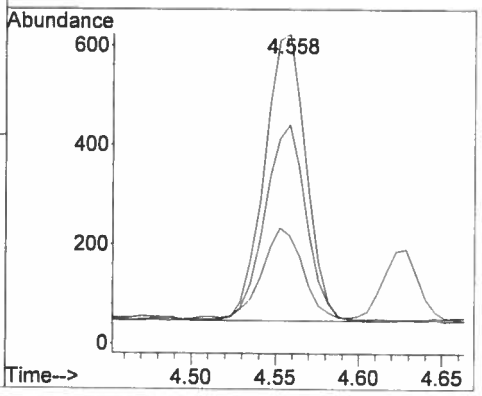


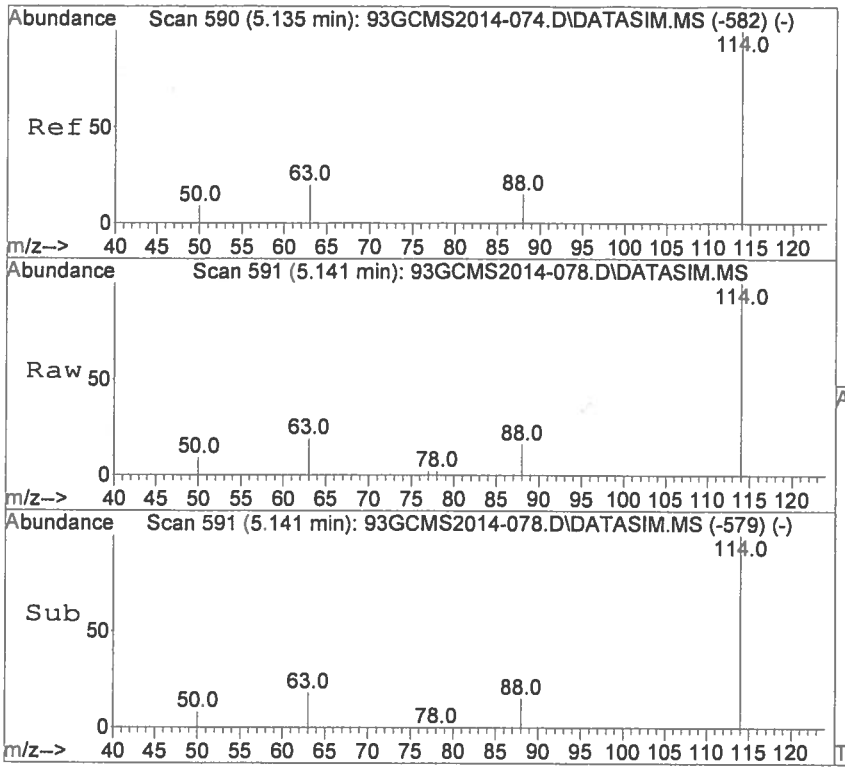


#8
Chloroform
Concen: 5.00 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.005 min
Lab File: 93GCMS2014-078.D
Acq: 23 Jan 2014 10:30

Tgt Ion: 83 Resp: 1000

Ion	Ratio	Lower	Upper
83	100		
85	68.2	52.0	78.0
47	31.7	20.0	30.0#

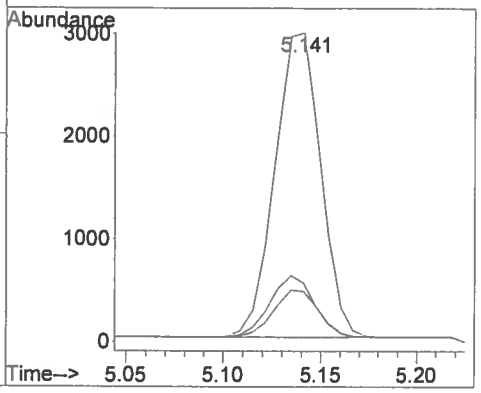


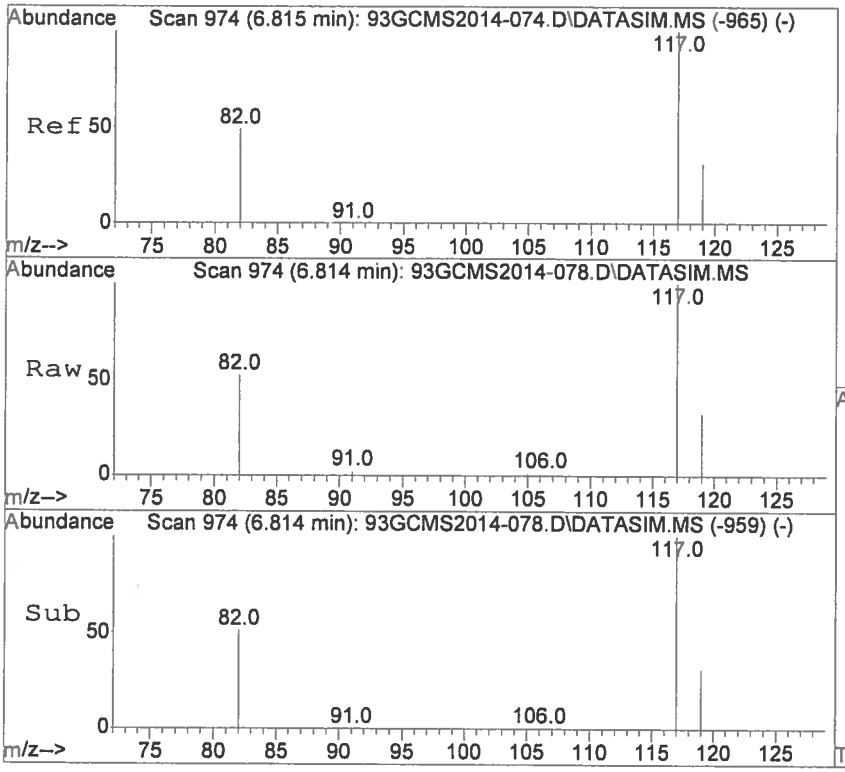


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.006 min
Lab File: 93GCMS2014-078.D
Acq: 23 Jan 2014 10:30

Tgt Ion:114 Resp: 4826

Ion	Ratio	Lower	Upper
114	100		
63	19.5	15.1	22.7
88	15.3	12.0	18.0

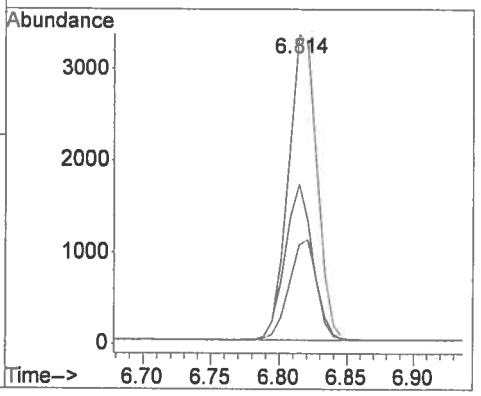


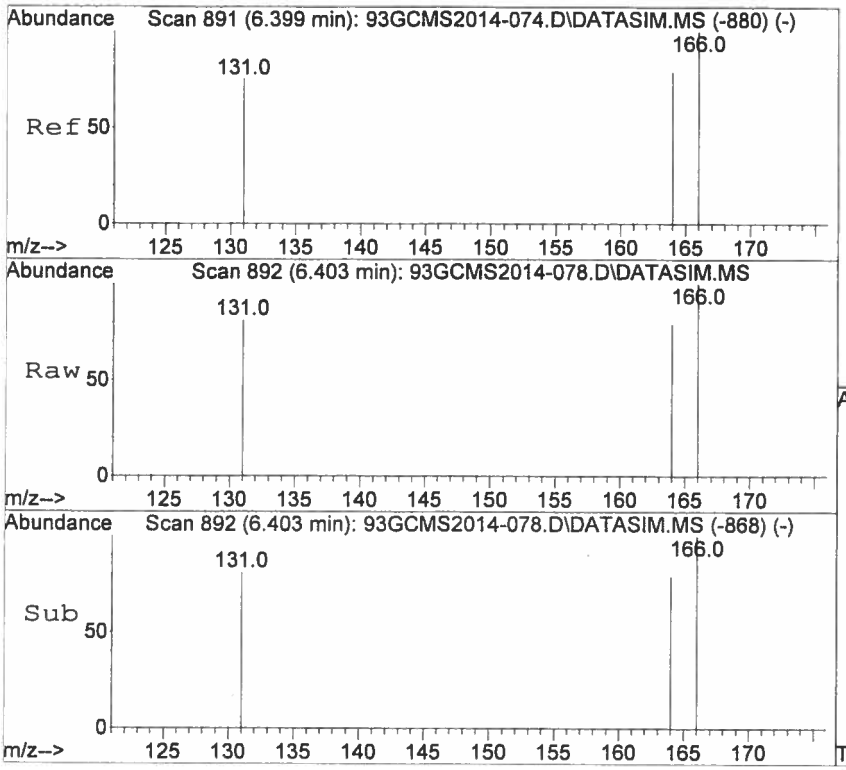


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.001 min
Lab File: 93GCMS2014-078.D
Acq: 23 Jan 2014 10:30

Tgt Ion:117 Resp: 4870

Ion	Ratio	Lower	Upper
117	100		
82	48.5	37.8	56.6
119	32.2	25.6	38.4

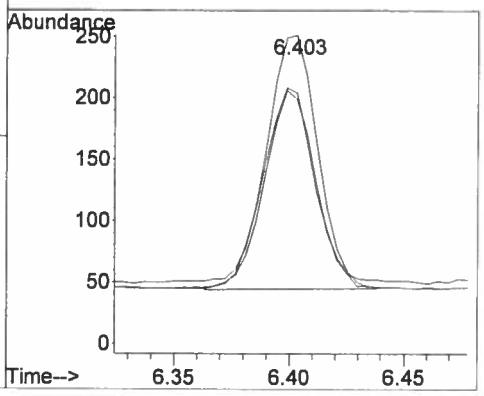




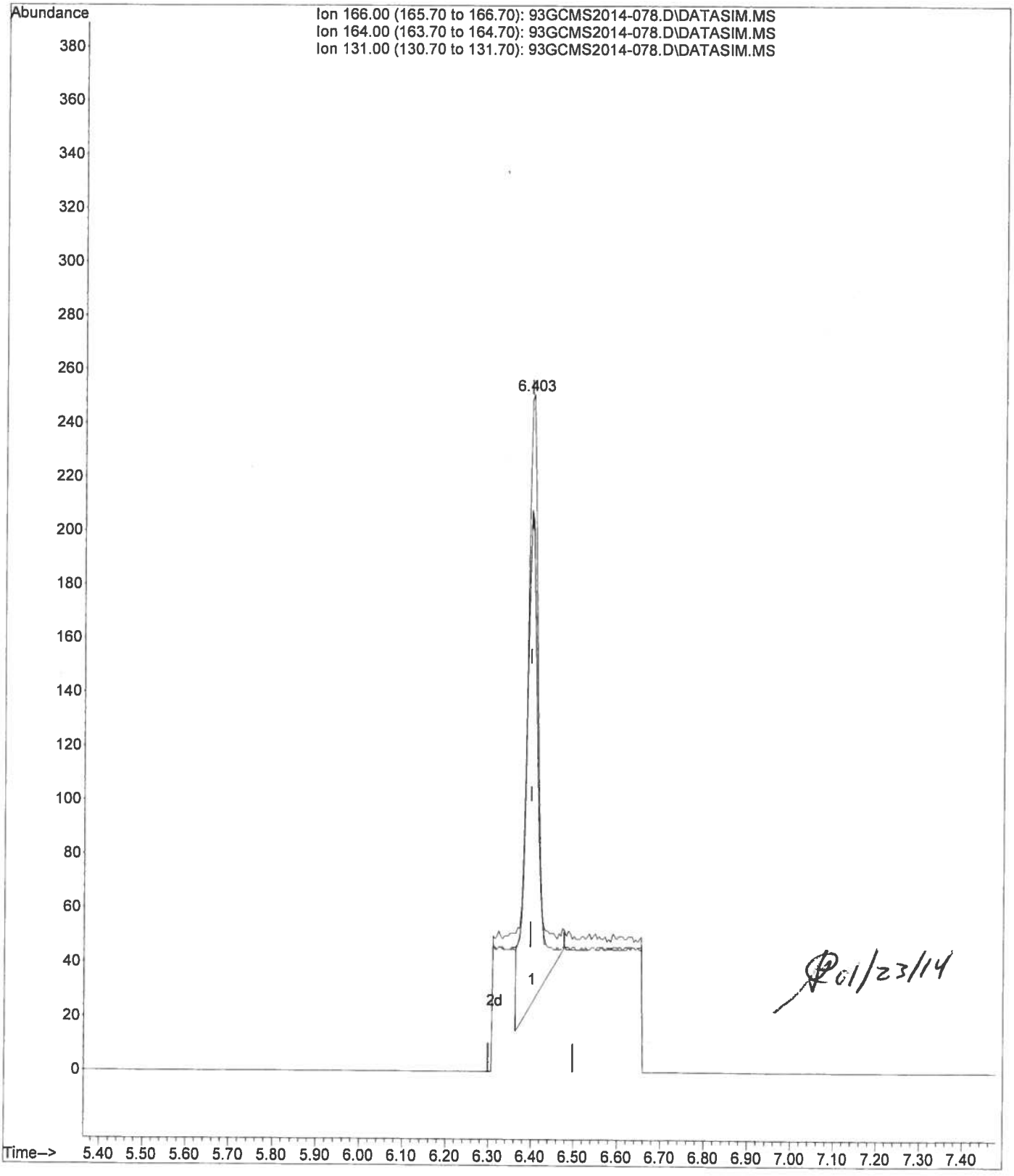
#15
Tetrachloroethene
Concen: 1.79 ppbv m
RT: 6.403 min Scan# 892
Delta R.T. 0.004 min
Lab File: 93GCMS2014-078.D
Acq: 23 Jan 2014 10:30

Tgt Ion:166 Resp: 325

Ion	Ratio	Lower	Upper
166	100		
164	110.2	62.5	93.7#
131	74.5	58.6	88.0



File :D:\msdchem\1\data\2014\20140123\93GCMS2014-078.D
Operator : SJT
Acquired : 23 Jan 2014 10:30 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-007 \ V12
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



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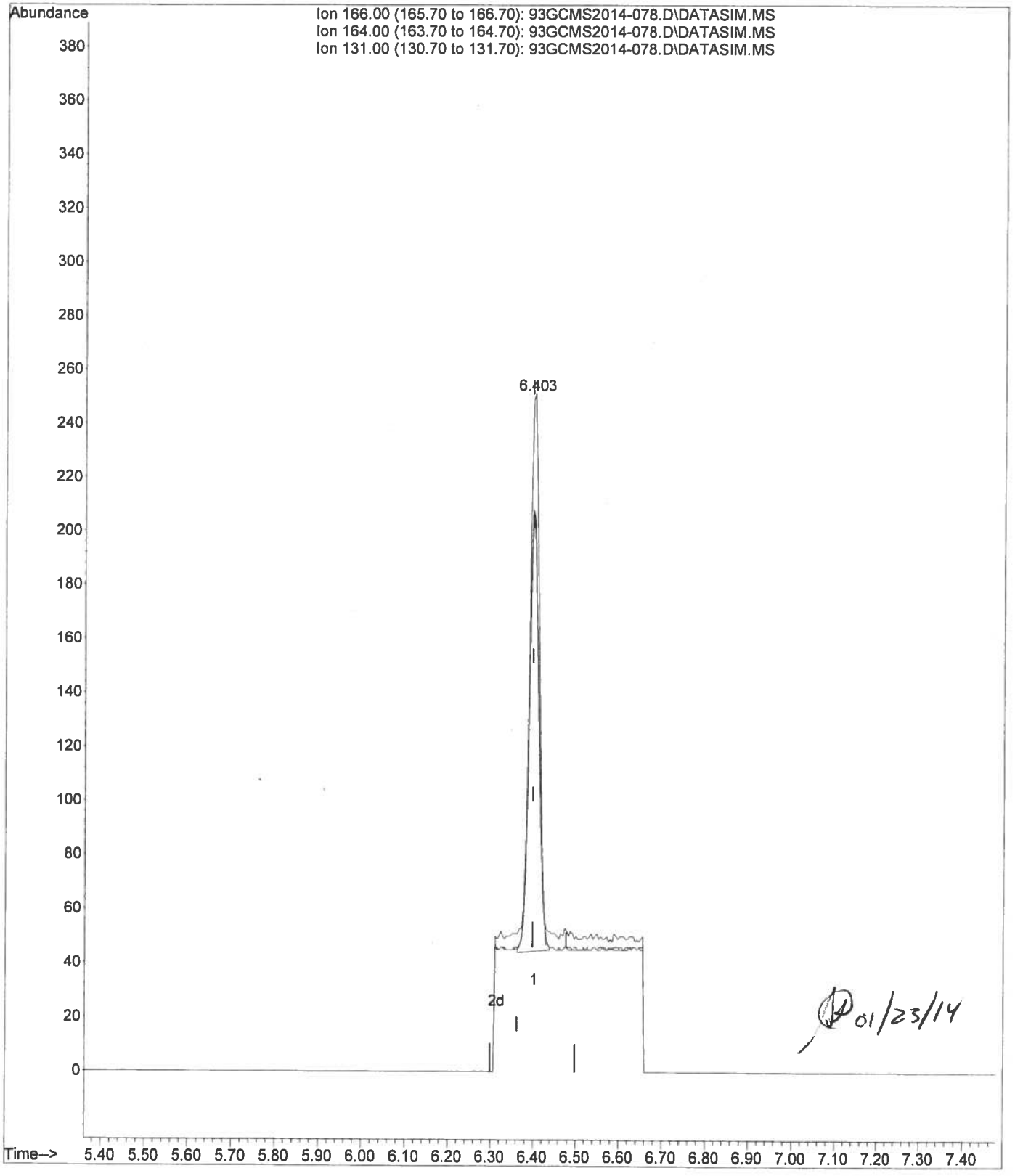
File :D:\msdchem\1\data\2014\20140123\93GCMS2014-078.D
Operator : SJT
Acquired : 23 Jan 2014 10:30 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-007 \ V12
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-079.D
Acq On : 23 Jan 2014 11:05
Operator : SJT
Sample : 219-T-008 \ V15
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 11:12:47 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.629	49	1964	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4820	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.815	117	4897	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.558	83	3171	15.81	ppbv	96

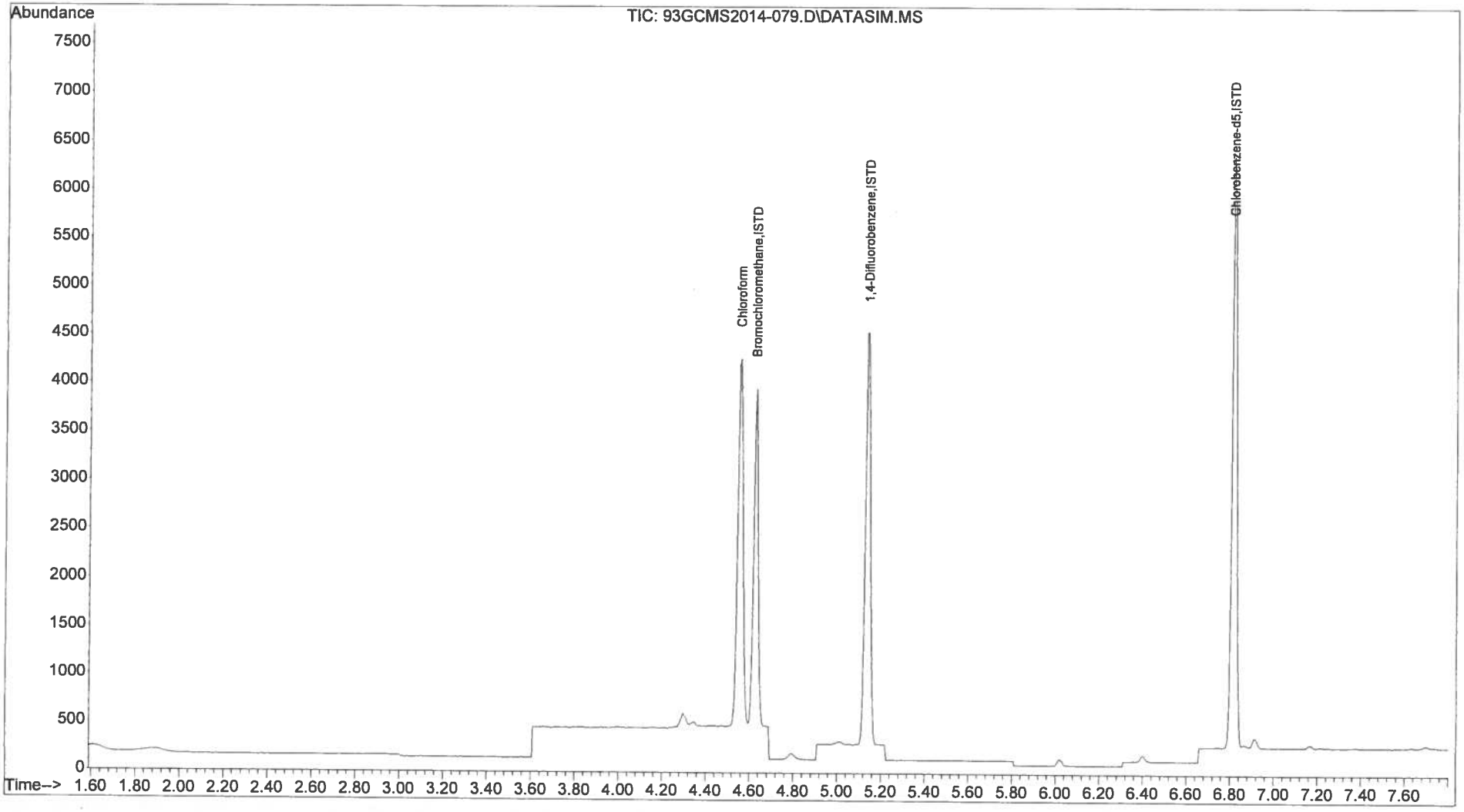
(#) = qualifier out of range (m) = manual integration (+) = signals summed

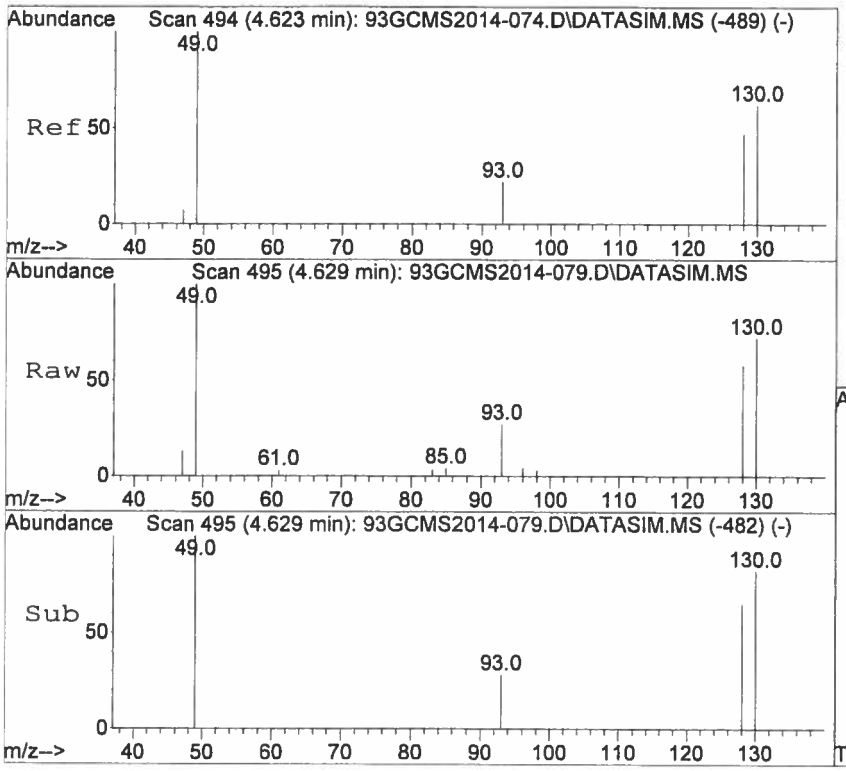
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-079.D
Acq On : 23 Jan 2014 11:05
Operator : SJT
Sample : 219-T-008 \ V15
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 11:12:47 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

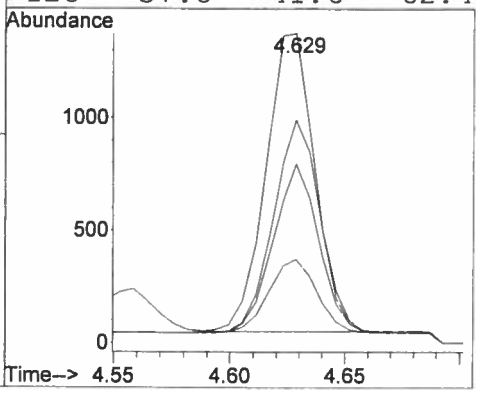


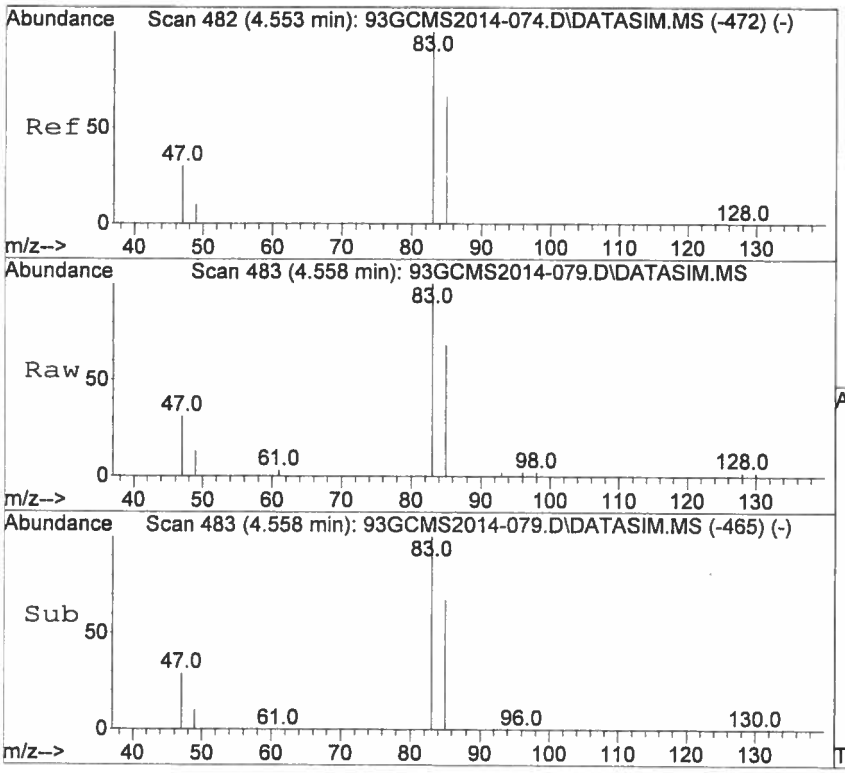


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.629 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-079.D
Acq: 23 Jan 2014 11:05

Tgt Ion: 49 Resp: 1964

Ion	Ratio	Lower	Upper
49	100		
130	72.0	51.6	77.4
93	27.0	19.6	29.4
128	57.8	41.6	62.4

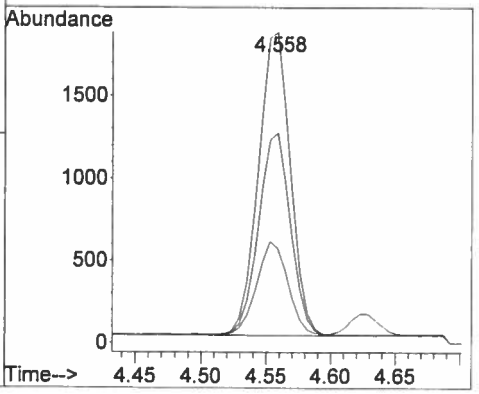


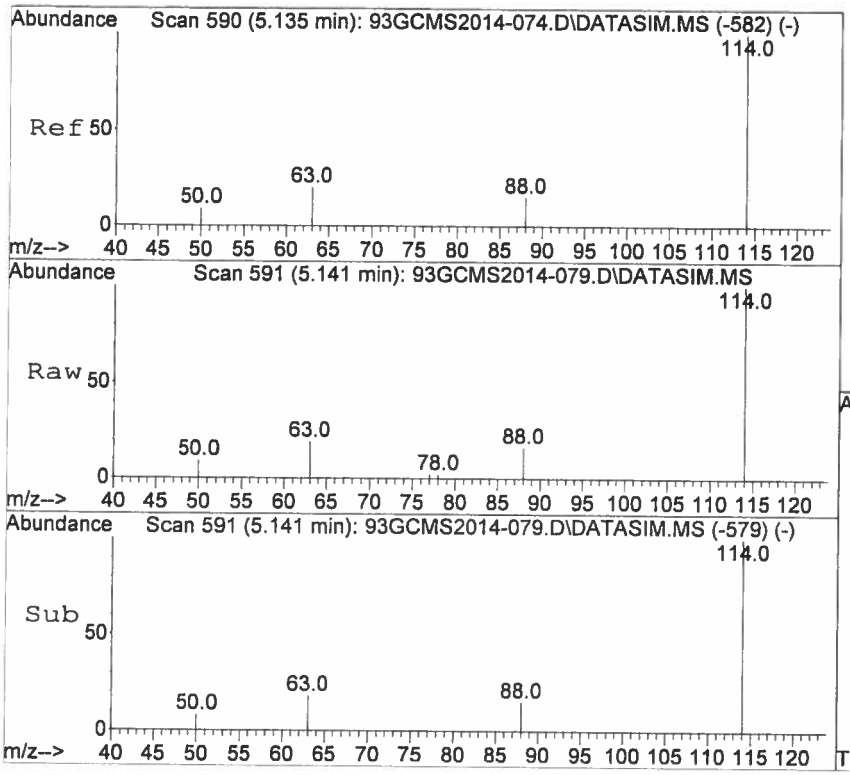


#8
Chloroform
Concen: 15.81 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.006 min
Lab File: 93GCMS2014-079.D
Acq: 23 Jan 2014 11:05

Tgt Ion: 83 Resp: 3171

Ion	Ratio	Lower	Upper
83	100		
85	66.6	52.0	78.0
47	29.9	20.0	30.0

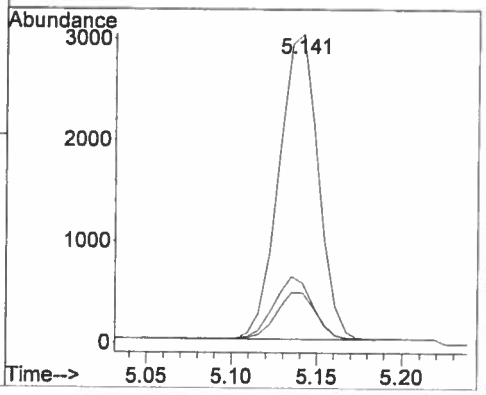


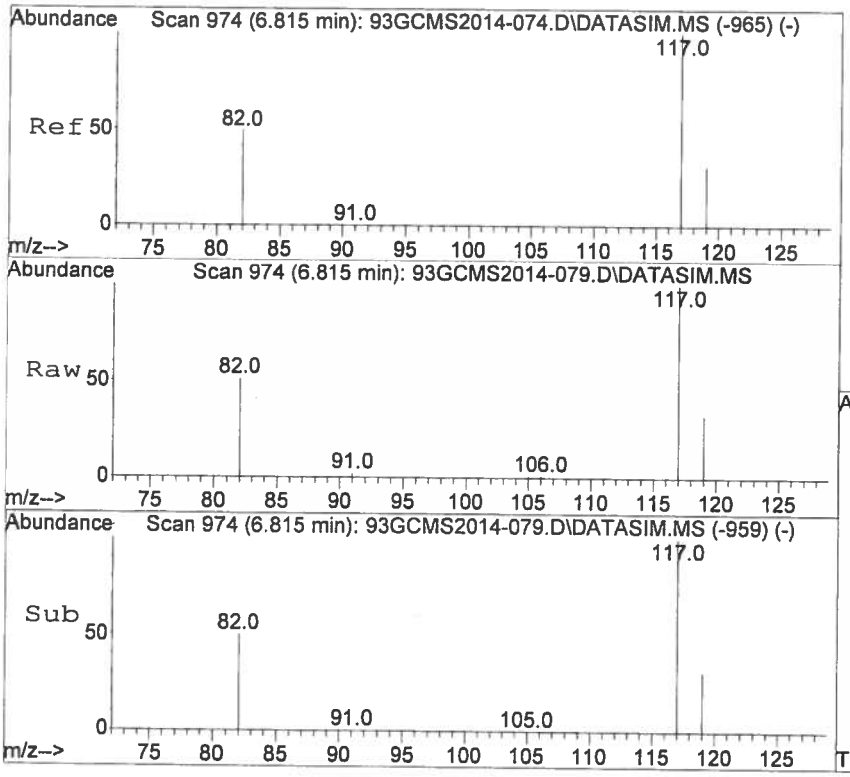


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.006 min
Lab File: 93GCMS2014-079.D
Acq: 23 Jan 2014 11:05

Tgt Ion:114 Resp: 4820

Ion	Ratio	Lower	Upper
114	100		
63	19.8	15.1	22.7
88	15.5	12.0	18.0

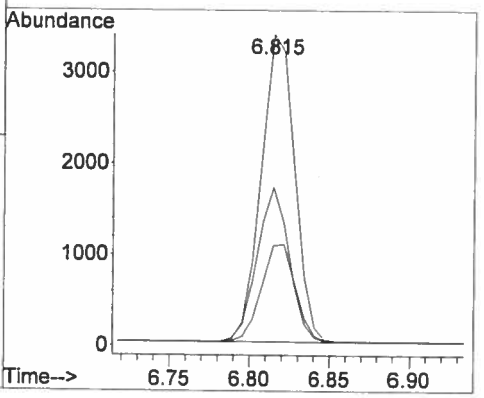




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.815 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-079.D
Acq: 23 Jan 2014 11:05

Tgt Ion:117 Resp: 4897

Ion	Ratio	Lower	Upper
117	100		
82	47.9	37.8	56.6
119	32.3	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-080.D
Acq On : 23 Jan 2014 11:21
Operator : SJT
Sample : 219-T-008 \ V15 REP
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 11:28:33 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09 43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.622	49	2005	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4866	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.821	117	4964	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.552	83	3135	15.31	ppbv	95

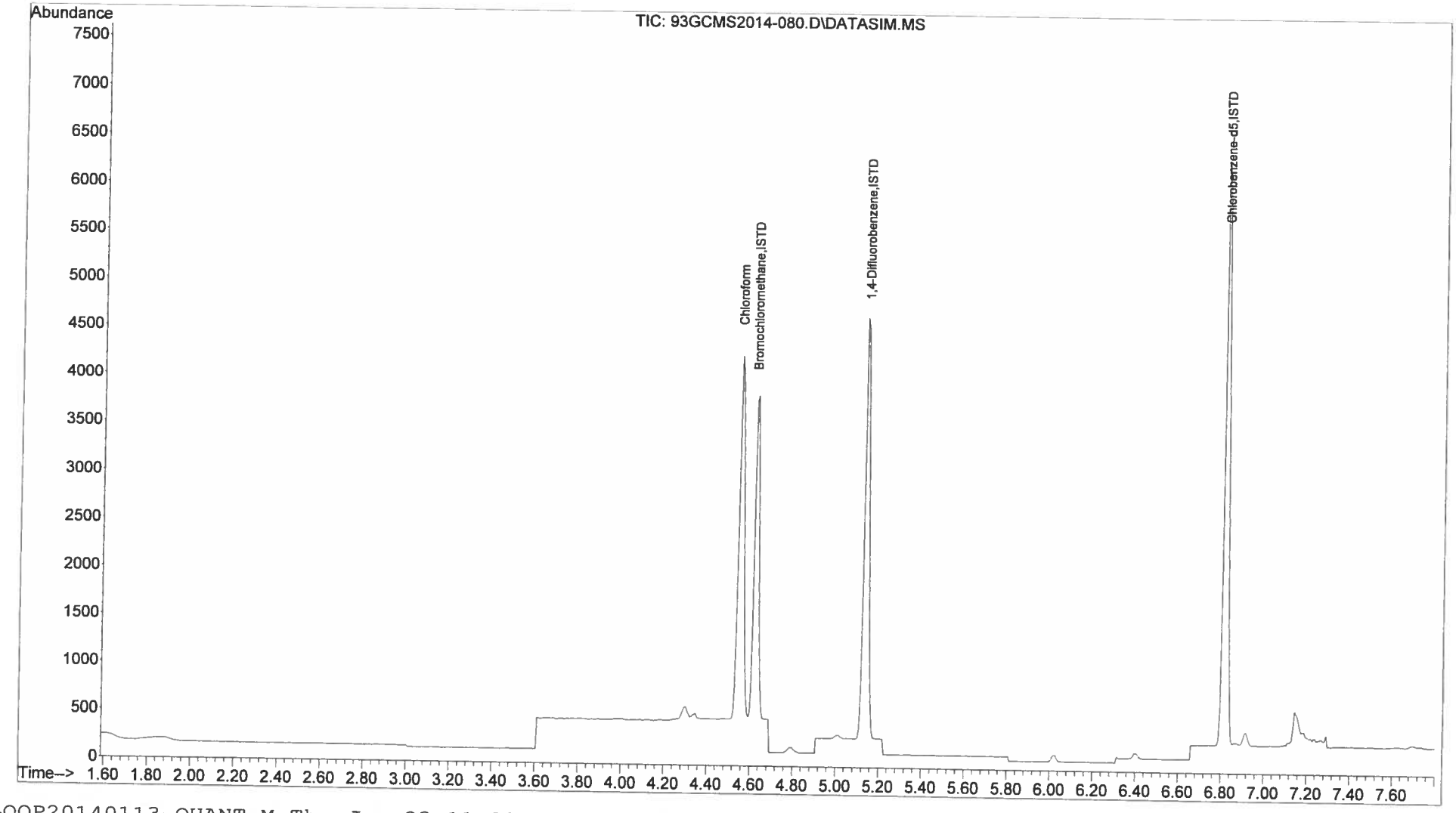
(#) = qualifier out of range (m) = manual integration (+) = signals summed

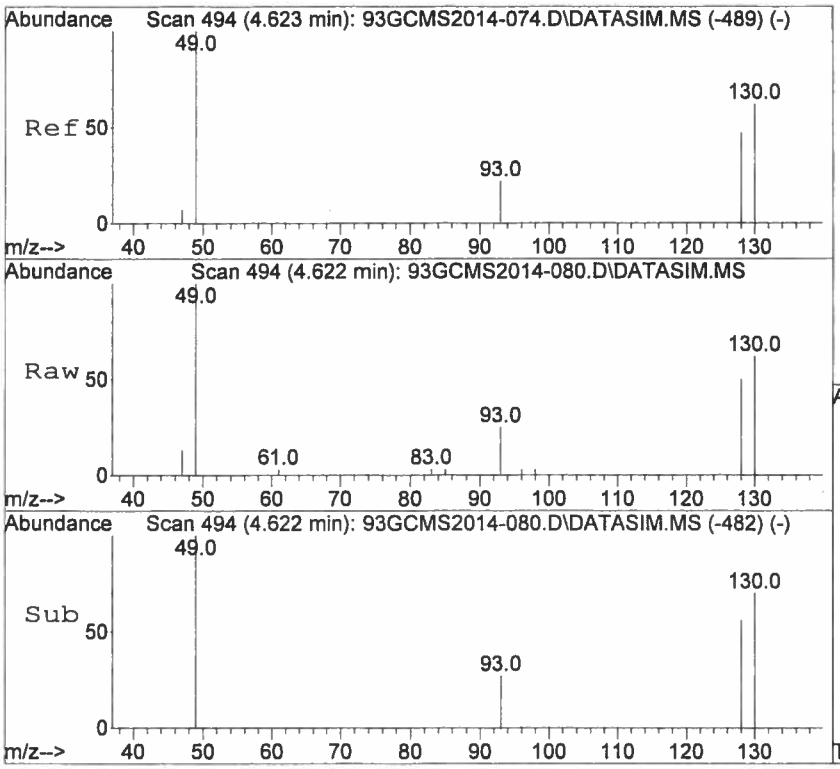
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-080.D
Acq On : 23 Jan 2014 11:21
Operator : SJT
Sample : 219-T-008 \ V15 REP
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 11:28:33 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

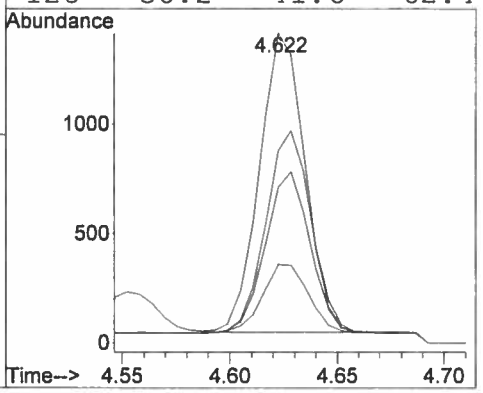


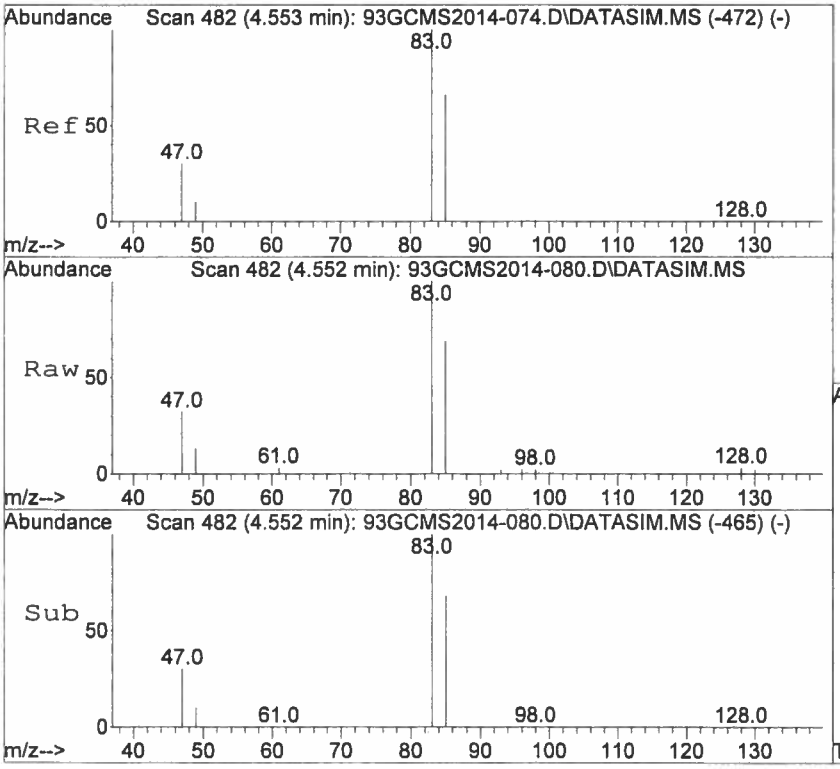


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 494
Delta R.T. -0.000 min
Lab File: 93GCMS2014-080.D
Acq: 23 Jan 2014 11:21

Tgt Ion: 49 Resp: 2005

Ion	Ratio	Lower	Upper
49	100		
130	61.9	51.6	77.4
93	25.4	19.6	29.4
128	50.2	41.6	62.4

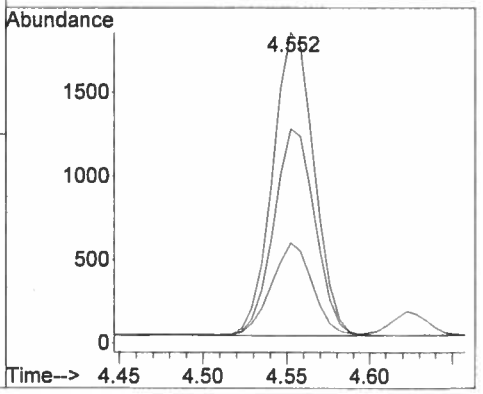


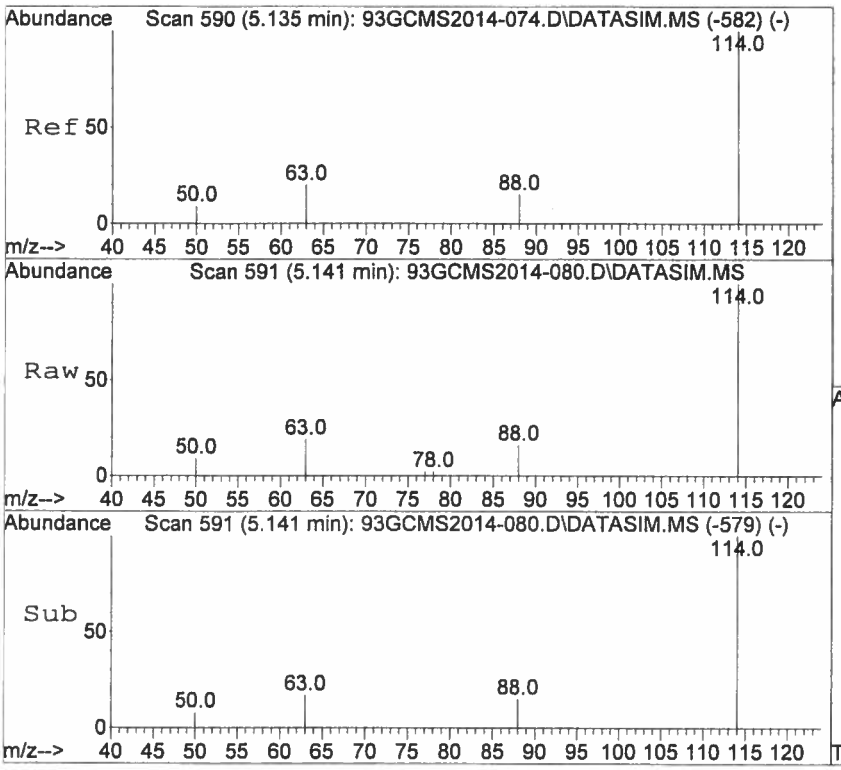


#8
Chloroform
Concen: 15.31 ppbv
RT: 4.552 min Scan# 482
Delta R.T. -0.000 min
Lab File: 93GCMS2014-080.D
Acq: 23 Jan 2014 11:21

Tgt Ion: 83 Resp: 3135

Ion	Ratio	Lower	Upper
83	100		
85	67.8	52.0	78.0
47	29.4	20.0	30.0

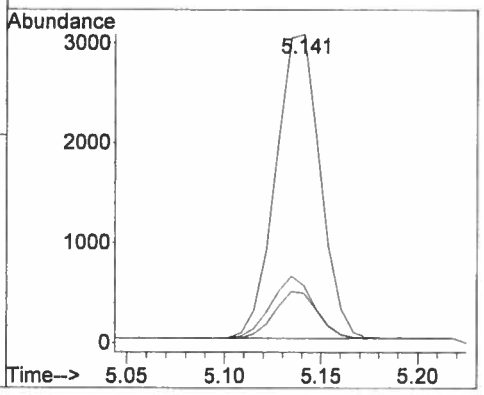


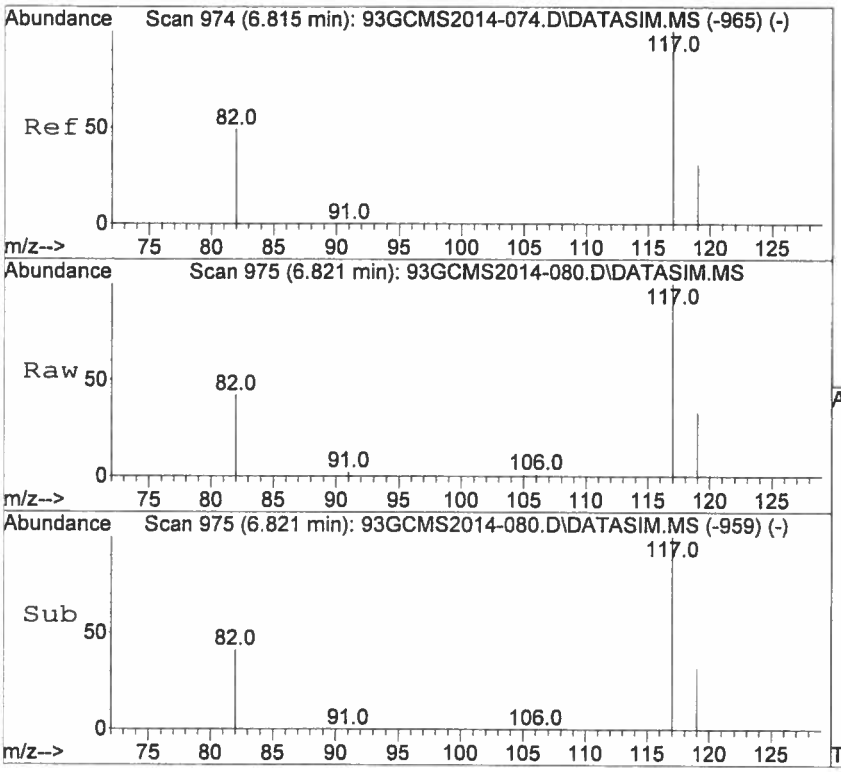


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.006 min
Lab File: 93GCMS2014-080.D
Acq: 23 Jan 2014 11:21

Tgt Ion:114 Resp: 4866

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.2	12.0	18.0

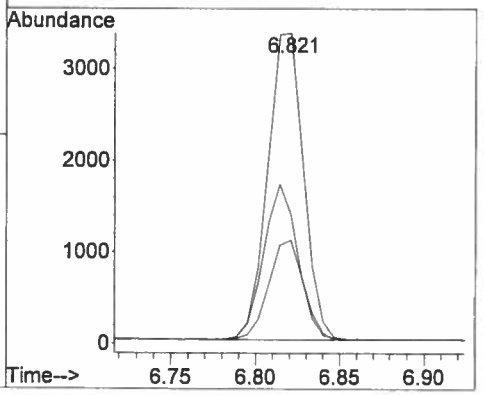




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.821 min Scan# 975
Delta R.T. 0.006 min
Lab File: 93GCMS2014-080.D
Acq: 23 Jan 2014 11:21

Tgt Ion:117 Resp: 4964

Ion	Ratio	Lower	Upper
117	100		
82	47.9	37.8	56.6
119	31.8	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-081.D
Acq On : 23 Jan 2014 15:25
Operator : SJT
Sample : 219-T-009 \ V14
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 15:32:10 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1985	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	4845	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4956	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
15) Tetrachloroethene	6.403	166	182m	0.99	ppbv	

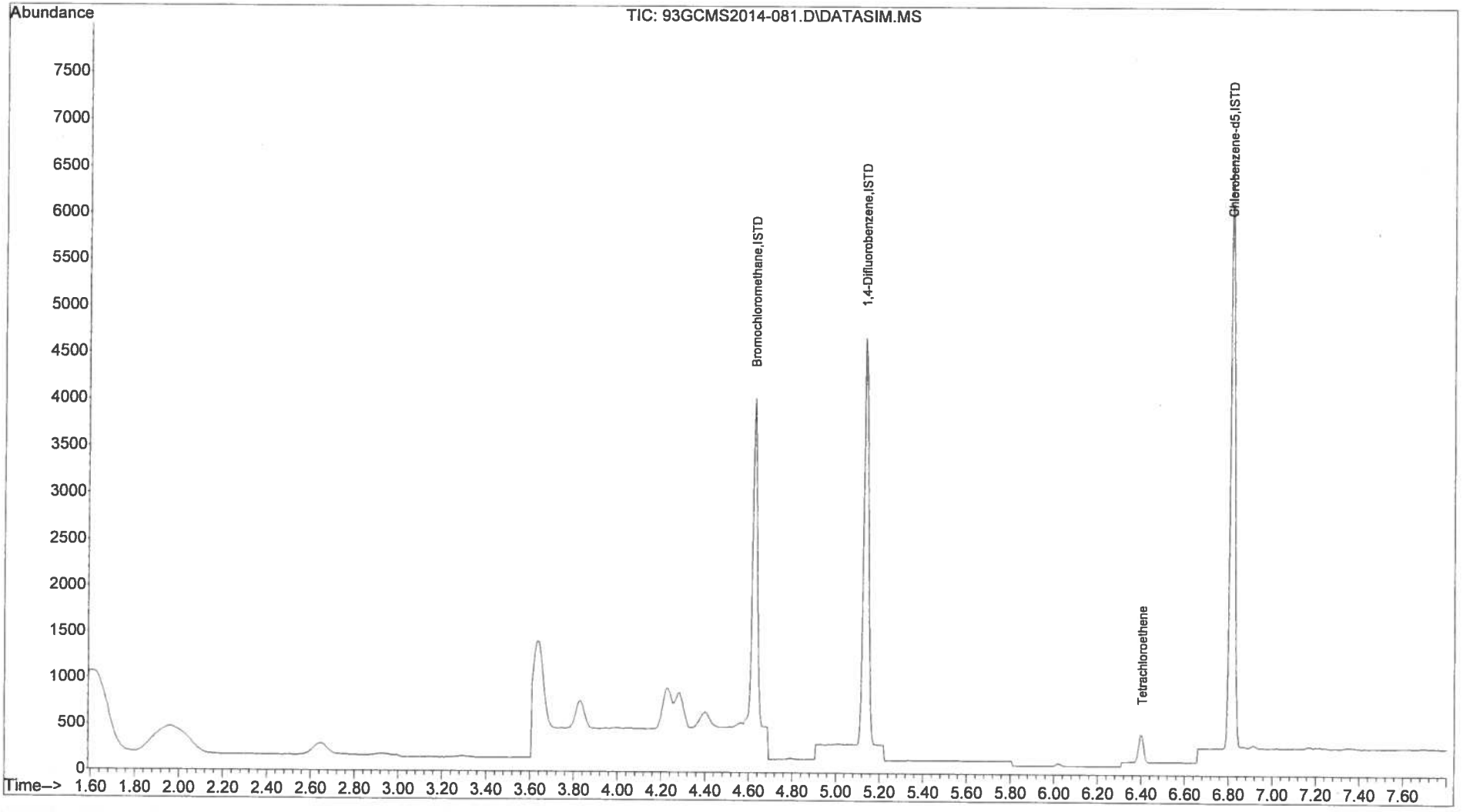
(#) = qualifier out of range (m) = manual integration (+) = signals summed

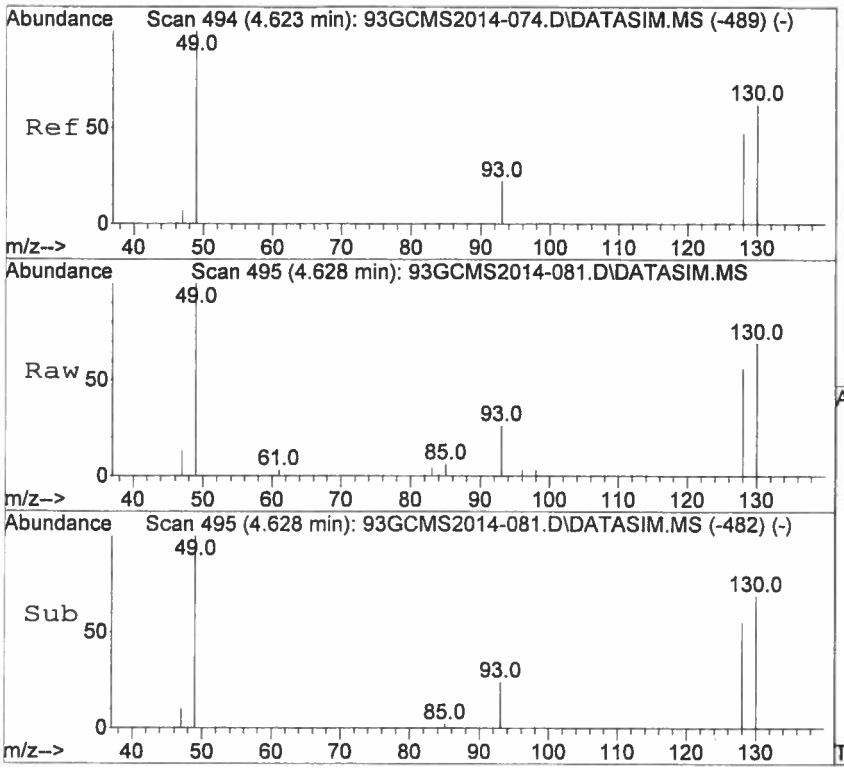
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-081.D
Acq On : 23 Jan 2014 15:25
Operator : SJT
Sample : 219-T-009 \ V14
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 15:32:10 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

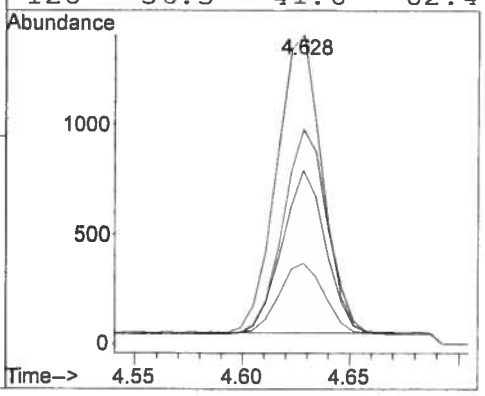


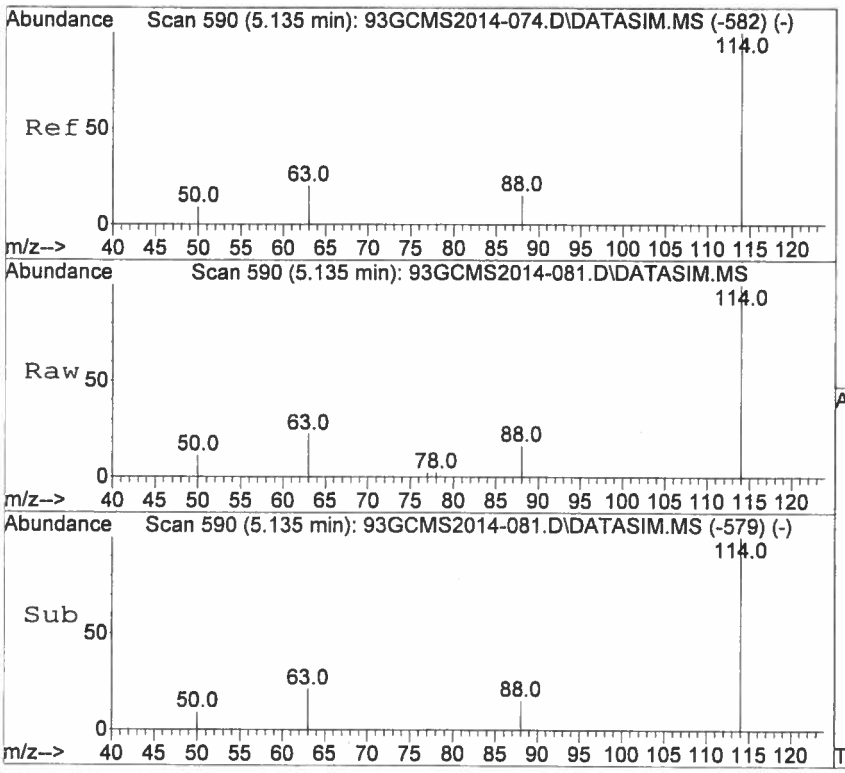


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.005 min
Lab File: 93GCMS2014-081.D
Acq: 23 Jan 2014 15:25

Tgt Ion: 49 Resp: 1985

Ion	Ratio	Lower	Upper
49	100		
130	69.5	51.6	77.4
93	26.3	19.6	29.4
128	56.3	41.6	62.4

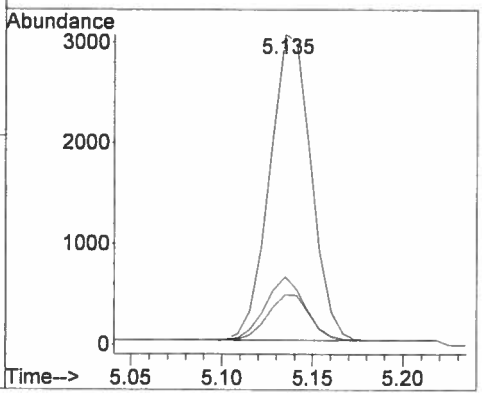


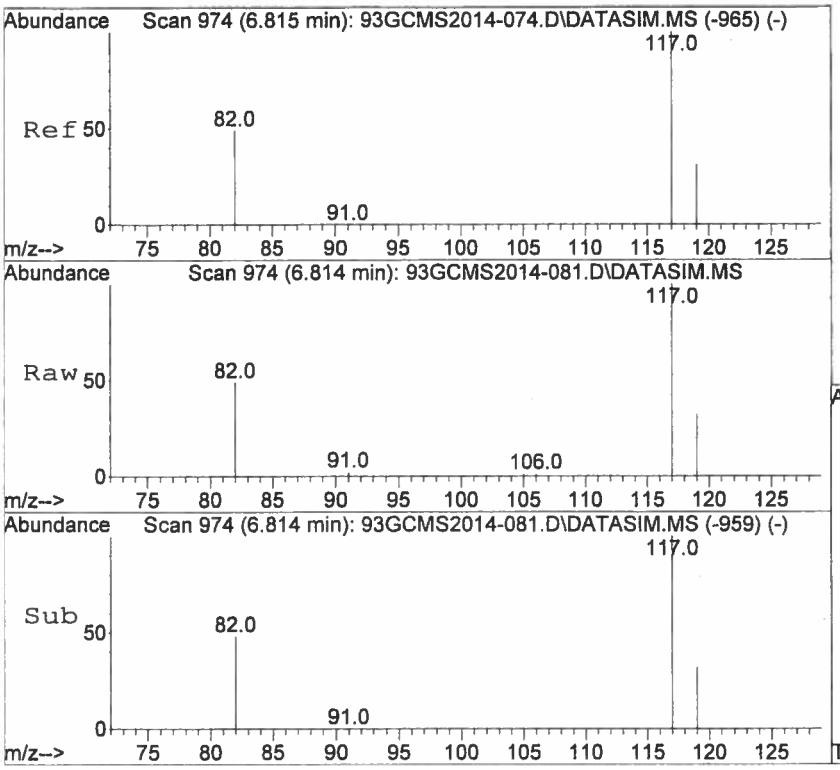


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.000 min
Lab File: 93GCMS2014-081.D
Acq: 23 Jan 2014 15:25

Tgt Ion:114 Resp: 4845

Ion	Ratio	Lower	Upper
114	100		
63	19.6	15.1	22.7
88	15.1	12.0	18.0

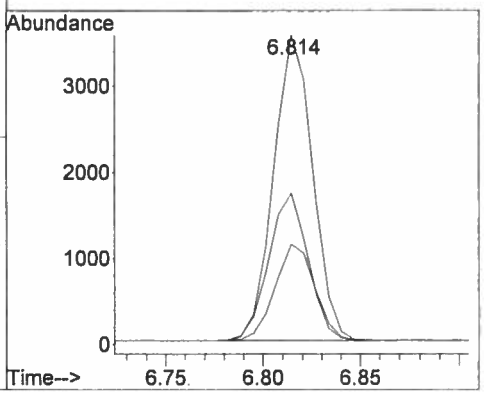


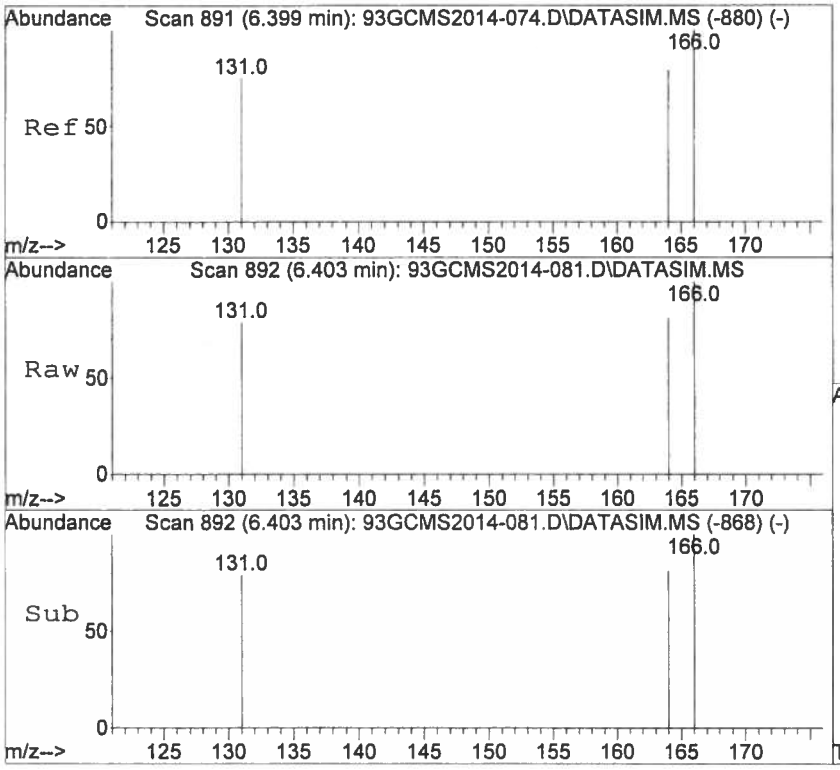


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-081.D
Acq: 23 Jan 2014 15:25

