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Trustee of the Multistate Environmental Response Trust
Greenfield Environmental Trust Group, Inc., Member
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July 5, 2018

By US Postal Service and E-mail—charlene.fitch@dnr.mo.gov

Ms. Charlene Fitch
Chief, Permits Section—Hazardous Waste Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

Subject: **Final Indoor Air Sampling: Warm-Season Event 2017, Former Tronox/Kerr-McGee Wood Treatment Facility, Springfield, Missouri; RCRA Permit No. MOD007129406 Technical Memorandum; 2800 West High Street, Springfield, Missouri**

Dear Ms. Fitch:

Greenfield Environmental Multistate Trust LLC, Trustee of the Multistate Environmental Response Trust (the Multistate Trust), respectfully submits the Final Indoor Air Sampling: Warm-Season Event 2017, Former Tronox/Kerr-McGee Wood Treatment Facility, Springfield, Missouri; RCRA Permit No. MOD007129406 (Warm Season Air Sampling Technical Memorandum). The Warm Season Air Sampling Technical Memorandum supports the Environmental Actions performed by the Multistate Trust and in accordance with the Indoor Air Work Plan[1], as approved by and under the oversight of the Missouri Department of Natural Resources (MoDNR) as Lead Agency for the Site. This technical memorandum also incorporates the comments received from MoDNR on the draft submittal[2]. The Multistate Trust hereby submits two hardcopies and one searchable electronic copy to MoDNR, and one hardcopy and one searchable electronic copy to the U.S. Environmental Protection Agency. If you have any questions or concerns, please do not hesitate to contact me at (414) 732-4514 or lg@g-etg.com.

Sincerely,

Greenfield Environmental Multistate Trust LLC
Trustee of the Multistate Environmental Response Trust
By: Greenfield Environmental Trust Group, Inc., Member

Lauri Gorton
Director of Environmental Programs and Sr. Strategist

[1] Environmental Works Inc. (EWI). 2017. *Indoor Air Work Plan, Former Tronox Facility, 2800 West High Street, Springfield, Missouri*. Resource Conservation and Recovery Act Permit Number MOD007129406. June 27.

[2] *"Re: Indoor Air Sampling Work Plan – Warm Season 2017 Event Technical Memorandum; Former Kerr-McGee/Tronox Facility at 2800 West High Street in Springfield, Missouri: RPA ID#MOD007129406."* Letter from Richard A. Nussbaum/MoDNR to Michael Novak/Multistate Trust. April 24, 2018.

Enclosure(s): Table 1: Response to Comments on the Warm Season 2017 Event Technical Memorandum

Final Indoor Air Sampling: Warm-Season Event 2017, Former Tronox/Kerr-McGee Wood Treatment Facility, Springfield, Missouri; RCRA Permit No. MOD007129406

cc: Bob Aston—Missouri State Coordinator, EPA Region 7
Steve Brauner—Integral Consulting, Inc
Don Dicks—MoDNR
Michelle Hartman—Missouri Department of Health and Senior Services
Mark Hogan—MoDNR
Jalal El-Jayyousi—MoDNR
Bob Lanning—Environmental Works Inc.
Tasha Lewis—Multistate Trust
Loren Lund—CH2M (now Jacobs)
Marc Weinreich—Multistate Trust

Table 1: Response to Comments on the Warm Season 2017 Event Technical Memorandum
Former Tronox/Kerr-McGee Facility, Springfield, Missouri, RCRA Permit MOD007129406

Comment Number	Reviewer	Comment	Response
1	MoDNR	1. Page 3, Section 5.1 Indoor, Outdoor, and Crawlspace Air Sampling. The Department recommends adding detail to this section. Specifically to document that the sampling guidelines set forth in the Indoor Air Work Plan and Appendix F Standard Operating Procedures were followed. For example, were the outdoor air samples located off the ground within breathing zone height? For indoor air samples, was only one sample taken on each floor or were there any special cases (i.e., sampling a closed room) for any of the homes? For crawlspace samples, was tubing required to collect air from the middle of the crawlspace and was the access point sealed? Some of these details can be inferred from Attachment 1 Pre-Sampling Building Surveys, but the Department recommends that these details be compiled in the most appropriate location, Section 5.1.	Section 5.1 of the Technical Memorandum was revised as recommended to provide additional clarification regarding height of the sample canisters, number and location of samples, and the crawlspace sampling method: "*Indoor, outdoor, and crawlspace air samples were collected from August 2 to August 3, 2017, in accordance with the SOP, Indoor, Outdoor, and Crawl Space Air Sampling for VOCs Using Canisters, presented in Appendix F of the Indoor Air Work Plan (EWI, 2017). The air samples were collected in laboratory-provided and individually-certified-clean, evacuated 6-liter stainless steel canisters equipped with 24-hour flow controllers. One indoor air canister was placed on each level of the home at participating residential structures, approximately 3 to 5 feet above the floor to represent a person's breathing zone. Four outdoor air canisters were stationed outside the homes, positioned in the breathing zone but locked securely to a feature that would not obstruct air flow, such as a chain link fence. Crawlspace vents, if present, were sealed during the pre-sampling building survey to limit the mixing of inside or outside air with the crawlspace air. Approximately 10 feet of Teflon tubing was attached to the inlet of the crawlspace air canister, and the tubing and canister were extended toward the center of the crawlspace, away from the crawlspace entrance, which was then closed for the sampling duration. The canister valves were opened, and left to collect indoor, outdoor, and crawlspace air undisturbed for nearly 24 hours (Figure 2).* *The evacuated canisters slowly filled with target air to maintain a small amount of final vacuum (between -2 and -10 inches of mercury) after sampling. The canister vacuums were checked before and after sampling with a digital vacuum gauge, and all canister vacuums were within the SOP-specified limits. The crawlspace air sample collected with a field duplicate used two canisters connected by a single-inlet tee connected to the Teflon tubing, with separate flow controllers. The sample canisters were shipped overnight to the laboratory for analysis, and analytical results are summarized in Table 2.* " The purpose for canister shipment to the laboratory is clarified in this sentence: *"The sample canisters were shipped overnight to the laboratory for analysis, and analytical results are summarized in Table 2."*
2	MoDNR	2. Page 4, Section 5.1 Indoor, Outdoor, and Crawlspace Air Sampling. "The evacuated canisters were slowly filled with target air to maintain a small amount of final vacuum (between -2 and -10 inches of pressure) after sampling." For consistency and accuracy, the Department requests that the word "pressure" be changed to "mercury." This appears to be the only instance of using pressure instead of mercury.	Page 4, Section 5.1 Indoor, Outdoor, and Crawlspace Air Sampling, of the Technical Memorandum was revised for consistency and accuracy as follows: *"The evacuated canisters slowly filled with target air to maintain a small amount of final vacuum (between -2 and -10 inches of mercury) after sampling."*
3	MoDNR	3. Page 4, Section 5.2 Subslab Vapor Sampling. Brief additional details should be provided such as whether the sample was collected as a grab using a 1-liter canister with a flow of 180 ml/min. Also, for other homes with slabs, such as Property 012, please explain why subslab samples were not collected from these properties.	The following text was added to Section 5.2, Subslab Vapor Sampling, for clarification: *"A subslab vapor probe was not installed at Property 004 because the resident did not provide permission. A vapor probe was not installed at Property 012, because the resident did not provide permission due to concern about significant recent flooding and a high water table—possibly immediately beneath the slab.* *Immediately after collecting the 24-hour indoor and outdoor air samples at Property 007 on August 3, 2017, a subslab vapor grab sample and a field duplicate were collected from the vapor probe into laboratory-provided, clean, 1-liter evacuated stainless steel canisters equipped with 5-minute flow restrictors. The two canisters were connected by a single-inlet tee, and each was equipped with its own flow restrictor. Since the flow restrictors limit the sample rate to approximately 200 milliliters per minute, as specified in the SOP (EWI, 2017), the sample time for 2 liters was doubled to approximately 10 minutes."*
4	MoDNR	4. Page 4, Section 5.3 Sump Water and Sump Headspace Sampling. The Department requests a clarification on the samples and measurements taken within or near the sump in Property 004. In Section 5.3 the following details are given: "The sampling team sealed off the sump opening on July 31, 2017, using plastic sheeting … approximately 48 hours before collecting a sump headspace sample. On August 2, 2017, a small hole was made … to measure sump headspace VOCs with the ppbRAE PID and collect a sump headspace and field duplicate sample into evacuated canisters through a small length of Teflon tubing. Concentrations of VOCs in the sump measured with the ppbRAE rose to 15.35 parts per million (ppm)." In Attachment 1 the following details are given: "The ppbRAE picked up 50-100 ppb prior to sealing sump with plastic. After the sump had been sealed with plastic and tape for 72 hrs, the ambient sump headspace sampled through plastic sheeting had VOC levels up to 7515 ppb." The Department recommends explicitly stating what the ppbRAE PID measured, what the canister sampling results were, the canister size and flow rate, and at what time those activities were performed. Differentiating the two methods with different units, such as ppb or µg/m3, would help as well. It is also recommended to add the qualifier that the ppbRAE PID measurement, presumably 48 hours after sealing the sump, may have been a false-high reading by the amount of moisture sealed within the sump headspace.	The text in Section 5.3, Sump Water and Sump Headspace Sampling, was corrected and rewritten for clarification. The elapsed time of 72 hours presented on the building survey form and in text was not accurate; it was actually closer to 48 hours between sealing the sump and measuring the sump headspace. The reading of 664 ppb was taken on 8/2/2017 and not 7/31/2017. Specific ppbRAE PID measurements and a potential explanation for high concentrations were added. The elevated PID readings are also discussed in Section 8.6 along with the results of the laboratory analyses. The Building Survey in Attachment 1 has been corrected. The PID results are presented in ppb units while the canister samples are presented in ug/m3 units. The updated Section 5.3: "*5.3 Sump Water and Sump Headspace Sampling* *A single sump is present at Property 004, in the northern corner of the basement. The sump is made up of an unperforated rectangular bucket that has been set into a hand-dug hole in the soil below the slab. Plastic tubing from the air conditioning unit in the basement empties into the bucket (Attachment 1 contains photographs). Subslab soil visible around the bucket did not appear saturated. A thin dust film was noted on the surface of the water in the bucket. The source of water was likely condensate from the air conditioning unit, but since the resident's representative reported flooding within the month, there was a possibility that it was residual water from that significant rain event.* *Prior to removal of household products containing VOCs on July 31, 2017, the sampling team measured ambient VOCs in the basement at 250 parts per billion (ppb) with the PID. Directly over the sump and close to floor level, PID readings were lower, around 50-100 ppb. The sampling team sealed off the sump opening, using plastic sheeting taped directly to the concrete basement floor. Approximately 48 hours later, on August 2, 2017, the sampling team returned to collect a sump headspace and sump water samples, and to deploy the remaining air samples. The team measured VOCs in the basement utility room as high as 644 ppb, approximately 15 feet away from the sump. The sampling team then made a small hole in the plastic sheeting that was taped over the sump opening to measure sump headspace VOCs with the PID. The PID read as high 7,515 ppb VOCs, and was steadily rising.* *The sampling team collected the sump headspace and field duplicate grab samples through a small length of Teflon tubing poked through the plastic sheeting into laboratory-provided, clean, evacuated 1-liter stainless steel canisters connected by a single-inlet tee, each equipped with a 5-minute flow restrictor. Concentrations of VOCs in the sump measured with the PID after the samples were collected rose to 15,350 ppb. Canister sample results, presented in Section 8.6, do not correlate well with these high PID readings. It is possible that the high humidity trapped in the sump under the plastic sheeting, combined with some dust in the PID filter, caused the instrument to read artificially high.* *The plastic sheeting was then removed, and a sump water sample and field duplicate sample were collected into 3 clean vials and preserved with hydrochloric acid, packaged in a cooler with ice, and shipped with a water trip blank to the laboratory. After the plastic sheet was removed, the indoor air samples (upstairs and downstairs) and outdoor air samples were set up for 24-hour collection as described in Section 5.1 ."*
5	MoDNR	5. Page 6, Section 8.0. Sampling Results and Data Evaluation. The Department appreciates the Level 4 data validation, but we request the Trust to include lab reports with raw data as an attachment.	The raw data packages from the laboratory were and are provided in Attachment 3, Laboratory Analytical Reports.
6	MoDNR	6. Page 6, Section 8.2 Crawlspace Air. "The air laboratory reported verbally while analyzing the samples that high levels of Freon were detected in the Property 040 crawlspace and indoor air samples." As communicated to the Trust on Dec. 1, 2017, the Department would like to remind the Trust and any relevant contractors that information such as this should be shared with the resident(s) as soon as possible. This is an example of how residents can benefit from participating in this air sampling program.	The Multistate Trust agrees with MoDNR. The Multistate Trust has communicated this expectation its Contractors performing the work and collecting real time data.

Table 1: Response to Comments on the Warm Season 2017 Event Technical Memorandum;
Former Tronox/Kerr-McGee Facility, Springfield, Missouri, RCRA Permit MOD007129406

Comment Number	Reviewer	Comment	Response
7	MoDNR	7. Page 8, Section 8.7 Sewer Gas Headspace. “Facility-related COC concentrations in Manholes A and B were generally two orders of magnitude lower than in Manhole C and downgradient Manholes D, E, and F. A strong odor and white-colored effluent were observed on August 2 and August 3, 2017 in Manholes D, E, and F.” The Department notes that the outdoor air samples were taken at the same time as the sewer gas headspace samples, and the manhole lids did not have holes or vents. Furthermore, Manhole C is adjacent to Property 007, Manhole D is adjacent to Properties 004 and 012, and Manhole E is somewhat nearby Property 040. While it is not specified in this memo as to when and exactly for how long the manhole lids were opened to deploy and retrieve canisters, it is conceivable that the temporary opening of the lids could have increased the values of outdoor air sample results. Therefore the Department recommends considering deploying sewer gas headspace canisters well before outdoor air canisters and waiting until the outdoor air canisters are done before opening manholes to retrieve sewer headspace canisters in future sampling events.	The impact of opening a manhole on the results of the outdoor air sample is limited based on the short duration the lids are open, the distance to the 24-hour outdoor air sample locations, and the air mixing that would occur over the 24-hour sample duration. The manhole lids are open between 10 and 20 minutes, long enough to take field measurements of the sewer headspace and secure and lower the sample canister(s). The sampling team will make additional efforts to keep the lids open no longer than 10-20 minutes. The closest outdoor air sample location to any of the manholes is at least 100 feet. The closest outdoor air sample to Manhole A is more than 600+ feet. Closest outdoor air sample to Manhole B is 300+ feet, while the closest outdoor air sample to Manhole C is 115+ feet. The closest outdoor air locations to Manhole D is 100 to 140 feet. The closest to Manhole E is 190+ feet. The distance to any other outdoor air sample is greater than 50 feet except for Manhole F which is in proximity to Property 033. The Multistate Trust acknowledges MoDNR's concern and will take MoDNR's recommendation into consideration. The Indoor Air Work Plan procedure is being followed. The following sentence was added to Section 5.4, Sewer Gas Headspace Sampling: "The manhole lids are open between 10 and 20 minutes, long enough to take field measurements of the sewer headspace and secure and lower the sample canister(s)." Please note if sewer headspace samples are deployed well before outdoor air sampling canisters, and then closed after outdoor air sample canisters are closed, the sample duration would exceed 24 hours and the capacity of the sewer headspace canisters (i.e., would run out of vacuum).
8	MoDNR	8. Page 8, Section 9.0 Conclusions and Recommendations. “For the subsequent sampling events, the following activities are recommended: Seek additional residents to participate in the next two sampling events.” In order to evaluate seasonal variability in each and every residence in the sampling program, each one will have three sampling events no matter when they start to participate. As such, please remove the “in the next two sampling events” wording in this recommendation.	Section 9.0, Conclusions and Recommendations, was revised to include the following text: "For the subsequent sampling events, the following activities are recommended: Seek additional residents to participate in upcoming sampling events."
9	MoDNR	9. Table 3 Subslab Vapor Sample Results and Table 5 Sump Head Space Sample Results. For ease of comparison, brief references to EPA Vapor Intrusion Screening Levels, Target Cancer Risk level, and Target noncancer Hazard Quotient should be included in these tables since they relate to in-home air samples and the potential pathway of VI, or the lack thereof.	Footnote 'a' of Table 3 was revised for clarification: "Subslab vapor sample results are screened against the subslab vapor screening level (VISL). The United States Environmental Protection Agency (EPA) VISL calculator was used to develop the subslab VISLs. A subslab-vapor-to-indoor-air attenuation factor of 0.03 (the default, generic factor used in EPA's VISL calculator) was used in deriving the subslab VISL. The target cancer risk level of 1E-06, as requested by the Missouri Department of Health and Senior Services, or a target noncancer hazard quotient of 1, was used to calculate the VISL, whichever results in a lower subslab VISL." Per the Indoor Air Work Plan (EWI, 2017), the Indoor Air Action Level (based on the EPA Vapor Intrusion Screening Levels) are intended for evaluation of the indoor air samples collected from the breathing zone. Rather than comparing the sump head space sample collected from Property 004 (SA-004) [Table 5] against indoor air screening levels, the indoor air sample (IAD-004) is more appropriate for comparison against the Indoor Air Action Level.

Final Indoor Air Sampling: Warm-season Event 2017, Former Tronox/Kerr-McGee Facility, Springfield, Missouri; RCRA Permit No. MOD007129406

PREPARED FOR:	Charlene Fitch/Missouri Department of Natural Resources (MoDNR) Jalal El-Jayyousi/MoDNR Mark Hogan/MoDNR Michelle Hartmann/Missouri Department of Health and Senior Services
COPY TO:	Lauri Gorton/Multistate Trust Tasha Lewis/Multistate Trust Marc Weinreich/Multistate Trust
PREPARED BY:	CH2M HILL, Engineers Inc. (now Jacobs)
DATE:	July 5, 2018

1.0 Introduction

This technical memorandum was prepared on behalf of the Greenfield Environmental Multistate Trust, LLC, not individually but solely in its representative capacity as Trustee for the Multistate Environmental Response Trust (Multistate Trust) for the Former Tronox/Kerr-McGee Facility[1] located at 2800 West High Street in Springfield, Missouri (Facility or Site), Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit Number MOD007129406 (Figure 1). This technical memorandum supports the Environmental Actions performed by the Multistate Trust as approved by and under the oversight of the Missouri Department of Natural Resources (MoDNR) as Lead Agency for the Site.

This technical memorandum presents the results of the August 2017 warm-season air sampling event performed in the residential neighborhood northeast of the Facility (Figure 2).

2.0 Background

The Facility is located on about 68 acres in northwest Springfield, Greene County, Missouri. In 1907, American Creosoting Corporation opened the Facility for wood treatment operations. In 1965, Kerr-McGee Chemical Corporation (KMCC) – Forest Products Division (FPD) purchased the property and continued wood treatment operations until decommissioning the Facility in 2004. In 2005, as part of a spinoff, Kerr-McGee transferred the Facility to Tronox, LLC. Tronox filed for bankruptcy in 2009, and in 2011, the court-appointed Multistate Trust took title to the property to investigate and remediate the Facility. During operations, wood was pressure-treated in large vessels with creosote solutions and subsequently used to produce railroad ties and utility poles.

[1] The Site is referred to as the Former Tronox Facility, Former Kerr-McGee Facility, Former Tronox/Kerr-McGee Wood Treatment Facility, and/or the Kerr-McGee Chemical Corporation (KMCC) Forest Products Division (FPD), Springfield, Missouri Facility.

Hydrogeological investigations identified impacted groundwater flowing offsite of the Facility property to the northeast. Corrective measures initiated in the mid-1980s included installing extraction wells, an onsite groundwater treatment system, and a low-permeability cap (EWI, 2016a). The groundwater treatment system is permitted to discharge water to the sanitary sewer system. The treatment system effluent discharges onsite to Manhole A before flowing offsite to the public sanitary sewer system (Figure 3).

Groundwater in the area is first encountered from approximately 1 to 26 feet below ground surface and locally flows to the northeast. Additional groundwater monitoring wells were installed in the neighborhood near the Clifton Drainage in 2015, and groundwater samples were collected shortly after installation. In 2016, the Missouri Department of Natural Resources (MoDNR) approved the *Remedial Action Optimization Work Plan* and addendums (RAO Work Plan; EWI, 2016a, 2016b) for the Facility in response to the need to refine the conceptual site model (CSM) depicting the nature and extent of contamination resulting from releases associated with Facility operations. In December 2016 and January 2017, temporary soil vapor probes were installed on the eastern end of the Facility and throughout the neighborhood near the Clifton Drainage, and shallow and deep soil vapor samples were collected.

The CSM was refined to include vapor intrusion (VI) and was developed using groundwater and soil vapor data, residential structure proximity to groundwater at high and low water tables, and potential preferential pathways. The results indicated further evaluation of the VI pathway was warranted in the neighborhood near the Clifton Drainage northeast of the Facility (EWI, 2017). Of the Facility-related COCs identified in the RAO Work Plan (EWI 2016a, 2016b), six were identified as having toxicity data and being sufficiently volatile when groundwater is the vapor source: benzene, toluene, ethylbenzene, m & p xylene, o xylene, and naphthalene (BTEXN) (EWI, 2017).

3.0 Purpose and Scope of the Warm-season Air Sampling Event

The warm-season air sampling event was conducted in accordance with the Indoor Air Work Plan (EWI, 2017). The Indoor Air Work Plan presents the rationale for a multi-pronged VI investigation in the neighborhood near the Clifton Drainage and includes procedures to perform building surveys, indoor air sampling, crawlspace air or subslab vapor sampling (depending on building construction), outdoor (ambient) air sampling, sump water sampling, sump headspace sampling, sewer gas headspace sampling, data validation, data management, and related activities (EWI, 2017).

The data quality objectives of the indoor air sampling event are to directly measure the concentrations of Facility-related COCs in residential indoor air to support an assessment of the completeness of the VI pathway and collect sufficient data to ascertain whether indoor air COCs detected above action levels (if any) are due to VI from Facility-related COCs or background sources.

Per the Indoor Air Work Plan (EWI, 2017), confirmatory sampling would be performed following the warm-season sampling event if 1) indoor air concentrations of Facility-related COCs were detected above indoor air action levels, and 2) evaluation of the multiple lines of evidence supported Facility-related VI at a given structure.

4.0 Preparatory Activities and Building Surveys

4.1 Program Solicitation

Residential structures in the neighborhood near the Clifton Drainage were prioritized for air sampling in the Indoor Air Work Plan using a process that accounted for multiple factors that could affect the VI pathway (EWI, 2017). Prioritization scores were assigned to the residential structures, and the property owners with the highest scoring residential structures were contacted for participation in the indoor air sampling event.

Each of the nine selected residences in the neighborhood near the Clifton Drainage were visited the week preceding the scheduled sampling activities. Residents were notified of the upcoming indoor air sampling program, provided with reading materials about the program, and asked for participation. Five of the nine residents agreed to sampling and signed Access Agreements, though one resident declined to participate on the first day of sampling.

4.2 Weather Station Installation

A RainWise WindLog Wind Data Logger was set up in the northeastern corner of the Facility on July 27, 2017 to log wind direction and speed to assist in placement of outdoor air sample canisters. The Indoor Air Work Plan specified that outdoor air samples were to be collected upwind of participating residential structures and distributed evenly throughout the neighborhood (EWI, 2017). Wind data analyzed for the 24 hours (August 1 to August 2, 2017) before the residential sampling event indicated the predominant wind direction was northeasterly. Outdoor air sample containers were set up northeast of homes at Properties 004 and 007, and west of the homes at Properties 012 and 040 (at the request of the resident at Property 012 and to protect the canister at Property 040). The outdoor air sample locations provided an even distribution throughout the neighborhood.

4.3 Building Surveys

On July 31, 2017, presampling building surveys were conducted at the four participating residences (Properties 004, 007, 040, and 012) in accordance with the standard operating procedure (SOP), *Conducting Building Surveys for Vapor Intrusion Evaluations* (EWI, 2017). The building surveys were performed to collect characteristic information about the building that could affect air sampling results and interpretation during data evaluation. In addition, BTEXN-containing household products or other articles that could bias the indoor air results were identified (to the extent feasible) and placed outside the residence before sampling.

The field team obtained information about the history of the buildings and recent, current, or proposed building maintenance activities that could generate volatile organic compounds (VOCs). The condition of the foundations and slab also was documented. The heating, ventilation, and air conditioning (HVAC) system types and typical operating conditions were documented on the building survey form. The existing HVAC systems were in use at least part of the time during sampling activities between July 31 and August 3, 2017.

Household products and other items that contain or operate using petroleum-based lubrication or fuel were removed before performing the indoor air sample collection. Items of potential concern were placed outside the building “envelope” before sample collection. The products and other items were located by simple observation (for example, gasoline cans and mowers) and by using a ppbRAE photoionization detector (PID) to detect potential BTEXN-containing items not immediately observed. The items were containerized in plastic snap-lid storage boxes and moved outside the residence approximately 48 hours before starting sampling activities, typically to a shed or back patio during sampling, at the direction of the residents. Motor vehicles were parked outside attached garages during the sampling event.

5.0 Sampling Activities

The air sampling event was conducted in the neighborhood near the Clifton Drainage from July 31 through August 3, 2017. The following samples were collected:

- Nine indoor air samples (plus one field duplicate)
- One crawlspace sample (plus one field duplicate)
- Four outdoor air samples (one outside each of the four participating residences)
- One subslab vapor sample (plus one field duplicate)

- Six sewer gas headspace samples (plus one field duplicate)
- One sump water headspace sample (plus one field duplicate)
- One sump water sample (plus one field duplicate).

The analytical data are summarized in Table 1 and depicted on Figures 2 and 3.

5.1 Indoor, Outdoor, and Crawlspace Air Sampling

Indoor, outdoor, and crawlspace air samples were collected from August 2 to August 3, 2017, in accordance with the SOP, *Indoor, Outdoor, and Crawl Space Air Sampling for VOCs Using Canisters*, presented in Appendix F of the Indoor Air Work Plan (EWI, 2017). The air samples were collected in laboratory-provided and individually-certified-clean, evacuated 6-liter stainless steel canisters equipped with 24-hour flow controllers. One indoor air canister was placed on each level of the home at participating residential structures, approximately 3 to 5 feet above the floor to represent a person's breathing zone. Four outdoor air canisters were stationed outside the homes, positioned in the breathing zone but locked securely to a feature that would not obstruct air flow, such as a chain link fence. Crawlspace vents, if present, were sealed during the pre-sampling building survey to limit the mixing of inside or outside air with the crawlspace air. Approximately 10 feet of Teflon tubing was attached to the inlet of the crawlspace air canister, and the tubing and canister were extended toward the center of the crawlspace, away from the crawlspace entrance, which was then closed for the sampling duration. The canister valves were opened, and left to collect indoor, outdoor, and crawlspace air undisturbed for nearly 24 hours (Figure 2).

The evacuated canisters slowly filled with target air to maintain a small amount of final vacuum (between -2 and -10 inches of mercury) after sampling. The canister vacuums were checked before and after sampling with a digital vacuum gauge, and all canister vacuums were within the SOP-specified limits. The crawlspace air sample collected with a field duplicate used two canisters connected by a single-inlet tee connected to the Teflon tubing, with separate flow controllers. The sample canisters were shipped overnight to the laboratory for analysis, and analytical results are summarized in Table 2.

5.2 Subslab Vapor Sampling

A professional utility location service was used at Property 007 on July 31, 2017, to scan the basement slab and mark utilities or other obstructions that could damage or be damaged by the hammer drill used to install a subslab vapor probe, per the SOP, *Subslab Soil Gas Sampling from Cox-Colvin Vapor Pins* (EWI, 2017). A subslab vapor probe was installed at Property 007, and a water dam leak check was performed to check the integrity of the vapor probe seal against the concrete slab. A subslab vapor probe was not installed at Property 004 because the resident did not provide permission. A vapor probe was not installed at Property 012, because the resident did not provide permission due to concern about significant recent flooding and a high water table—possibly immediately beneath the slab.

Immediately after collecting the 24-hour indoor and outdoor air samples at Property 007 on August 3, 2017, a subslab vapor grab sample and a field duplicate were collected from the vapor probe into laboratory-provided, clean, 1-liter evacuated stainless steel canisters equipped with 5-minute flow restrictors. The two canisters were connected by a single-inlet tee, and each was equipped with its own flow restrictor. Since the flow restrictors limit the sample rate to approximately 200 milliliters per minute (ml/min), as specified in the SOP (EWI, 2017), the sample time for 2 liters was doubled to approximately 10 minutes. Before sample collection, both a physical leak check of the sampling manifold and a helium leak check of the full sampling apparatus were performed. There was no vacuum loss during the physical leak check, and no helium was detected in the purged soil vapor. Helium was later analyzed in the samples at the laboratory. No helium was detected in the normal sample, and only 0.011 percent helium was detected in the duplicate, below the 1% threshold indicating no leaks were in the sample train that might allow indoor (room) air to mix with the subslab vapor sample. Analytical results

for the subslab vapor samples were below subslab vapor intrusion screening levels (VISLs) for the Facility-related COCs (Table 3).

5.3 Sump Water and Sump Headspace Sampling

A single sump is present at Property 004, in the northern corner of the basement. The sump is made up of an unperforated rectangular bucket that has been set into a hand-dug hole in the soil below the slab. Plastic tubing from the air conditioning unit in the basement empties into the bucket (Attachment 1 contains photographs). Subslab soil visible around the bucket did not appear saturated. A thin dust film was noted on the surface of the water in the bucket. The source of water was likely condensate from the air conditioning unit, but since the resident's representative reported flooding within the month, there was a small possibility that it was residual water from that significant rain event.

Prior to removal of household products containing VOCs on July 31, 2017, the sampling team measured ambient VOCs in the basement at 250 parts per billion (ppb) with the PID. Directly over the sump and close to floor level, PID readings were lower, around 50-100 ppb. The sampling team sealed off the sump opening, using plastic sheeting taped directly to the concrete basement floor. Approximately 48 hours later, on August 2, 2017, the sampling team returned to collect a sump headspace and sump water samples, and to deploy the remaining air samples. The team measured VOCs in the basement utility room as high as 644 ppb, approximately 15 feet away from the sump. The sampling team then made a small hole in the plastic sheeting that was taped over the sump opening to measure sump headspace VOCs with the PID. The PID read as high 7,515 ppb VOCs, and was steadily rising.

The sampling team collected the sump headspace and field duplicate grab samples through a small length of Teflon tubing poked through the plastic sheeting into laboratory-provided, clean, evacuated 1-liter stainless steel canisters connected by a single-inlet tee, each equipped with a 5-minute flow restrictor. Concentrations of VOCs in the sump measured with the PID after the samples were collected rose to 15,350 ppb. Canister sample results, presented in Section 8.6, do not correlate well with these high PID readings. It is possible that the high humidity trapped in the sump under the plastic sheeting, combined with some dust in the PID filter, caused the instrument to read artificially high.

The plastic sheeting was then removed, and a sump water sample and field duplicate sample were collected into 3 clean vials and preserved with hydrochloric acid, packaged in a cooler with ice, and shipped with a water trip blank to the laboratory. After the plastic sheet was removed, the indoor air samples (upstairs and downstairs) and outdoor air samples were set up for 24-hour collection as described in Section 5.1.

5.4 Sewer Gas Headspace Sampling

Six sanitary sewer gas headspace samples were collected on August 3, 2017, in accordance with the work plan, to help assess whether permitted discharge from the recovered groundwater treatment system was releasing detectable levels of Facility-related BTEXN-compound vapor in the sewer headspace (EWI, 2017). The manhole lids did not have holes or vents. The manhole lids are open between 10 and 20 minutes, long enough to take field measurements of the sewer headspace and secure and lower the sample canister(s). A field duplicate was collected at Manhole D (Figure 2). Sewer gas headspace samples were collected over a 24-hour period into laboratory-provided 6-liter, stainless-steel canisters equipped with 24-hour flow controllers. Analytical results for the sewer gas headspace samples are summarized in Table 6.

During sampling, a strong chemical odor and white liquid were observed from Manhole C downgradient to Manholes D, E, and F.

5.5 Deviations from the Work Plan

The following two deviations from the Indoor Air Work Plan (EWI, 2017) occurred during the sampling event.

5.5.1 Evacuated Canister Cleanliness Certification

Individually certified canisters are prepared for TO-15 SIM analysis to facilitate low detection limits. Indoor, outdoor, and crawlspace air samples were to be collected in these individually-certified clean evacuated canisters, as specified in the Indoor Air Sampling Work Plan (EWI, 2017). However, during field sample collection at Property 004, the field team inadvertently deployed three batch-certified canisters to collect the upstairs and downstairs indoor air samples (IAU-004_0817 and IAD-004_0817) and the outdoor air sample (OA-004_0817).

To assess the impact of the batch-certified canisters on data quality, two batch-certified canisters from the same canister-cleaning batches as the field sample canisters were analyzed as blanks to estimate the degree (if any) that potential target compounds might be present in the batch-certified canisters. Blank canisters were generated by the laboratory before analysis by pressurizing clean canisters with humidified nitrogen and analyzing by TO-15 SIM. The results of the blank batch-certified canister analyses indicated there was no impact to the data quality. As noted in the data quality evaluation (Attachment 2), the associated samples were deemed useable.

5.5.2 Sump Water Analysis

Sump water sample SW-004_0817 and duplicate were analyzed at the laboratory for 21 compounds (which included the six Facility-related COCs) using U.S. Environmental Protection Agency (EPA) SW-846 Method 8260B instead of the six Facility-related COCs due to a sample chain-of-custody preparation error. There were no detections in the sample and field duplicate of any of the 21 compounds, including the six Facility-related COCs.

6.0 Laboratory Analysis

Eurofins Air Toxics, Inc. in Folsom, California, analyzed the 28 evacuated canister samples using EPA Method TO-15. Indoor, outdoor, and crawlspace samples were analyzed using TO-15 in SIM mode. The subslab vapor, sump headspace, and sewer headspace samples were analyzed using Full Scan TO-15. Analytical data are summarized in Table 2 and depicted on Figure 2. The target analyte list for all samples was comprised of the six Facility-related COCs.

Eurofins Lancaster Laboratories Environmental in Lancaster, Pennsylvania, analyzed the sump water sample (as well as one field duplicate and one trip blank) using EPA SW-846 Method 8260B for target compound list VOCs plus naphthalene. The laboratory analytical reports are provided in Attachment 3.

7.0 Screening Levels

Screening levels used for evaluating the sampling results were identified in the Indoor Air Work Plan (EWI, 2017). VISLs and indoor air action levels (ALs) were calculated using methods consistent with EPA guidance and VI calculators (EPA, 2015a, 2015b, 2017a, 2017b) and MoDNR Technical Guidance (2006).

The indoor air ALs were derived to assess the need for mitigation to reduce human exposure. The indoor air ALs are based on EPA (2017a) regional screening levels (RSLs) for residential air using a target cancer risk level of 1×10^{-5} or the target noncancer hazard quotient of 1, whichever results in a lower indoor air AL. The indoor air ALs are presented in Table 2.

The subslab VISLs were derived to guide the investigation; a VISL exceedance indicates further evaluation of VI is warranted, and not that an unacceptable exposure exists. The subslab VISLs were based on EPA (2017a) RSLs for residential air, using a target cancer risk level of 1×10^{-6}, as requested by

the Missouri Department of Health and Senior Services, or a target noncancer hazard quotient of 1, whichever results in a lower subslab VISL. A subslab vapor-to-indoor air attenuation factor of 0.03 (EPA, 2017b) was used in deriving the subslab VISL. The subslab VISLs are presented in Table 3.

8.0 Sampling Results and Data Evaluation

Table 1 summarizes the samples collected as part of the warm-season VI sampling event, and Tables 2 through 6 summarize the warm-season sampling results, as described below:

- Table 1, Sample List
- Table 2, Indoor, Crawlspace, and Outdoor Air Sample Results
- Table 3, Subslab Vapor and Sump Head Space Sample Results
- Table 4, Sump Water Sample Results
- Table 5, Sump Headspace Sample Results
- Table 6, Sewer Gas Head Space Sample Results

A data quality evaluation, which includes a Level 4 data validation, is in Attachment 2.

8.1 Indoor Air

Each Facility-related COC was detected in the seven indoor air samples (four from the upstairs/main level at Properties 004, 007, 012, and 040, and three downstairs [basements] from Properties 004, 007, and 012). Results were similar between upstairs and downstairs samples at properties 004, 007, and 012 (no downstairs sample was collected from 040) indicating a lack of concentration gradient from the subsurface, moving from the basement (downstairs) to the main floor (upstairs). Indoor air analytical data are summarized in Table 2. Four Facility-related COCs (BTEX) were detected below indoor action levels from each of the four properties; only naphthalene concentrations slightly exceeded indoor air ALs. The detected indoor air concentrations of naphthalene were similar to outdoor air concentrations. Analytical results for the indoor and outdoor air samples are summarized in Table 2.

8.2 Crawlspace Air

Crawlspace air samples were collected at Property 040. The crawlspace at Property 040 is vented to outdoor air at five locations around three sides of the foundation and to the indoor air via a combustion air intake vent in the floor to the furnace closet. MoDNR requested that all vents be covered for the duration of air sampling, so that a worst-case scenario of crawlspace detections would be from a subsurface source instead of an outdoor air source. The one indoor air vent and five outdoor air vents were sealed with plastic sheeting and tape 48 hours before the start of sampling.

The air laboratory reported verbally while analyzing the samples that high levels of Freon were detected in the Property 040 crawlspace and indoor air samples. This is likely caused by a leaking air conditioning compressor, which is located below the furnace room in the crawlspace. The levels of Freon detected in the sample did not affect the BTEXN results.

All six Facility-related COCs were detected at low levels in the crawlspace samples, but none exceeded the indoor air AL. The lack of a decreasing concentration gradient from the crawlspace to the indoor air samples and the similarity of the indoor and outdoor air concentrations of naphthalene points to the outdoor air as a potential source of indoor air naphthalene. Analytical results for the crawlspace air samples are summarized in Table 2.

8.3 Outdoor Air

Four outdoor air samples were collected near each of the residences. Outdoor air concentrations of the Facility-related COCs were similar to or greater than indoor air concentrations at all locations, indicating outdoor air intrusion into the residential buildings is a potential source of VOCs in indoor air. Analytical results for the outdoor air samples are summarized in Table 2.

8.4 Subslab Vapor

The Facility-related COCs were detected in the subslab vapor samples from Property 007 except for benzene. However, none of the Facility COC concentrations exceeded VISLs in the subslab vapor sample and duplicate sample. The source of indoor air Facility-related COC detections does not appear to be from the soil vapor at this location at this time. Analytical results for the subslab vapor samples are summarized in Table 3.

8.5 Sump Water

At Property 004, none of the Facility-related COCs was detected in the sump water sample or the duplicate sample. The sump water does not appear to be a source of Facility-related COCs.

It should be noted, however, that water collected from the sump liner may not represent groundwater. The sump liner is a non-perforated bucket set below the slab, open to soil. The drain hose from the air conditioning compressor empties into the residence's unperforated sump liner. There is no lid over the sump hole or the liner. For groundwater or surface water to enter the sump liner itself, water would need to rise to a level just beneath the basement slab, likely representing flooding conditions. The resident stated recent flooding (within weeks) had occurred, and testing water in the sump liner was conducted in case water had entered the liner in this way. Sump water analytical results are summarized in Table 4.

8.6 Sump Headspace

The sump headspace air sample and duplicate from Property 004 reflect both vaporization from soil beneath the basement slab and headspace above water in the sump liner itself, as subslab soil is visible surrounding the liner. Of the six Facility-related COCs, only toluene was detected, just above the reporting level and at levels less than the indoor air AL in the headspace sample and duplicate. The use of the indoor air AL is for comparison purposes only but does not represent an assessment of the potential inhalation concerns since the sump headspace does not represent breathable air. During indoor air sampling, the plastic seal placed over the sump opening by the sample technicians was removed, and the top of the sump opening was again uncovered. The sump does not appear to be the source for indoor air detections of Facility-related COCs.

Based on the TO-15 sampling results for Facility-related COCs, it is unlikely that the VOCs measured at ppm levels by the PID in the sump headspace are Facility-related or related to water that was collected from the uncovered sump liner bucket. Plastic sheeting was placed across the basement slab over the top of the sump opening 48 hours before sampling sump headspace, and the downstairs indoor air VOCs measured with the PID were an order of magnitude lower than readings from the sealed sump. It is also possible humidity in the enclosed sump was high and caused a false-high detection of VOCs.

Analytical results for the sump water and sump headspace air samples are summarized in Tables 4 and 5, respectively.

8.7 Sewer Gas Headspace

BTEXN compounds were detected in the six sewer gas headspace samples collected from Manholes A to F (Figure 3) and one field duplicate at Manhole D. The sewer gas headspace analytical results are summarized in Table 6.

All six Facility-related COCs were elevated in sewer gas headspace samples from manholes starting at and downgradient of Manhole C, which is the first manhole offsite and takes inflow from the west along West High Street after it is joined by flow from Manhole A, and from the Greene County Highway Department facility from the south-southeast (Figure 3). Manholes D, E, and F are downgradient of Manhole C.

Manhole A, at the Facility sewer outfall, is located on Facility property (Figure 3) and exits the Facility along West High Street. It is downgradient of the onsite recovered groundwater treatment system that discharges to the sanitary sewer system. Naphthalene concentrations were detected in the Manhole A sewer gas headspace samples but at lower levels than in Manholes C to F (Table 6).

Facility-related COC concentrations in Manholes A and B were generally two orders of magnitude lower than in Manhole C and downgradient Manholes D, E, and F. A strong odor and white-colored effluent were observed on August 2 and August 3, 2017 in Manholes D, E, and F. No white liquid was observed in Manhole C during canister deployment on August 2, 2017, however the strong chemical odor was present at Manhole C during canister pickup on August 3, 2017, and the white liquid was observed coming from the direction of the Greene Country Highway Department facility. No strong chemical odor or white liquid were observed in Manhole A during the sampling event. In addition, no high levels of Facility-related COCs or white effluent were noted in Manhole B, which is located on Fulbright Avenue and lateral to the manholes along the Clifton Drainage. This lateral joins the Clifton Drainage manholes between Manholes D and E.

The groundwater level is high enough in places that there is the possibility that impacted groundwater is entering the sewer system through leaks.

9.0 Conclusions and Recommendations

The August 2017 warm-season air sampling results indicate Facility-related COC concentrations in indoor air in the four residences sampled were less than indoor air ALs, except naphthalene detections, which were slightly above the indoor air ALs but were similar to or lower than outdoor air concentrations, indicating a non-VI source. The subslab vapor, crawlspace, and sump headspace concentrations do not represent a potential ongoing and significant VI source of Facility-related COCs at the residences sampled. The likely source of Facility-related COCs is outdoor air.

Sewer gas does not appear to be affecting indoor air at this time. A potential source of BTEXN compounds, unrelated to the Facility groundwater treatment plant effluent, may be entering the sewer system south or west of Manhole C. The six manholes should be sampled again, noting flow properties (color, odor, and apparent source direction). If not evaluated previously, an evaluation of groundwater infiltration to the sewer system is recommended.

Based on the conclusion that VI into the residential structures sampled was not occurring or was insignificant during the warm-season sampling event, confirmatory sampling, as described in the Indoor Air Work Plan (EWI, 2017), was not required within 2 weeks following receipt of validated results showing exceedance. Temporary mitigation is not recommended since the data do not indicate VI is occurring presently, under current conditions. Post-temporary mitigation sampling is unnecessary, as no mitigation was required or implemented.

The Indoor Air Work Plan scope describes collecting the same sample media at all properties in different seasons to adequately evaluate the potential effects of temporal and groundwater elevation variability and heating/cooling seasons on VI. Per the Indoor Air Work Plan (EWI, 2017), additional sampling events are still proposed for the heating season (winter, around February 2018) and during the high-water table season (spring, around May 2018). For the subsequent sampling events, the following activities are recommended:

- Seek additional residents to participate in upcoming sampling events
- Collect the same number of samples (indoor air, crawlspace, outdoor air, subslab vapor, sump, sump headspace, and sewer gas headspace) as in the warm-season sampling event, depending on access
- Install subslab vapor probes and collect subslab samples in the heating season at Properties 004 and 012 if flooding is not anticipated and access is granted

- Remove subslab vapor probes before the high-water-table (spring) sampling event because a high-water-table would preclude subslab sampling to avoid potential water entry issues

No step-out screening of sumps at other residences is recommended, unless one of the five locations that refused sampling for the warm-season sampling event agree to future sampling and one of those residences has a sump.

The source of Facility-related COCs greater than the concentrations found in effluent from the Facility itself should be further investigated. The potential for contaminated groundwater entering the sewer system should also be considered.

10.0 References

Environmental Works Inc. (EWI). 2016a. *Remedial Action Optimization Work Plan, Former Tronox Facility, 2800 West High Street, Springfield, Missouri*.

Environmental Works Inc. (EWI). 2016b. *Addendums 1 and 2 to the Remedial Action Optimization Work Plan, Former Tronox Facility, 2800 West High Street, Springfield, Missouri*.

Environmental Works Inc. (EWI). 2017. *Indoor Air Work Plan, Former Tronox Facility, 2800 West High Street, Springfield, Missouri*. Resource Conservation and Recovery Act Permit Number MOD007129406. June 27.

Missouri Department of Natural Resources (MoDNR). 2006. 10 Code of State Regulations 12-18. Division 25 – Hazardous Waste Management Commission, Chapter 18 – Risk-Based Corrective Action Missouri Risk-Based Corrective Action Technical Guidance, Appendix B, Table B-2. June.

U.S. Environmental Protection Agency (EPA). 2015a. *Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites*. Office of Underground Storage Tanks, EPA 510-R-15-001. June.

U.S. Environmental Protection Agency (EPA). 2015b. *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air*. OSWER Publication 9200.2-154. June.

U.S. Environmental Protection Agency (EPA). 2017a. Integrated Risk Information System. https://www.epa.gov/iris.

U.S. Environmental Protection Agency (EPA). 2017b. Vapor Intrusion Screening Levels (VISLs), Version 3.5.1. May 2016 Regional Screening Levels. https://www.epa.gov/vaporintrusion/vapor- intrusion-screening-levels-visls.

Tables

Table 1. Sample List

Warm-Season Sampling Event, August 2017

Former Tronox Facility, Springfield, Missouri

Location	Medium	Sample ID	Analytical Method
004	Indoor Air Downstairs (basement)	IAD-004_0817	TO-15 SIM
	Indoor Air Upstairs (main)	IAU-004_0817	TO-15 SIM
	Outdoor Air	OA-004_0817	TO-15 SIM
	Sump Head Space	SA-004_0817	TO-15 Scan
	Sump Head Space	SA-104_0817 (Duplicate of SA-004_0817)	TO-15 Scan
007	Indoor Air Downstairs (basement)	IAD-007_0817	TO-15 SIM
	Indoor Air Downstairs (basement)	IAD-107_0817 (Duplicate of IAD-007_0817)	TO-15 SIM
	Indoor Air Upstairs (main)	IAU-007_0817	TO-15 SIM
	Outdoor Air	OA-007_0817	TO-15 SIM
	Subslab Vapor	SU-007_0817	TO-15 Scan and ASTM D 1946
	Subslab Vapor	SU-107_0817	TO-15 Scan and ASTM D 1946
012	Indoor Air Downstairs (basement)	IAD-012_0817	TO-15 SIM
	Indoor Air Downstairs (basement)	IAD-112_0817 (Duplicate of IAD-012_0817)	TO-15 SIM
	Indoor Air Upstairs (main)	IAU-012_0817	TO-15 SIM
	Outdoor Air	OA-012_0817	TO-15 SIM
040	Crawlspace	CS-040_0817	TO-15 SIM
	Crawlspace	CS-140_0817 (Duplicate of CS-040_0817)	TO-15 SIM
	Indoor Air (main)	IA-040_0817	TO-15 SIM
	Outdoor Air	OA-040_0817	TO-15 SIM
SH-A (Facility)	Sewer Head Space	SH-A_0817	TO-15 Scan
SH-B (N. Fulbright)	Sewer Head Space	SH-B_0817	TO-15 Scan
SH-C (Back of 008)	Sewer Head Space	SH-C_0817	TO-15 Scan
SH-D (Back of 005)	Sewer Head Space	SH-D_0817	TO-15 Scan
	Sewer Head Space	SH-G_0817 (Duplicate of SH-D_0817)	TO-15 Scan
SH-E (Back of 037)	Sewer Head Space	SH-E_0817	TO-15 Scan
SH-F (Back of 016)	Sewer Head Space	SH-F_0817	TO-15 Scan
Blank 1*	Quality Control	BATCH-to-SIM BLANK 1	TO-15 SIM
Blank 2**	Quality Control	BATCH-to-SIM BLANK 2	TO-15 SIM
Lab Blank	Quality Control	Lab Blank	TO-15 SIM
004	Grab Surface Water	SW-004_0817	TCL4.3+Naph 8260B w/RPD20% and SW-846 8260B
			GC/MS VOA Water Prep and SW-846 8260B
	Grab Surface Water	SW-104_0817	TCL4.3+Naph 8260B w/RPD20% and SW-846 8260B
			GC/MS VOA Water Prep and SW-846 8260B
Trip Blank	Quality Control	TRIP-1_0817	TCL4.3+Naph 8260B w/RPD20% and SW-846 8260B
			GC/MS VOA Water Prep and SW-846 8260B

Notes

* Blank 1 is associated with cleaning batch 03C07242017 and Sample ID IAU-004_0817

**Blank 2 is associated with cleaning batch 03B07242017 and Sample IDs OA-004_0817 and IAD-004_0817

Table 2. Indoor, Crawlspace, and Outdoor Air Sample Results
Warm-Season Sampling Event, August 2017
Former Tronox Facility, Springfield, Missouri

				Indoor Air Samples																				*Crawlspace Air Samples*						*Outdoor (Ambient) Air Samples*								
			Location ID :	**IAU-004**			**IAD-004**			**IAU-007**			**IAD-007**			**IAD-107 (Dup of IAD-007)**			**IAU-012**			**IAD-012**			**IAD-112 (Dup of IAD-012)**			**IA-040**			**CS-040**			**CS-140 (Dup of CS-040)**			**OA-004**			**OA-007**			**OA-012**			**OA-040**		
			Sample ID :	**IAU-004_0817**			**IAD-004_0817**			**IAU-007_0817**			**IAD-007_0817**			**IAD-107_0817**			**IAU-012_0817**			**IAD-012_0817**			**IAD-112_0817**			**IA-040_0817**			**CS-040_0817**			**CS-140_0817**			**OA-004_0817**			**OA-007_0817**			**OA-012_0817**			**OA-040_0817**		
			Date Collected :	**8/3/2017 09:20:00**			**8/3/2017 09:35:00**			**8/3/2017 11:31**			**8/3/2017 11:24:00**			**8/3/2017 11:24**			**8/3/2017 17:50**			**8/3/2017 17:45:00**			**8/3/2017 17:45:00**			**8/3/2017 17:25:00**			**8/3/2017 17:19:00**			**8/3/2017 17:19:00**			**8/3/2017 09:22:00**			**8/3/2017 11:52:00**			**8/3/2017 17:54:00**			**8/3/2017 17:22:00**		
Method	**Chemical**	**Unit**	**Indoor Air Action Level[a]**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**
TO-15 SIM	Benzene	µg/m3	3.6	**0.51**	0.3		**0.5**	0.3		**0.64**	0.28		**0.7**	0.29		**0.7**	0.28		**2**	0.33		**2.1**	0.26		**2**	0.3		**0.88**	0.29		**0.32**	0.29		**0.31**	0.27		**0.39**	0.3		**0.38**	0.49	J	**0.35**	0.31		**0.43**	0.29	
TO-15 SIM	Ethylbenzene	µg/m3	11	**0.76**	0.16		**0.67**	0.16		**0.29**	0.15		**0.43**	0.16		**0.44**	0.15		**3.3**	0.18		**3**	0.14		**2.4**	0.16		**2.3**	0.16		**0.039**	0.16	J	**0.054**	0.15	J	**0.23**	0.16		**0.27**	0.27		**0.22**	0.17		**0.3**	0.16	
TO-15 SIM	Naphthalene	µg/m3	0.83	**1.6**	0.5		**1.6**	0.5		**3**	0.46		**2**	0.48		**2**	0.46		**1.4**	0.54		**1.5**	0.42		**0.62**	0.49		**1.6**	0.47		**0.067**	0.47	J	**0.13**	0.44	J	**4.4**	0.49		**2.3**	0.81		**1.9**	0.51		**2.7**	0.48	
TO-15 SIM	Toluene	µg/m3	5,200	**5.3**	0.36		**6.1**	0.36		**4.6**	0.33		**3.7**	0.34		**3.7**	0.33		**20**	0.16		**20**	0.12		**17**	0.14		**8.7**	0.14		**0.64**	0.14		**0.63**	0.13		**2.1**	0.35		**2.2**	0.58		**1.8**	0.15		**2.5**	0.14	
TO-15 SIM	Xylene, o	µg/m3	100	**1.1**	0.16		**0.93**	0.16		**0.36**	0.15		**0.56**	0.16		**0.56**	0.15		**4.4**	0.18		**4**	0.14		**3.3**	0.16		**3.5**	0.16		**0.076**	0.16	J	**0.09**	0.15	J	**0.3**	0.16		**0.37**	0.27		**0.24**	0.17		**0.47**	0.16	
TO-15 SIM	Xylenes, m & p	µg/m3	100	**2.5**	0.33	J	**2.2**	0.33	J	**0.84**	0.3	J	**1.3**	0.32	J	**1.3**	0.3	J	**12**	0.36		**11**	0.28		**9.6**	0.33		**8.8**	0.31		**0.12**	0.31	J	**0.19**	0.3	J	**0.71**	0.32	J	**0.96**	0.54	J	**0.64**	0.34		**1**	0.32	

Notes:
Detects are bolded
Exceedances of Indoor Air Action Level are shaded
CS : crawlspace
Dup : duplicate
D : downstairs
IA : indoor air
J : estimated value
OA : outdoor air
Qual : laboratory qualifier
RL : reporting limit
TCR : target cancer risk
THQ : target noncancer hazard quotient
U : upstairs
µg/m3 : micrograms per cubic meter
VISL : vapor intrusion screening level

[a]: CS and IA data are screened against Indoor Air action levels. The United States Environmental Protection Agency VISL calculator was used to develop residential indoor air action levels by selecting a TCR of 1E-5 and a THQ of 1. A TCR of 1E-5 is the acceptable cancer risk by Missouri Regulations 10 CSR 25-18, therefore the VISL target level output can be used as the action.

Table 3. Subslab Vapor Sample Results

Warm-Season Sampling Event, August 2017

Former Tronox Facility, Springfield, Missouri

				Subslab Vapor					
			Location ID :	SU-007			SU-107 (Dup of SU-007)		
			Sample ID :	SU-007_0817			SU-107_0817		
			Date Collected :	8/3/2017 12:42:00			8/3/2017 12:42:00		
Method	Chemical	Unit	Subslab Vapor Instrusion Screening Level[a]	Result	RL	Qual	Result	RL	Qual
D1946	HELIUM	Percent		0.13	0.13	U	**0.011**	0.13	J
TO-15	Benzene	µg/m3	12	4	4	U	4	4	U
TO-15	Ethylbenzene	µg/m3	37	**1**	5.5	J	**0.82**	5.5	J
TO-15	Naphthalene	µg/m3	2.8	**0.46**	13	J	**0.48**	13	J
TO-15	Toluene	µg/m3	170,000	**2.2**	4.7	J	**1.9**	4.7	J
TO-15	Xylene, o	µg/m3	3,500	**1.6**	5.5	J	**1.9**	5.5	J
TO-15	Xylenes, m & p	µg/m3	3,500	**4**	5.5	J	**3.3**	5.5	J

Notes:

SU : subslab

Dup : Duplicate

J : estimated value

Qual : laboratory qualifier

RL : reporting limit

U : nondetect

µg/m3 : micrograms per cubic meter

[a] : Subslab vapor sample results are screened against the subslab vapor screening level (VISL). The United States Environmental Protection Agency (EPA) VISL calculator was used to develop the subslab VISLs. A subslab-vapor-to-indoor-air attenuation factor of 0.03 (the default, generic factor used in EPA's VISL calculator) was used in deriving the subslab VISL. The target cancer risk level of 1E-06, as requested by the Missouri Department of Health and Senior Services, or a target noncancer hazard quotient of 1, was used to calculate the VISL, whichever results in a lower subslab VISL.

Table 4. Sump Water Sample Results

Warm-Season Sampling Event, August 2017

Former Tronox Facility, Springfield, Missouri

		Location ID :	SW-004			SW-104 (Duplicate of SW-004)		
		Sample ID :	SW-004_0817-WS-08022017-N			SW-104_0817-WS-08022017-D		
		Date Collected :	8/2/2017 11:06:00			8/2/2017 11:00:00		
Method	**Chemical**	**Unit**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**
SW8260B	Benzene	µg/L	1	1	U	1	1	U
SW8260B	Ethylbenzene	µg/L	1	1	U	1	1	U
SW8260B	Naphthalene	µg/L	5	5	U	5	5	U
SW8260B	Toluene	µg/L	1	1	U	1	1	U
SW8260B	Xylene, o	µg/L	1	1	U	1	1	U
SW8260B	Xylenes, m & p	µg/L	1	1	U	1	1	U

Notes:

Qual : laboratory qualifier

RL : reporting limit

SW : sump water

U : nondetect

µg/L : micrograms per liter

Table 5. Sump Head Space Sample Results

Warm-Season Sampling Event, August 2017

Former Tronox Facility, Springfield, Missouri

			Sump Head Space Gas					
			SA-004 SA-004_0817 8/2/2017 10:55:00			SA-104 (Dup of SA-004) SA-104_0817 8/2/2017 08:00:00		
Method	**Chemical**	**Unit**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**
TO-15	Benzene	µg/m3	4.2	4.2	U	4.1	4.1	U
TO-15	Ethylbenzene	µg/m3	5.7	5.7	U	5.6	5.6	U
TO-15	Naphthalene	µg/m3	14	14	UJ	14	14	UJ
TO-15	Toluene	µg/m3	**1**	5	J	**0.89**	4.9	J
TO-15	Xylene, o	µg/m3	5.7	5.7	U	5.6	5.6	U
TO-15	Xylenes, m & p	µg/m3	5.7	5.7	U	5.6	5.6	U

Notes:

Detects are bolded

Dup : duplicate sample

J : estimated value

Qual : laboratory qualifier

RL : reporting limit

SA : sump air

U : nondetect

µg/m3 : micrograms per cubic meter

Table 6. Sewer Gas Head Space Sample Results

Warm-Season Sampling Event, August 2017

Former Tronox Facility, Springfield, Missouri

			Sewer Head Space Air												Sewer Head Space Air								
		Location ID :	SH-A			SH-B			SH-C			SH-D			SH-G (Dup of SH-D)			SH-E			SH-F		
		Sample ID :	SH-A_0817			SH-B_0817			SH-C_0817			SH-D_0817			SH-G_0817			SH-E_0817			SH-F_0817		
		Date Collected :	8/3/2017 14:58:00			8/3/2017 15:15:00			8/3/2017 15:08:00			8/3/2017 15:42:00			8/3/2017 15:42:00			8/3/2017 15:25:00			8/3/2017 15:22:00		
Method	**Chemical**	**Unit**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**
TO-15	Benzene	µg/m^3	**3.7**	2.4		**12**	2.9		**320**	36		**160**	19		**150**	20		**170**	8.7		**190**	15	
TO-15	Ethylbenzene	µg/m^3	**5.6**	3.3		**31**	4		**800**	49		**370**	26		**370**	27		**390**	12		**470**	20	
TO-15	Naphthalene	µg/m^3	**16**	8	J	0.71	9.6	UJ	**1,700**	120	J	**610**	62	J	**700**	66	J	**360**	28	J	**640**	49	J
TO-15	Toluene	µg/m^3	**6.2**	2.9		**21**	3.4		**640**	43		**310**	22		**290**	24		**320**	10		**370**	18	
TO-15	Xylene, o	µg/m^3	**3.3**	3.3		**21**	4		**580**	50		**270**	26		**260**	27		**280**	12		**340**	20	
TO-15	Xylenes, m & p	µg/m^3	**9.4**	3.3		**42**	4		**1,400**	50		**630**	26		**630**	27		**670**	12		**790**	20	

Notes:

Detects are bolded

J : estimated value

Qual : laboratory qualifier

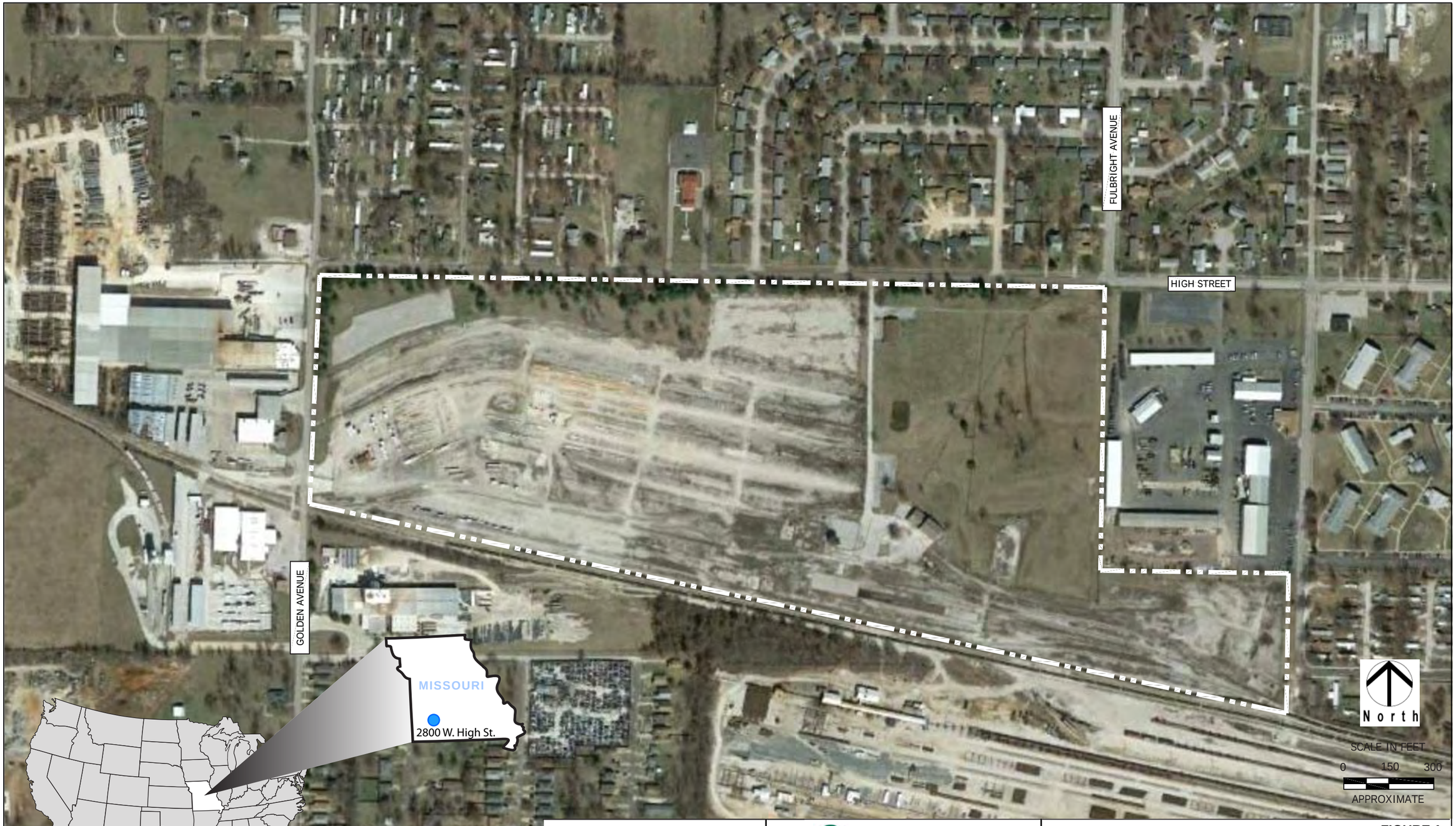
RL : reporting limit

SH : sewer headspace

U : nondetect

µg/m^3 : micrograms per cubic meter

Figures



LEGEND

FACILITY PROPERTY BOUNDARY

Former Tronox Facility Location

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

DATE: 9/12/2017

CREATED BY: CH2M

CHECKED BY: SS

Based on figure prepared by EWI

FIGURE 1

Facility Location Map

Indoor Air Sampling Technical Memorandum: Warm-Season Event

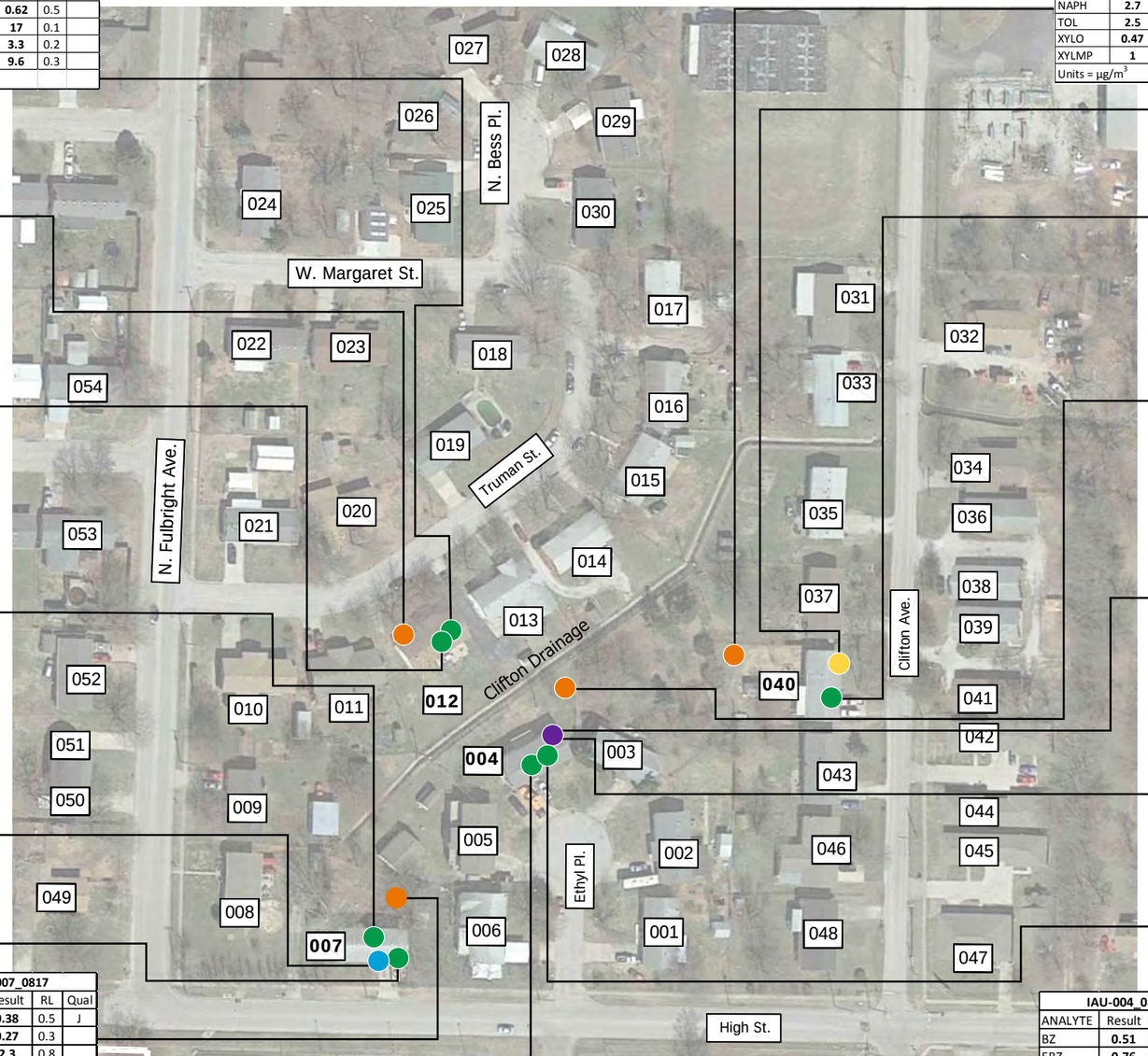
Former Tronox Facility 2800 West High St., Springfield, MO

ch2m

Definitions:

BZ = Benzene
EBZ = Ethylbenzene
NAPH = Naphthalene
TOL = Toluene
XYLO = Xylene, o
XYLMP = Xylenes, m & p
AL = Action Level
VISL = Vapor Intrusion Screening Level
µg/l = micrograms per liter
µg/m³ = micrograms per cubic meter
RL = Reporting Limit
Qual = Data Qualifier, or flag
J = Detection estimated
U = Not detected

Analyte	Indoor Air AL	Subslab VISL
BZ	3.6	12
EBZ	11	37
NAPTH	0.83	2.8
TOL	5,200	170,000
XYLO	100	3,500
XYLMP	100	3,500



IAD-012_0817 and DUP						
ANALYTE	Result	RL	Qual	Result	RL	Qual
BZ	**2.1**	0.3		**2**	0.3	
EBZ	**3**	0.1		**2.4**	0.2	
NAPH	**1.5**	0.4		**0.62**	0.5	
TOL	**20**	0.1		**17**	0.1	
XYLO	**4**	0.1		**3.3**	0.2	
XYLMP	**11**	0.3		**9.6**	0.3	
Units = µg/m³						

OA-012_0817			
ANALYTE	Result	RL	Qual
BZ	**0.35**	0.3	
EBZ	**0.22**	0.2	
NAPH	**1.9**	0.5	
TOL	**1.8**	0.2	
XYLO	**0.24**	0.2	
XYLMP	**0.64**	0.3	
Units = µg/m³			

IAU-012_0817			
ANALYTE	Result	RL	Qual
BZ	**2**	0.3	
EBZ	**3.3**	0.2	
NAPH	**1.4**	0.5	
TOL	**20**	0.2	
XYLO	**4.4**	0.2	
XYLMP	**12**	0.4	
Units = µg/m³			

IAU-007_0817			
ANALYTE	Result	RL	Qual
BZ	**0.64**	0.3	
EBZ	**0.29**	0.2	
NAPH	**3**	0.5	
TOL	**4.6**	0.3	
XYLO	**0.36**	0.2	
XYLMP	**0.84**	0.3	J
Units = µg/m³			

SU-007_0817 and DUP						
ANALYTE	Result	RL	Qual	Result	RL	Qual
BZ	4	4	U	4	4	U
EBZ	**1**	5.5	J	**0.82**	5.5	J
NAPH	**0.46**	13	J	**0.48**	13	J
TOL	**2.2**	4.7	J	**1.9**	4.7	J
XYLO	**1.6**	5.5	J	**1.9**	5.5	J
XYLMP	**4**	5.5	J	**3.3**	5.5	J
Units = µg/m³						

IAD-007_0817 and DUP						
ANALYTE	Result	RL	Qual	Result	RL	Qual
BZ	**0.7**	0.3		**0.7**	0.3	
EBZ	**0.43**	0.2		**0.44**	0.2	
NAPH	**2**	0.5		**2**	0.5	
TOL	**3.7**	0.3		**3.7**	0.3	
XYLO	**0.56**	0.2		**0.56**	0.2	
XYLMP	**1.3**	0.3	J	**1.3**	0.3	J
Units = µg/m³						

OA-007_0817			
ANALYTE	Result	RL	Qual
BZ	**0.38**	0.5	J
EBZ	**0.27**	0.3	
NAPH	**2.3**	0.8	
TOL	**2.2**	0.6	
XYLO	**0.37**	0.3	
XYLMP	**0.96**	0.5	J
Units = µg/m³			

OA-040_0817			
ANALYTE	Result	RL	Qual
BZ	**0.43**	0.3	
EBZ	**0.3**	0.2	
NAPH	**2.7**	0.5	
TOL	**2.5**	0.1	
XYLO	**0.47**	0.2	
XYLMP	**1**	0.3	
Units = µg/m³			

CS-040_0817 and DUP						
ANALYTE	Result	RL	Qual	Result	RL	Qual
BZ	**0.32**	0.3		**0.31**	0.3	
EBZ	**0.039**	0.2	J	**0.054**	0.2	J
NAPH	**0.067**	0.5	J	**0.13**	0.4	J
TOL	**0.64**	0.1		**0.63**	0.1	
XYLO	**0.076**	0.2	J	**0.09**	0.2	J
XYLMP	**0.12**	0.3	J	**0.19**	0.3	J
Units = µg/m³						

IA-040_0817			
ANALYTE	Result	RL	Qual
BZ	**0.88**	0.3	
EBZ	**2.3**	0.2	
NAPH	**1.6**	0.5	
TOL	**8.7**	0.1	
XYLO	**3.5**	0.2	
XYLMP	**8.8**	0.3	
Units = µg/m³			

OA-004_0817			
ANALYTE	Result	RL	Qual
BZ	**0.39**	0.3	
EBZ	**0.23**	0.2	
NAPTH	**4.4**	0.5	
TOL	**2.1**	0.4	
XYLO	**0.3**	0.2	
XYLMP	**0.71**	0.3	J
Units = µg/m³			

SW-004_0817 and DUP						
ANALYTE	Result	RL	Qual	Result	RL	Qual
BZ	1	1	U	1	1	U
EBZ	1	1	U	1	1	U
NAPTH	5	5	U	5	5	U
TOL	1	1	U	1	1	U
XYLO	1	1	U	1	1	U
XYLMP	1	1	U	1	1	U
Units = µg/l						

SA-004_0817 and DUP						
ANALYTE	Result	RL	Qual	Result	RL	Qual
BZ	4.2	4.2	U	4.1	4.1	U
EBZ	5.7	5.7	U	5.6	5.6	U
NAPTH	14	14	UJ	14	14	UJ
TOL	**1**	5	J	**0.89**	4.9	J
XYLO	5.7	5.7	U	5.6	5.6	U
XYLMP	5.7	5.7	U	5.6	5.6	U
Units = µg/m³						

IAD-004_0817			
ANALYTE	Result	RL	Qual
BZ	**0.5**	0.3	
EBZ	**0.67**	0.2	
NAPTH	**1.6**	0.5	
TOL	**6.1**	0.4	
XYLO	**0.93**	0.2	
XYLMP	**2.2**	0.3	J
Units = µg/m³			

IAU-004_0817			
ANALYTE	Result	RL	Qual
BZ	**0.51**	0.3	
EBZ	**0.76**	0.2	
NAPTH	**1.6**	0.5	
TOL	**5.3**	0.4	
XYLO	**1.1**	0.2	
XYLMP	**2.5**	0.3	J
Units = µg/m³			

LEGEND

- FACILITY PROPERTY BOUNDARY
- 004 PROPERTY NUMBERS
- INDOOR AIR SAMPLE
- OUTDOOR AIR SAMPLE
- CRAWLSPACE SAMPLE
- SUBSLAB SOIL VAPOR SAMPLE
- SUMP WATER AND SUMP HEADSPACE

North

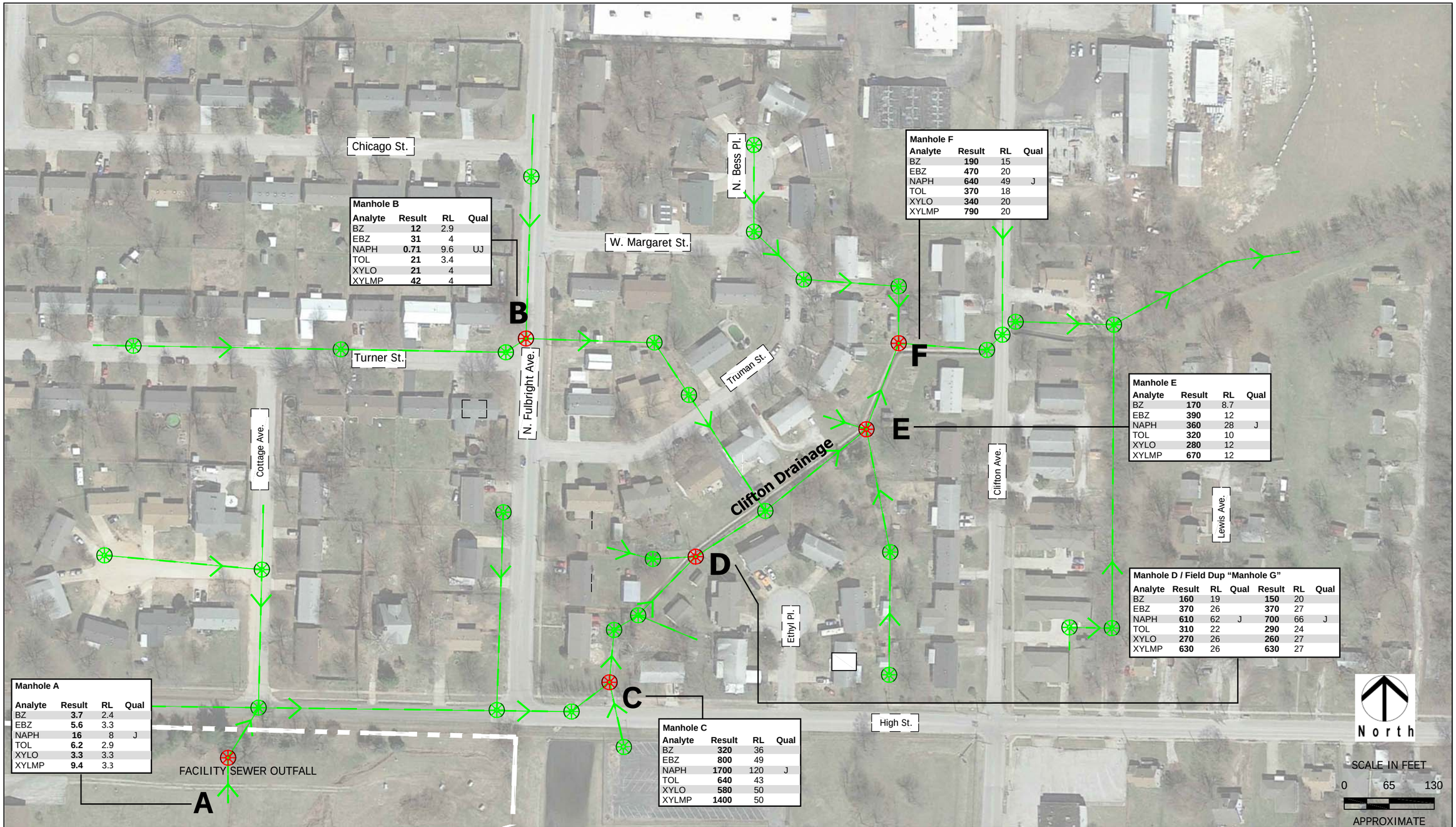
SCALE IN FEET
0 65 130
APPROXIMATE

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

DATE: 9/12/2017
CREATED BY: CH2M
CHECKED BY: SS
Based on figure prepared by EWI

FIGURE 2
Residential Sampling Locations and Results
Indoor Air Sampling Technical Memorandum:
Warm-Season Event
Former Tronox Facility 2800 West High St, Springfield, MO

ch2m.



Manhole B

Analyte	Result	RL	Qual
BZ	**12**	2.9	
EBZ	**31**	4	
NAPH	**0.71**	9.6	UJ
TOL	**21**	3.4	
XYLO	**21**	4	
XYLMP	**42**	4	

Manhole F

Analyte	Result	RL	Qual
BZ	**190**	15	
EBZ	**470**	20	
NAPH	**640**	49	J
TOL	**370**	18	
XYLO	**340**	20	
XYLMP	**790**	20	

Manhole E

Analyte	Result	RL	Qual
BZ	**170**	8.7	
EBZ	**390**	12	
NAPH	**360**	28	J
TOL	**320**	10	
XYLO	**280**	12	
XYLMP	**670**	12	

Manhole D / Field Dup "Manhole G"

Analyte	Result	RL	Qual	Result	RL	Qual
BZ	**160**	19		**150**	20	
EBZ	**370**	26		**370**	27	
NAPH	**610**	62	J	**700**	66	J
TOL	**310**	22		**290**	24	
XYLO	**270**	26		**260**	27	
XYLMP	**630**	26		**630**	27	

Manhole A

Analyte	Result	RL	Qual
BZ	**3.7**	2.4	
EBZ	**5.6**	3.3	
NAPH	**16**	8	J
TOL	**6.2**	2.9	
XYLO	**3.3**	3.3	
XYLMP	**9.4**	3.3	

Manhole C

Analyte	Result	RL	Qual
BZ	**320**	36	
EBZ	**800**	49	
NAPH	**1700**	120	J
TOL	**640**	43	
XYLO	**580**	50	
XYLMP	**1400**	50	

Definitions:
BZ = Benzene
EBZ = Ethylbenzene
NAPH = Naphthalene
TOL = Toluene
XYLO = Xylene, o
XYLMP = Xylenes, m & p
VISL = Vapor Intrusion Screening Level
RL = Reporting Limit
Qual = Data Qualifier, or flag
J = Detection estimated
U = Not detected
Dup = Duplicate
Results in µg/m³
µg/m³ = Micrograms per cubic meter

LEGEND
FACILITY PROPERTY BOUNDARY
SANITARY SEWER FLOW
SANITARY SEWER MANHOLE SELECTED FOR VAPOR INTRUSION SAMPLING
SANITARY SEWER MANHOLE EVALUATED IN INDOOR AIR SAMPLING WORK PLAN (EWI, 2017) BUT NOT SELECTED FOR VAPOR INTRUSION SAMPLING

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

DATE: 9/12/2017
CREATED BY: CH2M
CHECKED BY: SS
Based on figure prepared by EWI

FIGURE 3
Sewer-Gas Headspace Sampling Locations and Results
Indoor Air Sampling Technical Memorandum:
Warm-Season Event
Former Tronox Facility 2800 West High St, Springfield, MO

ch2m.

Attachment 1
Pre-Sampling Building Surveys

Property 004

Inspection Info

Select an Installation Id	5
Installation Name	Former Tronox Facility, Springfield MO
Date	07/31/2017
Time	07:12 (-7 GMT)
Preparer(s)	K. Rabe
Other Preparer name	
Select a Building for Inspection	004
Building Address	Personally Identifiable Information (PII)
Building/Facility Name (if different than listed above)	

Contact Info

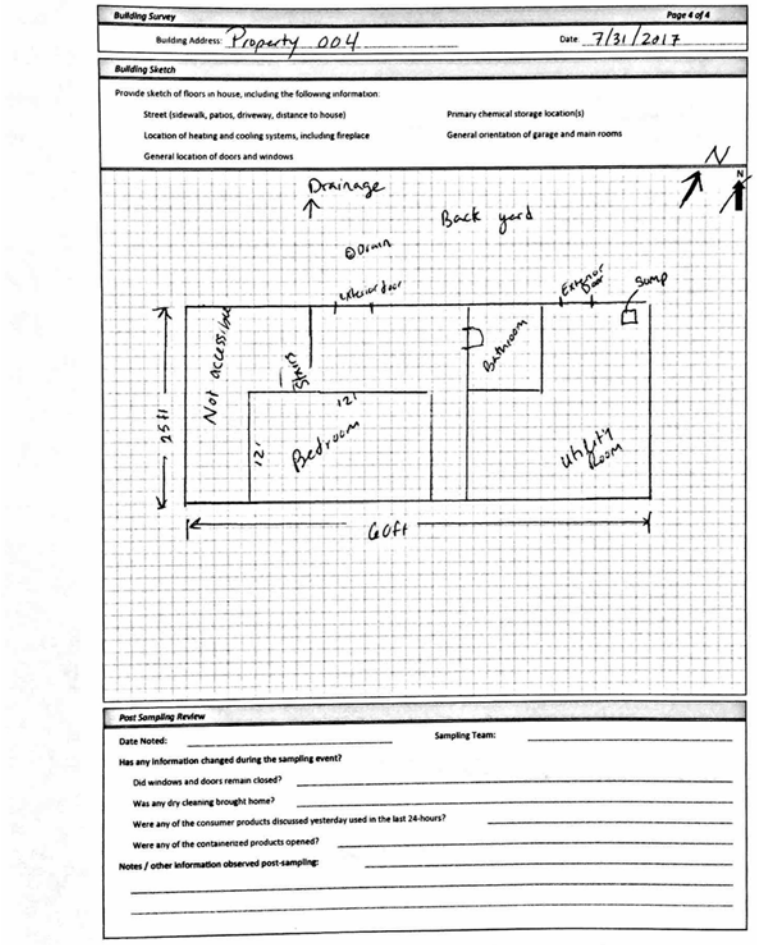
Primary Building POC Contact Name	PII
Primary Building POC Phone Number	PII
Primary Building POC email address	PII
Building POC Notes	PII

Building Characteristics

Number of Floors Aboveground	1
Number of Floors Below Ground	1
Building Length (Feet)	60
Building Width (Feet)	25
Building Height (Feet)	15
Area (Square Feet)	1500
Volume (Cubic Feet)	22500

General Building Description

Estimated number of building occupants	1
General observations about age range and % of male to female ratio	PII
Are there any sensitive receptors in the building? (elderly, children, immuno-compromised, women of child bearing age, etc.)	Yes
Describe the sensitive receptors	PII
How long have the current occupants occupied the building?	PII
Current Activities within Building	Residential (Single Family)
Other current activities within building	None
Historical Activities within Building (if known)	Unknown
Number of Floors	2
Building Height Notes	Standard 8 ft ceilings
Are any pipes or utilities observed passing through exterior walls?	Yes
Describe the pipes/utilities observed	Water main along the south wall in basement.
Attach Floorplan Sketch (if available)	See next page



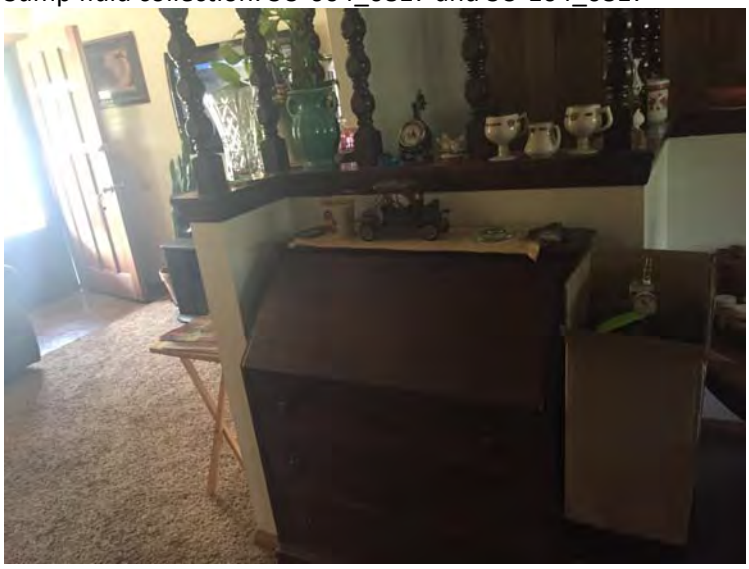
Building sketch

Building Photo(s)

Drain

Back of the house, view of the exterior access to the daylight basement

Sump fluid collection: SU-004_0817 and SU-104_0817



Upstairs indoor air sample location: IAU-004_0817

	 Downstairs indoor air sample location: IAD-004_0817
Notes	Prior to removing volatile products: 300-400 ppb upstairs ambient volatile organic compound (VOC) level 500 ppb under sinks (upstairs kitchen and bathroom) 250 ppb basement Water drain located 10 ft outside back basement door 1,670 ppb VOC levels Back of house is approximately 40 ft to Clifton drainage

Building Construction Details

Year Constructed	1970
What is the Aboveground Construction Type for the building envelope/exterior?	Wood frame/vinyl siding
Other Type of Aboveground Construction	NA
What is the type of building foundation?	Poured concrete
Other Type of Foundation Construction	NA
What is the grade of the slab?	Below Grade
How many feet above/below the grade is the slab?	8

What type of materials is the foundation?	Poured Concrete
Other Type of Foundation Materials	NA
Foundation Wall Materials	Poured Concrete
Other Type of Foundation Wall Materials	NA
General Description of Building Construction and Materials	Poured concrete foundation and walls.
Does the building have a basement and/or crawl space?	Yes
Describe the basement/crawl space	Basement. Daylight basement
How many feet below grade?	8 ft below grade on the NW side of the basement (daylight basement)
Approximate size in square feet	1500
Maximum ceiling height of basement/crawlspace	8
Minimum ceiling height of basement/crawlspace	8
Is the basement separated in to multiple rooms?	Yes
Describe the multiple rooms	Storage room north side/ flooring slab/Furnace Bathroom/laundry/vinyl flooring Finished Storage room on slab Inaccessible room, unknown
Construction materials of walls	Poured concrete basement
Are significant cracks present in the walls?	Yes
Describe cracks in the wall	Large crack along south side of basement wall, subgrade side of the basement (see photo)

Basement Photos	 Large crack along south side of exterior wall, located in utility room.

Potential Conduits from Soil

Floor/foundation type	Concrete
Other Type of Floor/foundation	
Is the floor raised above the foundation?	No
Are expansion joints or cracks visible?	No
Are expansion joints sealed?	NA
Are sumps or floor drains present?	Yes
Are basements or subsurface vaults present?	Yes

Are there subsurface drainage problems?	Yes
Notes on potential conduits	Sump: located in north corner of basement, is approx 1.5 ft deep and is unlined (exposed to the subslab with soil and fill visible). Sump pump is submerged in water inside of a plastic tub. A hose running from the HVAC unit appeared to discharge into the tub, (hose is shown in the photo). Trench in slab below the tub in basement- subslab visible (see photo) ppbRAE picked up 50-100 ppb prior to sealing sump with plastic.
Photos of Potential Conduits	 Sump located in the north corner of the basement.

Top View of sump. Sump pump submerged in water. A dust film was observed on the surface of the water.

Sump hole was sealed off from the room using plastic sheeting and tape approximately 48 hrs prior to collecting headspace air and water samples.

1' x 2' section of slab missing from the placement of a bathtub overflow pipe. Sub-slab is unlined and is exposed.

Filled crack spanning several feet from the basement door to center of room.

Building Condition

Is there standing water in the building (historic or current)?	No
Is there water damage in the building (historic or current)?	Yes
Is there fire damage in the building (historic or current)?	No
Is there a septic system?	No
Building Condition Notes	Flooding during extreme rain conditions, water runs into the basement through cracks in the southeast exterior wall and flows into the sump and to the exterior through the back door. The contact mentioned that basement flooded a few weeks prior to sampling.
Building Condition Photos	See attached photos.

Evaluation of Potential Existing Chemical Sources

Are SSDs available for chemicals used with in the building?	No
List items, approximate quantities, and frequency	Not applicable
Do any of the products stored in the building contain VOCs?	Yes
Are any of the target analytes used in the building?	Yes
Is the usage confined to a specific room or area?	Yes
Describe the room or area	Car and generator in garage (the garage is attached to the upstairs portion of the. There is no direct access from the basement to the garage)
Are pesticides used for pest control?	Yes
Names of pesticide products used?	See photos. Used a spider pesticide year ago
Has there been a pesticide application within the past 6 months?	No
Is smoking permitted in the building?	No
Notes regarding chemical use	

Has there been any remodeling or construction within the past 6 months?	No
Describe past remodel	
Is there a planned remodel in the near future?	No
Describe remodel plans	
Does the building have an attached garage or do vehicles regularly enter the space?	Yes
Describe the garage/vehicle use	Attached garage, resident typically parks his car in the garage; however, for the air sampling, the car was removed 48 hrs earlier and parked outside of the garage prior to deploying air canisters (and remained outside during the duration of the sample collection period).
Are gas powered equipment or cans of gasoline/fuels stored in the building or attached garage?	Yes
Describe gas/fuels stored	A generator is typically stored in the garage however for the air sampling, the generator was removed 48 hrs and parked outside of the garage prior to deploying air canisters (and remained outside during the duration of the sample collection period).
Do building occupants dry clean their clothes?	No
How often do they dry clean their clothes?	Unknown
Has there ever been a known chemical spill immediately outside or inside the building?	No
Describe known chemical spill	NA
Was the building screened with a ppbRAE to identify indoor VOC sources?	Yes
Describe the results of the ppbRAE screening	ppbRAE readings prior to removing volatile products: Upstairs ambient VOC level -- 300 to 400 ppb Under sinks (upstairs kitchen and bathroom) -- 500 ppb Ambient basement -- 250 ppb Water drain (located 10 ft outside back basement door, approximately 40 ft to Clifton drainage) – 1,670 ppb Products removed and placed in bucket outside the house (see photo).

	Measured readings during sample deployment: Upstairs ambient – 50 ppb Basement utility room -- 644 ppb Sump headspace (sampled through plastic sheeting, 48 hrs after covering sump) -- 7515 ppb to 15.35 ppm (15,350 ppb). Replaced ppbRAE filter after appointment.
Are there stationary sources nearby (i.e. gas stations, emission stacks, hazardous waste storage, etc.)?	No
Describe the nearby stationary sources	NA
Is there heavy vehicular traffic nearby or other mobile sources?	No
Photo(s) of potential indoor chemical sources	 Gasoline and other volatile products removed from the garage during building survey.

Volatile products removed from the garage

Generator removed from garage

	 All products removed from house and garage during building survey and stored under back deck

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room	No
Date of installation?	NA
Type of system?	NA
Location of mitigation system	NA
Notes	NA

Air Handling information

Are there any areas of the building that are positively or negatively pressurized?	No
Describe the building's pressure characteristics	Not measured
Number of HVAC Zones	One
Describe thermostat location(s)	
How many HVAC Zones?	
Type of ventilation system(s)	Mechanical Fans, Kitchen Range Hood Fan, Central Air Condition, Bathroom Ventilation Fans
Describe other type of ventilation system(s)	None
Type of heating system(s)	Forced Hot Air
Describe other type of heating system(s)	
Type of fuel utilized	Natural Gas
Describe other type of fuel(s)	
Are there other sources of outdoor air?	Doors
Describe other sources of outdoor air	No
Are windows/doors left open routinely?	No
Are there seasonal differences?	
Are any components of the building's heating, cooling or ventilation/circulation systems visible from the exterior?	Yes
Detail Air Handling components observed	Air Conditioning unit

Air Handling Photos

Forced hot air, natural gas furnace located in the utility room of basement.

External AC unit

Property 007

Inspection Info

Select an Installation Id	5
Installation Name	Former Tronox Facility, Springfield MO
Date	07/31/2017
Time	09:58 (-7 GMT)
Preparer(s)	Katie Rabe
Other Preparer name	Shirley Steinmacher
Select a Building for Inspection	007
Building Address	PII
Building/Facility Name (if different than listed above)	

Contact Info

Primary Building POC Contact Name	PII
Primary Building POC Phone Number	PII
Primary Building POC email address	PII
Building POC Notes	PII

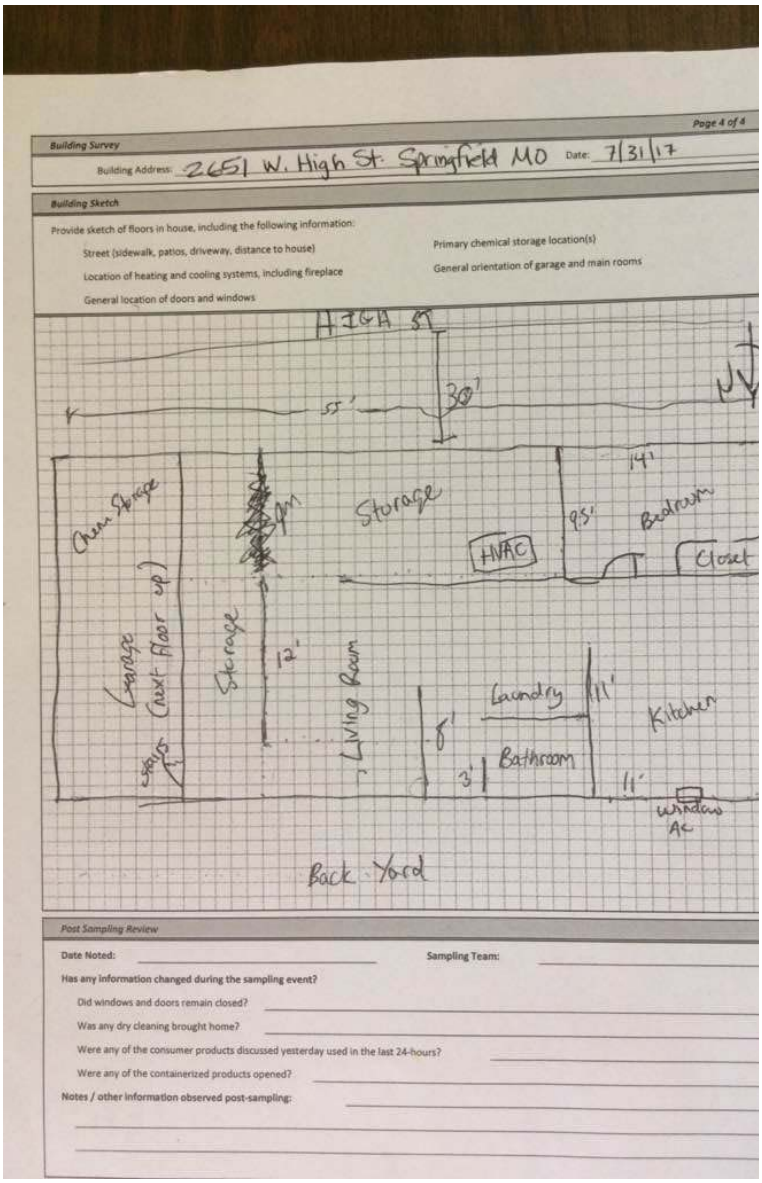
Building Characteristics

Number of Floors Aboveground	1
Number of Floors Below Ground	1
Building Length (Feet)	55
Building Width (Feet)	25
Building Height (Feet)	15
Area (Square Feet)	1375
Volume (Cubic Feet)	20625

General Building Description

Estimated number of building occupants	3
General observations about age range and % of male to female ratio	PII
Are there any sensitive receptors in the building? (elderly, children, immuno-compromised, women of child bearing age, etc.)	Yes
Describe the sensitive receptors	PII
How long have the current occupants occupied the building?	40
Current Activities within Building	Residential (Single Family)
Other current activities within building	Hobbies involving gasoline engines, paint
Historical Activities within Building (if known)	Residential
Number of Floors	2
Building Height Notes	15
Are any pipes or utilities observed passing through exterior walls?	Yes
Describe the pipes/utilities observed	South basement wall- water line

Attach Floorplan Sketch (if available)



Building Survey — Page 4 of 4

Building Address: 2651 W. High St. Springfield MO Date: 7/31/17

Building Sketch

Provide sketch of floors in house, including the following information:

- Street (sidewalk, patios, driveway, distance to house)
- Location of heating and cooling systems, including fireplace
- General location of doors and windows
- Primary chemical storage location(s)
- General orientation of garage and main rooms

Post Sampling Review

Date Noted: _____ Sampling Team: _____

Has any information changed during the sampling event?

Did windows and doors remain closed? _____

Was any dry cleaning brought home? _____

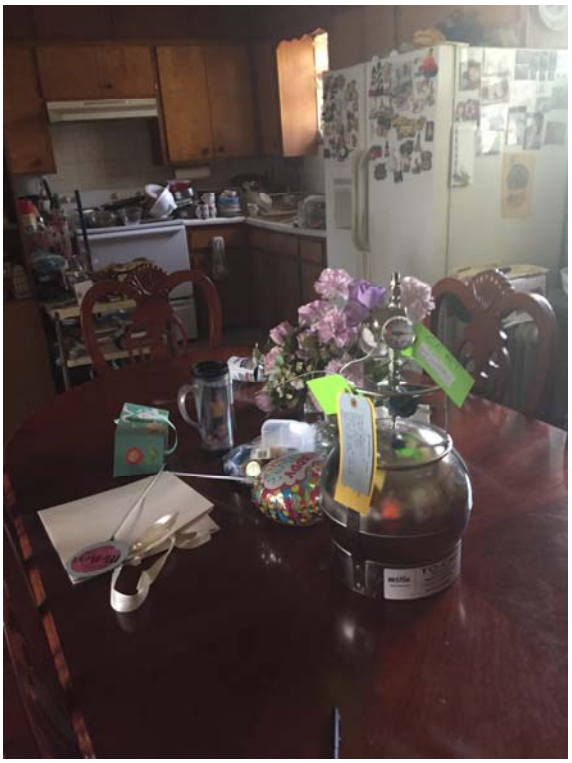
Were any of the consumer products discussed yesterday used in the last 24-hours? _____

Were any of the containerized products opened? _____

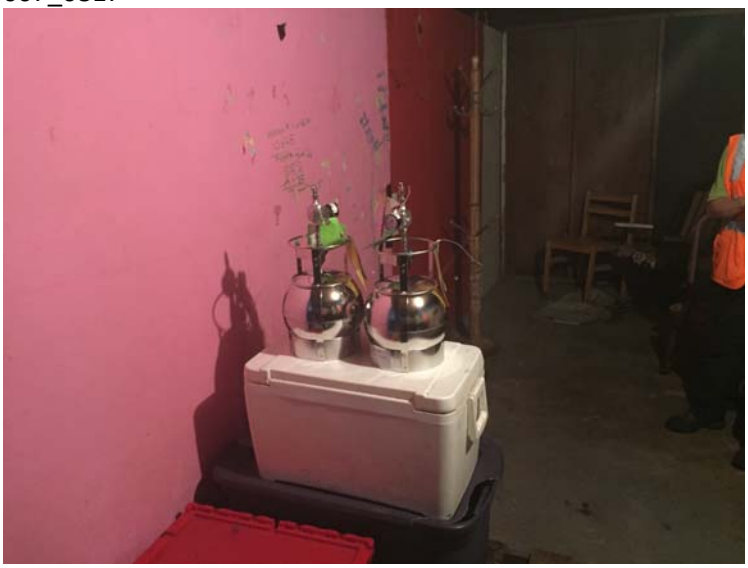
Notes / other information observed post-sampling: _____

Floorplan

Building Photo(s)



Upstairs indoor air sample location (kitchen table): IAU-007_0817



Downstairs indoor air sample location (storage room): IAD-007_0817 and IAD-107_0817

	 Subslab vapor pin location (storage room): SU-007_0817 and SU-107_0817
Notes	

Building Construction Details

Year Constructed	1970
What is the Aboveground Construction Type for the building envelope/exterior?	Concrete
Other Type of Aboveground Construction	Vinyl siding
What is the type of building foundation?	Poured concrete slab
Other Type of Foundation Construction	
What is the grade of the slab?	8 ft Below Grade on side of basement (Daylight Basement)
How many feet above/below the grade is the slab?	8
What type of materials is the foundation?	Poured Concrete
Other Type of Foundation Materials	
Foundation Wall Materials	Poured Concrete
Other Type of Foundation Wall Materials	
General Description of Building Construction and Materials	Daylight basement. Attached garage is located on upstairs level.

Does the building have a basement and/or crawl space?	Yes
Describe the basement/crawl space	The basement is accessed by stairway in attached garage and from backyard sliding door. The basement is unfinished and is used as a living space for 2 of the residents. There is no sump but a floor drain is located in the bathroom along the north side. 1 sub-slab vapor pin has been installed in the south side, storage room.
How many feet below grade?	8
Approximate size in square feet	1375
Maximum ceiling height of basement/crawlspace	8
Minimum ceiling height of basement/crawlspace	8
Is the basement separated in to multiple rooms?	Yes
Describe the multiple rooms	Sitting room, storage, bathroom, kitchen, bedroom.
Construction materials of walls	Poured concrete
Are significant cracks present in the walls?	Yes
Describe cracks in the wall	Large crack down the wall next to basement staircase (to garage) (see photo) Large crack along the bottom left of the south side of wall in basement (see photo) Garage floor has experienced settling. In the garage, deep cracks offset the slab floor height up to 2-3 inches.

Basement Photos	 Crack located on basement wall next to garage stairwell.

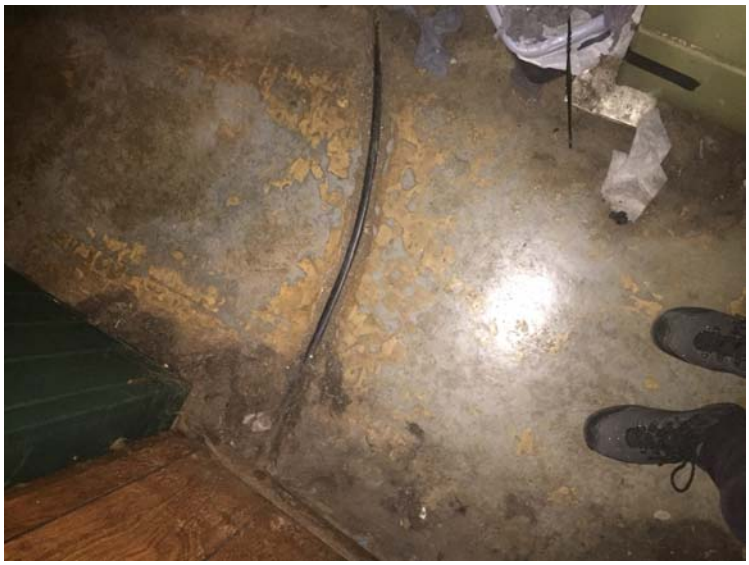
Crack between exterior south side wall and floor appears to have been filled at some point.

	Large crack in garage floor, slab height is off-set several inches.

Potential Conduits from Soil

Floor/foundation type	Concrete
Other Type of Floor/foundation	
Is the floor raised above the foundation?	No
Are expansion joints or cracks visible?	Yes
Are expansion joints sealed?	No
Are sumps or floor drains present?	No
Are basements or subsurface vaults present?	Yes
Are there subsurface drainage problems?	Yes
Notes on potential conduits	Water line in south exterior line. Shallow trench (does not appear to penetrate completely through the slab) used for making washer waterline flush with slab. Drain in the basement bathroom shower.

Photos of Potential Conduits	 Water line along south side wall.

	 Shallow trench used for a water line runs north to south and is located near laundry hallway in basement.

Building Condition

Is there standing water in the building (historic or current)?	Yes
Is there water damage in the building (historic or current)?	Yes
Is there fire damage in the building (historic or current)?	No
Is there a septic system?	No
Building Condition Notes	Basement floods during heavy rain events. Basement flooded several weeks prior to sampling. Resident said that water seeps in the basement through the south basement wall and from the cracks in the garage.

Building Condition Photos	 Cracks in the poured concrete shown from the west side of the exterior.

Evaluation of Potential Existing Chemical Sources

Are SSDs available for chemicals used with in the building?	No
List items, approximate quantities, and frequency	
Do any of the products stored in the building contain VOCs?	No
Are any of the target analytes used in the building?	No

Is the usage confined to a specific room or area?	
Describe the room or area	
Are pesticides used for pest control?	No
Names of pesticide products used?	
Has there been a pesticide application within the past 6 months?	
Is smoking permitted in the building?	No
Notes regarding chemical use	Resident downstairs smokes outside basement door but says he never smokes in the house.
Has there been any remodeling or construction within the past 6 months?	No
Describe past remodel	
Is there a planned remodel in the near future?	No
Describe remodel plans	
Does the building have an attached garage or do vehicles regularly enter the space?	Yes
Describe the garage/vehicle use	Car is not parked in garage. Primary use of garage is used for storage
Are gas powered equipment or cans of gasoline/fuels stored in the building or attached garage?	Yes
Describe gas/fuels stored	An engine block, excess fuels, and motor oils are stored in the garage. The volatile products were removed 48 hrs from the garage and placed outside. The engine block was too heavy to remove.
Do building occupants dry clean their clothes?	No
How often do they dry clean their clothes?	
Has there ever been a known chemical spill immediately outside or inside the building?	No
Describe known chemical spill	

Was the building screened with a ppbRAE to identify indoor VOC sources?	Yes
Describe the results of the ppbRAE screening	Prior to product removal: Upstairs 206 ppb Basement 26 ppb Basement kitchen 200 ppb Basement bedroom 164 ppb Basement bathroom drain 450 ppb Basement bathroom 420 ppb During air sample deployment: Ambient Upstairs 100 ppb Ambient Basement 130 ppb
Are there stationary sources nearby (i.e. gas stations, emission stacks, hazardous waste storage, etc.)?	Yes
Describe the nearby stationary sources	Engine block in garage 0 ppb (left in garage - see photo) Drip pan with oil/fuel spiked at 1600ppb (removed and placed outside)
Is there heavy vehicular traffic nearby or other mobile sources?	No
Photo(s) of potential indoor chemical sources	 Oil drip pan located in garage under engine block. Drip pan was removed and placed outside 48 hr prior to deploying air samples.

	 Products removed from residence.

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room?	No
Date of installation?	
Type of system?	
Location of mitigation system	
Notes	

Air Handling information

Are there any areas of the building that are positively or negatively pressurized?	No
Describe the building's pressure characteristics	
Number of HVAC Zones	
Describe thermostat location(s)	
How many HVAC Zones?	

Type of ventilation system(s)	Individual Air Condition Units
Describe other type of ventilation system(s)	
Type of heating system(s)	Forced Hot Air
Describe other type of heating system(s)	
Type of fuel utilized	Natural Gas
Describe other type of fuel(s)	
Are there other sources of outdoor air?	
Describe other sources of outdoor air	
Are windows/doors left open routinely?	No
Are there seasonal differences?	
Are any components of the building's heating, cooling or ventilation/circulation systems visible from the exterior?	No
Detail Air Handling components observed	First floor dining room window AC unit Basement kitchen window AC unit
Air Handling Photos	

Property 012

Inspection Info

Select an Installation Id	5
Installation Name	Former Tronox Facility, Springfield MO
Date	08/01/2017
Time	14:22 (-7 GMT)
Preparer(s)	Katie Rabe
Other Preparer name	Shirley Steinmacher
Select a Building for Inspection	012
Building Address	Personally Identifiable Information (PII)
Building/Facility Name (if different than listed above)	

Contact Info

Primary Building POC Contact Name	PII
Primary Building POC Phone Number	PII
Primary Building POC email address	PII
Building POC Notes	None

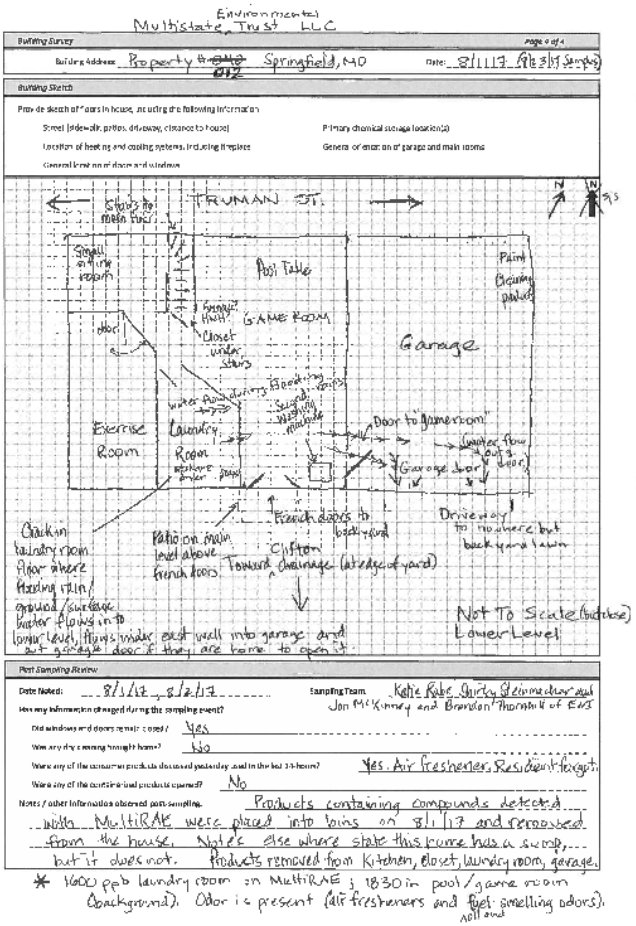
Building Characteristics

Number of Floors Aboveground	1
Number of Floors Below Ground	1
Building Length	60
Building Width (Feet)	25
Building Height (Feet)	15
Area (Square Feet)	1500
Volume (Cubic Feet)	22500

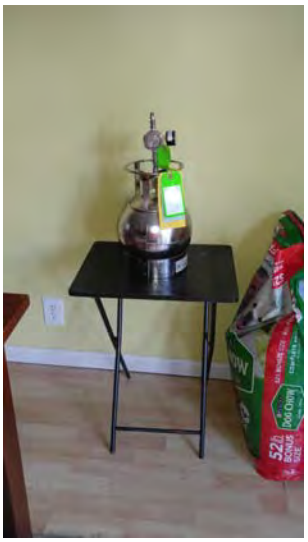
General Building Description

Estimated number of building occupants	5
General observations about age range and % of male to female ratio	1 male & 1 female 3 children
Are there any sensitive receptors in the building? (elderly, children, immuno-compromised, women of child bearing age, etc.)	Yes
Describe the sensitive receptors	PII
How long have the current occupants occupied the building?	3.5 years
Current Activities within Building	Residential (Single Family)
Other current activities within building	Unknown
Historical Activities within Building (if known)	
Number of Floors	2
Building Height Notes	15 ft to roof. Standard 8 ft ceilings.
Are any pipes or utilities observed passing through exterior walls?	Yes
Describe the pipes/utilities observed	The basement does not have a sump or floor drains. There is a sewer line/vent stack that penetrates the slab that is located in the garage NW of the garage door. The water main enters through exterior north wall of the garage (see photos below).

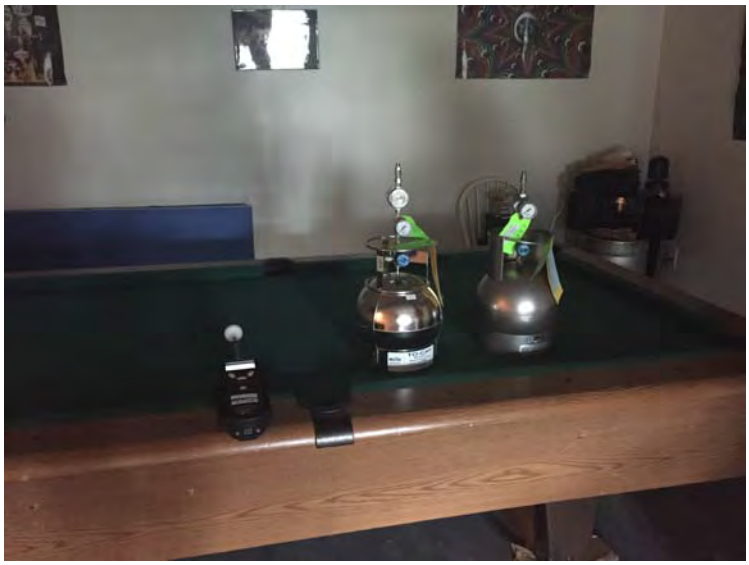
Attach Floorplan Sketch (if available)



Building Photo(s)



Upstairs indoor air samples located in kitchen: IAU-012_0817

	 Downstairs indoor air samples located in “game room”: IAD-012_0817 and duplicate IAD-112_0817
Notes	Residents said that they’re in the process of moving and plan to renovate within the next few months.

Building Construction Details

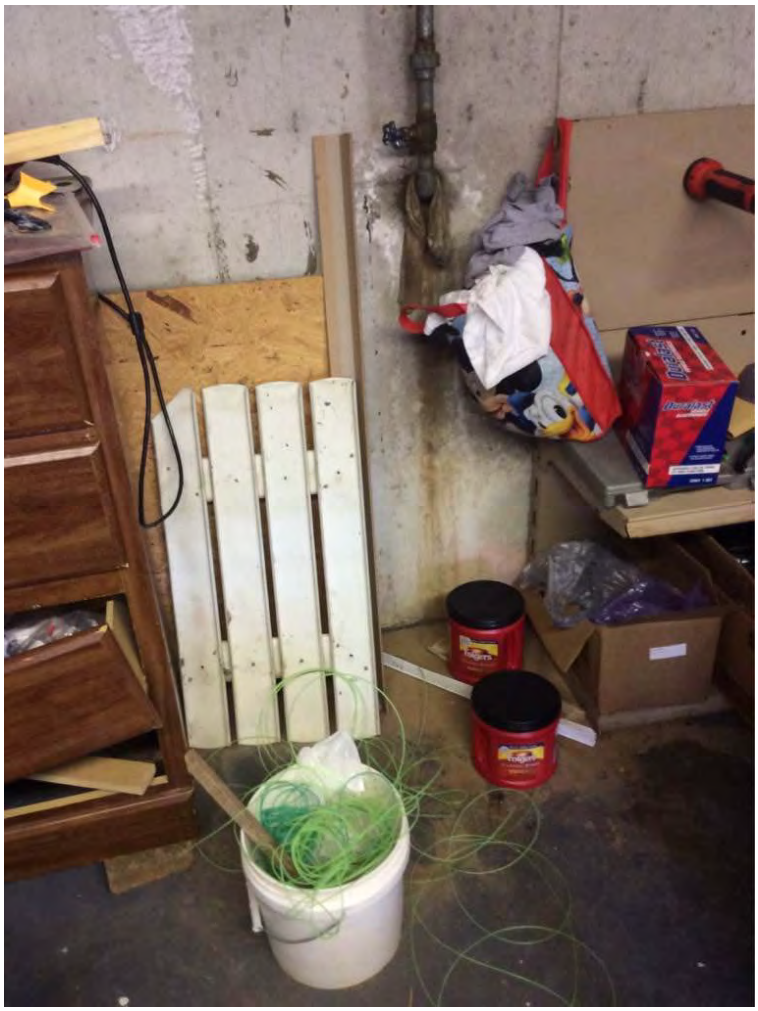
Year Constructed	1968
What is the Aboveground Construction Type for the building envelope/exterior?	Wood frame/vinyl siding
Other Type of Aboveground Construction	Day-light basement
What is the type of building foundation?	Basement, concrete slab
Other Type of Foundation Construction	
What is the grade of the slab?	Below Grade
How many feet above/below the grade is the slab?	8
What type of materials is the foundation?	Poured Concrete
Other Type of Foundation Materials	
Foundation Wall Materials	Poured Concrete
Other Type of Foundation Wall Materials	

General Description of Building Construction and Materials	The basement is a daylight basement that has access to an attached garage.
Does the building have a basement and/or crawl space?	Yes
Describe the basement/crawl space	Partial finished basement; the office/workout room and sitting room have linoleum flooring covering, the laundry room and game room do not have floor covering (bare concrete slab). The attached garage is accessible through the game room.
How many feet below grade?	8 ft below grade on north side (daylight basement)
Approximate size in square feet	1500
Maximum ceiling height of basement/crawlspace	8
Minimum ceiling height of basement/crawlspace	8
Is the basement separated in to multiple rooms?	Yes (see building sketch)
Describe the multiple rooms	Attached 1-car garage is used as general storage. No car is typically parked in it. Laundry room Office/workout Game room Sitting room
Construction materials of walls	Poured concrete
Are significant cracks present in the walls?	No
Describe cracks in the wall	
Basement Photos	

Potential Conduits from Soil

Floor/foundation type	Concrete
Other Type of Floor/foundation	None
Is the floor raised above the foundation?	No
Are expansion joints or cracks visible?	No
Are expansion joints sealed?	
Are sumps or floor drains present?	No

Are basements or subsurface vaults present?	No
Are there subsurface drainage problems?	Yes
Notes on potential conduits	It was reported that there are no sumps or floor drains in basement.
Photos of Potential Conduits	 Sewer line/vent stack located in the garage by garage door.



Water main going to the exterior located on the back wall of the garage. Staining around the pipes shows where water has infiltrated into the basement.

Building Condition

Is there standing water in the building (historic or current)?	Yes (historic)
Is there water damage in the building (historic or current)?	Yes (historic)
Is there fire damage in the building (historic or current)?	No
Is there a septic system?	No
Building Condition Notes	Resident said that flooding occurs in the basement after heavy precipitation. Water was described to flow out of the large crack

	(located in the hallway between the laundry room, family room, and game room), and flow east through the game room and out through the garage door, which they must open to allow water to go out.
Building Condition Photos	 Crack in basement floor in hallway between laundry, game room, and family room.

Evaluation of Potential Existing Chemical Sources

Are SSDs available for chemicals used with in the building?	No
List items, approximate quantities, and frequency	N/A
Do any of the products stored in the building contain VOCs?	Yes

Are any of the target analytes used in the building?	Yes
Is the usage confined to a specific room or area?	Yes
Describe the room or area	Garage - extra diesel fuel and lawn mower, fuel cleaners, motor oil. These products were removed 24 hrs prior to air collection
Are pesticides used for pest control?	Yes
Names of pesticide products used?	Sprayed for spiders a few weeks prior to sampling.
Has there been a pesticide application within the past 6 months?	Yes
Is smoking permitted in the building?	No
Notes regarding chemical use	Resident said they used essential oils in their office after the building survey and prior to the 24-hr air sample collection. During the air sample deployment, samplers noticed the stairway to the office had VOC levels of 2,000 - 3,000 ppb. Resident mentioned that they had used essential oils in that area prior to the samplers arriving. Sample canisters were placed away from the high readings area.
Has there been any remodeling or construction within the past 6 months?	No
Describe past remodel	
Is there a planned remodel in the near future?	Yes
Describe remodel plans	Residents are in the process of moving out and plan to remodel in a few weeks. No recent remolding occurred prior to this round of air sampling.
Does the building have an attached garage or do vehicles regularly enter the space?	Yes
Describe the garage/vehicle use	No cars are parked in the garage. The garage is used for storage of law mower and extra fuel and other miscellaneous storage.
Are gas powered equipment or cans of gasoline/fuels stored in the building or attached garage?	Yes
Describe gas/fuels stored	Lawn mower and fuels/fuel cleaner are stored in garage however for the air sampling, the lawn mower was removed 24 hours and parked outside of the garage prior to deploying air canisters (and remained outside during the duration of the

	sample collection period).
Do building occupants dry clean their clothes?	No
How often do they dry clean their clothes?	
Has there ever been a known chemical spill immediately outside or inside the building?	No
Describe known chemical spill	
Was the building screened with a ppbRAE to identify indoor VOC sources?	Yes
Describe the results of the ppbRAE screening	Reading taken during building surveys: Upstairs Living room 1440 ppb Upstairs Bedroom 1550 ppb Upstairs Bathroom 1600 ppb Basement game room 1865 ppb Garage 2600 ppb Readings taken during sample deployment (after products had been removed for 24 hrs) Upstairs Living room 600 ppb Basement game room 750 ppb Stairwell to basement "sitting room" 2300 ppb (resident said they had used essential oils just prior to samplers arriving there)
Are there stationary sources nearby (i.e. gas stations, emission stacks, hazardous waste storage, etc.)?	No
Describe the nearby stationary sources	
Is there heavy vehicular traffic nearby or other mobile sources?	No

Photo(s) of potential indoor chemical sources	


Tomcat
MOUSE
KILLER


KILLS
HOUSE MICE

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room?	No
Date of installation?	
Type of system?	
Location of mitigation system	
Notes	

Room Details

Additional Notes	

Air Handling information

Are there any areas of the building that are positively or negatively pressurized?	No
Describe the building's pressure characteristics	
Number of HVAC Zones	One
Describe thermostat location(s)	
How many HVAC Zones?	
Type of ventilation system(s)	Central Air Condition, Bathroom Ventilation Fans, Mechanical Fans, Kitchen Range Hood Fan
Describe other type of ventilation system(s)	
Type of heating system(s)	Forced Hot Air
Describe other type of heating system(s)	NA
Type of fuel utilized	Natural Gas
Describe other type of fuel(s)	NA
Are there other sources of outdoor air?	Windows
Describe other sources of outdoor air	Windows are rarely left open
Are windows/doors left open routinely?	No
Are there seasonal differences?	No
Are any components of the building's heating, cooling or ventilation/circulation systems visible from the exterior?	
Detail Air Handling components observed	

Property 040

Inspection Info

Select an Installation Id	5
Installation Name	Former Tronox Facility, Springfield MO
Date	07/31/2017
Time	14:46 (-7 GMT)
Preparer(s)	Katie Rabe
Other Preparer name	Shirley Steinmacher
Select a Building for Inspection	040
Building Address	Personally Identifiable Information (PII) removed
Building/Facility Name (if different than listed above)	N/A

Contact Info

Primary Building POC Contact Name	PII
Primary Building POC Phone Number	PII
Primary Building POC email address	PII
Building POC Notes	None

Building Characteristics

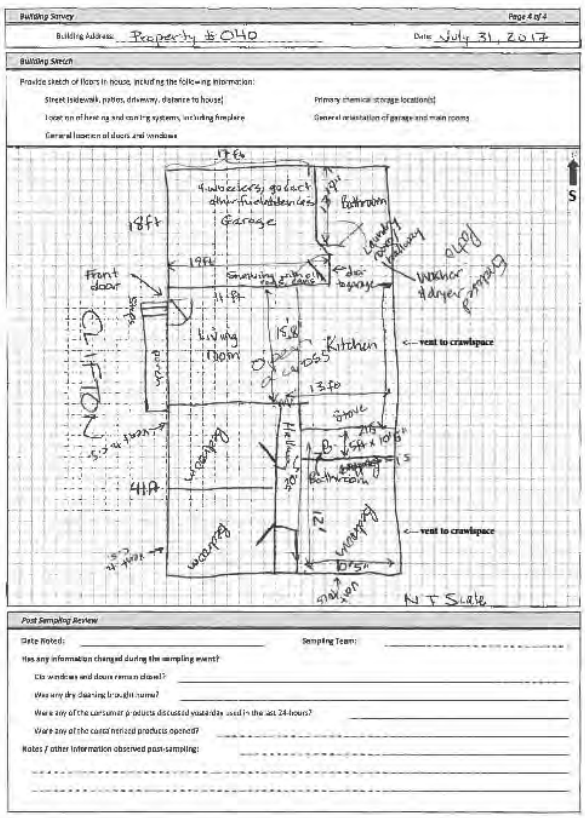
Number of Floors Aboveground	1
Number of Floors Below Ground	0
Building Length (Feet)	59
Building Width (Feet)	28
Building Height (Feet)	15
Area (Square Feet)	1652
Volume (Cubic Feet)	24780

General Building Description

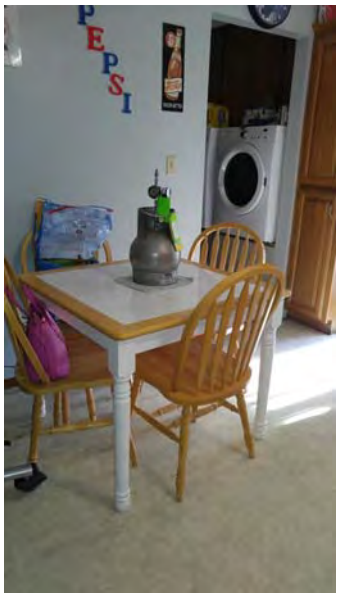
Estimated number of building occupants	3

General observations about age range and % of male to female ratio	2 male, 1 female
Are there any sensitive receptors in the building? (elderly, children, immuno-compromised, women of child bearing age, etc.)	Yes
Describe the sensitive receptors	PII
How long have the current occupants occupied the building?	5 years
Current Activities within Building	Residential (single family)
Other current activities within building	Hobbies with engines and vehicles
Historical Activities within Building (if known)	Residential
Number of Floors	1
Building Height Notes	None
Are any pipes or utilities observed passing through exterior walls?	No
Describe the pipes/utilities observed	

Attach Floorplan Sketch (if available)



Building Photo(s)



Kitchen, location of indoor air sample: IA-040_0817

	 Outdoor sample location: OA-040_0817  Crawlspace sample location: CS-040_0817/ CS-140_0817
Notes	Garage stores gas powered machinery (car, four wheelers, generator etc) fuel cleaners, grease, oil, oily rags Water meter in front of house had volatile organic compounds (VOCs) levels up to 6000 ppb.

Building Construction Details

Year Constructed	1968
What is the Aboveground Construction Type for the building envelope/exterior?	Wood frame/vinyl siding
Other Type of Aboveground Construction	
What is the type of building foundation?	Crawlspace
Other Type of Foundation Construction	
What is the grade of the slab?	Above Grade
How many feet above/below the grade is the slab?	2.5 above
What type of materials is the foundation?	Unlined dirt crawlspace
Other Type of Foundation Materials	
Foundation Wall Materials	Cinder Blocks
Other Type of Foundation Wall Materials	
General Description of Building Construction and Materials	Vinyl siding
Does the building have a basement and/or crawl space?	Yes- Crawlspace
Describe the basement/crawl space	Crawlspace is approximately 2 - 4 ft in height and sits below entire house. Garage is on poured concrete slab.
How many feet below grade?	None
Approximate size in square feet	1346
Maximum ceiling height of basement/crawlspace	4
Minimum ceiling height of basement/crawlspace	2
Is the basement separated in to multiple rooms?	N/A
Describe the multiple rooms	
Construction materials of walls	Cinder block
Are significant cracks present in the walls?	No

Describe cracks in the wall	
Basement Photos	N/A

Potential Conduits from Soil

Floor/foundation type	Dirt in Crawlspace
Other Type of Floor/foundation	Poured concrete slab in garage
Is the floor raised above the foundation?	Yes
Are expansion joints or cracks visible?	No
Are expansion joints sealed?	
Are sumps or floor drains present?	No
Are basements or subsurface vaults present?	No
Are there subsurface drainage problems?	No
Notes on potential conduits	A floor vent is located in the furnace closet that connects to the crawlspace. The vent had been sealed using tape prior to collecting the air samples to prevent air exchange between the crawlspace and indoor air.

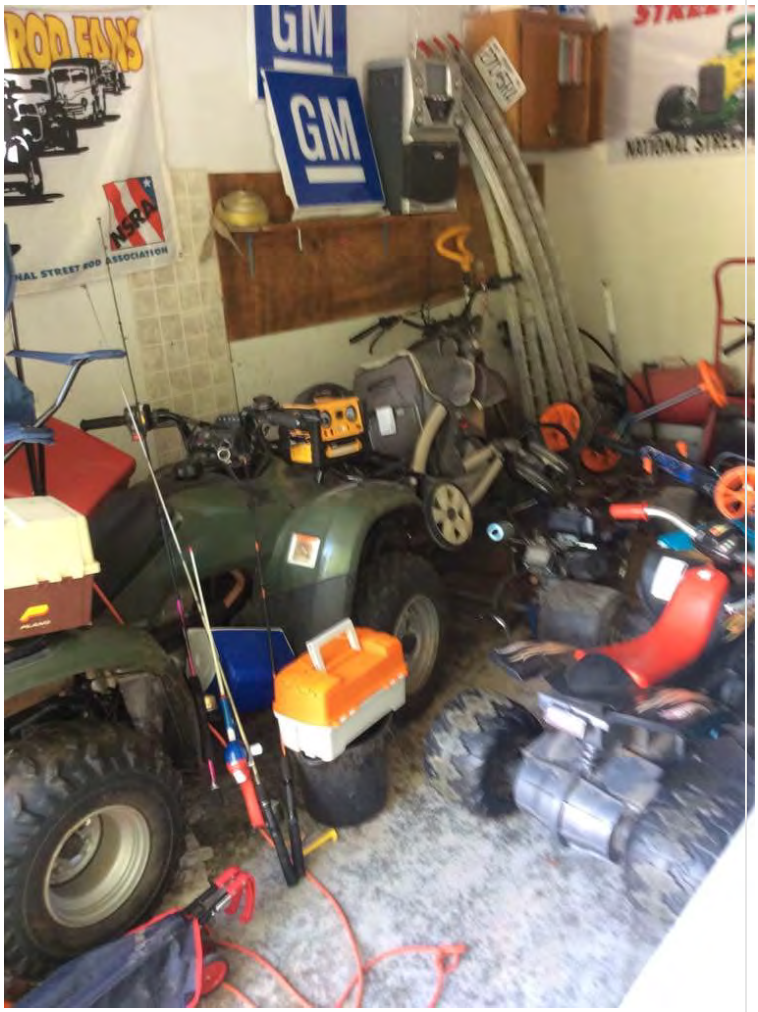
Building Condition

Is there standing water in the building (historic or current)?	No
Is there water damage in the building (historic or current)?	No
Is there fire damage in the building (historic or current)?	No
Is there a septic system?	No
Building Condition Notes	

Building Condition Photos

Resident typically stores his car in the garage.

Garage shelves store fuel cleaners, oil/oily rags, and other petroleum based products.



Garage stores gas powered vehicles and equipment.

Evaluation of Potential Existing Chemical Sources

Are SSDs available for chemicals used with in the building?	No
List items, approximate quantities, and frequency	
Do any of the products stored in the building contain VOCs?	No
Are any of the target analytes used in the building?	Yes
Is the usage confined to a specific room	Yes

or area?	
Describe the room or area	Garage contains (diesel, gasoline, engine oils and fluids, machinery and a car). Products, machinery, and the car were removed from house 48 hours prior to sampling.
Are pesticides used for pest control?	No
Names of pesticide products used?	N/A
Has there been a pesticide application within the past 6 months?	No
Is smoking permitted in the building?	No
Notes regarding chemical use	Male said he smokes e-cigarettes outside on porch but never smokes in the house
Has there been any remodeling or construction within the past 6 months?	No
Describe past remodel	N/A
Is there a planned remodel in the near future?	No
Describe remodel plans	None
Does the building have an attached garage or do vehicles regularly enter the space?	Yes
Describe the garage/vehicle use	Car is typically parked in garage. Resident removed all gas powered equipment, car, and extra fuels 48 hrs prior to collecting air samples.
Are gas powered equipment or cans of gasoline/fuels stored in the building or attached garage?	Yes; gas powered equipment (ATVs, gas-powered chainsaw, tools/items used to rebuild car engines and cans of gas/fuel and paint). Vehicles and gasolines/fuels and all other materials containing or linked to volatile compounds were removed from the garage and stored away from the residence during air sampling.
Describe gas/fuels stored	Diesel, motor oil, and fuel cleaner. See photos of removed products.
Do building occupants dry clean their clothes?	No
How often do they dry clean their clothes?	
Has there ever been a known chemical spill immediately outside or inside the	No

building?	
Describe known chemical spill	N/A
Was the building screened with a ppbRAE to identify indoor VOC sources?	Yes
Describe the results of the ppbRAE screening	Prior to removing the products: Living room ambient 700-800 ppb Bathroom 850-900 ppb Under kitchen sink 780 ppb Garage 7,800 ppb (see notes below) Deploying Air canisters: Living room 450 ppb Bathroom 500 ppb
Are there stationary sources nearby (i.e. gas stations, emission stacks, hazardous waste storage, etc.)?	No
Describe the nearby stationary sources	
Is there heavy vehicular traffic nearby or other mobile sources?	No

Photo(s) of potential indoor chemical sources	 Staining located in the east corner of garage.

Paint stored in the garage

Fuel pump

Assortment of products removed from garage and house.

Assortment of products removed from garage and house.

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room?	No
Date of installation?	NA
Type of system?	NA
Location of mitigation system	NA
Notes	

Air Handling information

Are there any areas of the building that are positively or negatively pressurized?	No
Describe the building's pressure characteristics	
Number of HVAC Zones	One
Describe thermostat location(s)	
How many HVAC Zones?	
Type of ventilation system(s)	Central Air Condition
Describe other type of ventilation system(s)	
Type of heating system(s)	Forced Hot Air
Describe other type of heating system(s)	
Type of fuel utilized	Natural Gas
Describe other type of fuel(s)	
Are there other sources of outdoor air?	Windows
Describe other sources of outdoor air	
Are windows/doors left open routinely?	No
Are there seasonal differences?	
Are any components of the building's heating, cooling or ventilation/circulation systems visible from the exterior?	No
Detail Air Handling components observed	No
Air Handling Photos	None

Attachment 2
Data Quality Evaluation

TECHNICAL MEMORANDUM

Data Quality Evaluation, August 2017 Warm-Season Sampling Event, Former Tronox Facility, Springfield, Missouri

PREPARED FOR:	Former Tronox Facility
PREPARED BY:	Tiffany Davis/CH2M HILL Engineers, Inc. (CH2M) Mark Stinnett/CH2M
DATE:	September 2017

The results of the data quality review for the August 2017 sampling event indicate the analytical systems were in control and all data results, without qualification, can be used in the decision-making process. The following sections provide a full description of the data quality review and associated findings.

Introduction

This memorandum presents the results of the data validation process for the samples collected in August 2017 for the Former Tronox Facility located in Springfield, Missouri. The quality control (QC) areas that were reviewed and the resulting findings are documented within each subsection that follows. These data were validated for compliance with the analytical method requirements. This process also included reviewing these data to assess the precision, accuracy, representativeness, completeness, and comparability (PARCC) based upon procedures described in the U.S. Environmental Protection Agency (USEPA) guidance document, *National Functional Guidelines for Organic Superfund Data Review* (EPA 2017) and *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA 2017). Quality assurance (QA)/QC summary forms and data reports were reviewed.

Field samples along with their associated QC were submitted to Eurofins Lancaster Laboratories in Lancaster, Pennsylvania and AirToxics Eurofins in Folsom, California, for project-selected analytical fractions.

Data Qualification

The analytical systems were in control, and no data was qualified during evaluation.

Analytical Method and Sample Reference

Table 1 lists the description of each sample (sample identification, analytical fractions, sample type, and other information) is in Table 1.

Table 1. Sample Reference

SDG	Native ID	Method	Matrix	QA-QC Type
1708091C	SU-007_0817	D1946	Air	N
1708091C	SU-107_0817	D1946	Air	FD
1708091A	OA-004_0817	TO15SIM	Air	N
1708091A	IAD-004_0817	TO15SIM	Air	N
1708091A	IAU-004_0817	TO15SIM	Air	N

Table 1. Sample Reference

SDG	Native ID	Method	Matrix	QA-QC Type
1708091A	IAD-107_0817	TO15SIM	Air	FD
1708091A	IAD-007_0817	TO15SIM	Air	N
1708091A	IAU-007_0817	TO15SIM	Air	N
1708091A	OA-007_0817	TO15SIM	Air	N
1708091B	SA-004_0817	TO15	Air	N
1708091B	SA-104_0817	TO15	Air	FD
1708091B	SU-007_0817	TO15	Air	N
1708091B	SU-107_0817	TO15	Air	FD
1708091B	SH-E_0817	TO15	Air	N
1708091B	SH-B_0817	TO15	Air	N
1708091B	SH-A_0817	TO15	Air	N
1708091B	SH-D_0817	TO15	Air	N
1708091B	SH-G_0817	TO15	Air	FD
1708091B	SH-F_0817	TO15	Air	N
1708091B	SH-C_0817	TO15	Air	N
1708092	IAU-012_0817	TO15SIM	Air	N
1708092	CS-140_0817	TO15SIM	Air	FD
1708092	CS-040_0817	TO15SIM	Air	N
1708092	IA-040_0817	TO15SIM	Air	N
1708092	OA-040_0817	TO15SIM	Air	N
1708092	OA-012_0817	TO15SIM	Air	N
1708092	IAD-012_0817	TO15SIM	Air	N
1708092	IAD-112_0817	TO15SIM	Air	FD
1708092	BATCH TO SIM BLANK 1	TO15SIM	Air	FB
1708092	BATCH TO SIM BLANK 2	TO15SIM	Air	FB
SMO01	TRIP-1_0817-WQ-08022017-N	SW8260B	Water	TB
SMO01	SW-004_0817-WS-08022017-N	SW8260B	Water	N
SMO01	SW-104_0817-WS-08022017-N	SW8260B	Water	FD

Quality Control Review

The QC review included evaluating the analytical data relative to QA/QC measures, as well as the PARCC of the analytical data. The following list represents the QA/QC measures that were reviewed during the data quality evaluation.

Holding Times

The holding times were evaluated to verify samples were extracted and analyzed within the method required holding times.

Blank Samples

Method blanks were prepared and analyzed by the laboratory. Field blank, equipment blank, and trip blank samples were provided for this project. Blank samples enabled the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.

Surrogate Recoveries

Surrogate compounds were added to each sample, and the recoveries were used to monitor laboratory performance and possible matrix interference.

Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

These samples were a "controlled matrix," laboratory reagent water, in which target compounds have been added before extraction/analysis. The recoveries served as a monitor of the overall performance of each step during the analysis, including sample preparation. Precision information also was determined by calculating the reproducibility, as relative percent difference (RPD), between the recoveries of each spiked parameter.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Samples

Spike recoveries were used to evaluate potential matrix interferences, as well as accuracy. Precision information also was determined by calculating the reproducibility, as RPD, between the recoveries of each spiked parameter.

Field Duplicate (FD) Samples

These samples were collected to determine precision between a native and FD. The precision may only be determined when the target compound is detected, and the acceptance criteria are based on the determined concentrations. If the results for the native sample and FD were less than five times the laboratory reporting limit concentration, the difference between the concentrations of the native and FD sample must be less than the value of the reporting limit. Otherwise, the two results must agree to within 20 percent RPD to meet acceptance criteria.

Gas Chromatography/Mass Spectrometry (GC/MS) Tuning

The mass spectrum of the tuning compound was evaluated for method compliance based on the established criteria in the analytical method to verify the proper mass assignment and mass resolution.

Initial Calibration

The initial calibration ensures the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.

Continuing Calibration

The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.

Internal Standards

The internal standards were used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis. The evaluation of the analytical data reports for each sample delivery group (SDG) found that the QA/QC measures were within acceptable control limits for all the sample results with the exceptions described below.

Initial and Continuing Calibration Criteria

Naphthalene and m,p-xylenes did not meet initial calibration criteria in SDGs 1708091A and 1708091B. Affected data and the assigned qualifiers are summarized in Attachment 2.

Blanks

Naphthalene, benzene, and toluene were detected in various method blanks. Affected data and the assigned qualifiers are summarized in Attachment 2.

Precision, Accuracy, Representativeness, Completeness, and Comparability

In addition to reviewing the QA/QC measures described above, the data quality evaluation also addressed the PARCC of the analytical data, as defined below.

- **Precision**—Measure of agreement between duplicate results, as estimated by comparing LCSD and MSD recoveries and FD sample results. If the agreement between the native and FD, the MS and MSD sample, and LCS and LCSD results for the analyses are within acceptable criteria, this is a satisfactory indication that the sample matrix did not interfere with the overall analytical process. All analyses are within precision criteria.
- **Accuracy**—Measure of the agreement between an experimental determination and the true value of the parameter. Each of the samples was spiked with a surrogate compound with a known concentration before preparation. The surrogate and MS/MSD data provide a measure of the matrix effects that may affect accuracy and precision of the analytical method. The LCS results demonstrate accuracy of the method. All analyses are within precision criteria.
- **Representativeness**—Qualitative measure of the degree to which sample data accurately and precisely represent a characteristic environmental condition. Representativeness is a subjective parameter used to evaluate the efficacy of the sampling plan design. Representativeness can be demonstrated by providing full descriptions in the project scoping documents of the sampling techniques and the rationale used for selecting sampling locations. Representativeness was deemed acceptable.
- **Completeness**—Percentage of measurements that are judged to be valid compared to the total number of measurements made. All data were deemed to be valid.
- **Comparability**—Qualitative measure designed to express the confidence with which one data set may be compared to another. Factors that affect comparability are sample collection and handling techniques, sample matrix type, and analytical method. Comparability is limited by the other PARCC parameters because data sets can be compared with confidence only when precision and accuracy are known. However, comparability can also be established if the current data set is comparable with other previously collected data at the site due to the laboratory's use of USEPA or appropriate methods to analyze the samples, as supported by the results of the laboratory's analytical reports. Comparability of the data set was deemed acceptable.

The evaluation of the analytical data reports for PARCC measures indicated the overall data set was acceptable.

Conclusion

An overall evaluation of the data for the August 2017 sampling event indicated the analytical systems were generally in control. The exceptions in the calibration and laboratory blanks resulted in the qualification of 18 data points as described in the above sections. All data, as qualified, are considered usable for the decision-making process.

Attachment 1
Secondary Data Qualifier Codes

Attachment 1. Secondary Data Qualifier, or Validation Reason, Codes

Secondary Data Qualifier	Description
2SH	Second source calibration verification standard greater than the upper control limit
2SL	Second source calibration verification standard less than the lower control limit
ABH	Ambient blank concentration greater than the RL
ABL	Ambient blank concentration less than the RL
BKD	The result is qualified because the DDT and/or Endrin breakdown was greater than 20%
CBKD	The result is qualified because the combined DDT/Endrin breakdown is greater than 30%
CCBH	Continuing calibration blank concentration greater than the RL
CCBL	Continuing calibration blank concentration less than RL
CCC	CCC failure
CCRRF	Continuing calibration relative response factor below the LCL
CCVF	Continuing calibration not analyzed at the required frequency
CCVH	Continuing calibration recovery greater than upper control limit
CCVL	Continuing calibration recovery less than lower control limit
CF	Confirmation result
CFP	Confirmation precision exceeded
CO	Compounds were reported combined on one column
DL	Secondary dilution
EBH	Equipment blank concentration greater than the RL
EBL	Equipment blank concentration less than the RL
EMPC	Estimated maximum possible concentration reported
FBH	Field blank concentration greater than the RL
FBL	Field blank concentration less than the RL
FD	Field duplicate exceeds RPD criteria
GPC	The results are qualified due to GPC calibration deficiencies
HTA	Analytical holding time exceeded
HTP	Preparation holding time exceeded
IB	Result between the MDL and RL
ICBH	Initial calibration blank concentration greater than the RL
ICBL	Initial calibration blank concentration less than RL
ICR2	Initial calibration exceeded the R2 for first order regression
ICRR	Exceeds RSD criteria and initial calibration exceeded the R2 for first order regression
ICRRF	Initial calibration relative response factor below the LCL
ICRSD	Initial calibration RSD exceeded
ICSH	Interference present and %recovery is greater than upper control limit
ICSL	Interference present and %recovery is less than lower control limit
ICSP	Single point initial calibrations used for quantitation
ICVH	Initial calibration recovery exceeds the upper control limit
ICVL	Initial calibration recovery exceeds the lower control limit
ICVSH	Initial calibration verification recovery greater than upper control limit
ICVSL	Initial calibration verification recovery less than lower control limit
ISH	Internal standard response exceeded the UCL criteria
ISL	Internal standard response exceeded the LCL criteria

Attachment 1. Secondary Data Qualifier, or Validation Reason, Codes

Secondary Data Qualifier	Description
LBH	Laboratory blank contamination greater than the RL
LBL	Laboratory blank contamination less than the RL
LCSDH	LCSD recovery greater than criteria
LCSDL	LCSD recovery less than the criteria
LCSH	LCS recovery greater than criteria
LCSL	LCS recovery less than the criteria
LCSP	LCS/LCSD RPD criteria exceeded
LDP	Laboratory duplicate precision out
LR	Linear range exceeded; concentration above linear range
MSA	Quantitated by the method of standard additions
MSALL	Global matrix spike flagging
MSAR2	method of standard additions R2 out
MSDH	Matrix spike duplicate recovery criteria greater than the upper limit
MSDL	Matrix spike duplicate recovery criteria less than the lower limit
MSDP	Matrix spike duplicate RPD criteria exceedance
MSH	Matrix spike recovery criteria greater than the upper limit
MSL	Matrix spike recovery criteria less than the lower limit
NMS	Not site-specific matrix spike
PH	Sample pH out; not properly preserved
PRM	Result differs from preliminary result
PSH	Post-spike recovery criteria greater than the upper limit
PSL	Post-spike recovery criteria less than the lower limit
RA	Sample was reanalyzed
RE	Sample was re-extracted and reanalyzed
RT	Result is outside the laboratory determined retention time window
SCRN	Screening method and/or data
SDIL	Serial dilution %D exceeds the upper control limit
SPCC	SPCC failure
SSH	Surrogate recovery greater than upper limit
SSL	Surrogate recovery less than lower limit
SSR	Surrogate spike recovery <10%
TBH	Trip blank concentration greater than the RL
TBL	Trip blank concentration less than the RL
TD	Total concentration < dissolved concentration
TEMP	Cooler temperature out upon arrival
TIC	Tentatively identified compound
TN	GC/MS tune does not meet criteria
XCC	No continuing calibration analyzed in the analytical batch
X-DL	Data not used due to dilution; another value is more appropriate or data was not requested
XIC	No initial calibration analyzed in the analytical batch
XICVS	Initial calibration verification standard was not analyzed
XLCS	No LCS in the analytical batch

Attachment 1. Secondary Data Qualifier, or Validation Reason, Codes

Secondary Data Qualifier	Description
XLD	Laboratory duplicate not reported
XMS	Matrix spike not reported
XMSD	Matrix spike duplicate not reported
X-RE	Data not used due to reanalysis, another value is more appropriate, or data were not requested
XICS	No interference check standard in analytical batch
XSDIL	No serial dilution in the analytical batch

Attachment 2
Assigned Qualifiers

Table 2. Assigned Qualifiers

Parameter Class	SDG	Lab Sample ID	Sample ID	Sample Type	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Primary Qualifier	Units	Secondary Qualifier
VOC	1708091A	1708091A-01A	OA-004_0817	N	TO15SIM	Xylenes, m & p	0.71		0.71	J	µg/m^3	ICRSD
VOC	1708091A	1708091A-02A	IAD-004_0817	N	TO15SIM	Xylenes, m & p	2.2		2.2	J	µg/m^3	ICRSD
VOC	1708091A	1708091A-03A	IAU-004_0817	N	TO15SIM	Xylenes, m & p	2.5		2.5	J	µg/m^3	ICRSD
VOC	1708091A	1708091A-06A	IAD-107_0817	FD	TO15SIM	Xylenes, m & p	1.3		1.3	J	µg/m^3	ICRSD
VOC	1708091A	1708091A-07A	IAD-007_0817	N	TO15SIM	Xylenes, m & p	1.3		1.3	J	µg/m^3	ICRSD
VOC	1708091A	1708091A-08A	IAU-007_0817	N	TO15SIM	Xylenes, m & p	0.84		0.84	J	µg/m^3	ICRSD
VOC	1708091A	1708091A-09A	OA-007_0817	N	TO15SIM	Xylenes, m & p	0.96		0.96	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-04A	SA-004_0817	N	TO-15	Naphthalene	14	U	14	UJ	µg/m^3	ICRSD
VOC	1708091B	1708091B-05A	SA-104_0817	FD	TO-15	Naphthalene	14	U	14	UJ	µg/m^3	ICRSD
VOC	1708091B	1708091B-10A	SU-007_0817	N	TO-15	Naphthalene	0.46	J	0.46	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-11A	SU-107_0817	FD	TO-15	Naphthalene	0.48	J	0.48	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-12A	SH-E_0817	N	TO-15	Naphthalene	360		360	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-13A	SH-B_0817	N	TO-15	Naphthalene	0.71	J	0.71	UJ	µg/m^3	LBL, ICRSD
VOC	1708091B	1708091B-14A	SH-A_0817	N	TO-15	Naphthalene	16		16	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-15A	SH-D_0817	N	TO-15	Naphthalene	610		610	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-16A	SH-G_0817	FD	TO-15	Naphthalene	700		700	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-17A	SH-F_0817	N	TO-15	Naphthalene	640		640	J	µg/m^3	ICRSD
VOC	1708091B	1708091B-18A	SH-C_0817	N	TO-15	Naphthalene	1,700		1,700	J	µg/m^3	ICRSD

µg/m^3 = micrograms per cubic meter
VOC = volatile organic compound

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1708091A**

Initial Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

Formula for Calculation of Relative Standard Deviation (%RSD)

$$\frac{\text{Standard Deviation of RRFs of } X}{\text{Average RRF}_X} \text{ multiplied by } 100 = \textbf{\%RSD}$$

Instrument: 0

Date: 7/6/2017

Benzene	referenced to:	1,4-difluorobeneze		
			1.759	**Level 3**
			1.816	**Level 4**
19647		5	1.489	**Level 5**
759008		0.1		
	Calc RRF	**1.294**		
			1.294	**Level 6**
			1.068	**Level 7**
			1.109	**Level 8**
			1.2353	**Level 12**
			1.1312	**Level 13**
			1.0669	**Level 15**
Standard Deviation =	0.2918807			
Average RRF =	1.3298	**Laboratory AVG RRF =**	1.3298	
		OK?	**Yes**	
% RSD =	21.950	**Laboratory %RSD =**	21.95	
		OK?	**Yes**	

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1708091A**

Continuing Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{Area_X}{Area_{IS}} \text{ multiplied by } \frac{Amount_{IS}}{Amount_X} = \textbf{RRF}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Amount_{IS}$ = Amount of Internal Standard added
$Amount_X$ = Amount of compound added

CCAL Filename: VSTD050D19A

Date/Time: 8/19/10, 07:45

Benzene	referenced to:	1,4-difluorobeneze		
1021480		5	**CCAL RRF=**	1.0327
494579		10		
			Laboratory CCAL RRF =	1.3298

Formula for Calculation of percent Difference (%D)

$$\frac{\text{ICAL AVG RRF - CCAL RRF}}{\text{ICAL AVG RRF}} \text{ multiplied by } 100 = \textbf{\%D}$$

Where:
ICAL AVG RRF = The average relative response factor from the curve
CCAL RRF = The Relative Response Factor from the continuing calibration verification run daily

%D =		22.34
Laboratory %D =	22.34196	
OK?	**Yes**	

Sample Compound Concentrations - VOC

SDG Number: **1708091A**

Formula for Calculation of Concentrations **Soil**

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ng/mL)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

Sample ID: OA-004_0817 **Air**

	Benzene
$Area_x$ =	8517
$Area_{IS}$ =	488440
$Conc_{IS}$	5
RRF_X =	1.3298
DF =	1.87

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Benzene		0.39	0.123 Calc Conc (ug/m3) 0.40

Concentrations agree within 2% ? **Yes**

Surrogate Recoveries - VOC

SDG Number: **1708091A**

Formula for Calculation of Surrogate Recovery

$$\text{\% Recovery} = \frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$$

Sample ID:
OA-004_0817

	Surrogate	Amt/Conc found	Amount/Conc spiked	% Rec	Lab %REC	OK?
1	1,2-dichlrooehtane-d4	5.21	5	104.3	104.0	**Yes**
2	4-Bromofluorobenzene	5.09	5	101.7	102.0	**Yes**
3	Toluene-d8	4.92	5	98.4	98.0	**Yes**

LCS/LCSD Recoveries - VOC

SDG Number: **1708091A**

Formula for Calculation of LCS and LCSD Recovery

% Recovery = $\frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$

LCS Sample ID: LCS

LCS Sample ID: LCSD

	Compound	Conc found	Conc spiked	% Rec	Lab %REC	OK?
LCS #1	Benzene	8.22	10	82.15	82.00	**Yes**
LCSD #1	Benzene	8.18	10	81.80	82.00	
LCS #2	Naphthalene	0.65	1	65.49	65.00	**Yes**
LCSD #2	Naphthalene	0.65	1	64.75	65.00	
LCS #3	Toluene	8.71	10	87.05	87.00	**Yes**
LCSD #3	Toluene	8.69	10.00	86.90	87.00	

Formula for Calculation of Relative Percent Difference

Relative Percent Difference = $\frac{\text{| LCSR - LCSDR |}}{\text{(1/2) (LCSR + LCSDR)}} \times 100$

where:

LCSR = Laboratory Control Spike Recovery
LCSDR = Laboratory Control Spike Duplicate Recovery

	Compound(s)	RPD	Lab RPD	OK?
1	Benzene	0		**Yes**
2	Naphthalene	1		**Yes**
3	Toluene	0		**Yes**

MS/MSD Accuracy and Precision Recoveries - VOC

SDG Number: **1708091A** **No MS-MSD**

Formula for Calculation of Matrix Spike Recovery

$$\text{Matrix Spike Recovery} = \frac{SSR - SR}{SA} \times 100$$

where:

SSR = Spike sample result
SR = Sample result
SA = Spike added

Sample ID:	**Compound**
Not Applicable	0

Matrix Spike	**Matrix Spike Duplicate**
SSR =	
SR =	
SA =	
MS Concentration	MSD Concentration
MS % Recovery =	MSD % Recovery =
Lab MS % Recovery	Lab MSD % Recovery
OK? **Yes**	**OK?** **Yes**

Formula for Calculation of Relative Percent Difference

$$\text{Relative Percent Difference} = \frac{|MSR - MSDR|}{(1/2)(MSR + MSDR)} \times 100$$

where:

MSR = Matrix Spike Recovery
MSDR = Matrix Spike Duplicate Recovery

Compound(s)	**RPD (Rec)**	**RPD (Conc)**	**Lab RPD**	**OK?**

Comment: Laboratory used % Recoveries to determine RPD versus concentrations.

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1708091B**

Initial Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

Formula for Calculation of Relative Standard Deviation (%RSD)

$$\frac{\text{Standard Deviation of RRFs of}_X}{\text{Average RRF}_X} \text{ multiplied by } 100 = \textbf{\%RSD}$$

Instrument:		**Date**:		
msd3.i		5/23/2017		
	referenced			
Toluene	to:	1,4-difluorobenzene		
			1.176	**Level 2**
			1.195	**Level 3**
393672		25	1.196	**Level 4**
504014		20		
	Calc RRF	**0.976**		
			0.976	**Level 5**
			0.994	**Level 6**
			1.048	**Level 7**
			1.0633	**Level 08**
			0.0000	**0**
			0.0000	**0**
Standard Deviation =	0.0949063			
Average RRF =	1.0926	**Laboratory AVG RRF =**	1.0926	
		OK?	**Yes**	
% RSD =	8.686	**Laboratory %RSD =**	8.686	
		OK?	**Yes**	

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1708091B**

Continuing Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

CCAL Filename:		**Date/Time**:		
VSTD050D19A		8/19/10, 07:45		
Toluene	referenced to:	1,4-difluorobenzene		
1421603		25	**CCAL RRF=**	1.1144
637861		50		
			Laboratory CCAL RRF =	1.0926

Formula for Calculation of percent Difference (%D)

$$\frac{\text{ICAL AVG RRF} - \text{CCAL RRF}}{\text{ICAL AVG RRF}} \text{ multiplied by } 100 = \textbf{\%D}$$

Where:
ICAL AVG RRF = The average relative response factor from the curve
CCAL RRF = The Relative Response Factor from the continuing calibration verification run daily

%D =	-1.99	
Laboratory %D =	-1.99014	
OK?	**Yes**	

Sample Compound Concentrations - VOC

SDG Number: **1708091B**

Formula for Calculation of Concentrations **Soil**

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ng/mL)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

Sample ID: SU-007_0817 **Air**

	Toluene
$Area_x$ =	5759
$Area_{IS}$ =	566909
$Conc_{IS}$	25
RRF_X =	1.0926
DF =	2.52

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Toluene		2.2 J	0.586
			Calc Conc (ug/m3)
			2.25

Concentrations agree within 2% ? **Yes**

Surrogate Recoveries - VOC

SDG Number: **1708091B**

Formula for Calculation of Surrogate Recovery

$$\text{\% Recovery} = \frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$$

Sample ID:
SU-007_0817

	Surrogate	Amt/Conc found	Amount/Conc spiked	% Rec	Lab %REC	OK?
1	1,2-dichlrooehtane-d4	22.08	25	88.3	88.0	**Yes**
2	4-Bromofluorobenzene	24.78	25	99.1	99.0	**Yes**
3	Toluene-d8	25.79	25	103.2	103.0	**Yes**

LCS/LCSD Recoveries - VOC

SDG Number: **1708091B**

Formula for Calculation of LCS and LCSD Recovery

% Recovery = $\frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$

LCS Sample ID: LCS

LCS Sample ID: LCSD

	Compound	Conc found	Conc spiked	% Rec	Lab %REC	OK?
LCS #1	Ethyl Benzene	52.33	50	104.67	105.00	**Yes**
LCSD #1	Ethyl Benzene	52.02	50	104.05	104.00	
LCS #2	m,p-Xylene	52.52	50	105.04	105.00	**Yes**
LCSD #2	m,p-Xylene	52.71	50	105.42	105.00	
LCS #3	Toluene	53.79	50	107.58	108.00	**Yes**
LCSD #3	Toluene	53.83	50.00	107.65	108.00	

Formula for Calculation of Relative Percent Difference

Relative Percent Difference = $\frac{\text{| LCSR - LCSDR |}}{\text{(1/2) (LCSR + LCSDR)}} \times 100$

where:

LCSR = Laboratory Control Spike Recovery
LCSDR = Laboratory Control Spike Duplicate Recovery

	Compound(s)	RPD	Lab RPD	OK?
1	Ethyl Benzene	1		**Yes**
2	m,p-Xylene	0		**Yes**
3	Toluene	0		**Yes**

MS/MSD Accuracy and Precision Recoveries - VOC

SDG Number: **1708091B** **No MS-MSD**

Formula for Calculation of Matrix Spike Recovery

$$\text{Matrix Spike Recovery} = \frac{SSR - SR}{SA} \times 100$$

where:

SSR = Spike sample result
SR = Sample result
SA = Spike added

Sample ID:	**Compound**
Not Applicable	0

Matrix Spike	**Matrix Spike Duplicate**
SSR =	
SR =	
SA =	
MS Concentration	MSD Concentration
MS % Recovery =	MSD % Recovery =
Lab MS % Recovery	Lab MSD % Recovery
OK? **Yes**	**OK?** **Yes**

Formula for Calculation of Relative Percent Difference

$$\text{Relative Percent Difference} = \frac{|MSR - MSDR|}{(1/2)(MSR + MSDR)} \times 100$$

where:

MSR = Matrix Spike Recovery
MSDR = Matrix Spike Duplicate Recovery

Compound(s)	**RPD (Rec)**	**RPD (Conc)**	**Lab RPD**	**OK?**

Comment: Laboratory used % Recoveries to determine RPD versus concentrations.

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1708092**

Initial Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

Formula for Calculation of Relative Standard Deviation (%RSD)

$$\frac{\text{Standard Deviation of RRFs of } X}{\text{Average RRF}_X} \text{ multiplied by } 100 = \textbf{\%RSD}$$

Instrument:		**Date**:		
msd20.i		8/3/2017		
	referenced			
Benzene	to:	1,4-difluorobeneze		
			1.581	**Level 3**
			1.448	**Level 4**
13360		5	1.185	**Level 5**
545944		0.1		
	Calc RRF	**1.224**		
			1.224	**Level 6**
			1.075	**Level 7**
			1.070	**Level 8**
			1.1391	**Level 12**
			1.0529	**Level 13**
			0.9540	**Level 15**
Standard Deviation =	0.2015705			
Average RRF =	1.1920	**Laboratory AVG RRF =**	1.1920	
		OK?	**Yes**	
% RSD =	16.910	**Laboratory %RSD =**	16.91	
		OK?	**Yes**	

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1708092**

Continuing Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

CCAL Filename: VSTD050D19A

Date/Time: 8/19/10, 07:45

Benzene	referenced to:	1,4-difluorobeneze		
913778		5	**CCAL RRF=**	1.0449
437272		10		
			Laboratory CCAL RRF =	1.1920

Formula for Calculation of percent Difference (%D)

$$\frac{\text{ICAL AVG RRF} - \text{CCAL RRF}}{\text{ICAL AVG RRF}} \text{ multiplied by } 100 = \textbf{\%D}$$

Where:
ICAL AVG RRF = The average relative response factor from the curve
CCAL RRF = The Relative Response Factor from the continuing calibration verification run daily

%D = 12.35

Laboratory %D = 12.34629

OK? **Yes**

Sample Compound Concentrations - VOC

SDG Number: **1708092**

Formula for Calculation of Concentrations **Soil**

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ng/mL)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

Sample ID: IAU-012_0817 **Air**

	Benzene
$Area_x$ =	21211
$Area_{IS}$ =	295529
$Conc_{IS}$	5
RRF_X =	1.19203
DF =	2.08

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Benzene		2	0.626
			Calc Conc (ug/m3)
			2.03

Concentrations agree within 2% ? **Yes**

Surrogate Recoveries - VOC

SDG Number: **1708092**

Formula for Calculation of Surrogate Recovery

$$\text{\% Recovery} = \frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$$

Sample ID:
IAU-012_0817

	Surrogate	Amt/Conc found	Amount/Conc spiked	% Rec	Lab %REC	OK?
1	1,2-dichlrooehtane-d4	4.39	5	87.8	88.0	**Yes**
2	4-Bromofluorobenzene	5.29	5	105.8	106.0	**Yes**
3	Toluene-d8	4.87	5	97.4	97.0	**Yes**

LCS/LCSD Recoveries - VOC

SDG Number: **1708092**

Formula for Calculation of LCS and LCSD Recovery

% Recovery = $\frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$

LCS Sample ID: LCS

LCS Sample ID: LCSD

	Compound	Conc found	Conc spiked	% Rec	Lab %REC	OK?
LCS #1	Benzene	8.94	10	89.43	89.00	**Yes**
LCSD #1	Benzene	9.39	10	93.92	94.00	
LCS #2	Naphthalene	0.69	1	68.96	69.00	**Yes**
LCSD #2	Naphthalene	0.73	1	73.40	73.00	
LCS #3	Toluene	10.44	10	104.43	104.00	**Yes**
LCSD #3	Toluene	9.76	10.00	97.62	98.00	

Formula for Calculation of Relative Percent Difference

Relative Percent Difference = $\frac{\text{| LCSR - LCSDR |}}{\text{(1/2) (LCSR + LCSDR)}} \times 100$

where:

LCSR = Laboratory Control Spike Recovery
LCSDR = Laboratory Control Spike Duplicate Recovery

	Compound(s)	RPD	Lab RPD	OK?
1	Benzene	5	5.5	**Yes**
2	Naphthalene	6	5.6	**Yes**
3	Toluene	7	5.9	**Yes**

MS/MSD Accuracy and Precision Recoveries - VOC

SDG Number: **1708092** **No MS-MSD**

Formula for Calculation of Matrix Spike Recovery

$$\text{Matrix Spike Recovery} = \frac{SSR - SR}{SA} \times 100$$

where:

SSR = Spike sample result
SR = Sample result
SA = Spike added

Sample ID:		**Compound**	
Not Applicable		0	
Matrix Spike		**Matrix Spike Duplicate**	
SSR =			
SR =			
SA =			
MS Concentration		MSD Concentration	
MS % Recovery =		MSD % Recovery =	
Lab MS % Recovery		Lab MSD % Recovery	
OK?	**Yes**	**OK?**	**Yes**

Formula for Calculation of Relative Percent Difference

$$\text{Relative Percent Difference} = \frac{|MSR - MSDR|}{(1/2)(MSR + MSDR)} \times 100$$

where:

MSR = Matrix Spike Recovery
MSDR = Matrix Spike Duplicate Recovery

Compound(s)	**RPD (Rec)**	**RPD (Conc)**	**Lab RPD**	**OK?**

Comment: Laboratory used % Recoveries to determine RPD versus concentrations.

Attachment 3
Laboratory Analytical Reports

Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified TO-15 SIM

INVENTORY SHEET

Work Order #: 1708091A

	Page Nos.	
	From	To
1. Work Order Cover Page & Laboratory Narrative	1	5
a. Lumen Validation Report	--	--
2. Sample Results and Raw Data (Organized by Sample)	6	90
a. ATL Sample Results Form		
b. Target Compound Raw Data		
-Internal Standard Area and Retention Time Summary		
-Surrogate Recovery Summary (If Applicable)		
-Chromatogram(s) and Ion Profiles (If Applicable)		
3. QC Results and Raw Data		
a. Method Blank (Results+ Raw Data)	91	100
b. Surrogate Recover Summary Form (If Applicable)	101	101
c. Internal Standard Summary Form (If Applicable)	102	102
d. Duplicate Results Summary Sheet	103	103
e. Matrix Spike/Matrix Spike Duplicate (Results + Raw Data	--	--
f. Initial Calibration Data (Summary Sheet + Raw Data)	104	199
g. MDL Study (If Applicable)	200	206
h. Continuing Calibration Verification Data (Summary Sheet	207	215
i. Second Source LCS(Summary + Raw Data)	216	235
i. Extraction Logs	--	--
k. Instrument Run Logs/Software Verification	236	236
l. GC/MS Tune (Results + Raw Data)	237	246
4. Shipping/Receiving Documents		
a. Login Receipt Summary Sheet	247	248
b. Chain-of-Custody Records	249	250
c. Sample Log-In Sheet	251	251
d. Misc Shipping/Receiving Records (list of individual records)		
Sample Receipt Discrepancy Report	252	254
5. Other Records (describe or list)		
a. Manual Spectral Defense	--	--
b. Manual Integrations	--	--
c. Manual Calculations	--	--
d. Canister Dilution Factors	255	257
e. Laboratory Corrective Action Request	--	--
f. CAS Number Reference	258	258
g. Variance Table	--	--
h. Canister Certification	259	269
i. Data Review Check Sheet	270	271

Comments:

Completed by:

Amanda Whittaker	Amanda Whittaker / Document Control	8/11/17
(Signature)	(Print Name & Title)	(Date)

eurofins | Air Toxics

WORK ORDER #: 1708091A

Work Order Summary

CLIENT:	Mr. Mark Stinnett CH2M Hill 3011 SW Williston Road Gainesville, FL 32608	**BILL TO:**	Accounts Payable/Atlanta CH2M Hill 6600 Peachtree Dunwoody Road Building 400, Suite 600 Atlanta, GA 30328
PHONE:	352-335-7991	**P.O. #**	
FAX:	352-3352959	**PROJECT #**	690813.01.01.01 Former Tronox-Springfield, Mo
DATE RECEIVED:	08/05/2017	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	08/10/2017		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	OA-004_0817	Modified TO-15 SIM	8.5 "Hg	5 psi
02A	IAD-004_0817	Modified TO-15 SIM	9.0 "Hg	5 psi
03A	IAU-004_0817	Modified TO-15 SIM	9.0 "Hg	5 psi
06A	IAD-107_0817	Modified TO-15 SIM	7.0 "Hg	5 psi
07A	IAD-007_0817	Modified TO-15 SIM	8.0 "Hg	5 psi
08A	IAU-007_0817	Modified TO-15 SIM	7.0 "Hg	5 psi
09A	OA-007_0817	Modified TO-15 SIM	17.0 "Hg	5 psi
10A	Lab Blank	Modified TO-15 SIM	NA	NA
11A	CCV	Modified TO-15 SIM	NA	NA
12A	LCS	Modified TO-15 SIM	NA	NA
12AA	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 08/10/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 SIM
CH2M Hill
Workorder# 1708091A

Three 6 Liter Summa Canister and four 6 Liter Summa Canister (SIM Certified) samples were received on August 05, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

Sample OA-007_0817 was received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All the canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Total Xylenes concentration is calculated by summing the individual concentrations of m,p-Xylene and O-Xylene.

A Method Detection Limit (MDL) and Limit of Detection (LOD) study is not maintained for Total Xylenes.

Due to the linear calibration range of the instrument, the reporting limit for Toluene was raised from

0.020ppbv to 0.050ppbv.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
OA-004 0817	1708091A-01A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
IAD-004 0817	1708091A-02A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
IAU-004 0817	1708091A-03A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
IAD-107 0817	1708091A-06A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
IAD-007 0817	1708091A-07A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
IAU-007 0817	1708091A-08A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
OA-007 0817	1708091A-09A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
Lab Blank	1708091A-10A	NA	NA	NA	NA	8/ 8/2017	NA	Good
CCV	1708091A-11A	NA	NA	NA	NA	8/ 8/2017	NA	Good
LCS	1708091A-12A	NA	NA	NA	NA	8/ 8/2017	NA	Good
LCSD	1708091A-12AA	NA	NA	NA	NA	8/ 8/2017	NA	Good

Sample Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	OA-004_0817		
Lab ID:	1708091A-01A	**Date/Time Analyzed:**	8/8/17 01:46 PM
Date/Time Collected:	8/3/17 09:22 AM	**Dilution Factor:**	1.87
Media:	6 Liter Summa Canister	**Instrument/Filename:**	msdv.i / v080808sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0098	0.024	0.30	0.39
Ethyl Benzene	100-41-4	0.017	0.032	0.16	0.23
m,p-Xylene	108-38-3	0.015	0.032	0.32	0.71
Naphthalene	91-20-3	0.024	0.024	0.49	4.4
o-Xylene	95-47-6	0.019	0.032	0.16	0.30
Toluene	108-88-3	0.024	0.028	0.35	2.1
Total Xylenes	9999-9999-015	NA	D	0.49	1.0

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	104
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080808sim.d
Lab Smp Id: 1708091A-01A
Inj Date : 08-AUG-2017 13:46
Operator : sw Inst ID: msdv.i
Smp Info : 250mL #N1643
Misc Info : 8.5"Hg ->5psi
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1
Dil Factor: 1.87000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
15.710	15.709 (1.000)	130	116739	5.00000			80.00- 120.00	100.00
15.710	15.709 (1.000)	128	90211				47.62- 107.62	77.28
15.710	15.709 (1.000)	49	227431				149.67- 209.67	194.82
17 Benzene						CAS #: 71-43-2		
16.532	16.531 (0.969)	78	8517	0.06557	0.1226		80.00- 120.00	100.00
16.532	16.531 (0.969)	77	3352				0.00- 52.91	39.35
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.505	16.504 (1.051)	65	190517	5.21448	5.214		80.00- 120.00	100.00
16.505	16.504 (1.051)	67	92785				27.09- 87.09	48.70
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.054	17.053 (1.000)	114	488440	5.00000			80.00- 120.00	100.00
17.054	17.053 (1.000)	88	74988				0.00- 45.81	15.35
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.568	19.567 (1.147)	98	432096	4.91843	4.918		80.00- 120.00	100.00
19.568	19.567 (1.147)	70	49103				0.00- 41.21	11.36

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.568	19.567 (1.147)	100	274404			34.67- 94.67	63.51
	23 Toluene					CAS #: 108-88-3		
	19.703	19.701 (1.155)	91	42845	0.29870	0.5586	80.00- 120.00	100.00
	19.703	19.701 (1.155)	92	24719			29.69- 89.69	57.69
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.994	21.992 (1.000)	117	400565	5.00000		80.00- 120.00	100.00
	21.966	21.965 (1.000)	82	212783			22.57- 82.57	53.12
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.104	22.102 (1.005)	106	1523	0.02790	0.05217	80.00- 120.00	100.00
	22.104	22.102 (1.005)	91	5339			275.83- 335.83	350.43
	31 m,p-Xylene					CAS #: 108-38-3		
	22.268	22.267 (1.012)	106	5982	0.08724	0.1631	80.00- 120.00	100.00
	22.241	22.267 (1.011)	91	12408			169.69- 229.69	207.41
	32 o-Xylene					CAS #: 95-47-6		
	22.790	22.789 (1.036)	106	2217	0.03695	0.06910	80.00- 120.00	100.00
	22.790	22.789 (1.036)	91	5038			180.67- 240.67	227.27
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.503	23.502 (1.069)	174	229355	5.08731	5.087	80.00- 120.00	100.00
	23.503	23.502 (1.069)	95	263508			89.82- 149.82	114.89
	23.503	23.502 (1.069)	176	224776			68.37- 128.37	98.00
	38 Naphthalene					CAS #: 91-20-3		
	27.354	27.352 (1.244)	128	32617	0.44579	0.8336	80.00- 120.00	100.00
	27.354	27.352 (1.244)	127	3781			0.00- 42.11	11.59
M	39 Total Xylene					CAS #: 1330-20-7		
				8199	0.12419	0.2322		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080808sim.d
Lab Smp Id: 1708091A-01A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 8.5"Hg ->5psi

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	116739	-4.43
20 1,4-Difluorobenze	494579	296747	692411	488440	-1.24
28 Chlorobenzene-d5	416996	250198	583794	400565	-3.94

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.01
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.01
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 09:39

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091A-01A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 8.5"Hg ->5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.214	104.29	70-130
$ 22 Toluene-d8	5.000	4.918	98.37	70-130
$ 33 4-Bromofluorobenze	5.000	5.087	101.75	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080808sim.d

Date : 08-AUG-2017 13:46

Client ID:

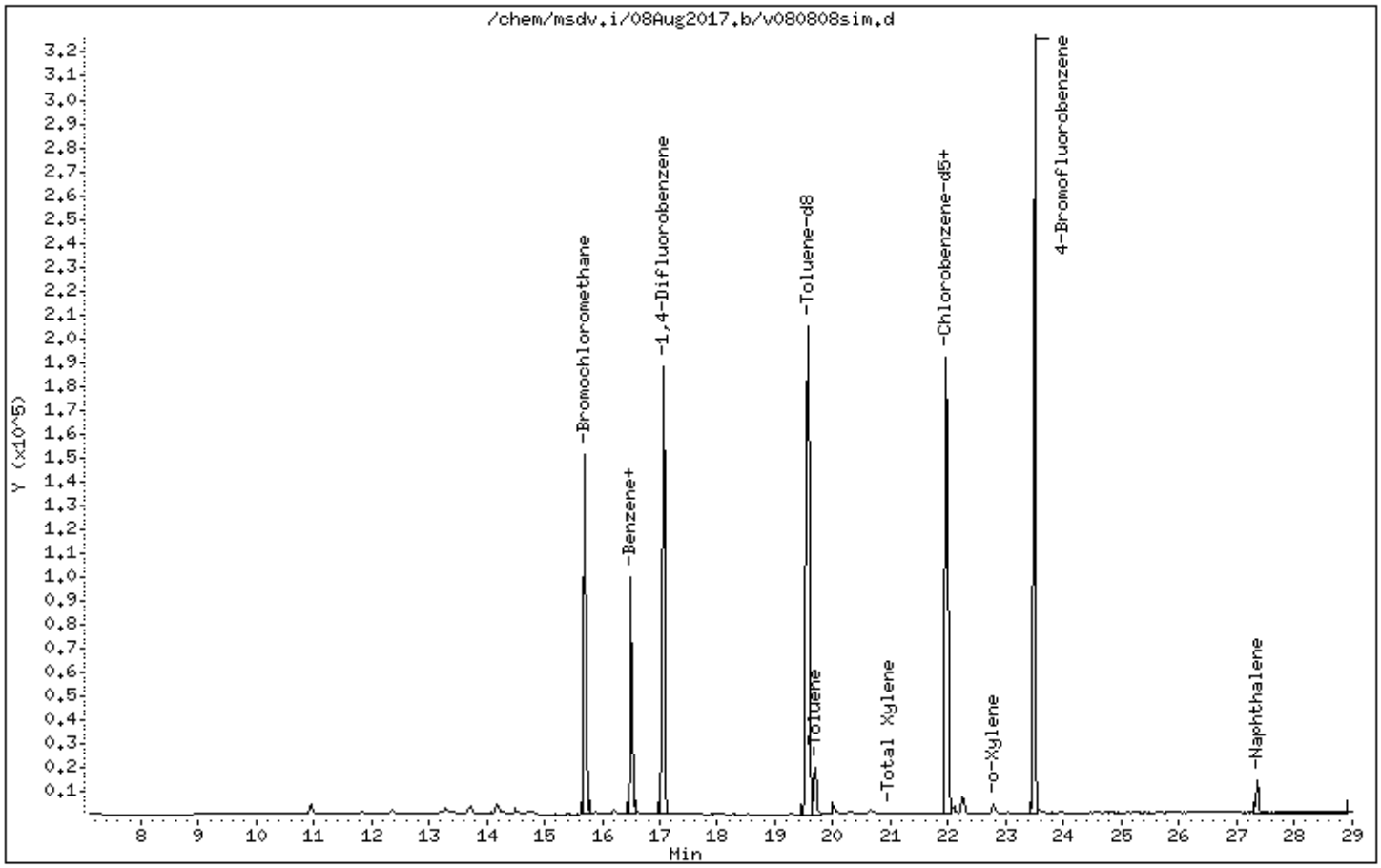
Instrument: msdv.i

Sample Info: 250mL #N1643

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080808sim.d

Date : 08-AUG-2017 13:46

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1643

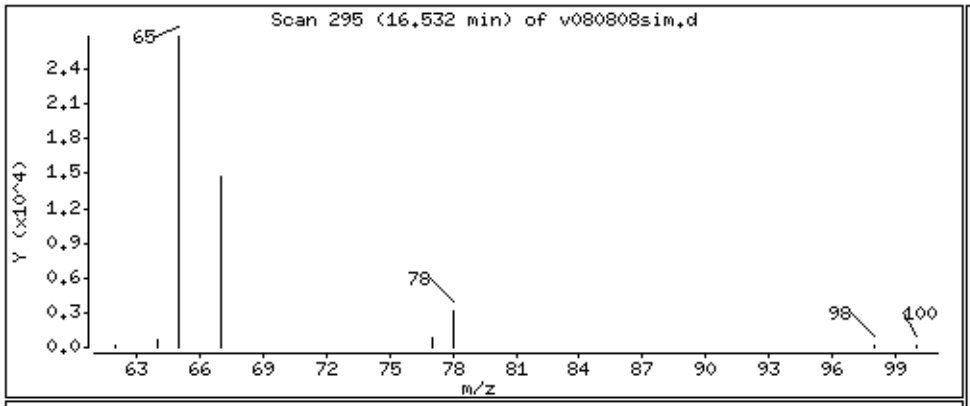
Operator: sw

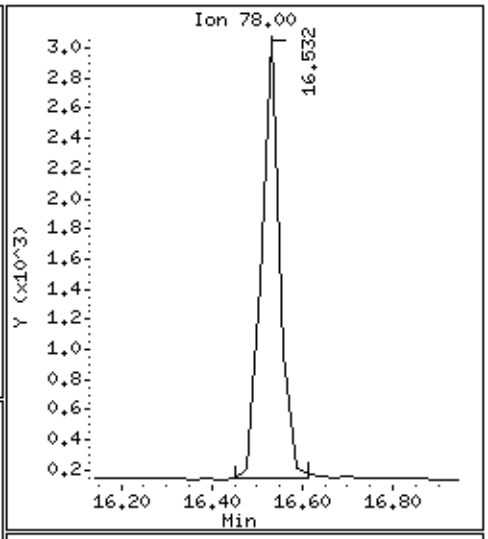
Column phase: RTX-624

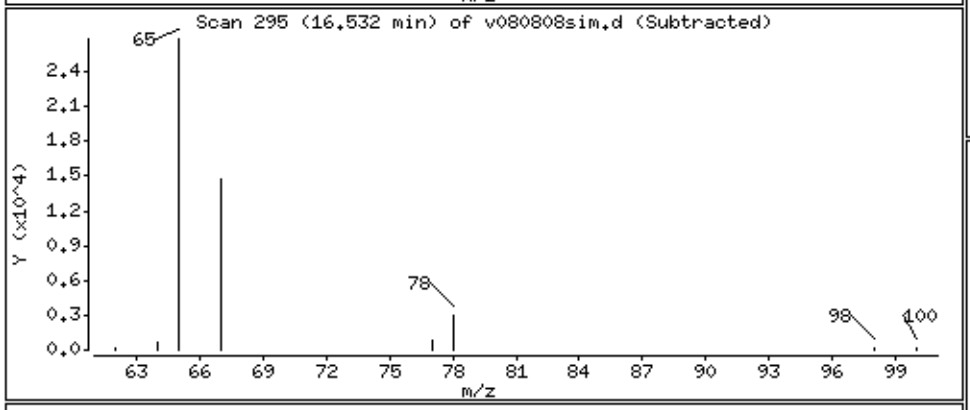
Column diameter: 0.32

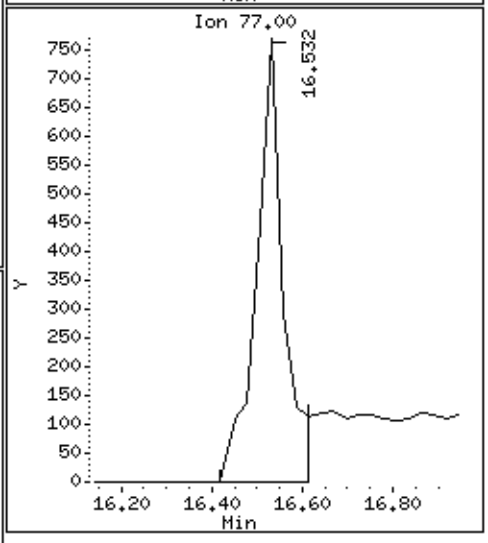
17 Benzene

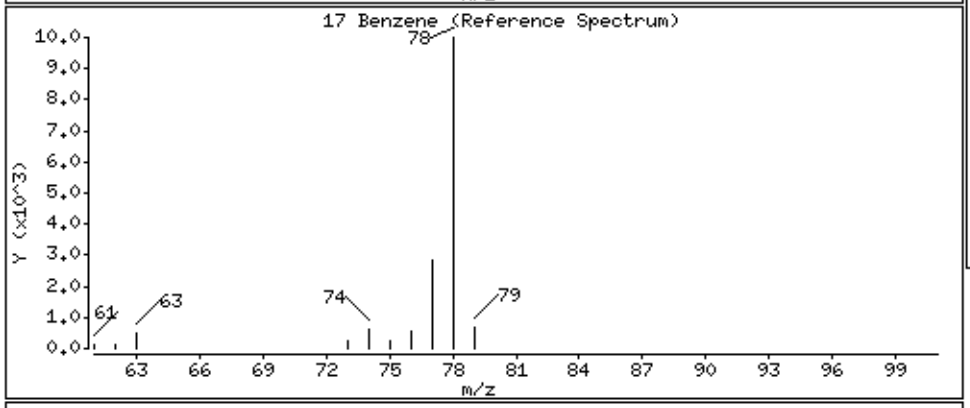
Concentration: 0.1226 PPBV

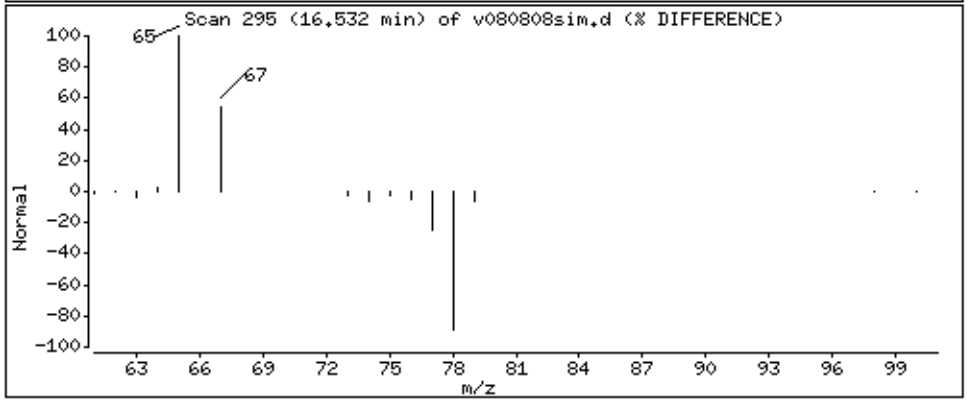












Data File: /chem/msdv.i/08Aug2017.b/v080808sim.d

Date : 08-AUG-2017 13:46

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1643

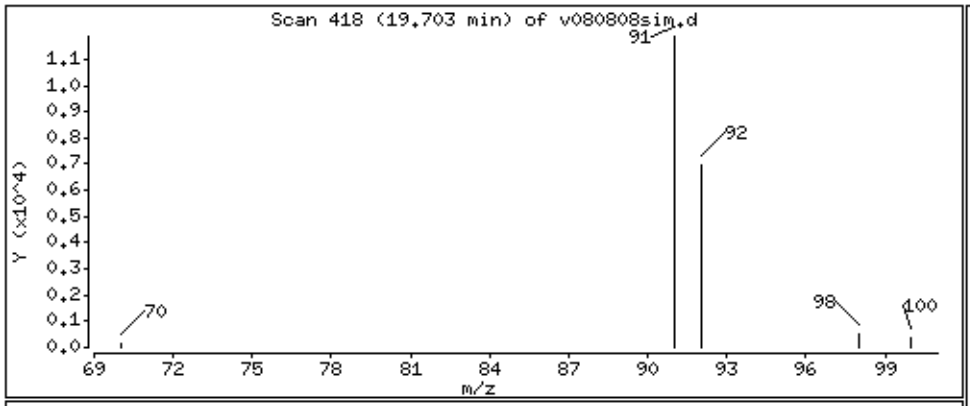
Operator: sw

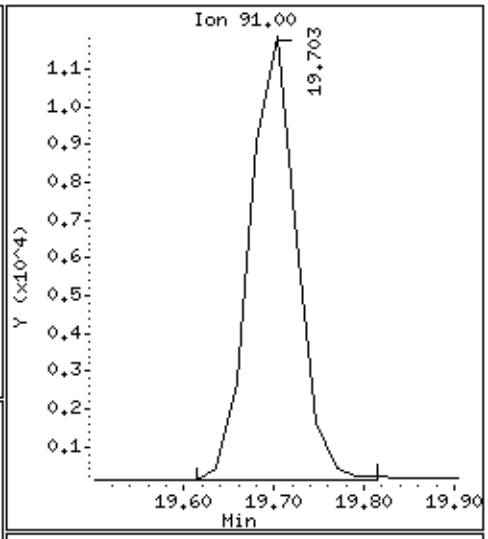
Column phase: RTX-624

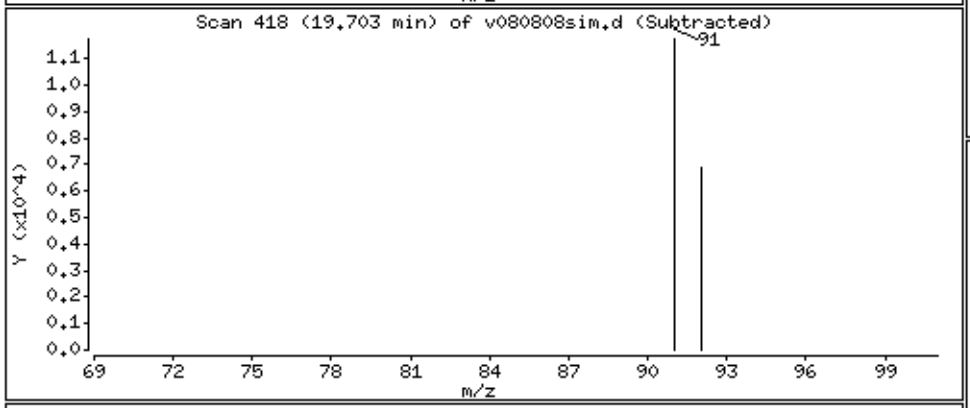
Column diameter: 0.32

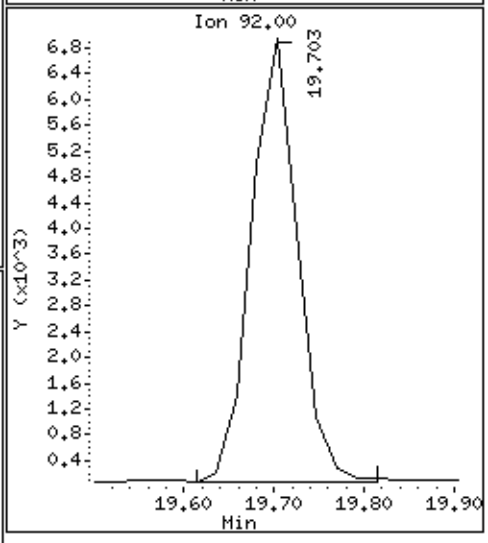
23 Toluene

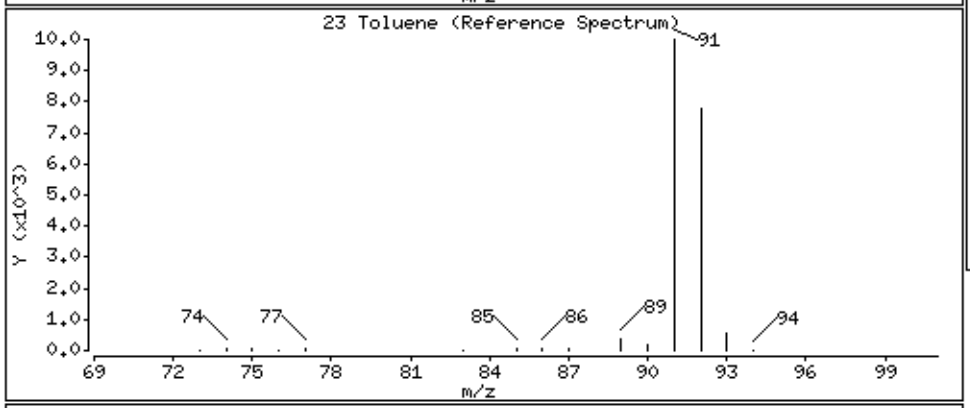
Concentration: 0.5586 PPBV

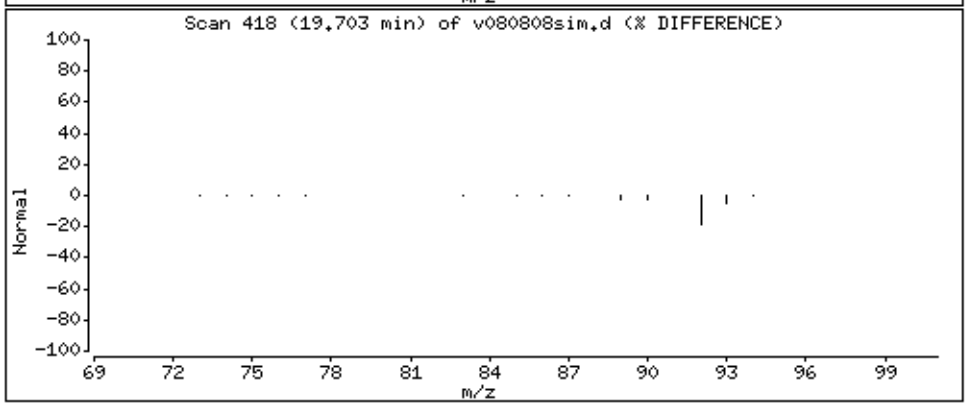












Data File: /chem/msdv.i/08Aug2017.b/v080808sim.d

Date : 08-AUG-2017 13:46

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1643

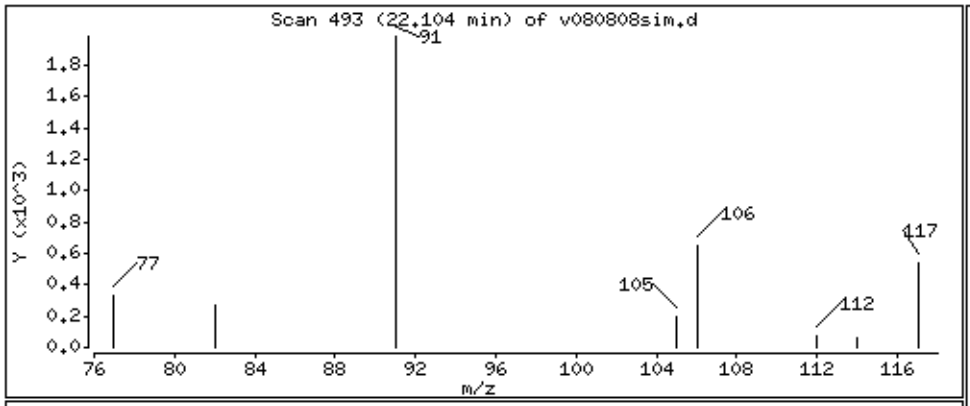
Operator: sw

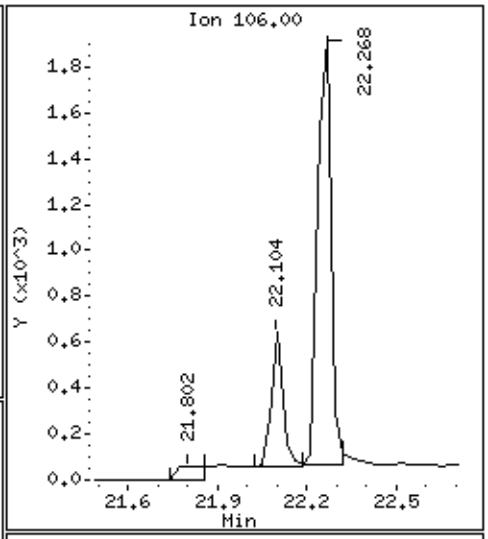
Column phase: RTX-624

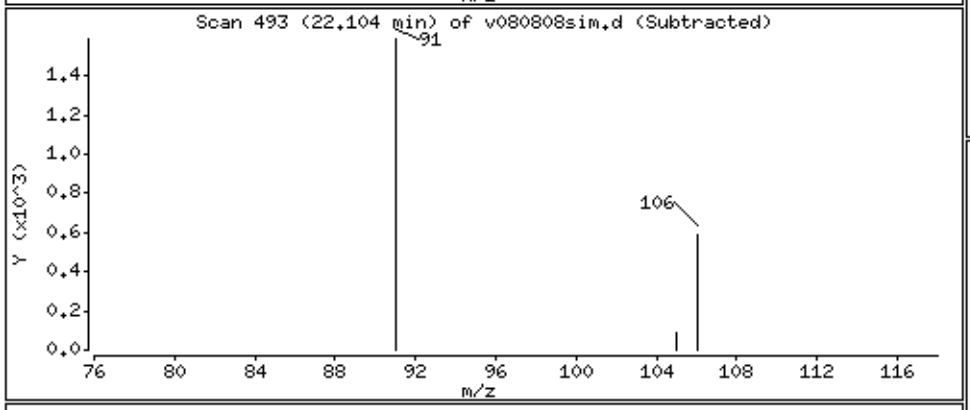
Column diameter: 0.32

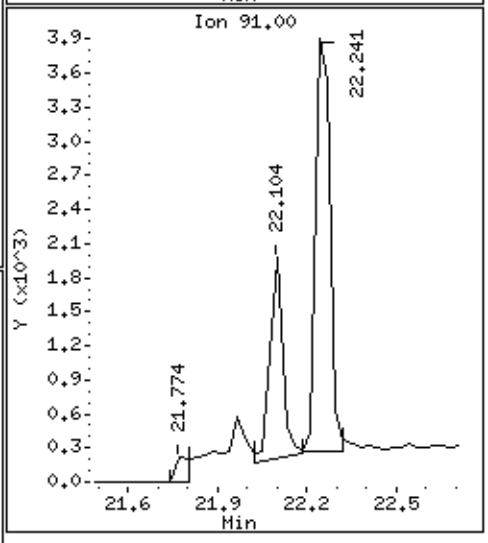
30 Ethyl Benzene

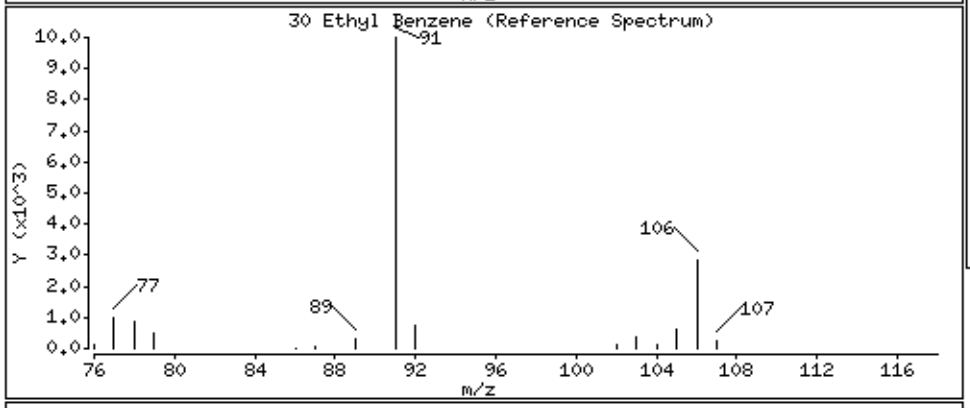
Concentration: 0.05217 PPBV

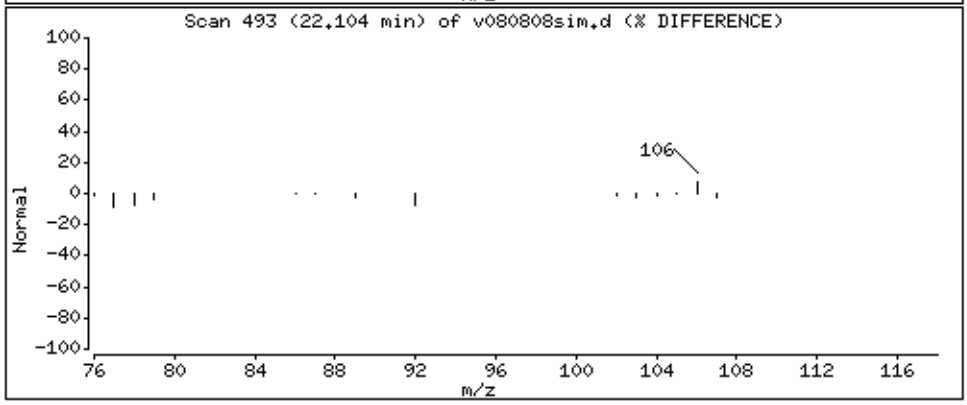












Data File: /chem/msdv.i/08Aug2017.b/v080808sim.d

Date : 08-AUG-2017 13:46

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1643

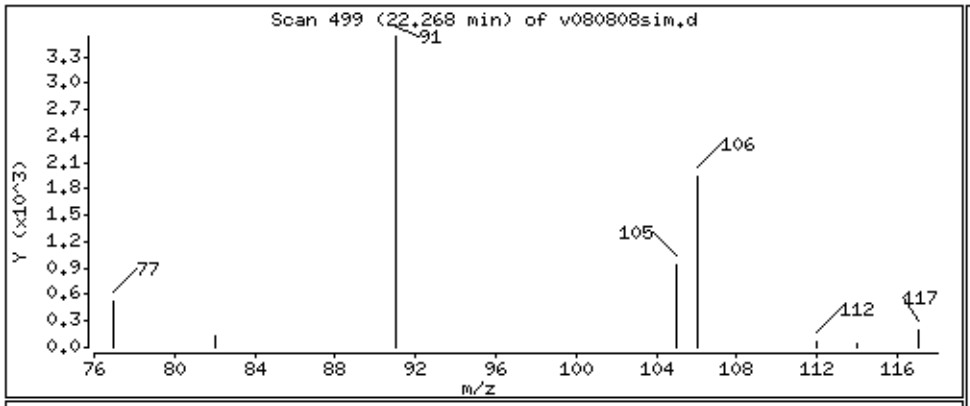
Operator: sw

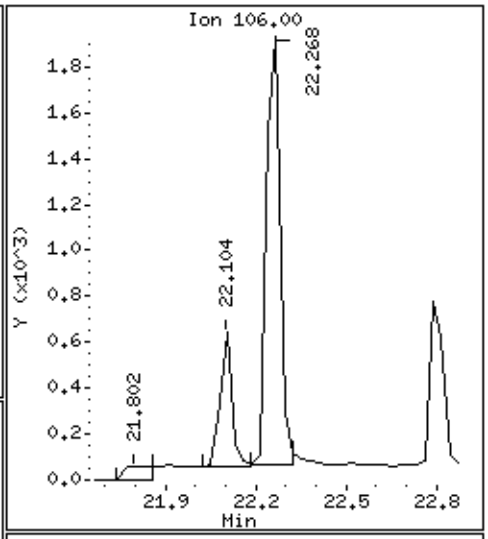
Column phase: RTX-624

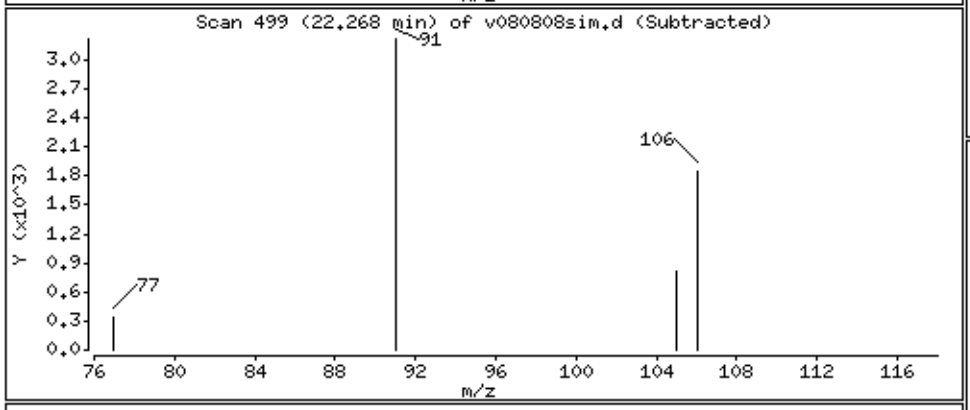
Column diameter: 0.32

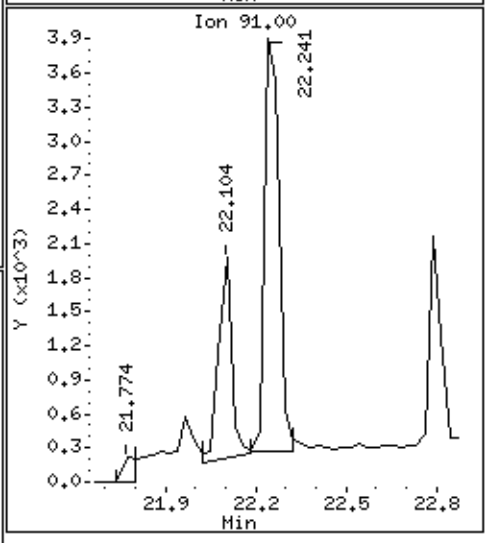
31 m,p-Xylene

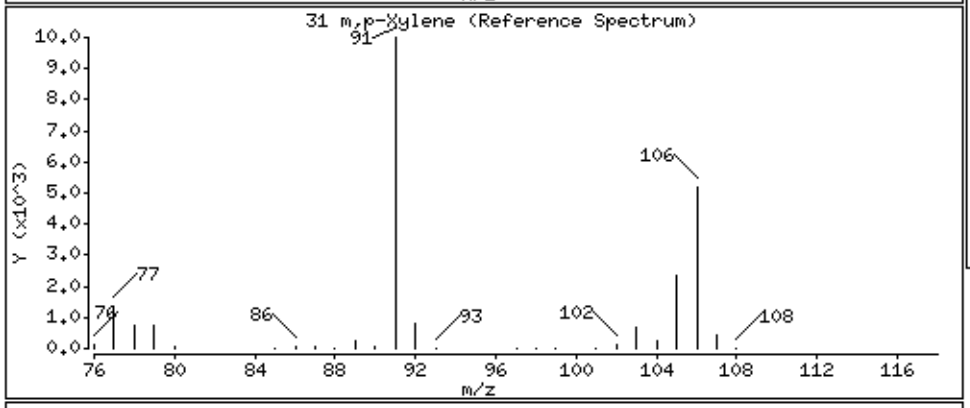
Concentration: 0.1631 PPBV

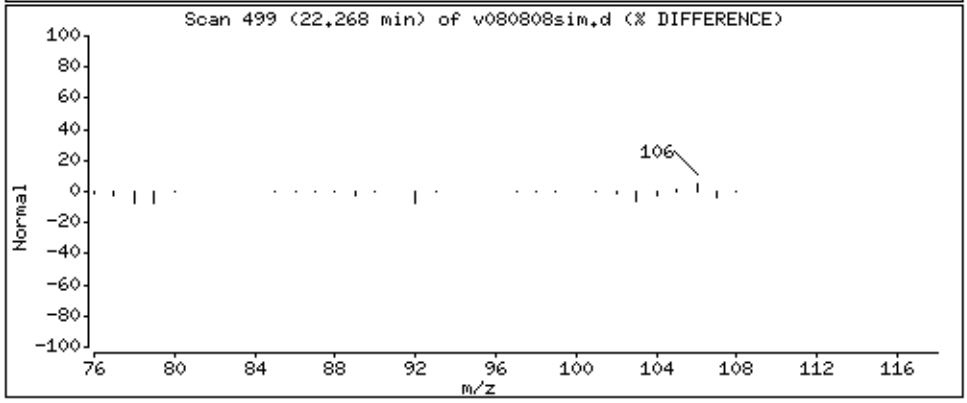












Data File: /chem/msdv.i/08Aug2017.b/v080808sim.d

Date : 08-AUG-2017 13:46

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1643

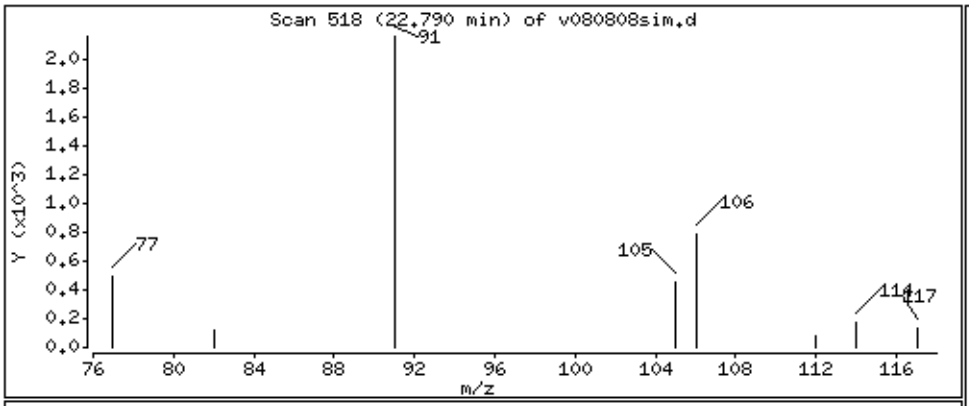
Operator: sw

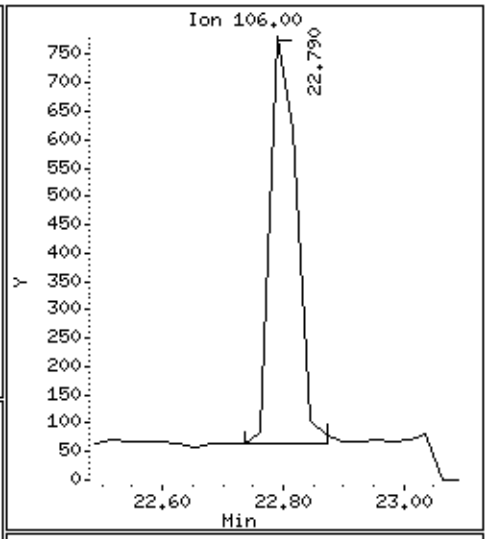
Column phase: RTX-624

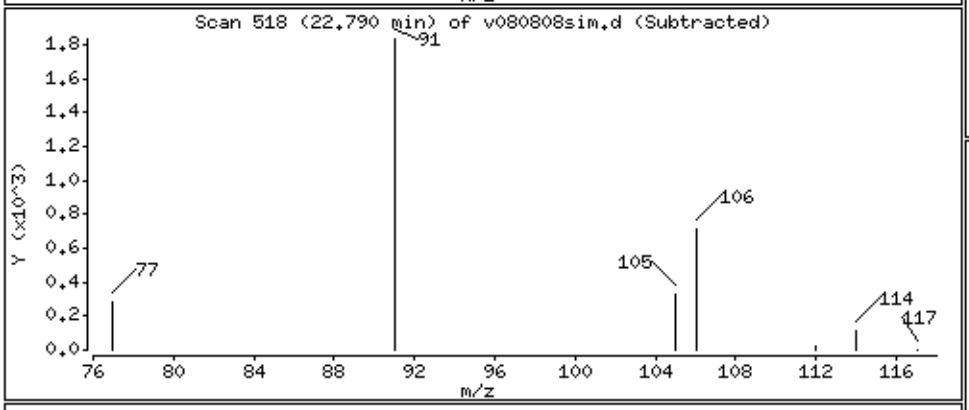
Column diameter: 0.32

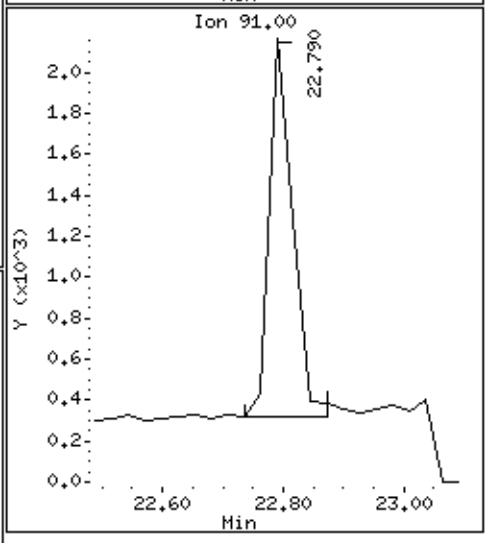
32 o-Xylene

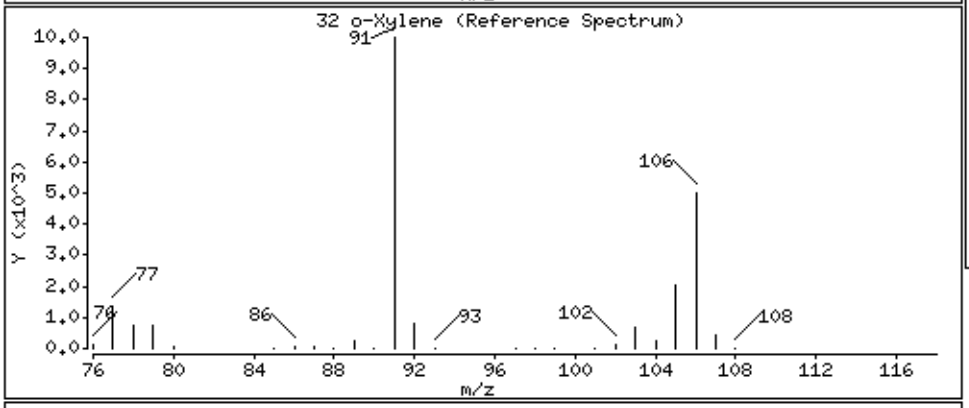
Concentration: 0.06910 PPBV

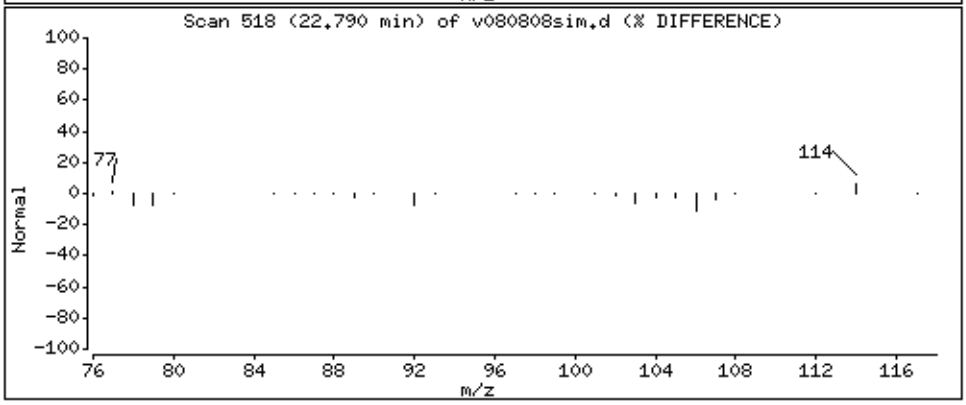












Data File: /chem/msdv.i/08Aug2017.b/v080808sim.d

Date : 08-AUG-2017 13:46

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1643

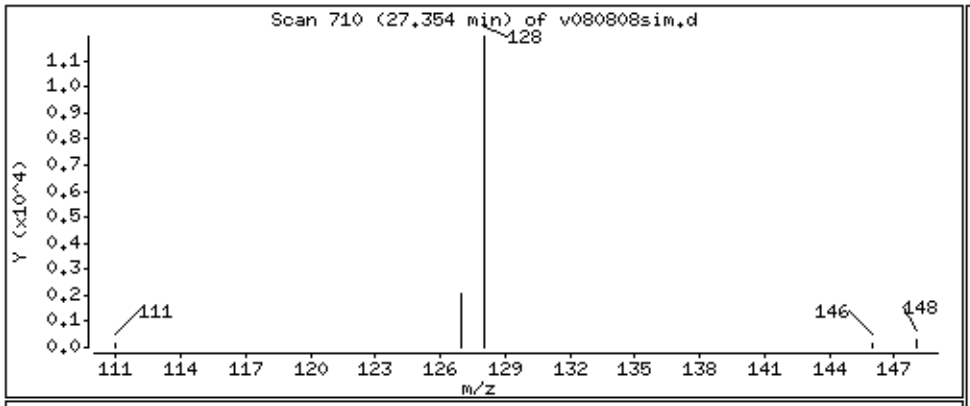
Operator: sw

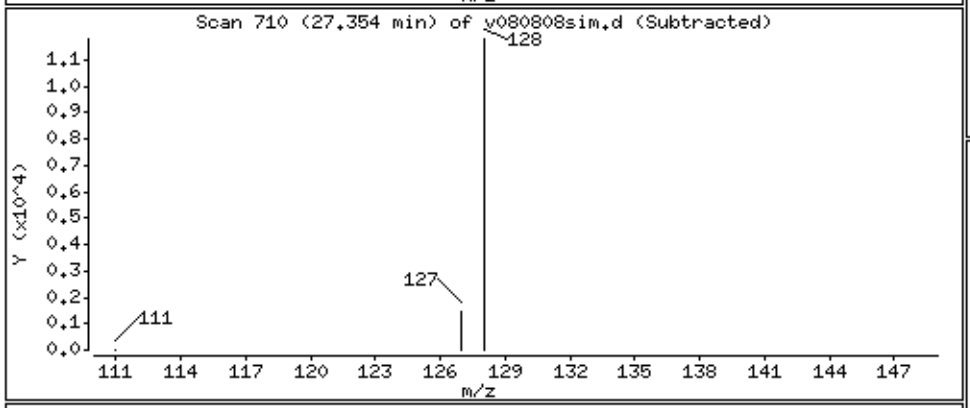
Column phase: RTX-624

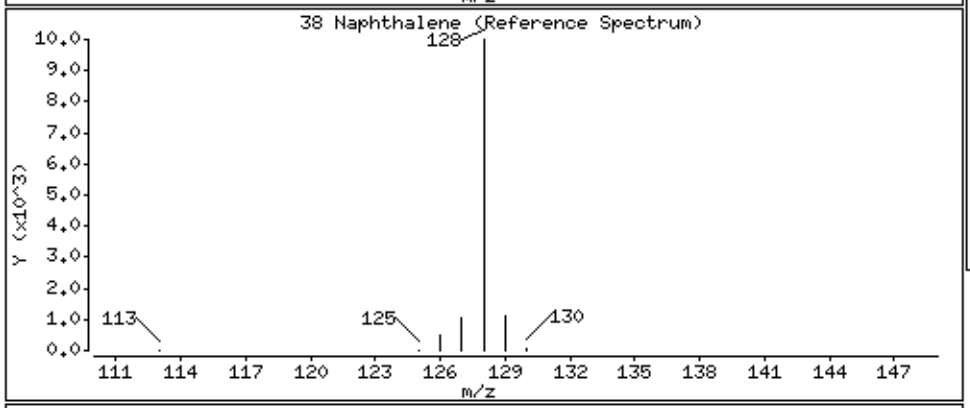
Column diameter: 0.32

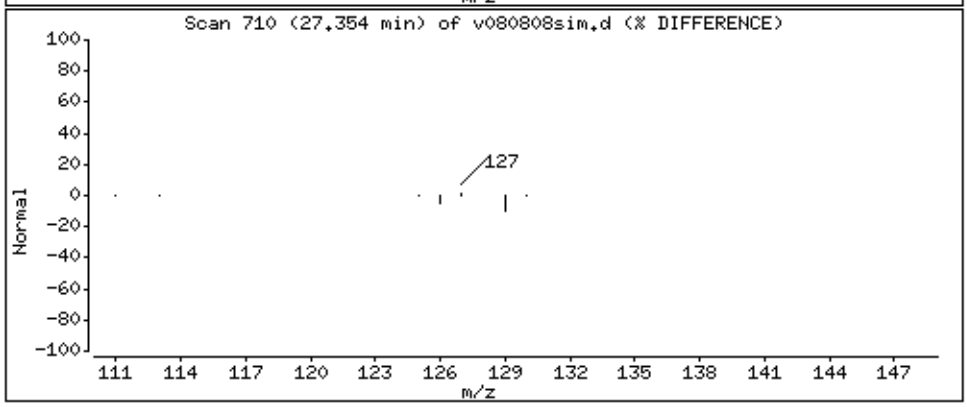
38 Naphthalene

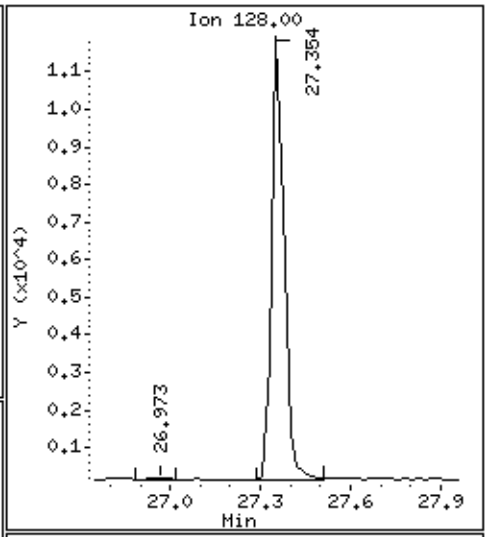
Concentration: 0.8336 PPBV

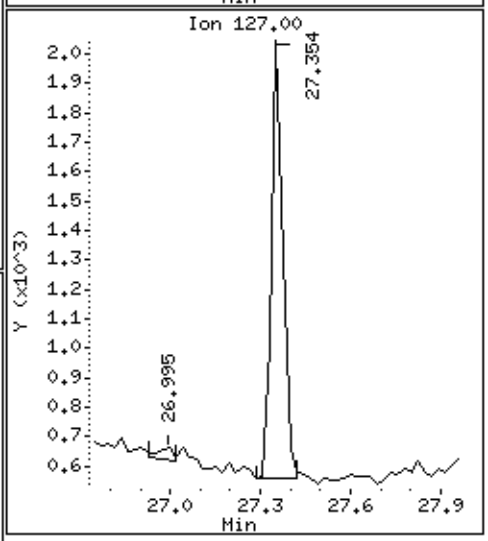












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAD-004_0817		
Lab ID:	1708091A-02A	**Date/Time Analyzed:**	8/8/17 02:35 PM
Date/Time Collected:	8/3/17 09:35 AM	**Dilution Factor:**	1.91
Media:	6 Liter Summa Canister	**Instrument/Filename:**	msdv.i / v080809sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.010	0.024	0.30	0.50
Ethyl Benzene	100-41-4	0.017	0.033	0.16	0.67
m,p-Xylene	108-38-3	0.015	0.033	0.33	2.2
Naphthalene	91-20-3	0.024	0.024	0.50	1.6
o-Xylene	95-47-6	0.019	0.033	0.16	0.93
Toluene	108-88-3	0.025	0.029	0.36	6.1
Total Xylenes	9999-9999-015	NA	D	0.50	3.1

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080809sim.d
Lab Smp Id: 1708091A-02A
Inj Date : 08-AUG-2017 14:35
Operator : sw Inst ID: msdv.i
Smp Info : 250mL #N1676
Misc Info : 9.0"Hg ->5psi
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1
Dil Factor: 1.91000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane							CAS #: 74-97-5	
15.710	15.709 (1.000)	130	117203	5.00000			80.00- 120.00	100.00
15.710	15.709 (1.000)	128	91157				47.62- 107.62	77.78
15.710	15.709 (1.000)	49	228927				149.67- 209.67	195.33
17 Benzene							CAS #: 71-43-2	
16.532	16.531 (0.969)	78	10365	0.08226	0.1571		80.00- 120.00	100.00
16.532	16.531 (0.969)	77	3673				0.00- 52.91	35.44
$ 18 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
16.505	16.504 (1.051)	65	185594	5.05963	5.060		80.00- 120.00	100.00
16.505	16.504 (1.051)	67	90684				27.09- 87.09	48.86
* 20 1,4-Difluorobenzene							CAS #: 540-36-3	
17.054	17.053 (1.000)	114	473775	5.00000			80.00- 120.00	100.00
17.054	17.053 (1.000)	88	73196				0.00- 45.81	15.45
$ 22 Toluene-d8							CAS #: 2037-26-5	
19.568	19.567 (1.147)	98	426723	5.00762	5.008		80.00- 120.00	100.00
19.568	19.567 (1.147)	70	47800				0.00- 41.21	11.20

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.568	19.567 (1.147)	100	270950			34.67- 94.67	63.50
	23 Toluene					CAS #: 108-88-3		
	19.703	19.701 (1.155)	91	117698	0.84594	1.616	80.00- 120.00	100.00
	19.703	19.701 (1.155)	92	68078			29.69- 89.69	57.84
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.994	21.992 (1.000)	117	397833	5.00000		80.00- 120.00	100.00
	21.966	21.965 (1.000)	82	206680			22.57- 82.57	51.95
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.104	22.102 (1.005)	106	4368	0.08052	0.1538	80.00- 120.00	100.00
	22.104	22.102 (1.005)	91	14080			275.83- 335.83	322.33
	31 m,p-Xylene					CAS #: 108-38-3		
	22.268	22.267 (1.012)	106	17880	0.26253	0.5014	80.00- 120.00	100.00
	22.241	22.267 (1.011)	91	37063			169.69- 229.69	207.28
	32 o-Xylene					CAS #: 95-47-6		
	22.790	22.789 (1.036)	106	6695	0.11237	0.2146	80.00- 120.00	100.00
	22.790	22.789 (1.036)	91	14721			180.67- 240.67	219.85
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.503	23.502 (1.069)	174	216092	4.82604	4.826	80.00- 120.00	100.00
	23.503	23.502 (1.069)	95	250050			89.82- 149.82	115.71
	23.503	23.502 (1.069)	176	211033			68.37- 128.37	97.66
	38 Naphthalene					CAS #: 91-20-3		
	27.354	27.352 (1.244)	128	11605	0.15970	0.3050	80.00- 120.00	100.00
	27.354	27.352 (1.244)	127	1846			0.00- 42.11	15.91
M	39 Total Xylene					CAS #: 1330-20-7		
				24576	0.37489	0.7160		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080809sim.d
Lab Smp Id: 1708091A-02A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 9.0"Hg ->5psi

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	117203	-4.05
20 1,4-Difluorobenze	494579	296747	692411	473775	-4.21
28 Chlorobenzene-d5	416996	250198	583794	397833	-4.60

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.01
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.01
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 09:39

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091A-02A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 9.0"Hg ->5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.060	101.19	70-130
$ 22 Toluene-d8	5.000	5.008	100.15	70-130
$ 33 4-Bromofluorobenze	5.000	4.826	96.52	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080809sim.d

Date : 08-AUG-2017 14:35

Client ID:

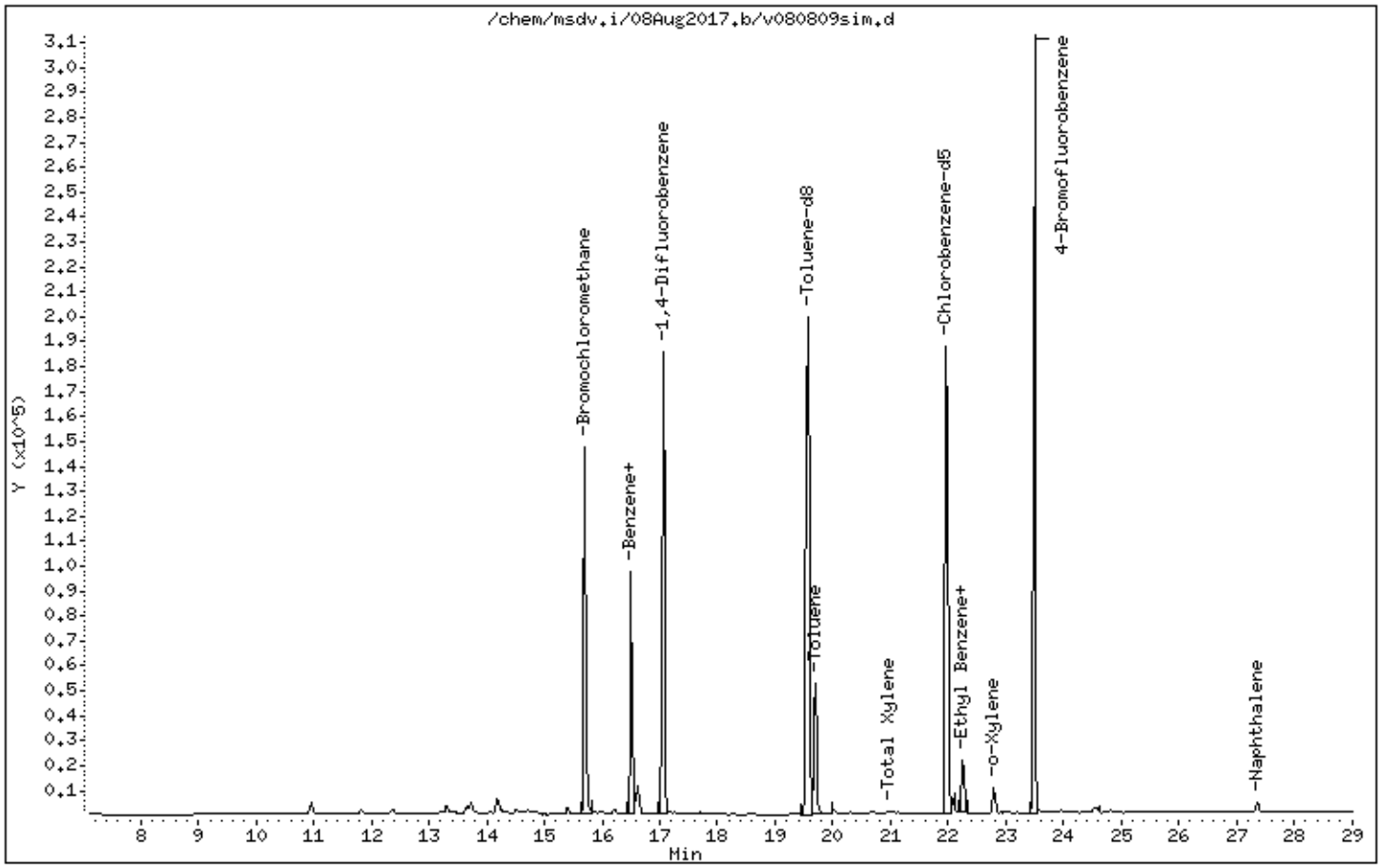
Instrument: msdv.i

Sample Info: 250mL #N1676

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080809sim.d

Date : 08-AUG-2017 14:35

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1676

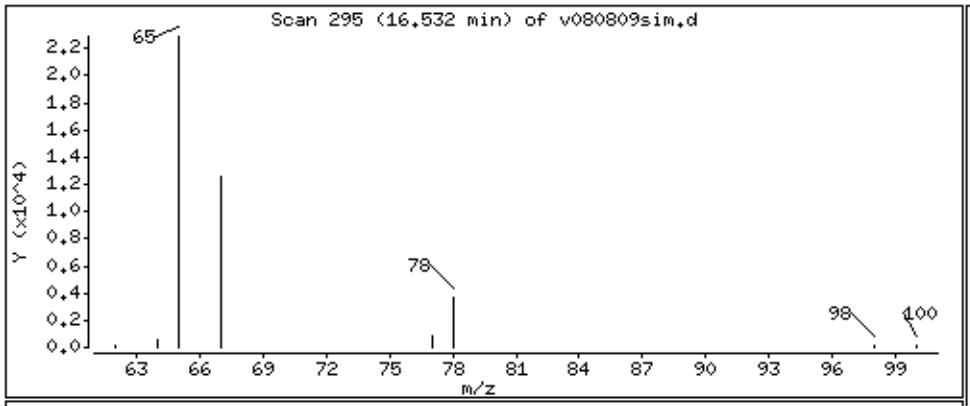
Operator: sw

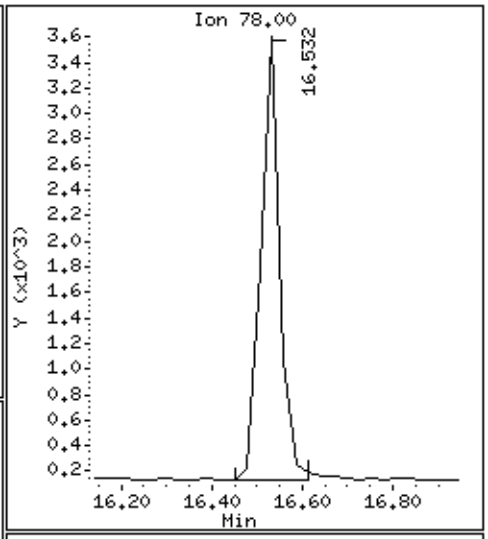
Column phase: RTX-624

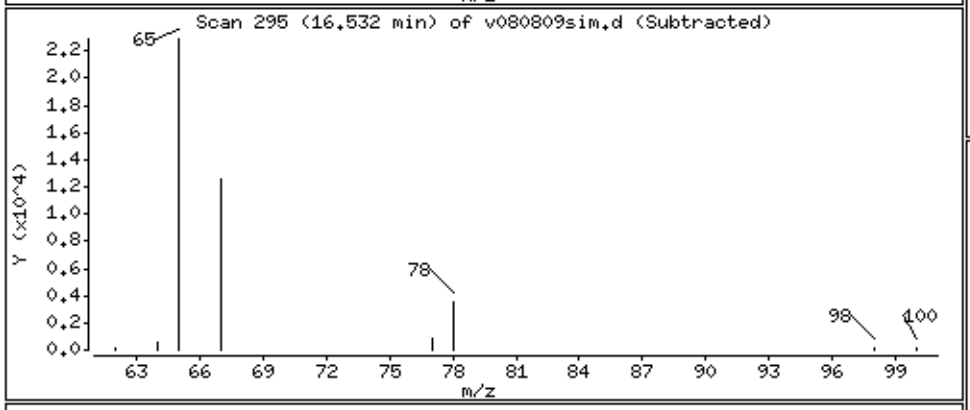
Column diameter: 0.32

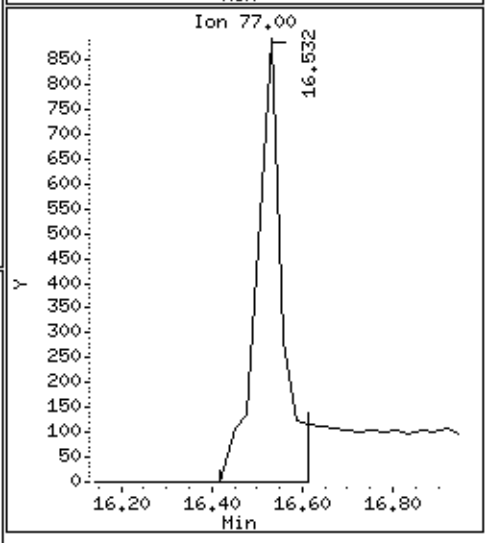
17 Benzene

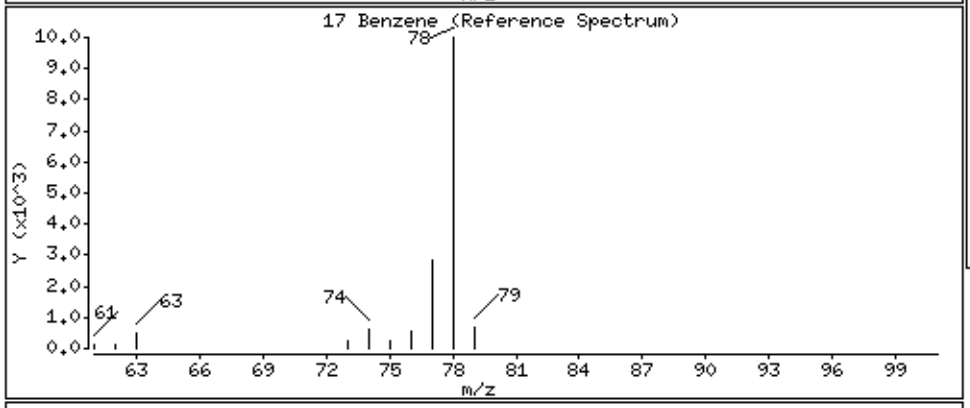
Concentration: 0.1571 PPBV

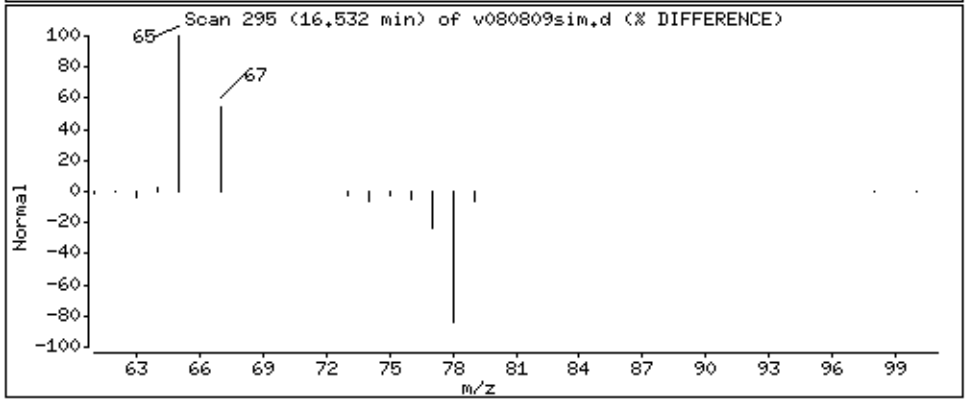












Data File: /chem/msdv.i/08Aug2017.b/v080809sim.d

Date : 08-AUG-2017 14:35

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1676

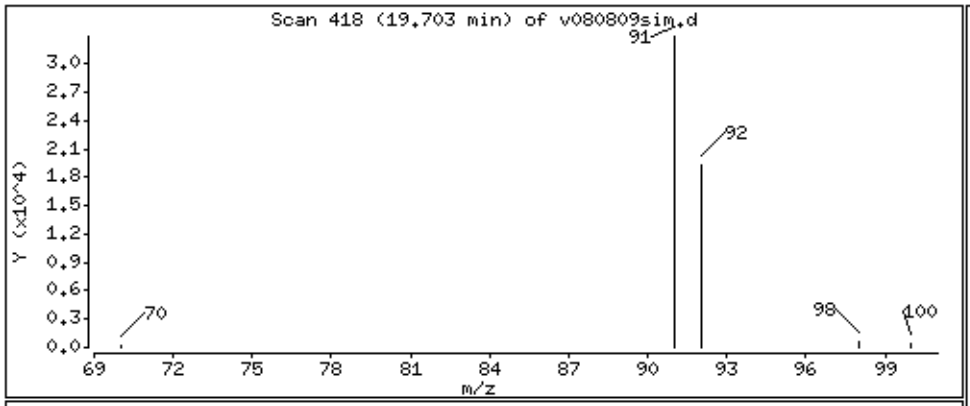
Operator: sw

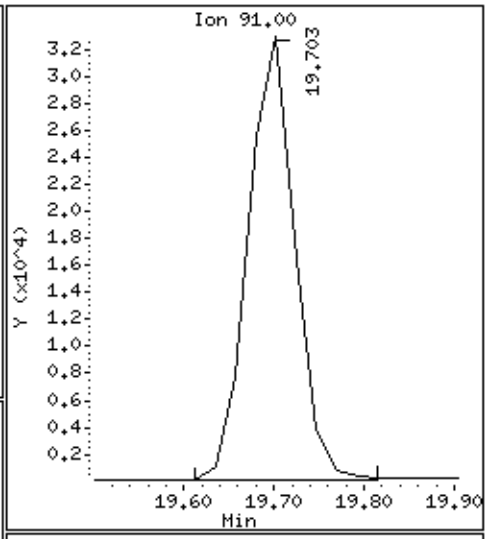
Column phase: RTX-624

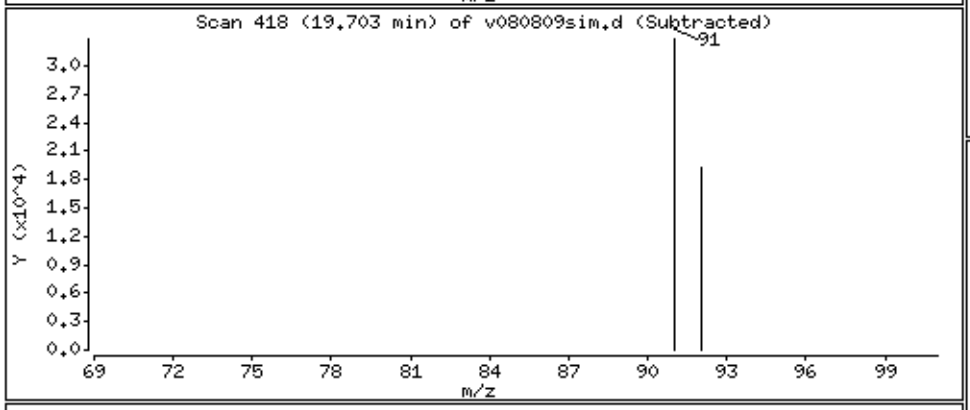
Column diameter: 0.32

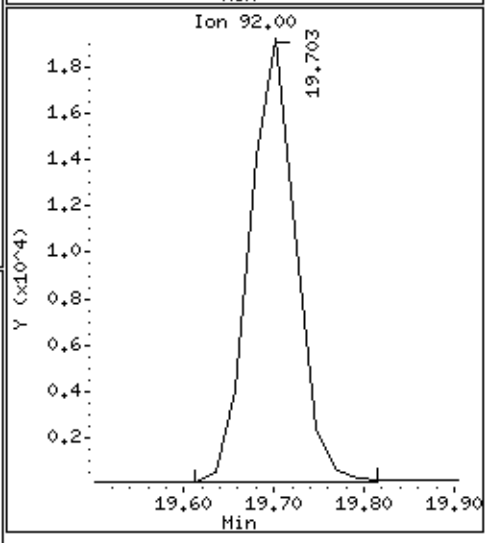
23 Toluene

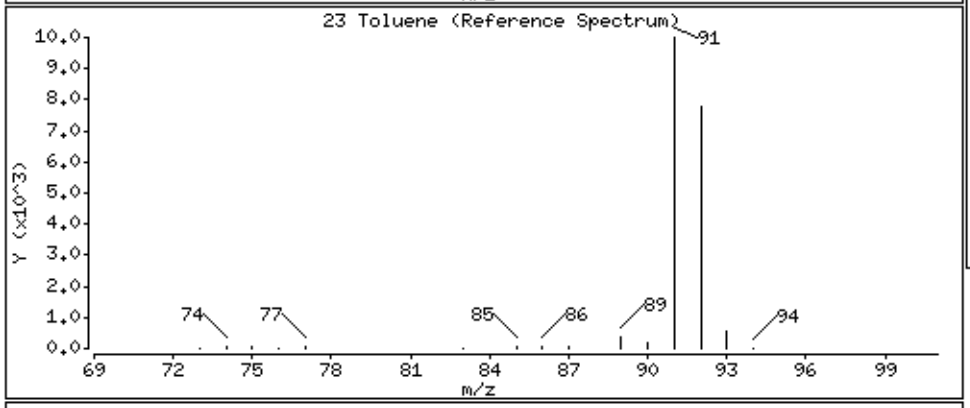
Concentration: 1.616 PPBV

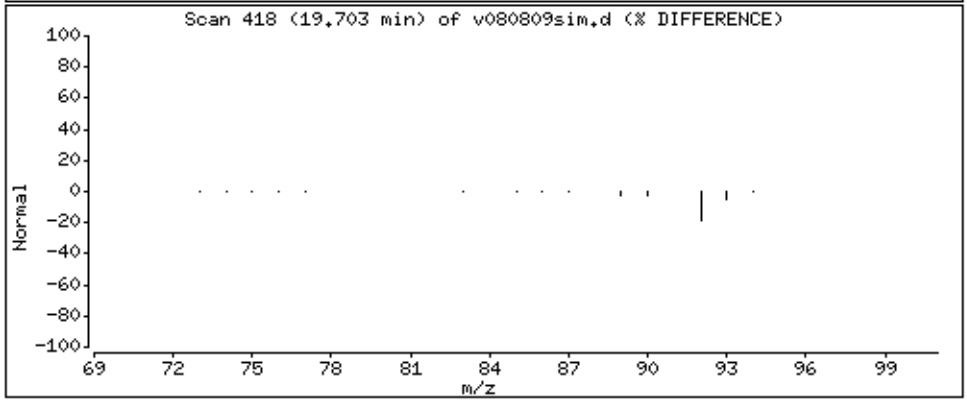












Data File: /chem/msdv.i/08Aug2017.b/v080809sim.d

Date : 08-AUG-2017 14:35

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1676

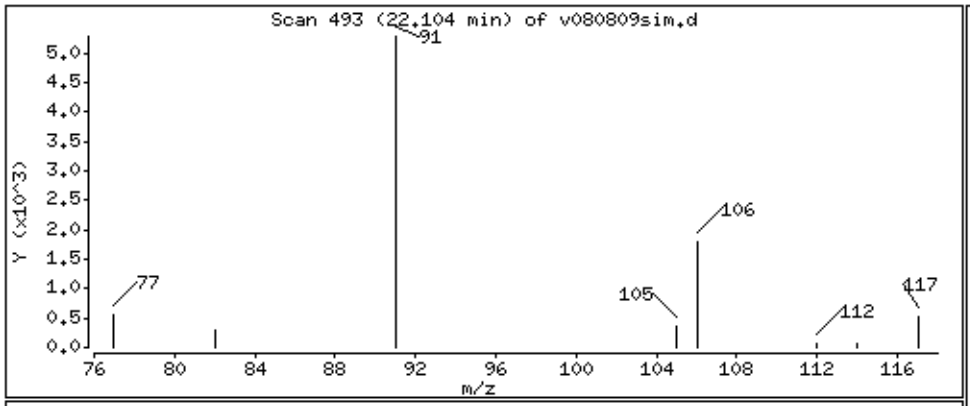
Operator: sw

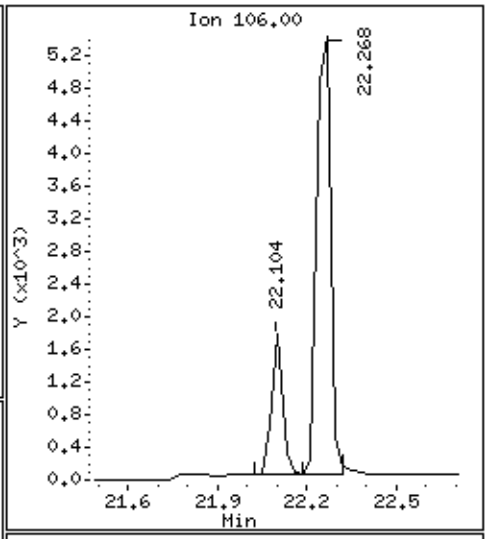
Column phase: RTX-624

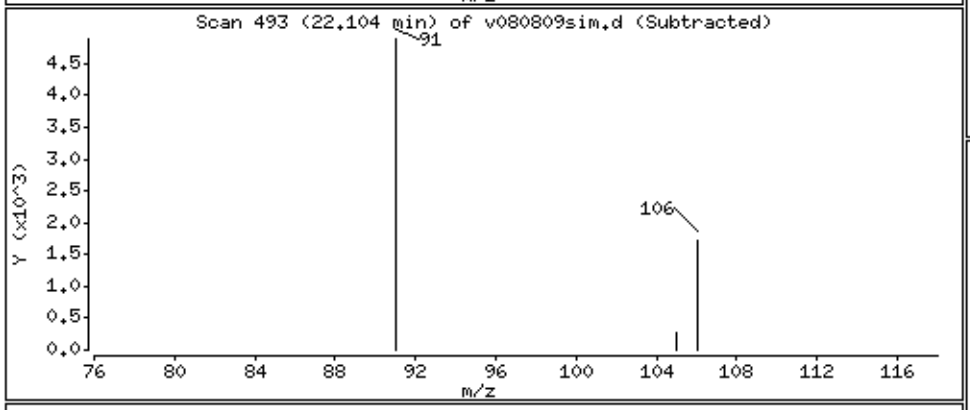
Column diameter: 0.32

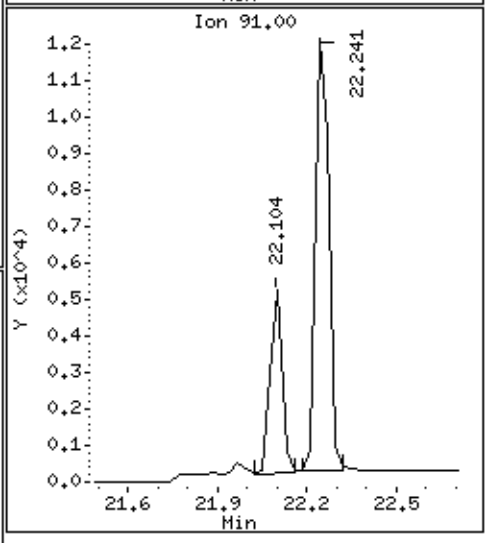
30 Ethyl Benzene

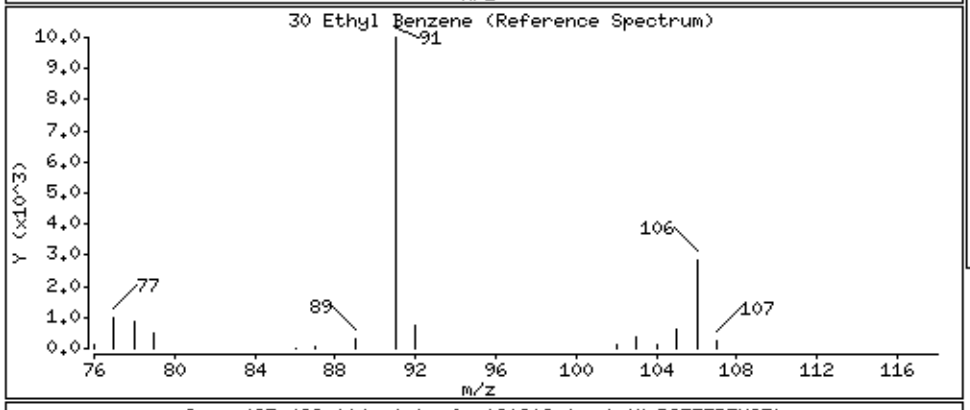
Concentration: 0.1538 PPBV

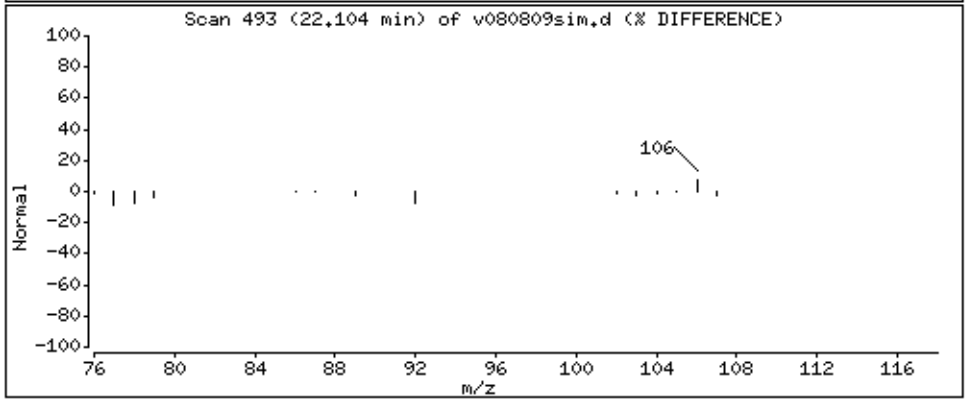












Data File: /chem/msdv.i/08Aug2017.b/v080809sim.d

Date : 08-AUG-2017 14:35

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1676

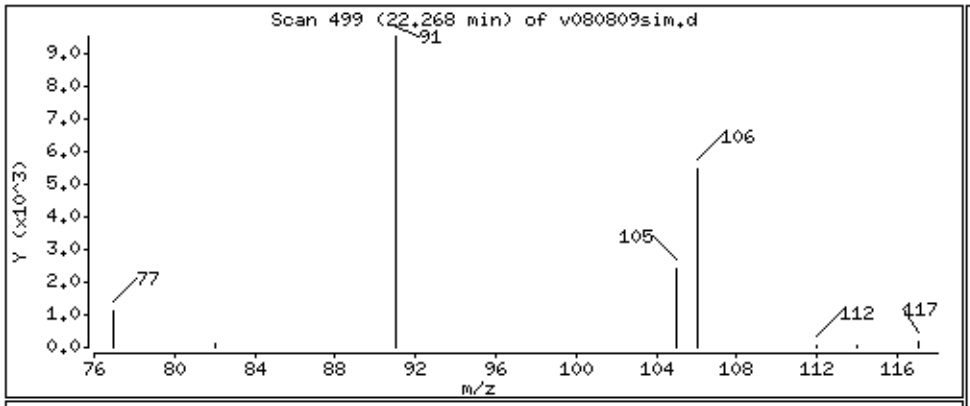
Operator: sw

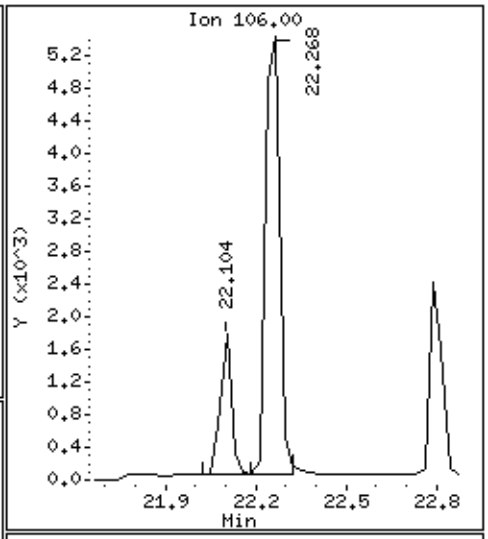
Column phase: RTX-624

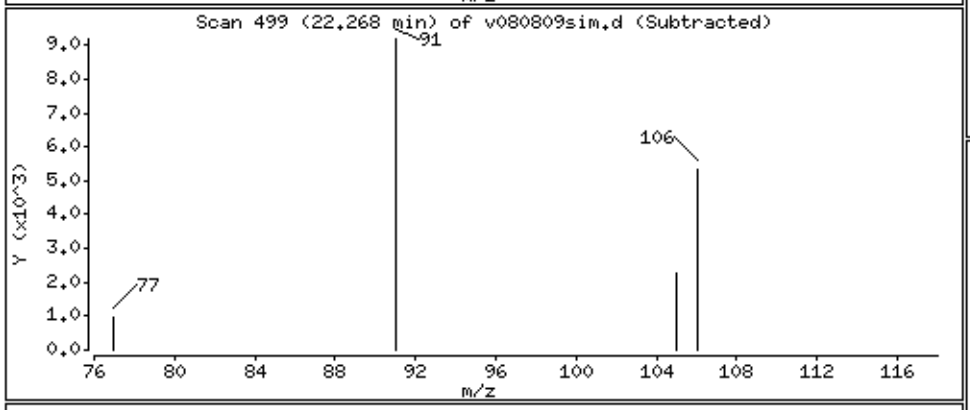
Column diameter: 0.32

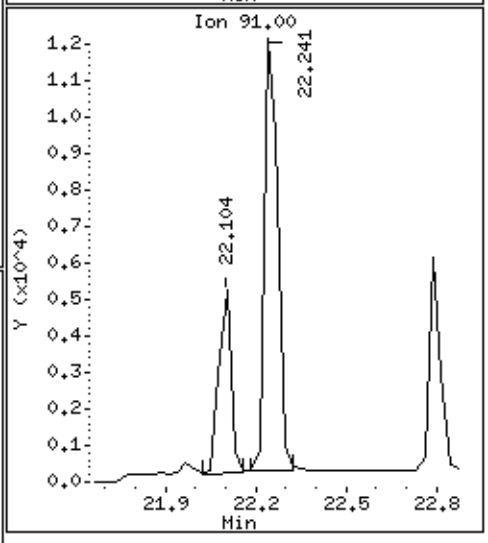
31 m,p-Xylene

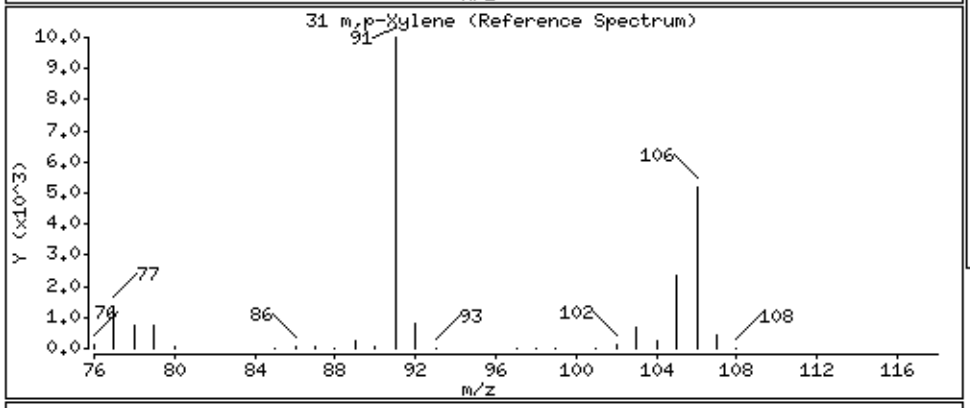
Concentration: 0.5014 PPBV

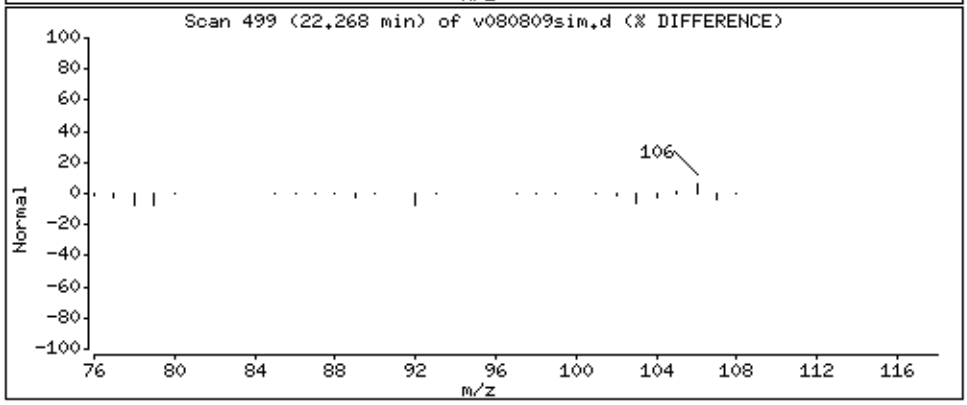












Data File: /chem/msdv.i/08Aug2017.b/v080809sim.d

Date : 08-AUG-2017 14:35

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1676

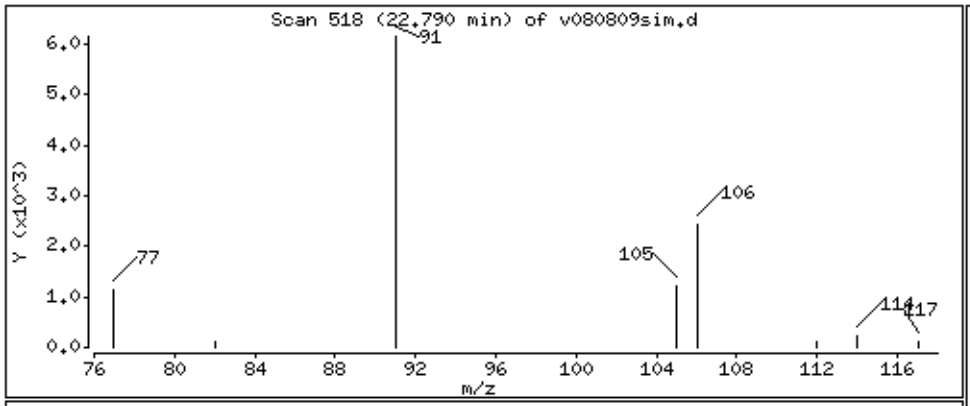
Operator: sw

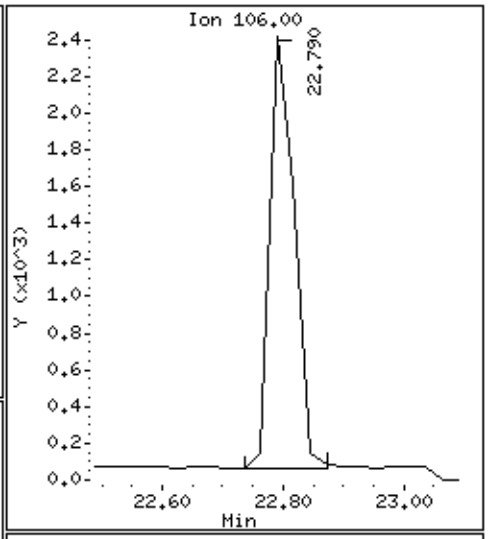
Column phase: RTX-624

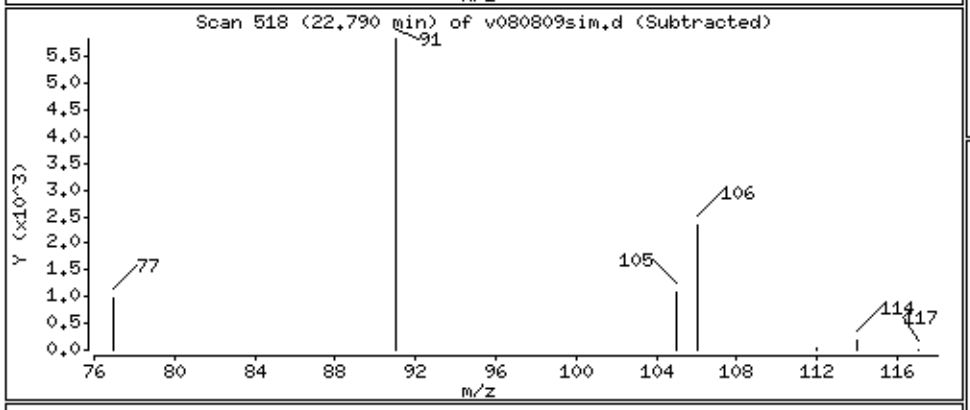
Column diameter: 0.32

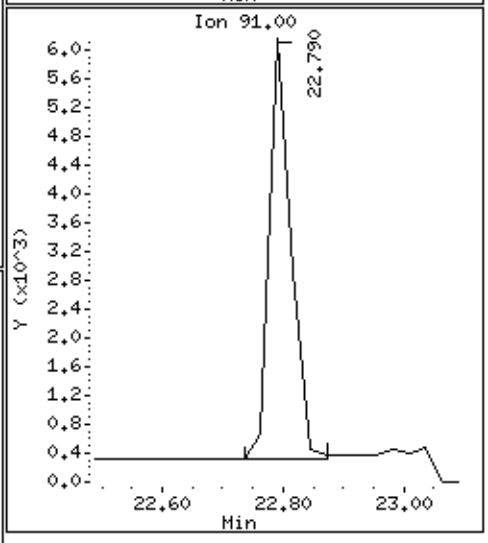
32 o-Xylene

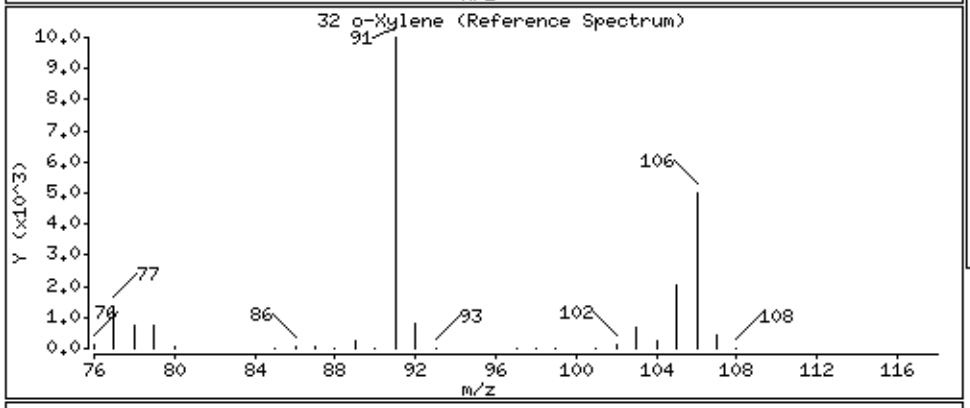
Concentration: 0.2146 PPBV

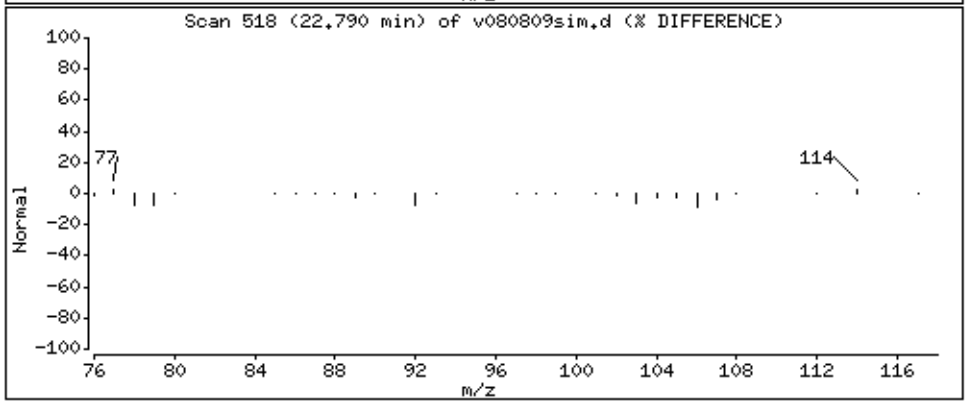












Data File: /chem/msdv.i/08Aug2017.b/v080809sim.d

Date : 08-AUG-2017 14:35

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1676

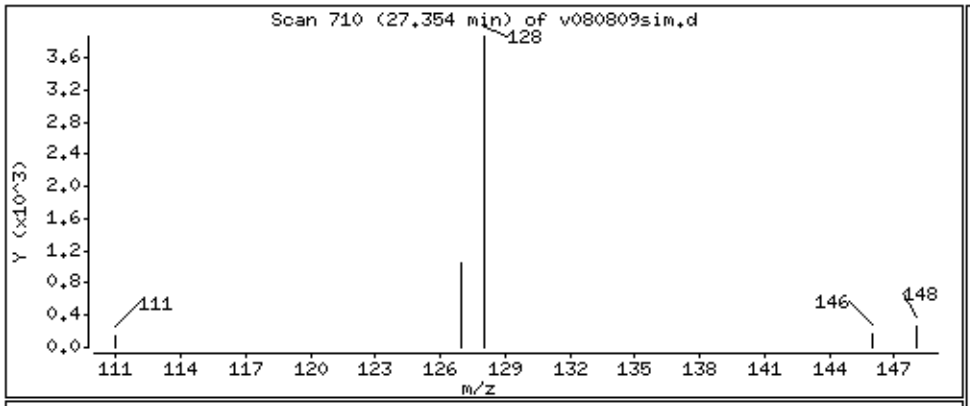
Operator: sw

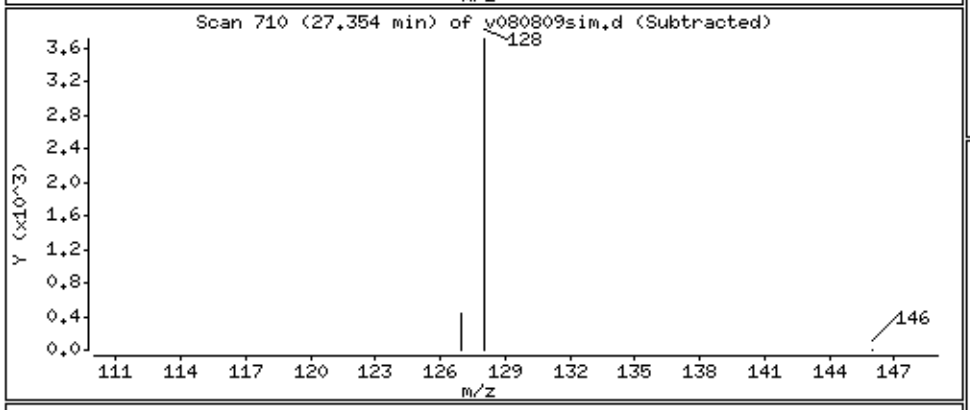
Column phase: RTX-624

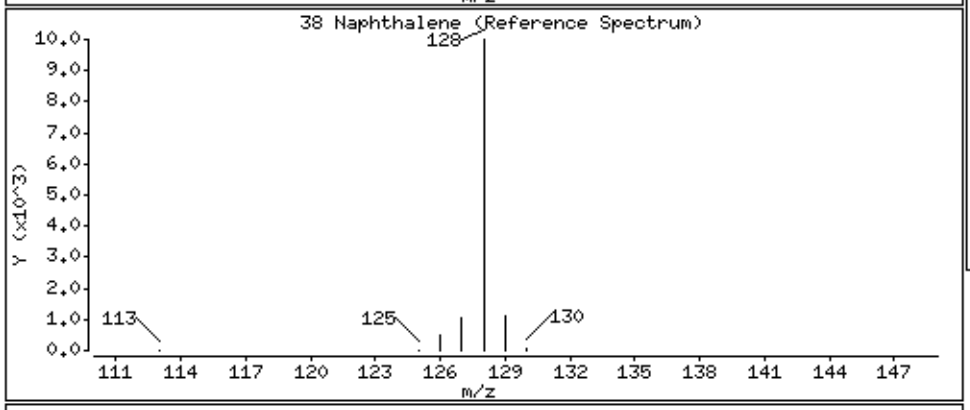
Column diameter: 0.32

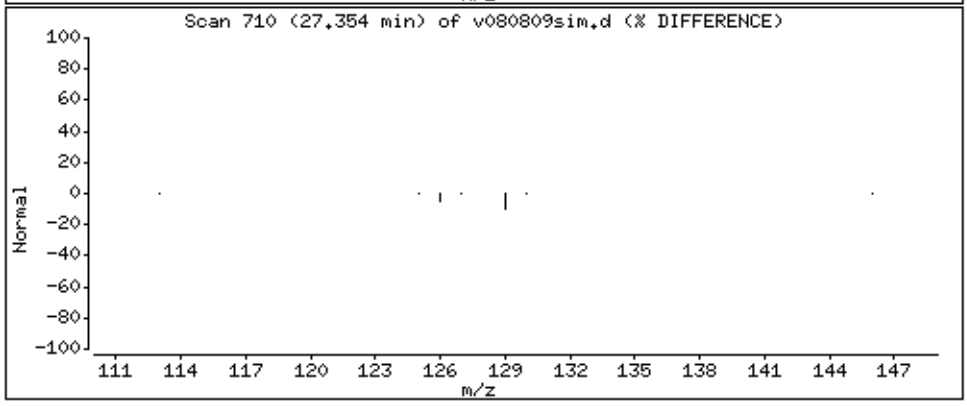
38 Naphthalene

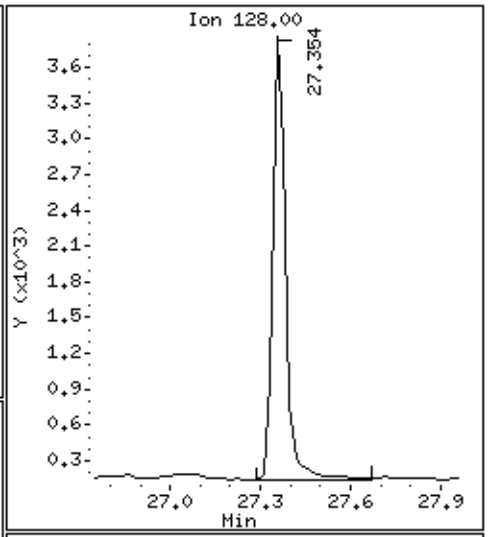
Concentration: 0.3050 PPBV

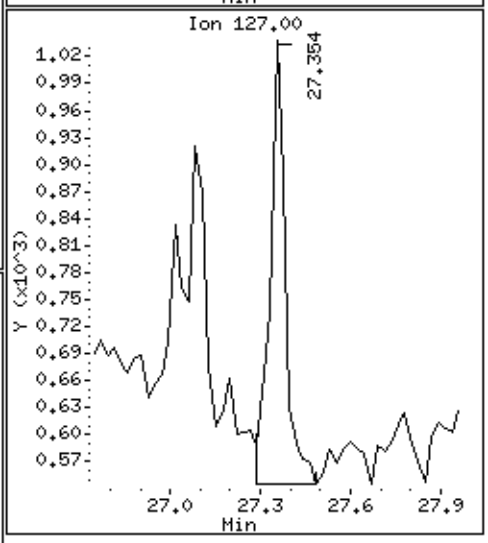












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAU-004_0817		
Lab ID:	1708091A-03A	**Date/Time Analyzed:**	8/8/17 03:11 PM
Date/Time Collected:	8/3/17 09:20 AM	**Dilution Factor:**	1.91
Media:	6 Liter Summa Canister	**Instrument/Filename:**	msdv.i / v080810sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.010	0.024	0.30	0.51
Ethyl Benzene	100-41-4	0.017	0.033	0.16	0.76
m,p-Xylene	108-38-3	0.015	0.033	0.33	2.5
Naphthalene	91-20-3	0.024	0.024	0.50	1.6
o-Xylene	95-47-6	0.019	0.033	0.16	1.1
Toluene	108-88-3	0.025	0.029	0.36	5.3
Total Xylenes	9999-9999-015	NA	D	0.50	3.6

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080810sim.d
Lab Smp Id: 1708091A-03A
Inj Date : 08-AUG-2017 15:11
Operator : sw Inst ID: msdv.i
Smp Info : 250mL #34342
Misc Info : 9.0"Hg ->5psi
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1
Dil Factor: 1.91000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane							CAS #: 74-97-5	
15.710	15.709 (1.000)	130	119261	5.00000			80.00- 120.00	100.00
15.710	15.709 (1.000)	128	92491				47.62- 107.62	77.55
15.710	15.709 (1.000)	49	233815				149.67- 209.67	196.05
17 Benzene							CAS #: 71-43-2	
16.532	16.531 (0.969)	78	10708	0.08291	0.1584		80.00- 120.00	100.00
16.532	16.531 (0.969)	77	3825				0.00- 52.91	35.73
$ 18 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
16.505	16.504 (1.051)	65	190953	5.11592	5.116		80.00- 120.00	100.00
16.505	16.504 (1.051)	67	93248				27.09- 87.09	48.83
* 20 1,4-Difluorobenzene							CAS #: 540-36-3	
17.054	17.053 (1.000)	114	485653	5.00000			80.00- 120.00	100.00
17.054	17.053 (1.000)	88	75062				0.00- 45.81	15.46
$ 22 Toluene-d8							CAS #: 2037-26-5	
19.568	19.567 (1.147)	98	431445	4.93921	4.939		80.00- 120.00	100.00
19.568	19.567 (1.147)	70	48590				0.00- 41.21	11.26

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.568	19.567 (1.147)	100	274336			34.67- 94.67	63.59
	23 Toluene					CAS #: 108-88-3		
	19.703	19.701 (1.155)	91	105044	0.73653	1.407	80.00- 120.00	100.00
	19.703	19.701 (1.155)	92	60769			29.69- 89.69	57.85
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.994	21.992 (1.000)	117	401289	5.00000		80.00- 120.00	100.00
	21.966	21.965 (1.000)	82	209349			22.57- 82.57	52.17
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.104	22.102 (1.005)	106	4999	0.09136	0.1745	80.00- 120.00	100.00
	22.104	22.102 (1.005)	91	16285			275.83- 335.83	325.77
	31 m,p-Xylene					CAS #: 108-38-3		
	22.268	22.267 (1.012)	106	21074	0.30675	0.5859	80.00- 120.00	100.00
	22.241	22.267 (1.011)	91	43873			169.69- 229.69	208.18
	32 o-Xylene					CAS #: 95-47-6		
	22.790	22.789 (1.036)	106	8040	0.13378	0.2555	80.00- 120.00	100.00
	22.790	22.789 (1.036)	91	17637			180.67- 240.67	219.34
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.503	23.502 (1.069)	174	220112	4.87347	4.873	80.00- 120.00	100.00
	23.503	23.502 (1.069)	95	252388			89.82- 149.82	114.66
	23.503	23.502 (1.069)	176	215337			68.37- 128.37	97.83
	38 Naphthalene					CAS #: 91-20-3		
	27.350	27.352 (1.244)	128	11916	0.16257	0.3105	80.00- 120.00	100.00
	27.350	27.352 (1.244)	127	1884			0.00- 42.11	15.81
M	39 Total Xylene					CAS #: 1330-20-7		
				29115	0.44053	0.8414		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080810sim.d
Lab Smp Id: 1708091A-03A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 9.0"Hg ->5psi

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	119261	-2.36
20 1,4-Difluorobenze	494579	296747	692411	485653	-1.80
28 Chlorobenzene-d5	416996	250198	583794	401289	-3.77

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.01
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.01
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 09:39

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091A-03A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 9.0"Hg ->5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.116	102.32	70-130
$ 22 Toluene-d8	5.000	4.939	98.78	70-130
$ 33 4-Bromofluorobenze	5.000	4.873	97.47	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

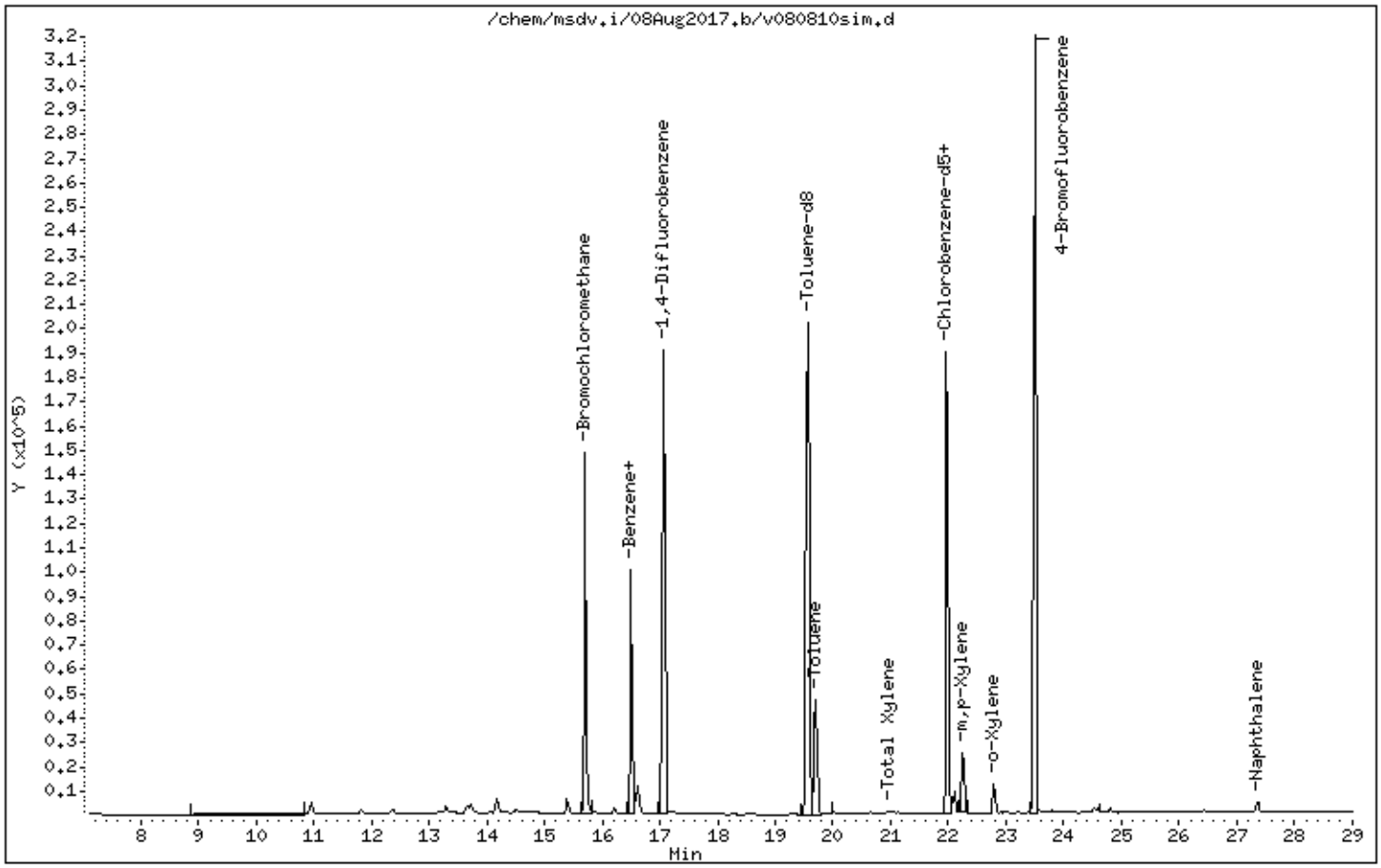
Instrument: msdv.i

Sample Info: 250mL #34342

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msdv.i

Sample Info: 250mL #34342

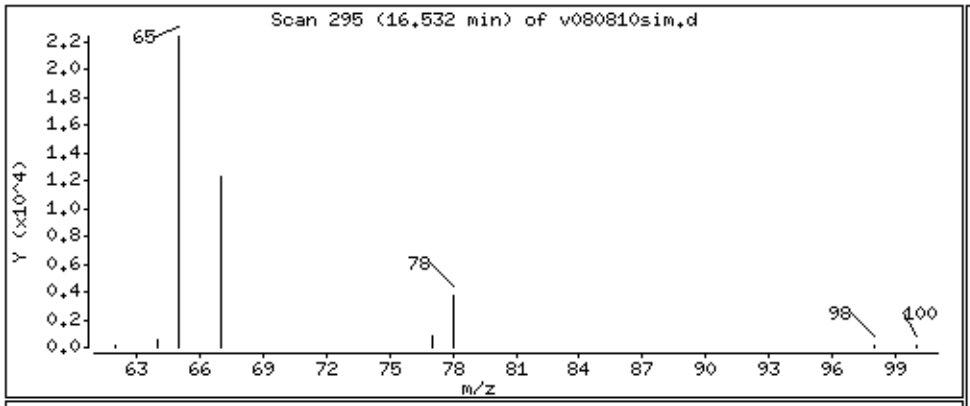
Operator: sw

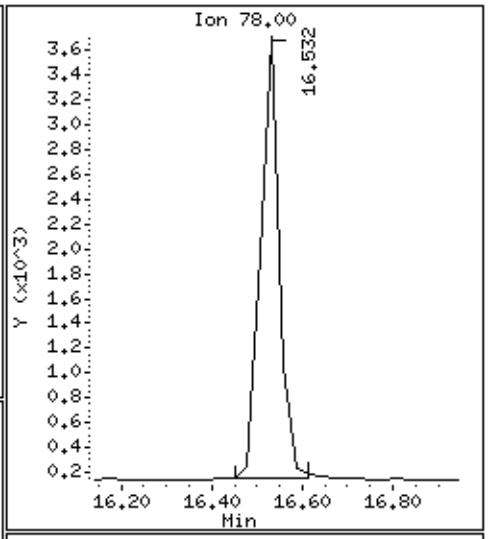
Column phase: RTX-624

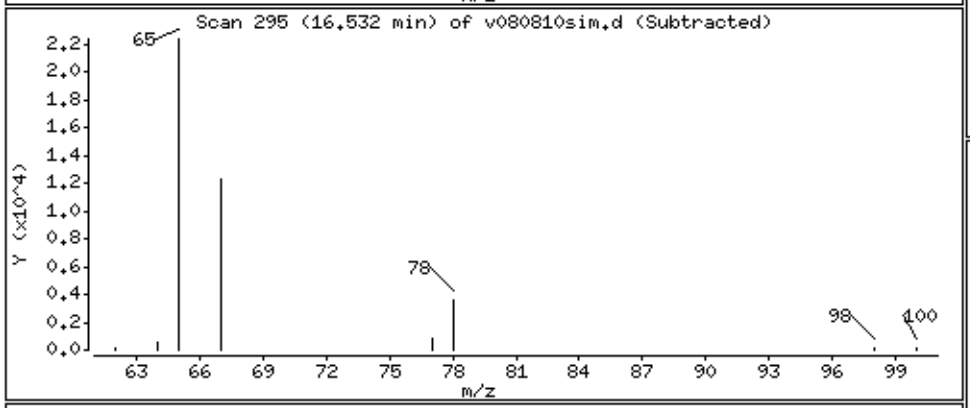
Column diameter: 0.32

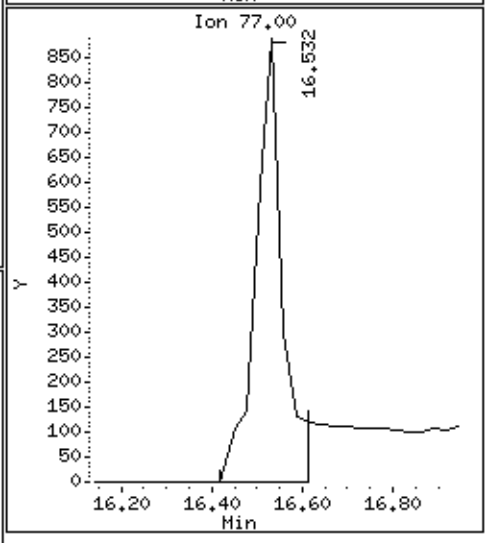
17 Benzene

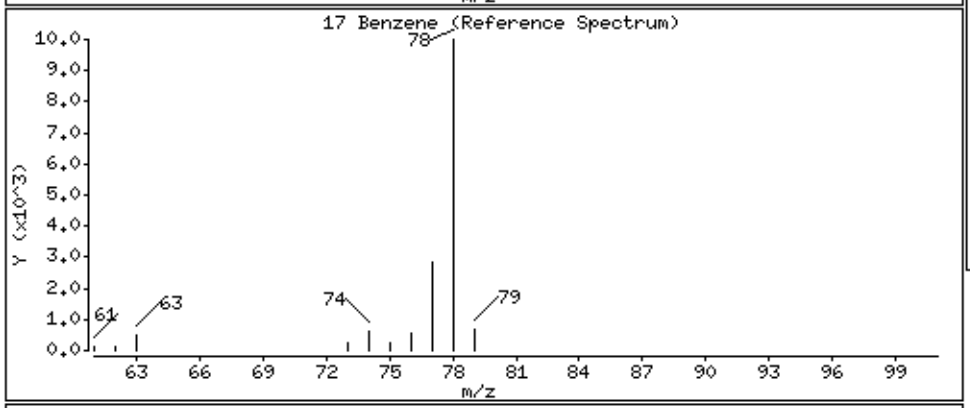
Concentration: 0.1584 PPBV

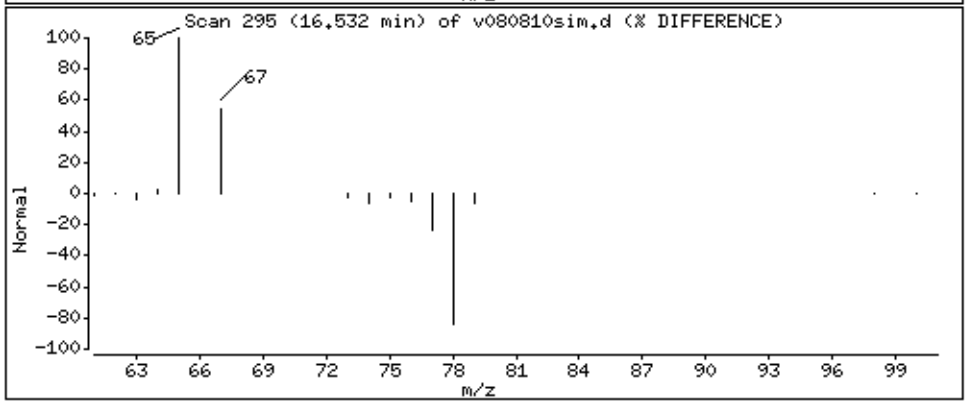












Data File: /chem/msdv.i/08Aug2017.b/v080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msdv.i

Sample Info: 250mL #34342

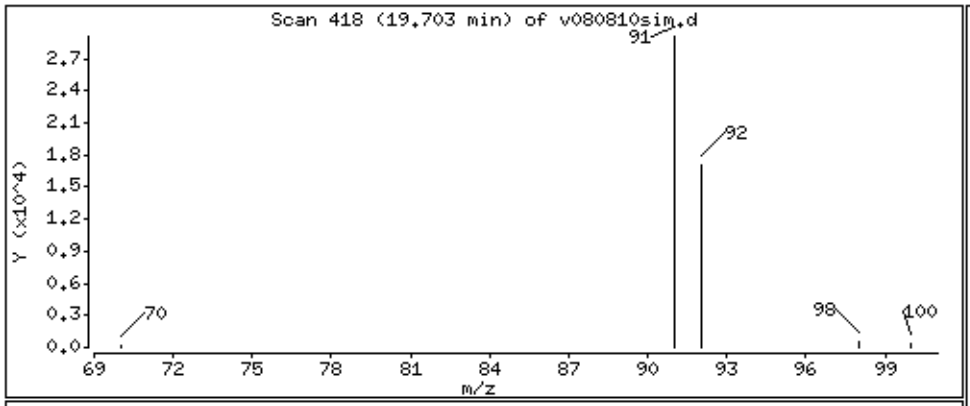
Operator: sw

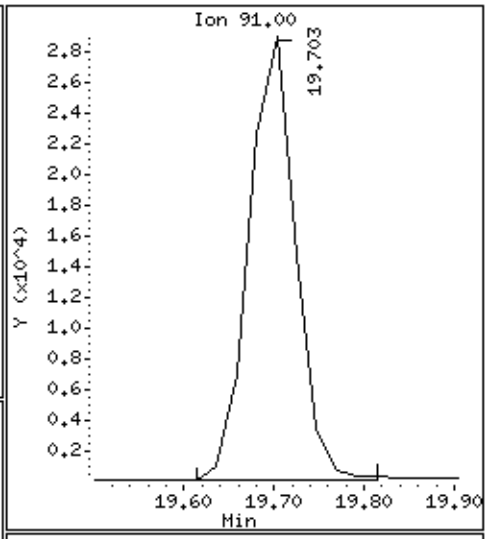
Column phase: RTX-624

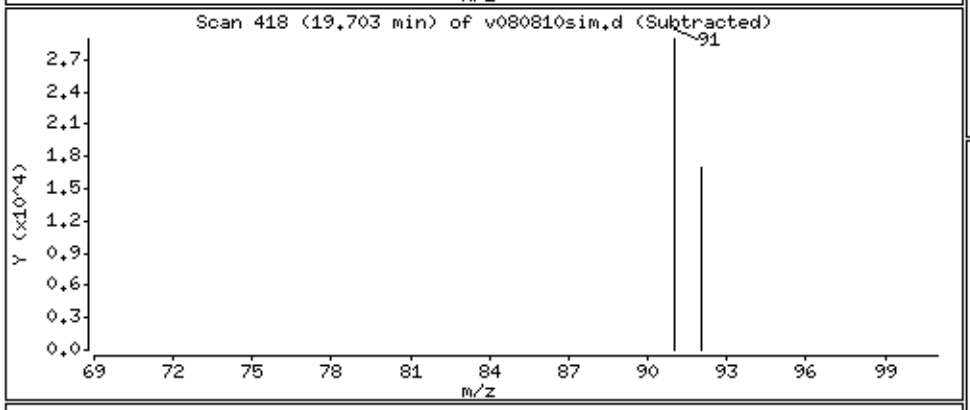
Column diameter: 0.32

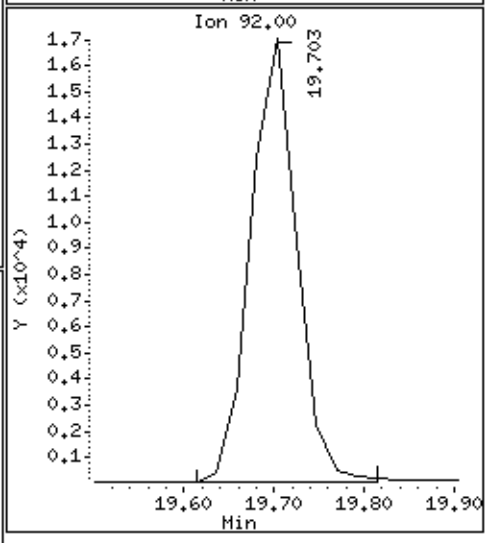
23 Toluene

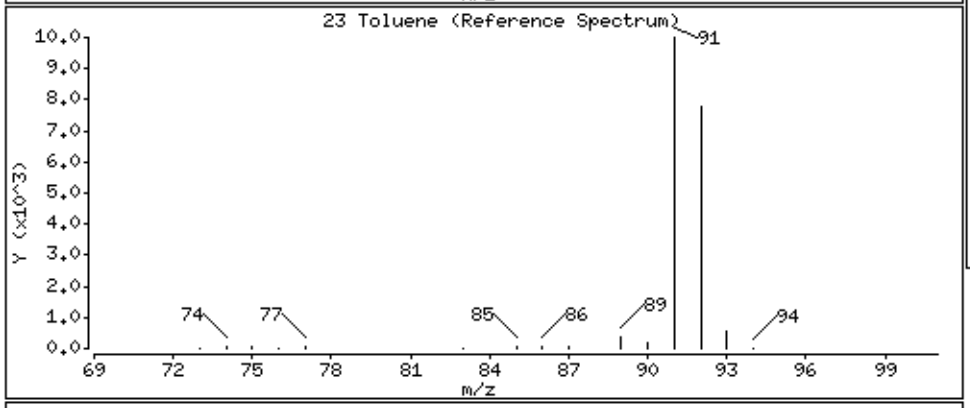
Concentration: 1.407 PPBV

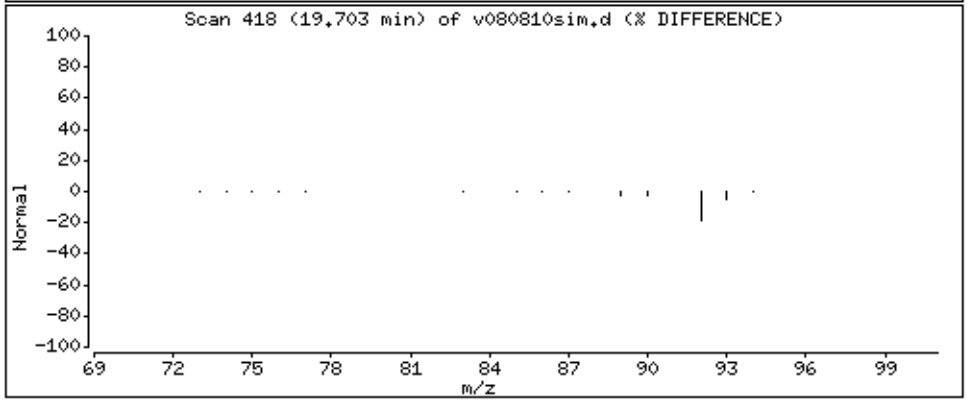












Data File: /chem/msdv.i/08Aug2017.b/v080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msdv.i

Sample Info: 250mL #34342

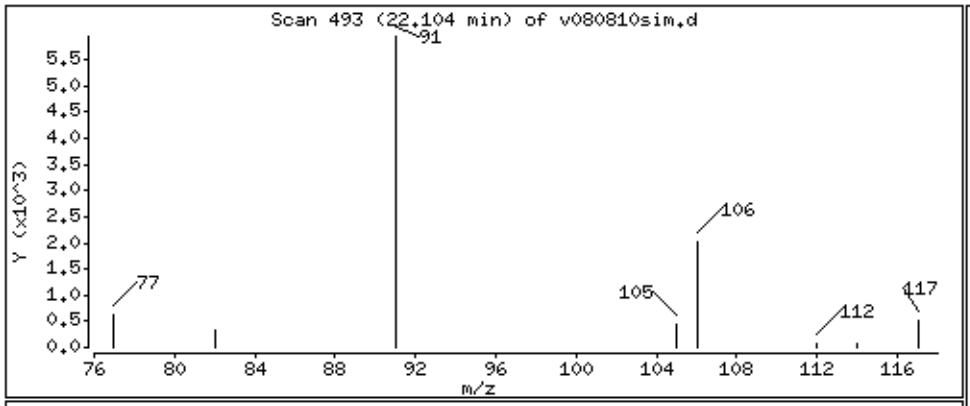
Operator: sw

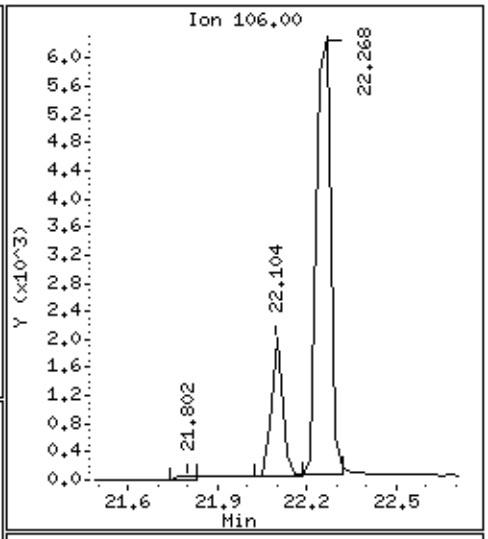
Column phase: RTX-624

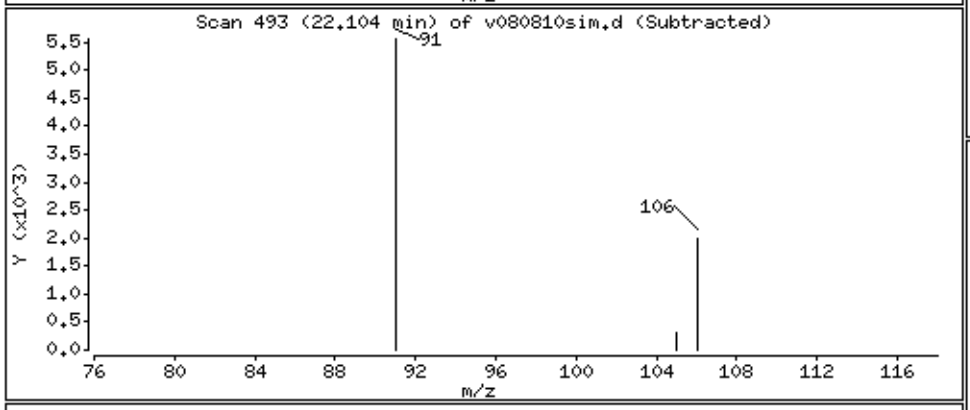
Column diameter: 0.32

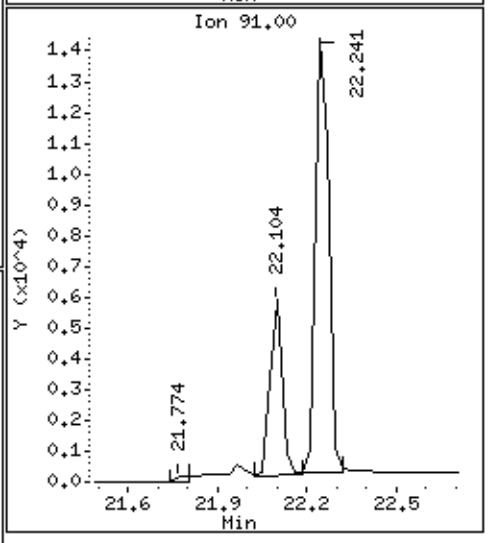
30 Ethyl Benzene

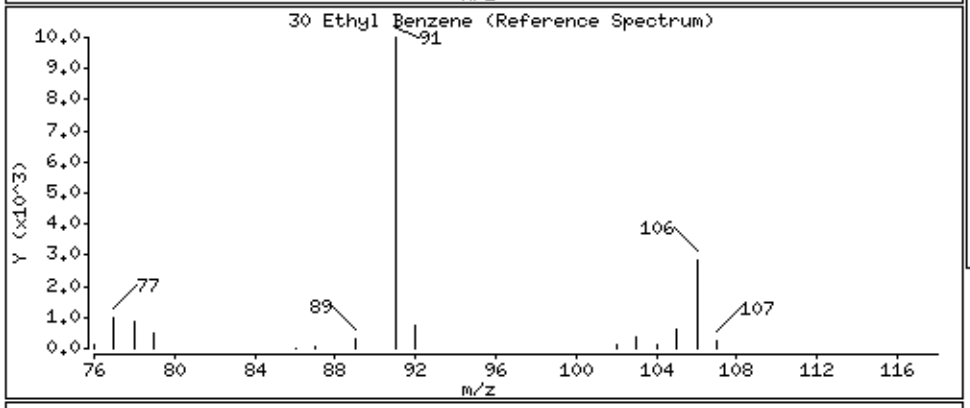
Concentration: 0.1745 PPBV

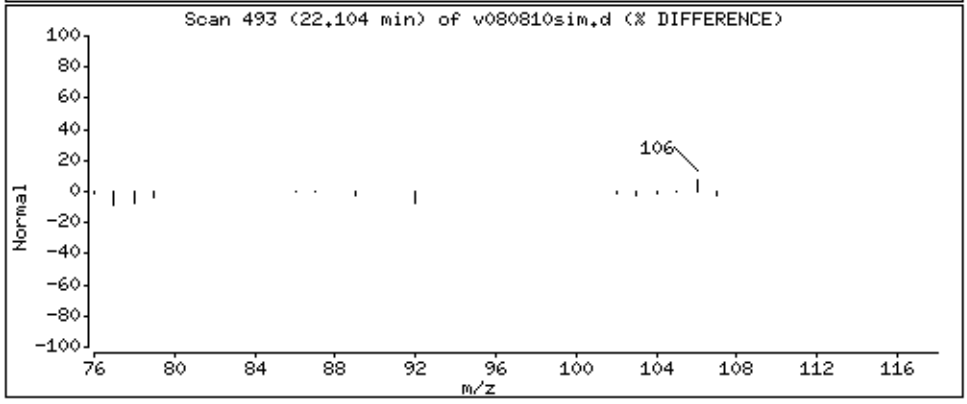












Data File: /chem/msdv.i/08Aug2017.b/v080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msdv.i

Sample Info: 250mL #34342

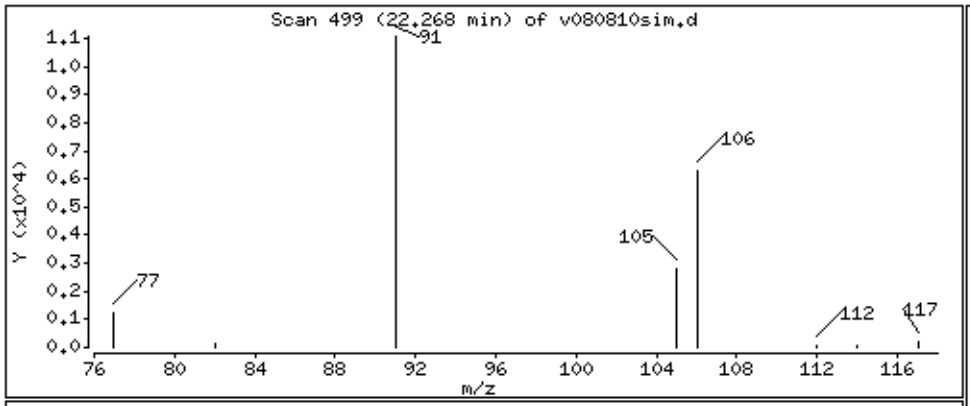
Operator: sw

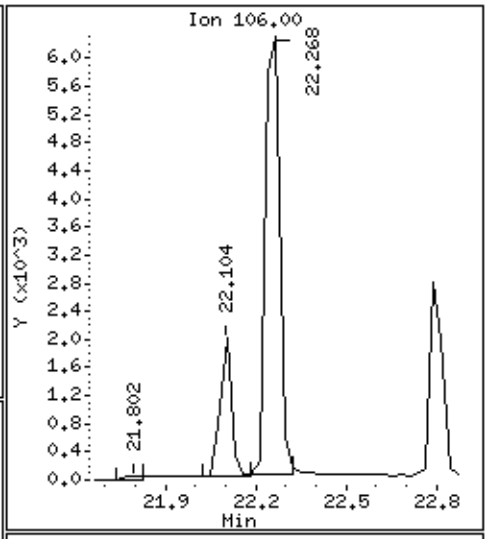
Column phase: RTX-624

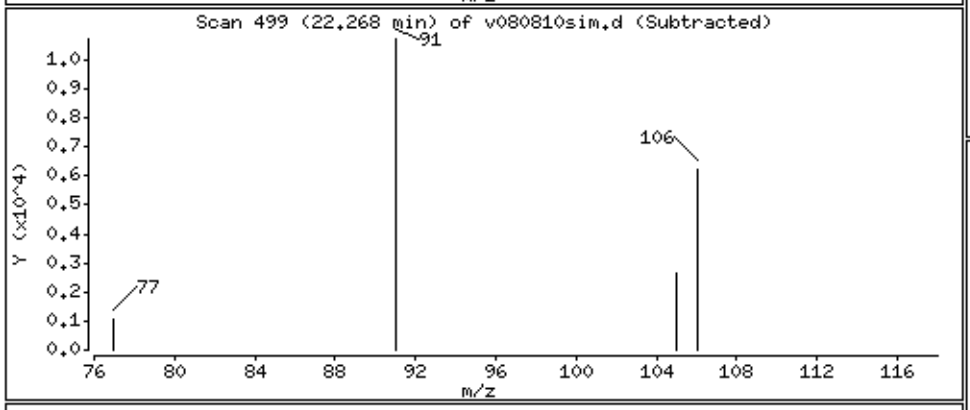
Column diameter: 0.32

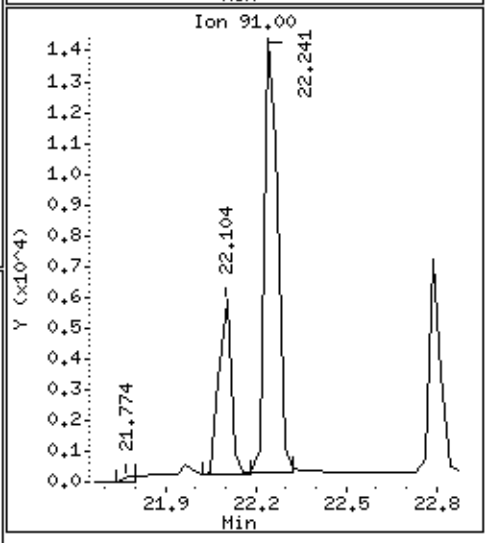
31 m,p-Xylene

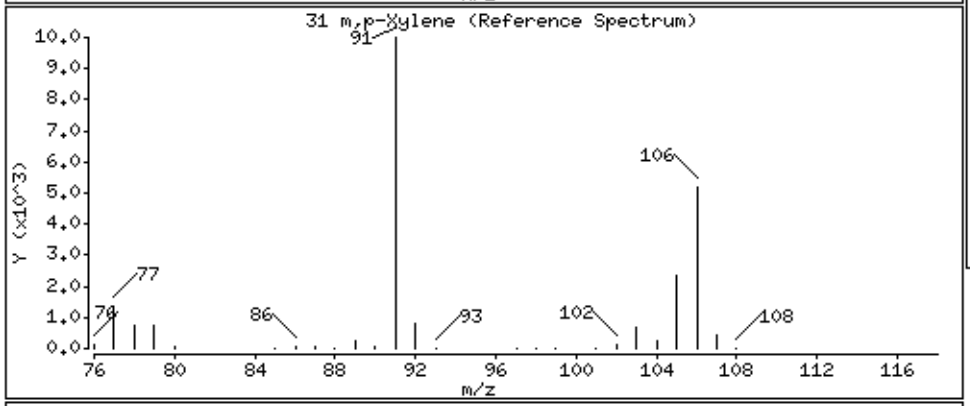
Concentration: 0.5859 PPBV

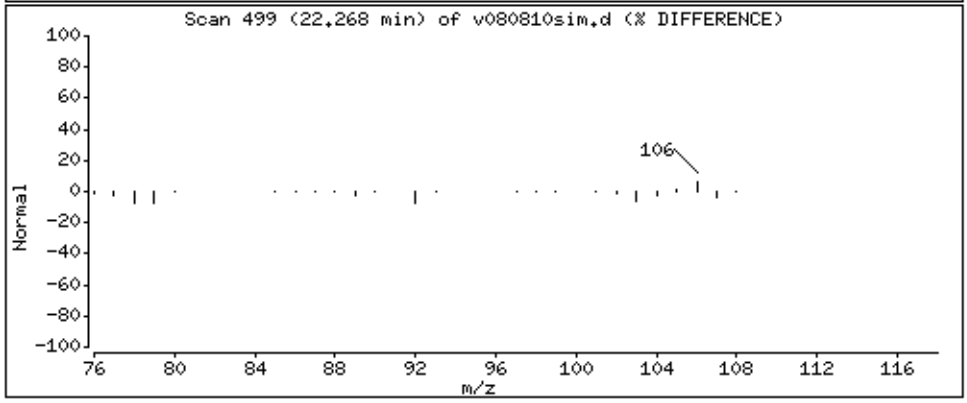












Data File: /chem/msdv.i/08Aug2017.b/v080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msdv.i

Sample Info: 250mL #34342

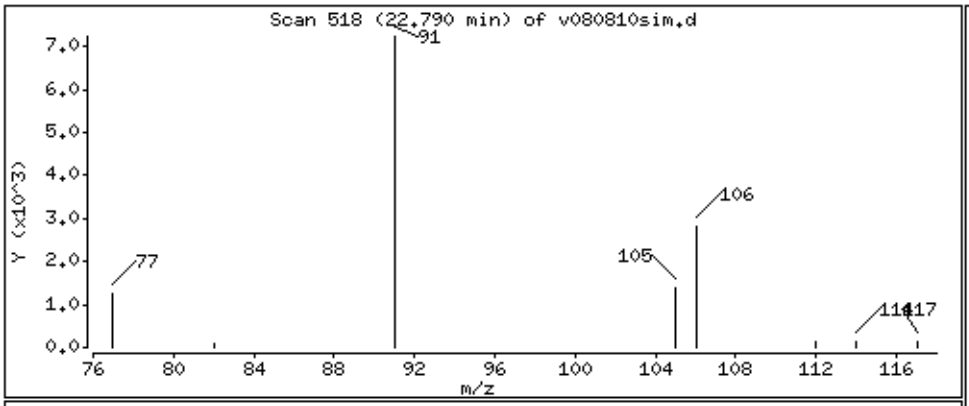
Operator: sw

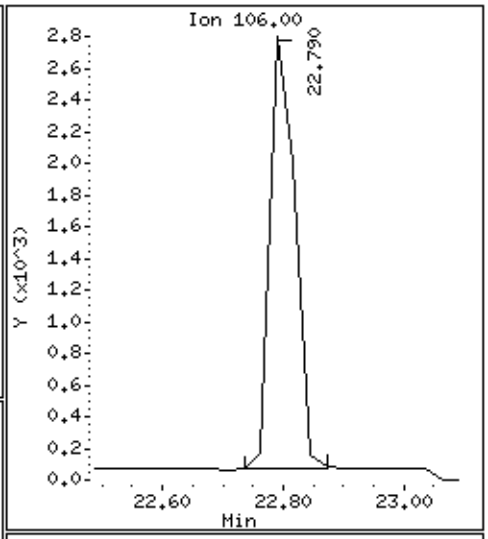
Column phase: RTX-624

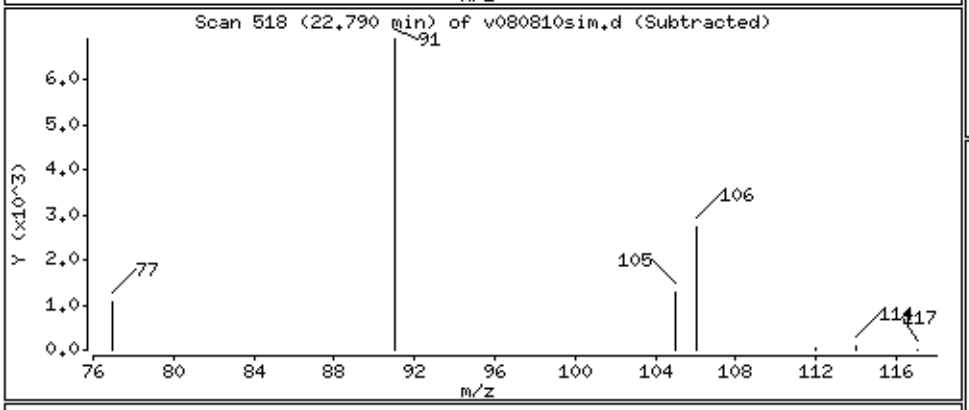
Column diameter: 0.32

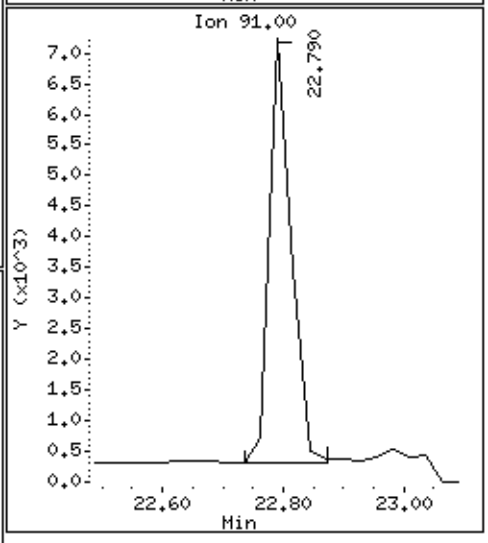
32 o-Xylene

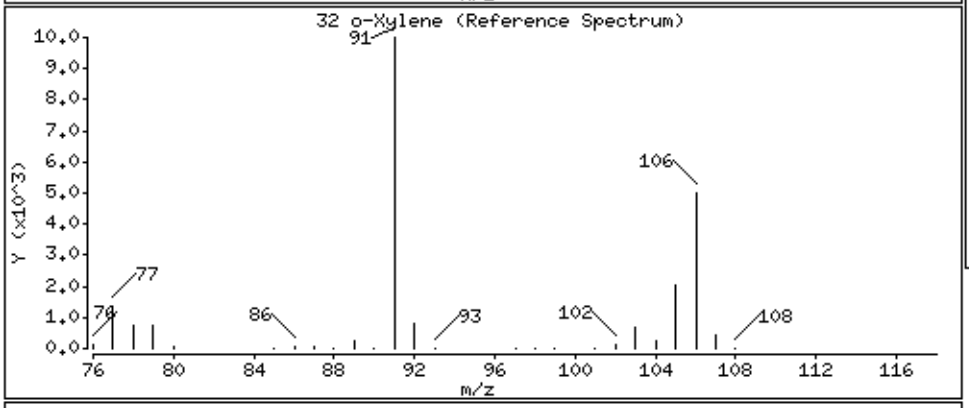
Concentration: 0.2555 PPBV

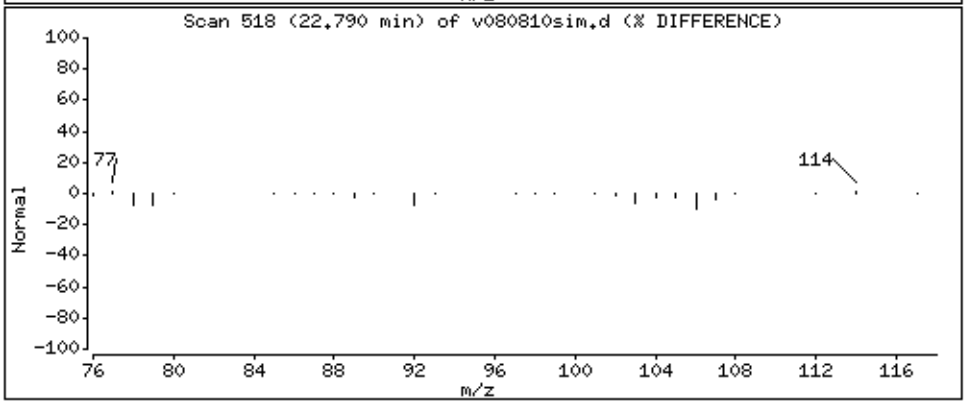












Data File: /chem/msdv.i/08Aug2017.b/v080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msdv.i

Sample Info: 250mL #34342

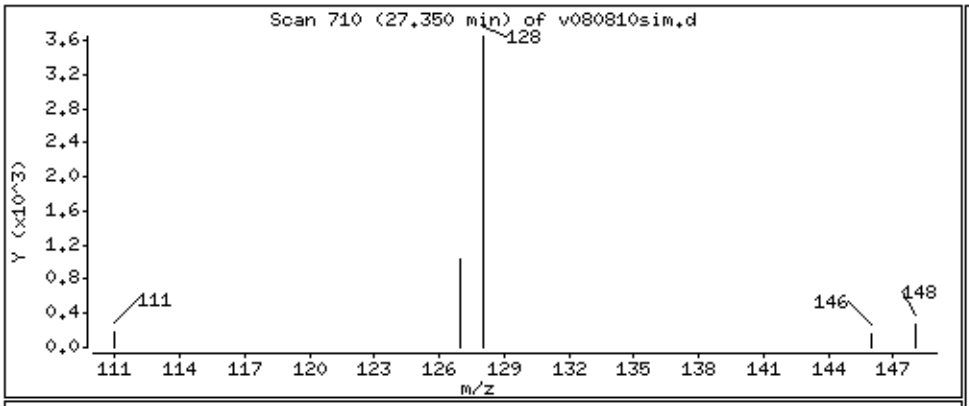
Operator: sw

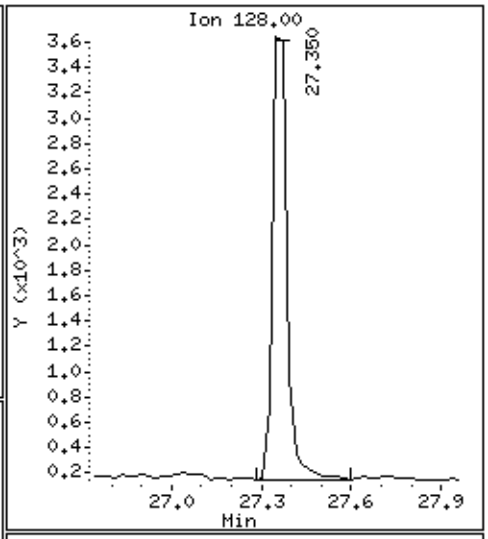
Column phase: RTX-624

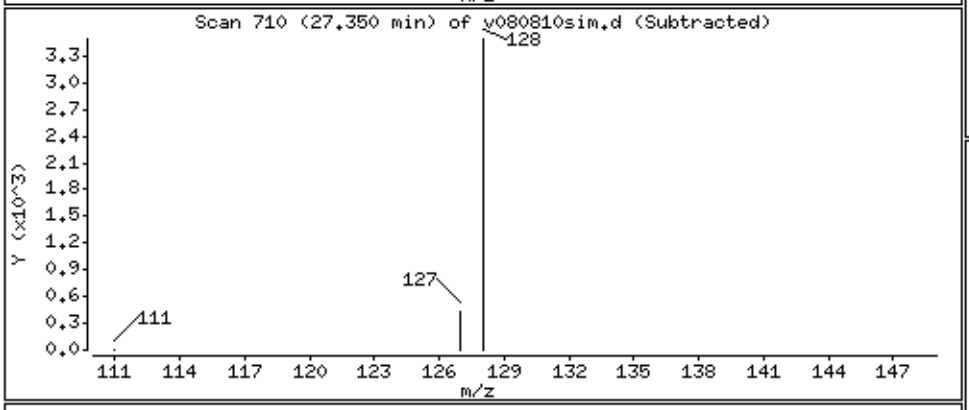
Column diameter: 0.32

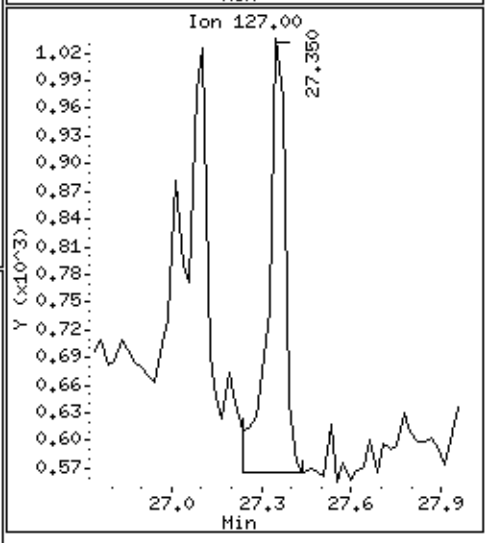
38 Naphthalene

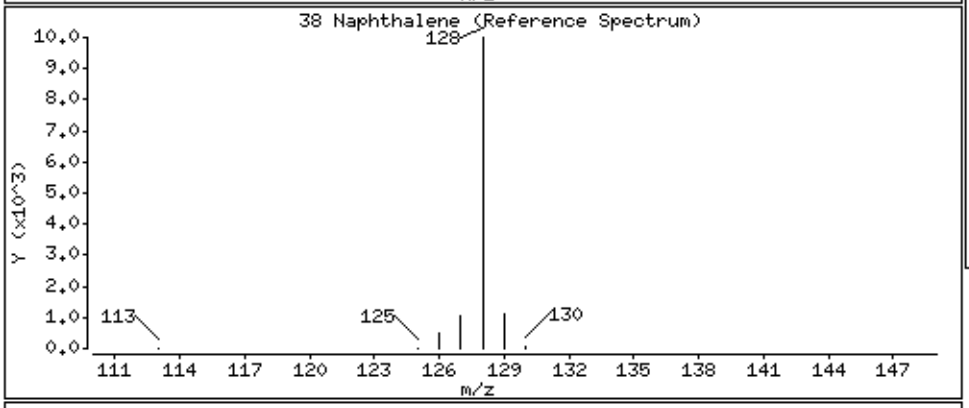
Concentration: 0.3105 PPBV

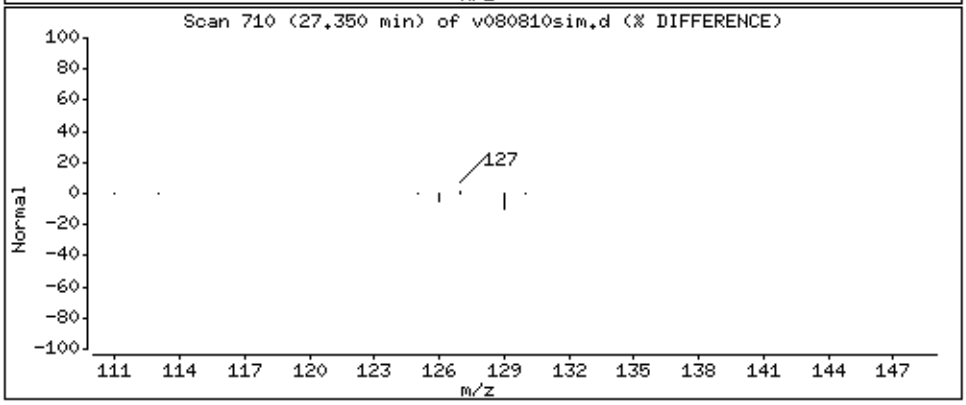












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAD-107_0817		
Lab ID:	1708091A-06A	**Date/Time Analyzed:**	8/8/17 03:55 PM
Date/Time Collected:	8/3/17 11:24 AM	**Dilution Factor:**	1.75
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msdv.i / v080811sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0092	0.022	0.28	0.70
Ethyl Benzene	100-41-4	0.016	0.030	0.15	0.44
m,p-Xylene	108-38-3	0.014	0.030	0.30	1.3
Naphthalene	91-20-3	0.022	0.022	0.46	2.0
o-Xylene	95-47-6	0.018	0.030	0.15	0.56
Toluene	108-88-3	0.022	0.026	0.33	3.7
Total Xylenes	9999-9999-015	NA	D	0.46	1.9

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080811sim.d
Lab Smp Id: 1708091A-06A
Inj Date : 08-AUG-2017 15:55
Operator : gh Inst ID: msdv.i
Smp Info : 250mL #N0428
Misc Info : 7.0"Hg ->5psi
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1
Dil Factor: 1.75000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
15.710	15.709 (1.000)	130	116277	5.00000			80.00- 120.00	100.00
15.710	15.709 (1.000)	128	90179				47.62- 107.62	77.56
15.710	15.709 (1.000)	49	227990				149.67- 209.67	196.07
17 Benzene						CAS #: 71-43-2		
16.532	16.531 (0.969)	78	15842	0.12432	0.2176		80.00- 120.00	100.00
16.532	16.531 (0.969)	77	5239				0.00- 52.91	33.07
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.505	16.504 (1.051)	65	186464	5.12385	5.124		80.00- 120.00	100.00
16.505	16.504 (1.051)	67	91647				27.09- 87.09	49.15
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.054	17.053 (1.000)	114	479152	5.00000			80.00- 120.00	100.00
17.054	17.053 (1.000)	88	73699				0.00- 45.81	15.38
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.568	19.567 (1.147)	98	427567	4.96121	4.961		80.00- 120.00	100.00
19.568	19.567 (1.147)	70	48432				0.00- 41.21	11.33

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.568	19.567 (1.147)	100	273310			34.67- 94.67	63.92
	23 Toluene					CAS #: 108-88-3		
	19.703	19.701 (1.155)	91	80002	0.56855	0.9950	80.00- 120.00	100.00
	19.703	19.701 (1.155)	92	46230			29.69- 89.69	57.79
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.994	21.992 (1.000)	117	397931	5.00000		80.00- 120.00	100.00
	21.966	21.965 (1.000)	82	209165			22.57- 82.57	52.56
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.104	22.102 (1.005)	106	3133	0.05774	0.1010	80.00- 120.00	100.00
	22.104	22.102 (1.005)	91	9630			275.83- 335.83	307.36
	31 m,p-Xylene					CAS #: 108-38-3		
	22.268	22.267 (1.012)	106	11494	0.16872	0.2952	80.00- 120.00	100.00
	22.241	22.267 (1.011)	91	23566			169.69- 229.69	205.03
	32 o-Xylene					CAS #: 95-47-6		
	22.790	22.789 (1.036)	106	4429	0.07431	0.1300	80.00- 120.00	100.00
	22.790	22.789 (1.036)	91	9904			180.67- 240.67	223.61
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.503	23.502 (1.069)	174	214751	4.79490	4.795	80.00- 120.00	100.00
	23.503	23.502 (1.069)	95	249479			89.82- 149.82	116.17
	23.503	23.502 (1.069)	176	209612			68.37- 128.37	97.61
	38 Naphthalene					CAS #: 91-20-3		
	27.350	27.352 (1.244)	128	16056	0.22089	0.3866	80.00- 120.00	100.00
	27.350	27.352 (1.244)	127	1861			0.00- 42.11	11.59
M	39 Total Xylene					CAS #: 1330-20-7		
				15923	0.24303	0.4253		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080811sim.d
Lab Smp Id: 1708091A-06A
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 7.0"Hg ->5psi

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	116277	-4.81
20 1,4-Difluorobenze	494579	296747	692411	479152	-3.12
28 Chlorobenzene-d5	416996	250198	583794	397931	-4.57

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.01
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.01
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091A-06A
Level: LOW Operator: gh
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 7.0"Hg ->5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.124	102.48	70-130
$ 22 Toluene-d8	5.000	4.961	99.22	70-130
$ 33 4-Bromofluorobenze	5.000	4.795	95.90	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080811sim.d

Date : 08-AUG-2017 15:55

Client ID:

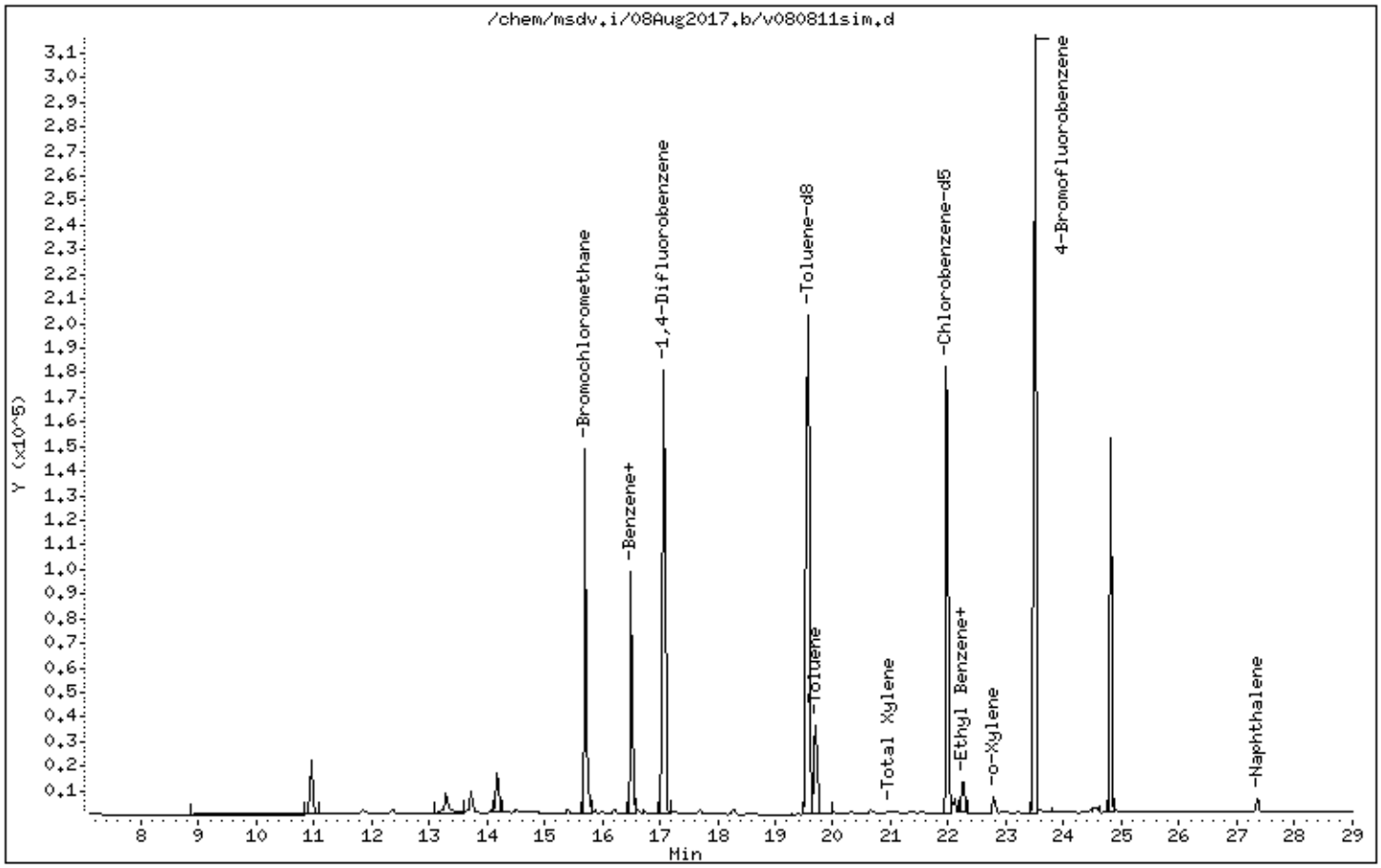
Instrument: msdv.i

Sample Info: 250mL #N0428

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080811sim.d

Date : 08-AUG-2017 15:55

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N0428

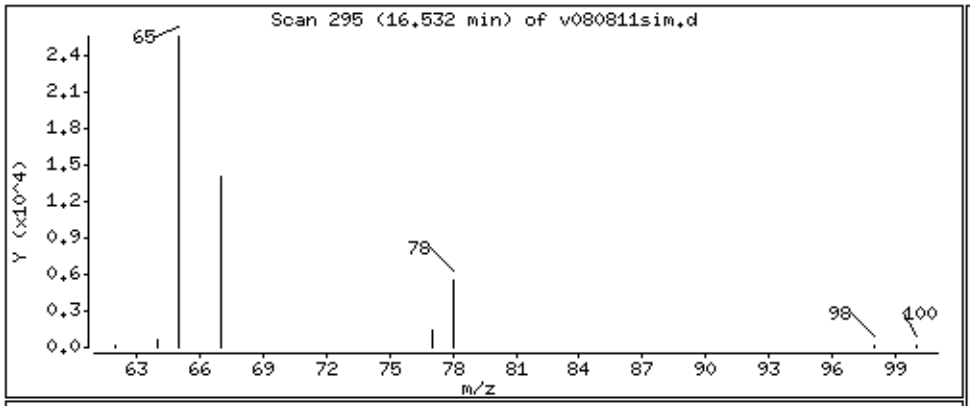
Operator: gh

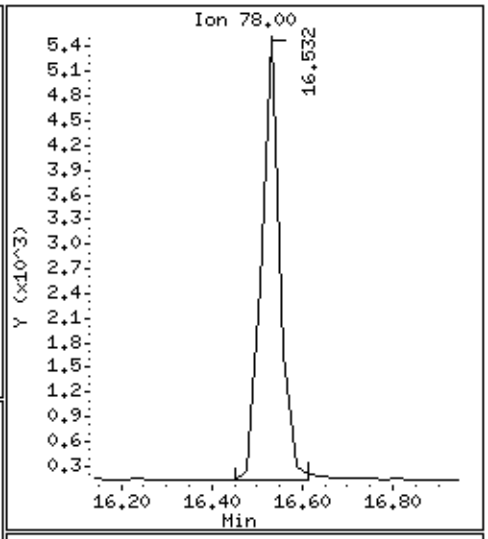
Column phase: RTX-624

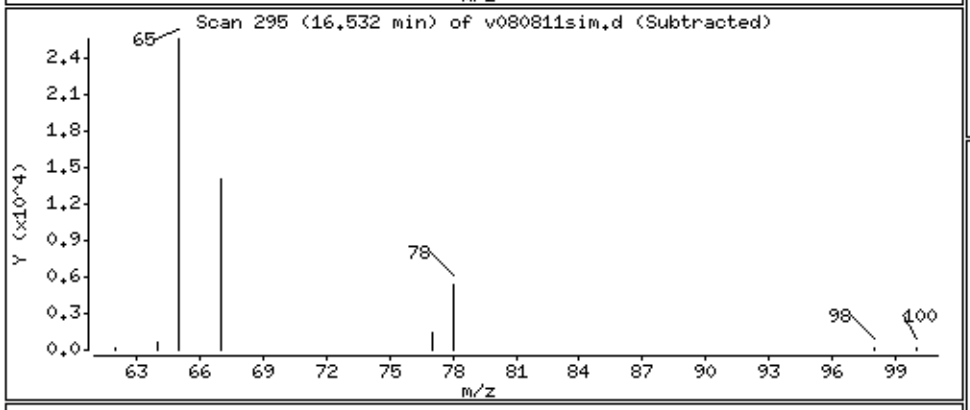
Column diameter: 0.32

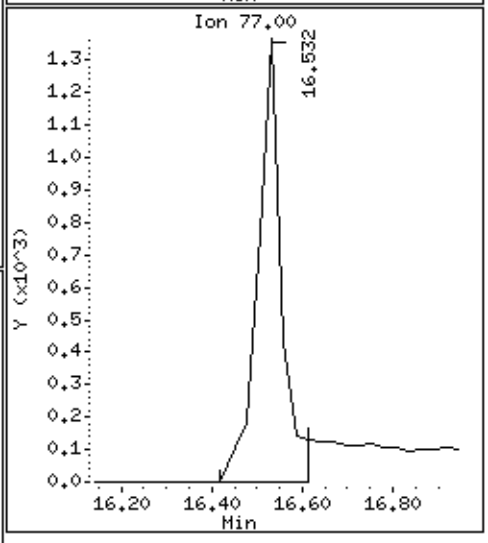
17 Benzene

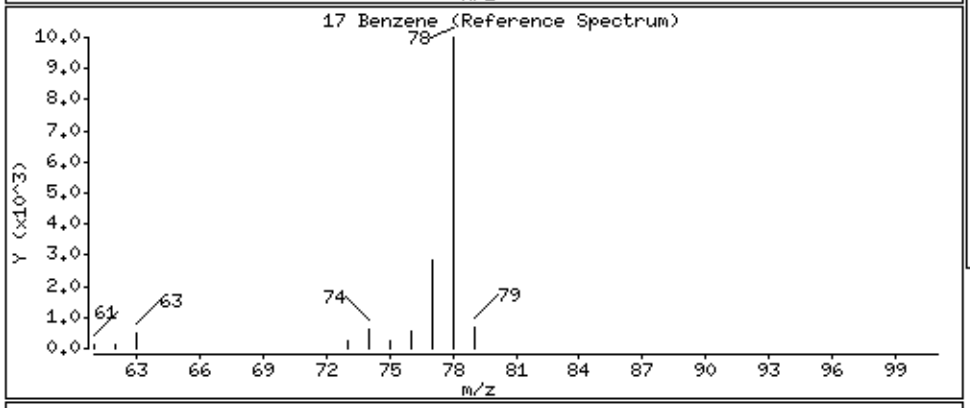
Concentration: 0.2176 PPBV

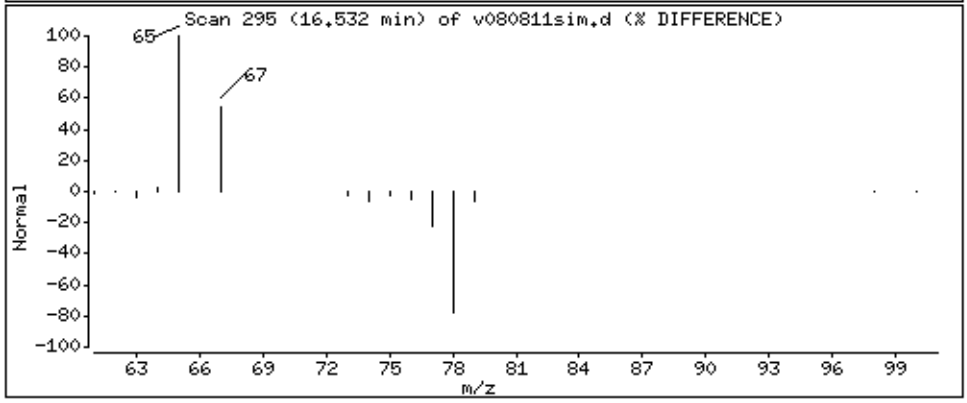












Data File: /chem/msdv.i/08Aug2017.b/v080811sim.d

Date : 08-AUG-2017 15:55

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N0428

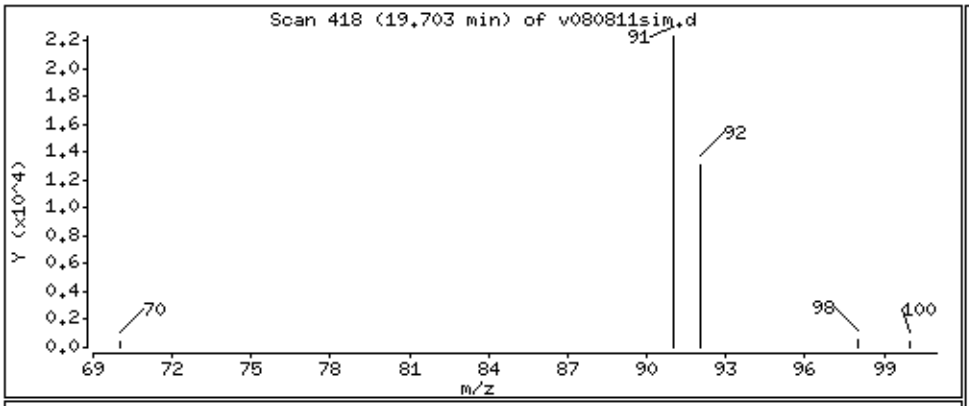
Operator: gh

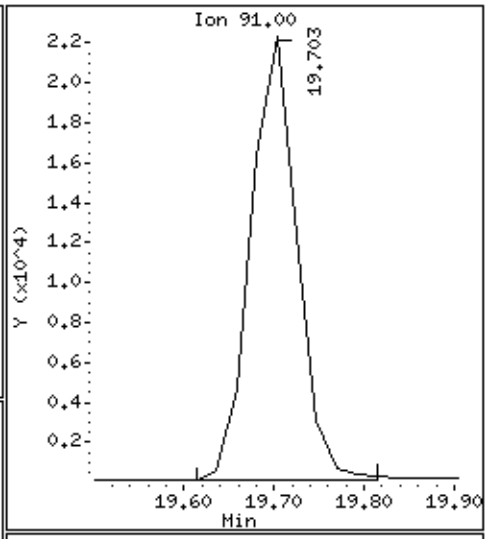
Column phase: RTX-624

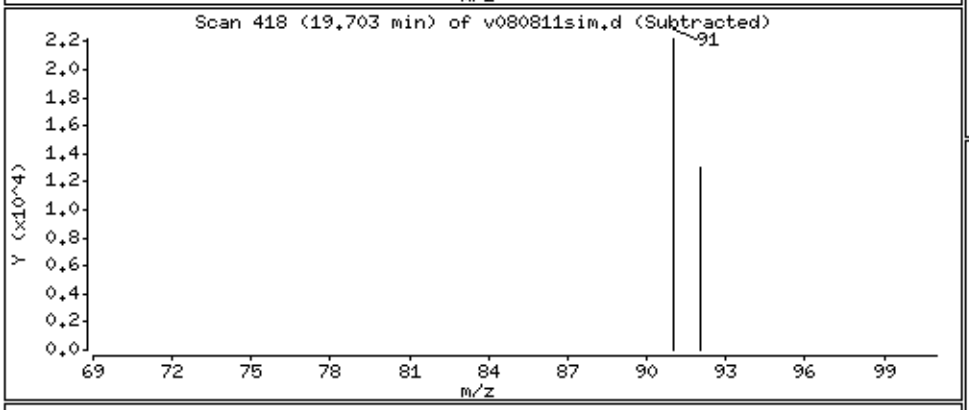
Column diameter: 0.32

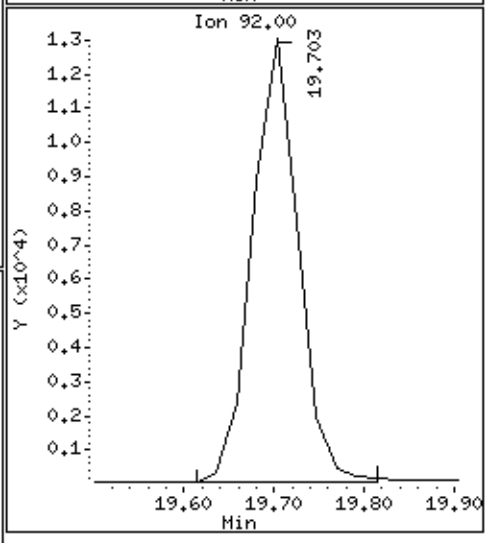
23 Toluene

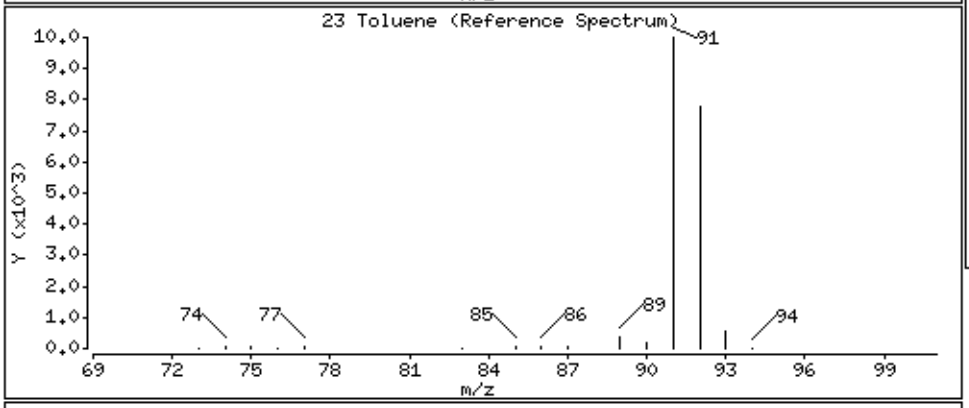
Concentration: 0.9950 PPBV

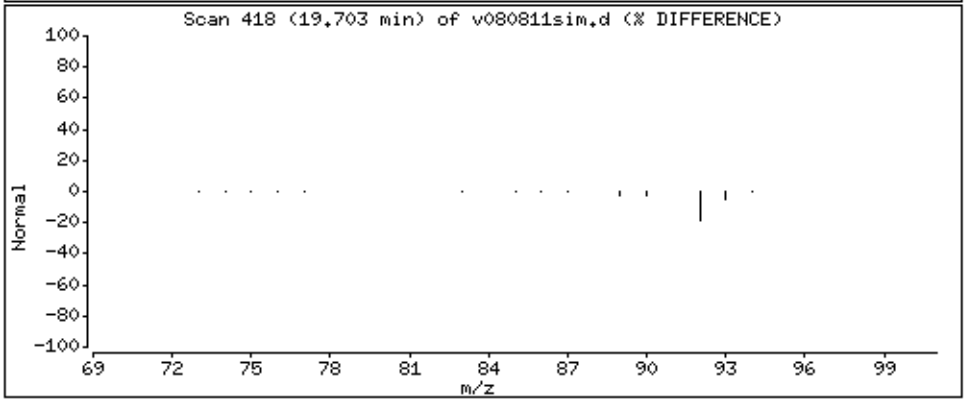












Data File: /chem/msdv.i/08Aug2017.b/v080811sim.d

Date : 08-AUG-2017 15:55

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N0428

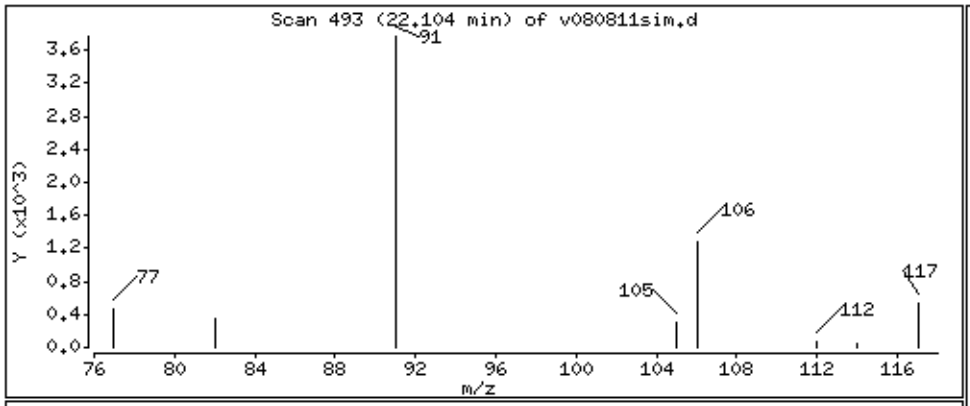
Operator: gh

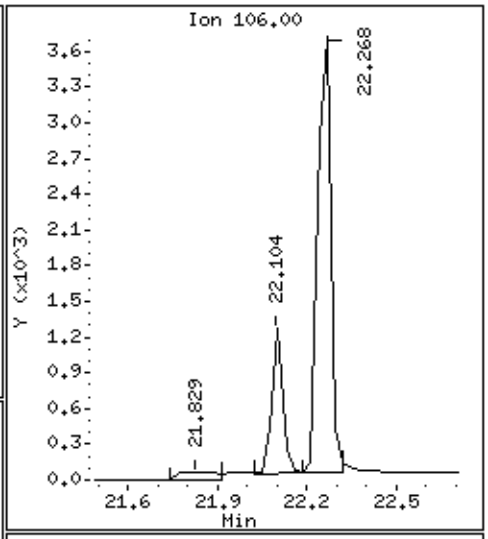
Column phase: RTX-624

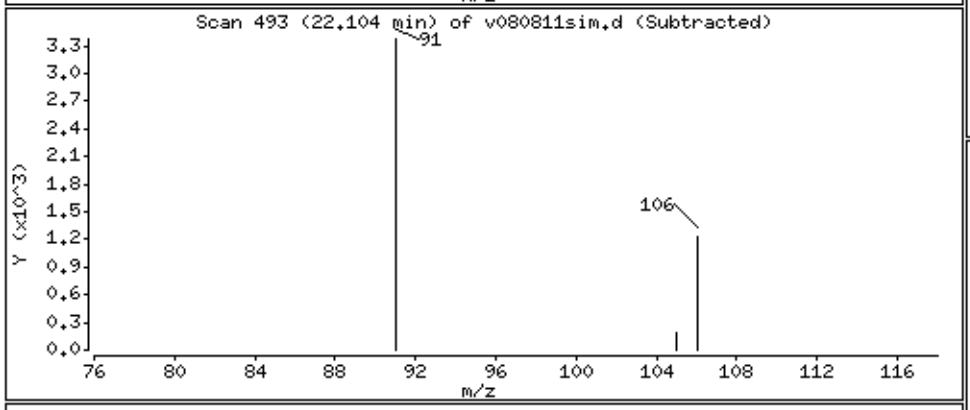
Column diameter: 0.32

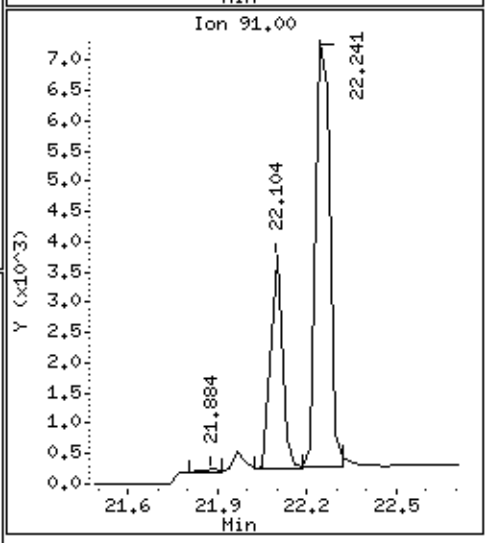
30 Ethyl Benzene

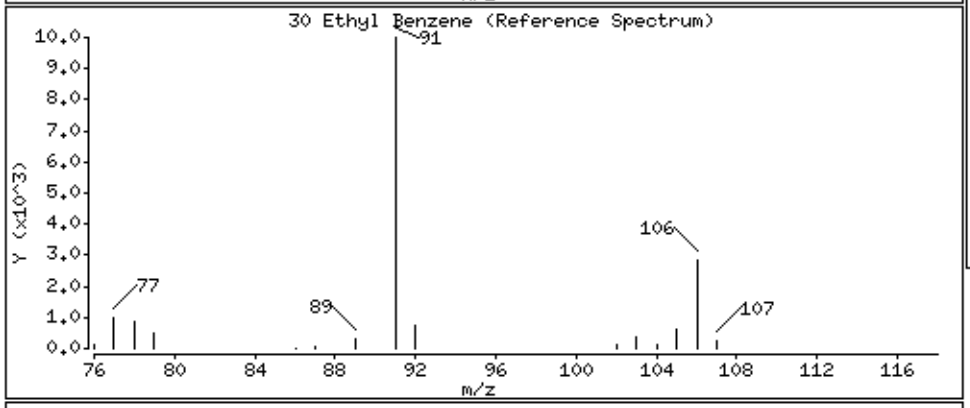
Concentration: 0.1010 PPBV

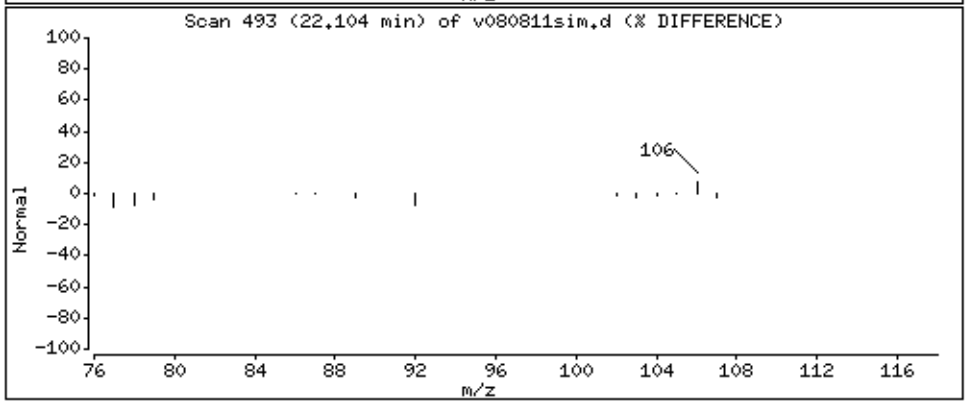












Data File: /chem/msdv.i/08Aug2017.b/v080811sim.d

Date : 08-AUG-2017 15:55

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N0428

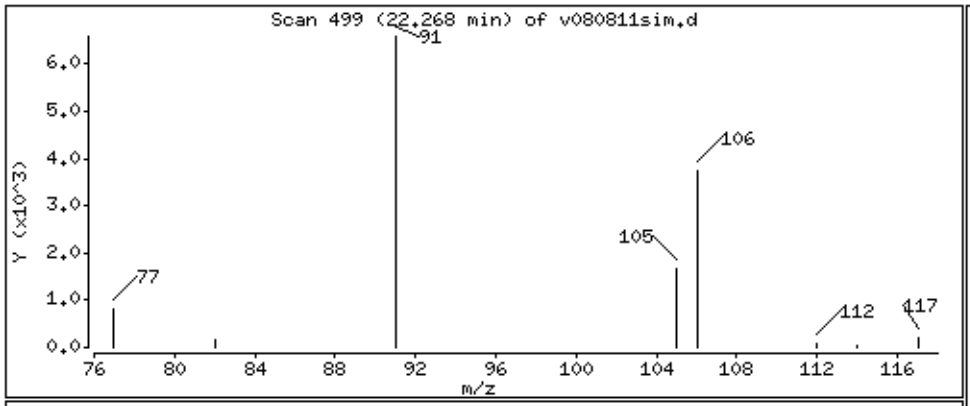
Operator: gh

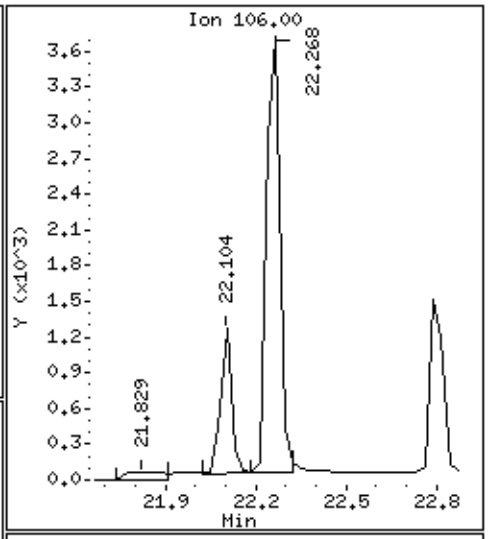
Column phase: RTX-624

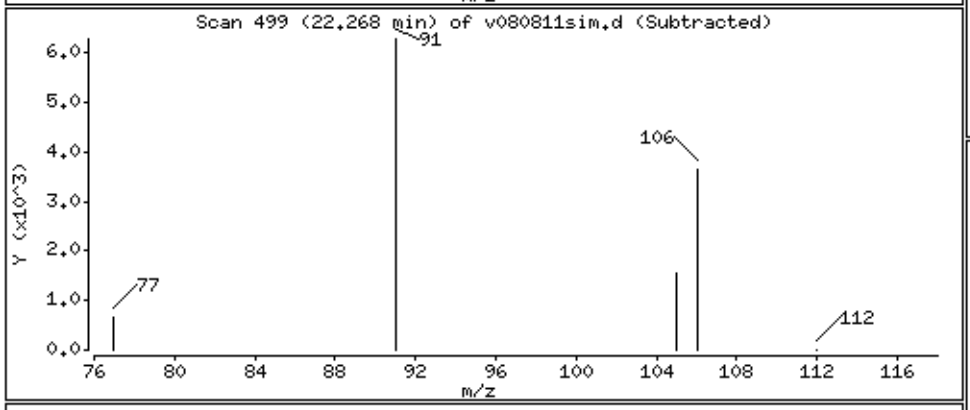
Column diameter: 0.32

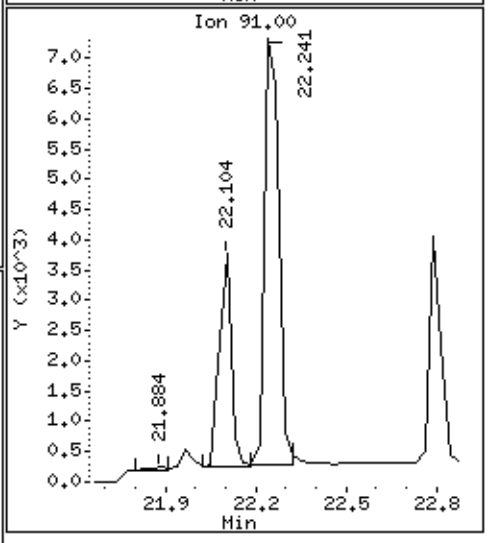
31 m,p-Xylene

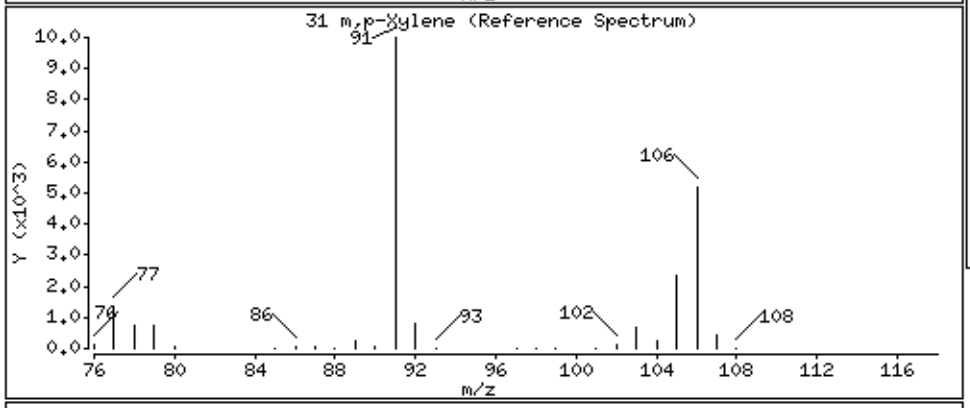
Concentration: 0.2952 PPBV

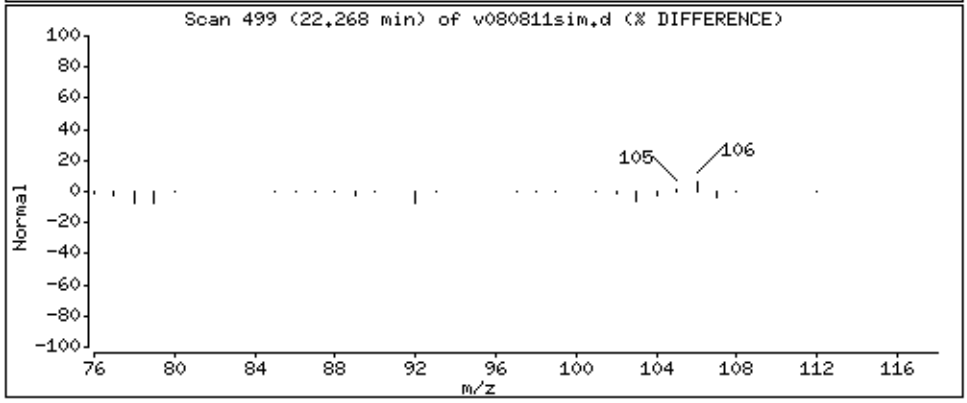












Data File: /chem/msdv.i/08Aug2017.b/v080811sim.d

Date : 08-AUG-2017 15:55

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N0428

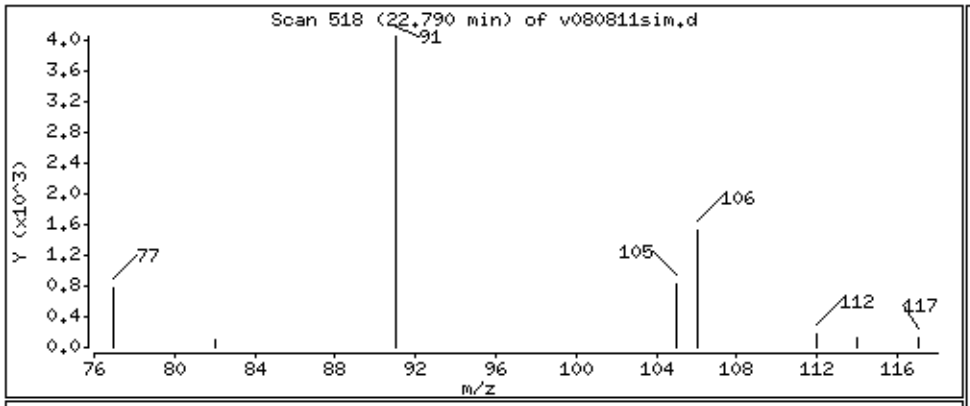
Operator: gh

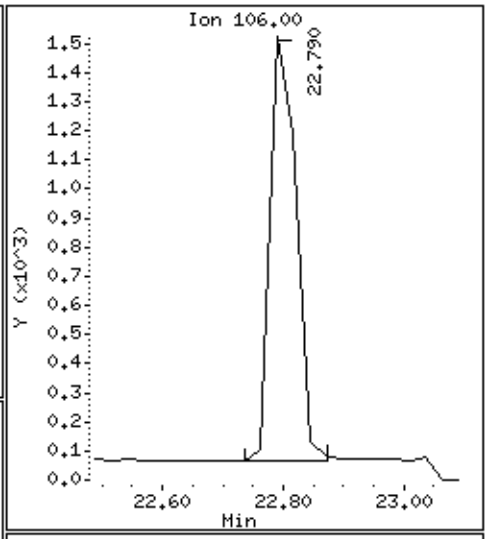
Column phase: RTX-624

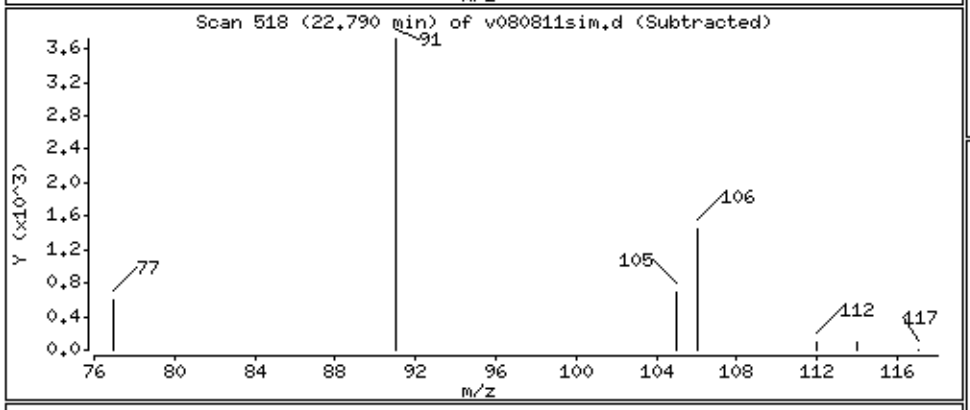
Column diameter: 0.32

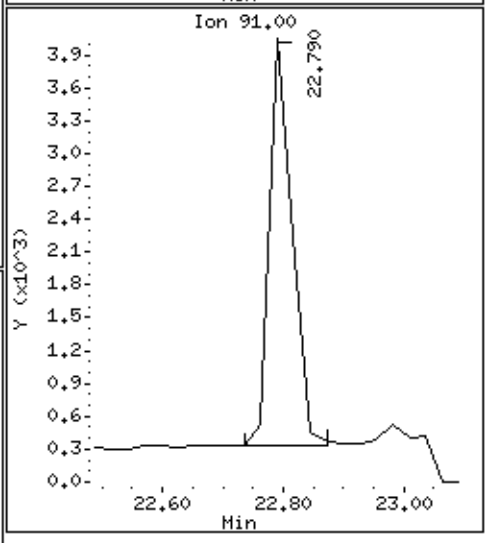
32 o-Xylene

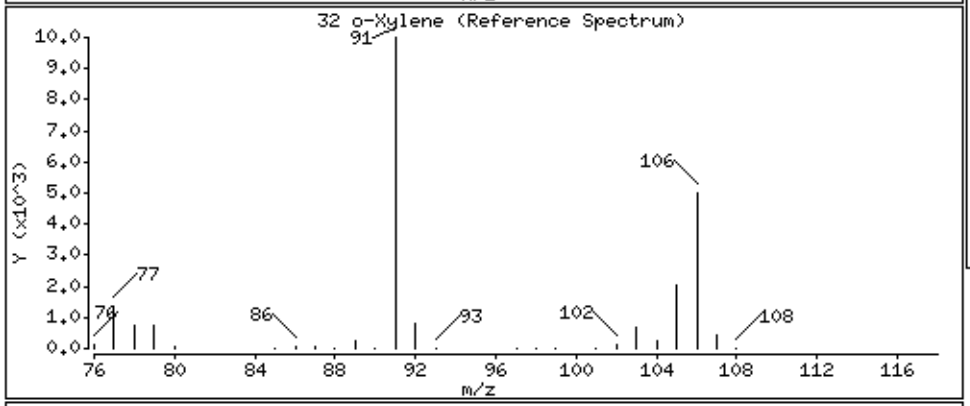
Concentration: 0.1300 PPBV

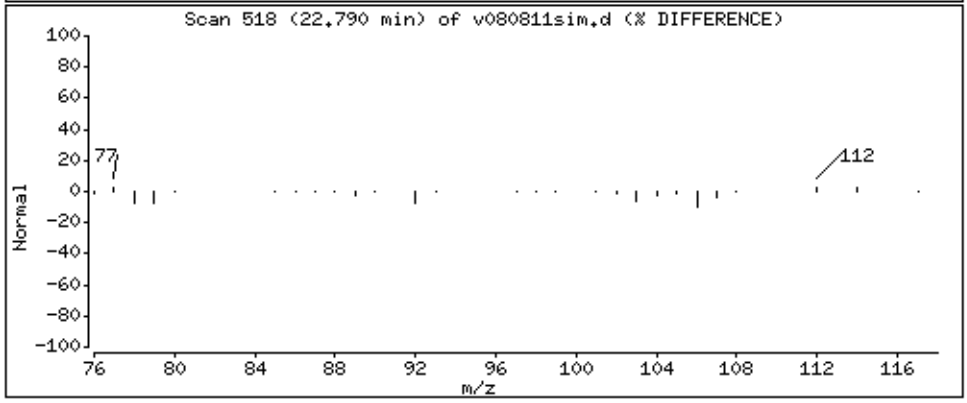












Data File: /chem/msdv.i/08Aug2017.b/v080811sim.d

Date : 08-AUG-2017 15:55

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N0428

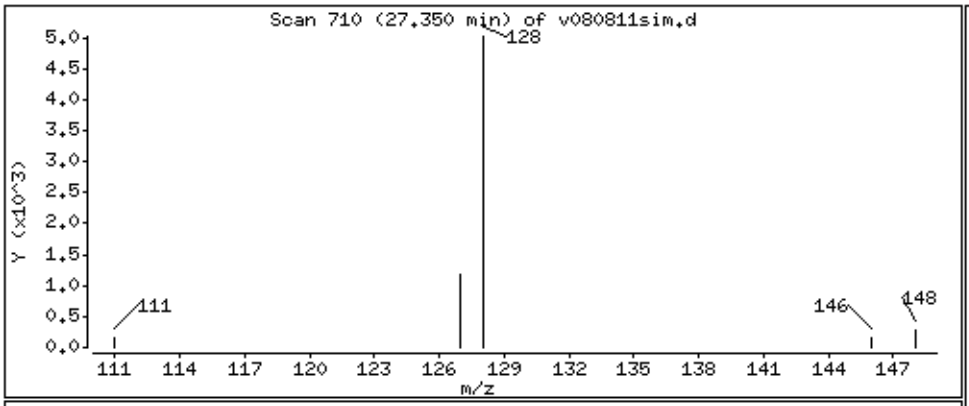
Operator: gh

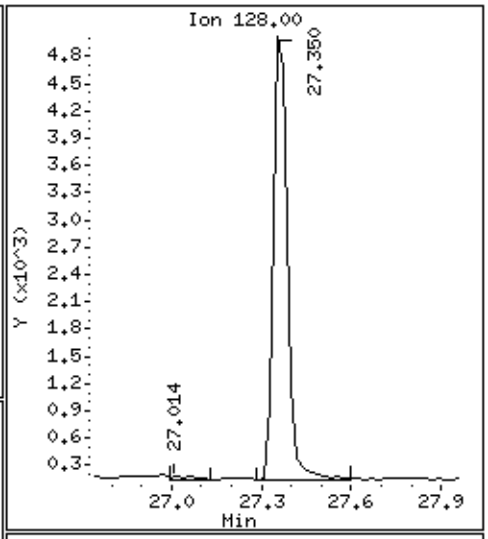
Column phase: RTX-624

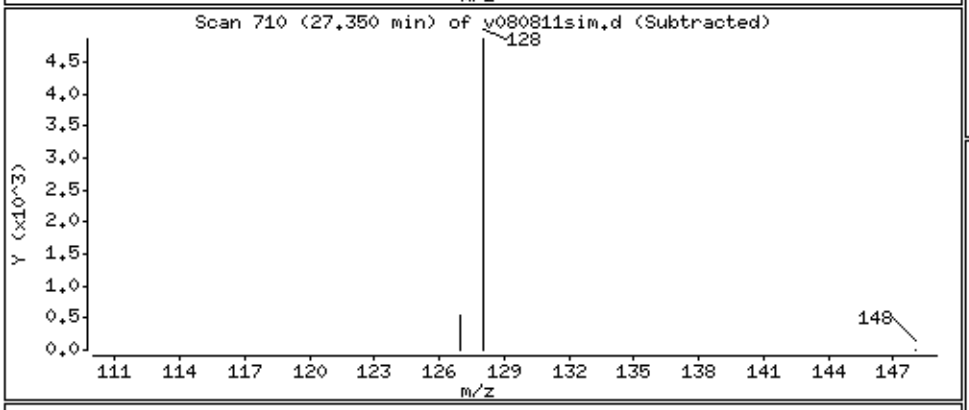
Column diameter: 0.32

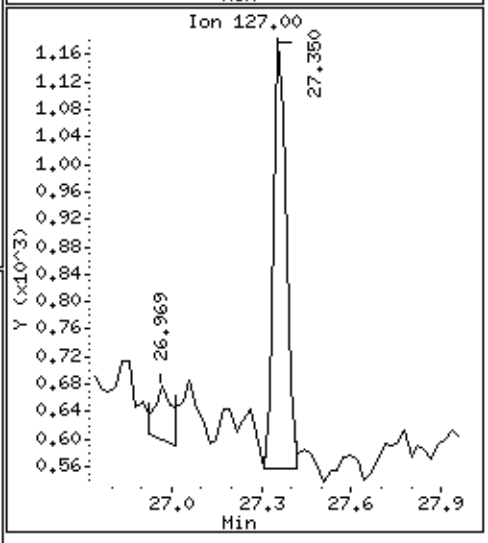
38 Naphthalene

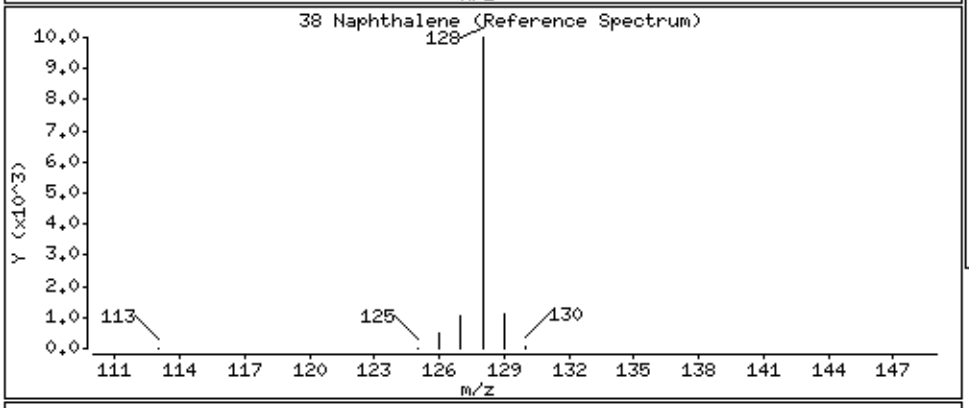
Concentration: 0.3866 PPBV

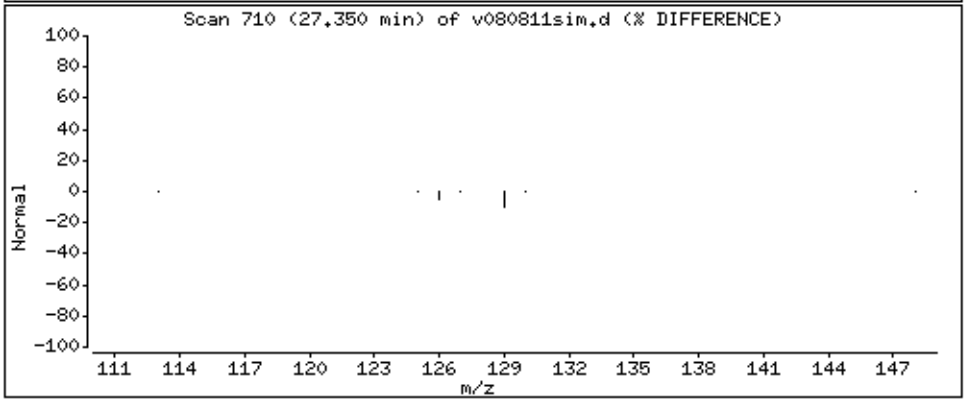












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAD-007_0817		
Lab ID:	1708091A-07A	**Date/Time Analyzed:**	8/8/17 04:37 PM
Date/Time Collected:	8/3/17 11:24 AM	**Dilution Factor:**	1.83
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msdv.i / v080812sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0096	0.023	0.29	0.70
Ethyl Benzene	100-41-4	0.017	0.032	0.16	0.43
m,p-Xylene	108-38-3	0.015	0.032	0.32	1.3
Naphthalene	91-20-3	0.023	0.023	0.48	2.0
o-Xylene	95-47-6	0.018	0.032	0.16	0.56
Toluene	108-88-3	0.024	0.028	0.34	3.7
Total Xylenes	9999-9999-015	NA	D	0.48	1.9

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080812sim.d
Lab Smp Id: 1708091A-07A
Inj Date : 08-AUG-2017 16:37
Operator : gh Inst ID: msdv.i
Smp Info : 250mL #N1732
Misc Info : 8.0"Hg ->5psi
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1
Dil Factor: 1.83000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
15.710	15.709 (1.000)	130	118026	5.00000			80.00- 120.00	100.00
15.710	15.709 (1.000)	128	91824				47.62- 107.62	77.80
15.710	15.709 (1.000)	49	232138				149.67- 209.67	196.68
17 Benzene						CAS #: 71-43-2		
16.532	16.531 (0.969)	78	15440	0.12049	0.2205		80.00- 120.00	100.00
16.532	16.531 (0.969)	77	5118				0.00- 52.91	33.15
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.505	16.504 (1.051)	65	188422	5.10091	5.101		80.00- 120.00	100.00
16.505	16.504 (1.051)	67	92451				27.09- 87.09	49.07
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.054	17.053 (1.000)	114	481824	5.00000			80.00- 120.00	100.00
17.054	17.053 (1.000)	88	74288				0.00- 45.81	15.42
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.568	19.567 (1.147)	98	428464	4.94405	4.944		80.00- 120.00	100.00
19.568	19.567 (1.147)	70	48448				0.00- 41.21	11.31

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.568	19.567 (1.147)	100	274021			34.67- 94.67	63.95
	23 Toluene					CAS #: 108-88-3		
	19.703	19.701 (1.155)	91	76607	0.54141	0.9908	80.00- 120.00	100.00
	19.703	19.701 (1.155)	92	44124			29.69- 89.69	57.60
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.994	21.992 (1.000)	117	399016	5.00000		80.00- 120.00	100.00
	21.966	21.965 (1.000)	82	209780			22.57- 82.57	52.57
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.104	22.102 (1.005)	106	2928	0.05382	0.09850	80.00- 120.00	100.00
	22.104	22.102 (1.005)	91	9826			275.83- 335.83	335.52
	31 m,p-Xylene					CAS #: 108-38-3		
	22.268	22.267 (1.012)	106	11391	0.16676	0.3052	80.00- 120.00	100.00
	22.241	22.267 (1.011)	91	23541			169.69- 229.69	206.65
	32 o-Xylene					CAS #: 95-47-6		
	22.790	22.789 (1.036)	106	4238	0.07091	0.1298	80.00- 120.00	100.00
	22.790	22.789 (1.036)	91	9463			180.67- 240.67	223.28
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.503	23.502 (1.069)	174	216490	4.82059	4.820	80.00- 120.00	100.00
	23.503	23.502 (1.069)	95	250092			89.82- 149.82	115.52
	23.503	23.502 (1.069)	176	211330			68.37- 128.37	97.62
	38 Naphthalene					CAS #: 91-20-3		
	27.354	27.352 (1.244)	128	15090	0.20704	0.3789	80.00- 120.00	100.00
	27.354	27.352 (1.244)	127	1710			0.00- 42.11	11.34
M	39 Total Xylene					CAS #: 1330-20-7		
				15630	0.23767	0.4349		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080812sim.d
Lab Smp Id: 1708091A-07A
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 8.0"Hg ->5psi

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	118026	-3.37
20 1,4-Difluorobenze	494579	296747	692411	481824	-2.58
28 Chlorobenzene-d5	416996	250198	583794	399016	-4.31

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.01
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.01
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091A-07A
Level: LOW Operator: gh
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 8.0"Hg ->5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.101	102.02	70-130
$ 22 Toluene-d8	5.000	4.944	98.88	70-130
$ 33 4-Bromofluorobenze	5.000	4.820	96.41	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080812sim.d

Date : 08-AUG-2017 16:37

Client ID:

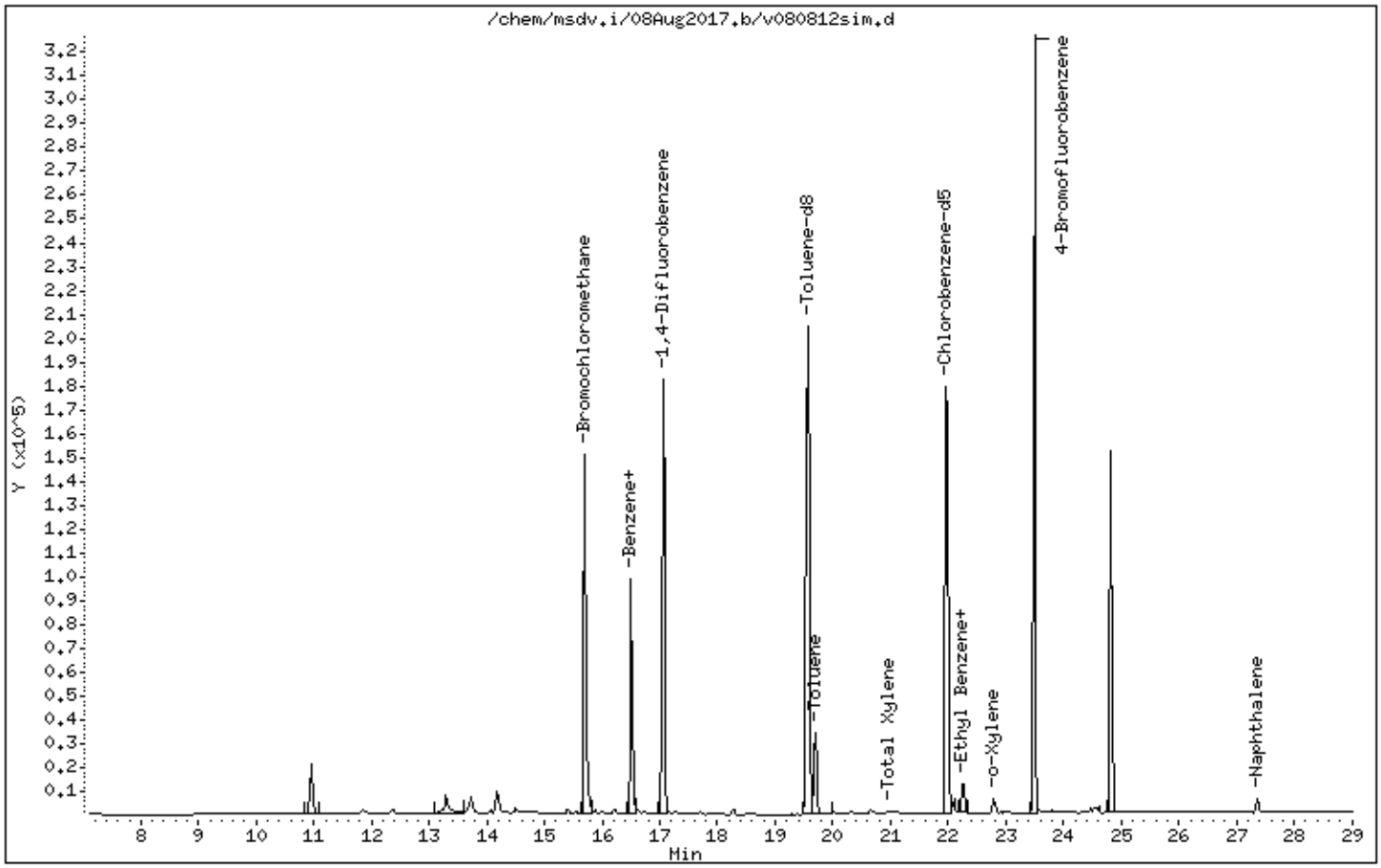
Instrument: msdv.i

Sample Info: 250mL #N1732

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080812sim.d

Date : 08-AUG-2017 16:37

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1732

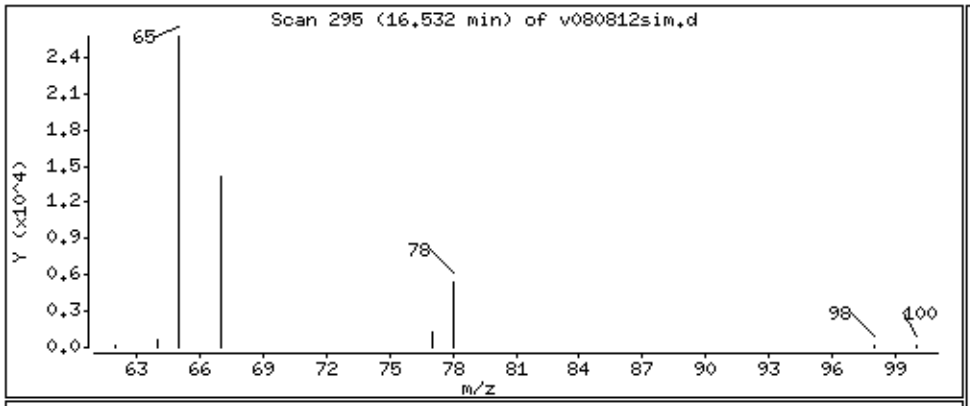
Operator: gh

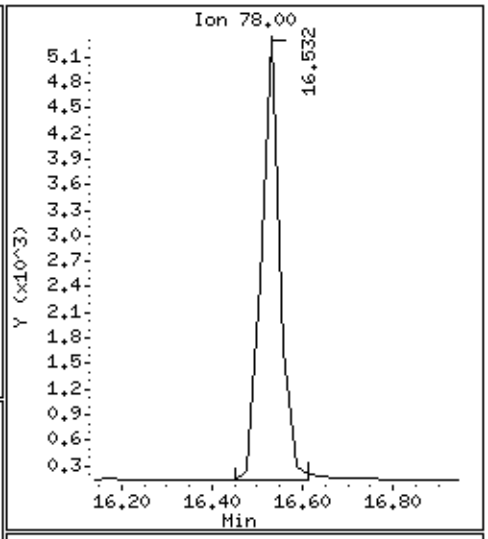
Column phase: RTX-624

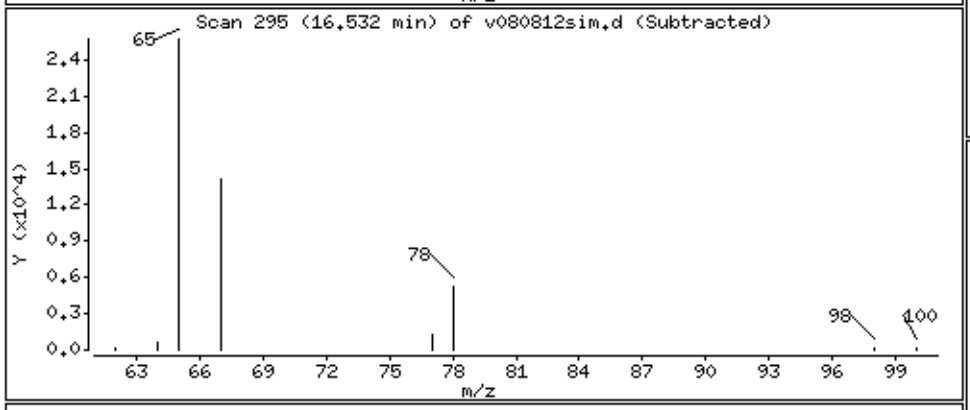
Column diameter: 0.32

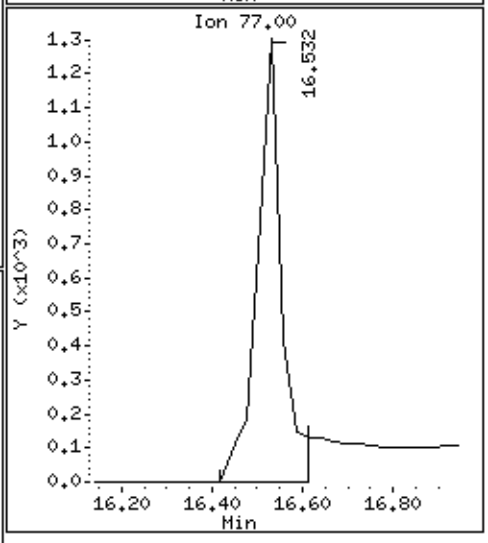
17 Benzene

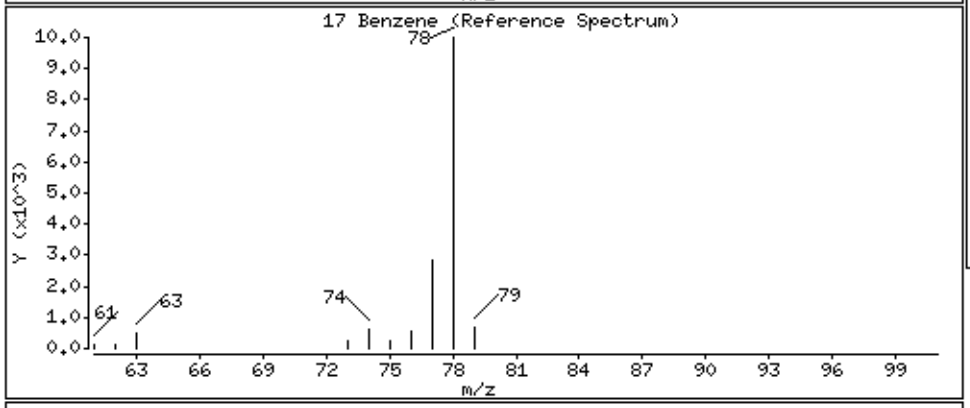
Concentration: 0.2205 PPBV

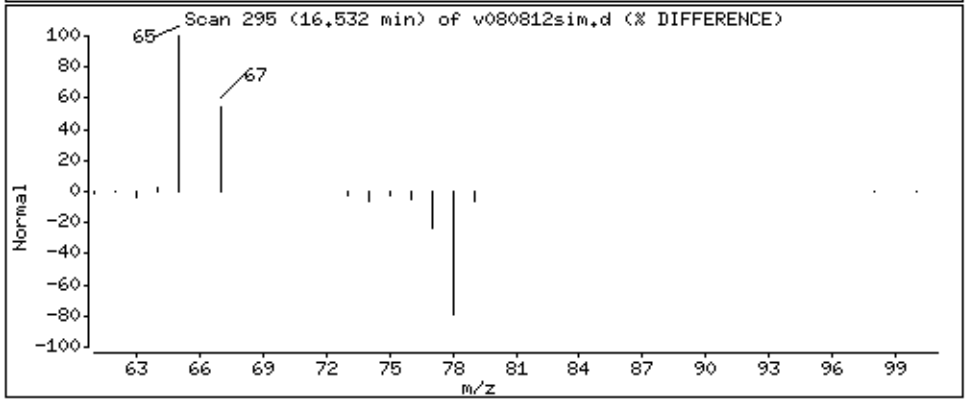












Data File: /chem/msdv.i/08Aug2017.b/v080812sim.d

Date : 08-AUG-2017 16:37

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1732

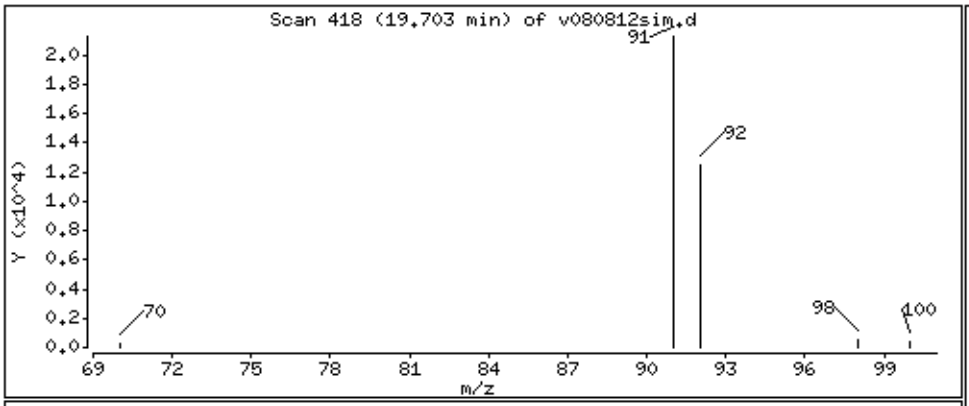
Operator: gh

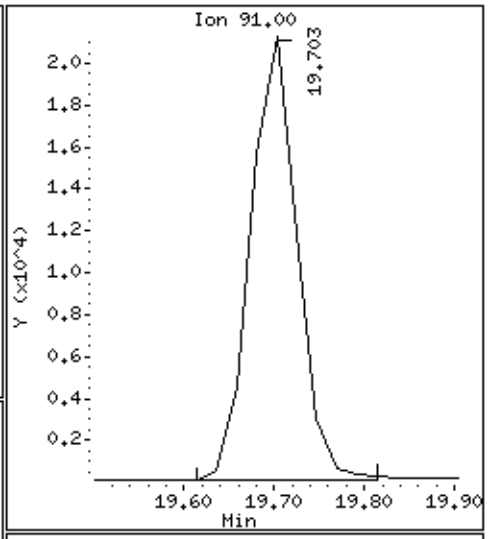
Column phase: RTX-624

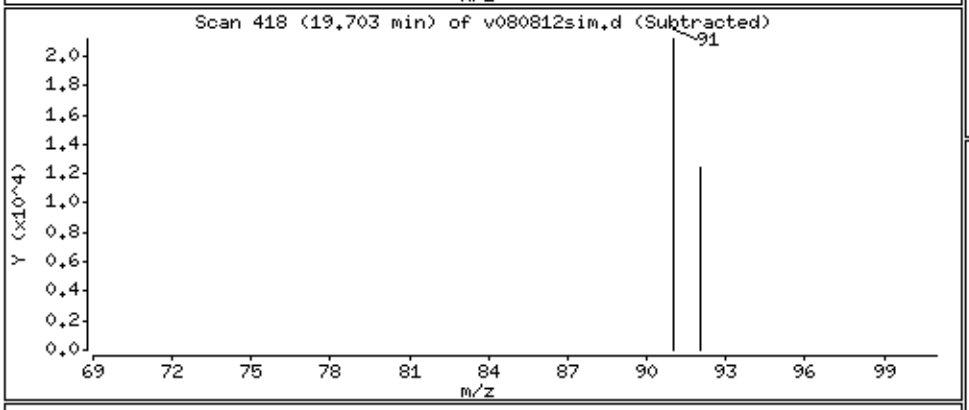
Column diameter: 0.32

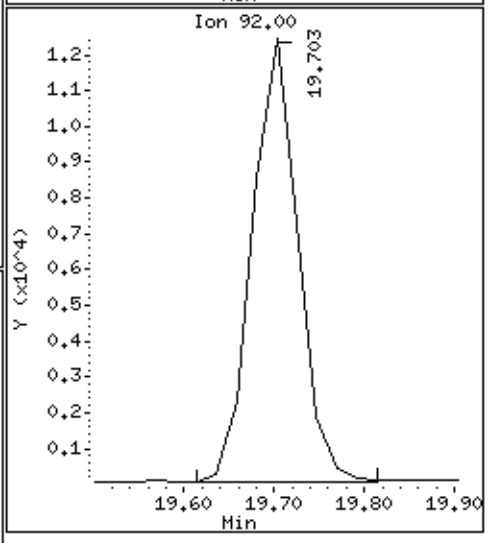
23 Toluene

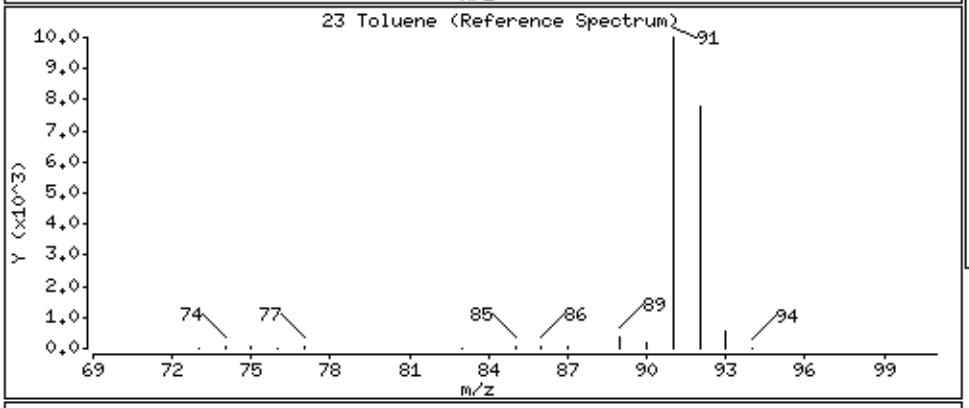
Concentration: 0.9908 PPBV

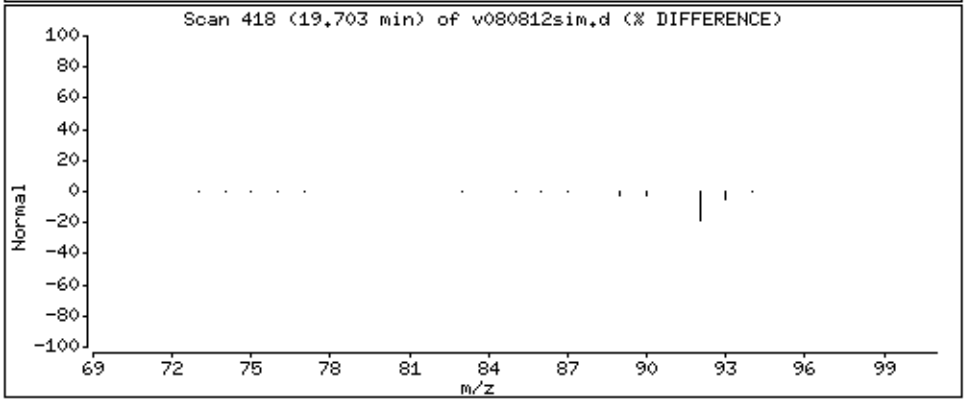












Data File: /chem/msdv.i/08Aug2017.b/v080812sim.d

Date : 08-AUG-2017 16:37

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1732

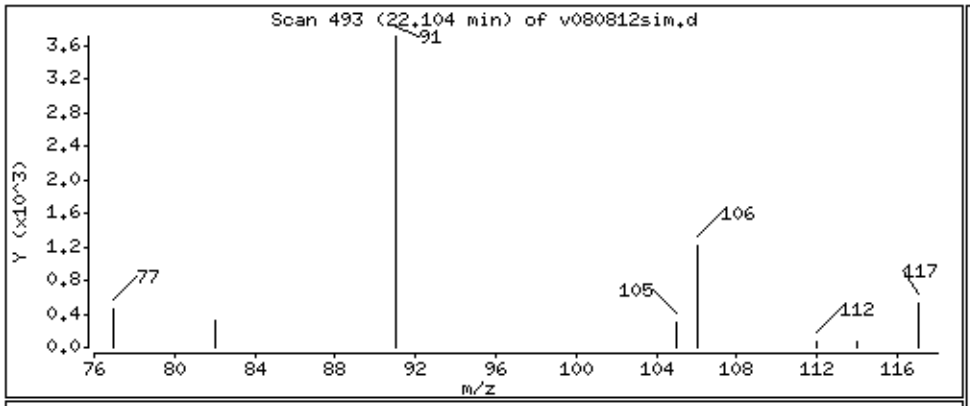
Operator: gh

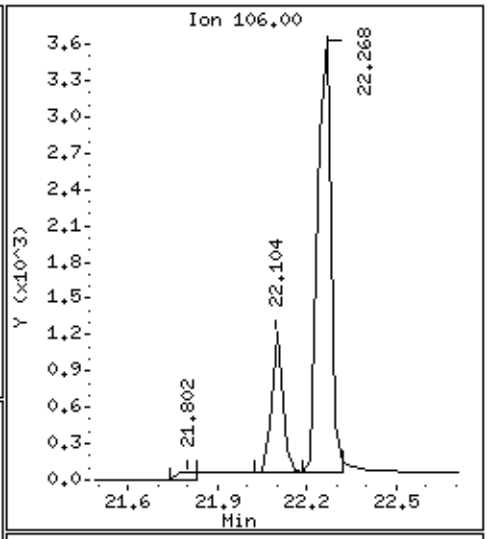
Column phase: RTX-624

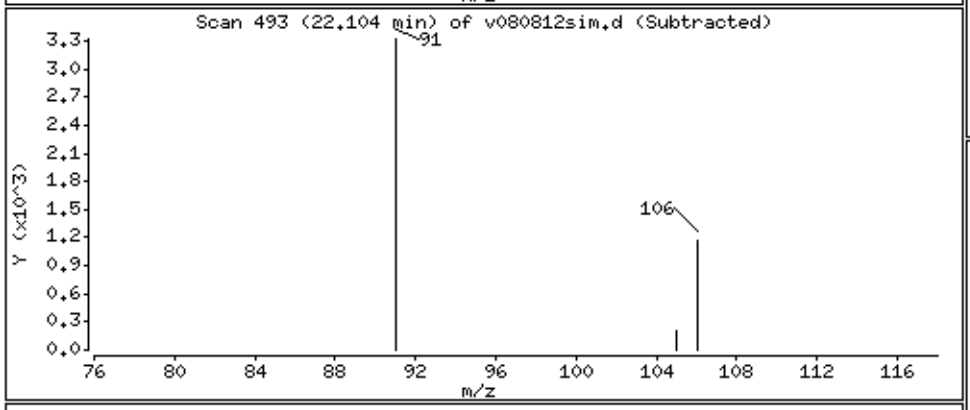
Column diameter: 0.32

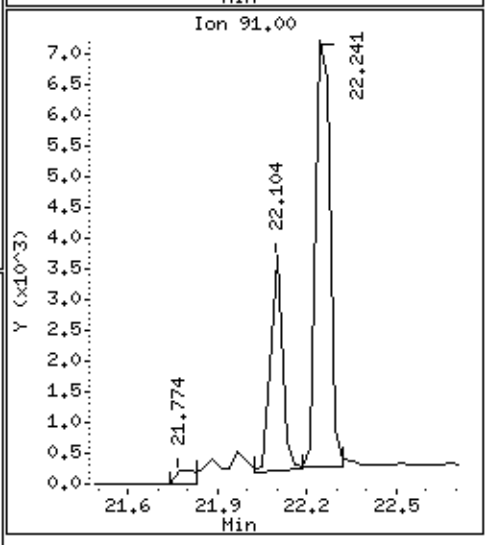
30 Ethyl Benzene

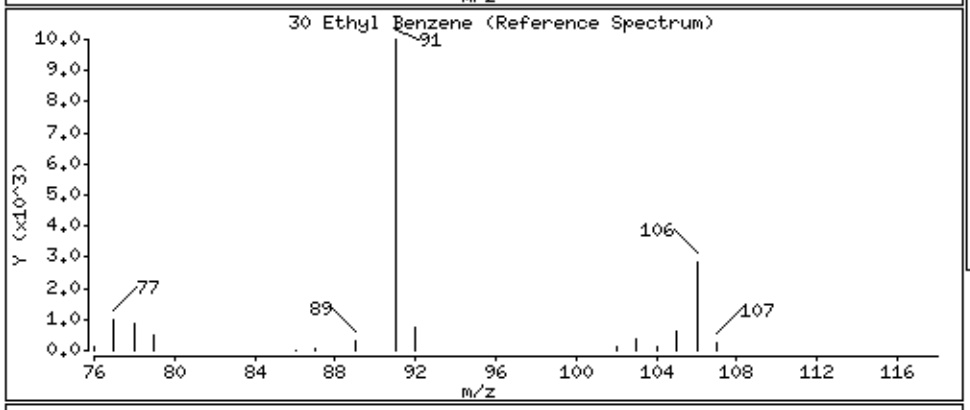
Concentration: 0.09850 PPBV

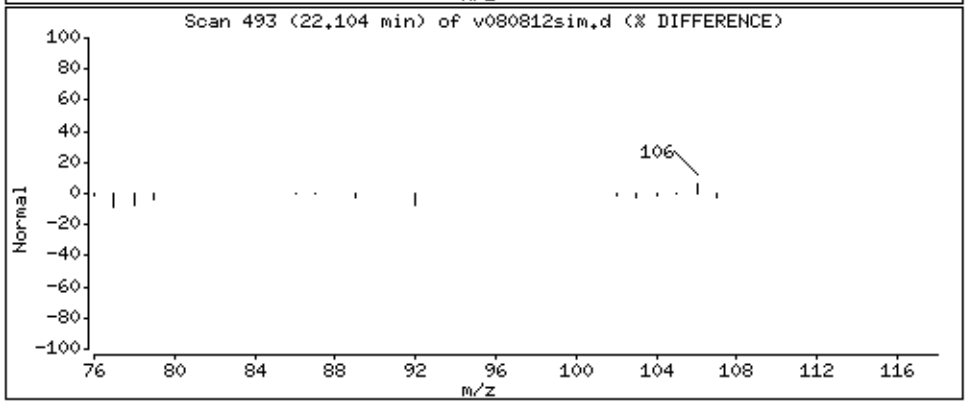












Data File: /chem/msdv.i/08Aug2017.b/v080812sim.d

Date : 08-AUG-2017 16:37

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1732

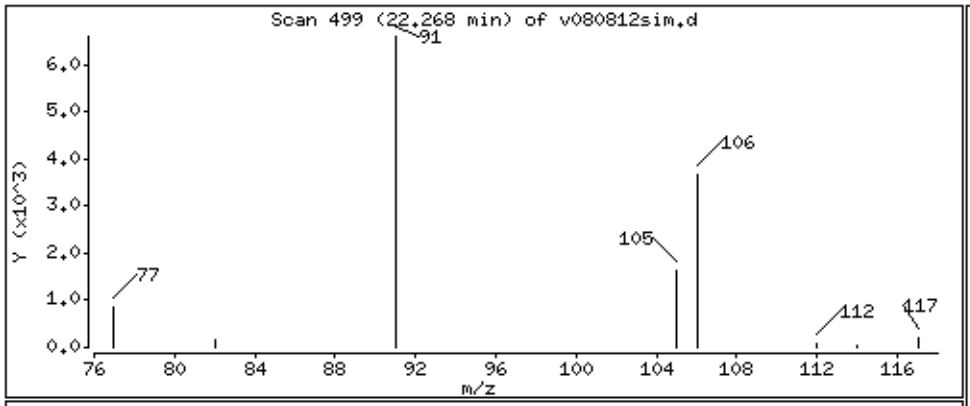
Operator: gh

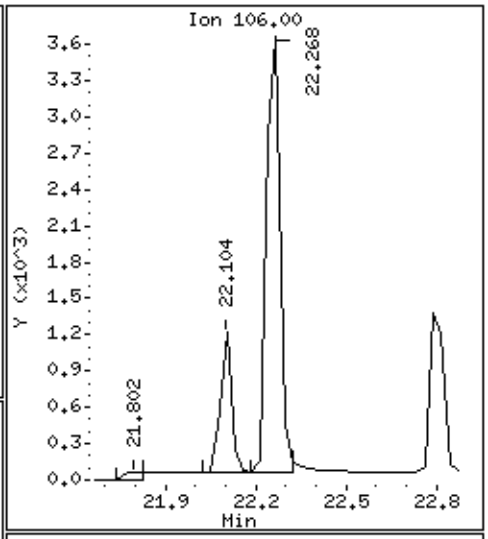
Column phase: RTX-624

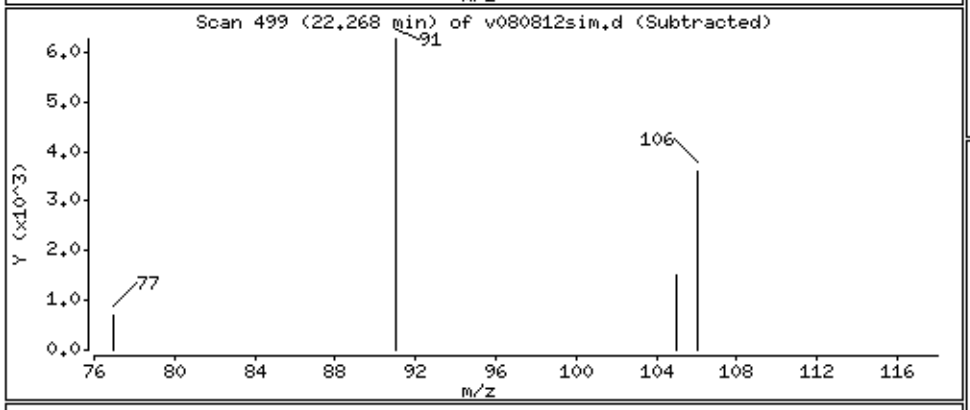
Column diameter: 0.32

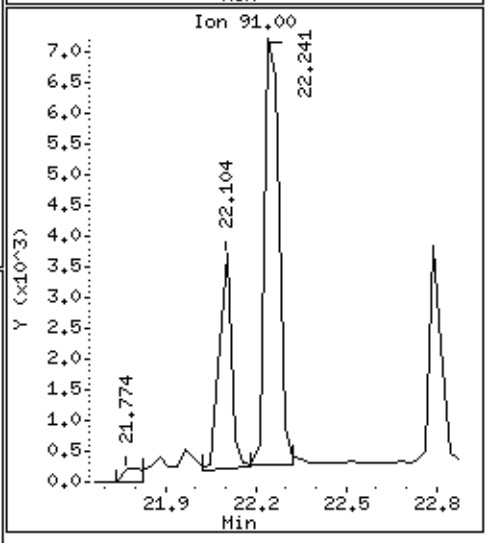
31 m,p-Xylene

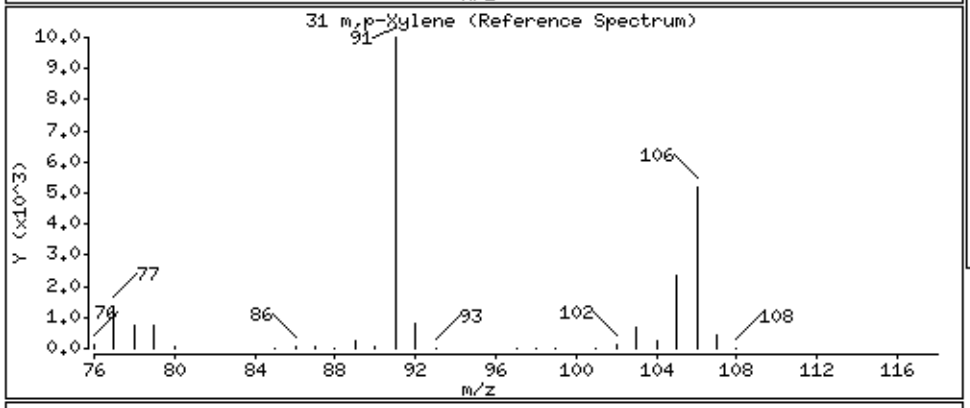
Concentration: 0.3052 PPBV

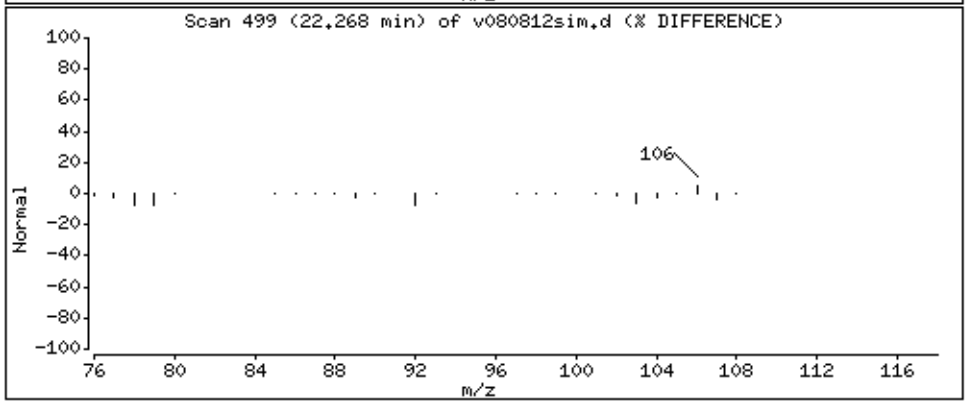












Data File: /chem/msdv.i/08Aug2017.b/v080812sim.d

Date : 08-AUG-2017 16:37

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1732

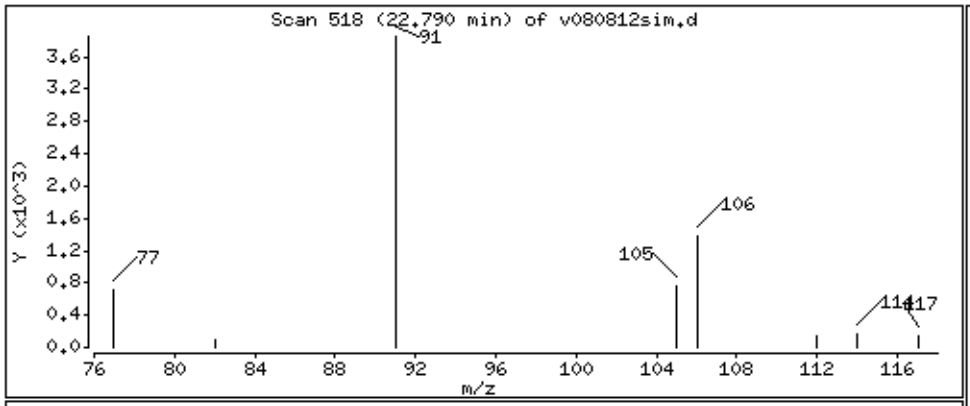
Operator: gh

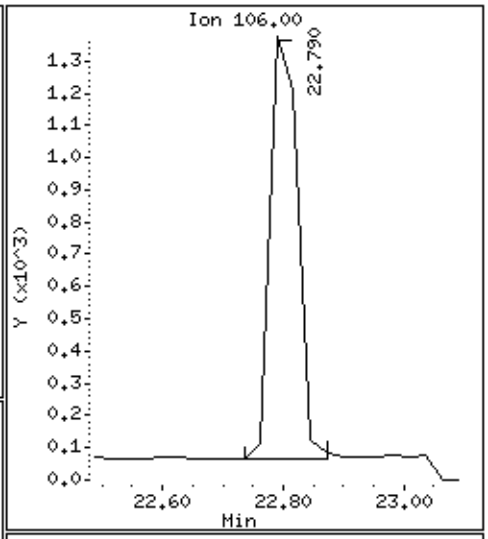
Column phase: RTX-624

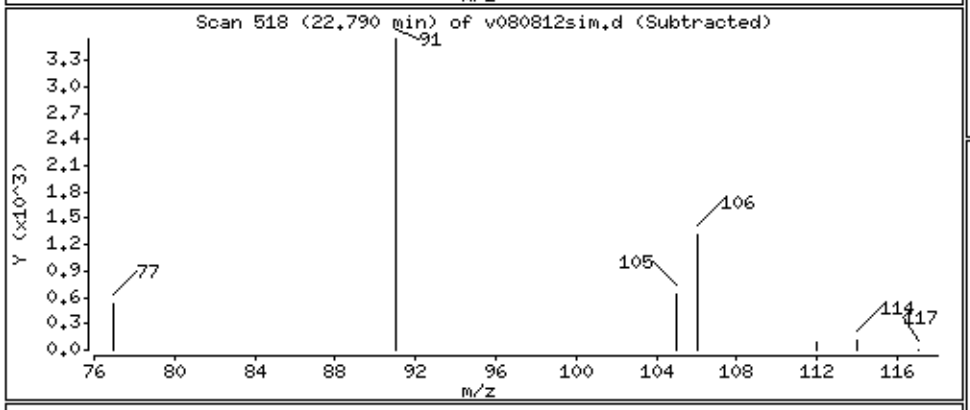
Column diameter: 0.32

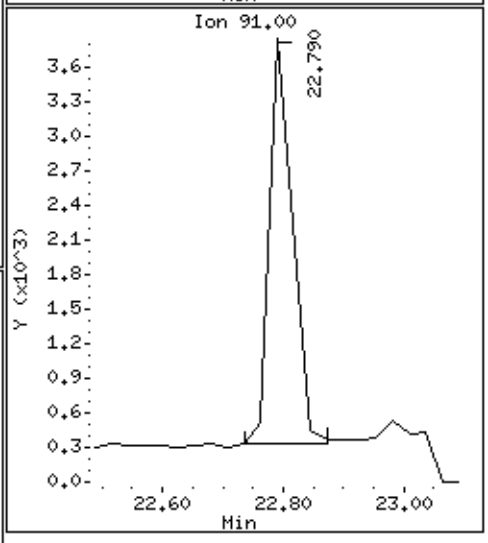
32 o-Xylene

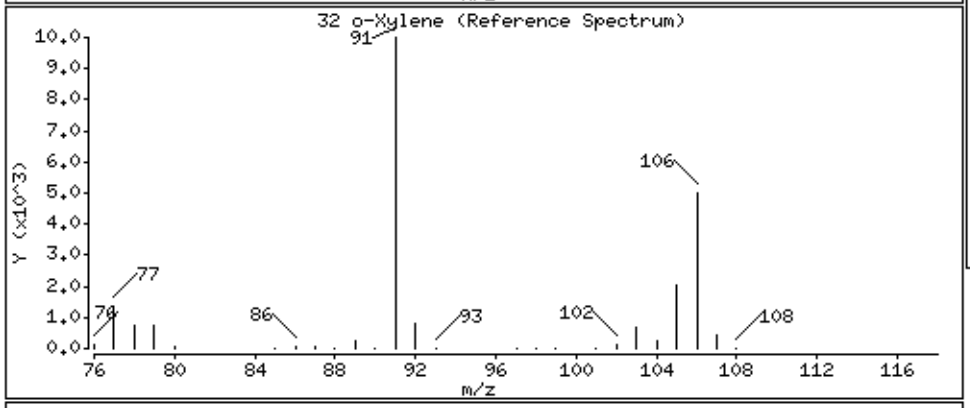
Concentration: 0.1298 PPBV

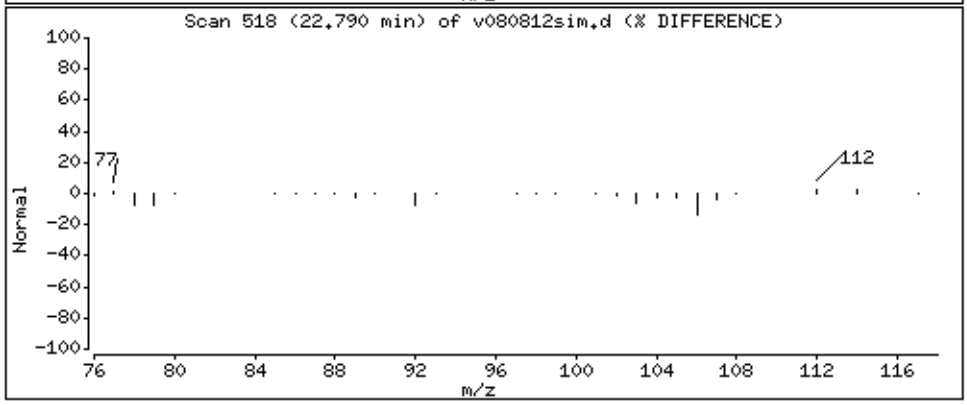












Data File: /chem/msdv.i/08Aug2017.b/v080812sim.d

Date : 08-AUG-2017 16:37

Client ID:

Instrument: msdv.i

Sample Info: 250mL #N1732

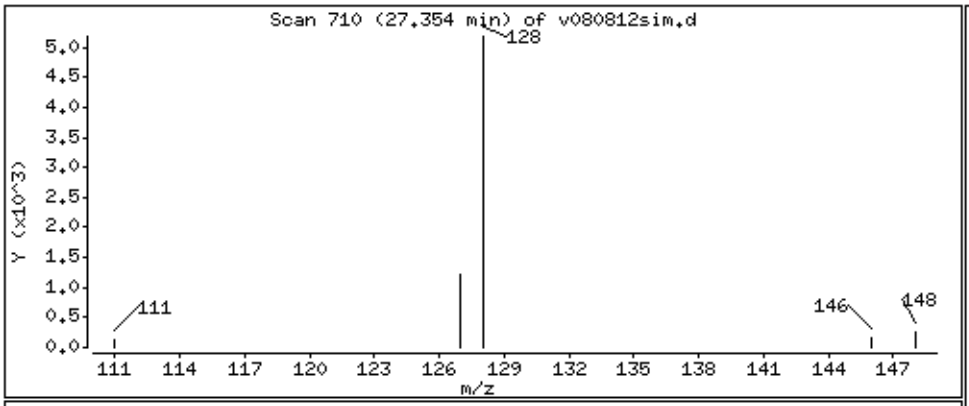
Operator: gh

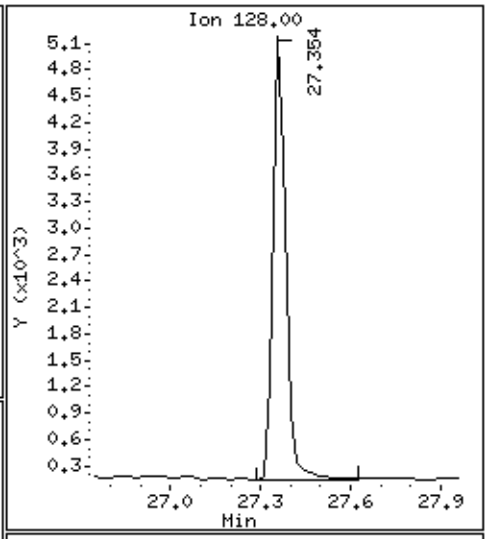
Column phase: RTX-624

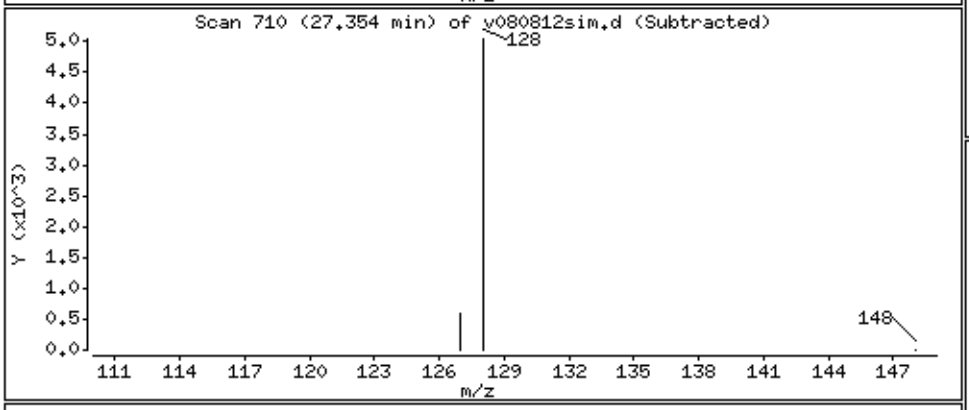
Column diameter: 0.32

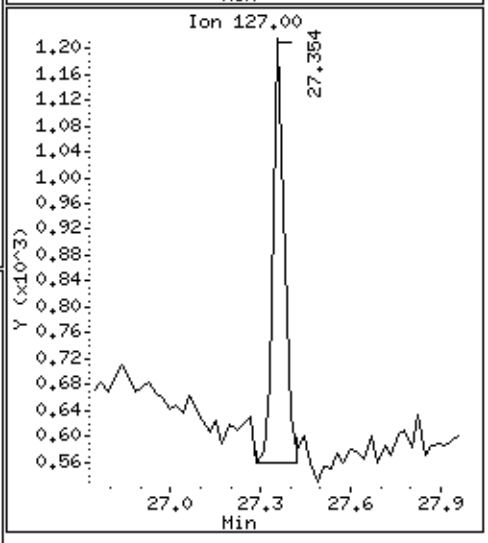
38 Naphthalene

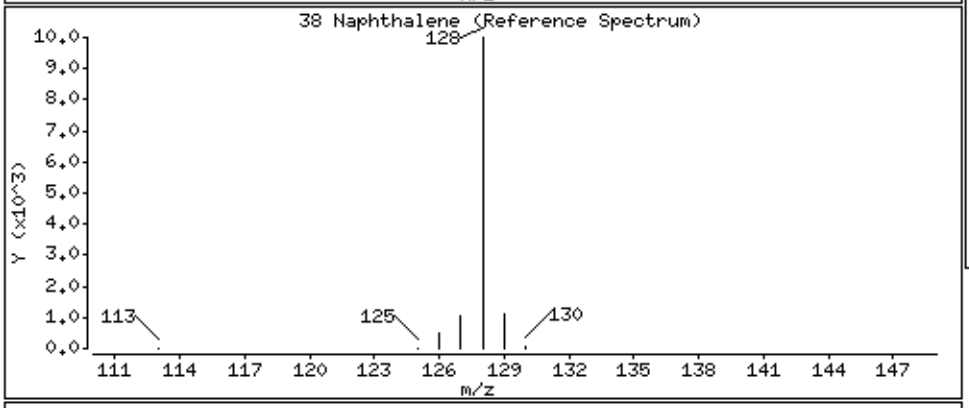
Concentration: 0.3789 PPBV

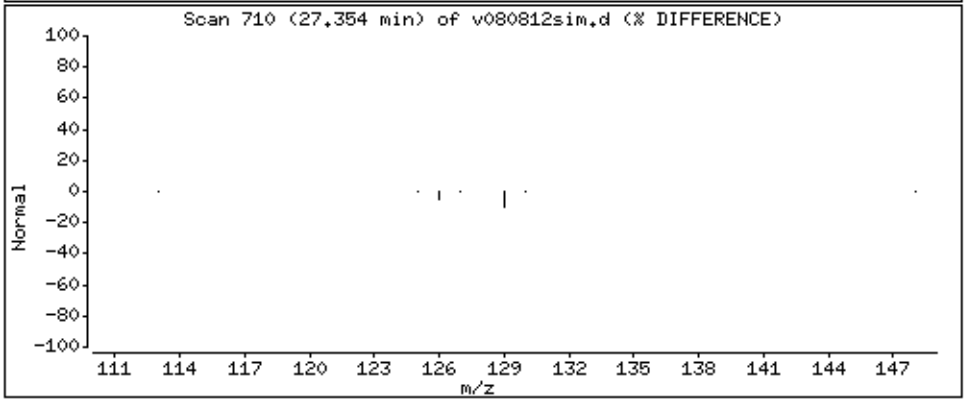












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAU-007_0817		
Lab ID:	1708091A-08A	**Date/Time Analyzed:**	8/8/17 05:18 PM
Date/Time Collected:	8/3/17 11:31 AM	**Dilution Factor:**	1.75
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msdv.i / v080813sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0092	0.022	0.28	0.64
Ethyl Benzene	100-41-4	0.016	0.030	0.15	0.29
m,p-Xylene	108-38-3	0.014	0.030	0.30	0.84
Naphthalene	91-20-3	0.022	0.022	0.46	3.0
o-Xylene	95-47-6	0.018	0.030	0.15	0.36
Toluene	108-88-3	0.022	0.026	0.33	4.6
Total Xylenes	9999-9999-015	NA	D	0.46	1.2

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	105
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080813sim.d
Lab Smp Id: 1708091A-08A
Inj Date : 08-AUG-2017 17:18
Operator : gh Inst ID: msdv.i
Smp Info : 250mL #O0262
Misc Info : 7.0"Hg ->5psi
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1
Dil Factor: 1.75000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
15.710	15.709 (1.000)	130	114546	5.00000			80.00- 120.00	100.00
15.710	15.709 (1.000)	128	88708				47.62- 107.62	77.44
15.710	15.709 (1.000)	49	226318				149.67- 209.67	197.58
17 Benzene						CAS #: 71-43-2		
16.532	16.531 (0.969)	78	14839	0.11557	0.2022		80.00- 120.00	100.00
16.532	16.531 (0.969)	77	5084				0.00- 52.91	34.27
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.505	16.504 (1.051)	65	188350	5.25389	5.254		80.00- 120.00	100.00
16.505	16.504 (1.051)	67	91887				27.09- 87.09	48.79
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.054	17.053 (1.000)	114	482774	5.00000			80.00- 120.00	100.00
17.054	17.053 (1.000)	88	74898				0.00- 45.81	15.51
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.568	19.567 (1.147)	98	429609	4.94751	4.948		80.00- 120.00	100.00
19.568	19.567 (1.147)	70	48629				0.00- 41.21	11.32

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.568	19.567 (1.147)	100	274950			34.67- 94.67	64.00
	23 Toluene					CAS #: 108-88-3		
	19.703	19.701 (1.155)	91	98518	0.69489	1.216	80.00- 120.00	100.00
	19.703	19.701 (1.155)	92	56845			29.69- 89.69	57.70
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.994	21.992 (1.000)	117	401788	5.00000		80.00- 120.00	100.00
	21.966	21.965 (1.000)	82	209986			22.57- 82.57	52.26
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.104	22.102 (1.005)	106	2095	0.03824	0.06693	80.00- 120.00	100.00
	22.104	22.102 (1.005)	91	7111			275.83- 335.83	339.39
	31 m,p-Xylene					CAS #: 108-38-3		
	22.268	22.267 (1.012)	106	7611	0.11066	0.1936	80.00- 120.00	100.00
	22.241	22.267 (1.011)	91	16047			169.69- 229.69	210.82
	32 o-Xylene					CAS #: 95-47-6		
	22.790	22.789 (1.036)	106	2851	0.04738	0.08291	80.00- 120.00	100.00
	22.790	22.789 (1.036)	91	6285			180.67- 240.67	220.45
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.503	23.502 (1.069)	174	224923	4.97381	4.974	80.00- 120.00	100.00
	23.503	23.502 (1.069)	95	261012			89.82- 149.82	116.04
	23.503	23.502 (1.069)	176	218564			68.37- 128.37	97.17
	38 Naphthalene					CAS #: 91-20-3		
	27.354	27.352 (1.244)	128	23742	0.32350	0.5661	80.00- 120.00	100.00
	27.354	27.352 (1.244)	127	2858			0.00- 42.11	12.04
M	39 Total Xylene					CAS #: 1330-20-7		
				10463	0.15803	0.2766		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080813sim.d
Lab Smp Id: 1708091A-08A
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 7.0"Hg ->5psi

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	114546	-6.22
20 1,4-Difluorobenze	494579	296747	692411	482774	-2.39
28 Chlorobenzene-d5	416996	250198	583794	401788	-3.65

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.01
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.01
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 09:39

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091A-08A
Level: LOW Operator: gh
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 7.0"Hg ->5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.254	105.08	70-130
$ 22 Toluene-d8	5.000	4.948	98.95	70-130
$ 33 4-Bromofluorobenze	5.000	4.974	99.48	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080813sim.d

Date : 08-AUG-2017 17:18

Client ID:

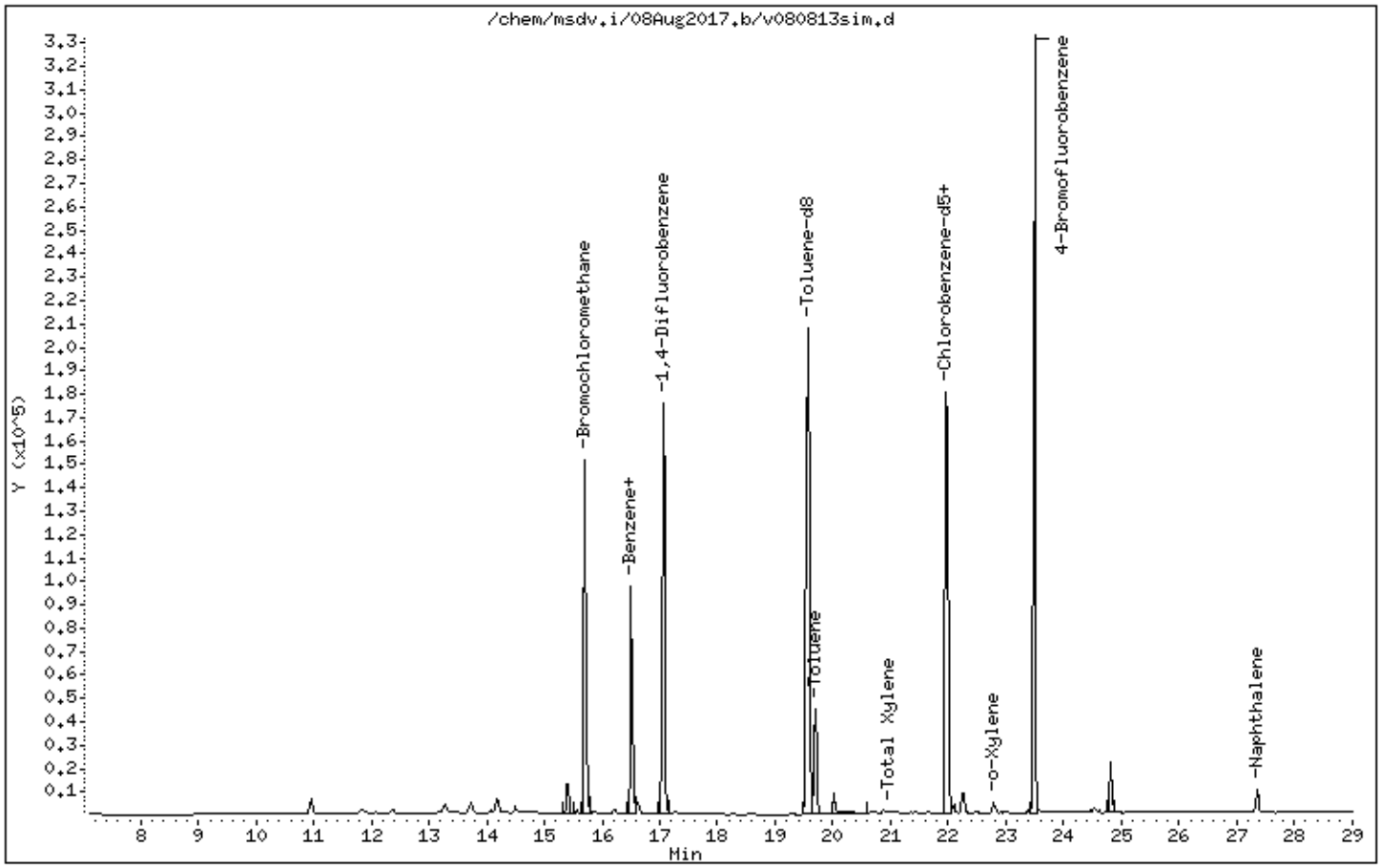
Instrument: msdv.i

Sample Info: 250mL #00262

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080813sim.d

Date : 08-AUG-2017 17:18

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00262

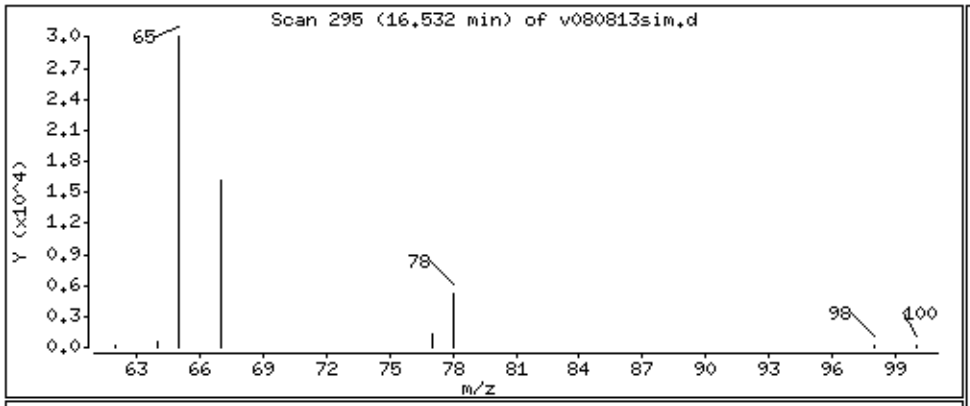
Operator: gh

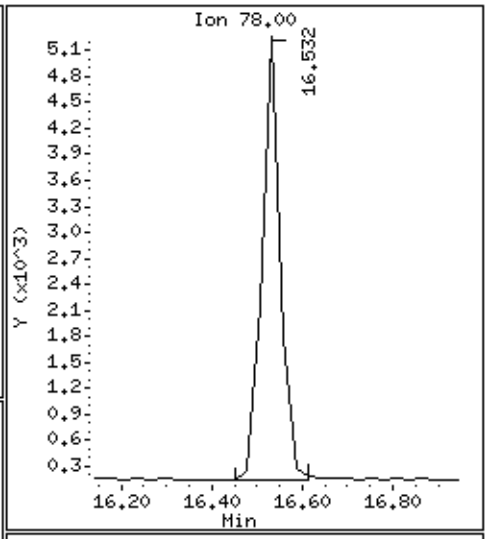
Column phase: RTX-624

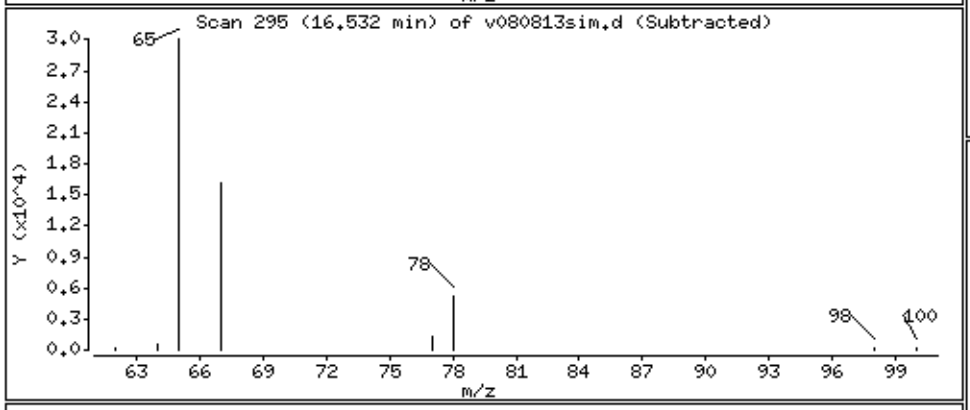
Column diameter: 0.32

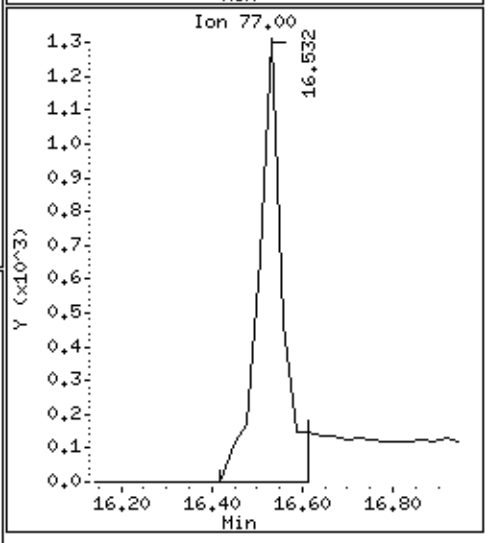
17 Benzene

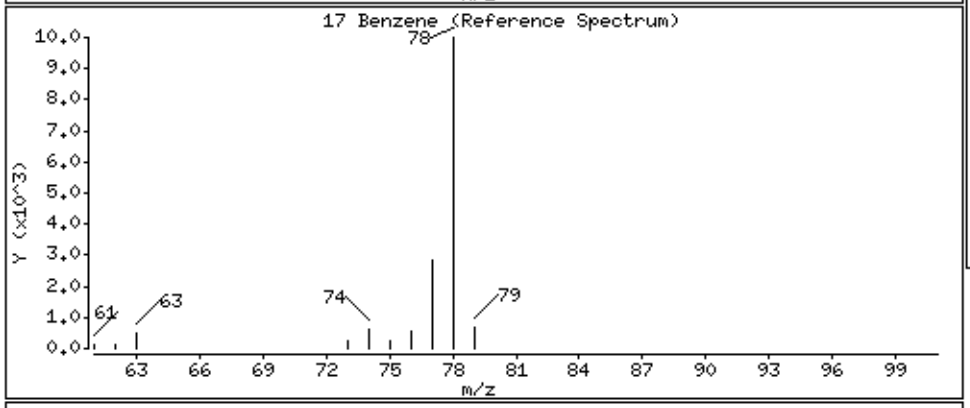
Concentration: 0.2022 PPBV

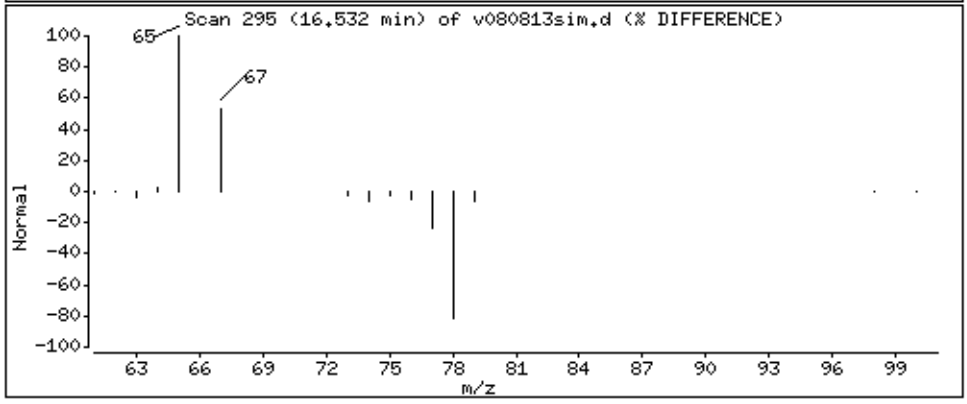












Data File: /chem/msdv.i/08Aug2017.b/v080813sim.d

Date : 08-AUG-2017 17:18

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00262

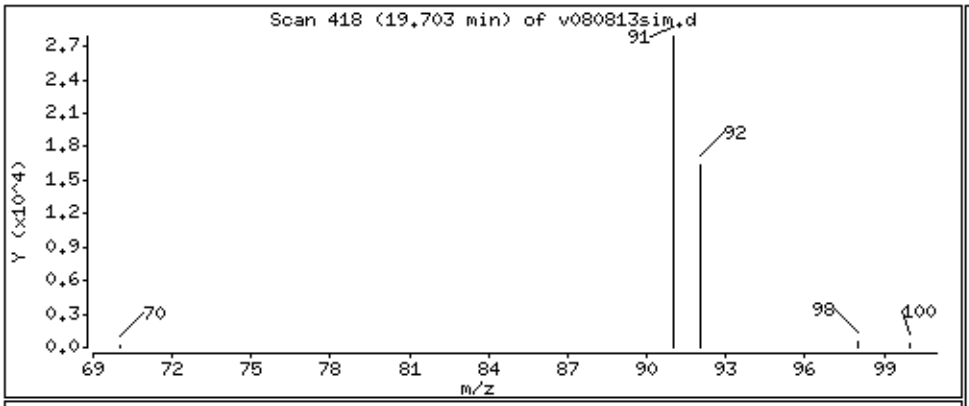
Operator: gh

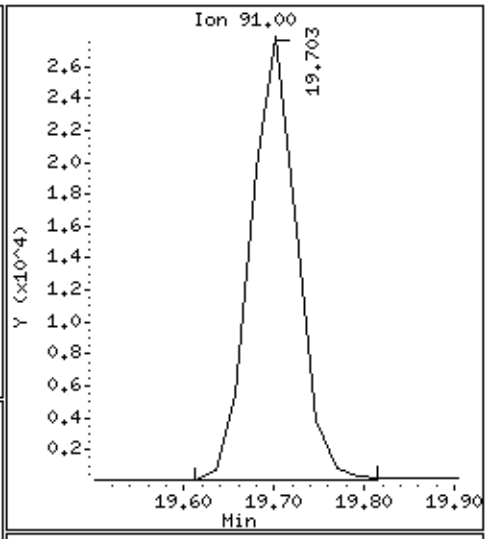
Column phase: RTX-624

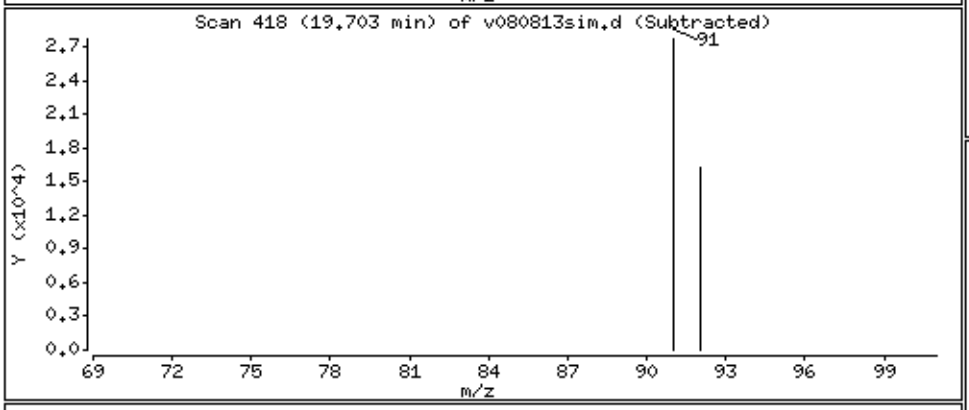
Column diameter: 0.32

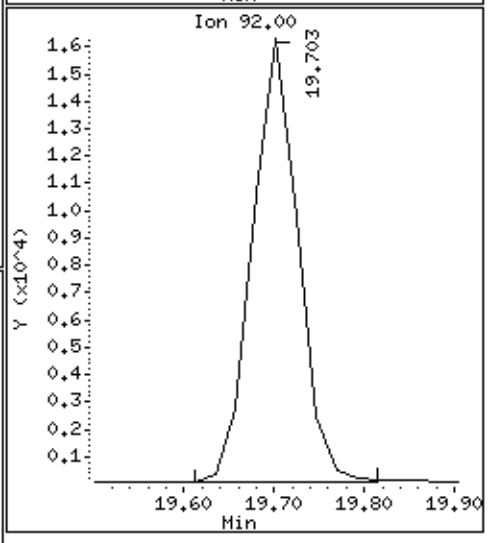
23 Toluene

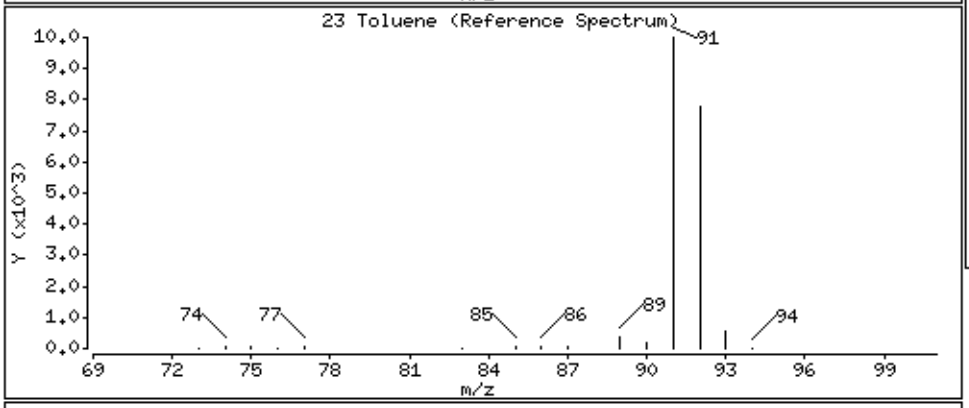
Concentration: 1.216 PPBV

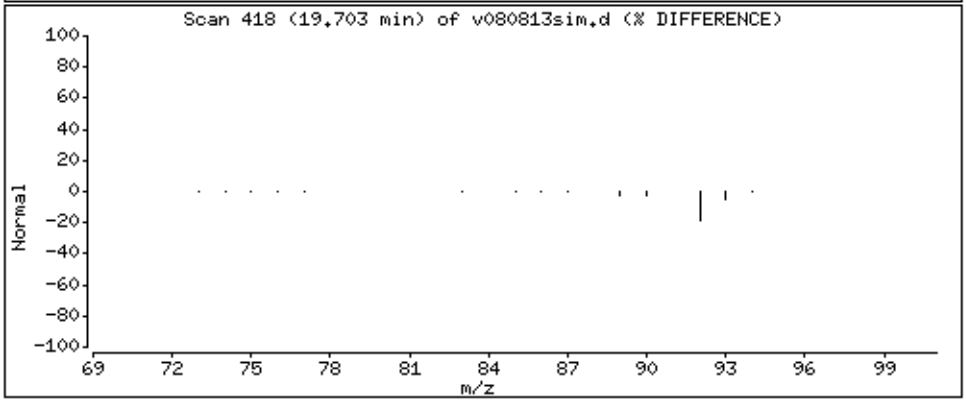












Data File: /chem/msdv.i/08Aug2017.b/v080813sim.d

Date : 08-AUG-2017 17:18

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00262

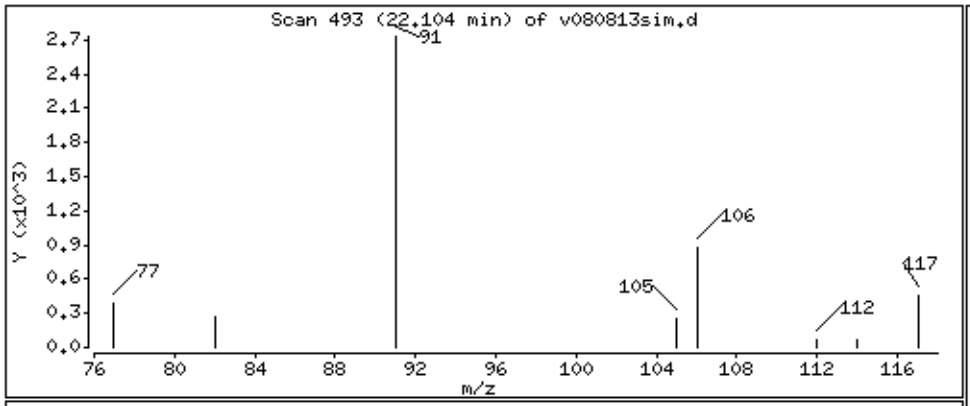
Operator: gh

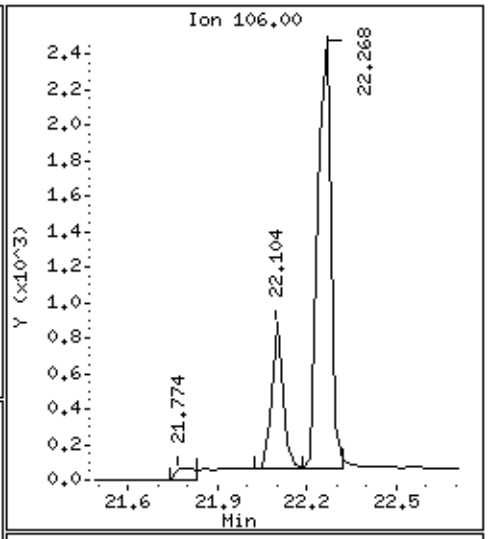
Column phase: RTX-624

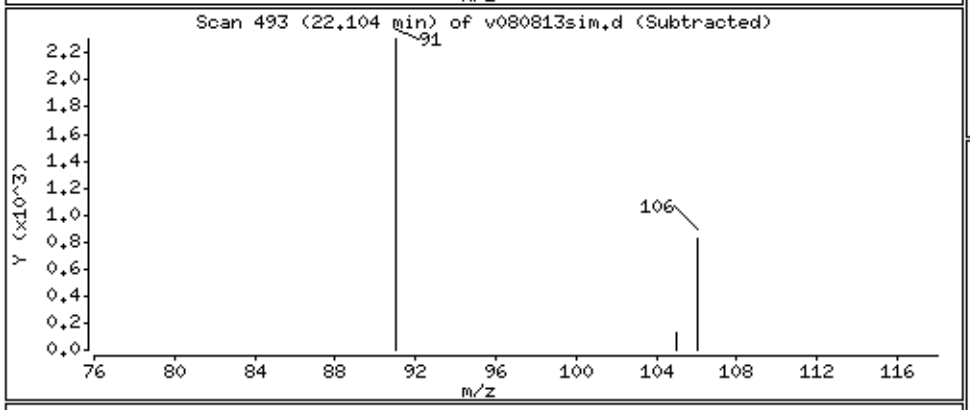
Column diameter: 0.32

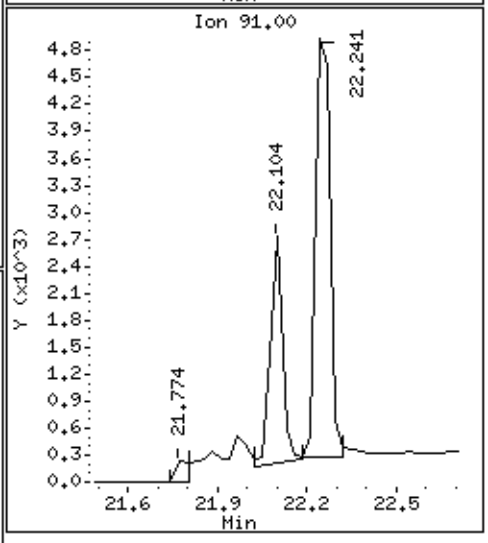
30 Ethyl Benzene

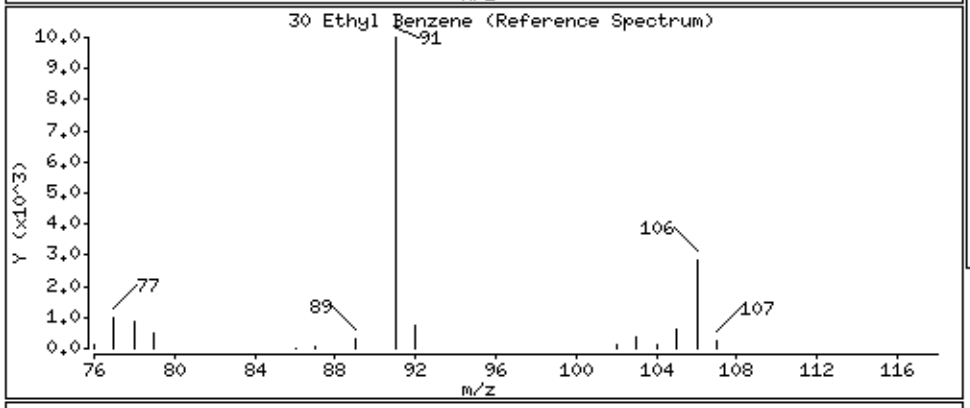
Concentration: 0.06693 PPBV

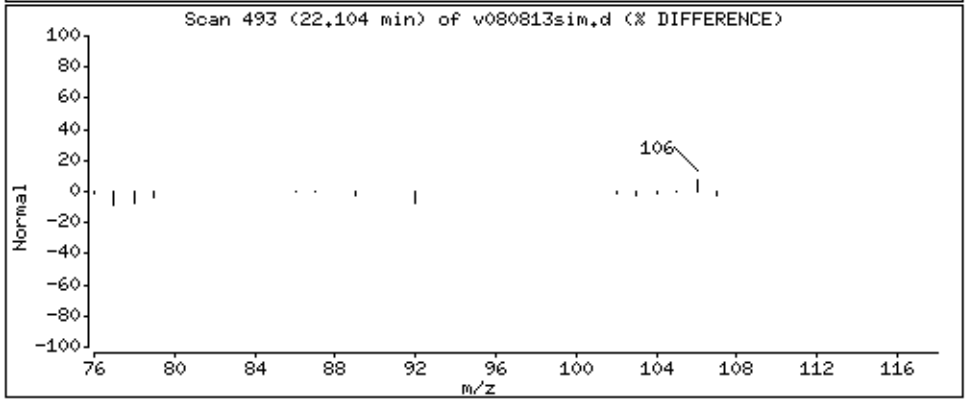












Data File: /chem/msdv.i/08Aug2017.b/v080813sim.d

Date : 08-AUG-2017 17:18

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00262

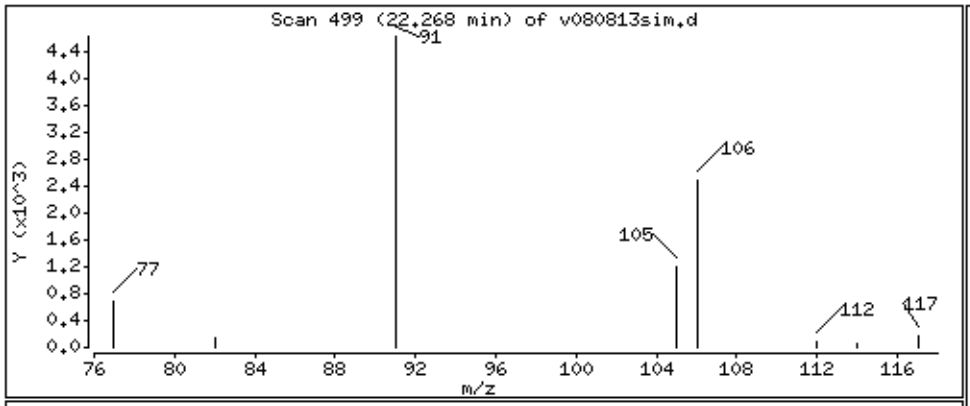
Operator: gh

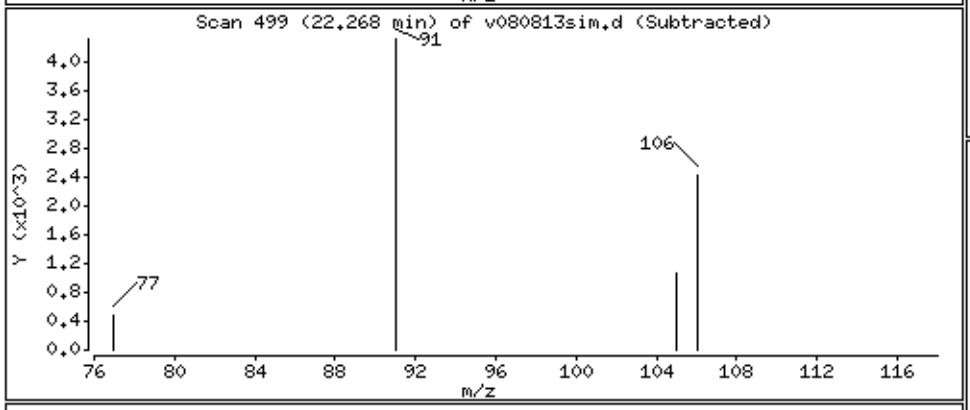
Column phase: RTX-624

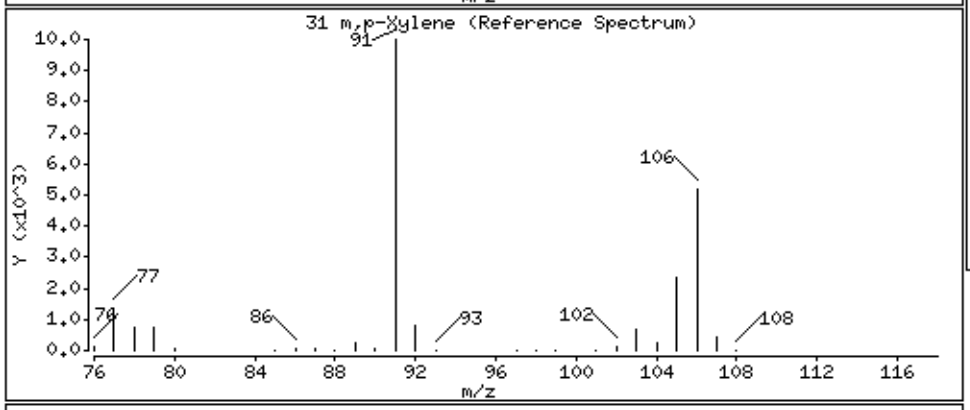
Column diameter: 0.32

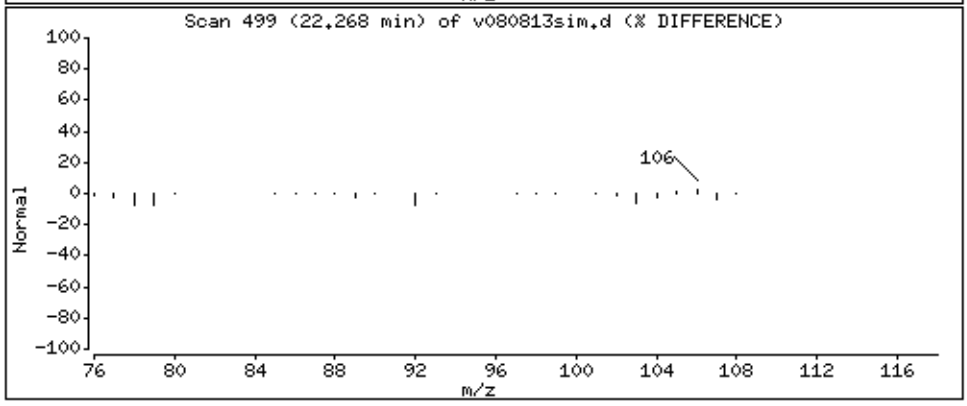
31 m,p-Xylene

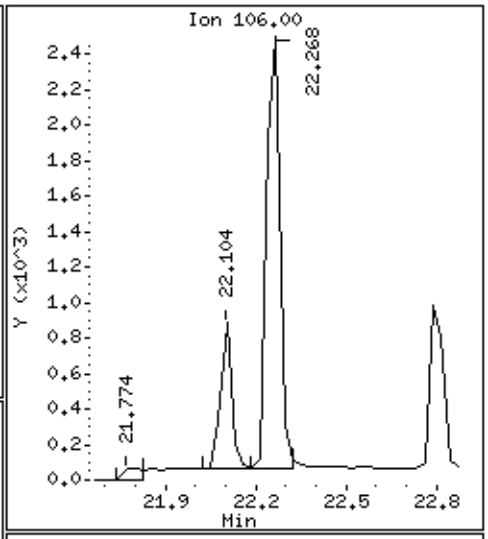
Concentration: 0.1936 PPBV

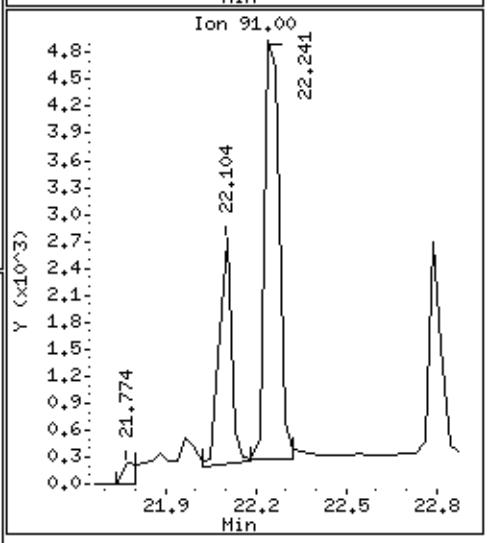












Data File: /chem/msdv.i/08Aug2017.b/v080813sim.d

Date : 08-AUG-2017 17:18

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00262

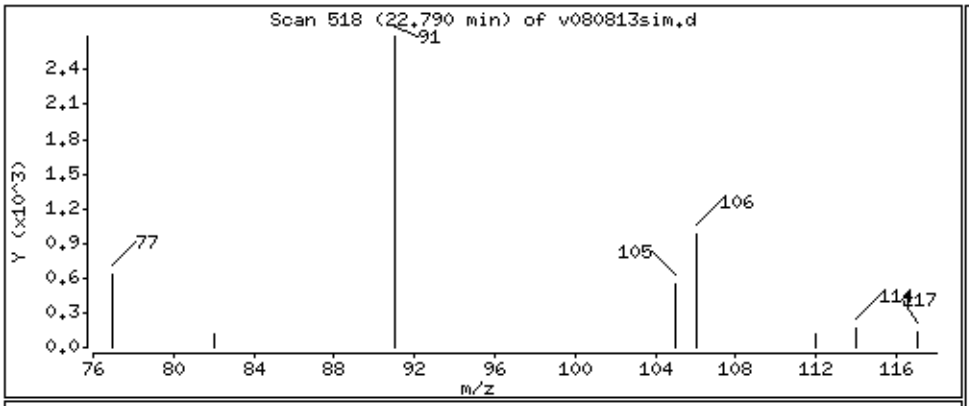
Operator: gh

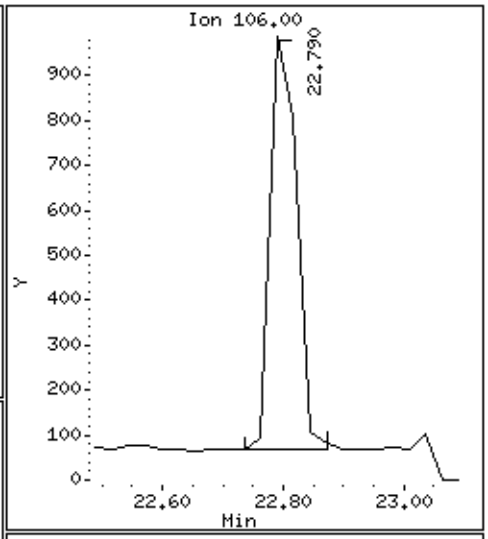
Column phase: RTX-624

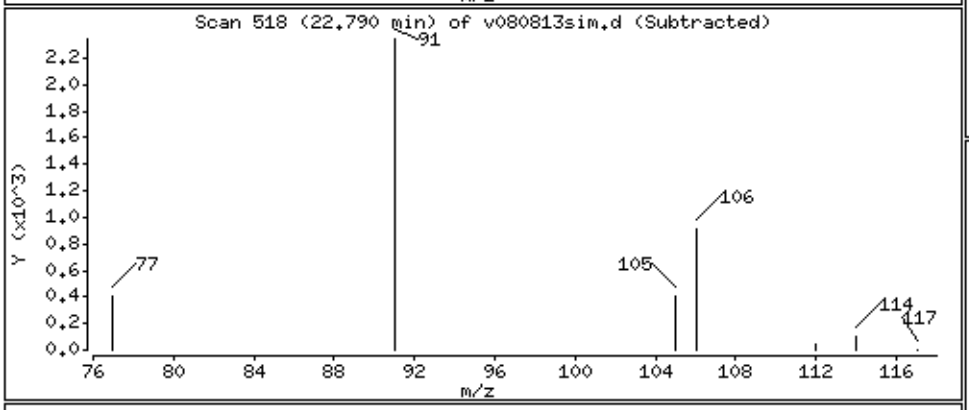
Column diameter: 0.32

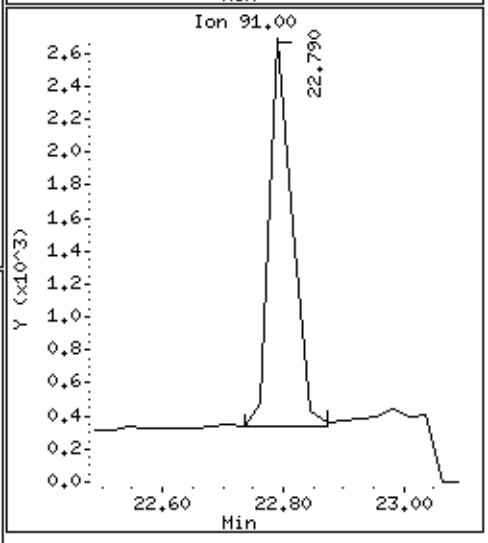
32 o-Xylene

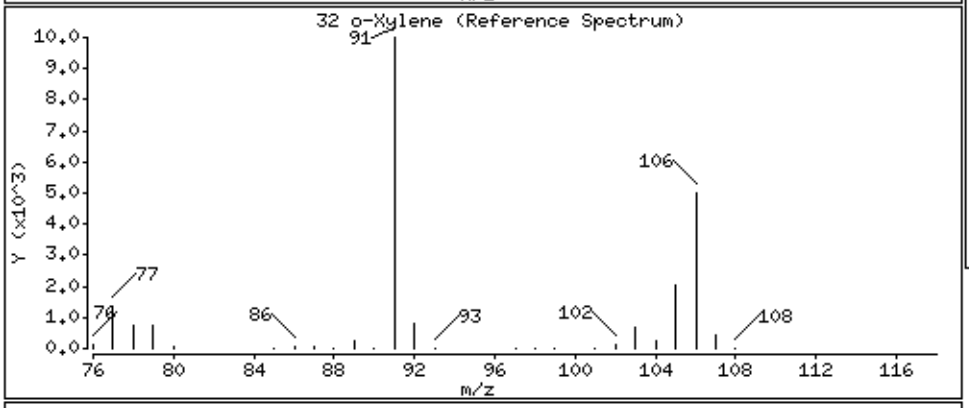
Concentration: 0.08291 PPBV

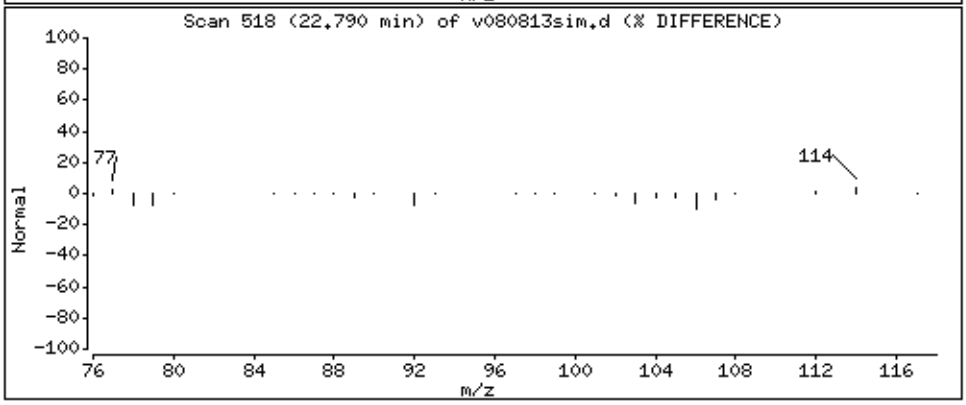












Data File: /chem/msdv.i/08Aug2017.b/v080813sim.d

Date : 08-AUG-2017 17:18

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00262

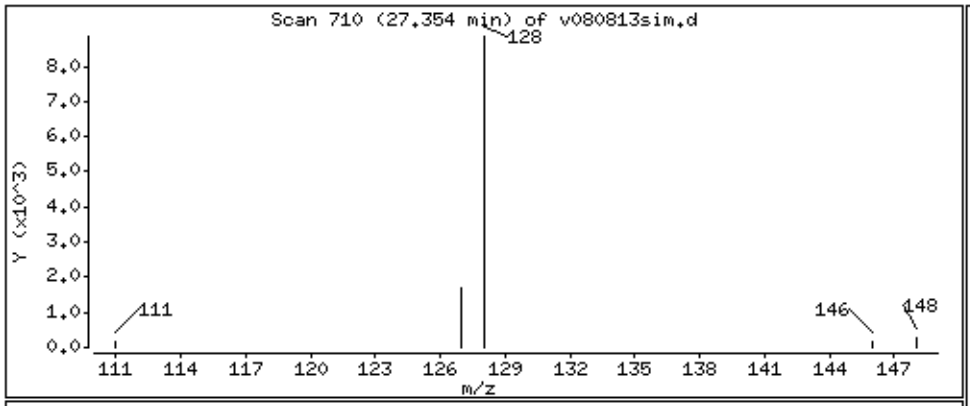
Operator: gh

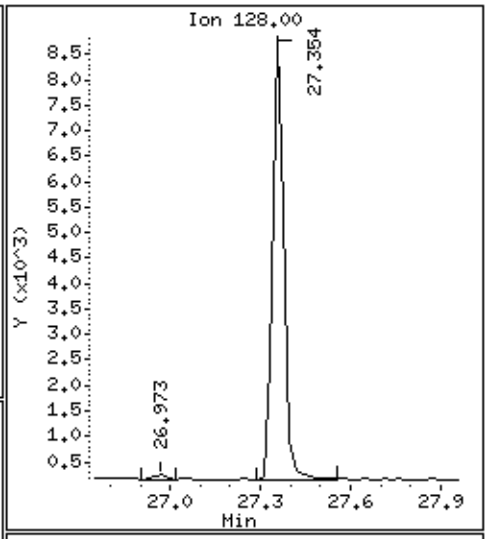
Column phase: RTX-624

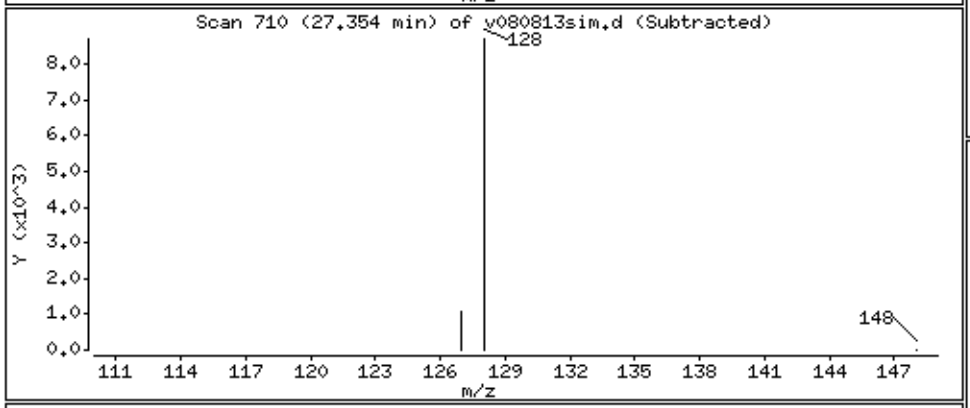
Column diameter: 0.32

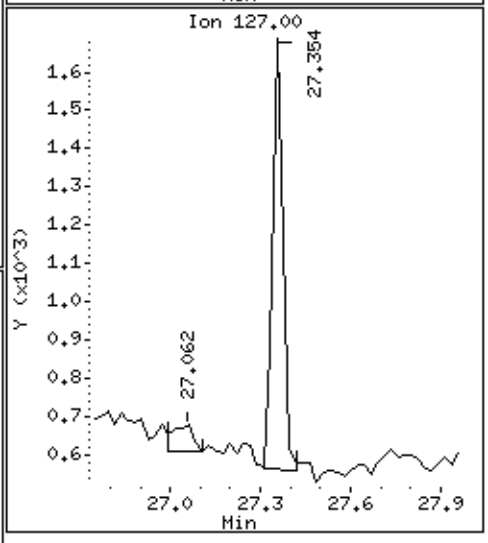
38 Naphthalene

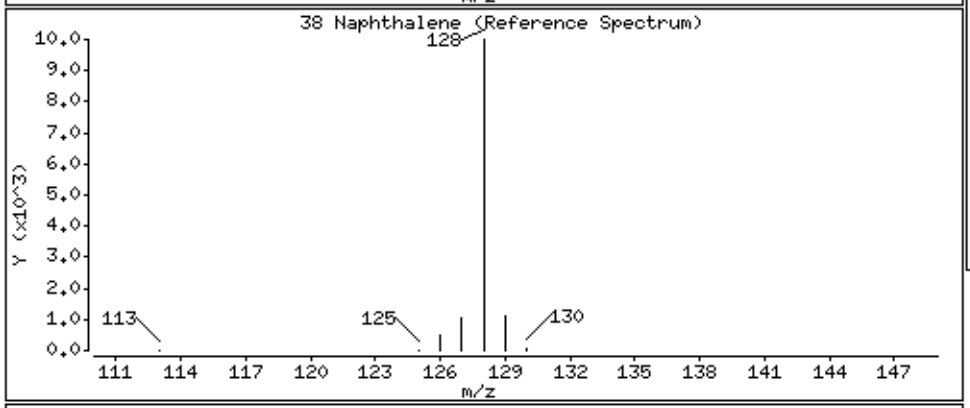
Concentration: 0.5661 PPBV

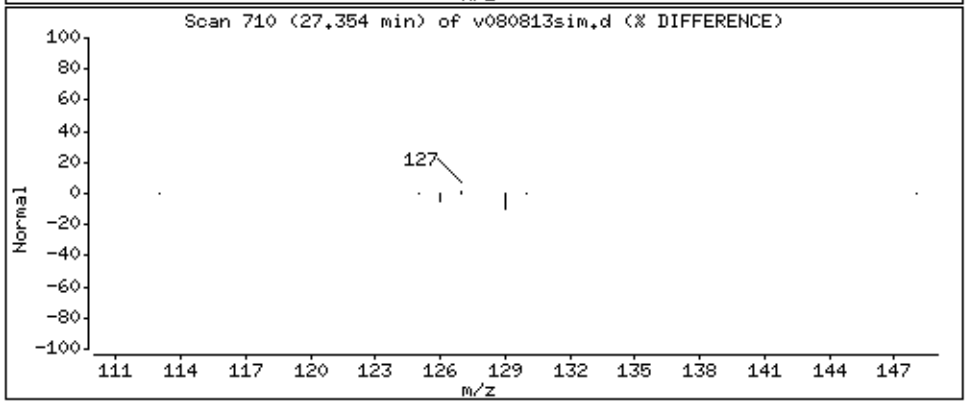












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	OA-007_0817		
Lab ID:	1708091A-09A	**Date/Time Analyzed:**	8/8/17 05:54 PM
Date/Time Collected:	8/3/17 11:52 AM	**Dilution Factor:**	3.09
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msdv.i / v080814sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.016	0.039	0.49	0.38 J
Ethyl Benzene	100-41-4	0.028	0.054	0.27	0.27
m,p-Xylene	108-38-3	0.025	0.054	0.54	0.96
Naphthalene	91-20-3	0.039	0.039	0.81	2.3
o-Xylene	95-47-6	0.031	0.054	0.27	0.37
Toluene	108-88-3	0.040	0.046	0.58	2.2
Total Xylenes	9999-9999-015	NA	D	0.80	1.3

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080814sim.d
Lab Smp Id: 1708091A-09A
Inj Date : 08-AUG-2017 17:54
Operator : gh Inst ID: msdv.i
Smp Info : 250mL #O0912
Misc Info : 17.0"Hg ->5psi
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 2
Dil Factor: 3.09000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
15.710	15.709 (1.000)	130	119381	5.00000			80.00- 120.00	100.00
15.710	15.709 (1.000)	128	92406				47.62- 107.62	77.40
15.710	15.709 (1.000)	49	232028				149.67- 209.67	194.36
17 Benzene						CAS #: 71-43-2		
16.532	16.531 (0.969)	78	4885	0.03821	0.1180		80.00- 120.00	100.00(a)
16.532	16.531 (0.969)	77	2421				0.00- 52.91	49.58
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.505	16.504 (1.051)	65	188655	5.04924	5.049		80.00- 120.00	100.00
16.505	16.504 (1.051)	67	91968				27.09- 87.09	48.75
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.054	17.053 (1.000)	114	480747	5.00000			80.00- 120.00	100.00
17.054	17.053 (1.000)	88	73818				0.00- 45.81	15.35
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.568	19.567 (1.147)	98	429873	4.97143	4.971		80.00- 120.00	100.00
19.568	19.567 (1.147)	70	48541				0.00- 41.21	11.29

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.568	19.567 (1.147)	100	273451			34.67- 94.67	63.61
	23 Toluene					CAS #: 108-88-3		
	19.703	19.701 (1.155)	91	26719	0.18925	0.5848	80.00- 120.00	100.00
	19.703	19.701 (1.155)	92	15342			29.69- 89.69	57.42
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.994	21.992 (1.000)	117	396901	5.00000		80.00- 120.00	100.00
	21.966	21.965 (1.000)	82	210400			22.57- 82.57	53.01
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.104	22.102 (1.005)	106	1108	0.02048	0.06329	80.00- 120.00	100.00
	22.104	22.102 (1.005)	91	3806			275.83- 335.83	343.39
	31 m,p-Xylene					CAS #: 108-38-3		
	22.268	22.267 (1.012)	106	4887	0.07192	0.2222	80.00- 120.00	100.00
	22.241	22.267 (1.011)	91	10103			169.69- 229.69	206.74
	32 o-Xylene					CAS #: 95-47-6		
	22.790	22.789 (1.036)	106	1627	0.02738	0.08460	80.00- 120.00	100.00
	22.790	22.789 (1.036)	91	3708			180.67- 240.67	227.83
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.503	23.502 (1.069)	174	224165	5.01808	5.018	80.00- 120.00	100.00
	23.503	23.502 (1.069)	95	256373			89.82- 149.82	114.37
	23.503	23.502 (1.069)	176	219652			68.37- 128.37	97.99
	38 Naphthalene					CAS #: 91-20-3		
	27.354	27.352 (1.244)	128	10184	0.14048	0.4341	80.00- 120.00	100.00
	27.354	27.352 (1.244)	127	1156			0.00- 42.11	11.36
M	39 Total Xylene					CAS #: 1330-20-7		
				6514	0.09930	0.3068		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080814sim.d
Lab Smp Id: 1708091A-09A
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 17.0"Hg ->5psi

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	119381	-2.26
20 1,4-Difluorobenze	494579	296747	692411	480747	-2.80
28 Chlorobenzene-d5	416996	250198	583794	396901	-4.82

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.01
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.01
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 09:39

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091A-09A
Level: LOW Operator: gh
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 17.0"Hg ->5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.049	100.98	70-130
$ 22 Toluene-d8	5.000	4.971	99.43	70-130
$ 33 4-Bromofluorobenze	5.000	5.018	100.36	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080814sim.d

Date : 08-AUG-2017 17:54

Client ID:

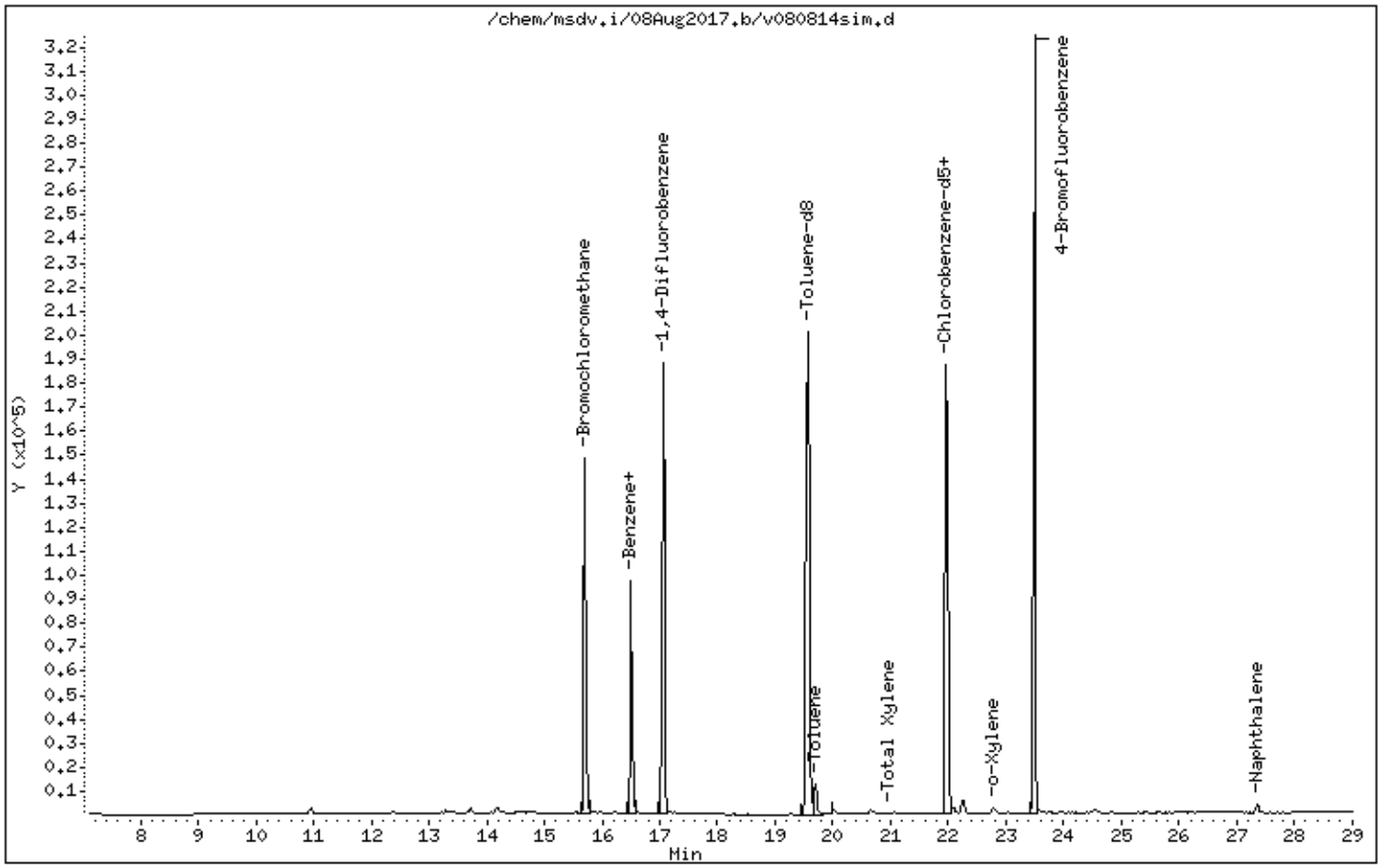
Instrument: msdv.i

Sample Info: 250mL #00912

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080814sim.d

Date : 08-AUG-2017 17:54

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00912

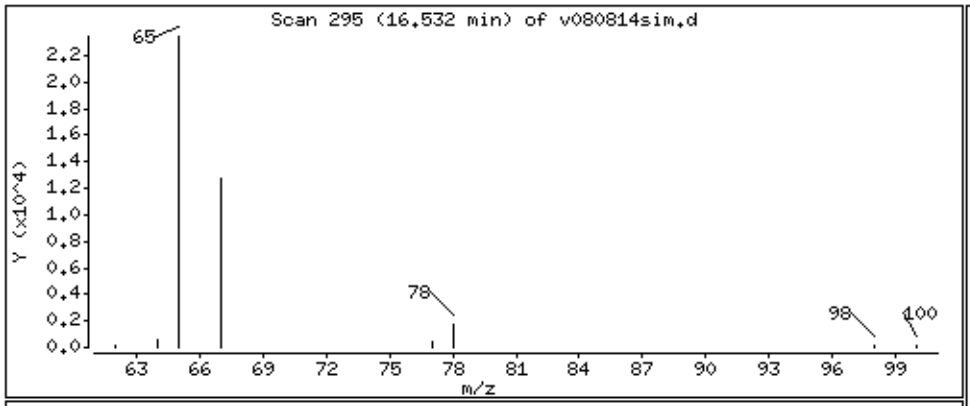
Operator: gh

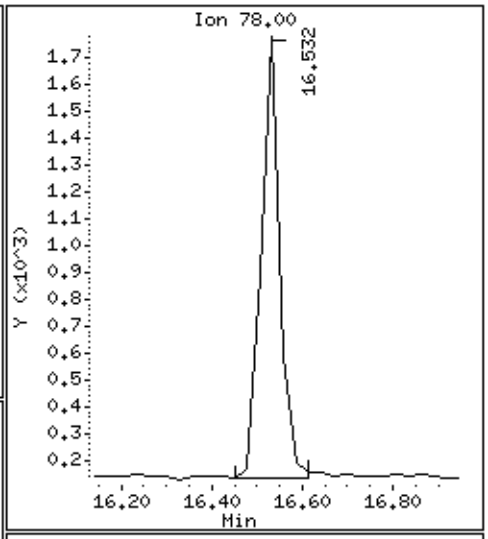
Column phase: RTX-624

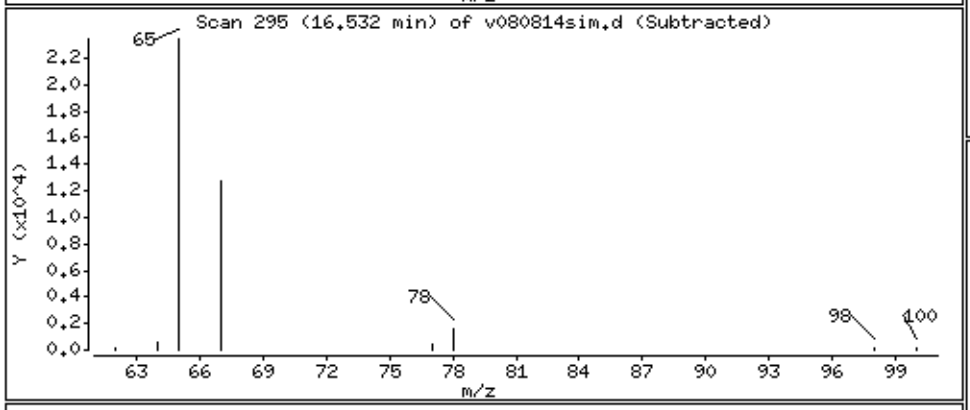
Column diameter: 0.32

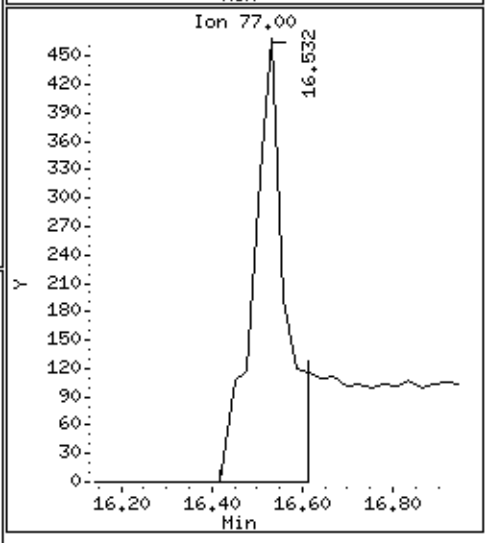
17 Benzene

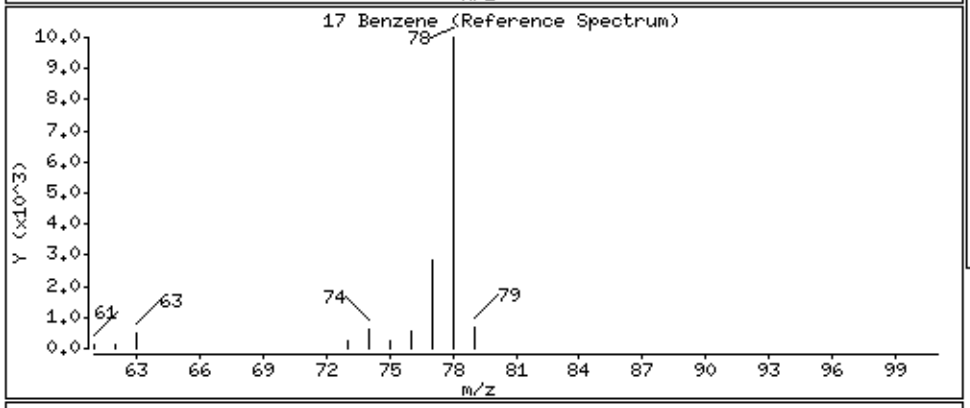
Concentration: 0.1180 PPBV

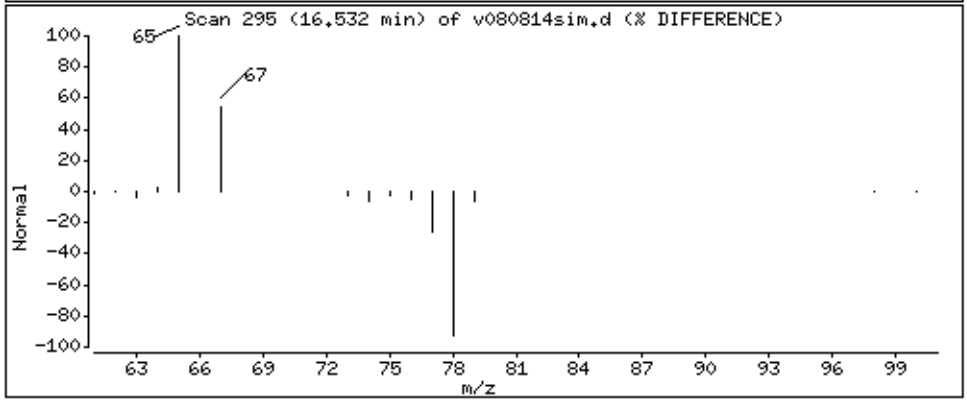












Data File: /chem/msdv.i/08Aug2017.b/v080814sim.d

Date : 08-AUG-2017 17:54

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00912

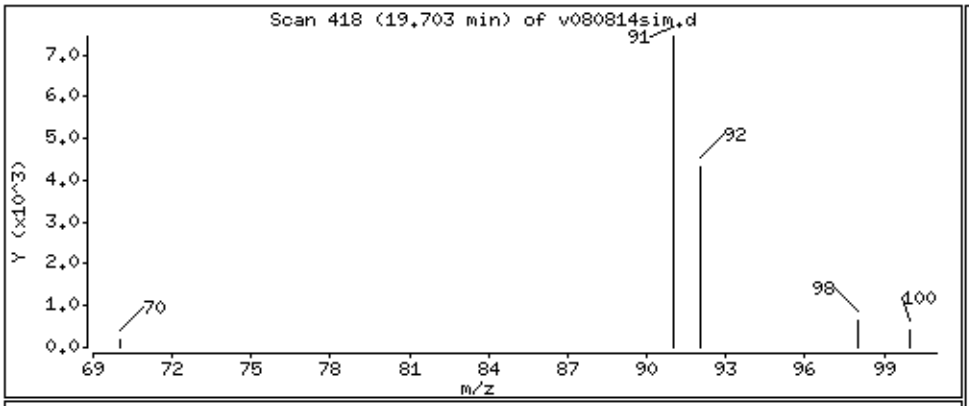
Operator: gh

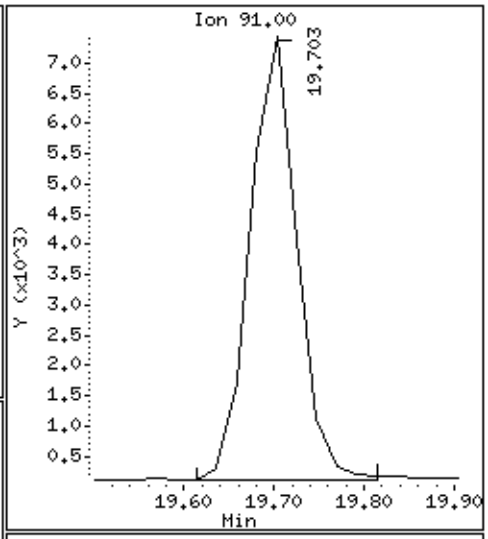
Column phase: RTX-624

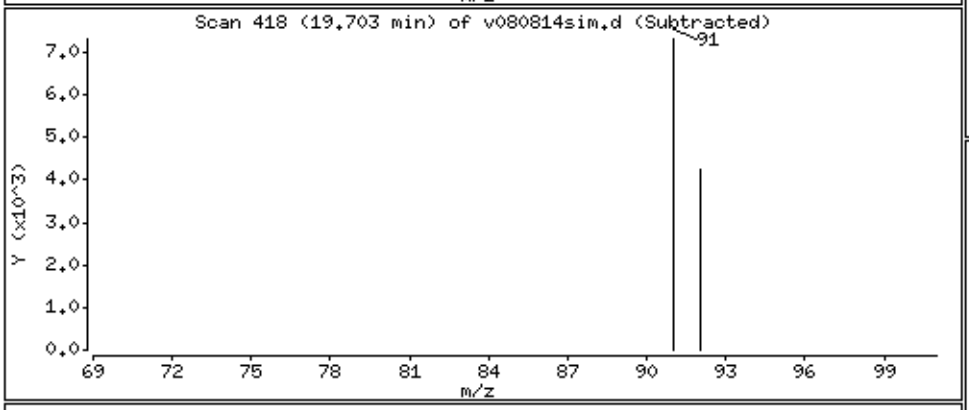
Column diameter: 0.32

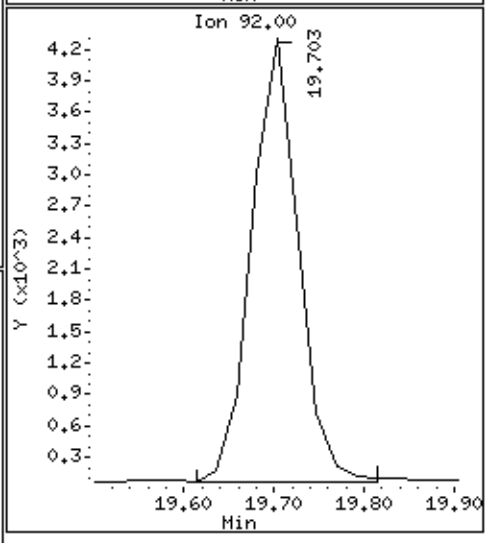
23 Toluene

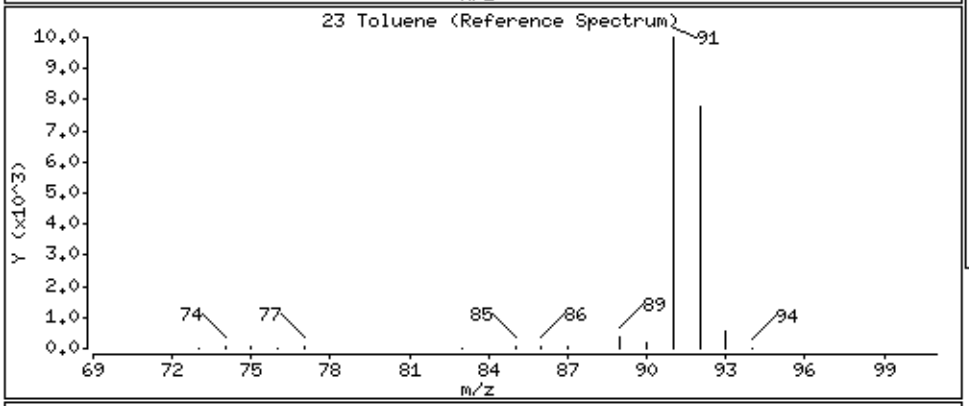
Concentration: 0.5848 PPBV

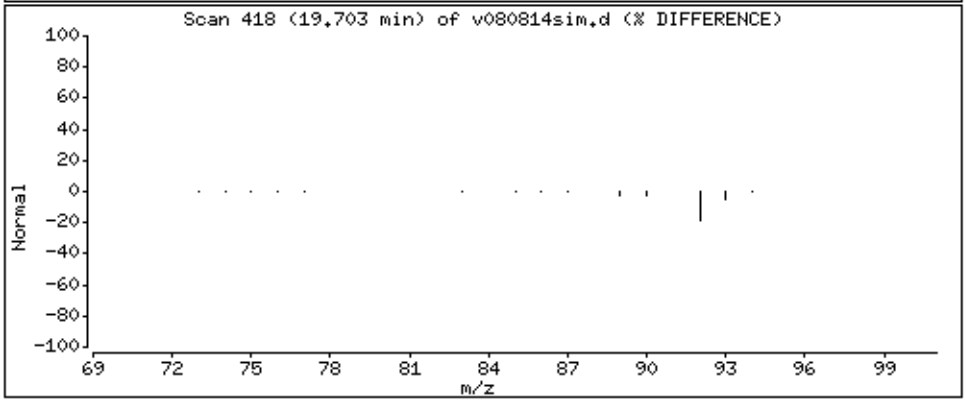












Data File: /chem/msdv.i/08Aug2017.b/v080814sim.d

Date : 08-AUG-2017 17:54

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00912

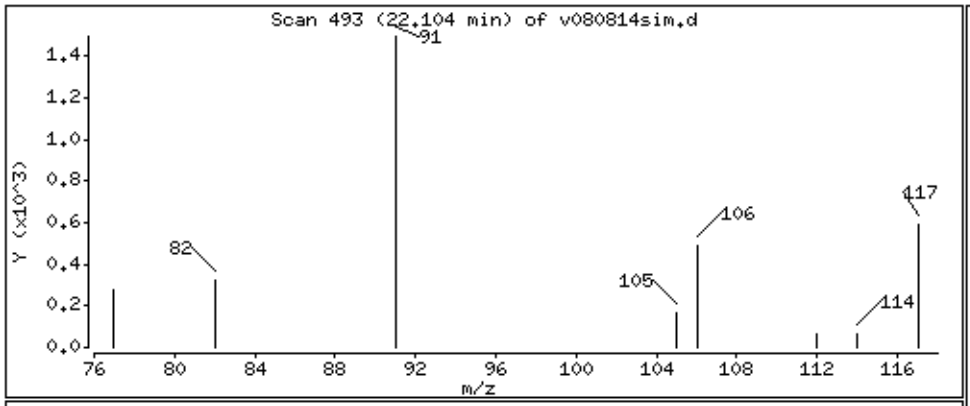
Operator: gh

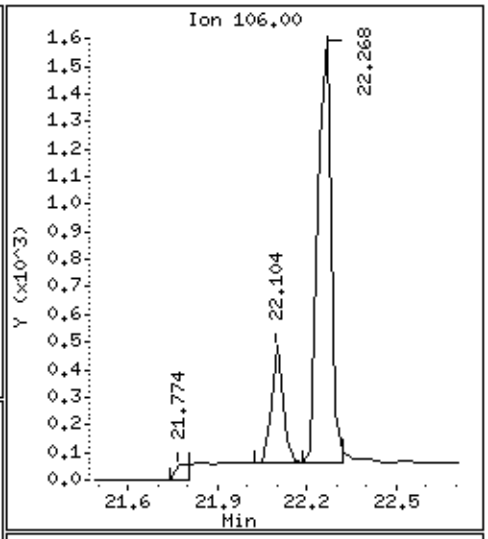
Column phase: RTX-624

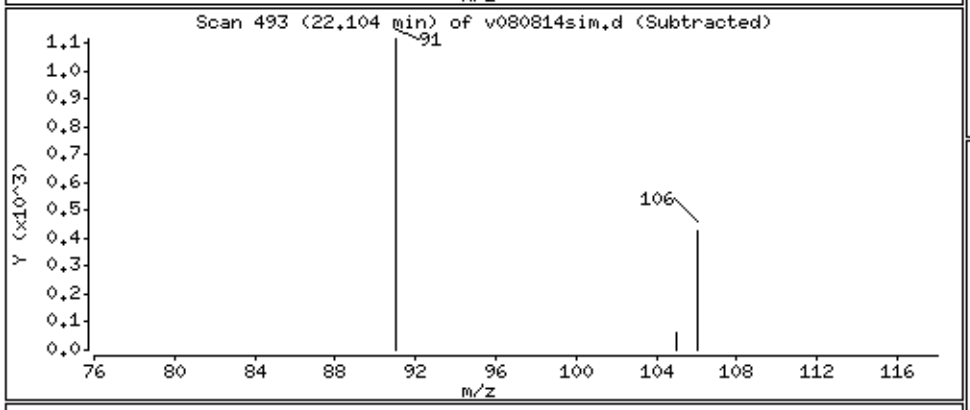
Column diameter: 0.32

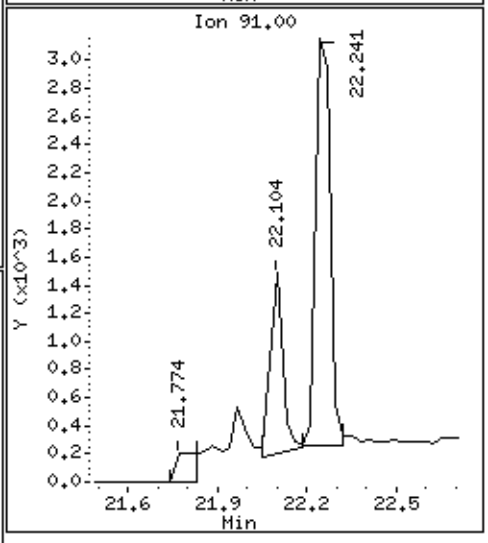
30 Ethyl Benzene

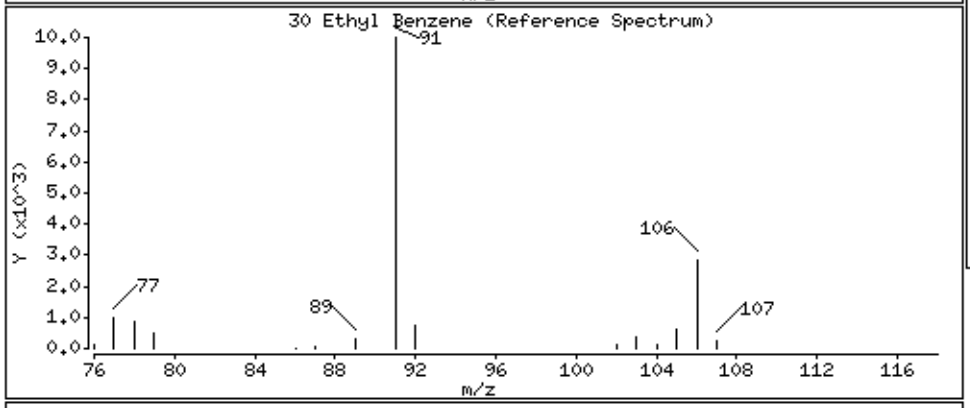
Concentration: 0.06329 PPBV

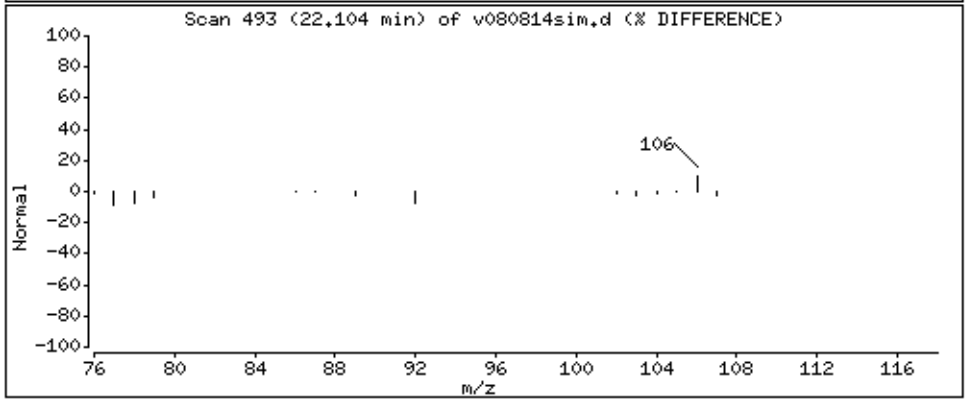












Data File: /chem/msdv.i/08Aug2017.b/v080814sim.d

Date : 08-AUG-2017 17:54

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00912

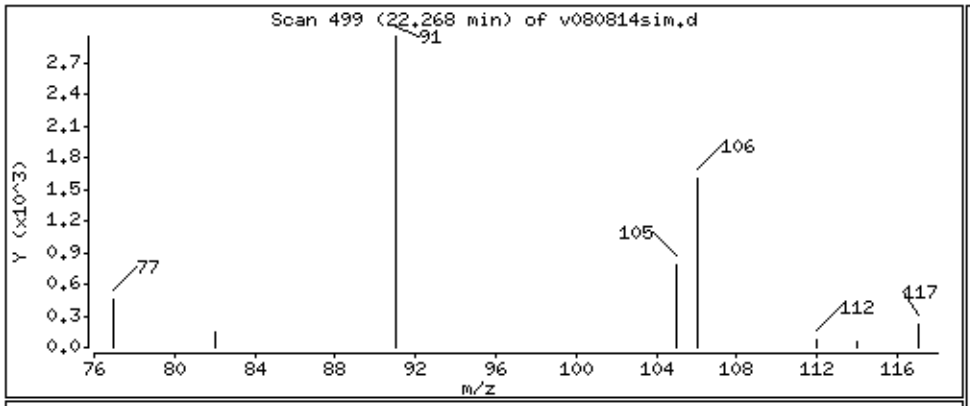
Operator: gh

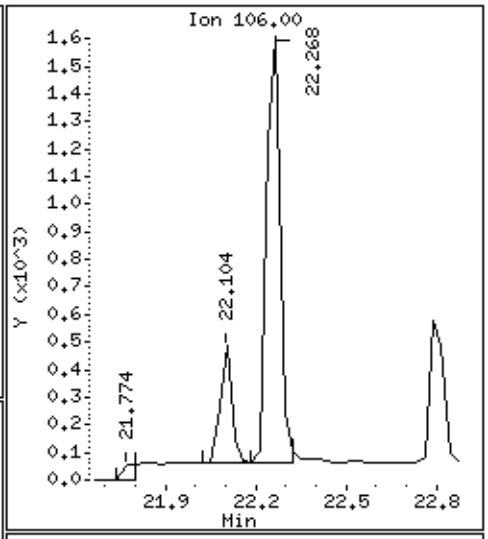
Column phase: RTX-624

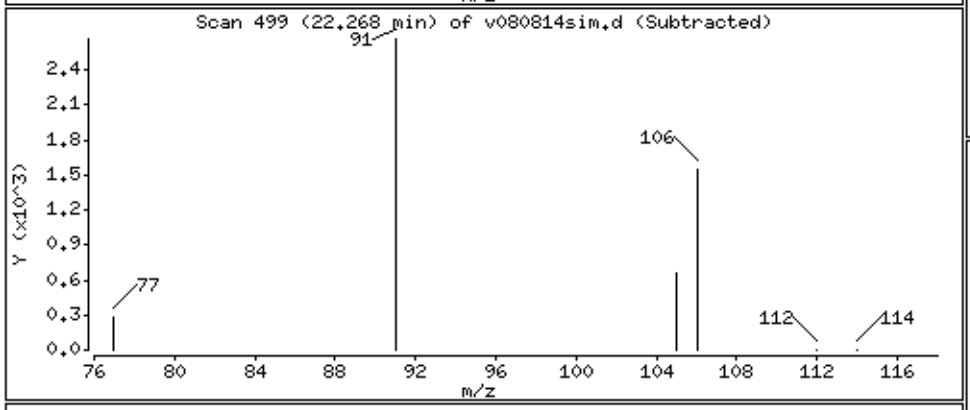
Column diameter: 0.32

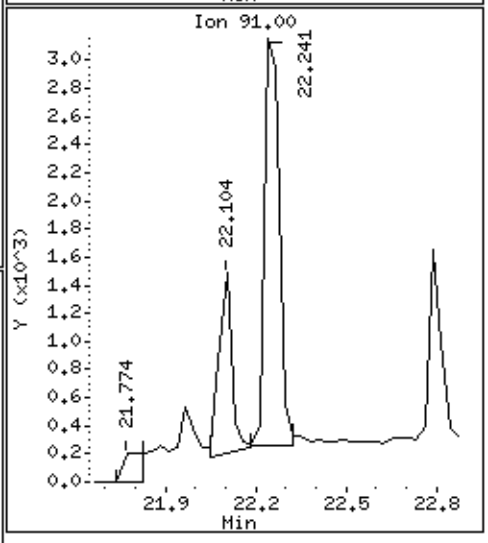
31 m,p-Xylene

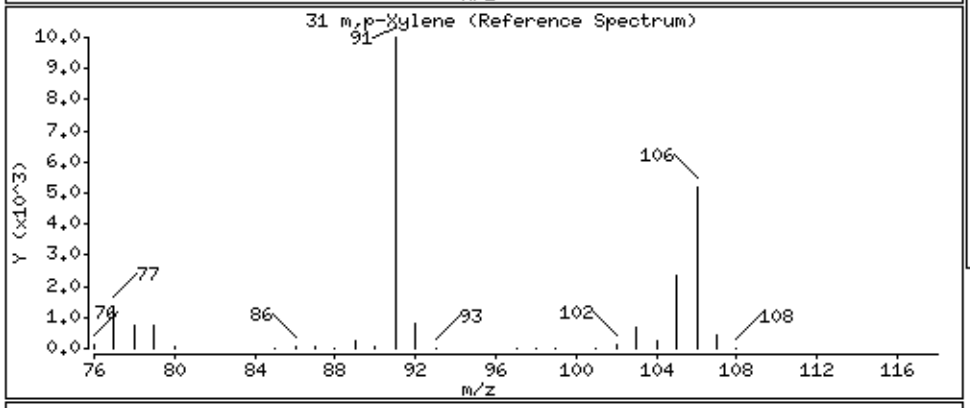
Concentration: 0.2222 PPBV

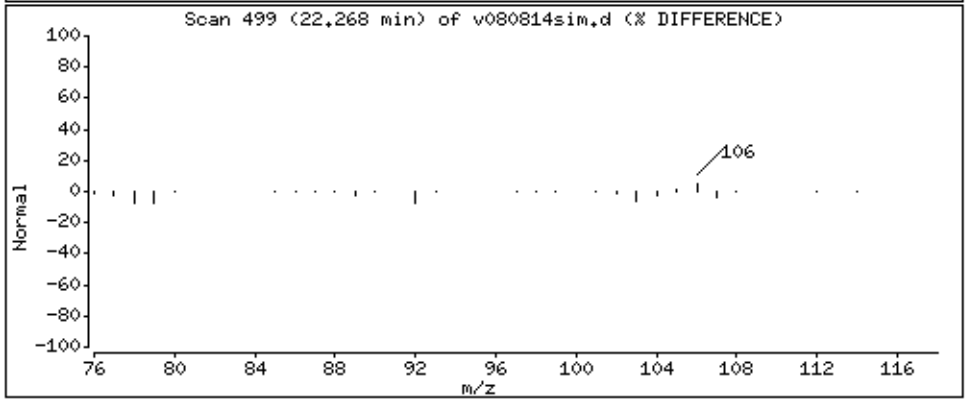












Data File: /chem/msdv.i/08Aug2017.b/v080814sim.d

Date : 08-AUG-2017 17:54

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00912

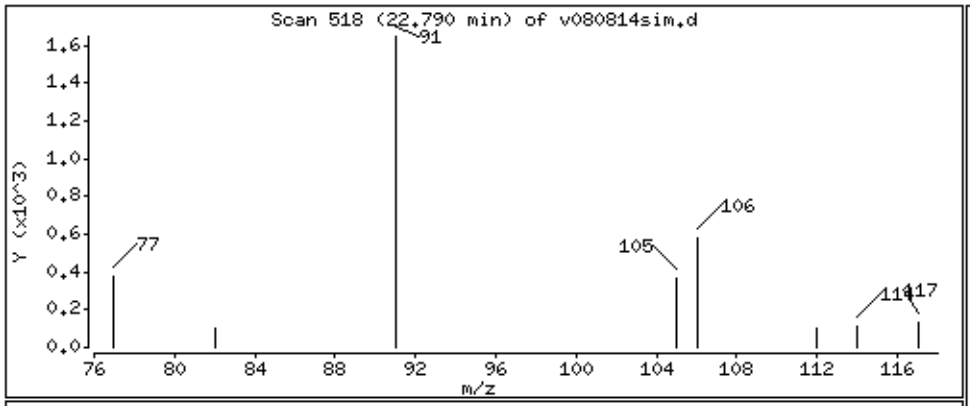
Operator: gh

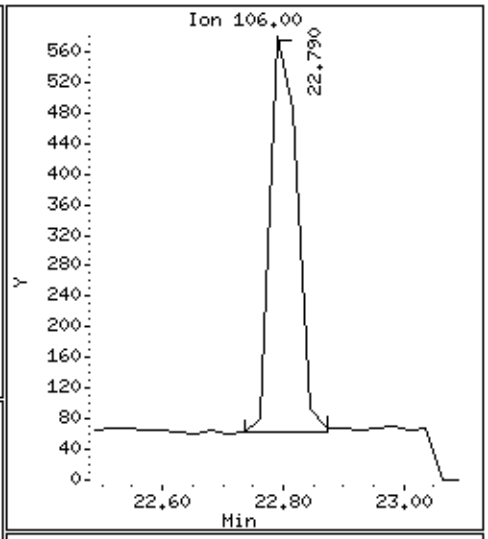
Column phase: RTX-624

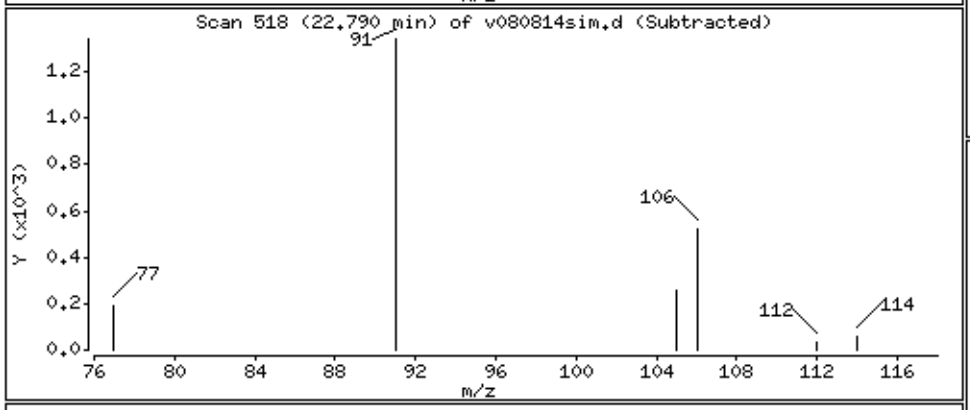
Column diameter: 0.32

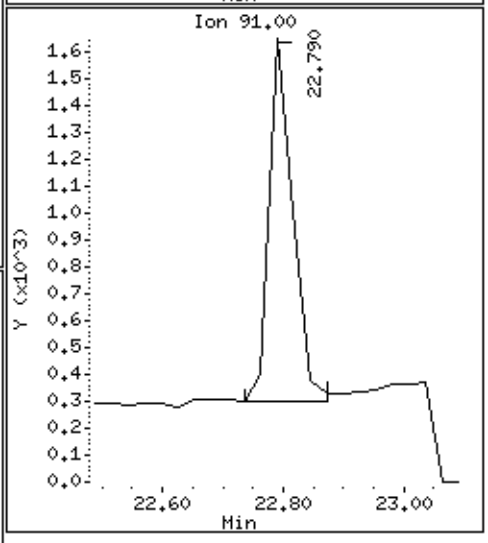
32 o-Xylene

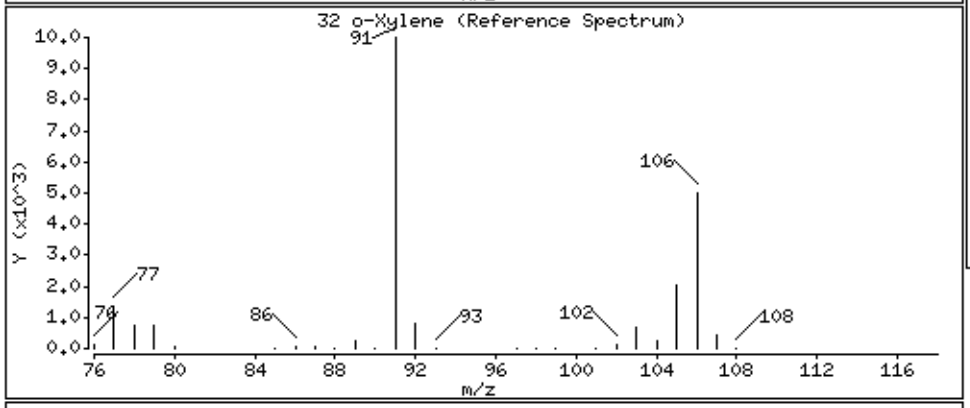
Concentration: 0.08460 PPBV

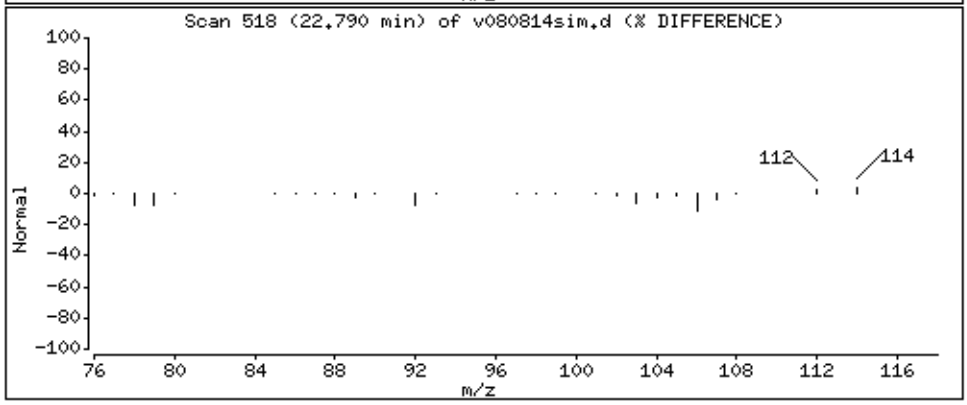












Data File: /chem/msdv.i/08Aug2017.b/v080814sim.d

Date : 08-AUG-2017 17:54

Client ID:

Instrument: msdv.i

Sample Info: 250mL #00912

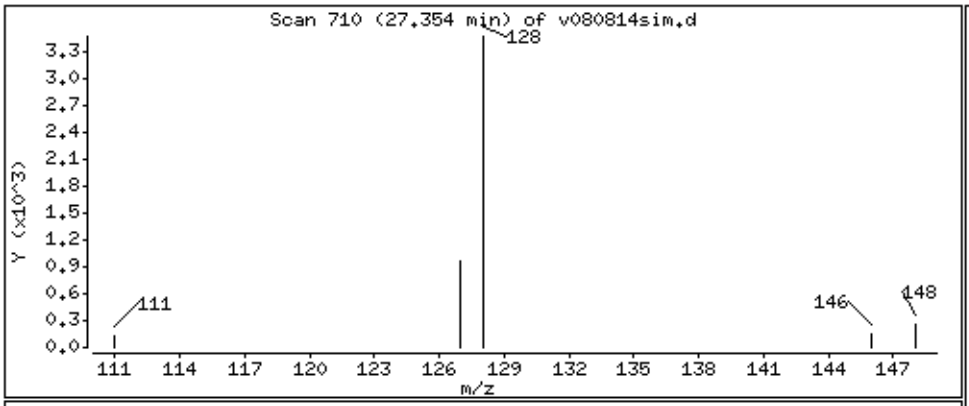
Operator: gh

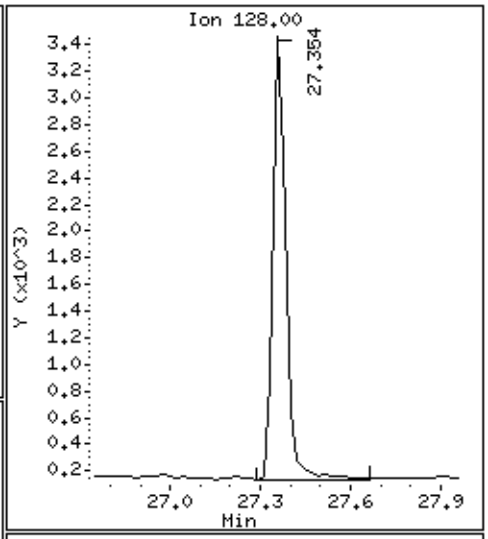
Column phase: RTX-624

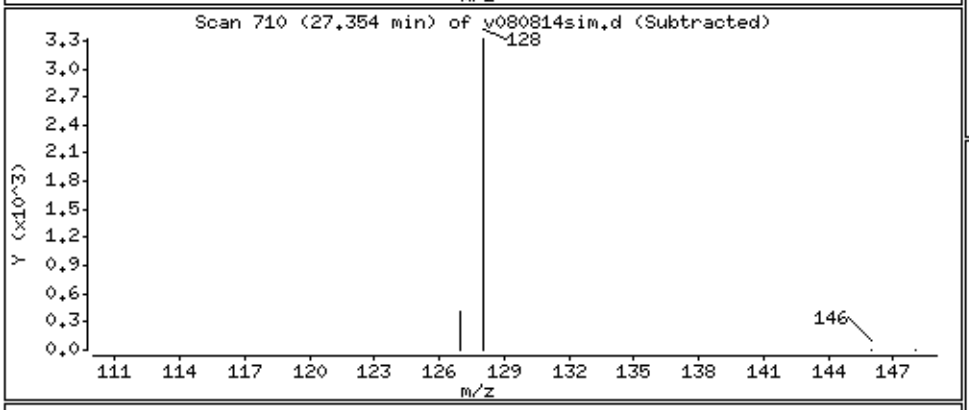
Column diameter: 0.32

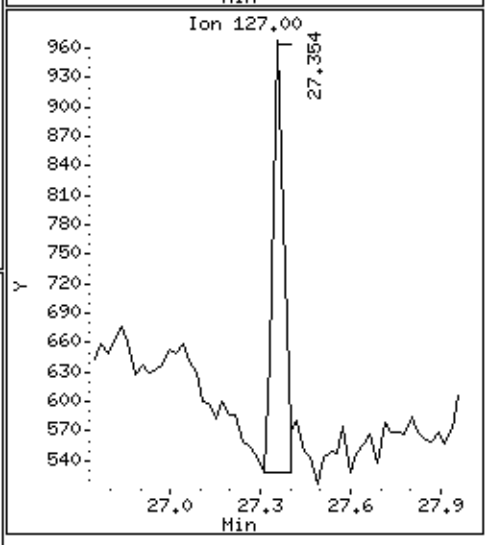
38 Naphthalene

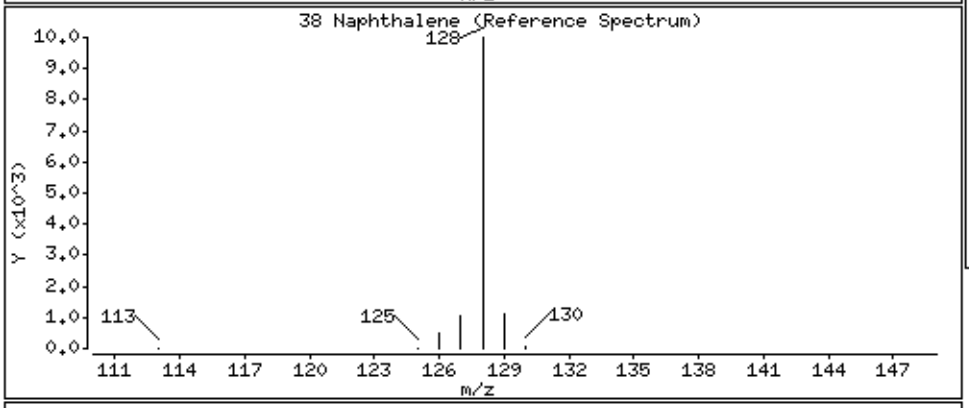
Concentration: 0.4341 PPBV

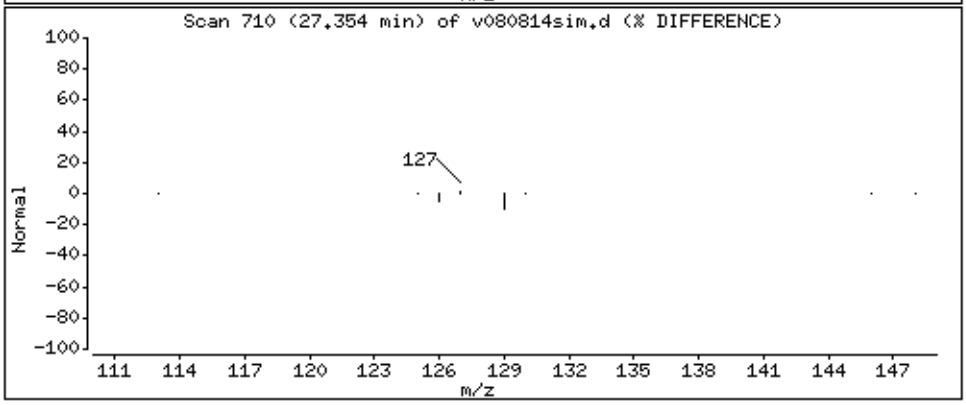












QC Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	Lab Blank		
Lab ID:	1708091A-10A	**Date/Time Analyzed:**	8/8/17 12:42 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdv.i / v080807simz

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0052	0.013	0.16	0.011 J
Ethyl Benzene	100-41-4	0.0091	0.017	0.087	Not Detected U
m,p-Xylene	108-38-3	0.0080	0.017	0.17	Not Detected U
Naphthalene	91-20-3	0.012	0.012	0.26	0.029 J
o-Xylene	95-47-6	0.010	0.017	0.087	Not Detected U
Toluene	108-88-3	0.013	0.015	0.19	0.014 J
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080807simz.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 08-AUG-2017 12:42
Operator : ef Inst ID: msdv.i
Smp Info : 250mL# 34202
Misc Info : Humid
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
15.709	15.709 (1.000)	130	119262	5.00000			80.00- 120.00	100.00
15.709	15.709 (1.000)	128	92327				47.62- 107.62	77.42
15.709	15.709 (1.000)	49	229639				149.67- 209.67	192.55
17 Benzene						CAS #: 71-43-2		
16.531	16.531 (0.969)	78	426	0.00335	0.003352		80.00- 120.00	100.00(a)
16.531	16.531 (0.969)	77	1062				0.00- 52.91	249.30
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.503	16.504 (1.051)	65	186656	5.00074	5.001		80.00- 120.00	100.00
16.503	16.504 (1.051)	67	91008				27.09- 87.09	48.76
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.052	17.053 (1.000)	114	477816	5.00000			80.00- 120.00	100.00
17.052	17.053 (1.000)	88	74197				0.00- 45.81	15.53
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.567	19.567 (1.147)	98	424142	4.93524	4.935		80.00- 120.00	100.00
19.567	19.567 (1.147)	70	48158				0.00- 41.21	11.35

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)								
19.567	19.567	(1.147)	100	270851			34.67- 94.67	63.86
23 Toluene						CAS #: 108-88-3		
19.701	19.701	(1.155)	91	535	0.00381	0.003813	80.00- 120.00	100.00(a)
19.701	19.701	(1.155)	92	321			29.69- 89.69	60.00
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
21.992	21.992	(1.000)	117	392374	5.00000		80.00- 120.00	100.00
21.965	21.965	(1.000)	82	205967			22.57- 82.57	52.49
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.502	23.502	(1.069)	174	222469	5.03757	5.038	80.00- 120.00	100.00
23.502	23.502	(1.069)	95	257382			89.82- 149.82	115.69
23.502	23.502	(1.069)	176	216889			68.37- 128.37	97.49
38 Naphthalene						CAS #: 91-20-3		
27.375	27.352	(1.245)	128	396	0.00553	0.005525	80.00- 120.00	100.00(a)
27.397	27.352	(1.246)	127	205			0.00- 42.11	51.77

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080807simz.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: Humid

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	119262	-2.36
20 1,4-Difluorobenze	494579	296747	692411	477816	-3.39
28 Chlorobenzene-d5	416996	250198	583794	392374	-5.90

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Level: LOW Operator: ef
Data Type: MS DATA SampleType: BLANK
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.001	100.01	70-130
$ 22 Toluene-d8	5.000	4.935	98.70	70-130
$ 33 4-Bromofluorobenze	5.000	5.038	100.75	70-130

Data File: /chem/msdv.i/08Aug2017.b/v080807simz.d

Date : 08-AUG-2017 12:42

Client ID: Lab Blank

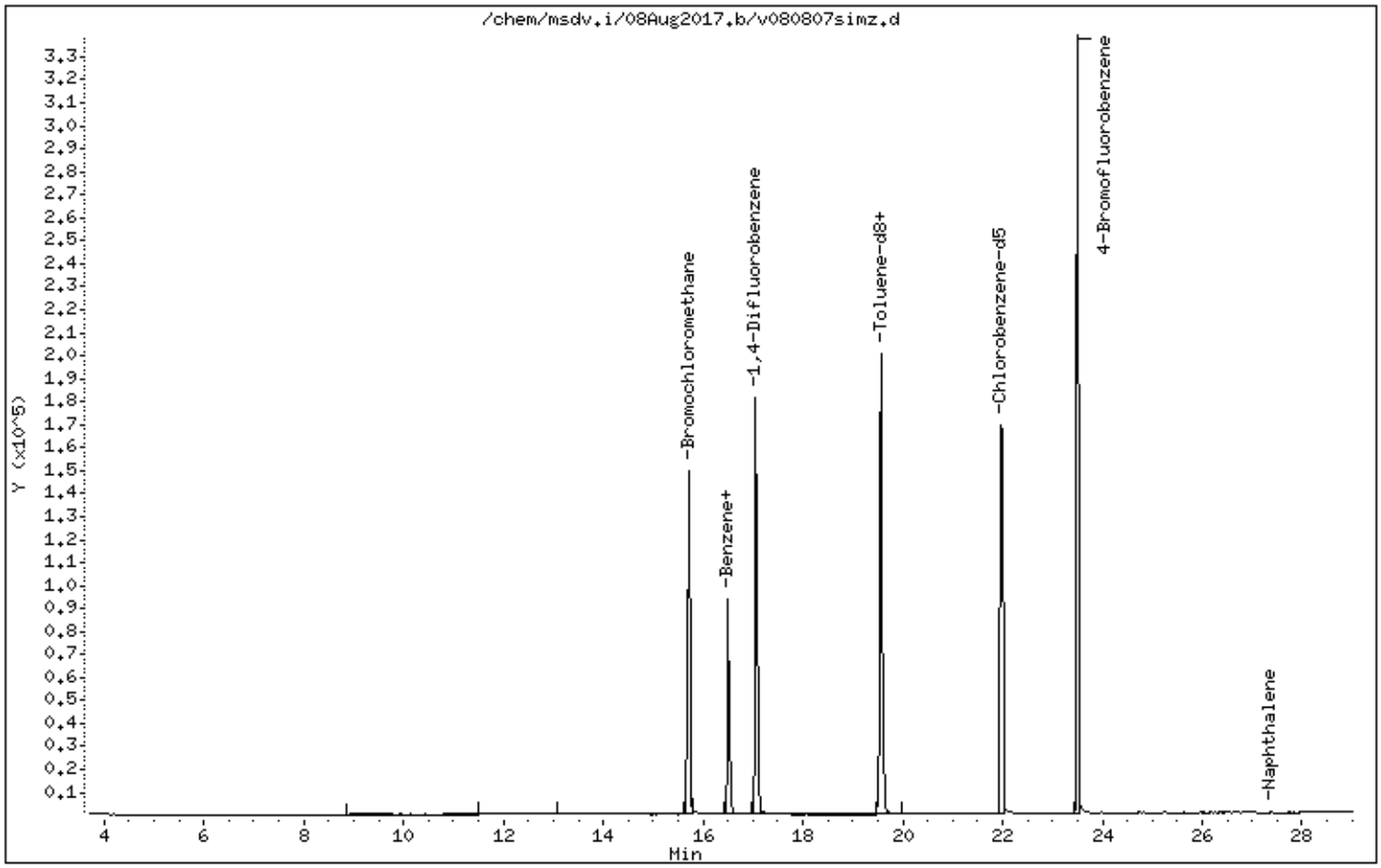
Instrument: msdv.i

Sample Info: 250mL# 34202

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msdv.i/08Aug2017.b/v080807simz.d

Date : 08-AUG-2017 12:42

Client ID: Lab Blank

Instrument: msdv.i

Sample Info: 250mL# 34202

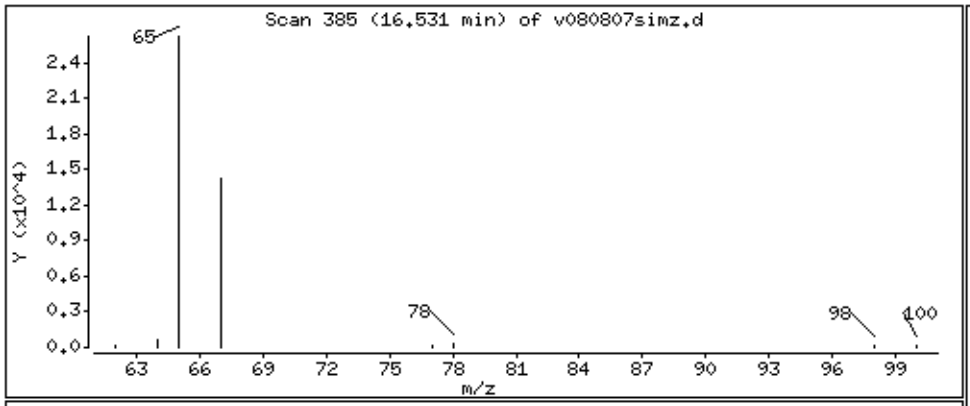
Operator: ef

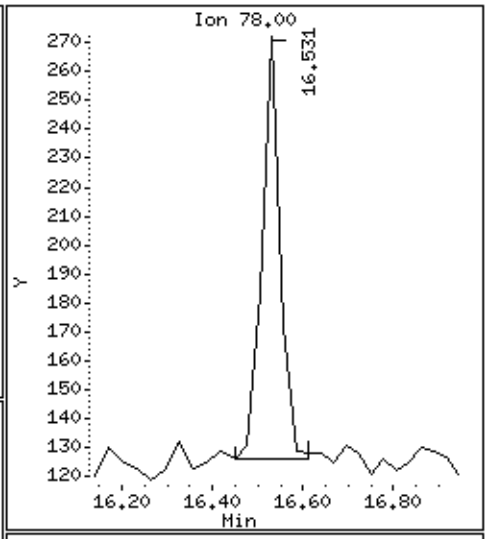
Column phase: RTX-624

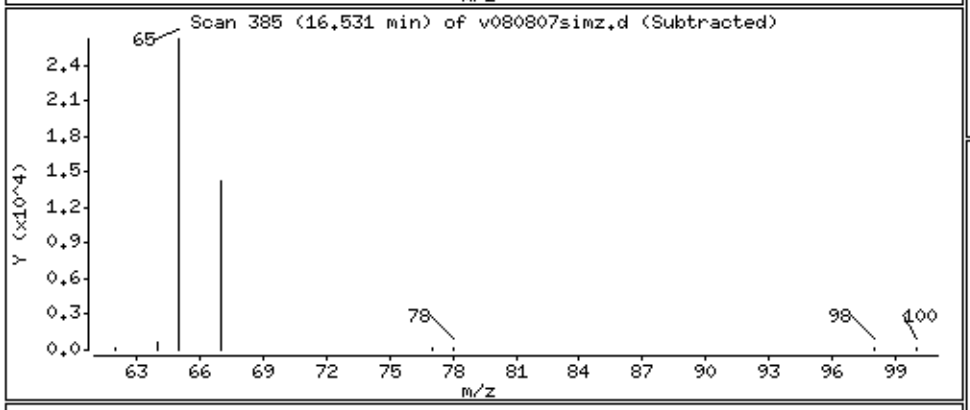
Column diameter: 0.32

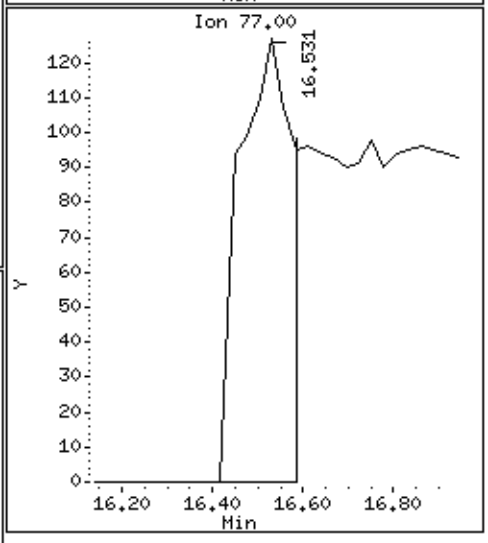
17 Benzene

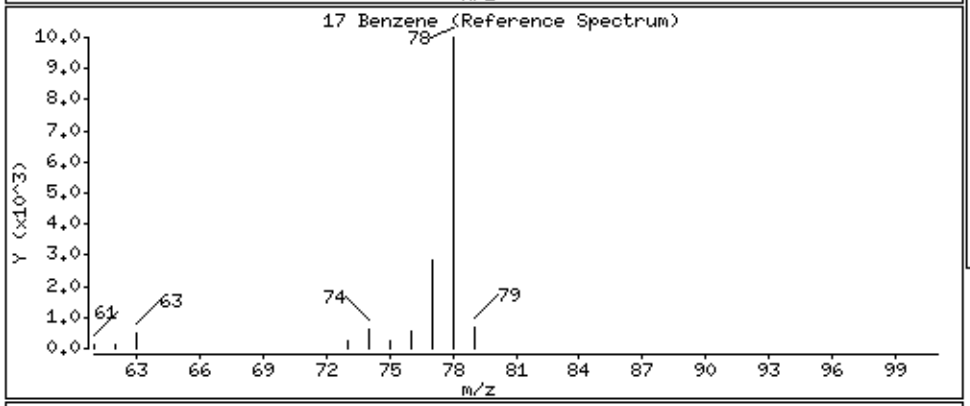
Concentration: 0.003352 PPBV

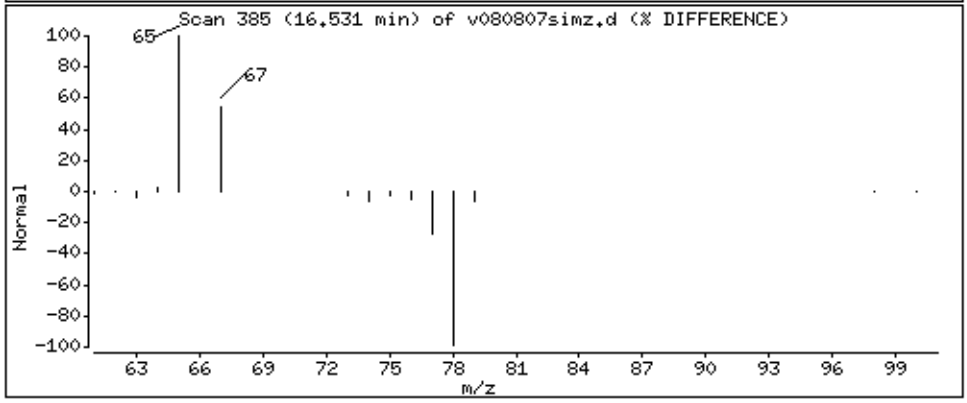












Data File: /chem/msdv.i/08Aug2017.b/v080807simz.d

Date : 08-AUG-2017 12:42

Client ID: Lab Blank

Instrument: msdv.i

Sample Info: 250mL# 34202

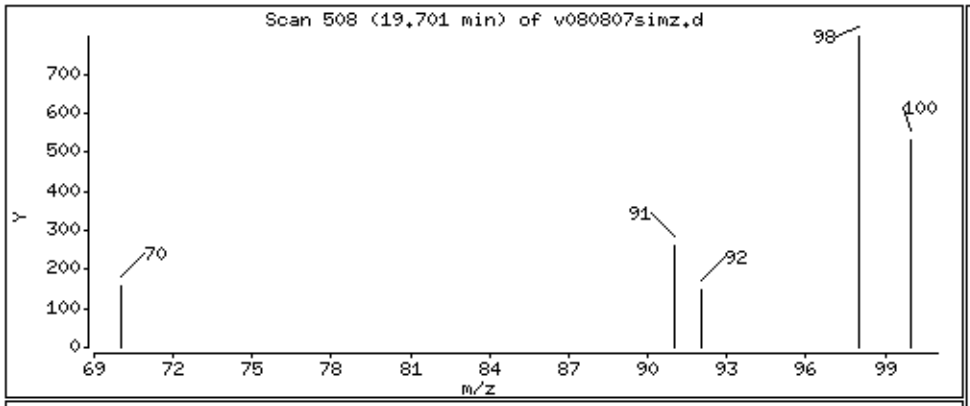
Operator: ef

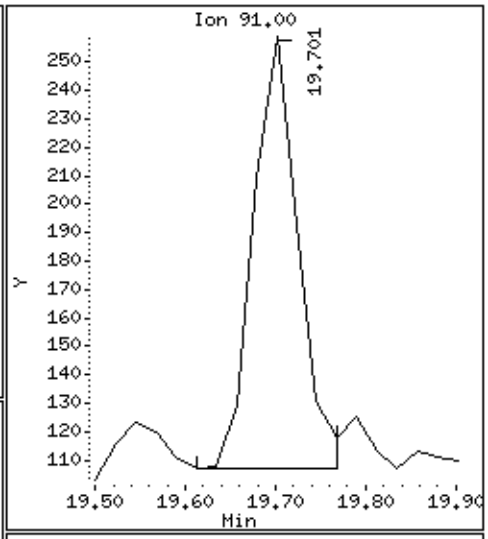
Column phase: RTX-624

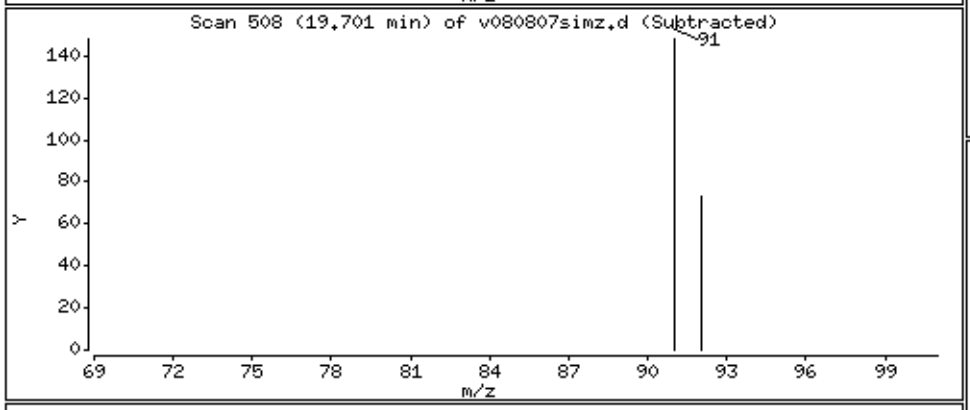
Column diameter: 0.32

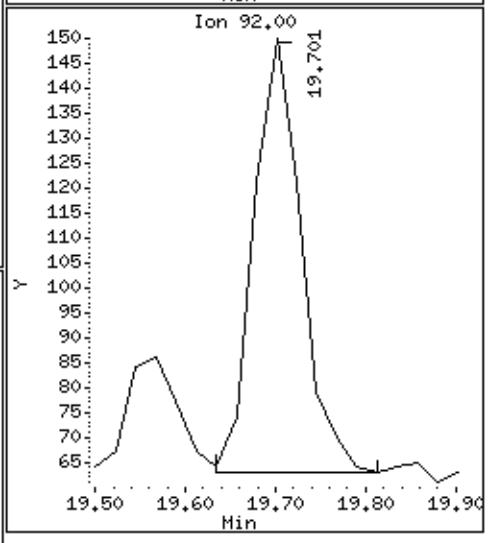
23 Toluene

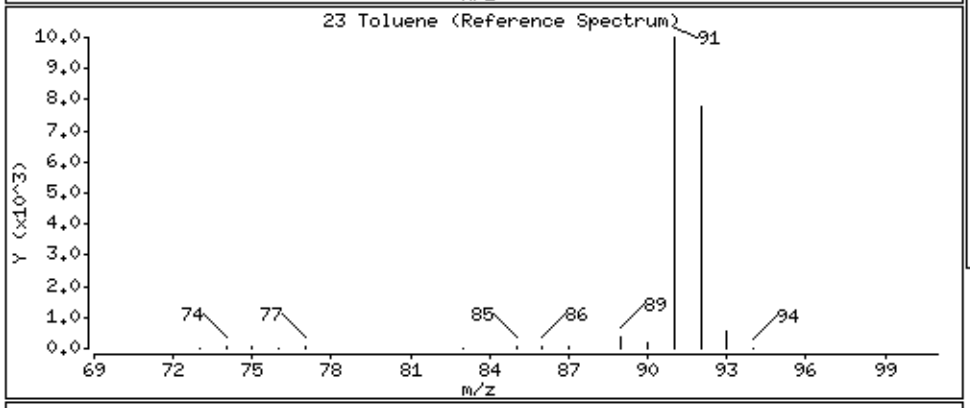
Concentration: 0.003813 PPBV

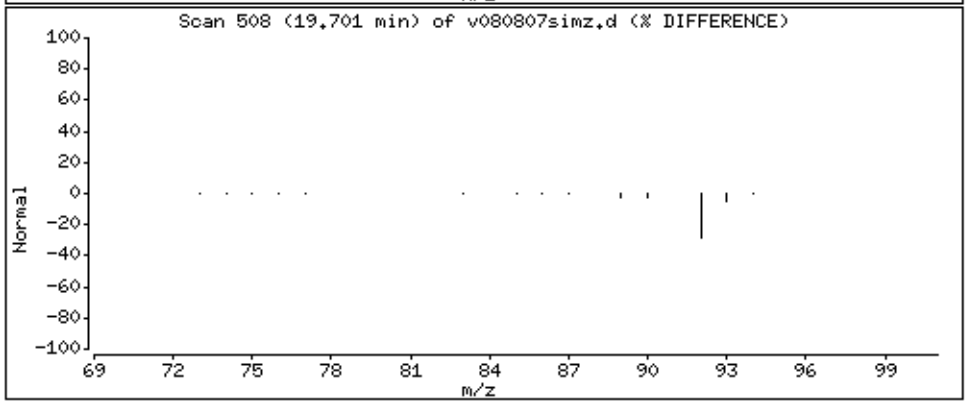












Data File: /chem/msdv.i/08Aug2017.b/v080807simz.d

Date : 08-AUG-2017 12:42

Client ID: Lab Blank

Instrument: msdv.i

Sample Info: 250mL# 34202

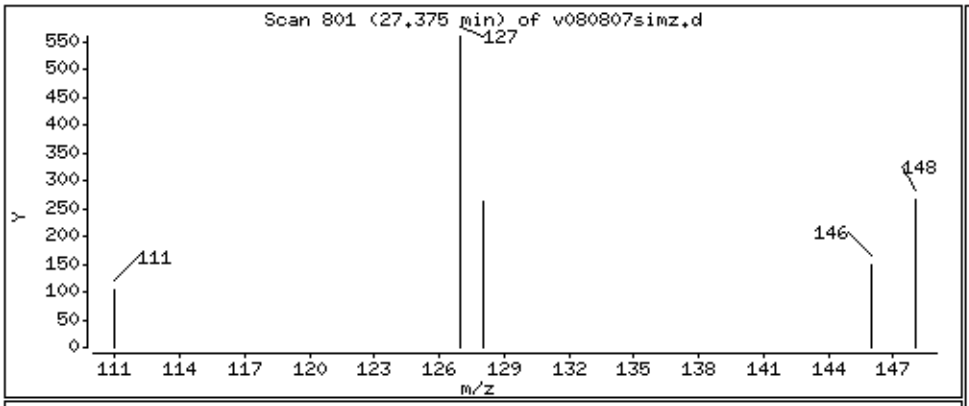
Operator: ef

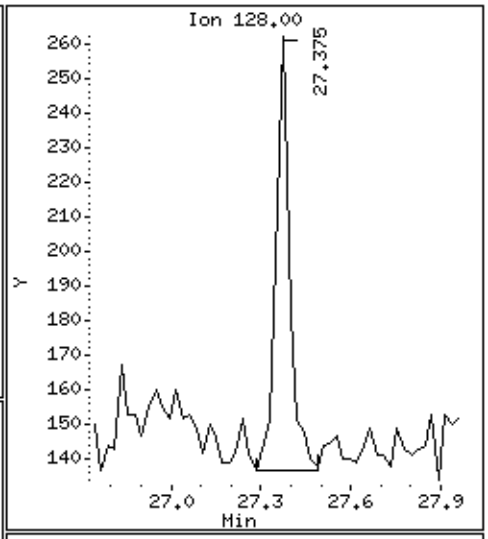
Column phase: RTX-624

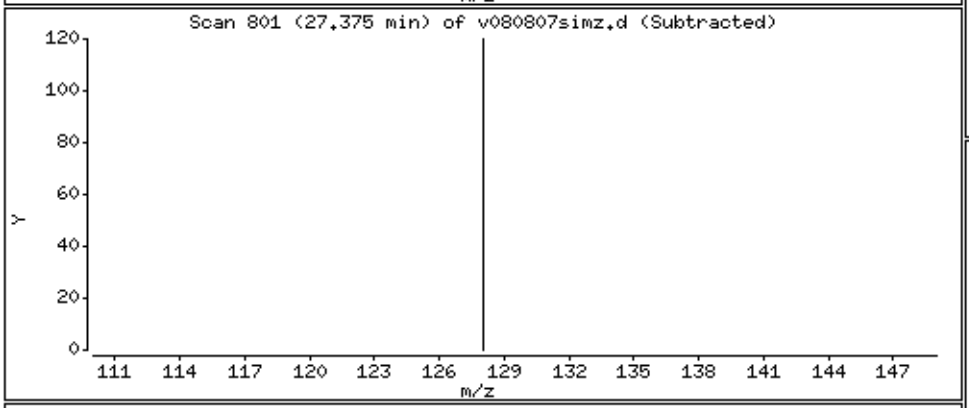
Column diameter: 0.32

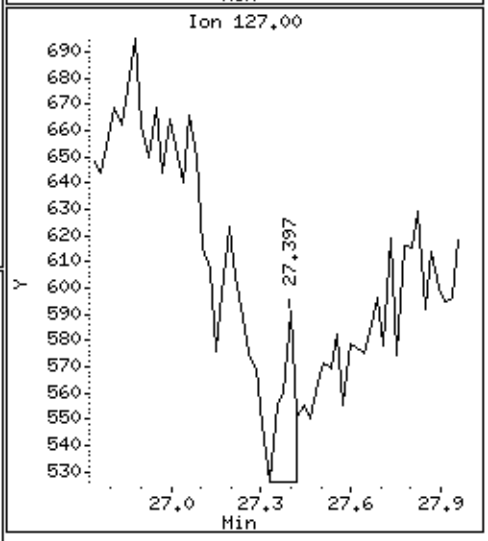
38 Naphthalene

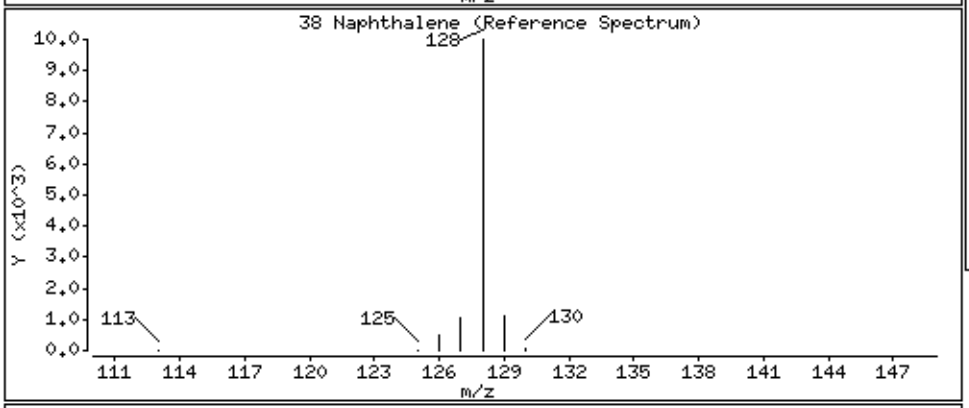
Concentration: 0.005525 PPBV

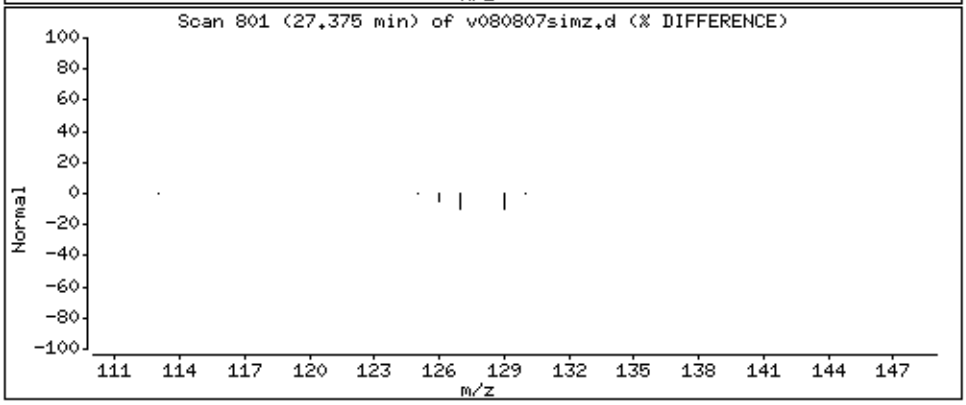












LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-15 GC/MS SIM

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1708091A

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	TOTAL OUT
01	OA-004_0817	104		98		102				0
02	IAD-004_0817	101		100		96				0
03	IAU-004_0817	102		99		97				0
04	IAD-107_0817	102		99		96				0
05	IAD-007_0817	102		99		96				0
06	IAU-007_0817	105		99		99				0
07	OA-007_0817	101		99		100				0
08	Lab Blank	100		99		101				0
09	CCV	100		100		98				0
10	LCS	99		101		96				0
11	LCSD	100		101		96				0
12										0
13										0
14										0
15										0
16										0
17										0
18										0
19										0
20										0
21										0
22										0
23										0
24										0

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1708091A

Lab File ID: v080803simz.d | Date Analyzed: 08/08/2017

Instrument ID: msdv.i | Time Analyzed: 09:37 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	416996		21.99		494579		17.05		122147		15.71	
	UPPER LIMIT	583794		22.32		692411		17.38		171006		16.04	
	LOWER LIMIT	250198		21.66		296747		16.72		73288		15.38	
	CLIENT SAMPLE NO												
01	OA-004_0817	400565		21.99		488440		17.05		116739		15.71	
02	IAD-004_0817	397833		21.99		473775		17.05		117203		15.71	
03	IAU-004_0817	401289		21.99		485653		17.05		119261		15.71	
04	IAD-107_0817	397931		21.99		479152		17.05		116277		15.71	
05	IAD-007_0817	399016		21.99		481824		17.05		118026		15.71	
06	IAU-007_0817	401788		21.99		482774		17.05		114546		15.71	
07	OA-007_0817	396901		21.99		480747		17.05		119381		15.71	
08	Lab Blank	392374		21.99		477816		17.05		119262		15.71	
09	CCV	416996		21.99		494579		17.05		122147		15.71	
10	LCS	417039		21.99		497549		17.05		124061		15.71	
11	LCSD	418914		21.99		499669		17.05		123482		15.71	
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: v080805simz.d & v080804simz.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 8/8/17 & 8/8/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	82		82		0	
100-41-4	Ethyl Benzene	86		86		0	
108-38-3	m,p-Xylene	72		73		1.4	
91-20-3	Naphthalene	65		65		0	
95-47-6	o-Xylene	80		82		2.5	
108-88-3	Toluene	87		87		0	
9999-9999-015	Total Xylenes	76		78		2.6	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-JUL-2017 19:46
End Cal Date : 07-JUL-2017 09:17
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Cal Date : 09-Aug-2017 12:38 efinn
Curve Type : Average

Calibration File Names:
Level 2: /chem/msdv.i/06Jul2017.b/v070602simz.d
Level 3: /chem/msdv.i/06Jul2017.b/v070603simz.d
Level 4: /chem/msdv.i/06Jul2017.b/v070604simz.d
Level 5: /chem/msdv.i/06Jul2017.b/v070605simz.d
Level 6: /chem/msdv.i/06Jul2017.b/v070606simz.d
Level 7: /chem/msdv.i/06Jul2017.b/v070607simz.d
Level 8: /chem/msdv.i/06Jul2017.b/v070608simz.d
Level 12: /chem/msdv.i/06Jul2017.b/v070609simz.d
Level 13: /chem/msdv.i/06Jul2017.b/v070610simz.d
Level 15: /chem/msdv.i/06Jul2017.b/v070611simz.d

Compound	0.00500 Level 2	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD
	1.000 Level 8	5.000 Level 12	10.000 Level 13	20.000 Level 15				
1 Freon 12	+++++	+++++	4.01595	4.35662	4.18173	3.49997		
	3.57482	4.28440	3.74817	3.55123			3.90161	8.981
2 Freon 114	+++++	+++++	3.57671	3.55609	3.57322	2.97022		
	3.07364	3.42042	3.09894	2.92945			3.27484	8.667
3 Chloromethane	+++++	+++++	+++++	2.37328	2.61696	1.93710		
	1.88718	2.07888	1.82925	1.73736			2.06572	15.445
4 Vinyl Chloride	+++++	2.47925	2.18054	1.99750	1.93279	1.63226		
	1.70619	1.93536	1.70755	1.62633			1.91086	14.873
5 Chloroethane	+++++	+++++	+++++	0.84950	0.84764	0.72783		
	0.75094	0.92050	0.83775	0.78030			0.81635	8.186
6 Freon 11	+++++	+++++	4.65057	4.57372	4.68567	4.00629		
	4.16054	4.57860	4.11385	3.84741			4.32708	7.632

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-JUL-2017 19:46
End Cal Date : 07-JUL-2017 09:17
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Cal Date : 09-Aug-2017 12:38 efinn
Curve Type : Average

Compound	0.00500 Level 2	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD
	1.000 Level 8	5.000 Level 12	10.000 Level 13	20.000 Level 15				
7 Freon 113	+++++	+++++	3.62805	3.62688	3.26627	2.81264		
	2.94469	3.21763	2.93026	2.74977			3.14702	10.997
8 1,1-Dichloroethene	1.35297	1.36414	1.10382	1.13679	1.12866	0.98944		
	1.01804	1.10532	1.00103	0.94640			1.11466	12.903
9 Methyl tert-butyl ether	+++++	+++++	4.66769	4.52003	4.56894	3.90856		
	4.16466	4.54782	4.11964	3.89717			4.29931	7.269
10 trans-1,2-Dichloroethene	+++++	1.16215	1.10524	1.15272	1.12460	0.95748		
	0.99067	1.10685	1.01489	0.97318			1.06531	7.574
11 1,1-Dichloroethane	+++++	+++++	3.73928	3.70829	3.71805	3.21822		
	3.35236	3.73024	3.37752	3.16994			3.50174	7.047
12 cis-1,2-Dichloroethene	1.53595	1.33094	1.15373	1.20876	1.21945	1.04745		
	1.08949	1.22127	1.11354	1.05903			1.19796	12.314
14 Chloroform	5.51169	4.14499	4.12148	3.77790	3.79885	3.26987		
	3.41976	3.76287	3.41077	3.20198			3.84202	17.506
15 1,1,1-Trichloroethane	+++++	+++++	4.49085	4.43036	4.09418	3.50081		
	3.70850	4.05635	3.65027	3.42092			3.91903	10.466
16 Carbon Tetrachloride	3.54323	2.77809	3.01339	3.20154	3.52080	3.20467		
	3.43506	4.18159	3.81857	3.63917			3.43361	11.819
17 Benzene	+++++	1.75861	1.81602	1.48867	1.29426	1.06821		
	1.10880	1.23532	1.13123	1.06686			1.32977	21.950

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-JUL-2017 19:46
End Cal Date : 07-JUL-2017 09:17
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Cal Date : 09-Aug-2017 12:38 efinn
Curve Type : Average

Compound	0.00500 Level 2 / 1.000 Level 8	0.01000 Level 3 / 5.000 Level 12	0.02000 Level 4 / 10.000 Level 13	0.05000 Level 5 / 20.000 Level 15	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD	
19 1,2-Dichloroethane	0.88667	0.75369	0.71226	0.66788	0.68240	0.59236			
	0.61547	0.69876	0.65302	0.61528			0.68778	12.436	
21 Trichloroethene	0.91757	0.72696	0.71916	0.70333	0.65836	0.55291			
	0.57649	0.64458	0.59244	0.55860			0.66504	16.584	
23 Toluene	+++++	+++++	+++++	2.12898	1.56948	1.27449			
	1.34396	1.44129	1.29906	1.22116			1.46835	21.360	
24 trans-1,3-Dichloropropene	+++++	+++++	+++++	0.70367	0.69399	0.72647			
	0.74271	0.87595	0.82014	0.79909			0.76600	8.804	
25 1,1,2-Trichloroethane	+++++	0.80726	0.75762	0.73813	0.74996	0.61983			
	0.63961	0.72563	0.66135	0.62719			0.70295	9.572	
26 Tetrachloroethene	1.76400	1.37397	1.28686	1.20343	1.12005	0.91320			
	0.95006	1.03507	0.94905	0.90856			1.15043	23.496	
27 1,2-Dibromoethane (EDB)	1.30740	1.21252	1.18210	1.17699	1.12950	0.96818			
	1.02725	1.14772	1.05436	0.99955			1.12056	9.505	
29 Chlorobenzene	+++++	+++++	2.01976	1.80165	1.60191	1.30862			
	1.39194	1.48515	1.36260	1.29787			1.53369	16.908	
30 Ethyl Benzene	+++++	+++++	0.85442	0.80690	0.73481	0.60083			
	0.61469	0.65252	0.60476	0.58567			0.68182	15.217	
31 m,p-Xylene	+++++	+++++	1.33840	1.14866	0.93391	0.71419			
	0.72860	0.71271	0.65028	0.62135			0.85601	30.549	<-

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-JUL-2017 19:46
End Cal Date : 07-JUL-2017 09:17
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Cal Date : 09-Aug-2017 12:38 efinn
Curve Type : Average

	0.00500	0.01000	0.02000	0.05000	0.10000	0.50000	___	
Compound	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	RRF	% RSD
	1.000	5.000	10.000	20.000				
	Level 8	Level 12	Level 13	Level 15				
32 o-Xylene	+++++	+++++	0.98893	0.94237	0.81464	0.68229		
	0.67917	0.67472	0.62059	0.58873			0.74893	19.951
34 1,1,2,2-Tetrachloroethane	1.69666	1.57782	1.37905	1.38891	1.32722	1.11471		
	1.15609	1.24642	1.12199	1.06767			1.30765	15.968
35 1,3-Dichlorobenzene	+++++	+++++	1.31871	1.35529	1.37316	1.16031		
	1.17098	1.10202	0.96863	0.88979			1.16736	15.237
36 1,4-Dichlorobenzene	+++++	+++++	1.64220	1.56243	1.39247	1.10160		
	1.12381	1.05758	0.92424	0.83632			1.20508	24.452
37 1,2-Dichlorobenzene	+++++	+++++	1.44484	1.40443	1.22718	1.04808		
	1.07531	0.98674	0.88207	0.81474			1.11042	20.757
38 Naphthalene	+++++	+++++	+++++	+++++	0.91810	0.99735		
	1.11612	0.71576	0.81027	0.92227			0.91331	15.324
M 39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++
$ 18 1,2-Dichloroethane-d4	1.54687	1.54854	1.55904	1.58543	1.53771	1.57771		
	1.58119	1.57553	1.55355	1.58302			1.56486	1.125
$ 22 Toluene-d8	0.90370	0.90218	0.90560	0.90262	0.89363	0.89714		
	0.90740	0.89930	0.89340	0.88820			0.89932	0.682
$ 33 4-Bromofluorobenzene	0.59006	0.59443	0.58609	0.57625	0.57619	0.56766		
	0.54788	0.52418	0.52482	0.53997			0.56275	4.719

Calibration History

Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Start Cal Date: 06-JUL-2017 19:46
End Cal Date : 07-JUL-2017 09:17

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 2 , Cal Amount: 0.00500		
06-JUL-2017 19:46	Level2	/chem/msdv.i/06Jul2017.b/v070602simz.d
Cal Level: 3 , Cal Amount: 0.01000		
06-JUL-2017 20:21	Level3	/chem/msdv.i/06Jul2017.b/v070603simz.d
Cal Level: 4 , Cal Amount: 0.02000		
06-JUL-2017 21:45	Level4	/chem/msdv.i/06Jul2017.b/v070604simz.d
Cal Level: 5 , Cal Amount: 0.05000		
06-JUL-2017 22:53	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070605simz.d
Cal Level: 6 , Cal Amount: 0.10000		
06-JUL-2017 23:28	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070606simz.d
Cal Level: 7 , Cal Amount: 0.50000		
07-JUL-2017 00:05	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070607simz.d
Cal Level: 8 , Cal Amount: 1.00000		
07-JUL-2017 07:33	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070608simz.d
Cal Level: 12, Cal Amount: 5.00000		
07-JUL-2017 08:07	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070609simz.d

Cal Level: 13, Cal Amount: 10.00000		
07-JUL-2017 08:42	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070610simz.d

Cal Level: 15, Cal Amount: 20.00000		
07-JUL-2017 09:17	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070611simz.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 13

Ccal Level: 13, Ccal Amount: 10.000		
07-JUL-2017 08:42	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070610simza.d

Ccal Level: 13, Ccal Amount: 10.000		
07-JUL-2017 08:42	HILOcrvFULL	/chem/msdv.i/06Jul2017.b/v070610simz.d

Curve Name: V17s0706Z

This ICAL is for samples from PID 22104 run on 8/8/17 only.

Initial Calibration Narrative

An initial calibration curve was analyzed on 07/06/17 on MSD-V. The instrument was set up to do Full Scan and Selective Ion Monitoring (SIM) simultaneously.

Tune File: v070601.
ICAL: Zero (0) out.
ICV: Zero (0) out. File # v070615sim.
DOD 5.0 ICV: Zero (0) out. File v070616sima.
DOD 4.2 ICV: Zero (0) out: File v070616simc.

The reporting limit for trans-1,3-Dichloropropene has been raised from 0.02ppbv to 0.05ppbv until 3/13/2018 due to poor sensitivity at the time of MDL.

The reporting limit for Toluene has been raised from 0.02ppbv to 0.05ppbv due to non-linearity of the low point.

Naphthalene was calibrated at a special reporting limit of 0.01ppbv.*
The following compounds were calibrated at a special reporting limit of 0.005ppbv:

1,1-Dichloroethene
Cis-1,2-Dichloroethene
Chloroform
Carbon Tetrachloride
1,2-Dichloroethane**
Trichloroethene
Tetrachloroethene
1,2-Dibromothane (EDB)
1,1,2,2-Tetrachloroethane

*The secondary mass ion peak, 127amu, for Naphthalene shows baseline interference at the special reporting limit of 0.01ppbv. Identification of Naphthalene is however reliable at the lowest concentrations based on the presence and abundance ratio of the secondary ion. The spectrum of Naphthalene in this ICAL point will be used as the reference to determine the ion ratio target in the samples for this ICAL.

**The quantitation ion peak (62amu) is sufficiently resolved for accurate quantification of 1,2-Dichloroethane (1,2-DCA) at the special reporting limit of 0.05ppbv. However, the confirmation mass ion peak (64amu) for 1,2-DCA is not baseline-resolved from the surrogate 1,2-Dichloroethane-d4 peak. Identification of 1,2-DCA based on the presence and abundance ratio of confirmation ion is less reliable at the lowest concentrations due to this interference with the surrogate's mass ion 64 peak.

MDL was run on 3/13/17.
Naphthalene MDL was run on 3/9/17

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 06-JUL-2017 19:46
End Cal Date : 07-JUL-2017 09:17
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Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Cal Date : 09-Aug-2017 12:38 efinn
Curve Type : Average

Calibration File Names:
Level 2: /chem/msdv.i/06Jul2017.b/v070602simz.d
Level 3: /chem/msdv.i/06Jul2017.b/v070603simz.d
Level 4: /chem/msdv.i/06Jul2017.b/v070604simz.d
Level 5: /chem/msdv.i/06Jul2017.b/v070605simz.d
Level 6: /chem/msdv.i/06Jul2017.b/v070606simz.d
Level 7: /chem/msdv.i/06Jul2017.b/v070607simz.d
Level 8: /chem/msdv.i/06Jul2017.b/v070608simz.d
Level 12: /chem/msdv.i/06Jul2017.b/v070609simz.d
Level 13: /chem/msdv.i/06Jul2017.b/v070610simz.d
Level 15: /chem/msdv.i/06Jul2017.b/v070611simz.d

KB 8/9/17

Compound	0.00500 Level 2	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	RRF	% RSD
	1.000 Level 8	5.000 Level 12	10.000 Level 13	20.000 Level 15				
1 Freon 12	+++++	+++++	4.01595	4.35662	4.18173	3.49997		
	3.57482	4.28440	3.74817	3.55123			3.90161	8.981
2 Freon 114	+++++	+++++	3.57671	3.55609	3.57322	2.97022		
	3.07364	3.42042	3.09894	2.92945			3.27484	8.667
3 Chloromethane	+++++	+++++	+++++	2.37328	2.61696	1.93710		
	1.88718	2.07888	1.82925	1.73736			2.06572	15.445
4 Vinyl Chloride	+++++	2.47925	2.18054	1.99750	1.93279	1.63226		
	1.70619	1.93536	1.70755	1.62633			1.91086	14.873
5 Chloroethane	+++++	+++++	+++++	0.84950	0.84764	0.72783		
	0.75094	0.92050	0.83775	0.78030			0.81635	8.186
6 Freon 11	+++++	+++++	4.65057	4.57372	4.68567	4.00629		
	4.16054	4.57860	4.11385	3.84741			4.32708	7.632

Trap Media # 576126 Exp. 4/5/18

NOMINAL Trap: 11.5mL/min

ACTUAL Trap: 25.1mL/min

Eurofins Air Toxics, Inc. **MSD-V** **Logbook #2865**

BFB Verification of 176/174 m/z Ratio: 297708 / 307264 X 100 = 96.90

Method Name: V17L07d6A / V17S07d6A

IS/S Std. #: 2850-187	Exp. Date: 9/14/17
BCM 11: 184864	11M: 191720
1,4-DFB 743625	772169
CB-dS 606277	632284

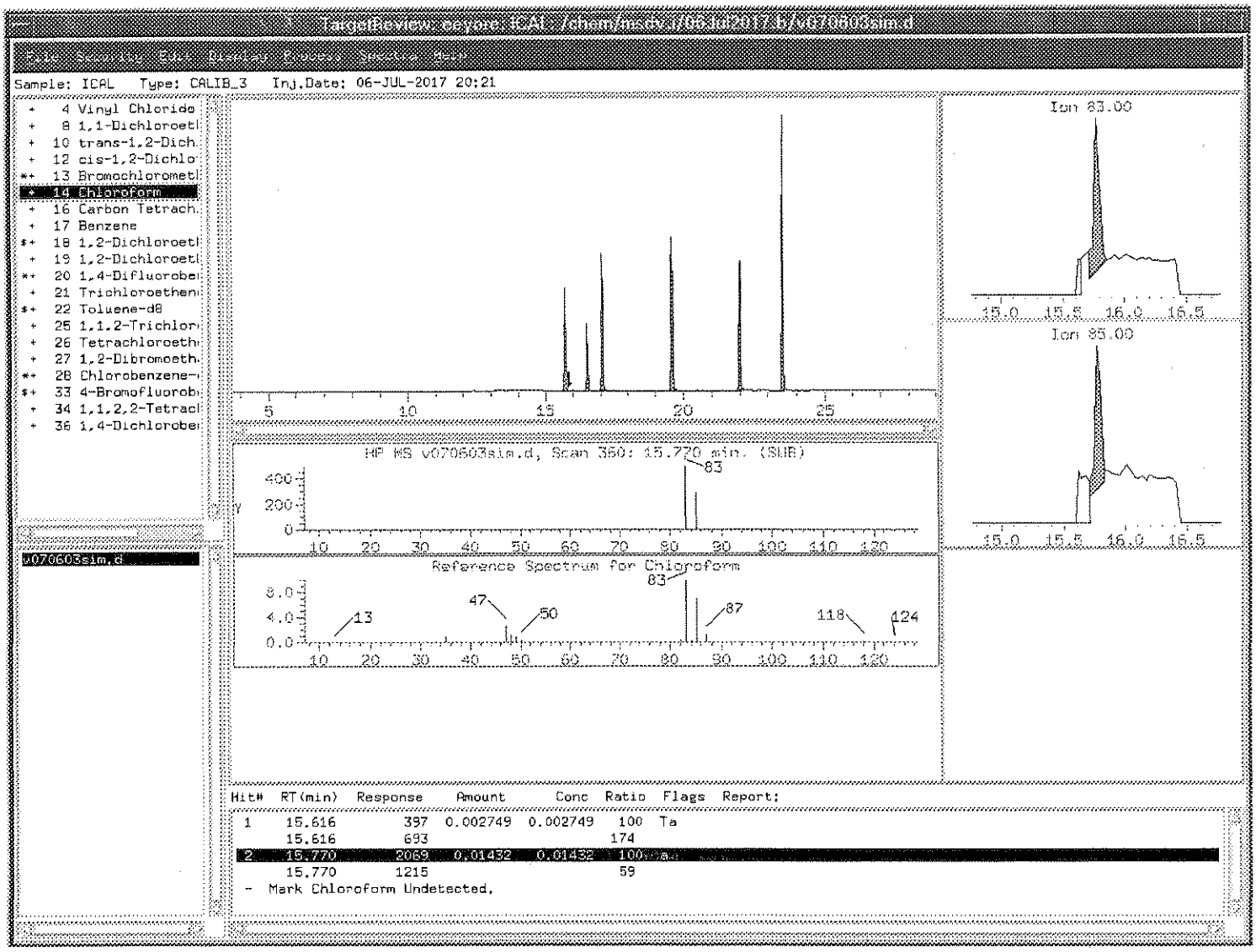
Verified CCV IS vs ICAL mid-point (-40%D): ___

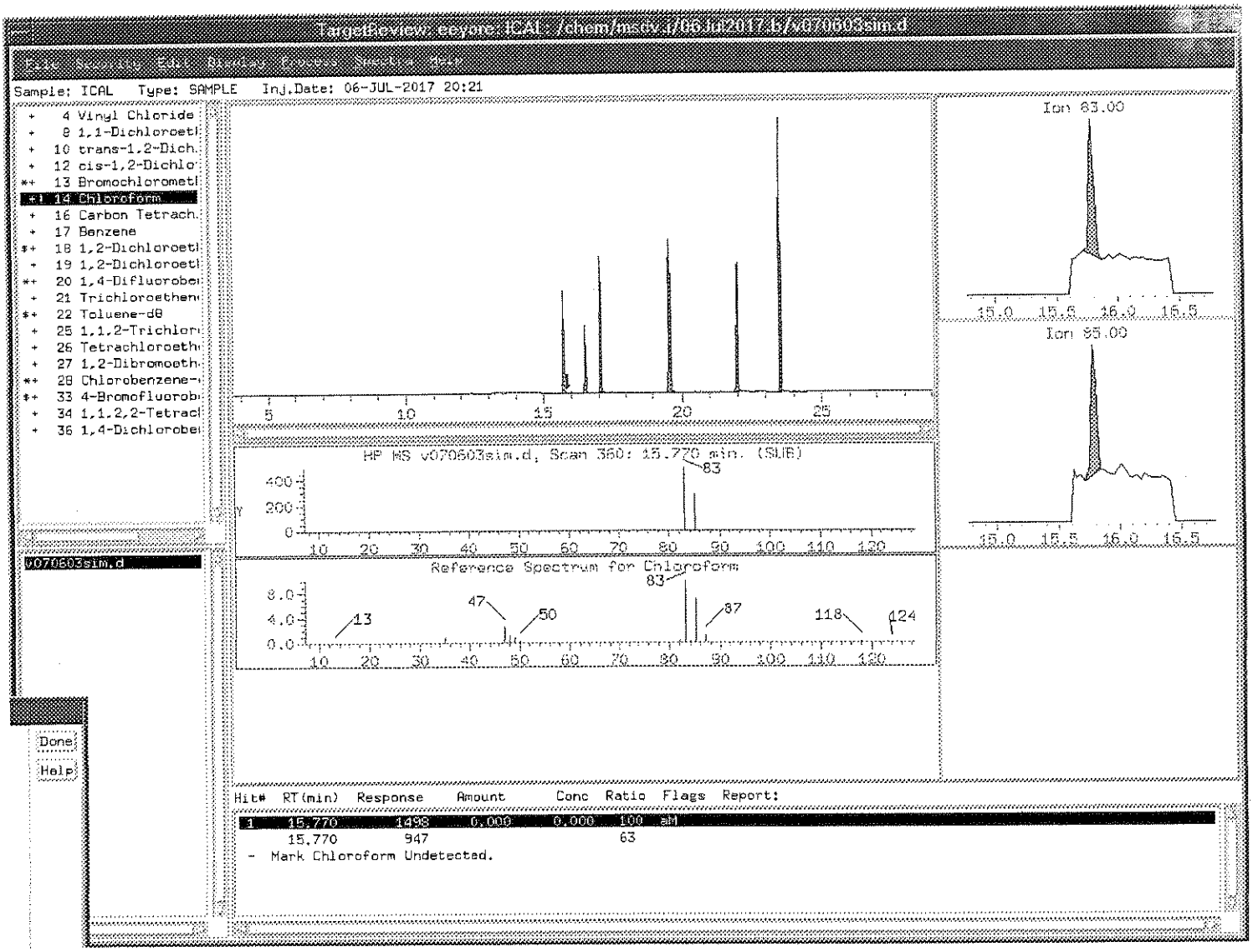
SOP# (Circle one): 6 / (83) (38) / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	/	V07D601	BFB TUNE CHECK	2810 B9	50ng	2.0mL	1.00	ED	7/6/17	1906	EA	
2	/	02	ICAL level 2	2850-244	0.005ppbv	25mL		EA		1946	~~EA~~	Exp. 9/27/17
3	/	03	3		0.01ppbv	50mL		ED		2021	~~EA~~	
4	/	04	4		0.02ppbv	100mL		EA		2145	~~EA~~	
5	/	05	5		0.05ppbv	250mL		EA		2253	~~EA~~	
6	/	06	6	2850-245	0.1ppbv	25mL		EA		2328	~~EA~~	Exp. 9/27/17
7	/	07	7		0.5ppbv	125mL		EA		0005	~~EA~~	
8	/	08	8		1.0ppbv	250mL		SW	7/7/17	0733	~~EA~~	
9	/	09	12	2850-226	5.0ppbv	25mL		SW		0807	~~EA~~	Exp. 9/27/17
10	/	10	13		10ppbv	50mL		~~EA~~		0842	~~EA~~	
11	/	11	15 @ 7/7/17 ~~14~~		20ppbv	100mL		~~EA~~		0917	~~EA~~	
12	/	12	16		40ppbv	200mL		~~EA~~		~~10~~ @ 7/7/17 0952	~~EA~~	
13	X	13	System Blank	339916	Humid	250mL	1.00	~~EA~~		1027	~~EA~~	
14	/	14	System Blank	339916	Humid	250mL	1.00	~~EA~~		1116	~~EA~~	
15	X	15	ICV (50ppbv)	2850-248	10ppbv	50mL	1.00	~~EA~~		1158	~~EA~~	Exp 10/7/17 NO NMPH
16	/	16	ICV (50ppbv)	2850-197	10ppbv	50mL	1.00	~~EA~~		1239	~~EA~~	Exp. 9/19/17
17		17	LCSD (50ppbv)	2850-197	10ppbv	50mL	1.00	~~EA~~				~~EA~~ 7/7/17

Reviewed

7/7/17
Date

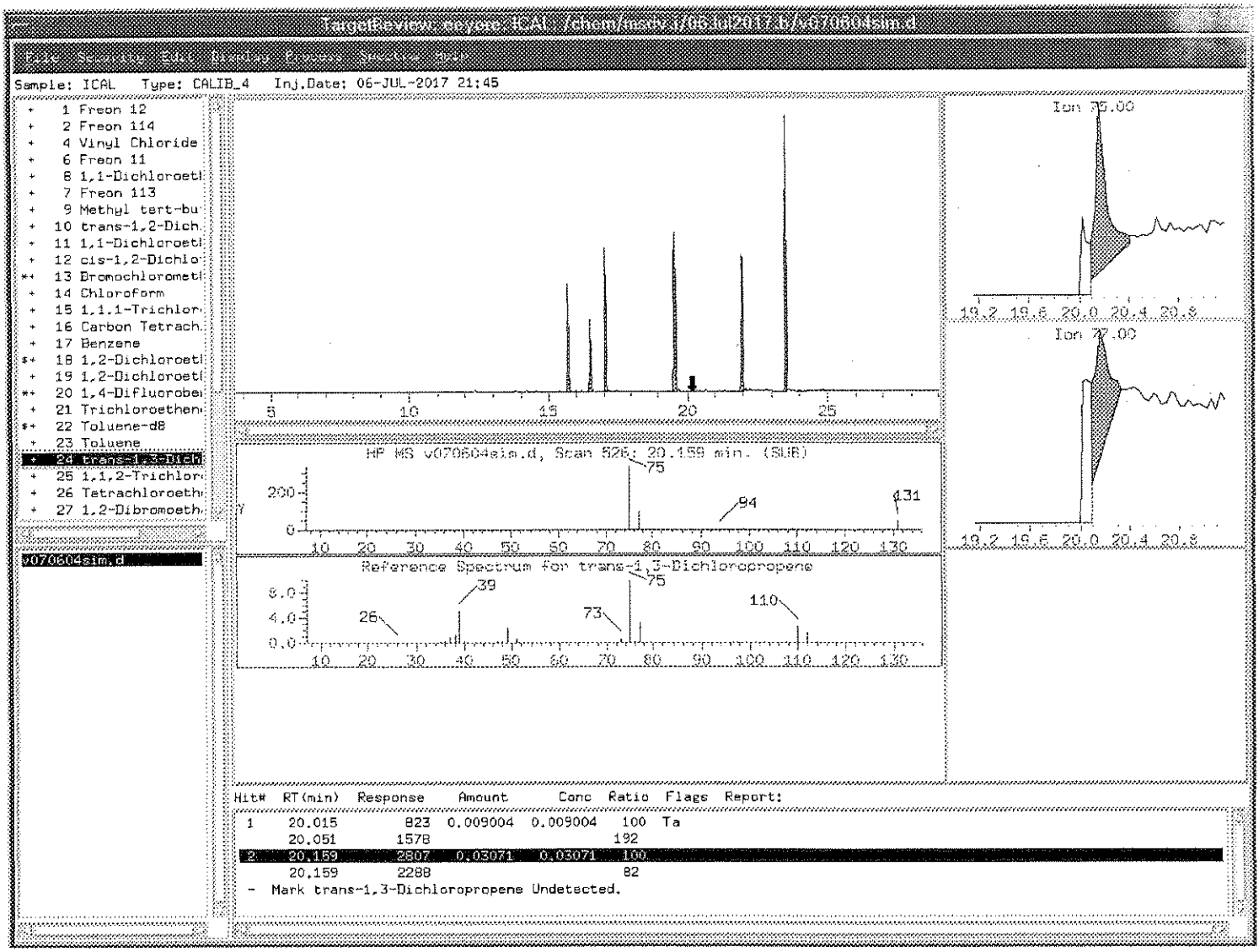

TargetReview: eeyore ICAL: /chem/ms5v.i/06Jul2017.b/v070603sim.d
File Scaling Edit Display Process Spectra Help
Sample: ICAL Type: CALIB_3 Inj.Date: 06-JUL-2017 20:21
+ 4 Vinyl Chloride
+ 8 1,1-Dichloroeth
+ 10 trans-1,2-Dich
+ 12 cis-1,2-Dichlo
*+ 13 Bromochlorometh
+ 14 Chloroform
+ 16 Carbon Tetrach
+ 17 Benzene
$+ 18 1,2-Dichloroeth
+ 19 1,2-Dichloroeth
*+ 20 1,4-Difluorobe
+ 21 Trichloroethene
$+ 22 Toluene-d8
+ 25 1,1,2-Trichlor
+ 26 Tetrachloroeth
+ 27 1,2-Dibromoeth
*+ 28 Chlorobenzene-
$+ 33 4-Bromofluorob
+ 34 1,1,2,2-Tetrach
+ 36 1,4-Dichlorobe
v070603sim.d
Ion 83.00
Ion 85.00
HP MS v070603sim.d, Scan 350: 15.770 min. (SUB)
Reference Spectrum for Chloroform
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 15.616 397 0.002749 0.002749 100 Ta
15.616 693 174
2 15.770 2069 0.01432 0.01432 100
15.770 1215 59
- Mark Chloroform Undetected.

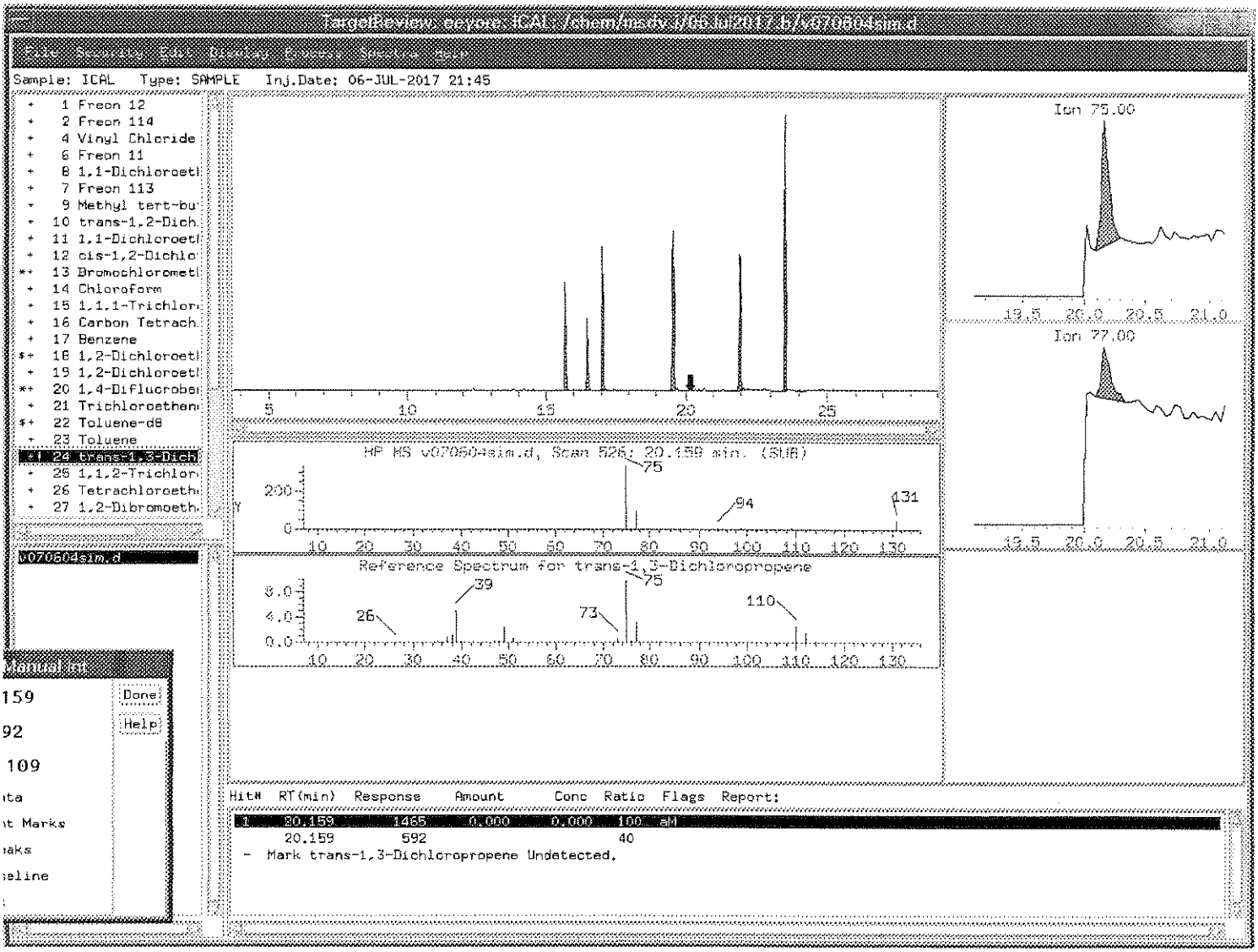


GS 7/7/17

After GS 7/7/17

Correct Baseline	X
Split Peak	
Merge Peak	
Zoom In	
Change Parameters	
System Peak Selection	
Peak Misidentified	
Corrected Peak Integration	

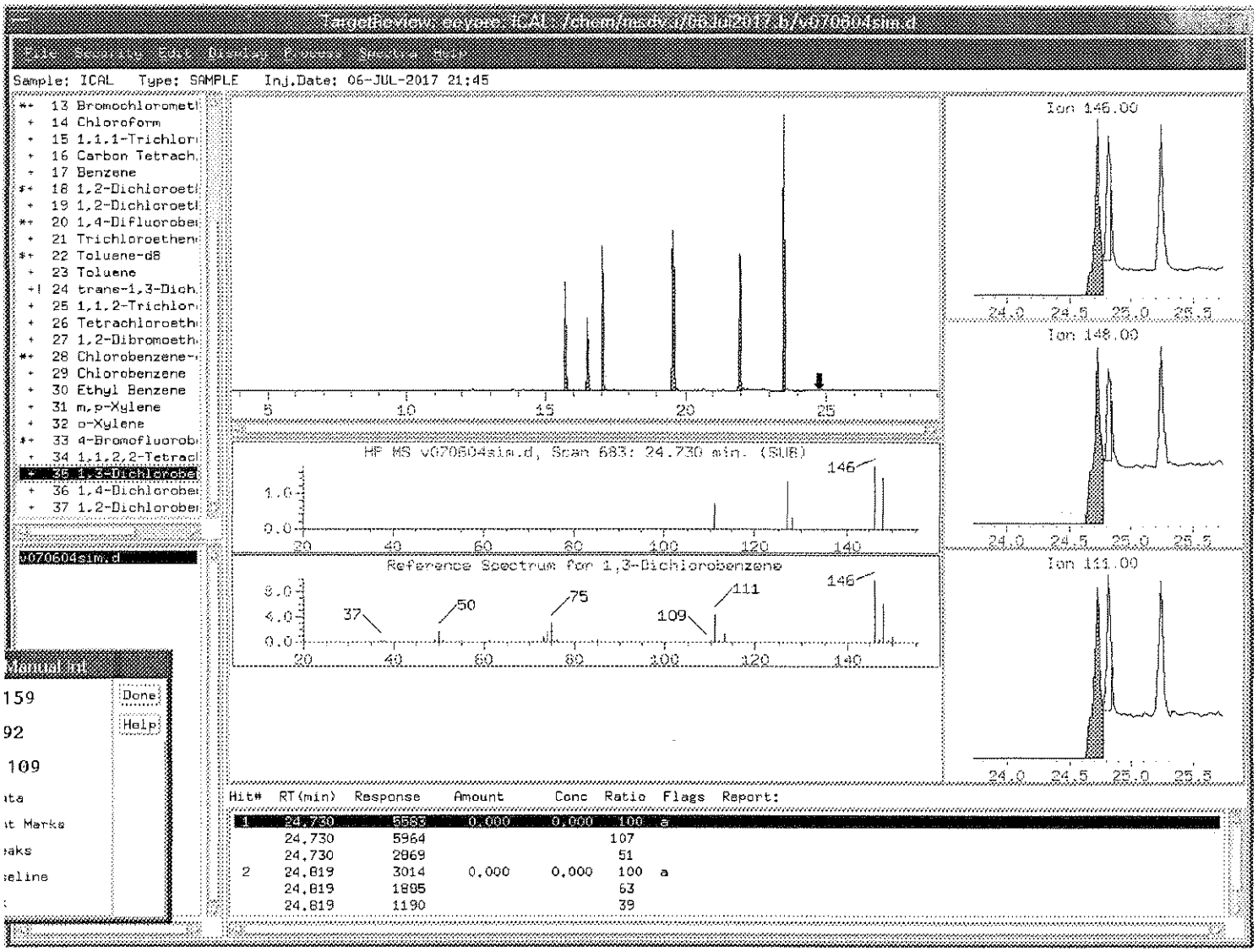

TargetReview: server: ICAL: /chem/msdv1/06Jul2017.b/v070604sim.d
File Sample Edit Review Process Spectra Help
Sample: ICAL Type: CALIB_4 Inj.Date: 06-JUL-2017 21:45
1 Freon 12
2 Freon 114
4 Vinyl Chloride
6 Freon 11
8 1,1-Dichloroeth
7 Freon 113
9 Methyl tert-bu
10 trans-1,2-Dich
11 1,1-Dichloroeth
12 cis-1,2-Dichlo
13 Bromochlorometh
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroeth
19 1,2-Dichloroeth
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
v070604sim.d
HP MS v070604sim.d, Scan 525: 20.159 min. (SUB)
Reference Spectrum for trans-1,3-Dichloropropene
Ion 75.00
Ion 77.00
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 20.015 823 0.009004 0.009004 100 Ta
20.051 1578 192
2 20.159 2807 0.03071 0.03071 100
20.159 2288 82
- Mark trans-1,3-Dichloropropene Undetected.

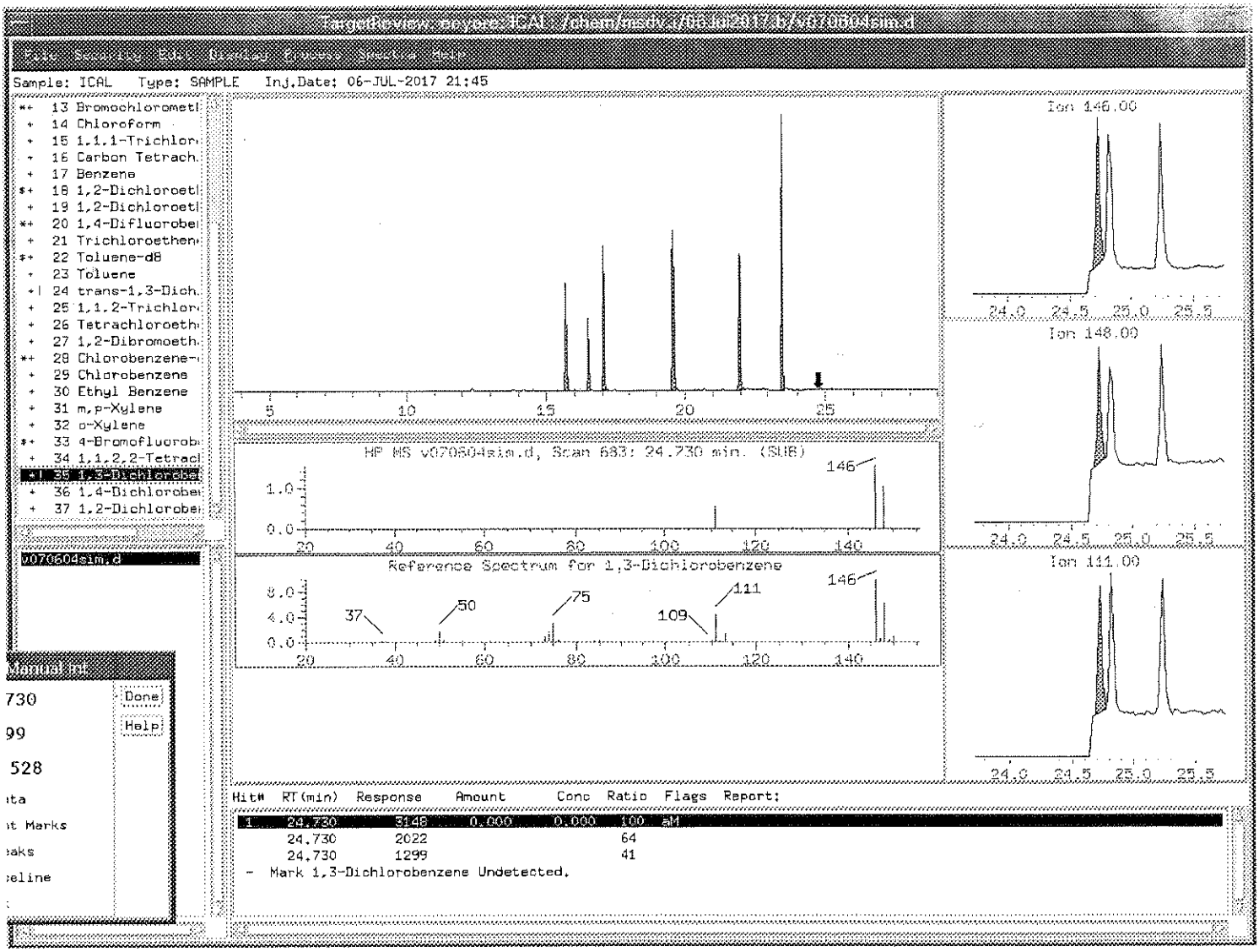


7/17/17

After 7/17/17

Correct Baseline	x
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	


Sample: ICAL Type: SAMPLE Inj.Date: 06-JUL-2017 21:45
13 Bromochlorometh
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroeth
19 1,2-Dichloroeth
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
28 Chlorobenzene-
29 Chlorobenzene
30 Ethyl Benzene
31 m,p-Xylene
32 o-Xylene
33 4-Bromofluorob
34 1,1,2,2-Tetrach
35 1,3-Dichlorobe
36 1,4-Dichlorobe
37 1,2-Dichlorobe
v070604sim.d
HP MS v070604sim.d, Scan 683: 24.730 min. (SUB)
Reference Spectrum for 1,3-Dichlorobenzene
146
111
75
50
37
109
Ion 146.00
Ion 148.00
Ion 111.00
Manual Int
159
92
109
Done
Help
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 24.730 5553 0.000 0.000 100 a
24.730 5964 107
24.730 2869 51
2 24.819 3014 0.000 0.000 100 a
24.819 1885 63
24.819 1190 39



45 7/7/17

After # 7/7/17

Correct Baseline	X
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

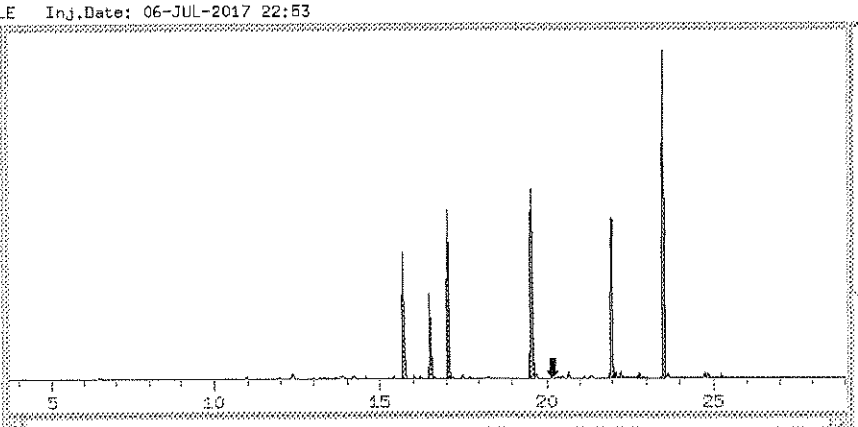
TargetReview: ecyore: ICAL: /chem/mach2/06jul2017b/v070605sim.d

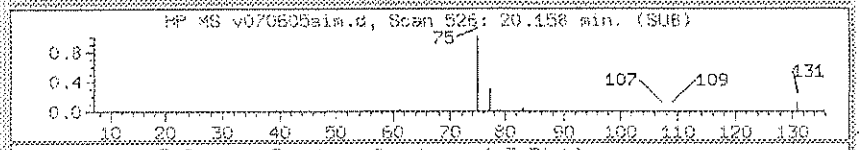
File Samples Edit Library Process Report Help

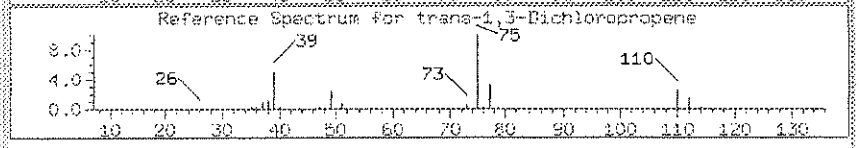
Sample: ICAL Type: SAMPLE Inj.Date: 06-JUL-2017 22:53

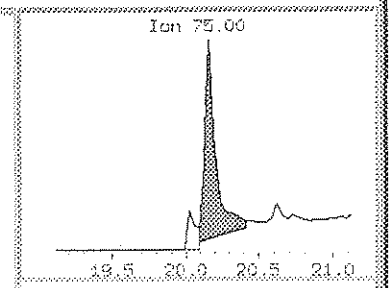
+ 14 Chloroform
+ 15 1,1,1-Trichlor
+ 16 Carbon Tetrach
+ 17 Benzene
*+ 18 1,2-Dichloroetl
+ 19 1,2-Dichloroetl
*+ 20 1,4-Difluorobe
+ 21 Trichloroethen
*+ 22 Toluene-d8
+ 23 Toluene
+ 24 trans-1,3-Dich
+ 25 1,1,2-Trichlor
+ 26 Tetrachloroeth
+ 27 1,2-Dibromoeth
*+ 28 Chlorobenzene-
+ 29 Chlorobenzene
+ 30 Ethyl Benzene
+ 31 m,p-Xylene
+ 32 o-Xylene
*+ 33 4-Bromofluorob
+ 34 1,1,2,2-Tetracl
+ 35 1,3-Dichlorobe
+ 36 1,4-Dichlorobe
+ 37 1,2-Dichlorobe
+ 38 Naphthalene

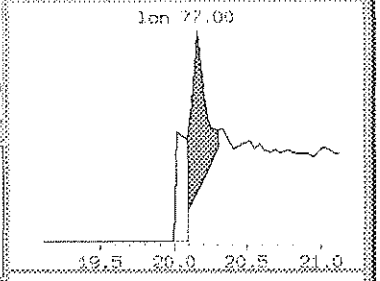
v070605sim.d





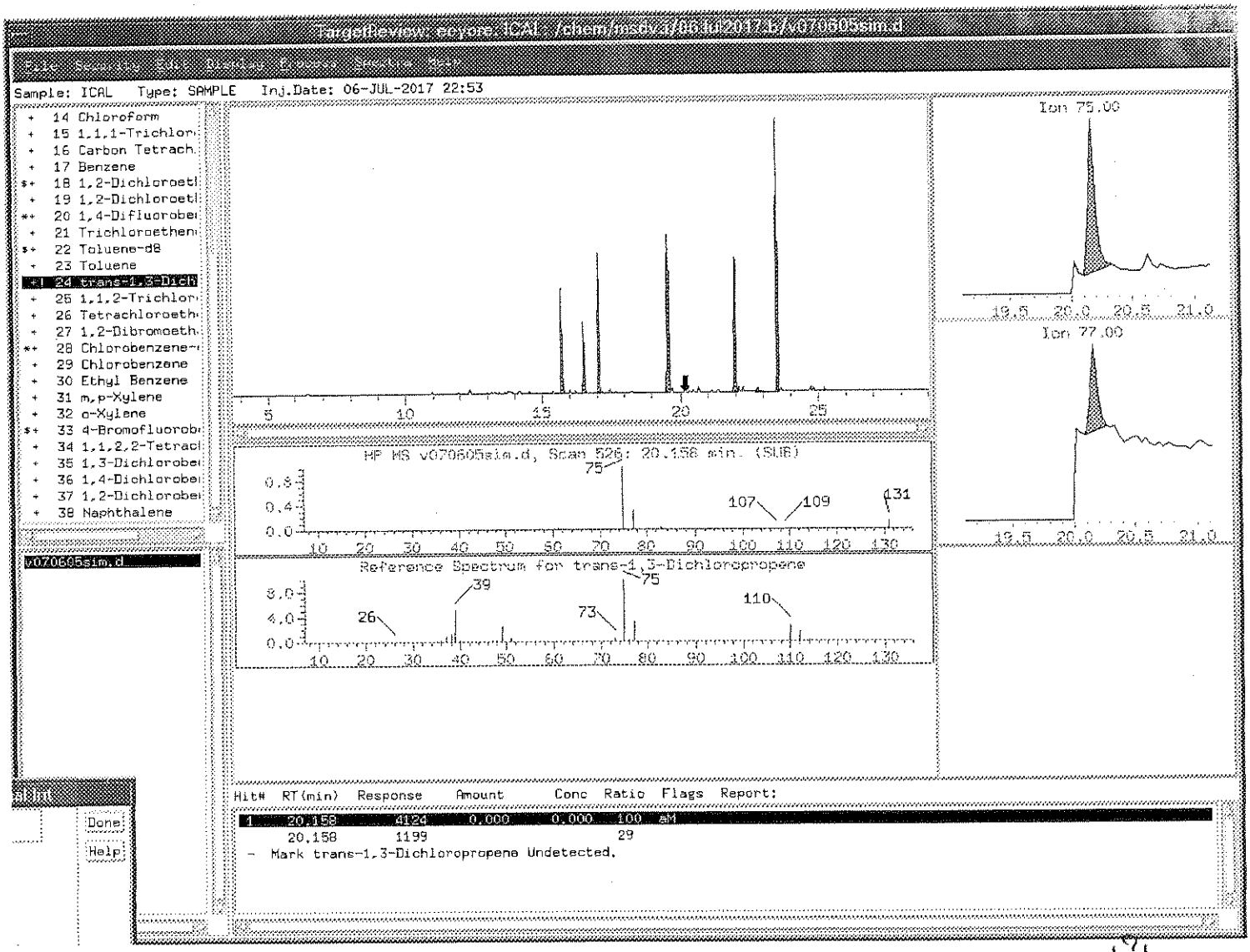






Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	20.015	868	0.000	0.000	100	a	
	20.015	1693			195		
2	20.158	5770	0.000	0.000	100	a	
	20.158	3163			55		

- Mark trans-1,3-Dichloropropene Undetected.

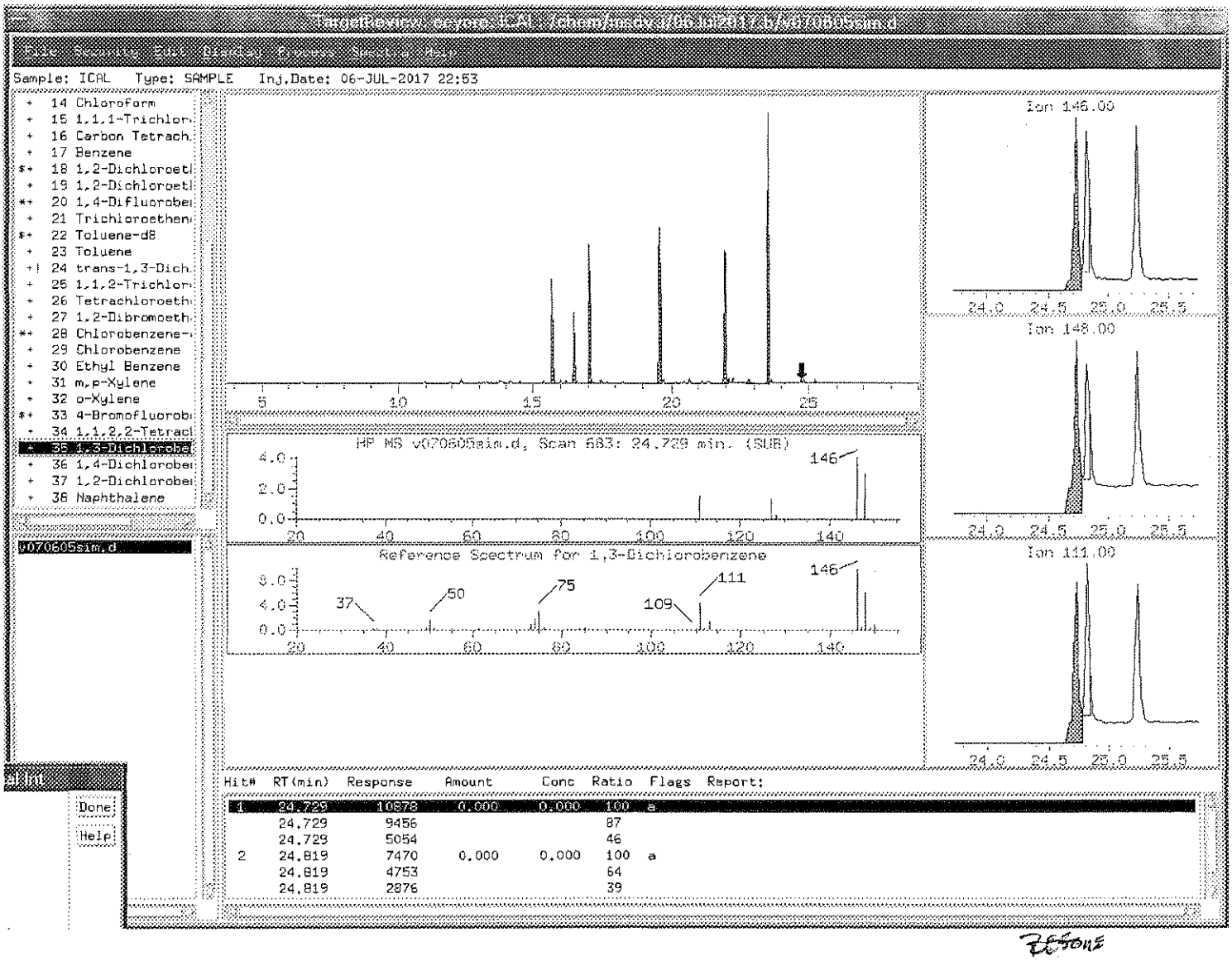


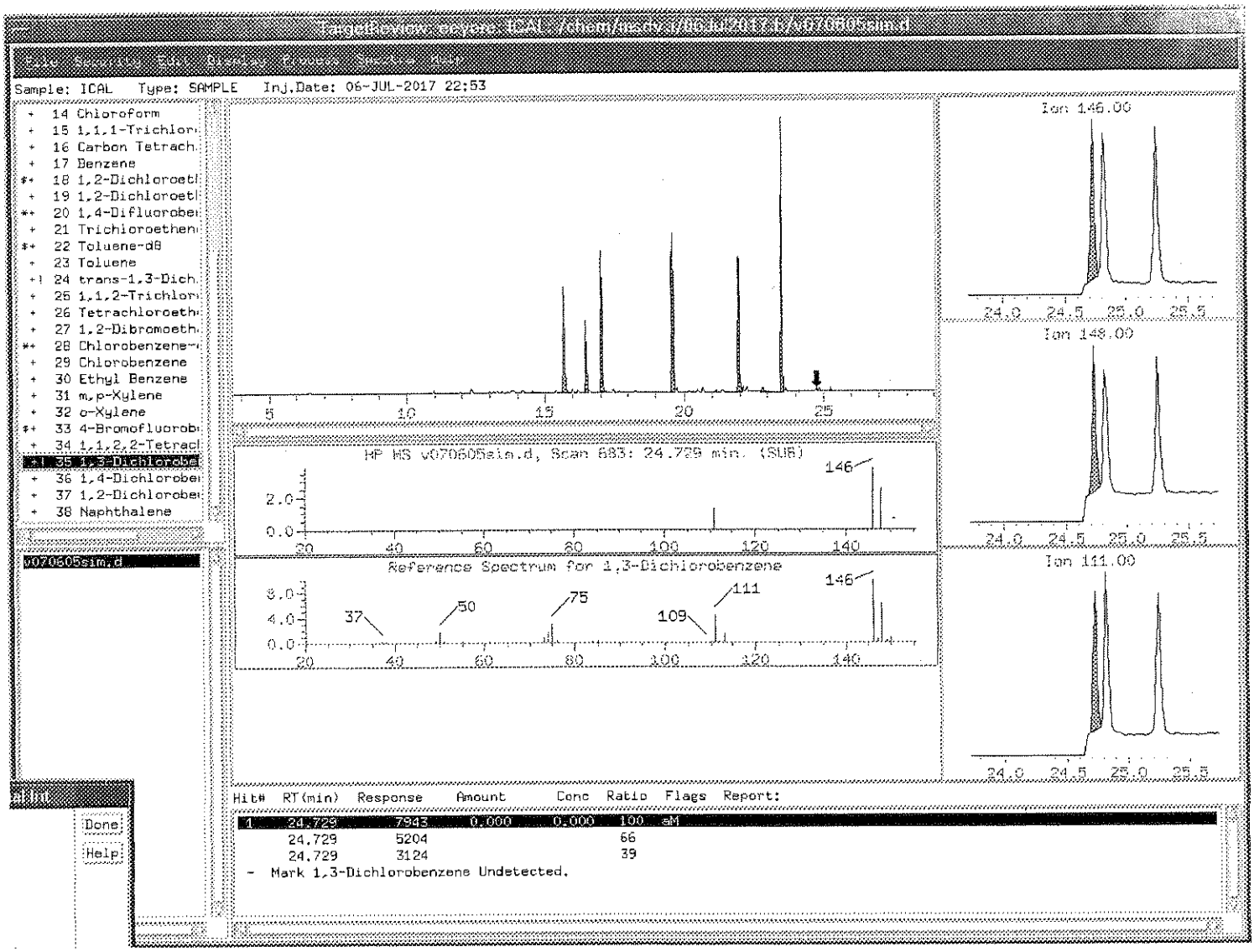
85 7/17/17

After

85 7/17/17

Correct Baseline	✓
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	


TargetReview: cryons.ICAL: /chem/ms.cv/data/2017.b/v070605sim.d
File Search Edit Display Process Spectral Help
Sample: ICAL Type: SAMPLE Inj.Date: 06-JUL-2017 22:53
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroetl
19 1,2-Dichloroetl
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
28 Chlorobenzene-
29 Chlorobenzene
30 Ethyl Benzene
31 m,p-Xylene
32 o-Xylene
33 4-Bromofluorob
34 1,1,2,2-Tetrac
35 1,3-Dichlorobe
36 1,4-Dichlorobe
37 1,2-Dichlorobe
38 Naphthalene
v070605sim.d
HP MS v070605sim.d, Scan 583: 24.729 min. (SUB)
Reference Spectrum for 1,3-Dichlorobenzene
146
111
75
50
37
109
Ion 146.00
Ion 148.00
Ion 111.00
Done
Help
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 24.729 10878 0.000 0.000 100 a
24.729 9456 87
24.729 5054 46
2 24.819 7470 0.000 0.000 100 a
24.819 4753 64
24.819 2876 39



7/7/17

After

Correct Baseline	✓ 7/7/17
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

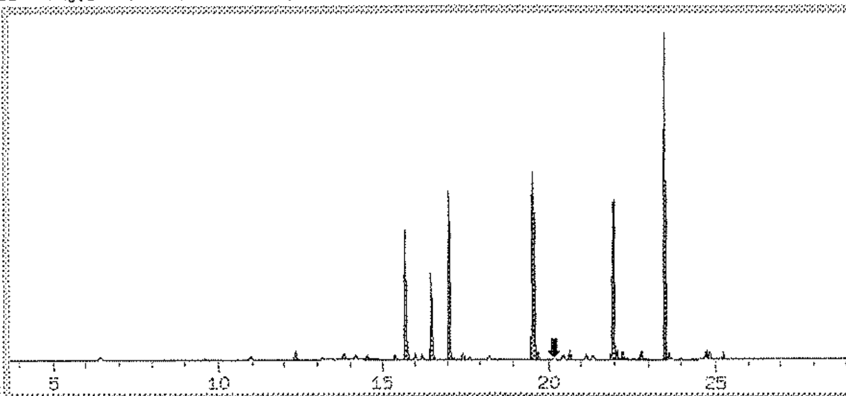
TargetReview: eeyore: ICAL: /chem/msdv.i/06Jul2017.b/v070606sim.d

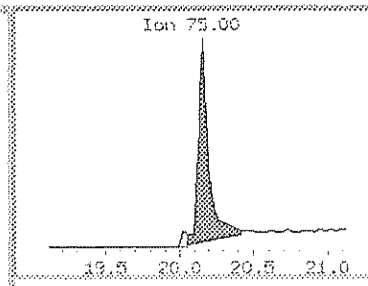
File Search Edit Display Process Spectra Help

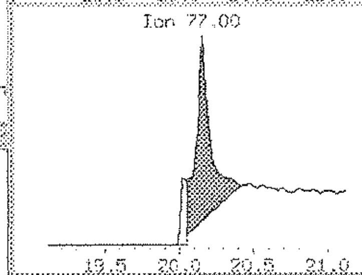
Sample: ICAL Type: SAMPLE Inj.Date: 06-JUL-2017 23:28

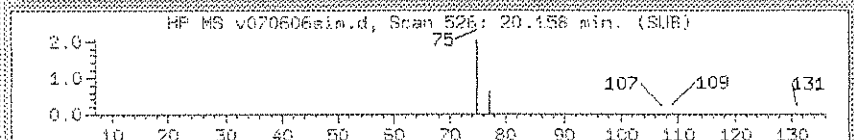
+	14	Chloroform
+	15	1,1,1-Trichlor
+	16	Carbon Tetrach
+	17	Benzene
$+	18	1,2-Dichloroetl
+	19	1,2-Dichloroetl
*+	20	1,4-Difluorobe
+	21	Trichloroethen
$+	22	Toluene-d8
+	23	Toluene
+	24	trans-1,3-Dich
+	25	1,1,2-Trichlor
+	26	Tetrachloroeth
+	27	1,2-Dibromoeth
*+	28	Chlorobenzene-
+	29	Chlorobenzene
+	30	Ethyl Benzene
+	31	m,p-Xylene
+	32	o-Xylene
$+	33	4-Bromofluorob
+	34	1,1,2,2-Tetracl
+	35	1,3-Dichlorobe
+	36	1,4-Dichlorobe
+	37	1,2-Dichlorobe
+	38	Naphthalene

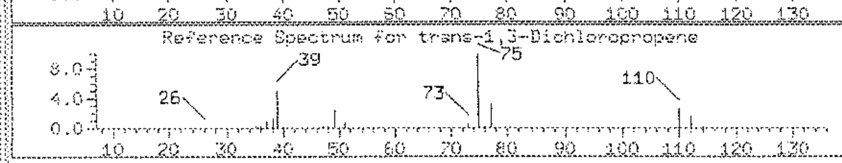
v070606sim.d





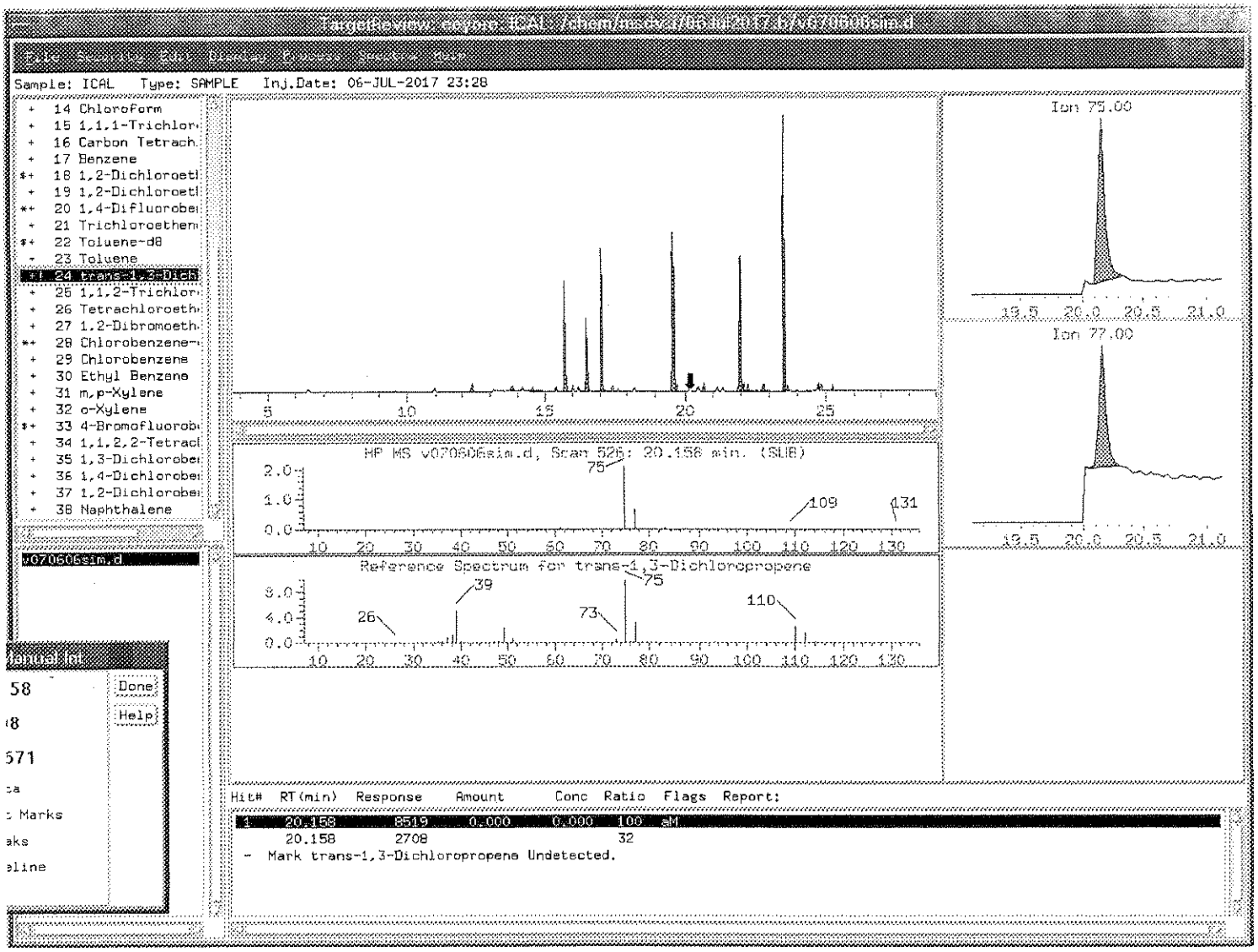






Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	20.015	531	0.000	0.000	100	a	
	20.015	1061			200		
2	20.158	10862	0.000	0.000	100	a	
	20.158	6087			56		

- Mark trans-1,3-Dichloropropene Undetected.



7/7/17

After

Correct Baseline	x
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

Modified EPA Methods TO-14A/TO-15 SIM
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane
Target Compounds:
Dichlorodifluoromethane (Fr12)
Freon 114
Chloromethane
Vinyl Chloride
Chloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
Methyl tert-butyl ether
1,1-Dichloroethane
cis-1,2-Dichloroethene
Chloroform
1,1,1-Trichloroethane
Carbon Tetrachloride
Surrogates:
1,2-Dichloroethane-d4

1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Trichloroethene
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
1,1,2-Trichloroethane
Tetrachloroethene
1,2-Dibromoethane
Ethyl Benzene
m,p-Xylene
o-Xylene
1,1,2,2-Tetrachloroethane
1,4-Dichlorobenzene
Naphthalene
Surrogates:
Bromofluorobenzene

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070616simz.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 07-JUL-2017 12:39
Operator : ef Inst ID: msdv.i
Smp Info : 50mL #2850-197
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
4.999	4.999 (0.318)	85	1468499	10.4312	10.431	80.00- 120.00	100.00
4.999	4.999 (0.318)	87	474150			2.27- 62.27	32.29
2 Freon 114					CAS #: 76-14-2		
6.472	6.472 (0.412)	135	1203100	10.1816	10.182	80.00- 120.00	100.00
6.472	6.472 (0.412)	137	387471			2.11- 62.11	32.21
3 Chloromethane					CAS #: 74-87-3		
6.849	6.849 (0.436)	50	700568	9.39905	9.399	80.00- 120.00	100.00
6.849	6.849 (0.436)	52	226692			2.48- 62.48	32.36
4 Vinyl Chloride					CAS #: 75-01-4		
7.774	7.774 (0.495)	62	668645	9.69774	9.698	80.00- 120.00	100.00
7.774	7.805 (0.495)	64	200043			0.00- 59.68	29.92
5 Chloroethane					CAS #: 75-00-3		
10.130	10.130 (0.645)	64	318925	10.8272	10.827	80.00- 120.00	100.00
10.130	10.130 (0.645)	66	94047			0.00- 59.38	29.49

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	1567452	10.0393	10.039	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	1031110			35.89- 95.89	65.78
	7 Freon 113					CAS #: 76-13-1		
	12.387	12.387 (0.789)	151	1073546	9.45421	9.454	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	694935			34.74- 94.74	64.73
	12.387	12.346 (0.789)	101	1207513			82.46- 142.46	112.48
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.346	12.346 (0.786)	98	370127	9.20265	9.203	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	1147165			278.03- 338.03	309.94
	12.346	12.346 (0.786)	96	582617			126.91- 186.91	157.41
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.786	13.786 (0.878)	73	1537327	9.90996	9.910	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	466946			0.50- 60.50	30.37
	13.786	13.786 (0.878)	41	456281			0.10- 60.10	29.68
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.841	13.841 (0.881)	98	323022	8.40352	8.404	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	880827			238.85- 298.85	272.68
	13.841	13.841 (0.881)	96	504331			125.51- 185.51	156.13
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.555	14.555 (0.927)	63	1251140	9.90209	9.902	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	378743			0.11- 60.11	30.27
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	453119	10.4827	10.483	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	1108333			214.12- 274.12	244.60
	15.388	15.388 (0.980)	96	701122			124.27- 184.27	154.73
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	180412	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	139572			47.62- 107.62	77.36
	15.709	15.709 (1.000)	49	325574			149.67- 209.67	180.46
	14 Chloroform					CAS #: 67-66-3		
	15.770	15.770 (1.004)	83	1250747	9.02225	9.022	80.00- 120.00	100.00
	15.770	15.770 (1.004)	85	824571			36.10- 96.10	65.93
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	1353160	9.56919	9.569	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	885729			35.68- 95.68	65.46

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride					CAS #: 56-23-5		
	16.202	16.202 (1.031)	119	1103740	8.90882	8.909	80.00- 120.00	100.00
	16.202	16.202 (1.031)	117	1086679			68.20- 128.20	98.45
	17 Benzene					CAS #: 71-43-2		
	16.531	16.531 (0.969)	78	1708484	8.64221	8.642	80.00- 120.00	100.00
	16.531	16.531 (0.969)	77	391496			0.00- 52.91	22.91
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.503	16.503 (1.051)	65	280744	4.97210	4.972	80.00- 120.00	100.00
	16.503	16.503 (1.051)	67	158568			27.09- 87.09	56.48
	19 1,2-Dichloroethane					CAS #: 107-06-2		
	16.613	16.613 (0.974)	62	977071	9.55584	9.556	80.00- 120.00	100.00
	16.613	16.613 (0.974)	64	303318			1.00- 61.00	31.04
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	17.053	17.053 (1.000)	114	743324	5.00000		80.00- 120.00	100.00
	17.053	17.053 (1.000)	88	116722			0.00- 45.81	15.70
	21 Trichloroethene					CAS #: 79-01-6		
	17.464	17.464 (1.024)	130	911083	9.21511	9.215	80.00- 120.00	100.00
	17.464	17.464 (1.024)	95	868916			65.68- 125.68	95.37
	17.464	17.464 (1.024)	97	564939			32.29- 92.29	62.01
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.567	19.567 (1.147)	98	677158	5.06488	5.065	80.00- 120.00	100.00
	19.567	19.567 (1.147)	70	75625			0.00- 41.21	11.17
	19.567	19.567 (1.147)	100	439108			34.67- 94.67	64.85
	23 Toluene					CAS #: 108-88-3		
	19.701	19.701 (1.155)	91	2011421	9.21438	9.214	80.00- 120.00	100.00
	19.701	19.701 (1.155)	92	1199300			29.69- 89.69	59.62
	24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
	20.123	20.123 (0.915)	75	1010418	10.7229	10.723	80.00- 120.00	100.00
	20.123	20.123 (0.915)	77	324022			2.14- 62.14	32.07
	25 1,1,2-Trichloroethane					CAS #: 79-00-5		
	20.481	20.481 (0.931)	97	811543	9.38484	9.385	80.00- 120.00	100.00
	20.481	20.481 (0.931)	99	513448			33.55- 93.55	63.27
	20.481	20.481 (0.931)	83	676553			53.06- 113.06	83.37
	26 Tetrachloroethene					CAS #: 127-18-4		
	20.661	20.661 (0.939)	166	1208615	8.54025	8.540	80.00- 120.00	100.00
	20.661	20.661 (0.939)	129	881335			42.41- 102.41	72.92

					CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
26 Tetrachloroethene (continued)								
20.661	20.661 (0.939)	131	885784				42.92- 102.92	73.29
27 1,2-Dibromoethane (EDB)						CAS #: 106-93-4		
21.342	21.342 (0.970)	107	1304530	9.46371		9.464	80.00- 120.00	100.00
21.342	21.342 (0.970)	109	1249511				65.76- 125.76	95.78
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
21.992	21.992 (1.000)	117	615076	5.00000			80.00- 120.00	100.00
21.965	21.965 (1.000)	82	330968				22.57- 82.57	53.81
29 Chlorobenzene						CAS #: 108-90-7		
22.020	22.020 (1.001)	112	1729233	9.16554		9.166	80.00- 120.00	100.00
22.020	22.020 (1.001)	114	568568				2.79- 62.79	32.88
22.020	22.020 (1.001)	77	940126				24.27- 84.27	54.37
30 Ethyl Benzene						CAS #: 100-41-4		
22.102	22.102 (1.005)	106	783276	9.33865		9.339	80.00- 120.00	100.00
22.102	22.102 (1.005)	91	2395964				275.83- 335.83	305.89
31 m,p-Xylene						CAS #: 108-38-3		
22.267	22.267 (1.012)	106	850523	8.07694		8.077	80.00- 120.00	100.00
22.267	22.239 (1.012)	91	1700025				169.69- 229.69	199.88
32 o-Xylene						CAS #: 95-47-6		
22.789	22.789 (1.036)	106	818170	8.88063		8.881	80.00- 120.00	100.00
22.789	22.789 (1.036)	91	1733757				180.67- 240.67	211.91
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.502	23.502 (1.069)	174	337923	4.88136		4.881	80.00- 120.00	100.00
23.502	23.502 (1.069)	95	398052				89.82- 149.82	117.79
23.502	23.502 (1.069)	176	333466				68.37- 128.37	98.68
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
23.631	23.631 (1.074)	83	1382674	8.59544		8.595	80.00- 120.00	100.00
23.656	23.631 (1.076)	85	905379				35.46- 95.46	65.48
35 1,3-Dichlorobenzene						CAS #: 541-73-1		
24.729	24.729 (1.124)	146	1275550	8.88247		8.882	80.00- 120.00	100.00
24.729	24.729 (1.124)	148	833844				35.53- 95.53	65.37
24.707	24.707 (1.123)	111	507007				10.03- 70.03	39.75
36 1,4-Dichlorobenzene						CAS #: 106-46-7		
24.819	24.819 (1.129)	146	1210647	8.16662		8.167	80.00- 120.00	100.00
24.819	24.819 (1.129)	148	791730				35.48- 95.48	65.40
24.819	24.819 (1.129)	111	464152				8.35- 68.35	38.34

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
25.245	25.245	(1.148)	146	1184819	8.67370	8.674	80.00- 120.00	100.00
25.245	25.245	(1.148)	148	773290			35.26- 95.26	65.27
25.245	25.223	(1.148)	111	480789			10.61- 70.61	40.58
38 Naphthalene						CAS #: 91-20-3		
27.352	27.352	(1.244)	128	68881	0.61309	0.6131	80.00- 120.00	100.00
27.352	27.352	(1.244)	127	8546			0.00- 42.11	12.41

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070616simz.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	180412	-5.63
20 1,4-Difluorobenze	772169	463301	1081037	743324	-3.74
28 Chlorobenzene-d5	632234	379340	885128	615076	-2.71

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 06Jul2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: ef
Data Type: MS DATA SampleType: ICV
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
1	Freon 12	10.000	10.431	104.31	70-130
2	Freon 114	10.000	10.182	101.82	70-130
3	Chloromethane	10.000	9.399	93.99	70-130
4	Vinyl Chloride	10.000	9.698	96.98	70-130
5	Chloroethane	10.000	10.827	108.27	70-130
6	Freon 11	10.000	10.039	100.39	70-130
7	Freon 113	10.000	9.454	94.54	70-130
8	1,1-Dichloroethene	10.000	9.203	92.03	70-130
9	Methyl tert-butyl	10.000	9.910	99.10	70-130
10	trans-1,2-Dichloro	10.000	8.404	84.04	70-130
11	1,1-Dichloroethane	10.000	9.902	99.02	70-130
12	cis-1,2-Dichloroet	10.000	10.483	104.83	70-130
14	Chloroform	10.000	9.022	90.22	70-130
15	1,1,1-Trichloroeth	10.000	9.569	95.69	70-130
16	Carbon Tetrachlori	10.000	8.909	89.09	60-140
17	Benzene	10.000	8.642	86.42	70-130
19	1,2-Dichloroethane	10.000	9.556	95.56	70-130
21	Trichloroethene	10.000	9.215	92.15	70-130
23	Toluene	10.000	9.214	92.14	70-130
24	trans-1,3-Dichloro	10.000	10.723	107.23	70-130
25	1,1,2-Trichloroeth	10.000	9.385	93.85	70-130
26	Tetrachloroethene	10.000	8.540	85.40	70-130
27	1,2-Dibromoethane	10.000	9.464	94.64	70-130
29	Chlorobenzene	10.000	9.166	91.66	70-130
30	Ethyl Benzene	10.000	9.339	93.39	70-130
31	m,p-Xylene	10.000	8.077	80.77	70-130
32	o-Xylene	10.000	8.881	88.81	70-130
34	1,1,2,2-Tetrachlor	10.000	8.595	85.95	70-130
35	1,3-Dichlorobenzen	10.000	8.882	88.82	70-130
36	1,4-Dichlorobenzen	10.000	8.167	81.67	70-130
37	1,2-Dichlorobenzen	10.000	8.674	86.74	70-130
38	Naphthalene	1.000	0.6131	61.31	60-140

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 06Jul2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: ef
Data Type: MS DATA SampleType: ICV
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.972	99.44	70-130
$ 22 Toluene-d8	5.000	5.065	101.30	70-130
$ 33 4-Bromofluorobenze	5.000	4.881	97.63	70-130

Data File: /chem/msdv.i/06Jul2017.b/v070616simz.d

Date : 07-JUL-2017 12:39

Client ID: ICV

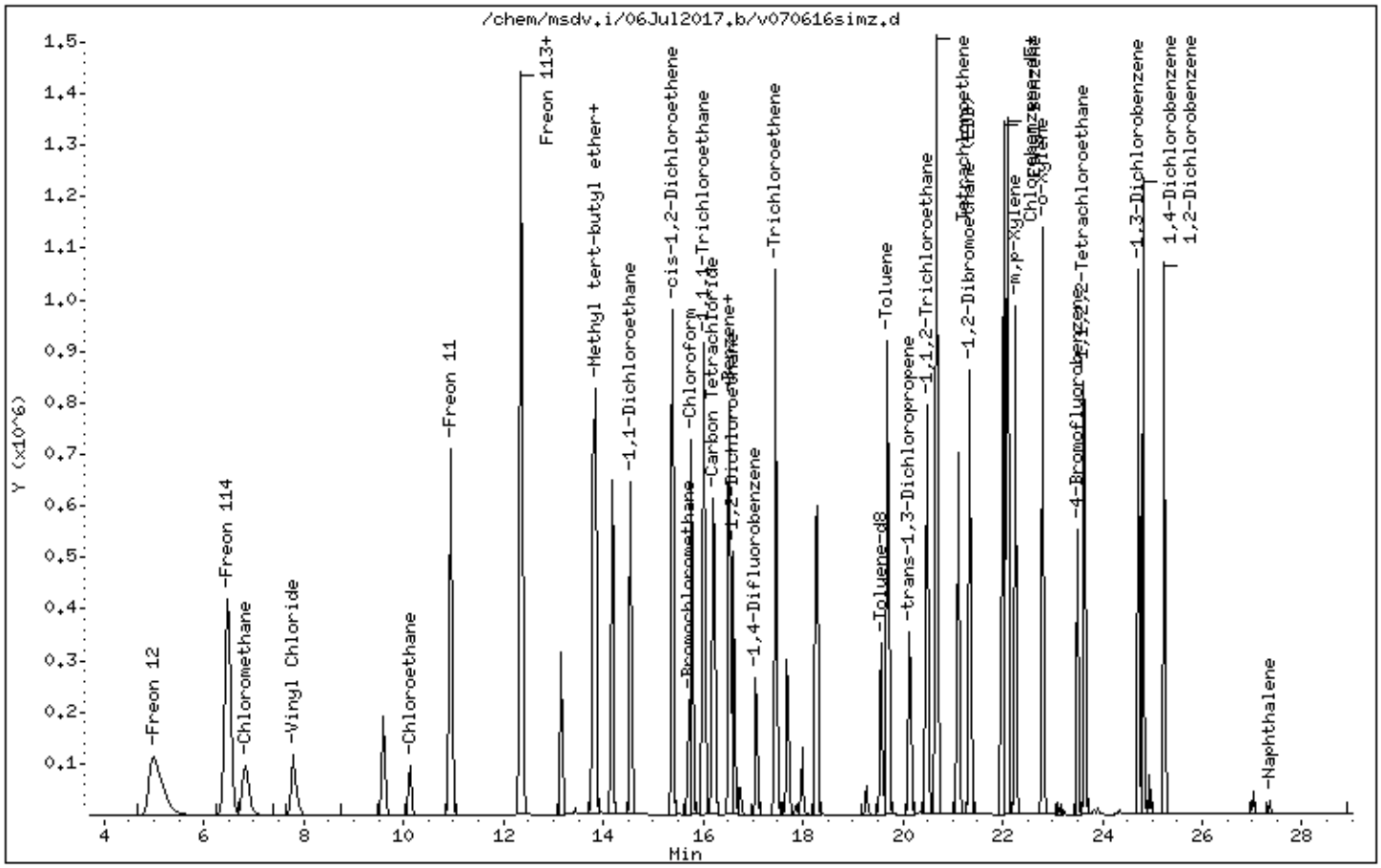
Instrument: msdv.i

Sample Info: 50mL #2850-197

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070602simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 2
Inj Date : 06-JUL-2017 19:46
Operator : EA Inst ID: msdv.i
Smp Info : 25mL# 2850-244
Misc Info : 0.005ppbv (.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 06-JUL-2017 19:46 Cal File: v070602simz.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level2.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
8 1,1-Dichloroethene						CAS #: 75-35-4		
12.346	12.346 (0.786)	98	244	0.00500	0.006069	80.00- 120.00	100.00(a)	
12.346	12.346 (0.786)	61	856			278.03- 338.03	350.82	
12.346	12.346 (0.786)	96	853			126.91- 186.91	349.59	
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
15.388	15.388 (0.980)	98	277	0.00500	0.006411	80.00- 120.00	100.00(a)	
15.388	15.388 (0.980)	61	567			214.12- 274.12	204.69	
15.388	15.388 (0.980)	96	415			124.27- 184.27	149.82	
* 13 Bromochloromethane						CAS #: 74-97-5		
15.709	15.709 (1.000)	130	180344	5.00000		80.00- 120.00	100.00	
15.709	15.709 (1.000)	128	139356			47.62- 107.62	77.27	
15.709	15.709 (1.000)	49	315855			149.67- 209.67	175.14	
14 Chloroform						CAS #: 67-66-3		
15.770	15.770 (1.004)	83	994	0.00500	0.007173	80.00- 120.00	100.00(a)	
15.770	15.770 (1.004)	85	843			36.10- 96.10	84.81	
16 Carbon Tetrachloride						CAS #: 56-23-5		
16.202	16.202 (1.031)	119	639	0.00500	0.005160	80.00- 120.00	100.00(a)	

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride (continued)							
	16.202	16.202 (1.031)	117	538			68.20- 128.20	84.19
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.503	16.503 (1.051)	65	278969	5.00000	4.942	80.00- 120.00	100.00
	16.503	16.503 (1.051)	67	138403			27.09- 87.09	49.61
	19 1,2-Dichloroethane					CAS #: 107-06-2		
	16.613	16.613 (0.974)	62	660	0.00500	0.006446	80.00- 120.00	100.00(a)
	16.613	16.613 (0.974)	64	260			1.00- 61.00	39.39
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	17.052	17.052 (1.000)	114	744356	5.00000		80.00- 120.00	100.00
	17.052	17.052 (1.000)	88	117747			0.00- 45.81	15.82
	21 Trichloroethene					CAS #: 79-01-6		
	17.464	17.464 (1.024)	130	683	0.00500	0.006899	80.00- 120.00	100.00(a)
	17.464	17.464 (1.024)	95	657			65.68- 125.68	96.19
	17.464	17.464 (1.024)	97	392			32.29- 92.29	57.39
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.567	19.567 (1.147)	98	672678	5.00000	5.024	80.00- 120.00	100.00
	19.567	19.567 (1.147)	70	76550			0.00- 41.21	11.38
	19.567	19.567 (1.147)	100	436019			34.67- 94.67	64.82
	26 Tetrachloroethene					CAS #: 127-18-4		
	20.661	20.661 (0.939)	166	1074	0.00500	0.007667	80.00- 120.00	100.00(a)
	20.661	20.661 (0.939)	129	906			42.41- 102.41	84.36
	20.661	20.661 (0.939)	131	1207			42.92- 102.92	112.38
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.378	21.378 (0.972)	107	796	0.00500	0.005834	80.00- 120.00	100.00(a)
	21.378	21.378 (0.972)	109	794			65.76- 125.76	99.75
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	608843	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	325470			22.57- 82.57	53.46
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	359252	5.00000	5.242	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	429777			89.82- 149.82	119.63
	23.502	23.502 (1.069)	176	352964			68.37- 128.37	98.25
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.631	23.631 (1.074)	83	1033	0.00500	0.006487	80.00- 120.00	100.00(a)
	23.656	23.656 (1.076)	85	762			35.46- 95.46	73.77

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070602simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 0.005ppbv (.05ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 2
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	180344	-5.66
20 1,4-Difluorobenze	772169	463301	1081037	744356	-3.60
28 Chlorobenzene-d5	632234	379340	885128	608843	-3.70

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070602simz.d

Date : 06-JUL-2017 19:46

Client ID: ICAL Level 2

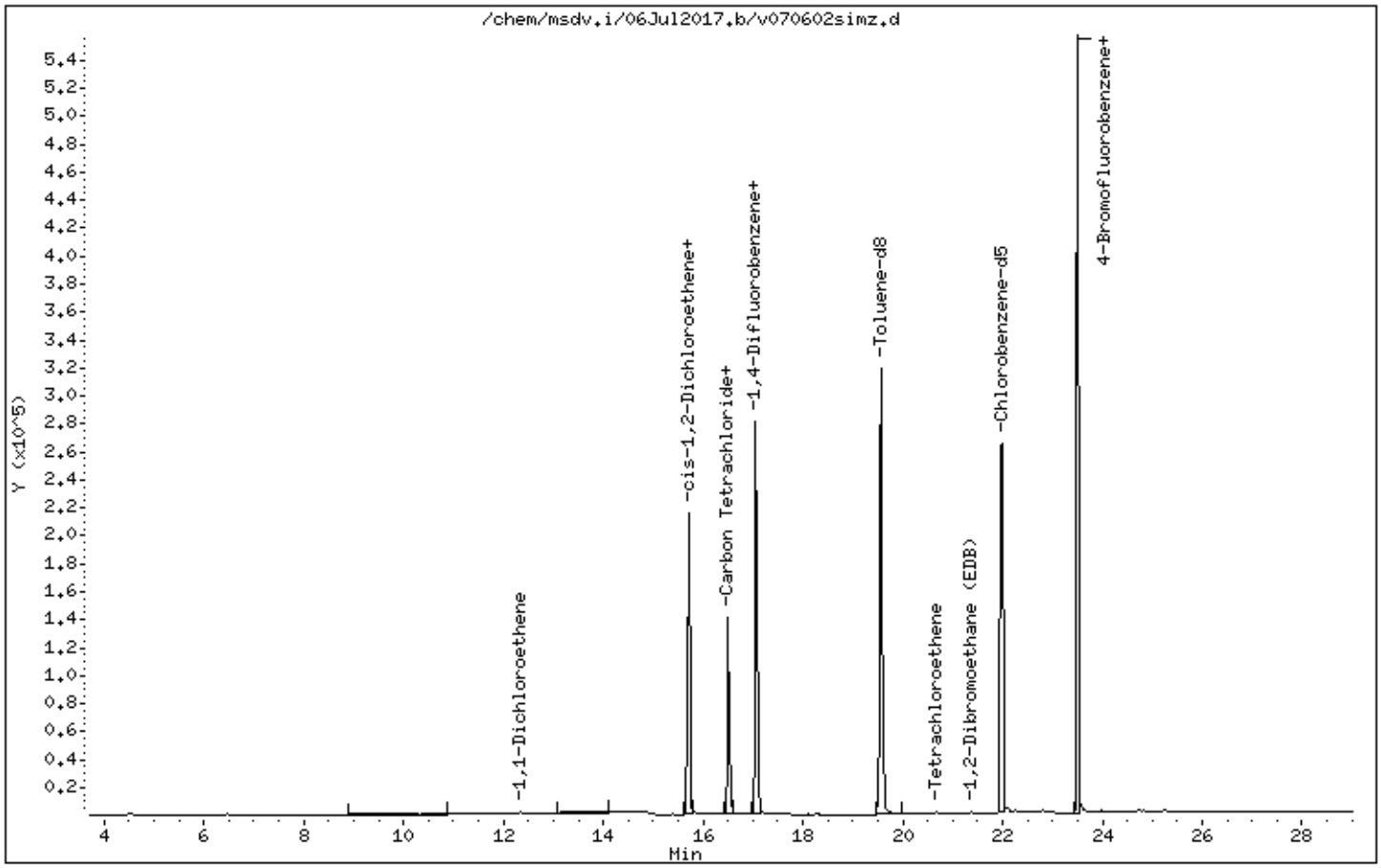
Instrument: msdv.i

Sample Info: 25mL# 2850-244

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070603simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 3
Inj Date : 06-JUL-2017 20:21
Operator : EA Inst ID: msdv.i
Smp Info : 50mL# 2850-244
Misc Info : 0.01ppbv (.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 06-JUL-2017 20:21 Cal File: v070603simz.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level3.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
4 Vinyl Chloride					CAS #: 75-01-4		
7.774	7.774 (0.495)	62	896	0.01000	0.01297	80.00- 120.00	100.00
7.774	7.774 (0.495)	64	362			0.00- 59.68	40.40
8 1,1-Dichloroethene					CAS #: 75-35-4		
12.346	12.346 (0.786)	98	493	0.01000	0.01224	80.00- 120.00	100.00
12.346	12.346 (0.786)	61	1426			278.03- 338.03	289.25
12.346	12.346 (0.786)	96	1061			126.91- 186.91	215.21
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
13.868	13.868 (0.883)	98	420	0.01000	0.01091	80.00- 120.00	100.00(a)
13.841	13.841 (0.881)	61	1120			238.85- 298.85	266.67
13.868	13.868 (0.883)	96	822			125.51- 185.51	195.71
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
15.388	15.388 (0.980)	98	481	0.01000	0.01111	80.00- 120.00	100.00(a)
15.388	15.388 (0.980)	61	1184			214.12- 274.12	246.15
15.388	15.388 (0.980)	96	1029			124.27- 184.27	213.93
* 13 Bromochloromethane					CAS #: 74-97-5		
15.709	15.709 (1.000)	130	180700	5.00000		80.00- 120.00	100.00

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane (continued)								
15.709	15.709 (1.000)	128	139798				47.62- 107.62	77.36
15.709	15.709 (1.000)	49	313815				149.67- 209.67	173.67
14 Chloroform						CAS #: 67-66-3		
15.770	15.770 (1.004)	83	1498	0.01000	0.01079		80.00- 120.00	100.00(aM)
15.770	15.770 (1.004)	85	946				36.10- 96.10	63.15
16 Carbon Tetrachloride						CAS #: 56-23-5		
16.202	16.202 (1.031)	119	1004	0.01000	0.008091		80.00- 120.00	100.00(a)
16.202	16.202 (1.031)	117	983				68.20- 128.20	97.91
17 Benzene						CAS #: 71-43-2		
16.531	16.531 (0.969)	78	2632	0.01000	0.01322		80.00- 120.00	100.00(a)
16.531	16.531 (0.969)	77	2724				0.00- 52.91	103.50
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.503	16.503 (1.051)	65	279821	5.00000	4.948		80.00- 120.00	100.00
16.503	16.503 (1.051)	67	138184				27.09- 87.09	49.38
19 1,2-Dichloroethane						CAS #: 107-06-2		
16.613	16.613 (0.974)	62	1128	0.01000	0.01096		80.00- 120.00	100.00(a)
16.613	16.613 (0.974)	64	367				1.00- 61.00	32.54
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.052	17.052 (1.000)	114	748318	5.00000			80.00- 120.00	100.00
17.052	17.052 (1.000)	88	118522				0.00- 45.81	15.84
21 Trichloroethene						CAS #: 79-01-6		
17.464	17.464 (1.024)	130	1088	0.01000	0.01093		80.00- 120.00	100.00(a)
17.464	17.464 (1.024)	95	1136				65.68- 125.68	104.41
17.464	17.464 (1.024)	97	769				32.29- 92.29	70.68
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.567	19.567 (1.147)	98	675120	5.00000	5.016		80.00- 120.00	100.00
19.567	19.567 (1.147)	70	76284				0.00- 41.21	11.30
19.567	19.567 (1.147)	100	437512				34.67- 94.67	64.81
25 1,1,2-Trichloroethane						CAS #: 79-00-5		
20.481	20.481 (0.931)	97	990	0.01000	0.01148		80.00- 120.00	100.00(a)
20.481	20.481 (0.931)	99	594				33.55- 93.55	60.00
20.481	20.481 (0.931)	83	843				53.06- 113.06	85.15
26 Tetrachloroethene						CAS #: 127-18-4		
20.661	20.661 (0.939)	166	1685	0.01000	0.01194		80.00- 120.00	100.00(a)
20.661	20.661 (0.939)	129	1429				42.41- 102.41	84.81

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)								
20.661	20.661	(0.939)	131	1762			42.92- 102.92	104.57
27 1,2-Dibromoethane (EDB)						CAS #: 106-93-4		
21.378	21.378	(0.972)	107	1487	0.01000	0.01082	80.00- 120.00	100.00(a)
21.378	21.378	(0.972)	109	1592			65.76- 125.76	107.06
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
21.992	21.992	(1.000)	117	613186	5.00000		80.00- 120.00	100.00
21.965	21.965	(1.000)	82	330098			22.57- 82.57	53.83
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.502	23.502	(1.069)	174	364496	5.00000	5.281	80.00- 120.00	100.00
23.502	23.502	(1.069)	95	436096			89.82- 149.82	119.64
23.502	23.502	(1.069)	176	361274			68.37- 128.37	99.12
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
23.631	23.631	(1.074)	83	1935	0.01000	0.01207	80.00- 120.00	100.00(a)
23.656	23.656	(1.076)	85	1205			35.46- 95.46	62.27

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070603simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 0.01ppbv (.05ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 3
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	180700	-5.48
20 1,4-Difluorobenze	772169	463301	1081037	748318	-3.09
28 Chlorobenzene-d5	632234	379340	885128	613186	-3.01

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070603simz.d

Date : 06-JUL-2017 20:21

Client ID: ICAL Level 3

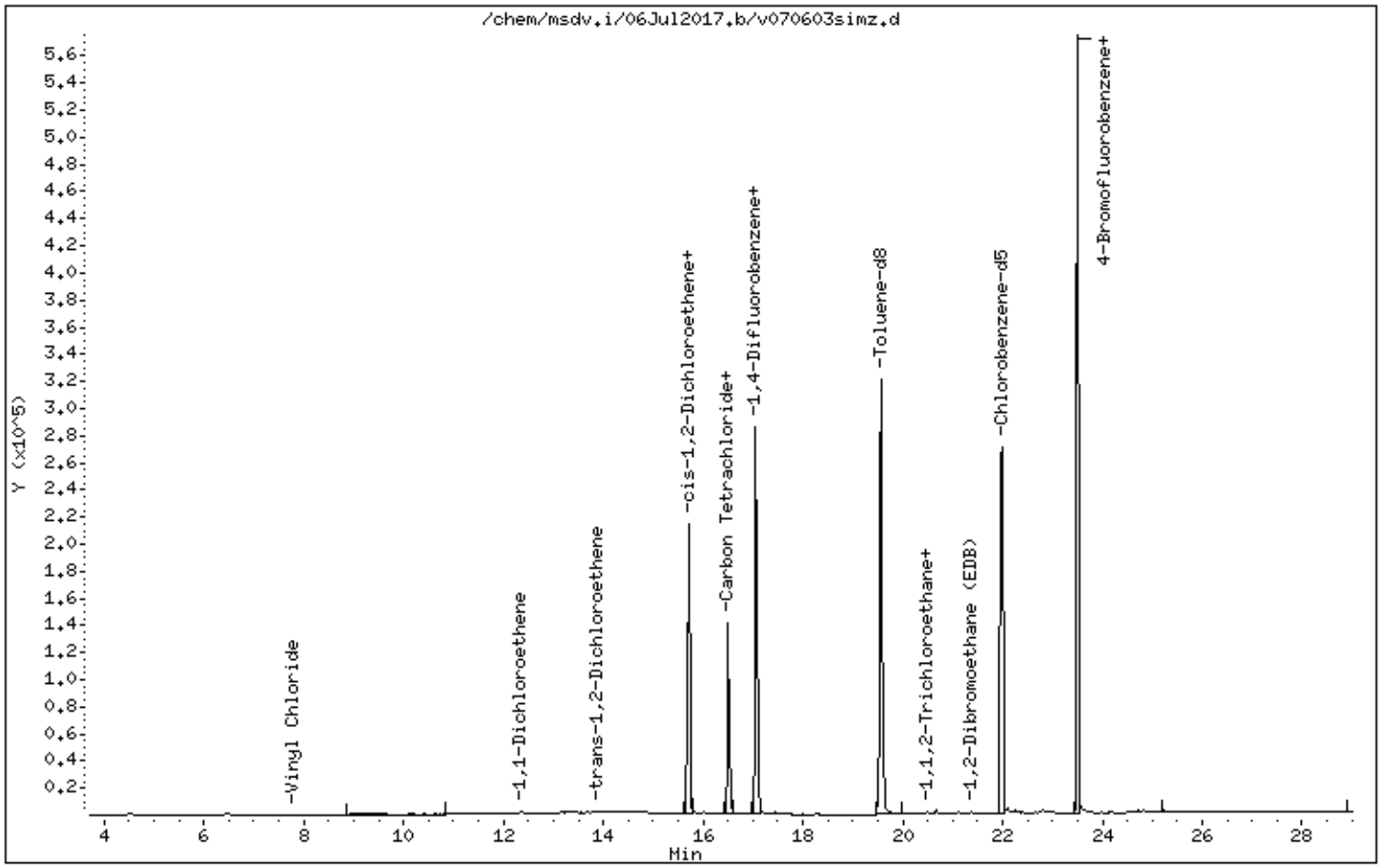
Instrument: msdv.i

Sample Info: 50mL# 2850-244

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070604simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 4
Inj Date : 06-JUL-2017 21:45
Operator : EA Inst ID: msdv.i
Smp Info : 100mL# 2850-244
Misc Info : 0.02ppbv (.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 06-JUL-2017 21:45 Cal File: v070604simz.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level4.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
4.999	4.999 (0.318)	85	2816	0.02000	0.02059	80.00- 120.00	100.00
4.961	4.961 (0.316)	87	1015			2.27- 62.27	36.04
2 Freon 114					CAS #: 76-14-2		
6.472	6.472 (0.412)	135	2508	0.02000	0.02184	80.00- 120.00	100.00
6.472	6.472 (0.412)	137	817			2.11- 62.11	32.58
4 Vinyl Chloride					CAS #: 75-01-4		
7.774	7.774 (0.495)	62	1529	0.02000	0.02282	80.00- 120.00	100.00
7.774	7.774 (0.495)	64	604			0.00- 59.68	39.50
6 Freon 11					CAS #: 75-69-4		
10.960	10.960 (0.698)	101	3261	0.02000	0.02150	80.00- 120.00	100.00
10.960	10.960 (0.698)	103	2192			35.89- 95.89	67.22
8 1,1-Dichloroethene					CAS #: 75-35-4		
12.346	12.346 (0.786)	98	774	0.02000	0.01980	80.00- 120.00	100.00
12.346	12.346 (0.786)	61	2615			278.03- 338.03	337.86
12.346	12.346 (0.786)	96	1401			126.91- 186.91	181.01

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
7 Freon 113						CAS #: 76-13-1		
12.387	12.387	(0.789)	151	2544	0.02000	0.02306	80.00- 120.00	100.00
12.387	12.387	(0.789)	153	1717			34.74- 94.74	67.49
12.346	12.346	(0.786)	101	3027			82.46- 142.46	118.99
9 Methyl tert-butyl ether						CAS #: 1634-04-4		
13.813	13.813	(0.879)	73	3273	0.02000	0.02171	80.00- 120.00	100.00(a)
13.786	13.786	(0.878)	57	1004			0.50- 60.50	30.68
13.786	13.786	(0.878)	41	1172			0.10- 60.10	35.81
10 trans-1,2-Dichloroethene						CAS #: 156-60-5		
13.868	13.868	(0.883)	98	775	0.02000	0.02075	80.00- 120.00	100.00(a)
13.841	13.841	(0.881)	61	2179			238.85- 298.85	281.16
13.868	13.868	(0.883)	96	1289			125.51- 185.51	166.32
11 1,1-Dichloroethane						CAS #: 75-34-3		
14.555	14.555	(0.927)	63	2622	0.02000	0.02136	80.00- 120.00	100.00
14.555	14.555	(0.927)	65	752			0.11- 60.11	28.68
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
15.388	15.388	(0.980)	98	809	0.02000	0.01926	80.00- 120.00	100.00(a)
15.388	15.388	(0.980)	61	2116			214.12- 274.12	261.56
15.388	15.388	(0.980)	96	1370			124.27- 184.27	169.34
* 13 Bromochloromethane						CAS #: 74-97-5		
15.709	15.709	(1.000)	130	175301	5.00000		80.00- 120.00	100.00
15.709	15.709	(1.000)	128	135570			47.62- 107.62	77.34
15.709	15.709	(1.000)	49	304520			149.67- 209.67	173.71
14 Chloroform						CAS #: 67-66-3		
15.771	15.771	(1.004)	83	2890	0.02000	0.02145	80.00- 120.00	100.00
15.771	15.771	(1.004)	85	2169			36.10- 96.10	75.05
15 1,1,1-Trichloroethane						CAS #: 71-55-6		
16.017	16.017	(1.020)	97	3149	0.02000	0.02292	80.00- 120.00	100.00
16.017	16.017	(1.020)	99	1930			35.68- 95.68	61.29
16 Carbon Tetrachloride						CAS #: 56-23-5		
16.202	16.202	(1.031)	119	2113	0.02000	0.01755	80.00- 120.00	100.00(a)
16.202	16.202	(1.031)	117	2152			68.20- 128.20	101.85
17 Benzene						CAS #: 71-43-2		
16.531	16.531	(0.969)	78	5265	0.02000	0.02731	80.00- 120.00	100.00(a)
16.531	16.531	(0.969)	77	2951			0.00- 52.91	56.05
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.504	16.504	(1.051)	65	273301	5.00000	4.981	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.504	16.504 (1.051)	67	135012			27.09- 87.09	49.40
19 1,2-Dichloroethane						CAS #: 107-06-2	
16.613	16.613 (0.974)	62	2065	0.02000	0.02071	80.00- 120.00	100.00
16.613	16.613 (0.974)	64	699			1.00- 61.00	33.85
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
17.053	17.053 (1.000)	114	724801	5.00000		80.00- 120.00	100.00
17.053	17.053 (1.000)	88	114604			0.00- 45.81	15.81
21 Trichloroethene						CAS #: 79-01-6	
17.465	17.465 (1.024)	130	2085	0.02000	0.02163	80.00- 120.00	100.00
17.465	17.465 (1.024)	95	1983			65.68- 125.68	95.11
17.465	17.465 (1.024)	97	1207			32.29- 92.29	57.89
$ 22 Toluene-d8						CAS #: 2037-26-5	
19.567	19.567 (1.147)	98	656383	5.00000	5.035	80.00- 120.00	100.00
19.567	19.567 (1.147)	70	74104			0.00- 41.21	11.29
19.567	19.567 (1.147)	100	423743			34.67- 94.67	64.56
24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
20.159	20.159 (0.917)	75	1464	0.02000	0.01602	80.00- 120.00	100.00(aM)
20.159	20.159 (0.917)	77	591			2.14- 62.14	40.37
25 1,1,2-Trichloroethane						CAS #: 79-00-5	
20.481	20.481 (0.931)	97	1808	0.02000	0.02156	80.00- 120.00	100.00
20.481	20.481 (0.931)	99	1112			33.55- 93.55	61.50
20.481	20.481 (0.931)	83	1597			53.06- 113.06	88.33
26 Tetrachloroethene						CAS #: 127-18-4	
20.661	20.661 (0.939)	166	3071	0.02000	0.02237	80.00- 120.00	100.00
20.661	20.661 (0.939)	129	2501			42.41- 102.41	81.44
20.661	20.661 (0.939)	131	3295			42.92- 102.92	107.29
27 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
21.378	21.378 (0.972)	107	2821	0.02000	0.02110	80.00- 120.00	100.00
21.378	21.378 (0.972)	109	2718			65.76- 125.76	96.35
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
21.992	21.992 (1.000)	117	596607	5.00000		80.00- 120.00	100.00
21.965	21.965 (1.000)	82	320401			22.57- 82.57	53.70
29 Chlorobenzene						CAS #: 108-90-7	
22.020	22.020 (1.001)	112	4820	0.02000	0.02634	80.00- 120.00	100.00
22.020	22.020 (1.001)	114	1693			2.79- 62.79	35.12

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
29 Chlorobenzene (continued)							
21.965	21.965 (0.999)	77	8287			24.27- 84.27	171.93
30 Ethyl Benzene					CAS #: 100-41-4		
22.102	22.102 (1.005)	106	2039	0.02000	0.02506	80.00- 120.00	100.00
22.102	22.102 (1.005)	91	6539			275.83- 335.83	320.70
31 m,p-Xylene					CAS #: 108-38-3		
22.267	22.267 (1.012)	106	3194	0.02000	0.03127	80.00- 120.00	100.00(a)
22.267	22.267 (1.012)	91	6557			169.69- 229.69	205.29
32 o-Xylene					CAS #: 95-47-6		
22.789	22.789 (1.036)	106	2360	0.02000	0.02641	80.00- 120.00	100.00
22.789	22.789 (1.036)	91	5901			180.67- 240.67	250.04
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
23.502	23.502 (1.069)	174	349667	5.00000	5.207	80.00- 120.00	100.00
23.502	23.502 (1.069)	95	417906			89.82- 149.82	119.52
23.502	23.502 (1.069)	176	344756			68.37- 128.37	98.60
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
23.631	23.631 (1.074)	83	3291	0.02000	0.02109	80.00- 120.00	100.00
23.631	23.631 (1.074)	85	2126			35.46- 95.46	64.60
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
24.730	24.730 (1.124)	146	3147	0.02000	0.02259	80.00- 120.00	100.00(M)
24.730	24.730 (1.124)	148	2022			35.53- 95.53	64.25
24.730	24.730 (1.124)	111	1298			10.03- 70.03	41.25
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
24.819	24.819 (1.129)	146	3919	0.02000	0.02725	80.00- 120.00	100.00
24.819	24.819 (1.129)	148	2528			35.48- 95.48	64.51
24.819	24.819 (1.129)	111	1396			8.35- 68.35	35.62
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
25.245	25.245 (1.148)	146	3448	0.02000	0.02602	80.00- 120.00	100.00
25.245	25.245 (1.148)	148	2227			35.26- 95.26	64.59
25.245	25.245 (1.148)	111	1482			10.61- 70.61	42.98

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070604simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 0.02ppbv (.05ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 4
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	175301	-8.30
20 1,4-Difluorobenze	772169	463301	1081037	724801	-6.13
28 Chlorobenzene-d5	632234	379340	885128	596607	-5.64

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070604simz.d

Date : 06-JUL-2017 21:45

Client ID: ICAL Level 4

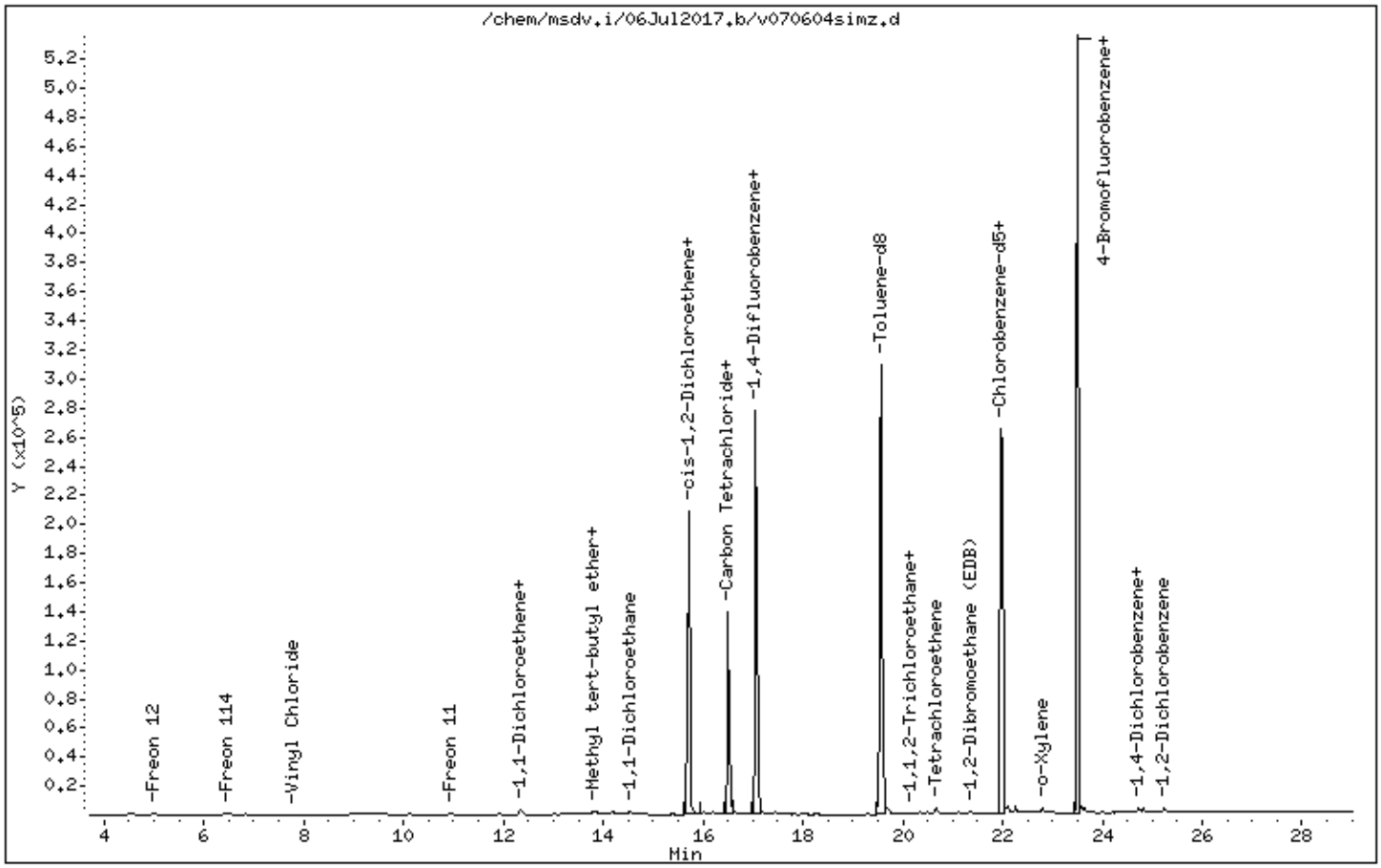
Instrument: msdv.i

Sample Info: 100mL# 2850-244

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070605simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 5
Inj Date : 06-JUL-2017 22:53
Operator : EA Inst ID: msdv.i
Smp Info : 250mL# 2850-244
Misc Info : 0.05ppbv (.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 06-JUL-2017 22:53 Cal File: v070605simz.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	==========	=====
1 Freon 12						CAS #: 75-71-8		
4.961	4.961 (0.316)	85	7385	0.05000	0.05583	80.00- 120.00		100.00
4.999	4.999 (0.318)	87	2422			2.27- 62.27		32.80
2 Freon 114						CAS #: 76-14-2		
6.471	6.471 (0.412)	135	6028	0.05000	0.05429	80.00- 120.00		100.00
6.471	6.471 (0.412)	137	1939			2.11- 62.11		32.17
3 Chloromethane						CAS #: 74-87-3		
6.849	6.849 (0.436)	50	4023	0.05000	0.05744	80.00- 120.00		100.00
6.849	6.849 (0.436)	52	1413			2.48- 62.48		35.12
4 Vinyl Chloride						CAS #: 75-01-4		
7.805	7.805 (0.497)	62	3386	0.05000	0.05227	80.00- 120.00		100.00
7.805	7.805 (0.497)	64	1170			0.00- 59.68		34.55
5 Chloroethane						CAS #: 75-00-3		
10.130	10.130 (0.645)	64	1440	0.05000	0.05203	80.00- 120.00		100.00
10.130	10.130 (0.645)	66	448			0.00- 59.38		31.11

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	==	====== ========	====	========	=======	=======	============	=====
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	7753	0.05000	0.05285	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	5096			35.89- 95.89	65.73
	7 Freon 113					CAS #: 76-13-1		
	12.387	12.387 (0.789)	151	6148	0.05000	0.05762	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	4049			34.74- 94.74	65.86
	12.345	12.345 (0.786)	101	7083			82.46- 142.46	115.21
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.345	12.345 (0.786)	98	1927	0.05000	0.05099	80.00- 120.00	100.00
	12.345	12.345 (0.786)	61	6141			278.03- 338.03	318.68
	12.345	12.345 (0.786)	96	3558			126.91- 186.91	184.64
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.813	13.813 (0.879)	73	7662	0.05000	0.05257	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	2236			0.50- 60.50	29.18
	13.786	13.786 (0.878)	41	2396			0.10- 60.10	31.27
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.868	13.868 (0.883)	98	1954	0.05000	0.05410	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	5317			238.85- 298.85	272.11
	13.841	13.841 (0.881)	96	3002			125.51- 185.51	153.63
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.554	14.554 (0.927)	63	6286	0.05000	0.05295	80.00- 120.00	100.00
	14.554	14.554 (0.927)	65	1856			0.11- 60.11	29.53
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	2049	0.05000	0.05045	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	5139			214.12- 274.12	250.81
	15.388	15.388 (0.980)	96	3234			124.27- 184.27	157.83
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	169512	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	131395			47.62- 107.62	77.51
	15.709	15.709 (1.000)	49	296168			149.67- 209.67	174.72
	14 Chloroform					CAS #: 67-66-3		
	15.770	15.770 (1.004)	83	6404	0.05000	0.04916	80.00- 120.00	100.00(a)
	15.770	15.770 (1.004)	85	4595			36.10- 96.10	71.75
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	7510	0.05000	0.05652	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	4852			35.68- 95.68	64.61

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride					CAS #: 56-23-5		
	16.202	16.202 (1.031)	119	5427	0.05000	0.04662	80.00- 120.00	100.00(a)
	16.202	16.202 (1.031)	117	5453			68.20- 128.20	100.48
	17 Benzene					CAS #: 71-43-2		
	16.531	16.531 (0.969)	78	10583	0.05000	0.05597	80.00- 120.00	100.00
	16.531	16.531 (0.969)	77	4246			0.00- 52.91	40.12
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.503	16.503 (1.051)	65	268750	5.00000	5.066	80.00- 120.00	100.00
	16.503	16.503 (1.051)	67	132715			27.09- 87.09	49.38
	19 1,2-Dichloroethane					CAS #: 107-06-2		
	16.613	16.613 (0.974)	62	4748	0.05000	0.04855	80.00- 120.00	100.00(a)
	16.613	16.613 (0.974)	64	1502			1.00- 61.00	31.63
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	17.052	17.052 (1.000)	114	710903	5.00000		80.00- 120.00	100.00
	17.052	17.052 (1.000)	88	111890			0.00- 45.81	15.74
	21 Trichloroethene					CAS #: 79-01-6		
	17.464	17.464 (1.024)	130	5000	0.05000	0.05288	80.00- 120.00	100.00
	17.464	17.464 (1.024)	95	4723			65.68- 125.68	94.46
	17.464	17.464 (1.024)	97	2991			32.29- 92.29	59.82
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.567	19.567 (1.147)	98	641674	5.00000	5.018	80.00- 120.00	100.00
	19.567	19.567 (1.147)	70	72948			0.00- 41.21	11.37
	19.567	19.567 (1.147)	100	415737			34.67- 94.67	64.79
	23 Toluene					CAS #: 108-88-3		
	19.701	19.701 (1.155)	91	15135	0.05000	0.07250	80.00- 120.00	100.00
	19.701	19.701 (1.155)	92	8656			29.69- 89.69	57.19
	24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
	20.158	20.158 (0.917)	75	4124	0.05000	0.04593	80.00- 120.00	100.00(aM)
	20.158	20.158 (0.917)	77	1198			2.14- 62.14	29.05
	25 1,1,2-Trichloroethane					CAS #: 79-00-5		
	20.481	20.481 (0.931)	97	4326	0.05000	0.05250	80.00- 120.00	100.00
	20.481	20.481 (0.931)	99	2636			33.55- 93.55	60.93
	20.481	20.481 (0.931)	83	3609			53.06- 113.06	83.43
	26 Tetrachloroethene					CAS #: 127-18-4		
	20.661	20.661 (0.939)	166	7053	0.05000	0.05230	80.00- 120.00	100.00
	20.661	20.661 (0.939)	129	5906			42.41- 102.41	83.74

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	7706			42.92- 102.92	109.26
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	6898	0.05000	0.05252	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	6261			65.76- 125.76	90.77
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	586073	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	315198			22.57- 82.57	53.78
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	10559	0.05000	0.05874	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	3540			2.79- 62.79	33.53
	22.020	22.020 (1.001)	77	11783			24.27- 84.27	111.59
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	4729	0.05000	0.05917	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	16429			275.83- 335.83	347.41
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	6732	0.05000	0.06709	80.00- 120.00	100.00
	22.267	22.267 (1.012)	91	14812			169.69- 229.69	220.02
	32 o-Xylene					CAS #: 95-47-6		
	22.816	22.816 (1.037)	106	5523	0.05000	0.06291	80.00- 120.00	100.00
	22.788	22.788 (1.036)	91	12268			180.67- 240.67	222.13
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.501	23.501 (1.069)	174	337726	5.00000	5.120	80.00- 120.00	100.00
	23.501	23.501 (1.069)	95	406308			89.82- 149.82	120.31
	23.501	23.501 (1.069)	176	331635			68.37- 128.37	98.20
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.630	23.630 (1.074)	83	8140	0.05000	0.05311	80.00- 120.00	100.00
	23.656	23.656 (1.076)	85	5229			35.46- 95.46	64.24
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.729	24.729 (1.124)	146	7943	0.05000	0.05805	80.00- 120.00	100.00(M)
	24.729	24.729 (1.124)	148	5204			35.53- 95.53	65.52
	24.729	24.729 (1.124)	111	3123			10.03- 70.03	39.32
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	9157	0.05000	0.06483	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	5833			35.48- 95.48	63.70
	24.819	24.819 (1.129)	111	3464			8.35- 68.35	37.83

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
25.245	25.245	(1.148)	146	8231	0.05000	0.06324	80.00- 120.00	100.00
25.245	25.245	(1.148)	148	5261			35.26- 95.26	63.92
25.245	25.245	(1.148)	111	3308			10.61- 70.61	40.19

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070605simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 0.05ppbv (.05ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 5
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	169512	-11.33
20 1,4-Difluorobenze	772169	463301	1081037	710903	-7.93
28 Chlorobenzene-d5	632234	379340	885128	586073	-7.30

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070605simz.d

Date : 06-JUL-2017 22:53

Client ID: ICAL Level 5

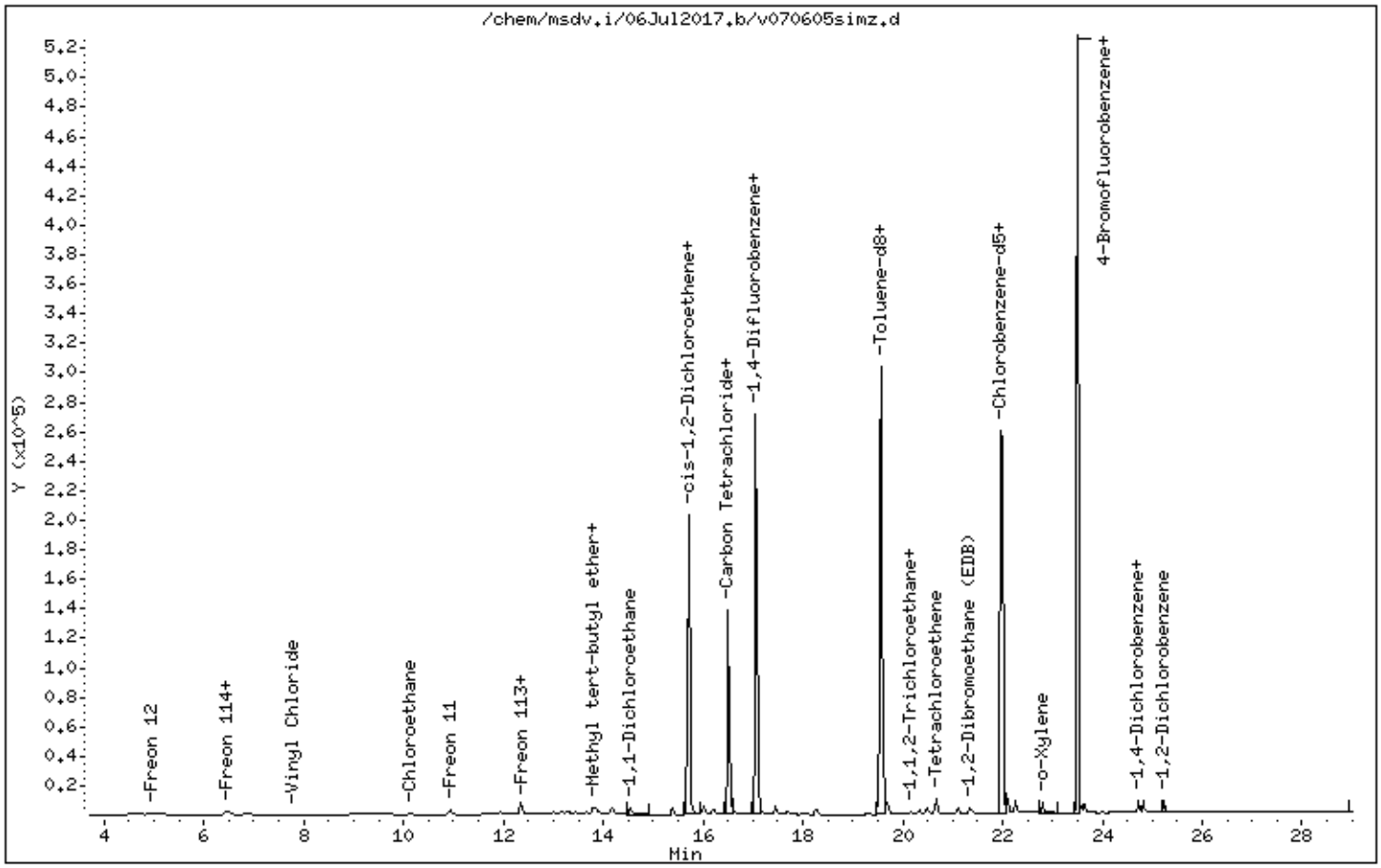
Instrument: msdv.i

Sample Info: 250mL# 2850-244

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070606simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 6
Inj Date : 06-JUL-2017 23:28
Operator : EA Inst ID: msdv.i
Smp Info : 25mL# 2850-245
Misc Info : 0.1ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 06-JUL-2017 23:28 Cal File: v070606simz.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
1 Freon 12					CAS #: 75-71-8			
4.999	4.999 (0.318)	85	15476	0.10000	0.1072	80.00-	120.00	100.00
4.999	4.999 (0.318)	87	5158			2.27-	62.27	33.33
2 Freon 114					CAS #: 76-14-2			
6.471	6.471 (0.412)	135	13224	0.10000	0.1091	80.00-	120.00	100.00
6.471	6.471 (0.412)	137	4184			2.11-	62.11	31.64
3 Chloromethane					CAS #: 74-87-3			
6.811	6.811 (0.434)	50	9685	0.10000	0.1267	80.00-	120.00	100.00
6.811	6.811 (0.434)	52	3210			2.48-	62.48	33.14
4 Vinyl Chloride					CAS #: 75-01-4			
7.774	7.774 (0.495)	62	7153	0.10000	0.1011	80.00-	120.00	100.00
7.774	7.774 (0.495)	64	2419			0.00-	59.68	33.82
5 Chloroethane					CAS #: 75-00-3			
10.092	10.092 (0.642)	64	3137	0.10000	0.1038	80.00-	120.00	100.00
10.092	10.092 (0.642)	66	1016			0.00-	59.38	32.39

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	==	====== ========	====	========	=======	=======	==========	=====
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	17341	0.10000	0.1083	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	11346			35.89- 95.89	65.43
	7 Freon 113					CAS #: 76-13-1		
	12.387	12.387 (0.789)	151	12088	0.10000	0.1038	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	7992			34.74- 94.74	66.12
	12.346	12.346 (0.786)	101	14055			82.46- 142.46	116.27
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.346	12.346 (0.786)	98	4177	0.10000	0.1012	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	13023			278.03- 338.03	311.78
	12.346	12.346 (0.786)	96	7054			126.91- 186.91	168.88
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.813	13.813 (0.879)	73	16909	0.10000	0.1063	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	4877			0.50- 60.50	28.84
	13.786	13.786 (0.878)	41	5419			0.10- 60.10	32.05
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.868	13.868 (0.883)	98	4162	0.10000	0.1056	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	11614			238.85- 298.85	279.05
	13.841	13.841 (0.881)	96	6615			125.51- 185.51	158.94
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.555	14.555 (0.927)	63	13760	0.10000	0.1062	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	4085			0.11- 60.11	29.69
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	4513	0.10000	0.1018	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	11369			214.12- 274.12	251.92
	15.388	15.388 (0.980)	96	7118			124.27- 184.27	157.72
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	185043	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	143469			47.62- 107.62	77.53
	15.709	15.709 (1.000)	49	322276			149.67- 209.67	174.16
	14 Chloroform					CAS #: 67-66-3		
	15.770	15.770 (1.004)	83	14059	0.10000	0.09888	80.00- 120.00	100.00
	15.770	15.770 (1.004)	85	9391			36.10- 96.10	66.80
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	15152	0.10000	0.1045	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	9776			35.68- 95.68	64.52

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO	
	16 Carbon Tetrachloride					CAS #: 56-23-5			
	16.202	16.202 (1.031)	119	13030	0.10000	0.1025	80.00- 120.00	100.00	
	16.202	16.202 (1.031)	117	13158			68.20- 128.20	100.98	
	17 Benzene					CAS #: 71-43-2			
	16.531	16.531 (0.969)	78	19647	0.10000	0.09733	80.00- 120.00	100.00	
	16.531	16.531 (0.969)	77	6375			0.00- 52.91	32.45	
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
	16.503	16.503 (1.051)	65	284543	5.00000	4.913	80.00- 120.00	100.00	
	16.503	16.503 (1.051)	67	141174			27.09- 87.09	49.61	
	19 1,2-Dichloroethane					CAS #: 107-06-2			
	16.613	16.613 (0.974)	62	10359	0.10000	0.09922	80.00- 120.00	100.00	
	16.613	16.613 (0.974)	64	3672			1.00- 61.00	35.45	
*	20 1,4-Difluorobenzene					CAS #: 540-36-3			
	17.052	17.052 (1.000)	114	759008	5.00000		80.00- 120.00	100.00	
	17.052	17.052 (1.000)	88	119383			0.00- 45.81	15.73	
	21 Trichloroethene					CAS #: 79-01-6			
	17.464	17.464 (1.024)	130	9994	0.10000	0.09900	80.00- 120.00	100.00	
	17.464	17.464 (1.024)	95	9747			65.68- 125.68	97.53	
	17.464	17.464 (1.024)	97	6239			32.29- 92.29	62.43	
$	22 Toluene-d8					CAS #: 2037-26-5			
	19.567	19.567 (1.147)	98	678271	5.00000	4.968	80.00- 120.00	100.00	
	19.567	19.567 (1.147)	70	76480			0.00- 41.21	11.28	
	19.567	19.567 (1.147)	100	439426			34.67- 94.67	64.79	
	23 Toluene					CAS #: 108-88-3			
	19.701	19.701 (1.155)	91	23825	0.10000	0.1069	80.00- 120.00	100.00	
	19.701	19.701 (1.155)	92	13581			29.69- 89.69	57.00	
	24 trans-1,3-Dichloropropene					CAS #: 10061-02-6			
	20.158	20.158 (0.917)	75	8519	0.10000	0.09060	80.00- 120.00	100.00(M)	
	20.158	20.158 (0.917)	77	2707			2.14- 62.14	31.78	
	25 1,1,2-Trichloroethane					CAS #: 79-00-5			
	20.481	20.481 (0.931)	97	9206	0.10000	0.1067	80.00- 120.00	100.00	
	20.481	20.481 (0.931)	99	5572			33.55- 93.55	60.53	
	20.481	20.481 (0.931)	83	7473			53.06- 113.06	81.18	
	26 Tetrachloroethene					CAS #: 127-18-4			
	20.661	20.661 (0.939)	166	13749	0.10000	0.09736	80.00- 120.00	100.00	
	20.661	20.661 (0.939)	129	10316			42.41- 102.41	75.03	

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	10632			42.92- 102.92	77.33
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	13865	0.10000	0.1008	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	13060			65.76- 125.76	94.19
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	613766	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	328889			22.57- 82.57	53.59
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	19664	0.10000	0.1044	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	6462			2.79- 62.79	32.86
	22.020	22.020 (1.001)	77	16593			24.27- 84.27	84.38
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	9020	0.10000	0.1078	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	30201			275.83- 335.83	334.82
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	11464	0.10000	0.1091	80.00- 120.00	100.00
	22.267	22.267 (1.012)	91	23883			169.69- 229.69	208.33
	32 o-Xylene					CAS #: 95-47-6		
	22.789	22.789 (1.036)	106	10000	0.10000	0.1088	80.00- 120.00	100.00
	22.789	22.789 (1.036)	91	22591			180.67- 240.67	225.91
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	353645	5.00000	5.119	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	426133			89.82- 149.82	120.50
	23.502	23.502 (1.069)	176	349858			68.37- 128.37	98.93
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.631	23.631 (1.074)	83	16292	0.10000	0.1015	80.00- 120.00	100.00
	23.656	23.656 (1.076)	85	10441			35.46- 95.46	64.09
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.729	24.729 (1.124)	146	16856	0.10000	0.1176	80.00- 120.00	100.00
	24.729	24.729 (1.124)	148	14404			35.53- 95.53	85.45
	24.729	24.729 (1.124)	111	6649			10.03- 70.03	39.45
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	17093	0.10000	0.1155	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	11209			35.48- 95.48	65.58
	24.819	24.819 (1.129)	111	6567			8.35- 68.35	38.42

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
25.245	25.245	(1.148)	146	15064	0.10000	0.1105	80.00- 120.00	100.00
25.245	25.245	(1.148)	148	9604			35.26- 95.26	63.75
25.245	25.245	(1.148)	111	6126			10.61- 70.61	40.67
38 Naphthalene						CAS #: 91-20-3		
27.375	27.375	(1.245)	128	1127	0.01000	0.01005	80.00- 120.00	100.00(a)
27.375	27.375	(1.245)	127	103			0.00- 42.11	9.14

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070606simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 0.1ppbv (1.0ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 6
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	185043	-3.21
20 1,4-Difluorobenze	772169	463301	1081037	759008	-1.70
28 Chlorobenzene-d5	632234	379340	885128	613766	-2.92

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070606simz.d

Date : 06-JUL-2017 23:28

Client ID: ICAL Level 6

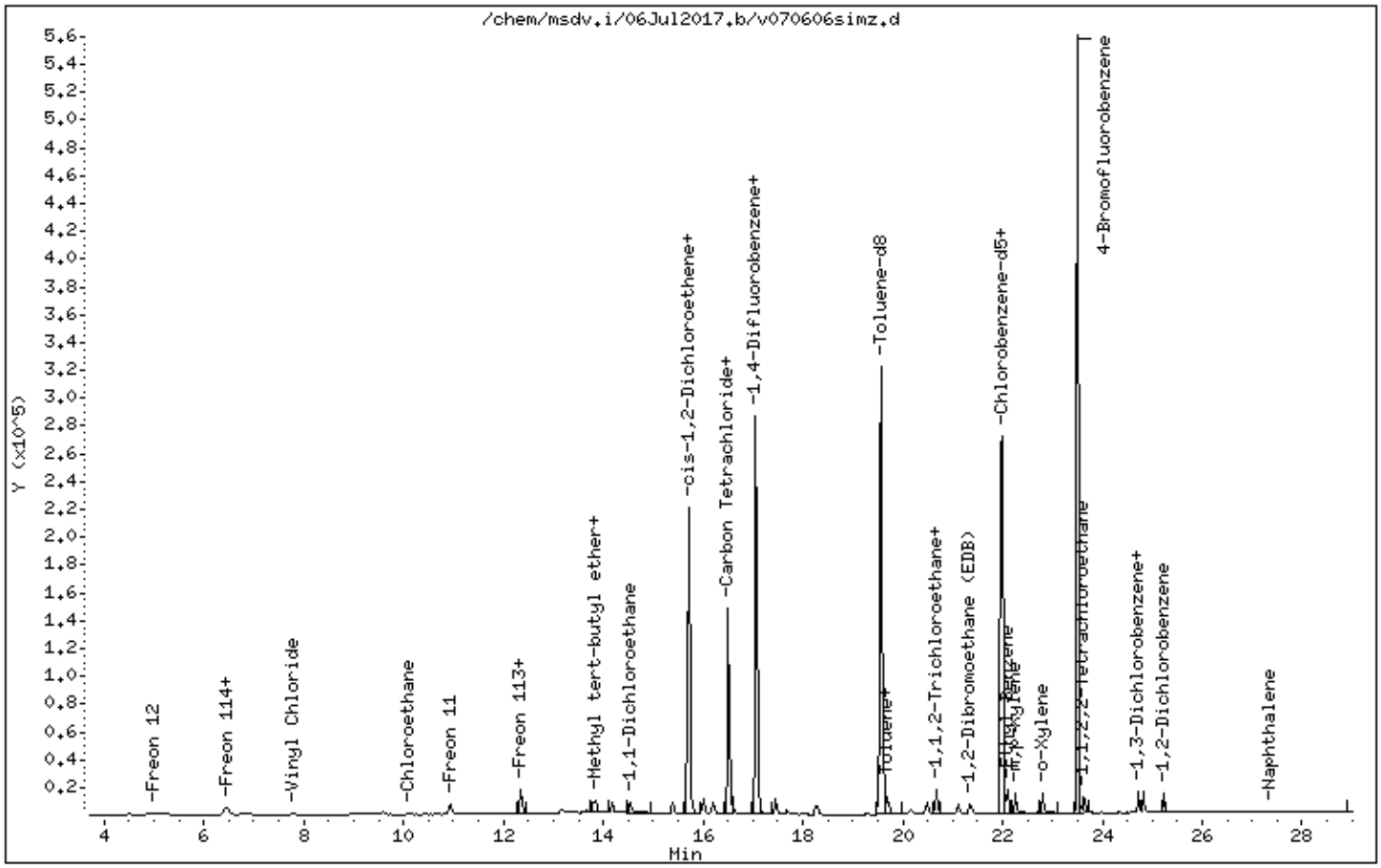
Instrument: msdv.i

Sample Info: 25mL# 2850-245

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070607simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 7
Inj Date : 07-JUL-2017 00:05
Operator : EA Inst ID: msdv.i
Smp Info : 125mL# 2850-245
Misc Info : 0.5ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 00:05 Cal File: v070607simz.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
1 Freon 12					CAS #: 75-71-8			
4.999	4.999 (0.318)	85	62745	0.50000	0.4485	80.00-	120.00	100.00
4.999	4.999 (0.318)	87	20255			2.27-	62.27	32.28
2 Freon 114					CAS #: 76-14-2			
6.471	6.471 (0.412)	135	53248	0.50000	0.4535	80.00-	120.00	100.00
6.471	6.471 (0.412)	137	17081			2.11-	62.11	32.08
3 Chloromethane					CAS #: 74-87-3			
6.849	6.849 (0.436)	50	34727	0.50000	0.4689	80.00-	120.00	100.00
6.849	6.849 (0.436)	52	11258			2.48-	62.48	32.42
4 Vinyl Chloride					CAS #: 75-01-4			
7.774	7.774 (0.495)	62	29262	0.50000	0.4271	80.00-	120.00	100.00
7.805	7.805 (0.497)	64	9057			0.00-	59.68	30.95
5 Chloroethane					CAS #: 75-00-3			
10.130	10.130 (0.645)	64	13048	0.50000	0.4458	80.00-	120.00	100.00
10.130	10.130 (0.645)	66	3884			0.00-	59.38	29.77

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	71822	0.50000	0.4629	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	45756			35.89- 95.89	63.71
	7 Freon 113					CAS #: 76-13-1		
	12.387	12.387 (0.789)	151	50423	0.50000	0.4469	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	32280			34.74- 94.74	64.02
	12.346	12.346 (0.786)	101	58117			82.46- 142.46	115.26
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.346	12.346 (0.786)	98	17738	0.50000	0.4438	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	54583			278.03- 338.03	307.72
	12.346	12.346 (0.786)	96	27406			126.91- 186.91	154.50
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.813	13.813 (0.879)	73	70070	0.50000	0.4546	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	20828			0.50- 60.50	29.72
	13.786	13.786 (0.878)	41	21409			0.10- 60.10	30.55
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.841	13.841 (0.881)	98	17165	0.50000	0.4494	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	48357			238.85- 298.85	281.72
	13.841	13.841 (0.881)	96	26684			125.51- 185.51	155.46
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.555	14.555 (0.927)	63	57694	0.50000	0.4595	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	17107			0.11- 60.11	29.65
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	18778	0.50000	0.4372	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	47205			214.12- 274.12	251.38
	15.388	15.388 (0.980)	96	29669			124.27- 184.27	158.00
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	179273	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	138603			47.62- 107.62	77.31
	15.709	15.709 (1.000)	49	319254			149.67- 209.67	178.08
	14 Chloroform					CAS #: 67-66-3		
	15.770	15.770 (1.004)	83	58620	0.50000	0.4255	80.00- 120.00	100.00
	15.770	15.770 (1.004)	85	37822			36.10- 96.10	64.52
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	62760	0.50000	0.4466	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	40903			35.68- 95.68	65.17

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE					
16 Carbon Tetrachloride						CAS #: 56-23-5		
16.202	16.202 (1.031)	119	57451	0.50000	0.4667		80.00- 120.00	100.00
16.202	16.202 (1.031)	117	58150				68.20- 128.20	101.22
17 Benzene						CAS #: 71-43-2		
16.531	16.531 (0.969)	78	79187	0.50000	0.4016		80.00- 120.00	100.00
16.531	16.531 (0.969)	77	18380				0.00- 52.91	23.21
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.503	16.503 (1.051)	65	282840	5.00000	5.041		80.00- 120.00	100.00
16.503	16.503 (1.051)	67	140524				27.09- 87.09	49.68
19 1,2-Dichloroethane						CAS #: 107-06-2		
16.613	16.613 (0.974)	62	43912	0.50000	0.4306		80.00- 120.00	100.00
16.613	16.613 (0.974)	64	13619				1.00- 61.00	31.01
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.053	17.053 (1.000)	114	741309	5.00000			80.00- 120.00	100.00
17.053	17.053 (1.000)	88	116739				0.00- 45.81	15.75
21 Trichloroethene						CAS #: 79-01-6		
17.464	17.464 (1.024)	130	40988	0.50000	0.4157		80.00- 120.00	100.00
17.464	17.464 (1.024)	95	39554				65.68- 125.68	96.50
17.464	17.464 (1.024)	97	25556				32.29- 92.29	62.35
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.567	19.567 (1.147)	98	665058	5.00000	4.988		80.00- 120.00	100.00
19.567	19.567 (1.147)	70	75353				0.00- 41.21	11.33
19.567	19.567 (1.147)	100	430416				34.67- 94.67	64.72
23 Toluene						CAS #: 108-88-3		
19.701	19.701 (1.155)	91	94479	0.50000	0.4340		80.00- 120.00	100.00
19.701	19.701 (1.155)	92	55181				29.69- 89.69	58.41
24 trans-1,3-Dichloropropene						CAS #: 10061-02-6		
20.158	20.158 (0.917)	75	44134	0.50000	0.4742		80.00- 120.00	100.00
20.158	20.158 (0.917)	77	15865				2.14- 62.14	35.95
25 1,1,2-Trichloroethane						CAS #: 79-00-5		
20.481	20.481 (0.931)	97	37655	0.50000	0.4409		80.00- 120.00	100.00
20.481	20.481 (0.931)	99	23727				33.55- 93.55	63.01
20.481	20.481 (0.931)	83	31328				53.06- 113.06	83.20
26 Tetrachloroethene						CAS #: 127-18-4		
20.661	20.661 (0.939)	166	55478	0.50000	0.3969		80.00- 120.00	100.00
20.661	20.661 (0.939)	129	41951				42.41- 102.41	75.62

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	42971			42.92- 102.92	77.46
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	58818	0.50000	0.4320	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	55245			65.76- 125.76	93.93
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	607510	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	321671			22.57- 82.57	52.95
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	79500	0.50000	0.4266	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	25696			2.79- 62.79	32.32
	22.020	22.020 (1.001)	77	52846			24.27- 84.27	66.47
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	36501	0.50000	0.4406	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	115127			275.83- 335.83	315.41
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	43388	0.50000	0.4172	80.00- 120.00	100.00
	22.267	22.267 (1.012)	91	89317			169.69- 229.69	205.86
	32 o-Xylene					CAS #: 95-47-6		
	22.789	22.789 (1.036)	106	41450	0.50000	0.4555	80.00- 120.00	100.00
	22.789	22.789 (1.036)	91	90668			180.67- 240.67	218.74
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	344860	5.00000	5.044	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	411014			89.82- 149.82	119.18
	23.502	23.502 (1.069)	176	340430			68.37- 128.37	98.72
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.631	23.631 (1.074)	83	67720	0.50000	0.4262	80.00- 120.00	100.00
	23.656	23.656 (1.076)	85	43390			35.46- 95.46	64.07
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.729	24.729 (1.124)	146	70490	0.50000	0.4970	80.00- 120.00	100.00
	24.729	24.729 (1.124)	148	44923			35.53- 95.53	63.73
	24.729	24.729 (1.124)	111	27673			10.03- 70.03	39.26
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	66923	0.50000	0.4571	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	43079			35.48- 95.48	64.37
	24.819	24.819 (1.129)	111	25545			8.35- 68.35	38.17

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
25.245	25.245 (1.148)	146	63672	0.50000	0.4719	80.00- 120.00	100.00
25.245	25.245 (1.148)	148	40594			35.26- 95.26	63.75
25.245	25.245 (1.148)	111	25784			10.61- 70.61	40.50
38 Naphthalene					CAS #: 91-20-3		
27.375	27.375 (1.245)	128	6059	0.05000	0.05460	80.00- 120.00	100.00
27.375	27.375 (1.245)	127	685			0.00- 42.11	11.31

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070607simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 0.5ppbv (1.0ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 7
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	179273	-6.22
20 1,4-Difluorobenze	772169	463301	1081037	741309	-4.00
28 Chlorobenzene-d5	632234	379340	885128	607510	-3.91

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070607simz.d

Date : 07-JUL-2017 00:05

Client ID: ICAL Level 7

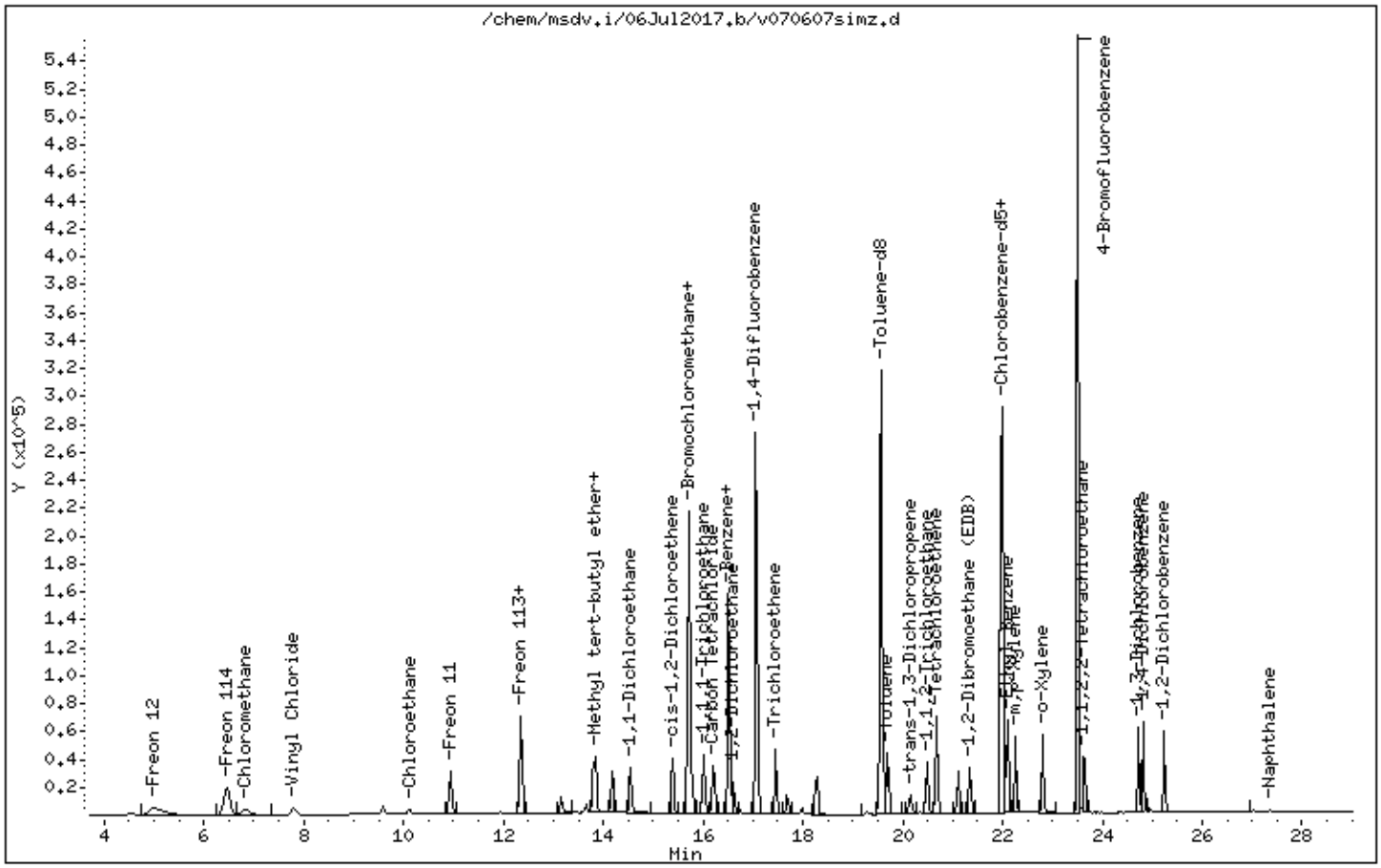
Instrument: msdv.i

Sample Info: 125mL# 2850-245

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070608simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 8
Inj Date : 07-JUL-2017 07:33
Operator : sw Inst ID: msdv.i
Smp Info : 250mL# 2850-245
Misc Info : 1.0ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 07:33 Cal File: v070608simz.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	==========	=====
1 Freon 12						CAS #: 75-71-8		
4.999	4.999 (0.318)	85	121729	1.00000		0.9162	80.00- 120.00	100.00
4.999	4.999 (0.318)	87	39062				2.27- 62.27	32.09
2 Freon 114						CAS #: 76-14-2		
6.509	6.509 (0.414)	135	104663	1.00000		0.9386	80.00- 120.00	100.00
6.509	6.509 (0.414)	137	33538				2.11- 62.11	32.04
3 Chloromethane						CAS #: 74-87-3		
6.887	6.887 (0.438)	50	64262	1.00000		0.9136	80.00- 120.00	100.00
6.887	6.887 (0.438)	52	20701				2.48- 62.48	32.21
4 Vinyl Chloride						CAS #: 75-01-4		
7.805	7.805 (0.497)	62	58099	1.00000		0.8929	80.00- 120.00	100.00
7.805	7.805 (0.497)	64	17315				0.00- 59.68	29.80
5 Chloroethane						CAS #: 75-00-3		
10.130	10.130 (0.645)	64	25571	1.00000		0.9199	80.00- 120.00	100.00
10.130	10.130 (0.645)	66	7553				0.00- 59.38	29.54

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	141674	1.00000	0.9615	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	91354			35.89- 95.89	64.48
	7 Freon 113					CAS #: 76-13-1		
	12.387	12.387 (0.789)	151	100272	1.00000	0.9357	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	64421			34.74- 94.74	64.25
	12.346	12.346 (0.786)	101	114948			82.46- 142.46	114.64
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.346	12.346 (0.786)	98	34666	1.00000	0.9133	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	107538			278.03- 338.03	310.21
	12.346	12.346 (0.786)	96	54374			126.91- 186.91	156.85
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.813	13.813 (0.879)	73	141814	1.00000	0.9687	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	42234			0.50- 60.50	29.78
	13.786	13.786 (0.878)	41	42333			0.10- 60.10	29.85
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.841	13.841 (0.881)	98	33734	1.00000	0.9299	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	93761			238.85- 298.85	277.94
	13.841	13.841 (0.881)	96	53159			125.51- 185.51	157.58
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.555	14.555 (0.927)	63	114154	1.00000	0.9573	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	33842			0.11- 60.11	29.65
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	37099	1.00000	0.9094	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	93605			214.12- 274.12	252.31
	15.388	15.388 (0.980)	96	58074			124.27- 184.27	156.54
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	170259	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	131324			47.62- 107.62	77.13
	15.709	15.709 (1.000)	49	305104			149.67- 209.67	179.20
	14 Chloroform					CAS #: 67-66-3		
	15.770	15.770 (1.004)	83	116449	1.00000	0.8901	80.00- 120.00	100.00
	15.770	15.770 (1.004)	85	75653			36.10- 96.10	64.97
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	126281	1.00000	0.9463	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	81516			35.68- 95.68	64.55

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
16 Carbon Tetrachloride						CAS #: 56-23-5		
16.202	16.202	(1.031)	119	116970	1.00000	1.000	80.00- 120.00	100.00
16.202	16.202	(1.031)	117	117786			68.20- 128.20	100.70
17 Benzene						CAS #: 71-43-2		
16.531	16.531	(0.969)	78	157997	1.00000	0.8338	80.00- 120.00	100.00
16.531	16.531	(0.969)	77	36385			0.00- 52.91	23.03
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.503	16.503	(1.051)	65	269212	5.00000	5.052	80.00- 120.00	100.00
16.503	16.503	(1.051)	67	134940			27.09- 87.09	50.12
19 1,2-Dichloroethane						CAS #: 107-06-2		
16.613	16.613	(0.974)	62	87701	1.00000	0.8949	80.00- 120.00	100.00
16.613	16.613	(0.974)	64	27050			1.00- 61.00	30.84
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.052	17.052	(1.000)	114	712471	5.00000		80.00- 120.00	100.00
17.052	17.052	(1.000)	88	111977			0.00- 45.81	15.72
21 Trichloroethene						CAS #: 79-01-6		
17.464	17.464	(1.024)	130	82147	1.00000	0.8668	80.00- 120.00	100.00
17.464	17.464	(1.024)	95	79262			65.68- 125.68	96.49
17.464	17.464	(1.024)	97	51108			32.29- 92.29	62.22
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.567	19.567	(1.147)	98	646494	5.00000	5.045	80.00- 120.00	100.00
19.567	19.567	(1.147)	70	72926			0.00- 41.21	11.28
19.567	19.567	(1.147)	100	418265			34.67- 94.67	64.70
23 Toluene						CAS #: 108-88-3		
19.701	19.701	(1.155)	91	191507	1.00000	0.9153	80.00- 120.00	100.00
19.701	19.701	(1.155)	92	111474			29.69- 89.69	58.21
24 trans-1,3-Dichloropropene						CAS #: 10061-02-6		
20.158	20.158	(0.917)	75	87206	1.00000	0.9696	80.00- 120.00	100.00
20.158	20.158	(0.917)	77	28495			2.14- 62.14	32.68
25 1,1,2-Trichloroethane						CAS #: 79-00-5		
20.481	20.481	(0.931)	97	75100	1.00000	0.9099	80.00- 120.00	100.00
20.481	20.481	(0.931)	99	47236			33.55- 93.55	62.90
20.481	20.481	(0.931)	83	62852			53.06- 113.06	83.69
26 Tetrachloroethene						CAS #: 127-18-4		
20.661	20.661	(0.939)	166	111552	1.00000	0.8258	80.00- 120.00	100.00
20.661	20.661	(0.939)	129	83529			42.41- 102.41	74.88

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	85335			42.92- 102.92	76.50
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	120616	1.00000	0.9167	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	112215			65.76- 125.76	93.03
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	587081	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	315442			22.57- 82.57	53.73
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	163436	1.00000	0.9076	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	52189			2.79- 62.79	31.93
	22.020	22.020 (1.001)	77	93226			24.27- 84.27	57.04
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	72175	1.00000	0.9015	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	228051			275.83- 335.83	315.97
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	85549	1.00000	0.8512	80.00- 120.00	100.00
	22.267	22.267 (1.012)	91	174489			169.69- 229.69	203.96
	32 o-Xylene					CAS #: 95-47-6		
	22.788	22.788 (1.036)	106	79745	1.00000	0.9068	80.00- 120.00	100.00
	22.788	22.788 (1.036)	91	175463			180.67- 240.67	220.03
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	321650	5.00000	4.868	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	384374			89.82- 149.82	119.50
	23.502	23.502 (1.069)	176	317285			68.37- 128.37	98.64
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.630	23.630 (1.074)	83	135744	1.00000	0.8841	80.00- 120.00	100.00
	23.656	23.656 (1.076)	85	86968			35.46- 95.46	64.07
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.729	24.729 (1.124)	146	137492	1.00000	1.003	80.00- 120.00	100.00
	24.729	24.729 (1.124)	148	87776			35.53- 95.53	63.84
	24.707	24.707 (1.123)	111	53972			10.03- 70.03	39.25
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	131953	1.00000	0.9326	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	84728			35.48- 95.48	64.21
	24.819	24.819 (1.129)	111	50261			8.35- 68.35	38.09

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
25.245	25.245	(1.148)	146	126259	1.00000	0.9684	80.00- 120.00	100.00
25.245	25.245	(1.148)	148	80765			35.26- 95.26	63.97
25.245	25.245	(1.148)	111	50719			10.61- 70.61	40.17
38 Naphthalene						CAS #: 91-20-3		
27.352	27.352	(1.244)	128	13105	0.10000	0.1222	80.00- 120.00	100.00
27.352	27.352	(1.244)	127	2161			0.00- 42.11	16.49

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070608simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 1.0ppbv (1.0ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 8
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	170259	-10.94
20 1,4-Difluorobenze	772169	463301	1081037	712471	-7.73
28 Chlorobenzene-d5	632234	379340	885128	587081	-7.14

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070608simz.d

Date : 07-JUL-2017 07:33

Client ID: ICAL Level 8

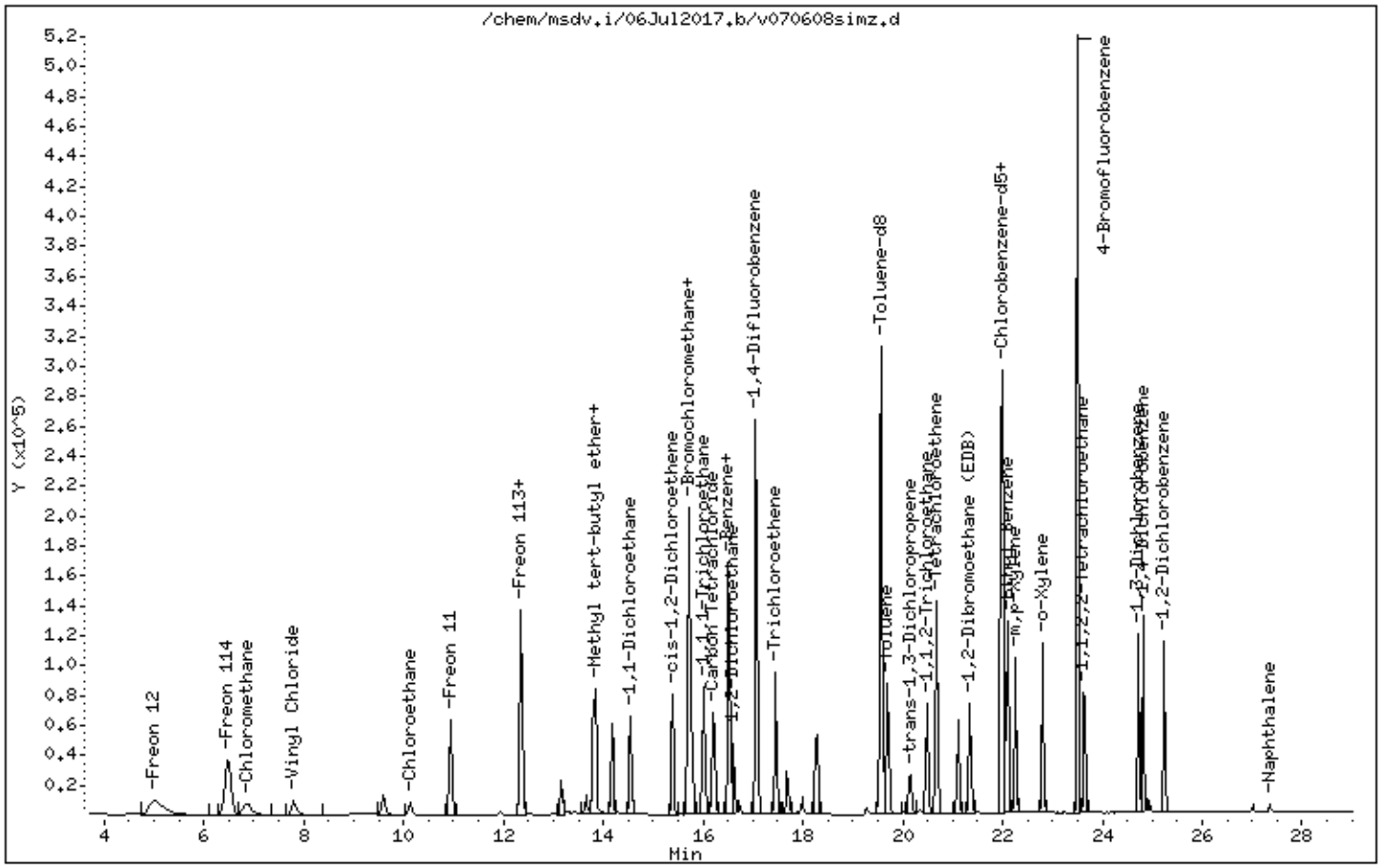
Instrument: msdv.i

Sample Info: 250mL# 2850-245

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070609simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 12
Inj Date : 07-JUL-2017 08:07
Operator : sw Inst ID: msdv.i
Smp Info : 25mL# 2850-226
Misc Info : 5.0ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 08:07 Cal File: v070609simz.d
Als bottle: 1 Calibration Sample, Level: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
4.999	4.999 (0.318)	85	791500	5.00000	5.490	80.00- 120.00	100.00
4.999	4.999 (0.318)	87	255273			2.27- 62.27	32.25
2 Freon 114					CAS #: 76-14-2		
6.471	6.471 (0.412)	135	631889	5.00000	5.222	80.00- 120.00	100.00
6.471	6.471 (0.412)	137	201700			2.11- 62.11	31.92
3 Chloromethane					CAS #: 74-87-3		
6.811	6.811 (0.434)	50	384052	5.00000	5.032	80.00- 120.00	100.00
6.811	6.811 (0.434)	52	125135			2.48- 62.48	32.58
4 Vinyl Chloride					CAS #: 75-01-4		
7.774	7.774 (0.495)	62	357538	5.00000	5.064	80.00- 120.00	100.00
7.774	7.774 (0.495)	64	105501			0.00- 59.68	29.51
5 Chloroethane					CAS #: 75-00-3		
10.092	10.092 (0.642)	64	170054	5.00000	5.638	80.00- 120.00	100.00
10.092	10.092 (0.642)	66	50430			0.00- 59.38	29.66

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	6 Freon 11						CAS #: 75-69-4	
	10.960	10.960 (0.698)	101	845850	5.00000	5.291	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	551969			35.89- 95.89	65.26
	7 Freon 113						CAS #: 76-13-1	
	12.387	12.387 (0.789)	151	594425	5.00000	5.112	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	383085			34.74- 94.74	64.45
	12.346	12.346 (0.786)	101	674064			82.46- 142.46	113.40
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.346	12.346 (0.786)	98	204197	5.00000	4.958	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	630854			278.03- 338.03	308.94
	12.346	12.346 (0.786)	96	320809			126.91- 186.91	157.11
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.786	13.786 (0.878)	73	840164	5.00000	5.289	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	253758			0.50- 60.50	30.20
	13.786	13.786 (0.878)	41	253430			0.10- 60.10	30.16
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.841	13.841 (0.881)	98	204480	5.00000	5.195	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	556953			238.85- 298.85	272.38
	13.841	13.841 (0.881)	96	318361			125.51- 185.51	155.69
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.555	14.555 (0.927)	63	689124	5.00000	5.326	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	206435			0.11- 60.11	29.96
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.388	15.388 (0.980)	98	225617	5.00000	5.097	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	554915			214.12- 274.12	245.95
	15.388	15.388 (0.980)	96	350338			124.27- 184.27	155.28
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.709	15.709 (1.000)	130	184740	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	142553			47.62- 107.62	77.16
	15.709	15.709 (1.000)	49	329765			149.67- 209.67	178.50
	14 Chloroform						CAS #: 67-66-3	
	15.770	15.770 (1.004)	83	695153	5.00000	4.897	80.00- 120.00	100.00
	15.770	15.770 (1.004)	85	455556			36.10- 96.10	65.53
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	16.017	16.017 (1.020)	97	749371	5.00000	5.175	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	488994			35.68- 95.68	65.25

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	16.202	16.202 (1.031)	119	772507	5.00000	6.089	80.00- 120.00	100.00
	16.202	16.202 (1.031)	117	765449			68.20- 128.20	99.09
	17 Benzene						CAS #: 71-43-2	
	16.531	16.531 (0.969)	78	943264	5.00000	4.645	80.00- 120.00	100.00
	16.531	16.531 (0.969)	77	215964			0.00- 52.91	22.90
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.503	16.503 (1.051)	65	291063	5.00000	5.034	80.00- 120.00	100.00
	16.503	16.503 (1.051)	67	154645			27.09- 87.09	53.13
	19 1,2-Dichloroethane						CAS #: 107-06-2	
	16.613	16.613 (0.974)	62	533555	5.00000	5.080	80.00- 120.00	100.00
	16.613	16.613 (0.974)	64	164499			1.00- 61.00	30.83
*	20 1,4-Difluorobenzene						CAS #: 540-36-3	
	17.053	17.053 (1.000)	114	763578	5.00000		80.00- 120.00	100.00
	17.053	17.053 (1.000)	88	120281			0.00- 45.81	15.75
	21 Trichloroethene						CAS #: 79-01-6	
	17.464	17.464 (1.024)	130	492188	5.00000	4.846	80.00- 120.00	100.00
	17.464	17.464 (1.024)	95	472735			65.68- 125.68	96.05
	17.464	17.464 (1.024)	97	305495			32.29- 92.29	62.07
$	22 Toluene-d8						CAS #: 2037-26-5	
	19.567	19.567 (1.147)	98	686682	5.00000	5.000	80.00- 120.00	100.00
	19.567	19.567 (1.147)	70	77229			0.00- 41.21	11.25
	19.567	19.567 (1.147)	100	444812			34.67- 94.67	64.78
	23 Toluene						CAS #: 108-88-3	
	19.701	19.701 (1.155)	91	1100535	5.00000	4.908	80.00- 120.00	100.00
	19.701	19.701 (1.155)	92	650466			29.69- 89.69	59.10
	24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
	20.123	20.123 (0.915)	75	550170	5.00000	5.718	80.00- 120.00	100.00
	20.123	20.123 (0.915)	77	174078			2.14- 62.14	31.64
	25 1,1,2-Trichloroethane						CAS #: 79-00-5	
	20.481	20.481 (0.931)	97	455755	5.00000	5.161	80.00- 120.00	100.00
	20.481	20.481 (0.931)	99	287532			33.55- 93.55	63.09
	20.481	20.481 (0.931)	83	377141			53.06- 113.06	82.75
	26 Tetrachloroethene						CAS #: 127-18-4	
	20.661	20.661 (0.939)	166	650111	5.00000	4.499	80.00- 120.00	100.00
	20.661	20.661 (0.939)	129	475597			42.41- 102.41	73.16

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	477458			42.92- 102.92	73.44
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	720864	5.00000	5.121	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	685322			65.76- 125.76	95.07
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	628084	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	332470			22.57- 82.57	52.93
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	932802	5.00000	4.842	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	304353			2.79- 62.79	32.63
	22.020	22.020 (1.001)	77	514235			24.27- 84.27	55.13
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	409836	5.00000	4.785	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	1284606			275.83- 335.83	313.44
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	447641	5.00000	4.163	80.00- 120.00	100.00
	22.267	22.267 (1.012)	91	899750			169.69- 229.69	201.00
	32 o-Xylene					CAS #: 95-47-6		
	22.789	22.789 (1.036)	106	423780	5.00000	4.504	80.00- 120.00	100.00
	22.789	22.789 (1.036)	91	905297			180.67- 240.67	213.62
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	329232	5.00000	4.657	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	394820			89.82- 149.82	119.92
	23.502	23.502 (1.069)	176	323489			68.37- 128.37	98.26
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.631	23.631 (1.074)	83	782857	5.00000	4.766	80.00- 120.00	100.00
	23.656	23.656 (1.076)	85	510640			35.46- 95.46	65.23
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.729	24.729 (1.124)	146	692158	5.00000	4.720	80.00- 120.00	100.00
	24.729	24.729 (1.124)	148	449076			35.53- 95.53	64.88
	24.707	24.707 (1.123)	111	273204			10.03- 70.03	39.47
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	664251	5.00000	4.388	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	429315			35.48- 95.48	64.63
	24.819	24.819 (1.129)	111	253961			8.35- 68.35	38.23

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
25.245	25.245	(1.148)	146	619757	5.00000	4.443	80.00- 120.00	100.00
25.245	25.245	(1.148)	148	400021			35.26- 95.26	64.54
25.245	25.245	(1.148)	111	251977			10.61- 70.61	40.66
38 Naphthalene						CAS #: 91-20-3		
27.352	27.352	(1.244)	128	44956	0.50000	0.3918	80.00- 120.00	100.00
27.352	27.352	(1.244)	127	5653			0.00- 42.11	12.57

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070609simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 5.0ppbv (50ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 12
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	184740	-3.36
20 1,4-Difluorobenze	772169	463301	1081037	763578	-1.11
28 Chlorobenzene-d5	632234	379340	885128	628084	-0.66

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070609simz.d

Date : 07-JUL-2017 08:07

Client ID: ICAL Level 12

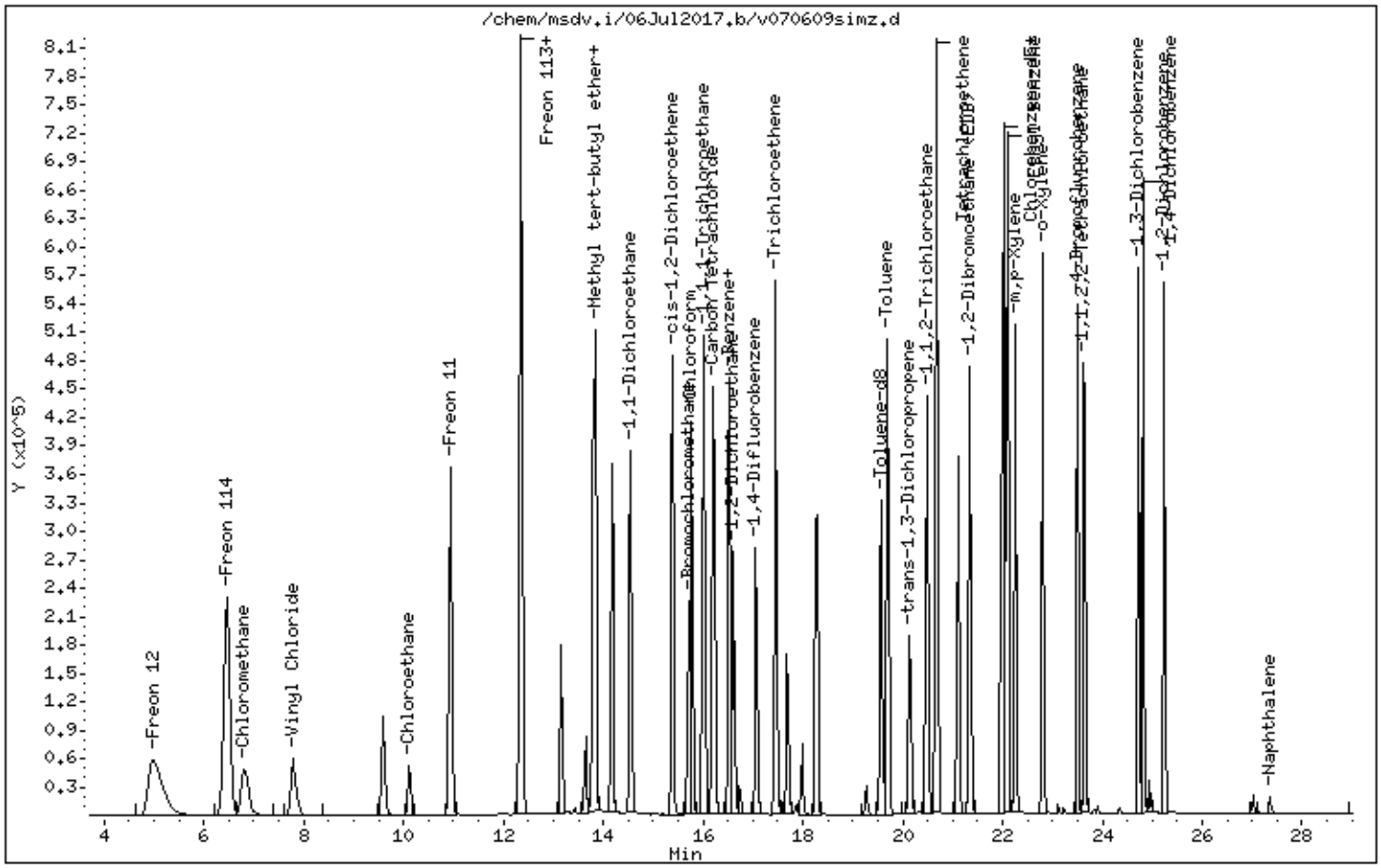
Instrument: msdv.i

Sample Info: 25mL# 2850-226

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070610simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 13
Inj Date : 07-JUL-2017 08:42
Operator : sw Inst ID: msdv.i
Smp Info : 50mL# 2850-226
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 08:42 Cal File: v070610simz.d
Als bottle: 1 Calibration Sample, Level: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	==========	=====
1 Freon 12						CAS #: 75-71-8		
4.999	4.999 (0.318)	85	1433077	10.0000		9.607	80.00- 120.00	100.00
4.999	4.999 (0.318)	87	462459				2.27- 62.27	32.27
2 Freon 114						CAS #: 76-14-2		
6.471	6.471 (0.412)	135	1184850	10.0000		9.463	80.00- 120.00	100.00
6.471	6.471 (0.412)	137	380485				2.11- 62.11	32.11
3 Chloromethane						CAS #: 74-87-3		
6.849	6.849 (0.436)	50	699397	10.0000		8.855	80.00- 120.00	100.00
6.849	6.849 (0.436)	52	227196				2.48- 62.48	32.48
4 Vinyl Chloride						CAS #: 75-01-4		
7.774	7.774 (0.495)	62	652866	10.0000		8.936	80.00- 120.00	100.00
7.774	7.774 (0.495)	64	193801				0.00- 59.68	29.68
5 Chloroethane						CAS #: 75-00-3		
10.130	10.130 (0.645)	64	320304	10.0000		10.262	80.00- 120.00	100.00
10.130	10.130 (0.645)	66	94113				0.00- 59.38	29.38

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	1572888	10.0000	9.507	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	1036303			35.89- 95.89	65.89
	7 Freon 113					CAS #: 76-13-1		
	12.387	12.387 (0.789)	151	1120357	10.0000	9.311	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	725277			34.74- 94.74	64.74
	12.346	12.346 (0.786)	101	1259930			82.46- 142.46	112.46
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.346	12.346 (0.786)	98	382735	10.0000	8.981	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	1178955			278.03- 338.03	308.03
	12.346	12.346 (0.786)	96	600552			126.91- 186.91	156.91
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.786	13.786 (0.878)	73	1575102	10.0000	9.582	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	480418			0.50- 60.50	30.50
	13.786	13.786 (0.878)	41	474104			0.10- 60.10	30.10
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.841	13.841 (0.881)	98	388032	10.0000	9.527	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	1043239			238.85- 298.85	268.85
	13.841	13.841 (0.881)	96	603434			125.51- 185.51	155.51
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.555	14.555 (0.927)	63	1291360	10.0000	9.645	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	388833			0.11- 60.11	30.11
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	425750	10.0000	9.295	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	1039325			214.12- 274.12	244.12
	15.388	15.388 (0.980)	96	656817			124.27- 184.27	154.27
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	191170	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	148390			47.62- 107.62	77.62
	15.709	15.709 (1.000)	49	343466			149.67- 209.67	179.67
	14 Chloroform					CAS #: 67-66-3		
	15.770	15.770 (1.004)	83	1304074	10.0000	8.878	80.00- 120.00	100.00
	15.770	15.770 (1.004)	85	862001			36.10- 96.10	66.10
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	1395645	10.0000	9.314	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	916719			35.68- 95.68	65.68

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
16 Carbon Tetrachloride						CAS #: 56-23-5		
16.202	16.202	(1.031)	119	1459992	10.0000	11.121	80.00- 120.00	100.00
16.202	16.202	(1.031)	117	1433745			68.20- 128.20	98.20
17 Benzene						CAS #: 71-43-2		
16.531	16.531	(0.969)	78	1746998	10.0000	8.507	80.00- 120.00	100.00
16.531	16.531	(0.969)	77	400214			0.00- 52.91	22.91
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.503	16.503	(1.051)	65	296993	5.00000	4.964	80.00- 120.00	100.00
16.503	16.503	(1.051)	67	169567			27.09- 87.09	57.09
19 1,2-Dichloroethane						CAS #: 107-06-2		
16.613	16.613	(0.974)	62	1008476	10.0000	9.494	80.00- 120.00	100.00
16.613	16.613	(0.974)	64	312668			1.00- 61.00	31.00
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.052	17.052	(1.000)	114	772169	5.00000		80.00- 120.00	100.00
17.052	17.052	(1.000)	88	122057			0.00- 45.81	15.81
21 Trichloroethene						CAS #: 79-01-6		
17.464	17.464	(1.024)	130	914934	10.0000	8.908	80.00- 120.00	100.00
17.464	17.464	(1.024)	95	875393			65.68- 125.68	95.68
17.464	17.464	(1.024)	97	569888			32.29- 92.29	62.29
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.567	19.567	(1.147)	98	689856	5.00000	4.967	80.00- 120.00	100.00
19.567	19.567	(1.147)	70	77320			0.00- 41.21	11.21
19.567	19.567	(1.147)	100	446145			34.67- 94.67	64.67
23 Toluene						CAS #: 108-88-3		
19.701	19.701	(1.155)	91	2006184	10.0000	8.847	80.00- 120.00	100.00
19.701	19.701	(1.155)	92	1197505			29.69- 89.69	59.69
24 trans-1,3-Dichloropropene						CAS #: 10061-02-6		
20.122	20.122	(0.915)	75	1037037	10.0000	10.707	80.00- 120.00	100.00
20.122	20.122	(0.915)	77	333335			2.14- 62.14	32.14
25 1,1,2-Trichloroethane						CAS #: 79-00-5		
20.481	20.481	(0.931)	97	836254	10.0000	9.408	80.00- 120.00	100.00
20.481	20.481	(0.931)	99	531426			33.55- 93.55	63.55
20.481	20.481	(0.931)	83	694631			53.06- 113.06	83.06
26 Tetrachloroethene						CAS #: 127-18-4		
20.661	20.661	(0.939)	166	1200046	10.0000	8.250	80.00- 120.00	100.00
20.661	20.661	(0.939)	129	868965			42.41- 102.41	72.41

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	875054			42.92- 102.92	72.92
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	1333203	10.0000	9.409	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	1276618			65.76- 125.76	95.76
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	632234	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	332357			22.57- 82.57	52.57
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	1722959	10.0000	8.884	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	564896			2.79- 62.79	32.79
	22.020	22.020 (1.001)	77	935089			24.27- 84.27	54.27
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	764696	10.0000	8.870	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	2338706			275.83- 335.83	305.83
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	822257	10.0000	7.597	80.00- 120.00	100.00
	22.267	22.267 (1.012)	91	1641988			169.69- 229.69	199.69
	32 o-Xylene					CAS #: 95-47-6		
	22.789	22.789 (1.036)	106	784714	10.0000	8.286	80.00- 120.00	100.00
	22.789	22.789 (1.036)	91	1653133			180.67- 240.67	210.67
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	331807	5.00000	4.663	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	397570			89.82- 149.82	119.82
	23.502	23.502 (1.069)	176	326407			68.37- 128.37	98.37
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.631	23.631 (1.074)	83	1418716	10.0000	8.580	80.00- 120.00	100.00
	23.656	23.656 (1.076)	85	928721			35.46- 95.46	65.46
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.729	24.729 (1.124)	146	1224798	10.0000	8.298	80.00- 120.00	100.00
	24.729	24.729 (1.124)	148	802589			35.53- 95.53	65.53
	24.707	24.707 (1.123)	111	490248			10.03- 70.03	40.03
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	1168675	10.0000	7.670	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	765213			35.48- 95.48	65.48
	24.819	24.819 (1.129)	111	448141			8.35- 68.35	38.35

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
25.245	25.245	(1.148)	146	1115347	10.0000	7.944	80.00- 120.00	100.00
25.245	25.245	(1.148)	148	727927			35.26- 95.26	65.26
25.245	25.245	(1.148)	111	452892			10.61- 70.61	40.61
38 Naphthalene						CAS #: 91-20-3		
27.352	27.352	(1.244)	128	102456	1.00000	0.8872	80.00- 120.00	100.00
27.352	27.352	(1.244)	127	12410			0.00- 42.11	12.11

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070610simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 13
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	191170	0.00
20 1,4-Difluorobenze	772169	463301	1081037	772169	0.00
28 Chlorobenzene-d5	632234	379340	885128	632234	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070610simz.d

Date : 07-JUL-2017 08:42

Client ID: ICAL Level 13

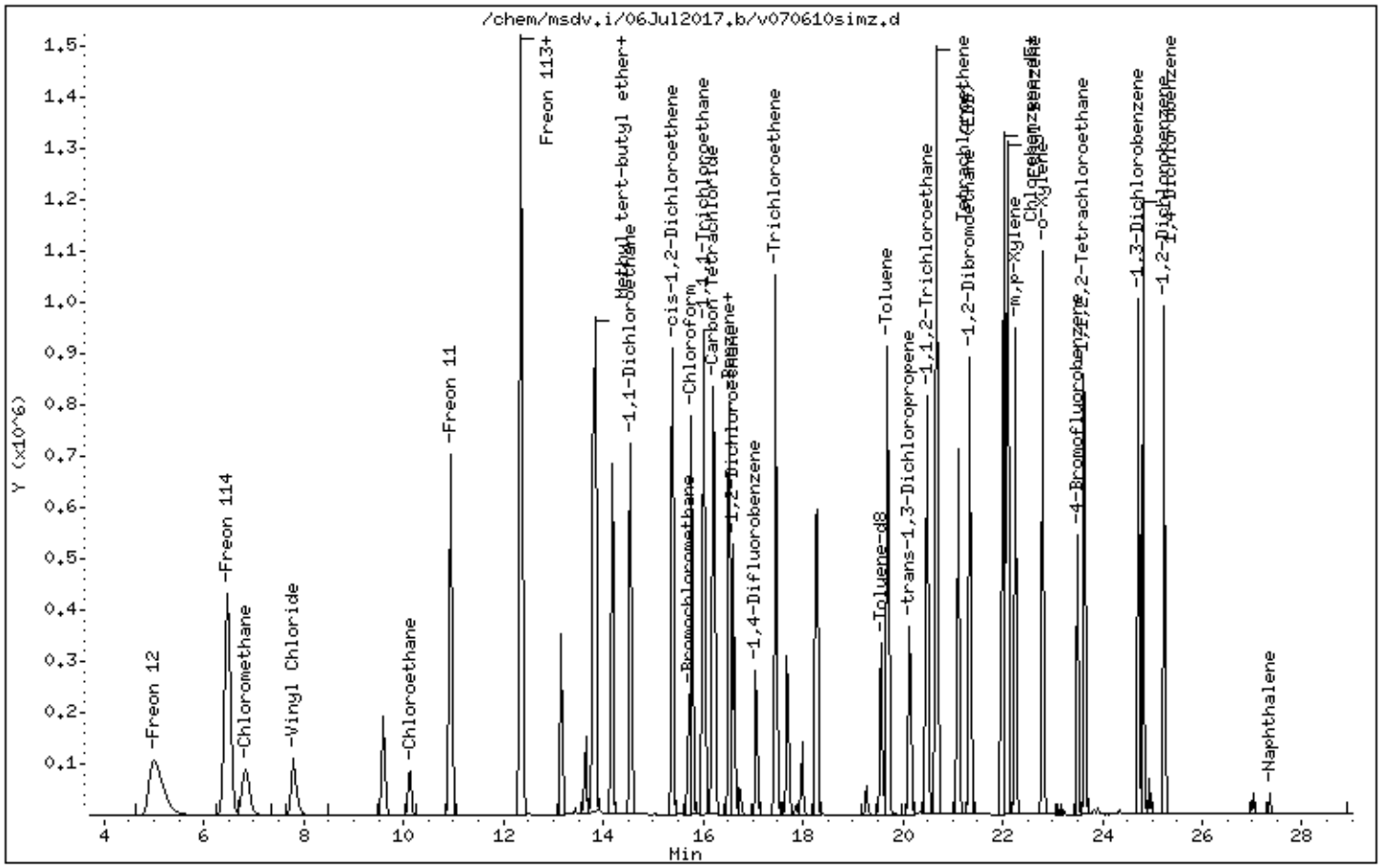
Instrument: msdv.i

Sample Info: 50mL# 2850-226

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/06Jul2017.b/v070611simz.d
Lab Smp Id: ICAL Client Smp ID: ICAL Level 15
Inj Date : 07-JUL-2017 09:17
Operator : sw Inst ID: msdv.i
Smp Info : 100mL# 2850-226
Misc Info : 20ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/06Jul2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 12:33 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1 Calibration Sample, Level: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
1 Freon 12					CAS #: 75-71-8			
4.999	4.999 (0.318)	85	2692357	20.0000	18.204	80.00- 120.00		100.00
4.999	4.999 (0.318)	87	873607			2.27- 62.27		32.45
2 Freon 114					CAS #: 76-14-2			
6.472	6.472 (0.412)	135	2220956	20.0000	17.891	80.00- 120.00		100.00
6.472	6.472 (0.412)	137	717167			2.11- 62.11		32.29
3 Chloromethane					CAS #: 74-87-3			
6.849	6.849 (0.436)	50	1317178	20.0000	16.821	80.00- 120.00		100.00
6.849	6.849 (0.436)	52	427809			2.48- 62.48		32.48
4 Vinyl Chloride					CAS #: 75-01-4			
7.774	7.774 (0.495)	62	1232996	20.0000	17.022	80.00- 120.00		100.00
7.805	7.805 (0.497)	64	368167			0.00- 59.68		29.86
5 Chloroethane					CAS #: 75-00-3			
10.130	10.130 (0.645)	64	591583	20.0000	19.117	80.00- 120.00		100.00
10.130	10.130 (0.645)	66	175904			0.00- 59.38		29.73

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	6 Freon 11						CAS #: 75-69-4	
	10.960	10.960 (0.698)	101	2916907	20.0000	17.783	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	1936393			35.89- 95.89	66.39
	7 Freon 113						CAS #: 76-13-1	
	12.387	12.387 (0.789)	151	2084729	20.0000	17.475	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	1361352			34.74- 94.74	65.30
	12.346	12.346 (0.786)	101	2338139			82.46- 142.46	112.16
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.346	12.346 (0.786)	98	717508	20.0000	16.981	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	2204269			278.03- 338.03	307.21
	12.346	12.346 (0.786)	96	1128818			126.91- 186.91	157.32
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.786	13.786 (0.878)	73	2954630	20.0000	18.129	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	906151			0.50- 60.50	30.67
	13.786	13.786 (0.878)	41	883614			0.10- 60.10	29.91
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.841	13.841 (0.881)	98	737814	20.0000	18.270	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	1963965			238.85- 298.85	266.19
	13.841	13.841 (0.881)	96	1138954			125.51- 185.51	154.37
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.555	14.555 (0.927)	63	2403284	20.0000	18.105	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	732071			0.11- 60.11	30.46
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.388	15.388 (0.980)	98	802904	20.0000	17.681	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	1945100			214.12- 274.12	242.26
	15.388	15.388 (0.980)	96	1239332			124.27- 184.27	154.36
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.709	15.709 (1.000)	130	189537	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	147048			47.62- 107.62	77.58
	15.709	15.709 (1.000)	49	356925			149.67- 209.67	188.31
	14 Chloroform						CAS #: 67-66-3	
	15.770	15.770 (1.004)	83	2427577	20.0000	16.668	80.00- 120.00	100.00
	15.770	15.770 (1.004)	85	1617623			36.10- 96.10	66.64
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	16.017	16.017 (1.020)	97	2593567	20.0000	17.458	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	1714372			35.68- 95.68	66.10

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	16.202	16.202 (1.031)	119	2759032	20.0000	21.197	80.00- 120.00	100.00(A)
	16.202	16.202 (1.031)	117	2690462			68.20- 128.20	97.51
	17 Benzene						CAS #: 71-43-2	
	16.531	16.531 (0.969)	78	3285348	20.0000	16.046	80.00- 120.00	100.00
	16.531	16.531 (0.969)	77	752410			0.00- 52.91	22.90
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.503	16.503 (1.051)	65	300041	5.00000	5.058	80.00- 120.00	100.00
	16.503	16.503 (1.051)	67	191778			27.09- 87.09	63.92
	19 1,2-Dichloroethane						CAS #: 107-06-2	
	16.613	16.613 (0.974)	62	1894710	20.0000	17.892	80.00- 120.00	100.00
	16.613	16.613 (0.974)	64	594358			1.00- 61.00	31.37
*	20 1,4-Difluorobenzene						CAS #: 540-36-3	
	17.053	17.053 (1.000)	114	769862	5.00000		80.00- 120.00	100.00
	17.053	17.053 (1.000)	88	121138			0.00- 45.81	15.74
	21 Trichloroethene						CAS #: 79-01-6	
	17.464	17.464 (1.024)	130	1720174	20.0000	16.799	80.00- 120.00	100.00
	17.464	17.464 (1.024)	95	1639911			65.68- 125.68	95.33
	17.464	17.464 (1.024)	97	1071056			32.29- 92.29	62.26
$	22 Toluene-d8						CAS #: 2037-26-5	
	19.567	19.567 (1.147)	98	683788	5.00000	4.938	80.00- 120.00	100.00
	19.567	19.567 (1.147)	70	76935			0.00- 41.21	11.25
	19.567	19.567 (1.147)	100	442417			34.67- 94.67	64.70
	23 Toluene						CAS #: 108-88-3	
	19.701	19.701 (1.155)	91	3760514	20.0000	16.633	80.00- 120.00	100.00
	19.701	19.701 (1.155)	92	2263234			29.69- 89.69	60.18
	24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
	20.123	20.123 (0.915)	75	1998649	20.0000	20.864	80.00- 120.00	100.00(A)
	20.123	20.123 (0.915)	77	646977			2.14- 62.14	32.37
	25 1,1,2-Trichloroethane						CAS #: 79-00-5	
	20.481	20.481 (0.931)	97	1568714	20.0000	17.844	80.00- 120.00	100.00
	20.481	20.481 (0.931)	99	1004348			33.55- 93.55	64.02
	20.481	20.481 (0.931)	83	1296003			53.06- 113.06	82.62
	26 Tetrachloroethene						CAS #: 127-18-4	
	20.661	20.661 (0.939)	166	2272461	20.0000	15.795	80.00- 120.00	100.00
	20.661	20.661 (0.939)	129	1659614			42.41- 102.41	73.03

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	1663600			42.92- 102.92	73.21
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	2500040	20.0000	17.840	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	2415780			65.76- 125.76	96.63
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	625290	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	333527			22.57- 82.57	53.34
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	3246181	20.0000	16.925	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	1077854			2.79- 62.79	33.20
	22.020	22.020 (1.001)	77	1772699			24.27- 84.27	54.61
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	1464854	20.0000	17.180	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	4439820			275.83- 335.83	303.09
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	1554106	20.0000	14.517	80.00- 120.00	100.00
	22.239	22.239 (1.011)	91	3058776			169.69- 229.69	196.82
	32 o-Xylene					CAS #: 95-47-6		
	22.789	22.789 (1.036)	106	1472512	20.0000	15.722	80.00- 120.00	100.00
	22.789	22.789 (1.036)	91	3067414			180.67- 240.67	208.31
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	337639	5.00000	4.798	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	398939			89.82- 149.82	118.16
	23.502	23.502 (1.069)	176	331087			68.37- 128.37	98.06
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.631	23.631 (1.074)	83	2670422	20.0000	16.330	80.00- 120.00	100.00
	23.631	23.631 (1.074)	85	1769649			35.46- 95.46	66.27
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.729	24.729 (1.124)	146	2225506	20.0000	15.244	80.00- 120.00	100.00
	24.729	24.729 (1.124)	148	1465464			35.53- 95.53	65.85
	24.707	24.707 (1.123)	111	891053			10.03- 70.03	40.04
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	2091764	20.0000	13.880	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	1375795			35.48- 95.48	65.77
	24.819	24.819 (1.129)	111	808423			8.35- 68.35	38.65

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1	
25.245	25.245 (1.148)	146	2037805	20.0000	14.674	80.00- 120.00	100.00
25.245	25.245 (1.148)	148	1333669			35.26- 95.26	65.45
25.223	25.223 (1.147)	111	830558			10.61- 70.61	40.76
38 Naphthalene						CAS #: 91-20-3	
27.352	27.352 (1.244)	128	230675	2.00000	2.020	80.00- 120.00	100.00
27.352	27.352 (1.244)	127	28380			0.00- 42.11	12.30

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v070611simz.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/06Jul2017.b/v17s0706z.m
Misc Info: 20ppbv (50ppbv)

Calibration Date: 07-JUL-2017
Calibration Time: 08:42
Client Smp ID: ICAL Level 15
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	191170	114702	267638	189537	-0.85
20 1,4-Difluorobenze	772169	463301	1081037	769862	-0.30
28 Chlorobenzene-d5	632234	379340	885128	625290	-1.10

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/06Jul2017.b/v070611simz.d

Date : 07-JUL-2017 09:17

Client ID: ICAL Level 15

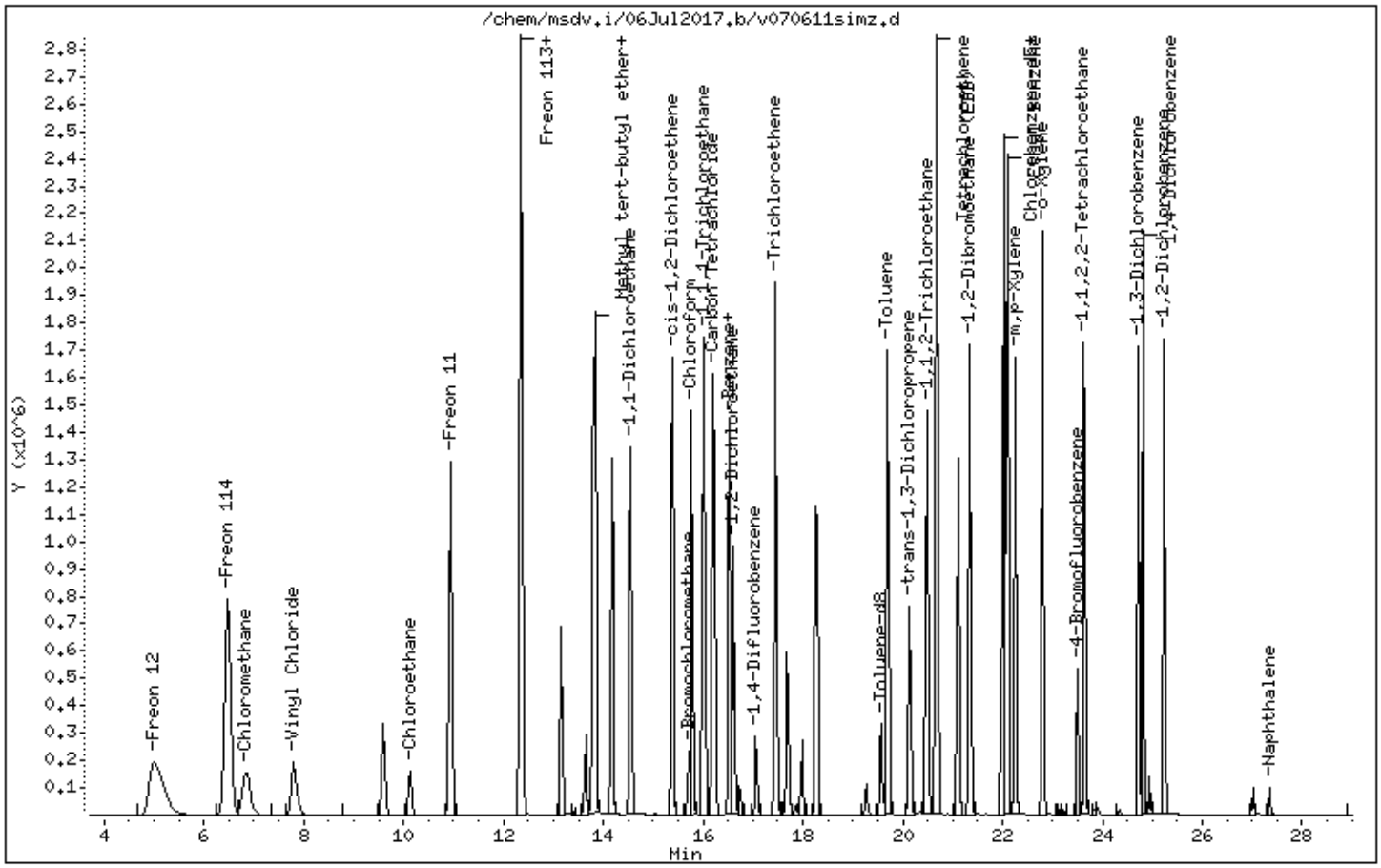
Instrument: msdv.i

Sample Info: 100mL# 2850-226

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics, Inc. 2Q 2017 TO-14A/TO-15 SIM Limit of Detections (LODs) Effective 07-01-17						
CAS #	Analyte	Molecular Weight (MW)	LOD (ppbv)	LOQ (ppbv)	LOD (ug/m3)	LOQ (ug/m3)
71-55-6	1,1,1-Trichloroethane	133.42	0.004	0.02	0.02183	0.10914
79-34-5	1,1,2,2-Tetrachloroethane	167.86	0.004	0.02	0.02746	0.13731
79-00-5	1,1,2-Trichloroethane	133.42	0.004	0.02	0.02183	0.10914
75-34-3	1,1-Dichloroethane	98.97	0.004	0.02	0.01619	0.08096
75-35-4	1,1-Dichloroethene	96.95	0.004	0.01	0.01586	0.03965
106-93-4	1,2-Dibromoethane (EDB)	187.88	0.004	0.02	0.03074	0.15369
107-06-2	1,2-Dichloroethane	98.96	0.004	0.02	0.01619	0.08095
106-46-7	1,4-Dichlorobenzene	147.01	0.004	0.02	0.02405	0.12025
71-43-2	Benzene	78.11	0.004	0.05	0.01278	0.15973
56-23-5	Carbon Tetrachloride	153.84	0.004	0.02	0.02517	0.12584
75-00-3	Chloroethane	64.52	0.02	0.05	0.05278	0.13194
67-66-3	Chloroform	119.39	0.004	0.02	0.01953	0.09766
74-87-3	Chloromethane	50.49	0.02	0.05	0.0413	0.10325
156-59-2	cis-1,2-Dichloroethene	96.94	0.004	0.02	0.01586	0.0793
100-41-4	Ethyl Benzene	106.16	0.004	0.02	0.01737	0.08684
76-14-2	Freon 114	170.93	0.004	0.02	0.02796	0.13982
75-71-8	Freon 12	120.92	0.004	0.02	0.01978	0.09891
108-38-3	m,p-Xylene	106.17	0.004	0.04	0.01737	0.17369
1634-04-4	Methyl tert-butyl ether	88.15	0.004	0.1	0.01442	0.36053
91-20-3	Naphthalene*	128.17	0.0024	0.05	0.01258	0.26211
95-47-6	o-Xylene	106.17	0.004	0.02	0.01737	0.08685
127-18-4	Tetrachloroethene	165.85	0.004	0.02	0.02713	0.13566
108-88-3	Toluene	92.13	0.004	0.02	0.01507	0.07536
156-60-5	trans-1,2-Dichloroethene*	96.94	0.00551	0.1	0.02185	0.39648
79-01-6	Trichloroethene	131.39	0.004	0.02	0.0215	0.10748
75-01-4	Vinyl Chloride	62.5	0.004	0.01	0.01022	0.02556

ppbv - part per billion by volume

Concentration (ug/m3) = Concentration (ppbv)*MW/24.45

Instrument ID - msdv.i file msdv.i/05May2017.b/v050523sim.d msdv.i/07Jun2017.b/v060709sim.d msdv.i/07Jun2017.b/v060709sima.d

*LOD was less then the MDL therefore was raised to equal the MDL value.

0.01 ppbv SIM MDL

2850-4 (0.05ppbv); 50mL

MDL verification: ~~2850-4~~ SW 3/15/17 2850-4 (0.05ppbv)
0.004ppbv, 20mL
v031415sim

Report Date : 13-Mar-2017 14:21

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msdv.i/13Mar2017.b/v17l0309a.m/v17s0309a.m
Batch File: /chem/msdv.i/13Mar2017.b
Inst ID: msdv.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07
FILENAME:	v031307sim	v031308sim	v031309sim	v031310sim	v031311sim	v031312sim	v031313sim
INJ.DATE:	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017
INJ.TIME:	10:26	11:01	11:36	12:12	12:47	13:25	14:05

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL	RL (ppbv)
1	Freon 12	11.51	9.99	10.51	10.93	11.09	10.16	10.44	10.66	0.54	1.69	20
2	Freon 114	10.71	11.96	9.85	9.82	9.34	10.03	11.67	10.48	1.00	3.14	20
3	Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4	Vinyl Chloride	12.83	10.82	9.99	9.82	10.16	9.45	10.85	10.56	1.12	3.54	10
5	Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
6	Freon 11	9.35	9.37	10.24	9.07	9.43	9.79	9.95	9.60	0.41	1.28	20
7	Freon 113	10.88	13.45	11.84	12.45	10.75	11.08	12.31	11.82	0.99	3.11	20
8	1,1-Dichloroethene	11.70	11.26	12.41	11.02	11.79	11.53	13.57	11.90	0.86	2.70	10
9	Methyl tert-butyl ethe	10.06	10.42	10.30	10.26	10.78	10.12	10.78	10.39	0.29	0.92	100
10	trans-1,2-Dichloroethe	10.56	10.35	9.00	10.81	10.37	14.17	8.88	10.59	1.75	5.51	100
11	1,1-Dichloroethane	9.46	10.42	9.71	10.17	10.10	9.47	10.02	9.91	0.37	1.16	20
12	cis-1,2-Dichloroethene	9.06	10.35	8.73	9.06	10.86	10.38	10.33	9.83	0.85	2.66	20
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14	Chloroform	8.93	9.58	8.37	8.98	8.18	8.94	8.78	8.82	0.45	1.42	20
15	1,1,1-Trichloroethane	9.74	10.83	10.18	10.78	9.40	10.42	11.63	10.42	0.75	2.34	20
16	Carbon Tetrachloride	7.50	7.67	7.94	8.40	8.59	9.15	8.45	8.24	0.57	1.80	20
17	Benzene	13.29	12.56	12.43	12.28	11.72	12.50	13.10	12.55	0.52	1.64	50

Reviewer 1 _____ Date: 3/15/17
Reviewer 2 _____ Date: 3/15/17

$\bar{X} = 0.002$

$2\bar{X} = 0.004$

$3\bar{X} = 0.006$

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msdv.i/13Mar2017.b/v17l0309a.m/v17s0309a.m
Batch File: /chem/msdv.i/13Mar2017.b
Inst ID: msdv.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL	RL (ppbv)
$	18 1,2-Dichloroethane-d4	4788.89	4912.96	4791.91	4873.70	4809.81	4784.32	4766.38	4818.28	54.03	169.80	
	19 1,2-Dichloroethane	10.95	10.70	10.09	10.35	9.10	9.65	10.02	10.12	0.63	1.97	20
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	21 Trichloroethene	10.13	10.61	9.96	10.08	9.78	9.63	11.07	10.18	0.50	1.57	20
$	22 Toluene-d8	4713.49	4577.25	4613.19	4616.45	4646.56	4649.48	4609.53	4632.28	43.31	136.13	
	23 Toluene	14.87	12.85	12.38	13.15	12.48	14.12	14.91	13.54	1.09	3.42	20
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	25 1,1,2-Trichloroethane	11.30	11.96	12.01	10.66	11.43	11.40	13.01	11.68	0.74	2.33	20
	26 Tetrachloroethene	12.23	11.70	12.43	12.41	10.92	11.24	12.32	11.89	0.62	1.94	20
	27 1,2-Dibromoethane (EDB	12.59	12.28	11.68	11.87	10.88	11.73	12.52	11.94	0.59	1.87	20
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	29 Chlorobenzene	12.48	12.19	12.10	13.48	12.09	12.97	12.76	12.58	0.52	1.64	20
	30 Ethyl Benzene	13.02	13.73	12.80	13.36	12.11	12.78	14.12	13.13	0.67	2.10	20
	31 m,p-Xylene	14.90	14.96	14.15	15.07	15.73	15.27	15.93	15.14	0.59	1.85	40
	32 o-Xylene	14.99	13.05	14.05	14.09	13.73	14.69	15.15	14.25	0.74	2.33	20
$	33 4-Bromofluorobenzene	5056.45	4869.57	5007.19	4966.06	4992.49	5061.63	5092.65	5006.58	74.76	234.98	
	34 1,1,2,2-Tetrachloroeth	12.37	12.71	12.26	13.14	11.82	12.20	12.03	12.36	0.44	1.38	20
	35 1,3-Dichlorobenzene	11.86	11.98	11.49	11.99	11.52	11.24	12.98	11.87	0.57	1.78	20
	36 1,4-Dichlorobenzene	13.38	14.19	13.44	14.40	13.25	13.30	13.90	13.70	0.47	1.46	20
	37 1,2-Dichlorobenzene	14.70	14.53	14.71	13.87	13.98	12.81	13.81	14.06	0.67	2.11	20
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
M	39 Total Xylene	~~49.61~~	~~48.72~~	~~45.92~~	~~49.03~~	~~50.70~~	~~54.50~~	~~50.29~~	~~49.81~~	~~2.58~~	~~8.12~~	N/A SW 3/13/17

0.05ppbv SIM MDL

2850-4 (0.05ppbv); 250mL

MDL verification: 2850-4
0.02ppbv; 100mL
v031416sim

Report Date : 14-Mar-2017 12:29

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msdv.i/13Mar2017.b/v1710309a.m/v17s0309a.m
Batch File: /chem/msdv.i/13Mar2017.b
Inst ID: msdv.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07
FILENAME:	v031314sim	v031315sim	v031316sim	v031317sim	v031318sim	v031319sim	v031320sim
INJ.DATE:	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017	13-MAR-2017
INJ.TIME:	15:36	16:11	16:53	17:28	18:19	18:56	19:37

RL (ppbv)

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL	
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3	Chloromethane	46.68	46.28	52.47	47.78	50.47	48.74	47.87	48.61	2.19	6.89	50
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5	Chloroethane	47.40	47.15	45.33	46.51	52.47	53.02	44.72	48.08	3.33	10.46	50
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
17	Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Reviewer 1 _____ Date: 3/15/17
Reviewer 2 _____ Date: 3/15/17

$\bar{x} = 0.01$

$2\bar{x} = 0.02$

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msdv.i/13Mar2017.b/v17l0309a.m/v17s0309a.m
Batch File: /chem/msdv.i/13Mar2017.b
Inst ID: msdv.i

RL (ppbv)

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL	
$	18 1,2-Dichloroethane-d4	4963.44	4978.97	4950.38	4959.16	4927.83	4990.44	4942.43	4958.95	21.32	67.02	
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$	22 Toluene-d8	4514.81	4517.16	4612.86	4602.82	4602.43	4567.26	4637.03	4579.20	47.81	150.25	
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	24 trans-1,3-Dichloroprop	59.23	47.83	47.65	49.26	49.28	47.03	46.91	49.60	4.35	13.68	SD
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$	33 4-Bromofluorobenzene	4759.89	4730.42	4859.92	4842.15	4872.60	4947.64	4808.51	4831.59	73.00	229.43	
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

0.01ppbv Sim MDL Naph only

Report Date : 13-Mar-2017 13:21

2850-5 (0.1ppbv Naph); Page 1
25mL
MDL verification: 2850-4; 0.005ppbv; 250mL
v031315sim3.d

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msdv.i/09Mar2017.b/v17s0309a.m
Batch File: /chem/msdv.i/09Mar2017.b
Inst ID: msdv.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	v030929sim	v030930sim	v030931sim	v030932sim	v030933sim	v030934sim	v030935sim	v030936sim
INJ.DATE:	10-MAR-2017	10-MAR-2017	10-MAR-2017	10-MAR-2017	10-MAR-2017	10-MAR-2017	10-MAR-2017	10-MAR-2017
INJ.TIME:	15:13	15:50	16:26	17:03	17:39	18:15	18:52	19:28

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3	Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5	Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
17	Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Reviewer 1 _____ Date: 3/15/17
Reviewer 2 _____ Date: 3/15/17

$\bar{x} = 0.002$

$2\bar{x} = 0.004$

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msdv.i/09Mar2017.b/v17s0309a.m
Batch File: /chem/msdv.i/09Mar2017.b
Inst ID: msdv.i

RL (ppbv)

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
$	18 1,2-Dichloroethane-d4	4942.65	4976.11	5025.85	4951.69	5003.75	4996.87	5021.18	5010.25	4991.04	31.16	93.42	
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$	22 Toluene-d8	4650.09	4660.68	4670.53	4676.92	4699.34	4724.30	4737.58	4692.40	4688.98	30.54	91.55	
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$	33 4-Bromofluorobenzene	4929.73	5029.43	4965.24	5089.67	4867.29	5008.27	4889.66	4930.33	4963.70	74.85	224.41	
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	38 Naphthalene	12.22	12.42	13.03	11.13	11.33	11.05	10.70	11.97	11.73	0.80	2.40	50
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	CCV		
Lab ID:	1708091A-11A	**Date/Time Analyzed:**	8/8/17 09:37 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdv.i / v080803simz

Compound	CAS#	%Recovery
Benzene	71-43-2	78
Ethyl Benzene	100-41-4	82
m,p-Xylene	108-38-3	70
Naphthalene	91-20-3	96
o-Xylene	95-47-6	76
Toluene	108-88-3	82
Total Xylenes	9999-9999-015	73

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdv.i Injection Date: 08-AUG-2017 09:37
Lab File ID: v080803simz.d Init. Cal. Date(s): 06-JUL-2017 07-JUL-2017
Analysis Type: AIR Init. Cal. Times: 19:46 09:17
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msdv.i/08Aug2017.b/v17s0706z.m

			MIN		MAX	
COMPOUND	RRF / AMOUNT	RF10	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
1 Freon 12	3.90161	3.68568	0.010	5.53448	30.00000	Averaged
2 Freon 114	3.27484	2.86619	0.010	12.47851	30.00000	Averaged
3 Chloromethane	2.06572	1.98124	0.010	4.08971	30.00000	Averaged
4 Vinyl Chloride	1.91086	1.67669	0.010	12.25489	30.00000	Averaged
5 Chloroethane	0.81635	0.77902	0.010	4.57345	30.00000	Averaged
6 Freon 11	4.32708	3.79301	0.010	12.34258	30.00000	Averaged
7 Freon 113	3.14702	2.71080	0.010	13.86147	30.00000	Averaged
8 1,1-Dichloroethene	1.11466	0.91012	0.010	18.34958	30.00000	Averaged
9 Methyl tert-butyl ether	4.29931	3.67939	0.010	14.41919	30.00000	Averaged
10 trans-1,2-Dichloroethene	1.06531	0.93562	0.010	12.17356	30.00000	Averaged
11 1,1-Dichloroethane	3.50174	3.13945	0.010	10.34605	30.00000	Averaged
12 cis-1,2-Dichloroethene	1.19796	1.01827	0.010	14.99981	30.00000	Averaged
14 Chloroform	3.84202	3.13773	0.010	18.33125	30.00000	Averaged
15 1,1,1-Trichloroethane	3.91903	3.36376	0.010	14.16852	30.00000	Averaged
16 Carbon Tetrachloride	3.43361	3.40836	0.010	0.73539	40.00000	Averaged
17 Benzene	1.32977	1.03268	0.010	22.34196	30.00000	Averaged
$ 18 1,2-Dichloroethane-d4	1.56486	1.56361	0.010	0.07999	30.00000	Averaged
19 1,2-Dichloroethane	0.68778	0.60625	0.010	11.85439	30.00000	Averaged
21 Trichloroethene	0.66504	0.54682	0.010	17.77682	30.00000	Averaged
$ 22 Toluene-d8	0.89932	0.90410	0.010	-0.53146	30.00000	Averaged
23 Toluene	1.46835	1.21104	0.010	17.52377	30.00000	Averaged
24 trans-1,3-Dichloropropene	0.76600	0.71877	0.010	6.16603	30.00000	Averaged
25 1,1,2-Trichloroethane	0.70295	0.58588	0.010	16.65459	30.00000	Averaged
26 Tetrachloroethene	1.15043	0.86910	0.010	24.45404	30.00000	Averaged
27 1,2-Dibromoethane (EDB)	1.12056	0.95607	0.010	14.67923	30.00000	Averaged
29 Chlorobenzene	1.53369	1.26951	0.010	17.22477	30.00000	Averaged
30 Ethyl Benzene	0.68182	0.55632	0.010	18.40710	30.00000	Averaged
31 m,p-Xylene	0.85601	0.59848	0.010	30.08468	30.00000	Averaged <-
32 o-Xylene	0.74893	0.56824	0.010	24.12667	30.00000	Averaged
$ 33 4-Bromofluorobenzene	0.56275	0.55172	0.010	1.95979	30.00000	Averaged
34 1,1,2,2-Tetrachloroethane	1.30765	1.02945	0.010	21.27498	30.00000	Averaged
35 1,3-Dichlorobenzene	1.16736	0.93991	0.010	19.48451	30.00000	Averaged
36 1,4-Dichlorobenzene	1.20508	0.89894	0.010	25.40387	30.00000	Averaged
37 1,2-Dichlorobenzene	1.11042	0.86040	0.010	22.51651	30.00000	Averaged
38 Naphthalene	0.91331	0.87990	0.010	3.65830	40.00000	Averaged
M 39 Total Xylene	++++	1.16672	0.010	++++	30.00000	Averaged <-

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080803simz.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 08-AUG-2017 09:37
Operator : ef Inst ID: msdv.i
Smp Info : 50mL #2850-226
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
4.999	4.999 (0.318)	85	900389	10.0000	9.446	80.00- 120.00	100.00
4.961	4.961 (0.316)	87	291024			2.27- 62.27	32.32
2 Freon 114					CAS #: 76-14-2		
6.472	6.472 (0.412)	135	700192	10.0000	8.752	80.00- 120.00	100.00
6.472	6.472 (0.412)	137	224090			2.11- 62.11	32.00
3 Chloromethane					CAS #: 74-87-3		
6.849	6.849 (0.436)	50	484004	10.0000	9.591	80.00- 120.00	100.00
6.849	6.849 (0.436)	52	153936			2.48- 62.48	31.80
4 Vinyl Chloride					CAS #: 75-01-4		
7.774	7.774 (0.495)	62	409605	10.0000	8.774	80.00- 120.00	100.00
7.774	7.774 (0.495)	64	120336			0.00- 59.68	29.38
5 Chloroethane					CAS #: 75-00-3		
10.130	10.130 (0.645)	64	190309	10.0000	9.543	80.00- 120.00	100.00
10.130	10.130 (0.645)	66	55642			0.00- 59.38	29.24

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
10.960	10.960 (0.698)	101	926609	10.0000		8.766	80.00- 120.00	100.00
10.960	10.960 (0.698)	103	607506				35.89- 95.89	65.56
	7 Freon 113					CAS #: 76-13-1		
12.387	12.387 (0.789)	151	662232	10.0000		8.614	80.00- 120.00	100.00
12.387	12.387 (0.789)	153	427499				34.74- 94.74	64.55
12.346	12.346 (0.786)	101	746486				82.46- 142.46	112.72
	8 1,1-Dichloroethene					CAS #: 75-35-4		
12.346	12.346 (0.786)	98	222338	10.0000		8.165	80.00- 120.00	100.00
12.346	12.346 (0.786)	61	706288				278.03- 338.03	317.66
12.346	12.346 (0.786)	96	348924				126.91- 186.91	156.93
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
13.786	13.786 (0.878)	73	898852	10.0000		8.558	80.00- 120.00	100.00
13.786	13.786 (0.878)	57	297135				0.50- 60.50	33.06
13.786	13.786 (0.878)	41	310204				0.10- 60.10	34.51
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
13.841	13.841 (0.881)	98	228567	10.0000		8.783	80.00- 120.00	100.00
13.841	13.841 (0.881)	61	634033				238.85- 298.85	277.39
13.841	13.841 (0.881)	96	356000				125.51- 185.51	155.75
	11 1,1-Dichloroethane					CAS #: 75-34-3		
14.555	14.555 (0.927)	63	766948	10.0000		8.965	80.00- 120.00	100.00
14.555	14.555 (0.927)	65	227465				0.11- 60.11	29.66
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
15.388	15.388 (0.980)	98	248757	10.0000		8.500	80.00- 120.00	100.00
15.388	15.388 (0.980)	61	629510				214.12- 274.12	253.06
15.388	15.388 (0.980)	96	384466				124.27- 184.27	154.55
*	13 Bromochloromethane					CAS #: 74-97-5		
15.709	15.709 (1.000)	130	122147	5.00000			80.00- 120.00	100.00
15.709	15.709 (1.000)	128	94624				47.62- 107.62	77.47
15.709	15.709 (1.000)	49	246492				149.67- 209.67	201.80
	14 Chloroform					CAS #: 67-66-3		
15.771	15.771 (1.004)	83	766528	10.0000		8.167	80.00- 120.00	100.00
15.771	15.771 (1.004)	85	503145				36.10- 96.10	65.64
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
16.017	16.017 (1.020)	97	821747	10.0000		8.583	80.00- 120.00	100.00
16.017	16.017 (1.020)	99	537040				35.68- 95.68	65.35

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
16 Carbon Tetrachloride						CAS #: 56-23-5		
16.202	16.202	(1.031)	119	832642	10.0000	9.926	80.00- 120.00	100.00
16.202	16.202	(1.031)	117	822056			68.20- 128.20	98.73
17 Benzene						CAS #: 71-43-2		
16.531	16.531	(0.969)	78	1021480	10.0000	7.766	80.00- 120.00	100.00
16.531	16.531	(0.969)	77	235440			0.00- 52.91	23.05
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.504	16.504	(1.051)	65	190990	5.00000	4.996	80.00- 120.00	100.00
16.504	16.504	(1.051)	67	107775			27.09- 87.09	56.43
19 1,2-Dichloroethane						CAS #: 107-06-2		
16.613	16.613	(0.974)	62	599674	10.0000	8.814	80.00- 120.00	100.00
16.613	16.613	(0.974)	64	183367			1.00- 61.00	30.58
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
17.053	17.053	(1.000)	114	494579	5.00000		80.00- 120.00	100.00
17.053	17.053	(1.000)	88	76314			0.00- 45.81	15.43
21 Trichloroethene						CAS #: 79-01-6		
17.464	17.464	(1.024)	130	540890	10.0000	8.222	80.00- 120.00	100.00
17.464	17.464	(1.024)	95	513588			65.68- 125.68	94.95
17.464	17.464	(1.024)	97	334164			32.29- 92.29	61.78
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.567	19.567	(1.147)	98	447147	5.00000	5.026	80.00- 120.00	100.00
19.567	19.567	(1.147)	70	49956			0.00- 41.21	11.17
19.567	19.567	(1.147)	100	285866			34.67- 94.67	63.93
23 Toluene						CAS #: 108-88-3		
19.701	19.701	(1.155)	91	1197907	10.0000	8.248	80.00- 120.00	100.00
19.701	19.701	(1.155)	92	705693			29.69- 89.69	58.91
24 trans-1,3-Dichloropropene						CAS #: 10061-02-6		
20.123	20.123	(0.915)	75	599449	10.0000	9.383	80.00- 120.00	100.00
20.123	20.123	(0.915)	77	191666			2.14- 62.14	31.97
25 1,1,2-Trichloroethane						CAS #: 79-00-5		
20.481	20.481	(0.931)	97	488618	10.0000	8.334	80.00- 120.00	100.00
20.481	20.481	(0.931)	99	309240			33.55- 93.55	63.29
20.481	20.481	(0.931)	83	409302			53.06- 113.06	83.77
26 Tetrachloroethene						CAS #: 127-18-4		
20.661	20.661	(0.939)	166	724823	10.0000	7.554	80.00- 120.00	100.00
20.661	20.661	(0.939)	129	522461			42.41- 102.41	72.08

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	26 Tetrachloroethene (continued)							
	20.661	20.661 (0.939)	131	530231			42.92- 102.92	73.15
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.342	21.342 (0.970)	107	797353	10.0000	8.532	80.00- 120.00	100.00
	21.342	21.342 (0.970)	109	758139			65.76- 125.76	95.08
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	21.992	21.992 (1.000)	117	416996	5.00000		80.00- 120.00	100.00
	21.965	21.965 (1.000)	82	217657			22.57- 82.57	52.20
	29 Chlorobenzene					CAS #: 108-90-7		
	22.020	22.020 (1.001)	112	1058764	10.0000	8.278	80.00- 120.00	100.00
	22.020	22.020 (1.001)	114	346898			2.79- 62.79	32.76
	22.020	22.020 (1.001)	77	559266			24.27- 84.27	52.82
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.102	22.102 (1.005)	106	463966	10.0000	8.159	80.00- 120.00	100.00
	22.102	22.102 (1.005)	91	1438346			275.83- 335.83	310.01
	31 m,p-Xylene					CAS #: 108-38-3		
	22.267	22.267 (1.012)	106	499131	10.0000	6.992	80.00- 120.00	100.00
	22.267	22.267 (1.012)	91	1006567			169.69- 229.69	201.66
	32 o-Xylene					CAS #: 95-47-6		
	22.789	22.789 (1.036)	106	473906	10.0000	7.587	80.00- 120.00	100.00
	22.789	22.789 (1.036)	91	1006220			180.67- 240.67	212.32
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.502	23.502 (1.069)	174	230067	5.00000	4.902	80.00- 120.00	100.00
	23.502	23.502 (1.069)	95	263844			89.82- 149.82	114.68
	23.502	23.502 (1.069)	176	225786			68.37- 128.37	98.14
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	23.631	23.631 (1.074)	83	858554	10.0000	7.872	80.00- 120.00	100.00
	23.631	23.631 (1.074)	85	561367			35.46- 95.46	65.39
	35 1,3-Dichlorobenzene					CAS #: 541-73-1		
	24.730	24.730 (1.124)	146	783874	10.0000	8.052	80.00- 120.00	100.00
	24.730	24.730 (1.124)	148	509112			35.53- 95.53	64.95
	24.707	24.707 (1.123)	111	304202			10.03- 70.03	38.81
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	24.819	24.819 (1.129)	146	749712	10.0000	7.460	80.00- 120.00	100.00
	24.819	24.819 (1.129)	148	487246			35.48- 95.48	64.99
	24.819	24.819 (1.129)	111	279844			8.35- 68.35	37.33

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	37 1,2-Dichlorobenzene						CAS #: 95-50-1	
	25.245	25.245 (1.148)	146	717563	10.0000	7.748	80.00- 120.00	100.00
	25.245	25.245 (1.148)	148	464802			35.26- 95.26	64.78
	25.245	25.245 (1.148)	111	287809			10.61- 70.61	40.11
	38 Naphthalene						CAS #: 91-20-3	
	27.352	27.352 (1.244)	128	73383	1.00000	0.9634	80.00- 120.00	100.00
	27.352	27.352 (1.244)	127	8878			0.00- 42.11	12.10
M	39 Total Xylene						CAS #: 1330-20-7	
				973037	10.0000	14.579		

Report Date: 09-Aug-2017 16:47

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080803simz.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	122147	0.00
20 1,4-Difluorobenze	494579	296747	692411	494579	0.00
28 Chlorobenzene-d5	416996	250198	583794	416996	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/08Aug2017.b/v080803simz.d

Date : 08-AUG-2017 09:37

Client ID: CCV

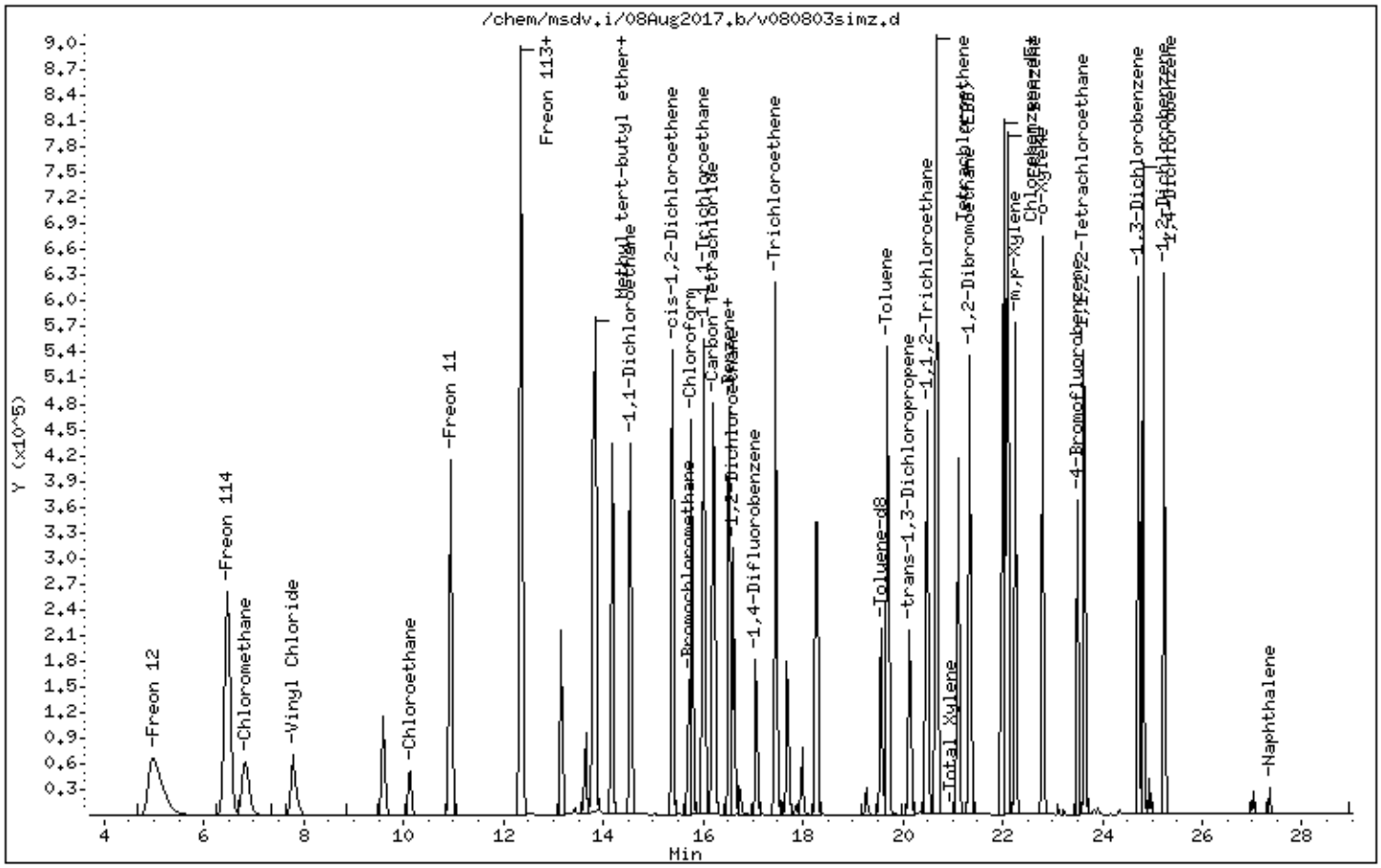
Instrument: msdv.i

Sample Info: 50mL #2850-226

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCS		
Lab ID:	1708091A-12A	**Date/Time Analyzed:**	8/8/17 10:20 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdv.i / v080804simz

Compound	CAS#	%Recovery
Benzene	71-43-2	82
Ethyl Benzene	100-41-4	86
m,p-Xylene	108-38-3	72
Naphthalene	91-20-3	65
o-Xylene	95-47-6	80
Toluene	108-88-3	87
Total Xylenes	9999-9999-015	76

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	99
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	101

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

	SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1	Freon 12	10.000	10.097	100.97	70-130
	2	Freon 114	10.000	9.642	96.42	70-130
	3	Chloromethane	10.000	9.973	99.73	70-130
	4	Vinyl Chloride	10.000	9.405	94.05	70-130
	5	Chloroethane	10.000	10.240	102.40	70-130
	6	Freon 11	10.000	9.503	95.03	70-130
	7	Freon 113	10.000	8.907	89.07	70-130
	8	1,1-Dichloroethene	10.000	8.604	86.04	70-130
	9	Methyl tert-butyl	10.000	8.866	88.66	70-130
	10	trans-1,2-Dichloro	10.000	7.915	79.15	70-130
	11	1,1-Dichloroethane	10.000	9.470	94.70	70-130
	12	cis-1,2-Dichloroet	10.000	9.848	98.48	70-130
	14	Chloroform	10.000	8.456	84.56	70-130
	15	1,1,1-Trichloroeth	10.000	8.972	89.72	70-130
	16	Carbon Tetrachlori	10.000	9.009	90.09	60-140
	17	Benzene	10.000	8.215	82.15	70-130
	19	1,2-Dichloroethane	10.000	9.352	93.52	70-130
	21	Trichloroethene	10.000	8.728	87.28	70-130
	23	Toluene	10.000	8.705	87.05	70-130
	24	trans-1,3-Dichloro	10.000	10.036	100.36	70-130
	25	1,1,2-Trichloroeth	10.000	8.992	89.92	70-130
	26	Tetrachloroethene	10.000	8.063	80.63	70-130
	27	1,2-Dibromoethane	10.000	9.145	91.45	70-130
	29	Chlorobenzene	10.000	8.689	86.89	70-130
	30	Ethyl Benzene	10.000	8.562	85.62	70-130
	31	m,p-Xylene	10.000	7.244	72.45	70-130
	32	o-Xylene	10.000	8.028	80.28	70-130
	34	1,1,2,2-Tetrachlor	10.000	8.497	84.97	70-130
	35	1,3-Dichlorobenzen	10.000	8.483	84.83	70-130
	36	1,4-Dichlorobenzen	10.000	7.807	78.07	70-130
	37	1,2-Dichlorobenzen	10.000	8.261	82.61	70-130
	38	Naphthalene	1.000	0.6549	65.49	60-140
M	39	Total Xylene	20.000	15.273	76.36	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.959	99.18	70-130
$ 22 Toluene-d8	5.000	5.044	100.88	70-130
$ 33 4-Bromofluorobenze	5.000	4.795	95.91	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080804simz.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 08-AUG-2017 10:20
Operator : ef Inst ID: msdv.i
Smp Info : 50mL# 2850-251
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
1 Freon 12						CAS #: 75-71-8		
4.999	4.999	(0.318)	85	977449	10.0968	10.097	80.00- 120.00	100.00
4.999	4.961	(0.318)	87	315569			2.27- 62.27	32.28
2 Freon 114						CAS #: 76-14-2		
6.471	6.472	(0.412)	135	783465	9.64195	9.642	80.00- 120.00	100.00
6.471	6.472	(0.412)	137	252127			2.11- 62.11	32.18
3 Chloromethane						CAS #: 74-87-3		
6.849	6.849	(0.436)	50	511185	9.97337	9.973	80.00- 120.00	100.00
6.849	6.849	(0.436)	52	162922			2.48- 62.48	31.87
4 Vinyl Chloride						CAS #: 75-01-4		
7.774	7.774	(0.495)	62	445938	9.40545	9.405	80.00- 120.00	100.00
7.774	7.774	(0.495)	64	131803			0.00- 59.68	29.56
5 Chloroethane						CAS #: 75-00-3		
10.129	10.130	(0.645)	64	207410	10.2397	10.240	80.00- 120.00	100.00
10.129	10.130	(0.645)	66	60697			0.00- 59.38	29.26

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	1020266	9.50283	9.503	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	668345			35.89- 95.89	65.51
	7 Freon 113					CAS #: 76-13-1		
	12.386	12.387 (0.789)	151	695517	8.90723	8.907	80.00- 120.00	100.00
	12.386	12.387 (0.789)	153	448733			34.74- 94.74	64.52
	12.345	12.346 (0.786)	101	784516			82.46- 142.46	112.80
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.345	12.346 (0.786)	98	237975	8.60446	8.604	80.00- 120.00	100.00
	12.345	12.346 (0.786)	61	756452			278.03- 338.03	317.87
	12.345	12.346 (0.786)	96	374179			126.91- 186.91	157.23
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.786	13.786 (0.878)	73	945822	8.86636	8.866	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	304778			0.50- 60.50	32.22
	13.786	13.786 (0.878)	41	319984			0.10- 60.10	33.83
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.841	13.841 (0.881)	98	209223	7.91532	7.915	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	587605			238.85- 298.85	280.85
	13.841	13.841 (0.881)	96	326867			125.51- 185.51	156.23
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.554	14.555 (0.927)	63	822791	9.46979	9.470	80.00- 120.00	100.00
	14.554	14.555 (0.927)	65	245123			0.11- 60.11	29.79
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	292721	9.84795	9.848	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	736635			214.12- 274.12	251.65
	15.388	15.388 (0.980)	96	452515			124.27- 184.27	154.59
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	124061	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	96527			47.62- 107.62	77.81
	15.709	15.709 (1.000)	49	250535			149.67- 209.67	201.95
	14 Chloroform					CAS #: 67-66-3		
	15.770	15.771 (1.004)	83	806073	8.45570	8.456	80.00- 120.00	100.00
	15.770	15.771 (1.004)	85	529057			36.10- 96.10	65.63
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	872429	8.97193	8.972	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	569350			35.68- 95.68	65.26

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride					CAS #: 56-23-5		
	16.202	16.202 (1.031)	119	767517	9.00890	9.009	80.00- 120.00	100.00
	16.202	16.202 (1.031)	117	758605			68.20- 128.20	98.84
	17 Benzene					CAS #: 71-43-2		
	16.531	16.531 (0.969)	78	1087077	8.21517	8.215	80.00- 120.00	100.00
	16.531	16.531 (0.969)	77	251448			0.00- 52.91	23.13
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.503	16.504 (1.051)	65	192539	4.95882	4.959	80.00- 120.00	100.00
	16.503	16.504 (1.051)	67	107536			27.09- 87.09	55.85
	19 1,2-Dichloroethane					CAS #: 107-06-2		
	16.613	16.613 (0.974)	62	640052	9.35191	9.352	80.00- 120.00	100.00
	16.613	16.613 (0.974)	64	196251			1.00- 61.00	30.66
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	17.052	17.053 (1.000)	114	497549	5.00000		80.00- 120.00	100.00
	17.052	17.053 (1.000)	88	77254			0.00- 45.81	15.53
	21 Trichloroethene					CAS #: 79-01-6		
	17.464	17.464 (1.024)	130	577611	8.72812	8.728	80.00- 120.00	100.00
	17.464	17.464 (1.024)	95	548276			65.68- 125.68	94.92
	17.464	17.464 (1.024)	97	355377			32.29- 92.29	61.53
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.566	19.567 (1.147)	98	451405	5.04415	5.044	80.00- 120.00	100.00
	19.566	19.567 (1.147)	70	50287			0.00- 41.21	11.14
	19.566	19.567 (1.147)	100	288863			34.67- 94.67	63.99
	23 Toluene					CAS #: 108-88-3		
	19.701	19.701 (1.155)	91	1271887	8.70471	8.705	80.00- 120.00	100.00
	19.701	19.701 (1.155)	92	750115			29.69- 89.69	58.98
	24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
	20.122	20.123 (0.915)	75	641186	10.0357	10.036	80.00- 120.00	100.00
	20.122	20.123 (0.915)	77	204475			2.14- 62.14	31.89
	25 1,1,2-Trichloroethane					CAS #: 79-00-5		
	20.481	20.481 (0.931)	97	527210	8.99189	8.992	80.00- 120.00	100.00
	20.481	20.481 (0.931)	99	334104			33.55- 93.55	63.37
	20.481	20.481 (0.931)	83	436777			53.06- 113.06	82.85
	26 Tetrachloroethene					CAS #: 127-18-4		
	20.660	20.661 (0.939)	166	773702	8.06321	8.063	80.00- 120.00	100.00
	20.660	20.661 (0.939)	129	563948			42.41- 102.41	72.89

					CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
26 Tetrachloroethene (continued)								
20.660	20.661 (0.939)	131	567414				42.92- 102.92	73.34
27 1,2-Dibromoethane (EDB)						CAS #: 106-93-4		
21.342	21.342 (0.970)	107	854763	9.14545		9.145	80.00- 120.00	100.00
21.342	21.342 (0.970)	109	813344				65.76- 125.76	95.15
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
21.992	21.992 (1.000)	117	417039	5.00000			80.00- 120.00	100.00
21.965	21.965 (1.000)	82	217623				22.57- 82.57	52.18
29 Chlorobenzene						CAS #: 108-90-7		
22.020	22.020 (1.001)	112	1111481	8.68877		8.689	80.00- 120.00	100.00
22.020	22.020 (1.001)	114	363730				2.79- 62.79	32.72
22.020	22.020 (1.001)	77	591504				24.27- 84.27	53.22
30 Ethyl Benzene						CAS #: 100-41-4		
22.102	22.102 (1.005)	106	486897	8.56167		8.562	80.00- 120.00	100.00
22.102	22.102 (1.005)	91	1507637				275.83- 335.83	309.64
31 m,p-Xylene						CAS #: 108-38-3		
22.267	22.267 (1.012)	106	517248	7.24456		7.244	80.00- 120.00	100.00
22.239	22.267 (1.011)	91	1037591				169.69- 229.69	200.60
32 o-Xylene						CAS #: 95-47-6		
22.788	22.789 (1.036)	106	501503	8.02834		8.028	80.00- 120.00	100.00
22.788	22.789 (1.036)	91	1070974				180.67- 240.67	213.55
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.501	23.502 (1.069)	174	225086	4.79539		4.795	80.00- 120.00	100.00
23.501	23.502 (1.069)	95	256876				89.82- 149.82	114.12
23.501	23.502 (1.069)	176	221088				68.37- 128.37	98.22
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
23.630	23.631 (1.074)	83	926790	8.49732		8.497	80.00- 120.00	100.00
23.630	23.631 (1.074)	85	601587				35.46- 95.46	64.91
35 1,3-Dichlorobenzene						CAS #: 541-73-1		
24.729	24.730 (1.124)	146	825996	8.48333		8.483	80.00- 120.00	100.00
24.729	24.730 (1.124)	148	537429				35.53- 95.53	65.06
24.707	24.707 (1.123)	111	318676				10.03- 70.03	38.58
36 1,4-Dichlorobenzene						CAS #: 106-46-7		
24.819	24.819 (1.129)	146	784678	7.80672		7.807	80.00- 120.00	100.00
24.819	24.819 (1.129)	148	510684				35.48- 95.48	65.08
24.819	24.819 (1.129)	111	292349				8.35- 68.35	37.26

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
	37 1,2-Dichlorobenzene					CAS #: 95-50-1		
	25.245	25.245 (1.148)	146	765100	8.26081	8.261	80.00- 120.00	100.00
	25.245	25.245 (1.148)	148	495574			35.26- 95.26	64.77
	25.222	25.245 (1.147)	111	303370			10.61- 70.61	39.65
	38 Naphthalene					CAS #: 91-20-3		
	27.352	27.352 (1.244)	128	49891	0.65493	0.6549	80.00- 120.00	100.00
	27.352	27.352 (1.244)	127	6108			0.00- 42.11	12.24
M	39 Total Xylene					CAS #: 1330-20-7		
				1018751	15.2729	15.273		

Report Date: 09-Aug-2017 16:47

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080804simz.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	124061	1.57
20 1,4-Difluorobenze	494579	296747	692411	497549	0.60
28 Chlorobenzene-d5	416996	250198	583794	417039	0.01

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/08Aug2017.b/v080804simz.d

Date : 08-AUG-2017 10:20

Client ID: LCS

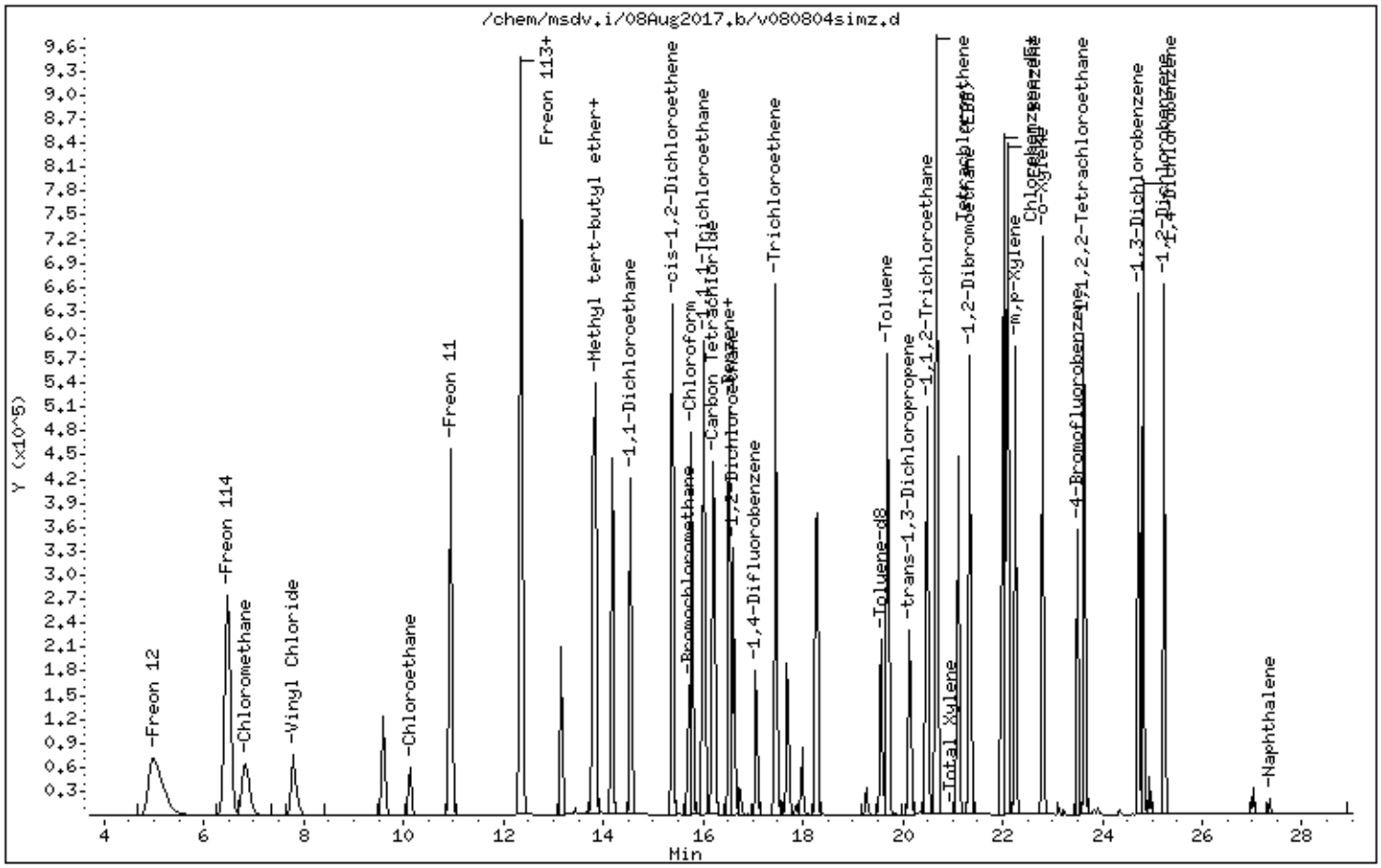
Instrument: msdv.i

Sample Info: 50mL# 2850-251

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCSD		
Lab ID:	1708091A-12AA	**Date/Time Analyzed:**	8/8/17 11:01 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdv.i / v080805simz

Compound	CAS#	%Recovery
Benzene	71-43-2	82
Ethyl Benzene	100-41-4	86
m,p-Xylene	108-38-3	73
Naphthalene	91-20-3	65
o-Xylene	95-47-6	82
Toluene	108-88-3	87
Total Xylenes	9999-9999-015	78

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	101

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: sw
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

	SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1	Freon 12	10.000	10.166	101.66	70-130
	2	Freon 114	10.000	9.649	96.49	70-130
	3	Chloromethane	10.000	10.052	100.52	70-130
	4	Vinyl Chloride	10.000	9.460	94.61	70-130
	5	Chloroethane	10.000	10.318	103.18	70-130
	6	Freon 11	10.000	9.506	95.06	70-130
	7	Freon 113	10.000	8.948	89.48	70-130
	8	1,1-Dichloroethene	10.000	8.583	85.83	70-130
	9	Methyl tert-butyl	10.000	8.929	89.29	70-130
	10	trans-1,2-Dichloro	10.000	7.963	79.63	70-130
	11	1,1-Dichloroethane	10.000	9.422	94.23	70-130
	12	cis-1,2-Dichloroet	10.000	9.876	98.77	70-130
	14	Chloroform	10.000	8.508	85.09	70-130
	15	1,1,1-Trichloroeth	10.000	9.001	90.01	70-130
	16	Carbon Tetrachlori	10.000	9.030	90.30	60-140
	17	Benzene	10.000	8.180	81.80	70-130
	19	1,2-Dichloroethane	10.000	9.272	92.72	70-130
	21	Trichloroethene	10.000	8.717	87.17	70-130
	23	Toluene	10.000	8.690	86.90	70-130
	24	trans-1,3-Dichloro	10.000	10.014	100.14	70-130
	25	1,1,2-Trichloroeth	10.000	8.925	89.25	70-130
	26	Tetrachloroethene	10.000	8.078	80.78	70-130
	27	1,2-Dibromoethane	10.000	9.085	90.85	70-130
	29	Chlorobenzene	10.000	8.711	87.11	70-130
	30	Ethyl Benzene	10.000	8.622	86.23	70-130
	31	m,p-Xylene	10.000	7.346	73.46	70-130
	32	o-Xylene	10.000	8.183	81.83	70-130
	34	1,1,2,2-Tetrachlor	10.000	8.414	84.14	70-130
	35	1,3-Dichlorobenzen	10.000	8.502	85.02	70-130
	36	1,4-Dichlorobenzen	10.000	7.868	78.68	70-130
	37	1,2-Dichlorobenzen	10.000	8.284	82.84	70-130
	38	Naphthalene	1.000	0.6475	64.75	60-140
M	39	Total Xylene	20.000	15.529	77.65	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: sw
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.987	99.75	70-130
$ 22 Toluene-d8	5.000	5.041	100.82	70-130
$ 33 4-Bromofluorobenze	5.000	4.813	96.26	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdv.i/08Aug2017.b/v080805simz.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 08-AUG-2017 11:01
Operator : sw Inst ID: msdv.i
Smp Info : 50mL# 2850-251
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msdv.i/08Aug2017.b/v17s0706z.m
Meth Date : 09-Aug-2017 16:47 efinn Quant Type: ISTD
Cal Date : 07-JUL-2017 09:17 Cal File: v070611simz.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
1 Freon 12						CAS #: 75-71-8		
4.961	4.999 (0.316)	85	979567	10.1661	10.166	80.00- 120.00		100.00
4.961	4.961 (0.316)	87	316651			2.27- 62.27		32.33
2 Freon 114						CAS #: 76-14-2		
6.472	6.472 (0.412)	135	780383	9.64905	9.649	80.00- 120.00		100.00
6.472	6.472 (0.412)	137	249730			2.11- 62.11		32.00
3 Chloromethane						CAS #: 74-87-3		
6.849	6.849 (0.436)	50	512808	10.0519	10.052	80.00- 120.00		100.00
6.849	6.849 (0.436)	52	163057			2.48- 62.48		31.80
4 Vinyl Chloride						CAS #: 75-01-4		
7.774	7.774 (0.495)	62	446457	9.46055	9.460	80.00- 120.00		100.00
7.774	7.774 (0.495)	64	131520			0.00- 59.68		29.46
5 Chloroethane						CAS #: 75-00-3		
10.130	10.130 (0.645)	64	208020	10.3180	10.318	80.00- 120.00		100.00
10.130	10.130 (0.645)	66	60491			0.00- 59.38		29.08

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
	10.960	10.960 (0.698)	101	1015795	9.50555	9.506	80.00- 120.00	100.00
	10.960	10.960 (0.698)	103	664462			35.89- 95.89	65.41
	7 Freon 113					CAS #: 76-13-1		
	12.387	12.387 (0.789)	151	695441	8.94802	8.948	80.00- 120.00	100.00
	12.387	12.387 (0.789)	153	449046			34.74- 94.74	64.57
	12.346	12.346 (0.786)	101	783749			82.46- 142.46	112.70
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	12.346	12.346 (0.786)	98	236270	8.58287	8.583	80.00- 120.00	100.00
	12.346	12.346 (0.786)	61	751819			278.03- 338.03	318.20
	12.346	12.346 (0.786)	96	371114			126.91- 186.91	157.07
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	13.786	13.786 (0.878)	73	948018	8.92861	8.929	80.00- 120.00	100.00
	13.786	13.786 (0.878)	57	305608			0.50- 60.50	32.24
	13.786	13.786 (0.878)	41	319528			0.10- 60.10	33.70
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	13.841	13.841 (0.881)	98	209504	7.96312	7.963	80.00- 120.00	100.00
	13.841	13.841 (0.881)	61	586103			238.85- 298.85	279.76
	13.841	13.841 (0.881)	96	327583			125.51- 185.51	156.36
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	14.555	14.555 (0.927)	63	814863	9.42252	9.422	80.00- 120.00	100.00
	14.555	14.555 (0.927)	65	242782			0.11- 60.11	29.79
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	15.388	15.388 (0.980)	98	292200	9.87652	9.876	80.00- 120.00	100.00
	15.388	15.388 (0.980)	61	736328			214.12- 274.12	251.99
	15.388	15.388 (0.980)	96	453338			124.27- 184.27	155.15
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.709	15.709 (1.000)	130	123482	5.00000		80.00- 120.00	100.00
	15.709	15.709 (1.000)	128	95770			47.62- 107.62	77.56
	15.709	15.709 (1.000)	49	250104			149.67- 209.67	202.54
	14 Chloroform					CAS #: 67-66-3		
	15.771	15.771 (1.004)	83	807324	8.50854	8.508	80.00- 120.00	100.00
	15.771	15.771 (1.004)	85	529424			36.10- 96.10	65.58
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	16.017	16.017 (1.020)	97	871211	9.00142	9.001	80.00- 120.00	100.00
	16.017	16.017 (1.020)	99	567197			35.68- 95.68	65.10

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
16 Carbon Tetrachloride					CAS #: 56-23-5		
16.202	16.202 (1.031)	119	765736	9.03014	9.030	80.00- 120.00	100.00
16.202	16.202 (1.031)	117	755757			68.20- 128.20	98.70
17 Benzene					CAS #: 71-43-2		
16.531	16.531 (0.969)	78	1087061	8.18020	8.180	80.00- 120.00	100.00
16.531	16.531 (0.969)	77	250579			0.00- 52.91	23.05
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
16.504	16.504 (1.051)	65	192740	4.98727	4.987	80.00- 120.00	100.00
16.504	16.504 (1.051)	67	107339			27.09- 87.09	55.69
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.613	16.613 (0.974)	62	637308	9.27231	9.272	80.00- 120.00	100.00
16.613	16.613 (0.974)	64	195099			1.00- 61.00	30.61
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
17.053	17.053 (1.000)	114	499669	5.00000		80.00- 120.00	100.00
17.053	17.053 (1.000)	88	77006			0.00- 45.81	15.41
21 Trichloroethene					CAS #: 79-01-6		
17.465	17.464 (1.024)	130	579308	8.71662	8.717	80.00- 120.00	100.00
17.465	17.464 (1.024)	95	548848			65.68- 125.68	94.74
17.465	17.464 (1.024)	97	356459			32.29- 92.29	61.53
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.567	19.567 (1.147)	98	453054	5.04110	5.041	80.00- 120.00	100.00
19.567	19.567 (1.147)	70	50500			0.00- 41.21	11.15
19.567	19.567 (1.147)	100	289583			34.67- 94.67	63.92
23 Toluene					CAS #: 108-88-3		
19.701	19.701 (1.155)	91	1275111	8.68974	8.690	80.00- 120.00	100.00
19.701	19.701 (1.155)	92	751863			29.69- 89.69	58.96
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
20.123	20.123 (0.915)	75	642693	10.0143	10.014	80.00- 120.00	100.00
20.123	20.123 (0.915)	77	203793			2.14- 62.14	31.71
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.481	20.481 (0.931)	97	525628	8.92478	8.925	80.00- 120.00	100.00
20.481	20.481 (0.931)	99	331267			33.55- 93.55	63.02
20.481	20.481 (0.931)	83	436170			53.06- 113.06	82.98
26 Tetrachloroethene					CAS #: 127-18-4		
20.661	20.661 (0.939)	166	778628	8.07823	8.078	80.00- 120.00	100.00
20.661	20.661 (0.939)	129	564725			42.41- 102.41	72.53

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
26 Tetrachloroethene (continued)							
20.661	20.661 (0.939)	131	569385			42.92- 102.92	73.13
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.342	21.342 (0.970)	107	852933	9.08502	9.085	80.00- 120.00	100.00
21.342	21.342 (0.970)	109	814395			65.76- 125.76	95.48
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
21.992	21.992 (1.000)	117	418914	5.00000		80.00- 120.00	100.00
21.965	21.965 (1.000)	82	217684			22.57- 82.57	51.96
29 Chlorobenzene					CAS #: 108-90-7		
22.020	22.020 (1.001)	112	1119299	8.71073	8.711	80.00- 120.00	100.00
22.020	22.020 (1.001)	114	366364			2.79- 62.79	32.73
22.020	22.020 (1.001)	77	594891			24.27- 84.27	53.15
30 Ethyl Benzene					CAS #: 100-41-4		
22.102	22.102 (1.005)	106	492562	8.62252	8.622	80.00- 120.00	100.00
22.102	22.102 (1.005)	91	1528239			275.83- 335.83	310.26
31 m,p-Xylene					CAS #: 108-38-3		
22.267	22.267 (1.012)	106	526827	7.34569	7.346	80.00- 120.00	100.00
22.240	22.267 (1.011)	91	1061121			169.69- 229.69	201.42
32 o-Xylene					CAS #: 95-47-6		
22.789	22.789 (1.036)	106	513489	8.18342	8.183	80.00- 120.00	100.00
22.789	22.789 (1.036)	91	1087005			180.67- 240.67	211.69
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
23.502	23.502 (1.069)	174	226918	4.81278	4.813	80.00- 120.00	100.00
23.502	23.502 (1.069)	95	261185			89.82- 149.82	115.10
23.502	23.502 (1.069)	176	222456			68.37- 128.37	98.03
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
23.631	23.631 (1.074)	83	921776	8.41352	8.414	80.00- 120.00	100.00
23.631	23.631 (1.074)	85	603031			35.46- 95.46	65.42
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
24.730	24.730 (1.124)	146	831531	8.50195	8.502	80.00- 120.00	100.00
24.730	24.730 (1.124)	148	539936			35.53- 95.53	64.93
24.707	24.707 (1.123)	111	323387			10.03- 70.03	38.89
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
24.819	24.819 (1.129)	146	794382	7.86789	7.868	80.00- 120.00	100.00
24.819	24.819 (1.129)	148	516475			35.48- 95.48	65.02
24.819	24.819 (1.129)	111	294078			8.35- 68.35	37.02

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
	37 1,2-Dichlorobenzene					CAS #: 95-50-1		
	25.245	25.245 (1.148)	146	770732	8.28437	8.284	80.00- 120.00	100.00
	25.245	25.245 (1.148)	148	500014			35.26- 95.26	64.88
	25.223	25.245 (1.147)	111	306869			10.61- 70.61	39.82
	38 Naphthalene					CAS #: 91-20-3		
	27.352	27.352 (1.244)	128	49547	0.64751	0.6475	80.00- 120.00	100.00
	27.352	27.352 (1.244)	127	5975			0.00- 42.11	12.06
M	39 Total Xylene					CAS #: 1330-20-7		
				1040316	15.5291	15.529		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdv.i
Lab File ID: v080805simz.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msdv.i/08Aug2017.b/v17s0706z.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 08-AUG-2017
Calibration Time: 09:37
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	122147	73288	171006	123482	1.09
20 1,4-Difluorobenze	494579	296747	692411	499669	1.03
28 Chlorobenzene-d5	416996	250198	583794	418914	0.46

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.71	15.38	16.04	15.71	0.00
20 1,4-Difluorobenze	17.05	16.72	17.38	17.05	0.00
28 Chlorobenzene-d5	21.99	21.66	22.32	21.99	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdv.i/08Aug2017.b/v080805simz.d

Date : 08-AUG-2017 11:01

Client ID: LCSD

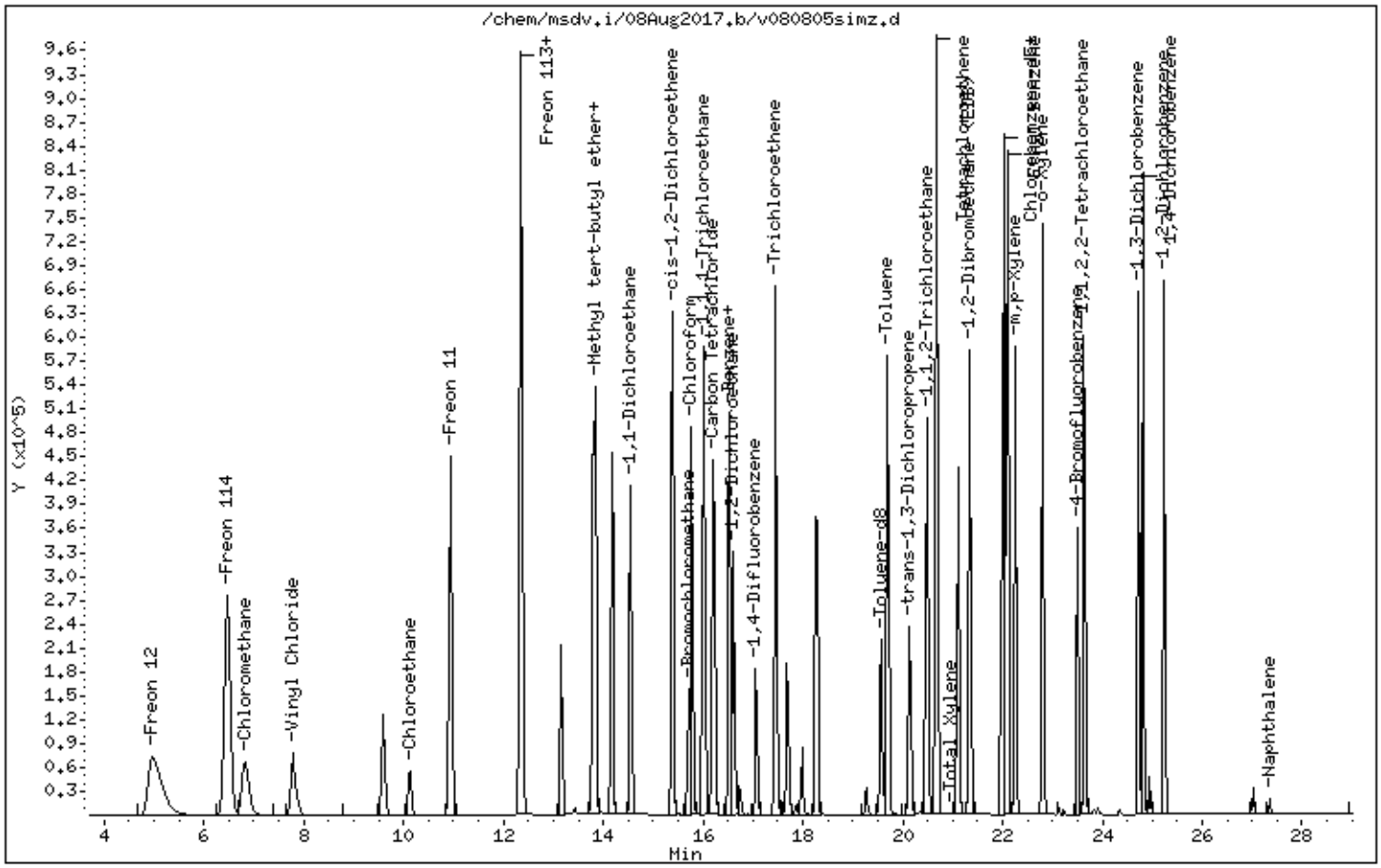
Instrument: msdv.i

Sample Info: 50mL# 2850-251

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics, Inc. **MSD-V** **Logbook #2865**

BFB Verification of 176/174 m/z Ratio: (222848 / 229564) x100 = 97.10
Method Name: V17L0706B / V17S0706A

IS/S Std. #: 2850-270	Exp. Date: 10/21/17
BCM Lot: 1169665	Smp: 1221447
1,4-DFB 467293	4945790
CB-d5 400273	4166996

Verified CCV IS vs ICAL mid-point (-40%D): SF

SOP# (Circle one): 61 / 83 / 38 / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	V0608014	BFB tune check	2810-89	50mg	210µl	1.00	SW	8/8/17	0830	SF	
2	X	02	CCV (50ppbv)	2850-246	10ppbv	50mL	1.00	SF		0852	SF	Exp. 9/27/17 w.p. tune out
3	✓	03	CCV (50ppbv)	2850-246	10ppbv	50mL	1.00	SF		0937	SF	Exp. 9/27/17 SF out
4	✓	04	LCS (50ppbv)	2850-251	10ppbv	50mL	1.00	SF		1020	SW	Exp. 10/7/17 OK at
5	✓	05	LCSD ↓	↓	↓	↓	1	SW		1101	SW	↓
6	X	06	Lab blank	34202	Humid	250mL		SW		1156	SF	
7	✓	07	LAB BLANK	34202	Humid	250mL	1.00	SF		1242	SW	
8	✓	08	1708091A-01A	N1643	8.5"Hg → 5psi	250mL	1.87	SW		1346	SW	
9	✓	09	-02A	N1676	9.0"Hg → 5psi	250mL	1.91	SW		1435	GH	E Estimate
10	✓	10	-03A	34342	9.0"Hg → 5psi	250mL	1.91	SW		1511	GH	E Estimate
11	✓	11	-06A	N0479	7.0"Hg-5psi	250mL	1.75	GH		1555	GH	
12	✓	12	-07A	N1732	8.0"Hg-5psi	250mL	1.83	GH		1637	GH	
13	✓	13	-08A	00262	7.0"Hg-5psi	250mL	1.75	GH		1719	GH	
14	✓	14	-09A	00912	17.0"Hg-5psi	250mL	3.09	GH		1754	GH	
15		~~15~~	~~1708091A-01A~~	~~00310~~	~~5.9"Hg-5.2psi~~	~~250mL~~	~~1.69~~	~~GH~~				
16												
17												

Reviewed

8/8/17
Date

Eurofins Air Toxics Inc.

Data file : /var/chem/msdv.i/06Jul2017.b/v070601.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 06-JUL-2017 19:05
Operator : ea Inst ID: msdv.i
Smp Info : 2.0uL #2810-89; BFB; BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msdv.i/06Jul2017.b/bfb60.m
Meth Date : 06-Jul-2017 19:15 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
6.472	6.640	-0.168	95	405226			100.00- 100.00	100.00
6.472	6.640	-0.168	50	96197			8.00- 40.00	23.74
6.472	6.640	-0.168	75	191913			30.00- 66.00	47.36
6.472	6.640	-0.168	96	27168			5.00- 9.00	6.70
6.472	6.640	-0.168	173	2385			0.00- 1.99	0.78
6.472	6.640	-0.168	174	307264			50.00- 120.00	75.83
6.472	6.640	-0.168	175	22260			4.00- 9.00	7.24
6.472	6.640	-0.168	176	297737			93.00- 101.00	96.90
6.472	6.640	-0.168	177	18884			5.00- 9.00	6.34

Data File: /chem/msdv.i/06Jul2017.b/v070601.d

Date : 06-JUL-2017 19:05

Client ID: BFB

Instrument: msdv.i

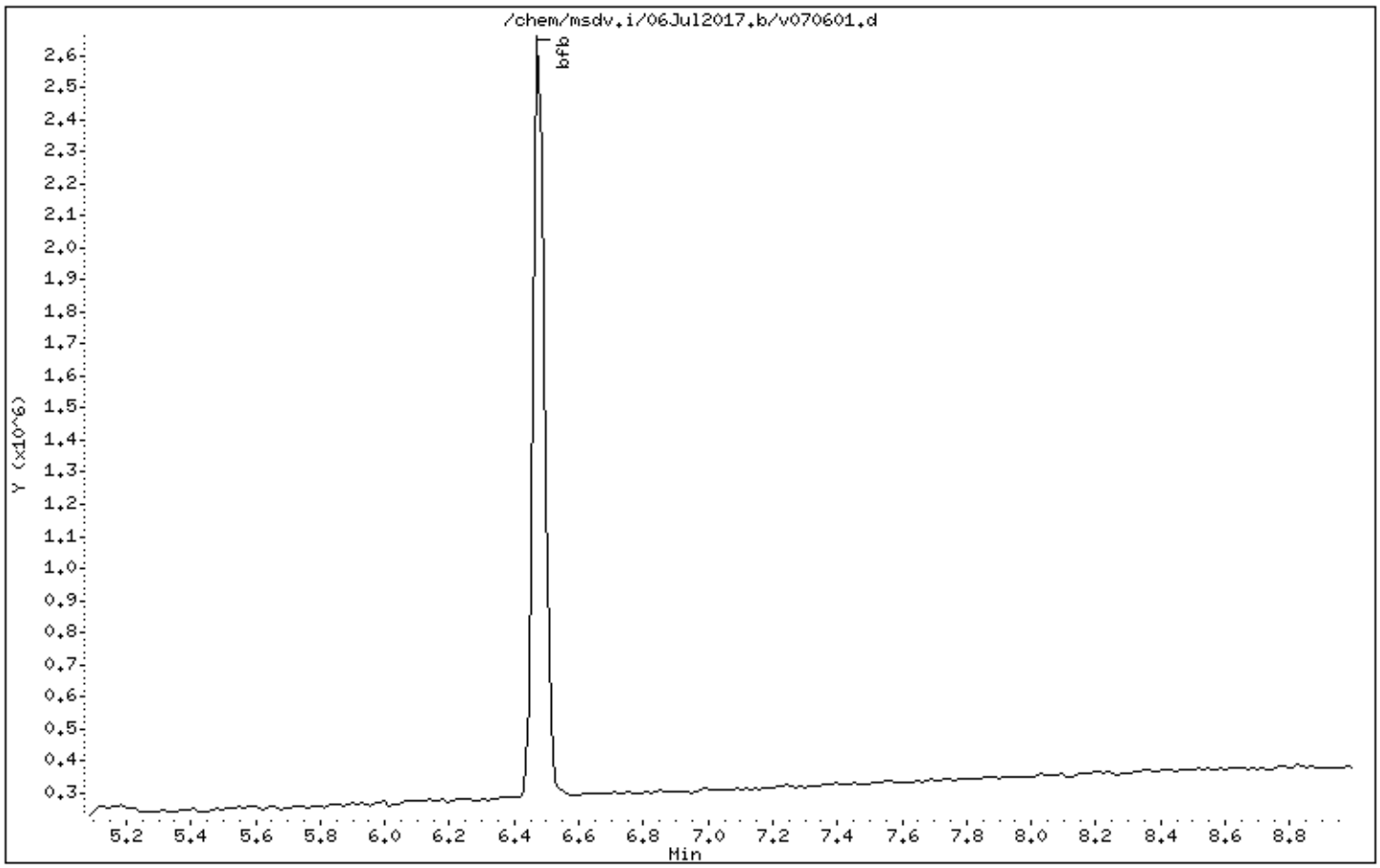
Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0

Operator: ea

Column phase:

Column diameter: 2.00



Data File: /chem/msdv.i/06Jul2017.b/v070601.d

Date : 06-JUL-2017 19:05

Client ID: BFB

Instrument: msdv.i

Sample Info: 2.0uL #2810-89; BFB; BFB

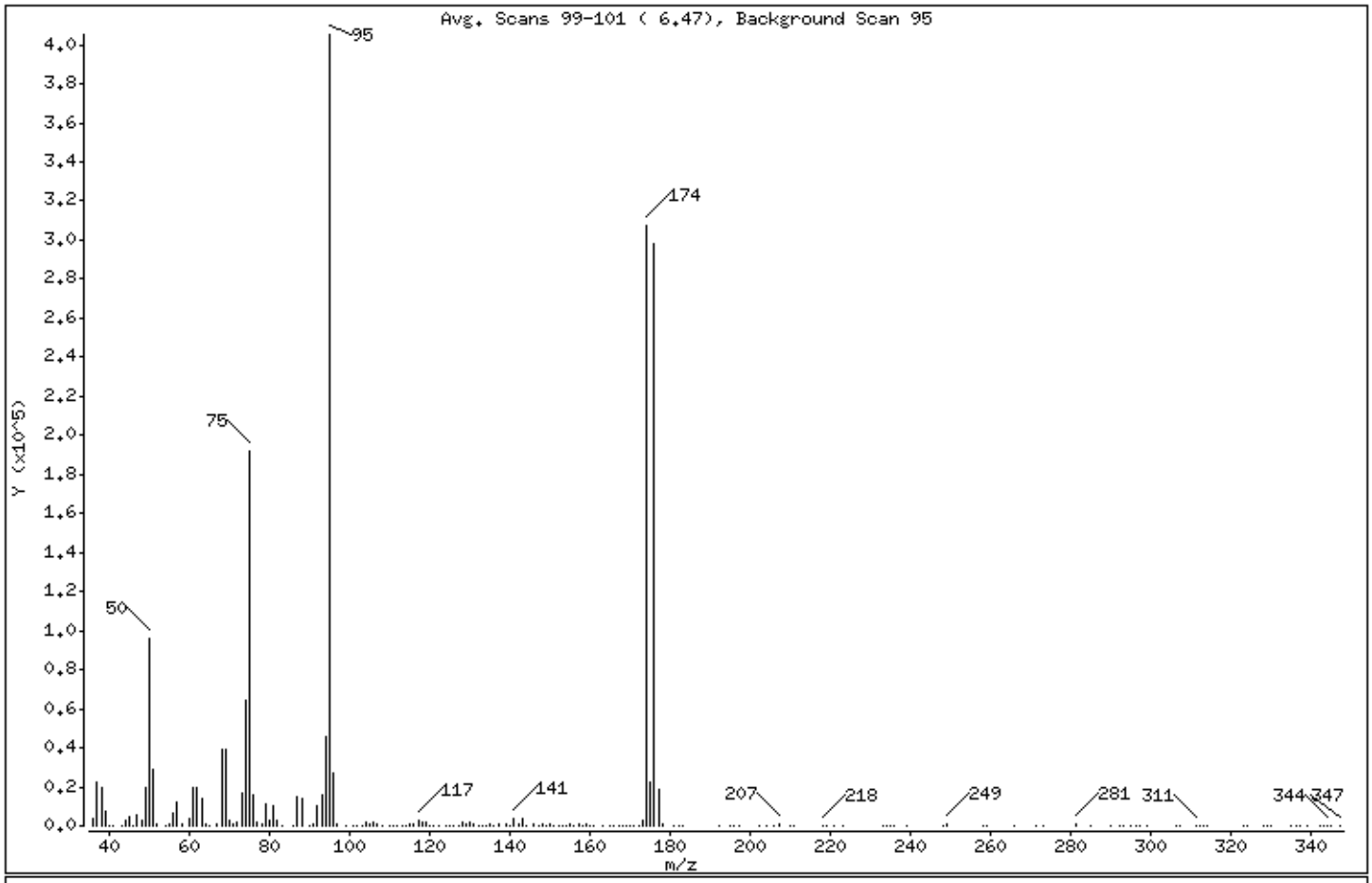
Volume Injected (uL): 1.0

Operator: ea

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	23.74
75	30.00 - 66.00% of mass 95	47.36
96	5.00 - 9.00% of mass 95	6.70
173	Less than 1.99% of mass 174	0.59 (0.78)
174	50.00 - 120.00% of mass 95	75.83
175	4.00 - 9.00% of mass 174	5.49 (7.24)
176	93.00 - 101.00% of mass 174	73.47 (96.90)
177	5.00 - 9.00% of mass 176	4.66 (6.34)

Date : 06-JUL-2017 19:05

Client ID: BFB Instrument: msdv.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ea

Column phase: Column diameter: 2.00

Data File: v070601.d
Spectrum: Avg. Scans 99-101 (6.47), Background Scan 95
Location of Maximum: 95.00
Number of points: 186

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	4178	90.00	76	142.00	546	218.00	261
37.00	22488	91.00	1043	143.00	3963	219.00	146
38.00	20008	92.00	10346	144.00	230	221.00	36
39.00	7805	93.00	15491	146.00	521	223.00	145
40.00	288	94.00	45960	147.00	256	233.00	185
41.00	224	95.00	405184	148.00	807	234.00	82
43.00	423	96.00	27168	149.00	128	235.00	26
44.00	2949	97.00	983	150.00	641	236.00	90
45.00	4332	99.00	79	151.00	78	239.00	98
46.00	423	101.00	147	152.00	281	248.00	49
47.00	5772	102.00	110	153.00	407	249.00	469
48.00	2930	103.00	114	154.00	152	258.00	52
49.00	19840	104.00	1649	155.00	960	259.00	68
50.00	96192	105.00	691	156.00	310	266.00	109
51.00	29296	106.00	1717	157.00	982	271.00	281
52.00	1284	107.00	603	158.00	295	273.00	61
54.00	91	108.00	99	159.00	643	281.00	745
55.00	1159	110.00	280	160.00	117	285.00	239
56.00	6667	111.00	111	161.00	462	290.00	121
57.00	11878	112.00	219	163.00	34	292.00	67
58.00	771	113.00	202	165.00	164	293.00	6
60.00	3882	114.00	62	166.00	110	295.00	188
61.00	19488	115.00	590	167.00	56	296.00	52
62.00	19632	116.00	1363	168.00	161	297.00	73
63.00	14225	117.00	2621	169.00	208	299.00	54
64.00	1285	118.00	1416	170.00	56	306.00	42
65.00	80	119.00	2126	171.00	71	307.00	84
67.00	957	120.00	141	172.00	338	311.00	306
68.00	39128	121.00	80	173.00	2385	312.00	59
69.00	38696	122.00	45	174.00	307264	313.00	103
70.00	2792	124.00	232	175.00	22256	314.00	72
71.00	503	125.00	291	176.00	297728	323.00	117
72.00	1758	126.00	350	177.00	18880	324.00	142
73.00	16334	127.00	266	178.00	591	328.00	140
74.00	64120	128.00	1522	181.00	227	329.00	52

Date : 06-JUL-2017 19:05

Client ID: BFB Instrument: msdv.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ea

Column phase: Column diameter: 2.00

Data File: v070601.d
Spectrum: Avg. Scans 99-101 (6.47), Background Scan 95
Location of Maximum: 95.00
Number of points: 186

m/z	Y	m/z	Y	m/z	Y	m/z	Y
75.00	191872	129.00	684	182.00	61	330.00	138
76.00	16286	130.00	1602	183.00	59	335.00	108
77.00	2132	131.00	749	192.00	271	336.00	40
78.00	1300	132.00	89	195.00	19	337.00	57
79.00	10813	133.00	448	196.00	31	339.00	63
80.00	3216	134.00	204	197.00	39	342.00	93
81.00	10575	135.00	919	202.00	39	343.00	4
82.00	2620	136.00	206	204.00	56	344.00	237
83.00	56	137.00	631	206.00	12	345.00	49
86.00	465	139.00	498	207.00	930	347.00	58
87.00	14899	140.00	234	210.00	225		
88.00	13995	141.00	4006	211.00	252		

Eurofins Air Toxics Inc.

Data file : /var/chem/msdv.i/08Aug2017.b/v080801.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 08-AUG-2017 08:30
Operator : sw Inst ID: msdv.i
Smp Info : 2.0uL #2810-89; BFB; BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msdv.i/08Aug2017.b/bfb60.m
Meth Date : 08-Aug-2017 08:39 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
6.472	6.640	-0.168	95	289770			100.00- 100.00	100.00
6.472	6.640	-0.168	50	77634			8.00- 40.00	26.79
6.472	6.640	-0.168	75	139375			30.00- 66.00	48.10
6.472	6.640	-0.168	96	19269			5.00- 9.00	6.65
6.472	6.640	-0.168	173	2025			0.00- 1.99	0.88
6.472	6.640	-0.168	174	229546			50.00- 120.00	79.22
6.472	6.640	-0.168	175	16691			4.00- 9.00	7.27
6.472	6.640	-0.168	176	222909			93.00- 101.00	97.11
6.472	6.640	-0.168	177	13819			5.00- 9.00	6.20

Data File: /var/chem/msdv.i/08Aug2017.b/v080801.d

Date : 08-AUG-2017 08:30

Client ID: BFB

Instrument: msdv.i

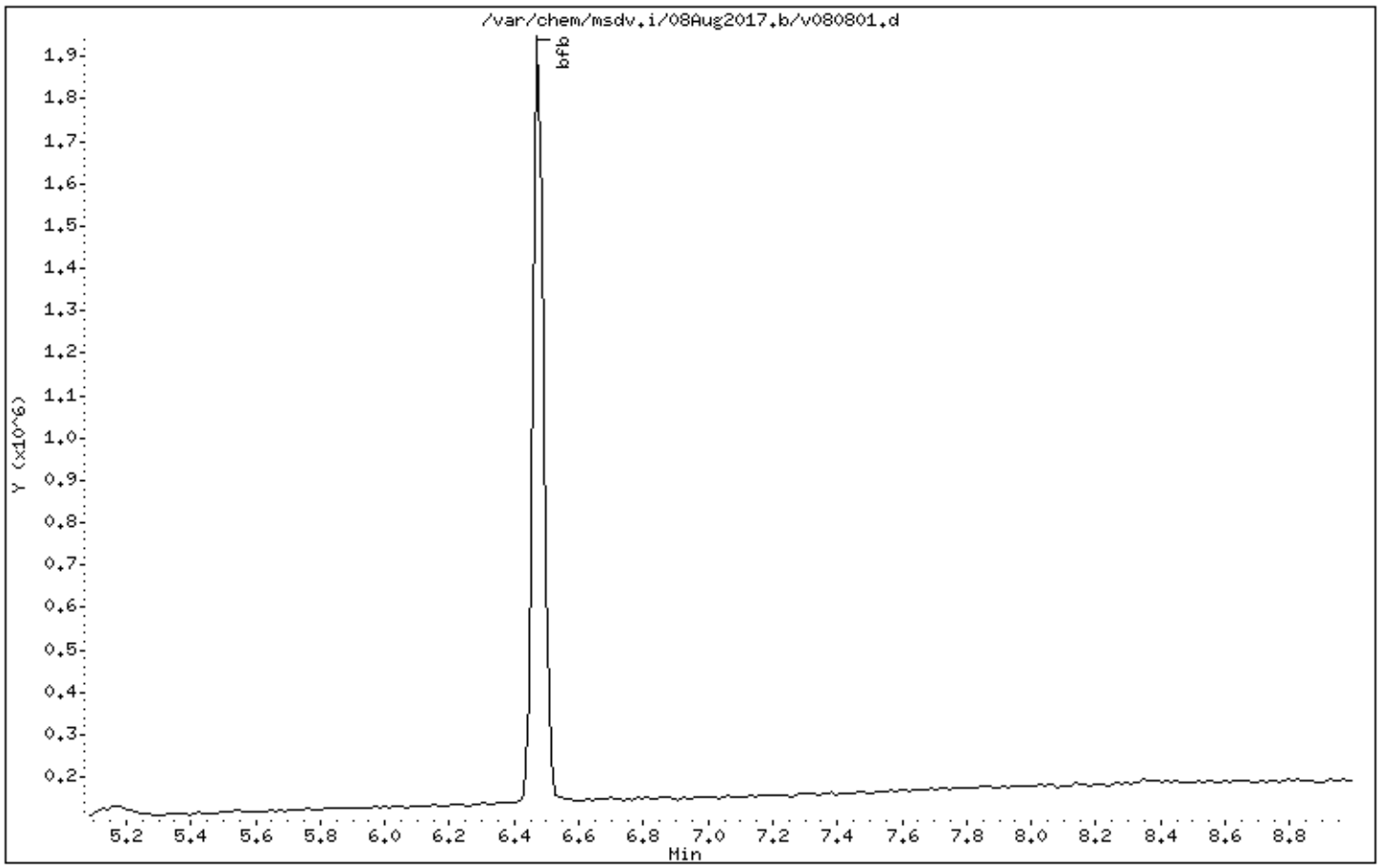
Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0

Operator: sw

Column phase:

Column diameter: 2.00



Data File: /var/chem/msdv.i/08Aug2017.b/v080801.d

Date : 08-AUG-2017 08:30

Client ID: BFB

Instrument: msdv.i

Sample Info: 2.0uL #2810-89; BFB; BFB

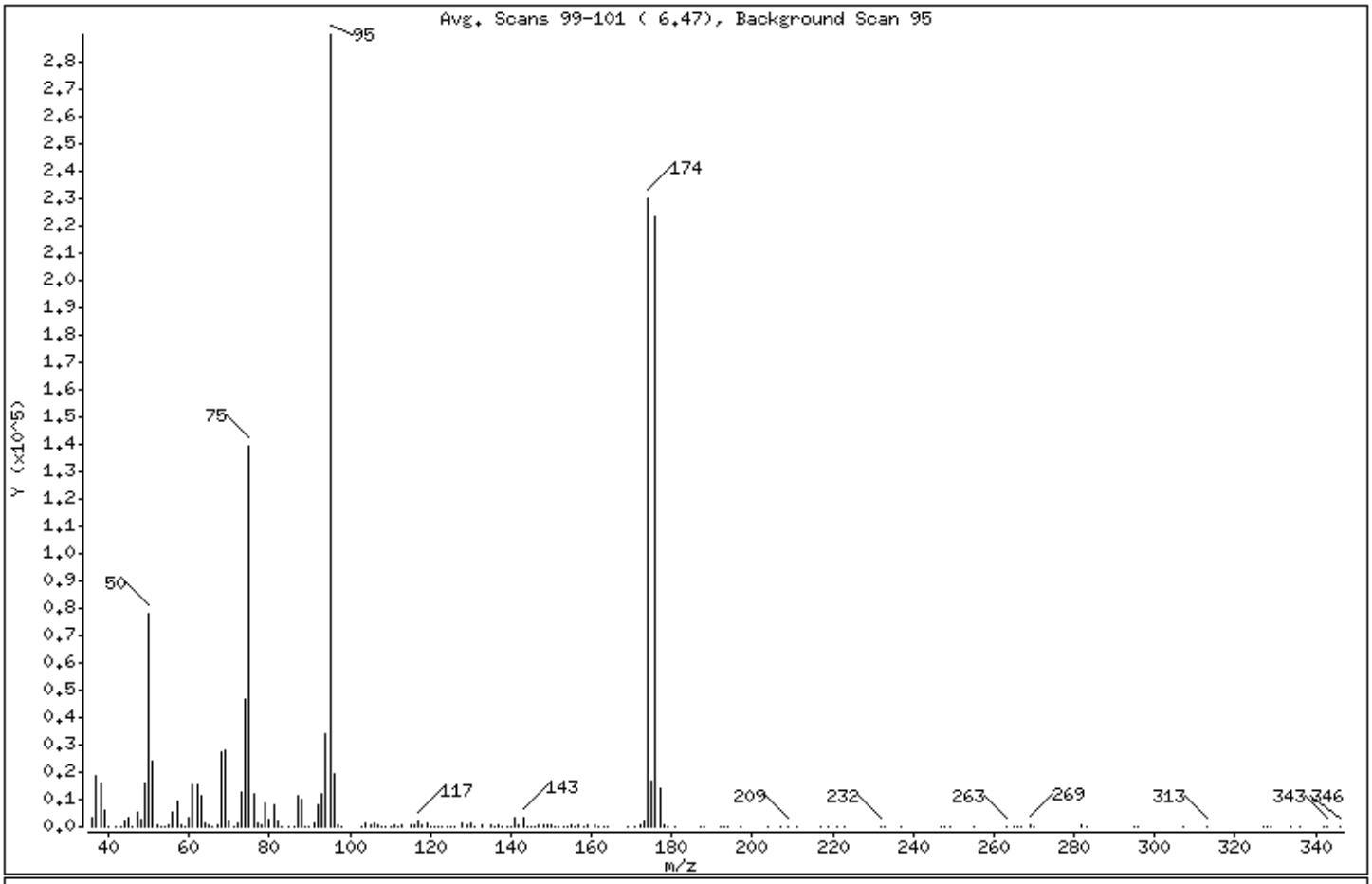
Volume Injected (uL): 1.0

Operator: sw

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	26.79
75	30.00 - 66.00% of mass 95	48.10
96	5.00 - 9.00% of mass 95	6.65
173	Less than 1.99% of mass 174	0.70 (0.88)
174	50.00 - 120.00% of mass 95	79.22
175	4.00 - 9.00% of mass 174	5.76 (7.27)
176	93.00 - 101.00% of mass 174	76.93 (97.11)
177	5.00 - 9.00% of mass 176	4.77 (6.20)

Date : 08-AUG-2017 08:30

Client ID: BFB Instrument: msdv.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: sw

Column phase: Column diameter: 2.00

Data File: v080801.d
Spectrum: Avg. Scans 99-101 (6.47), Background Scan 95
Location of Maximum: 95.00
Number of points: 170

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	3362	80.00	2507	130.00	1266	187.00	59
37.00	18664	81.00	8271	131.00	297	188.00	50
38.00	15979	82.00	1854	133.00	886	192.00	22
39.00	6294	83.00	263	135.00	476	193.00	191
40.00	112	85.00	218	136.00	92	194.00	141
42.00	110	86.00	217	137.00	501	197.00	155
43.00	101	87.00	11079	138.00	124	204.00	68
44.00	1865	88.00	10082	139.00	136	207.00	2
45.00	3307	89.00	283	140.00	267	209.00	291
46.00	295	90.00	52	141.00	3130	211.00	165
47.00	5583	91.00	1270	142.00	417	217.00	110
48.00	2434	92.00	7939	143.00	3183	219.00	12
49.00	16221	93.00	11913	144.00	206	221.00	60
50.00	77632	94.00	34152	145.00	258	223.00	162
51.00	24080	95.00	289728	146.00	133	232.00	229
52.00	985	96.00	19264	147.00	854	233.00	13
53.00	30	97.00	550	148.00	714	237.00	118
54.00	51	98.00	70	149.00	397	247.00	45
55.00	891	103.00	58	150.00	381	248.00	58
56.00	5354	104.00	1358	151.00	130	249.00	5
57.00	9619	105.00	511	152.00	176	255.00	13
58.00	467	106.00	1304	153.00	238	263.00	183
59.00	107	107.00	465	154.00	106	265.00	172
60.00	3232	108.00	61	155.00	695	266.00	90
61.00	15244	109.00	144	156.00	125	267.00	147
62.00	15504	110.00	137	157.00	443	269.00	522
63.00	11205	111.00	436	158.00	7	270.00	131
64.00	1128	112.00	253	159.00	425	282.00	361
65.00	469	113.00	336	161.00	358	283.00	170
66.00	51	115.00	450	162.00	2	295.00	63
67.00	785	116.00	800	163.00	216	296.00	77
68.00	27480	117.00	1821	164.00	70	307.00	81
69.00	27920	118.00	980	169.00	50	313.00	178
70.00	2016	119.00	1567	171.00	55	327.00	67
71.00	200	120.00	88	172.00	517	328.00	31

Date : 08-AUG-2017 08:30

Client ID: BFB Instrument: msdv.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: sw

Column phase: Column diameter: 2.00

Data File: v080801.d
Spectrum: Avg. Scans 99-101 (6.47), Background Scan 95
Location of Maximum: 95.00
Number of points: 170

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	1370	121.00	83	173.00	2025	329.00	41
73.00	12328	122.00	58	174.00	229504	334.00	173
74.00	46768	123.00	195	175.00	16688	336.00	36
75.00	139328	124.00	231	176.00	222848	342.00	166
76.00	11841	125.00	93	177.00	13819	343.00	258
77.00	1555	126.00	84	178.00	454	346.00	50
78.00	990	128.00	1154	179.00	50		
79.00	8705	129.00	616	181.00	20		

Shipping/ Receiving Documents

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct: _____ WO #: _____ Sample #s: _____

COC#: 1

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and International laws, regulations and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: Multi-State Environmental Trust, LLC

Project Manager: Brian Wied-CH2M HILL P.O.#

Sampler: Shirley Steinmacher, Katie Rolac PN: 680813.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection	Check all analyses requested: TO-15 TOTAL SCAN	TO-15 SIM BTEXN	ASTM D 1946 Helium					Canister Vacuum/Pressure: Initial	Final	Lab Use Only: Receipt	Final (psig)	Turn Around Time: Normal / Rush (Specify: 72 H TAT FORM 1)	Remarks
01A	OA-004_0817	6L0885	8/2/17-8/3/17	1124-0932		X						29.18	6.60				Outdoors
02A	IAU-004_0817	6L0909	8/2/17-8/3/17	1004-0935		X						28.15	7.39				Upstairs
03A	IAD-004_0817	34342	8/2/17-8/3/17	1112-0920		X						28.76	7.20				Downstairs
	SA-004_0817	IL1843	8/2/17-8/2/17	1043-1055	X						28.41	28.49	5.81				Sump headspace
	SA-104_0817	IL2610	8/2/17-8/2/17	0750-0800	X							26.32	5.62				Sump headspace
06A	IAD-007_0817	6L0077	8/2/17-8/3/17	1200-1124		X						28.77	5.06				Downstairs
04A	IAD-007_0817	6L0941	8/2/17-8/3/17	1204-1124		X						28.60	6.21				Downstairs
05A	IAU-007_0817	6L0635	8/2/17-8/3/17	1207-1131		X						26.81	5.04				Upstairs
07A	OA-007_0817	6L0346	8/2/17-8/3/17	1156-1152		X						28.44	15.37				FC tradow/ Outdoors
	SU-007_0817	IL2961	8/3/17	1232-1242	X		X					28.34	4.75				Subslab

	Date	Time		Date	Time	
Relinquished by:	8/4/17	1830	Received by: FEDEX	8/4/17	1850	Level IV Data Required? Yes / No (Circle One)
Relinquished by:	Date	Time	Received by: GAT	8/05/17	0947	Specific EDD format Required? Yes / No (Circle One)
Relinquished by:	Date	Time	Received by:	Date	Time	708091

Lab Use Only

Shipper Name: Fed Ex

Custody Seals Intact? Yes No (None) Temp: N/A Note: primary TCL VOC BETXN He

Sample Condition Upon Receipt: Good

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct _____ WO # _____ Sample #s: _____

COC#: 2

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and International laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. P.O.™ Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: ~~Multi-State Environmental Trust, LLC~~ (METC)

Project Manager: Brian Wied-CH2M HILL P.O.#

Samples: Shula Steinmacher, Katie Rebec PN: 640813.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection 1232-	TO-15 TOTAL SCAN	TO-15 SIM BTEXN	ASTM D 1946 Helium				Canister Vacuum/Pressure Initial	Canister Vacuum/Pressure Final	Lab Use Only Receipt	Lab Use Only Final (psig)	Turn Around Time: Normal / Rush! Specify: 72 hr TAT FORM 1
	SU-107_0817	1L2394	8/3/17	1234-1242	X		X				28.34	4.34			Remarks: Subslab
	SH-E_0817 *	6L1731	8/2/17-8/3/17	1632-1525	X	6/8/17					29.69	10.56			* SORRY!! Used SIM
	SH-B_0817*	6L1283	8/2/17-8/3/17	1543-1515	X						26.68	6.58			Canisters for
	SH-A_0817*	00001386		1505-1458	X						28.66	2.91			sewer sampling.
	SH-D_0817*	6L1617		1550-1542	X						29.68	6.23			
	SH-G_0817*	00002766		1650-1542	X						28.69	7.20			
	SH-F_0817*	6L0421		1611-1522	X						28.68	7.20			
	SH-C_0817*	3446137 00000980	8/2/17-8/3/17	1522-1508	X						28.62	5.13			SORRY!!
	~~BATCH CONVERSION BLANK 1~~ **		8/4/17			X					5.5				** See note
	~~BATCH CONVERSION BLANK 2~~ **		8/4/17			X					5.5				** See note

	Date	Time		Date	Time	
Relinquished by:	8/4/17	1830	Received by: FED EX	8/4/17	1830	Level IV Data Required? Yes / No (Circle One)
Relinquished by:			Received by: GAT	08/05/17	0747	Specific EDD format Required? Yes / No (Circle One)
Relinquished by:			Received by:			1708091

Lab Use Only

Shipper Name: Fed Ex

Custody Seals Intact? Yes No (None)

Temp: N4

Note: primary TCL VOC BETXN, Hc

Sample Condition Upon Receipt: Good

Eurofins Air Toxics, Inc. 180 Blue Ravine Rd. Suite B Folsom, CA 95630 (916) 985-1000 Fax: (916) 351-8279

** ANALYZE THESE BATCH-CERTIFIED CANISTERS WITH ZERO AIR/AS BLANKS ~~TO DETERMINE IF~~ WE USING TO-15 SIM, PLEASE. THANK YOU.

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 1708091A

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep: N/A

Date Promised: 08/10/17 12:00 pm
Date Completed: 8/10/17
Date Received: 8/5/17
PO#:
Project#: 690813.01.01.01 Former Tronox-Springfield, Mo
Total $: $ 3,100.00
Logged By: AB

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	OA-004_0817	Modified TO-15 SIM	8/3/2017	8.5 "Hg	$180.00
02A	IAD-004_0817	Modified TO-15 SIM	8/3/2017	9.0 "Hg	$180.00
03A	IAU-004_0817	Modified TO-15 SIM	8/3/2017	9.0 "Hg	$180.00
06A	IAD-107_0817	Modified TO-15 SIM	8/3/2017	7.0 "Hg	$180.00
07A	IAD-007_0817	Modified TO-15 SIM	8/3/2017	8.0 "Hg	$180.00
08A	IAU-007_0817	Modified TO-15 SIM	8/3/2017	7.0 "Hg	$180.00
09A	OA-007_0817	Modified TO-15 SIM	8/3/2017	17.0 "Hg	$180.00
10A	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00
11A	CCV	Modified TO-15 SIM	NA	NA	$0.00
12A	LCS	Modified TO-15 SIM	NA	NA	$0.00
12AA	LCSD	Modified TO-15 SIM	NA	NA	$0.00

Misc. Charges	1 Liter Summa Canister (20) @ $15.00 each., Shipment 114263	$300.00
	6 Liter Summa Canister (3) @ $30.00 each., Shipment 114263	$90.00
	6 Liter Summa Canister (SIM Certified) (11) @ $60.00 each., Shipment 11	$660.00
	EATL Flow controller (20) @ $15.00 each., Shipment 114263	$300.00
	Flow Controller-24 hr (1) @ $30.00 each., Shipment 114263	$30.00
	Flow Controller-24 hr (SIM Certified) (13) @ $30.00 each., Shipment 114	$390.00
	Client Specific EDD (7) @ $5.00 each.	$35.00
	eCVP (7) @ $5.00 each.	$35.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox Facility/22104

BILL TO: Accounts Payable/Atlanta
CH2M Hill
6600 Peachtree Dunwoody Road
Building 400, Suite 600
Atlanta, GA 30328

Analysis Code: pptv

TERMS:

Reporting Method: Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

Sample Discrepancy Report

Identification

Initiated By: JV **Project ID:**22104 **PM**: BSW **Date:** 8/7/2017 **Discrepancy Type:** ☐ **1.** ☒ **2.** ☐ **3.**

Workorder(s) affected:1708091A **Sample(s) affected:** 09a

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube) was received broken, however sample was intact.

1.2. ☐ No brass cap on canister.

1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.

1.4. ☐ Sampling year not documented on COC but noted on sample tag.

1.5. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C but less than 6°C.

Notify Lab for further determination:

1.6. ☐ Tedlar bag received with minimal volume.

Narration Required in Lab Narrative and Sample Confirmation:

1.7. ☐ COC was not filled out in ink.

1.8. ☐ COC improperly relinquished / received.
☐ Signature missing ☐ date missing ☐ time missing.

1.9. ☐ Sample ID on tags do not match the COC.

1.10. ☐ Can numbers do not match the COC.

1.11. ☐ Sampling date discrepancy.

1.12. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).

1.13. ☐ ID-none on the sample Tag/Blank.

1.14. ☐ Other (describe below).

Initials: _____ Date: _____

Describe the Discrepancy: _____

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.

2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.

2.3. ☐ Incorrect sampling media / container for analysis requested.

2.4. ☐ Number of samples on the COC does not match the number of samples that were received.

2.5. ☐ Samples were received expired.

2.6. ☐ Sampling date is not documented for ☐ *some* / ☐ *any* samples (check one).

2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.

2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.

2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.

2.10. ☐ Sorbent samples -sampling volume was not provided.

2.11. ☐ Flow controller used – canister samples received at ambient or under pressure.

2.12. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
- ☐ Canister valve was open.
- ☐ Brass nut was loose/not present.
- ☐ Sample can be analyzed.
- ☐ Sample cannot be analyzed.

2.13. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. and the final recorded vac. on the COC.
- ☐ Canister passed leak check in lab <2psi, no evidence sample was compromised.
- ☐ Canister failed lab leak check, canister found to be leaking. Canister sample compromised.

2.14. ☒ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).

2.15. ☐ Canister Trip Blank received at low vacuum (<25"Hg).

2.16. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).

2.17. ☐ Other (describe below).

Initials: jv **Date:** 8/7/2017 **Notify Receiving:** ☐ **Notify PM:** ☒

Describe the Discrepancy: 2.14:09a

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ Sample loss due to instrument malfunction / broken glassware.

3.6. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.7. ☐ Reporting Limit was raised.

3.8. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.9. ☐ Sample Trip Blank has a reportable level(s) of target compound(s) present. Re-analysis confirmed the initial result.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

_____

_____

How Does this Affect Client: _____

_____

_____

Project Manager Use Only

Project Manager Notification ☒ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☒ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials: BSW Date: 8/7/2017

☐ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials: _____ Person notified: _____ Date: _____

☐ Waiting for Client Reply

Comments: **Narrate and proceed with analysis. Lab measurements are consistent with those noted on the COC.**

☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐

☐ **Additional notifications attached.**

Additional Comments:

_____

Other Records

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} - [\text{Init. Pressure (“Hg)})*(14.7\text{psi}/30\text{”Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
0.0	1.34	2.02
0.2	1.35	2.03
0.4	1.36	2.05
0.5	1.36	2.05
0.6	1.37	2.06
0.8	1.38	2.08
1.0	1.39	2.09
1.2	1.40	2.10
1.4	1.40	2.12
1.5	1.41	2.13
1.6	1.42	2.13
1.8	1.42	2.15
2.0	1.44	2.16
2.2	1.45	2.18
2.4	1.46	2.20
2.5	1.46	2.20
2.6	1.47	2.21
2.8	1.48	2.23
3.0	1.49	2.24
3.2	1.50	2.26
3.4	1.51	2.28
3.5	1.52	2.29
3.6	1.52	2.30
3.8	1.53	2.31
4.0	1.55	2.33
4.2	1.56	2.35
4.4	1.57	2.37
4.5	1.58	2.38
4.6	1.58	2.39
4.8	1.60	2.40
5.0	1.61	2.42
5.2	1.62	2.44
5.4	1.63	2.46
5.5	1.64	2.47
5.6	1.65	2.48
5.8	1.66	2.50
6.0	1.68	2.52
6.2	1.69	2.55
6.4	1.70	2.57
6.5	1.71	2.58
6.6	1.72	2.59
6.8	1.73	2.61
7.0	1.75	2.64
7.2	1.76	2.66
7.4	1.78	2.68
7.5	1.79	2.69
7.6	1.79	2.70

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
7.7	1.80	2.72
7.8	1.81	2.73
8.0	1.83	2.76
8.2	1.84	2.78
8.4	1.86	2.81
8.5	1.87	2.82
8.6	1.88	2.83
8.8	1.90	2.86
9.0	1.91	2.89
9.2	1.93	2.91
9.4	1.95	2.94
9.5	1.96	2.96
9.6	1.97	2.97
9.8	1.99	3.00
10.0	2.01	3.03
10.2	2.03	3.06
10.4	2.05	3.09
10.5	2.06	3.11
10.6	2.07	3.12
10.8	2.09	3.16
11.0	2.12	3.19
11.2	2.14	3.22
11.4	2.16	3.26
11.5	2.17	3.28
11.6	2.18	3.29
11.8	2.21	3.33
12.0	2.23	3.37
12.2	2.26	3.40
12.4	2.28	3.44
12.5	2.30	3.46
12.6	2.31	3.48
12.8	2.34	3.52
13.0	2.36	3.56
13.2	2.39	3.61
13.4	2.42	3.65
13.5	2.44	3.67
13.6	2.45	3.70
13.8	2.48	3.74
14.0	2.51	3.79
14.2	2.54	3.84
14.4	2.58	3.88
14.5	2.59	3.91
14.6	2.61	3.94
14.8	2.64	3.99
15.0	2.68	4.04
15.2	2.72	4.10
15.4	2.75	4.15

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
15.5	2.77	4.18
15.6	2.79	4.21
15.8	2.83	4.27
16.0	2.87	4.33
16.2	2.91	4.39
16.4	2.96	4.46
16.5	2.98	4.49
16.6	3.00	4.52
16.8	3.05	4.59
17.0	3.09	4.66
17.2	3.14	4.74
17.4	3.19	4.81
17.5	3.22	4.85
17.6	3.24	4.89
17.8	3.30	4.97
18.0	3.35	5.05
18.2	3.41	5.14
18.4	3.47	5.22
18.5	3.50	5.27
18.6	3.53	5.32
18.8	3.59	5.41
19.0	3.65	5.51
19.2	3.72	5.61
19.4	3.79	5.72
19.5	3.83	5.77
19.6	3.87	5.83
19.8	3.94	5.94
20.0	4.02	6.06
20.2	4.10	6.18
20.4	4.19	6.31
20.5	4.23	6.38
20.6	4.28	6.45
20.8	4.37	6.59
21.0	4.47	6.73
21.2	4.57	6.89
21.4	4.67	7.05
21.5	4.73	7.13
21.6	4.79	7.22
21.8	4.90	7.39
22.0	5.03	7.58
22.4	5.29	7.98

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
22.5	5.36	8.08
22.6	5.43	8.19
22.8	5.58	8.42
23.0	5.74	8.66
23.2	5.91	8.91
23.4	6.09	9.18
23.5	6.19	9.32
23.6	6.28	9.47
23.8	6.48	9.78
24.0	6.70	10.10
24.2	6.93	10.45
24.4	7.18	10.82
24.5	7.31	11.02
24.6	7.45	11.22
24.8	7.73	11.66
25.0	8.04	12.12
25.2	8.38	12.63
25.4	8.74	13.18
25.5	8.93	13.47
25.6	9.14	13.78
25.8	9.57	14.43
26.0	10.05	15.15
26.2	10.58	15.95
26.4	11.17	16.84
26.5	11.49	17.32
26.6	11.82	17.83
26.8	12.56	18.94
27.0	13.40	20.20
27.2	14.36	21.65
27.4	15.46	23.31
27.5	16.08	24.24
27.6	16.75	25.26
27.8	18.27	27.55
28.0	20.10	30.31
28.2	22.34	33.67
28.4	25.13	37.88
28.5	26.80	40.41
28.6	28.72	43.29
28.8	33.50	50.51
29.0	40.20	60.61

Compound Listing

Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

CAS Number	Compound	Detection Limit ppbv	Type
71-43-2	Benzene	0.050	
108-88-3	Toluene	0.020	
100-41-4	Ethyl Benzene	0.020	
9999-9999-015	Total Xylenes	0.060	
91-20-3	Naphthalene	0.050	
17060-07-0	1,2-Dichloroethane-d4		
2037-26-5	Toluene-d8		
460-00-4	4-Bromofluorobenzene		
108-38-3	m,p-Xylene	0.040	
95-47-6	o-Xylene	0.020	

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Media Certification Report

Canister Number: 6L# 0428 w/Batch
Can#: 114263-0428
Date : 07/20/17 17:34
Data File: d072013.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		102.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	97.00	% Recovery
Toluene-d8	2037-26-5	0.250	100.00	% Recovery

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Media Certification Report

Canister Number: 6L# 1732
Can#: 114263-1732
Date : 07/21/17 1:34
Data File: d072026.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		107.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	98.00	% Recovery
Toluene-d8	2037-26-5	0.250	100.00	% Recovery

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Media Certification Report

Canister Number: 6L# 0262
Can#: 114263-0262
Date : 07/20/17 13:53
Data File: d072007.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		99.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	96.00	% Recovery
Toluene-d8	2037-26-5	0.250	101.00	% Recovery

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Media Certification Report

Canister Number: 6L# 0912
Can#: 114263-0912
Date : 07/21/17 14:46
Data File: o072108.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		102.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	112.00	% Recovery
Toluene-d8	2037-26-5	0.250	99.00	% Recovery

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Media Certification Report

Canister Number: 6L# 2845
Can#: 114263-2845
Date : 07/20/17 14:30
Data File: d072008.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		98.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	95.00	% Recovery
Toluene-d8	2037-26-5	0.250	100.00	% Recovery

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Media Certification Report

Canister Number: 6L# 6L1283
Can#: 114263-6L1283
Date : 07/21/17 0:57
Data File: d072025.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		100.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	96.00	% Recovery
Toluene-d8	2037-26-5	0.250	99.00	% Recovery

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Media Certification Report

Canister Number: 6L# 5785
Can#: 114263-5785
Date : 07/21/17 17:24
Data File: o072113.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		109.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	100.00	% Recovery
Toluene-d8	2037-26-5	0.250	98.00	% Recovery

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Media Certification Report

Canister Number: 6L# 2547
Can#: 114263-2547
Date : 07/22/17 8:12
Data File: o072141.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		106.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	101.00	% Recovery
Toluene-d8	2037-26-5	0.250	96.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L# 32119
Can#: 114263-32119
Date : 07/21/17 23:10
Data File: o072124.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		98.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	102.00	% Recovery
Toluene-d8	2037-26-5	0.250	97.00	% Recovery

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Media Certification Report

Canister Number: 6L# 0587
Can#: 114263-0587
Date : 07/22/17 5:35
Data File: o072136.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		94.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	107.00	% Recovery
Toluene-d8	2037-26-5	0.250	97.00	% Recovery

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Media Certification Report

Canister Number: 6L# 34463
Can#: 114263-34463
Date : 07/22/17 6:37
Data File: o072138.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		110.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	101.00	% Recovery
Toluene-d8	2037-26-5	0.250	97.00	% Recovery

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 05/24/17
Workorder # 1708091A	Form F1.27	Revision #14	Revision Date: 05/24/17	Page 1 of 2

S1	S2	S3	S4	D	*Section 1* – Spec Out				
					Initials/Instrument/Date	**S1:** 8/8/17	**S2:**	**S3:**	**S4:**
✓				■	Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
✓				■	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
NA				■	Manual Integrations included and approved				
✓				✓	Chain of Custody verified for special comments (add comments below)				
✓				■	Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				

Profile, analyses, reporting, special notes and unusual circumstances:

8 LRQC, 1 Hg MDL, total xylenes use "2" multiplier for QC and samples - ES 8/9/17

A1	A2	A3	A4	D	*Section 2* – Sample Analysis				
					Initials/Date	**A1:** GHS 8/9/17	**A2:**	**A3:**	**A4:**
✓				✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, Canister #s Verified and dilution ranges are met per SOP (ex. Over-ranged/overdiluted)				
NA				NA	**a)** Tedlar Bag IDs verified against COC **b)** Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
				NA	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓				■	12/24 Hr clock time & Hold Time met for all samples				
NA				✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
✓				✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: 01A - 03A, 06A - 09A rerun'd 06A re-FD ok

D1	D2	D3	D4	T	3T	*Section 3* – Target Data Reduction	**Technical Review Needed? Circle one: Yes / No**	**T:**		
						Initials/Instrument/ Date	**D1:** AG 8/10/17	**D2:**	**D3:**	**D4:**
NA					■	CAR # *(if applicable)*				
✓					■	Spectra Verified *(documentation of spectral defense included if applicable)*				
NA					■	TICs resemble reference spectra/ TICs between sample dups. are consistent *(if applicable)*				
✓						Lab Narrative is correct				
NA					■	TPH/NMOC calculations complete and included in folder				

Special notes:

A	3T	*Section 4*- Atlas Data Entry	**Lumen verified and included in folder**	**Circle one:** Yes / No
		Initials/Date: AG 8/10/17	**3rd Tier:** *(needed only for DOD or per client request)*	
✓		Sample Discrepancy Report (SDR) complete and approved *(if applicable)*		
✓		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review * 3rd Tier Report Review is for DoD & Client Specific projects only (Initials/Date)	QA Review (Initials/Date)

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review * 3rd Tier Report Review is for DoD & Client Specific projects only (Initials/Date)	QA Review (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable

Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

TO-15

INVENTORY SHEET

Work Order #: 1708091B

	Page Nos.	
	From	To
1. Work Order Cover Page & Laboratory Narrative	1	5
a. Lumen Validation Report	--	--
2. Sample Results and Raw Data (Organized by Sample)	6	292
a. ATL Sample Results Form		
b. Target Compound Raw Data		
-Internal Standard Area and Retention Time Summary		
-Surrogate Recovery Summary (If Applicable)		
-Chromatogram(s) and Ion Profiles (If Applicable)		
3. QC Results and Raw Data		
a. Method Blank (Results+ Raw Data)	293	311
b. Surrogate Recover Summary Form (If Applicable)	312	312
c. Internal Standard Summary Form (If Applicable)	313	314
d. Duplicate Results Summary Sheet	315	316
e. Matrix Spike/Matrix Spike Duplicate (Results + Raw Data	--	--
f. Initial Calibration Data (Summary Sheet + Raw Data)	317	471
g. MDL Study (If Applicable)	472	497
h. Continuing Calibration Verification Data (Summary Sheet	498	527
i. Second Source LCS(Summary + Raw Data)	528	587
i. Extraction Logs	--	--
k. Instrument Run Logs/Software Verification	588	589
l. GC/MS Tune (Results + Raw Data)	590	605
4. Shipping/Receiving Documents		
a. Login Receipt Summary Sheet	606	607
b. Chain-of-Custody Records	608	609
c. Sample Log-In Sheet	610	611
d. Misc Shipping/Receiving Records (list of individual records)		
Sample Receipt Discrepancy Report	--	--
5. Other Records (describe or list)		
a. Manual Spectral Defense	--	--
b. Manual Integrations	--	--
c. Manual Calculations	--	--
d. Canister Dilution Factors	612	614
e. Laboratory Corrective Action Request	--	--
f. CAS Number Reference	615	615
g. Variance Table	--	--
h. Canister Certification	--	--
i. Data Review Check Sheet	616	617

Comments:

Completed by:

Amanda Whittaker	Amanda Whittaker / Document Control	8/11/17
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1708091B

Work Order Summary

CLIENT:	Mr. Mark Stinnett CH2M Hill 3011 SW Williston Road Gainesville, FL 32608	**BILL TO:**	Accounts Payable/Atlanta CH2M Hill 6600 Peachtree Dunwoody Road Building 400, Suite 600 Atlanta, GA 30328
PHONE:	352-335-7991	**P.O. #**	
FAX:	352-3352959	**PROJECT #**	690813.01.01.01 Former Tronox-Springfield, Mo
DATE RECEIVED:	08/05/2017	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	08/10/2017		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
04A	SA-004_0817	TO-15	7.0 "Hg	15 psi
05A	SA-104_0817	TO-15	6.5 "Hg	15 psi
10A	SU-007_0817	TO-15	6.0 "Hg	15 psi
11A	SU-107_0817	TO-15	6.0 "Hg	15 psi
12A	SH-E_0817	TO-15	11.5 "Hg	5 psi
13A	SH-B_0817	TO-15	8.0 "Hg	5 psi
14A	SH-A_0817	TO-15	3.5 "Hg	5 psi
15A	SH-D_0817	TO-15	7.5 "Hg	5 psi
16A	SH-G_0817	TO-15	8.5 "Hg	5 psi
17A	SH-F_0817	TO-15	8.5 "Hg	5 psi
18A	SH-C_0817	TO-15	6.5 "Hg	5 psi
19A	Lab Blank	TO-15	NA	NA
19B	Lab Blank	TO-15	NA	NA
20A	CCV	TO-15	NA	NA
20B	CCV	TO-15	NA	NA
21A	LCS	TO-15	NA	NA
21AA	LCSD	TO-15	NA	NA
21B	LCS	TO-15	NA	NA
21BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 08/10/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

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LABORATORY NARRATIVE
EPA Method TO-15
CH2M Hill
Workorder# 1708091B

Four 1 Liter Summa Canister and seven 6 Liter Summa Canister (SIM Certified) samples were received on August 05, 2017. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Specific analytes that are requested by the client to be reported as tentatively identified compounds (TICs) are determined by searching for each compound's characteristic spectra. If no chromatographic peak displaying the compound specific spectra exists, then the TIC is reported as not detected. Please note that the laboratory has not evaluated the stability of any heretofore tentatively identified compound in the vapor phase or for efficiency of recovery through the analytical system.

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified (0.2 ppbv for compounds reported at 0.5 ppbv and 0.8 ppbv for compounds reported at 2.0 ppbv) may be false positives.

Dilution was performed on samples SH-E_0817, SH-D_0817, SH-G_0817, SH-F_0817 and SH-C_0817 due to the presence of high level target species.

Total Xylenes concentration is calculated by summing the individual concentrations of m,p-Xylene and O-Xylene.

A Limit of Detection (LOD) and Method Detection Limit (MDL) study are not maintained for Total Xylenes.

Tentatively identified compound (TIC) Limonene was detected in the laboratory blank analyzed on 08/08/17. Associated samples that contained Limonene were flagged as indicated.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not

performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
SA-004 0817	1708091B-04A	8/ 2/2017	8/ 5/2017	NA	5	8/ 7/2017	NA	Good
SA-104 0817	1708091B-05A	8/ 2/2017	8/ 5/2017	NA	5	8/ 7/2017	NA	Good
SU-007 0817	1708091B-10A	8/ 3/2017	8/ 5/2017	NA	4	8/ 7/2017	NA	Good
SU-107 0817	1708091B-11A	8/ 3/2017	8/ 5/2017	NA	4	8/ 7/2017	NA	Good
SH-E 0817	1708091B-12A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
SH-B 0817	1708091B-13A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
SH-A 0817	1708091B-14A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
SH-D 0817	1708091B-15A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
SH-G 0817	1708091B-16A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
SH-F 0817	1708091B-17A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
SH-C 0817	1708091B-18A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
Lab Blank	1708091B-19A	NA	NA	NA	NA	8/ 7/2017	NA	Good
Lab Blank	1708091B-19B	NA	NA	NA	NA	8/ 8/2017	NA	Good
CCV	1708091B-20A	NA	NA	NA	NA	8/ 7/2017	NA	Good
CCV	1708091B-20B	NA	NA	NA	NA	8/ 8/2017	NA	Good
LCS	1708091B-21A	NA	NA	NA	NA	8/ 7/2017	NA	Good
LCSD	1708091B-21AA	NA	NA	NA	NA	8/ 7/2017	NA	Good
LCS	1708091B-21B	NA	NA	NA	NA	8/ 8/2017	NA	Good
LCSD	1708091B-21BB	NA	NA	NA	NA	8/ 8/2017	NA	Good

Sample Results and Raw Data

EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SA-004_0817		
Lab ID:	1708091B-04A	**Date/Time Analyzed:**	8/7/17 10:10 PM
Date/Time Collected:	8/2/17 10:55 AM	**Dilution Factor:**	2.64
Media:		**Instrument/Filename:**	msd3.i / 3080716

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.41	1.7	4.2	Not Detected U
Ethyl Benzene	100-41-4	0.53	2.3	5.7	Not Detected U
m,p-Xylene	108-38-3	0.53	2.3	5.7	Not Detected U
Naphthalene	91-20-3	0.20	1.1	14	Not Detected U
o-Xylene	95-47-6	0.24	2.3	5.7	Not Detected U
Toluene	108-88-3	0.31	2.0	5.0	1.0 J
Total Xylene	1330-20-7	NA	D	11	Not Detected U

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	NA		Not Detected
Limonene	138-86-3	NA		Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	103

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080716.d
Lab Smp Id: 1708091B-04A
Inj Date : 07-AUG-2017 22:10
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml O0487
Misc Info : 7.0 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 2
Dil Factor: 2.64000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.410 (1.000)	130	168955	25.0000		80.00- 120.00		100.00
5.410	5.410 (1.000)	128	129465			46.73- 106.73		76.63
5.410	5.410 (1.000)	49	186221			91.08- 151.08		110.22
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	563575	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	79310			0.00- 44.78		14.07
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	562147	25.0000		80.00- 120.00		100.00
8.755	8.755 (1.000)	82	264040			20.58- 80.58		46.97
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	195756	22.6707	22.671	80.00- 120.00		100.00
5.956	5.956 (1.101)	67	99733			24.54- 84.54		50.95
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	589788	25.7995	25.800	80.00- 120.00		100.00
7.523	7.523 (1.193)	70	60487			0.00- 40.44		10.26

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.523	7.523	(1.193)	100	373710			35.27- 95.27	63.36
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.737	9.737	(1.112)	174	352939	24.0471	24.047	80.00- 120.00	100.00
9.737	9.737	(1.112)	95	365027			84.77- 144.77	103.42
9.737	9.737	(1.112)	176	338262			64.74- 124.74	95.84
147 Toluene						CAS #: 108-88-3		
7.573	7.574	(1.201)	91	2612	0.10605	0.2800	80.00- 120.00	100.00(a)
7.581	7.574	(1.202)	92	1411			27.96- 87.96	54.02

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080716.d
Lab Smp Id: 1708091B-04A
Inj Date : 07-AUG-2017 22:10
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml O0487
Misc Info : 7.0 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 2
Dil Factor: 2.64000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.410	798068	25.000

	CONCENTRATIONS			QUANT			
	RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown					CAS #:			
	1.353	2255681	70.6606495	186.54	0		0	98
Unknown					CAS #:			
	1.772	72336	2.26596966	5.982	0		0	98
Acetone					CAS #: 67-64-1			
	3.381	78307	2.45301330	6.476	83	NIST08.l	214	98
Isopropyl Alcohol					CAS #: 67-63-0			
	3.549	113826	3.56568541	9.413	64	NIST08.l	294	98

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080716.d
Lab Smp Id: 1708091B-04A
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 7.0 Hg->15 psi

Calibration Date: 07-AUG-2017
Calibration Time: 10:44

Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	168955	-6.90
123 1,4-Difluorobenze	637861	382717	893005	563575	-11.65
163 Chlorobenzene-d5	604933	362960	846906	562147	-7.07

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:56

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-04A
Level: LOW Operator: mjs
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 7.0 Hg->15 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.671	90.68	70-130
$ 146 Toluene-d8	25.000	25.800	103.20	70-130
$ 177 4-Bromofluorobenze	25.000	24.047	96.19	70-130

«Z˘

Data File: /chem/msd3.i/07aug17.b/3080716.d

Date : 07-AUG-2017 22:10

Client ID:

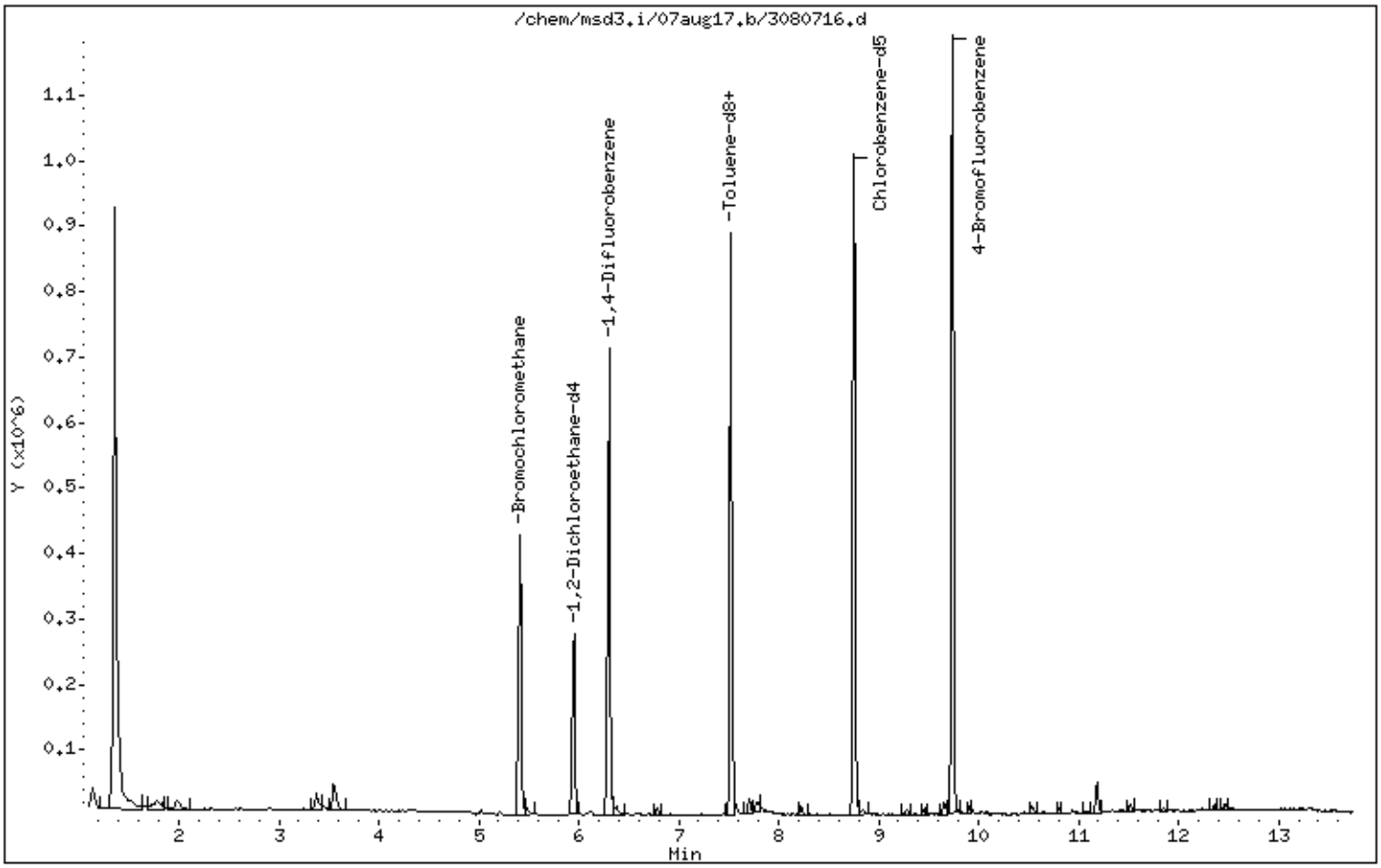
Instrument: msd3.i

Sample Info: 200ml 00487

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/07aug17.b/3080716.d

Date : 07-AUG-2017 22:10

Client ID:

Instrument: msd3.i

Sample Info: 200ml 00487

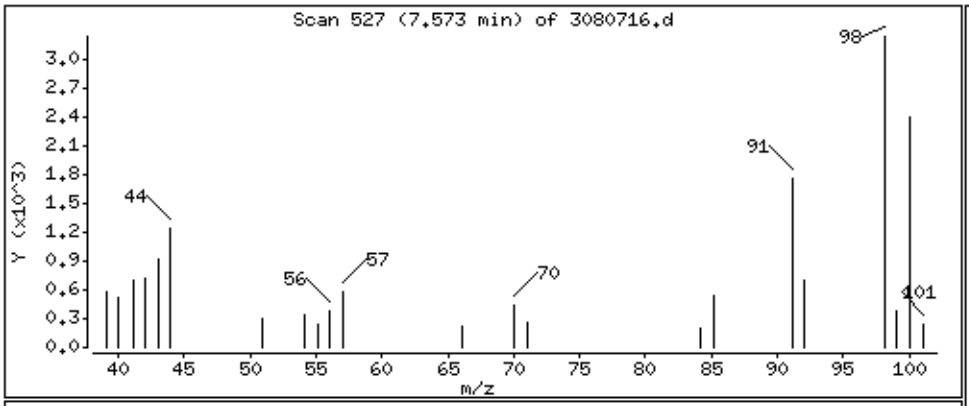
Operator: mjs

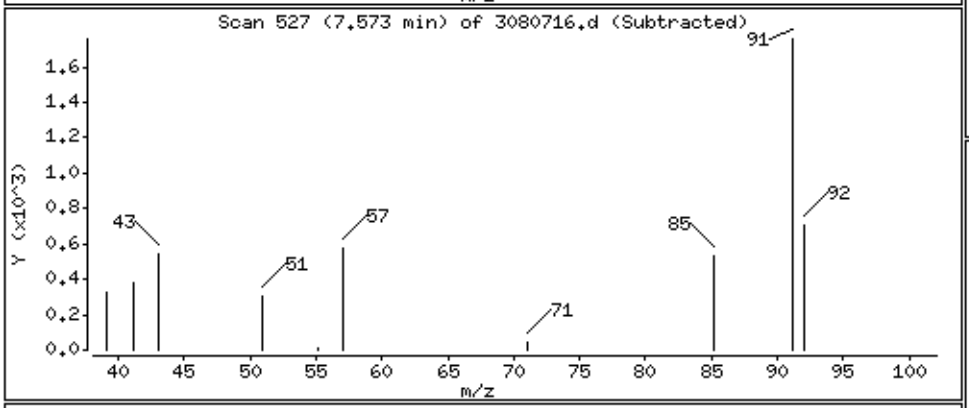
Column phase: RTX-624

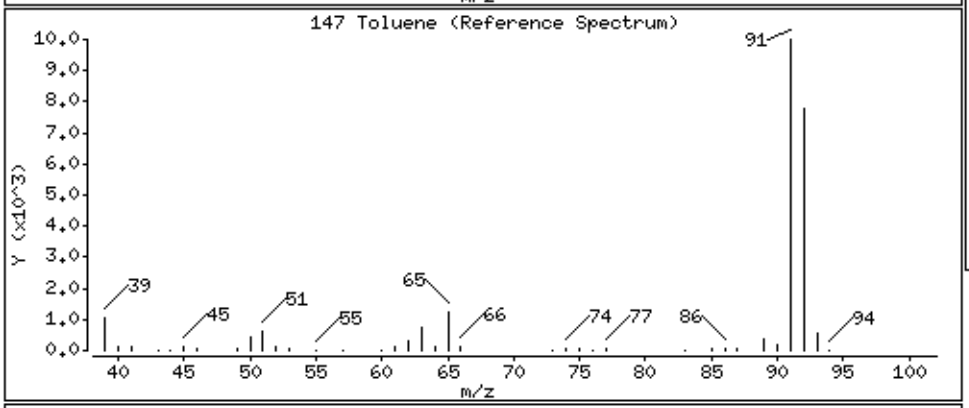
Column diameter: 0.25

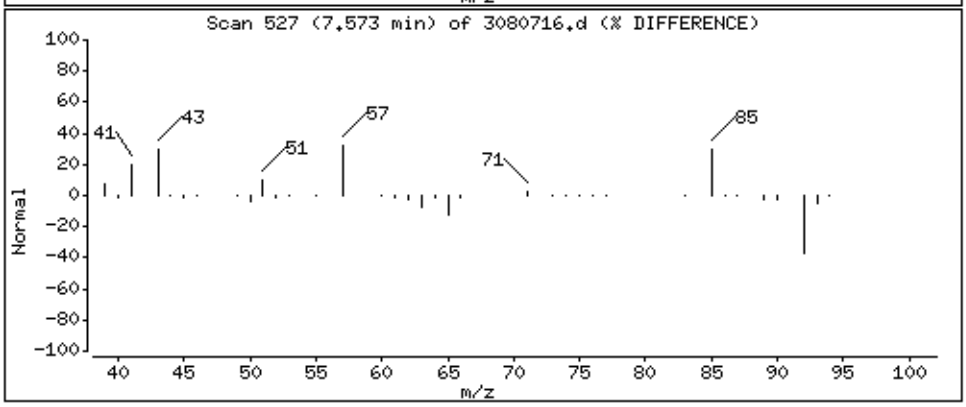
147 Toluene

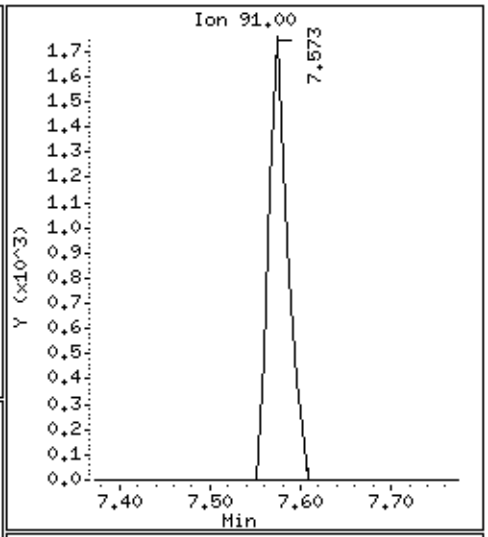
Concentration: 0.2800 PPBV

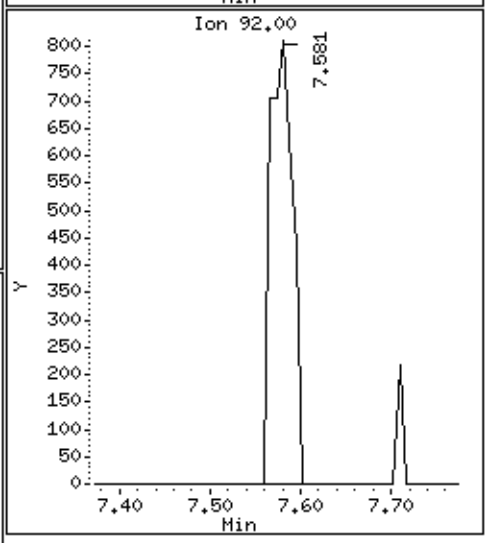












Data File: /chem/msd3.i/07aug17.b/3080716.d

Date : 07-AUG-2017 22:10

Client ID:

Instrument: msd3.i

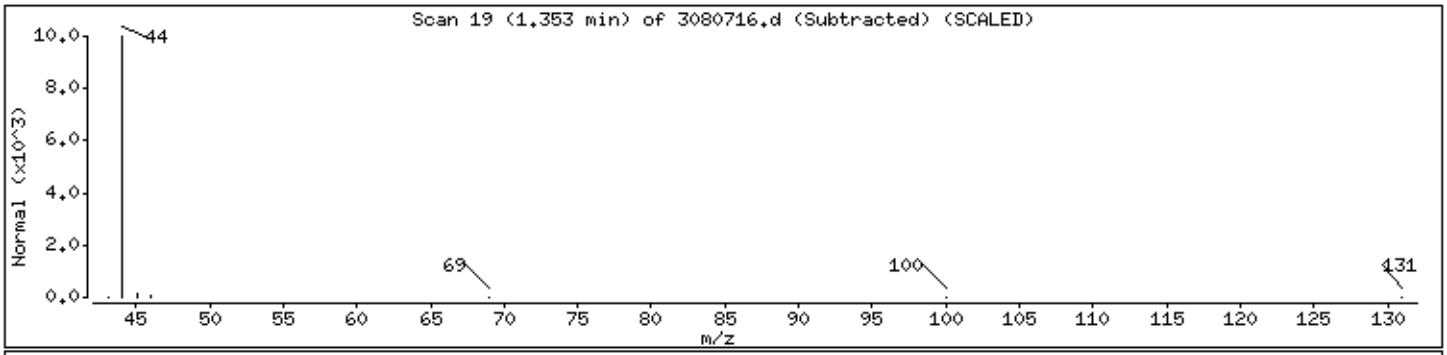
Sample Info: 200ml 00487

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080716.d

Date : 07-AUG-2017 22:10

Client ID:

Instrument: msd3.i

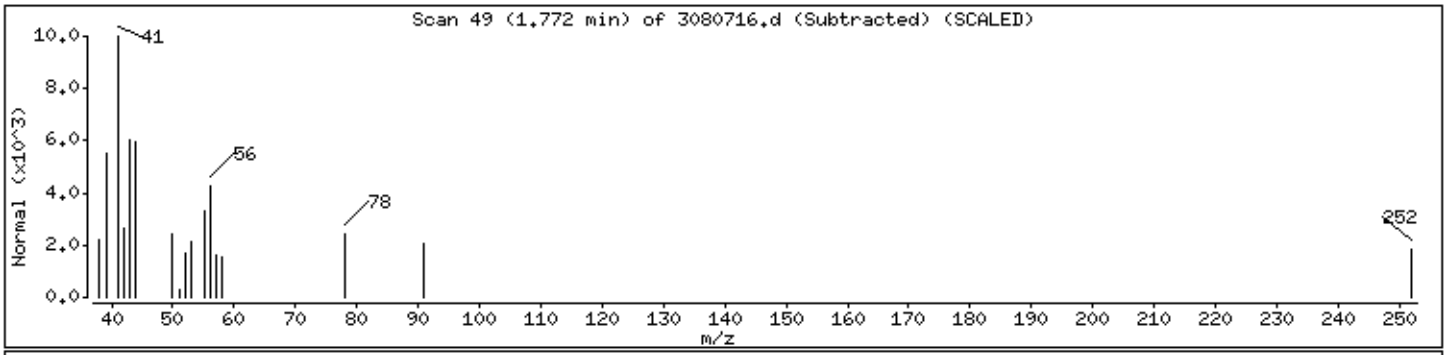
Sample Info: 200ml 00487

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080716.d

Date : 07-AUG-2017 22:10

Client ID:

Instrument: msd3.i

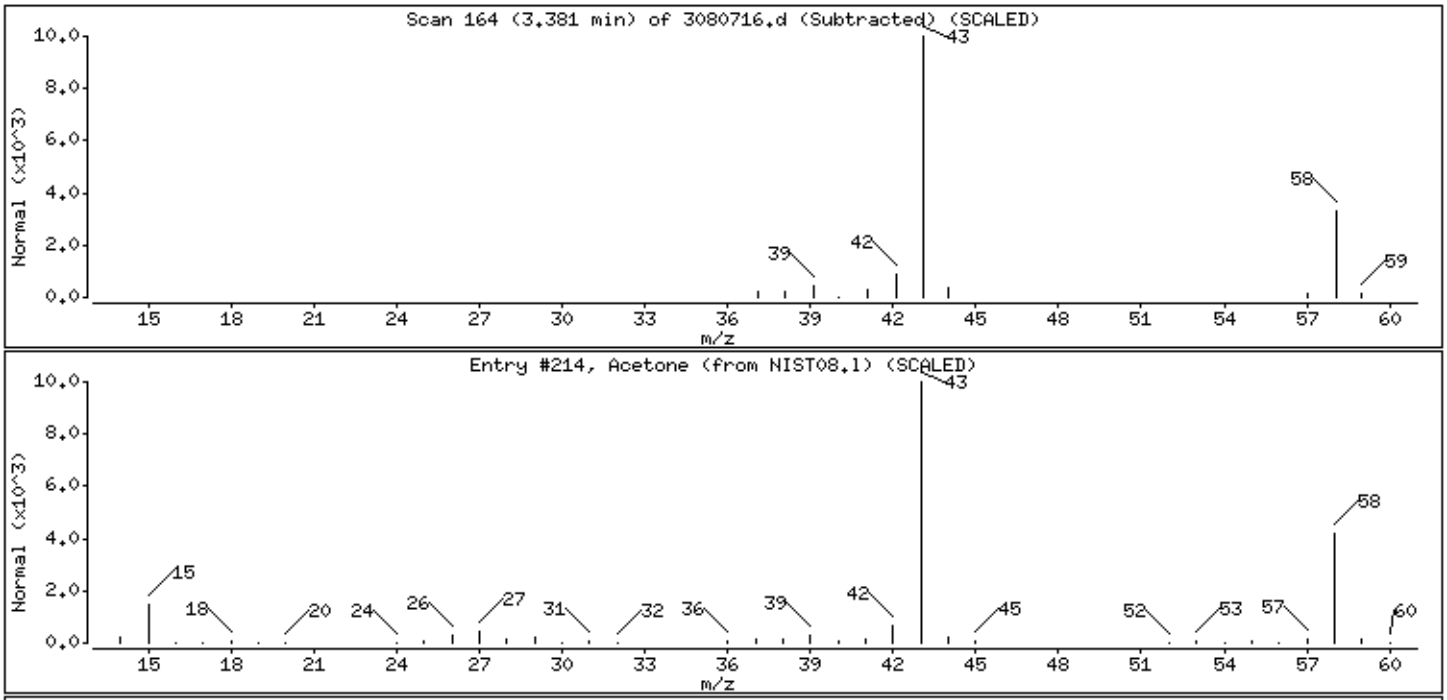
Sample Info: 200ml 00487

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Acetone	67-64-1	NIST08.l	214	83	C3H6O	58



Data File: /chem/msd3.i/07aug17.b/3080716.d

Date : 07-AUG-2017 22:10

Client ID:

Instrument: msd3.i

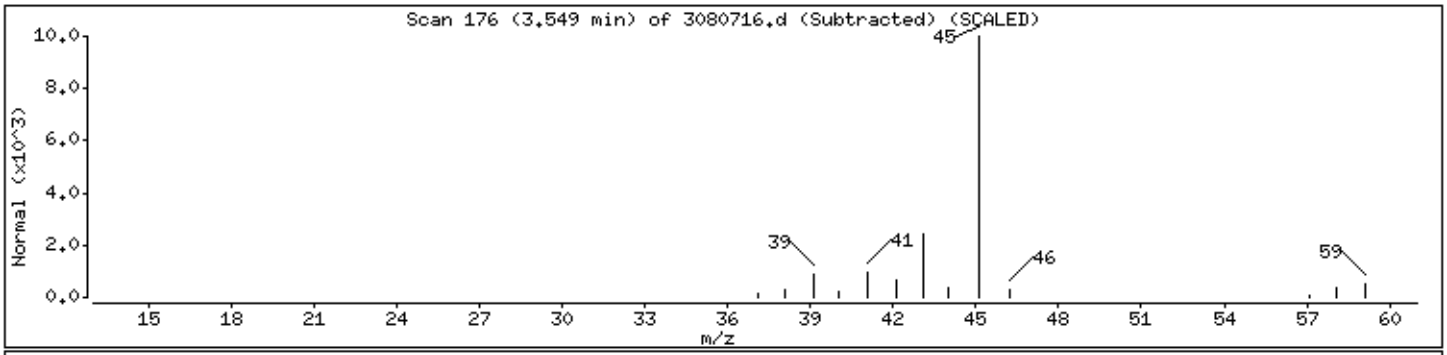
Sample Info: 200ml 00487

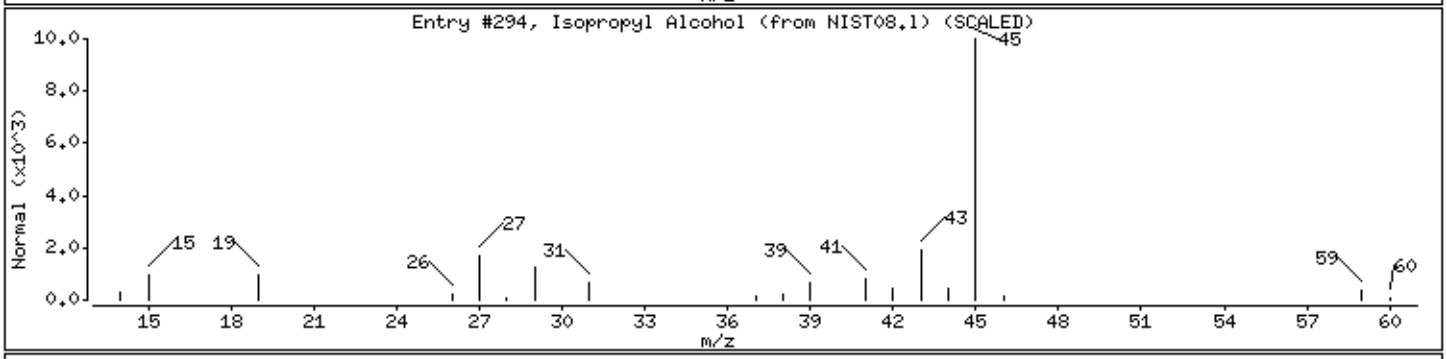
Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isopropyl Alcohol	67-63-0	NIST08.l	294	64	C3H8O	60





EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SA-104_0817		
Lab ID:	1708091B-05A	**Date/Time Analyzed:**	8/7/17 10:36 PM
Date/Time Collected:	8/2/17 08:00 AM	**Dilution Factor:**	2.58
Media:		**Instrument/Filename:**	msd3.i / 3080717

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.40	1.6	4.1	Not Detected U
Ethyl Benzene	100-41-4	0.52	2.2	5.6	Not Detected U
m,p-Xylene	108-38-3	0.52	2.2	5.6	Not Detected U
Naphthalene	91-20-3	0.19	1.1	14	Not Detected U
o-Xylene	95-47-6	0.23	2.2	5.6	Not Detected U
Toluene	108-88-3	0.30	1.9	4.9	0.89 J
Total Xylene	1330-20-7	NA	D	11	Not Detected U

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	NA		Not Detected
Limonene	138-86-3	NA		Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	102

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080717.d
Lab Smp Id: 1708091B-05A
Inj Date : 07-AUG-2017 22:36
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml N1984
Misc Info : 6.5 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 3
Dil Factor: 2.58000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.424	5.410 (1.000)	130	167029	25.0000			80.00- 120.00	100.00
5.424	5.410 (1.000)	128	131262				46.73- 106.73	78.59
5.410	5.410 (1.000)	49	187853				91.08- 151.08	112.47
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	569516	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	78269				0.00- 44.78	13.74
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	552464	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	264057				20.58- 80.58	47.80
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	189033	22.1446	22.144		80.00- 120.00	100.00
5.956	5.956 (1.098)	67	98042				24.54- 84.54	51.87
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	586734	25.3982	25.398		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	60742				0.00- 40.44	10.35

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.523	7.523	(1.193)	100	372813			35.27- 95.27	63.54
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.737	9.737	(1.112)	174	355486	24.6452	24.645	80.00- 120.00	100.00
9.737	9.737	(1.112)	95	367460			84.77- 144.77	103.37
9.737	9.737	(1.112)	176	343785			64.74- 124.74	96.71
147 Toluene						CAS #: 108-88-3		
7.574	7.574	(1.201)	91	2269	0.09119	0.2352	80.00- 120.00	100.00(a)
7.581	7.574	(1.202)	92	1104			27.96- 87.96	48.65

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080717.d
Lab Smp Id: 1708091B-05A
Inj Date : 07-AUG-2017 22:36
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml N1984
Misc Info : 6.5 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 3
Dil Factor: 2.58000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.424	799620	25.000

	CONCENTRATIONS			QUANT			
	RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown					CAS #:			
	1.353	2199778	68.7756942	177.44	0		0	98
Acetone					CAS #: 67-64-1			
	3.382	110227	3.44623481	8.891	72	NIST08.l	213	98
Unknown					CAS #:			
	3.549	240308	7.51317785	19.384	0		0	98
Unknown					CAS #:			
	5.494	71292	2.22893907	5.751	0		0	98

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080717.d
Lab Smp Id: 1708091B-05A
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 6.5 Hg->15 psi

Calibration Date: 07-AUG-2017
Calibration Time: 10:44
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	167029	-7.96
123 1,4-Difluorobenze	637861	382717	893005	569516	-10.71
163 Chlorobenzene-d5	604933	362960	846906	552464	-8.67

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:53

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-05A
Level: LOW Operator: mjs
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 6.5 Hg->15 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.144	88.58	70-130
$ 146 Toluene-d8	25.000	25.398	101.59	70-130
$ 177 4-Bromofluorobenze	25.000	24.645	98.58	70-130

Data File: /chem/msd3.i/07aug17.b/3080717.d

Date : 07-AUG-2017 22:36

Client ID:

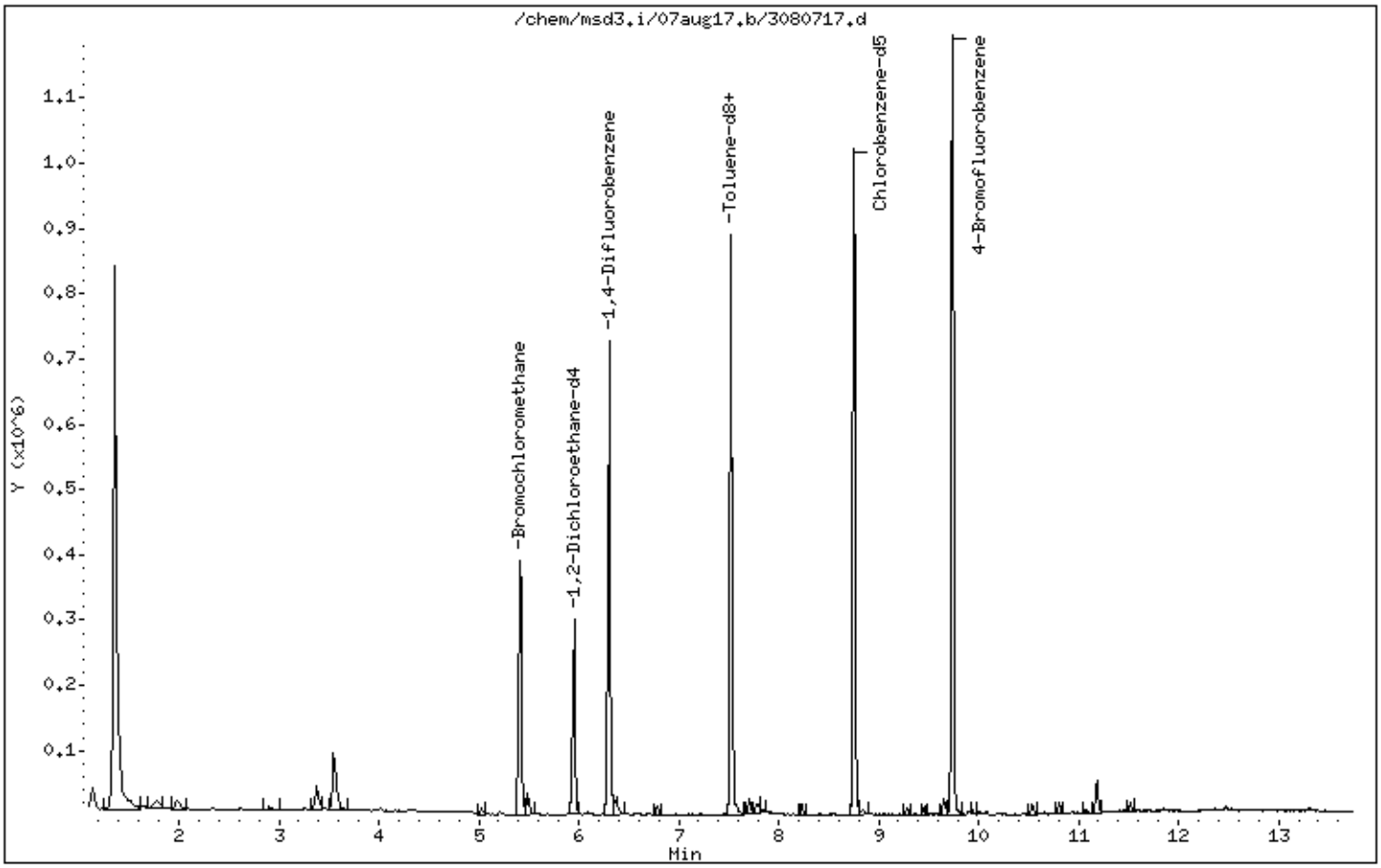
Instrument: msd3.i

Sample Info: 200ml N1984

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/07aug17.b/3080717.d

Date : 07-AUG-2017 22:36

Client ID:

Instrument: msd3.i

Sample Info: 200ml N1984

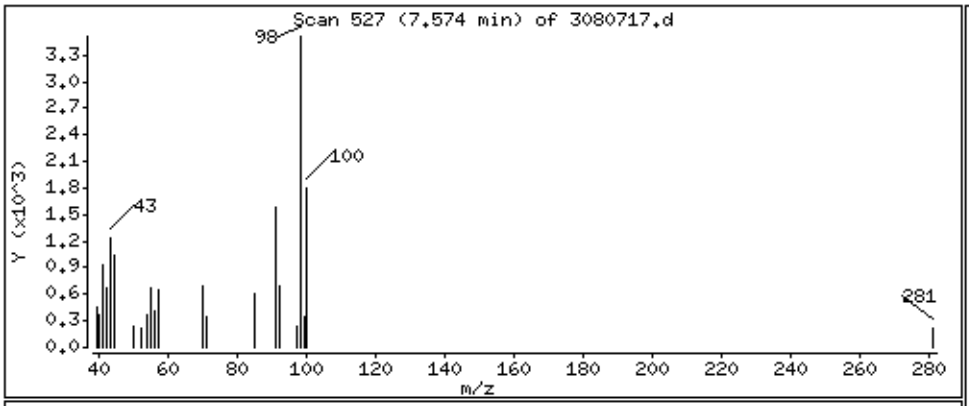
Operator: mjs

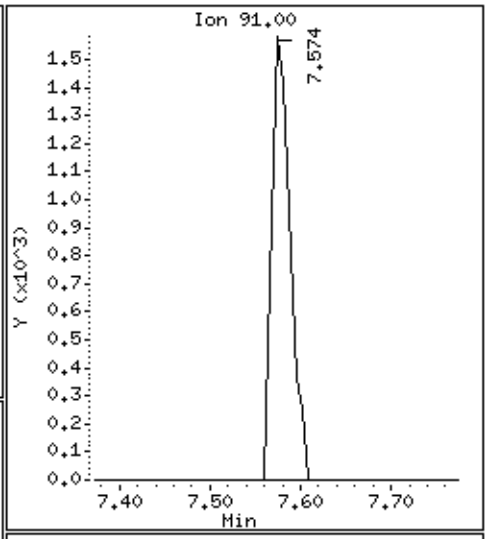
Column phase: RTX-624

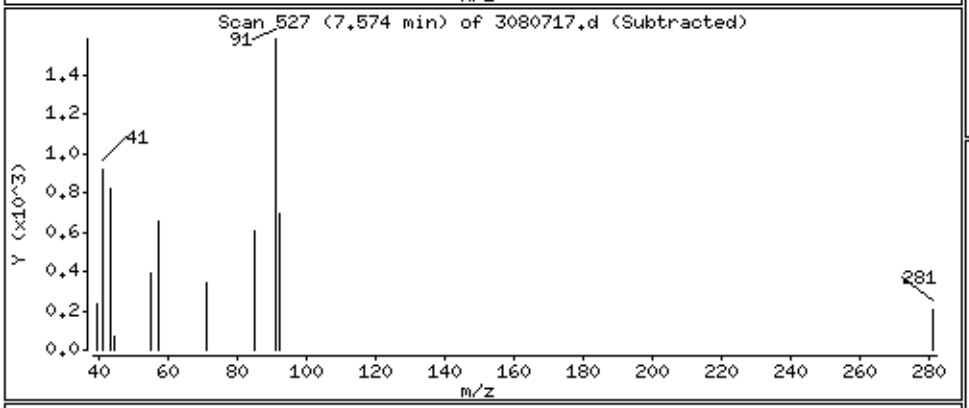
Column diameter: 0.25

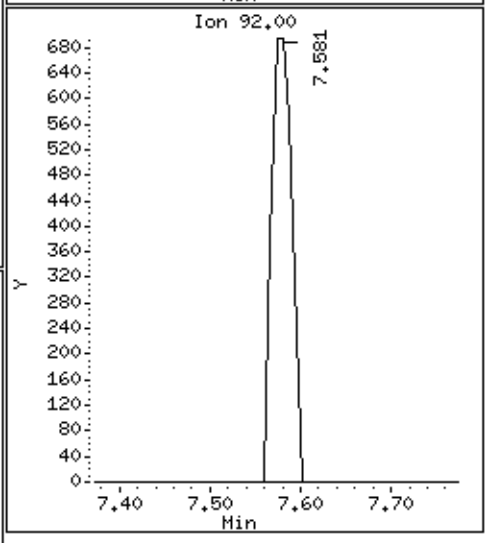
147 Toluene

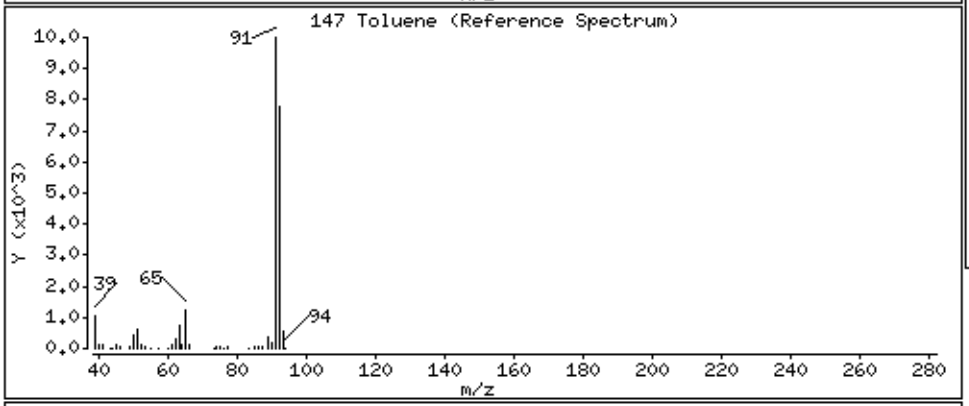
Concentration: 0.2352 PPBV

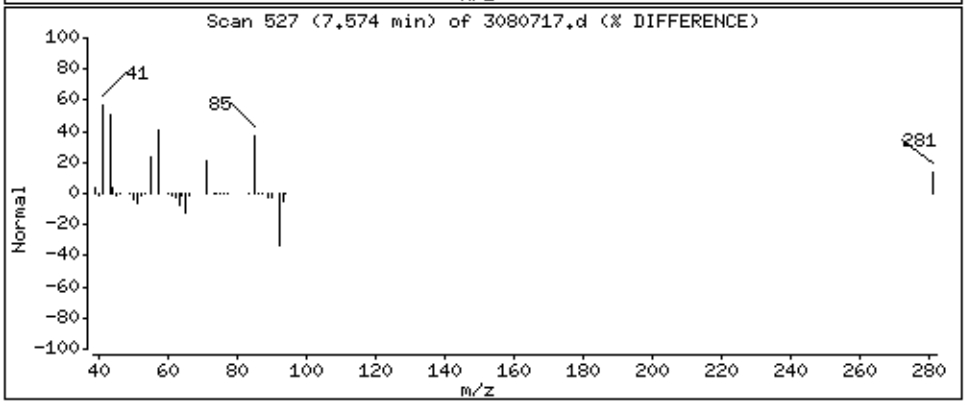












Data File: /chem/msd3.i/07aug17.b/3080717.d

Date : 07-AUG-2017 22:36

Client ID:

Instrument: msd3.i

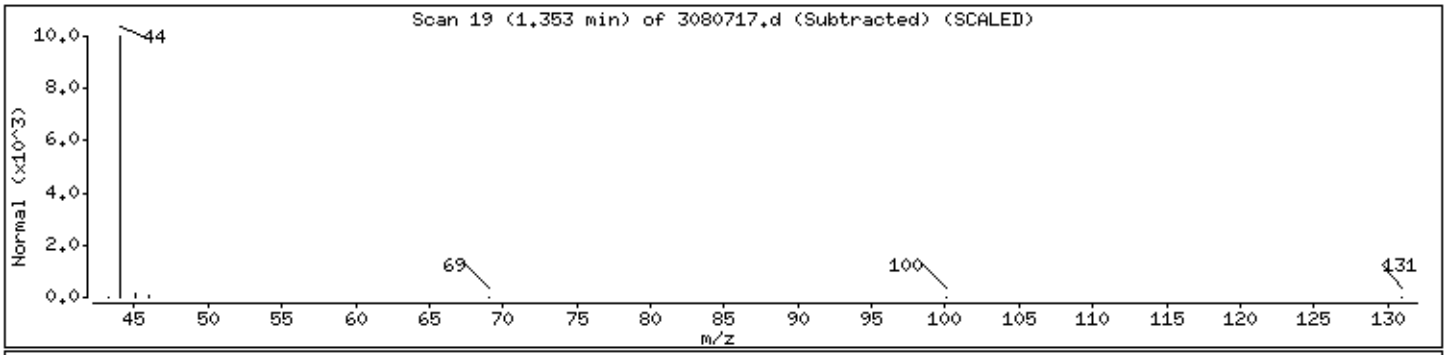
Sample Info: 200ml N1984

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/07aug17.b/3080717.d

Date : 07-AUG-2017 22:36

Client ID:

Instrument: msd3.i

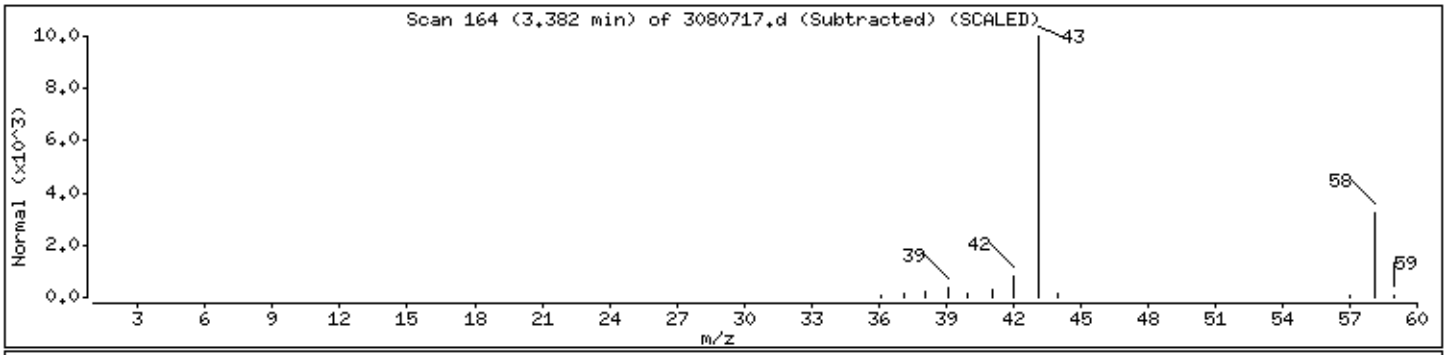
Sample Info: 200ml N1984

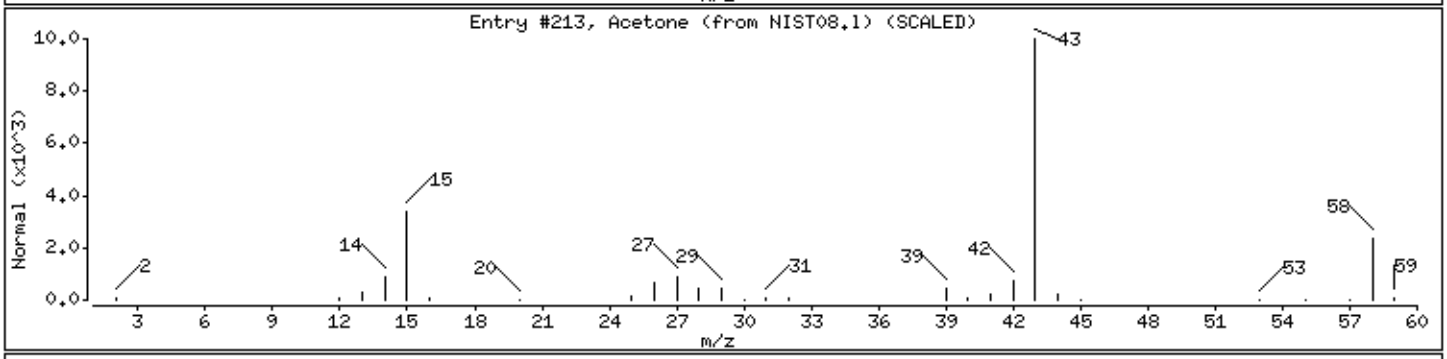
Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Acetone	67-64-1	NIST08.l	213	72	C3H6O	58





Data File: /chem/msd3.i/07aug17.b/3080717.d

Date : 07-AUG-2017 22:36

Client ID:

Instrument: msd3.i

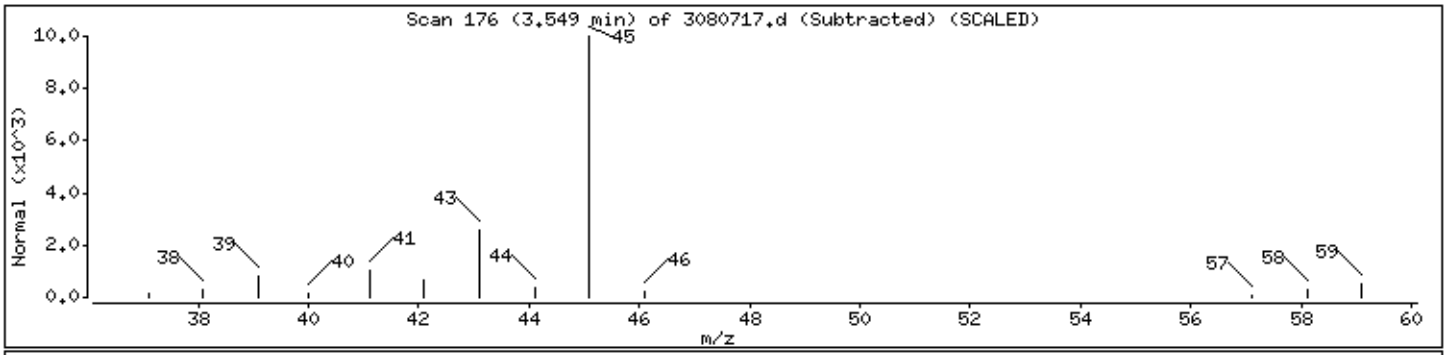
Sample Info: 200ml N1984

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/07aug17.b/3080717.d

Date : 07-AUG-2017 22:36

Client ID:

Instrument: msd3.i

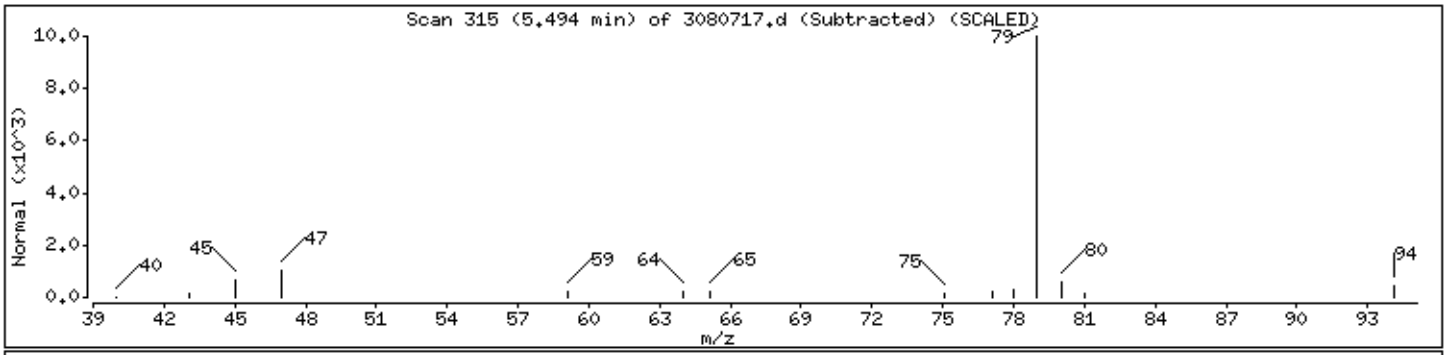
Sample Info: 200ml N1984

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SU-007_0817		
Lab ID:	1708091B-10A	**Date/Time Analyzed:**	8/7/17 11:02 PM
Date/Time Collected:	8/3/17 12:42 PM	**Dilution Factor:**	2.52
Media:		**Instrument/Filename:**	msd3.i / 3080718

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.39	1.6	4.0	Not Detected U
Ethyl Benzene	100-41-4	0.51	2.2	5.5	1.0 J
m,p-Xylene	108-38-3	0.51	2.2	5.5	4.0 J
Naphthalene	91-20-3	0.19	1.0	13	0.46 J
o-Xylene	95-47-6	0.23	2.2	5.5	1.6 J
Toluene	108-88-3	0.30	1.9	4.7	2.2 J
Total Xylene	1330-20-7	NA	D	11	Not Detected U

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	NA		Not Detected
Limonene	138-86-3	NA		Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	103

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080718.d
Lab Smp Id: 1708091B-10A
Inj Date : 07-AUG-2017 23:02
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml N2670
Misc Info : 6.0 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 4
Dil Factor: 2.52000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.424	5.410 (1.000)	130	166020	25.0000			80.00- 120.00	100.00
5.424	5.410 (1.000)	128	127489				46.73- 106.73	76.79
5.410	5.410 (1.000)	49	187973				91.08- 151.08	113.22
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	566909	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	80759				0.00- 44.78	14.25
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	577511	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	268156				20.58- 80.58	46.43
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	187316	22.0768	22.077		80.00- 120.00	100.00
5.956	5.956 (1.098)	67	96941				24.54- 84.54	51.75
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	593145	25.7938	25.794		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	60378				0.00- 40.44	10.18

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	378940			35.27- 95.27	63.89
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	373664	24.7819	24.782	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	386986			84.77- 144.77	103.57
9.737	9.737 (1.112)	176	361265			64.74- 124.74	96.68
147 Toluene					CAS #: 108-88-3		
7.581	7.574 (1.202)	91	5759	0.23246	0.5858	80.00- 120.00	100.00(a)
7.581	7.574 (1.202)	92	3287			27.96- 87.96	57.08
167 Ethyl Benzene					CAS #: 100-41-4		
8.820	8.827 (1.007)	106	1116	0.09095	0.2292	80.00- 120.00	100.00(a)
8.827	8.827 (1.008)	91	3079			272.32- 332.32	275.74
169 m,p-Xylene					CAS #: 108-38-3		
8.920	8.927 (1.019)	106	5581	0.36354	0.9161	80.00- 120.00	100.00(a)
8.920	8.927 (1.019)	91	9989			165.91- 225.91	178.97
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.059)	106	2200	0.15071	0.3798	80.00- 120.00	100.00(a)
9.264	9.264 (1.058)	91	5339			175.85- 235.85	242.64
228 Naphthalene					CAS #: 91-20-3		
12.716	12.717 (1.452)	128	2213	0.03522	0.08874	80.00- 120.00	100.00(a)
12.709	12.717 (1.452)	127	355			0.00- 43.00	16.08

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080718.d
Lab Smp Id: 1708091B-10A
Inj Date : 07-AUG-2017 23:02
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml N2670
Misc Info : 6.0 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 4
Dil Factor: 2.52000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.424	795675	25.000
* 163 Chlorobenzene-d5	8.755	1677129	25.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.353	13165581	413.660627	1042.4	0		0	98
Unknown				CAS #:			
1.646	141388	4.44239549	11.195	0		0	98
Unknown				CAS #:			
1.772	138775	4.36028568	10.988	0		0	98
Unknown				CAS #:			
5.494	114336	3.59242412	9.053	0		0	98

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Cyclotrisiloxane, hexamethyl-				CAS #: 541-05-9			
7.781	128738	1.91902646	4.836	87	NIST08.l	76685	163
Heptane, 2,4-dimethyl-				CAS #: 2213-23-2			
7.889	218252	3.25335273	8.198	81	NIST08.l	12561	163
Cyclotetrasiloxane, octamethyl-				CAS #: 556-67-2			
9.651	273492	4.07679500	10.274	76	NIST08.l	133885	163
Decane, 3,7-dimethyl-				CAS #: 17312-54-8			
10.553	446662	6.65812885	16.778	64	NIST08.l	37493	163
Undecane, 5,7-dimethyl-				CAS #: 17312-83-3			
10.610	153564	2.28908873	5.768	78	NIST08.l	47645	163
Undecane				CAS #: 1120-21-4			
10.940	147972	2.20573120	5.558	97	NIST08.l	27916	163
Decane, 2,3,7-trimethyl-				CAS #: 62238-13-5			
10.976	315376	4.70112408	11.847	53	NIST08.l	47673	163
Undecane, 2,7-dimethyl-				CAS #: 17301-24-5			
11.033	145144	2.16357465	5.452	72	NIST08.l	47647	163
3-Hydroxymandelic acid, ethyl ester, di-				CAS #: 1000071-88-9			
11.184	201674	3.00623925	7.576	50	NIST08.l	165058	163
Unknown				CAS #:			
11.520	137248	2.04588394	5.156	0		0	163

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080718.d
Lab Smp Id: 1708091B-10A
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 6.0 Hg->15 psi

Calibration Date: 07-AUG-2017
Calibration Time: 10:44
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	166020	-8.52
123 1,4-Difluorobenze	637861	382717	893005	566909	-11.12
163 Chlorobenzene-d5	604933	362960	846906	577511	-4.53

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:57

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-10A
Level: LOW Operator: mjs
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 6.0 Hg->15 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.077	88.31	70-130
$ 146 Toluene-d8	25.000	25.794	103.18	70-130
$ 177 4-Bromofluorobenze	25.000	24.782	99.13	70-130

MÜ

Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

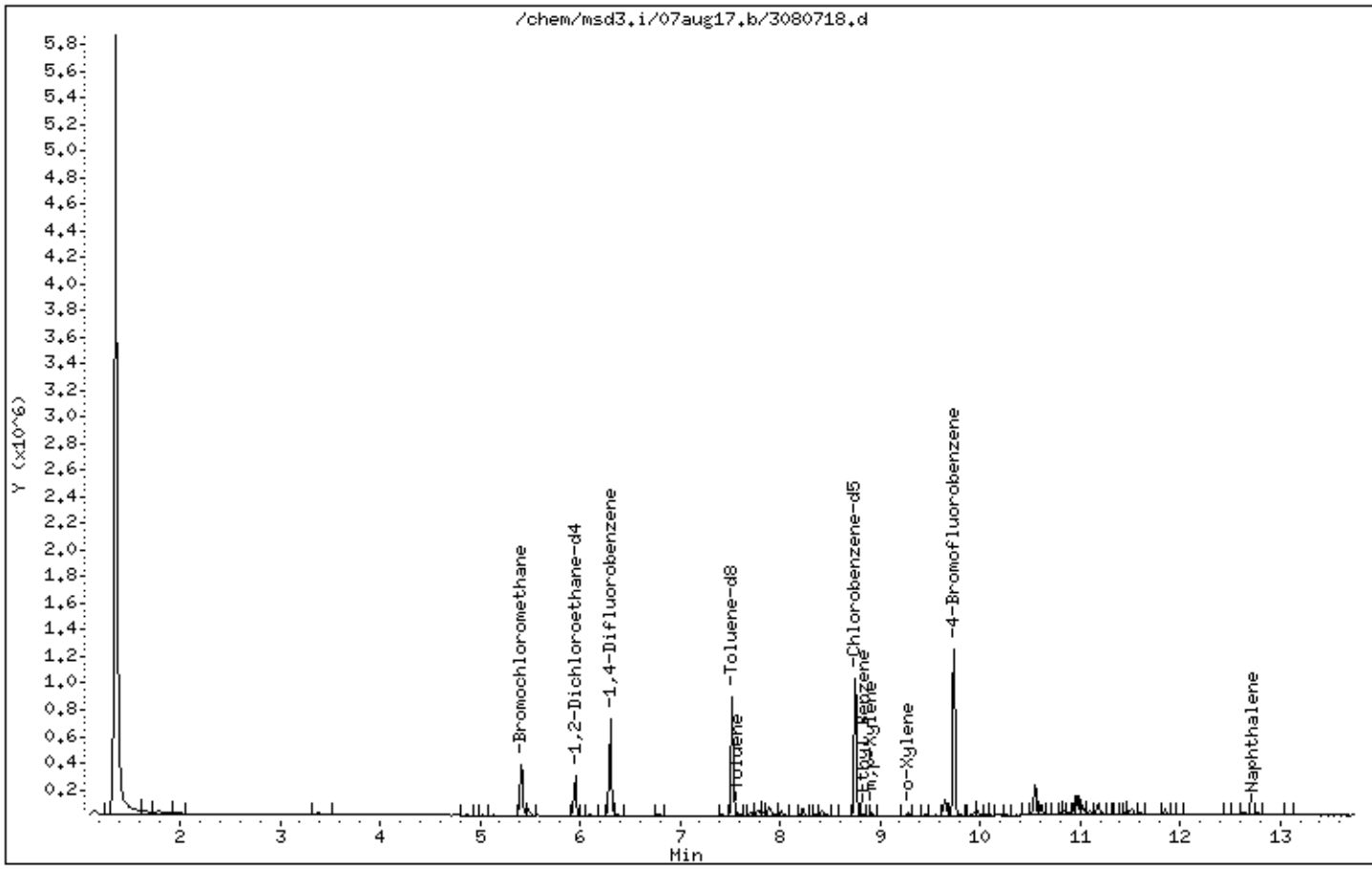
Instrument: msd3.i

Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

Sample Info: 200ml N2670

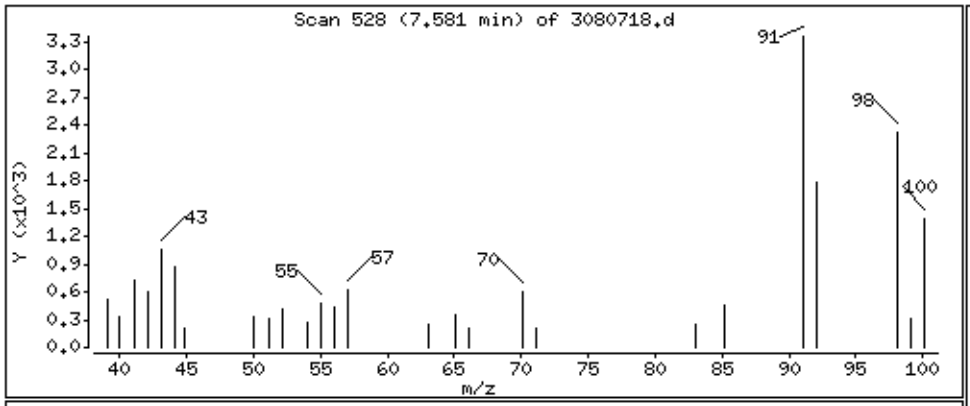
Operator: mjs

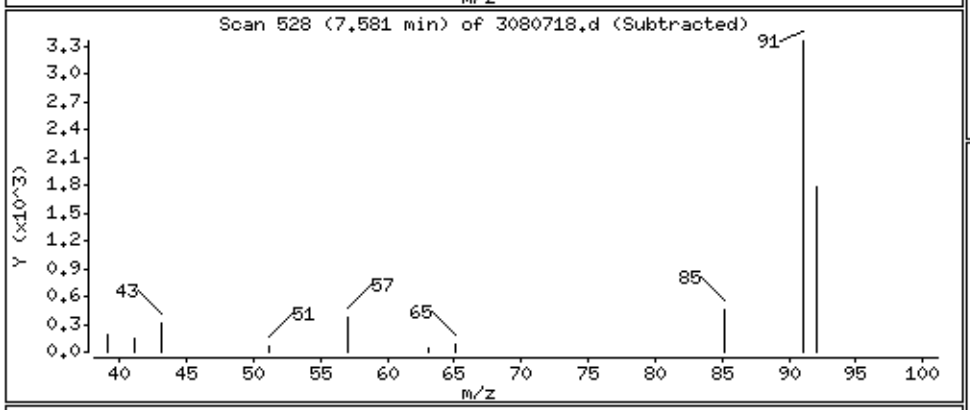
Column phase: RTX-624

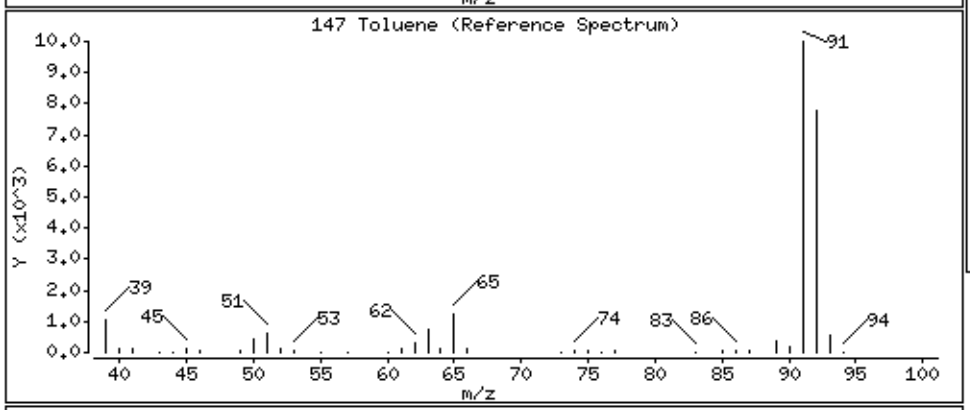
Column diameter: 0.25

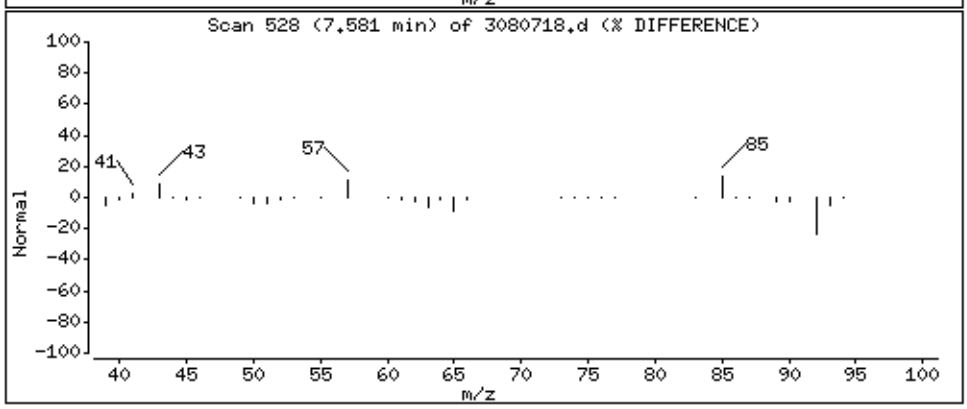
147 Toluene

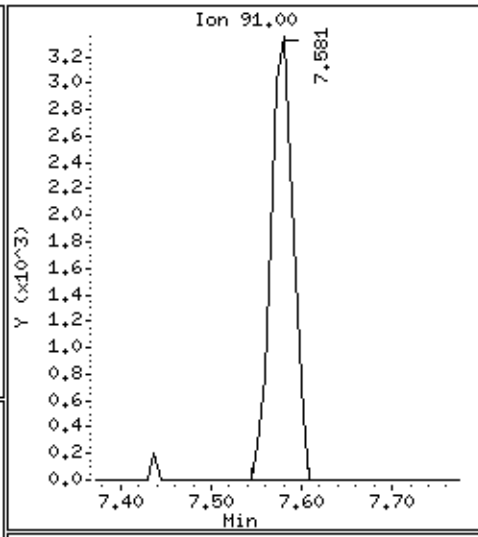
Concentration: 0.5858 PPBV

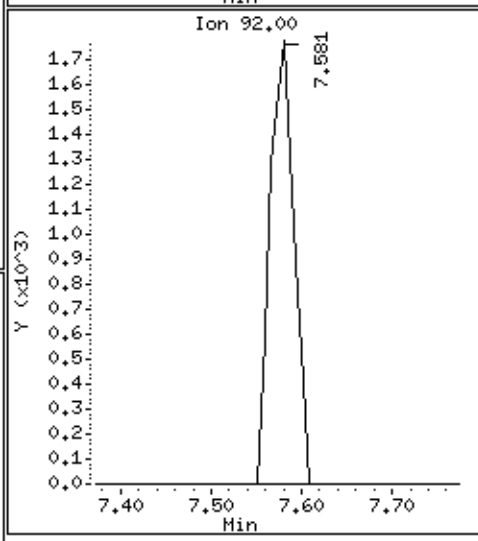












Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

Sample Info: 200ml N2670

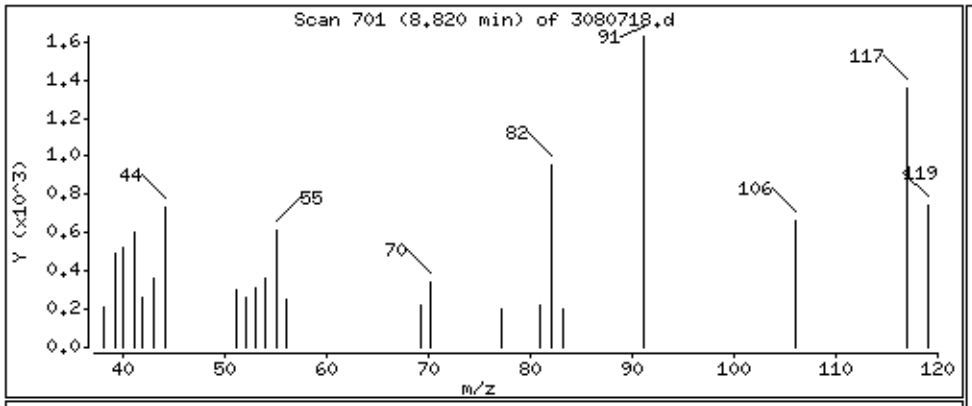
Operator: mjs

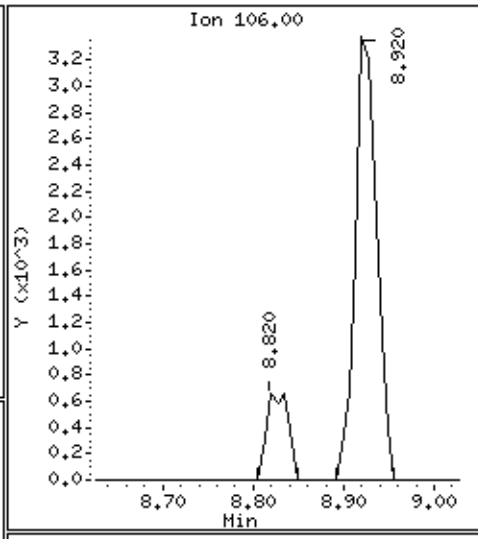
Column phase: RTX-624

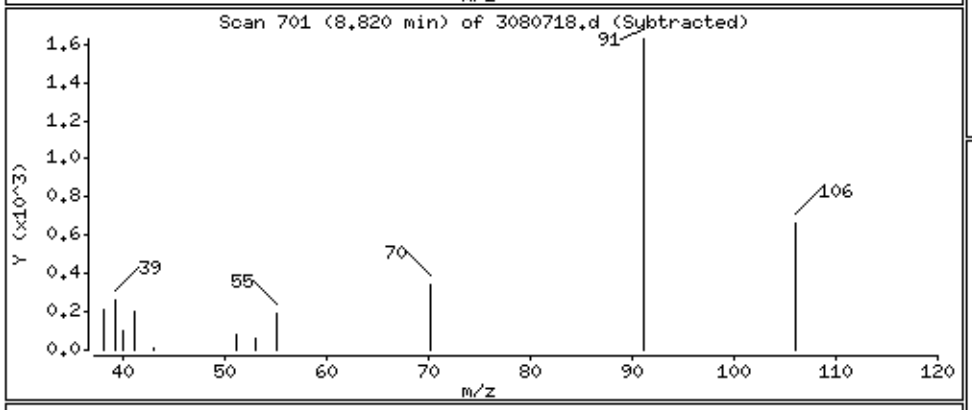
Column diameter: 0.25

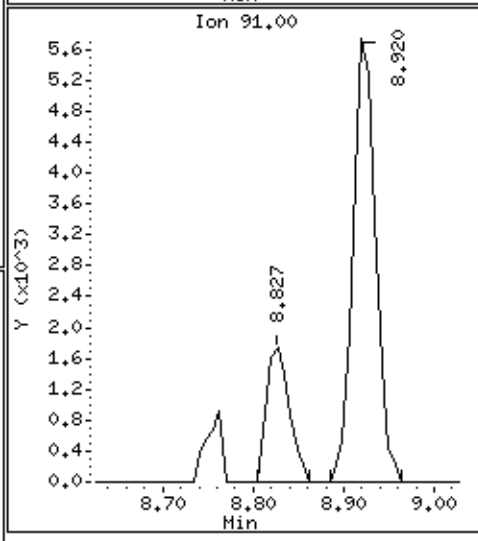
167 Ethyl Benzene

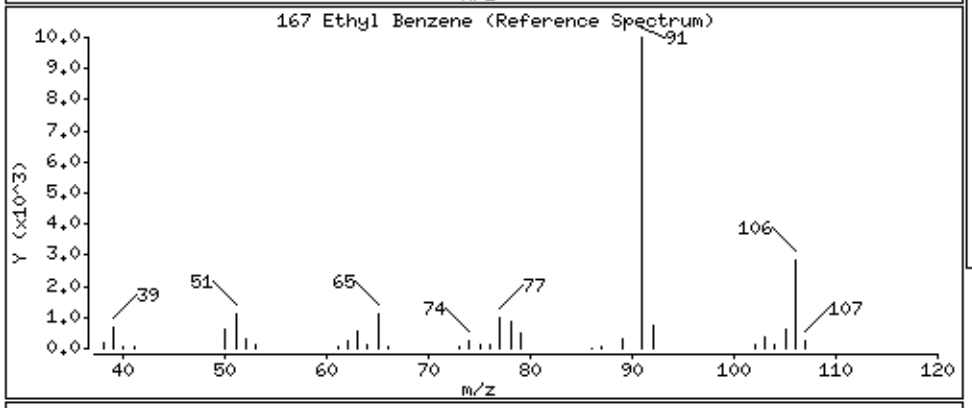
Concentration: 0.2292 PPBV

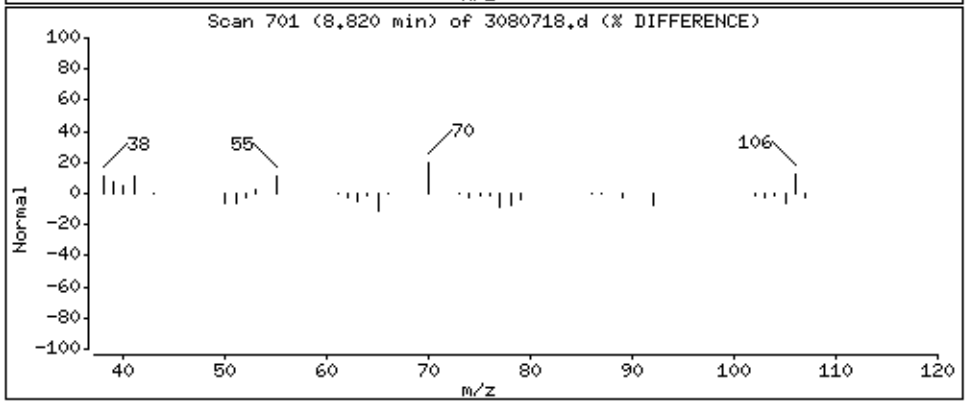












Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

Sample Info: 200ml N2670

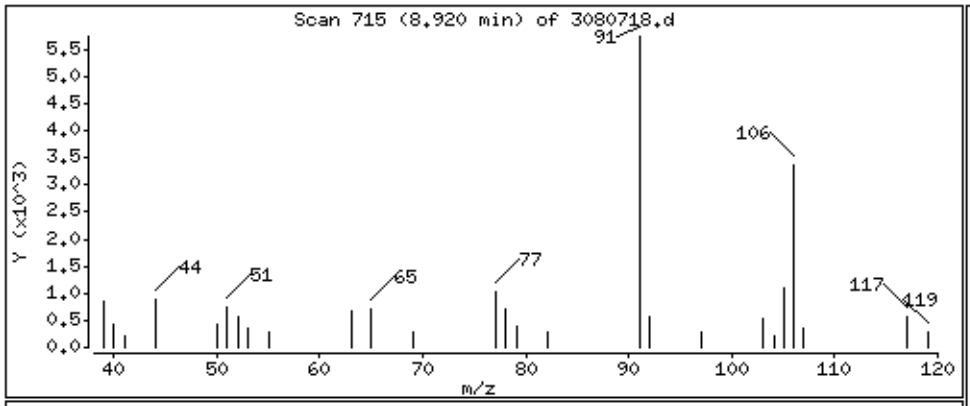
Operator: mjs

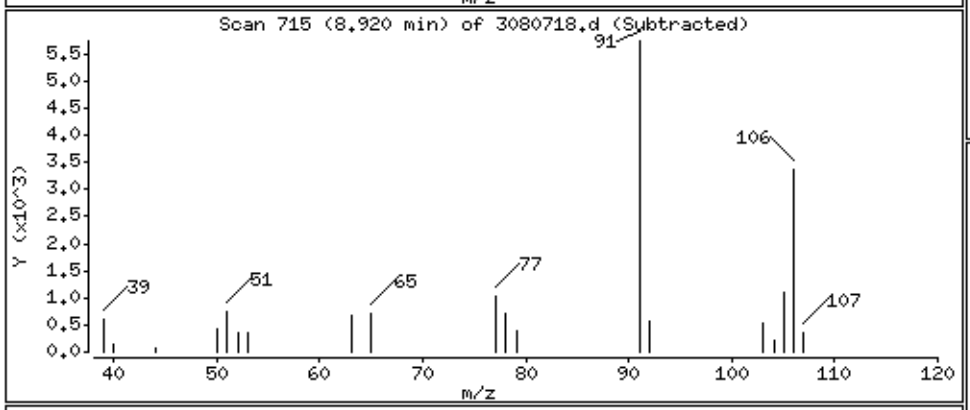
Column phase: RTX-624

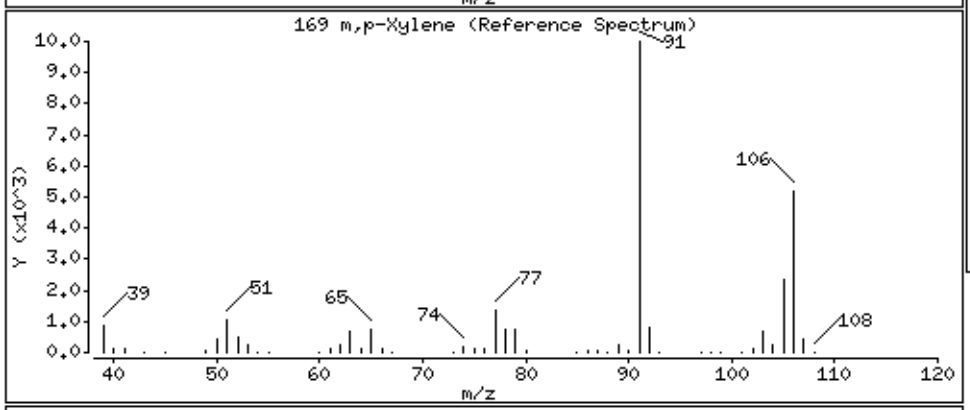
Column diameter: 0.25

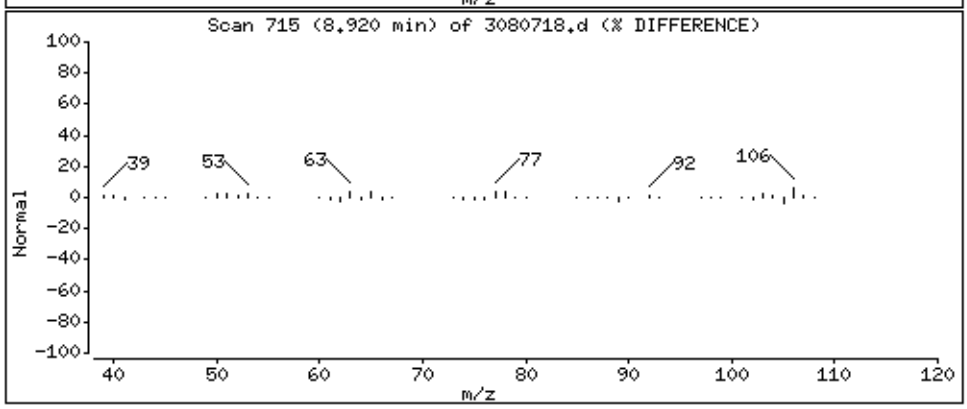
169 m,p-Xylene

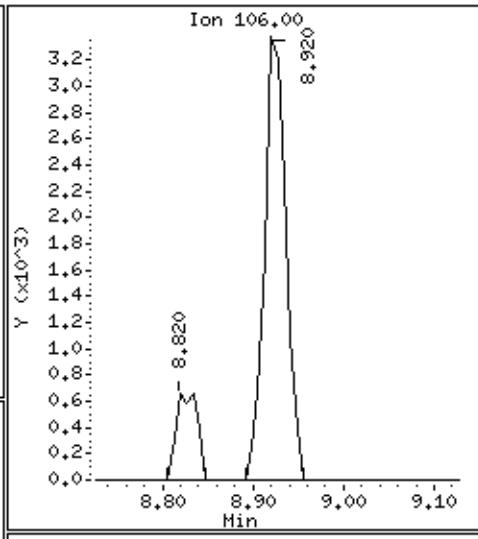
Concentration: 0.9161 PPBV

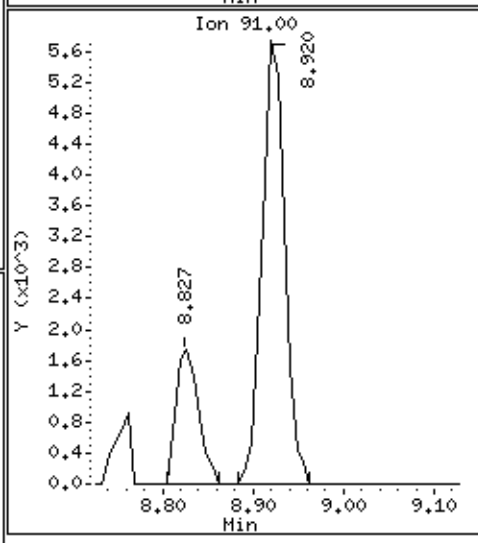












Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

Sample Info: 200ml N2670

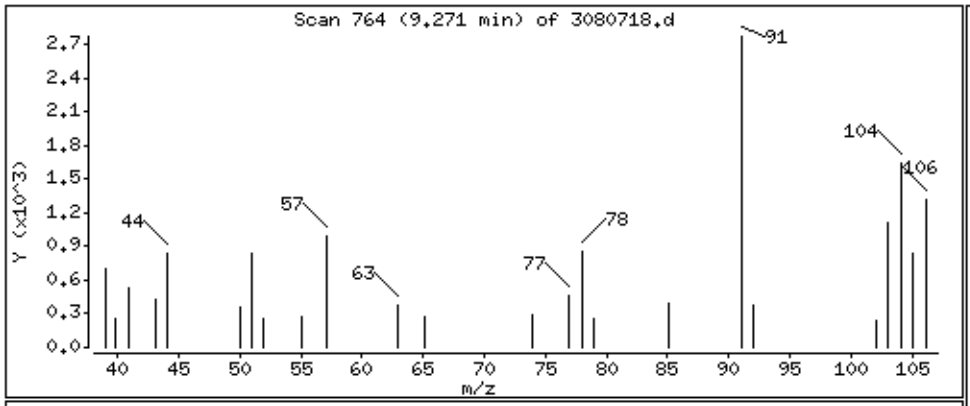
Operator: mjs

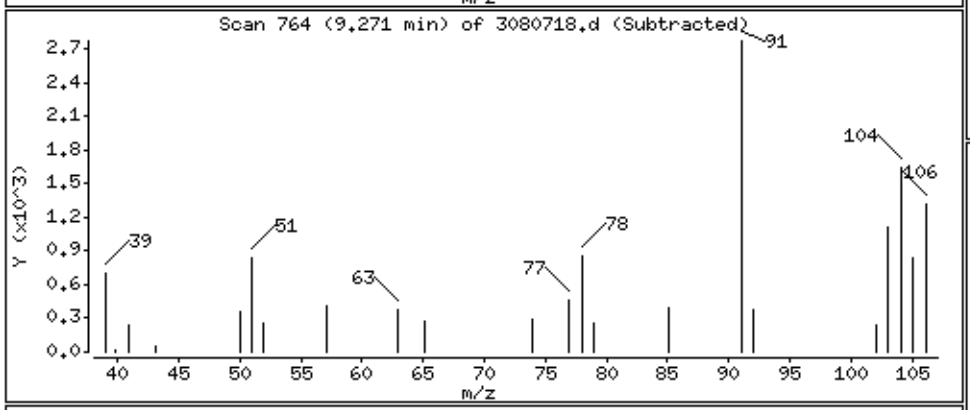
Column phase: RTX-624

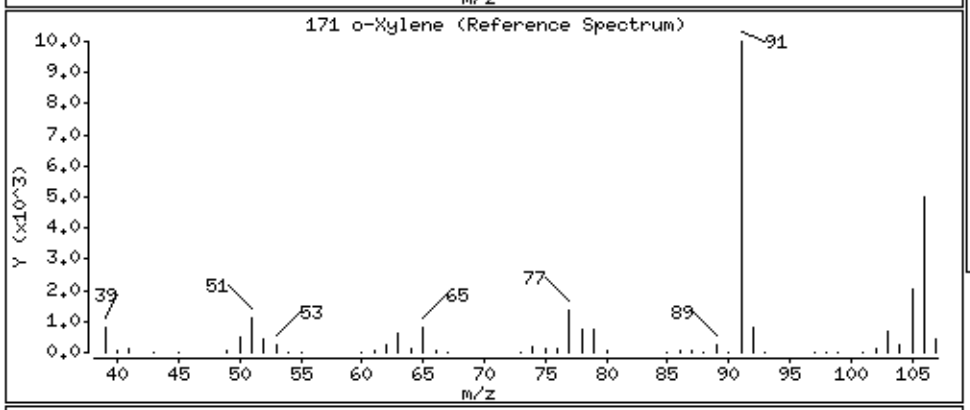
Column diameter: 0.25

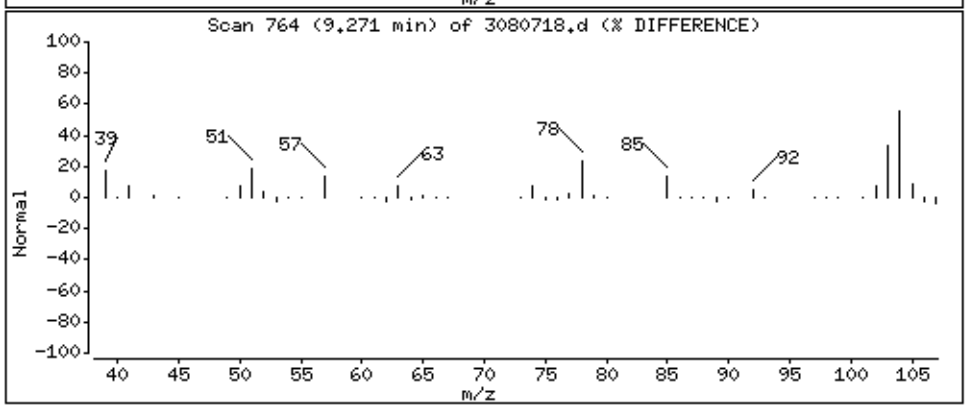
171 o-Xylene

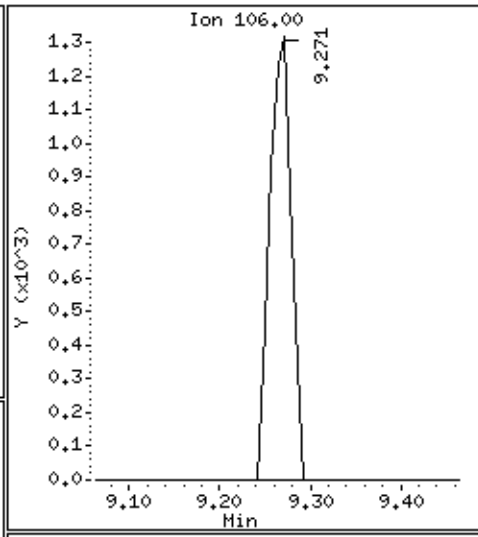
Concentration: 0.3798 PPBV

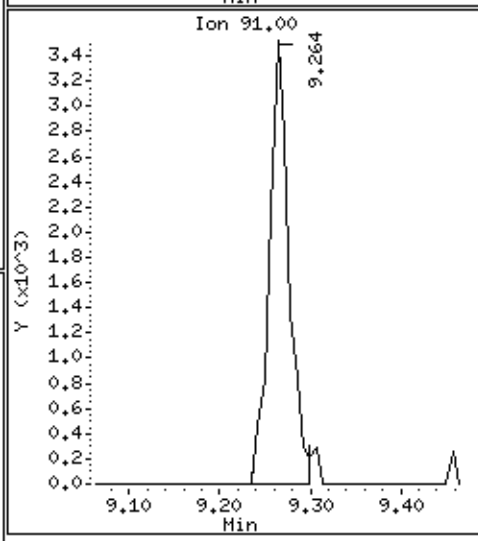












Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

Sample Info: 200ml N2670

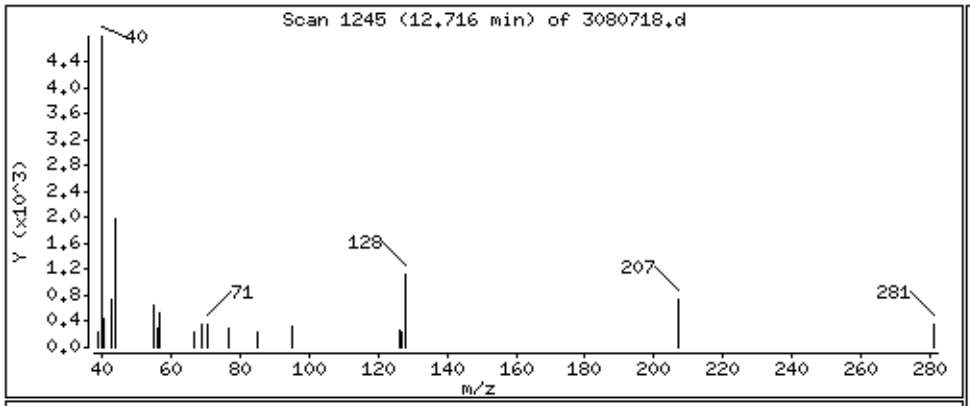
Operator: mjs

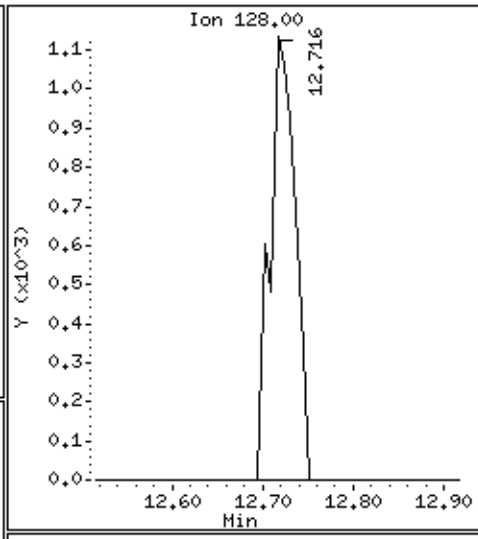
Column phase: RTX-624

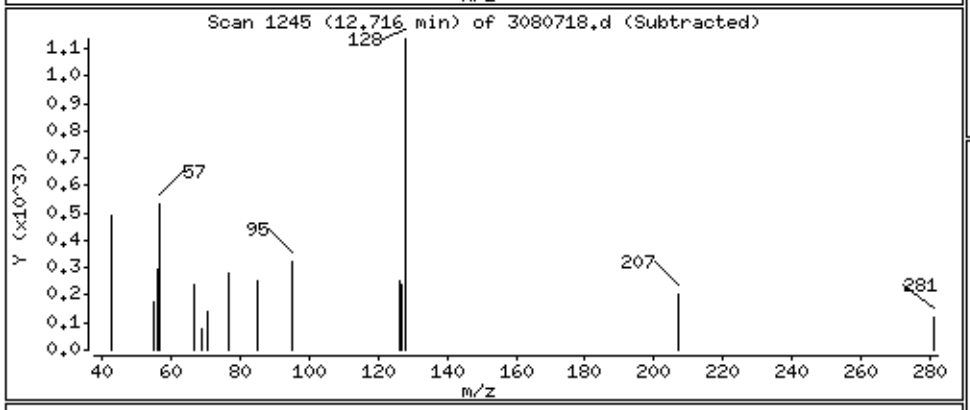
Column diameter: 0.25

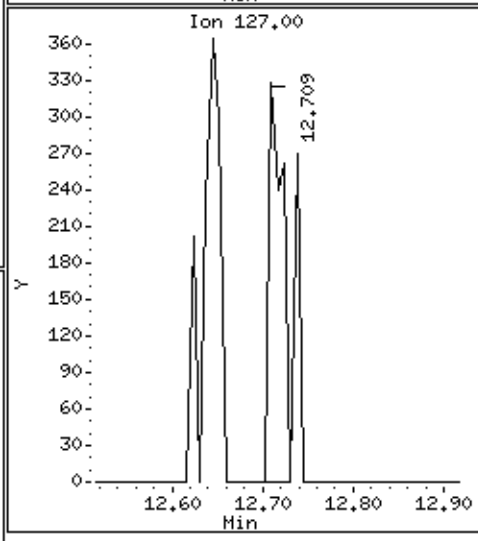
228 Naphthalene

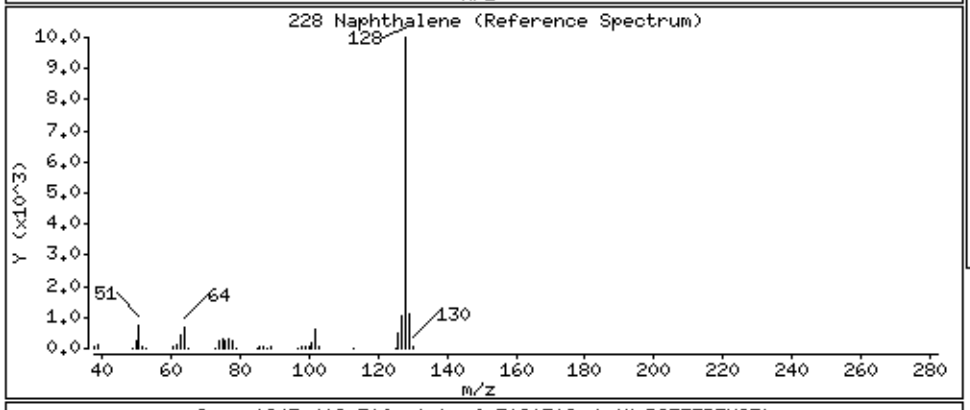
Concentration: 0.08874 PPBV

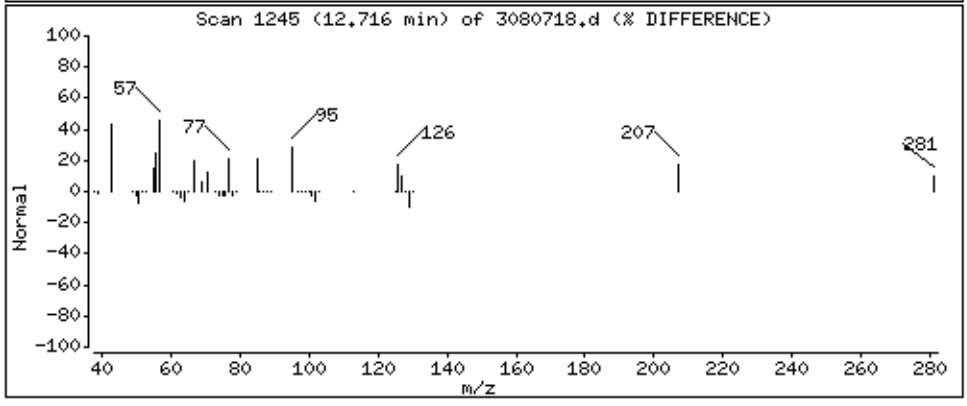












Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

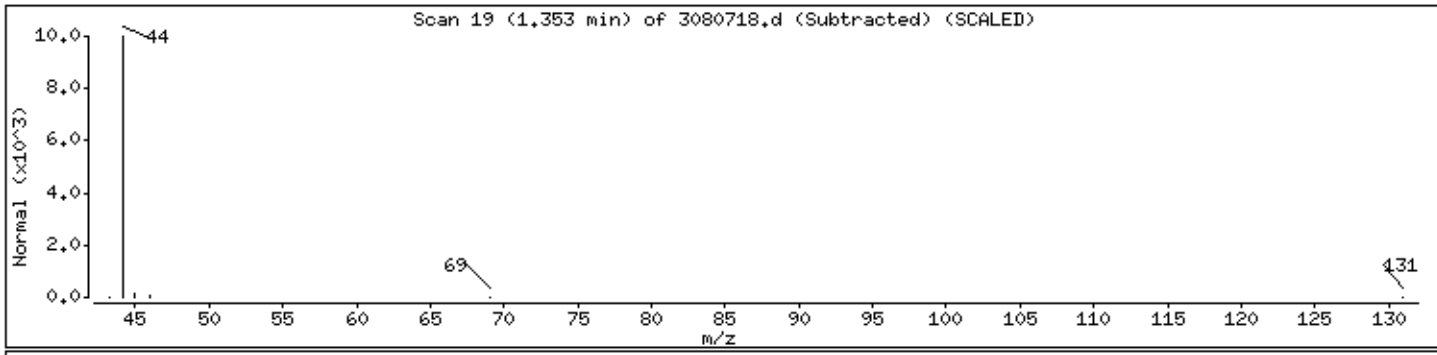
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

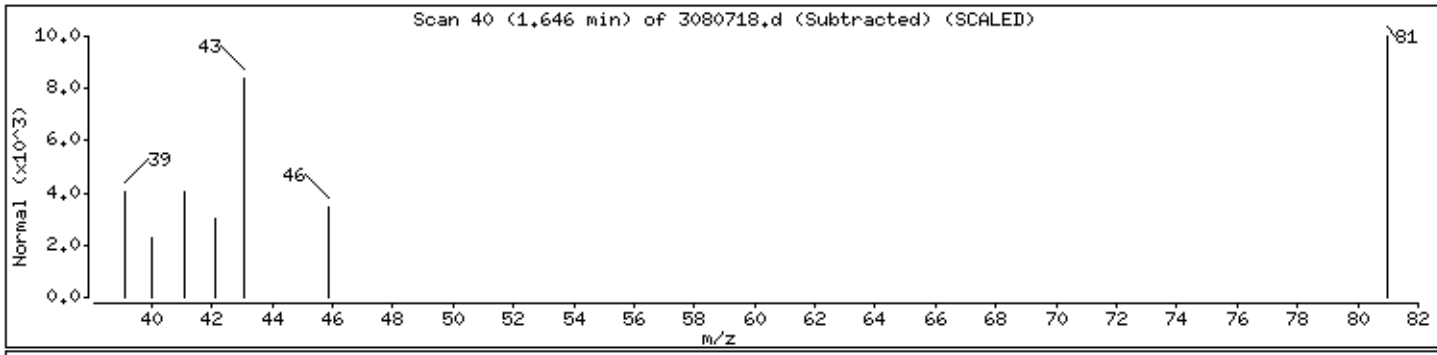
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

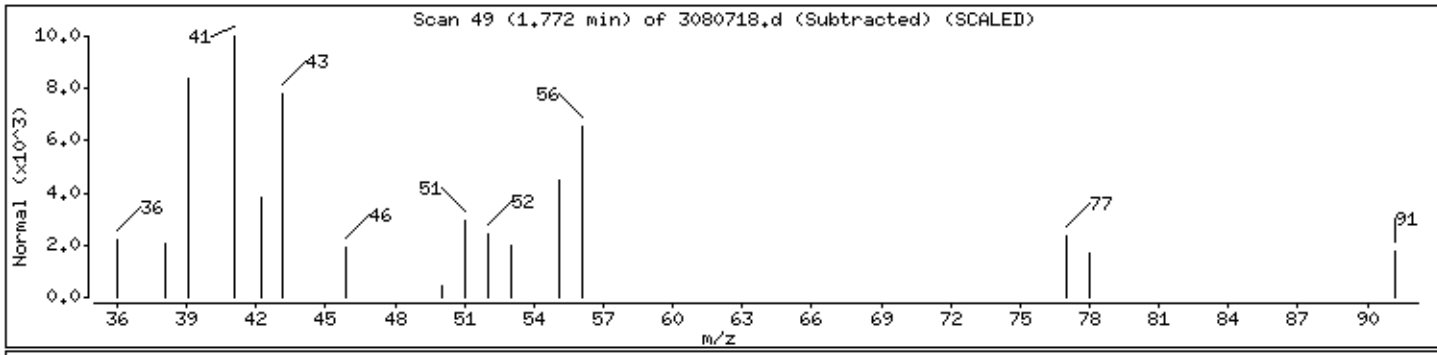
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

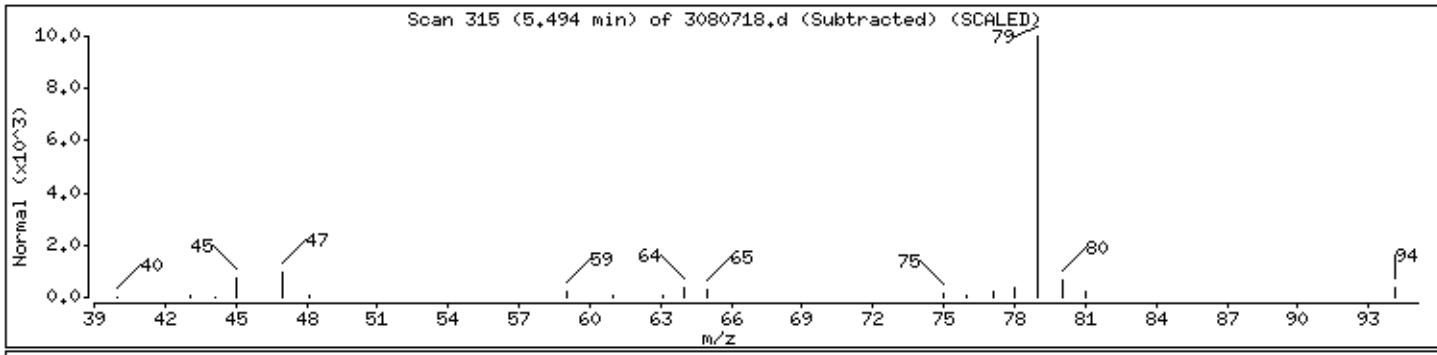
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

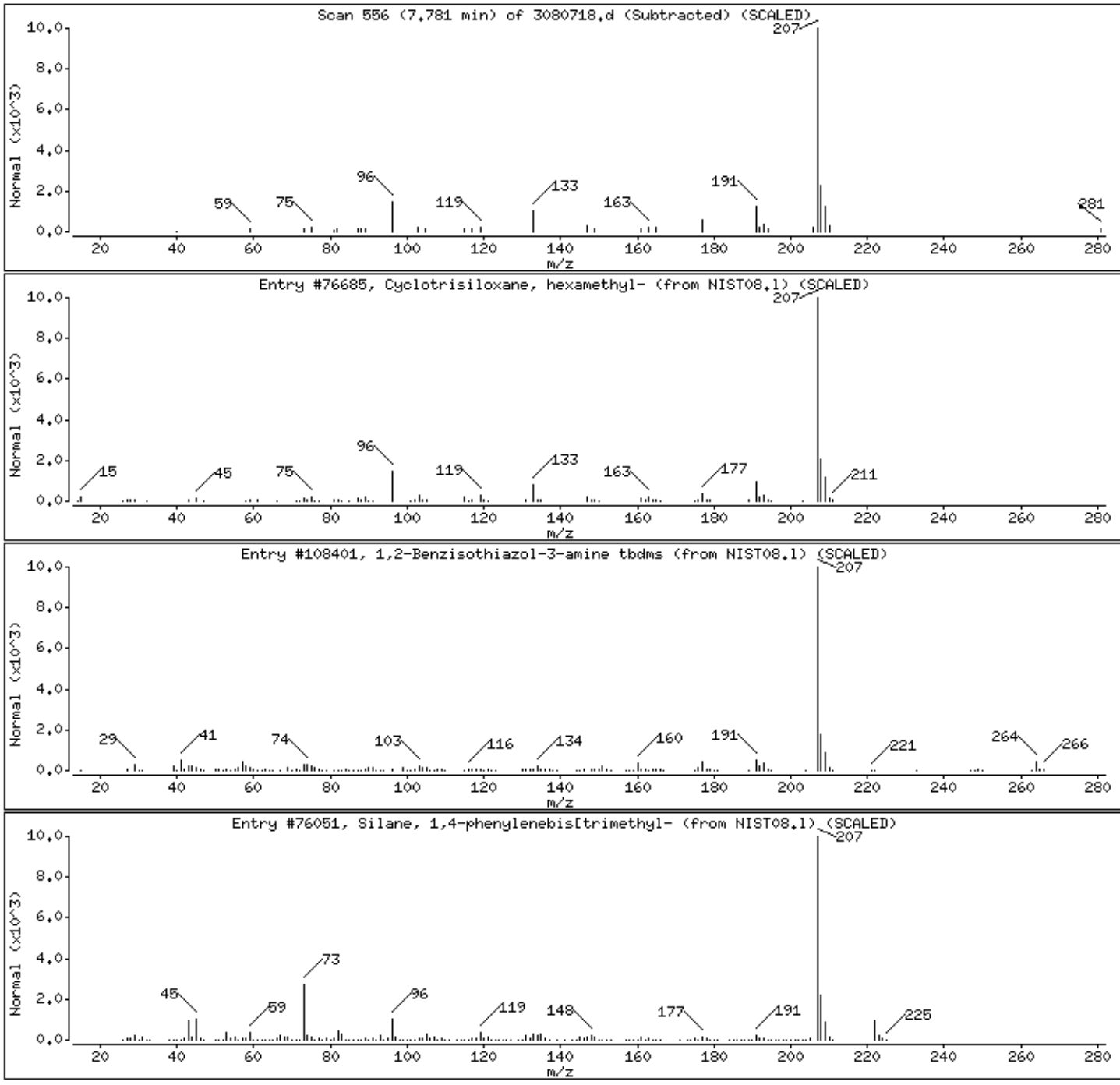
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST08.l	76685	87	C6H18O3Si3	222
1,2-Benzisothiazol-3-amine tbdms	1000332-57-2	NIST08.l	108401	59	C13H20N2SSi	264
Silane, 1,4-phenylenebis[trimethyl-	13183-70-5	NIST08.l	76051	50	C12H22Si2	222



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

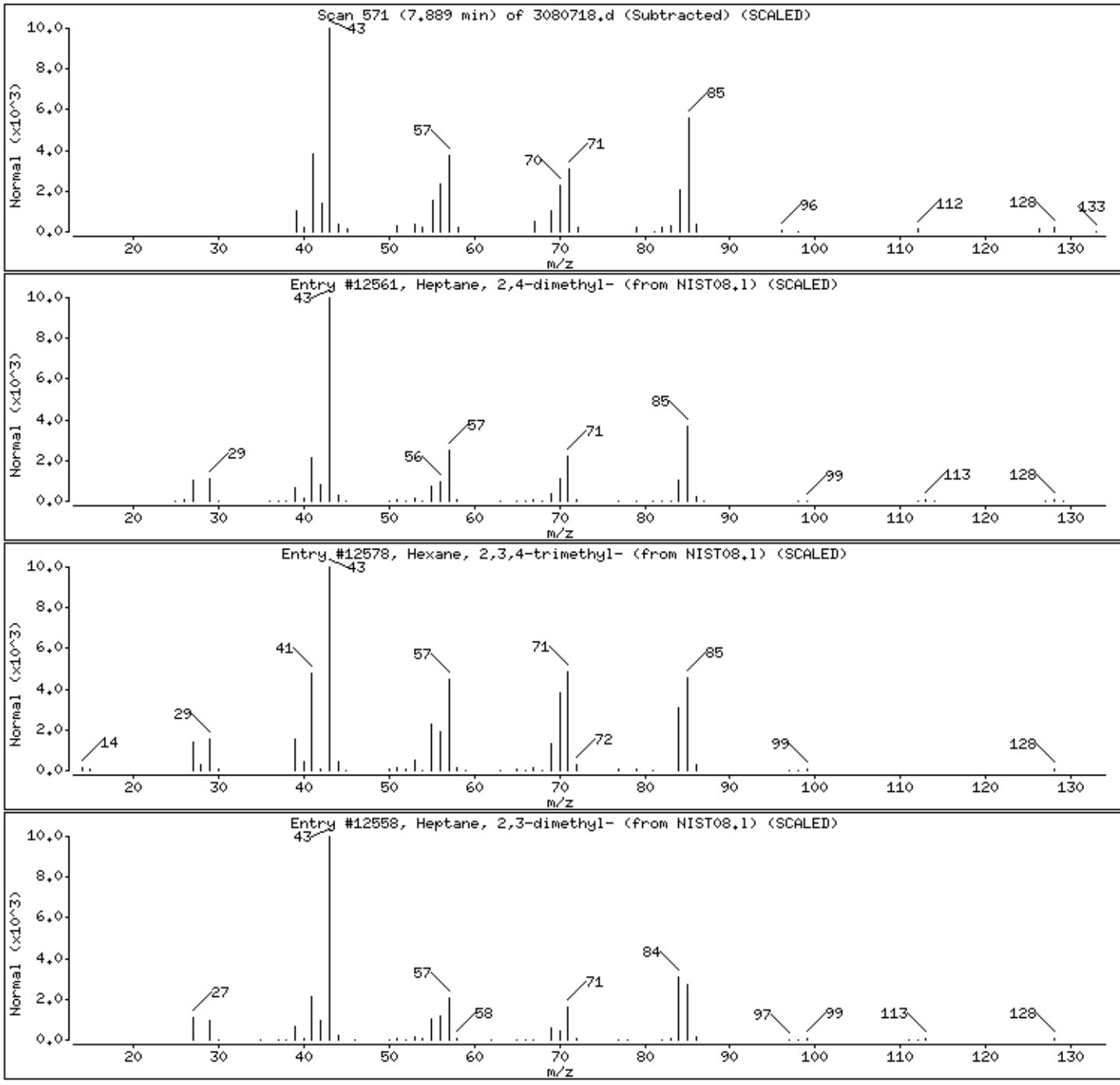
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Heptane, 2,4-dimethyl-	2213-23-2	NIST08.l	12561	81	C9H20	128
Hexane, 2,3,4-trimethyl-	921-47-1	NIST08.l	12578	76	C9H20	128
Heptane, 2,3-dimethyl-	3074-71-3	NIST08.l	12558	58	C9H20	128



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

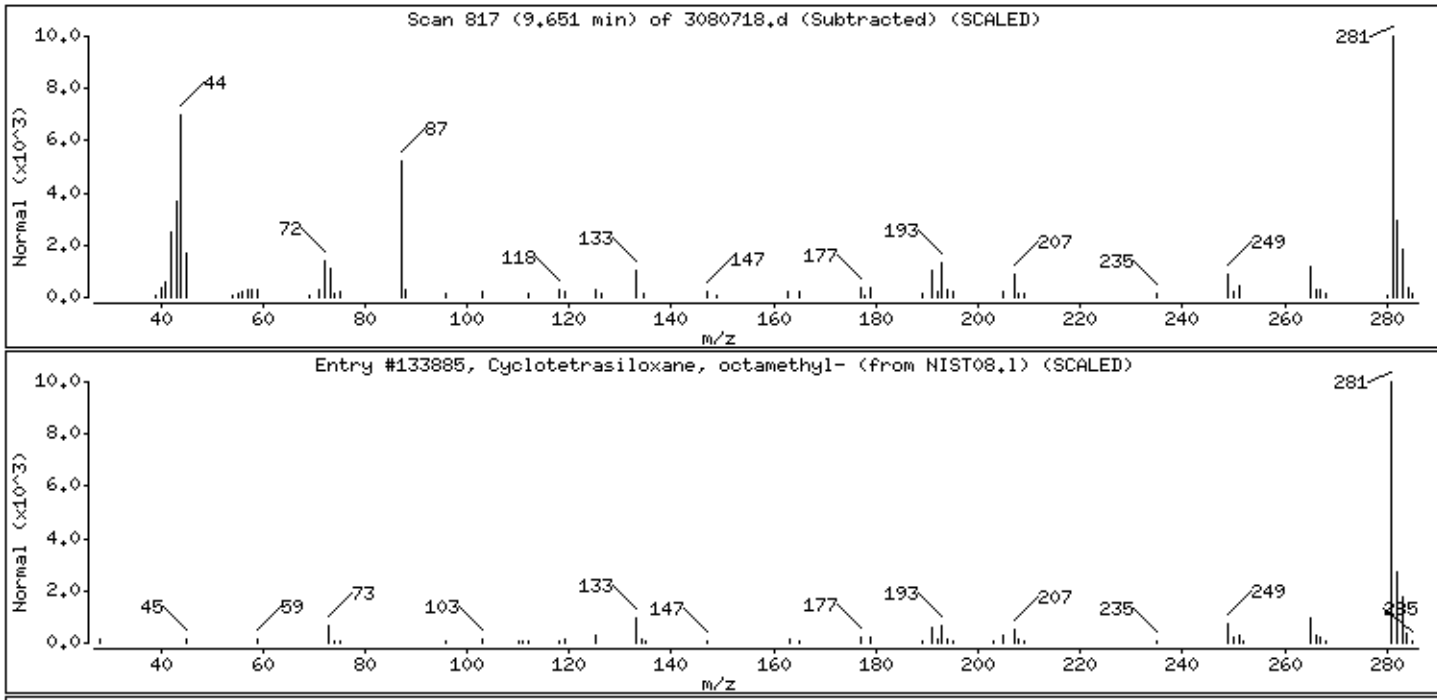
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Cyclotetrasiloxane, octamethyl-	556-67-2	NIST08.l	133885	76	C8H24O4Si4	296



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

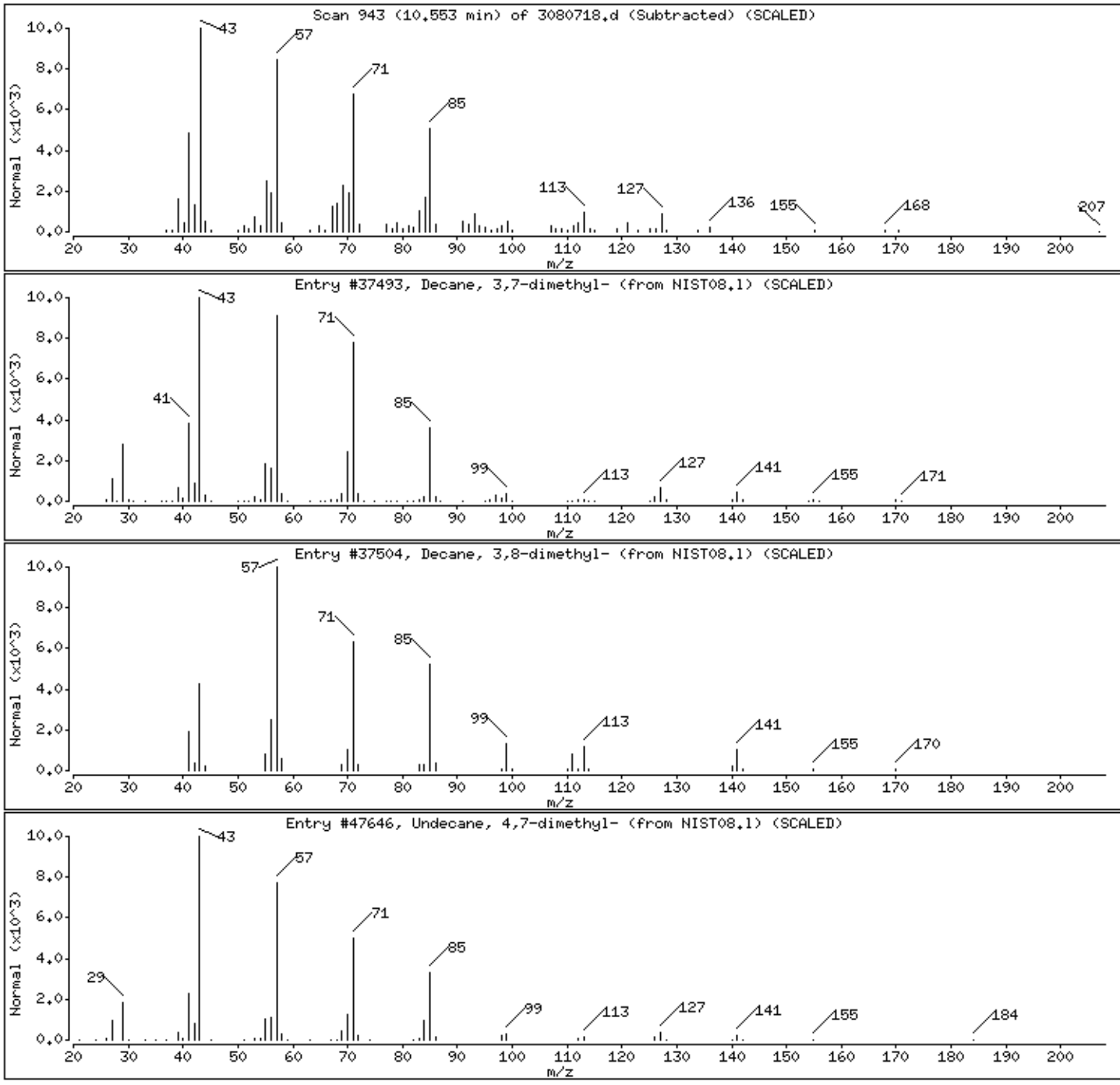
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Decane, 3,7-dimethyl-	17312-54-8	NIST08.l	37493	64	C12H26	170
Decane, 3,8-dimethyl-	17312-55-9	NIST08.l	37504	64	C12H26	170
Undecane, 4,7-dimethyl-	17301-32-5	NIST08.l	47646	64	C13H28	184



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

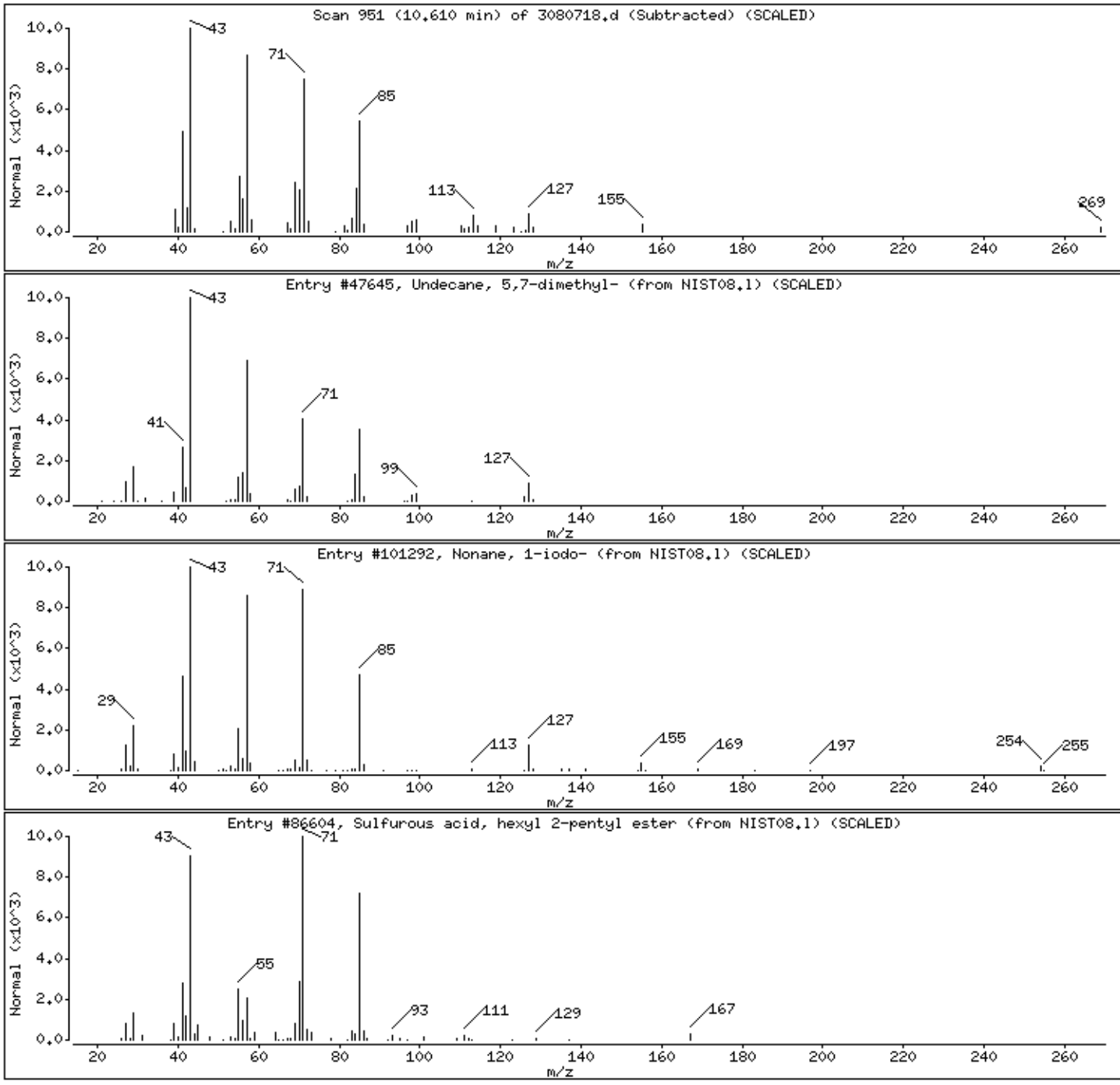
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Undecane, 5,7-dimethyl-	17312-83-3	NIST08.l	47645	78	C13H28	184
Nonane, 1-iodo-	4282-42-2	NIST08.l	101292	59	C9H19I	254
Sulfurous acid, hexyl 2-pentyl ester	1000309-15-6	NIST08.l	86604	53	C11H24O3S	236



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

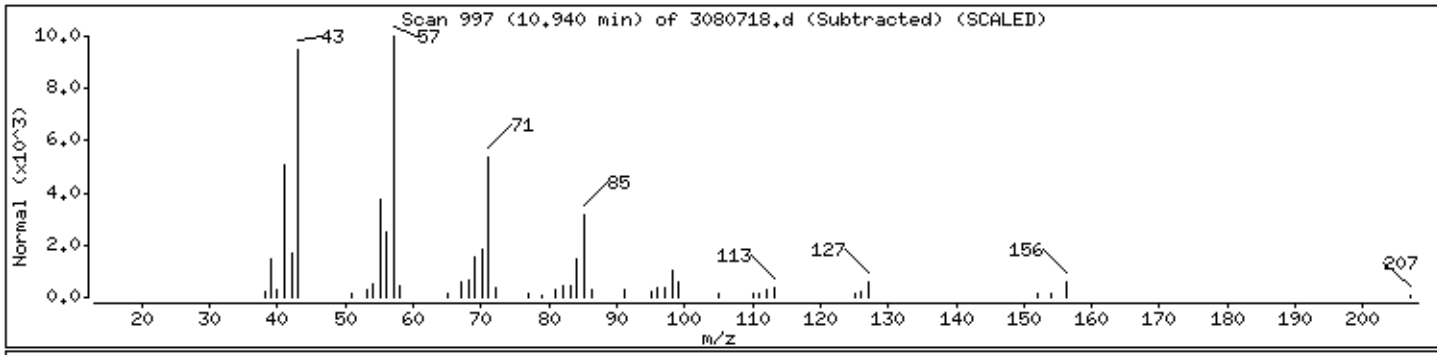
Sample Info: 200ml N2670

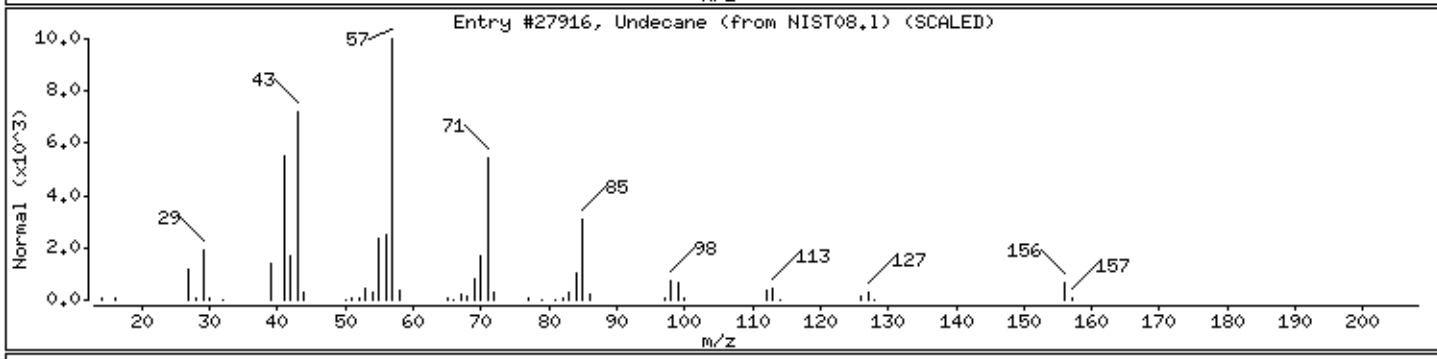
Operator: mjs

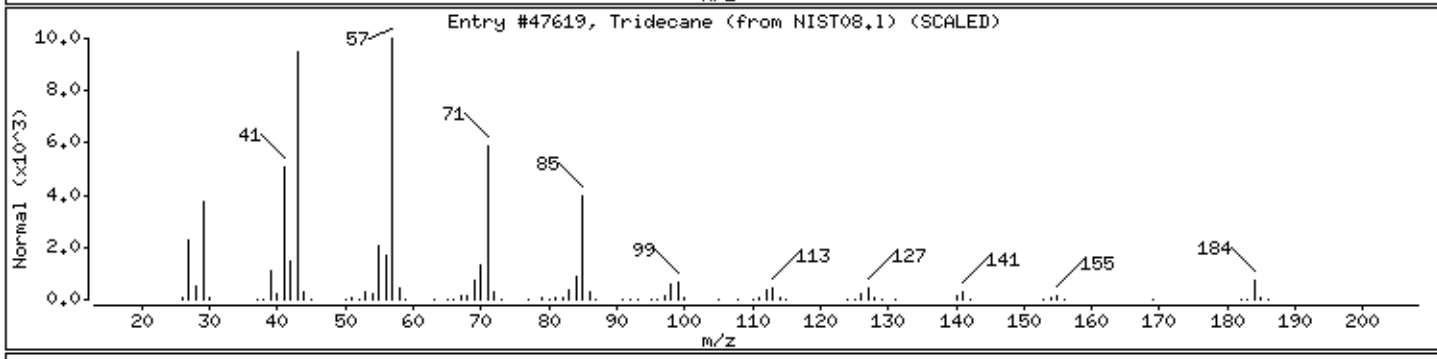
Column phase: RTX-624

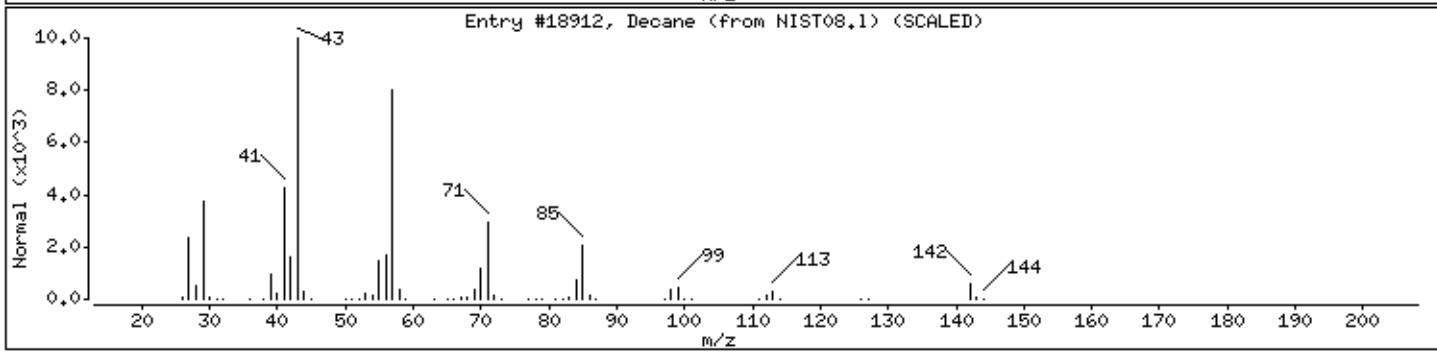
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Undecane	1120-21-4	NIST08.l	27916	97	C11H24	156
Tridecane	629-50-5	NIST08.l	47619	86	C13H28	184
Decane	124-18-5	NIST08.l	18912	86	C10H22	142









Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

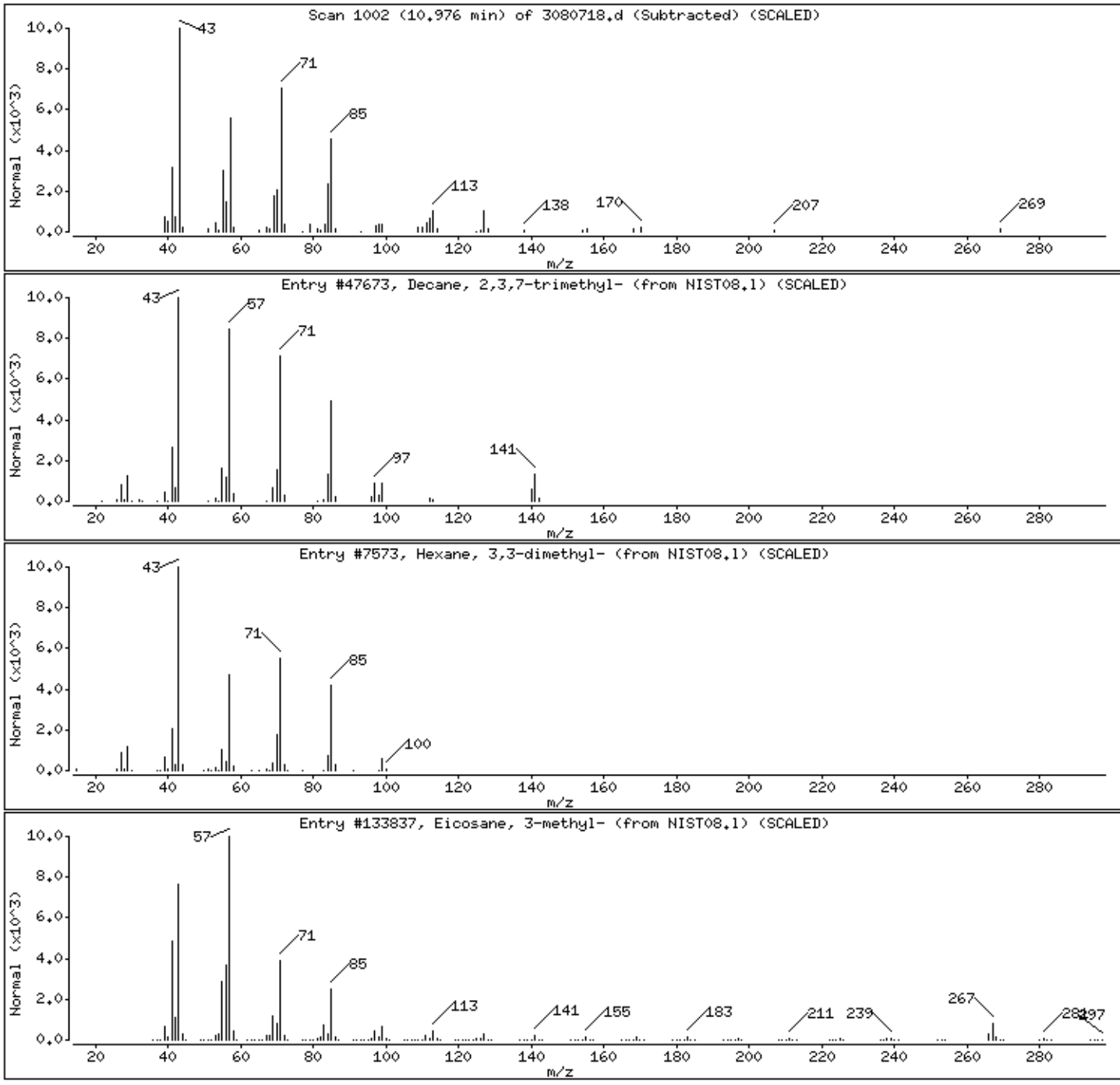
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Decane, 2,3,7-trimethyl-	62238-13-5	NIST08.l	47673	53	C13H28	184
Hexane, 3,3-dimethyl-	563-16-6	NIST08.l	7573	50	C8H18	114
Eicosane, 3-methyl-	6418-46-8	NIST08.l	133837	50	C21H44	296



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

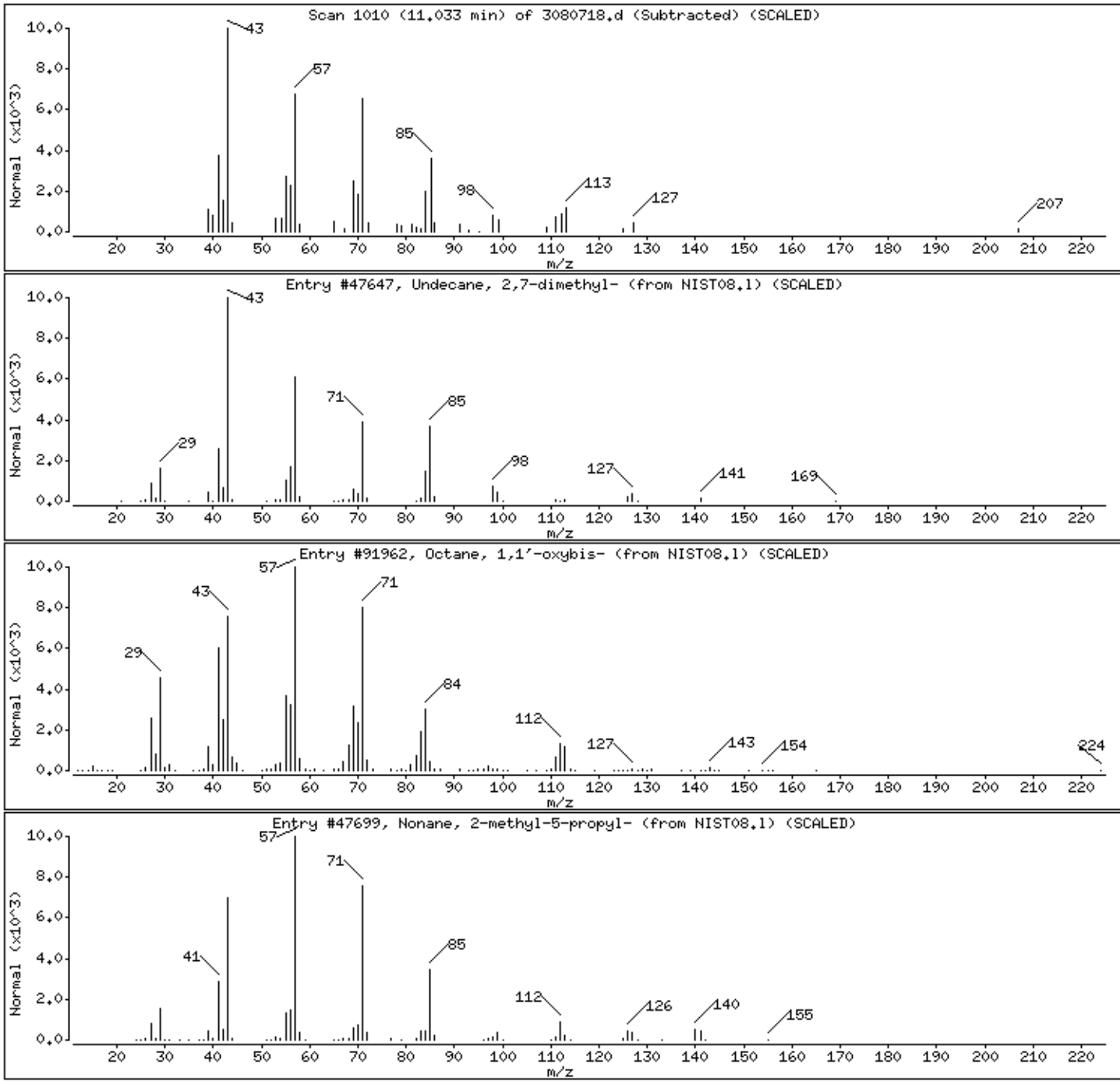
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Undecane, 2,7-dimethyl-	17301-24-5	NIST08.l	47647	72	C13H28	184
Octane, 1,1'-oxybis-	629-82-3	NIST08.l	91962	64	C16H34O	242
Nonane, 2-methyl-5-propyl-	31081-17-1	NIST08.l	47699	53	C13H28	184



Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

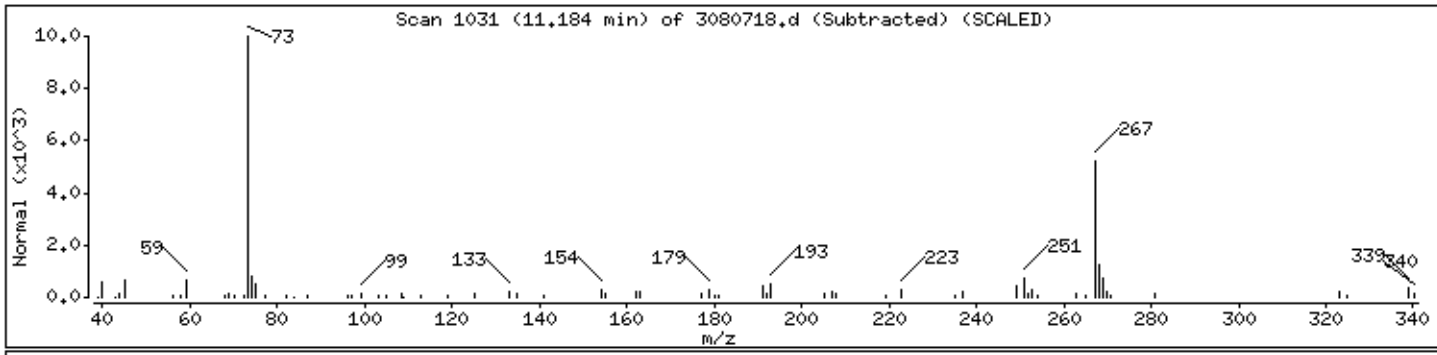
Sample Info: 200ml N2670

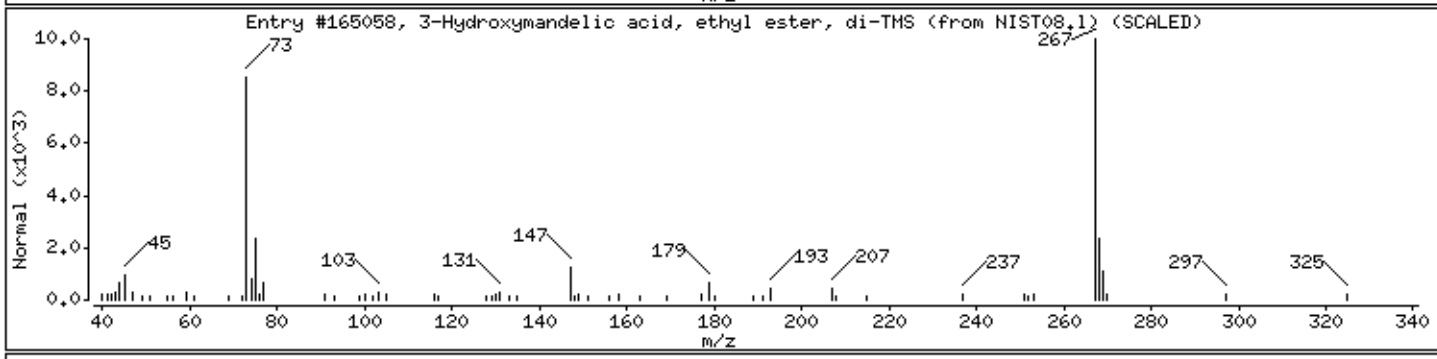
Operator: mjs

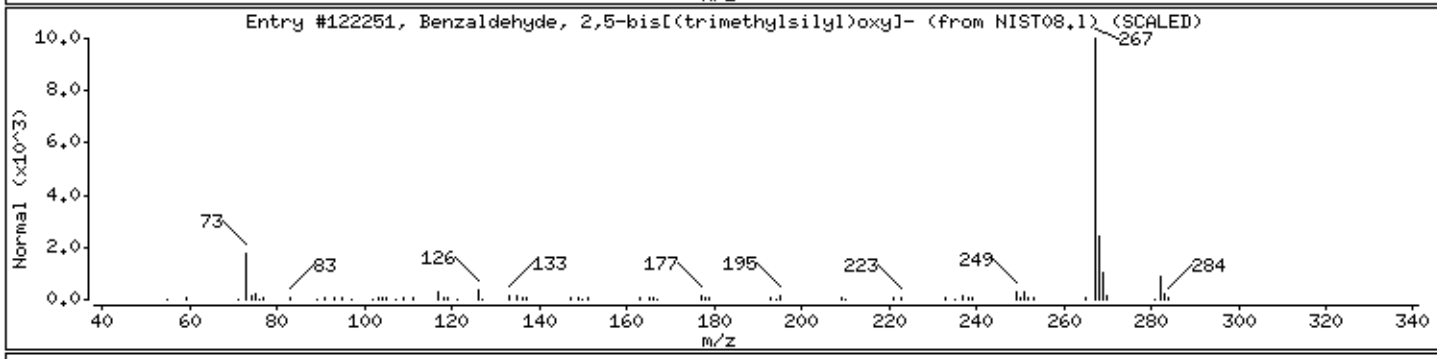
Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
3-Hydroxymandelic acid, ethyl ester, di-	1000071-88-9	NIST08.l	165058	50	C16H28O4Si2	340
Benzaldehyde, 2,5-bis[(trimethylsilyl)ox	56114-69-3	NIST08.l	122251	50	C13H22O3Si2	282







Data File: /chem/msd3.i/07aug17.b/3080718.d

Date : 07-AUG-2017 23:02

Client ID:

Instrument: msd3.i

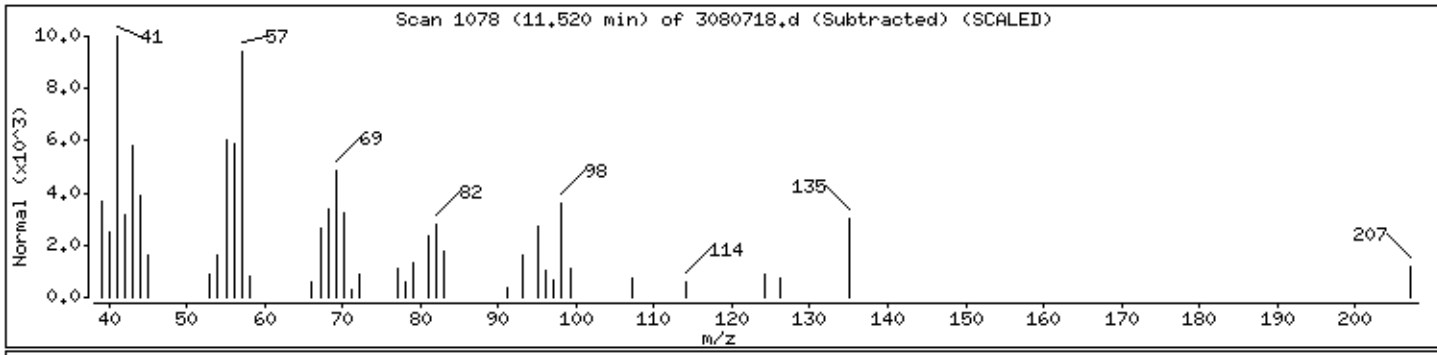
Sample Info: 200ml N2670

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SU-107_0817		
Lab ID:	1708091B-11A	**Date/Time Analyzed:**	8/7/17 11:29 PM
Date/Time Collected:	8/3/17 12:42 PM	**Dilution Factor:**	2.52
Media:		**Instrument/Filename:**	msd3.i / 3080719

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.39	1.6	4.0	Not Detected U
Ethyl Benzene	100-41-4	0.51	2.2	5.5	0.82 J
m,p-Xylene	108-38-3	0.51	2.2	5.5	3.3 J
Naphthalene	91-20-3	0.19	1.0	13	0.48 J
o-Xylene	95-47-6	0.23	2.2	5.5	1.9 J
Toluene	108-88-3	0.30	1.9	4.7	1.9 J
Total Xylene	1330-20-7	NA	D	11	Not Detected U

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	NA		Not Detected
Limonene	138-86-3	NA		Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	102

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080719.d
Lab Smp Id: 1708091B-11A
Inj Date : 07-AUG-2017 23:29
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml O0717
Misc Info : 6.0 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 5
Dil Factor: 2.52000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.424	5.410 (1.000)	130	165638	25.0000		80.00- 120.00	100.00
5.424	5.410 (1.000)	128	127228			46.73- 106.73	76.81
5.410	5.410 (1.000)	49	187442			91.08- 151.08	113.16
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.306	6.306 (1.000)	114	574406	25.0000		80.00- 120.00	100.00
6.306	6.306 (1.000)	88	79974			0.00- 44.78	13.92
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	570648	25.0000		80.00- 120.00	100.00
8.755	8.755 (1.000)	82	273086			20.58- 80.58	47.86
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	188759	22.2982	22.298	80.00- 120.00	100.00
5.956	5.956 (1.098)	67	97532			24.54- 84.54	51.67
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	591774	25.3983	25.398	80.00- 120.00	100.00
7.523	7.523 (1.193)	70	60686			0.00- 40.44	10.26

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	376637			35.27- 95.27	63.65
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	367730	24.6817	24.682	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	380102			84.77- 144.77	103.36
9.737	9.737 (1.112)	176	357117			64.74- 124.74	97.11
147 Toluene					CAS #: 108-88-3		
7.573	7.574 (1.201)	91	5002	0.19925	0.5021	80.00- 120.00	100.00(a)
7.581	7.574 (1.202)	92	3057			27.96- 87.96	61.13
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	910	0.07501	0.1890	80.00- 120.00	100.00(a)
8.827	8.827 (1.008)	91	3187			272.32- 332.32	350.28
169 m,p-Xylene					CAS #: 108-38-3		
8.920	8.927 (1.019)	106	4545	0.29960	0.7550	80.00- 120.00	100.00(a)
8.920	8.927 (1.019)	91	9982			165.91- 225.91	219.61
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.059)	106	2524	0.17496	0.4409	80.00- 120.00	100.00(a)
9.264	9.264 (1.058)	91	4969			175.85- 235.85	196.85
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.453)	128	2239	0.03606	0.09088	80.00- 120.00	100.00(a)
12.738	12.717 (1.455)	127	296			0.00- 43.00	13.24

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080719.d
Lab Smp Id: 1708091B-11A
Inj Date : 07-AUG-2017 23:29
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml O0717
Misc Info : 6.0 Hg->15 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 5
Dil Factor: 2.52000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.424	788620	25.000
* 163 Chlorobenzene-d5	8.755	1675313	25.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.353	13768185	436.464234	1099.9	0		0	98
Unknown				CAS #:			
1.786	137724	4.36597016	11.002	0		0	98
Unknown				CAS #:			
1.982	64150	2.03360393	5.125	0		0	98
Cyclotrisiloxane, hexamethyl-				CAS #: 541-05-9			
7.781	360780	5.38377154	13.567	91	NIST08.1	76687	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Octane				CAS #: 111-65-9			
7.889	262693	3.92005886	9.878	72	NIST08.l	7548	163
Cyclotetrasiloxane, octamethyl-				CAS #: 556-67-2			
9.658	258927	3.86385224	9.737	90	NIST08.l	133885	163
Decane, 3,6-dimethyl-				CAS #: 17312-53-7			
10.553	447336	6.67540509	16.822	70	NIST08.l	37498	163
Undecane, 2,7-dimethyl-				CAS #: 17301-24-5			
10.611	156340	2.33300036	5.879	72	NIST08.l	47647	163
Undecane				CAS #: 1120-21-4			
10.940	155741	2.32406302	5.857	90	NIST08.l	27916	163
Decane, 3,6-dimethyl-				CAS #: 17312-53-7			
10.976	321174	4.79274230	12.078	64	NIST08.l	37498	163
Hexadecane				CAS #: 544-76-3			
11.033	140679	2.09928753	5.290	72	NIST08.l	79881	163
Benzeneethanamine, N-[(pentafluorophenyl				CAS #: 55429-85-1			
11.184	183251	2.73457144	6.891	53	NIST08.l	210821	163

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080719.d
Lab Smp Id: 1708091B-11A
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 6.0 Hg->15 psi

Calibration Date: 07-AUG-2017
Calibration Time: 10:44

Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	165638	-8.73
123 1,4-Difluorobenze	637861	382717	893005	574406	-9.95
163 Chlorobenzene-d5	604933	362960	846906	570648	-5.67

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-11A
Level: LOW Operator: mjs
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 6.0 Hg->15 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.298	89.19	70-130
$ 146 Toluene-d8	25.000	25.398	101.59	70-130
$ 177 4-Bromofluorobenze	25.000	24.682	98.73	70-130