Tgt Ion:117 Resp: 4956

Ion	Ratio	Lower	Upper
117	100		
82	48.5	37.8	56.6
119	32.1	25.6	38.4

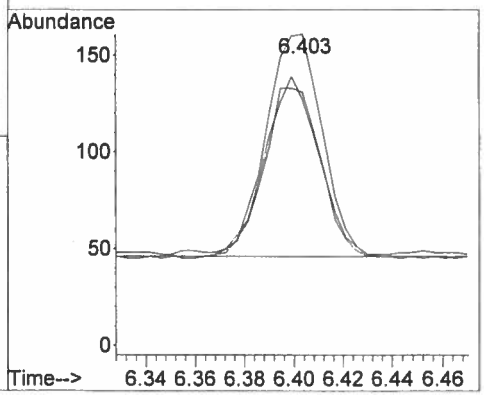




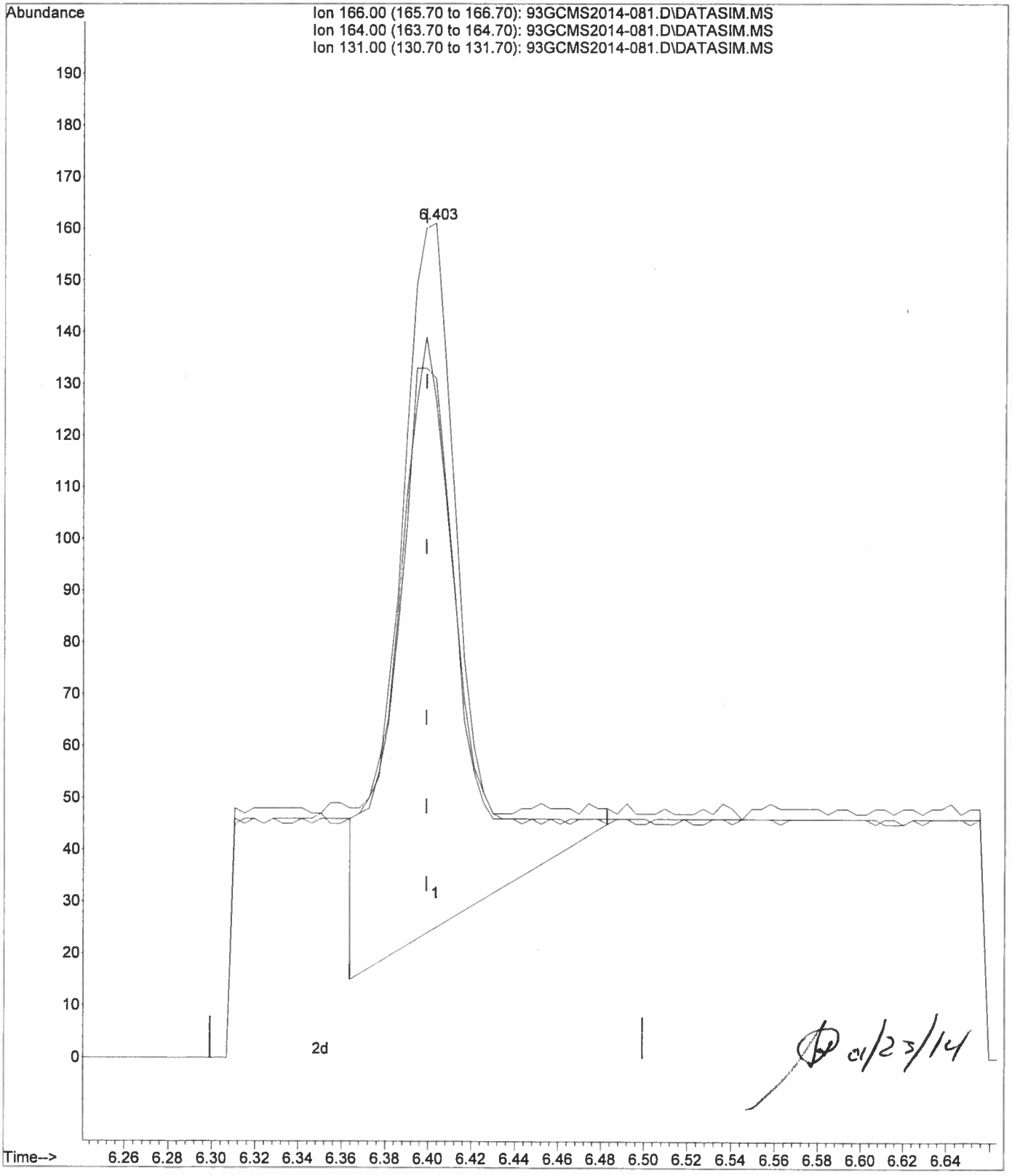
#15
Tetrachloroethene
Concen: 0.99 ppbv m
RT: 6.403 min Scan# 892
Delta R.T. 0.004 min
Lab File: 93GCMS2014-081.D
Acq: 23 Jan 2014 15:25

Tgt Ion:166 Resp: 182

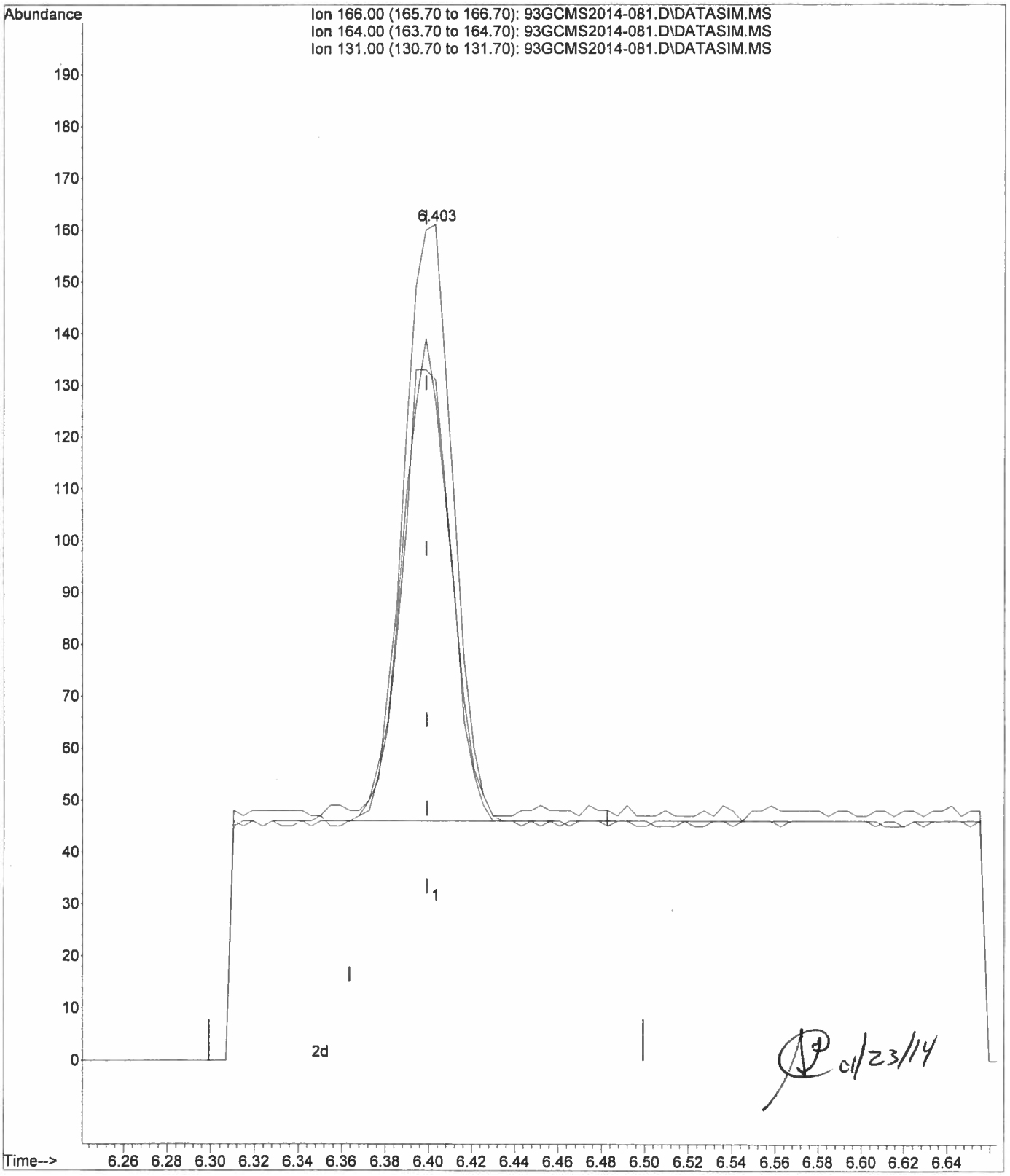
Ion	Ratio	Lower	Upper
166	100		
164	75.8	62.5	93.7
131	130.2	58.6	88.0#



File :D:\msdchem\1\data\2014\20140123\93GCMS2014-081.D
Operator : SJT
Acquired : 23 Jan 2014 15:25 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-009 \ V14
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



File : D:\msdchem\1\data\2014\20140123\93GCMS2014-081.D
Operator : SJT
Acquired : 23 Jan 2014 15:25 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-009 \ V14
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-082.D
Acq On : 23 Jan 2014 15:49
Operator : SJT
Sample : 219-T-010 \ V05
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 15:58:16 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09 43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1927	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4747	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4768	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.558	83	469	2.38	ppbv	96
9) 1,1,1-Trichloroethane	4.794	97	113m	0.55	ppbv	
15) Tetrachloroethene	6.399	166	344m	1.94	ppbv	

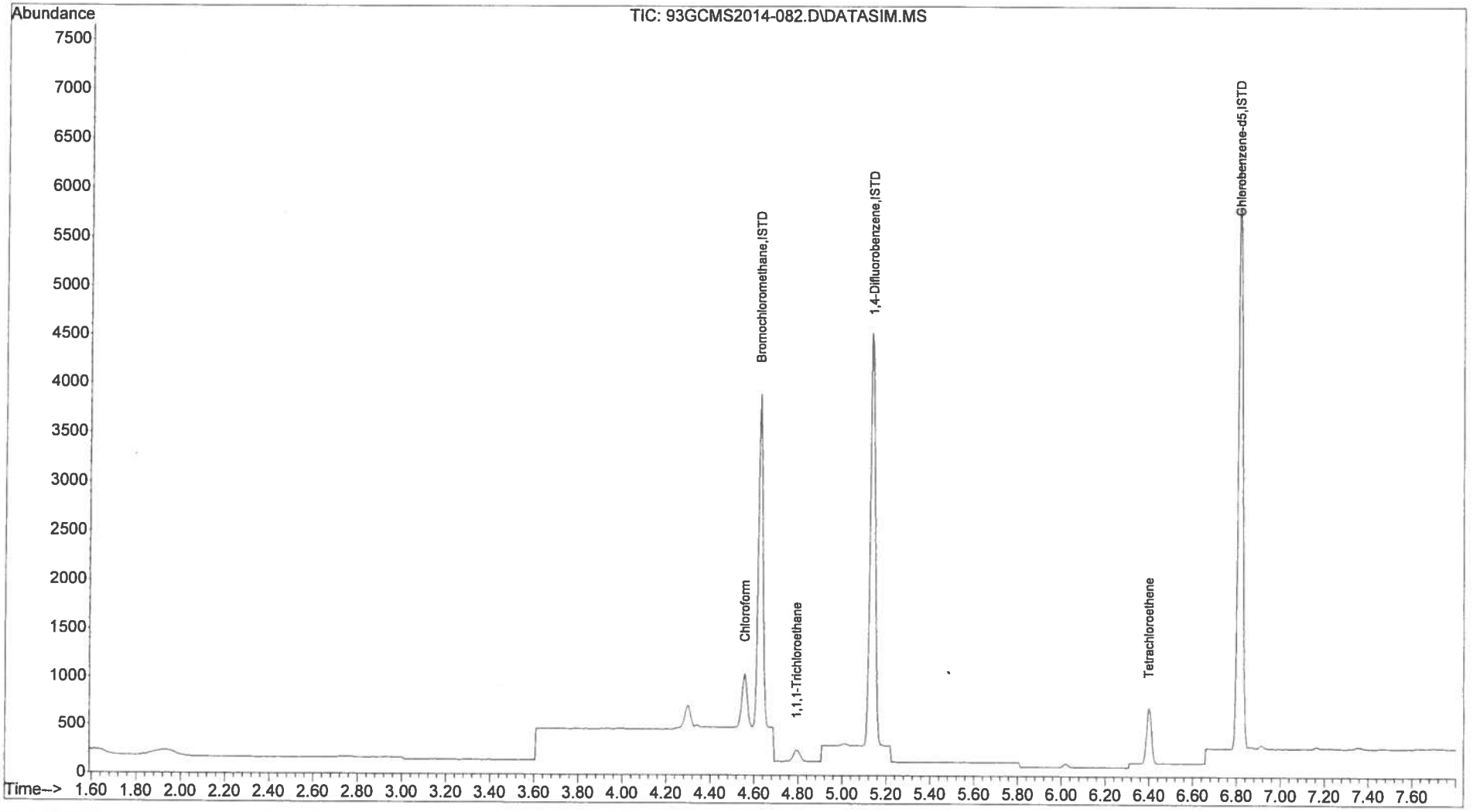
(#) = qualifier out of range (m) = manual integration (+) = signals summed

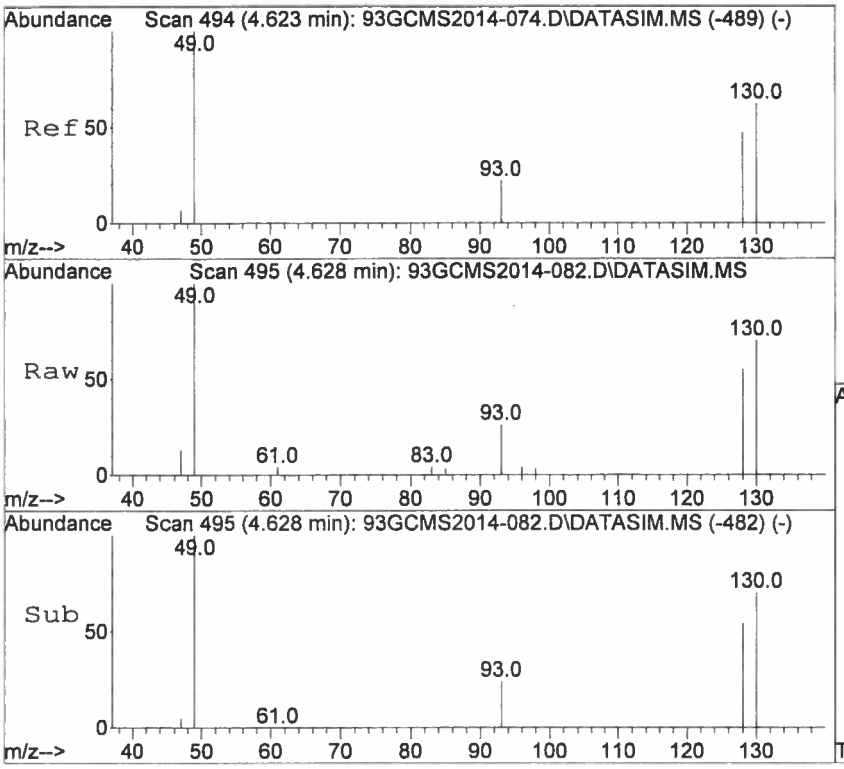
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-082.D
Acq On : 23 Jan 2014 15:49
Operator : SJT
Sample : 219-T-010 \ V05
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 15:58:16 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

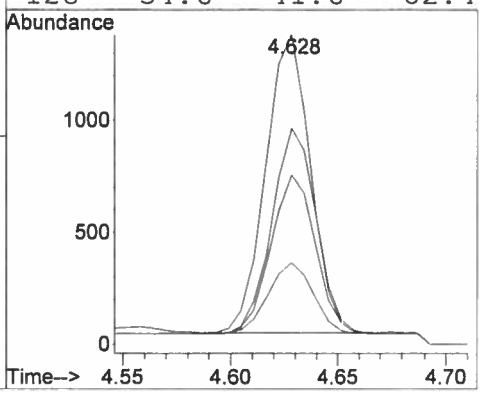


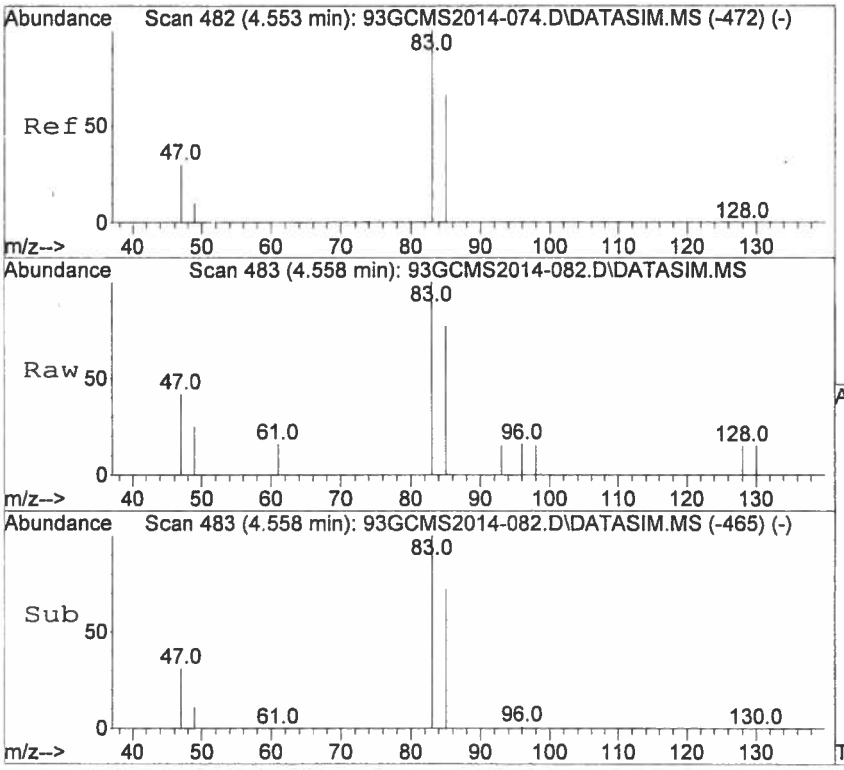


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.005 min
Lab File: 93GCMS2014-082.D
Acq: 23 Jan 2014 15:49

Tgt Ion: 49 Resp: 1927

Ion	Ratio	Lower	Upper
49	100		
130	69.5	51.6	77.4
93	26.4	19.6	29.4
128	54.6	41.6	62.4

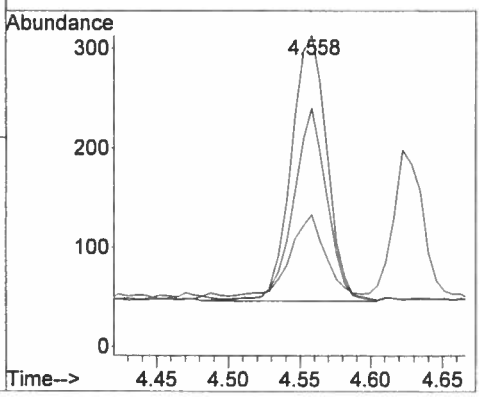


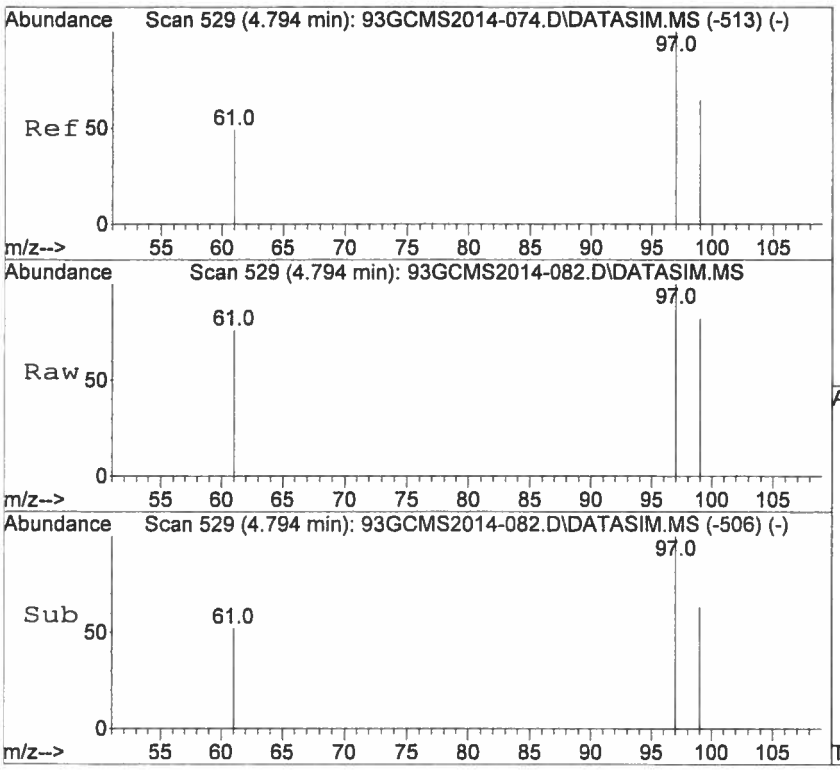


#8
Chloroform
Concen: 2.38 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.005 min
Lab File: 93GCMS2014-082.D
Acq: 23 Jan 2014 15:49

Tgt Ion: 83 Resp: 469

Ion	Ratio	Lower	Upper
83	100		
85	66.7	52.0	78.0
47	29.6	20.0	30.0

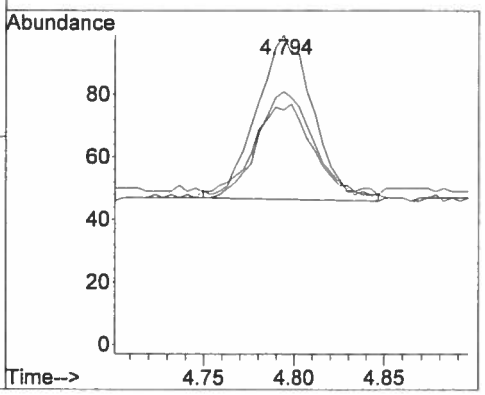


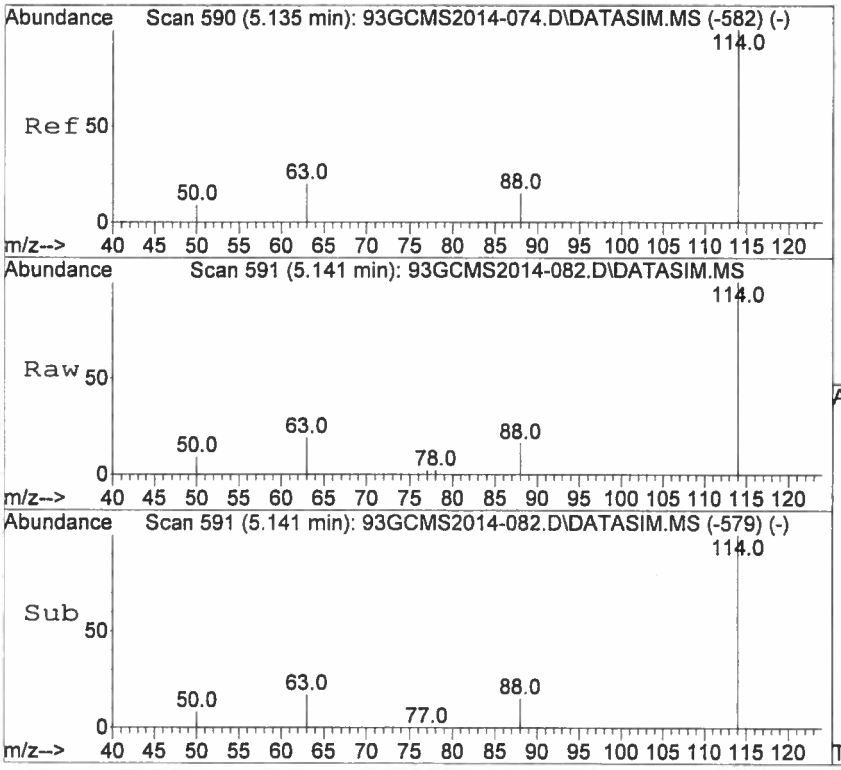


#9
1,1,1-Trichloroethane
Concen: 0.55 ppbv m
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-082.D
Acq: 23 Jan 2014 15:49

Tgt Ion: 97 Resp: 113

Ion	Ratio	Lower	Upper
97	100		
99	68.1	51.4	77.0
61	57.5	37.4	56.0#

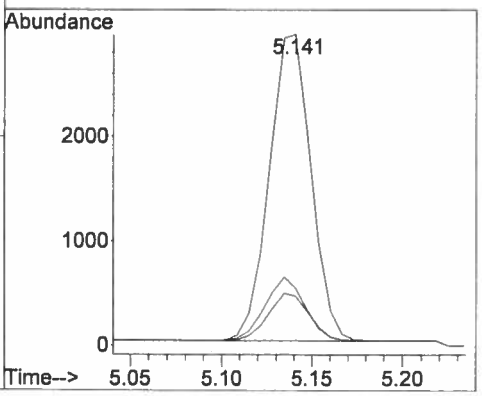


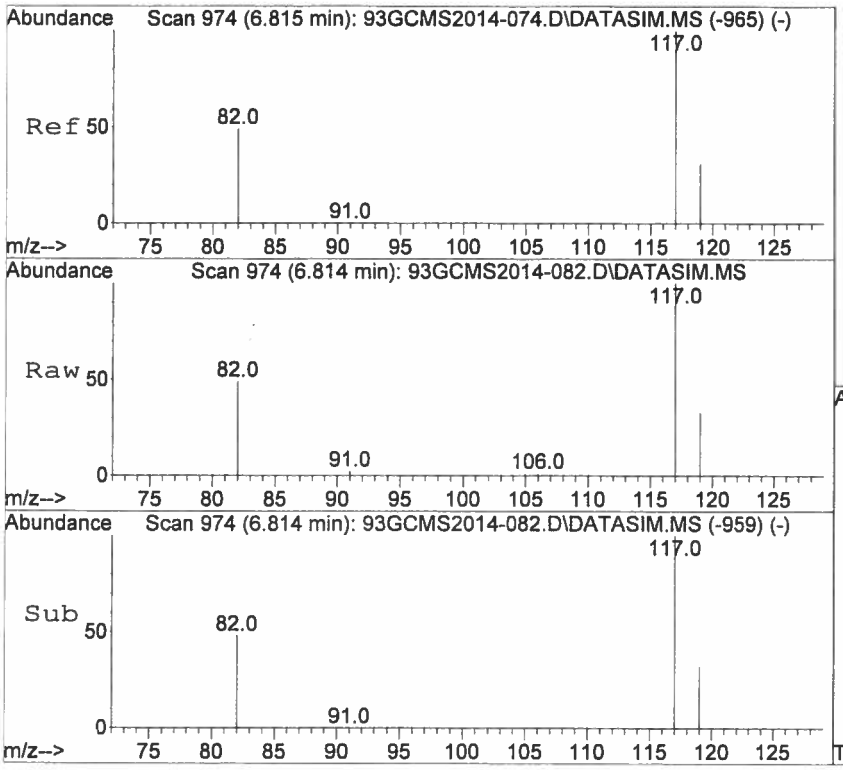


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.006 min
Lab File: 93GCMS2014-082.D
Acq: 23 Jan 2014 15:49

Tgt Ion:114 Resp: 4747

Ion	Ratio	Lower	Upper
114	100		
63	19.5	15.1	22.7
88	15.1	12.0	18.0

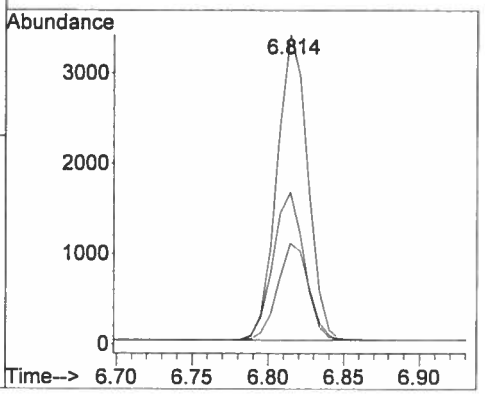


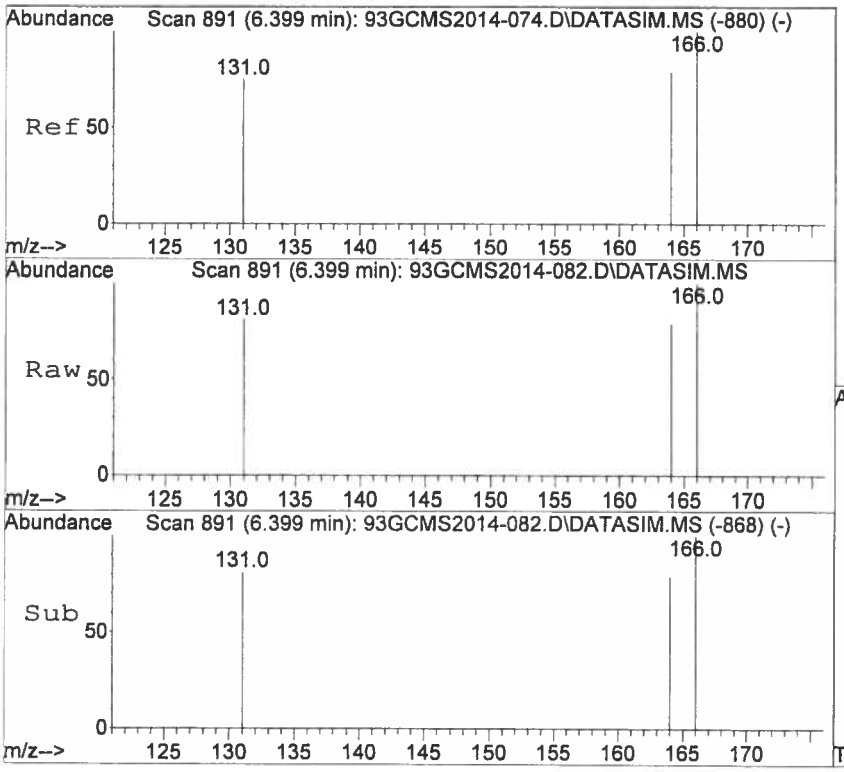


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-082.D
Acq: 23 Jan 2014 15:49

Tgt Ion:117 Resp: 4768

Ion	Ratio	Lower	Upper
117	100		
82	48.4	37.8	56.6
119	32.2	25.6	38.4

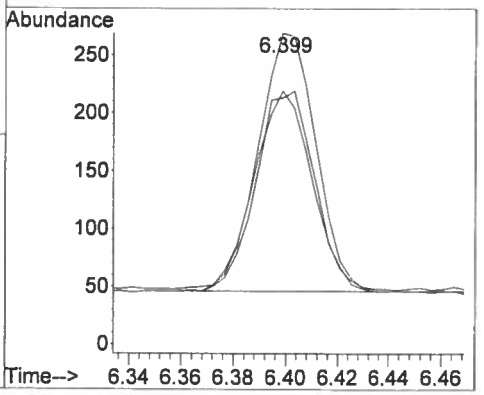




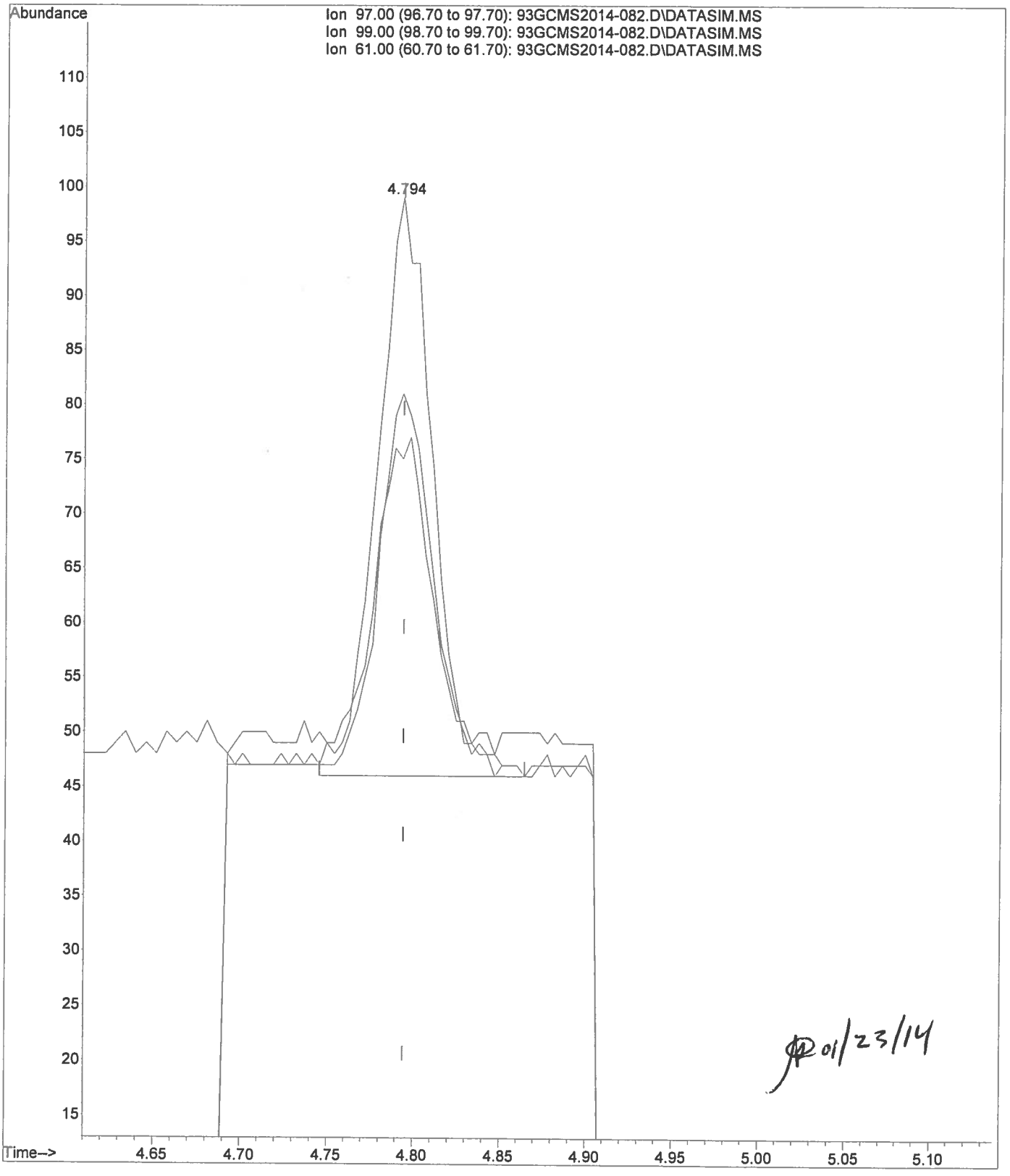
#15
Tetrachloroethene
Concen: 1.94 ppbv m
RT: 6.399 min Scan# 891
Delta R.T. -0.000 min
Lab File: 93GCMS2014-082.D
Acq: 23 Jan 2014 15:49

Tgt Ion:166 Resp: 344

Ion	Ratio	Lower	Upper
166	100		
164	106.1	62.5	93.7#
131	108.4	58.6	88.0#

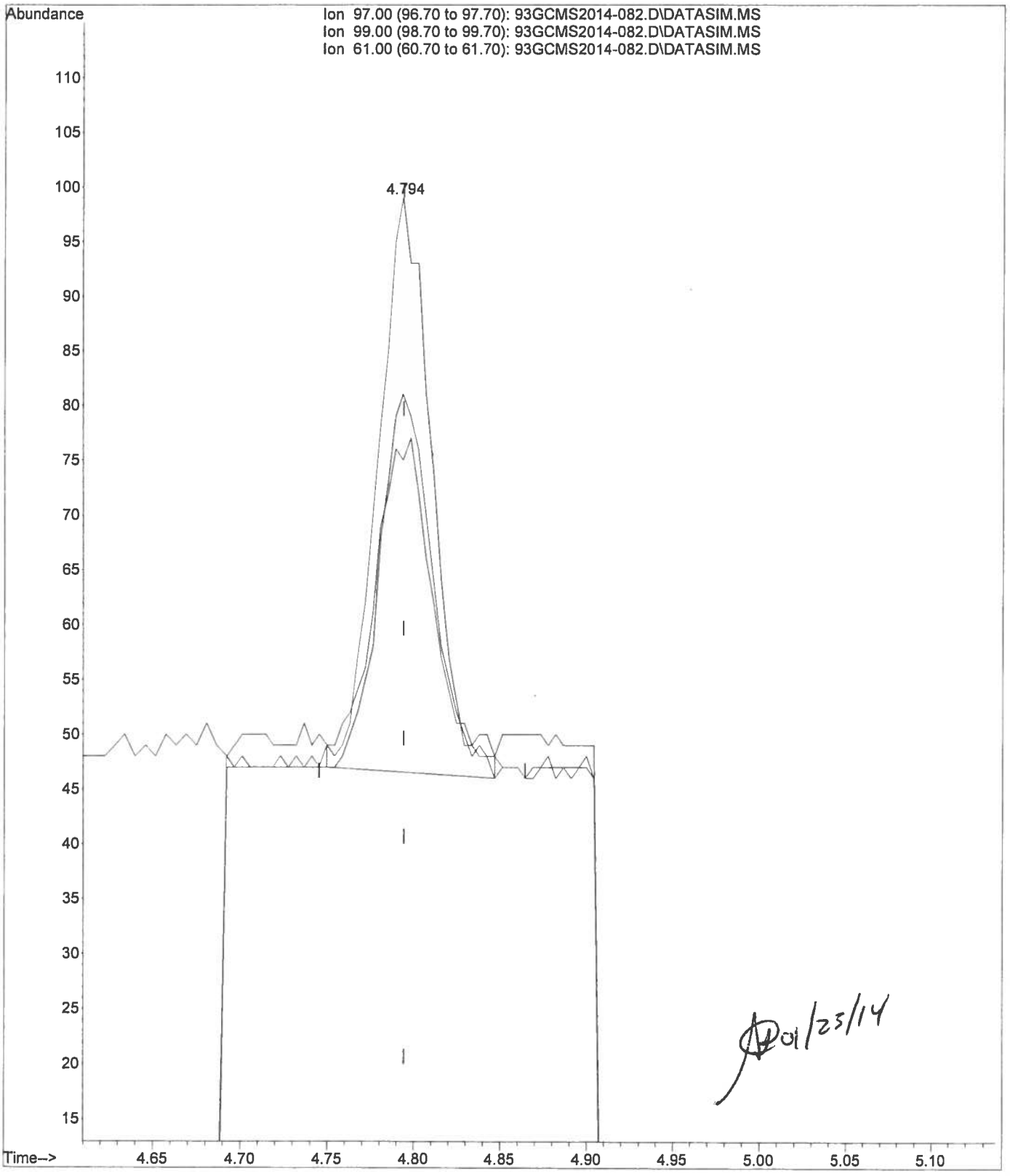


File :D:\msdchem\1\data\2014\20140123\93GCMS2014-082.D
Operator : SJT
Acquired : 23 Jan 2014 15:49 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-010 \ V05
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



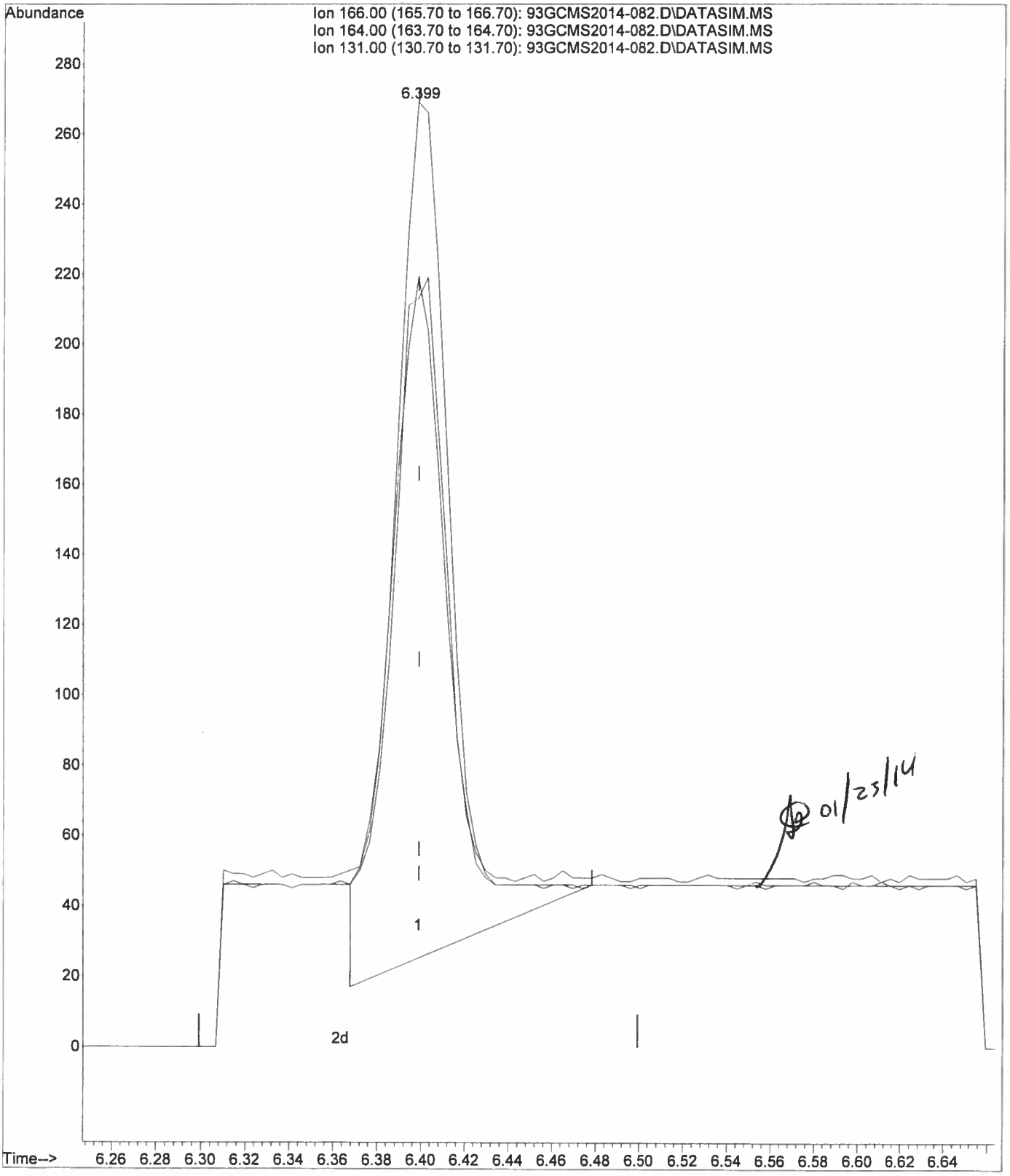
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-082.D
Operator : SJT
Acquired : 23 Jan 2014 15:49 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-010 \ V05
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1

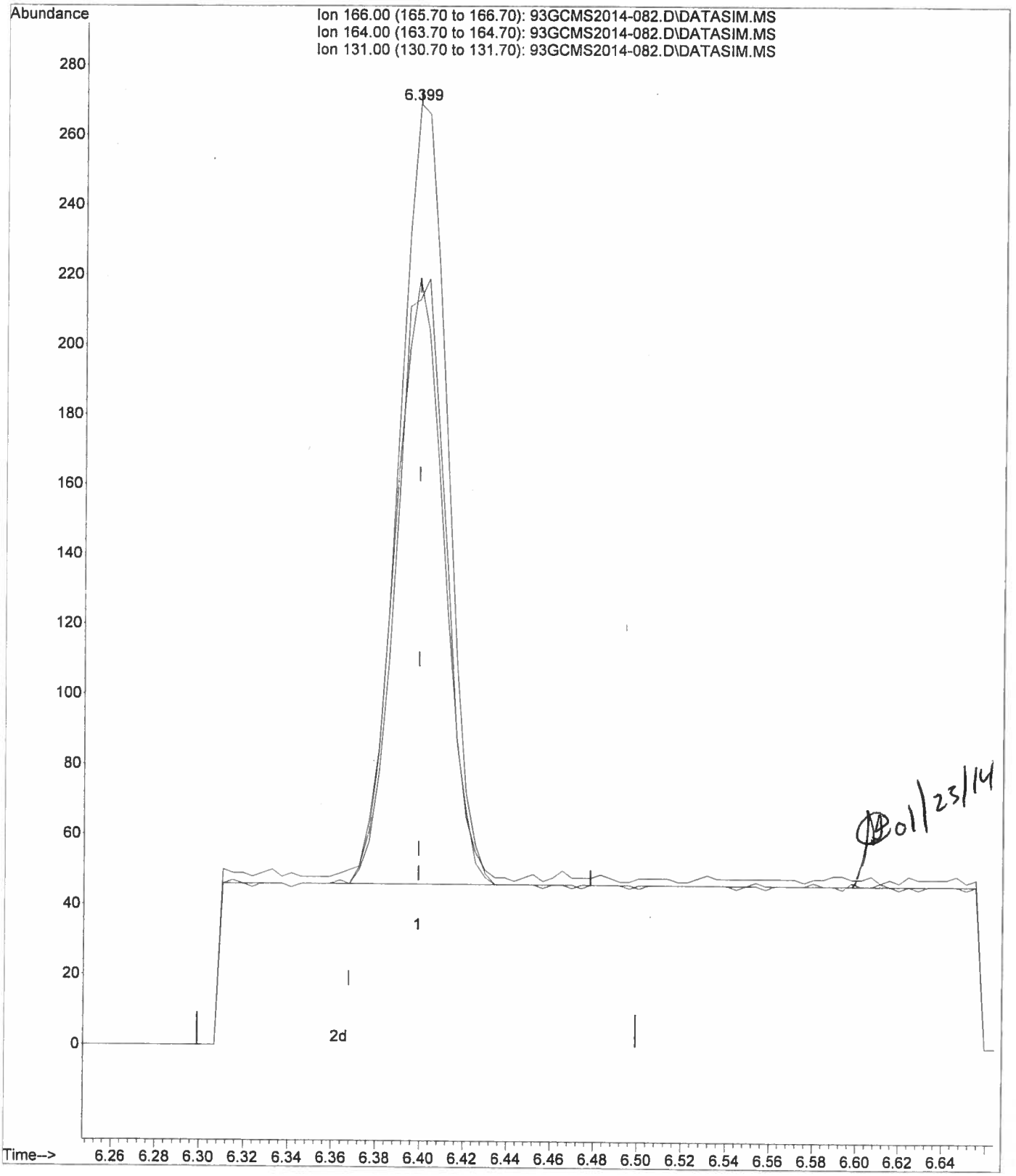


01/25/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-082.D
Operator : SJT
Acquired : 23 Jan 2014 15:49 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-010 \ V05
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



File : D:\msdchem\1\data\2014\20140123\93GCMS2014-082.D
Operator : SJT
Acquired : 23 Jan 2014 15:49 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-010 \ V05
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-083.D
Acq On : 23 Jan 2014 16:01
Operator : SJT
Sample : 219-T-011 \ V04
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:09:24 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09 43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.622	49	1990	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.134	114	4794	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4828	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.558	83	188	0.93	ppbv	95
9) 1,1,1-Trichloroethane	4.794	97	131	0.62	ppbv	92
15) Tetrachloroethene	6.399	166	459m	2.55	ppbv	

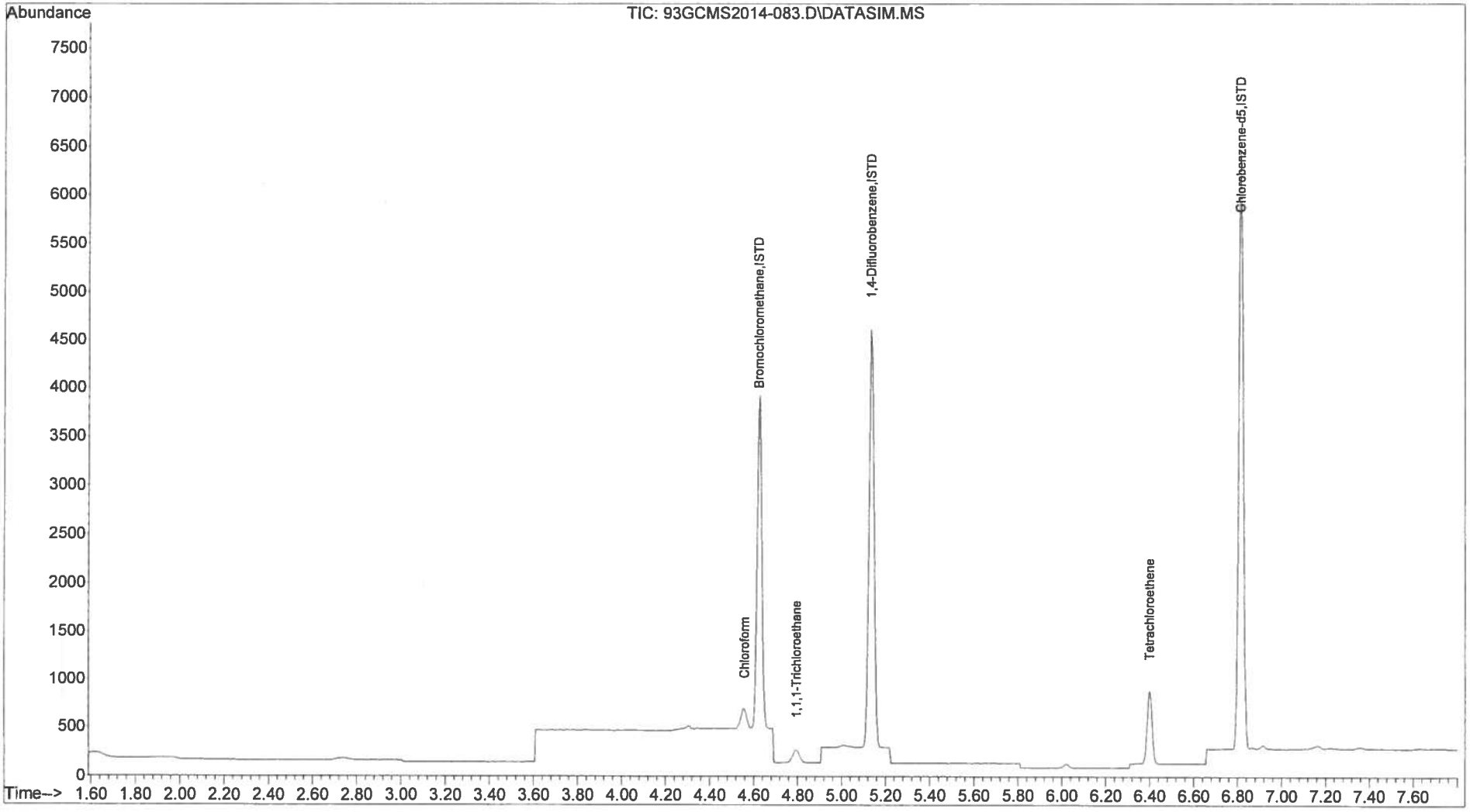
(#) = qualifier out of range (m) = manual integration (+) = signals summed

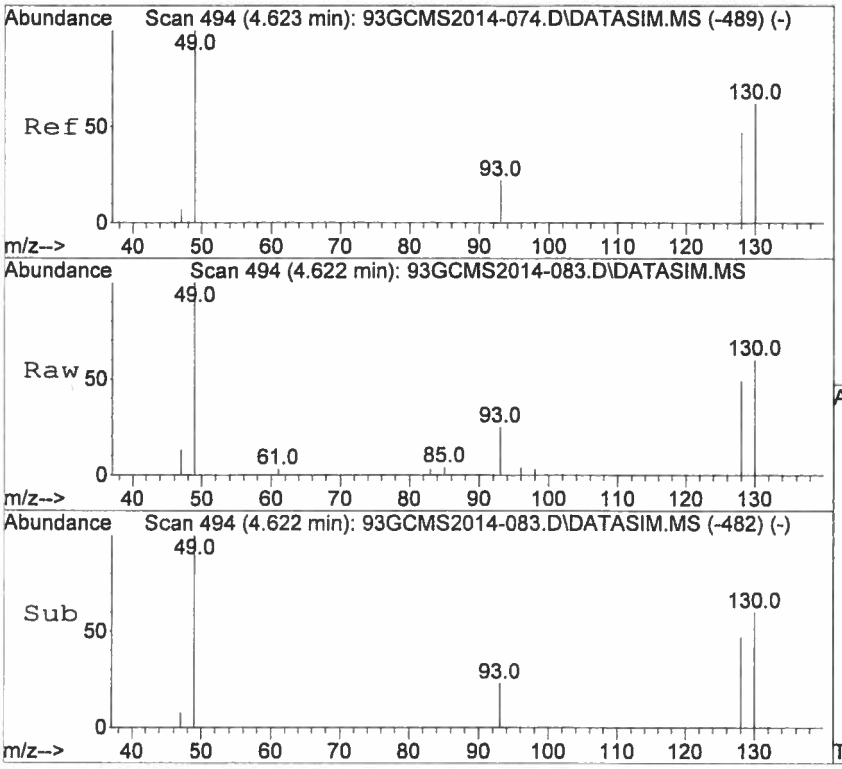
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-083.D
Acq On : 23 Jan 2014 16:01
Operator : SJT
Sample : 219-T-011 \ V04
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:09:24 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

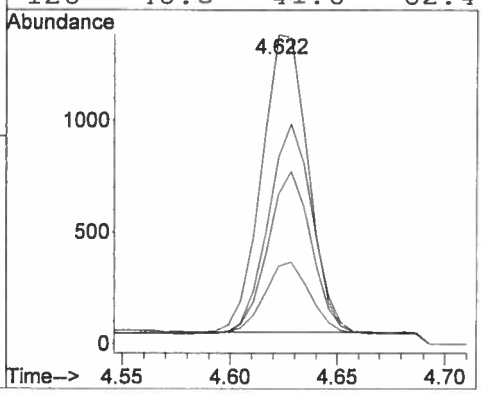


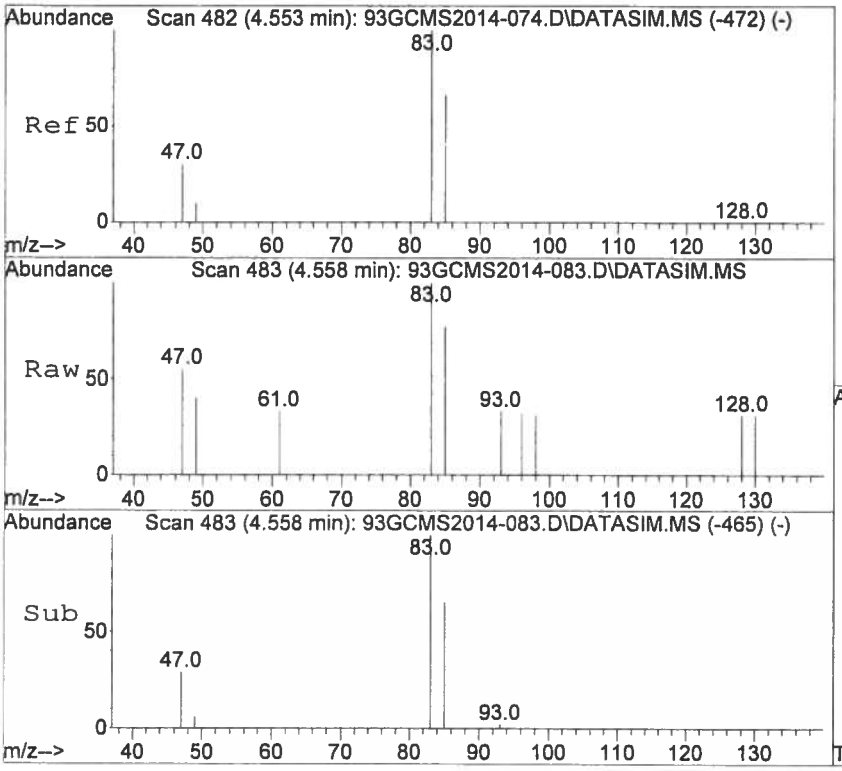


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 494
Delta R.T. -0.000 min
Lab File: 93GCMS2014-083.D
Acq: 23 Jan 2014 16:01

Tgt Ion: 49 Resp: 1990

Ion	Ratio	Lower	Upper
49	100		
130	60.4	51.6	77.4
93	25.1	19.6	29.4
128	48.5	41.6	62.4

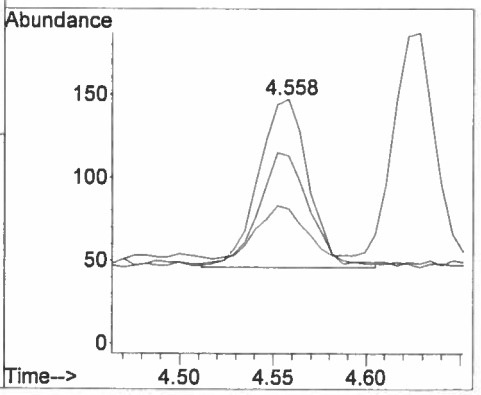


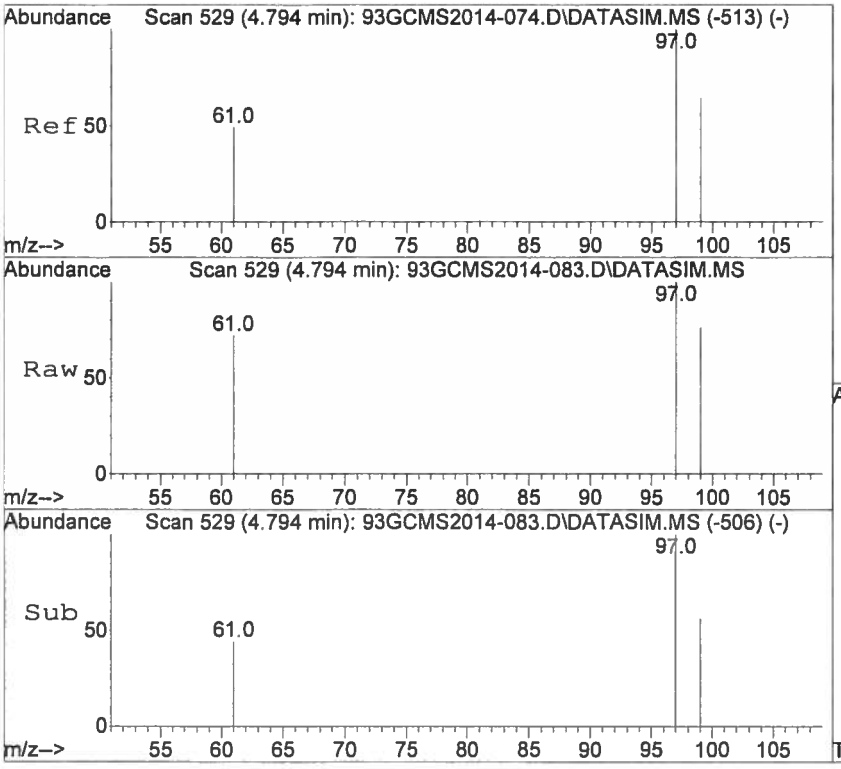


#8
Chloroform
Concen: 0.93 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.005 min
Lab File: 93GCMS2014-083.D
Acq: 23 Jan 2014 16:01

Tgt Ion: 83 Resp: 188

Ion	Ratio	Lower	Upper
83	100		
85	62.8	52.0	78.0
47	29.8	20.0	30.0

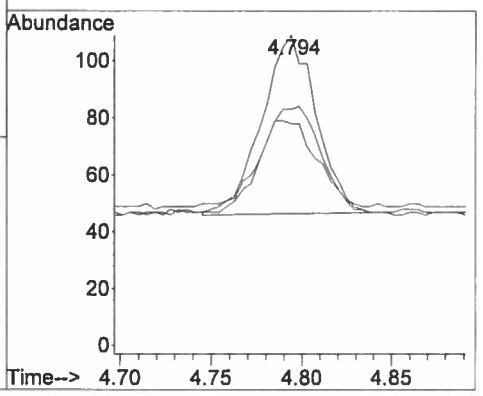


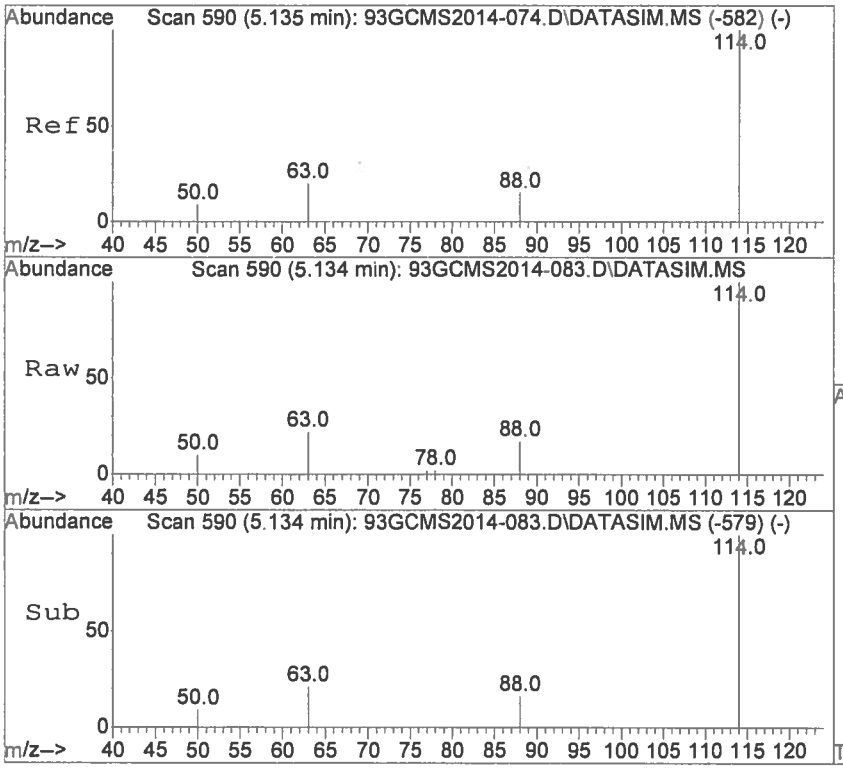


#9
1,1,1-Trichloroethane
Concen: 0.62 ppbv
RT: 4.794 min Scan# 529
Delta R.T. -0.000 min
Lab File: 93GCMS2014-083.D
Acq: 23 Jan 2014 16:01

Tgt Ion: 97 Resp: 131

Ion	Ratio	Lower	Upper
97	100		
99	67.9	51.4	77.0
61	54.2	37.4	56.0

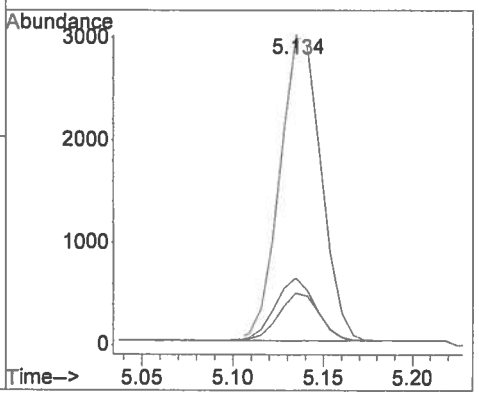


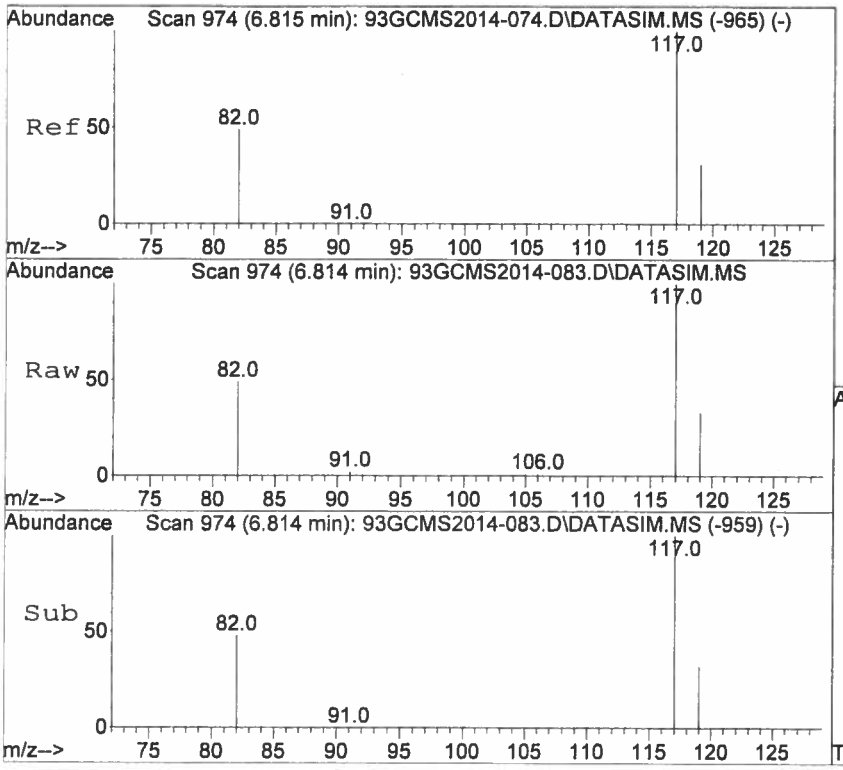


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.134 min Scan# 590
Delta R.T. -0.000 min
Lab File: 93GCMS2014-083.D
Acq: 23 Jan 2014 16:01

Tgt Ion:114 Resp: 4794

Ion	Ratio	Lower	Upper
114	100		
63	19.8	15.1	22.7
88	15.2	12.0	18.0

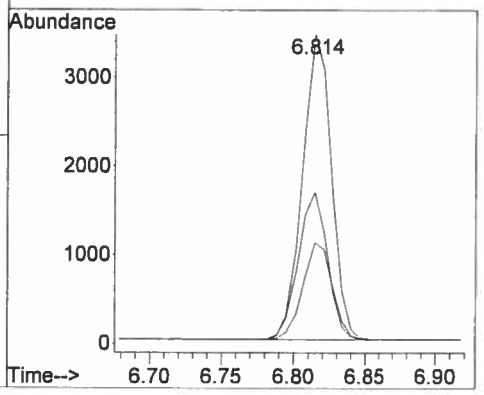


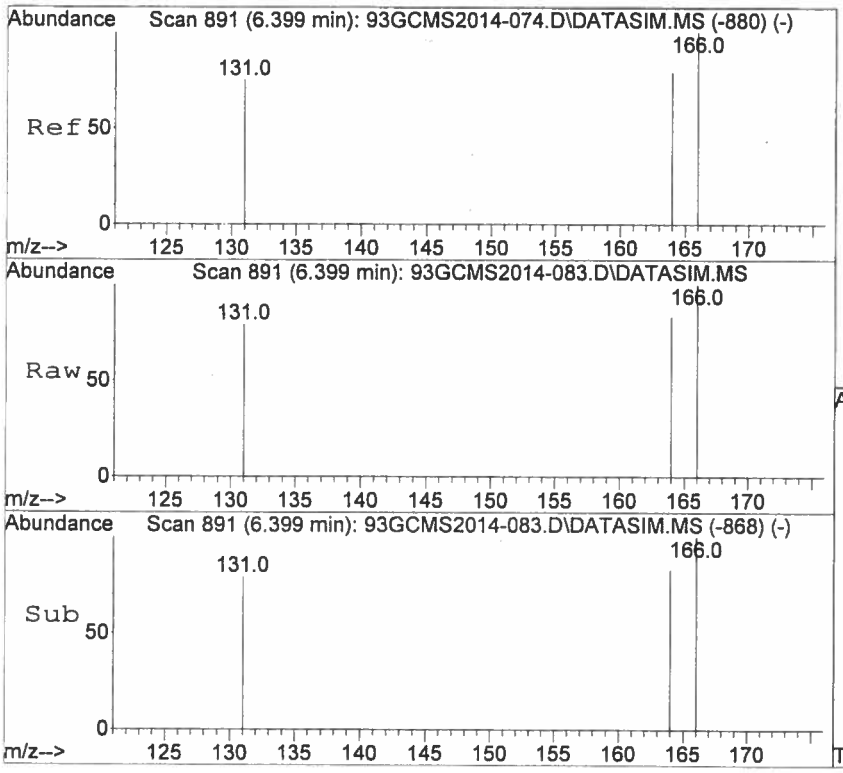


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-083.D
Acq: 23 Jan 2014 16:01

Tgt Ion:117 Resp: 4828

Ion	Ratio	Lower	Upper
117	100		
82	48.4	37.8	56.6
119	32.3	25.6	38.4

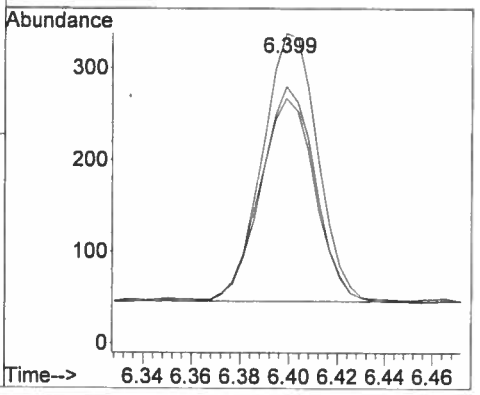




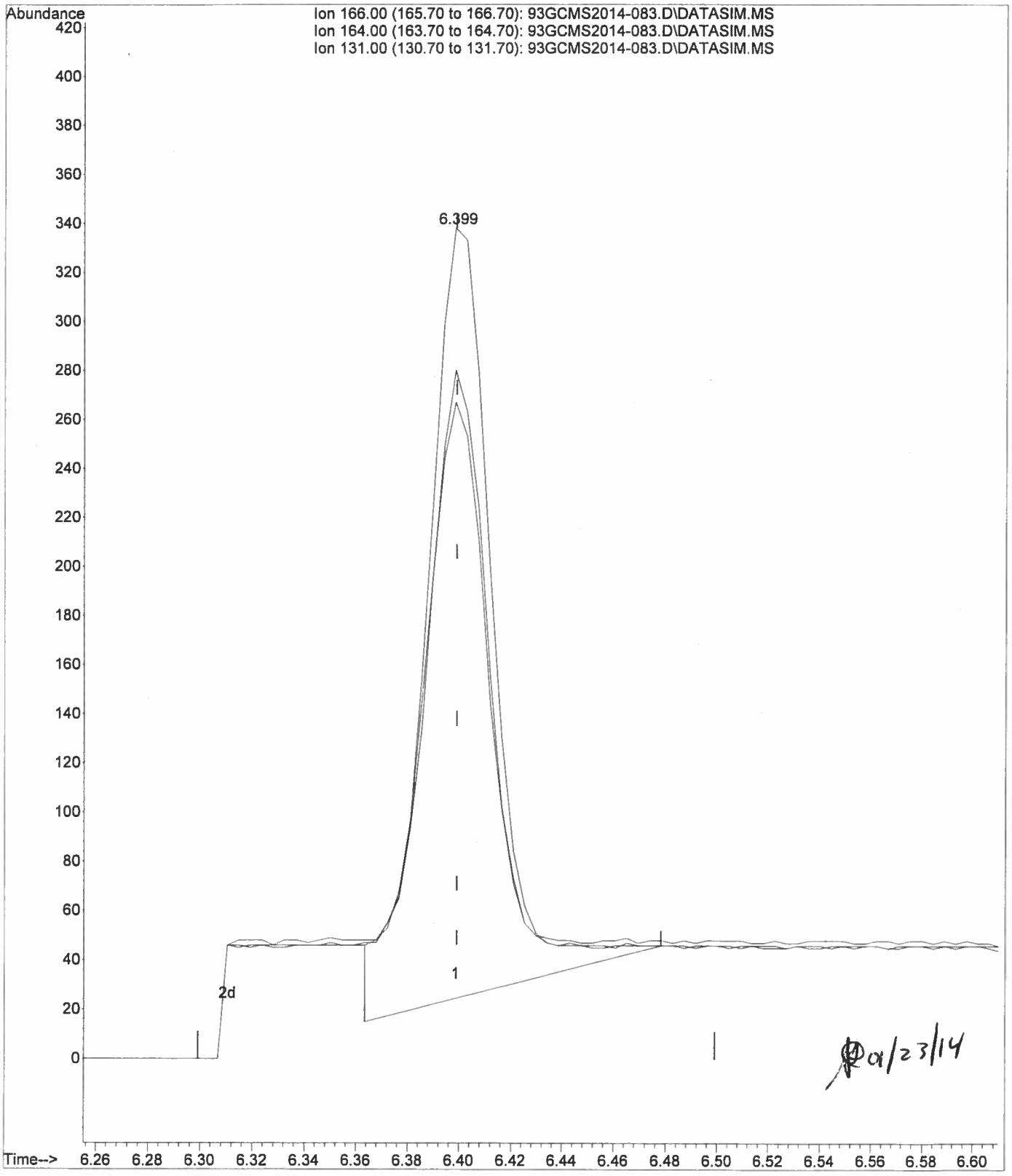
#15
Tetrachloroethene
Concen: 2.55 ppbv m
RT: 6.399 min Scan# 891
Delta R.T. -0.000 min
Lab File: 93GCMS2014-083.D
Acq: 23 Jan 2014 16:01

Tgt Ion:166 Resp: 459

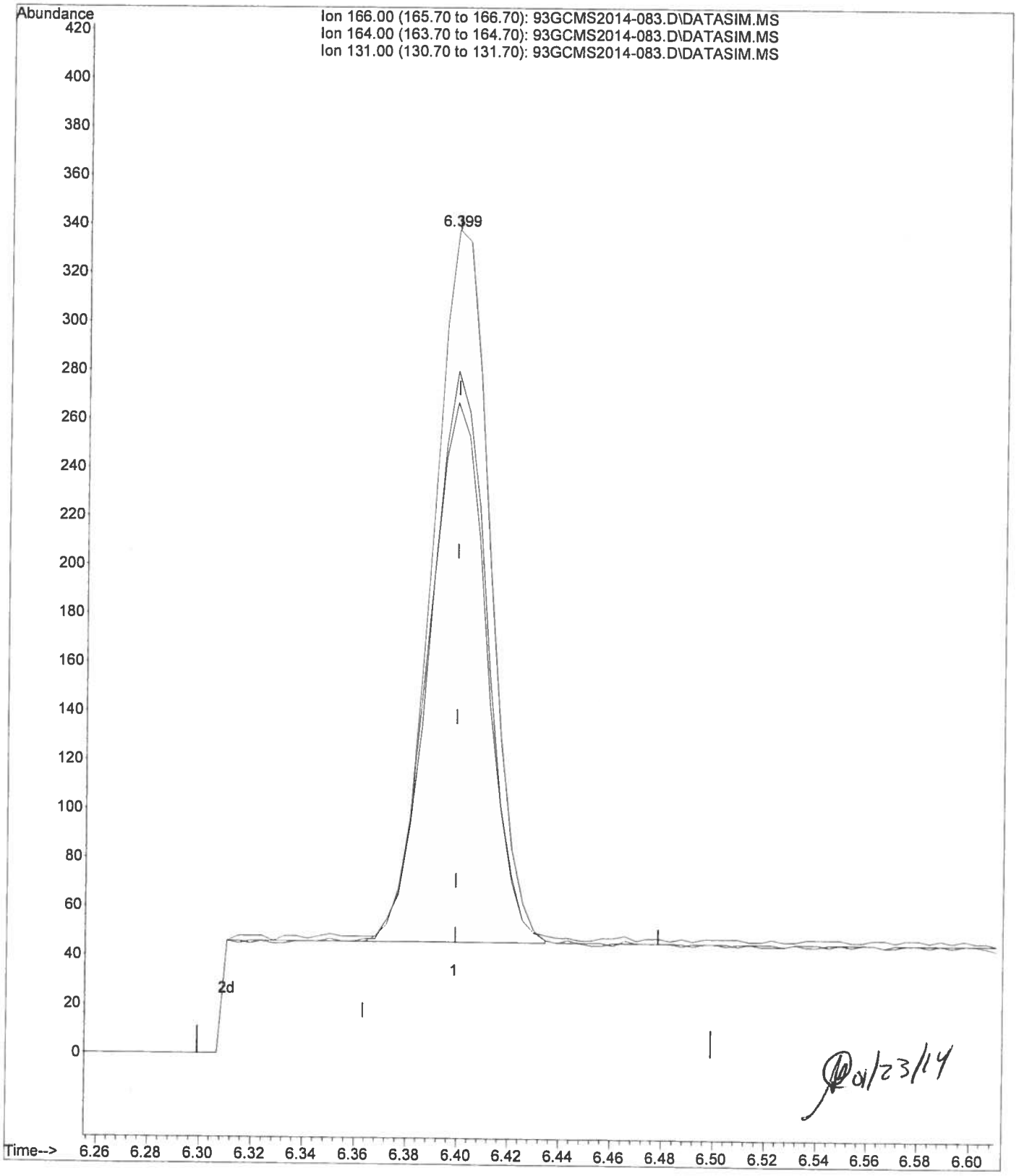
Ion	Ratio	Lower	Upper
166	100		
164	99.1	62.5	93.7#
131	98.7	58.6	88.0#



File :D:\msdchem\1\data\2014\20140123\93GCMS2014-083.D
Operator : SJT
Acquired : 23 Jan 2014 16:01 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-011 \ V04
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



File :D:\msdchem\1\data\2014\20140123\93GCMS2014-083.D
Operator : SJT
Acquired : 23 Jan 2014 16:01 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-011 \ V04
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-084.D
Acq On : 23 Jan 2014 16:13
Operator : SJT
Sample : 219-T-013 \ V06
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:19:55 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09 43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.628	49	1889	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.141	114	4558	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4624	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.558	83	1711	8.87	ppbv	95

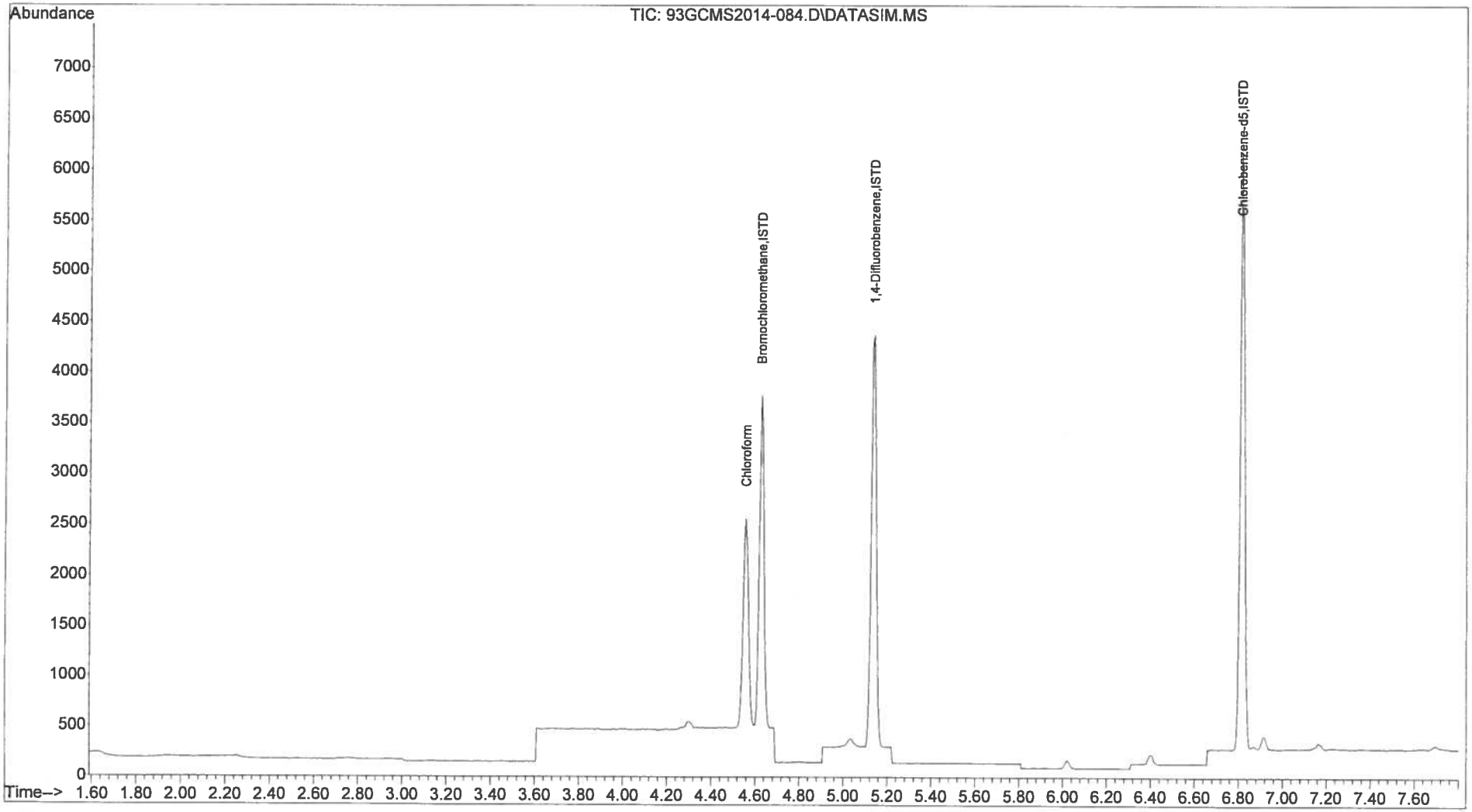
(#) = qualifier out of range (m) = manual integration (+) = signals summed

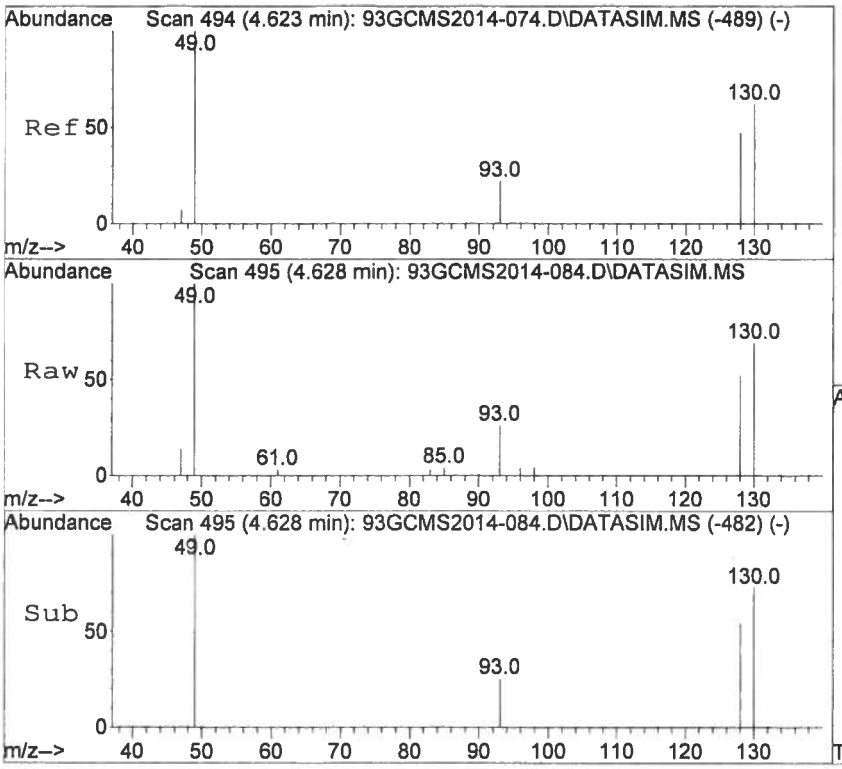
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-084.D
Acq On : 23 Jan 2014 16:13
Operator : SJT
Sample : 219-T-013 \ V06
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:19:55 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

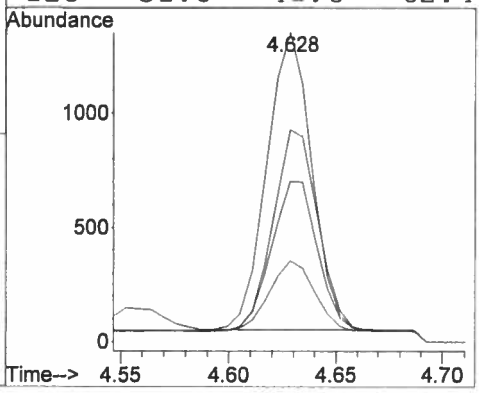


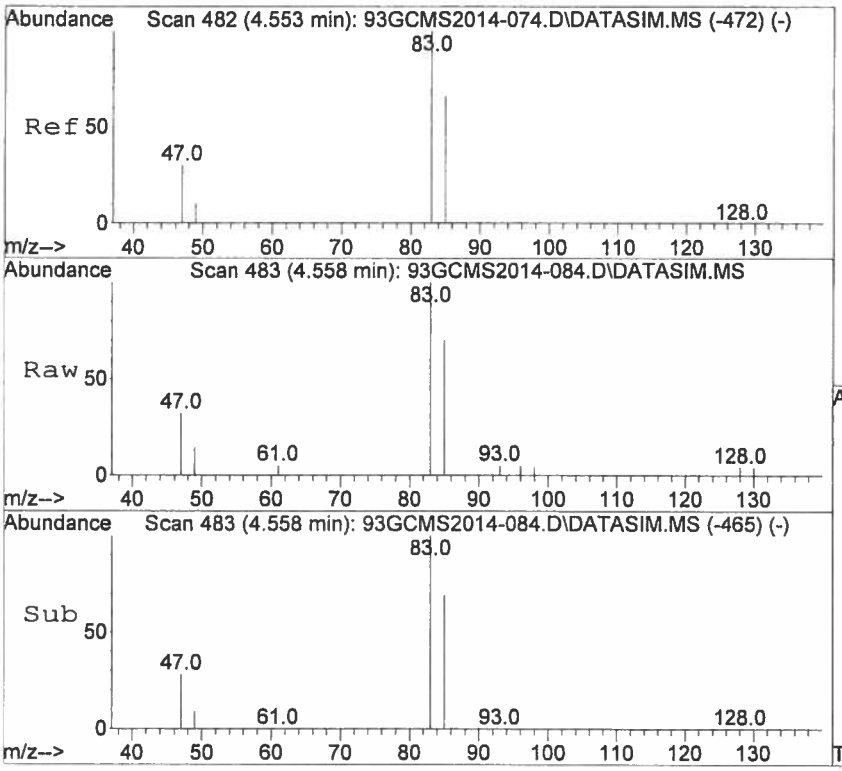


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.628 min Scan# 495
Delta R.T. 0.006 min
Lab File: 93GCMS2014-084.D
Acq: 23 Jan 2014 16:13

Tgt Ion: 49 Resp: 1889

Ion	Ratio	Lower	Upper
49	100		
130	68.6	51.6	77.4
93	26.3	19.6	29.4
128	51.8	41.6	62.4

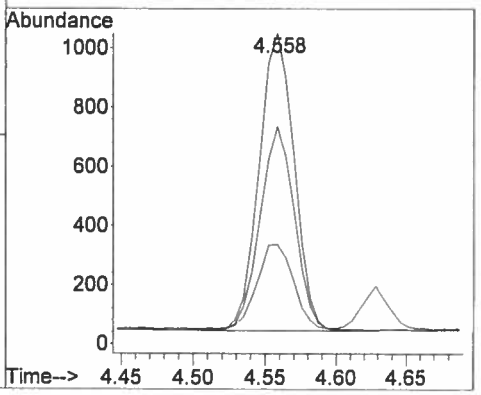


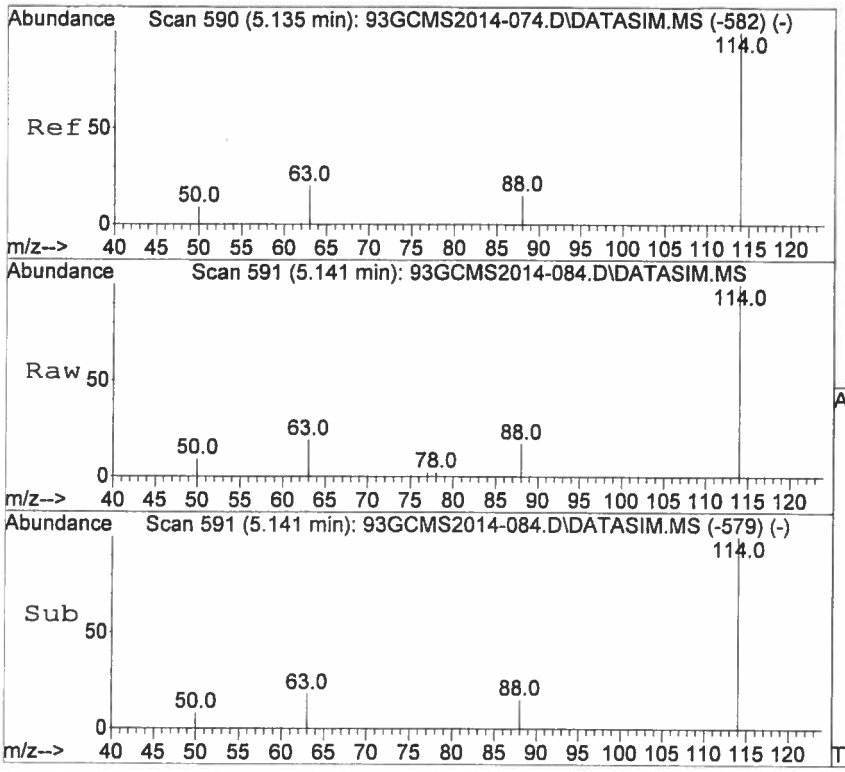


#8
Chloroform
Concen: 8.87 ppbv
RT: 4.558 min Scan# 483
Delta R.T. 0.006 min
Lab File: 93GCMS2014-084.D
Acq: 23 Jan 2014 16:13

Tgt Ion: 83 Resp: 1711

Ion	Ratio	Lower	Upper
83	100		
85	67.4	52.0	78.0
47	29.6	20.0	30.0

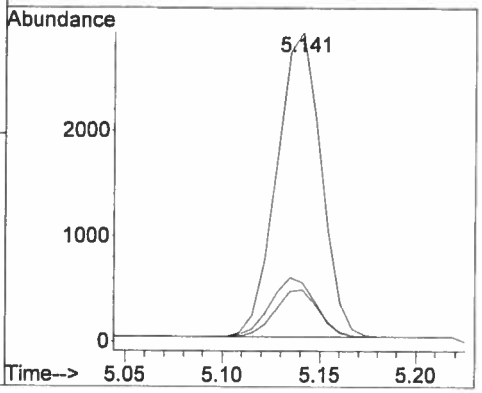


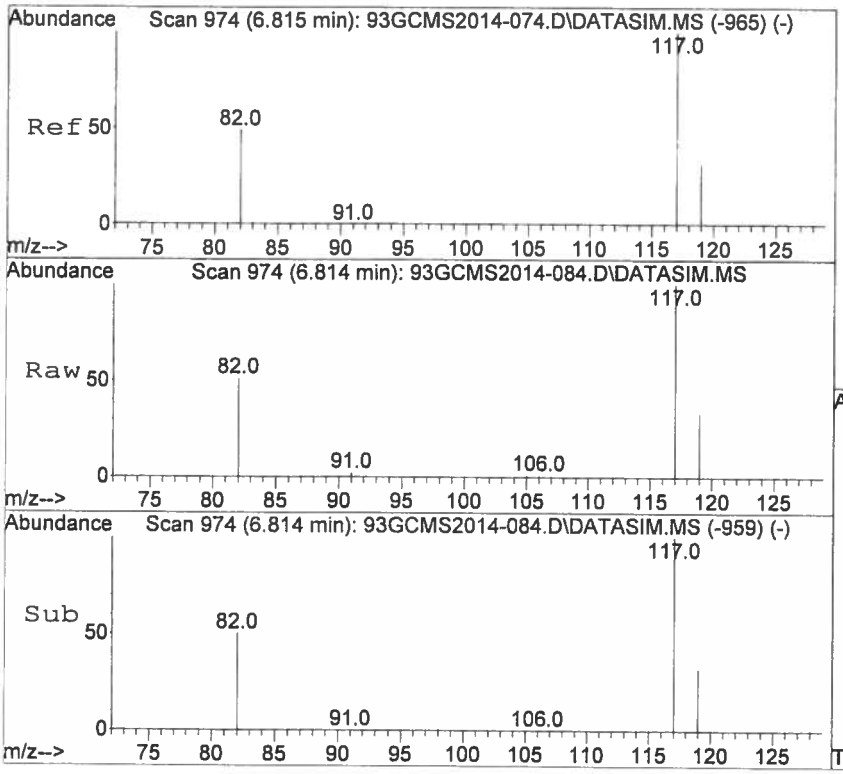


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.141 min Scan# 591
Delta R.T. 0.006 min
Lab File: 93GCMS2014-084.D
Acq: 23 Jan 2014 16:13

Tgt Ion:114 Resp: 4558

Ion	Ratio	Lower	Upper
114	100		
63	19.7	15.1	22.7
88	15.4	12.0	18.0

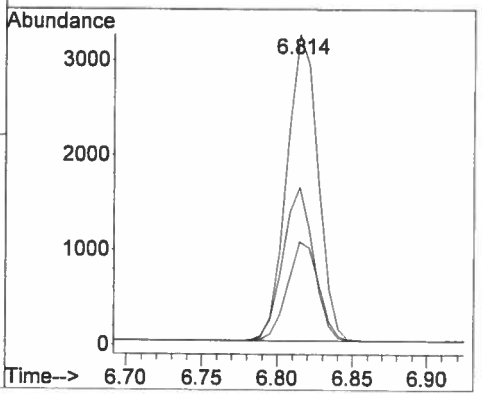




#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-084.D
Acq: 23 Jan 2014 16:13

Tgt Ion:117 Resp: 4624

Ion	Ratio	Lower	Upper
117	100		
82	48.8	37.8	56.6
119	32.4	25.6	38.4



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-085.D
Acq On : 23 Jan 2014 16:24
Operator : SJT
Sample : 219-T-014 \ V01
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:32:53 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.623	49	1995	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.135	114	4810	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4863	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.552	83	106m	0.52	ppbv	
9) 1,1,1-Trichloroethane	4.790	97	155m	0.73	ppbv	
15) Tetrachloroethene	6.399	166	280m	1.55	ppbv	

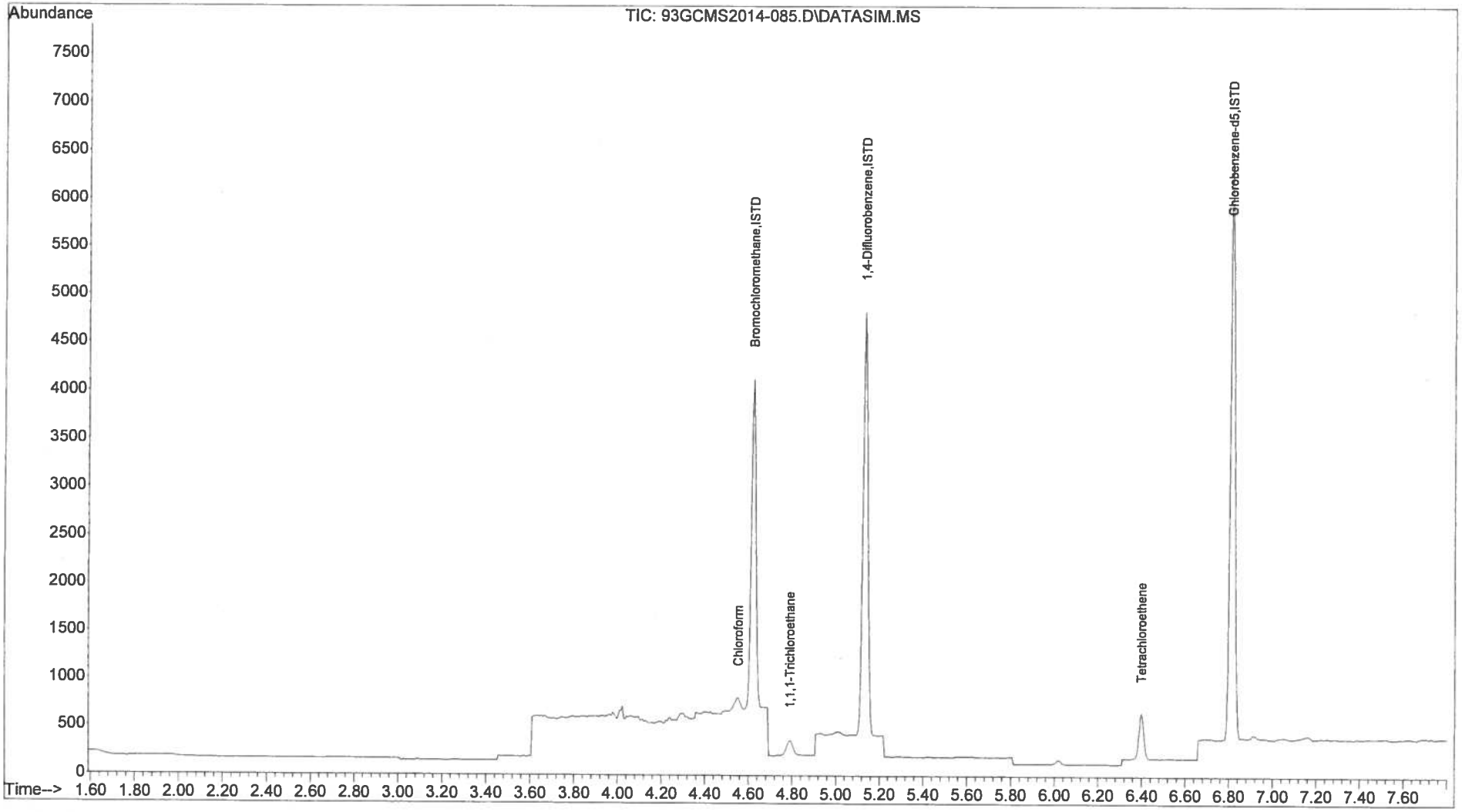
(#) = qualifier out of range (m) = manual integration (+) = signals summed

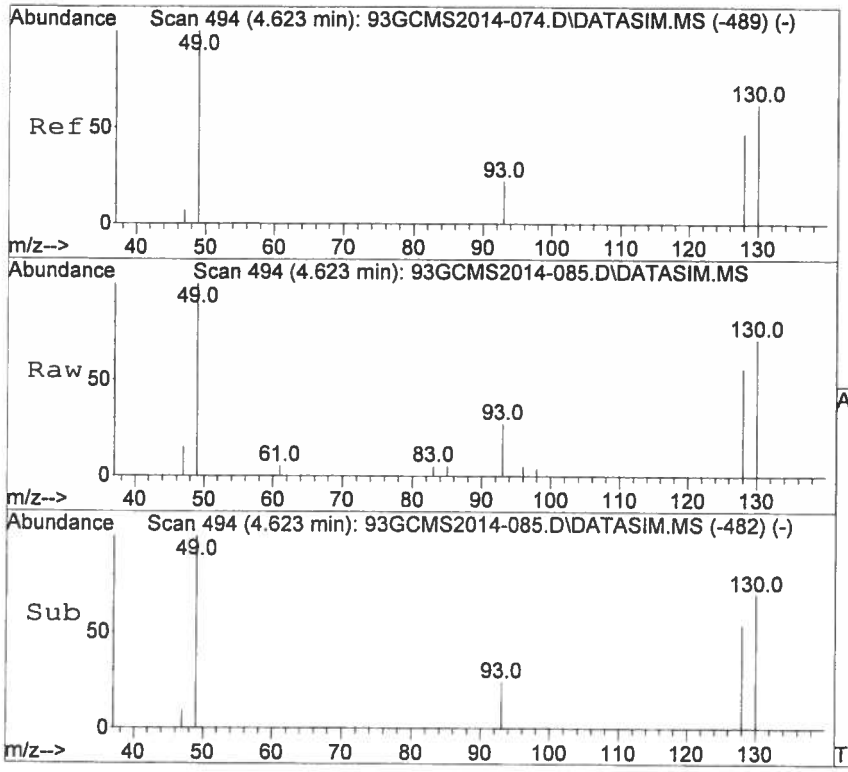
01/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-085.D
Acq On : 23 Jan 2014 16:24
Operator : SJT
Sample : 219-T-014 \ V01
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:32:53 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

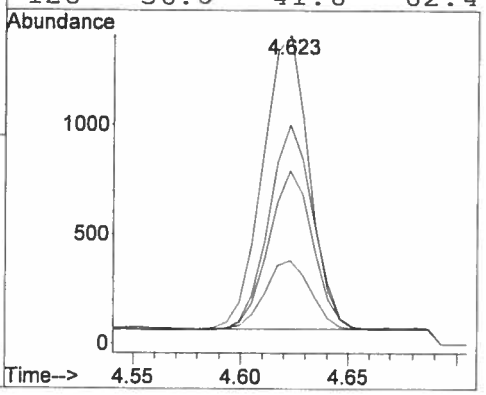


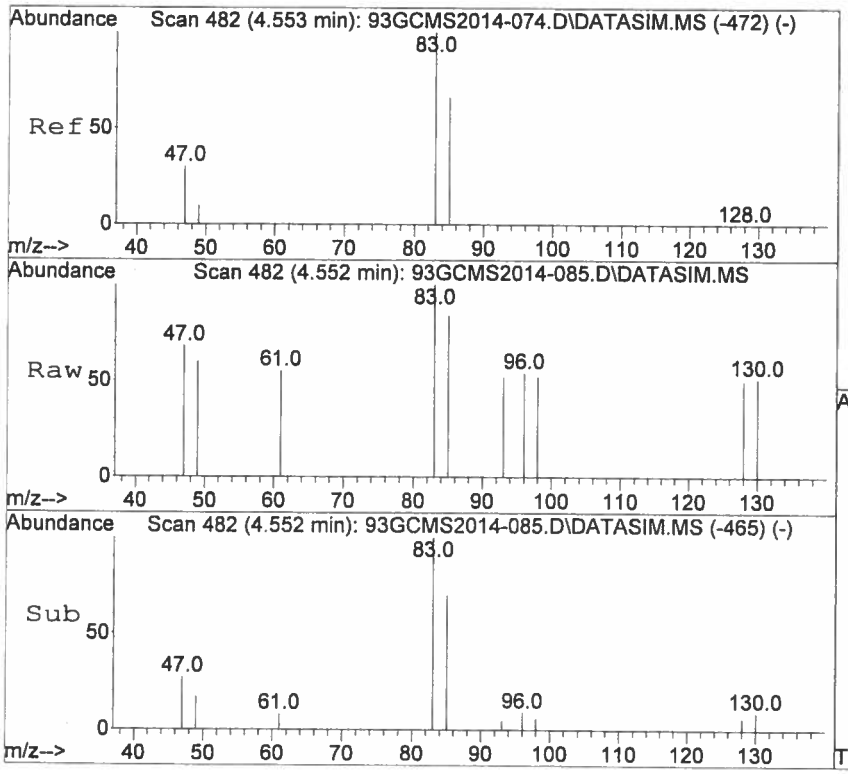


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.623 min Scan# 494
Delta R.T. -0.000 min
Lab File: 93GCMS2014-085.D
Acq: 23 Jan 2014 16:24

Tgt Ion: 49 Resp: 1995

Ion	Ratio	Lower	Upper
49	100		
130	70.9	51.6	77.4
93	27.0	19.6	29.4
128	56.0	41.6	62.4

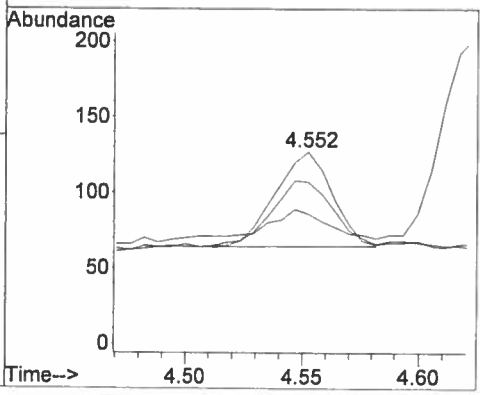


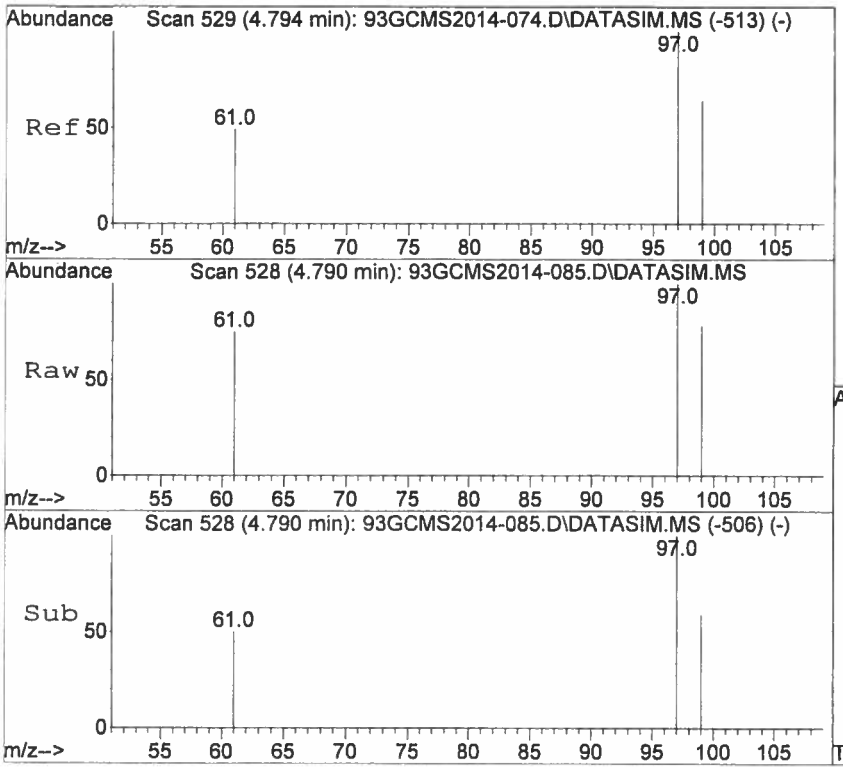


#8
Chloroform
Concen: 0.52 ppbv m
RT: 4.552 min Scan# 482
Delta R.T. -0.000 min
Lab File: 93GCMS2014-085.D
Acq: 23 Jan 2014 16:24

Tgt Ion: 83 Resp: 106

Ion	Ratio	Lower	Upper
83	100		
85	84.9	52.0	78.0#
47	51.9	20.0	30.0#

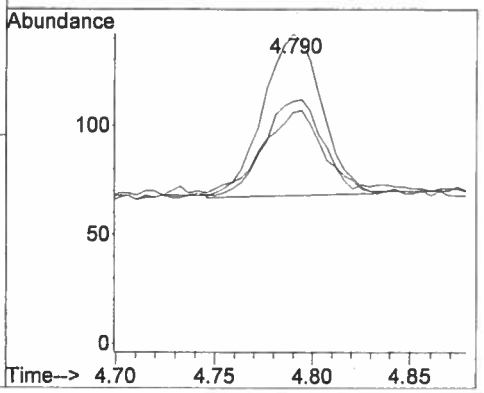


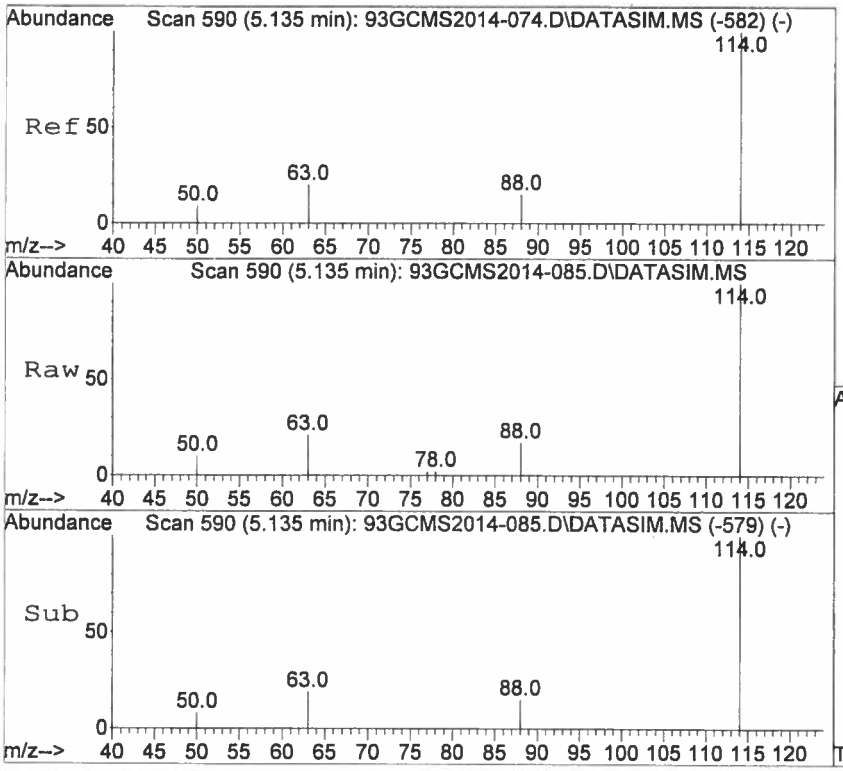


#9
1,1,1-Trichloroethane
Concen: 0.73 ppbv m
RT: 4.790 min Scan# 528
Delta R.T. -0.005 min
Lab File: 93GCMS2014-085.D
Acq: 23 Jan 2014 16:24

Tgt Ion: 97 Resp: 155

Ion	Ratio	Lower	Upper
97	100		
99	61.9	51.4	77.0
61	53.5	37.4	56.0

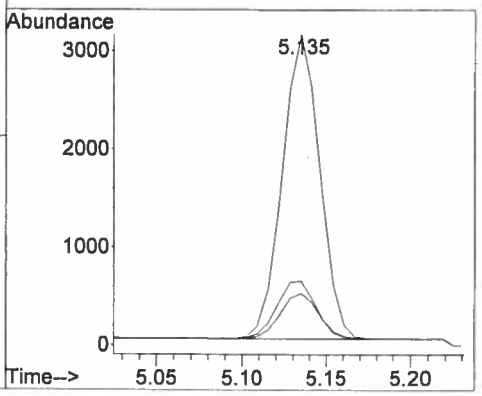


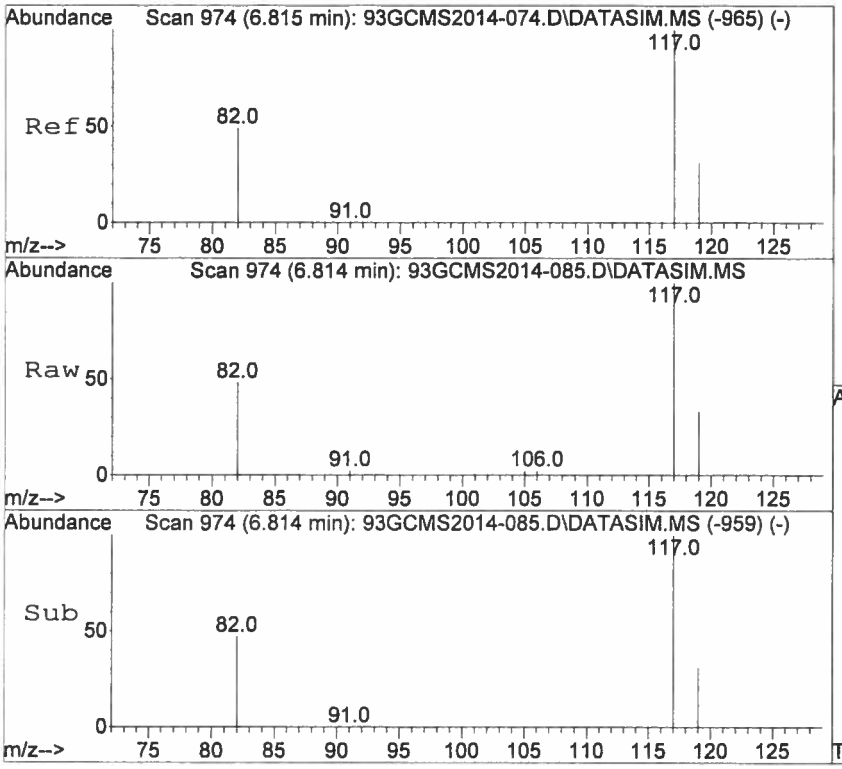


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.135 min Scan# 590
Delta R.T. -0.000 min
Lab File: 93GCMS2014-085.D
Acq: 23 Jan 2014 16:24

Tgt Ion:114 Resp: 4810

Ion	Ratio	Lower	Upper
114	100		
63	19.7	15.1	22.7
88	15.5	12.0	18.0

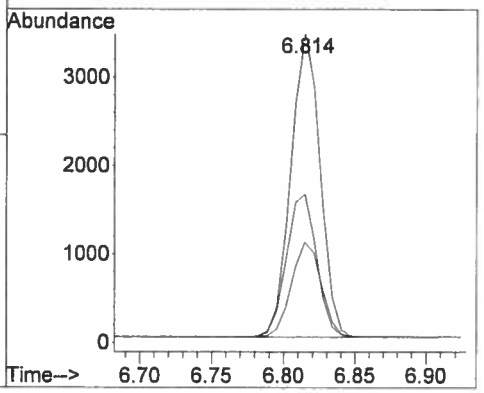


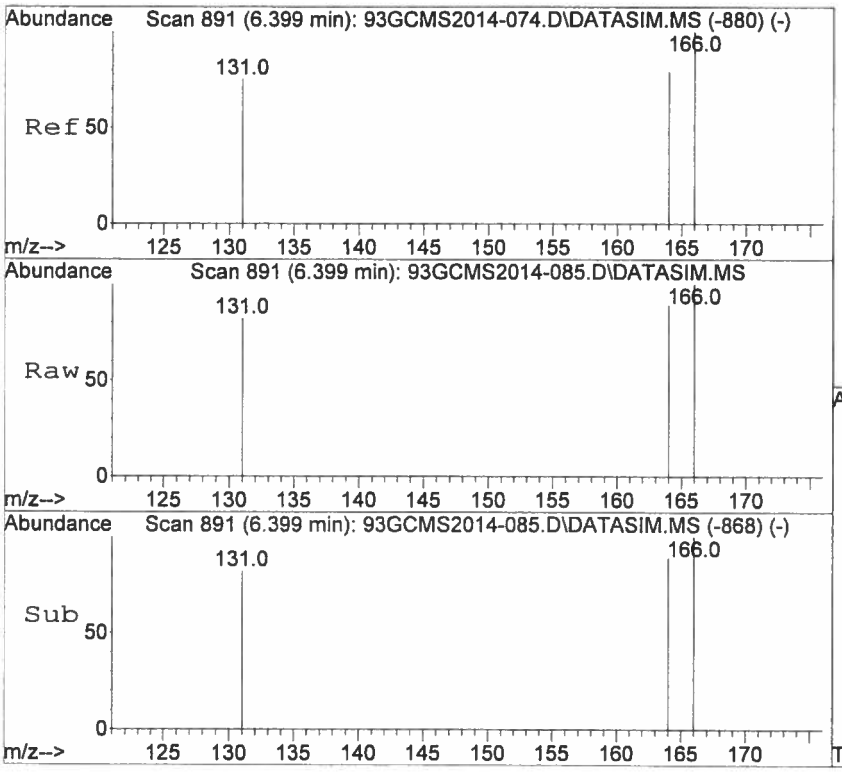


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-085.D
Acq: 23 Jan 2014 16:24

Tgt Ion:117 Resp: 4863

Ion	Ratio	Lower	Upper
117	100		
82	48.3	37.8	56.6
119	31.8	25.6	38.4

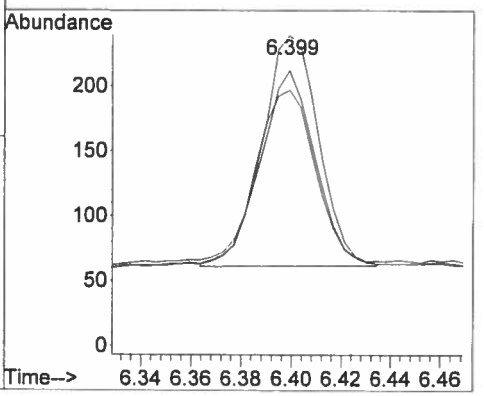




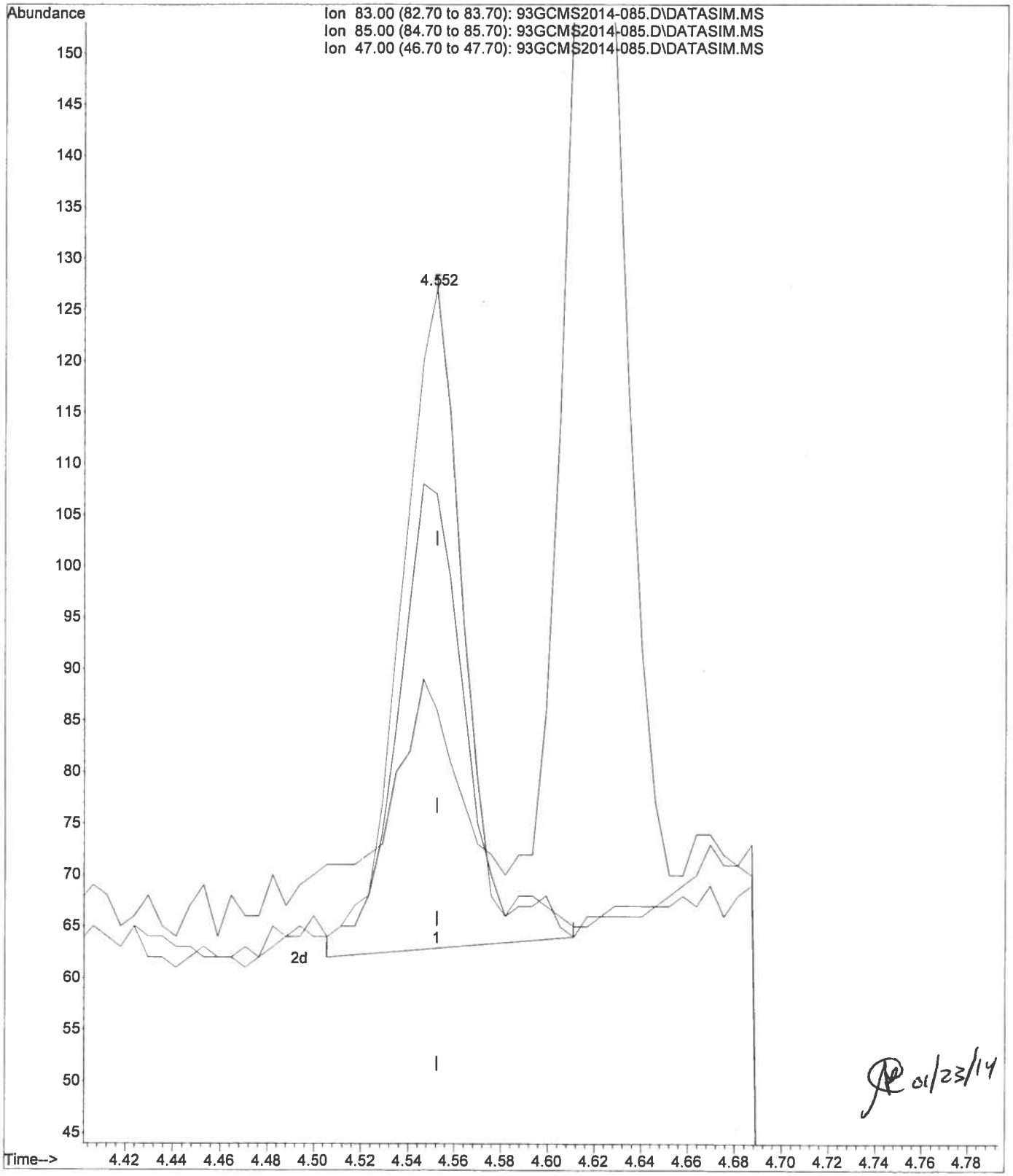
#15
Tetrachloroethene
Concen: 1.55 ppbv m
RT: 6.399 min Scan# 891
Delta R.T. -0.000 min
Lab File: 93GCMS2014-085.D
Acq: 23 Jan 2014 16:24

Tgt Ion:166 Resp: 280

Ion	Ratio	Lower	Upper
166	100		
164	136.8	62.5	93.7#
131	134.6	58.6	88.0#

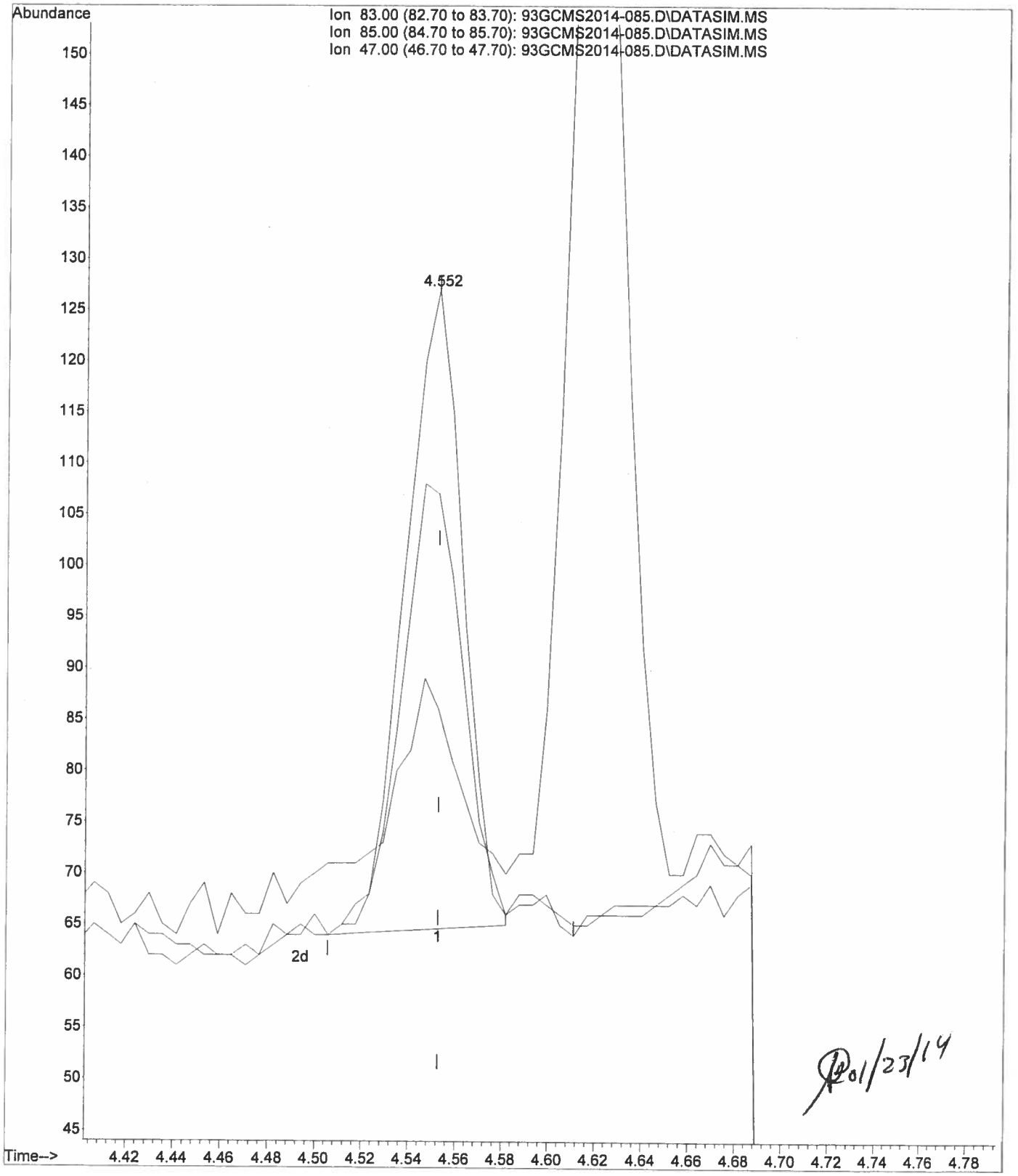


File :D:\msdchem\1\data\2014\20140123\93GCMS2014-085.D
Operator : SJT
Acquired : 23 Jan 2014 16:24 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-014 \ V01
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



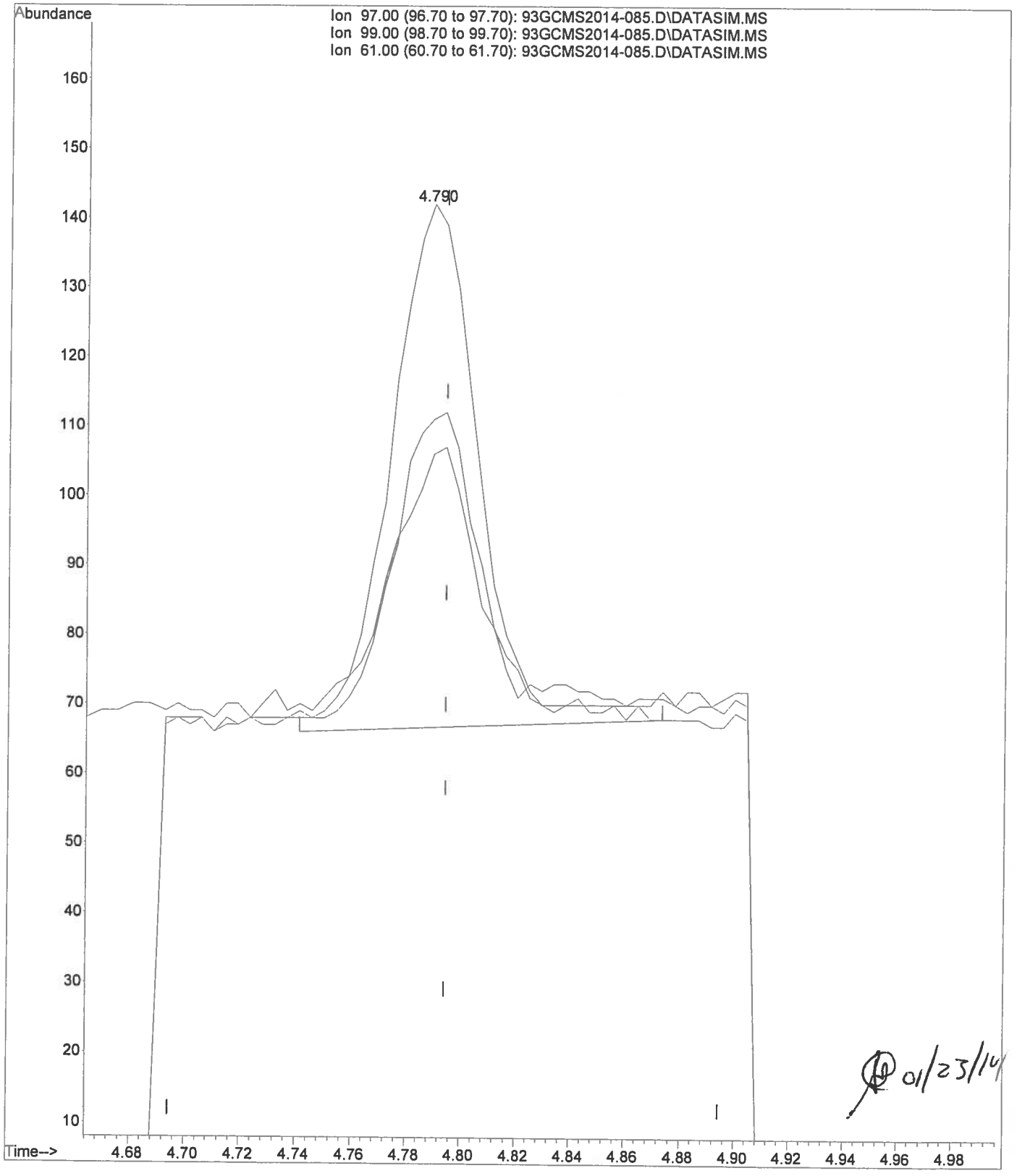
01/23/14

File : D:\msdchem\1\data\2014\20140123\93GCMS2014-085.D
Operator : SJT
Acquired : 23 Jan 2014 16:24 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-014 \ V01
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