ó%

Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

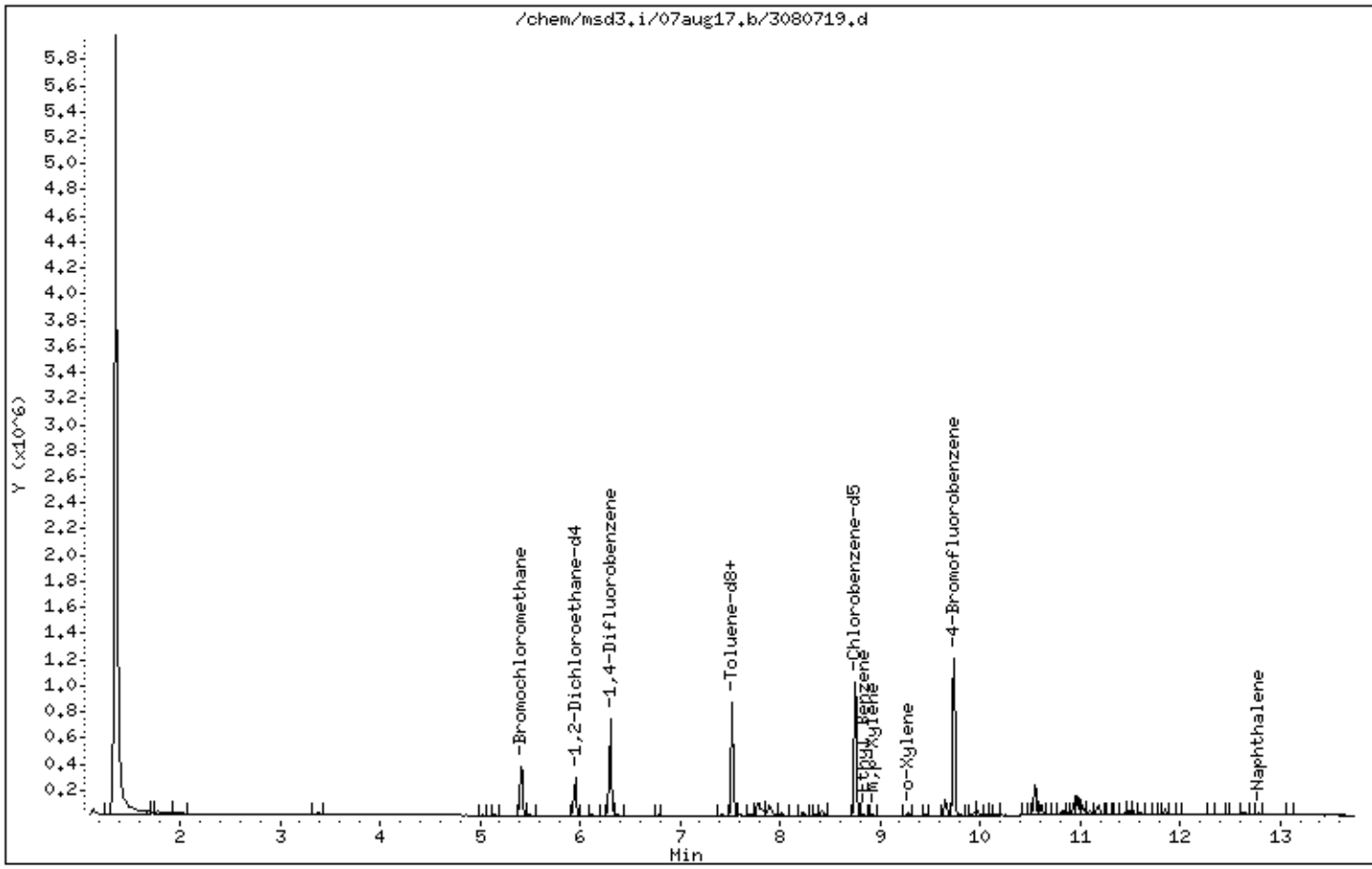
Instrument: msd3.i

Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

Sample Info: 200ml 00717

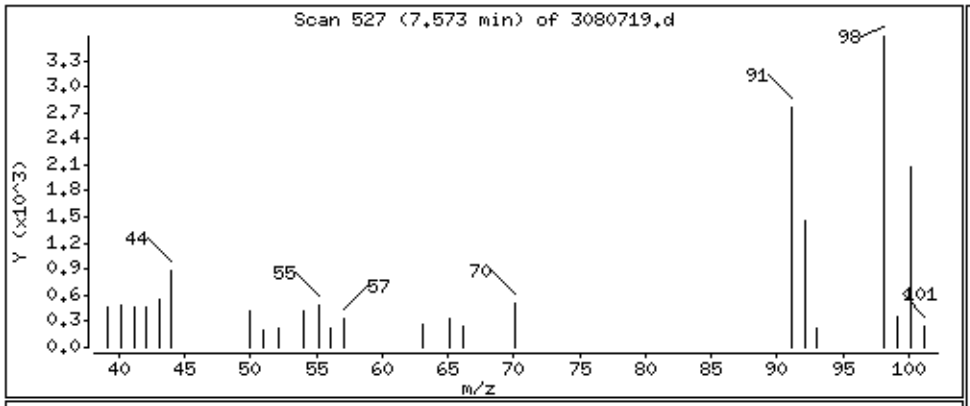
Operator: mjs

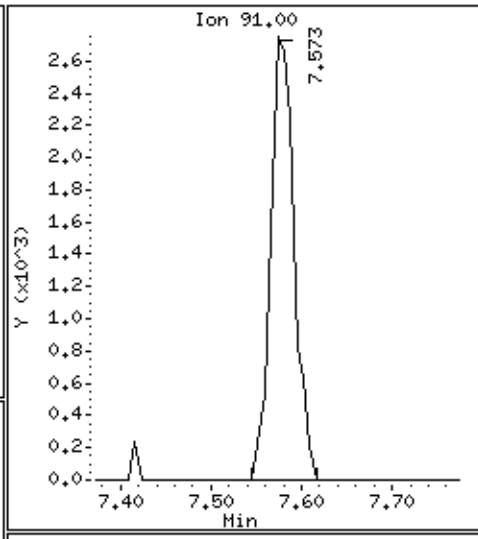
Column phase: RTX-624

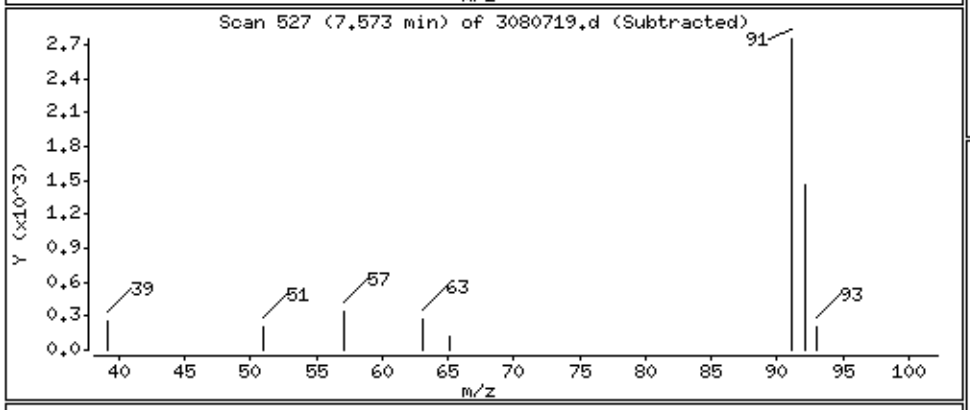
Column diameter: 0.25

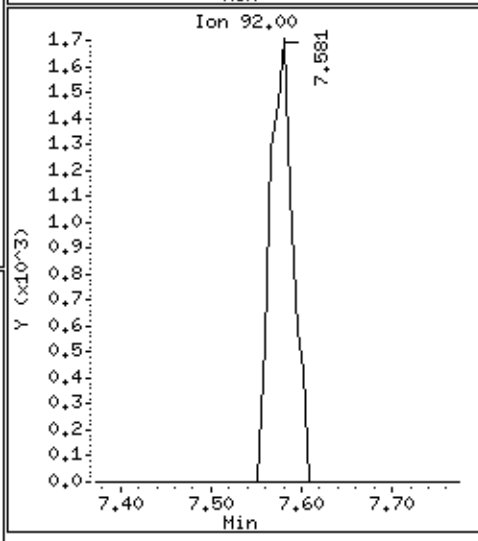
147 Toluene

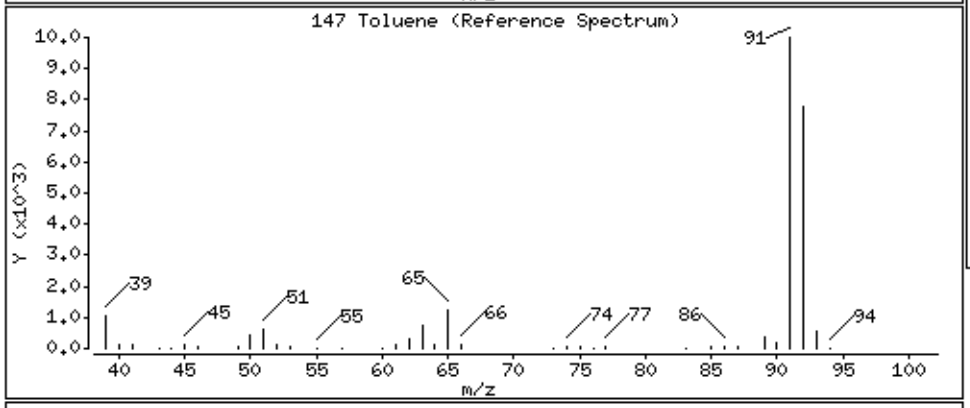
Concentration: 0.5021 PPBV

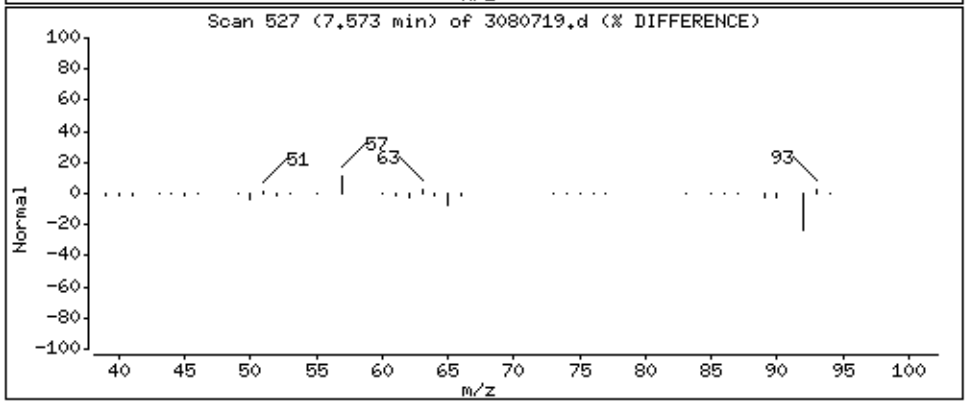












Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

Sample Info: 200ml 00717

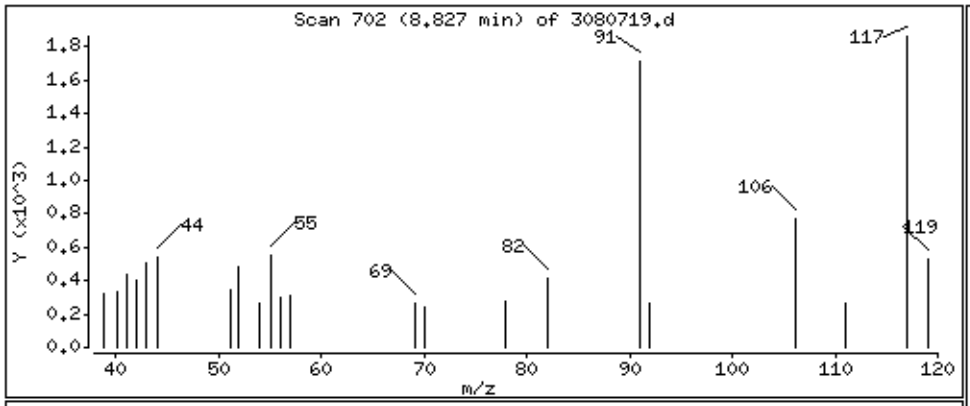
Operator: mjs

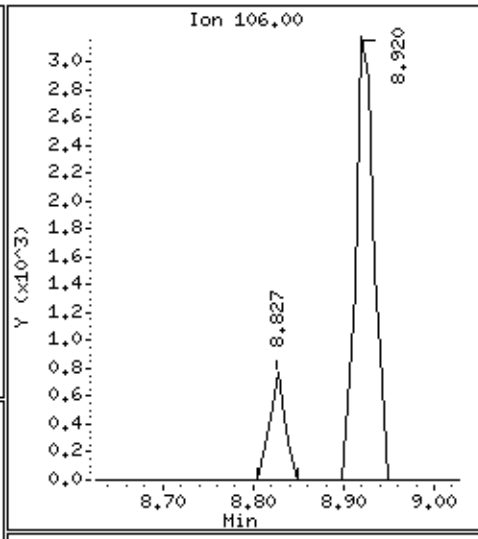
Column phase: RTX-624

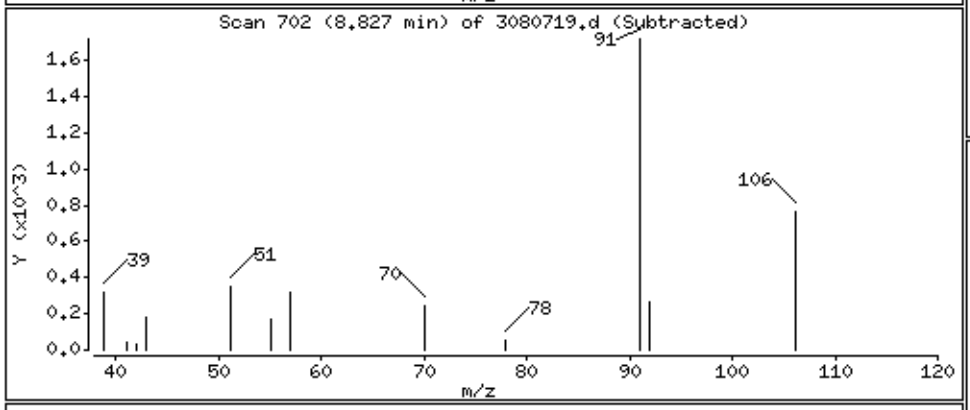
Column diameter: 0.25

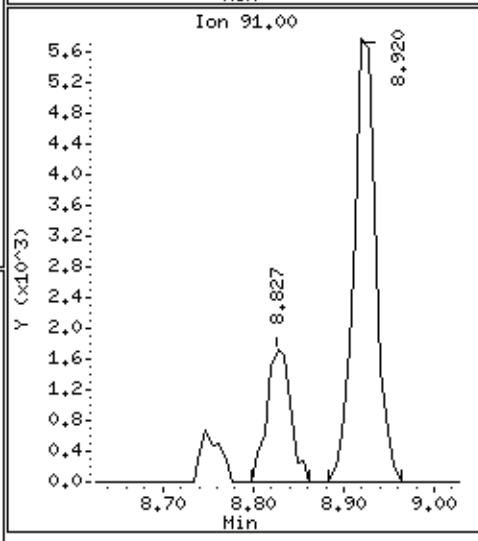
167 Ethyl Benzene

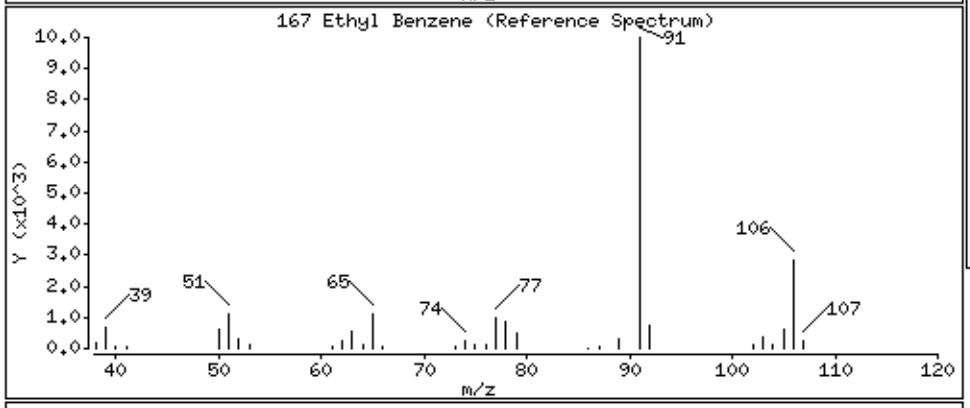
Concentration: 0.1890 PPBV

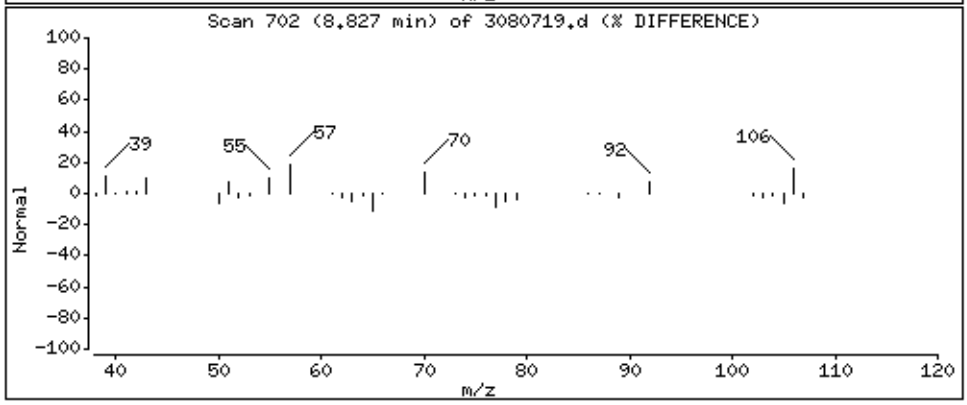












Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

Sample Info: 200ml 00717

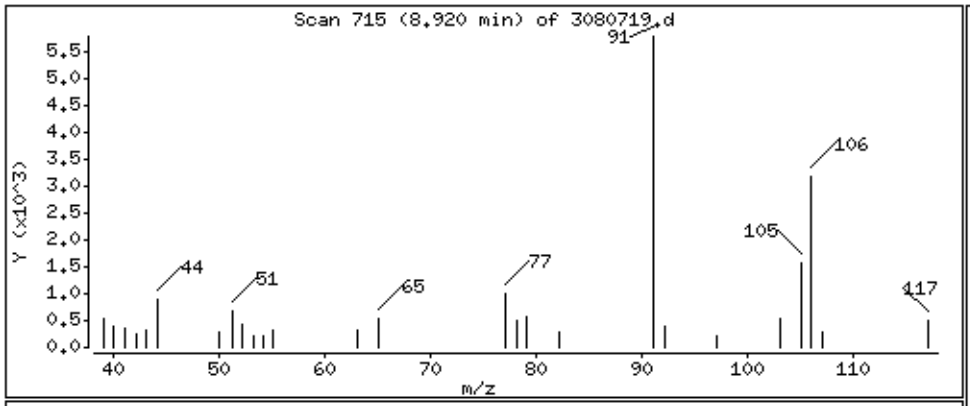
Operator: mjs

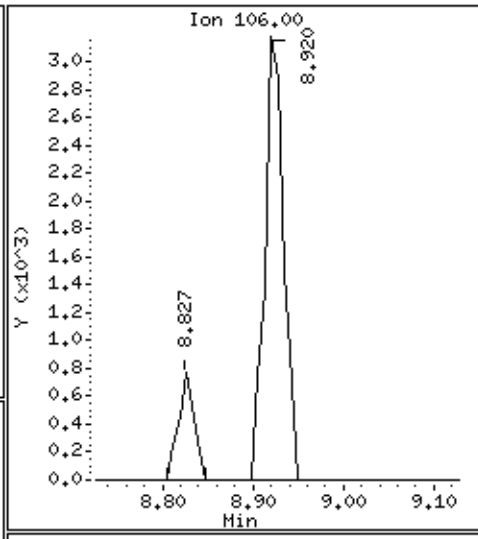
Column phase: RTX-624

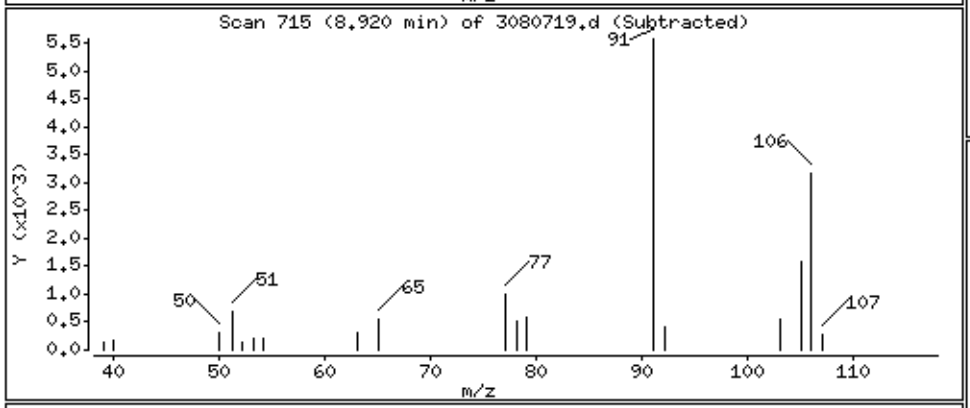
Column diameter: 0.25

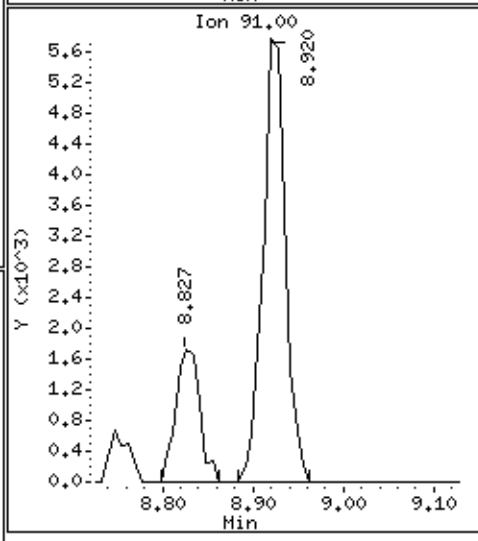
169 m,p-Xylene

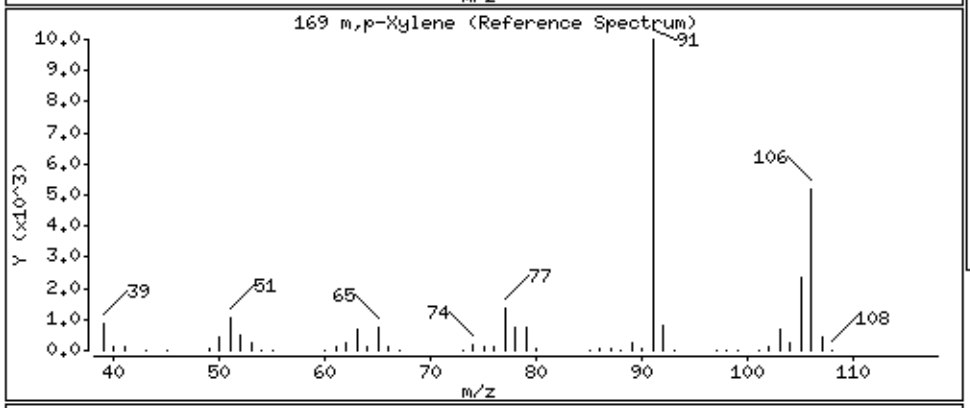
Concentration: 0.7550 PPBV

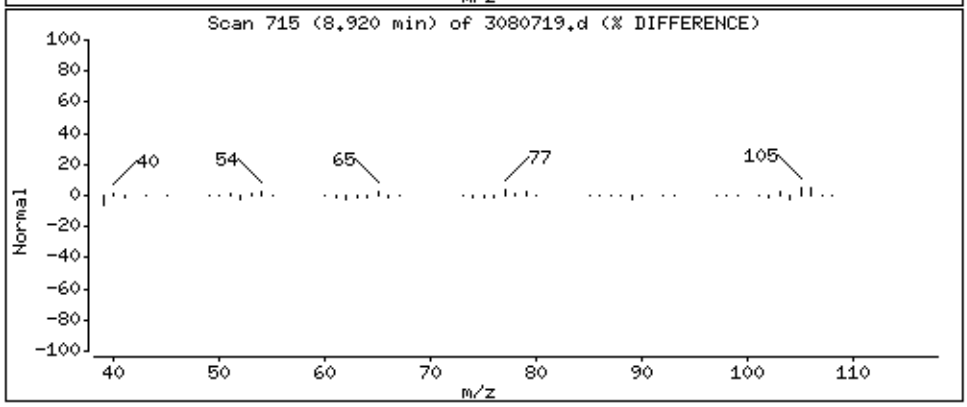












Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

Sample Info: 200ml 00717

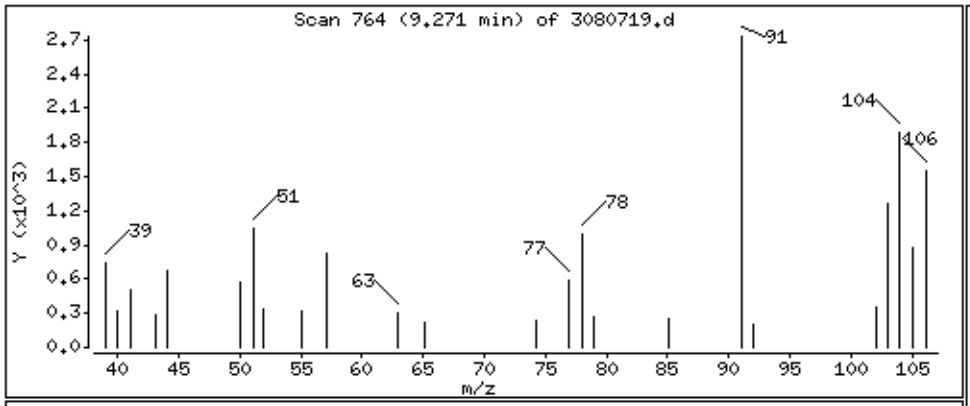
Operator: mjs

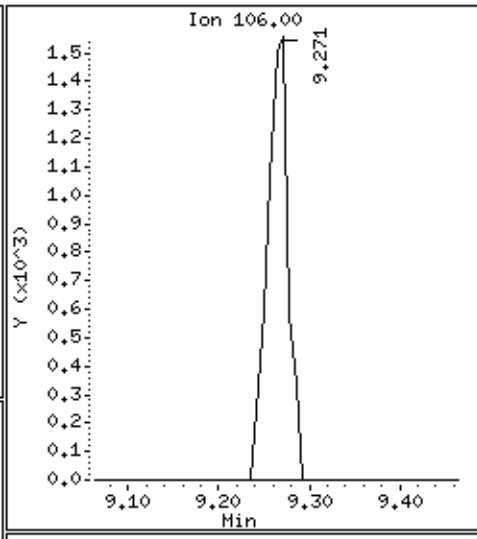
Column phase: RTX-624

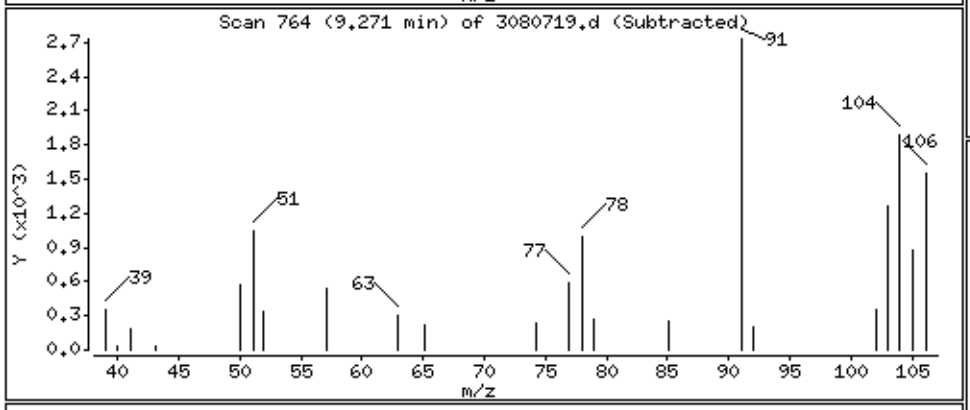
Column diameter: 0.25

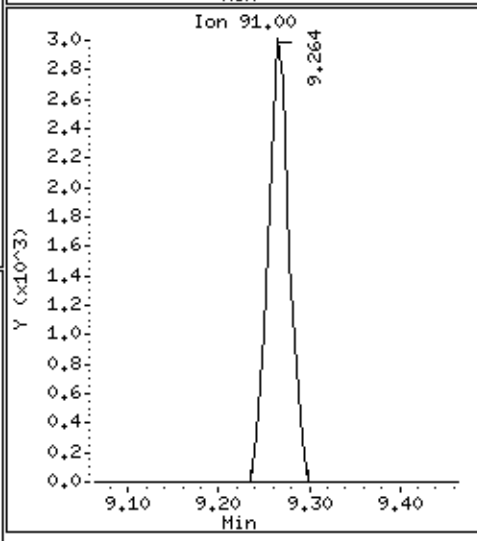
171 o-Xylene

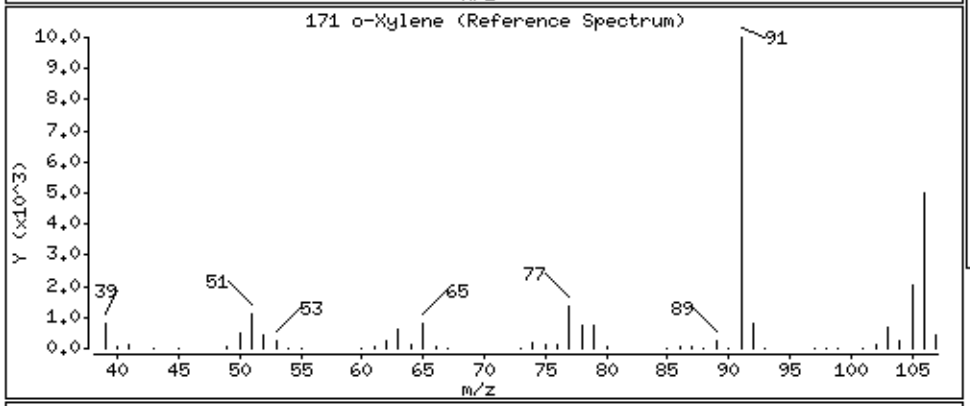
Concentration: 0.4409 PPBV

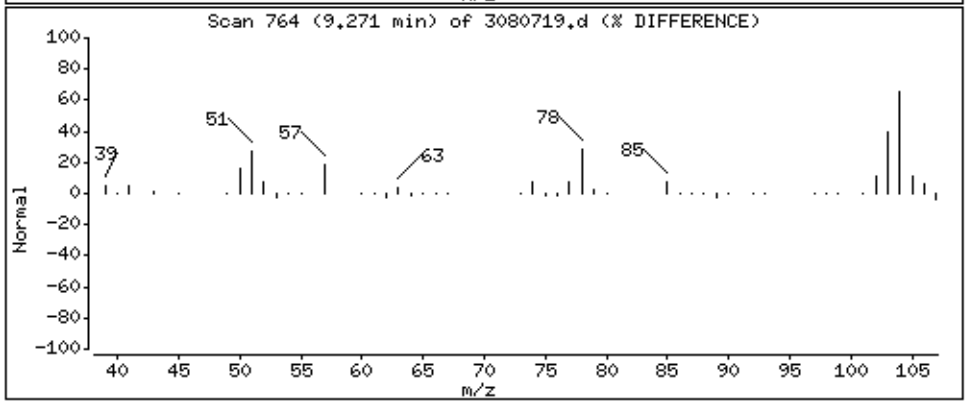












Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

Sample Info: 200ml 00717

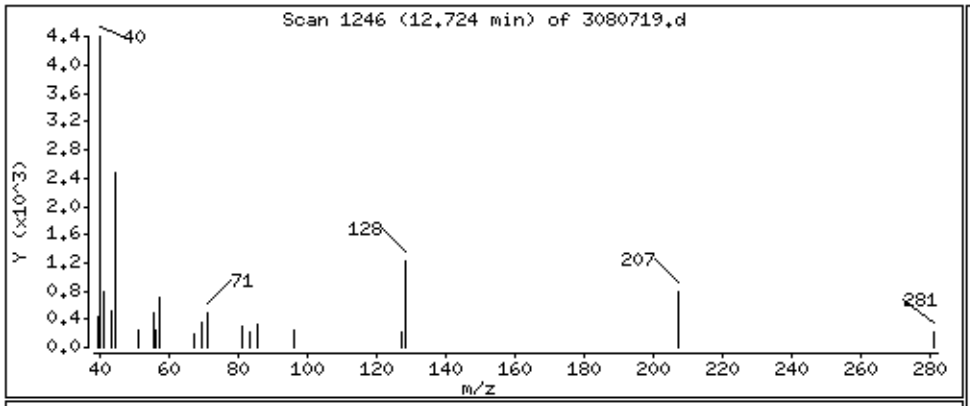
Operator: mjs

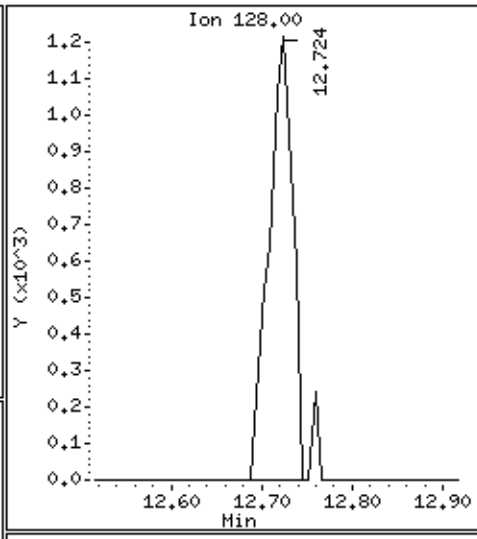
Column phase: RTX-624

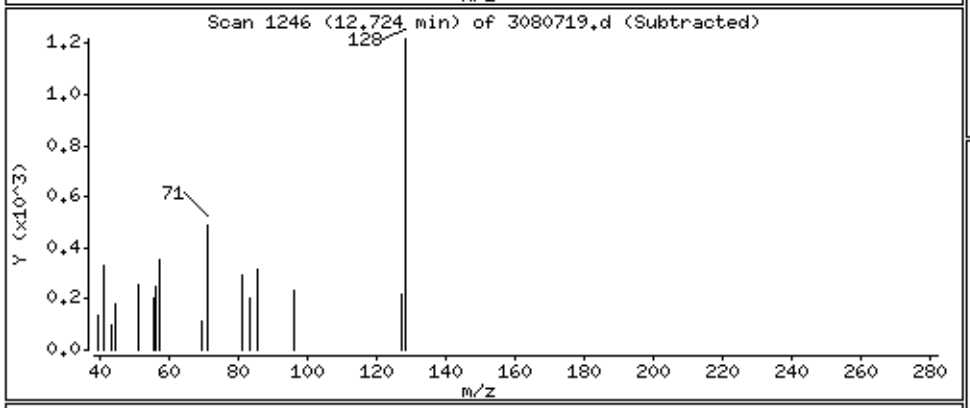
Column diameter: 0.25

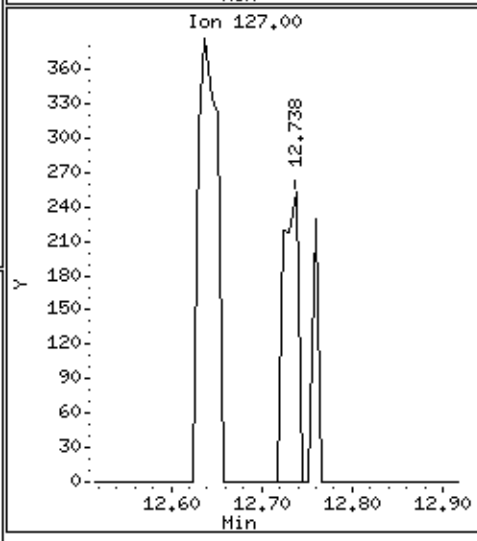
228 Naphthalene

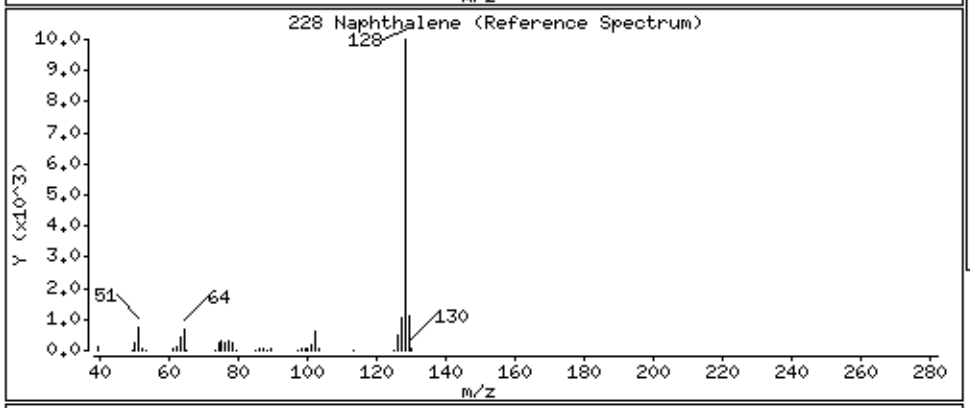
Concentration: 0.09088 PPBV

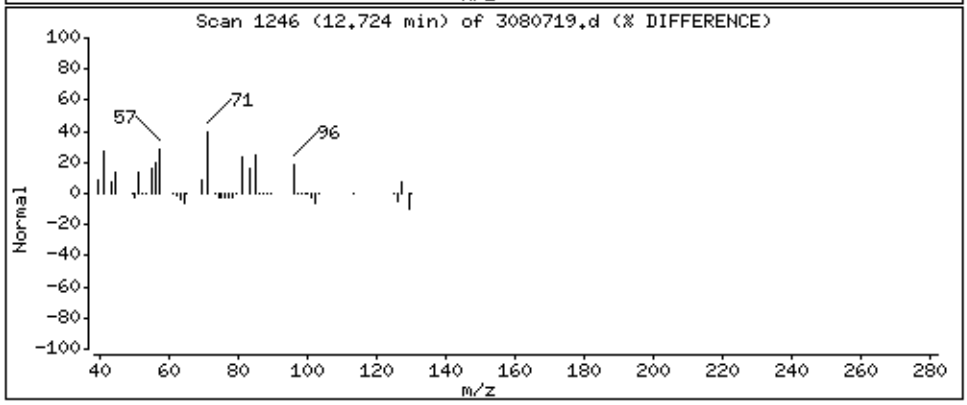












Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

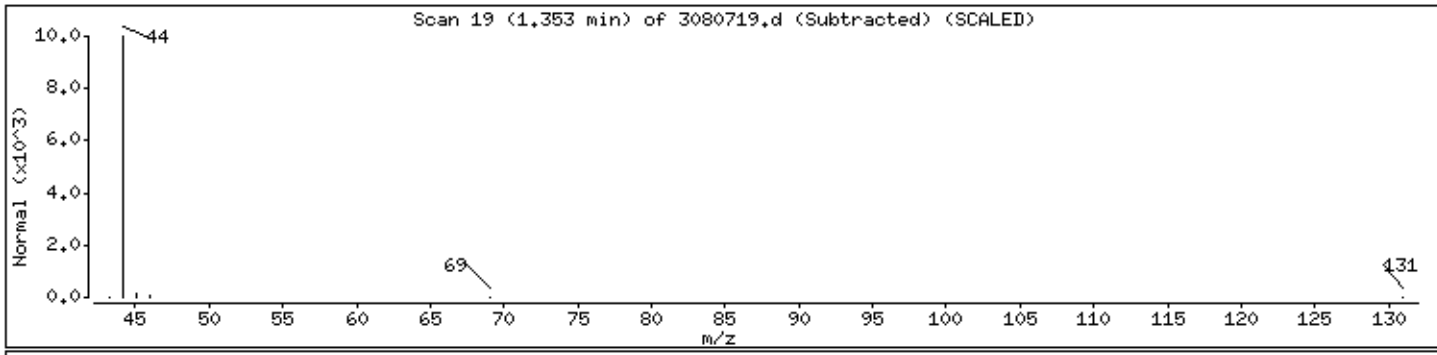
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

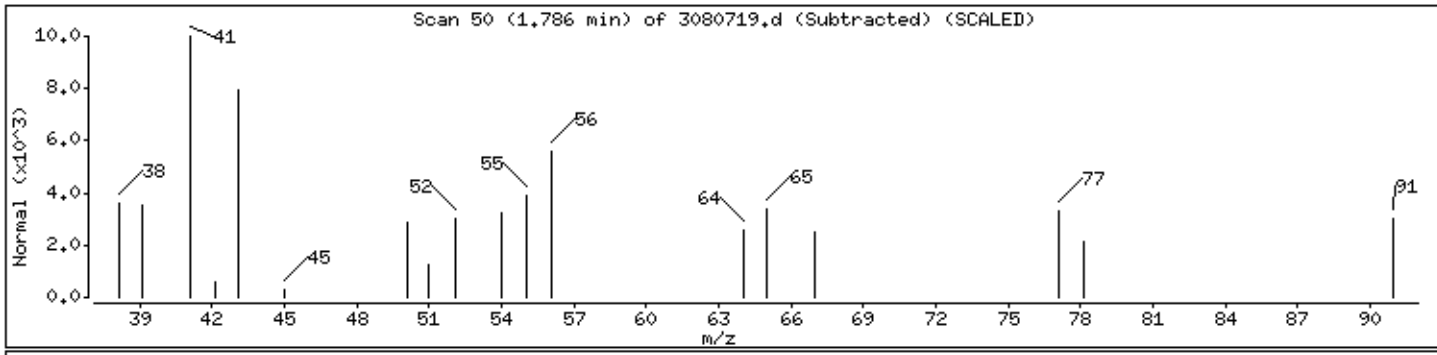
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

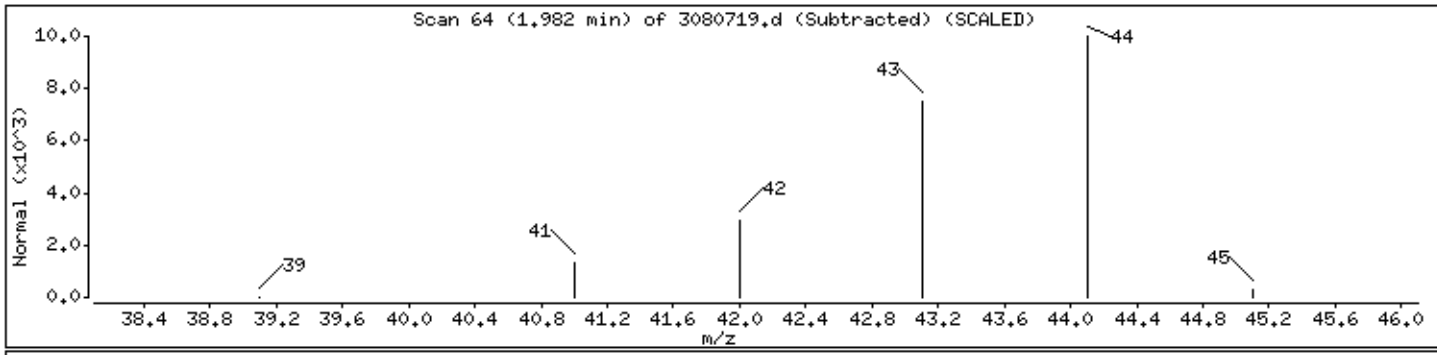
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

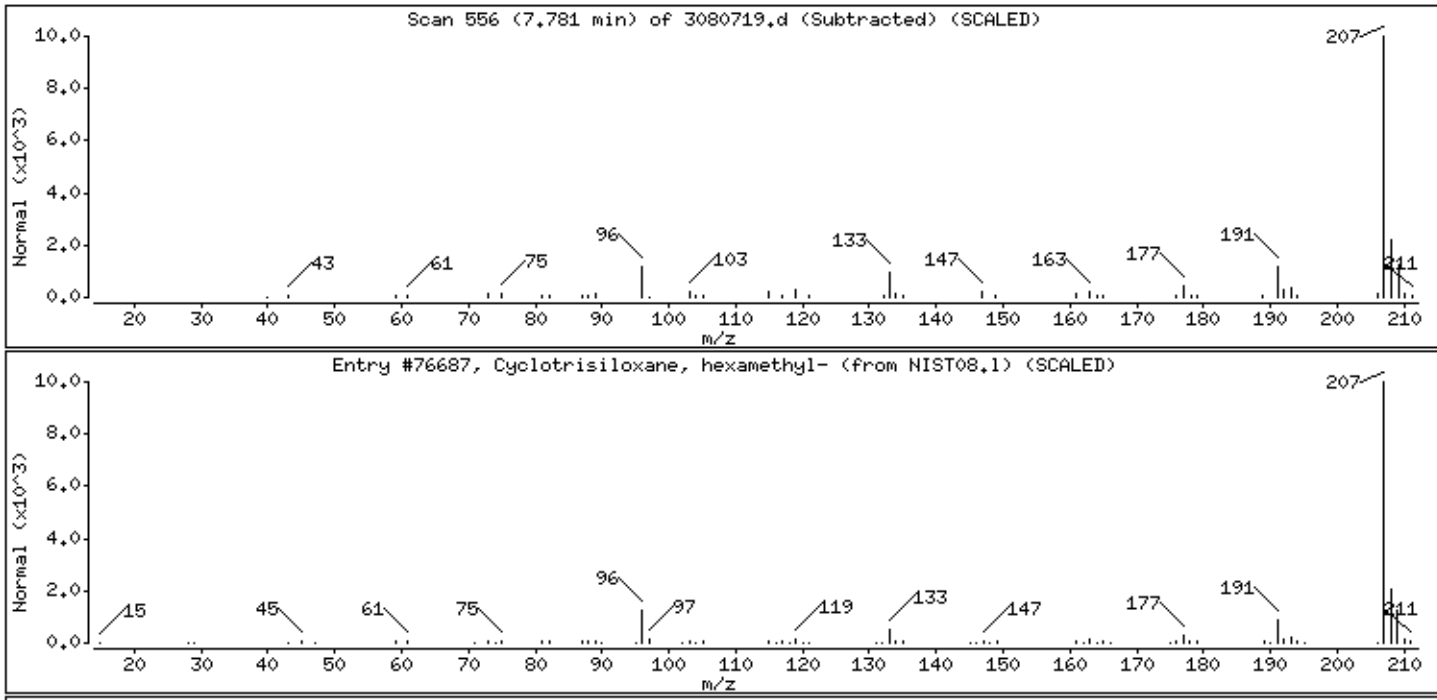
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST08.l	76687	91	C6H18O3Si3	222



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

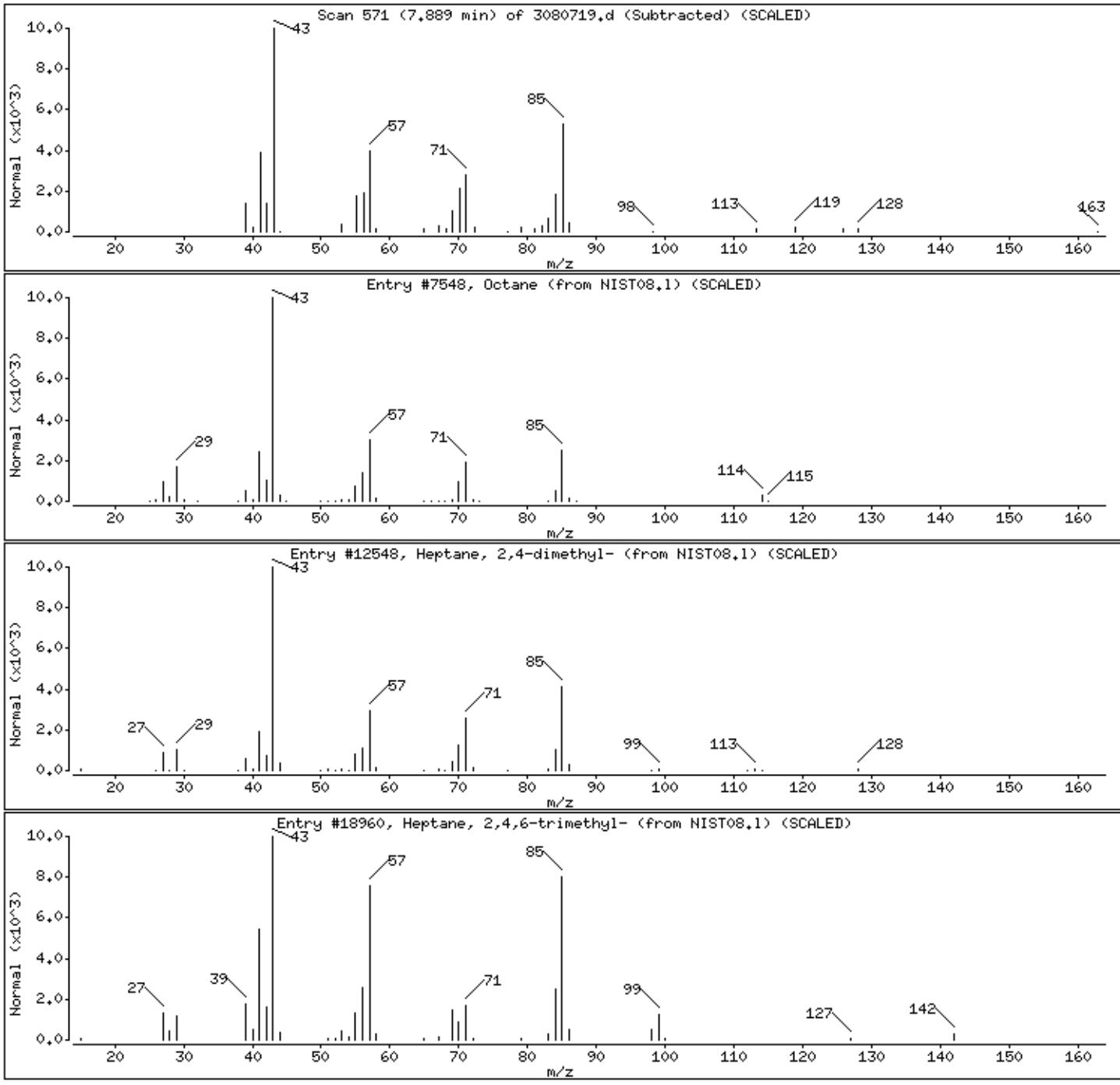
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Octane	111-65-9	NIST08.l	7548	72	C8H18	114
Heptane, 2,4-dimethyl-	2213-23-2	NIST08.l	12548	68	C9H20	128
Heptane, 2,4,6-trimethyl-	2613-61-8	NIST08.l	18960	59	C10H22	142



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

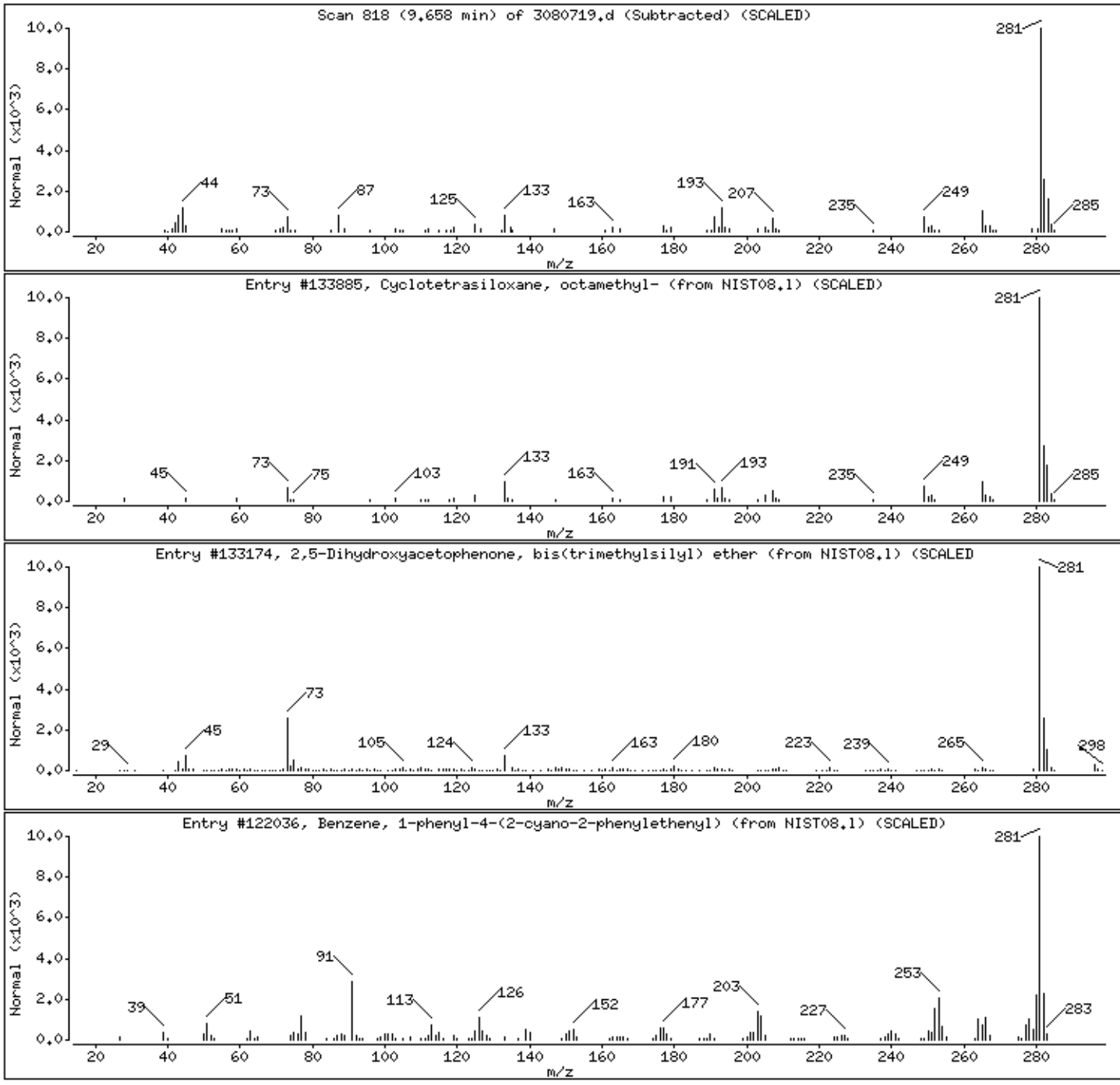
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Cyclotetrasiloxane, octamethyl-	556-67-2	NIST08.l	133885	90	C8H24O4Si4	296
2,5-Dihydroxyacetophenone, bis(trimethyl	1000352-83-7	NIST08.l	133174	59	C14H24O3Si2	296
Benzene, 1-phenyl-4-(2-cyano-2-phenyleth	27869-56-3	NIST08.l	122036	59	C21H15N	281



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

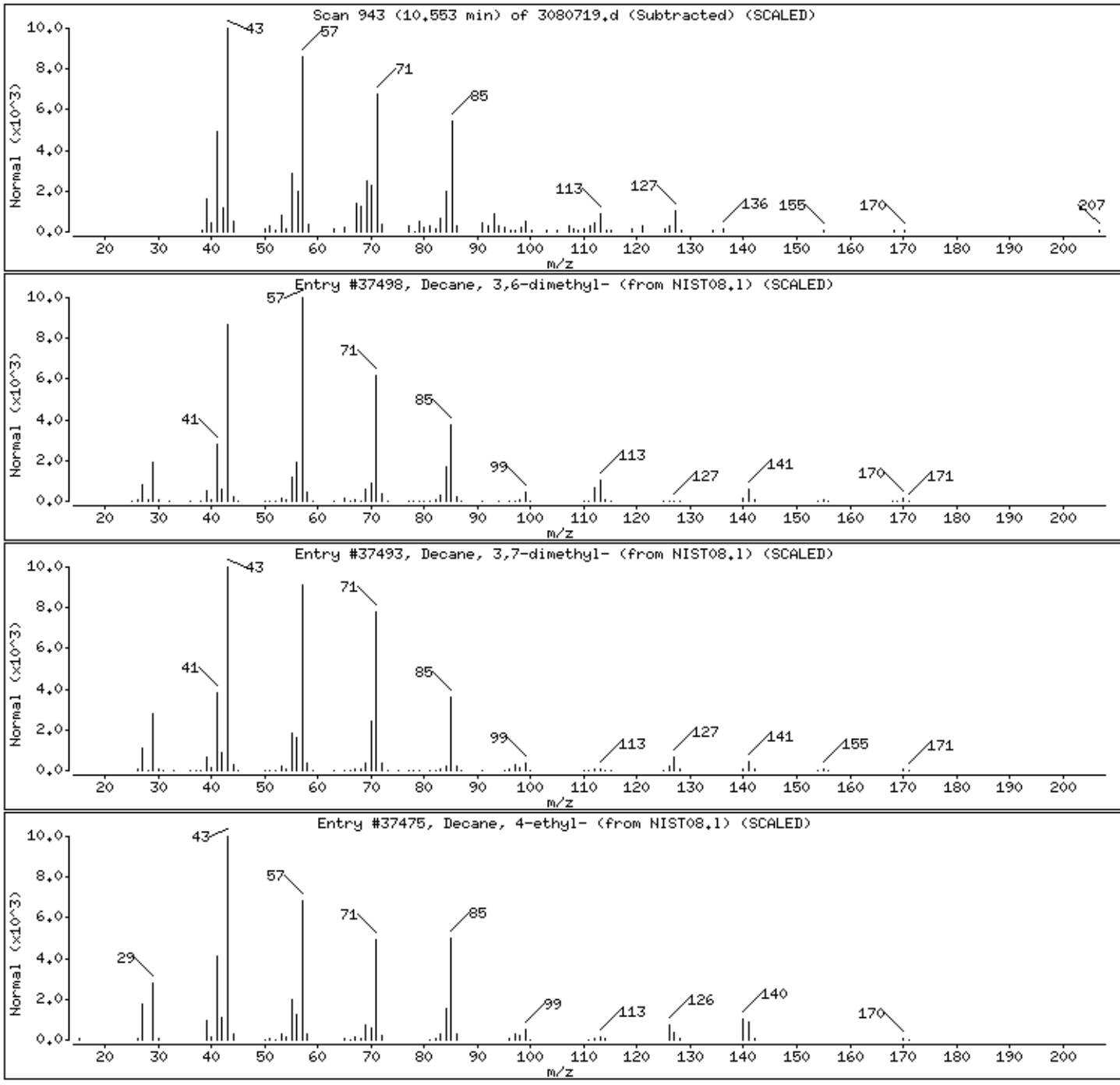
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Decane, 3,6-dimethyl-	17312-53-7	NIST08.l	37498	70	C12H26	170
Decane, 3,7-dimethyl-	17312-54-8	NIST08.l	37493	70	C12H26	170
Decane, 4-ethyl-	1636-44-8	NIST08.l	37475	64	C12H26	170



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

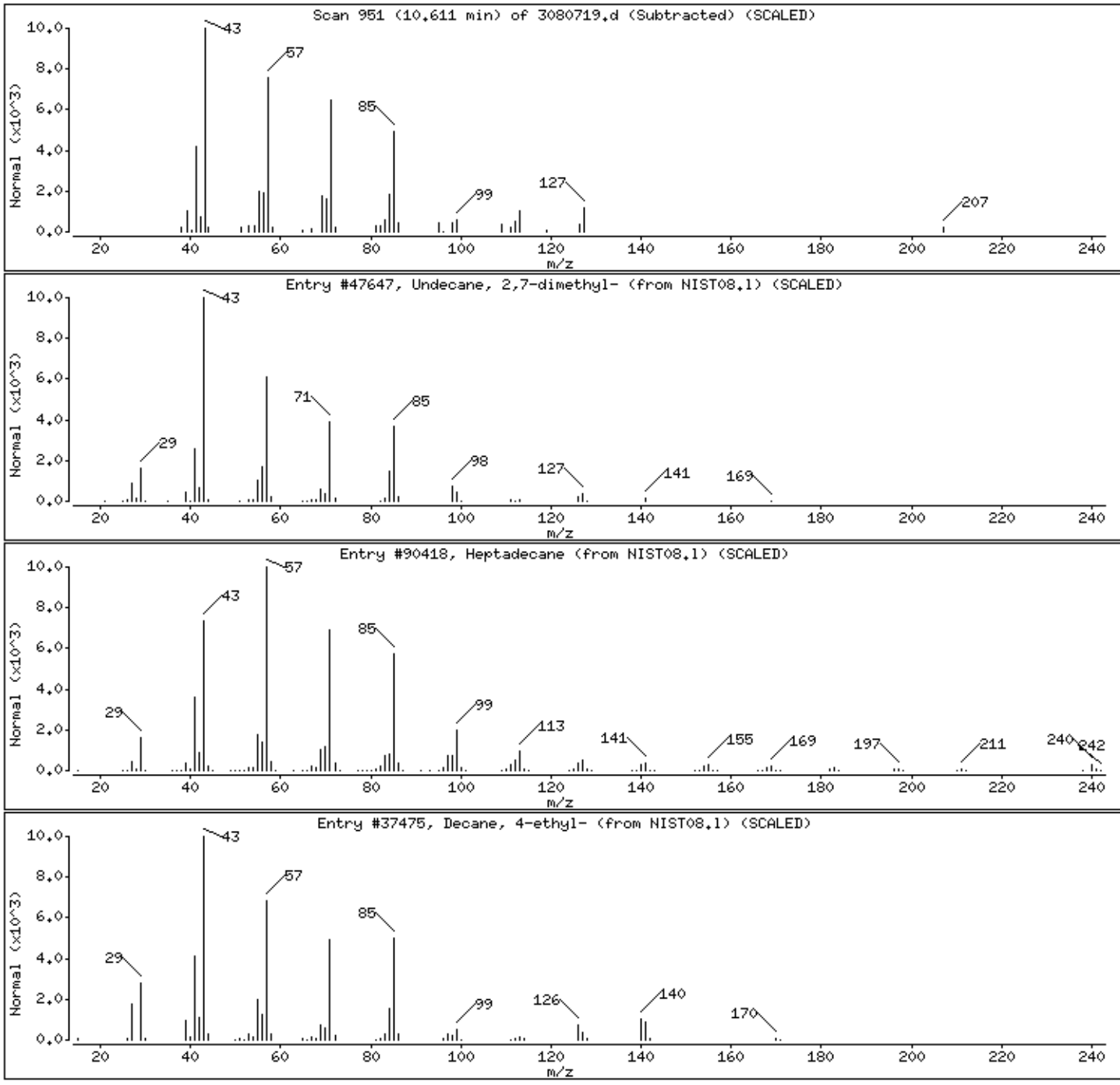
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Undecane, 2,7-dimethyl-	17301-24-5	NIST08.l	47647	72	C13H28	184
Heptadecane	629-78-7	NIST08.l	90418	64	C17H36	240
Decane, 4-ethyl-	1636-44-8	NIST08.l	37475	59	C12H26	170



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

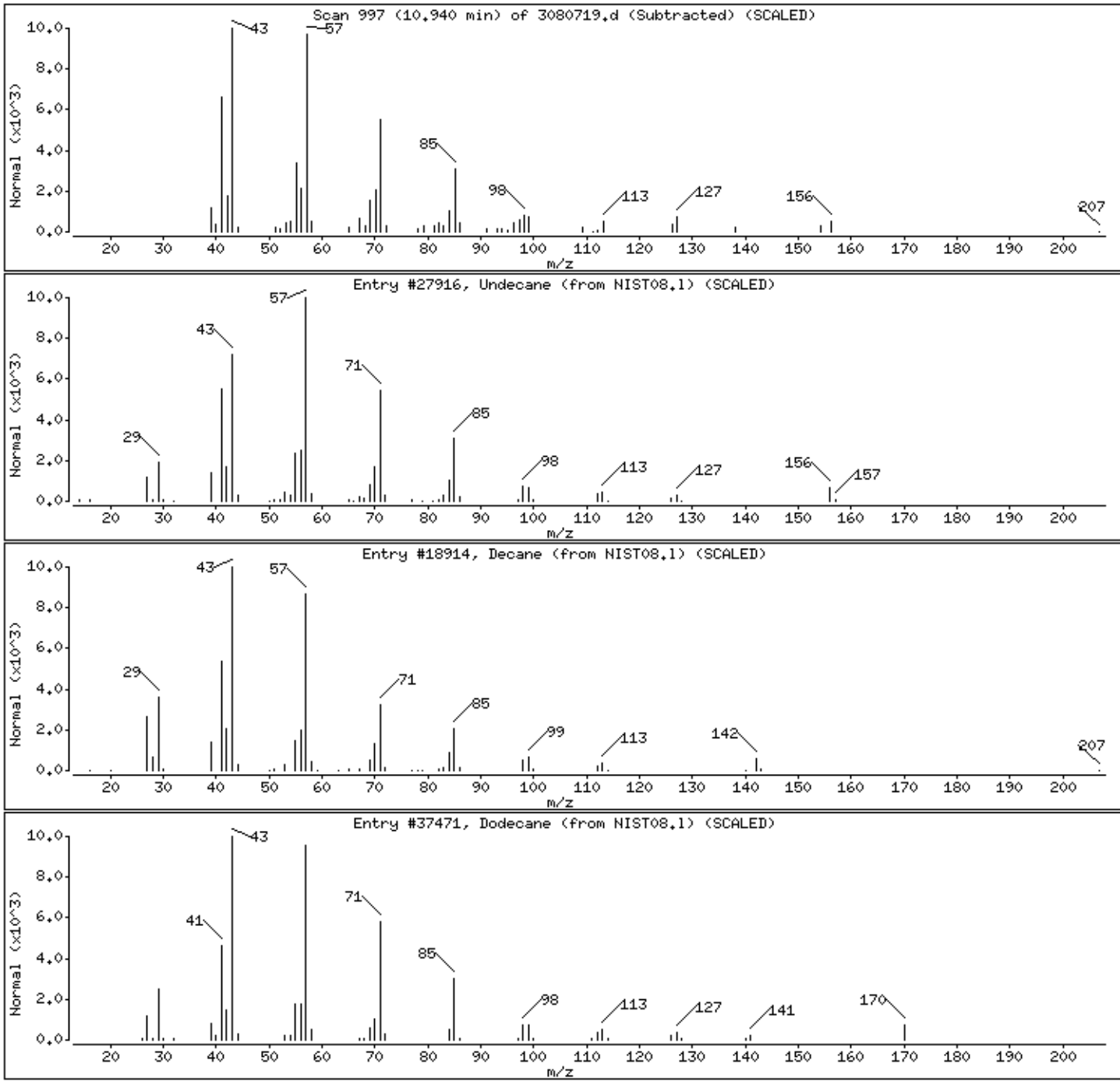
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Undecane	1120-21-4	NIST08.l	27916	90	C11H24	156
Decane	124-18-5	NIST08.l	18914	86	C10H22	142
Dodecane	112-40-3	NIST08.l	37471	72	C12H26	170



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

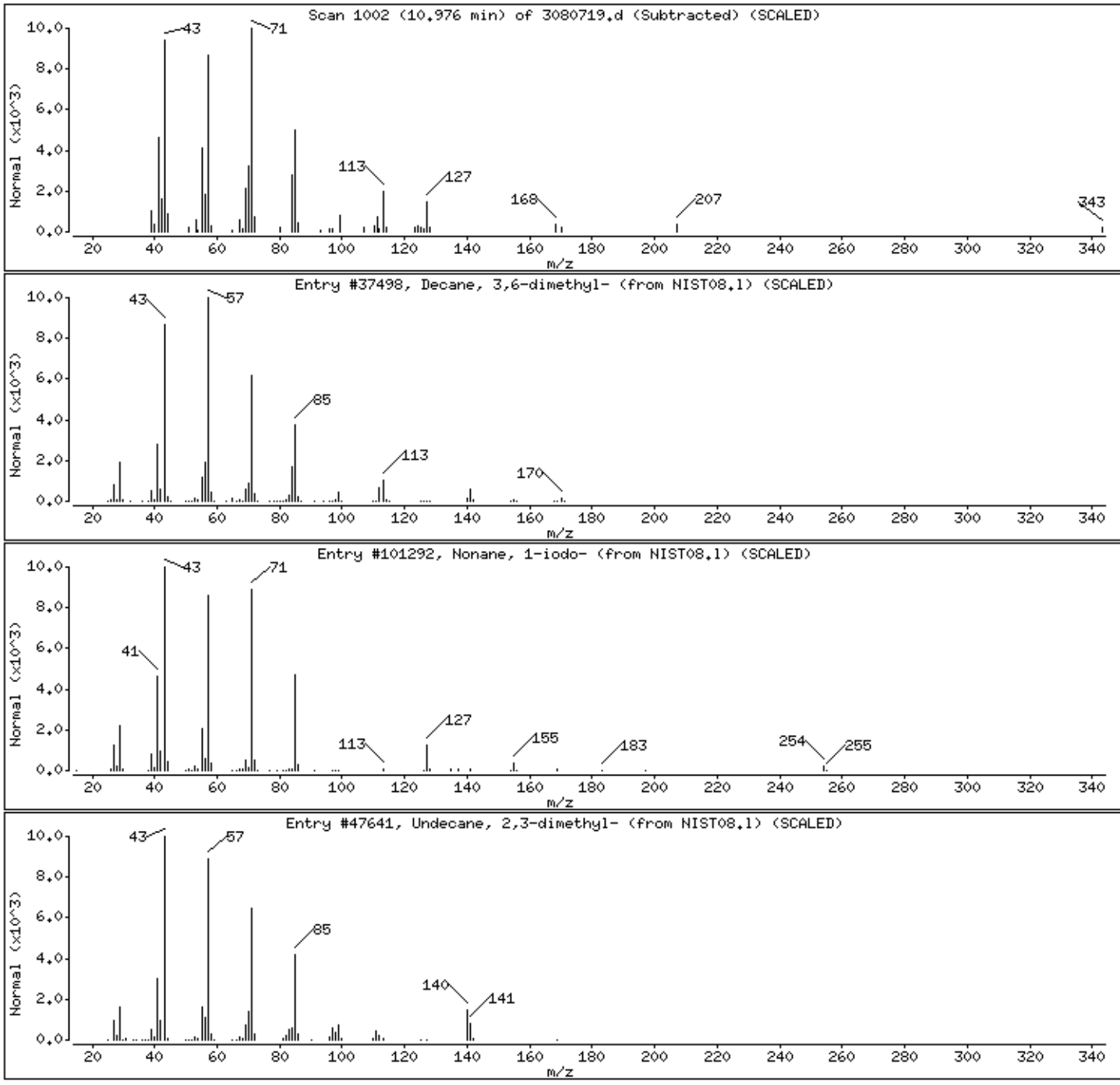
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Decane, 3,6-dimethyl-	17312-53-7	NIST08.l	37498	64	C12H26	170
Nonane, 1-iodo-	4282-42-2	NIST08.l	101292	58	C9H19I	254
Undecane, 2,3-dimethyl-	17312-77-5	NIST08.l	47641	53	C13H28	184



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

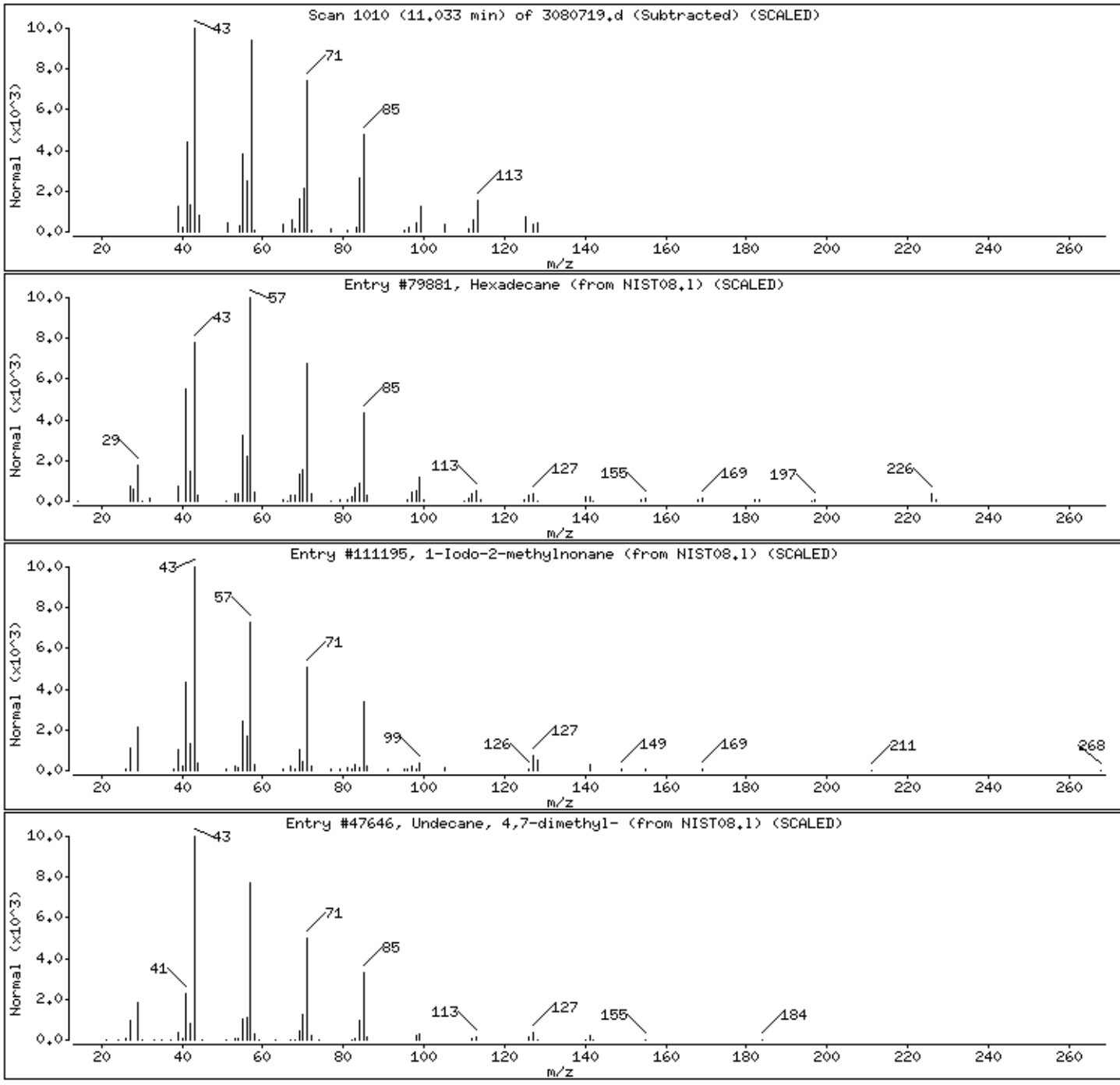
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Hexadecane	544-76-3	NIST08.l	79881	72	C16H34	226
1-Iodo-2-methylnonane	1000101-47-9	NIST08.l	111195	64	C10H21I	268
Undecane, 4,7-dimethyl-	17301-32-5	NIST08.l	47646	64	C13H28	184



Data File: /chem/msd3.i/07aug17.b/3080719.d

Date : 07-AUG-2017 23:29

Client ID:

Instrument: msd3.i

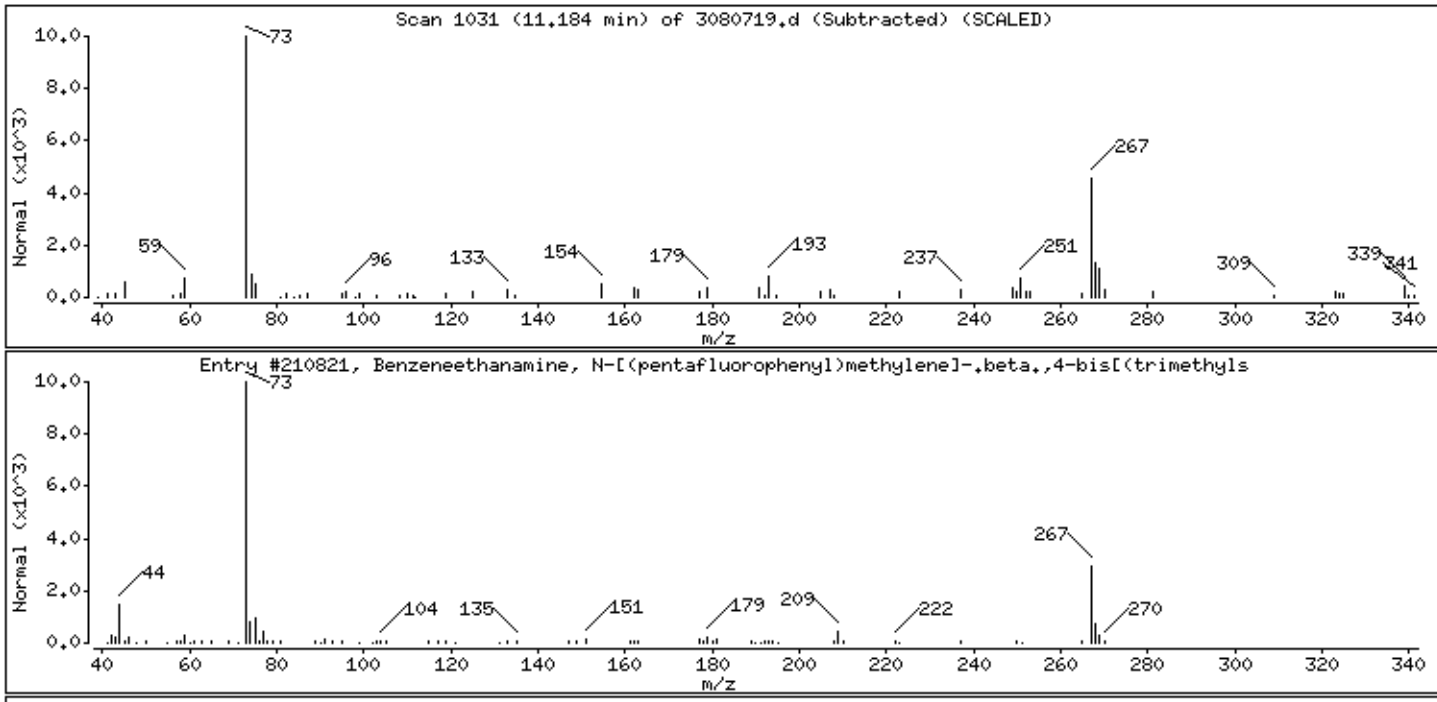
Sample Info: 200ml 00717

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzeneethanamine, N-[(pentafluorophenyl	55429-85-1	NIST08.l	210821	53	C21H26F5NO2Si2	475



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SH-E_0817		
Lab ID:	1708091B-12A	**Date/Time Analyzed:**	8/8/17 03:38 PM
Date/Time Collected:	8/3/17 03:25 PM	**Dilution Factor:**	5.43
Media:		**Instrument/Filename:**	msd3.i / 3080808

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.84	3.5	8.7	170
Ethyl Benzene	100-41-4	1.1	4.7	12	390
m,p-Xylene	108-38-3	1.1	4.7	12	670
Naphthalene	91-20-3	0.41	2.3	28	360
o-Xylene	95-47-6	0.49	4.7	12	280
Toluene	108-88-3	0.64	4.1	10	320
Total Xylene	1330-20-7	NA	D	24	940

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	95%		570 NJ
Limonene	138-86-3	91%		2200 NJB

NJ =The identification is based on presumptive evidence; estimated value.
B = Analyte present in laboratory blank greater than reporting limit.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080808.d
Lab Smp Id: 1708091B-12A
Inj Date : 08-AUG-2017 15:38
Operator : jg Inst ID: msd3.i
Smp Info : 80ml N2845
Misc Info : 11.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 3
Dil Factor: 5.43000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.424	5.410 (1.000)	130	210899	25.0000			80.00- 120.00	100.00
5.424	5.410 (1.000)	128	163762				46.73- 106.73	77.65
5.410	5.410 (1.000)	49	228906				91.08- 151.08	108.54
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	714461	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	100395				0.00- 44.78	14.05
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.763	8.755 (1.000)	117	701795	25.0000			80.00- 120.00	100.00
8.763	8.755 (1.000)	82	334490				20.58- 80.58	47.66
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	243062	22.5508	22.551		80.00- 120.00	100.00
5.956	5.956 (1.098)	67	125963				24.54- 84.54	51.82
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.530	7.523 (1.194)	98	707229	24.4033	24.403		80.00- 120.00	100.00
7.530	7.523 (1.194)	70	70544				0.00- 40.44	9.97

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.530	7.523 (1.194)	100	449370			35.27- 95.27	63.54
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.744	9.737 (1.112)	174	468289	25.5575	25.557	80.00- 120.00	100.00
9.744	9.737 (1.112)	95	484448			84.77- 144.77	103.45
9.744	9.737 (1.112)	176	447841			64.74- 124.74	95.63
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	222452	9.58322	52.037	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	53350			0.00- 53.39	23.98
147 Toluene					CAS #: 108-88-3		
7.581	7.574 (1.202)	91	483780	15.4934	84.129	80.00- 120.00	100.00
7.581	7.574 (1.202)	92	281231			27.96- 87.96	58.13
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.827 (1.008)	106	245667	16.4659	89.410	80.00- 120.00	100.00
8.834	8.827 (1.008)	91	734076			272.32- 332.32	298.81
169 m,p-Xylene					CAS #: 108-38-3		
8.927	8.920 (1.019)	106	527550	28.2735	153.52	80.00- 120.00	100.00
8.927	8.920 (1.019)	91	1014324			165.91- 225.91	192.27
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.058)	106	207814	11.7118	63.595	80.00- 120.00	100.00
9.271	9.264 (1.058)	91	418033			175.85- 235.85	201.16
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.452)	128	975844	12.7776	69.382	80.00- 120.00	100.00
12.724	12.717 (1.452)	127	126910			0.00- 43.00	13.01
M 239 Total Xylene					CAS #: 1330-20-7		
			735364	39.9852	217.12		

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080808.d
Lab Smp Id: 1708091B-12A
Inj Date : 08-AUG-2017 15:38
Operator : jg Inst ID: msd3.i
Smp Info : 80ml N2845
Misc Info : 11.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 3
Dil Factor: 5.43000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.424	1010718	25.000
* 163 Chlorobenzene-d5	8.763	2580137	25.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.353	2619884	64.8025193	351.88	0		0	98
Isobutane				CAS #: 75-28-5			
1.647	305089	7.54633022	40.976	64	NIST08.1	235	98
Trichloromethane				CAS #: 67-66-3			
5.480	277268	6.85818923	37.240	95	NIST08.1	8890	98
Benzene, 1-ethyl-2-methyl-				CAS #: 611-14-3			
9.973	1345063	13.0328630	70.768	95	NIST08.1	9314	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.045	1431648	13.8718187	75.324	97	NIST08.l	9301	163
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.367	1794315	17.3858435	94.405	97	NIST08.l	9310	163
Limonene				CAS #: 138-86-3			
10.560	41084645	398.085738	2161.6	91	NIST08.l	15483	163(L)
Benzene, 1-methyl-3-(1-methylethyl)-				CAS #: 535-77-3			
10.603	2121247	20.5536223	111.61	91	NIST08.l	14735	163
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.732	700242	6.78492948	36.842	94	NIST08.l	9310	163
Indane				CAS #: 496-11-7			
10.919	10794313	104.590465	567.93	95	NIST08.l	8853	163
Indene				CAS #: 95-13-6			
11.119	979316	9.48898600	51.525	97	NIST08.l	8322	163
Benzene, 1-ethyl-2,4-dimethyl-				CAS #: 874-41-9			
11.191	285331	2.76468437	15.012	58	NIST08.l	14699	163
Benzene, 2-ethyl-1,4-dimethyl-				CAS #: 1758-88-9			
11.262	303001	2.93590179	15.942	97	NIST08.l	14698	163
Indan, 1-methyl-				CAS #: 767-58-8			
11.391	563042	5.45554227	29.624	83	NIST08.l	13876	163
Benzene, 1,3-diethyl-				CAS #: 141-93-5			
11.613	289678	2.80681106	15.241	64	NIST08.l	14666	163
Benzene, 2-ethyl-1,4-dimethyl-				CAS #: 1758-88-9			
11.656	268996	2.60641507	14.153	91	NIST08.l	14714	163
Benzofuran, 2-methyl-				CAS #: 4265-25-2			
11.707	302334	2.92943223	15.907	87	NIST08.l	14362	163
3-Phenylbut-1-ene				CAS #: 934-10-1			
11.907	361975	3.50732199	19.045	91	NIST08.l	13877	163
1H-Indene, 2,3-dihydro-4-methyl-				CAS #: 824-22-6			
12.058	719249	6.96909081	37.842	90	NIST08.l	13916	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
1H-Indene, 1-methyl-				CAS #: 767-59-9			
12.237	337653	3.27165404	17.765	94	NIST08.l	12956	163

QC Flag Legend

L - Operator selected an alternate library search match.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080808.d
Lab Smp Id: 1708091B-12A
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 11.5 Hg->5 psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	210899	7.08
123 1,4-Difluorobenze	728289	436973	1019605	714461	-1.90
163 Chlorobenzene-d5	663497	398098	928896	701795	5.77

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-12A
Level: LOW Operator: jg
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 11.5 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.551	90.20	70-130
$ 146 Toluene-d8	25.000	24.403	97.61	70-130
$ 177 4-Bromofluorobenze	25.000	25.557	102.23	70-130

Àí

Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

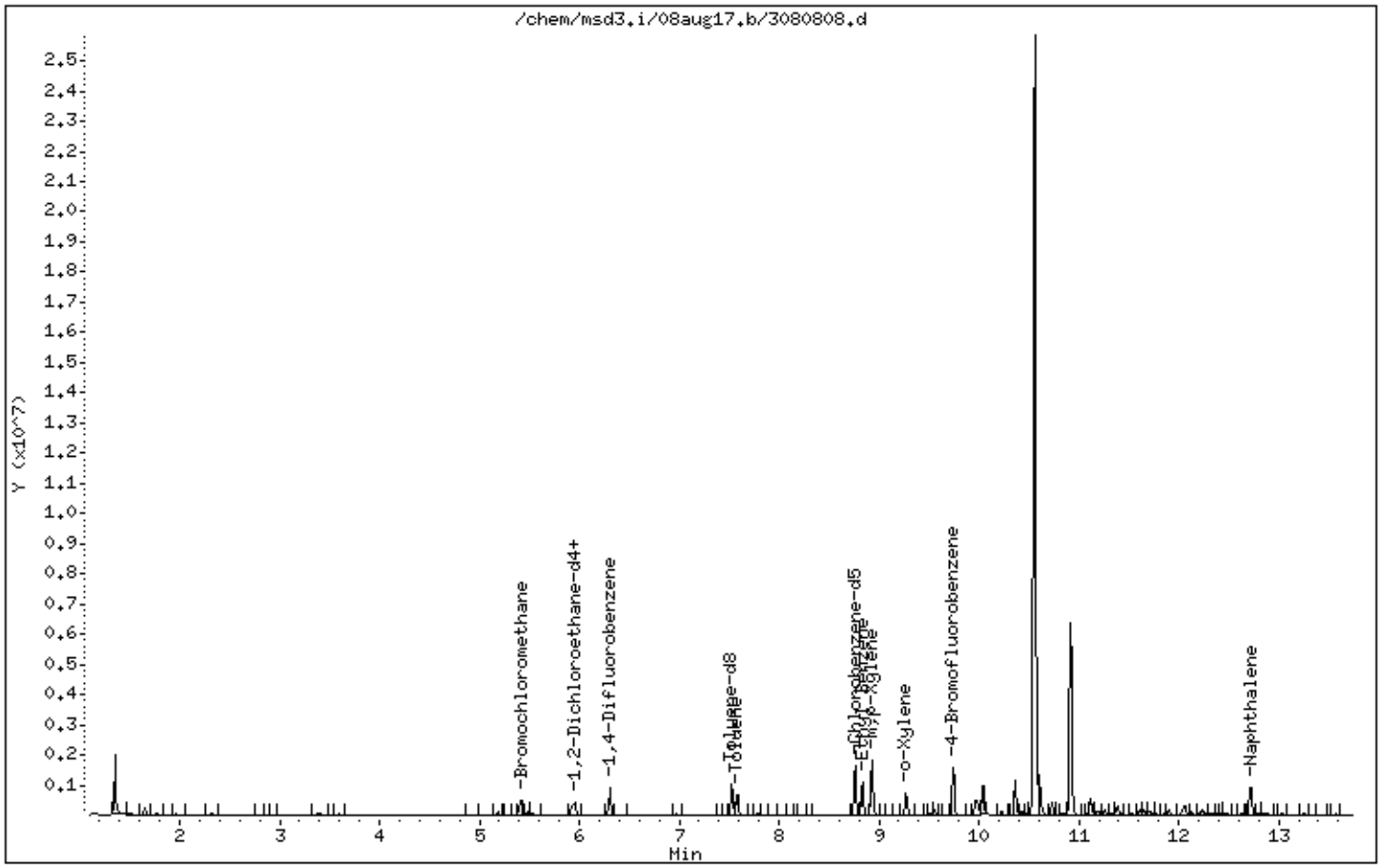
Instrument: msd3.i

Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

Sample Info: 80ml N2845

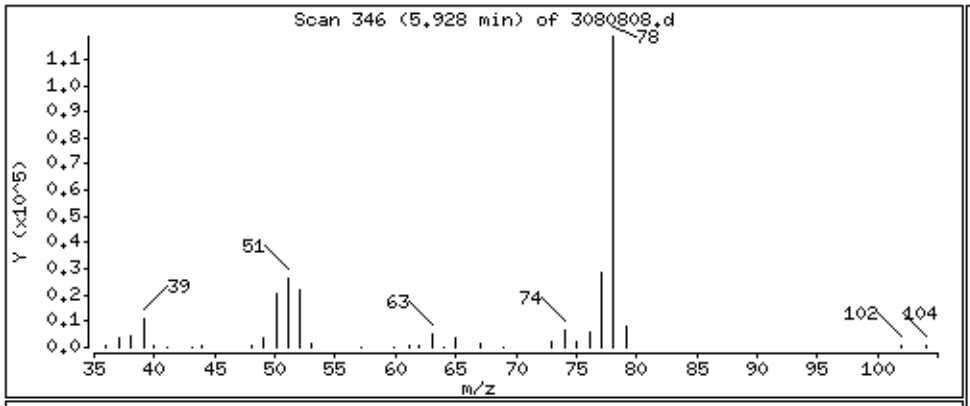
Operator: jg

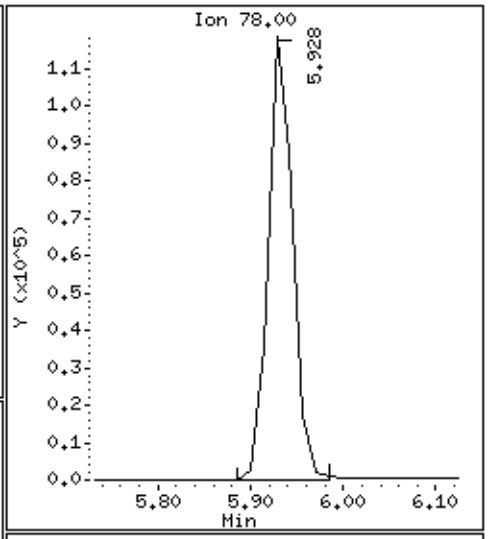
Column phase: RTX-624

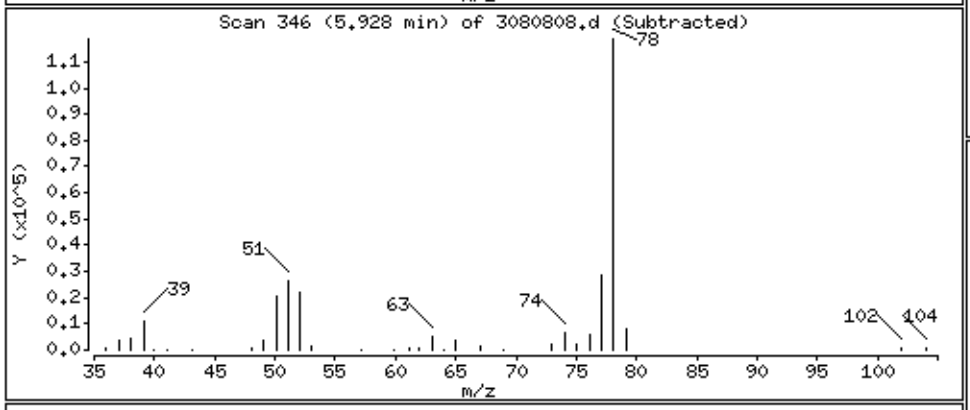
Column diameter: 0.25

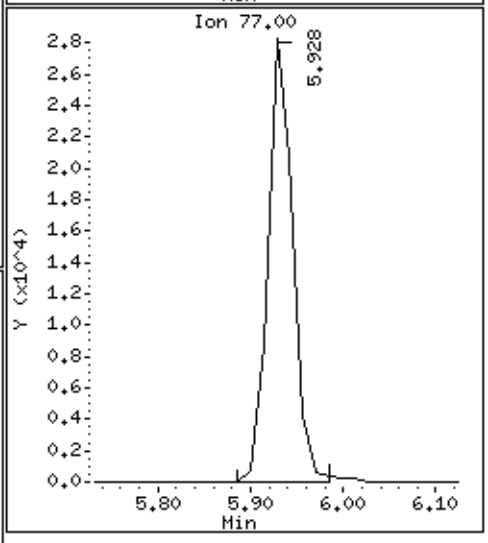
116 Benzene

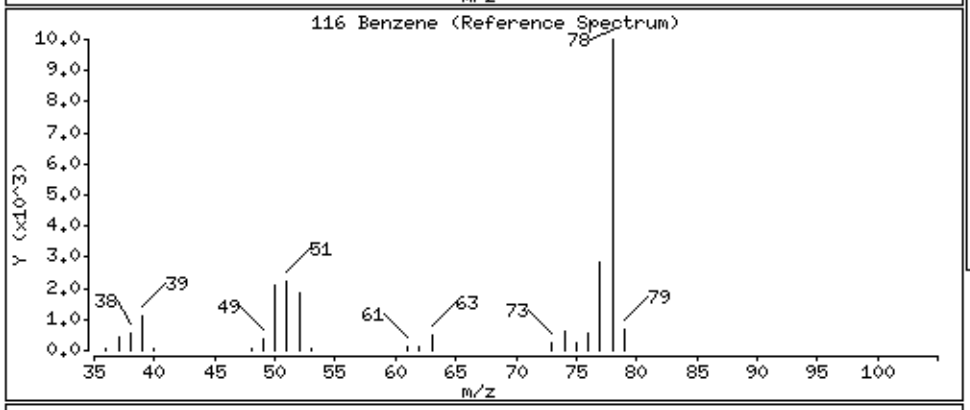
Concentration: 52.037 PPBV

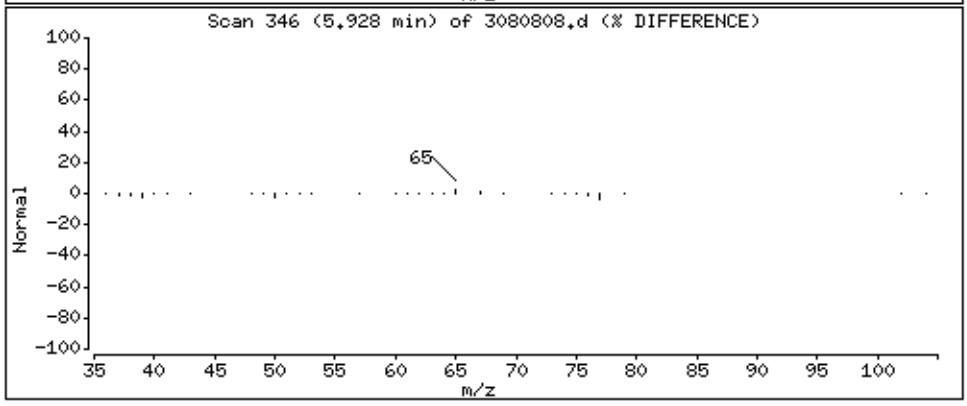












Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

Sample Info: 80ml N2845

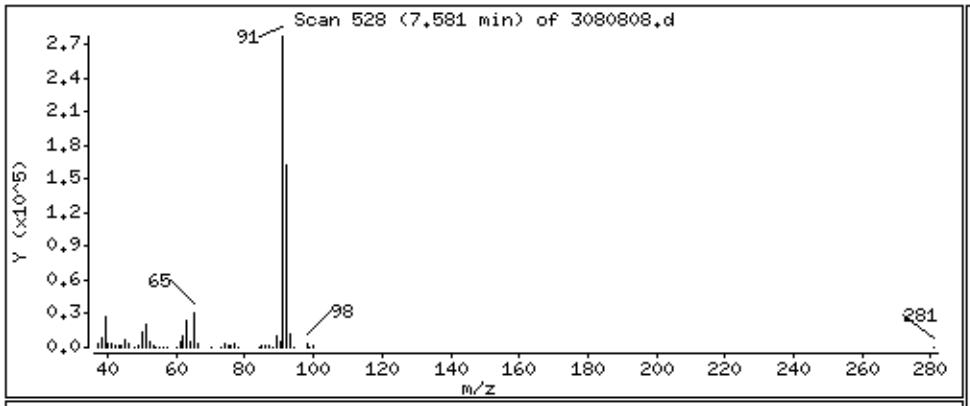
Operator: jg

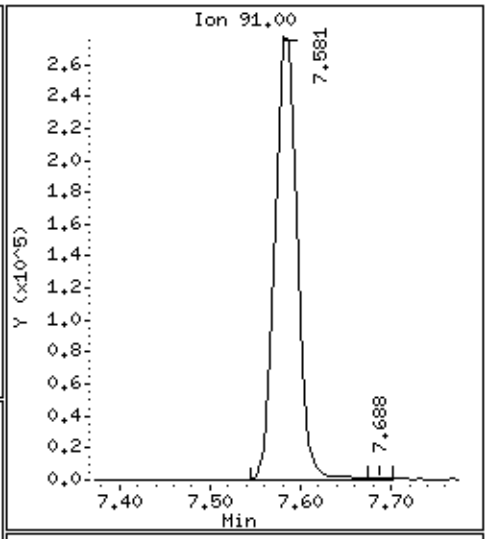
Column phase: RTX-624

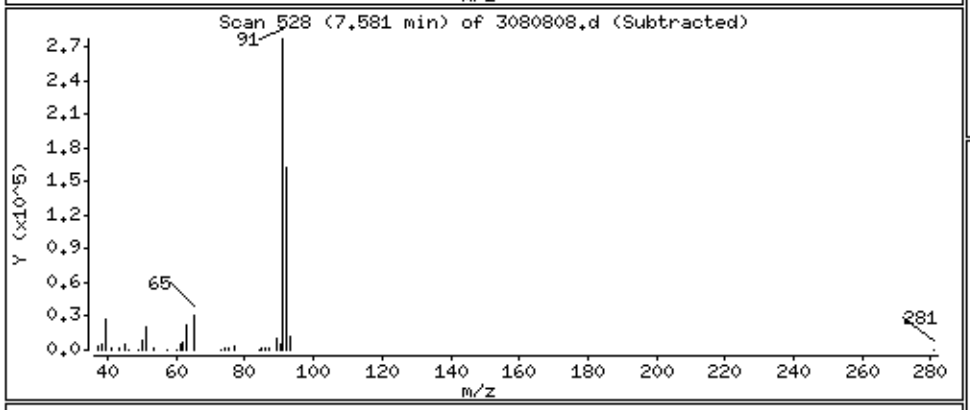
Column diameter: 0.25

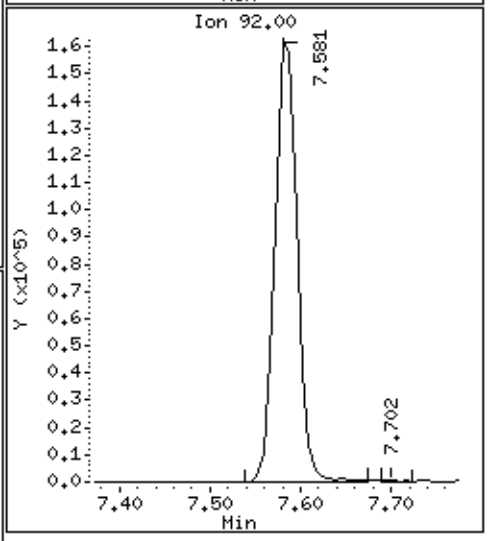
147 Toluene

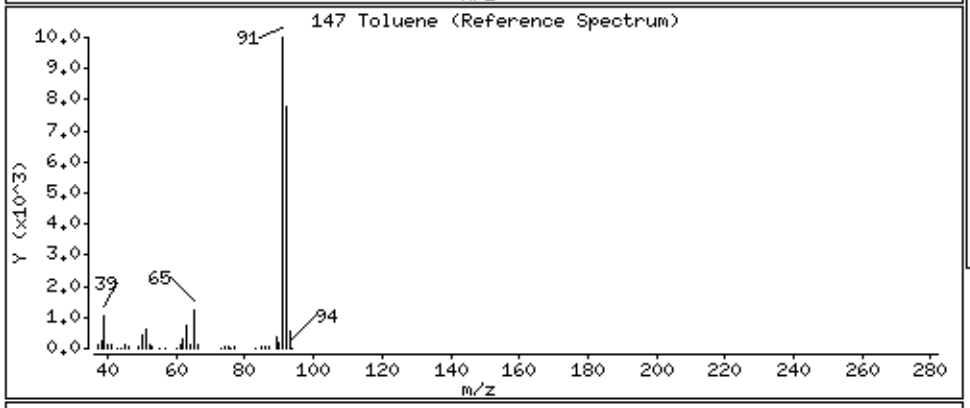
Concentration: 84.129 PPBV

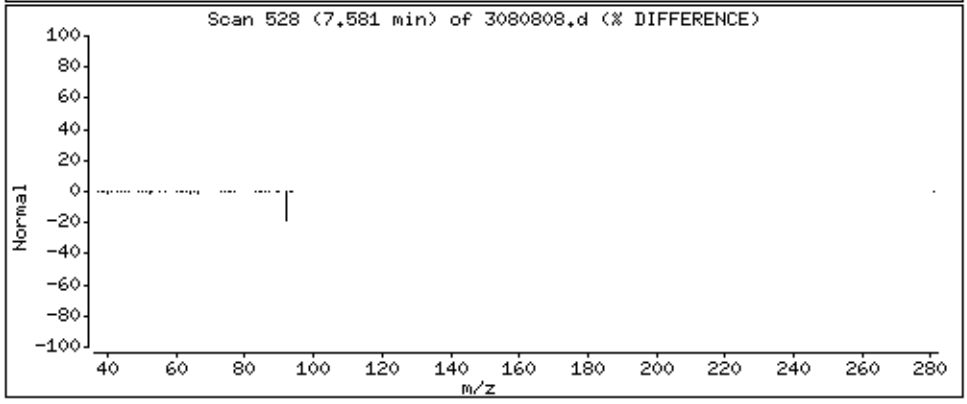












Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

Sample Info: 80ml N2845

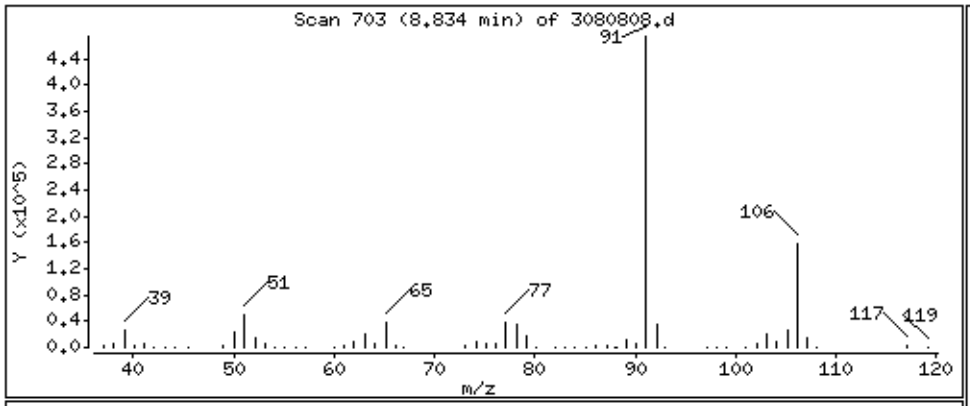
Operator: jg

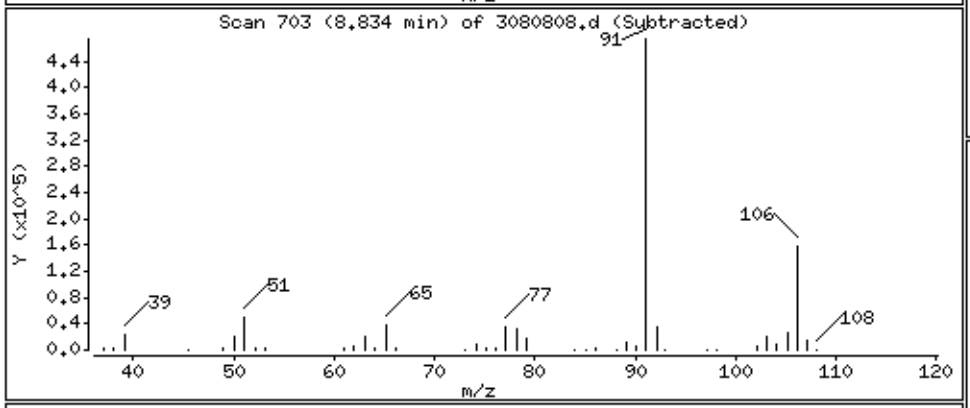
Column phase: RTX-624

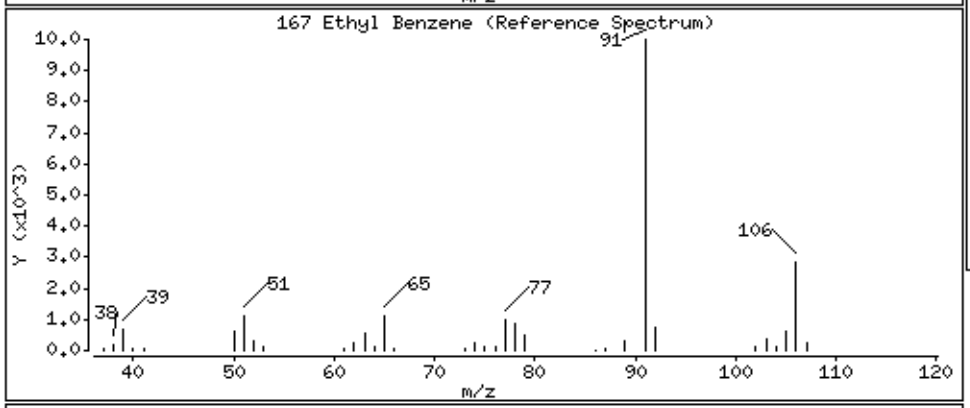
Column diameter: 0.25

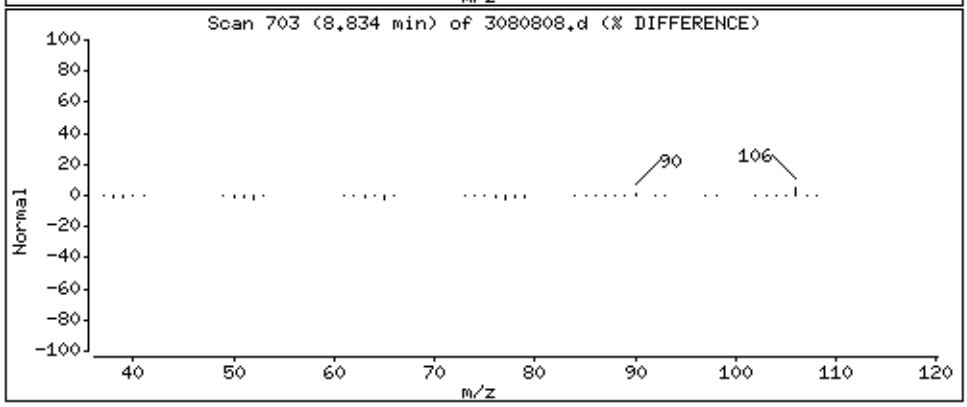
167 Ethyl Benzene

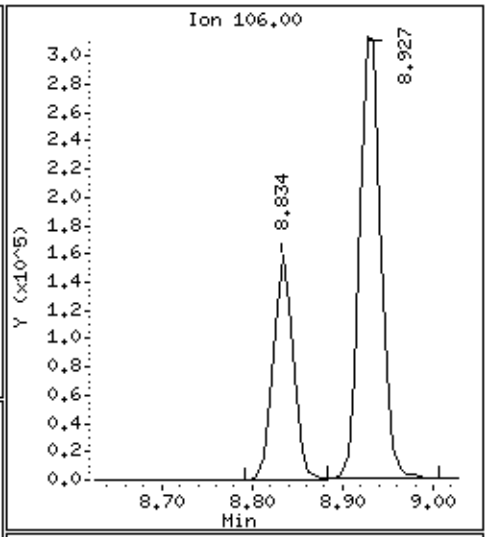
Concentration: 89.410 PPBV

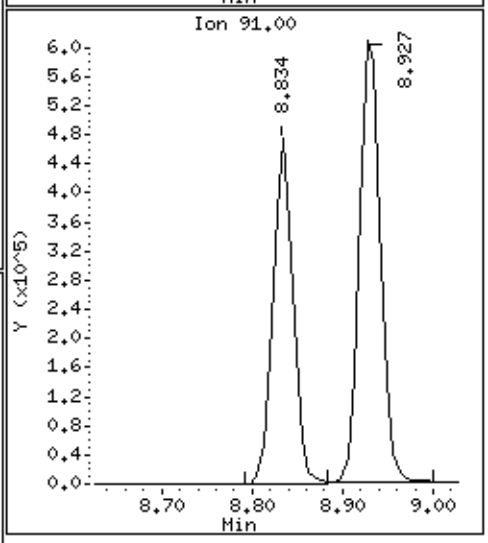












Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

Sample Info: 80ml N2845

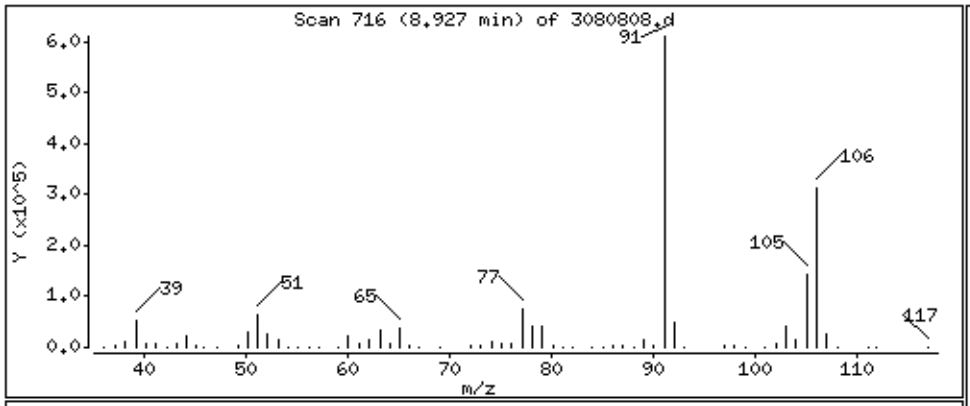
Operator: jg

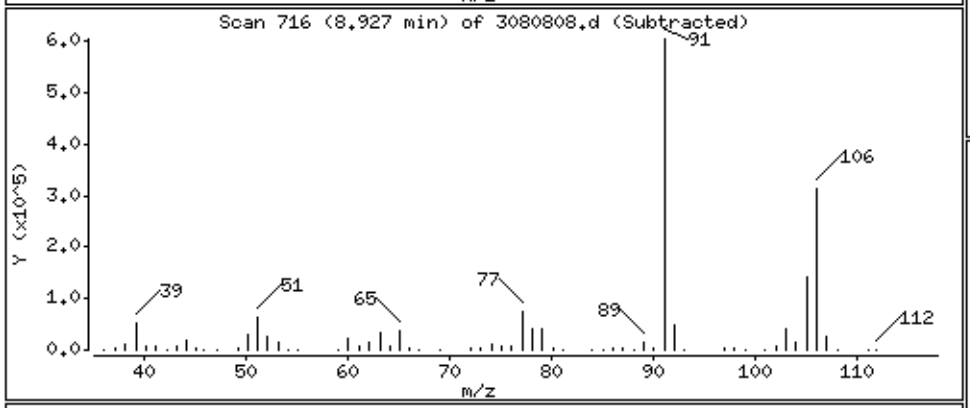
Column phase: RTX-624

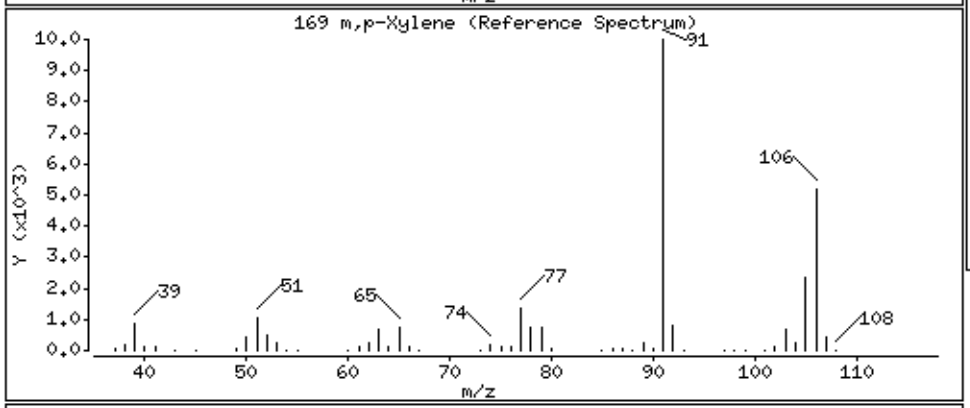
Column diameter: 0.25

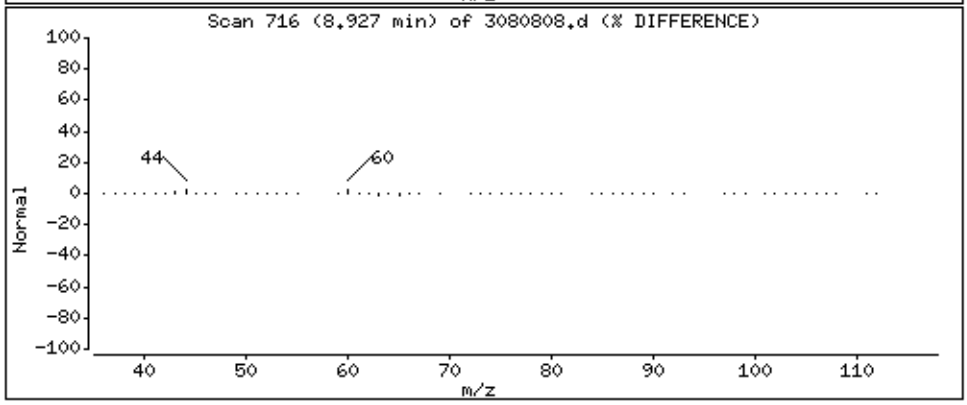
169 m,p-Xylene

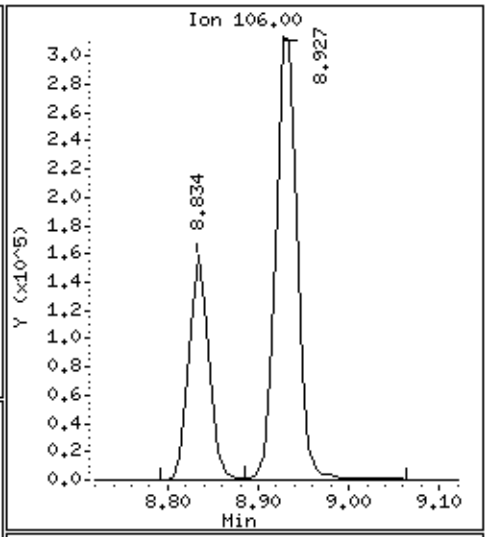
Concentration: 153.52 PPBV

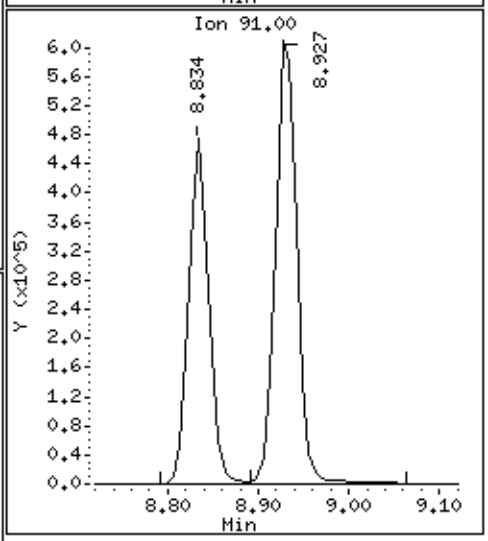












Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

Sample Info: 80ml N2845

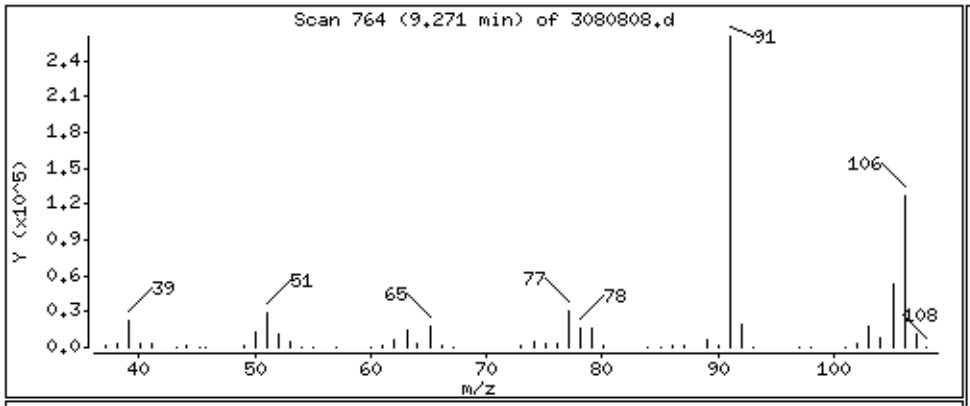
Operator: jg

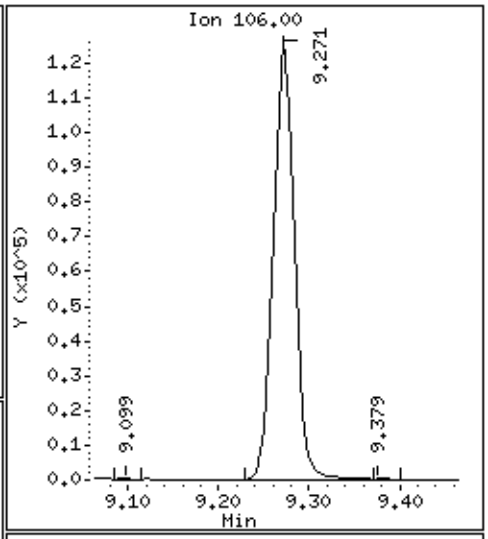
Column phase: RTX-624

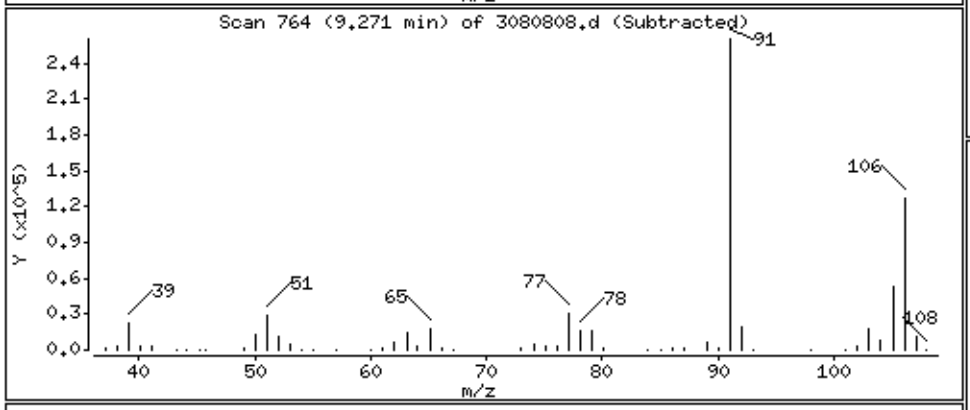
Column diameter: 0.25

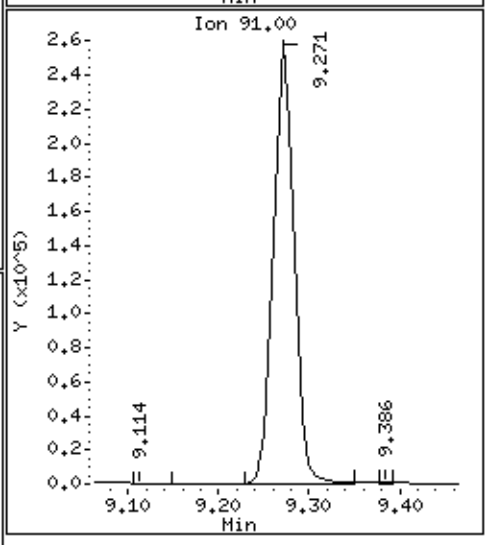
171 o-Xylene

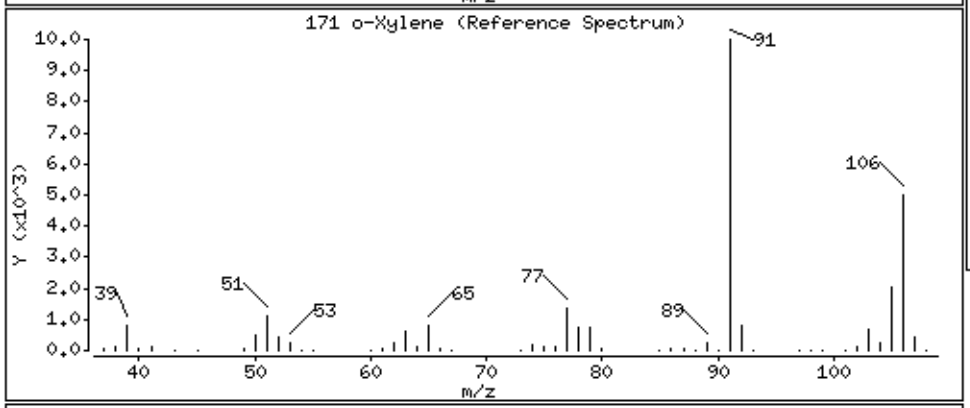
Concentration: 63.595 PPBV

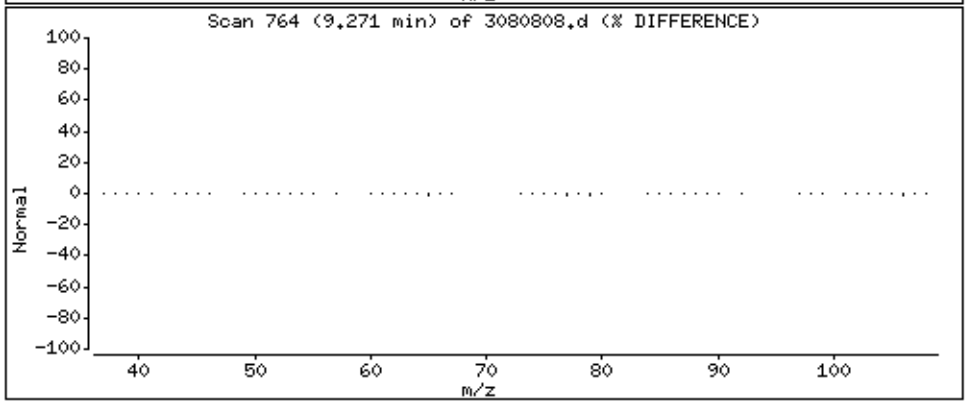












Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

Sample Info: 80ml N2845

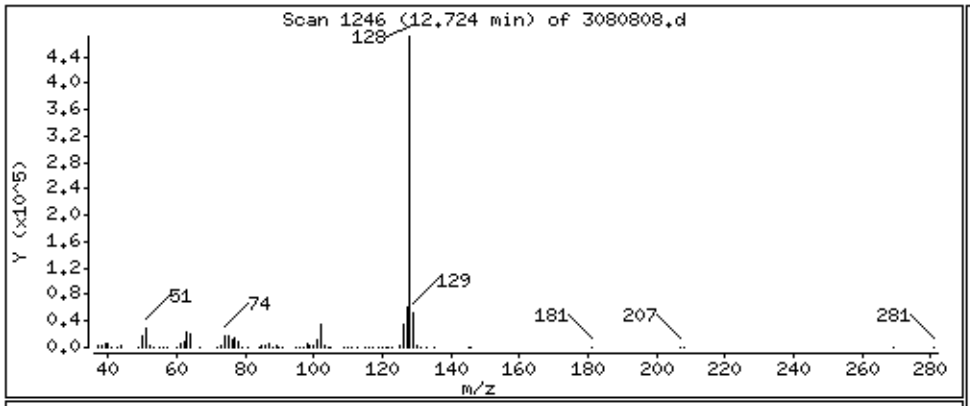
Operator: jg

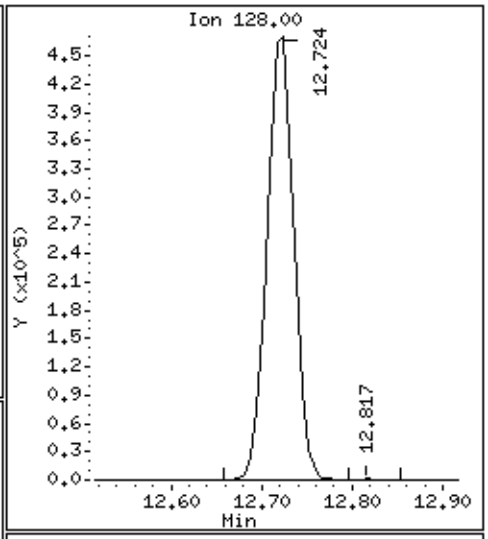
Column phase: RTX-624

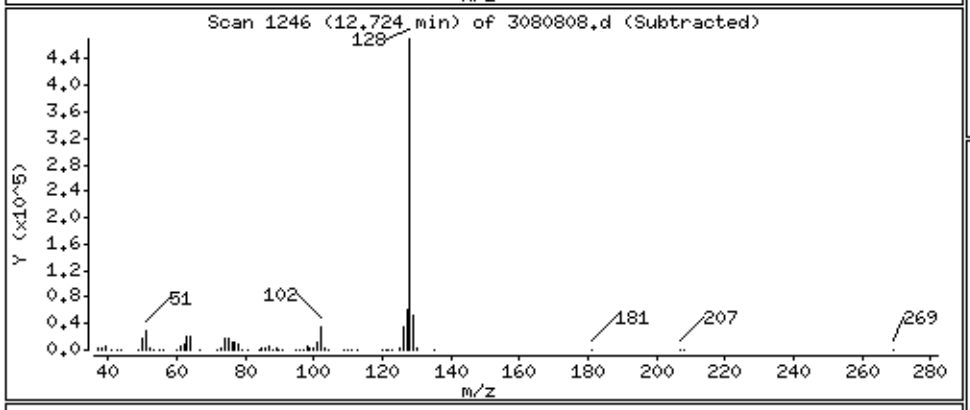
Column diameter: 0.25

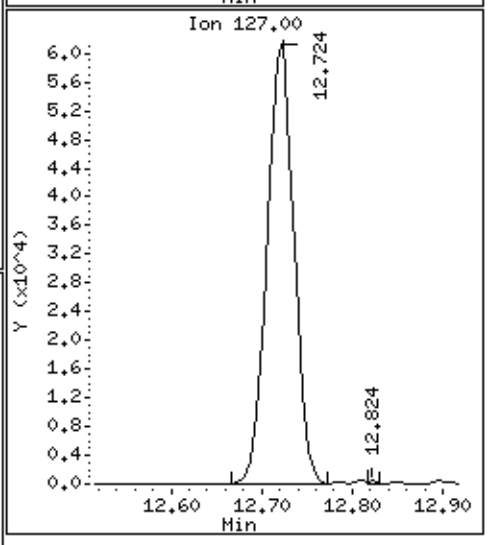
228 Naphthalene

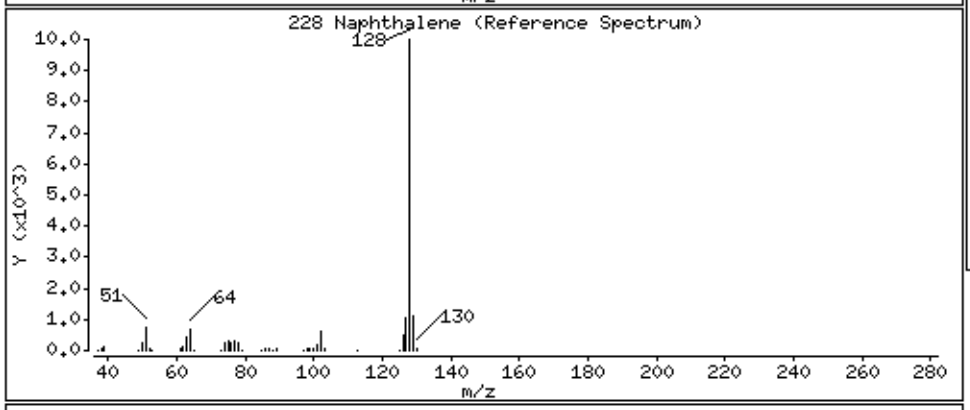
Concentration: 69.382 PPBV

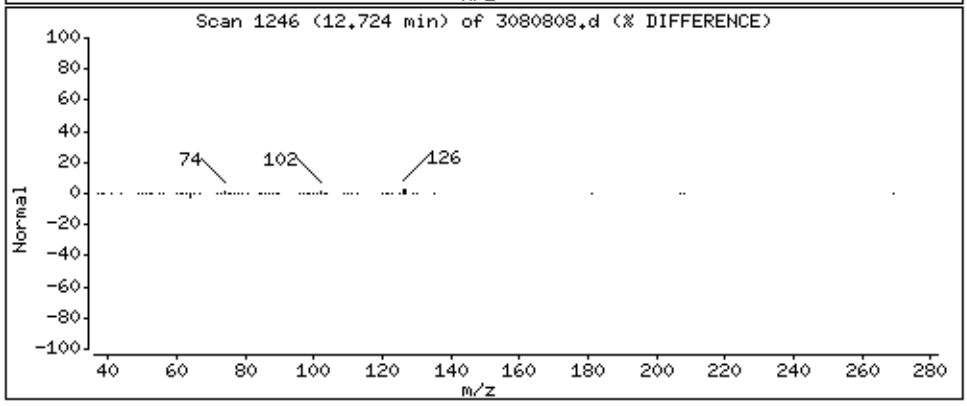












Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

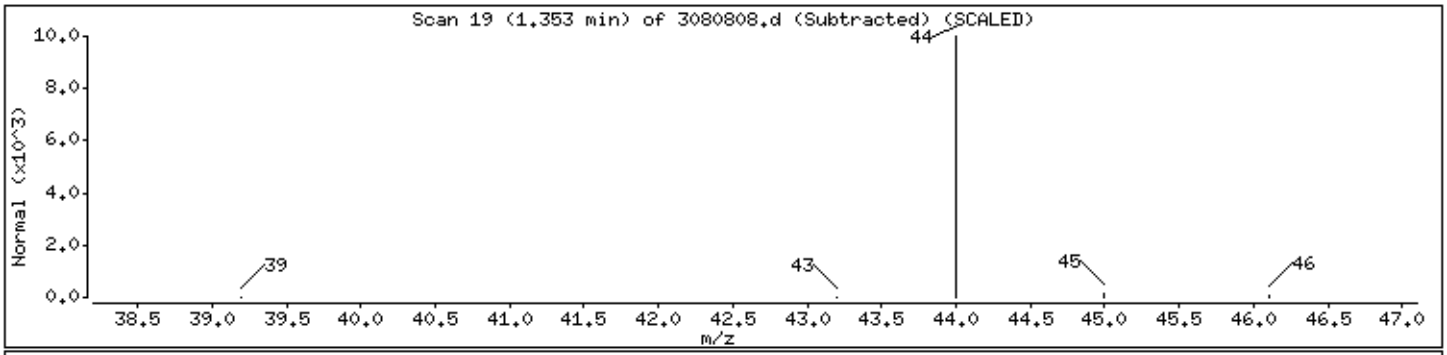
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

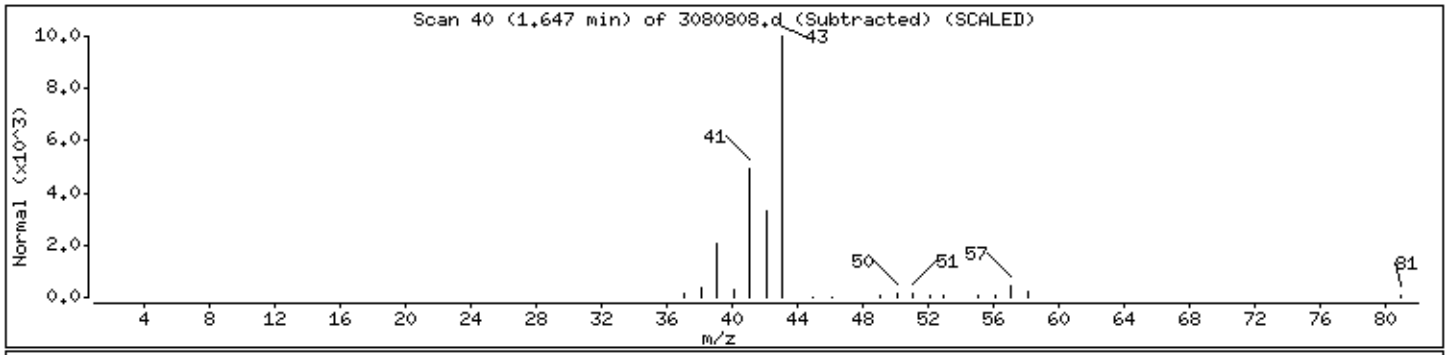
Sample Info: 80ml N2845

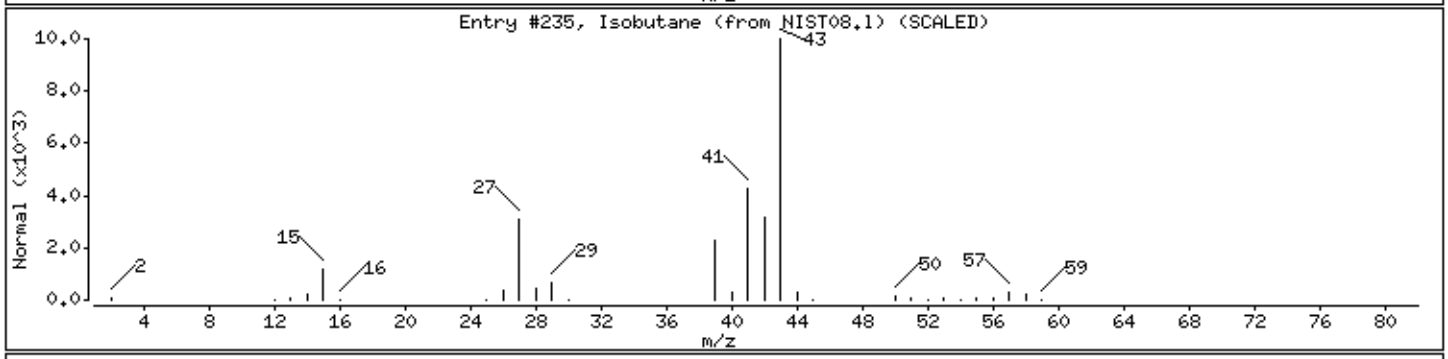
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isobutane	75-28-5	NIST08.l	235	64	C4H10	58





Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

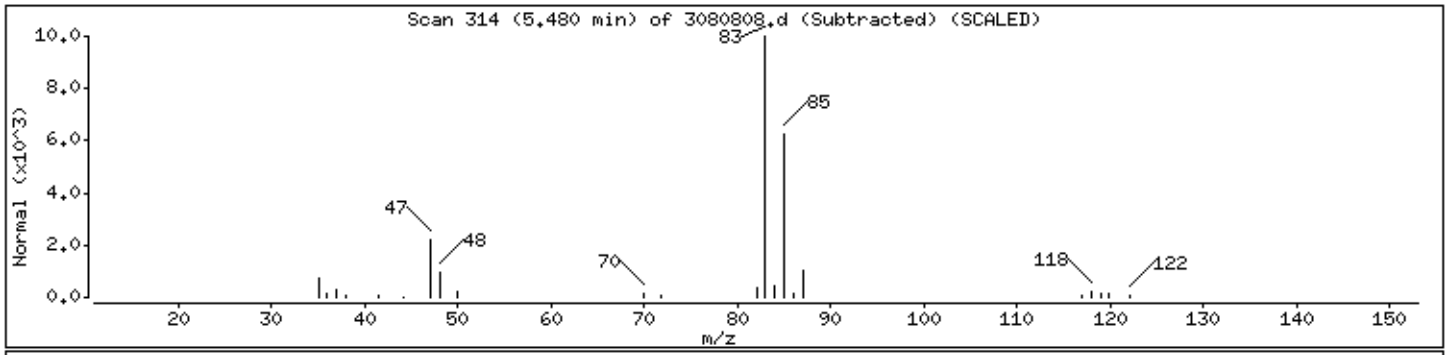
Sample Info: 80ml N2845

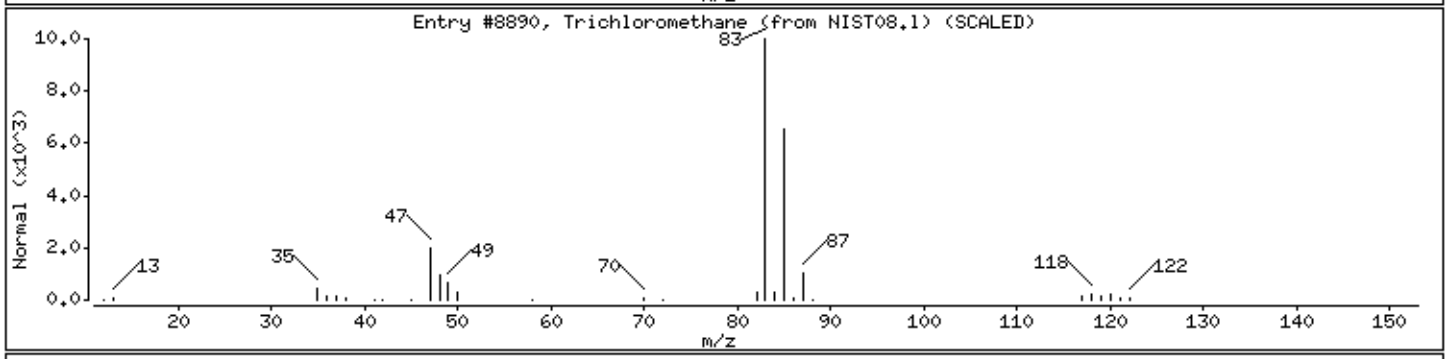
Operator: jg

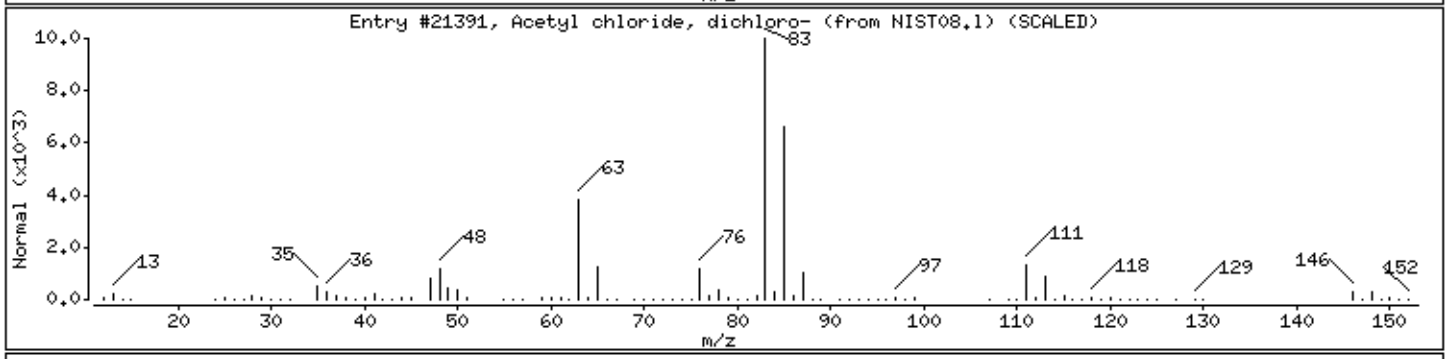
Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Trichloromethane	67-66-3	NIST08.1	8890	95	CHCl3	118
Acetyl chloride, dichloro-	79-36-7	NIST08.1	21391	72	C2HCl3O	146







Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

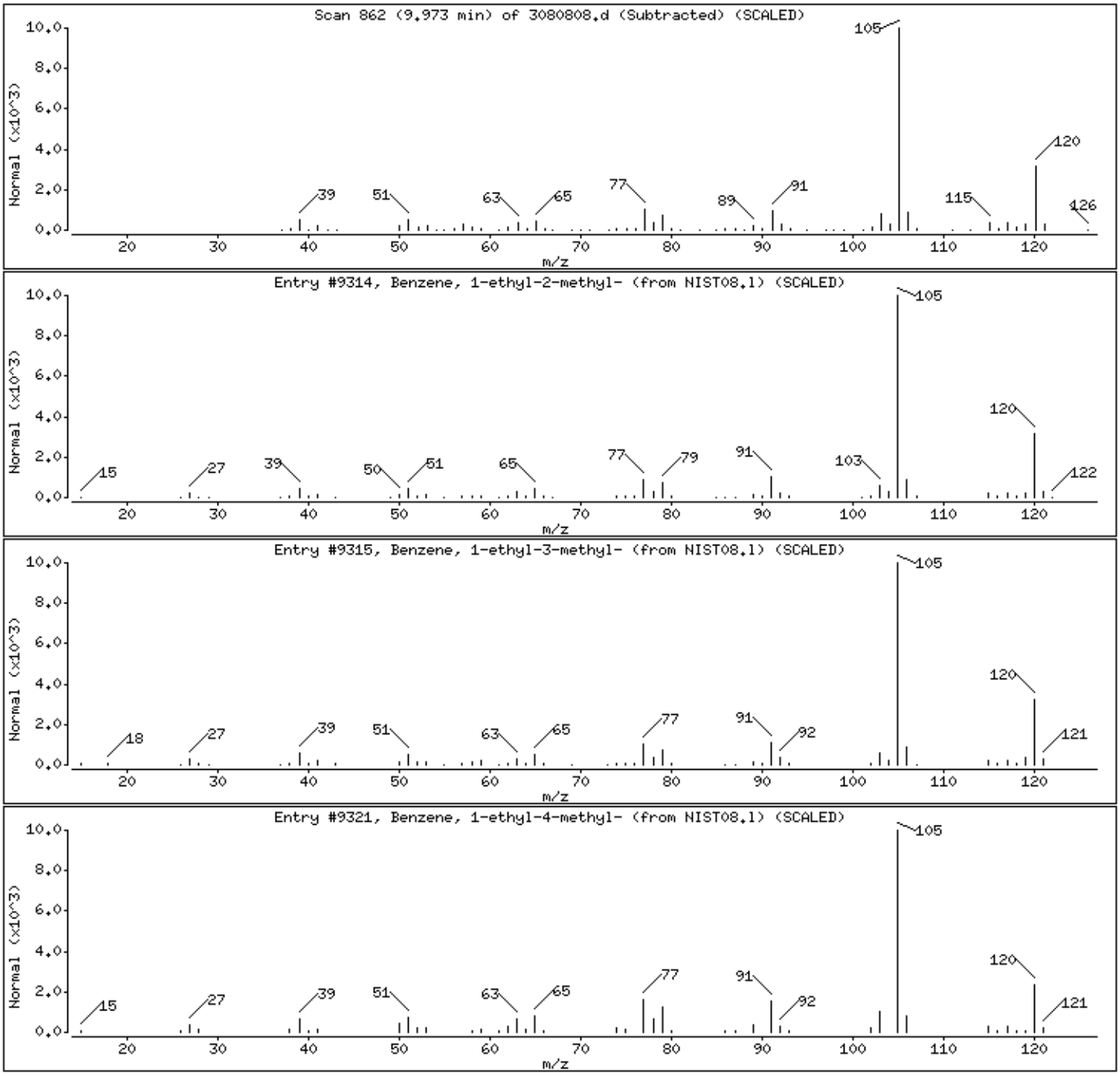
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-2-methyl-	611-14-3	NIST08.l	9314	95	C9H12	120
Benzene, 1-ethyl-3-methyl-	620-14-4	NIST08.l	9315	95	C9H12	120
Benzene, 1-ethyl-4-methyl-	622-96-8	NIST08.l	9321	93	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

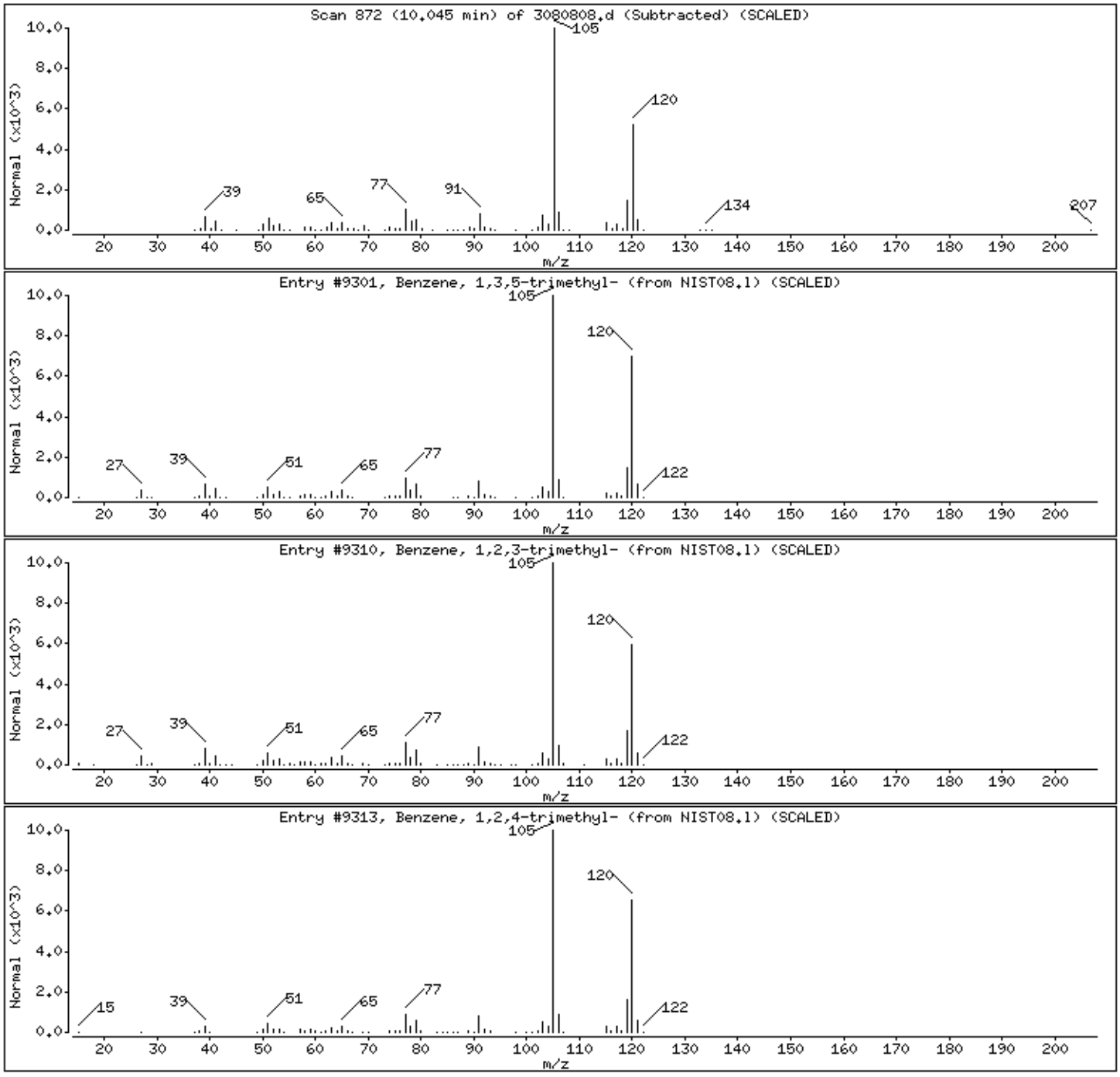
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9301	97	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	95	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

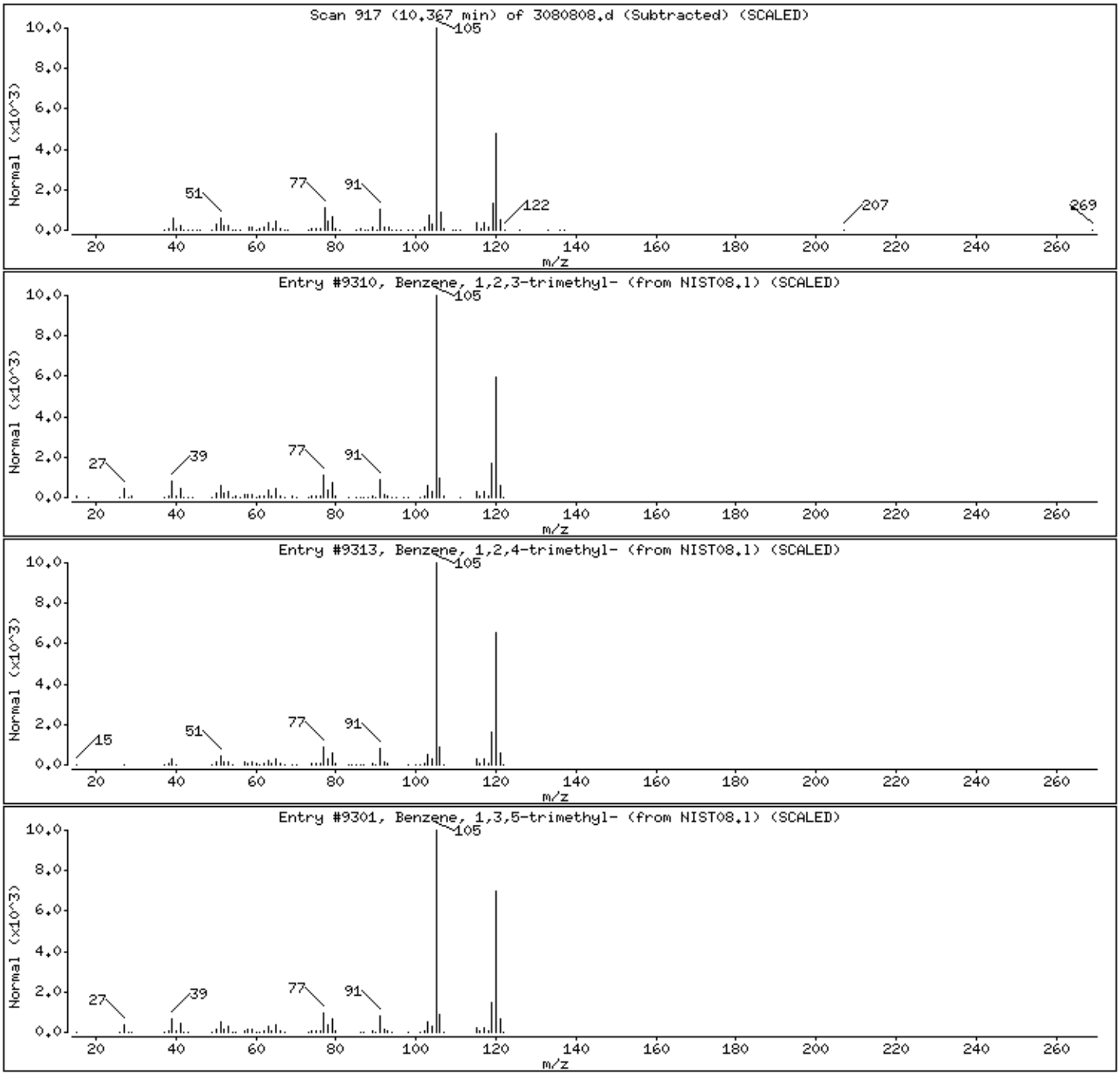
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	95	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9301	95	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

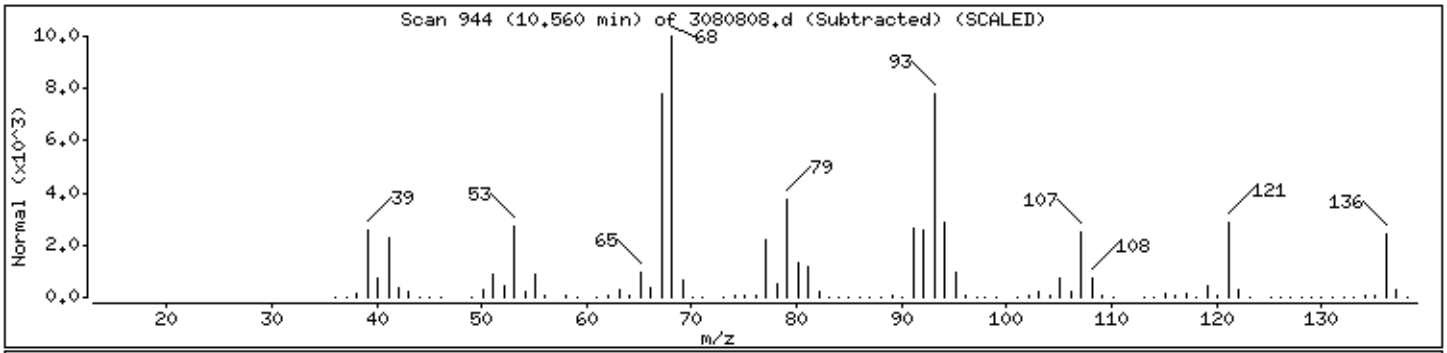
Sample Info: 80ml N2845

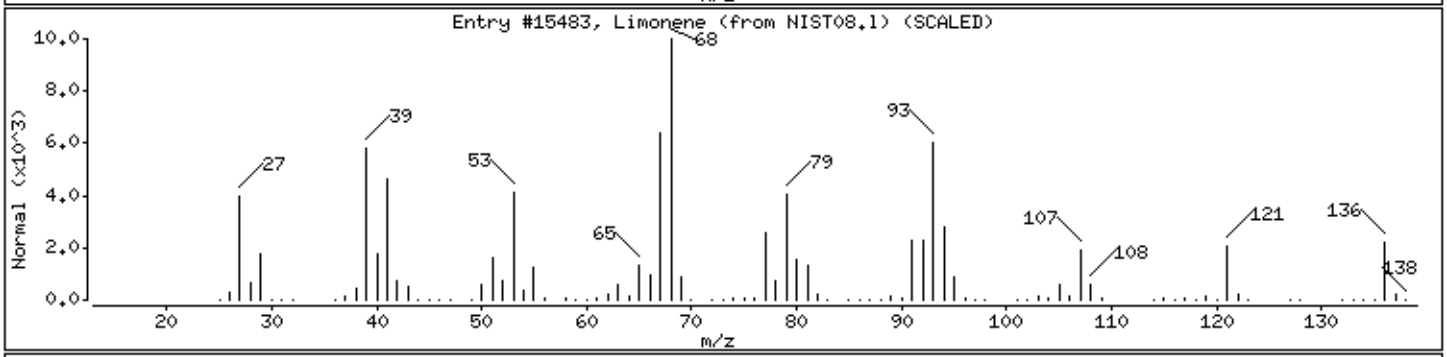
Operator: jg

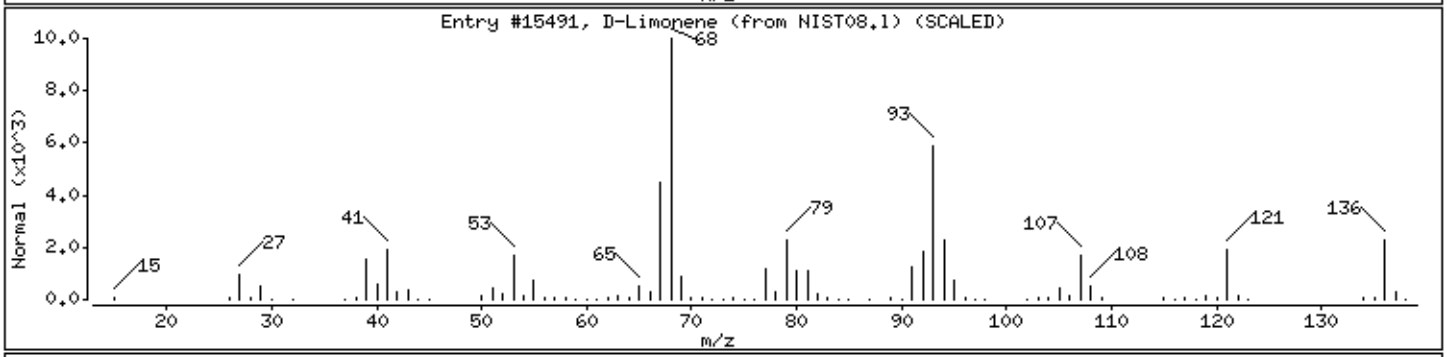
Column phase: RTX-624

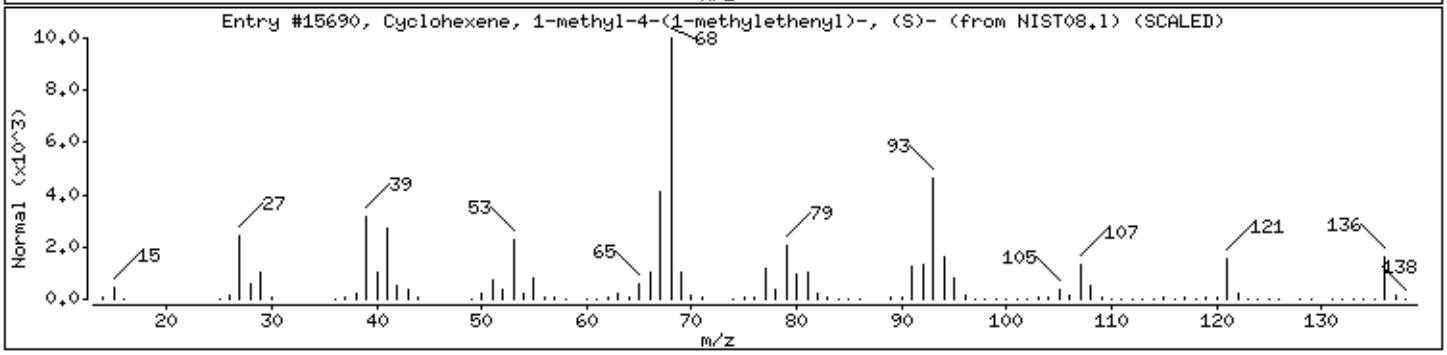
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15483	91	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15491	94	C10H16	136
Cyclohexene, 1-methyl-4-(1-methylethenyl	5989-54-8	NIST08.l	15690	89	C10H16	136









Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

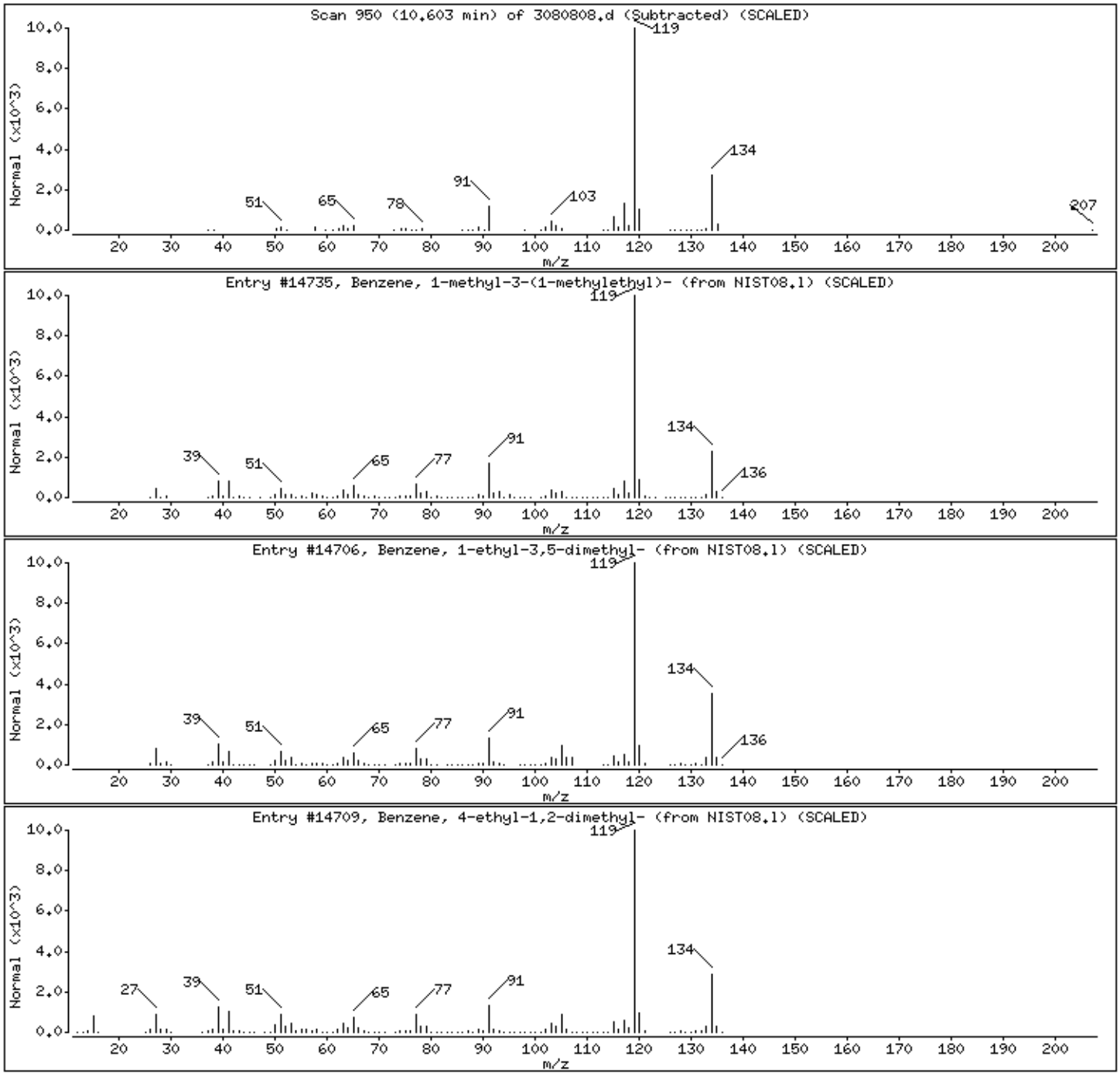
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-methyl-3-(1-methylethyl)-	535-77-3	NIST08.l	14735	91	C10H14	134
Benzene, 1-ethyl-3,5-dimethyl-	934-74-7	NIST08.l	14706	91	C10H14	134
Benzene, 4-ethyl-1,2-dimethyl-	934-80-5	NIST08.l	14709	91	C10H14	134



Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

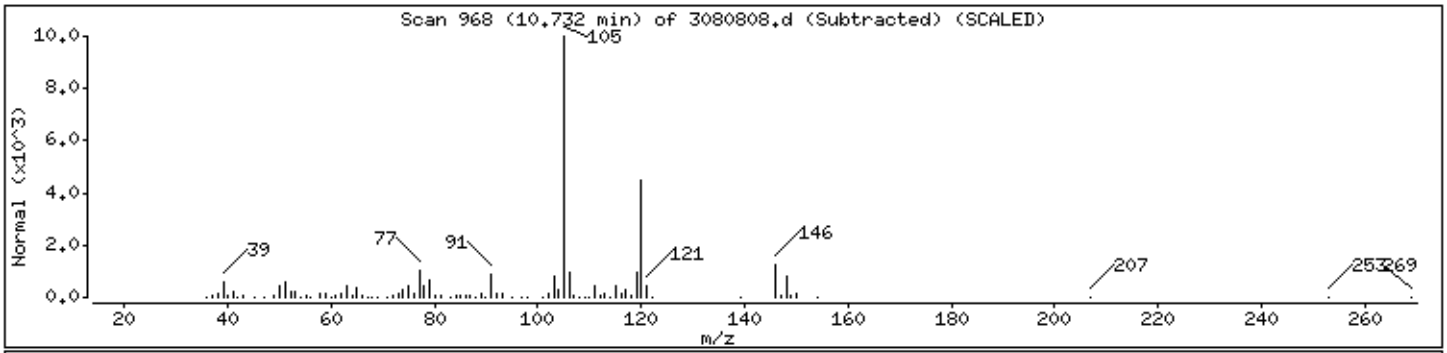
Sample Info: 80ml N2845

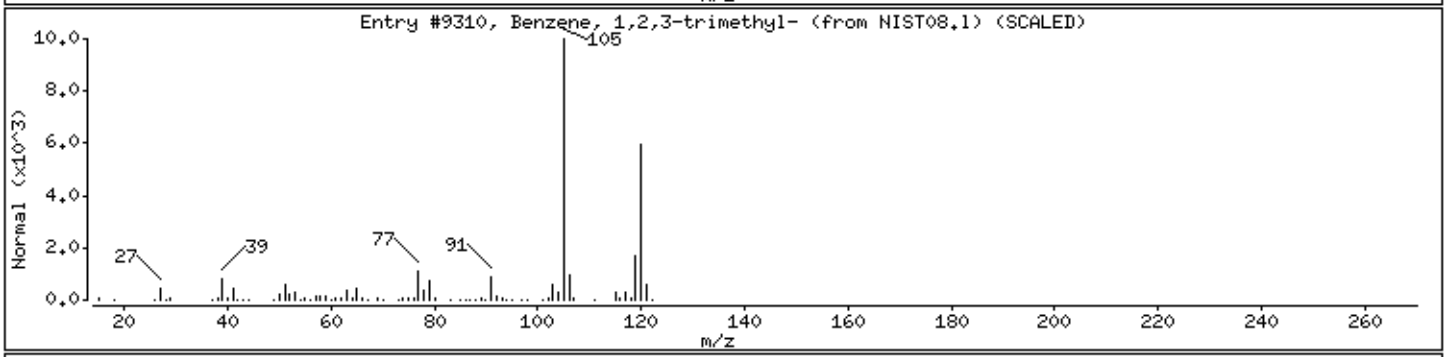
Operator: jg

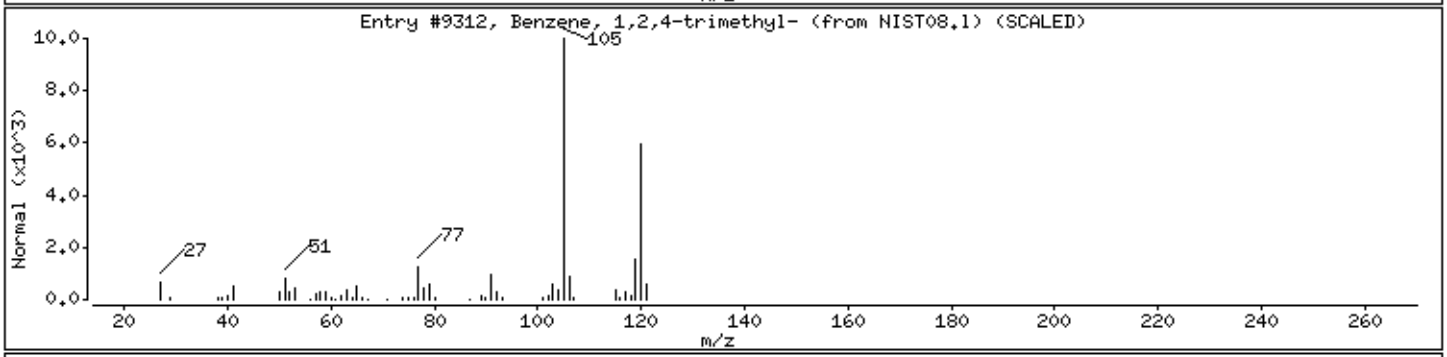
Column phase: RTX-624

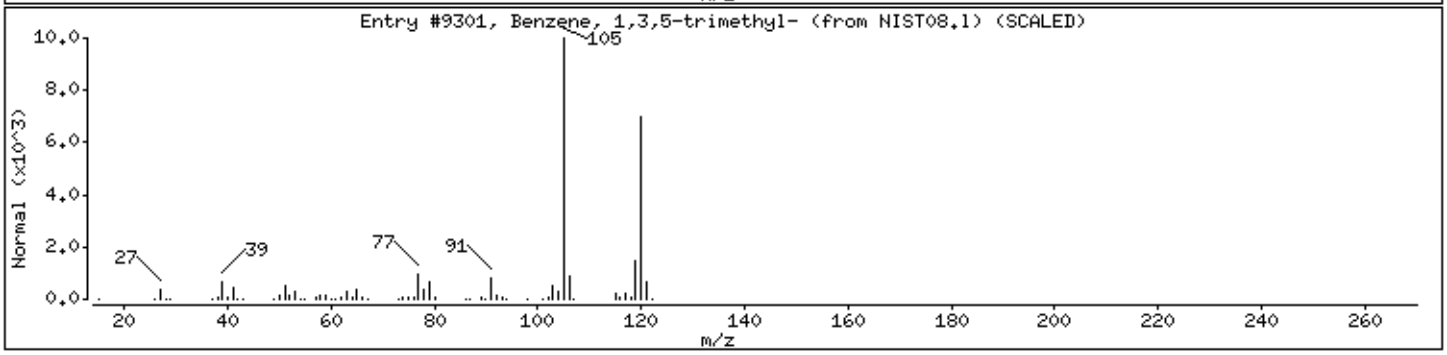
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	94	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	93	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9301	81	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

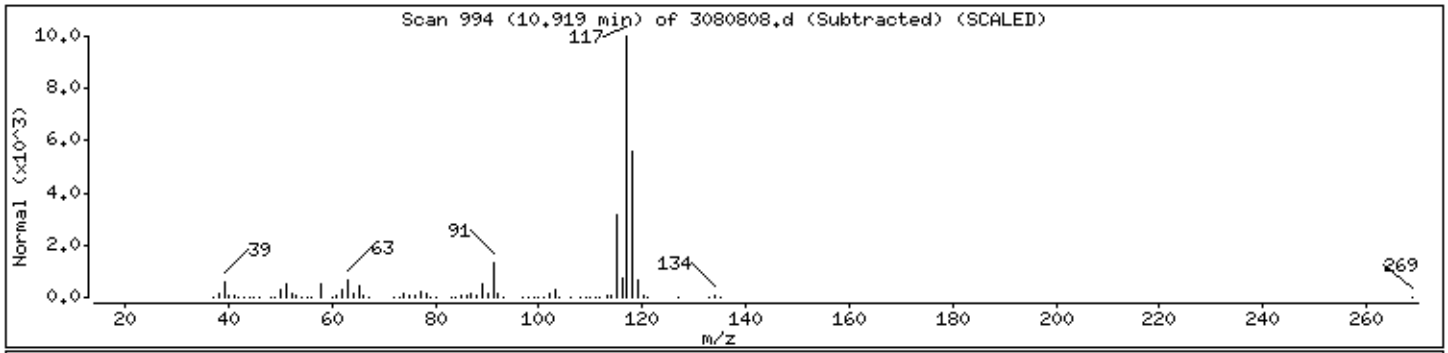
Sample Info: 80ml N2845

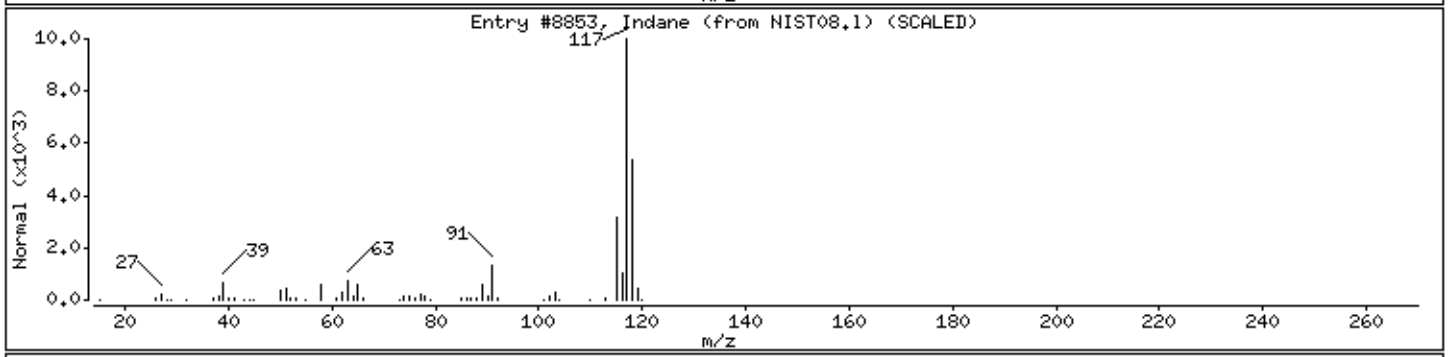
Operator: jg

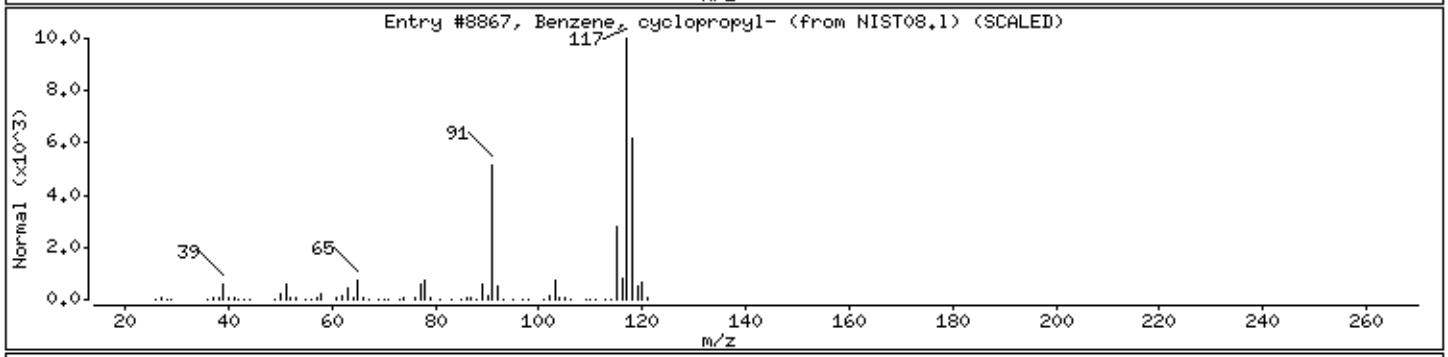
Column phase: RTX-624

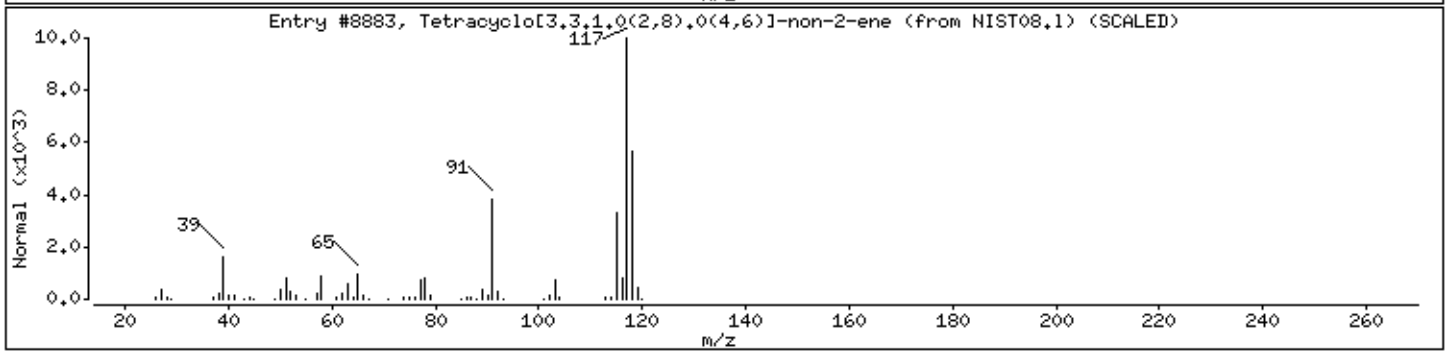
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indane	496-11-7	NIST08.l	8853	95	C9H10	118
Benzene, cyclopropyl-	873-49-4	NIST08.l	8867	83	C9H10	118
Tetracyclo[3.3.1.0(2,8).0(4,6)]-non-2-en	1000191-13-7	NIST08.l	8883	80	C9H10	118









Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

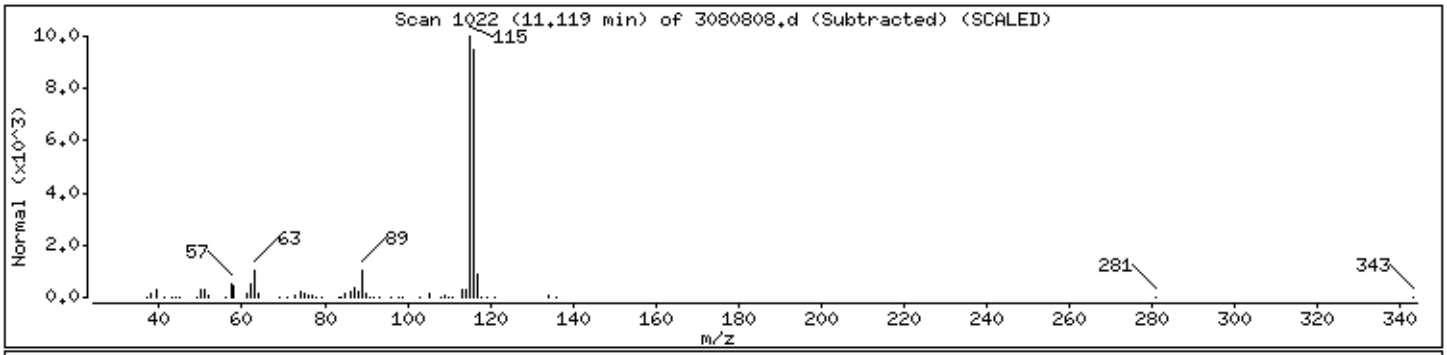
Sample Info: 80ml N2845

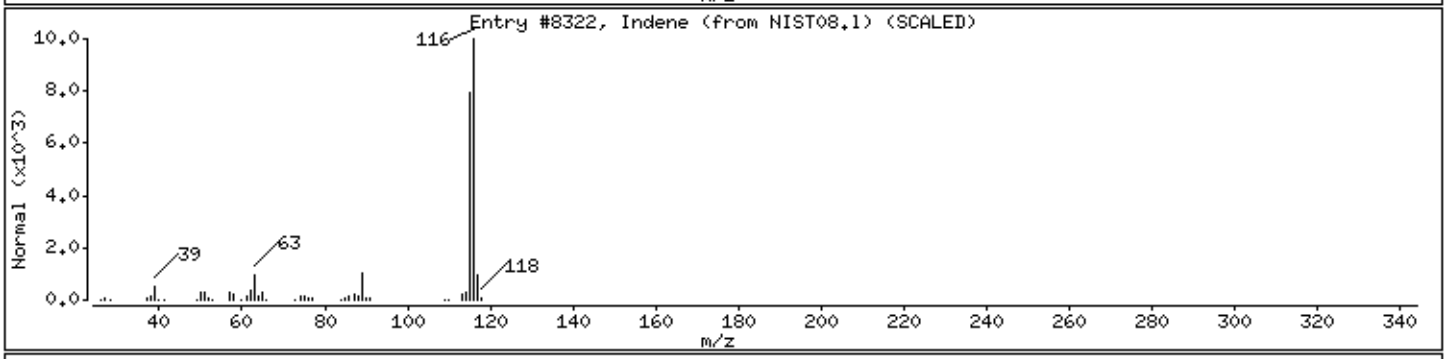
Operator: jg

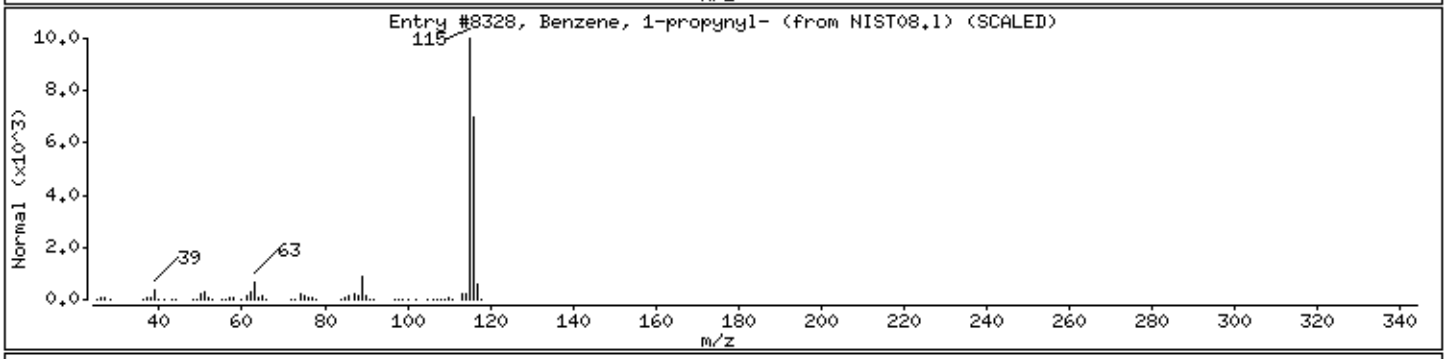
Column phase: RTX-624

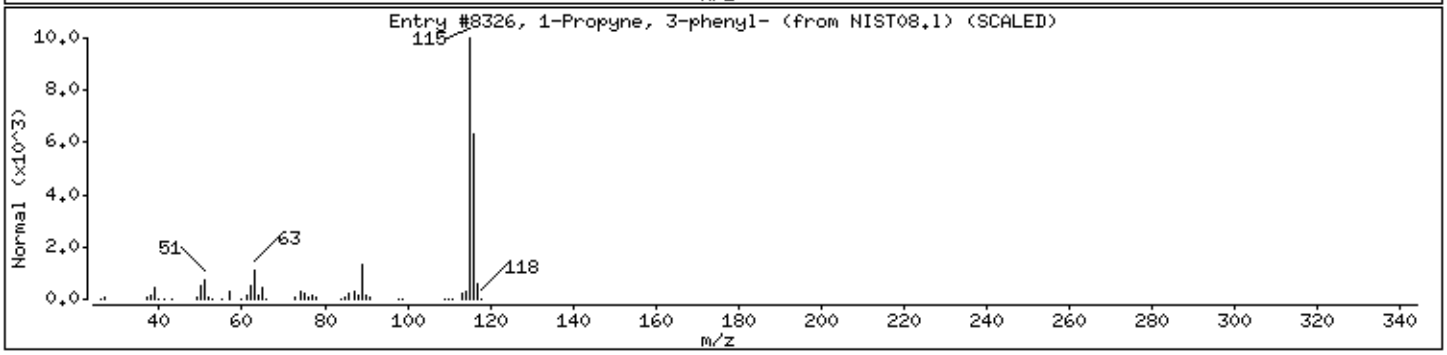
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indene	95-13-6	NIST08.l	8322	97	C9H8	116
Benzene, 1-propynyl-	673-32-5	NIST08.l	8328	94	C9H8	116
1-Propyne, 3-phenyl-	10147-11-2	NIST08.l	8326	91	C9H8	116









Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

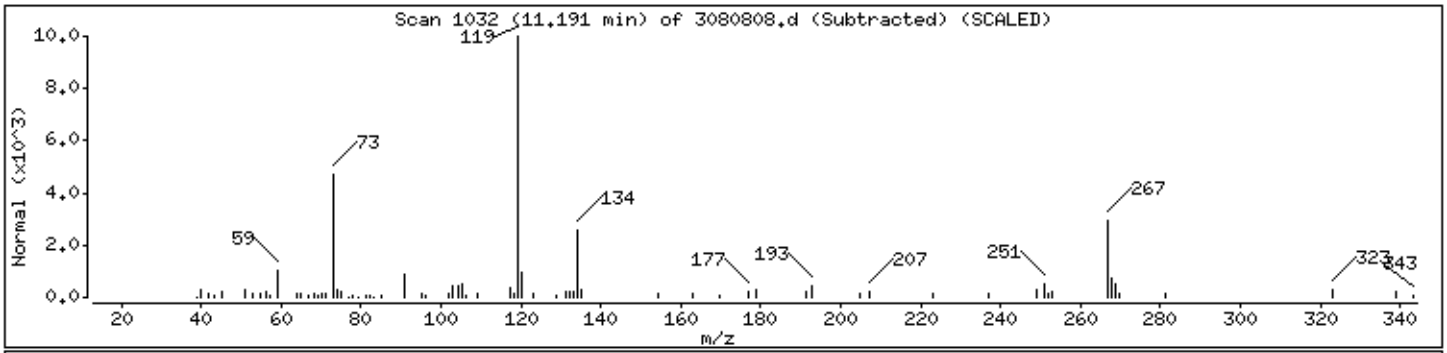
Sample Info: 80ml N2845

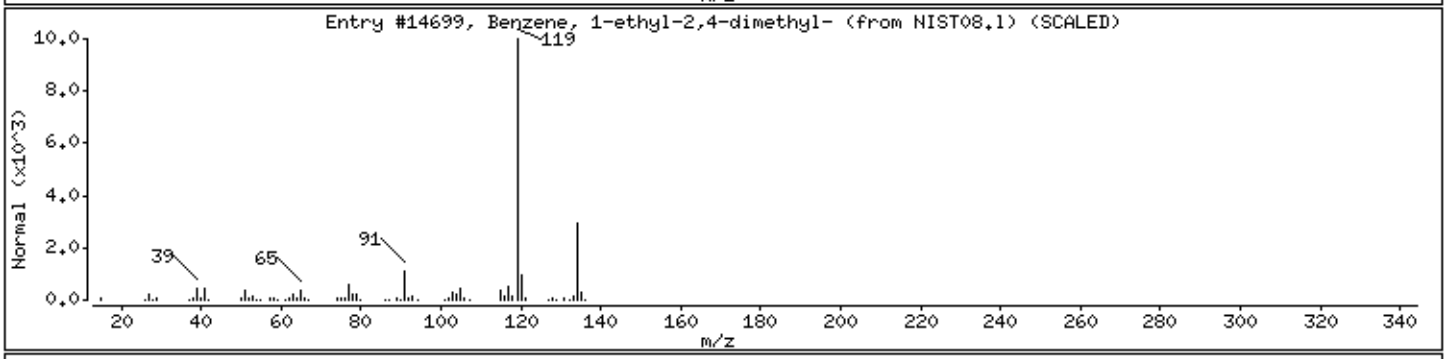
Operator: jg

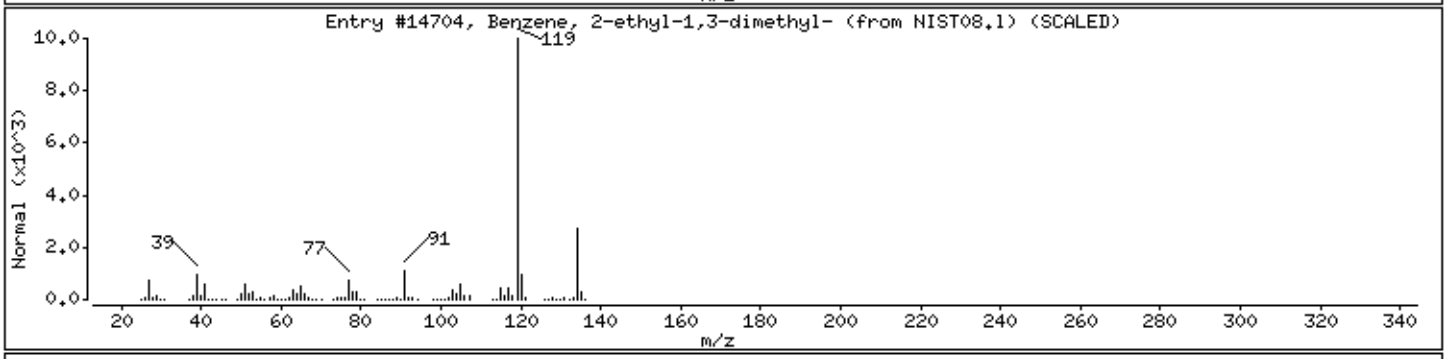
Column phase: RTX-624

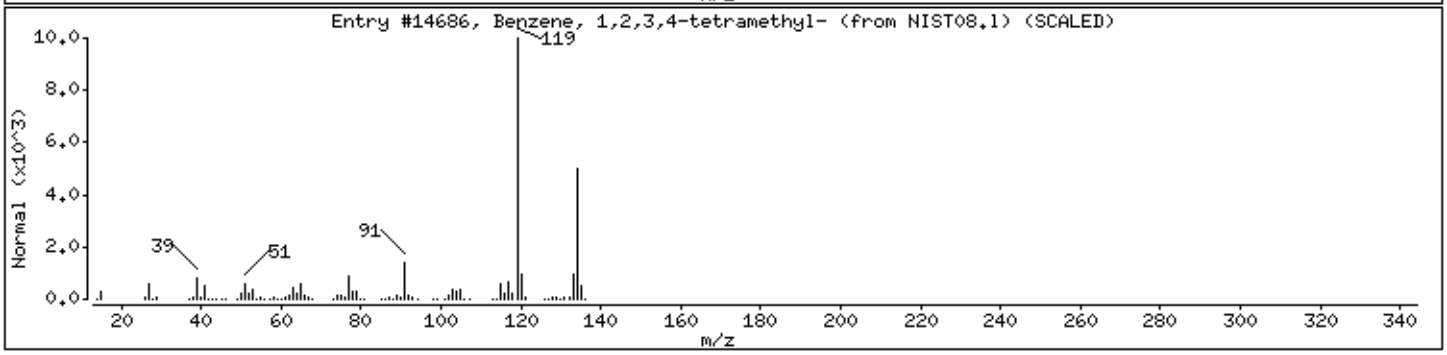
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-2,4-dimethyl-	874-41-9	NIST08.l	14699	58	C10H14	134
Benzene, 2-ethyl-1,3-dimethyl-	2870-04-4	NIST08.l	14704	58	C10H14	134
Benzene, 1,2,3,4-tetramethyl-	488-23-3	NIST08.l	14686	52	C10H14	134









Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

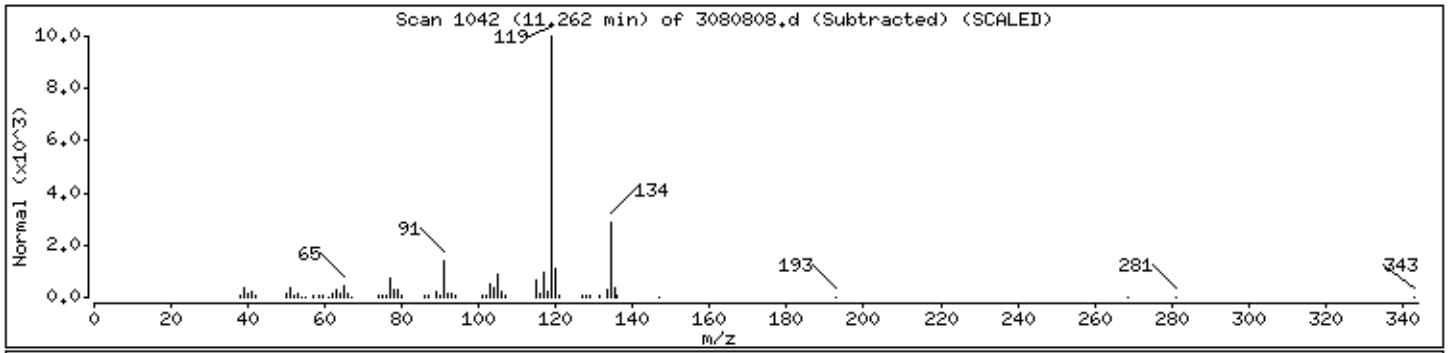
Sample Info: 80ml N2845

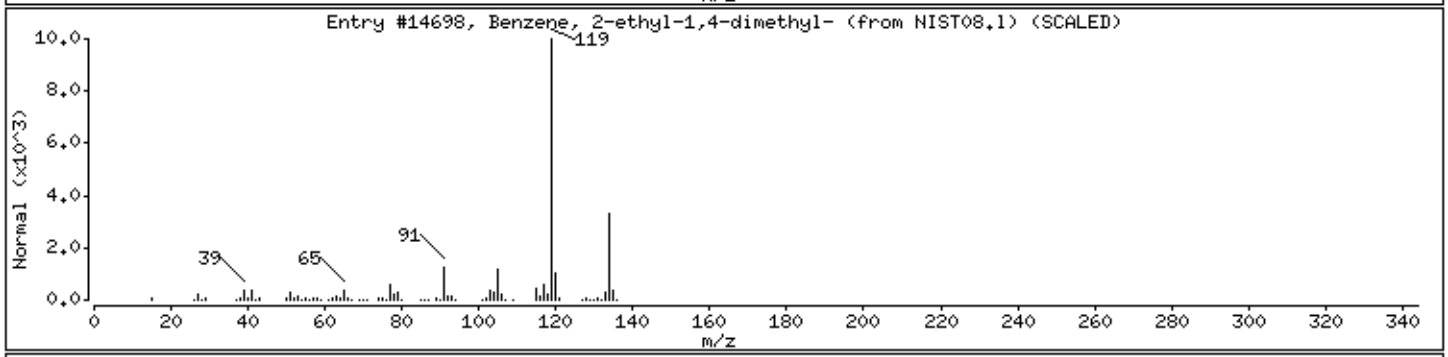
Operator: jg

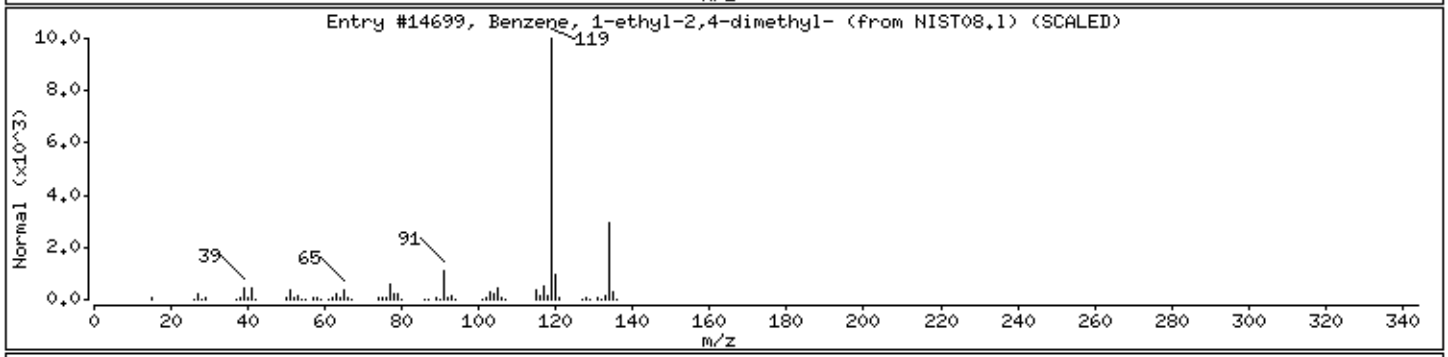
Column phase: RTX-624

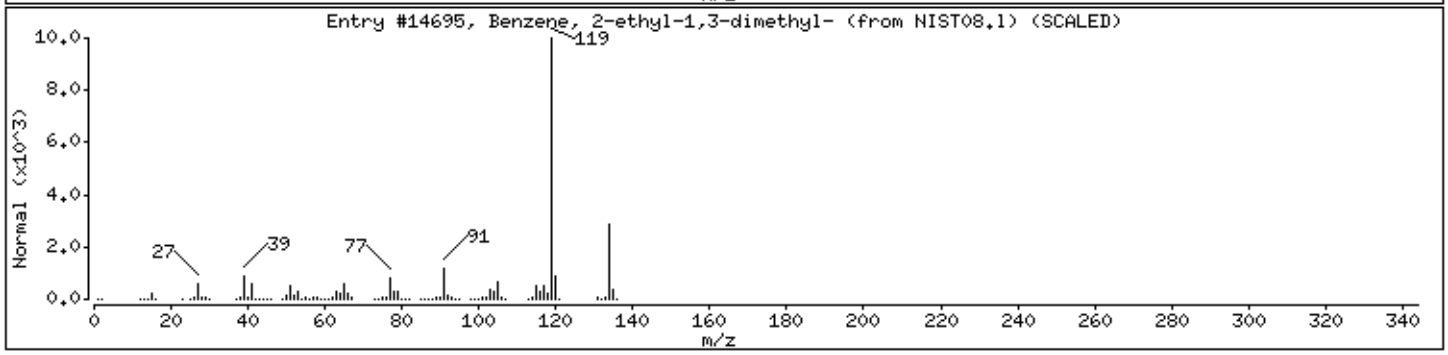
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 2-ethyl-1,4-dimethyl-	1758-88-9	NIST08.l	14698	97	C10H14	134
Benzene, 1-ethyl-2,4-dimethyl-	874-41-9	NIST08.l	14699	97	C10H14	134
Benzene, 2-ethyl-1,3-dimethyl-	2870-04-4	NIST08.l	14695	95	C10H14	134









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Date : 08-AUG-2017 15:38

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Instrument: msd3.i

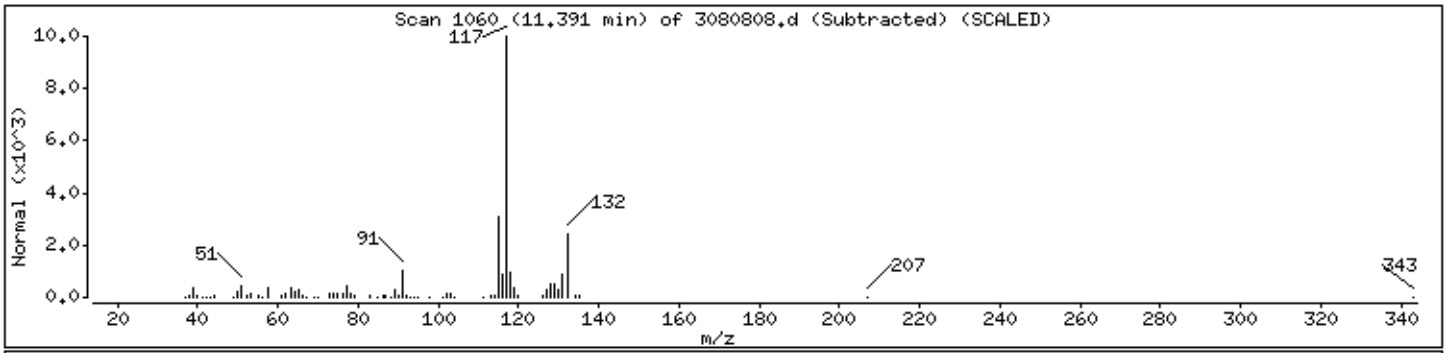
Sample Info: 80ml N2845

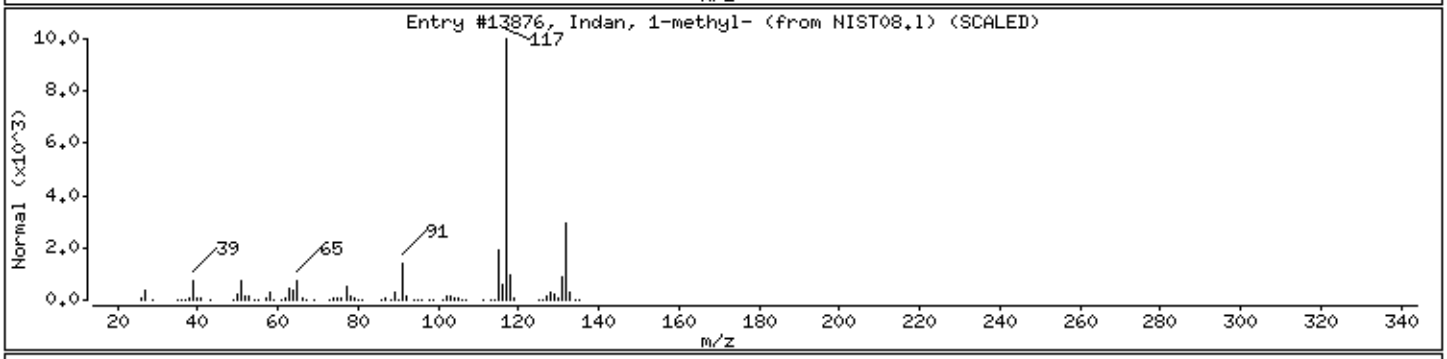
Operator: jg

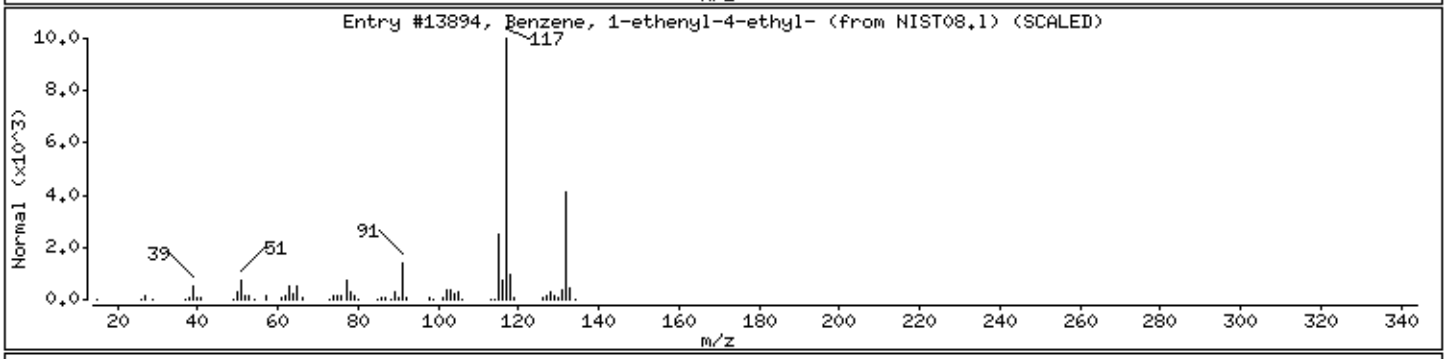
Column phase: RTX-624

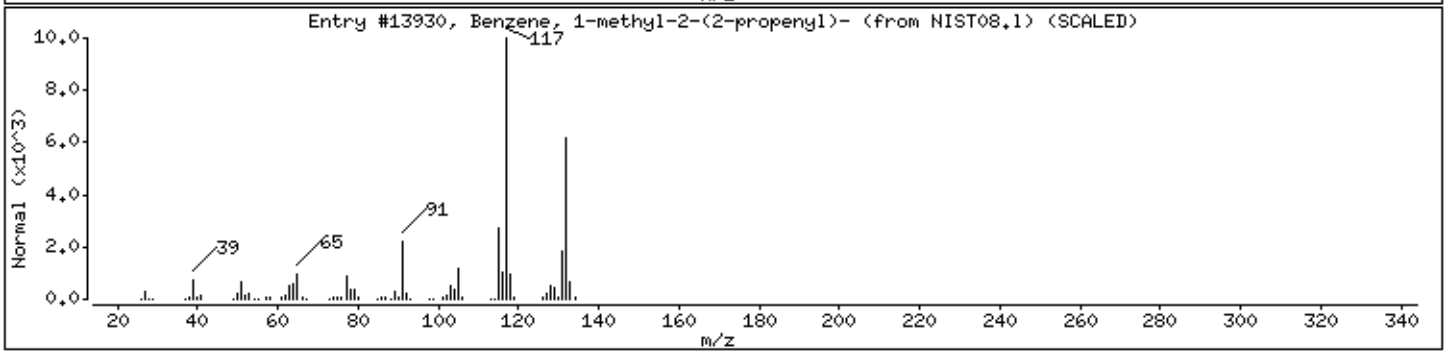
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indan, 1-methyl-	767-58-8	NIST08.l	13876	83	C10H12	132
Benzene, 1-ethenyl-4-ethyl-	3454-07-7	NIST08.l	13894	80	C10H12	132
Benzene, 1-methyl-2-(2-propenyl)-	1587-04-8	NIST08.l	13930	72	C10H12	132









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Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

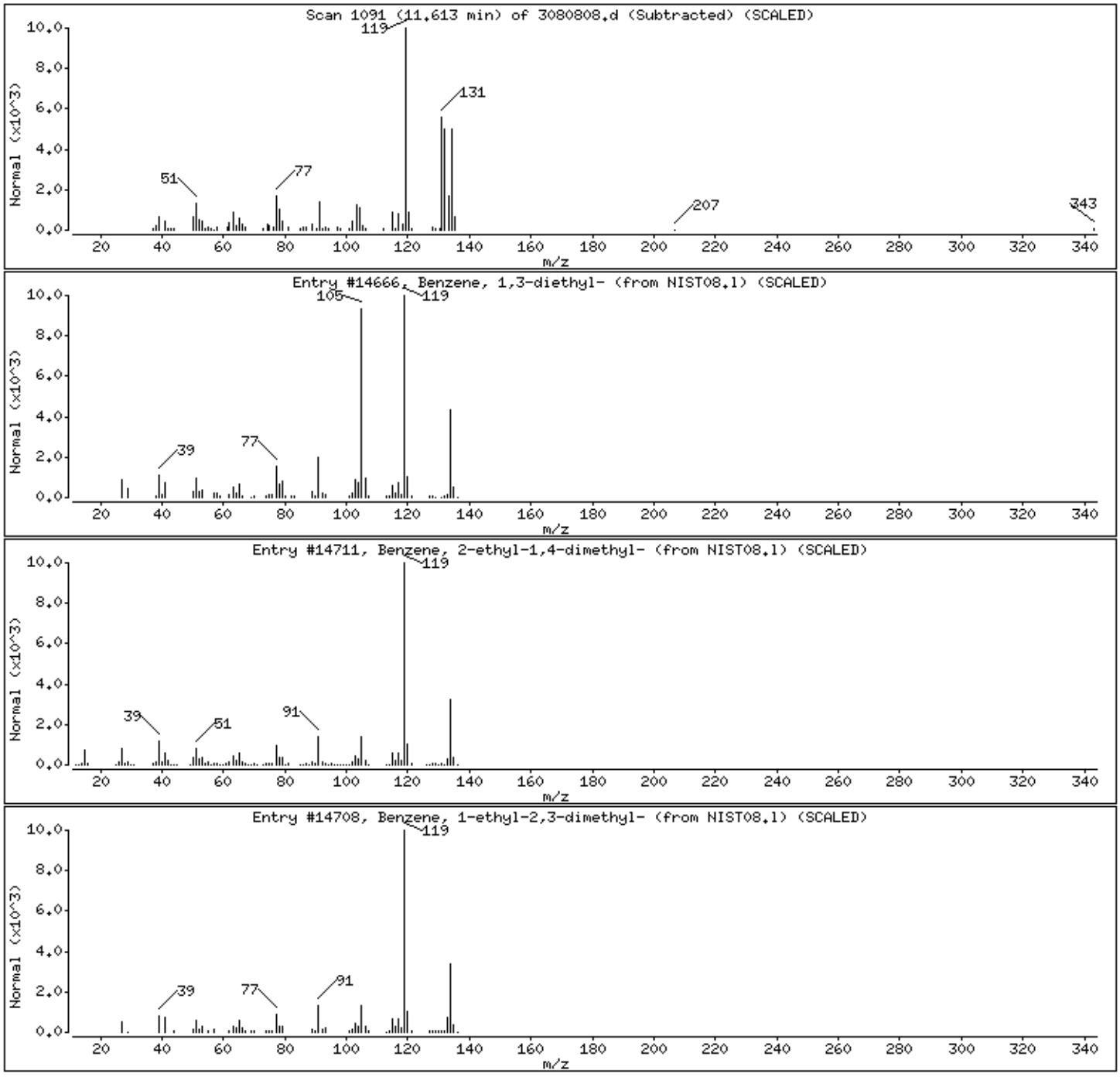
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3-diethyl-	141-93-5	NIST08.l	14666	64	C10H14	134
Benzene, 2-ethyl-1,4-dimethyl-	1758-88-9	NIST08.l	14711	60	C10H14	134
Benzene, 1-ethyl-2,3-dimethyl-	933-98-2	NIST08.l	14708	60	C10H14	134



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Date : 08-AUG-2017 15:38

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Instrument: msd3.i

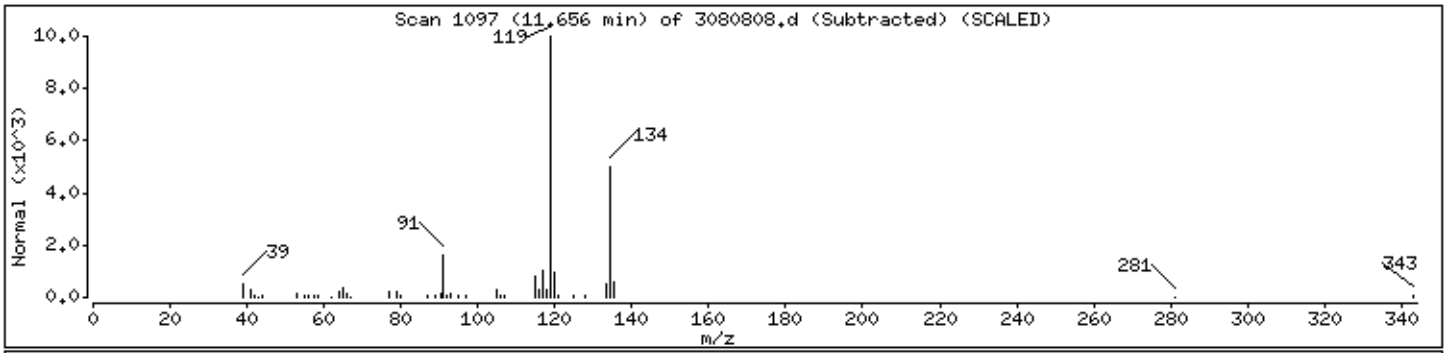
Sample Info: 80ml N2845

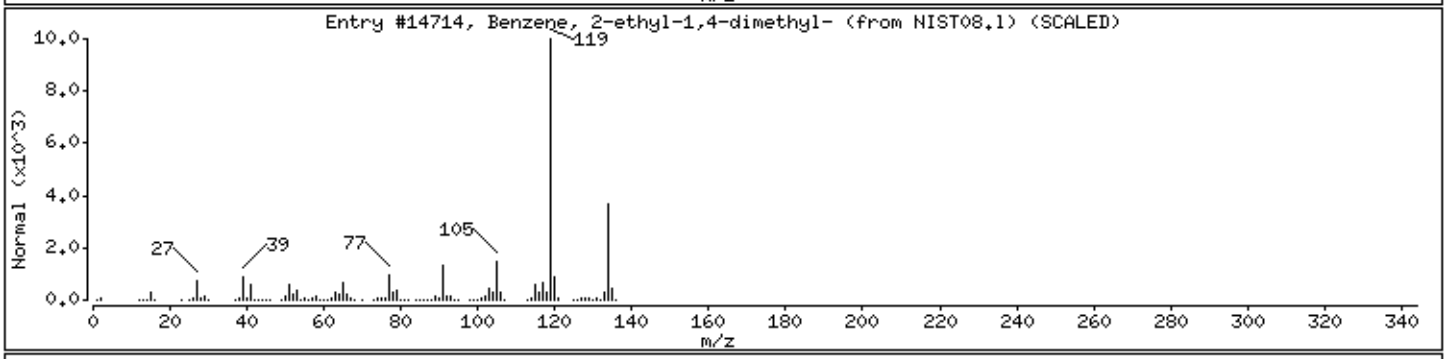
Operator: jg

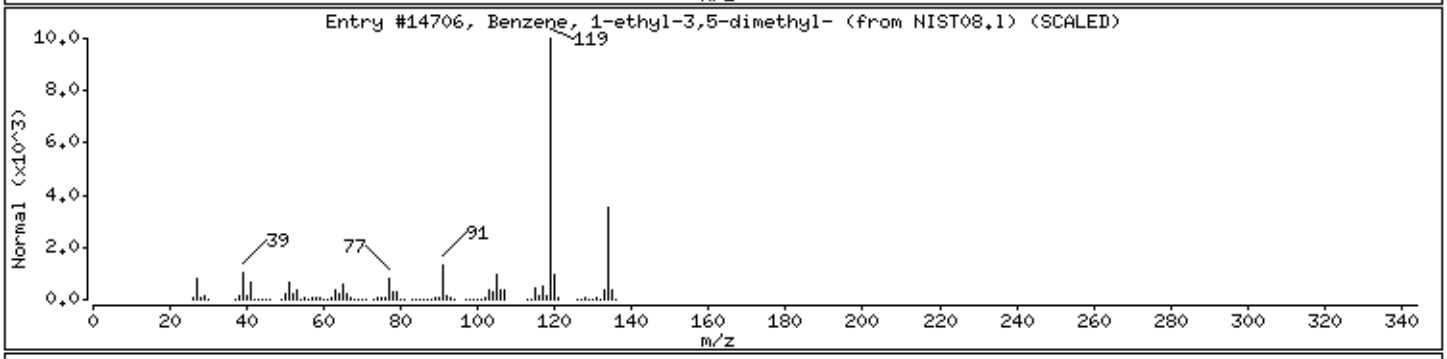
Column phase: RTX-624

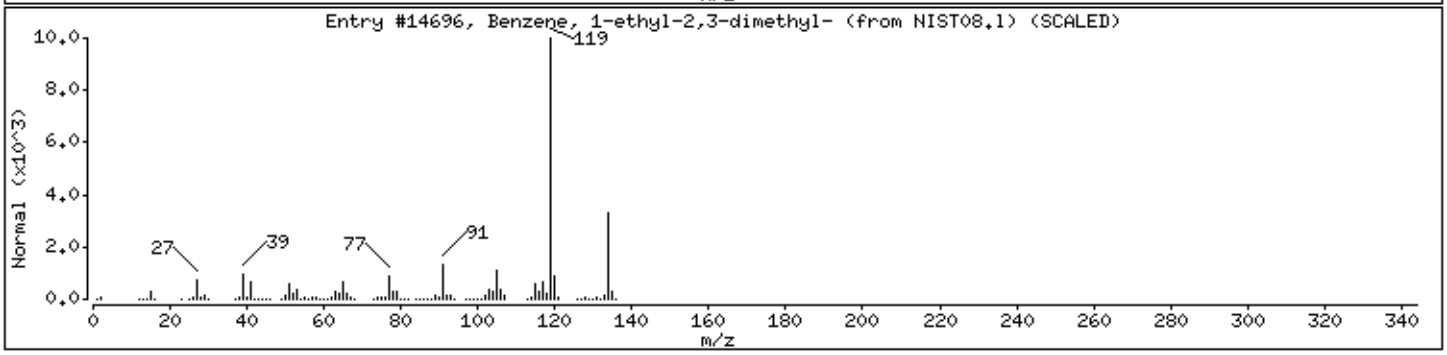
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 2-ethyl-1,4-dimethyl-	1758-88-9	NIST08.l	14714	91	C10H14	134
Benzene, 1-ethyl-3,5-dimethyl-	934-74-7	NIST08.l	14706	91	C10H14	134
Benzene, 1-ethyl-2,3-dimethyl-	933-98-2	NIST08.l	14696	91	C10H14	134









Data File: /chem/msd3.i/08aug17.b/3080808.d

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Client ID:

Instrument: msd3.i

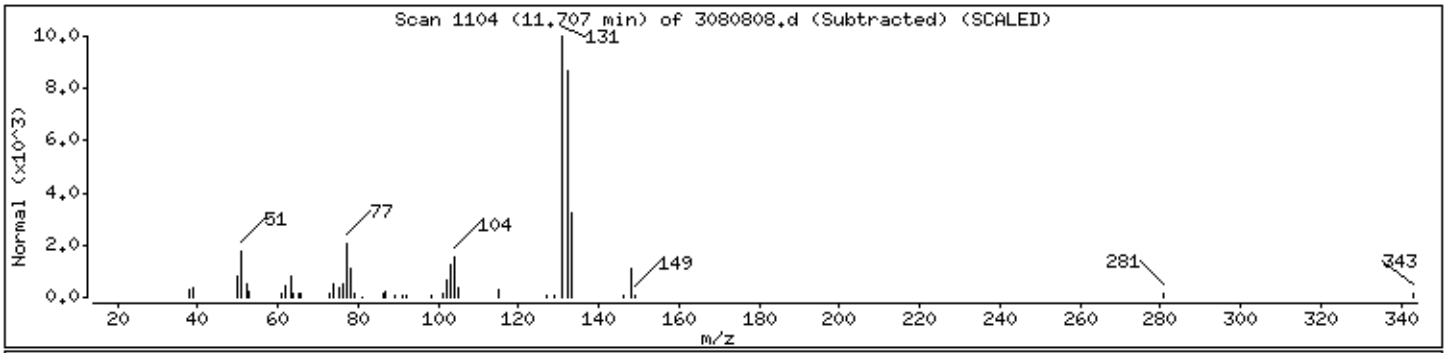
Sample Info: 80ml N2845

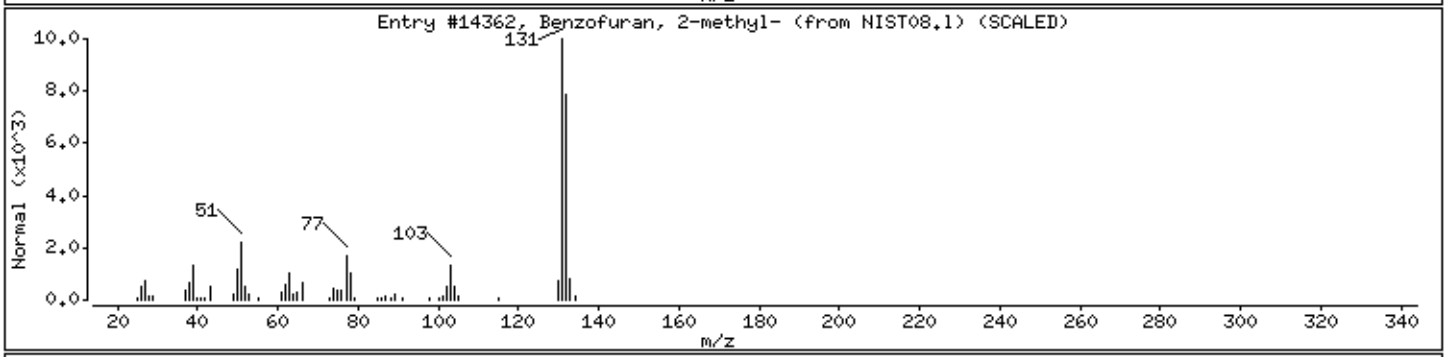
Operator: jg

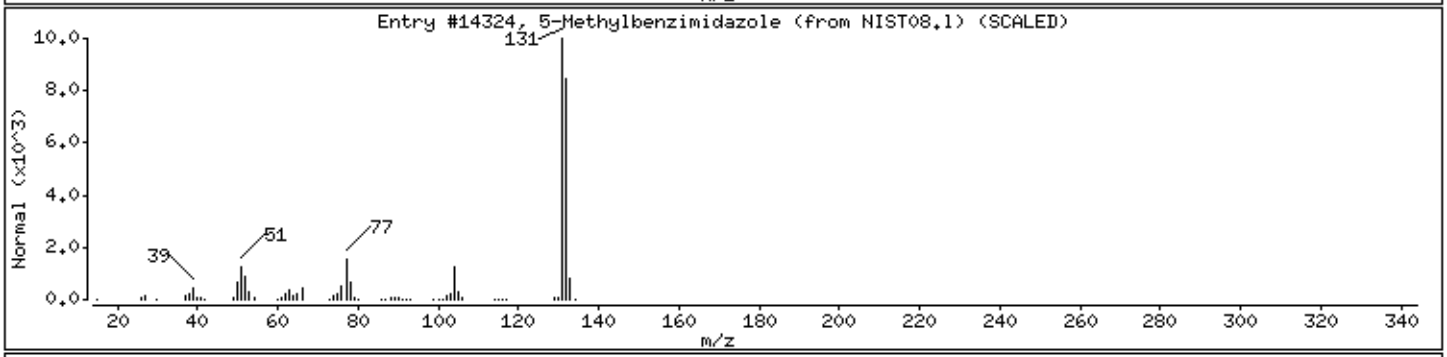
Column phase: RTX-624

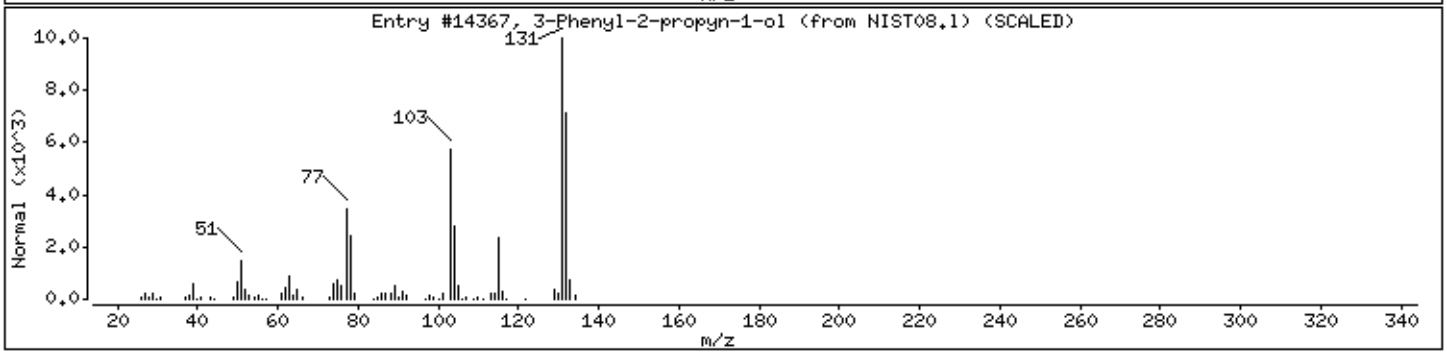
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzofuran, 2-methyl-	4265-25-2	NIST08.l	14362	87	C9H8O	132
5-Methylbenzimidazole	614-97-1	NIST08.l	14324	72	C8H8N2	132
3-Phenyl-2-propyn-1-ol	1504-58-1	NIST08.l	14367	72	C9H8O	132









Data File: /chem/msd3.i/08aug17.b/3080808.d

Date : 08-AUG-2017 15:38

Client ID:

Instrument: msd3.i

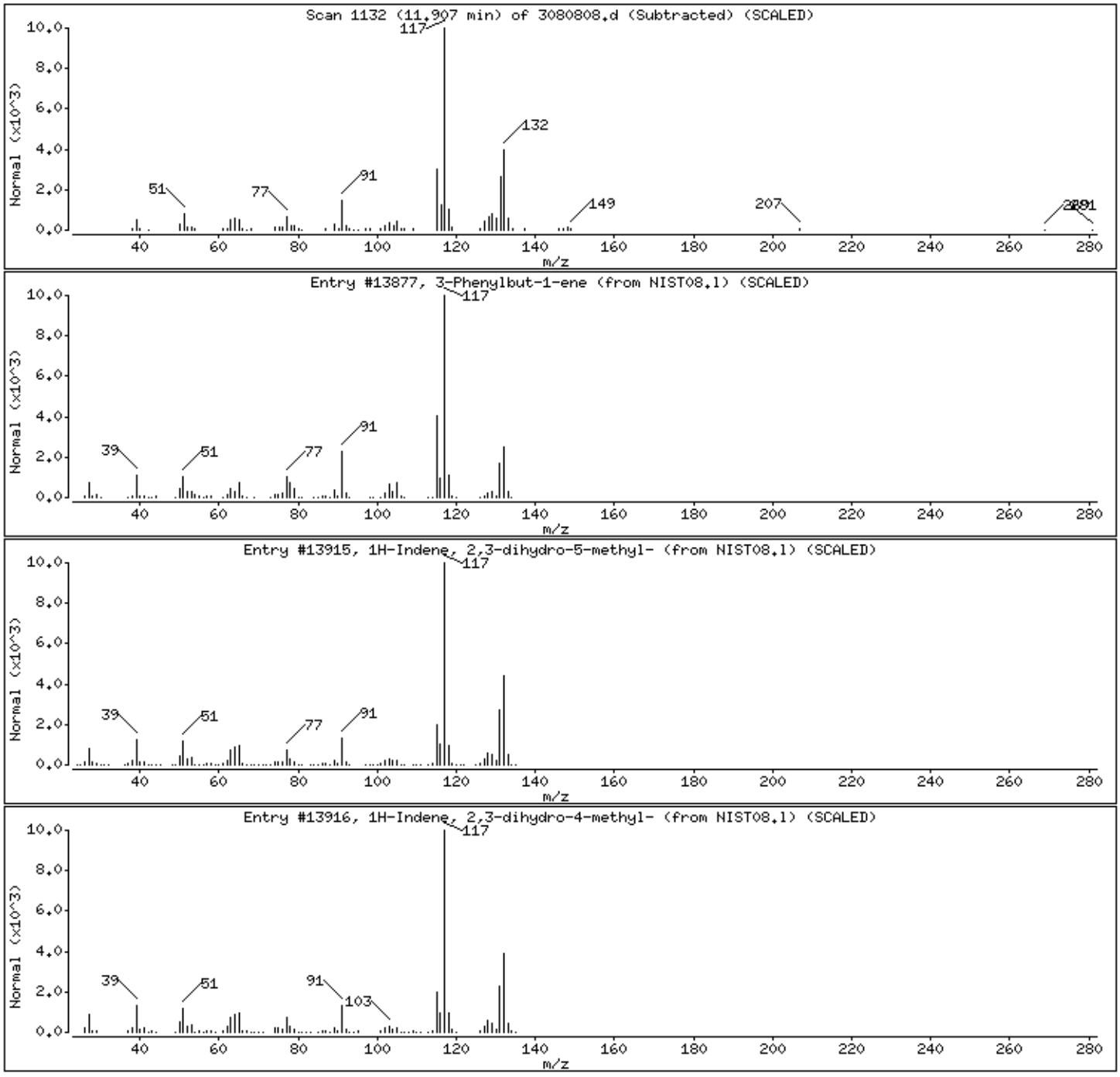
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
3-Phenylbut-1-ene	934-10-1	NIST08.l	13877	91	C10H12	132
1H-Indene, 2,3-dihydro-5-methyl-	874-35-1	NIST08.l	13915	90	C10H12	132
1H-Indene, 2,3-dihydro-4-methyl-	824-22-6	NIST08.l	13916	90	C10H12	132



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Instrument: msd3.i

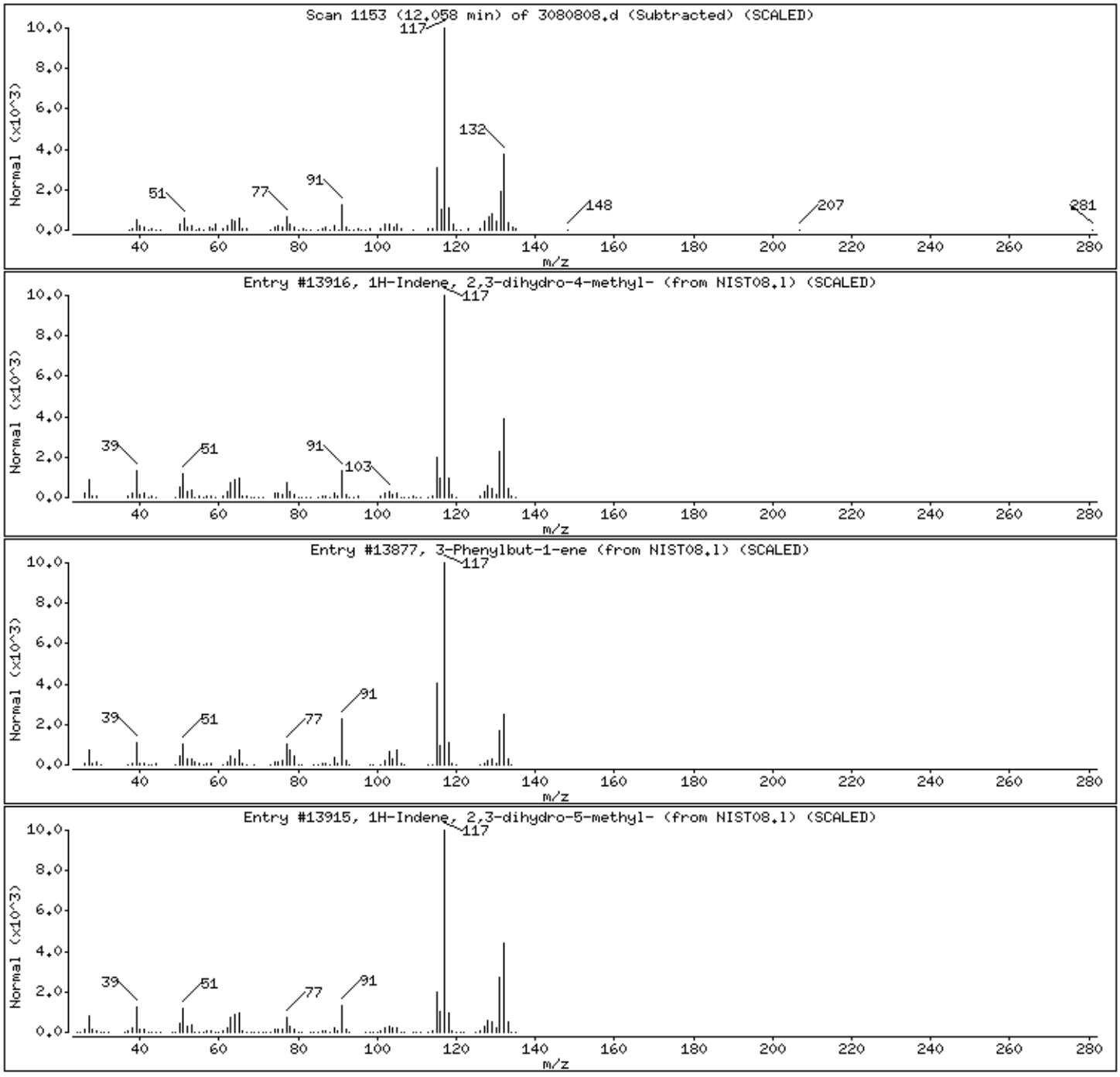
Sample Info: 80ml N2845

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
1H-Indene, 2,3-dihydro-4-methyl-	824-22-6	NIST08.l	13916	90	C10H12	132
3-Phenylbut-1-ene	934-10-1	NIST08.l	13877	87	C10H12	132
1H-Indene, 2,3-dihydro-5-methyl-	874-35-1	NIST08.l	13915	87	C10H12	132



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Instrument: msd3.i

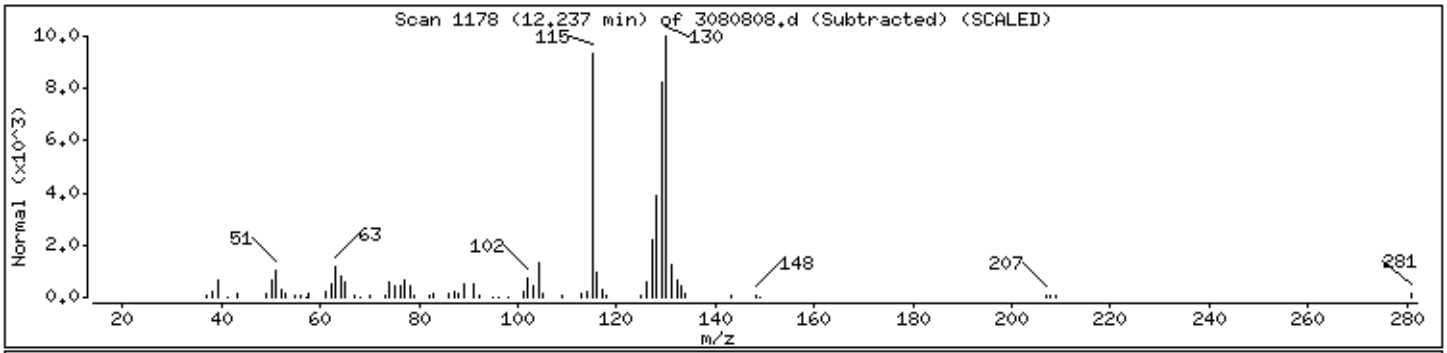
Sample Info: 80ml N2845

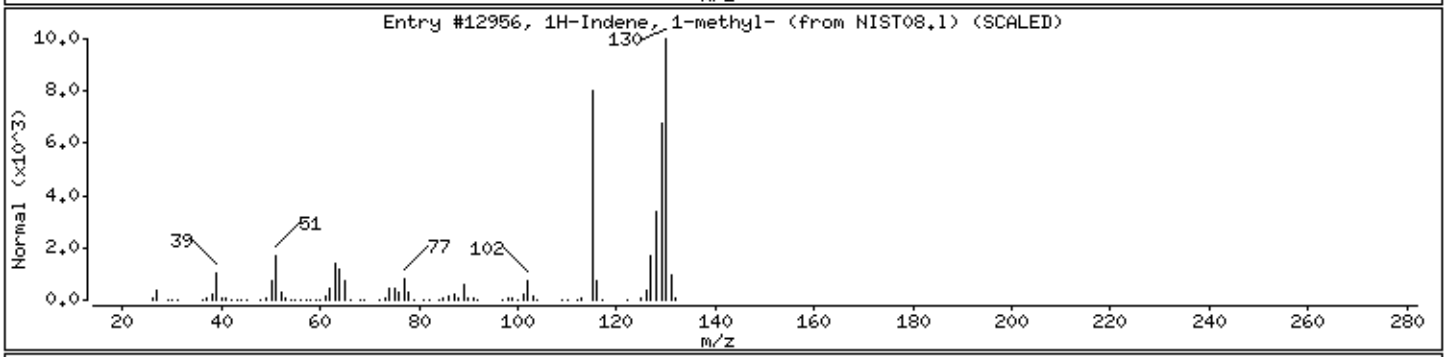
Operator: jg

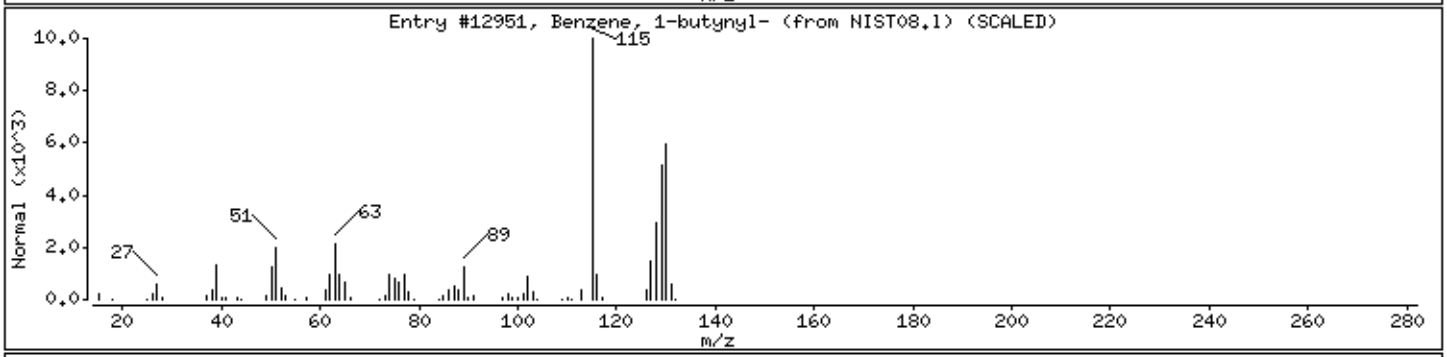
Column phase: RTX-624

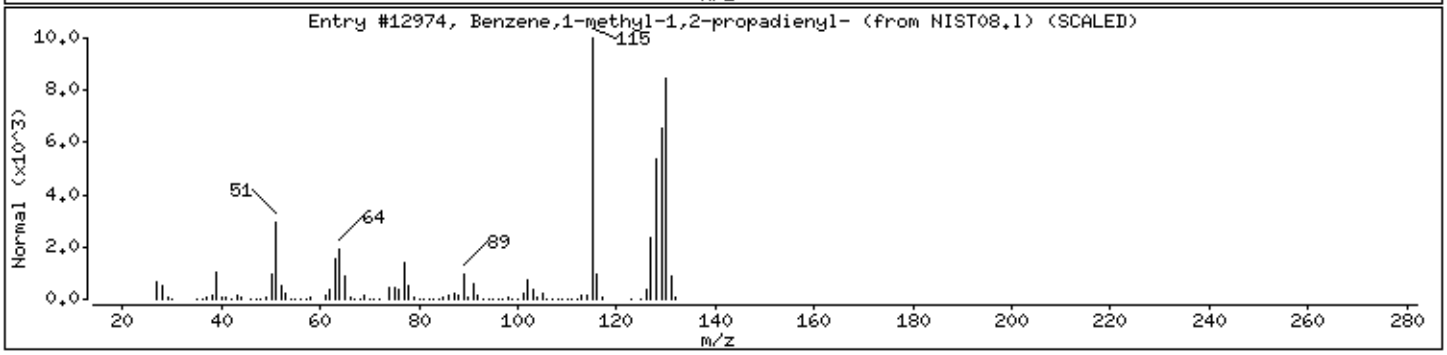
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
1H-Indene, 1-methyl-	767-59-9	NIST08.l	12956	94	C10H10	130
Benzene, 1-butynyl-	622-76-4	NIST08.l	12951	94	C10H10	130
Benzene,1-methyl-1,2-propadienyl-	22433-39-2	NIST08.l	12974	93	C10H10	130









EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SH-B_0817		
Lab ID:	1708091B-13A	**Date/Time Analyzed:**	8/8/17 03:16 PM
Date/Time Collected:	8/3/17 03:15 PM	**Dilution Factor:**	1.83
Media:		**Instrument/Filename:**	msd3.i / 3080807

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.28	1.2	2.9	12
Ethyl Benzene	100-41-4	0.37	1.6	4.0	31
m,p-Xylene	108-38-3	0.37	1.6	4.0	42
Naphthalene	91-20-3	0.14	0.77	9.6	0.71 J
o-Xylene	95-47-6	0.16	1.6	4.0	21
Toluene	108-88-3	0.21	1.4	3.4	21
Total Xylene	1330-20-7	NA	D	7.9	63

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indane	496-11-7	91%		22 NJ
Limonene	138-86-3	91%		9.6 NJB

J = Estimated value.
NJ =The identification is based on presumptive evidence; estimated value.
B = Analyte present in laboratory blank greater than reporting limit.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	95

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080807.d
Lab Smp Id: 1708091B-13A
Inj Date : 08-AUG-2017 15:16
Operator : jg Inst ID: msd3.i
Smp Info : 200ml 6L1283
Misc Info : 8.0 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 2
Dil Factor: 1.83000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.410 (1.000)	130	184884	25.0000			80.00- 120.00	100.00
5.410	5.410 (1.000)	128	143980				46.73- 106.73	77.88
5.410	5.410 (1.000)	49	200271				91.08- 151.08	108.32
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	706113	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	99245				0.00- 44.78	14.06
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	663047	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	316949				20.58- 80.58	47.80
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	222963	23.5969	23.597		80.00- 120.00	100.00
5.956	5.956 (1.101)	67	116318				24.54- 84.54	52.17
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	682866	23.8412	23.841		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	68668				0.00- 40.44	10.06

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	442270			35.27- 95.27	64.77
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	455475	26.3108	26.311	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	476501			84.77- 144.77	104.62
9.737	9.737 (1.112)	176	441015			64.74- 124.74	96.83
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	45355	1.97699	3.618	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	10639			0.00- 53.39	23.46
147 Toluene					CAS #: 108-88-3		
7.574	7.574 (1.201)	91	95740	3.10239	5.677	80.00- 120.00	100.00
7.574	7.574 (1.201)	92	54405			27.96- 87.96	56.83
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	54514	3.86734	7.077	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	158853			272.32- 332.32	291.40
169 m,p-Xylene					CAS #: 108-38-3		
8.920	8.920 (1.019)	106	94013	5.33300	9.759	80.00- 120.00	100.00
8.920	8.920 (1.019)	91	181880			165.91- 225.91	193.46
171 o-Xylene					CAS #: 95-47-6		
9.264	9.264 (1.058)	106	43649	2.60373	4.765	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	87677			175.85- 235.85	200.87
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.453)	128	5323	0.07378	0.1350	80.00- 120.00	100.00(a)
12.717	12.717 (1.452)	127	492			0.00- 43.00	9.25
M 239 Total Xylene					CAS #: 1330-20-7		
			137663	7.93672	14.524		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080807.d
Lab Smp Id: 1708091B-13A
Inj Date : 08-AUG-2017 15:16
Operator : jg Inst ID: msd3.i
Smp Info : 200ml 6L1283
Misc Info : 8.0 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 2
Dil Factor: 1.83000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.410	846180	25.000
* 123 1,4-Difluorobenzene	6.306	1532535	25.000
* 163 Chlorobenzene-d5	8.755	1934477	25.000

	CONCENTRATIONS			QUANT			
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.353	2455733	72.5534407	132.77	0		0	98
Isobutane				CAS #: 75-28-5			
1.647	357202	10.5533710	19.313	53	NIST08.l	233	98
Butane, 2-methyl-				CAS #: 78-78-4			
2.318	358941	10.6047296	19.407	91	NIST08.l	710	98

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Ethanol				CAS #: 64-17-5			
2.920	296953	8.77333253	16.055	64	NIST08.l	93	98
Acetone				CAS #: 67-64-1			
3.382	628093	18.5566950	33.959	59	NIST08.l	215	98
Isopropyl Alcohol				CAS #: 67-63-0			
3.577	1191957	35.2157818	64.445	78	NIST08.l	295	98
Trichloromethane				CAS #: 67-66-3			
5.480	2567723	75.8621490	138.83	97	NIST08.l	8890	98
Methane, bromodichloro-				CAS #: 75-27-4			
6.965	482202	7.86607952	14.395	96	NIST08.l	32162	123
Unknown				CAS #:			
7.745	486828	6.29146370	11.513	0		0	163
Cyclotrisiloxane, hexamethyl-				CAS #: 541-05-9			
7.788	264442	3.41748025	6.254	50	NIST08.l	76685	163
Methane, dibromochloro-				CAS #: 124-48-1			
8.290	192894	2.49284461	4.562	98	NIST08.l	64429	163
Acetamide, N,N-dimethyl-				CAS #: 127-19-5			
9.651	331949	4.28990345	7.850	76	NIST08.l	1880	163
Unknown				CAS #:			
9.973	340689	4.40285497	8.057	0		0	163
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.038	315270	4.07434986	7.456	97	NIST08.l	9308	163
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.360	196735	2.54247815	4.653	97	NIST08.l	9310	163
Limonene				CAS #: 138-86-3			
10.560	406889	5.25838406	9.623	91	NIST08.l	15483	163
Benzene, 1,2-dichloro-				CAS #: 95-50-1			
10.732	268461	3.46941931	6.349	98	NIST08.l	21601	163
Indane				CAS #: 496-11-7			
10.919	915009	11.8250100	21.640	91	NIST08.l	8851	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Benzoic acid, 2-[(trimethylsilyl)oxy]-, CAS #: 3789-85-3							
11.184	414132	5.35198196	9.794	50	NIST08.l	122257	163
Nonane, 2,2,4,4,6,8,8-heptamethyl- CAS #: 4390-04-9							
13.361	253633	3.27779932	5.998	86	NIST08.l	79910	163

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080807.d
Lab Smp Id: 1708091B-13A
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 8.0 Hg->5 psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	184884	-6.13
123 1,4-Difluorobenze	728289	436973	1019605	706113	-3.04
163 Chlorobenzene-d5	663497	398098	928896	663047	-0.07

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-13A
Level: LOW Operator: jg
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 8.0 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	23.597	94.39	70-130
$ 146 Toluene-d8	25.000	23.841	95.36	70-130
$ 177 4-Bromofluorobenze	25.000	26.311	105.24	70-130

šÀ

Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

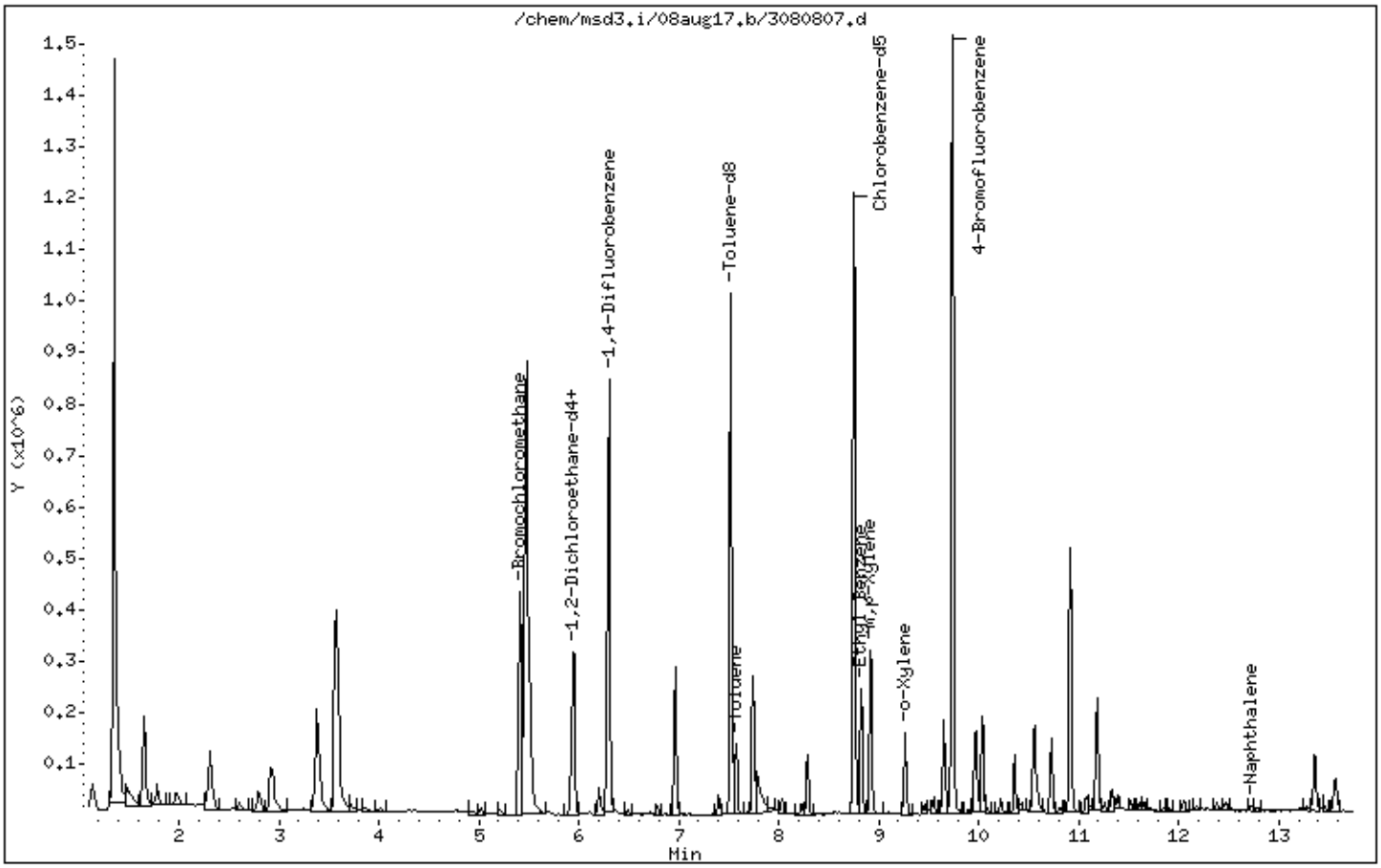
Instrument: msd3.i

Sample Info: 200ml 6L1283

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

Sample Info: 200ml 6L1283

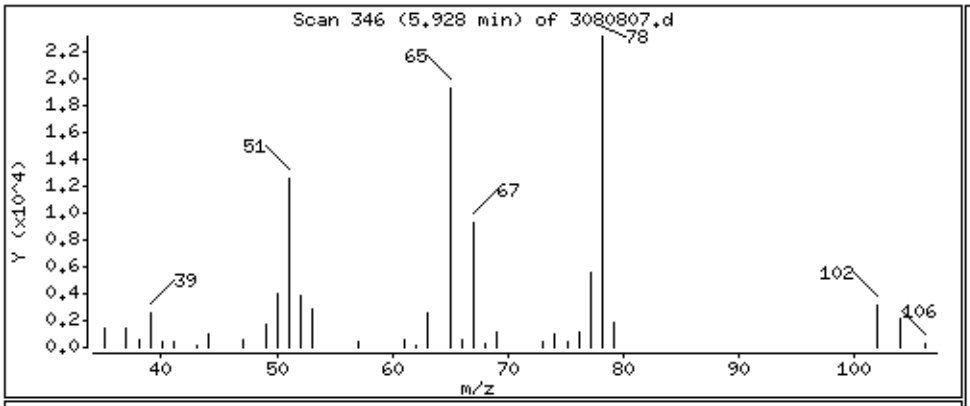
Operator: jg

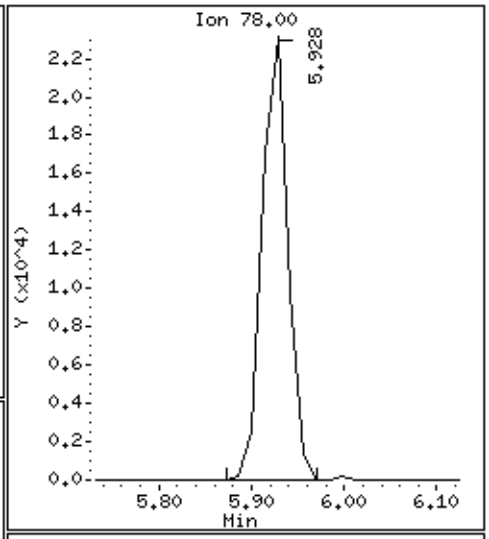
Column phase: RTX-624

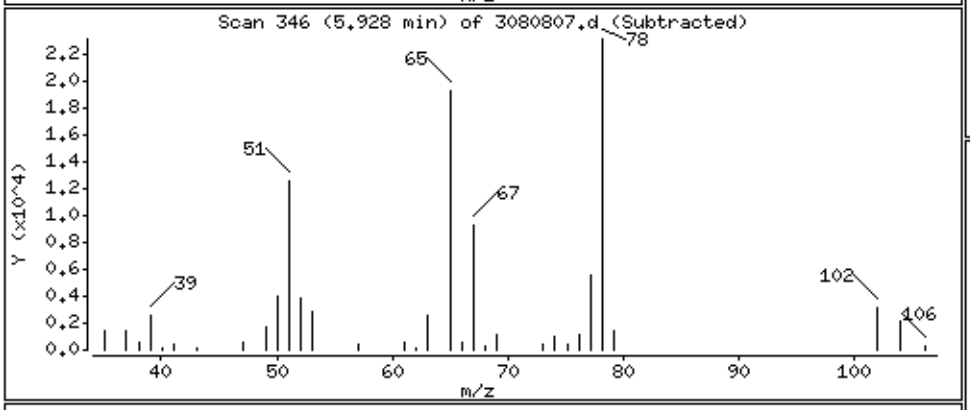
Column diameter: 0.25

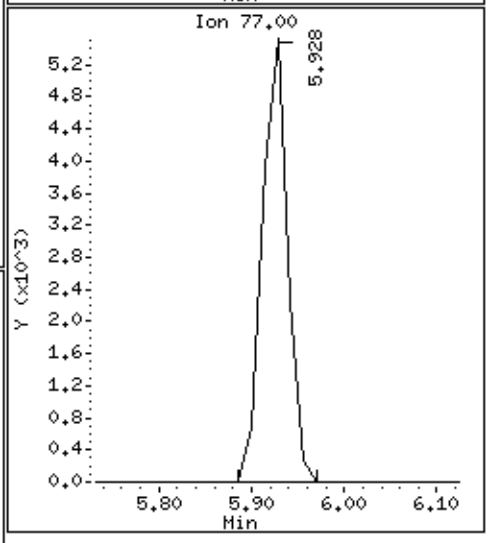
116 Benzene

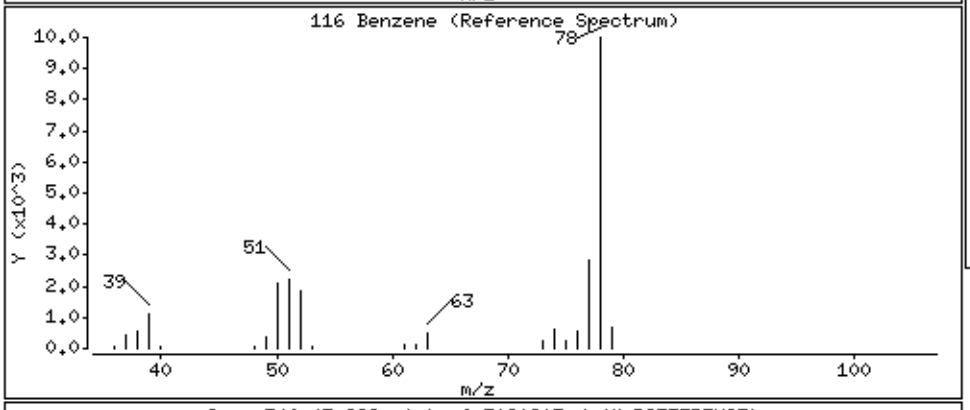
Concentration: 3.618 PPBV

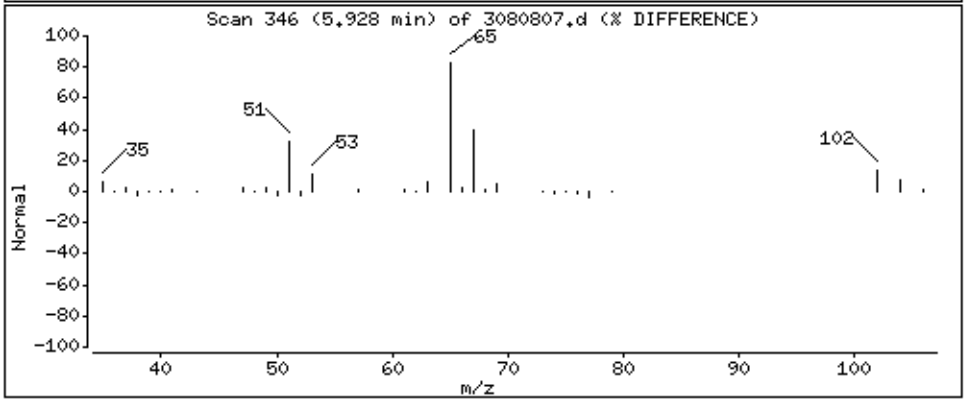












Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

Sample Info: 200ml 6L1283

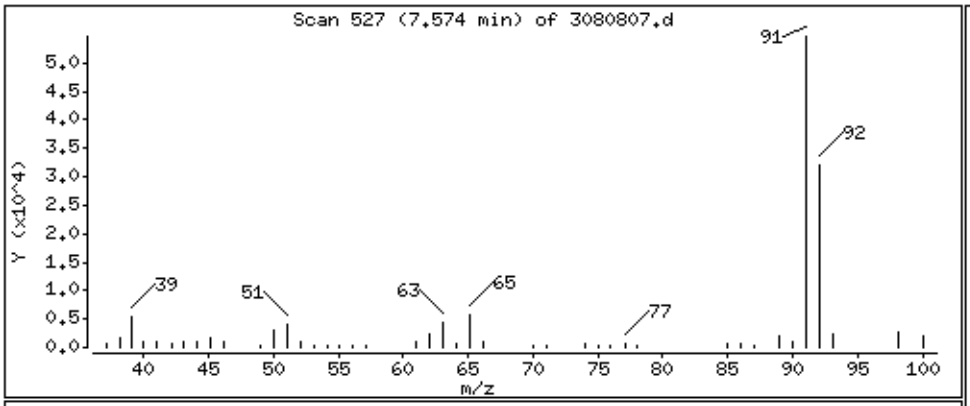
Operator: jg

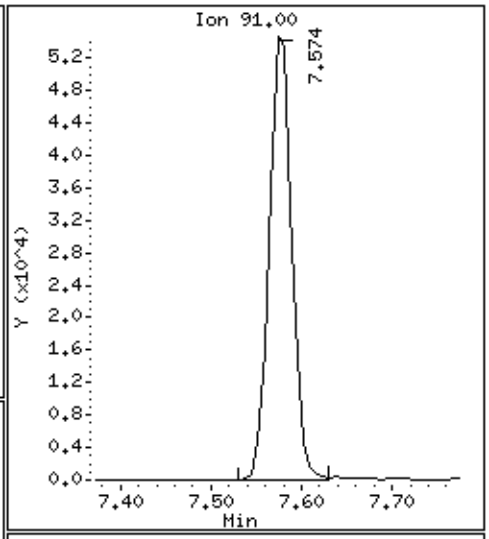
Column phase: RTX-624

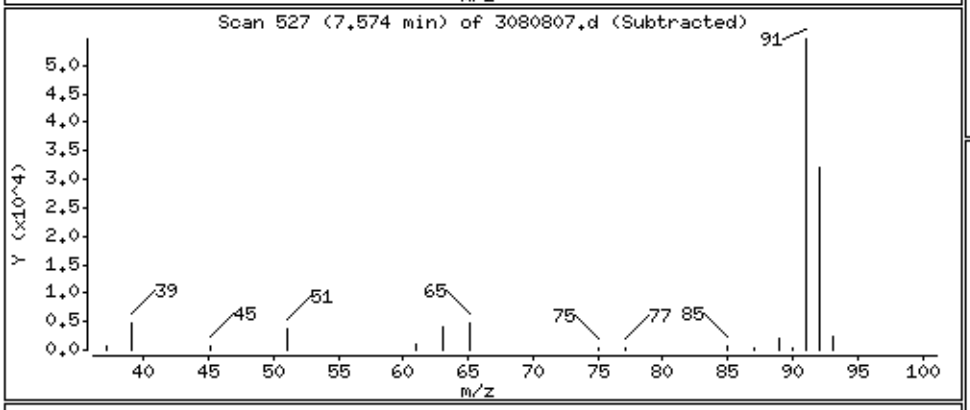
Column diameter: 0.25

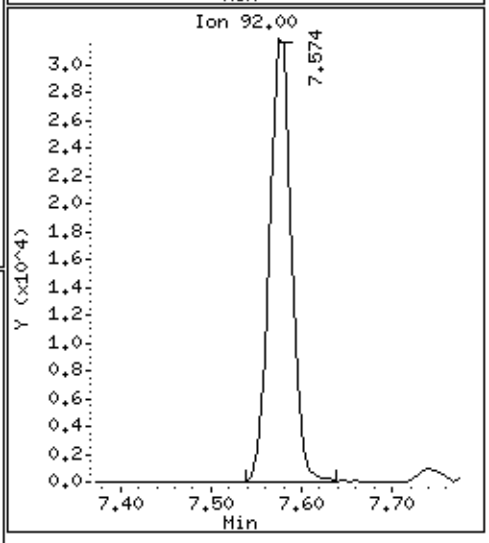
147 Toluene

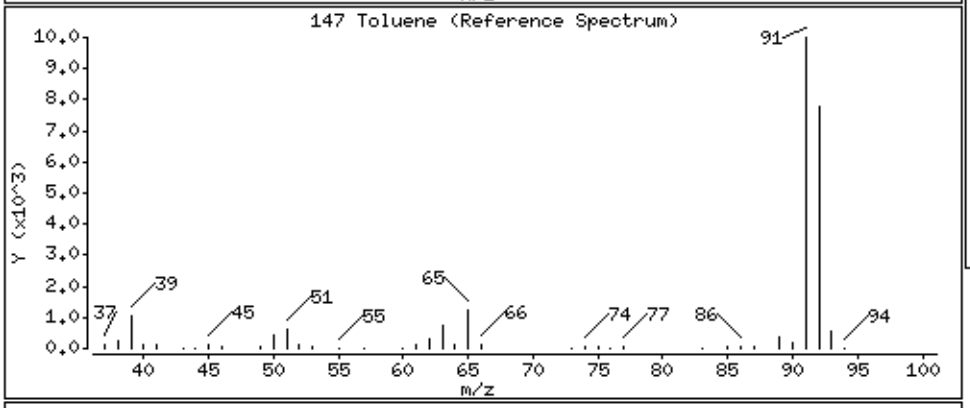
Concentration: 5.677 PPBV

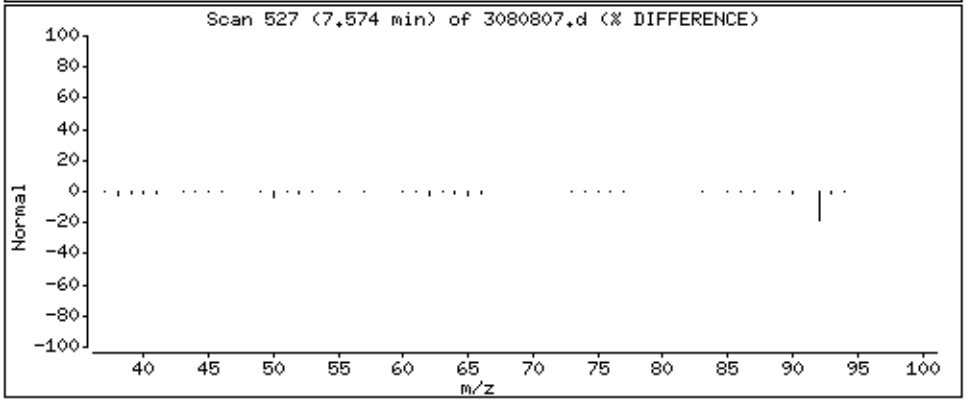












Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

Sample Info: 200ml 6L1283

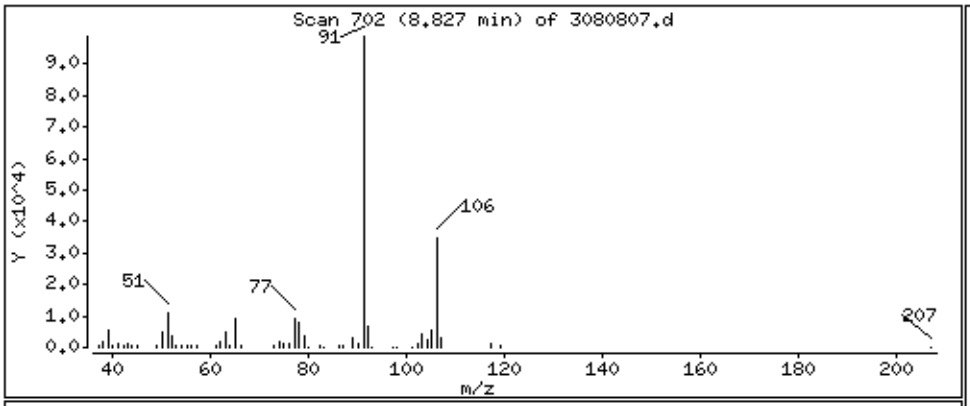
Operator: jg

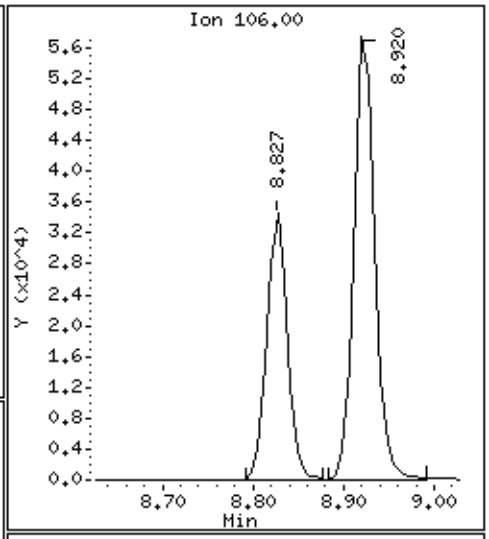
Column phase: RTX-624

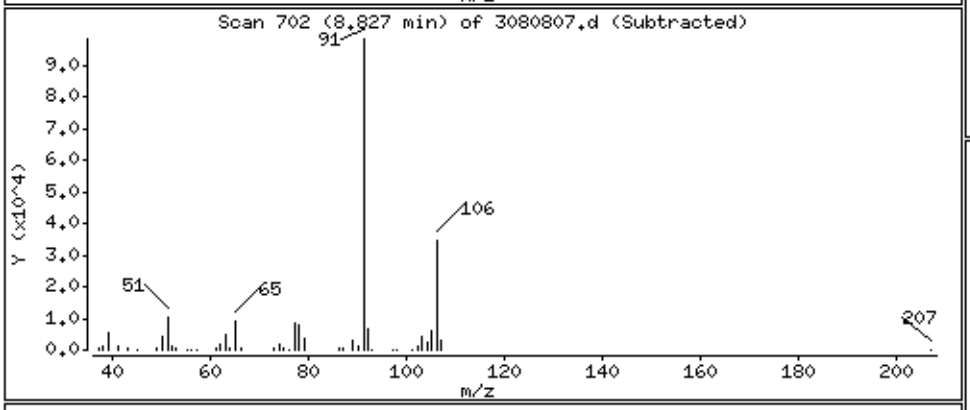
Column diameter: 0.25

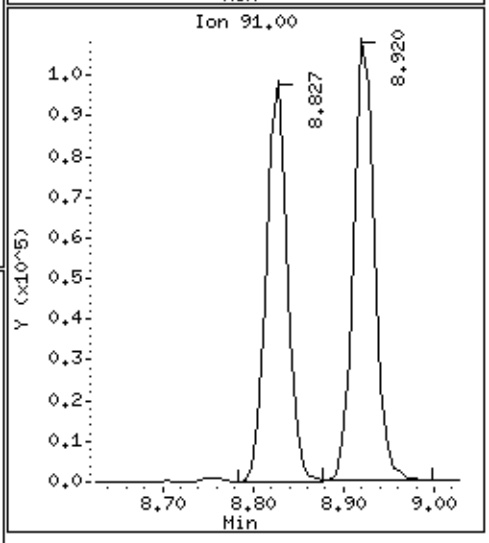
167 Ethyl Benzene

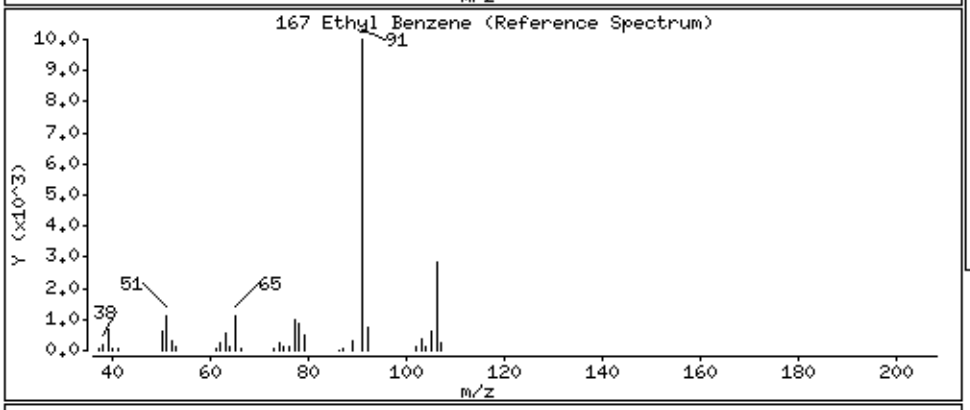
Concentration: 7.077 PPBV

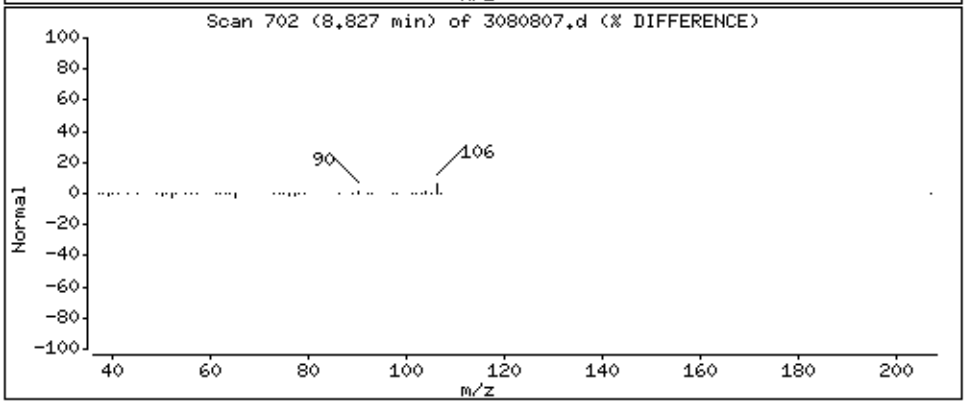












Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

Sample Info: 200ml 6L1283

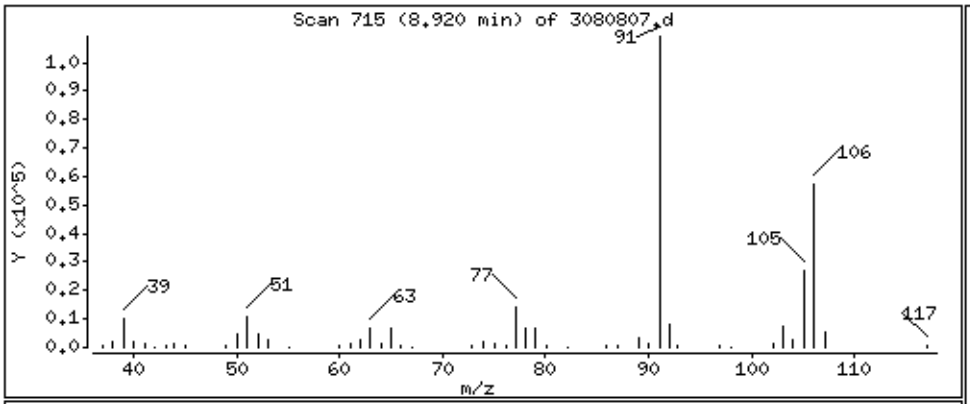
Operator: jg

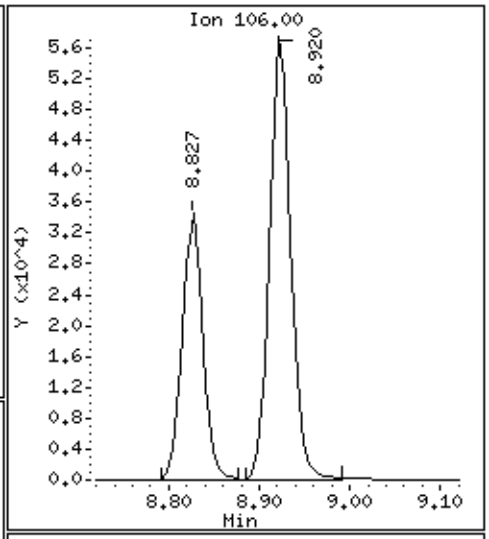
Column phase: RTX-624

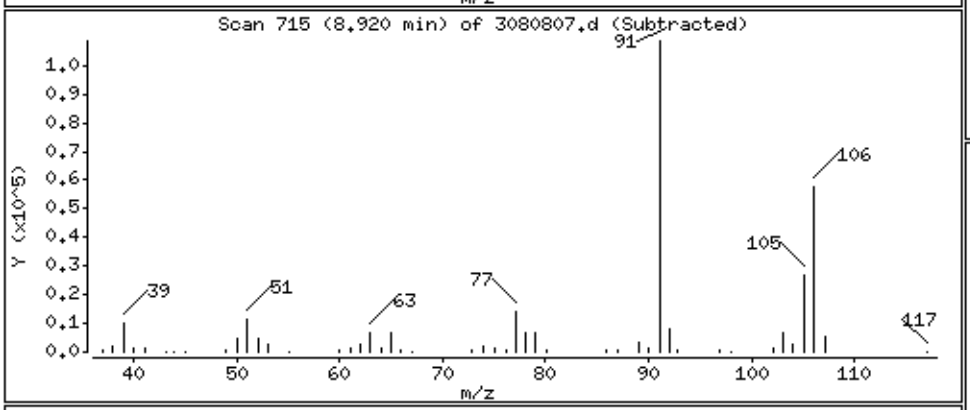
Column diameter: 0.25

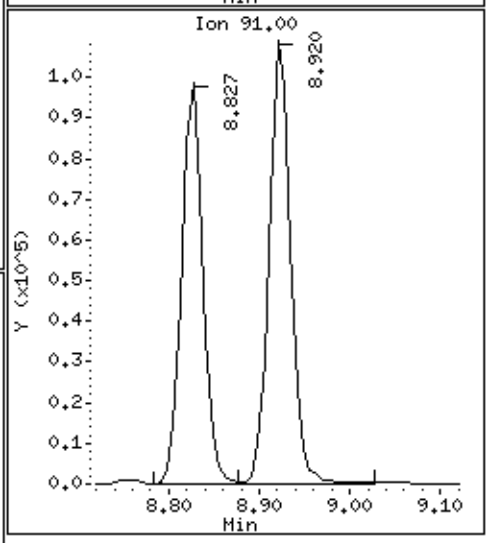
169 m,p-Xylene

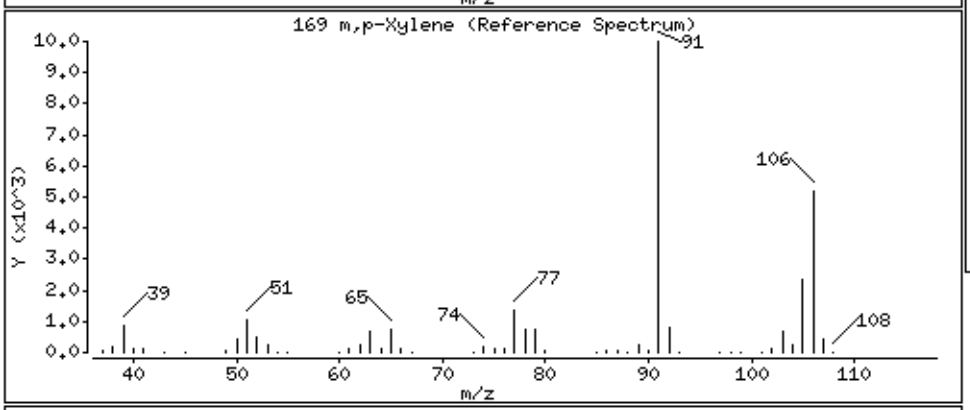
Concentration: 9.759 PPBV

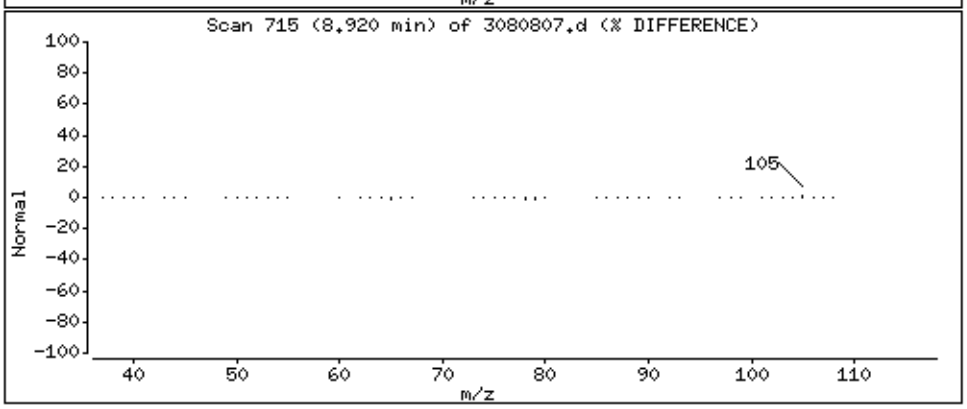












Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

Sample Info: 200ml 6L1283

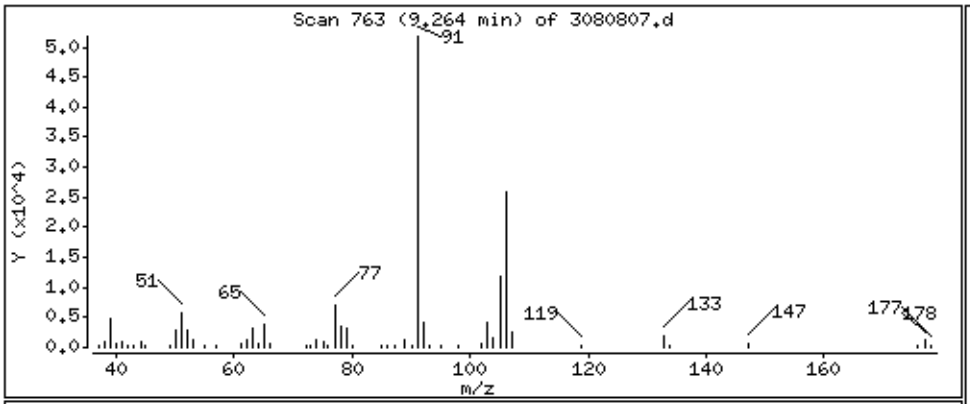
Operator: jg

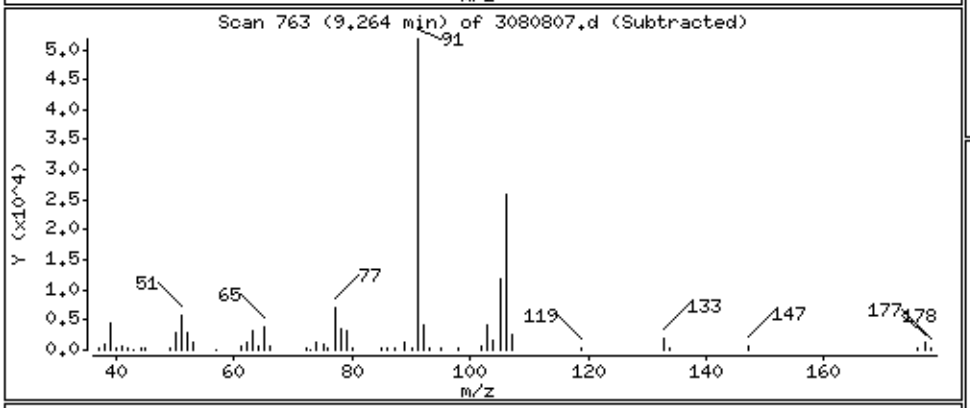
Column phase: RTX-624

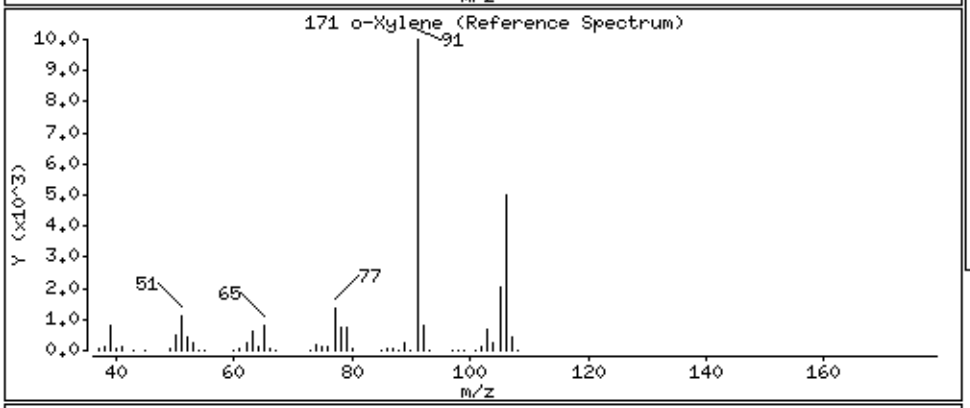
Column diameter: 0.25

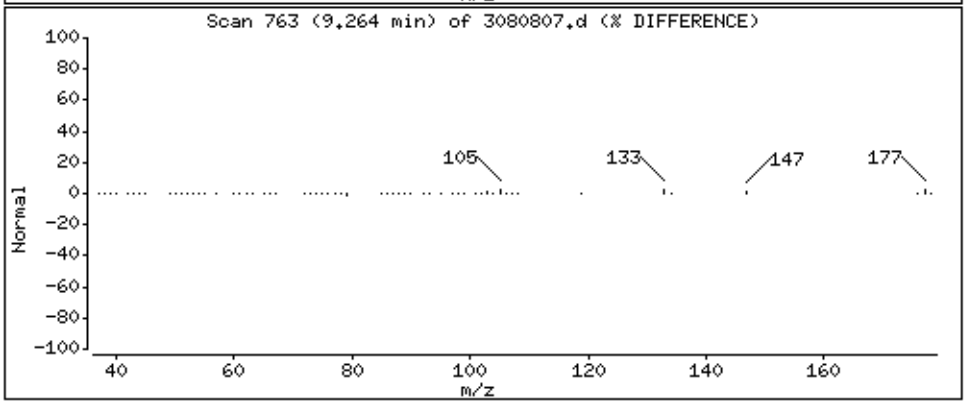
171 o-Xylene

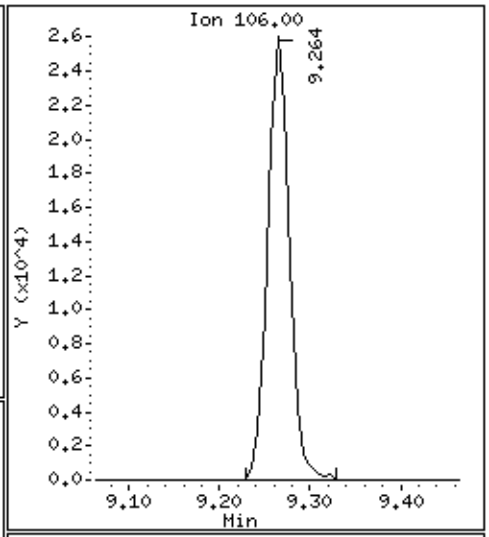
Concentration: 4.765 PPBV

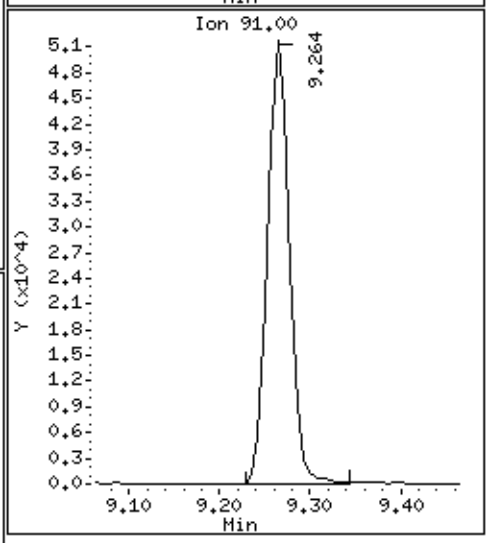












Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

Sample Info: 200ml 6L1283

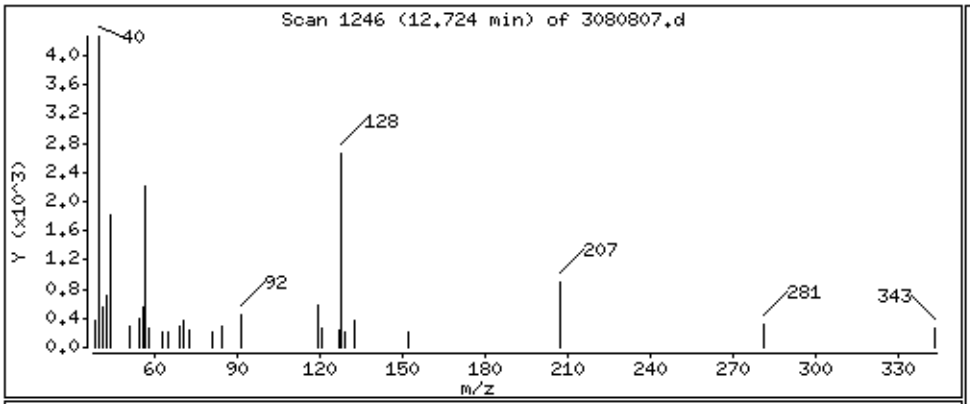
Operator: jg

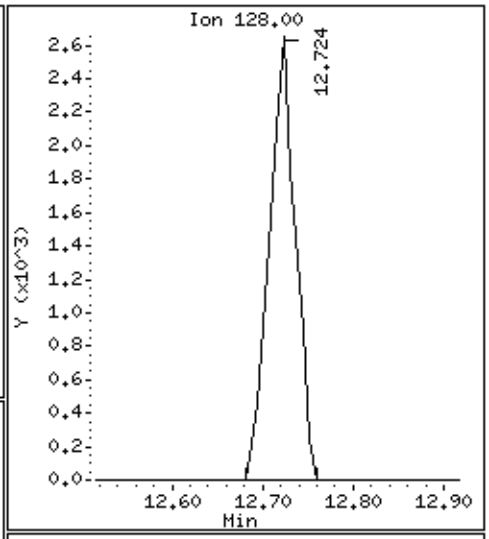
Column phase: RTX-624

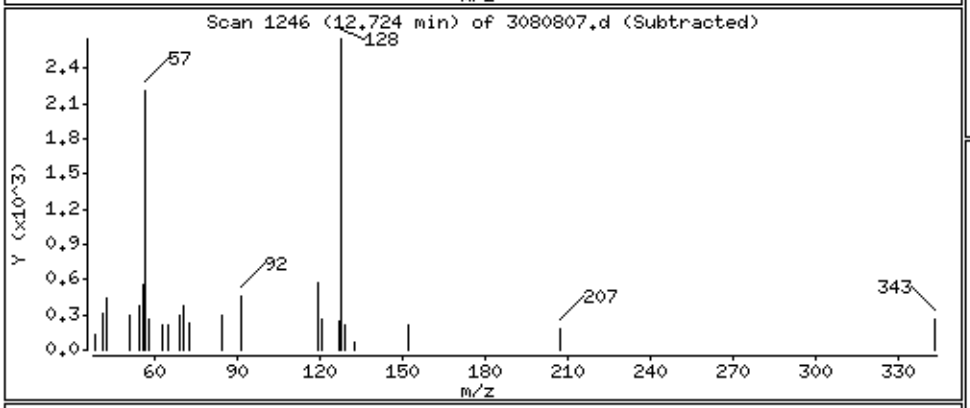
Column diameter: 0.25

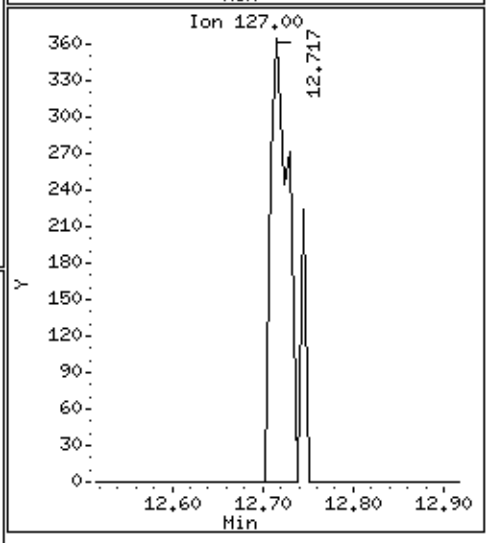
228 Naphthalene

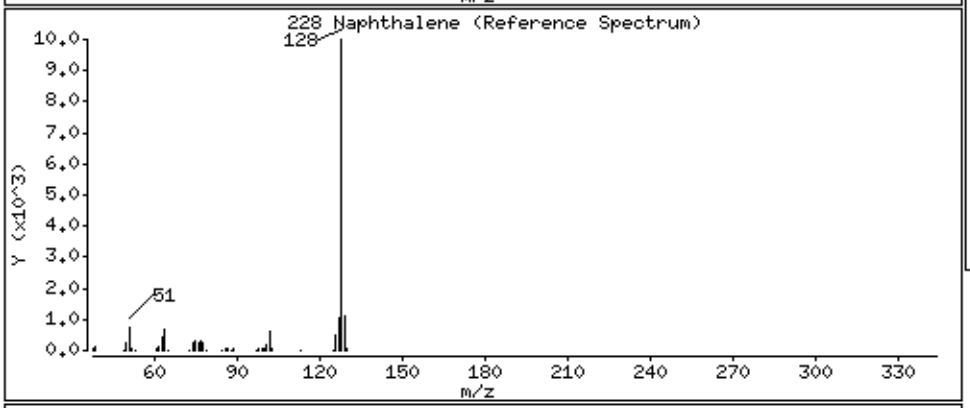
Concentration: 0.1350 PPBV

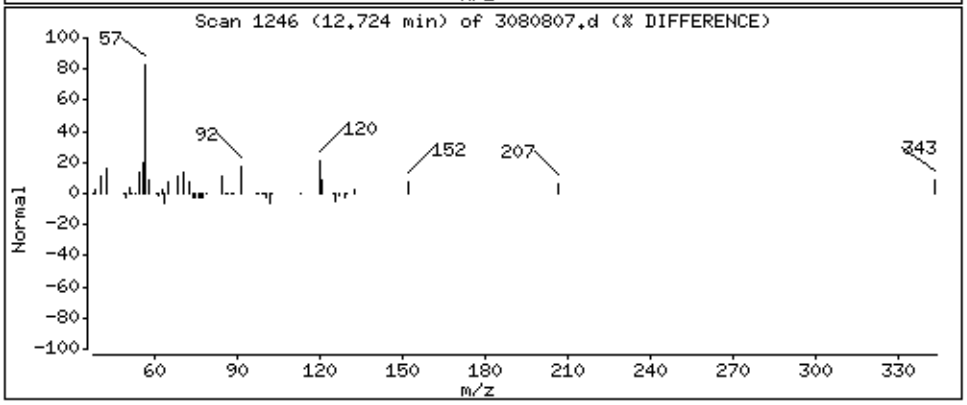












Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

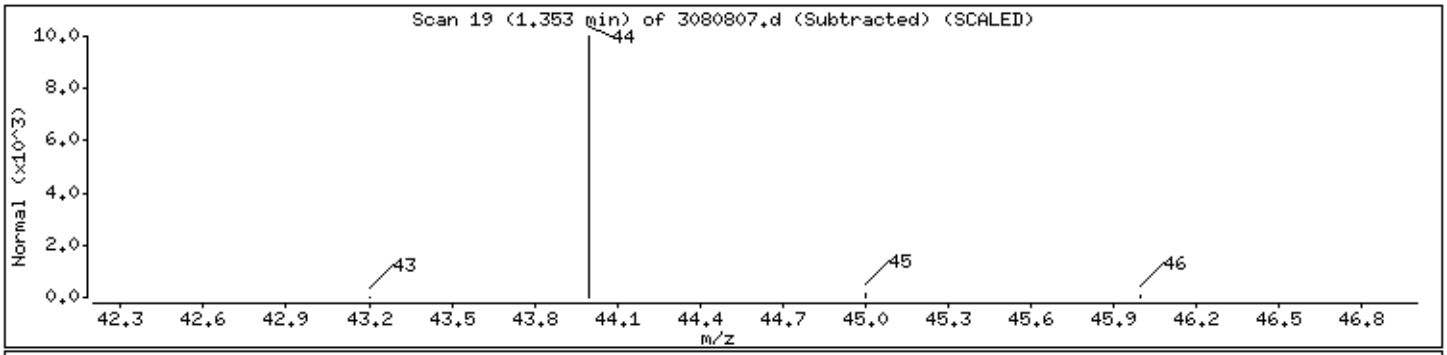
Sample Info: 200ml 6L1283

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

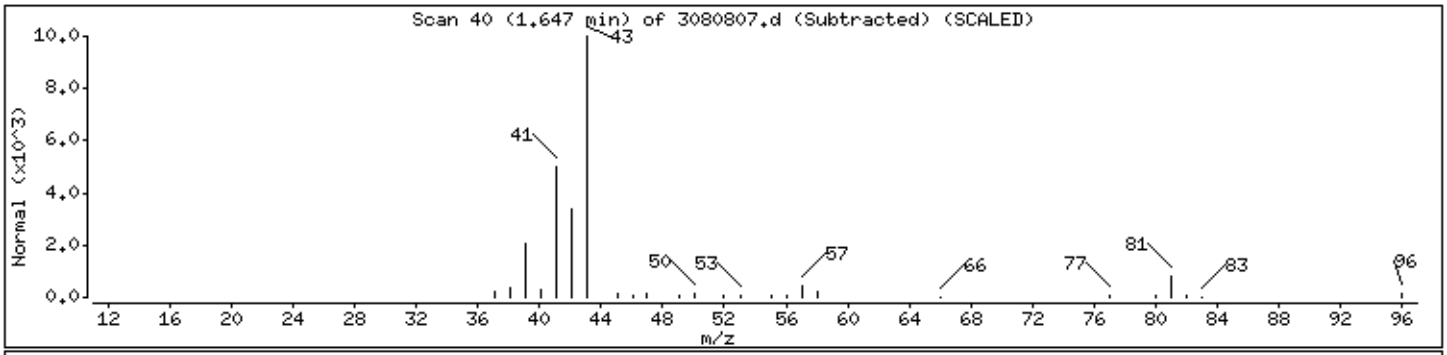
Sample Info: 200ml 6L1283

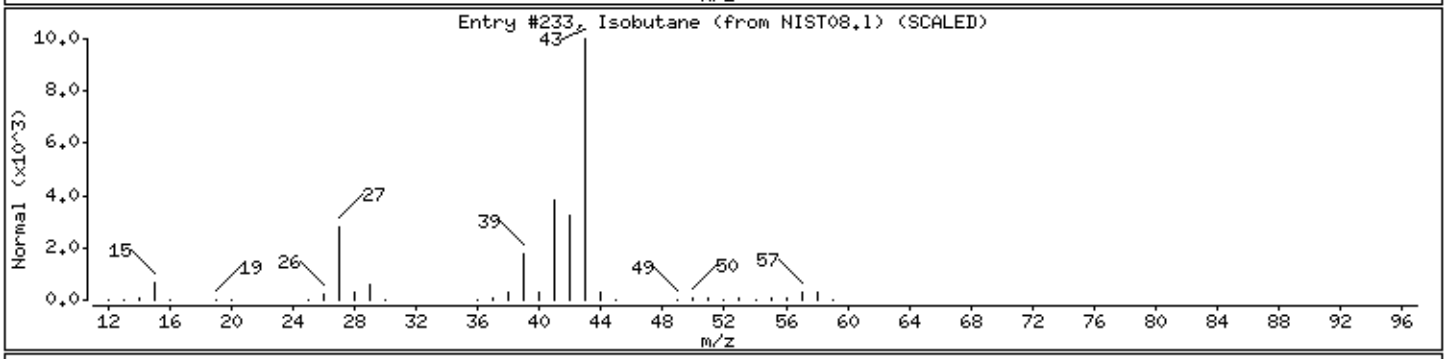
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isobutane	75-28-5	NIST08.l	233	53	C4H10	58





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

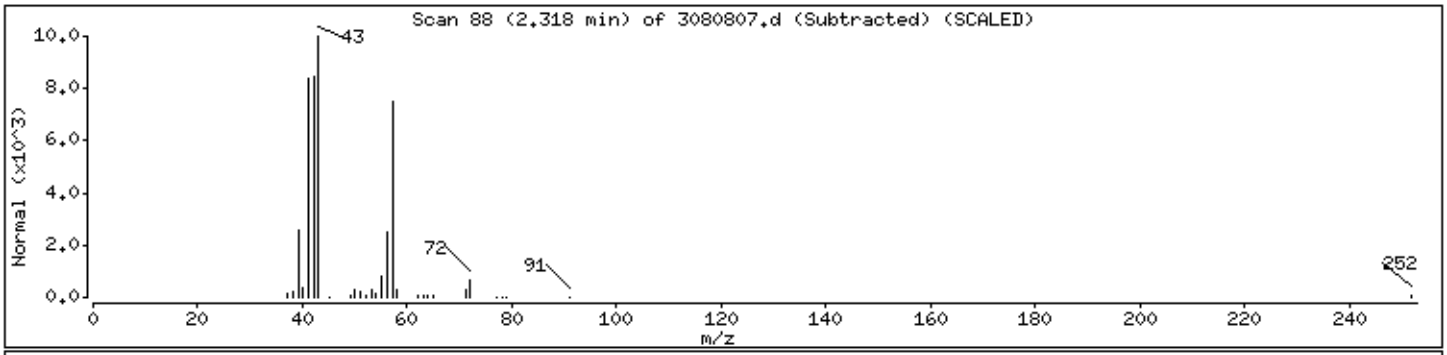
Sample Info: 200ml 6L1283

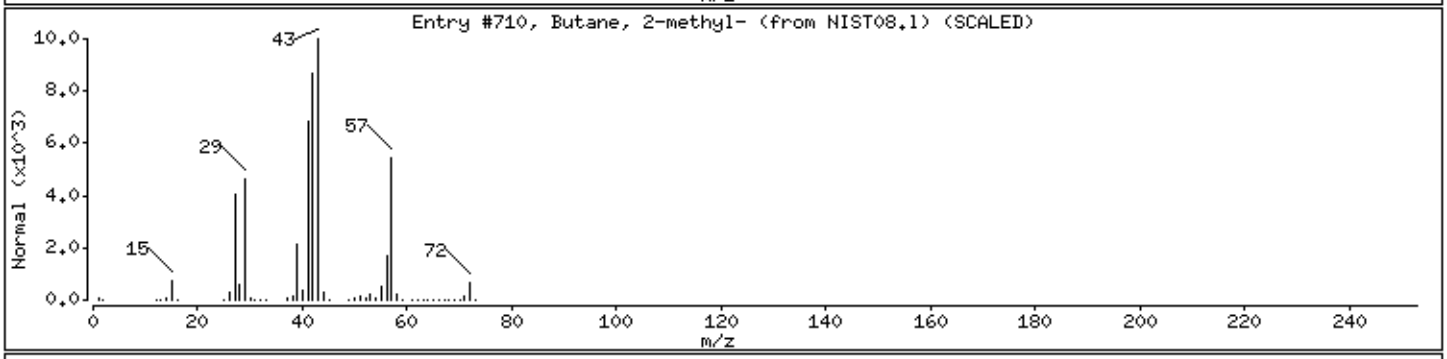
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Butane, 2-methyl-	78-78-4	NIST08.l	710	91	C5H12	72





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

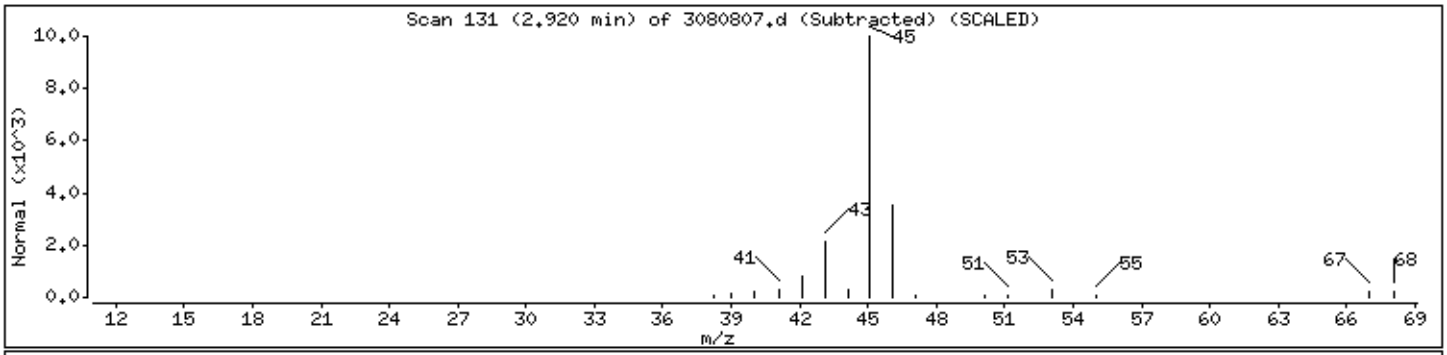
Sample Info: 200ml 6L1283

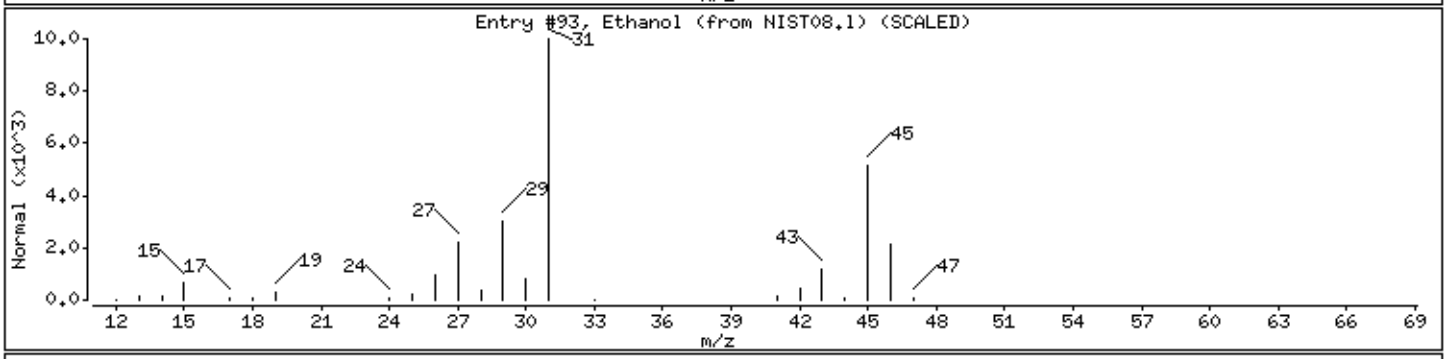
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Ethanol	64-17-5	NIST08.l	93	64	C2H6O	46





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

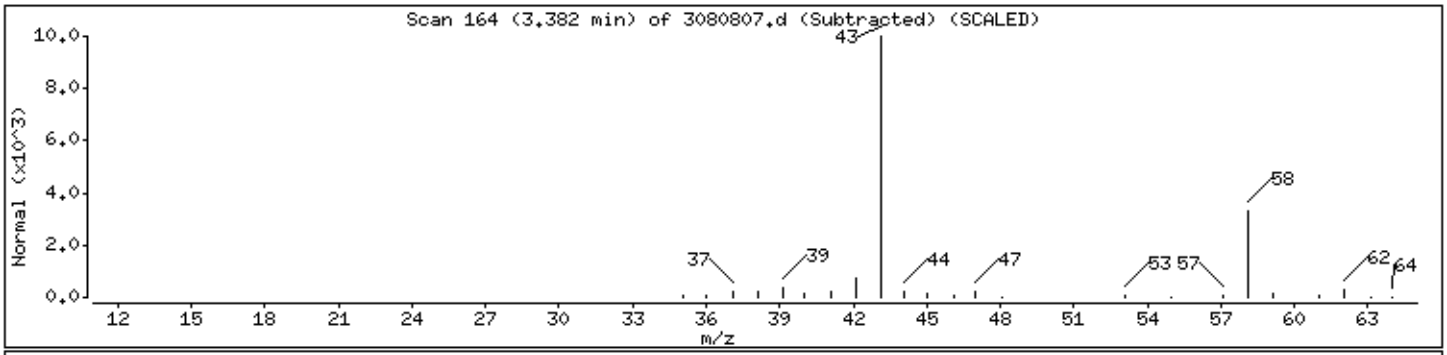
Sample Info: 200ml 6L1283

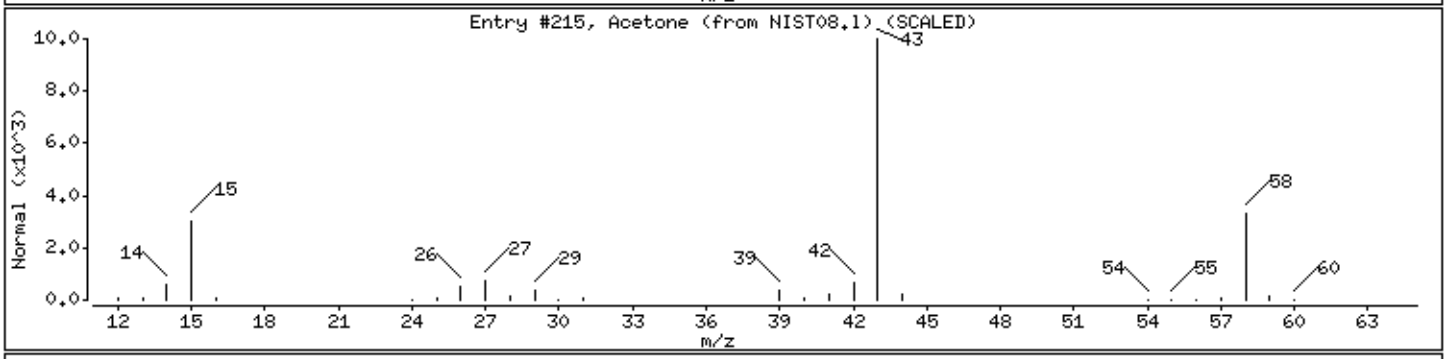
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Acetone	67-64-1	NIST08.l	215	59	C3H6O	58





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

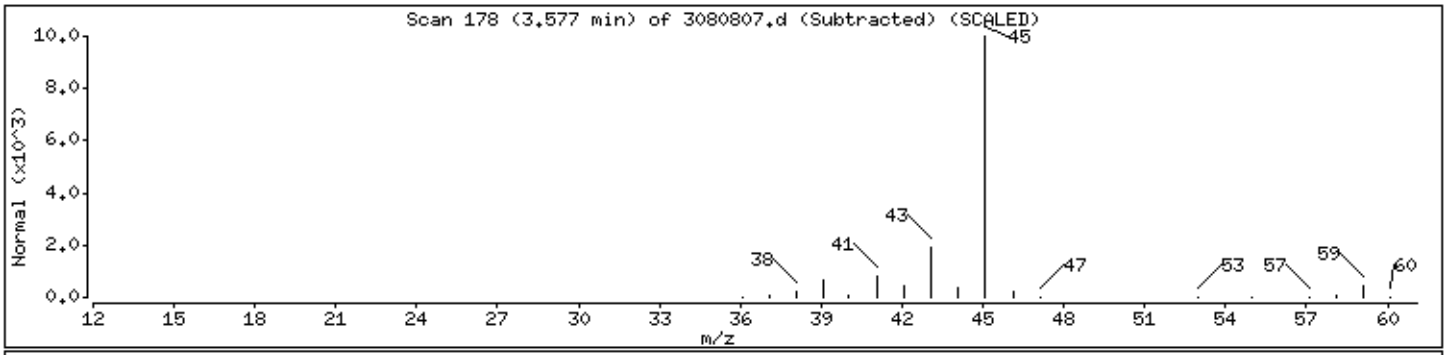
Sample Info: 200ml 6L1283

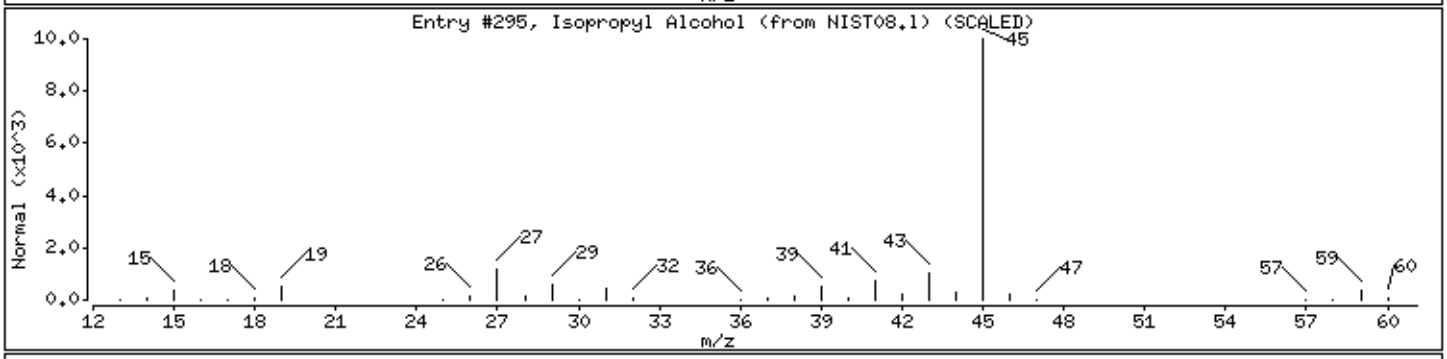
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isopropyl Alcohol	67-63-0	NIST08.l	295	78	C3H8O	60





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

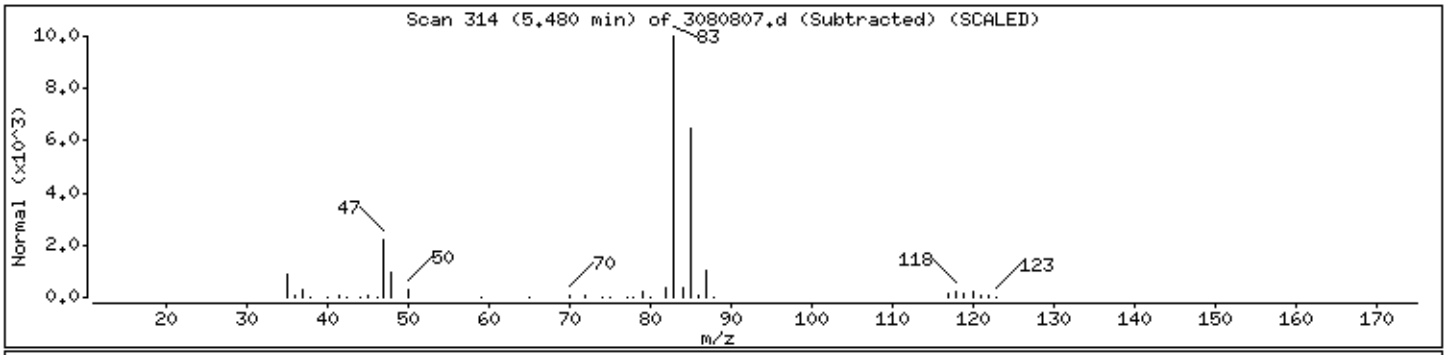
Sample Info: 200ml 6L1283

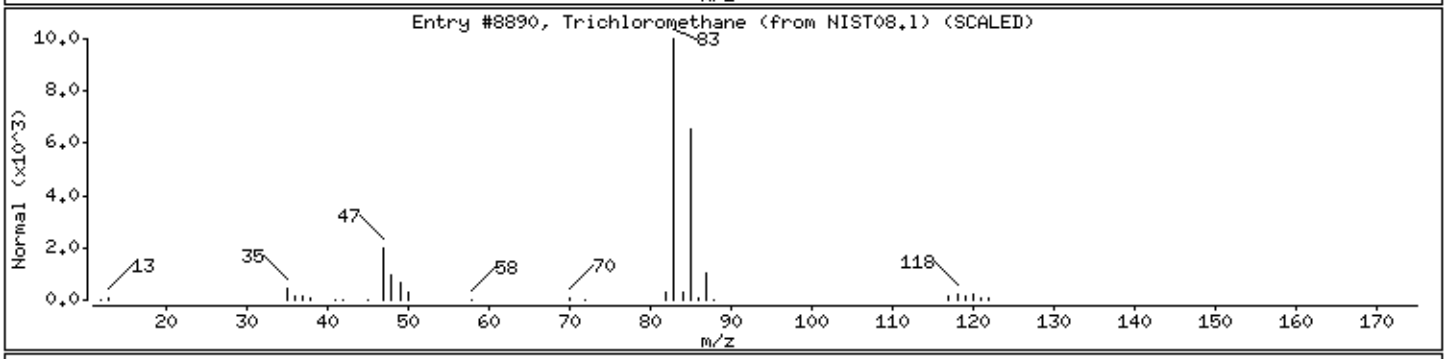
Operator: jg

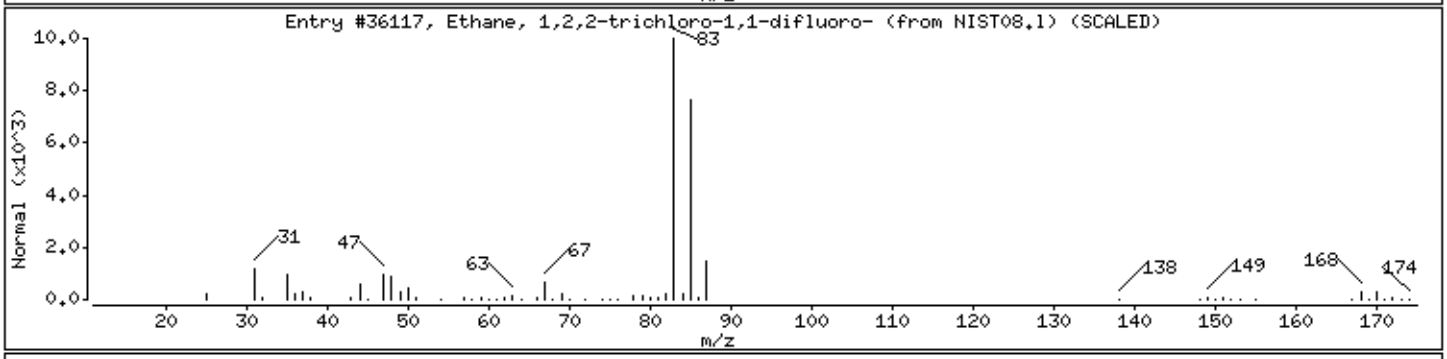
Column phase: RTX-624

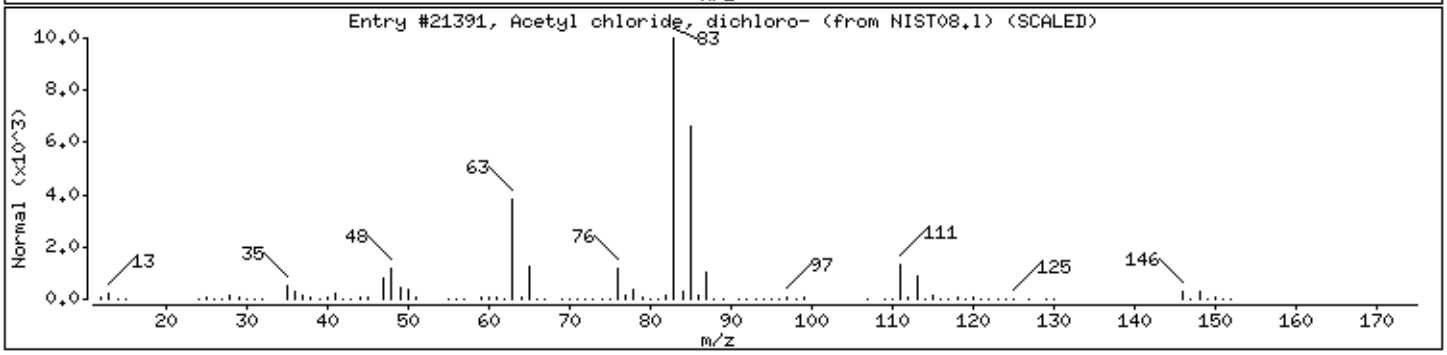
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Trichloromethane	67-66-3	NIST08.l	8890	97	CHCl3	118
Ethane, 1,2,2-trichloro-1,1-difluoro-	354-21-2	NIST08.l	36117	72	C2HCl3F2	168
Acetyl chloride, dichloro-	79-36-7	NIST08.l	21391	56	C2HCl3O	146









Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

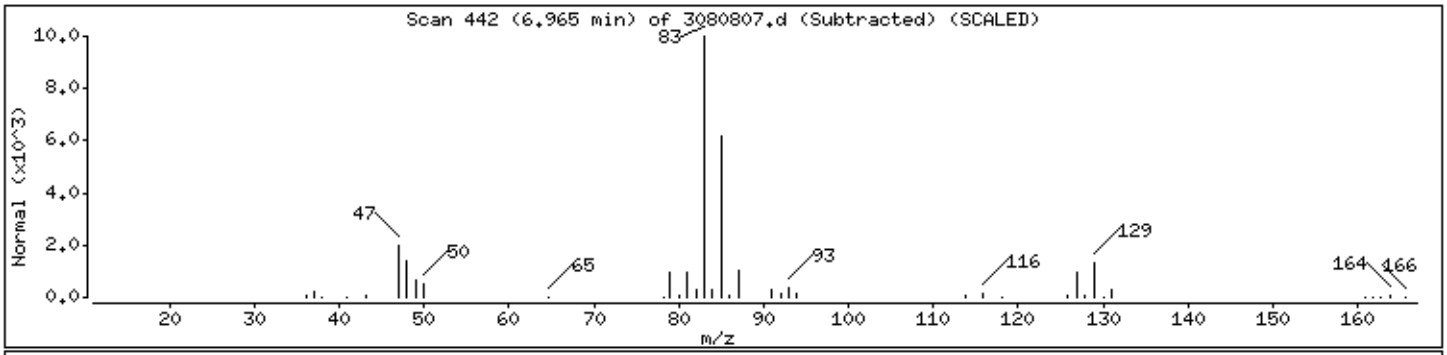
Sample Info: 200ml 6L1283

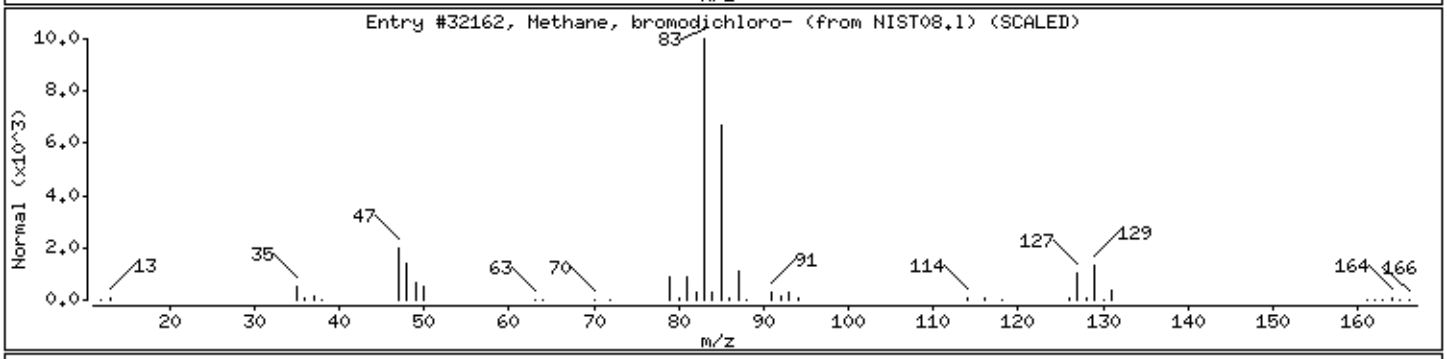
Operator: jg

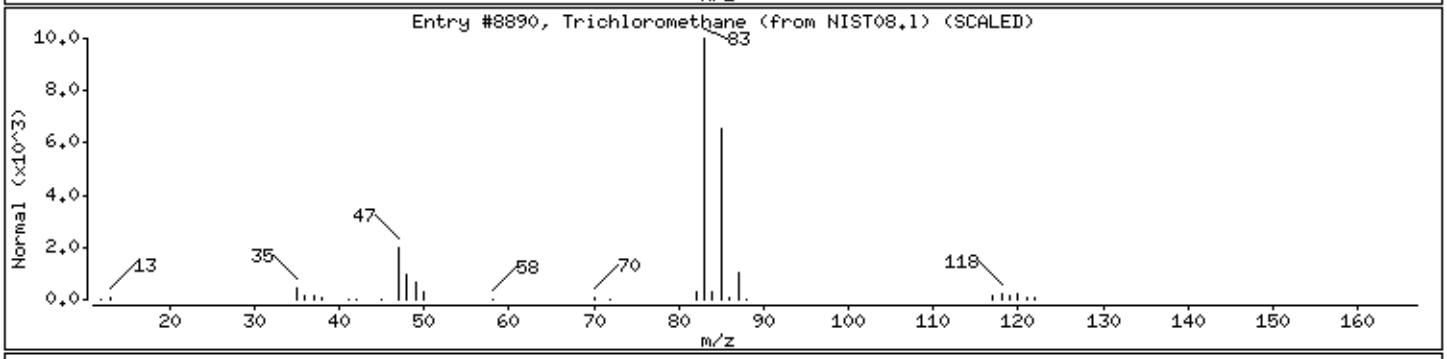
Column phase: RTX-624

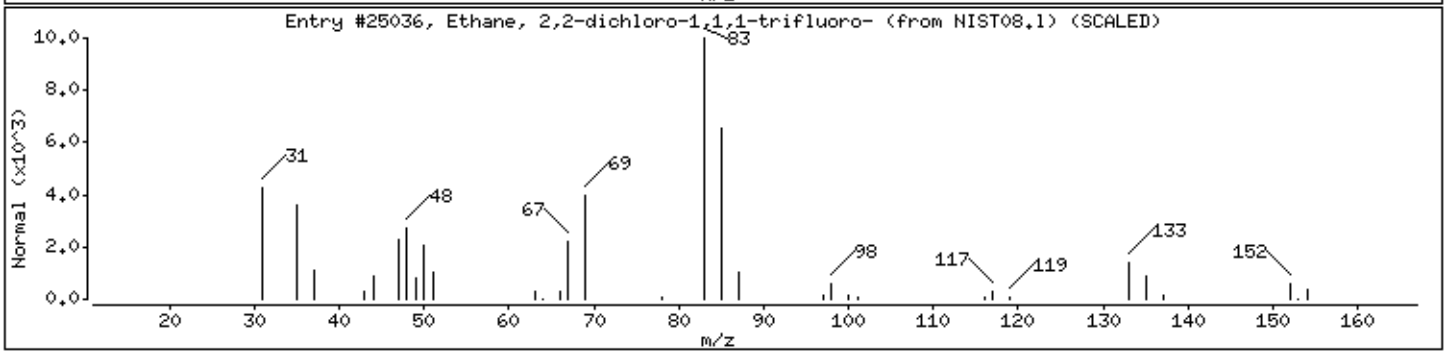
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Methane, bromodichloro-	75-27-4	NIST08.1	32162	96	CHBrCl2	162
Trichloromethane	67-66-3	NIST08.1	8890	64	CHCl3	118
Ethane, 2,2-dichloro-1,1,1-trifluoro-	306-83-2	NIST08.1	25036	59	C2HCl2F3	152









Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

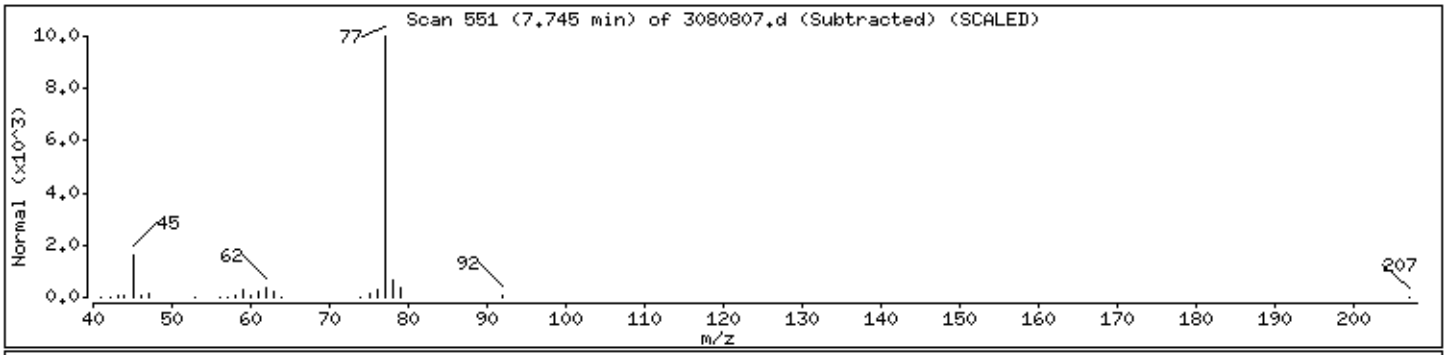
Sample Info: 200ml 6L1283

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

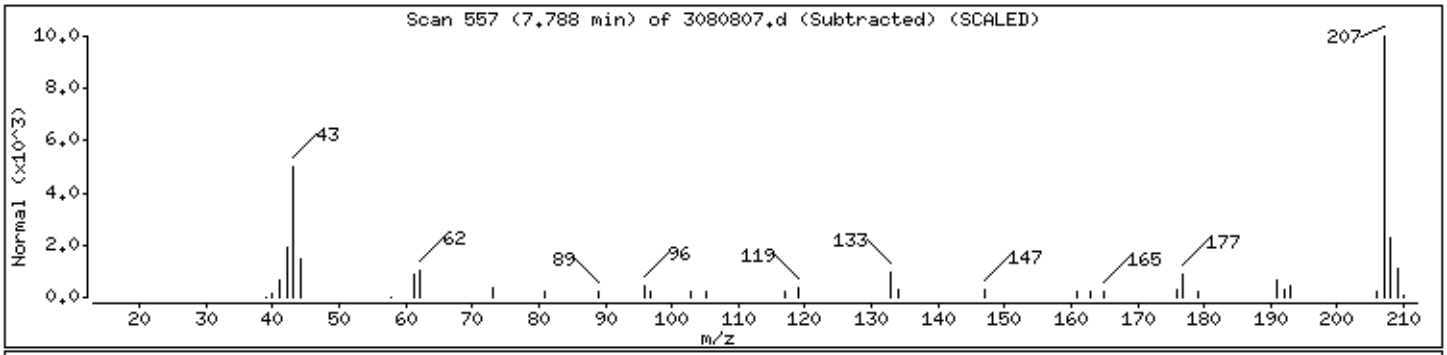
Sample Info: 200ml 6L1283

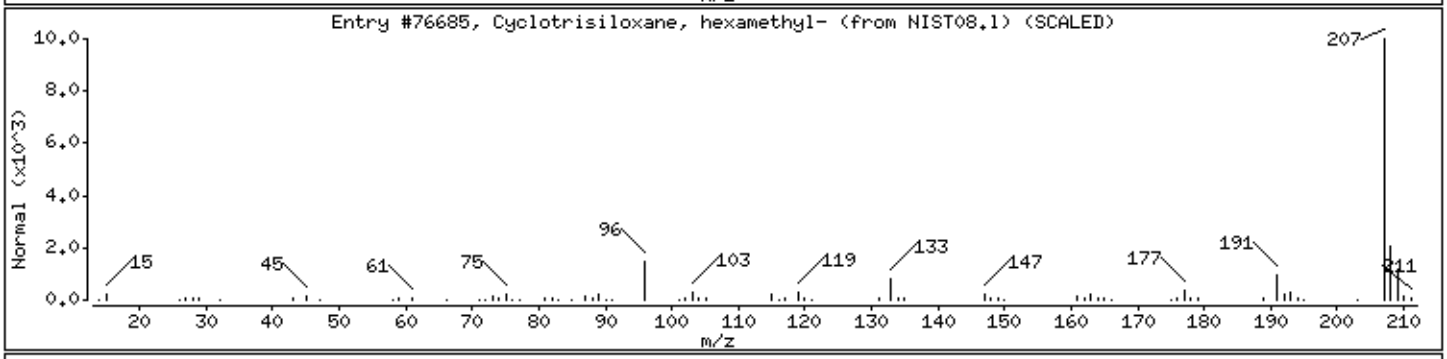
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST08.l	76685	50	C6H18O3Si3	222





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

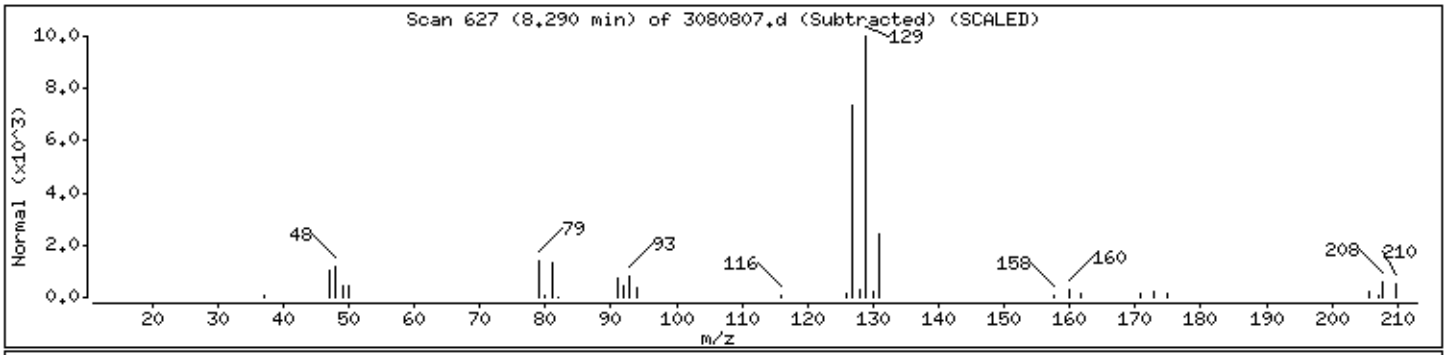
Sample Info: 200ml 6L1283

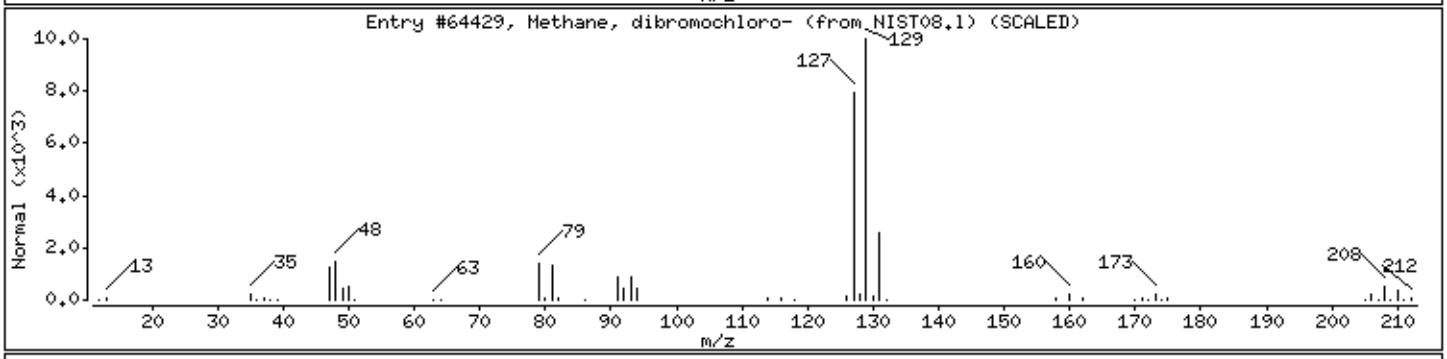
Operator: jg

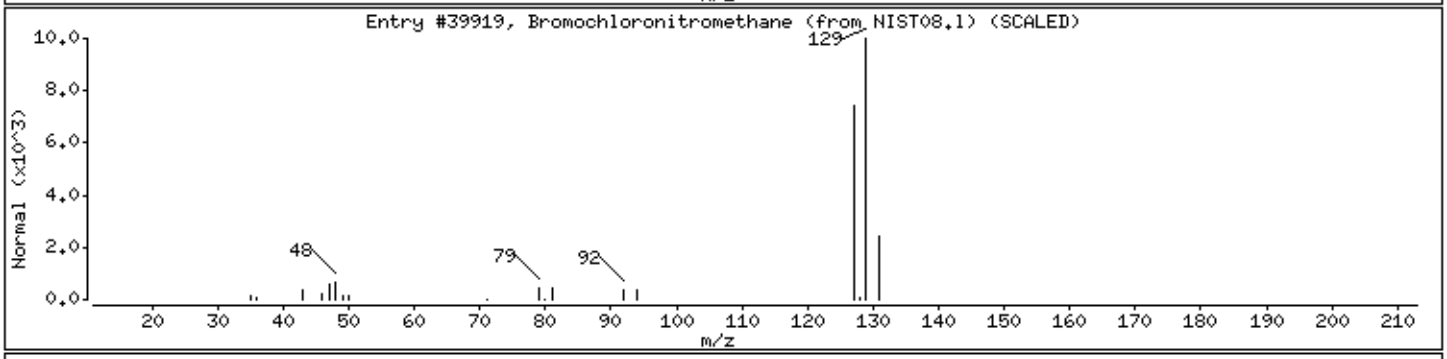
Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Methane, dibromochloro-	124-48-1	NIST08.l	64429	98	CHBr2Cl	206
Bromochloronitromethane	135531-25-8	NIST08.l	39919	78	CHBrClNO2	173







Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

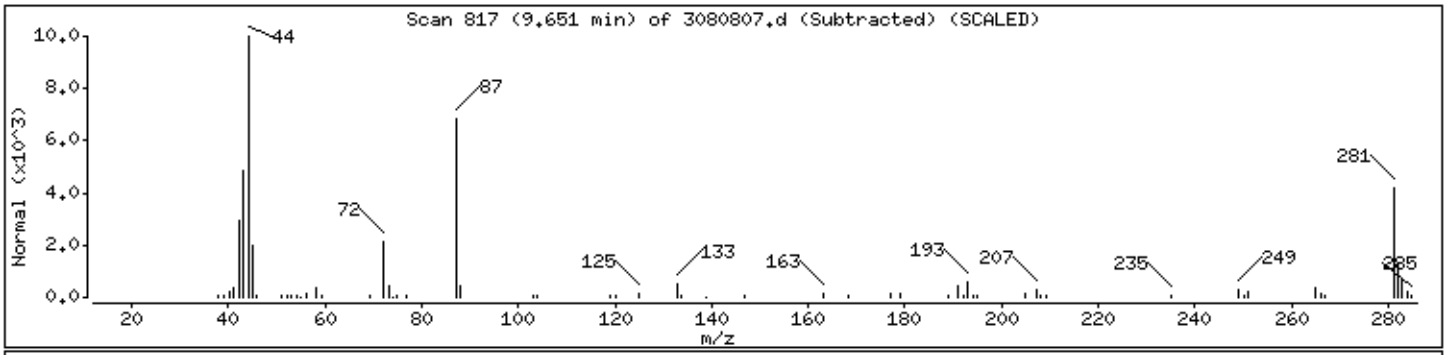
Sample Info: 200ml 6L1283

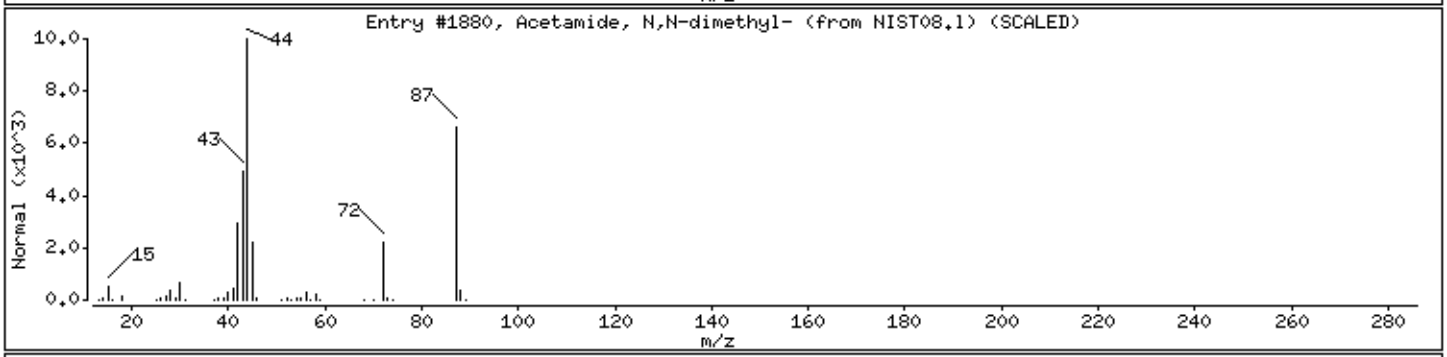
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Acetamide, N,N-dimethyl-	127-19-5	NIST08.l	1880	76	C4H9NO	87





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

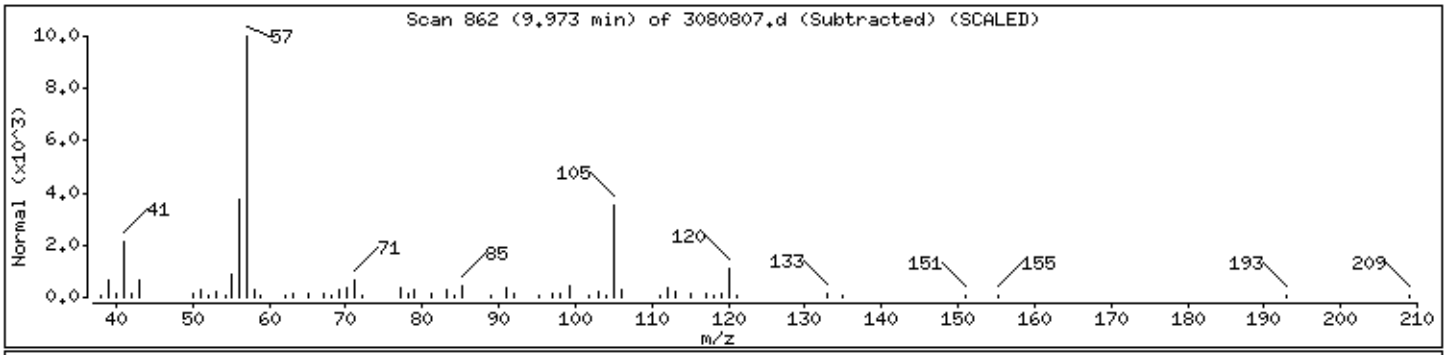
Sample Info: 200ml 6L1283

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

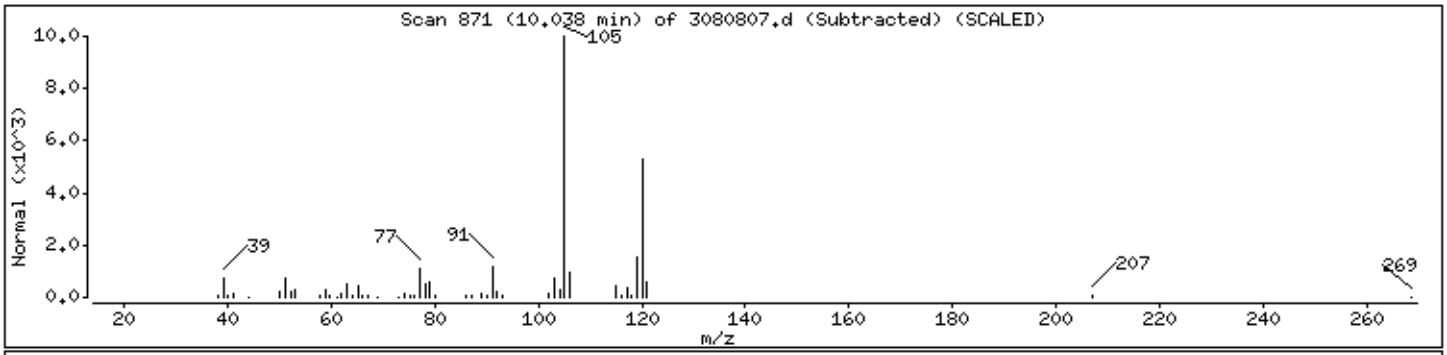
Sample Info: 200ml 6L1283

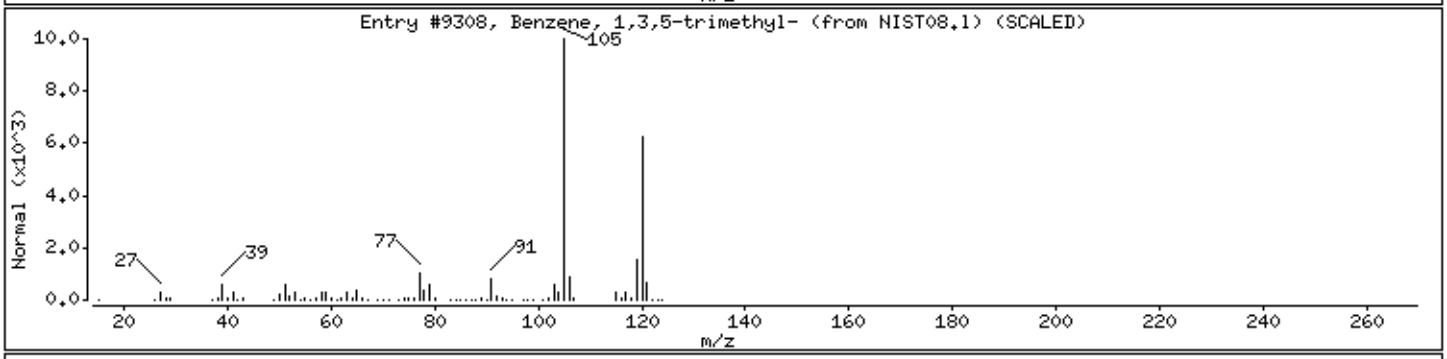
Operator: jg

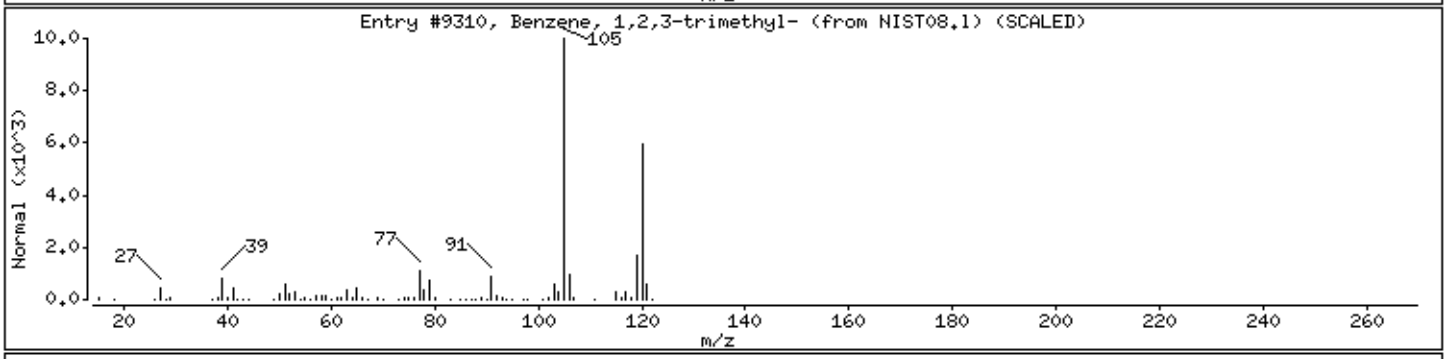
Column phase: RTX-624

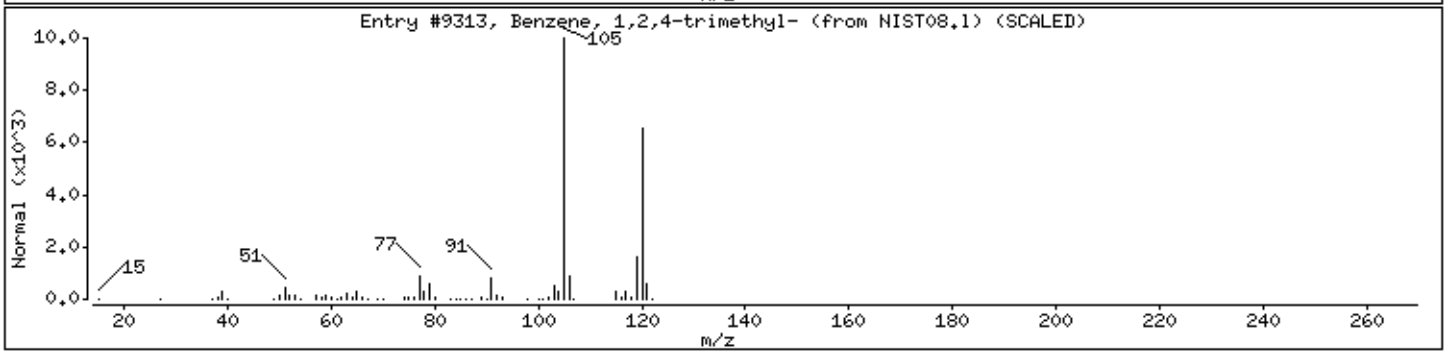
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9308	97	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	95	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

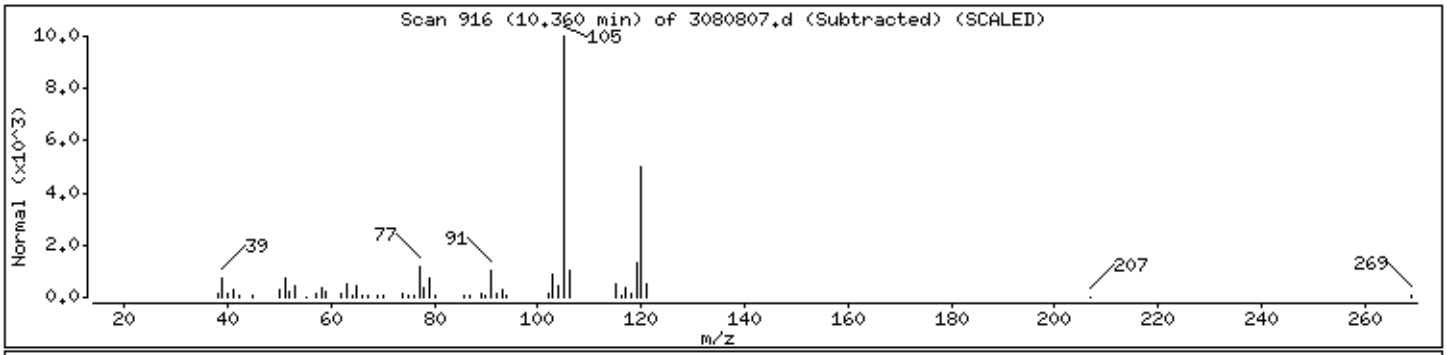
Sample Info: 200ml 6L1283

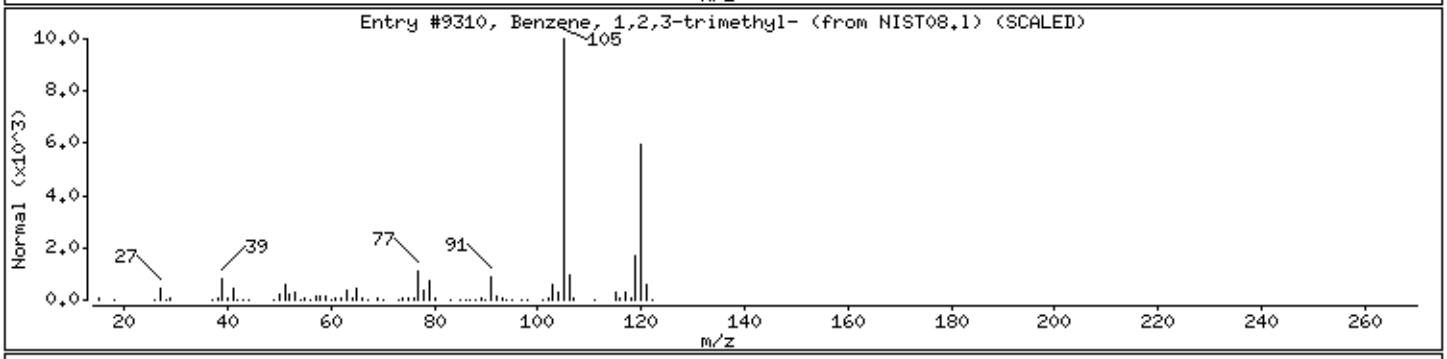
Operator: jg

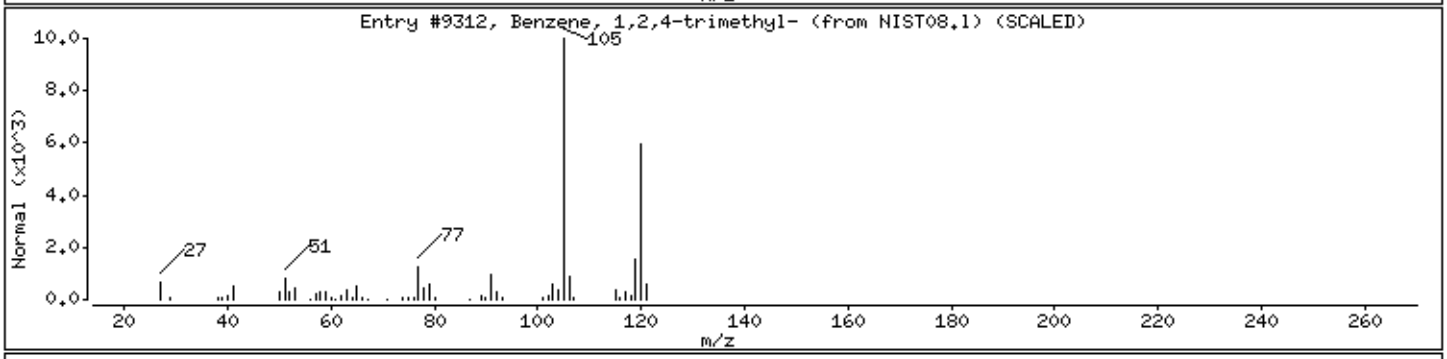
Column phase: RTX-624

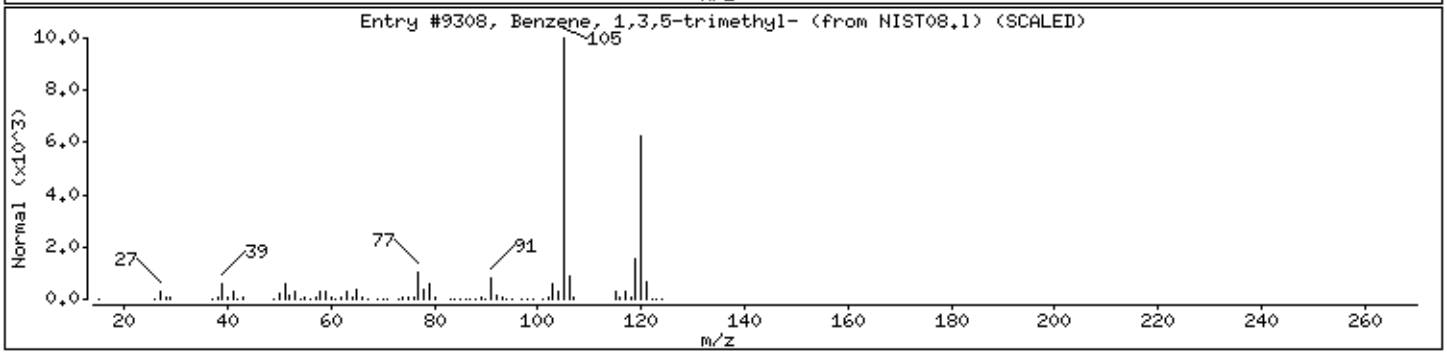
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	95	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9308	94	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

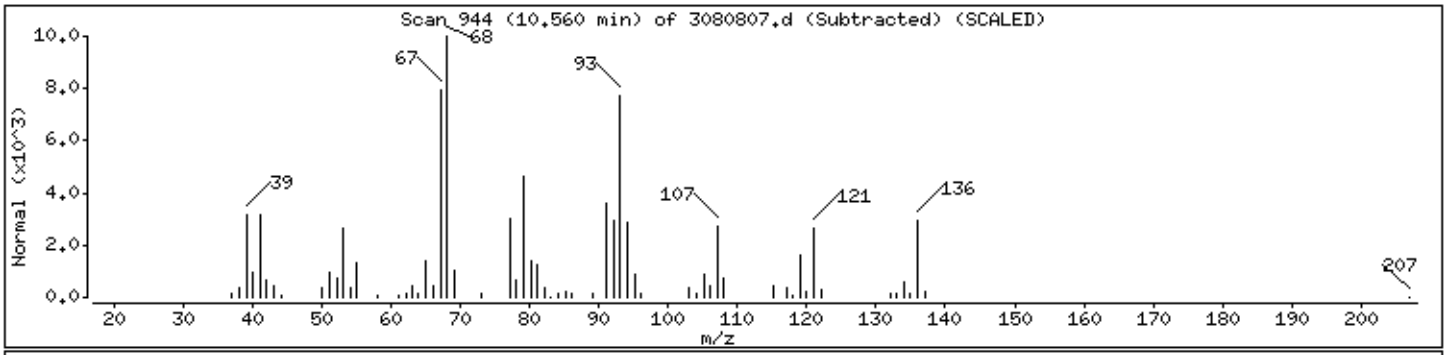
Sample Info: 200ml 6L1283

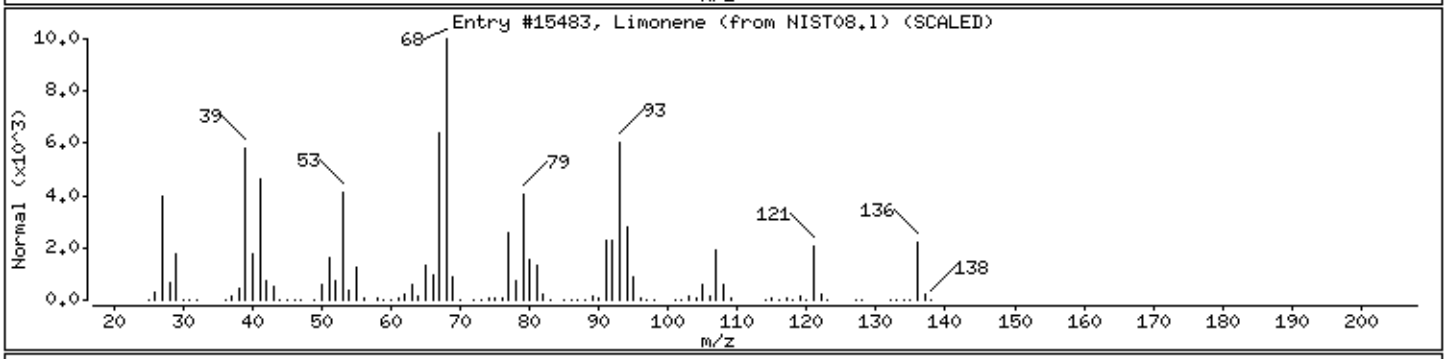
Operator: jg

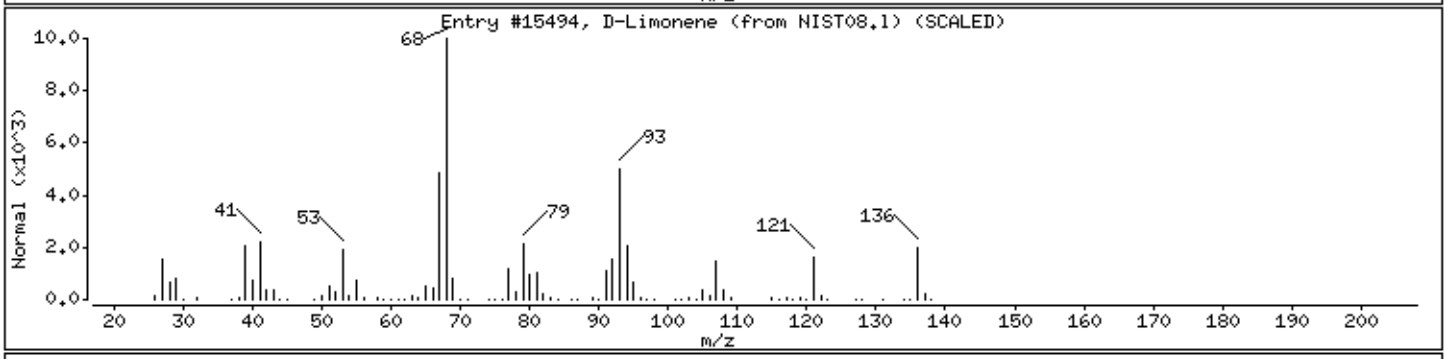
Column phase: RTX-624

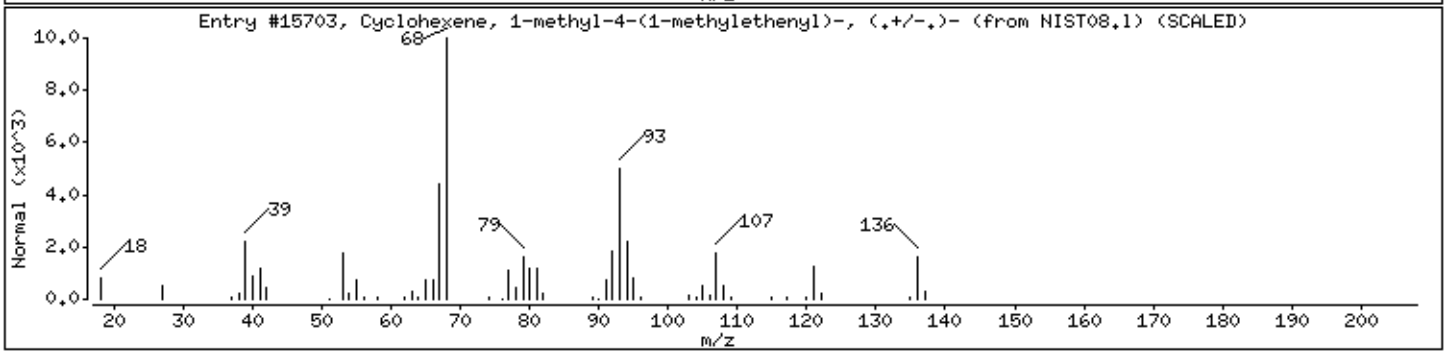
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15483	91	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15494	86	C10H16	136
Cyclohexene, 1-methyl-4-(1-methylethenyl	7705-14-8	NIST08.l	15703	76	C10H16	136









Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

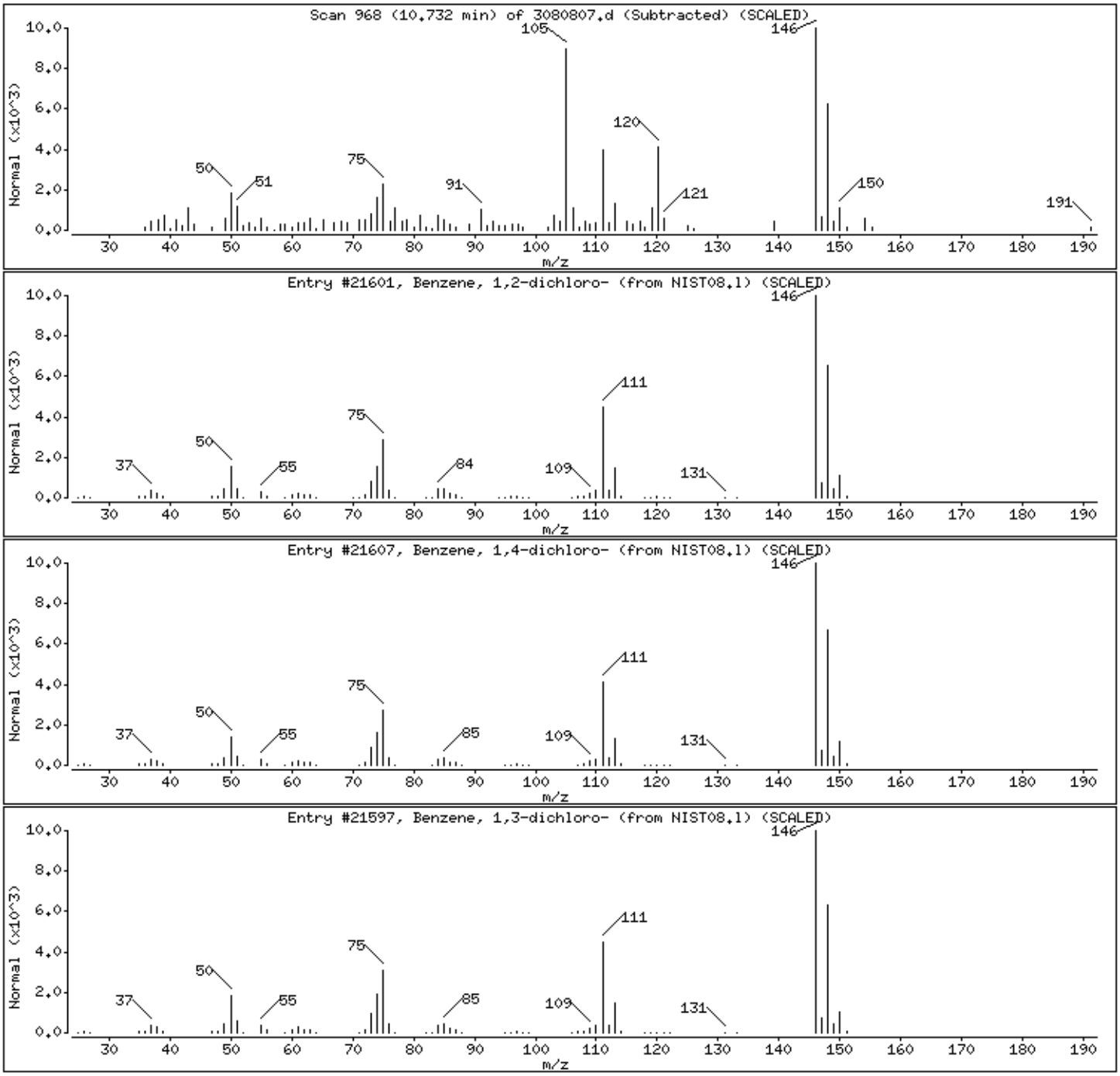
Sample Info: 200ml 6L1283

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2-dichloro-	95-50-1	NIST08.l	21601	98	C6H4Cl2	146
Benzene, 1,4-dichloro-	106-46-7	NIST08.l	21607	97	C6H4Cl2	146
Benzene, 1,3-dichloro-	541-73-1	NIST08.l	21597	96	C6H4Cl2	146



Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

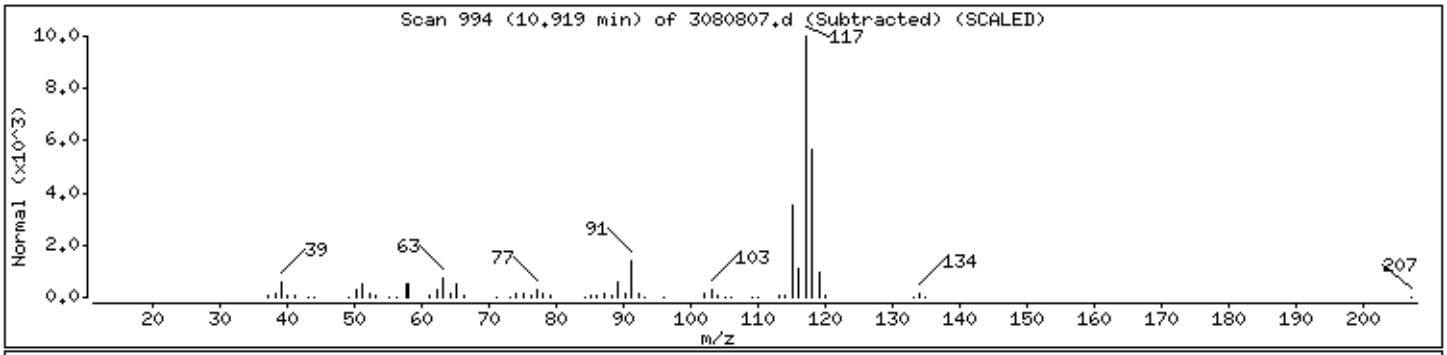
Sample Info: 200ml 6L1283

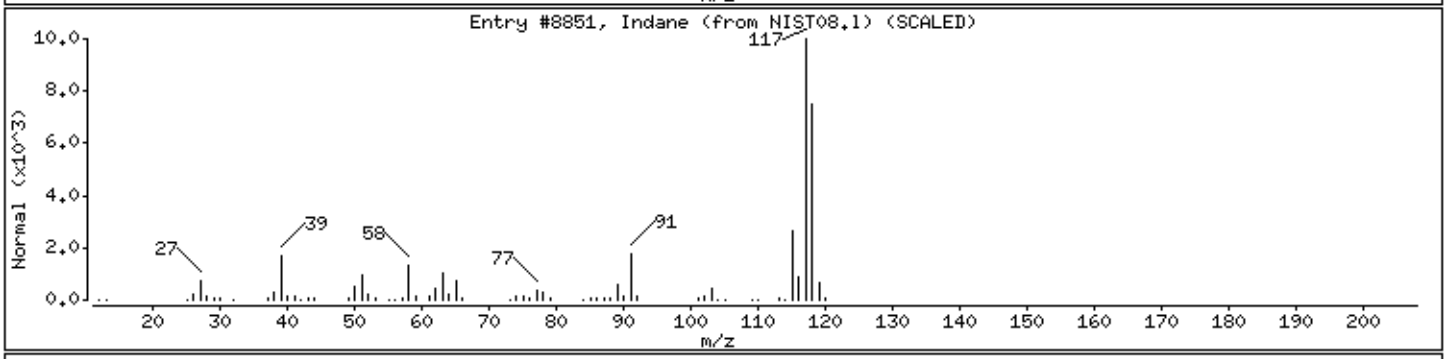
Operator: jg

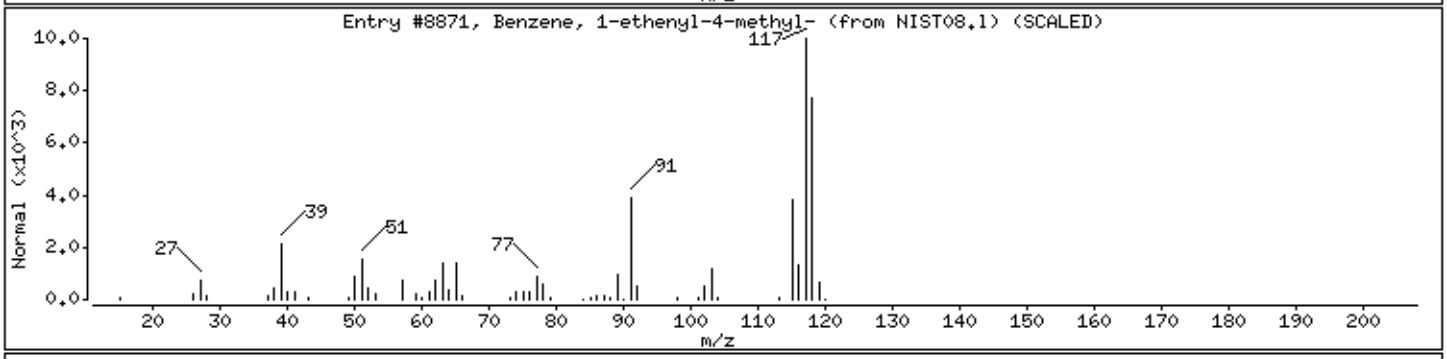
Column phase: RTX-624

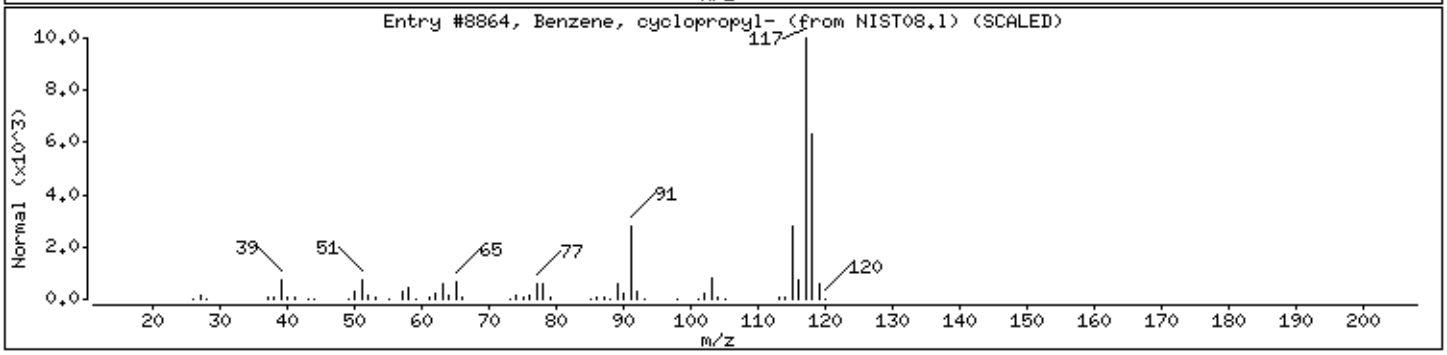
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indane	496-11-7	NIST08.l	8851	91	C9H10	118
Benzene, 1-ethenyl-4-methyl-	622-97-9	NIST08.l	8871	87	C9H10	118
Benzene, cyclopropyl-	873-49-4	NIST08.l	8864	83	C9H10	118









Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

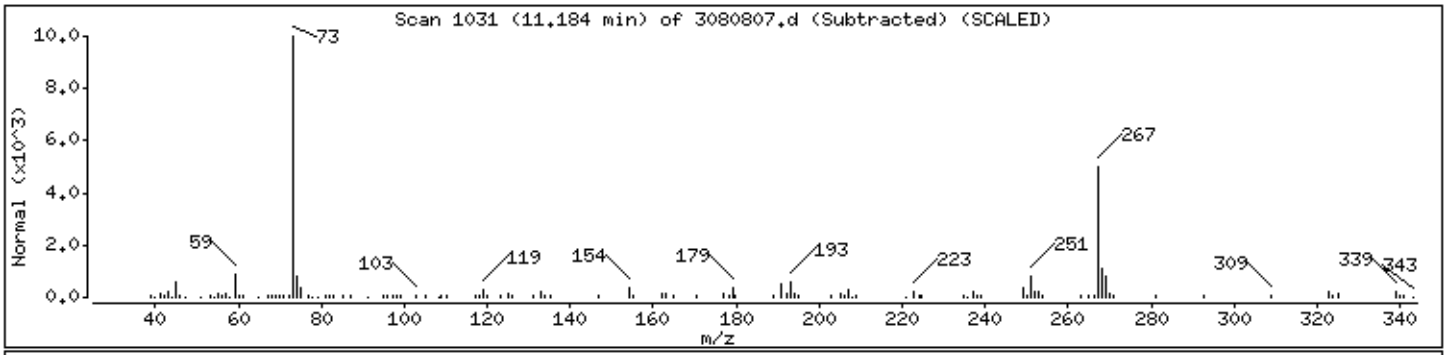
Sample Info: 200ml 6L1283

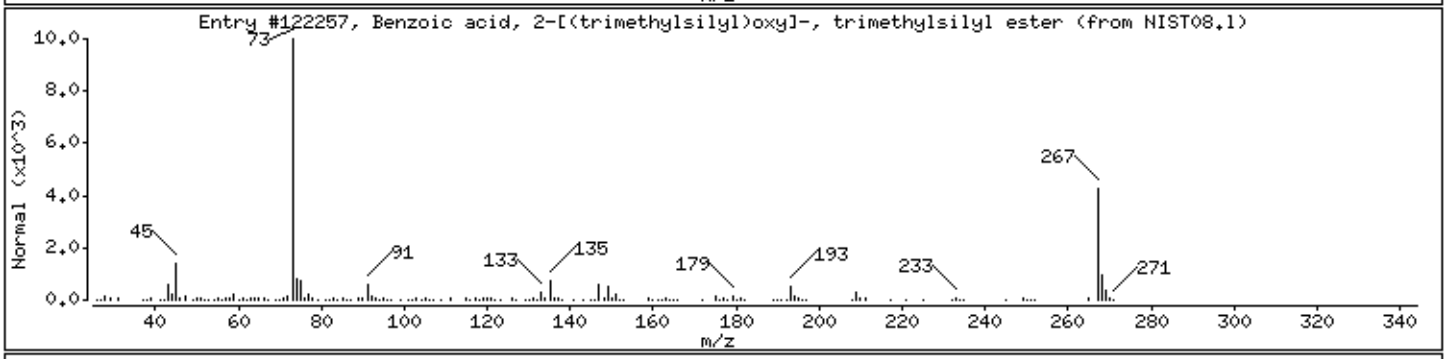
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzoic acid, 2-[(trimethylsilyl)oxy]-,	3789-85-3	NIST08.l	122257	50	C13H2203Si2	282





Data File: /chem/msd3.i/08aug17.b/3080807.d

Date : 08-AUG-2017 15:16

Client ID:

Instrument: msd3.i

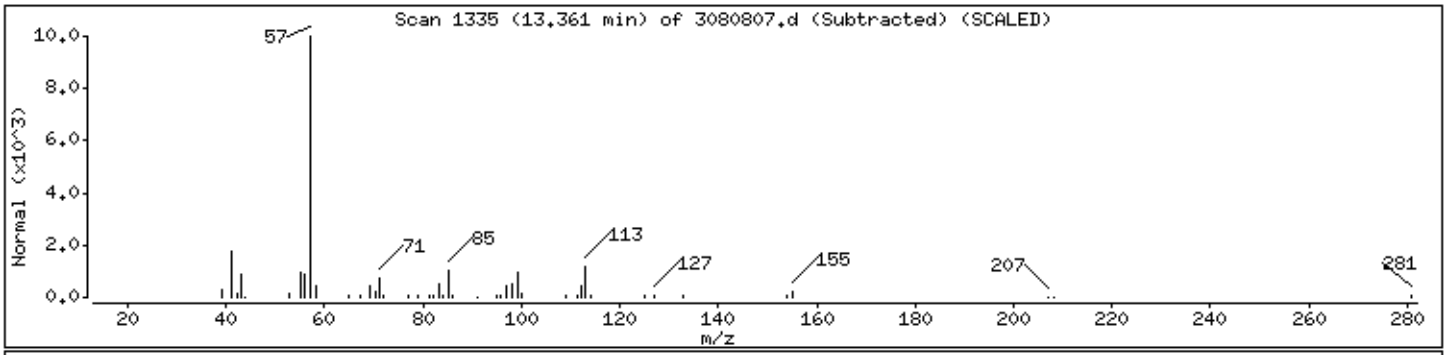
Sample Info: 200ml 6L1283

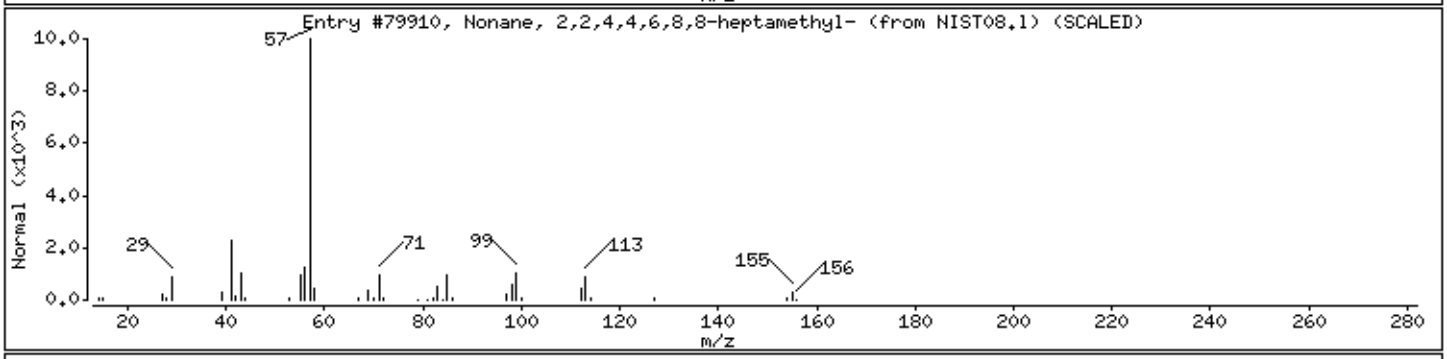
Operator: jg

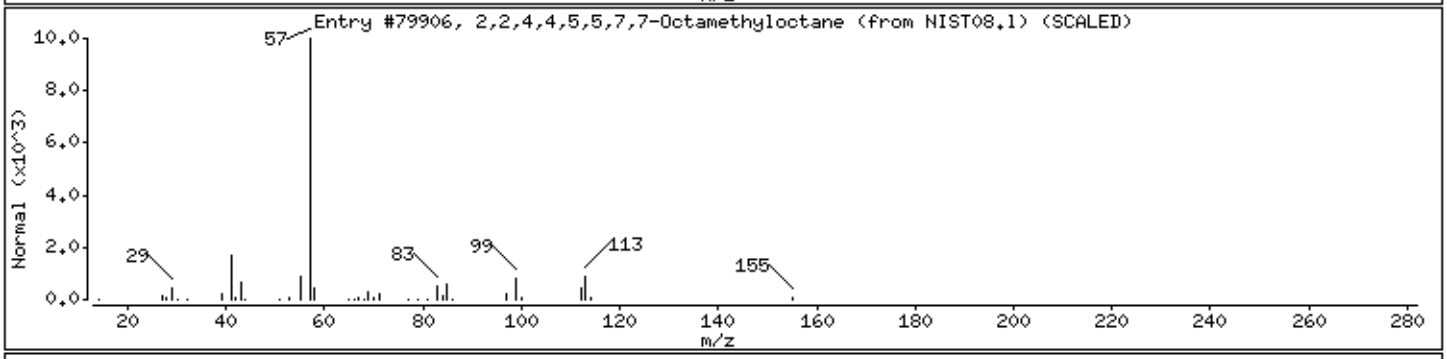
Column phase: RTX-624

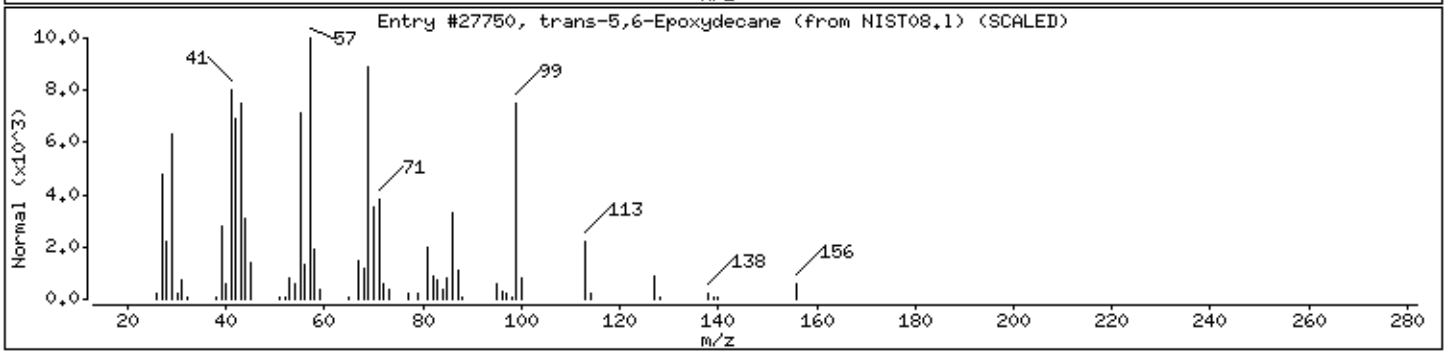
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Nonane, 2,2,4,4,6,8,8-heptamethyl-	4390-04-9	NIST08.l	79910	86	C16H34	226
2,2,4,4,5,5,7,7-Octamethyloctane	5171-85-7	NIST08.l	79906	72	C16H34	226
trans-5,6-Epoxydecane	2165-61-9	NIST08.l	27750	55	C10H20O	156









EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SH-A_0817		
Lab ID:	1708091B-14A	**Date/Time Analyzed:**	8/8/17 12:48 AM
Date/Time Collected:	8/3/17 02:58 PM	**Dilution Factor:**	1.52
Media:		**Instrument/Filename:**	msd3.i / 3080722

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.23	0.97	2.4	3.7
Ethyl Benzene	100-41-4	0.31	1.3	3.3	5.6
m,p-Xylene	108-38-3	0.30	1.3	3.3	9.4
Naphthalene	91-20-3	0.11	0.64	8.0	16
o-Xylene	95-47-6	0.14	1.3	3.3	3.3
Toluene	108-88-3	0.18	1.1	2.9	6.2
Total Xylene	1330-20-7	NA	D	6.6	13

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indane	496-11-7	93%		11 NJ
Limonene	138-86-3	94%		17 NJ

NJ =The identification is based on presumptive evidence; estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	101

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080722.d
Lab Smp Id: 1708091B-14A
Inj Date : 08-AUG-2017 00:48
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml 5785
Misc Info : 3.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 8
Dil Factor: 1.52000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
*	98 Bromochloromethane					CAS #: 74-97-5		
	5.424	5.410 (1.000)	130	169603	25.0000		80.00- 120.00	100.00
	5.424	5.410 (1.000)	128	130513			46.73- 106.73	76.95
	5.424	5.410 (1.000)	49	186730			91.08- 151.08	110.10
*	123 1,4-Difluorobenzene					CAS #: 540-36-3		
	6.306	6.306 (1.000)	114	588949	25.0000		80.00- 120.00	100.00
	6.306	6.306 (1.000)	88	81736			0.00- 44.78	13.88
*	163 Chlorobenzene-d5					CAS #: 3114-55-4		
	8.755	8.755 (1.000)	117	568317	25.0000		80.00- 120.00	100.00
	8.755	8.755 (1.000)	82	269996			20.58- 80.58	47.51
$	117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	5.956	5.956 (1.098)	65	193355	22.3071	22.307	80.00- 120.00	100.00
	5.956	5.956 (1.098)	67	100820			24.54- 84.54	52.14
$	146 Toluene-d8					CAS #: 2037-26-5		
	7.523	7.523 (1.193)	98	605538	25.3473	25.347	80.00- 120.00	100.00
	7.523	7.523 (1.193)	70	60266			0.00- 40.44	9.95

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	383640			35.27- 95.27	63.36
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	366356	24.6903	24.690	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	379166			84.77- 144.77	103.50
9.737	9.737 (1.112)	176	350082			64.74- 124.74	95.56
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	14718	0.76920	1.169	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	3700			0.00- 53.39	25.14
147 Toluene					CAS #: 108-88-3		
7.581	7.574 (1.202)	91	27869	1.08275	1.646	80.00- 120.00	100.00
7.581	7.574 (1.202)	92	15849			27.96- 87.96	56.87
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	10182	0.84276	1.281	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	30195			272.32- 332.32	296.55
169 m,p-Xylene					CAS #: 108-38-3		
8.927	8.927 (1.020)	106	21643	1.43239	2.177	80.00- 120.00	100.00
8.920	8.927 (1.019)	91	42376			165.91- 225.91	195.79
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.059)	106	7223	0.50272	0.7641	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	16383			175.85- 235.85	226.80
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.453)	128	128728	2.08143	3.164	80.00- 120.00	100.00
12.716	12.717 (1.452)	127	16510			0.00- 43.00	12.83
M 239 Total Xylene					CAS #: 1330-20-7		
			28867	1.93511	2.941		

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080722.d
Lab Smp Id: 1708091B-14A
Inj Date : 08-AUG-2017 00:48
Operator : mjs Inst ID: msd3.i
Smp Info : 200ml 5785
Misc Info : 3.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 8
Dil Factor: 1.52000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.424	796664	25.000
* 163 Chlorobenzene-d5	8.755	1651356	25.000

	CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.367	1811304	56.8402223	86.397	0		0	98
Unknown				CAS #:			
1.507	61176	1.91974235	2.918	0		0	98
Unknown				CAS #:			
1.786	57687	1.81026507	2.752	0		0	98
Unknown				CAS #:			
5.494	65796	2.06473645	3.138	0		0	98

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Limonene				CAS #: 138-86-3			
10.568	724664	10.9707364	16.676	94	NIST08.l	15482	163
Aniline				CAS #: 62-53-3			
10.739	141333	2.13964362	3.252	95	NIST08.l	2473	163
Indane				CAS #: 496-11-7			
10.919	466232	7.05832366	10.729	93	NIST08.l	8850	163

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080722.d
Lab Smp Id: 1708091B-14A
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 3.5 Hg->5 psi

Calibration Date: 07-AUG-2017
Calibration Time: 10:44

Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	169603	-6.55
123 1,4-Difluorobenze	637861	382717	893005	588949	-7.67
163 Chlorobenzene-d5	604933	362960	846906	568317	-6.05

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:53

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-14A
Level: LOW Operator: mjs
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 3.5 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.307	89.23	70-130
$ 146 Toluene-d8	25.000	25.347	101.39	70-130
$ 177 4-Bromofluorobenze	25.000	24.690	98.76	70-130

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Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

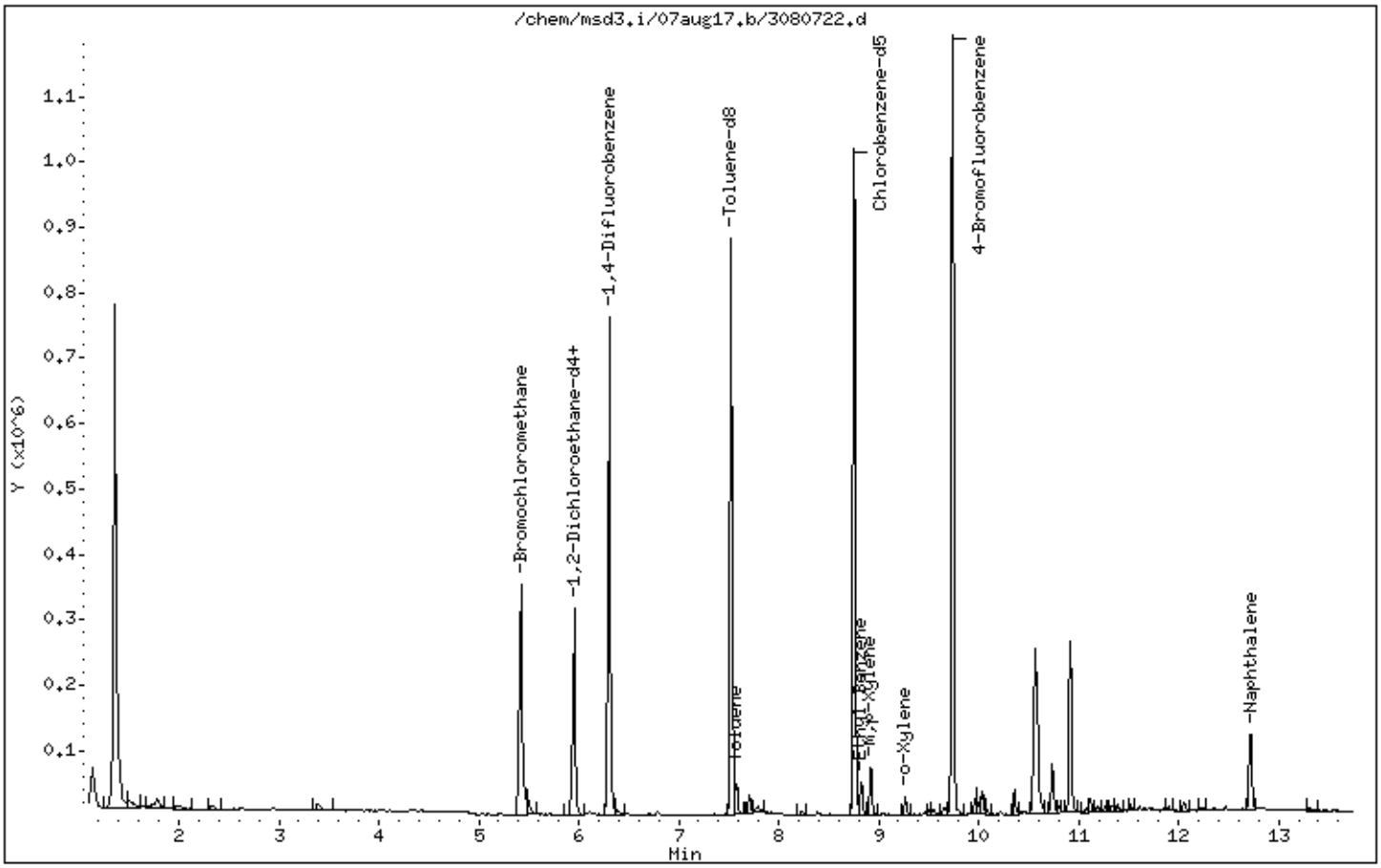
Instrument: msd3.i

Sample Info: 200ml 5785

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

Sample Info: 200ml 5785

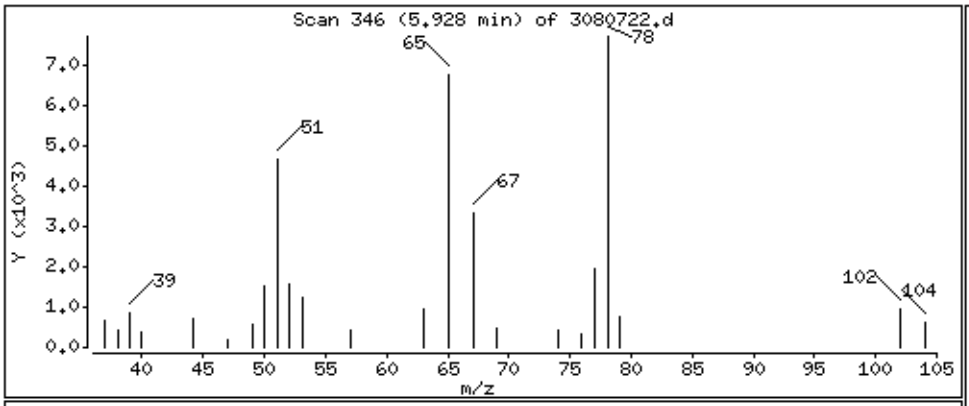
Operator: mjs

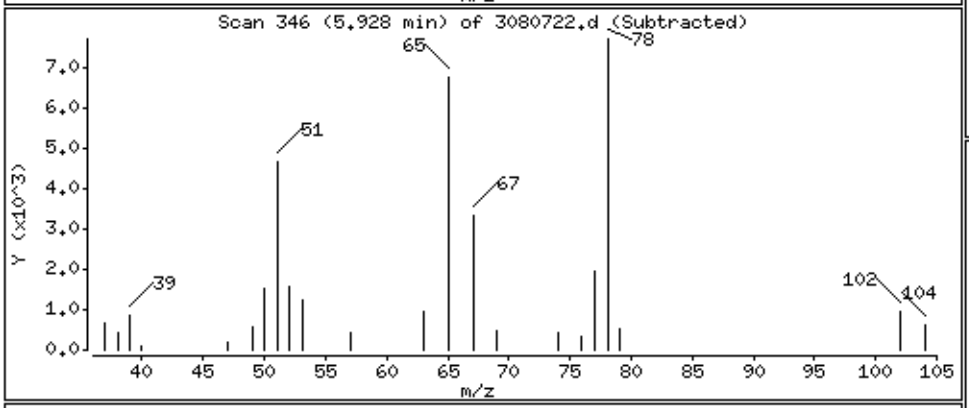
Column phase: RTX-624

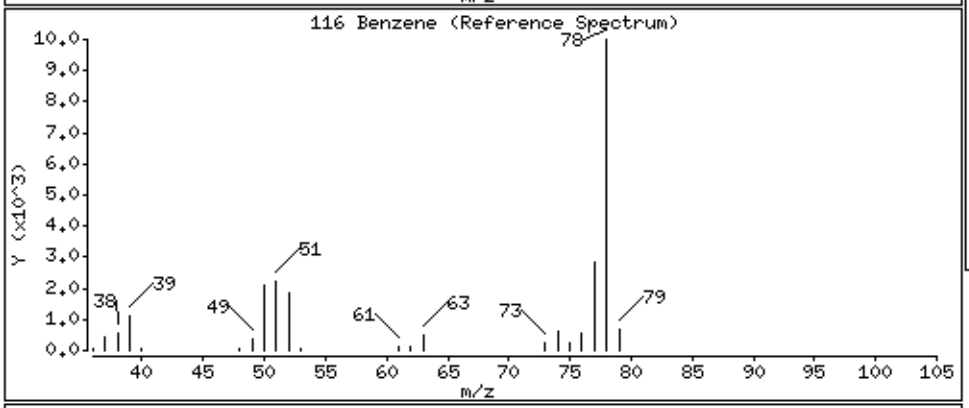
Column diameter: 0.25

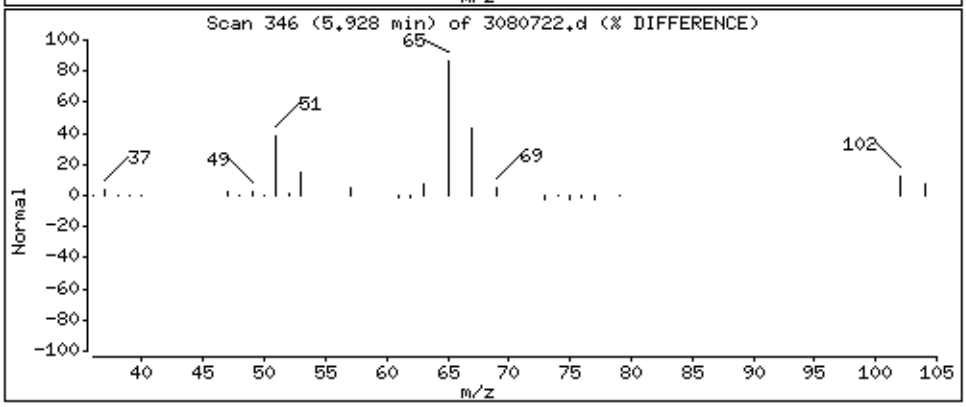
116 Benzene

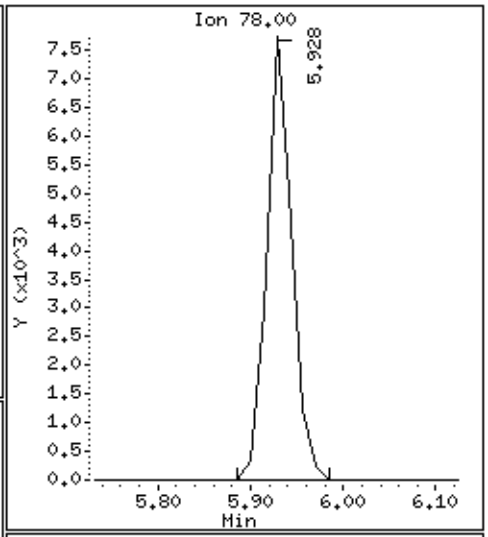
Concentration: 1.169 PPBV

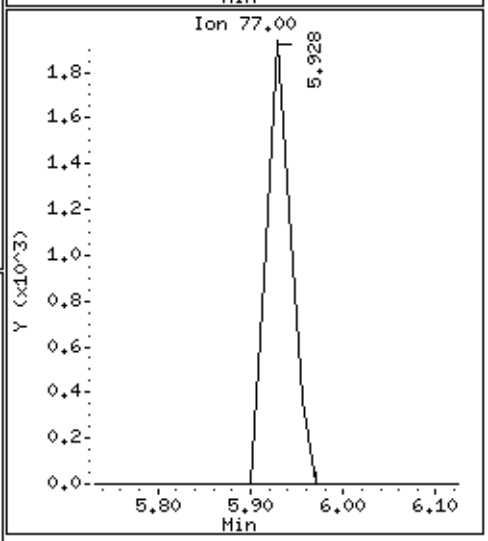












Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

Sample Info: 200ml 5785

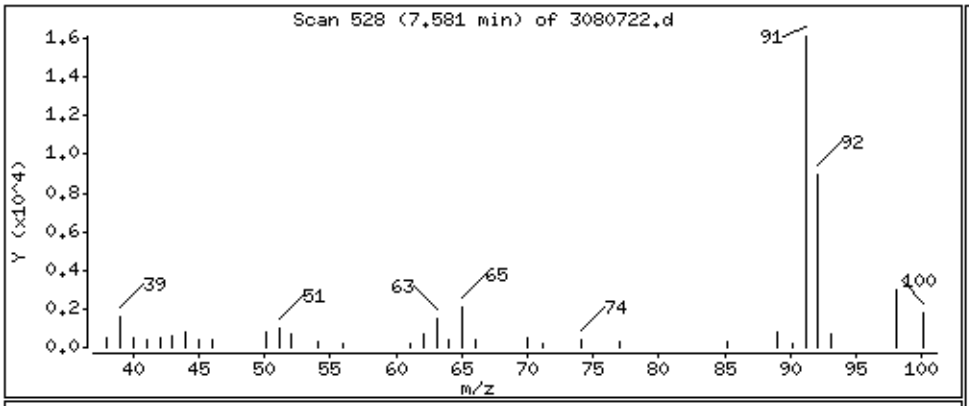
Operator: mjs

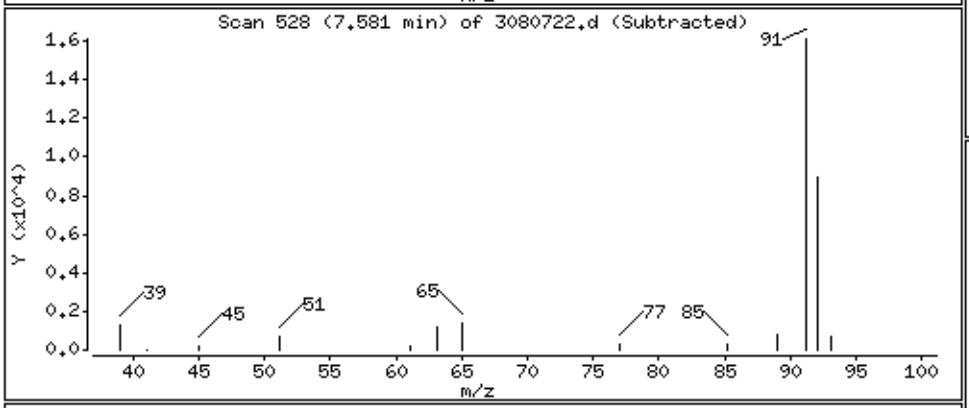
Column phase: RTX-624

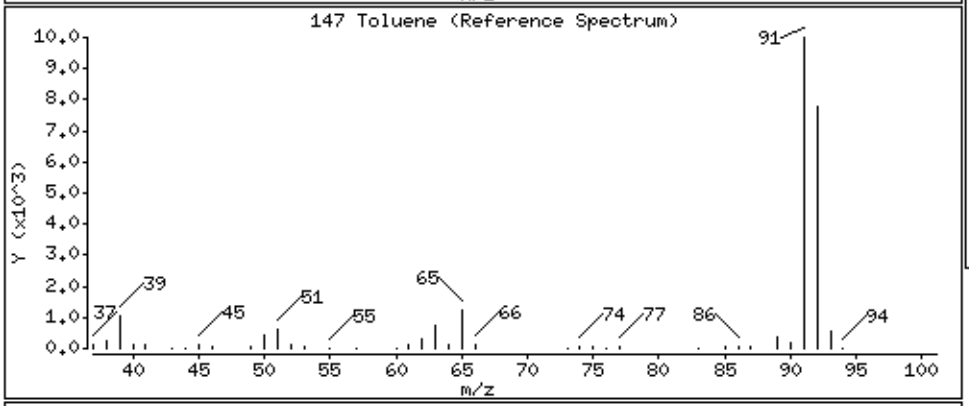
Column diameter: 0.25

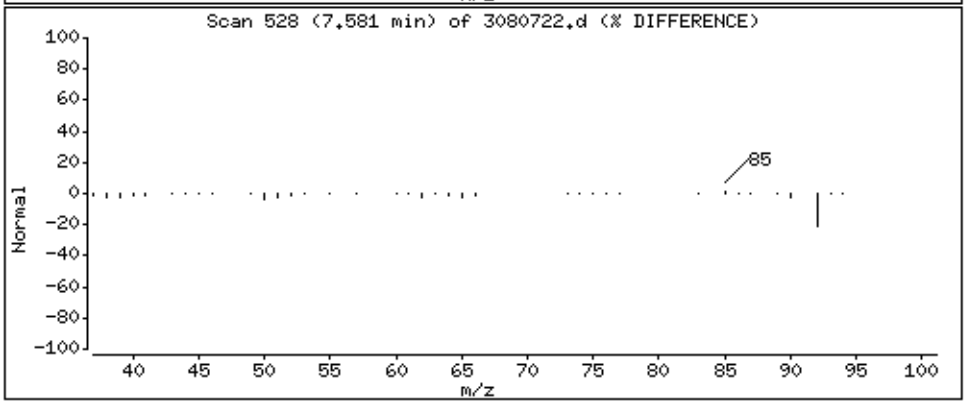
147 Toluene

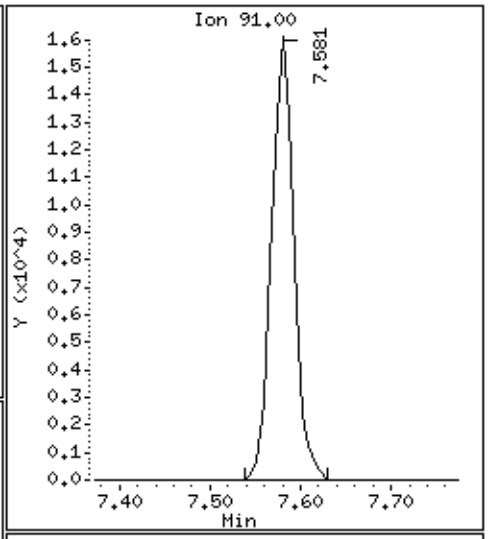
Concentration: 1.646 PPBV

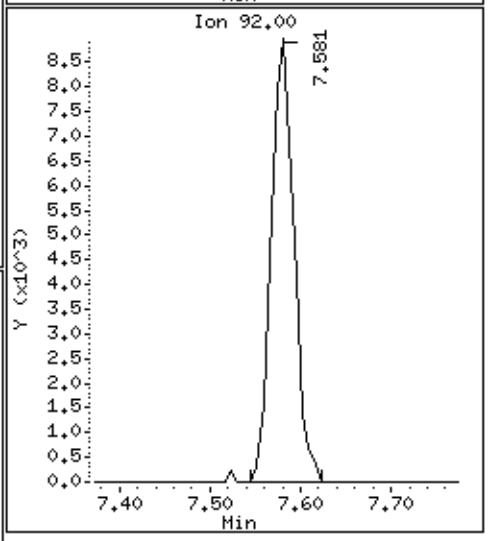












Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

Sample Info: 200ml 5785

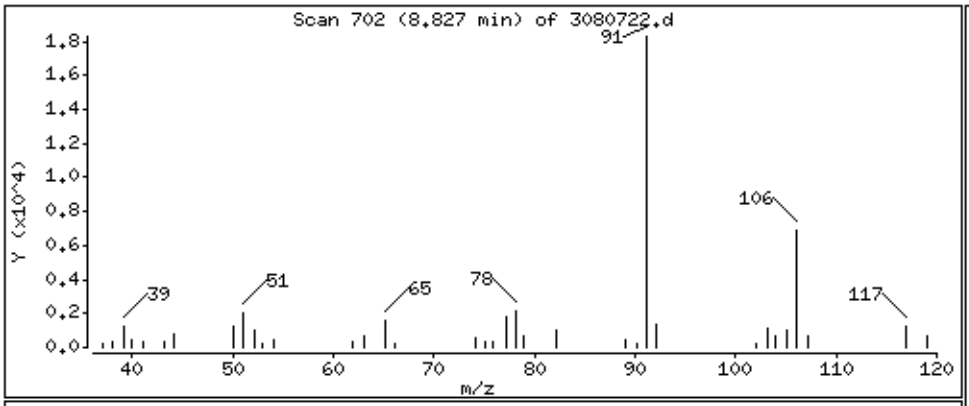
Operator: mjs

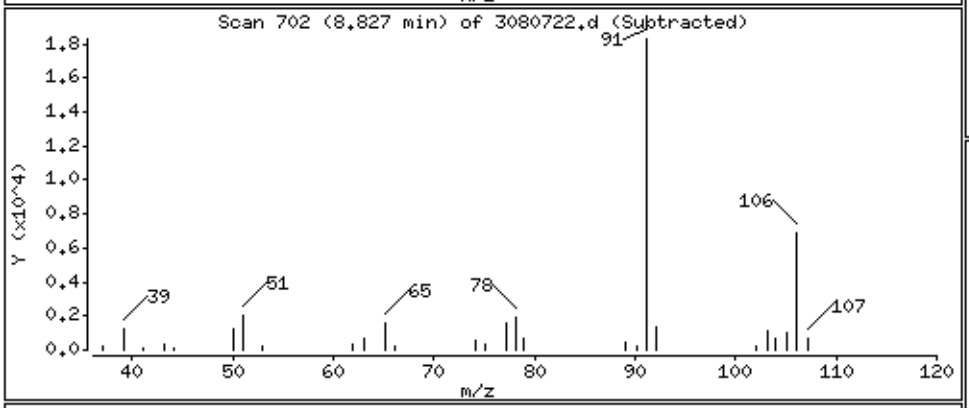
Column phase: RTX-624

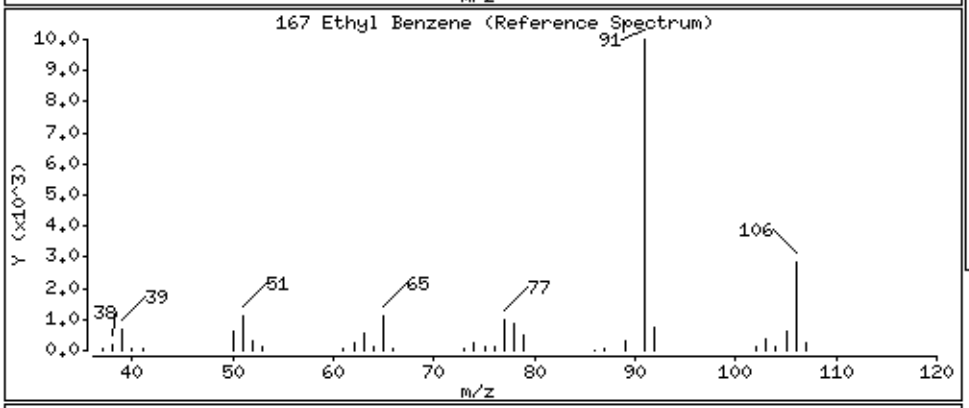
Column diameter: 0.25

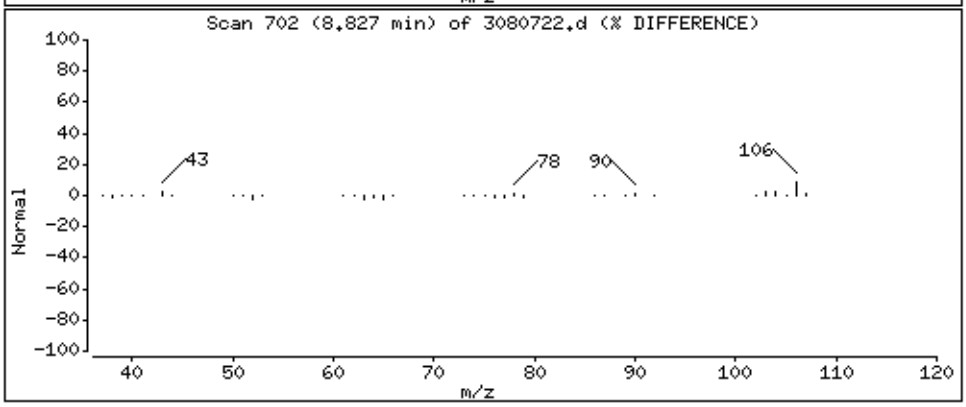
167 Ethyl Benzene

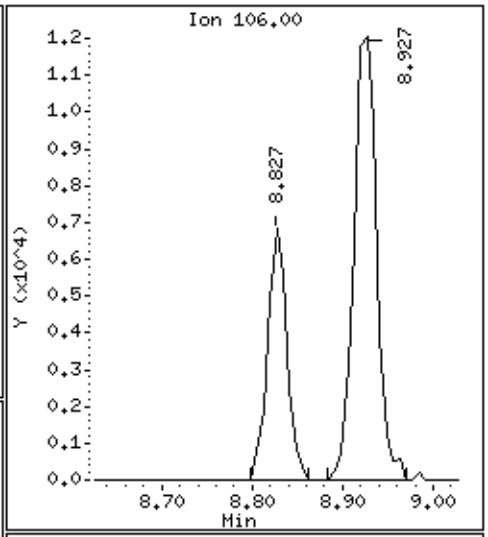
Concentration: 1.281 PPBV

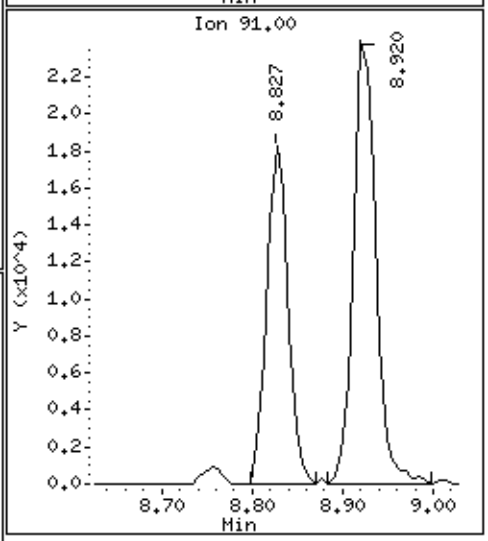












Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

Sample Info: 200ml 5785

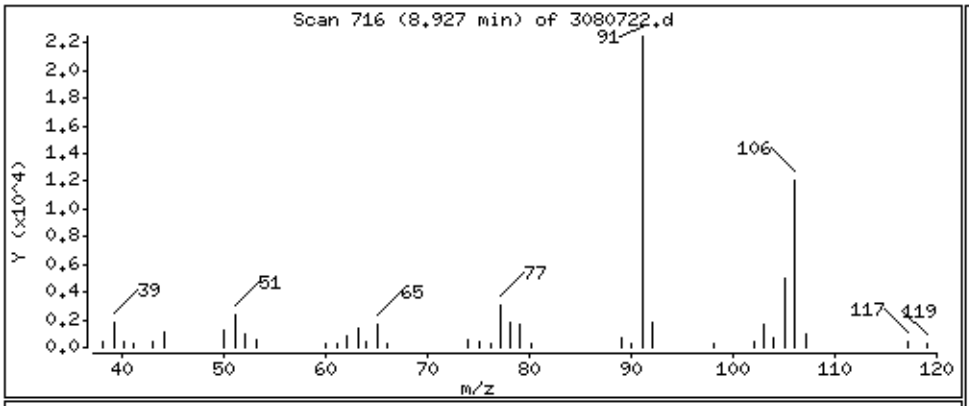
Operator: mjs

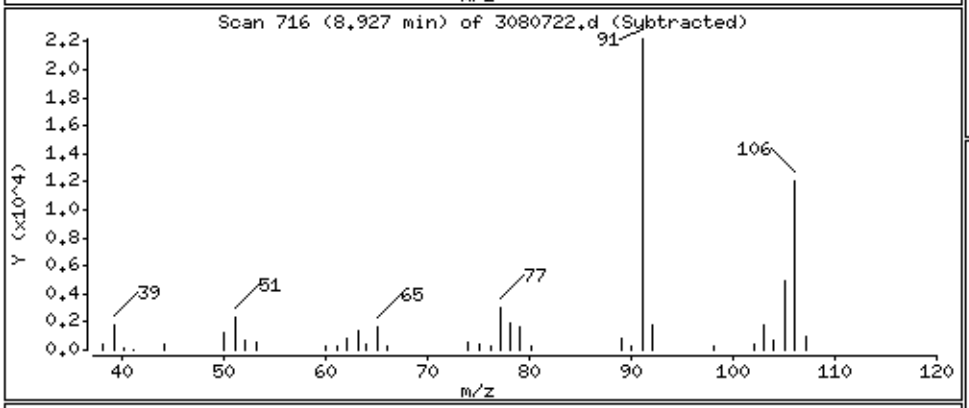
Column phase: RTX-624

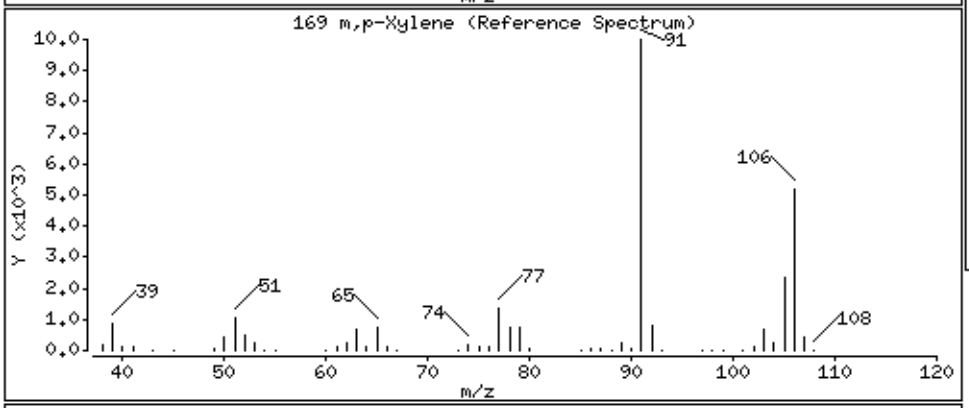
Column diameter: 0.25

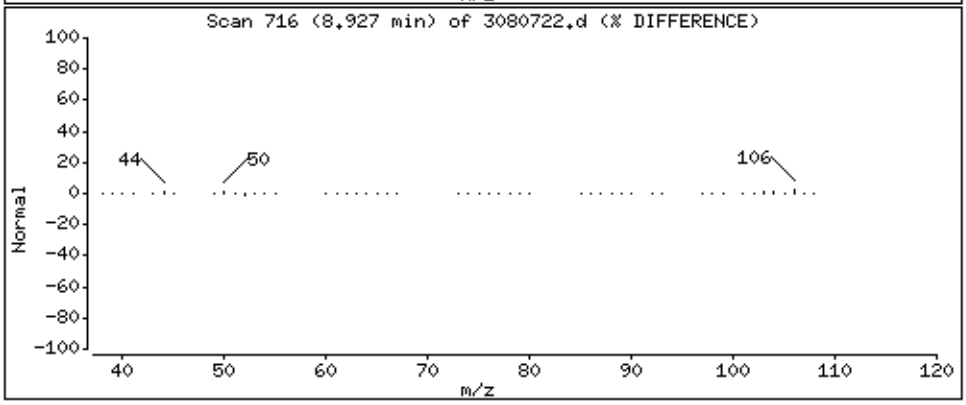
169 m,p-Xylene

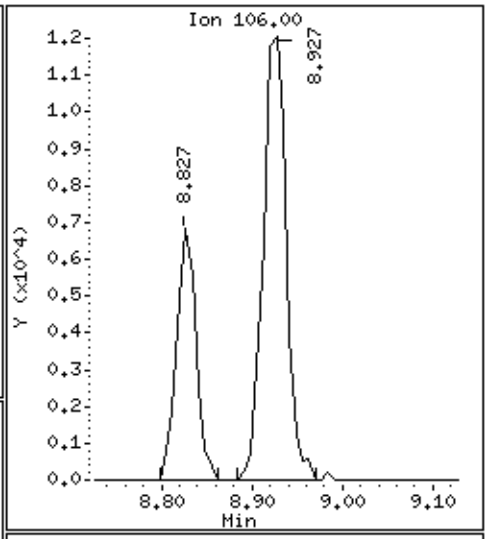
Concentration: 2.177 PPBV

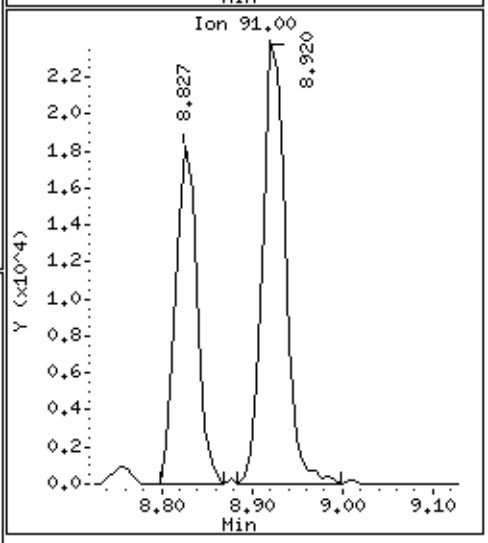












Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

Sample Info: 200ml 5785

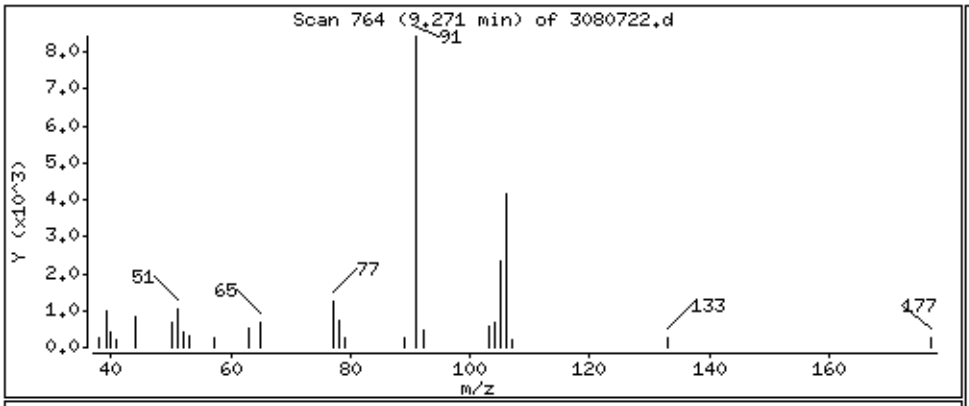
Operator: mjs

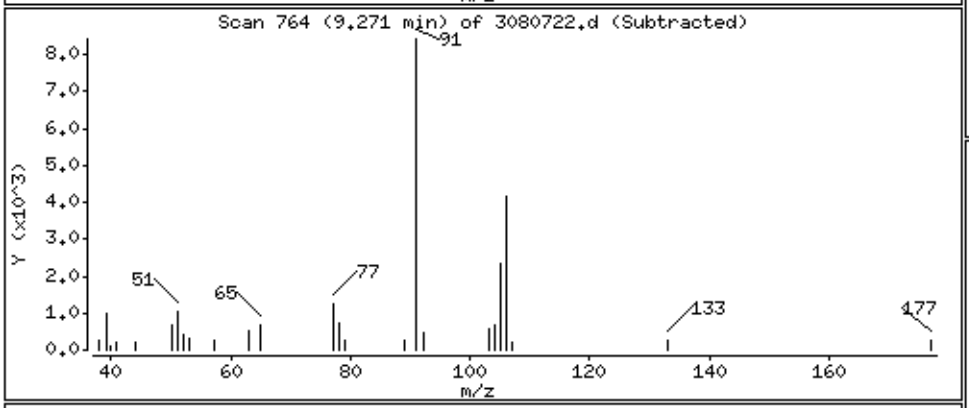
Column phase: RTX-624

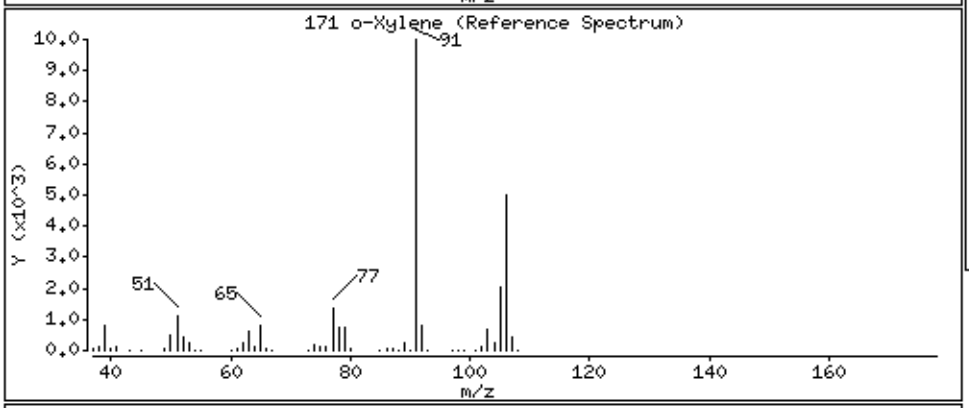
Column diameter: 0.25

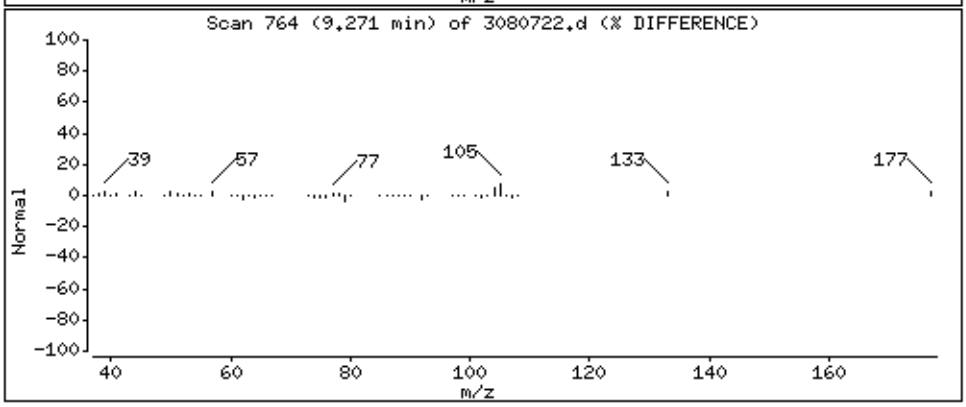
171 o-Xylene

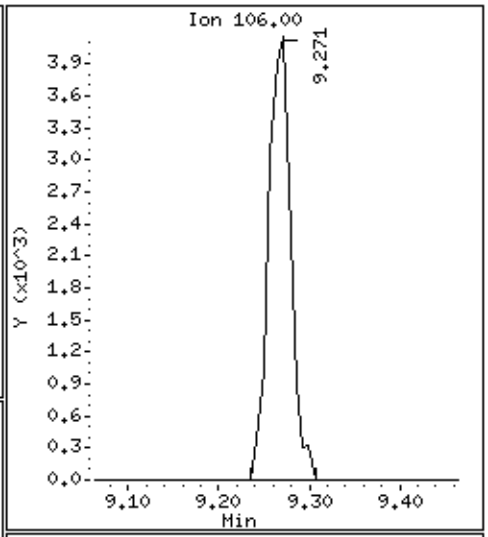
Concentration: 0.7641 PPBV

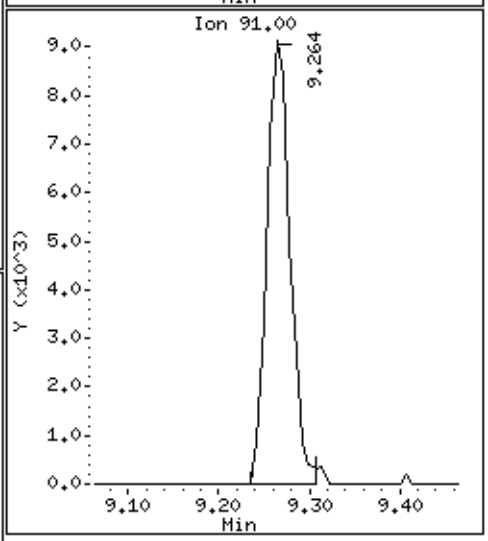












Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

Sample Info: 200ml 5785

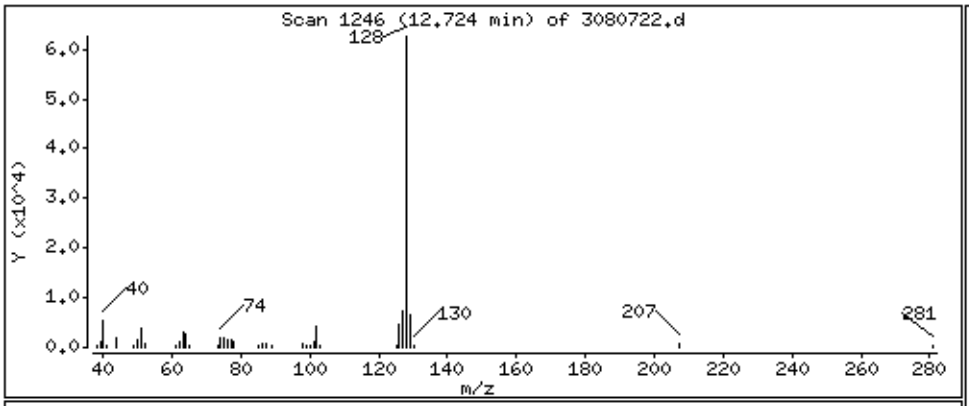
Operator: mjs

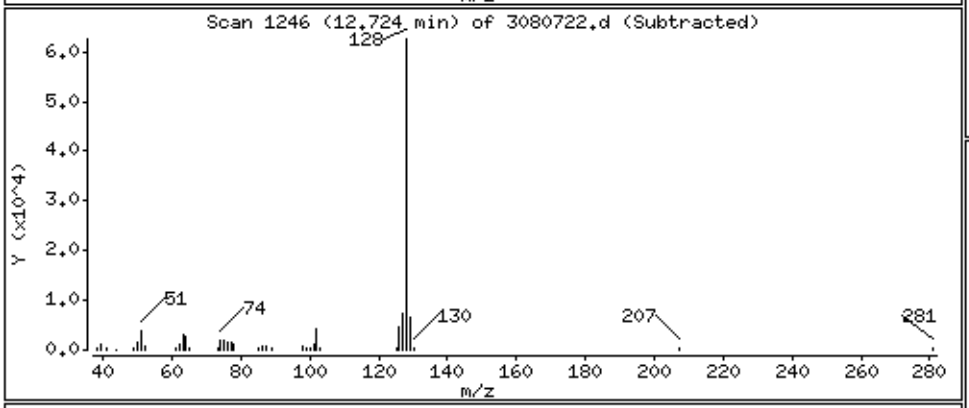
Column phase: RTX-624

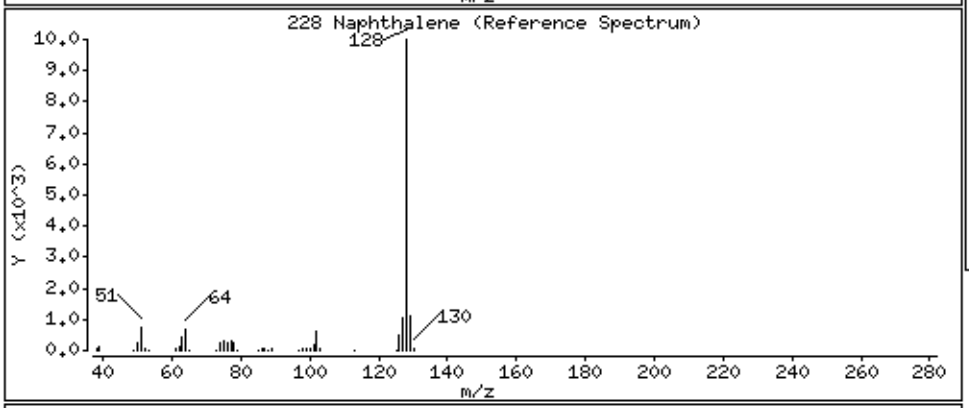
Column diameter: 0.25

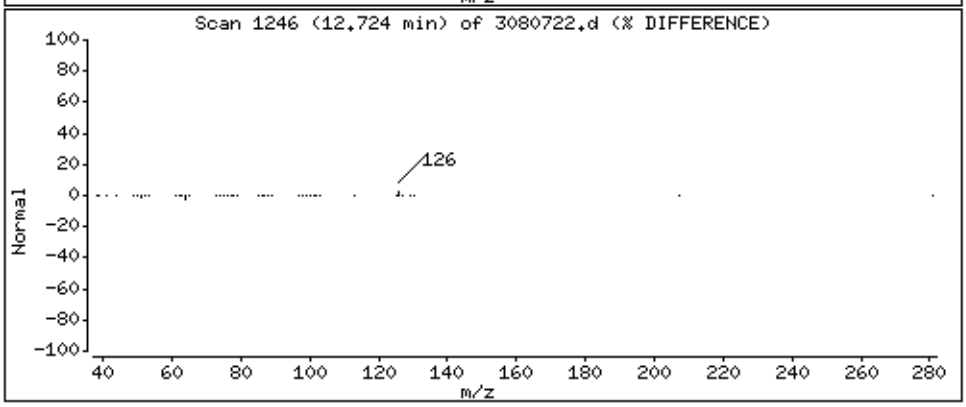
228 Naphthalene

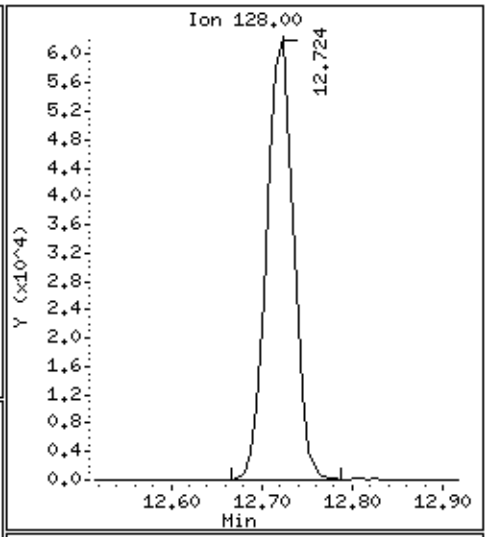
Concentration: 3.164 PPBV

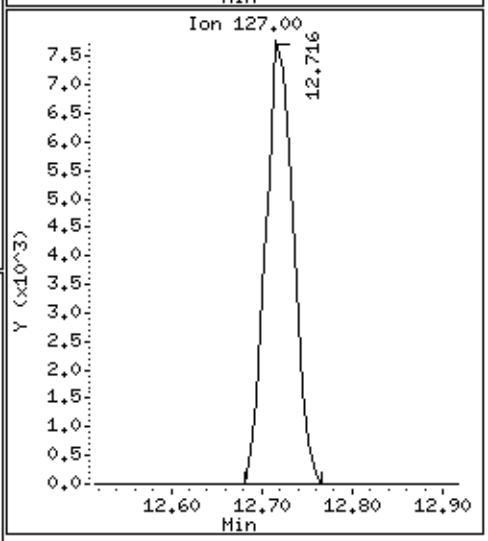












Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

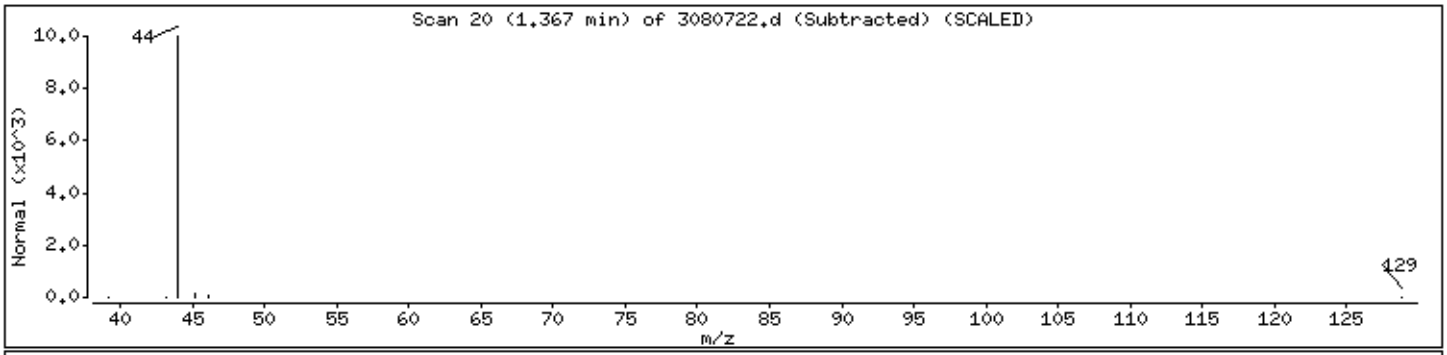
Sample Info: 200ml 5785

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

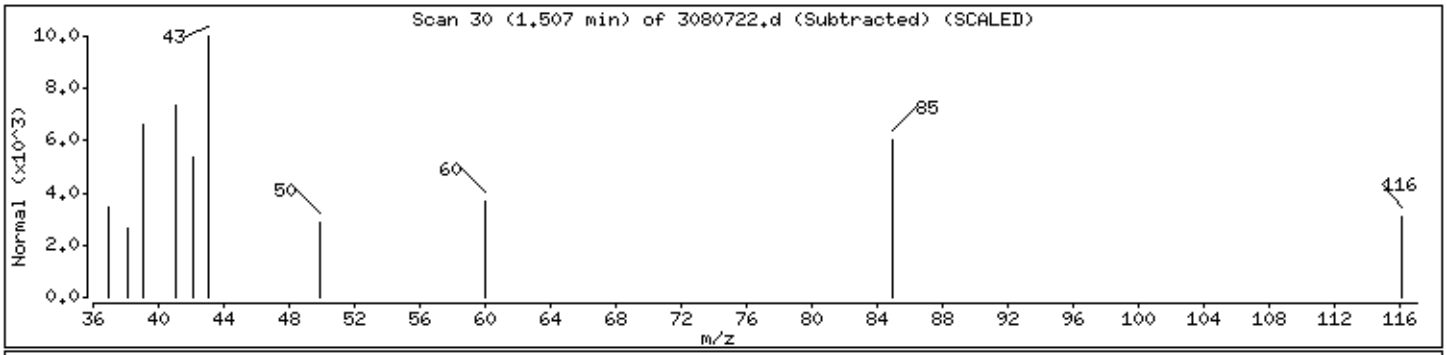
Sample Info: 200ml 5785

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

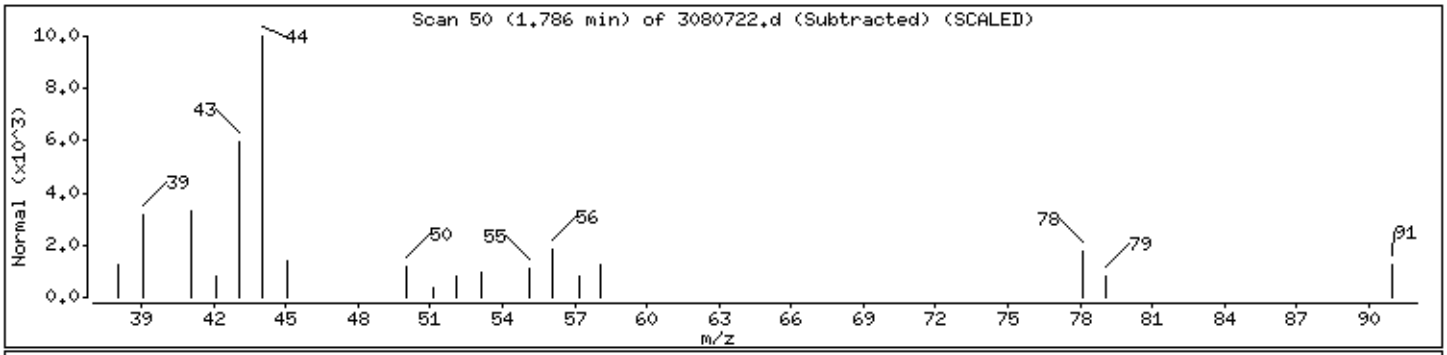
Sample Info: 200ml 5785

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

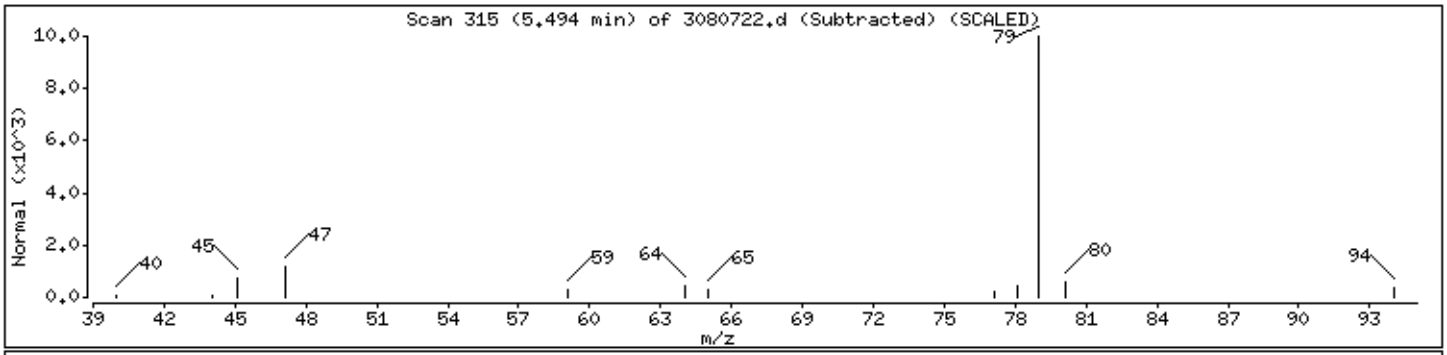
Sample Info: 200ml 5785

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

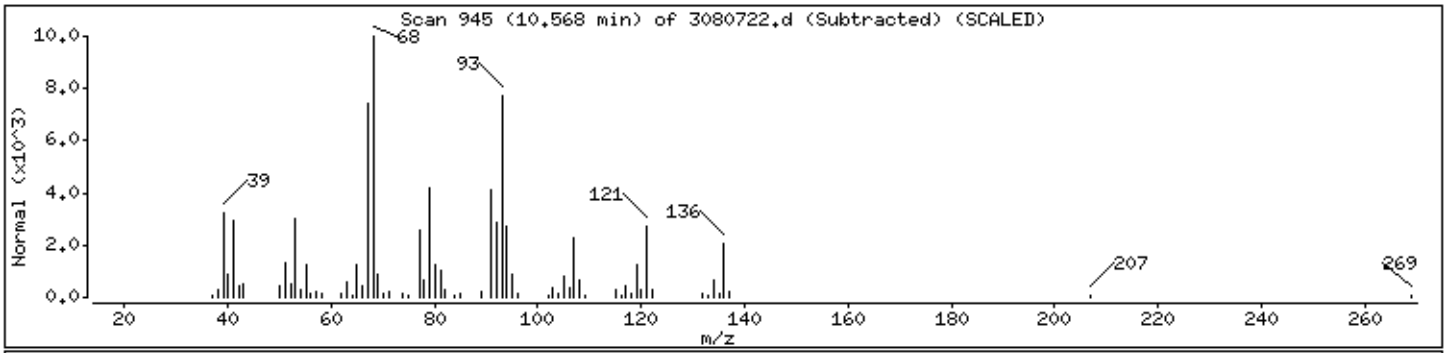
Sample Info: 200ml 5785

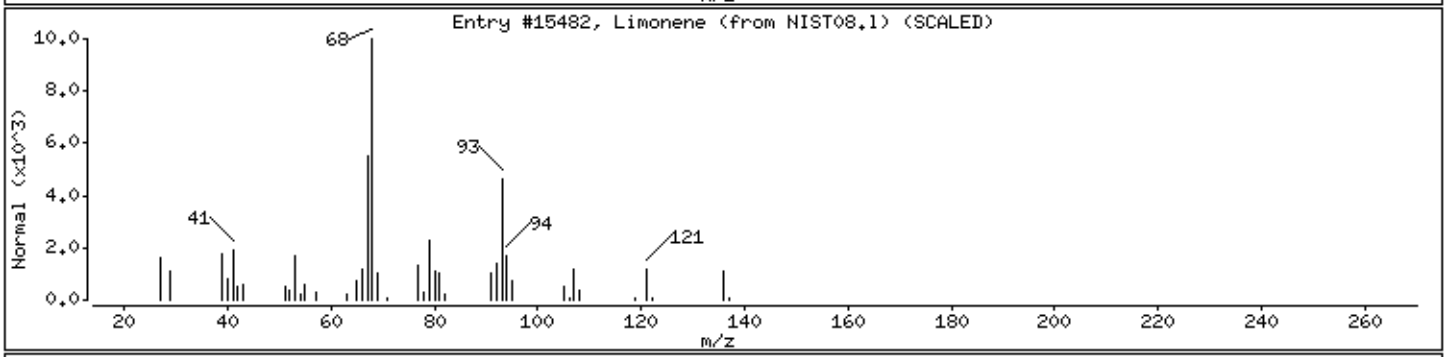
Operator: mjs

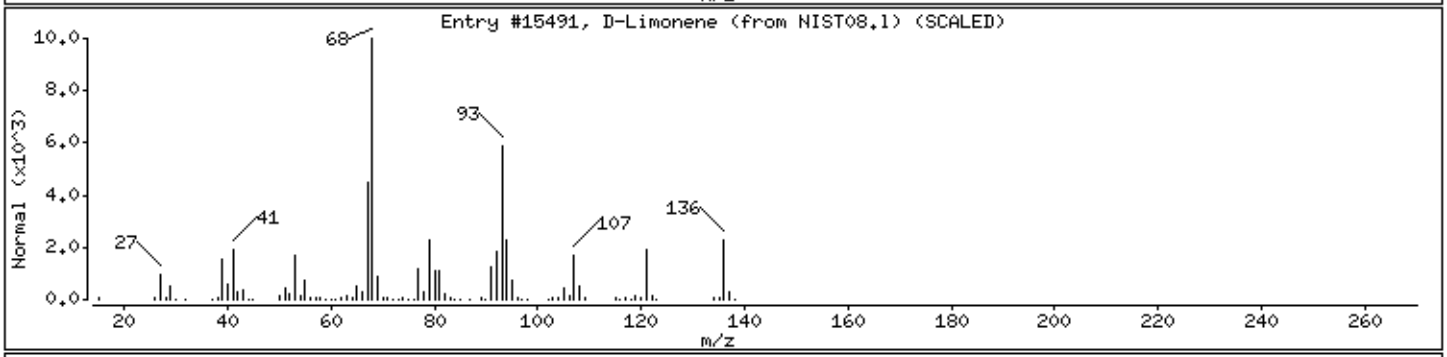
Column phase: RTX-624

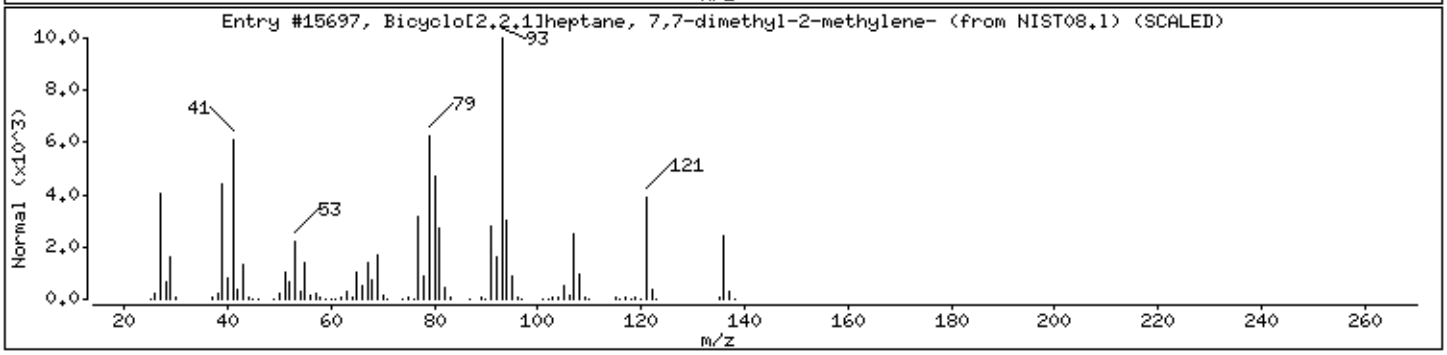
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15482	94	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15491	76	C10H16	136
Bicyclo[2.2.1]heptane, 7,7-dimethyl-2-me	471-84-1	NIST08.l	15697	64	C10H16	136









Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

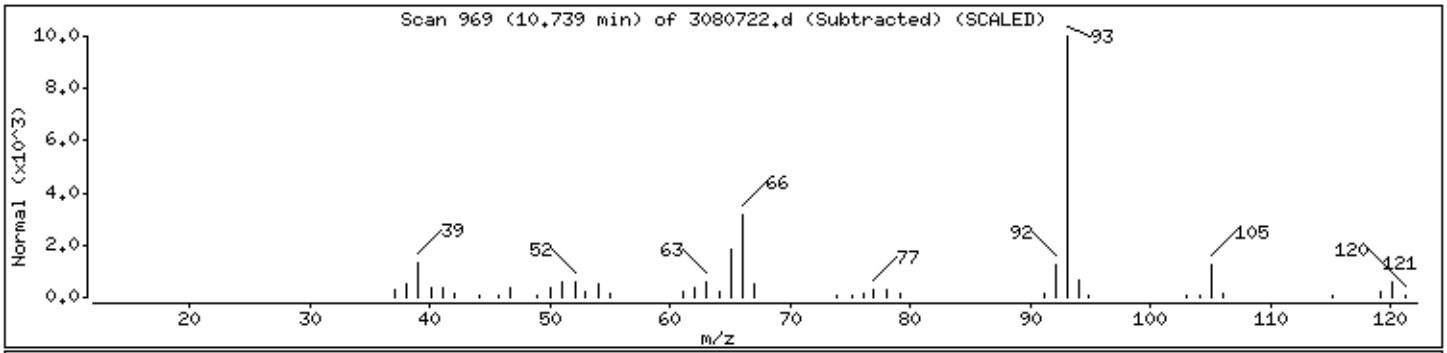
Sample Info: 200ml 5785

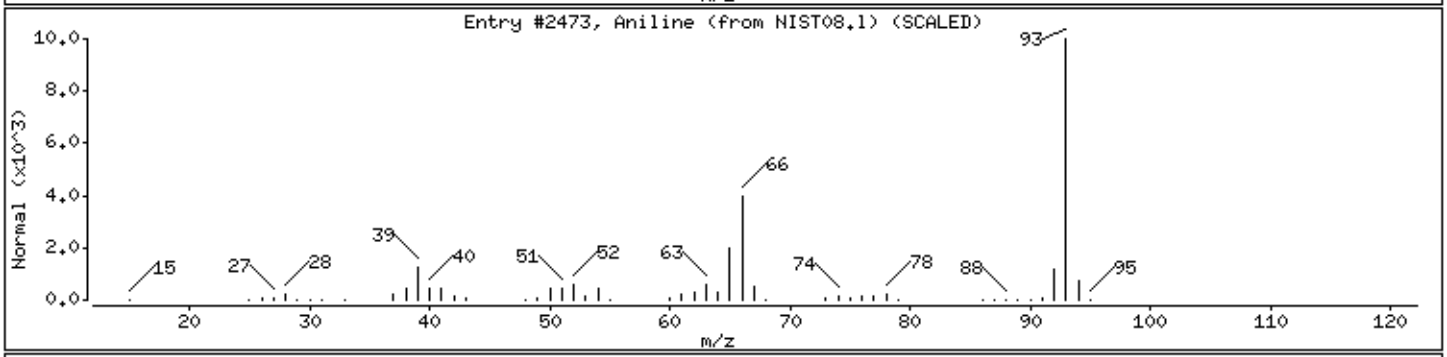
Operator: mjs

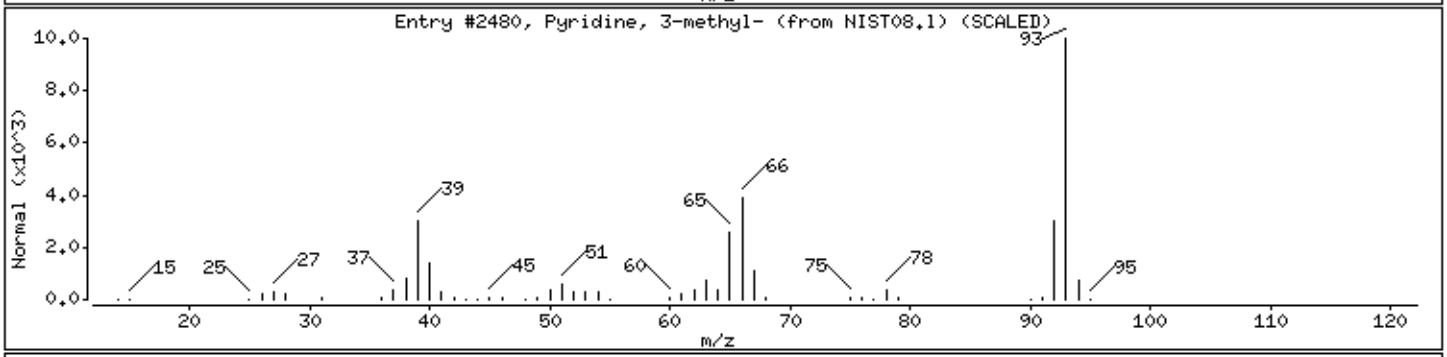
Column phase: RTX-624

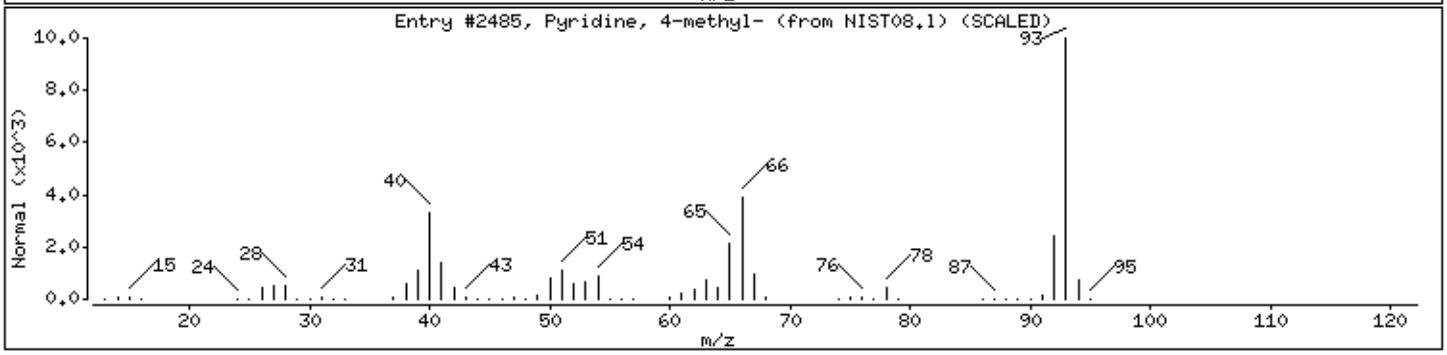
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Aniline	62-53-3	NIST08.l	2473	95	C6H7N	93
Pyridine, 3-methyl-	108-99-6	NIST08.l	2480	87	C6H7N	93
Pyridine, 4-methyl-	108-89-4	NIST08.l	2485	80	C6H7N	93









Data File: /chem/msd3.i/07aug17.b/3080722.d

Date : 08-AUG-2017 00:48

Client ID:

Instrument: msd3.i

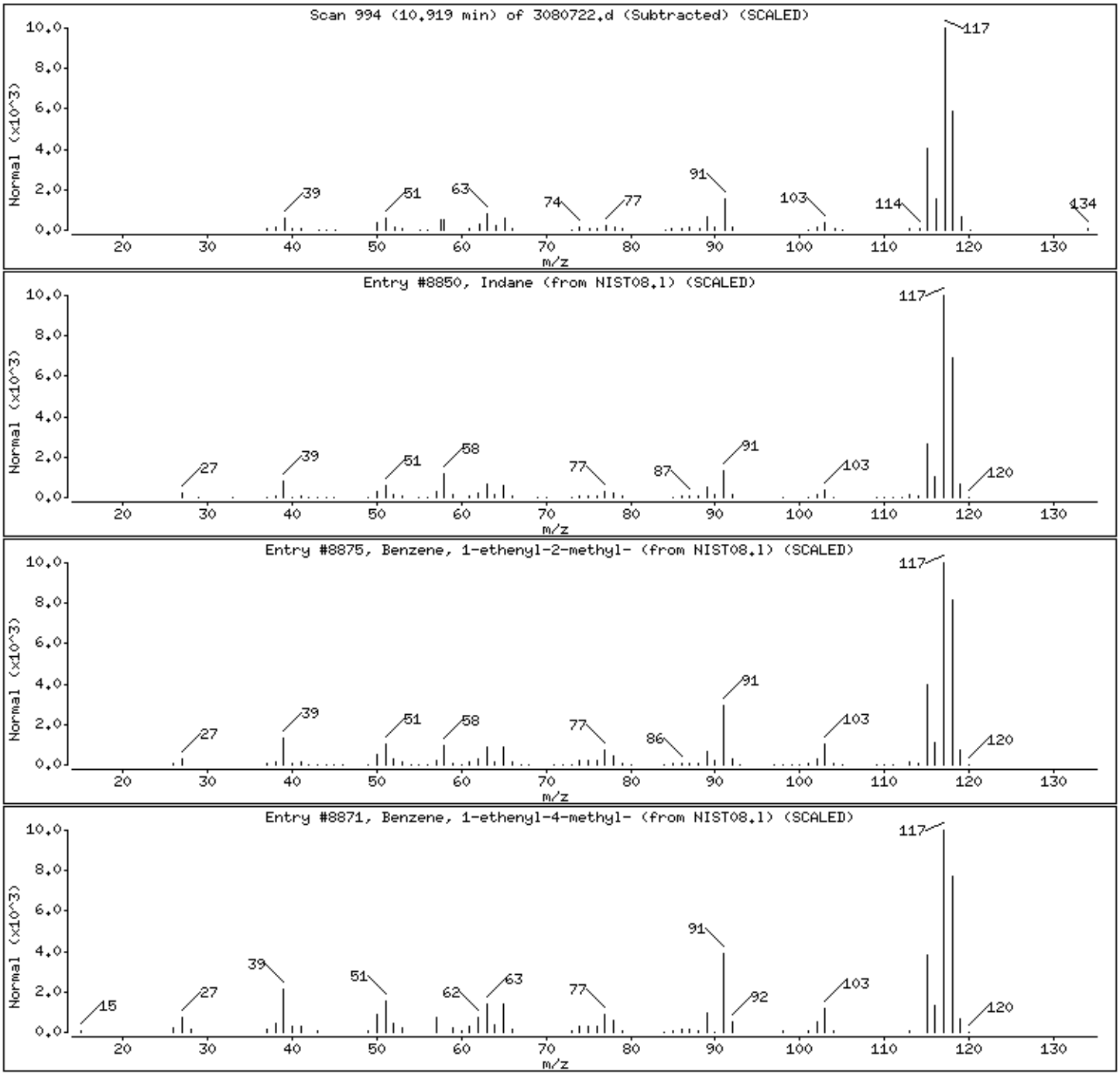
Sample Info: 200ml 5785

Operator: mjs

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indane	496-11-7	NIST08.l	8850	93	C9H10	118
Benzene, 1-ethenyl-2-methyl-	611-15-4	NIST08.l	8875	76	C9H10	118
Benzene, 1-ethenyl-4-methyl-	622-97-9	NIST08.l	8871	68	C9H10	118



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SH-D_0817		
Lab ID:	1708091B-15A	**Date/Time Analyzed:**	8/8/17 04:02 PM
Date/Time Collected:	8/3/17 03:42 PM	**Dilution Factor:**	11.9
Media:		**Instrument/Filename:**	msd3.i / 3080809

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	1.8	7.6	19	160
Ethyl Benzene	100-41-4	2.4	10	26	370
m,p-Xylene	108-38-3	2.4	10	26	630
Naphthalene	91-20-3	0.89	5.0	62	610
o-Xylene	95-47-6	1.1	10	26	270
Toluene	108-88-3	1.4	9.0	22	310
Total Xylene	1330-20-7	NA	D	52	900

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	94%		680 NJ
Limonene	138-86-3	94%		3700 NJB

NJ =The identification is based on presumptive evidence; estimated value.
B = Analyte present in laboratory blank greater than reporting limit.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080809.d
Lab Smp Id: 1708091B-15A
Inj Date : 08-AUG-2017 16:02
Operator : jg Inst ID: msd3.i
Smp Info : 30ml N2547
Misc Info : 7.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 4
Dil Factor: 11.90000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.410 (1.000)	130	192855	25.0000			80.00- 120.00	100.00
5.410	5.410 (1.000)	128	147999				46.73- 106.73	76.74
5.410	5.410 (1.000)	49	208170				91.08- 151.08	107.94
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	674523	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	93806				0.00- 44.78	13.91
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	626380	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	299365				20.58- 80.58	47.79
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	215363	21.8505		21.850	80.00- 120.00	100.00(a)
5.956	5.956 (1.101)	67	111773				24.54- 84.54	51.90
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	672915	24.5941		24.594	80.00- 120.00	100.00
7.523	7.523 (1.193)	70	67063				0.00- 40.44	9.97

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	430713			35.27- 95.27	64.01
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	408732	24.9927	24.993	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	421243			84.77- 144.77	103.06
9.737	9.737 (1.112)	176	392337			64.74- 124.74	95.99
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	90315	4.12113	49.041	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	21329			0.00- 53.39	23.62
147 Toluene					CAS #: 108-88-3		
7.581	7.574 (1.202)	91	205477	6.97018	82.945	80.00- 120.00	100.00
7.581	7.574 (1.202)	92	114980			27.96- 87.96	55.96
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	95741	7.18967	85.557	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	290515			272.32- 332.32	303.44
169 m,p-Xylene					CAS #: 108-38-3		
8.920	8.920 (1.019)	106	203750	12.2345	145.59	80.00- 120.00	100.00
8.920	8.920 (1.019)	91	392450			165.91- 225.91	192.61
171 o-Xylene					CAS #: 95-47-6		
9.264	9.264 (1.058)	106	81580	5.15114	61.298	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	163084			175.85- 235.85	199.91
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.453)	128	669201	9.81739	116.83	80.00- 120.00	100.00
12.724	12.717 (1.453)	127	86698			0.00- 43.00	12.96
M 239 Total Xylene					CAS #: 1330-20-7		
			285331	17.3857	206.89		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080809.d
Lab Smp Id: 1708091B-15A
Inj Date : 08-AUG-2017 16:02
Operator : jg Inst ID: msd3.i
Smp Info : 30ml N2547
Misc Info : 7.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 4
Dil Factor: 11.90000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.410	916909	25.000
* 163 Chlorobenzene-d5	8.755	2029931	25.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.353	3169390	86.4150101	1028.3	0		0	98
Isobutane				CAS #: 75-28-5			
1.646	144520	3.94042363	46.891	64	NIST08.1	234	98
1,2-Dichloroethylene				CAS #: 540-59-0			
5.186	112062	3.05543246	36.360	97	NIST08.1	2671	98
Benzene, 1-ethyl-3-methyl-				CAS #: 620-14-4			
9.966	550048	6.77422319	80.613	97	NIST08.1	9318	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.037	715628	8.81345340	104.88	97	NIST08.l	9310	163
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.360	739093	9.10243727	108.32	97	NIST08.l	9310	163
Limonene				CAS #: 138-86-3			
10.553	25002503	307.923047	3664.3	94	NIST08.l	15483	163(L)
Benzene, 1-ethyl-3,5-dimethyl-				CAS #: 934-74-7			
10.603	1193282	14.6960843	174.88	91	NIST08.l	14705	163
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.732	266179	3.27817887	39.010	94	NIST08.l	9308	163
Indane				CAS #: 496-11-7			
10.918	4630583	57.0288151	678.64	94	NIST08.l	8853	163
Indene				CAS #: 95-13-6			
11.119	431441	5.31348995	63.230	97	NIST08.l	8322	163
Benzene, 1-methyl-4-(2-propenyl)-				CAS #: 3333-13-9			
11.384	210986	2.59844293	30.921	83	NIST08.l	13929	163
Benzene, 2-ethenyl-1,4-dimethyl-				CAS #: 2039-89-6			
11.900	155634	1.91674259	22.809	95	NIST08.l	13913	163
Benzene, 2-butenyl-				CAS #: 1560-06-1			
12.057	291866	3.59453089	42.775	91	NIST08.l	13887	163

QC Flag Legend

L - Operator selected an alternate library search match.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080809.d
Lab Smp Id: 1708091B-15A
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 7.5 Hg->5 psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	192855	-2.08
123 1,4-Difluorobenze	728289	436973	1019605	674523	-7.38
163 Chlorobenzene-d5	663497	398098	928896	626380	-5.59

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-15A
Level: LOW Operator: jg
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 7.5 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	21.850	87.40	70-130
$ 146 Toluene-d8	25.000	24.594	98.38	70-130
$ 177 4-Bromofluorobenze	25.000	24.993	99.97	70-130

JÓ

Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

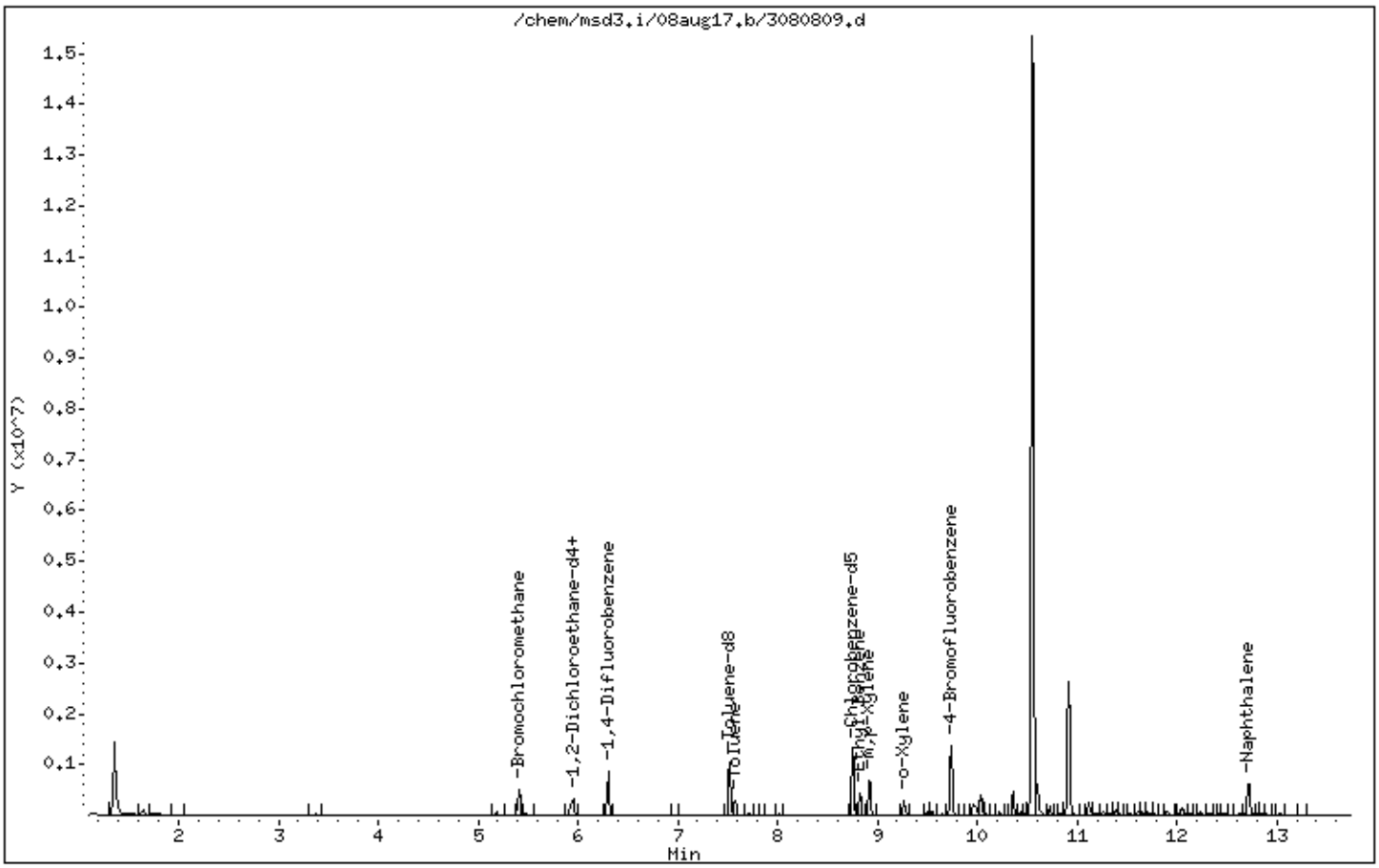
Instrument: msd3.i

Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

Sample Info: 30ml N2547

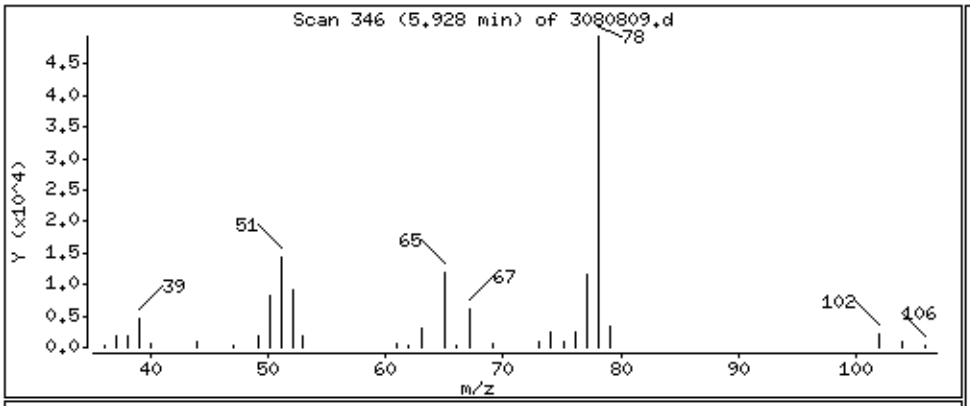
Operator: jg

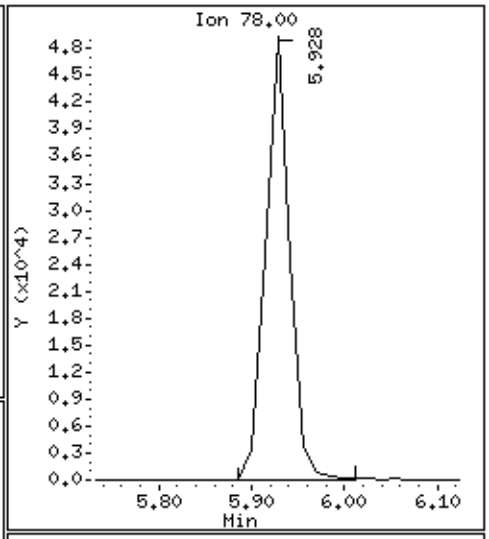
Column phase: RTX-624

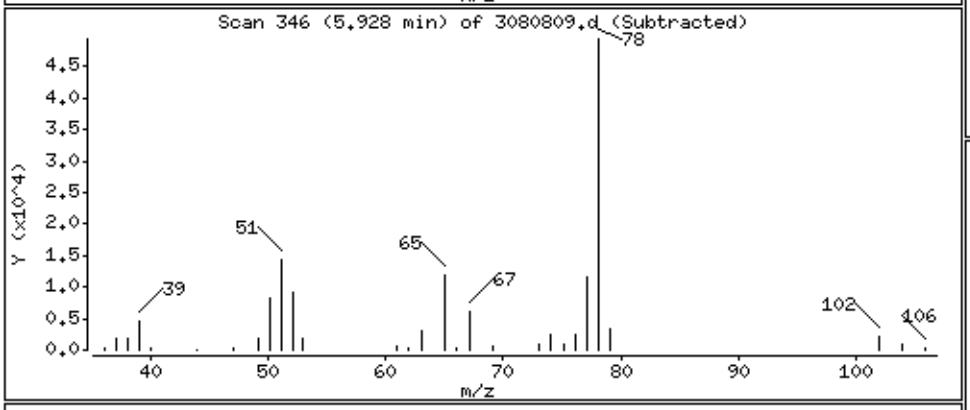
Column diameter: 0.25

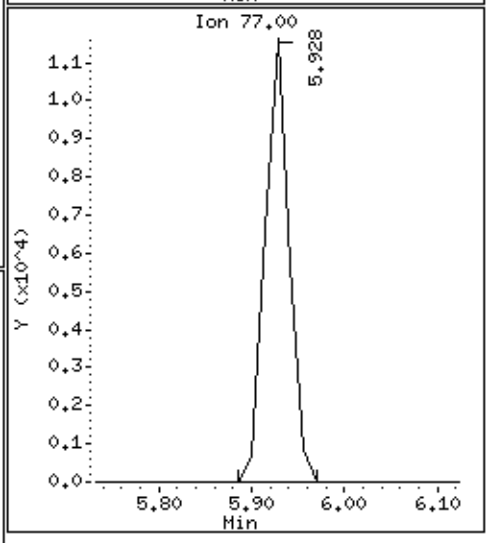
116 Benzene

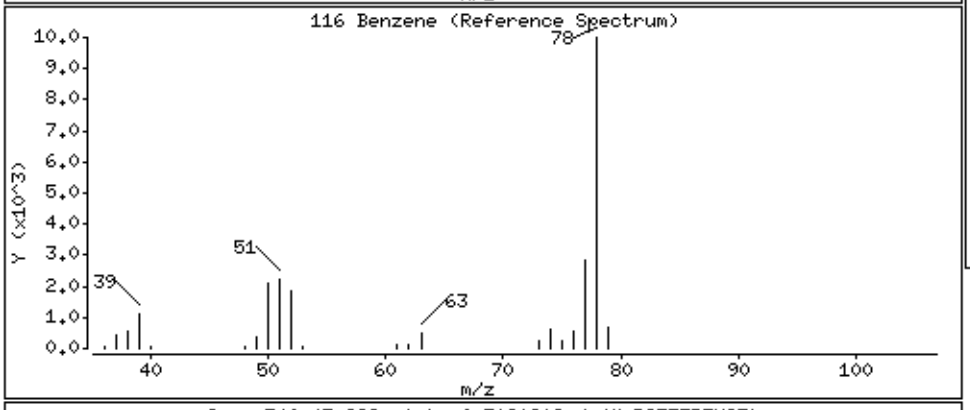
Concentration: 49.041 PPBV

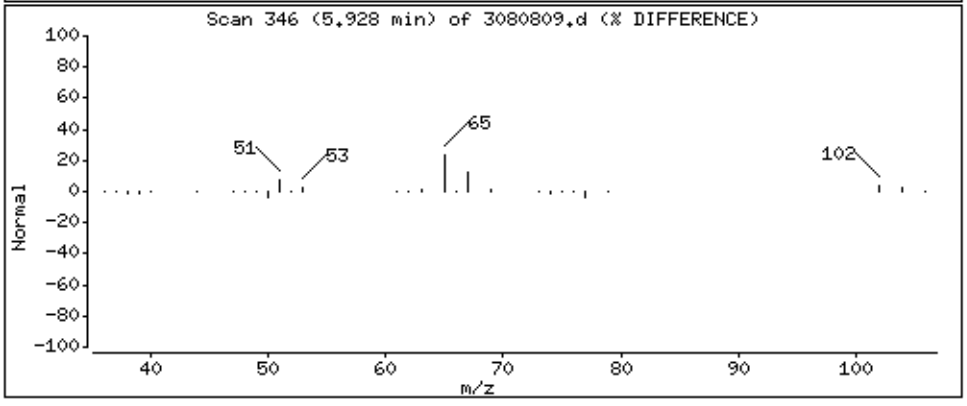












Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

Sample Info: 30ml N2547

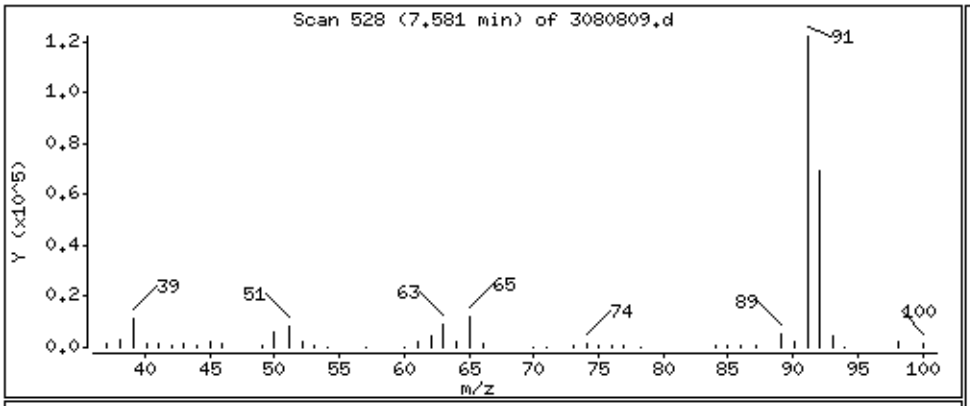
Operator: jg

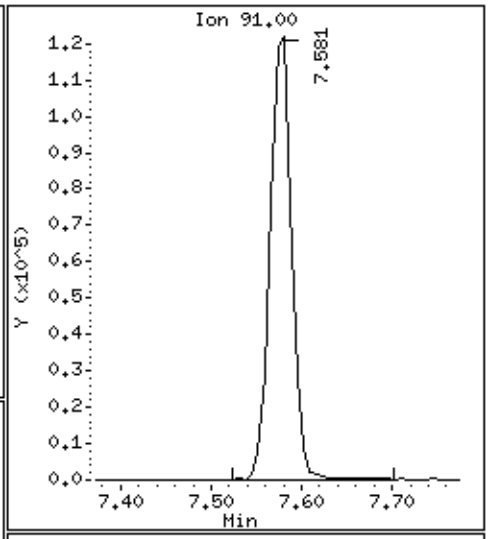
Column phase: RTX-624

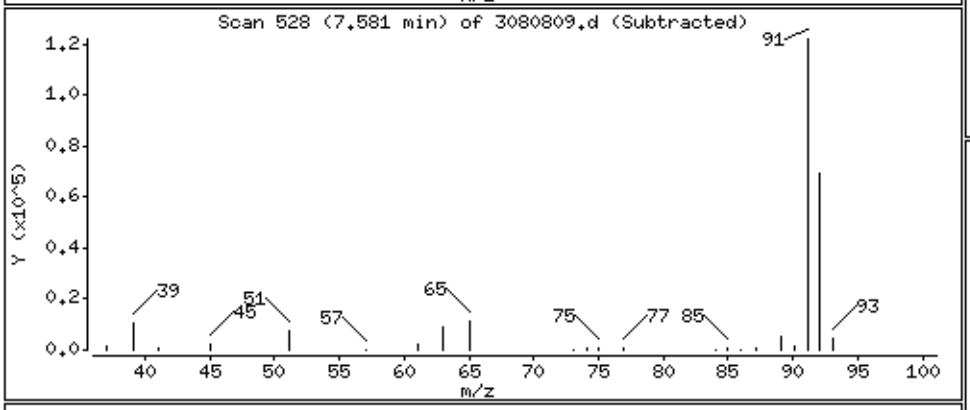
Column diameter: 0.25

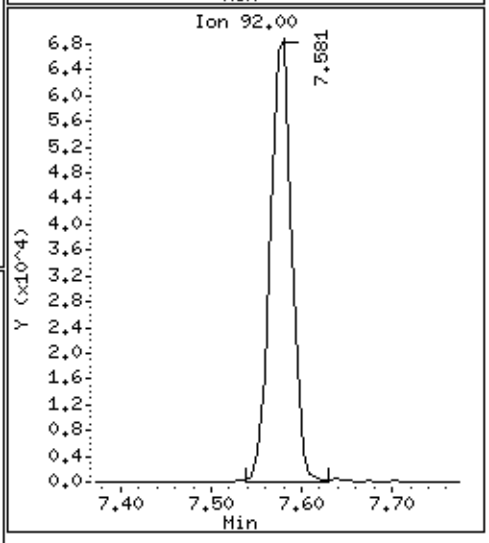
147 Toluene

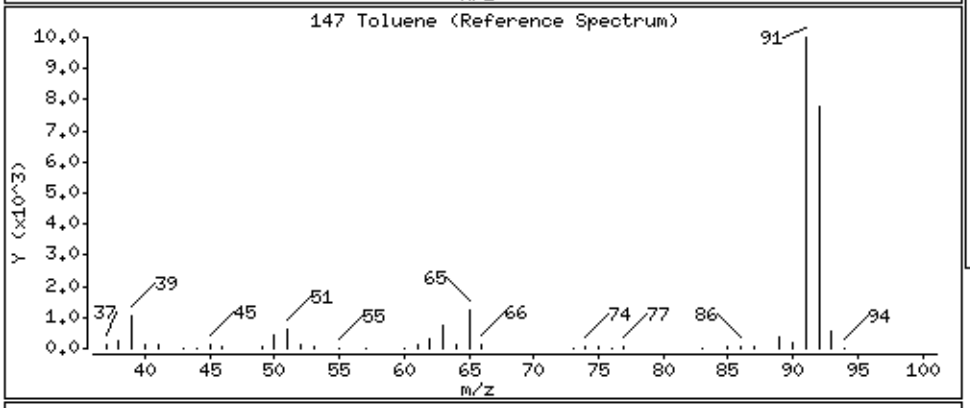
Concentration: 82.945 PPBV

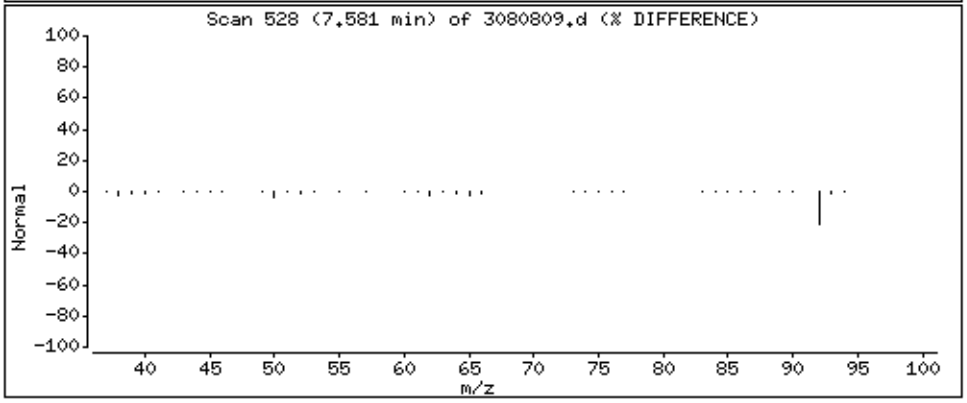












Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

Sample Info: 30ml N2547

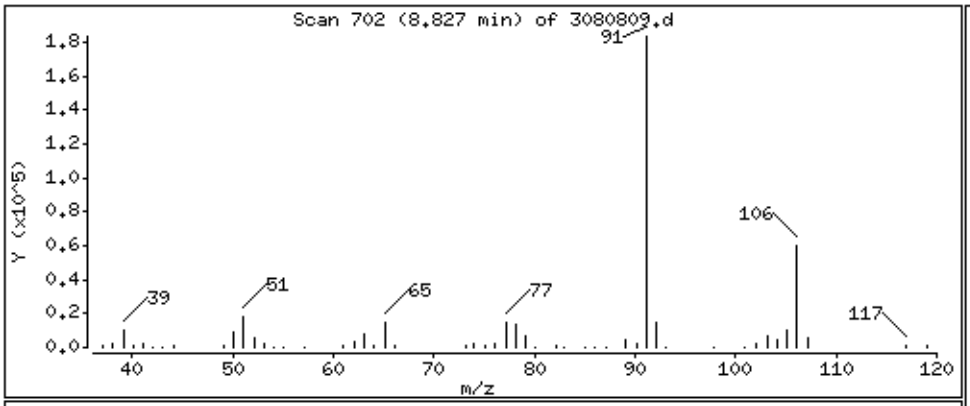
Operator: jg

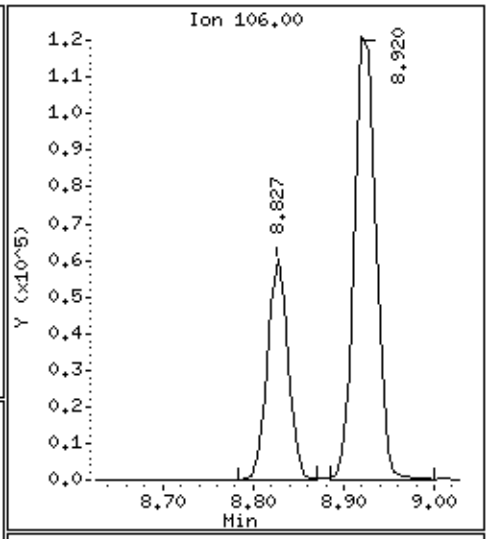
Column phase: RTX-624

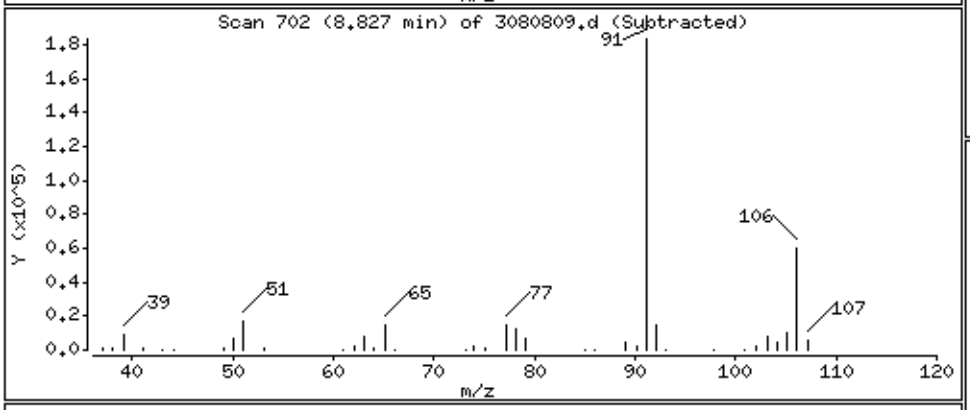
Column diameter: 0.25

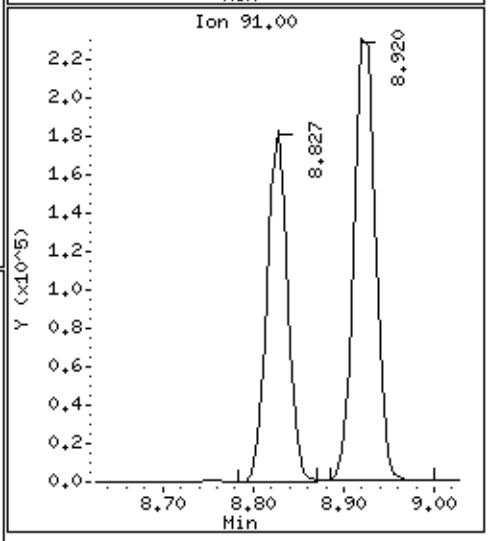
167 Ethyl Benzene

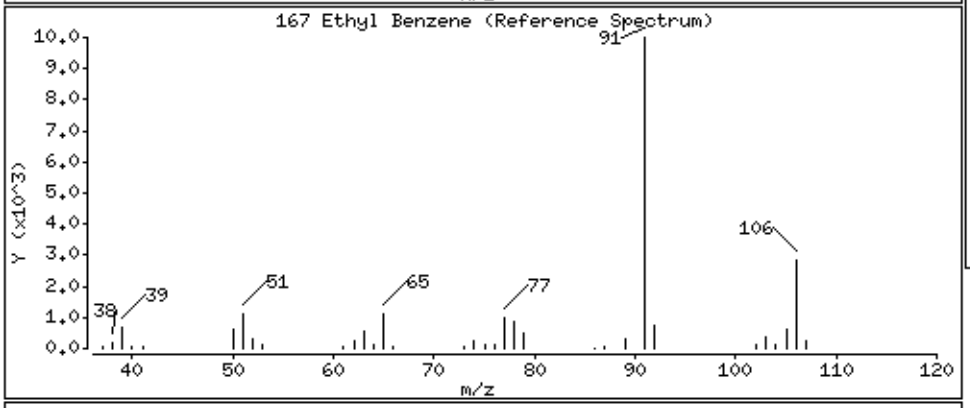
Concentration: 85.557 PPBV

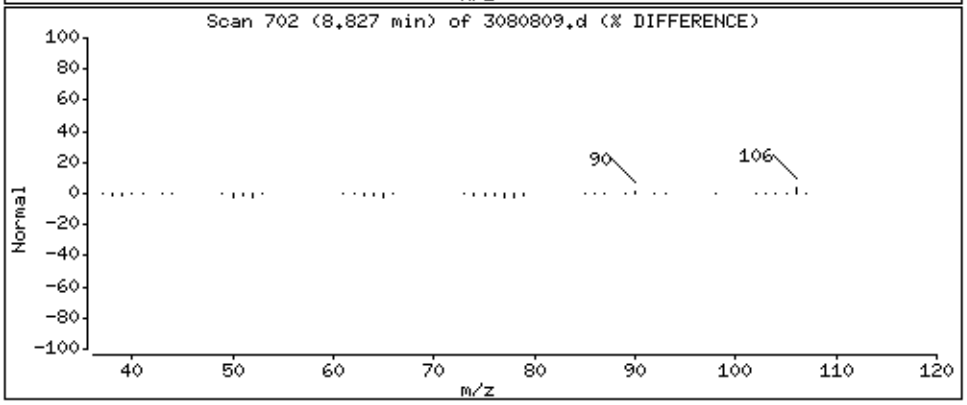












Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

Sample Info: 30ml N2547

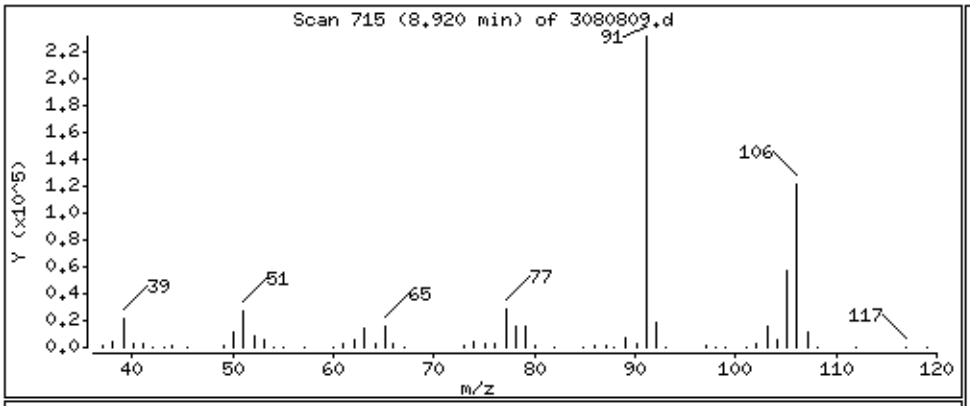
Operator: jg

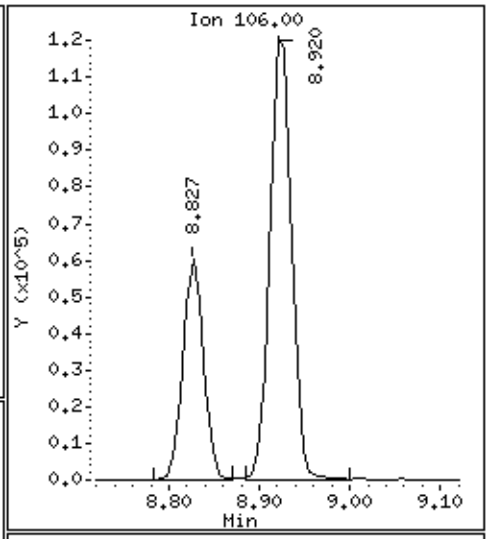
Column phase: RTX-624

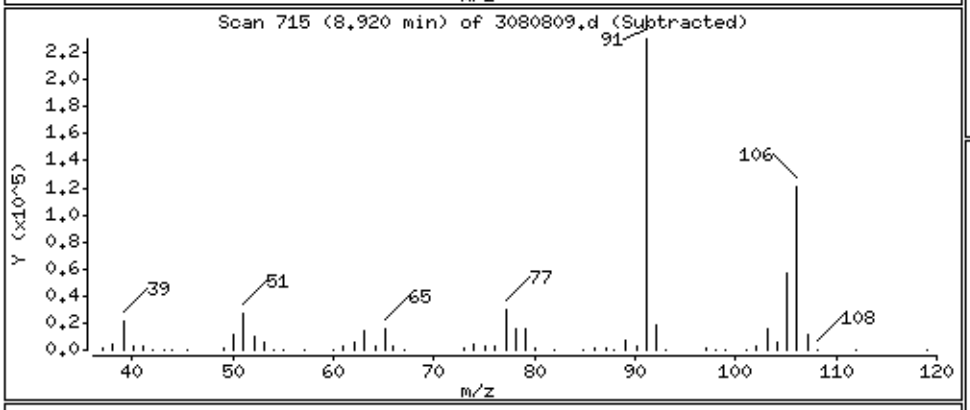
Column diameter: 0.25

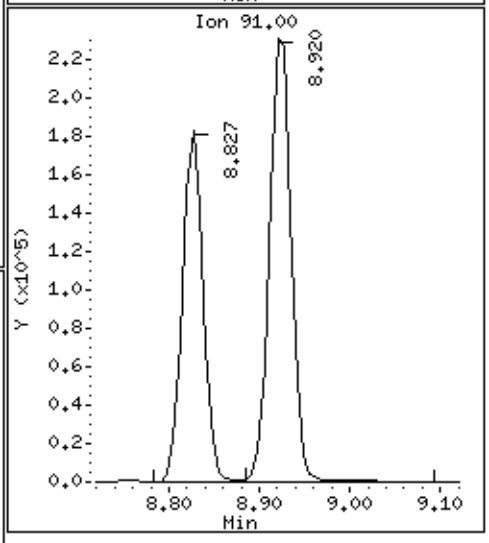
169 m,p-Xylene

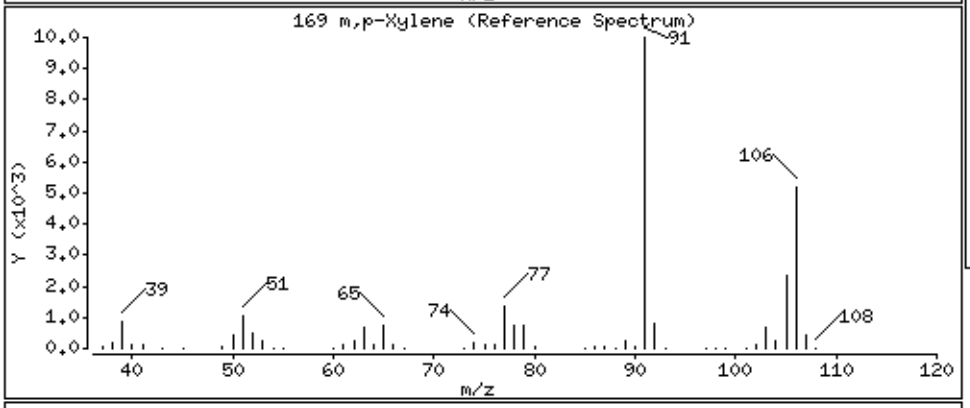
Concentration: 145.59 PPBV

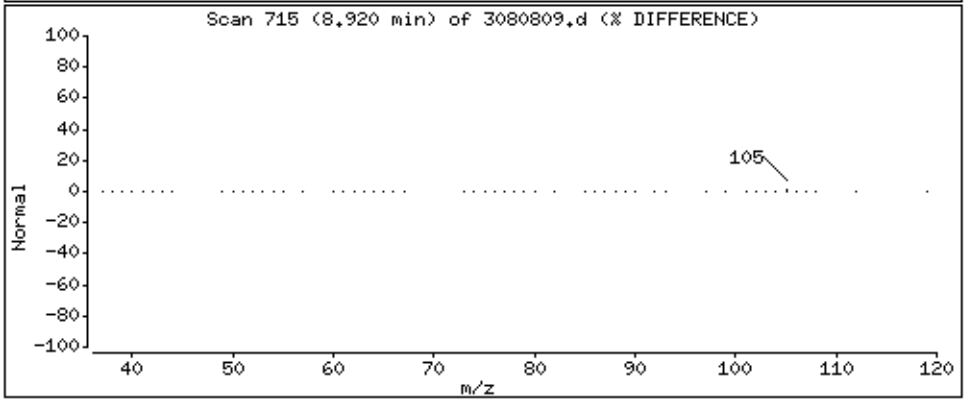












Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

Sample Info: 30ml N2547

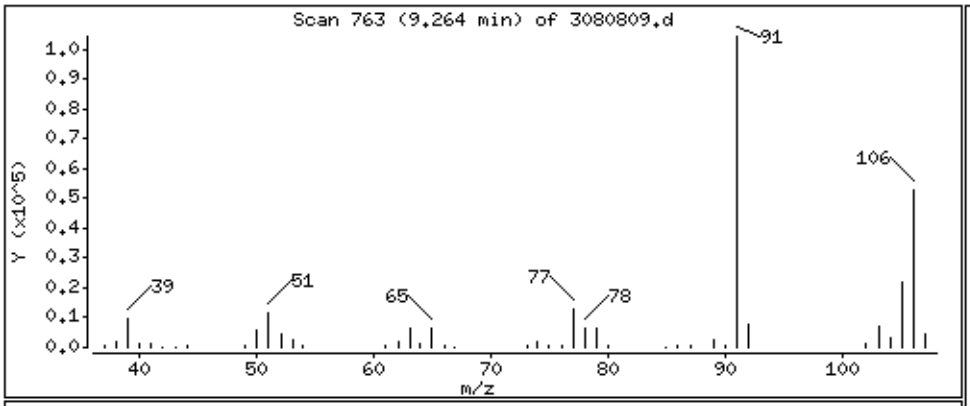
Operator: jg

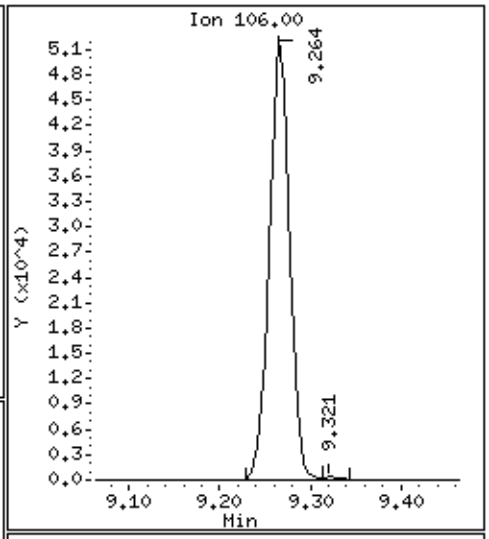
Column phase: RTX-624

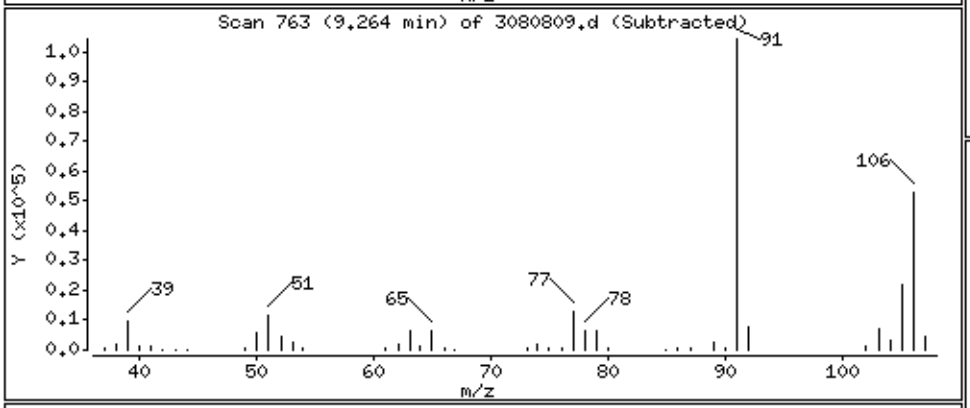
Column diameter: 0.25

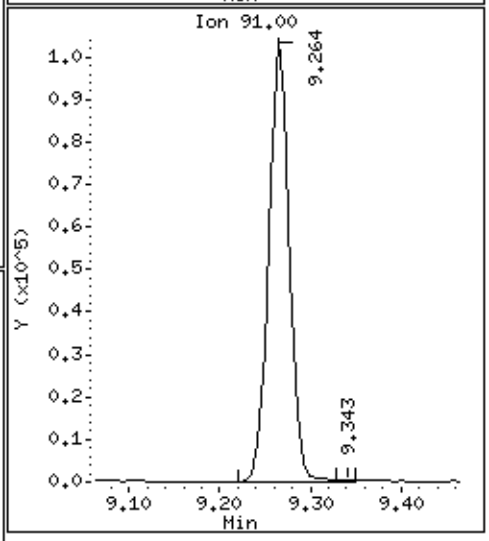
171 o-Xylene

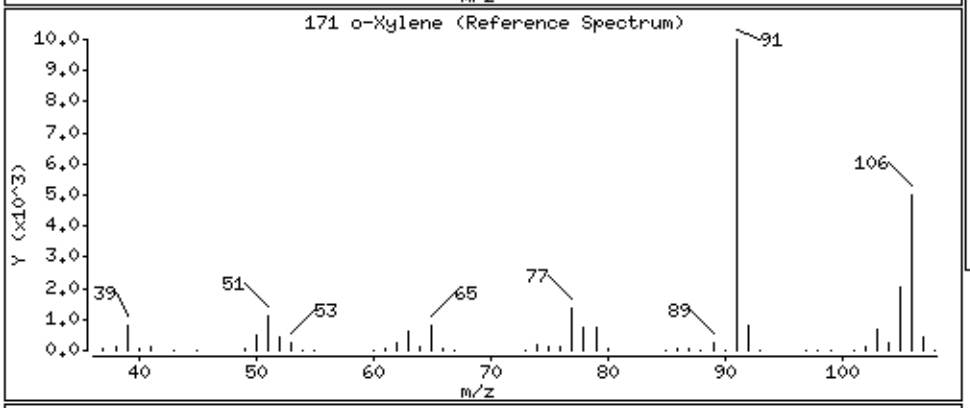
Concentration: 61.298 PPBV

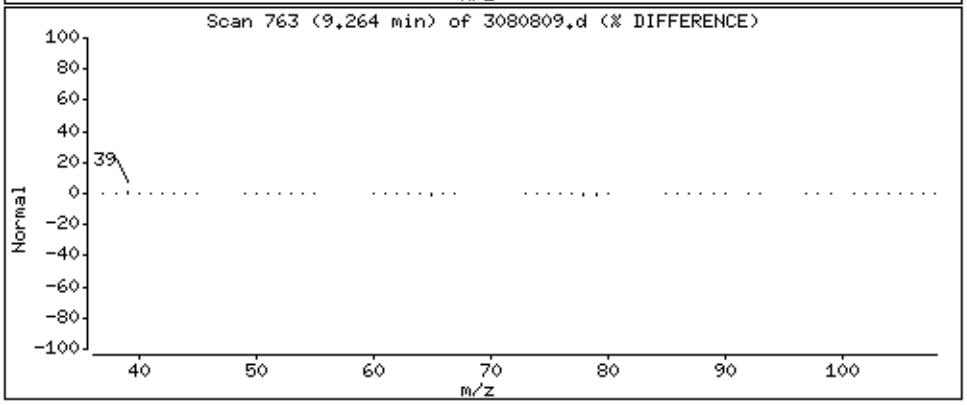












Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

Sample Info: 30ml N2547

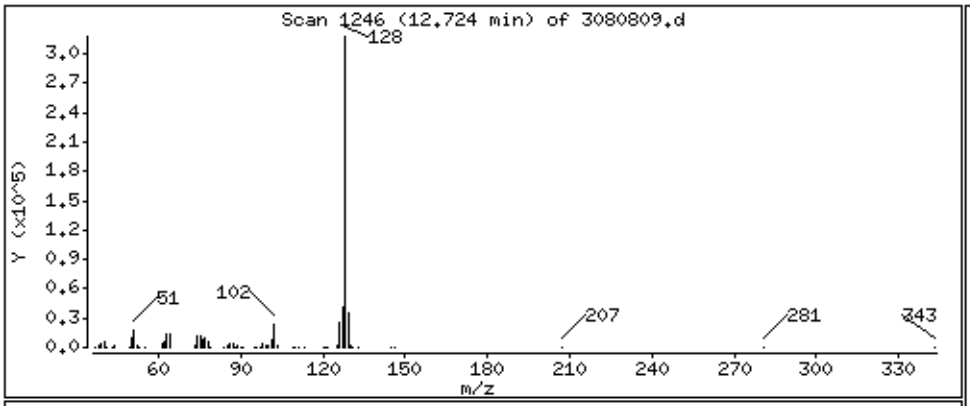
Operator: jg

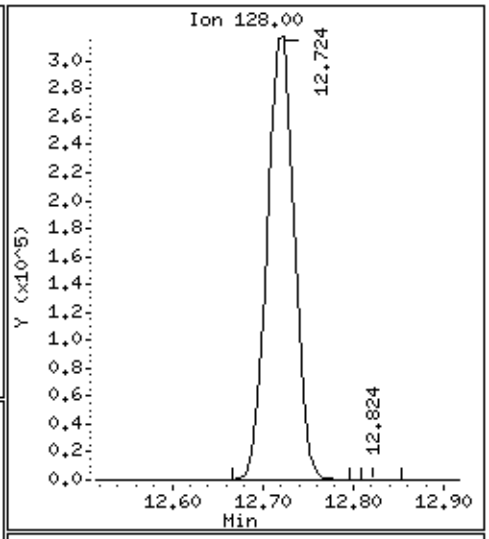
Column phase: RTX-624

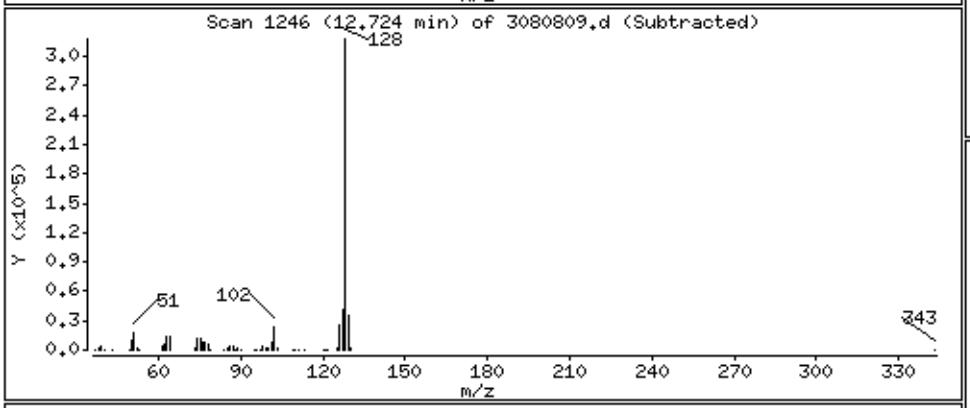
Column diameter: 0.25

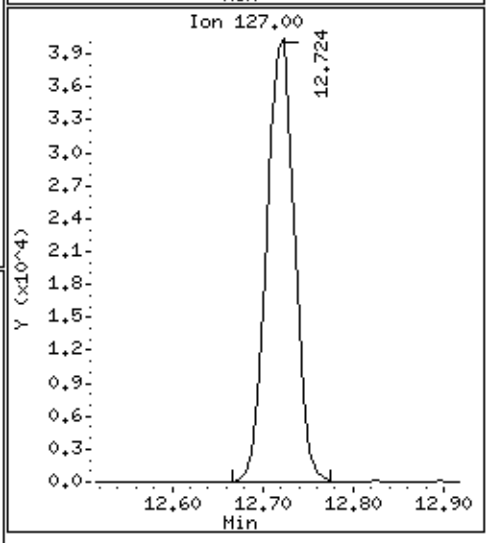
228 Naphthalene

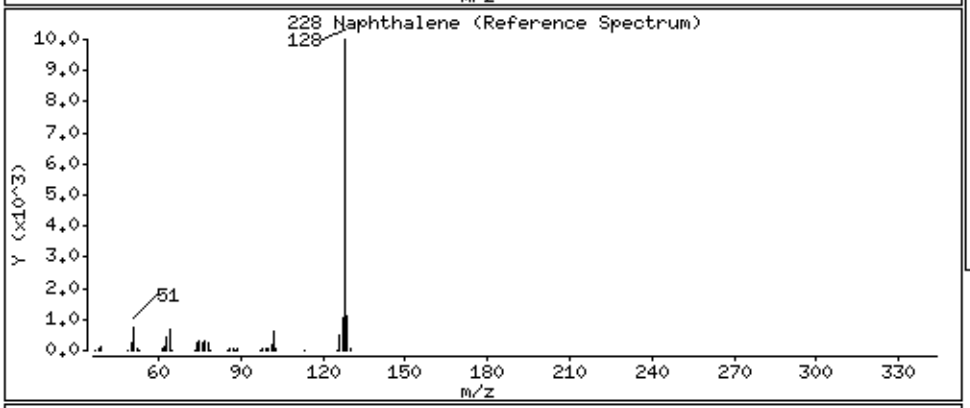
Concentration: 116.83 PPBV

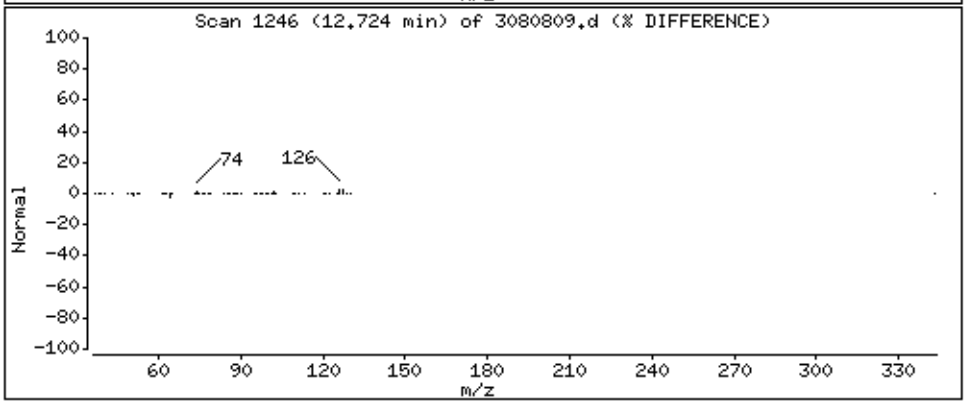












Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

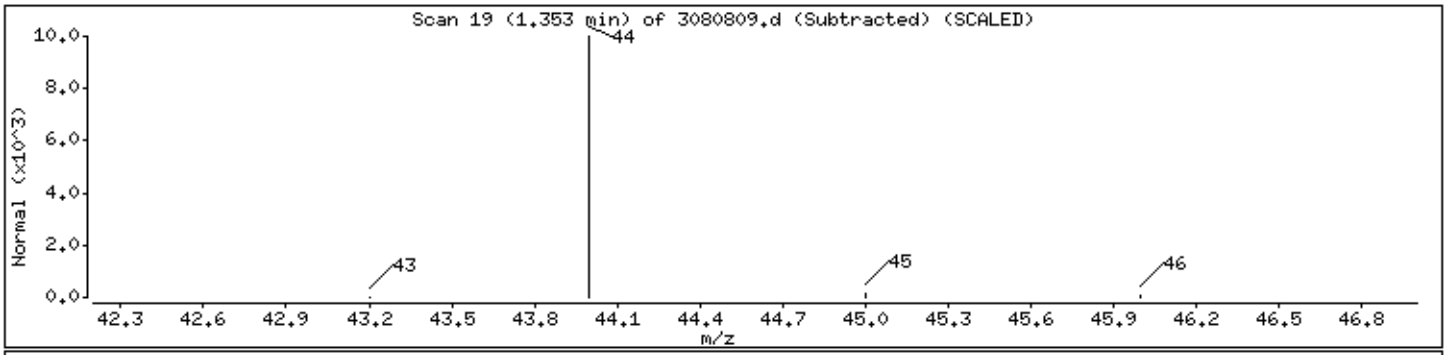
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

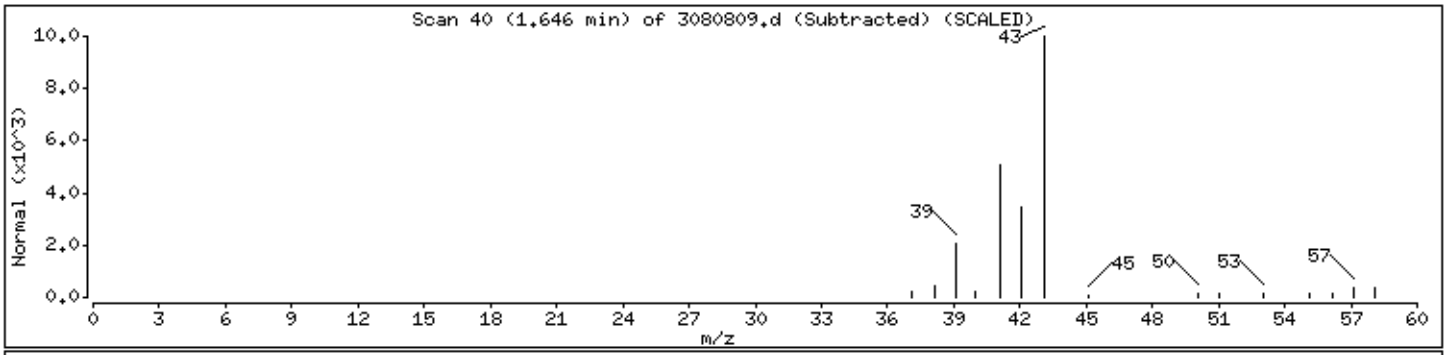
Sample Info: 30ml N2547

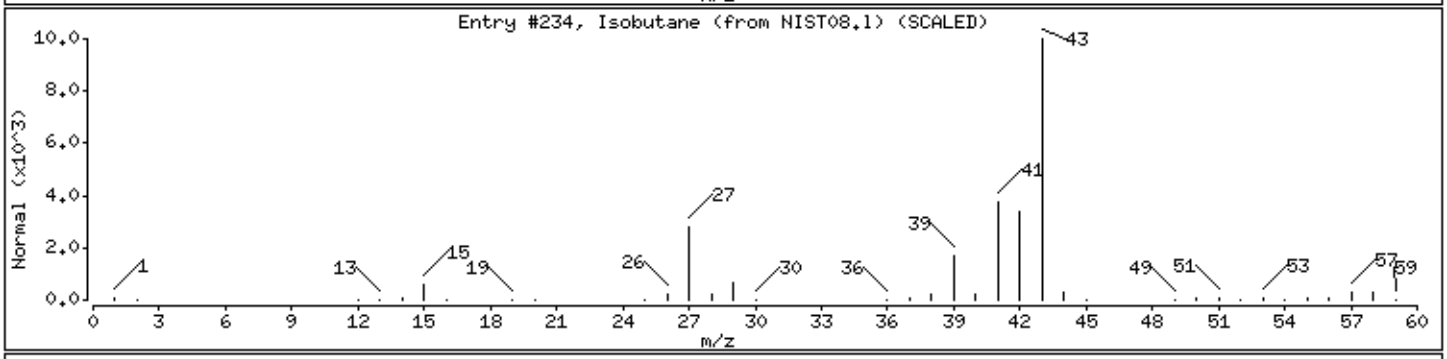
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isobutane	75-28-5	NIST08.l	234	64	C4H10	58





Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

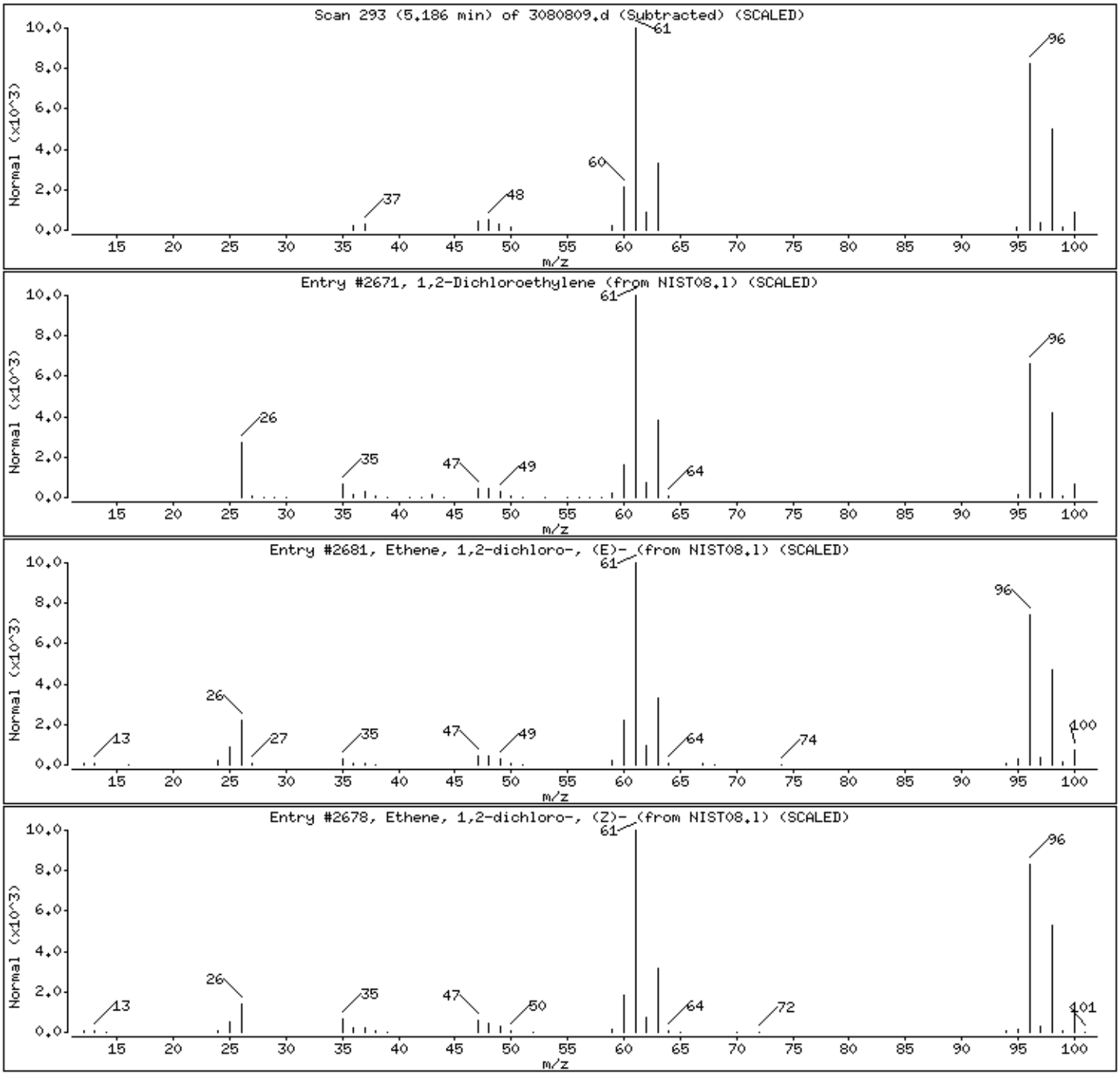
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
1,2-Dichloroethylene	540-59-0	NIST08.l	2671	97	C2H2C12	96
Ethene, 1,2-dichloro-, (E)-	156-60-5	NIST08.l	2681	96	C2H2C12	96
Ethene, 1,2-dichloro-, (Z)-	156-59-2	NIST08.l	2678	95	C2H2C12	96



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

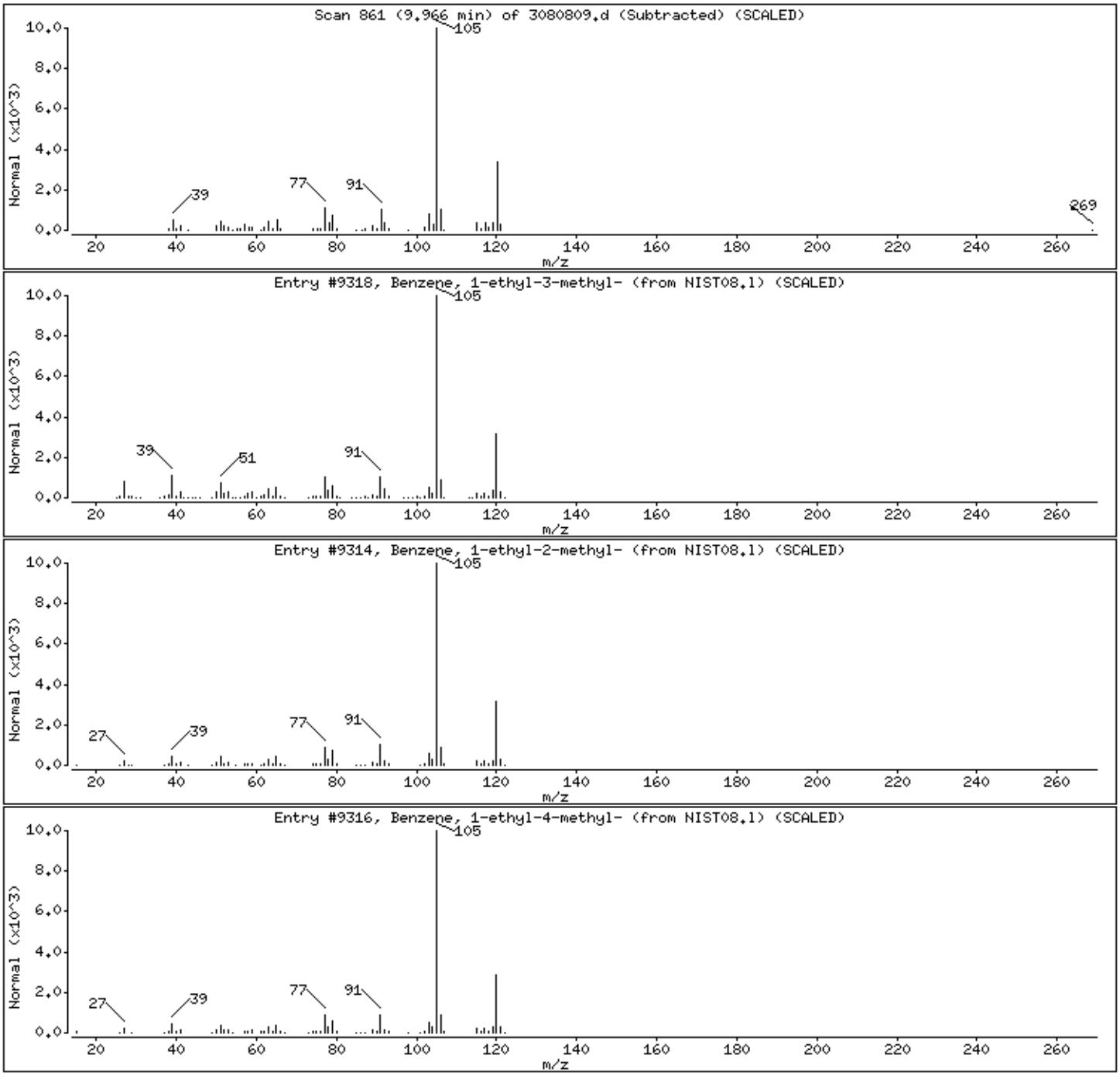
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-3-methyl-	620-14-4	NIST08.l	9318	97	C9H12	120
Benzene, 1-ethyl-2-methyl-	611-14-3	NIST08.l	9314	95	C9H12	120
Benzene, 1-ethyl-4-methyl-	622-96-8	NIST08.l	9316	91	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

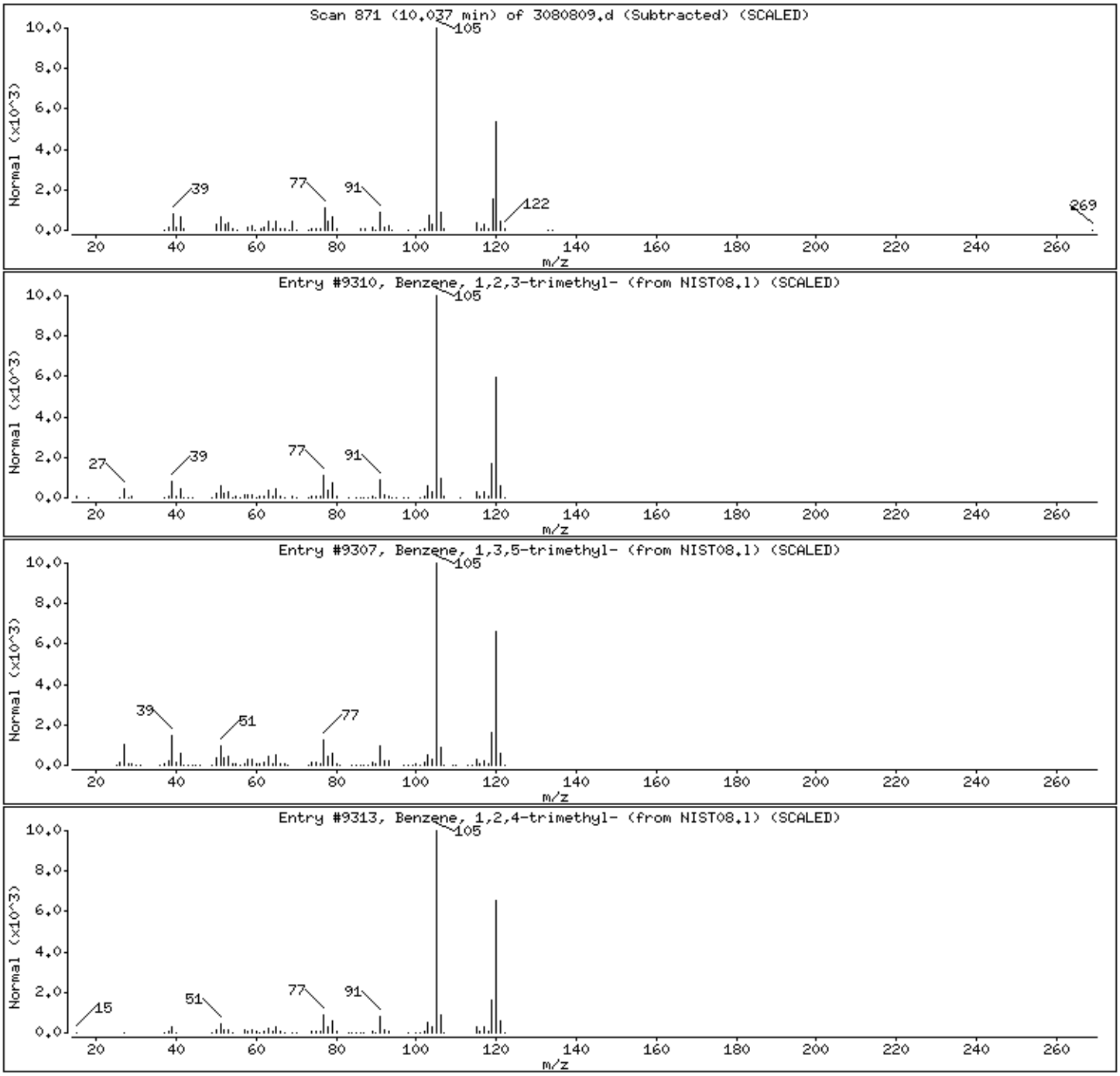
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9307	95	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	94	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

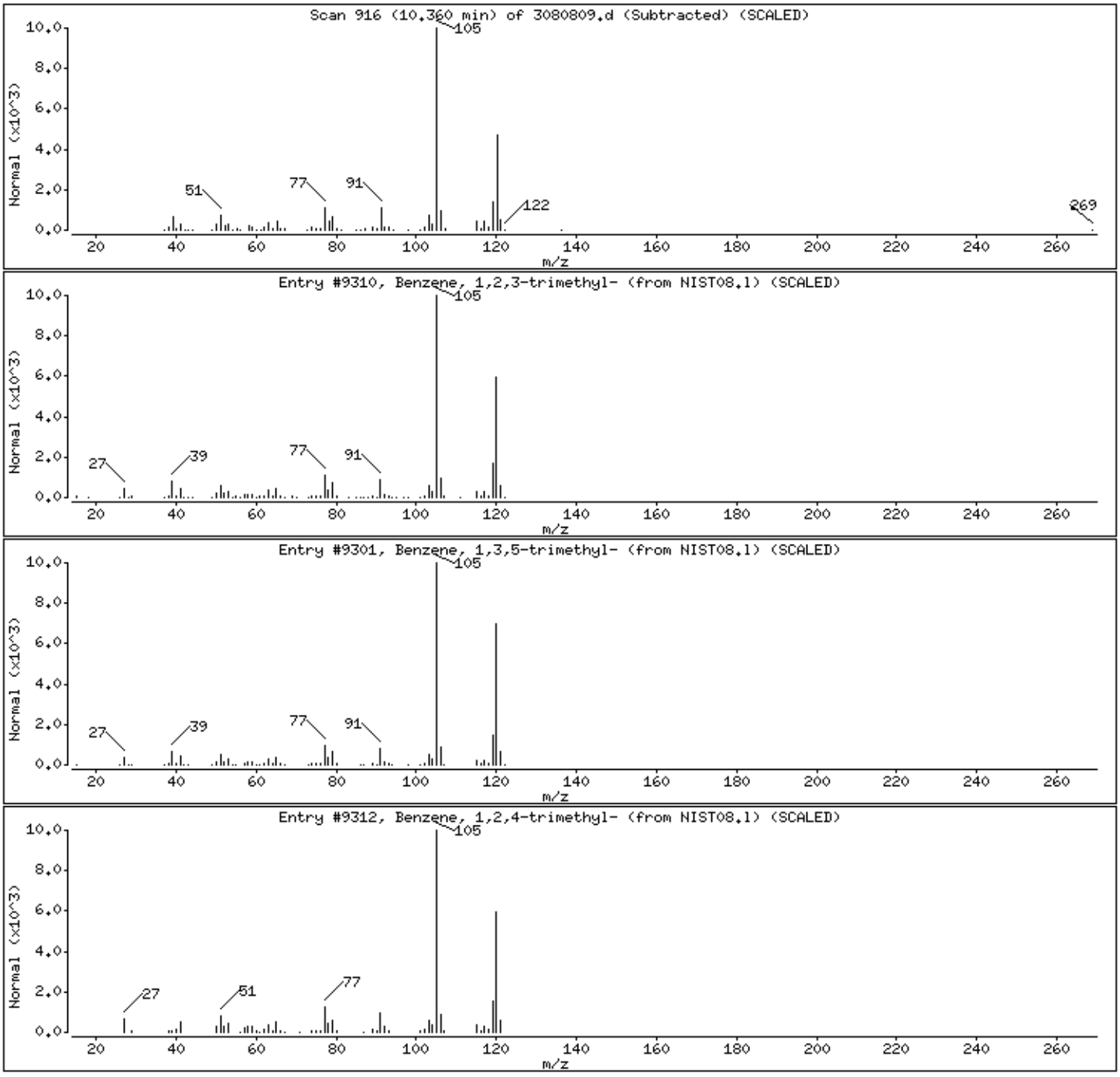
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9301	95	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	95	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

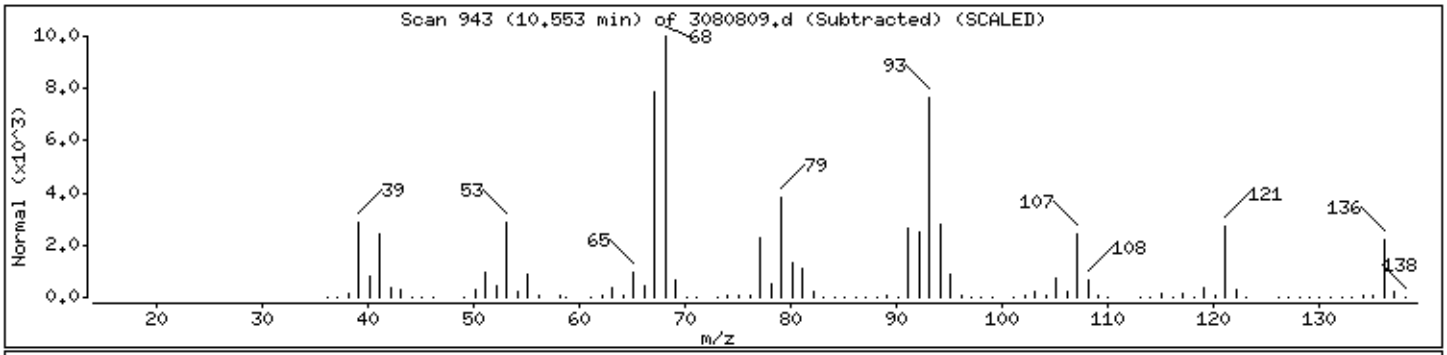
Sample Info: 30ml N2547

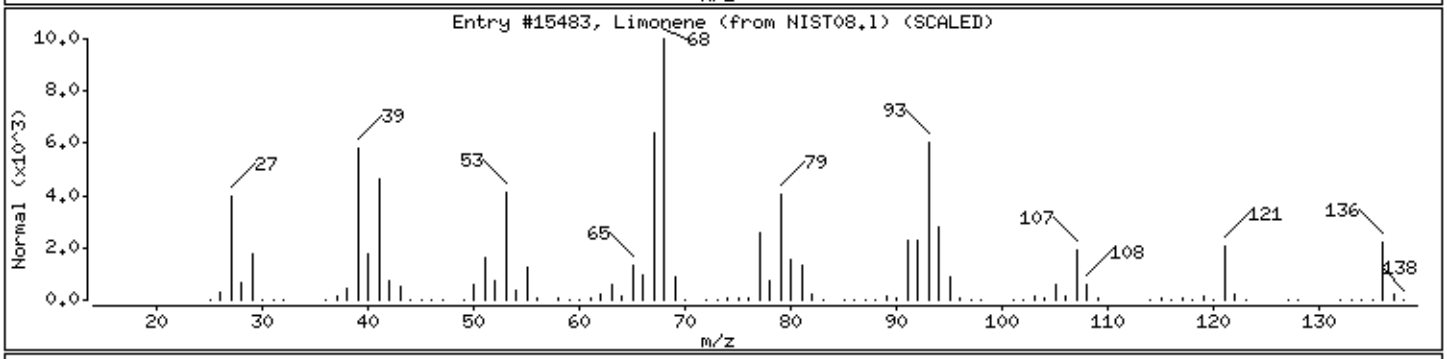
Operator: jg

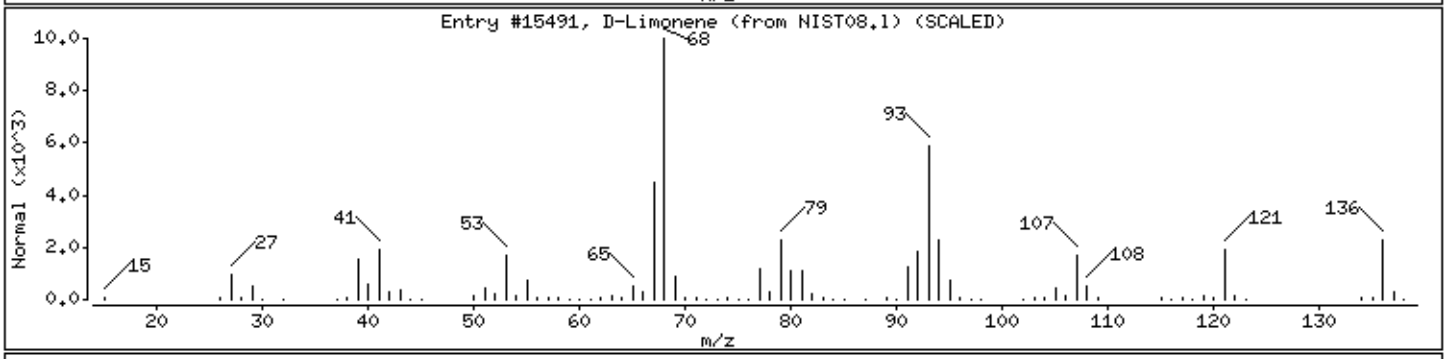
Column phase: RTX-624

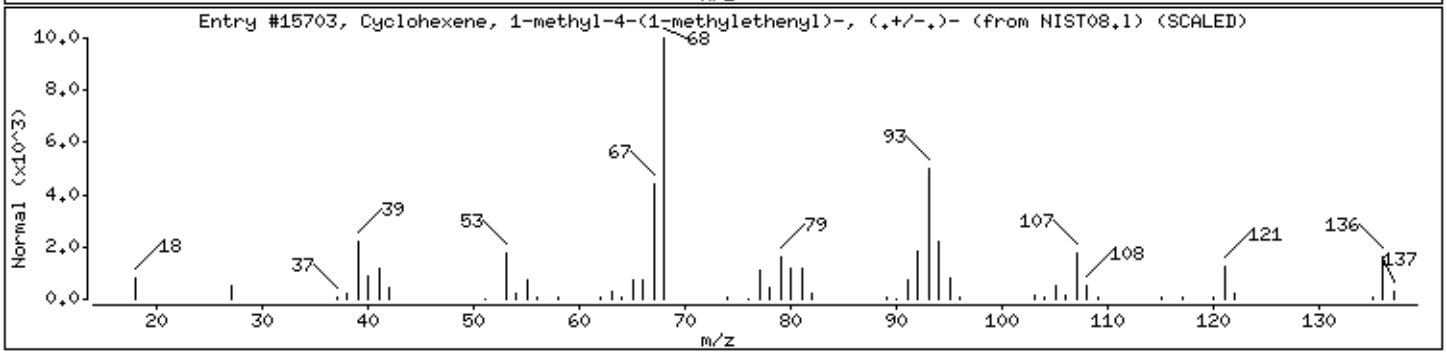
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15483	94	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15491	94	C10H16	136
Cyclohexene, 1-methyl-4-(1-methylethenyl	7705-14-8	NIST08.l	15703	70	C10H16	136









Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

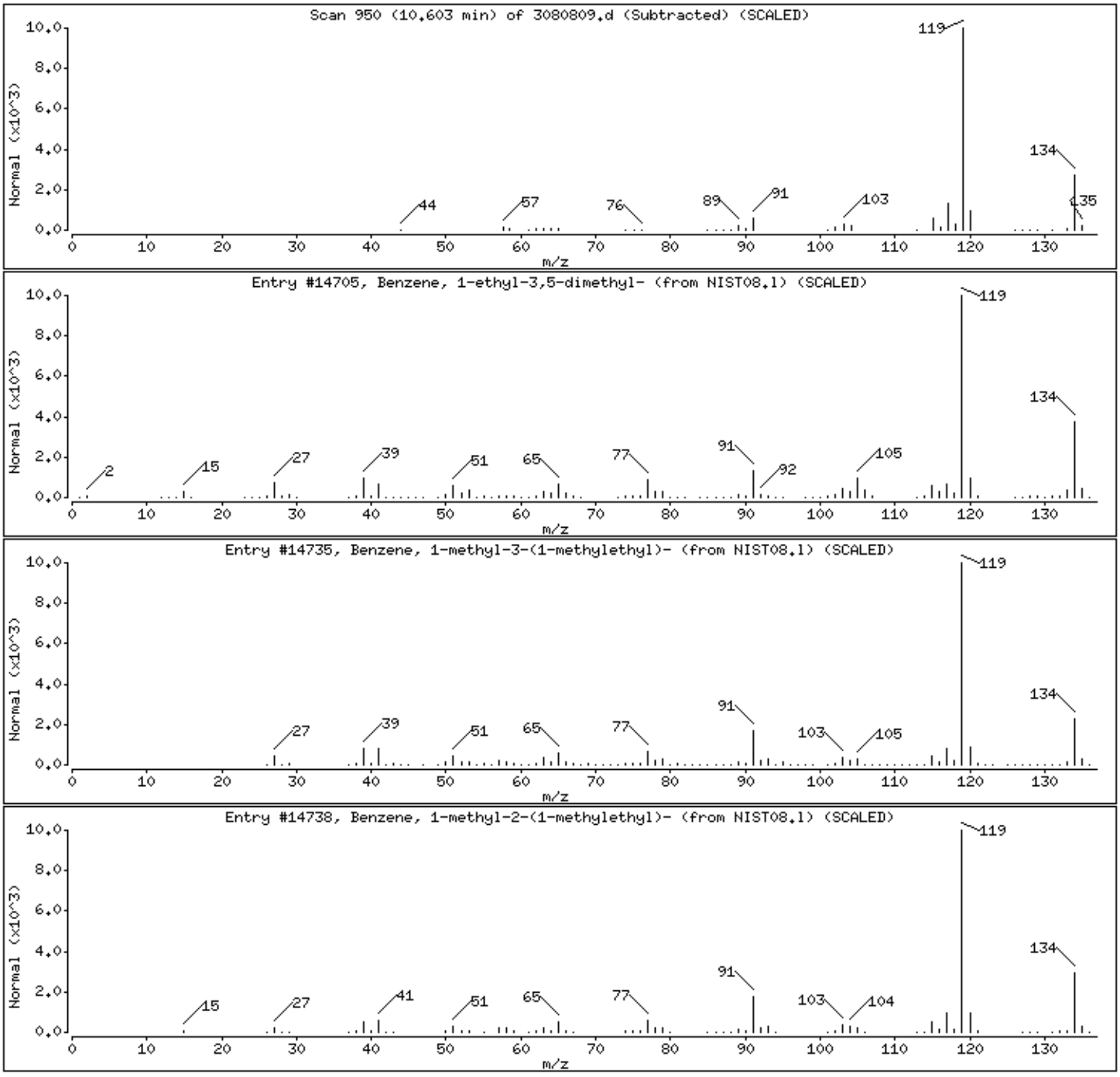
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-3,5-dimethyl-	934-74-7	NIST08.l	14705	91	C10H14	134
Benzene, 1-methyl-3-(1-methylethyl)-	535-77-3	NIST08.l	14735	91	C10H14	134
Benzene, 1-methyl-2-(1-methylethyl)-	527-84-4	NIST08.l	14738	91	C10H14	134



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

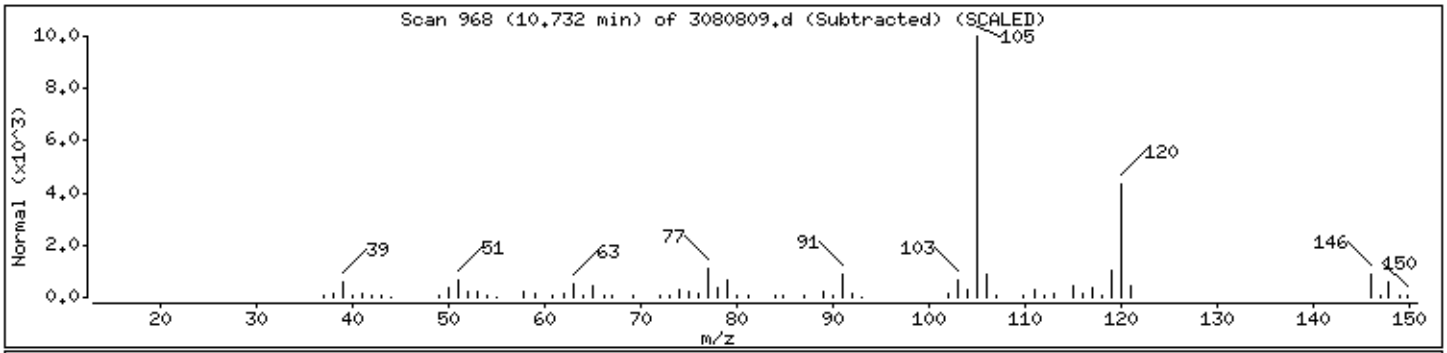
Sample Info: 30ml N2547

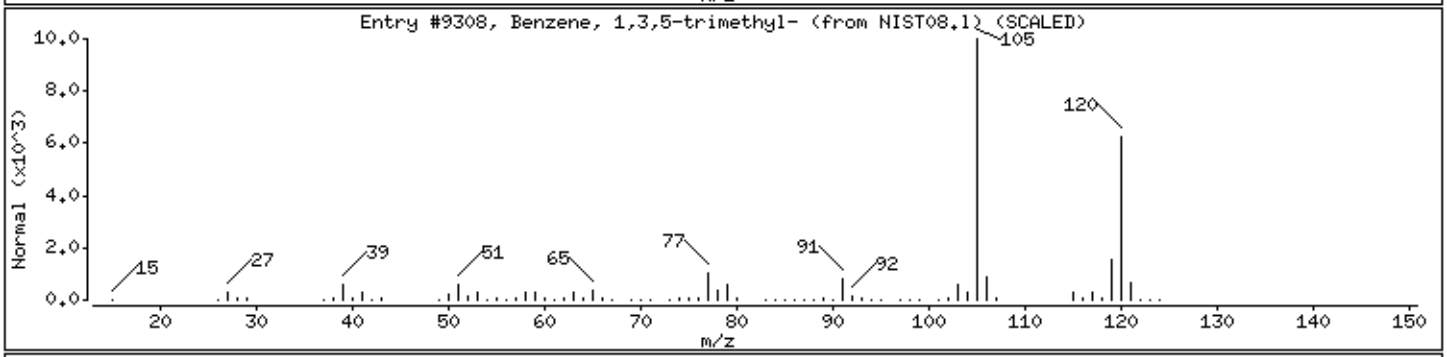
Operator: jg

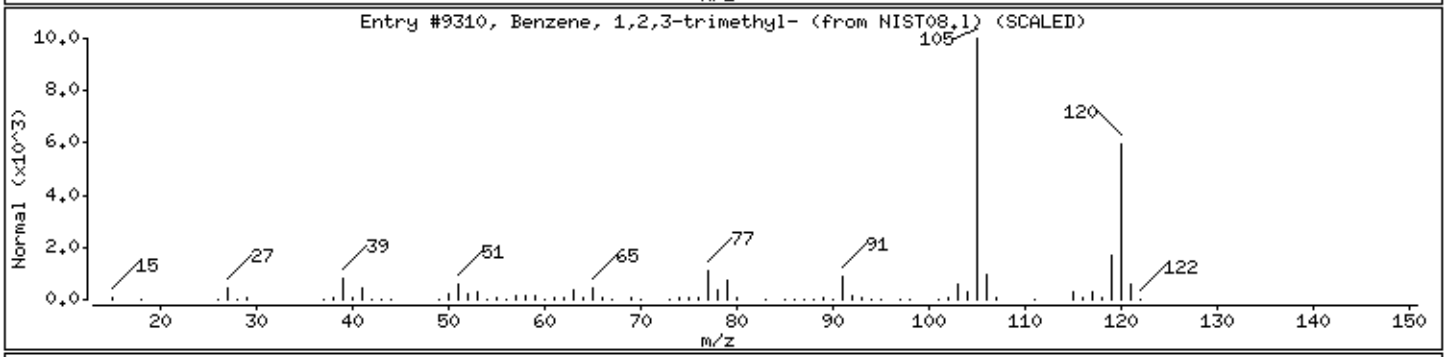
Column phase: RTX-624

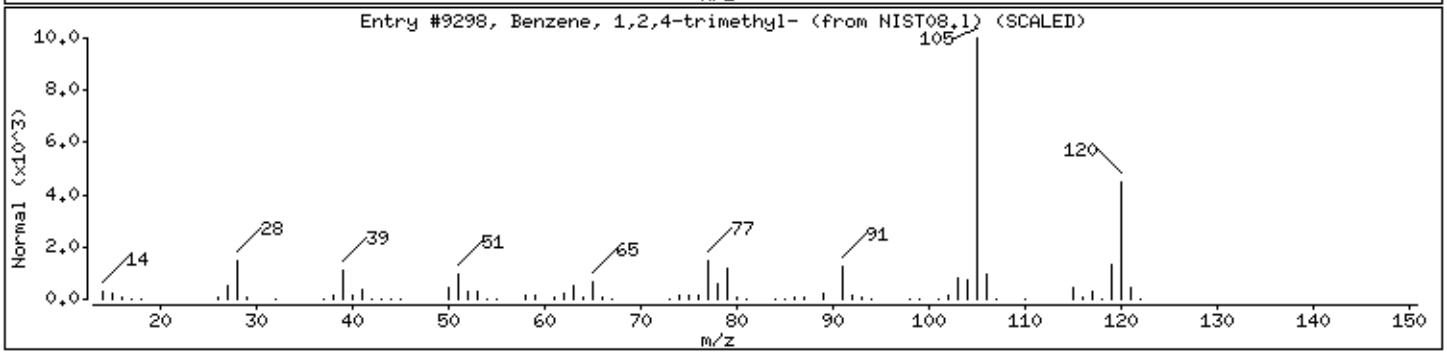
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9308	94	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	94	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9298	91	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

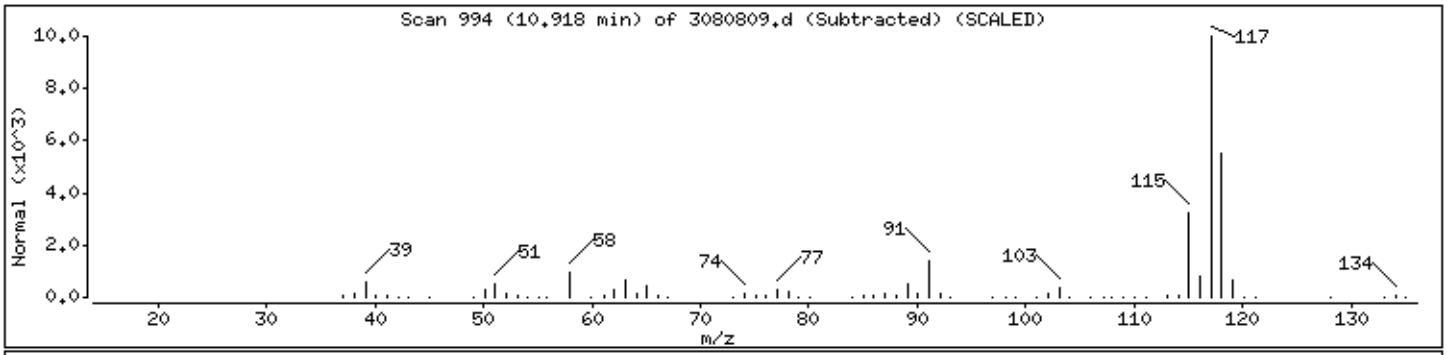
Sample Info: 30ml N2547

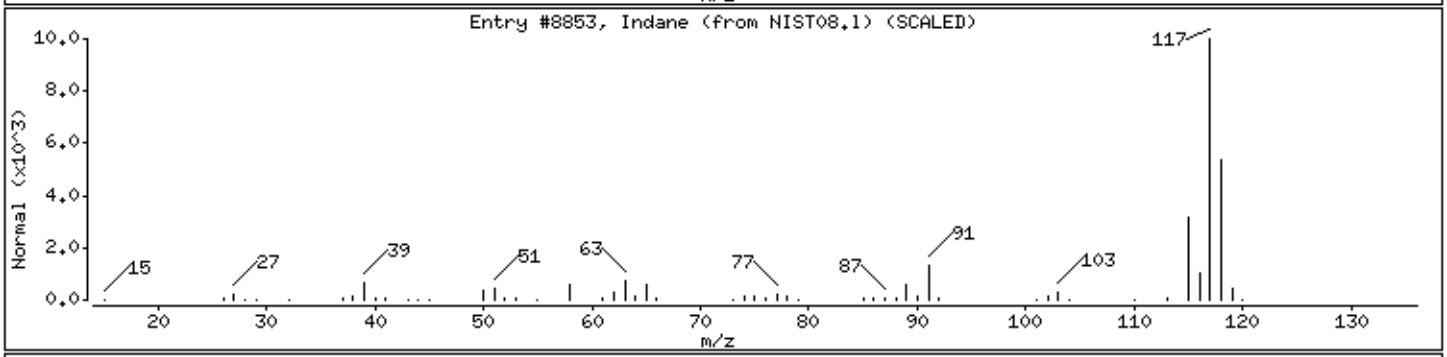
Operator: jg

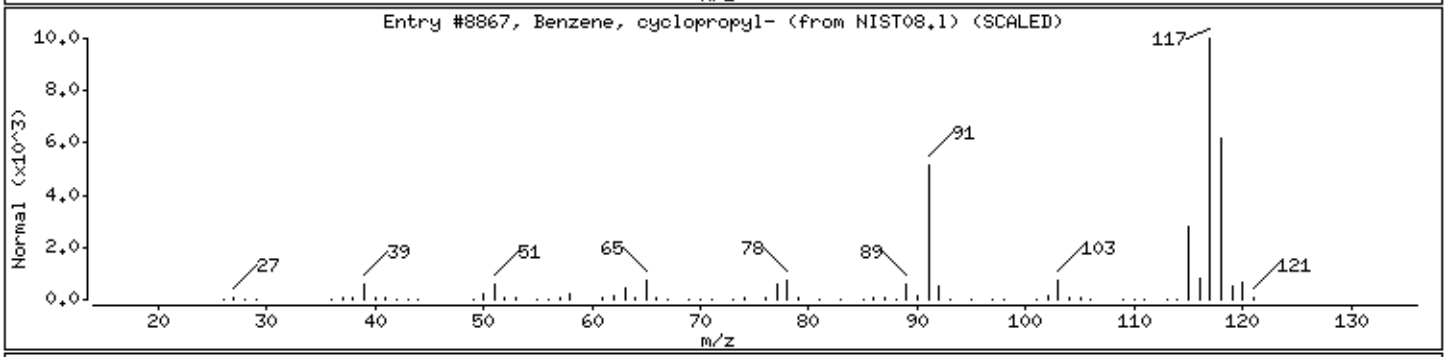
Column phase: RTX-624

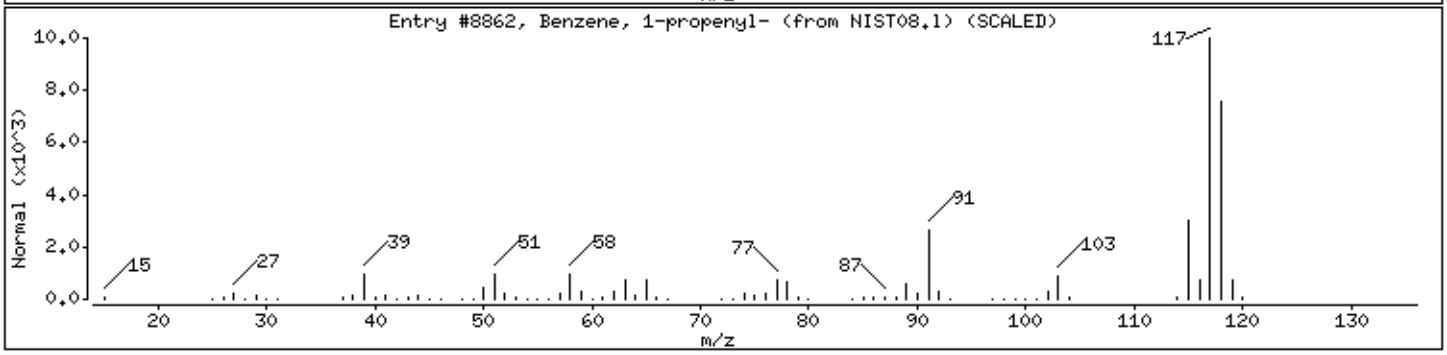
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indane	496-11-7	NIST08.l	8853	94	C9H10	118
Benzene, cyclopropyl-	873-49-4	NIST08.l	8867	74	C9H10	118
Benzene, 1-propenyl-	637-50-3	NIST08.l	8862	72	C9H10	118









Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

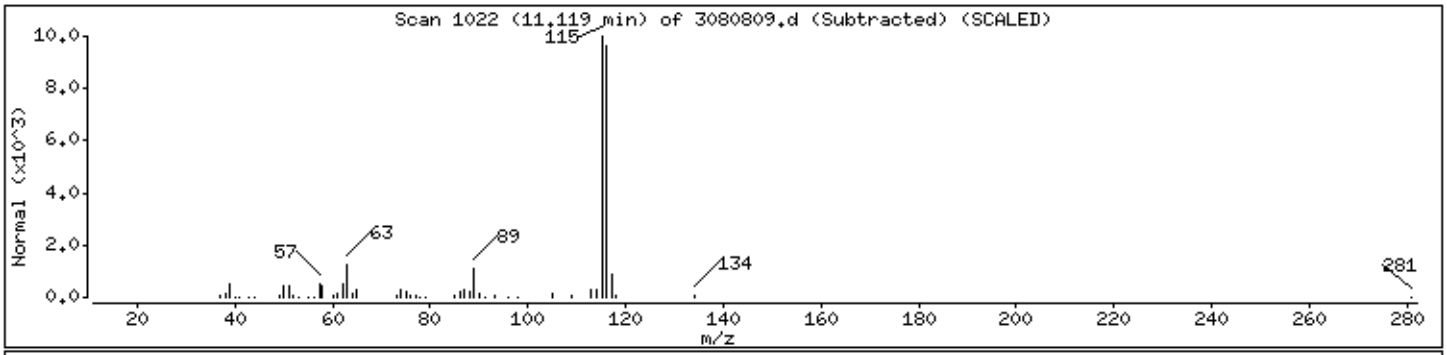
Sample Info: 30ml N2547

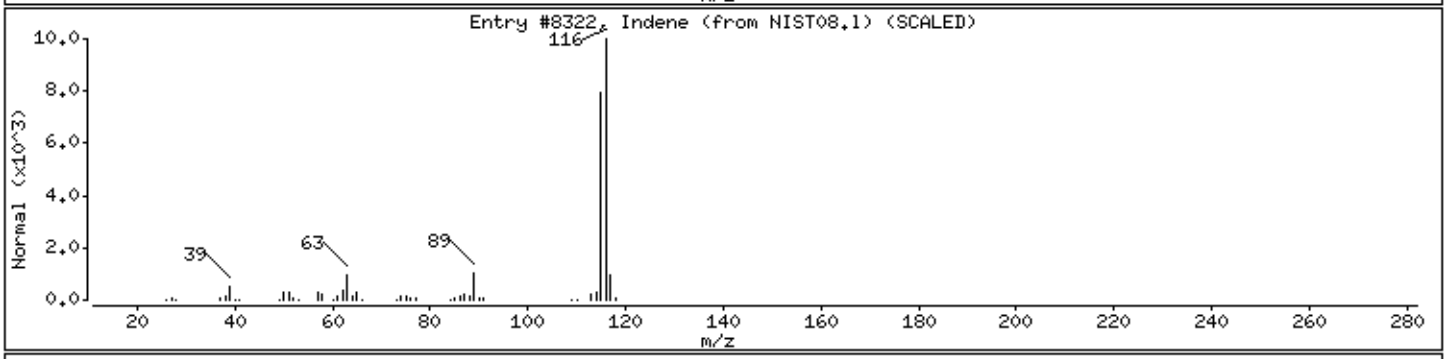
Operator: jg

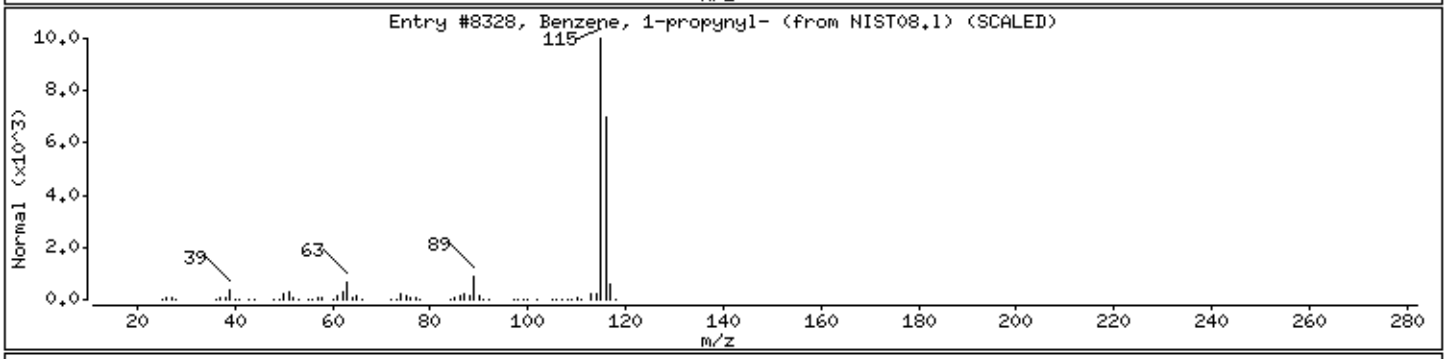
Column phase: RTX-624

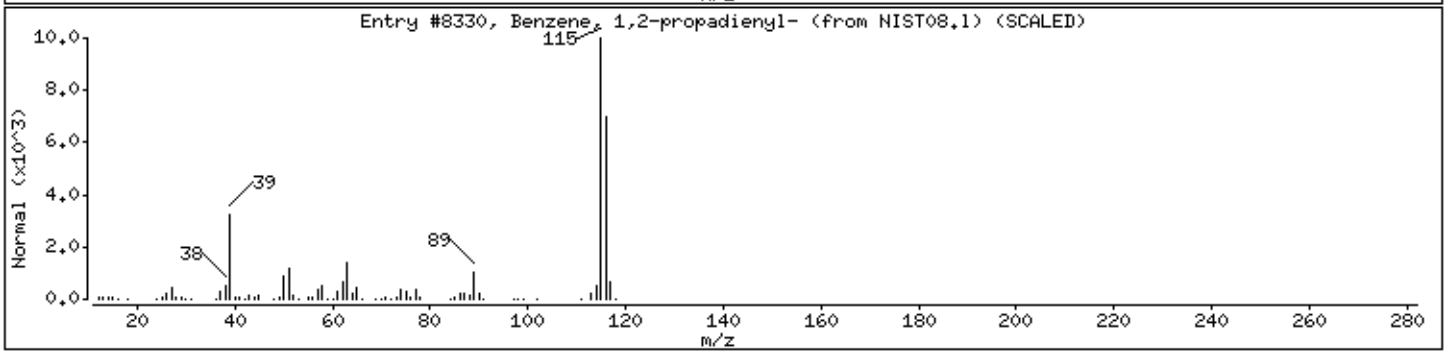
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indene	95-13-6	NIST08.l	8322	97	C9H8	116
Benzene, 1-propynyl-	673-32-5	NIST08.l	8328	94	C9H8	116
Benzene, 1,2-propadienyl-	2327-99-3	NIST08.l	8330	91	C9H8	116









Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

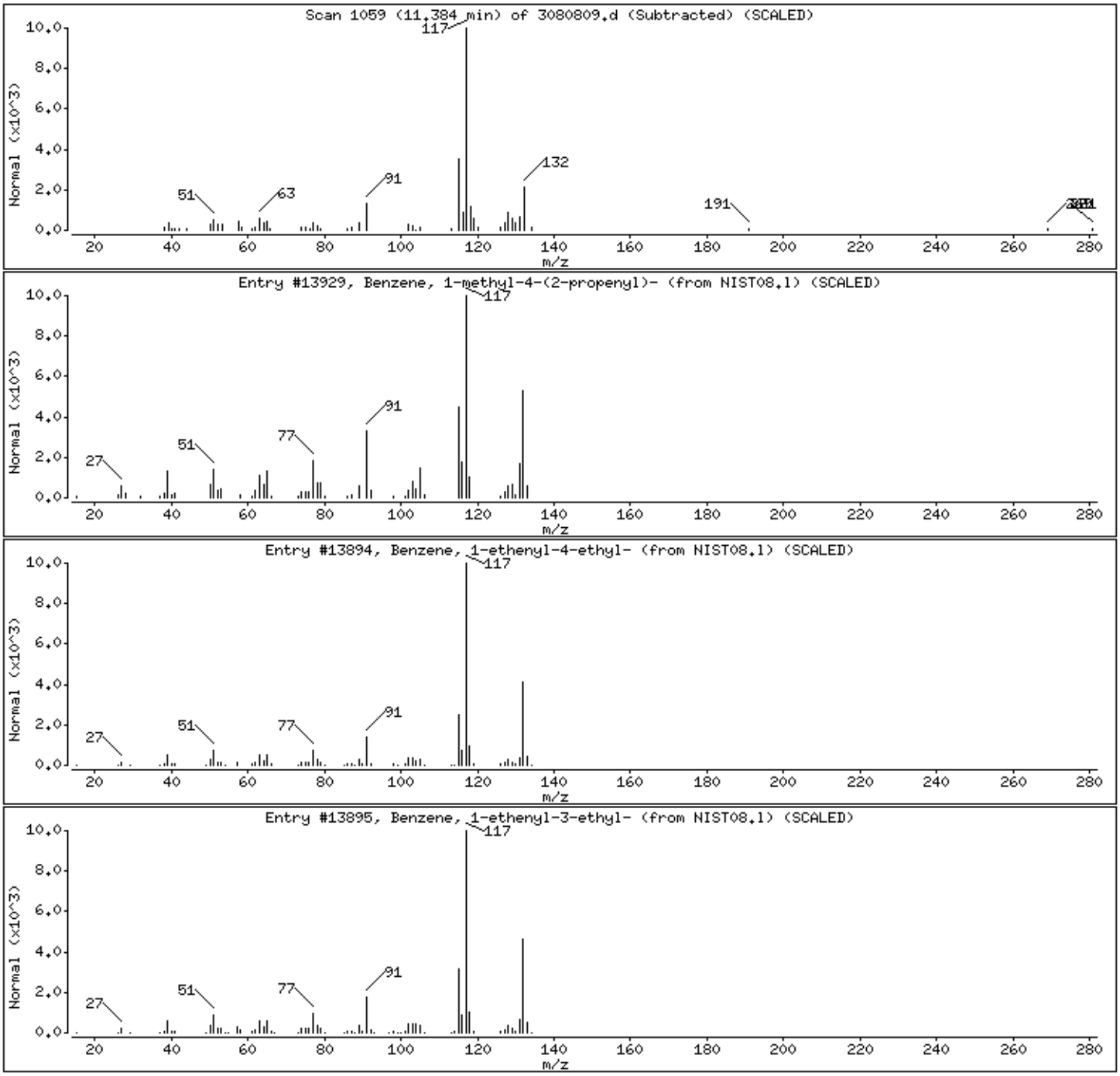
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-methyl-4-(2-propenyl)-	3333-13-9	NIST08.l	13929	83	C10H12	132
Benzene, 1-ethenyl-4-ethyl-	3454-07-7	NIST08.l	13894	80	C10H12	132
Benzene, 1-ethenyl-3-ethyl-	7525-62-4	NIST08.l	13895	80	C10H12	132



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

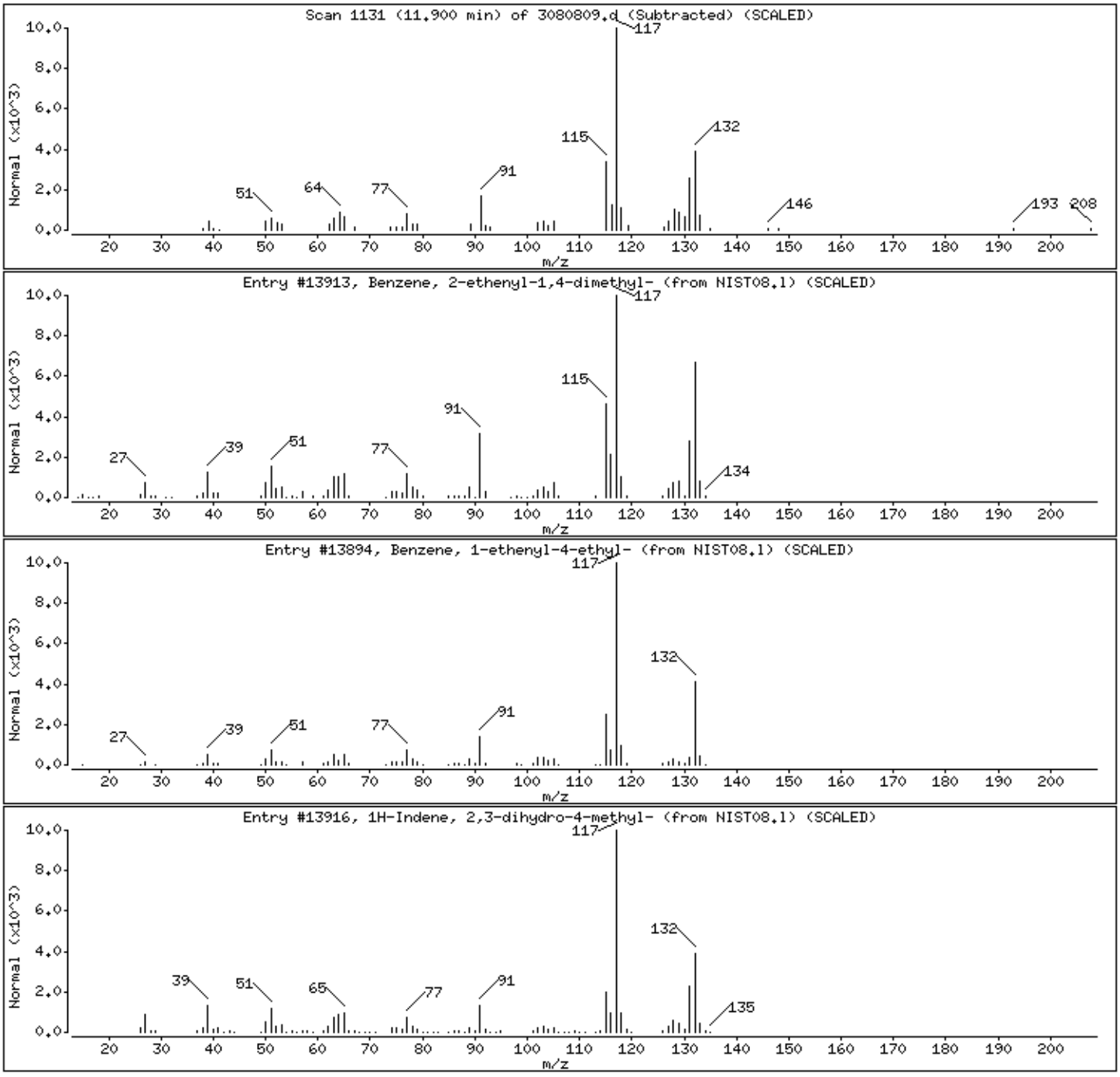
Sample Info: 30ml N2547

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 2-ethenyl-1,4-dimethyl-	2039-89-6	NIST08.l	13913	95	C10H12	132
Benzene, 1-ethenyl-4-ethyl-	3454-07-7	NIST08.l	13894	94	C10H12	132
1H-Indene, 2,3-dihydro-4-methyl-	824-22-6	NIST08.l	13916	91	C10H12	132



Data File: /chem/msd3.i/08aug17.b/3080809.d

Date : 08-AUG-2017 16:02

Client ID:

Instrument: msd3.i

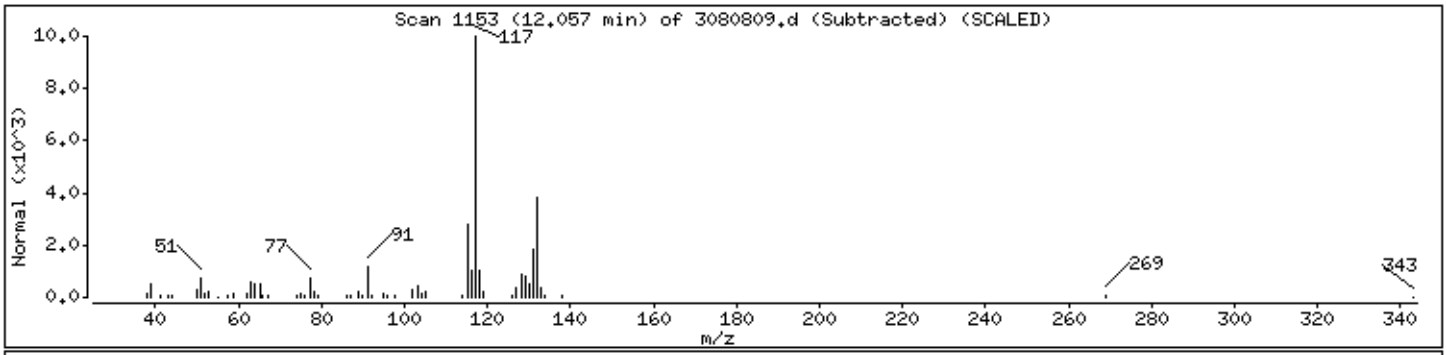
Sample Info: 30ml N2547

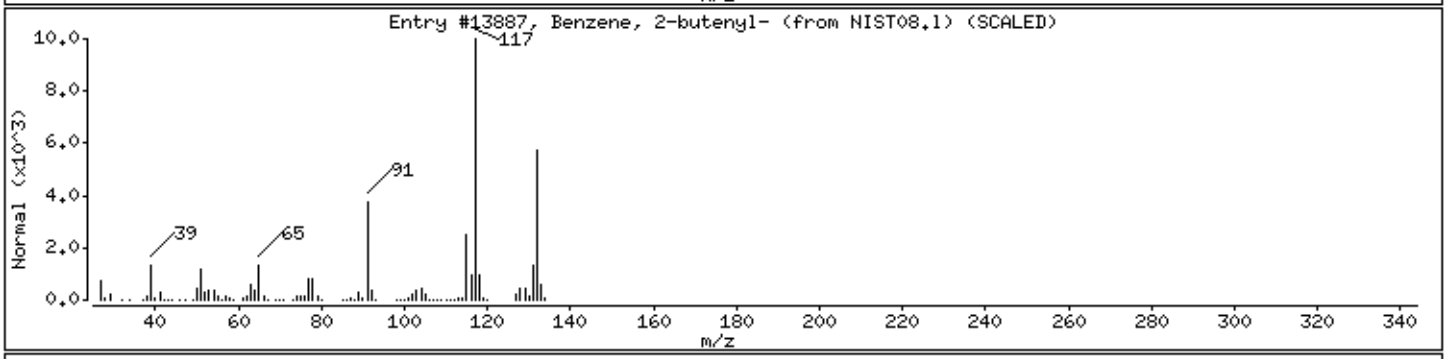
Operator: jg

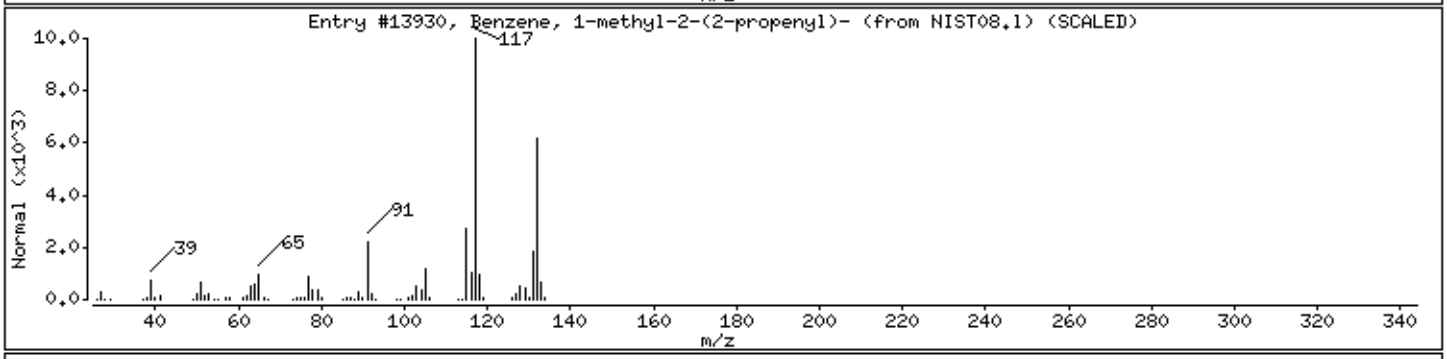
Column phase: RTX-624

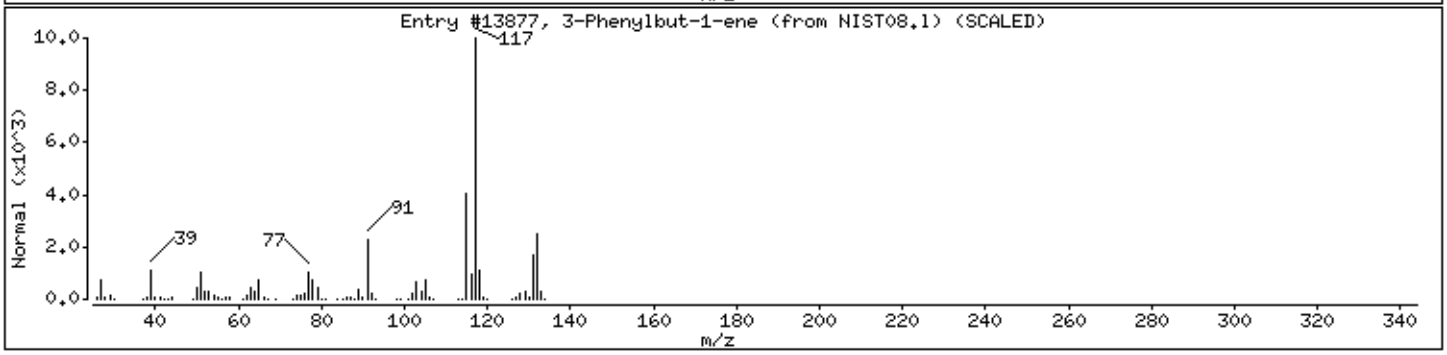
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 2-butenyl-	1560-06-1	NIST08.l	13887	91	C10H12	132
Benzene, 1-methyl-2-(2-propenyl)-	1587-04-8	NIST08.l	13930	90	C10H12	132
3-Phenylbut-1-ene	934-10-1	NIST08.l	13877	90	C10H12	132









EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SH-G_0817		
Lab ID:	1708091B-16A	**Date/Time Analyzed:**	8/8/17 04:26 PM
Date/Time Collected:	8/3/17 03:42 PM	**Dilution Factor:**	12.5
Media:		**Instrument/Filename:**	msd3.i / 3080810

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	1.9	8.0	20	150
Ethyl Benzene	100-41-4	2.5	11	27	370
m,p-Xylene	108-38-3	2.5	11	27	630
Naphthalene	91-20-3	0.94	5.2	66	700
o-Xylene	95-47-6	1.1	11	27	260
Toluene	108-88-3	1.5	9.4	24	290
Total Xylene	1330-20-7	NA	D	54	890

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	95%		680 NJ
Limonene	138-86-3	94%		3900 NJB

NJ =The identification is based on presumptive evidence; estimated value.
B = Analyte present in laboratory blank greater than reporting limit.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	96

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080810.d
Lab Smp Id: 1708091B-16A
Inj Date : 08-AUG-2017 16:26
Operator : jg Inst ID: msd3.i
Smp Info : 30ml 32119
Misc Info : 8.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 5
Dil Factor: 12.50000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.410 (1.000)	130	189866	25.0000			80.00- 120.00	100.00
5.410	5.410 (1.000)	128	147525				46.73- 106.73	77.70
5.410	5.410 (1.000)	49	206328				91.08- 151.08	108.67
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	687131	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	95130				0.00- 44.78	13.84
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	628040	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	299574				20.58- 80.58	47.70
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	215599	22.2187	22.219		80.00- 120.00	100.00(a)
5.956	5.956 (1.101)	67	110946				24.54- 84.54	51.46
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	671244	24.0829	24.083		80.00- 120.00	100.00(a)
7.523	7.523 (1.193)	70	67511				0.00- 40.44	10.06

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	435582			35.27- 95.27	64.89
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	407226	24.8349	24.835	80.00- 120.00	100.00(a)
9.737	9.737 (1.112)	95	422350			84.77- 144.77	103.71
9.737	9.737 (1.112)	176	393851			64.74- 124.74	96.72
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	85228	3.81765	47.721	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	20248			0.00- 53.39	23.76
147 Toluene					CAS #: 108-88-3		
7.580	7.574 (1.202)	91	187980	6.25965	78.246	80.00- 120.00	100.00
7.580	7.574 (1.202)	92	106835			27.96- 87.96	56.83
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	90592	6.78500	84.812	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	276603			272.32- 332.32	305.33
169 m,p-Xylene					CAS #: 108-38-3		
8.920	8.920 (1.019)	106	193842	11.6088	145.11	80.00- 120.00	100.00
8.920	8.920 (1.019)	91	368649			165.91- 225.91	190.18
171 o-Xylene					CAS #: 95-47-6		
9.264	9.264 (1.058)	106	75471	4.75282	59.410	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	152593			175.85- 235.85	202.19
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.453)	128	727605	10.6460	133.07	80.00- 120.00	100.00
12.716	12.717 (1.452)	127	94589			0.00- 43.00	13.00
M 239 Total Xylene					CAS #: 1330-20-7		
			269313	16.3616	204.52		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080810.d
Lab Smp Id: 1708091B-16A
Inj Date : 08-AUG-2017 16:26
Operator : jg Inst ID: msd3.i
Smp Info : 30ml 32119
Misc Info : 8.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 5
Dil Factor: 12.50000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.410	910161	25.000
* 163 Chlorobenzene-d5	8.755	2028367	25.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.353	3069628	84.3154839	1053.9	0		0	98
Isobutane				CAS #: 75-28-5			
1.646	134222	3.68676609	46.084	72	NIST08.1	235	98
Ethene, 1,2-dichloro-, (E)-				CAS #: 156-60-5			
5.186	101365	2.78427019	34.803	96	NIST08.1	2681	98
Benzene, 1-ethyl-2-methyl-				CAS #: 611-14-3			
9.966	513942	6.33443195	79.180	95	NIST08.1	9314	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.037	660746	8.14381739	101.80	97	NIST08.l	9301	163
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.360	699116	8.61672893	107.71	97	NIST08.l	9309	163
Limonene				CAS #: 138-86-3			
10.553	25273112	311.495706	3893.7	94	NIST08.l	15483	163(L)
Benzene, 1-methyl-4-(1-methylethyl)-				CAS #: 99-87-6			
10.603	1149612	14.1691727	177.11	91	NIST08.l	14733	163
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.732	255955	3.15469738	39.434	94	NIST08.l	9310	163
Indane				CAS #: 496-11-7			
10.918	4404599	54.2874795	678.59	95	NIST08.l	8853	163
Indene				CAS #: 95-13-6			
11.119	445590	5.49198191	68.650	97	NIST08.l	8322	163
Benzene, 1-butenyl-, (E)-				CAS #: 1005-64-7			
11.384	231681	2.85551189	35.694	86	NIST08.l	13893	163
Benzene, (1-methyl-1-propenyl)-, (Z)-				CAS #: 767-99-7			
12.057	271133	3.34176288	41.772	86	NIST08.l	13934	163

QC Flag Legend

L - Operator selected an alternate library search match.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080810.d
Lab Smp Id: 1708091B-16A
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 8.5 Hg->5 psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	189866	-3.60
123 1,4-Difluorobenze	728289	436973	1019605	687131	-5.65
163 Chlorobenzene-d5	663497	398098	928896	628040	-5.34

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:40

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-16A
Level: LOW Operator: jg
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 8.5 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.219	88.87	70-130
$ 146 Toluene-d8	25.000	24.083	96.33	70-130
$ 177 4-Bromofluorobenze	25.000	24.835	99.34	70-130

X

Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

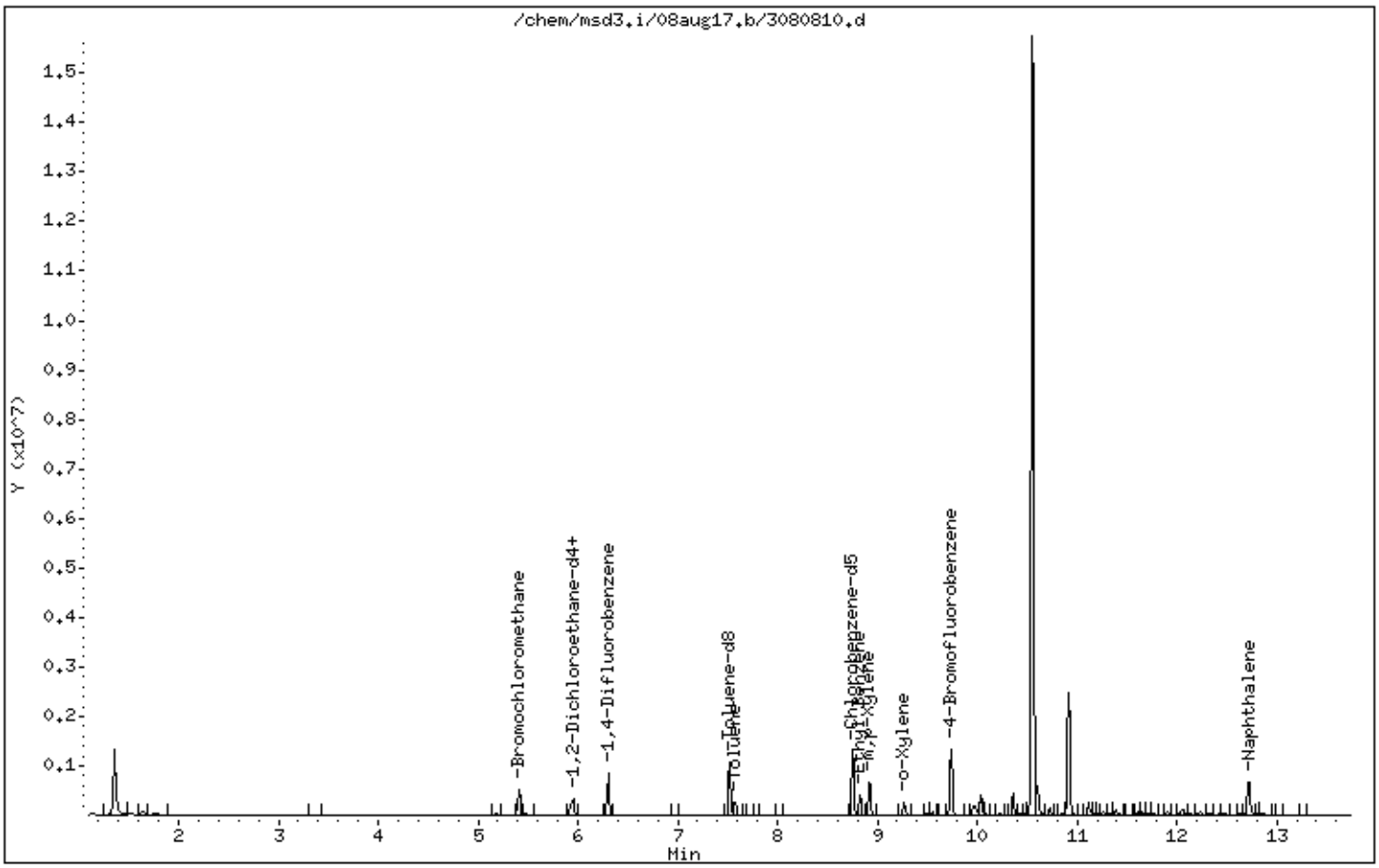
Instrument: msd3.i

Sample Info: 30ml 32119

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

Sample Info: 30ml 32119

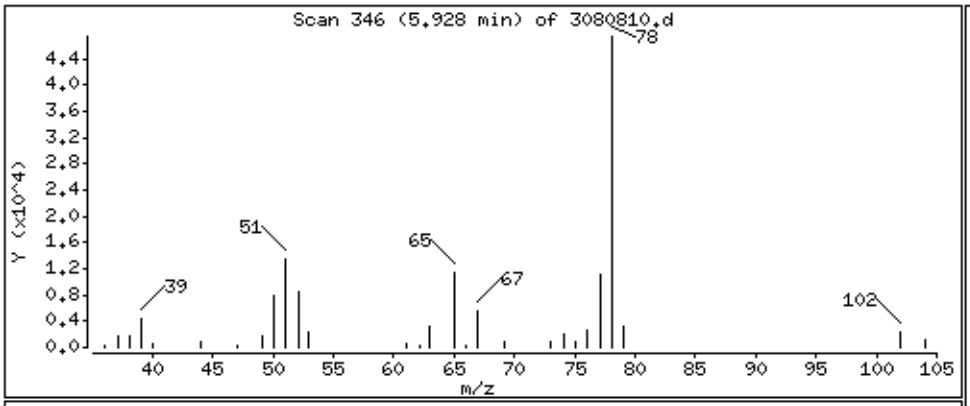
Operator: jg

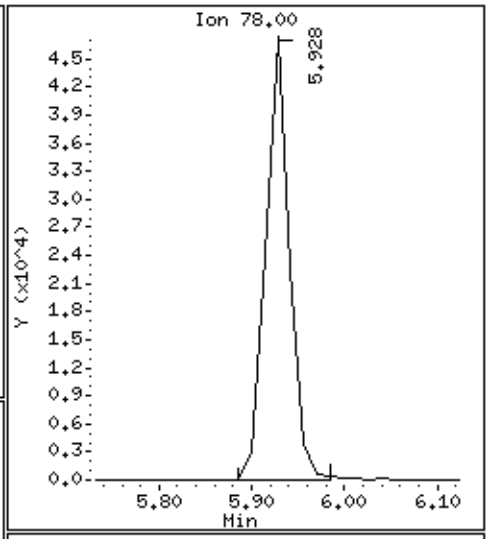
Column phase: RTX-624

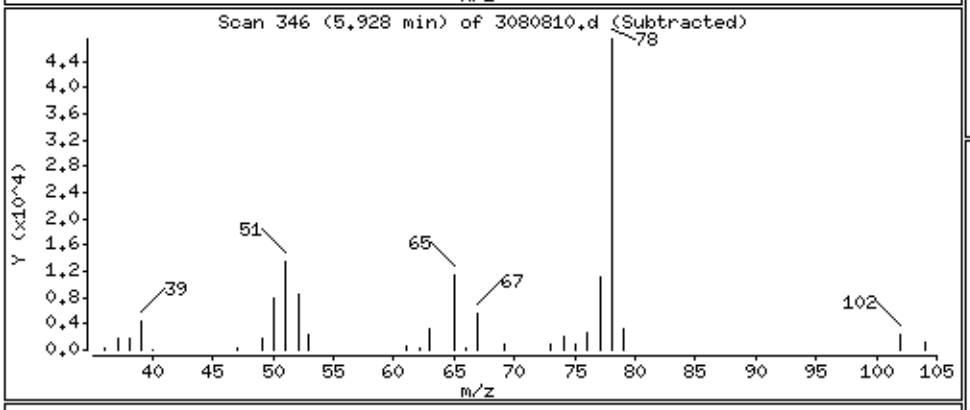
Column diameter: 0.25

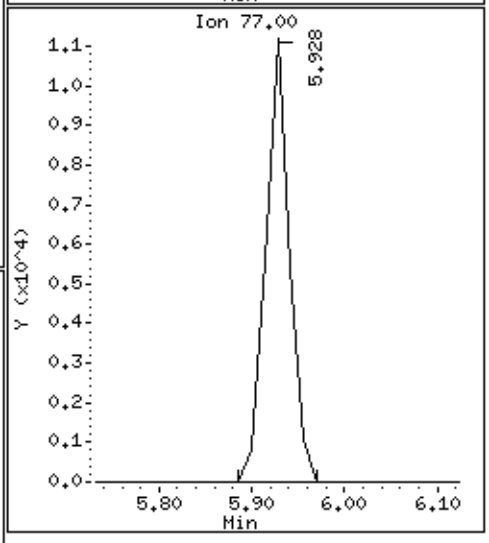
116 Benzene

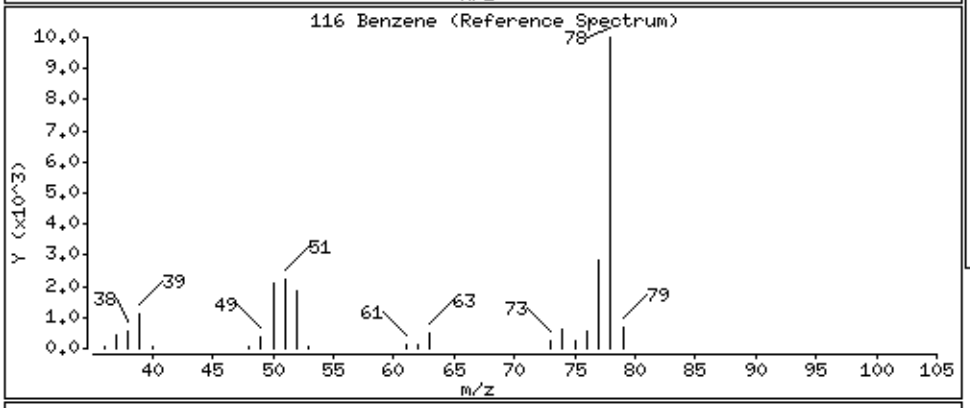
Concentration: 47.721 PPBV

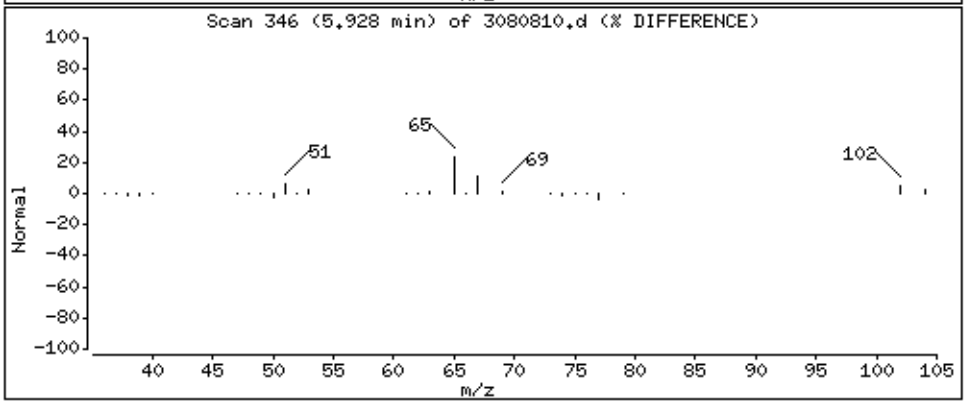












Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

Sample Info: 30ml 32119

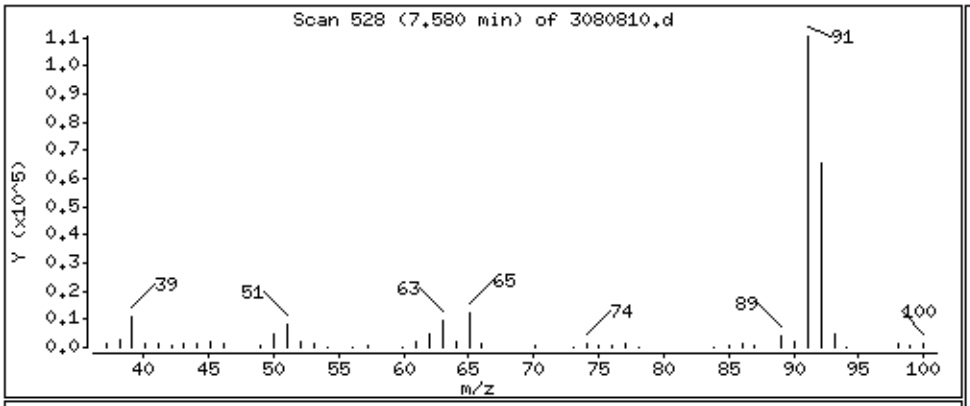
Operator: jg

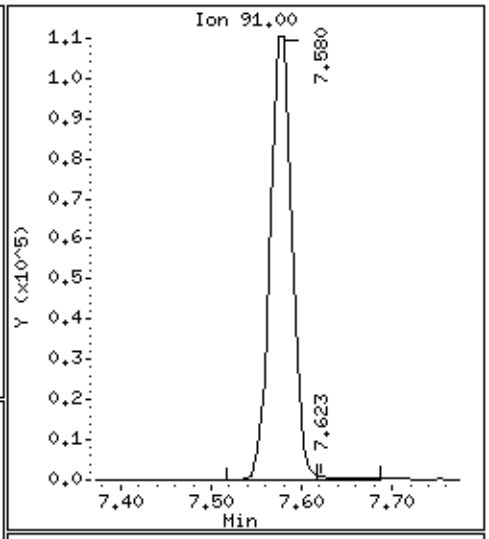
Column phase: RTX-624

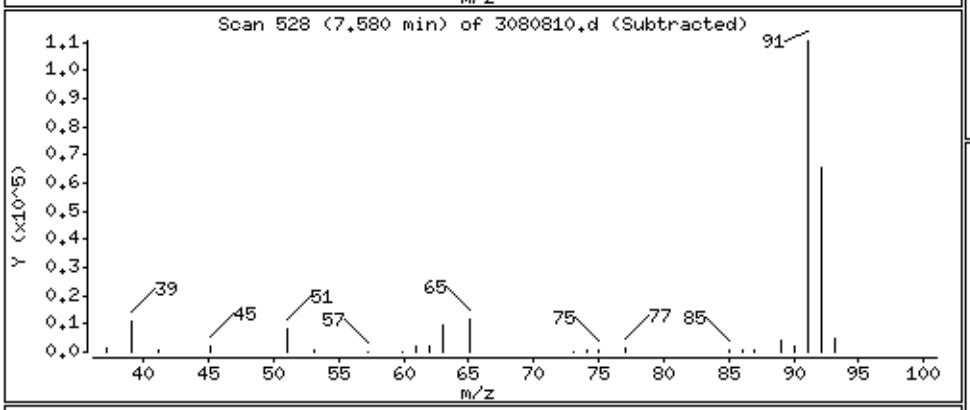
Column diameter: 0.25

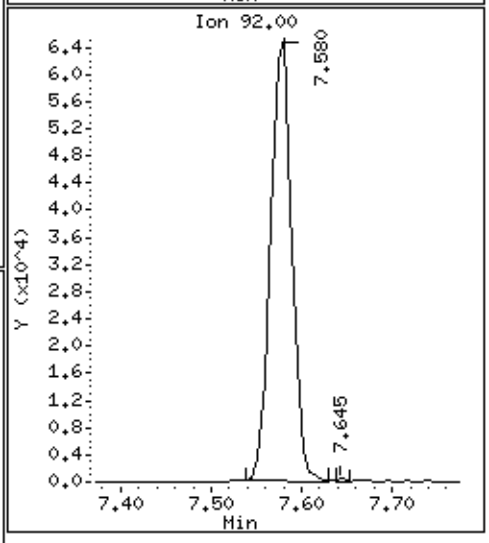
147 Toluene

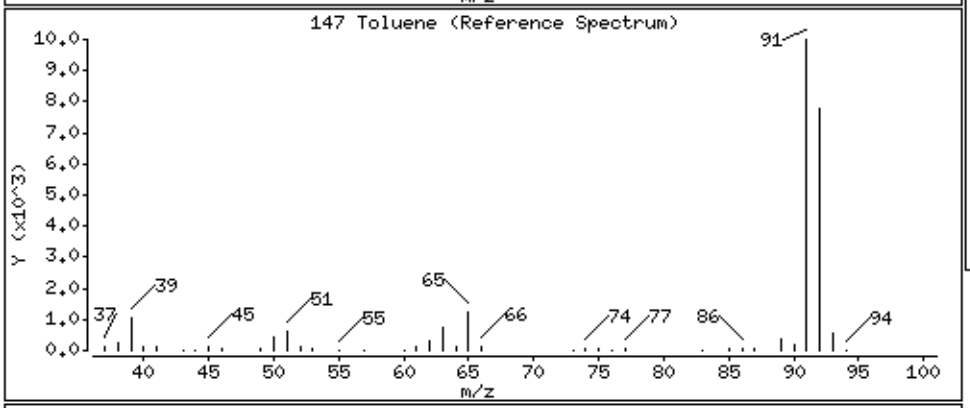
Concentration: 78.246 PPBV

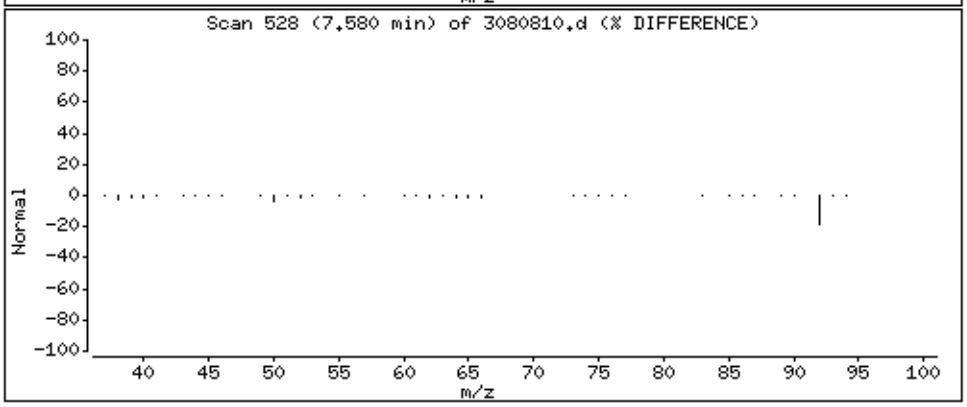












Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

Sample Info: 30ml 32119

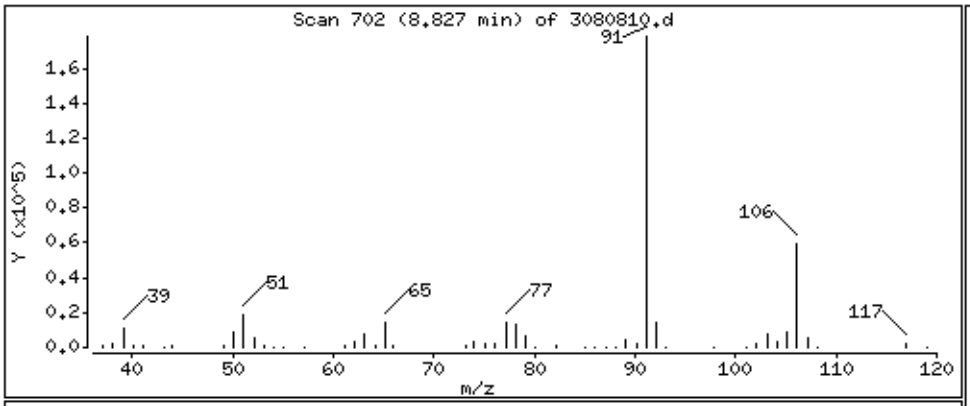
Operator: jg

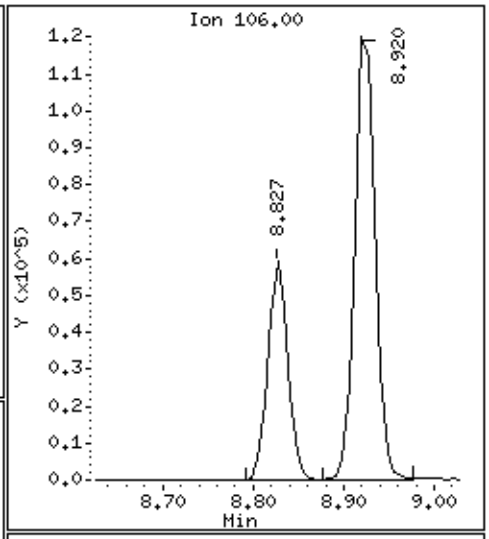
Column phase: RTX-624

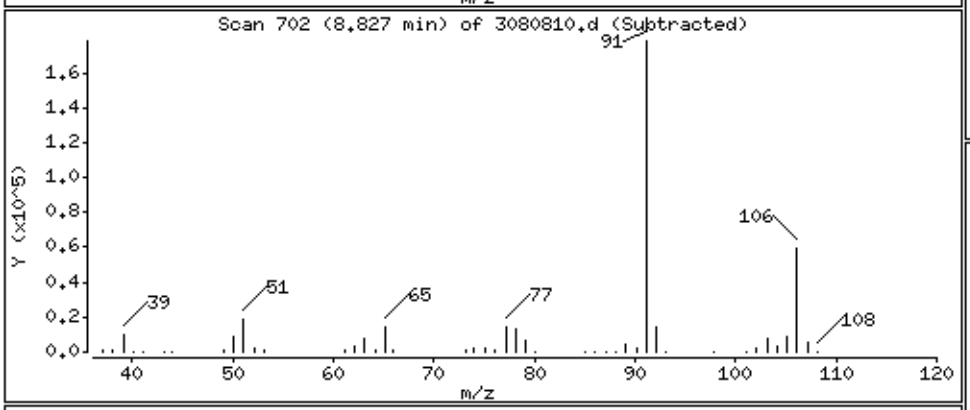
Column diameter: 0.25

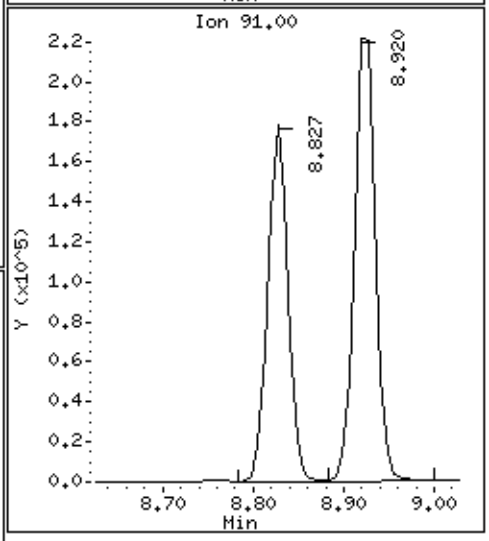
167 Ethyl Benzene

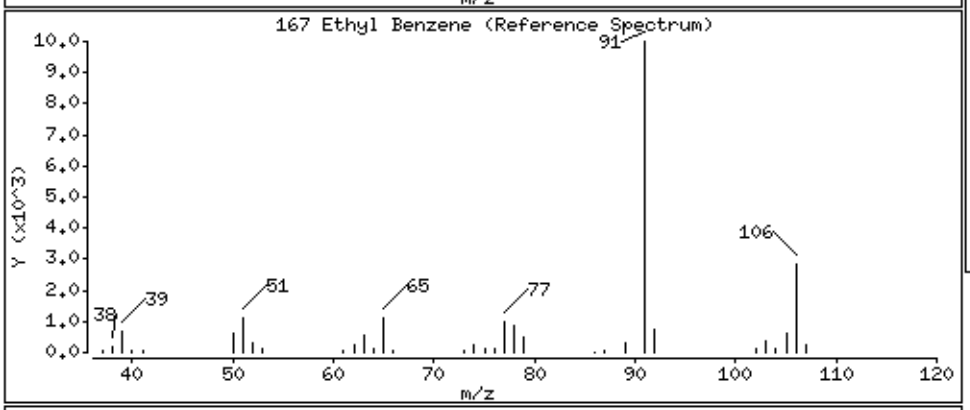
Concentration: 84.812 PPBV

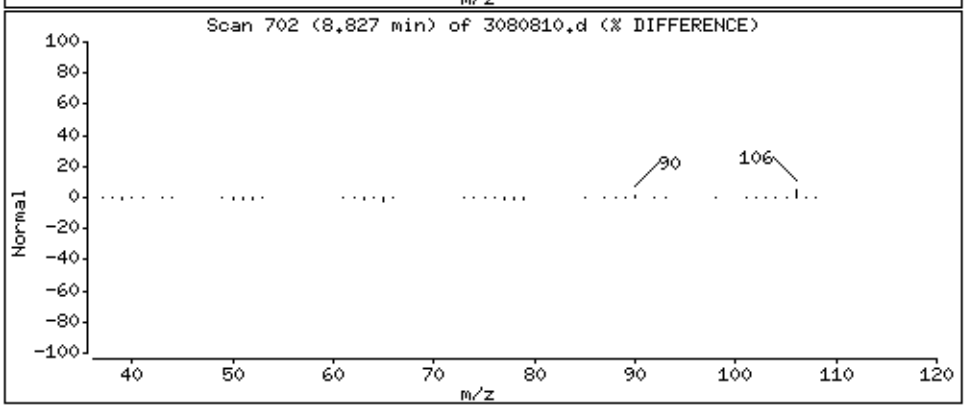












Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

Sample Info: 30ml 32119

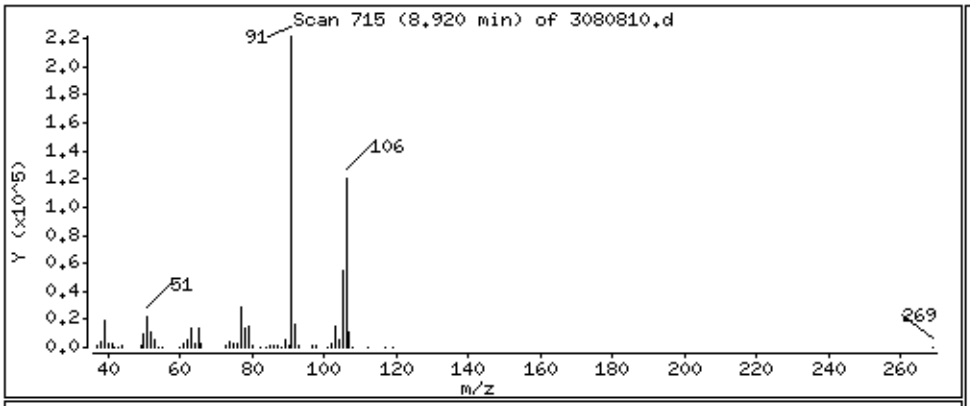
Operator: jg

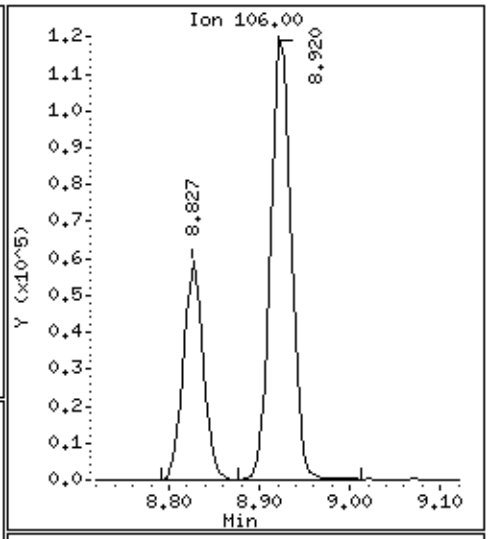
Column phase: RTX-624

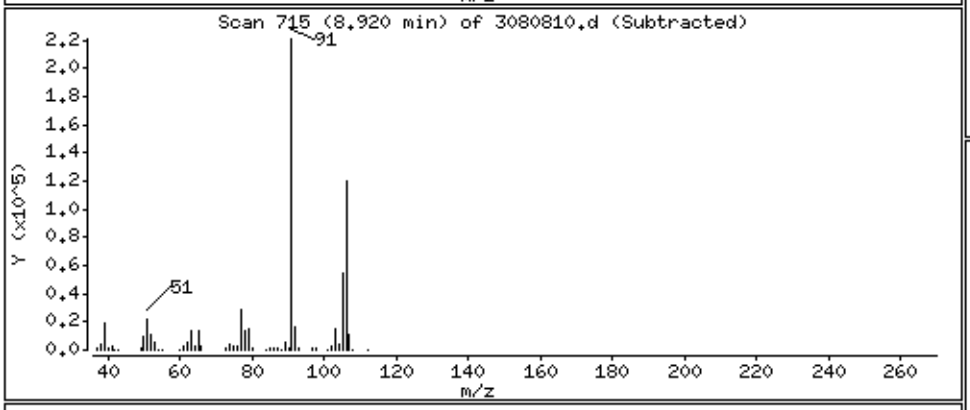
Column diameter: 0.25

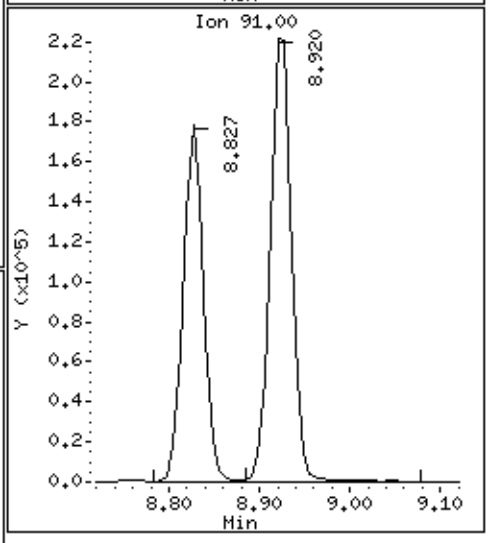
169 m,p-Xylene

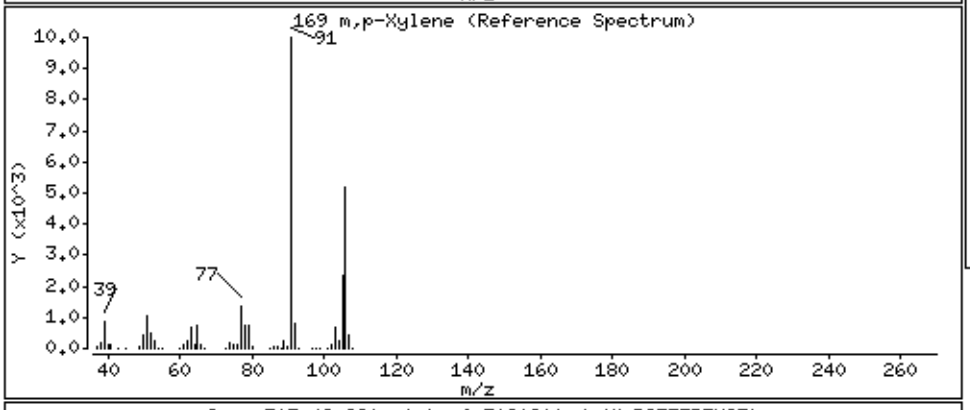
Concentration: 145.11 PPBV

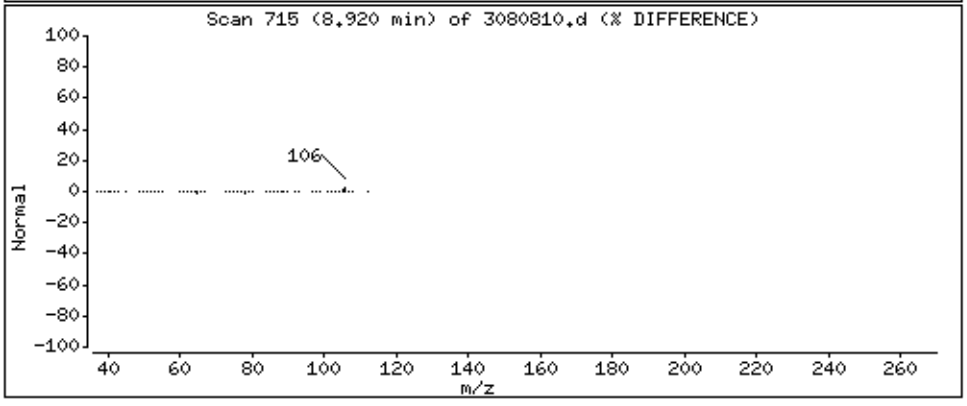












Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

Sample Info: 30ml 32119

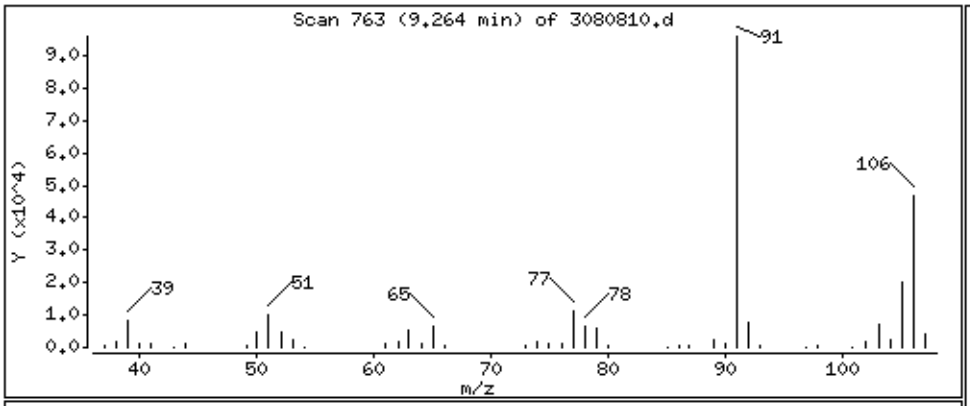
Operator: jg

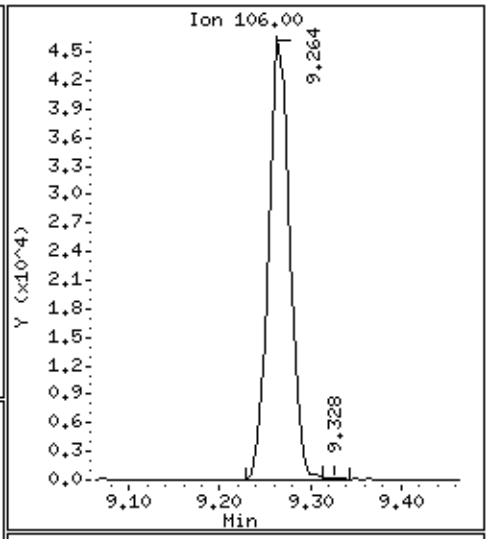
Column phase: RTX-624

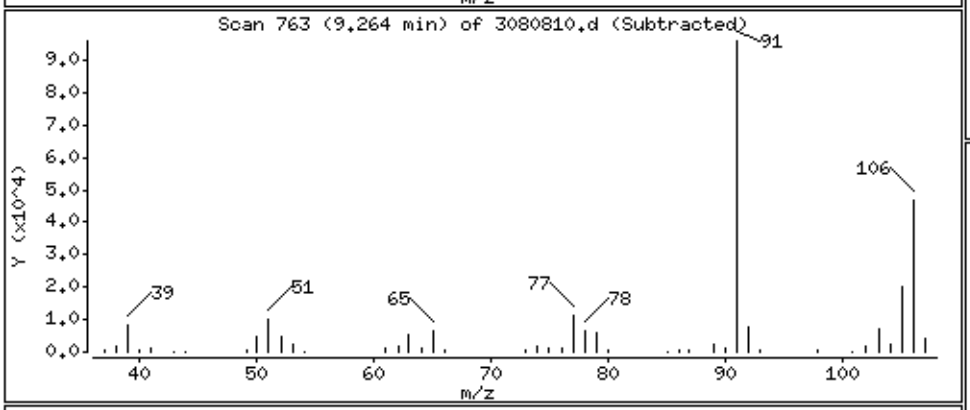
Column diameter: 0.25

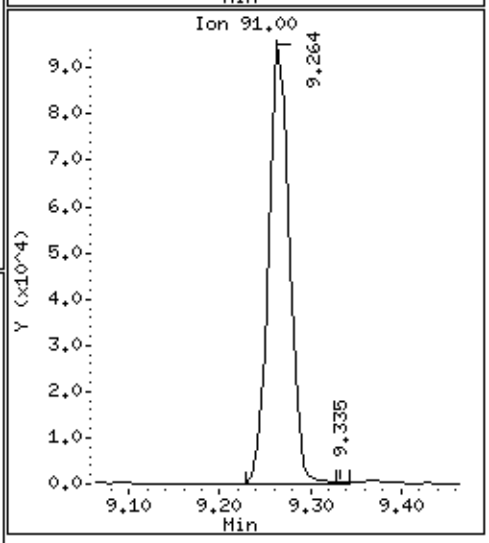
171 o-Xylene

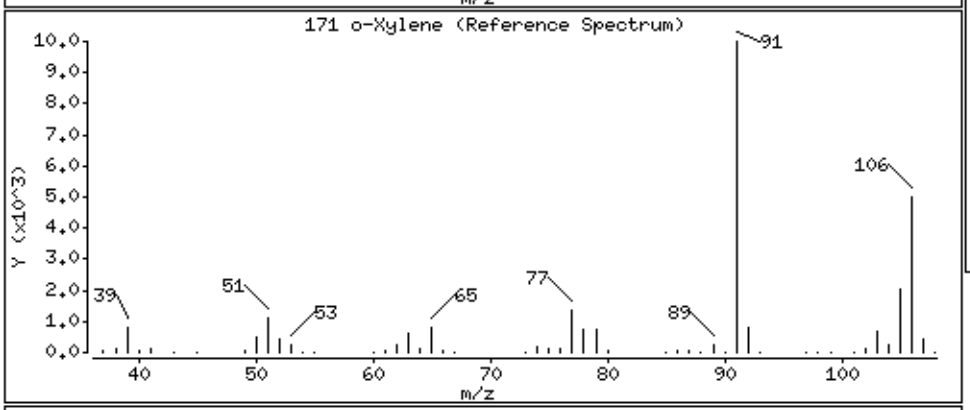
Concentration: 59.410 PPBV

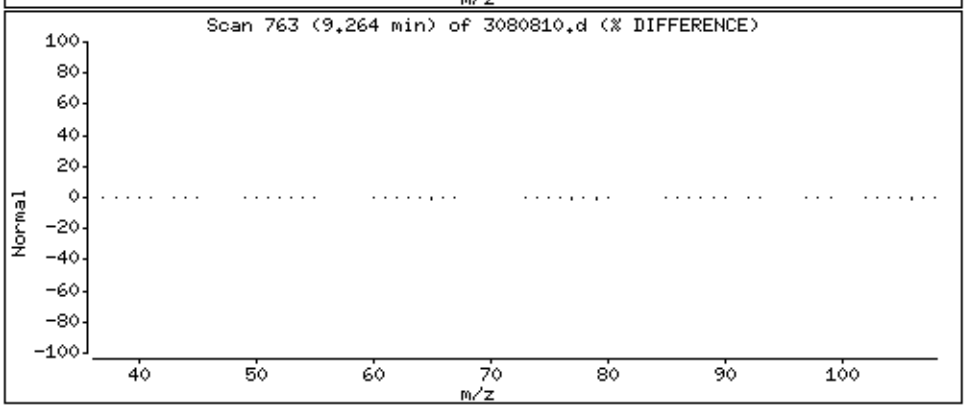












Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

Sample Info: 30ml 32119

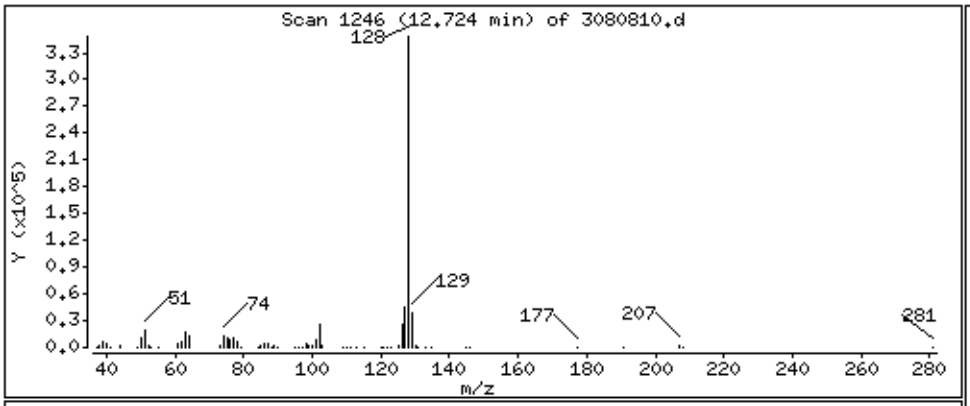
Operator: jg

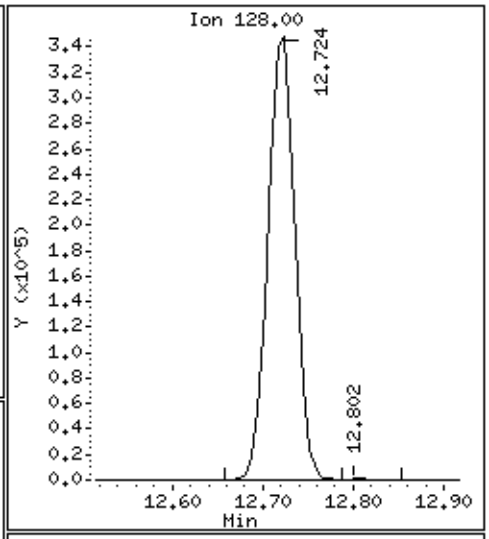
Column phase: RTX-624

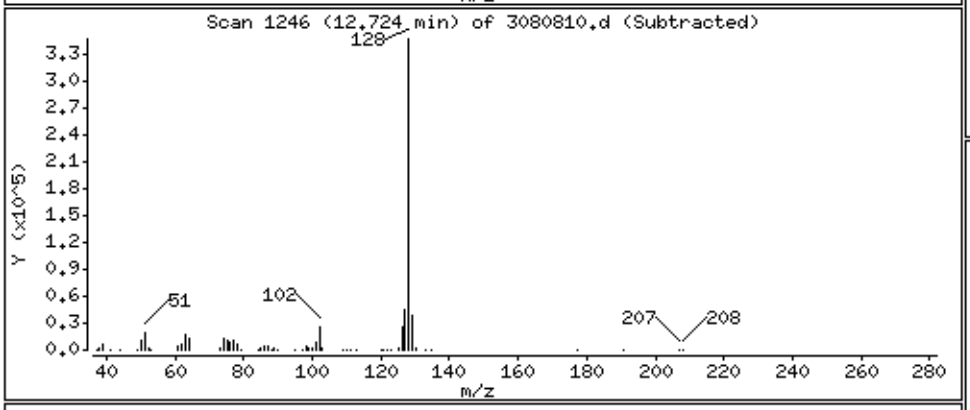
Column diameter: 0.25

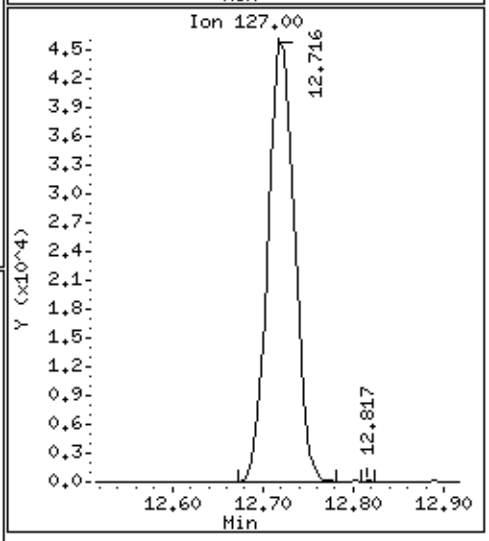
228 Naphthalene

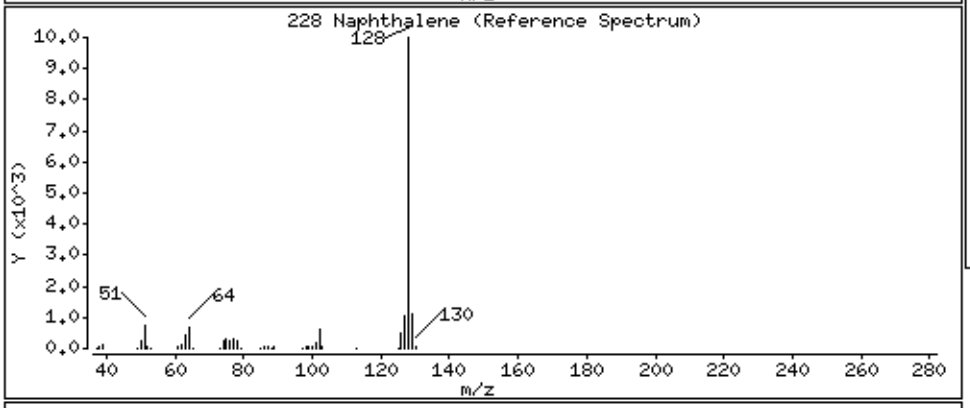
Concentration: 133.07 PPBV

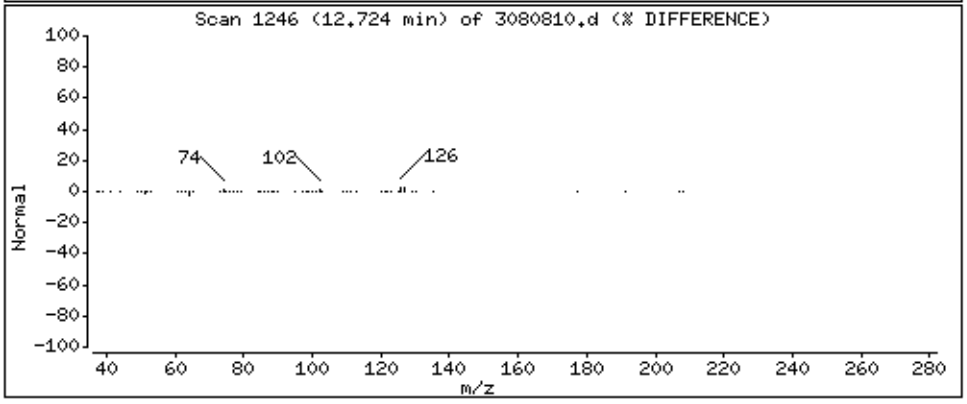












Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

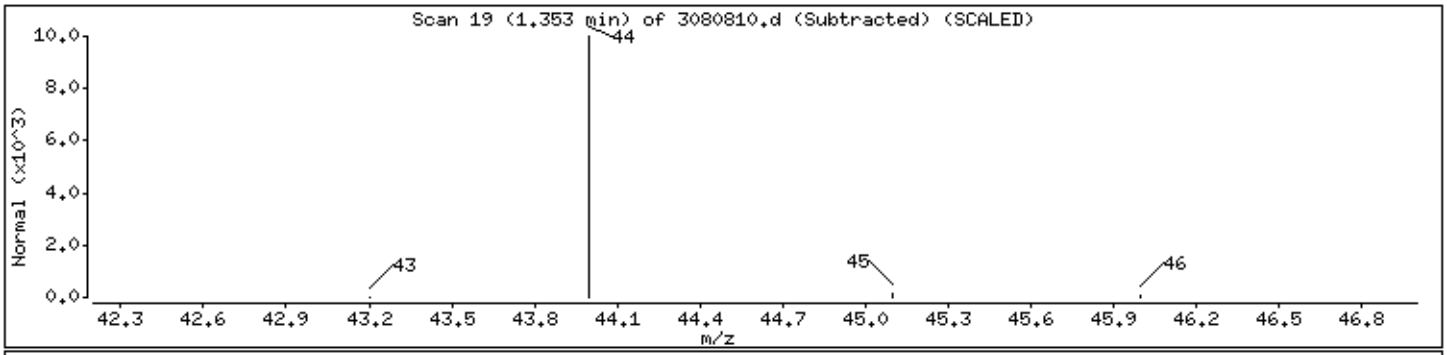
Sample Info: 30ml 32119

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

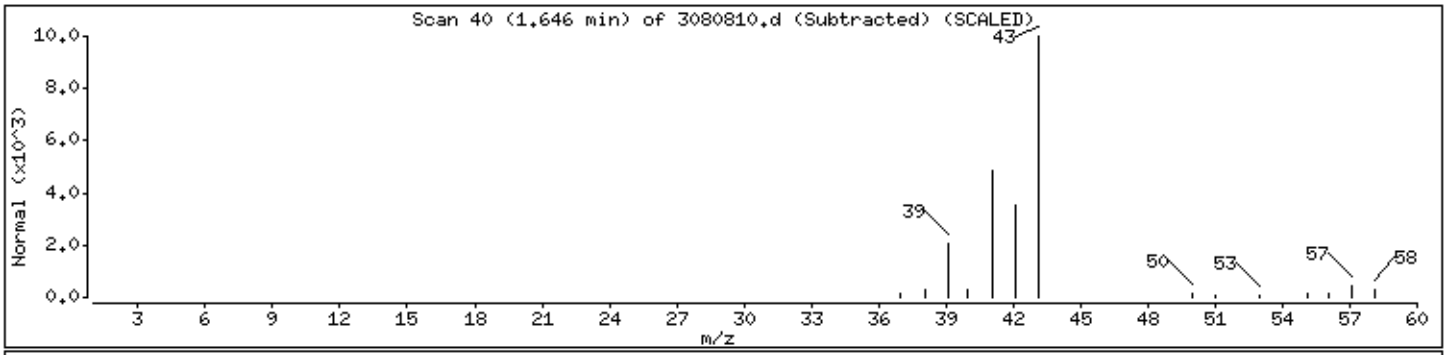
Sample Info: 30ml 32119

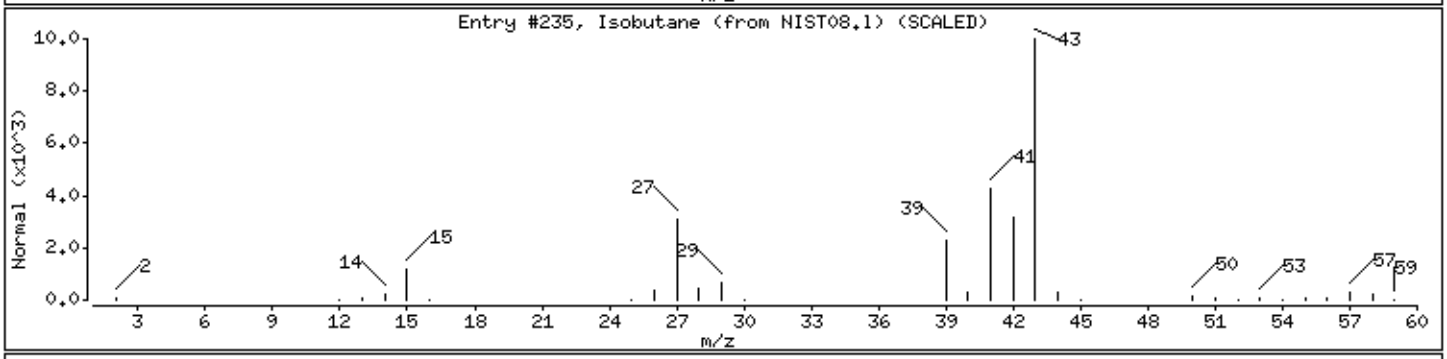
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isobutane	75-28-5	NIST08.l	235	72	C4H10	58





Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

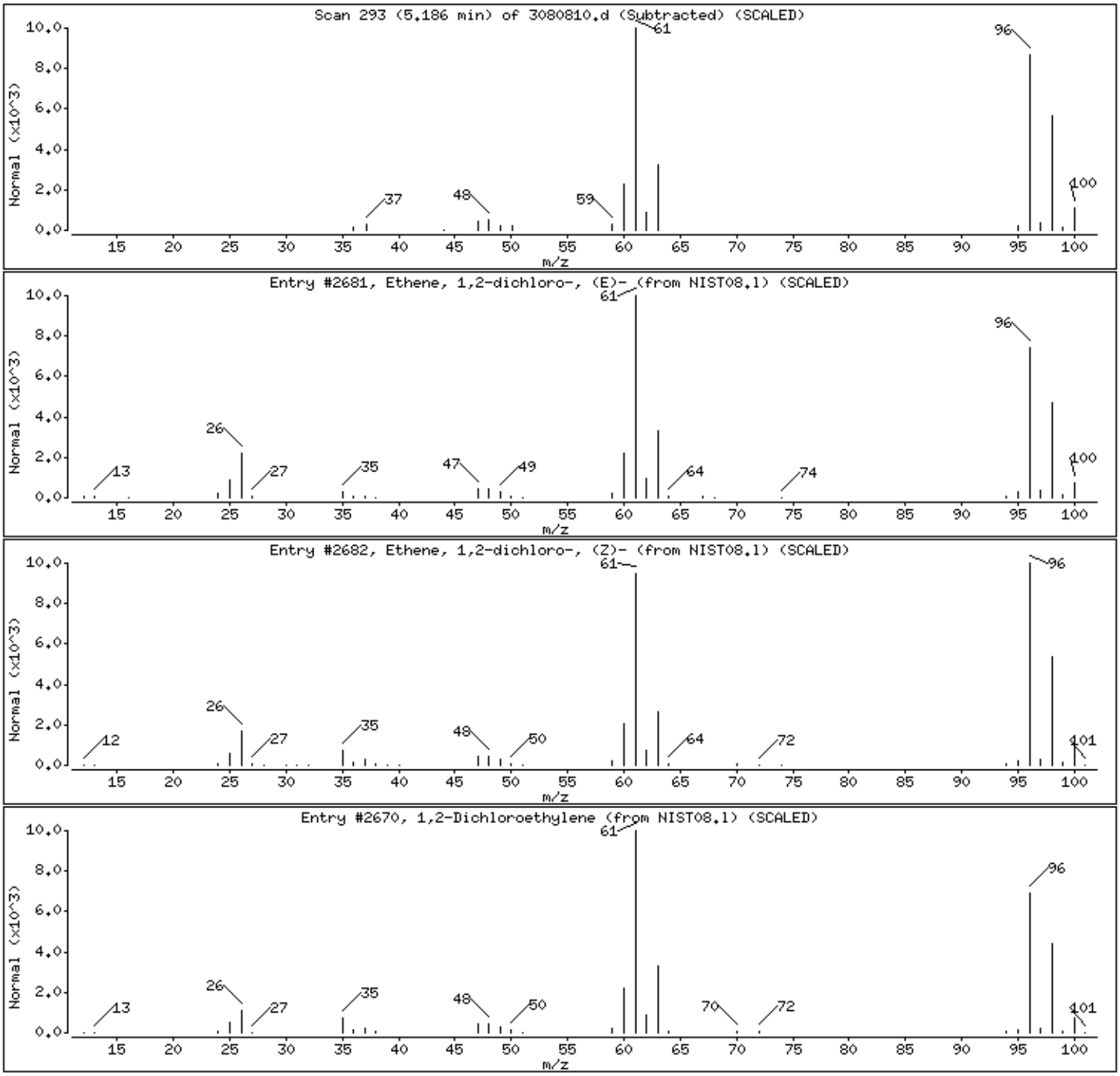
Sample Info: 30ml 32119

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Ethene, 1,2-dichloro-, (E)-	156-60-5	NIST08.l	2681	96	C2H2Cl2	96
Ethene, 1,2-dichloro-, (Z)-	156-59-2	NIST08.l	2682	95	C2H2Cl2	96
1,2-Dichloroethylene	540-59-0	NIST08.l	2670	95	C2H2Cl2	96



Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

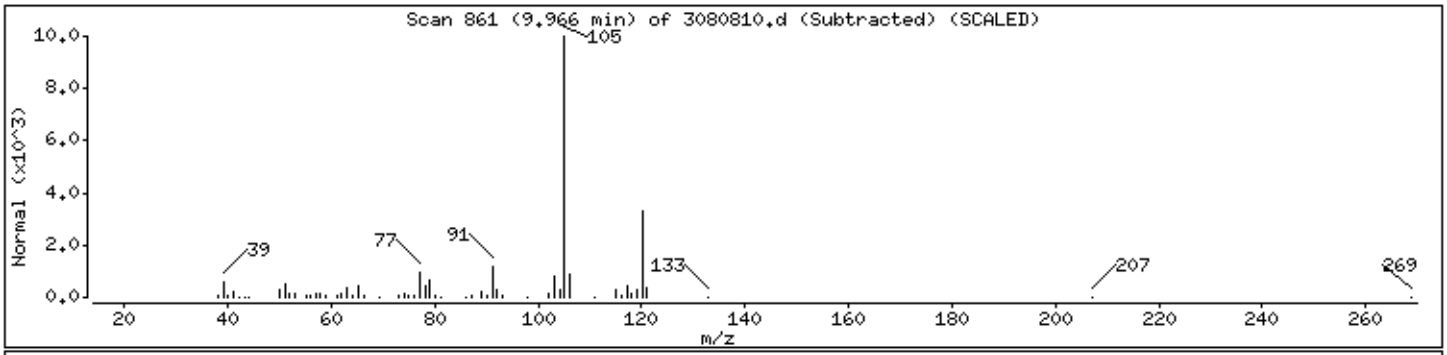
Sample Info: 30ml 32119

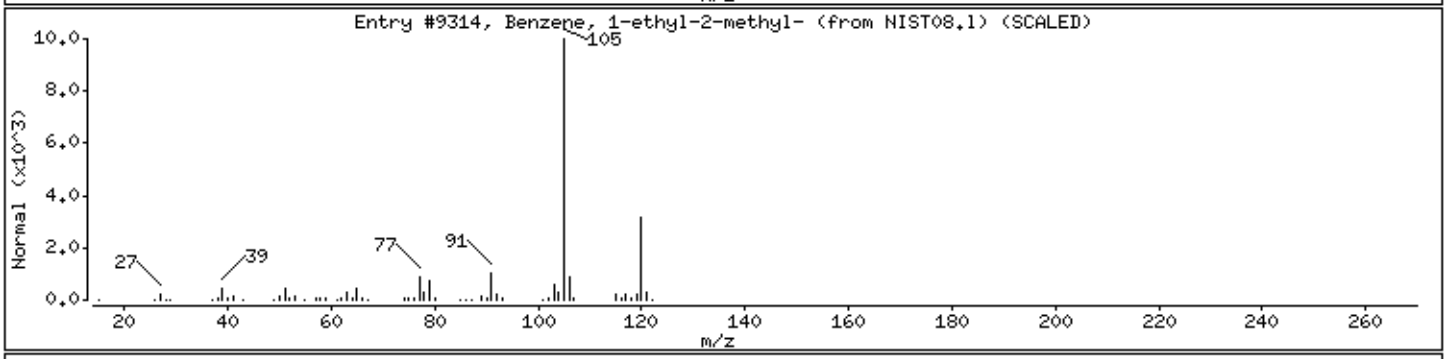
Operator: jg

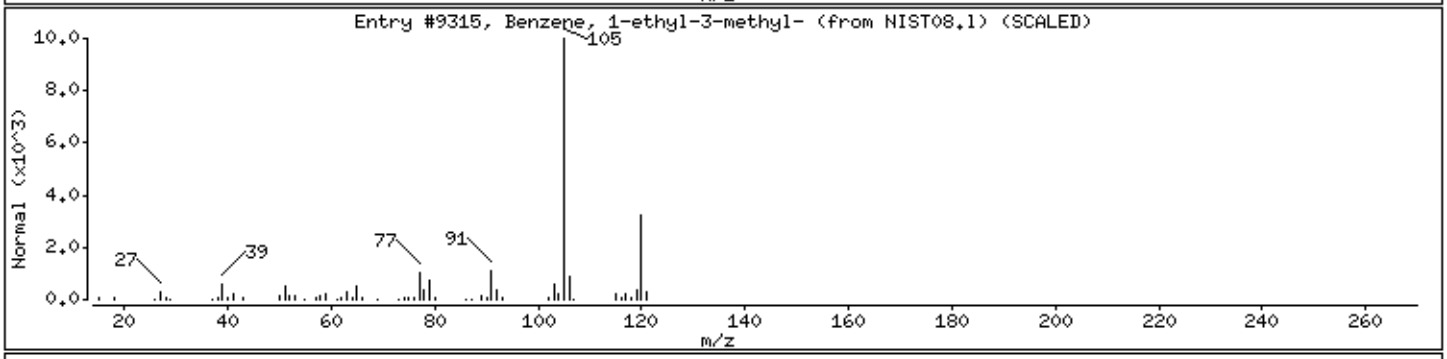
Column phase: RTX-624

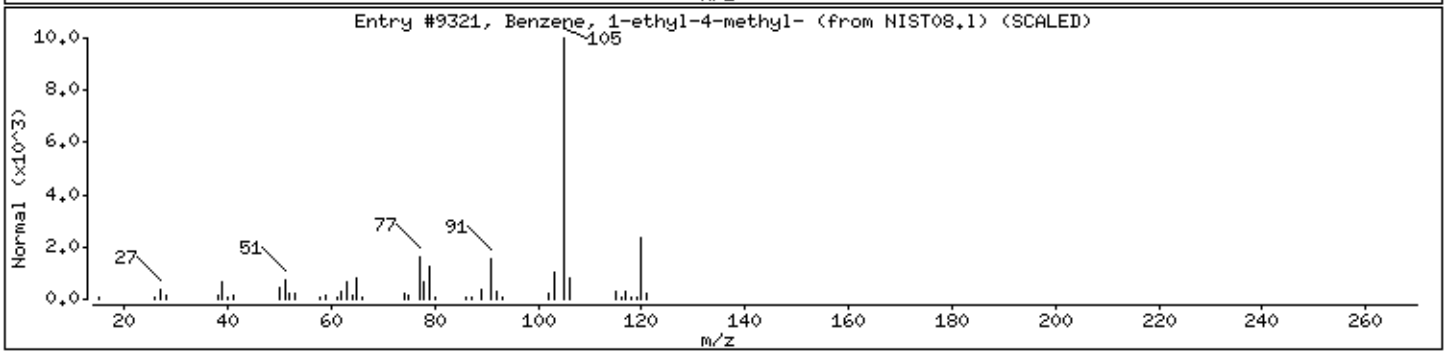
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-2-methyl-	611-14-3	NIST08.l	9314	95	C9H12	120
Benzene, 1-ethyl-3-methyl-	620-14-4	NIST08.l	9315	93	C9H12	120
Benzene, 1-ethyl-4-methyl-	622-96-8	NIST08.l	9321	93	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

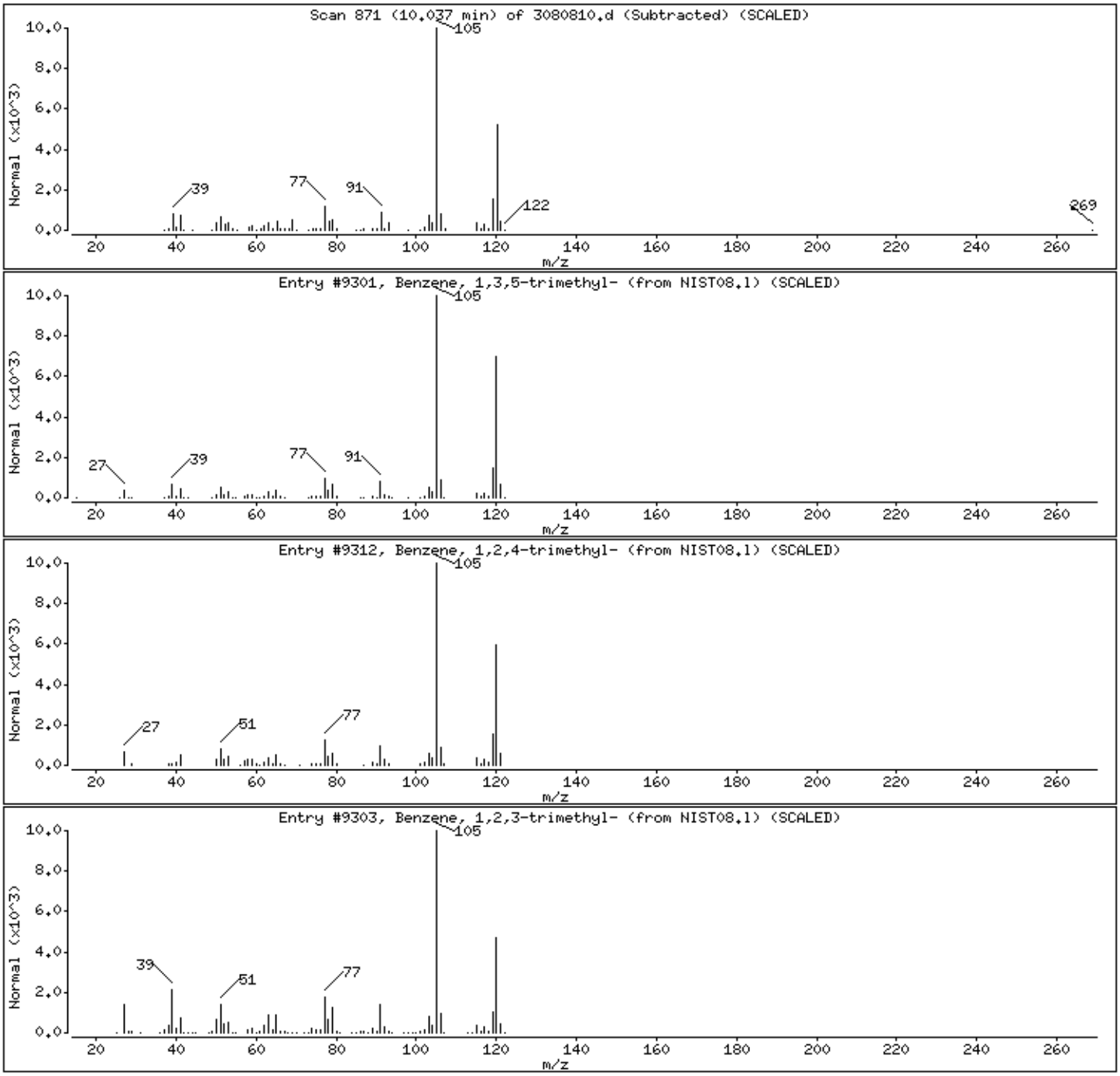
Sample Info: 30ml 32119

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9301	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	91	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9303	91	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

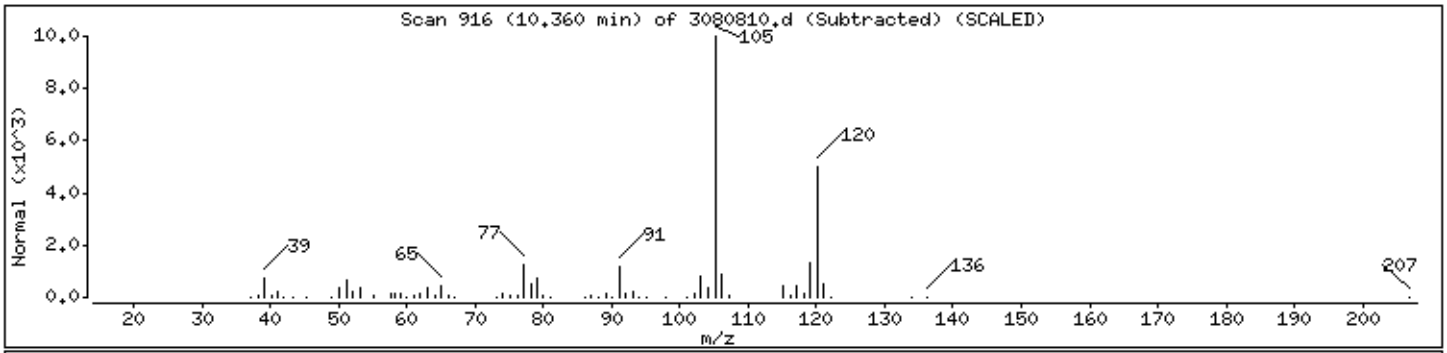
Sample Info: 30ml 32119

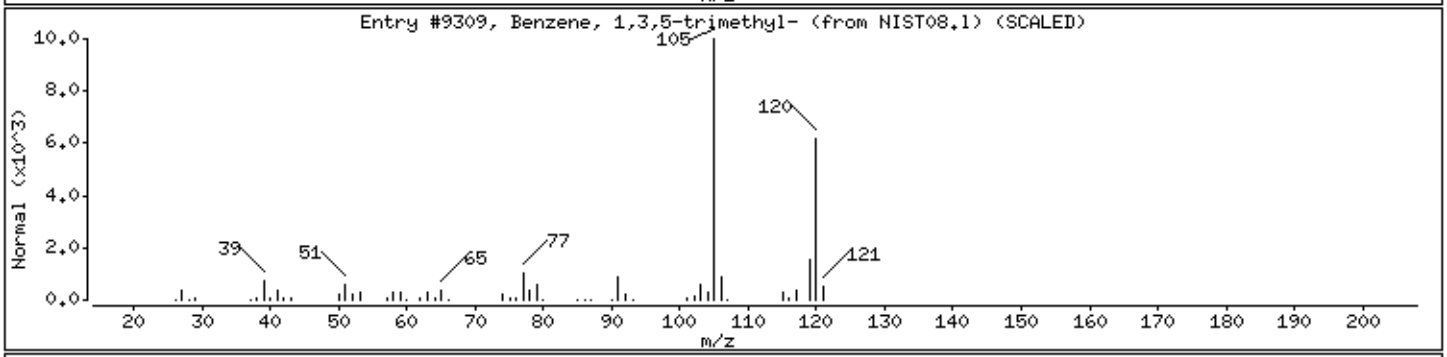
Operator: jg

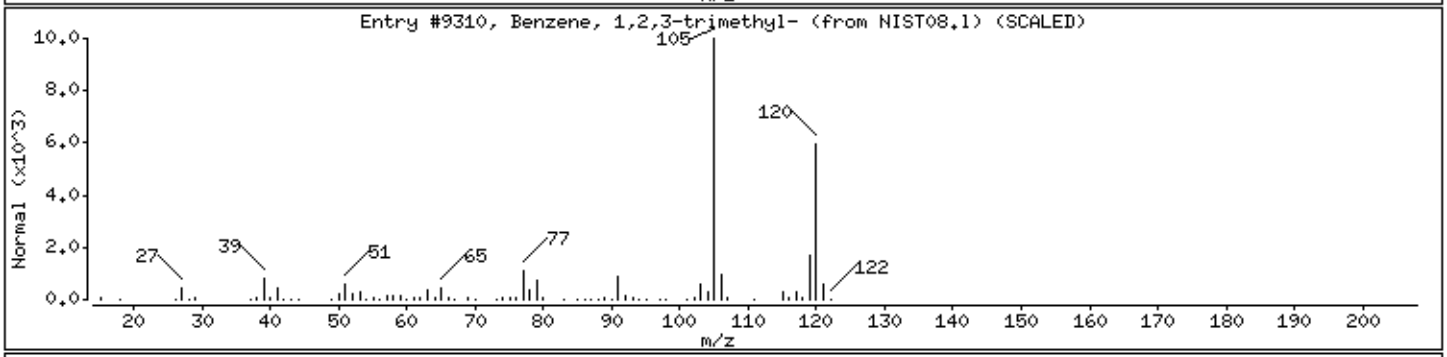
Column phase: RTX-624

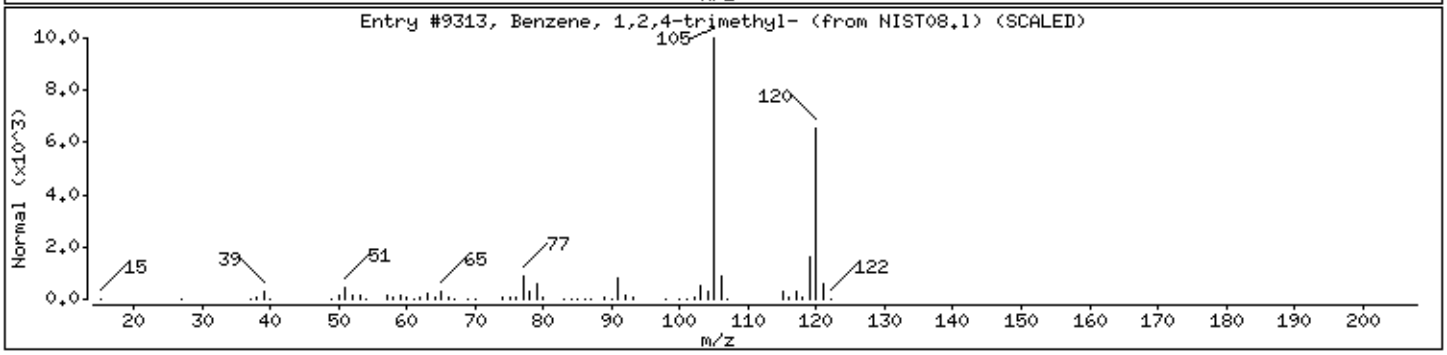
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9309	97	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	95	C9H12	120









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Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

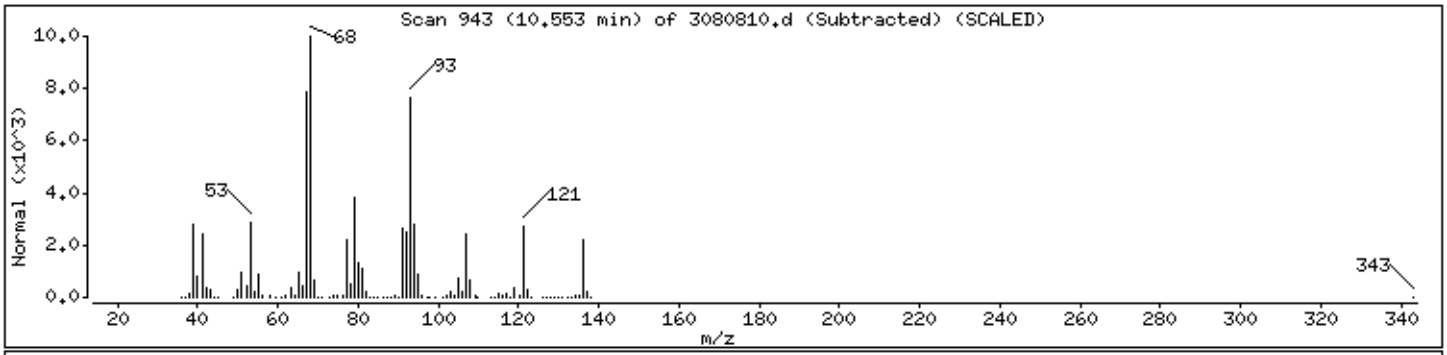
Sample Info: 30ml 32119

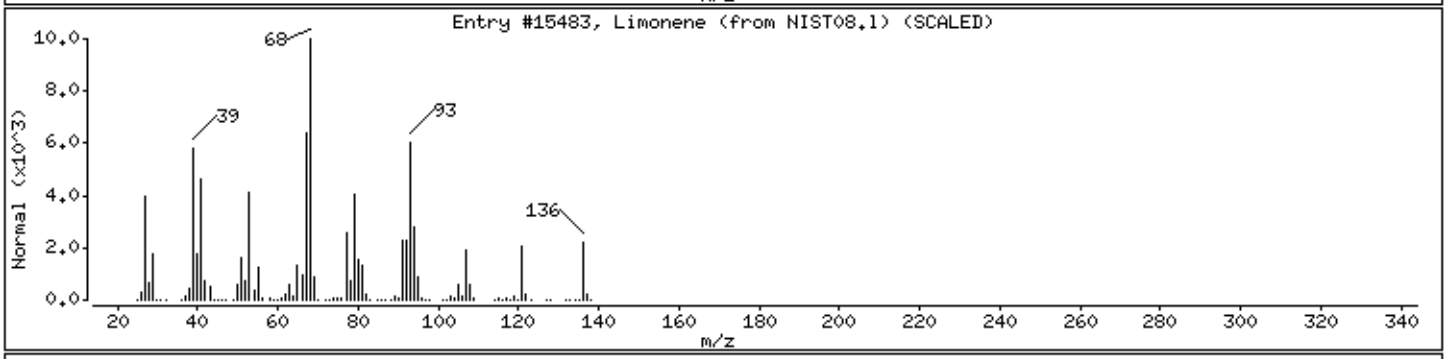
Operator: jg

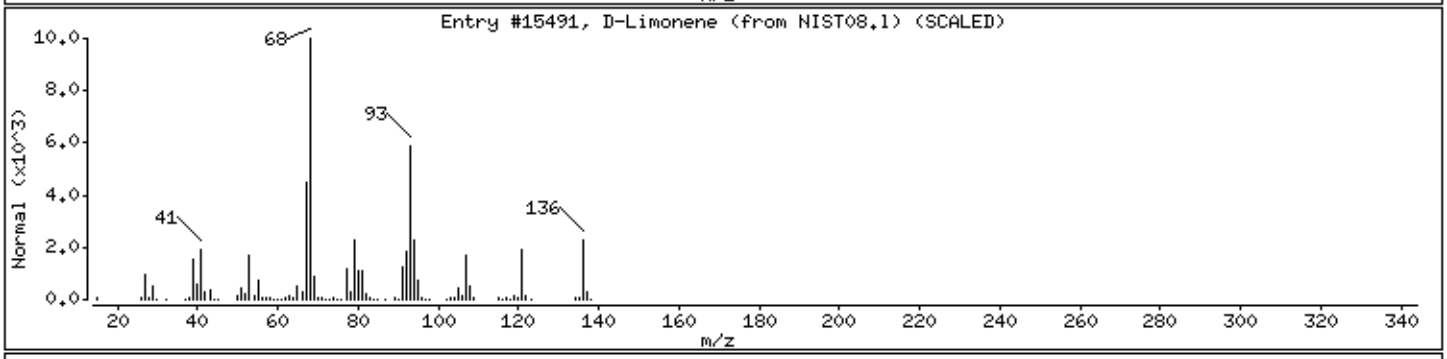
Column phase: RTX-624

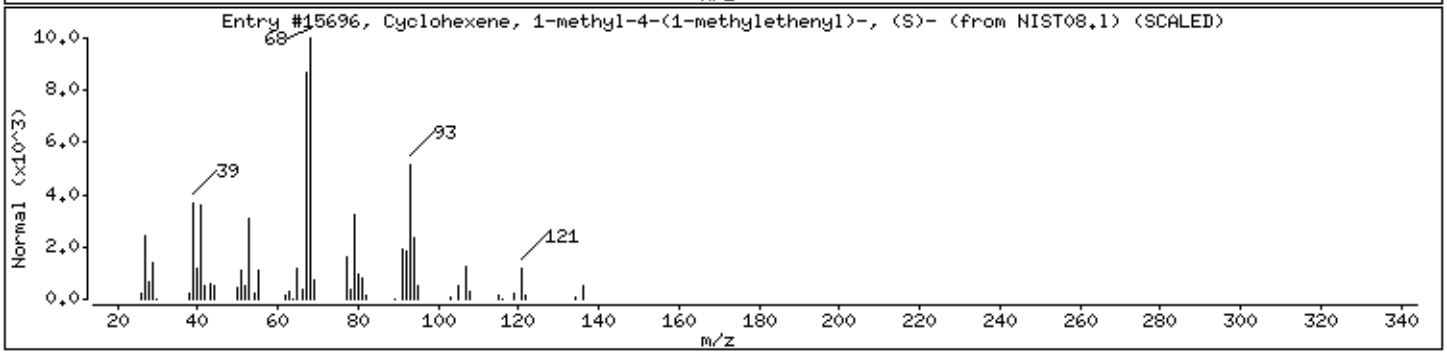
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15483	94	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15491	94	C10H16	136
Cyclohexene, 1-methyl-4-(1-methylethenyl	5989-54-8	NIST08.l	15696	90	C10H16	136









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Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

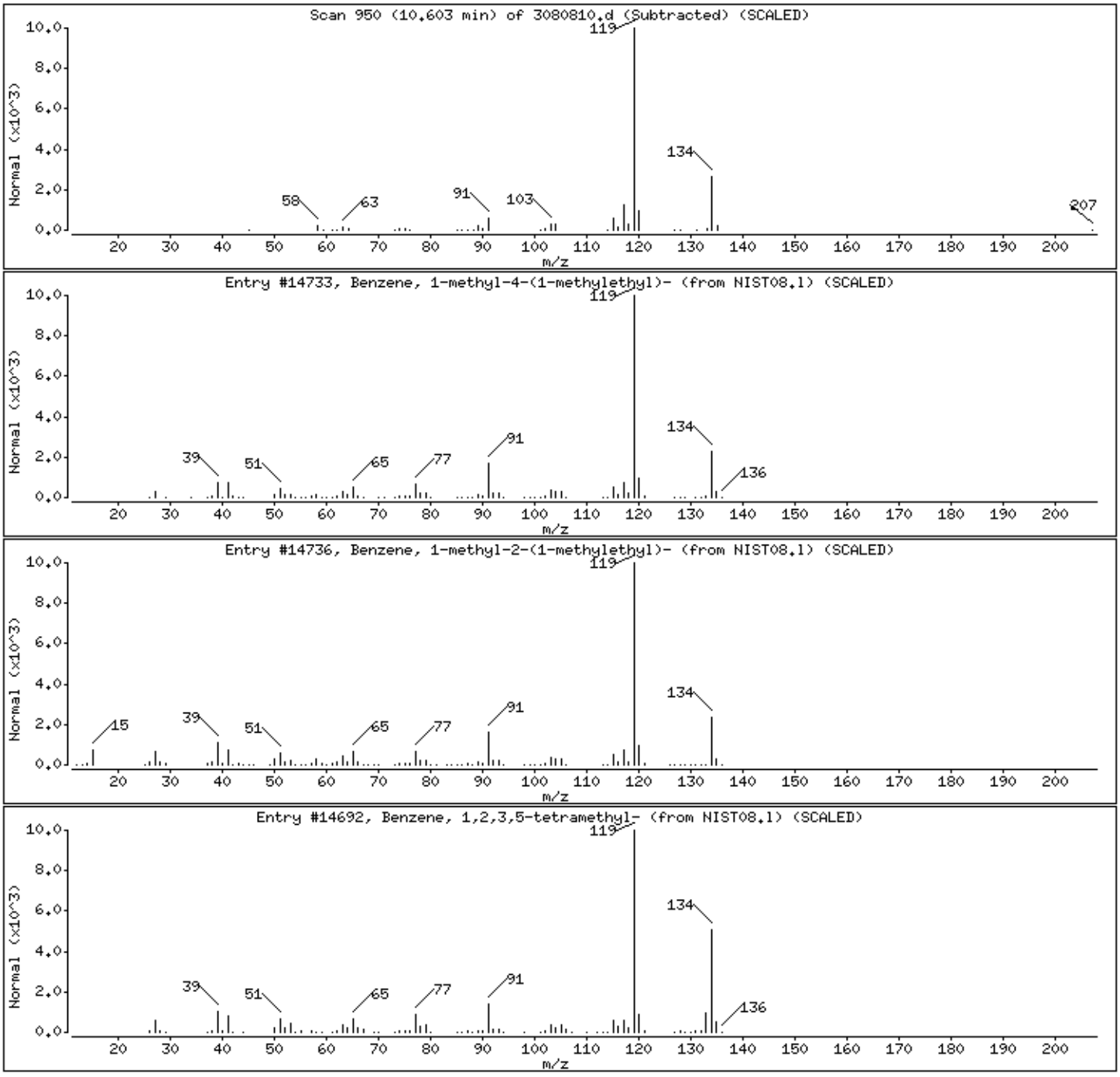
Sample Info: 30ml 32119

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-methyl-4-(1-methylethyl)-	99-87-6	NIST08.l	14733	91	C10H14	134
Benzene, 1-methyl-2-(1-methylethyl)-	527-84-4	NIST08.l	14736	91	C10H14	134
Benzene, 1,2,3,5-tetramethyl-	527-53-7	NIST08.l	14692	91	C10H14	134



Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

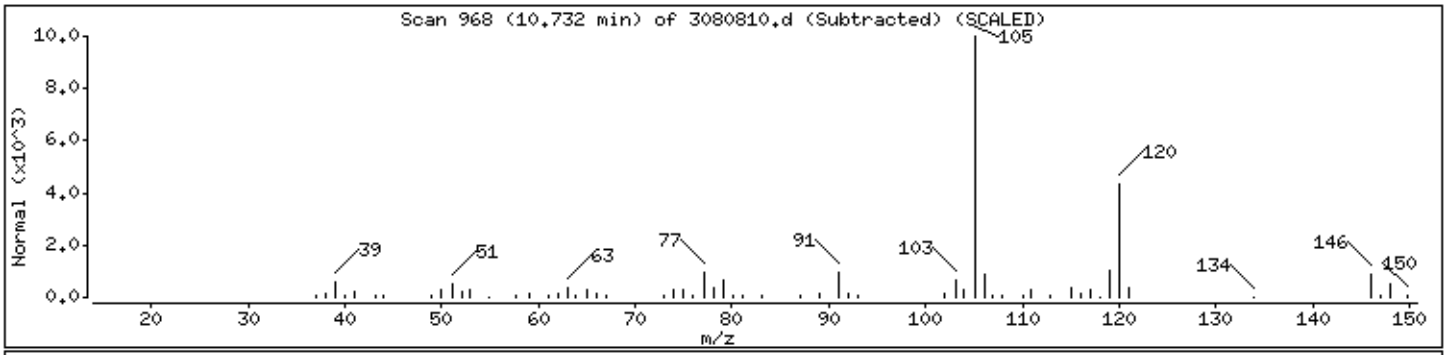
Sample Info: 30ml 32119

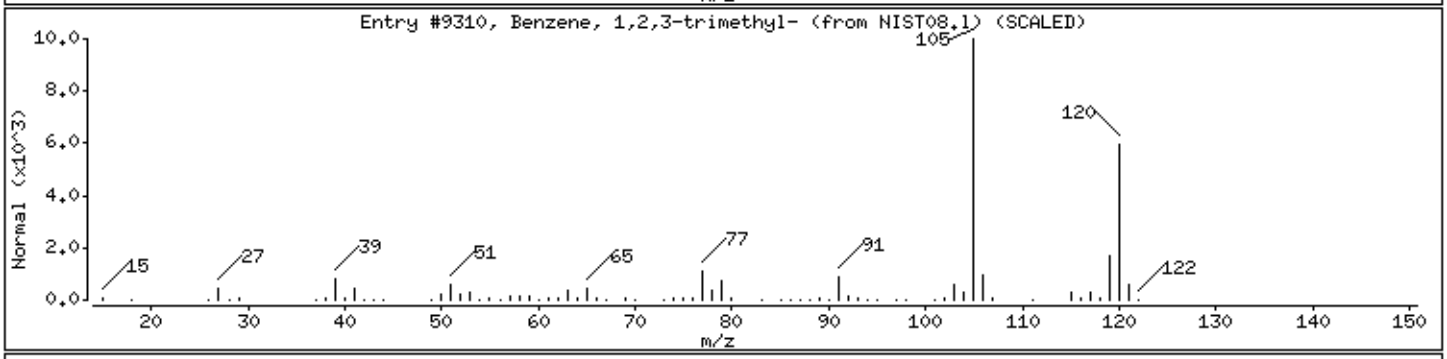
Operator: jg

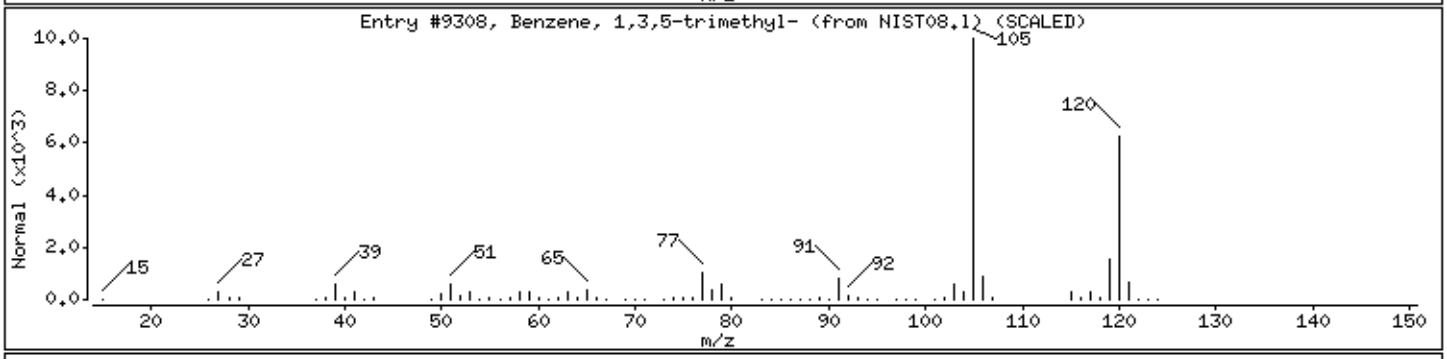
Column phase: RTX-624

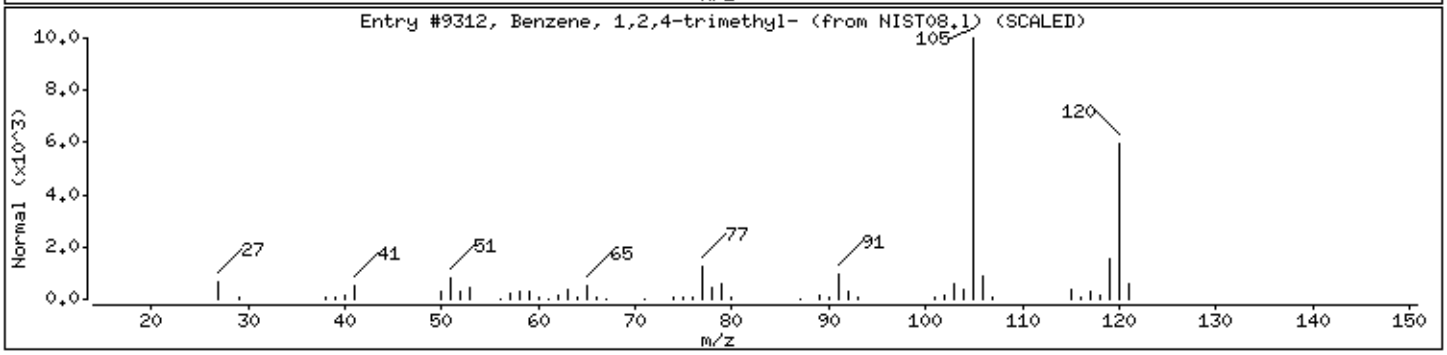
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	94	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9308	94	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	93	C9H12	120









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Client ID:

Instrument: msd3.i

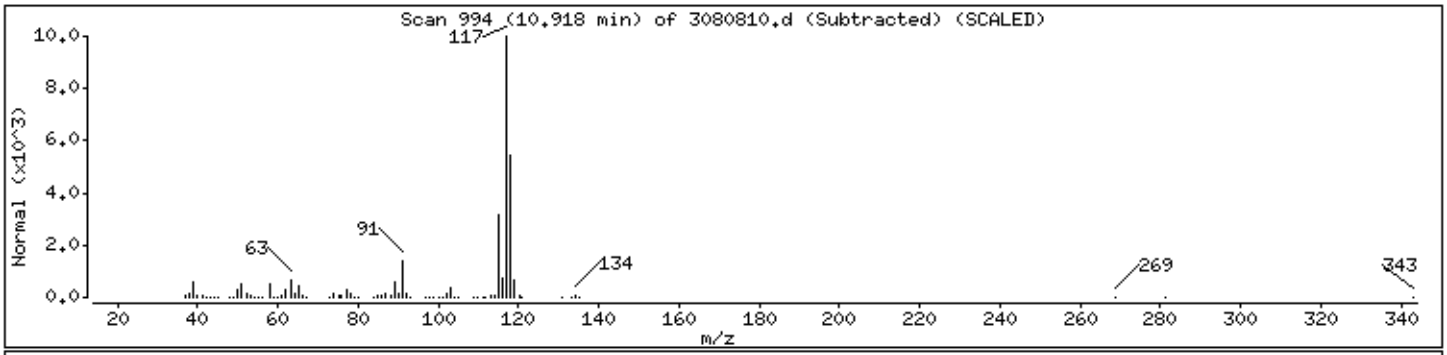
Sample Info: 30ml 32119

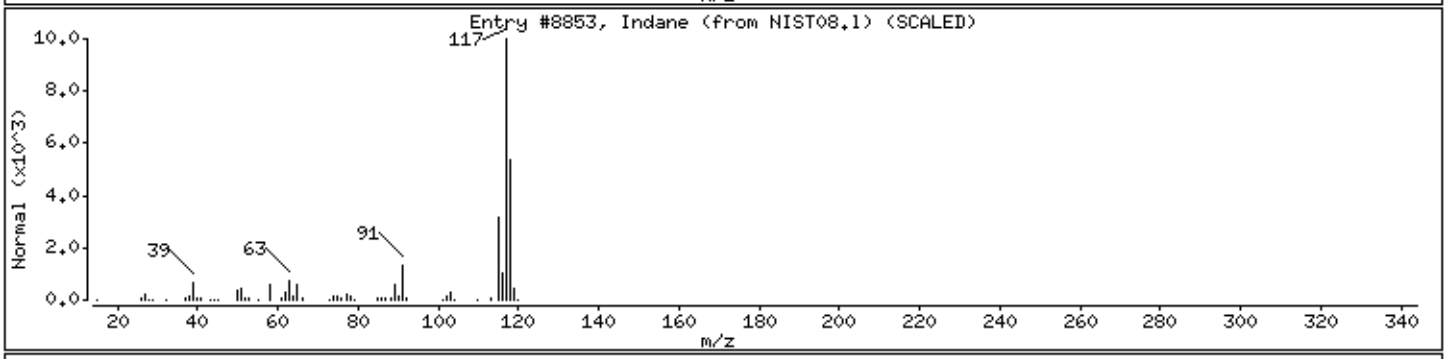
Operator: jg

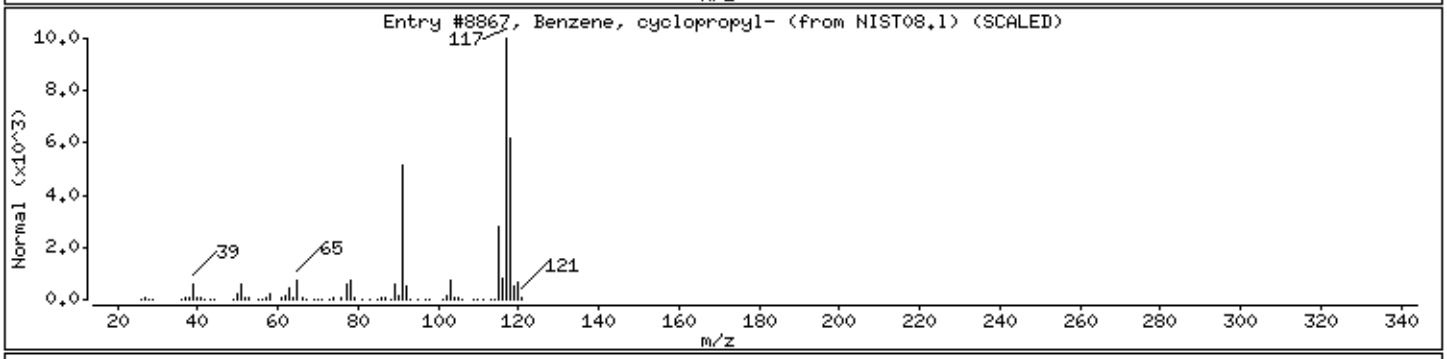
Column phase: RTX-624

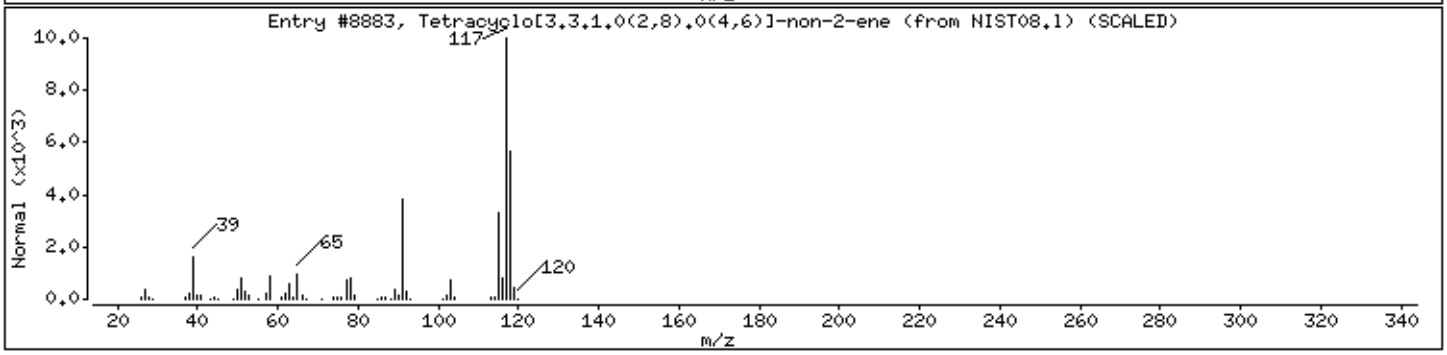
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indane	496-11-7	NIST08.l	8853	95	C9H10	118
Benzene, cyclopropyl-	873-49-4	NIST08.l	8867	87	C9H10	118
Tetracyclo[3.3.1.0(2,8).0(4,6)]-non-2-en	1000191-13-7	NIST08.l	8883	80	C9H10	118









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Client ID:

Instrument: msd3.i

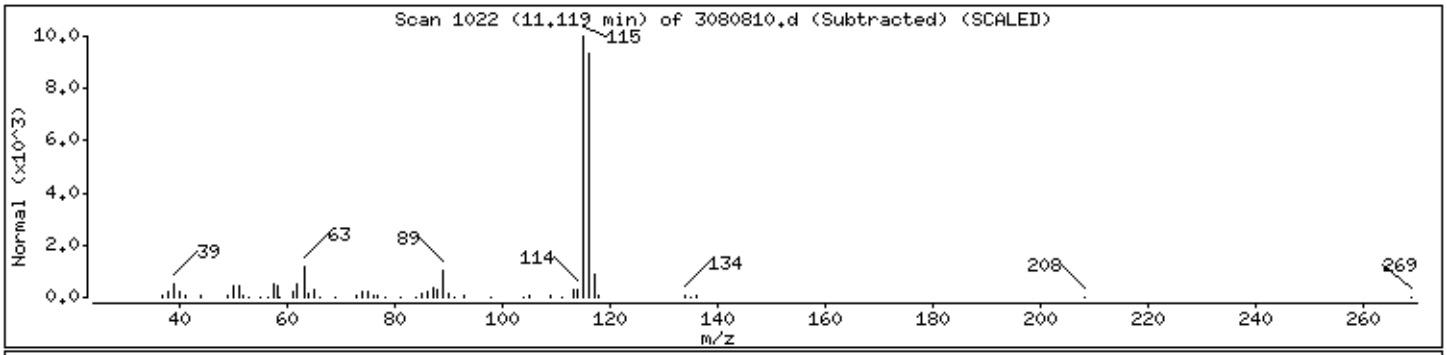
Sample Info: 30ml 32119

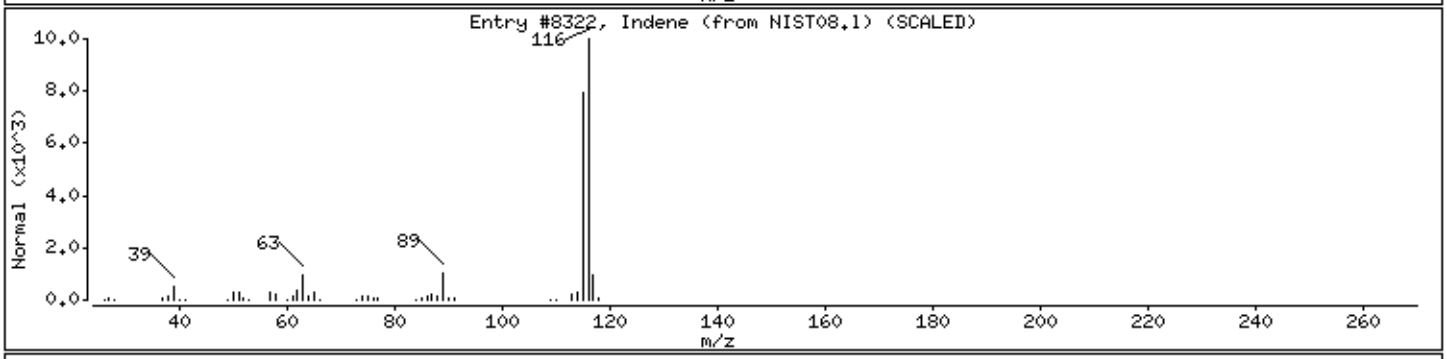
Operator: jg

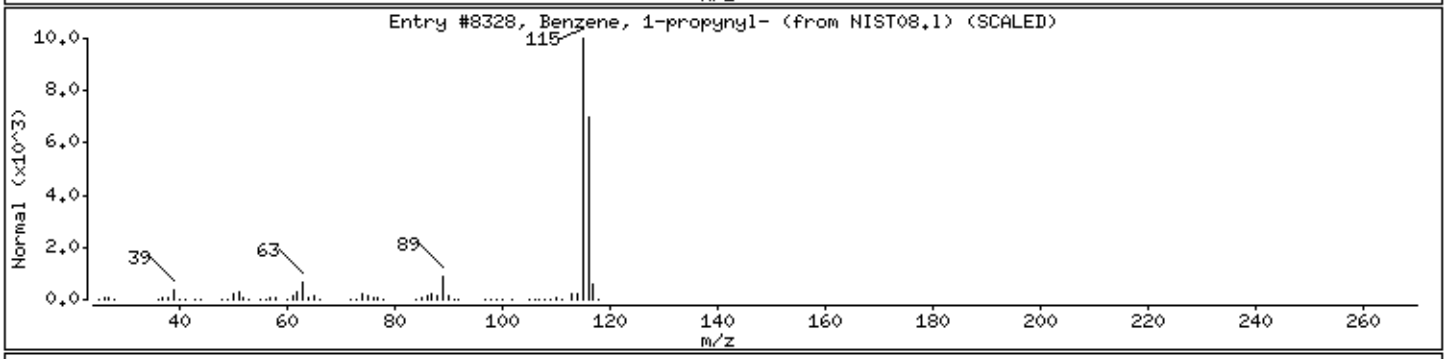
Column phase: RTX-624

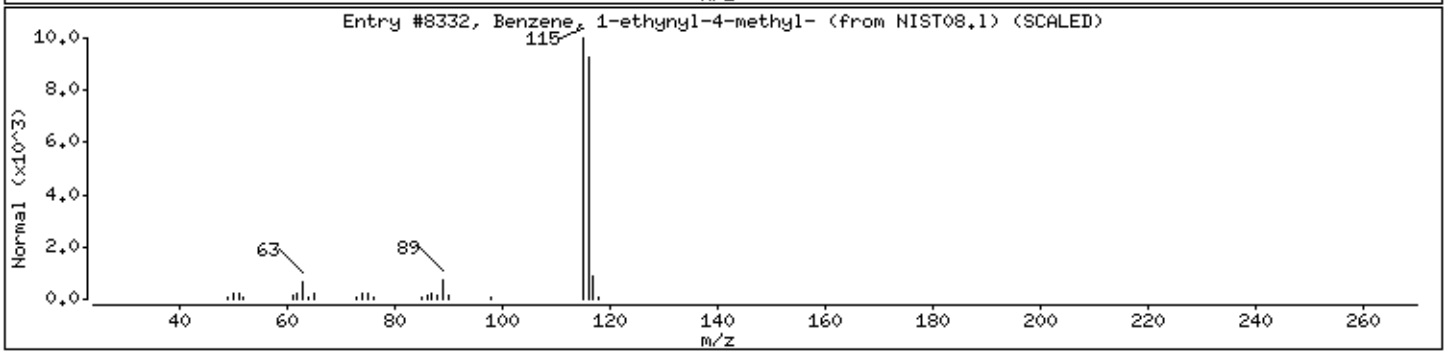
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indene	95-13-6	NIST08.l	8322	97	C9H8	116
Benzene, 1-propynyl-	673-32-5	NIST08.l	8328	95	C9H8	116
Benzene, 1-ethynyl-4-methyl-	766-97-2	NIST08.l	8332	91	C9H8	116









Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

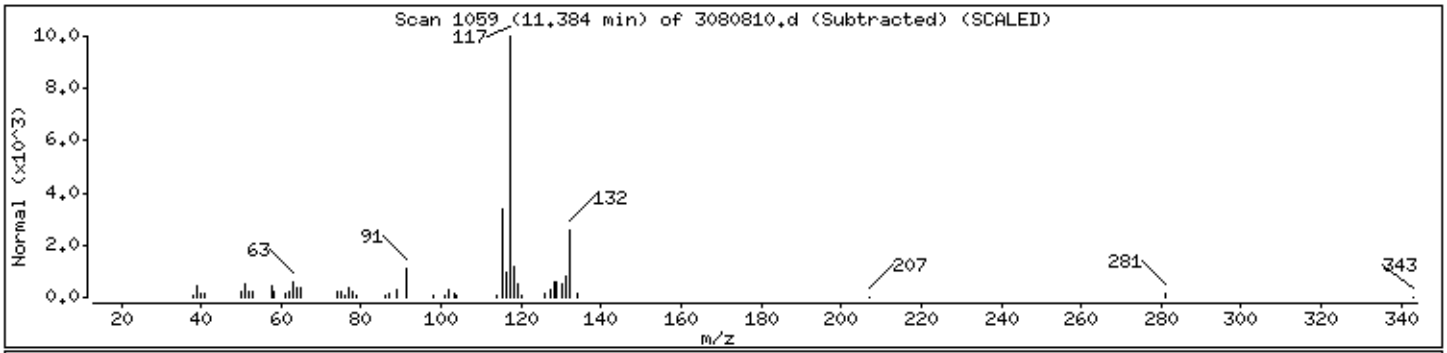
Sample Info: 30ml 32119

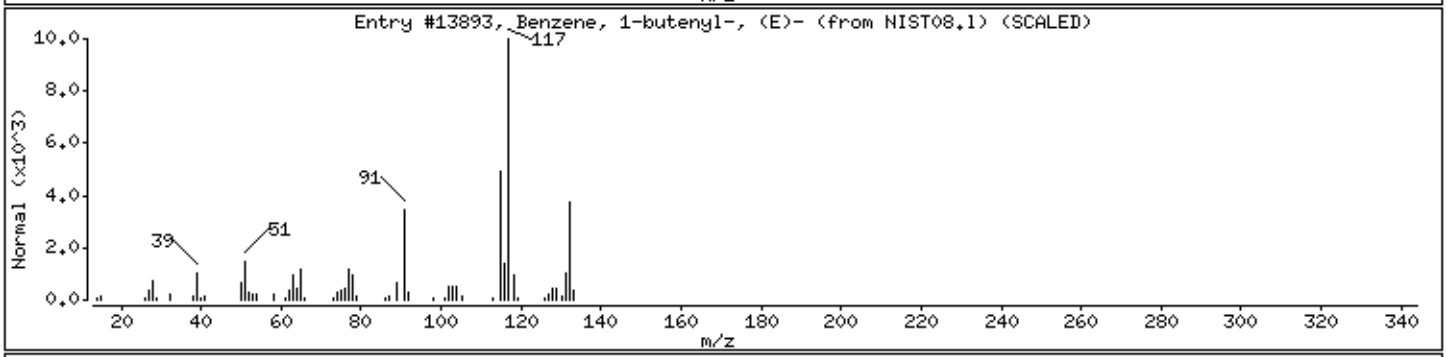
Operator: jg

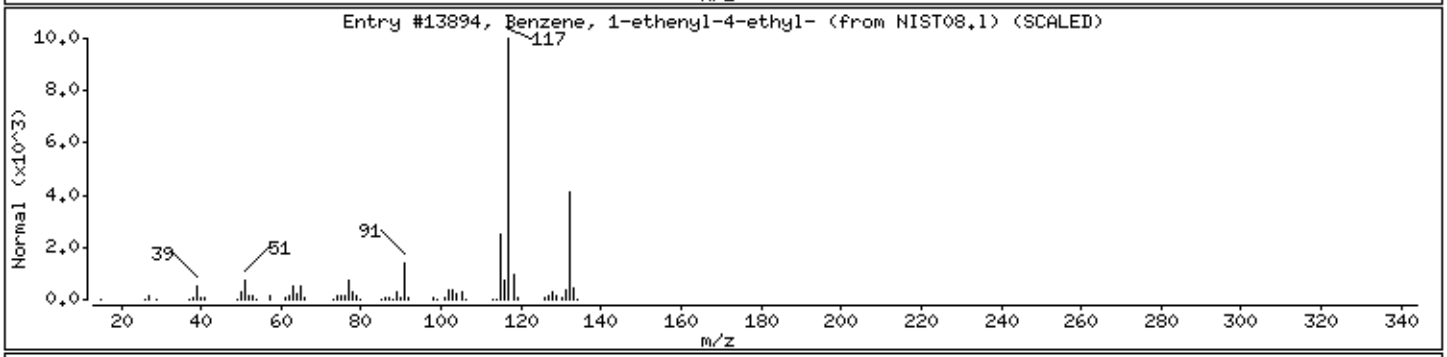
Column phase: RTX-624

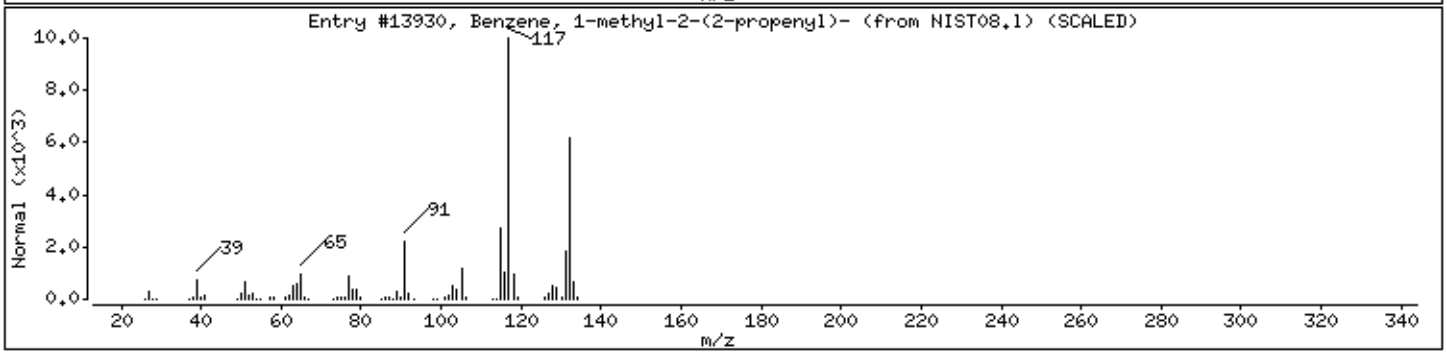
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-butenyl-, (E)-	1005-64-7	NIST08.l	13893	86	C10H12	132
Benzene, 1-ethenyl-4-ethyl-	3454-07-7	NIST08.l	13894	86	C10H12	132
Benzene, 1-methyl-2-(2-propenyl)-	1587-04-8	NIST08.l	13930	86	C10H12	132









Data File: /chem/msd3.i/08aug17.b/3080810.d

Date : 08-AUG-2017 16:26

Client ID:

Instrument: msd3.i

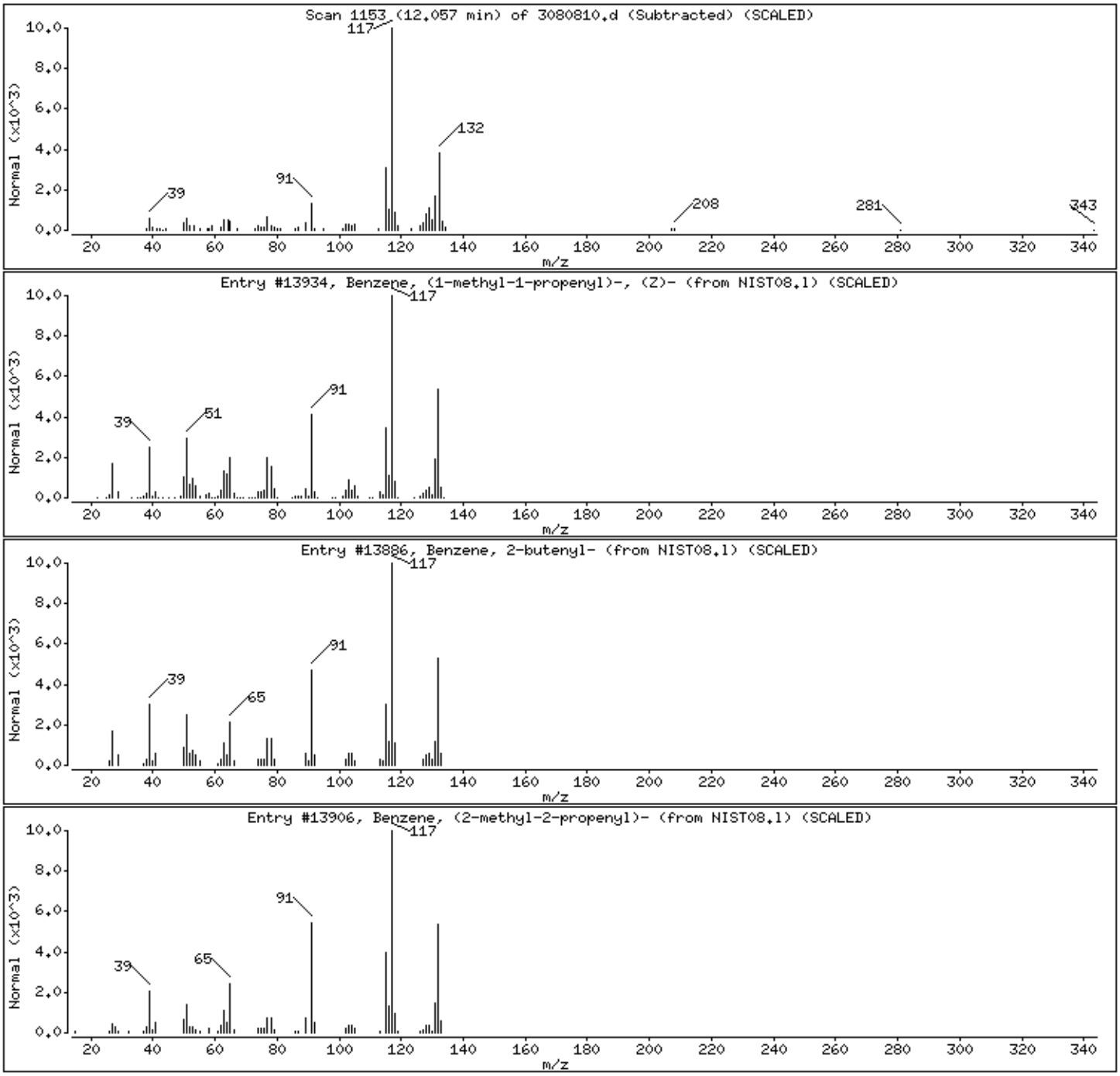
Sample Info: 30ml 32119

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, (1-methyl-1-propenyl)-, (Z)-	767-99-7	NIST08.l	13934	86	C10H12	132
Benzene, 2-butenyl-	1560-06-1	NIST08.l	13886	86	C10H12	132
Benzene, (2-methyl-2-propenyl)-	3290-53-7	NIST08.l	13906	83	C10H12	132



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SH-F_0817		
Lab ID:	1708091B-17A	**Date/Time Analyzed:**	8/8/17 04:50 PM
Date/Time Collected:	8/3/17 03:22 PM	**Dilution Factor:**	9.35
Media:		**Instrument/Filename:**	msd3.i / 3080811

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	1.4	6.0	15	190
Ethyl Benzene	100-41-4	1.9	8.1	20	470
m,p-Xylene	108-38-3	1.9	8.1	20	790
Naphthalene	91-20-3	0.70	3.9	49	640
o-Xylene	95-47-6	0.84	8.1	20	340
Toluene	108-88-3	1.1	7.0	18	370
Total Xylene	1330-20-7	NA	D	41	1100

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	87%		770 NJ
Limonene	138-86-3	94%		2900 NJB

NJ =The identification is based on presumptive evidence; estimated value.
B = Analyte present in laboratory blank greater than reporting limit.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	101

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080811.d
Lab Smp Id: 1708091B-17A
Inj Date : 08-AUG-2017 16:50
Operator : jg Inst ID: msd3.i
Smp Info : 40ml N0587
Misc Info : 8.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 6
Dil Factor: 9.35000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.410 (1.000)	130	191712	25.0000			80.00- 120.00	100.00
5.410	5.410 (1.000)	128	148715				46.73- 106.73	77.57
5.410	5.410 (1.000)	49	205338				91.08- 151.08	107.11
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	668015	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	94677				0.00- 44.78	14.17
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	633443	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	302588				20.58- 80.58	47.77
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	213458	21.7863	21.786		80.00- 120.00	100.00
5.956	5.956 (1.101)	67	110687				24.54- 84.54	51.85
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	683437	25.2220	25.222		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	68069				0.00- 40.44	9.96

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	433887			35.27- 95.27	63.49
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	411093	24.8568	24.857	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	429042			84.77- 144.77	104.37
9.737	9.737 (1.112)	176	395468			64.74- 124.74	96.20
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	139769	6.43987	60.213	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	32111			0.00- 53.39	22.97
147 Toluene					CAS #: 108-88-3		
7.581	7.574 (1.202)	91	305493	10.4638	97.837	80.00- 120.00	100.00
7.581	7.574 (1.202)	92	175942			27.96- 87.96	57.59
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	156720	11.6377	108.81	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	464515			272.32- 332.32	296.40
169 m,p-Xylene					CAS #: 108-38-3		
8.927	8.920 (1.020)	106	329299	19.5528	182.82	80.00- 120.00	100.00
8.927	8.920 (1.020)	91	628605			165.91- 225.91	190.89
171 o-Xylene					CAS #: 95-47-6		
9.264	9.264 (1.058)	106	134051	8.36989	78.258	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	268270			175.85- 235.85	200.13
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.453)	128	908511	13.1795	123.23	80.00- 120.00	100.00
12.717	12.717 (1.452)	127	115612			0.00- 43.00	12.73
M 239 Total Xylene					CAS #: 1330-20-7		
			463351	27.9227	261.08		

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080811.d
Lab Smp Id: 1708091B-17A
Inj Date : 08-AUG-2017 16:50
Operator : jg Inst ID: msd3.i
Smp Info : 40ml N0587
Misc Info : 8.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 6
Dil Factor: 9.35000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.410	917251	25.000
* 163 Chlorobenzene-d5	8.755	2186899	25.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.353	3520123	95.9421051	897.06	0		0	98
Isobutane				CAS #: 75-28-5			
1.647	194092	5.29003591	49.462	72	NIST08.1	234	98
Benzene, (1-methylethyl)-				CAS #: 98-82-8			
9.550	208405	2.38242316	22.276	86	NIST08.1	9304	163
Benzene, 1-ethyl-2-methyl-				CAS #: 611-14-3			
9.966	943914	10.7905462	100.89	95	NIST08.1	9314	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.038	983712	11.2455070	105.14	97	NIST08.l	9301	163
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.224	206898	2.36519727	22.114	94	NIST08.l	9300	163
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.360	1145118	13.0906580	122.40	97	NIST08.l	9309	163
Limonene				CAS #: 138-86-3			
10.553	26961770	308.219078	2881.8	94	NIST08.l	15483	163(L)
Benzene, 1-methyl-2-(1-methylethyl)-				CAS #: 527-84-4			
10.603	1343366	15.3569644	143.59	91	NIST08.l	14737	163
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.732	479212	5.47820819	51.221	94	NIST08.l	9310	163
Indane				CAS #: 496-11-7			
10.919	7203766	82.3513524	769.98	87	NIST08.l	8851	163
Indene				CAS #: 95-13-6			
11.119	644599	7.36886819	68.899	97	NIST08.l	8322	163
Benzene, 1-ethyl-3,5-dimethyl-				CAS #: 934-74-7			
11.198	157402	1.79937612	16.824	58	NIST08.l	14705	163
Benzene, 2-ethyl-1,4-dimethyl-				CAS #: 1758-88-9			
11.262	206922	2.36547242	22.117	96	NIST08.l	14698	163
Indan, 1-methyl-				CAS #: 767-58-8			
11.384	326945	3.73753710	34.946	81	NIST08.l	13875	163
Benzene, 1,3-diethyl-				CAS #: 141-93-5			
11.613	203066	2.32138775	21.705	64	NIST08.l	14666	163
Benzofuran, 2-methyl-				CAS #: 4265-25-2			
11.707	191422	2.18828156	20.460	87	NIST08.l	14358	163
1H-Indene, 2,3-dihydro-5-methyl-				CAS #: 874-35-1			
11.907	214835	2.45593207	22.963	91	NIST08.l	13915	163
Benzene, 2-ethenyl-1,4-dimethyl-				CAS #: 2039-89-6			
12.058	492605	5.63131458	52.653	95	NIST08.l	13913	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Benzene, 1-butynyl-				CAS #: 622-76-4			
12.237	237871	2.71926786	25.425	96	NIST08.l	12952	163

QC Flag Legend

L - Operator selected an alternate library search match.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080811.d
Lab Smp Id: 1708091B-17A
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 8.5 Hg->5 psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	191712	-2.66
123 1,4-Difluorobenze	728289	436973	1019605	668015	-8.28
163 Chlorobenzene-d5	663497	398098	928896	633443	-4.53

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:40

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-17A
Level: LOW Operator: jg
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 8.5 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	21.786	87.15	70-130
$ 146 Toluene-d8	25.000	25.222	100.89	70-130
$ 177 4-Bromofluorobenze	25.000	24.857	99.43	70-130