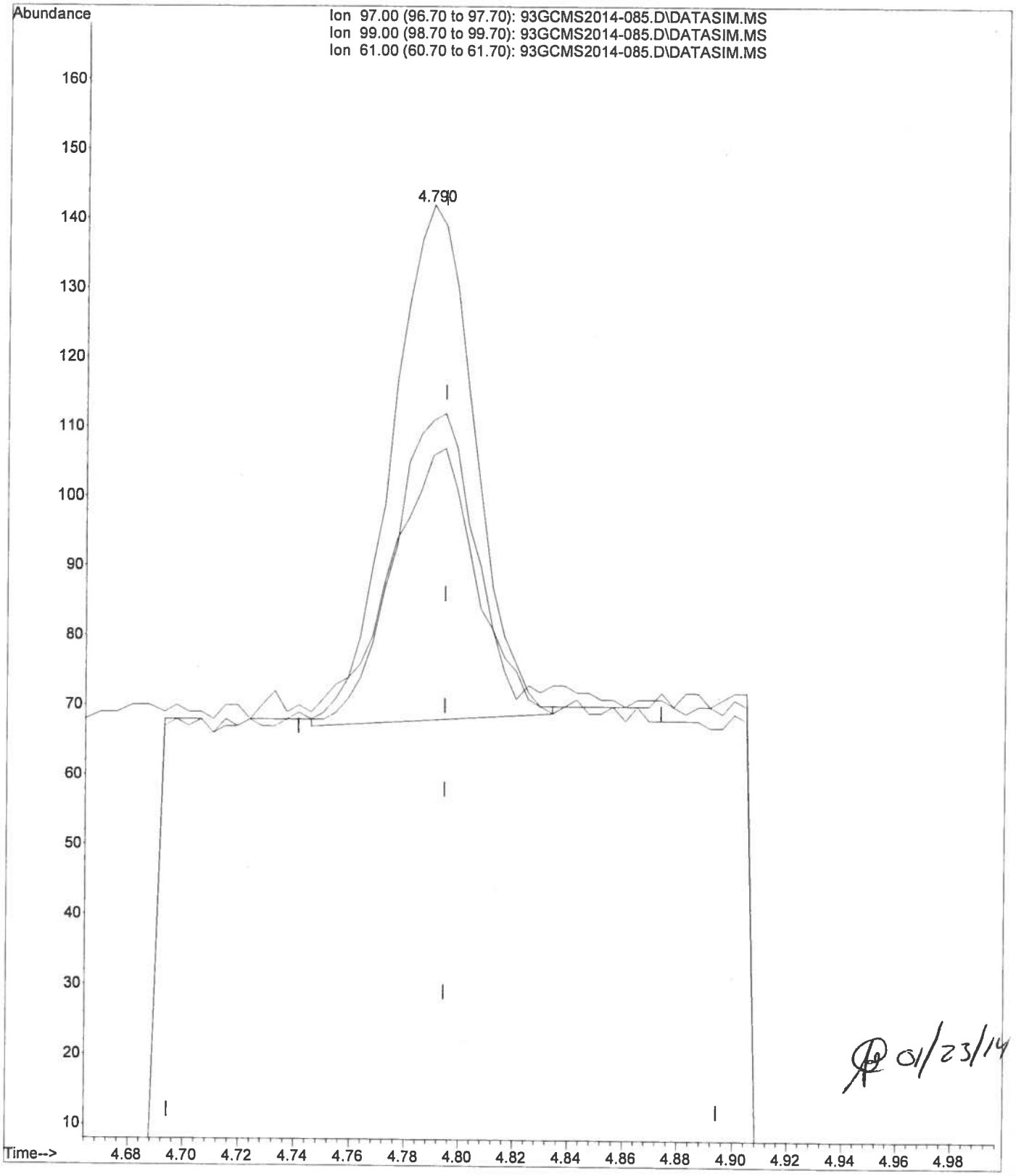
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-085.D
Operator : SJT
Acquired : 23 Jan 2014 16:24 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-014 \ V01
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



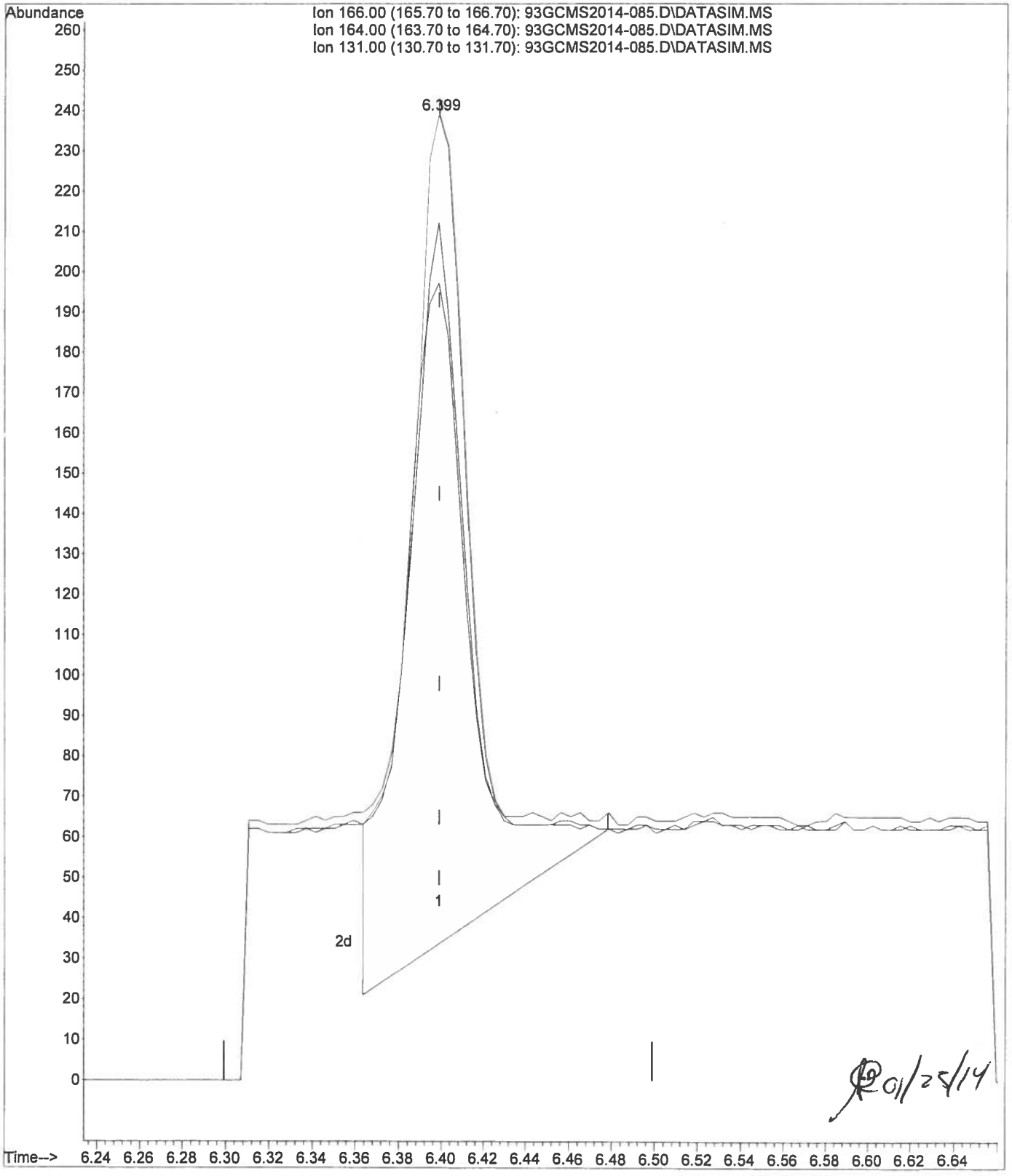
01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-085.D
Operator : SJT
Acquired : 23 Jan 2014 16:24 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-014 \ V01
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



01/23/14

File :D:\msdchem\1\data\2014\20140123\93GCMS2014-085.D
Operator : SJT
Acquired : 23 Jan 2014 16:24 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-014 \ V01
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



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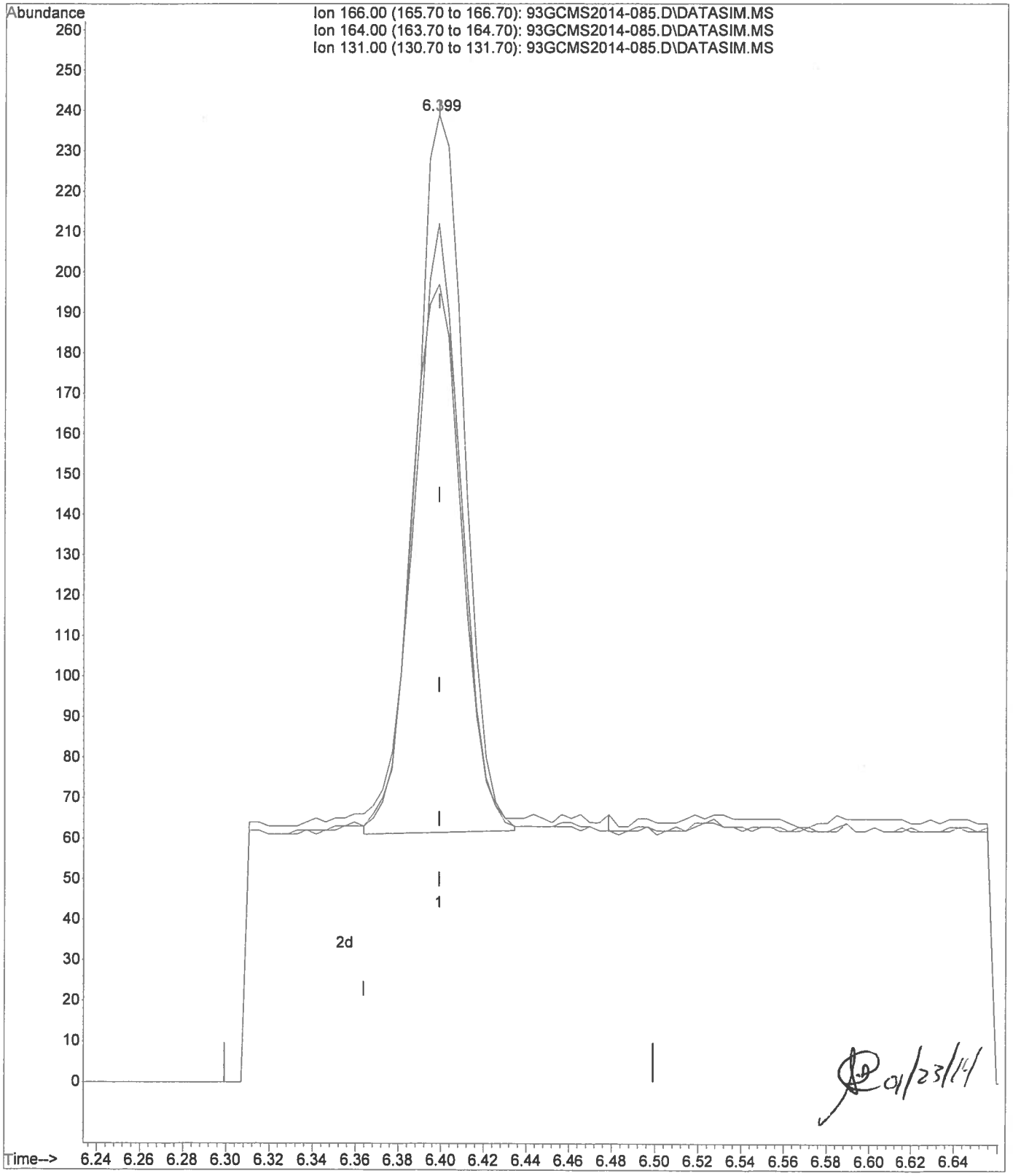
Operator : SJT
Acquired : 23 Jan 2014 16:24 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-014 \ V01
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-086.D
Acq On : 23 Jan 2014 16:36
Operator : SJT
Sample : 219-T-015 \ V02
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:44:38 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	4.622	49	1966	10.00	ppbv	0.00
10) 1,4-Difluorobenzene	5.134	114	4762	10.00	ppbv	0.00
13) Chlorobenzene-d5	6.814	117	4829	10.00	ppbv	0.00
System Monitoring Compounds						
Target Compounds						Qvalue
8) Chloroform	4.552	83	391m	1.95	ppbv	
15) Tetrachloroethene	6.399	166	308m	1.71	ppbv	

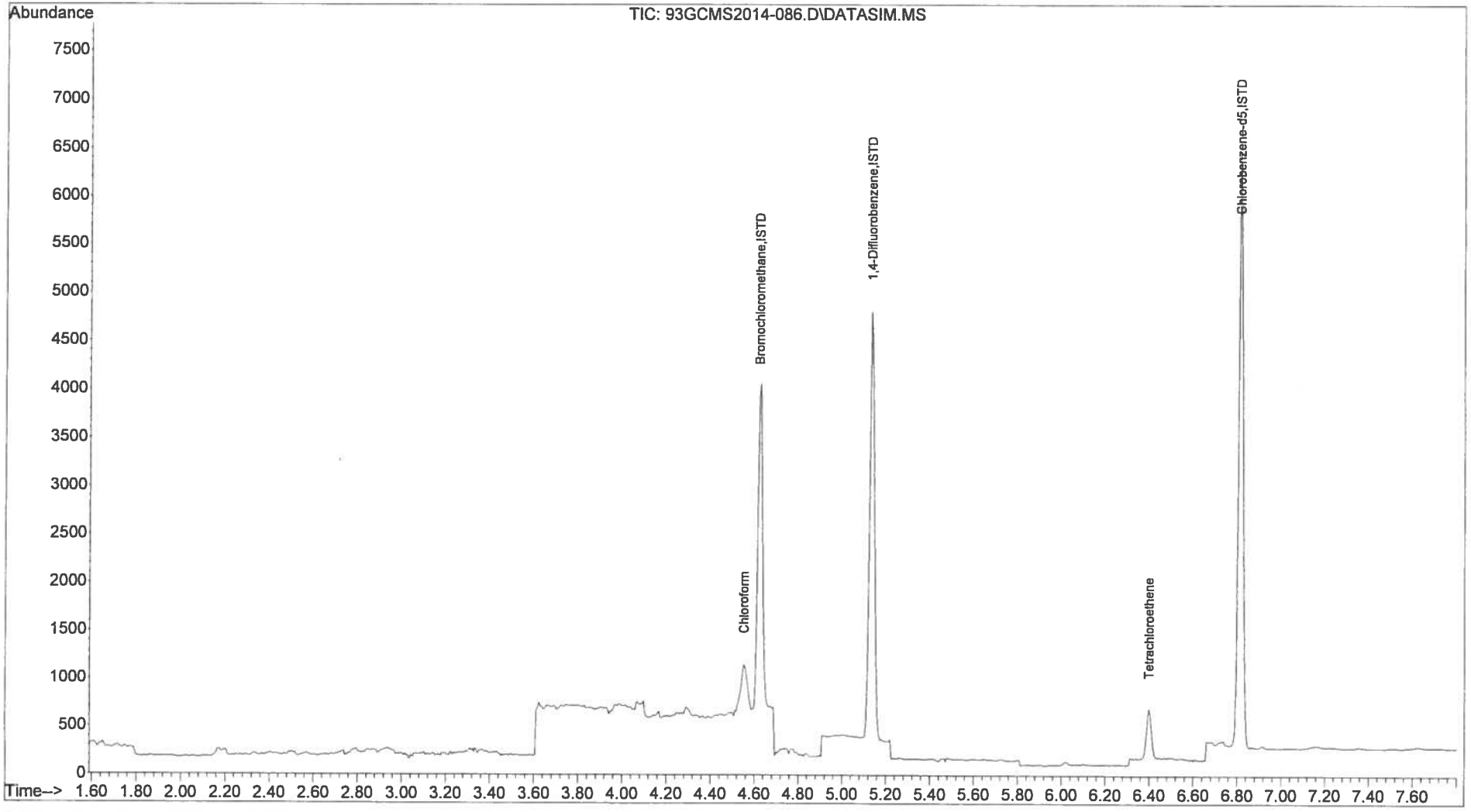
(#) = qualifier out of range (m) = manual integration (+) = signals summed

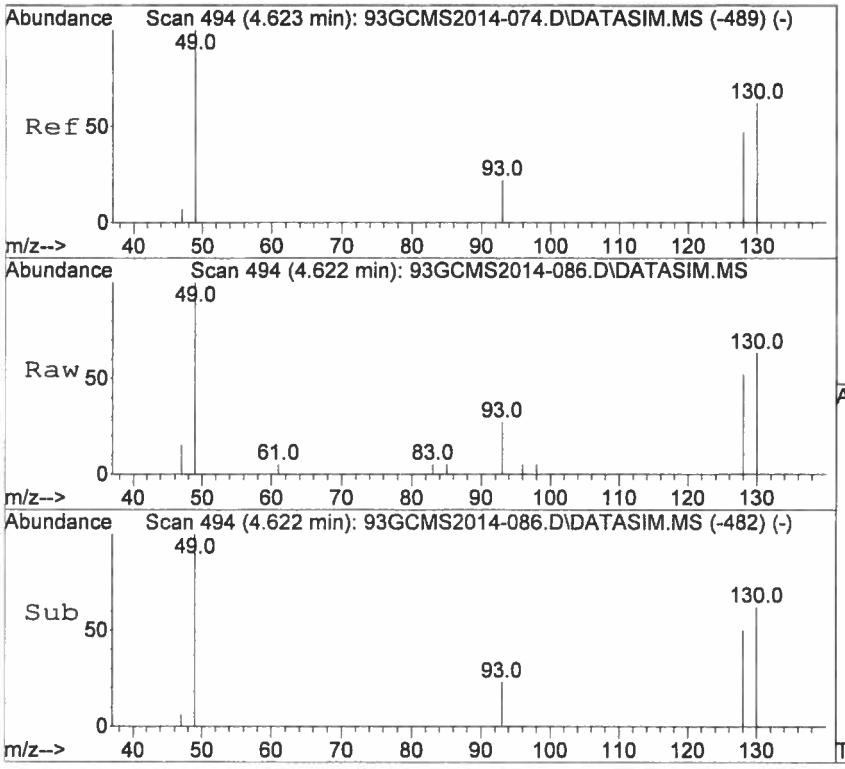
1/23/14

Quantitation Report (QT Reviewed)

Data Path : D:\msdchem\1\data\2014\20140123\
Data File : 93GCMS2014-086.D
Acq On : 23 Jan 2014 16:36
Operator : SJT
Sample : 219-T-015 \ V02
Misc : 5mL \ 23 Jan 2014
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 23 16:44:38 2014
Quant Method : C:\msdchem\1\METHODS\LOOP20140113-QUANT.M
Quant Title : Modified EPA TO-15, Loop GC/MS Pulse Splitless InjThu Jan 23 09:43:35 2014
QLast Update : Thu Jan 23 09:43:35 2014
Response via : Initial Calibration

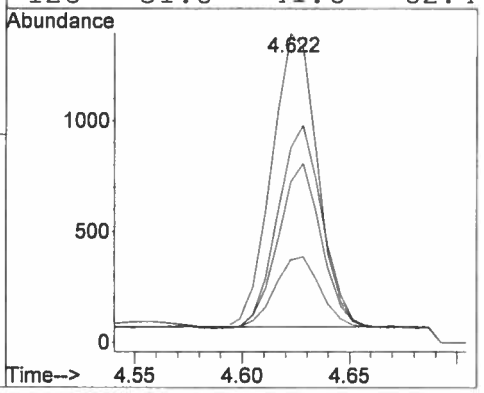


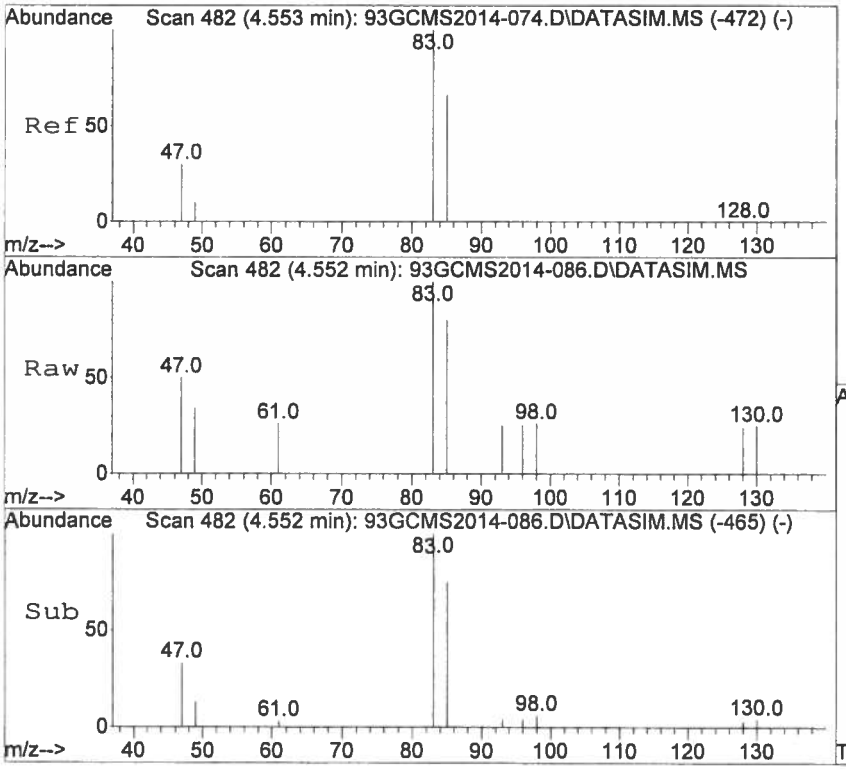


#1
Bromochloromethane
Concen: 10.00 ppbv
RT: 4.622 min Scan# 494
Delta R.T. -0.000 min
Lab File: 93GCMS2014-086.D
Acq: 23 Jan 2014 16:36

Tgt Ion: 49 Resp: 1966

Ion	Ratio	Lower	Upper
49	100		
130	62.9	51.6	77.4
93	26.7	19.6	29.4
128	51.8	41.6	62.4

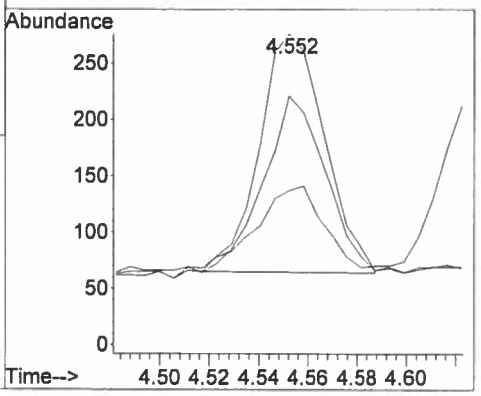


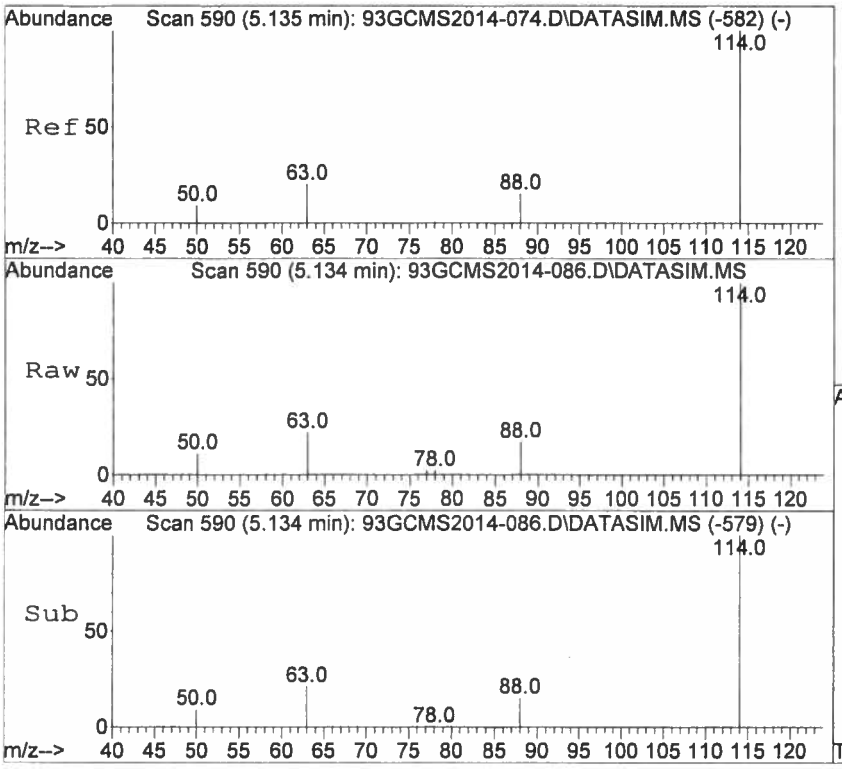


#8
Chloroform
Concen: 1.95 ppbv m
RT: 4.552 min Scan# 482
Delta R.T. -0.000 min
Lab File: 93GCMS2014-086.D
Acq: 23 Jan 2014 16:36

Tgt Ion: 83 Resp: 391

Ion	Ratio	Lower	Upper
83	100		
85	78.5	52.0	78.0#
47	37.1	20.0	30.0#

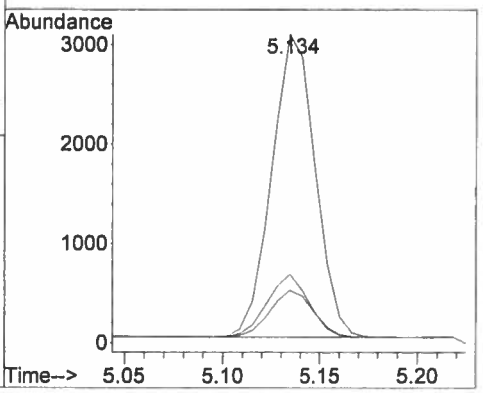


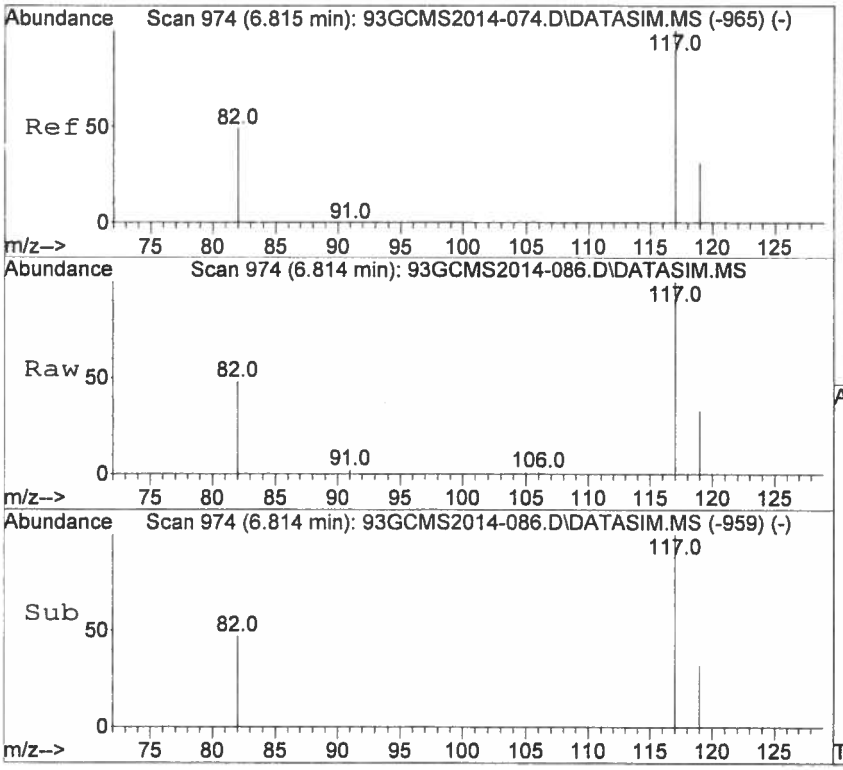


#10
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 5.134 min Scan# 590
Delta R.T. -0.000 min
Lab File: 93GCMS2014-086.D
Acq: 23 Jan 2014 16:36

Tgt Ion:114 Resp: 4762

Ion	Ratio	Lower	Upper
114	100		
63	19.9	15.1	22.7
88	15.5	12.0	18.0

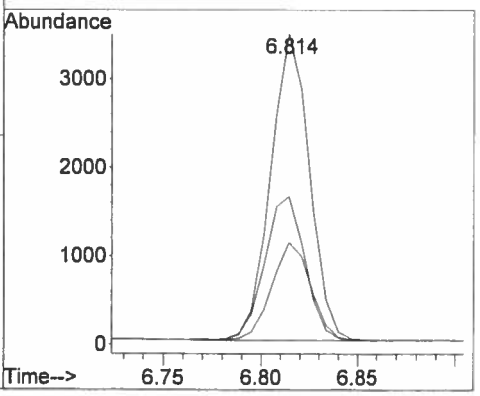


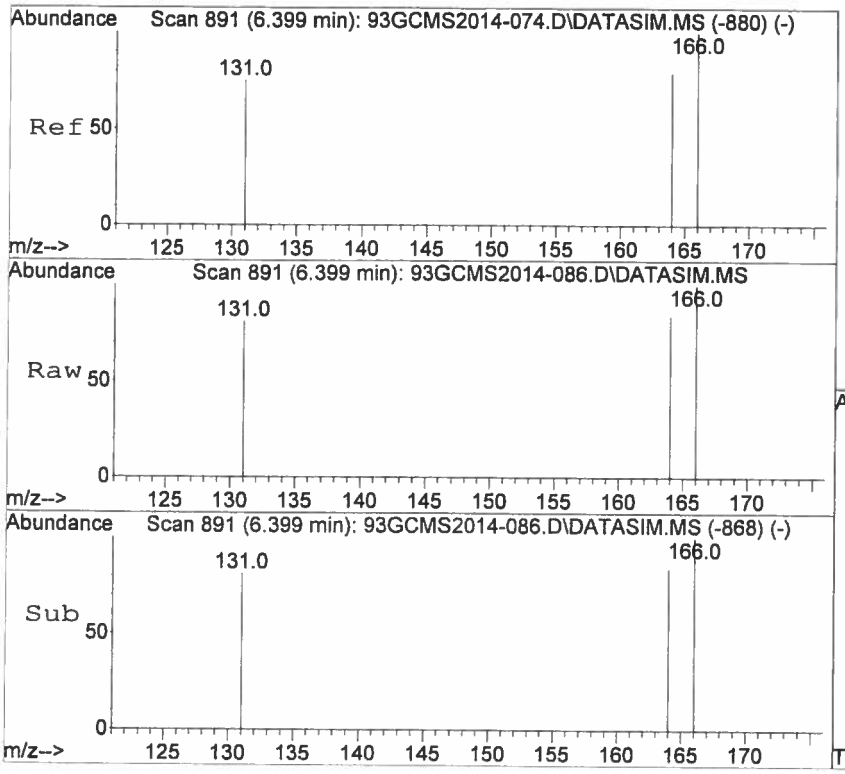


#13
Chlorobenzene-d5
Concen: 10.00 ppbv
RT: 6.814 min Scan# 974
Delta R.T. -0.000 min
Lab File: 93GCMS2014-086.D
Acq: 23 Jan 2014 16:36

Tgt Ion:117 Resp: 4829

Ion	Ratio	Lower	Upper
117	100		
82	48.5	37.8	56.6
119	32.2	25.6	38.4

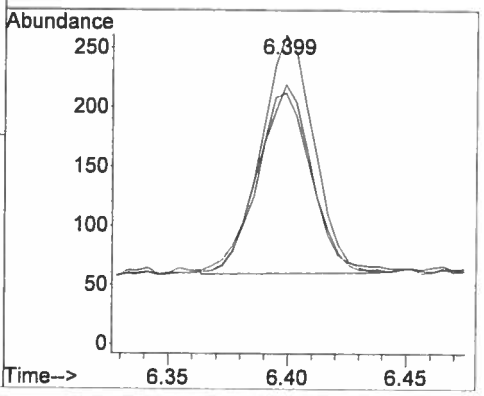




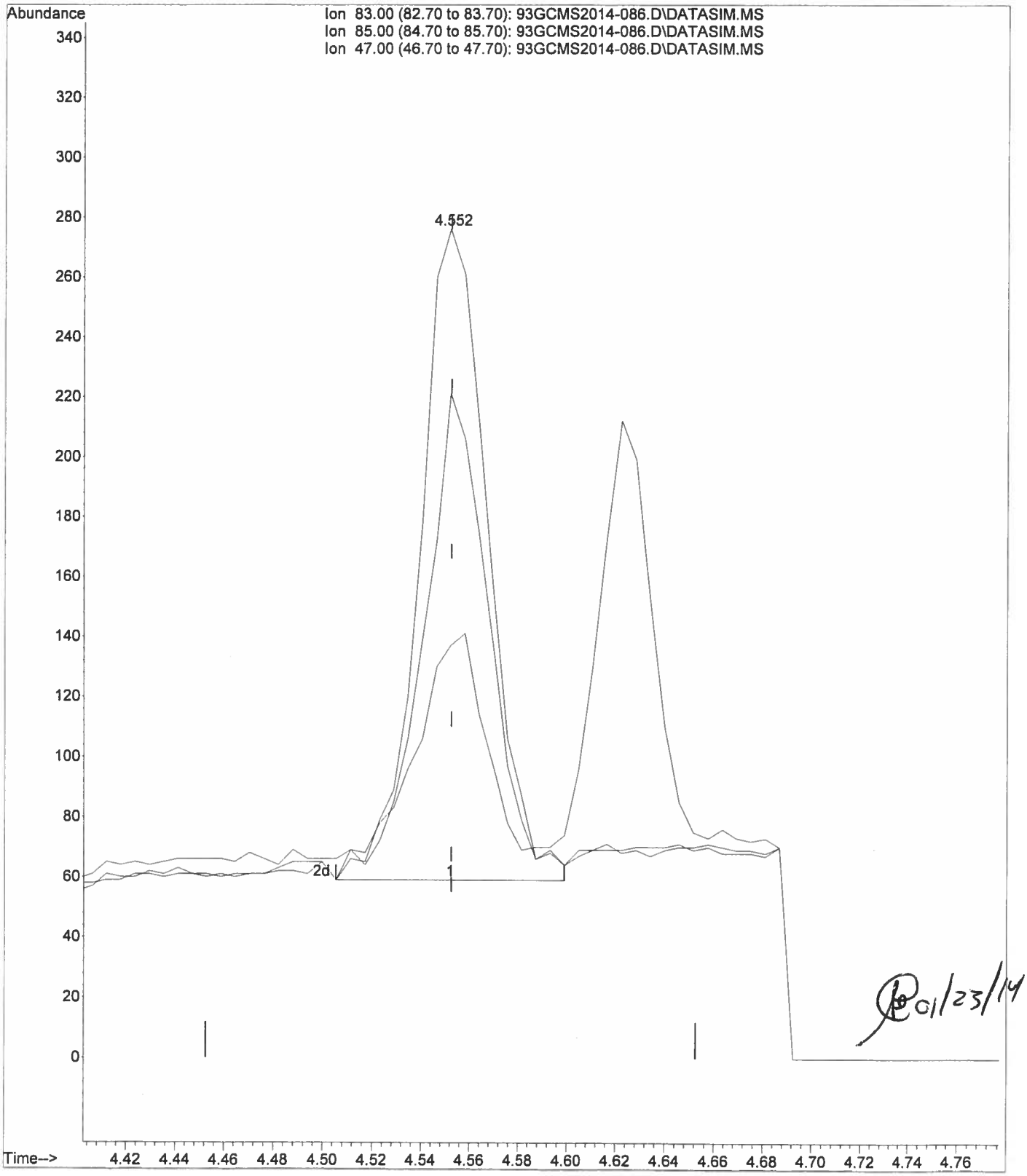
#15
Tetrachloroethene
Concen: 1.71 ppbv m
RT: 6.399 min Scan# 891
Delta R.T. -0.000 min
Lab File: 93GCMS2014-086.D
Acq: 23 Jan 2014 16:36

Tgt Ion:166 Resp: 308

Ion	Ratio	Lower	Upper
166	100		
164	125.6	62.5	93.7#
131	125.3	58.6	88.0#



File :D:\msdchem\1\data\2014\20140123\93GCMS2014-086.D
Operator : SJT
Acquired : 23 Jan 2014 16:36 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-015 \ V02
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



01/23/14

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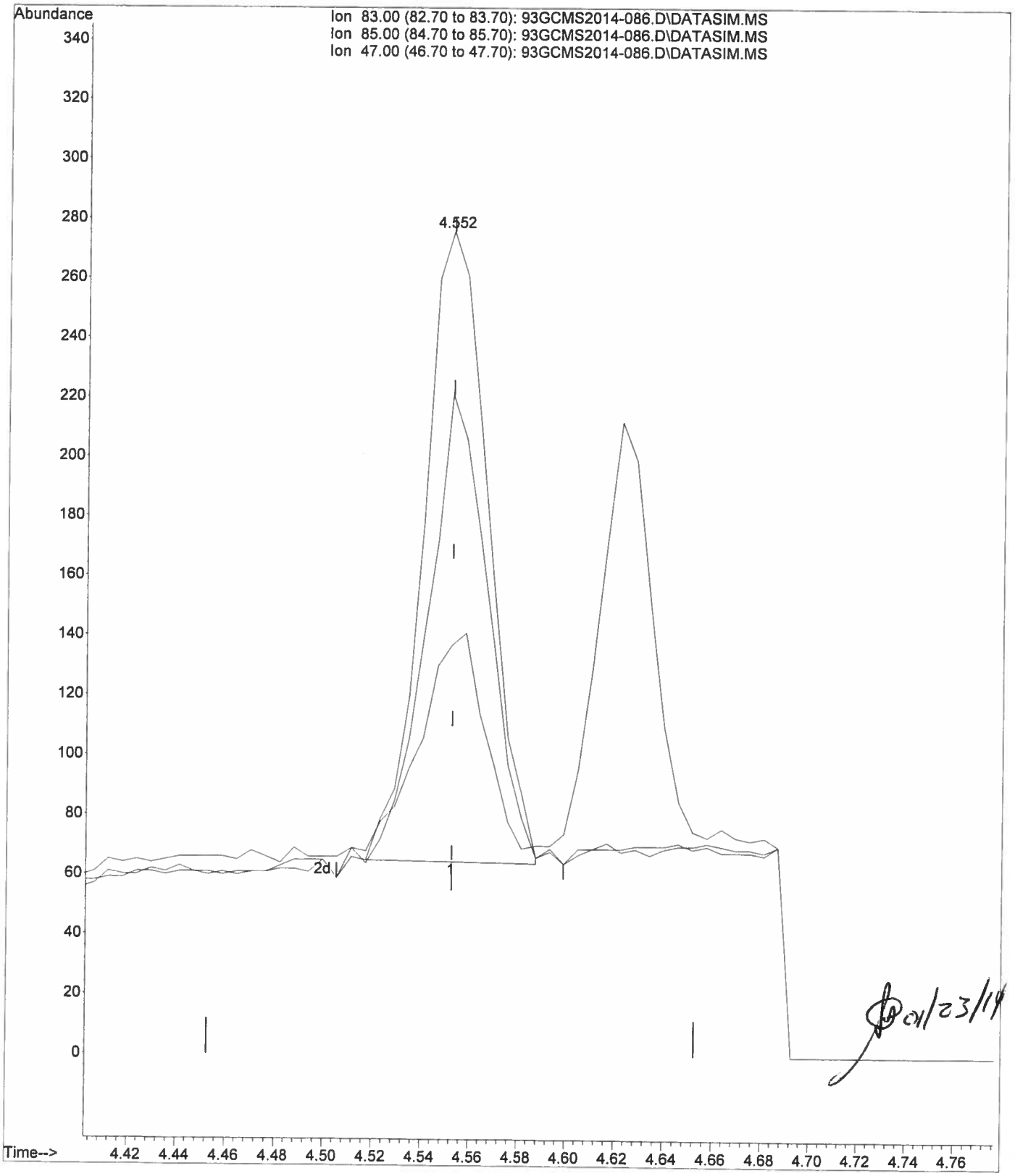
Operator : SJT
Acquired : 23 Jan 2014 16:36 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-015 \ V02
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



01/23/14

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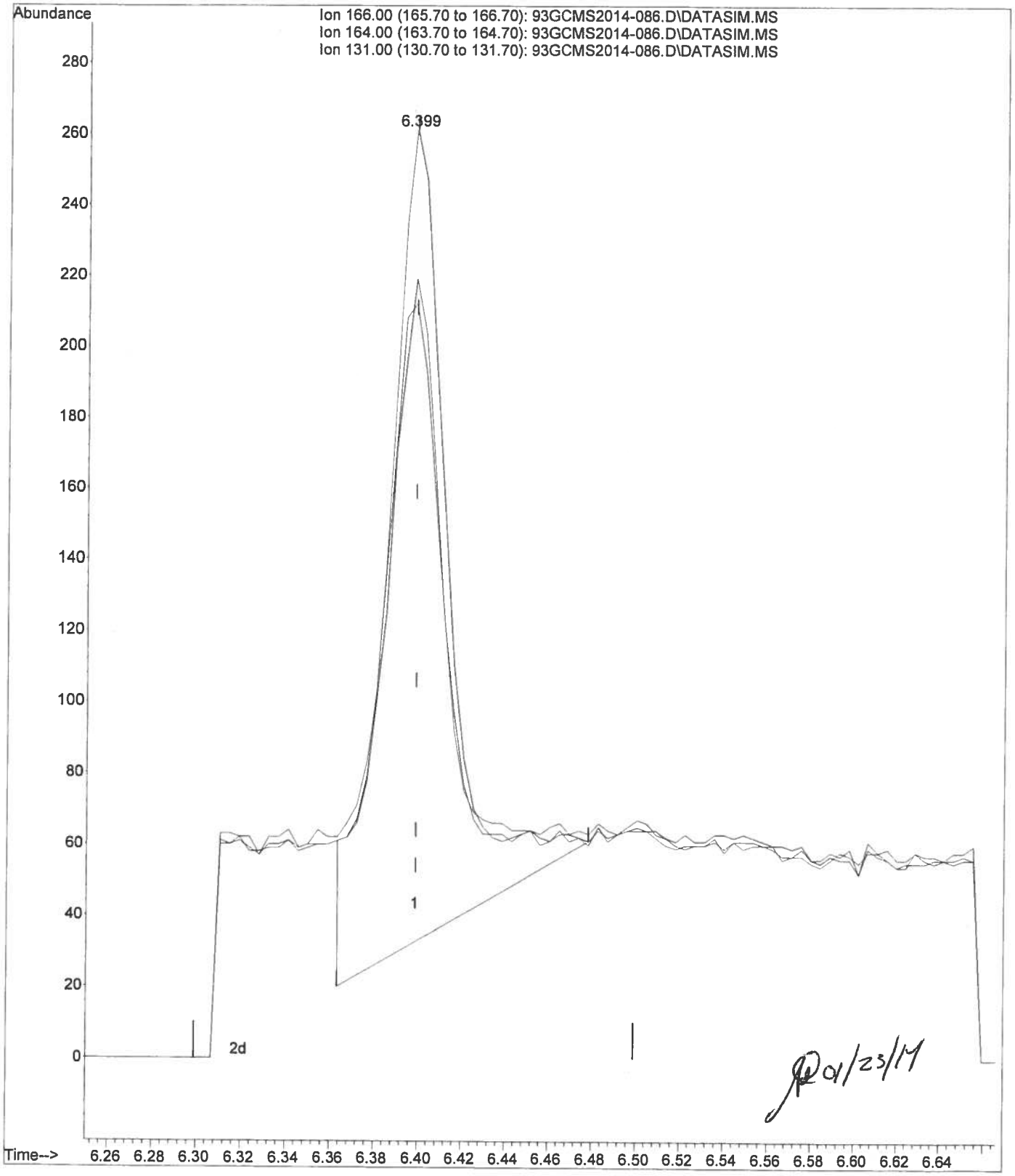
Acquired : 23 Jan 2014 16:36 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-015 \ V02
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



01/23/14

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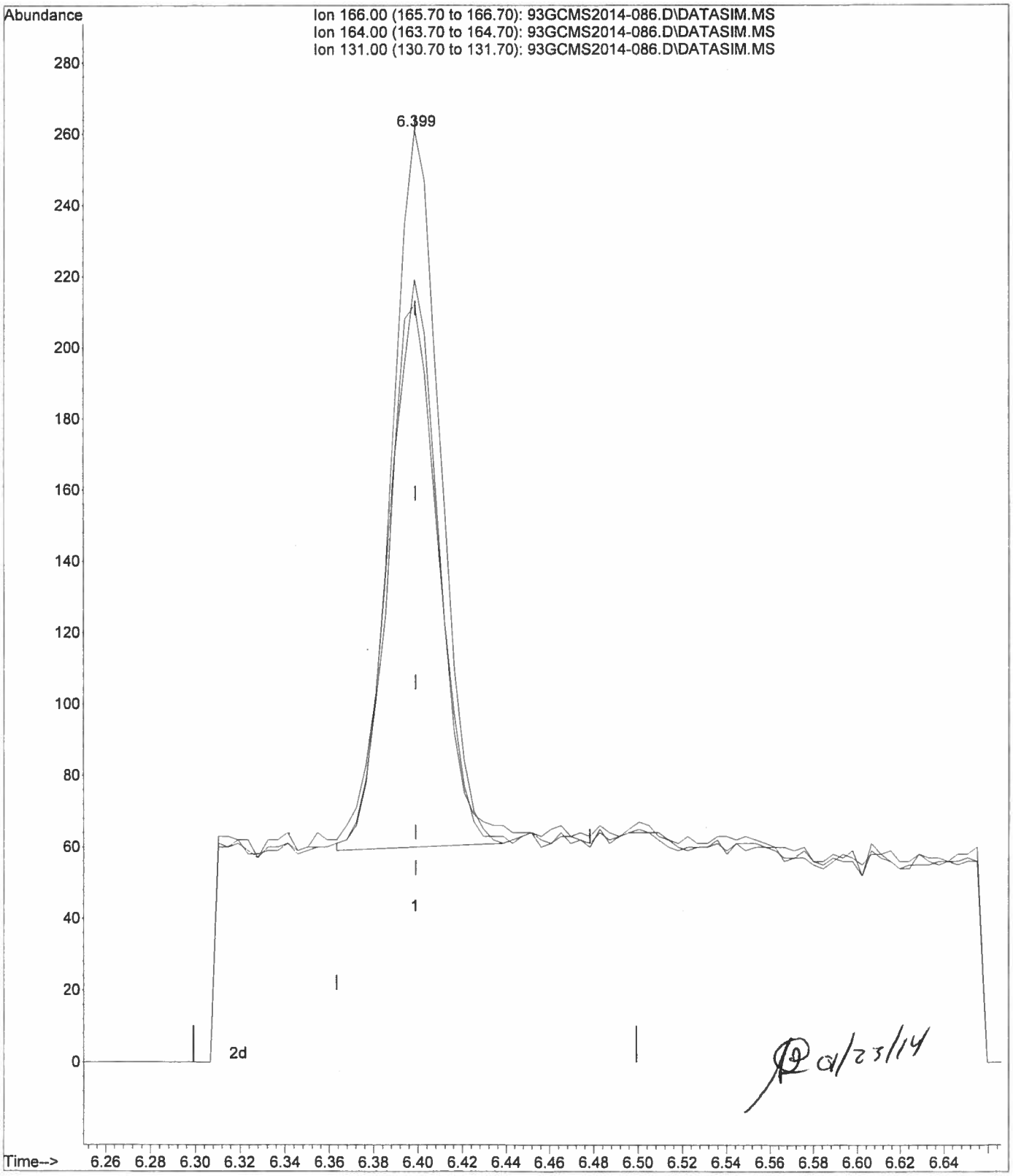
Operator : SJT
Acquired : 23 Jan 2014 16:36 using AcqMethod LOOPSOP1741+HCCL3.M
Instrument : Instrument 2
Sample Name: 219-T-015 \ V02
Misc Info : 5mL \ 23 Jan 2014
Vial Number: 1



APPENDIX B

Final Analytical Report for Samples Collected in SUMMA® Canisters

Passyunk Soil Gas Site

Trip Report

February 2018

ANALYTICAL REPORT

Prepared by
Lockheed Martin Information Systems and Global Services/Environmental Services
Scientific, Engineering, Response and Analytical Services

Passyunk Soil Gas Site
Philadelphia PA

March 2014

EPA Work Assignment No. SERAS-219
LOCKHEED MARTIN Work Order SER0219
EPA Contract No. EP-W-09-031

Submitted to
D. Mickunas
EPA/ERT
109 T.W. Alexander Dr
Research Triangle Park NC

D. Killeen — Date 4/23/14
QA/QC Officer

P. Mulrooney — Date 4/23/14
Acting Program Manager

Analysis by:
Con Test Analytical

Prepared by:/Validated by:
Y. Mehra/J Soroka

REPORT OF LABORATORY ANALYSIS
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Section II

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Section III

Correspondence
Chains of Custody

Appendices

Appendix A Data for VOC in Air — Z 018

Appendix A will be furnished on request.

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Environmental Response Team/Scientific, Engineering, Response and Analytical Services
2890 Woodbridge Avenue, Building 209 Annex
Edison NJ 08837

TESTING LABORATORIES INFORMATION

Analysis of Volatile Organic Compounds in Air by EPA Method TO-15 "*Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)"*

Con Test Analytical Laboratory
East Longmeadow, MA

All analyses were performed according to our NELAP-approved quality assurance program. The test results meet the requirements of the current NELAP standards, where applicable, except as noted in the laboratory case narrative provided. Results are intended to be considered in their entirety and apply only to those analyzed and reported herein.

Con Test Laboratory is certified by the New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID # MA007 for VOC analysis in air.

REPORT OF LABORATORY ANALYSIS
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Detailed Sample Information

Laboratory Sample #	Field Sample #
14A0739-01	219-IA-001
14A0739-02	219-IA-002
14A0739-03	219-IA-003
14A0739-04	219-IA-004
14A0739-05	219-AA-014
14A0739-06	219-AA-015
14A0739-07	219-TB-021
14A0739-08	219-IA-005
14A0739-09	219-IA-006
14A0739-10	219-IA-007
14A0739-11	219-IA-008
14A0739-12	219-SS-020
14A0739-13	219-SS-022
14A0739-14	219-SS-016
14A0739-15	219-SS-017
14A0739-16	219-SS-018
14A0739-17	219-SS-019
14A0739-18	219-IA-009
14A0739-19	219-IA-010
14A0739-20	219-IA-011
14A0739-21	219-IA-012
14A0739-22	219-IA-013

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Introduction

SERAS personnel, in response to WA# SERAS-219, provided analytical support for environmental samples collected from the Passyunk Soil Gas Site in Philadelphia, PA, as described in the following table. The support also included QA/QC, data review and preparation of an analytical report containing analytical and QA/QC results.

Chain of Custody #	Number of Samples	Sampling Date	Date Received	Date Analyzed	Matrix	Analysis/ Method	Laboratory	Data Package
3-012314-093133-0001	1	01/23/14	01/27/14	02/04/14 through 02/07/14	Indoor Air	VOC/EPA Method TO-15	Con Test Analytical	Z 018
3-012314-093609-0002	4							
3-012314-093757-0003	4							
3-012314-094010-0004	2				Ambient Air			
	1	01/22/14			Trip			
3-012314-154459-0005	4	01/23/14			Indoor Air			
3-012314-154648-0006	4				Soil Gas			
3-012314-155158-0007	2							

Case Narrative

Sampling was conducted as per the site-specific Quality Assurance Project Plan (QAPP) and analyzed by the analytical methods as stated in the QAPP. The laboratory reported the data to three significant figures. Any other representation of the data is the responsibility of the user. Data were validated using a Stage 4 validation done manually (S4VM) in accordance with the "Guidance for Labeling Externally Validated Data for Superfund Use." All data validation flags have been inserted into the results tables.

The SERAS Task Leader (TL) was notified prior to sample submittal that the laboratory was not analyzing for or reporting 1,2,3-trichloropropane.

VOC in Air Package Z 018

The Regional Screening Levels (RSLs) for indoor air for 1,1,2,2-trichloroethane, 1,2-dibromoethane, 1,2-dichloroethane, 1,4-dioxane, chloroform and dibromochloromethane are below the laboratory's reporting limits (RLs). For any of these compounds detected, estimated concentrations under the RL were included for reference. The concentration of 1,2-dichloroethane in sample 219-AA-014 and the concentration of chloroform in sample 219-AA-015 are qualified estimated (J) since the results are below the certification level and the reporting limit. These results should be used with caution.

The trip blank 219-TB-021 contained methylene chloride above the RL. Methylene chloride result in samples

REPORT OF LABORATORY ANALYSIS
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219-IA-001 through 219-IA-004, 219-IA-007 through 219-IA-011, 219-IA-013 through 219-IA-015 and 219-SS-020 are reported non-detect (U) and the RL raised to the concentration found in the sample.

Acetone did not meet the percent relative standard deviation (RSD) criterion for the initial calibration of 6/01/2010. All positive results for acetone are qualified estimated (J).

Methyl isobutyl ketone did not meet the percent difference (%D) criterion for the continuing calibration of 02/05/14. Methyl isobutyl ketone results in sample 219-IA-011 and method blank 2/5/14 are qualified estimated (J).

The LCS percent recoveries (%R) for vinyl acetate were below the %R criterion for the LCS of 02/04/14 and 02/05/14. All vinyl acetate results are qualified estimated (J).

The LCS percent recoveries for 2-hexanone and methyl isobutyl ketone were below the %R criterion for the LCS of 02/05/14. Results for these analytes in samples 219-IA-011 through 219-IA-013, 219-SS-016 through 219-SS-020 and 219-SS-022 are qualified estimated (J).

The results presented in this report only relate to the samples analyzed. All results are intended to be considered in their entirety. The Environmental Response Team/Scientific, Engineering, Response and Analytical Services laboratory is not responsible for utilization of less than the complete report.

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Summary of Abbreviations

BFB	Bromofluorobenzene
C	Centigrade
CLP	Contract Laboratory Program
COC	Chain of Custody
conc	concentration
cont	continued
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
D	(Surrogate Table) value is from a diluted sample and was not calculated
Dioxin	Polychlorinated dibenzo-p-dioxins (PCDD) and Polychlorinated dibenzofurans (PCDF)
DFTPP	Decafluorotriphenylphosphine
EMPC	Estimated maximum possible concentration
GC/MS	Gas Chromatography/ Mass Spectrometry
IS	Internal Standard
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MDA	Minimum Detectable Activity
MS (BS)	Matrix Spike (Blank Spike)
MSD (BSD)	Matrix Spike Duplicate (Blank Spike Duplicate)
MW	Molecular Weight
NA	Not Applicable or Not Available
NAD	Normalized Absolute Difference
NC	Not Calculated
NR	Not Requested/Not Reported
NS	Not Spiked
% D	Percent Difference
% REC	Percent Recovery
SOP	Standard Operating Procedure
ppbv	parts per billion by volume
ppm	parts per million
pptv	parts per trillion by volume
PQL	Practical Quantitation Limit
PAL	Performance Acceptance Limit
QA/QC	Quality Assurance/Quality Control
QL	Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SERAS	Scientific, Engineering, Response and Analytical Services
SIM	Selected Ion Monitoring
Sur	Surrogate
TIC	Tentatively Identified Compound
TCLP	Toxicity Characteristic Leaching Procedure
VOC	Volatile Organic Compound
*	Value exceeds the acceptable QC limits

m^3	cubic meter	g	gram	kg	kilogram	L	liter
µg	microgram	µL	microliter	mg	milligram	mL	milliliter
ng	nanogram	pg	picogram	pCi	picocurie	s	sigma

Data Validation Flags

J	Value is estimated	R	Value is unusable
J+	Value is estimated high (metals only)	U	Not detected
J-	Value is estimated low (metals only)	UJ	Not detected and RL is estimated
N	Presumptively present (Aroclors only)		

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number		14A0739-07	14A0739-01	14A0739-02
Sample Number	B090018-BLK1	219-TB-021	219-IA-001	219-IA-002
Sample Location	2/4/2014	Trip Blank	Unit 84	Unit 116

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	U	1.0	U	1.4	5.5 J	1.4	3.7 J	1.4
Benzene	U	0.025	U	0.035	0.22	0.035	0.24	0.035
Bromoform	U	0.025	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Butadiene	U	0.025	U	0.035	0.036	0.035	0.066	0.035
2-Butanone (MEK)	U	1.0	U	1.4	U	1.4	U	1.4
Carbon Tetrachloride	U	0.025	U	0.018	0.057	0.018	0.065	0.018
Chlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Chloroform	U	0.025	U	0.035	0.035	0.035	0.042	0.035
Chloromethane	U	0.050	U	0.070	0.36	0.070	0.45	0.070
Cyclohexane	U	0.025	U	0.035	0.058	0.035	0.12	0.035
Dibromochloromethane	U	0.025	U	0.018	U	0.018	U	0.018
1,2-Dibromoethane	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	U	0.025	U	0.035	0.23	0.035	0.25	0.035
1,1-Dichloroethane	U	0.025	U	0.018	U	0.018	U	0.018
1,2-Dichloroethane	U	0.025	U	0.018	U	0.018	U	0.018
1,1-Dichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
cis-1,2-Dichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
trans-1,2-Dichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
1,2-Dichloropropane	U	0.025	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.25	U	0.35	U	0.35	U	0.35
Ethyl Acetate	U	0.025	U	0.035	0.12	0.035	0.26	0.035
Ethylbenzene	U	0.025	U	0.035	0.037	0.035	0.038	0.035
4-Ethyltoluene	U	0.025	U	0.035	U	0.035	U	0.035
Heptane	U	0.025	U	0.035	0.13	0.035	0.17	0.035
Hexane	U	1.0	U	1.4	U	1.4	U	1.4
2-Hexanone (MBK)	U	0.025	U	0.035	0.053	0.035	U	0.035
Isopropanol	U	1.0	U	1.4	U	1.4	U	1.4
Methyl tert-Butyl Ether (MTBE)	U	0.025	U	0.035	U	0.035	U	0.035
Methylene Chloride	U	0.25	0.43	0.35	U	0.36	U	0.66
4-Methyl-2-pentanone (MIBK)	U	0.025	U	0.035	U	0.035	U	0.035
Propene	U	1.0	U	1.4	U	1.4	U	1.4
Styrene	U	0.025	U	0.035	0.046	0.035	U	0.035
1,1,2,2-Tetrachloroethane	U	0.025	U	0.018	U	0.018	U	0.018
Tetrachloroethylene	U	0.025	U	0.018	U	0.018	0.019	0.018
Tetrahydrofuran	U	0.025	U	0.035	U	0.035	U	0.035
Toluene	U	0.025	U	0.035	0.32	0.035	0.38	0.035
1,1,1-Trichloroethane	U	0.025	U	0.018	U	0.018	0.020	0.018
1,1,2-Trichloroethane	U	0.025	U	0.018	U	0.018	U	0.018
Trichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
Trichlorofluoromethane	U	0.025	U	0.035	0.19	0.035	0.21	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.025	U	0.035	0.059	0.035	0.066	0.035
1,2,4-Trimethylbenzene	U	0.025	U	0.035	0.042	0.035	0.041	0.035
1,3,5-Trimethylbenzene	U	0.025	U	0.035	U	0.035	U	0.035
Vinyl Acetate	U	0.50	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.025	U	0.018	U	0.018	U	0.018
m&p-Xylene	U	0.050	U	0.070	0.11	0.070	0.11	0.070
o-Xylene	U	0.025	U	0.035	0.045	0.035	0.047	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-03	14A0739-04	14A0739-05	14A0739-06
Sample Number	219-IA-003	219-IA-004	219-AA-014	219-AA-015
Sample Location	Unit 116	Unit 84	Unit 175	Ernest Street

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	12 J	1.4	6.6 J	1.4	4.2 J	1.4	4.0 J	1.4
Benzene	0.35	0.035	0.30	0.035	0.32	0.035	0.22	0.035
Bromoform	U	0.035	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Butadiene	0.084	0.035	0.076	0.035	0.065	0.035	U	0.035
2-Butanone (MEK)	U	1.4	U	1.4	U	1.4	U	1.4
Carbon Tetrachloride	U	0.018	U	0.018	0.053	0.018	0.046	0.018
Chlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.035	U	0.035	U	0.035	U	0.035
Chloroform	0.046	0.035	0.044	0.035	U	0.035	U	0.035
Chloromethane	0.53	0.070	0.52	0.070	0.46	0.070	0.42	0.070
Cyclohexane	0.051	0.035	0.061	0.035	0.039	0.035	U	0.035
Dibromochloromethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dibromoethane	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	0.26	0.035	0.27	0.035	0.25	0.035	0.25	0.035
1,1-Dichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloroethane	0.032	0.018	0.020	0.018	0.015 J	0.018	U	0.018
1,1-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
cis-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
trans-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloropropane	U	0.035	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.35	U	0.35	U	0.35	U	0.35
Ethyl Acetate	0.45	0.035	0.23	0.035	U	0.035	U	0.035
Ethylbenzene	0.051	0.035	0.055	0.035	0.045	0.035	0.038	0.035
4-Ethyltoluene	U	0.035	U	0.035	U	0.035	U	0.035
Heptane	0.50	0.035	0.50	0.035	0.064	0.035	0.044	0.035
Hexane	U	1.4	U	1.4	U	1.4	U	1.4
2-Hexanone (MBK)	0.065	0.035	0.079	0.035	0.065	0.035	0.063	0.035
Isopropanol	U	1.4	U	1.4	U	1.4	U	1.4
Methyl tert-Butyl Ether (MTBE)	U	0.035	U	0.035	U	0.035	U	0.035
Methylene Chloride	U	0.40	U	0.63	U	1.2	U	0.49
4-Methyl-2-pentanone (MIBK)	U	0.035	U	0.035	U	0.035	U	0.035
Propene	U	1.4	U	1.4	U	1.4	U	1.4
Styrene	U	0.035	0.043	0.035	U	0.035	U	0.035
1,1,2,2-Tetrachloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Tetrachloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
Tetrahydrofuran	0.062	0.035	0.080	0.035	U	0.035	U	0.035
Toluene	0.39	0.035	0.38	0.035	0.34	0.035	0.25	0.035
1,1,1-Trichloroethane	0.019	0.018	U	0.018	U	0.018	U	0.018
1,1,2-Trichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Trichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
Trichlorofluoromethane	0.21	0.035	0.22	0.035	0.20	0.035	0.20	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	0.064	0.035	0.067	0.035	0.069	0.035	0.066	0.035
1,2,4-Trimethylbenzene	0.039	0.035	0.055	0.035	0.050	0.035	0.040	0.035
1,3,5-Trimethylbenzene	U	0.035	U	0.035	U	0.035	U	0.035
Vinyl Acetate	U J	0.70	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.018	U	0.018	0.051	0.018	U	0.018
m&p-Xylene	0.14	0.070	0.16	0.070	0.14	0.070	0.11	0.070
o-Xylene	0.055	0.035	0.060	0.035	0.060	0.035	0.048	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-08	14A0739-09	14A0739-10	14A0739-11
Sample Number	219-IA-005	219-IA-006	219-IA-007	219-IA-008
Sample Location	Unit 50	Unit 50	Unit 34	Unit 34

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	19 J	1.4	23 J	1.4	12 J	1.4	24 J	1.4
Benzene	0.71	0.035	0.26	0.035	0.21	0.035	0.24	0.035
Bromoform	U	0.035	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Butadiene	0.10	0.035	0.087	0.035	0.037	0.035	0.063	0.035
2-Butanone (MEK)	2.8	1.4	3.6	1.4	U	1.4	U	1.4
Carbon Tetrachloride	U	0.018	0.066	0.018	0.059	0.018	0.11	0.018
Chlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.035	0.051	0.035	U	0.035	U	0.035
Chloroform	0.039	0.035	0.044	0.035	0.084	0.035	0.11	0.035
Chloromethane	0.46	0.070	0.54	0.070	0.36	0.070	0.46	0.070
Cyclohexane	0.12	0.035	0.083	0.035	0.046	0.035	0.069	0.035
Dibromochloromethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dibromoethane	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	0.24	0.035	0.24	0.035	0.25	0.035	0.26	0.035
1,1-Dichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloroethane	U	0.018	U	0.018	0.046	0.018	0.051	0.018
1,1-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
cis-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
trans-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloropropane	U	0.035	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.35	U	0.35	U	0.35	U	0.35
Ethyl Acetate	0.11	0.035	0.11	0.035	0.14	0.035	0.85	0.035
Ethylbenzene	0.10	0.035	0.11	0.035	0.042	0.035	0.072	0.035
4-Ethyltoluene	0.061	0.035	0.069	0.035	0.042	0.035	0.060	0.035
Heptane	0.31	0.035	0.19	0.035	0.060	0.035	0.098	0.035
Hexane	U	1.4	U	1.4	U	1.4	U	1.4
2-Hexanone (MBK)	0.12	0.035	0.094	0.035	0.12	0.035	0.070	0.035
Isopropanol	5.7	1.4	5.0	1.4	12	1.4	130	56
Methyl tert-Butyl Ether (MTBE)	U	0.035	U	0.035	U	0.035	0.062	0.035
Methylene Chloride	4.2	0.35	5.6	0.35	U	0.43	U	1.3
4-Methyl-2-pentanone (MIBK)	U	0.035	U	0.035	U	0.035	U	0.035
Propene	U	1.4	U	1.4	U	1.4	U	1.4
Styrene	0.041	0.035	U	0.035	U	0.035	0.038	0.035
1,1,2,2-Tetrachloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Tetrachloroethylene	U	0.018	0.066	0.018	0.081	0.018	0.086	0.018
Tetrahydrofuran	2.9	0.035	4.8	0.035	0.14	0.035	0.066	0.035
Toluene	0.52	0.035	0.51	0.035	0.29	0.035	0.63	0.035
1,1,1-Trichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
1,1,2-Trichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Trichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
Trichlorofluoromethane	0.21	0.035	0.22	0.035	0.20	0.035	0.22	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	0.067	0.035	0.069	0.035	0.071	0.035	0.074	0.035
1,2,4-Trimethylbenzene	0.28	0.035	0.33	0.035	0.19	0.035	0.24	0.035
1,3,5-Trimethylbenzene	0.12	0.035	0.14	0.035	0.053	0.035	0.073	0.035
Vinyl Acetate	U J	0.70	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.018	U	0.018	U	0.018	U	0.018
m&p-Xylene	0.38	0.070	0.40	0.070	0.13	0.070	0.21	0.070
o-Xylene	0.15	0.035	0.16	0.035	0.061	0.035	0.088	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-18	14A0739-19
Sample Number	219-IA-009	219-IA-010
Sample Location	Unit 34	Unit 70

Analyte	Result ppbv		RL ppbv	Result ppbv		RL ppbv
Acetone	20	J	1.4	65	J	40
Benzene	0.22		0.035	0.23		0.035
Bromoform	U		0.035	U		0.035
Bromomethane	U		0.035	U		0.035
1,3-Butadiene	U		0.035	0.042		0.035
2-Butanone (MEK)	U		1.4	U		1.4
Carbon Tetrachloride	U		0.018	0.065		0.018
Chlorobenzene	U		0.035	U		0.035
Chloroethane	U		0.035	U		0.035
Chloroform	0.10		0.035	0.039		0.035
Chloromethane	0.46		0.070	0.40		0.070
Cyclohexane	0.064		0.035	0.036		0.035
Dibromochloromethane	U		0.018	U		0.018
1,2-Dibromoethane	U		0.035	U		0.035
1,2-Dichlorobenzene	U		0.035	U		0.035
1,3-Dichlorobenzene	U		0.035	U		0.035
1,4-Dichlorobenzene	U		0.035	U		0.035
Dichlorodifluoromethane	0.23		0.035	0.25		0.035
1,1-Dichloroethane	U		0.018	U		0.018
1,2-Dichloroethane	0.048		0.018	0.037		0.018
1,1-Dichloroethylene	U		0.018	U		0.018
cis-1,2-Dichloroethylene	U		0.018	U		0.018
trans-1,2-Dichloroethylene	U		0.018	U		0.018
1,2-Dichloropropane	U		0.035	U		0.035
cis-1,3-Dichloropropene	U		0.035	U		0.035
trans-1,3-Dichloropropene	U		0.035	U		0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U		0.035	U		0.035
1,4-Dioxane	U		0.35	U		0.35
Ethyl Acetate	0.90		0.035	0.14		0.035
Ethylbenzene	0.066		0.035	0.058		0.035
4-Ethyltoluene	0.056		0.035	U		0.035
Heptane	0.091		0.035	0.057		0.035
Hexane	U		1.4	U		1.4
2-Hexanone (MBK)	U		0.035	0.073		0.035
Isopropanol	93		56	1.7		1.4
Methyl tert-Butyl Ether (MTBE)	0.059		0.035	U		0.035
Methylene Chloride	U		1.3	U		0.43
4-Methyl-2-pentanone (MIBK)	U		0.035	0.053		0.035
Propene	U		1.4	U		1.4
Styrene	0.046		0.035	0.065		0.035
1,1,2,2-Tetrachloroethane	U		0.018	U		0.018
Tetrachloroethylene	0.081		0.018	U		0.018
Tetrahydrofuran	0.062		0.035	U		0.035
Toluene	0.60		0.035	0.39		0.035
1,1,1-Trichloroethane	U		0.018	U		0.018
1,1,2-Trichloroethane	U		0.018	U		0.018
Trichloroethylene	U		0.018	U		0.018
Trichlorofluoromethane	0.21		0.035	0.20		0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	0.070		0.035	0.072		0.035
1,2,4-Trimethylbenzene	0.22		0.035	0.050		0.035
1,3,5-Trimethylbenzene	0.066		0.035	U		0.035
Vinyl Acetate	U	J	0.70	U	J	0.70
Vinyl Chloride	U		0.018	U		0.018
m&p-Xylene	0.19		0.070	0.15		0.070
o-Xylene	0.081		0.035	0.058		0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number		14A0739-20	14A0739-21	14A0739-22
Sample Number	B090019-BLK1	219-IA-011	219-IA-012	219-IA-013
Sample Location	2/5/2014	Unit 70	Unit 175	Unit 175

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	U	1.0	56 J	40	18 J	1.4	9.5 J	1.4
Benzene	U	0.025	0.23	0.035	0.40	0.035	0.42	0.035
Bromoform	U	0.025	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Butadiene	U	0.025	0.051	0.035	0.057	0.035	0.095	0.035
2-Butanone (MEK)	U	1.0	U	1.4	2.1	1.4	U	1.4
Carbon Tetrachloride	U	0.025	0.055	0.035	0.088	0.035	0.062	0.035
Chlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Chloroform	U	0.025	0.038	0.035	0.53	0.035	0.19	0.035
Chloromethane	U	0.050	0.41	0.070	0.60	0.070	0.41	0.070
Cyclohexane	U	0.025	0.039	0.035	0.062	0.035	0.093	0.035
1,2-Dibromoethane	U	0.025	U	0.035	U	0.035	U	0.035
Dibromochloromethane	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	U	0.025	0.28	0.035	0.65	0.035	0.42	0.035
1,1-Dichloroethane	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloroethane	U	0.025	0.036	0.035	U	0.035	U	0.035
1,1-Dichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
cis-1,2-Dichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
trans-1,2-Dichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloropropane	U	0.025	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.25	U	0.35	U	0.35	U	0.35
Ethyl Acetate	U	0.025	0.17	0.035	0.40	0.035	0.20	0.035
Ethylbenzene	U	0.025	0.058	0.035	0.57	0.035	0.21	0.035
4-Ethyltoluene	U	0.025	U	0.035	U	0.035	U	0.035
Heptane	U	0.025	0.061	0.035	0.089	0.035	0.24	0.035
Hexane	U	1.0	U	1.4	8.0	1.4	U	1.4
2-Hexanone (MBK)	U	0.025	0.13 J	0.035	0.060 J	0.035	U J	0.035
Isopropanol	U	1.0	U	1.4	1.4	1.4	2.7	1.4
Methyl tert-Butyl Ether (MTBE)	U	0.025	U	0.035	U	0.035	U	0.035
Methylene Chloride	U	0.25	U	0.62	18	0.35	U	0.67
4-Methyl-2-pentanone (MIBK)	U J	0.025	0.057 J	0.035	U J	0.035	U J	0.035
Propene	U	1.0	U	1.4	U	1.4	U	1.4
Styrene	U	0.025	0.038	0.035	U	0.035	U	0.035
1,1,2,2-Tetrachloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Tetrachloroethylene	U	0.025	U	0.035	0.046	0.035	U	0.035
Tetrahydrofuran	U	0.025	0.046	0.035	0.27	0.035	0.079	0.035
Toluene	U	0.025	0.37	0.035	2.0	0.035	0.87	0.035
1,1,1-Trichloroethane	U	0.025	U	0.035	0.11	0.035	0.062	0.035
1,1,2-Trichloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Trichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
Trichlorofluoromethane	U	0.025	0.21	0.035	2.0	0.035	0.81	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.025	0.072	0.035	0.11	0.035	0.077	0.035
1,2,4-Trimethylbenzene	U	0.025	0.052	0.035	0.11	0.035	0.088	0.035
1,3,5-Trimethylbenzene	U	0.025	U	0.035	0.035	0.035	U	0.035
Vinyl Acetate	U	0.50	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.025	U	0.035	U	0.035	U	0.035
m&p-Xylene	U	0.050	0.14	0.070	1.8	0.070	0.75	0.070
o-Xylene	U	0.025	0.056	0.035	0.47	0.035	0.25	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-12	14A0739-13	14A0739-14	14A0739-15
Sample Number	219-SS-020	219-SS-022	219-SS-016	219-SS-017
Sample Location	Unit 70	Unit 175	Unit 84	Unit 116

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	33 J	4.0	33 J	4.0	50 J	4.0	57 J	4.0
Benzene	U	0.10	U	0.10	0.11	0.10	0.38	0.10
Bromoform	U	0.10	U	0.10	U	0.10	U	0.10
Bromomethane	U	0.10	U	0.10	U	0.10	U	0.10
1,3-Butadiene	U	0.10	U	0.10	U	0.10	0.23	0.10
2-Butanone (MEK)	U	4.0	U	4.0	U	4.0	U	4.0
Carbon Tetrachloride	U	0.10	U	0.10	U	0.10	U	0.10
Chlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
Chloroethane	U	0.10	U	0.10	U	0.10	U	0.10
Chloroform	U	0.10	0.16	0.10	U	0.10	0.16	0.10
Chloromethane	U	0.20	U	0.20	0.45	0.20	0.45	0.20
Cyclohexane	0.11	0.10	U	0.10	U	0.10	0.14	0.10
Dibromochloromethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dibromoethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
1,3-Dichlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
1,4-Dichlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
Dichlorodifluoromethane	0.39	0.10	1.5	0.10	0.44	0.10	0.37	0.10
1,1-Dichloroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichloroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,1-Dichloroethylene	U	0.10	U	0.10	U	0.10	U	0.10
cis-1,2-Dichloroethylene	U	0.10	U	0.10	U	0.10	U	0.10
trans-1,2-Dichloroethylene	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichloropropane	U	0.10	U	0.10	U	0.10	U	0.10
cis-1,3-Dichloropropene	U	0.10	U	0.10	U	0.10	U	0.10
trans-1,3-Dichloropropene	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,4-Dioxane	U	1.0	U	1.0	U	1.0	U	1.0
Ethyl Acetate	U	0.10	U	0.10	0.32	0.10	0.30	0.10
Ethylbenzene	U	0.10	U	0.10	U	0.10	0.15	0.10
4-Ethyltoluene	U	0.10	U	0.10	U	0.10	U	0.10
Heptane	U	0.10	U	0.10	U	0.10	0.34	0.10
Hexane	U	4.0	U	4.0	U	4.0	U	4.0
2-Hexanone (MBK)	0.15 J	0.10	0.11 J	0.10	0.27 J	0.10	0.21 J	0.10
Isopropanol	U	4.0	U	4.0	U	4.0	U	4.0
Methyl tert-Butyl Ether (MTBE)	U	0.10	U	0.10	U	0.10	U	0.10
Methylene Chloride	U	1.1	U	1.0	4.1	1.0	3.5	1.0
4-Methyl-2-pentanone (MIBK)	U J	0.10	U J	0.10	U J	0.10	U J	0.10
Propene	U	4.0	U	4.0	U	4.0	U	4.0
Styrene	U	0.10	U	0.10	U	0.10	U	0.10
1,1,2,2-Tetrachloroethane	U	0.10	U	0.10	U	0.10	U	0.10
Tetrachloroethylene	0.23	0.10	0.14	0.10	0.15	0.10	0.12	0.10
Tetrahydrofuran	U	0.10	U	0.10	U	0.10	U	0.10
Toluene	U	0.10	U	0.10	0.27	0.10	0.58	0.10
1,1,1-Trichloroethane	U	0.10	0.32	0.10	U	0.10	U	0.10
1,1,2-Trichloroethane	U	0.10	U	0.10	U	0.10	U	0.10
Trichloroethylene	U	0.10	1.6	0.10	U	0.10	U	0.10
Trichlorofluoromethane	0.22	0.10	0.59	0.10	0.26	0.10	0.25	0.10
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2,4-Trimethylbenzene	U	0.10	U	0.10	0.16	0.10	U	0.10
1,3,5-Trimethylbenzene	U	0.10	U	0.10	U	0.10	U	0.10
Vinyl Acetate	U J	2.0	U J	2.0	U J	2.0	U J	2.0
Vinyl Chloride	U	0.10	U	0.10	U	0.10	U	0.10
m&p-Xylene	U	0.20	U	0.20	U	0.20	0.30	0.20
o-Xylene	U	0.10	0.15	0.10	0.32	0.10	0.35	0.10

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-16	14A0739-17
Sample Number	219-SS-018	219-SS-019
Sample Location	Unit 50	Unit 34

Analyte	Result ppbv		RL ppbv	Result ppbv		RL ppbv
Acetone	27	J	4.0	41	J	4.0
Benzene	U		0.10	U		0.10
Bromoform	U		0.10	U		0.10
Bromomethane	U		0.10	U		0.10
1,3-Butadiene	U		0.10	U		0.10
2-Butanone (MEK)	U		4.0	U		4.0
Carbon Tetrachloride	U		0.10	U		0.10
Chlorobenzene	U		0.10	U		0.10
Chloroethane	U		0.10	U		0.10
Chloroform	0.49		0.10	0.74		0.10
Chloromethane	U		0.20	U		0.20
Cyclohexane	U		0.10	U		0.10
Dibromochloromethane	U		0.10	U		0.10
1,2-Dibromoethane	U		0.10	U		0.10
1,2-Dichlorobenzene	U		0.10	U		0.10
1,3-Dichlorobenzene	U		0.10	U		0.10
1,4-Dichlorobenzene	U		0.10	U		0.10
Dichlorodifluoromethane	0.42		0.10	0.45		0.10
1,1-Dichloroethane	U		0.10	U		0.10
1,2-Dichloroethane	U		0.10	U		0.10
1,1-Dichloroethylene	U		0.10	U		0.10
cis-1,2-Dichloroethylene	U		0.10	U		0.10
trans-1,2-Dichloroethylene	U		0.10	U		0.10
1,2-Dichloropropane	U		0.10	U		0.10
cis-1,3-Dichloropropene	U		0.10	U		0.10
trans-1,3-Dichloropropene	U		0.10	U		0.10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U		0.10	U		0.10
1,4-Dioxane	U		1.0	U		1.0
Ethyl Acetate	U		0.10	0.21		0.10
Ethylbenzene	U		0.10	U		0.10
4-Ethyltoluene	U		0.10	U		0.10
Heptane	U		0.10	U		0.10
Hexane	U		4.0	U		4.0
2-Hexanone (MBK)	U	J	0.10	0.18	J	0.10
Isopropanol	U		4.0	U		4.0
Methyl tert-Butyl Ether (MTBE)	U		0.10	U		0.10
Methylene Chloride	4.3		1.0	6.2		1.0
4-Methyl-2-pentanone (MIBK)	U	J	0.10	U	J	0.10
Propene	U		4.0	U		4.0
Styrene	U		0.10	U		0.10
1,1,2,2-Tetrachloroethane	U		0.10	U		0.10
Tetrachloroethylene	U		0.10	0.57		0.10
Tetrahydrofuran	0.29		0.10	U		0.10
Toluene	0.11		0.10	0.14		0.10
1,1,1-Trichloroethane	U		0.10	0.11		0.10
1,1,2-Trichloroethane	U		0.10	U		0.10
Trichloroethylene	0.10		0.10	U		0.10
Trichlorofluoromethane	0.25		0.10	0.25		0.10
1,1,2-Trichloro-1,2,2-trifluoroethane	U		0.10	U		0.10
1,2,4-Trimethylbenzene	U		0.10	U		0.10
1,3,5-Trimethylbenzene	U		0.10	U		0.10
Vinyl Acetate	U	J	2.0	U	J	2.0
Vinyl Chloride	U		0.10	U		0.10
m&p-Xylene	U		0.20	U		0.20
o-Xylene	0.11		0.10	0.19		0.10

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Table 1.1b Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number		14A0739-07	14A0739-01	14A0739-02
Sample Number	B090018-BLK1	219-TB-021	219-IA-001	219-IA-002
Sample Location	2/4/2014	Trip Blank	Unit 84	Unit 116

Analyte	Result µg/m^3	*RL* µg/m^3	Result µg/m^3	*RL* µg/m^3	Result µg/m^3	*RL* µg/m^3	Result µg/m^3	*RL* µg/m^3
Acetone	U	2.4	U	3.3	13 J	3.3	8.8 J	3.3
Benzene	U	0.080	U	0.11	0.70	0.11	0.78	0.11
Bromoform	U	0.26	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.097	U	0.14	U	0.14	U	0.14
1,3-Butadiene	U	0.055	U	0.077	0.081	0.077	0.15	0.077
2-Butanone (MEK)	U	2.9	U	4.1	U	4.1	U	4.1
Carbon Tetrachloride	U	0.16	U	0.11	0.36	0.11	0.41	0.11
Chlorobenzene	U	0.12	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.066	U	0.092	U	0.092	U	0.092
Chloroform	U	0.12	U	0.17	0.17	0.17	0.21	0.17
Chloromethane	U	0.10	U	0.14	0.74	0.14	0.94	0.14
Cyclohexane	U	0.086	U	0.12	0.20	0.12	0.41	0.12
Dibromochloromethane	U	0.21	U	0.15	U	0.15	U	0.15
1,2-Dibromoethane	U	0.19..	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	U	0.12	U	0.17	1.2	0.17	1.2	0.17
1,1-Dichloroethane	U	0.10	U	0.073	U	0.073	U	0.073
1,2-Dichloroethane	U	0.10	U	0.073	U	0.073	U	0.073
1,1-Dichloroethylene	U	0.099	U	0.071	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.099	U	0.071	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.099	U	0.071	U	0.071	U	0.071
1,2-Dichloropropane	U	0.12	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.17	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	0.90	U	1.3	U	1.3	U	1.3
Ethyl Acetate	U	0.090	U	0.13	0.44	0.13	0.93	0.13
Ethylbenzene	U	0.11	U	0.15	0.16	0.15	0.16	0.15
4-Ethyltoluene	U	0.12	U	0.17	U	0.17	U	0.17
Heptane	U	0.10	U	0.14	0.54	0.14	0.68	0.14
Hexane	U	3.5	U	4.9	U	4.9	U	4.9
2-Hexanone (MBK)	U	0.10	U	0.14	0.22	0.14	U	0.14
Isopropanol	U	2.5	U	3.4	U	3.4	U	3.4
Methyl tert-Butyl Ether (MTBE)	U	0.090	U	0.13	U	0.13	U	0.13
Methylene Chloride	U	0.87	U	1.5	U	1.2	U	2.3
4-Methyl-2-pentanone (MIBK)	U	0.10	U	0.14	U	0.14	U	0.14
Propene	U	1.7	U	2.4	U	2.4	U	2.4
Styrene	U	0.11	U	0.15	0.19	0.15	U	0.15
1,1,2,2-Tetrachloroethane	U	0.17	U	0.12	U	0.12	U	0.12
Tetrachloroethylene	U	0.17	U	0.12	U	0.12	0.13	0.12
Tetrahydrofuran	U	0.074	U	0.10	U	0.10	U	0.10
Toluene	U	0.094	U	0.13	1.2	0.13	1.4	0.13
1,1,1-Trichloroethane	U	0.14	U	0.098	U	0.098	0.11	0.098
1,1,2-Trichloroethane	U	0.14	U	0.098	U	0.098	U	0.098
Trichloroethylene	U	0.13	U	0.097	U	0.097	U	0.097
Trichlorofluoromethane	U	0.14	U	0.20	1.1	0.20	1.2	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.19	U	0.27	0.45	0.27	0.51	0.27
1,2,4-Trimethylbenzene	U	0.12	U	0.17	0.21	0.17	0.20	0.17
1,3,5-Trimethylbenzene	U	0.12	U	0.17	U	0.17	U	0.17
Vinyl Acetate	U	1.8	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.064	U	0.046	U	0.046	U	0.046
m&p-Xylene	U	0.22	U	0.30	0.48	0.30	0.48	0.30
o-Xylene	U	0.11	U	0.15	0.20	0.15	0.20	0.15

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Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-03	14A0739-04	14A0739-05	14A0739-06
Sample Number	219-IA-003	219-IA-004	219-AA-014	219-AA-015
Sample Location	Unit 116	Unit 84	Unit 175	Ernest Street

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	28 J	3.3	16 J	3.3	10 J	3.3	9.6 J	3.3
Benzene	1.1	0.11	0.94	0.11	1.0	0.11	0.71	0.11
Bromoform	U	0.36	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.14	U	0.14	U	0.14	U	0.14
1,3-Butadiene	0.19	0.077	0.17	0.077	0.14	0.077	U	0.077
2-Butanone (MEK)	U	4.1	U	4.1	U	4.1	U	4.1
Carbon Tetrachloride	U	0.11	U	0.11	0.34	0.11	0.29	0.11
Chlorobenzene	U	0.16	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.092	U	0.092	U	0.092	U	0.092
Chloroform	0.22	0.17	0.22	0.17	U	0.17	U	0.17
Chloromethane	1.1	0.14	1.1	0.14	0.95	0.14	0.87	0.14
Cyclohexane	0.17	0.12	0.21	0.12	0.13	0.12	U	0.12
Dibromochloromethane	U	0.15	U	0.15	U	0.15	U	0.15
1,2-Dibromoethane	U	0.27	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	1.3	0.17	1.3	0.17	1.2	0.17	1.2	0.17
1,1-Dichloroethane	U	0.073	U	0.073	U	0.073	U	0.073
1,2-Dichloroethane	0.13	0.073	0.082	0.073	0.062 J	0.073	U	0.073
1,1-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
1,2-Dichloropropane	U	0.16	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.24	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	1.3	U	1.3	U	1.3	U	1.3
Ethyl Acetate	1.6	0.13	0.83	0.13	U	0.13	U	0.13
Ethylbenzene	0.22	0.15	0.24	0.15	0.20	0.15	0.16	0.15
4-Ethyltoluene	U	0.17	U	0.17	U	0.17	U	0.17
Heptane	2.0	0.14	2.0	0.14	0.26	0.14	0.18	0.14
Hexane	U	4.9	U	4.9	U	4.9	U	4.9
2-Hexanone (MBK)	0.27	0.14	0.32	0.14	0.27	0.14	0.26	0.14
Isopropanol	U	3.4	U	3.4	U	3.4	U	3.4
Methyl tert-Butyl Ether (MTBE)	U	0.13	U	0.13	U	0.13	U	0.13
Methylene Chloride	U	1.4	U	2.2	U	4.2	U	1.7
4-Methyl-2-pentanone (MIBK)	U	0.14	U	0.14	U	0.14	U	0.14
Propene	U	2.4	U	2.4	U	2.4	U	2.4
Styrene	U	0.15	0.18	0.15	U	0.15	U	0.15
1,1,2,2-Tetrachloroethane	U	0.12	U	0.12	U	0.12	U	0.12
Tetrachloroethylene	U	0.12	U	0.12	U	0.12	U	0.12
Tetrahydrofuran	0.18	0.10	0.24	0.10	U	0.10	U	0.10
Toluene	1.5	0.13	1.4	0.13	1.3	0.13	0.96	0.13
1,1,1-Trichloroethane	0.10	0.098	U	0.098	U	0.098	U	0.098
1,1,2-Trichloroethane	U	0.098	U	0.098	U	0.098	U	0.098
Trichloroethylene	U	0.097	U	0.097	U	0.097	U	0.097
Trichlorofluoromethane	1.2	0.20	1.2	0.20	1.1	0.20	1.1	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.49	0.27	0.51	0.27	0.53	0.27	0.51	0.27
1,2,4-Trimethylbenzene	0.19	0.17	0.27	0.17	0.24	0.17	0.20	0.17
1,3,5-Trimethylbenzene	U	0.17	U	0.17	U	0.17	U	0.17
Vinyl Acetate	U J	2.5	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.046	U	0.046	0.13	0.046	U	0.046
m&p-Xylene	0.63	0.30	0.68	0.30	0.63	0.30	0.48	0.30
o-Xylene	0.24	0.15	0.26	0.15	0.26	0.15	0.21	0.15

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Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-08	14A0739-09	14A0739-10	14A0739-11
Sample Number	219-IA-005	219-IA-006	219-IA-007	219-IA-008
Sample Location	Unit 50	Unit 50	Unit 34	Unit 34

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	44 J	3.3	56 J	3.3	28 J	3.3	56 J	3.3
Benzene	2.3	0.11	0.84	0.11	0.67	0.11	0.76	0.11
Bromoform	U	0.36	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.14	U	0.14	U	0.14	U	0.14
1,3-Butadiene	0.23	0.077	0.19	0.077	0.082	0.077	0.14	0.077
2-Butanone (MEK)	8.1	4.1	11	4.1	U	4.1	U	4.1
Carbon Tetrachloride	U	0.11	0.41	0.11	0.37	0.11	0.72	0.11
Chlorobenzene	U	0.16	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.092	0.14	0.092	U	0.092	U	0.092
Chloroform	0.19	0.17	0.22	0.17	0.41	0.17	0.53	0.17
Chloromethane	0.95	0.14	1.1	0.14	0.75	0.14	0.94	0.14
Cyclohexane	0.40	0.12	0.29	0.12	0.16	0.12	0.24	0.12
Dibromochloromethane	U	0.15	U	0.15	U	0.15	U	0.15
1,2-Dibromoethane	U	0.27	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	1.2	0.17	1.2	0.17	1.3	0.17	1.3	0.17
1,1-Dichloroethane	U	0.073	U	0.073	U	0.073	U	0.073
1,2-Dichloroethane	U	0.073	U	0.073	0.18	0.073	0.21	0.073
1,1-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
1,2-Dichloropropane	U	0.16	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.24	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	1.3	U	1.3	U	1.3	U	1.3
Ethyl Acetate	0.38	0.13	0.39	0.13	0.50	0.13	3.1	0.13
Ethylbenzene	0.44	0.15	0.47	0.15	0.18	0.15	0.31	0.15
4-Ethyltoluene	0.30	0.17	0.34	0.17	0.21	0.17	0.30	0.17
Heptane	1.3	0.14	0.77	0.14	0.24	0.14	0.40	0.14
Hexane	U	4.9	U	4.9	U	4.9	U	4.9
2-Hexanone (MBK)	0.48	0.14	0.39	0.14	0.49	0.14	0.29	0.14
Isopropanol	14	3.4	12	3.4	29	3.4	320	140
Methyl tert-Butyl Ether (MTBE)	U	0.13	U	0.13	U	0.13	0.22	0.13
Methylene Chloride	15	1.2	20	1.2	U	1.5	U	4.4
4-Methyl-2-pentanone (MIBK)	U	0.14	U	0.14	U	0.14	U	0.14
Propene	U	2.4	U	2.4	U	2.4	U	2.4
Styrene	0.18	0.15	U	0.15	U	0.15	0.16	0.15
1,1,2,2-Tetrachloroethane	U	0.12	U	0.12	U	0.12	U	0.12
Tetrachloroethylene	U	0.12	0.45	0.12	0.55	0.12	0.58	0.12
Tetrahydrofuran	8.5	0.10	14	0.10	0.42	0.10	0.19	0.10
Toluene	2.0	0.13	1.9	0.13	1.1	0.13	2.4	0.13
1,1,1-Trichloroethane	U	0.098	U	0.098	U	0.098	U	0.098
1,1,2-Trichloroethane	U	0.098	U	0.098	U	0.098	U	0.098
Trichloroethylene	U	0.097	U	0.097	U	0.097	U	0.097
Trichlorofluoromethane	1.2	0.20	1.2	0.20	1.1	0.20	1.2	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	0.27	0.53	0.27	0.54	0.27	0.57	0.27
1,2,4-Trimethylbenzene	1.4	0.17	1.6	0.17	0.91	0.17	1.2	0.17
1,3,5-Trimethylbenzene	0.59	0.17	0.70	0.17	0.26	0.17	0.36	0.17
Vinyl Acetate	U J	2.5	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.046	U	0.046	U	0.046	U	0.046
m&p-Xylene	1.6	0.30	1.7	0.30	0.57	0.30	0.90	0.30
o-Xylene	0.63	0.15	0.70	0.15	0.27	0.15	0.38	0.15

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Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-18	14A0739-19
Sample Number	219-IA-009	219-IA-010
Sample Location	Unit 34	Unit 70

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	48 J	3.3	160 J	95
Benzene	0.72	0.11	0.72	0.11
Bromoform	U	0.36	U	0.36
Bromomethane	U	0.14	U	0.14
1,3-Butadiene	U	0.077	0.093	0.077
2-Butanone (MEK)	U	4.1	U	4.1
Carbon Tetrachloride	U	0.11	0.41	0.11
Chlorobenzene	U	0.16	U	0.16
Chloroethane	U	0.092	U	0.092
Chloroform	0.49	0.17	0.19	0.17
Chloromethane	0.95	0.14	0.82	0.14
Cyclohexane	0.22	0.12	0.13	0.12
Dibromochloromethane	U	0.15	U	0.15
1,2-Dibromoethane	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.21	U	0.21
Dichlorodifluoromethane	1.1	0.17	1.3	0.17
1,1-Dichloroethane	U	0.073	U	0.073
1,2-Dichloroethane	0.20	0.073	0.15	0.073
1,1-Dichloroethylene	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.071	U	0.071
1,2-Dichloropropane	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.24	U	0.24
1,4-Dioxane	U	1.3	U	1.3
Ethyl Acetate	3.3	0.13	0.51	0.13
Ethylbenzene	0.29	0.15	0.25	0.15
4-Ethyltoluene	0.28	0.17	U	0.17
Heptane	0.37	0.14	0.23	0.14
Hexane	U	4.9	U	4.9
2-Hexanone (MBK)	U	0.14	0.30	0.14
Isopropanol	230	200	4.2	3.4
Methyl tert-Butyl Ether (MTBE)	0.21	0.13	U	0.13
Methylene Chloride	U	4.5	U	1.5
4-Methyl-2-pentanone (MIBK)	U	0.14	0.22	0.14
Propene	U	2.4	U	2.4
Styrene	0.19	0.15	0.28	0.15
1,1,2,2-Tetrachloroethane	U	0.12	U	0.12
Tetrachloroethylene	0.55	0.12	U	0.12
Tetrahydrofuran	0.18	0.10	U	0.10
Toluene	2.3	0.13	1.5	0.13
1,1,1-Trichloroethane	U	0.098	U	0.098
1,1,2-Trichloroethane	U	0.098	U	0.098
Trichloroethylene	U	0.097	U	0.097
Trichlorofluoromethane	1.2	0.20	1.2	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.54	0.27	0.55	0.27
1,2,4-Trimethylbenzene	1.1	0.17	0.24	0.17
1,3,5-Trimethylbenzene	0.32	0.17	U	0.17
Vinyl Acetate	U J	2.5	U J	2.5
Vinyl Chloride	U	0.046	U	0.046
m&p-Xylene	0.84	0.30	0.63	0.30
o-Xylene	0.35	0.15	0.25	0.15

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Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number		14A0739-20	14A0739-21	14A0739-22
Sample Number	B090019-BLK1	219-IA-011	219-IA-012	219-IA-013
Sample Location	2/5/2014	Unit 70	Unit 175	Unit 175

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	U	2.4	130 J	95	43 J	3.3	23 J	3.3
Benzene	U	0.080	0.75	0.11	1.3	0.11	1.3	0.11
Bromoform	U	0.26	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.097	U	0.14	U	0.14	U	0.14
1,3-Butadiene	U	0.055	0.11	0.077	0.13	0.077	0.21	0.077
2-Butanone (MEK)	U	2.9	U	4.1	6.1	4.1	U	4.1
Carbon Tetrachloride	U	0.16	0.35	0.22	0.55	0.22	0.39	0.22
Chlorobenzene	U	0.12	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.066	U	0.092	U	0.092	U	0.092
Chloroform	U	0.12	0.19	0.17	2.6	0.17	0.95	0.17
Chloromethane	U	0.10	0.85	0.14	1.2	0.14	0.85	0.14
Cyclohexane	U	0.086	0.13	0.12	0.21	0.12	0.32	0.12
Dibromochloromethane	U	0.21	U	0.30	U	0.30	U	0.30
1,2-Dibromoethane	U	0.27	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	U	0.12	1.4	0.17	3.2	0.17	2.1	0.17
1,1-Dichloroethane	U	0.10	U	0.14	U	0.14	U	0.14
1,2-Dichloroethane	U	0.10	0.15	0.14	U	0.14	U	0.14
1,1-Dichloroethylene	U	0.099	U	0.14	U	0.14	U	0.14
cis-1,2-Dichloroethylene	U	0.099	U	0.14	U	0.14	U	0.14
trans-1,2-Dichloroethylene	U	0.099	U	0.14	U	0.14	U	0.14
1,2-Dichloropropane	U	0.12	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.17	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	0.90	U	1.3	U	1.3	U	1.3
Ethyl Acetate	U	0.090	0.61	0.13	1.4	0.13	0.73	0.13
Ethylbenzene	U	0.11	0.25	0.15	2.5	0.15	0.93	0.15
4-Ethyltoluene	U	0.12	U	0.17	U	0.17	0.12 J	0.17
Heptane	U	0.10	0.25	0.14	0.37	0.14	0.99	0.14
Hexane	U	3.5	U	4.9	28	4.9	U	4.9
2-Hexanone (MBK)	U	0.10	0.53 J	0.14	0.24 J	0.14	U J	0.14
Isopropanol	U	2.5	U	3.4	3.5	3.4	6.7	3.4
Methyl tert-Butyl Ether (MTBE)	U	0.090	U	0.13	U	0.13	U	0.13
Methylene Chloride	U	0.87	U	2.1	61	1.2	U	2.3
4-Methyl-2-pentanone (MIBK)	U J	0.10	0.23 J	0.14	U J	0.14	U	0.14
Propene	U	1.7	U	2.4	U	2.4	U	2.4
Styrene	U	0.11	0.16	0.15	U	0.15	U	0.15
1,1,2,2-Tetrachloroethane	U	0.17	U	0.24	U	0.24	U	0.24
Tetrachloroethylene	U	0.17	U	0.24	0.31	0.24	U	0.24
Tetrahydrofuran	U	0.074	0.14	0.10	0.81	0.10	0.23	0.10
Toluene	U	0.094	1.4	0.13	7.5	0.13	3.3	0.13
1,1,1-Trichloroethane	U	0.14	U	0.19	0.60	0.19	0.34	0.19
1,1,2-Trichloroethane	U	0.14	U	0.19	U	0.19	U	0.19
Trichloroethylene	U	0.13	U	0.19	U	0.19	U	0.19
Trichlorofluoromethane	U	0.14	1.2	0.20	11	0.20	4.6	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.19	0.55	0.27	0.83	0.27	0.59	0.27
1,2,4-Trimethylbenzene	U	0.12	0.26	0.17	0.54	0.17	0.43	0.17
1,3,5-Trimethylbenzene	U	0.12	U	0.17	0.17	0.17	U	0.17
Vinyl Acetate	U	1.8	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.064	U	0.089	U	0.089	U	0.089
m&p-Xylene	U	0.22	0.61	0.30	7.9	0.30	3.3	0.30
o-Xylene	U	0.11	0.24	0.15	2.0	0.15	1.1	0.15

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Environmental Response Team/Scientific Engineering, Response and Analytical Services
2890 Woodbridge Avenue, Building 209 Annex
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Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-12	14A0739-13	14A0739-14	14A0739-15
Sample Number	219-SS-020	219-SS-022	219-SS-016	219-SS-017
Sample Location	Unit 70	Unit 175	Unit 84	Unit 116

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	77 J	9.5	79 J	9.5	120 J	9.5	140 J	9.5
Benzene	U	0.32	U	0.32	0.34	0.32	1.2	0.32
Bromoform	U	1.0	U	1.0	U	1.0	U	1.0
Bromomethane	U	0.39	U	0.39	U	0.39	U	0.39
1,3-Butadiene	U	0.22	U	0.22	U	0.22	0.50	0.22
2-Butanone (MEK)	U	12	U	12	U	12	U	12
Carbon Tetrachloride	U	0.63	U	0.63	U	0.63	U	0.63
Chlorobenzene	U	0.46	U	0.46	U	0.46	U	0.46
Chloroethane	U	0.26	U	0.26	U	0.26	U	0.26
Chloroform	U	0.49	0.78	0.49	U	0.49	0.77	0.49
Chloromethane	U	0.41	U	0.41	0.93	0.41	0.94	0.41
Cyclohexane	0.36	0.34	U	0.34	U	0.34	0.50	0.34
Dibromochloromethane	U	0.85	U	0.85	U	0.85	U	0.85
1,2-Dibromoethane	U	0.77	U	0.77	U	0.77	U	0.77
1,2-Dichlorobenzene	U	0.60	U	0.60	U	0.60	U	0.60
1,3-Dichlorobenzene	U	0.60	U	0.60	U	0.60	U	0.60
1,4-Dichlorobenzene	U	0.60	U	0.60	U	0.60	U	0.60
Dichlorodifluoromethane	1.9	0.49	7.5	0.49	2.2	0.49	1.8	0.49
1,1-Dichloroethane	U	0.40	U	0.40	U	0.40	U	0.40
1,2-Dichloroethane	U	0.40	U	0.40	U	0.40	U	0.40
1,1-Dichloroethylene	U	0.40	U	0.40	U	0.40	U	0.40
cis-1,2-Dichloroethylene	U	0.40	U	0.40	U	0.40	U	0.40
trans-1,2-Dichloroethylene	U	0.40	U	0.40	U	0.40	U	0.40
1,2-Dichloropropane	U	0.46	U	0.46	U	0.46	U	0.46
cis-1,3-Dichloropropene	U	0.45	U	0.45	U	0.45	U	0.45
trans-1,3-Dichloropropene	U	0.45	U	0.45	U	0.45	U	0.45
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.70	U	0.70	U	0.70	U	0.70
1,4-Dioxane	U	3.6	U	3.6	U	3.6	U	3.6
Ethyl Acetate	U	0.36	U	0.36	1.1	0.36	1.1	0.36
Ethylbenzene	U	0.43	U	0.43	U	0.43	0.65	0.43
4-Ethyltoluene	U	0.49	U	0.49	U	0.49	U	0.49
Heptane	U	0.41	U	0.41	U	0.41	1.4	0.41
Hexane	U	14	U	14	U	14	U	14
2-Hexanone (MBK)	0.61 J	0.41	0.47 J	0.41	1.1 J	0.41	0.86 J	0.41
Isopropanol	U	9.8	U	9.8	U	9.8	U	9.8
Methyl tert-Butyl Ether (MTBE)	U	0.36	U	0.36	U	0.36	U	0.36
Methylene Chloride	U	3.8	U	3.5	14	3.5	12	3.5
4-Methyl-2-pentanone (MIBK)	U J	0.41	U J	0.41	U J	0.41	U J	0.41
Propene	U	6.9	U	6.9	U	6.9	U	6.9
Styrene	U	0.43	U	0.43	U	0.43	U	0.43
1,1,2,2-Tetrachloroethane	U	0.69	U	0.69	U	0.69	U	0.69
Tetrachloroethylene	1.5	0.68	0.92	0.68	1.0	0.68	0.81	0.68
Tetrahydrofuran	U	0.29	U	0.29	U	0.29	U	0.29
Toluene	U	0.38	U	0.38	1.0	0.38	2.2	0.38
1,1,1-Trichloroethane	U	0.55	1.8	0.55	U	0.55	U	0.55
1,1,2-Trichloroethane	U	0.55	U	0.55	U	0.55	U	0.55
Trichloroethylene	U	0.54	8.4	0.54	U	0.54	U	0.54
Trichlorofluoromethane	1.2	0.56	3.3	0.56	1.4	0.56	1.4	0.56
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.77	U	0.77	U	0.77	U	0.77
1,2,4-Trimethylbenzene	U	0.49	U	0.49	0.79	0.49	U	0.49
1,3,5-Trimethylbenzene	U	0.49	U	0.49	U	0.49	U	0.49
Vinyl Acetate	U J	7.0	U J	7.0	U J	7.0	U J	7.0
Vinyl Chloride	U	0.26	U	0.26	U	0.26	U	0.26
m&p-Xylene	U	0.87	U	0.87	U	0.87	1.3	0.87
o-Xylene	U	0.43	0.63	0.43	1.4	0.43	1.5	0.43

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Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 Passyunk Soil Gas Site

Method : EPA TO-15

Laboratory Sample Number	14A0739-16	14A0739-17
Sample Number	219-SS-018	219-SS-019
Sample Location	Unit 50	Unit 34

Analyte	Results µg/m^3		*RL* µg/m^3	Results µg/m^3		*RL* µg/m^3
Acetone	64	J	9.5	98	J	9.5
Benzene	U		0.32	U		0.32
Bromoform	U		1.0	U		1.0
Bromomethane	U		0.39	U		0.39
1,3-Butadiene	U		0.22	U		0.22
2-Butanone (MEK)	U		12	U		12
Carbon Tetrachloride	U		0.63	U		0.63
Chlorobenzene	U		0.46	U		0.46
Chloroethane	U		0.26	U		0.26
Chloroform	2.4		0.49	3.6		0.49
Chloromethane	U		0.41	U		0.41
Cyclohexane	U		0.34	U		0.34
Dibromochloromethane	U		0.85	U		0.85
1,2-Dibromoethane	U		0.77	U		0.77
1,2-Dichlorobenzene	U		0.60	U		0.60
1,3-Dichlorobenzene	U		0.60	U		0.60
1,4-Dichlorobenzene	U		0.60	U		0.60
Dichlorodifluoromethane	2.1		0.49	2.2		0.49
1,1-Dichloroethane	U		0.40	U		0.40
1,2-Dichloroethane	U		0.40	U		0.40
1,1-Dichloroethylene	U		0.40	U		0.40
cis-1,2-Dichloroethylene	U		0.40	U		0.40
trans-1,2-Dichloroethylene	U		0.40	U		0.40
1,2-Dichloropropane	U		0.46	U		0.46
cis-1,3-Dichloropropene	U		0.45	U		0.45
trans-1,3-Dichloropropene	U		0.45	U		0.45
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U		0.70	U		0.70
1,4-Dioxane	U		3.6	U		3.6
Ethyl Acetate	U		0.36	0.75		0.36
Ethylbenzene	U		0.43	U		0.43
4-Ethyltoluene	U		0.49	U		0.49
Heptane	U		0.41	U		0.41
Hexane	U		14	U		14
2-Hexanone (MBK)	U	J	0.41	0.72	J	0.41
Isopropanol	U		9.8	U		9.8
Methyl tert-Butyl Ether (MTBE)	U		0.36	U		0.36
Methylene Chloride	15		3.5	22		3.5
4-Methyl-2-pentanone (MIBK)	U	J	0.41	U	J	0.41
Propene	U		6.9	U		6.9
Styrene	U		0.43	U		0.43
1,1,2,2-Tetrachloroethane	U		0.69	U		0.69
Tetrachloroethylene	U		0.68	3.8		0.68
Tetrahydrofuran	0.87		0.29	U		0.29
Toluene	0.41		0.38	0.51		0.38
1,1,1-Trichloroethane	U		0.55	0.58		0.55
1,1,2-Trichloroethane	U		0.55	U		0.55
Trichloroethylene	0.55		0.54	U		0.54
Trichlorofluoromethane	1.4		0.56	1.4		0.56
1,1,2-Trichloro-1,2,2-trifluoroethane	U		0.77	U		0.77
1,2,4-Trimethylbenzene	U		0.49	U		0.49
1,3,5-Trimethylbenzene	U		0.49	U		0.49
Vinyl Acetate	U	J	7.0	U	J	7.0
Vinyl Chloride	U		0.26	U		0.26
m&p-Xylene	U		0.87	U		0.87
o-Xylene	0.48		0.43	0.82		0.43

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Table 2.1 Results of the LCS Analysis for VOC in Air
WA # SERAS-219 Passyunk Soil Gas Site

Sample ID: LCS 020414

Analyte	Spike Added ppbv	Spike Recovered ppbv	LCS % Recovery		QC Limits % Recovery
Acetone	5.0	4.9	98		70 - 130
Benzene	5.0	4.2	84		70 - 130
Bromoform	5.0	4.9	98		70 - 130
Bromomethane	5.0	4.3	85		70 - 130
1,3-Butadiene	5.0	4.7	93		70 - 130
2-Butanone (MEK)	5.0	3.7	73		70 - 130
Carbon Tetrachloride	5.0	4.4	89		70 - 130
Chlorobenzene	5.0	5.0	99		70 - 130
Chloroethane	5.0	5.2	104		70 - 130
Chloroform	5.0	4.6	93		70 - 130
Chloromethane	5.0	4.3	86		70 - 130
Cyclohexane	5.0	4.1	82		70 - 130
Dibromochloromethane	5.0	5.0	100		70 - 130
1,2-Dibromoethane	5.0	5.0	100		70 - 130
1,2-Dichlorobenzene	5.0	5.1	102		70 - 130
1,3-Dichlorobenzene	5.0	5.2	103		70 - 130
1,4-Dichlorobenzene	5.0	5.0	101		70 - 130
Dichlorodifluoromethane (12)	5.0	4.4	88		70 - 130
1,1-Dichloroethane	5.0	4.5	90		70 - 130
1,2-Dichloroethane	5.0	4.5	89		70 - 130
1,1-Dichloroethylene	5.0	4.1	83		70 - 130
cis-1,2-Dichloroethylene	5.0	4.7	93		70 - 130
trans-1,2-Dichloroethylene	5.0	4.4	89		70 - 130
1,2-Dichloropropane	5.0	4.5	90		70 - 130
cis-1,3-Dichloropropene	5.0	4.5	89		70 - 130
trans-1,3-Dichloropropene	5.0	4.6	92		70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane (	5.0	4.5	90		70 - 130
1,4-Dioxane	5.0	4.1	81		70 - 130
Ethyl Acetate	5.0	5.6	112		70 - 130
Ethylbenzene	5.0	4.8	96		70 - 130
4-Ethyltoluene	5.0	4.8	97		70 - 130
Heptane	5.0	4.2	83		70 - 130
Hexane	5.0	4.2	84		70 - 130
2-Hexanone (MBK)	5.0	4.0	80		70 - 130
Isopropanol	5.0	5.2	103		70 - 130
Methyl tert-Butyl Ether (MTBE)	5.0	4.3	86		70 - 130
Methylene Chloride	5.0	4.0	80		70 - 130
4-Methyl-2-pentanone (MIBK)	5.0	3.8	76		70 - 130
Propene	5.0	4.5	90		70 - 130
Styrene	5.0	5.1	102		70 - 130
1,1,2,2-Tetrachloroethane	5.0	5.5	109		70 - 130
Tetrachloroethylene	5.0	5.0	100		70 - 130
Tetrahydrofuran	5.0	4.5	90		70 - 130
Toluene	5.0	4.8	96		70 - 130
1,1,1-Trichloroethane	5.0	4.3	86		70 - 130
1,1,2-Trichloroethane	5.0	5.3	106		70 - 130
Trichloroethylene	5.0	4.4	89		70 - 130
Trichlorofluoromethane (11)	5.0	4.5	89		70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (11	5.0	4.2	85		70 - 130
1,2,4-Trimethylbenzene	5.0	5.2	104		70 - 130
1,3,5-Trimethylbenzene	5.0	5.1	103		70 - 130
Vinyl Acetate	5.0	2.8	55	*	70 - 130
Vinyl Chloride	5.0	4.7	94		70 - 130
m&p-Xylene	10	10	100		70 - 130
o-Xylene	5.0	5.0	100		70 - 130

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Table 2.1 (cont) Results of the LCS Analysis for VOC in Air
WA # SERAS-219 Passyunk Facility Study

Sample ID: LCS 020514

Analyte	Spike Added ppbv	Spike Recovered ppbv	LCS % Recovery		QC Limits % Recovery
Acetone	5.0	4.8	96		70 - 130
Benzene	5.0	4.1	81		70 - 130
Bromoform	5.0	4.6	93		70 - 130
Bromomethane	5.0	4.4	88		70 - 130
1,3-Butadiene	5.0	4.8	96		70 - 130
2-Butanone (MEK)	5.0	3.6	73		70 - 130
Carbon Tetrachloride	5.0	4.2	83		70 - 130
Chlorobenzene	5.0	4.8	97		70 - 130
Chloroethane	5.0	4.8	96		70 - 130
Chloroform	5.0	4.8	97		70 - 130
Chloromethane	5.0	4.4	88		70 - 130
Cyclohexane	5.0	4.1	81		70 - 130
Dibromochloromethane	5.0	4.7	94		70 - 130
1,2-Dibromoethane	5.0	4.7	94		70 - 130
1,2-Dichlorobenzene	5.0	4.8	95		70 - 130
1,3-Dichlorobenzene	5.0	4.9	98		70 - 130
1,4-Dichlorobenzene	5.0	4.7	95		70 - 130
Dichlorodifluoromethane	5.0	4.5	90		70 - 130
1,1-Dichloroethane	5.0	4.7	93		70 - 130
1,2-Dichloroethane	5.0	4.4	87		70 - 130
1,1-Dichloroethylene	5.0	4.2	85		70 - 130
cis-1,2-Dichloroethylene	5.0	4.7	94		70 - 130
trans-1,2-Dichloroethylene	5.0	4.6	91		70 - 130
1,2-Dichloropropane	5.0	4.3	85		70 - 130
cis-1,3-Dichloropropene	5.0	4.3	85		70 - 130
trans-1,3-Dichloropropene	5.0	4.3	86		70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.0	4.8	95		70 - 130
1,4-Dioxane	5.0	4.0	80		70 - 130
Ethyl Acetate	5.0	5.7	114		70 - 130
Ethylbenzene	5.0	4.6	92		70 - 130
4-Ethyltoluene	5.0	4.6	93		70 - 130
Heptane	5.0	3.9	78		70 - 130
Hexane	5.0	4.0	80		70 - 130
2-Hexanone (MBK)	5.0	3.4	67	*	70 - 130
Isopropanol	5.0	5.2	103		70 - 130
Methyl tert-Butyl Ether (MTBE)	5.0	4.6	91		70 - 130
Methylene Chloride	5.0	3.9	79		70 - 130
4-Methyl-2-pentanone (MIBK)	5.0	3.3	66	*	70 - 130
Propene	5.0	4.4	88		70 - 130
Styrene	5.0	4.9	98		70 - 130
1,1,2,2-Tetrachloroethane	5.0	5.0	100		70 - 130
Tetrachloroethylene	5.0	4.9	98		70 - 130
Tetrahydrofuran	5.0	5.0	100		70 - 130
Toluene	5.0	4.7	93		70 - 130
1,1,1-Trichloroethane	5.0	4.0	80		70 - 130
1,1,2-Trichloroethane	5.0	5.0	100		70 - 130
Trichloroethylene	5.0	4.3	87		70 - 130
Trichlorofluoromethane	5.0	4.7	93		70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	4.6	93		70 - 130
1,2,4-Trimethylbenzene	5.0	4.8	97		70 - 130
1,3,5-Trimethylbenzene	5.0	4.8	95		70 - 130
Vinyl Acetate	5.0	2.7	54	*	70 - 130
Vinyl Chloride	5.0	4.9	98		70 - 130
m&p-Xylene	10	9.4	94		70 - 130
o-Xylene	5.0	4.7	94		70 - 130

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Table 2.1 (cont) Results of the LCS Analysis for VOC in Air
WA # SERAS-219 Passyunk Facility Study

Sample ID: LCS 020614

Analyte	Spike Added ppbv	Spike Recovered ppbv	LCS % Recovery		QC Limits % Recovery
Acetone	5.0	5.2	104		70 - 130
Benzene	5.0	4.5	89		70 - 130
Bromoform	5.0	5.3	105		70 - 130
Bromomethane	5.0	4.7	93		70 - 130
1,3-Butadiene	5.0	4.7	93		70 - 130
2-Butanone (MEK)	5.0	3.9	79		70 - 130
Carbon Tetrachloride	5.0	4.5	90		70 - 130
Chlorobenzene	5.0	5.4	109		70 - 130
Chloroethane	5.0	5.1	102		70 - 130
Chloroform	5.0	5.3	106		70 - 130
Chloromethane	5.0	4.3	86		70 - 130
Cyclohexane	5.0	4.4	88		70 - 130
Dibromochloromethane	5.0	5.3	106		70 - 130
1,2-Dibromoethane	5.0	5.3	106		70 - 130
1,2-Dichlorobenzene	5.0	5.5	109		70 - 130
1,3-Dichlorobenzene	5.0	5.6	111		70 - 130
1,4-Dichlorobenzene	5.0	5.4	108		70 - 130
Dichlorodifluoromethane	5.0	4.9	97		70 - 130
1,1-Dichloroethane	5.0	5.1	101		70 - 130
1,2-Dichloroethane	5.0	4.7	94		70 - 130
1,1-Dichloroethylene	5.0	4.6	91		70 - 130
cis-1,2-Dichloroethylene	5.0	5.1	103		70 - 130
trans-1,2-Dichloroethylene	5.0	4.9	98		70 - 130
1,2-Dichloropropane	5.0	4.6	91		70 - 130
cis-1,3-Dichloropropene	5.0	4.6	91		70 - 130
trans-1,3-Dichloropropene	5.0	4.6	93		70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.0	4.9	98		70 - 130
1,4-Dioxane	5.0	4.3	87		70 - 130
Ethyl Acetate	5.0	6.3	125		70 - 130
Ethylbenzene	5.0	5.2	103		70 - 130
4-Ethyltoluene	5.0	5.2	104		70 - 130
Heptane	5.0	4.2	84		70 - 130
Hexane	5.0	4.4	87		70 - 130
2-Hexanone (MBK)	5.0	3.8	76		70 - 130
Isopropanol	5.0	5.6	112		70 - 130
Methyl tert-Butyl Ether (MTBE)	5.0	4.9	99		70 - 130
Methylene Chloride	5.0	4.2	85		70 - 130
4-Methyl-2-pentanone (MIBK)	5.0	3.5	71		70 - 130
Propene	5.0	4.8	95		70 - 130
Styrene	5.0	5.5	110		70 - 130
1,1,2,2-Tetrachloroethane	5.0	5.6	112		70 - 130
Tetrachloroethylene	5.0	5.6	112		70 - 130
Tetrahydrofuran	5.0	5.4	108		70 - 130
Toluene	5.0	5.2	105		70 - 130
1,1,1-Trichloroethane	5.0	4.4	88		70 - 130
1,1,2-Trichloroethane	5.0	5.7	114		70 - 130
Trichloroethylene	5.0	4.7	93		70 - 130
Trichlorofluoromethane	5.0	5.0	100		70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	5.1	101		70 - 130
1,2,4-Trimethylbenzene	5.0	5.5	110		70 - 130
1,3,5-Trimethylbenzene	5.0	5.3	107		70 - 130
Vinyl Acetate	5.0	2.9	58	*	70 - 130
Vinyl Chloride	5.0	4.8	96		70 - 130
m&p-Xylene	10	11	106		70 - 130
o-Xylene	5.0	5.2	105		70 - 130

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Table 2.2 Results of the Duplicate Analysis for VOC in Air
WA # SERAS-219 Passyunk Soil Gas Site

Sample ID: 219-IA-013

Analyte	Initial Analysis ppbv	Duplicate Analysis ppbv	RPD	QC Limit RPD
Acetone	9.5	9.8	3	≤25
Benzene	0.42	0.43	2	≤25
Bromoform	U	U	NC	≤25
Bromomethane	U	U	NC	≤25
1,3-Butadiene	0.095	0.11	11	≤25
2-Butanone (MEK)	U	U	NC	≤25
Carbon Tetrachloride	0.062	0.064	3	≤25
Chlorobenzene	U	U	NC	≤25
Chloroethane	U	U	NC	≤25
Chloroform	0.19	0.20	5	≤25
Chloromethane	0.41	0.42	3	≤25
Cyclohexane	0.093	0.11	16	≤25
Dibromochloromethane	U	U	NC	≤25
1,2-Dibromoethane	U	U	NC	≤25
1,2-Dichlorobenzene	U	U	NC	≤25
1,3-Dichlorobenzene	U	U	NC	≤25
1,4-Dichlorobenzene	U	U	NC	≤25
Dichlorodifluoromethane	0.42	0.50	18	≤25
1,1-Dichloroethane	U	U	NC	≤25
1,2-Dichloroethane	U	U	NC	≤25
1,1-Dichloroethylene	U	U	NC	≤25
cis-1,2-Dichloroethylene	U	U	NC	≤25
trans-1,2-Dichloroethylene	U	U	NC	≤25
1,2-Dichloropropane	U	U	NC	≤25
cis-1,3-Dichloropropene	U	U	NC	≤25
trans-1,3-Dichloropropene	U	U	NC	≤25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	U	NC	≤25
1,4-Dioxane	U	U	NC	≤25
Ethyl Acetate	0.20	0.21	5	≤25
Ethylbenzene	0.21	0.22	2	≤25
4-Ethyltoluene	U	U	NC	≤25
Heptane	0.24	0.26	5	≤25
Hexane	U	U	NC	≤25
2-Hexanone (MBK)	U	U	NC	≤25
Isopropanol	2.7	2.8	1	≤25
Methyl tert-Butyl Ether (MTBE)	U	U	NC	≤25
Methylene Chloride	0.67	0.72	8	≤25
4-Methyl-2-pentanone (MIBK)	U	U	NC	≤25
Propene	U	U	NC	≤25
Styrene	U	U	NC	≤25
1,1,2,2-Tetrachloroethane	U	U	NC	≤25
Tetrachloroethylene	U	U	NC	≤25
Tetrahydrofuran	0.079	0.073	7	≤25
Toluene	0.87	0.87	0	≤25
1,1,1-Trichloroethane	0.062	0.063	1	≤25
1,1,2-Trichloroethane	U	U	NC	≤25
Trichloroethylene	U	U	NC	≤25
Trichlorofluoromethane	0.81	0.84	4	≤25
1,1,2-Trichloro-1,2,2-trifluoroethane	0.077	0.079	3	≤25
1,2,4-Trimethylbenzene	0.088	0.090	1	≤25
1,3,5-Trimethylbenzene	U	U	NC	≤25
Vinyl Acetate	U	U	NC	≤25
Vinyl Chloride	U	U	NC	≤25
m&p-Xylene	0.75	0.76	1	≤25
o-Xylene	0.25	0.25	1	≤25

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LOCKHEED MARTIN

Lockheed Martin Information Systems & Global Solutions (IS&GS - Civil)
Environmental Services SERAS
2890 Woodbridge Avenue, Building 209 Annex
Edison, NJ 08837-3679
Telephone: 732-321-4200, Facsimile: 732-494-4021

Contest Analytical
39 Spruce Street
East Long Meadow, MA
01028

Attn: Susan Burney

7 January 2014

As per Lockheed Martin blanket purchase authorization # BPA 4400003548, for Project 0219, please analyze::

Analysis/Method	Matrix	# of samples
VOA/TO-15 Attached List. Most compounds at .030 ppbv RL for IAQ/ambient. Sublab soil gas at 0.050 ppbv. RL.	Summa/Air	45
Data package: Full level four documentation with .csv file. Units must be in ppbv and ug/m3.		

The above number of samples are expected to arrive at your laboratory on or about January 24, 2014. Preliminary sample and QC result tables and a signed copy of our chain of custody must be sent to SERAS 5 business days after sample receipt. The complete data package is due 10 business days after receipt of the samples. The complete data package must include all items on the deliverables checklist. Please submit all reports concerning this project to **Misty Barkley at misty.barkley@lmco.com.**

The laboratory must provide documentation for individual summa canister and flow controller certification. The summa canisters and preset orifices must arrive at SERAS by January 17, 2014. The flow controllers should have 1/4 inch fittings.