}Í

Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

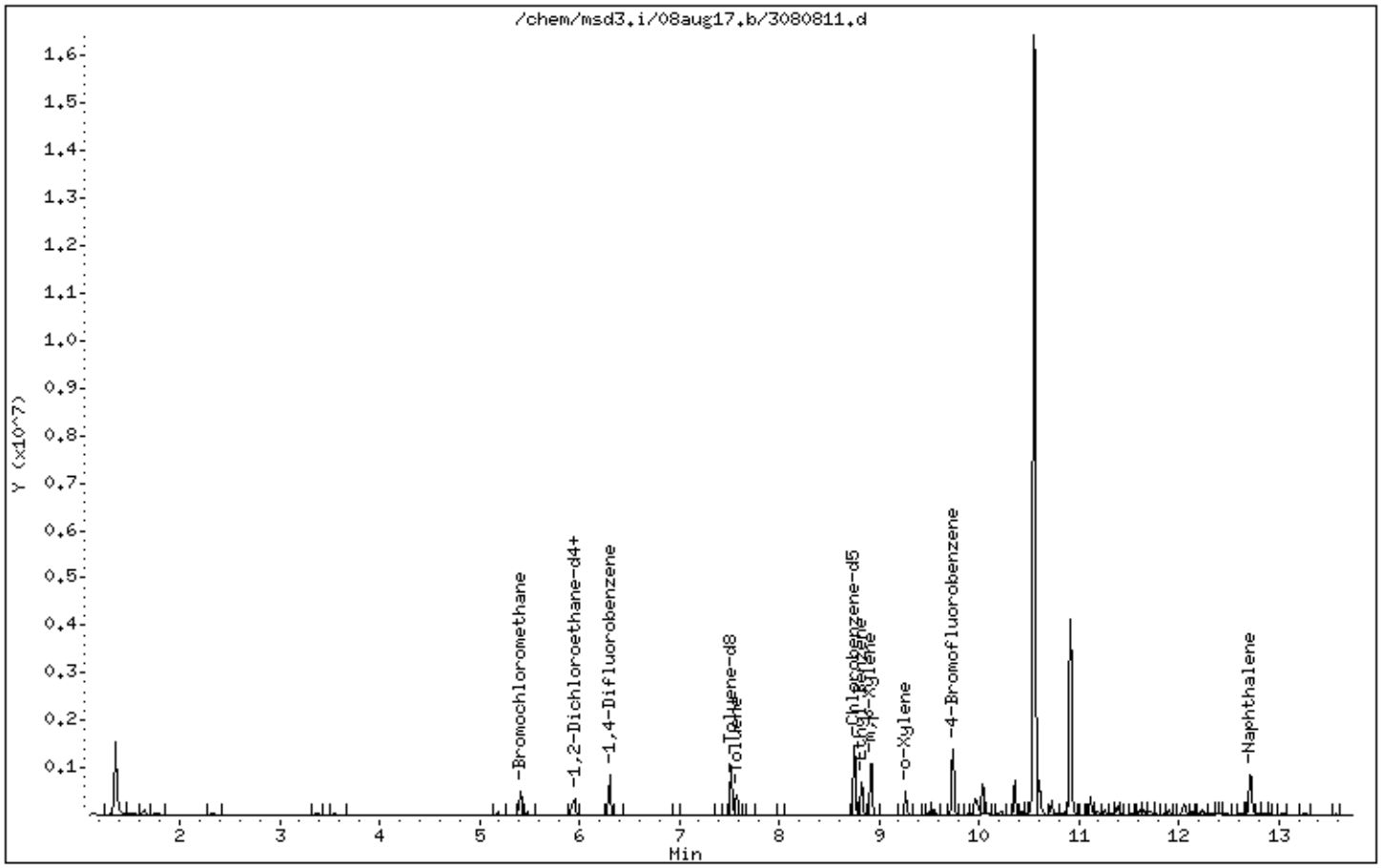
Instrument: msd3.i

Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

Sample Info: 40ml N0587

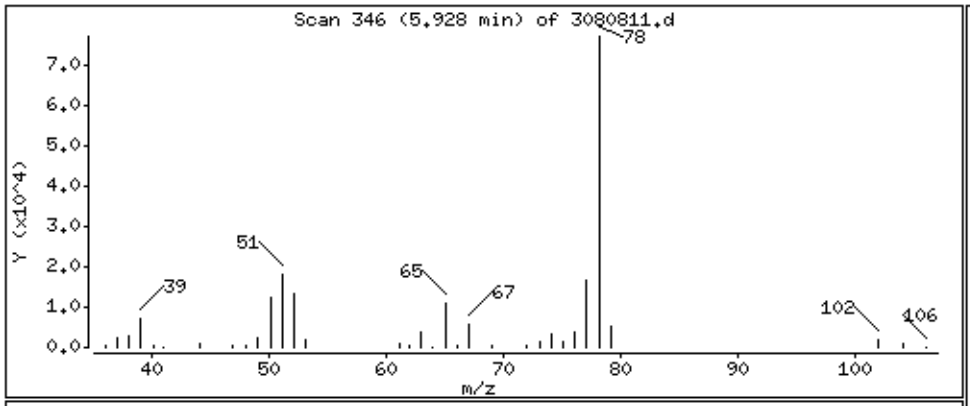
Operator: jg

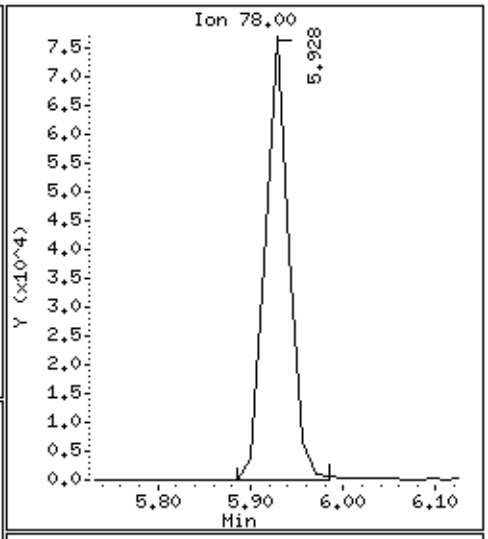
Column phase: RTX-624

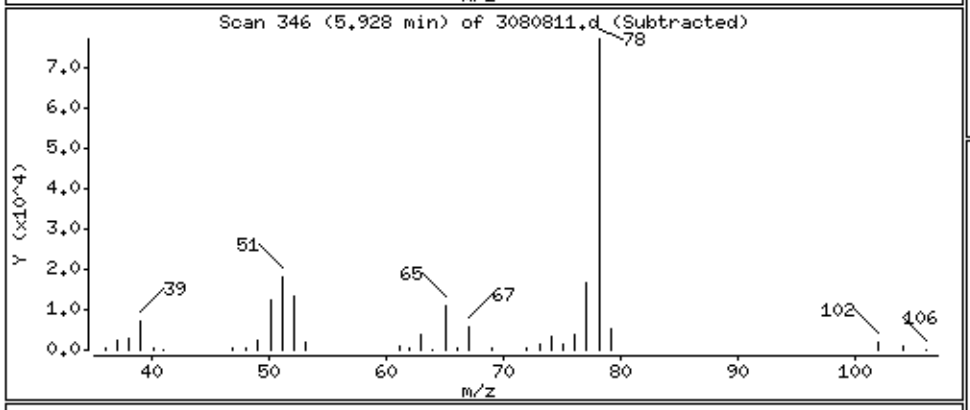
Column diameter: 0.25

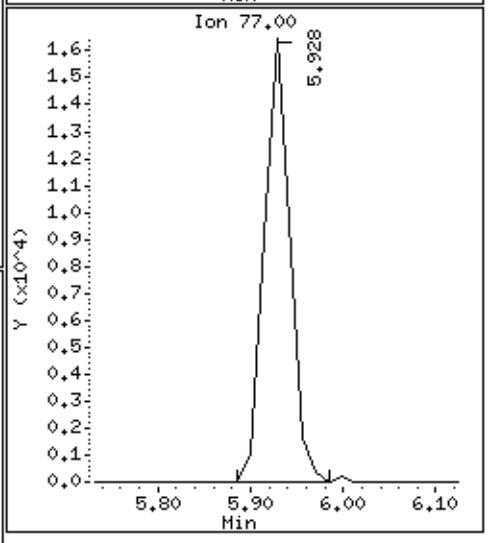
116 Benzene

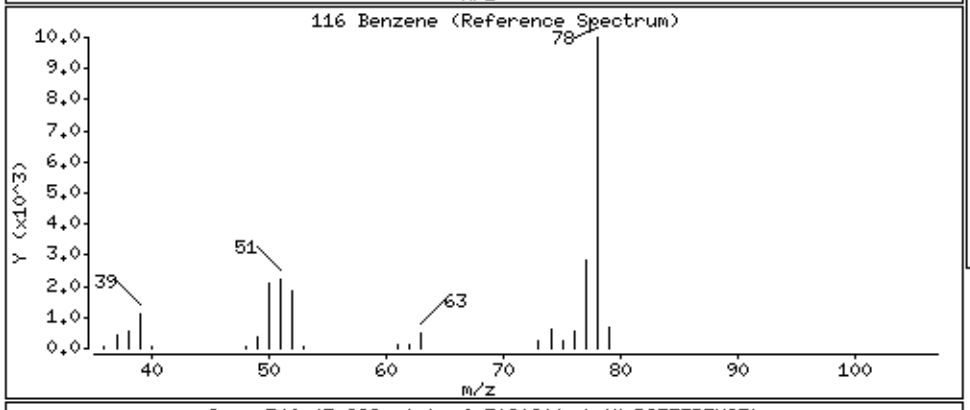
Concentration: 60.213 PPBV

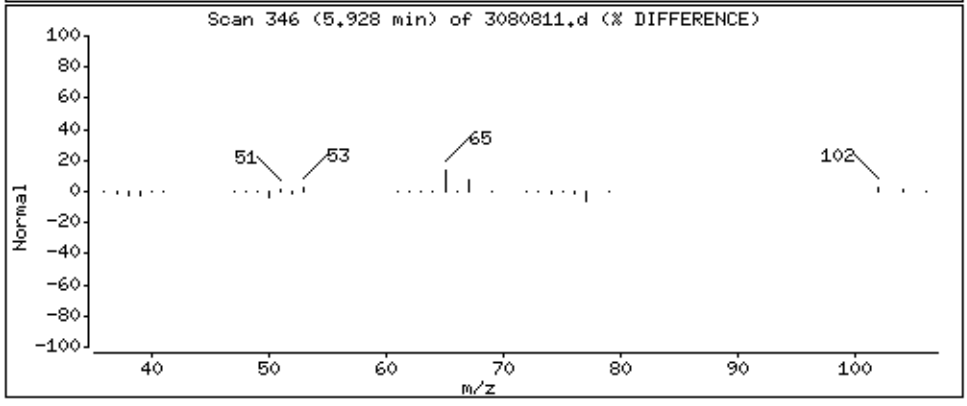












Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

Sample Info: 40ml N0587

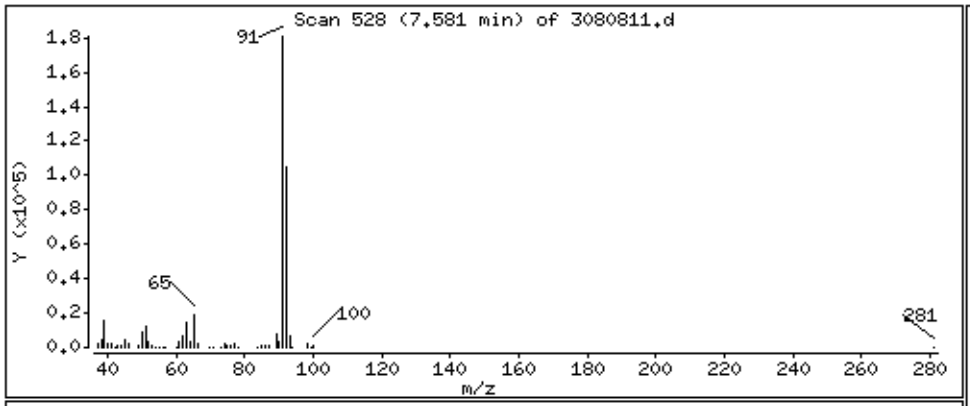
Operator: jg

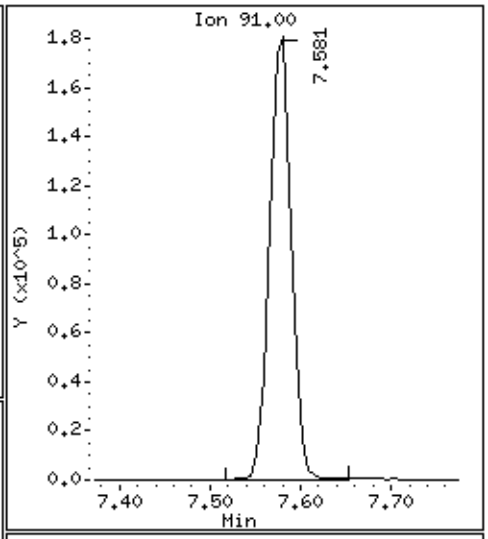
Column phase: RTX-624

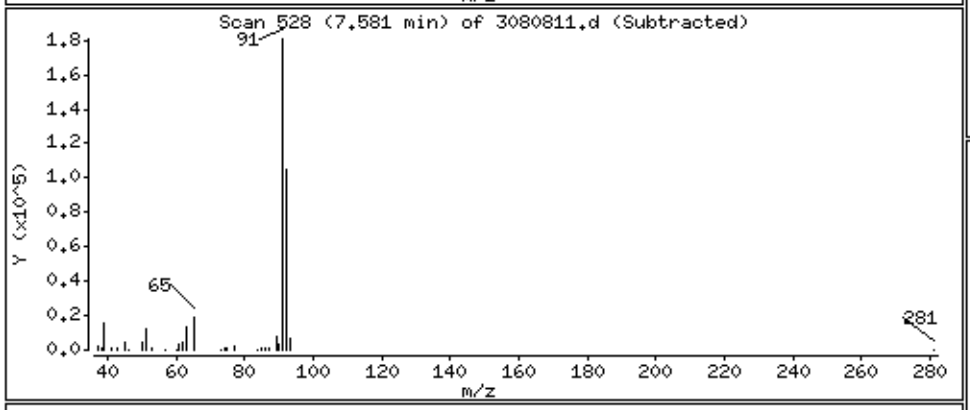
Column diameter: 0.25

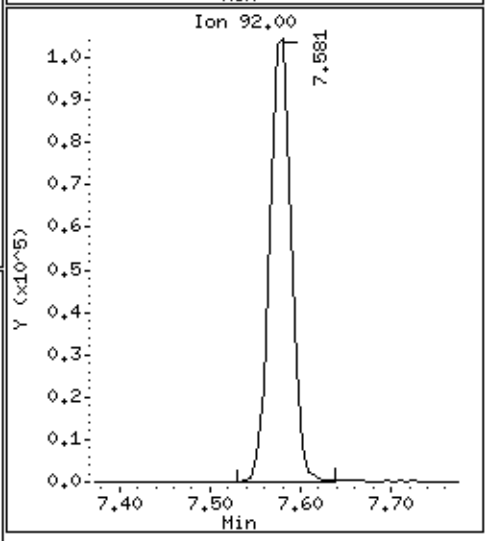
147 Toluene

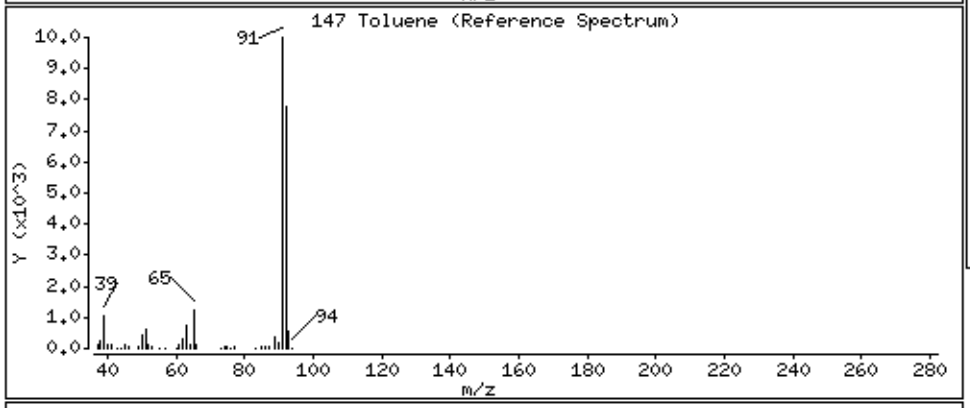
Concentration: 97.837 PPBV

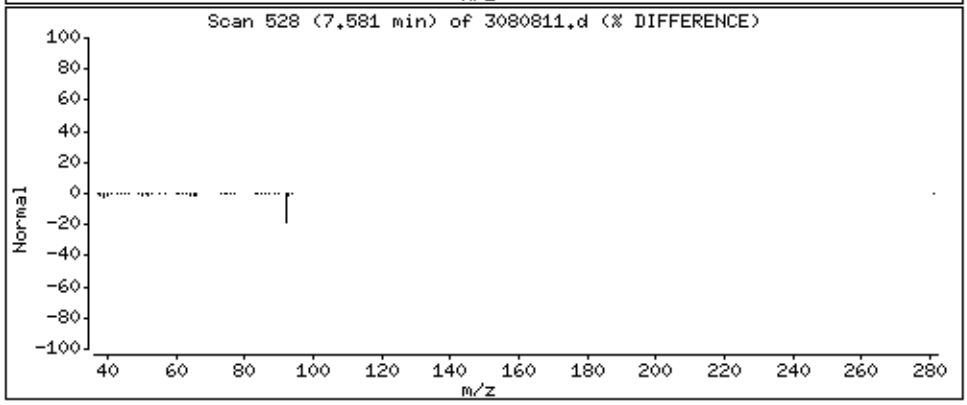












Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

Sample Info: 40ml N0587

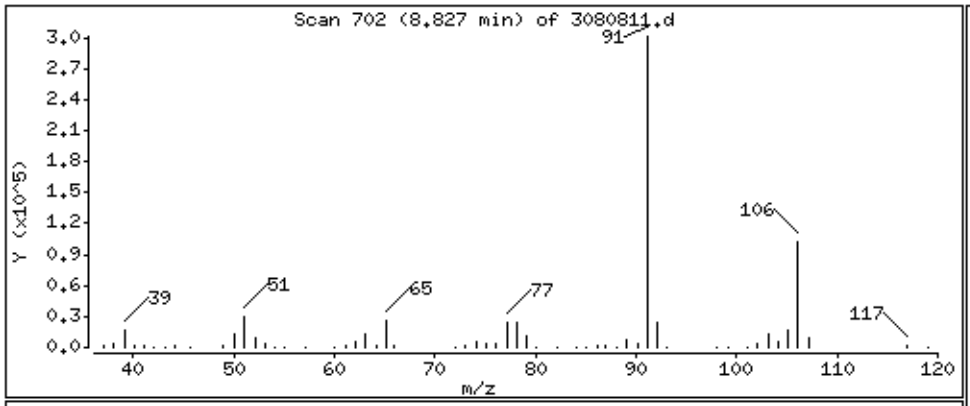
Operator: jg

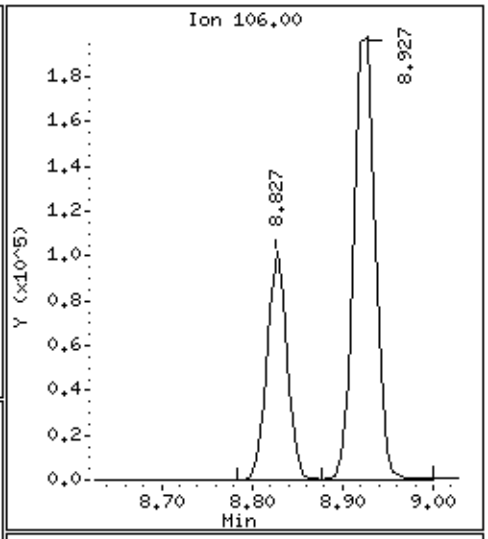
Column phase: RTX-624

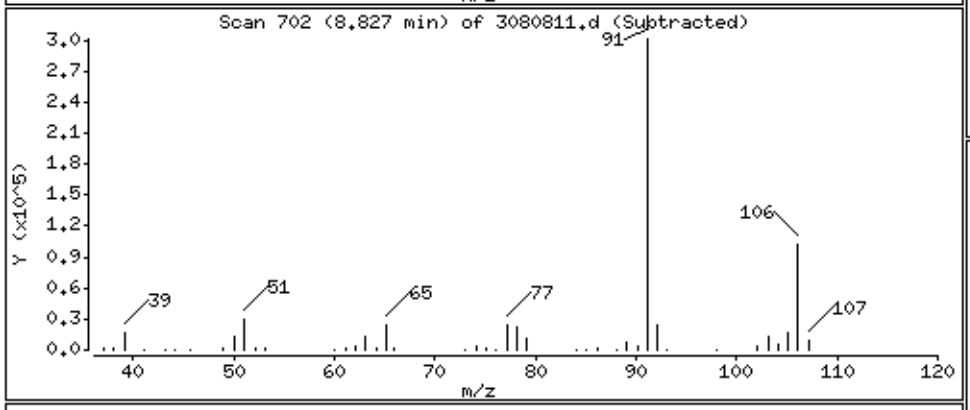
Column diameter: 0.25

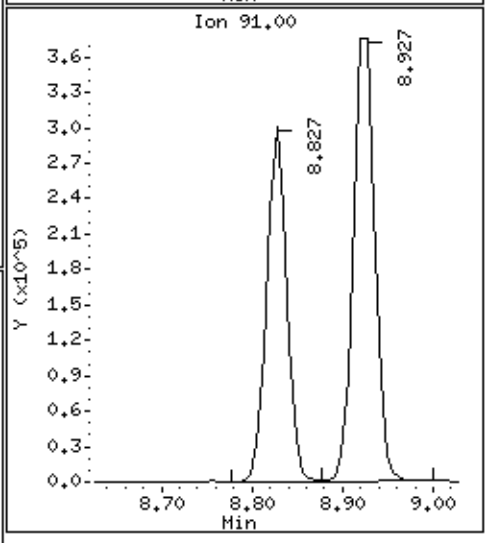
167 Ethyl Benzene

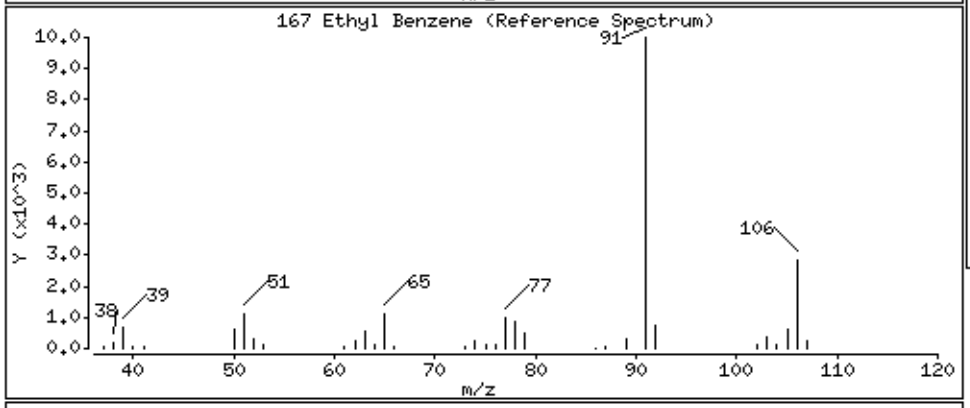
Concentration: 108.81 PPBV

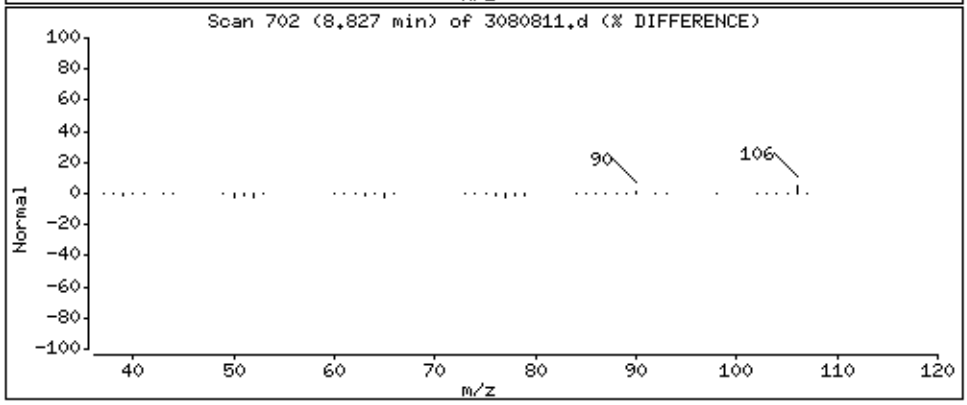












Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

Sample Info: 40ml N0587

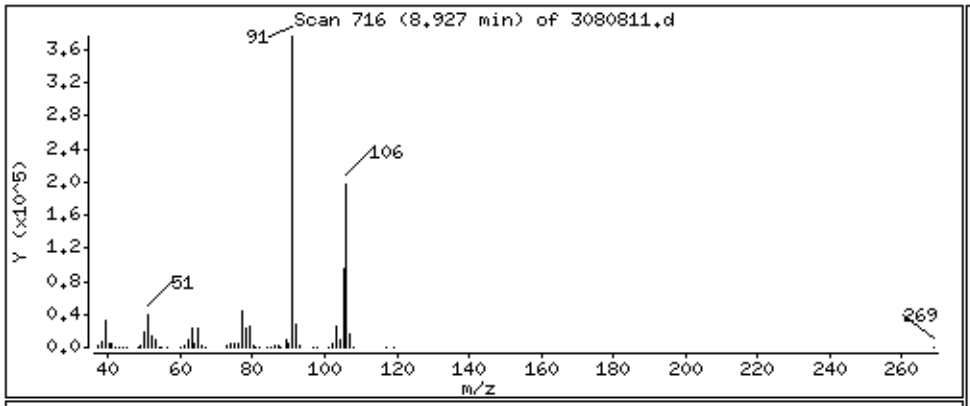
Operator: jg

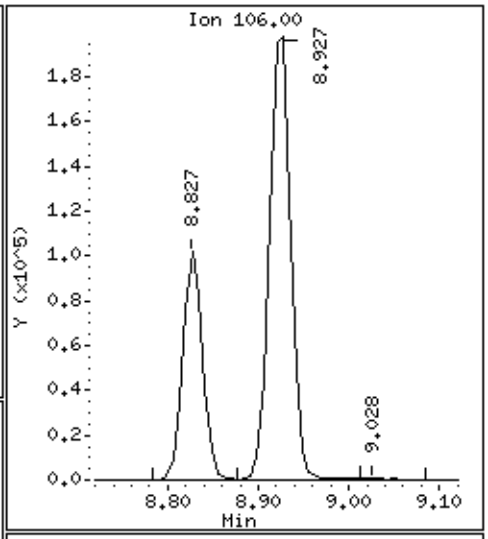
Column phase: RTX-624

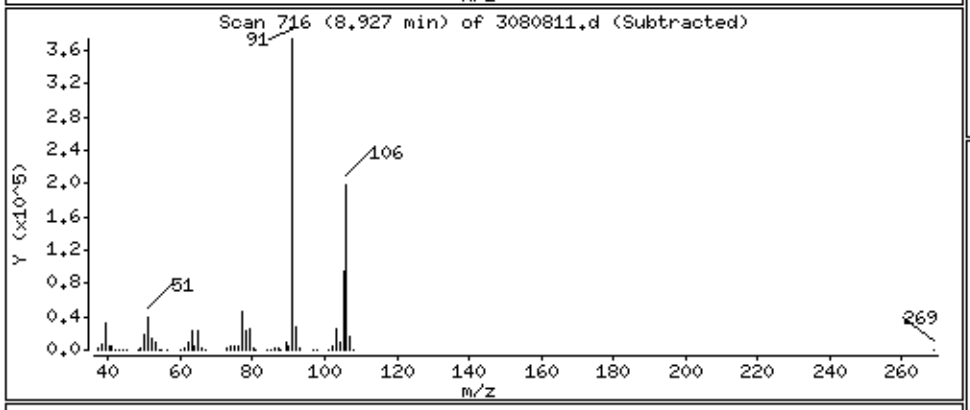
Column diameter: 0.25

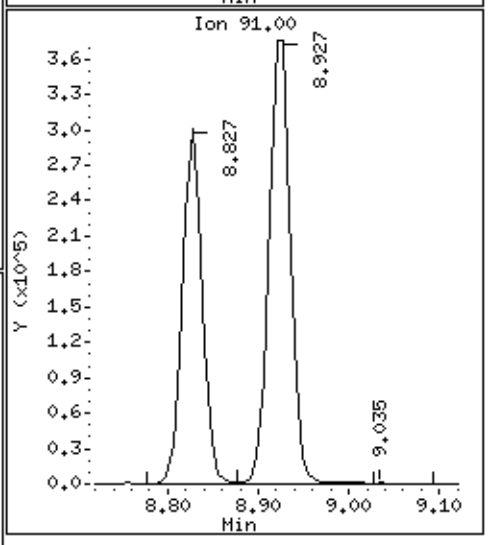
169 m,p-Xylene

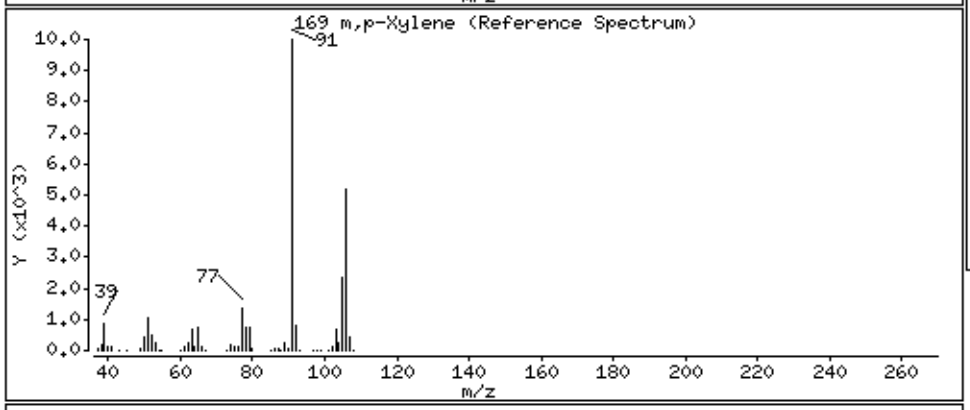
Concentration: 182.82 PPBV

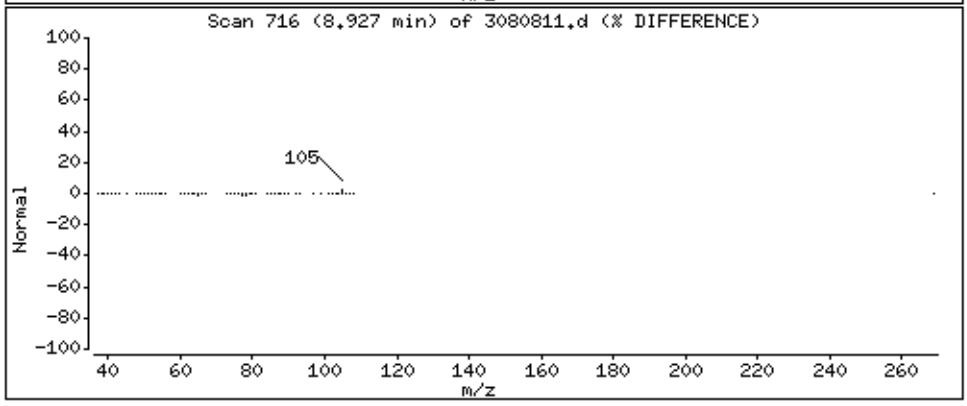












Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

Sample Info: 40ml N0587

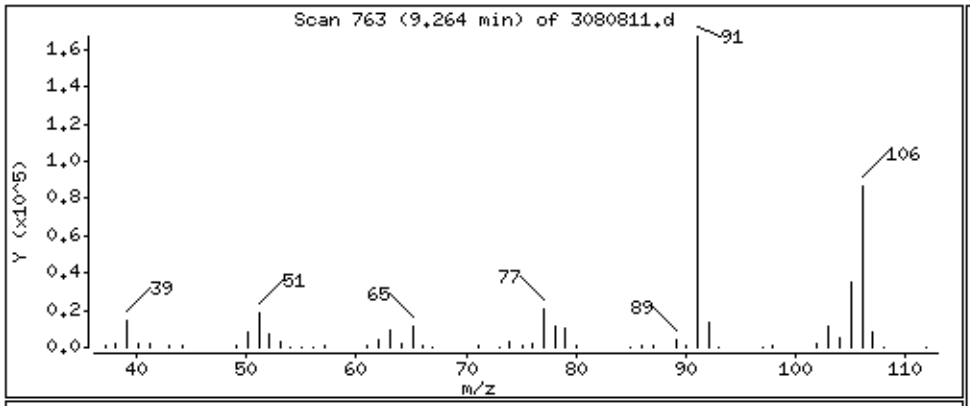
Operator: jg

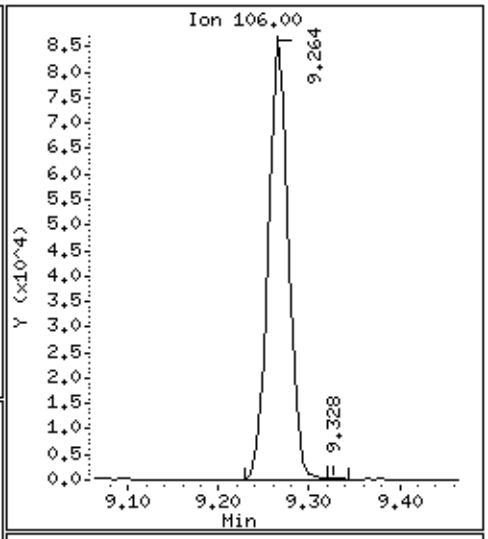
Column phase: RTX-624

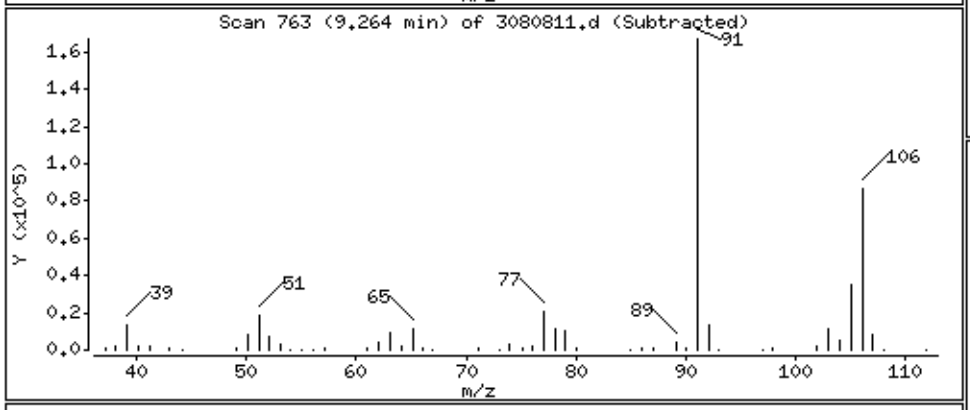
Column diameter: 0.25

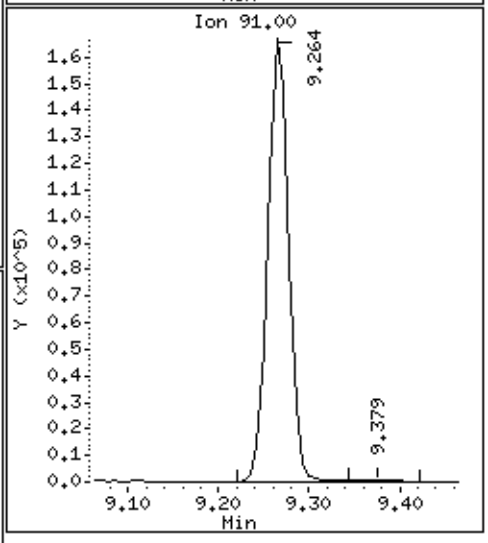
171 o-Xylene

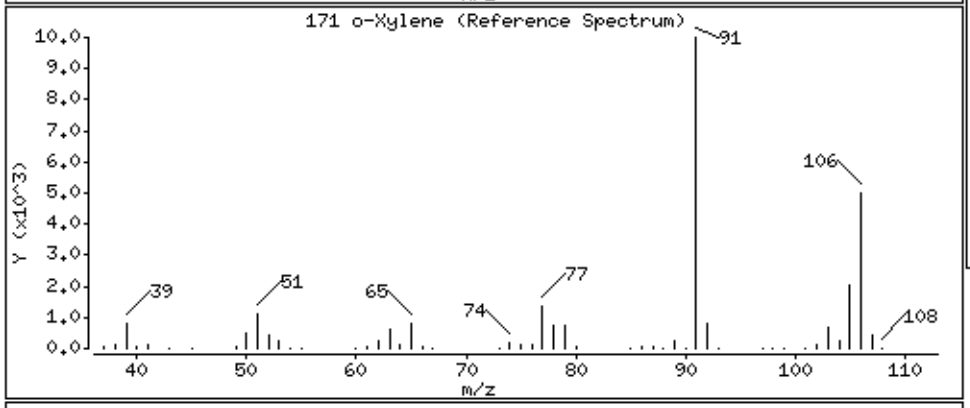
Concentration: 78.258 PPBV

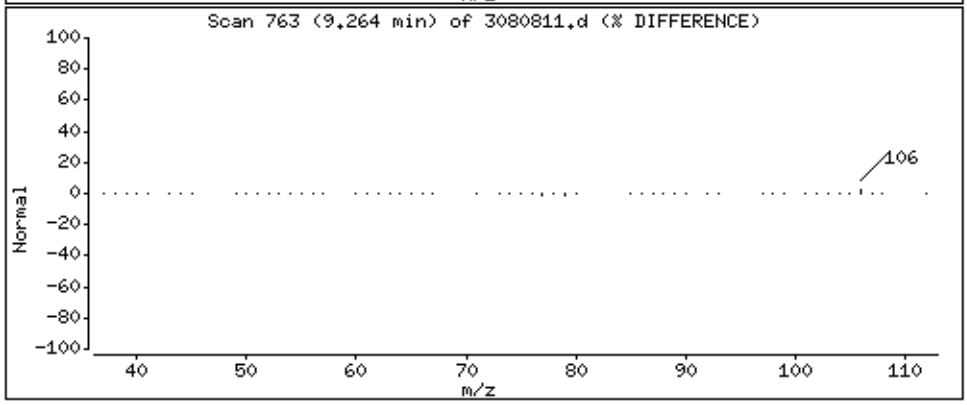












Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

Sample Info: 40ml N0587

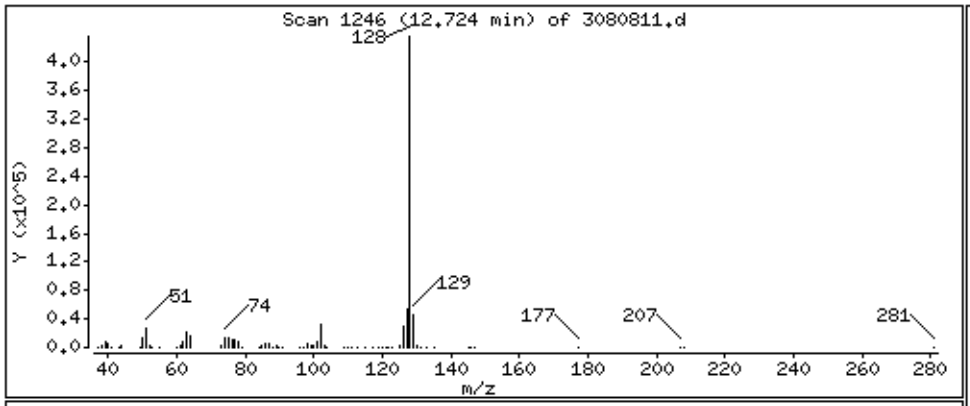
Operator: jg

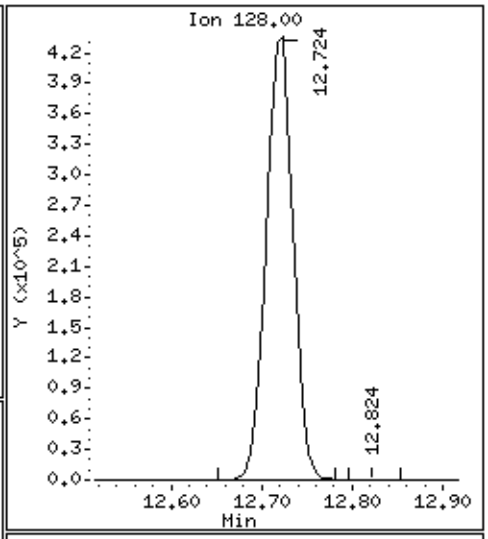
Column phase: RTX-624

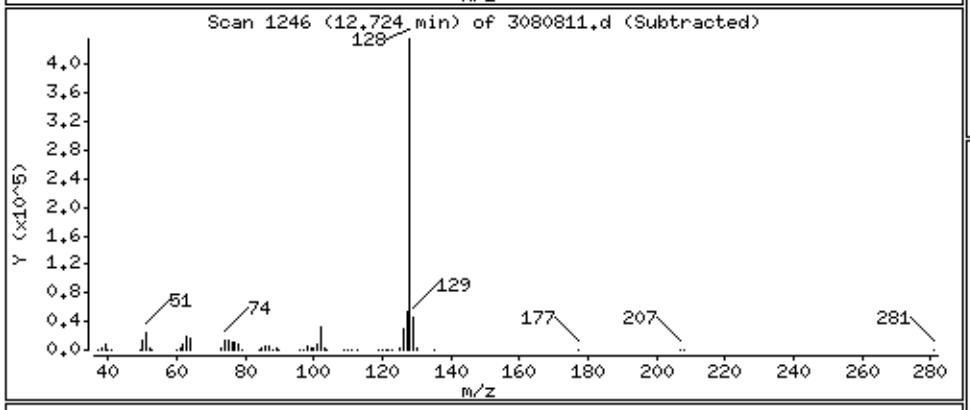
Column diameter: 0.25

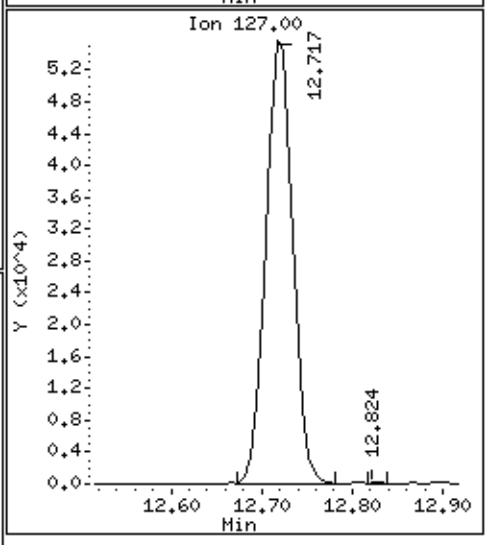
228 Naphthalene

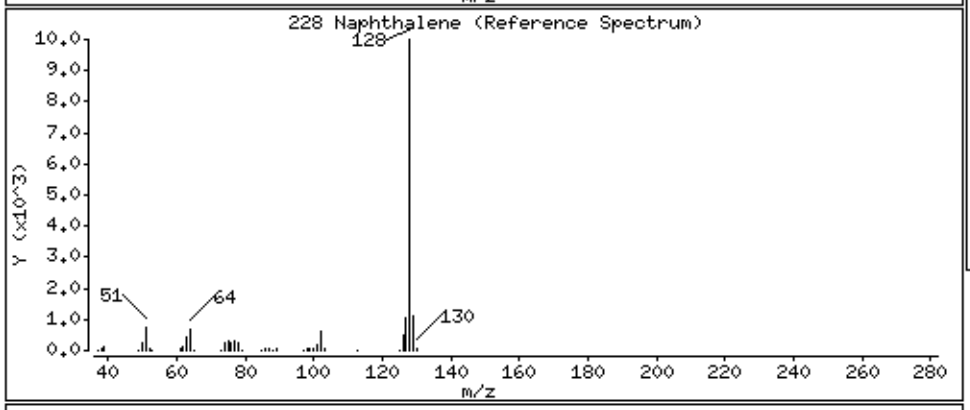
Concentration: 123.23 PPBV

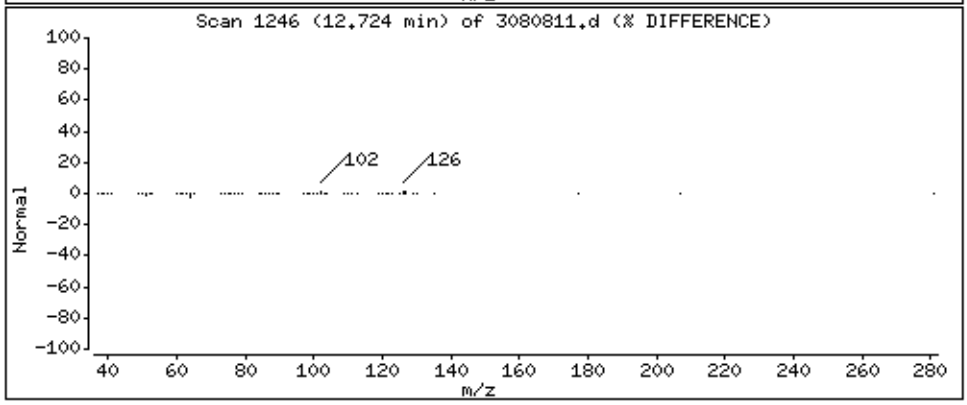












Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

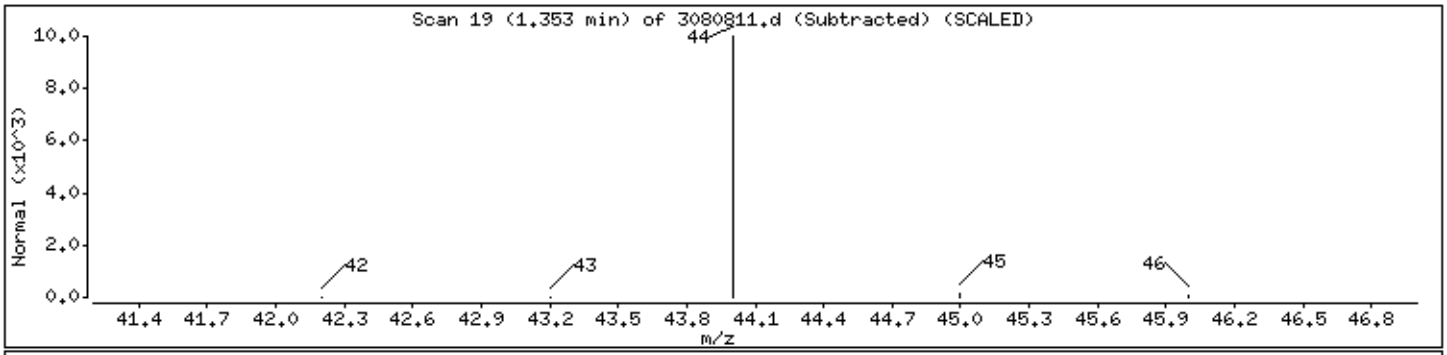
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

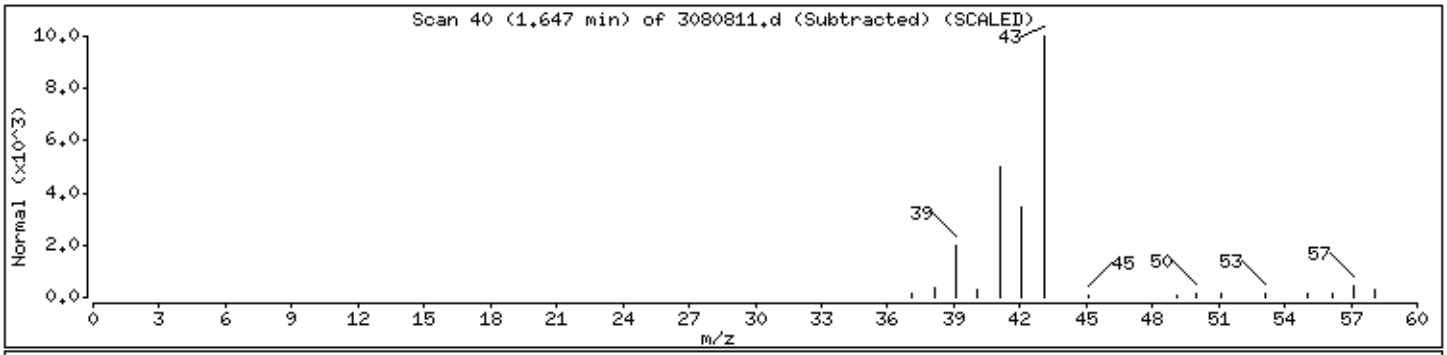
Sample Info: 40ml N0587

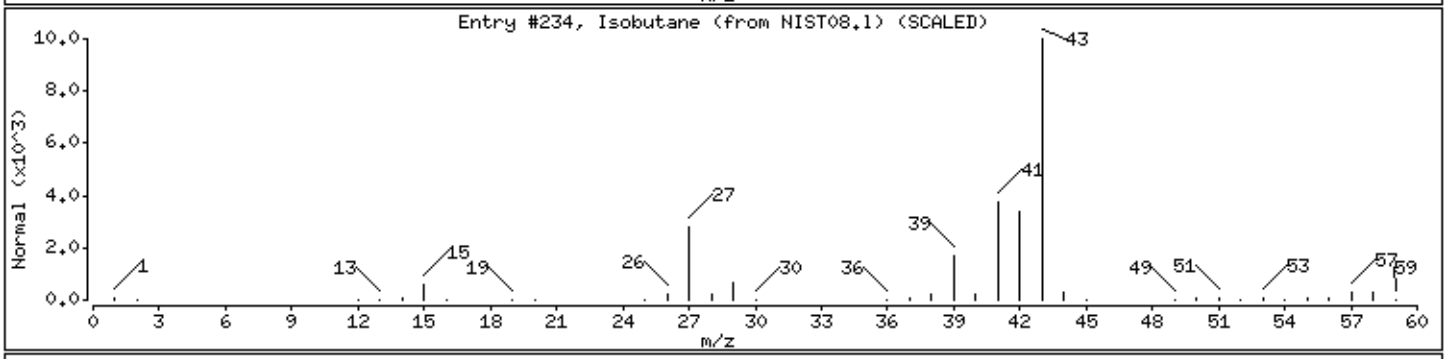
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isobutane	75-28-5	NIST08.l	234	72	C4H10	58





Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

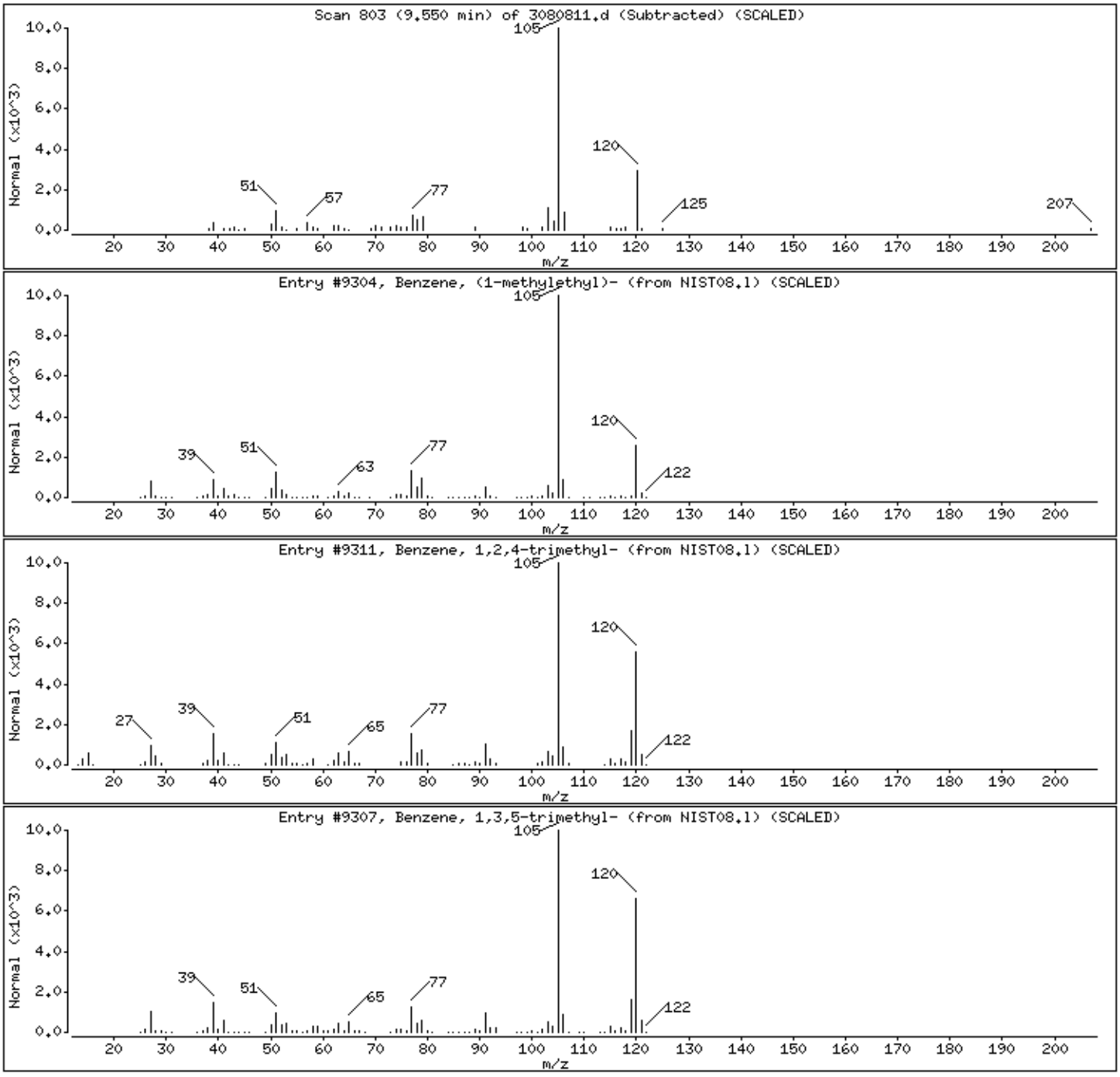
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, (1-methylethyl)-	98-82-8	NIST08.l	9304	86	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9311	78	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9307	72	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

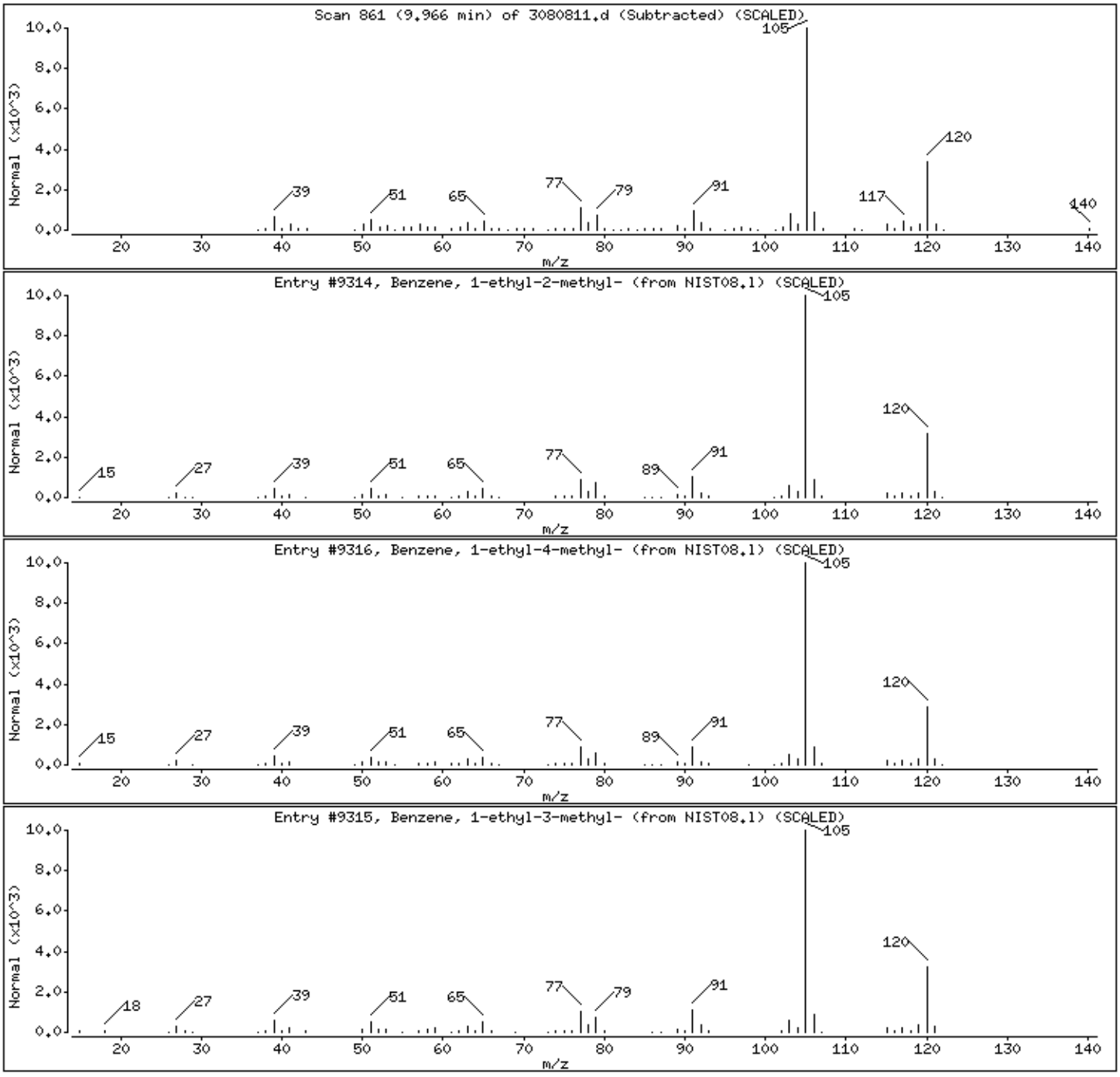
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-2-methyl-	611-14-3	NIST08.l	9314	95	C9H12	120
Benzene, 1-ethyl-4-methyl-	622-96-8	NIST08.l	9316	94	C9H12	120
Benzene, 1-ethyl-3-methyl-	620-14-4	NIST08.l	9315	94	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

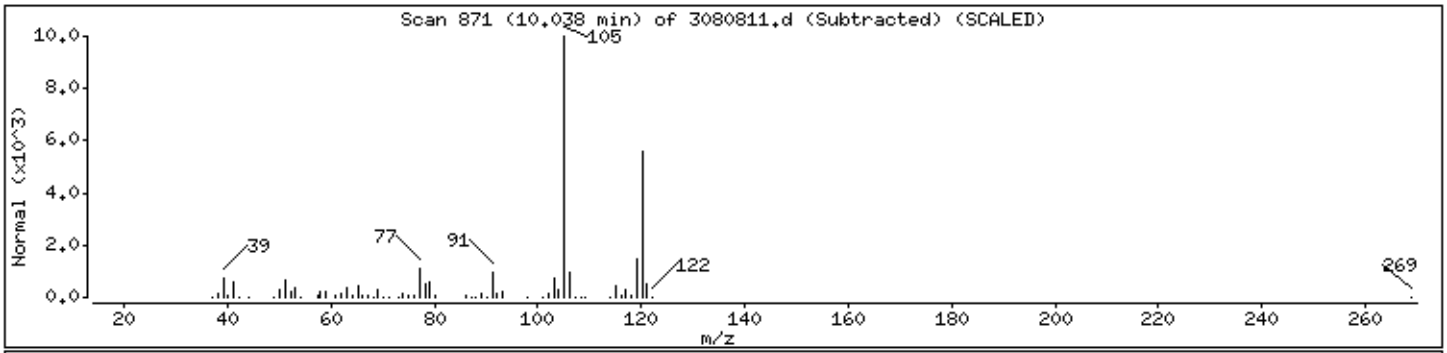
Sample Info: 40ml N0587

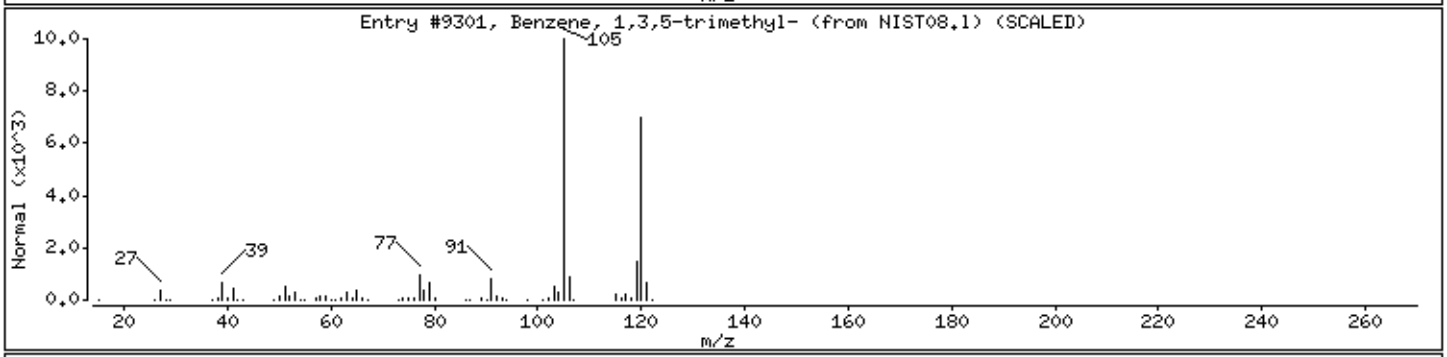
Operator: jg

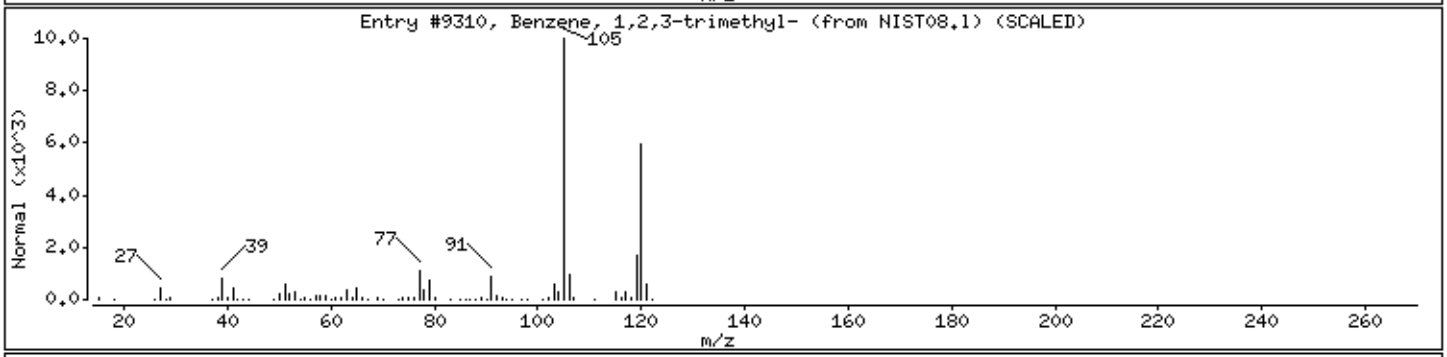
Column phase: RTX-624

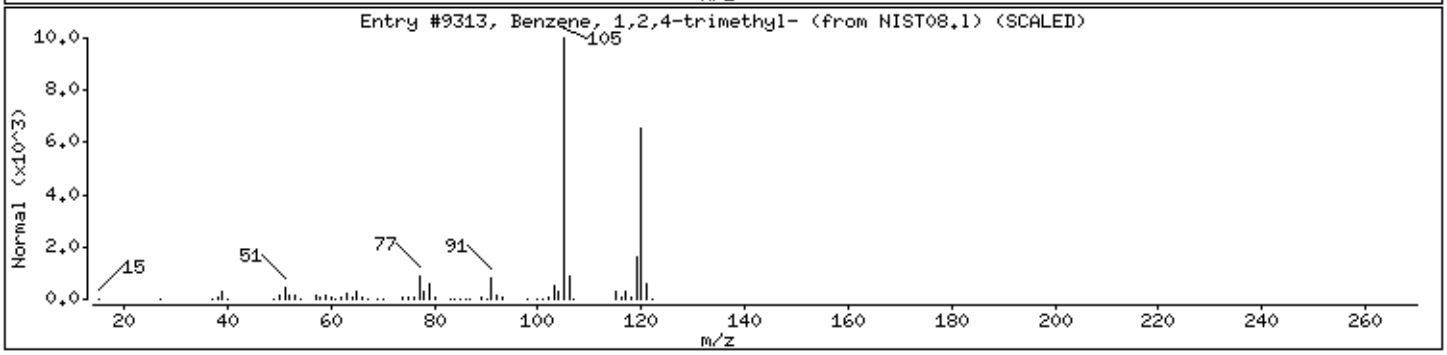
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9301	97	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	95	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

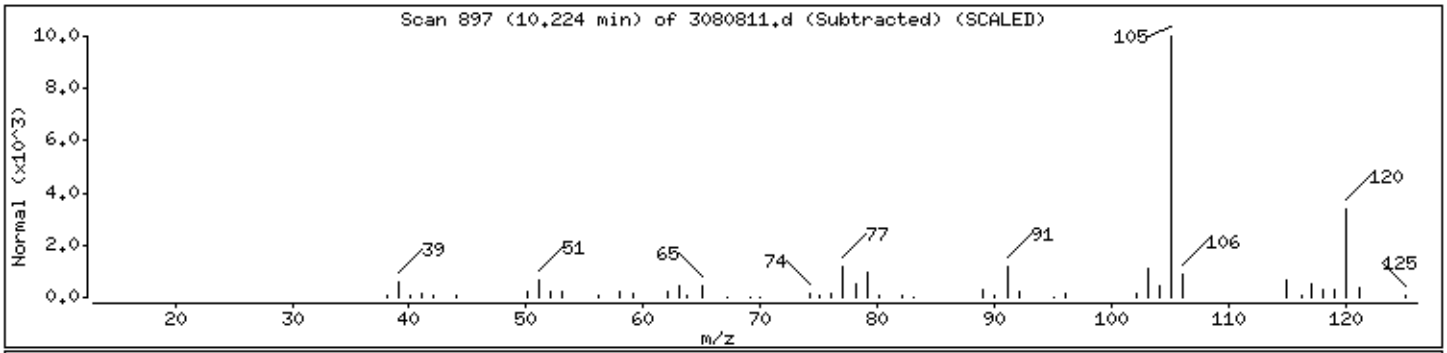
Sample Info: 40ml N0587

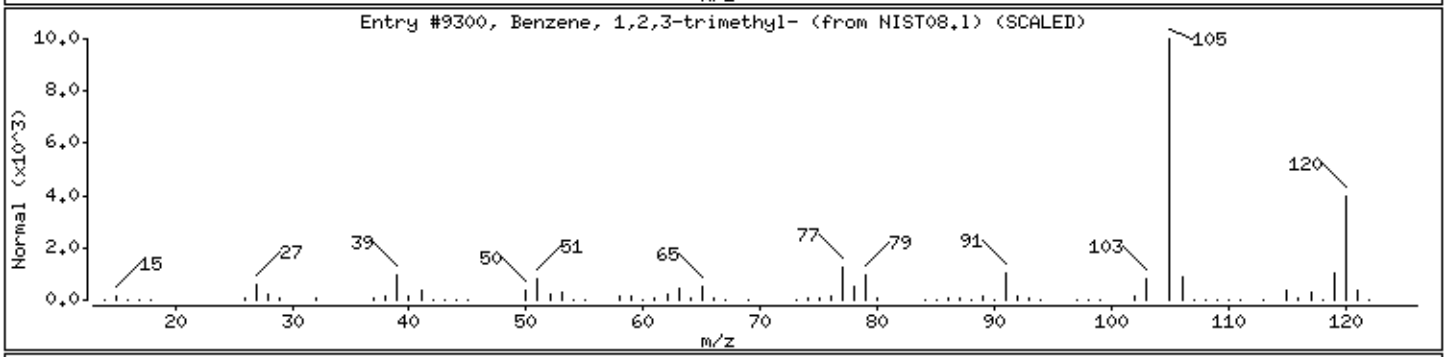
Operator: jg

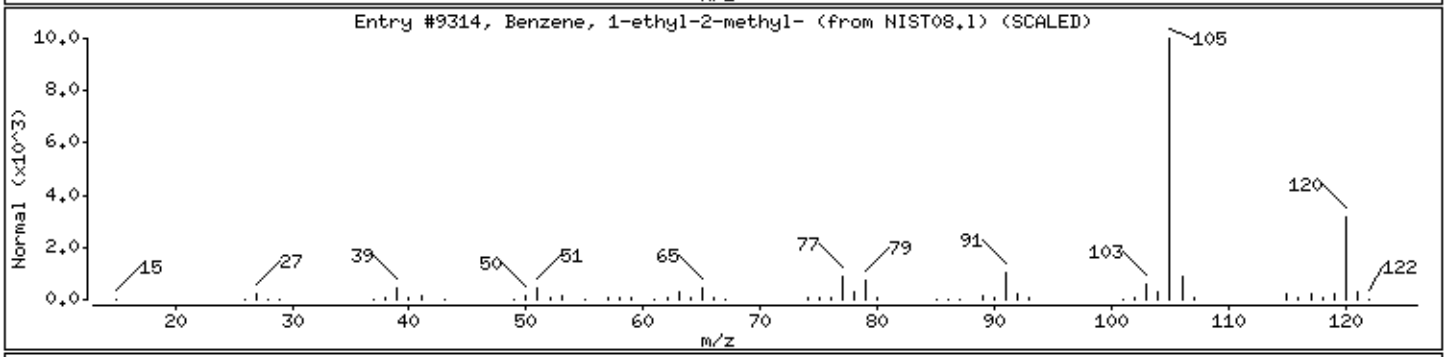
Column phase: RTX-624

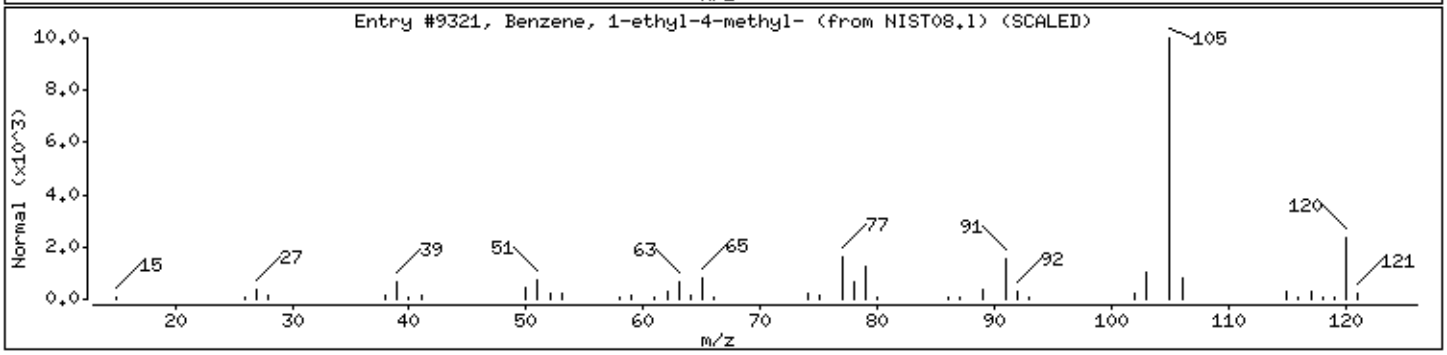
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9300	94	C9H12	120
Benzene, 1-ethyl-2-methyl-	611-14-3	NIST08.l	9314	91	C9H12	120
Benzene, 1-ethyl-4-methyl-	622-96-8	NIST08.l	9321	91	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

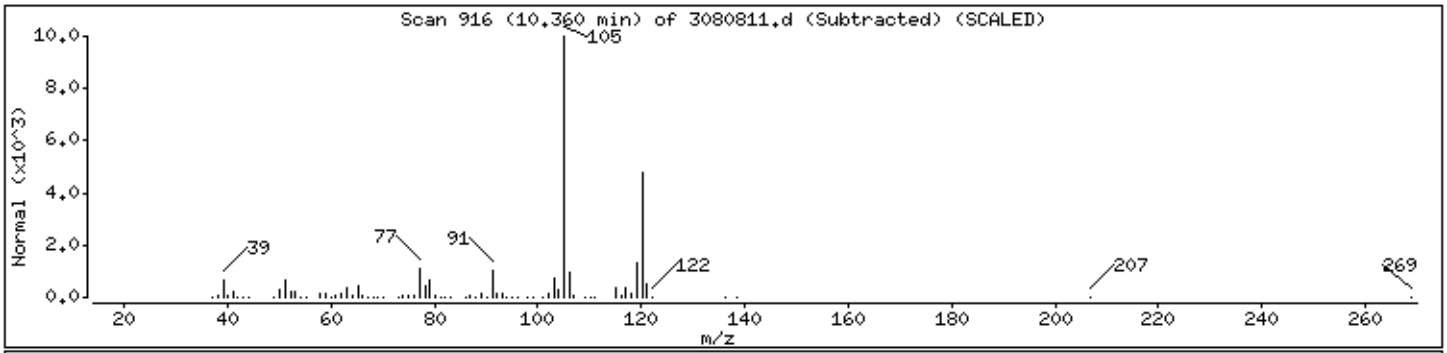
Sample Info: 40ml N0587

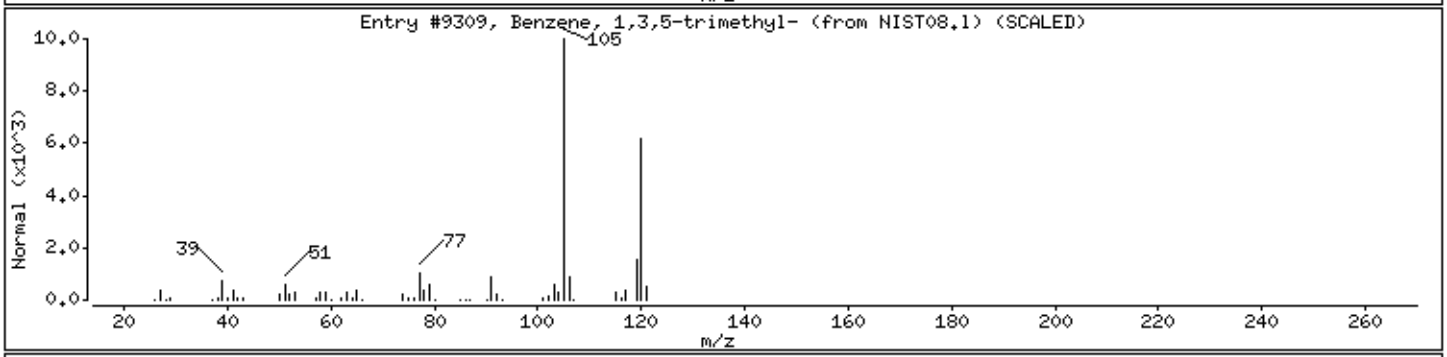
Operator: jg

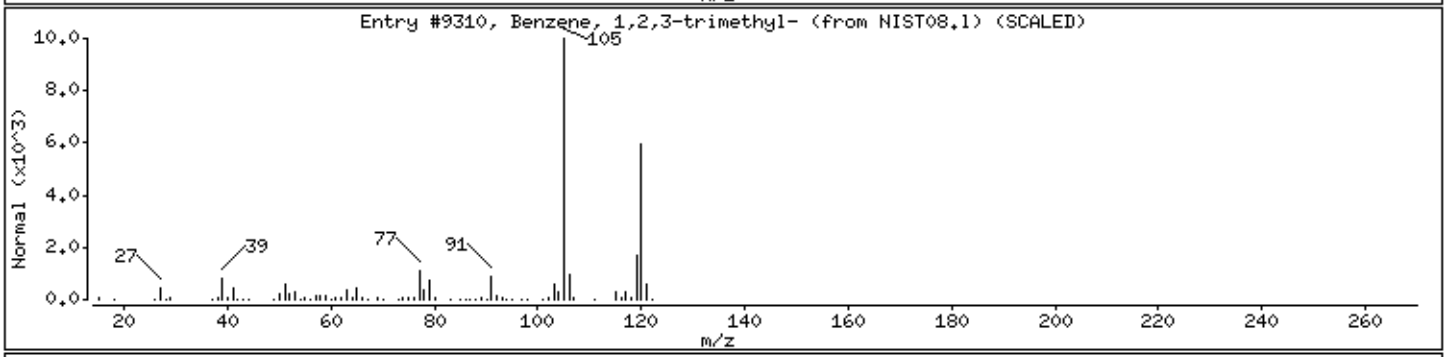
Column phase: RTX-624

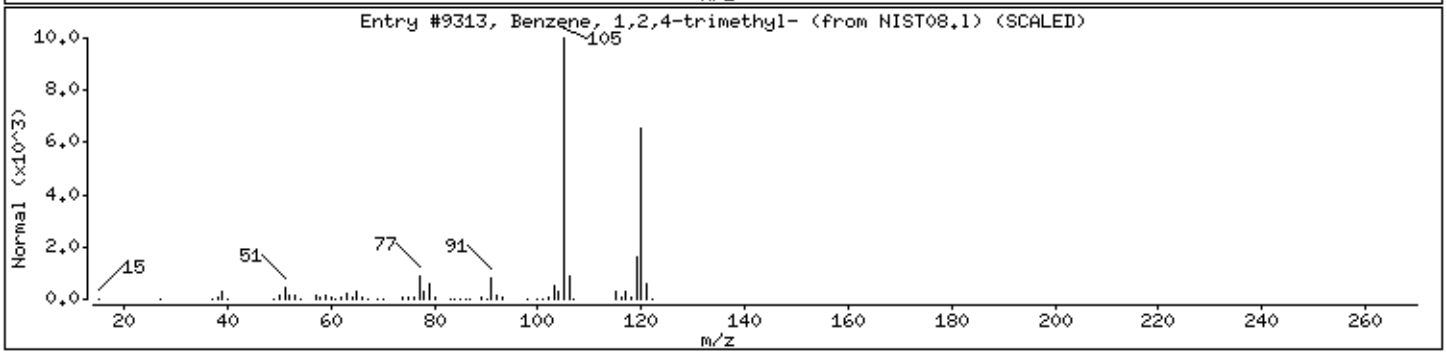
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9309	97	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	95	C9H12	120









Data File: /chem/msd3.i/08aug17.b/3080811.d

Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

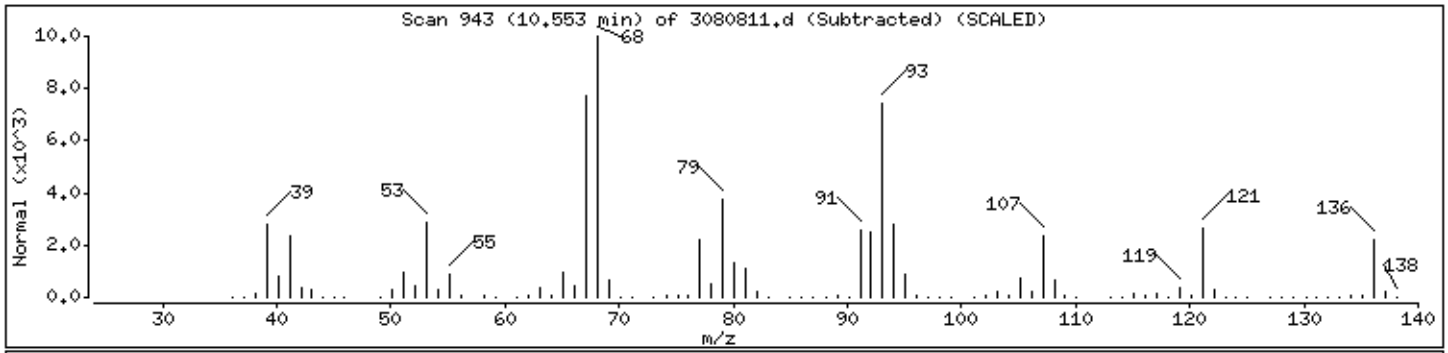
Sample Info: 40ml N0587

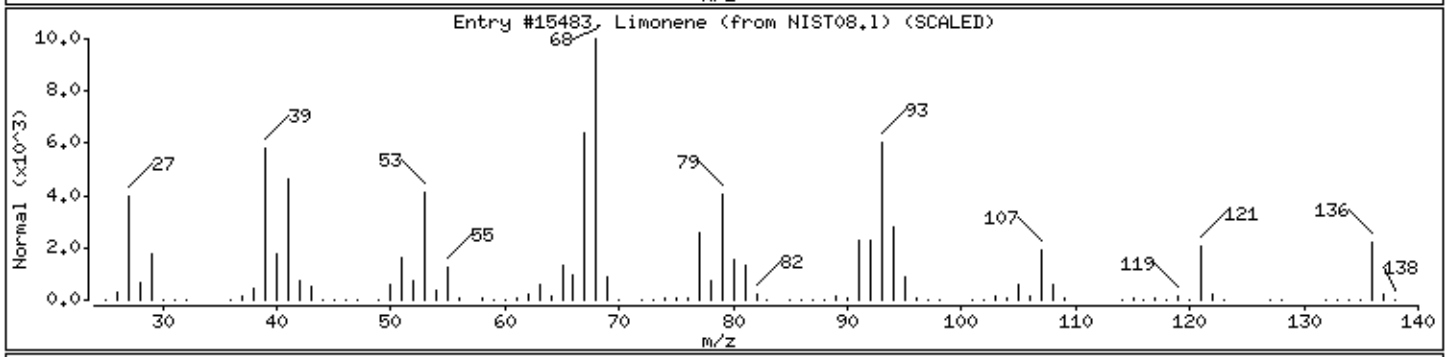
Operator: jg

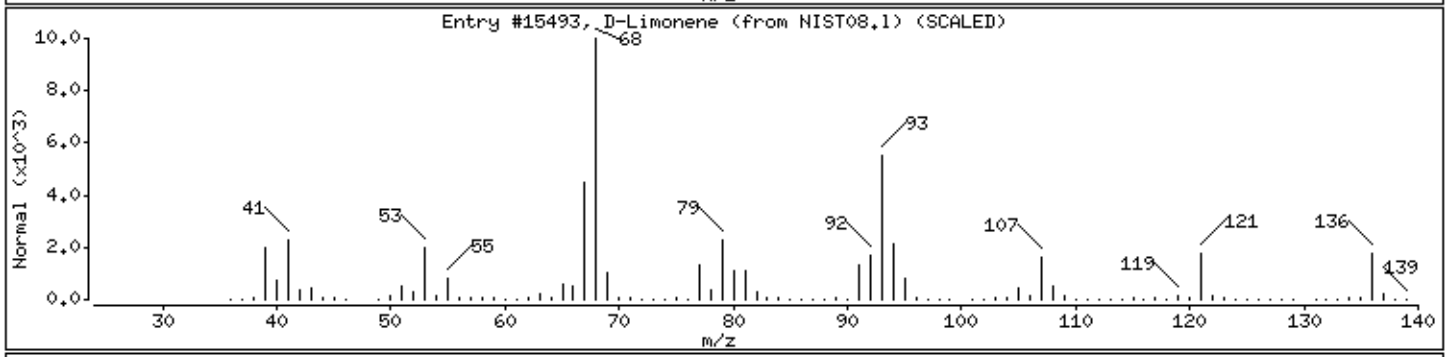
Column phase: RTX-624

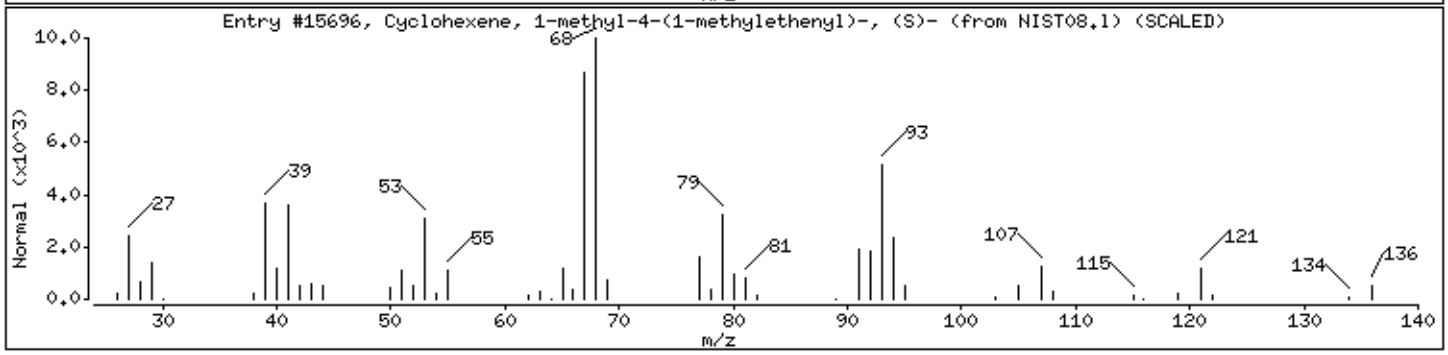
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15483	94	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15493	96	C10H16	136
Cyclohexene, 1-methyl-4-(1-methylethenyl	5989-54-8	NIST08.l	15696	90	C10H16	136









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Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

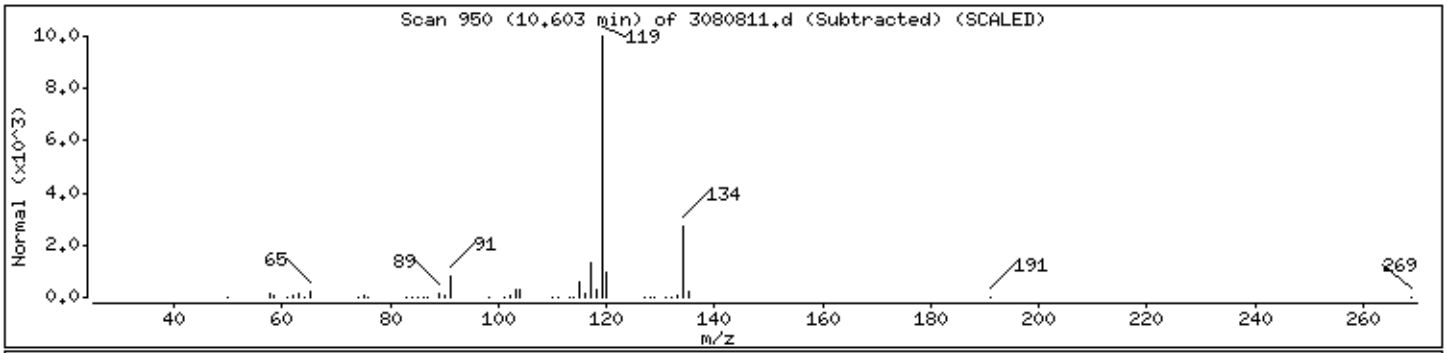
Sample Info: 40ml N0587

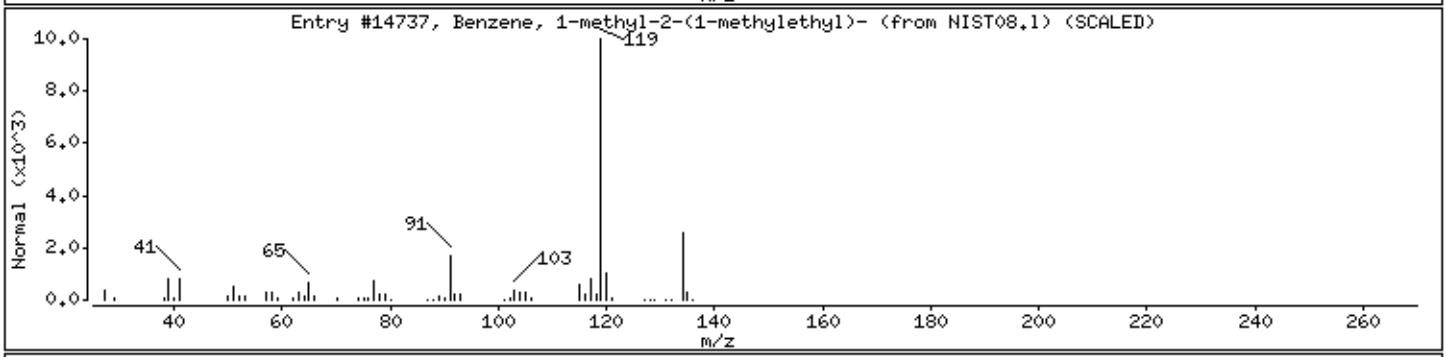
Operator: jg

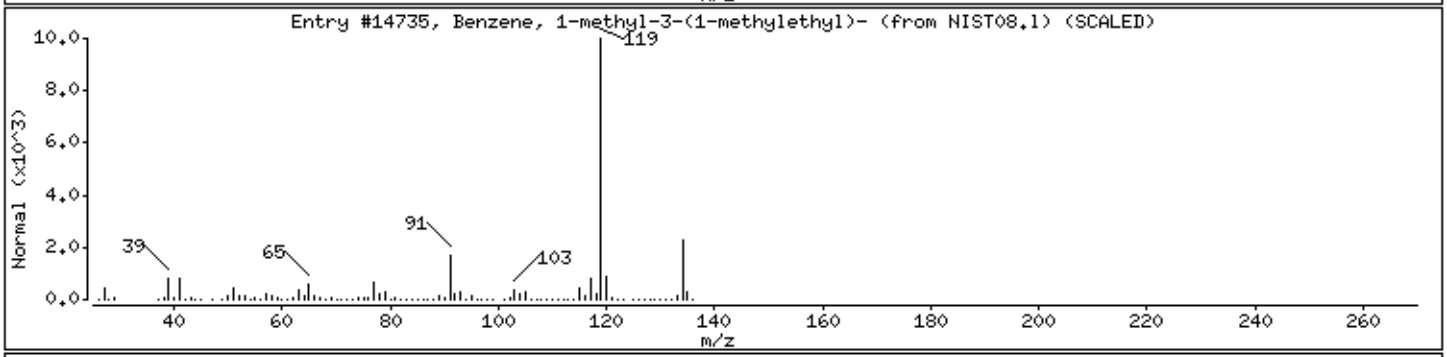
Column phase: RTX-624

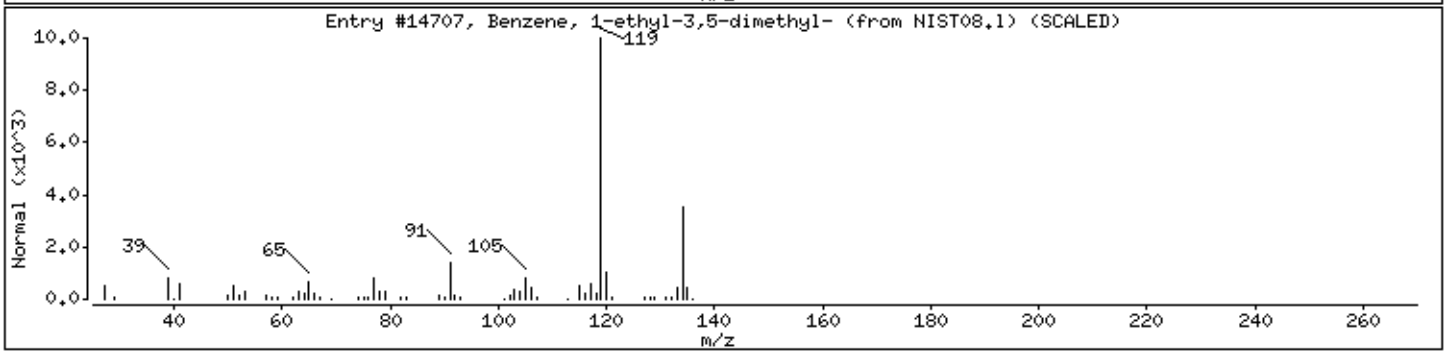
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-methyl-2-(1-methylethyl)-	527-84-4	NIST08.l	14737	91	C10H14	134
Benzene, 1-methyl-3-(1-methylethyl)-	535-77-3	NIST08.l	14735	91	C10H14	134
Benzene, 1-ethyl-3,5-dimethyl-	934-74-7	NIST08.l	14707	91	C10H14	134









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Instrument: msd3.i

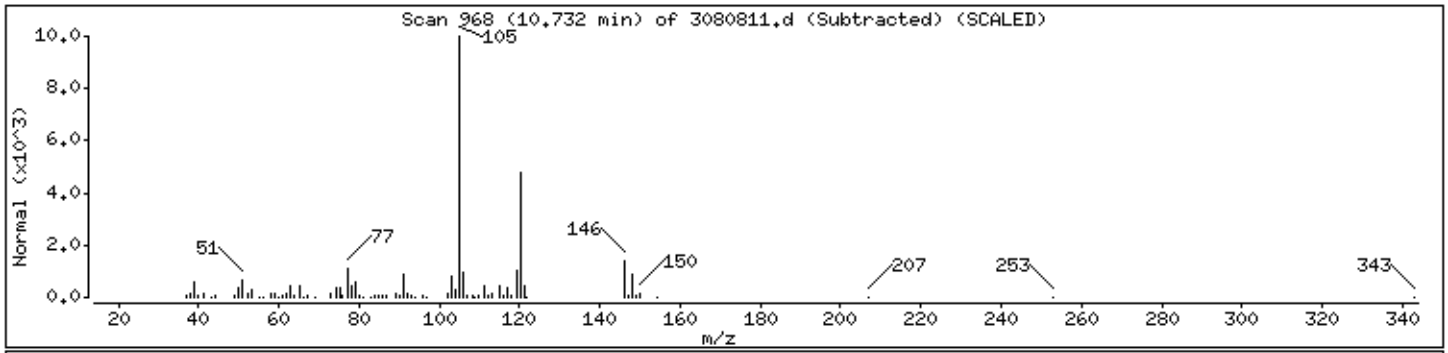
Sample Info: 40ml N0587

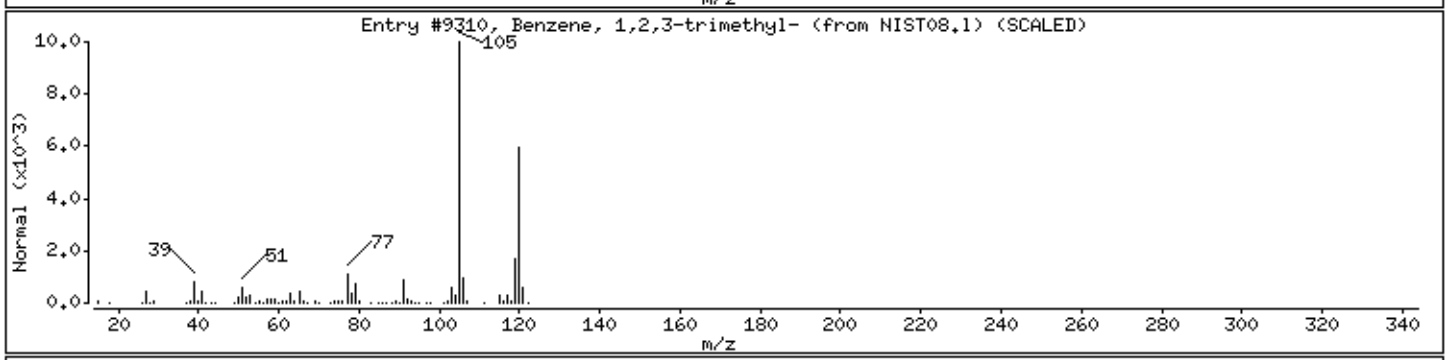
Operator: jg

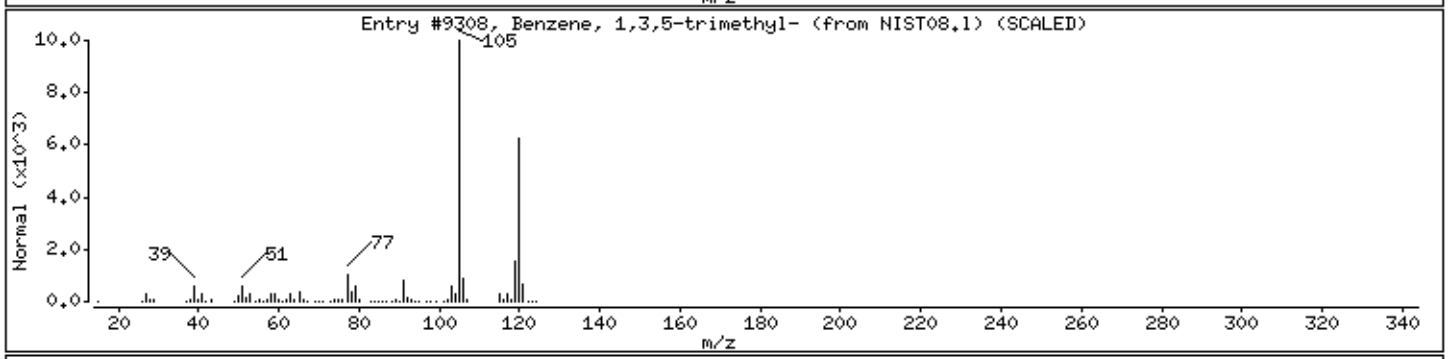
Column phase: RTX-624

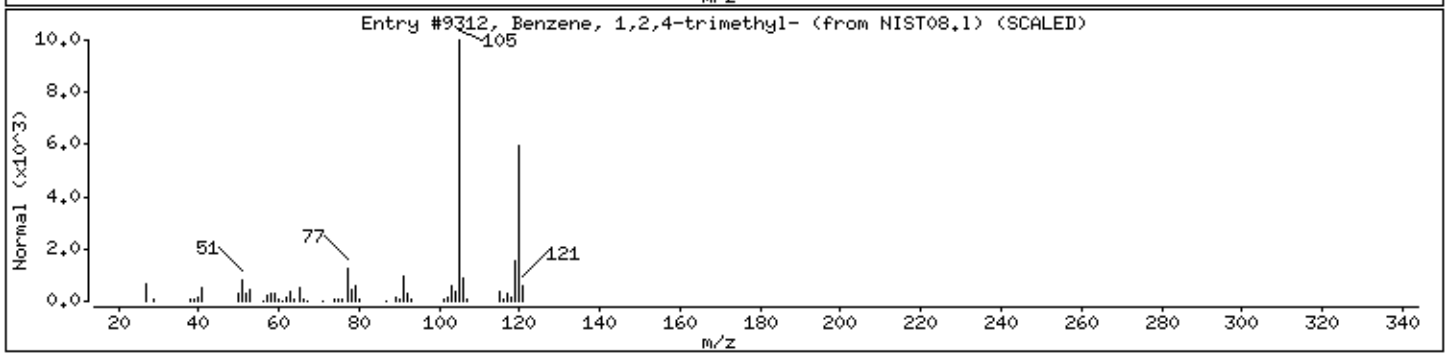
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	94	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9308	93	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	92	C9H12	120









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Client ID:

Instrument: msd3.i

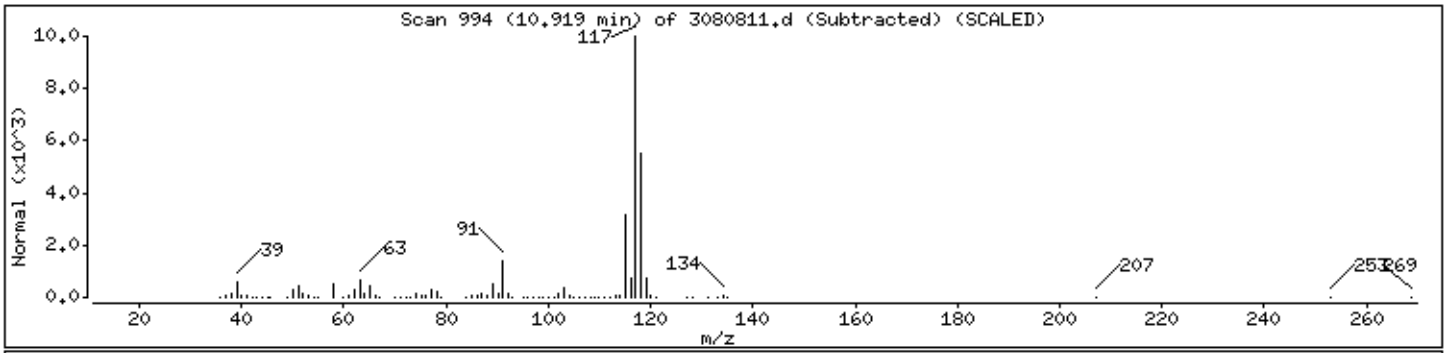
Sample Info: 40ml N0587

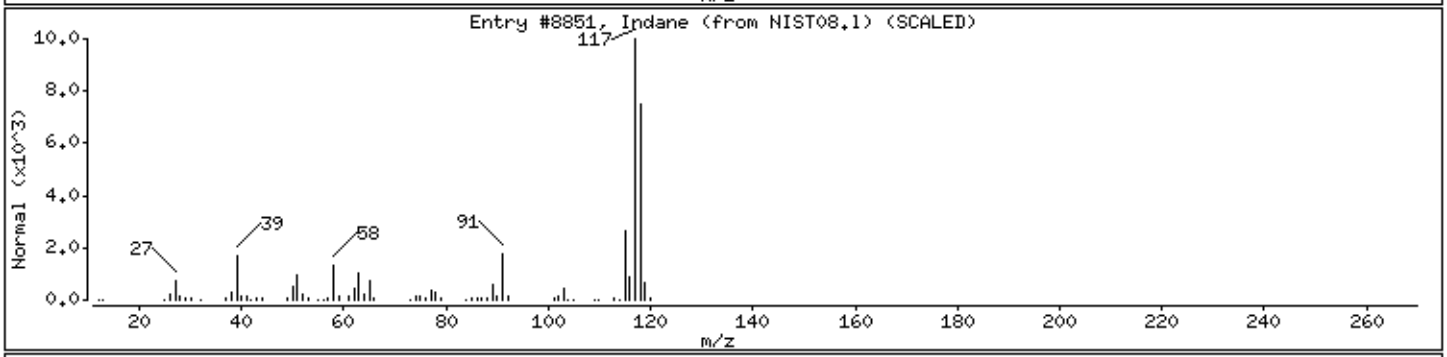
Operator: jg

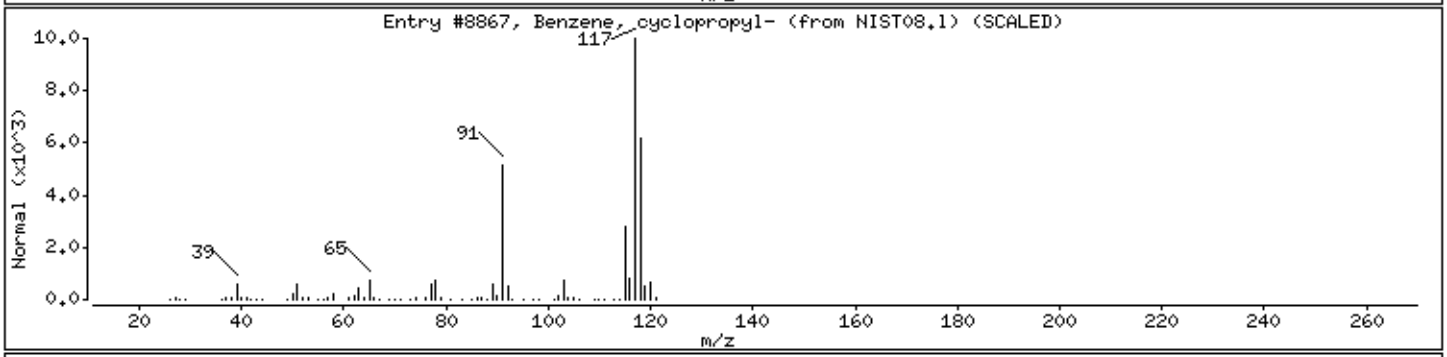
Column phase: RTX-624

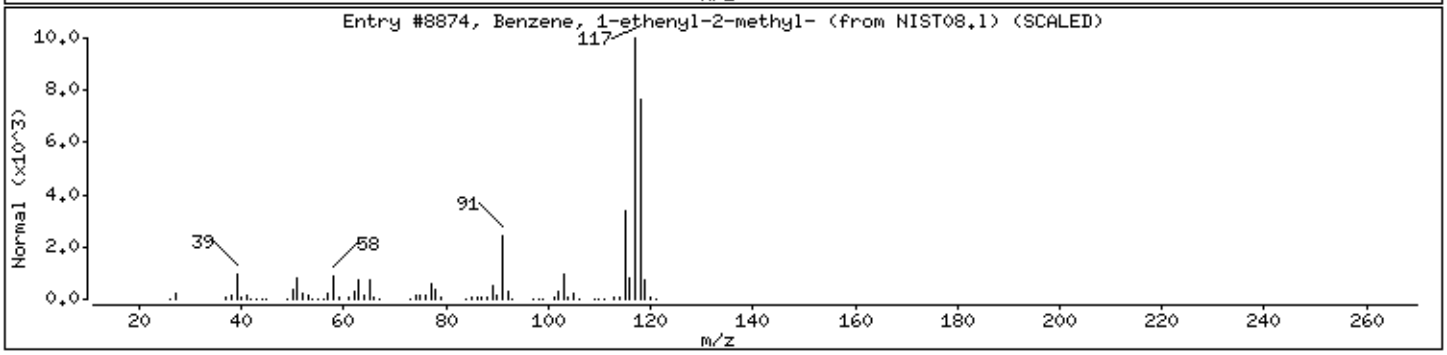
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indane	496-11-7	NIST08.l	8851	87	C9H10	118
Benzene, cyclopropyl-	873-49-4	NIST08.l	8867	83	C9H10	118
Benzene, 1-ethenyl-2-methyl-	611-15-4	NIST08.l	8874	83	C9H10	118









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Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

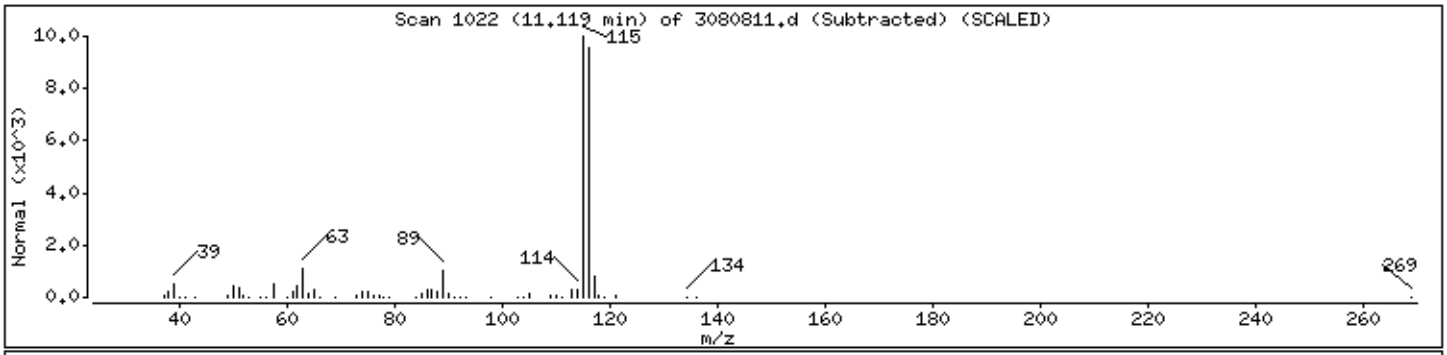
Sample Info: 40ml N0587

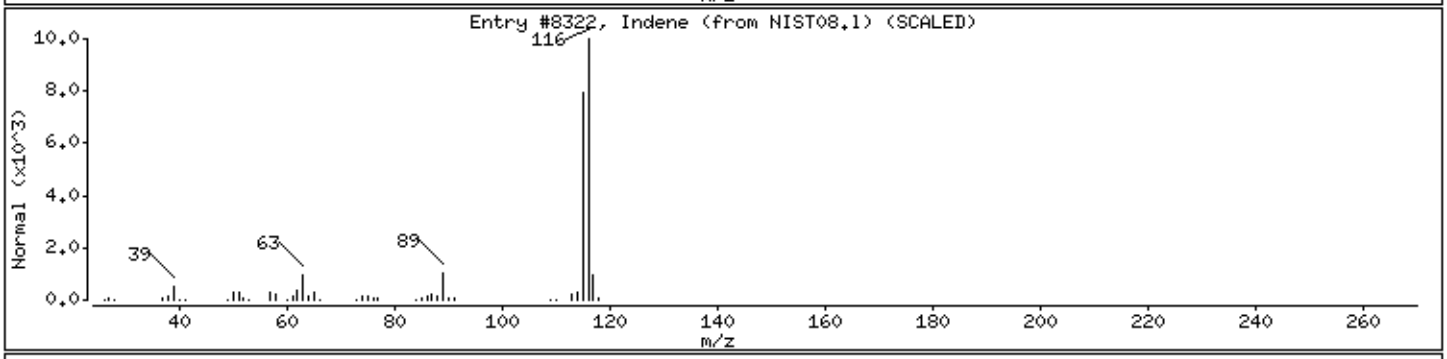
Operator: jg

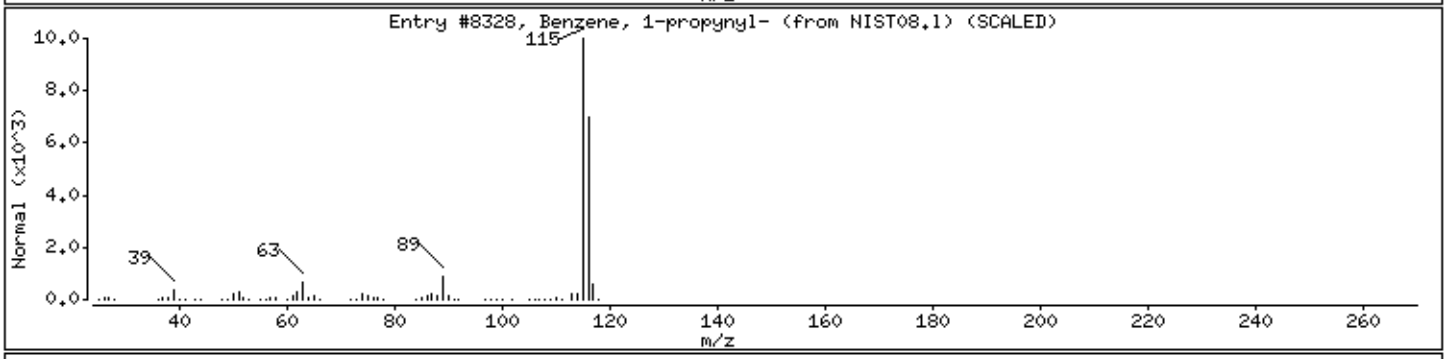
Column phase: RTX-624

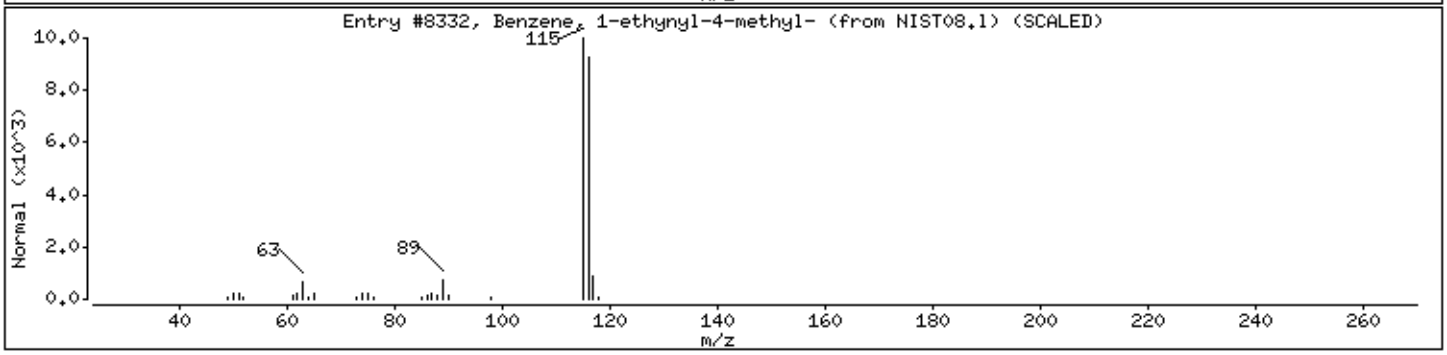
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indene	95-13-6	NIST08.l	8322	97	C9H8	116
Benzene, 1-propynyl-	673-32-5	NIST08.l	8328	94	C9H8	116
Benzene, 1-ethynyl-4-methyl-	766-97-2	NIST08.l	8332	91	C9H8	116









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Client ID:

Instrument: msd3.i

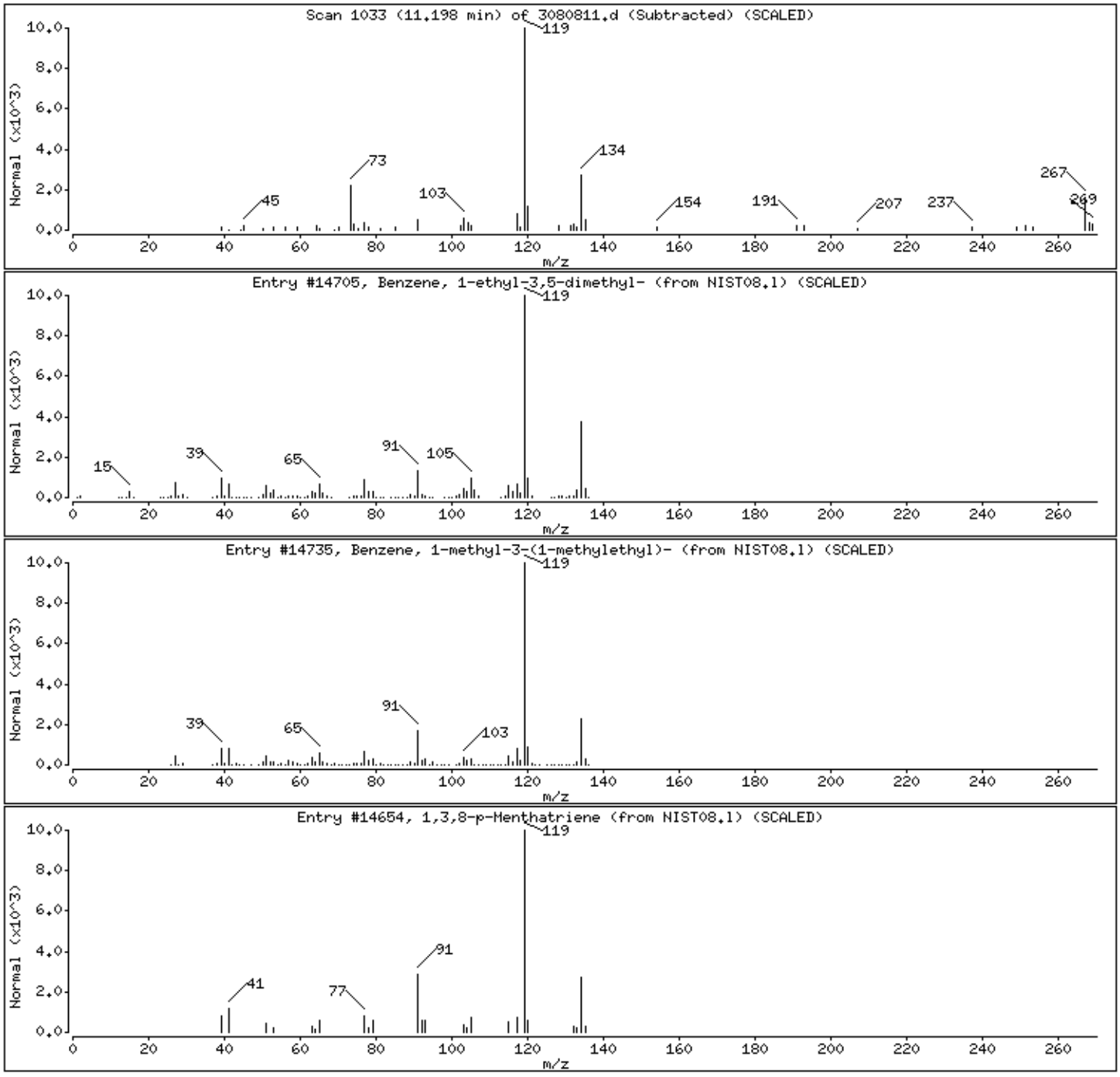
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-3,5-dimethyl-	934-74-7	NIST08.l	14705	58	C10H14	134
Benzene, 1-methyl-3-(1-methylethyl)-	535-77-3	NIST08.l	14735	58	C10H14	134
1,3,8-p-Menthatriene	21195-59-5	NIST08.l	14654	58	C10H14	134



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Instrument: msd3.i

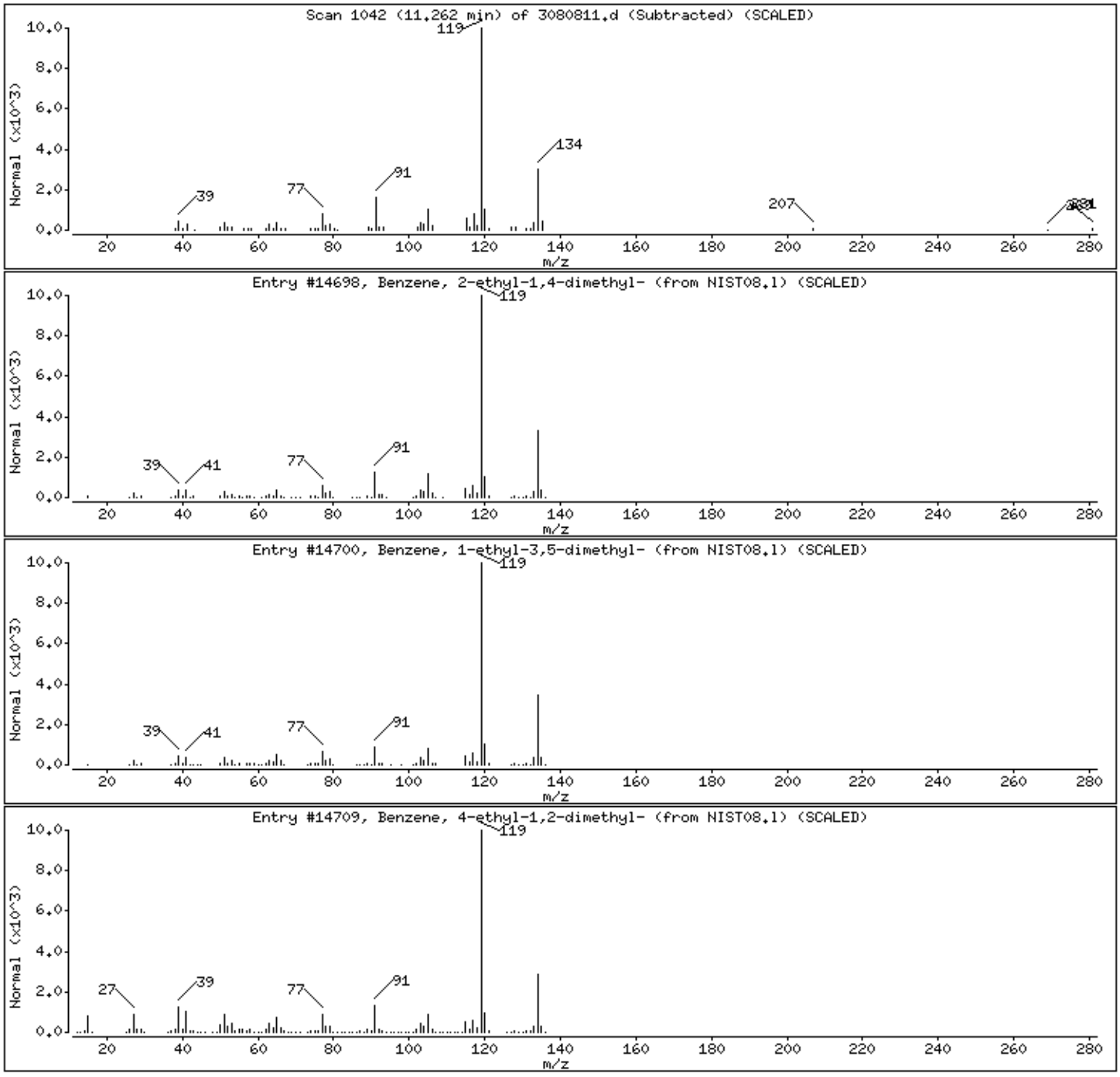
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 2-ethyl-1,4-dimethyl-	1758-88-9	NIST08.l	14698	96	C10H14	134
Benzene, 1-ethyl-3,5-dimethyl-	934-74-7	NIST08.l	14700	95	C10H14	134
Benzene, 4-ethyl-1,2-dimethyl-	934-80-5	NIST08.l	14709	95	C10H14	134



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Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

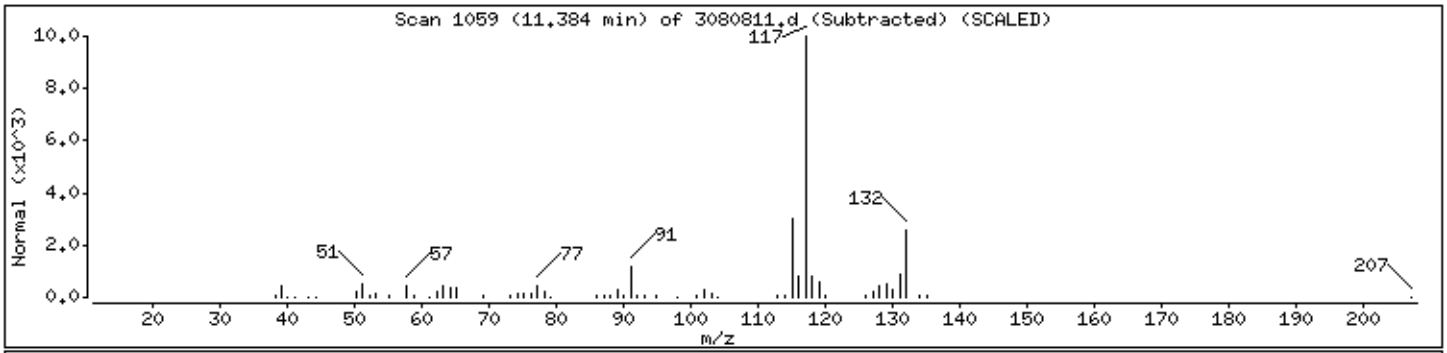
Sample Info: 40ml N0587

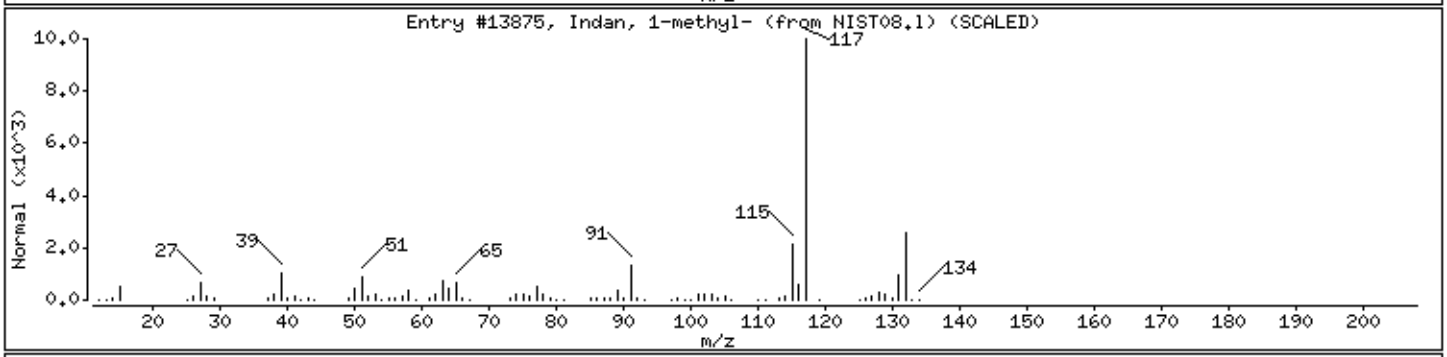
Operator: jg

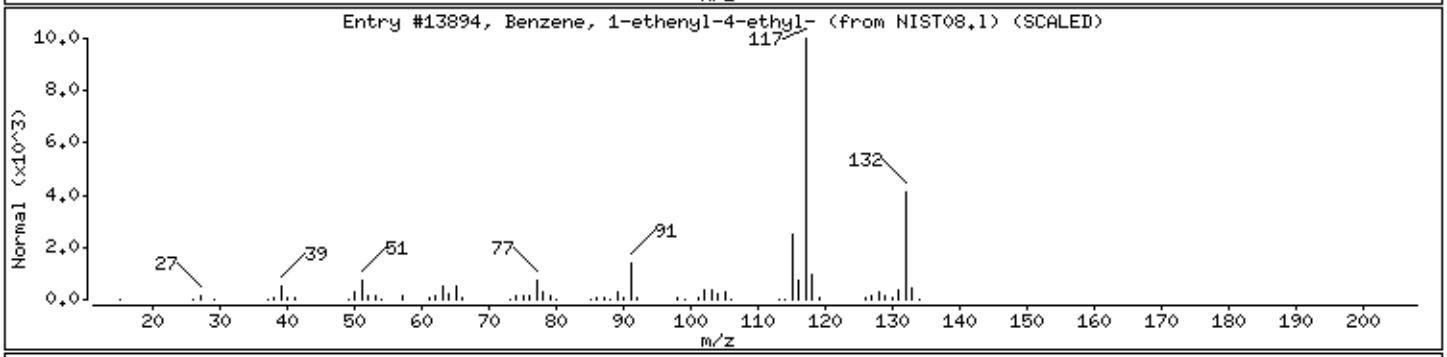
Column phase: RTX-624

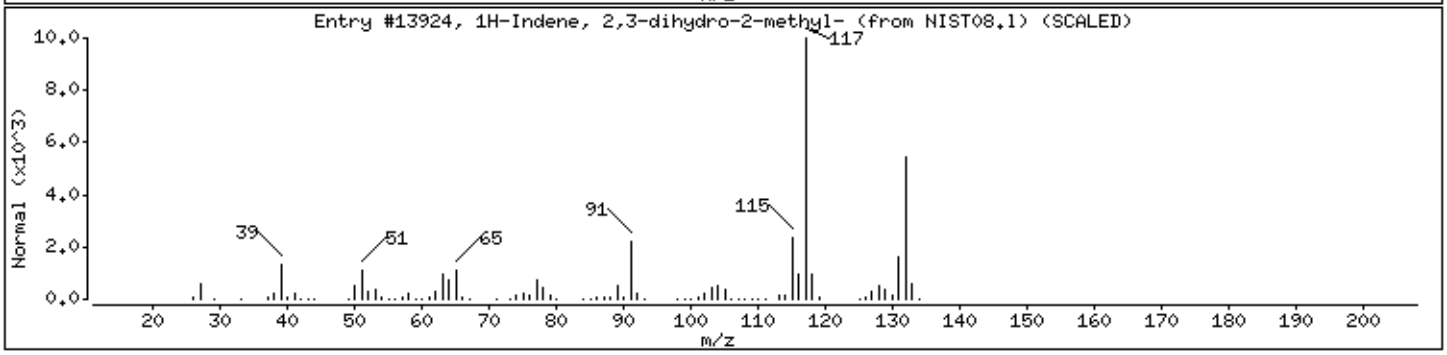
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indan, 1-methyl-	767-58-8	NIST08.l	13875	81	C10H12	132
Benzene, 1-ethenyl-4-ethyl-	3454-07-7	NIST08.l	13894	78	C10H12	132
1H-Indene, 2,3-dihydro-2-methyl-	824-63-5	NIST08.l	13924	72	C10H12	132









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Date : 08-AUG-2017 16:50

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Instrument: msd3.i

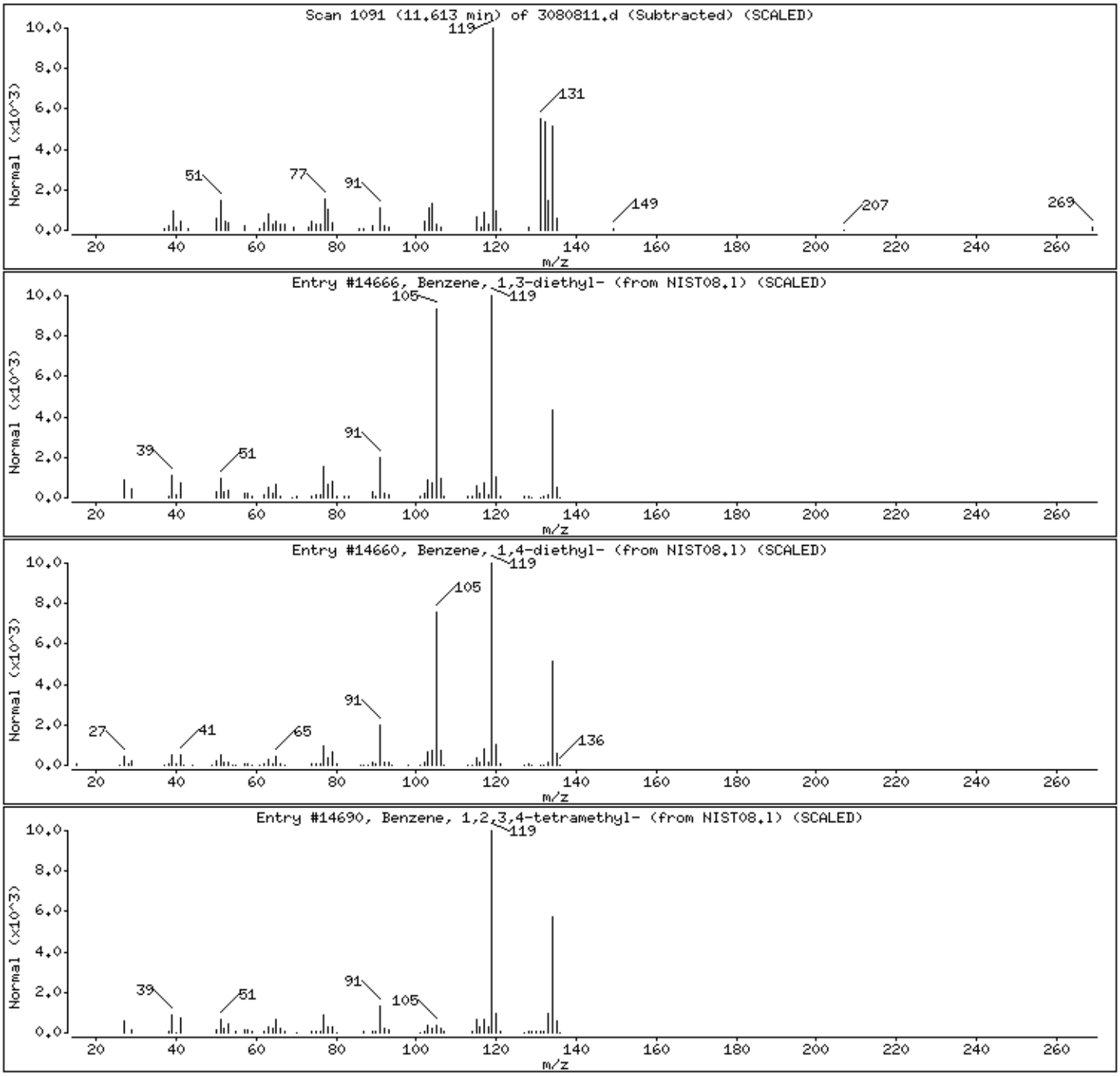
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3-diethyl-	141-93-5	NIST08.l	14666	64	C10H14	134
Benzene, 1,4-diethyl-	105-05-5	NIST08.l	14660	64	C10H14	134
Benzene, 1,2,3,4-tetramethyl-	488-23-3	NIST08.l	14690	60	C10H14	134



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Instrument: msd3.i

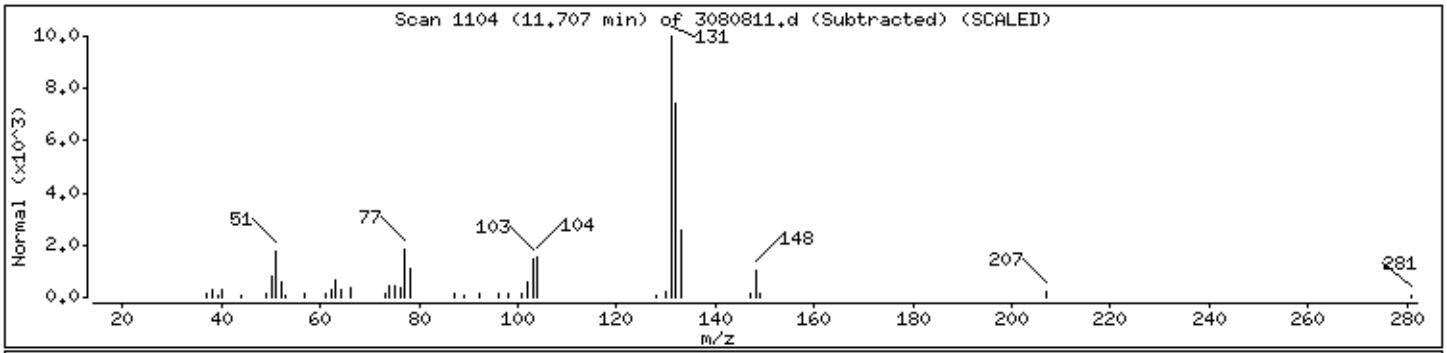
Sample Info: 40ml N0587

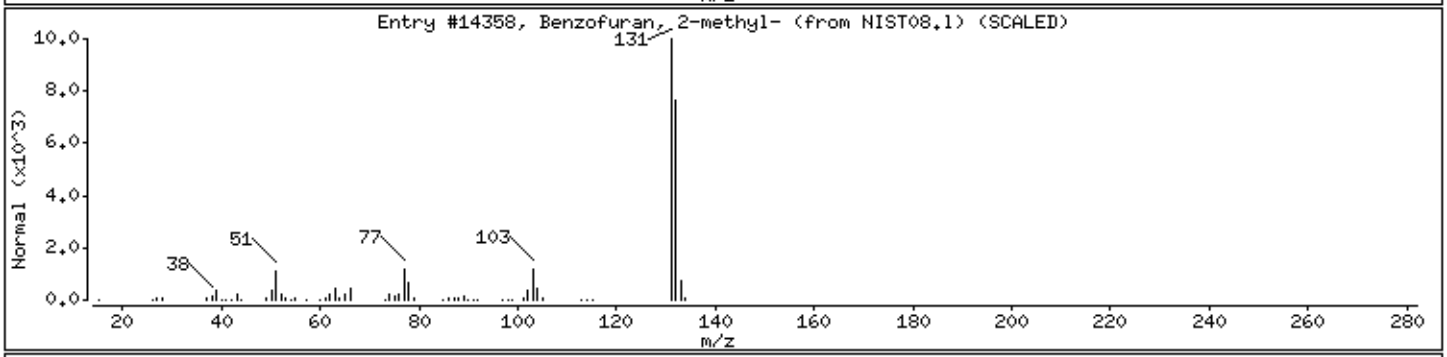
Operator: jg

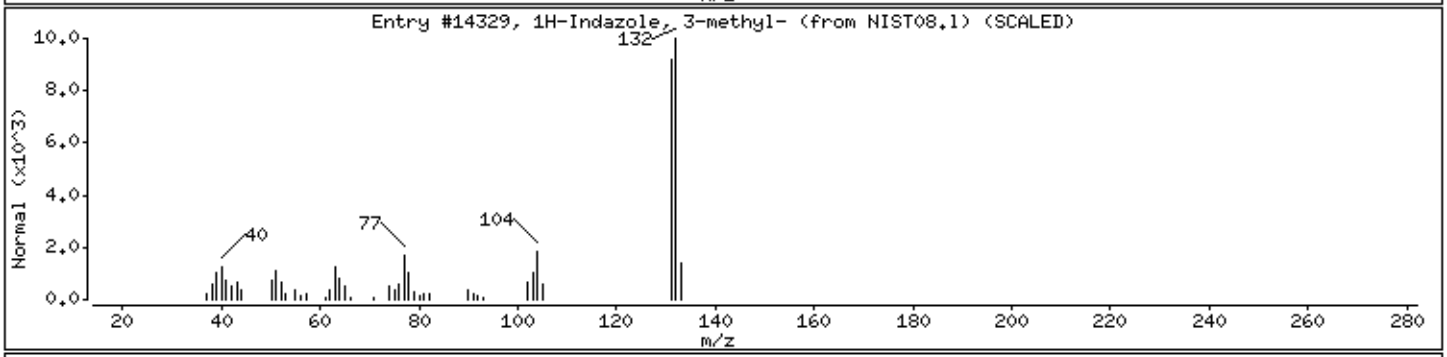
Column phase: RTX-624

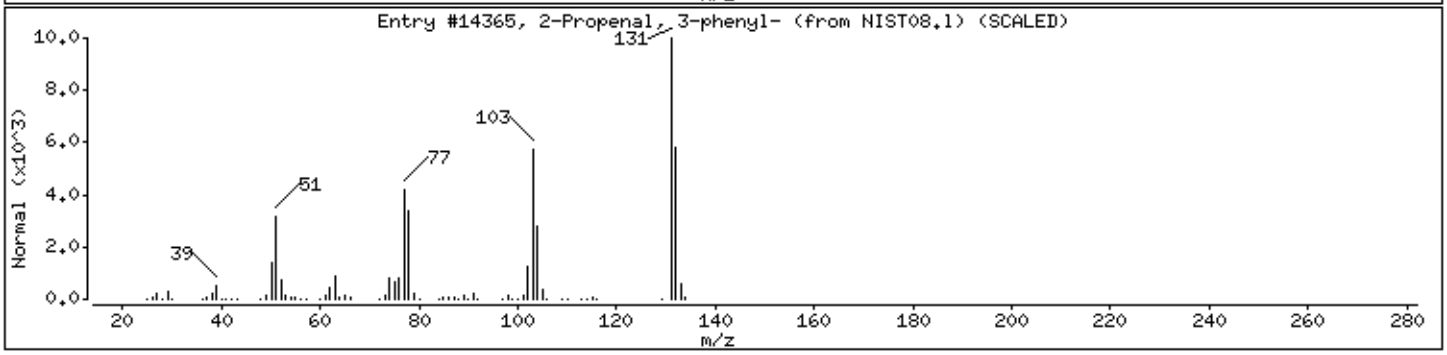
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzofuran, 2-methyl-	4265-25-2	NIST08.l	14358	87	C9H8O	132
1H-Indazole, 3-methyl-	1000316-00-2	NIST08.l	14329	86	C8H8N2	132
2-Propenal, 3-phenyl-	104-55-2	NIST08.l	14365	74	C9H8O	132









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Instrument: msd3.i

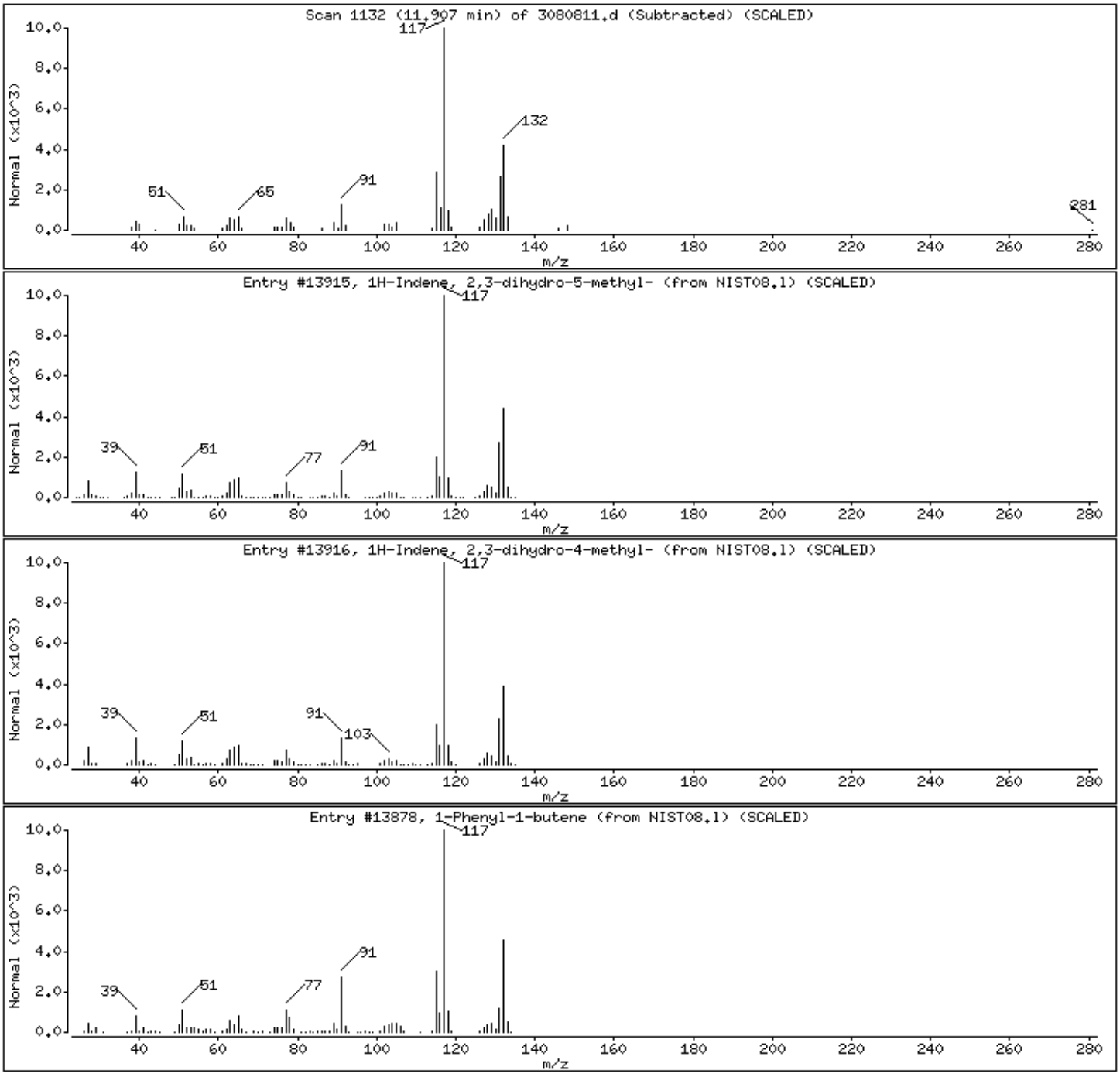
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
1H-Indene, 2,3-dihydro-5-methyl-	874-35-1	NIST08.l	13915	91	C10H12	132
1H-Indene, 2,3-dihydro-4-methyl-	824-22-6	NIST08.l	13916	90	C10H12	132
1-Phenyl-1-butene	824-90-8	NIST08.l	13878	87	C10H12	132



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Date : 08-AUG-2017 16:50

Client ID:

Instrument: msd3.i

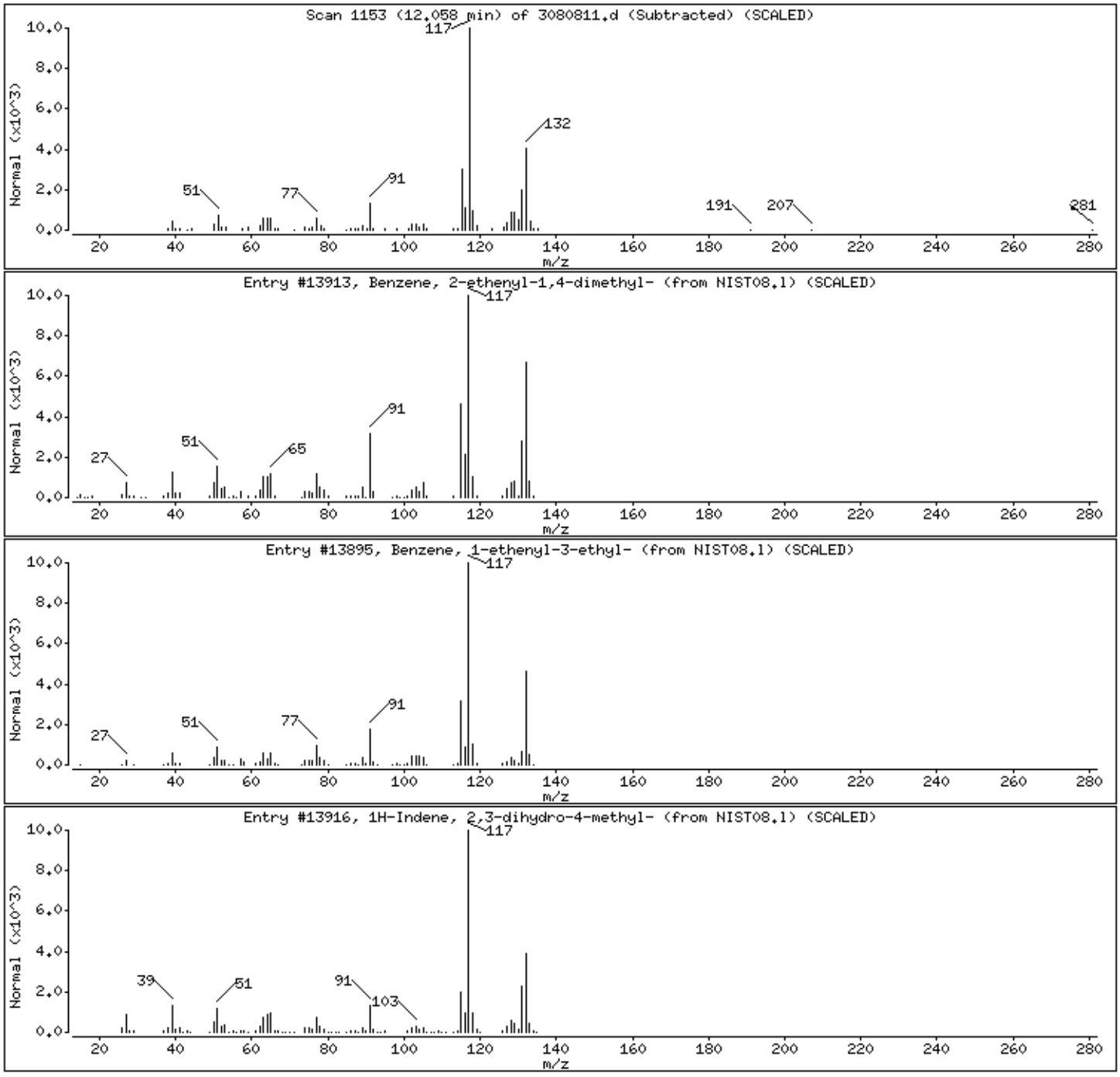
Sample Info: 40ml N0587

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 2-ethenyl-1,4-dimethyl-	2039-89-6	NIST08.l	13913	95	C10H12	132
Benzene, 1-ethenyl-3-ethyl-	7525-62-4	NIST08.l	13895	91	C10H12	132
1H-Indene, 2,3-dihydro-4-methyl-	824-22-6	NIST08.l	13916	90	C10H12	132



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Client ID:

Instrument: msd3.i

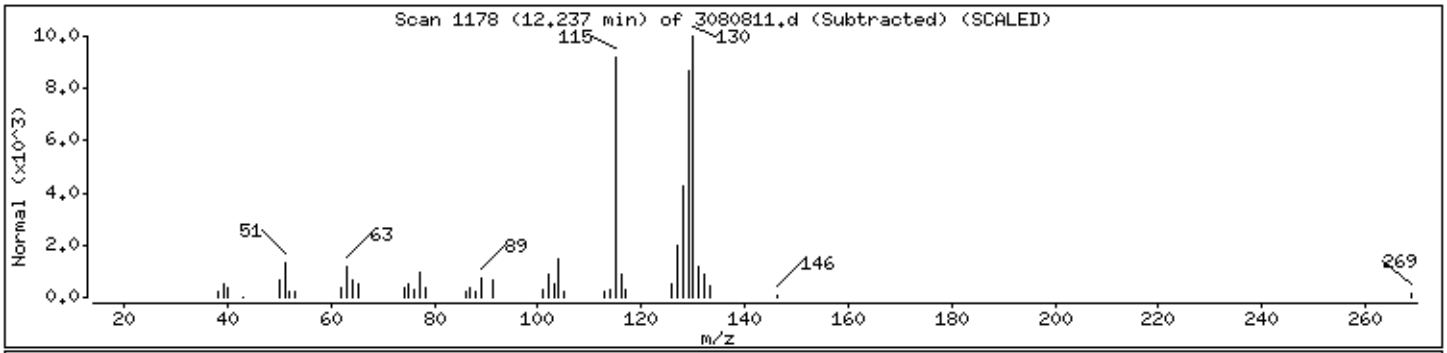
Sample Info: 40ml N0587

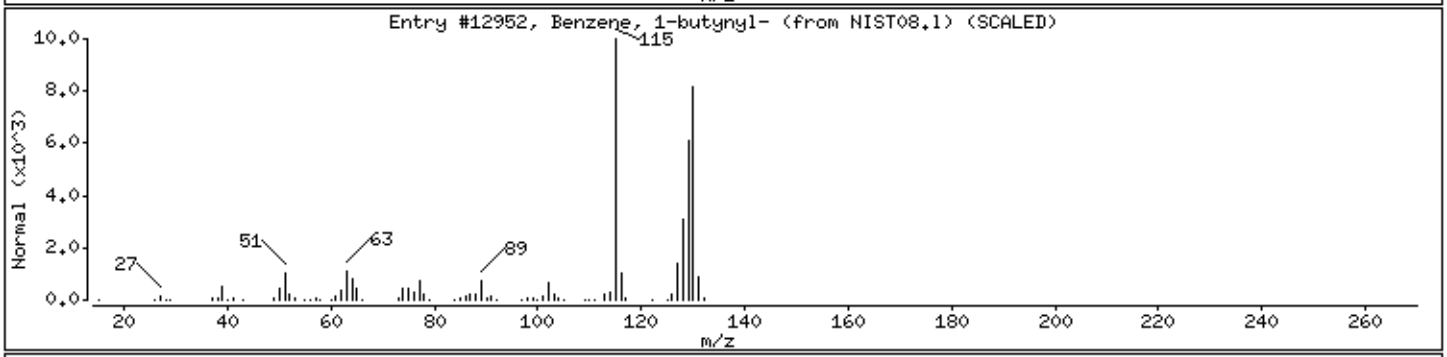
Operator: jg

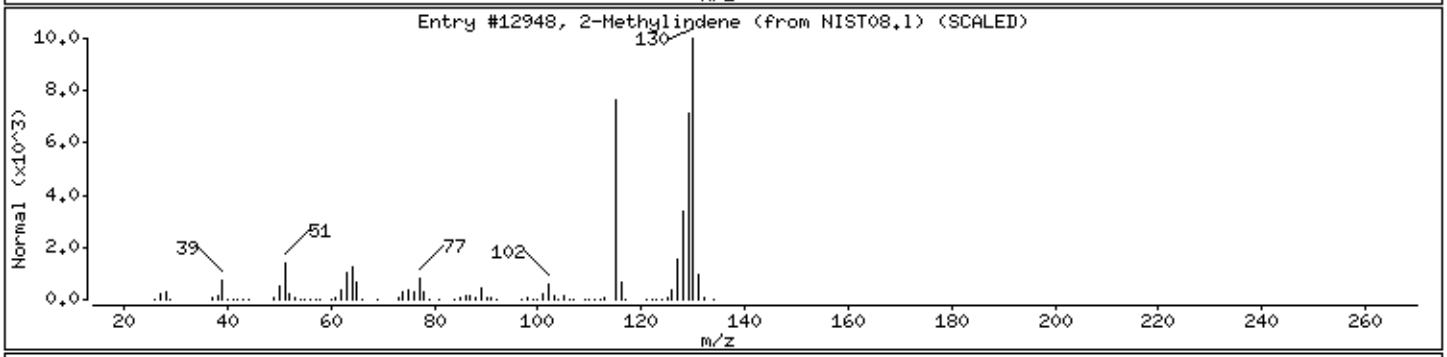
Column phase: RTX-624

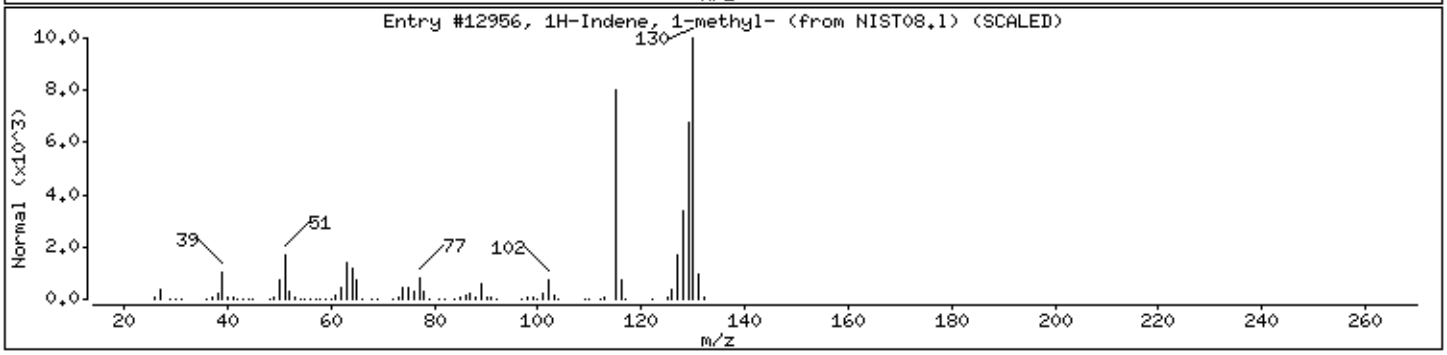
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-butynyl-	622-76-4	NIST08.l	12952	96	C10H10	130
2-Methylindene	2177-47-1	NIST08.l	12948	93	C10H10	130
1H-Indene, 1-methyl-	767-59-9	NIST08.l	12956	90	C10H10	130









EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	SH-C_0817		
Lab ID:	1708091B-18A	**Date/Time Analyzed:**	8/8/17 05:14 PM
Date/Time Collected:	8/3/17 03:08 PM	**Dilution Factor:**	22.8
Media:		**Instrument/Filename:**	msd3.i / 3080812

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	3.5	14	36	320
Ethyl Benzene	100-41-4	4.6	20	49	800
m,p-Xylene	108-38-3	4.6	20	50	1400
Naphthalene	91-20-3	1.7	9.6	120	1700
o-Xylene	95-47-6	2.0	20	50	580
Toluene	108-88-3	2.7	17	43	640
Total Xylene	1330-20-7	NA	D	99	2000

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indane	496-11-7	91%		1400 NJ
Limonene	138-86-3	94%		10000 NJB

NJ =The identification is based on presumptive evidence; estimated value.
B = Analyte present in laboratory blank greater than reporting limit.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080812.d
Lab Smp Id: 1708091B-18A
Inj Date : 08-AUG-2017 17:14
Operator : jg Inst ID: msd3.i
Smp Info : 15ml 34463
Misc Info : 6.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 7
Dil Factor: 22.80000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.410 (1.000)	130	190651	25.0000			80.00- 120.00	100.00
5.410	5.410 (1.000)	128	149519				46.73- 106.73	78.43
5.410	5.410 (1.000)	49	206046				91.08- 151.08	108.08
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	667654	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	95977				0.00- 44.78	14.38
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	612293	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	293032				20.58- 80.58	47.86
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	215638	22.1313	22.131		80.00- 120.00	100.00(a)
5.956	5.956 (1.101)	67	111109				24.54- 84.54	51.53
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	667667	24.6533	24.653		80.00- 120.00	100.00(a)
7.523	7.523 (1.193)	70	66386				0.00- 40.44	9.94

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	424635			35.27- 95.27	63.60
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	402890	25.2023	25.202	80.00- 120.00	100.00(a)
9.737	9.737 (1.112)	95	421150			84.77- 144.77	104.53
9.737	9.737 (1.112)	176	391348			64.74- 124.74	97.14
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	93860	4.32698	98.655	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	22018			0.00- 53.39	23.46
147 Toluene					CAS #: 108-88-3		
7.573	7.574 (1.201)	91	215688	7.39182	168.53	80.00- 120.00	100.00
7.580	7.574 (1.202)	92	127010			27.96- 87.96	58.89
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	105539	8.10781	184.86	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	318548			272.32- 332.32	301.83
169 m,p-Xylene					CAS #: 108-38-3		
8.920	8.920 (1.019)	106	235223	14.4493	329.44	80.00- 120.00	100.00
8.920	8.920 (1.019)	91	446956			165.91- 225.91	190.01
171 o-Xylene					CAS #: 95-47-6		
9.264	9.264 (1.058)	106	90144	5.82288	132.76	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	182672			175.85- 235.85	202.64
228 Naphthalene					CAS #: 91-20-3		
12.724	12.717 (1.453)	128	934252	14.0211	319.68	80.00- 120.00	100.00
12.724	12.717 (1.453)	127	120088			0.00- 43.00	12.85
M 239 Total Xylene					CAS #: 1330-20-7		
			325368	20.2722	462.20		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080812.d
Lab Smp Id: 1708091B-18A
Inj Date : 08-AUG-2017 17:14
Operator : jg Inst ID: msd3.i
Smp Info : 15ml 34463
Misc Info : 6.5 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 7
Dil Factor: 22.80000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.410	913127	25.000
* 163 Chlorobenzene-d5	8.755	2049605	25.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.367	5414916	148.251903	3380.1	0		0	98
Isobutane				CAS #: 75-28-5			
1.646	221142	6.05453092	138.04	72	NIST08.1	234	98
1,2-Dichloroethylene				CAS #: 540-59-0			
5.186	237215	6.49457481	148.08	97	NIST08.1	2671	98
Benzene, 1-ethyl-3-methyl-				CAS #: 620-14-4			
9.966	610135	7.44210380	169.68	97	NIST08.1	9315	163

RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Benzene, 1,2,3-trimethyl-				CAS #: 526-73-8			
10.037	788295	9.61520992	219.23	97	NIST08.l	9310	163
Benzene, 1,3,5-trimethyl-				CAS #: 108-67-8			
10.360	826211	10.0776881	229.77	97	NIST08.l	9309	163
Limonene				CAS #: 138-86-3			
10.553	36967484	450.909810	10281	94	NIST08.l	15483	163(L)
Benzene, 1-methyl-4-(1-methylethyl)-				CAS #: 99-87-6			
10.603	1551133	18.9198967	431.37	91	NIST08.l	14729	163
Benzene, 1,2,4-trimethyl-				CAS #: 95-63-6			
10.732	240543	2.93401296	66.895	94	NIST08.l	9312	163
Indane				CAS #: 496-11-7			
10.918	4980463	60.7490506	1385.1	91	NIST08.l	8851	163
Indene				CAS #: 95-13-6			
11.119	461573	5.63002839	128.36	97	NIST08.l	8322	163
Benzene, 1-ethenyl-4-ethyl-				CAS #: 3454-07-7			
11.384	241382	2.94425063	67.129	80	NIST08.l	13894	163
3-Phenylbut-1-ene				CAS #: 934-10-1			
11.900	164412	2.00541629	45.723	90	NIST08.l	13877	163
1H-Indene, 2,3-dihydro-5-methyl-				CAS #: 874-35-1			
12.057	328623	4.00836793	91.391	90	NIST08.l	13915	163

QC Flag Legend

L - Operator selected an alternate library search match.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080812.d
Lab Smp Id: 1708091B-18A
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 6.5 Hg->5 psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	190651	-3.20
123 1,4-Difluorobenze	728289	436973	1019605	667654	-8.33
163 Chlorobenzene-d5	663497	398098	928896	612293	-7.72

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:41

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708091B-18A
Level: LOW Operator: jg
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 6.5 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.131	88.53	70-130
$ 146 Toluene-d8	25.000	24.653	98.61	70-130
$ 177 4-Bromofluorobenze	25.000	25.202	100.81	70-130

Ñ

Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

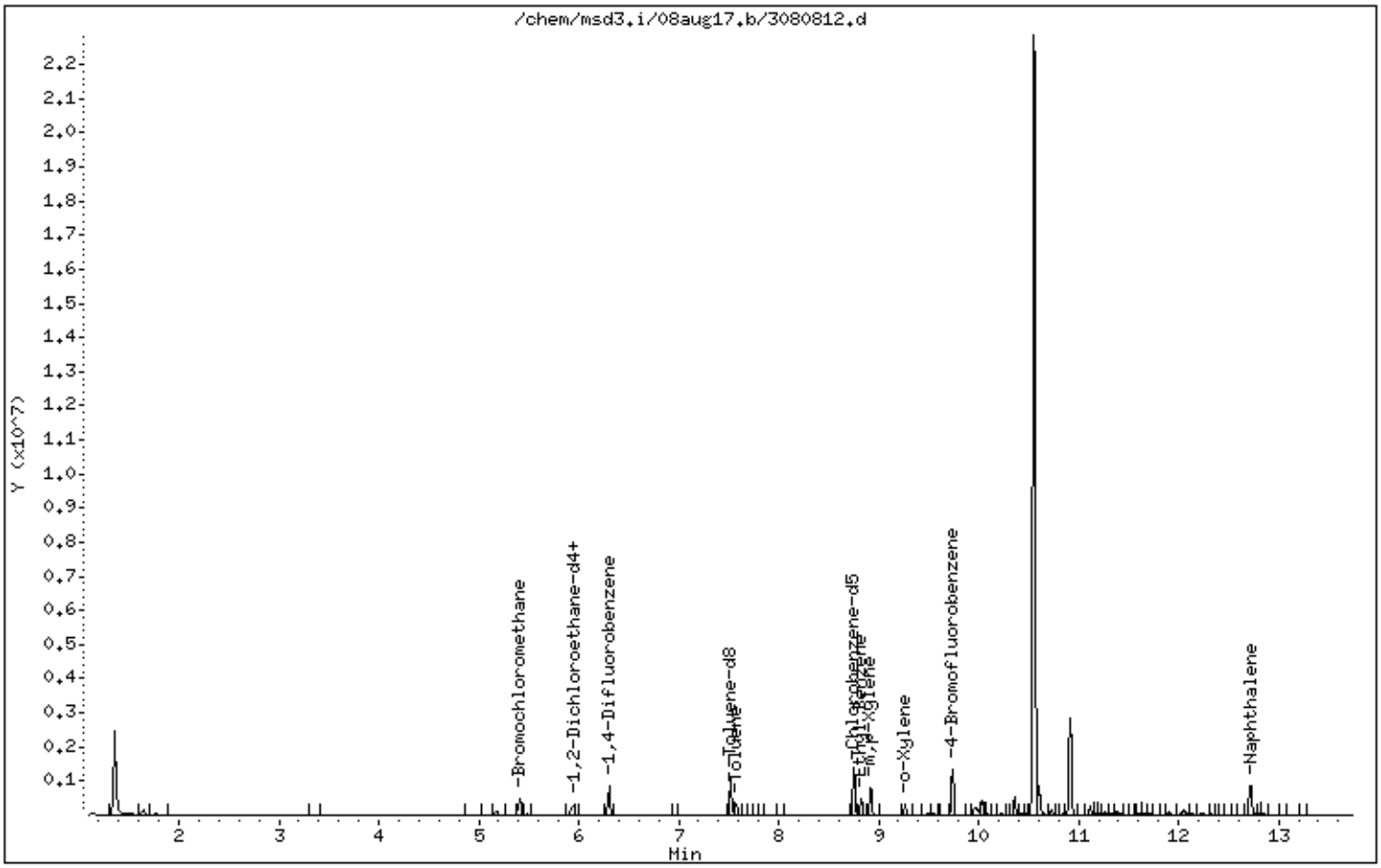
Instrument: msd3.i

Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

Sample Info: 15ml 34463

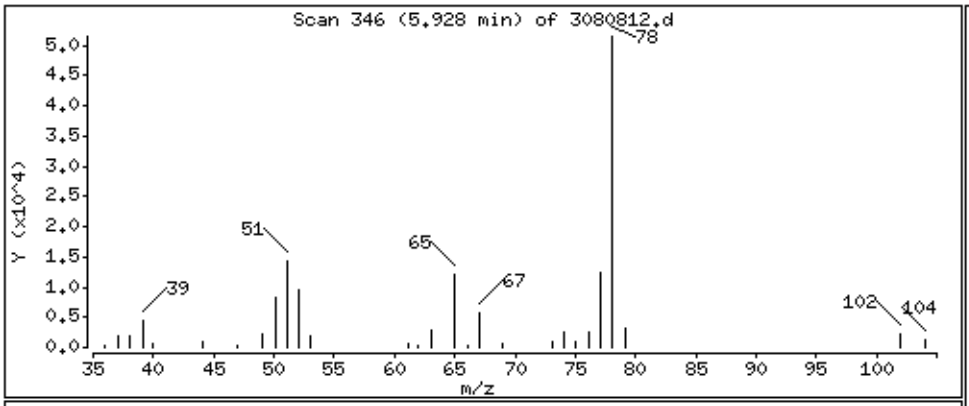
Operator: jg

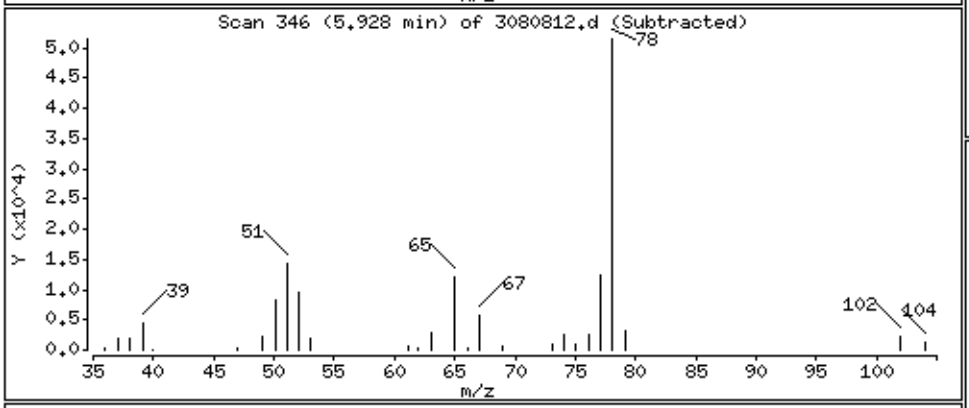
Column phase: RTX-624

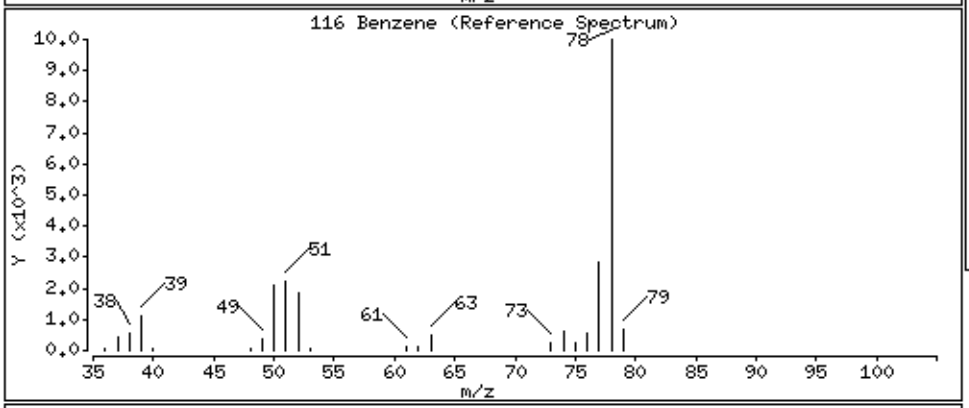
Column diameter: 0.25

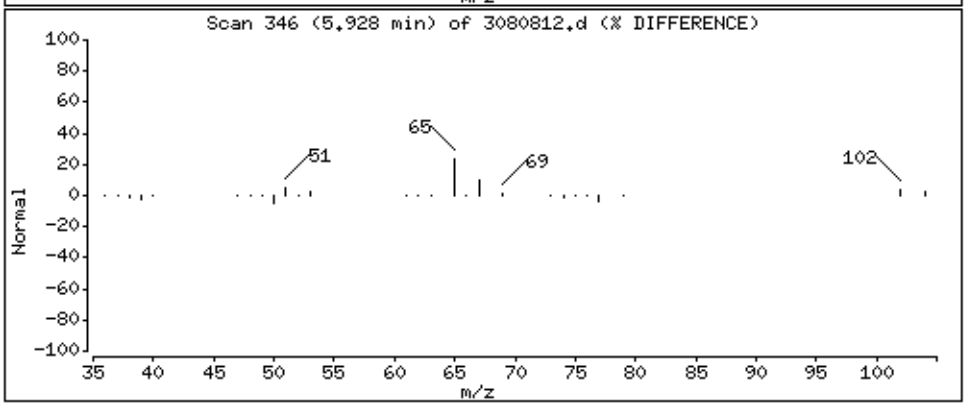
116 Benzene

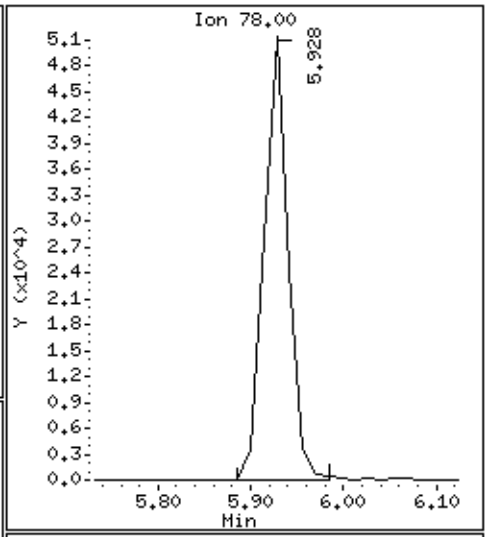
Concentration: 98.655 PPBV

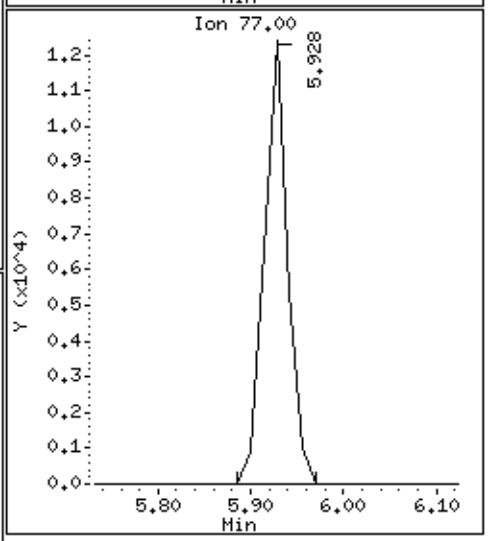












Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

Sample Info: 15ml 34463

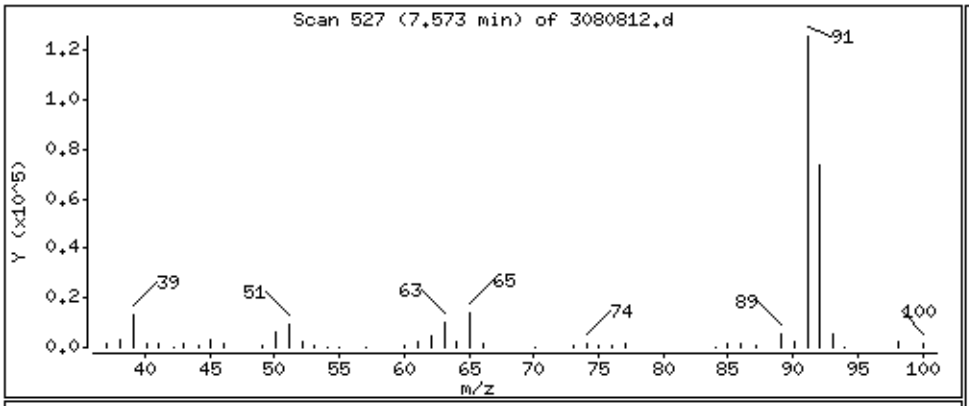
Operator: jg

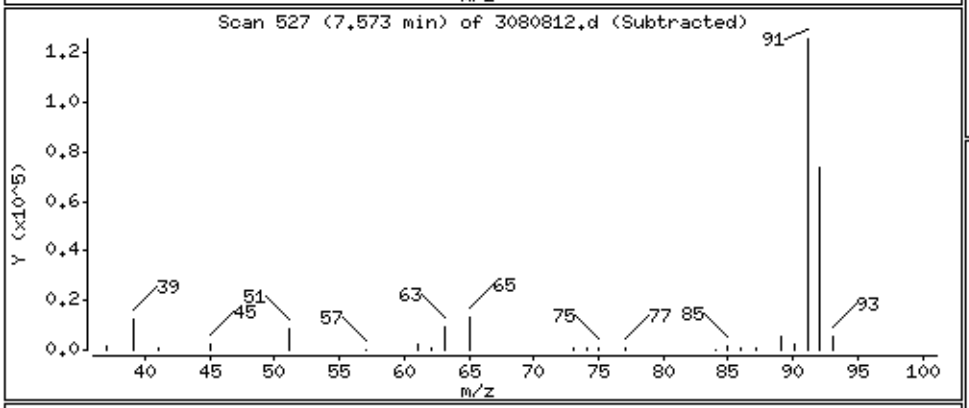
Column phase: RTX-624

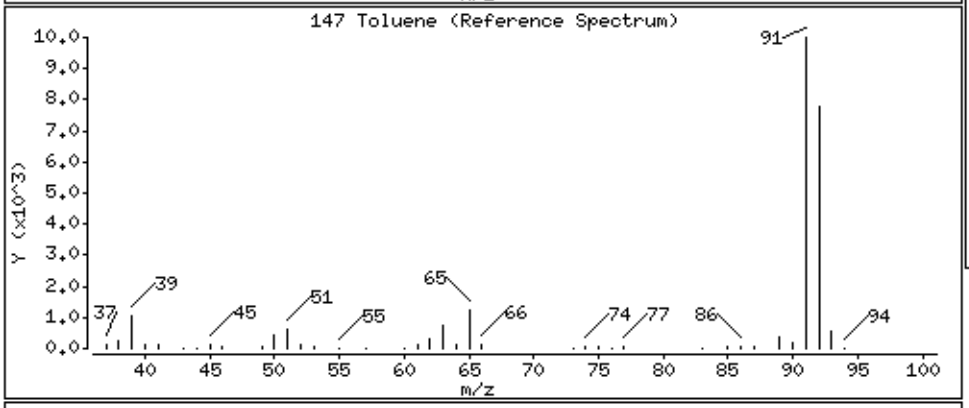
Column diameter: 0.25

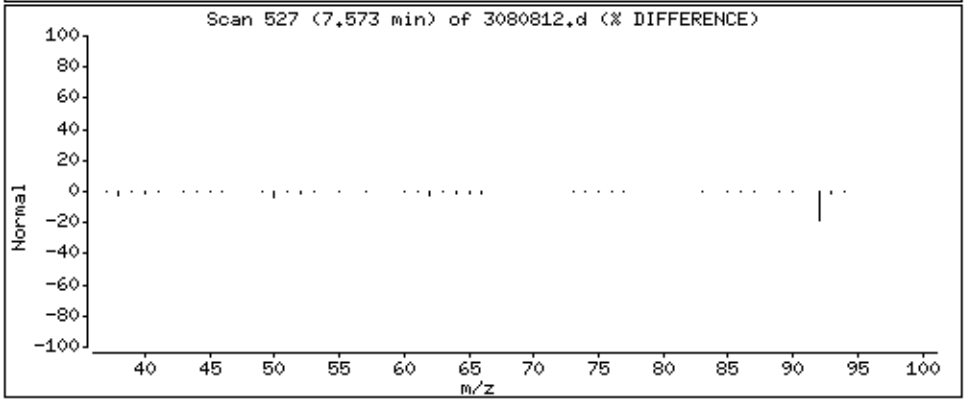
147 Toluene

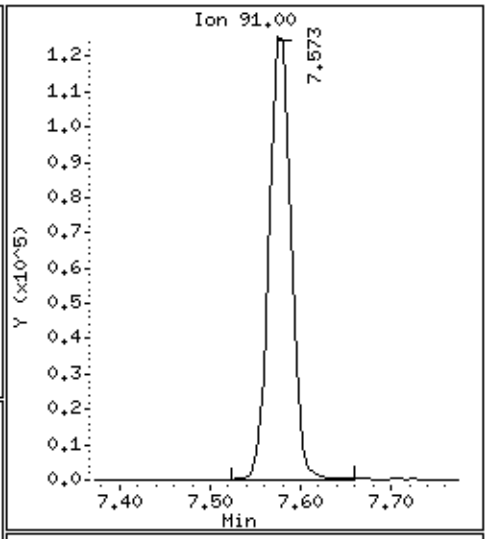
Concentration: 168.53 PPBV

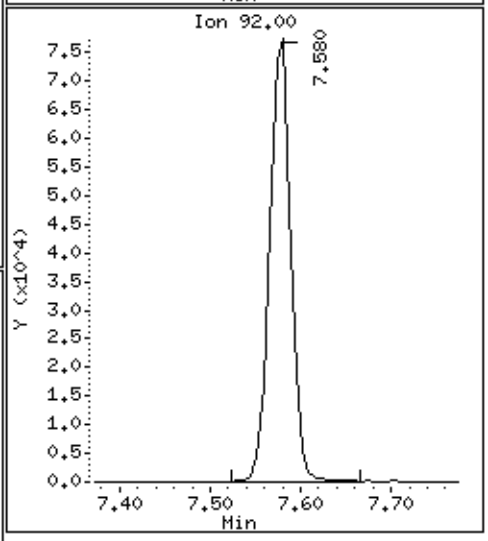












Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

Sample Info: 15ml 34463

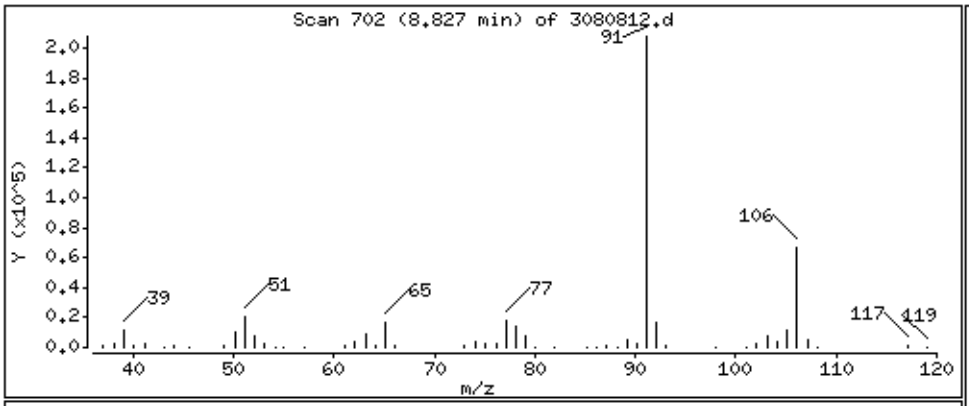
Operator: jg

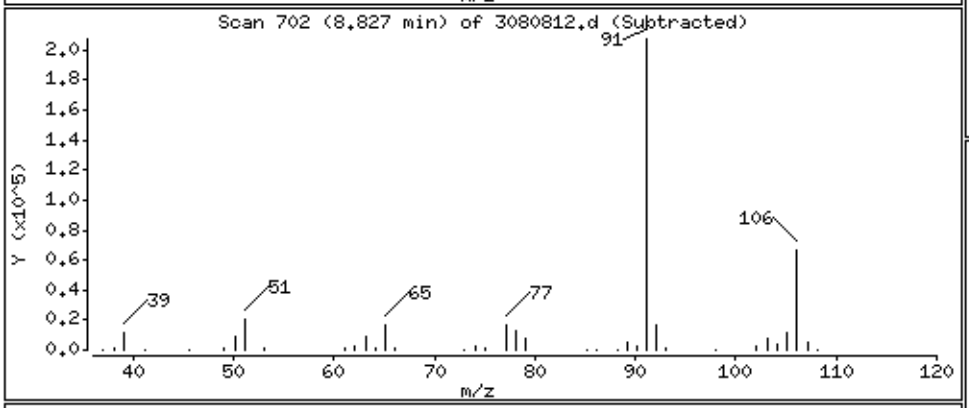
Column phase: RTX-624

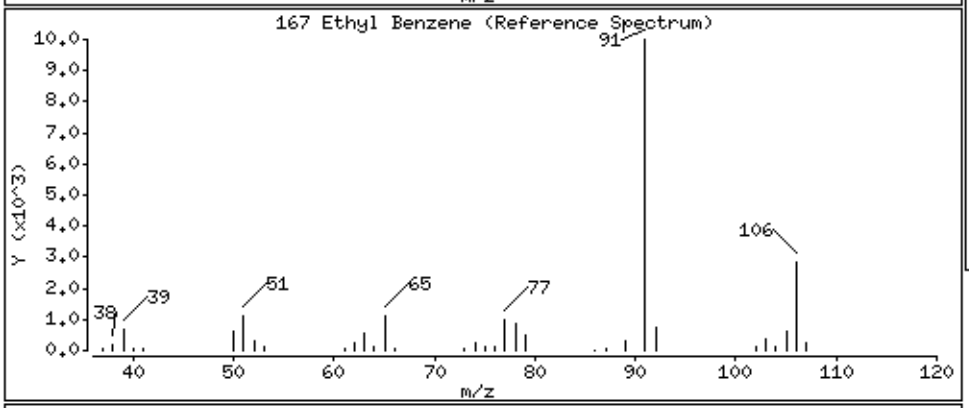
Column diameter: 0.25

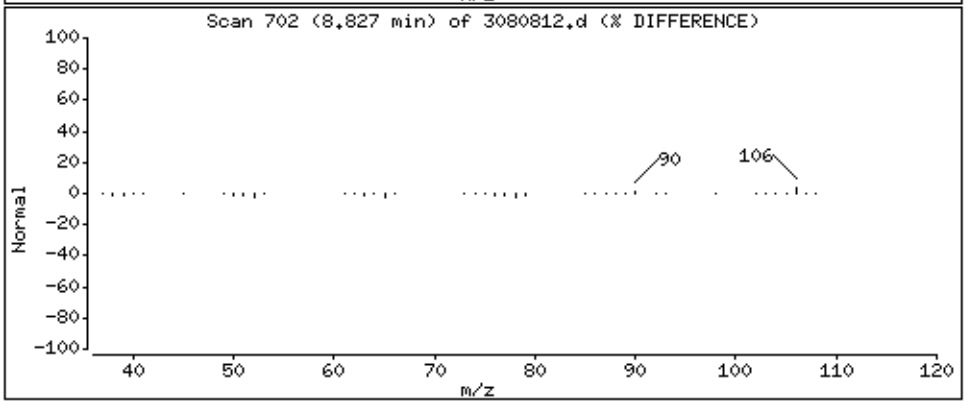
167 Ethyl Benzene

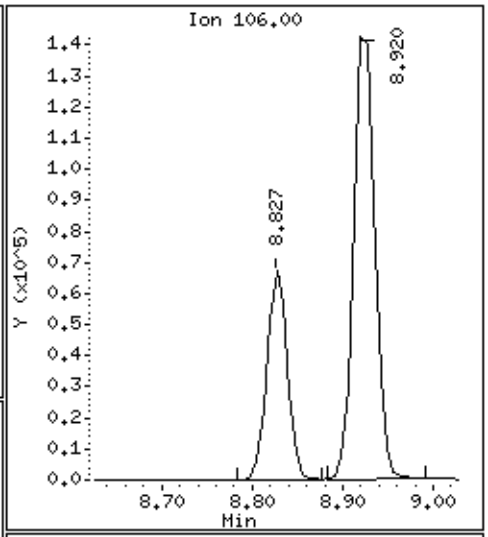
Concentration: 184.86 PPBV

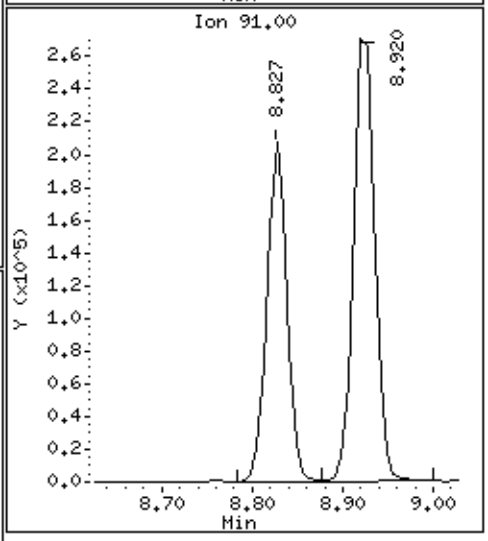












Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

Sample Info: 15ml 34463

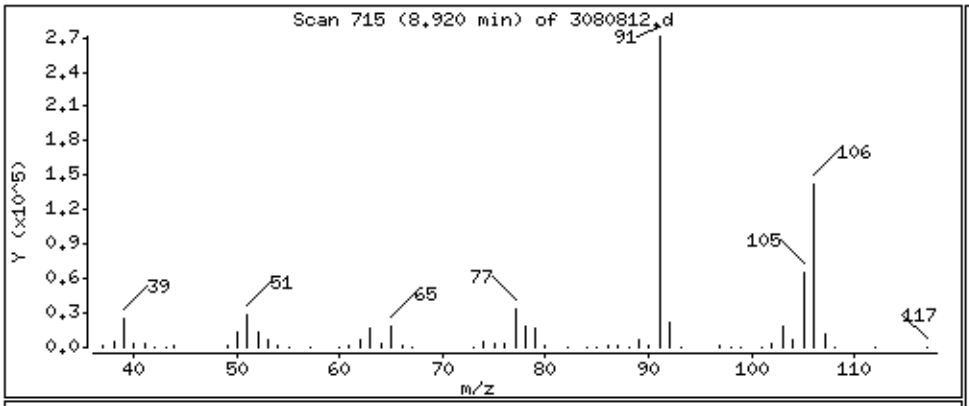
Operator: jg

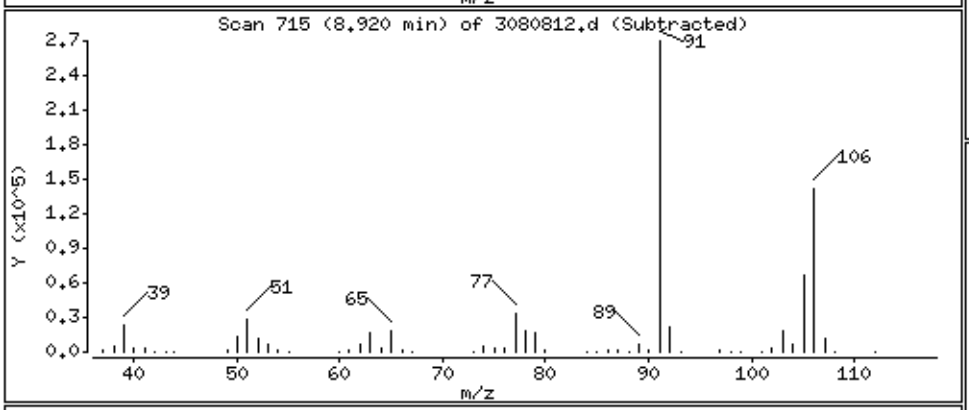
Column phase: RTX-624

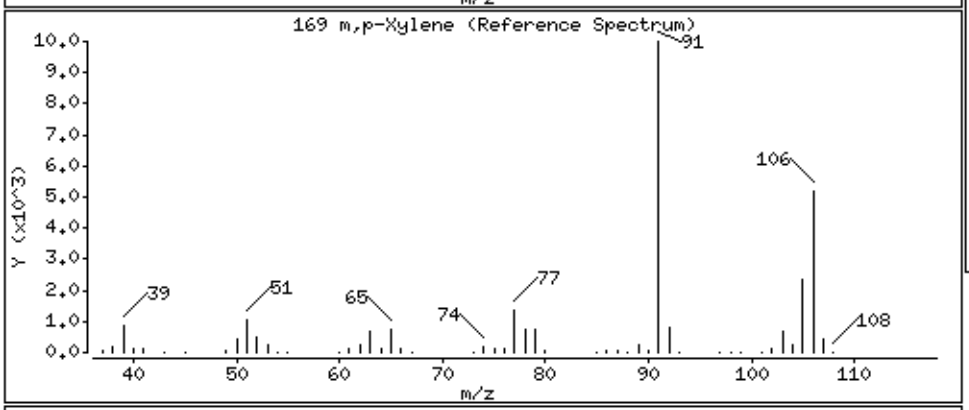
Column diameter: 0.25

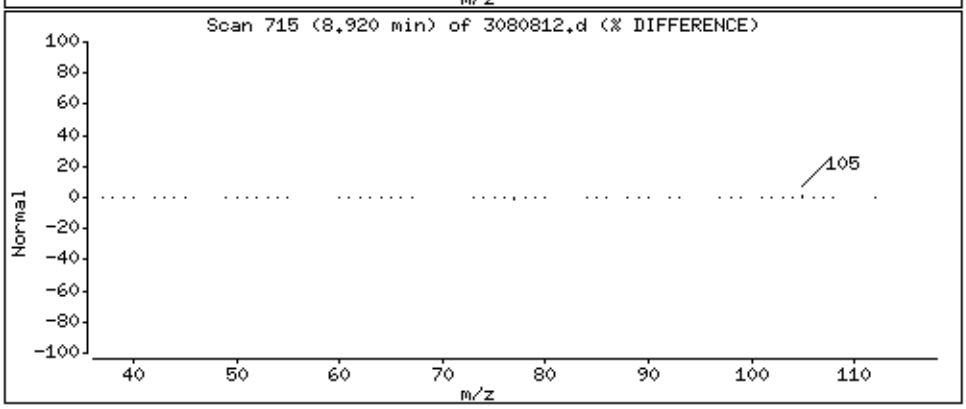
169 m,p-Xylene

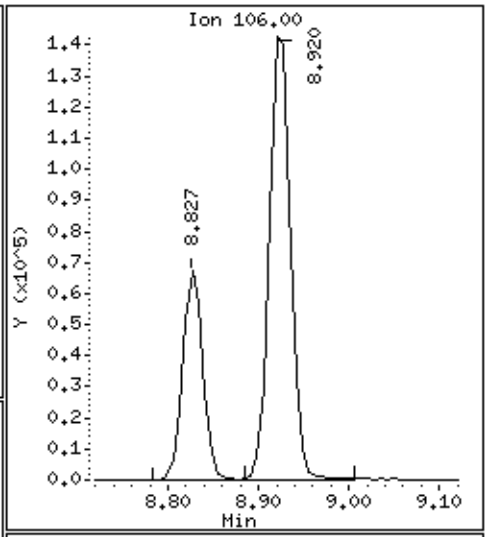
Concentration: 329.44 PPBV

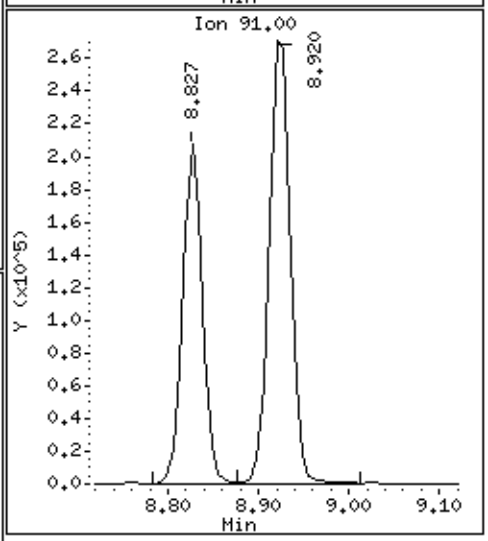












Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

Sample Info: 15ml 34463

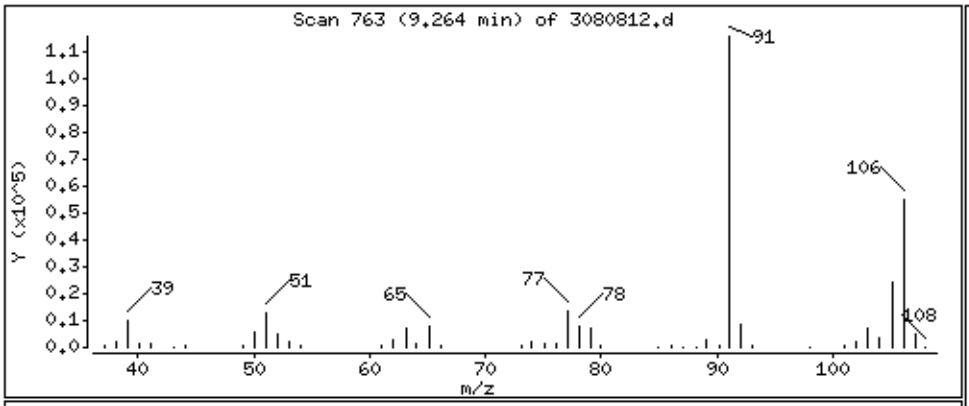
Operator: jg

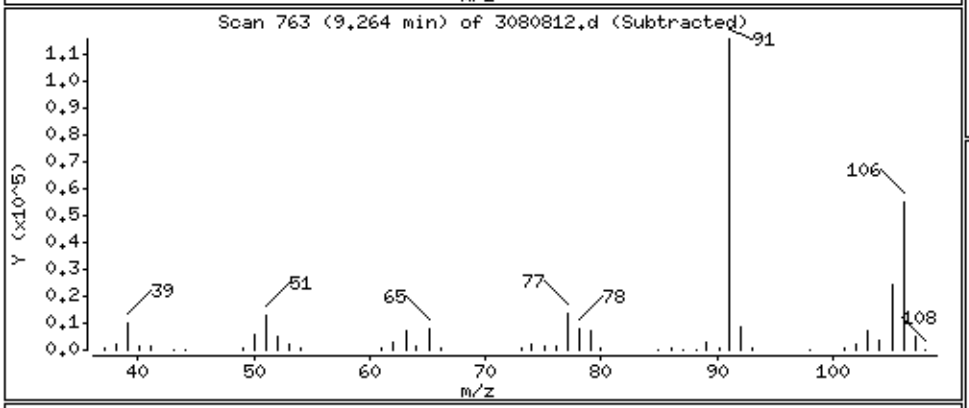
Column phase: RTX-624

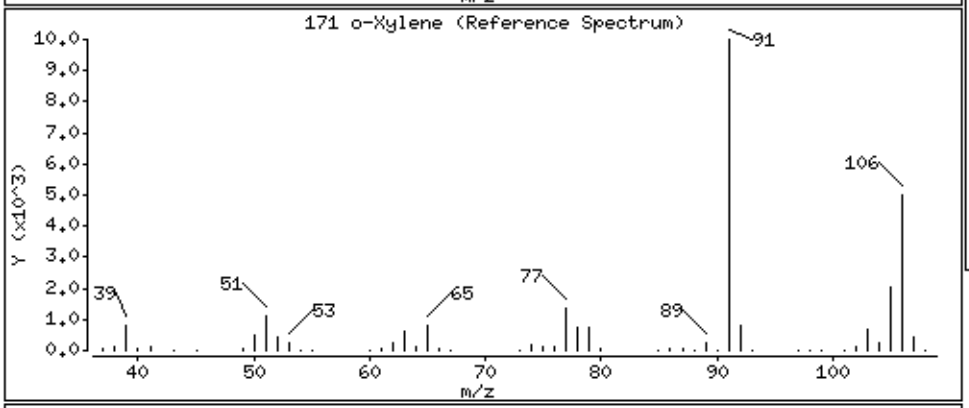
Column diameter: 0.25

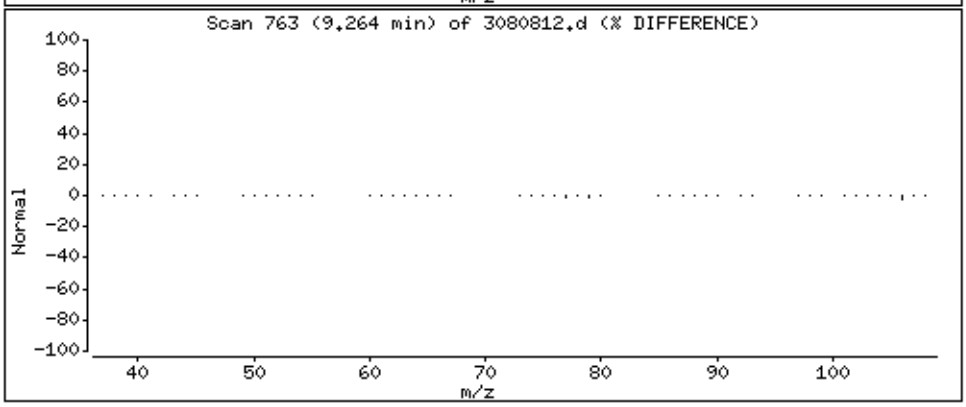
171 o-Xylene

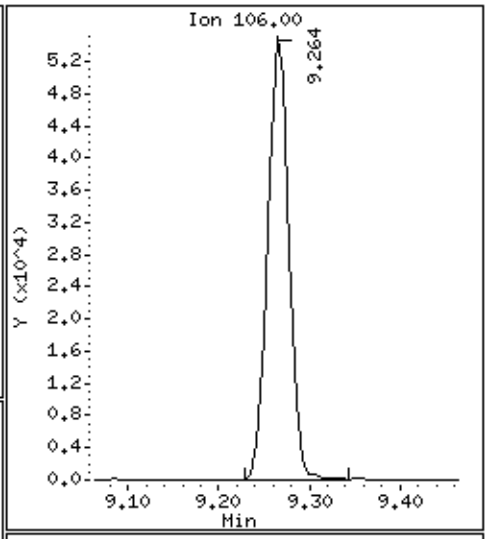
Concentration: 132.76 PPBV

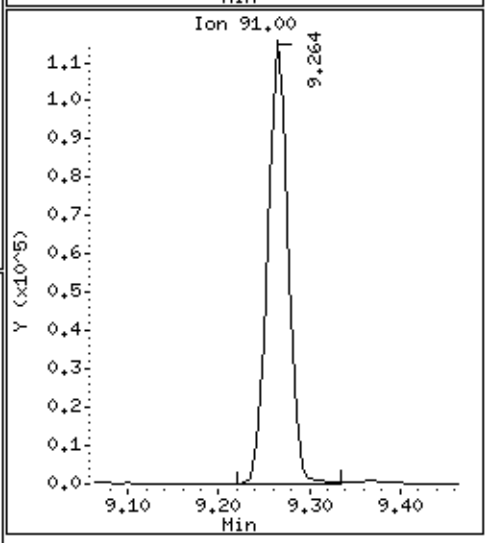












Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

Sample Info: 15ml 34463

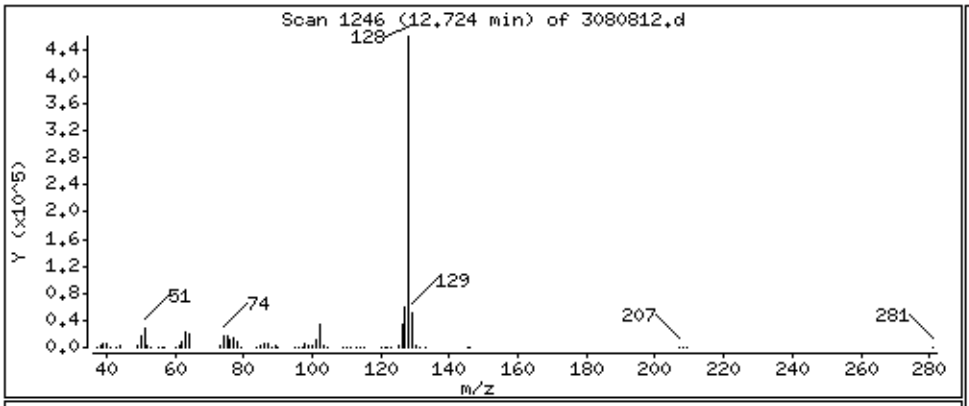
Operator: jg

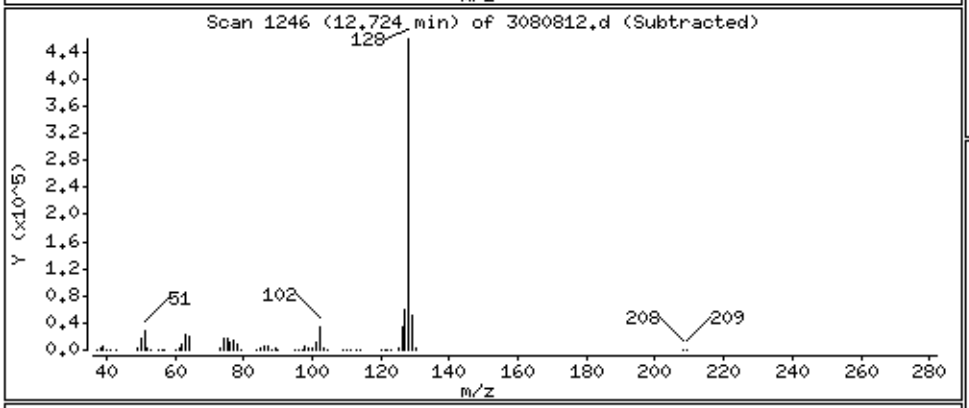
Column phase: RTX-624

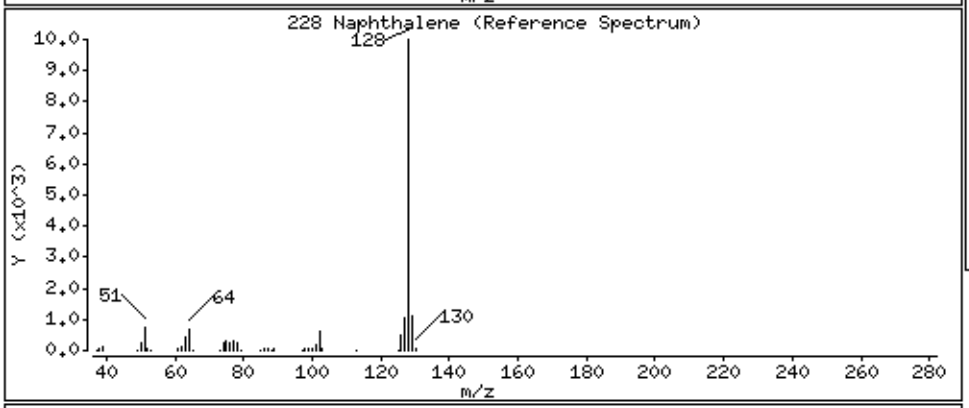
Column diameter: 0.25

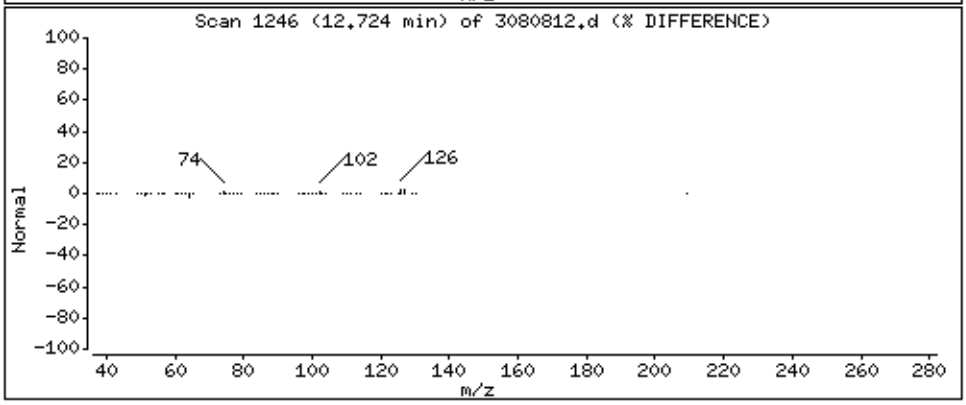
228 Naphthalene

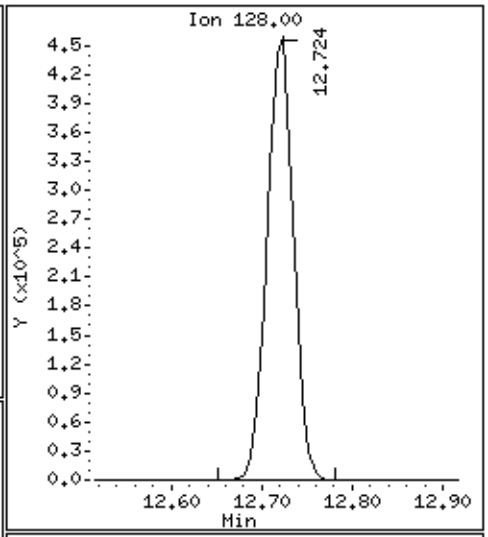
Concentration: 319.68 PPBV

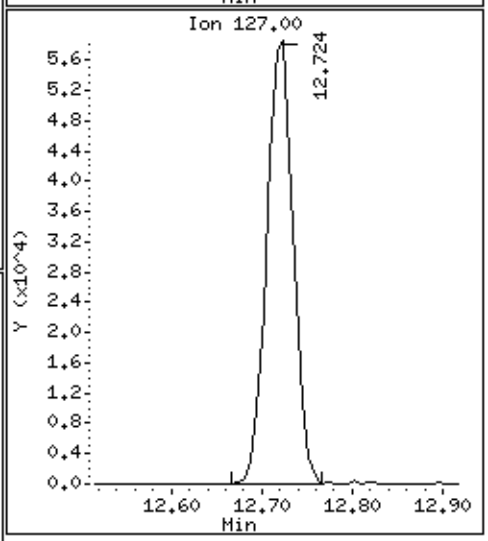












Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

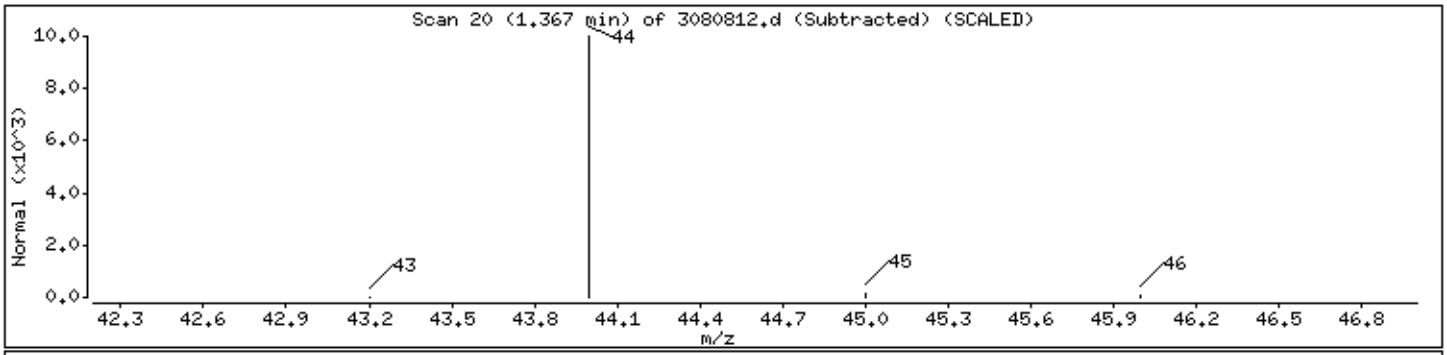
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Unknown			0	0		0



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

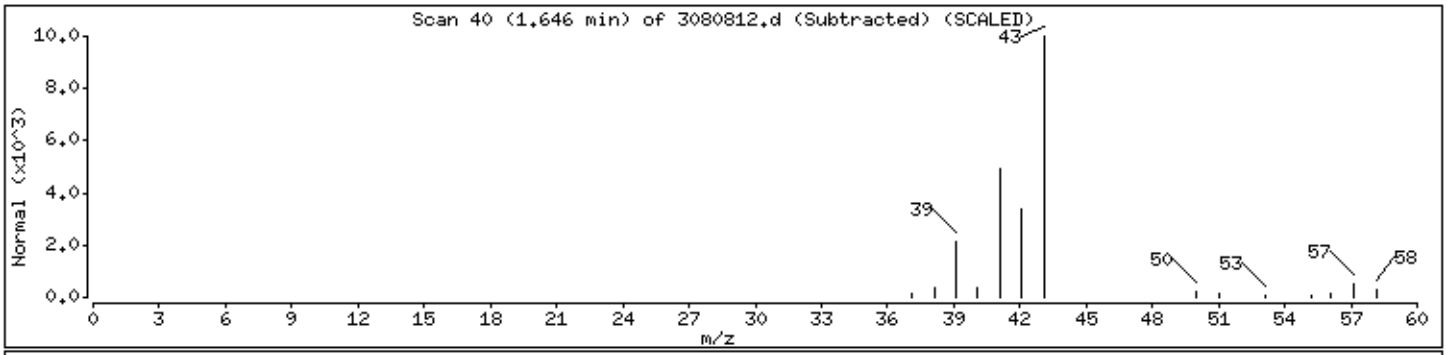
Sample Info: 15ml 34463

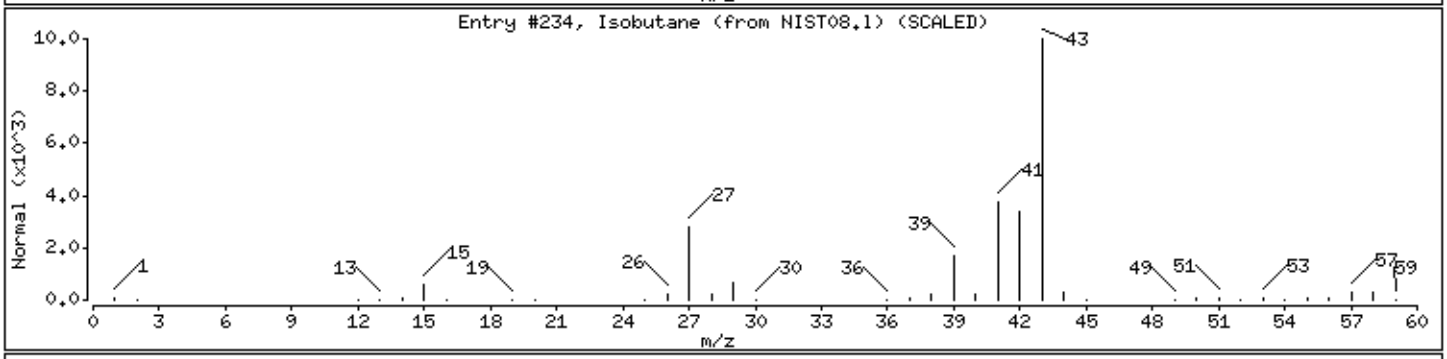
Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isobutane	75-28-5	NIST08.l	234	72	C4H10	58





Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

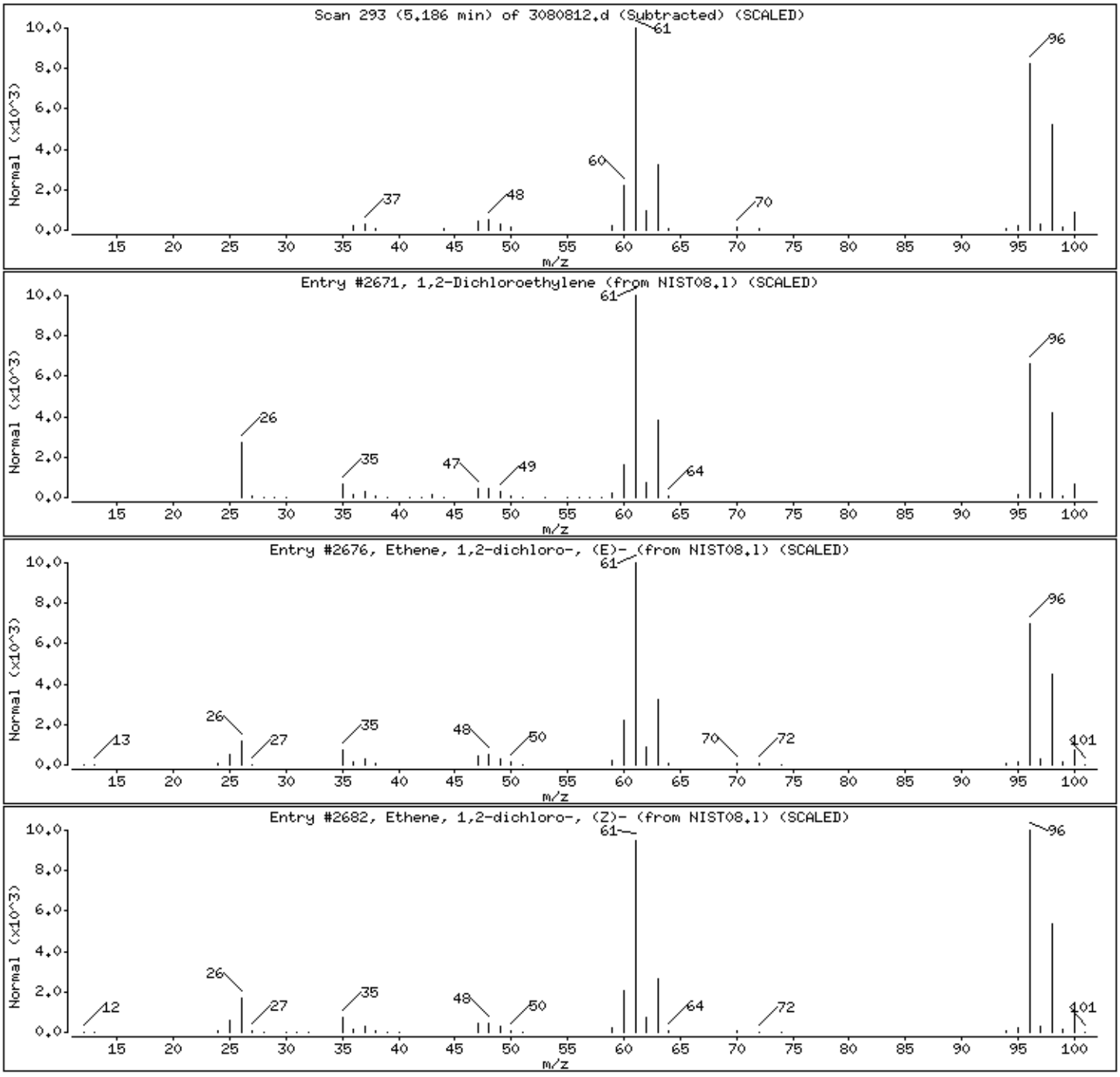
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
1,2-Dichloroethylene	540-59-0	NIST08.l	2671	97	C2H2Cl2	96
Ethene, 1,2-dichloro-, (E)-	156-60-5	NIST08.l	2676	96	C2H2Cl2	96
Ethene, 1,2-dichloro-, (Z)-	156-59-2	NIST08.l	2682	96	C2H2Cl2	96



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

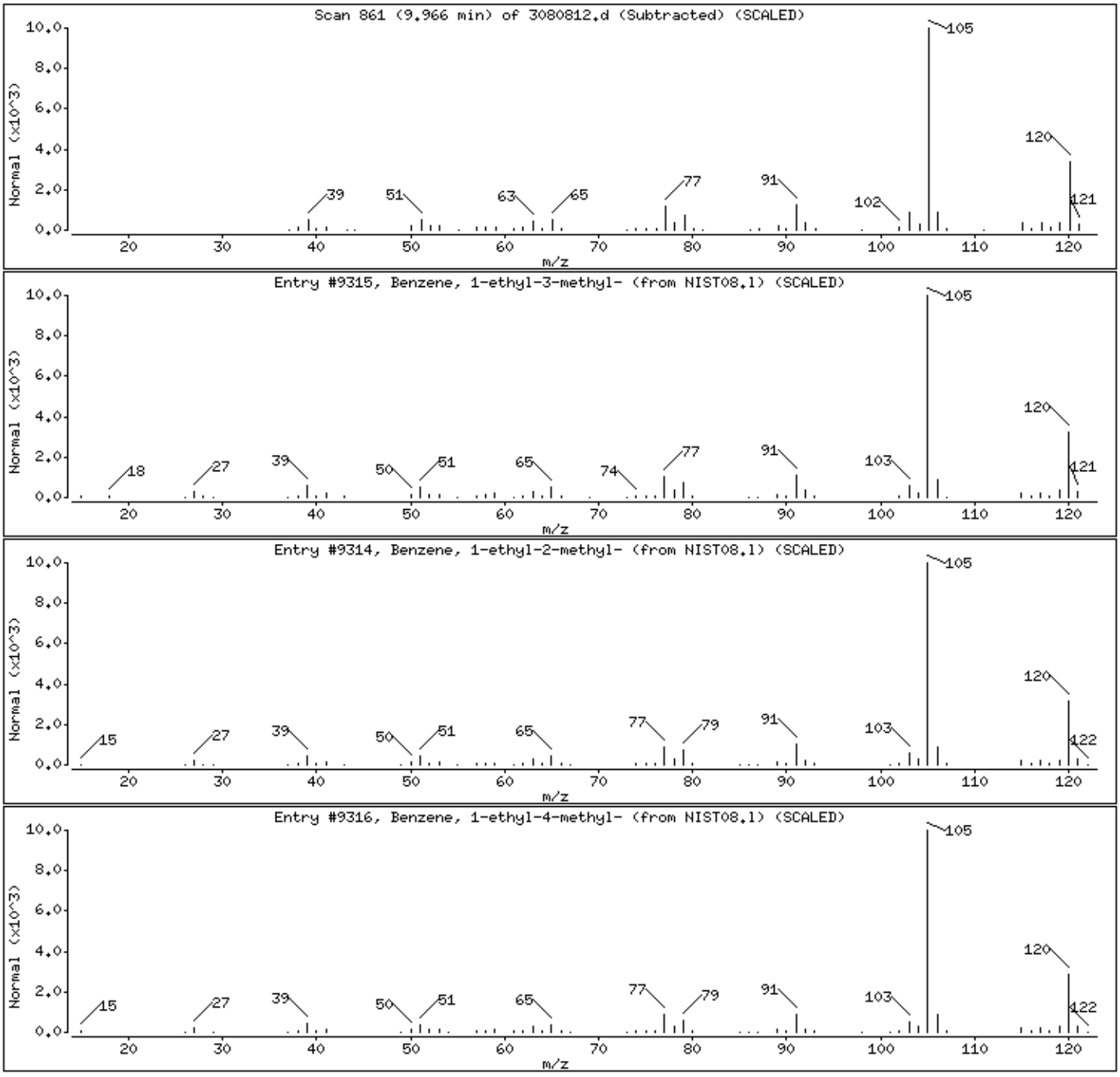
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethyl-3-methyl-	620-14-4	NIST08.l	9315	97	C9H12	120
Benzene, 1-ethyl-2-methyl-	611-14-3	NIST08.l	9314	95	C9H12	120
Benzene, 1-ethyl-4-methyl-	622-96-8	NIST08.l	9316	94	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

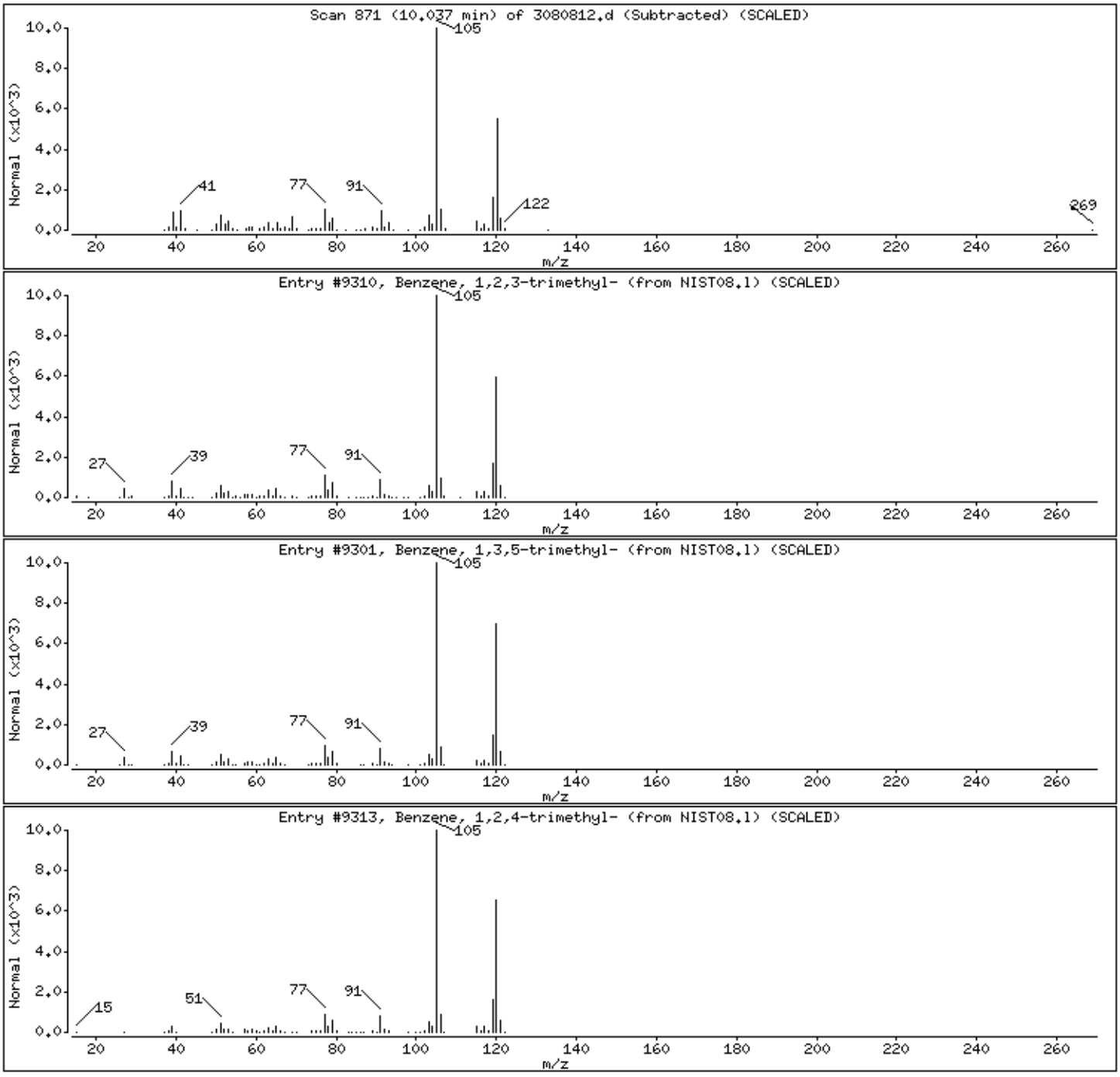
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9301	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9313	94	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

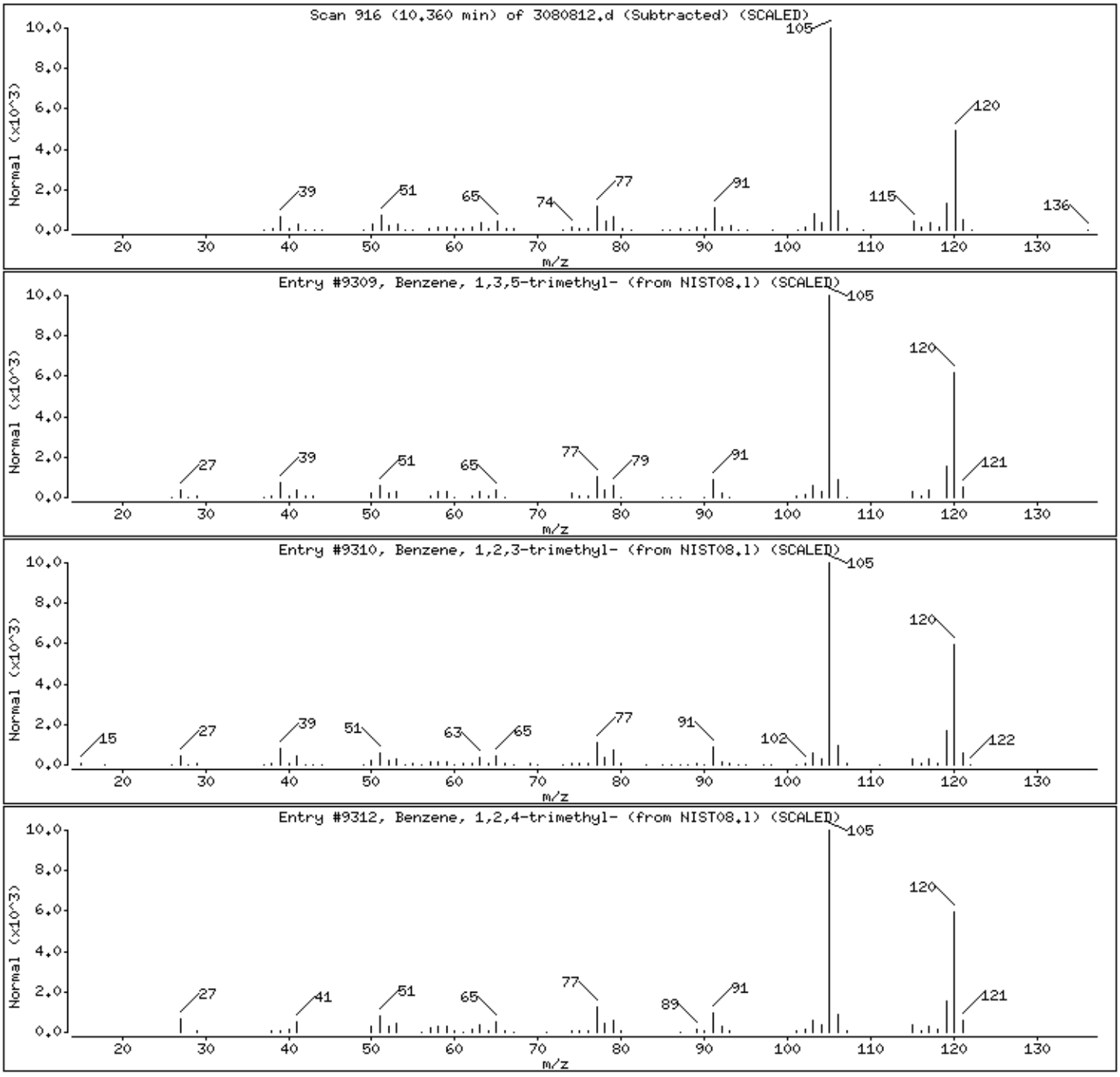
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9309	97	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9310	97	C9H12	120
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	95	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

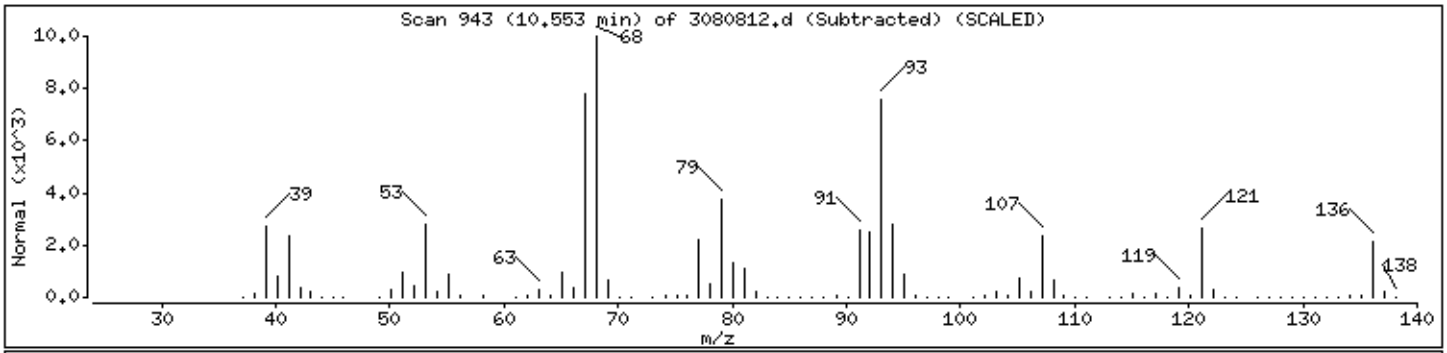
Sample Info: 15ml 34463

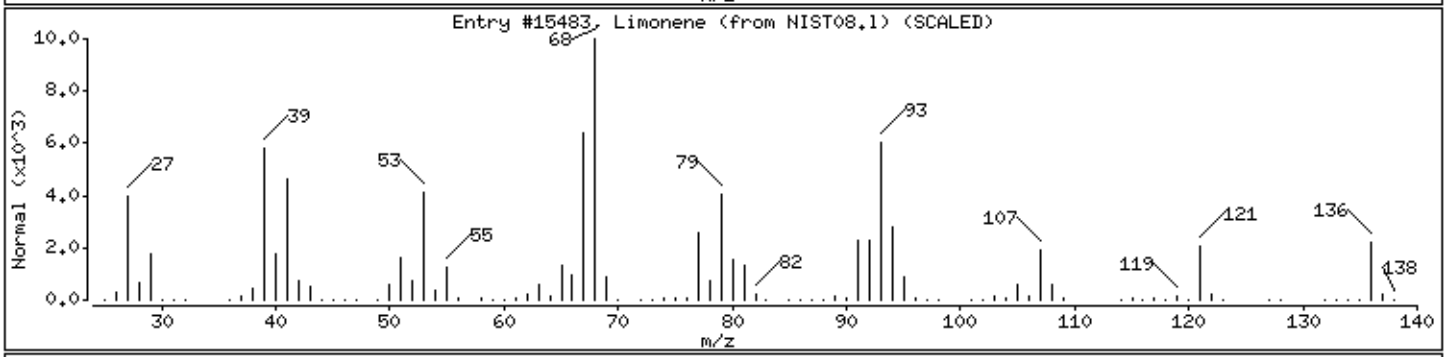
Operator: jg

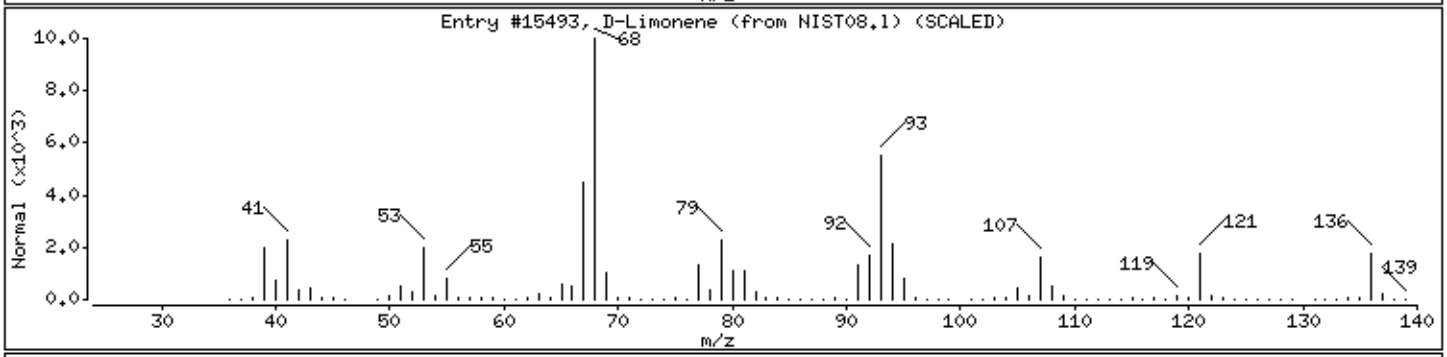
Column phase: RTX-624

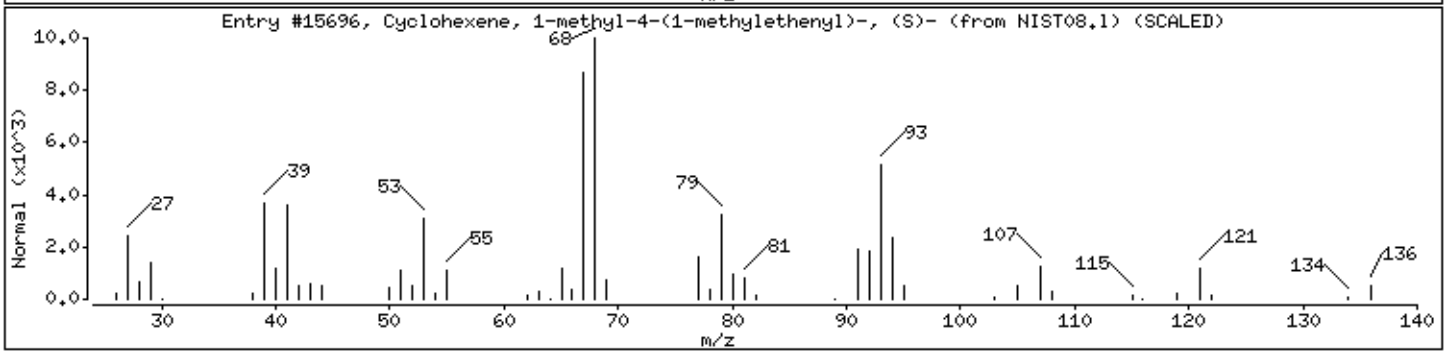
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15483	94	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15493	96	C10H16	136
Cyclohexene, 1-methyl-4-(1-methylethenyl	5989-54-8	NIST08.l	15696	90	C10H16	136









Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

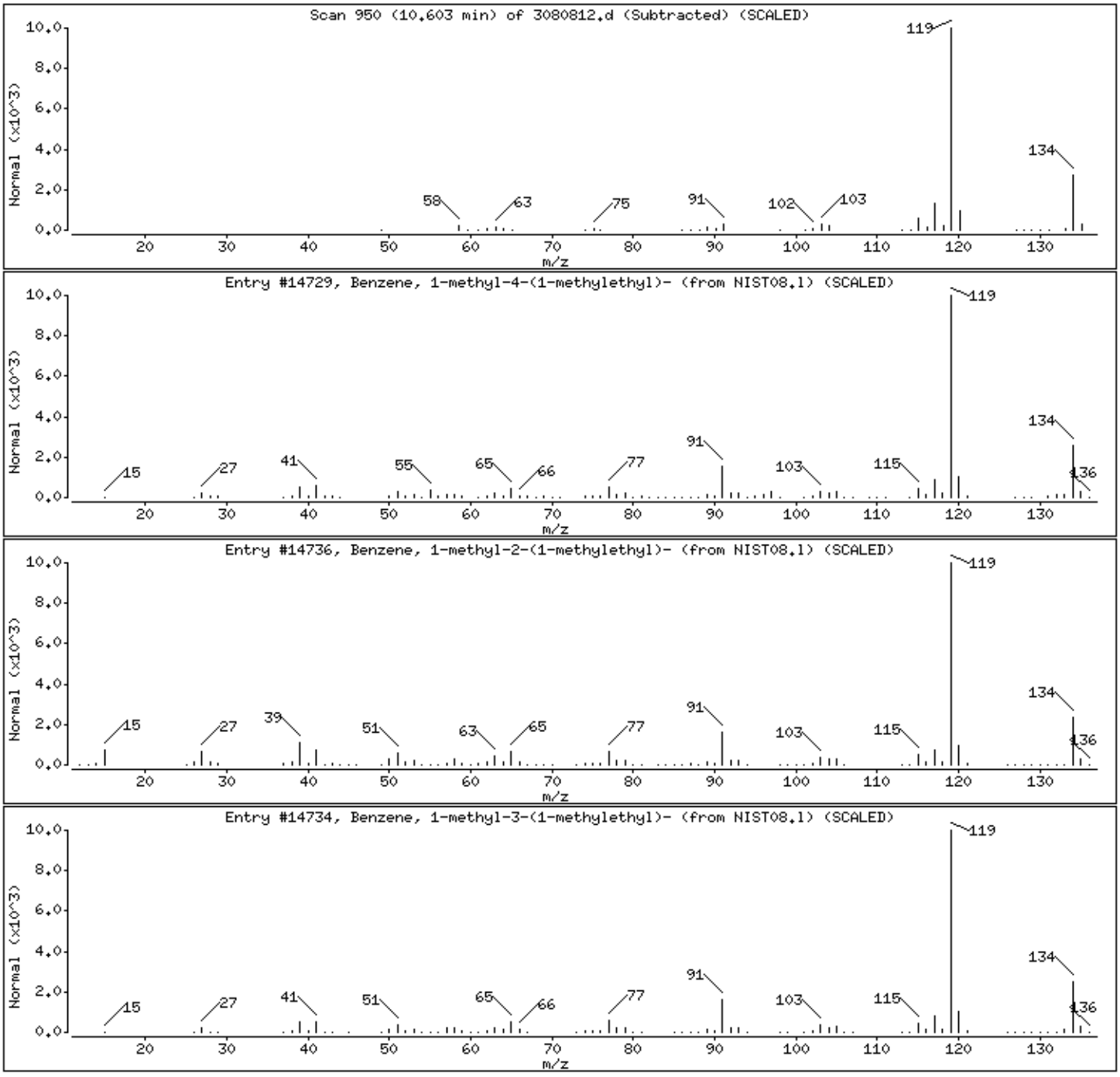
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-methyl-4-(1-methylethyl)-	99-87-6	NIST08.l	14729	91	C10H14	134
Benzene, 1-methyl-2-(1-methylethyl)-	527-84-4	NIST08.l	14736	91	C10H14	134
Benzene, 1-methyl-3-(1-methylethyl)-	535-77-3	NIST08.l	14734	91	C10H14	134



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

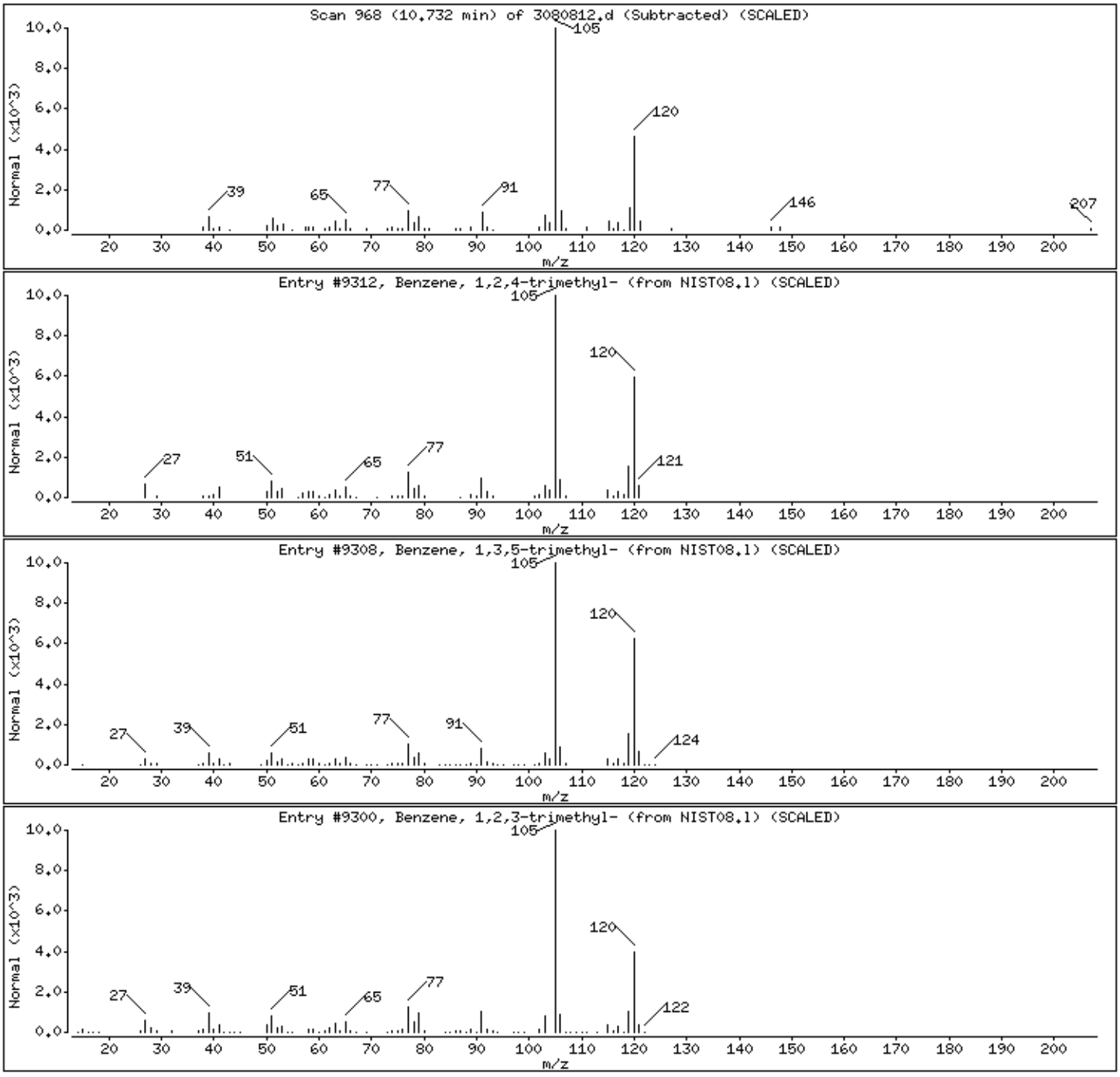
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,2,4-trimethyl-	95-63-6	NIST08.l	9312	94	C9H12	120
Benzene, 1,3,5-trimethyl-	108-67-8	NIST08.l	9308	94	C9H12	120
Benzene, 1,2,3-trimethyl-	526-73-8	NIST08.l	9300	93	C9H12	120



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

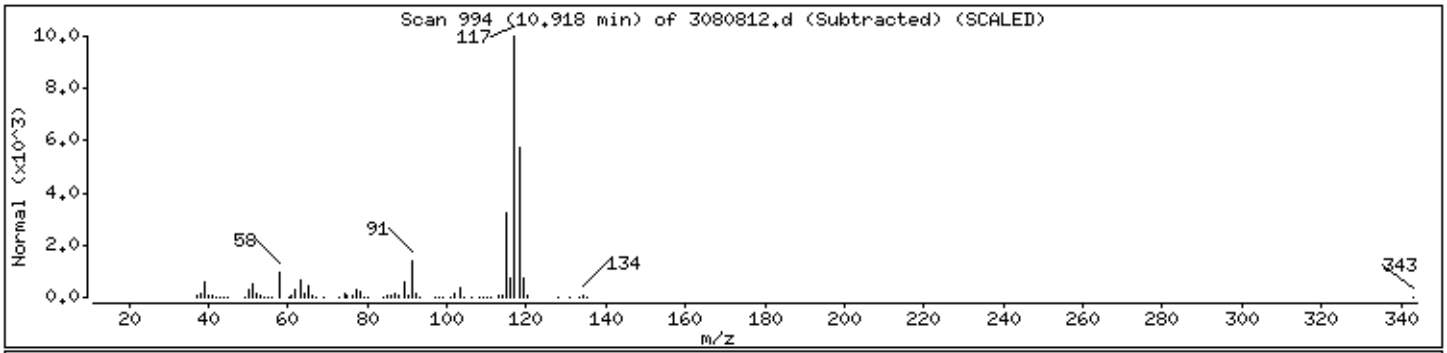
Sample Info: 15ml 34463

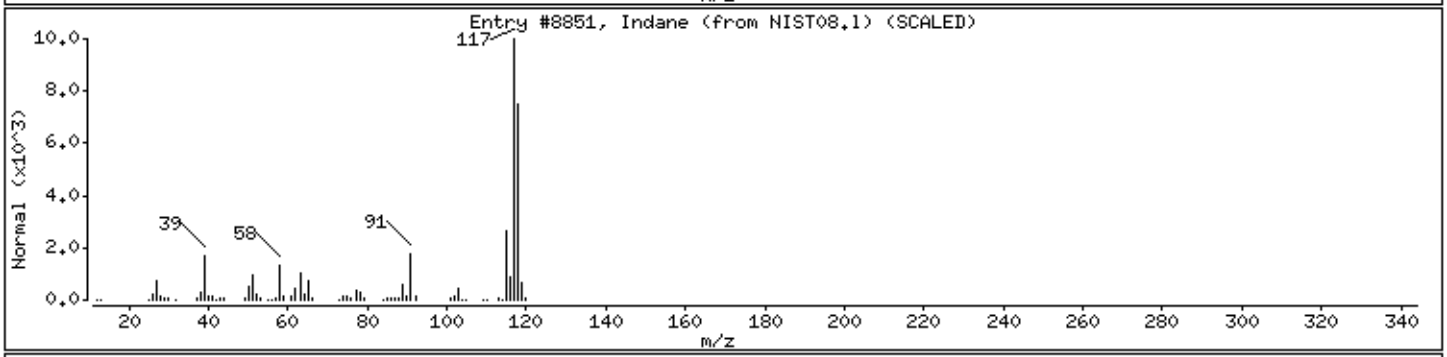
Operator: jg

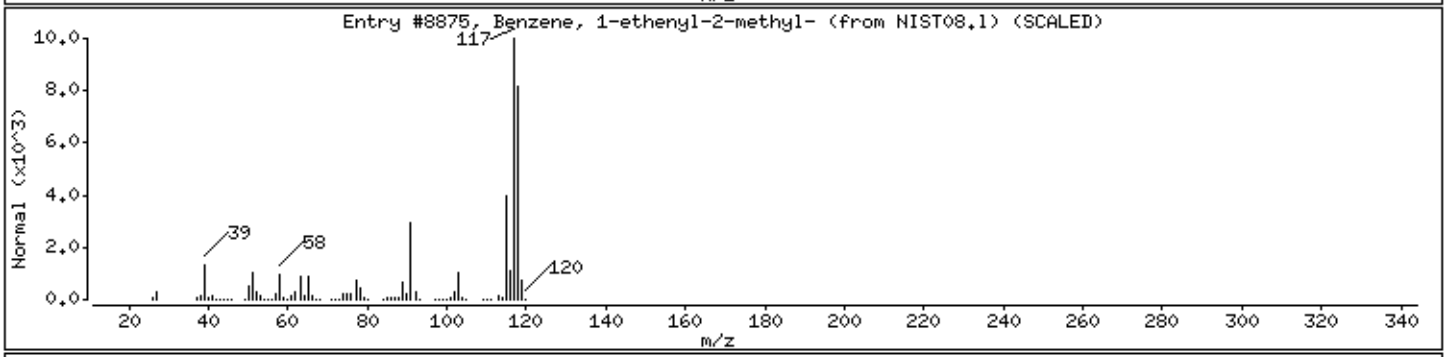
Column phase: RTX-624

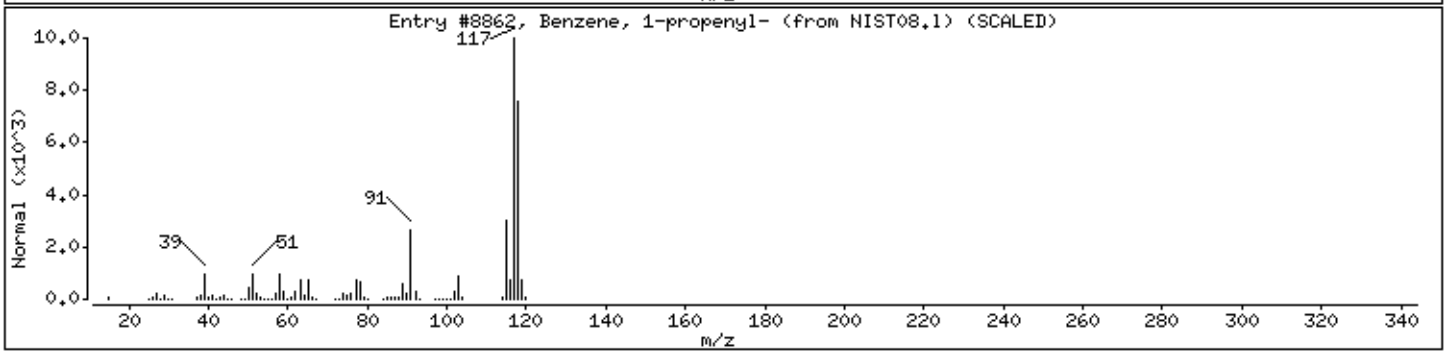
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indane	496-11-7	NIST08.l	8851	91	C9H10	118
Benzene, 1-ethenyl-2-methyl-	611-15-4	NIST08.l	8875	83	C9H10	118
Benzene, 1-propenyl-	637-50-3	NIST08.l	8862	80	C9H10	118









Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

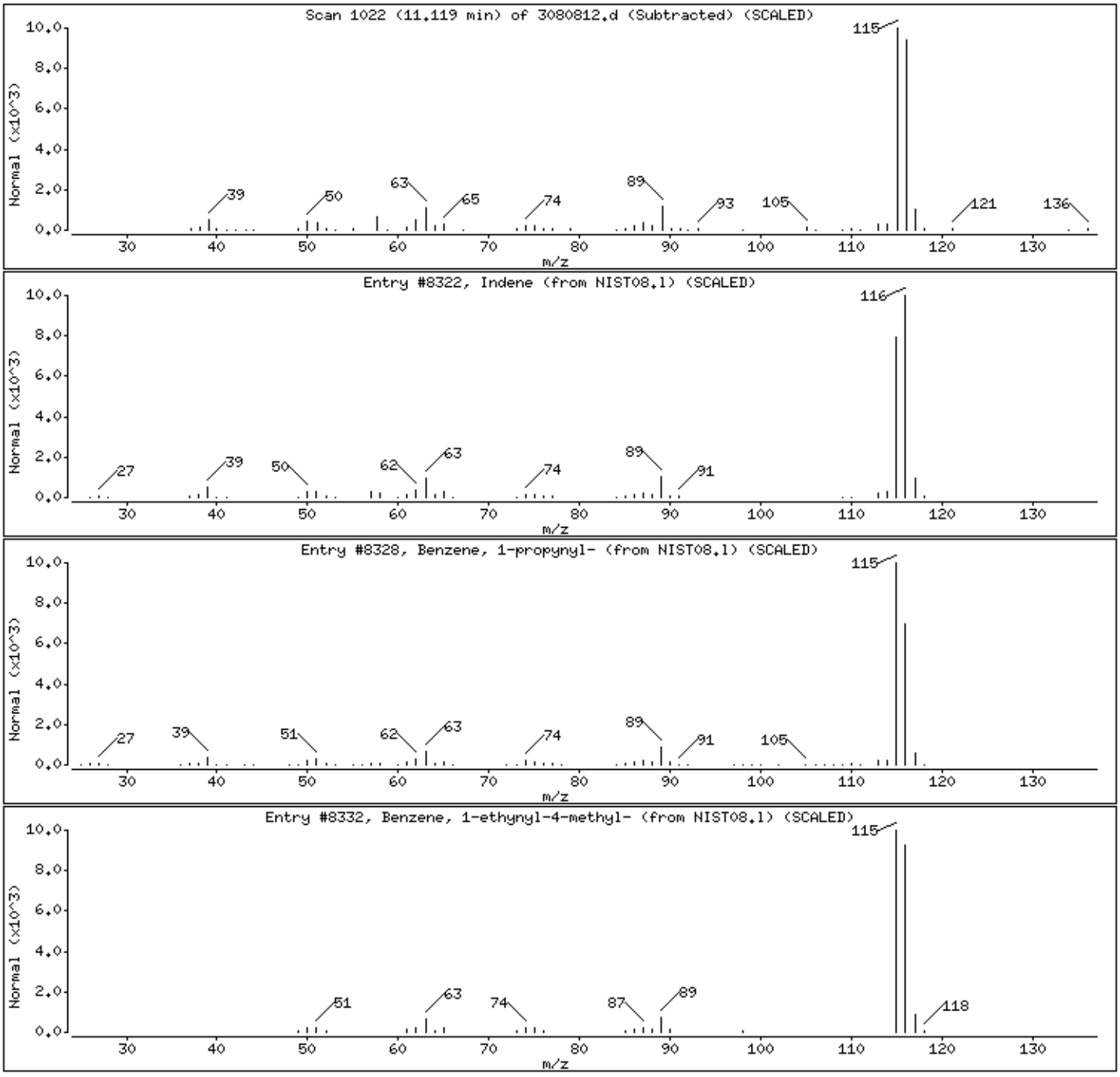
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Indene	95-13-6	NIST08.l	8322	97	C9H8	116
Benzene, 1-propynyl-	673-32-5	NIST08.l	8328	94	C9H8	116
Benzene, 1-ethynyl-4-methyl-	766-97-2	NIST08.l	8332	91	C9H8	116



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

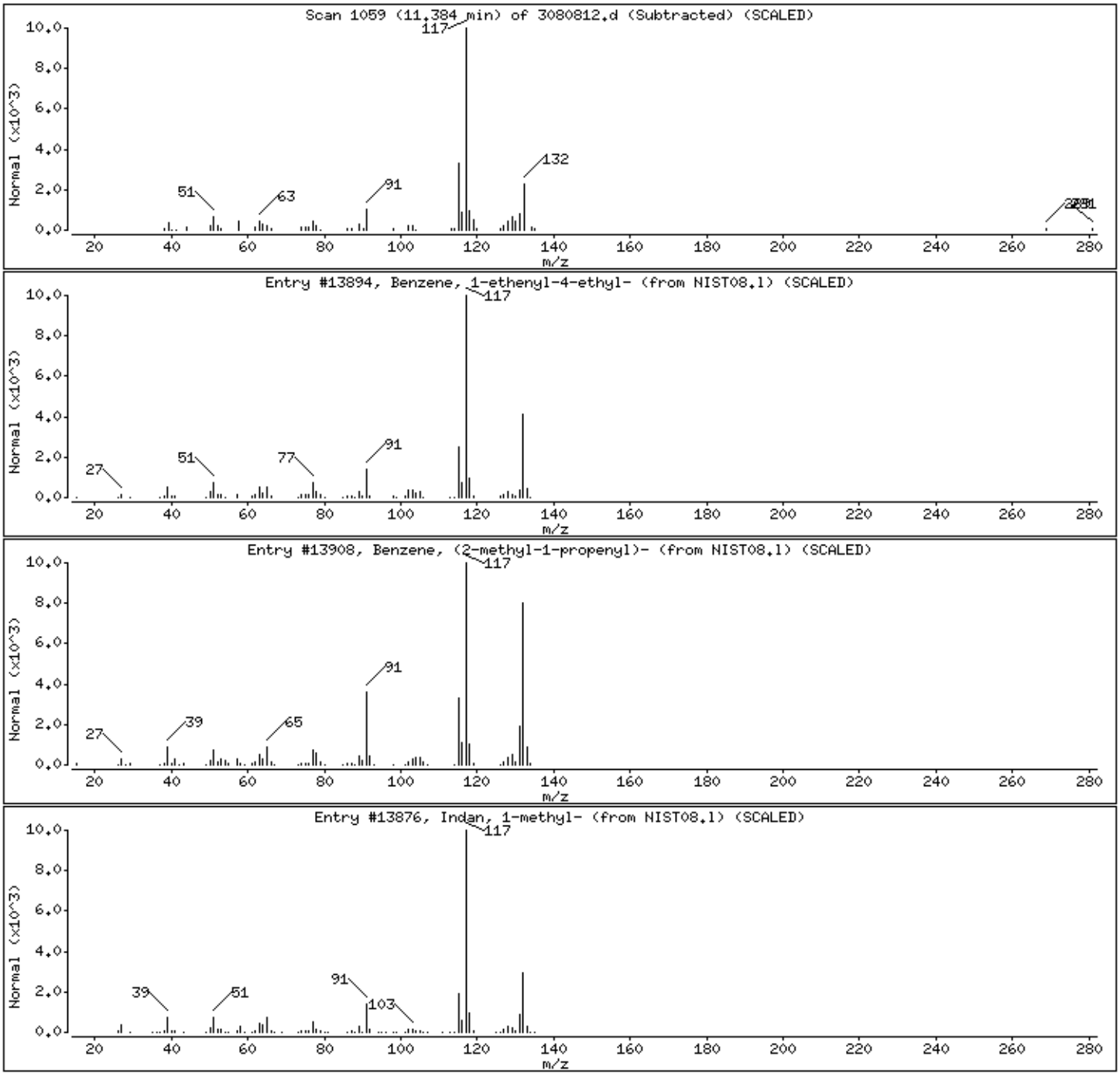
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-ethenyl-4-ethyl-	3454-07-7	NIST08.l	13894	80	C10H12	132
Benzene, (2-methyl-1-propenyl)-	768-49-0	NIST08.l	13908	78	C10H12	132
Indan, 1-methyl-	767-58-8	NIST08.l	13876	74	C10H12	132



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

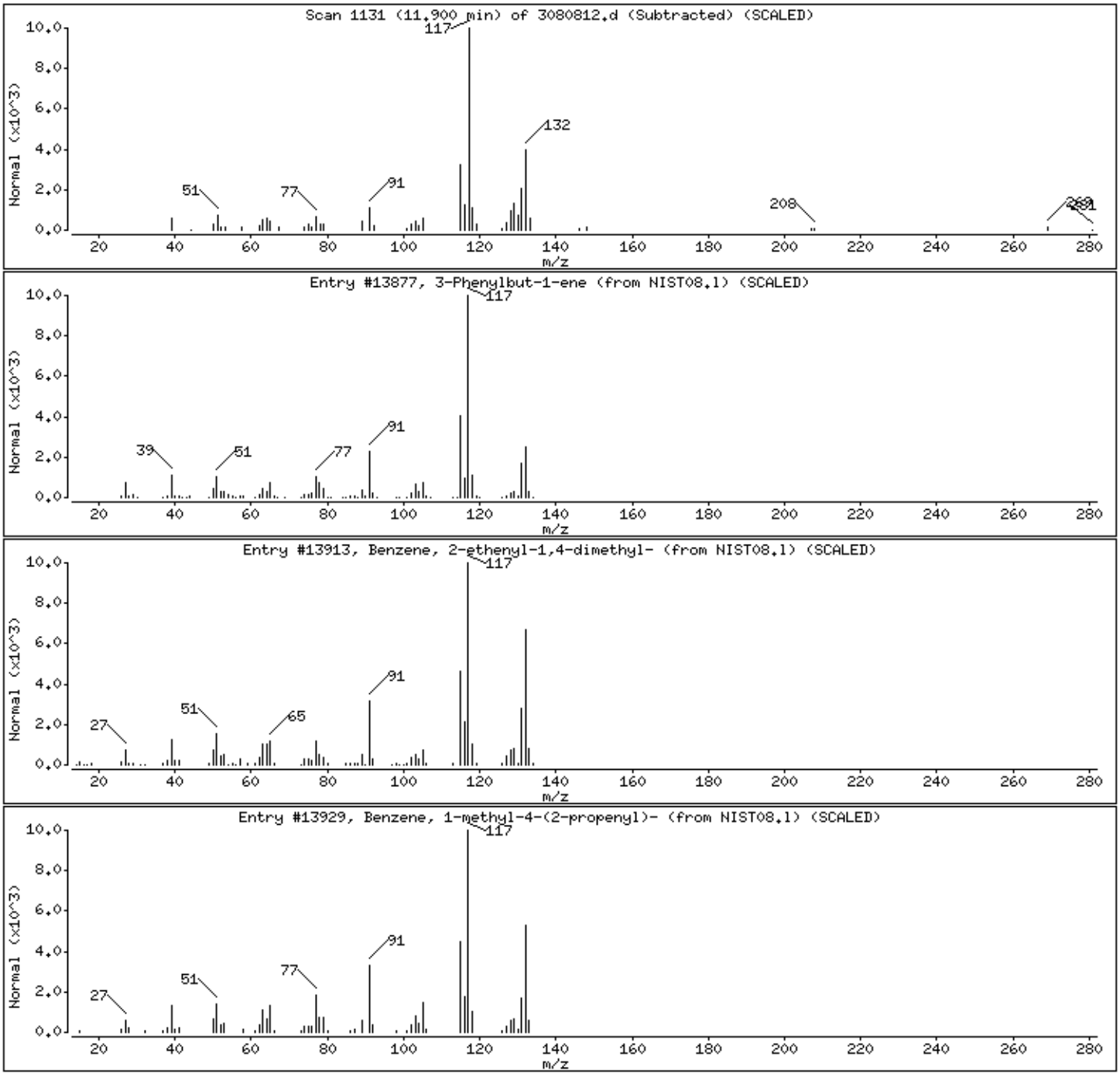
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
3-Phenylbut-1-ene	934-10-1	NIST08.l	13877	90	C10H12	132
Benzene, 2-ethenyl-1,4-dimethyl-	2039-89-6	NIST08.l	13913	86	C10H12	132
Benzene, 1-methyl-4-(2-propenyl)-	3333-13-9	NIST08.l	13929	83	C10H12	132



Data File: /chem/msd3.i/08aug17.b/3080812.d

Date : 08-AUG-2017 17:14

Client ID:

Instrument: msd3.i

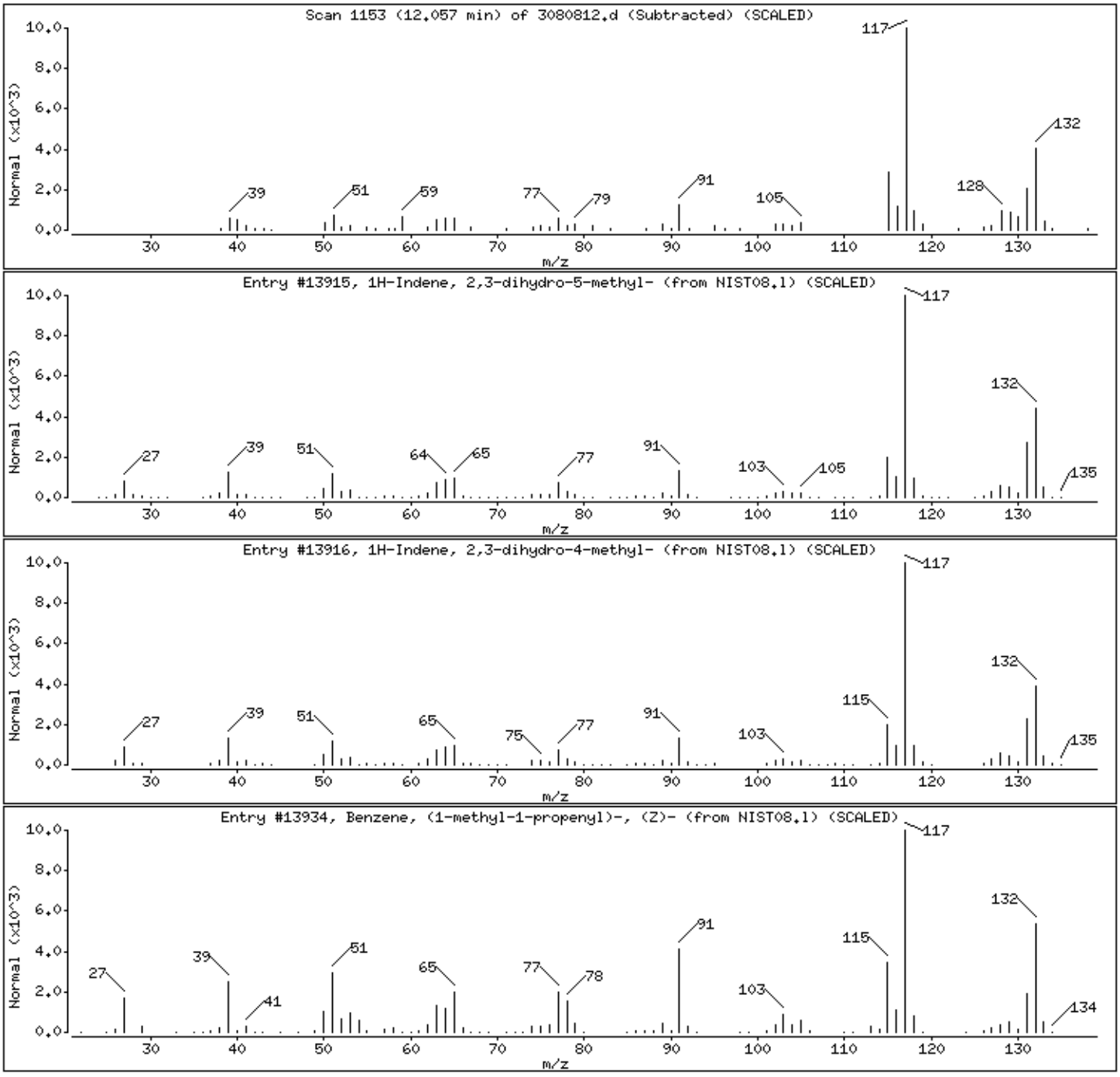
Sample Info: 15ml 34463

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
1H-Indene, 2,3-dihydro-5-methyl-	874-35-1	NIST08.l	13915	90	C10H12	132
1H-Indene, 2,3-dihydro-4-methyl-	824-22-6	NIST08.l	13916	87	C10H12	132
Benzene, (1-methyl-1-propenyl)-, (Z)-	767-99-7	NIST08.l	13934	86	C10H12	132



QC Results and Raw Data

EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	Lab Blank		
Lab ID:	1708091B-19A	**Date/Time Analyzed:**	8/7/17 01:02 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:		**Instrument/Filename:**	msd3.i / 3080706c

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.15	0.64	1.6	Not Detected U
Ethyl Benzene	100-41-4	0.20	0.87	2.2	Not Detected U
m,p-Xylene	108-38-3	0.20	0.87	2.2	Not Detected U
Naphthalene	91-20-3	0.075	0.42	5.2	Not Detected U
o-Xylene	95-47-6	0.090	0.87	2.2	Not Detected U
Toluene	108-88-3	0.12	0.75	1.9	Not Detected U
Total Xylene	1330-20-7	NA	D	4.3	Not Detected U

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	NA		Not Detected
Limonene	138-86-3	NA		Not Detected

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	89
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080706c.d
Lab Smp Id: Lab blank Client Smp ID: Lab blank
Inj Date : 07-AUG-2017 13:02
Operator : jg Inst ID: msd3.i
Smp Info : 200mL #24229
Misc Info : Humid
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 6 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.424	5.410 (1.000)	130	178580	25.0000			80.00- 120.00	100.00
5.424	5.410 (1.000)	128	136819				46.73- 106.73	76.61
5.424	5.410 (1.000)	49	196408				91.08- 151.08	109.98
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	623197	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	86059				0.00- 44.78	13.81
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	599363	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	281513				20.58- 80.58	46.97
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	202529	22.1908	22.191		80.00- 120.00	100.00
5.956	5.956 (1.098)	67	103012				24.54- 84.54	50.86
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	633858	25.0746	25.074		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	61522				0.00- 40.44	9.71

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.523	7.523	(1.193)	100	403847			35.27- 95.27	63.71
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.744	9.737	(1.113)	174	376988	24.0908	24.091	80.00- 120.00	100.00
9.744	9.737	(1.113)	95	389279			84.77- 144.77	103.26
9.744	9.737	(1.113)	176	360328			64.74- 124.74	95.58

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080706c.d
Lab Smp Id: Lab blank Client Smp ID: Lab blank
Inj Date : 07-AUG-2017 13:02
Operator : jg Inst ID: msd3.i
Smp Info : 200mL #24229
Misc Info : Humid
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:48 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 6 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.424	848176	25.000

	CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
1.381	107443	3.16689484	3.167	0		0	98

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080706c.d
Lab Smp Id: Lab blank
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: Humid

Calibration Date: 07-AUG-2017
Calibration Time: 10:44
Client Smp ID: Lab blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	178580	-1.60
123 1,4-Difluorobenze	637861	382717	893005	623197	-2.30
163 Chlorobenzene-d5	604933	362960	846906	599363	-0.92

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:55

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab blank Client Smp ID: Lab blank
Level: LOW Operator: jg
Data Type: MS DATA SampleType: BLANK
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.191	88.76	70-130
$ 146 Toluene-d8	25.000	25.074	100.30	70-130
$ 177 4-Bromofluorobenze	25.000	24.091	96.36	70-130

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Data File: /chem/msd3.i/07aug17.b/3080706c.d

Date : 07-AUG-2017 13:02

Client ID: Lab blank

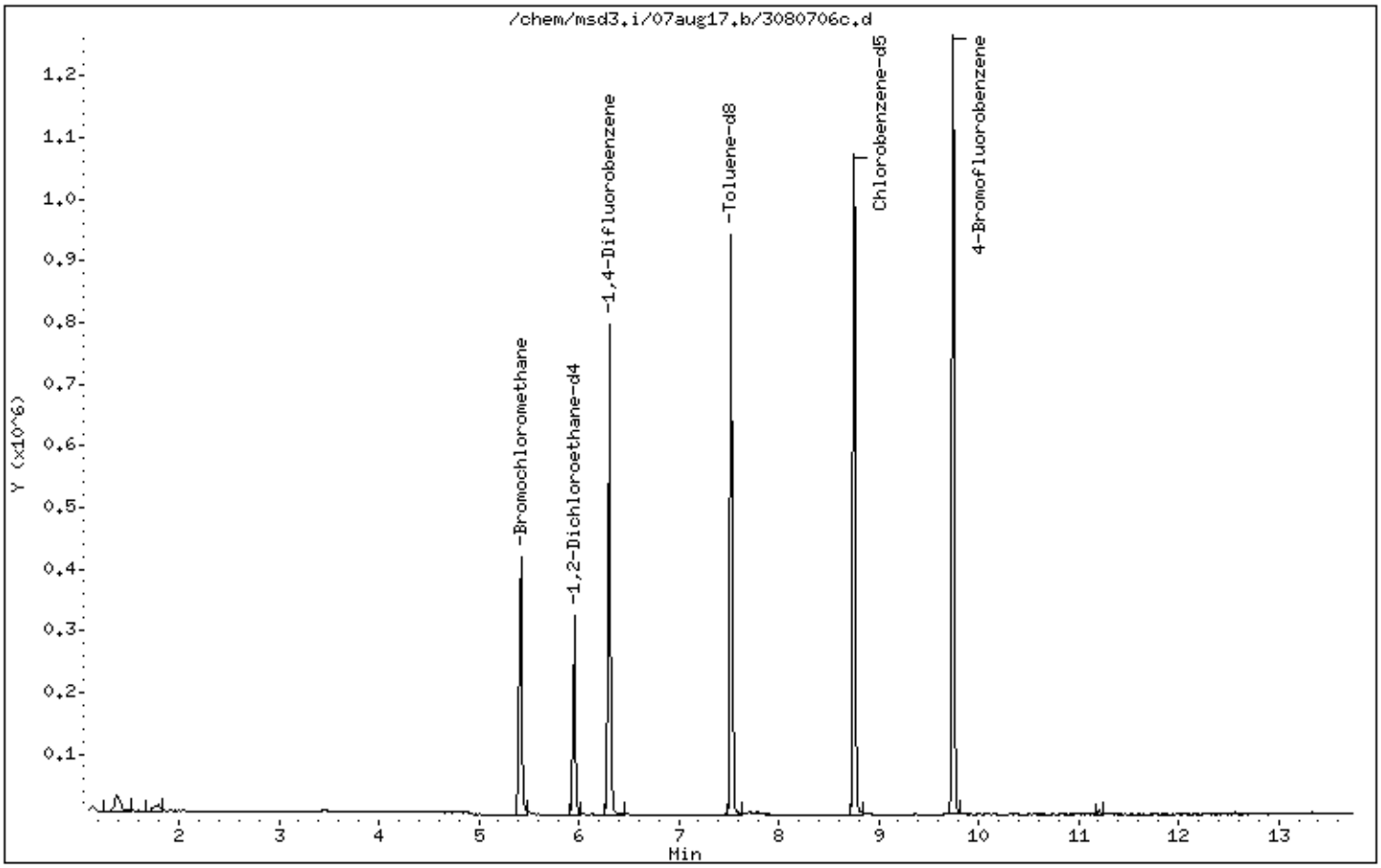
Instrument: msd3.i

Sample Info: 200mL #24229

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/07aug17.b/3080706c.d

Date : 07-AUG-2017 13:02

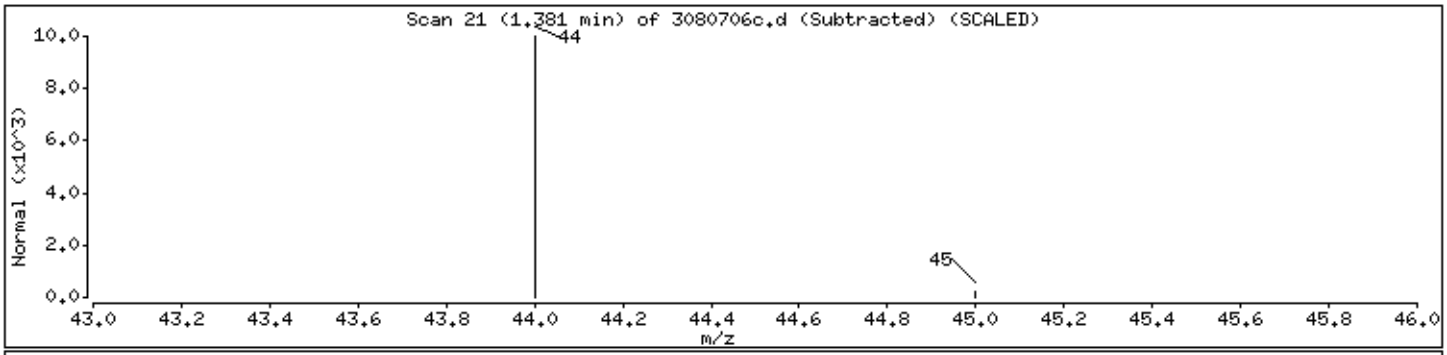
Client ID: Lab blank Instrument: msd3.i

Sample Info: 200mL #24229

Operator: jg

Column phase: RTX-624 Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	Lab Blank		
Lab ID:	1708091B-19B	**Date/Time Analyzed:**	8/8/17 01:52 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:		**Instrument/Filename:**	msd3.i / 3080806c

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.15	0.64	1.6	Not Detected U
Ethyl Benzene	100-41-4	0.20	0.87	2.2	Not Detected U
m,p-Xylene	108-38-3	0.20	0.87	2.2	Not Detected U
Naphthalene	91-20-3	0.075	0.42	5.2	0.60 J
o-Xylene	95-47-6	0.090	0.87	2.2	Not Detected U
Toluene	108-88-3	0.12	0.75	1.9	Not Detected U
Total Xylene	1330-20-7	NA	D	4.3	Not Detected U

D: Analyte not within the DoD scope of accreditation.

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS#	Match	LOD	Amount ppbv
Indan	496-11-7	NA		Not Detected
Limonene	138-86-3	94%		3.5 NJ

U = The analyte was not detected above the MDL.
J = Estimated value.
NJ =The identification is based on presumptive evidence; estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080806c.d
Lab Smp Id: Lab Blank Client Smp ID: Lab blank
Inj Date : 08-AUG-2017 13:52
Operator : jg Inst ID: msd3.i
Smp Info : 200mL #24229
Misc Info : humid
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 12 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS			
					ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	==========	=====
* 98 Bromochloromethane							CAS #: 74-97-5	
5.410	5.410 (1.000)	130	186108	25.0000			80.00- 120.00	100.00
5.410	5.410 (1.000)	128	145088				46.73- 106.73	77.96
5.410	5.410 (1.000)	49	199384				91.08- 151.08	107.13
* 123 1,4-Difluorobenzene							CAS #: 540-36-3	
6.306	6.306 (1.000)	114	683435	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	94866				0.00- 44.78	13.88
* 163 Chlorobenzene-d5							CAS #: 3114-55-4	
8.755	8.755 (1.000)	117	630616	25.0000			80.00- 120.00	100.00
8.755	8.755 (1.000)	82	298285				20.58- 80.58	47.30
$ 117 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
5.956	5.956 (1.101)	65	213897	22.4885	22.488		80.00- 120.00	100.00
5.956	5.956 (1.101)	67	109704				24.54- 84.54	51.29
$ 146 Toluene-d8							CAS #: 2037-26-5	
7.523	7.523 (1.193)	98	681856	24.5959	24.596		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	67092				0.00- 40.44	9.84

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.523	7.523	(1.193)	100	432804			35.27- 95.27	63.47
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.744	9.737	(1.113)	174	401829	24.4056	24.406	80.00- 120.00	100.00
9.744	9.737	(1.113)	95	421210			84.77- 144.77	104.82
9.744	9.737	(1.113)	176	392114			64.74- 124.74	97.58
228 Naphthalene						CAS #: 91-20-3		
12.745	12.717	(1.456)	128	7887	0.11493	0.1149	80.00- 120.00	100.00(a)
12.738	12.717	(1.455)	127	1063			0.00- 43.00	13.48

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080806c.d
Lab Smp Id: Lab Blank Client Smp ID: Lab blank
Inj Date : 08-AUG-2017 13:52
Operator : jg Inst ID: msd3.i
Smp Info : 200mL #24229
Misc Info : humid
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 10-Aug-2017 06:23 mchen Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 12 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 98 Bromochloromethane	5.410	870464	25.000
* 163 Chlorobenzene-d5	8.755	1840970	25.000

	CONCENTRATIONS			QUANT			
	RT	AREA	ON-COL(PPBV)	FINAL(PPBV)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown					CAS #:			
	1.367	98157	2.81909490	2.819	0		0	98
Limonene					CAS #: 138-86-3			
	10.582	255540	3.47018401	3.470	94	NIST08.1	15483	163

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080806c.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: humid

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Client Smp ID: Lab blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	186108	-5.51
123 1,4-Difluorobenze	728289	436973	1019605	683435	-6.16
163 Chlorobenzene-d5	663497	398098	928896	630616	-4.96

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 06:29

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab Blank Client Smp ID: Lab blank
Level: LOW Operator: jg
Data Type: MS DATA SampleType: BLANK
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	22.488	89.95	70-130
$ 146 Toluene-d8	25.000	24.596	98.38	70-130
$ 177 4-Bromofluorobenze	25.000	24.406	97.62	70-130

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Data File: /chem/msd3.i/08aug17.b/3080806c.d

Date : 08-AUG-2017 13:52

Client ID: Lab blank

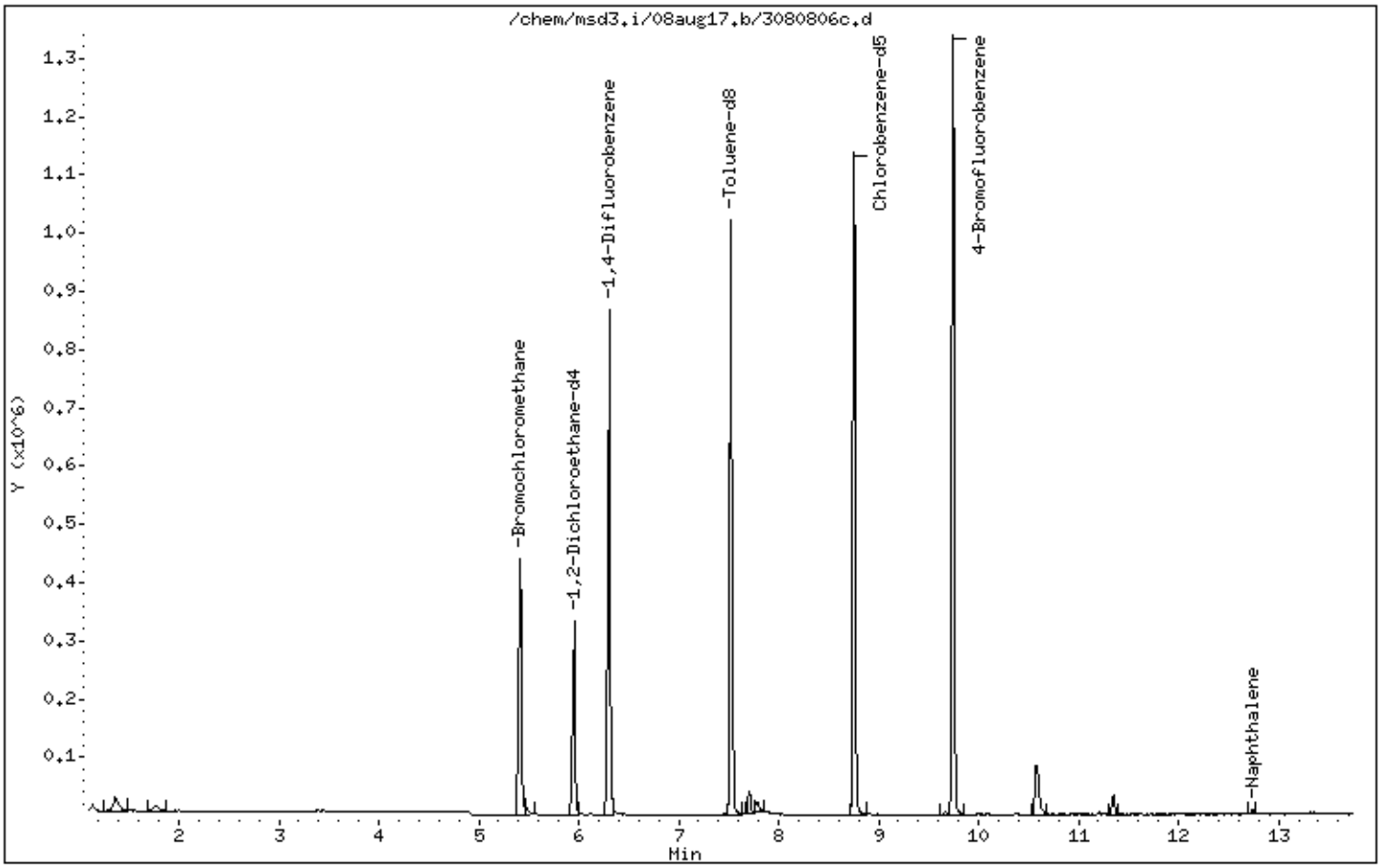
Instrument: msd3.i

Sample Info: 200mL #24229

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Data File: /chem/msd3.i/08aug17.b/3080806c.d

Date : 08-AUG-2017 13:52

Client ID: Lab blank

Instrument: msd3.i

Sample Info: 200mL #24229

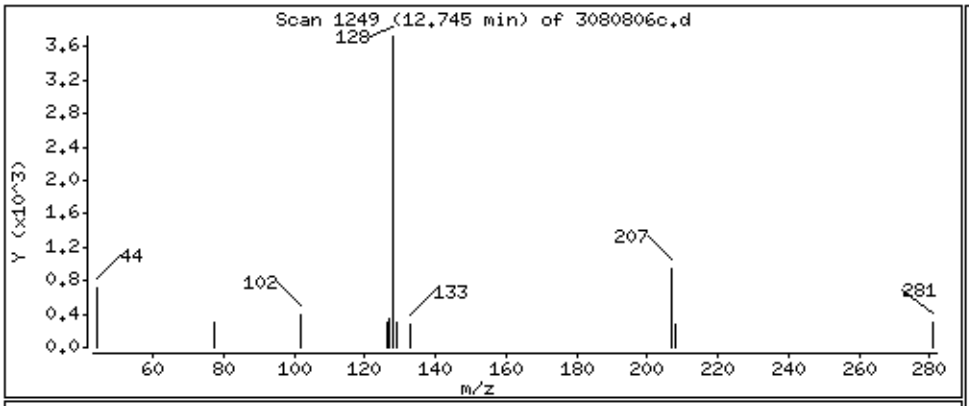
Operator: jg

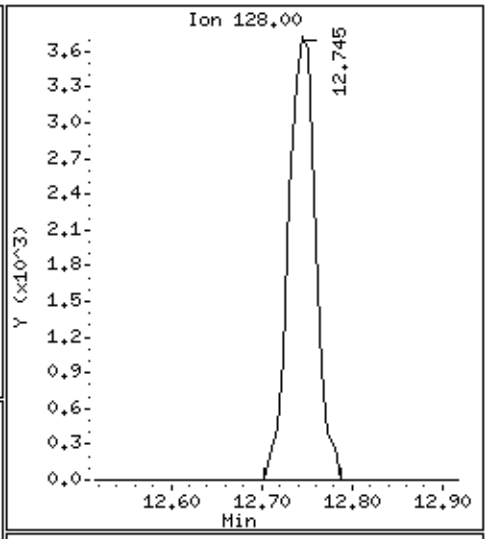
Column phase: RTX-624

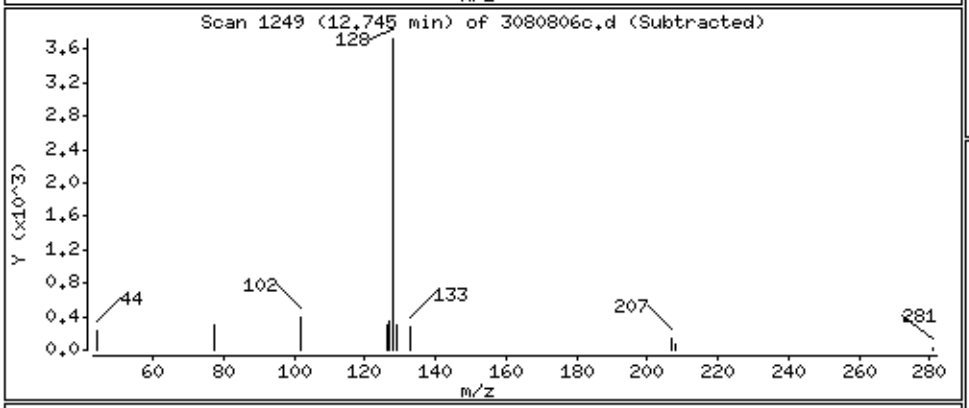
Column diameter: 0.25

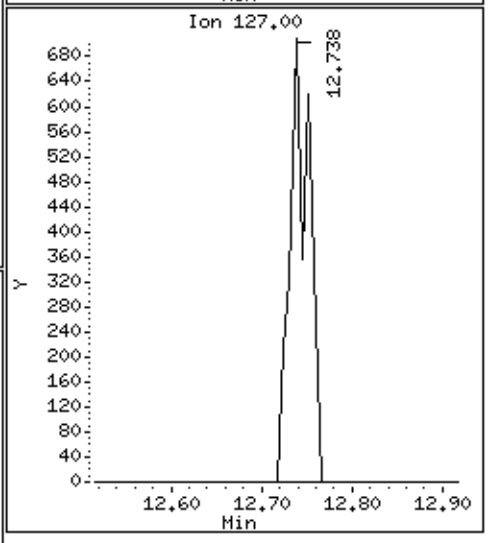
228 Naphthalene

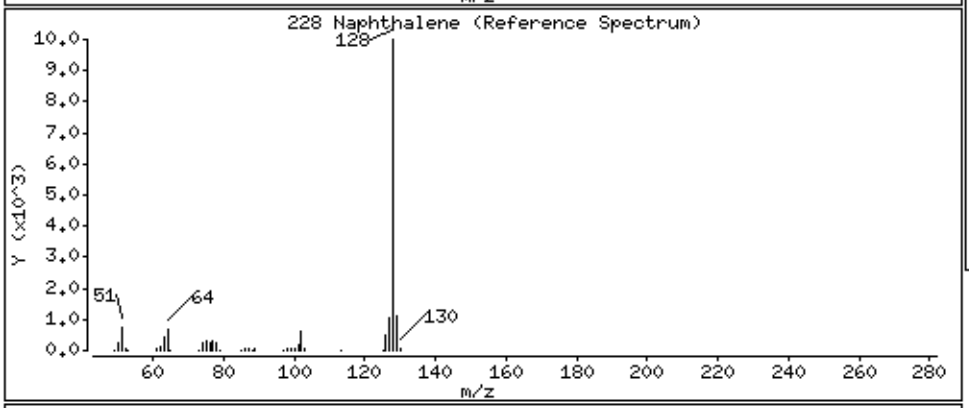
Concentration: 0.1149 PPBV

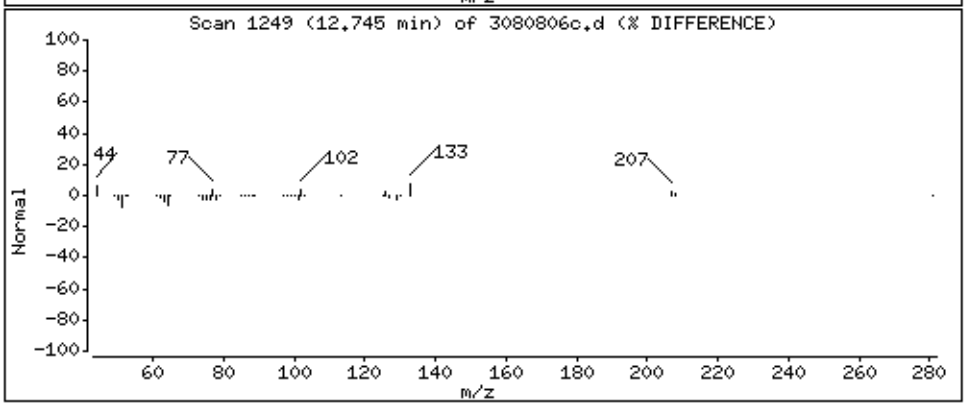












Data File: /chem/msd3.i/08aug17.b/3080806c.d

Date : 08-AUG-2017 13:52

Client ID: Lab blank

Instrument: msd3.i

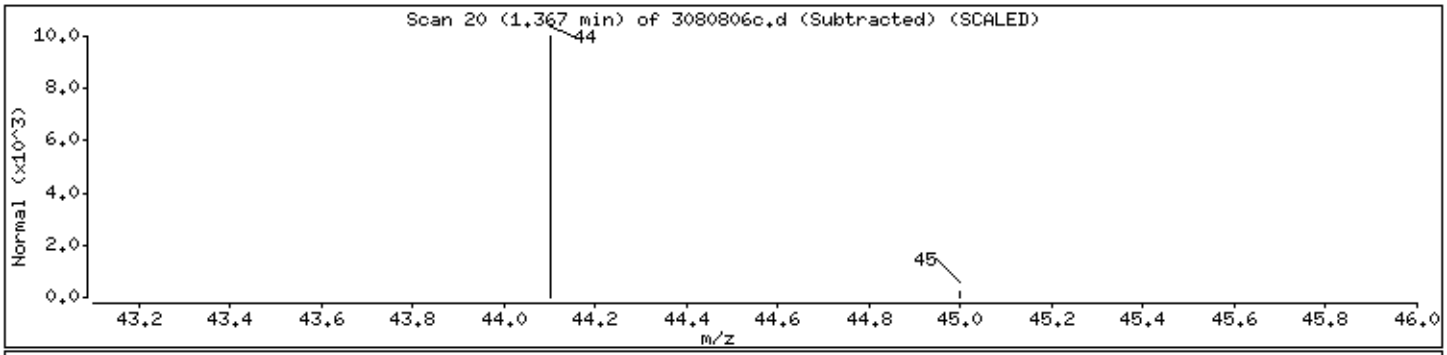
Sample Info: 200mL #24229

Operator: jg

Column phase: RTX-624

Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
UNKNOWN						



Data File: /chem/msd3.i/08aug17.b/3080806c.d

Date : 08-AUG-2017 13:52

Client ID: Lab blank

Instrument: msd3.i

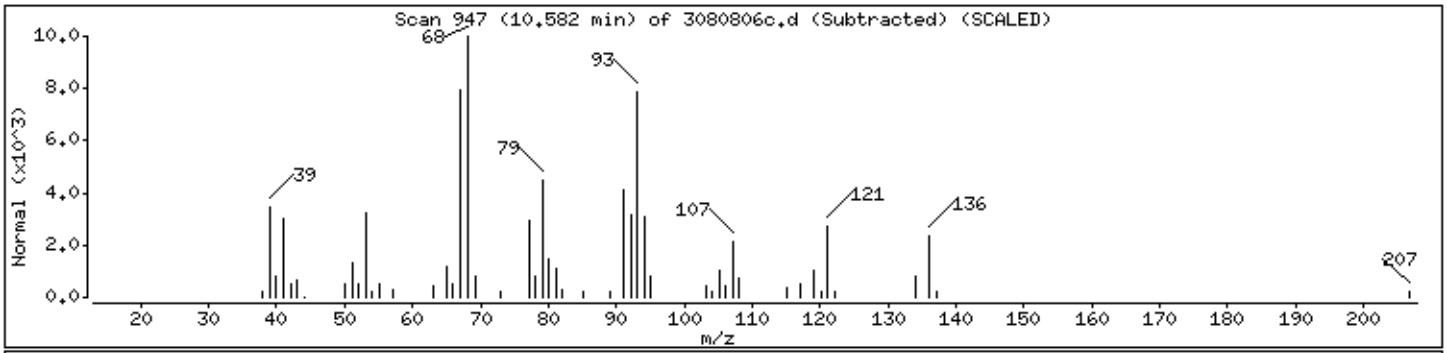
Sample Info: 200mL #24229

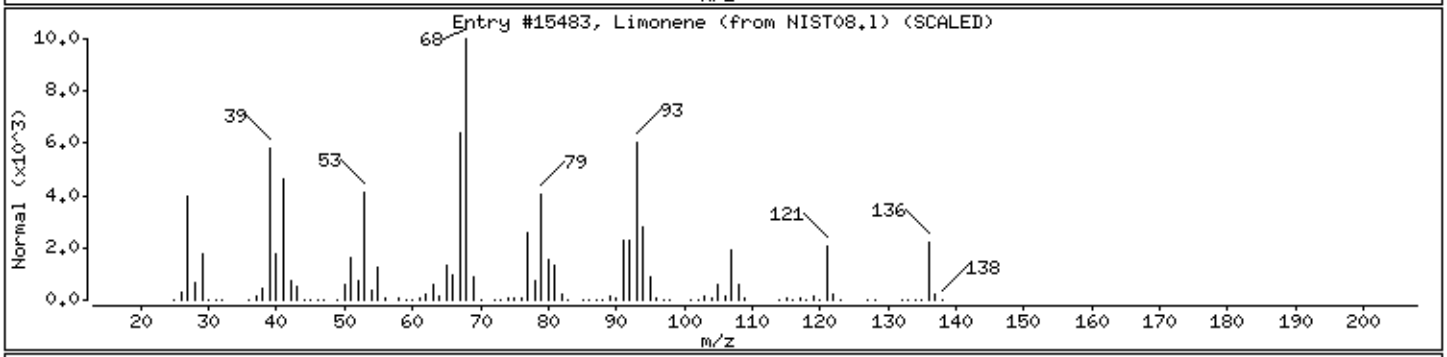
Operator: jg

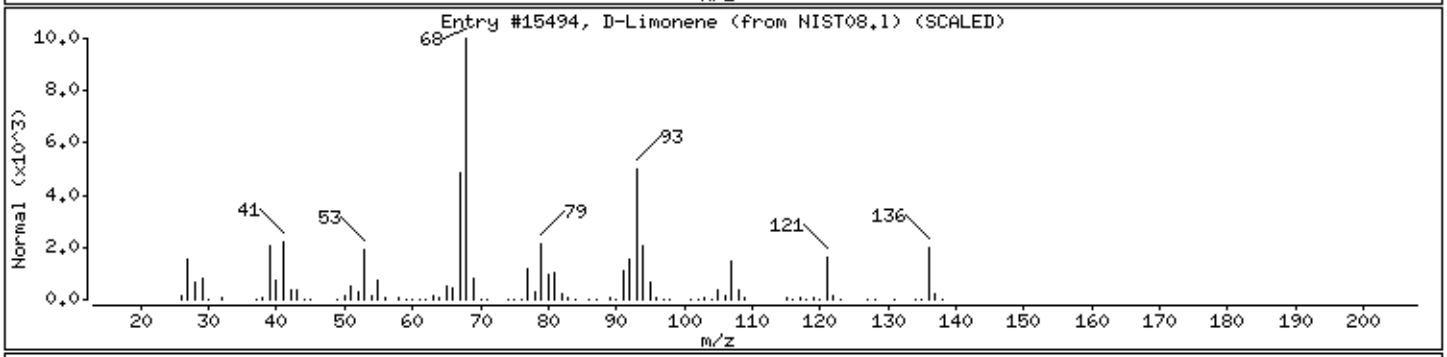
Column phase: RTX-624

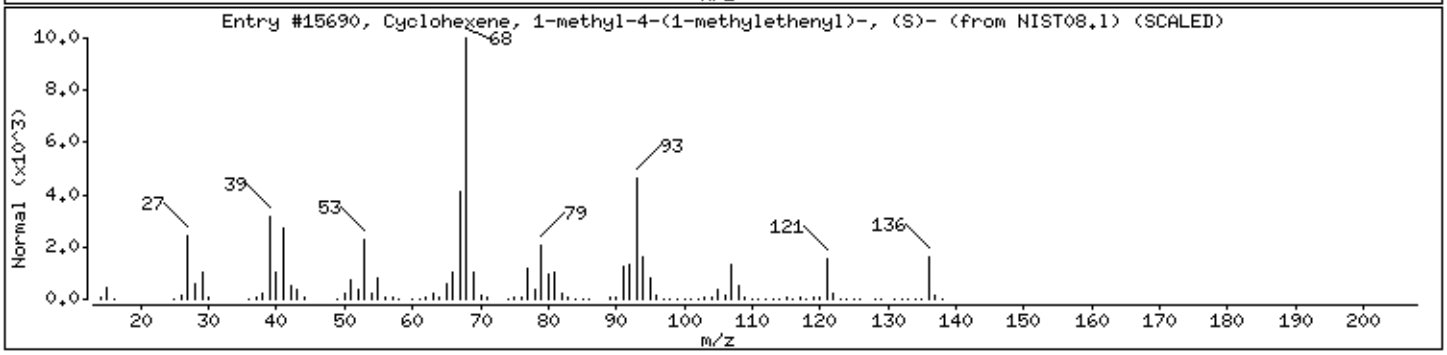
Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Limonene	138-86-3	NIST08.l	15483	94	C10H16	136
D-Limonene	5989-27-5	NIST08.l	15494	83	C10H16	136
Cyclohexene, 1-methyl-4-(1-methylethenyl	5989-54-8	NIST08.l	15690	62	C10H16	136









LEVEL-IV VALIDATABLE

EPA METHOD TO-15 GC/MS FULL SCAN

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1708091B

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	TOTAL OUT
01	SA-004_0817	91		103		96				0
02	SA-104_0817	88		102		98				0
03	SU-007_0817	88		103		99				0
04	SU-107_0817	89		102		99				0
05	SH-E_0817	90		98		102				0
06	SH-B_0817	94		95		105				0
07	SH-A_0817	89		101		99				0
08	SH-D_0817	87		98		100				0
09	SH-G_0817	89		96		99				0
10	SH-F_0817	87		101		99				0
11	SH-C_0817	88		99		101				0
12	Lab Blank	89		100		96				0
13	Lab Blank	90		98		98				0
14	CCV	84		106		101				0
15	CCV	85		101		101				0
16	LCS	83		102		101				0
17	LCSD	83		103		101				0
18	LCS	86		102		101				0
19	LCSD	85		100		102				0
20										0
21										0
22										0
23										0
24										0

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

EPA Method TO-15 GC/MS Full Scan

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1708091B

Lab File ID: 3080702.d | Date Analyzed: 08/07/2017

Instrument ID: msd3.i | Time Analyzed: 10:44 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	604933		8.76		637861		6.31		181481		5.41	
	UPPER LIMIT	846906		09.09		893005		06.64		254073		05.74	
	LOWER LIMIT	362960		08.43		382717		05.98		108889		05.08	
	CLIENT SAMPLE NO												
01	SA-004_0817	562147		8.76		563575		6.31		168955		5.41	
02	SA-104_0817	552464		8.76		569516		6.31		167029		5.42	
03	SU-007_0817	577511		8.76		566909		6.31		166020		5.42	
04	SU-107_0817	570648		8.76		574406		6.31		165638		5.42	
05	SH-A_0817	568317		8.76		588949		6.31		169603		5.42	
06	Lab Blank	599363		8.76		623197		6.31		178580		5.42	
07	CCV	604933		8.76		637861		6.31		181481		5.41	
08	LCS	616193		8.76		665896		6.32		181118		5.42	
09	LCSD	627558		8.76		671666		6.32		183297		5.42	
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

EPA Method TO-15 GC/MS Full Scan

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1708091B

Lab File ID: 3080802.d | Date Analyzed: 08/08/2017

Instrument ID: msd3.i | Time Analyzed: 10:56 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	663497		8.76		728289		6.31		196954		5.41	
	UPPER LIMIT	928896		09.09		1019605		06.64		275736		05.74	
	LOWER LIMIT	398098		08.43		436973		05.98		118172		05.08	
	CLIENT SAMPLE NO												
01	SH-E_0817	701795		8.76		714461		6.31		210899		5.42	
02	SH-B_0817	663047		8.76		706113		6.31		184884		5.41	
03	SH-D_0817	626380		8.76		674523		6.31		192855		5.41	
04	SH-G_0817	628040		8.76		687131		6.31		189866		5.41	
05	SH-F_0817	633443		8.76		668015		6.31		191712		5.41	
06	SH-C_0817	612293		8.76		667654		6.31		190651		5.41	
07	Lab Blank	630616		8.76		683435		6.31		186108		5.41	
08	CCV	663497		8.76		728289		6.31		196954		5.41	
09	LCS	668826		8.76		721526		6.32		193545		5.42	
10	LCSD	665868		8.76		725898		6.32		196741		5.42	
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 3080704.d & 3080703.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 8/7/17 & 8/7/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	107		106		0.94	
100-41-4	Ethyl Benzene	105		104		0.96	
108-38-3	m,p-Xylene	105		105		0	
91-20-3	Naphthalene	78		76		2.6	
95-47-6	o-Xylene	104		105		0.96	
108-88-3	Toluene	108		108		0	
1330-20-7	Total Xylene	104		105		0.96	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 3080804.d & 3080803.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 8/8/17 & 8/8/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	106		103		2.9	
100-41-4	Ethyl Benzene	104		103		0.97	
108-38-3	m,p-Xylene	104		103		0.97	
91-20-3	Naphthalene	81		76		6.4	
95-47-6	o-Xylene	104		103		0.97	
108-88-3	Toluene	106		104		1.9	
1330-20-7	Total Xylene	104		103		0.97	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Calibration File Names:
Level 2: /chem/msd3.i/23may17.b/3052316.d
Level 3: /chem/msd3.i/04aug17.b/3080405.d
Level 4: /chem/msd3.i/04aug17.b/3080406.d
Level 5: /chem/msd3.i/04aug17.b/3080407.d
Level 6: /chem/msd3.i/04aug17.b/3080408.d
Level 7: /chem/msd3.i/23may17.b/3052310.d
Level 8: /chem/msd3.i/04aug17.b/3080409.d

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6 Freon 143a	+++++	0.22116	0.23031	0.18091	0.17092	+++++	0.16633	0.19393	15.310
7 Freon 134a	+++++	0.62929	0.77041	0.52214	0.52091	+++++	0.58159	0.60487	17.029

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
8 Propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
9 Propylene	+++++	1.07603	1.13907	0.75362	0.74546	0.76895	0.77962	0.87712	20.520
10 1,1-Difluoroethane	+++++	0.35918	0.46174	0.29331	0.28143	+++++	0.34324	0.34778	20.588
11 Freon 12	2.64907	2.98226	3.01890	2.26032	2.32971	2.44548	2.41430	2.58572	11.914
12 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
13 Chlorodifluoromethane	+++++	0.17193	0.20274	0.14301	0.13839	+++++	0.15659	0.16253	15.998
14 Ethylene Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
15 Freon 114	2.14108	2.41813	2.45878	1.88603	1.94971	2.04333	1.98619	2.12618	10.714
16 Freon 142b	+++++	1.65549	1.74470	1.15655	1.20098	+++++	1.33062	1.41767	18.869
17 Chloromethane	+++++	1.20162	0.94687	0.80122	0.81146	0.82471	0.68282	0.87812	20.418

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
23 Butane	+++++	0.24284	0.26633	0.20719	0.20045	0.21088	0.20090	0.22143	12.203
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
25 Vinyl Chloride	1.00001	1.09245	1.17228	0.88507	0.91453	0.95174	0.95998	0.99658	10.249
26 1,3-Butadiene	1.03081	1.01592	0.98521	0.77397	0.78812	0.81018	0.79429	0.88550	13.360
27 3-Methyl-1-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
28 Methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
29 Bromomethane	+++++	0.96022	0.97198	0.80833	0.80874	0.82389	0.78479	0.85966	9.710
30 Chloroethane	+++++	0.59620	0.60191	0.46340	0.47289	0.48492	0.48071	0.51667	12.438
31 Isopentane	+++++	1.55758	1.58255	1.21384	1.17112	1.20181	1.21235	1.32321	14.510
32 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
33 2-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
34 Pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
35 Freon 11	2.91409	3.24556	3.35059	2.59531	2.61172	2.74298	2.72070	2.88299	10.534
36 1-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
37 Dichlorofluoromethane	+++++	2.11535	2.44632	1.65686	1.82094	+++++	1.93176	1.99425	15.185

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
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Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
38 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
39 Isoprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
40 2-Methyl-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
41 trans-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
42 Ethanol	+++++	0.47579	0.49449	0.38164	0.39033	0.40453	0.40965	0.42607	11.077
43 1,2-Dichloro-1-fluoroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
44 Ethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
45 cis-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
46 Acrolein	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
47 Freon 123a	+++++	2.02383	2.09274	1.46935	1.53313	+++++	1.63948	1.75170	16.408

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
48 Freon 123	+++++	2.96990	3.04165	2.17772	2.21232	+++++	2.38424	2.55717	16.334
49 Freon 113	2.18253	2.29234	2.41437	1.98496	1.92619	1.98209	1.98813	2.11009	8.904
50 1,1-Dichloroethene	1.22548	1.16955	1.23879	0.94751	0.97283	1.01871	1.00866	1.08308	11.446
51 2,2-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
52 Acetone	+++++	0.80611	0.78391	0.47615	0.49340	0.51555	0.49722	0.59539	26.082
53 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
54 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
55 4-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
56 Carbon Disulfide	+++++	4.34271	3.80205	2.59316	2.62006	2.69840	2.67777	3.12236	24.227
57 2-Propanol	+++++	2.34275	2.35756	1.78087	1.87106	1.91001	1.86249	2.02079	12.797

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Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
58 3-Chloropropene	+++++	0.49509	0.55535	0.42245	0.43075	0.44884	0.45625	0.46812	10.609
59 Cyclopentene	+++++	1.79424	1.83901	1.51447	1.72946	+++++	1.91372	1.75818	8.637
60 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
61 Methyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
62 3-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
63 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
64 Cyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
65 1-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
66 Methylene Chloride	1.50648	1.46530	1.57190	1.18392	1.22483	1.25270	1.25699	1.35173	11.633
67 2-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
68 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
69 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
70 tert-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
71 tert-Butyl alcohol	+++++	2.86934	2.97635	2.34069	2.32831	2.44655	2.43341	2.56578	11.017
72 Methyl tert-butyl ether	3.20801	3.29001	3.50016	2.87002	2.76398	2.85604	2.87134	3.05137	9.162
73 trans-1,2-Dichloroethene	0.62472	0.71930	0.78017	0.57579	0.60830	0.64119	0.64034	0.65569	10.708
74 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
75 trans-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
76 1-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
77 cis-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
78 Hexane	2.05477	1.99659	2.13794	1.56698	1.63878	1.73728	1.76816	1.84293	11.931
79 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
80 sec-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
81 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
82 1,1-Dichloroethane	2.05097	2.18681	2.31056	1.72949	1.83558	1.94054	1.94370	1.99966	10.020
83 Isopropyl ether	+++++	4.32955	4.54838	3.70514	3.59289	3.74468	3.83171	3.95873	9.753
84 1-Propanol	+++++	0.22788	0.23323	0.21377	0.25832	+++++	0.25241	0.23712	7.687
85 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
86 Vinyl Acetate	+++++	0.30122	0.31568	0.23972	0.25807	0.27941	0.28108	0.27920	9.905
87 Butanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
88 Ethyl-tert-butyl ether	+++++	4.30737	4.45315	3.60038	3.54824	3.69822	3.75593	3.89388	9.924
89 Isobutyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
90 2,2-Dichloropropane	+++++	2.00903	2.05101	1.81309	1.82126	+++++	1.95527	1.92993	5.618
91 cis-1,2-Dichloroethene	0.97187	0.93929	0.93817	0.69295	0.74309	0.78578	0.77585	0.83529	13.367
92 2-Butanone	+++++	0.58430	0.61427	0.44472	0.46322	0.50494	0.50097	0.51874	12.929
93 Methyl Acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
94 Ethyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
95 Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
96 2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
97 2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	___ RRF	% RSD
	200.000 Level 8							
99 Tetrahydrofuran	1.62967	1.45023	1.51116	1.14099	1.18808	1.25044		
	1.26110						1.34738	13.615
100 Chloroform	2.30078	2.56447	2.75142	1.98419	2.10320	2.24827		
	2.24543						2.31396	11.386
101 1-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						+++++	+++++
102 Cyclohexane	1.50724	1.64179	1.70793	1.38180	1.35445	1.39873		
	1.42426						1.48803	9.245
103 1,1,1-Trichloroethane	2.63652	2.85484	2.98478	2.38113	2.37510	2.47142		
	2.49016						2.59914	9.178
104 Chloroacetonitrile	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						+++++	+++++
105 n-Butylchloride	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						+++++	+++++
106 Carbon Tetrachloride	2.36656	3.00636	3.17388	2.56940	2.58440	2.69910		
	2.73269						2.73320	10.057
107 1,1-Dichloropropene	+++++	0.19454	0.18269	0.14762	0.18391	+++++		
	0.19217						0.18019	10.494
108 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						+++++	+++++

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
109 2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
110 3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
113 2,2,4-Trimethylpentane	6.48864	6.58022	6.96858	5.46247	5.42983	5.69332	5.81554	6.06266	10.052
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
115 Isobutanol	+++++	0.38701	0.29679	0.24147	0.24711	+++++	0.24888	0.28425	21.671
116 Benzene	0.83716	0.93817	0.92100	0.70079	0.73184	0.76928	0.78749	0.81225	11.200
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
119 tert-Amyl methyl ether	+++++	0.21792	0.24682	0.20633	0.20547	0.21315	0.21501	0.21745	6.989
120 1,2-Dichloroethane	0.41443	0.47068	0.48967	0.37131	0.38991	0.40317	0.40348	0.42038	10.316

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
121 Heptane	0.29495	0.32556	0.31880	0.26835	0.27016	0.27573	0.28135	0.29070	8.013
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
124 n-Butanol	+++++	0.42774	0.47978	0.47205	0.55060	+++++	0.53048	0.49213	9.950
125 Trichloroethene	0.41039	0.44123	0.45018	0.34548	0.36797	0.38430	0.38739	0.39813	9.567
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
127 Methylcyclohexane	0.35459	0.36346	0.31796	0.23643	0.22684	0.34828	0.24915	0.29953	20.050
128 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
131 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
132 1,2-Dichloropropane	0.32221	0.35868	0.35848	0.28326	0.29230	0.30992	0.31072	0.31937	9.292
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
134 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
136 1,4-Dioxane	+++++	0.22540	0.22617	0.18121	0.18682	0.19583	0.19651	0.20199	9.554
137 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
138 Bromodichloromethane	0.61212	0.69531	0.72058	0.56257	0.59149	0.62542	0.62657	0.63344	8.830
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
140 bis(chloromethyl) Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
143 2-Chloroethyl Vinyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
144 cis-1,3-Dichloropropene	0.47447	0.54792	0.54503	0.42979	0.45513	0.48558	0.48669	0.48923	8.945
145 4-Methyl-2-pentanone	0.41295	0.33043	0.32444	0.26428	0.26175	0.27093	0.27519	0.30571	18.042
147 Toluene	1.17556	1.19525	1.19553	0.97634	0.99432	1.04791	1.06333	1.09261	8.686
148 Octane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
150 trans-1,3-Dichloropropene	0.53591	0.57768	0.57538	0.47112	0.48851	0.50269	0.51134	0.52323	7.929
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
152 1-Chloro-2-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
155 1,1,2-Trichloroethane	0.42673	0.45938	0.46269	0.37998	0.38320	0.40044	0.40028	0.41610	8.231
156 Tetrachloroethene	0.69535	0.71343	0.70781	0.59709	0.58747	0.61215	0.61741	0.64724	8.596
157 1,3-Dichloropropane	+++++	0.62125	0.56299	0.47615	0.54494	+++++	0.54550	0.55017	9.421
158 2-Hexanone	0.38091	0.44308	0.46212	0.38507	0.37566	0.39222	0.40248	0.40593	8.241
159 Butyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
160 Dibromochloromethane	0.84670	0.95031	0.99023	0.80705	0.82462	0.86192	0.86854	0.87848	7.641
161 1,2-Dibromoethane (EDB)	0.70700	0.74941	0.75827	0.62269	0.63407	0.65782	0.66215	0.68449	7.943
162 1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
164 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
165 Chlorobenzene	1.11643	1.12402	1.16902	0.97522	0.95880	1.00175	1.01516	1.05148	7.909
166 Butyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
167 Ethyl Benzene	0.56165	0.55701	0.57500	0.51271	0.49129	0.50636	0.51638	0.53149	6.088
168 1,1,1,2-Tetrachloroethane	+++++	0.66892	0.71471	0.68022	0.64591	+++++	0.68908	0.67977	3.730
169 m,p-Xylene	0.68648	0.72011	0.72279	0.63326	0.61127	0.63163	0.64725	0.66468	6.773
170 Nonane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
171 o-Xylene	0.63477	0.68594	0.69113	0.60795	0.58524	0.60001	0.61963	0.63210	6.573
172 Styrene	0.45824	1.06292	1.10887	0.97339	0.95161	1.00432	1.03648	0.94226	23.347
173 2-Heptanone	+++++	1.61998	1.83319	2.10243	2.19750	+++++	2.47303	2.04523	16.129

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Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
174 Bromoform	0.79044	0.88865	0.90908	0.80864	0.79796	0.83849	0.85618	0.84135	5.446
175 Cumene	2.07397	2.11786	2.15242	1.93992	1.87405	1.88778	1.90375	1.99282	5.922
176 Cyclohexanone	+++++	0.51108	0.51510	0.38943	0.36366	+++++	0.28017	0.41189	24.481
178 1-Decene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
179 alpha-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
180 Bromobenzene	+++++	0.77877	0.80833	0.76108	0.71475	+++++	0.79878	0.77234	4.792
181 1,1,2,2-Tetrachloroethane	0.95699	1.00316	1.00230	0.89890	0.86004	0.87496	0.89294	0.92704	6.459
182 Propylbenzene	2.41471	2.41971	2.44990	2.16881	2.07050	2.09163	2.09663	2.24456	7.783
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
184 trans-1,4-Dichloro-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
185 1,2,3-Trichloropropane	+++++	0.33886	0.34986	0.32868	0.30646	+++++	0.32797	0.33036	4.863
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
187 Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
188 4-Ethyltoluene	0.61103	0.65697	0.67139	0.60845	0.58435	0.57846	0.59741	0.61544	5.777
189 2-Chlorotoluene	+++++	0.56955	0.58012	0.58469	0.56212	+++++	0.60666	0.58063	2.933
190 1,3,5-Trimethylbenzene	0.76126	0.90328	0.93000	0.83039	0.79700	0.82708	0.83427	0.84047	6.945
191 4-Chlorotoluene	+++++	0.55439	0.58125	0.59205	0.56099	+++++	0.62696	0.58313	4.940
192 beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
193 Diisobutyl Ketone	+++++	0.98308	1.12275	1.24299	1.22529	+++++	1.28842	1.17250	10.406
194 alpha Methyl Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
195 tert-Butylbenzene	+++++	1.57649	1.74030	1.75621	1.73144	+++++	1.84473	1.72983	5.599
196 1,2,4-Trimethylbenzene	1.75985	1.75034	1.75720	1.59715	1.54495	1.55462	1.59053	1.65066	6.063
197 Pentachloroethane	+++++	0.52084	0.56243	0.59762	0.56453	+++++	0.61974	0.57303	6.585
198 Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
199 D-Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
200 Benzaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
201 Indan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
202 Indene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
203 sec-Butylbenzene	+++++	0.48417	0.55021	0.58084	0.54609	+++++	0.59910	0.55208	7.941
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
206 bis(2-Chloroethyl) Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
207 p-Cymene	+++++	2.02118	2.24942	2.45771	2.31859	+++++	2.45328	2.30004	7.808
208 1,3-Dichlorobenzene	1.28319	1.26623	1.28968	1.14876	1.11640	1.14795	1.17545	1.20395	6.082
209 1,4-Dichlorobenzene	1.28996	1.28814	1.30920	1.16668	1.13434	1.16971	1.19615	1.22203	5.858
210 1,2,3-Trimethylbenzene	+++++	0.77375	0.86800	0.91122	0.85946	+++++	0.95579	0.87364	7.757
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
212 alpha-Chlorotoluene	1.40103	1.45748	1.55198	1.45389	1.43349	1.48079	1.53098	1.47281	3.615
213 Butylbenzene	+++++	0.52242	0.57820	0.63413	0.60040	+++++	0.67972	0.60298	9.801
214 1,2-Dichlorobenzene	1.24447	1.19119	1.21927	1.10483	1.06904	1.09824	1.12659	1.15052	5.856

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
215 Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
216 4-Ethyl-1,2-dimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
217 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
220 1,2,4,5-tetramethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
221 1,2-Dibromo-3-chloropropane	+++++	0.65867	0.75011	0.76809	0.69655	+++++	0.80323	0.73533	7.836
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
224 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD	
225 Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
226 1,2,4-Trichlorobenzene	+++++	1.00552	1.02256	0.88254	0.91963	0.97175	1.01407	0.96935	5.864	
227 Hexachlorobutadiene	+++++	0.80993	0.81635	0.67582	0.69698	0.72975	0.76825	0.74951	7.791	
228 Naphthalene	+++++	+++++	4.66060	2.07583	2.13771	2.30790	2.42091	2.72059	40.178	<-
229 1,2,3-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
230 Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
231 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
232 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
233 1,3,5-Triethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
234 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
235 Phenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
236 Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 237 1,2-Dichloroethene (Total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 238 Chlorobutane (Total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 239 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 240 3 and 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
241 Total Volatile Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
242 TPH reference to Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
243 TPH reference to Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
244 TPH reference to Gasoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
245 TPH reference MineralSpirits	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
246 TPH reference to Stoddard	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
247 TVOC reference to Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
248 TVOC reference to Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
249 TVOC reference to Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
250 TVOC reference to Toluene-d8	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
251 NMOC reference to Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
252 NMOC reference to Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
253 NMOC reference to Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
254 C3 - C4 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
255 C4 - C5 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
256 C5 - C6 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
257 C6 - C7 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref C5 + C6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 08-Aug-2017 10:55 jscarbro
Curve Type : Average

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
265 C10-C12 Aliphatic ref Dodecan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
266 C8-C10 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,2,3-TMB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,4,5-TMB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 112 Benzene-d6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 117 1,2-Dichloroethane-d4	1.27948	1.31509	1.29862	1.27244	1.26481	1.24878	1.26449	1.27767	1.763
$ 146 Toluene-d8	1.01128	1.01833	1.00655	1.00102	1.02307	1.01584	1.02247	1.01408	0.813
$ 177 4-Bromofluorobenzene	0.63769	0.64673	0.65294	0.65583	0.65375	0.65522	0.66687	0.65272	1.369

Calibration History

Method : /chem/msd3.i/04aug17.b/317q0523b.m
Start Cal Date: 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 2 , Cal Amount: 0.50000		
24-MAY-2017 08:36	AT12low	/chem/msd3.i/23may17.b/3052316.d
Cal Level: 3 , Cal Amount: 2.00000		
04-AUG-2017 11:05	AT1crv	/chem/msd3.i/04aug17.b/3080405.d
23-MAY-2017 13:12	AT12mdl	/chem/msd3.i/23may17.b/3052306.d
Cal Level: 4 , Cal Amount: 5.00000		
04-AUG-2017 11:31	AT1crv	/chem/msd3.i/04aug17.b/3080406.d
23-MAY-2017 14:39	AT12curve	/chem/msd3.i/23may17.b/3052307.d
Cal Level: 5 , Cal Amount: 20.00000		
04-AUG-2017 11:55	AT1crv	/chem/msd3.i/04aug17.b/3080407.d
23-MAY-2017 15:03	AT12	/chem/msd3.i/23may17.b/3052308.d
Cal Level: 6 , Cal Amount: 50.00000		
04-AUG-2017 12:20	AT1crv	/chem/msd3.i/04aug17.b/3080408.d
23-MAY-2017 15:30	AT12	/chem/msd3.i/23may17.b/3052309.d
Cal Level: 7 , Cal Amount: 100.00000		
23-MAY-2017 15:53	AT12	/chem/msd3.i/23may17.b/3052310.d
Cal Level: 8 , Cal Amount: 200.00000		
04-AUG-2017 12:46	AT1crv	/chem/msd3.i/04aug17.b/3080409.d
23-MAY-2017 16:20	AT12	/chem/msd3.i/23may17.b/3052311.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 6

Ccal Level: 6 , Ccal Amount: 50.000		
04-AUG-2017 12:20	AT1crv	/chem/msd3.i/04aug17.b/3080408.d
Ccal Level: 6 , Ccal Amount: 50.000		
04-AUG-2017 07:54	AT12	/chem/msd3.i/04aug17.b/3080402.d
Ccal Level: 6 , Ccal Amount: 50.000		
04-AUG-2017 12:20	AT1ccv	/chem/msd3.i/04aug17.b/3080408a.d

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 04-AUG-2017 12:46
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/04aug17.b/317q0523b.m
Cal Date : 04-Aug-2017 15:25 jscarbro
Curve Type : Average

Calibration File Names:
Level 2: /chem/msd3.i/23may17.b/3052316.d
Level 3: /chem/msd3.i/04aug17.b/3080405.d
Level 4: /chem/msd3.i/04aug17.b/3080406.d
Level 5: /chem/msd3.i/04aug17.b/3080407.d
Level 6: /chem/msd3.i/04aug17.b/3080408.d
Level 7: /chem/msd3.i/23may17.b/3052310.d
Level 8: /chem/msd3.i/04aug17.b/3080409.d

Please see Calibration History page(s) for all the calibration files.

9m 8/4/17

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	RRF	% RSD
6 Freon 143a	+++++	0.22116	0.23031	0.18091	0.17092	+++++	0.16633	0.19393	15.310
7 Freon 134a	+++++	0.62929	0.77041	0.52214	0.52091	+++++	0.58159	0.60487	17.029
10 1,1-Difluoroethane	+++++	0.35918	0.46174	0.29331	0.28142	+++++	0.34324	0.34778	20.589
13 Chlorodifluoromethane	+++++	0.17193	0.20274	0.14301	0.13839	+++++	0.15659	0.16253	15.998
16 Freon 142b	+++++	1.65549	1.74470	1.15776	1.20098	+++++	1.33062	1.41791	18.845
37 Dichlorofluoromethane	+++++	2.11535	2.44632	1.65814	1.82223	+++++	1.93176	1.99476	15.154
47 Freon 123a	+++++	2.02383	2.09274	1.49948	1.53313	+++++	1.63948	1.75773	15.944

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2017 13:12
End Cal Date : 24-MAY-2017 08:36
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd3.i/23may17.b/317q0523a.m
Cal Date : 25-May-2017 12:38 jscarbro
Curve Type : Average

Calibration File Names:
Level 2: /chem/msd3.i/23may17.b/3052316.d
Level 3: /chem/msd3.i/23may17.b/3052306.d
Level 4: /chem/msd3.i/23may17.b/3052307.d
Level 5: /chem/msd3.i/23may17.b/3052308.d
Level 6: /chem/msd3.i/23may17.b/3052309.d
Level 7: /chem/msd3.i/23may17.b/3052310.d
Level 8: /chem/msd3.i/23may17.b/3052311.d

Please see Calibration History page(s) for all the calibration files.

QM 5/25/17
ES 5/26/17

Compound	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	___ RRF	% RSD
	200.000 Level 8							
9 Propylene	+++++	1.07603	1.13907	0.75362	0.74546	0.76895		
	0.77962						0.87712	20.520
11 Freon 12	2.64907	2.98226	3.01890	2.26032	2.32971	2.44548		
	2.41430						2.58572	11.914
15 Freon 114	2.14108	2.41813	2.45878	1.88603	1.94971	2.04333		
	1.98619						2.12618	10.714
17 Chloromethane	+++++	1.20162	0.94687	0.80122	0.81146	0.82471		
	0.68282						0.87812	20.418
23 Butane	+++++	0.24284	0.26633	0.20719	0.20045	0.21088		
	0.20090						0.22143	12.203
25 Vinyl Chloride	1.00001	1.09245	1.17228	0.88507	0.91453	0.95174		
	0.95998						0.99658	10.249
26 1,3-Butadiene	1.03081	1.01592	0.98521	0.77397	0.78812	0.81018		
	0.79429						0.88550	13.360

Initial Calibration Narrative
317Q0523B.m

A multi-point AT-12 initial calibration was analyzed on MSD-3 on 5/23/17.

ICAL: 0 out
Level #2 was reanalyzed due to lack of sensitivity.
Naph >30%RSD

AT-12 ICV: 0 out.
File: 3052318; 100ml: #2850-72 (200ppbv ->50ppbv); exp: 7/6/17
Ok for DoD 4.2 & 5.0:
3052318a (4.2). 0 out
3052318c (5.0). 0 out

A **5-point AT1** initial calibration was analyzed on 8/4/07.
No Butyl Acetate.

BFB tune file:
1. 3052304
2. 3080401

The MDL study was analyzed on 5/26/17.

MSD3

Method TO-15/TO-14

BFB Tune Verification: (206784/213888) *100= 96.68%

*100	2850-264	Exp. Date:	10/17/2017
BCM		193,109	
1,4-DFB		717,401	
CB-d5		648,934	

Verified: js IS ↑- watch for saturation

Method: 317q05238.m

Method TO-15/TO-14

SOP# 6

Vacuum: NA

Use	File #	Enter/Scan Sample IDs	Canister#	Cart Pos.	Pressure	Amount	DF	Verify Load	Loaded Init	Date Analyzed	Time	Review Init	Comments
√	3080401	BFB tune check	2850-264	11	Humid	50ml	1.00	jg	jg	8/4/2017	0729	jg	
√	3080402	CCV	2850-234	13	50ppbv (200ppbv)	50ml	1.00	jg	jg	8/4/2017	0754	jg	exp. 9/27/17; 0 out
√	3080403	LCS	2850-207A	14	50ppbv (100ppbv)	100ml	1.00	jg	jg	8/4/2017	0816	jg	exp. 9/2117; 0 out
√	3080404	LCSD	2850-207A	14	50ppbv (100ppbv)	100ml	1.00	jg	jg	8/4/2017	0930	jg	RPD ok
√	3080405	ICAL Level #3	2850-217	1	2.0ppbv (5.0ppbv)	80ml	1.00	jg	jg	8/4/2017	1105	jg	AT1; exp. 9/23/17
√	3080406	ICAL Level #4	2850-217	1	5.0ppbv (5.0ppbv)	200ml	1.00	jg	jg	8/4/2017	1131	jg	AT1; exp. 9/23/17
√	3080407	ICAL Level #5	2850-287	2	20ppbv (200ppbv)	20ml	1.00	jg	jg	8/4/2017	1155	jg	AT1; exp. 11/3/17
√	3080408	ICAL Level #6	2850-287	2	50ppbv (200ppbv)	50ml	1.00	jg	jg	8/4/2017	1220	jg	CCV; AT1; exp. 11/3/17
√	3080409	ICAL Level #8	2850-287	2	200ppbv (200ppbv)	200ml	1.00	jg	jg	8/4/2017	1246	jg	AT1; exp. 11/3/17
X	3080410	Lab Blank	6L0723	11	Humid	200ml	1.00	jg	jg	8/4/2017	1313	jg	
√	3080411	Lab Blank	6L0723	11	Humid	200ml	1.00	jg	jg	8/4/2017	1339	jg	ok for TO15N
	~~3080412~~	~~1707463-05A~~	~~1L1765~~	~~3~~	~~2.5 Hg->15 psi~~	~~200ml~~	~~2.20~~		~~jg~~	~~8/4/2017~~			
	3080413	1707463-06A	N1925	4	3.5 Hg->15 psi	200ml	2.29		jg	8/4/2017			
	3080414	1707463-07A	1L1739	5	4.0 Hg->15 psi	200ml	2.33		jg	8/4/2017			
	3080415	1707463-08A	1L1769	6	2.0 Hg->15 psi	200ml	2.16		jg	8/4/2017			
	3080416	1707463-09A	1L1577	7	4.0 Hg->15 psi	200ml	2.33		jg	8/4/2017			
	3080417	1707463-10A	O1029	8	3.0 Hg->15 psi	200ml	2.24		jg	8/4/2017			
	3080418	1707463-11A	36519	9	5.5 Hg->15 psi	200ml	2.47		jg	8/4/2017			
	3080419	1707463-12A	1L1566	10	5.5 Hg->15 psi	200ml	2.47		jg	8/4/2017			
	3080420	1707480-02A	12695	11	5.9 Hg->5.2 psi	200ml	1.68		jg	8/4/2017			
	3080421	1707480-01A	SH34258	12	2.2 Hg->5.1 psi	100ml	2.91		jg	8/4/2017			

JG 8/4/17

MSD3

67392/71456 (100) = 94.31%

BFB Tune Verification: (/) * 100= %

	2850-102	Exp. Date:	7/7/2017
BCM	131,467		
1,4-DFB	510,592		
CB-d5	463,787		

Verified: NA

Method: 317q0523A.m

Method TO-15/TO-14	
SOP# 6	
Vacuum:	NA

Use	File #	Enter/Scan Sample IDs	Canister#	Cart Pos.	Pressure	Amount	DF	Verify Load	Loaded Init	Date Analyzed	Time	Review Init	Comments
√	3052304	BFB tune check	2850-102	12	Humid	200ml	1.00	jg	jg	05/23/17	1127	gh	exp. 7/27/17
X	3052305	ICAL Level #2	2850-103	1	0.5ppbv (5.0ppbv)	20ml	1.00	jg	jg	05/23/17	1216	jg	exp. 7/6/17
√	3052306	ICAL Level #3	2850-103	1	2.0ppbv (5.0ppbv)	80ml	1.00	jg	jg	05/23/17	1312	jg	
√	3052307	ICAL Level #4	2850-103	1	5.0ppbv (5.0ppbv)	200ml	1.00	gh	jg	05/23/17	1439	jg	
√	3052308	ICAL Level #5	2850-97	2	20ppbv (200ppbv)	20ml	1.00	gh	jg	05/23/17	1503	jg	
√	3052309	ICAL Level #6	2850-97	2	50ppbv (200ppbv)	50ml	1.00	gh	jg	05/23/17	1530	jg	CCV ;
√	3052310	ICAL Level #7	2850-97	2	100ppbv (200ppbv)	100ml	1.00	gh	jg	05/23/17	1553	jg	
√	3052311	ICAL Level #8	2850-97	2	200ppbv (200ppbv)	200ml	1.00	gh	jg	05/23/17	1620	jg	
X	3052312	System Blank	6L1347	1	humid	200ml	1.00	gh	gh	05/23/17	1735	jg	wrong acquistion method and wrong leg used.
X	3052313	System Blank	6L1347	1	humid	200ml	1.00	gh	gh	05/23/17	1822	jg	wrong acquistion method and wrong leg used.
√	3052314	System Blank	6L1347	12	humid	200ml	1.00	gh	gh	05/23/17	1929	gh	<RL
√	3052315	System Blank	6L1347	12	humid	200ml	1.00	gh	gh	05/23/17	1959	gh	<RL
√	3052316	ICAL Level #2	2850-36A	1	0.5ppbv (2.5ppbv)	40ml	1.00	jg	jg	05/24/17	0836	jg	exp. 6/16/17
√	3052317	System Blank	6L1347	12	humid	200ml	1.00	jg	jg	05/24/17	0936	jg	
√	3052318	ICV	2850-72	14	50ppbv (200ppbv)	50ml	1.00	jg	jg	05/24/17	1101	jg	exp. 7/6/17
X	3052319	System Blank	6L1347	12	humid	200ml	1.00	jg	jg	05/24/17	1158	jg	Out of clock. < RL

5/25/17

IS and Associated Target Compounds and Surr.
Instruction #: I1.20

Modified EPA Methods TO-14A/TO-15
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane*
Target Compounds:
Freon 12
Freon 114
Chloromethane
Vinyl Chloride
1,3-Butadiene
Bromomethane
Chloroethane
Freon 11
Ethanol
Freon 113
1,1-Dichloroethene
Acetone
2-Propanol
Carbon Disulfide
3-Chloropropene
Methylene Chloride
Methyl tert-butyl ether
trans-1,2-Dichloroethene
Hexane
1,1-Dichloroethane
2-Butanone (Methyl Ethyl Ketone)
cis-1,2-Dichloroethene
Tetrahydrofuran
Chloroform
1,1,1-Trichloroethane
Cyclohexane
Carbon Tetrachloride
2,2,4-Trimethylpentane
Surrogates:
1,2-Dichloroethane-d4

1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Heptane
Trichloroethene
1,2-Dichloropropane
1,4-Dioxane
Bromodichloromethane
cis-1,3-Dichloropropene
4-Methyl-2-pentanone
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
trans-1,3-Dichloropropene
1,1,2-Trichloroethane
Tetrachloroethene
2-Hexanone
Dibromochloromethane
1,2-Dibromoethane (EDB)
Chlorobenzene
Ethyl Benzene
m,p-Xylene
o-Xylene
Styrene
Bromoform
Cumene
1,1,2,2-Tetrachloroethane
Propylbenzene
4-Ethyltoluene
1,3,5-Trimethylbenzene
1,2,4-Trimethylbenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
alpha-Chlorotoluene
1,2-Dichlorobenzene
1,2,4-Trichlorobenzene
Hexachlorobutadiene
Surrogates:
Bromofluorobenzene

*Note: If Bromochloromethane (BCM) is required as a target compound, the internal standard mix is blended without BCM. Compounds and surrogates assigned to BCM are re-assigned to 1,4-Difluorobenzene for calibration and subsequent quantitation.