Sincerely,

Jay Patel
Analytical Support Chemist
Lockheed Martin / SERAS Project

cc. D. Mickunas
D. Killeen
J. Patel
G. Depasquale
C. Steffensen

Compound	RL ppbv	RL µg/m3
1,1,1-Trichloroethane	0.0300	0.164
1,1,2,2-Tetrachloroethane	0.0300	0.206
1,1,2-Trichloroethane	0.0300	0.164
1,1-Dichloroethane	0.0300	0.121
1,1-Dichloroethene	0.0300	0.119
1,2,3-Trichloropropane	0.0300	0.181
1,2,4-Trimethylbenzene	0.0300	0.147
1,2-Dibromoethane	0.0300	0.231
1,2-Dichlorobenzene	0.0300	0.180
1,2-Dichloroethane	0.0300	0.121
1,2-Dichloropropane	0.0300	0.139
1,3,5-trimethylbenzene	0.0300	0.147
1,3-Butadiene	0.0300	0.0664
1,3-Dichlorobenzene	0.0300	0.180
1,4-Dichlorobenzene	0.0300	0.180
1,4-Dioxane	0.0300	0.108
2-Butanone	0.0300	0.0885
2-Hexanone	0.0300	0.123
Acetone	0.100	0.238
Benzene	0.0300	0.0958
Bromoform(Tribromomethane)	0.0300	0.310
Bromomethane	0.0300	0.117
Carbon Tetrachloride	0.0300	0.189
Chlorobenzene	0.0300	0.138
Chloroethane	0.0300	0.0792
Chloroform	0.0300	0.146
Chloromethane	0.0300	0.0620
cis-1,2-Dichloroethene	0.0300	0.119
cis-1,3-Dichloropropene	0.0300	0.137
Cyclohexane	0.0300	0.103
Dibromochloromethane	0.0300	0.201
Dichlorodifluoromethane	0.0300	0.148
Dichlorotetrafluoroethane	0.0300	0.210
Ethyl Acetate	0.0300	0.108
Ethylbenzene	0.0300	0.130
Ethyltoluene	0.0300	0.147
Heptane	0.0300	0.123

Hexane	0.0300	0.106
Isopropyl Alcohol	0.0300	0.0737
m&p-Xylene	0.0600	0.261
Methyl Isobutyl Ketone	0.0300	0.123
Methylene Chloride	0.0300	0.104
MTBE	0.0300	0.108
o-Xylene	0.0300	0.130
Propylene	0.0300	0.0516
Styrene	0.0300	0.128
Tetrachloroethene	0.0300	0.203
Tetrahydrofuran	0.0300	0.0885
Toluene	0.0300	0.113
trans-1,2-Dichloroethene	0.0300	0.119
trans-1,3-Dichloropropene	0.0300	0.136
Trichloroethene	0.0300	0.161
Trichlorofluoromethane	0.0300	0.169
Trichlorotrifluoroethane	0.0300	0.230
Vinyl Acetate	0.0300	0.106
Vinyl Chloride	0.0300	0.0767

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USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-093133-0001
Case #: 1
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Num b Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
22	219-IA-013	Unit 175	TO-15	Indoor Air	1/23/2014	1	SUMMA	1640	3542	-30	-11	3:02:00 PM	1:45:00 PM

1/24/14

Special Instructions: Indoor Air Samples

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Air Analysis		1/24/14		1/27/14	0940						

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3

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USEPA

DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD

Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-093609-0002

Case #: 2
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
08	219-IA-005	Unit 50	TO-15	Indoor Air	1/23/2014	1	SUMMA	1135	3477	-30	-12	12:09:00 PM	11:32:00 AM
09	219-IA-006	Unit 50	TO-15	Indoor Air	1/23/2014	1	SUMMA	1152	3478	-30	-12	12:13:00 PM	11:25:00 AM
10	219-IA-007	Unit 34	TO-15	Indoor Air	1/23/2014	1	SUMMA	1087	3475	-30	-13	12:41:00 PM	11:01:00 AM
11	219-IA-008	Unit 34	TO-15	Indoor Air	1/23/2014	1	SUMMA	1018	3407	-30	-12	12:44:00 PM	11:04:00 AM

CS 1/24/14

Special Instructions: Indoor Air Samples

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All Analysis	CS	1/24/14		1/27/14	0940						

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USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo:

14A0739

CHAIN OF CUSTODY RECORD

Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-093757-0003

Case #: 3
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
01	219-IA-001	Unit 84	TO-15	Indoor Air	1/23/2014	1	SUMMA	1035	3421	-30	-10.5	11:49:00 AM	10:40:00 AM
02	219-IA-002	Unit 116	TO-15	Indoor Air	1/23/2014	1	SUMMA	1071	3424	-30	-10	11:48:00 AM	10:45:00 AM
03	219-IA-003	Unit 116	TO-15	Indoor Air	1/23/2014	1	SUMMA	1048	3422	-30	-10	11:51:00 AM	10:34:00 AM
04	219-IA-004	Unit 84	TO-15	Indoor Air	1/23/2014	1	SUMMA	1085	3425	-30	-12	11:51:00 AM	10:37:00 AM

1/24/14

Special Instructions: Indoor Air Samples

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All/Analysis		1/24/14		1/27/14	0940						

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2

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USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-094010-0004
Case #: 4
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
05	219-AA-014	Unit 175	TO-15	Ambient	1/23/2014	1	SUMMA	1156	3487	-30	-12	3:04:00 PM	1:48:00 PM
06	219-AA-015	Ernest Street	TO-15	Ambient	1/23/2014	1	SUMMA	1173	3488	-30	-12	3:12:00 PM	2:05:00 PM
07	219-TB-021	Trip Blank		Blank	1/22/2014	1		1188		-30		12:30:00 PM	

1/24/14

Special Instructions: Ambient Air Samples
Analyze via TO-15 per agreement.

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All Analysis		1/24/14		1/27/14	0948						

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028

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USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-154459-0005
Case #: 8
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Num b Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
18	219-IA-009	Unit 34	TO-15	Indoor Air	1/23/2014	1	SUMMA	1105	3476	-30	-14.5	12:44:00 PM	11:04:00 AM
19	219-IA-010	Unit 70	TO-15	Indoor Air	1/23/2014	1	SUMMA	1701	3544	-30	-10	1:00:00 PM	11:17:00 AM
20	219-IA-011	Unit 70	TO-15	Indoor Air	1/23/2014	1	SUMMA	1720	3545	-30	-14	1:00:00 PM	11:11:00 AM
21	219-IA-012	Unit 175	TO-15	Indoor Air	1/23/2014	1	SUMMA	1669	3543	-30	-14	2:59:00 PM	1:34:00 PM

1/24/14

Special Instructions: Indoor Air Samples

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time
All Analysis		1/24/14		1/27/14	0940

Items/Reason	Relinquished By	Date	Received by	Date	Time

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SERAS-219-DARR1-042314

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USEPA

DateShipped: 1/24/2014

CarrierName: FedEx

AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD

Site #: 219

Contact Name: Colleen Steffensen

Contact Phone: 732-321-4211

No: 3-012314-154648-0006

Case #: SS 2

Lab: ConTest Analytical Laboratory

Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
14	219-SS-016	Unit 84	TO-15	Soil Gas	1/23/2014	1	SUMMA	1509	3268	-30	-9	11:31:00 AM	10:41:00 AM
15	219-SS-017	Unit 116	TO-15	Soil Gas	1/23/2014	1	SUMMA	1493	3265	-30	-20	11:48:00 AM	10:45:00 AM
16	219-SS-018	Unit 50	TO-15	Soil Gas	1/23/2014	1	SUMMA	1670	3414	-30	-10	12:14:00 PM	11:25:00 AM
17	219-SS-019	Unit 34	TO-15	Soil Gas	1/23/2014	1	SUMMA	1851	3417	-30	-14	12:41:00 PM	10:59:00 AM

CS

1/24/14

Special Instructions: SUB-SLAB SOIL GAS SAMPLES

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time
All/Analysis		1/24/14		1/27/14	0940

Items/Reason	Relinquished By	Date	Received by	Date	Time

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030

7

8

4

77

USEPA

DateShipped: 1/24/2014

CarrierName: FedEx

AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD

Site #: 219

Contact Name: Colleen Steffensen

Contact Phone: 732-321-4211

No: 3-012314-155158-0007

Case #: SS 3

Lab: ConTest Analytical Laboratory

Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
12	219-SS-020	Unit 70	TO-15	Soil Gas	1/23/2014	1	SUMMA	1846	3416	-30	-10	1:00:00 PM	11:11:00 AM
13	219-SS-022	Unit 175	TO-15	Soil Gas	1/23/2014	1	SUMMA	~~1879~~ 1870	3418	-30	-11	3:00:00 PM	1:34:00 PM

CS 1/24/14

Special Instructions: SUB-SLAB SOIL GAS SAMPLES

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All Analysis	CS	1/24/14		1/27/14	0940						

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APPENDIX C

Final TAGA MS/MS Analytical Report for Indoor Air Monitoring

Passyunk Soil Gas Site

Trip Report

February 2018

FINAL ANALYTICAL TAGA REPORT
PASSYUNK SOIL GAS SITE
PHILADELPHIA, PENNSYLVANIA
FEBRUARY 2014

U.S. EPA Work Assignment No.: SERAS-219
LOCKHEED MARTIN Work Order No.: SER00219
U.S. EPA Contract No.: EP-W-09-031

Submitted to
David Mickunas
U.S. EPA/ERT

Prepared by:
Lockheed Martin/SERAS

Colleen Steffensen
SERAS Task Leader

1/30/14
Date

Analyzed and prepared by:
Scott J. Thompson

01/28/14

Dennis Miller
SERAS Program Manager

2/4/14
Date

SERAS-219-DFA-020714

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2 Summary of Meteorological Conditions during Monitoring on 22 January 2014

3 Summary of Response Factors and Error Bars for 22 January 2014

4 Summary of Detection and Quantitation Limit Data for 22 January 2014

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FIGURE

1a Unit 116 and 84 Floor Plan, 93MSMS477

1b TAGA File Event Summary, File: 93MSMS477 Acquired on 22 January 2014 at 10:37:01, Title: Unit 116 and 84 Survey

1c Unit 116 and 84 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total-Xylenes

1d TAGA Target Compound Summary for Unit 116 and 84, File: 93MSMS477 Acquired on 22 January 2014 at 10:37:01

2a Unit 50 Floor Plan, 93MSMS478

2b TAGA File Event Summary, File: 93MSMS478 Acquired on 22 January 2014 at 11:03:26, Title: Unit 50 Survey

2c Unit 50 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total-Xylenes

2d TAGA Target Compound Summary for Unit 50, File: 93MSMS478 Acquired on 22 January 2014 at 11:03:26

3a Unit 34 Floor Plan, 93MSMS479

3b TAGA File Event Summary, File: 93MSMS479 Acquired on 22 January 2014 at 11:40:54, Title: Unit 34 Survey

3c Unit 34 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total-Xylenes

3d TAGA Target Compound Summary for Unit 34, File: 93MSMS479 Acquired on 22 January 2014 at 11:40:54

4a Unit 70 Floor Plan, 93MSMS480

4b TAGA File Event Summary, File: 93MSMS480 Acquired on 22 January 2014 at 12:30:01, Title: Unit 70 Survey

4c Unit 70 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total-Xylenes

4d TAGA Target Compound Summary for Unit 70, File: 93MSMS480 Acquired on 22 January 2014 at 12:30:01

5a Unit 175 Floor Plan, 93MSMS482

5b TAGA File Event Summary, File: 93MSMS482 Acquired on 22 January 2014 at 14:22:44, Title: Unit 175 Survey

5c Unit 175 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total-Xylenes

5d TAGA Target Compound Summary for Unit 175, File: 93MSMS482 Acquired on 22 January 2014 at 14:22:44

1.0 INTRODUCTION

The Environmental Protection Agency (EPA)/Environmental Response Team (ERT) issued Work Assignment (WA) Number SERAS-219, Passyunk Soil Gas Site (Site) in Philadelphia, Pennsylvania (PA), to Lockheed Martin under the Scientific, Engineering, Response, and Analytical Services (SERAS) contract. As an element of this WA, SERAS personnel will conduct target compound monitoring using the ECA Trace Atmospheric Gas Analyzer (TAGA) IIe, to assist EPA Region III in its investigation of residential indoor air quality.

The TAGA air monitoring events conducted on 22 January 2014 were screening in nature. Indoor air monitoring events for tetrachloroethene (PCE), trichloroethene (TCE), total-dichloroethene (DCE), vinyl chloride (VCL), chloroform (HCCL3), and benzene, toluene and total-xylenes (BTX) were performed in accordance with the SERAS Standard Operating Procedure (SOP) # 1711, *Trace Atmospheric Gas Analyzer (TAGA) IIe Operation*. Real-time monitoring for the target compounds was performed using a selected ion technique.

2.0 METHODOLOGY

2.1 Mass Spectrometer/Mass Spectrometer General Theory

The ECA TAGA IIe is based upon the Perkin-Elmer API 365 mass spectrometer/mass spectrometer (MS/MS) and is a direct air-monitoring instrument capable of detecting, in real time, trace levels of many organic compounds in ambient air. The technique of triple quadrupole MS/MS is used to differentiate and quantitate compounds.

The initial step in the MS/MS process involves simultaneous chemical ionization of the compounds present in a sample of ambient air. The ionization produces both positive and negative ions by removing or donating one or more electrons. The chemical ionization is a "soft" ionization technique, which allows ions to be formed with little or no structural fragmentation. These ions are called parent ions. The parent ions with different mass-to-charge (m/z) ratios are separated by the first quadrupole (the first MS of the MS/MS system). The quadrupole scans selected m/z ratios allowing only the parent ions with these ratios to pass through the quadrupole. Parent ions with m/z ratios different from those selected are discriminated electronically and fail to pass through the quadrupole.

The parent ions selected in the first quadrupole are accelerated through a collision cell containing uncharged nitrogen molecules in the second quadrupole. A portion of the parent ions entering the second quadrupole fragments as they collide with the nitrogen molecules. These fragment ions are called daughter ions. This process, in the second quadrupole, is called collision induced dissociation. The daughter ions are separated according to their m/z ratios by the third quadrupole (the second MS of the MS/MS system). The quadrupole scans selected m/z ratios, allowing only the daughter ions with these ratios to pass through the quadrupole. Daughter ions with m/z ratios different from those selected are discriminated electronically and fail to pass through the quadrupole. Daughter ions with the selected m/z ratios are then counted by an electron multiplier. The resulting signals are measured in ion counts per second (icps) for each parent/daughter ion pair selected. The intensity of the icps for each parent/daughter ion pair is directly proportional to the ambient air concentration of the organic compound that produced the ion pair. All of the ions discussed in this report have a single charge. The m/z ratios of all of the ions discussed are equal to the ion masses in atomic mass units (amu). Therefore, the terms parent and daughter masses are synonymous with parent and daughter ion m/z ratios.

2.2 TAGA Procedure

The TAGA was used to analyze indoor air and outdoor ambient air during stationary monitoring events. Indoor air monitoring utilized a 300-foot corrugated Teflon® sampling hose. The proximal end was attached to the TAGA source inlet, while the distal end was taken inside a unit.

Air was continuously drawn through the hose at a set flow rate and transported to the TAGA source during the monitoring event.

2.2.1 TAGA Mass Calibration

At the beginning of the monitoring period, a gas mixture containing PCE, TCE, DCE, VCL, $HCCL_{3,}$ and BTX was introduced by a mass flow controller (MFC) into the sample air flow (SAF). The tuning parameters for the first quadrupole at 30, 78, 106, 130, and 166 amu, and the third quadrupole at 30, 78, 105, 129, and 166 amu were optimized for sensitivity and mass assignment. The peak widths were limited between 0.55 amu and 0.85 amu. The mass assignments were set to the correct values within 0.15 amu.

2.2.2 TAGA Response Factor Measurements

The TAGA was calibrated for the target compounds at the beginning and end of the day. The calibration system consisted of a regulated gas cylinder containing a gas standard mixture of the target compounds connected to an in-line MFC. The MFC was calibrated with a National Institute of Standards and Technology (NIST) traceable flow rate meter. The gas standard certification is presented in Appendix A. The gas standard containing a known mixture of target compounds, certified by the supplier, was regulated at preset flow rates, and diluted with ambient air. The dilution of the gas standard resulted in known analyte concentrations. The calibration consisted of a zero point and five known concentrations obtained by setting the MFC to 0, 10, 20, 40, 80, and 90 milliliters per minute (mL/min) with the SAF at 1,500 milliliters per second (mL/sec).

The approximate concentration range of standards introduced into the TAGA was between 2 and 20 parts per billion by volume (ppbv). Utilizing the analytes' concentrations, gas flow rates, and air sampling flow rates, the response factors (RFs), in units of ion counts per second per part per billion by volume (icps/ppbv), were calculated for each ion pair by using a least-square-fit algorithm to calculate the slope of its curve. The coefficient of correlation was checked for each ion pair's RF to ensure that it was greater than 0.90. The intermediate response factor (IRF) was calculated between pairs of calibrations and used to quantify target compounds in ambient air.

2.2.3 Transport Efficiency

The transport efficiency and residence time for the target compounds through the 300-foot length of corrugated Teflon® sampling hose was determined prior to and at the conclusion of indoor air monitoring activities each day. The transport efficiency was determined by introducing a known concentration of the target compounds into the proximal end and then into the distal end of the sampling hose. The signal intensity of each ion pair for each compound was measured in icps and the percent (%) transport efficiency calculated using the equation below:

$$\%\ transport\ \ efficiency\ =\ \frac{signal\ intensity\ at\ the\ distal\ end\ of\ \ the\ hose}{signal\ intensity\ at\ the\ \ proximal\ end\ of\ \ the\ hose}\ \ x\ \ 100$$

A transport efficiency of 85% is considered acceptable and results are summarized in Table 1.

The residence time is the interval, in seconds; it takes the air sample to travel the length of the sampling hose. The residence time, which reflects a time difference between the sampling and the instrument response, is incorporated in the offset. The offset, which is the total number of sequences acquired during the residence time, is applied to the monitoring files (Figures 1b to 6b and Figures 1c to 6c). Therefore, the observations and

instrument responses are temporally coordinated.

2.2.4 TAGA Air Monitoring

TAGA monitoring was performed by continuously drawing air through the Teflon® hose at a flow-rate of approximately 1,500 mL/sec. The air was then passed through a glass splitter where the pressure gradient between the mass spectrometer core and the atmosphere causes a sample flow of approximately 10 mL/min into the ionization source through a heated transfer line. The flow into the TAGA source was controlled so that the ionization source pressure was maintained at an optimum value of approximately 0.90 torr. The remaining airflow was drawn through the air pump and vented from the TAGA bus.

Monitoring was performed in the parent/daughter ion-monitoring mode. As monitoring proceeded, the operator pressed letter keys (flags), alphabetically on a computer keyboard, to denote events or locations during the monitoring event. This information was also recorded on an event log sheet. The intensity of each parent/daughter ion pair monitored by the TAGA was recorded in a permanent file on the computer's hard drive. One set of recorded measurements of all the ion pairs is called a sequence.

At the beginning of each unit survey, a one-minute pre-entry ambient data segment was collected. At the operator's signal, the sampler then entered the unit while holding the distal end of the hose at breathing height. The sampler proceeded to each room in the unit where one-minute data segments were collected. After the rooms in the unit were monitored, a one-minute post-exit ambient data segment was collected. Upon completion of the one-minute post-exit ambient data segment, the instrumentation was challenged with the calibration standard, which was introduced at 30 mL/min (approximately 6.8 ppbv), to verify that the system was functioning properly.

2.3 Meteorological Monitoring

United States Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center provided the meteorological data for 22 January 2014. Data were collected from the Philadelphia International Airport. The airport is located approximately 6 miles southwest of the Passyunk Soil Gas Site. Meteorological data, such as wind speed, wind direction, and rainfall, are summarized in Table 2 for the periods during which monitoring occurred. The compiled meteorological data are presented in Appendix B. The reported data for rainfall is an average of the data recorded during the hour preceding the time recorded in the table. The reported meteorological data for wind speed and direction represent a five-minute average collected prior to the time recorded in the table. Because of the distance of the meteorological monitoring location from the study location and the short averaging period, care should be exercised in relating meteorological conditions existing at the Site.

3.0 TAGA AIR MONITORING RESULTS

The TAGA was used to survey indoor air in residential units in the vicinity of the Site.

3.1 Unit Surveys

Figures 1a through 5a, present the approximate floor plans of each unit. The monitoring locations marked by letters are the "flags" that the TAGA operator placed into the file. These "flags" mark events and are carried through the rest of the data presentation.

3.2 TAGA File Event Summaries

Figures 1b through 5b present the TAGA file event summaries. These are the observations made during the file acquisition by the TAGA operator, along with the times from the TAGA file and the letter "flags" used to mark the data, which are recorded by the TAGA computer.

3.3 Graphical Presentations

Figures 1c through 5c are the graphical representations of the TAGA files. A graph of each target compound concentration is presented with ppbv plotted on the vertical axis, and time into the acquisition, in minutes, on the horizontal axis. The target compound concentration was calculated by averaging the concentrations obtained from the ion pairs that were monitored for each target compound. There are two horizontal lines on each graph. The lower line is set at the detection limit (DL) for the compound. The higher line is set at the concentration equal to the quantitation limit (QL) for the target compound. When high concentrations are represented, the lower DL line may not be readily discerned. Transient, momentary spikes above the QL line are occasionally observed. These spikes, electronic in nature, do not affect average concentrations. They may be distinguished from elevated concentrations because the spikes are only present for one sequence and are often only present for one ion pair of the monitored compound.

3.4 TAGA Target Compound Summaries

The TAGA target compound summaries are presented in Figures 1d through 5d. These figures contain the concentrations of the target compounds averaged over time, at the various locations logged into the TAGA file event summaries.

4.0 DISCUSSION OF RESULTS

The TAGA target compound summaries are represented in Figures 1d through 5d. During each survey, a one-minute average was measured in each room, or at various locations within a room. Only the highest average concentrations above the QL are listed below. The End of Day Transport Efficiency for benzene, toluene and total-xylenes were lower than the 85% acceptance criteria at 76.1%, 83.1% and 69.1%, respectively. Benzene, toluene and total-xylenes data should be used with caution and may be biased low.

4.1 Unit 116 and 84 Survey, 93MSMS477

Unit 116 and 84 was surveyed on 22 January 2014 at 10:37:01 and is represented in Figures 1a through 1d. The average wind speed and direction at the airport for the five-minute period ending at 09:54 were 21 miles per hour (mph) from 330 degrees. There was no precipitation during the preceding hour. The average concentrations of tetrachloroethene, trichloroethene, total dichloroethene, vinyl chloride, chloroform, benzene, toluene, and total xylenes were not detected above their quantitation limits at any of the monitoring locations.

4.2 Unit 50 Survey, 93MSMS478

Unit 50 was surveyed on 22 January 2014 at 11:03:26 and is represented in Figures 2a through 2d. The average wind speed and direction at the airport for the five-minute period ending at 10:54 were 20 mph from 340 degrees. There was no precipitation during the preceding hour. The average concentrations of tetrachloroethene, trichloroethene, total dichloroethene, vinyl chloride, benzene, and toluene were not detected above their quantitation limits at any of the monitoring locations. The highest average concentrations of chloroform were 6.6 ppbv and 6.2 ppbv in the basement between flags G and H and in the trench between flags I and J, respectively. The highest average concentration of total xylenes was 2.4 ppbv in the crawl space between flags M and N.

4.3 Unit 34 Survey, 93MSMS479

Unit 34 was surveyed on 22 January 2014 at 11:40:54 and is represented in Figures 3a through 3d. The average wind speed and direction at the airport for the five-minute period ending at 10:54 were 20 mph from 340 degrees. There was no precipitation during the preceding hour. The average concentrations of tetrachloroethene, trichloroethene, total dichloroethene, vinyl chloride and benzene were not detected above their quantitation limits at any of the monitoring locations. The highest average concentrations of chloroform, toluene, and total xylenes were 39 ppbv, 81 ppbv, and 260 ppbv, respectively, from the storage bin between flags P and Q.

4.4 Unit 70 Survey, 93MSMS480

Unit 70 was surveyed on 22 January 2014 at 12:30:01 and is represented in Figures 4a through 4d. The average wind speed and direction at the airport for the five-minute period ending at 11:54 were 18 mph from 330 degrees. There was no precipitation during the preceding hour. The average concentrations of tetrachloroethene, trichloroethene, total dichloroethene, vinyl chloride, chloroform, benzene, toluene, and total xylenes were not detected above their quantitation limits at any of the monitoring locations.

4.5 Unit 175 Survey, 93MSMS482

Unit 175 was surveyed on 22 January 2014 at 14:22:44 and is represented in Figures 5a through 5d. The average wind speed and direction at the airport for the five-minute period ending at 13:54 were 16 mph from 300 degrees. There was no precipitation during the preceding hour. The average concentrations of tetrachloroethene, trichloroethene, total dichloroethene, vinyl chloride, chloroform, benzene, and toluene were not detected above their quantitation limits at any of the monitoring locations. The highest average concentrations of total xylenes were 3.6 ppbv and 3.5 ppbv in the crack in the wall between flags M and N and in the basement between flags I and J, respectively.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

The compound parent/daughter ion pairs used are listed below.

Compound	Parent Ion Mass	Daughter Ion Mass	Compound	Parent Ion Mass	Daughter Ion Mass
Tetrachloroethene	164	129	Chloroform	83	47
Tetrachloroethene	166	129	Chloroform	85	47
Tetrachloroethene	166	131	Chloroform	85	49
Trichloroethene	130	95	Benzene	78	39
Trichloroethene	132	95	Benzene	78	52
Trichloroethene	132	97	Toluene	92	39
Dichloroethene	96	61	Toluene	92	51
Dichloroethene	98	61	Xylenes	106	65
Vinyl Chloride	62	27	Xylenes	106	91
Vinyl Chloride	64	27			

Tables 3 and 4 documents the RFs and IRFs generated during the calibration procedure for the individual ion pairs. Intermediate response factors were used to quantitate the ion pair concentrations.

The summaries of detection and quantitation limit data for the monitoring periods (Sections 5.3 and 5.4 and Table 4) document the concentration, in ppbv, required for a compound's ion pair to be considered

detectable and quantifiable during the specified monitoring period. The DL is defined as three times the standard deviation of the concentration for a compound's ion pair measured in an ambient air sample. The QL is defined as 10 times the standard deviation of the concentration for the same conditions. The detection and quantitation limits for a compound result from averaging the appropriate detection and quantitation limits of the compound's ion pairs.

5.1 Intermediate Response Factor for Ion Pairs

Response factors were generated from two calibration events, as described in the procedure (Section 2.2.2.). Table 3 contains the RFs in units of icps/ppbv. The initial and final RFs were used to calculate the IRFs, which were used to calculate the reported concentration results.

The following equation was used to calculate the IRFs found in Tables 3 and 4:

$$\mathrm{IRF} = \frac{2(\mathrm{RF}_1 \times \mathrm{RF}_2)}{(\mathrm{RF}_1 + \mathrm{RF}_2)}$$

where:

IRF = Intermediate response factor (icps/ppbv)
RF_1 = The RF for an ion pair measured during the first calibration event (icps/ppbv)
RF_2 = The RF for the same ion pair measured during the second calibration event (icps/ppbv)

For example, the entry for the 83/47 ion pair of chloroform from Table 3 for files 93MSMS48MID and 93MSMS483 on 22 January 2014 is:

RF_1 = 37.879 icps/ppbv
RF_2 = 40.837 icps/ppbv

therefore,

$$\mathrm{IRF} = \frac{2(37.879 \times 40.831)}{(37.879 + 40.831)} = \frac{3093.275}{78.710} = 39.299 \text{ icps/ppbv}$$

The result, 39.299 icps/ppbv, is the IRF reported in Table 3 and used in Table 4.

5.2 Error Bars

The potential maximum concentration percent deviations for each target compound are presented in Table 3 and are called “error bars” for simplicity. They represent the potential bias in the concentration due to changes in the sensitivity of the TAGA instrument. Errors bars were calculated using the following equation:

$$\text{error bar} = \frac{\left|\mathrm{RF}_1 - \mathrm{RF}_2\right|}{(\mathrm{RF}_1 + \mathrm{RF}_2)} \times 100$$

where:

error bar = Maximum concentration percent deviation
RF_1 = The RF for an ion pair measured during the first calibration event (icps/ppbv)
RF_2 = The RF for the same ion pair measured during the second calibration event (icps/ppbv)

For example, the entry for the 83/47 ion pair of chloroform from Table 3 for files 93MSMS481MID and 93MSMS483 on 22 January 2014 is:

RF_1 = 37.879 icps/ppbv
RF_2 = 40.831 icps/ppbv

$$\text{error bar} = \frac{|37.879 - 40.831|}{(37.879 + 40.831)} \times 100 = 3.75\ \%$$

The % error bar calculated for the 83/47 ion pair of chloroform is 3.75% for files 93MSMS481MID and 93MSMS483 on 22 January 2014.

The above calculation was repeated for each ion pair. The error bars for each compound's ions were averaged to give a single value for the compound. This averaged error bar can be applied to the samples analyzed between the two calibrations of the monitoring period.

5.3 Ion Pair Detection and Quantitation Limits

The DLs and QLs were calculated using the standard deviation (SD) of the compound's ion pair intensity measured in an ambient air sample and its RF. The SD reflects the variability of the instrument's response to the ambient air sample.

The following equation was used to calculate the DLs found in Table 4:

$$DL = \frac{3 \times SD}{IRF}$$

where:

DL = Detection limit for an ion pair (ppbv)
SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
IRF = Intermediate response factor for an ion pair (icps/ppbv)

For example, the entry for the 83/47 ion pair of chloroform from Table 4 for files 93MSMS481MID and 93MSMS483 on 22 January 2014 is:

SD = 18.824 icps
IRF = 39.299 icps/ppbv

$$DL = \frac{3 \times 18.824}{39.299} = 1.44 \text{ ppbv}$$

The following equation was used to calculate the QLs found in Table 4:

$$QL = \frac{10 \times SD}{IRF}$$

where:

QL = Quantitation limit concentration for an ion pair (ppbv)
SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
IRF = Intermediate response factor for an ion pair (icps/ppbv)

For example, the entry for the 83/47 ion pair of chloroform from Table 4 for files 93MSMS481MID and 93MSMS483 on 22 January 2014 is:

SD = 18.824 icps

IRF = 39.299 icps/ppbv

$$QL = \frac{10 \times 18.824}{39.299} = 4.79 \text{ ppbv}$$

5.4 Compound Detection and Quantitation Limits

Averaging the respective DLs and QLs of the target compound's ion pairs found in Table 4 generated the DLs and QLs found in Table 4.

The following equation was used to calculate the compound's DL:

$$DL_c = \frac{DL_1 + DL_2 + \ldots + DL_n}{n}$$

where:

DL_c = Detection limit for a compound (ppbv)
DL_1 = Detection limit for the first ion pair (ppbv)
DL_2 = Detection limit for the second ion pair (ppbv)
DL_n = Detection limit for the n^{th} ion pair (ppbv)
n = Number of ion pairs to be averaged

For example, the entry for the 83/47, 83/47, and 83/49 ion pairs of chloroform from Table 4 for files 93MSMS481MID and 93MSMS483on 22 January 2014 is:

$$DL_c = \frac{1.44 + 1.62 + 1.34}{3} = \frac{4.40}{3} = 1.5 \text{ ppbv}$$

This result, 1.46 ppbv, rounded to 1.5 ppbv is the DL for chloroform found in Table 4.

The following equation was used to calculate the compound's QL:

$$QL_c = \frac{QL_1 + QL_2 + \ldots QL_n}{n}$$

where:

QL_c = Quantitation limit for a compound (ppbv)
QL_1 = Quantitation limit for the first ion pair (ppbv)
QL_2 = Quantitation limit for the second ion pair (ppbv)
QL_n = Quantitation limit for the n^{th} ion pair (ppbv)
n = Number of ion pairs to be averaged

For example, the entry for the 83/47, 83/47, and 83/49 ion pairs of chloroform from Table 4 for files 93MSMS481MID and 93MSMS483 on 22 January 2014 is:

$$QL_c = \frac{4.79 + 5.38 + 4.47}{3} = \frac{14.64}{3} = 4.88 \text{ ppbv}$$

This result, 4.88 ppbv, rounded to 4.9 ppbv is the QL for chloroform found in Table 4.

TABLES

TABLE 1
Summary of Transport Efficiencies Measured on 22 January 2014
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Beginning of Day Transport Efficiency for 22 January 2014 10:24:28 File: 93MSMS476				
	Start Sequence:	40	130	
	End Sequence:	70	160	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Tetrachloroethene	164/129	8824.5	7750.3	87.8
Tetrachloroethene	166/129	3170.0	2753.2	86.9
Tetrachloroethene	166/131	8993.9	7832.6	87.1
			Average Tetrachloroethene Transport Efficiency:	87.3
Trichloroethene	130/95	20162.9	18484.8	91.7
Trichloroethene	132/95	6856.5	6280.6	91.6
Trichloroethene	132/97	12633.5	11520.0	91.2
			Average Trichloroethene Transport Efficiency:	91.5
Dichloroethene	96/61	8947.7	8537.1	95.4
Dichloroethene	98/61	2830.3	2635.5	93.1
			Average Dichloroethene Transport Efficiency:	94.3
Vinyl Chloride	62/27	38.1	37.7	99.2
Vinyl Chloride	64/27	16.1	17.4	108.0
			Average Vinyl Chloride Transport Efficiency:	103.6
Chloroform	83/47	982.9	907.4	92.3
Chloroform	85/47	288.7	301.9	104.6
Chloroform	85/49	321.9	314.2	97.6
			Average Chloroform Transport Efficiency:	98.2
Benzene	78/39	512.6	496.8	96.9
Benzene	78/52	2751.3	2496.1	90.7
			Average Benzene Transport Efficiency:	93.8
Toluene	92/39	112.9	91.3	80.9
Toluene	92/51	326.8	305.8	93.6
			Average Toluene Transport Efficiency:	87.2
Xylene	106/65	6920.6	6228.4	90.0
Xylene	106/91	26254.5	23636.5	90.0
			Average Xylene Transport Efficiency:	90.0

PM/DM = Parent mass/Daughter mass
icps = Ion counts per second
% = Percent

TABLE 1 (continued)
Summary of Transport Efficiencies Measured on 22 January 2014
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

End of Day Transport Efficiency for 22 January 2014 15:20:44 File: 93MSMS484				
	Start Sequence:	77	182	
	End Sequence:	110	212	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Tetrachloroethene	164/129	4159.7	3571.9	85.9
Tetrachloroethene	166/129	1740.3	1474.8	84.7
Tetrachloroethene	166/131	4857.4	4235.8	87.2
			Average Tetrachloroethene Transport Efficiency:	85.9
Trichloroethene	130/95	9799.4	8934.5	91.2
Trichloroethene	132/95	2926.5	2732.6	93.4
Trichloroethene	132/97	5555.0	5160.3	92.9
			Average Trichloroethene Transport Efficiency:	92.5
Dichloroethene	96/61	3971.2	3816.1	96.1
Dichloroethene	98/61	1551.5	1496.1	96.4
			Average Dichloroethene Transport Efficiency:	96.3
Vinyl Chloride	62/27	24.4	21.9	89.9
Vinyl Chloride	64/27	9.4	11.0	116.5
			Average Vinyl Chloride Transport Efficiency:	103.2
Chloroform	83/47	461.8	420.3	91.0
Chloroform	85/47	179.4	156.8	87.4
Chloroform	85/49	172.6	159.4	92.3
			Average Chloroform Transport Efficiency:	90.2
Benzene	78/39	253.5	194.5	76.7
Benzene	78/52	1295.0	978.7	75.6
			Average Benzene Transport Efficiency:	76.1
Toluene	92/39	61.5	52.9	86.1
Toluene	92/51	216.8	173.9	80.2
			Average Toluene Transport Efficiency:	83.1
Xylene	106/65	2402.9	1651.6	68.7
Xylene	106/91	8499.1	5894.8	69.4
			Average Xylene Transport Efficiency:	69.1

PM/DM = Parent mass/Daughter mass
icps = Ion counts per second
% = Percent

TABLE 2
Summary of Meteorological Conditions during Monitoring on 22 January 2014
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Unit #	File	Date	Time (LST)	Relative Humidity (%)	Wind Speed (MPH)	Wind Direction (deg.)	Station Pressure (in. Hg)	Precipitation Total (inches)
Unit 116 and 84	93MSMS477	01/22/2014	09:54	50	21	330	29.90	
Unit 50	93MSMS478	01/22/2014	10:54	50	20	340	29.90	
Unit 34	93MSMS479	01/22/2014	10:54	50	20	340	29.90	
Unit 70	93MSMS480	01/22/2014	11:54	48	18	330	29.88	
Unit 175	93MSMS482	01/22/2014	13:54	46	16	300	29.88	

Note: The wind direction is the direction from which the wind is blowing
MPH = mile per hour
LST = Local Standard Time
% = Percentage
deg. = Degree
In. Hg = inch Mercury

TABLE 3
Summary of Response Factors and Error Bars for 22 January 2014
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Calibration Files: 93MSMS475 and 93MSMS481 on 22 January 2014
Used for Survey Files: 93MSMS477, 93MSMS478, 93MSMS479, and 93MSMS480

Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Tetrachloroethene	164/129	1388.7	525.72	762.71	45.1
Tetrachloroethene	166/129	463.61	193.84	273.37	41.0
Tetrachloroethene	166/131	1318.6	557.28	783.45	40.6
				Average:	42.
Trichloroethene	130/95	2915.1	1234.3	1734.3	40.5
Trichloroethene	132/95	1011.1	366.59	538.09	46.8
Trichloroethene	132/97	1868.0	685.27	1002.7	46.3
				Average:	45.
Dichloroethene	96/61	1255.9	456.97	670.11	46.6
Dichloroethene	98/61	403.15	169.54	238.70	40.8
				Average:	44.
Vinyl Chloride	62/27	5.6359	1.8974	2.8390	49.6
Vinyl Chloride	64/27	1.8599	1.0548	1.3462	27.6
				Average:	39.
Chloroform	83/47	132.50	37.879	58.915	55.5
Chloroform	85/47	44.332	14.767	22.154	50.0
Chloroform	85/49	48.033	16.795	24.888	48.2
				Average:	51.
Benzene	78/39	66.083	14.780	24.156	63.4
Benzene	78/52	348.04	83.047	134.10	61.5
				Average:	62.
Toluene	92/39	15.247	6.7296	9.3377	38.8
Toluene	92/51	49.792	22.227	30.734	38.3
				Average:	39.
Xylene	106/65	618.34	99.639	171.62	72.2
Xylene	106/91	2361.2	351.71	612.23	74.1
				Average:	73.

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 3 (continued)
Summary of Response Factors and Error Bars for 22 January 2014
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Calibration Files: 93MSMS481MID and 93MSMS483 on 22 January 2014
Used for Survey File: 93MSMS482

Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Tetrachloroethene	164/129	525.72	534.37	530.01	0.816
Tetrachloroethene	166/129	193.84	194.75	194.29	0.235
Tetrachloroethene	166/131	557.28	555.89	556.59	0.125
				Average:	0.39
Trichloroethene	130/95	1234.3	1223.8	1229.1	0.426
Trichloroethene	132/95	366.59	378.19	372.30	1.56
Trichloroethene	132/97	685.27	707.18	696.05	1.57
				Average:	1.2
Dichloroethene	96/61	456.97	505.04	479.81	5.00
Dichloroethene	98/61	169.54	186.26	177.51	4.70
				Average:	4.8
Vinyl Chloride	62/27	1.8974	2.4216	2.1277	12.1
Vinyl Chloride	64/27	1.0548	1.0673	1.0610	0.589
				Average:	6.4
Chloroform	83/47	37.879	40.831	39.299	3.75
Chloroform	85/47	14.767	16.315	15.502	4.98
Chloroform	85/49	16.795	17.420	17.102	1.82
				Average:	3.5
Benzene	78/39	14.780	17.033	15.826	7.08
Benzene	78/52	83.047	91.442	87.043	4.81
				Average:	5.9
Toluene	92/39	6.7296	7.6829	7.1747	6.61
Toluene	92/51	22.227	21.600	21.909	1.43
				Average:	4.0
Xylene	106/65	99.639	108.26	103.77	4.15
Xylene	106/91	351.71	374.72	362.85	3.17
				Average:	3.7

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 4
Summary of Detection and Quantitation Limit Data for 22 January 2014
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Calibration Files: 93MSMS475 and 93MSMS481 on 22 January 2014
Used for Survey Files: 93MSMS477, 93MSMS478, 93MSMS479, and 93MSMS480

Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Tetrachloroethene	164/129	762.71	15.519	0.0610	0.203
Tetrachloroethene	166/129	273.37	8.3648	0.0918	0.306
Tetrachloroethene	166/131	783.45	14.709	0.0563	0.188
			Average:	0.070	0.23
Trichloroethene	130/95	1734.3	15.740	0.0272	0.0908
Trichloroethene	132/95	538.09	7.3112	0.0408	0.136
Trichloroethene	132/97	1002.7	10.015	0.0300	0.0999
			Average:	0.033	0.11
Dichloroethene	96/61	670.11	6.7562	0.0302	0.101
Dichloroethene	98/61	238.70	3.4658	0.0436	0.145
			Average:	0.037	0.12
Vinyl Chloride	62/27	2.8390	5.0075	5.29	17.6
Vinyl Chloride	64/27	1.3462	3.4658	7.72	25.7
			Average:	6.5	22.
Chloroform	83/47	58.915	17.255	0.879	2.93
Chloroform	85/47	22.154	11.251	1.52	5.08
Chloroform	85/49	24.888	7.5337	0.908	3.03
			Average:	1.1	3.7
Benzene	78/39	24.156	11.689	1.45	4.84
Benzene	78/52	134.10	33.042	0.739	2.46
			Average:	1.1	3.7
Toluene	92/39	9.3377	6.9208	2.22	7.41
Toluene	92/51	30.734	11.184	1.09	3.64
			Average:	1.7	5.5
Xylene	106/65	171.62	42.412	0.741	2.47
Xylene	106/91	612.23	115.08	0.564	1.88
			Average:	0.65	2.2

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

TABLE 4 (continued)
Summary of Detection and Quantitation Limit Data for 22 January 2014
Passyunk Soil Gas Site
Philadelphia, Pennsylvania
February 2014

Calibration Files: 93MSMS481MID and 93MSMS483 on 22 January 2014
Used for Survey File: 93MSMS482

Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Tetrachloroethene	164/129	530.01	7.6817	0.0435	0.145
Tetrachloroethene	166/129	194.29	7.4737	0.115	0.385
Tetrachloroethene	166/131	556.59	8.3648	0.0451	0.150
			Average:	0.068	0.23
Trichloroethene	130/95	1229.1	9.3240	0.0228	0.0759
Trichloroethene	132/95	372.30	11.271	0.0908	0.303
Trichloroethene	132/97	696.05	6.9208	0.0298	0.0994
			Average:	0.048	0.16
Dichloroethene	96/61	479.81	4.7930	0.0300	0.0999
Dichloroethene	98/61	177.51	1.6440	0.0278	0.0926
			Average:	0.029	0.096
Vinyl Chloride	62/27	2.1277	3.1480	4.44	14.8
Vinyl Chloride	64/27	1.0610	2.7672	7.82	26.1
			Average:	6.1	20.
Chloroform	83/47	39.299	18.824	1.44	4.79
Chloroform	85/47	15.502	8.3468	1.62	5.38
Chloroform	85/49	17.102	7.6524	1.34	4.47
			Average:	1.5	4.9
Benzene	78/39	15.826	13.529	2.56	8.55
Benzene	78/52	87.043	24.199	0.834	2.78
			Average:	1.7	5.7
Toluene	92/39	7.1747	7.3009	3.05	10.2
Toluene	92/51	21.909	8.8701	1.21	4.05
			Average:	2.1	7.1
Xylene	106/65	103.77	29.214	0.845	2.82
Xylene	106/91	362.85	49.532	0.410	1.37
			Average:	0.63	2.1

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

FIGURES

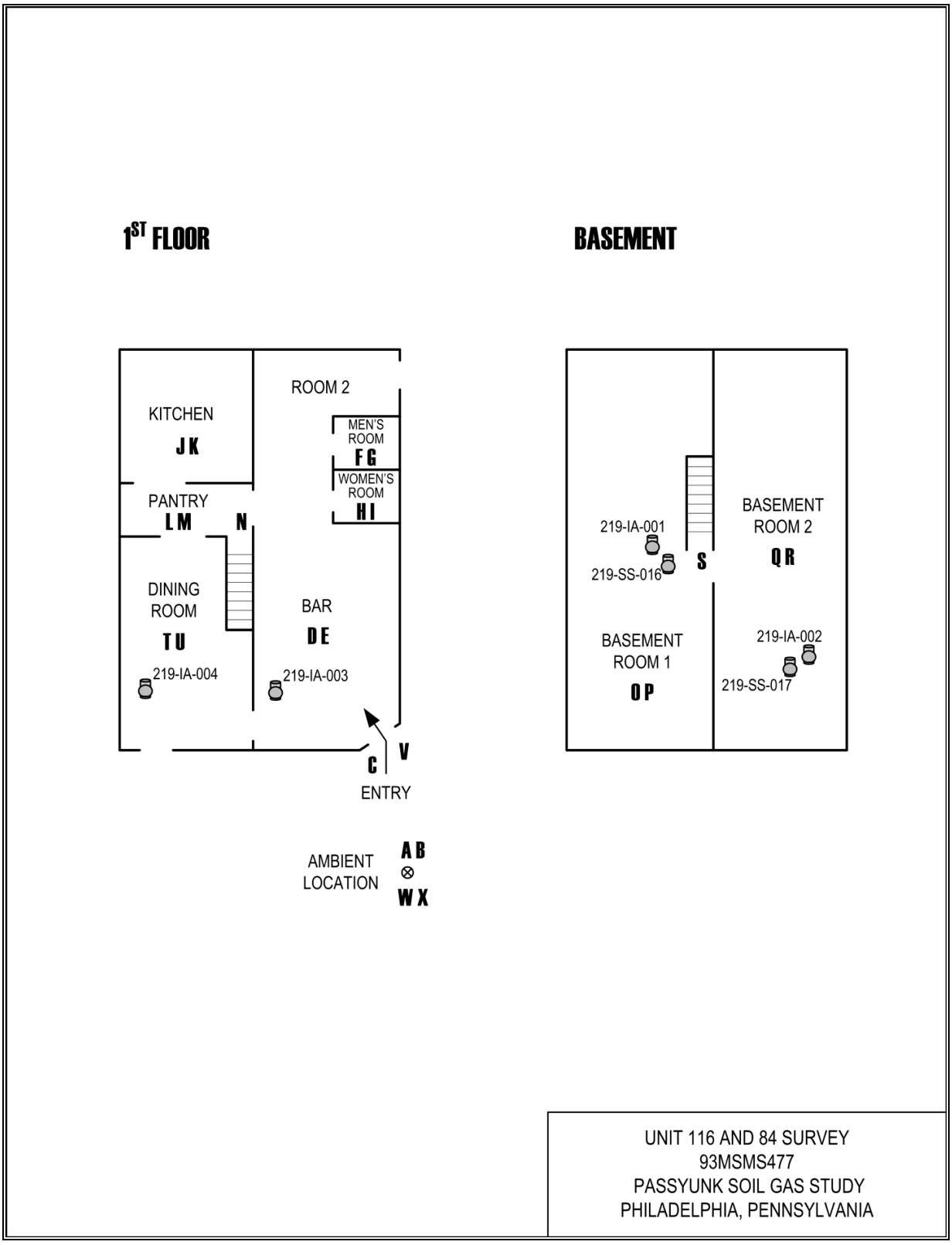

Figure 1a Unit 116 and 84 Floor Plan, 93MSMS477

Figure 1b

TAGA File Event Summary
File: 93MSMS477 Acquired on 22 January 2014 at 10:37:01
Title: Unit 116 and 84 Survey

Flag	Offset Time	Offset Sequence	Description
A	1.6	48	Start of the pre-entry ambient
B	2.6	79	End of the pre-entry ambient
C	3.6	108	Entering the unit
D	4.7	143	Start of the bar
E	5.7	173	End of the bar
F	6.0	180	Start of the men's room
G	7.0	210	End of the men's room
H	7.2	217	Start of the women's room
I	8.2	247	End of the women's room
J	8.5	256	Start of the kitchen
K	9.5	287	End of the kitchen
L	9.8	294	Start of the pantry
M	11.0	331	End of the pantry
N	11.2	338	Descending stairs to the basement
O	11.7	352	Start of basement room one
P	12.7	384	End of basement room one
Q	13.3	402	Start of basement room two
R	14.3	432	End of basement room two
S	15.0	452	Ascending stairs from the basement
T	15.9	479	Start of the dining room
U	17.1	515	End of the dining room
V	17.4	523	Exiting the unit
W	17.8	537	Start of the post-exit ambient
X	18.8	567	End of the post-exit ambient
Y	21.0	633	Start of 30 mL/min spike
Z	22.0	663	End of 30 mL/min spike

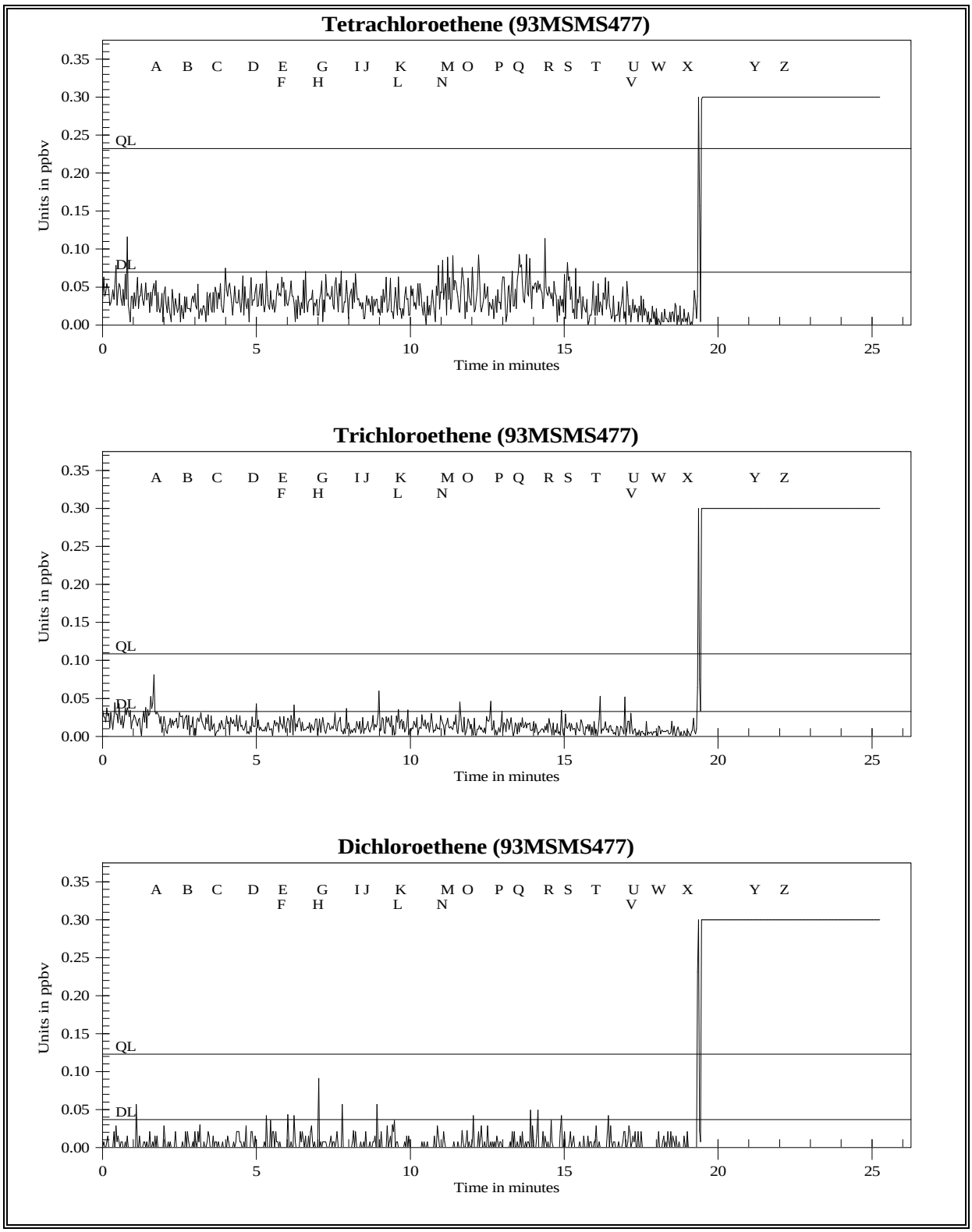

Figure 1c Unit 116 and 84 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

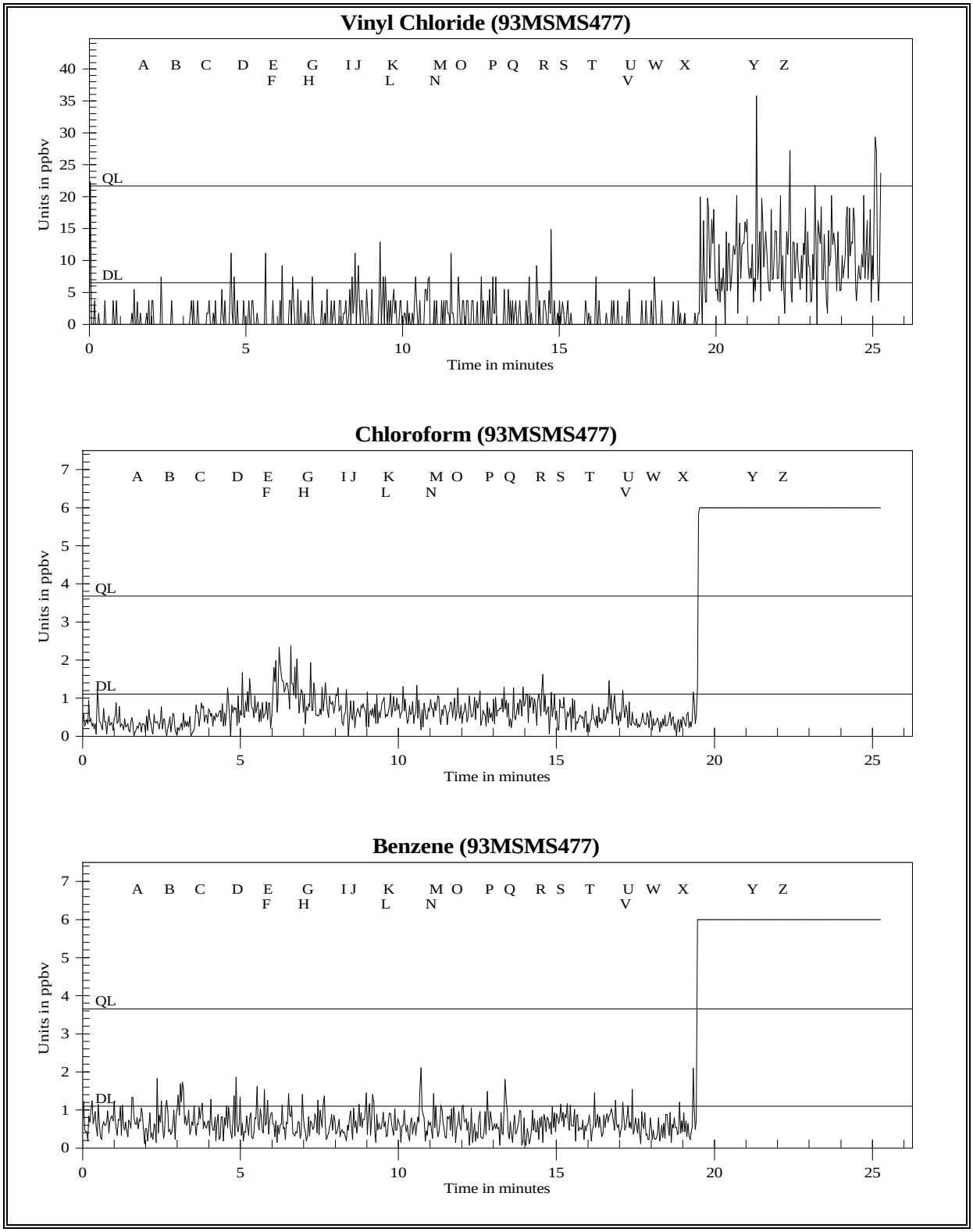

Figure 1c (continued) Unit 116 and 84 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

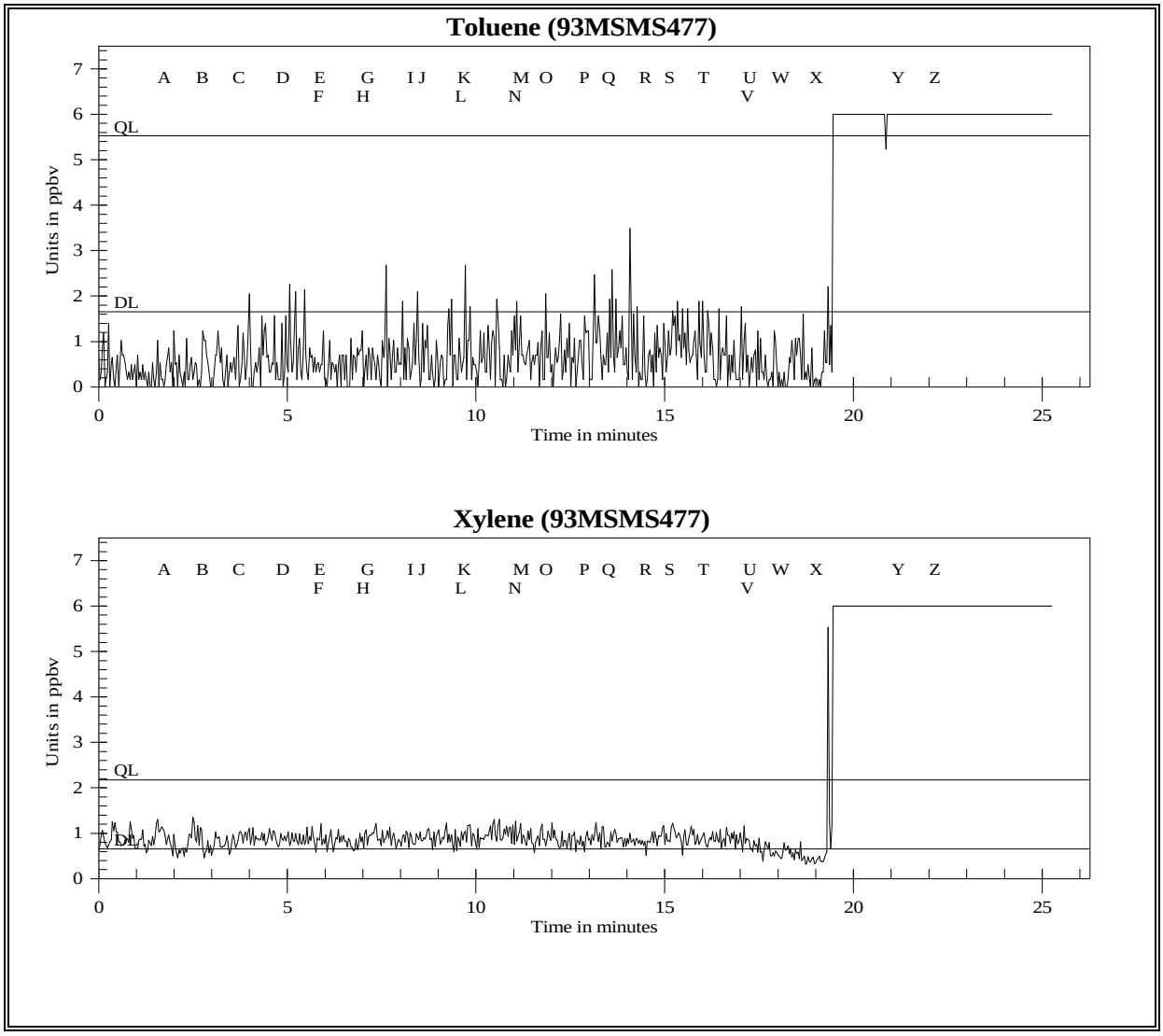

Figure 1c (continued) Unit 116 and 84 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

Figure 1d

TAGA Target Compound Summary for Unit 116 and 84
File: 93MSMS477 Acquired on 22 January 2014 at 10:37:01

		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
Detection Limits - DL:		0.070	0.033	0.037	6.5	1.1	1.1	1.7	0.65
Quantitation Limits - QL:		0.23	0.11	0.12	22.	3.7	3.7	5.5	2.2
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.85J
D - E	Bar	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
F - G	Men's room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	1.3J	DL=1.1	DL=1.7	0.82J
H - I	Women's room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.91J
J - K	Kitchen	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.90J
L - M	Pantry	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.99J
O - P	Basement room one	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
Q - R	Basement room two	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
T - U	Dining room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.87J
W - X	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
Y - Z	30 mL/min spike	9.4	10.	11.	11.J	12.	17.	10.	33.

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

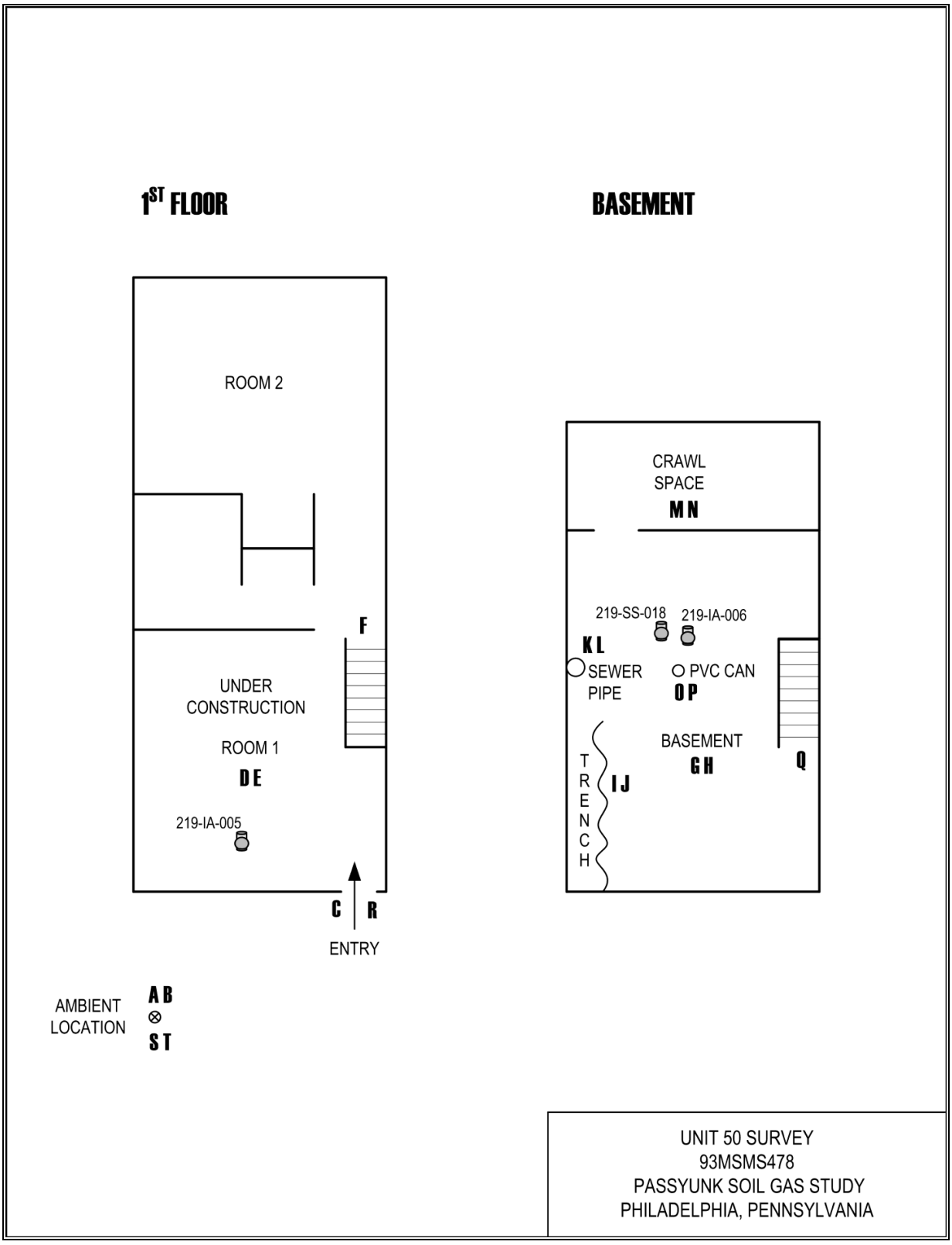

Figure 2a Unit 50 Floor Plan, 93MSMS478

Figure 2b

TAGA File Event Summary
File: 93MSMS478 Acquired on 22 January 2014 at 11:03:26
Title: Unit 50 Survey

Flag	Offset Time	Offset Sequence	Description
A	1.5	47	Start of the pre-entry ambient
B	2.5	76	End of the pre-entry ambient
C	4.5	137	Entering the unit
D	6.7	201	Start of room one under construction
E	7.7	231	End of room one under construction
F	8.0	241	Descending stairs to the basement
G	8.7	262	Start of the basement
H	9.7	293	End of the basement
I	10.5	318	Start of the trench
J	11.5	348	End of the trench
K	12.1	365	Start of the sewer pipe
L	13.1	396	End of the sewer pipe
M	13.6	410	Start of the crawl space
N	14.7	442	End of the crawl space
O	15.3	462	Start of the can of PVC cement
P	16.3	492	End of the can of PVC cement
Q	16.6	501	Ascending stairs from the basement
R	17.2	517	Exiting the unit
S	17.9	538	Start of the post-exit ambient
T	18.9	568	End of the post-exit ambient
U	20.5	618	Start of 30 mL/min spike
V	21.6	649	End of 30 mL/min spike

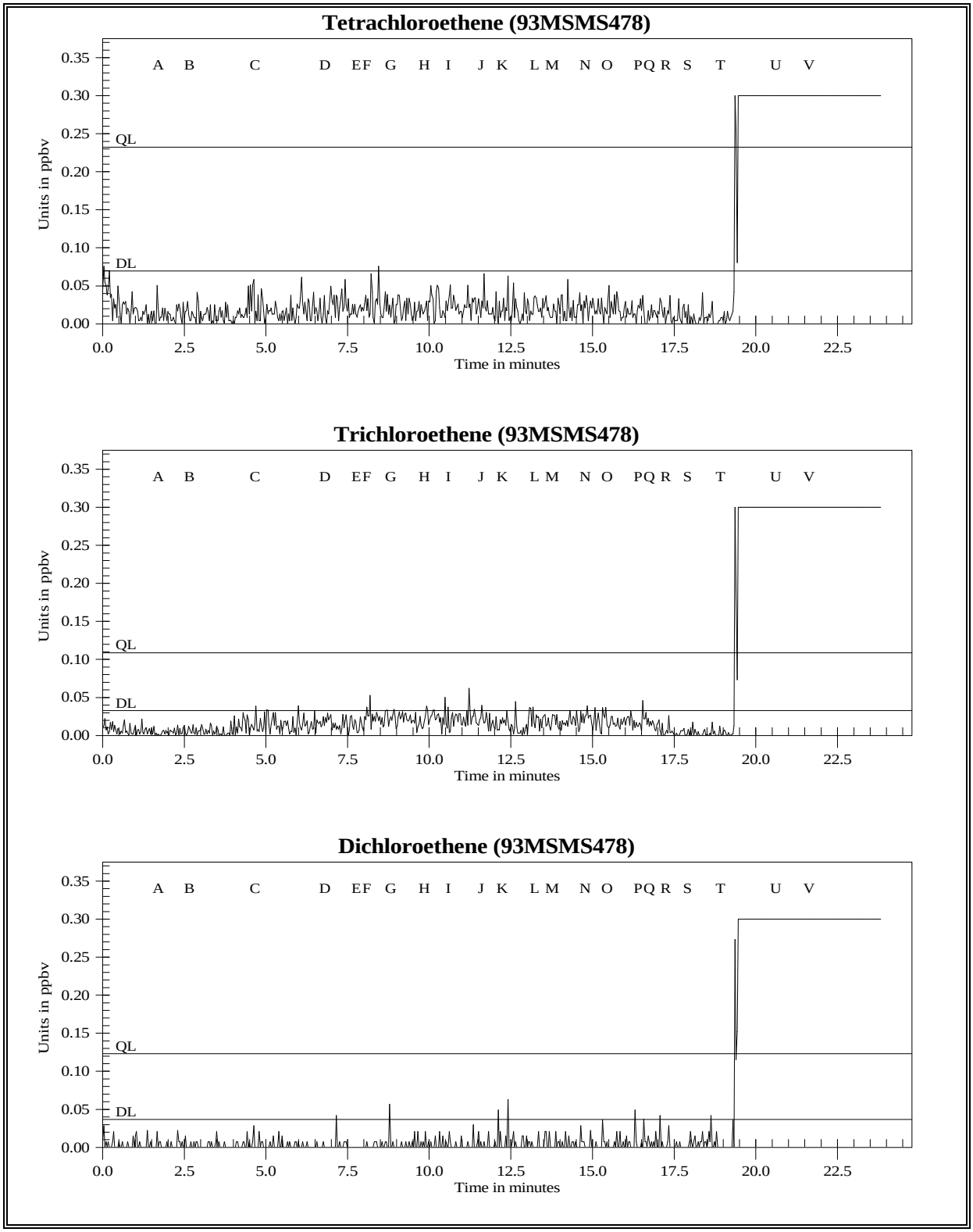

Figure 2c Unit 50 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

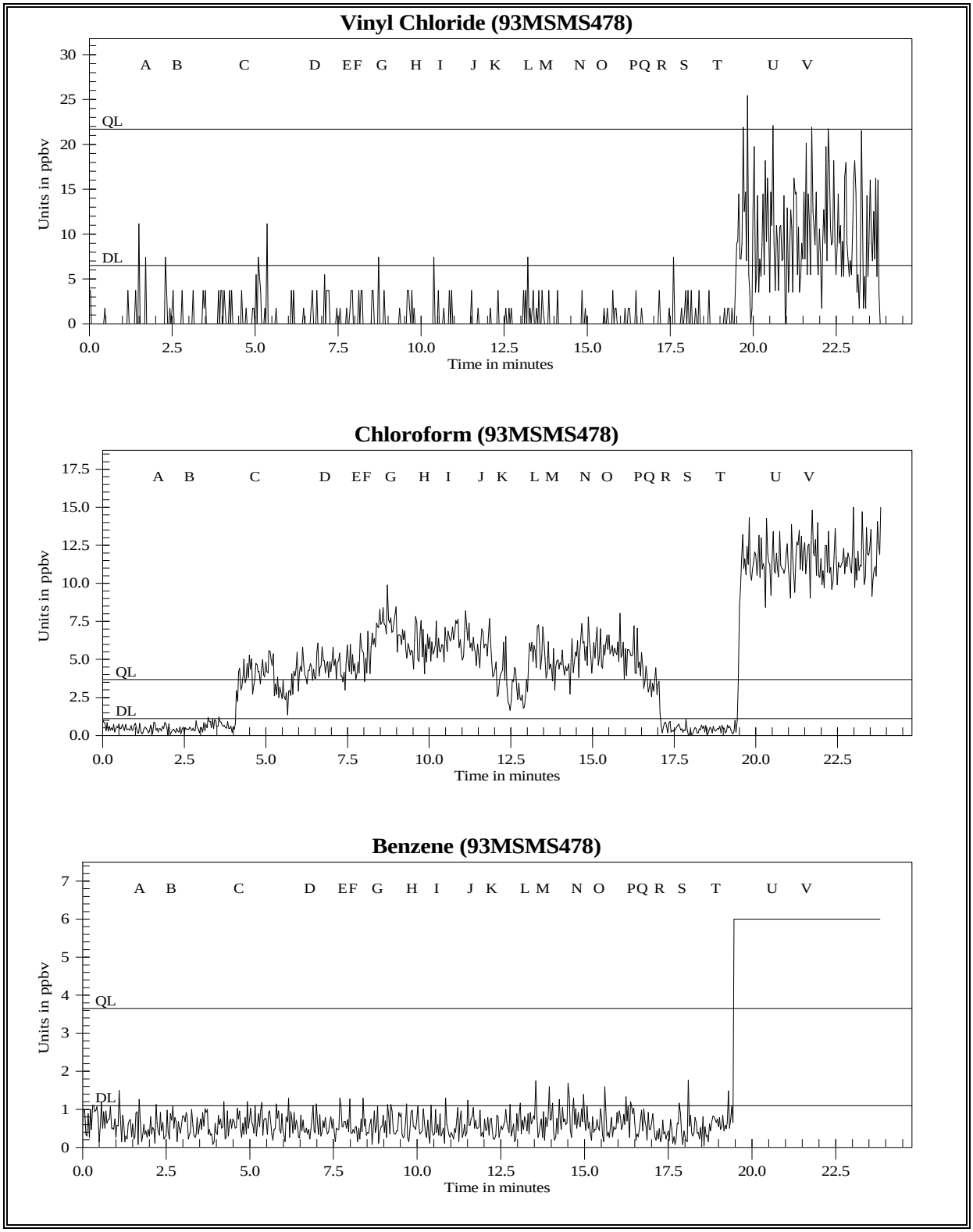

Figure 2c (continued) Unit 50 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

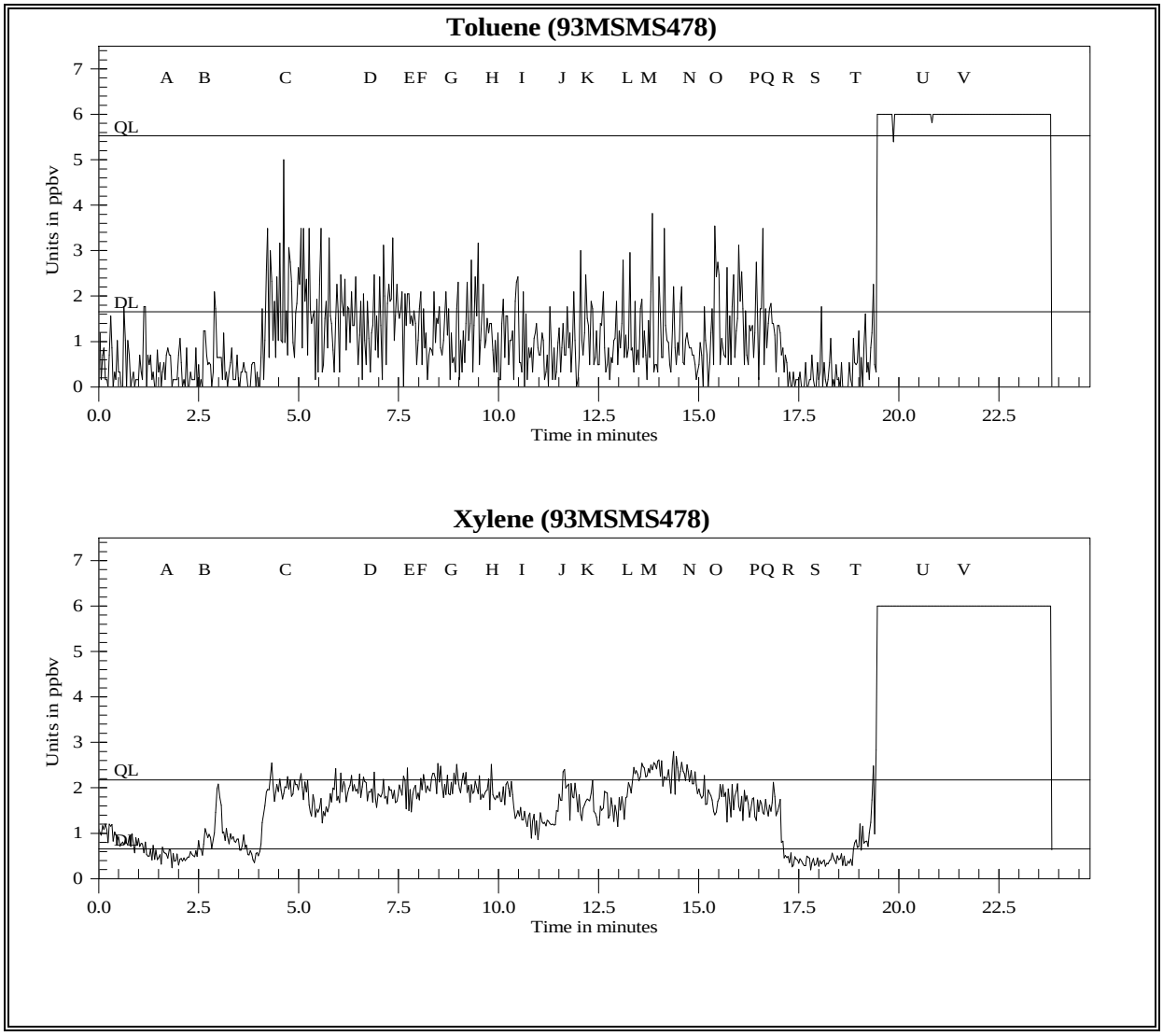

Figure 2c (continued) Unit 50 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

Figure 2d

TAGA Target Compound Summary for Unit 50
File: 93MSMS478 Acquired on 22 January 2014 at 11:03:26

		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
Detection Limits - DL:		0.070	0.033	0.037	6.5	1.1	1.1	1.7	0.65
Quantitation Limits - QL:		0.23	0.11	0.12	22.	3.7	3.7	5.5	2.2
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
D - E	Room one under construction	DL=0.070	DL=0.033	DL=0.037	DL=6.5	4.6	DL=1.1	DL=1.7	1.9J
G - H	Basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	6.6	DL=1.1	DL=1.7	2.0J
I - J	Trench	DL=0.070	DL=0.033	DL=0.037	DL=6.5	6.2	DL=1.1	DL=1.7	1.3J
K - L	Sewer pipe	DL=0.070	DL=0.033	DL=0.037	DL=6.5	3.6J	DL=1.1	DL=1.7	1.6J
M - N	Crawl space	DL=0.070	DL=0.033	DL=0.037	DL=6.5	4.8	DL=1.1	DL=1.7	2.4
O - P	Can of PVC cement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	5.5	DL=1.1	DL=1.7	1.7J
S - T	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
U - V	30 mL/min spike	9.0	9.2	10.	9.2J	12.	17.	10.	29.

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

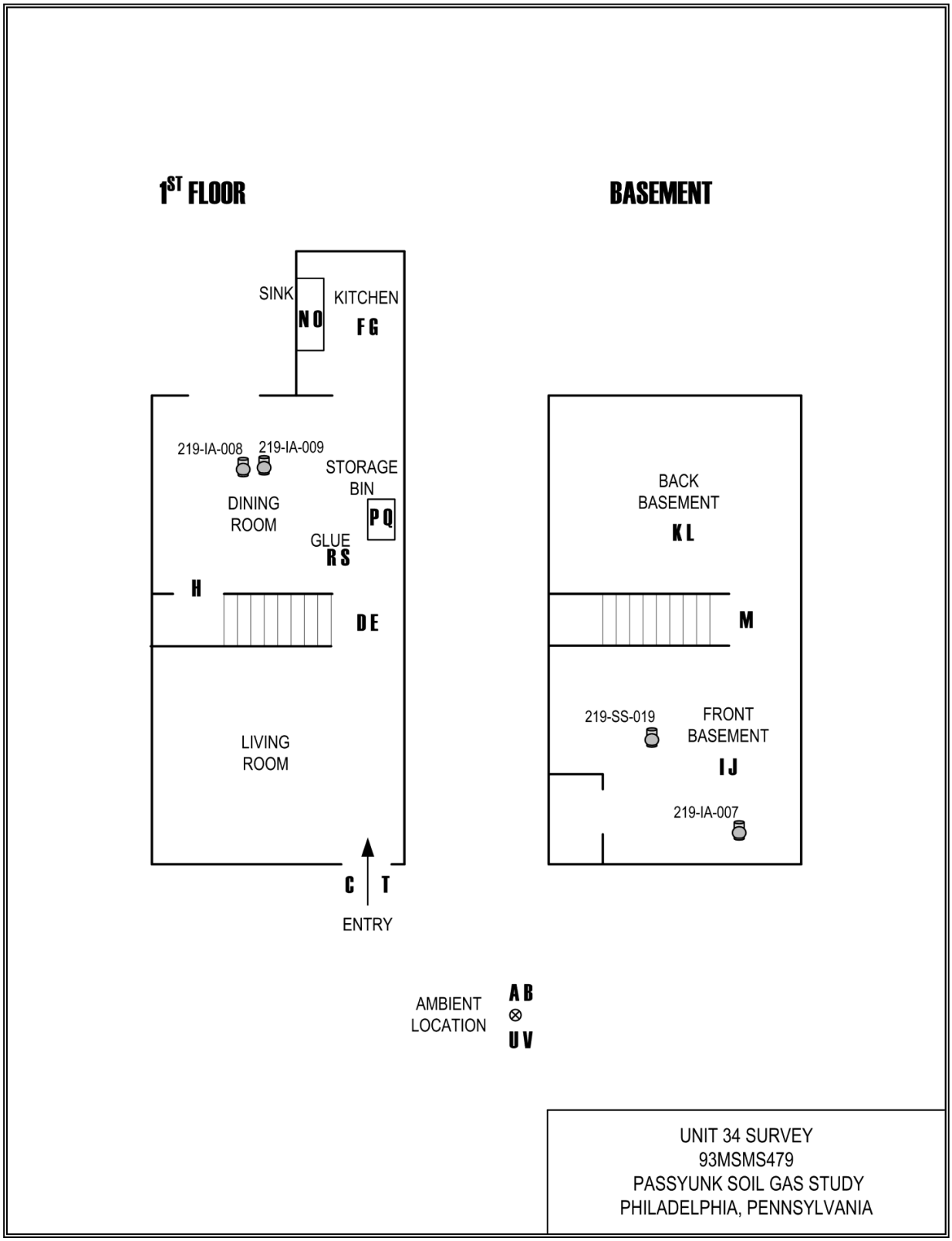

Figure 3a Unit 34 Floor Plan, 93MSMS479

Figure 3b

TAGA File Event Summary
File: 93MSMS479 Acquired on 22 January 2014 at 11:40:54
Title: Unit 34 Survey

Flag	Offset Time	Offset Sequence	Description
A	1.6	49	Start of the pre-entry ambient
B	2.6	79	End of the pre-entry ambient
C	5.1	153	Entering the unit
D	9.7	292	Start of the living room / dining room
E	10.8	325	End of the living room / dining room
F	11.0	333	Start of the kitchen
G	12.1	364	End of the kitchen
H	12.4	374	Descending stairs to the basement
I	12.9	390	Start of the front of the basement
J	14.0	421	End of the front of the basement
K	14.8	447	Start of the back of the basement
L	15.8	477	End of the back of the basement
M	16.1	486	Ascending stairs from the basement
N	16.8	506	Start of the area under the sink
O	18.1	544	End of the area under the sink
P	18.5	558	Start of the storage bin
Q	19.9	599	End of the storage bin
R	21.1	635	Start of liquid nail glue
S	22.2	668	End of liquid nail glue
T	36.1	1087	Exiting the unit
U	36.6	1100	Start of the post-exit ambient
V	37.6	1131	End of the post-exit ambient
W	39.3	1181	Start of 30 mL/min spike
X	40.4	1214	End of 30 mL/min spike

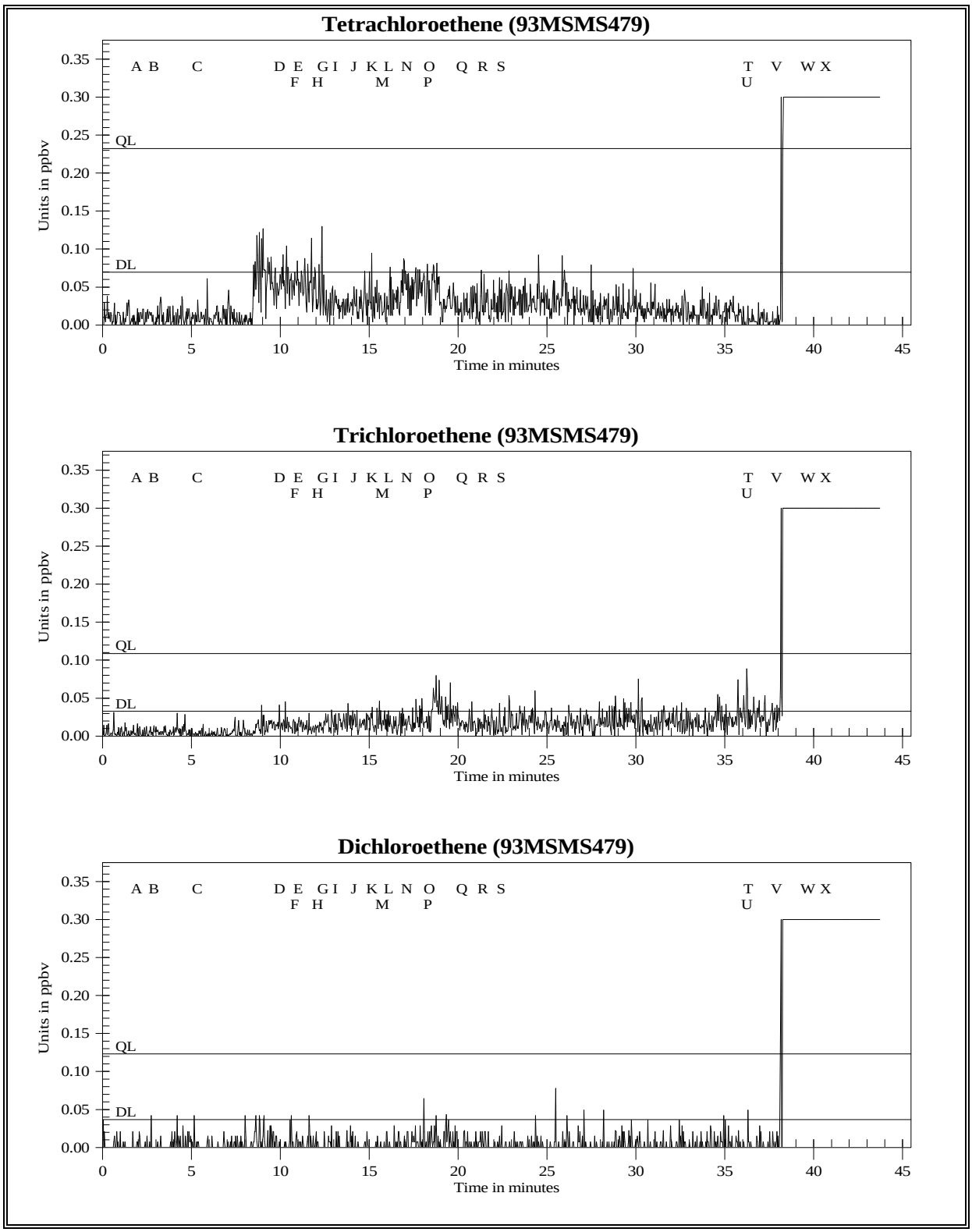

Figure 3c Unit 34 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

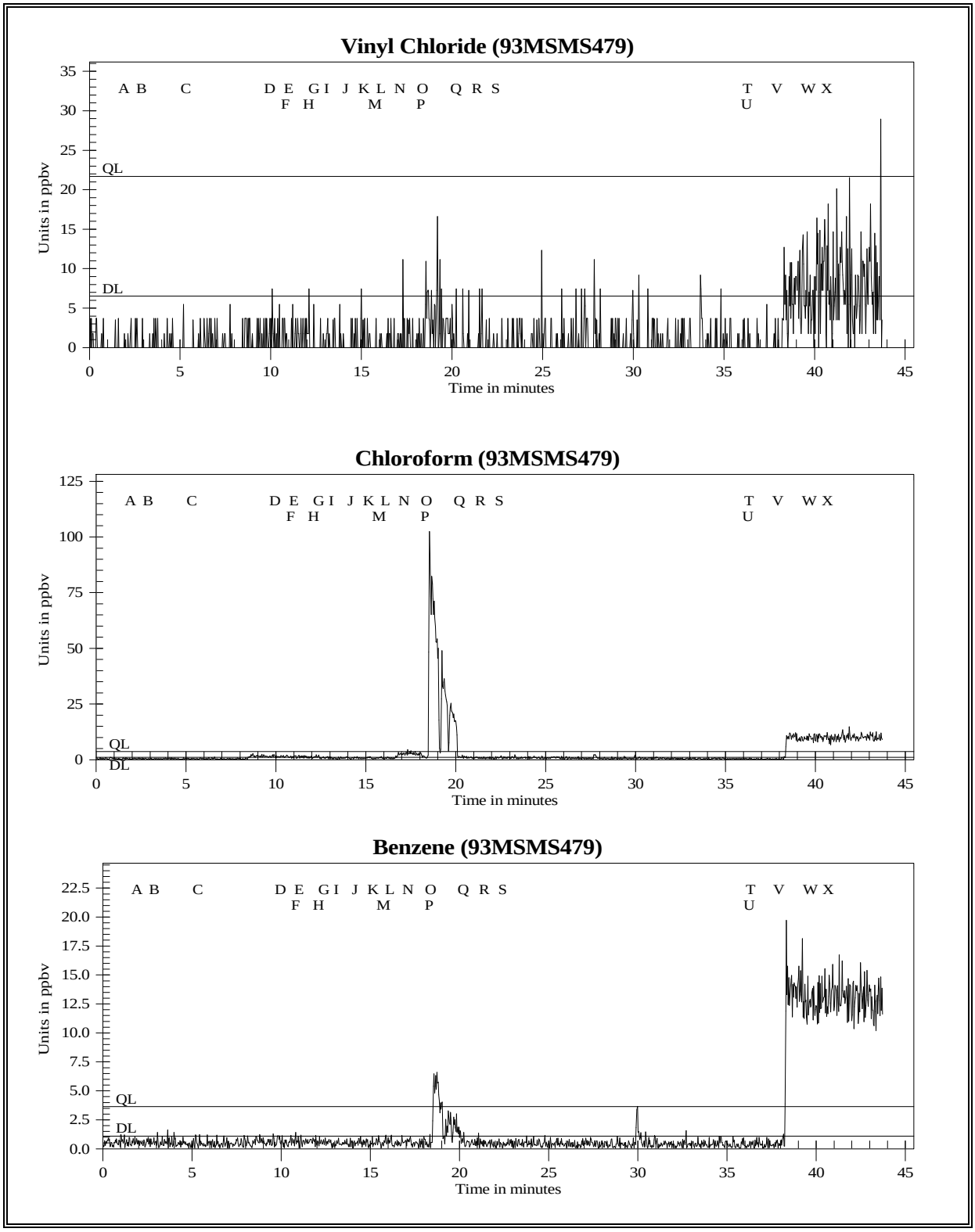

Figure 3c (continued) Unit 34 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

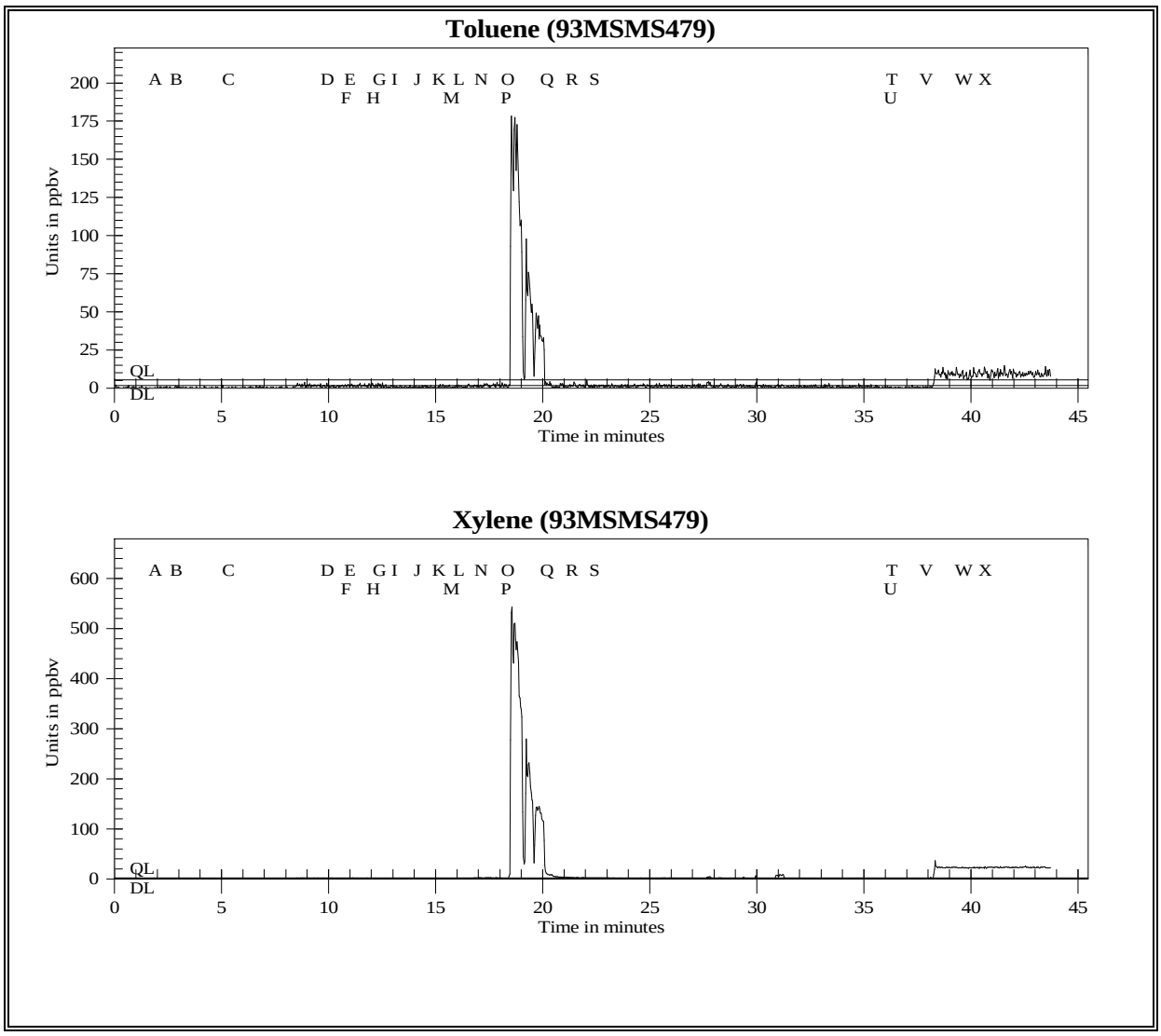

Figure 3c (continued) Unit 34 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

Figure 3d

TAGA Target Compound Summary for Unit 34
File: 93MSMS479 Acquired on 22 January 2014 at 11:40:54

		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
Detection Limits - DL:		0.070	0.033	0.037	6.5	1.1	1.1	1.7	0.65
Quantitation Limits - QL:		0.23	0.11	0.12	22.	3.7	3.7	5.5	2.2
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
D - E	Living room / dining room	DL=0.070	DL=0.033	DL=0.037	DL=6.5	1.5J	DL=1.1	DL=1.7	1.6J
F - G	Kitchen	DL=0.070	DL=0.033	DL=0.037	DL=6.5	1.3J	DL=1.1	1.7J	1.6J
I - J	Front of the basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.94J
K - L	Back of the basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.98J
N - O	Area under the sink	DL=0.070	DL=0.033	DL=0.037	DL=6.5	2.8J	DL=1.1	DL=1.7	2.1J
P - Q	Storage bin	DL=0.070	0.036J	DL=0.037	DL=6.5	39.	3.0J	81.	260
R - S	Liquid nail glue	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	2.6
U - V	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
W - X	30 mL/min spike	7.8	7.5	9.0	7.0J	9.8	13.	8.9	22.

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

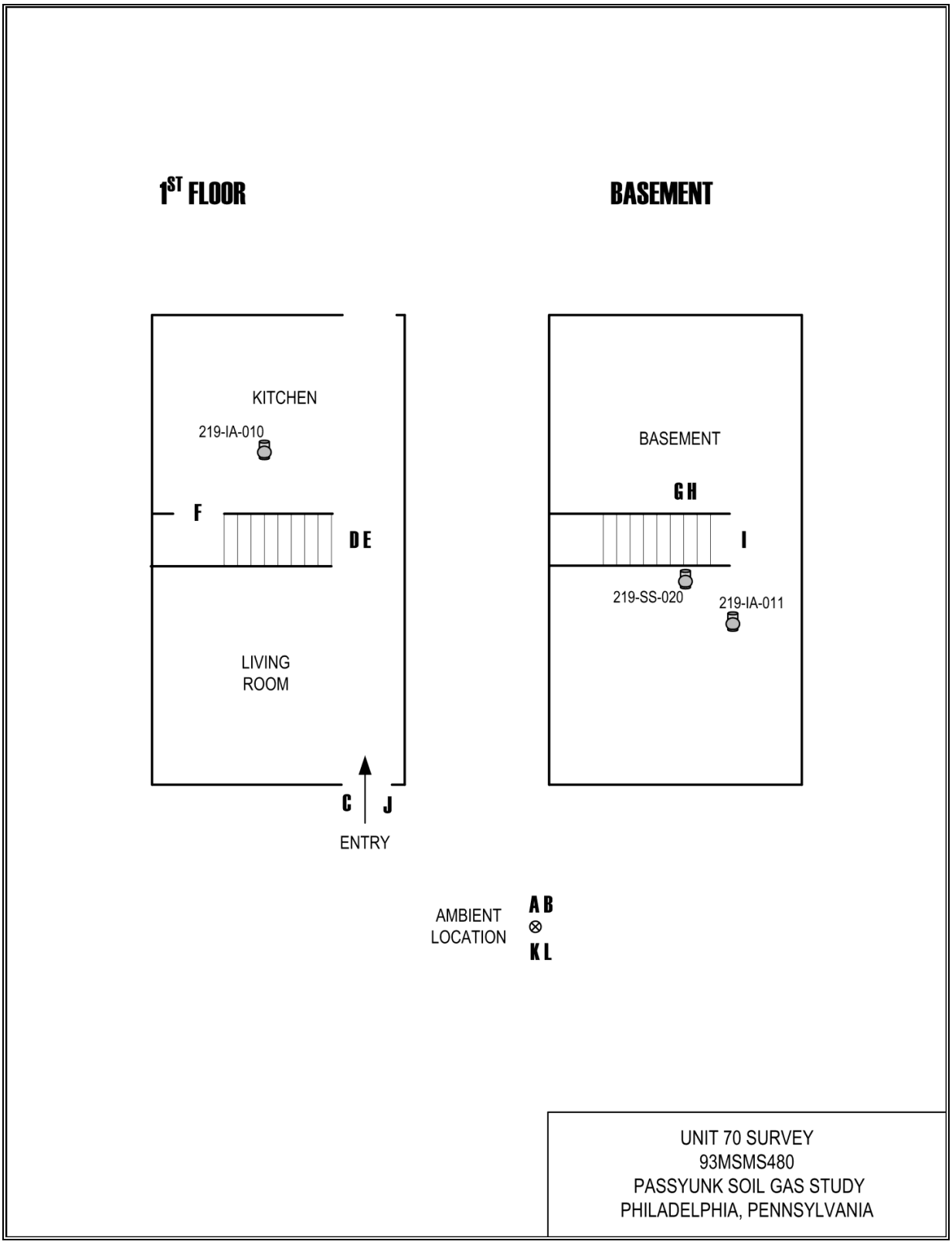

Figure 4a Unit 70 Floor Plan, 93MSMS480

Figure 4b

TAGA File Event Summary
File: 93MSMS480 Acquired on 22 January 2014 at 12:30:01
Title: Unit 70 Survey

Flag	Offset Time	Offset Sequence	Description
A	1.4	43	Start of the pre-entry ambient
B	2.4	72	End of the pre-entry ambient
C	3.8	114	Entering the unit
D	4.1	124	Start of the living room / kitchen
E	5.1	155	End of the living room / kitchen
F	5.5	165	Descending stairs to the basement
G	6.1	185	Start of the basement
H	7.8	236	End of the basement
I	8.2	247	Ascending stairs from the basement
J	8.8	264	Exiting the unit
K	9.0	271	Start of the post-exit ambient
L	10.4	314	End of the post-exit ambient
M	11.4	344	Start of 30 mL/min spike
N	12.5	376	End of 30 mL/min spike

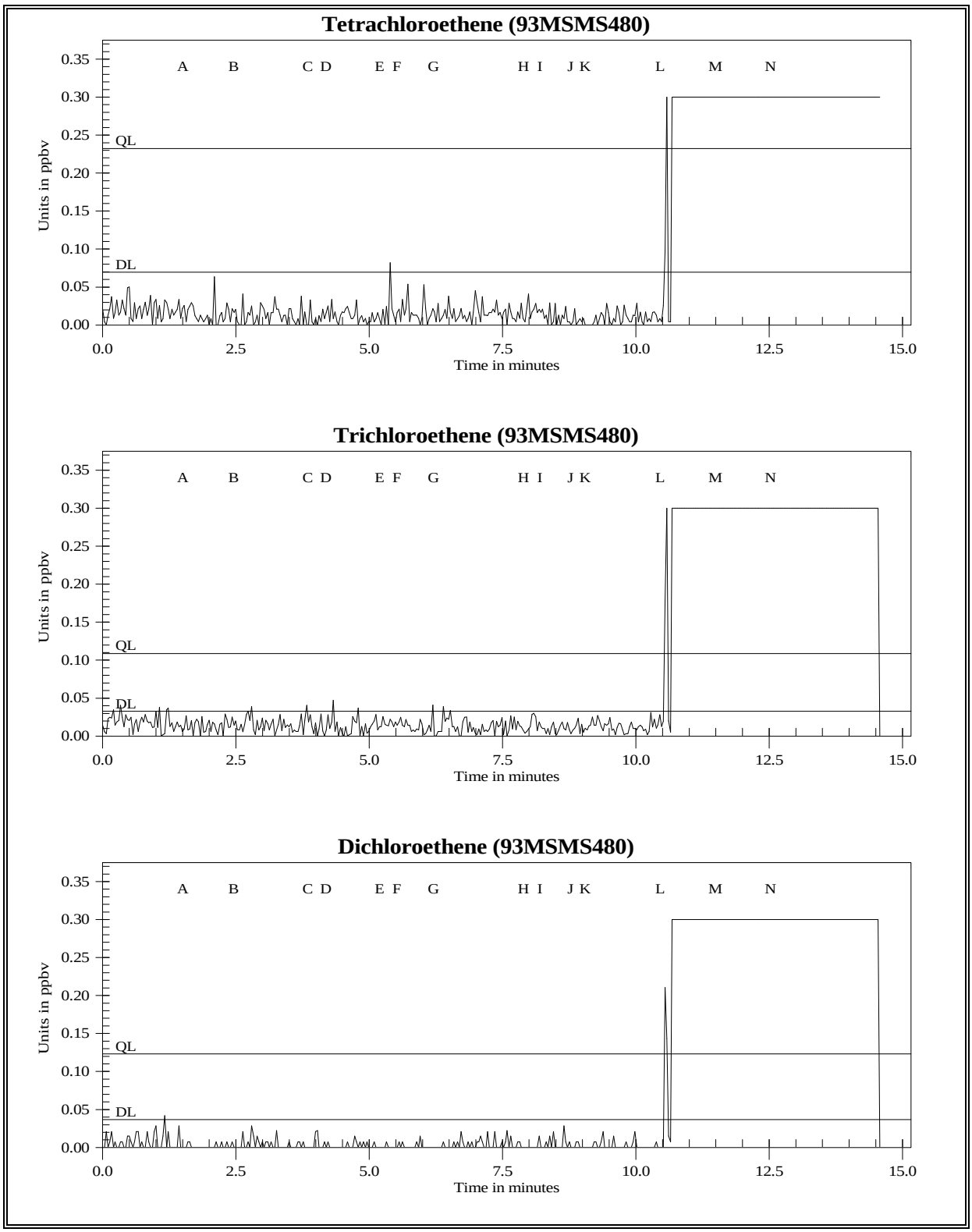

Figure 4c Unit 70 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

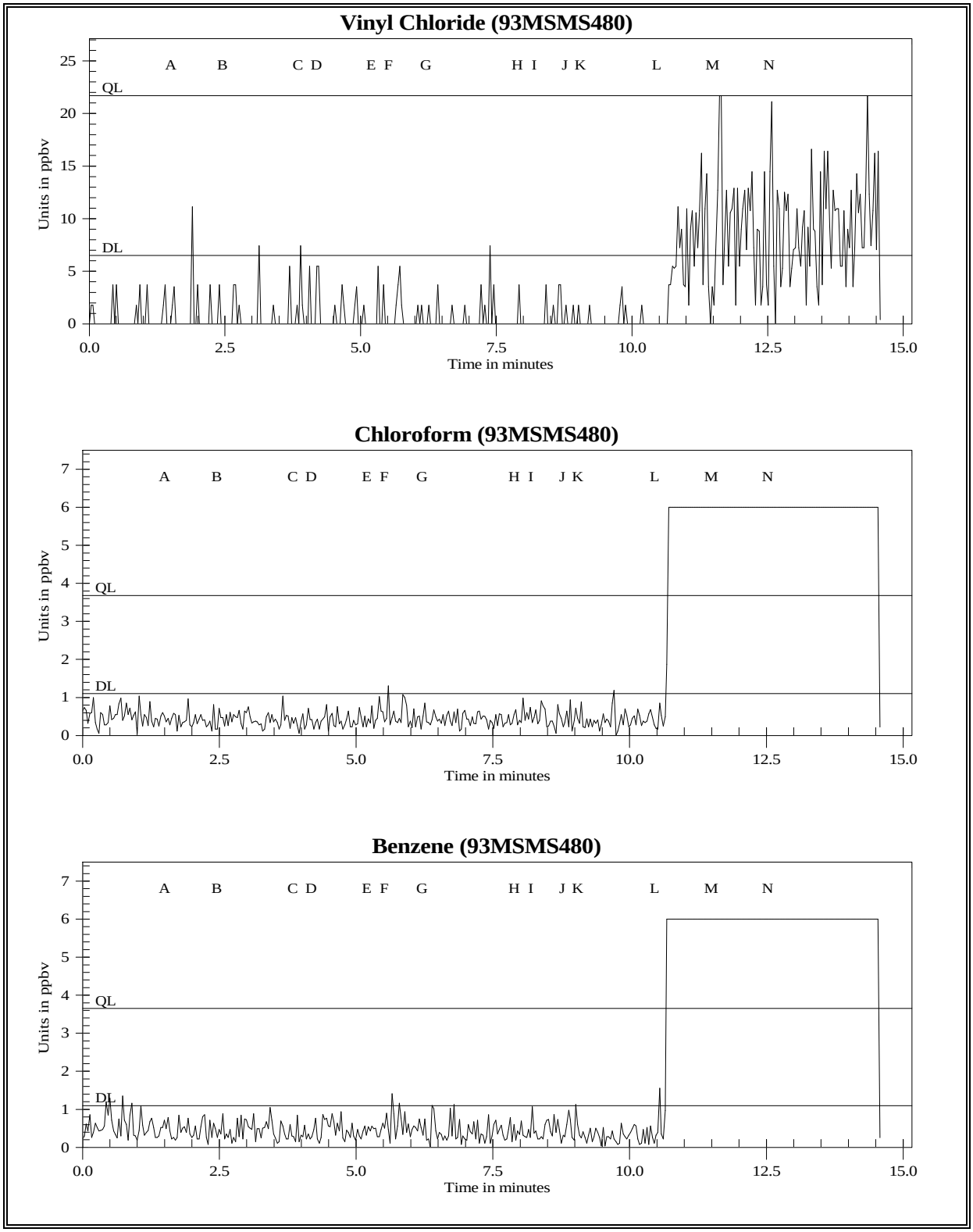

Figure 4c (continued) Unit 70 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

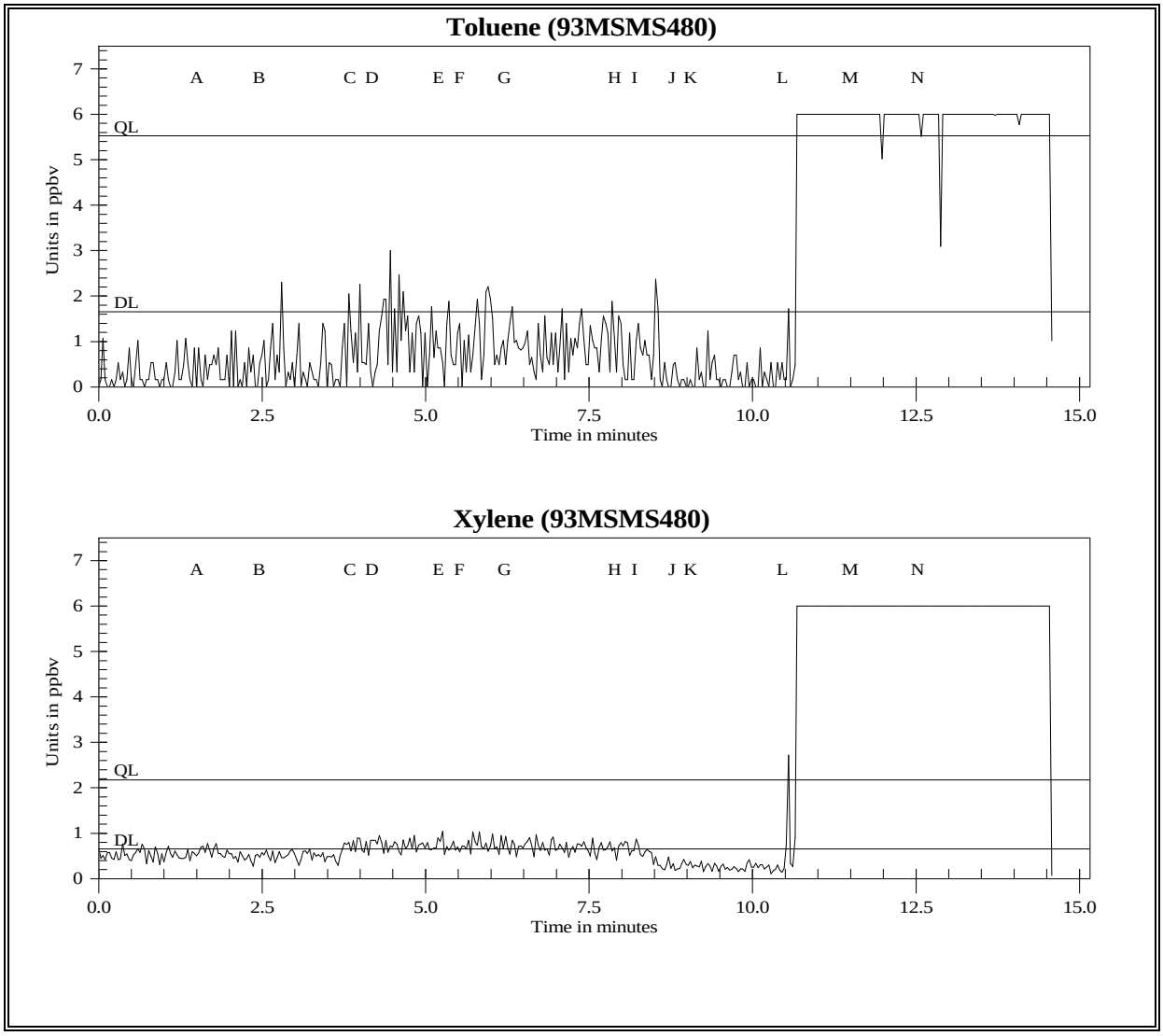

Figure 4c (continued) Unit 70 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

Figure 4d

TAGA Target Compound Summary for Unit 70
File: 93MSMS480 Acquired on 22 January 2014 at 12:30:01

	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
Detection Limits - DL:	0.070	0.033	0.037	6.5	1.1	1.1	1.7	0.65
Quantitation Limits - QL:	0.23	0.11	0.12	22.	3.7	3.7	5.5	2.2

Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
D - E	Living room / kitchen	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.73J
G - H	Basement	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	0.70J
K - L	Post-exit ambient	DL=0.070	DL=0.033	DL=0.037	DL=6.5	DL=1.1	DL=1.1	DL=1.7	DL=0.65
M - N	30 mL/min spike	7.6	7.4	8.6	8.9J	10.	13.	9.0	22.

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

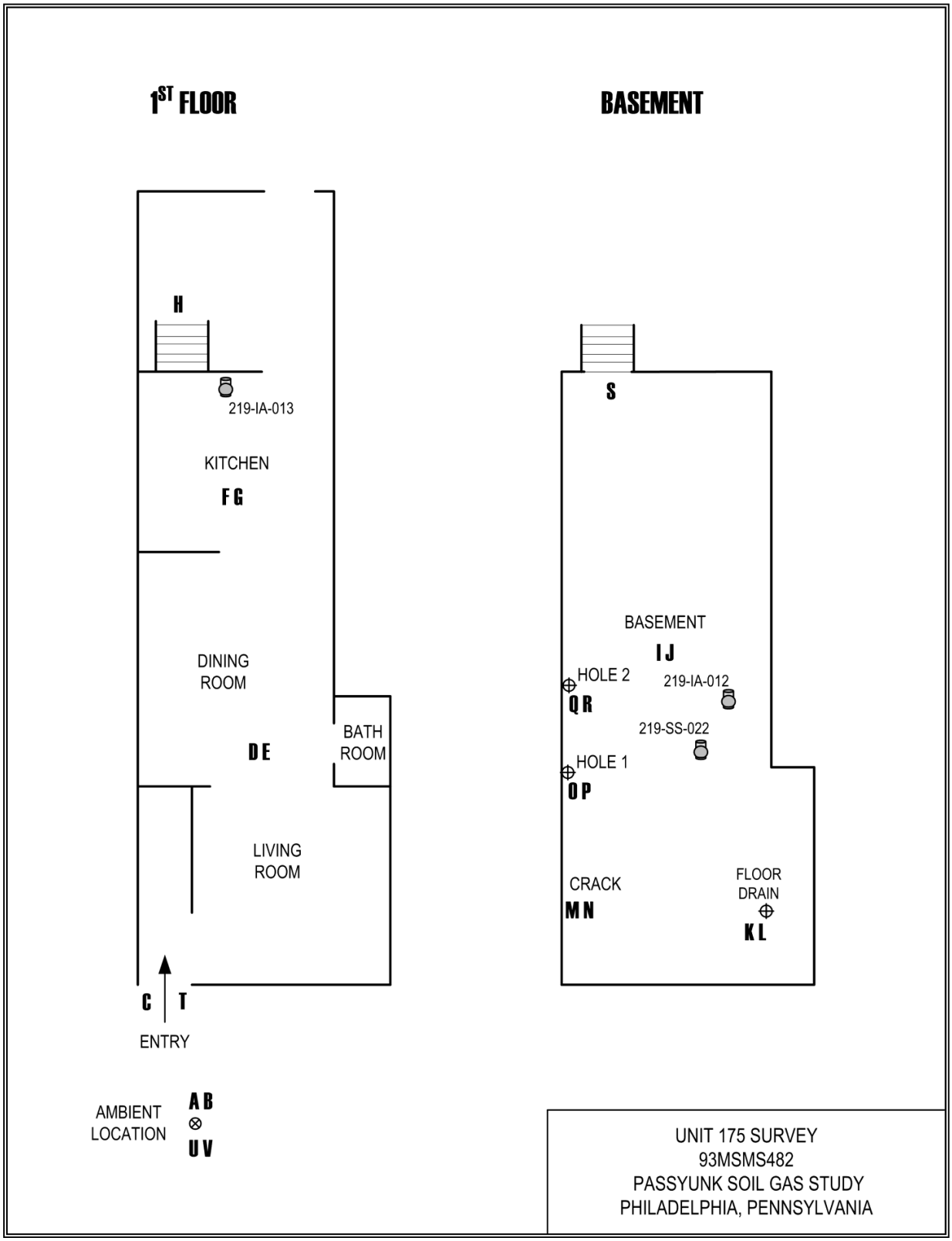

Figure 5a Unit 175 Floor Plan, 93MSMS482

Figure 5b

TAGA File Event Summary
File: 93MSMS482 Acquired on 22 January 2014 at 14:22:44
Title: Unit 175 Survey

Flag	Offset Time	Offset Sequence	Description
A	1.5	45	Start of the pre-entry ambient
B	2.6	78	End of the pre-entry ambient
C	3.8	115	Entering the unit
D	4.3	129	Start of the living room / dining room
E	5.8	176	End of the living room / dining room
F	6.1	184	Start of the kitchen
G	7.1	213	End of the kitchen
H	8.0	241	Descending stairs to the basement
I	8.7	262	Start of the basement
J	9.9	297	End of the basement
K	11.7	353	Start of the floor drain
L	12.7	383	End of the floor drain
M	17.3	520	Start of the crack in the wall
N	18.3	552	End of the crack in the wall
O	19.3	580	Start of hole one in the wall
P	20.7	622	End of hole one in the wall
Q	21.7	654	Start of hole two in the wall
R	22.8	687	End of hole two in the wall
S	23.8	715	Ascending stairs from the basement
T	25.2	757	Exiting the unit
U	26.4	794	Start of the post-exit ambient
V	27.3	823	End of the post-exit ambient
W	28.2	849	Start of 30 mL/min spike
X	29.2	879	End of 30 mL/min spike

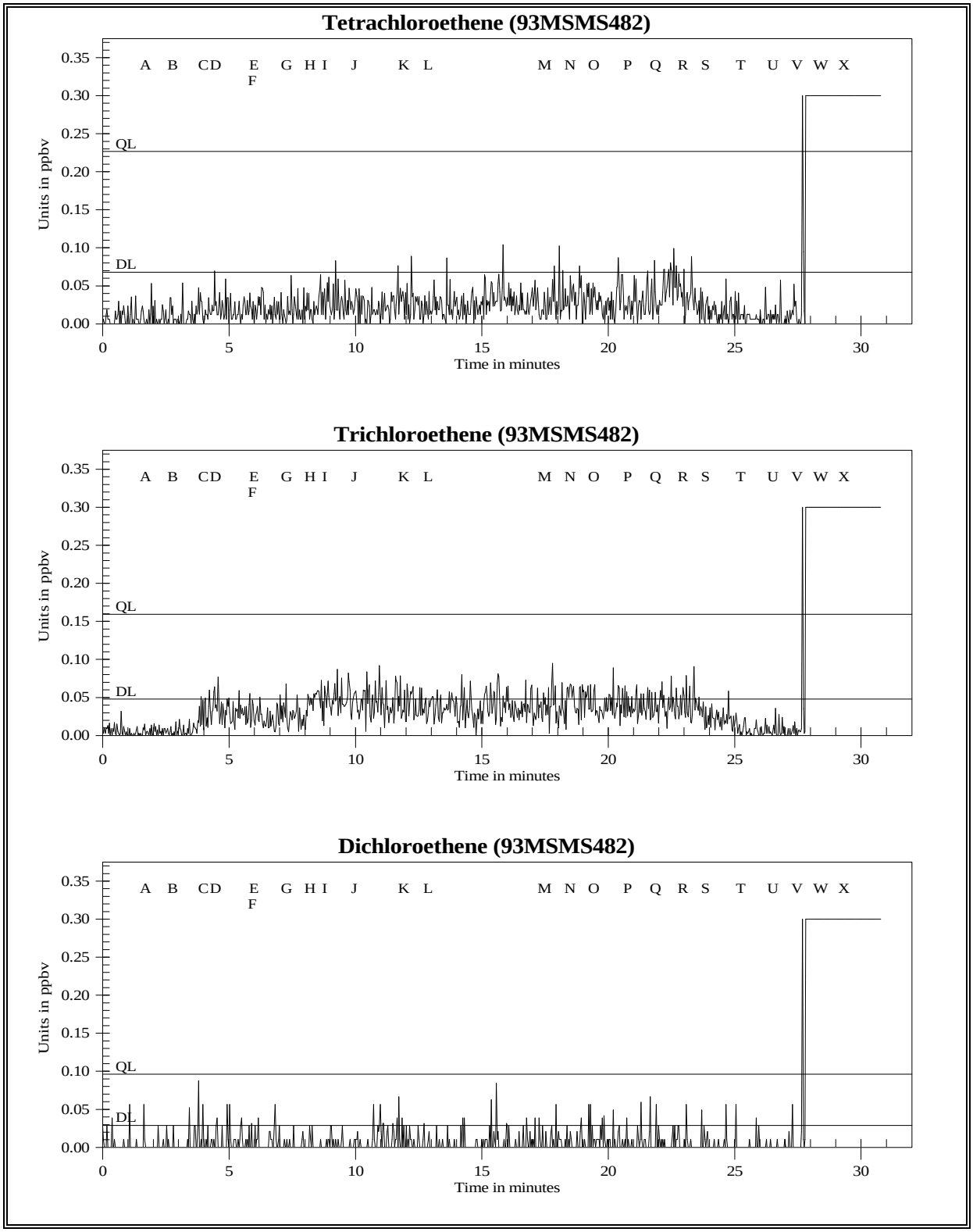

Figure 5c Unit 175 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

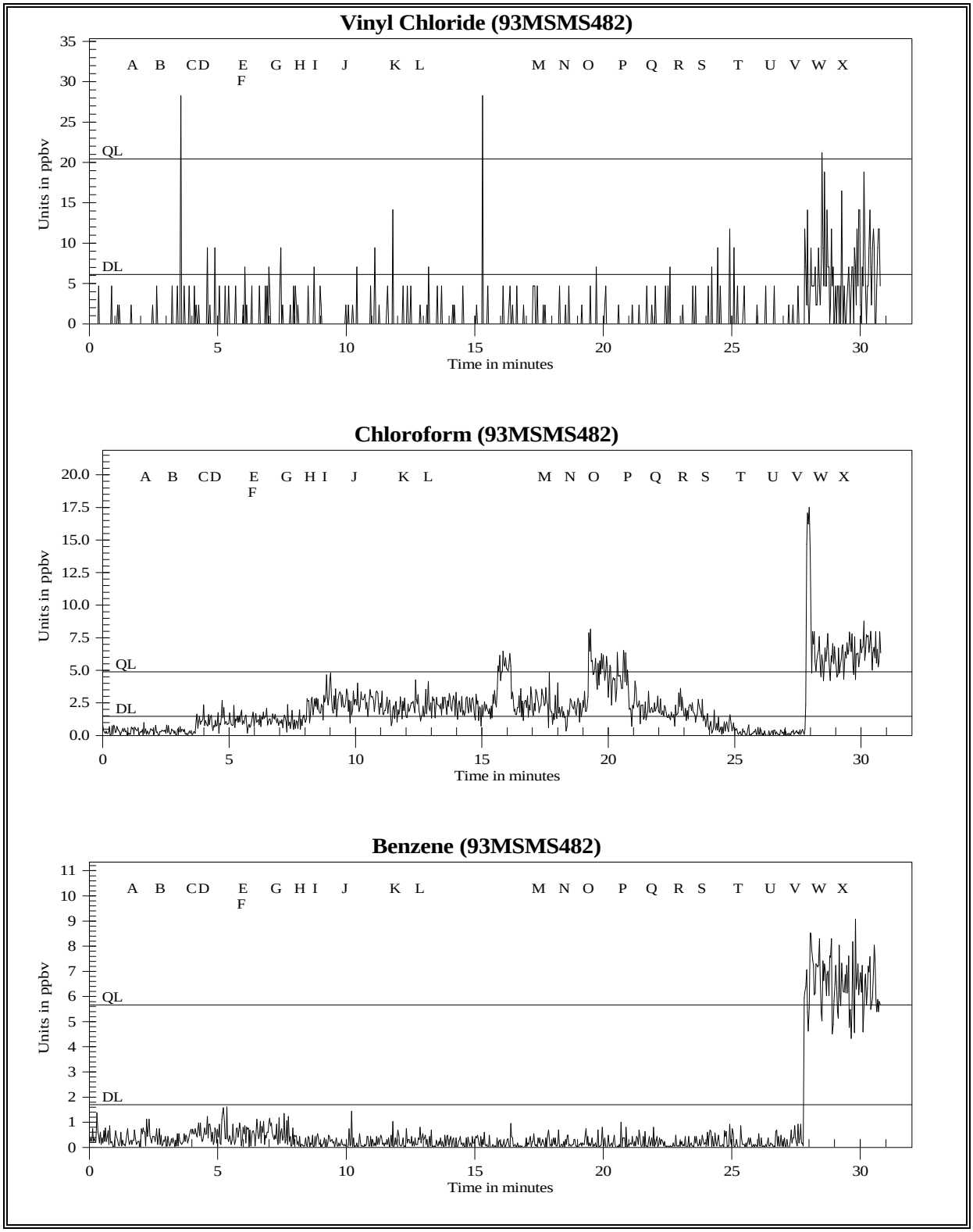

Figure 5c (continued) Unit 175 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

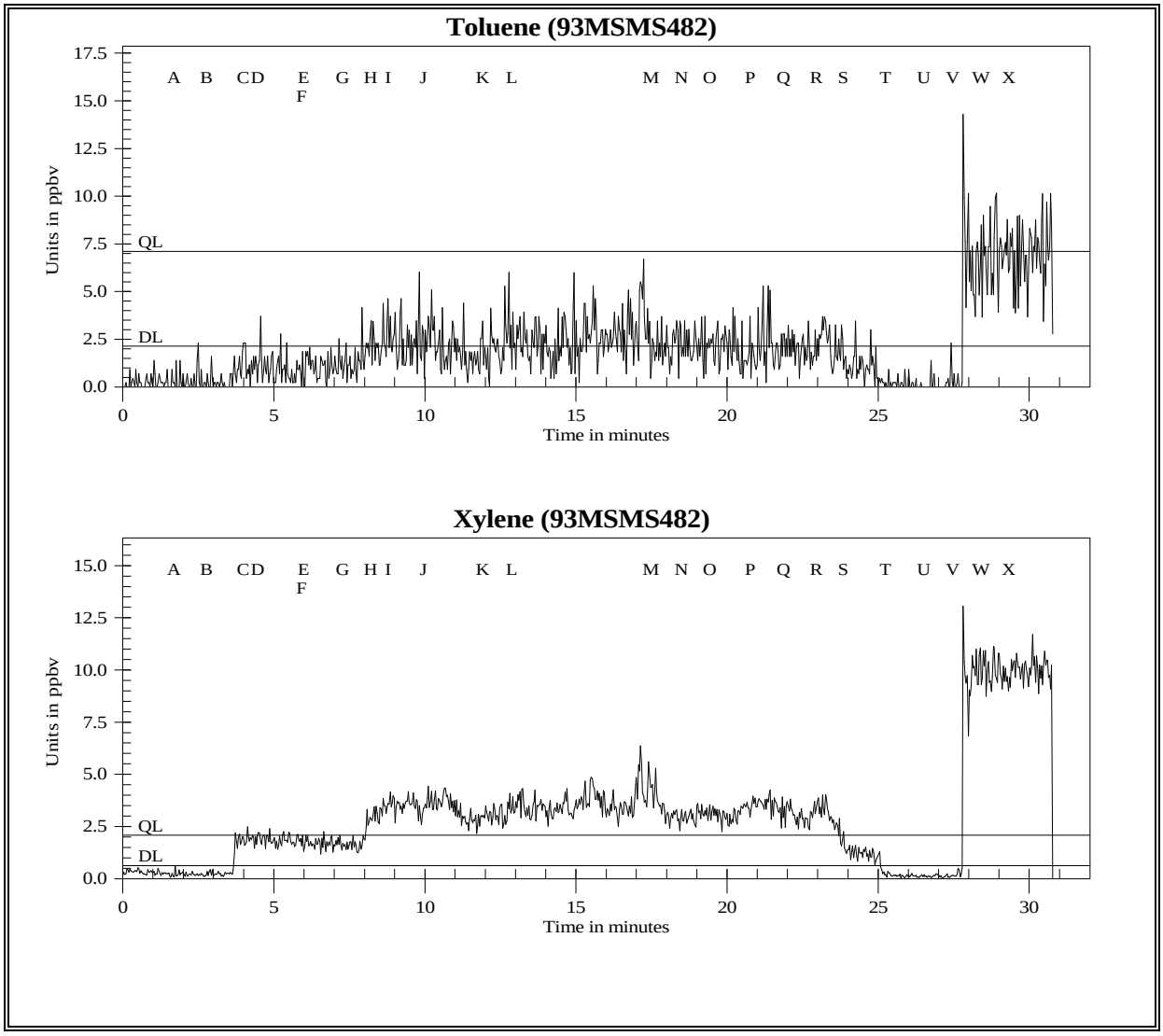

Figure 5c (continued) Unit 175 Survey for Tetrachloroethene, Trichloroethene, total-Dichloroethene, Vinyl Chloride, Chloroform, Benzene, Toluene, and total Xylenes.

Figure 5d

TAGA Target Compound Summary for Unit 175
File: 93MSMS482 Acquired on 22 January 2014 at 14:22:44

		Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
Detection Limits - DL:		0.068	0.048	0.029	6.1	1.5	1.7	2.1	0.63
Quantitation Limits - QL:		0.23	0.16	0.096	20.	4.9	5.7	7.1	2.1
Flags	Description	Tetrachloroethene	Trichloroethene	Dichloroethene	Vinyl Chloride	Chloroform	Benzene	Toluene	Xylene
A - B	Pre-entry ambient	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	DL=0.63
D - E	Living room / dining room	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	1.9J
F - G	Kitchen	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	1.7J
I - J	Basement	DL=0.068	DL=0.048	DL=0.029	DL=6.1	2.7J	DL=1.7	2.5J	3.5
K - L	Floor drain	DL=0.068	DL=0.048	DL=0.029	DL=6.1	2.1J	DL=1.7	DL=2.1	3.0
M - N	Crack in the wall	DL=0.068	DL=0.048	DL=0.029	DL=6.1	2.1J	DL=1.7	2.3J	3.6
O - P	Hole one in the wall	DL=0.068	DL=0.048	DL=0.029	DL=6.1	4.9J	DL=1.7	DL=2.1	3.1
Q - R	Hole two in the wall	DL=0.068	DL=0.048	DL=0.029	DL=6.1	1.9J	DL=1.7	DL=2.1	3.0
U - V	Post-exit ambient	DL=0.068	DL=0.048	DL=0.029	DL=6.1	DL=1.5	DL=1.7	DL=2.1	DL=0.63
W - X	30 mL/min spike	6.2	6.2	6.9	DL=6.1	5.8	6.6	6.8J	10.