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052318.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 24-MAY-2017 11:01
Operator : jg Inst ID: msd3.i
Smp Info : 50mL #2850-72
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:38 jscarbro Quant Type: ISTD
Cal Date : 23-MAY-2017 15:30 Cal File: 3052309.d
Als bottle: 14 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.424 (1.000)	130	129828	25.0000			80.00- 120.00	100.00
5.410	5.424 (1.000)	128	100419				46.73- 106.73	77.35
5.410	5.410 (1.000)	49	155990				91.08- 151.08	120.15
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	505006	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	74572				0.00- 44.78	14.77
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.763	8.762 (1.000)	117	455031	25.0000			80.00- 120.00	100.00
8.763	8.762 (1.000)	82	232099				20.58- 80.58	51.01
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	164896	24.8521	24.852		80.00- 120.00	100.00
5.956	5.956 (1.101)	67	90637				24.54- 84.54	54.97
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.530 (1.193)	98	513062	25.0461	25.046		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	53468				0.00- 40.44	10.42

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.523	7.530	(1.193)	100	334719			35.27- 95.27	65.24
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.751	9.751	(1.113)	174	300410	25.2864	25.286	80.00- 120.00	100.00
9.751	9.744	(1.113)	95	338726			84.77- 144.77	112.75
9.751	9.751	(1.113)	176	280501			64.74- 124.74	93.37
9 Propylene						CAS #: 115-07-1		
1.493	1.493	(0.276)	41	198466	43.5709	43.571	80.00- 120.00	100.00
1.493	1.493	(0.276)	42	132276			34.96- 94.96	66.65
1.493	1.493	(0.276)	39	148851			43.10- 103.10	75.00
11 Freon 12						CAS #: 75-71-8		
1.521	1.521	(0.281)	85	645157	48.0458	48.046	80.00- 120.00	100.00
1.521	1.521	(0.281)	87	207123			2.61- 62.61	32.10
15 Freon 114						CAS #: 76-14-2		
1.633	1.632	(0.302)	135	530708	48.0648	48.065	80.00- 120.00	100.00
1.633	1.632	(0.302)	137	169142			1.52- 61.52	31.87
17 Chloromethane						CAS #: 74-87-3		
1.716	1.716	(0.317)	50	237593	52.1019	52.102	80.00- 120.00	100.00
1.716	1.716	(0.317)	52	79964			5.06- 65.06	33.66
23 Butane						CAS #: 106-97-8		
1.786	1.786	(0.330)	58	55549	48.3067	48.307	80.00- 120.00	100.00
1.786	1.786	(0.330)	43	437610			780.12- 840.12	787.79
25 Vinyl Chloride						CAS #: 75-01-4		
1.828	1.828	(0.338)	62	253248	48.9334	48.933	80.00- 120.00	100.00
1.814	1.828	(0.335)	64	80209			2.35- 62.35	31.67
26 1,3-Butadiene						CAS #: 106-99-0		
1.842	1.842	(0.341)	54	208385	45.3158	45.316	80.00- 120.00	100.00
1.842	1.842	(0.341)	39	212459			70.49- 130.49	101.96
29 Bromomethane						CAS #: 74-83-9		
2.192	2.206	(0.405)	94	226883	50.8215	50.822	80.00- 120.00	100.00
2.192	2.206	(0.405)	96	212842			64.76- 124.76	93.81
30 Chloroethane						CAS #: 75-00-3		
2.304	2.304	(0.426)	64	132400	49.3452	49.345	80.00- 120.00	100.00
2.304	2.304	(0.426)	66	40171			0.04- 60.04	30.34
2.304	2.318	(0.426)	49	41587			0.57- 60.57	31.41

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.431)	43	318465	46.3453	46.345	80.00- 120.00	100.00
2.332	2.332 (0.431)	57	220820			39.30- 99.30	69.34
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.472)	101	708436	47.3183	47.318	80.00- 120.00	100.00
2.556	2.556 (0.472)	103	456248			35.42- 95.42	64.40
42 Ethanol					CAS #: 64-17-5		
2.892	2.892 (0.534)	45	105273	47.5780	47.578	80.00- 120.00	100.00
2.892	2.892 (0.534)	46	41599			8.36- 68.36	39.52
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.589)	151	518724	47.3378	47.338	80.00- 120.00	100.00
3.186	3.186 (0.589)	153	329869			33.57- 93.57	63.59
3.186	3.186 (0.589)	101	585111			81.85- 141.85	112.80
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	96	263805	46.9024	46.902	80.00- 120.00	100.00
3.214	3.214 (0.594)	98	170660			33.92- 93.92	64.69
3.214	3.214 (0.594)	61	457856			146.09- 206.09	173.56
52 Acetone					CAS #: 67-64-1		
3.368	3.367 (0.622)	58	131699	42.5945	42.594	80.00- 120.00	100.00
3.368	3.367 (0.622)	43	451786			310.81- 370.81	343.04
56 Carbon Disulfide					CAS #: 75-15-0		
3.437	3.451 (0.635)	76	738463	45.5426	45.542	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.535	3.549 (0.653)	45	501762	47.8132	47.813	80.00- 120.00	100.00
3.535	3.549 (0.653)	43	97217			0.00- 49.20	19.38
3.549	3.549 (0.656)	59	19314			0.00- 33.72	3.85
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.682)	76	119968	49.3491	49.349	80.00- 120.00	100.00
3.689	3.689 (0.682)	41	372085			282.10- 342.10	310.15
66 Methylene Chloride					CAS #: 75-09-2		
3.857	3.871 (0.713)	49	327474	46.6507	46.651	80.00- 120.00	100.00
3.871	3.871 (0.716)	84	230832			38.75- 98.75	70.49
3.857	3.871 (0.713)	51	102757			0.74- 60.74	31.38
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.081	4.095 (0.754)	73	767987	48.4653	48.465	80.00- 120.00	100.00
4.081	4.081 (0.754)	57	192899			0.00- 56.12	25.12

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
72 Methyl tert-butyl ether (continued)							
4.081	4.081 (0.754)	41	186803			0.00- 55.40	24.32
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.109 (0.759)	98	180015	52.8668	52.867	80.00- 120.00	100.00
4.109	4.109 (0.759)	61	415886			202.86- 262.86	231.03
4.109	4.109 (0.759)	96	277744			122.28- 182.28	154.29
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.798)	57	447434	46.7511	46.751	80.00- 120.00	100.00
4.319	4.319 (0.798)	43	282273			33.71- 93.71	63.09
4.319	4.319 (0.798)	86	66145			0.00- 44.46	14.78
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.599	4.599 (0.850)	63	488088	47.0016	47.002	80.00- 120.00	100.00
4.599	4.599 (0.850)	65	148076			0.47- 60.47	30.34
86 Vinyl Acetate					CAS #: 108-05-4		
4.641	4.655 (0.858)	86	68079	46.9540	46.954	80.00- 120.00	100.00
4.641	4.641 (0.858)	43	796180			1252.04-1312.04	1169.49
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.186	5.186 (0.959)	98	183630	42.3331	42.333	80.00- 120.00	100.00
5.186	5.186 (0.959)	96	284620			120.71- 180.71	155.00
5.186	5.186 (0.959)	61	389986			179.50- 239.50	212.38
92 2-Butanone					CAS #: 78-93-3		
5.214	5.214 (0.964)	72	128400	47.6640	47.664	80.00- 120.00	100.00
5.214	5.214 (0.964)	43	577798			421.08- 481.08	450.00
5.214	5.214 (0.964)	57	46507			6.95- 66.95	36.22
99 Tetrahydrofuran					CAS #: 109-99-9		
5.410	5.410 (1.000)	42	318823	45.5650	45.565	80.00- 120.00	100.00
5.410	5.410 (1.000)	71	114560			4.59- 64.59	35.93
5.410	5.410 (1.000)	72	119773			7.27- 67.27	37.57
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.013)	83	573041	47.6871	47.687	80.00- 120.00	100.00
5.480	5.480 (1.013)	85	370491			35.09- 95.09	64.65
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.031)	84	375023	48.5309	48.531	80.00- 120.00	100.00
5.578	5.578 (1.031)	56	475355			96.78- 156.78	126.75
5.578	5.578 (1.031)	41	276877			43.37- 103.37	73.83
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.606 (1.036)	97	649591	48.1263	48.126	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
103 1,1,1-Trichloroethane (continued)							
5.606	5.606 (1.036)	99	418919			34.29- 94.29	64.49
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.057)	119	700404	49.3457	49.346	80.00- 120.00	100.00
5.718	5.718 (1.057)	117	715578			71.44- 131.44	102.17
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.914 (1.093)	57	1493239	47.4283	47.428	80.00- 120.00	100.00
5.914	5.914 (1.093)	56	469815			0.95- 60.95	31.46
5.914	5.914 (1.093)	41	428345			0.00- 57.81	28.69
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	764922	46.6201	46.620	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	179913			0.00- 53.39	23.52
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.956)	62	402058	47.3469	47.347	80.00- 120.00	100.00
6.026	6.026 (0.956)	64	127030			1.16- 61.16	31.59
121 Heptane					CAS #: 142-82-5		
6.082	6.082 (0.964)	71	288711	49.1658	49.166	80.00- 120.00	100.00
6.068	6.082 (0.962)	43	549252			159.72- 219.72	190.24
6.082	6.082 (0.964)	57	305093			73.21- 133.21	105.67
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.031)	95	386408	48.0466	48.046	80.00- 120.00	100.00
6.502	6.502 (1.031)	130	443082			84.28- 144.28	114.67
6.502	6.502 (1.031)	97	253174			35.52- 95.52	65.52
127 Methylcyclohexane					CAS #: 108-87-2		
6.586	6.586 (1.044)	83	262779	43.4304	43.430	80.00- 120.00	100.00
6.586	6.621 (1.044)	98	121353			22.71- 82.71	46.18
6.586	6.586 (1.044)	55	228691			64.76- 124.76	87.03
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.743	6.742 (1.069)	63	306928	47.5762	47.576	80.00- 120.00	100.00
6.743	6.742 (1.069)	62	211357			39.16- 99.16	68.86
6.743	6.742 (1.069)	41	194968			33.29- 93.29	63.52
136 1,4-Dioxane					CAS #: 123-91-1		
6.836	6.836 (1.084)	88	192364	47.1449	47.145	80.00- 120.00	100.00
6.836	6.836 (1.084)	58	141345			43.17- 103.17	73.48
6.836	6.836 (1.084)	57	48809			0.00- 55.09	25.37
138 Bromodichloromethane					CAS #: 75-27-4		
6.972	6.972 (1.106)	83	633201	49.4859	49.486	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
6.972	6.972 (1.106)	85	405333			34.33- 94.33	64.01
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.344	7.351 (1.165)	75	509536	51.5590	51.559	80.00- 120.00	100.00
7.344	7.351 (1.165)	77	162808			2.53- 62.53	31.95
7.344	7.351 (1.165)	39	317346			33.48- 93.48	62.28
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.459 (1.183)	58	277774	44.9805	44.980	80.00- 120.00	100.00
7.459	7.459 (1.183)	43	733125			231.49- 291.49	263.93
7.459	7.459 (1.183)	85	121119			13.16- 73.16	43.60
147 Toluene					CAS #: 108-88-3		
7.581	7.581 (1.202)	91	1049651	47.5581	47.558	80.00- 120.00	100.00
7.581	7.581 (1.202)	92	607643			27.96- 87.96	57.89
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.824	7.831 (0.893)	75	463808	48.7014	48.701	80.00- 120.00	100.00
7.824	7.831 (0.893)	77	152017			2.78- 62.78	32.78
7.824	7.824 (0.893)	39	271819			29.86- 89.86	58.61
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.982	7.982 (0.911)	97	368703	48.6831	48.683	80.00- 120.00	100.00
7.982	7.982 (0.911)	99	226984			31.98- 91.98	61.56
7.982	7.982 (0.911)	83	306233			53.23- 113.23	83.06
156 Tetrachloroethene					CAS #: 127-18-4		
8.018	8.018 (0.915)	166	560307	47.5616	47.562	80.00- 120.00	100.00
8.018	8.018 (0.915)	129	433854			46.99- 106.99	77.43
8.018	8.018 (0.915)	131	420622			44.98- 104.98	75.07
158 2-Hexanone					CAS #: 591-78-6		
8.146	8.146 (0.930)	58	368760	49.9099	49.910	80.00- 120.00	100.00
8.146	8.146 (0.930)	43	711734			164.73- 224.73	193.01
8.146	8.146 (0.930)	100	78033			0.00- 50.65	21.16
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.297 (0.947)	129	798318	49.9278	49.928	80.00- 120.00	100.00
8.297	8.297 (0.947)	127	616128			47.57- 107.57	77.18
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.412	8.411 (0.960)	107	603050	48.4047	48.405	80.00- 120.00	100.00
8.412	8.411 (0.960)	109	569078			63.47- 123.47	94.37
165 Chlorobenzene					CAS #: 108-90-7		
8.784	8.784 (1.002)	112	924117	48.2862	48.286	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
165 Chlorobenzene (continued)							
8.784	8.784 (1.002)	114	296518			1.87- 61.87	32.09
8.784	8.784 (1.002)	77	481760			21.88- 81.88	52.13
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.834 (1.008)	106	481250	49.7482	49.748	80.00- 120.00	100.00
8.834	8.834 (1.008)	91	1463827			272.32- 332.32	304.17
169 m,p-Xylene					CAS #: 108-38-3		
8.927	8.934 (1.019)	106	595168	49.1954	49.195	80.00- 120.00	100.00
8.927	8.934 (1.019)	91	1168460			165.91- 225.91	196.32
171 o-Xylene					CAS #: 95-47-6		
9.271	9.271 (1.058)	106	573536	49.8513	49.851	80.00- 120.00	100.00
9.271	9.271 (1.058)	91	1175010			175.85- 235.85	204.87
172 Styrene					CAS #: 100-42-5		
9.293	9.293 (1.060)	104	929378	54.1901	54.190	80.00- 120.00	100.00
9.293	9.293 (1.060)	78	436261			17.56- 77.56	46.94
174 Bromoform					CAS #: 75-25-2		
9.500	9.493 (1.084)	173	798654	52.1532	52.153	80.00- 120.00	100.00
9.500	9.493 (1.084)	171	412567			21.66- 81.66	51.66
175 Cumene					CAS #: 98-82-8		
9.565	9.558 (1.092)	105	1800914	49.6505	49.650	80.00- 120.00	100.00
9.565	9.558 (1.092)	120	505188			0.00- 57.98	28.05
9.558	9.558 (1.091)	51	180317			0.00- 39.96	10.01
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.880	9.873 (1.128)	83	835274	49.5027	49.503	80.00- 120.00	100.00
9.880	9.880 (1.128)	85	540999			34.78- 94.78	64.77
182 Propylbenzene					CAS #: 103-65-1		
9.909	9.901 (1.131)	91	2038710	49.9027	49.903	80.00- 120.00	100.00
9.909	9.901 (1.131)	120	524823			0.00- 55.78	25.74
9.909	9.901 (1.131)	105	78988			0.00- 33.82	3.87
188 4-Ethyltoluene					CAS #: 622-96-8		
10.002	9.995 (1.141)	120	588113	52.5020	52.502	80.00- 120.00	100.00
10.002	9.995 (1.141)	105	1860127			285.47- 345.47	316.29
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.052	10.045 (1.147)	120	784313	51.2704	51.270	80.00- 120.00	100.00
10.052	10.045 (1.147)	105	1546339			169.49- 229.49	197.16

				CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.381	10.367 (1.185)	105	1523056	50.6940	50.694	80.00- 120.00	100.00
10.381	10.367 (1.185)	120	720767			17.18- 77.18	47.32
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.668	10.661 (1.217)	146	1093558	49.9036	49.904	80.00- 120.00	100.00
10.668	10.661 (1.217)	148	698135			34.08- 94.08	63.84
10.668	10.661 (1.217)	111	423156			9.00- 69.00	38.70
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.754	10.739 (1.227)	146	1124127	50.5399	50.540	80.00- 120.00	100.00
10.754	10.739 (1.227)	148	714702			33.83- 93.83	63.58
10.754	10.739 (1.227)	111	420739			7.37- 67.37	37.43
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.868	10.854 (1.240)	91	1441014	53.7553	53.755	80.00- 120.00	100.00
10.868	10.854 (1.240)	126	342275			0.00- 53.98	23.75
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.076	11.069 (1.264)	146	1048508	50.0699	50.070	80.00- 120.00	100.00
11.076	11.069 (1.264)	148	665818			33.96- 93.96	63.50
11.076	11.069 (1.264)	111	420960			9.96- 69.96	40.15
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.487	12.466 (1.425)	180	885557	50.1923	50.192	80.00- 120.00	100.00
12.487	12.466 (1.425)	182	846477			64.97- 124.97	95.59
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.573	12.552 (1.435)	225	678264	49.7185	49.718	80.00- 120.00	100.00
12.573	12.552 (1.435)	223	427430			33.42- 93.42	63.02
228 Naphthalene					CAS #: 91-20-3		
12.752	12.731 (1.455)	128	216425	4.37063	4.371	80.00- 120.00	100.00
12.752	12.731 (1.455)	127	27623			0.00- 43.00	12.76

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052318.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Client Smp ID: ICV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	129828	-1.25
123 1,4-Difluorobenze	510592	306355	714829	505006	-1.09
163 Chlorobenzene-d5	463787	278272	649302	455031	-1.89

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.41	-0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 23may17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: jg
Data Type: MS DATA SampleType: ICV
SpikeList File: AT12ethanol.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 50ppbv (200ppbv)

SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
9	Propylene	50.000	43.571	87.14	60-140
11	Freon 12	50.000	48.046	96.09	70-130
15	Freon 114	50.000	48.065	96.13	70-130
17	Chloromethane	50.000	52.102	104.20	70-130
23	Butane	50.000	48.307	96.61	60-140
25	Vinyl Chloride	50.000	48.933	97.87	70-130
26	1,3-Butadiene	50.000	45.316	90.63	70-130
29	Bromomethane	50.000	50.822	101.64	70-130
30	Chloroethane	50.000	49.345	98.69	70-130
31	Isopentane	50.000	46.345	92.69	60-140
35	Freon 11	50.000	47.318	94.64	70-130
42	Ethanol	57.500	47.578	82.74	70-130
49	Freon 113	50.000	47.338	94.68	70-130
50	1,1-Dichloroethene	50.000	46.902	93.80	70-130
52	Acetone	50.000	42.594	85.19	70-130
56	Carbon Disulfide	50.000	45.542	91.09	70-130
57	2-Propanol	50.000	47.813	95.63	70-130
58	3-Chloropropene	50.000	49.349	98.70	70-130
66	Methylene Chloride	50.000	46.651	93.30	70-130
72	Methyl tert-butyl	50.000	48.465	96.93	70-130
73	trans-1,2-Dichloro	50.000	52.867	105.73	70-130
78	Hexane	50.000	46.751	93.50	70-130
82	1,1-Dichloroethane	50.000	47.002	94.00	70-130
86	Vinyl Acetate	50.000	46.954	93.91	60-140
91	cis-1,2-Dichloroet	50.000	42.333	84.67	70-130
92	2-Butanone	50.000	47.664	95.33	70-130
99	Tetrahydrofuran	50.000	45.565	91.13	70-130
100	Chloroform	50.000	47.687	95.37	70-130
103	1,1,1-Trichloroeth	50.000	48.126	96.25	70-130
106	Carbon Tetrachlori	50.000	49.346	98.69	70-130
102	Cyclohexane	50.000	48.531	97.06	70-130
113	2,2,4-Trimethylpen	50.000	47.428	94.86	70-130
116	Benzene	50.000	46.620	93.24	70-130

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
120 1,2-Dichloroethane	50.000	47.347	94.69	70-130
121 Heptane	50.000	49.166	98.33	70-130
125 Trichloroethene	50.000	48.046	96.09	70-130
127 Methylcyclohexane	50.000	43.430	86.86	60-140
132 1,2-Dichloropropan	50.000	47.576	95.15	70-130
136 1,4-Dioxane	50.000	47.145	94.29	70-130
138 Bromodichlorometha	50.000	49.486	98.97	70-130
144 cis-1,3-Dichloropr	50.000	51.559	103.12	70-130
145 4-Methyl-2-pentano	50.000	44.980	89.96	70-130
147 Toluene	50.000	47.558	95.12	70-130
150 trans-1,3-Dichloro	50.000	48.701	97.40	70-130
155 1,1,2-Trichloroeth	50.000	48.683	97.37	70-130
156 Tetrachloroethene	50.000	47.562	95.12	70-130
158 2-Hexanone	50.000	49.910	99.82	70-130
160 Dibromochlorometha	50.000	49.928	99.86	70-130
161 1,2-Dibromoethane	50.000	48.405	96.81	70-130
165 Chlorobenzene	50.000	48.286	96.57	70-130
167 Ethyl Benzene	50.000	49.748	99.50	70-130
169 m,p-Xylene	50.000	49.195	98.39	70-130
171 o-Xylene	50.000	49.851	99.70	70-130
172 Styrene	50.000	54.190	108.38	70-130
174 Bromoform	50.000	52.153	104.31	70-130
175 Cumene	50.000	49.650	99.30	70-130
181 1,1,2,2-Tetrachlor	50.000	49.503	99.01	70-130
182 Propylbenzene	50.000	49.903	99.81	70-130
188 4-Ethyltoluene	50.000	52.502	105.00	70-130
190 1,3,5-Trimethylben	50.000	51.270	102.54	70-130
196 1,2,4-Trimethylben	50.000	50.694	101.39	70-130
208 1,3-Dichlorobenzen	50.000	49.904	99.81	70-130
209 1,4-Dichlorobenzen	50.000	50.540	101.08	70-130
212 alpha-Chlorotoluen	50.000	53.755	107.51	70-130
214 1,2-Dichlorobenzen	50.000	50.070	100.14	70-130
226 1,2,4-Trichloroben	50.000	50.192	100.38	70-130
227 Hexachlorobutadien	50.000	49.718	99.44	70-130
228 Naphthalene	5.000	4.371	87.41	60-140

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	24.852	99.41	70-130
$ 146 Toluene-d8	25.000	25.046	100.18	70-130
$ 177 4-Bromofluorobenze	25.000	25.286	101.15	70-130

Data File: /chem/msd3.i/23may17.b/3052318.d

Date : 24-MAY-2017 11:01

Client ID: ICV

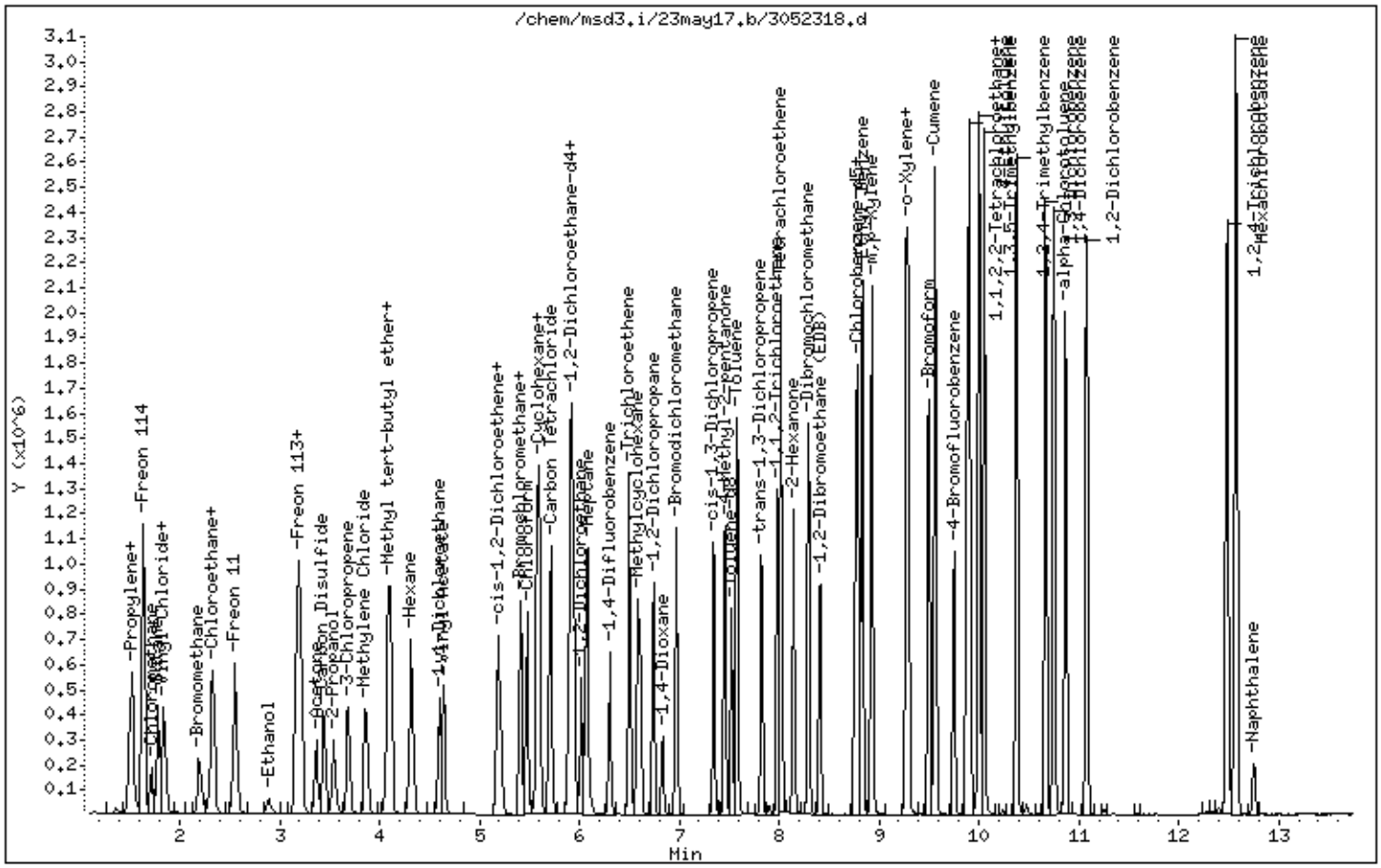
Instrument: msd3.i

Sample Info: 50mL #2850-72

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052316.d
Lab Smp Id: ICAL Level #2
Inj Date : 24-MAY-2017 08:36
Operator : jg Inst ID: msd3.i
Smp Info : 40ml 2850-36A
Misc Info : 0.5ppbv (2.5ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:08 jscarbro Quant Type: ISTD
Cal Date : 24-MAY-2017 08:36 Cal File: 3052316.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12low.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 98 Bromochloromethane						CAS #: 74-97-5		
5.410	5.410 (1.000)	130	131499	25.0000		80.00- 120.00		100.00
5.410	5.410 (1.000)	128	101781			46.73- 106.73		77.40
5.410	5.410 (1.000)	49	156332			91.08- 151.08		118.88
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	506353	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	76653			0.00- 44.78		15.14
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.763	8.763 (1.000)	117	450634	25.0000		80.00- 120.00		100.00
8.763	8.763 (1.000)	82	225941			20.58- 80.58		50.14
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.101)	65	168250	25.0000	25.035	80.00- 120.00		100.00
5.956	5.956 (1.101)	67	85243			24.54- 84.54		50.66
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	512063	25.0000	24.931	80.00- 120.00		100.00
7.523	7.523 (1.193)	70	54976			0.00- 40.44		10.74

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	329101			35.27- 95.27	64.27
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.751	9.751 (1.113)	174	287365	25.0000	24.424	80.00- 120.00	100.00
9.751	9.751 (1.113)	95	331709			84.77- 144.77	115.43
9.751	9.751 (1.113)	176	272467			64.74- 124.74	94.82
11 Freon 12					CAS #: 75-71-8		
1.521	1.521 (0.281)	85	6967	0.50000	0.5122	80.00- 120.00	100.00
1.521	1.521 (0.281)	87	2045			2.61- 62.61	29.35
15 Freon 114					CAS #: 76-14-2		
1.633	1.633 (0.302)	135	5631	0.50000	0.5035	80.00- 120.00	100.00
1.633	1.633 (0.302)	137	1588			1.52- 61.52	28.20
25 Vinyl Chloride					CAS #: 75-01-4		
1.829	1.829 (0.338)	62	2630	0.50000	0.5017	80.00- 120.00	100.00
1.829	1.829 (0.338)	64	1783			2.35- 62.35	67.79
26 1,3-Butadiene					CAS #: 106-99-0		
1.843	1.843 (0.341)	54	2711	0.50000	0.5820	80.00- 120.00	100.00
1.843	1.843 (0.341)	39	3321			70.49- 130.49	122.50
35 Freon 11					CAS #: 75-69-4		
2.542	2.542 (0.470)	101	7664	0.50000	0.5054	80.00- 120.00	100.00
2.542	2.542 (0.470)	103	4961			35.42- 95.42	64.73
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.589)	151	5740	0.50000	0.5172	80.00- 120.00	100.00
3.186	3.186 (0.589)	153	3516			33.57- 93.57	61.25
3.172	3.172 (0.586)	101	6690			81.85- 141.85	116.55
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	96	3223	0.50000	0.5657	80.00- 120.00	100.00
3.214	3.214 (0.594)	98	1498			33.92- 93.92	46.48
3.214	3.214 (0.594)	61	4611			146.09- 206.09	143.07
66 Methylene Chloride					CAS #: 75-09-2		
3.857	3.857 (0.713)	49	3962	0.50000	0.5572	80.00- 120.00	100.00(a)
3.871	3.871 (0.716)	84	3088			38.75- 98.75	77.94
3.857	3.857 (0.713)	51	1502			0.74- 60.74	37.91
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.095 (0.757)	73	8437	0.50000	0.5257	80.00- 120.00	100.00
4.081	4.081 (0.754)	57	2531			0.00- 56.12	30.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
72 Methyl tert-butyl ether (continued)							
4.095	4.095 (0.757)	41	2269			0.00- 55.40	26.89
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.109 (0.759)	98	1643	0.50000	0.4764	80.00- 120.00	100.00(a)
4.109	4.109 (0.759)	61	3849			202.86- 262.86	234.27
4.109	4.109 (0.759)	96	2952			122.28- 182.28	179.67
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.798)	57	5404	0.50000	0.5575	80.00- 120.00	100.00
4.319	4.319 (0.798)	43	3347			33.71- 93.71	61.94
4.333	4.333 (0.801)	86	341			0.00- 44.46	6.31
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.599	4.599 (0.850)	63	5394	0.50000	0.5128	80.00- 120.00	100.00
4.599	4.599 (0.850)	65	1566			0.47- 60.47	29.03
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.187	5.187 (0.959)	98	2556	0.50000	0.5818	80.00- 120.00	100.00
5.187	5.187 (0.959)	96	3483			120.71- 180.71	136.27
5.187	5.187 (0.959)	61	4318			179.50- 239.50	168.94
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.424 (1.003)	42	4286	0.50000	0.6048	80.00- 120.00	100.00
5.424	5.424 (1.003)	71	1216			4.59- 64.59	28.37
5.424	5.424 (1.003)	72	1030			7.27- 67.27	24.03
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.013)	83	6051	0.50000	0.4972	80.00- 120.00	100.00(a)
5.480	5.480 (1.013)	85	3697			35.09- 95.09	61.10
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.031)	84	3964	0.50000	0.5064	80.00- 120.00	100.00
5.578	5.578 (1.031)	56	5436			96.78- 156.78	137.13
5.578	5.578 (1.031)	41	3048			43.37- 103.37	76.89
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.592	5.592 (1.034)	97	6934	0.50000	0.5072	80.00- 120.00	100.00
5.592	5.592 (1.034)	99	4320			34.29- 94.29	62.30
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.057)	119	6224	0.50000	0.4329	80.00- 120.00	100.00(a)
5.718	5.718 (1.057)	117	7445			71.44- 131.44	119.62
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.914 (1.093)	57	17065	0.50000	0.5351	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
113 2,2,4-Trimethylpentane (continued)							
5.914	5.914 (1.093)	56	6192			0.95- 60.95	36.28
5.914	5.914 (1.093)	41	4900			0.00- 57.81	28.71
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	8478	0.50000	0.5153	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	1938			0.00- 53.39	22.86
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.956)	62	4197	0.50000	0.4929	80.00- 120.00	100.00(a)
6.026	6.026 (0.956)	64	1443			1.16- 61.16	34.38
121 Heptane					CAS #: 142-82-5		
6.082	6.082 (0.964)	71	2987	0.50000	0.5073	80.00- 120.00	100.00
6.068	6.068 (0.962)	43	7342			159.72- 219.72	245.80
6.082	6.082 (0.964)	57	3578			73.21- 133.21	119.79
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.031)	95	4156	0.50000	0.5154	80.00- 120.00	100.00
6.502	6.502 (1.031)	130	4873			84.28- 144.28	117.25
6.502	6.502 (1.031)	97	2825			35.52- 95.52	67.97
127 Methylcyclohexane					CAS #: 108-87-2		
6.586	6.586 (1.044)	83	3591	0.50000	0.5919	80.00- 120.00	100.00(a)
6.586	6.586 (1.044)	98	1537			22.71- 82.71	42.80
6.586	6.586 (1.044)	55	4108			64.76- 124.76	114.40
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.743	6.743 (1.069)	63	3263	0.50000	0.5044	80.00- 120.00	100.00
6.743	6.743 (1.069)	62	2138			39.16- 99.16	65.52
6.750	6.750 (1.070)	41	2000			33.29- 93.29	61.29
138 Bromodichloromethane					CAS #: 75-27-4		
6.972	6.972 (1.106)	83	6199	0.50000	0.4832	80.00- 120.00	100.00(a)
6.972	6.972 (1.106)	85	4195			34.33- 94.33	67.67
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.344	7.344 (1.165)	75	4805	0.50000	0.4849	80.00- 120.00	100.00(a)
7.352	7.352 (1.166)	77	1835			2.53- 62.53	38.19
7.344	7.344 (1.165)	39	3642			33.48- 93.48	75.80
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.459 (1.183)	58	4182	0.50000	0.6754	80.00- 120.00	100.00
7.459	7.459 (1.183)	43	11120			231.49- 291.49	265.90
7.459	7.459 (1.183)	85	1790			13.16- 73.16	42.80

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
147 Toluene						CAS #: 108-88-3	
7.581	7.581 (1.202)	91	11905	0.50000	0.5380	80.00- 120.00	100.00
7.581	7.581 (1.202)	92	6666			27.96- 87.96	55.99
150 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
7.831	7.831 (0.894)	75	4830	0.50000	0.5121	80.00- 120.00	100.00
7.824	7.824 (0.893)	77	1985			2.78- 62.78	41.10
7.824	7.824 (0.893)	39	3214			29.86- 89.86	66.54
155 1,1,2-Trichloroethane						CAS #: 79-00-5	
7.982	7.982 (0.911)	97	3846	0.50000	0.5128	80.00- 120.00	100.00
7.982	7.982 (0.911)	99	2181			31.98- 91.98	56.71
7.982	7.982 (0.911)	83	3364			53.23- 113.23	87.47
156 Tetrachloroethene						CAS #: 127-18-4	
8.018	8.018 (0.915)	166	6267	0.50000	0.5372	80.00- 120.00	100.00
8.018	8.018 (0.915)	129	4839			46.99- 106.99	77.21
8.018	8.018 (0.915)	131	4745			44.98- 104.98	75.71
158 2-Hexanone						CAS #: 591-78-6	
8.147	8.147 (0.930)	58	3433	0.50000	0.4692	80.00- 120.00	100.00(a)
8.154	8.154 (0.931)	43	8045			164.73- 224.73	234.34
8.154	8.154 (0.931)	100	764			0.00- 50.65	22.25
160 Dibromochloromethane						CAS #: 124-48-1	
8.297	8.297 (0.947)	129	7631	0.50000	0.4819	80.00- 120.00	100.00(a)
8.297	8.297 (0.947)	127	5967			47.57- 107.57	78.19
161 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
8.412	8.412 (0.960)	107	6372	0.50000	0.5164	80.00- 120.00	100.00
8.404	8.404 (0.959)	109	5792			63.47- 123.47	90.90
165 Chlorobenzene						CAS #: 108-90-7	
8.784	8.784 (1.002)	112	10062	0.50000	0.5309	80.00- 120.00	100.00
8.791	8.791 (1.003)	114	3028			1.87- 61.87	30.09
8.777	8.777 (1.002)	77	9563			21.88- 81.88	95.04
167 Ethyl Benzene						CAS #: 100-41-4	
8.834	8.834 (1.008)	106	5062	0.50000	0.5284	80.00- 120.00	100.00
8.834	8.834 (1.008)	91	15123			272.32- 332.32	298.76
169 m,p-Xylene						CAS #: 108-38-3	
8.927	8.927 (1.019)	106	6187	0.50000	0.5164	80.00- 120.00	100.00
8.927	8.927 (1.019)	91	12717			165.91- 225.91	205.54
171 o-Xylene						CAS #: 95-47-6	
9.271	9.271 (1.058)	106	5721	0.50000	0.5021	80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
171 o-Xylene (continued)								
9.271	9.271	(1.058)	91	12652			175.85- 235.85	221.15
172 Styrene						CAS #: 100-42-5		
9.293	9.293	(1.060)	104	4130	0.50000	0.2432	80.00- 120.00	100.00(a)
9.293	9.293	(1.060)	78	2427			17.56- 77.56	58.77
174 Bromoform						CAS #: 75-25-2		
9.500	9.500	(1.084)	173	7124	0.50000	0.4697	80.00- 120.00	100.00(a)
9.500	9.500	(1.084)	171	3869			21.66- 81.66	54.31
175 Cumene						CAS #: 98-82-8		
9.558	9.558	(1.091)	105	18692	0.50000	0.5204	80.00- 120.00	100.00
9.565	9.565	(1.092)	120	4963			0.00- 57.98	26.55
9.565	9.565	(1.092)	51	1770			0.00- 39.96	9.47
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
9.880	9.880	(1.128)	83	8625	0.50000	0.5162	80.00- 120.00	100.00
9.880	9.880	(1.128)	85	5787			34.78- 94.78	67.10
182 Propylbenzene						CAS #: 103-65-1		
9.909	9.909	(1.131)	91	21763	0.50000	0.5379	80.00- 120.00	100.00
9.909	9.909	(1.131)	120	5397			0.00- 55.78	24.80
9.909	9.909	(1.131)	105	731			0.00- 33.82	3.36
188 4-Ethyltoluene						CAS #: 622-96-8		
10.002	10.002	(1.141)	120	5507	0.50000	0.4964	80.00- 120.00	100.00(a)
10.002	10.002	(1.141)	105	17806			285.47- 345.47	323.33
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
10.052	10.052	(1.147)	120	6861	0.50000	0.4529	80.00- 120.00	100.00(a)
10.052	10.052	(1.147)	105	14380			169.49- 229.49	209.59
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
10.381	10.381	(1.185)	105	15861	0.50000	0.5331	80.00- 120.00	100.00
10.381	10.381	(1.185)	120	6756			17.18- 77.18	42.60
208 1,3-Dichlorobenzene						CAS #: 541-73-1		
10.668	10.668	(1.217)	146	11565	0.50000	0.5329	80.00- 120.00	100.00
10.668	10.668	(1.217)	148	7390			34.08- 94.08	63.90
10.675	10.675	(1.218)	111	4376			9.00- 69.00	37.84
209 1,4-Dichlorobenzene						CAS #: 106-46-7		
10.754	10.754	(1.227)	146	11626	0.50000	0.5278	80.00- 120.00	100.00
10.754	10.754	(1.227)	148	7470			33.83- 93.83	64.25
10.754	10.754	(1.227)	111	4327			7.37- 67.37	37.22

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.869	10.869 (1.240)	91	12627	0.50000	0.4756	80.00- 120.00	100.00(a)
10.869	10.869 (1.240)	126	2561			0.00- 53.98	20.28
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.083	11.083 (1.265)	146	11216	0.50000	0.5408	80.00- 120.00	100.00
11.083	11.083 (1.265)	148	7087			33.96- 93.96	63.19
11.083	11.083 (1.265)	111	4315			9.96- 69.96	38.47

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052316.d
Lab Smp Id: ICAL Level #2
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 0.5ppbv (2.5ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	131499	0.02
123 1,4-Difluorobenze	510592	306355	714829	506353	-0.83
163 Chlorobenzene-d5	463787	278272	649302	450634	-2.84

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.41	-0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/23may17.b/3052316.d

Date : 24-MAY-2017 08:36

Client ID:

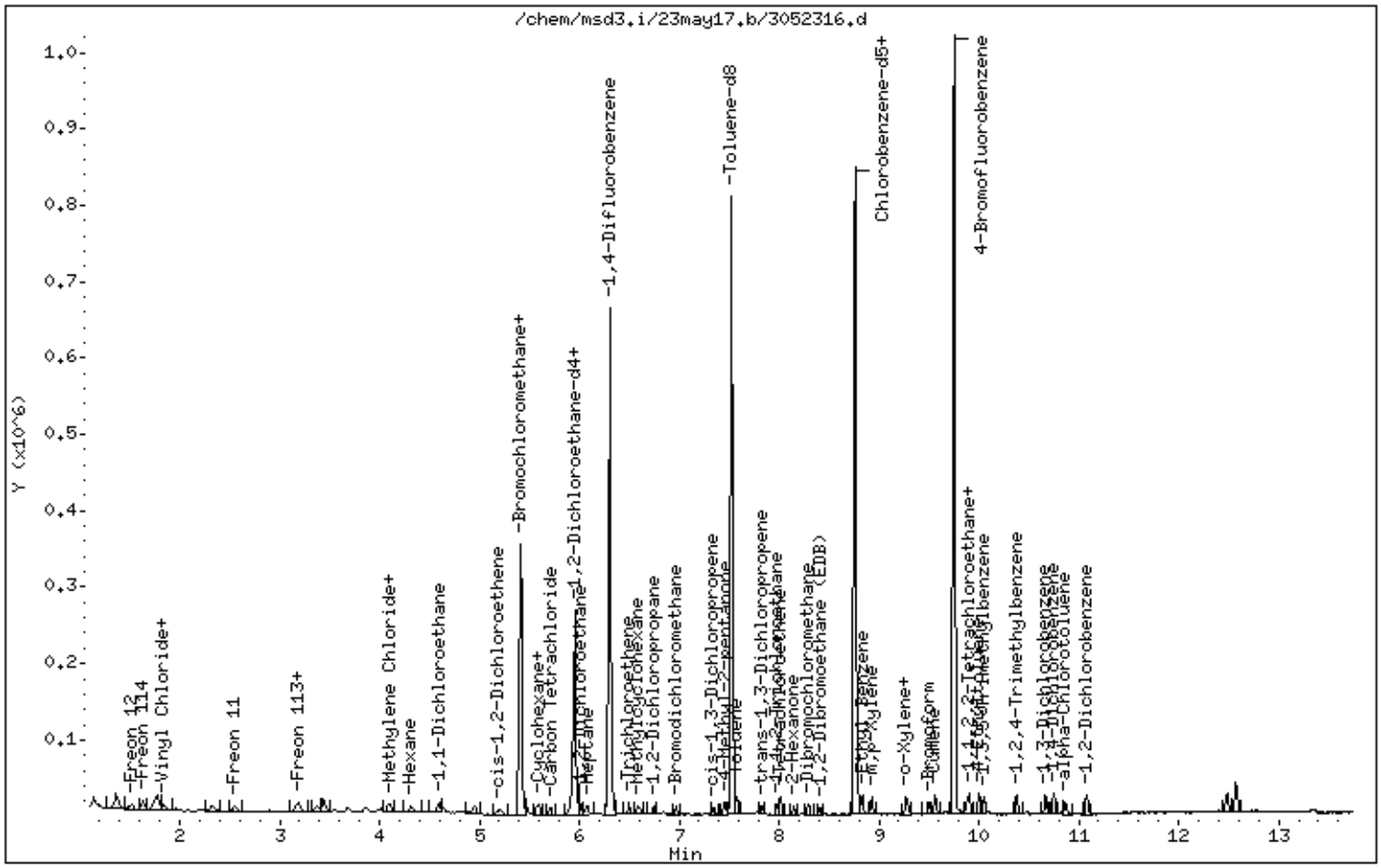
Instrument: msd3.i

Sample Info: 40ml 2850-36A

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/04aug17.b/3080405.d
Lab Smp Id: ICAL Level #3
Inj Date : 04-AUG-2017 11:05
Operator : jg Inst ID: msd3.i
Smp Info : 80ml 2850-217
Misc Info : 2.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/04aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 10:53 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 11:05 Cal File: 3080405.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT1crv.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 98 Bromochloromethane					CAS #: 74-97-5			
5.410	5.410 (1.000)	130	219633	25.0000		80.00- 120.00		100.00
5.410	5.410 (1.000)	128	168307			46.73- 106.73		76.63
5.410	5.410 (1.000)	49	234567			91.08- 151.08		106.80
* 123 1,4-Difluorobenzene					CAS #: 540-36-3			
6.306	6.306 (1.000)	114	739431	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	104131			0.00- 44.78		14.08
* 163 Chlorobenzene-d5					CAS #: 3114-55-4			
8.763	8.763 (1.000)	117	705299	25.0000		80.00- 120.00		100.00
8.763	8.763 (1.000)	82	332702			20.58- 80.58		47.17
6 Freon 143a					CAS #: 420-46-2			
1.395	1.395 (0.258)	65	3886	2.00000	1.959	0.00- 30.00		100.00(a)
1.395	1.395 (0.258)	69	9503			0.00- 30.00		244.54
1.395	1.395 (0.258)	64	557			0.00- 30.00		14.33
7 Freon 134a					CAS #: 811-97-2			
1.451	1.451 (0.268)	83	11057	2.00000	1.798	0.00- 30.00		100.00(a)

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a (continued)							
1.451	1.451 (0.268)	69	12323			0.00- 30.00	111.45
1.451	1.451 (0.268)	63	866			0.00- 30.00	7.83
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.493	1.493 (0.276)	65	6311	2.00000	1.750	0.00- 30.00	100.00(a)
1.493	1.493 (0.276)	51	13021			0.00- 30.00	206.32
1.493	1.493 (0.276)	47	2669			0.00- 30.00	42.29
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.549	1.549 (0.286)	67	3021	2.00000	1.836	0.00- 30.00	100.00(a)
1.549	1.549 (0.286)	51	22723			0.00- 30.00	752.17
1.549	1.549 (0.286)	85	390			0.00- 30.00	12.91
16 Freon 142b					CAS #: 75-68-3		
1.675	1.675 (0.310)	65	29088	2.00000	1.948	0.00- 30.00	100.00(a)
1.675	1.675 (0.310)	45	8235			0.00- 30.00	28.31
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.556	2.556 (0.472)	67	37168	2.00000	1.855	0.00- 30.00	100.00(a)
2.556	2.556 (0.472)	69	12907			0.00- 30.00	34.73
47 Freon 123a					CAS #: 354-23-4		
3.018	3.018 (0.558)	117	35560	2.00000	1.966	0.00- 30.00	100.00(a)
3.018	3.018 (0.558)	67	40884			0.00- 30.00	114.97
48 Freon 123					CAS #: 306-83-2		
3.116	3.116 (0.576)	83	52183	2.00000	1.976	0.00- 30.00	100.00(a)
3.116	3.116 (0.576)	133	11019			0.00- 30.00	21.12
3.116	3.116 (0.576)	85	34231			0.00- 30.00	65.60
59 Cyclopentene					CAS #: 142-29-0		
3.689	3.689 (0.682)	67	31526	2.00000	1.975	0.00- 30.00	100.00(a)
3.689	3.689 (0.682)	68	11711			0.00- 30.00	37.15
3.689	3.689 (0.682)	53	6958			0.00- 30.00	22.07
84 1-Propanol					CAS #: 71-23-8		
4.781	4.781 (0.884)	59	4004	2.00000	1.977	0.00- 30.00	100.00(a)
4.781	4.781 (0.884)	42	3863			0.00- 30.00	96.48
4.781	4.781 (0.884)	41	2576			0.00- 30.00	64.34
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.145	5.145 (0.951)	77	35300	2.00000	1.979	0.00- 30.00	100.00(a)
5.145	5.145 (0.951)	79	11398			0.00- 30.00	32.29
5.145	5.145 (0.951)	97	7932			0.00- 30.00	22.47

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.746	5.746 (0.911)	110	11508	2.00000	2.063	0.00- 30.00	100.00
5.746	5.746 (0.911)	75	25726			0.00- 30.00	223.55
115 Isobutanol					CAS #: 78-83-1		
5.928	5.928 (1.096)	39	6800	2.00000	2.264	0.00- 30.00	100.00
5.928	5.928 (1.096)	43	16679			0.00- 30.00	245.28
5.928	5.928 (1.096)	41	14473			0.00- 30.00	212.84
124 n-Butanol					CAS #: 71-36-3		
6.488	6.488 (1.029)	56	25303	2.00000	1.885	0.00- 30.00	100.00(a)
6.488	6.488 (1.029)	41	20977			0.00- 30.00	82.90
6.488	6.488 (1.029)	43	12618			0.00- 30.00	49.87
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.132	8.132 (1.290)	76	36750	2.00000	2.098	0.00- 30.00	100.00
8.132	8.132 (1.290)	41	23939			0.00- 30.00	65.14
8.132	8.132 (1.290)	78	11581			0.00- 30.00	31.51
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.856	8.856 (1.011)	131	37743	2.00000	1.934	0.00- 30.00	100.00(a)
8.856	8.856 (1.011)	117	32014			0.00- 30.00	84.82
8.856	8.856 (1.011)	95	12400			0.00- 30.00	32.85
173 2-Heptanone					CAS #: 110-43-0		
9.371	9.371 (1.732)	58	28464	2.00000	1.876	0.00- 30.00	100.00(a)
9.371	9.371 (1.732)	43	47441			0.00- 30.00	166.67
176 Cyclohexanone					CAS #: 108-94-1		
9.730	9.730 (1.110)	55	28837	2.00000	1.992	0.00- 30.00	100.00(a)
9.730	9.730 (1.110)	98	11521			0.00- 30.00	39.95
9.730	9.730 (1.110)	42	20718			0.00- 30.00	71.85
180 Bromobenzene					CAS #: 108-86-1		
9.873	9.873 (1.127)	156	43941	2.00000	1.963	0.00- 30.00	100.00(a)
9.880	9.880 (1.128)	158	43122			0.00- 30.00	98.14
9.873	9.873 (1.127)	77	53919			0.00- 30.00	122.71
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.930	9.930 (1.133)	110	19120	2.00000	1.968	0.00- 30.00	100.00(a)
9.930	9.930 (1.133)	75	43182			0.00- 30.00	225.85
9.930	9.930 (1.133)	61	11201			0.00- 30.00	58.58
189 2-Chlorotoluene					CAS #: 95-49-8		
10.016	10.016 (1.143)	126	32136	2.00000	1.982	0.00- 30.00	100.00(a)
10.016	10.016 (1.143)	91	80627			0.00- 30.00	250.89

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
189 2-Chlorotoluene (continued)							
10.016	10.016 (1.143)	65	6753			0.00- 30.00	21.01
191 4-Chlorotoluene					CAS #: 106-43-4		
10.109	10.109 (1.154)	126	31281	2.00000	1.953	0.00- 30.00	100.00(a)
10.109	10.109 (1.154)	91	79467			0.00- 30.00	254.04
10.109	10.109 (1.154)	63	9827			0.00- 30.00	31.42
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.138	10.138 (1.157)	57	55469	2.00000	1.867	0.00- 30.00	100.00(a)
10.138	10.138 (1.157)	85	47486			0.00- 30.00	85.61
195 tert-Butylbenzene					CAS #: 98-06-6		
10.310	10.310 (1.177)	119	88952	2.00000	1.901	0.00- 30.00	100.00(a)
10.310	10.310 (1.177)	134	22029			0.00- 30.00	24.77
10.310	10.310 (1.177)	91	53353			0.00- 30.00	59.98
197 Pentachloroethane					CAS #: 76-01-7		
10.389	10.389 (1.186)	167	29388	2.00000	1.923	0.00- 30.00	100.00(a)
10.496	10.496 (1.198)	117	4285			0.00- 30.00	14.58
10.381	10.381 (1.185)	169	13813			0.00- 30.00	47.00
203 sec-Butylbenzene					CAS #: 135-98-8		
10.496	10.496 (1.198)	134	27319	2.00000	1.872	0.00- 30.00	100.00(a)
10.496	10.496 (1.198)	105	127054			0.00- 30.00	465.08
10.496	10.496 (1.198)	91	20559			0.00- 30.00	75.26
207 p-Cymene					CAS #: 99-87-6		
10.611	10.611 (1.211)	119	114043	2.00000	1.893	0.00- 30.00	100.00(a)
10.611	10.611 (1.211)	134	31464			0.00- 30.00	27.59
10.611	10.611 (1.211)	91	25123			0.00- 30.00	22.03
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8		
10.732	10.732 (1.225)	120	43658	2.00000	1.885	0.00- 30.00	100.00(a)
10.732	10.732 (1.225)	105	96418			0.00- 30.00	220.85
10.732	10.732 (1.225)	77	10470			0.00- 30.00	23.98
213 Butylbenzene					CAS #: 104-51-8		
10.962	10.962 (1.251)	134	29477	2.00000	1.899	0.00- 30.00	100.00(a)
10.955	10.955 (1.250)	91	95524			0.00- 30.00	324.06
10.962	10.962 (1.251)	92	49028			0.00- 30.00	166.33
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8		
11.742	11.742 (1.340)	157	37165	2.00000	1.870	0.00- 30.00	100.00(a)
11.742	11.742 (1.340)	75	27992			0.00- 30.00	75.32
11.742	11.742 (1.340)	155	28285			0.00- 30.00	76.11

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080405.d
Lab Smp Id: ICAL Level #3
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/04aug17.b/317q0523b.m
Misc Info: 2.0ppbv (5.0ppbv)

Calibration Date: 04-AUG-2017
Calibration Time: 07:54
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	193109	115865	270353	219633	13.74
123 1,4-Difluorobenze	717401	430441	1004361	739431	3.07
163 Chlorobenzene-d5	648934	389360	908508	705299	8.69

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/04aug17.b/3080405.d

Date : 04-AUG-2017 11:05

Client ID:

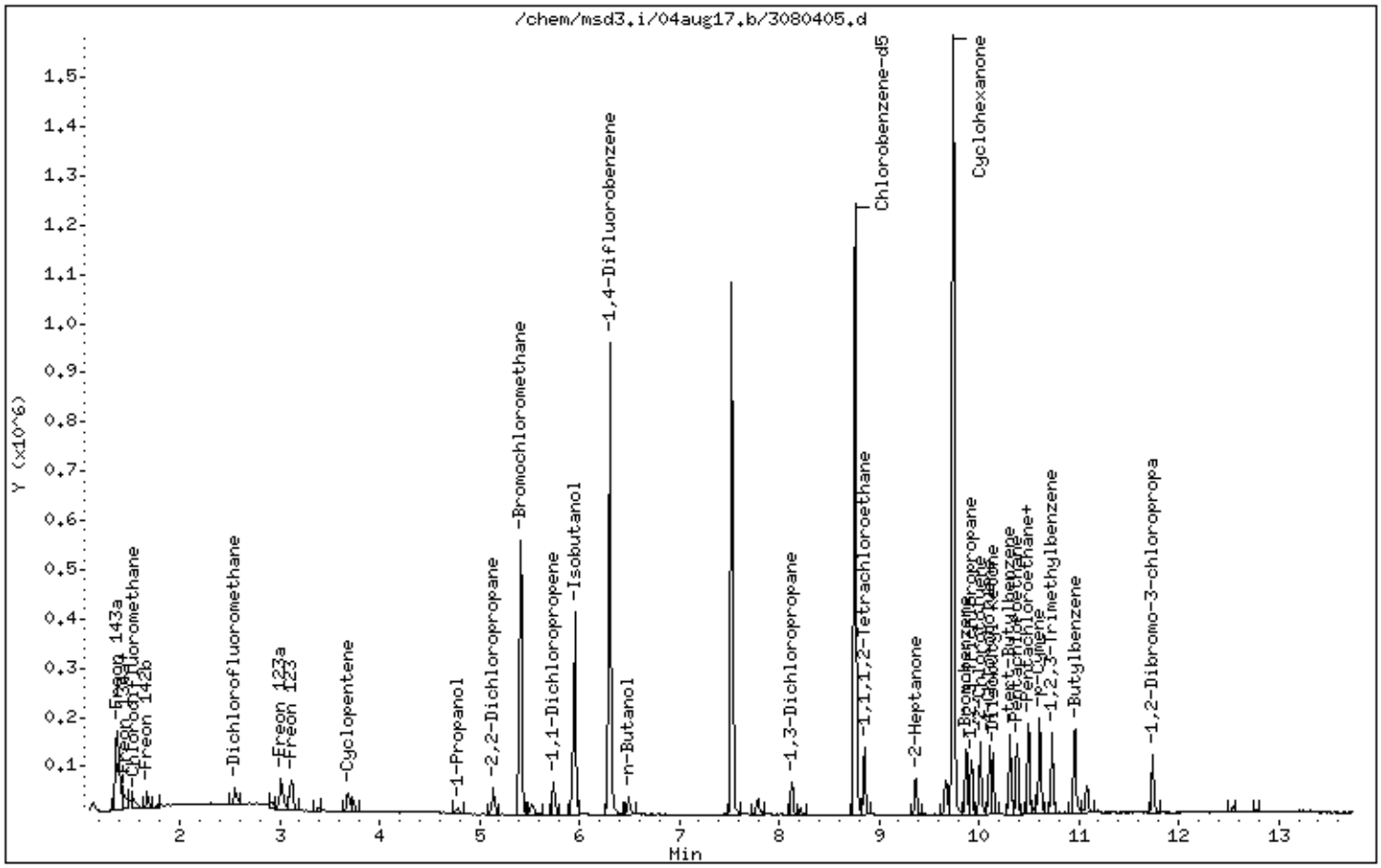
Instrument: msd3.i

Sample Info: 80ml 2850-217

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052306.d
Lab Smp Id: Level #3
Inj Date : 23-MAY-2017 13:12
Operator : jg Inst ID: msd3.i
Smp Info : 80ml 6L1347
Misc Info : 2.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:08 jscarbro Quant Type: ISTD
Cal Date : 23-MAY-2017 13:12 Cal File: 3052306.d
Als bottle: 12 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12mdl.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	==========	=====
* 98 Bromochloromethane						CAS #: 74-97-5		
5.424	5.424 (1.000)	130	130178	25.0000			80.00- 120.00	100.00
5.424	5.424 (1.000)	128	100858				46.73- 106.73	77.48
5.410	5.410 (1.000)	49	156705				91.08- 151.08	120.38
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	502602	25.0000			80.00- 120.00	100.00
6.306	6.306 (1.000)	88	74048				0.00- 44.78	14.73
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.762	8.762 (1.000)	117	454775	25.0000			80.00- 120.00	100.00
8.762	8.762 (1.000)	82	230547				20.58- 80.58	50.69
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	171196	25.0000	25.000		80.00- 120.00	100.00
5.956	5.956 (1.098)	67	82696				24.54- 84.54	48.30
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.523	7.523 (1.193)	98	511815	25.0000	25.000		80.00- 120.00	100.00
7.523	7.523 (1.193)	70	52487				0.00- 40.44	10.26

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	330977			35.27- 95.27	64.67
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.751	9.751 (1.113)	174	294117	25.0000	25.000	80.00- 120.00	100.00
9.751	9.751 (1.113)	95	332985			84.77- 144.77	113.22
9.751	9.751 (1.113)	176	275556			64.74- 124.74	93.69
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.275)	41	11206	2.00000	2.000	80.00- 120.00	100.00
1.493	1.493 (0.275)	42	6829			34.96- 94.96	60.94
1.493	1.493 (0.275)	39	8055			43.10- 103.10	71.88
11 Freon 12					CAS #: 75-71-8		
1.520	1.520 (0.280)	85	31058	2.00000	2.000	80.00- 120.00	100.00
1.520	1.520 (0.280)	87	9364			2.61- 62.61	30.15
15 Freon 114					CAS #: 76-14-2		
1.632	1.632 (0.301)	135	25183	2.00000	2.000	80.00- 120.00	100.00
1.632	1.632 (0.301)	137	7867			1.52- 61.52	31.24
17 Chloromethane					CAS #: 74-87-3		
1.716	1.716 (0.316)	50	12514	2.00000	2.000	80.00- 120.00	100.00(a)
1.716	1.716 (0.316)	52	3673			5.06- 65.06	29.35
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.329)	58	2529	2.00000	2.000	80.00- 120.00	100.00
1.786	1.786 (0.329)	43	28707			780.12- 840.12	1135.11
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.337)	62	11377	2.00000	2.000	80.00- 120.00	100.00
1.828	1.828 (0.337)	64	4931			2.35- 62.35	43.34
26 1,3-Butadiene					CAS #: 106-99-0		
1.856	1.856 (0.342)	54	10580	2.00000	2.000	80.00- 120.00	100.00
1.842	1.842 (0.340)	39	11198			70.49- 130.49	105.84
29 Bromomethane					CAS #: 74-83-9		
2.206	2.206 (0.407)	94	10000	2.00000	2.000	80.00- 120.00	100.00(a)
2.206	2.206 (0.407)	96	9807			64.76- 124.76	98.07
30 Chloroethane					CAS #: 75-00-3		
2.318	2.318 (0.427)	64	6209	2.00000	2.000	80.00- 120.00	100.00
2.304	2.304 (0.425)	66	1222			0.04- 60.04	19.68
2.318	2.318 (0.427)	49	1558			0.57- 60.57	25.09

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	16221	2.00000	2.000	80.00- 120.00	100.00
2.332	2.332 (0.430)	57	11016			39.30- 99.30	67.91
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.471)	101	33800	2.00000	2.000	80.00- 120.00	100.00
2.556	2.556 (0.471)	103	21314			35.42- 95.42	63.06
42 Ethanol					CAS #: 64-17-5		
2.906	2.906 (0.536)	45	4955	2.00000	2.000	80.00- 120.00	100.00
2.906	2.906 (0.536)	46	1364			8.36- 68.36	27.53
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.587)	151	23873	2.00000	2.000	80.00- 120.00	100.00
3.186	3.186 (0.587)	153	15107			33.57- 93.57	63.28
3.186	3.186 (0.587)	101	27155			81.85- 141.85	113.75
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.592)	96	12180	2.00000	2.000	80.00- 120.00	100.00
3.214	3.214 (0.592)	98	7728			33.92- 93.92	63.45
3.214	3.214 (0.592)	61	21943			146.09- 206.09	180.16
52 Acetone					CAS #: 67-64-1		
3.381	3.381 (0.623)	58	8395	2.00000	2.000	80.00- 120.00	100.00(a)
3.367	3.367 (0.621)	43	31651			310.81- 370.81	377.02
56 Carbon Disulfide					CAS #: 75-15-0		
3.451	3.451 (0.636)	76	45226	2.00000	2.000	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.654)	45	24398	2.00000	2.000	80.00- 120.00	100.00(T)
3.549	3.549 (0.654)	43	5980			0.00- 49.20	24.51
0.000	1.000 (0.000)	59	0			0.00- 33.72	0.00
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	5156	2.00000	2.000	80.00- 120.00	100.00
3.689	3.689 (0.680)	41	17019			282.10- 342.10	330.08
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.871 (0.714)	49	15260	2.00000	2.000	80.00- 120.00	100.00(a)
3.871	3.871 (0.714)	84	11131			38.75- 98.75	72.94
3.871	3.871 (0.714)	51	4984			0.74- 60.74	32.66
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.997	3.997 (0.737)	59	29882	2.00000	2.000	80.00- 120.00	100.00
4.011	4.011 (0.739)	41	7765			0.00- 51.35	25.99

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)								
4.011	4.011	(0.739)	57	3535			0.00- 41.27	11.83
72 Methyl tert-butyl ether						CAS #: 1634-04-4		
4.095	4.095	(0.755)	73	34263	2.00000	2.000	80.00- 120.00	100.00
4.095	4.095	(0.755)	57	9996			0.00- 56.12	29.17
4.081	4.081	(0.752)	41	11591			0.00- 55.40	33.83
73 trans-1,2-Dichloroethene						CAS #: 156-60-5		
4.109	4.109	(0.758)	98	7491	2.00000	2.000	80.00- 120.00	100.00
4.109	4.109	(0.758)	61	18488			202.86- 262.86	246.80
4.109	4.109	(0.758)	96	11758			122.28- 182.28	156.96
78 Hexane						CAS #: 110-54-3		
4.319	4.319	(0.796)	57	20793	2.00000	2.000	80.00- 120.00	100.00
4.319	4.319	(0.796)	43	14618			33.71- 93.71	70.30
4.319	4.319	(0.796)	86	2629			0.00- 44.46	12.64
82 1,1-Dichloroethane						CAS #: 75-34-3		
4.599	4.599	(0.848)	63	22774	2.00000	2.000	80.00- 120.00	100.00
4.599	4.599	(0.848)	65	7417			0.47- 60.47	32.57
83 Isopropyl ether						CAS #: 108-20-3		
4.599	4.599	(0.848)	45	45089	2.00000	2.000	80.00- 120.00	100.00
4.599	4.599	(0.848)	87	10926			0.00- 55.24	24.23
4.599	4.599	(0.848)	59	4877			0.00- 41.21	10.82
86 Vinyl Acetate						CAS #: 108-05-4		
4.655	4.655	(0.858)	86	3137	2.00000	2.000	80.00- 120.00	100.00
4.641	4.641	(0.856)	43	43327			1252.04-1312.04	1381.16
88 Ethyl-tert-butyl ether						CAS #: 637-92-3		
4.949	4.949	(0.912)	59	44858	2.00000	2.000	80.00- 120.00	100.00
4.949	4.949	(0.912)	87	16868			8.64- 68.64	37.60
4.949	4.949	(0.912)	41	9944			0.00- 48.69	22.17
91 cis-1,2-Dichloroethene						CAS #: 156-59-2		
5.186	5.186	(0.956)	98	9782	2.00000	2.000	80.00- 120.00	100.00
5.186	5.186	(0.956)	96	14407			120.71- 180.71	147.28
5.186	5.186	(0.956)	61	19438			179.50- 239.50	198.71
92 2-Butanone						CAS #: 78-93-3		
5.214	5.214	(0.961)	72	6085	2.00000	2.000	80.00- 120.00	100.00
5.214	5.214	(0.961)	43	29103			421.08- 481.08	478.27
5.214	5.214	(0.961)	57	2255			6.95- 66.95	37.06

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.424 (1.000)	42	15103	2.00000	2.000	80.00- 120.00	100.00
5.424	5.424 (1.000)	71	5036			4.59- 64.59	33.34
5.424	5.424 (1.000)	72	5256			7.27- 67.27	34.80
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	26707	2.00000	2.000	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	17303			35.09- 95.09	64.79
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.028)	84	17098	2.00000	2.000	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	21244			96.78- 156.78	124.25
5.578	5.578 (1.028)	41	14397			43.37- 103.37	84.20
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.606 (1.034)	97	29731	2.00000	2.000	80.00- 120.00	100.00
5.606	5.606 (1.034)	99	19240			34.29- 94.29	64.71
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.054)	119	31309	2.00000	2.000	80.00- 120.00	100.00
5.718	5.718 (1.054)	117	31767			71.44- 131.44	101.46
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.914 (1.090)	57	68528	2.00000	2.000	80.00- 120.00	100.00
5.914	5.914 (1.090)	56	21365			0.95- 60.95	31.18
5.914	5.914 (1.090)	41	20943			0.00- 57.81	30.56
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	37722	2.00000	2.000	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	8374			0.00- 53.39	22.20
119 tert-Amyl methyl ether					CAS #: 994-05-8		
5.998	5.998 (0.951)	87	8762	2.00000	2.000	80.00- 120.00	100.00
5.998	5.998 (0.951)	73	38426			355.30- 415.30	438.55
5.998	5.998 (0.951)	55	11344			79.12- 139.12	129.47
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.956)	62	18925	2.00000	2.000	80.00- 120.00	100.00
6.026	6.026 (0.956)	64	6324			1.16- 61.16	33.42
121 Heptane					CAS #: 142-82-5		
6.082	6.082 (0.964)	71	13090	2.00000	2.000	80.00- 120.00	100.00
6.082	6.082 (0.964)	43	27595			159.72- 219.72	210.81
6.082	6.082 (0.964)	57	13308			73.21- 133.21	101.67
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.031)	95	17741	2.00000	2.000	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.502	6.502 (1.031)	130	20191			84.28- 144.28	113.81
6.502	6.502 (1.031)	97	11985			35.52- 95.52	67.56
127 Methylcyclohexane					CAS #: 108-87-2		
6.586	6.586 (1.044)	83	14614	2.00000	2.000	80.00- 120.00	100.00
6.621	6.621 (1.050)	98	7328			22.71- 82.71	50.14
6.586	6.586 (1.044)	55	13321			64.76- 124.76	91.15
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.742	6.742 (1.069)	63	14422	2.00000	2.000	80.00- 120.00	100.00
6.742	6.742 (1.069)	62	9776			39.16- 99.16	67.79
6.742	6.742 (1.069)	41	10797			33.29- 93.29	74.86
136 1,4-Dioxane					CAS #: 123-91-1		
6.843	6.843 (1.085)	88	9063	2.00000	2.000	80.00- 120.00	100.00
6.843	6.843 (1.085)	58	6730			43.17- 103.17	74.26
6.836	6.836 (1.084)	57	2561			0.00- 55.09	28.26
138 Bromodichloromethane					CAS #: 75-27-4		
6.972	6.972 (1.106)	83	27957	2.00000	2.000	80.00- 120.00	100.00
6.972	6.972 (1.106)	85	18672			34.33- 94.33	66.79
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.351 (1.166)	75	22031	2.00000	2.000	80.00- 120.00	100.00
7.344	7.344 (1.165)	77	7386			2.53- 62.53	33.53
7.351	7.351 (1.166)	39	14430			33.48- 93.48	65.50
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.459 (1.183)	58	13286	2.00000	2.000	80.00- 120.00	100.00
7.459	7.459 (1.183)	43	36453			231.49- 291.49	274.37
7.459	7.459 (1.183)	85	5976			13.16- 73.16	44.98
147 Toluene					CAS #: 108-88-3		
7.581	7.581 (1.202)	91	48059	2.00000	2.000	80.00- 120.00	100.00
7.581	7.581 (1.202)	92	27656			27.96- 87.96	57.55
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.831 (0.894)	75	21017	2.00000	2.000	80.00- 120.00	100.00
7.831	7.831 (0.894)	77	8438			2.78- 62.78	40.15
7.831	7.831 (0.894)	39	13829			29.86- 89.86	65.80
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.982	7.982 (0.911)	97	16713	2.00000	2.000	80.00- 120.00	100.00
7.982	7.982 (0.911)	99	10081			31.98- 91.98	60.32
7.982	7.982 (0.911)	83	13488			53.23- 113.23	80.70

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.017	8.017 (0.915)	166	25956	2.00000	2.000	80.00- 120.00	100.00
8.017	8.017 (0.915)	129	20329			46.99- 106.99	78.32
8.017	8.017 (0.915)	131	19600			44.98- 104.98	75.51
158 2-Hexanone					CAS #: 591-78-6		
8.146	8.146 (0.930)	58	16120	2.00000	2.000	80.00- 120.00	100.00
8.146	8.146 (0.930)	43	33238			164.73- 224.73	206.19
8.146	8.146 (0.930)	100	3349			0.00- 50.65	20.78
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.297 (0.947)	129	34574	2.00000	2.000	80.00- 120.00	100.00
8.297	8.297 (0.947)	127	26167			47.57- 107.57	75.68
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.411	8.411 (0.960)	107	27265	2.00000	2.000	80.00- 120.00	100.00
8.411	8.411 (0.960)	109	25961			63.47- 123.47	95.22
165 Chlorobenzene					CAS #: 108-90-7		
8.784	8.784 (1.002)	112	40894	2.00000	2.000	80.00- 120.00	100.00
8.784	8.784 (1.002)	114	12991			1.87- 61.87	31.77
8.784	8.784 (1.002)	77	26199			21.88- 81.88	64.07
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.834 (1.008)	106	20265	2.00000	2.000	80.00- 120.00	100.00
8.834	8.834 (1.008)	91	63664			272.32- 332.32	314.16
169 m,p-Xylene					CAS #: 108-38-3		
8.934	8.934 (1.020)	106	26199	2.00000	2.000	80.00- 120.00	100.00
8.927	8.927 (1.019)	91	51869			165.91- 225.91	197.98
171 o-Xylene					CAS #: 95-47-6		
9.271	9.271 (1.058)	106	24956	2.00000	2.000	80.00- 120.00	100.00
9.271	9.271 (1.058)	91	52382			175.85- 235.85	209.90
172 Styrene					CAS #: 100-42-5		
9.293	9.293 (1.060)	104	38671	2.00000	2.000	80.00- 120.00	100.00
9.293	9.293 (1.060)	78	19097			17.56- 77.56	49.38
174 Bromoform					CAS #: 75-25-2		
9.500	9.500 (1.084)	173	32331	2.00000	2.000	80.00- 120.00	100.00
9.500	9.500 (1.084)	171	16789			21.66- 81.66	51.93
175 Cumene					CAS #: 98-82-8		
9.565	9.565 (1.092)	105	77052	2.00000	2.000	80.00- 120.00	100.00
9.565	9.565 (1.092)	120	21927			0.00- 57.98	28.46

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.558	9.558 (1.091)	51	8149			0.00- 39.96	10.58
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.880	9.880 (1.128)	83	36497	2.00000	2.000	80.00- 120.00	100.00
9.880	9.880 (1.128)	85	23416			34.78- 94.78	64.16
182 Propylbenzene					CAS #: 103-65-1		
9.909	9.909 (1.131)	91	88034	2.00000	2.000	80.00- 120.00	100.00
9.909	9.909 (1.131)	120	21979			0.00- 55.78	24.97
9.909	9.909 (1.131)	105	3655			0.00- 33.82	4.15
188 4-Ethyltoluene					CAS #: 622-96-8		
10.002	10.002 (1.141)	120	23902	2.00000	2.000	80.00- 120.00	100.00
10.002	10.002 (1.141)	105	75491			285.47- 345.47	315.84
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.052	10.052 (1.147)	120	32863	2.00000	2.000	80.00- 120.00	100.00
10.052	10.052 (1.147)	105	66568			169.49- 229.49	202.56
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.381	10.381 (1.185)	105	63681	2.00000	2.000	80.00- 120.00	100.00
10.381	10.381 (1.185)	120	29771			17.18- 77.18	46.75
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.668	10.668 (1.217)	146	46068	2.00000	2.000	80.00- 120.00	100.00
10.668	10.668 (1.217)	148	29276			34.08- 94.08	63.55
10.668	10.668 (1.217)	111	18263			9.00- 69.00	39.64
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.754	10.754 (1.227)	146	46865	2.00000	2.000	80.00- 120.00	100.00
10.754	10.754 (1.227)	148	29806			33.83- 93.83	63.60
10.747	10.747 (1.226)	111	17580			7.37- 67.37	37.51
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.868	10.868 (1.240)	91	53026	2.00000	2.000	80.00- 120.00	100.00
10.868	10.868 (1.240)	126	12446			0.00- 53.98	23.47
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.083	11.083 (1.265)	146	43338	2.00000	2.000	80.00- 120.00	100.00
11.083	11.083 (1.265)	148	27670			33.96- 93.96	63.85
11.076	11.076 (1.264)	111	18016			9.96- 69.96	41.57
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.487	12.487 (1.425)	180	36583	2.00000	2.000	80.00- 120.00	100.00
12.487	12.487 (1.425)	182	34334			64.97- 124.97	93.85

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.573	12.573 (1.435)	225	29467	2.00000	2.000	80.00- 120.00	100.00
12.573	12.573 (1.435)	223	19591			33.42- 93.42	66.48

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052306.d
Lab Smp Id: Level #3
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 2.0ppbv (5.0ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	130178	-0.98
123 1,4-Difluorobenze	510592	306355	714829	502602	-1.56
163 Chlorobenzene-d5	463787	278272	649302	454775	-1.94

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.42	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/23may17.b/3052306.d

Date : 23-MAY-2017 13:12

Client ID:

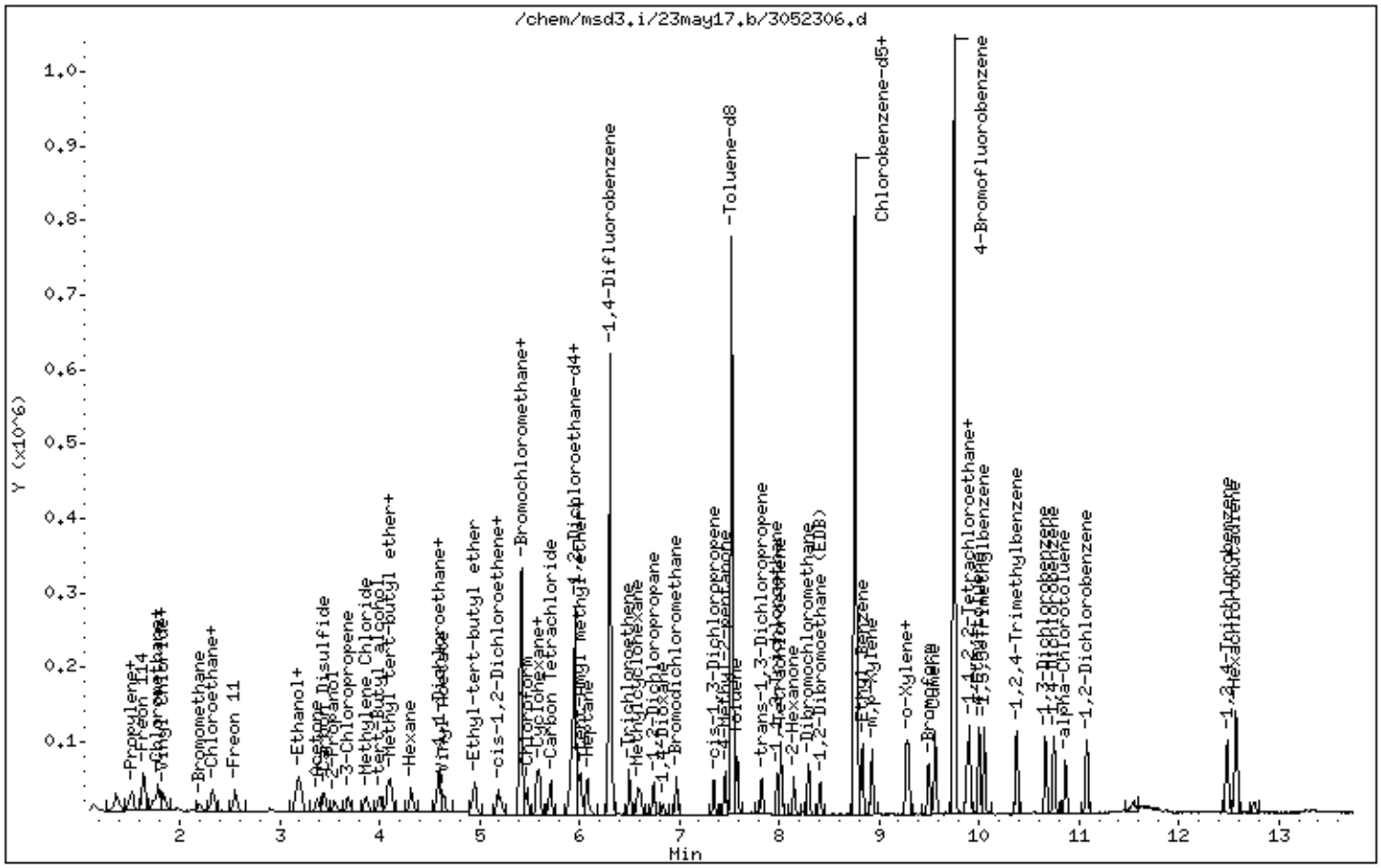
Instrument: msd3.i

Sample Info: 80ml 6L1347

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/04aug17.b/3080406.d
Lab Smp Id: ICAL Level #4
Inj Date : 04-AUG-2017 11:31
Operator : jg Inst ID: msd3.i
Smp Info : 200ml 2850-217
Misc Info : 5.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/04aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 10:53 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 11:31 Cal File: 3080406.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT1crv.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 98 Bromochloromethane					CAS #: 74-97-5		
5.424	5.424 (1.000)	130	186445	25.0000		80.00- 120.00	100.00
5.424	5.424 (1.000)	128	144854			46.73- 106.73	77.69
5.410	5.410 (1.000)	49	201759			91.08- 151.08	108.21
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.306	6.306 (1.000)	114	692974	25.0000		80.00- 120.00	100.00
6.306	6.306 (1.000)	88	94719			0.00- 44.78	13.67
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	622756	25.0000		80.00- 120.00	100.00
8.755	8.755 (1.000)	82	298101			20.58- 80.58	47.87
6 Freon 143a					CAS #: 420-46-2		
1.423	1.423 (0.262)	65	8588	5.00000	5.101	0.00- 30.00	100.00
1.465	1.465 (0.270)	69	47380			0.00- 30.00	551.70
1.423	1.423 (0.262)	64	1945			0.00- 30.00	22.65
7 Freon 134a					CAS #: 811-97-2		
1.465	1.465 (0.270)	83	28728	5.00000	5.504	0.00- 30.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a (continued)							
1.465	1.465 (0.270)	69	49462			0.00- 30.00	172.17
1.465	1.465 (0.270)	63	3613			0.00- 30.00	12.58
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.520	1.520 (0.280)	65	17218	5.00000	5.625	0.00- 30.00	100.00
1.562	1.562 (0.288)	51	86599			0.00- 30.00	502.96
1.520	1.520 (0.280)	47	7180			0.00- 30.00	41.70
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.562	1.562 (0.288)	67	7560	5.00000	5.411	0.00- 30.00	100.00
1.562	1.562 (0.288)	51	88076			0.00- 30.00	1165.03
1.548	1.548 (0.285)	85	205			0.00- 30.00	2.71
16 Freon 142b					CAS #: 75-68-3		
1.688	1.688 (0.311)	65	65058	5.00000	5.131	0.00- 30.00	100.00
1.688	1.688 (0.311)	45	16599			0.00- 30.00	25.51
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.570	2.570 (0.474)	67	91221	5.00000	5.363	0.00- 30.00	100.00
2.570	2.570 (0.474)	69	29295			0.00- 30.00	32.11
47 Freon 123a					CAS #: 354-23-4		
3.032	3.032 (0.559)	117	78036	5.00000	5.084	0.00- 30.00	100.00(a)
3.032	3.032 (0.559)	67	91787			0.00- 30.00	117.62
48 Freon 123					CAS #: 306-83-2		
3.130	3.130 (0.577)	83	113420	5.00000	5.060	0.00- 30.00	100.00
3.130	3.130 (0.577)	133	26337			0.00- 30.00	23.22
3.130	3.130 (0.577)	85	76195			0.00- 30.00	67.18
59 Cyclopentene					CAS #: 142-29-0		
3.703	3.703 (0.683)	67	68575	5.00000	5.062	0.00- 30.00	100.00
3.703	3.703 (0.683)	68	26276			0.00- 30.00	38.32
3.703	3.703 (0.683)	53	15064			0.00- 30.00	21.97
84 1-Propanol					CAS #: 71-23-8		
4.753	4.753 (0.876)	59	8697	5.00000	5.058	0.00- 30.00	100.00
4.753	4.753 (0.876)	42	7486			0.00- 30.00	86.08
4.753	4.753 (0.876)	41	5379			0.00- 30.00	61.85
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.144	5.144 (0.948)	77	76480	5.00000	5.052	0.00- 30.00	100.00
5.144	5.144 (0.948)	79	25203			0.00- 30.00	32.95
5.144	5.144 (0.948)	97	17701			0.00- 30.00	23.14

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.746	5.746 (0.911)	110	25320	5.00000	4.843	0.00- 30.00	100.00
5.746	5.746 (0.911)	75	59819			0.00- 30.00	236.25
115 Isobutanol					CAS #: 78-83-1		
5.900	5.900 (1.088)	39	11067	5.00000	4.340	0.00- 30.00	100.00
5.900	5.900 (1.088)	43	36518			0.00- 30.00	329.97
5.900	5.900 (1.088)	41	26819			0.00- 30.00	242.33
124 n-Butanol					CAS #: 71-36-3		
6.474	6.474 (1.027)	56	66495	5.00000	5.287	0.00- 30.00	100.00
6.474	6.474 (1.027)	41	50124			0.00- 30.00	75.38
6.474	6.474 (1.027)	43	35613			0.00- 30.00	53.56
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.125	8.125 (1.288)	76	78028	5.00000	4.754	0.00- 30.00	100.00
8.125	8.125 (1.288)	41	54027			0.00- 30.00	69.24
8.125	8.125 (1.288)	78	25704			0.00- 30.00	32.94
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.848	8.848 (1.011)	131	89018	5.00000	5.165	0.00- 30.00	100.00
8.848	8.848 (1.011)	117	63957			0.00- 30.00	71.85
8.848	8.848 (1.011)	95	28579			0.00- 30.00	32.10
173 2-Heptanone					CAS #: 110-43-0		
9.364	9.364 (1.726)	58	68358	5.00000	5.309	0.00- 30.00	100.00
9.364	9.364 (1.726)	43	111847			0.00- 30.00	163.62
176 Cyclohexanone					CAS #: 108-94-1		
9.722	9.722 (1.110)	55	64156	5.00000	5.020	0.00- 30.00	100.00
9.722	9.722 (1.110)	98	29135			0.00- 30.00	45.41
9.722	9.722 (1.110)	42	50310			0.00- 30.00	78.42
180 Bromobenzene					CAS #: 108-86-1		
9.873	9.873 (1.128)	156	100678	5.00000	5.093	0.00- 30.00	100.00
9.873	9.873 (1.128)	158	97874			0.00- 30.00	97.21
9.873	9.873 (1.128)	77	123122			0.00- 30.00	122.29
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.923	9.923 (1.133)	110	43575	5.00000	5.080	0.00- 30.00	100.00
9.923	9.923 (1.133)	75	97399			0.00- 30.00	223.52
9.923	9.923 (1.133)	61	28290			0.00- 30.00	64.92
189 2-Chlorotoluene					CAS #: 95-49-8		
10.009	10.009 (1.143)	126	72255	5.00000	5.046	0.00- 30.00	100.00
10.009	10.009 (1.143)	91	183006			0.00- 30.00	253.28

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
189 2-Chlorotoluene (continued)							
10.009	10.009 (1.143)	65	15713			0.00- 30.00	21.75
191 4-Chlorotoluene					CAS #: 106-43-4		
10.109	10.109 (1.155)	126	72395	5.00000	5.118	0.00- 30.00	100.00
10.102	10.102 (1.154)	91	188513			0.00- 30.00	260.40
10.109	10.109 (1.155)	63	23243			0.00- 30.00	32.11
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.138	10.138 (1.158)	57	139840	5.00000	5.332	0.00- 30.00	100.00
10.138	10.138 (1.158)	85	117094			0.00- 30.00	83.73
195 tert-Butylbenzene					CAS #: 98-06-6		
10.310	10.310 (1.178)	119	216757	5.00000	5.247	0.00- 30.00	100.00
10.310	10.310 (1.178)	134	54159			0.00- 30.00	24.99
10.310	10.310 (1.178)	91	129687			0.00- 30.00	59.83
197 Pentachloroethane					CAS #: 76-01-7		
10.381	10.381 (1.186)	167	70051	5.00000	5.192	0.00- 30.00	100.00
10.489	10.489 (1.198)	117	8955			0.00- 30.00	12.78
10.381	10.381 (1.186)	169	33787			0.00- 30.00	48.23
203 sec-Butylbenzene					CAS #: 135-98-8		
10.496	10.496 (1.199)	134	68529	5.00000	5.319	0.00- 30.00	100.00
10.496	10.496 (1.199)	105	306237			0.00- 30.00	446.87
10.496	10.496 (1.199)	91	47849			0.00- 30.00	69.82
207 p-Cymene					CAS #: 99-87-6		
10.603	10.603 (1.211)	119	280168	5.00000	5.267	0.00- 30.00	100.00
10.611	10.611 (1.212)	134	74976			0.00- 30.00	26.76
10.603	10.603 (1.211)	91	60227			0.00- 30.00	21.50
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8		
10.732	10.732 (1.226)	120	108110	5.00000	5.287	0.00- 30.00	100.00
10.732	10.732 (1.226)	105	234828			0.00- 30.00	217.21
10.732	10.732 (1.226)	77	26696			0.00- 30.00	24.69
213 Butylbenzene					CAS #: 104-51-8		
10.954	10.954 (1.251)	134	72016	5.00000	5.253	0.00- 30.00	100.00
10.954	10.954 (1.251)	91	241718			0.00- 30.00	335.64
10.954	10.954 (1.251)	92	122557			0.00- 30.00	170.18
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8		
11.742	11.742 (1.341)	157	93427	5.00000	5.324	0.00- 30.00	100.00
11.735	11.735 (1.340)	75	66929			0.00- 30.00	71.64
11.742	11.742 (1.341)	155	72815			0.00- 30.00	77.94

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080406.d
Lab Smp Id: ICAL Level #4
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/04aug17.b/317q0523b.m
Misc Info: 5.0ppbv (5.0ppbv)

Calibration Date: 04-AUG-2017
Calibration Time: 07:54
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	193109	115865	270353	186445	-3.45
123 1,4-Difluorobenze	717401	430441	1004361	692974	-3.40
163 Chlorobenzene-d5	648934	389360	908508	622756	-4.03

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/04aug17.b/3080406.d

Date : 04-AUG-2017 11:31

Client ID:

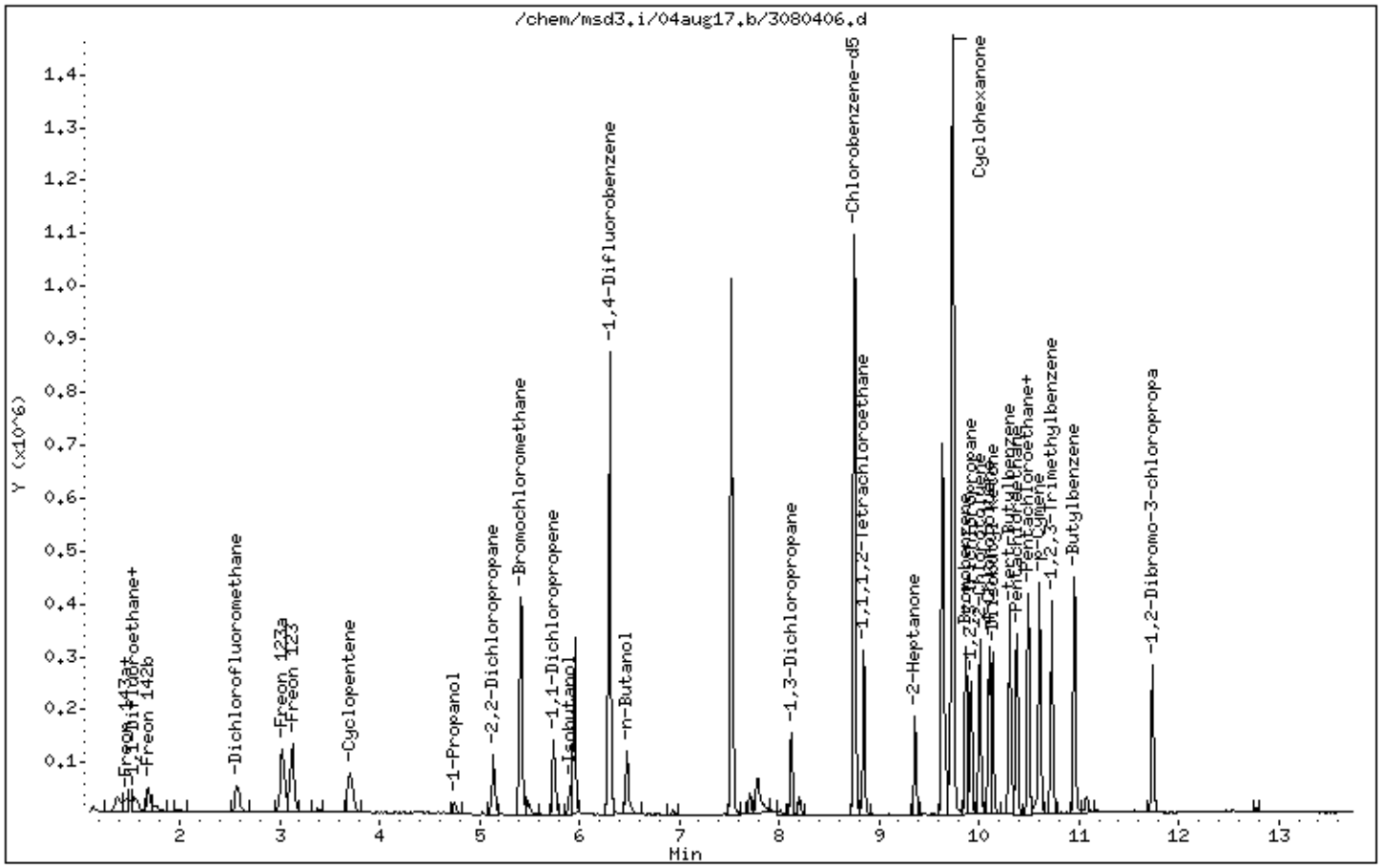
Instrument: msd3.i

Sample Info: 200ml 2850-217

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052307.d
Lab Smp Id: ICAL Level #4
Inj Date : 23-MAY-2017 14:39
Operator : jg Inst ID: msd3.i
Smp Info : 200ml 2850-103
Misc Info : 5.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:08 jscarbro Quant Type: ISTD
Cal Date : 23-MAY-2017 14:39 Cal File: 3052307.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12curve.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.424	5.424 (1.000)	130	125857	25.0000		80.00- 120.00		100.00
5.424	5.424 (1.000)	128	98126			46.73- 106.73		77.97
5.424	5.424 (1.000)	49	149488			91.08- 151.08		118.78
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.306	6.306 (1.000)	114	502726	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	75921			0.00- 44.78		15.10
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.762	8.762 (1.000)	117	452077	25.0000		80.00- 120.00		100.00
8.762	8.762 (1.000)	82	228767			20.58- 80.58		50.60
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	163440	25.0000	24.842	80.00- 120.00		100.00
5.956	5.956 (1.098)	67	85700			24.54- 84.54		52.44
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.530	7.530 (1.194)	98	506021	25.0000	24.855	80.00- 120.00		100.00
7.530	7.530 (1.194)	70	53916			0.00- 40.44		10.65

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.530	7.530 (1.194)	100	326973			35.27- 95.27	64.62
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.751	9.751 (1.113)	174	295181	25.0000	25.120	80.00- 120.00	100.00
9.744	9.744 (1.112)	95	333751			84.77- 144.77	113.07
9.751	9.751 (1.113)	176	276362			64.74- 124.74	93.62
9 Propylene					CAS #: 115-07-1		
1.506	1.506 (0.278)	41	28672	5.00000	5.142	80.00- 120.00	100.00
1.506	1.506 (0.278)	42	17175			34.96- 94.96	59.90
1.506	1.506 (0.278)	39	19707			43.10- 103.10	68.73
11 Freon 12					CAS #: 75-71-8		
1.534	1.534 (0.283)	85	75990	5.00000	5.030	80.00- 120.00	100.00
1.534	1.534 (0.283)	87	24115			2.61- 62.61	31.73
15 Freon 114					CAS #: 76-14-2		
1.646	1.646 (0.304)	135	61891	5.00000	5.042	80.00- 120.00	100.00
1.646	1.646 (0.304)	137	19683			1.52- 61.52	31.80
17 Chloromethane					CAS #: 74-87-3		
1.730	1.730 (0.319)	50	23834	5.00000	4.407	80.00- 120.00	100.00(a)
1.730	1.730 (0.319)	52	6776			5.06- 65.06	28.43
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.329)	58	6704	5.00000	5.231	80.00- 120.00	100.00
1.786	1.786 (0.329)	43	60198			780.12- 840.12	897.94
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.337)	62	29508	5.00000	5.176	80.00- 120.00	100.00
1.828	1.828 (0.337)	64	10214			2.35- 62.35	34.61
26 1,3-Butadiene					CAS #: 106-99-0		
1.856	1.856 (0.342)	54	24799	5.00000	4.923	80.00- 120.00	100.00
1.856	1.856 (0.342)	39	29557			70.49- 130.49	119.19
29 Bromomethane					CAS #: 74-83-9		
2.206	2.206 (0.407)	94	24466	5.00000	5.030	80.00- 120.00	100.00
2.206	2.206 (0.407)	96	22486			64.76- 124.76	91.91
30 Chloroethane					CAS #: 75-00-3		
2.318	2.318 (0.427)	64	15151	5.00000	5.024	80.00- 120.00	100.00
2.318	2.318 (0.427)	66	4840			0.04- 60.04	31.95
2.318	2.318 (0.427)	49	4195			0.57- 60.57	27.69

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	39835	5.00000	5.040	80.00- 120.00	100.00
2.332	2.332 (0.430)	57	26597			39.30- 99.30	66.77
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.471)	101	84339	5.00000	5.080	80.00- 120.00	100.00
2.556	2.556 (0.471)	103	54289			35.42- 95.42	64.37
42 Ethanol					CAS #: 64-17-5		
2.906	2.906 (0.536)	45	12447	5.00000	5.096	80.00- 120.00	100.00
2.906	2.906 (0.536)	46	4504			8.36- 68.36	36.19
49 Freon 113					CAS #: 76-13-1		
3.185	3.185 (0.587)	151	60773	5.00000	5.130	80.00- 120.00	100.00
3.185	3.185 (0.587)	153	38526			33.57- 93.57	63.39
3.185	3.185 (0.587)	101	69001			81.85- 141.85	113.54
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.213	3.213 (0.592)	96	31182	5.00000	5.144	80.00- 120.00	100.00
3.213	3.213 (0.592)	98	19633			33.92- 93.92	62.96
3.213	3.213 (0.592)	61	54123			146.09- 206.09	173.57
52 Acetone					CAS #: 67-64-1		
3.381	3.381 (0.623)	58	19732	5.00000	4.930	80.00- 120.00	100.00(a)
3.381	3.381 (0.623)	43	68911			310.81- 370.81	349.23
56 Carbon Disulfide					CAS #: 75-15-0		
3.451	3.451 (0.636)	76	95703	5.00000	4.668	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.654)	45	59343	5.00000	5.016	80.00- 120.00	100.00
3.549	3.549 (0.654)	43	11712			0.00- 49.20	19.74
3.549	3.549 (0.654)	59	1824			0.00- 33.72	3.07
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	13979	5.00000	5.287	80.00- 120.00	100.00
3.689	3.689 (0.680)	41	42718			282.10- 342.10	305.59
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.871 (0.714)	49	39567	5.00000	5.175	80.00- 120.00	100.00
3.871	3.871 (0.714)	84	26328			38.75- 98.75	66.54
3.871	3.871 (0.714)	51	12093			0.74- 60.74	30.56
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.997	3.997 (0.737)	59	74919	5.00000	5.092	80.00- 120.00	100.00
3.997	3.997 (0.737)	41	14975			0.00- 51.35	19.99

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.997	3.997 (0.737)	57	8290			0.00- 41.27	11.07
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.095 (0.755)	73	88104	5.00000	5.155	80.00- 120.00	100.00
4.095	4.095 (0.755)	57	24650			0.00- 56.12	27.98
4.095	4.095 (0.755)	41	22000			0.00- 55.40	24.97
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.109 (0.758)	98	19638	5.00000	5.203	80.00- 120.00	100.00
4.109	4.109 (0.758)	61	44995			202.86- 262.86	229.12
4.109	4.109 (0.758)	96	29421			122.28- 182.28	149.82
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.796)	57	53815	5.00000	5.171	80.00- 120.00	100.00
4.319	4.319 (0.796)	43	36120			33.71- 93.71	67.12
4.319	4.319 (0.796)	86	7650			0.00- 44.46	14.22
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.599	4.599 (0.848)	63	58160	5.00000	5.138	80.00- 120.00	100.00
4.599	4.599 (0.848)	65	17752			0.47- 60.47	30.52
83 Isopropyl ether					CAS #: 108-20-3		
4.599	4.599 (0.848)	45	114489	5.00000	5.123	80.00- 120.00	100.00
4.599	4.599 (0.848)	87	29410			0.00- 55.24	25.69
4.599	4.599 (0.848)	59	12910			0.00- 41.21	11.28
86 Vinyl Acetate					CAS #: 108-05-4		
4.655	4.655 (0.858)	86	7946	5.00000	5.117	80.00- 120.00	100.00
4.641	4.641 (0.856)	43	109704			1252.04-1312.04	1380.62
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.948	4.948 (0.912)	59	112092	5.00000	5.083	80.00- 120.00	100.00
4.948	4.948 (0.912)	87	42640			8.64- 68.64	38.04
4.948	4.948 (0.912)	41	20258			0.00- 48.69	18.07
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.186	5.186 (0.956)	98	23615	5.00000	4.997	80.00- 120.00	100.00
5.186	5.186 (0.956)	96	34994			120.71- 180.71	148.19
5.186	5.186 (0.956)	61	48957			179.50- 239.50	207.31
92 2-Butanone					CAS #: 78-93-3		
5.214	5.214 (0.961)	72	15462	5.00000	5.125	80.00- 120.00	100.00
5.214	5.214 (0.961)	43	71727			421.08- 481.08	463.89
5.214	5.214 (0.961)	57	5624			6.95- 66.95	36.37

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.424 (1.000)	42	38038	5.00000	5.103	80.00- 120.00	100.00
5.424	5.424 (1.000)	71	13029			4.59- 64.59	34.25
5.424	5.424 (1.000)	72	14515			7.27- 67.27	38.16
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	69257	5.00000	5.176	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	44352			35.09- 95.09	64.04
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.028)	84	42991	5.00000	5.099	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	55541			96.78- 156.78	129.19
5.578	5.578 (1.028)	41	33478			43.37- 103.37	77.87
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.606 (1.034)	97	75131	5.00000	5.111	80.00- 120.00	100.00
5.606	5.606 (1.034)	99	48542			34.29- 94.29	64.61
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.054)	119	79891	5.00000	5.136	80.00- 120.00	100.00
5.718	5.718 (1.054)	117	82197			71.44- 131.44	102.89
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.914 (1.090)	57	175409	5.00000	5.143	80.00- 120.00	100.00
5.914	5.914 (1.090)	56	52970			0.95- 60.95	30.20
5.914	5.914 (1.090)	41	48933			0.00- 57.81	27.90
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	92602	5.00000	4.954	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	21609			0.00- 53.39	23.34
119 tert-Amyl methyl ether					CAS #: 994-05-8		
5.998	5.998 (0.951)	87	24817	5.00000	5.311	80.00- 120.00	100.00
5.998	5.998 (0.951)	73	96539			355.30- 415.30	389.00
5.998	5.998 (0.951)	55	27995			79.12- 139.12	112.81
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.956)	62	49234	5.00000	5.099	80.00- 120.00	100.00
6.026	6.026 (0.956)	64	15968			1.16- 61.16	32.43
121 Heptane					CAS #: 142-82-5		
6.082	6.082 (0.964)	71	32054	5.00000	4.948	80.00- 120.00	100.00
6.082	6.082 (0.964)	43	67292			159.72- 219.72	209.93
6.082	6.082 (0.964)	57	36132			73.21- 133.21	112.72
125 Trichloroethene					CAS #: 79-01-6		
6.501	6.501 (1.031)	95	45263	5.00000	5.050	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.501	6.501 (1.031)	130	52249			84.28- 144.28	115.43
6.501	6.501 (1.031)	97	29987			35.52- 95.52	66.25
127 Methylcyclohexane					CAS #: 108-87-2		
6.585	6.585 (1.044)	83	31969	5.00000	4.666	80.00- 120.00	100.00
6.621	6.621 (1.050)	98	16225			22.71- 82.71	50.75
6.585	6.585 (1.044)	55	29648			64.76- 124.76	92.74
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.742	6.742 (1.069)	63	36043	5.00000	4.998	80.00- 120.00	100.00
6.742	6.742 (1.069)	62	25105			39.16- 99.16	69.65
6.742	6.742 (1.069)	41	24480			33.29- 93.29	67.92
136 1,4-Dioxane					CAS #: 123-91-1		
6.843	6.843 (1.085)	88	22740	5.00000	5.008	80.00- 120.00	100.00
6.835	6.835 (1.084)	58	17036			43.17- 103.17	74.92
6.843	6.843 (1.085)	57	6252			0.00- 55.09	27.49
138 Bromodichloromethane					CAS #: 75-27-4		
6.972	6.972 (1.106)	83	72451	5.00000	5.089	80.00- 120.00	100.00
6.972	6.972 (1.106)	85	46017			34.33- 94.33	63.51
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.351 (1.166)	75	54800	5.00000	4.987	80.00- 120.00	100.00
7.351	7.351 (1.166)	77	18074			2.53- 62.53	32.98
7.351	7.351 (1.166)	39	37651			33.48- 93.48	68.71
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.459 (1.183)	58	32621	5.00000	4.954	80.00- 120.00	100.00
7.459	7.459 (1.183)	43	88386			231.49- 291.49	270.95
7.459	7.459 (1.183)	85	14263			13.16- 73.16	43.72
147 Toluene					CAS #: 108-88-3		
7.580	7.580 (1.202)	91	120205	5.00000	5.000	80.00- 120.00	100.00
7.580	7.580 (1.202)	92	70350			27.96- 87.96	58.53
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.831 (0.894)	75	52023	5.00000	4.990	80.00- 120.00	100.00
7.831	7.831 (0.894)	77	18569			2.78- 62.78	35.69
7.831	7.831 (0.894)	39	33466			29.86- 89.86	64.33
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.982	7.982 (0.911)	97	41834	5.00000	5.018	80.00- 120.00	100.00
7.982	7.982 (0.911)	99	25716			31.98- 91.98	61.47
7.982	7.982 (0.911)	83	36149			53.23- 113.23	86.41

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.025	8.025 (0.916)	166	63997	5.00000	4.980	80.00- 120.00	100.00
8.017	8.017 (0.915)	129	50056			46.99- 106.99	78.22
8.025	8.025 (0.916)	131	48665			44.98- 104.98	76.04
158 2-Hexanone					CAS #: 591-78-6		
8.146	8.146 (0.930)	58	41783	5.00000	5.105	80.00- 120.00	100.00
8.146	8.146 (0.930)	43	83701			164.73- 224.73	200.32
8.146	8.146 (0.930)	100	8611			0.00- 50.65	20.61
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.297 (0.947)	129	89532	5.00000	5.103	80.00- 120.00	100.00
8.297	8.297 (0.947)	127	67331			47.57- 107.57	75.20
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.411	8.411 (0.960)	107	68559	5.00000	5.029	80.00- 120.00	100.00
8.411	8.411 (0.960)	109	65721			63.47- 123.47	95.86
165 Chlorobenzene					CAS #: 108-90-7		
8.784	8.784 (1.002)	112	105697	5.00000	5.098	80.00- 120.00	100.00
8.784	8.784 (1.002)	114	34169			1.87- 61.87	32.33
8.784	8.784 (1.002)	77	59149			21.88- 81.88	55.96
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.834 (1.008)	106	51989	5.00000	5.079	80.00- 120.00	100.00
8.834	8.834 (1.008)	91	161889			272.32- 332.32	311.39
169 m,p-Xylene					CAS #: 108-38-3		
8.934	8.934 (1.020)	106	65351	5.00000	5.009	80.00- 120.00	100.00
8.934	8.934 (1.020)	91	132395			165.91- 225.91	202.59
171 o-Xylene					CAS #: 95-47-6		
9.271	9.271 (1.058)	106	62489	5.00000	5.019	80.00- 120.00	100.00
9.271	9.271 (1.058)	91	130626			175.85- 235.85	209.04
172 Styrene					CAS #: 100-42-5		
9.292	9.292 (1.060)	104	100259	5.00000	5.106	80.00- 120.00	100.00
9.292	9.292 (1.060)	78	48470			17.56- 77.56	48.34
174 Bromoform					CAS #: 75-25-2		
9.493	9.493 (1.083)	173	82195	5.00000	5.057	80.00- 120.00	100.00
9.493	9.493 (1.083)	171	42194			21.66- 81.66	51.33
175 Cumene					CAS #: 98-82-8		
9.557	9.557 (1.091)	105	194612	5.00000	5.040	80.00- 120.00	100.00
9.557	9.557 (1.091)	120	53624			0.00- 57.98	27.55

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.557	9.557 (1.091)	51	19338			0.00- 39.96	9.94
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.880	9.880 (1.128)	83	90623	5.00000	4.998	80.00- 120.00	100.00
9.880	9.880 (1.128)	85	58847			34.78- 94.78	64.94
182 Propylbenzene					CAS #: 103-65-1		
9.901	9.901 (1.130)	91	221509	5.00000	5.031	80.00- 120.00	100.00
9.901	9.901 (1.130)	120	55198			0.00- 55.78	24.92
9.901	9.901 (1.130)	105	8777			0.00- 33.82	3.96
188 4-Ethyltoluene					CAS #: 622-96-8		
9.994	9.994 (1.141)	120	60704	5.00000	5.054	80.00- 120.00	100.00
9.994	9.994 (1.141)	105	188651			285.47- 345.47	310.77
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.045	10.045 (1.146)	120	84086	5.00000	5.073	80.00- 120.00	100.00
10.045	10.045 (1.146)	105	166031			169.49- 229.49	197.45
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.374	10.374 (1.184)	105	158878	5.00000	5.010	80.00- 120.00	100.00
10.374	10.374 (1.184)	120	76440			17.18- 77.18	48.11
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.661	10.661 (1.217)	146	116607	5.00000	5.046	80.00- 120.00	100.00
10.661	10.661 (1.217)	148	74238			34.08- 94.08	63.67
10.661	10.661 (1.217)	111	45243			9.00- 69.00	38.80
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.739	10.739 (1.226)	146	118372	5.00000	5.040	80.00- 120.00	100.00
10.739	10.739 (1.226)	148	75305			33.83- 93.83	63.62
10.739	10.739 (1.226)	111	44240			7.37- 67.37	37.37
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.854	10.854 (1.239)	91	140323	5.00000	5.157	80.00- 120.00	100.00
10.861	10.861 (1.240)	126	31821			0.00- 53.98	22.68
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.069	11.069 (1.263)	146	110241	5.00000	5.058	80.00- 120.00	100.00
11.069	11.069 (1.263)	148	70059			33.96- 93.96	63.55
11.069	11.069 (1.263)	111	44552			9.96- 69.96	40.41
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.466	12.466 (1.423)	180	92455	5.00000	5.042	80.00- 120.00	100.00
12.466	12.466 (1.423)	182	89190			64.97- 124.97	96.47

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.559	12.559	(1.433)	225	73811	5.00000	5.020	80.00- 120.00	100.00
12.552	12.552	(1.432)	223	47041			33.42- 93.42	63.73
228 Naphthalene						CAS #: 91-20-3		
12.738	12.738	(1.454)	128	42139	0.50000	0.5000	80.00- 120.00	100.00(a)
12.731	12.731	(1.453)	127	5491			0.00- 43.00	13.03

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052307.d
Lab Smp Id: ICAL Level #4
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 5.0ppbv (5.0ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	125857	-4.27
123 1,4-Difluorobenze	510592	306355	714829	502726	-1.54
163 Chlorobenzene-d5	463787	278272	649302	452077	-2.52

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.42	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/23may17.b/3052307.d

Date : 23-MAY-2017 14:39

Client ID:

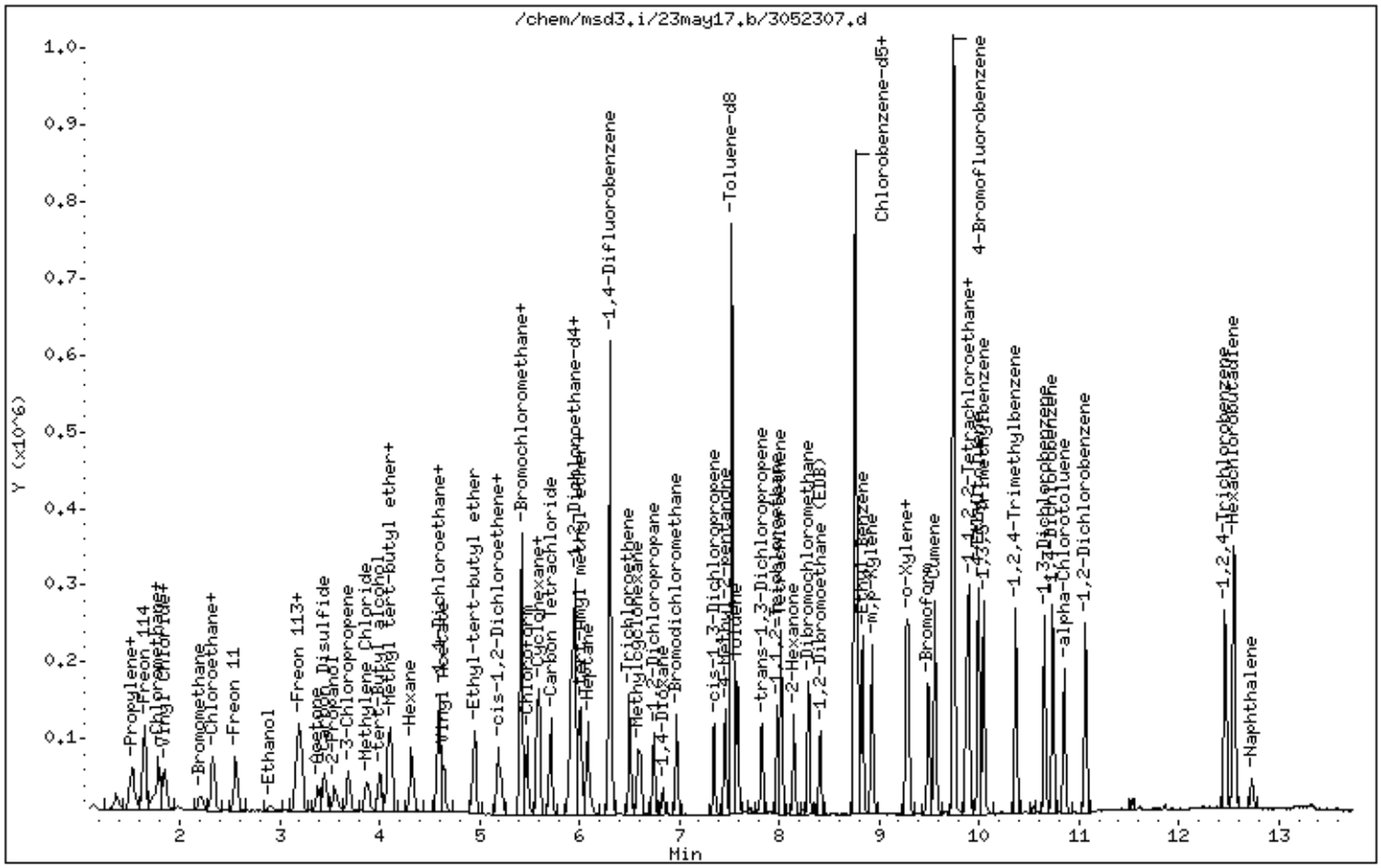
Instrument: msd3.i

Sample Info: 200ml 2850-103

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/04aug17.b/3080407.d
Lab Smp Id: ICAL Level #5
Inj Date : 04-AUG-2017 11:55
Operator : jg Inst ID: msd3.i
Smp Info : 20ml 2850-287
Misc Info : 20ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/04aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 10:53 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 11:55 Cal File: 3080407.d
Als bottle: 2 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT1crv.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.410	5.410 (1.000)	130	199856	25.0000		80.00- 120.00	100.00
5.410	5.410 (1.000)	128	156987			46.73- 106.73	78.55
5.410	5.410 (1.000)	49	219311			91.08- 151.08	109.73
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.306	6.306 (1.000)	114	711045	25.0000		80.00- 120.00	100.00
6.306	6.306 (1.000)	88	100298			0.00- 44.78	14.11
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	638996	25.0000		80.00- 120.00	100.00
8.755	8.755 (1.000)	82	306638			20.58- 80.58	47.99
6 Freon 143a					CAS #: 420-46-2		
1.395	1.395 (0.258)	65	28924	20.0000	17.164	0.00- 30.00	100.00
1.395	1.395 (0.258)	69	80168			0.00- 30.00	277.17
1.395	1.395 (0.258)	64	8787			0.00- 30.00	30.38
7 Freon 134a					CAS #: 811-97-2		
1.451	1.451 (0.268)	83	83483	20.0000	16.301	0.00- 30.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a (continued)							
1.451	1.451 (0.268)	69	81734			0.00- 30.00	97.90
1.451	1.451 (0.268)	63	9561			0.00- 30.00	11.45
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.492	1.492 (0.276)	65	46896	20.0000	15.794	0.00- 30.00	100.00
1.492	1.492 (0.276)	51	103304			0.00- 30.00	220.28
1.492	1.492 (0.276)	47	21090			0.00- 30.00	44.97
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.548	1.548 (0.286)	67	22865	20.0000	16.575	0.00- 30.00	100.00
1.548	1.548 (0.286)	51	159328			0.00- 30.00	696.82
1.548	1.548 (0.286)	85	2619			0.00- 30.00	11.45
16 Freon 142b					CAS #: 75-68-3		
1.674	1.674 (0.309)	65	184914	20.0000	15.229	0.00- 30.00	100.00
1.674	1.674 (0.309)	45	46141			0.00- 30.00	24.95
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.556	2.556 (0.472)	67	264907	20.0000	15.986	0.00- 30.00	100.00
2.556	2.556 (0.472)	69	83580			0.00- 30.00	31.55
47 Freon 123a					CAS #: 354-23-4		
3.018	3.018 (0.558)	117	234926	20.0000	15.783	0.00- 30.00	100.00
3.018	3.018 (0.558)	67	277876			0.00- 30.00	118.28
48 Freon 123					CAS #: 306-83-2		
3.116	3.116 (0.576)	83	348185	20.0000	15.955	0.00- 30.00	100.00
3.130	3.130 (0.578)	133	80039			0.00- 30.00	22.99
3.116	3.116 (0.576)	85	230391			0.00- 30.00	66.17
59 Cyclopentene					CAS #: 142-29-0		
3.689	3.689 (0.682)	67	242141	20.0000	17.652	0.00- 30.00	100.00
3.689	3.689 (0.682)	68	87651			0.00- 30.00	36.20
3.689	3.689 (0.682)	53	51712			0.00- 30.00	21.36
84 1-Propanol					CAS #: 71-23-8		
4.739	4.739 (0.876)	59	34179	20.0000	19.005	0.00- 30.00	100.00
4.739	4.739 (0.876)	42	26178			0.00- 30.00	76.59
4.739	4.739 (0.876)	41	18129			0.00- 30.00	53.04
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.144	5.144 (0.951)	77	289885	20.0000	18.522	0.00- 30.00	100.00
5.144	5.144 (0.951)	79	94140			0.00- 30.00	32.47
5.144	5.144 (0.951)	97	68876			0.00- 30.00	23.76

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
107 1,1-Dichloropropene						CAS #: 563-58-6		
5.746	5.746	(0.911)	110	83973	20.0000	16.876	0.00- 30.00	100.00
5.746	5.746	(0.911)	75	194645			0.00- 30.00	231.79
115 Isobutanol						CAS #: 78-83-1		
5.900	5.900	(1.091)	39	38607	20.0000	15.658	0.00- 30.00	100.00
5.900	5.900	(1.091)	43	134724			0.00- 30.00	348.96
5.900	5.900	(1.091)	41	100395			0.00- 30.00	260.04
124 n-Butanol						CAS #: 71-36-3		
6.474	6.474	(1.027)	56	268520	20.0000	20.530	0.00- 30.00	100.00
6.474	6.474	(1.027)	41	185467			0.00- 30.00	69.07
6.474	6.474	(1.027)	43	140715			0.00- 30.00	52.40
157 1,3-Dichloropropane						CAS #: 142-28-9		
8.125	8.125	(1.288)	76	270850	20.0000	17.206	0.00- 30.00	100.00
8.125	8.125	(1.288)	41	180934			0.00- 30.00	66.80
8.125	8.125	(1.288)	78	87076			0.00- 30.00	32.15
168 1,1,1,2-Tetrachloroethane						CAS #: 630-20-6		
8.848	8.848	(1.011)	131	347728	20.0000	19.775	0.00- 30.00	100.00
8.848	8.848	(1.011)	117	230077			0.00- 30.00	66.17
8.848	8.848	(1.011)	95	116459			0.00- 30.00	33.49
173 2-Heptanone						CAS #: 110-43-0		
9.364	9.364	(1.731)	58	336147	20.0000	22.706	0.00- 30.00	100.00
9.364	9.364	(1.731)	43	531655			0.00- 30.00	158.16
176 Cyclohexanone						CAS #: 108-94-1		
9.722	9.722	(1.110)	55	199076	20.0000	16.506	0.00- 30.00	100.00
9.722	9.722	(1.110)	98	92933			0.00- 30.00	46.68
9.722	9.722	(1.110)	42	138461			0.00- 30.00	69.55
180 Bromobenzene						CAS #: 108-86-1		
9.873	9.873	(1.128)	156	389060	20.0000	19.447	0.00- 30.00	100.00
9.873	9.873	(1.128)	158	376496			0.00- 30.00	96.77
9.873	9.873	(1.128)	77	478139			0.00- 30.00	122.90
185 1,2,3-Trichloropropane						CAS #: 96-18-4		
9.923	9.923	(1.133)	110	168018	20.0000	19.383	0.00- 30.00	100.00
9.923	9.923	(1.133)	75	373542			0.00- 30.00	222.32
9.923	9.923	(1.133)	61	105530			0.00- 30.00	62.81
189 2-Chlorotoluene						CAS #: 95-49-8		
10.009	10.009	(1.143)	126	298892	20.0000	20.227	0.00- 30.00	100.00
10.009	10.009	(1.143)	91	756833			0.00- 30.00	253.21

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
189 2-Chlorotoluene (continued)							
10.009	10.009 (1.143)	65	68361			0.00- 30.00	22.87
191 4-Chlorotoluene					CAS #: 106-43-4		
10.109	10.109 (1.155)	126	302652	20.0000	20.561	0.00- 30.00	100.00
10.109	10.109 (1.155)	91	765821			0.00- 30.00	253.04
10.102	10.102 (1.154)	63	95082			0.00- 30.00	31.42
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.138	10.138 (1.158)	57	635414	20.0000	22.270	0.00- 30.00	100.00
10.138	10.138 (1.158)	85	537454			0.00- 30.00	84.58
195 tert-Butylbenzene					CAS #: 98-06-6		
10.310	10.310 (1.178)	119	897767	20.0000	20.771	0.00- 30.00	100.00
10.310	10.310 (1.178)	134	224497			0.00- 30.00	25.01
10.310	10.310 (1.178)	91	534582			0.00- 30.00	59.55
197 Pentachloroethane					CAS #: 76-01-7		
10.381	10.381 (1.186)	167	305499	20.0000	21.332	0.00- 30.00	100.00
10.489	10.489 (1.198)	117	26746			0.00- 30.00	8.75
10.381	10.381 (1.186)	169	147509			0.00- 30.00	48.28
203 sec-Butylbenzene					CAS #: 135-98-8		
10.496	10.496 (1.199)	134	296923	20.0000	21.576	0.00- 30.00	100.00
10.496	10.496 (1.199)	105	1349016			0.00- 30.00	454.33
10.496	10.496 (1.199)	91	200786			0.00- 30.00	67.62
207 p-Cymene					CAS #: 99-87-6		
10.603	10.603 (1.211)	119	1256375	20.0000	21.917	0.00- 30.00	100.00
10.603	10.603 (1.211)	134	343085			0.00- 30.00	27.31
10.603	10.603 (1.211)	91	261030			0.00- 30.00	20.78
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8		
10.732	10.732 (1.226)	120	465812	20.0000	21.416	0.00- 30.00	100.00
10.732	10.732 (1.226)	105	1039893			0.00- 30.00	223.24
10.732	10.732 (1.226)	77	113355			0.00- 30.00	24.33
213 Butylbenzene					CAS #: 104-51-8		
10.954	10.954 (1.251)	134	324165	20.0000	21.933	0.00- 30.00	100.00
10.954	10.954 (1.251)	91	1076530			0.00- 30.00	332.09
10.954	10.954 (1.251)	92	552916			0.00- 30.00	170.57
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8		
11.742	11.742 (1.341)	157	392647	20.0000	21.170	0.00- 30.00	100.00
11.735	11.735 (1.340)	75	277355			0.00- 30.00	70.64
11.742	11.742 (1.341)	155	305890			0.00- 30.00	77.90

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080407.d
Lab Smp Id: ICAL Level #5
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/04aug17.b/317q0523b.m
Misc Info: 20ppbv (200ppbv)

Calibration Date: 04-AUG-2017
Calibration Time: 07:54
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	193109	115865	270353	199856	3.49
123 1,4-Difluorobenze	717401	430441	1004361	711045	-0.89
163 Chlorobenzene-d5	648934	389360	908508	638996	-1.53

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/04aug17.b/3080407.d

Date : 04-AUG-2017 11:55

Client ID:

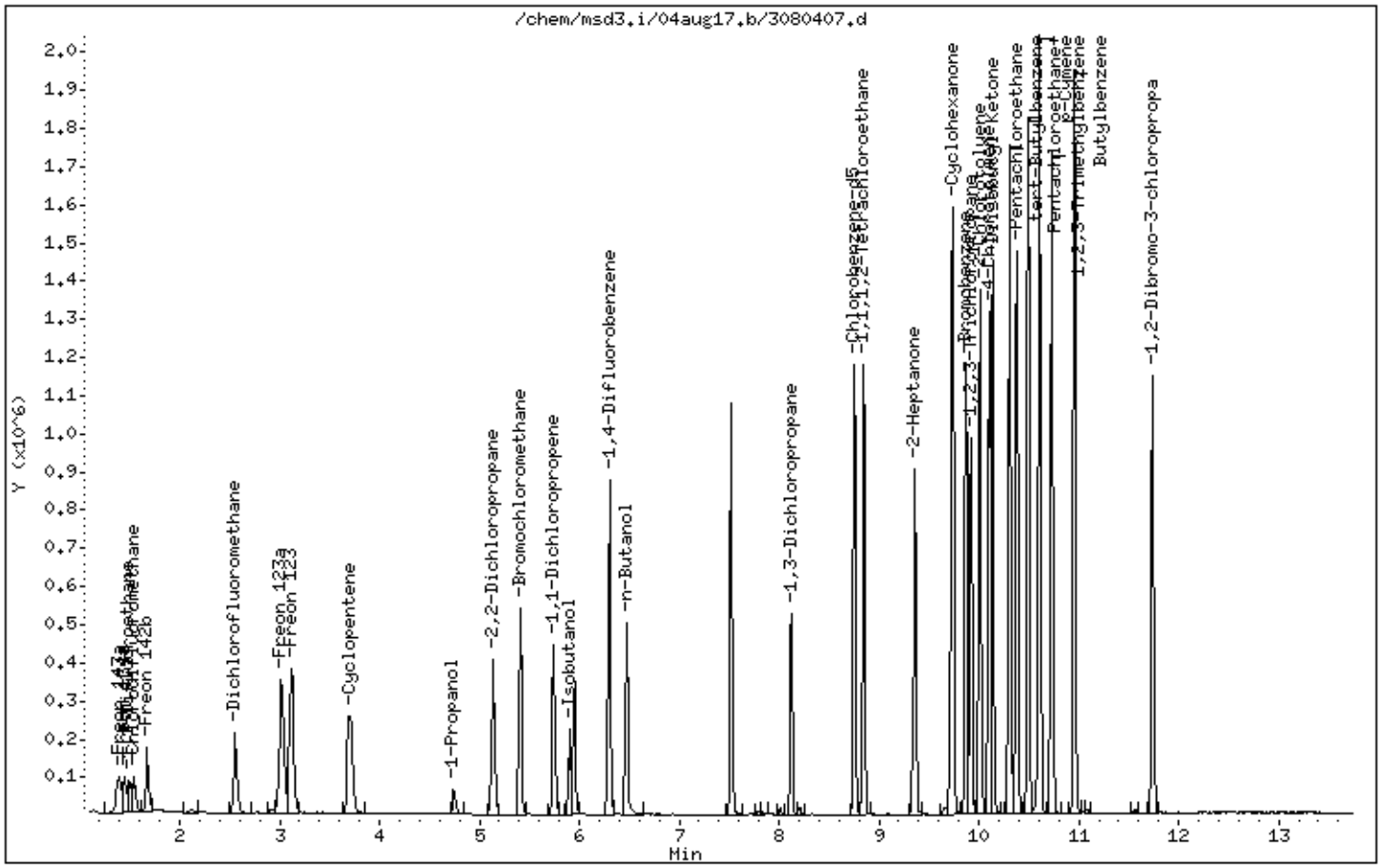
Instrument: msd3.i

Sample Info: 20ml 2850-287

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052308.d
Lab Smp Id: ICAL Level #5
Inj Date : 23-MAY-2017 15:03
Operator : jg Inst ID: msd3.i
Smp Info : 20ml 2850-97
Misc Info : 20ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:08 jscarbro Quant Type: ISTD
Cal Date : 23-MAY-2017 15:03 Cal File: 3052308.d
Als bottle: 2 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 98 Bromochloromethane					CAS #: 74-97-5			
5.424	5.424 (1.000)	130	130213	25.0000		80.00- 120.00		100.00
5.424	5.424 (1.000)	128	101784			46.73- 106.73		78.17
5.410	5.410 (1.000)	49	157240			91.08- 151.08		120.76
* 123 1,4-Difluorobenzene					CAS #: 540-36-3			
6.306	6.306 (1.000)	114	504014	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	74873			0.00- 44.78		14.86
* 163 Chlorobenzene-d5					CAS #: 3114-55-4			
8.763	8.763 (1.000)	117	446424	25.0000		80.00- 120.00		100.00
8.763	8.763 (1.000)	82	226732			20.58- 80.58		50.79
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
5.956	5.956 (1.098)	65	165688	25.0000	24.557	80.00- 120.00		100.00
5.956	5.956 (1.098)	67	88933			24.54- 84.54		53.67
$ 146 Toluene-d8					CAS #: 2037-26-5			
7.523	7.523 (1.193)	98	504529	25.0000	24.811	80.00- 120.00		100.00
7.523	7.523 (1.193)	70	53016			0.00- 40.44		10.51

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	327214			35.27- 95.27	64.86
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.744	9.744 (1.112)	174	292778	25.0000	25.153	80.00- 120.00	100.00
9.744	9.744 (1.112)	95	331984			84.77- 144.77	113.39
9.744	9.744 (1.112)	176	275648			64.74- 124.74	94.15
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.275)	41	78505	20.0000	15.231	80.00- 120.00	100.00
1.493	1.493 (0.275)	42	49929			34.96- 94.96	63.60
1.493	1.493 (0.275)	39	55631			43.10- 103.10	70.86
11 Freon 12					CAS #: 75-71-8		
1.521	1.521 (0.280)	85	235458	20.0000	16.416	80.00- 120.00	100.00
1.521	1.521 (0.280)	87	76680			2.61- 62.61	32.57
15 Freon 114					CAS #: 76-14-2		
1.633	1.633 (0.301)	135	196469	20.0000	16.733	80.00- 120.00	100.00
1.633	1.633 (0.301)	137	63390			1.52- 61.52	32.26
17 Chloromethane					CAS #: 74-87-3		
1.717	1.717 (0.316)	50	83463	20.0000	16.298	80.00- 120.00	100.00
1.717	1.717 (0.316)	52	30280			5.06- 65.06	36.28
23 Butane					CAS #: 106-97-8		
1.787	1.787 (0.329)	58	21583	20.0000	17.353	80.00- 120.00	100.00
1.787	1.787 (0.329)	43	170162			780.12- 840.12	788.41
25 Vinyl Chloride					CAS #: 75-01-4		
1.814	1.814 (0.334)	62	92198	20.0000	16.860	80.00- 120.00	100.00
1.814	1.814 (0.334)	64	30377			2.35- 62.35	32.95
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.340)	54	80625	20.0000	16.734	80.00- 120.00	100.00
1.842	1.842 (0.340)	39	83820			70.49- 130.49	103.96
29 Bromomethane					CAS #: 74-83-9		
2.192	2.192 (0.404)	94	84204	20.0000	17.697	80.00- 120.00	100.00
2.192	2.192 (0.404)	96	78039			64.76- 124.76	92.68
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.425)	64	48273	20.0000	16.734	80.00- 120.00	100.00
2.304	2.304 (0.425)	66	14409			0.04- 60.04	29.85
2.304	2.304 (0.425)	49	14827			0.57- 60.57	30.71

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	126446	20.0000	16.727	80.00- 120.00	100.00
2.332	2.332 (0.430)	57	86887			39.30- 99.30	68.71
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.471)	101	270355	20.0000	16.942	80.00- 120.00	100.00
2.556	2.556 (0.471)	103	172073			35.42- 95.42	63.65
42 Ethanol					CAS #: 64-17-5		
2.892	2.892 (0.533)	45	39756	20.0000	16.938	80.00- 120.00	100.00
2.892	2.892 (0.533)	46	15151			8.36- 68.36	38.11
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.587)	151	206774	20.0000	17.798	80.00- 120.00	100.00
3.186	3.186 (0.587)	153	131452			33.57- 93.57	63.57
3.186	3.186 (0.587)	101	232354			81.85- 141.85	112.37
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.592)	96	98702	20.0000	16.941	80.00- 120.00	100.00
3.214	3.214 (0.592)	98	64368			33.92- 93.92	65.21
3.214	3.214 (0.592)	61	171673			146.09- 206.09	173.93
52 Acetone					CAS #: 67-64-1		
3.368	3.368 (0.621)	58	49601	20.0000	13.827	80.00- 120.00	100.00
3.368	3.368 (0.621)	43	173018			310.81- 370.81	348.82
56 Carbon Disulfide					CAS #: 75-15-0		
3.438	3.438 (0.634)	76	270130	20.0000	14.490	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.550	3.550 (0.654)	45	185514	20.0000	16.486	80.00- 120.00	100.00
3.550	3.550 (0.654)	43	35138			0.00- 49.20	18.94
3.550	3.550 (0.654)	59	6797			0.00- 33.72	3.66
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	44007	20.0000	17.209	80.00- 120.00	100.00
3.689	3.689 (0.680)	41	133778			282.10- 342.10	303.99
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.871 (0.714)	49	123329	20.0000	16.828	80.00- 120.00	100.00
3.871	3.871 (0.714)	84	84201			38.75- 98.75	68.27
3.871	3.871 (0.714)	51	37524			0.74- 60.74	30.43
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.997	3.997 (0.737)	59	243831	20.0000	17.156	80.00- 120.00	100.00
3.997	3.997 (0.737)	41	51463			0.00- 51.35	21.11

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
71 tert-Butyl alcohol (continued)							
3.997	3.997 (0.737)	57	26710			0.00- 41.27	10.95
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.095 (0.755)	73	298971	20.0000	17.826	80.00- 120.00	100.00
4.095	4.095 (0.755)	57	78747			0.00- 56.12	26.34
4.081	4.081 (0.752)	41	76588			0.00- 55.40	25.62
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.109 (0.758)	98	59980	20.0000	16.647	80.00- 120.00	100.00
4.109	4.109 (0.758)	61	141119			202.86- 262.86	235.28
4.109	4.109 (0.758)	96	92962			122.28- 182.28	154.99
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.796)	57	163233	20.0000	16.490	80.00- 120.00	100.00
4.319	4.319 (0.796)	43	105180			33.71- 93.71	64.44
4.319	4.319 (0.796)	86	23809			0.00- 44.46	14.59
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.599	4.599 (0.848)	63	180162	20.0000	16.665	80.00- 120.00	100.00
4.599	4.599 (0.848)	65	55206			0.47- 60.47	30.64
83 Isopropyl ether					CAS #: 108-20-3		
4.585	4.585 (0.845)	45	385966	20.0000	17.667	80.00- 120.00	100.00
4.599	4.599 (0.848)	87	95779			0.00- 55.24	24.82
4.599	4.599 (0.848)	59	42083			0.00- 41.21	10.90
86 Vinyl Acetate					CAS #: 108-05-4		
4.641	4.641 (0.856)	86	24972	20.0000	16.791	80.00- 120.00	100.00
4.641	4.641 (0.856)	43	325065			1252.04-1312.04	1301.72
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.912)	59	375053	20.0000	17.476	80.00- 120.00	100.00
4.949	4.949 (0.912)	87	145515			8.64- 68.64	38.80
4.949	4.949 (0.912)	41	70166			0.00- 48.69	18.71
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.187	5.187 (0.956)	98	72185	20.0000	16.175	80.00- 120.00	100.00
5.187	5.187 (0.956)	96	111135			120.71- 180.71	153.96
5.187	5.187 (0.956)	61	152954			179.50- 239.50	211.89
92 2-Butanone					CAS #: 78-93-3		
5.215	5.215 (0.961)	72	46327	20.0000	16.238	80.00- 120.00	100.00
5.215	5.215 (0.961)	43	205800			421.08- 481.08	444.23
5.215	5.215 (0.961)	57	16476			6.95- 66.95	35.56

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran							CAS #: 109-99-9	
5.410	5.410	(0.997)	42	118857	20.0000	16.688	80.00- 120.00	100.00
5.410	5.410	(0.997)	71	40897			4.59- 64.59	34.41
5.410	5.410	(0.997)	72	42652			7.27- 67.27	35.89
100 Chloroform							CAS #: 67-66-3	
5.480	5.480	(1.010)	83	206694	20.0000	16.308	80.00- 120.00	100.00
5.480	5.480	(1.010)	85	134278			35.09- 95.09	64.96
102 Cyclohexane							CAS #: 110-82-7	
5.578	5.578	(1.028)	84	143943	20.0000	17.522	80.00- 120.00	100.00
5.578	5.578	(1.028)	56	182859			96.78- 156.78	127.04
5.578	5.578	(1.028)	41	104348			43.37- 103.37	72.49
103 1,1,1-Trichloroethane							CAS #: 71-55-6	
5.606	5.606	(1.034)	97	248043	20.0000	17.379	80.00- 120.00	100.00
5.606	5.606	(1.034)	99	162071			34.29- 94.29	65.34
106 Carbon Tetrachloride							CAS #: 56-23-5	
5.718	5.718	(1.054)	119	267655	20.0000	17.619	80.00- 120.00	100.00
5.718	5.718	(1.054)	117	272429			71.44- 131.44	101.78
113 2,2,4-Trimethylpentane							CAS #: 540-84-1	
5.914	5.914	(1.090)	57	569028	20.0000	17.240	80.00- 120.00	100.00
5.914	5.914	(1.090)	56	174914			0.95- 60.95	30.74
5.914	5.914	(1.090)	41	159016			0.00- 57.81	27.95
116 Benzene							CAS #: 71-43-2	
5.928	5.928	(0.940)	78	282565	20.0000	16.425	80.00- 120.00	100.00
5.928	5.928	(0.940)	77	66453			0.00- 53.39	23.52
119 tert-Amyl methyl ether							CAS #: 994-05-8	
5.998	5.998	(0.951)	87	83193	20.0000	18.448	80.00- 120.00	100.00
5.998	5.998	(0.951)	73	319622			355.30- 415.30	384.19
5.998	5.998	(0.951)	55	92050			79.12- 139.12	110.65
120 1,2-Dichloroethane							CAS #: 107-06-2	
6.026	6.026	(0.956)	62	149717	20.0000	16.730	80.00- 120.00	100.00
6.026	6.026	(0.956)	64	47966			1.16- 61.16	32.04
121 Heptane							CAS #: 142-82-5	
6.082	6.082	(0.964)	71	108200	20.0000	17.641	80.00- 120.00	100.00
6.082	6.082	(0.964)	43	206950			159.72- 219.72	191.27
6.082	6.082	(0.964)	57	114340			73.21- 133.21	105.67
125 Trichloroethene							CAS #: 79-01-6	
6.502	6.502	(1.031)	95	139300	20.0000	16.759	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.502	6.502 (1.031)	130	159649			84.28- 144.28	114.61
6.502	6.502 (1.031)	97	90842			35.52- 95.52	65.21
127 Methylcyclohexane					CAS #: 108-87-2		
6.586	6.586 (1.044)	83	95330	20.0000	15.455	80.00- 120.00	100.00
6.586	6.586 (1.044)	98	51112			22.71- 82.71	53.62
6.586	6.586 (1.044)	55	94941			64.76- 124.76	99.59
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.743	6.743 (1.069)	63	114215	20.0000	16.989	80.00- 120.00	100.00
6.743	6.743 (1.069)	62	79536			39.16- 99.16	69.64
6.743	6.743 (1.069)	41	72980			33.29- 93.29	63.90
136 1,4-Dioxane					CAS #: 123-91-1		
6.836	6.836 (1.084)	88	73067	20.0000	17.182	80.00- 120.00	100.00
6.836	6.836 (1.084)	58	53998			43.17- 103.17	73.90
6.836	6.836 (1.084)	57	18629			0.00- 55.09	25.50
138 Bromodichloromethane					CAS #: 75-27-4		
6.972	6.972 (1.106)	83	226833	20.0000	17.061	80.00- 120.00	100.00
6.972	6.972 (1.106)	85	145871			34.33- 94.33	64.31
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.351 (1.166)	75	173298	20.0000	16.935	80.00- 120.00	100.00
7.351	7.351 (1.166)	77	55841			2.53- 62.53	32.22
7.351	7.351 (1.166)	39	112458			33.48- 93.48	64.89
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.459 (1.183)	58	106561	20.0000	17.252	80.00- 120.00	100.00
7.459	7.459 (1.183)	43	282209			231.49- 291.49	264.83
7.459	7.459 (1.183)	85	46627			13.16- 73.16	43.76
147 Toluene					CAS #: 108-88-3		
7.581	7.581 (1.202)	91	393672	20.0000	17.398	80.00- 120.00	100.00
7.581	7.581 (1.202)	92	227728			27.96- 87.96	57.85
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.831 (0.894)	75	168257	20.0000	17.404	80.00- 120.00	100.00
7.831	7.831 (0.894)	77	56132			2.78- 62.78	33.36
7.831	7.831 (0.894)	39	104765			29.86- 89.86	62.26
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.982	7.982 (0.911)	97	135705	20.0000	17.510	80.00- 120.00	100.00
7.982	7.982 (0.911)	99	84016			31.98- 91.98	61.91
7.982	7.982 (0.911)	83	114503			53.23- 113.23	84.38

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene						CAS #: 127-18-4	
8.018	8.018 (0.915)	166	213244	20.0000	17.750	80.00- 120.00	100.00
8.018	8.018 (0.915)	129	162506			46.99- 106.99	76.21
8.018	8.018 (0.915)	131	157570			44.98- 104.98	73.89
158 2-Hexanone						CAS #: 591-78-6	
8.147	8.147 (0.930)	58	137524	20.0000	17.906	80.00- 120.00	100.00
8.147	8.147 (0.930)	43	268174			164.73- 224.73	195.00
8.147	8.147 (0.930)	100	28196			0.00- 50.65	20.50
160 Dibromochloromethane						CAS #: 124-48-1	
8.297	8.297 (0.947)	129	288229	20.0000	17.624	80.00- 120.00	100.00
8.297	8.297 (0.947)	127	224871			47.57- 107.57	78.02
161 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
8.412	8.412 (0.960)	107	222387	20.0000	17.538	80.00- 120.00	100.00
8.412	8.412 (0.960)	109	210880			63.47- 123.47	94.83
165 Chlorobenzene						CAS #: 108-90-7	
8.784	8.784 (1.002)	112	348289	20.0000	17.904	80.00- 120.00	100.00
8.784	8.784 (1.002)	114	111638			1.87- 61.87	32.05
8.784	8.784 (1.002)	77	184891			21.88- 81.88	53.09
167 Ethyl Benzene						CAS #: 100-41-4	
8.834	8.834 (1.008)	106	183110	20.0000	18.704	80.00- 120.00	100.00
8.834	8.834 (1.008)	91	551026			272.32- 332.32	300.93
169 m,p-Xylene						CAS #: 108-38-3	
8.935	8.935 (1.020)	106	226162	20.0000	18.301	80.00- 120.00	100.00
8.935	8.935 (1.020)	91	440952			165.91- 225.91	194.97
171 o-Xylene						CAS #: 95-47-6	
9.271	9.271 (1.058)	106	217122	20.0000	18.376	80.00- 120.00	100.00
9.271	9.271 (1.058)	91	448334			175.85- 235.85	206.49
172 Styrene						CAS #: 100-42-5	
9.293	9.293 (1.060)	104	347636	20.0000	18.569	80.00- 120.00	100.00
9.293	9.293 (1.060)	78	165851			17.56- 77.56	47.71
174 Bromoform						CAS #: 75-25-2	
9.493	9.493 (1.083)	173	288796	20.0000	18.615	80.00- 120.00	100.00
9.493	9.493 (1.083)	171	148947			21.66- 81.66	51.58
175 Cumene						CAS #: 98-82-8	
9.558	9.558 (1.091)	105	692820	20.0000	18.742	80.00- 120.00	100.00
9.558	9.558 (1.091)	120	193371			0.00- 57.98	27.91

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.558	9.558 (1.091)	51	71557			0.00- 39.96	10.33
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.873	9.873 (1.127)	83	321033	20.0000	18.570	80.00- 120.00	100.00
9.873	9.873 (1.127)	85	206472			34.78- 94.78	64.31
182 Propylbenzene					CAS #: 103-65-1		
9.902	9.902 (1.130)	91	774567	20.0000	18.488	80.00- 120.00	100.00
9.902	9.902 (1.130)	120	198076			0.00- 55.78	25.57
9.902	9.902 (1.130)	105	29075			0.00- 33.82	3.75
188 4-Ethyltoluene					CAS #: 622-96-8		
9.995	9.995 (1.141)	120	217303	20.0000	18.849	80.00- 120.00	100.00
9.995	9.995 (1.141)	105	687242			285.47- 345.47	316.26
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.045	10.045 (1.146)	120	296564	20.0000	18.705	80.00- 120.00	100.00
10.045	10.045 (1.146)	105	585023			169.49- 229.49	197.27
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.367	10.367 (1.183)	105	570404	20.0000	18.773	80.00- 120.00	100.00
10.367	10.367 (1.183)	120	268766			17.18- 77.18	47.12
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.661	10.661 (1.217)	146	410268	20.0000	18.605	80.00- 120.00	100.00
10.661	10.661 (1.217)	148	263132			34.08- 94.08	64.14
10.661	10.661 (1.217)	111	159233			9.00- 69.00	38.81
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.740	10.740 (1.226)	146	416666	20.0000	18.597	80.00- 120.00	100.00
10.740	10.740 (1.226)	148	264238			33.83- 93.83	63.42
10.740	10.740 (1.226)	111	155285			7.37- 67.37	37.27
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.854	10.854 (1.239)	91	519240	20.0000	19.544	80.00- 120.00	100.00
10.854	10.854 (1.239)	126	122336			0.00- 53.98	23.56
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.069	11.069 (1.263)	146	394578	20.0000	18.858	80.00- 120.00	100.00
11.069	11.069 (1.263)	148	250902			33.96- 93.96	63.59
11.069	11.069 (1.263)	111	158076			9.96- 69.96	40.06
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.466	12.466 (1.423)	180	315190	20.0000	18.193	80.00- 120.00	100.00
12.466	12.466 (1.423)	182	300682			64.97- 124.97	95.40

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.552	12.552 (1.432)	225	241363	20.0000	17.614	80.00- 120.00	100.00
12.552	12.552 (1.432)	223	151934			33.42- 93.42	62.95
228 Naphthalene					CAS #: 91-20-3		
12.731	12.731 (1.453)	128	74136	2.00000	1.232	80.00- 120.00	100.00
12.731	12.731 (1.453)	127	9844			0.00- 43.00	13.28

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052308.d
Lab Smp Id: ICAL Level #5
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 20ppbv (200ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	130213	-0.95
123 1,4-Difluorobenze	510592	306355	714829	504014	-1.29
163 Chlorobenzene-d5	463787	278272	649302	446424	-3.74

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.42	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/23may17.b/3052308.d

Date : 23-MAY-2017 15:03

Client ID:

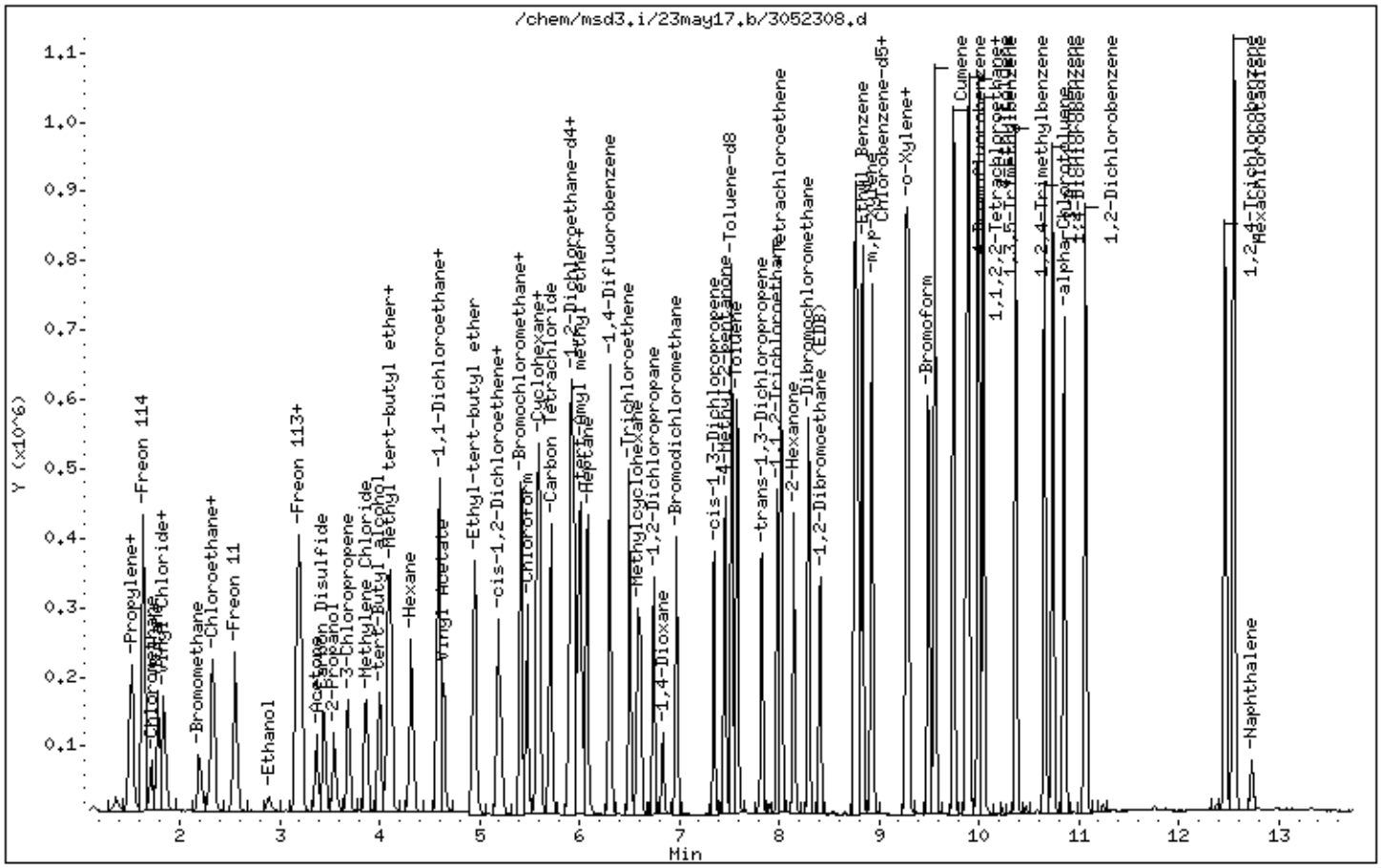
Instrument: msd3.i

Sample Info: 20ml 2850-97

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/04aug17.b/3080408.d
Lab Smp Id: ICAL Level #6
Inj Date : 04-AUG-2017 12:20
Operator : jg Inst ID: msd3.i
Smp Info : 50ml 2850-287
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/04aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 10:53 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 2 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT1crv.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 98 Bromochloromethane					CAS #: 74-97-5		
5.410	5.410 (1.000)	130	219311	25.0000		80.00- 120.00	100.00
5.410	5.410 (1.000)	128	169450			46.73- 106.73	77.26
5.410	5.410 (1.000)	49	231702			91.08- 151.08	105.65
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.306	6.306 (1.000)	114	747895	25.0000		80.00- 120.00	100.00
6.306	6.306 (1.000)	88	105183			0.00- 44.78	14.06
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	728499	25.0000		80.00- 120.00	100.00
8.755	8.755 (1.000)	82	342935			20.58- 80.58	47.07
6 Freon 143a					CAS #: 420-46-2		
1.395	1.395 (0.258)	65	74968	50.0000	42.554	0.00- 30.00	100.00
1.409	1.409 (0.260)	69	206918			0.00- 30.00	276.01
1.409	1.409 (0.260)	64	19732			0.00- 30.00	26.32
7 Freon 134a					CAS #: 811-97-2		
1.451	1.451 (0.268)	83	228481	50.0000	42.649	0.00- 30.00	100.00

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
7 Freon 134a (continued)								
1.451	1.451 (0.268)	69	234216			0.00-	30.00	102.51
1.451	1.451 (0.268)	63	26698			0.00-	30.00	11.68
10 1,1-Difluoroethane					CAS #: 75-37-6			
1.493	1.493 (0.276)	65	123442	50.0000	40.329	0.00-	30.00	100.00
1.493	1.493 (0.276)	51	264048			0.00-	30.00	213.90
1.493	1.493 (0.276)	47	57798			0.00-	30.00	46.82
13 Chlorodifluoromethane					CAS #: 75-45-6			
1.549	1.549 (0.286)	67	60700	50.0000	42.187	0.00-	30.00	100.00
1.549	1.549 (0.286)	51	446478			0.00-	30.00	735.55
1.549	1.549 (0.286)	85	7380			0.00-	30.00	12.16
16 Freon 142b					CAS #: 75-68-3			
1.675	1.675 (0.310)	65	526777	50.0000	41.717	0.00-	30.00	100.00
1.675	1.675 (0.310)	45	133866			0.00-	30.00	25.41
37 Dichlorofluoromethane					CAS #: 75-43-4			
2.542	2.542 (0.470)	67	798706	50.0000	45.300	0.00-	30.00	100.00
2.542	2.542 (0.470)	69	251347			0.00-	30.00	31.47
47 Freon 123a					CAS #: 354-23-4			
3.018	3.018 (0.558)	117	672465	50.0000	43.071	0.00-	30.00	100.00
3.018	3.018 (0.558)	67	778292			0.00-	30.00	115.74
48 Freon 123					CAS #: 306-83-2			
3.116	3.116 (0.576)	83	970373	50.0000	42.538	0.00-	30.00	100.00
3.116	3.116 (0.576)	133	228443			0.00-	30.00	23.54
3.116	3.116 (0.576)	85	647269			0.00-	30.00	66.70
59 Cyclopentene					CAS #: 142-29-0			
3.689	3.689 (0.682)	67	758579	50.0000	50.296	0.00-	30.00	100.00
3.689	3.689 (0.682)	68	286522			0.00-	30.00	37.77
3.689	3.689 (0.682)	53	166178			0.00-	30.00	21.91
84 1-Propanol					CAS #: 71-23-8			
4.753	4.753 (0.878)	59	113305	50.0000	55.362	0.00-	30.00	100.00
4.753	4.753 (0.878)	42	91023			0.00-	30.00	80.33
4.753	4.753 (0.878)	41	61455			0.00-	30.00	54.24
90 2,2-Dichloropropane					CAS #: 594-20-7			
5.131	5.131 (0.948)	77	798845	50.0000	47.340	0.00-	30.00	100.00
5.131	5.131 (0.948)	79	259168			0.00-	30.00	32.44
5.145	5.145 (0.951)	97	186131			0.00-	30.00	23.30

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.746	5.746 (0.911)	110	275084	50.0000	51.895	0.00- 30.00	100.00
5.746	5.746 (0.911)	75	627858			0.00- 30.00	228.24
115 Isobutanol					CAS #: 78-83-1		
5.914	5.914 (1.093)	39	108386	50.0000	42.155	0.00- 30.00	100.00
5.914	5.914 (1.093)	43	415972			0.00- 30.00	383.79
5.914	5.914 (1.093)	41	303731			0.00- 30.00	280.23
124 n-Butanol					CAS #: 71-36-3		
6.474	6.474 (1.027)	56	823586	50.0000	57.052	0.00- 30.00	100.00
6.474	6.474 (1.027)	41	559120			0.00- 30.00	67.89
6.474	6.474 (1.027)	43	442101			0.00- 30.00	53.68
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.125	8.125 (1.288)	76	815123	50.0000	49.420	0.00- 30.00	100.00
8.125	8.125 (1.288)	41	534122			0.00- 30.00	65.53
8.125	8.125 (1.288)	78	262822			0.00- 30.00	32.24
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.849	8.849 (1.011)	131	941084	50.0000	47.673	0.00- 30.00	100.00
8.849	8.849 (1.011)	117	618572			0.00- 30.00	65.73
8.849	8.849 (1.011)	95	314445			0.00- 30.00	33.41
173 2-Heptanone					CAS #: 110-43-0		
9.364	9.364 (1.731)	58	963872	50.0000	56.687	0.00- 30.00	100.00
9.364	9.364 (1.731)	43	1534035			0.00- 30.00	159.15
176 Cyclohexanone					CAS #: 108-94-1		
9.722	9.722 (1.110)	55	529857	50.0000	40.878	0.00- 30.00	100.00
9.722	9.722 (1.110)	98	243072			0.00- 30.00	45.88
9.722	9.722 (1.110)	42	358564			0.00- 30.00	67.67
180 Bromobenzene					CAS #: 108-86-1		
9.873	9.873 (1.128)	156	1041386	50.0000	46.671	0.00- 30.00	100.00
9.873	9.873 (1.128)	158	1012423			0.00- 30.00	97.22
9.873	9.873 (1.128)	77	1279420			0.00- 30.00	122.86
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.923	9.923 (1.133)	110	446508	50.0000	46.298	0.00- 30.00	100.00
9.923	9.923 (1.133)	75	985171			0.00- 30.00	220.64
9.923	9.923 (1.133)	61	283004			0.00- 30.00	63.38
189 2-Chlorotoluene					CAS #: 95-49-8		
10.009	10.009 (1.143)	126	819003	50.0000	48.955	0.00- 30.00	100.00
10.009	10.009 (1.143)	91	2035265			0.00- 30.00	248.51

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
189 2-Chlorotoluene (continued)							
10.009	10.009 (1.143)	65	178829			0.00- 30.00	21.83
191 4-Chlorotoluene					CAS #: 106-43-4		
10.109	10.109 (1.155)	126	817367	50.0000	49.023	0.00- 30.00	100.00
10.102	10.102 (1.154)	91	2079541			0.00- 30.00	254.42
10.102	10.102 (1.154)	63	251417			0.00- 30.00	30.76
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.138	10.138 (1.158)	57	1785238	50.0000	53.575	0.00- 30.00	100.00
10.138	10.138 (1.158)	85	1514444			0.00- 30.00	84.83
195 tert-Butylbenzene					CAS #: 98-06-6		
10.310	10.310 (1.178)	119	2522699	50.0000	50.891	0.00- 30.00	100.00
10.310	10.310 (1.178)	134	627318			0.00- 30.00	24.87
10.310	10.310 (1.178)	91	1480063			0.00- 30.00	58.67
197 Pentachloroethane					CAS #: 76-01-7		
10.381	10.381 (1.186)	167	822512	50.0000	50.282	0.00- 30.00	100.00
10.496	10.496 (1.199)	117	60500			0.00- 30.00	7.36
10.381	10.381 (1.186)	169	395923			0.00- 30.00	48.14
203 sec-Butylbenzene					CAS #: 135-98-8		
10.496	10.496 (1.199)	134	795656	50.0000	50.533	0.00- 30.00	100.00
10.496	10.496 (1.199)	105	3632493			0.00- 30.00	456.54
10.496	10.496 (1.199)	91	533755			0.00- 30.00	67.08
207 p-Cymene					CAS #: 99-87-6		
10.604	10.604 (1.211)	119	3378186	50.0000	51.257	0.00- 30.00	100.00
10.604	10.604 (1.211)	134	914165			0.00- 30.00	27.06
10.604	10.604 (1.211)	91	689270			0.00- 30.00	20.40
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8		
10.732	10.732 (1.226)	120	1252231	50.0000	50.372	0.00- 30.00	100.00
10.732	10.732 (1.226)	105	2809789			0.00- 30.00	224.38
10.732	10.732 (1.226)	77	299083			0.00- 30.00	23.88
213 Butylbenzene					CAS #: 104-51-8		
10.955	10.955 (1.251)	134	874779	50.0000	51.423	0.00- 30.00	100.00
10.955	10.955 (1.251)	91	2870606			0.00- 30.00	328.15
10.955	10.955 (1.251)	92	1510064			0.00- 30.00	172.62
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8		
11.742	11.742 (1.341)	157	1014876	50.0000	48.482	0.00- 30.00	100.00
11.735	11.735 (1.340)	75	703852			0.00- 30.00	69.35
11.742	11.742 (1.341)	155	787737			0.00- 30.00	77.62

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080408.d
Lab Smp Id: ICAL Level #6
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/04aug17.b/317q0523b.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 04-AUG-2017
Calibration Time: 12:20
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	219311	131587	307035	219311	0.00
123 1,4-Difluorobenze	747895	448737	1047053	747895	0.00
163 Chlorobenzene-d5	728499	437099	1019899	728499	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/04aug17.b/3080408.d

Date : 04-AUG-2017 12:20

Client ID:

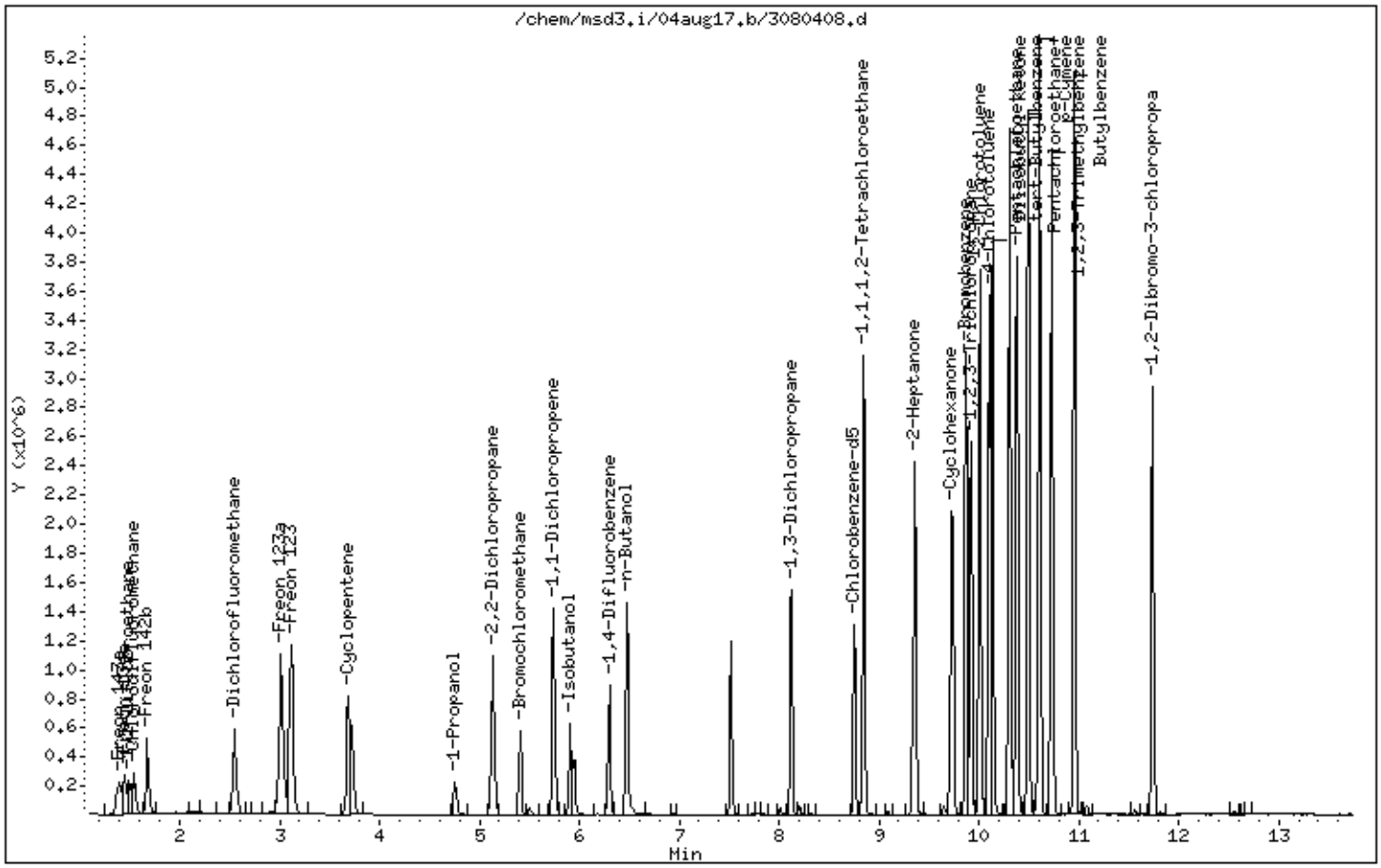
Instrument: msd3.i

Sample Info: 50ml 2850-287

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052309.d
Lab Smp Id: ICAL Level #6
Inj Date : 23-MAY-2017 15:30
Operator : jg Inst ID: msd3.i
Smp Info : 50ml 2850-97
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:38 jscarbro Quant Type: ISTD
Cal Date : 23-MAY-2017 15:30 Cal File: 3052309.d
Als bottle: 2 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 98 Bromochloromethane					CAS #: 74-97-5			
5.424	5.424 (1.000)	130	131467	25.0000		80.00- 120.00		100.00
5.424	5.424 (1.000)	128	100877			46.73- 106.73		76.73
5.410	5.410 (1.000)	49	159186			91.08- 151.08		121.08
* 123 1,4-Difluorobenzene					CAS #: 540-36-3			
6.306	6.306 (1.000)	114	510592	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	75472			0.00- 44.78		14.78
* 163 Chlorobenzene-d5					CAS #: 3114-55-4			
8.762	8.762 (1.000)	117	463787	25.0000		80.00- 120.00		100.00
8.762	8.762 (1.000)	82	234593			20.58- 80.58		50.58
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
5.956	5.956 (1.098)	65	166281	25.0000	24.748	80.00- 120.00		100.00
5.956	5.956 (1.098)	67	90682			24.54- 84.54		54.54
$ 146 Toluene-d8					CAS #: 2037-26-5			
7.530	7.530 (1.194)	98	522372	25.0000	25.222	80.00- 120.00		100.00
7.523	7.523 (1.193)	70	54523			0.00- 40.44		10.44

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.530	7.530 (1.194)	100	340945			35.27- 95.27	65.27
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.751	9.751 (1.113)	174	303203	25.0000	25.040	80.00- 120.00	100.00
9.744	9.744 (1.112)	95	347990			84.77- 144.77	114.77
9.751	9.751 (1.113)	176	287269			64.74- 124.74	94.74
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.275)	41	196006	50.0000	42.494	80.00- 120.00	100.00
1.493	1.493 (0.275)	42	127318			34.96- 94.96	64.96
1.493	1.493 (0.275)	39	143274			43.10- 103.10	73.10
11 Freon 12					CAS #: 75-71-8		
1.521	1.521 (0.280)	85	612561	50.0000	45.050	80.00- 120.00	100.00
1.521	1.521 (0.280)	87	199753			2.61- 62.61	32.61
15 Freon 114					CAS #: 76-14-2		
1.632	1.632 (0.301)	135	512646	50.0000	45.850	80.00- 120.00	100.00
1.632	1.632 (0.301)	137	161602			1.52- 61.52	31.52
17 Chloromethane					CAS #: 74-87-3		
1.716	1.716 (0.316)	50	213361	50.0000	46.205	80.00- 120.00	100.00
1.716	1.716 (0.316)	52	74814			5.06- 65.06	35.06
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.329)	58	52705	50.0000	45.262	80.00- 120.00	100.00
1.786	1.786 (0.329)	43	426973			780.12- 840.12	810.12
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.337)	62	240462	50.0000	45.884	80.00- 120.00	100.00
1.828	1.828 (0.337)	64	77797			2.35- 62.35	32.35
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.340)	54	207224	50.0000	44.502	80.00- 120.00	100.00
1.842	1.842 (0.340)	39	208246			70.49- 130.49	100.49
29 Bromomethane					CAS #: 74-83-9		
2.206	2.206 (0.407)	94	212645	50.0000	47.038	80.00- 120.00	100.00
2.206	2.206 (0.407)	96	201509			64.76- 124.76	94.76
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.425)	64	124339	50.0000	45.763	80.00- 120.00	100.00
2.304	2.304 (0.425)	66	37357			0.04- 60.04	30.04
2.318	2.318 (0.427)	49	38010			0.57- 60.57	30.57

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	307926	50.0000	44.253	80.00- 120.00	100.00
2.332	2.332 (0.430)	57	213378			39.30- 99.30	69.30
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.471)	101	686709	50.0000	45.295	80.00- 120.00	100.00
2.556	2.556 (0.471)	103	449252			35.42- 95.42	65.42
42 Ethanol					CAS #: 64-17-5		
2.892	2.892 (0.533)	45	102631	50.0000	45.806	80.00- 120.00	100.00
2.892	2.892 (0.533)	46	39366			8.36- 68.36	38.36
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.587)	151	506460	50.0000	45.642	80.00- 120.00	100.00
3.186	3.186 (0.587)	153	321942			33.57- 93.57	63.57
3.186	3.186 (0.587)	101	566488			81.85- 141.85	111.85
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.592)	96	255790	50.0000	44.910	80.00- 120.00	100.00
3.214	3.214 (0.592)	98	163496			33.92- 93.92	63.92
3.214	3.214 (0.592)	61	450417			146.09- 206.09	176.09
52 Acetone					CAS #: 67-64-1		
3.367	3.367 (0.621)	58	129732	50.0000	41.435	80.00- 120.00	100.00
3.367	3.367 (0.621)	43	442146			310.81- 370.81	340.81
56 Carbon Disulfide					CAS #: 75-15-0		
3.451	3.451 (0.636)	76	688902	50.0000	41.956	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.654)	45	491965	50.0000	46.295	80.00- 120.00	100.00
3.549	3.549 (0.654)	43	94441			0.00- 49.20	19.20
3.549	3.549 (0.654)	59	18322			0.00- 33.72	3.72
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	113258	50.0000	46.008	80.00- 120.00	100.00
3.689	3.689 (0.680)	41	353474			282.10- 342.10	312.10
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.871 (0.714)	49	322050	50.0000	45.306	80.00- 120.00	100.00
3.871	3.871 (0.714)	84	221407			38.75- 98.75	68.75
3.871	3.871 (0.714)	51	98998			0.74- 60.74	30.74
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.997	3.997 (0.737)	59	612193	50.0000	45.372	80.00- 120.00	100.00
3.997	3.997 (0.737)	41	130676			0.00- 51.35	21.35

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.997	3.997 (0.737)	57	68964			0.00- 41.27	11.27
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.095 (0.755)	73	726744	50.0000	45.291	80.00- 120.00	100.00
4.081	4.081 (0.752)	57	189798			0.00- 56.12	26.12
4.081	4.081 (0.752)	41	184590			0.00- 55.40	25.40
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.109 (0.758)	98	159942	50.0000	46.386	80.00- 120.00	100.00
4.109	4.109 (0.758)	61	372437			202.86- 262.86	232.86
4.109	4.109 (0.758)	96	243562			122.28- 182.28	152.28
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.796)	57	430891	50.0000	44.461	80.00- 120.00	100.00
4.319	4.319 (0.796)	43	274500			33.71- 93.71	63.71
4.319	4.319 (0.796)	86	62316			0.00- 44.46	14.46
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.599	4.599 (0.848)	63	482636	50.0000	45.897	80.00- 120.00	100.00
4.599	4.599 (0.848)	65	147072			0.47- 60.47	30.47
83 Isopropyl ether					CAS #: 108-20-3		
4.585	4.585 (0.845)	45	944694	50.0000	45.379	80.00- 120.00	100.00
4.599	4.599 (0.848)	87	238487			0.00- 55.24	25.24
4.599	4.599 (0.848)	59	105932			0.00- 41.21	11.21
86 Vinyl Acetate					CAS #: 108-05-4		
4.655	4.655 (0.858)	86	67856	50.0000	46.217	80.00- 120.00	100.00
4.641	4.641 (0.856)	43	869943			1252.04-1312.04	1282.04
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.912)	59	932954	50.0000	45.562	80.00- 120.00	100.00
4.949	4.949 (0.912)	87	360507			8.64- 68.64	38.64
4.949	4.949 (0.912)	41	174368			0.00- 48.69	18.69
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.186	5.186 (0.956)	98	195383	50.0000	44.481	80.00- 120.00	100.00
5.186	5.186 (0.956)	96	294455			120.71- 180.71	150.71
5.186	5.186 (0.956)	61	409328			179.50- 239.50	209.50
92 2-Butanone					CAS #: 78-93-3		
5.214	5.214 (0.961)	72	121796	50.0000	44.649	80.00- 120.00	100.00
5.214	5.214 (0.961)	43	549394			421.08- 481.08	451.08
5.214	5.214 (0.961)	57	44998			6.95- 66.95	36.95

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.410	5.410 (0.997)	42	312386	50.0000	44.088	80.00- 120.00	100.00
5.410	5.410 (0.997)	71	108055			4.59- 64.59	34.59
5.410	5.410 (0.997)	72	116435			7.27- 67.27	37.27
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	553003	50.0000	45.446	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	359977			35.09- 95.09	65.09
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.028)	84	356130	50.0000	45.511	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	451497			96.78- 156.78	126.78
5.578	5.578 (1.028)	41	261303			43.37- 103.37	73.37
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.606 (1.034)	97	624494	50.0000	45.690	80.00- 120.00	100.00
5.606	5.606 (1.034)	99	401514			34.29- 94.29	64.29
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.054)	119	679527	50.0000	47.278	80.00- 120.00	100.00
5.718	5.718 (1.054)	117	689306			71.44- 131.44	101.44
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.914 (1.090)	57	1427686	50.0000	44.781	80.00- 120.00	100.00
5.914	5.914 (1.090)	56	441885			0.95- 60.95	30.95
5.914	5.914 (1.090)	41	397077			0.00- 57.81	27.81
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	747341	50.0000	45.050	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	174774			0.00- 53.39	23.39
119 tert-Amyl methyl ether					CAS #: 994-05-8		
5.998	5.998 (0.951)	87	209818	50.0000	47.245	80.00- 120.00	100.00
5.998	5.998 (0.951)	73	808436			355.30- 415.30	385.30
5.998	5.998 (0.951)	55	228960			79.12- 139.12	109.12
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.956)	62	398170	50.0000	46.376	80.00- 120.00	100.00
6.026	6.026 (0.956)	64	124075			1.16- 61.16	31.16
121 Heptane					CAS #: 142-82-5		
6.082	6.082 (0.964)	71	275881	50.0000	46.467	80.00- 120.00	100.00
6.082	6.082 (0.964)	43	523410			159.72- 219.72	189.72
6.082	6.082 (0.964)	57	284737			73.21- 133.21	103.21
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.031)	95	375763	50.0000	46.212	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.502	6.502 (1.031)	130	429440			84.28- 144.28	114.28
6.502	6.502 (1.031)	97	246216			35.52- 95.52	65.52
127 Methylcyclohexane					CAS #: 108-87-2		
6.586	6.586 (1.044)	83	231644	50.0000	37.866	80.00- 120.00	100.00
6.621	6.621 (1.050)	98	122103			22.71- 82.71	52.71
6.586	6.586 (1.044)	55	219505			64.76- 124.76	94.76
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.742	6.742 (1.069)	63	298490	50.0000	45.762	80.00- 120.00	100.00
6.742	6.742 (1.069)	62	206435			39.16- 99.16	69.16
6.742	6.742 (1.069)	41	188913			33.29- 93.29	63.29
136 1,4-Dioxane					CAS #: 123-91-1		
6.836	6.836 (1.084)	88	190782	50.0000	46.246	80.00- 120.00	100.00
6.836	6.836 (1.084)	58	139600			43.17- 103.17	73.17
6.836	6.836 (1.084)	57	47860			0.00- 55.09	25.09
138 Bromodichloromethane					CAS #: 75-27-4		
6.972	6.972 (1.106)	83	604023	50.0000	46.689	80.00- 120.00	100.00
6.972	6.972 (1.106)	85	388538			34.33- 94.33	64.33
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.351 (1.166)	75	464770	50.0000	46.515	80.00- 120.00	100.00
7.351	7.351 (1.166)	77	151172			2.53- 62.53	32.53
7.351	7.351 (1.166)	39	295051			33.48- 93.48	63.48
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.459 (1.183)	58	267295	50.0000	42.810	80.00- 120.00	100.00
7.459	7.459 (1.183)	43	698939			231.49- 291.49	261.49
7.459	7.459 (1.183)	85	115370			13.16- 73.16	43.16
147 Toluene					CAS #: 108-88-3		
7.581	7.581 (1.202)	91	1015381	50.0000	45.502	80.00- 120.00	100.00
7.581	7.581 (1.202)	92	588502			27.96- 87.96	57.96
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.831 (0.894)	75	453132	50.0000	46.682	80.00- 120.00	100.00
7.831	7.831 (0.894)	77	148522			2.78- 62.78	32.78
7.824	7.824 (0.893)	39	271239			29.86- 89.86	59.86
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.982	7.982 (0.911)	97	355445	50.0000	46.046	80.00- 120.00	100.00
7.982	7.982 (0.911)	99	220319			31.98- 91.98	61.98
7.982	7.982 (0.911)	83	295851			53.23- 113.23	83.23

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.018	8.018 (0.915)	166	544922	50.0000	45.382	80.00- 120.00	100.00
8.018	8.018 (0.915)	129	419561			46.99- 106.99	76.99
8.018	8.018 (0.915)	131	408560			44.98- 104.98	74.98
158 2-Hexanone					CAS #: 591-78-6		
8.146	8.146 (0.930)	58	348455	50.0000	46.271	80.00- 120.00	100.00
8.146	8.146 (0.930)	43	678529			164.73- 224.73	194.73
8.146	8.146 (0.930)	100	71959			0.00- 50.65	20.65
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.297 (0.947)	129	764899	50.0000	46.935	80.00- 120.00	100.00
8.297	8.297 (0.947)	127	593298			47.57- 107.57	77.57
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.411	8.411 (0.960)	107	588147	50.0000	46.317	80.00- 120.00	100.00
8.411	8.411 (0.960)	109	549731			63.47- 123.47	93.47
165 Chlorobenzene					CAS #: 108-90-7		
8.784	8.784 (1.002)	112	889356	50.0000	45.592	80.00- 120.00	100.00
8.784	8.784 (1.002)	114	283465			1.87- 61.87	31.87
8.784	8.784 (1.002)	77	461441			21.88- 81.88	51.88
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.834 (1.008)	106	455710	50.0000	46.219	80.00- 120.00	100.00
8.834	8.834 (1.008)	91	1377684			272.32- 332.32	302.32
169 m,p-Xylene					CAS #: 108-38-3		
8.934	8.934 (1.020)	106	566997	50.0000	45.982	80.00- 120.00	100.00
8.934	8.934 (1.020)	91	1110785			165.91- 225.91	195.91
171 o-Xylene					CAS #: 95-47-6		
9.271	9.271 (1.058)	106	542852	50.0000	46.293	80.00- 120.00	100.00
9.271	9.271 (1.058)	91	1117472			175.85- 235.85	205.85
172 Styrene					CAS #: 100-42-5		
9.293	9.293 (1.060)	104	882690	50.0000	50.496	80.00- 120.00	100.00
9.293	9.293 (1.060)	78	419825			17.56- 77.56	47.56
174 Bromoform					CAS #: 75-25-2		
9.493	9.493 (1.083)	173	740163	50.0000	47.421	80.00- 120.00	100.00
9.493	9.493 (1.083)	171	382400			21.66- 81.66	51.66
175 Cumene					CAS #: 98-82-8		
9.558	9.558 (1.091)	105	1738321	50.0000	47.020	80.00- 120.00	100.00
9.558	9.558 (1.091)	120	486378			0.00- 57.98	27.98

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.558	9.558 (1.091)	51	173062			0.00- 39.96	9.96
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.873	9.873 (1.127)	83	797754	50.0000	46.386	80.00- 120.00	100.00
9.880	9.880 (1.128)	85	516823			34.78- 94.78	64.78
182 Propylbenzene					CAS #: 103-65-1		
9.901	9.901 (1.130)	91	1920545	50.0000	46.123	80.00- 120.00	100.00
9.901	9.901 (1.130)	120	495100			0.00- 55.78	25.78
9.901	9.901 (1.130)	105	73456			0.00- 33.82	3.82
188 4-Ethyltoluene					CAS #: 622-96-8		
9.995	9.995 (1.141)	120	542024	50.0000	47.474	80.00- 120.00	100.00
9.995	9.995 (1.141)	105	1709905			285.47- 345.47	315.47
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.045	10.045 (1.146)	120	739280	50.0000	47.414	80.00- 120.00	100.00
10.045	10.045 (1.146)	105	1474782			169.49- 229.49	199.49
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.367	10.367 (1.183)	105	1433057	50.0000	46.798	80.00- 120.00	100.00
10.367	10.367 (1.183)	120	676095			17.18- 77.18	47.18
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.661	10.661 (1.217)	146	1035540	50.0000	46.364	80.00- 120.00	100.00
10.661	10.661 (1.217)	148	663549			34.08- 94.08	64.08
10.661	10.661 (1.217)	111	403894			9.00- 69.00	39.00
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.739	10.739 (1.226)	146	1052188	50.0000	46.412	80.00- 120.00	100.00
10.739	10.739 (1.226)	148	671630			33.83- 93.83	63.83
10.739	10.739 (1.226)	111	393186			7.37- 67.37	37.37
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.854	10.854 (1.239)	91	1329672	50.0000	48.665	80.00- 120.00	100.00
10.854	10.854 (1.239)	126	318807			0.00- 53.98	23.98
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.069	11.069 (1.263)	146	991612	50.0000	46.459	80.00- 120.00	100.00
11.069	11.069 (1.263)	148	634282			33.96- 93.96	63.96
11.069	11.069 (1.263)	111	396291			9.96- 69.96	39.96
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.466	12.466 (1.423)	180	853025	50.0000	47.436	80.00- 120.00	100.00
12.466	12.466 (1.423)	182	810130			64.97- 124.97	94.97

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.552	12.552 (1.432)	225	646496	50.0000	46.495	80.00- 120.00	100.00
12.552	12.552 (1.432)	223	410010			33.42- 93.42	63.42
228 Naphthalene					CAS #: 91-20-3		
12.731	12.731 (1.453)	128	198288	5.00000	3.929	80.00- 120.00	100.00
12.731	12.731 (1.453)	127	25786			0.00- 43.00	13.00

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052309.d
Lab Smp Id: ICAL Level #6
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	131467	0.00
123 1,4-Difluorobenze	510592	306355	714829	510592	0.00
163 Chlorobenzene-d5	463787	278272	649302	463787	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.42	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/23may17.b/3052309.d

Date : 23-MAY-2017 15:30

Client ID:

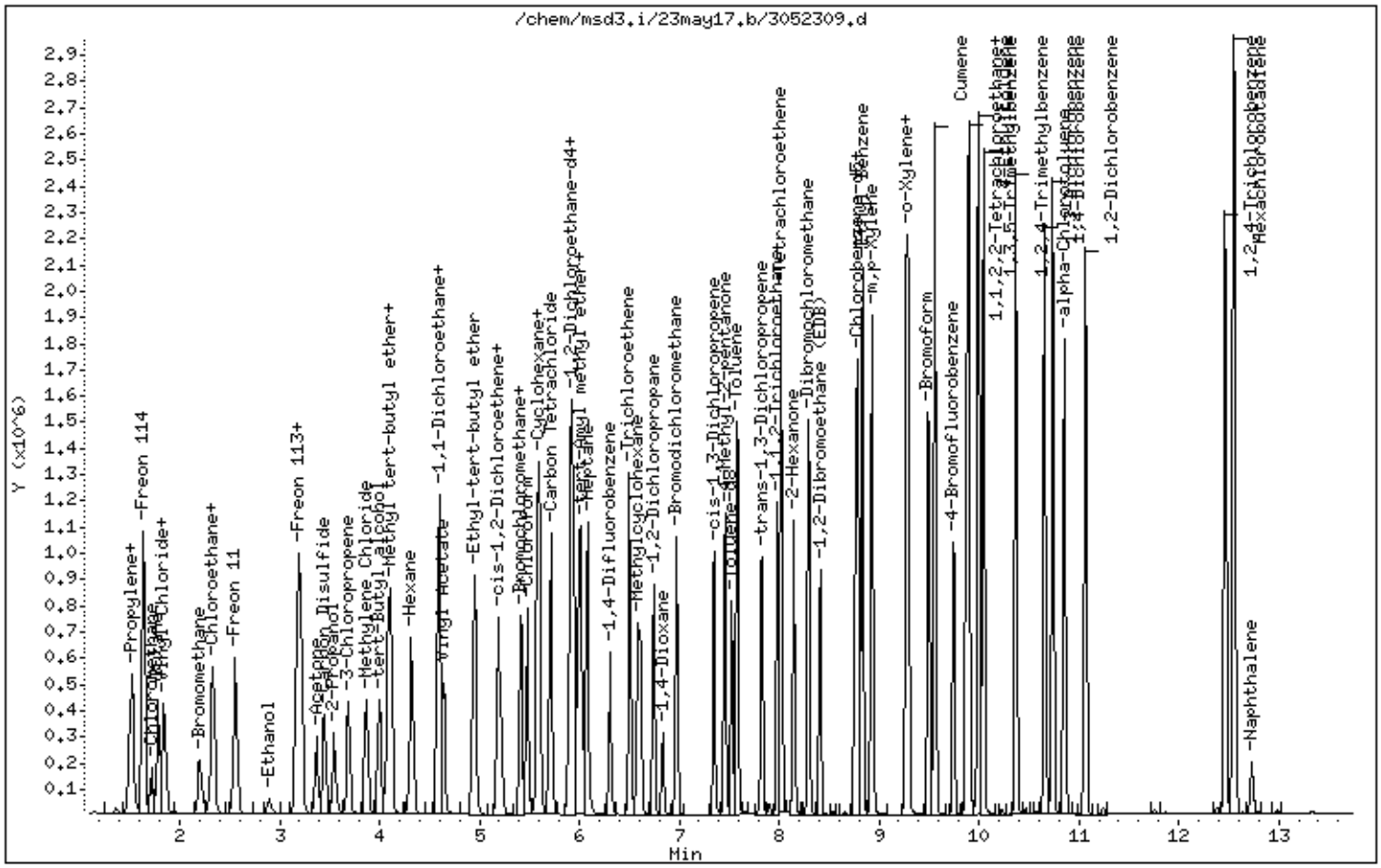
Instrument: msd3.i

Sample Info: 50ml 2850-97

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052310.d
Lab Smp Id: ICAL Level #7
Inj Date : 23-MAY-2017 15:53
Operator : jg Inst ID: msd3.i
Smp Info : 100ml 2850-97
Misc Info : 100ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:08 jscarbro Quant Type: ISTD
Cal Date : 23-MAY-2017 15:53 Cal File: 3052310.d
Als bottle: 2 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	==========	=====
* 98 Bromochloromethane						CAS #: 74-97-5		
5.438	5.438 (1.000)	130	130318	25.0000			80.00- 120.00	100.00
5.424	5.424 (1.000)	128	100362				46.73- 106.73	77.01
5.424	5.424 (1.000)	49	161988				91.08- 151.08	124.30
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.320	6.320 (1.000)	114	516197	25.0000			80.00- 120.00	100.00
6.320	6.320 (1.000)	88	76467				0.00- 44.78	14.81
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.770	8.770 (1.000)	117	476217	25.0000			80.00- 120.00	100.00
8.770	8.770 (1.000)	82	239238				20.58- 80.58	50.24
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.970	5.970 (1.098)	65	162738	25.0000	24.391		80.00- 120.00	100.00
5.970	5.970 (1.098)	67	94798				24.54- 84.54	58.25
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.538	7.538 (1.193)	98	524374	25.0000	25.071		80.00- 120.00	100.00
7.538	7.538 (1.193)	70	55209				0.00- 40.44	10.53

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.538	7.538 (1.193)	100	344876			35.27- 95.27	65.77
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.751	9.751 (1.112)	174	312028	25.0000	25.089	80.00- 120.00	100.00
9.751	9.751 (1.112)	95	356964			84.77- 144.77	114.40
9.751	9.751 (1.112)	176	293667			64.74- 124.74	94.12
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.274)	41	400833	100.000	85.761	80.00- 120.00	100.00
1.493	1.493 (0.274)	42	266170			34.96- 94.96	66.40
1.493	1.493 (0.274)	39	299622			43.10- 103.10	74.75
11 Freon 12					CAS #: 75-71-8		
1.535	1.535 (0.282)	85	1274758	100.000	93.792	80.00- 120.00	100.00
1.535	1.535 (0.282)	87	411431			2.61- 62.61	32.28
15 Freon 114					CAS #: 76-14-2		
1.647	1.647 (0.303)	135	1065130	100.000	94.986	80.00- 120.00	100.00
1.647	1.647 (0.303)	137	340463			1.52- 61.52	31.96
17 Chloromethane					CAS #: 74-87-3		
1.730	1.730 (0.318)	50	429896	100.000	89.918	80.00- 120.00	100.00
1.730	1.730 (0.318)	52	149424			5.06- 65.06	34.76
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.328)	58	109925	100.000	93.500	80.00- 120.00	100.00
1.786	1.786 (0.328)	43	861081			780.12- 840.12	783.34
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.336)	62	496117	100.000	94.869	80.00- 120.00	100.00
1.828	1.828 (0.336)	64	158067			2.35- 62.35	31.86
26 1,3-Butadiene					CAS #: 106-99-0		
1.856	1.856 (0.341)	54	422324	100.000	92.626	80.00- 120.00	100.00
1.856	1.856 (0.341)	39	446486			70.49- 130.49	105.72
29 Bromomethane					CAS #: 74-83-9		
2.206	2.206 (0.406)	94	429471	100.000	94.198	80.00- 120.00	100.00
2.206	2.206 (0.406)	96	403188			64.76- 124.76	93.88
30 Chloroethane					CAS #: 75-00-3		
2.318	2.318 (0.426)	64	252773	100.000	92.565	80.00- 120.00	100.00
2.318	2.318 (0.426)	66	77832			0.04- 60.04	30.79
2.318	2.318 (0.426)	49	78318			0.57- 60.57	30.98

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.346	2.346 (0.431)	43	626469	100.000	89.329	80.00- 120.00	100.00
2.346	2.346 (0.431)	57	437993			39.30- 99.30	69.91
35 Freon 11					CAS #: 75-69-4		
2.570	2.570 (0.473)	101	1429838	100.000	94.285	80.00- 120.00	100.00
2.570	2.570 (0.473)	103	927019			35.42- 95.42	64.83
42 Ethanol					CAS #: 64-17-5		
2.906	2.906 (0.534)	45	210869	100.000	94.217	80.00- 120.00	100.00
2.906	2.906 (0.534)	46	81962			8.36- 68.36	38.87
49 Freon 113					CAS #: 76-13-1		
3.200	3.200 (0.588)	151	1033209	100.000	93.495	80.00- 120.00	100.00
3.200	3.200 (0.588)	153	658681			33.57- 93.57	63.75
3.200	3.200 (0.588)	101	1157293			81.85- 141.85	112.01
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.228	3.228 (0.593)	96	531027	100.000	95.253	80.00- 120.00	100.00
3.228	3.228 (0.593)	98	344595			33.92- 93.92	64.89
3.228	3.228 (0.593)	61	924046			146.09- 206.09	174.01
52 Acetone					CAS #: 67-64-1		
3.382	3.382 (0.622)	58	268740	100.000	83.826	80.00- 120.00	100.00
3.382	3.382 (0.622)	43	906956			310.81- 370.81	337.48
56 Carbon Disulfide					CAS #: 75-15-0		
3.465	3.465 (0.637)	76	1406602	100.000	84.029	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.563	3.563 (0.655)	45	995635	100.000	93.060	80.00- 120.00	100.00
3.549	3.549 (0.653)	43	192817			0.00- 49.20	19.37
3.563	3.563 (0.655)	59	38444			0.00- 33.72	3.86
58 3-Chloropropene					CAS #: 107-05-1		
3.703	3.703 (0.681)	76	233966	100.000	95.396	80.00- 120.00	100.00
3.703	3.703 (0.681)	41	728547			282.10- 342.10	311.39
66 Methylene Chloride					CAS #: 75-09-2		
3.885	3.885 (0.714)	49	652999	100.000	93.504	80.00- 120.00	100.00
3.885	3.885 (0.714)	84	451243			38.75- 98.75	69.10
3.885	3.885 (0.714)	51	199879			0.74- 60.74	30.61
71 tert-Butyl alcohol					CAS #: 75-65-0		
4.011	4.011 (0.738)	59	1275318	100.000	94.379	80.00- 120.00	100.00
4.011	4.011 (0.738)	41	271219			0.00- 51.35	21.27

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)								
4.011	4.011	(0.738)	57	142301			0.00- 41.27	11.16
72 Methyl tert-butyl ether						CAS #: 1634-04-4		
4.095	4.095	(0.753)	73	1488776	100.000	93.456	80.00- 120.00	100.00
4.095	4.095	(0.753)	57	384032			0.00- 56.12	25.80
4.095	4.095	(0.753)	41	370133			0.00- 55.40	24.86
73 trans-1,2-Dichloroethene						CAS #: 156-60-5		
4.123	4.123	(0.758)	98	334237	100.000	96.427	80.00- 120.00	100.00
4.123	4.123	(0.758)	61	772748			202.86- 262.86	231.20
4.123	4.123	(0.758)	96	512001			122.28- 182.28	153.19
78 Hexane						CAS #: 110-54-3		
4.333	4.333	(0.797)	57	905598	100.000	95.691	80.00- 120.00	100.00
4.333	4.333	(0.797)	43	575146			33.71- 93.71	63.51
4.333	4.333	(0.797)	86	134010			0.00- 44.46	14.80
82 1,1-Dichloroethane						CAS #: 75-34-3		
4.613	4.613	(0.848)	63	1011549	100.000	96.998	80.00- 120.00	100.00
4.613	4.613	(0.848)	65	308561			0.47- 60.47	30.50
83 Isopropyl ether						CAS #: 108-20-3		
4.599	4.599	(0.846)	45	1951999	100.000	93.990	80.00- 120.00	100.00
4.599	4.599	(0.846)	87	493916			0.00- 55.24	25.30
4.599	4.599	(0.846)	59	221214			0.00- 41.21	11.33
86 Vinyl Acetate						CAS #: 108-05-4		
4.655	4.655	(0.856)	86	145649	100.000	100.21	80.00- 120.00	100.00
4.655	4.655	(0.856)	43	1783804			1252.04-1312.04	1224.73
88 Ethyl-tert-butyl ether						CAS #: 637-92-3		
4.963	4.963	(0.913)	59	1927776	100.000	94.307	80.00- 120.00	100.00
4.963	4.963	(0.913)	87	739804			8.64- 68.64	38.38
4.963	4.963	(0.913)	41	354897			0.00- 48.69	18.41
91 cis-1,2-Dichloroethene						CAS #: 156-59-2		
5.200	5.200	(0.956)	98	409603	100.000	95.843	80.00- 120.00	100.00
5.200	5.200	(0.956)	96	623432			120.71- 180.71	152.20
5.200	5.200	(0.956)	61	859973			179.50- 239.50	209.95
92 2-Butanone						CAS #: 78-93-3		
5.228	5.228	(0.961)	72	263210	100.000	96.678	80.00- 120.00	100.00
5.228	5.228	(0.961)	43	1165861			421.08- 481.08	442.94
5.228	5.228	(0.961)	57	91958			6.95- 66.95	34.94

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.424 (0.997)	42	651819	100.000	95.586	80.00- 120.00	100.00
5.424	5.424 (0.997)	71	232849			4.59- 64.59	35.72
5.424	5.424 (0.997)	72	242853			7.27- 67.27	37.26
100 Chloroform					CAS #: 67-66-3		
5.494	5.494 (1.010)	83	1171961	100.000	96.480	80.00- 120.00	100.00
5.494	5.494 (1.010)	85	757024			35.09- 95.09	64.59
102 Cyclohexane					CAS #: 110-82-7		
5.592	5.592 (1.028)	84	729117	100.000	93.439	80.00- 120.00	100.00
5.592	5.592 (1.028)	56	929501			96.78- 156.78	127.48
5.592	5.592 (1.028)	41	532022			43.37- 103.37	72.97
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.606 (1.031)	97	1288284	100.000	94.565	80.00- 120.00	100.00
5.606	5.606 (1.031)	99	831900			34.29- 94.29	64.57
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.732	5.732 (1.054)	119	1406964	100.000	96.169	80.00- 120.00	100.00
5.732	5.732 (1.054)	117	1435939			71.44- 131.44	102.06
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.928	5.928 (1.090)	57	2967766	100.000	94.465	80.00- 120.00	100.00
5.914	5.914 (1.087)	56	913218			0.95- 60.95	30.77
5.914	5.914 (1.087)	41	789171			0.00- 57.81	26.59
116 Benzene					CAS #: 71-43-2		
5.942	5.942 (0.940)	78	1588398	100.000	94.714	80.00- 120.00	100.00
5.942	5.942 (0.940)	77	372920			0.00- 53.39	23.48
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.012	6.012 (0.951)	87	440108	100.000	97.804	80.00- 120.00	100.00
6.012	6.012 (0.951)	73	1659981			355.30- 415.30	377.18
6.012	6.012 (0.951)	55	461201			79.12- 139.12	104.79
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.040	6.040 (0.956)	62	832458	100.000	94.875	80.00- 120.00	100.00
6.040	6.040 (0.956)	64	263042			1.16- 61.16	31.60
121 Heptane					CAS #: 142-82-5		
6.096	6.096 (0.965)	71	569319	100.000	94.519	80.00- 120.00	100.00
6.096	6.096 (0.965)	43	1109026			159.72- 219.72	194.80
6.096	6.096 (0.965)	57	596021			73.21- 133.21	104.69
125 Trichloroethene					CAS #: 79-01-6		
6.516	6.516 (1.031)	95	793492	100.000	96.598	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.516	6.516 (1.031)	130	916688			84.28- 144.28	115.53
6.516	6.516 (1.031)	97	521078			35.52- 95.52	65.67
127 Methylcyclohexane					CAS #: 108-87-2		
6.621	6.621 (1.048)	83	719132	100.000	116.64	80.00- 120.00	100.00
6.621	6.621 (1.048)	98	352646			22.71- 82.71	49.04
6.621	6.621 (1.048)	55	635361			64.76- 124.76	88.35
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.757	6.757 (1.069)	63	639923	100.000	96.691	80.00- 120.00	100.00
6.757	6.757 (1.069)	62	443336			39.16- 99.16	69.28
6.757	6.757 (1.069)	41	399520			33.29- 93.29	62.43
136 1,4-Dioxane					CAS #: 123-91-1		
6.843	6.843 (1.083)	88	404356	100.000	96.428	80.00- 120.00	100.00
6.843	6.843 (1.083)	58	302024			43.17- 103.17	74.69
6.843	6.843 (1.083)	57	99054			0.00- 55.09	24.50
138 Bromodichloromethane					CAS #: 75-27-4		
6.986	6.986 (1.105)	83	1291370	100.000	97.864	80.00- 120.00	100.00
6.986	6.986 (1.105)	85	820740			34.33- 94.33	63.56
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.359	7.359 (1.164)	75	1002611	100.000	98.556	80.00- 120.00	100.00
7.359	7.359 (1.164)	77	325841			2.53- 62.53	32.50
7.359	7.359 (1.164)	39	616700			33.48- 93.48	61.51
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.466	7.466 (1.181)	58	559412	100.000	93.306	80.00- 120.00	100.00
7.466	7.466 (1.181)	43	1474652			231.49- 291.49	263.61
7.466	7.466 (1.181)	85	241792			13.16- 73.16	43.22
147 Toluene					CAS #: 108-88-3		
7.595	7.595 (1.202)	91	2163718	100.000	96.861	80.00- 120.00	100.00
7.595	7.595 (1.202)	92	1259977			27.96- 87.96	58.23
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.839	7.839 (0.894)	75	957567	100.000	96.103	80.00- 120.00	100.00
7.839	7.839 (0.894)	77	314254			2.78- 62.78	32.82
7.839	7.839 (0.894)	39	567998			29.86- 89.86	59.32
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.996	7.996 (0.912)	97	762790	100.000	95.998	80.00- 120.00	100.00
7.996	7.996 (0.912)	99	469294			31.98- 91.98	61.52
7.996	7.996 (0.912)	83	632032			53.23- 113.23	82.86

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene						CAS #: 127-18-4	
8.032	8.032 (0.916)	166	1166059	100.000	95.114	80.00- 120.00	100.00
8.032	8.032 (0.916)	129	905499			46.99- 106.99	77.65
8.032	8.032 (0.916)	131	878398			44.98- 104.98	75.33
158 2-Hexanone						CAS #: 591-78-6	
8.154	8.154 (0.930)	58	747128	100.000	95.284	80.00- 120.00	100.00
8.154	8.154 (0.930)	43	1442291			164.73- 224.73	193.04
8.161	8.161 (0.931)	100	157813			0.00- 50.65	21.12
160 Dibromochloromethane						CAS #: 124-48-1	
8.304	8.304 (0.947)	129	1641838	100.000	97.191	80.00- 120.00	100.00
8.304	8.304 (0.947)	127	1276200			47.57- 107.57	77.73
161 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
8.419	8.419 (0.960)	107	1253057	100.000	96.109	80.00- 120.00	100.00
8.419	8.419 (0.960)	109	1189277			63.47- 123.47	94.91
165 Chlorobenzene						CAS #: 108-90-7	
8.798	8.798 (1.003)	112	1908208	100.000	95.792	80.00- 120.00	100.00
8.798	8.798 (1.003)	114	610367			1.87- 61.87	31.99
8.798	8.798 (1.003)	77	973556			21.88- 81.88	51.02
167 Ethyl Benzene						CAS #: 100-41-4	
8.841	8.841 (1.008)	106	964546	100.000	95.815	80.00- 120.00	100.00
8.841	8.841 (1.008)	91	2932730			272.32- 332.32	304.05
169 m,p-Xylene						CAS #: 108-38-3	
8.942	8.942 (1.020)	106	1203163	100.000	95.152	80.00- 120.00	100.00
8.942	8.942 (1.020)	91	2358966			165.91- 225.91	196.06
171 o-Xylene						CAS #: 95-47-6	
9.278	9.278 (1.058)	106	1142936	100.000	94.630	80.00- 120.00	100.00
9.278	9.278 (1.058)	91	2351025			175.85- 235.85	205.70
172 Styrene						CAS #: 100-42-5	
9.300	9.300 (1.060)	104	1913100	100.000	98.441	80.00- 120.00	100.00
9.300	9.300 (1.060)	78	899048			17.56- 77.56	46.99
174 Bromoform						CAS #: 75-25-2	
9.500	9.500 (1.083)	173	1597215	100.000	98.813	80.00- 120.00	100.00
9.500	9.500 (1.083)	171	821298			21.66- 81.66	51.42
175 Cumene						CAS #: 98-82-8	
9.565	9.565 (1.091)	105	3595965	100.000	94.654	80.00- 120.00	100.00
9.565	9.565 (1.091)	120	1008208			0.00- 57.98	28.04

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.565	9.565 (1.091)	51	357433			0.00- 39.96	9.94
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.880	9.880 (1.127)	83	1666681	100.000	94.297	80.00- 120.00	100.00
9.880	9.880 (1.127)	85	1072835			34.78- 94.78	64.37
182 Propylbenzene					CAS #: 103-65-1		
9.909	9.909 (1.130)	91	3984286	100.000	93.372	80.00- 120.00	100.00
9.909	9.909 (1.130)	120	1022094			0.00- 55.78	25.65
9.909	9.909 (1.130)	105	154291			0.00- 33.82	3.87
188 4-Ethyltoluene					CAS #: 622-96-8		
10.002	10.002 (1.140)	120	1101891	100.000	93.311	80.00- 120.00	100.00
10.002	10.002 (1.140)	105	3596987			285.47- 345.47	326.44
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.052	10.052 (1.146)	120	1575486	100.000	96.447	80.00- 120.00	100.00
10.052	10.052 (1.146)	105	3035173			169.49- 229.49	192.65
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.374	10.374 (1.183)	105	2961351	100.000	94.745	80.00- 120.00	100.00
10.374	10.374 (1.183)	120	1402815			17.18- 77.18	47.37
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.661	10.661 (1.216)	146	2186701	100.000	96.159	80.00- 120.00	100.00
10.661	10.661 (1.216)	148	1399414			34.08- 94.08	64.00
10.661	10.661 (1.216)	111	848554			9.00- 69.00	38.81
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.740	10.740 (1.225)	146	2228139	100.000	96.382	80.00- 120.00	100.00
10.740	10.740 (1.225)	148	1412884			33.83- 93.83	63.41
10.740	10.740 (1.225)	111	831179			7.37- 67.37	37.30
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.861	10.861 (1.238)	91	2820713	100.000	100.36	80.00- 120.00	100.00
10.861	10.861 (1.238)	126	671871			0.00- 53.98	23.82
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.069	11.069 (1.262)	146	2092000	100.000	96.632	80.00- 120.00	100.00
11.069	11.069 (1.262)	148	1334579			33.96- 93.96	63.79
11.069	11.069 (1.262)	111	840599			9.96- 69.96	40.18
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.466	12.466 (1.421)	180	1851060	100.000	101.18	80.00- 120.00	100.00
12.466	12.466 (1.421)	182	1767689			64.97- 124.97	95.50

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.552	12.552 (1.431)	225	1390078	100.000	97.852	80.00- 120.00	100.00
12.559	12.559 (1.432)	223	880816			33.42- 93.42	63.36
228 Naphthalene					CAS #: 91-20-3		
12.731	12.731 (1.452)	128	439624	10.0000	8.256	80.00- 120.00	100.00
12.731	12.731 (1.452)	127	57243			0.00- 43.00	13.02

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052310.d
Lab Smp Id: ICAL Level #7
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 100ppbv (200ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	130318	-0.87
123 1,4-Difluorobenze	510592	306355	714829	516197	1.10
163 Chlorobenzene-d5	463787	278272	649302	476217	2.68

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.44	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.32	0.22
163 Chlorobenzene-d5	8.76	8.43	9.09	8.77	0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/23may17.b/3052310.d

Date : 23-MAY-2017 15:53

Client ID:

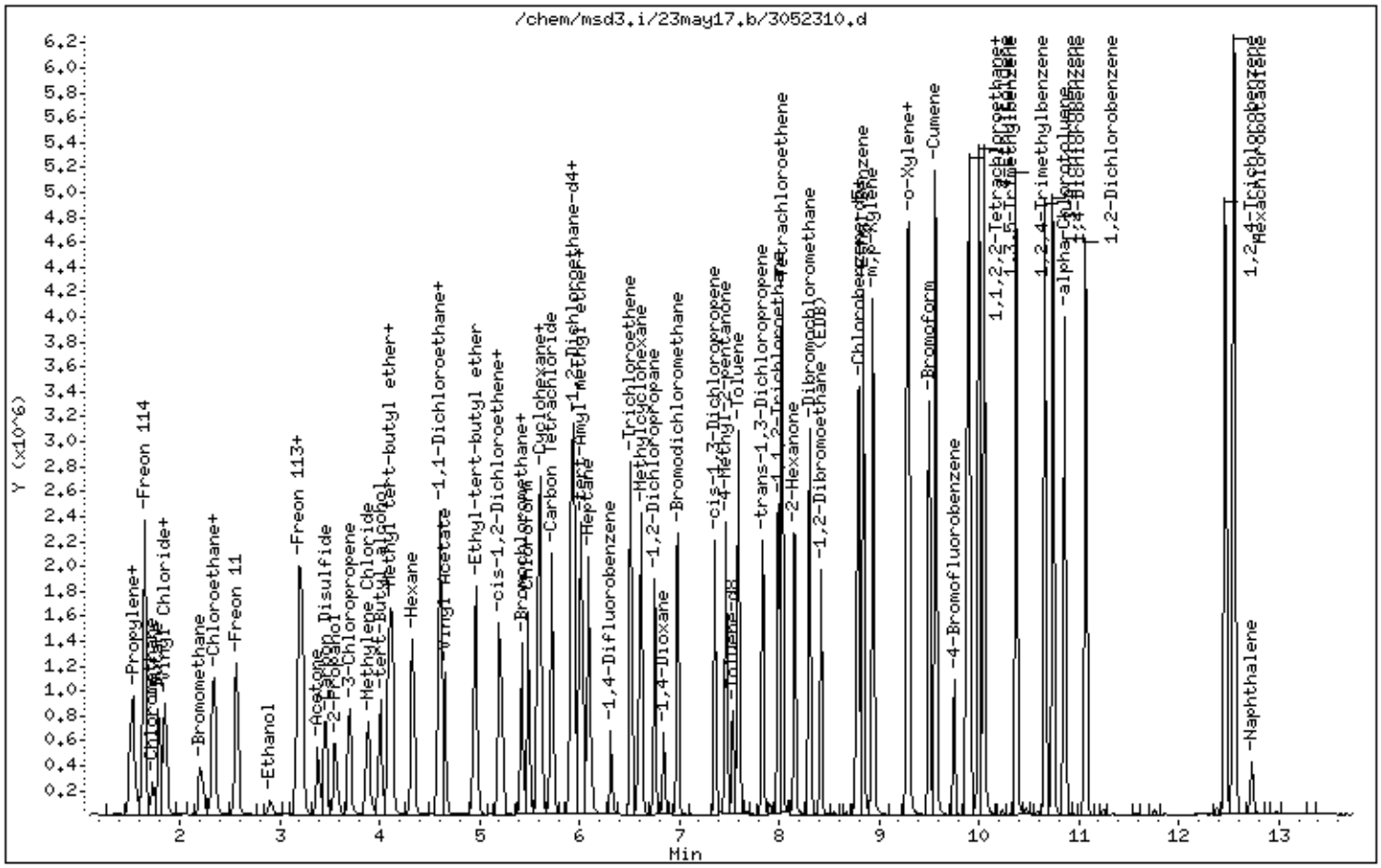
Instrument: msd3.i

Sample Info: 100ml 2850-97

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/04aug17.b/3080409.d
Lab Smp Id: ICAL Level #8
Inj Date : 04-AUG-2017 12:46
Operator : jg Inst ID: msd3.i
Smp Info : 200ml 2850-287
Misc Info : 200ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/04aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 10:53 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 2 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT1crv.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 98 Bromochloromethane					CAS #: 74-97-5		
5.424	5.424 (1.000)	130	207227	25.0000		80.00- 120.00	100.00
5.424	5.424 (1.000)	128	159959			46.73- 106.73	77.19
5.410	5.410 (1.000)	49	228276			91.08- 151.08	110.16
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.306	6.306 (1.000)	114	784651	25.0000		80.00- 120.00	100.00
6.306	6.306 (1.000)	88	107597			0.00- 44.78	13.71
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.755	8.755 (1.000)	117	703717	25.0000		80.00- 120.00	100.00
8.755	8.755 (1.000)	82	337857			20.58- 80.58	48.01
6 Freon 143a					CAS #: 420-46-2		
1.423	1.423 (0.262)	65	275751	200.000	171.54	0.00- 30.00	100.00
1.465	1.465 (0.270)	69	1678417			0.00- 30.00	608.67
1.423	1.423 (0.262)	64	75607			0.00- 30.00	27.42
7 Freon 134a					CAS #: 811-97-2		
1.465	1.465 (0.270)	83	964169	200.000	192.30	0.00- 30.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a (continued)							
1.465	1.465 (0.270)	69	1742069			0.00- 30.00	180.68
1.465	1.465 (0.270)	63	124375			0.00- 30.00	12.90
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.521	1.521 (0.280)	65	569026	200.000	197.39	0.00- 30.00	100.00
1.562	1.562 (0.288)	51	2941612			0.00- 30.00	516.96
1.521	1.521 (0.280)	47	248418			0.00- 30.00	43.66
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.562	1.562 (0.288)	67	259605	200.000	192.69	0.00- 30.00	100.00
1.562	1.562 (0.288)	51	2975098			0.00- 30.00	1146.01
1.562	1.562 (0.288)	85	30204			0.00- 30.00	11.63
16 Freon 142b					CAS #: 75-68-3		
1.674	1.674 (0.309)	65	2205918	200.000	187.72	0.00- 30.00	100.00
1.674	1.674 (0.309)	45	574235			0.00- 30.00	26.03
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.556	2.556 (0.471)	67	3202506	200.000	193.73	0.00- 30.00	100.00
2.556	2.556 (0.471)	69	1001646			0.00- 30.00	31.28
47 Freon 123a					CAS #: 354-23-4		
3.032	3.032 (0.559)	117	2717950	200.000	187.19	0.00- 30.00	100.00
3.032	3.032 (0.559)	67	3191230			0.00- 30.00	117.41
48 Freon 123					CAS #: 306-83-2		
3.130	3.130 (0.577)	83	3952632	200.000	186.48	0.00- 30.00	100.00
3.130	3.130 (0.577)	133	907102			0.00- 30.00	22.95
3.130	3.130 (0.577)	85	2620486			0.00- 30.00	66.30
59 Cyclopentene					CAS #: 142-29-0		
3.689	3.689 (0.680)	67	3172601	200.000	217.69	0.00- 30.00	100.00(A)
3.689	3.689 (0.680)	68	1193892			0.00- 30.00	37.63
3.689	3.689 (0.680)	53	690260			0.00- 30.00	21.76
84 1-Propanol					CAS #: 71-23-8		
4.767	4.767 (0.879)	59	418450	200.000	212.89	0.00- 30.00	100.00(A)
4.753	4.753 (0.876)	42	336534			0.00- 30.00	80.42
4.753	4.753 (0.876)	41	213022			0.00- 30.00	50.91
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.144	5.144 (0.948)	77	3241479	200.000	202.62	0.00- 30.00	100.00(A)
5.144	5.144 (0.948)	79	1040354			0.00- 30.00	32.10
5.144	5.144 (0.948)	97	750721			0.00- 30.00	23.16

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.746	5.746 (0.911)	110	1206283	200.000	213.30	0.00- 30.00	100.00(A)
5.746	5.746 (0.911)	75	2756874			0.00- 30.00	228.54
115 Isobutanol					CAS #: 78-83-1		
5.914	5.914 (1.090)	39	412589	200.000	175.11	0.00- 30.00	100.00
5.914	5.914 (1.090)	43	1713540			0.00- 30.00	415.31
5.914	5.914 (1.090)	41	1228986			0.00- 30.00	297.87
124 n-Butanol					CAS #: 71-36-3		
6.488	6.488 (1.029)	56	3329927	200.000	215.58	0.00- 30.00	100.00(A)
6.488	6.488 (1.029)	41	2175426			0.00- 30.00	65.33
6.488	6.488 (1.029)	43	1748172			0.00- 30.00	52.50
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.125	8.125 (1.288)	76	3424228	200.000	198.30	0.00- 30.00	100.00
8.125	8.125 (1.288)	41	2212834			0.00- 30.00	64.62
8.125	8.125 (1.288)	78	1102778			0.00- 30.00	32.21
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.848	8.848 (1.011)	131	3879318	200.000	202.74	0.00- 30.00	100.00(A)
8.848	8.848 (1.011)	117	2532013			0.00- 30.00	65.27
8.848	8.848 (1.011)	95	1278717			0.00- 30.00	32.96
173 2-Heptanone					CAS #: 110-43-0		
9.364	9.364 (1.726)	58	4099836	200.000	241.83	0.00- 30.00	100.00(A)
9.364	9.364 (1.726)	43	6610984			0.00- 30.00	161.25
176 Cyclohexanone					CAS #: 108-94-1		
9.722	9.722 (1.110)	55	1577305	200.000	136.04	0.00- 30.00	100.00
9.722	9.722 (1.110)	98	724037			0.00- 30.00	45.90
9.722	9.722 (1.110)	42	1051206			0.00- 30.00	66.65
180 Bromobenzene					CAS #: 108-86-1		
9.873	9.873 (1.128)	156	4496934	200.000	206.85	0.00- 30.00	100.00(A)
9.873	9.873 (1.128)	158	4385552			0.00- 30.00	97.52
9.873	9.873 (1.128)	77	5477480			0.00- 30.00	121.80
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.923	9.923 (1.133)	110	1846357	200.000	198.55	0.00- 30.00	100.00
9.923	9.923 (1.133)	75	4080714			0.00- 30.00	221.01
9.923	9.923 (1.133)	61	1169788			0.00- 30.00	63.36
189 2-Chlorotoluene					CAS #: 95-49-8		
10.016	10.016 (1.144)	126	3415309	200.000	208.96	0.00- 30.00	100.00(A)
10.009	10.009 (1.143)	91	8589801			0.00- 30.00	251.51

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
189 2-Chlorotoluene (continued)							
10.009	10.009 (1.143)	65	737395			0.00- 30.00	21.59
191 4-Chlorotoluene					CAS #: 106-43-4		
10.109	10.109 (1.155)	126	3529592	200.000	215.03	0.00- 30.00	100.00(A)
10.109	10.109 (1.155)	91	8849167			0.00- 30.00	250.71
10.109	10.109 (1.155)	63	1050757			0.00- 30.00	29.77
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.138	10.138 (1.158)	57	7253454	200.000	219.77	0.00- 30.00	100.00(A)
10.138	10.138 (1.158)	85	6160119			0.00- 30.00	84.93
195 tert-Butylbenzene					CAS #: 98-06-6		
10.310	10.310 (1.178)	119	10385332	200.000	213.28	0.00- 30.00	100.00(A)
10.310	10.310 (1.178)	134	2622684			0.00- 30.00	25.25
10.310	10.310 (1.178)	91	6142078			0.00- 30.00	59.14
197 Pentachloroethane					CAS #: 76-01-7		
10.381	10.381 (1.186)	167	3488998	200.000	216.30	0.00- 30.00	100.00(A)
10.496	10.496 (1.199)	117	211558			0.00- 30.00	6.06
10.381	10.381 (1.186)	169	1667805			0.00- 30.00	47.80
203 sec-Butylbenzene					CAS #: 135-98-8		
10.496	10.496 (1.199)	134	3372772	200.000	217.03	0.00- 30.00	100.00(A)
10.496	10.496 (1.199)	105	14646775			0.00- 30.00	434.27
10.496	10.496 (1.199)	91	2234642			0.00- 30.00	66.26
207 p-Cymene					CAS #: 99-87-6		
10.611	10.611 (1.212)	119	13811322	200.000	213.32	0.00- 30.00	100.00(A)
10.611	10.611 (1.212)	134	3892302			0.00- 30.00	28.18
10.611	10.611 (1.212)	91	2911956			0.00- 30.00	21.08
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8		
10.732	10.732 (1.226)	120	5380860	200.000	218.81	0.00- 30.00	100.00(A)
10.732	10.732 (1.226)	105	11732065			0.00- 30.00	218.03
10.732	10.732 (1.226)	77	1252766			0.00- 30.00	23.28
213 Butylbenzene					CAS #: 104-51-8		
10.954	10.954 (1.251)	134	3826669	200.000	225.46	0.00- 30.00	100.00(A)
10.954	10.954 (1.251)	91	12020978			0.00- 30.00	314.14
10.954	10.954 (1.251)	92	6518697			0.00- 30.00	170.35
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8		
11.742	11.742 (1.341)	157	4521950	200.000	218.47	0.00- 30.00	100.00(A)
11.742	11.742 (1.341)	75	3071774			0.00- 30.00	67.93
11.742	11.742 (1.341)	155	3511638			0.00- 30.00	77.66

QC Flag Legend

A - Target compound detected but, quantitated amount
exceeded maximum amount.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080409.d
Lab Smp Id: ICAL Level #8
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/04aug17.b/317q0523b.m
Misc Info: 200ppbv (200ppbv)

Calibration Date: 04-AUG-2017
Calibration Time: 12:20
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	219311	131587	307035	207227	-5.51
123 1,4-Difluorobenze	747895	448737	1047053	784651	4.91
163 Chlorobenzene-d5	728499	437099	1019899	703717	-3.40

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/04aug17.b/3080409.d

Date : 04-AUG-2017 12:46

Client ID:

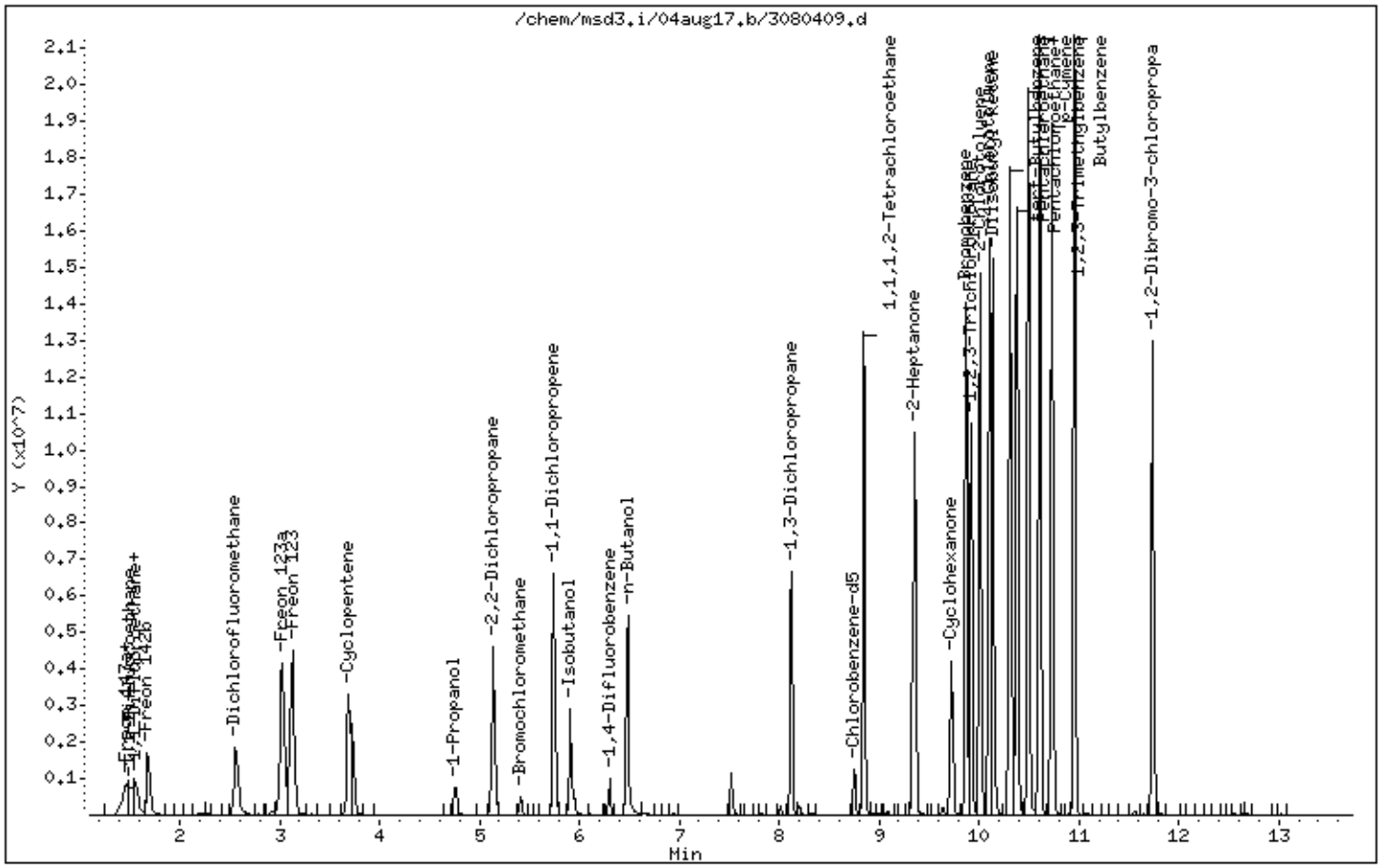
Instrument: msd3.i

Sample Info: 200ml 2850-287

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/23may17.b/3052311.d
Lab Smp Id: ICAL Level #8
Inj Date : 23-MAY-2017 16:20
Operator : jg Inst ID: msd3.i
Smp Info : 200ml 2850-97
Misc Info : 200ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/23may17.b/317q0523a.m
Meth Date : 25-May-2017 12:08 jscarbro Quant Type: ISTD
Cal Date : 23-MAY-2017 16:20 Cal File: 3052311.d
Als bottle: 2 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
*	98 Bromochloromethane					CAS #: 74-97-5		
	5.424	5.424 (1.000)	130	130358	25.0000		80.00- 120.00	100.00
	5.424	5.424 (1.000)	128	102165			46.73- 106.73	78.37
	5.424	5.424 (1.000)	49	151017			91.08- 151.08	115.85
*	123 1,4-Difluorobenzene					CAS #: 540-36-3		
	6.320	6.320 (1.000)	114	518061	25.0000		80.00- 120.00	100.00
	6.306	6.306 (1.000)	88	76721			0.00- 44.78	14.81
*	163 Chlorobenzene-d5					CAS #: 3114-55-4		
	8.762	8.762 (1.000)	117	477974	25.0000		80.00- 120.00	100.00
	8.762	8.762 (1.000)	82	241263			20.58- 80.58	50.48
$	117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	5.956	5.956 (1.098)	65	164836	25.0000	24.748	80.00- 120.00	100.00
	5.956	5.956 (1.098)	67	107518			24.54- 84.54	65.23
$	146 Toluene-d8					CAS #: 2037-26-5		
	7.530	7.530 (1.192)	98	529703	25.0000	25.195	80.00- 120.00	100.00
	7.530	7.530 (1.192)	70	55384			0.00- 40.44	10.46

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.530	7.530 (1.192)	100	350213			35.27- 95.27	66.11
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.751	9.751 (1.113)	174	318745	25.0000	25.444	80.00- 120.00	100.00
9.751	9.751 (1.113)	95	364898			84.77- 144.77	114.48
9.751	9.751 (1.113)	176	300834			64.74- 124.74	94.38
9 Propylene					CAS #: 115-07-1		
1.507	1.507 (0.278)	41	813035	200.000	177.77	80.00- 120.00	100.00
1.507	1.507 (0.278)	42	536282			34.96- 94.96	65.96
1.507	1.507 (0.278)	39	600863			43.10- 103.10	73.90
11 Freon 12					CAS #: 75-71-8		
1.534	1.534 (0.283)	85	2517787	200.000	187.51	80.00- 120.00	100.00
1.534	1.534 (0.283)	87	814361			2.61- 62.61	32.34
15 Freon 114					CAS #: 76-14-2		
1.646	1.646 (0.304)	135	2071326	200.000	187.05	80.00- 120.00	100.00
1.646	1.646 (0.304)	137	662258			1.52- 61.52	31.97
17 Chloromethane					CAS #: 74-87-3		
1.730	1.730 (0.319)	50	712084	200.000	155.52	80.00- 120.00	100.00
1.730	1.730 (0.319)	52	287048			5.06- 65.06	40.31
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.329)	58	209513	200.000	181.46	80.00- 120.00	100.00
1.786	1.786 (0.329)	43	1654815			780.12- 840.12	789.84
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.337)	62	1001133	200.000	192.77	80.00- 120.00	100.00
1.828	1.828 (0.337)	64	318575			2.35- 62.35	31.82
26 1,3-Butadiene					CAS #: 106-99-0		
1.856	1.856 (0.342)	54	828338	200.000	184.44	80.00- 120.00	100.00
1.856	1.856 (0.342)	39	892748			70.49- 130.49	107.78
29 Bromomethane					CAS #: 74-83-9		
2.206	2.206 (0.407)	94	818432	200.000	182.58	80.00- 120.00	100.00
2.206	2.206 (0.407)	96	769973			64.76- 124.76	94.08
30 Chloroethane					CAS #: 75-00-3		
2.318	2.318 (0.427)	64	501311	200.000	186.08	80.00- 120.00	100.00
2.318	2.318 (0.427)	66	155937			0.04- 60.04	31.11
2.318	2.318 (0.427)	49	156672			0.57- 60.57	31.25

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	1264311	200.000	183.24	80.00- 120.00	100.00
2.332	2.332 (0.430)	57	881258			39.30- 99.30	69.70
35 Freon 11					CAS #: 75-69-4		
2.570	2.570 (0.474)	101	2837324	200.000	189.08	80.00- 120.00	100.00
2.570	2.570 (0.474)	103	1840579			35.42- 95.42	64.87
42 Ethanol					CAS #: 64-17-5		
2.906	2.906 (0.536)	45	427205	200.000	192.29	80.00- 120.00	100.00
2.906	2.906 (0.536)	46	164085			8.36- 68.36	38.41
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.587)	151	2073345	200.000	189.52	80.00- 120.00	100.00
3.186	3.186 (0.587)	153	1313851			33.57- 93.57	63.37
3.186	3.186 (0.587)	101	2324400			81.85- 141.85	112.11
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.228	3.228 (0.595)	96	1051900	200.000	190.43	80.00- 120.00	100.00
3.228	3.228 (0.595)	98	685287			33.92- 93.92	65.15
3.228	3.228 (0.595)	61	1834402			146.09- 206.09	174.39
52 Acetone					CAS #: 67-64-1		
3.381	3.381 (0.623)	58	518531	200.000	167.02	80.00- 120.00	100.00
3.381	3.381 (0.623)	43	1740941			310.81- 370.81	335.74
56 Carbon Disulfide					CAS #: 75-15-0		
3.451	3.451 (0.636)	76	2792553	200.000	171.52	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.654)	45	1942324	200.000	184.33	80.00- 120.00	100.00
3.549	3.549 (0.654)	43	369040			0.00- 49.20	19.00
3.549	3.549 (0.654)	59	73781			0.00- 33.72	3.80
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	475804	200.000	194.93	80.00- 120.00	100.00
3.689	3.689 (0.680)	41	1451181			282.10- 342.10	305.00
66 Methylene Chloride					CAS #: 75-09-2		
3.885	3.885 (0.716)	49	1310870	200.000	189.60	80.00- 120.00	100.00
3.885	3.885 (0.716)	84	904630			38.75- 98.75	69.01
3.885	3.885 (0.716)	51	398052			0.74- 60.74	30.37
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.997	3.997 (0.737)	59	2537717	200.000	189.68	80.00- 120.00	100.00
3.997	3.997 (0.737)	41	517549			0.00- 51.35	20.39

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.997	3.997 (0.737)	57	276376			0.00- 41.27	10.89
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.095 (0.755)	73	2994415	200.000	189.82	80.00- 120.00	100.00
4.081	4.081 (0.752)	57	785784			0.00- 56.12	26.24
4.081	4.081 (0.752)	41	747297			0.00- 55.40	24.96
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.123	4.123 (0.760)	98	667788	200.000	193.79	80.00- 120.00	100.00
4.109	4.109 (0.758)	61	1547990			202.86- 262.86	231.81
4.123	4.123 (0.760)	96	1030977			122.28- 182.28	154.39
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.796)	57	1843955	200.000	195.63	80.00- 120.00	100.00
4.319	4.319 (0.796)	43	1166784			33.71- 93.71	63.28
4.319	4.319 (0.796)	86	276760			0.00- 44.46	15.01
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.613	4.613 (0.850)	63	2027013	200.000	195.24	80.00- 120.00	100.00
4.613	4.613 (0.850)	65	616206			0.47- 60.47	30.40
83 Isopropyl ether					CAS #: 108-20-3		
4.599	4.599 (0.848)	45	3995951	200.000	193.58	80.00- 120.00	100.00
4.599	4.599 (0.848)	87	1008002			0.00- 55.24	25.23
4.599	4.599 (0.848)	59	443349			0.00- 41.21	11.09
86 Vinyl Acetate					CAS #: 108-05-4		
4.655	4.655 (0.858)	86	293133	200.000	201.35	80.00- 120.00	100.00(A)
4.655	4.655 (0.858)	43	3839979			1252.04-1312.04	1309.98
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.912)	59	3916922	200.000	192.91	80.00- 120.00	100.00
4.949	4.949 (0.912)	87	1505188			8.64- 68.64	38.43
4.949	4.949 (0.912)	41	711232			0.00- 48.69	18.16
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.186	5.186 (0.956)	98	809109	200.000	190.97	80.00- 120.00	100.00
5.186	5.186 (0.956)	96	1242288			120.71- 180.71	153.54
5.186	5.186 (0.956)	61	1699550			179.50- 239.50	210.05
92 2-Butanone					CAS #: 78-93-3		
5.214	5.214 (0.961)	72	522443	200.000	193.15	80.00- 120.00	100.00
5.214	5.214 (0.961)	43	2359800			421.08- 481.08	451.69
5.214	5.214 (0.961)	57	188781			6.95- 66.95	36.13

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.410	5.410 (0.997)	42	1315157	200.000	193.97	80.00- 120.00	100.00
5.410	5.410 (0.997)	71	466169			4.59- 64.59	35.45
5.410	5.410 (0.997)	72	487219			7.27- 67.27	37.05
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	2341674	200.000	193.89	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	1517481			35.09- 95.09	64.80
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.028)	84	1485306	200.000	191.84	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	1911279			96.78- 156.78	128.68
5.578	5.578 (1.028)	41	1068268			43.37- 103.37	71.92
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.606 (1.034)	97	2596895	200.000	192.07	80.00- 120.00	100.00
5.606	5.606 (1.034)	99	1670246			34.29- 94.29	64.32
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.054)	119	2849819	200.000	195.59	80.00- 120.00	100.00
5.718	5.718 (1.054)	117	2897236			71.44- 131.44	101.66
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.914 (1.090)	57	6064820	200.000	194.12	80.00- 120.00	100.00
5.914	5.914 (1.090)	56	1846727			0.95- 60.95	30.45
5.914	5.914 (1.090)	41	1631321			0.00- 57.81	26.90
116 Benzene					CAS #: 71-43-2		
5.942	5.942 (0.940)	78	3263732	200.000	194.90	80.00- 120.00	100.00
5.942	5.942 (0.940)	77	758232			0.00- 53.39	23.23
119 tert-Amyl methyl ether					CAS #: 994-05-8		
5.998	5.998 (0.949)	87	891091	200.000	197.75	80.00- 120.00	100.00
5.998	5.998 (0.949)	73	3428928			355.30- 415.30	384.80
5.998	5.998 (0.949)	55	964296			79.12- 139.12	108.22
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.954)	62	1672214	200.000	191.51	80.00- 120.00	100.00
6.026	6.026 (0.954)	64	527637			1.16- 61.16	31.55
121 Heptane					CAS #: 142-82-5		
6.082	6.082 (0.962)	71	1166059	200.000	194.04	80.00- 120.00	100.00
6.082	6.082 (0.962)	43	2307499			159.72- 219.72	197.89
6.082	6.082 (0.962)	57	1221932			73.21- 133.21	104.79
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.029)	95	1605543	200.000	195.61	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.502	6.502 (1.029)	130	1844080			84.28- 144.28	114.86
6.502	6.502 (1.029)	97	1057249			35.52- 95.52	65.85
127 Methylcyclohexane					CAS #: 108-87-2		
6.621	6.621 (1.048)	83	1032605	200.000	171.62	80.00- 120.00	100.00
6.621	6.621 (1.048)	98	514373			22.71- 82.71	49.81
6.621	6.621 (1.048)	55	891566			64.76- 124.76	86.34
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.750	6.750 (1.068)	63	1287788	200.000	194.88	80.00- 120.00	100.00
6.750	6.750 (1.068)	62	891075			39.16- 99.16	69.19
6.750	6.750 (1.068)	41	792745			33.29- 93.29	61.56
136 1,4-Dioxane					CAS #: 123-91-1		
6.836	6.836 (1.082)	88	814424	200.000	194.57	80.00- 120.00	100.00
6.836	6.836 (1.082)	58	601108			43.17- 103.17	73.81
6.836	6.836 (1.082)	57	199303			0.00- 55.09	24.47
138 Bromodichloromethane					CAS #: 75-27-4		
6.979	6.979 (1.104)	83	2596799	200.000	196.73	80.00- 120.00	100.00
6.979	6.979 (1.104)	85	1673122			34.33- 94.33	64.43
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.351 (1.163)	75	2017097	200.000	197.97	80.00- 120.00	100.00
7.351	7.351 (1.163)	77	653779			2.53- 62.53	32.41
7.351	7.351 (1.163)	39	1238737			33.48- 93.48	61.41
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.459 (1.180)	58	1140525	200.000	191.21	80.00- 120.00	100.00
7.459	7.459 (1.180)	43	2988400			231.49- 291.49	262.02
7.459	7.459 (1.180)	85	494422			13.16- 73.16	43.35
147 Toluene					CAS #: 108-88-3		
7.588	7.588 (1.201)	91	4406952	200.000	197.14	80.00- 120.00	100.00
7.588	7.588 (1.201)	92	2565299			27.96- 87.96	58.21
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.831 (0.894)	75	1955249	200.000	196.24	80.00- 120.00	100.00
7.831	7.831 (0.894)	77	636581			2.78- 62.78	32.56
7.831	7.831 (0.894)	39	1138877			29.86- 89.86	58.25
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.989	7.989 (0.912)	97	1530598	200.000	193.22	80.00- 120.00	100.00
7.989	7.989 (0.912)	99	950596			31.98- 91.98	62.11
7.989	7.989 (0.912)	83	1283094			53.23- 113.23	83.83

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene						CAS #: 127-18-4	
8.025	8.025 (0.916)	166	2360856	200.000	193.17	80.00- 120.00	100.00
8.025	8.025 (0.916)	129	1846468			46.99- 106.99	78.21
8.025	8.025 (0.916)	131	1782106			44.98- 104.98	75.49
158 2-Hexanone						CAS #: 591-78-6	
8.154	8.154 (0.930)	58	1539011	200.000	196.28	80.00- 120.00	100.00
8.154	8.154 (0.930)	43	2936451			164.73- 224.73	190.80
8.154	8.154 (0.930)	100	323600			0.00- 50.65	21.03
160 Dibromochloromethane						CAS #: 124-48-1	
8.297	8.297 (0.947)	129	3321130	200.000	196.55	80.00- 120.00	100.00
8.297	8.297 (0.947)	127	2591758			47.57- 107.57	78.04
161 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
8.411	8.411 (0.960)	107	2531911	200.000	194.54	80.00- 120.00	100.00
8.411	8.411 (0.960)	109	2379600			63.47- 123.47	93.98
165 Chlorobenzene						CAS #: 108-90-7	
8.791	8.791 (1.003)	112	3881755	200.000	195.10	80.00- 120.00	100.00
8.791	8.791 (1.003)	114	1241503			1.87- 61.87	31.98
8.791	8.791 (1.003)	77	1982862			21.88- 81.88	51.08
167 Ethyl Benzene						CAS #: 100-41-4	
8.834	8.834 (1.008)	106	1974546	200.000	196.17	80.00- 120.00	100.00
8.834	8.834 (1.008)	91	5963051			272.32- 332.32	302.00
169 m,p-Xylene						CAS #: 108-38-3	
8.934	8.934 (1.020)	106	2474960	200.000	195.82	80.00- 120.00	100.00
8.934	8.934 (1.020)	91	4841000			165.91- 225.91	195.60
171 o-Xylene						CAS #: 95-47-6	
9.278	9.278 (1.059)	106	2369331	200.000	196.19	80.00- 120.00	100.00
9.278	9.278 (1.059)	91	4850957			175.85- 235.85	204.74
172 Styrene						CAS #: 100-42-5	
9.300	9.300 (1.061)	104	3963290	200.000	202.65	80.00- 120.00	100.00(A)
9.300	9.300 (1.061)	78	1871344			17.56- 77.56	47.22
174 Bromoform						CAS #: 75-25-2	
9.500	9.500 (1.084)	173	3273867	200.000	201.49	80.00- 120.00	100.00(A)
9.500	9.500 (1.084)	171	1693521			21.66- 81.66	51.73
175 Cumene						CAS #: 98-82-8	
9.565	9.565 (1.092)	105	7279552	200.000	192.37	80.00- 120.00	100.00
9.565	9.565 (1.092)	120	2053326			0.00- 57.98	28.21

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.565	9.565 (1.092)	51	718880			0.00- 39.96	9.88
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.887	9.887 (1.128)	83	3414412	200.000	193.68	80.00- 120.00	100.00
9.887	9.887 (1.128)	85	2198576			34.78- 94.78	64.39
182 Propylbenzene					CAS #: 103-65-1		
9.909	9.909 (1.131)	91	8017085	200.000	189.21	80.00- 120.00	100.00
9.909	9.909 (1.131)	120	2099767			0.00- 55.78	26.19
9.909	9.909 (1.131)	105	316832			0.00- 33.82	3.95
188 4-Ethyltoluene					CAS #: 622-96-8		
10.002	10.002 (1.141)	120	2284359	200.000	193.91	80.00- 120.00	100.00
10.002	10.002 (1.141)	105	7161287			285.47- 345.47	313.49
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.059	10.059 (1.148)	120	3190073	200.000	195.45	80.00- 120.00	100.00
10.059	10.059 (1.148)	105	6332298			169.49- 229.49	198.50
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.381	10.381 (1.185)	105	6081838	200.000	194.86	80.00- 120.00	100.00
10.381	10.381 (1.185)	120	2900298			17.18- 77.18	47.69
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.675	10.675 (1.218)	146	4494661	200.000	197.43	80.00- 120.00	100.00
10.675	10.675 (1.218)	148	2872235			34.08- 94.08	63.90
10.668	10.668 (1.217)	111	1748684			9.00- 69.00	38.91
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.754	10.754 (1.227)	146	4573842	200.000	197.60	80.00- 120.00	100.00
10.754	10.754 (1.227)	148	2924578			33.83- 93.83	63.94
10.754	10.754 (1.227)	111	1725693			7.37- 67.37	37.73
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.868	10.868 (1.240)	91	5854168	200.000	206.22	80.00- 120.00	100.00(A)
10.868	10.868 (1.240)	126	1411991			0.00- 53.98	24.12
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.083	11.083 (1.265)	146	4307846	200.000	198.54	80.00- 120.00	100.00
11.083	11.083 (1.265)	148	2743428			33.96- 93.96	63.68
11.083	11.083 (1.265)	111	1746054			9.96- 69.96	40.53
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.487	12.487 (1.425)	180	3877592	200.000	209.23	80.00- 120.00	100.00(A)
12.487	12.487 (1.425)	182	3694672			64.97- 124.97	95.28

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.580	12.580	(1.436)	225	2937633	200.000	205.00	80.00- 120.00	100.00(A)
12.580	12.580	(1.436)	223	1857983			33.42- 93.42	63.25
228 Naphthalene						CAS #: 91-20-3		
12.752	12.752	(1.455)	128	925705	20.0000	17.797	80.00- 120.00	100.00
12.752	12.752	(1.455)	127	118007			0.00- 43.00	12.75

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3052311.d
Lab Smp Id: ICAL Level #8
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/23may17.b/317q0523a.m
Misc Info: 200ppbv (200ppbv)

Calibration Date: 23-MAY-2017
Calibration Time: 15:30
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	131467	78880	184054	130358	-0.84
123 1,4-Difluorobenze	510592	306355	714829	518061	1.46
163 Chlorobenzene-d5	463787	278272	649302	477974	3.06

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.42	5.09	5.75	5.42	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.32	0.22
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd3.i/23may17.b/3052311.d

Date : 23-MAY-2017 16:20

Client ID:

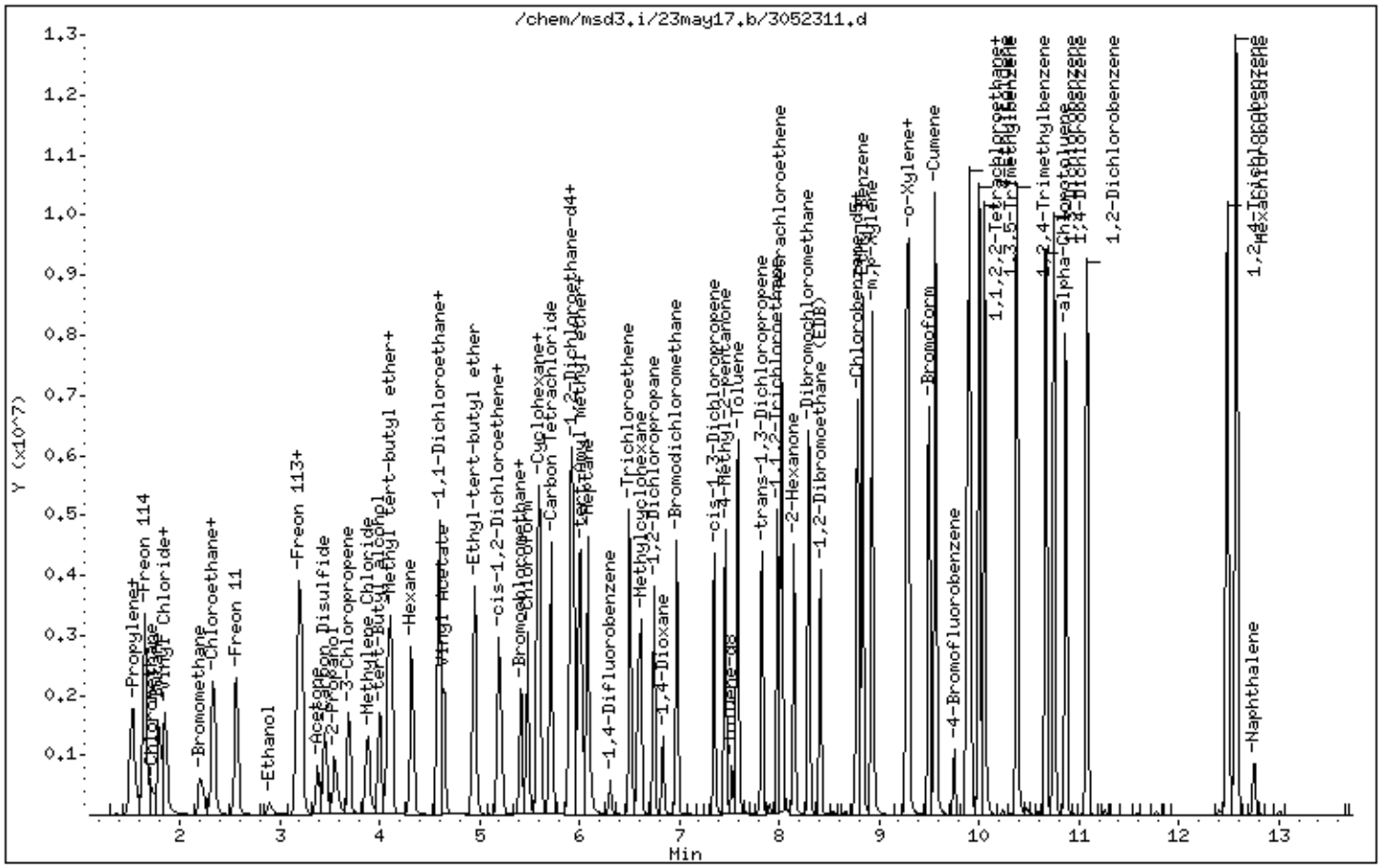
Instrument: msd3.i

Sample Info: 200ml 2850-97

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



Eurofins Air Toxics, Inc. 2Q 2017 LODs TO-14A/TO-15 QUAD Limit of Detections (LODs) Effective 05-26-17						
CAS #	Analyte	Molecular Weight (MW)	LOD (ppbv)	LOQ (ppbv)	LOD (ug/m3)	LOQ (ug/m3)
71-55-6	1,1,1-Trichloroethane	133.42	0.2	0.5	1.09137	2.72843
79-34-5	1,1,2,2-Tetrachloroethane	167.86	0.2	0.5	1.37309	3.43272
79-00-5	1,1,2-Trichloroethane	133.42	0.2	0.5	1.09137	2.72843
75-34-3	1,1-Dichloroethane	98.97	0.2	0.5	0.80957	2.02393
75-35-4	1,1-Dichloroethene	96.95	0.2	0.5	0.79305	1.98262
120-82-1	1,2,4-Trichlorobenzene	181.46	0.8	2	5.93734	14.84335
95-63-6	1,2,4-Trimethylbenzene	120.19	0.2	0.5	0.98315	2.45787
106-93-4	1,2-Dibromoethane (EDB)	187.88	0.2	0.5	1.53685	3.84213
95-50-1	1,2-Dichlorobenzene	147.01	0.2	0.5	1.20254	3.00634
107-06-2	1,2-Dichloroethane	98.96	0.2	0.5	0.80949	2.02372
78-87-5	1,2-Dichloropropane	112.99	0.2	0.5	0.92425	2.31063
108-67-8	1,3,5-Trimethylbenzene	120.19	0.2	0.5	0.98315	2.45787
106-99-0	1,3-Butadiene	54.09	0.2	0.5	0.44245	1.10613
541-73-1	1,3-Dichlorobenzene	147.01	0.2	0.5	1.20254	3.00634
106-46-7	1,4-Dichlorobenzene	147.01	0.2	0.5	1.20254	3.00634
123-91-1	1,4-Dioxane	88.11	0.8	2	2.88294	7.20736
540-84-1	2,2,4-Trimethylpentane	114.22	0.2	0.5	0.93431	2.33579
78-93-3	2-Butanone	72.11	0.8	2	2.35943	5.89857
591-78-6	2-Hexanone	100.16	0.8	2	3.27722	8.19305
67-63-0	2-Propanol	60.09	0.8	2	1.96613	4.91534
107-05-1	3-Chloropropene	76.53	0.8	2	2.50405	6.26012
622-96-8	4-Ethyltoluene	120.19	0.2	0.5	0.98315	2.45787
108-10-1	4-Methyl-2-pentanone	100.16	0.2	0.5	0.8193	2.04826
67-64-1	Acetone	58.08	0.8	5	1.90037	11.8773
100-44-7	alpha-Chlorotoluene	126.58	0.2	0.5	1.03542	2.58855
71-43-2	Benzene	78.11	0.2	0.5	0.63894	1.59734
75-27-4	Bromodichloromethane	163.83	0.2	0.5	1.34012	3.35031
75-25-2	Bromoform	252.77	0.2	0.5	2.06765	5.16912
74-83-9	Bromomethane	94.95	0.8	5	3.10675	19.41718
75-15-0	Carbon Disulfide	76.14	0.8	2	2.49129	6.22822
56-23-5	Carbon Tetrachloride	153.84	0.2	0.5	1.2584	3.14601
108-90-7	Chlorobenzene	112.56	0.2	0.5	0.92074	2.30184
75-00-3	Chloroethane	64.52	0.8	2	2.11108	5.27771
67-66-3	Chloroform	119.39	0.2	0.5	0.97661	2.44151
74-87-3	Chloromethane	50.49	0.8	5	1.65202	10.32515
156-59-2	cis-1,2-Dichloroethene	96.94	0.2	0.5	0.79297	1.98241
10061-01-5	cis-1,3-Dichloropropene	110.97	0.2	0.5	0.90773	2.26933
98-82-8	Cumene	120.19	0.2	0.5	0.98315	2.45787
110-82-7	Cyclohexane	84.16	0.2	0.5	0.68843	1.72106
124-48-1	Dibromochloromethane	208.28	0.2	0.5	1.70372	4.2593
64-17-5	Ethanol	46.07	0.8	2	1.5074	3.76851

100-41-4	Ethyl Benzene	106.16	0.2	0.5	0.86838	2.17096
75-69-4	Freon 11	137.38	0.2	0.5	1.12376	2.80941
76-13-1	Freon 113	187.39	0.2	0.5	1.53284	3.83211
76-14-2	Freon 114	170.93	0.2	0.5	1.3982	3.4955
75-71-8	Freon 12	120.92	0.2	0.5	0.98912	2.4728
142-82-5	Heptane	100.2	0.2	0.5	0.81963	2.04908
87-68-3	Hexachlorobutadiene	260.76	0.8	2	8.53202	21.33006
110-54-3	Hexane	86.17	0.2	0.5	0.70487	1.76217
108-38-3	m,p-Xylene	106.17	0.2	0.5	0.86847	2.17117
1634-04-4	Methyl tert-butyl ether	88.15	0.8	2	2.88425	7.2106
75-09-2	Methylene Chloride	84.94	0.8	5	2.77922	17.37014
91-20-3	Naphthalene	128.17	0.08	1	0.41937	5.24213
95-47-6	o-Xylene	106.17	0.2	0.5	0.86847	2.17117
103-65-1	Propylbenzene	120.19	0.2	0.5	0.98315	2.45787
115-07-1	Propylene	42.08	0.8	2	1.37685	3.44213
100-42-5	Styrene	104.14	0.2	0.5	0.85186	2.12965
127-18-4	Tetrachloroethene	165.85	0.2	0.5	1.35665	3.39162
109-99-9	Tetrahydrofuran	72.1	0.2	0.5	0.58978	1.47444
108-88-3	Toluene	92.13	0.2	0.5	0.75362	1.88405
156-60-5	trans-1,2-Dichloroethene	96.94	0.2	0.5	0.79297	1.98241
10061-02-6	trans-1,3-Dichloropropene	110.97	0.2	0.5	0.90773	2.26933
79-01-6	Trichloroethene	131.39	0.2	0.5	1.07476	2.68691
108-05-4	Vinyl Acetate	86.09	0.8	2	2.81685	7.04213
75-01-4	Vinyl Chloride	62.5	0.2	0.5	0.51125	1.27812

ppbv - part per billion by volume

Concentration (ug/m3) = Concentration (ppbv)*MW/24.45

Instrument ID - msd3.i file msd3.i/31may17.b/3053113a.d msd3.i/31may17.b/3053109a.d msd3.i/31may17.b/3053109c.d

TO15 MDL (0.5ppbv) MSD3

Report Date : 30-May-2017 13:08

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Standard#: 2850-155; 50ml
0.5ppbv (2.0ppbv)

verification: 2850-155; 20mL
0.2ppbv (2.0ppbv)

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	3052606	3052607	3052608	3052609	3052610	3052611	3052612	3052613
INJ.DATE:	26-MAY-2017	26-MAY-2017	26-MAY-2017	26-MAY-2017	26-MAY-2017	26-MAY-2017	26-MAY-2017	26-MAY-2017
INJ.TIME:	19:02	19:41	20:05	20:30	20:55	21:20	21:44	22:09

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL (pptv)	pptv
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
6 Freon 143a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7 Freon 134a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8 Propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
9 Propylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
10 1,1-Difluoroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
11 Freon 12	433.08	467.22	456.23	469.07	432.17	456.49	460.08	457.76	454.01	14.03	42.07	500
12 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
13 Chlorodifluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
14 Ethylene Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
15 Freon 114	437.87	455.95	451.57	463.90	443.37	471.39	441.35	457.55	452.87	11.62	34.85	500
16 Freon 142b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
17 Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Reviewer 1 _____ Date: 5/30/17
Reviewer 2 _____ Date: 6/2/17

See narrative for compounds that have ratios exceeding 20. (Ratio of the mean recovered concentration and the MDL values).

$\bar{x}$ = 0.04974 ppbv
$2\bar{x}$ = 0.09948 ppbv
$4\bar{x}$ = 0.2 ppbv

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
												ppbv
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
23 Butane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
25 Vinyl Chloride	458.85	440.82	448.21	480.71	462.16	428.85	448.12	448.84	452.07	15.47	46.37	500
26 1,3-Butadiene	439.51	535.30	394.03	511.19	517.89	556.05	446.68	477.31	484.75	55.06	165.06	500
27 3-Methyl-1-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
28 Methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
29 Bromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
30 Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
31 Isopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
32 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
33 2-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
34 Pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
35 Freon 11	452.35	457.21	461.49	453.35	442.43	488.08	458.49	460.73	459.27	13.14	39.39	500
36 1-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
37 Dichlorofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
38 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
39 Isoprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
40 2-Methyl-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	ppbv
41 trans-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
42 Ethanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
43 1,2-Dichloro-1-fluoroe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
44 Ethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
45 cis-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
46 Acrolein	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
47 Freon 123a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
48 Freon 123	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
49 Freon 113	474.50	502.64	483.07	491.99	521.75	473.46	507.17	507.76	495.29	17.40	52.17	500
50 1,1-Dichloroethene	467.73	456.87	469.65	482.14	450.83	477.28	418.48	485.02	463.50	21.67	64.97	500
51 2,2-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
52 Acetone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
53 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
54 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
55 4-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
56 Carbon Disulfide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
57 2-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
58 3-Chloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
59 Cyclopentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
60 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
61 Methyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
62 3-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
63 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
												ppbv
64 Cyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
65 1-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
66 Methylene Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
67 2-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
68 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
69 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
70 tert-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
71 tert-Butyl alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
72 Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
73 trans-1,2-Dichloroethe	395.10	507.04	477.59	406.66	465.36	435.77	405.65	447.65	442.60	39.42	118.19	500
74 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
75 trans-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
76 1-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
77 cis-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
78 Hexane	445.92	446.74	480.00	453.18	430.63	458.68	459.69	466.75	455.20	14.86	44.56	500
79 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
80 sec-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
81 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
82 1,1-Dichloroethane	441.50	465.56	437.41	431.37	428.67	426.76	477.75	445.44	444.31	18.31	54.89	500
83 Isopropyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
84 1-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
85 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
86 Vinyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
	87 Butanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	ppbv
	88 Ethyl-tert-butyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	89 Isobutyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	90 2,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	91 cis-1,2-Dichloroethene	408.54	460.91	425.81	453.61	415.88	425.91	455.41	423.34	433.68	19.96	59.85	500
	92 2-Butanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	93 Methyl Acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	94 Ethyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	95 Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	96 2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	97 2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
*	98 Bromochloromethane	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	0.00	0.00	
	99 Tetrahydrofuran	421.72	430.66	449.78	441.41	468.75	468.33	468.94	417.55	445.89	21.42	64.22	500
	100 Chloroform	430.16	458.35	446.18	470.24	442.10	449.23	479.05	460.47	454.47	15.79	47.33	500
	101 1-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	102 Cyclohexane	495.74	499.60	427.97	459.01	426.85	433.40	446.32	510.59	462.43	34.60	103.72	500
	103 1,1,1-Trichloroethane	440.40	476.71	471.07	480.60	448.34	460.09	470.82	482.75	466.35	15.39	46.15	500
	104 Chloroacetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	105 n-Butylchloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	106 Carbon Tetrachloride	438.70	457.75	427.25	447.30	445.53	437.23	441.31	442.01	442.13	8.79	26.34	500
	107 1,1-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	108 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	109 2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	110 3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$ 112 Benzene-d6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
113 2,2,4-Trimethylpentane	459.07	458.77	442.48	453.70	443.53	474.42	443.37	429.41	450.59	13.80	41.36	500
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
115 Isobutanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
116 Benzene	425.97	434.88	475.67	458.77	450.47	433.81	453.67	441.19	446.80	16.10	48.26	500
$ 117 1,2-Dichloroethane-d4	24884.80	25407.92	25260.59	25301.37	25099.71	25532.99	25218.80	25966.27	25334.06	320.99	962.31	SA 5/30/17
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
119 tert-Amyl methyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
120 1,2-Dichloroethane	419.13	450.23	432.83	421.76	466.53	459.69	447.55	436.23	441.74	17.17	51.46	500
121 Heptane	431.91	463.07	408.79	458.76	452.51	449.89	413.29	433.08	438.91	20.46	61.33	500
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 123 1,4-Difluorobenzene	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	0.00	0.00	
124 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
125 Trichloroethene	421.38	473.83	454.94	487.39	458.40	423.54	483.67	440.02	455.40	25.58	76.69	500
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
127 Methylcyclohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
128 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
131 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
132 1,2-Dichloropropane	438.15	486.17	431.71	426.97	467.26	464.49	453.70	434.85	450.41	20.92	62.72	500
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
134 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	ppbv
136 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
137 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
138 Bromodichloromethane	457.69	458.86	462.85	475.66	443.58	440.41	478.87	451.92	458.73	13.74	41.20	500
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
140 bis(chloromethyl) Ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
143 2-Chloroethyl Vinyl Et	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
144 cis-1,3-Dichloropropen	405.52	437.12	434.94	441.43	456.42	473.74	449.92	442.61	442.71	19.56	58.65	500
145 4-Methyl-2-pentanone	512.38	539.88	529.01	511.14	457.76	532.95	471.22	515.29	508.70	29.36	88.03	500
$ 146 Toluene-d8	24523.09	24674.86	24827.24	24473.90	24952.16	24576.68	24757.21	24795.14	24697.53	164.89	494.33	5000 ppbv spk in
147 Toluene	473.74	469.71	469.90	476.73	481.63	462.19	496.96	479.04	476.24	10.37	31.10	500
148 Octane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
150 trans-1,3-Dichloroprop	443.49	433.14	425.02	427.70	412.91	437.64	443.31	424.96	431.02	10.46	31.37	500
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
152 1-Chloro-2-Bromopropan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
155 1,1,2-Trichloroethane	438.04	471.58	423.44	462.53	421.80	465.22	478.28	466.71	453.45	22.30	66.86	500
156 Tetrachloroethene	481.58	472.52	486.59	479.08	461.23	473.73	486.30	446.48	473.44	13.70	41.06	500
157 1,3-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
158 2-Hexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
													ppbv
159	Butyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
160	Dibromochloromethane	427.83	435.71	418.92	429.73	440.09	450.21	463.18	444.68	438.79	13.98	41.91	500
161	1,2-Dibromoethane (EDB	458.42	441.69	460.12	445.37	430.80	440.08	463.55	449.64	448.71	11.35	34.01	500
162	1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 163	Chlorobenzene-d5	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	0.00	0.00	
164	1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
165	Chlorobenzene	452.45	451.72	462.26	476.14	487.87	464.11	466.34	447.17	463.51	13.58	40.71	500
166	Butyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
167	Ethyl Benzene	430.85	452.88	465.72	481.56	448.84	459.03	456.01	440.00	454.36	15.52	46.52	500
168	1,1,1,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
169	m,p-Xylene	442.13	441.68	432.50	470.40	454.18	450.88	457.61	420.77	446.27	15.46	46.35	500
170	Nonane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
171	o-Xylene	461.19	452.45	443.35	454.57	443.67	461.29	452.48	456.71	453.21	6.89	20.66	500
172	Styrene	501.22	469.46	463.85	467.14	473.39	474.54	469.74	439.81	469.89	16.75	50.23	500
173	2-Heptanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
174	Bromoform	423.27	439.81	434.85	433.04	437.87	434.05	443.98	441.69	436.07	6.44	19.30	500
175	Cumene	459.40	439.87	446.49	458.60	466.32	457.37	460.47	456.78	455.66	8.42	25.26	500
176	Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$ 177	4-Bromofluorobenzene	24738.81	24613.11	24796.21	24610.96	24668.14	24606.88	24865.07	24391.49	24661.33	144.62	433.56	
178	1-Decene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
179	alpha-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
180	Bromobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
181	1,1,2,2-Tetrachloroeth	453.83	462.18	463.67	474.75	469.28	471.60	459.97	452.85	463.52	7.99	23.95	500
182	Propylbenzene	459.24	487.90	477.30	458.68	490.95	468.31	467.33	458.10	470.98	13.10	39.26	500

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
184 trans-1,4-Dichloro-2-b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
185 1,2,3-Trichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
187 Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
188 4-Ethyltoluene	457.55	469.15	476.77	470.70	473.01	432.31	447.62	453.57	460.08	15.19	45.55	500
189 2-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
190 1,3,5-Trimethylbenzene	428.17	462.36	473.96	462.17	444.64	450.71	473.43	449.70	455.64	15.47	46.37	500
191 4-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
192 beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
193 Diisobutyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
194 alpha Methyl Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
195 tert-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
196 1,2,4-Trimethylbenzene	455.35	453.02	457.07	459.46	438.13	455.89	452.56	451.38	452.86	6.50	19.50	500
197 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
198 Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
199 D-Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
200 Benzaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
201 Indan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
202 Indene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
203 sec-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
206 bis(2-Chloroethyl) Eth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
207 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
208 1,3-Dichlorobenzene	445.22	443.24	453.23	471.90	444.00	447.97	465.15	445.00	451.96	10.84	32.49	500
209 1,4-Dichlorobenzene	448.40	453.45	459.75	455.58	445.38	449.30	448.54	460.88	452.66	5.69	17.05	500
210 1,2,3-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
212 alpha-Chlorotoluene	408.40	417.17	397.19	416.85	400.15	411.47	392.84	374.55	402.33	14.36	43.06	500
213 Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
214 1,2-Dichlorobenzene	433.36	465.70	453.04	460.19	450.84	473.10	457.45	452.73	455.80	11.74	35.19	500
215 Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
216 4-Ethyl-1,2-dimethylbe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
217 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
220 1,2,4,5-tetramethylben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
221 1,2-Dibromo-3-chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
224 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
225 Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
226 1,2,4-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
227 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
228 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
229 1,2,3-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
230 Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
231 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
232 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
233 1,3,5-Triethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
234 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
235 Phenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
236 Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
~~M 237 1,2-Dichloroethene (To~~	~~803.64~~	~~967.95~~	~~903.39~~	~~860.27~~	~~881.24~~	~~861.68~~	~~861.06~~	~~870.99~~	~~876.28~~	~~46.55~~	~~139.56~~
M 238 Chlorobutane (Total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 239 Total Xylene	903.32	894.13	875.85	924.97	897.85	912.17	910.09	877.48	899.48	16.95	50.83
~~M 240 3 and 4-Ethyltoluene~~	~~457.55~~	~~469.15~~	~~476.77~~	~~470.70~~	~~473.01~~	~~432.31~~	~~447.62~~	~~453.57~~	~~460.08~~	~~15.19~~	~~45.55~~
241 Total Volatile Hydroca	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
242 TPH reference to Hexan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
243 TPH reference to Hepta	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
244 TPH reference to Gasol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
245 TPH reference MineralS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
246 TPH reference to Stodd	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
247 TVOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
248 TVOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
249 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
250 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
251 NMOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
252 NMOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
253 NMOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

QA 5/30/17
No MDL for
summary compounds.

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
254 C3 - C4 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
255 C4 - C5 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
256 C5 - C6 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
257 C6 - C7 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref He	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref D	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
265 C10-C12 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
266 C8-C10 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naph	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

TO15 2.0ppbv MDL MSD3

Standard#: 2850-155

2.0ppbv (2.0ppbv); 200mL

verification#: 2850-155

0.8ppbv (2.0ppbv); 80mL

Report Date : 30-May-2017 16:27

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	3052614	3052615	3052616	3052617	3052618	3052619	3052620	3052621
INJ.DATE:	26-MAY-2017	26-MAY-2017	26-MAY-2017	27-MAY-2017	27-MAY-2017	27-MAY-2017	27-MAY-2017	27-MAY-2017
INJ.TIME:	22:50	23:16	23:42	00:08	00:35	01:01	01:27	01:54

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
											pptv	pptv (RL)
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
6 Freon 143a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7 Freon 134a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8 Propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
9 Propylene	2257.39	2120.85	2132.14	2185.17	2181.02	2143.82	2208.09	2159.23	2173.47	44.71	134.04	2000
10 1,1-Difluoroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
11 Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
12 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
13 Chlorodifluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
14 Ethylene Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
15 Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
16 Freon 142b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
17 Chloromethane	2554.27	2433.45	2802.13	2573.67	2445.36	2633.15	2621.16	2563.07	2578.28	116.15	348.21	2000

Reviewer 1 _____ Date: 5/30/17

Reviewer 2 _____ Date: 6/2/17

$\bar{x}$ = 0.1874052 ppbv

$2\bar{x}$ = 0.3748104 ppbv

$4\bar{x}$ = 0.75 ppbv

See narrative for compounds that have ratios exceeding 20. (Ratio of the mean recovered concentration and the MDL value(s).

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	ppbv
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
23 Butane	1975.23	2146.03	1865.03	2052.54	2064.69	2145.94	2275.71	2204.62	2091.22	130.77	392.06	2000
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
25 Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
26 1,3-Butadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
27 3-Methyl-1-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
28 Methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
29 Bromomethane	2035.14	1864.33	1847.77	1853.16	1911.39	1939.76	1656.71	1895.38	1875.45	107.28	321.61	2000
30 Chloroethane	2307.99	2172.60	2152.68	2160.15	2096.78	2092.43	2360.09	2218.65	2195.17	95.81	287.24	2000
31 Isopentane	2145.05	2118.96	2139.76	2178.28	2115.77	2063.00	2132.58	2033.64	2115.88	46.54	139.53	2000
32 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
33 2-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
34 Pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
35 Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
36 1-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
37 Dichlorofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
38 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
39 Isoprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
												ppbv
40 2-Methyl-2-butene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
41 trans-2-Pentene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
42 Ethanol	2056.05	2149.04	1908.26	2196.69	2178.21	1976.29	2122.33	2208.53	2099.43	109.64	328.69	2000
43 1,2-Dichloro-1-fluoroe	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
44 Ethyl Ether	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
45 cis-2-Pentene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
46 Acrolein	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
47 Freon 123a	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
48 Freon 123	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
49 Freon 113	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
50 1,1-Dichloroethene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
51 2,2-Dimethylbutane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
52 Acetone	2130.94	2049.71	1946.35	1967.22	1948.72	2133.90	2118.92	2103.12	2049.86	83.68	250.87	2000
53 Iodomethane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
54 Bromoethane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
55 4-Methyl-1-pentene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
56 Carbon Disulfide	2047.42	1967.04	1979.90	1959.59	1928.75	1921.19	1950.11	2026.11	1972.52	44.38	133.05	2000
57 2-Propanol	2127.18	2006.65	2114.58	2111.46	2049.21	2074.95	2040.01	2034.11	2069.77	44.13	132.30	2000
58 3-Chloropropene	1991.53	1884.85	2009.73	2008.43	1964.54	1919.17	1885.27	1949.63	1951.64	51.11	153.21	2000
59 Cyclopentene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
60 2-Methylpentane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
61 Methyl Acetate	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
62 3-Methylpentane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	
63 Acetonitrile	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
												ppbv
64 Cyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
65 1-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
66 Methylene Chloride	2031.51	1947.37	2011.95	1836.89	1939.57	1943.52	1980.21	2017.98	1963.63	62.66	187.85	2000
67 2-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
68 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
69 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
70 tert-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
71 tert-Butyl alcohol	2110.56	2135.16	2061.21	2114.75	2094.48	2068.14	2141.31	2142.29	2108.49	31.70	95.04	2000
72 Methyl tert-butyl ethe	1949.85	1938.29	1924.38	1967.15	1934.47	1931.76	1946.20	2005.54	1949.71	26.08	78.18	2000
73 trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
74 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
75 trans-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
76 1-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
77 cis-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
78 Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
79 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
80 sec-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
81 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
82 1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
83 Isopropyl ether	1968.46	1900.44	1944.41	1965.80	1986.09	1923.50	1959.57	1946.80	1949.39	27.20	81.56	2000
84 1-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
85 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
86 Vinyl Acetate	1870.67	1740.55	1562.61	1675.75	1626.19	1727.46	1686.25	1808.76	1712.28	98.01	293.84	2000

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
87	Butanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
88	Ethyl-tert-butyl ether	1971.59	1917.06	1916.20	1904.21	1941.30	1886.66	1939.18	1943.01	1927.40	26.61	79.78
89	Isobutyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
90	2,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
91	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
92	2-Butanone	1993.38	2031.55	2142.51	2104.93	1952.78	1909.62	2014.02	2046.82	2024.45	75.93	227.65
93	Methyl Acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
94	Ethyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
95	Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
96	2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
97	2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 98	Bromochloromethane	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	0.00	0.00
99	Tetrahydrofuran	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
100	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
101	1-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
102	Cyclohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
103	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
104	Chloroacetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
105	n-Butylchloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
106	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
107	1,1-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
108	Thiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
109	2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
110	3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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2000
2000

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	ppbv
$ 112 Benzene-d6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
113 2,2,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
115 Isobutanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
116 Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$ 117 1,2-Dichloroethane-d4	25962.05	25409.02	25478.88	25926.88	26184.39	25640.26	25853.16	25839.19	25786.73	260.37	780.60	
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
119 tert-Amyl methyl ether	1957.68	1997.78	1973.99	1902.75	1939.56	1870.05	1788.49	1909.23	1917.44	66.46	199.25	2000
120 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
121 Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 123 1,4-Difluorobenzene	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	0.00	0.00	
124 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
125 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
127 Methylcyclohexane	1970.86	2090.97	1955.44	2172.82	1982.65	2175.11	2068.47	2104.53	2065.11	87.54	262.45	2000
128 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
131 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
132 1,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
134 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
												ppbv
135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
136 1,4-Dioxane	2119.49	2229.14	2232.78	2299.59	2112.24	2130.96	2121.84	2171.34	2177.17	69.23	207.57	2000
137 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
138 Bromodichloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
140 bis(chloromethyl) Ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
143 2-Chloroethyl Vinyl Et	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
144 cis-1,3-Dichloropropen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
145 4-Methyl-2-pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$ 146 Toluene-d8	24487.44	24531.73	24548.49	25185.09	24562.22	24567.46	24574.53	24507.64	24620.58	230.09	689.82	
147 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
148 Octane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
150 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
152 1-Chloro-2-Bromopropan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
155 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
156 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
157 1,3-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
158 2-Hexanone	2172.61	2152.16	2102.56	2240.81	2219.69	2251.38	2178.33	2122.19	2179.96	54.17	162.40	2000

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
	159 Butyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	160 Dibromochloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	161 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	162 1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	163 Chlorobenzene-d5	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	25000.00	0.00	0.00
	164 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	165 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	166 Butyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	167 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	168 1,1,1,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	169 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	170 Nonane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	171 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	172 Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	173 2-Heptanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	174 Bromoform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	175 Cumene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	176 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	177 4-Bromofluorobenzene	24672.58	24767.46	24754.09	24852.64	24922.19	24647.46	24803.12	24905.41	24790.62	100.56	301.48
	178 1-Decene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	179 alpha-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	180 Bromobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	181 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	182 Propylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
184 trans-1,4-Dichloro-2-b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
185 1,2,3-Trichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
187 Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
188 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
189 2-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
190 1,3,5-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
191 4-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
192 beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
193 Diisobutyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
194 alpha Methyl Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
195 tert-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
196 1,2,4-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
197 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
198 Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
199 D-Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
200 Benzaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
201 Indan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
202 Indene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
203 sec-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
206 bis(2-Chloroethyl) Eth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	ppbv
207 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
208 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
209 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
210 1,2,3-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
212 alpha-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
213 Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
214 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
215 Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
216 4-Ethyl-1,2-dimethylbe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
217 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
220 1,2,4,5-tetramethylben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
221 1,2-Dibromo-3-chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
224 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
225 Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
226 1,2,4-Trichlorobenzene	1730.44	1821.55	1815.01	1776.57	1815.48	1815.35	1771.34	1753.60	1787.42	34.35	102.98	2000
227 Hexachlorobutadiene	1901.97	1879.96	1890.72	1858.28	1909.23	1886.96	1907.05	1939.07	1896.65	23.83	71.43	2000
228 Naphthalene	126.68	119.79	124.11	131.93	117.28	123.13	121.32	118.54	122.85	4.78	14.34	2000
229 1,2,3-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
	230 Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	231 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	232 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	233 1,3,5-Triethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	234 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	235 Phenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	236 Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M	237 1,2-Dichloroethene (To	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M	238 Chlorobutane (Total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M	239 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M	240 3 and 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	241 Total Volatile Hydroca	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	242 TPH reference to Hexan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	243 TPH reference to Hepta	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	244 TPH reference to Gasol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	245 TPH reference MineralS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	246 TPH reference to Stodd	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	247 TVOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	248 TVOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	249 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	250 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	251 NMOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	252 NMOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	253 NMOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd3.i/26may17.b/317q0523a.m
Batch File: /chem/msd3.i/26may17.b
Inst ID: msd3.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
254 C3 - C4 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
255 C4 - C5 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
256 C5 - C6 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
257 C6 - C7 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref He	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref D	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
265 C10-C12 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
266 C8-C10 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naph	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	CCV		
Lab ID:	1708091B-20A	**Date/Time Analyzed:**	8/7/17 10:44 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3080702

Compound	CAS#	%Recovery
Benzene	71-43-2	102
Ethyl Benzene	100-41-4	97
m,p-Xylene	108-38-3	98
Naphthalene	91-20-3	73
o-Xylene	95-47-6	95
Toluene	108-88-3	102
Total Xylene	1330-20-7	96

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	84
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	106

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd3.i Injection Date: 07-AUG-2017 10:44
Lab File ID: 3080702.d Init. Cal. Date(s): 23-MAY-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 13:12 12:46
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd3.i/07aug17.b/317q0523b.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 117 1,2-Dichloroethane-d4	1.27767	1.07175	0.010	16.11703	30.00000	Averaged
$ 146 Toluene-d8	1.01408	1.07262	0.010	-5.77222	30.00000	Averaged
$ 177 4-Bromofluorobenzene	0.65272	0.65937	0.010	-1.01816	30.00000	Averaged
9 Propylene	0.87712	0.67207	0.010	23.37765	40.00000	Averaged
11 Freon 12	2.58572	2.20035	0.010	14.90372	30.00000	Averaged
15 Freon 114	2.12618	1.98352	0.010	6.70975	30.00000	Averaged
17 Chloromethane	0.87812	0.77521	0.010	11.71944	30.00000	Averaged
23 Butane	0.22143	0.17478	0.010	21.06778	40.00000	Averaged
25 Vinyl Chloride	0.99658	0.88555	0.010	11.14091	30.00000	Averaged
26 1,3-Butadiene	0.88550	0.75546	0.010	14.68517	30.00000	Averaged
29 Bromomethane	0.85966	0.81820	0.010	4.82220	30.00000	Averaged
30 Chloroethane	0.51667	0.46453	0.010	10.09284	30.00000	Averaged
31 Isopentane	1.32321	1.08298	0.010	18.15475	40.00000	Averaged
35 Freon 11	2.88299	2.44941	0.010	15.03921	30.00000	Averaged
42 Ethanol	0.42607	0.36805	0.010	13.61851	30.00000	Averaged
49 Freon 113	2.11009	1.97595	0.010	6.35711	30.00000	Averaged
50 1,1-Dichloroethene	1.08308	0.95358	0.010	11.95595	30.00000	Averaged
52 Acetone	0.59539	0.48409	0.010	18.69311	30.00000	Averaged
56 Carbon Disulfide	3.12236	2.72961	0.010	12.57872	30.00000	Averaged
57 2-Propanol	2.02079	1.61309	0.010	20.17547	30.00000	Averaged
58 3-Chloropropene	0.46812	0.40780	0.010	12.88633	30.00000	Averaged
66 Methylene Chloride	1.35173	1.17524	0.010	13.05639	30.00000	Averaged
71 tert-Butyl alcohol	2.56578	1.84924	0.010	27.92659	40.00000	Averaged
72 Methyl tert-butyl ether	3.05137	2.38928	0.010	21.69811	30.00000	Averaged
73 trans-1,2-Dichloroethene	0.65569	0.66908	0.010	-2.04306	30.00000	Averaged
78 Hexane	1.84293	1.51901	0.010	17.57622	30.00000	Averaged
82 1,1-Dichloroethane	1.99966	1.80317	0.010	9.82624	30.00000	Averaged
83 Isopropyl ether	3.95873	3.19482	0.010	19.29664	40.00000	Averaged
86 Vinyl Acetate	0.27920	0.24713	0.010	11.48656	40.00000	Averaged
88 Ethyl-tert-butyl ether	3.89388	3.05261	0.010	21.60506	40.00000	Averaged
91 cis-1,2-Dichloroethene	0.83529	0.68985	0.010	17.41156	30.00000	Averaged
92 2-Butanone	0.51874	0.45285	0.010	12.70139	30.00000	Averaged
99 Tetrahydrofuran	1.34738	1.08445	0.010	19.51399	30.00000	Averaged
100 Chloroform	2.31396	2.10035	0.010	9.23134	30.00000	Averaged
102 Cyclohexane	1.48803	1.28898	0.010	13.37653	30.00000	Averaged
103 1,1,1-Trichloroethane	2.59914	2.24757	0.010	13.52639	30.00000	Averaged

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd3.i Injection Date: 07-AUG-2017 10:44
Lab File ID: 3080702.d Init. Cal. Date(s): 23-MAY-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 13:12 12:46
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd3.i/07aug17.b/317q0523b.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
106 Carbon Tetrachloride	2.73320	2.48120	0.010	9.21991	30.00000	Averaged
113 2,2,4-Trimethylpentane	6.06266	5.15485	0.010	14.97374	30.00000	Averaged
116 Benzene	0.81225	0.82685	0.010	-1.79775	30.00000	Averaged
119 tert-Amyl methyl ether	0.21745	0.19829	0.010	8.80814	40.00000	Averaged
120 1,2-Dichloroethane	0.42038	0.38226	0.010	9.06832	30.00000	Averaged
121 Heptane	0.29070	0.28483	0.010	2.01890	30.00000	Averaged
125 Trichloroethene	0.39813	0.39424	0.010	0.97848	30.00000	Averaged
127 Methylcyclohexane	0.29953	0.26349	0.010	12.03376	40.00000	Averaged
132 1,2-Dichloropropane	0.31937	0.32266	0.010	-1.03112	30.00000	Averaged
136 1,4-Dioxane	0.20199	0.19451	0.010	3.70482	30.00000	Averaged
138 Bromodichloromethane	0.63344	0.64209	0.010	-1.36582	30.00000	Averaged
144 cis-1,3-Dichloropropene	0.48923	0.48555	0.010	0.75187	30.00000	Averaged
145 4-Methyl-2-pentanone	0.30571	0.27298	0.010	10.70508	30.00000	Averaged
147 Toluene	1.09261	1.11435	0.010	-1.99014	30.00000	Averaged
150 trans-1,3-Dichloropropene	0.52323	0.47601	0.010	9.02601	30.00000	Averaged
155 1,1,2-Trichloroethane	0.41610	0.42446	0.010	-2.00814	30.00000	Averaged
156 Tetrachloroethene	0.64724	0.64718	0.010	0.01051	30.00000	Averaged
158 2-Hexanone	0.40593	0.38705	0.010	4.65109	30.00000	Averaged
160 Dibromochloromethane	0.87848	0.87672	0.010	0.20057	30.00000	Averaged
161 1,2-Dibromoethane (EDB)	0.68449	0.67558	0.010	1.30146	30.00000	Averaged
165 Chlorobenzene	1.05148	1.03111	0.010	1.93765	30.00000	Averaged
167 Ethyl Benzene	0.53149	0.51521	0.010	3.06178	30.00000	Averaged
169 m,p-Xylene	0.66468	0.65075	0.010	2.09582	30.00000	Averaged
171 o-Xylene	0.63210	0.60054	0.010	4.99160	30.00000	Averaged
172 Styrene	0.94226	1.01577	0.010	-7.80107	30.00000	Averaged
174 Bromoform	0.84135	0.85646	0.010	-1.79613	30.00000	Averaged
175 Cumene	1.99282	1.93586	0.010	2.85846	30.00000	Averaged
181 1,1,2,2-Tetrachloroethane	0.92704	0.92792	0.010	-0.09460	30.00000	Averaged
182 Propylbenzene	2.24456	2.19191	0.010	2.34540	30.00000	Averaged
188 4-Ethyltoluene	0.61544	0.62874	0.010	-2.16100	30.00000	Averaged
190 1,3,5-Trimethylbenzene	0.84047	0.89117	0.010	-6.03311	30.00000	Averaged
196 1,2,4-Trimethylbenzene	1.65066	1.60167	0.010	2.96782	30.00000	Averaged
208 1,3-Dichlorobenzene	1.20395	1.23893	0.010	-2.90555	30.00000	Averaged
209 1,4-Dichlorobenzene	1.22203	1.25462	0.010	-2.66728	30.00000	Averaged
212 alpha-Chlorotoluene	1.47281	1.45946	0.010	0.90635	30.00000	Averaged

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd3.i Injection Date: 07-AUG-2017 10:44
Lab File ID: 3080702.d Init. Cal. Date(s): 23-MAY-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 13:12 12:46
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd3.i/07aug17.b/317q0523b.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
214 1,2-Dichlorobenzene	1.15052	1.17713	0.010	-2.31301	30.00000	Averaged
226 1,2,4-Trichlorobenzene	0.96935	0.98730	0.010	-1.85177	30.00000	Averaged
227 Hexachlorobutadiene	0.74951	0.78207	0.010	-4.34398	30.00000	Averaged
228 Naphthalene	2.72059	1.98807	0.010	26.92494	40.00000	Averaged

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080702.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 07-AUG-2017 10:44
Operator : jg Inst ID: msd3.i
Smp Info : 50ml #2850-234
Misc Info : 50ppbv(200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 07-Aug-2017 13:34 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 13 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 98 Bromochloromethane					CAS #: 74-97-5			
5.410	5.410 (1.000)	130	181481	25.0000		80.00- 120.00		100.00
5.410	5.410 (1.000)	128	139718			46.73- 106.73		76.99
5.410	5.410 (1.000)	49	200454			91.08- 151.08		110.45
* 123 1,4-Difluorobenzene					CAS #: 540-36-3			
6.306	6.306 (1.000)	114	637861	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	89269			0.00- 44.78		14.00
* 163 Chlorobenzene-d5					CAS #: 3114-55-4			
8.755	8.755 (1.000)	117	604933	25.0000		80.00- 120.00		100.00
8.755	8.755 (1.000)	82	286391			20.58- 80.58		47.34
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
5.956	5.956 (1.101)	65	194502	25.0000	20.971	80.00- 120.00		100.00
5.956	5.956 (1.101)	67	116536			24.54- 84.54		59.92
$ 146 Toluene-d8					CAS #: 2037-26-5			
7.523	7.523 (1.193)	98	684180	25.0000	26.443	80.00- 120.00		100.00
7.523	7.523 (1.193)	70	66619			0.00- 40.44		9.74

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	440343			35.27- 95.27	64.36
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	398872	25.0000	25.254	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	411157			84.77- 144.77	103.08
9.737	9.737 (1.112)	176	382032			64.74- 124.74	95.78
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.276)	41	243937	50.0000	38.311	80.00- 120.00	100.00
1.493	1.493 (0.276)	42	164172			34.96- 94.96	67.30
1.493	1.493 (0.276)	39	175604			43.10- 103.10	71.99
11 Freon 12					CAS #: 75-71-8		
1.521	1.521 (0.281)	85	798644	50.0000	42.548	80.00- 120.00	100.00
1.521	1.521 (0.281)	87	259474			2.61- 62.61	32.49
15 Freon 114					CAS #: 76-14-2		
1.633	1.633 (0.302)	135	719942	50.0000	46.645	80.00- 120.00	100.00
1.633	1.633 (0.302)	137	232758			1.52- 61.52	32.33
17 Chloromethane					CAS #: 74-87-3		
1.717	1.717 (0.317)	50	281370	50.0000	44.140	80.00- 120.00	100.00
1.717	1.717 (0.317)	52	96158			5.06- 65.06	34.17
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.330)	58	63439	50.0000	39.466	80.00- 120.00	100.00
1.786	1.786 (0.330)	43	466500			780.12- 840.12	735.35
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.338)	62	321422	50.0000	44.430	80.00- 120.00	100.00
1.814	1.814 (0.335)	64	101718			2.35- 62.35	31.65
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.341)	54	274204	50.0000	42.657	80.00- 120.00	100.00
1.842	1.842 (0.341)	39	263720			70.49- 130.49	96.18
29 Bromomethane					CAS #: 74-83-9		
2.192	2.192 (0.405)	94	296977	50.0000	47.589	80.00- 120.00	100.00
2.192	2.192 (0.405)	96	280399			64.76- 124.76	94.42
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	168605	50.0000	44.954	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	51068			0.04- 60.04	30.29
2.304	2.304 (0.426)	49	49182			0.57- 60.57	29.17

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.431)	43	393081	50.0000	40.923	80.00- 120.00	100.00
2.332	2.332 (0.431)	57	280194			39.30- 99.30	71.28
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.472)	101	889044	50.0000	42.480	80.00- 120.00	100.00
2.556	2.556 (0.472)	103	573841			35.42- 95.42	64.55
42 Ethanol					CAS #: 64-17-5		
2.892	2.892 (0.534)	45	133587	50.0000	43.191	80.00- 120.00	100.00
2.892	2.892 (0.534)	46	52474			8.36- 68.36	39.28
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.589)	151	717193	50.0000	46.821	80.00- 120.00	100.00
3.186	3.186 (0.589)	153	455665			33.57- 93.57	63.53
3.186	3.186 (0.589)	101	772122			81.85- 141.85	107.66
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	96	346115	50.0000	44.022	80.00- 120.00	100.00
3.214	3.214 (0.594)	98	222721			33.92- 93.92	64.35
3.214	3.214 (0.594)	61	553358			146.09- 206.09	159.88
52 Acetone					CAS #: 67-64-1		
3.368	3.368 (0.622)	58	175707	50.0000	40.653	80.00- 120.00	100.00
3.368	3.368 (0.622)	43	536636			310.81- 370.81	305.42
56 Carbon Disulfide					CAS #: 75-15-0		
3.438	3.438 (0.635)	76	990743	50.0000	43.711	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.656)	45	585489	50.0000	39.912	80.00- 120.00	100.00
3.535	3.535 (0.653)	43	120590			0.00- 49.20	20.60
3.549	3.549 (0.656)	59	24020			0.00- 33.72	4.10
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.682)	76	148015	50.0000	43.557	80.00- 120.00	100.00
3.675	3.675 (0.679)	41	434984			282.10- 342.10	293.88
66 Methylene Chloride					CAS #: 75-09-2		
3.857	3.857 (0.713)	49	426569	50.0000	43.472	80.00- 120.00	100.00
3.857	3.857 (0.713)	84	312819			38.75- 98.75	73.33
3.857	3.857 (0.713)	51	133233			0.74- 60.74	31.23
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.997	3.997 (0.739)	59	671205	50.0000	36.037	80.00- 120.00	100.00
3.997	3.997 (0.739)	41	160761			0.00- 51.35	23.95

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.997	3.997 (0.739)	57	76775			0.00- 41.27	11.44
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.081	4.081 (0.754)	73	867217	50.0000	39.151	80.00- 120.00	100.00
4.081	4.081 (0.754)	57	234288			0.00- 56.12	27.02
4.081	4.081 (0.754)	41	229389			0.00- 55.40	26.45
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.109 (0.759)	98	242852	50.0000	51.022	80.00- 120.00	100.00
4.109	4.109 (0.759)	61	528059			202.86- 262.86	217.44
4.109	4.109 (0.759)	96	373778			122.28- 182.28	153.91
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.798)	57	551344	50.0000	41.212	80.00- 120.00	100.00
4.319	4.319 (0.798)	43	345749			33.71- 93.71	62.71
4.319	4.319 (0.798)	86	81052			0.00- 44.46	14.70
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.599	4.599 (0.850)	63	654483	50.0000	45.087	80.00- 120.00	100.00
4.599	4.599 (0.850)	65	197821			0.47- 60.47	30.23
83 Isopropyl ether					CAS #: 108-20-3		
4.585	4.585 (0.847)	45	1159600	50.0000	40.352	80.00- 120.00	100.00
4.585	4.585 (0.847)	87	295019			0.00- 55.24	25.44
4.585	4.585 (0.847)	59	138156			0.00- 41.21	11.91
86 Vinyl Acetate					CAS #: 108-05-4		
4.641	4.641 (0.858)	86	89698	50.0000	44.257	80.00- 120.00	100.00
4.641	4.641 (0.858)	43	1045701			1252.04-1312.04	1165.80
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.915)	59	1107980	50.0000	39.197	80.00- 120.00	100.00
4.949	4.949 (0.915)	87	430577			8.64- 68.64	38.86
4.949	4.949 (0.915)	41	223737			0.00- 48.69	20.19
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.187	5.187 (0.959)	98	250389	50.0000	41.294	80.00- 120.00	100.00
5.187	5.187 (0.959)	96	380997			120.71- 180.71	152.16
5.173	5.173 (0.956)	61	493301			179.50- 239.50	197.01
92 2-Butanone					CAS #: 78-93-3		
5.215	5.215 (0.964)	72	164367	50.0000	43.649	80.00- 120.00	100.00
5.201	5.201 (0.961)	43	724891			421.08- 481.08	441.02
5.201	5.201 (0.961)	57	60703			6.95- 66.95	36.93

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.410	5.410 (1.000)	42	393615	50.0000	40.243	80.00- 120.00	100.00
5.410	5.410 (1.000)	71	144476			4.59- 64.59	36.70
5.410	5.410 (1.000)	72	152641			7.27- 67.27	38.78
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.013)	83	762349	50.0000	45.384	80.00- 120.00	100.00
5.480	5.480 (1.013)	85	486306			35.09- 95.09	63.79
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.031)	84	467851	50.0000	43.312	80.00- 120.00	100.00
5.578	5.578 (1.031)	56	596683			96.78- 156.78	127.54
5.578	5.578 (1.031)	41	319440			43.37- 103.37	68.28
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.592	5.592 (1.034)	97	815781	50.0000	43.237	80.00- 120.00	100.00
5.592	5.592 (1.034)	99	525415			34.29- 94.29	64.41
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.704	5.704 (1.054)	119	900581	50.0000	45.390	80.00- 120.00	100.00
5.704	5.704 (1.054)	117	907583			71.44- 131.44	100.78
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.900	5.900 (1.091)	57	1871015	50.0000	42.513	80.00- 120.00	100.00
5.900	5.900 (1.091)	56	595808			0.95- 60.95	31.84
5.900	5.900 (1.091)	41	462995			0.00- 57.81	24.75
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	1054828	50.0000	50.899	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	245669			0.00- 53.39	23.29
119 tert-Amyl methyl ether					CAS #: 994-05-8		
5.998	5.998 (0.951)	87	252969	50.0000	45.596	80.00- 120.00	100.00
5.998	5.998 (0.951)	73	971722			355.30- 415.30	384.13
5.998	5.998 (0.951)	55	313064			79.12- 139.12	123.76
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.012	6.012 (0.953)	62	487654	50.0000	45.466	80.00- 120.00	100.00
6.012	6.012 (0.953)	64	156683			1.16- 61.16	32.13
121 Heptane					CAS #: 142-82-5		
6.068	6.068 (0.962)	71	363364	50.0000	48.990	80.00- 120.00	100.00
6.068	6.068 (0.962)	43	668372			159.72- 219.72	183.94
6.068	6.068 (0.962)	57	387068			73.21- 133.21	106.52
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.031)	95	502936	50.0000	49.511	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.502	6.502 (1.031)	130	603710			84.28- 144.28	120.04
6.502	6.502 (1.031)	97	333056			35.52- 95.52	66.22
127 Methylcyclohexane					CAS #: 108-87-2		
6.586	6.586 (1.044)	83	336134	50.0000	43.983	80.00- 120.00	100.00
6.586	6.586 (1.044)	98	161104			22.71- 82.71	47.93
6.586	6.586 (1.044)	55	283679			64.76- 124.76	84.39
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.735	6.735 (1.068)	63	411625	50.0000	50.516	80.00- 120.00	100.00
6.735	6.735 (1.068)	62	288014			39.16- 99.16	69.97
6.735	6.735 (1.068)	41	228753			33.29- 93.29	55.57
136 1,4-Dioxane					CAS #: 123-91-1		
6.829	6.829 (1.083)	88	248138	50.0000	48.148	80.00- 120.00	100.00
6.829	6.829 (1.083)	58	184844			43.17- 103.17	74.49
6.829	6.829 (1.083)	57	59772			0.00- 55.09	24.09
138 Bromodichloromethane					CAS #: 75-27-4		
6.965	6.965 (1.104)	83	819127	50.0000	50.683	80.00- 120.00	100.00
6.965	6.965 (1.104)	85	518582			34.33- 94.33	63.31
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.344	7.344 (1.165)	75	619430	50.0000	49.624	80.00- 120.00	100.00
7.344	7.344 (1.165)	77	202414			2.53- 62.53	32.68
7.344	7.344 (1.165)	39	331534			33.48- 93.48	53.52
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.452	7.452 (1.182)	58	348252	50.0000	44.647	80.00- 120.00	100.00
7.452	7.452 (1.182)	43	886295			231.49- 291.49	254.50
7.452	7.452 (1.182)	85	148753			13.16- 73.16	42.71
147 Toluene					CAS #: 108-88-3		
7.574	7.574 (1.201)	91	1421603	50.0000	50.995	80.00- 120.00	100.00
7.574	7.574 (1.201)	92	813365			27.96- 87.96	57.21
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.824	7.824 (0.894)	75	575904	50.0000	45.487	80.00- 120.00	100.00
7.824	7.824 (0.894)	77	189206			2.78- 62.78	32.85
7.817	7.817 (0.893)	39	290893			29.86- 89.86	50.51
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.975	7.975 (0.911)	97	513534	50.0000	51.004	80.00- 120.00	100.00
7.975	7.975 (0.911)	99	317116			31.98- 91.98	61.75
7.975	7.975 (0.911)	83	422021			53.23- 113.23	82.18

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.010	8.010 (0.915)	166	782997	50.0000	49.995	80.00- 120.00	100.00
8.010	8.010 (0.915)	129	585639			46.99- 106.99	74.79
8.010	8.010 (0.915)	131	574781			44.98- 104.98	73.41
158 2-Hexanone					CAS #: 591-78-6		
8.139	8.139 (0.930)	58	468284	50.0000	47.674	80.00- 120.00	100.00
8.139	8.139 (0.930)	43	850188			164.73- 224.73	181.55
8.139	8.139 (0.930)	100	97649			0.00- 50.65	20.85
160 Dibromochloromethane					CAS #: 124-48-1		
8.290	8.290 (0.947)	129	1060712	50.0000	49.900	80.00- 120.00	100.00
8.290	8.290 (0.947)	127	813101			47.57- 107.57	76.66
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.404	8.404 (0.960)	107	817359	50.0000	49.349	80.00- 120.00	100.00
8.404	8.404 (0.960)	109	770901			63.47- 123.47	94.32
165 Chlorobenzene					CAS #: 108-90-7		
8.777	8.777 (1.002)	112	1247505	50.0000	49.031	80.00- 120.00	100.00
8.777	8.777 (1.002)	114	401042			1.87- 61.87	32.15
8.777	8.777 (1.002)	77	620537			21.88- 81.88	49.74
167 Ethyl Benzene					CAS #: 100-41-4		
8.827	8.827 (1.008)	106	623340	50.0000	48.469	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	1876259			272.32- 332.32	301.00
169 m,p-Xylene					CAS #: 108-38-3		
8.927	8.927 (1.020)	106	787323	50.0000	48.952	80.00- 120.00	100.00
8.920	8.920 (1.019)	91	1485949			165.91- 225.91	188.73
171 o-Xylene					CAS #: 95-47-6		
9.264	9.264 (1.058)	106	726578	50.0000	47.504	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	1460802			175.85- 235.85	201.05
172 Styrene					CAS #: 100-42-5		
9.286	9.286 (1.061)	104	1228944	50.0000	53.900	80.00- 120.00	100.00
9.286	9.286 (1.061)	78	536540			17.56- 77.56	43.66
174 Bromoform					CAS #: 75-25-2		
9.486	9.486 (1.083)	173	1036203	50.0000	50.898	80.00- 120.00	100.00
9.486	9.486 (1.083)	171	532567			21.66- 81.66	51.40
175 Cumene					CAS #: 98-82-8		
9.551	9.551 (1.091)	105	2342127	50.0000	48.571	80.00- 120.00	100.00
9.551	9.551 (1.091)	120	664328			0.00- 57.98	28.36

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.551	9.551 (1.091)	51	217973			0.00- 39.96	9.31
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.866	9.866 (1.127)	83	1122656	50.0000	50.047	80.00- 120.00	100.00
9.866	9.866 (1.127)	85	730540			34.78- 94.78	65.07
182 Propylbenzene					CAS #: 103-65-1		
9.894	9.894 (1.130)	91	2651922	50.0000	48.827	80.00- 120.00	100.00
9.894	9.894 (1.130)	120	698660			0.00- 55.78	26.35
9.894	9.894 (1.130)	105	102352			0.00- 33.82	3.86
188 4-Ethyltoluene					CAS #: 622-96-8		
9.987	9.987 (1.141)	120	760687	50.0000	51.080	80.00- 120.00	100.00
9.987	9.987 (1.141)	105	2357066			285.47- 345.47	309.86
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.038	10.038 (1.146)	120	1078202	50.0000	53.016	80.00- 120.00	100.00
10.038	10.038 (1.146)	105	2078807			169.49- 229.49	192.80
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.360	10.360 (1.183)	105	1937812	50.0000	48.516	80.00- 120.00	100.00
10.360	10.360 (1.183)	120	940591			17.18- 77.18	48.54
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.646	10.646 (1.216)	146	1498943	50.0000	51.453	80.00- 120.00	100.00
10.646	10.646 (1.216)	148	951824			34.08- 94.08	63.50
10.646	10.646 (1.216)	111	550271			9.00- 69.00	36.71
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.732	10.732 (1.226)	146	1517923	50.0000	51.334	80.00- 120.00	100.00
10.732	10.732 (1.226)	148	967629			33.83- 93.83	63.75
10.732	10.732 (1.226)	111	535098			7.37- 67.37	35.25
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.847	10.847 (1.239)	91	1765748	50.0000	49.547	80.00- 120.00	100.00
10.847	10.847 (1.239)	126	426752			0.00- 53.98	24.17
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.055	11.055 (1.263)	146	1424170	50.0000	51.156	80.00- 120.00	100.00
11.055	11.055 (1.263)	148	906756			33.96- 93.96	63.67
11.055	11.055 (1.263)	111	542012			9.96- 69.96	38.06
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.452	12.452 (1.422)	180	1194496	50.0000	50.926	80.00- 120.00	100.00
12.452	12.452 (1.422)	182	1147092			64.97- 124.97	96.03

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.545	12.545 (1.433)	225	946204	50.0000	52.172	80.00- 120.00	100.00
12.545	12.545 (1.433)	223	601101			33.42- 93.42	63.53
228 Naphthalene					CAS #: 91-20-3		
12.717	12.717 (1.452)	128	240530	5.00000	3.654	80.00- 120.00	100.00
12.717	12.717 (1.452)	127	30780			0.00- 43.00	12.80

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080702.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 50ppbv(200ppbv)

Calibration Date: 07-AUG-2017
Calibration Time: 12:36
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	212111	127267	296955	181481	-14.44
123 1,4-Difluorobenze	708415	425049	991781	637861	-9.96
163 Chlorobenzene-d5	701828	421097	982559	604933	-13.81

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

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Data File: /chem/msd3.i/07aug17.b/3080702.d

Date : 07-AUG-2017 10:44

Client ID: CCV

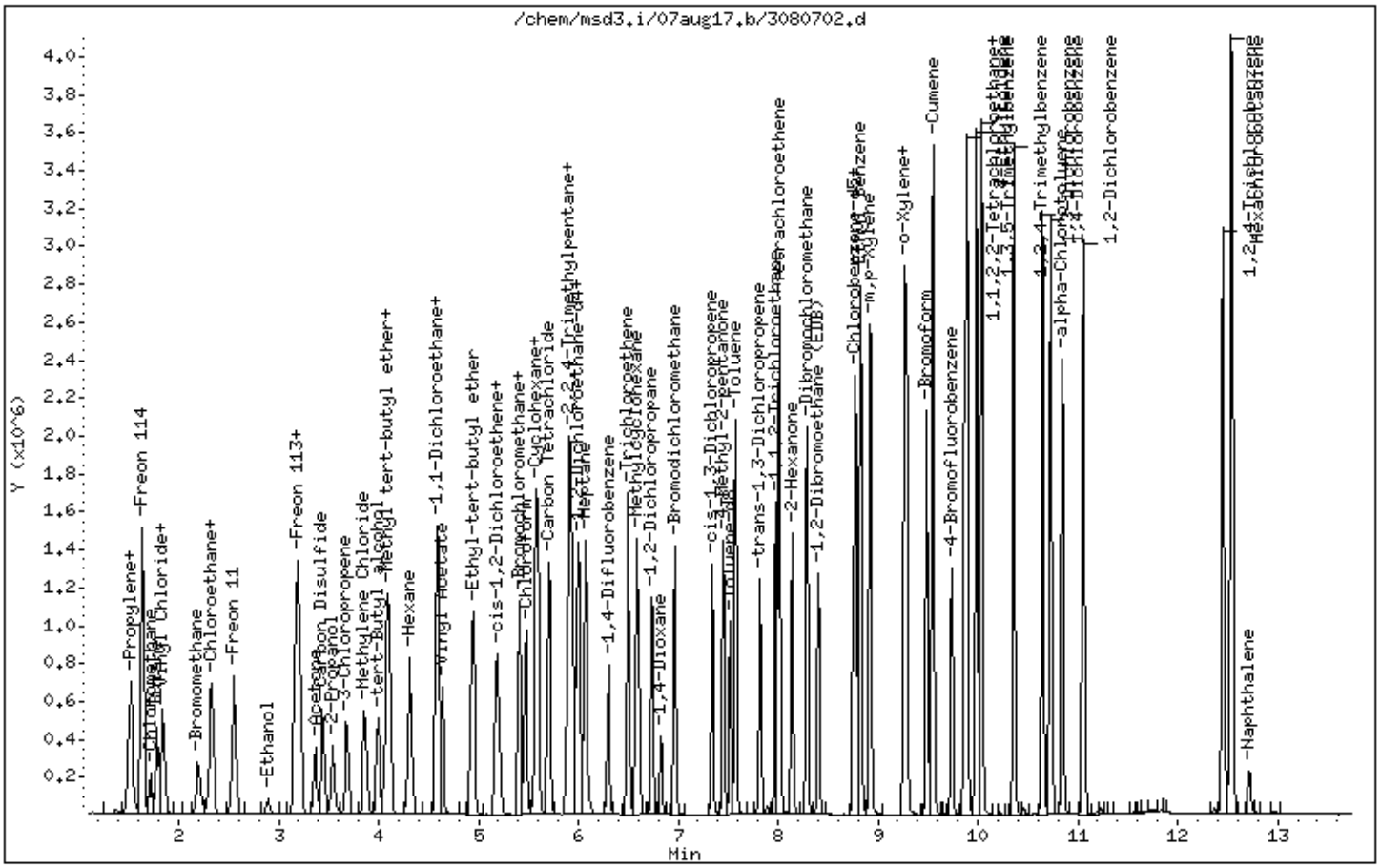
Instrument: msd3.i

Sample Info: 50ml #2850-234

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	CCV		
Lab ID:	1708091B-20B	**Date/Time Analyzed:**	8/8/17 10:56 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3080802

Compound	CAS#	%Recovery
Benzene	71-43-2	94
Ethyl Benzene	100-41-4	97
m,p-Xylene	108-38-3	98
Naphthalene	91-20-3	76
o-Xylene	95-47-6	96
Toluene	108-88-3	97
Total Xylene	1330-20-7	97

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	85
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	101

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd3.i Injection Date: 08-AUG-2017 10:56
Lab File ID: 3080802.d Init. Cal. Date(s): 23-MAY-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 13:12 12:46
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd3.i/08aug17.b/317q0523b.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 117 1,2-Dichloroethane-d4	1.27767	1.08137	0.010	15.36365	30.00000	Averaged
$ 146 Toluene-d8	1.01408	1.02045	0.010	-0.62811	30.00000	Averaged
$ 177 4-Bromofluorobenzene	0.65272	0.66132	0.010	-1.31694	30.00000	Averaged
9 Propylene	0.87712	0.66278	0.010	24.43724	40.00000	Averaged
11 Freon 12	2.58572	2.18817	0.010	15.37490	30.00000	Averaged
15 Freon 114	2.12618	1.98451	0.010	6.66294	30.00000	Averaged
17 Chloromethane	0.87812	0.75851	0.010	13.62044	30.00000	Averaged
23 Butane	0.22143	0.17983	0.010	18.78720	40.00000	Averaged
25 Vinyl Chloride	0.99658	0.89509	0.010	10.18344	30.00000	Averaged
26 1,3-Butadiene	0.88550	0.74464	0.010	15.90778	30.00000	Averaged
29 Bromomethane	0.85966	0.81520	0.010	5.17189	30.00000	Averaged
30 Chloroethane	0.51667	0.45913	0.010	11.13706	30.00000	Averaged
31 Isopentane	1.32321	1.06864	0.010	19.23873	40.00000	Averaged
35 Freon 11	2.88299	2.46994	0.010	14.32714	30.00000	Averaged
42 Ethanol	0.42607	0.37530	0.010	11.91537	30.00000	Averaged
49 Freon 113	2.11009	1.99212	0.010	5.59056	30.00000	Averaged
50 1,1-Dichloroethene	1.08308	0.97288	0.010	10.17447	30.00000	Averaged
52 Acetone	0.59539	0.47928	0.010	19.50142	30.00000	Averaged
56 Carbon Disulfide	3.12236	2.67589	0.010	14.29903	30.00000	Averaged
57 2-Propanol	2.02079	1.66524	0.010	17.59478	30.00000	Averaged
58 3-Chloropropene	0.46812	0.42807	0.010	8.55529	30.00000	Averaged
66 Methylene Chloride	1.35173	1.15724	0.010	14.38835	30.00000	Averaged
71 tert-Butyl alcohol	2.56578	1.96831	0.010	23.28612	40.00000	Averaged
72 Methyl tert-butyl ether	3.05137	2.51807	0.010	17.47730	30.00000	Averaged
73 trans-1,2-Dichloroethene	0.65569	0.67556	0.010	-3.03133	30.00000	Averaged
78 Hexane	1.84293	1.54812	0.010	15.99695	30.00000	Averaged
82 1,1-Dichloroethane	1.99966	1.80382	0.010	9.79399	30.00000	Averaged
83 Isopropyl ether	3.95873	3.23523	0.010	18.27592	40.00000	Averaged
86 Vinyl Acetate	0.27920	0.25558	0.010	8.45834	40.00000	Averaged
88 Ethyl-tert-butyl ether	3.89388	3.14872	0.010	19.13672	40.00000	Averaged
91 cis-1,2-Dichloroethene	0.83529	0.69982	0.010	16.21745	30.00000	Averaged
92 2-Butanone	0.51874	0.46285	0.010	10.77360	30.00000	Averaged
99 Tetrahydrofuran	1.34738	1.07764	0.010	20.01978	30.00000	Averaged
100 Chloroform	2.31396	2.08558	0.010	9.86992	30.00000	Averaged
102 Cyclohexane	1.48803	1.32790	0.010	10.76094	30.00000	Averaged
103 1,1,1-Trichloroethane	2.59914	2.29523	0.010	11.69269	30.00000	Averaged

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd3.i Injection Date: 08-AUG-2017 10:56
Lab File ID: 3080802.d Init. Cal. Date(s): 23-MAY-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 13:12 12:46
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd3.i/08aug17.b/317q0523b.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
106 Carbon Tetrachloride	2.73320	2.46652	0.010	9.75707	30.00000	Averaged
113 2,2,4-Trimethylpentane	6.06266	5.21942	0.010	13.90864	30.00000	Averaged
116 Benzene	0.81225	0.76633	0.010	5.65272	30.00000	Averaged
119 tert-Amyl methyl ether	0.21745	0.19644	0.010	9.66054	40.00000	Averaged
120 1,2-Dichloroethane	0.42038	0.37411	0.010	11.00564	30.00000	Averaged
121 Heptane	0.29070	0.27235	0.010	6.31133	30.00000	Averaged
125 Trichloroethene	0.39813	0.38103	0.010	4.29434	30.00000	Averaged
127 Methylcyclohexane	0.29953	0.26762	0.010	10.65415	40.00000	Averaged
132 1,2-Dichloropropane	0.31937	0.30381	0.010	4.87000	30.00000	Averaged
136 1,4-Dioxane	0.20199	0.18739	0.010	7.22975	30.00000	Averaged
138 Bromodichloromethane	0.63344	0.60195	0.010	4.97142	30.00000	Averaged
144 cis-1,3-Dichloropropene	0.48923	0.47692	0.010	2.51598	30.00000	Averaged
145 4-Methyl-2-pentanone	0.30571	0.26011	0.010	14.91487	30.00000	Averaged
147 Toluene	1.09261	1.05934	0.010	3.04459	30.00000	Averaged
150 trans-1,3-Dichloropropene	0.52323	0.47777	0.010	8.68823	30.00000	Averaged
155 1,1,2-Trichloroethane	0.41610	0.41319	0.010	0.69861	30.00000	Averaged
156 Tetrachloroethene	0.64724	0.64253	0.010	0.72871	30.00000	Averaged
158 2-Hexanone	0.40593	0.38610	0.010	4.88498	30.00000	Averaged
160 Dibromochloromethane	0.87848	0.86960	0.010	1.01072	30.00000	Averaged
161 1,2-Dibromoethane (EDB)	0.68449	0.67447	0.010	1.46265	30.00000	Averaged
165 Chlorobenzene	1.05148	1.01905	0.010	3.08448	30.00000	Averaged
167 Ethyl Benzene	0.53149	0.51513	0.010	3.07837	30.00000	Averaged
169 m,p-Xylene	0.66468	0.65219	0.010	1.87930	30.00000	Averaged
171 o-Xylene	0.63210	0.60501	0.010	4.28493	30.00000	Averaged
172 Styrene	0.94226	1.01242	0.010	-7.44614	30.00000	Averaged
174 Bromoform	0.84135	0.85543	0.010	-1.67319	30.00000	Averaged
175 Cumene	1.99282	1.93607	0.010	2.84765	30.00000	Averaged
181 1,1,2,2-Tetrachloroethane	0.92704	0.90361	0.010	2.52715	30.00000	Averaged
182 Propylbenzene	2.24456	2.16976	0.010	3.33256	30.00000	Averaged
188 4-Ethyltoluene	0.61544	0.62129	0.010	-0.95102	30.00000	Averaged
190 1,3,5-Trimethylbenzene	0.84047	0.86965	0.010	-3.47248	30.00000	Averaged
196 1,2,4-Trimethylbenzene	1.65066	1.60514	0.010	2.75795	30.00000	Averaged
208 1,3-Dichlorobenzene	1.20395	1.23878	0.010	-2.89267	30.00000	Averaged
209 1,4-Dichlorobenzene	1.22203	1.24680	0.010	-2.02766	30.00000	Averaged
212 alpha-Chlorotoluene	1.47281	1.46492	0.010	0.53526	30.00000	Averaged

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd3.i Injection Date: 08-AUG-2017 10:56
Lab File ID: 3080802.d Init. Cal. Date(s): 23-MAY-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 13:12 12:46
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd3.i/08aug17.b/317q0523b.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
214 1,2-Dichlorobenzene	1.15052	1.16793	0.010	-1.51346	30.00000	Averaged
226 1,2,4-Trichlorobenzene	0.96935	0.99453	0.010	-2.59762	30.00000	Averaged
227 Hexachlorobutadiene	0.74951	0.79082	0.010	-5.51101	30.00000	Averaged
228 Naphthalene	2.72059	2.06674	0.010	24.03338	40.00000	Averaged

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080802.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 08-AUG-2017 10:56
Operator : jg Inst ID: msd3.i
Smp Info : 50ml 2850-234
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 11:35 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 13 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 98 Bromochloromethane					CAS #: 74-97-5			
5.410	5.410 (1.000)	130	196954	25.0000		80.00- 120.00		100.00
5.410	5.410 (1.000)	128	152564			46.73- 106.73		77.46
5.410	5.410 (1.000)	49	214588			91.08- 151.08		108.95
* 123 1,4-Difluorobenzene					CAS #: 540-36-3			
6.306	6.306 (1.000)	114	728289	25.0000		80.00- 120.00		100.00
6.306	6.306 (1.000)	88	102495			0.00- 44.78		14.07
* 163 Chlorobenzene-d5					CAS #: 3114-55-4			
8.755	8.755 (1.000)	117	663497	25.0000		80.00- 120.00		100.00
8.755	8.755 (1.000)	82	317638			20.58- 80.58		47.87
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
5.956	5.956 (1.101)	65	212981	25.0000	21.159	80.00- 120.00		100.00
5.956	5.956 (1.101)	67	122186			24.54- 84.54		57.37
$ 146 Toluene-d8					CAS #: 2037-26-5			
7.523	7.523 (1.193)	98	743183	25.0000	25.157	80.00- 120.00		100.00
7.523	7.523 (1.193)	70	72643			0.00- 40.44		9.77

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.523	7.523 (1.193)	100	477041			35.27- 95.27	64.19
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.737	9.737 (1.112)	174	438781	25.0000	25.329	80.00- 120.00	100.00
9.737	9.737 (1.112)	95	454534			84.77- 144.77	103.59
9.737	9.737 (1.112)	176	428685			64.74- 124.74	97.70
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.276)	41	261074	50.0000	37.781	80.00- 120.00	100.00
1.493	1.493 (0.276)	42	176518			34.96- 94.96	67.61
1.493	1.493 (0.276)	39	187138			43.10- 103.10	71.68
11 Freon 12					CAS #: 75-71-8		
1.521	1.521 (0.281)	85	861937	50.0000	42.312	80.00- 120.00	100.00
1.521	1.521 (0.281)	87	280326			2.61- 62.61	32.52
15 Freon 114					CAS #: 76-14-2		
1.633	1.633 (0.302)	135	781716	50.0000	46.668	80.00- 120.00	100.00
1.633	1.633 (0.302)	137	253503			1.52- 61.52	32.43
17 Chloromethane					CAS #: 74-87-3		
1.717	1.717 (0.317)	50	298784	50.0000	43.190	80.00- 120.00	100.00
1.717	1.717 (0.317)	52	104414			5.06- 65.06	34.95
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.330)	58	70837	50.0000	40.606	80.00- 120.00	100.00
1.786	1.786 (0.330)	43	502639			780.12- 840.12	709.57
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.338)	62	352585	50.0000	44.908	80.00- 120.00	100.00
1.828	1.828 (0.338)	64	109815			2.35- 62.35	31.15
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.341)	54	293318	50.0000	42.046	80.00- 120.00	100.00
1.842	1.842 (0.341)	39	267852			70.49- 130.49	91.32
29 Bromomethane					CAS #: 74-83-9		
2.192	2.192 (0.405)	94	321113	50.0000	47.414	80.00- 120.00	100.00
2.192	2.192 (0.405)	96	302963			64.76- 124.76	94.35
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	180855	50.0000	44.431	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	56497			0.04- 60.04	31.24
2.304	2.304 (0.426)	49	51837			0.57- 60.57	28.66

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.431)	43	420945	50.0000	40.381	80.00- 120.00	100.00
2.332	2.332 (0.431)	57	303357			39.30- 99.30	72.07
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.472)	101	972930	50.0000	42.836	80.00- 120.00	100.00
2.556	2.556 (0.472)	103	627449			35.42- 95.42	64.49
42 Ethanol					CAS #: 64-17-5		
2.892	2.892 (0.534)	45	147835	50.0000	44.042	80.00- 120.00	100.00
2.892	2.892 (0.534)	46	56372			8.36- 68.36	38.13
49 Freon 113					CAS #: 76-13-1		
3.186	3.186 (0.589)	151	784712	50.0000	47.205	80.00- 120.00	100.00
3.186	3.186 (0.589)	153	499930			33.57- 93.57	63.71
3.186	3.186 (0.589)	101	835428			81.85- 141.85	106.46
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	96	383225	50.0000	44.913	80.00- 120.00	100.00
3.214	3.214 (0.594)	98	247365			33.92- 93.92	64.55
3.214	3.214 (0.594)	61	614946			146.09- 206.09	160.47
52 Acetone					CAS #: 67-64-1		
3.368	3.368 (0.622)	58	188792	50.0000	40.249	80.00- 120.00	100.00
3.368	3.368 (0.622)	43	574789			310.81- 370.81	304.46
56 Carbon Disulfide					CAS #: 75-15-0		
3.438	3.438 (0.635)	76	1054055	50.0000	42.850	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.656)	45	655950	50.0000	41.203	80.00- 120.00	100.00
3.549	3.549 (0.656)	43	130315			0.00- 49.20	19.87
3.549	3.549 (0.656)	59	27900			0.00- 33.72	4.25
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.682)	76	168621	50.0000	45.722	80.00- 120.00	100.00
3.689	3.689 (0.682)	41	481314			282.10- 342.10	285.44
66 Methylene Chloride					CAS #: 75-09-2		
3.857	3.857 (0.713)	49	455846	50.0000	42.806	80.00- 120.00	100.00
3.871	3.871 (0.716)	84	343723			38.75- 98.75	75.40
3.857	3.857 (0.713)	51	140830			0.74- 60.74	30.89
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.997	3.997 (0.739)	59	775332	50.0000	38.357	80.00- 120.00	100.00
3.997	3.997 (0.739)	41	170967			0.00- 51.35	22.05

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.997	3.997 (0.739)	57	86062			0.00- 41.27	11.10
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.081	4.081 (0.754)	73	991888	50.0000	41.261	80.00- 120.00	100.00
4.081	4.081 (0.754)	57	260784			0.00- 56.12	26.29
4.081	4.081 (0.754)	41	242044			0.00- 55.40	24.40
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.109 (0.759)	98	266110	50.0000	51.516	80.00- 120.00	100.00
4.109	4.109 (0.759)	61	575685			202.86- 262.86	216.33
4.109	4.109 (0.759)	96	405822			122.28- 182.28	152.50
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.798)	57	609816	50.0000	42.002	80.00- 120.00	100.00
4.319	4.319 (0.798)	43	375747			33.71- 93.71	61.62
4.319	4.319 (0.798)	86	92479			0.00- 44.46	15.17
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.599	4.599 (0.850)	63	710538	50.0000	45.103	80.00- 120.00	100.00
4.599	4.599 (0.850)	65	215255			0.47- 60.47	30.29
83 Isopropyl ether					CAS #: 108-20-3		
4.585	4.585 (0.847)	45	1274384	50.0000	40.862	80.00- 120.00	100.00
4.585	4.585 (0.847)	87	340032			0.00- 55.24	26.68
4.585	4.585 (0.847)	59	153159			0.00- 41.21	12.02
86 Vinyl Acetate					CAS #: 108-05-4		
4.641	4.641 (0.858)	86	100676	50.0000	45.771	80.00- 120.00	100.00
4.641	4.641 (0.858)	43	1138519			1252.04-1312.04	1130.87
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.915)	59	1240306	50.0000	40.432	80.00- 120.00	100.00
4.949	4.949 (0.915)	87	493267			8.64- 68.64	39.77
4.949	4.949 (0.915)	41	230237			0.00- 48.69	18.56
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.186	5.186 (0.959)	98	275666	50.0000	41.891	80.00- 120.00	100.00
5.186	5.186 (0.959)	96	421473			120.71- 180.71	152.89
5.186	5.186 (0.959)	61	548159			179.50- 239.50	198.85
92 2-Butanone					CAS #: 78-93-3		
5.214	5.214 (0.964)	72	182320	50.0000	44.613	80.00- 120.00	100.00
5.214	5.214 (0.964)	43	770863			421.08- 481.08	422.81
5.214	5.214 (0.964)	57	65612			6.95- 66.95	35.99

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.410	5.410 (1.000)	42	424490	50.0000	39.990	80.00- 120.00	100.00
5.410	5.410 (1.000)	71	159367			4.59- 64.59	37.54
5.410	5.410 (1.000)	72	169144			7.27- 67.27	39.85
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.013)	83	821526	50.0000	45.065	80.00- 120.00	100.00
5.480	5.480 (1.013)	85	534754			35.09- 95.09	65.09
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.031)	84	523071	50.0000	44.620	80.00- 120.00	100.00
5.578	5.578 (1.031)	56	652036			96.78- 156.78	124.66
5.578	5.578 (1.031)	41	343895			43.37- 103.37	65.75
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.592	5.592 (1.034)	97	904108	50.0000	44.154	80.00- 120.00	100.00
5.592	5.592 (1.034)	99	583950			34.29- 94.29	64.59
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.057)	119	971581	50.0000	45.121	80.00- 120.00	100.00
5.704	5.704 (1.054)	117	982704			71.44- 131.44	101.14
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.900	5.900 (1.091)	57	2055973	50.0000	43.046	80.00- 120.00	100.00
5.900	5.900 (1.091)	56	637634			0.95- 60.95	31.01
5.900	5.900 (1.091)	41	497269			0.00- 57.81	24.19
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.940)	78	1116222	50.0000	47.174	80.00- 120.00	100.00
5.928	5.928 (0.940)	77	265738			0.00- 53.39	23.81
119 tert-Amyl methyl ether					CAS #: 994-05-8		
5.998	5.998 (0.951)	87	286132	50.0000	45.170	80.00- 120.00	100.00
5.998	5.998 (0.951)	73	1084253			355.30- 415.30	378.93
5.998	5.998 (0.951)	55	324606			79.12- 139.12	113.45
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.956)	62	544925	50.0000	44.497	80.00- 120.00	100.00
6.026	6.026 (0.956)	64	168579			1.16- 61.16	30.94
121 Heptane					CAS #: 142-82-5		
6.068	6.068 (0.962)	71	396702	50.0000	46.844	80.00- 120.00	100.00
6.068	6.068 (0.962)	43	717259			159.72- 219.72	180.81
6.068	6.068 (0.962)	57	419447			73.21- 133.21	105.73
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.031)	95	555007	50.0000	47.853	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.502	6.502 (1.031)	130	658926			84.28- 144.28	118.72
6.502	6.502 (1.031)	97	363074			35.52- 95.52	65.42
127 Methylcyclohexane					CAS #: 108-87-2		
6.586	6.586 (1.044)	83	389806	50.0000	44.673	80.00- 120.00	100.00
6.586	6.586 (1.044)	98	184236			22.71- 82.71	47.26
6.586	6.586 (1.044)	55	333866			64.76- 124.76	85.65
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.735	6.735 (1.068)	63	442529	50.0000	47.565	80.00- 120.00	100.00
6.735	6.735 (1.068)	62	308281			39.16- 99.16	69.66
6.735	6.735 (1.068)	41	247015			33.29- 93.29	55.82
136 1,4-Dioxane					CAS #: 123-91-1		
6.829	6.829 (1.083)	88	272945	50.0000	46.385	80.00- 120.00	100.00
6.829	6.829 (1.083)	58	201852			43.17- 103.17	73.95
6.829	6.829 (1.083)	57	65148			0.00- 55.09	23.87
138 Bromodichloromethane					CAS #: 75-27-4		
6.965	6.965 (1.104)	83	876782	50.0000	47.514	80.00- 120.00	100.00
6.972	6.972 (1.106)	85	562085			34.33- 94.33	64.11
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.344	7.344 (1.165)	75	694674	50.0000	48.742	80.00- 120.00	100.00
7.344	7.344 (1.165)	77	227421			2.53- 62.53	32.74
7.344	7.344 (1.165)	39	370430			33.48- 93.48	53.32
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.452	7.452 (1.182)	58	378877	50.0000	42.542	80.00- 120.00	100.00
7.452	7.452 (1.182)	43	952096			231.49- 291.49	251.29
7.452	7.452 (1.182)	85	167096			13.16- 73.16	44.10
147 Toluene					CAS #: 108-88-3		
7.574	7.574 (1.201)	91	1543014	50.0000	48.478	80.00- 120.00	100.00
7.574	7.574 (1.201)	92	889544			27.96- 87.96	57.65
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.824	7.824 (0.894)	75	634003	50.0000	45.656	80.00- 120.00	100.00
7.824	7.824 (0.894)	77	211233			2.78- 62.78	33.32
7.824	7.824 (0.894)	39	322174			29.86- 89.86	50.82
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.975	7.975 (0.911)	97	548304	50.0000	49.651	80.00- 120.00	100.00
7.975	7.975 (0.911)	99	339882			31.98- 91.98	61.99
7.975	7.975 (0.911)	83	448065			53.23- 113.23	81.72

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene						CAS #: 127-18-4	
8.018	8.018 (0.916)	166	852631	50.0000	49.636	80.00- 120.00	100.00
8.010	8.010 (0.915)	129	649608			46.99- 106.99	76.19
8.010	8.010 (0.915)	131	630578			44.98- 104.98	73.96
158 2-Hexanone						CAS #: 591-78-6	
8.139	8.139 (0.930)	58	512359	50.0000	47.558	80.00- 120.00	100.00
8.139	8.139 (0.930)	43	928582			164.73- 224.73	181.24
8.139	8.139 (0.930)	100	108311			0.00- 50.65	21.14
160 Dibromochloromethane						CAS #: 124-48-1	
8.290	8.290 (0.947)	129	1153956	50.0000	49.495	80.00- 120.00	100.00
8.290	8.290 (0.947)	127	894324			47.57- 107.57	77.50
161 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
8.404	8.404 (0.960)	107	895024	50.0000	49.269	80.00- 120.00	100.00
8.404	8.404 (0.960)	109	842508			63.47- 123.47	94.13
165 Chlorobenzene						CAS #: 108-90-7	
8.777	8.777 (1.002)	112	1352275	50.0000	48.458	80.00- 120.00	100.00
8.777	8.777 (1.002)	114	430777			1.87- 61.87	31.86
8.777	8.777 (1.002)	77	676555			21.88- 81.88	50.03
167 Ethyl Benzene						CAS #: 100-41-4	
8.827	8.827 (1.008)	106	683569	50.0000	48.461	80.00- 120.00	100.00
8.827	8.827 (1.008)	91	2052046			272.32- 332.32	300.20
169 m,p-Xylene						CAS #: 108-38-3	
8.920	8.920 (1.019)	106	865454	50.0000	49.060	80.00- 120.00	100.00
8.920	8.920 (1.019)	91	1663071			165.91- 225.91	192.16
171 o-Xylene						CAS #: 95-47-6	
9.264	9.264 (1.058)	106	802846	50.0000	47.858	80.00- 120.00	100.00
9.264	9.264 (1.058)	91	1619341			175.85- 235.85	201.70
172 Styrene						CAS #: 100-42-5	
9.285	9.285 (1.061)	104	1343481	50.0000	53.723	80.00- 120.00	100.00
9.285	9.285 (1.061)	78	593378			17.56- 77.56	44.17
174 Bromoform						CAS #: 75-25-2	
9.486	9.486 (1.083)	173	1135146	50.0000	50.836	80.00- 120.00	100.00
9.486	9.486 (1.083)	171	583355			21.66- 81.66	51.39
175 Cumene						CAS #: 98-82-8	
9.550	9.550 (1.091)	105	2569156	50.0000	48.576	80.00- 120.00	100.00
9.550	9.550 (1.091)	120	727711			0.00- 57.98	28.32

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.550	9.550 (1.091)	51	236005			0.00- 39.96	9.19
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.866	9.866 (1.127)	83	1199089	50.0000	48.736	80.00- 120.00	100.00
9.866	9.866 (1.127)	85	768859			34.78- 94.78	64.12
182 Propylbenzene					CAS #: 103-65-1		
9.894	9.894 (1.130)	91	2879254	50.0000	48.334	80.00- 120.00	100.00
9.894	9.894 (1.130)	120	754688			0.00- 55.78	26.21
9.894	9.894 (1.130)	105	110562			0.00- 33.82	3.84
188 4-Ethyltoluene					CAS #: 622-96-8		
9.987	9.987 (1.141)	120	824448	50.0000	50.476	80.00- 120.00	100.00
9.987	9.987 (1.141)	105	2656414			285.47- 345.47	322.21
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.038	10.038 (1.146)	120	1154025	50.0000	51.736	80.00- 120.00	100.00
10.038	10.038 (1.146)	105	2194877			169.49- 229.49	190.19
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.360	10.360 (1.183)	105	2130010	50.0000	48.621	80.00- 120.00	100.00
10.360	10.360 (1.183)	120	1027327			17.18- 77.18	48.23
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.646	10.646 (1.216)	146	1643851	50.0000	51.446	80.00- 120.00	100.00
10.654	10.654 (1.217)	148	1051918			34.08- 94.08	63.99
10.646	10.646 (1.216)	111	612555			9.00- 69.00	37.26
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.732	10.732 (1.226)	146	1654502	50.0000	51.014	80.00- 120.00	100.00
10.732	10.732 (1.226)	148	1060917			33.83- 93.83	64.12
10.732	10.732 (1.226)	111	589217			7.37- 67.37	35.61
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.847	10.847 (1.239)	91	1943944	50.0000	49.732	80.00- 120.00	100.00
10.847	10.847 (1.239)	126	475265			0.00- 53.98	24.45
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.055	11.055 (1.263)	146	1549838	50.0000	50.757	80.00- 120.00	100.00
11.055	11.055 (1.263)	148	989907			33.96- 93.96	63.87
11.055	11.055 (1.263)	111	596629			9.96- 69.96	38.50
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.459	12.459 (1.423)	180	1319730	50.0000	51.299	80.00- 120.00	100.00
12.459	12.459 (1.423)	182	1265127			64.97- 124.97	95.86

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.545	12.545 (1.433)	225	1049414	50.0000	52.756	80.00- 120.00	100.00
12.537	12.537 (1.432)	223	655141			33.42- 93.42	62.43
228 Naphthalene					CAS #: 91-20-3		
12.717	12.717 (1.452)	128	274255	5.00000	3.798	80.00- 120.00	100.00
12.717	12.717 (1.452)	127	35422			0.00- 43.00	12.92

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080802.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	196954	0.00
123 1,4-Difluorobenze	728289	436973	1019605	728289	0.00
163 Chlorobenzene-d5	663497	398098	928896	663497	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.31	5.98	6.64	6.31	0.00
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

^Ý

Data File: /chem/msd3.i/08aug17.b/3080802.d

Date : 08-AUG-2017 10:56

Client ID: CCV

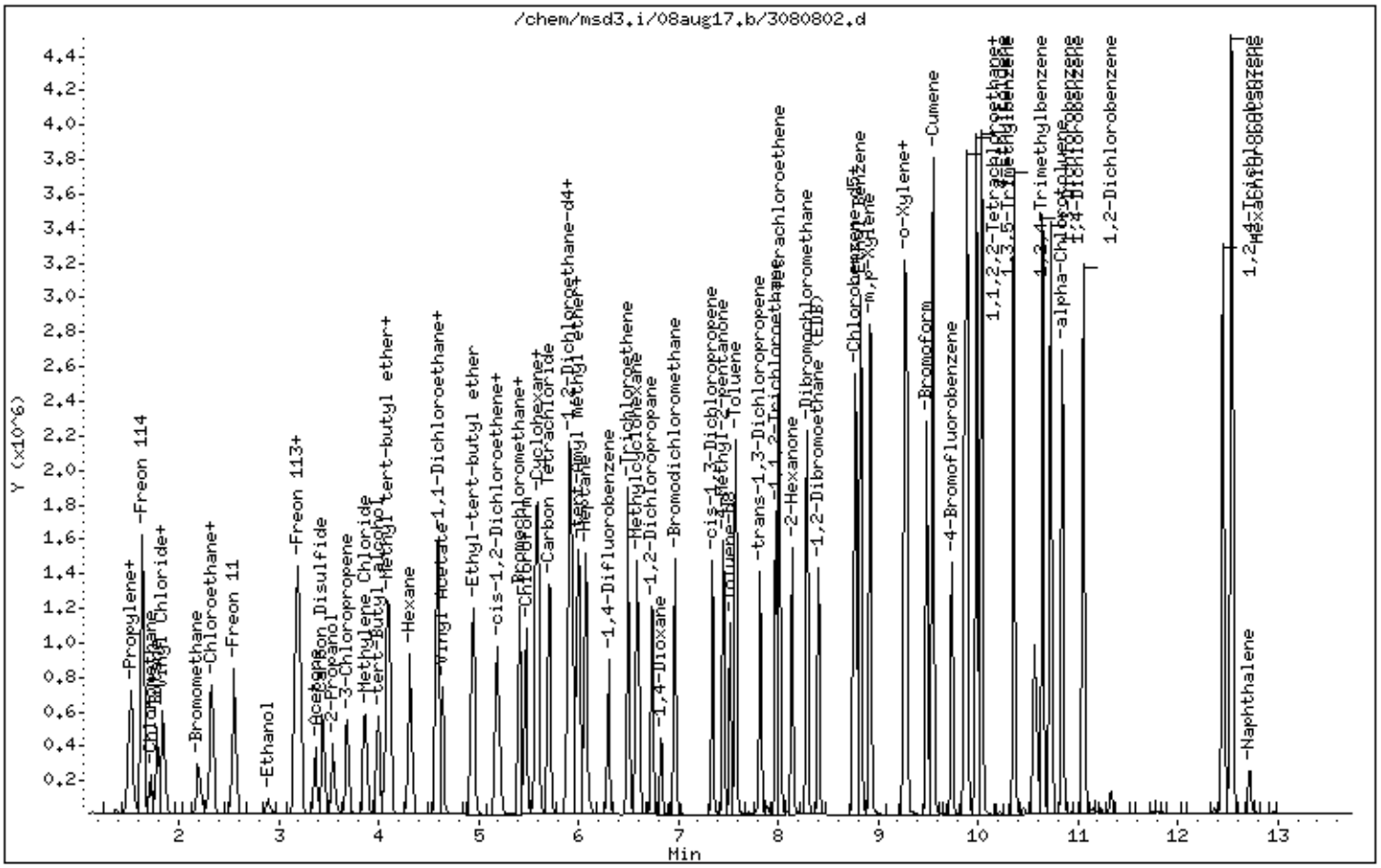
Instrument: msd3.i

Sample Info: 50ml 2850-234

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	LCS		
Lab ID:	1708091B-21A	**Date/Time Analyzed:**	8/7/17 11:07 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3080703

Compound	CAS#	%Recovery
Benzene	71-43-2	107
Ethyl Benzene	100-41-4	105
m,p-Xylene	108-38-3	105
Naphthalene	91-20-3	78
o-Xylene	95-47-6	104
Toluene	108-88-3	108
Total Xylene	1330-20-7	104

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	83
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: jg
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 50ppbv(100ppbv)

SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
9	Propylene	50.000	40.145	80.29	70-130
11	Freon 12	50.000	47.539	95.08	70-130
15	Freon 114	50.000	53.914	107.83	70-130
17	Chloromethane	50.000	46.828	93.66	70-130
23	Butane	50.000	44.773	89.55	70-130
25	Vinyl Chloride	50.000	50.062	100.12	70-130
26	1,3-Butadiene	50.000	45.691	91.38	70-130
29	Bromomethane	50.000	51.226	102.45	70-130
30	Chloroethane	50.000	49.060	98.12	70-130
31	Isopentane	50.000	43.878	87.76	70-130
35	Freon 11	50.000	47.412	94.82	70-130
42	Ethanol	50.000	47.769	95.54	70-130
49	Freon 113	50.000	49.618	99.24	70-130
50	1,1-Dichloroethene	50.000	46.870	93.74	70-130
52	Acetone	50.000	44.070	88.14	70-130
56	Carbon Disulfide	50.000	41.157	82.31	70-130
57	2-Propanol	50.000	44.210	88.42	70-130
58	3-Chloropropene	50.000	44.564	89.13	70-130
66	Methylene Chloride	50.000	45.885	91.77	70-130
72	Methyl tert-butyl	50.000	42.380	84.76	70-130
73	trans-1,2-Dichloro	50.000	48.285	96.57	70-130
78	Hexane	50.000	45.884	91.77	70-130
82	1,1-Dichloroethane	50.000	48.738	97.48	70-130
86	Vinyl Acetate	50.000	48.847	97.69	70-130
91	cis-1,2-Dichloroet	50.000	50.579	101.16	70-130
92	2-Butanone	50.000	47.498	95.00	70-130
99	Tetrahydrofuran	50.000	43.985	87.97	70-130
100	Chloroform	50.000	48.373	96.75	70-130
103	1,1,1-Trichloroeth	50.000	46.702	93.40	70-130
106	Carbon Tetrachlori	50.000	48.222	96.44	70-130
102	Cyclohexane	50.000	47.185	94.37	70-130
113	2,2,4-Trimethylpen	50.000	46.580	93.16	70-130
116	Benzene	50.000	53.511	107.02	70-130

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
120 1,2-Dichloroethane	50.000	47.300	94.60	70-130
121 Heptane	50.000	50.836	101.67	70-130
125 Trichloroethene	50.000	52.242	104.48	70-130
127 Methylcyclohexane	50.000	46.438	92.88	70-130
132 1,2-Dichloropropan	50.000	53.543	107.09	70-130
136 1,4-Dioxane	50.000	51.138	102.28	70-130
138 Bromodichlorometha	50.000	53.948	107.90	70-130
144 cis-1,3-Dichloropr	50.000	49.394	98.79	70-130
145 4-Methyl-2-pentano	50.000	46.416	92.83	70-130
147 Toluene	50.000	53.791	107.58	70-130
150 trans-1,3-Dichloro	50.000	48.736	97.47	70-130
155 1,1,2-Trichloroeth	50.000	54.581	109.16	70-130
156 Tetrachloroethene	50.000	54.554	109.11	70-130
158 2-Hexanone	50.000	51.453	102.91	70-130
160 Dibromochlorometha	50.000	53.812	107.62	70-130
161 1,2-Dibromoethane	50.000	53.807	107.61	70-130
165 Chlorobenzene	50.000	52.862	105.72	70-130
167 Ethyl Benzene	50.000	52.333	104.67	70-130
169 m,p-Xylene	50.000	52.518	105.04	70-130
171 o-Xylene	50.000	52.033	104.07	70-130
172 Styrene	50.000	57.780	115.56	70-130
174 Bromoform	65.000	73.816	113.56	70-130
175 Cumene	50.000	52.023	104.05	70-130
181 1,1,2,2-Tetrachlor	50.000	53.594	107.19	70-130
182 Propylbenzene	50.000	52.772	105.55	70-130
188 4-Ethyltoluene	50.000	54.973	109.95	70-130
190 1,3,5-Trimethylben	50.000	54.450	108.90	70-130
196 1,2,4-Trimethylben	50.000	51.320	102.64	70-130
208 1,3-Dichlorobenzen	50.000	55.309	110.62	70-130
209 1,4-Dichlorobenzen	50.000	55.304	110.61	70-130
212 alpha-Chlorotoluen	50.000	53.934	107.87	70-130
214 1,2-Dichlorobenzen	50.000	55.186	110.37	70-130
226 1,2,4-Trichloroben	50.000	56.317	112.63	70-130
227 Hexachlorobutadien	50.000	56.894	113.79	70-130
228 Naphthalene	5.000	3.902	78.04	60-140

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	20.652	82.61	70-130
$ 146 Toluene-d8	25.000	25.583	102.33	70-130
$ 177 4-Bromofluorobenze	25.000	25.346	101.39	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080703.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 07-AUG-2017 11:07
Operator : jg Inst ID: msd3.i
Smp Info : 100ml #2850-207A
Misc Info : 50ppbv(100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 07-Aug-2017 13:34 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
*	98 Bromochloromethane					CAS #: 74-97-5		
	5.424	5.410 (1.000)	130	181118	25.0000		80.00- 120.00	100.00
	5.424	5.410 (1.000)	128	139821			46.73- 106.73	77.20
	5.424	5.410 (1.000)	49	199737			91.08- 151.08	110.28
*	123 1,4-Difluorobenzene					CAS #: 540-36-3		
	6.320	6.306 (1.000)	114	665896	25.0000		80.00- 120.00	100.00
	6.320	6.306 (1.000)	88	93393			0.00- 44.78	14.03
*	163 Chlorobenzene-d5					CAS #: 3114-55-4		
	8.763	8.755 (1.000)	117	616193	25.0000		80.00- 120.00	100.00
	8.763	8.755 (1.000)	82	290263			20.58- 80.58	47.11
$	117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	5.956	5.956 (1.098)	65	191162	20.6519	20.652	80.00- 120.00	100.00
	5.956	5.956 (1.098)	67	113009			24.54- 84.54	59.12
$	146 Toluene-d8					CAS #: 2037-26-5		
	7.531	7.523 (1.192)	98	691031	25.5834	25.583	80.00- 120.00	100.00
	7.531	7.523 (1.192)	70	66734			0.00- 40.44	9.66

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.531	7.523 (1.192)	100	447378			35.27- 95.27	64.74
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.744	9.737 (1.112)	174	407773	25.3463	25.346	80.00- 120.00	100.00
9.744	9.737 (1.112)	95	418810			84.77- 144.77	102.71
9.744	9.737 (1.112)	176	393385			64.74- 124.74	96.47
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.275)	41	255105	40.1455	40.145	80.00- 120.00	100.00
1.493	1.493 (0.275)	42	172254			34.96- 94.96	67.52
1.493	1.493 (0.275)	39	183178			43.10- 103.10	71.80
11 Freon 12					CAS #: 75-71-8		
1.535	1.521 (0.283)	85	890540	47.5390	47.539	80.00- 120.00	100.00
1.535	1.521 (0.283)	87	291469			2.61- 62.61	32.73
15 Freon 114					CAS #: 76-14-2		
1.647	1.633 (0.304)	135	830475	53.9144	53.914	80.00- 120.00	100.00
1.647	1.633 (0.304)	137	264354			1.52- 61.52	31.83
17 Chloromethane					CAS #: 74-87-3		
1.717	1.717 (0.316)	50	297907	46.8282	46.828	80.00- 120.00	100.00
1.717	1.717 (0.316)	52	102339			5.06- 65.06	34.35
23 Butane					CAS #: 106-97-8		
1.787	1.786 (0.329)	58	71825	44.7727	44.773	80.00- 120.00	100.00
1.787	1.786 (0.329)	43	530349			780.12- 840.12	738.39
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.337)	62	361445	50.0620	50.062	80.00- 120.00	100.00
1.828	1.814 (0.337)	64	111712			2.35- 62.35	30.91
26 1,3-Butadiene					CAS #: 106-99-0		
1.856	1.842 (0.342)	54	293118	45.6912	45.691	80.00- 120.00	100.00
1.856	1.842 (0.342)	39	273304			70.49- 130.49	93.24
29 Bromomethane					CAS #: 74-83-9		
2.206	2.192 (0.407)	94	319037	51.2264	51.226	80.00- 120.00	100.00
2.206	2.192 (0.407)	96	303774			64.76- 124.76	95.22
30 Chloroethane					CAS #: 75-00-3		
2.318	2.304 (0.427)	64	183638	49.0598	49.060	80.00- 120.00	100.00
2.318	2.304 (0.427)	66	56625			0.04- 60.04	30.84
2.318	2.304 (0.427)	49	53728			0.57- 60.57	29.26

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	420622	43.8776	43.878	80.00- 120.00	100.00
2.346	2.332 (0.433)	57	294945			39.30- 99.30	70.12
35 Freon 11					CAS #: 75-69-4		
2.556	2.556 (0.471)	101	990263	47.4117	47.412	80.00- 120.00	100.00
2.556	2.556 (0.471)	103	643489			35.42- 95.42	64.98
42 Ethanol					CAS #: 64-17-5		
2.906	2.892 (0.536)	45	147453	47.7694	47.769	80.00- 120.00	100.00
2.906	2.892 (0.536)	46	58547			8.36- 68.36	39.71
49 Freon 113					CAS #: 76-13-1		
3.200	3.186 (0.590)	151	758512	49.6182	49.618	80.00- 120.00	100.00
3.200	3.186 (0.590)	153	482989			33.57- 93.57	63.68
3.186	3.186 (0.587)	101	820581			81.85- 141.85	108.18
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.228	3.214 (0.595)	96	367768	46.8698	46.870	80.00- 120.00	100.00
3.228	3.214 (0.595)	98	242526			33.92- 93.92	65.95
3.228	3.214 (0.595)	61	592237			146.09- 206.09	161.04
52 Acetone					CAS #: 67-64-1		
3.382	3.368 (0.623)	58	190092	44.0699	44.070	80.00- 120.00	100.00
3.382	3.368 (0.623)	43	569015			310.81- 370.81	299.34
56 Carbon Disulfide					CAS #: 75-15-0		
3.452	3.438 (0.636)	76	930988	41.1566	41.157	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.654)	45	647241	44.2103	44.210	80.00- 120.00	100.00
3.549	3.535 (0.654)	43	134816			0.00- 49.20	20.83
3.549	3.549 (0.654)	59	26425			0.00- 33.72	4.08
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	151136	44.5644	44.564	80.00- 120.00	100.00
3.689	3.675 (0.680)	41	447915			282.10- 342.10	296.37
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.857 (0.714)	49	449349	45.8851	45.885	80.00- 120.00	100.00
3.871	3.857 (0.714)	84	334055			38.75- 98.75	74.34
3.871	3.857 (0.714)	51	141395			0.74- 60.74	31.47
71 tert-Butyl alcohol					CAS #: 75-65-0		
4.011	3.997 (0.739)	59	728086	39.1690	39.169	80.00- 120.00	100.00
4.011	3.997 (0.739)	41	174079			0.00- 51.35	23.91

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
4.011	3.997 (0.739)	57	77564			0.00- 41.27	10.65
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.081 (0.755)	73	936860	42.3798	42.380	80.00- 120.00	100.00
4.095	4.081 (0.755)	57	255553			0.00- 56.12	27.28
4.095	4.081 (0.755)	41	238358			0.00- 55.40	25.44
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.123	4.109 (0.760)	98	229367	48.2850	48.285	80.00- 120.00	100.00
4.123	4.109 (0.760)	61	493410			202.86- 262.86	215.12
4.123	4.109 (0.760)	96	348737			122.28- 182.28	152.04
78 Hexane					CAS #: 110-54-3		
4.333	4.319 (0.799)	57	612617	45.8837	45.884	80.00- 120.00	100.00
4.319	4.319 (0.796)	43	377653			33.71- 93.71	61.65
4.333	4.319 (0.799)	86	88529			0.00- 44.46	14.45
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.613	4.599 (0.850)	63	706074	48.7384	48.738	80.00- 120.00	100.00
4.613	4.599 (0.850)	65	216564			0.47- 60.47	30.67
83 Isopropyl ether					CAS #: 108-20-3		
4.599	4.585 (0.848)	45	1234618	43.0483	43.048	80.00- 120.00	100.00
4.599	4.585 (0.848)	87	320892			0.00- 55.24	25.99
4.599	4.585 (0.848)	59	145850			0.00- 41.21	11.81
86 Vinyl Acetate					CAS #: 108-05-4		
4.655	4.641 (0.858)	86	98804	48.8473	48.847	80.00- 120.00	100.00
4.655	4.641 (0.858)	43	1112400			1252.04-1312.04	1125.87
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.912)	59	1189657	42.1713	42.171	80.00- 120.00	100.00
4.949	4.949 (0.912)	87	468072			8.64- 68.64	39.35
4.949	4.949 (0.912)	41	231516			0.00- 48.69	19.46
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.187	5.187 (0.956)	98	306077	50.5795	50.579	80.00- 120.00	100.00
5.187	5.187 (0.956)	96	463465			120.71- 180.71	151.42
5.187	5.173 (0.956)	61	594120			179.50- 239.50	194.11
92 2-Butanone					CAS #: 78-93-3		
5.215	5.215 (0.961)	72	178503	47.4983	47.498	80.00- 120.00	100.00
5.215	5.201 (0.961)	43	779551			421.08- 481.08	436.72
5.215	5.201 (0.961)	57	64296			6.95- 66.95	36.02

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.410 (1.000)	42	429354	43.9849	43.985	80.00- 120.00	100.00
5.424	5.410 (1.000)	71	155947			4.59- 64.59	36.32
5.424	5.410 (1.000)	72	164917			7.27- 67.27	38.41
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	810930	48.3732	48.373	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	527676			35.09- 95.09	65.07
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.028)	84	508667	47.1847	47.185	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	651429			96.78- 156.78	128.07
5.578	5.578 (1.028)	41	345392			43.37- 103.37	67.90
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.592 (1.034)	97	879390	46.7015	46.702	80.00- 120.00	100.00
5.606	5.592 (1.034)	99	564577			34.29- 94.29	64.20
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.704 (1.054)	119	954862	48.2223	48.222	80.00- 120.00	100.00
5.718	5.704 (1.054)	117	974824			71.44- 131.44	102.09
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.900 (1.090)	57	2045893	46.5799	46.580	80.00- 120.00	100.00
5.914	5.900 (1.090)	56	643422			0.95- 60.95	31.45
5.914	5.900 (1.090)	41	504604			0.00- 57.81	24.66
116 Benzene					CAS #: 71-43-2		
5.942	5.928 (0.940)	78	1157706	53.5112	53.511	80.00- 120.00	100.00
5.942	5.928 (0.940)	77	269473			0.00- 53.39	23.28
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.012	5.998 (0.951)	87	274768	47.4400	47.440	80.00- 120.00	100.00
6.012	5.998 (0.951)	73	1045900			355.30- 415.30	380.65
6.012	5.998 (0.951)	55	338937			79.12- 139.12	123.35
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.012 (0.954)	62	529625	47.3000	47.300	80.00- 120.00	100.00
6.026	6.012 (0.954)	64	166929			1.16- 61.16	31.52
121 Heptane					CAS #: 142-82-5		
6.082	6.068 (0.962)	71	393625	50.8362	50.836	80.00- 120.00	100.00
6.082	6.068 (0.962)	43	740129			159.72- 219.72	188.03
6.082	6.068 (0.962)	57	428278			73.21- 133.21	108.80
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.029)	95	554004	52.2420	52.242	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.502	6.502 (1.029)	130	667722			84.28- 144.28	120.53
6.502	6.502 (1.029)	97	365117			35.52- 95.52	65.91
127 Methylcyclohexane					CAS #: 108-87-2		
6.621	6.586 (1.048)	83	370494	46.4381	46.438	80.00- 120.00	100.00
6.621	6.586 (1.048)	98	194692			22.71- 82.71	52.55
6.621	6.586 (1.048)	55	344701			64.76- 124.76	93.04
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.750	6.735 (1.068)	63	455469	53.5429	53.543	80.00- 120.00	100.00
6.750	6.735 (1.068)	62	316320			39.16- 99.16	69.45
6.750	6.735 (1.068)	41	251302			33.29- 93.29	55.17
136 1,4-Dioxane					CAS #: 123-91-1		
6.843	6.829 (1.083)	88	275136	51.1385	51.138	80.00- 120.00	100.00
6.843	6.829 (1.083)	58	203584			43.17- 103.17	73.99
6.843	6.829 (1.083)	57	66959			0.00- 55.09	24.34
138 Bromodichloromethane					CAS #: 75-27-4		
6.979	6.965 (1.104)	83	910213	53.9477	53.948	80.00- 120.00	100.00
6.979	6.965 (1.104)	85	584668			34.33- 94.33	64.23
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.344 (1.163)	75	643657	49.3940	49.394	80.00- 120.00	100.00
7.351	7.344 (1.163)	77	210739			2.53- 62.53	32.74
7.351	7.344 (1.163)	39	351399			33.48- 93.48	54.59
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.452 (1.180)	58	377956	46.4156	46.416	80.00- 120.00	100.00
7.459	7.452 (1.180)	43	953311			231.49- 291.49	252.23
7.459	7.452 (1.180)	85	161354			13.16- 73.16	42.69
147 Toluene					CAS #: 108-88-3		
7.588	7.574 (1.201)	91	1565446	53.7908	53.791	80.00- 120.00	100.00
7.588	7.574 (1.201)	92	898236			27.96- 87.96	57.38
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.824 (0.894)	75	628525	48.7360	48.736	80.00- 120.00	100.00
7.831	7.824 (0.894)	77	206146			2.78- 62.78	32.80
7.831	7.817 (0.894)	39	322640			29.86- 89.86	51.33
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.989	7.975 (0.912)	97	559777	54.5810	54.581	80.00- 120.00	100.00
7.989	7.975 (0.912)	99	345916			31.98- 91.98	61.80
7.989	7.975 (0.912)	83	466286			53.23- 113.23	83.30

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.025	8.010 (0.916)	166	870311	54.5543	54.554	80.00- 120.00	100.00
8.025	8.010 (0.916)	129	661954			46.99- 106.99	76.06
8.025	8.010 (0.916)	131	637435			44.98- 104.98	73.24
158 2-Hexanone					CAS #: 591-78-6		
8.154	8.139 (0.931)	58	514803	51.4527	51.453	80.00- 120.00	100.00
8.154	8.139 (0.931)	43	930697			164.73- 224.73	180.79
8.154	8.139 (0.931)	100	107676			0.00- 50.65	20.92
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.290 (0.947)	129	1165171	53.8122	53.812	80.00- 120.00	100.00
8.297	8.290 (0.947)	127	909037			47.57- 107.57	78.02
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.412	8.404 (0.960)	107	907777	53.8069	53.807	80.00- 120.00	100.00
8.412	8.404 (0.960)	109	856971			63.47- 123.47	94.40
165 Chlorobenzene					CAS #: 108-90-7		
8.791	8.777 (1.003)	112	1369999	52.8617	52.862	80.00- 120.00	100.00
8.791	8.777 (1.003)	114	436979			1.87- 61.87	31.90
8.784	8.777 (1.002)	77	671782			21.88- 81.88	49.04
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.827 (1.008)	106	685565	52.3334	52.333	80.00- 120.00	100.00
8.834	8.827 (1.008)	91	2054467			272.32- 332.32	299.68
169 m,p-Xylene					CAS #: 108-38-3		
8.935	8.927 (1.020)	106	860392	52.5176	52.518	80.00- 120.00	100.00
8.935	8.920 (1.020)	91	1638575			165.91- 225.91	190.45
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.058)	106	810658	52.0329	52.033	80.00- 120.00	100.00
9.271	9.264 (1.058)	91	1633287			175.85- 235.85	201.48
172 Styrene					CAS #: 100-42-5		
9.293	9.286 (1.060)	104	1341921	57.7801	57.780	80.00- 120.00	100.00
9.293	9.286 (1.060)	78	585988			17.56- 77.56	43.67
174 Bromoform					CAS #: 75-25-2		
9.493	9.486 (1.083)	173	1530758	73.8165	73.816	80.00- 120.00	100.00
9.493	9.486 (1.083)	171	784566			21.66- 81.66	51.25
175 Cumene					CAS #: 98-82-8		
9.558	9.551 (1.091)	105	2555290	52.0230	52.023	80.00- 120.00	100.00
9.558	9.551 (1.091)	120	720185			0.00- 57.98	28.18

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)								
9.558	9.551	(1.091)	51	231852			0.00- 39.96	9.07
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
9.873	9.866	(1.127)	83	1224586	53.5937	53.594	80.00- 120.00	100.00
9.873	9.866	(1.127)	85	792445			34.78- 94.78	64.71
182 Propylbenzene						CAS #: 103-65-1		
9.902	9.894	(1.130)	91	2919547	52.7725	52.772	80.00- 120.00	100.00
9.902	9.894	(1.130)	120	776406			0.00- 55.78	26.59
9.902	9.894	(1.130)	105	114998			0.00- 33.82	3.94
188 4-Ethyltoluene						CAS #: 622-96-8		
9.995	9.987	(1.141)	120	833893	54.9731	54.973	80.00- 120.00	100.00
9.995	9.987	(1.141)	105	2577303			285.47- 345.47	309.07
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
10.045	10.038	(1.146)	120	1127959	54.4497	54.450	80.00- 120.00	100.00
10.045	10.038	(1.146)	105	2212882			169.49- 229.49	196.18
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
10.367	10.360	(1.183)	105	2087975	51.3204	51.320	80.00- 120.00	100.00
10.367	10.360	(1.183)	120	1013726			17.18- 77.18	48.55
208 1,3-Dichlorobenzene						CAS #: 541-73-1		
10.654	10.646	(1.216)	146	1641276	55.3090	55.309	80.00- 120.00	100.00
10.654	10.646	(1.216)	148	1053570			34.08- 94.08	64.19
10.654	10.646	(1.216)	111	606544			9.00- 69.00	36.96
209 1,4-Dichlorobenzene						CAS #: 106-46-7		
10.732	10.732	(1.225)	146	1665766	55.3040	55.304	80.00- 120.00	100.00
10.732	10.732	(1.225)	148	1061588			33.83- 93.83	63.73
10.732	10.732	(1.225)	111	591927			7.37- 67.37	35.53
212 alpha-Chlorotoluene						CAS #: 100-44-7		
10.847	10.847	(1.238)	91	1957876	53.9340	53.934	80.00- 120.00	100.00
10.847	10.847	(1.238)	126	476831			0.00- 53.98	24.35
214 1,2-Dichlorobenzene						CAS #: 95-50-1		
11.062	11.055	(1.262)	146	1564949	55.1861	55.186	80.00- 120.00	100.00
11.062	11.055	(1.262)	148	1003628			33.96- 93.96	64.13
11.062	11.055	(1.262)	111	596975			9.96- 69.96	38.15
226 1,2,4-Trichlorobenzene						CAS #: 120-82-1		
12.459	12.452	(1.422)	180	1345527	56.3167	56.317	80.00- 120.00	100.00
12.459	12.452	(1.422)	182	1282435			64.97- 124.97	95.31