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

APPENDIX A

Standard Gas Cylinder Certification

Passyunk Soil Gas Site

Final Analytical TAGA Report

February 2014

ISO 9001:2008 Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

THE LINDE GROUP

Linde

SHIPPED TO: Lockheed Martin
2890 Woodbridge Ave
Edison, NJ 08837

PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	110726164	**Cylinder Size:**	2A (8" X 47.5")
Production#:	2898350	**Cylinder # :**	CC-162975
Certification Date:	Aug-28-2013	**Cylinder Pressure:**	1000 psig
P.O.# :	RECERT Charles Shields	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	14004551	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	2000 Liter
Expiration Date:	Aug-28-2014	**Blend Tolerance:**	5% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	2% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Vinyl Chloride	75-01-4	20.0 ppm	20.6 ppm
1,1-Dichloroethene	75-35-4	20.0 ppm	21.2 ppm
Benzene	71-43-2	20.0 ppm	20.6 ppm
Trichloroethylene	79-01-6	20.0 ppm	20.2 ppm
Toluene	108-88-3	20.0 ppm	20.5 ppm
Tetrachloroethylene	127-18-4	20.0 ppm	20.1 ppm
p-xylene	106-42-3	10.0 ppm	10.2 ppm
m-xylene	108-38-3	10.0 ppm	10.2 ppm
o-xylene	95-47-6	10.0 ppm	10.2 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Matthew Booth

DATE: Aug-28-2013

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

ISO 9001:2008 Linde SPECTRA Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

THE LINDE GROUP

Linde

SHIPPED TO: Lockheed Martin
2890 Woodbridge Ave.
Edison, NJ 08837-3679

PAGE: 1 of 1

CERTIFICATE OF ANALYSIS

Sales#:	111074597	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1278990	**Cylinder # :**	CC-128284
Certification Date:	Nov-22-2013	**Cylinder Pressure:**	2000 psig
P.O.# :	Scott Thompson	**Cylinder Valve:**	CGA 350 / Steel
Blend Type:	CERTIFIED	**Cylinder Volume:**	29.5 Liter
Material#:	24086389	**Cylinder Material:**	Aluminum
Traceability:	NIST by weight	**Gas Volume:**	4000 Liter
Expiration Date:	Nov-22-2014	**Blend Tolerance:**	5% Relative
Do NOT use under:	150 psig	**Analytical Accuracy:**	2% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Chloroform	67-66-3	20.0 ppm	20.6 ppm
Nitrogen	7727-37-9	Balance	Balance

ANALYST: Lou Lorenzetti

DATE: Nov-22-2013

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

APPENDIX B

Compiled Meteorological Data

Passyunk Soil Gas Site

Final Analytical TAGA Report

February 2014

Local Climatological Data – Hourly Observations Table
Philadelphia International Airport (13739)
Elevation: 10 ft. above sea level
Latitude: 39.868
Longitude: -75.231
22 January 2014

Date	Time (LST)	Dry Bulb Temperature (F)	Dew Point Temperature (F)	Relative Humidity (%)	Wind Speed (MPH)	Wind Direction (deg.)	Station Pressure (in. Hg)	Precipitation Total (inches)
1/22/2014	06:54	4	-9	54	18	340	29.86	
1/22/2014	07:54	4	-9	54	21	340	29.86	
1/22/2014	08:54	5	-8	54	13	350	29.88	
1/22/2014	09:54	7	-8	50	21	330	29.90	
1/22/2014	10:54	9	-6	50	20	340	29.90	
1/22/2014	11:54	11	-5	48	18	330	29.88	
1/22/2014	12:54	13	-5	44	15	320	29.88	
1/22/2014	13:54	14	-3	46	16	300	29.88	
1/22/2014	14:54	16	-5	39	17	300	29.90	
1/22/2014	15:54	16	-5	39	10	310	29.91	
1/22/2014	16:54	16	-4	41	10	300	29.93	

Wind direction is the direction from which the wind is blowing.

LST	=	Local standard time	MPH	=	Miles per hour
F	=	Fahrenheit	deg	=	degree
%	=	Percent	in. Hg	=	inches of mercury

APPENDIX D

Field Sampling Worksheets for January 2014 Mobilization

Passyunk Soil Gas Site

Trip Report

February 2018

EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031

Air Sampling Work Sheet

Site: Passyunk
Sampler: Steffensen
Date: 1/22-1/23/14

WA# 219
U.S. EPA/ERT WAM: Mickunas
SERAS Task Leader: Steffensen

Sample #	219-1A-001	219-1A-002	219-1A-003	219-1A-004	219-1A-005
Location	Unit 84 (CS)	Unit 116 (CS)	Unit 116 (CS)	Unit 84 (CS)	Unit 50
Sub-Location	1A	1A	1st Floor	1st Floor	1st Floor
Summa #	1035	1071	1048	1085	1135
Orifice ID	3421	3424	3422	3425	3477
Start Pressure	-30	-30	-30	-30	-30
Flow Rate (Start)	3.2	2.9	*3.4	30	2.7
Flow meter	Agilent	→	→	→	→
Analysis/Method	TO-15	→	→	→	→
Time/Counter (Start)	1149	1148	1151	1157	1209
Time/Counter (Stop)	1040	1045	1034	1037	1132
Total Time					
End Pressure	-10.5	-10	-10	-12	-12
Sample Volume					

MET Station on Site?: Y / (N)

EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031

Air Sampling Work Sheet

Site: Passyunk
Sampler: Steffensen
Date: 1/22-1/23/14

WA# 219
U.S. EPA/ERT WAM: McKenna
SERAS Task Leader: Steffensen

Sample #	219-1A-006	29-1A-007	219-1A-008	219-1A-009	219-1A-010
Location	Unit 50	Unit 34	Unit 34	Unit 34	Unit 70
Sub-Location	1A	1A	1st Floor	1st Floor Dup	1st Floor
Summa #	1152	1087	1018	1105	1701
Orifice ID	3478	3475	3407	3476	3544
Start Pressure	-30	-30	-30	-30	-30
Flow Rate (Start)	2.9	3.1	3.0	2.6	3.3
Flow meter	Agilent	→	→	→	→
Analysis/Method	TO-15	→	→	→	→
Time/Counter (Start)	1213	1241	1244	1244	1300
Time/Counter (Stop)	1125	1101	1104	1104	1117
Total Time					
End Pressure	-12.0	-13.05	-12.1	-14.5	-10.05
Sample Volume					

MET Station on Site?: Y / (N)

EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031

Air Sampling Work Sheet

Site: Passyunk WA# 219

Sampler: Steffensen U.S. EPA/ERT WAM: Mickunas

Date: 1/22/14 - 1/23/14 SERAS Task Leader: Steffensen

Sample #	219-1A-011	219-1A-012	219-1A-013	219-~~A~~A-014	219-~~A~~A-015
Location	Unit 70	Unit 175	Unit 175	Unit 175	Unit
Sub-Location	1A	1A	1st Floor	ambient	ambient
Summa #	1720	1669	1640	1156	1173
Orifice ID	3545	3543	3542	3487	3488
Start Pressure	-30	-30	-30	-30	-30
Flow Rate (Start)	3.0	3.0	3.2	3.1	2.9
Flow meter	Agilent				
Analysis/Method	TO-15				
Time/Counter (Start)	1300	1459	1502	1504	1512
Time/Counter (Stop)	1111	1334	1345	1348	~~0730~~ 1405
Total Time					
End Pressure	~~-13.9~~ ~~-10.0~~ (CS)	-14.4	-11.4	-11.75	-12
Sample Volume					

MET Station on Site?: Y / (N)

EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031

Air Sampling Work Sheet

Site: Passyunk WA# 219

Sampler: Steffensen U.S. EPA/ERT WAM: Mickunas

Date: 1/22 - 1/23/13 SERAS Task Leader:

Sample #	219-SS-016	219-SS-017	219-SS-018	219-SS-019	219-SS-020
Location	Unit ~~116~~ 84 (CS)	Unit ~~84~~ 116 (CS)	Unit 50	Unit 34	Unit 70
Sub-Location	SS	SS	SS	SS	SS
Summa #	1509	1493	1670	1851	1846
Orifice ID	3268	3265	3414	3417	3416
Start Pressure	-30	-30	-30	-30	-30
Flow Rate (Start)	3.2	2.9	3.0	2.8	3.2
Flow meter	Agilent →				
Analysis/Method	TO-15 →				
Time/Counter (Start)	1131	1148	1214	1241	1300
Time/Counter (Stop)	1641	1045	1125	1059	1111
Total Time					
End Pressure	-9.1	-20	-9.96	-13.9	~~-13.9~~ -10.04 (CS)
Sample Volume					

MET Station on Site?: Y (N)

EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031

Air Sampling Work Sheet

Site: Passyunk
WA# 219
Sampler: Steffensen
U.S. EPA/ERT WAM: Mickunas
Date: 1/22-1/23/14
SERAS Task Leader: Steffensen

Sample #	219-TB-021	219-SS-022
Location	Trip	~~Unit~~ 175
Sub-Location	—	SS
Summa #	1185	1870
Orifice ID	—	3418
Start Pressure	-30	-30
Flow Rate (Start)	—	3.1
Flow meter	~~Agilent~~ CS	Agilent
Analysis/Method		TO-15
Time/Counter (Start)	1230	1500
Time/Counter (Stop)	—	1334
Total Time	—	
End Pressure	—	-11.1
Sample Volume	—	

MET Station on Site?: Y / (N)

APPENDIX E

Individual Table of Results per Unit Sampled During the January 2014 Mobilization

Passyunk Soil Gas Site

Trip Report

February 2018

Table 1. Unit 116
Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)				Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor					
1,1,1-Trichloroethane	71-55-6	0.55	U	0.11		0.1		0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	0.69	U	0.12	U	0.12	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.77	U	0.51		0.49		0.51		0.53	
1,1,2-Trichloroethane	79-00-5	0.55	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	0.4	U	0.073	U	0.073	U	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	0.49	U	0.2		0.19		0.2		0.24	
1,2-Dibromoethane	106-93-4	0.77	U	0.27	U	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.7	U	0.24	U	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	0.4	U	0.073	U	0.13		0.073	U	0.062	J
1,2-Dichloropropane	78-87-5	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	0.49	U	0.17	U	0.17	U	0.17	U	0.17	U
1,3-Butadiene	106-99-0	0.5		0.15		0.19		0.077	U	0.14	
1,3-Dichlorobenzene	541-73-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dioxane	123-91-1	3.6	U	1.3	U	1.3	U	1.3	U	1.3	U
2-Butanone	78-93-3	12	U	4.1	U	4.1	U	4.1	U	4.1	U
2-Hexanone	591-78-6	0.86	J	0.14	U	0.27		0.26		0.27	
4-Ethyltoluene	622-96-8	0.49	U	0.17	U	0.17	U	0.17	U	0.17	U
Acetone	67-64-1	140	J	8.8	J	28	J	9.6	J	10	J
Benzene	71-43-2	1.2		0.78		1.1		0.71		1	
Bromoform	75-25-2	1	U	0.36	U	0.36	U	0.36	U	0.36	U
Bromomethane	74-83-9	0.39	U	0.14	U	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	0.63	U	0.41		0.11	U	0.29		0.34	
Chlorobenzene	108-90-7	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
Chloroethane	75-00-3	0.26	U	0.092	U	0.092	U	0.092	U	0.092	U
Chloroform	67-66-3	0.77		0.21		0.22		0.17	U	0.17	U
Chloromethane	74-87-3	0.94		0.94		1.1		0.87		0.95	
cis-1,2-Dichloroethene	156-59-2	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U

Table 1. Unit 116

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)				Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor					
cis-1,3-Dichloropropene	1006-01-5	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Cyclohexane	110-82-7	0.5		0.41		0.17		0.12	U	0.13	
Dibromochloromethane	124-48-1	0.85	U	0.15	U	0.15	U	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	1.8		1.2		1.3		1.2		1.2	
Ethyl Acetate	141-78-6	1.1		0.93		1.6		0.13	U	0.13	U
Ethylbenzene	100-41-4	0.65		0.16		0.22		0.16		0.2	
Heptane	142-82-5	1.4		0.68		2		0.18		0.26	
Hexane	110-54-3	14	U	4.9	U	4.9	U	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	9.8	U	3.4	U	3.4	U	3.4	U	3.4	U
m & p -Xylene	108-38-3	1.3		0.48		0.63		0.48		0.63	
Methyl Isobutyl Ketone	108-10-1	0.41	UJ	0.14	U	0.14	U	0.14	U	0.14	U
Methylene Chloride	75-09-2	12		2.3	U	1.4	U	1.7	U	4.2	U
MTBE	1634-04-4	0.36	U	0.13	U	0.13	U	0.13	U	0.13	U
o-Xylene	95-47-6	1.5		0.2		0.24		0.21		0.26	
Propylene	115-07-1	6.9	U	2.4	U	2.4	U	2.4	U	2.4	U
Styrene	100-42-5	0.43	U	0.15	U	0.15	U	0.15	U	0.15	U
Tetrachloroethene	127-18-4	0.81		0.13		0.12	U	0.12	U	0.12	U
Tetrahydrofuran	109-99-9	0.29	U	0.1	U	0.18		0.1	U	0.1	U
Toluene	108-88-3	2.2		1.4		1.5		0.96		1.3	
trans-1,2-Dichloroethene	156-60-5	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Trichloroethene	79-01-6	0.54	U	0.097	U	0.097	U	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	1.4		1.2		1.2		1.1		1.1	
Vinyl Acetate	108-05-4	7	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	0.26	U	0.046	U	0.046	U	0.046	U	0.13	

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

Table 2. Unit 116

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	Cancer Risk Range (µg/m^3)		Non-Cancer Risk Range (µg/m^3)		Residential Indoor Air Result (µg/m^3)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
1,1,1-Trichloroethane	71-55-6	--	--	5200	15600	0.11		0.1	
1,1,2,2-Tetrachloroethane	79-34-5	4.2	0.042	--	--	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	31000	93000	0.51		0.49	
1,1,2-Trichloroethane	79-00-5	15	0.15	0.21	0.63	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	150	1.5	--	--	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	--	--	210	630	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	--	--	7.3	21.9	0.2		0.19	
1,2-Dibromoethane	106-93-4	0.41	0.0041	9.4	28.2	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	--	--	--	--	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	--	--	210	630	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	9.4	0.094	7.3	21.9	0.073	U	0.13	
1,2-Dichloropropane	78-87-5	24	0.24	4.2	12.6	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	--	--	--	--	0.17	U	0.17	U
1,3-Butadiene	106-99-0	8.1	0.081	2.1	6.3	0.15		0.19	
1,3-Dichlorobenzene	541-73-1	--	--	--	--	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	22	0.22	830	2490	0.21	U	0.21	U
1,4-Dioxane	123-91-1	49	0.49	31	93	1.3	U	1.3	U
2-Butanone	78-93-3	--	--	5200	15600	4.1	U	4.1	U
2-Hexanone	591-78-6	--	--	31	93	0.14	U	0.27	
4-Ethyltoluene	622-96-8	--	--	--	--	0.17	U	0.17	U
Acetone	67-64-1	--	--	32000	96000	8.8	J	28	J
Benzene	71-43-2	31	0.31	310	930	0.78		1.1	
Bromoform	75-25-2	220	2.2	--	--	0.36	U	0.36	U
Bromomethane	74-83-9	--	--	5.2	15.6	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	41	0.41	100	300	0.41		0.11	U
Chlorobenzene	108-90-7	--	--	52	156	0.16	U	0.16	U
Chloroethane	75-00-3	--	--	10000	30000	0.092	U	0.092	U
Chloroform	67-66-3	11	0.11	100	300	0.21		0.22	
Chloromethane	74-87-3	--	--	94	282	0.94		1.1	
cis-1,2-Dichloroethene	156-59-2	--	--	--	--	0.071	U	0.071	U
cis-1,3-Dichloropropene	1006-01-5	--	--	--	--	0.16	U	0.16	U

Table 2. Unit 116

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	Cancer Risk Range (µg/m^3)		Non-Cancer Risk Range (µg/m^3)		Residential Indoor Air Result (µg/m^3)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
Cyclohexane	110-82-7	--	--	6300	18900	0.41		0.17	
Dibromochloromethane	124-48-1	9	0.09	--	--	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	--	--	100	300	1.2		1.3	
Ethyl Acetate	141-78-6	--	--	73	219	0.93		1.6	
Ethylbenzene	100-41-4	97	0.97	1000	3000	0.16		0.22	
Heptane	142-82-5	--	--	--	--	0.68		2	
Hexane	110-54-3	--	--	730	2190	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	--	--	7300	21900	3.4	U	3.4	U
m & p -Xylene	108-38-3	--	--	100	300	0.48		0.63	
Methyl Isobutyl Ketone	108-10-1	--	--	3100	9300	0.14	U	0.14	U
Methylene Chloride	75-09-2	9600	96	630	1890	2.3	U	1.4	U
MTBE	1634-04-4	940	9.4	3100	9300	0.13	U	0.13	U
o-Xylene	95-47-6	--	--	100	300	0.2		0.24	
Propylene	115-07-1	--	--	3100	9300	2.4	U	2.4	U
Styrene	100-42-5	--	--	1000	3000	0.15	U	0.15	U
Tetrachloroethene	127-18-4	940	9.4	42	126	0.13		0.12	U
Tetrahydrofuran	109-99-9	--	--	2100	6300	0.1	U	0.18	
Toluene	108-88-3	--	--	5200	15600	1.4		1.5	
trans-1,2-Dichloroethene	156-60-5	--	--	63	189	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	--	0.16	U	0.16	U
Trichloroethene	79-01-6	43	0.43	2.1	6.3	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	--	--	730	2190	1.2		1.2	
Vinyl Acetate	108-05-4	--	--	210	630	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	16	0.16	100	300	0.046	U	0.046	U

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

HI - Hazard Index

*Risk ranges are derived from the EPA Regional Screening Levels Summary Table, November 2013
http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/resair_sl_table_run_NOV2013.pdf

Table 1. Unit 84
Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)				Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor					
1,1,1-Trichloroethane	71-55-6	0.55	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	0.69	U	0.12	U	0.12	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.77	U	0.45		0.51		0.51		0.53	
1,1,2-Trichloroethane	79-00-5	0.55	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	0.4	U	0.073	U	0.073	U	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	0.79		0.21		0.27		0.2		0.24	
1,2-Dibromoethane	106-93-4	0.77	U	0.27	U	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.7	U	0.24	U	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	0.4	U	0.073	U	0.082		0.073	U	0.062	J
1,2-Dichloropropane	78-87-5	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	0.49	U	0.17	U	0.17	U	0.17	U	0.17	U
1,3-Butadiene	106-99-0	0.22	U	0.081		0.17		0.077	U	0.14	
1,3-Dichlorobenzene	541-73-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dioxane	123-91-1	3.6	U	1.3	U	1.3	U	1.3	U	1.3	U
2-Butanone	78-93-3	12	U	4.1	U	4.1	U	4.1	U	4.1	U
2-Hexanone	591-78-6	1.1	J	0.22		0.32		0.26		0.27	
4-Ethyltoluene	622-96-8	0.49	U	0.17	U	0.17	U	0.17	U	0.17	U
Acetone	67-64-1	120	J	13	J	16	J	9.6	J	10	J
Benzene	71-43-2	0.34		0.7		0.94		0.71		1	
Bromoform	75-25-2	1	U	0.36	U	0.36	U	0.36	U	0.36	U
Bromomethane	74-83-9	0.39	U	0.14	U	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	0.63	U	0.36		0.11	U	0.29		0.34	
Chlorobenzene	108-90-7	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
Chloroethane	75-00-3	0.26	U	0.092	U	0.092	U	0.092	U	0.092	U
Chloroform	67-66-3	0.49	U	0.17		0.22		0.17	U	0.17	U
Chloromethane	74-87-3	0.93		0.74		1.1		0.87		0.95	
cis-1,2-Dichloroethene	156-59-2	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U

Table 1. Unit 84

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)				Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor					
cis-1,3-Dichloropropene	1006-01-5	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Cyclohexane	110-82-7	0.34	U	0.2		0.21		0.12	U	0.13	
Dibromochloromethane	124-48-1	0.85	U	0.15	U	0.15	U	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	2.2		1.2		1.3		1.2		1.2	
Ethyl Acetate	141-78-6	1.1		0.44		0.83		0.13	U	0.13	U
Ethylbenzene	100-41-4	0.43	U	0.16		0.24		0.16		0.2	
Heptane	142-82-5	0.41	U	0.54		2		0.18		0.26	
Hexane	110-54-3	14	U	4.9	U	4.9	U	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	9.8	U	3.4	U	3.4	U	3.4	U	3.4	U
m & p -Xylene	108-38-3	0.87	U	0.48		0.68		0.48		0.63	
Methyl Isobutyl Ketone	108-10-1	0.41	UJ	0.14	U	0.14	U	0.14	U	0.14	U
Methylene Chloride	75-09-2	14		1.2	U	2.2	U	1.7	U	4.2	U
MTBE	1634-04-4	0.36	U	0.13	U	0.13	U	0.13	U	0.13	U
o-Xylene	95-47-6	1.4		0.2		0.26		0.21		0.26	
Propylene	115-07-1	6.9	U	2.4	U	2.4	U	2.4	U	2.4	U
Styrene	100-42-5	0.43	U	0.19		0.18		0.15	U	0.15	U
Tetrachloroethene	127-18-4	1		0.12	U	0.12	U	0.12	U	0.12	U
Tetrahydrofuran	109-99-9	0.29	U	0.1	U	0.24		0.1	U	0.1	U
Toluene	108-88-3	1		1.2		1.4		0.96		1.3	
trans-1,2-Dichloroethene	156-60-5	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Trichloroethene	79-01-6	0.54	U	0.097	U	0.097	U	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	1.4		1.1		1.2		1.1		1.1	
Vinyl Acetate	108-05-4	7	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	0.26	U	0.046	U	0.046	U	0.046	U	0.13	

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

Table 2. Unit 84

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	(µg/m^3)		(µg/m^3)		(µg/m^3)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
1,1,1-Trichloroethane	71-55-6	--	--	5200	15600	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	4.2	0.042	--	--	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	31000	93000	0.45		0.51	
1,1,2-Trichloroethane	79-00-5	15	0.15	0.21	0.63	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	150	1.5	--	--	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	--	--	210	630	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	--	--	7.3	21.9	0.21		0.27	
1,2-Dibromoethane	106-93-4	0.41	0.0041	9.4	28.2	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	--	--	--	--	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	--	--	210	630	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	9.4	0.094	7.3	21.9	0.073	U	0.082	
1,2-Dichloropropane	78-87-5	24	0.24	4.2	12.6	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	--	--	--	--	0.17	U	0.17	U
1,3-Butadiene	106-99-0	8.1	0.081	2.1	6.3	0.081		0.17	
1,3-Dichlorobenzene	541-73-1	--	--	--	--	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	22	0.22	830	2490	0.21	U	0.21	U
1,4-Dioxane	123-91-1	49	0.49	31	93	1.3	U	1.3	U
2-Butanone	78-93-3	--	--	5200	15600	4.1	U	4.1	U
2-Hexanone	591-78-6	--	--	31	93	0.22		0.32	
4-Ethyltoluene	622-96-8	--	--	--	--	0.17	U	0.17	U
Acetone	67-64-1	--	--	32000	96000	13	J	16	J
Benzene	71-43-2	31	0.31	310	930	0.7		0.94	
Bromoform	75-25-2	220	2.2	--	--	0.36	U	0.36	U
Bromomethane	74-83-9	--	--	5.2	15.6	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	41	0.41	100	300	0.36		0.11	U
Chlorobenzene	108-90-7	--	--	52	156	0.16	U	0.16	U
Chloroethane	75-00-3	--	--	10000	30000	0.092	U	0.092	U
Chloroform	67-66-3	11	0.11	100	300	0.17		0.22	
Chloromethane	74-87-3	--	--	94	282	0.74		1.1	
cis-1,2-Dichloroethene	156-59-2	--	--	--	--	0.071	U	0.071	U
cis-1,3-Dichloropropene	1006-01-5	--	--	--	--	0.16	U	0.16	U

Table 2. Unit 84

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	(µg/m^3)		(µg/m^3)		(µg/m^3)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
Cyclohexane	110-82-7	--	--	6300	18900	0.2		0.21	
Dibromochloromethane	124-48-1	9	0.09	--	--	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	--	--	100	300	1.2		1.3	
Ethyl Acetate	141-78-6	--	--	73	219	0.44		0.83	
Ethylbenzene	100-41-4	97	0.97	1000	3000	0.16		0.24	
Heptane	142-82-5	--	--	--	--	0.54		2	
Hexane	110-54-3	--	--	730	2190	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	--	--	7300	21900	3.4	U	3.4	U
m & p -Xylene	108-38-3	--	--	100	300	0.48		0.68	
Methyl Isobutyl Ketone	108-10-1	--	--	3100	9300	0.14	U	0.14	U
Methylene Chloride	75-09-2	9600	96	630	1890	1.2	U	2.2	U
MTBE	1634-04-4	940	9.4	3100	9300	0.13	U	0.13	U
o-Xylene	95-47-6	--	--	100	300	0.2		0.26	
Propylene	115-07-1	--	--	3100	9300	2.4	U	2.4	U
Styrene	100-42-5	--	--	1000	3000	0.19		0.18	
Tetrachloroethene	127-18-4	940	9.4	42	126	0.12	U	0.12	U
Tetrahydrofuran	109-99-9	--	--	2100	6300	0.1	U	0.24	
Toluene	108-88-3	--	--	5200	15600	1.2		1.4	
trans-1,2-Dichloroethene	156-60-5	--	--	63	189	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	--	0.16	U	0.16	U
Trichloroethene	79-01-6	43	0.43	2.1	6.3	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	--	--	730	2190	1.1		1.2	
Vinyl Acetate	108-05-4	--	--	210	630	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	16	0.16	100	300	0.046	U	0.046	U

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

HI - Hazard Index

*Risk ranges are derived from the EPA Regional Screening Levels Summary Table, November 2013

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/resair_sl_table_run_NOV2013.pdf

Table 1. Unit 50
Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab ($\mu g/m^3$)		Indoor Air Result ($\mu g/m^3$)				Ambient Air Unit 116 ($\mu g/m^3$)		Ambient Air Unit 175 ($\mu g/m^3$)	
				Basement		First Floor					
1,1,1-Trichloroethane	71-55-6	0.55	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	0.69	U	0.12	U	0.12	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.77	U	0.53		0.52		0.51		0.53	
1,1,2-Trichloroethane	79-00-5	0.55	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	0.4	U	0.073	U	0.073	U	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	0.49	U	1.6		1.4		0.2		0.24	
1,2-Dibromoethane	106-93-4	0.77	U	0.27	U	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.7	U	0.24	U	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	0.4	U	0.073	U	0.073	U	0.073	U	0.062	J
1,2-Dichloropropane	78-87-5	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	0.49	U	0.7		0.59		0.17	U	0.17	U
1,3-Butadiene	106-99-0	0.22	U	0.19		0.23		0.077	U	0.14	
1,3-Dichlorobenzene	541-73-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dioxane	123-91-1	3.6	U	1.3	U	1.3	U	1.3	U	1.3	U
2-Butanone	78-93-3	12	U	11		8.1		4.1	U	4.1	U
2-Hexanone	591-78-6	0.41	UJ	0.39		0.48		0.26		0.27	
4-Ethyltoluene	622-96-8	0.49	U	0.34		0.3		0.17	U	0.17	U
Acetone	67-64-1	64	J	56	J	44	J	9.6	J	10	J
Benzene	71-43-2	0.32	U	0.84		2.3		0.71		1	
Bromoform	75-25-2	1	U	0.36	U	0.36	U	0.36	U	0.36	U
Bromomethane	74-83-9	0.39	U	0.14	U	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	0.63	U	0.41		0.11	U	0.29		0.34	
Chlorobenzene	108-90-7	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
Chloroethane	75-00-3	0.26	U	0.14		0.092	U	0.092	U	0.092	U
Chloroform	67-66-3	2.4		0.22		0.19		0.17	U	0.17	U
Chloromethane	74-87-3	0.41	U	1.1		0.95		0.87		0.95	
cis-1,2-Dichloroethene	156-59-2	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U

Table 1. Unit 50

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab ($\mu g/m^3$)		Indoor Air Result ($\mu g/m^3$)				Ambient Air Unit 116 ($\mu g/m^3$)		Ambient Air Unit 175 ($\mu g/m^3$)	
				Basement		First Floor					
cis-1,3-Dichloropropene	1006-01-5	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Cyclohexane	110-82-7	0.34	U	0.29		0.4		0.12	U	0.13	
Dibromochloromethane	124-48-1	0.85	U	0.15	U	0.15	U	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	2.1		1.2		1.2		1.2		1.2	
Ethyl Acetate	141-78-6	0.36	U	0.39		0.38		0.13	U	0.13	U
Ethylbenzene	100-41-4	0.43	U	0.47		0.44		0.16		0.2	
Heptane	142-82-5	0.41	U	0.77		1.3		0.18		0.26	
Hexane	110-54-3	14	U	4.9	U	4.9	U	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	9.8	U	12		14		3.4	U	3.4	U
m & p -Xylene	108-38-3	0.87	U	1.7		1.6		0.48		0.63	
Methyl Isobutyl Ketone	108-10-1	0.41	UJ	0.14	U	0.14	U	0.14	U	0.14	U
Methylene Chloride	75-09-2	15		20		15		1.7	U	4.2	U
MTBE	1634-04-4	0.36	U	0.13	U	0.13	U	0.13	U	0.13	U
o-Xylene	95-47-6	0.48		0.7		0.63		0.21		0.26	
Propylene	115-07-1	6.9	U	2.4	U	2.4	U	2.4	U	2.4	U
Styrene	100-42-5	0.43	U	0.15	U	0.18		0.15	U	0.15	U
Tetrachloroethene	127-18-4	0.68	U	0.45		0.12	U	0.12	U	0.12	U
Tetrahydrofuran	109-99-9	0.87		14		8.5		0.1	U	0.1	U
Toluene	108-88-3	0.41		1.9		2		0.96		1.3	
trans-1,2-Dichloroethene	156-60-5	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Trichloroethene	79-01-6	0.55		0.097	U	0.097	U	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	1.4		1.2		1.2		1.1		1.1	
Vinyl Acetate	108-05-4	7	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	0.26	U	0.046	U	0.046	U	0.046	U	0.13	

U - Not detected

J - Concentration is estimated

$\mu g/m^3$ - micrograms per cubic meter

Table 2. Unit 50

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	($\mu g/m^3$)		($\mu g/m^3$)		($\mu g/m^3$)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
1,1,1-Trichloroethane	71-55-6	--	--	5200	15600	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	4.2	0.042	--	--	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	31000	93000	0.53		0.52	
1,1,2-Trichloroethane	79-00-5	15	0.15	0.21	0.63	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	150	1.5	--	--	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	--	--	210	630	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	--	--	7.3	21.9	1.6		1.4	
1,2-Dibromoethane	106-93-4	0.41	0.0041	9.4	28.2	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	--	--	--	--	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	--	--	210	630	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	9.4	0.094	7.3	21.9	0.073	U	0.073	U
1,2-Dichloropropane	78-87-5	24	0.24	4.2	12.6	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	--	--	--	--	0.7		0.59	
1,3-Butadiene	106-99-0	8.1	0.081	2.1	6.3	0.19		0.23	
1,3-Dichlorobenzene	541-73-1	--	--	--	--	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	22	0.22	830	2490	0.21	U	0.21	U
1,4-Dioxane	123-91-1	49	0.49	31	93	1.3	U	1.3	U
2-Butanone	78-93-3	--	--	5200	15600	11		8.1	
2-Hexanone	591-78-6	--	--	31	93	0.39		0.48	
4-Ethyltoluene	622-96-8	--	--	--	--	0.34		0.3	
Acetone	67-64-1	--	--	32000	96000	56	J	44	J
Benzene	71-43-2	31	0.31	310	930	0.84		2.3	
Bromoform	75-25-2	220	2.2	--	--	0.36	U	0.36	U
Bromomethane	74-83-9	--	--	5.2	15.6	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	41	0.41	100	300	0.41		0.11	U
Chlorobenzene	108-90-7	--	--	52	156	0.16	U	0.16	U
Chloroethane	75-00-3	--	--	10000	30000	0.14		0.092	U
Chloroform	67-66-3	11	0.11	100	300	0.22		0.19	
Chloromethane	74-87-3	--	--	94	282	1.1		0.95	
cis-1,2-Dichloroethene	156-59-2	--	--	--	--	0.071	U	0.071	U
cis-1,3-Dichloropropene	1006-01-5	--	--	--	--	0.16	U	0.16	U

Table 2. Unit 50

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	(µg/m^3)		(µg/m^3)		(µg/m^3)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
Cyclohexane	110-82-7	--	--	6300	18900	0.29		0.4	
Dibromochloromethane	124-48-1	9	0.09	--	--	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	--	--	100	300	1.2		1.2	
Ethyl Acetate	141-78-6	--	--	73	219	0.39		0.38	
Ethylbenzene	100-41-4	97	0.97	1000	3000	0.47		0.44	
Heptane	142-82-5	--	--	--	--	0.77		1.3	
Hexane	110-54-3	--	--	730	2190	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	--	--	7300	21900	12		14	
m & p -Xylene	108-38-3	--	--	100	300	1.7		1.6	
Methyl Isobutyl Ketone	108-10-1	--	--	3100	9300	0.14	U	0.14	U
Methylene Chloride	75-09-2	9600	96	630	1890	20		15	
MTBE	1634-04-4	940	9.4	3100	9300	0.13	U	0.13	U
o-Xylene	95-47-6	--	--	100	300	0.7		0.63	
Propylene	115-07-1	--	--	3100	9300	2.4	U	2.4	U
Styrene	100-42-5	--	--	1000	3000	0.15	U	0.18	
Tetrachloroethene	127-18-4	940	9.4	42	126	0.45		0.12	U
Tetrahydrofuran	109-99-9	--	--	2100	6300	14		8.5	
Toluene	108-88-3	--	--	5200	15600	1.9		2	
trans-1,2-Dichloroethene	156-60-5	--	--	63	189	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	--	0.16	U	0.16	U
Trichloroethene	79-01-6	43	0.43	2.1	6.3	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	--	--	730	2190	1.2		1.2	
Vinyl Acetate	108-05-4	--	--	210	630	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	16	0.16	100	300	0.046	U	0.046	U

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

HI - Hazard Index

*Risk ranges are derived from the EPA Regional Screening Levels Summary Table, November 2013

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/resair_sl_table_run_NOV2013.pdf

Table 1. Unit 34

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)						Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor		First Floor (Duplicate)					
1,1,1-Trichloroethane	71-55-6	0.58		0.098	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	0.69	U	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.77	U	0.54		0.57		0.54		0.51		0.53	
1,1,2-Trichloroethane	79-00-5	0.55	U	0.098	U	0.098	U	0.098	U	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	0.4	U	0.073	U	0.073	U	0.073	U	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	0.49	U	0.91		1.2		1.1		0.2		0.24	
1,2-Dibromoethane	106-93-4	0.77	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.7	U	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	0.4	U	0.18		0.21		0.2		0.073	U	0.062	J
1,2-Dichloropropane	78-87-5	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	0.49	U	0.26		0.36		0.32		0.17	U	0.17	U
1,3-Butadiene	106-99-0	0.22	U	0.082		0.14		0.077	U	0.077	U	0.14	
1,3-Dichlorobenzene	541-73-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dioxane	123-91-1	3.6	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
2-Butanone	78-93-3	12	U	4.1	U	4.1	U	4.1	U	4.1	U	4.1	U
2-Hexanone	591-78-6	0.72	J	0.49		0.29		0.14	U	0.26		0.27	
4-Ethyltoluene	622-96-8	0.49	U	0.21		0.3		0.28		0.17	U	0.17	U
Acetone	67-64-1	98	J	28	J	56	J	48	J	9.6	J	10	J
Benzene	71-43-2	0.32	U	0.67		0.76		0.72		0.71		1	
Bromoform	75-25-2	1	U	0.36	U	0.36	U	0.36	U	0.36	U	0.36	U
Bromomethane	74-83-9	0.39	U	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	0.63	U	0.37		0.72		0.11	U	0.29		0.34	
Chlorobenzene	108-90-7	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
Chloroethane	75-00-3	0.26	U	0.092	U	0.092	U	0.092	U	0.092	U	0.092	U
Chloroform	67-66-3	3.6		0.41		0.53		0.49		0.17	U	0.17	U
Chloromethane	74-87-3	0.41	U	0.75		0.94		0.95		0.87		0.95	
cis-1,2-Dichloroethene	156-59-2	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U

Table 1. Unit 34

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)						Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor		First Floor (Duplicate)					
cis-1,3-Dichloropropene	1006-01-5	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
Cyclohexane	110-82-7	0.34	U	0.16		0.24		0.22		0.12	U	0.13	
Dibromochloromethane	124-48-1	0.85	U	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	2.2		1.3		1.3		1.1		1.2		1.2	
Ethyl Acetate	141-78-6	0.75		0.5		3.1		3.3		0.13	U	0.13	U
Ethylbenzene	100-41-4	0.43	U	0.18		0.31		0.29		0.16		0.2	
Heptane	142-82-5	0.41	U	0.24		0.4		0.37		0.18		0.26	
Hexane	110-54-3	14	U	4.9	U	4.9	U	4.9	U	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	9.8	U	29		320		230		3.4	U	3.4	U
m & p -Xylene	108-38-3	0.87	U	0.57		0.9		0.84		0.48		0.63	
Methyl Isobutyl Ketone	108-10-1	0.41	UJ	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
Methylene Chloride	75-09-2	22		1.5	U	4.4	U	4.5	U	1.7	U	4.2	U
MTBE	1634-04-4	0.36	U	0.13	U	0.22		0.21		0.13	U	0.13	U
o-Xylene	95-47-6	0.82		0.27		0.38		0.35		0.21		0.26	
Propylene	115-07-1	6.9	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
Styrene	100-42-5	0.43	U	0.15	U	0.16		0.19		0.15	U	0.15	U
Tetrachloroethene	127-18-4	3.8		0.55		0.58		0.55		0.12	U	0.12	U
Tetrahydrofuran	109-99-9	0.29	U	0.42		0.19		0.18		0.1	U	0.1	U
Toluene	108-88-3	0.51		1.1		2.4		2.3		0.96		1.3	
trans-1,2-Dichloroethene	156-60-5	0.4	U	0.071	U	0.071	U	0.071	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
Trichloroethene	79-01-6	0.54	U	0.097	U	0.097	U	0.097	U	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	1.4		1.1		1.2		1.2		1.1		1.1	
Vinyl Acetate	108-05-4	7	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	0.26	U	0.046	U	0.046	U	0.046	U	0.046	U	0.13	

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

Table 2. Unit 34

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	(µg/m^3)		Range		(µg/m^3)					
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor		First Floor (Duplicate)	
1,1,1-Trichloroethane	71-55-6	--	--	5200	15600	0.098	U	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	4.2	0.042	--	--	0.12	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	31000	93000	0.54		0.57		0.54	
1,1,2-Trichloroethane	79-00-5	15	0.15	0.21	0.63	0.098	U	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	150	1.5	--	--	0.073	U	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	--	--	210	630	0.071	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	--	--	7.3	21.9	0.91		1.2		1.1	
1,2-Dibromoethane	106-93-4	0.41	0.0041	9.4	28.2	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	--	--	--	--	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	--	--	210	630	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	9.4	0.094	7.3	21.9	0.18		0.21		0.2	
1,2-Dichloropropane	78-87-5	24	0.24	4.2	12.6	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	--	--	--	--	0.26		0.36		0.32	
1,3-Butadiene	106-99-0	8.1	0.081	2.1	6.3	0.082		0.14		0.077	U
1,3-Dichlorobenzene	541-73-1	--	--	--	--	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	22	0.22	830	2490	0.21	U	0.21	U	0.21	U
1,4-Dioxane	123-91-1	49	0.49	31	93	1.3	U	1.3	U	1.3	U
2-Butanone	78-93-3	--	--	5200	15600	4.1	U	4.1	U	4.1	U
2-Hexanone	591-78-6	--	--	31	93	0.49		0.29		0.14	U
4-Ethyltoluene	622-96-8	--	--	--	--	0.21		0.3		0.28	
Acetone	67-64-1	--	--	32000	96000	28	J	56	J	48	J
Benzene	71-43-2	31	0.31	310	930	0.67		0.76		0.72	
Bromoform	75-25-2	220	2.2	--	--	0.36	U	0.36	U	0.36	U
Bromomethane	74-83-9	--	--	5.2	15.6	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	41	0.41	100	300	0.37		0.72		0.11	U
Chlorobenzene	108-90-7	--	--	52	156	0.16	U	0.16	U	0.16	U
Chloroethane	75-00-3	--	--	10000	30000	0.092	U	0.092	U	0.092	U
Chloroform	67-66-3	11	0.11	100	300	0.41		0.53		0.49	
Chloromethane	74-87-3	--	--	94	282	0.75		0.94		0.95	
cis-1,2-Dichloroethene	156-59-2	--	--	--	--	0.071	U	0.071	U	0.071	U
cis-1,3-Dichloropropene	1006-01-5	--	--	--	--	0.16	U	0.16	U	0.16	U

Table 2. Unit 34

Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	(µg/m^3)		Range		(µg/m^3)					
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor		First Floor (Duplicate)	
Cyclohexane	110-82-7	--	--	6300	18900	0.16		0.24		0.22	
Dibromochloromethane	124-48-1	9	0.09	--	--	0.15	U	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	--	--	100	300	1.3		1.3		1.1	
Ethyl Acetate	141-78-6	--	--	73	219	0.5		3.1		3.3	
Ethylbenzene	100-41-4	97	0.97	1000	3000	0.18		0.31		0.29	
Heptane	142-82-5	--	--	--	--	0.24		0.4		0.37	
Hexane	110-54-3	--	--	730	2190	4.9	U	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	--	--	7300	21900	29		320		230	
m & p -Xylene	108-38-3	--	--	100	300	0.57		0.9		0.84	
Methyl Isobutyl Ketone	108-10-1	--	--	3100	9300	0.14	U	0.14	U	0.14	U
Methylene Chloride	75-09-2	9600	96	630	1890	1.5	U	4.4	U	4.5	U
MTBE	1634-04-4	940	9.4	3100	9300	0.13	U	0.22		0.21	
o-Xylene	95-47-6	--	--	100	300	0.27		0.38		0.35	
Propylene	115-07-1	--	--	3100	9300	2.4	U	2.4	U	2.4	U
Styrene	100-42-5	--	--	1000	3000	0.15	U	0.16		0.19	
Tetrachloroethene	127-18-4	940	9.4	42	126	0.55		0.58		0.55	
Tetrahydrofuran	109-99-9	--	--	2100	6300	0.42		0.19		0.18	
Toluene	108-88-3	--	--	5200	15600	1.1		2.4		2.3	
trans-1,2-Dichloroethene	156-60-5	--	--	63	189	0.071	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	--	0.16	U	0.16	U	0.16	U
Trichloroethene	79-01-6	43	0.43	2.1	6.3	0.097	U	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	--	--	730	2190	1.1		1.2		1.2	
Vinyl Acetate	108-05-4	--	--	210	630	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	16	0.16	100	300	0.046	U	0.046	U	0.046	U

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

HI - Hazard Index

*Risk ranges are derived from the EPA Regional Screening Levels Summary Table, November 2013

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/resair_sl_table_run_NOV2013.pdf

Table 1. Unit 70

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab ($\mu g/m^3$)		Indoor Air Result ($\mu g/m^3$)				Ambient Air Unit 116 ($\mu g/m^3$)		Ambient Air Unit 175 ($\mu g/m^3$)	
				Basement		First Floor					
1,1,1-Trichloroethane	71-55-6	0.55	U	0.19	U	0.098	U	0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	0.69	U	0.24	U	0.12	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.77	U	0.55		0.55		0.51		0.53	
1,1,2-Trichloroethane	79-00-5	0.55	U	0.19	U	0.098	U	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	0.4	U	0.14	U	0.073	U	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	0.4	U	0.14	U	0.071	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	0.49	U	0.26		0.24		0.2		0.24	
1,2-Dibromoethane	106-93-4	0.77	U	0.27	U	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.7	U	0.24	U	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	0.4	U	0.15		0.15		0.073	U	0.062	J
1,2-Dichloropropane	78-87-5	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	0.49	U	0.17	U	0.17	U	0.17	U	0.17	U
1,3-Butadiene	106-99-0	0.22	U	0.11		0.093		0.077	U	0.14	
1,3-Dichlorobenzene	541-73-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dioxane	123-91-1	3.6	U	1.3	U	1.3	U	1.3	U	1.3	U
2-Butanone	78-93-3	12	U	4.1	U	4.1	U	4.1	U	4.1	U
2-Hexanone	591-78-6	0.61	J	0.53	J	0.3		0.26		0.27	
4-Ethyltoluene	622-96-8	0.49	U	0.17	U	0.17	U	0.17	U	0.17	U
Acetone	67-64-1	77	J	130	J	160	J	9.6	J	10	J
Benzene	71-43-2	0.32	U	0.75		0.72		0.71		1	
Bromoform	75-25-2	1	U	0.36	U	0.36	U	0.36	U	0.36	U
Bromomethane	74-83-9	0.39	U	0.14	U	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	0.63	U	0.35		0.41		0.29		0.34	
Chlorobenzene	108-90-7	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
Chloroethane	75-00-3	0.26	U	0.092	U	0.092	U	0.092	U	0.092	U
Chloroform	67-66-3	0.49	U	0.19		0.19		0.17	U	0.17	U
Chloromethane	74-87-3	0.41	U	0.85		0.82		0.87		0.95	
cis-1,2-Dichloroethene	156-59-2	0.4	U	0.14	U	0.071	U	0.071	U	0.071	U

Table 1. Unit 70

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)				Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor					
cis-1,3-Dichloropropene	1006-01-5	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Cyclohexane	110-82-7	0.36		0.13		0.13		0.12	U	0.13	
Dibromochloromethane	124-48-1	0.85	U	0.3	U	0.15	U	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	1.9		1.4		1.3		1.2		1.2	
Ethyl Acetate	141-78-6	0.36	U	0.61		0.51		0.13	U	0.13	U
Ethylbenzene	100-41-4	0.43	U	0.25		0.25		0.16		0.2	
Heptane	142-82-5	0.41	U	0.25		0.23		0.18		0.26	
Hexane	110-54-3	14	U	4.9	U	4.9	U	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	9.8	U	3.4	U	4.2		3.4	U	3.4	U
m & p -Xylene	108-38-3	0.87	U	0.61		0.63		0.48		0.63	
Methyl Isobutyl Ketone	108-10-1	0.41	UJ	0.23	J	0.22		0.14	U	0.14	U
Methylene Chloride	75-09-2	3.8	U	2.1	U	1.5	U	1.7	U	4.2	U
MTBE	1634-04-4	0.36	U	0.13	U	0.13	U	0.13	U	0.13	U
o-Xylene	95-47-6	0.43	U	0.24		0.25		0.21		0.26	
Propylene	115-07-1	6.9	U	2.4	U	2.4	U	2.4	U	2.4	U
Styrene	100-42-5	0.43	U	0.16		0.28		0.15	U	0.15	U
Tetrachloroethene	127-18-4	1.5		0.24	U	0.12	U	0.12	U	0.12	U
Tetrahydrofuran	109-99-9	0.29	U	0.14		0.1	U	0.1	U	0.1	U
Toluene	108-88-3	0.38	U	1.4		1.5		0.96		1.3	
trans-1,2-Dichloroethene	156-60-5	0.4	U	0.14	U	0.071	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Trichloroethene	79-01-6	0.54	U	0.19	U	0.097	U	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	1.2		1.2		1.2		1.1		1.1	
Vinyl Acetate	108-05-4	7	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	0.26	U	0.089	U	0.046	U	0.046	U	0.13	

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

Table 2. Unit 70
Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	Cancer Risk Range (µg/m^3)		Non-Cancer Risk Range (µg/m^3)		Residential Indoor Air Result (µg/m^3)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
1,1,1-Trichloroethane	71-55-6	--	--	5200	15600	0.19	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	4.2	0.042	--	--	0.24	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	31000	93000	0.55		0.55	
1,1,2-Trichloroethane	79-00-5	15	0.15	0.21	0.63	0.19	U	0.098	U
1,1-Dichloroethane	75-34-3	150	1.5	--	--	0.14	U	0.073	U
1,1-Dichloroethene	75-35-4	--	--	210	630	0.14	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	--	--	7.3	21.9	0.26		0.24	
1,2-Dibromoethane	106-93-4	0.41	0.0041	9.4	28.2	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	--	--	--	--	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	--	--	210	630	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	9.4	0.094	7.3	21.9	0.15		0.15	
1,2-Dichloropropane	78-87-5	24	0.24	4.2	12.6	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	--	--	--	--	0.17	U	0.17	U
1,3-Butadiene	106-99-0	8.1	0.081	2.1	6.3	0.11		0.093	
1,3-Dichlorobenzene	541-73-1	--	--	--	--	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	22	0.22	830	2490	0.21	U	0.21	U
1,4-Dioxane	123-91-1	49	0.49	31	93	1.3	U	1.3	U
2-Butanone	78-93-3	--	--	5200	15600	4.1	U	4.1	U
2-Hexanone	591-78-6	--	--	31	93	0.53	J	0.3	
4-Ethyltoluene	622-96-8	--	--	--	--	0.17	U	0.17	U
Acetone	67-64-1	--	--	32000	96000	130	J	160	J
Benzene	71-43-2	31	0.31	310	930	0.75		0.72	
Bromoform	75-25-2	220	2.2	--	--	0.36	U	0.36	U
Bromomethane	74-83-9	--	--	5.2	15.6	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	41	0.41	100	300	0.35		0.41	
Chlorobenzene	108-90-7	--	--	52	156	0.16	U	0.16	U
Chloroethane	75-00-3	--	--	10000	30000	0.092	U	0.092	U
Chloroform	67-66-3	11	0.11	100	300	0.19		0.19	
Chloromethane	74-87-3	--	--	94	282	0.85		0.82	
cis-1,2-Dichloroethene	156-59-2	--	--	--	--	0.14	U	0.071	U

Table 2. Unit 70
Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	Cancer Risk Range (µg/m^3)		Non-Cancer Risk Range (µg/m^3)		Residential Indoor Air Result (µg/m^3)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
cis-1,3-Dichloropropene	1006-01-5	--	--	--	--	0.16	U	0.16	U
Cyclohexane	110-82-7	--	--	6300	18900	0.13		0.13	
Dibromochloromethane	124-48-1	9	0.09	--	--	0.3	U	0.15	U
Dichlorodifluoromethane	75-71-8	--	--	100	300	1.4		1.3	
Ethyl Acetate	141-78-6	--	--	73	219	0.61		0.51	
Ethylbenzene	100-41-4	97	0.97	1000	3000	0.25		0.25	
Heptane	142-82-5	--	--	--	--	0.25		0.23	
Hexane	110-54-3	--	--	730	2190	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	--	--	7300	21900	3.4	U	4.2	
m & p -Xylene	108-38-3	--	--	100	300	0.61		0.63	
Methyl Isobutyl Ketone	108-10-1	--	--	3100	9300	0.23	J	0.22	
Methylene Chloride	75-09-2	9600	96	630	1890	2.1	U	1.5	U
MTBE	1634-04-4	940	9.4	3100	9300	0.13	U	0.13	U
o-Xylene	95-47-6	--	--	100	300	0.24		0.25	
Propylene	115-07-1	--	--	3100	9300	2.4	U	2.4	U
Styrene	100-42-5	--	--	1000	3000	0.16		0.28	
Tetrachloroethene	127-18-4	940	9.4	42	126	0.24	U	0.12	U
Tetrahydrofuran	109-99-9	--	--	2100	6300	0.14		0.1	U
Toluene	108-88-3	--	--	5200	15600	1.4		1.5	
trans-1,2-Dichloroethene	156-60-5	--	--	63	189	0.14	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	--	0.16	U	0.16	U
Trichloroethene	79-01-6	43	0.43	2.1	6.3	0.19	U	0.097	U
Trichlorofluoromethane	75-69-4	--	--	730	2190	1.2		1.2	
Vinyl Acetate	108-05-4	--	--	210	630	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	16	0.16	100	300	0.089	U	0.046	U

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

HI - Hazard Index

*Risk ranges are derived from the EPA Regional Screening Levels Summary Table, November 2013

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/resair_sl_table_run_NOV2013.pdf

Table 1. Unit 175
Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)				Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor					
1,1,1-Trichloroethane	71-55-6	1.8		0.6		0.34		0.098	U	0.098	U
1,1,2,2-Tetrachloroethane	79-34-5	0.69	U	0.24	U	0.24	U	0.12	U	0.12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.77	U	0.83		0.59		0.51		0.53	
1,1,2-Trichloroethane	79-00-5	0.55	U	0.19	U	0.19	U	0.098	U	0.098	U
1,1-Dichloroethane	75-34-3	0.4	U	0.14	U	0.14	U	0.073	U	0.073	U
1,1-Dichloroethene	75-35-4	0.4	U	0.14	U	0.14	U	0.071	U	0.071	U
1,2,4-Trimethylbenzene	95-63-6	0.49	U	0.54		0.43		0.2		0.24	
1,2-Dibromoethane	106-93-4	0.77	U	0.27	U	0.27	U	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.7	U	0.24	U	0.24	U	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	0.4	U	0.14	U	0.14	U	0.073	U	0.062	J
1,2-Dichloropropane	78-87-5	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	0.49	U	0.17		0.17	U	0.17	U	0.17	U
1,3-Butadiene	106-99-0	0.22	U	0.13		0.21		0.077	U	0.14	
1,3-Dichlorobenzene	541-73-1	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	0.6	U	0.21	U	0.21	U	0.21	U	0.21	U
1,4-Dioxane	123-91-1	3.6	U	1.3	U	1.3	U	1.3	U	1.3	U
2-Butanone	78-93-3	12	U	6.1		4.1	U	4.1	U	4.1	U
2-Hexanone	591-78-6	0.47	J	0.24	J	0.14	UJ	0.26		0.27	
4-Ethyltoluene	622-96-8	0.49	U	0.17	U	0.12	J	0.17	U	0.17	U
Acetone	67-64-1	79	J	43	J	23	J	9.6	J	10	J
Benzene	71-43-2	0.32	U	1.3		1.3		0.71		1	
Bromoform	75-25-2	1	U	0.36	U	0.36	U	0.36	U	0.36	U
Bromomethane	74-83-9	0.39	U	0.14	U	0.14	U	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	0.63	U	0.55		0.39		0.29		0.34	
Chlorobenzene	108-90-7	0.46	U	0.16	U	0.16	U	0.16	U	0.16	U
Chloroethane	75-00-3	0.26	U	0.092	U	0.092	U	0.092	U	0.092	U
Chloroform	67-66-3	0.78		2.6		0.95		0.17	U	0.17	U
Chloromethane	74-87-3	0.41	U	1.2		0.85		0.87		0.95	
cis-1,2-Dichloroethene	156-59-2	0.4	U	0.14	U	0.14	U	0.071	U	0.071	U

Table 1. Unit 175

Summary of Air Sampling Results

Analyte	CAS Number	Sub-slab (µg/m^3)		Indoor Air Result (µg/m^3)				Ambient Air Unit 116 (µg/m^3)		Ambient Air Unit 175 (µg/m^3)	
				Basement		First Floor					
cis-1,3-Dichloropropene	1006-01-5	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Cyclohexane	110-82-7	0.34	U	0.21		0.32		0.12	U	0.13	
Dibromochloromethane	124-48-1	0.85	U	0.3	U	0.3	U	0.15	U	0.15	U
Dichlorodifluoromethane	75-71-8	7.5		3.2		2.1		1.2		1.2	
Ethyl Acetate	141-78-6	0.36	U	1.4		0.73		0.13	U	0.13	U
Ethylbenzene	100-41-4	0.43	U	2.5		0.93		0.16		0.2	
Heptane	142-82-5	0.41	U	0.37		0.99		0.18		0.26	
Hexane	110-54-3	14	U	28		4.9	U	4.9	U	4.9	U
Isopropyl Alcohol	67-63-0	9.8	U	3.5		6.7		3.4	U	3.4	U
m & p -Xylene	108-38-3	0.87	U	7.9		3.3		0.48		0.63	
Methyl Isobutyl Ketone	108-10-1	0.41	UJ	0.14	UJ	0.14	U	0.14	U	0.14	U
Methylene Chloride	75-09-2	3.5	U	61		2.3	U	1.7	U	4.2	U
MTBE	1634-04-4	0.36	U	0.13	U	0.13	U	0.13	U	0.13	U
o-Xylene	95-47-6	0.63		2		1.1		0.21		0.26	
Propylene	115-07-1	6.9	U	2.4	U	2.4	U	2.4	U	2.4	U
Styrene	100-42-5	0.43	U	0.15	U	0.15	U	0.15	U	0.15	U
Tetrachloroethene	127-18-4	0.92		0.31		0.24	U	0.12	U	0.12	U
Tetrahydrofuran	109-99-9	0.29	U	0.81		0.23		0.1	U	0.1	U
Toluene	108-88-3	0.38	U	7.5		3.3		0.96		1.3	
trans-1,2-Dichloroethene	156-60-5	0.4	U	0.14	U	0.14	U	0.071	U	0.071	U
trans-1,3-Dichloropropene	10061-02-6	0.45	U	0.16	U	0.16	U	0.16	U	0.16	U
Trichloroethene	79-01-6	8.4		0.19	U	0.19	U	0.097	U	0.097	U
Trichlorofluoromethane	75-69-4	3.3		11		4.6		1.1		1.1	
Vinyl Acetate	108-05-4	7	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	0.26	U	0.089	U	0.089	U	0.046	U	0.13	

U - Not detected

J - Concentration is estimated

µg/m^3 - micrograms per cubic meter

Table 2. Unit 175
Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	Cancer Risk Range ($\mu g/m^3$)		Non-Cancer Risk Range ($\mu g/m^3$)		Residential Indoor Air Result ($\mu g/m^3$)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
1,1,1-Trichloroethane	71-55-6	--	--	5200	15600	0.6		0.34	
1,1,2,2-Tetrachloroethane	79-34-5	4.2	0.042	--	--	0.24	U	0.24	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	31000	93000	0.83		0.59	
1,1,2-Trichloroethane	79-00-5	15	0.15	0.21	0.63	0.19	U	0.19	U
1,1-Dichloroethane	75-34-3	150	1.5	--	--	0.14	U	0.14	U
1,1-Dichloroethene	75-35-4	--	--	210	630	0.14	U	0.14	U
1,2,4-Trimethylbenzene	95-63-6	--	--	7.3	21.9	0.54		0.43	
1,2-Dibromoethane	106-93-4	0.41	0.0041	9.4	28.2	0.27	U	0.27	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	--	--	--	--	0.24	U	0.24	U
1,2-Dichlorobenzene	95-50-1	--	--	210	630	0.21	U	0.21	U
1,2-Dichloroethane	107-06-2	9.4	0.094	7.3	21.9	0.14	U	0.14	U
1,2-Dichloropropane	78-87-5	24	0.24	4.2	12.6	0.16	U	0.16	U
1,3,5-Trimethylbenzene	108-67-8	--	--	--	--	0.17		0.17	U
1,3-Butadiene	106-99-0	8.1	0.081	2.1	6.3	0.13		0.21	
1,3-Dichlorobenzene	541-73-1	--	--	--	--	0.21	U	0.21	U
1,4-Dichlorobenzene	106-46-7	22	0.22	830	2490	0.21	U	0.21	U
1,4-Dioxane	123-91-1	49	0.49	31	93	1.3	U	1.3	U
2-Butanone	78-93-3	--	--	5200	15600	6.1		4.1	U
2-Hexanone	591-78-6	--	--	31	93	0.24	J	0.14	UJ
4-Ethyltoluene	622-96-8	--	--	--	--	0.17	U	0.12	J
Acetone	67-64-1	--	--	32000	96000	43	J	23	J
Benzene	71-43-2	31	0.31	310	930	1.3		1.3	
Bromoform	75-25-2	220	2.2	--	--	0.36	U	0.36	U
Bromomethane	74-83-9	--	--	5.2	15.6	0.14	U	0.14	U
Carbon Tetrachloride	56-23-5	41	0.41	100	300	0.55		0.39	
Chlorobenzene	108-90-7	--	--	52	156	0.16	U	0.16	U
Chloroethane	75-00-3	--	--	10000	30000	0.092	U	0.092	U
Chloroform	67-66-3	11	0.11	100	300	2.6		0.95	
Chloromethane	74-87-3	--	--	94	282	1.2		0.85	
cis-1,2-Dichloroethene	156-59-2	--	--	--	--	0.14	U	0.14	U

Table 2. Unit 175
Comparison of Indoor Air Results to EPA Risk Ranges*

Analyte	CAS Number	Cancer Risk Range ($\mu g/m^3$)		Non-Cancer Risk Range ($\mu g/m^3$)		Residential Indoor Air Result ($\mu g/m^3$)			
		10^{-4}	10^{-6}	HI 1	HI 3	Basement		First Floor	
cis-1,3-Dichloropropene	1006-01-5	--	--	--	--	0.16	U	0.16	U
Cyclohexane	110-82-7	--	--	6300	18900	0.21		0.32	
Dibromochloromethane	124-48-1	9	0.09	--	--	0.3	U	0.3	U
Dichlorodifluoromethane	75-71-8	--	--	100	300	3.2		2.1	
Ethyl Acetate	141-78-6	--	--	73	219	1.4		0.73	
Ethylbenzene	100-41-4	97	0.97	1000	3000	2.5		0.93	
Heptane	142-82-5	--	--	--	--	0.37		0.99	
Hexane	110-54-3	--	--	730	2190	28		4.9	U
Isopropyl Alcohol	67-63-0	--	--	7300	21900	3.5		6.7	
m & p -Xylene	108-38-3	--	--	100	300	7.9		3.3	
Methyl Isobutyl Ketone	108-10-1	--	--	3100	9300	0.14	UJ	0.14	U
Methylene Chloride	75-09-2	9600	96	630	1890	61		2.3	U
MTBE	1634-04-4	940	9.4	3100	9300	0.13	U	0.13	U
o-Xylene	95-47-6	--	--	100	300	2		1.1	
Propylene	115-07-1	--	--	3100	9300	2.4	U	2.4	U
Styrene	100-42-5	--	--	1000	3000	0.15	U	0.15	U
Tetrachloroethene	127-18-4	940	9.4	42	126	0.31		0.24	U
Tetrahydrofuran	109-99-9	--	--	2100	6300	0.81		0.23	
Toluene	108-88-3	--	--	5200	15600	7.5		3.3	
trans-1,2-Dichloroethene	156-60-5	--	--	63	189	0.14	U	0.14	U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	--	0.16	U	0.16	U
Trichloroethene	79-01-6	43	0.43	2.1	6.3	0.19	U	0.19	U
Trichlorofluoromethane	75-69-4	--	--	730	2190	11		4.6	
Vinyl Acetate	108-05-4	--	--	210	630	2.5	UJ	2.5	UJ
Vinyl Chloride	75-01-4	16	0.16	100	300	0.089	U	0.089	U

U - Not detected
J - Concentration is estimated
$\mu g/m^3$ - micrograms per cubic meter
HI - Hazard Index
*Risk ranges are derived from the EPA Regional Screening Levels Summary Table, November 2013
http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/resair_sl_table_run_NOV2013.pdf