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.545	12.545	(1.432)	225	1051041	56.8935	56.894	80.00- 120.00	100.00
12.545	12.545	(1.432)	223	660888			33.42- 93.42	62.88
228 Naphthalene						CAS #: 91-20-3		
12.724	12.717	(1.452)	128	261651	3.90196	3.902	80.00- 120.00	100.00
12.717	12.717	(1.451)	127	35027			0.00- 43.00	13.39

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080703.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 07-AUG-2017 11:07
Operator : jg Inst ID: msd3.i
Smp Info : 100ml #2850-207A
Misc Info : 50ppbv(100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 07-Aug-2017 13:34 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080703.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 50ppbv(100ppbv)

Calibration Date: 07-AUG-2017
Calibration Time: 10:44
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	181118	-0.20
123 1,4-Difluorobenze	637861	382717	893005	665896	4.40
163 Chlorobenzene-d5	604933	362960	846906	616193	1.86

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.32	0.22
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Ný

Data File: /chem/msd3.i/07aug17.b/3080703.d

Date : 07-AUG-2017 11:07

Client ID: LCS

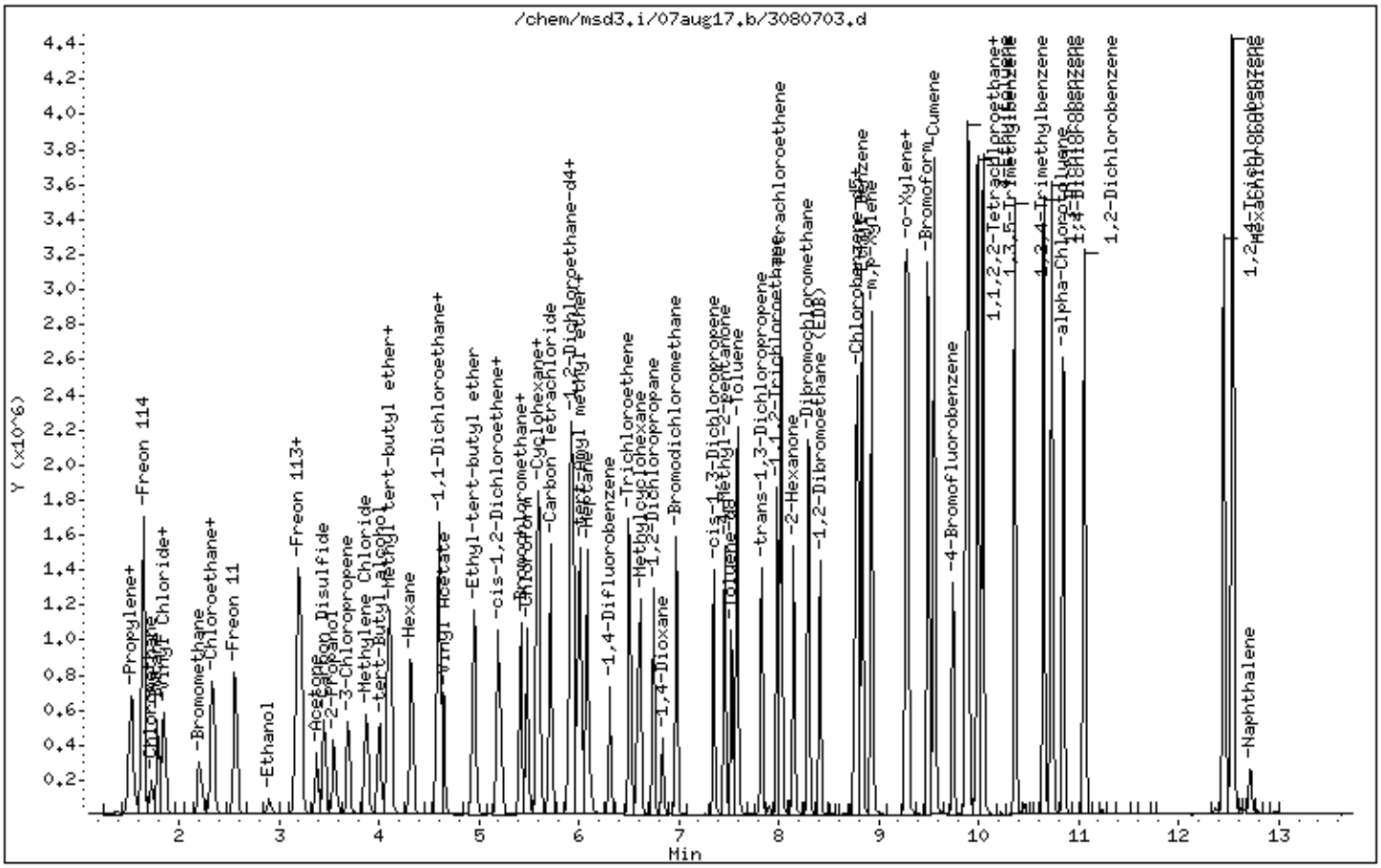
Instrument: msd3.i

Sample Info: 100ml #2850-207A

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	LCSD		
Lab ID:	1708091B-21AA	**Date/Time Analyzed:**	8/7/17 11:30 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3080704

Compound	CAS#	%Recovery
Benzene	71-43-2	106
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	105
Naphthalene	91-20-3	76
o-Xylene	95-47-6	105
Toluene	108-88-3	108
Total Xylene	1330-20-7	105

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	83
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	103

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: jg
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 50ppbv(100ppbv)

SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
9	Propylene	50.000	39.954	79.91	70-130
11	Freon 12	50.000	47.491	94.98	70-130
15	Freon 114	50.000	54.218	108.44	70-130
17	Chloromethane	50.000	45.943	91.89	70-130
23	Butane	50.000	44.384	88.77	70-130
25	Vinyl Chloride	50.000	49.984	99.97	70-130
26	1,3-Butadiene	50.000	45.208	90.42	70-130
29	Bromomethane	50.000	51.419	102.84	70-130
30	Chloroethane	50.000	49.212	98.42	70-130
31	Isopentane	50.000	43.632	87.26	70-130
35	Freon 11	50.000	47.940	95.88	70-130
42	Ethanol	50.000	48.732	97.46	70-130
49	Freon 113	50.000	49.852	99.70	70-130
50	1,1-Dichloroethene	50.000	47.482	94.96	70-130
52	Acetone	50.000	43.432	86.86	70-130
56	Carbon Disulfide	50.000	41.007	82.01	70-130
57	2-Propanol	50.000	44.572	89.14	70-130
58	3-Chloropropene	50.000	46.462	92.93	70-130
66	Methylene Chloride	50.000	46.081	92.16	70-130
72	Methyl tert-butyl	50.000	42.826	85.65	70-130
73	trans-1,2-Dichloro	50.000	48.443	96.89	70-130
78	Hexane	50.000	45.941	91.88	70-130
82	1,1-Dichloroethane	50.000	48.868	97.74	70-130
86	Vinyl Acetate	50.000	50.329	100.66	70-130
91	cis-1,2-Dichloroet	50.000	50.410	100.82	70-130
92	2-Butanone	50.000	48.004	96.01	70-130
99	Tetrahydrofuran	50.000	43.751	87.50	70-130
100	Chloroform	50.000	48.990	97.98	70-130
103	1,1,1-Trichloroeth	50.000	46.824	93.65	70-130
106	Carbon Tetrachlori	50.000	49.040	98.08	70-130
102	Cyclohexane	50.000	47.580	95.16	70-130
113	2,2,4-Trimethylpen	50.000	47.024	94.05	70-130
116	Benzene	50.000	53.110	106.22	70-130

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
120 1,2-Dichloroethane	50.000	47.630	95.26	70-130
121 Heptane	50.000	51.185	102.37	70-130
125 Trichloroethene	50.000	52.408	104.82	70-130
127 Methylcyclohexane	50.000	55.912	111.82	70-130
132 1,2-Dichloropropan	50.000	54.174	108.35	70-130
136 1,4-Dioxane	50.000	51.458	102.92	70-130
138 Bromodichlorometha	50.000	53.981	107.96	70-130
144 cis-1,3-Dichloropr	50.000	50.238	100.48	70-130
145 4-Methyl-2-pentano	50.000	47.344	94.69	70-130
147 Toluene	50.000	53.825	107.65	70-130
150 trans-1,3-Dichloro	50.000	49.361	98.72	70-130
155 1,1,2-Trichloroeth	50.000	54.313	108.63	70-130
156 Tetrachloroethene	50.000	54.224	108.45	70-130
158 2-Hexanone	50.000	51.845	103.69	70-130
160 Dibromochlorometha	50.000	53.995	107.99	70-130
161 1,2-Dibromoethane	50.000	53.556	107.11	70-130
165 Chlorobenzene	50.000	53.046	106.09	70-130
167 Ethyl Benzene	50.000	52.024	104.05	70-130
169 m,p-Xylene	50.000	52.708	105.42	70-130
171 o-Xylene	50.000	52.354	104.71	70-130
172 Styrene	50.000	57.546	115.09	70-130
174 Bromoform	65.000	73.805	113.55	70-130
175 Cumene	50.000	51.658	103.32	70-130
181 1,1,2,2-Tetrachlor	50.000	53.501	107.00	70-130
182 Propylbenzene	50.000	52.960	105.92	70-130
188 4-Ethyltoluene	50.000	53.843	107.69	70-130
190 1,3,5-Trimethylben	50.000	54.917	109.83	70-130
196 1,2,4-Trimethylben	50.000	51.758	103.52	70-130
208 1,3-Dichlorobenzen	50.000	55.196	110.39	70-130
209 1,4-Dichlorobenzen	50.000	55.070	110.14	70-130
212 alpha-Chlorotoluen	50.000	53.790	107.58	70-130
214 1,2-Dichlorobenzen	50.000	55.178	110.36	70-130
226 1,2,4-Trichloroben	50.000	57.570	115.14	70-130
227 Hexachlorobutadien	50.000	58.076	116.15	70-130
228 Naphthalene	5.000	3.783	75.67	60-140

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	20.758	83.03	70-130
$ 146 Toluene-d8	25.000	25.652	102.61	70-130
$ 177 4-Bromofluorobenze	25.000	25.363	101.45	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080704.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 07-AUG-2017 11:30
Operator : jg Inst ID: msd3.i
Smp Info : 100ml #2850-207A
Misc Info : 50ppbv(100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 07-Aug-2017 13:34 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 14 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.424	5.410 (1.000)	130	183297	25.0000			80.00- 120.00	100.00
5.424	5.410 (1.000)	128	142234				46.73- 106.73	77.60
5.424	5.410 (1.000)	49	204405				91.08- 151.08	111.52
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.320	6.306 (1.000)	114	671666	25.0000			80.00- 120.00	100.00
6.320	6.306 (1.000)	88	93764				0.00- 44.78	13.96
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.763	8.755 (1.000)	117	627558	25.0000			80.00- 120.00	100.00
8.763	8.755 (1.000)	82	296876				20.58- 80.58	47.31
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.956	5.956 (1.098)	65	194461	20.7586	20.758		80.00- 120.00	100.00
5.956	5.956 (1.098)	67	123519				24.54- 84.54	63.52
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.531	7.523 (1.192)	98	698896	25.6523	25.652		80.00- 120.00	100.00
7.531	7.523 (1.192)	70	68453				0.00- 40.44	9.79

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.531	7.523	(1.192)	100	455910			35.27- 95.27	65.23
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.751	9.737	(1.113)	174	415561	25.3626	25.363	80.00- 120.00	100.00
9.751	9.737	(1.113)	95	429591			84.77- 144.77	103.38
9.751	9.737	(1.113)	176	399964			64.74- 124.74	96.25
9 Propylene						CAS #: 115-07-1		
1.493	1.493	(0.275)	41	256943	39.9540	39.954	80.00- 120.00	100.00
1.493	1.493	(0.275)	42	170034			34.96- 94.96	66.18
1.493	1.493	(0.275)	39	184049			43.10- 103.10	71.63
11 Freon 12						CAS #: 75-71-8		
1.535	1.521	(0.283)	85	900346	47.4911	47.491	80.00- 120.00	100.00
1.535	1.521	(0.283)	87	291983			2.61- 62.61	32.43
15 Freon 114						CAS #: 76-14-2		
1.647	1.633	(0.304)	135	845203	54.2183	54.218	80.00- 120.00	100.00
1.647	1.633	(0.304)	137	268307			1.52- 61.52	31.74
17 Chloromethane						CAS #: 74-87-3		
1.731	1.717	(0.319)	50	295794	45.9433	45.943	80.00- 120.00	100.00
1.731	1.717	(0.319)	52	105459			5.06- 65.06	35.65
23 Butane						CAS #: 106-97-8		
1.786	1.786	(0.329)	58	72058	44.3840	44.384	80.00- 120.00	100.00
1.786	1.786	(0.329)	43	531224			780.12- 840.12	737.22
25 Vinyl Chloride						CAS #: 75-01-4		
1.828	1.828	(0.337)	62	365223	49.9839	49.984	80.00- 120.00	100.00
1.828	1.814	(0.337)	64	116600			2.35- 62.35	31.93
26 1,3-Butadiene						CAS #: 106-99-0		
1.856	1.842	(0.342)	54	293509	45.2083	45.208	80.00- 120.00	100.00
1.856	1.842	(0.342)	39	277150			70.49- 130.49	94.43
29 Bromomethane						CAS #: 74-83-9		
2.206	2.192	(0.407)	94	324090	51.4191	51.419	80.00- 120.00	100.00
2.206	2.192	(0.407)	96	304847			64.76- 124.76	94.06
30 Chloroethane						CAS #: 75-00-3		
2.318	2.304	(0.427)	64	186425	49.2123	49.212	80.00- 120.00	100.00
2.318	2.304	(0.427)	66	57212			0.04- 60.04	30.69
2.318	2.304	(0.427)	49	54418			0.57- 60.57	29.19

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	423297	43.6317	43.632	80.00- 120.00	100.00
2.346	2.332 (0.433)	57	304884			39.30- 99.30	72.03
35 Freon 11					CAS #: 75-69-4		
2.570	2.556 (0.474)	101	1013350	47.9403	47.940	80.00- 120.00	100.00
2.570	2.556 (0.474)	103	650615			35.42- 95.42	64.20
42 Ethanol					CAS #: 64-17-5		
2.906	2.892 (0.536)	45	152234	48.7320	48.732	80.00- 120.00	100.00
2.906	2.892 (0.536)	46	58687			8.36- 68.36	38.55
49 Freon 113					CAS #: 76-13-1		
3.200	3.186 (0.590)	151	771257	49.8521	49.852	80.00- 120.00	100.00
3.200	3.186 (0.590)	153	494445			33.57- 93.57	64.11
3.186	3.186 (0.587)	101	835404			81.85- 141.85	108.32
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.228	3.214 (0.595)	96	377052	47.4817	47.482	80.00- 120.00	100.00
3.228	3.214 (0.595)	98	249794			33.92- 93.92	66.25
3.228	3.214 (0.595)	61	605954			146.09- 206.09	160.71
52 Acetone					CAS #: 67-64-1		
3.382	3.368 (0.623)	58	189596	43.4323	43.432	80.00- 120.00	100.00
3.382	3.368 (0.623)	43	580048			310.81- 370.81	305.94
56 Carbon Disulfide					CAS #: 75-15-0		
3.452	3.438 (0.636)	76	938760	41.0069	41.007	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.654)	45	660393	44.5724	44.572	80.00- 120.00	100.00
3.549	3.535 (0.654)	43	134568			0.00- 49.20	20.38
3.549	3.549 (0.654)	59	26978			0.00- 33.72	4.09
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	159469	46.4625	46.462	80.00- 120.00	100.00
3.689	3.675 (0.680)	41	458752			282.10- 342.10	287.67
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.857 (0.714)	49	456694	46.0807	46.081	80.00- 120.00	100.00
3.871	3.857 (0.714)	84	339711			38.75- 98.75	74.38
3.871	3.857 (0.714)	51	142622			0.74- 60.74	31.23
71 tert-Butyl alcohol					CAS #: 75-65-0		
4.011	3.997 (0.739)	59	755720	40.1723	40.172	80.00- 120.00	100.00
4.011	3.997 (0.739)	41	173324			0.00- 51.35	22.93

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
4.011	3.997 (0.739)	57	80689			0.00- 41.27	10.68
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.081 (0.755)	73	958127	42.8266	42.826	80.00- 120.00	100.00
4.095	4.081 (0.755)	57	260118			0.00- 56.12	27.15
4.095	4.081 (0.755)	41	237373			0.00- 55.40	24.77
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.123	4.109 (0.760)	98	232885	48.4428	48.443	80.00- 120.00	100.00
4.123	4.109 (0.760)	61	498651			202.86- 262.86	214.12
4.123	4.109 (0.760)	96	349351			122.28- 182.28	150.01
78 Hexane					CAS #: 110-54-3		
4.319	4.319 (0.796)	57	620760	45.9409	45.941	80.00- 120.00	100.00
4.319	4.319 (0.796)	43	381931			33.71- 93.71	61.53
4.333	4.319 (0.799)	86	91971			0.00- 44.46	14.82
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.613	4.599 (0.850)	63	716475	48.8685	48.868	80.00- 120.00	100.00
4.613	4.599 (0.850)	65	218725			0.47- 60.47	30.53
83 Isopropyl ether					CAS #: 108-20-3		
4.599	4.585 (0.848)	45	1265656	43.6059	43.606	80.00- 120.00	100.00
4.599	4.585 (0.848)	87	331451			0.00- 55.24	26.19
4.599	4.585 (0.848)	59	152040			0.00- 41.21	12.01
86 Vinyl Acetate					CAS #: 108-05-4		
4.655	4.641 (0.858)	86	103025	50.3286	50.329	80.00- 120.00	100.00
4.655	4.641 (0.858)	43	1135122			1252.04-1312.04	1101.79
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.912)	59	1214961	42.5563	42.556	80.00- 120.00	100.00
4.949	4.949 (0.912)	87	479270			8.64- 68.64	39.45
4.949	4.949 (0.912)	41	232604			0.00- 48.69	19.14
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.187	5.187 (0.956)	98	308719	50.4096	50.410	80.00- 120.00	100.00
5.187	5.187 (0.956)	96	468387			120.71- 180.71	151.72
5.187	5.173 (0.956)	61	604668			179.50- 239.50	195.86
92 2-Butanone					CAS #: 78-93-3		
5.215	5.215 (0.961)	72	182574	48.0040	48.004	80.00- 120.00	100.00
5.215	5.201 (0.961)	43	786035			421.08- 481.08	430.53
5.215	5.201 (0.961)	57	65151			6.95- 66.95	35.68

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.410 (1.000)	42	432213	43.7514	43.751	80.00- 120.00	100.00
5.424	5.410 (1.000)	71	157799			4.59- 64.59	36.51
5.424	5.410 (1.000)	72	163931			7.27- 67.27	37.93
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	831145	48.9897	48.990	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	535483			35.09- 95.09	64.43
102 Cyclohexane					CAS #: 110-82-7		
5.592	5.578 (1.031)	84	519096	47.5797	47.580	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	665101			96.78- 156.78	128.13
5.578	5.578 (1.028)	41	343738			43.37- 103.37	66.22
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.592 (1.034)	97	892312	46.8244	46.824	80.00- 120.00	100.00
5.606	5.592 (1.034)	99	575429			34.29- 94.29	64.49
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.704 (1.054)	119	982726	49.0395	49.040	80.00- 120.00	100.00
5.718	5.704 (1.054)	117	1000583			71.44- 131.44	101.82
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.900 (1.090)	57	2090257	47.0242	47.024	80.00- 120.00	100.00
5.914	5.900 (1.090)	56	651472			0.95- 60.95	31.17
5.914	5.900 (1.090)	41	507109			0.00- 57.81	24.26
116 Benzene					CAS #: 71-43-2		
5.942	5.928 (0.940)	78	1158990	53.1103	53.110	80.00- 120.00	100.00
5.942	5.928 (0.940)	77	271523			0.00- 53.39	23.43
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.012	5.998 (0.951)	87	277863	47.5622	47.562	80.00- 120.00	100.00
6.012	5.998 (0.951)	73	1073944			355.30- 415.30	386.50
5.998	5.998 (0.949)	55	336838			79.12- 139.12	121.22
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.012 (0.954)	62	537937	47.6297	47.630	80.00- 120.00	100.00
6.026	6.012 (0.954)	64	173117			1.16- 61.16	32.18
121 Heptane					CAS #: 142-82-5		
6.082	6.068 (0.962)	71	399763	51.1854	51.185	80.00- 120.00	100.00
6.082	6.068 (0.962)	43	743589			159.72- 219.72	186.01
6.082	6.068 (0.962)	57	431712			73.21- 133.21	107.99
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.029)	95	560585	52.4084	52.408	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.516	6.502 (1.031)	130	673420			84.28- 144.28	120.13
6.502	6.502 (1.029)	97	376845			35.52- 95.52	67.22
127 Methylcyclohexane					CAS #: 108-87-2		
6.621	6.586 (1.048)	83	449943	55.9118	55.912	80.00- 120.00	100.00
6.621	6.586 (1.048)	98	204879			22.71- 82.71	45.53
6.621	6.586 (1.048)	55	370023			64.76- 124.76	82.24
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.750	6.735 (1.068)	63	464827	54.1736	54.174	80.00- 120.00	100.00
6.750	6.735 (1.068)	62	321118			39.16- 99.16	69.08
6.750	6.735 (1.068)	41	254131			33.29- 93.29	54.67
136 1,4-Dioxane					CAS #: 123-91-1		
6.843	6.829 (1.083)	88	279254	51.4581	51.458	80.00- 120.00	100.00
6.843	6.829 (1.083)	58	203909			43.17- 103.17	73.02
6.843	6.829 (1.083)	57	69471			0.00- 55.09	24.88
138 Bromodichloromethane					CAS #: 75-27-4		
6.979	6.965 (1.104)	83	918671	53.9813	53.981	80.00- 120.00	100.00
6.979	6.965 (1.104)	85	591262			34.33- 94.33	64.36
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.344 (1.163)	75	660332	50.2383	50.238	80.00- 120.00	100.00
7.351	7.344 (1.163)	77	220218			2.53- 62.53	33.35
7.351	7.344 (1.163)	39	353849			33.48- 93.48	53.59
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.452 (1.180)	58	388857	47.3441	47.344	80.00- 120.00	100.00
7.459	7.452 (1.180)	43	963450			231.49- 291.49	247.76
7.459	7.452 (1.180)	85	165940			13.16- 73.16	42.67
147 Toluene					CAS #: 108-88-3		
7.588	7.574 (1.201)	91	1580030	53.8255	53.825	80.00- 120.00	100.00
7.588	7.574 (1.201)	92	911577			27.96- 87.96	57.69
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.824 (0.894)	75	648330	49.3613	49.361	80.00- 120.00	100.00
7.831	7.824 (0.894)	77	211972			2.78- 62.78	32.70
7.831	7.817 (0.894)	39	331712			29.86- 89.86	51.16
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.989	7.975 (0.912)	97	567299	54.3127	54.313	80.00- 120.00	100.00
7.989	7.975 (0.912)	99	354137			31.98- 91.98	62.43
7.989	7.975 (0.912)	83	476223			53.23- 113.23	83.95

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.025	8.010 (0.916)	166	880989	54.2236	54.224	80.00- 120.00	100.00
8.025	8.010 (0.916)	129	666464			46.99- 106.99	75.65
8.025	8.010 (0.916)	131	652168			44.98- 104.98	74.03
158 2-Hexanone					CAS #: 591-78-6		
8.154	8.139 (0.931)	58	528293	51.8447	51.845	80.00- 120.00	100.00
8.154	8.139 (0.931)	43	945237			164.73- 224.73	178.92
8.154	8.139 (0.931)	100	109975			0.00- 50.65	20.82
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.290 (0.947)	129	1190698	53.9953	53.995	80.00- 120.00	100.00
8.297	8.290 (0.947)	127	918164			47.57- 107.57	77.11
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.412	8.404 (0.960)	107	920209	53.5560	53.556	80.00- 120.00	100.00
8.412	8.404 (0.960)	109	867959			63.47- 123.47	94.32
165 Chlorobenzene					CAS #: 108-90-7		
8.791	8.777 (1.003)	112	1400126	53.0457	53.046	80.00- 120.00	100.00
8.791	8.777 (1.003)	114	449542			1.87- 61.87	32.11
8.791	8.777 (1.003)	77	678039			21.88- 81.88	48.43
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.827 (1.008)	106	694076	52.0236	52.024	80.00- 120.00	100.00
8.834	8.827 (1.008)	91	2082571			272.32- 332.32	300.05
169 m,p-Xylene					CAS #: 108-38-3		
8.935	8.927 (1.020)	106	879446	52.7085	52.708	80.00- 120.00	100.00
8.935	8.920 (1.020)	91	1663220			165.91- 225.91	189.12
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.058)	106	830710	52.3543	52.354	80.00- 120.00	100.00
9.271	9.264 (1.058)	91	1660310			175.85- 235.85	199.87
172 Styrene					CAS #: 100-42-5		
9.293	9.286 (1.060)	104	1361133	57.5460	57.546	80.00- 120.00	100.00
9.293	9.286 (1.060)	78	592721			17.56- 77.56	43.55
174 Bromoform					CAS #: 75-25-2		
9.500	9.486 (1.084)	173	1558750	73.8051	73.805	80.00- 120.00	100.00
9.500	9.486 (1.084)	171	805883			21.66- 81.66	51.70
175 Cumene					CAS #: 98-82-8		
9.558	9.551 (1.091)	105	2584137	51.6575	51.658	80.00- 120.00	100.00
9.558	9.551 (1.091)	120	737208			0.00- 57.98	28.53

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.558	9.551 (1.091)	51	238126			0.00- 39.96	9.21
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.880	9.866 (1.128)	83	1245018	53.5011	53.501	80.00- 120.00	100.00
9.880	9.866 (1.128)	85	800786			34.78- 94.78	64.32
182 Propylbenzene					CAS #: 103-65-1		
9.902	9.894 (1.130)	91	2983960	52.9600	52.960	80.00- 120.00	100.00
9.909	9.894 (1.131)	120	778619			0.00- 55.78	26.09
9.909	9.894 (1.131)	105	117519			0.00- 33.82	3.94
188 4-Ethyltoluene					CAS #: 622-96-8		
10.002	9.987 (1.141)	120	831814	53.8429	53.843	80.00- 120.00	100.00
10.002	9.987 (1.141)	105	2617593			285.47- 345.47	314.68
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.052	10.038 (1.147)	120	1158618	54.9168	54.917	80.00- 120.00	100.00
10.052	10.038 (1.147)	105	2258688			169.49- 229.49	194.95
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.374	10.360 (1.184)	105	2144607	51.7577	51.758	80.00- 120.00	100.00
10.374	10.360 (1.184)	120	1032637			17.18- 77.18	48.15
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.668	10.646 (1.217)	146	1668134	55.1961	55.196	80.00- 120.00	100.00
10.668	10.646 (1.217)	148	1076605			34.08- 94.08	64.54
10.661	10.646 (1.217)	111	617489			9.00- 69.00	37.02
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.747	10.732 (1.226)	146	1689312	55.0701	55.070	80.00- 120.00	100.00
10.747	10.732 (1.226)	148	1075787			33.83- 93.83	63.68
10.747	10.732 (1.226)	111	598575			7.37- 67.37	35.43
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.861	10.847 (1.240)	91	1988652	53.7897	53.790	80.00- 120.00	100.00
10.861	10.847 (1.240)	126	485357			0.00- 53.98	24.41
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.076	11.055 (1.264)	146	1593578	55.1780	55.178	80.00- 120.00	100.00
11.076	11.055 (1.264)	148	1016160			33.96- 93.96	63.77
11.076	11.055 (1.264)	111	608978			9.96- 69.96	38.21
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.480	12.452 (1.424)	180	1400854	57.5705	57.570	80.00- 120.00	100.00
12.473	12.452 (1.423)	182	1336042			64.97- 124.97	95.37

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.566	12.545	(1.434)	225	1092665	58.0755	58.076	80.00- 120.00	100.00
12.566	12.545	(1.434)	223	690921			33.42- 93.42	63.23
228 Naphthalene						CAS #: 91-20-3		
12.745	12.717	(1.454)	128	258383	3.78344	3.783	80.00- 120.00	100.00
12.738	12.717	(1.454)	127	33837			0.00- 43.00	13.10

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/07aug17.b/3080704.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 07-AUG-2017 11:30
Operator : jg Inst ID: msd3.i
Smp Info : 100ml #2850-207A
Misc Info : 50ppbv(100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/07aug17.b/317q0523b.m
Meth Date : 07-Aug-2017 13:34 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:20 Cal File: 3080408.d
Als bottle: 14 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080704.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/07aug17.b/317q0523b.m
Misc Info: 50ppbv(100ppbv)

Calibration Date: 07-AUG-2017
Calibration Time: 10:44
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	181481	108889	254073	183297	1.00
123 1,4-Difluorobenze	637861	382717	893005	671666	5.30
163 Chlorobenzene-d5	604933	362960	846906	627558	3.74

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.32	0.22
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

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Data File: /chem/msd3.i/07aug17.b/3080704.d

Date : 07-AUG-2017 11:30

Client ID: LCSD

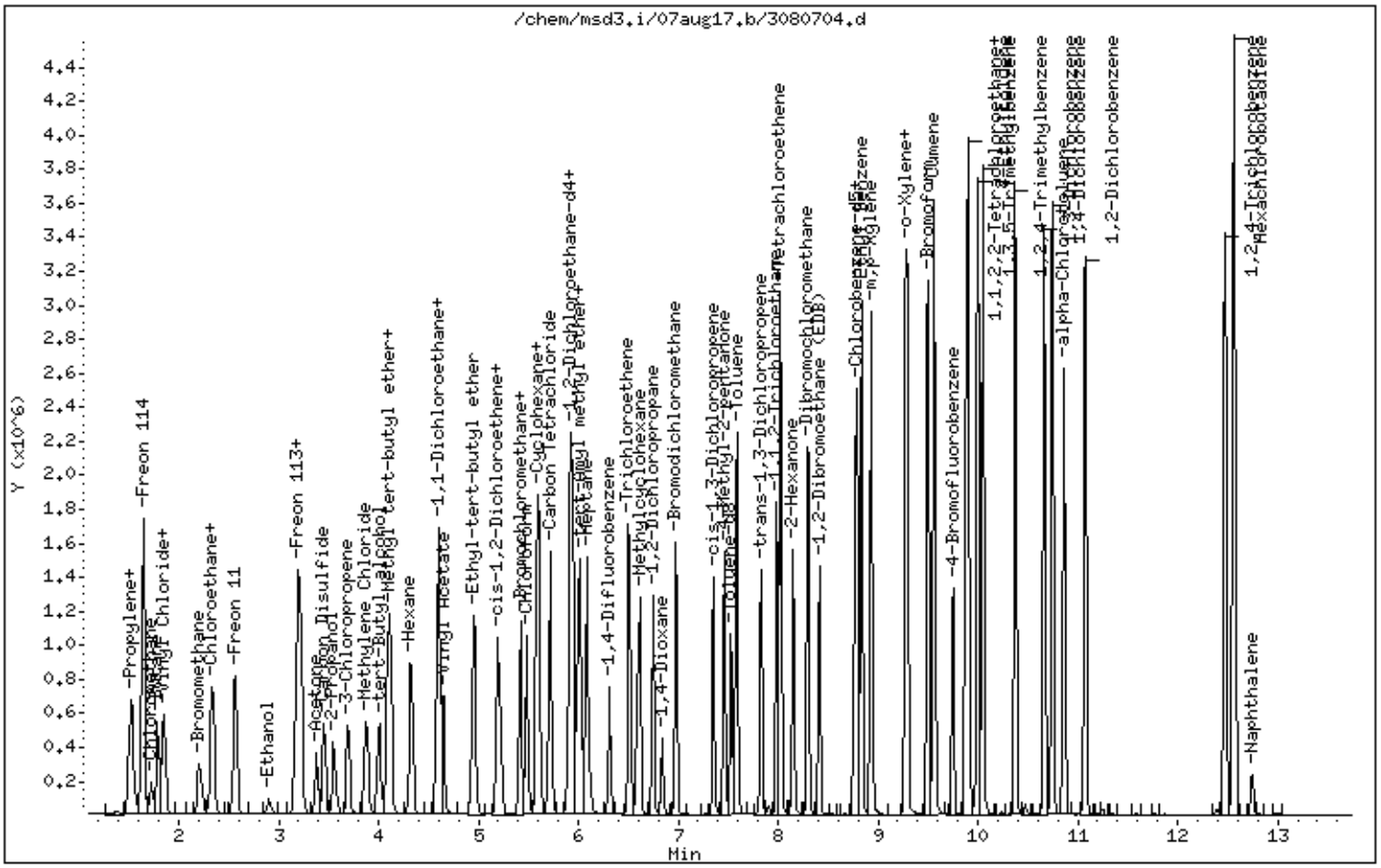
Instrument: msd3.i

Sample Info: 100ml #2850-207A

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	LCS		
Lab ID:	1708091B-21B	**Date/Time Analyzed:**	8/8/17 11:19 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3080803

Compound	CAS#	%Recovery
Benzene	71-43-2	106
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	104
Naphthalene	91-20-3	81
o-Xylene	95-47-6	104
Toluene	108-88-3	106
Total Xylene	1330-20-7	104

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	86
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: jg
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 50ppbv (100ppbv)

SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
9	Propylene	50.000	39.500	79.00	70-130
11	Freon 12	50.000	48.095	96.19	70-130
15	Freon 114	50.000	54.165	108.33	70-130
17	Chloromethane	50.000	46.390	92.78	70-130
23	Butane	50.000	45.362	90.72	70-130
25	Vinyl Chloride	50.000	50.004	100.01	70-130
26	1,3-Butadiene	50.000	45.360	90.72	70-130
29	Bromomethane	50.000	51.885	103.77	70-130
30	Chloroethane	50.000	48.840	97.68	70-130
31	Isopentane	50.000	43.481	86.96	70-130
35	Freon 11	50.000	48.585	97.17	70-130
42	Ethanol	50.000	48.459	96.92	70-130
49	Freon 113	50.000	50.602	101.20	70-130
50	1,1-Dichloroethene	50.000	48.909	97.82	70-130
52	Acetone	50.000	43.957	87.91	70-130
56	Carbon Disulfide	50.000	41.179	82.36	70-130
57	2-Propanol	50.000	45.731	91.46	70-130
58	3-Chloropropene	50.000	47.091	94.18	70-130
66	Methylene Chloride	50.000	45.840	91.68	70-130
72	Methyl tert-butyl	50.000	44.572	89.14	70-130
73	trans-1,2-Dichloro	50.000	48.772	97.54	70-130
78	Hexane	50.000	47.220	94.44	70-130
82	1,1-Dichloroethane	50.000	49.111	98.22	70-130
86	Vinyl Acetate	50.000	50.696	101.39	70-130
91	cis-1,2-Dichloroet	50.000	51.136	102.27	70-130
92	2-Butanone	50.000	47.678	95.36	70-130
99	Tetrahydrofuran	50.000	43.732	87.46	70-130
100	Chloroform	50.000	49.133	98.27	70-130
103	1,1,1-Trichloroeth	50.000	47.678	95.36	70-130
106	Carbon Tetrachlori	50.000	49.770	99.54	70-130
102	Cyclohexane	50.000	48.655	97.31	70-130
113	2,2,4-Trimethylpen	50.000	47.141	94.28	70-130
116	Benzene	50.000	52.884	105.77	70-130

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
120 1,2-Dichloroethane	50.000	48.517	97.03	70-130
121 Heptane	50.000	51.490	102.98	70-130
125 Trichloroethene	50.000	52.437	104.87	70-130
127 Methylcyclohexane	50.000	55.542	111.08	70-130
132 1,2-Dichloropropan	50.000	52.650	105.30	70-130
136 1,4-Dioxane	50.000	51.848	103.70	70-130
138 Bromodichlorometha	50.000	54.068	108.14	70-130
144 cis-1,3-Dichloropr	50.000	50.254	100.51	70-130
145 4-Methyl-2-pentano	50.000	46.101	92.20	70-130
147 Toluene	50.000	53.093	106.19	70-130
150 trans-1,3-Dichloro	50.000	49.479	98.96	70-130
155 1,1,2-Trichloroeth	50.000	53.673	107.35	70-130
156 Tetrachloroethene	50.000	53.663	107.33	70-130
158 2-Hexanone	50.000	50.653	101.31	70-130
160 Dibromochlorometha	50.000	53.806	107.61	70-130
161 1,2-Dibromoethane	50.000	53.315	106.63	70-130
165 Chlorobenzene	50.000	52.350	104.70	70-130
167 Ethyl Benzene	50.000	51.854	103.71	70-130
169 m,p-Xylene	50.000	52.253	104.51	70-130
171 o-Xylene	50.000	52.026	104.05	70-130
172 Styrene	50.000	57.068	114.14	70-130
174 Bromoform	65.000	73.166	112.56	70-130
175 Cumene	50.000	51.717	103.43	70-130
181 1,1,2,2-Tetrachlor	50.000	51.979	103.96	70-130
182 Propylbenzene	50.000	52.278	104.56	70-130
188 4-Ethyltoluene	50.000	53.638	107.28	70-130
190 1,3,5-Trimethylben	50.000	53.786	107.57	70-130
196 1,2,4-Trimethylben	50.000	51.423	102.85	70-130
208 1,3-Dichlorobenzen	50.000	54.990	109.98	70-130
209 1,4-Dichlorobenzen	50.000	54.150	108.30	70-130
212 alpha-Chlorotoluen	50.000	53.428	106.86	70-130
214 1,2-Dichlorobenzen	50.000	54.045	108.09	70-130
226 1,2,4-Trichloroben	50.000	56.500	113.00	70-130
227 Hexachlorobutadien	50.000	56.987	113.97	70-130
228 Naphthalene	5.000	4.053	81.06	60-140

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	21.532	86.13	70-130
$ 146 Toluene-d8	25.000	25.477	101.91	70-130
$ 177 4-Bromofluorobenze	25.000	25.288	101.15	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080803.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 08-AUG-2017 11:19
Operator : jg Inst ID: msd3.i
Smp Info : 100ml 2850-207A
Misc Info : 50ppbv (100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 11:35 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
*	98 Bromochloromethane					CAS #: 74-97-5		
	5.424	5.410 (1.000)	130	193545	25.0000		80.00- 120.00	100.00
	5.424	5.410 (1.000)	128	149509			46.73- 106.73	77.25
	5.424	5.410 (1.000)	49	205381			91.08- 151.08	106.12
*	123 1,4-Difluorobenzene					CAS #: 540-36-3		
	6.320	6.306 (1.000)	114	721526	25.0000		80.00- 120.00	100.00
	6.320	6.306 (1.000)	88	101579			0.00- 44.78	14.08
*	163 Chlorobenzene-d5					CAS #: 3114-55-4		
	8.762	8.755 (1.000)	117	668826	25.0000		80.00- 120.00	100.00
	8.762	8.755 (1.000)	82	316632			20.58- 80.58	47.34
$	117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	5.956	5.956 (1.098)	65	212979	21.5316	21.532	80.00- 120.00	100.00
	5.956	5.956 (1.098)	67	122592			24.54- 84.54	57.56
$	146 Toluene-d8					CAS #: 2037-26-5		
	7.530	7.523 (1.192)	98	745654	25.4773	25.477	80.00- 120.00	100.00
	7.530	7.523 (1.192)	70	72361			0.00- 40.44	9.70

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.530	7.523 (1.192)	100	480192			35.27- 95.27	64.40
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.744	9.737 (1.112)	174	441589	25.2882	25.288	80.00- 120.00	100.00
9.744	9.737 (1.112)	95	462510			84.77- 144.77	104.74
9.744	9.737 (1.112)	176	429515			64.74- 124.74	97.27
9 Propylene					CAS #: 115-07-1		
1.493	1.493 (0.275)	41	268225	39.4999	39.500	80.00- 120.00	100.00
1.493	1.493 (0.275)	42	180340			34.96- 94.96	67.23
1.493	1.493 (0.275)	39	195937			43.10- 103.10	73.05
11 Freon 12					CAS #: 75-71-8		
1.535	1.521 (0.283)	85	962774	48.0951	48.095	80.00- 120.00	100.00
1.535	1.521 (0.283)	87	310648			2.61- 62.61	32.27
15 Freon 114					CAS #: 76-14-2		
1.646	1.633 (0.304)	135	891587	54.1654	54.165	80.00- 120.00	100.00
1.646	1.633 (0.304)	137	287678			1.52- 61.52	32.27
17 Chloromethane					CAS #: 74-87-3		
1.730	1.717 (0.319)	50	315372	46.3906	46.390	80.00- 120.00	100.00
1.730	1.717 (0.319)	52	110801			5.06- 65.06	35.13
23 Butane					CAS #: 106-97-8		
1.786	1.786 (0.329)	58	77763	45.3618	45.362	80.00- 120.00	100.00
1.786	1.786 (0.329)	43	567488			780.12- 840.12	729.77
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.828 (0.337)	62	385796	50.0038	50.004	80.00- 120.00	100.00
1.828	1.828 (0.337)	64	124048			2.35- 62.35	32.15
26 1,3-Butadiene					CAS #: 106-99-0		
1.856	1.842 (0.342)	54	310963	45.3606	45.360	80.00- 120.00	100.00
1.856	1.842 (0.342)	39	291202			70.49- 130.49	93.65
29 Bromomethane					CAS #: 74-83-9		
2.206	2.192 (0.407)	94	345311	51.8851	51.885	80.00- 120.00	100.00
2.206	2.192 (0.407)	96	328007			64.76- 124.76	94.99
30 Chloroethane					CAS #: 75-00-3		
2.318	2.304 (0.427)	64	195358	48.8398	48.840	80.00- 120.00	100.00
2.318	2.304 (0.427)	66	60336			0.04- 60.04	30.88
2.318	2.304 (0.427)	49	57343			0.57- 60.57	29.35

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	445418	43.4809	43.481	80.00- 120.00	100.00
2.346	2.332 (0.432)	57	326560			39.30- 99.30	73.32
35 Freon 11					CAS #: 75-69-4		
2.570	2.556 (0.474)	101	1084406	48.5855	48.585	80.00- 120.00	100.00
2.570	2.556 (0.474)	103	703536			35.42- 95.42	64.88
42 Ethanol					CAS #: 64-17-5		
2.906	2.892 (0.536)	45	159845	48.4590	48.459	80.00- 120.00	100.00
2.906	2.892 (0.536)	46	62099			8.36- 68.36	38.85
49 Freon 113					CAS #: 76-13-1		
3.200	3.186 (0.590)	151	826620	50.6016	50.602	80.00- 120.00	100.00
3.200	3.186 (0.590)	153	529718			33.57- 93.57	64.08
3.186	3.186 (0.587)	101	888528			81.85- 141.85	107.49
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.228	3.214 (0.595)	96	410104	48.9095	48.909	80.00- 120.00	100.00
3.228	3.214 (0.595)	98	267966			33.92- 93.92	65.34
3.228	3.214 (0.595)	61	652152			146.09- 206.09	159.02
52 Acetone					CAS #: 67-64-1		
3.381	3.368 (0.623)	58	202615	43.9571	43.957	80.00- 120.00	100.00
3.381	3.368 (0.623)	43	616737			310.81- 370.81	304.39
56 Carbon Disulfide					CAS #: 75-15-0		
3.451	3.438 (0.636)	76	995398	41.1786	41.179	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.549	3.549 (0.654)	45	715437	45.7307	45.731	80.00- 120.00	100.00
3.549	3.549 (0.654)	43	142651			0.00- 49.20	19.94
3.549	3.549 (0.654)	59	29792			0.00- 33.72	4.16
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	170662	47.0909	47.091	80.00- 120.00	100.00
3.689	3.689 (0.680)	41	486147			282.10- 342.10	284.86
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.857 (0.714)	49	479709	45.8401	45.840	80.00- 120.00	100.00
3.871	3.871 (0.714)	84	359603			38.75- 98.75	74.96
3.871	3.857 (0.714)	51	150466			0.74- 60.74	31.37
71 tert-Butyl alcohol					CAS #: 75-65-0		
4.011	3.997 (0.739)	59	835360	42.0545	42.054	80.00- 120.00	100.00
4.011	3.997 (0.739)	41	185084			0.00- 51.35	22.16

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
4.011	3.997 (0.739)	57	87610			0.00- 41.27	10.49
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.081 (0.755)	73	1052918	44.5716	44.572	80.00- 120.00	100.00
4.095	4.081 (0.755)	57	277500			0.00- 56.12	26.36
4.095	4.081 (0.755)	41	250440			0.00- 55.40	23.79
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.123	4.109 (0.760)	98	247579	48.7725	48.772	80.00- 120.00	100.00
4.123	4.109 (0.760)	61	536011			202.86- 262.86	216.50
4.123	4.109 (0.760)	96	376077			122.28- 182.28	151.90
78 Hexane					CAS #: 110-54-3		
4.333	4.319 (0.799)	57	673713	47.2198	47.220	80.00- 120.00	100.00
4.333	4.319 (0.799)	43	406759			33.71- 93.71	60.38
4.333	4.319 (0.799)	86	102214			0.00- 44.46	15.17
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.613	4.599 (0.850)	63	760287	49.1110	49.111	80.00- 120.00	100.00
4.613	4.599 (0.850)	65	229949			0.47- 60.47	30.25
83 Isopropyl ether					CAS #: 108-20-3		
4.599	4.585 (0.848)	45	1349179	44.0222	44.022	80.00- 120.00	100.00
4.599	4.585 (0.848)	87	361600			0.00- 55.24	26.80
4.599	4.585 (0.848)	59	158494			0.00- 41.21	11.75
86 Vinyl Acetate					CAS #: 108-05-4		
4.655	4.641 (0.858)	86	109580	50.6964	50.696	80.00- 120.00	100.00
4.655	4.641 (0.858)	43	1202025			1252.04-1312.04	1096.94
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.912)	59	1328307	44.0630	44.063	80.00- 120.00	100.00
4.949	4.949 (0.912)	87	524250			8.64- 68.64	39.47
4.949	4.949 (0.912)	41	242445			0.00- 48.69	18.25
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.186	5.186 (0.956)	98	330679	51.1364	51.136	80.00- 120.00	100.00
5.186	5.186 (0.956)	96	503375			120.71- 180.71	152.22
5.186	5.186 (0.956)	61	650601			179.50- 239.50	196.75
92 2-Butanone					CAS #: 78-93-3		
5.214	5.214 (0.961)	72	191474	47.6784	47.678	80.00- 120.00	100.00
5.214	5.214 (0.961)	43	828945			421.08- 481.08	432.93
5.214	5.214 (0.961)	57	69838			6.95- 66.95	36.47

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.410 (1.000)	42	456172	43.7317	43.732	80.00- 120.00	100.00
5.424	5.410 (1.000)	71	170238			4.59- 64.59	37.32
5.424	5.410 (1.000)	72	178691			7.27- 67.27	39.17
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	880177	49.1328	49.133	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	568490			35.09- 95.09	64.59
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.028)	84	560504	48.6548	48.655	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	708663			96.78- 156.78	126.43
5.578	5.578 (1.028)	41	366113			43.37- 103.37	65.32
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.592 (1.034)	97	959378	47.6781	47.678	80.00- 120.00	100.00
5.606	5.592 (1.034)	99	614677			34.29- 94.29	64.07
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.054)	119	1053138	49.7705	49.770	80.00- 120.00	100.00
5.718	5.704 (1.054)	117	1064764			71.44- 131.44	101.10
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.900 (1.090)	57	2212612	47.1412	47.141	80.00- 120.00	100.00
5.914	5.900 (1.090)	56	687726			0.95- 60.95	31.08
5.914	5.900 (1.090)	41	534346			0.00- 57.81	24.15
116 Benzene					CAS #: 71-43-2		
5.942	5.928 (0.940)	78	1239715	52.8838	52.884	80.00- 120.00	100.00
5.942	5.928 (0.940)	77	287211			0.00- 53.39	23.17
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.012	5.998 (0.951)	87	304632	48.5410	48.541	80.00- 120.00	100.00
6.012	5.998 (0.951)	73	1162447			355.30- 415.30	381.59
6.012	5.998 (0.951)	55	354113			79.12- 139.12	116.24
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.954)	62	588640	48.5174	48.517	80.00- 120.00	100.00
6.026	6.026 (0.954)	64	184345			1.16- 61.16	31.32
121 Heptane					CAS #: 142-82-5		
6.082	6.068 (0.962)	71	431995	51.4900	51.490	80.00- 120.00	100.00
6.082	6.068 (0.962)	43	778530			159.72- 219.72	180.22
6.082	6.068 (0.962)	57	453097			73.21- 133.21	104.88
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.029)	95	602532	52.4374	52.437	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.516	6.502 (1.031)	130	723031			84.28- 144.28	120.00
6.502	6.502 (1.029)	97	401450			35.52- 95.52	66.63
127 Methylcyclohexane					CAS #: 108-87-2		
6.621	6.586 (1.048)	83	480146	55.5419	55.542	80.00- 120.00	100.00
6.621	6.586 (1.048)	98	229499			22.71- 82.71	47.80
6.621	6.586 (1.048)	55	431737			64.76- 124.76	89.92
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.750	6.735 (1.068)	63	485289	52.6499	52.650	80.00- 120.00	100.00
6.750	6.735 (1.068)	62	338554			39.16- 99.16	69.76
6.750	6.735 (1.068)	41	266344			33.29- 93.29	54.88
136 1,4-Dioxane					CAS #: 123-91-1		
6.843	6.829 (1.083)	88	302260	51.8485	51.848	80.00- 120.00	100.00
6.843	6.829 (1.083)	58	216056			43.17- 103.17	71.48
6.843	6.829 (1.083)	57	73878			0.00- 55.09	24.44
138 Bromodichloromethane					CAS #: 75-27-4		
6.979	6.965 (1.104)	83	988447	54.0677	54.068	80.00- 120.00	100.00
6.979	6.972 (1.104)	85	630748			34.33- 94.33	63.81
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.351	7.344 (1.163)	75	709566	50.2536	50.254	80.00- 120.00	100.00
7.351	7.344 (1.163)	77	235436			2.53- 62.53	33.18
7.351	7.344 (1.163)	39	381000			33.48- 93.48	53.69
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.452 (1.180)	58	406759	46.1014	46.101	80.00- 120.00	100.00
7.459	7.452 (1.180)	43	1012378			231.49- 291.49	248.89
7.459	7.452 (1.180)	85	180582			13.16- 73.16	44.40
147 Toluene					CAS #: 108-88-3		
7.588	7.574 (1.201)	91	1674230	53.0932	53.093	80.00- 120.00	100.00
7.588	7.574 (1.201)	92	963076			27.96- 87.96	57.52
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.824 (0.894)	75	692607	49.4787	49.479	80.00- 120.00	100.00
7.831	7.824 (0.894)	77	224964			2.78- 62.78	32.48
7.831	7.824 (0.894)	39	353320			29.86- 89.86	51.01
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.989	7.975 (0.912)	97	597488	53.6734	53.673	80.00- 120.00	100.00
7.989	7.975 (0.912)	99	368449			31.98- 91.98	61.67
7.989	7.975 (0.912)	83	492338			53.23- 113.23	82.40

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.025	8.018 (0.916)	166	929217	53.6631	53.663	80.00- 120.00	100.00
8.025	8.010 (0.916)	129	706036			46.99- 106.99	75.98
8.025	8.010 (0.916)	131	692799			44.98- 104.98	74.56
158 2-Hexanone					CAS #: 591-78-6		
8.154	8.139 (0.930)	58	550088	50.6527	50.653	80.00- 120.00	100.00
8.154	8.139 (0.930)	43	986835			164.73- 224.73	179.40
8.154	8.139 (0.930)	100	115709			0.00- 50.65	21.03
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.290 (0.947)	129	1264563	53.8066	53.806	80.00- 120.00	100.00
8.297	8.290 (0.947)	127	976454			47.57- 107.57	77.22
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.412	8.404 (0.960)	107	976307	53.3149	53.315	80.00- 120.00	100.00
8.412	8.404 (0.960)	109	920743			63.47- 123.47	94.31
165 Chlorobenzene					CAS #: 108-90-7		
8.791	8.777 (1.003)	112	1472641	52.3505	52.350	80.00- 120.00	100.00
8.791	8.777 (1.003)	114	467018			1.87- 61.87	31.71
8.791	8.777 (1.003)	77	722984			21.88- 81.88	49.09
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.827 (1.008)	106	737304	51.8538	51.854	80.00- 120.00	100.00
8.834	8.827 (1.008)	91	2217214			272.32- 332.32	300.72
169 m,p-Xylene					CAS #: 108-38-3		
8.934	8.920 (1.020)	106	929179	52.2531	52.253	80.00- 120.00	100.00
8.934	8.920 (1.020)	91	1773396			165.91- 225.91	190.86
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.058)	106	879792	52.0264	52.026	80.00- 120.00	100.00
9.271	9.264 (1.058)	91	1774732			175.85- 235.85	201.72
172 Styrene					CAS #: 100-42-5		
9.293	9.285 (1.060)	104	1438592	57.0680	57.068	80.00- 120.00	100.00
9.293	9.285 (1.060)	78	637059			17.56- 77.56	44.28
174 Bromoform					CAS #: 75-25-2		
9.493	9.486 (1.083)	173	1646866	73.1659	73.166	80.00- 120.00	100.00
9.493	9.486 (1.083)	171	850099			21.66- 81.66	51.62
175 Cumene					CAS #: 98-82-8		
9.558	9.550 (1.091)	105	2757238	51.7170	51.717	80.00- 120.00	100.00
9.558	9.550 (1.091)	120	785210			0.00- 57.98	28.48

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)								
9.558	9.550	(1.091)	51	248086			0.00- 39.96	9.00
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
9.873	9.866	(1.127)	83	1289143	51.9791	51.979	80.00- 120.00	100.00
9.873	9.866	(1.127)	85	838687			34.78- 94.78	65.06
182 Propylbenzene						CAS #: 103-65-1		
9.901	9.894	(1.130)	91	3139210	52.2777	52.278	80.00- 120.00	100.00
9.901	9.894	(1.130)	120	817210			0.00- 55.78	26.03
9.901	9.894	(1.130)	105	121153			0.00- 33.82	3.86
188 4-Ethyltoluene						CAS #: 622-96-8		
9.995	9.987	(1.141)	120	883149	53.6386	53.638	80.00- 120.00	100.00
9.995	9.987	(1.141)	105	2767860			285.47- 345.47	313.41
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
10.045	10.038	(1.146)	120	1209377	53.7857	53.786	80.00- 120.00	100.00
10.045	10.038	(1.146)	105	2370689			169.49- 229.49	196.03
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
10.367	10.360	(1.183)	105	2270839	51.4227	51.423	80.00- 120.00	100.00
10.367	10.360	(1.183)	120	1100970			17.18- 77.18	48.48
208 1,3-Dichlorobenzene						CAS #: 541-73-1		
10.654	10.646	(1.216)	146	1771207	54.9904	54.990	80.00- 120.00	100.00
10.654	10.654	(1.216)	148	1131913			34.08- 94.08	63.91
10.654	10.646	(1.216)	111	660809			9.00- 69.00	37.31
209 1,4-Dichlorobenzene						CAS #: 106-46-7		
10.732	10.732	(1.225)	146	1770314	54.1498	54.150	80.00- 120.00	100.00
10.732	10.732	(1.225)	148	1134950			33.83- 93.83	64.11
10.732	10.732	(1.225)	111	633829			7.37- 67.37	35.80
212 alpha-Chlorotoluene						CAS #: 100-44-7		
10.847	10.847	(1.238)	91	2105162	53.4277	53.428	80.00- 120.00	100.00
10.854	10.847	(1.239)	126	509375			0.00- 53.98	24.20
214 1,2-Dichlorobenzene						CAS #: 95-50-1		
11.062	11.055	(1.262)	146	1663502	54.0451	54.045	80.00- 120.00	100.00
11.062	11.055	(1.262)	148	1066364			33.96- 93.96	64.10
11.062	11.055	(1.262)	111	644764			9.96- 69.96	38.76
226 1,2,4-Trichlorobenzene						CAS #: 120-82-1		
12.459	12.459	(1.422)	180	1465214	56.5001	56.500	80.00- 120.00	100.00
12.459	12.459	(1.422)	182	1402310			64.97- 124.97	95.71

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.545	12.545	(1.432)	225	1142687	56.9868	56.987	80.00- 120.00	100.00
12.545	12.537	(1.432)	223	724891			33.42- 93.42	63.44
228 Naphthalene						CAS #: 91-20-3		
12.724	12.717	(1.452)	128	295001	4.05310	4.053	80.00- 120.00	100.00
12.716	12.717	(1.451)	127	37683			0.00- 43.00	12.77

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080803.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 08-AUG-2017 11:19
Operator : jg Inst ID: msd3.i
Smp Info : 100ml 2850-207A
Misc Info : 50ppbv (100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 11:35 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080803.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 50ppbv (100ppbv)

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	193545	-1.73
123 1,4-Difluorobenze	728289	436973	1019605	721526	-0.93
163 Chlorobenzene-d5	663497	398098	928896	668826	0.80

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.32	0.22
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

±Ý

Data File: /chem/msd3.i/08aug17.b/3080803.d

Date : 08-AUG-2017 11:19

Client ID: LCS

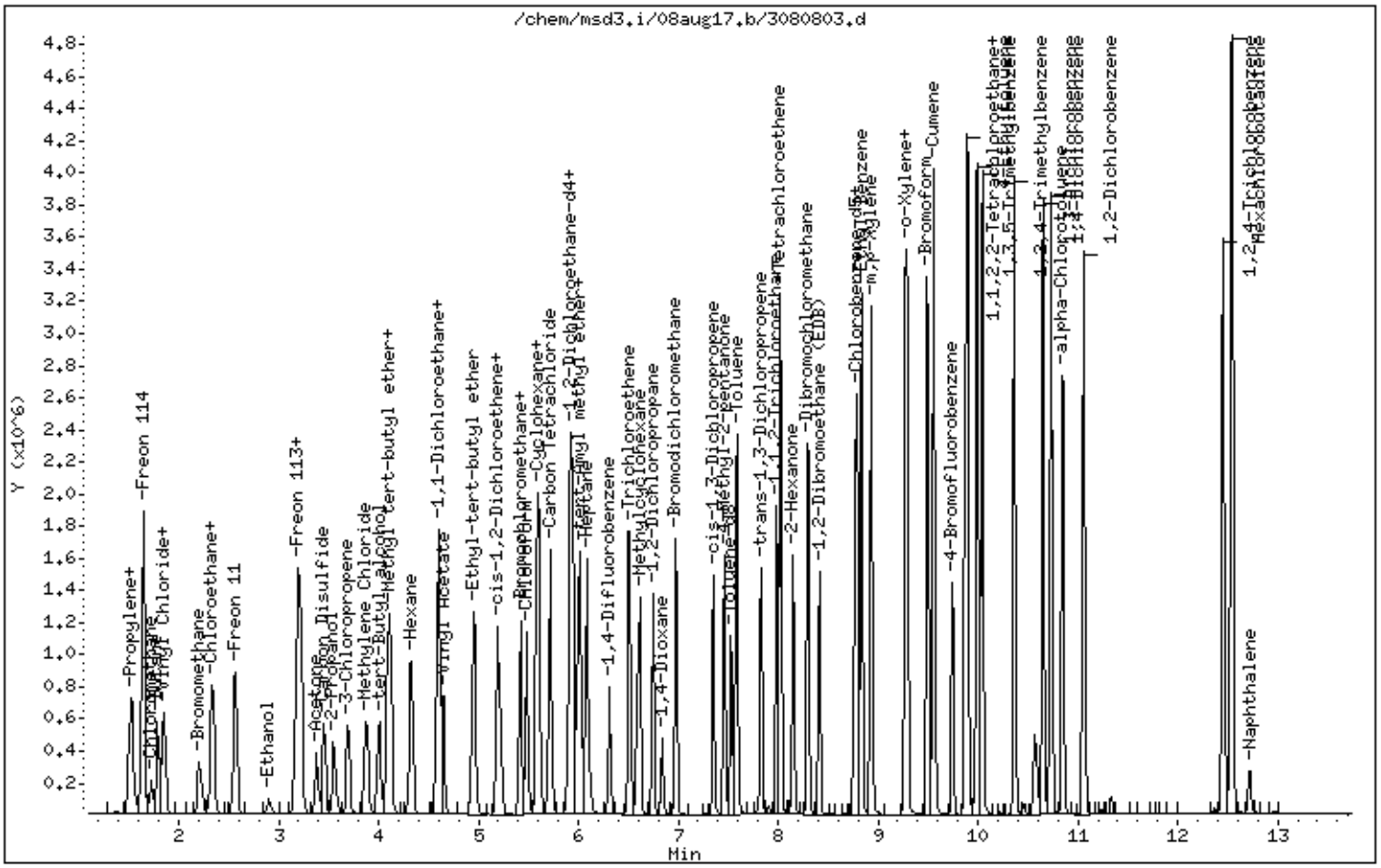
Instrument: msd3.i

Sample Info: 100ml 2850-207A

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



EPA METHOD TO-15 GC/MS FULL SCAN
Former Tronox-Springfield, Mo

Client ID:	LCSD		
Lab ID:	1708091B-21BB	**Date/Time Analyzed:**	8/8/17 11:42 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3080804

Compound	CAS#	%Recovery
Benzene	71-43-2	103
Ethyl Benzene	100-41-4	103
m,p-Xylene	108-38-3	103
Naphthalene	91-20-3	76
o-Xylene	95-47-6	103
Toluene	108-88-3	104
Total Xylene	1330-20-7	103

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	85
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	100

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: jg
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12Bromoform.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 50ppbv (100ppbv)

SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
9	Propylene	50.000	38.804	77.61	70-130
11	Freon 12	50.000	47.033	94.07	70-130
15	Freon 114	50.000	53.086	106.17	70-130
17	Chloromethane	50.000	44.803	89.61	70-130
23	Butane	50.000	45.040	90.08	70-130
25	Vinyl Chloride	50.000	49.376	98.75	70-130
26	1,3-Butadiene	50.000	43.695	87.39	70-130
29	Bromomethane	50.000	50.988	101.98	70-130
30	Chloroethane	50.000	48.220	96.44	70-130
31	Isopentane	50.000	42.094	84.19	70-130
35	Freon 11	50.000	47.464	94.93	70-130
42	Ethanol	50.000	46.477	92.95	70-130
49	Freon 113	50.000	49.482	98.96	70-130
50	1,1-Dichloroethene	50.000	47.956	95.91	70-130
52	Acetone	50.000	42.407	84.81	70-130
56	Carbon Disulfide	50.000	39.971	79.94	70-130
57	2-Propanol	50.000	44.524	89.05	70-130
58	3-Chloropropene	50.000	45.035	90.07	70-130
66	Methylene Chloride	50.000	44.506	89.01	70-130
72	Methyl tert-butyl	50.000	43.053	86.11	70-130
73	trans-1,2-Dichloro	50.000	47.116	94.23	70-130
78	Hexane	50.000	45.763	91.53	70-130
82	1,1-Dichloroethane	50.000	47.926	95.85	70-130
86	Vinyl Acetate	50.000	50.754	101.51	70-130
91	cis-1,2-Dichloroet	50.000	49.922	99.84	70-130
92	2-Butanone	50.000	46.725	93.45	70-130
99	Tetrahydrofuran	50.000	42.783	85.57	70-130
100	Chloroform	50.000	48.070	96.14	70-130
103	1,1,1-Trichloroeth	50.000	47.045	94.09	70-130
106	Carbon Tetrachlori	50.000	48.370	96.74	70-130
102	Cyclohexane	50.000	47.199	94.40	70-130
113	2,2,4-Trimethylpen	50.000	45.872	91.74	70-130
116	Benzene	50.000	51.503	103.01	70-130

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
120 1,2-Dichloroethane	50.000	47.003	94.01	70-130
121 Heptane	50.000	50.671	101.34	70-130
125 Trichloroethene	50.000	52.271	104.54	70-130
127 Methylcyclohexane	50.000	51.635	103.27	70-130
132 1,2-Dichloropropan	50.000	51.922	103.84	70-130
136 1,4-Dioxane	50.000	50.505	101.01	70-130
138 Bromodichlorometha	50.000	52.897	105.79	70-130
144 cis-1,3-Dichloropr	50.000	49.788	99.58	70-130
145 4-Methyl-2-pentano	50.000	45.536	91.07	70-130
147 Toluene	50.000	51.979	103.96	70-130
150 trans-1,3-Dichloro	50.000	49.200	98.40	70-130
155 1,1,2-Trichloroeth	50.000	53.429	106.86	70-130
156 Tetrachloroethene	50.000	53.851	107.70	70-130
158 2-Hexanone	50.000	50.299	100.60	70-130
160 Dibromochlorometha	50.000	53.449	106.90	70-130
161 1,2-Dibromoethane	50.000	52.956	105.91	70-130
165 Chlorobenzene	50.000	51.977	103.95	70-130
167 Ethyl Benzene	50.000	51.566	103.13	70-130
169 m,p-Xylene	50.000	51.440	102.88	70-130
171 o-Xylene	50.000	51.319	102.64	70-130
172 Styrene	50.000	56.375	112.75	70-130
174 Bromoform	65.000	73.174	112.58	70-130
175 Cumene	50.000	51.439	102.88	70-130
181 1,1,2,2-Tetrachlor	50.000	51.517	103.03	70-130
182 Propylbenzene	50.000	51.649	103.30	70-130
188 4-Ethyltoluene	50.000	52.792	105.58	70-130
190 1,3,5-Trimethylben	50.000	53.750	107.50	70-130
196 1,2,4-Trimethylben	50.000	51.008	102.02	70-130
208 1,3-Dichlorobenzen	50.000	54.724	109.45	70-130
209 1,4-Dichlorobenzen	50.000	54.053	108.11	70-130
212 alpha-Chlorotoluen	50.000	52.993	105.99	70-130
214 1,2-Dichlorobenzen	50.000	54.313	108.63	70-130
226 1,2,4-Trichloroben	50.000	57.080	114.16	70-130
227 Hexachlorobutadien	50.000	57.484	114.97	70-130
228 Naphthalene	5.000	3.829	76.58	60-140

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	25.000	21.220	84.88	70-130
$ 146 Toluene-d8	25.000	25.085	100.34	70-130
$ 177 4-Bromofluorobenze	25.000	25.448	101.79	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080804.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 08-AUG-2017 11:42
Operator : jg Inst ID: msd3.i
Smp Info : 100ml 2850-207A
Misc Info : 50ppbv (100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 11:35 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 14 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane							CAS #: 74-97-5	
5.424	5.410 (1.000)	130	196741	25.0000			80.00- 120.00	100.00
5.424	5.410 (1.000)	128	147950				46.73- 106.73	75.20
5.424	5.410 (1.000)	49	211352				91.08- 151.08	107.43
* 123 1,4-Difluorobenzene							CAS #: 540-36-3	
6.320	6.306 (1.000)	114	725898	25.0000			80.00- 120.00	100.00
6.320	6.306 (1.000)	88	102414				0.00- 44.78	14.11
* 163 Chlorobenzene-d5							CAS #: 3114-55-4	
8.763	8.755 (1.000)	117	665868	25.0000			80.00- 120.00	100.00
8.763	8.755 (1.000)	82	319106				20.58- 80.58	47.92
$ 117 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
5.956	5.956 (1.098)	65	213366	21.2203	21.220		80.00- 120.00	100.00
5.956	5.956 (1.098)	67	121216				24.54- 84.54	56.81
$ 146 Toluene-d8							CAS #: 2037-26-5	
7.531	7.523 (1.192)	98	738617	25.0848	25.085		80.00- 120.00	100.00
7.531	7.523 (1.192)	70	72823				0.00- 40.44	9.86

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.531	7.523 (1.192)	100	481252			35.27- 95.27	65.16
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4	
9.751	9.737 (1.113)	174	442417	25.4482	25.448	80.00- 120.00	100.00
9.751	9.737 (1.113)	95	462109			84.77- 144.77	104.45
9.751	9.737 (1.113)	176	429351			64.74- 124.74	97.05
9 Propylene						CAS #: 115-07-1	
1.493	1.493 (0.275)	41	267849	38.8038	38.804	80.00- 120.00	100.00
1.493	1.493 (0.275)	42	175928			34.96- 94.96	65.68
1.493	1.493 (0.275)	39	191001			43.10- 103.10	71.31
11 Freon 12						CAS #: 75-71-8	
1.535	1.521 (0.283)	85	957066	47.0333	47.033	80.00- 120.00	100.00
1.535	1.521 (0.283)	87	311863			2.61- 62.61	32.59
15 Freon 114						CAS #: 76-14-2	
1.647	1.633 (0.304)	135	888255	53.0863	53.086	80.00- 120.00	100.00
1.647	1.633 (0.304)	137	285883			1.52- 61.52	32.18
17 Chloromethane						CAS #: 74-87-3	
1.731	1.717 (0.319)	50	309607	44.8027	44.803	80.00- 120.00	100.00
1.731	1.717 (0.319)	52	109204			5.06- 65.06	35.27
23 Butane						CAS #: 106-97-8	
1.787	1.786 (0.329)	58	78486	45.0398	45.040	80.00- 120.00	100.00
1.787	1.786 (0.329)	43	564291			780.12- 840.12	718.97
25 Vinyl Chloride						CAS #: 75-01-4	
1.829	1.828 (0.337)	62	387243	49.3760	49.376	80.00- 120.00	100.00
1.829	1.828 (0.337)	64	122551			2.35- 62.35	31.65
26 1,3-Butadiene						CAS #: 106-99-0	
1.856	1.842 (0.342)	54	304491	43.6950	43.695	80.00- 120.00	100.00
1.856	1.842 (0.342)	39	286405			70.49- 130.49	94.06
29 Bromomethane						CAS #: 74-83-9	
2.206	2.192 (0.407)	94	344942	50.9877	50.988	80.00- 120.00	100.00
2.206	2.192 (0.407)	96	320672			64.76- 124.76	92.96
30 Chloroethane						CAS #: 75-00-3	
2.318	2.304 (0.427)	64	196063	48.2198	48.220	80.00- 120.00	100.00
2.318	2.304 (0.427)	66	61342			0.04- 60.04	31.29
2.318	2.304 (0.427)	49	56975			0.57- 60.57	29.06

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.332	2.332 (0.430)	43	438330	42.0939	42.094	80.00- 120.00	100.00
2.346	2.332 (0.433)	57	324004			39.30- 99.30	73.92
35 Freon 11					CAS #: 75-69-4		
2.570	2.556 (0.474)	101	1076861	47.4637	47.464	80.00- 120.00	100.00
2.570	2.556 (0.474)	103	699102			35.42- 95.42	64.92
42 Ethanol					CAS #: 64-17-5		
2.906	2.892 (0.536)	45	155840	46.4774	46.477	80.00- 120.00	100.00
2.906	2.892 (0.536)	46	61354			8.36- 68.36	39.37
49 Freon 113					CAS #: 76-13-1		
3.200	3.186 (0.590)	151	821679	49.4820	49.482	80.00- 120.00	100.00
3.200	3.186 (0.590)	153	526961			33.57- 93.57	64.13
3.186	3.186 (0.587)	101	881370			81.85- 141.85	107.26
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.228	3.214 (0.595)	96	408754	47.9565	47.956	80.00- 120.00	100.00
3.228	3.214 (0.595)	98	265132			33.92- 93.92	64.86
3.228	3.214 (0.595)	61	649777			146.09- 206.09	158.97
52 Acetone					CAS #: 67-64-1		
3.382	3.368 (0.623)	58	198696	42.4066	42.407	80.00- 120.00	100.00
3.382	3.368 (0.623)	43	603965			310.81- 370.81	303.96
56 Carbon Disulfide					CAS #: 75-15-0		
3.452	3.438 (0.636)	76	982172	39.9715	39.971	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.550	3.549 (0.654)	45	708058	44.5239	44.524	80.00- 120.00	100.00
3.550	3.549 (0.654)	43	140184			0.00- 49.20	19.80
3.550	3.549 (0.654)	59	29114			0.00- 33.72	4.11
58 3-Chloropropene					CAS #: 107-05-1		
3.689	3.689 (0.680)	76	165908	45.0354	45.035	80.00- 120.00	100.00
3.689	3.689 (0.680)	41	479324			282.10- 342.10	288.91
66 Methylene Chloride					CAS #: 75-09-2		
3.871	3.857 (0.714)	49	473434	44.5055	44.506	80.00- 120.00	100.00
3.871	3.871 (0.714)	84	358712			38.75- 98.75	75.77
3.871	3.857 (0.714)	51	145860			0.74- 60.74	30.81
71 tert-Butyl alcohol					CAS #: 75-65-0		
4.011	3.997 (0.739)	59	820409	40.6309	40.631	80.00- 120.00	100.00
4.011	3.997 (0.739)	41	184334			0.00- 51.35	22.47

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
4.011	3.997 (0.739)	57	87313			0.00- 41.27	10.64
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.095	4.081 (0.755)	73	1033835	43.0529	43.053	80.00- 120.00	100.00
4.095	4.081 (0.755)	57	277479			0.00- 56.12	26.84
4.095	4.081 (0.755)	41	248423			0.00- 55.40	24.03
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.123	4.109 (0.760)	98	243121	47.1162	47.116	80.00- 120.00	100.00
4.123	4.109 (0.760)	61	525119			202.86- 262.86	215.99
4.123	4.109 (0.760)	96	373327			122.28- 182.28	153.56
78 Hexane					CAS #: 110-54-3		
4.333	4.319 (0.799)	57	663705	45.7627	45.763	80.00- 120.00	100.00
4.319	4.319 (0.796)	43	395566			33.71- 93.71	59.60
4.333	4.319 (0.799)	86	98270			0.00- 44.46	14.81
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.613	4.599 (0.850)	63	754198	47.9263	47.926	80.00- 120.00	100.00
4.613	4.599 (0.850)	65	229369			0.47- 60.47	30.41
83 Isopropyl ether					CAS #: 108-20-3		
4.599	4.585 (0.848)	45	1324736	42.5225	42.522	80.00- 120.00	100.00
4.599	4.585 (0.848)	87	355567			0.00- 55.24	26.84
4.599	4.585 (0.848)	59	157451			0.00- 41.21	11.89
86 Vinyl Acetate					CAS #: 108-05-4		
4.655	4.641 (0.858)	86	111515	50.7535	50.754	80.00- 120.00	100.00
4.655	4.641 (0.858)	43	1192054			1252.04-1312.04	1068.96
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.949	4.949 (0.912)	59	1316028	42.9465	42.946	80.00- 120.00	100.00
4.949	4.949 (0.912)	87	517947			8.64- 68.64	39.36
4.949	4.949 (0.912)	41	238678			0.00- 48.69	18.14
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.187	5.186 (0.956)	98	328159	49.9223	49.922	80.00- 120.00	100.00
5.187	5.186 (0.956)	96	499938			120.71- 180.71	152.35
5.187	5.186 (0.956)	61	643227			179.50- 239.50	196.01
92 2-Butanone					CAS #: 78-93-3		
5.215	5.214 (0.961)	72	190744	46.7251	46.725	80.00- 120.00	100.00
5.215	5.214 (0.961)	43	811739			421.08- 481.08	425.56
5.215	5.214 (0.961)	57	69917			6.95- 66.95	36.65

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.424	5.410 (1.000)	42	453643	42.7828	42.783	80.00- 120.00	100.00
5.424	5.410 (1.000)	71	171438			4.59- 64.59	37.79
5.424	5.410 (1.000)	72	178581			7.27- 67.27	39.37
100 Chloroform					CAS #: 67-66-3		
5.480	5.480 (1.010)	83	875353	48.0697	48.070	80.00- 120.00	100.00
5.480	5.480 (1.010)	85	567000			35.09- 95.09	64.77
102 Cyclohexane					CAS #: 110-82-7		
5.578	5.578 (1.028)	84	552715	47.1993	47.199	80.00- 120.00	100.00
5.578	5.578 (1.028)	56	697684			96.78- 156.78	126.23
5.578	5.578 (1.028)	41	360882			43.37- 103.37	65.29
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.606	5.592 (1.034)	97	962280	47.0455	47.045	80.00- 120.00	100.00
5.606	5.592 (1.034)	99	611197			34.29- 94.29	63.52
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.718	5.718 (1.054)	119	1040399	48.3698	48.370	80.00- 120.00	100.00
5.718	5.704 (1.054)	117	1050673			71.44- 131.44	100.99
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.900 (1.090)	57	2188614	45.8724	45.872	80.00- 120.00	100.00
5.914	5.900 (1.090)	56	675364			0.95- 60.95	30.86
5.914	5.900 (1.090)	41	528031			0.00- 57.81	24.13
116 Benzene					CAS #: 71-43-2		
5.942	5.928 (0.940)	78	1214662	51.5030	51.503	80.00- 120.00	100.00
5.942	5.928 (0.940)	77	285158			0.00- 53.39	23.48
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.012	5.998 (0.951)	87	304825	48.2792	48.279	80.00- 120.00	100.00
6.012	5.998 (0.951)	73	1154338			355.30- 415.30	378.69
5.998	5.998 (0.949)	55	347658			79.12- 139.12	114.05
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.026	6.026 (0.954)	62	573718	47.0027	47.003	80.00- 120.00	100.00
6.026	6.026 (0.954)	64	183204			1.16- 61.16	31.93
121 Heptane					CAS #: 142-82-5		
6.082	6.068 (0.962)	71	427701	50.6712	50.671	80.00- 120.00	100.00
6.082	6.068 (0.962)	43	770926			159.72- 219.72	180.25
6.082	6.068 (0.962)	57	444117			73.21- 133.21	103.84
125 Trichloroethene					CAS #: 79-01-6		
6.502	6.502 (1.029)	95	604262	52.2712	52.271	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.516	6.502 (1.031)	130	716818			84.28- 144.28	118.63
6.502	6.502 (1.029)	97	398653			35.52- 95.52	65.97
127 Methylcyclohexane					CAS #: 108-87-2		
6.621	6.586 (1.048)	83	449076	51.6350	51.635	80.00- 120.00	100.00
6.621	6.586 (1.048)	98	218955			22.71- 82.71	48.76
6.621	6.586 (1.048)	55	347919			64.76- 124.76	77.47
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.750	6.735 (1.068)	63	481476	51.9217	51.922	80.00- 120.00	100.00
6.750	6.735 (1.068)	62	336594			39.16- 99.16	69.91
6.750	6.735 (1.068)	41	264453			33.29- 93.29	54.93
136 1,4-Dioxane					CAS #: 123-91-1		
6.843	6.829 (1.083)	88	296214	50.5053	50.505	80.00- 120.00	100.00
6.843	6.829 (1.083)	58	216210			43.17- 103.17	72.99
6.843	6.829 (1.083)	57	71872			0.00- 55.09	24.26
138 Bromodichloromethane					CAS #: 75-27-4		
6.979	6.965 (1.104)	83	972912	52.8974	52.897	80.00- 120.00	100.00
6.979	6.972 (1.104)	85	626194			34.33- 94.33	64.36
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.352	7.344 (1.163)	75	707250	49.7879	49.788	80.00- 120.00	100.00
7.352	7.344 (1.163)	77	231403			2.53- 62.53	32.72
7.352	7.344 (1.163)	39	378049			33.48- 93.48	53.45
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.459	7.452 (1.180)	58	404208	45.5364	45.536	80.00- 120.00	100.00
7.459	7.452 (1.180)	43	996971			231.49- 291.49	246.65
7.459	7.452 (1.180)	85	176838			13.16- 73.16	43.75
147 Toluene					CAS #: 108-88-3		
7.588	7.574 (1.201)	91	1649014	51.9786	51.979	80.00- 120.00	100.00
7.588	7.574 (1.201)	92	942769			27.96- 87.96	57.17
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.831	7.824 (0.894)	75	685660	49.2000	49.200	80.00- 120.00	100.00
7.831	7.824 (0.894)	77	225814			2.78- 62.78	32.93
7.831	7.824 (0.894)	39	352406			29.86- 89.86	51.40
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.989	7.975 (0.912)	97	592136	53.4289	53.429	80.00- 120.00	100.00
7.989	7.975 (0.912)	99	367734			31.98- 91.98	62.10
7.989	7.975 (0.912)	83	489806			53.23- 113.23	82.72

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.025	8.018 (0.916)	166	928352	53.8513	53.851	80.00- 120.00	100.00
8.025	8.010 (0.916)	129	700595			46.99- 106.99	75.47
8.025	8.010 (0.916)	131	678512			44.98- 104.98	73.09
158 2-Hexanone					CAS #: 591-78-6		
8.154	8.139 (0.930)	58	543829	50.2988	50.299	80.00- 120.00	100.00
8.154	8.139 (0.930)	43	967460			164.73- 224.73	177.90
8.154	8.139 (0.930)	100	116291			0.00- 50.65	21.38
160 Dibromochloromethane					CAS #: 124-48-1		
8.297	8.290 (0.947)	129	1250607	53.4491	53.449	80.00- 120.00	100.00
8.297	8.290 (0.947)	127	970058			47.57- 107.57	77.57
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.412	8.404 (0.960)	107	965441	52.9557	52.956	80.00- 120.00	100.00
8.412	8.404 (0.960)	109	913261			63.47- 123.47	94.60
165 Chlorobenzene					CAS #: 108-90-7		
8.791	8.777 (1.003)	112	1455675	51.9773	51.977	80.00- 120.00	100.00
8.791	8.777 (1.003)	114	463828			1.87- 61.87	31.86
8.791	8.777 (1.003)	77	714606			21.88- 81.88	49.09
167 Ethyl Benzene					CAS #: 100-41-4		
8.834	8.827 (1.008)	106	729969	51.5660	51.566	80.00- 120.00	100.00
8.834	8.827 (1.008)	91	2189289			272.32- 332.32	299.92
169 m,p-Xylene					CAS #: 108-38-3		
8.935	8.920 (1.020)	106	910667	51.4395	51.440	80.00- 120.00	100.00
8.935	8.920 (1.020)	91	1760671			165.91- 225.91	193.34
171 o-Xylene					CAS #: 95-47-6		
9.271	9.264 (1.058)	106	863989	51.3189	51.319	80.00- 120.00	100.00
9.271	9.264 (1.058)	91	1748005			175.85- 235.85	202.32
172 Styrene					CAS #: 100-42-5		
9.293	9.285 (1.060)	104	1414849	56.3755	56.375	80.00- 120.00	100.00
9.293	9.285 (1.060)	78	626000			17.56- 77.56	44.25
174 Bromoform					CAS #: 75-25-2		
9.500	9.486 (1.084)	173	1639777	73.1746	73.174	80.00- 120.00	100.00
9.500	9.486 (1.084)	171	838882			21.66- 81.66	51.16
175 Cumene					CAS #: 98-82-8		
9.558	9.550 (1.091)	105	2730292	51.4390	51.439	80.00- 120.00	100.00
9.565	9.550 (1.092)	120	769024			0.00- 57.98	28.17

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.558	9.550 (1.091)	51	245629			0.00- 39.96	9.00
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.880	9.866 (1.128)	83	1272041	51.5174	51.517	80.00- 120.00	100.00
9.880	9.866 (1.128)	85	822296			34.78- 94.78	64.64
182 Propylbenzene					CAS #: 103-65-1		
9.902	9.894 (1.130)	91	3087719	51.6486	51.649	80.00- 120.00	100.00
9.909	9.894 (1.131)	120	808476			0.00- 55.78	26.18
9.909	9.894 (1.131)	105	119890			0.00- 33.82	3.88
188 4-Ethyltoluene					CAS #: 622-96-8		
10.002	9.987 (1.141)	120	865368	52.7921	52.792	80.00- 120.00	100.00
10.002	9.987 (1.141)	105	2741354			285.47- 345.47	316.78
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.052	10.038 (1.147)	120	1203227	53.7499	53.750	80.00- 120.00	100.00
10.052	10.038 (1.147)	105	2366125			169.49- 229.49	196.65
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.374	10.360 (1.184)	105	2242546	51.0076	51.008	80.00- 120.00	100.00
10.374	10.360 (1.184)	120	1088184			17.18- 77.18	48.52
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.668	10.646 (1.217)	146	1754843	54.7244	54.724	80.00- 120.00	100.00
10.668	10.654 (1.217)	148	1119884			34.08- 94.08	63.82
10.661	10.646 (1.217)	111	651934			9.00- 69.00	37.15
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.747	10.732 (1.226)	146	1759336	54.0531	54.053	80.00- 120.00	100.00
10.747	10.732 (1.226)	148	1130606			33.83- 93.83	64.26
10.747	10.732 (1.226)	111	628655			7.37- 67.37	35.73
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.861	10.847 (1.240)	91	2078815	52.9934	52.993	80.00- 120.00	100.00
10.861	10.847 (1.240)	126	511051			0.00- 53.98	24.58
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.076	11.055 (1.264)	146	1664363	54.3133	54.313	80.00- 120.00	100.00
11.076	11.055 (1.264)	148	1048983			33.96- 93.96	63.03
11.076	11.055 (1.264)	111	634937			9.96- 69.96	38.15
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.473	12.459 (1.423)	180	1473699	57.0797	57.080	80.00- 120.00	100.00
12.473	12.459 (1.423)	182	1407751			64.97- 124.97	95.53

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.566	12.545	(1.434)	225	1147566	57.4843	57.484	80.00- 120.00	100.00
12.566	12.537	(1.434)	223	729753			33.42- 93.42	63.59
228 Naphthalene						CAS #: 91-20-3		
12.745	12.717	(1.454)	128	277445	3.82883	3.829	80.00- 120.00	100.00
12.745	12.717	(1.454)	127	36293			0.00- 43.00	13.08

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd3.i/08aug17.b/3080804.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 08-AUG-2017 11:42
Operator : jg Inst ID: msd3.i
Smp Info : 100ml 2850-207A
Misc Info : 50ppbv (100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msd3.i/08aug17.b/317q0523b.m
Meth Date : 08-Aug-2017 11:35 jscarbro Quant Type: ISTD
Cal Date : 04-AUG-2017 12:46 Cal File: 3080409.d
Als bottle: 14 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd3.i
Lab File ID: 3080804.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msd3.i/08aug17.b/317q0523b.m
Misc Info: 50ppbv (100ppbv)

Calibration Date: 08-AUG-2017
Calibration Time: 10:56
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	196954	118172	275736	196741	-0.11
123 1,4-Difluorobenze	728289	436973	1019605	725898	-0.33
163 Chlorobenzene-d5	663497	398098	928896	665868	0.36

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.26
123 1,4-Difluorobenze	6.31	5.98	6.64	6.32	0.22
163 Chlorobenzene-d5	8.76	8.43	9.09	8.76	0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

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Data File: /chem/msd3.i/08aug17.b/3080804.d

Date : 08-AUG-2017 11:42

Client ID: LCSD

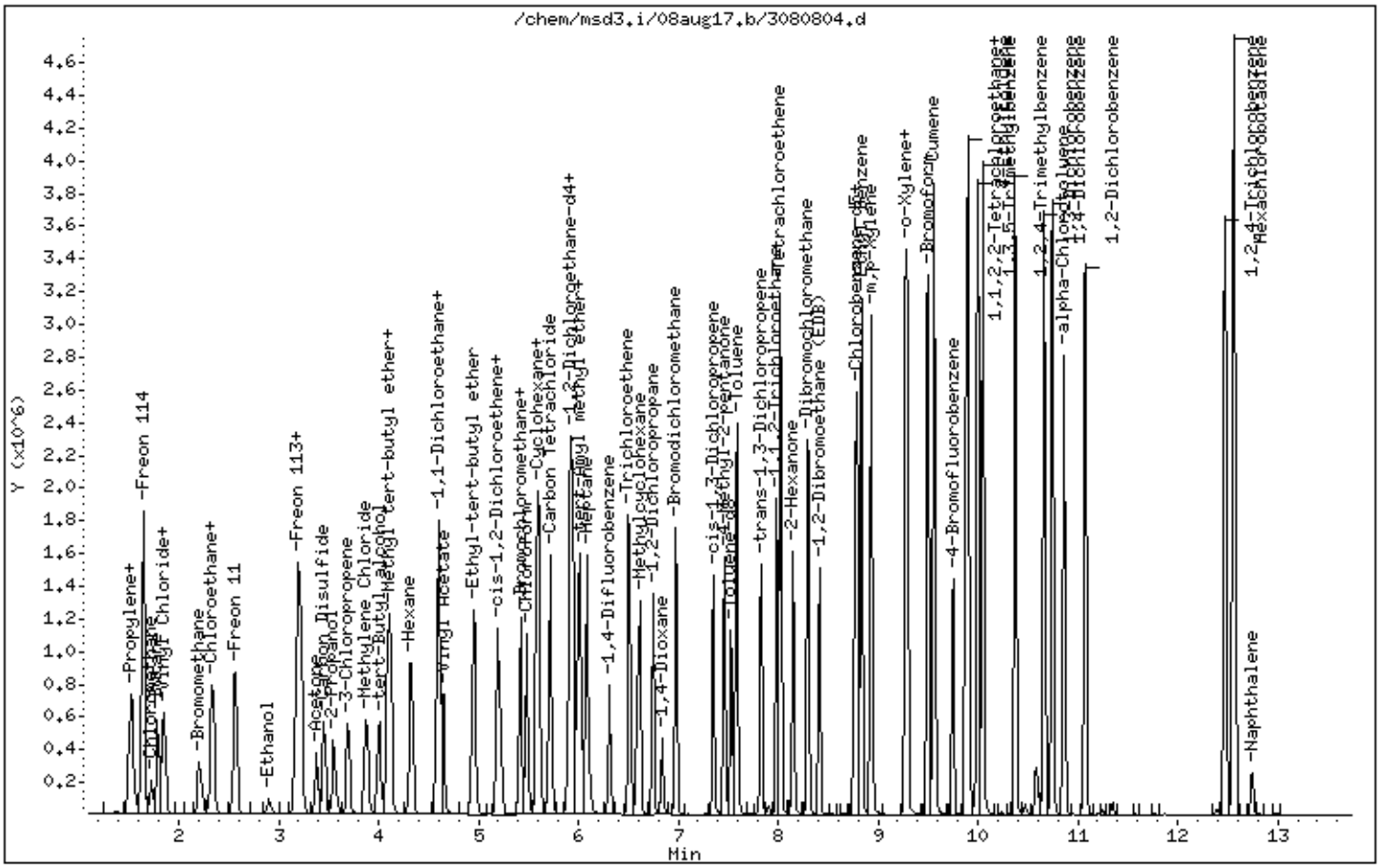
Instrument: msd3.i

Sample Info: 100ml 2850-207A

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



MSD3

BFB Tune Verification: (186560/193920) * 100= 96.2%			
*100	2850-264	Exp. Date:	10/17/2017
BCM		181,481	
1,4-DFB		637,861	
CB-d5		604,933	

Method TO-15/TO-14	
SOP# 6	
Vacuum:	NA

Verified: jg

Method: 317q0523B.m

Use	File #	Enter/Scan Sample IDs	Canister#	Cart Pos.	Pressure	Amount	DF	Verify Load	Loaded Init	Date Analyzed	Time	Review Init	Comments
√	3080701	BFB tune check	2850-264	6	Humid	50ml	1.00	jg	jg	8/7/2017	0954	jg	
√	3080702	CCV	2850-234	13	50ppbv (200ppbv)	50ml	1.00	jg	jg	8/7/2017	1044	jg	exp. 9/27/17; 0 out
√	3080703	LCS	2850-207A	14	25ppbv (100ppbv)	50ml	1.00	jg	jg	8/7/2017	1107	jg	exp. 9/2117; 0 out
√	3080704	LCSD	2850-207A	14	25ppbv (100ppbv)	50ml	1.00	jg	jg	8/7/2017	1130	jg	
√	3080705	CCVsp	2850--287	1	50ppbv (200ppbv)	50ml	1.00	jg	jg	8/7/2017	1236	jg	exp. 11/3/17. 0 out
√	3080706	Lab Blank	24229	6	Humid	200ml	1.00	jg	jg	8/7/2017	1302	jg	
√	3080707	1708001-11A	O1011	2	4.9 Hg->15.5 psi	200ml	2.46	mjs	jg	8/7/2017	1620	mjs	
√	3080708	1708001-12A	1L1574	3	20.4 Hg->15.5 psi	200ml	6.42	mjs	jg	8/7/2017	1646	mjs	
√	3080709	1707476-11A	N2613	4	5.5 Hg->14.8 psi	200ml	2.46	mjs	jg	8/7/2017	1713	mjs	
√	3080710	1707476-12A	1L1608	5	3.7 Hg->15 psi	200ml	2.30	mjs	jg	8/7/2017	1739	mjs	
√	3080711	1707476-18A	O0231	6	5.1 Hg->15.1 psi	200ml	2.44	mjs	jg	8/7/2017	1805	mjs	
√	3080712	1707476-20A	O0249	7	3.7 Hg->14.9 psi	100ml	4.59	mjs	jg	8/7/2017	1828	mjs	DIL TC
√	3080713	1707477-13A	1L1545	8	4.5 Hg->15 psi	200ml	2.38	mjs	jg	8/7/2017	1854	mjs	
C	3080714	1707477-05A	34604	9	5.0 Hg->15 psi	200ml	2.42	mjs	jg	8/7/2017	1920	mjs	confirmation
C	3080715	1707477-09A	1L1731	10	5.5 Hg->15 psi	200ml	2.47	mjs	jg	8/7/2017	1947	mjs	confirmation
√	3080716	1708091B-04A	O0487	2	7.0 Hg->15 psi	200ml	2.64	jg	mjs	8/7/2017	2210	jg	
√	3080717	1708091B-05A	N1984	3	6.5 Hg->15 psi	200ml	2.58	jg	mjs	8/7/2017	2236	jg	
√	3080718	1708091B-10A	N2670	4	6.0 Hg->15 psi	200ml	2.52	jg	mjs	8/7/2017	2302	jg	
√	3080719	1708091B-11A	O0717	5	6.0 Hg->15 psi	200ml	2.52	jg	mjs	8/7/2017	2329	jg	
X	3080720	1708091B-12A	N2845	6	11.5 Hg->5 psi	200ml	2.17	jg	mjs	8/7/2017	2355	jg	overrange rr @ 80ml
X	3080721	1708091B-13A	6L1283	7	8.0 Hg->5 psi	200ml	1.83	jg	mjs	8/7/2017	0021	jg	possible carryover
√	3080722	1708091B-14A	5785	8	3.5 Hg->5 psi	200ml	1.52	jg	mjs	8/7/2017	0048	jg	
X	3080723	1708091B-15A	N2547	9	7.5 Hg->5 psi	200ml	1.79	jg	mjs	8/7/2017	0114	jg	overrange rr @ 30ml
X	3080724	1708091B-16A	32119	10	8.5 Hg->5 psi	200ml	1.87	jg	mjs	8/7/2017	0140	jg	overrange rr @ 30ml
X	3080725	1708091B-17A	N0587	11	8.5 Hg->5 psi	200ml	1.87	jg	mjs	8/7/2017	0207	jg	overrange rr @ 40ml
X	3080726	1708091B-18A	34463	12	6.5 Hg->5 psi	120ml	2.85	jg	mjs	8/7/2017	0230	jg	overrange rr @ 15ml

8/8/17

MSD3

BFB Tune Verification: (215744/223680) * 100= 96.45%			
*100	2850-264	Exp. Date:	10/17/2017
BCM	196,954		
1,4-DFB	728,289		
CB-d5	663,497		

Method TO-15/TO-14	
SOP# 6	
Vacuum:	NA

Verified: js IS ↑ - watch for saturation

Method: 317q05238.m

Use	File #	Enter/Scan Sample IDs	Canister#	Cart Pos.	Pressure	Amount	DF	Verify Load	Loaded Init	Date Analyzed	Time	Review Init	Comments
√	3080801	BFB tune check	2850-264	12	Humid	200ml	1.00	jg	jg	8/8/2017	1031	jg	
√	3080802	CCV	2850-234	13	50ppbv (200pppbv)	50ml	1.00	jg	jg	8/8/2017	1056	jg	exp. 9/27/17; 0 out
√	3080803	LCS	2850-207A	14	50ppbv (100pppbv)	100ml	1.00	jg	jg	8/8/2017	1119	jg	exp. 9/2117; 0 out
√	3080804	LCSD	2850-207A	14	50ppbv (100pppbv)	100ml	1.00	jg	jg	8/8/2017	1142	jg	
X	3080805	Lab Blank	24229	12	Humid	200ml	1.00	jg	jg	8/8/2017	1251	jg	
√	3080806	Lab Blank	24229	12	Humid	200ml	1.00	jg	jg	8/8/2017	1352	jg	
√	3080807	1708091B-13A	6L1283	2	8.0 Hg->5 psi	200ml	1.83	gh	jg	8/8/2017	1516	gh	
√	3080808	1708091B-12A	N2845	3	11.5 Hg->5 psi	80ml	5.43	gh	jg	8/8/2017	1538	gh	dil tc
√	3080809	1708091B-15A	N2547	4	7.5 Hg->5 psi	30ml	11.9	gh	jg	8/8/2017	1601	gh	dil tc
√	3080810	1708091B-16A	32119	5	8.5 Hg->5 psi	30ml	12.5	gh	jg	8/8/2017	1626	gh	dil tc
√	3080811	1708091B-17A	N0587	6	8.5 Hg->5 psi	40ml	9.35	gh	jg	8/8/2017	1650	gh	dil tc
√	3080812	1708091B-18A	34463	7	6.5 Hg->5 psi	15ml	22.80	gh	jg	8/8/2017	1714	gh	dil tc
√	3080813	1708071-02A	O0418	11	4.3 Hg->5 psi	80ml	3.91	gh	jg	8/8/2017	1736	gh	dil tc
√	3080814	1708071-04A	O0431	9	9.0 Hg->4.6 psi	100ml	3.75	gh	jg	8/8/2017	1759	gh	dil tc
√	3080815	1708071-09A	6L1222	10	2.8 Hg->4.7 psi	20ml	14.6	gh	jg	8/8/2017	1823	gh	green dot: initial: 5.4 final:5.0; dil tc

Eurofins Air Toxics Inc.

Data file : /var/chem/msd3.i/23may17.b/3052304.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 23-MAY-2017 11:27
Operator : jg Inst ID: msd3.i
Smp Info : 1.0ml #2850-33; BFB; BFB
Misc Info : 36ng
Comment :
Method : /var/chem/msd3.i/23may17.b/bfb30.m
Meth Date : 23-May-2017 11:50 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 12 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
9.751	9.916	-0.165	95	82605			100.00- 100.00	100.00
9.751	9.916	-0.165	50	18066			8.00- 40.00	21.87
9.751	9.916	-0.165	75	40397			30.00- 66.00	48.90
9.751	9.916	-0.165	96	5514			5.00- 9.00	6.68
9.751	9.916	-0.165	173	786			0.00- 1.99	1.10
9.751	9.916	-0.165	174	71458			50.01- 120.00	86.51
9.751	9.916	-0.165	175	5318			4.00- 9.00	7.44
9.751	9.916	-0.165	176	67394			93.00- 101.00	94.31
9.751	9.916	-0.165	177	4458			5.00- 9.00	6.61

Data File: /chem/msd3.i/23may17.b/3052304.d

Date : 23-MAY-2017 11:27

Client ID: BFB

Instrument: msd3.i

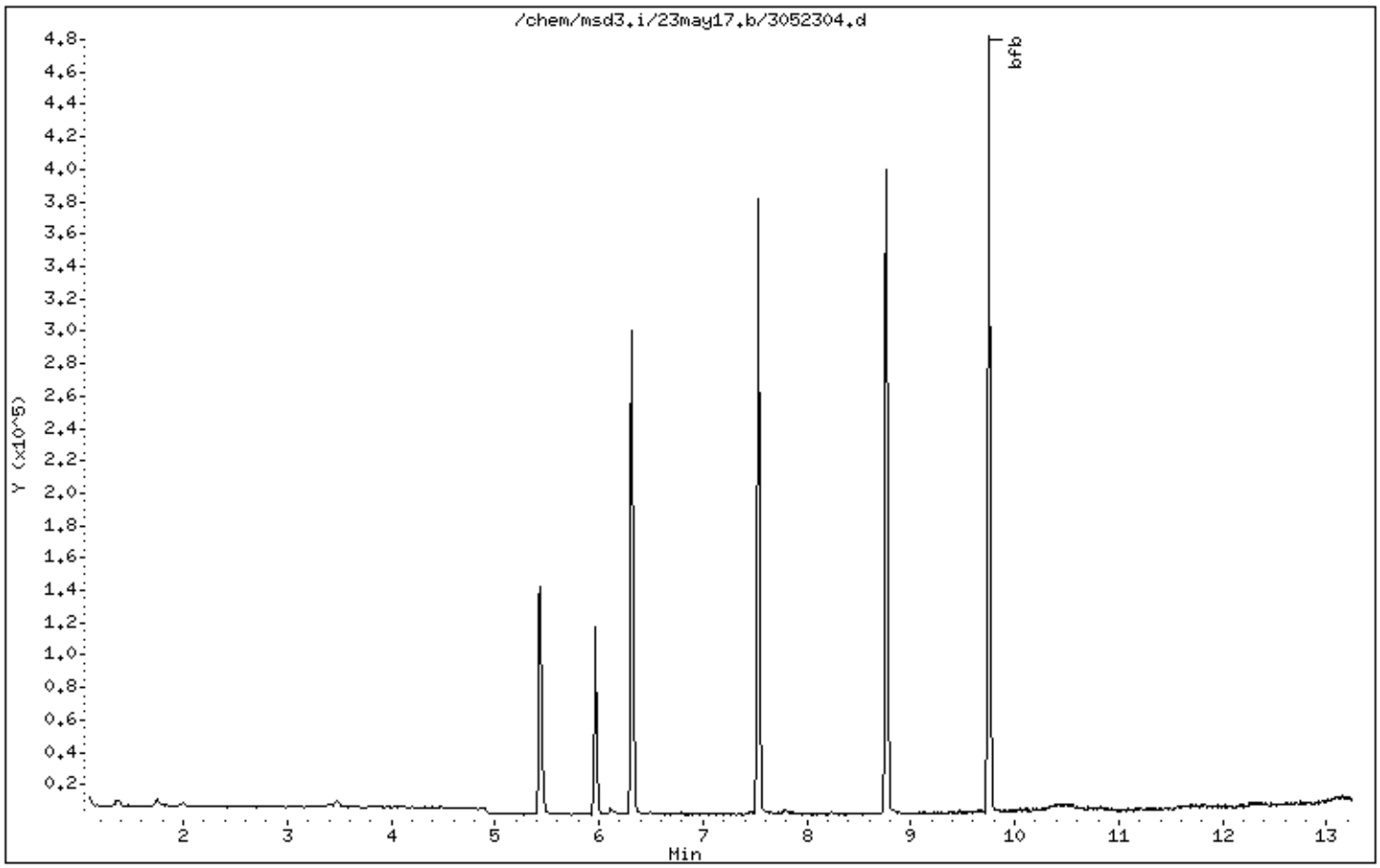
Sample Info: 1.0ml #2850-33; BFB; BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00



Data File: /chem/msd3.i/23may17.b/3052304.d

Date : 23-MAY-2017 11:27

Client ID: BFB

Instrument: msd3.i

Sample Info: 1.0ml #2850-33; BFB; BFB

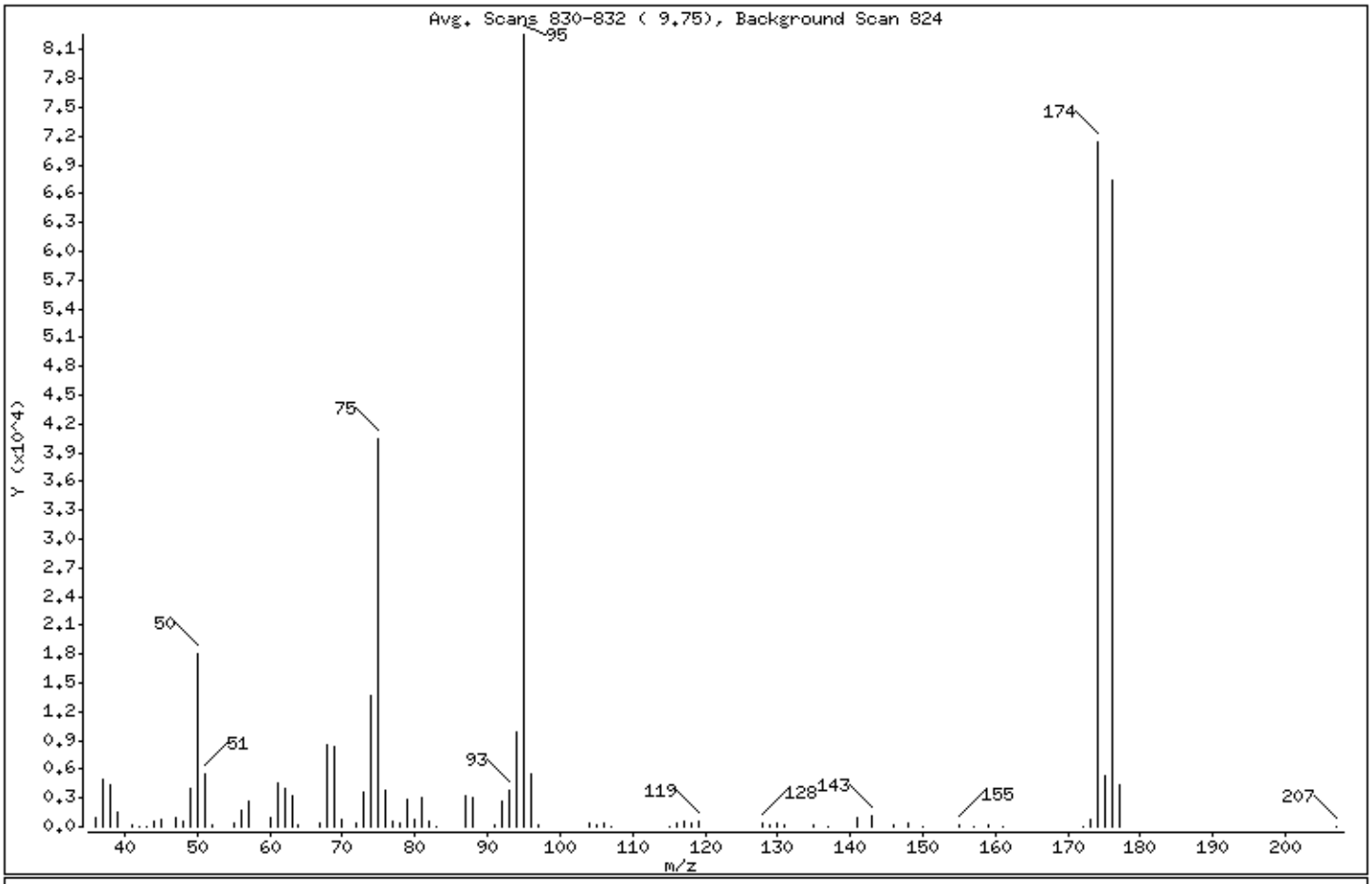
Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	21.87
75	30.00 - 66.00% of mass 95	48.90
96	5.00 - 9.00% of mass 95	6.68
173	Less than 1.99% of mass 174	0.95 (1.10)
174	50.01 - 120.00% of mass 95	86.51
175	4.00 - 9.00% of mass 174	6.44 (7.44)
176	93.00 - 101.00% of mass 174	81.59 (94.31)
177	5.00 - 9.00% of mass 176	5.40 (6.61)

Data File: /chem/msd3.i/23may17.b/3052304.d

Date : 23-MAY-2017 11:27

Client ID: BFB

Instrument: msd3.i

Sample Info: 1.0ml #2850-33; BFB; BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

Data File: 3052304.d
Spectrum: Avg. Scans 830-832 (9.75), Background Scan 824
Location of Maximum: 95.00
Number of points: 79

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	865	62.00	3997	88.00	3007	131.00	104
37.00	4984	63.00	3249	91.00	247	135.00	163
38.00	4280	64.00	280	92.00	2593	137.00	55
39.00	1552	67.00	326	93.00	3760	141.00	917
41.00	107	68.00	8462	94.00	9865	143.00	1051
42.00	59	69.00	8402	95.00	82600	146.00	135
43.00	52	70.00	732	96.00	5514	148.00	300
44.00	486	72.00	450	97.00	194	150.00	50
45.00	818	73.00	3594	104.00	418	155.00	220
47.00	928	74.00	13673	105.00	160	157.00	50
48.00	520	75.00	40392	106.00	363	159.00	99
49.00	4081	76.00	3845	107.00	57	161.00	50
50.00	18064	77.00	509	115.00	70	172.00	54
51.00	5508	78.00	308	116.00	351	173.00	786
52.00	255	79.00	2936	117.00	567	174.00	71456
55.00	285	80.00	815	118.00	394	175.00	5318
56.00	1622	81.00	2988	119.00	606	176.00	67392
57.00	2664	82.00	630	128.00	380	177.00	4458
60.00	882	83.00	67	129.00	242	207.00	54
61.00	4536	87.00	3212	130.00	298		

Eurofins Air Toxics Inc.

Data file : /var/chem/msd3.i/04aug17.b/3080401.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 04-AUG-2017 07:29
Operator : jg Inst ID: msd3.i
Smp Info : 50ml 2850-264;BFB;BFB
Misc Info : Humid
Comment :
Method : /var/chem/msd3.i/04aug17.b/bfb30.m
Meth Date : 04-Aug-2017 07:44 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 11 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
9.737	9.916	-0.179	95	225204			100.00- 100.00	100.00
9.737	9.916	-0.179	50	45669			8.00- 40.00	20.28
9.737	9.916	-0.179	75	103509			30.00- 66.00	45.96
9.737	9.916	-0.179	96	14477			5.00- 9.00	6.43
9.737	9.916	-0.179	173	2137			0.00- 1.99	1.00
9.737	9.916	-0.179	174	213929			50.01- 120.00	94.99
9.737	9.916	-0.179	175	15955			4.00- 9.00	7.46
9.737	9.916	-0.179	176	206814			93.00- 101.00	96.67
9.737	9.916	-0.179	177	13477			5.00- 9.00	6.52

Data File: /chem/msd3.i/04aug17.b/3080401.d

Date : 04-AUG-2017 07:29

Client ID: BFB

Instrument: msd3.i

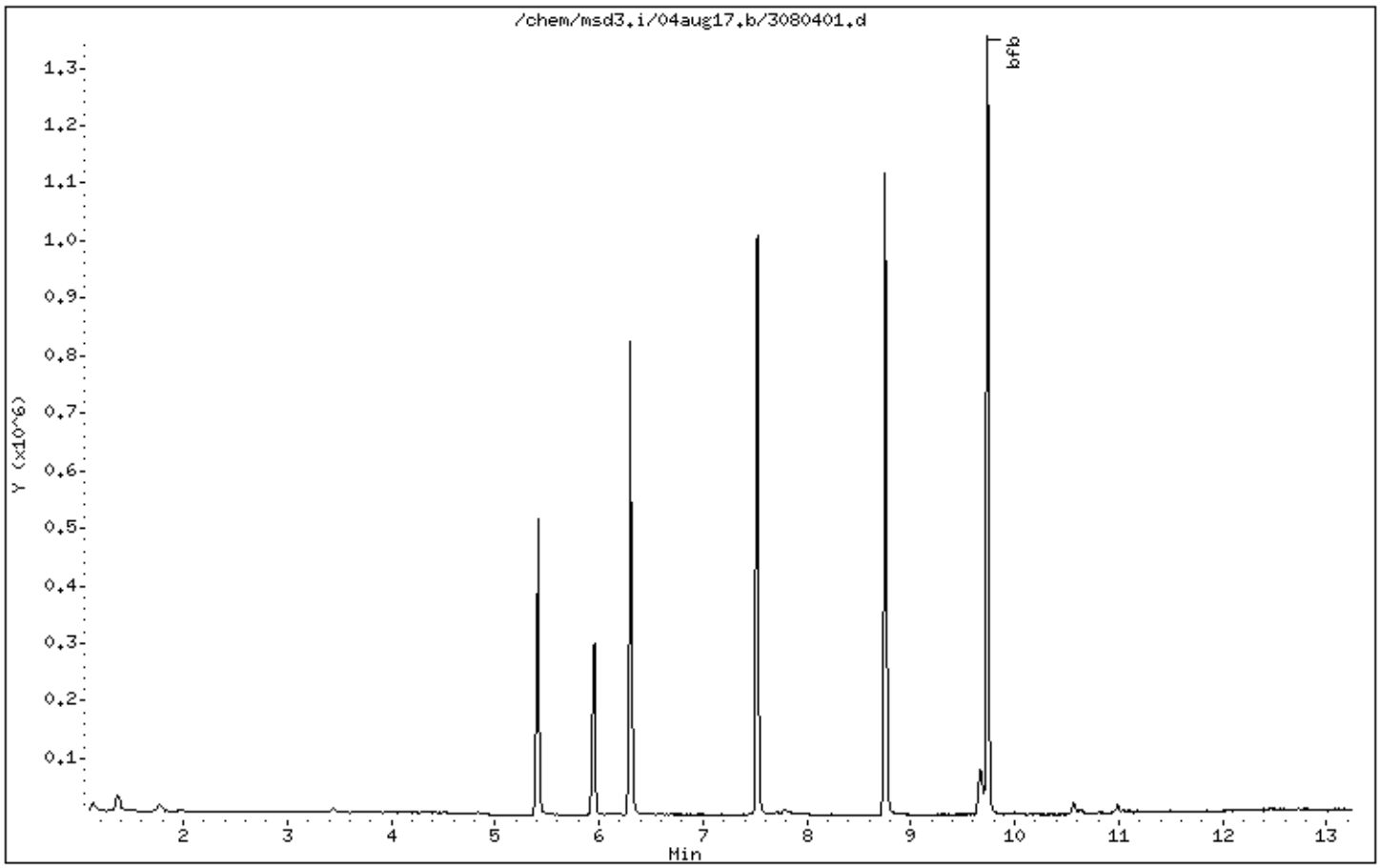
Sample Info: 50ml 2850-264;BFB;BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00



Data File: /chem/msd3.i/04aug17.b/3080401.d

Date : 04-AUG-2017 07:29

Client ID: BFB

Instrument: msd3.i

Sample Info: 50ml 2850-264;BFB;BFB

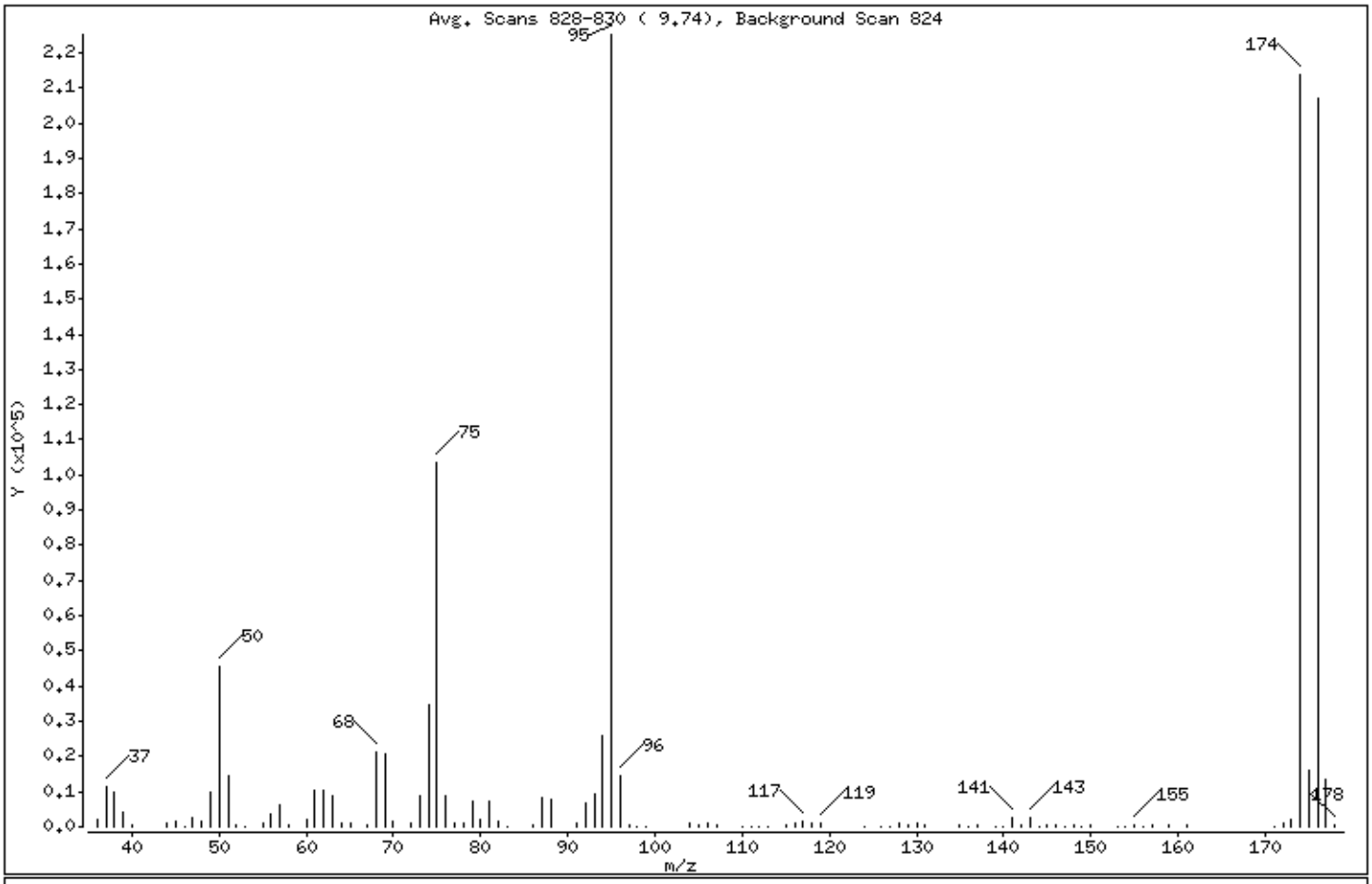
Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	20.28
75	30.00 - 66.00% of mass 95	45.96
96	5.00 - 9.00% of mass 95	6.43
173	Less than 1.99% of mass 174	0.95 (1.00)
174	50.01 - 120.00% of mass 95	94.99
175	4.00 - 9.00% of mass 174	7.08 (7.46)
176	93.00 - 101.00% of mass 174	91.83 (96.67)
177	5.00 - 9.00% of mass 176	5.98 (6.52)

Date : 04-AUG-2017 07:29

Client ID: BFB Instrument: msd3.i

Sample Info: 50ml 2850-264;BFB;BFB

Volume Injected (uL): 1.0 Operator: jg

Column phase: Column diameter: 2.00

Data File: 3080401.d
Spectrum: Avg. Scans 828-830 (9.74), Background Scan 824
Location of Maximum: 95.00
Number of points: 103

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1894	68.00	21232	99.00	56	141.00	2635
37.00	11451	69.00	20848	104.00	1227	142.00	370
38.00	9644	70.00	1560	105.00	470	143.00	2652
39.00	3997	72.00	941	106.00	1148	144.00	81
40.00	265	73.00	8873	107.00	273	145.00	450
44.00	993	74.00	34672	110.00	125	146.00	330
45.00	1568	75.00	103504	111.00	180	147.00	219
46.00	158	76.00	8809	112.00	86	148.00	675
47.00	2338	77.00	1188	113.00	177	149.00	250
48.00	1410	78.00	895	115.00	268	150.00	346
49.00	9777	79.00	7341	116.00	867	153.00	220
50.00	45664	80.00	1844	117.00	1512	154.00	143
51.00	14464	81.00	7353	118.00	950	155.00	730
52.00	596	82.00	1556	119.00	1123	156.00	80
53.00	190	83.00	203	124.00	62	157.00	474
55.00	859	86.00	278	126.00	54	159.00	276
56.00	3584	87.00	8107	127.00	72	161.00	330
57.00	6180	88.00	7646	128.00	907	171.00	211
58.00	410	91.00	1092	129.00	528	172.00	1260
60.00	2056	92.00	6531	130.00	921	173.00	2137
61.00	10417	93.00	9382	131.00	395	174.00	213888
62.00	10455	94.00	25968	135.00	482	175.00	15955
63.00	8585	95.00	225152	136.00	60	176.00	206784
64.00	1042	96.00	14477	137.00	477	177.00	13477
65.00	845	97.00	579	139.00	54	178.00	350
67.00	615	98.00	103	140.00	194		

Eurofins Air Toxics Inc.

Data file : /var/chem/msd3.i/07aug17.b/3080701.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 07-AUG-2017 09:54
Operator : jg Inst ID: msd3.i
Smp Info : 1.0ml #2850-264; BFB; BFB
Misc Info : 36ng
Comment :
Method : /var/chem/msd3.i/07aug17.b/bfb30.m
Meth Date : 07-Aug-2017 10:08 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 6 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
9.744	9.916	-0.172	95	197546			100.00- 100.00	100.00
9.744	9.916	-0.172	50	39165			8.00- 40.00	19.83
9.744	9.916	-0.172	75	90664			30.00- 66.00	45.90
9.744	9.916	-0.172	96	12661			5.00- 9.00	6.41
9.744	9.916	-0.172	173	1996			0.00- 1.99	1.03
9.744	9.916	-0.172	174	193920			50.01- 120.00	98.16
9.744	9.916	-0.172	175	14472			4.00- 9.00	7.46
9.744	9.916	-0.172	176	186560			93.00- 101.00	96.20
9.744	9.916	-0.172	177	12162			5.00- 9.00	6.52

Data File: /chem/msd3.i/07aug17.b/3080701.d

Date : 07-AUG-2017 09:54

Client ID: BFB

Instrument: msd3.i

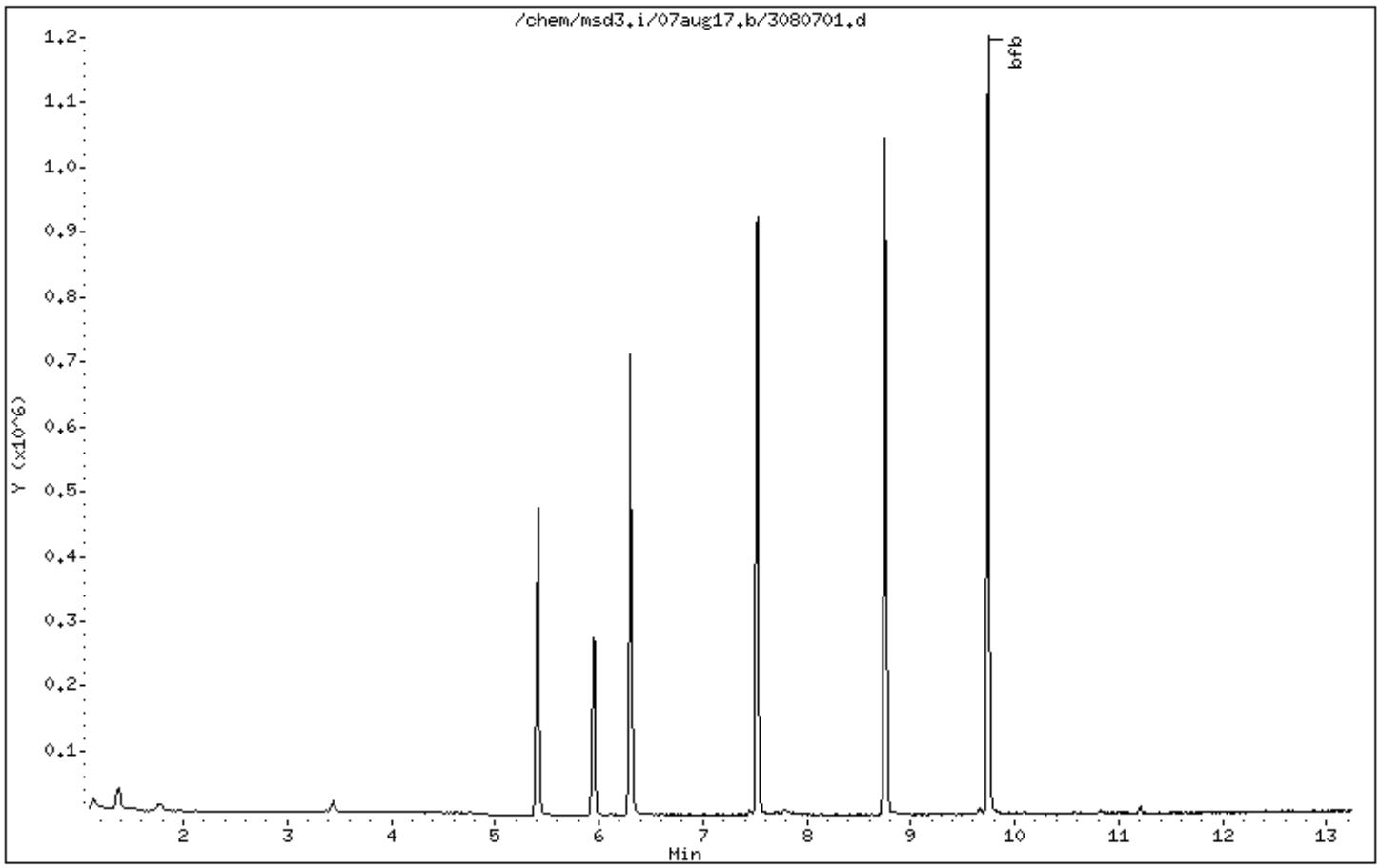
Sample Info: 1.0ml #2850-264; BFB; BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00



Data File: /chem/msd3.i/07aug17.b/3080701.d

Date : 07-AUG-2017 09:54

Client ID: BFB

Instrument: msd3.i

Sample Info: 1.0ml #2850-264; BFB; BFB

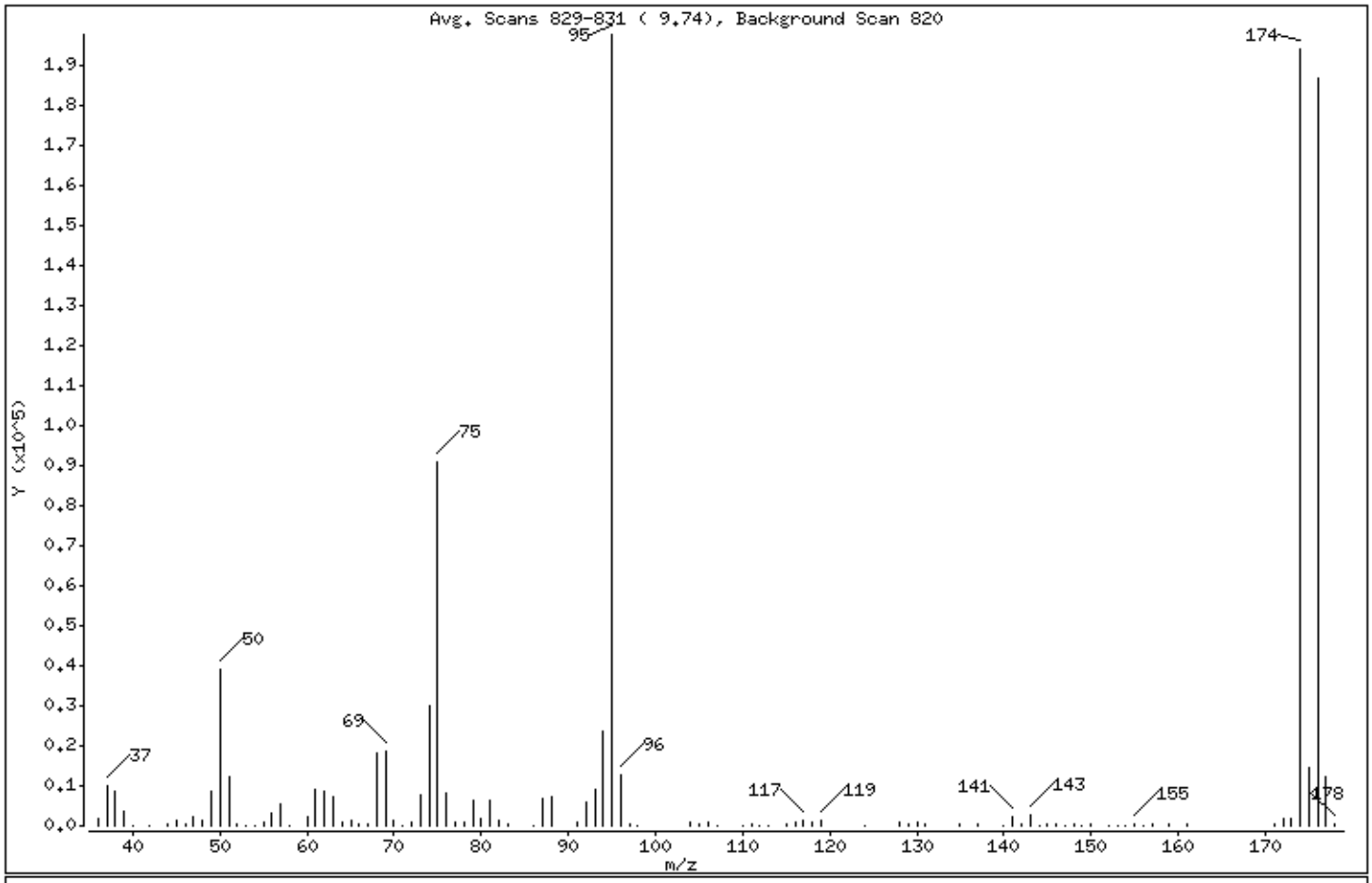
Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.83
75	30.00 - 66.00% of mass 95	45.90
96	5.00 - 9.00% of mass 95	6.41
173	Less than 1.99% of mass 174	1.01 (1.03)
174	50.01 - 120.00% of mass 95	98.16
175	4.00 - 9.00% of mass 174	7.33 (7.46)
176	93.00 - 101.00% of mass 174	94.44 (96.20)
177	5.00 - 9.00% of mass 176	6.16 (6.52)

Data File: /chem/msd3.i/07aug17.b/3080701.d

Date : 07-AUG-2017 09:54

Client ID: BFB

Instrument: msd3.i

Sample Info: 1.0ml #2850-264; BFB; BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

Data File: 3080701.d
Spectrum: Avg. Scans 829-831 (9.74), Background Scan 820
Location of Maximum: 95.00
Number of points: 103

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1630	65.00	1305	95.00	197504	142.00	298
37.00	10000	66.00	245	96.00	12661	143.00	2677
38.00	8480	67.00	518	97.00	443	144.00	195
39.00	3800	68.00	17992	98.00	88	145.00	654
40.00	13	69.00	18656	104.00	967	146.00	470
42.00	32	70.00	1559	105.00	343	147.00	135
44.00	584	71.00	221	106.00	909	148.00	459
45.00	1508	72.00	762	107.00	168	149.00	158
46.00	245	73.00	7944	110.00	54	150.00	249
47.00	2466	74.00	30168	111.00	271	152.00	142
48.00	1293	75.00	90664	112.00	214	153.00	179
49.00	8593	76.00	8156	113.00	132	154.00	109
50.00	39160	77.00	999	115.00	261	155.00	641
51.00	12060	78.00	831	116.00	729	156.00	63
52.00	555	79.00	6420	117.00	1470	157.00	460
53.00	208	80.00	1814	118.00	847	159.00	247
54.00	135	81.00	6474	119.00	1286	161.00	293
55.00	720	82.00	1383	124.00	179	171.00	285
56.00	3095	83.00	327	128.00	897	172.00	1890
57.00	5266	86.00	218	129.00	351	173.00	1996
58.00	34	87.00	6980	130.00	890	174.00	193920
60.00	2052	88.00	7175	131.00	426	175.00	14472
61.00	9251	91.00	878	135.00	617	176.00	186560
62.00	8701	92.00	5866	137.00	436	177.00	12162
63.00	7178	93.00	8923	140.00	123	178.00	322
64.00	962	94.00	23664	141.00	2298		

Eurofins Air Toxics Inc.

Data file : /var/chem/msd3.i/08aug17.b/3080801.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 08-AUG-2017 10:31
Operator : jg Inst ID: msd3.i
Smp Info : 200ml 2850-264;BFB;BFB
Misc Info : Humid
Comment :
Method : /var/chem/msd3.i/08aug17.b/bfb30.m
Meth Date : 08-Aug-2017 10:46 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 12 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
9.737	9.916	-0.179	95	233685			100.00- 100.00	100.00
9.737	9.916	-0.179	50	46717			8.00- 40.00	19.99
9.737	9.916	-0.179	75	108808			30.00- 66.00	46.56
9.737	9.916	-0.179	96	15825			5.00- 9.00	6.77
9.737	9.916	-0.179	173	2036			0.00- 1.99	0.91
9.737	9.916	-0.179	174	223680			50.01- 120.00	95.72
9.737	9.916	-0.179	175	16457			4.00- 9.00	7.36
9.737	9.916	-0.179	176	215744			93.00- 101.00	96.45
9.737	9.916	-0.179	177	13872			5.00- 9.00	6.43

Data File: /chem/msd3.i/08aug17.b/3080801.d

Date : 08-AUG-2017 10:31

Client ID: BFB

Instrument: msd3.i

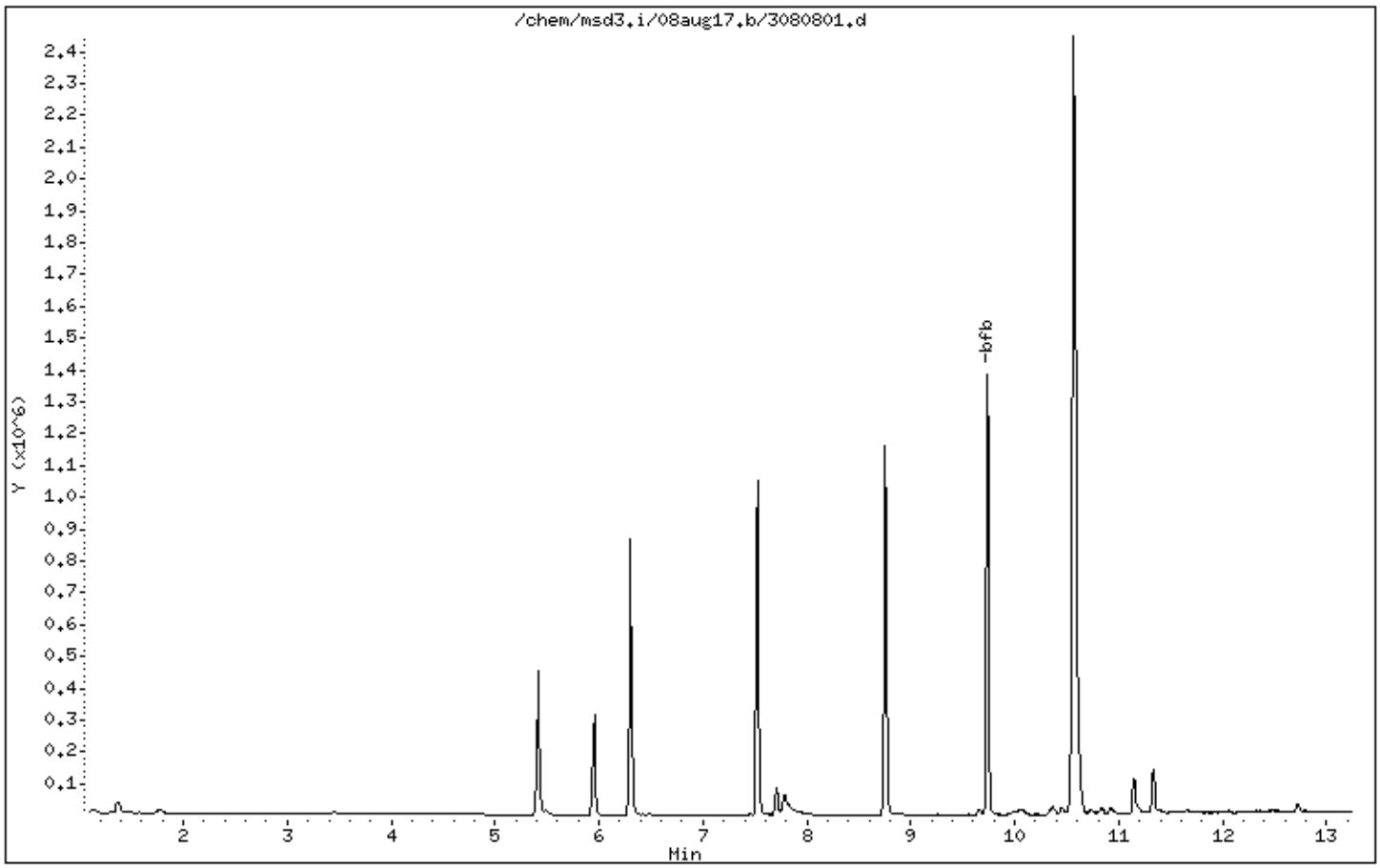
Sample Info: 200ml 2850-264;BFB;BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00



Data File: /chem/msd3.i/08aug17.b/3080801.d

Date : 08-AUG-2017 10:31

Client ID: BFB

Instrument: msd3.i

Sample Info: 200ml 2850-264;BFB;BFB

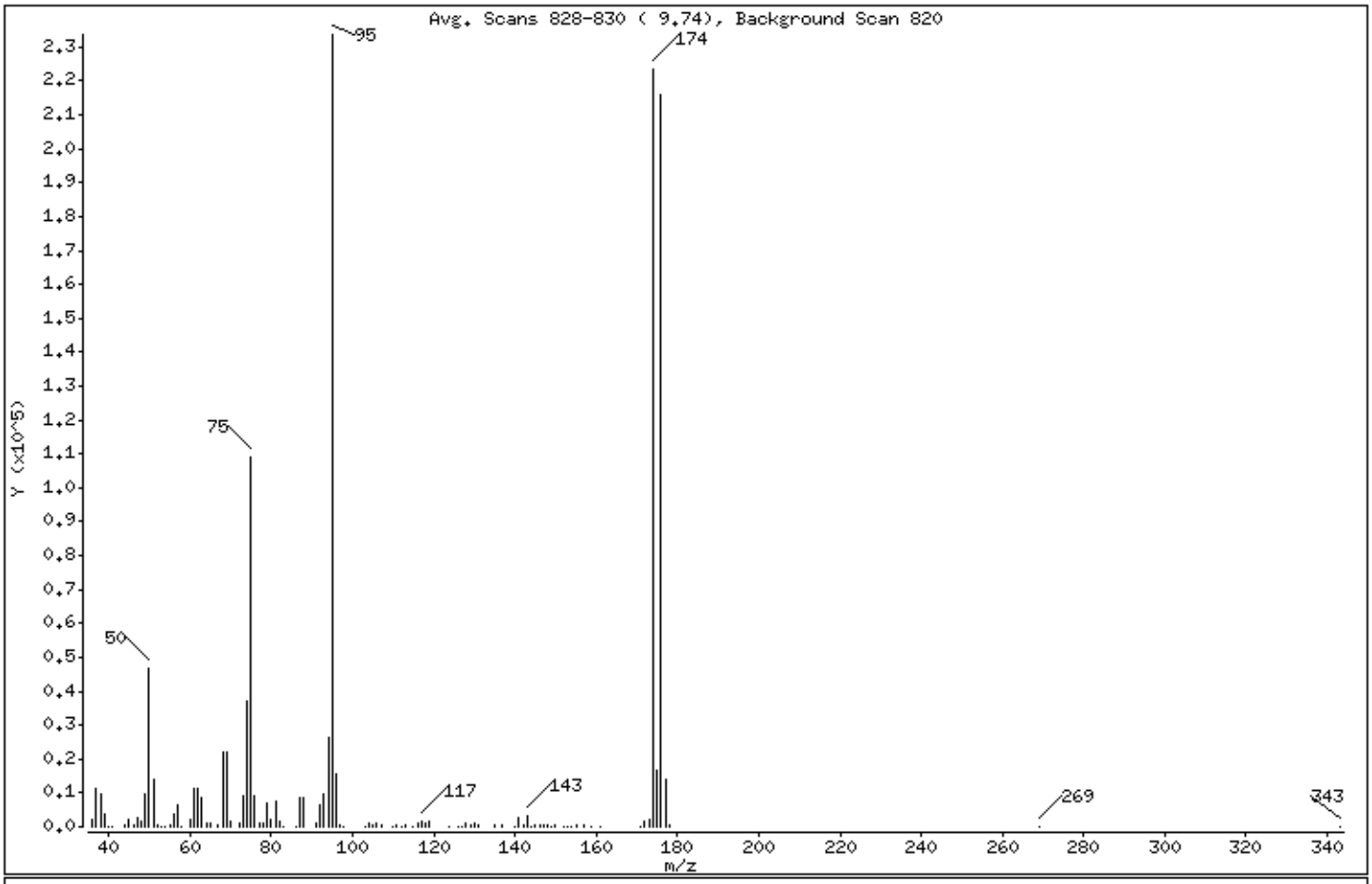
Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	19.99
75	30.00 - 66.00% of mass 95	46.56
96	5.00 - 9.00% of mass 95	6.77
173	Less than 1.99% of mass 174	0.87 (0.91)
174	50.01 - 120.00% of mass 95	95.72
175	4.00 - 9.00% of mass 174	7.04 (7.36)
176	93.00 - 101.00% of mass 174	92.32 (96.45)
177	5.00 - 9.00% of mass 176	5.94 (6.43)

Date : 08-AUG-2017 10:31

Client ID: BFB Instrument: msd3.i

Sample Info: 200ml 2850-264;BFB;BFB

Volume Injected (uL): 1.0 Operator: jg

Column phase: Column diameter: 2.00

Data File: 3080801.d
Spectrum: Avg. Scans 828-830 (9.74), Background Scan 820
Location of Maximum: 95.00
Number of points: 105

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2278	67.00	643	103.00	140	144.00	207
37.00	11548	68.00	21800	104.00	1126	145.00	564
38.00	9829	69.00	21840	105.00	361	146.00	456
39.00	3934	70.00	1512	106.00	937	147.00	290
40.00	171	72.00	1291	107.00	279	148.00	606
41.00	62	73.00	9043	110.00	207	149.00	194
44.00	701	74.00	36808	111.00	313	150.00	430
45.00	1937	75.00	108808	112.00	71	152.00	67
46.00	302	76.00	9236	113.00	284	153.00	206
47.00	2632	77.00	1250	115.00	255	154.00	142
48.00	1670	78.00	872	116.00	968	155.00	578
49.00	9800	79.00	7233	117.00	1524	157.00	562
50.00	46712	80.00	2012	118.00	889	159.00	263
51.00	14099	81.00	7417	119.00	1352	161.00	244
52.00	660	82.00	1502	124.00	170	171.00	202
53.00	173	83.00	209	126.00	135	172.00	1659
54.00	55	86.00	216	127.00	129	173.00	2036
55.00	612	87.00	8424	128.00	908	174.00	223680
56.00	3612	88.00	8753	129.00	438	175.00	16456
57.00	6482	91.00	912	130.00	816	176.00	215744
58.00	251	92.00	6542	131.00	449	177.00	13872
60.00	2314	93.00	9418	135.00	513	178.00	381
61.00	11062	94.00	26488	137.00	519	269.00	118
62.00	11023	95.00	233664	140.00	238	343.00	112
63.00	8571	96.00	15825	141.00	2630		
64.00	987	97.00	539	142.00	270		
65.00	970	98.00	76	143.00	2977		

Shipping/ Receiving Documents

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct: _____ WO # _____ Sample #s: _____

COC#: 1

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and International laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: Multi-State Environmental Trust, LLC

Project Manager: Brian Wiel-CH2M HILL P.O.#

Sampler: Shirley Steinmacher, Katie Rolac PN: 690813.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection	Check all analyses requested: TO-15 TOTAL SCAN	TO-15 SIM GTEs/N	ASTM D 1946 He/Lm					Canister Vacuum/Pressure: Initial	Final	Lab Use Only: Receipt	Final (psig)	Turn Around Time: Normal / Rush! Specify: 72 h TAT FORM 1	Remarks:
	OA-004_0817	6L0985	8/2/17-8/3/17	1124-0922		X						28.18	6.60				Outdoor
	UA-004_0817	6L0909	8/2/17-8/3/17	1104-0935		X						28.15	7.39				Upstairs
	DA-004_0817	34342	8/2/17-8/3/17	1112-0920		X						28.76	7.20				Downstairs
OA	SA-004_0817	IL1943	8/2/17-8/3/17	1043-1055	X						28.41	28.49	5.81				Sump headspace
05A	SA-104_0817	IL2610	8/2/17-8/3/17	0750-0600	X							28.32	5.82				Sump headspace
	IAD-107_0817	6L0077	8/2/17-8/3/17	1200-1129		X						28.77	5.06				Downstairs
	IAD-007_0817	6L0941	8/2/17-8/3/17	1204-1124		X						28.66	6.21				Downstairs
	IAU-007_0817	6L0635	8/2/17-8/3/17	1207-1131		X						26.67	5.09				Upstairs
	OA-007_0817	6L0346	8/2/17-8/3/17	1156-1152		X						28.44	5.37				FC (outdoor) Outdoors
10A	SU-007_0817	IL2961	8/3/17	1232-1242	X		X					28.34	4.75				Subslab

Relinquished by:	Date: 8/4/17	Time: 1830	Received by: FEDEX	Date: 8/4/17	Time: 1830	Level IV Data Required? Yes / No (Circle One)
Relinquished by:	Date:	Time:	Received by:	Date: 08/05/17	Time: 0947	Specific EDD format Required? Yes / No (Circle One)
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	1703091

Lab Use Only

Shipper Name: Fed Ex

Custody Seals Intact? Yes No None

Temp: NA

Note: primary TCL VOC BETXN, He

Sample Condition Upon Receipt: Good

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct: _____ WO #: _____ Sample #s: _____

COC#: 2

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: Multi-State Environmental Trust, LLC (Beta)

Project Manager: Brian Wied-CH2M HILL P.O.#

Sampler: Shirley Steinmacher, Katie Rabe PN: 640813.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection 1232-	TO-15 TOTAL SCAN	TO-15 SIM BTEXN	ASTM D 1946 Helium				Canister Vacuum/Pressure Initial	Final	Lab Use Only Receipt	Final (psig)	Turn Around Time: Normal / Rush! Specify: 72 H TAT FORM 1
11A	SU-107_0817	1L2394	8/3/17	1242	X		X				28.34	4.74			Remarks: Beta lab
2A	SH-E_0817 *	6L1731	8/2/17-8/3/17	1632-1525	X	X					28.67	10.50			* SORRY!! Used SIM
13A	SH-B_0817*	6L1283	8/2/17 8/3/17	1543-1515	X						26.68	6.58			Canisters for
14A	SH-A_0817*	00001386		1605-1458	X						28.66	2.91			sewer sampling.
15A	SH-D_0817*	6L1617		1650-1642	X						28.68	6.21			
16A	SH-G_0817*	00002755		1650-1542	X						28.69	7.20			
17A	SH-F_0817*	6L0421		1611-1522	X						28.68	7.20			
18A	SH-C_0817*	3486 00002180	8/2/17-8/3/17	1522-1508	X						28.62	5.13			SORRY!!
	~~BATCH CONVERSION BLANK 1~~ **		8/4/17			X					29.5				** See note
	~~BATCH CONVERSION BLANK 2~~ **		8/4/17			X					29.5				** See note

Relinquished by:	Date: 8/4/17	Time: 1830	Received by: FED EX	Date: 8/4/17	Time: 1830	Level IV Data Required?	Yes / No (Circle One)
Relinquished by:	Date	Time	Received by: GAIL	Date: 08/05/17	Time: 0947	Specific EDD format Required?	Yes / No (Circle One)
Relinquished by:	Date	Time	Received by:	Date	Time	1708091	

Lab Use Only

Shipper Name: Fed Ex

Custody Seals Intact? Yes No None

Temp: N/A

Note: primary TCL VOC BETXN, He

Sample Condition Upon Receipt: Good

Eurofins Air Toxics, Inc. 180 Blue Ravine Rd. Suite B Folsom, CA 95630 (916) 985-1000 Fax: (916) 351-0279

** ANALYZE THESE BATCH-CERTIFIED CANISTERS WITH ZERO AIR/AS BLANKS ~~TO BE DETERMINED~~ ** USING TO-15 SIM, PLEASE. THANK YOU.

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 1708091B

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep: N/A

Date Promised: 08/10/17 12:00 pm
Date Completed: 8/10/17
Date Received: 8/5/17
PO#:
Project#: 690813.01.01.01 Former Tronox-Springfield, Mo
Total $: $ 1,760.00
Logged By: AB

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
04A	SA-004_0817	TO-15	8/2/2017	7.0 "Hg	$150.00
05A	SA-104_0817	TO-15	8/2/2017	6.5 "Hg	$150.00
10A	SU-007_0817	TO-15	8/3/2017	6.0 "Hg	$150.00
11A	SU-107_0817	TO-15	8/3/2017	6.0 "Hg	$150.00
12A	SH-E_0817	TO-15	8/3/2017	11.5 "Hg	$150.00
13A	SH-B_0817	TO-15	8/3/2017	8.0 "Hg	$150.00
14A	SH-A_0817	TO-15	8/3/2017	3.5 "Hg	$150.00
15A	SH-D_0817	TO-15	8/3/2017	7.5 "Hg	$150.00
16A	SH-G_0817	TO-15	8/3/2017	8.5 "Hg	$150.00
17A	SH-F_0817	TO-15	8/3/2017	8.5 "Hg	$150.00
18A	SH-C_0817	TO-15	8/3/2017	6.5 "Hg	$150.00
19A	Lab Blank	TO-15	NA	NA	$0.00
19B	Lab Blank	TO-15	NA	NA	$0.00
20A	CCV	TO-15	NA	NA	$0.00
20B	CCV	TO-15	NA	NA	$0.00
21A	LCS	TO-15	NA	NA	$0.00
21AA	LCSD	TO-15	NA	NA	$0.00
21B	LCS	TO-15	NA	NA	$0.00
21BB	LCSD	TO-15	NA	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox Facility/22104

BILL TO: Accounts Payable/Atlanta
CH2M Hill
6600 Peachtree Dunwoody Road
Building 400, Suite 600
Atlanta, GA 30328

Analysis Code: TO-14A

TERMS:

Reporting Method: TO-15 (Sp)-BTEX, Total Xylenes & Naph @ 1ppbv

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SAMPLE RECEIPT SUMMARY Continued

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep:

Date Promised:
Date Completed: 8/10/17
Date Received: 8/5/17
PO#:
Project#: 690813.01.01.01 Former Tronox-Springfield, Mo
Total $: $ 1,760.00
Logged By: AB

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
Misc. Charges	Client Specific EDD (11) @ $5.00 each.				$55.00
	eCVP (11) @ $5.00 each.				$55.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox Facility/22104

BILL TO: Accounts Payable/Atlanta
CH2M Hill
6600 Peachtree Dunwoody Road
Building 400, Suite 600
Atlanta, GA 30328

Analysis Code: TO-14A

TERMS:

Reporting Method: TO-15 (Sp)-BTEX, Total Xylenes & Naph @ 1ppbv

Other Records

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} - [\text{Init. Pressure (“Hg)})*(14.7\text{psi}/30\text{”Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
0.0	1.34	2.02
0.2	1.35	2.03
0.4	1.36	2.05
0.5	1.36	2.05
0.6	1.37	2.06
0.8	1.38	2.08
1.0	1.39	2.09
1.2	1.40	2.10
1.4	1.40	2.12
1.5	1.41	2.13
1.6	1.42	2.13
1.8	1.42	2.15
2.0	1.44	2.16
2.2	1.45	2.18
2.4	1.46	2.20
2.5	1.46	2.20
2.6	1.47	2.21
2.8	1.48	2.23
3.0	1.49	2.24
3.2	1.50	2.26
3.4	1.51	2.28
3.5	1.52	2.29
3.6	1.52	2.30
3.8	1.53	2.31
4.0	1.55	2.33
4.2	1.56	2.35
4.4	1.57	2.37
4.5	1.58	2.38
4.6	1.58	2.39
4.8	1.60	2.40
5.0	1.61	2.42
5.2	1.62	2.44
5.4	1.63	2.46
5.5	1.64	2.47
5.6	1.65	2.48
5.8	1.66	2.50
6.0	1.68	2.52
6.2	1.69	2.55
6.4	1.70	2.57
6.5	1.71	2.58
6.6	1.72	2.59
6.8	1.73	2.61
7.0	1.75	2.64
7.2	1.76	2.66
7.4	1.78	2.68
7.5	1.79	2.69
7.6	1.79	2.70

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
7.7	1.80	2.72
7.8	1.81	2.73
8.0	1.83	2.76
8.2	1.84	2.78
8.4	1.86	2.81
8.5	1.87	2.82
8.6	1.88	2.83
8.8	1.90	2.86
9.0	1.91	2.89
9.2	1.93	2.91
9.4	1.95	2.94
9.5	1.96	2.96
9.6	1.97	2.97
9.8	1.99	3.00
10.0	2.01	3.03
10.2	2.03	3.06
10.4	2.05	3.09
10.5	2.06	3.11
10.6	2.07	3.12
10.8	2.09	3.16
11.0	2.12	3.19
11.2	2.14	3.22
11.4	2.16	3.26
11.5	2.17	3.28
11.6	2.18	3.29
11.8	2.21	3.33
12.0	2.23	3.37
12.2	2.26	3.40
12.4	2.28	3.44
12.5	2.30	3.46
12.6	2.31	3.48
12.8	2.34	3.52
13.0	2.36	3.56
13.2	2.39	3.61
13.4	2.42	3.65
13.5	2.44	3.67
13.6	2.45	3.70
13.8	2.48	3.74
14.0	2.51	3.79
14.2	2.54	3.84
14.4	2.58	3.88
14.5	2.59	3.91
14.6	2.61	3.94
14.8	2.64	3.99
15.0	2.68	4.04
15.2	2.72	4.10
15.4	2.75	4.15

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
15.5	2.77	4.18
15.6	2.79	4.21
15.8	2.83	4.27
16.0	2.87	4.33
16.2	2.91	4.39
16.4	2.96	4.46
16.5	2.98	4.49
16.6	3.00	4.52
16.8	3.05	4.59
17.0	3.09	4.66
17.2	3.14	4.74
17.4	3.19	4.81
17.5	3.22	4.85
17.6	3.24	4.89
17.8	3.30	4.97
18.0	3.35	5.05
18.2	3.41	5.14
18.4	3.47	5.22
18.5	3.50	5.27
18.6	3.53	5.32
18.8	3.59	5.41
19.0	3.65	5.51
19.2	3.72	5.61
19.4	3.79	5.72
19.5	3.83	5.77
19.6	3.87	5.83
19.8	3.94	5.94
20.0	4.02	6.06
20.2	4.10	6.18
20.4	4.19	6.31
20.5	4.23	6.38
20.6	4.28	6.45
20.8	4.37	6.59
21.0	4.47	6.73
21.2	4.57	6.89
21.4	4.67	7.05
21.5	4.73	7.13
21.6	4.79	7.22
21.8	4.90	7.39
22.0	5.03	7.58
22.4	5.29	7.98

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
22.5	5.36	8.08
22.6	5.43	8.19
22.8	5.58	8.42
23.0	5.74	8.66
23.2	5.91	8.91
23.4	6.09	9.18
23.5	6.19	9.32
23.6	6.28	9.47
23.8	6.48	9.78
24.0	6.70	10.10
24.2	6.93	10.45
24.4	7.18	10.82
24.5	7.31	11.02
24.6	7.45	11.22
24.8	7.73	11.66
25.0	8.04	12.12
25.2	8.38	12.63
25.4	8.74	13.18
25.5	8.93	13.47
25.6	9.14	13.78
25.8	9.57	14.43
26.0	10.05	15.15
26.2	10.58	15.95
26.4	11.17	16.84
26.5	11.49	17.32
26.6	11.82	17.83
26.8	12.56	18.94
27.0	13.40	20.20
27.2	14.36	21.65
27.4	15.46	23.31
27.5	16.08	24.24
27.6	16.75	25.26
27.8	18.27	27.55
28.0	20.10	30.31
28.2	22.34	33.67
28.4	25.13	37.88
28.5	26.80	40.41
28.6	28.72	43.29
28.8	33.50	50.51
29.0	40.20	60.61

Compound Listing

TO-15 (Sp)-BTEX, Total Xylenes & Naph @ 1ppbv

CAS Number	Compound	Detection Limit ppbv	Type
71-43-2	Benzene	0.50	
108-88-3	Toluene	0.50	
100-41-4	Ethyl Benzene	0.50	
108-38-3	m,p-Xylene	0.50	
95-47-6	o-Xylene	0.50	
91-20-3	Naphthalene	1.0	
2037-26-5	Toluene-d8		
17060-07-0	1,2-Dichloroethane-d4		
460-00-4	4-Bromofluorobenzene		
1330-20-7	Total Xylene	1.0	

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 05/24/17
Workorder # 17080911B	Form F1.27	Revision #14	Revision Date: 05/24/17	Page 1 of 2

S1	S2	S3	S4	D	Section 1 – Spec Out				
					Initials/Instrument/Date	S1: MD3 QM 8/7/17	S2: MD3 QM 8/8/17	S3:	S4:
✓				■	Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
✓				■	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
✓				■	Manual Integrations included and approved				
✓				✓	Chain of Custody verified for special comments (add comments below)				
✓				■	Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				

Profile, analyses, reporting, special notes and unusual circumstances:

ND e flags, flag to MDL, see screening limits for A2
S1: 3 out 15 watch for saturation. see screening limits/notes

A1	A2	A3	A4	D	Section 2 – Sample Analysis				
					Initials/Date	A1: QM 8/8/17	A2: QM 8/9/17	A3:	A4:
✓	✓			✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, Canister #s Verified and dilution ranges are met per SOP (ex. Over-ranged/overdiluted)				
NA	NA			NA	a) Tedlar Bag IDs verified against COC b) Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
NA	✓			NA	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓	✓			■	12/24 Hr clock time & Hold Time met for all samples				
NA	✓			✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
✓	✓			✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: D4A, D5A, D8A, 11A full load, 14A full load-screening limit not met

F M contacted. See email

A2 = 13A-full load, 12A, 15A-15A-011Tc (15A+16A = FDOK) (Hits for all compounds in diluted runs)

D1	D2	D3	D4	T	3T	Section 3 – Target Data Reduction	Technical Review Needed? Circle one: Yes/No		T:	
						Initials/Instrument/Date	D1: MC 8/10/17	D2:	D3:	D4:
NA					■	CAR # (if applicable)				
✓					■	Spectra Verified (documentation of spectral defense included if applicable)				
✓					■	TICs resemble reference spectra/ TICs between sample dups. are consistent (if applicable)				
✓						Lab Narrative is correct				
NA					■	TPH/NMOC calculations complete and included in folder				

Special notes: Special TICs, J flag to MDL, D1 TC-120, 15A to 18A, Tedlar Xylene LOD & MDL but for Total Xylene. Lab ok 8/8/17 has bit limonene. Field Dup-ok, 1008 11A, 15A & 16A)

A	3T	Section 4 – Atlas Data Entry	Lumen verified and included in folder	Circle one: Yes/No
		Initials/Date: MC 8/10/17	3rd Tier: (needed only for DOD or per client request)	
NA		Sample Discrepancy Report (SDR) complete and approved (if applicable)		
NA		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review * 3rd Tier Report Review is for DoD & Client Specific projects only (Initials/Date)	QA Review (Initials/Date)

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review * 3rd Tier Report Review is for DoD & Client Specific projects only (Initials/Date)	QA Review (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable

Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified ASTM D-1946

INVENTORY SHEET

Work Order #: 1708091C

	Page Nos.	
	From	To
1. Work Order Cover Page & Laboratory Narrative	1	5
a. Lumen Validation Report	--	--
2. Sample Results and Raw Data (Organized by Sample)	6	14
a. ATL Sample Results Form		
b. Target Compound Raw Data		
-Internal Standard Area and Retention Time Summary		
-Surrogate Recovery Summary (If Applicable)		
-Chromatogram(s) and Ion Profiles (If Applicable)		
3. QC Results and Raw Data		
a. Method Blank (Results+ Raw Data)	15	19
b. Surrogate Recover Summary Form (If Applicable)	--	--
c. Internal Standard Summary Form (If Applicable)	--	--
d. Duplicate Results Summary Sheet	20	20
e. Matrix Spike/Matrix Spike Duplicate (Results + Raw Data	--	--
f. Initial Calibration Data (Summary Sheet + Raw Data)	21	66
g. MDL Study (If Applicable)	67	71
h. Continuing Calibration Verification Data (Summary Sheet	72	75
i. Second Source LCS(Summary + Raw Data)	76	85
j. Extraction Logs	--	--
k. Instrument Run Logs/Software Verification	86	87
l. GC/MS Tune (Results + Raw Data)	--	--
4. Shipping/Receiving Documents		
a. Login Receipt Summary Sheet	88	89
b. Chain-of-Custody Records	90	91
c. Sample Log-In Sheet	92	92
d. Misc Shipping/Receiving Records (list of individual records)		
Sample Receipt Discrepancy Report	--	--
5. Other Records (describe or list)		
a. Manual Spectral Defense	--	--
b. Manual Integrations	--	--
c. Manual Calculations	--	--
d. Canister Dilution Factors	93	95
e. Laboratory Corrective Action Request	--	--
f. CAS Number Reference	96	96
g. Variance Table	--	--
h. Canister Certification	--	--
i. Data Review Check Sheet	97	98

Comments:

Completed by:

Amanda Whittaker	Amanda Whittaker / Document Control	8/11/17
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1708091C

Work Order Summary

CLIENT:	Mr. Mark Stinnett CH2M Hill 3011 SW Williston Road Gainesville, FL 32608	**BILL TO:**	Accounts Payable/Atlanta CH2M Hill 6600 Peachtree Dunwoody Road Building 400, Suite 600 Atlanta, GA 30328
PHONE:	352-335-7991	**P.O. #**	
FAX:	352-3352959	**PROJECT #**	690813.01.01.01 Former Tronox-Springfield, Mo
DATE RECEIVED:	08/05/2017	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	08/10/2017		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
10A	SU-007_0817	Modified ASTM D-1946	6.0 "Hg	15 psi
11A	SU-107_0817	Modified ASTM D-1946	6.0 "Hg	15 psi
12A	Lab Blank	Modified ASTM D-1946	NA	NA
13A	LCS	Modified ASTM D-1946	NA	NA
13AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 08/10/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
CH2M Hill
Workorder# 1708091C

Two 1 Liter Summa Canister samples were received on August 05, 2017. The laboratory performed analysis via Modified ASTM Method D-1946 for Helium in air using GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
SU-007 0817	1708091C-10A	8/ 3/2017	8/ 5/2017	NA	4	8/ 7/2017	NA	Good
SU-107 0817	1708091C-11A	8/ 3/2017	8/ 5/2017	NA	4	8/ 7/2017	NA	Good
Lab Blank	1708091C-12A	NA	NA	NA	NA	8/ 7/2017	NA	Good
LCS	1708091C-13A	NA	NA	NA	NA	8/ 7/2017	NA	Good
LCSD	1708091C-13AA	NA	NA	NA	NA	8/ 7/2017	NA	Good

Sample Results and Raw Data

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946
Former Tronox-Springfield, Mo

Client ID:	SU-007_0817		
Lab ID:	1708091C-10A	**Date/Time Analyzed:**	8/7/17 07:51 PM
Date/Time Collected:	8/3/17 12:42 PM	**Dilution Factor:**	2.52
Media:	1 Liter Summa Canister	**Instrument/Filename:**	gc10.i / 10080723c

Compound	CAS#	MDL (%)	LOD (%)	Rpt. Limit (%)	Amount (%)
Helium	7440-59-7	0.0091	0.018	0.13	Not Detected U

U = The analyte was not detected above the MDL.

Eurofins Air Toxics Inc.

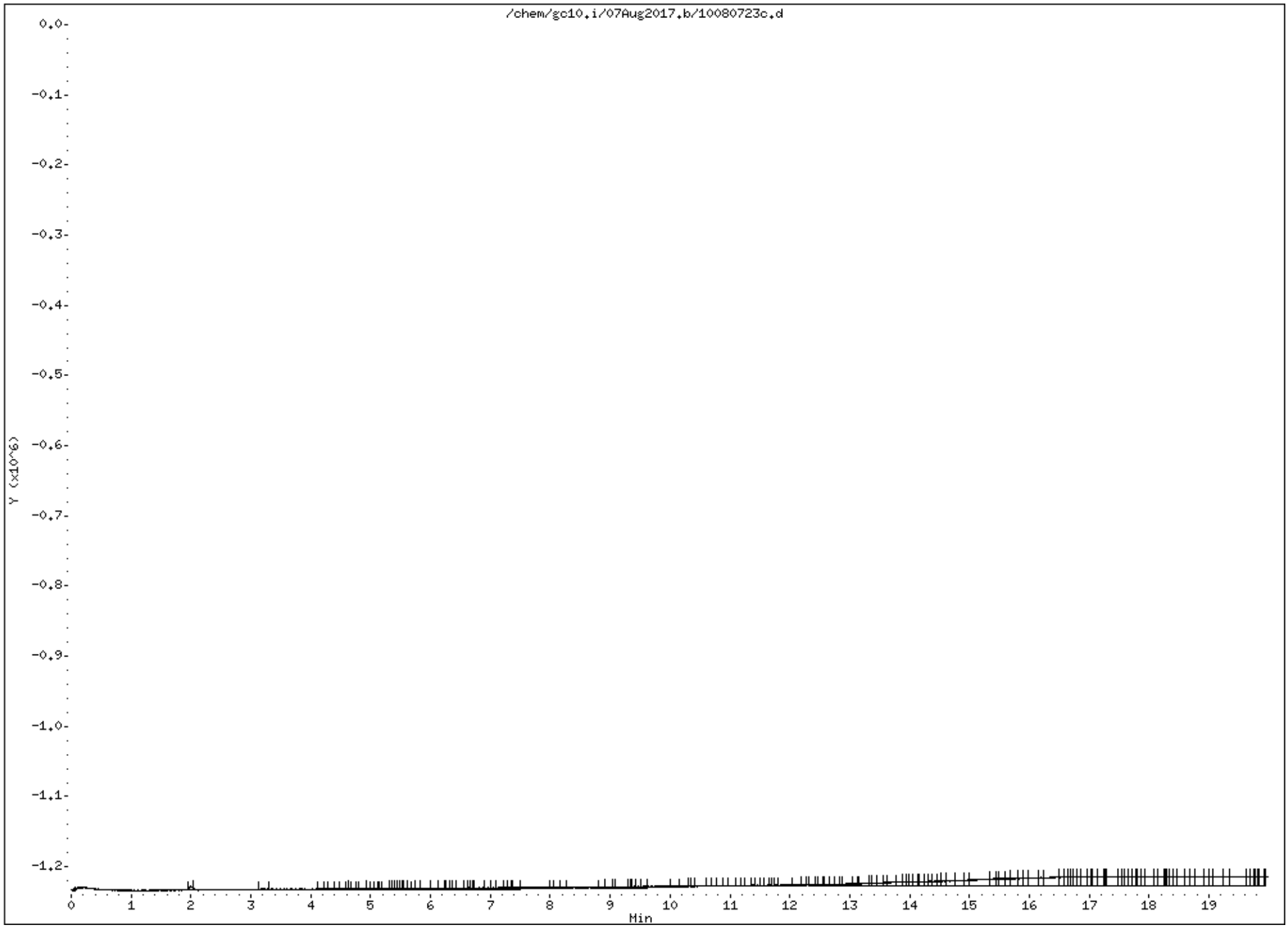
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/07Aug2017.b/10080723c.d
Lab Smp Id: 1708091C-10A
Inj Date : 07-AUG-2017 19:51
Operator : gh Inst ID: gc10.i
Smp Info : 1.0mL,N2670
Misc Info : 1.0mL,N2670;6.0"Hg>15psi;1708091C-10A;
Comment : GC/TCD
Method : /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Meth Date : 10-Aug-2017 07:27 gmash Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1
Dil Factor: 2.52000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	CONCENTRATIONS FINAL (%)
1 Helium	Compound Not Detected.					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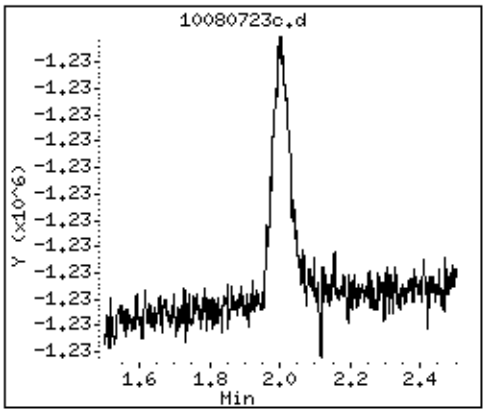
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Y (x10^6)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium (Undetected)



NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946
Former Tronox-Springfield, Mo

Client ID:	SU-107_0817		
Lab ID:	1708091C-11A	**Date/Time Analyzed:**	8/7/17 08:28 PM
Date/Time Collected:	8/3/17 12:42 PM	**Dilution Factor:**	2.52
Media:	1 Liter Summa Canister	**Instrument/Filename:**	gc10.i / 10080724c

Compound	CAS#	MDL (%)	LOD (%)	Rpt. Limit (%)	Amount (%)
Helium	7440-59-7	0.0091	0.018	0.13	0.011 J

J = Estimated value.

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc10.i/07Aug2017.b/10080724c.d
Lab Smp Id: 1708091C-11A
Inj Date : 07-AUG-2017 20:28
Operator : gh Inst ID: gc10.i
Smp Info : 1.0mL,O0717
Misc Info : 1.0mL,O0717;6.0"Hg>15psi;1708091C-11A;
Comment : GC/TCD
Method : /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Meth Date : 10-Aug-2017 07:27 gmash Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1
Dil Factor: 2.52000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

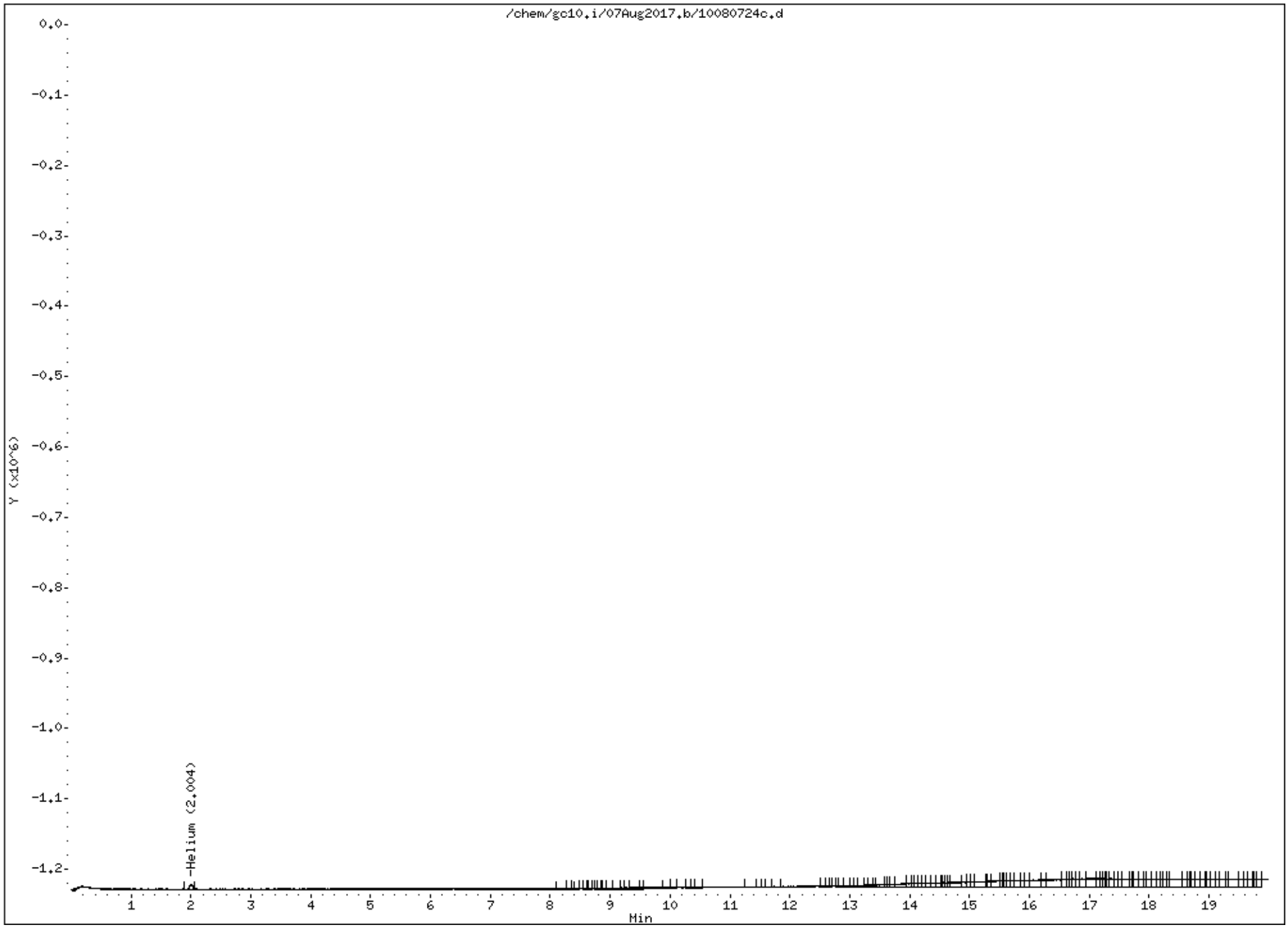
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	CONCENTRATIONS FINAL (%)
1 Helium	2.004	2.002	0.002	1154234	0.00452	0.0114(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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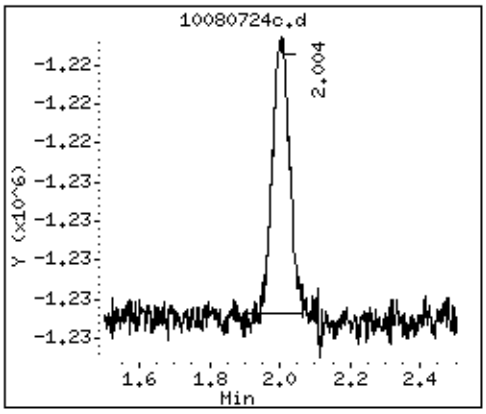
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Y (x10^6)
Helium (2.004)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10080724c.d
2.004
-1.22
-1.22
-1.22
-1.23
-1.23
-1.23
-1.23
-1.23
Y (x10^6)
1.6
1.8
2.0
2.2
2.4
Min

QC Results and Raw Data

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946
Former Tronox-Springfield, Mo

Client ID:	Lab Blank		
Lab ID:	1708091C-12A	**Date/Time Analyzed:**	8/7/17 10:02 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	gc10.i / 10080704c

Compound	CAS#	MDL (%)	LOD (%)	Rpt. Limit (%)	Amount (%)
Helium	7440-59-7	0.0036	0.0070	0.050	Not Detected U

U = The analyte was not detected above the MDL.

Eurofins Air Toxics Inc.

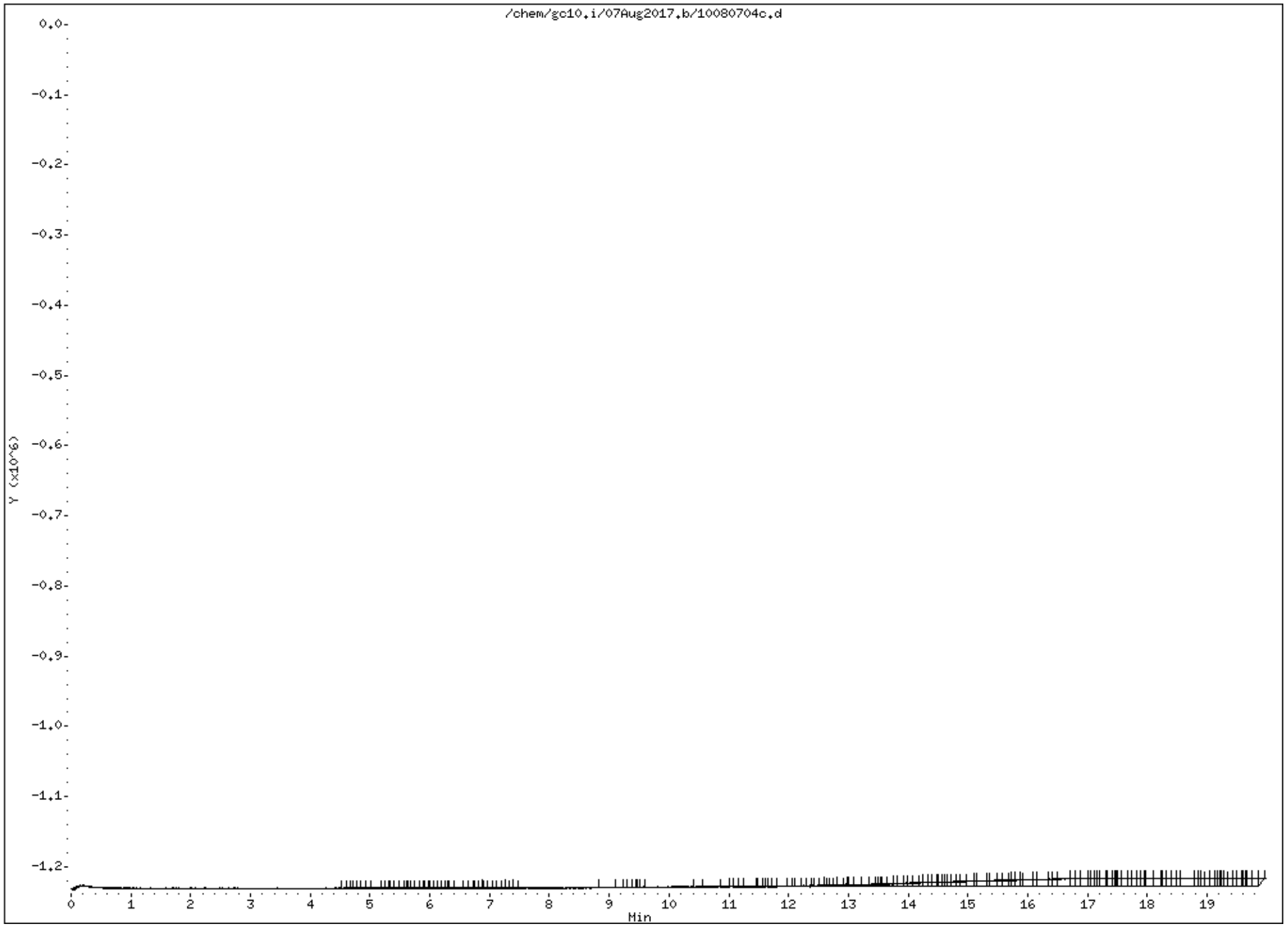
Modified ASTM D-1945/1946

Data file : /var/chem/gc10.i/07Aug2017.b/10080704c.d
Lab Smp Id: N2 Lab Blank Client Smp ID: Lab Blank
Inj Date : 07-AUG-2017 10:02
Operator : ly Inst ID: gc10.i
Smp Info : 1.0mL,33771
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Meth Date : 07-Aug-2017 08:52 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	CONCENTRATIONS FINAL (%)
1 Helium	Compound Not Detected.					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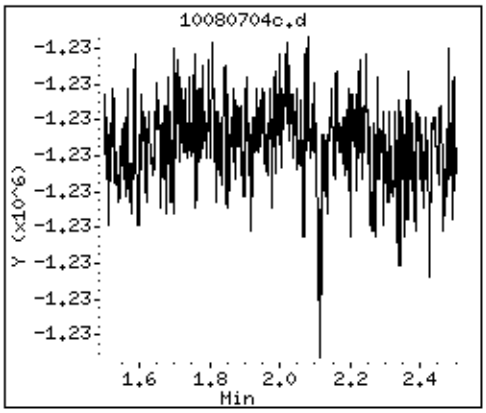
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Y (x10^6)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium (Undetected)



SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 10080725c.d & 10080702c.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 8/7/17 & 8/7/17

CAS Number	Compound	Original Amount	Flags	Duplicate Amount	Flags	RPD	Result Less Than 5X RL
7440-59-7	Helium	97		99		2.0	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-FEB-2017 09:04
End Cal Date : 16-FEB-2017 14:04
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc10.i/16Feb2017.b/107C0216.m
Cal Date : 17-Feb-2017 11:29 lyohanne
Curve Type : Average

Calibration File Names:
Level 1: /chem/gc10.i/16Feb2017.b/10021602c.d
Level 2: /chem/gc10.i/16Feb2017.b/10021604c.d
Level 3: /chem/gc10.i/16Feb2017.b/10021606c.d
Level 4: /chem/gc10.i/16Feb2017.b/10021609c.d
Level 5: /chem/gc10.i/16Feb2017.b/10021610c.d
Level 6: /chem/gc10.i/16Feb2017.b/10021612c.d

	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	___	
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
1 Helium	256411657	254474570	222291025	262796721	266242297	268813547	255171636	6.674
2 Hydrogen	429339600	419974550	413989210	420887254	436306864	416719336	422869469	1.983

Calibration History

Method : /chem/gc10.i/16Feb2017.b/107C0216.m
Start Cal Date: 16-FEB-2017 09:04
End Cal Date : 16-FEB-2017 14:04

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.00000		
16-FEB-2017 09:04	heh2	/chem/gc10.i/16Feb2017.b/10021602c.d
Cal Level: 2 , Cal Amount: 0.00000		
16-FEB-2017 10:01	h2	/chem/gc10.i/16Feb2017.b/10021604c.d
16-FEB-2017 09:30	he	/chem/gc10.i/16Feb2017.b/10021603c.d
Cal Level: 3 , Cal Amount: 0.00000		
16-FEB-2017 11:12	he	/chem/gc10.i/16Feb2017.b/10021606c.d
16-FEB-2017 10:26	h2	/chem/gc10.i/16Feb2017.b/10021605c.d
Cal Level: 4 , Cal Amount: 0.00000		
16-FEB-2017 12:41	h2	/chem/gc10.i/16Feb2017.b/10021609c.d
16-FEB-2017 11:43	he	/chem/gc10.i/16Feb2017.b/10021607c.d
Cal Level: 5 , Cal Amount: 0.00000		
16-FEB-2017 13:05	h2	/chem/gc10.i/16Feb2017.b/10021610c.d
16-FEB-2017 12:11	he	/chem/gc10.i/16Feb2017.b/10021608c.d
Cal Level: 6 , Cal Amount: 0.00000		
16-FEB-2017 14:04	h2	/chem/gc10.i/16Feb2017.b/10021612c.d
16-FEB-2017 13:32	he	/chem/gc10.i/16Feb2017.b/10021611c.d

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-FEB-2017 09:04
End Cal Date : 16-FEB-2017 14:04
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc10.i/16Feb2017.b/107C0216.m
Cal Date : 17-Feb-2017 11:29 lyohanne
Curve Type : Average

Calibration File Names:
Level 1: /chem/gc10.i/16Feb2017.b/10021602c.d
Level 2: /chem/gc10.i/16Feb2017.b/10021604c.d
Level 3: /chem/gc10.i/16Feb2017.b/10021606c.d
Level 4: /chem/gc10.i/16Feb2017.b/10021609c.d
Level 5: /chem/gc10.i/16Feb2017.b/10021610c.d
Level 6: /chem/gc10.i/16Feb2017.b/10021612c.d

Please see Calibration History page(s) for all the calibration files.

LY 2/17/17

Compound	0.000e+00 Level 1	0.000e+00 Level 2	0.000e+00 Level 3	0.000e+00 Level 4	0.000e+00 Level 5	0.000e+00 Level 6	RRF	% RSD
1 Helium	256411657	254474570	222291025	262796721	266242297	268813547	255171636	6.674
2 Hydrogen	429339600	419974550	413989210	420887254	436306864	416719336	422869469	1.983

Initial Calibration Narrative

A six point calibration curve was analyzed on February 16, 2017 for Helium and Hydrogen on instrument GC-10. The calibration curve features the following:

1.) ICAL is named as 107C0216.m.
2.) Units: %
3.) The ICAL is based on 1.0 mL loop load
4.) The second source file numbers are 10021514c and 10021515c
5.) Following are the levels for the ICAL:

Compounds	Level-1	Level-2	Level-3	Level-4	Level-5	Level-6
Helium	0.0495	0.500	2.500	10.0	50.0	100
Hydrogen	0.0100	0.100	0.500	2.00	10.0	25.0

Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946**

GC-10

Logbook # 2815
Leak Test Ly

	USE	File #	Sample Name/Client ID	Can #	Verified Pressure >2psi	Pressure	Amt	DF	Date	Time	Review Init.	Comments
1	✓	10021601	Syster Blank	9553	NA	NA	1.0mL	1.00	2/16/17	0838	Ly	
2	✓	02	2787-65	6L0053		He/H2				0904		Level -1
3	✓	03	2299-1048B	NA		He				0930		-2
4	✓	04	2299-1684 H2			H2	(5:100) 1.0mL			1001		-2
5	✓	05				H2	(25:100) 1.0mL			1026		-3
6	✓	06	2787-66	Bag		2.5% He	(25:100) 1.0mL			1112		-3
7	✓	07	-67	6L0015		10% He	(10:100) 1.0mL			1143		-4
8	✓	08	-67			50% He	(25:50) 1.0mL			1211		-5
9	✓	09	2299-1684 H2	NA		2% H2	1.0mL			1241		-4
10	✓	10	2787-63 H2	Bag		10% H2	(10:100) 1.0mL			1305		-5
11	✓	11	2787-67 He	6L0015		100% He	1.0mL			1332		-6
12	✓	12	2787-63 H2	Bag		25% H2	(25:100) 1.0mL			1404		-6
13	✓	13	Syster Blank	9553		NA	1.0mL			1454		
14	✓	14	2299-1160 He	NA			1.0mL			1519		ICV
15	✓	15	2299-1522 H2				1.0mL			1549		ICV

Calculation check : File ID: 10021614C Compound: He Initials: Ly

Sample Amt= Area Count Sample x / RF Dilution Factor = (1260897691) x / (255171636) (1.00)= 0.494

Reported Result= 0.494

Reviewed by/Date Ly 2/16/17

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021614c.d
Lab Smp Id: 2299-1160 He Client Smp ID: ICV
Inj Date : 16-FEB-2017 15:19
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107C0216.m
Meth Date : 17-Feb-2017 10:05 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: he.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	CONCENTRATIONS FINAL (%)
1 Helium	1.994	2.059	-0.065	126089769	0.49414	0.494

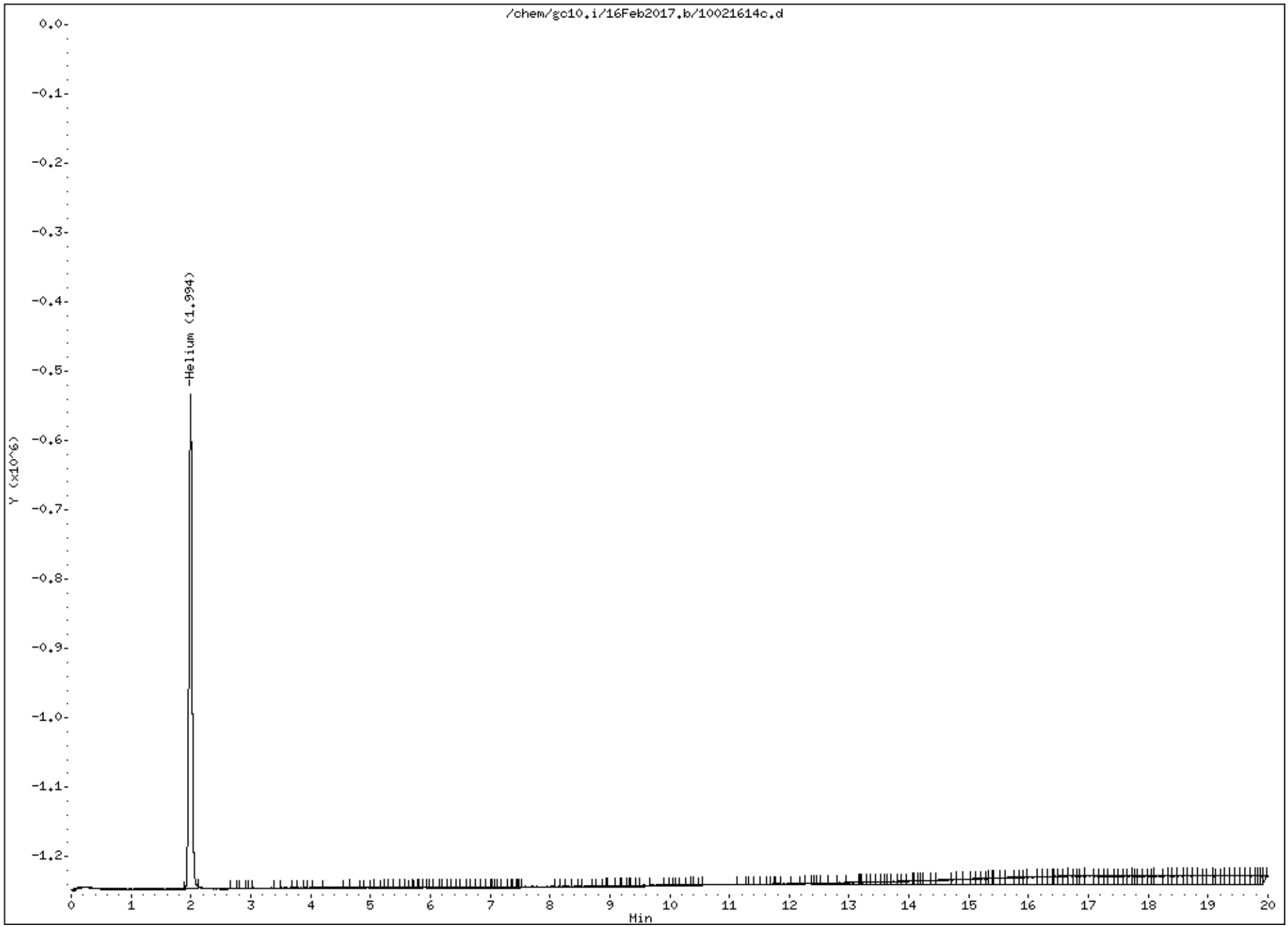
Report Date: 17-Feb-2017 10:07

Eurofins Air Toxics Inc.

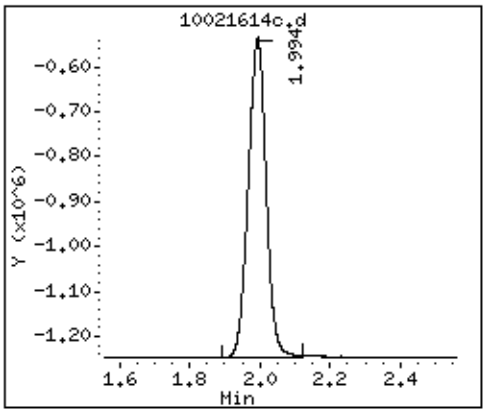
RECOVERY REPORT

Client Name: Client SDG: 16Feb2017
Sample Matrix: GAS Fraction: Atm Gas
Lab Smp Id: 2299-1160 He Client Smp ID: ICV
Level: LOW Operator: ly
Data Type: GC DATA SampleType: ICV
SpikeList File: 2299-1160he.spk Quant Type: ESTD
Sublist File: he.sub
Method File: /chem/gc10.i/16Feb2017.b/107C0216.m
Misc Info:

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
1 Helium	0.495	0.494	99.83	85-115


/chem/gc10.i/16Feb2017.b/10021614c.d
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Y (x10^6)
-Helium (1.994)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Min

1 Helium


10021614c.d
1.994
-0.60
-0.70
-0.80
-0.90
-1.00
-1.10
-1.20
Y (x10^6)
1.6
1.8
2.0
2.2
2.4
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021615c.d
Lab Smp Id: 2299-1522 H2 Client Smp ID: ICV
Inj Date : 16-FEB-2017 15:49
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107C0216.m
Meth Date : 17-Feb-2017 10:05 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: h2.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
2 Hydrogen	2.276	2.339	-0.063	835420984	1.97560	1.98

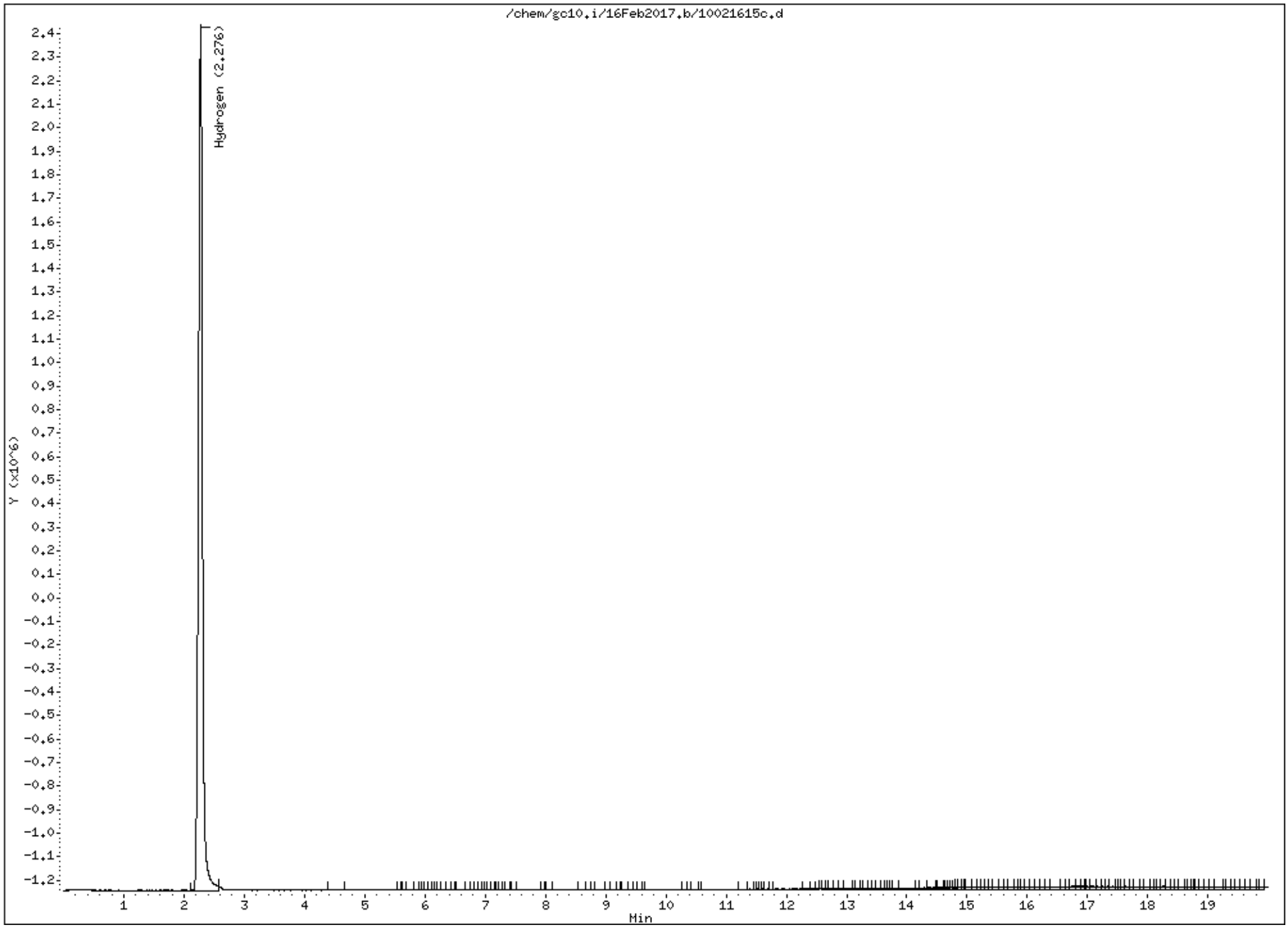
Report Date: 17-Feb-2017 10:07

Eurofins Air Toxics Inc.

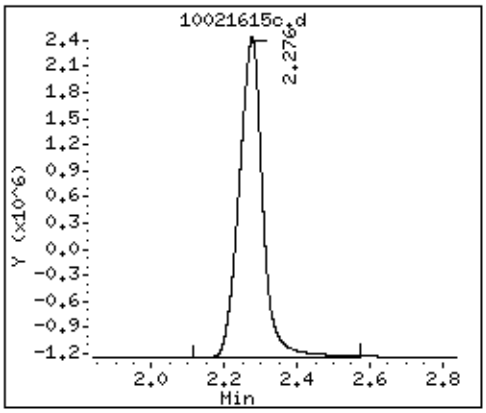
RECOVERY REPORT

Client Name: Client SDG: 16Feb2017
Sample Matrix: GAS Fraction: Atm Gas
Lab Smp Id: 2299-1522 H2 Client Smp ID: ICV
Level: LOW Operator: ly
Data Type: GC DATA SampleType: ICV
SpikeList File: 2.0%H2.spk Quant Type: ESTD
Sublist File: h2.sub
Method File: /chem/gc10.i/16Feb2017.b/107C0216.m
Misc Info:

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
2 Hydrogen	2.00	1.98	98.98	85-115


/chem/gc10.i/16Feb2017.b/10021615c.d
Hydrogen (2.276)
Y (x10^6)
Min

2 Hydrogen


10021615c.d
2.276
Y (x10^6)
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.0
-0.3
-0.6
-0.9
-1.2
2.0
2.2
2.4
2.6
2.8
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021602c.d
Lab Smp Id: 2787-65HeH2 Client Smp ID: Level-1
Inj Date : 16-FEB-2017 09:04
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,6L0053
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 09:04 Cal File: 10021602c.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: heh2.sub
Target Version: 3.50
Processing Host: eeyore

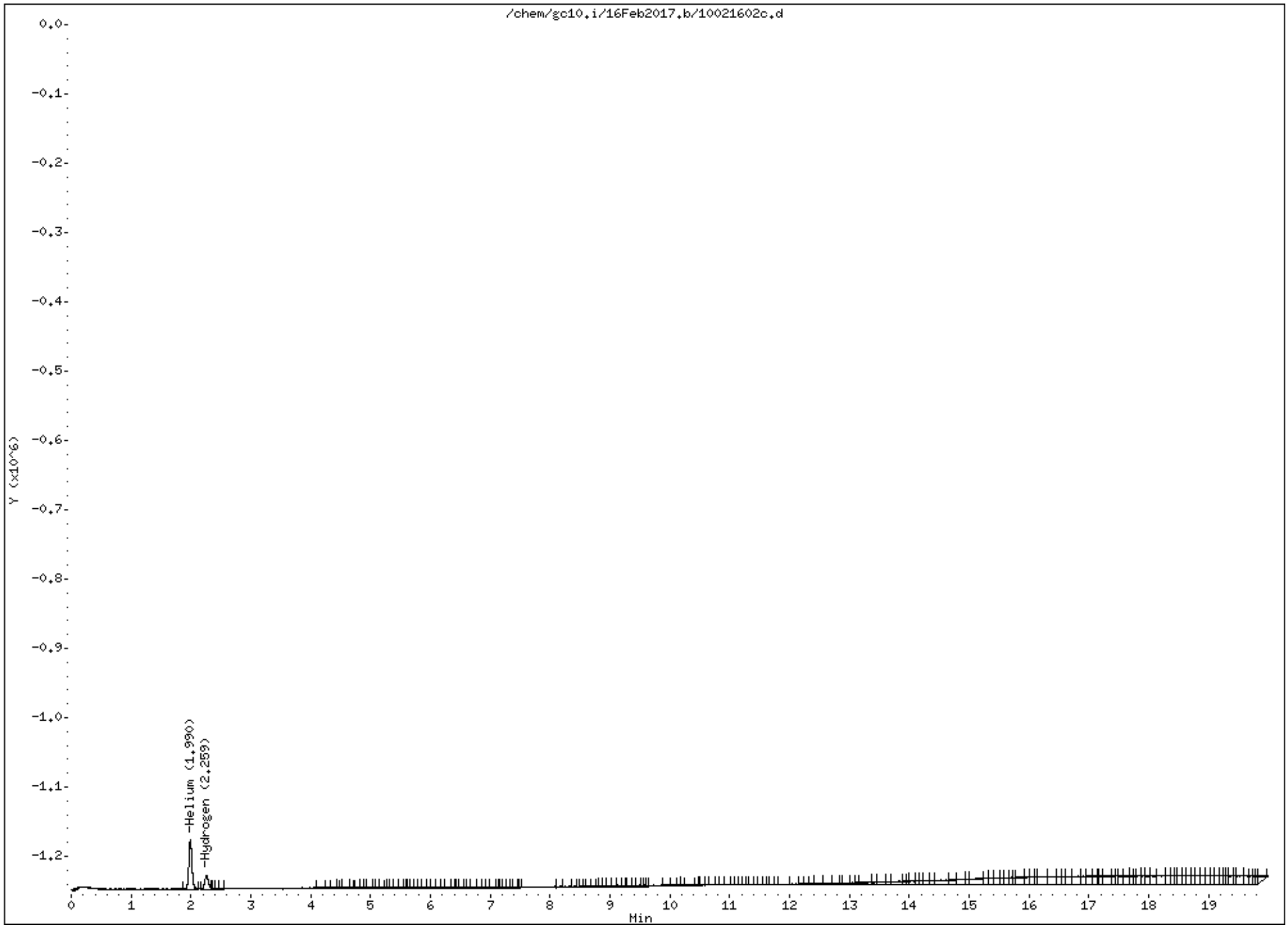
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

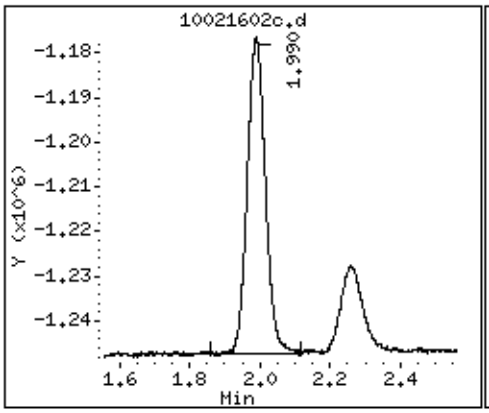
					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
1 Helium	1.990	2.059	-0.069	12692377	0.04950	0.0495(a)
2 Hydrogen	2.259	2.339	-0.080	4293396	0.01000	0.0100

QC Flag Legend

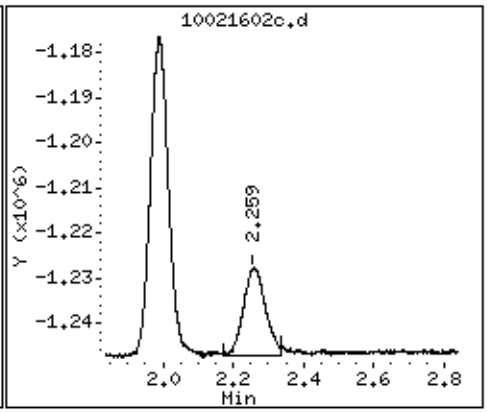
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


/chem/gc10.i/16Feb2017.b/10021602c.d
Y (x10^6)
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
-Helium (1.990)
-Hydrogen (2.259)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium



2 Hydrogen



Eurofins Air Toxics Inc.

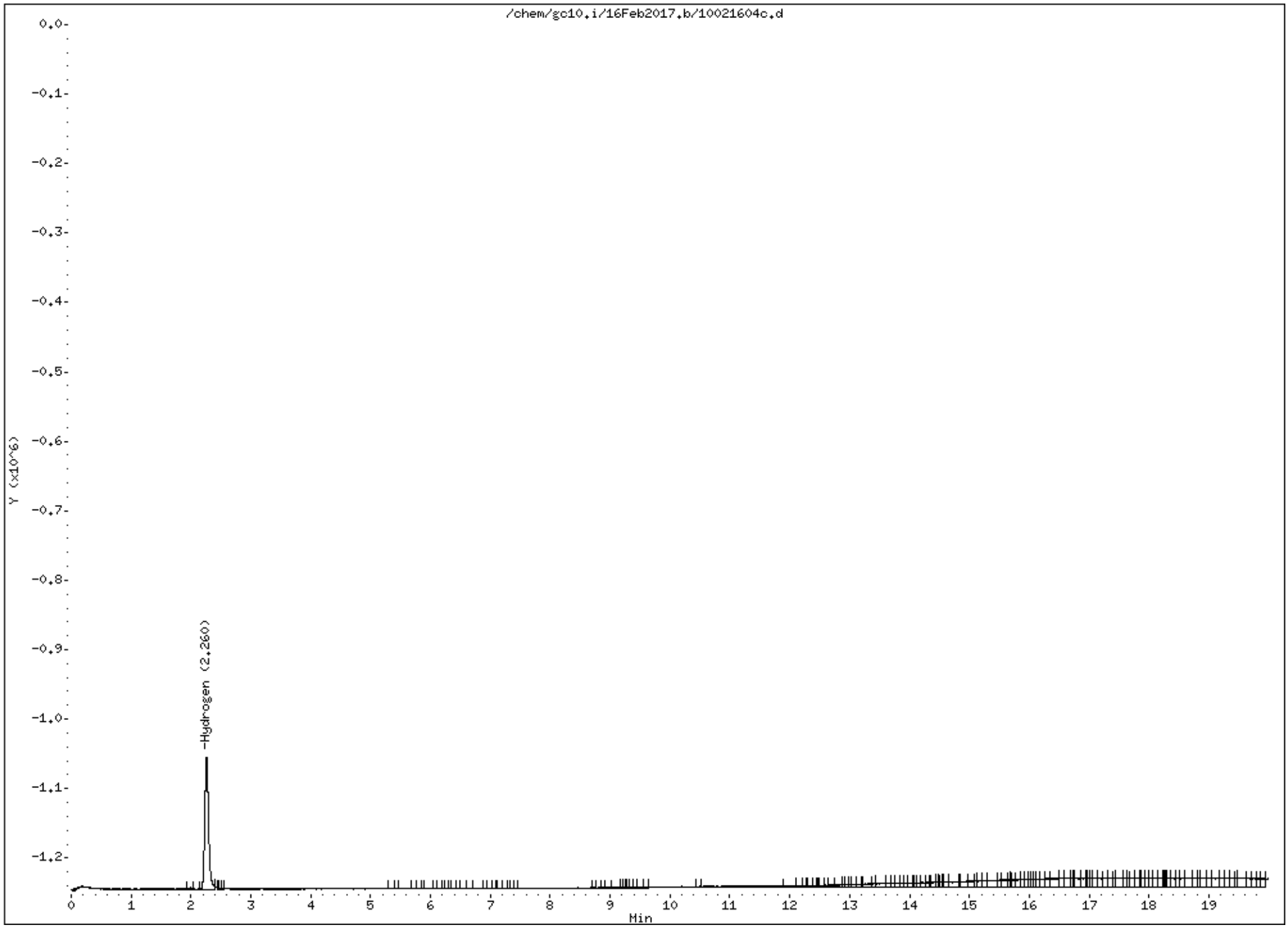
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021604c.d
Lab Smp Id: 2299-1684 H2 Client Smp ID: Level-2
Inj Date : 16-FEB-2017 10:01
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml(5:100)
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 10:01 Cal File: 10021604c.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: h2.sub
Target Version: 3.50
Processing Host: eeyore

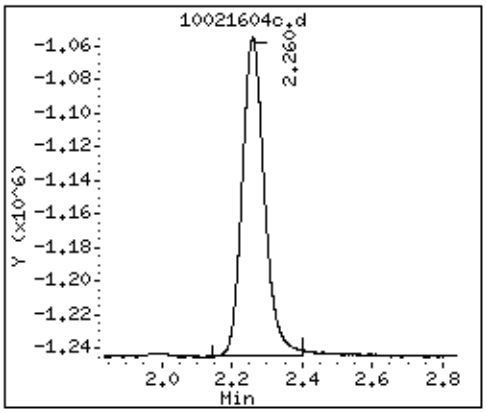
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
2 Hydrogen	2.260	2.339	-0.079	41997455	0.10000	0.0989


/chem/gc10.i/16Feb2017.b/10021604c.d
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Y (x10^6)
-Hydrogen (2.260)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

2 Hydrogen


10021604c.d
2.260
-1.06
-1.08
-1.10
-1.12
-1.14
-1.16
-1.18
-1.20
-1.22
-1.24
Y (x10^6)
2.0
2.2
2.4
2.6
2.8
Min

Eurofins Air Toxics Inc.

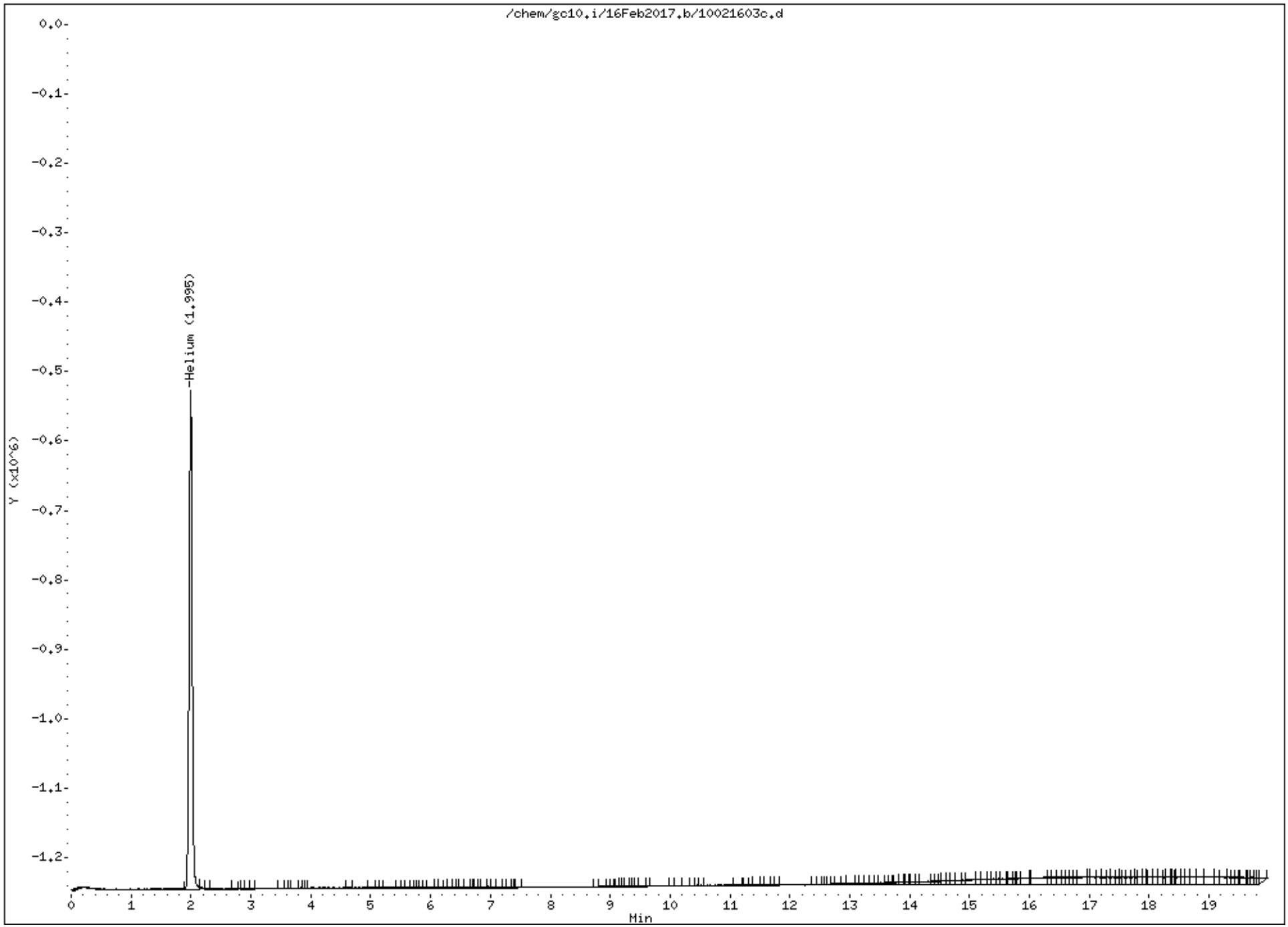
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021603c.d
Lab Smp Id: 2299-1048B He Client Smp ID: Level-2
Inj Date : 16-FEB-2017 09:30
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 09:30 Cal File: 10021603c.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: he.sub
Target Version: 3.50
Processing Host: eeyore

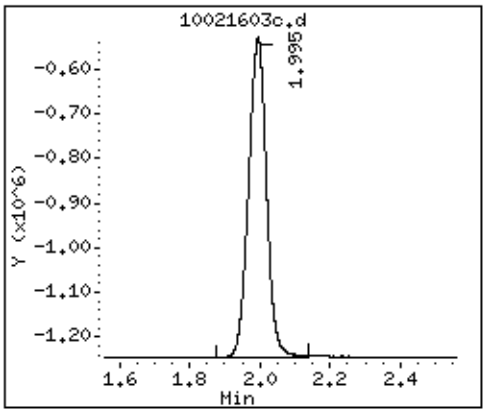
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
==========	==	======	======	========	=======	=======
1 Helium	1.995	2.059	-0.064	127237285	0.50000	0.498


/chem/gc10.i/16Feb2017.b/10021603c.d
Y (x10^6)
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Helium (1.995)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10021603c.d
1.995
-0.60
-0.70
-0.80
-0.90
-1.00
-1.10
-1.20
Y (x10^6)
1.6
1.8
2.0
2.2
2.4
Min

Eurofins Air Toxics Inc.

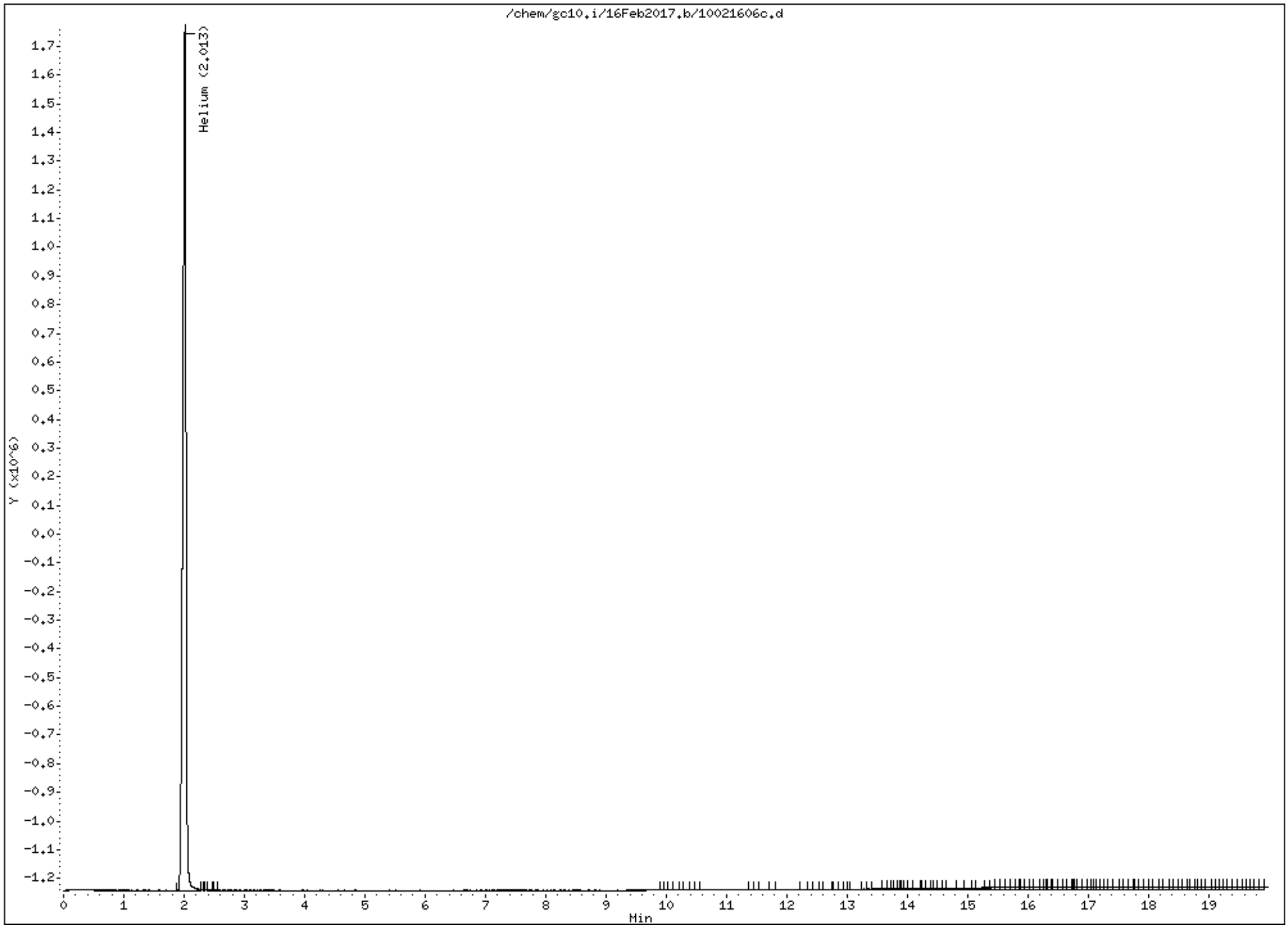
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021606c.d
Lab Smp Id: 2787-66 He Client Smp ID: Level-3
Inj Date : 16-FEB-2017 11:12
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml(25:100)
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 11:12 Cal File: 10021606c.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: he.sub
Target Version: 3.50
Processing Host: eeyore

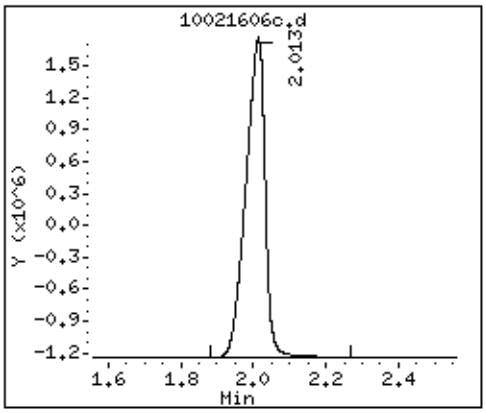
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
==========	==	======	======	========	=======	=======
1 Helium	2.013	2.059	-0.046	555727562	2.50000	2.27


/chem/gc10.i/16Feb2017.b/10021606c.d
Helium (2.013)
Y (x10^6)
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10021606c.d
2.013
Y (x10^6)
1.5
1.2
0.9
0.6
0.3
0.0
-0.3
-0.6
-0.9
-1.2
1.6
1.8
2.0
2.2
2.4
Min

Eurofins Air Toxics Inc.

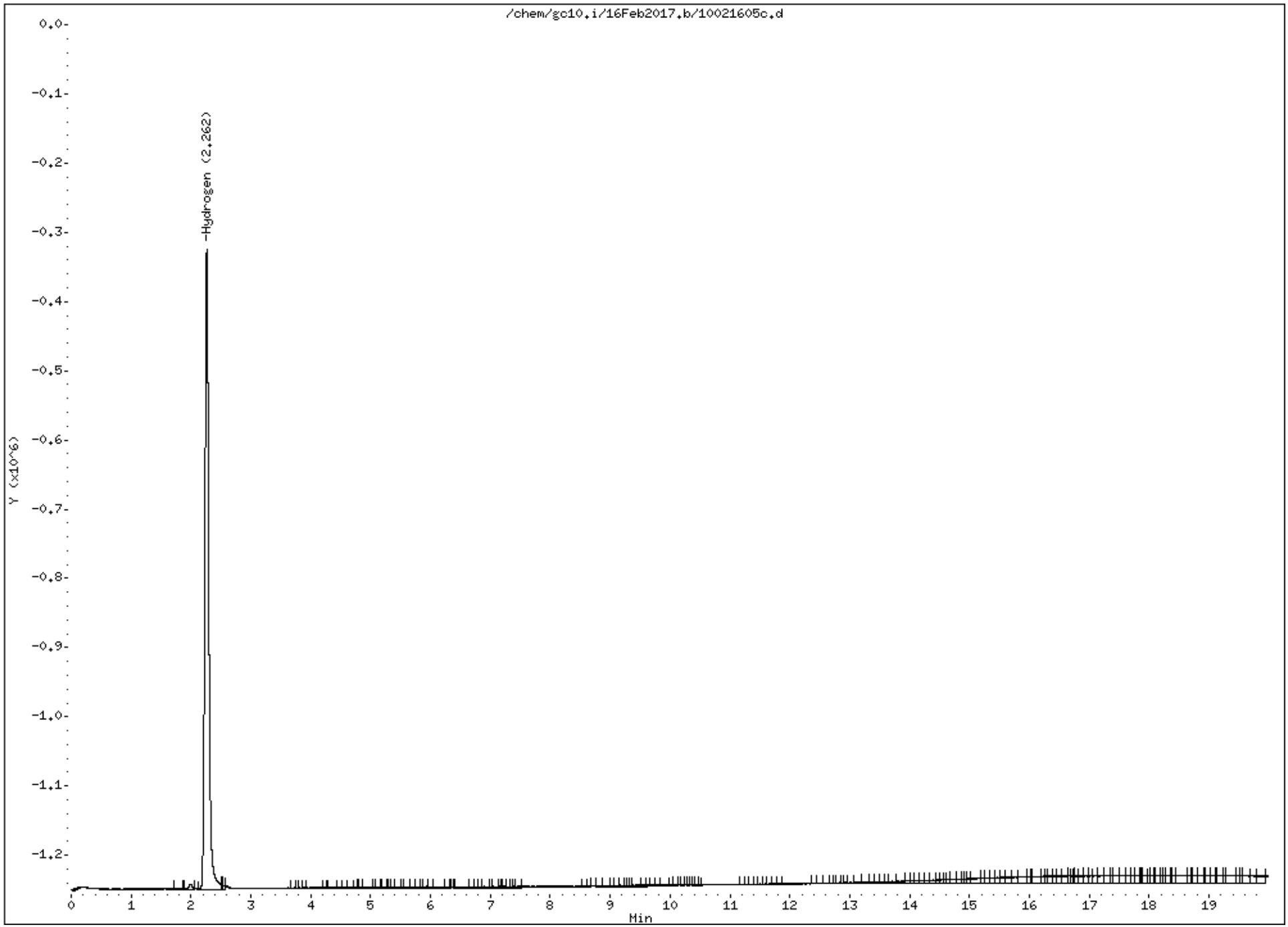
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021605c.d
Lab Smp Id: 2299-1684 H2 Client Smp ID: Level-3
Inj Date : 16-FEB-2017 10:26
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml(25:100)
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 10:26 Cal File: 10021605c.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: h2.sub
Target Version: 3.50
Processing Host: eeyore

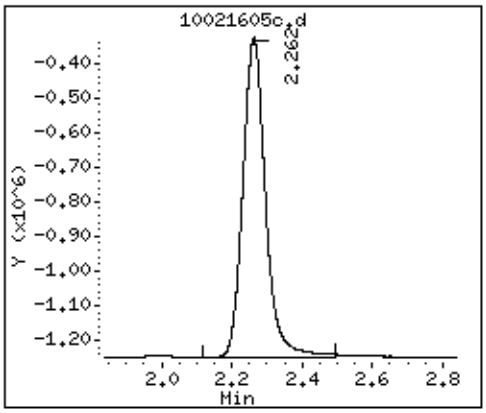
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
2 Hydrogen	2.262	2.339	-0.077	206994605	0.50000	0.492


/chem/gc10.i/16Feb2017.b/10021605c.d
Hydrogen (2.262)
Y (x10^6)
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

2 Hydrogen


10021605c.d
2.262
-0.40
-0.50
-0.60
-0.70
-0.80
-0.90
-1.00
-1.10
-1.20
Y (x10^6)
2.0
2.2
2.4
2.6
2.8
Min

Eurofins Air Toxics Inc.

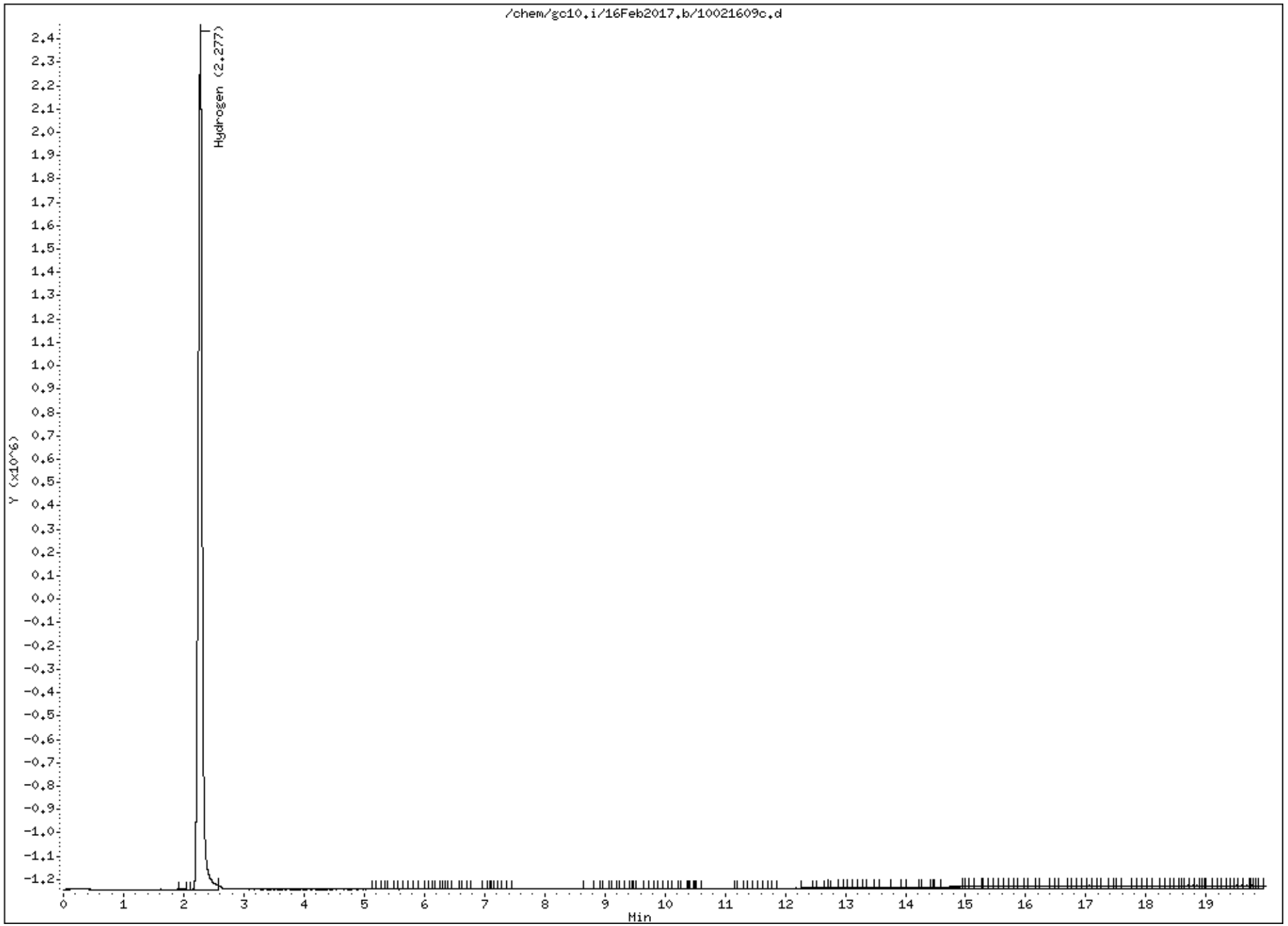
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021609c.d
Lab Smp Id: 2299-1684 H2 Client Smp ID: Level-4
Inj Date : 16-FEB-2017 12:41
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 12:41 Cal File: 10021609c.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: h2.sub
Target Version: 3.50
Processing Host: eeyore

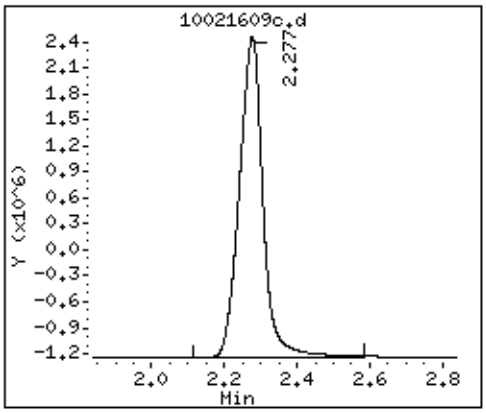
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
2 Hydrogen	2.277	2.339	-0.062	841774507	2.00000	2.00


/chem/gc10.i/16Feb2017.b/10021609c.d
Hydrogen (2.277)
Y (x10^6)
Min

2 Hydrogen


10021609c.d
2.277
Y (x10^6)
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.0
-0.3
-0.6
-0.9
-1.2
2.0
2.2
2.4
2.6
2.8
Min

Eurofins Air Toxics Inc.

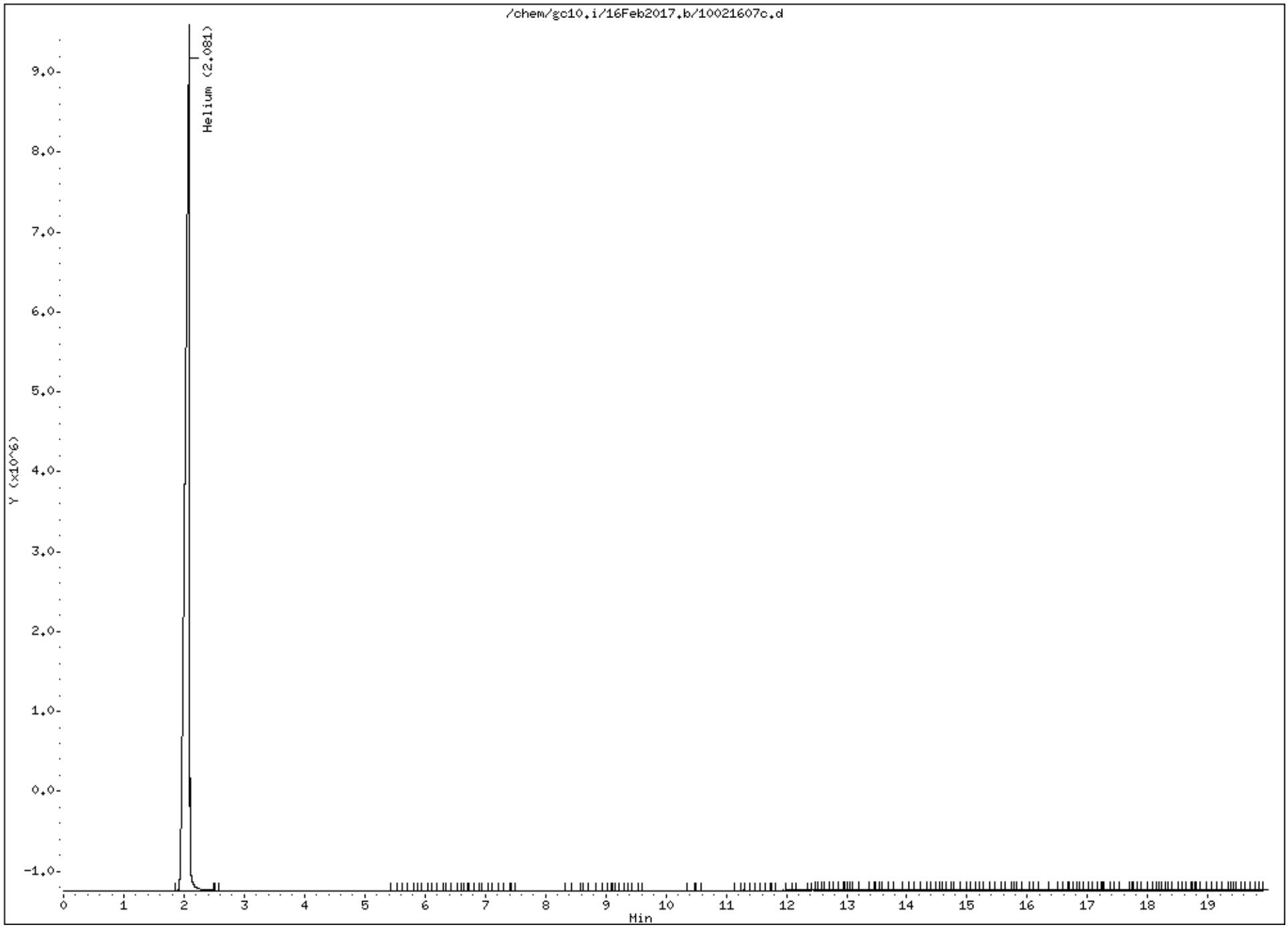
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021607c.d
Lab Smp Id: 2787-67 He Client Smp ID: Level-4
Inj Date : 16-FEB-2017 11:43
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml(10:100)
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 11:43 Cal File: 10021607c.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: he.sub
Target Version: 3.50
Processing Host: eeyore

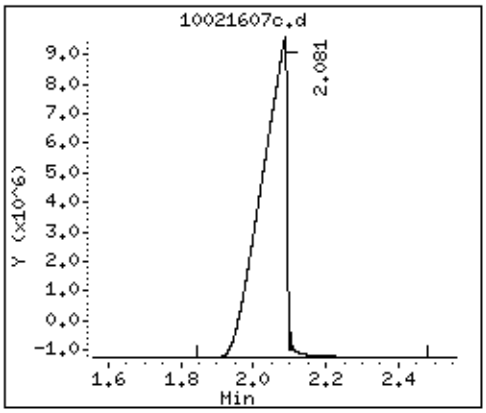
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
1 Helium	2.081	2.059	0.022	2627967215	10.0000	10.6


/chem/gc10.i/16Feb2017.b/10021607c.d
Helium (2.081)
Y (x10^6)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10021607c.d
2.081
Y (x10^6)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
1.6
1.8
2.0
2.2
2.4
Min

Eurofins Air Toxics Inc.

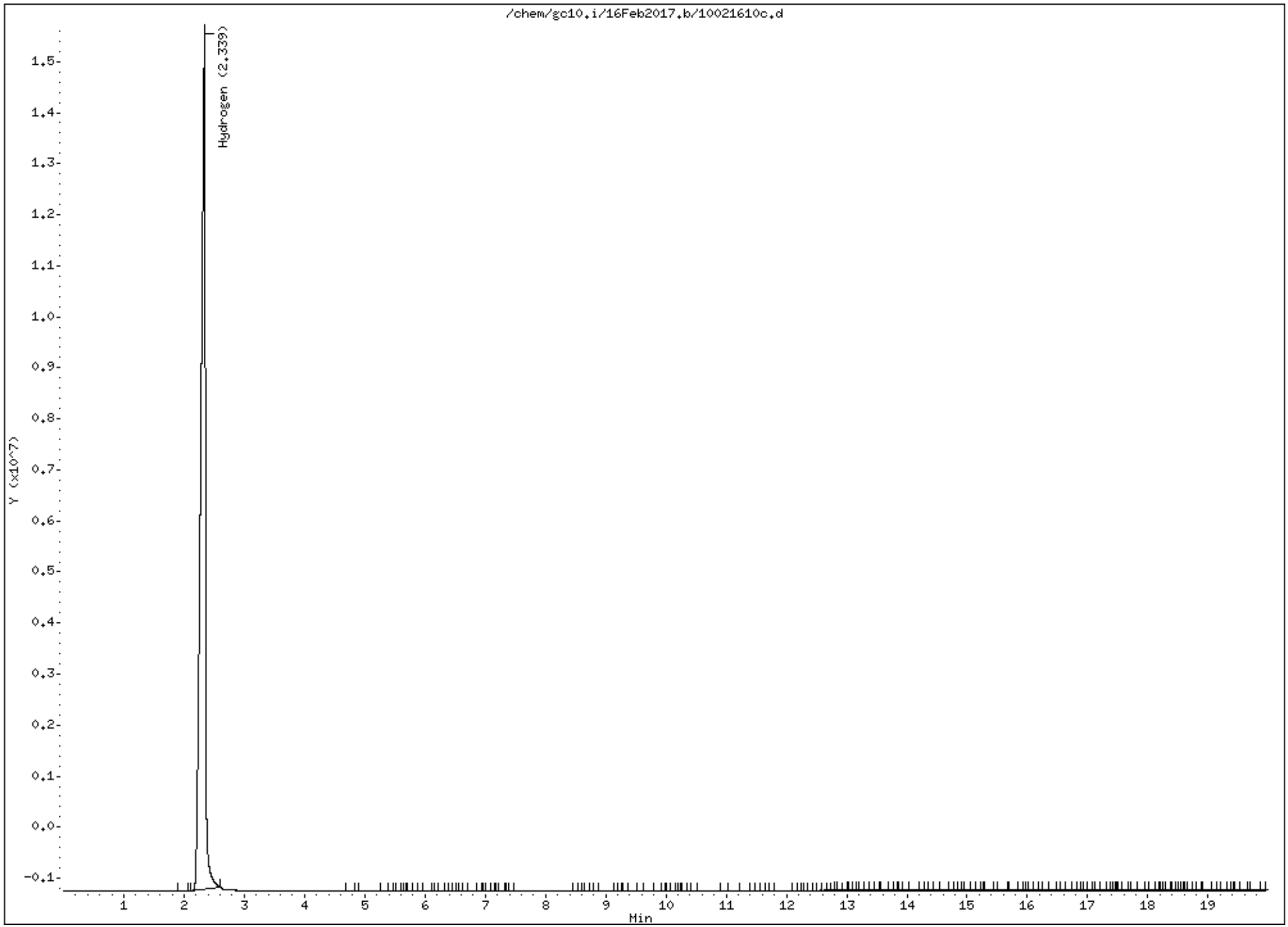
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021610c.d
Lab Smp Id: 2787-63 H2 Client Smp ID: Level-5
Inj Date : 16-FEB-2017 13:05
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 13:05 Cal File: 10021610c.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: h2.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
2 Hydrogen	2.339	2.339	0.000	4363068641	10.0000	10.3


/chem/gc10.i/16Feb2017.b/10021610c.d
Hydrogen (2.339)
Y (x10^7)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
1
2
3
4
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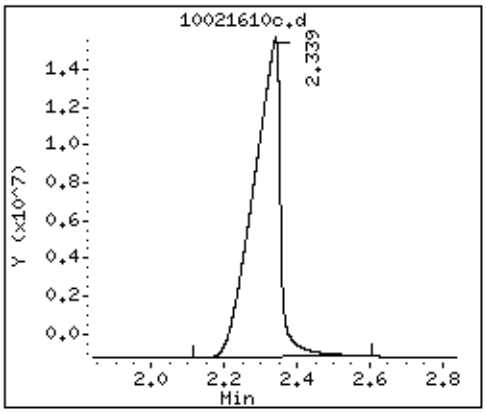
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

2 Hydrogen



Eurofins Air Toxics Inc.

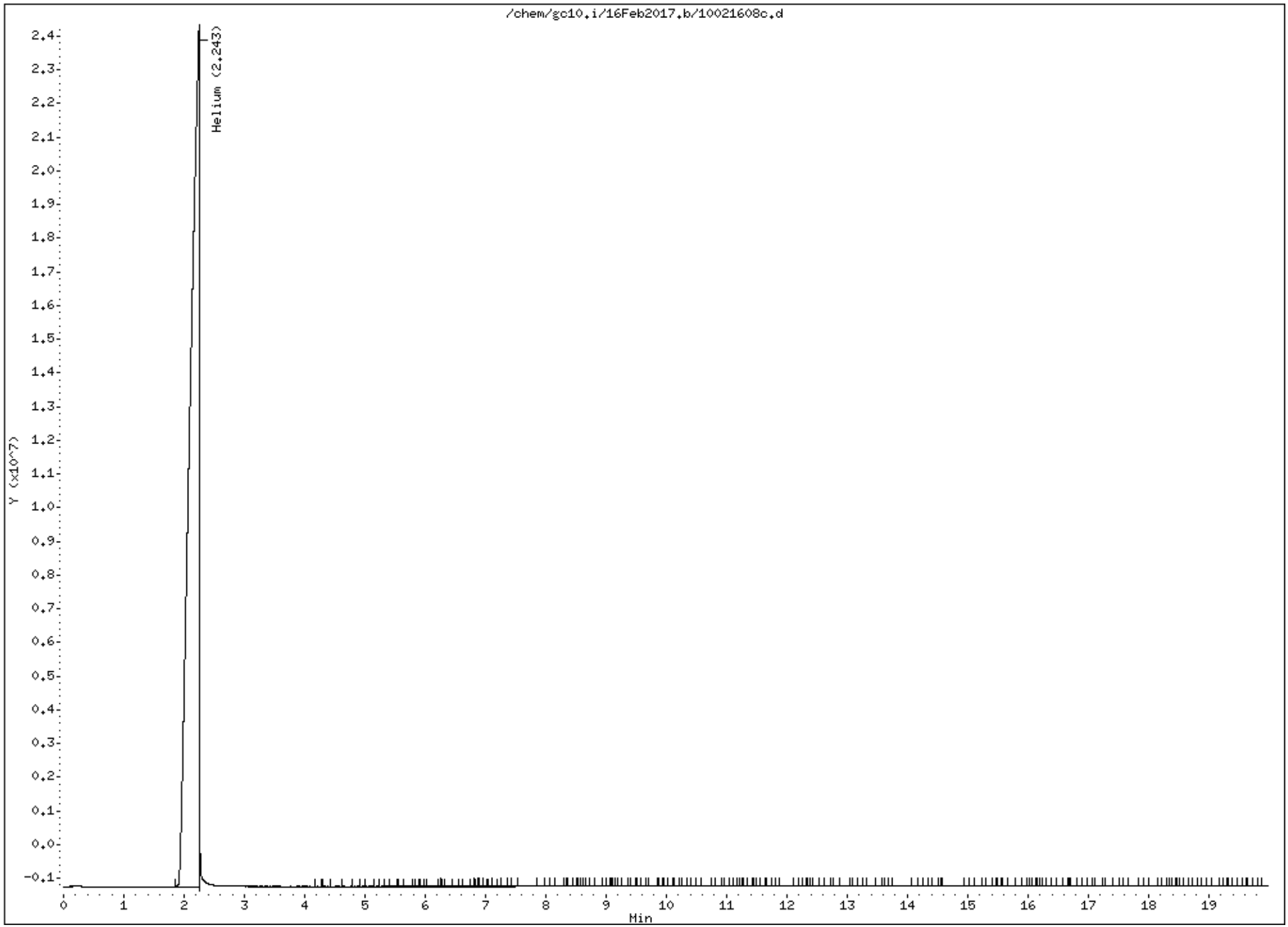
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021608c.d
Lab Smp Id: 2787-67 He Client Smp ID: Level-5
Inj Date : 16-FEB-2017 12:11
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml(25:50),
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 12:11 Cal File: 10021608c.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: he.sub
Target Version: 3.50
Processing Host: eeyore

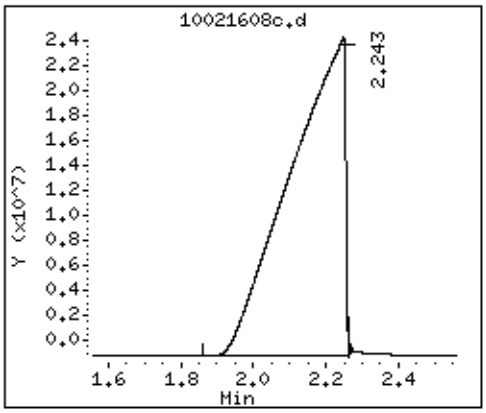
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
1 Helium	2.243	2.059	0.184	13312114832	50.0000	52.7


/chem/gc10.i/16Feb2017.b/10021608c.d
Helium (2.243)
Y (x10^7)
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10021608c.d
2.243
Y (x10^7)
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.6
1.8
2.0
2.2
2.4
Min

Eurofins Air Toxics Inc.

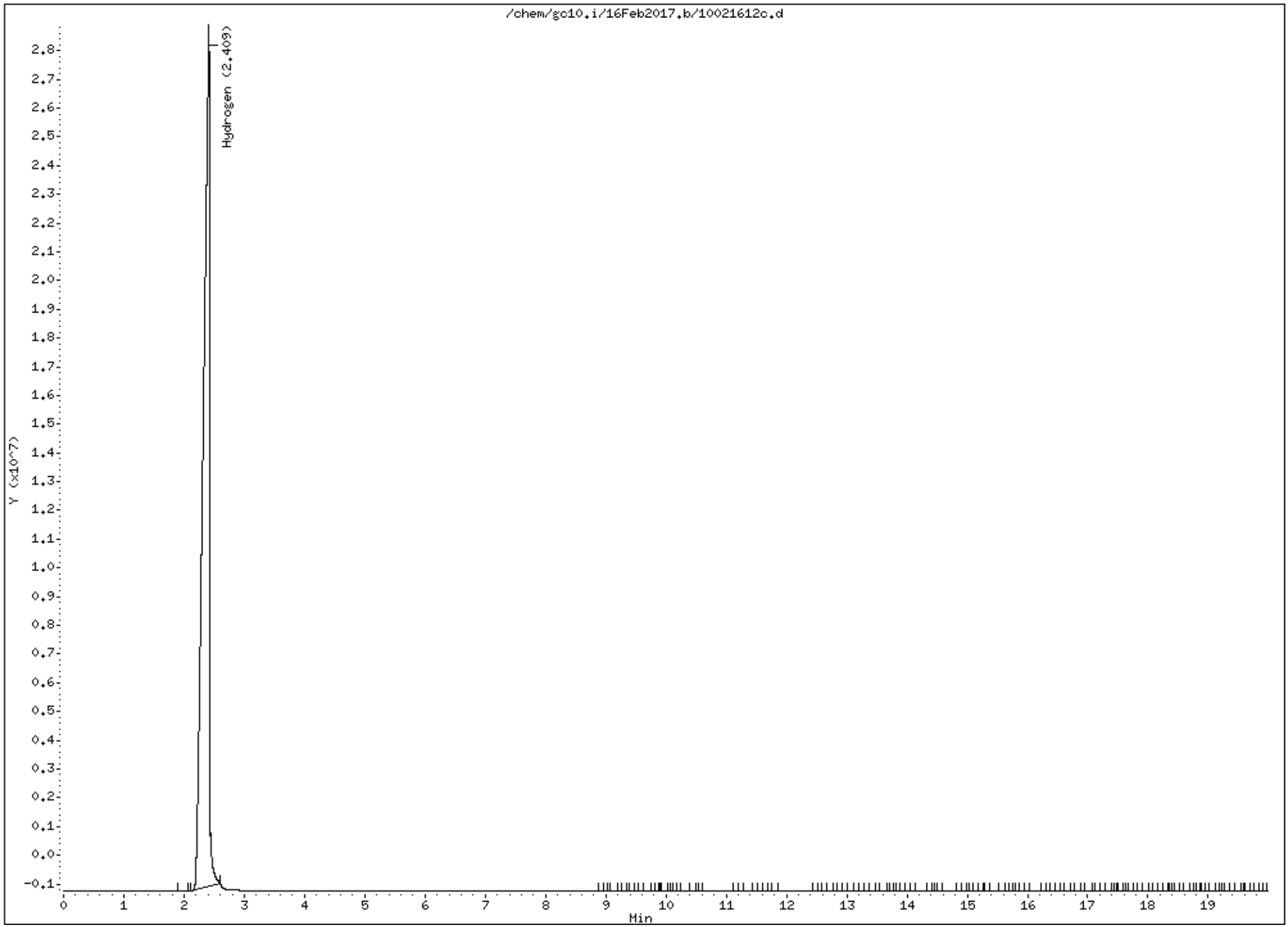
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021612c.d
Lab Smp Id: 2787-63 H2 Client Smp ID: Level-6
Inj Date : 16-FEB-2017 14:04
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: h2.sub
Target Version: 3.50
Processing Host: eeyore

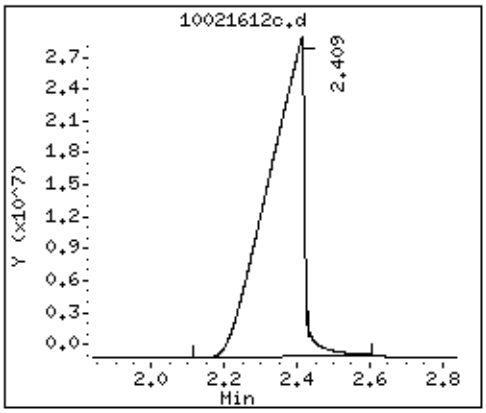
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
2 Hydrogen	2.409	2.339	0.070	10417983391	25.0000	24.6


/chem/gc10.i/16Feb2017.b/10021612c.d
Hydrogen (2.409)
Y (x10^7)
Min

2 Hydrogen


10021612c.d
2.409
Y (x10^7)
2.7
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.0
2.0
2.2
2.4
2.6
2.8
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc10.i/16Feb2017.b/10021611c.d
Lab Smp Id: 2787-67 He Client Smp ID: Level-6
Inj Date : 16-FEB-2017 13:32
Operator : ly Inst ID: gc10.i
Smp Info : 1.0ml,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/16Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Meth Date : 17-Feb-2017 10:04 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 13:32 Cal File: 10021611c.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: he.sub
Target Version: 3.50
Processing Host: eeyore

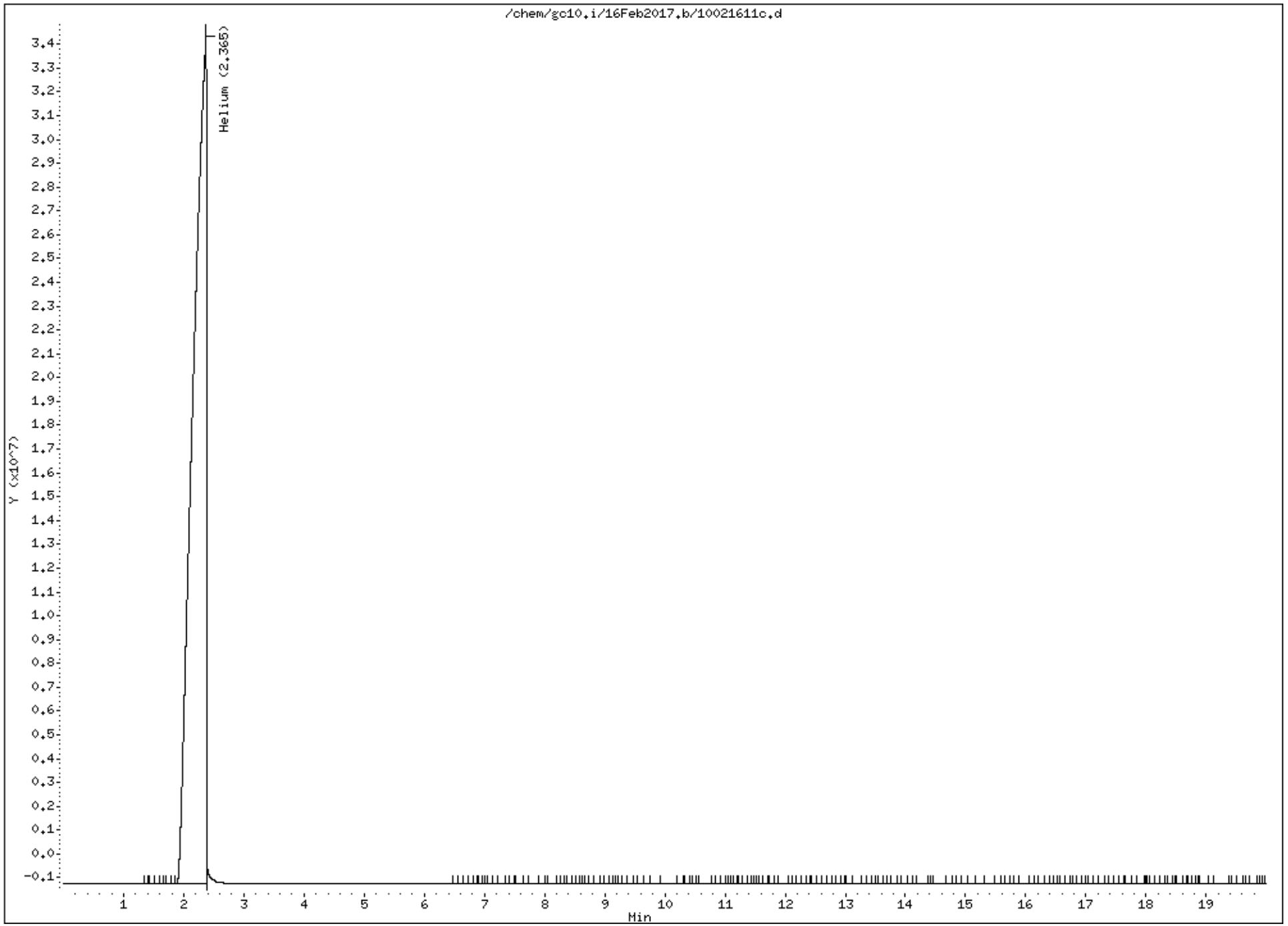
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
1 Helium	2.365	2.059	0.306	26881354736	100.000	105(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


/chem/gc10.i/16Feb2017.b/10021611c.d
Helium (2.365)
Y (x10^7)
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
1
2
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17
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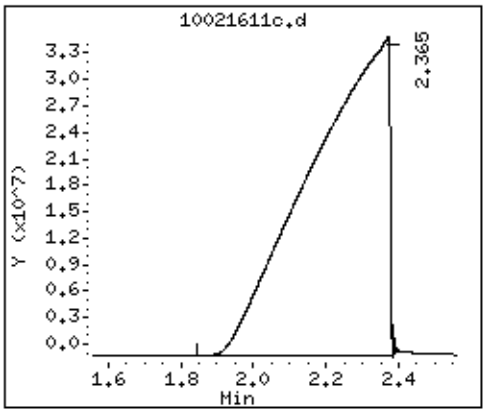
19
Min

1 Helium


10021611c.d
2.365
Y (x10^7)
3.3
3.0
2.7
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.0
1.6
1.8
2.0
2.2
2.4
Min

Eurofins Air Toxics, Inc. 2Q 2017 ASTM D-1945/1946 Limit of Detections (LODs) Effective 07-01-17				
CAS #	**Analyte**	**Molecular Weight (MW)**	**LOD (%)**	**LOQ (%)**
7782-44-7	Oxygen	32	NA*	0.1
7727-37-9	Nitrogen	28.01	NA*	0.1
74-86-2	Acetylene	26.0373	0.0001	0.001
106-97-8	Butane	58.1222	0.0001	0.001
124-38-9	Carbon Dioxide	44.0095	0.004	0.01
630-08-0	Carbon Monoxide	28.0101	0.004	0.01
74-84-0	Ethane	30.069	0.0001	0.001
74-85-1	Ethylene	28.0532	0.0001	0.001
7440-59-7	Helium	4.002602	0.007	0.05
1333-74-0	Hydrogen	2.01588	0.005	0.01
75-28-5	Isobutane	58.1222	0.0001	0.001
78-78-4	Isopentane	72.1488	0.0001	0.001
74-82-8	Methane	16.0425	0.00006	0.0001
463-82-1	Neopentane	72.1488	0.0001	0.001
109-66-0	Pentane	72.1488	0.0001	0.001
74-98-6	Propane	44.0956	0.0001	0.001

*LOD analysis requires dilution of lowest concentration standard, but O2 and N2 cannot be reported from a diluted analysis. These analytes may only be reported to MDL (DL).

Instrument ID - gc10.i file gc10.i/28Jun2017.b/10062804b.d gc10.i/21Apr2017.b/10042104.d gc10.i/22Apr2017.b/10042211.d gc10.i/22Apr2017.b/10042206c.d gc10.i/22Apr2017.b/10042205c.d

$C_2 - C_7$ MDL

Report Date : 06-Jan-2017 14:22 ASTMD - 1945 / 1946 GC-10 FID

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

1.0 mL of Std # 2787-43 was spiked, resulting in a concentration of 0.001% for C_2-C_7.

Method File: /chem/gc10.i/06Jan2017.b/106n0115.m
Batch File: /chem/gc10.i/06Jan2017.b
Inst ID: gc10.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07
FILENAME:	10010603	10010604	10010605	10010606	10010607	10010608	10010609
INJ.DATE:	06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017	06-JAN-2017
INJ.TIME:	09:36	10:00	10:24	11:00	11:26	11:50	12:18

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL ppmV	% MDL	RL %	Amount Spiked
	2 Methane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	3 ethane	10.19	10.23	9.96	10.16	10.09	10.02	10.16	10.12	0.10	0.30	0.000030	0.001	0.001%
	4 ethene	10.16	10.23	9.99	10.18	9.96	9.88	10.10	10.07	0.13	0.41	0.000041		
	5 propane	10.06	10.29	9.93	10.20	10.01	9.92	10.11	10.07	0.14	0.43	0.000043		
	7 acetylene	10.21	10.47	10.14	10.51	10.14	9.90	10.41	10.26	0.22	0.69	0.000069		
	8 iso-butane	10.25	10.37	10.22	10.38	10.19	10.05	10.28	10.25	0.11	0.36	0.000036		
	10 n-butane	9.87	10.03	9.82	10.01	9.82	9.55	9.89	9.86	0.16	0.51	0.000051		
	15 neo-pentane	10.66	10.80	10.56	10.64	10.45	10.40	10.60	10.59	0.13	0.42	0.000042		
	16 isopentane	10.60	10.73	10.42	10.61	10.30	10.26	10.56	10.50	0.17	0.55	0.000055		
	17 pentane	10.43	10.63	10.28	10.35	10.27	10.18	10.37	10.36	0.14	0.46	0.000046		
	39 Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	40 Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
S	22 c6-c7	10.64	10.79	10.49	10.60	10.35	10.15	10.51	10.51	0.21	0.65	0.000065	0.01	
M	37 C6+ Hydrocarbons	10.64	10.79	10.49	10.60	10.35	10.15	10.51	10.51	0.21	0.65	0.000065	0.01	
S	36 c8+	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			

Reviewer 1 Lydy Hans Date: 1/6/17
Reviewer 2 JMcMillan Date: 1/12/17

(*) The ratio of the mean recovered concentration and the MDL value is greater than 20 for all compounds except Acetylene, Butane, Isopentane and C6+ Hydrocarbons.

CH4 MDL
ASTM D-1945/1946
GC-10 FID

Report Date : 07-Jan-2017 13:53

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

1.0 mL of Std 2787-43 (200x) was spiked, resulting in a concentration of 0.0001% for CH4.

Method File: /chem/gc10.i/07Jan2017.b/106n0115.m
Batch File: /chem/gc10.i/07Jan2017.b
Inst ID: gc10.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	10010707	10010708	10010709	10010710	10010711	10010712	10010713	10010714
INJ.DATE:	07-JAN-2017	07-JAN-2017	07-JAN-2017	07-JAN-2017	07-JAN-2017	07-JAN-2017	07-JAN-2017	07-JAN-2017
INJ.TIME:	10:25	10:56	11:19	11:44	12:06	12:29	12:52	13:20

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL ppmV	%	RL %	Conc Spike
	2 Methane	0.78	0.91	0.87	0.97	1.05	0.97	1.19	1.22	1.00	0.15	0.46	0.000046	0.0001	0.0001%
	3 ethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	4 ethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	5 propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	7 acetylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	8 iso-butane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	10 n-butane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	15 neo-pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	16 isopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	17 pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	39 Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	40 Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
S	22 c6-c7	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
M	37 C6+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
S	36 c8+	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			

Reviewer 1 Lyol Yahan Date: 01/07/17
Reviewer 2 JP Marrone Date: 1/12/17

GC-10 ASTMD-1945/1946
TCD MDL
CO_2 O_2 N_2 CO

Report Date : 21-Feb-2017 12:10

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/gc10.i/21Feb2017.b/107n0112.m/106C0414.m
Batch File: /chem/gc10.i/21Feb2017.b
Inst ID: gc10.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07
FILENAME:	10022103b	10022104b	10022105b	10022106b	10022107b	10022108b	10022109b
INJ.DATE:	21-FEB-2017	21-FEB-2017	21-FEB-2017	21-FEB-2017	21-FEB-2017	21-FEB-2017	21-FEB-2017
INJ.TIME:	08:51	09:16	09:38	10:04	10:27	11:06	11:30

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL (ppmV)	% MDL	% RL
3 Carbon Dioxide	123.23	115.50	122.17	117.99	122.05	115.55	119.20	119.38	3.20	10.06	0.001006	0.010 %
9 Oxygen	988.95	987.52	971.29	973.24	985.25	988.62	968.18	980.44	9.12	28.65	0.002865	0.10 %
10 Nitrogen	1211.79	1224.36	1215.92	1219.80	1222.10	1206.51	1225.10	1217.94	6.90	21.69	0.002169	0.10 %
12 Carbon Monoxide	91.10	95.47	94.06	96.45	92.84	84.24	93.45	92.52	4.04	12.70	0.001270	0.010 %

Reviewer 1 _____ Date: 2/21/17
Reviewer 2 _____ Date: 2/22/17

1.0 ml of Std # 2787-69 was spiked, resulting in a conc. of CO_2 & CO at 0.010 %. and O_2 & N_2 at 0.10 %.

The ratio of the mean recovered concentration and the MDL value is greater than 20 for Oxygen and Nitrogen.

GC-10 ASTMD-1945/1946
He/H_2 MDL
TCD

Report Date : 17-Feb-2017 13:24

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/gc10.i/17Feb2017.b/107n0112.m/106C0414.m/107C0216.m
Batch File: /chem/gc10.i/17Feb2017.b
Inst ID: gc10.i

1.0 ml of Std # 2787-65 was spiked, resulting in a concentration of Helium at 0.0495% and H_2 at 0.010%.

Reporting Limit

He : 0.050%
H_2 : 0.010%

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07
FILENAME:	10021704c	10021705c	10021706c	10021707c	10021708c	10021709c	10021710c
INJ.DATE:	17-FEB-2017	17-FEB-2017	17-FEB-2017	17-FEB-2017	17-FEB-2017	17-FEB-2017	17-FEB-2017
INJ.TIME:	10:18	10:49	11:12	11:35	11:58	12:25	12:50

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL ppmV	% MDL
1 Helium	507.47	493.37	474.84	498.09	479.66	481.60	488.77	489.11	11.44	35.96	0.003596
2 Hydrogen	119.99	104.82	95.10	104.53	97.22	103.03	103.67	104.05	7.99	25.10	0.002510

Reviewer 1 Lyd Ydan Date: 2/18/17
Reviewer 2 JMasciana Date: 2/20/17

Report Date: 07-Aug-2017 08:52

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: gc10.i Injection Date: 07-AUG-2017 08:23
Lab File ID: 10080701c.d Init. Cal. Date(s): 16-FEB-2017 16-FEB-2017
Analysis Type: AIR Init. Cal. Times: 09:04 14:04
Lab Sample ID: 2299-1048B NGas Quant Type: ESTD
Method: /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m

COMPOUND	RRF / AMOUNT	RF0.000	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Helium	255171636	256814440	0.010	-0.64380	15.00000	Averaged

Eurofins Air Toxics Inc.

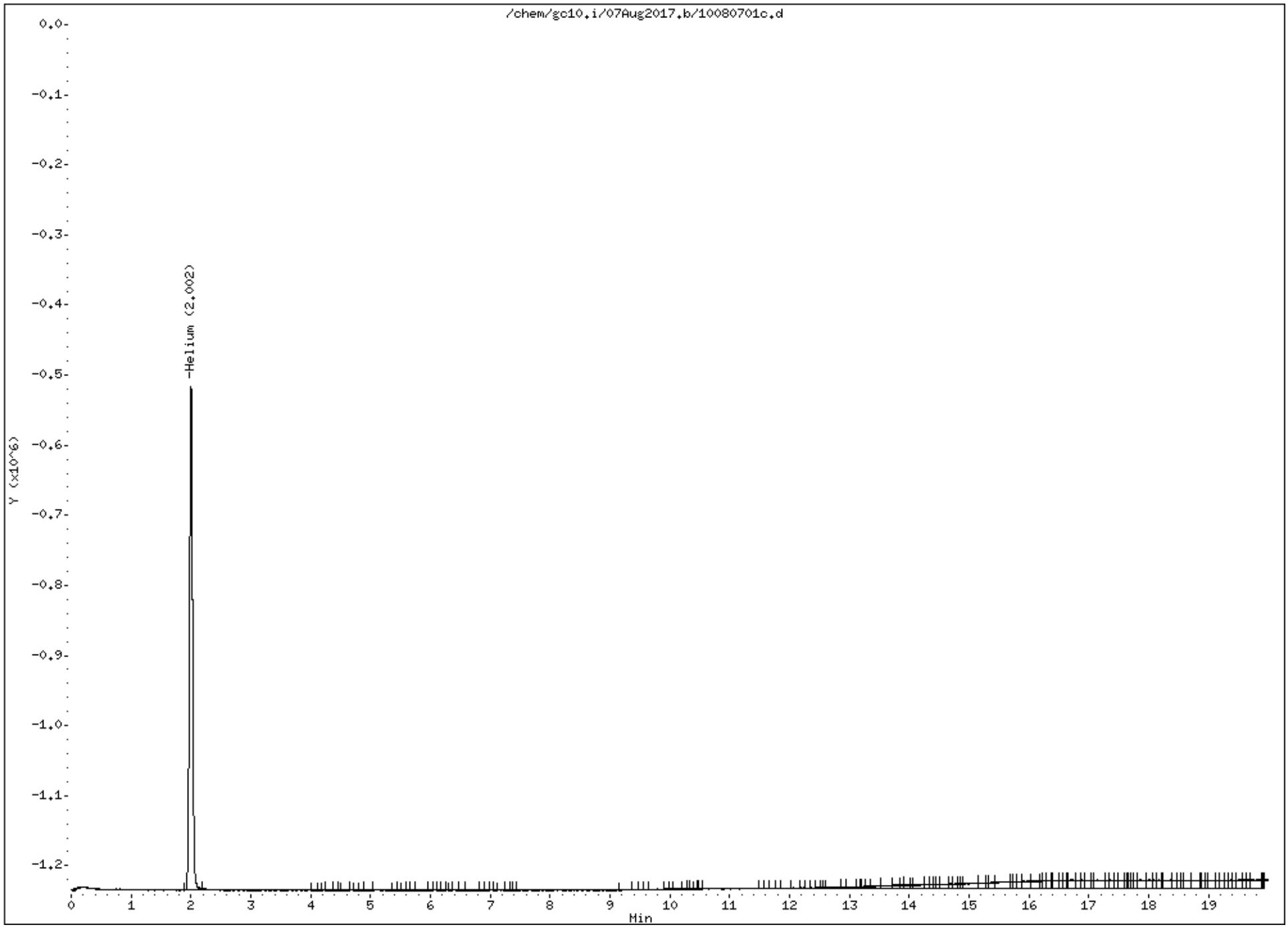
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/07Aug2017.b/10080701c.d
Lab Smp Id: 2299-1048B NGas Client Smp ID: CCV
Inj Date : 07-AUG-2017 08:23
Operator : gm Inst ID: gc10.i
Smp Info : 1.0mL,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Meth Date : 07-Aug-2017 08:52 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

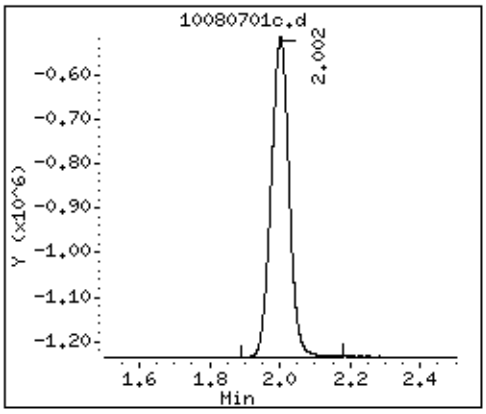
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
==========	==	======	======	========	=======	=======
1 Helium	2.002	2.002	0.000	127123148	0.49500	0.498


/chem/gc10.i/07Aug2017.b/10080701c.d
Y (x10^6)
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Helium (2.002)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10080701c.d
2.002
-0.60
-0.70
-0.80
-0.90
-1.00
-1.10
-1.20
Y (x10^6)
1.6
1.8
2.0
2.2
2.4
Min

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946
Former Tronox-Springfield, Mo

Client ID:	LCS		
Lab ID:	1708091C-13A	**Date/Time Analyzed:**	8/7/17 08:55 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	gc10.i / 10080702c

Compound	CAS#	%Recovery
Helium	7440-59-7	97

* % Recovery is calculated using unrounded analytical results.

Report Date: 07-Aug-2017 09:18

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07Aug2017
Sample Matrix: GAS Fraction: Atm Gas
Lab Smp Id: 2299-1160A NGas Client Smp ID: LCS
Level: LOW Operator: ly
Data Type: GC DATA SampleType: LCS
SpikeList File: 2299-1160he.spk Quant Type: ESTD
Sublist File: ngas.sub
Method File: /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Misc Info:

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
1 Helium	0.495	0.482	97.35	85-115

Eurofins Air Toxics Inc.

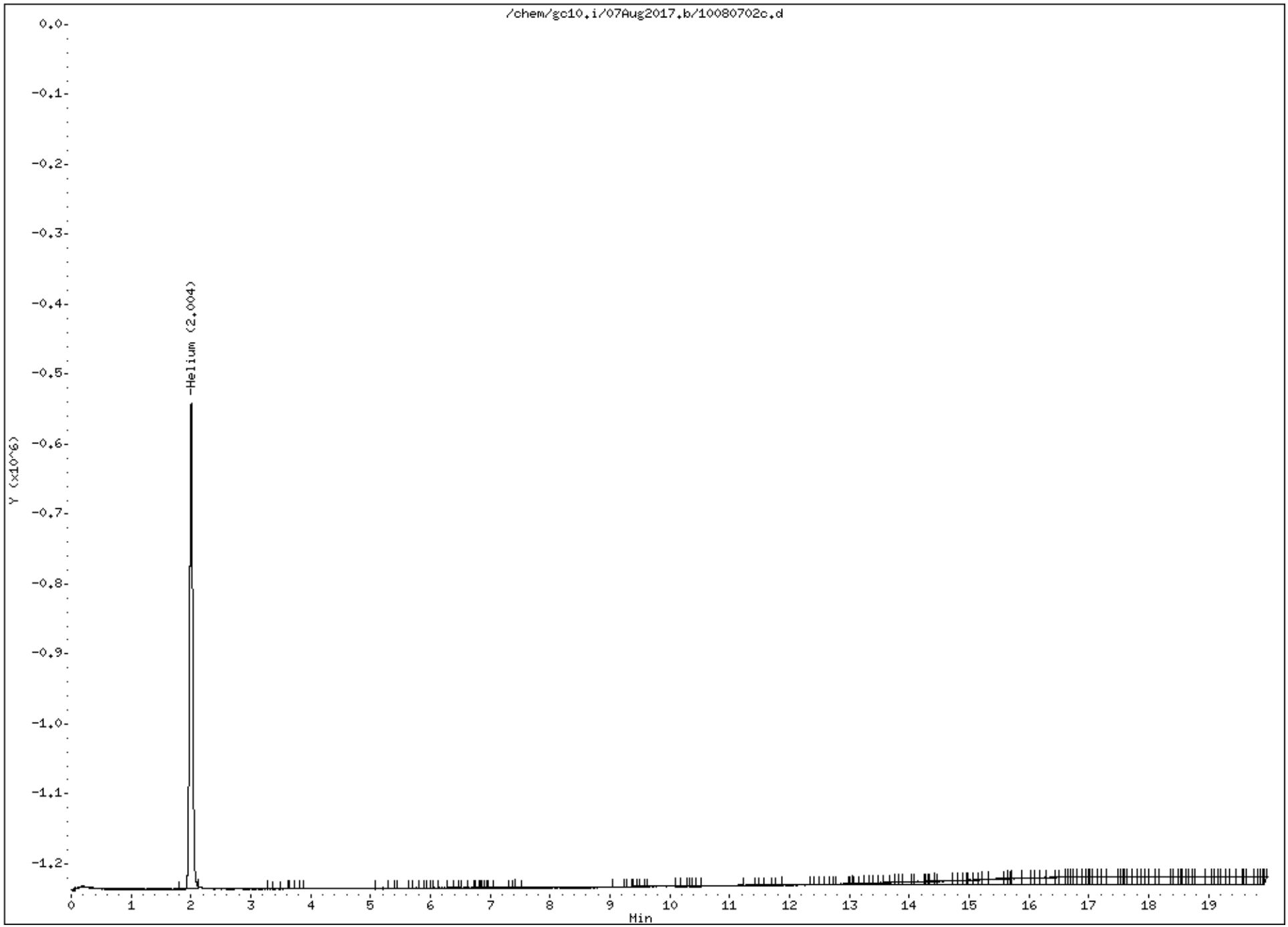
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/07Aug2017.b/10080702c.d
Lab Smp Id: 2299-1160A NGas Client Smp ID: LCS
Inj Date : 07-AUG-2017 08:55
Operator : ly Inst ID: gc10.i
Smp Info : 1.0mL,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Meth Date : 07-Aug-2017 08:52 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
1 Helium	2.004	2.002	0.002	122961812	0.48188	0.482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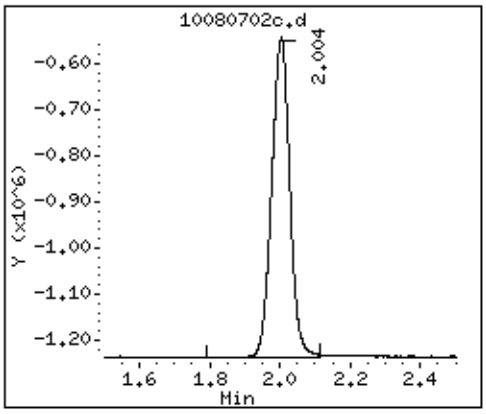
Y (x10^6)
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Helium (2.004)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10080702c.d
2.004
-0.60
-0.70
-0.80
-0.90
-1.00
-1.10
-1.20
Y (x10^6)
1.6
1.8
2.0
2.2
2.4
Min

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946
Former Tronox-Springfield, Mo

Client ID:	LCSD		
Lab ID:	1708091C-13AA	**Date/Time Analyzed:**	8/7/17 08:59 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	gc10.i / 10080725c

Compound	CAS#	%Recovery
Helium	7440-59-7	99

* % Recovery is calculated using unrounded analytical results.

Report Date: 07-Aug-2017 21:21

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07Aug2017
Sample Matrix: GAS Fraction: Atm Gas
Lab Smp Id: 2299-1160A Ngas Client Smp ID: LCSD
Level: LOW Operator: mjs
Data Type: GC DATA SampleType: LCSD
SpikeList File: 2299-1160he.spk Quant Type: ESTD
Sublist File: ngas.sub
Method File: /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Misc Info:

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
1 Helium	0.495	0.490	99.06	85-115

Eurofins Air Toxics Inc.

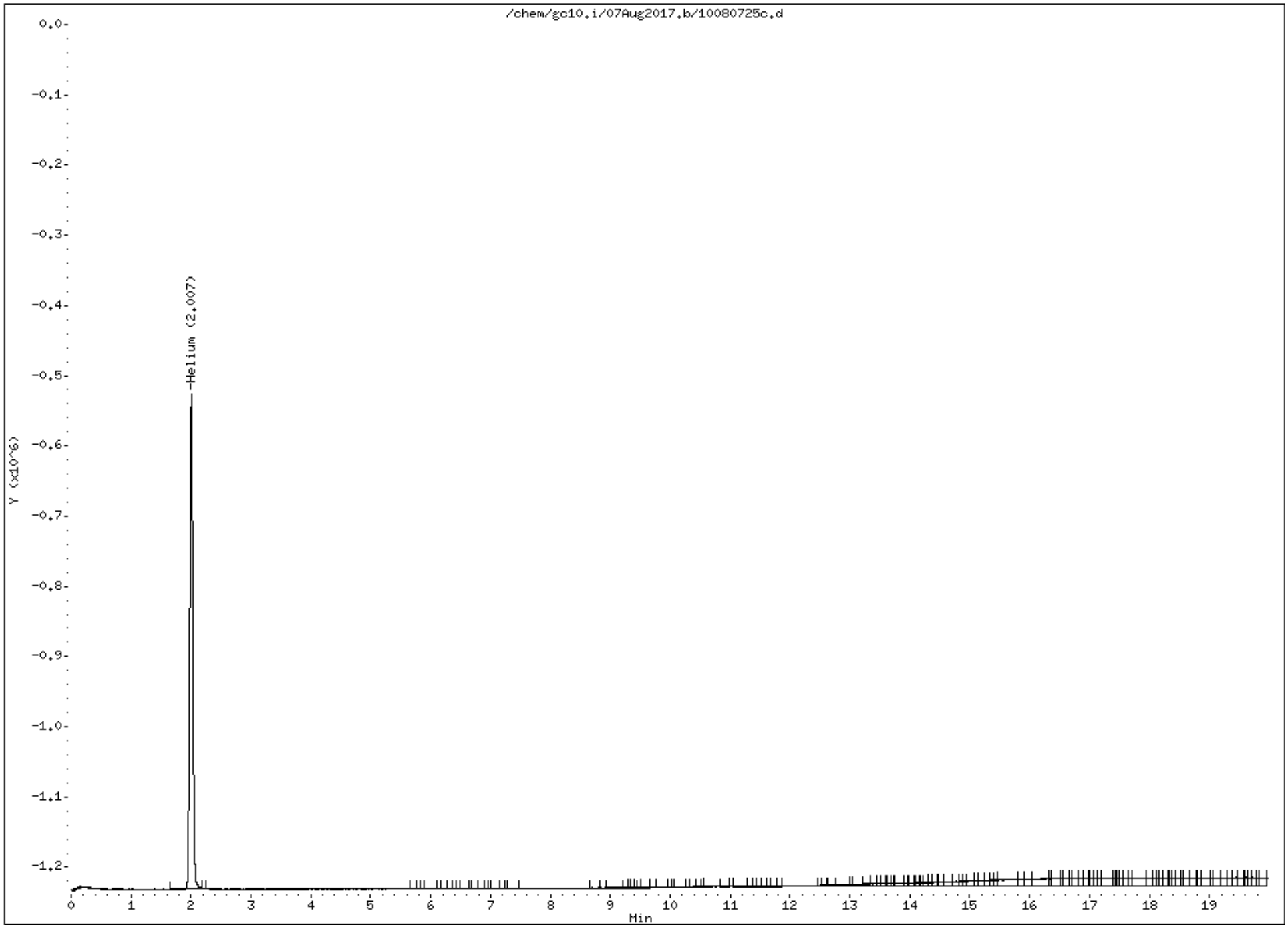
Modified ASTM D-1945/1946

Data file : /chem/gc10.i/07Aug2017.b/10080725c.d
Lab Smp Id: 2299-1160A Ngas Client Smp ID: LCSD
Inj Date : 07-AUG-2017 20:59
Operator : mjs Inst ID: gc10.i
Smp Info : 1.0mL,
Misc Info :
Comment : GC/TCD
Method : /chem/gc10.i/07Aug2017.b/107n0112.m/107C0414.m/107C0216.m
Meth Date : 07-Aug-2017 08:52 lyohanne Quant Type: ESTD
Cal Date : 16-FEB-2017 14:04 Cal File: 10021612c.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

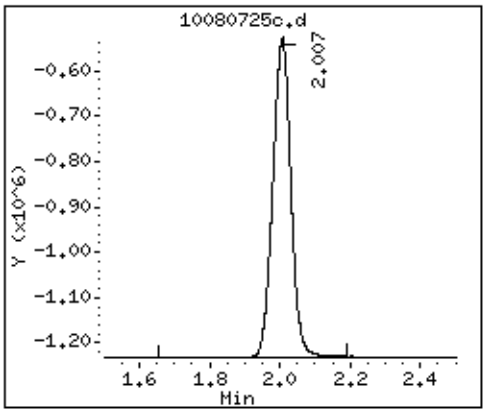
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
1 Helium	2.007	2.002	0.005	125120032	0.49034	0.490


/chem/gc10.i/07Aug2017.b/10080725c.d
Y (x10^6)
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
Helium (2.007)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Min

1 Helium


10080725c.d
2.007
-0.60
-0.70
-0.80
-0.90
-1.00
-1.10
-1.20
Y (x10^6)
1.6
1.8
2.0
2.2
2.4
Min

Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946**

GC-10

Logbook # 2856
Leak Test gm

	USE	File #	Sample Name/Client ID	Can #	Verified Pressure >2psi	Pressure	Amt	DF	Date	Time	Review Init.	Comments
1	✓	10080701	2299-1048B	NA	NA	NA	1.0mL	1.00	8/7/17	0823	Ly	CCV
2	✓	02	2299-1160A	↓						0855		LCS
3	✓	03	He Lab Blank	6L0015						0922		
4	✓	04	N_2 Lab Blank	33771						1002		
5	✓	05	1707424A-01A	N1926	✓	3.5"Hg → 15psi		2.28		1040		
6	✓	06	-02A	1L1505	✓	4.5"Hg → 14.7psi		2.35		1106		
7	✓	07	-03A	01020	✓	6.1"Hg → 14.8psi		2.52		1142		
8	✓	08	-04A	N3126	✓	8.4"Hg → 15.3psi		2.83		1210		
9	✓	09	-05A	1L1781	✓	4.1"Hg → 14.5psi		2.30		1235		
10	✓	10	-06A	N3134	✓	~~3.9"Hg → 14.9psi~~ 5.3"Hg → 14.6psi		~~2.31~~ 2.42		1300		
11		11	-07A	N2596	✓	3.9"Hg → 14.9psi		2.31		1326		
12	✓	12	-08A	N2573	✓	6.1"Hg → 14.9psi		2.53		1355	GH/MB	
13	✓	13	1707431B-01A	34607	✓	3.9"Hg → 14.9psi		2.31		1422	GH/MB	
14	✓	14	-02A	30488	✓	5.3"Hg - 14.7psi		2.43		1503	GH/MB	
15	✓	15	-03A	N2632	✓	4.1"Hg - 14.7psi		2.32		1531	GH/MB	

Calculation check : File ID: 10080702 Compound: CH_4 Initials: Ly

Sample Amt= $\frac{\text{Area Count Sample}}{\text{RF}} \times$ Dilution Factor = $\frac{(10666668189)}{(217680049)} \times$ (1.00)= 4.90

Reported Result= 4.90

Reviewed by/Date MJ 8/7/17

Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946**

GC-10

Logbook # 2856
Leak Test MTS

	USE	File #	Sample Name/Client ID	Can #	Verified Pressure >2psi	Pressure	Amt	DF	Date	Time	Review Init.	Comments
1	✓	10090719	17074318-24A	161770	✓	4.9"Hg-15.1psi	1.0mL	2.42	9-7-17	1554	GH/MJS	
2	✓	17	-05A	01008	✓	4.1"Hg-14.6psi		2.32		1620	GH/MJS	
3	✓	18	-06A	34087	✓	3.3"Hg-14.7psi		2.24		1643	GH/MJS	
4	✓	19	17080858-03A	31426	✓	5.1"Hg-5psi		1.61		1710	MJS	
5	✓	20	-05A	N0794	✓	5.1"Hg-5psi		1.61		1811	GH/MJS	
6	✓	21	-06A	34249	✓	6.3"Hg-5.1psi		1.71		1954	GH/MJS	
7	✓	22	17073928-01A	N1713	✓	3.7"Hg-5psi		1.53		1927	GH/MJS	
8	✓	23	17080910-10A	N2670	✓	6.0"Hg-15psi		2.52		1951	GH/MJS	
9	✓	24	-11A	00717	✓	6.0"Hg-15psi		2.52		2028	GH/MJS	
10	✓	25	2299-1160A Nga's	NA	NA	N/A		1.00		2059	MJS	Exp. 2/7/18 LCSD MJS-1
11		~~26~~	"	"	"	"		"				LCS MJS-2
12												
13												
14												
15						GH 9/1/17						

Calculation check : File ID: 10090722 Compound: Methane Initials: GH

Sample Amt= Area Count Sample x / RF Dilution Factor = (25566798) x / (21768049) (1.53)= 1.79

Reported Result= 1.79

Reviewed by/Date GH 9/2/17

Shipping/ Receiving Documents

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct.: _____ WO #: _____ Sample #s: _____

COC#: 1

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and International laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: Multi-State Environmental Trust, LLC

Project Manager: Brian Wied-CH2M HILL P.O.#

Sampler: Shirley Steinmacher, Katie Rabe PN: 690813.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection	TO-15 TOTAL SCAN	TO-15 SIM BTEXN	ASTM D 1946 Helium				Canister Vacuum/Pressure Initial	Canister Vacuum/Pressure Final	Lab Use Only Receipt	Lab Use Only Final (psig)	Turn Around Time: Normal / Rush!
	OA-004_0817	6L0885	8/2/17-8/3/17	1124-0922		X					28.15	6.60			Remarks: Outdoor
	IAU-004_0817	6L0909	8/2/17-8/3/17	1104-0935		X					28.15	4.91			Upstairs
	IAD-004_0817	34342	8/2/17-8/3/17	1112-0920		X					28.76	7.20			Downstairs
	SA-004_0817	IL1843	8/2/17-8/3/17	1047-1055	X						28.49	5.81			Sump headspace
	SA-104_0817	IL2610	8/2/17-8/3/17	0750-0800	X						28.32	5.82			Sump headspace
	IAD-107_0817	6L0077	8/2/17-8/3/17	1200-1124		X					28.77	5.06			Downstairs
	IAD-007_0817	6L0941	8/2/17-8/3/17	1204-1124		X					28.48	6.21			Downstairs
	IAU-007_0817	6L0635	8/3/17-8/3/17	1207-1131		X					26.89	5.09			Upstairs
	OA-007_0817	6L0346	8/2/17-8/2/17	1156-1152		X					28.49	5.37			FC Ironstone Outdoors
10A	SU-007_0817	IL2961	8/2/17	1232-1242	X		X				28.34	4.75			Subslab

Relinquished by:	Date: 8/4/17	Time: 1830	Received by: FEDEX	Date: 8/4/17	Time: 1830	Level IV Data Required?	Yes / No (Circle One)	
Relinquished by:	Date:	Time:	Received by:	Date:	Time:			
Relinquished by:	Date:	Time:	Received by: GAT	Date: 8/5/17	Time: 0947	Specific EDD format Required?	Yes / No (Circle One)	
			Received by:	Date:	Time:			1708091

Shipper Name: Fed Ex

Lab Use Only

Custody Seals Intact? Yes No None | Temp: NA | Note: primary TCL VOC BETXN, He

Sample Condition Upon Receipt: Good

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Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct. _____ WO # _____ Samples: _____

COC#: 2

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and International laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D O T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: Multi-State Environmental Trust, LLC (METC)

Project Manager: Brian Wied-CH2M HILL P.O.#

Sampler: Shirley Steinmacher, Katie Robe PN: 680813.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection 1232-	TO-15 TOTAL SCAN	TO-15 SIM BTEXN	ASTM D 1946 Helium				Canister Vacuum/Pressure: Initial	Final	Lab Use Only: Receipt	Final (psig)
14	SU-107_0817	1L2394	8/3/17	1234-1242	X		X				28.34	4.74		
	SH-E_0817 *	6L1731	8/2/17-8/3/17	1632-1525	X	68	15				25.69	10.50		
	SH-B_0817*	6L1283	8/2/17-8/3/17	1543-1515	X						26.68	6.58		
	SH-A_0817*	00001386		1505-1458	X						28.66	2.71		
	SH-D_0817*	6L1617		1650-1642	X						28.68	6.21		
	SH-G_0817*	00002755		1650-1542	X						28.69	7.20		
	SH-F_0817*	6L0421		1611-1522	X						28.68	7.20		
	SH-C_0817*	3HB33 00000780	8/2/17-8/3/17	1522-1506	X						28.62	5.13		
	~~BATCH CONDITIONING~~ **		~~8/4/17~~			X								
	~~BATCH CONDITION BLANK 2~~ **		~~8/4/17~~			X								

Turn Around Time:

- Normal
- Rush! Specify: 72 H TAT FORM 1

Remarks: Subslab

SORRY!! Used SIM Canisters for Subslab sampling.

SORRY!!

** See note

** See note

Relinquished by:	Date: 8/4/17	Time: 1830	Received By: FED EX	Date: 8/4/17	Time: 1830	Level IV Data Required?	Yes / No (Circle One)	
Relinquished by:	Date:	Time:	Received by:	Date: 08/05/17	Time: 0947	Specific EDD format Required?	Yes / No (Circle One)	
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	170891		

Lab Use Only

Shipper Name: Fed Ex

Custody Seals Intact? Yes No None

Temp: NA

Sample Condition Upon Receipt: Good

Note: primary TCL VOC BTEXN, Fe

** ANALYZE THESE BATCH-CERTIFIED CANISTERS WITH ZERO AIR/N2 BLANKS ~~TO DETERMINE IF SIM~~ USING TO-15 SIM, PLEASE. THANK YOU.

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 1708091C

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep: N/A

Date Promised: 08/10/17 12:00 pm
Date Completed: 8/10/17
Date Received: 8/5/17
PO#:
Project#: 690813.01.01.01 Former Tronox-Springfield, Mo
Total $: $ 220.00
Logged By: AB

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
10A	SU-007_0817	Modified ASTM D-1946	8/3/2017	6.0 "Hg	$100.00
11A	SU-107_0817	Modified ASTM D-1946	8/3/2017	6.0 "Hg	$100.00
12A	Lab Blank	Modified ASTM D-1946	NA	NA	$0.00
13A	LCS	Modified ASTM D-1946	NA	NA	$0.00
13AA	LCSD	Modified ASTM D-1946	NA	NA	$0.00

Misc. Charges	Client Specific EDD (2) @ $5.00 each.	$10.00
	eCVP (2) @ $5.00 each.	$10.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox Facility/22104

BILL TO: Accounts Payable/Atlanta
CH2M Hill
6600 Peachtree Dunwoody Road
Building 400, Suite 600
Atlanta, GA 30328

Analysis Code: ASTM

TERMS:

Reporting Method: Modified ASTM D-1946 (Sh)-He only

Other Records

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} - [\text{Init. Pressure (“Hg)})*(14.7\text{psi}/30\text{”Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
0.0	1.34	2.02
0.2	1.35	2.03
0.4	1.36	2.05
0.5	1.36	2.05
0.6	1.37	2.06
0.8	1.38	2.08
1.0	1.39	2.09
1.2	1.40	2.10
1.4	1.40	2.12
1.5	1.41	2.13
1.6	1.42	2.13
1.8	1.42	2.15
2.0	1.44	2.16
2.2	1.45	2.18
2.4	1.46	2.20
2.5	1.46	2.20
2.6	1.47	2.21
2.8	1.48	2.23
3.0	1.49	2.24
3.2	1.50	2.26
3.4	1.51	2.28
3.5	1.52	2.29
3.6	1.52	2.30
3.8	1.53	2.31
4.0	1.55	2.33
4.2	1.56	2.35
4.4	1.57	2.37
4.5	1.58	2.38
4.6	1.58	2.39
4.8	1.60	2.40
5.0	1.61	2.42
5.2	1.62	2.44
5.4	1.63	2.46
5.5	1.64	2.47
5.6	1.65	2.48
5.8	1.66	2.50
6.0	1.68	2.52
6.2	1.69	2.55
6.4	1.70	2.57
6.5	1.71	2.58
6.6	1.72	2.59
6.8	1.73	2.61
7.0	1.75	2.64
7.2	1.76	2.66
7.4	1.78	2.68
7.5	1.79	2.69
7.6	1.79	2.70

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
7.7	1.80	2.72
7.8	1.81	2.73
8.0	1.83	2.76
8.2	1.84	2.78
8.4	1.86	2.81
8.5	1.87	2.82
8.6	1.88	2.83
8.8	1.90	2.86
9.0	1.91	2.89
9.2	1.93	2.91
9.4	1.95	2.94
9.5	1.96	2.96
9.6	1.97	2.97
9.8	1.99	3.00
10.0	2.01	3.03
10.2	2.03	3.06
10.4	2.05	3.09
10.5	2.06	3.11
10.6	2.07	3.12
10.8	2.09	3.16
11.0	2.12	3.19
11.2	2.14	3.22
11.4	2.16	3.26
11.5	2.17	3.28
11.6	2.18	3.29
11.8	2.21	3.33
12.0	2.23	3.37
12.2	2.26	3.40
12.4	2.28	3.44
12.5	2.30	3.46
12.6	2.31	3.48
12.8	2.34	3.52
13.0	2.36	3.56
13.2	2.39	3.61
13.4	2.42	3.65
13.5	2.44	3.67
13.6	2.45	3.70
13.8	2.48	3.74
14.0	2.51	3.79
14.2	2.54	3.84
14.4	2.58	3.88
14.5	2.59	3.91
14.6	2.61	3.94
14.8	2.64	3.99
15.0	2.68	4.04
15.2	2.72	4.10
15.4	2.75	4.15

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
15.5	2.77	4.18
15.6	2.79	4.21
15.8	2.83	4.27
16.0	2.87	4.33
16.2	2.91	4.39
16.4	2.96	4.46
16.5	2.98	4.49
16.6	3.00	4.52
16.8	3.05	4.59
17.0	3.09	4.66
17.2	3.14	4.74
17.4	3.19	4.81
17.5	3.22	4.85
17.6	3.24	4.89
17.8	3.30	4.97
18.0	3.35	5.05
18.2	3.41	5.14
18.4	3.47	5.22
18.5	3.50	5.27
18.6	3.53	5.32
18.8	3.59	5.41
19.0	3.65	5.51
19.2	3.72	5.61
19.4	3.79	5.72
19.5	3.83	5.77
19.6	3.87	5.83
19.8	3.94	5.94
20.0	4.02	6.06
20.2	4.10	6.18
20.4	4.19	6.31
20.5	4.23	6.38
20.6	4.28	6.45
20.8	4.37	6.59
21.0	4.47	6.73
21.2	4.57	6.89
21.4	4.67	7.05
21.5	4.73	7.13
21.6	4.79	7.22
21.8	4.90	7.39
22.0	5.03	7.58
22.4	5.29	7.98

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
22.5	5.36	8.08
22.6	5.43	8.19
22.8	5.58	8.42
23.0	5.74	8.66
23.2	5.91	8.91
23.4	6.09	9.18
23.5	6.19	9.32
23.6	6.28	9.47
23.8	6.48	9.78
24.0	6.70	10.10
24.2	6.93	10.45
24.4	7.18	10.82
24.5	7.31	11.02
24.6	7.45	11.22
24.8	7.73	11.66
25.0	8.04	12.12
25.2	8.38	12.63
25.4	8.74	13.18
25.5	8.93	13.47
25.6	9.14	13.78
25.8	9.57	14.43
26.0	10.05	15.15
26.2	10.58	15.95
26.4	11.17	16.84
26.5	11.49	17.32
26.6	11.82	17.83
26.8	12.56	18.94
27.0	13.40	20.20
27.2	14.36	21.65
27.4	15.46	23.31
27.5	16.08	24.24
27.6	16.75	25.26
27.8	18.27	27.55
28.0	20.10	30.31
28.2	22.34	33.67
28.4	25.13	37.88
28.5	26.80	40.41
28.6	28.72	43.29
28.8	33.50	50.51
29.0	40.20	60.61

Compound Listing

Modified ASTM D-1946 (Sh)-He only

CAS Number	Compound	Detection Limit %	Type
7440-59-7	Helium	0.050	

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 05/24/17
Workorder #: [redacted]	Form FL 27	Revision #14	Revision Date: 05/24/17	Page 1 of 2

S 1	S 2	S 3	S 4	D	Section 1 – Spec Out	Initials/Instrument/Date	S1: [redacted]	S2:	S3:	S4:
✓				[redacted]	Project Requirements (PR), Project Requirements Table (PRT), Daily QC and ICAL met Criteria					
✓				[redacted]	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder					
✓				[redacted]	Manual Integrations included and approved					
✓				✓	Chain of Custody verified for special comments (add comments below)					
✓				[redacted]	Non-standard Target analytes verified (MDL, LOD, RL control limits, etc.)					

Profile, analytes, reporting, special notes and unusual circumstances:

A 1	A 2	A 3	A 4	D	Section 2 – Sample Analysis	Initials/Date	A1: [redacted]	A2:	A3:	A4:
✓				✓	ID/Dun Recovery, Dilution Factors, Used Volumes, Logs of instruments, Initial/Final Pressures, Canister Id verified and dilution ranges are met per SOP (ex. Over-ranged/reanalyzed)					
✓				✓	a) Tester Sig ID verified against SOP. b) Tester Sig ID confirmed with loading sequence/log(s) of instrument					
✓				✓	Manual integrations/Sig or Can Dilution Form/Re-analysis/Re-extraction Forms/Bag Can Transfer Forms present (circle all that apply)					
✓				[redacted]	12/24 hr clock time & Hold Time met for all samples					
✓				✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) Reinjection been checked for trends					
✓				✓	All runs have been evaluated for potential carry-over (TICs/non-Target/over-ranges compounds) etc.)					

Analytical and special notes:

D 1	D 2	D 3	D 4	T	1 T	Section 3 – Target Data Reduction	Technical Review Needed? Circle one: Yes/No		T:	
						Initials/Instrument/ Date	D1: [redacted]	D2:	D3:	D4:
✓				[redacted]		CAS # (if applicable)				
✓				[redacted]		Spectra verified, documentation of spectral defense included (if applicable)				
✓				[redacted]		TICs reasonable reference spectra/ TICs between sample types are consistent (if applicable)				
✓						Lab Narrative is correct				
✓				[redacted]		TPH/RPHDC calculations complete and included in folder				

Special notes:

A 1	1 T	Section 4- Atlas Data Entry	Lumen verified and included in folder:	Circle one: Yes/No
		Initials/Date: [redacted]	2nd tier: (needed only for DOD or per client request)	
✓		Sample Discrepancy Report (SDR) complete and approved (if applicable)		
✓		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final invoice is correct/ Final PDF report, EDD and EDR reviewed and correct		

Special Notes:

Note (1) Please check all the applicable boxes. Indicate "NA" for any statement that doesn't apply.
Note (2) 2nd Tier Report Reviewer and Invoice Up Reviewer must be separate individuals for DoD & Client specific Projects.

Eurofins Air Toxics, Inc. Reissued	Data Review Checklist			Release Date: 09/26/17
	Form FL-27	Revision #14	Revision Date: 03/24/17	Page 2 of 2

Workorder # :	Reason for Reissue:

W	T	ST	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review of affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, 3 hardcopies, etc)
				Corrective Action issued - if
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	Tech Review (Initials/Date)	"3rd Tier Review" * 3rd Tier Report Review is for Non-A Client Specific projects only (Initials/Date)	QA Review (Initials/Date)

Workorder # :	Reason for Reissue:

W	T	ST	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review of affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, 3 hardcopies, etc)
				Corrective Action issued - if
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	Tech Review (Initials/Date)	"3rd Tier Review" * 3rd Tier Report Review is for Non-A Client Specific projects only (Initials/Date)	QA Review (Initials/Date)

Note (1) Please check all the appropriate boxes. Indicate "Not" for any statement that doesn't apply
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for Non-A & Client Specific Projects

Not Applicable

Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified TO-15 SIM

INVENTORY SHEET

Work Order #: 1708092

	Page Nos. From	To
1. Work Order Cover Page & Laboratory Narrative	1	5
a. Lumen Validation Report	--	--
2. Sample Results and Raw Data (Organized by Sample)	6	122
a. ATL Sample Results Form		
b. Target Compound Raw Data		
-Internal Standard Area and Retention Time Summary		
-Surrogate Recovery Summary (If Applicable)		
-Chromatogram(s) and Ion Profiles (If Applicable)		
3. QC Results and Raw Data		
a. Method Blank (Results+ Raw Data)	123	148
b. Surrogate Recover Summary Form (If Applicable)	149	149
c. Internal Standard Summary Form (If Applicable)	150	152
d. Duplicate Results Summary Sheet	153	155
e. Matrix Spike/Matrix Spike Duplicate (Results + Raw Data	--	--
f. Initial Calibration Data (Summary Sheet + Raw Data)	156	337
g. MDL Study (If Applicable)	338	353
h. Continuing Calibration Verification Data (Summary Sheet	354	379
i. Second Source LCS(Summary + Raw Data)	380	437
i. Extraction Logs	--	--
k. Instrument Run Logs/Software Verification	438	441
l. GC/MS Tune (Results + Raw Data)	442	462
4. Shipping/Receiving Documents		
a. Login Receipt Summary Sheet	463	464
b. Chain-of-Custody Records	465	466
c. Sample Log-In Sheet	467	468
d. Misc Shipping/Receiving Records (list of individual records)		
Sample Receipt Discrepancy Report	469	471
5. Other Records (describe or list)		
a. Manual Spectral Defense	--	--
b. Manual Integrations	472	474
c. Manual Calculations	--	--
d. Canister Dilution Factors	475	476
e. Laboratory Corrective Action Request	--	--
f. CAS Number Reference	477	477
g. Variance Table	--	--
h. Canister Certification	478	485
i. Data Review Check Sheet	486	487

Comments:

Completed by:

Amanda Whittaker	Amanda Whittaker / Document Control	8/11/17
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1708092

Work Order Summary

CLIENT:	Mr. Mark Stinnett CH2M Hill 3011 SW Williston Road Gainesville, FL 32608	**BILL TO:**	Accounts Payable/Atlanta CH2M Hill 6600 Peachtree Dunwoody Road Building 400, Suite 600 Atlanta, GA 30328
PHONE:	352-335-7991	**P.O. #**	Springfield, MO
FAX:	352-3352959	**PROJECT #**	690813.01.01.01 Former Tronox-Springfield, Mo
DATE RECEIVED:	08/05/2017	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	08/10/2017		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IAU-012_0817	Modified TO-15 SIM	10.8 "Hg	4.9 psi
02A	CS-140_0817	Modified TO-15 SIM	6.5 "Hg	4.9 psi
03A	CS-040_0817	Modified TO-15 SIM	8.0 "Hg	4.9 psi
04A	IA-040_0817	Modified TO-15 SIM	7.8 "Hg	5 psi
05A	OA-040_0817	Modified TO-15 SIM	7.8 "Hg	5.1 psi
06A	OA-012_0817	Modified TO-15 SIM	9.4 "Hg	4.9 psi
07A	IAD-012_0817	Modified TO-15 SIM	4.9 "Hg	5 psi
08A	IAD-112_0817	Modified TO-15 SIM	8.6 "Hg	5 psi
09A	BATCH TO SIM BLANK 1	Modified TO-15 SIM	29.8 "Hg	5.1 psi
10A	BATCH TO SIM BLANK 2	Modified TO-15 SIM	29.8 "Hg	5 psi
11A	Lab Blank	Modified TO-15 SIM	NA	NA
11B	Lab Blank	Modified TO-15 SIM	NA	NA
11C	Lab Blank	Modified TO-15 SIM	NA	NA
12A	CCV	Modified TO-15 SIM	NA	NA
12B	CCV	Modified TO-15 SIM	NA	NA
12C	CCV	Modified TO-15 SIM	NA	NA
13A	LCS	Modified TO-15 SIM	NA	NA
13AA	LCSD	Modified TO-15 SIM	NA	NA
13B	LCS	Modified TO-15 SIM	NA	NA
13BB	LCSD	Modified TO-15 SIM	NA	NA
13C	LCS	Modified TO-15 SIM	NA	NA
13CC	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 08/10/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 SIM
CH2M Hill
Workorder# 1708092

Eight 6 Liter Summa Canister (SIM Certified) and two 6 Liter Summa Canister samples were received on August 05, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) information for sample OA-012_0817 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All the canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Total Xylenes concentration is calculated by summing the individual concentrations of m,p-Xylene and O-Xylene.

A Method Detection Limit (MDL) and Limit of Detection (LOD) study is not maintained for Total Xylenes.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
IAU-012 0817	1708092-01A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
CS-140 0817	1708092-02A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
CS-040 0817	1708092-03A	8/ 3/2017	8/ 5/2017	NA	4	8/ 7/2017	NA	Good
IA-040 0817	1708092-04A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
OA-040 0817	1708092-05A	8/ 3/2017	8/ 5/2017	NA	6	8/ 9/2017	NA	Good
OA-012 0817	1708092-06A	8/ 3/2017	8/ 5/2017	NA	6	8/ 9/2017	NA	Good
IAD-012 0817	1708092-07A	8/ 3/2017	8/ 5/2017	NA	5	8/ 8/2017	NA	Good
IAD-112 0817	1708092-08A	8/ 3/2017	8/ 5/2017	NA	6	8/ 9/2017	NA	Good
BATCH TO SIM BLANK 1	1708092-09A	8/ 3/2017	8/ 5/2017	NA	6	8/ 9/2017	NA	Good
BATCH TO SIM BLANK 2	1708092-10A	8/ 3/2017	8/ 5/2017	NA	6	8/ 9/2017	NA	Good
Lab Blank	1708092-11A	NA	NA	NA	NA	8/ 7/2017	NA	Good
Lab Blank	1708092-11B	NA	NA	NA	NA	8/ 8/2017	NA	Good
Lab Blank	1708092-11C	NA	NA	NA	NA	8/ 9/2017	NA	Good
CCV	1708092-12A	NA	NA	NA	NA	8/ 7/2017	NA	Good
CCV	1708092-12B	NA	NA	NA	NA	8/ 8/2017	NA	Good
CCV	1708092-12C	NA	NA	NA	NA	8/ 9/2017	NA	Good
LCS	1708092-13A	NA	NA	NA	NA	8/ 7/2017	NA	Good
LCSD	1708092-13AA	NA	NA	NA	NA	8/ 7/2017	NA	Good
LCS	1708092-13B	NA	NA	NA	NA	8/ 8/2017	NA	Good
LCSD	1708092-13BB	NA	NA	NA	NA	8/ 8/2017	NA	Good
LCS	1708092-13C	NA	NA	NA	NA	8/ 9/2017	NA	Good
LCSD	1708092-13CC	NA	NA	NA	NA	8/ 9/2017	NA	Good

Sample Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAU-012_0817		
Lab ID:	1708092-01A	**Date/Time Analyzed:**	8/8/17 03:11 PM
Date/Time Collected:	8/3/17 05:50 PM	**Dilution Factor:**	2.08
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20080810sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.011	0.033	0.33	2.0
Ethyl Benzene	100-41-4	0.013	0.045	0.18	3.3
m,p-Xylene	108-38-3	0.015	0.045	0.36	12
Naphthalene	91-20-3	0.045	0.087	0.54	1.4
o-Xylene	95-47-6	0.014	0.045	0.18	4.4
Toluene	108-88-3	0.0048	0.039	0.16	20
Total Xylenes	9999-9999-015	NA	D	0.54	17

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	97

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080810sim.d
Lab Smp Id: 1708092-01A
Inj Date : 08-AUG-2017 15:11
Operator : ef Inst ID: msd20.i
Smp Info : 250mL# 5584
Misc Info : 10.8"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 2.08000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS			
				ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 13 Bromochloromethane					CAS #: 74-97-5		
17.337	17.340 (1.000)	130	66132	5.00000		80.00- 120.00	100.00
17.337	17.340 (1.000)	128	51205			48.37- 108.37	77.43
17.337	17.340 (1.000)	49	60082			82.84- 142.84	90.85
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.882	18.880 (1.000)	114	295529	5.00000		80.00- 120.00	100.00
18.882	18.880 (1.000)	88	37905			0.00- 44.04	12.83
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.358	24.356 (1.000)	117	240862	5.00000		80.00- 120.00	100.00
24.358	24.356 (1.000)	82	106360			17.63- 77.63	44.16
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.274	18.265 (1.054)	65	81206	4.38814	4.388	80.00- 120.00	100.00
18.274	18.265 (1.054)	67	42258			26.67- 86.67	52.04
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.700	21.698 (1.149)	98	253458	4.86991	4.870	80.00- 120.00	100.00
21.684	21.683 (1.148)	70	24393			0.00- 40.38	9.62

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)								
21.700	21.698	(1.149)	100	160587			33.71- 93.71	63.36
$ 33 4-Bromofluorobenzene							CAS #: 460-00-4	
25.963	25.961	(1.066)	174	172747	5.28938	5.289	80.00- 120.00	100.00
25.963	25.961	(1.066)	95	147253			57.01- 117.01	85.24
25.963	25.980	(1.066)	176	170108			68.59- 128.59	98.47
17 Benzene							CAS #: 71-43-2	
18.250	18.244	(0.966)	78	21211	0.30105	0.6262	80.00- 120.00	100.00
18.250	18.244	(0.966)	77	5243			0.00- 53.56	24.72
23 Toluene							CAS #: 108-88-3	
21.856	21.854	(1.157)	91	195809	2.49058	5.180	80.00- 120.00	100.00
21.856	21.854	(1.157)	92	111032			27.62- 87.62	56.70
30 Ethyl Benzene							CAS #: 100-41-4	
24.481	24.480	(1.005)	106	10886	0.37035	0.7703	80.00- 120.00	100.00
24.481	24.480	(1.005)	91	34645			281.86- 341.86	318.25
31 m,p-Xylene							CAS #: 108-38-3	
24.646	24.665	(1.012)	106	44795	1.35902	2.827	80.00- 120.00	100.00
24.646	24.645	(1.012)	91	85427			165.84- 225.84	190.71
32 o-Xylene							CAS #: 95-47-6	
25.244	25.243	(1.036)	106	14884	0.48755	1.014	80.00- 120.00	100.00
25.224	25.222	(1.036)	91	30976			174.02- 234.02	208.12
38 Naphthalene							CAS #: 91-20-3	
30.471	30.469	(1.251)	128	3195	0.12658	0.2633	80.00- 120.00	100.00
30.471	30.469	(1.251)	127	572			0.00- 43.90	17.90
M 39 Total Xylene				59679	1.84657	3.841	CAS #: 1330-20-7	

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080810sim.d
Lab Smp Id: 1708092-01A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10.8"Hg -> 4.9psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	66132	-32.40
20 1,4-Difluorobenze	453999	272399	635599	295529	-34.91
28 Chlorobenzene-d5	343223	205934	480512	240862	-29.82

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	-0.01
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.01
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-01A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10.8"Hg -> 4.9psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.388	87.76	70-130
$ 22 Toluene-d8	5.000	4.870	97.40	70-130
$ 33 4-Bromofluorobenze	5.000	5.289	105.79	70-130

Data File: /chem/msd20.i/08aug17.b/20080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

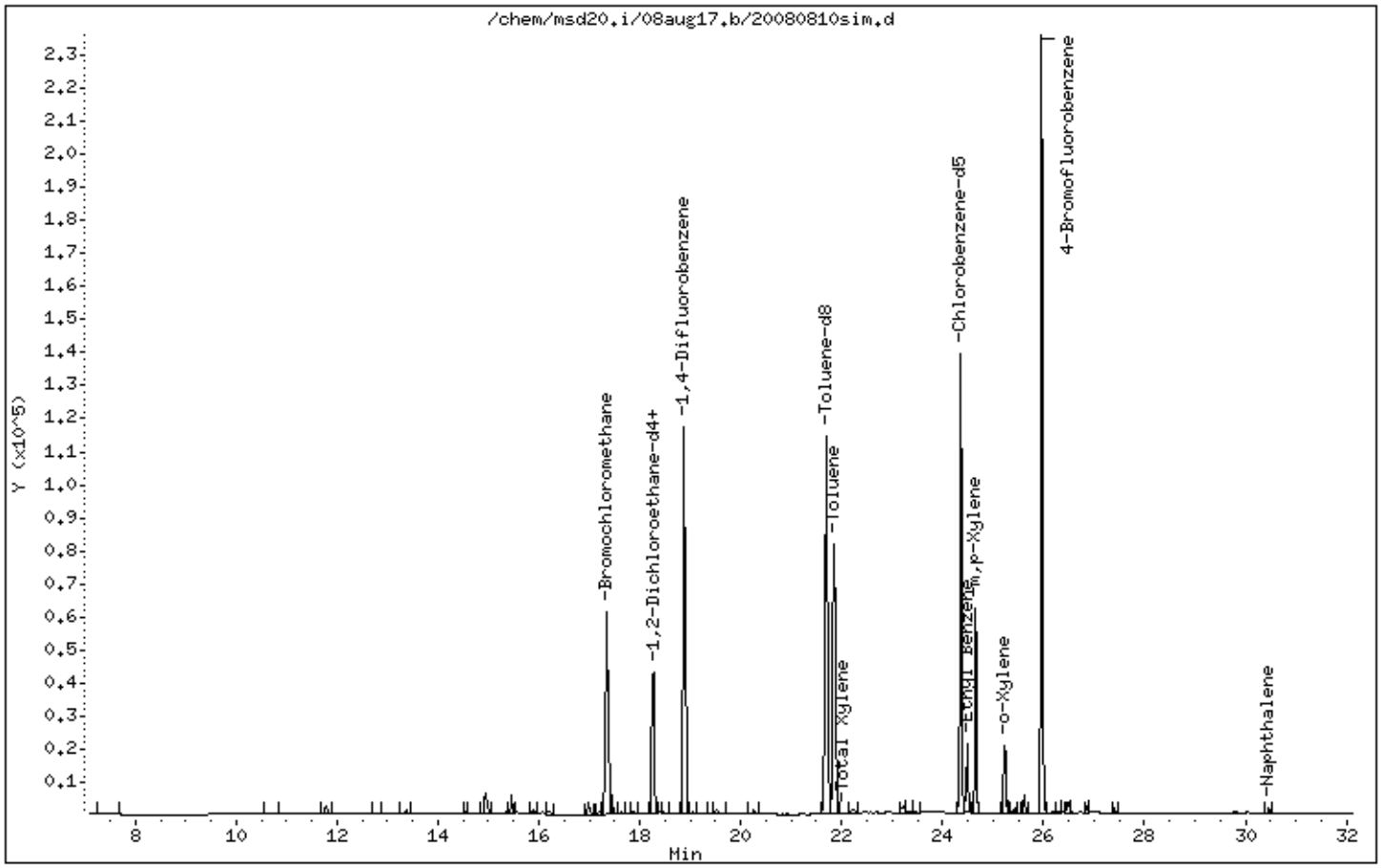
Instrument: msd20.i

Sample Info: 250mL# 5584

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/08aug17.b/20080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 5584

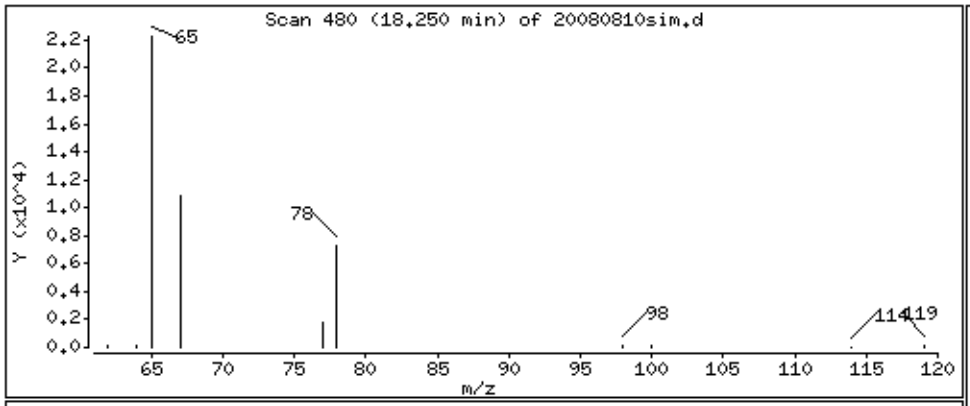
Operator: ef

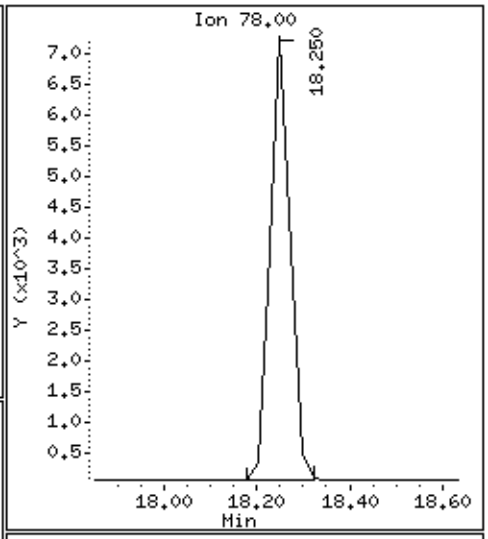
Column phase: RTX-624

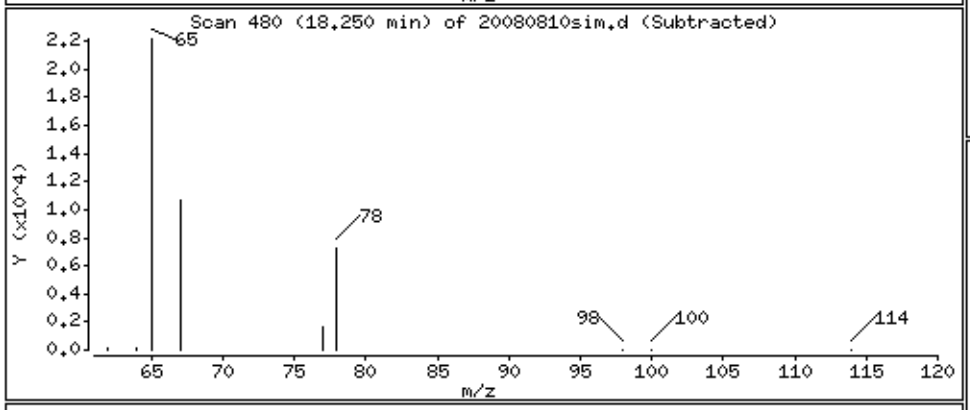
Column diameter: 0.32

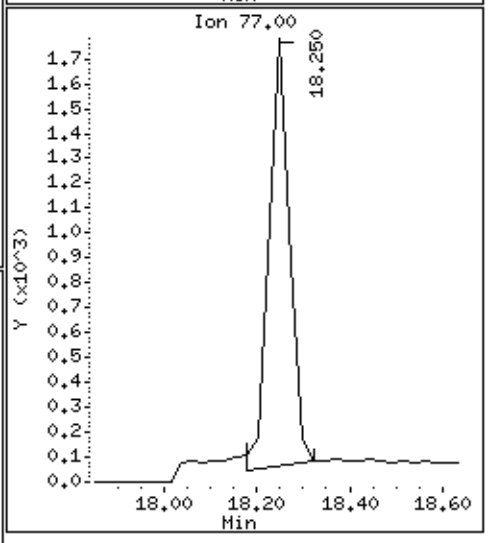
17 Benzene

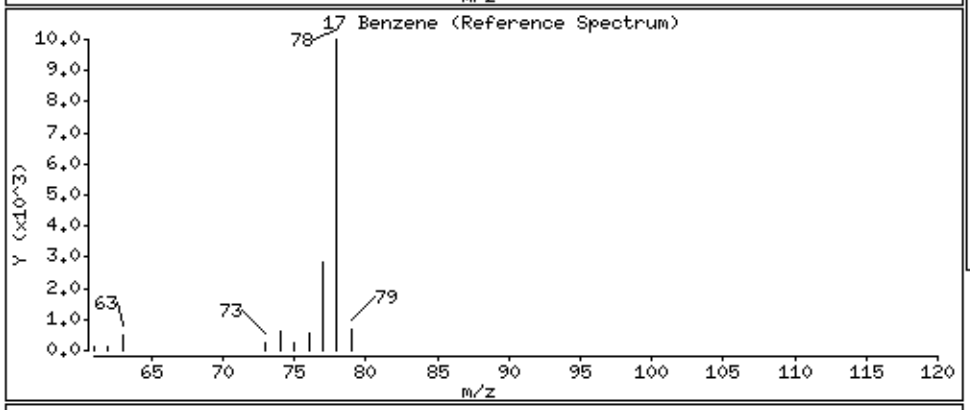
Concentration: 0.6262 PPBV

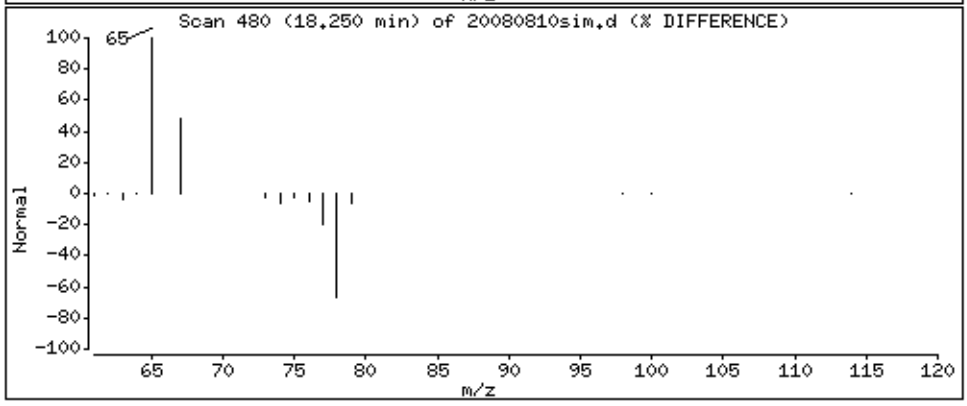












Data File: /chem/msd20.i/08aug17.b/20080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 5584

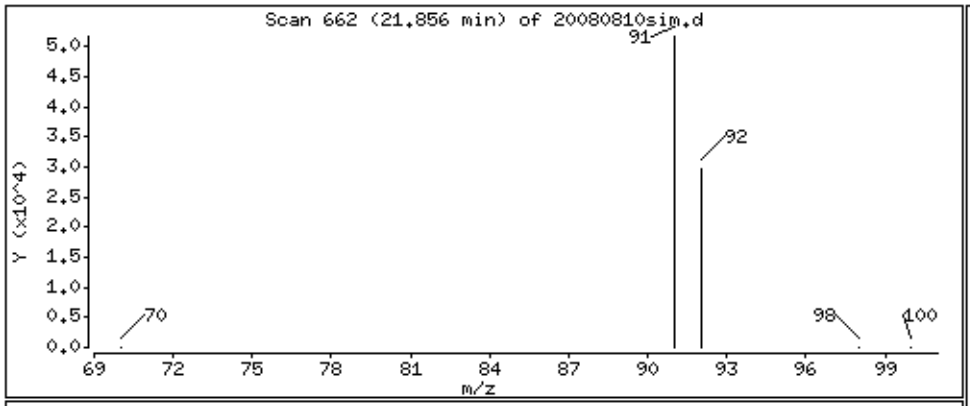
Operator: ef

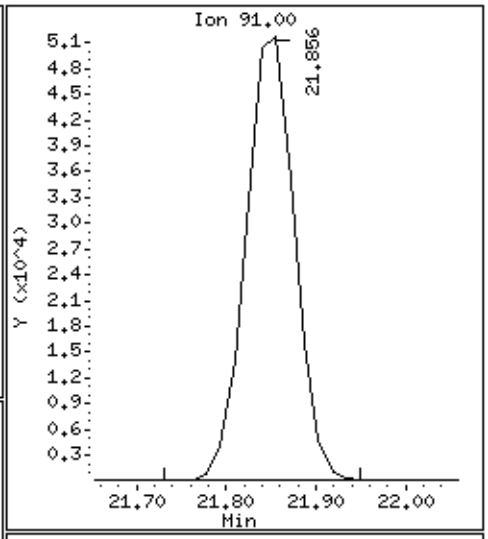
Column phase: RTX-624

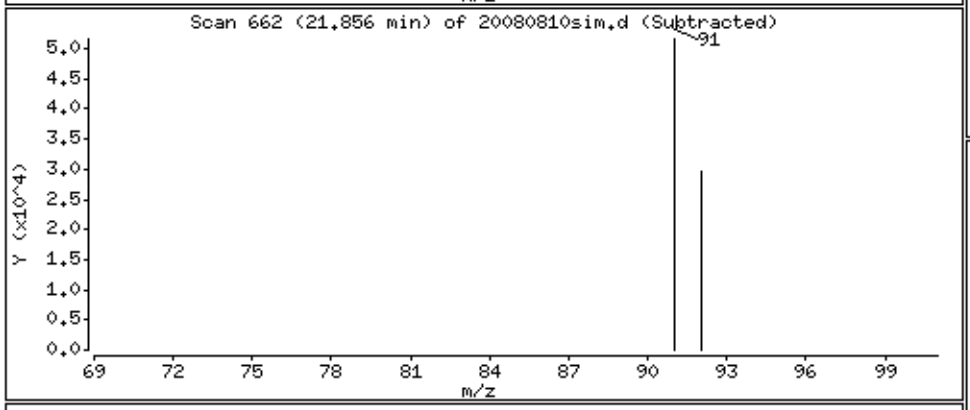
Column diameter: 0.32

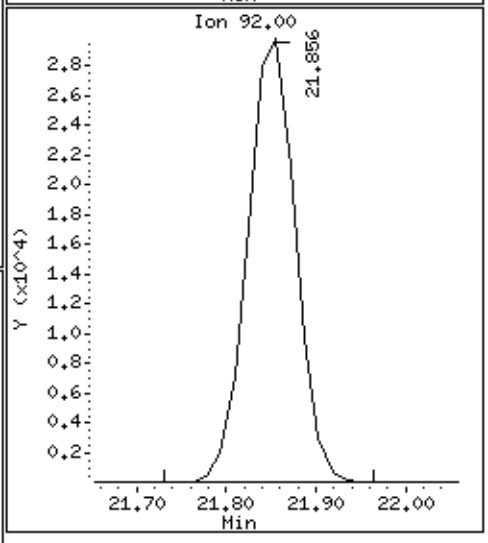
23 Toluene

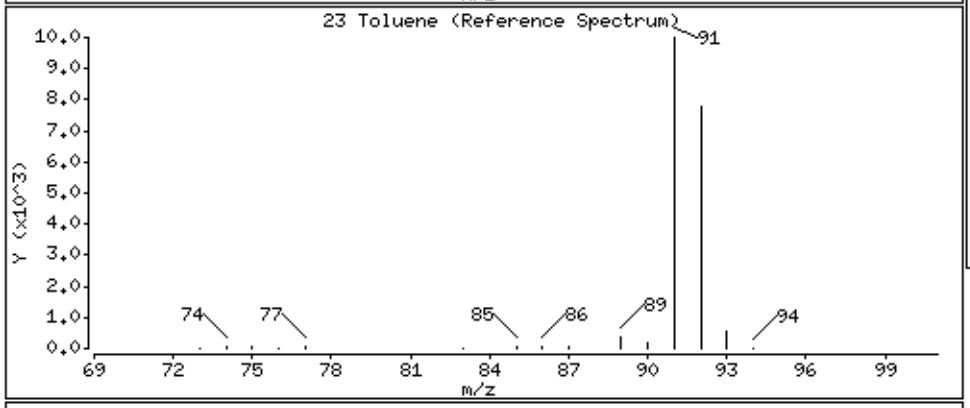
Concentration: 5.180 PPBV

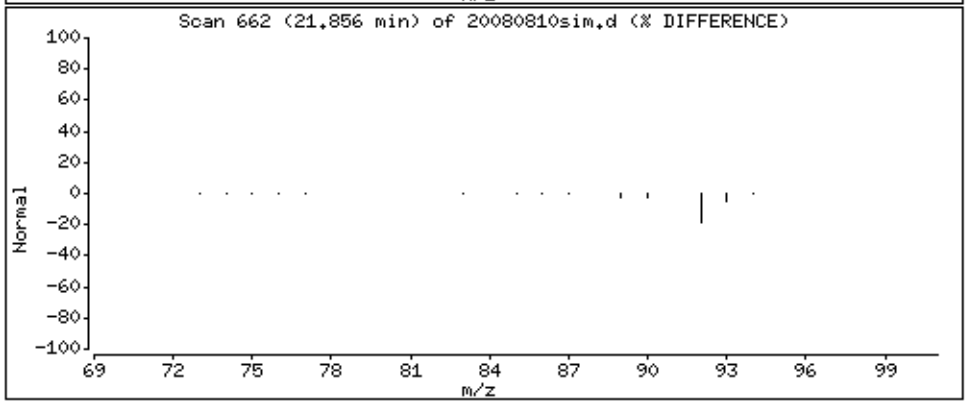












Data File: /chem/msd20.i/08aug17.b/20080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 5584

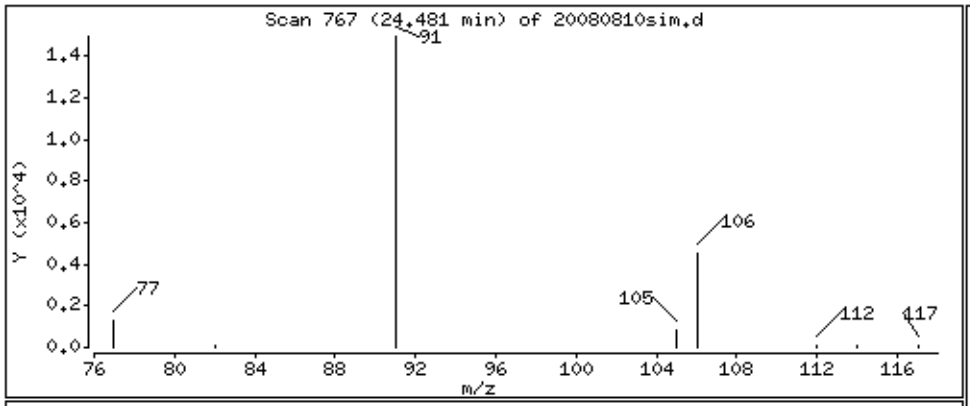
Operator: ef

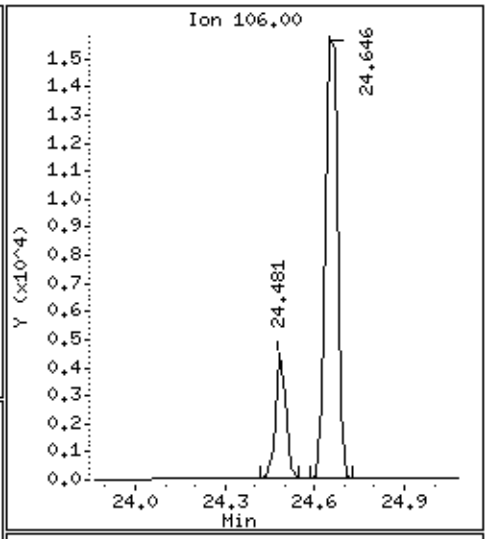
Column phase: RTX-624

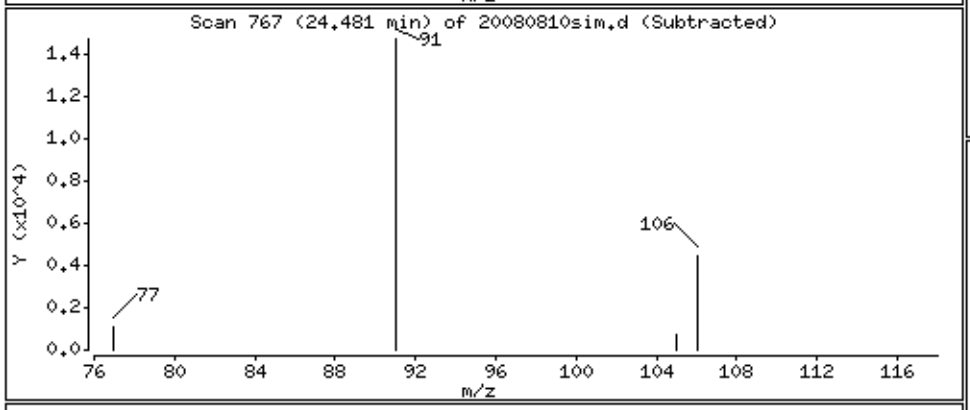
Column diameter: 0.32

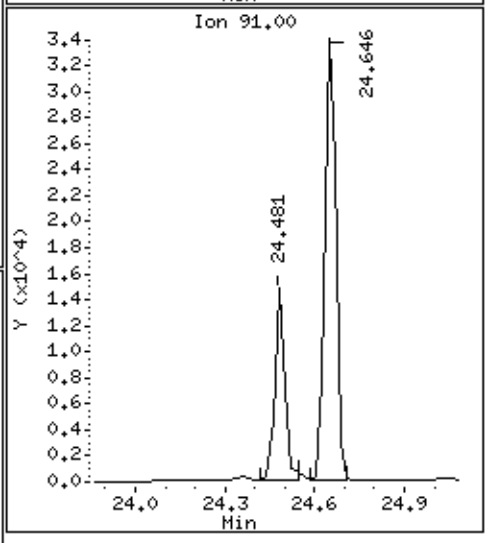
30 Ethyl Benzene

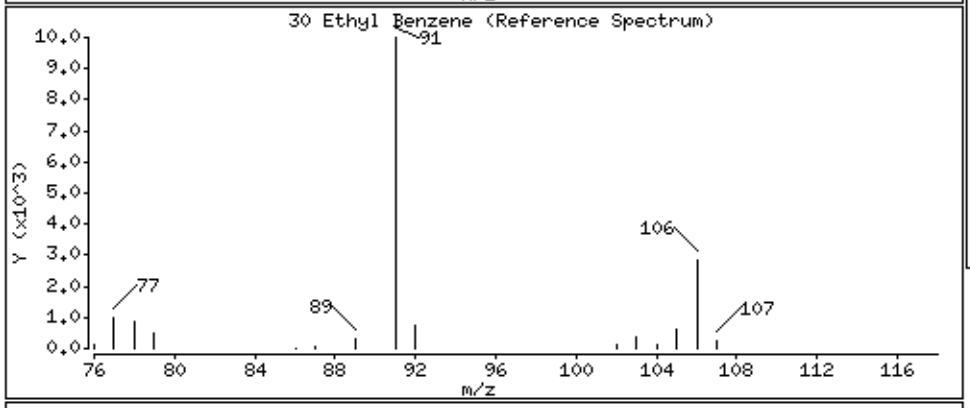
Concentration: 0.7703 PPBV

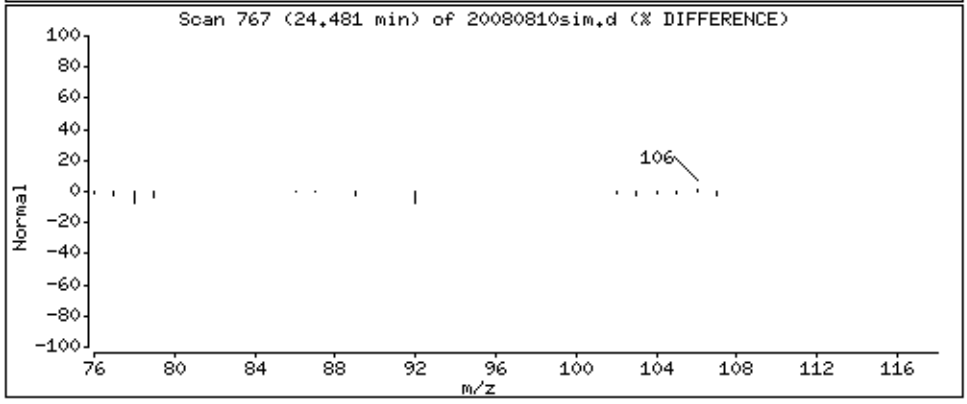












Data File: /chem/msd20.i/08aug17.b/20080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 5584

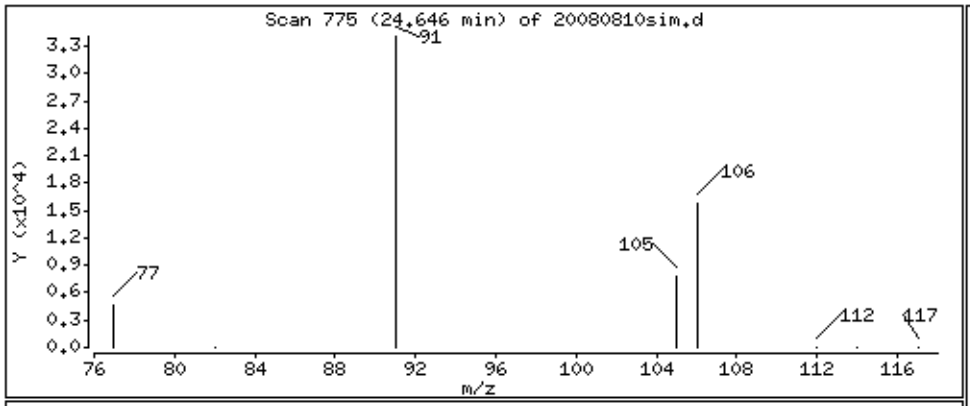
Operator: ef

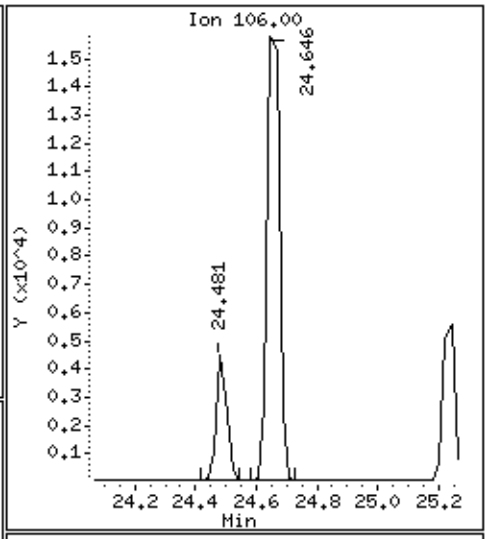
Column phase: RTX-624

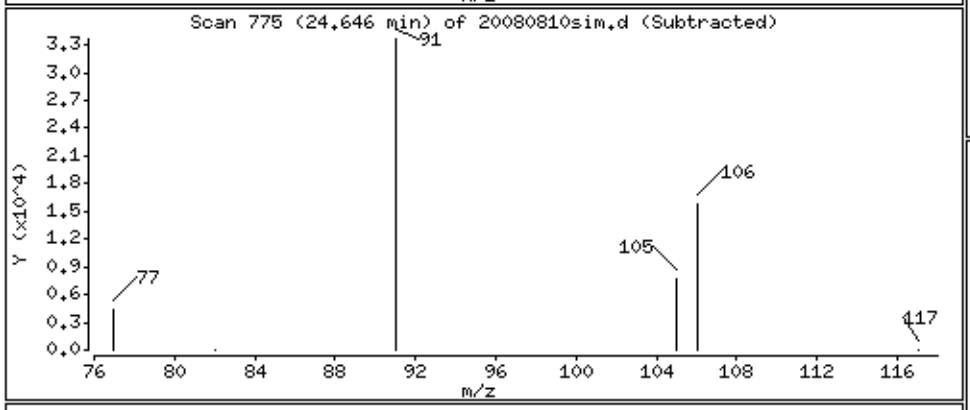
Column diameter: 0.32

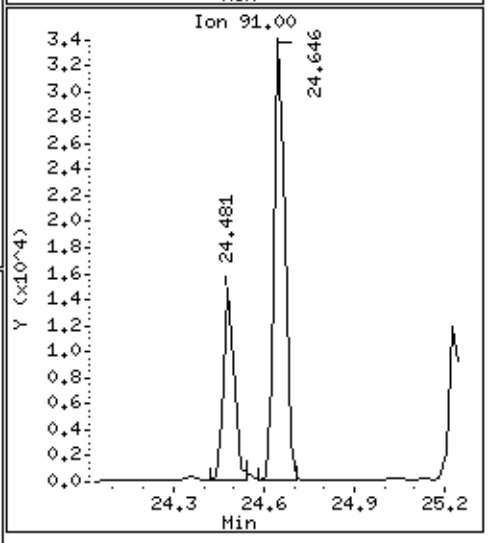
31 m,p-Xylene

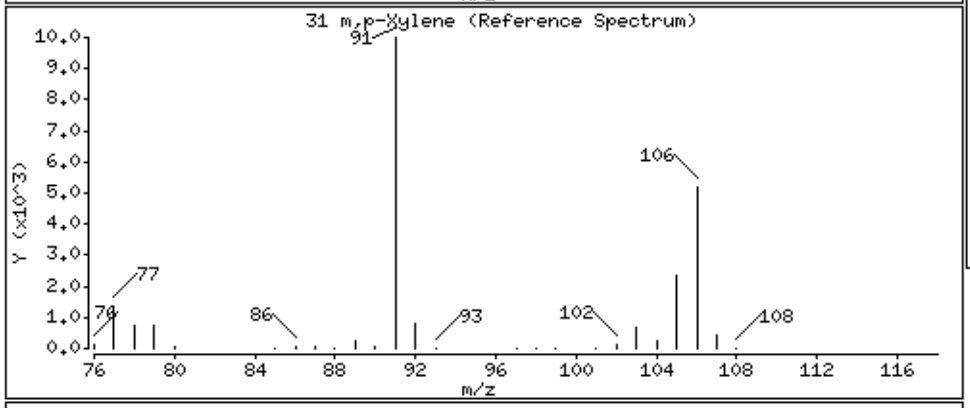
Concentration: 2.827 PPBV

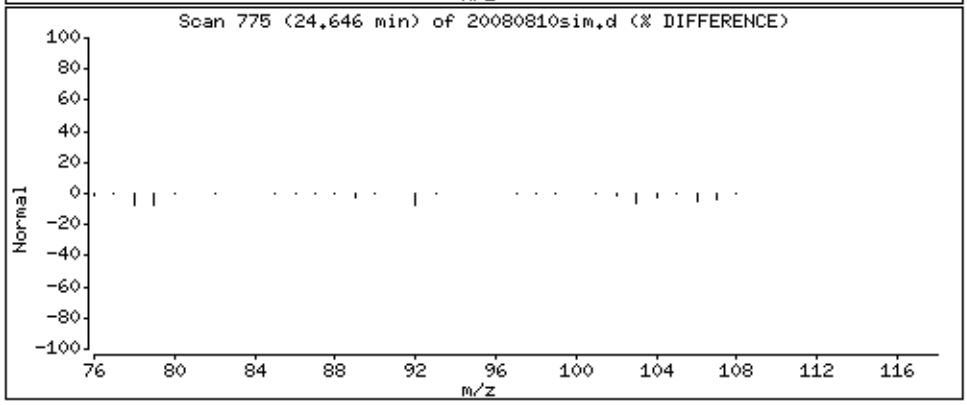












Data File: /chem/msd20.i/08aug17.b/20080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 5584

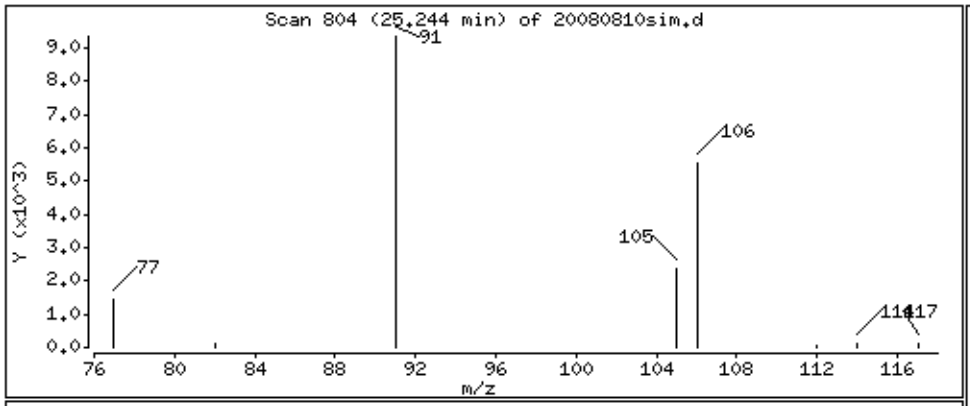
Operator: ef

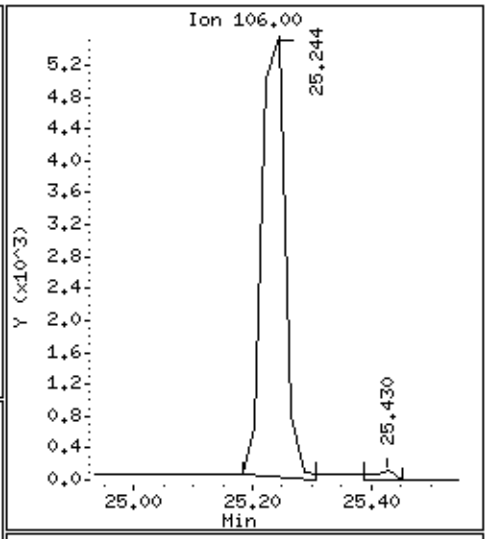
Column phase: RTX-624

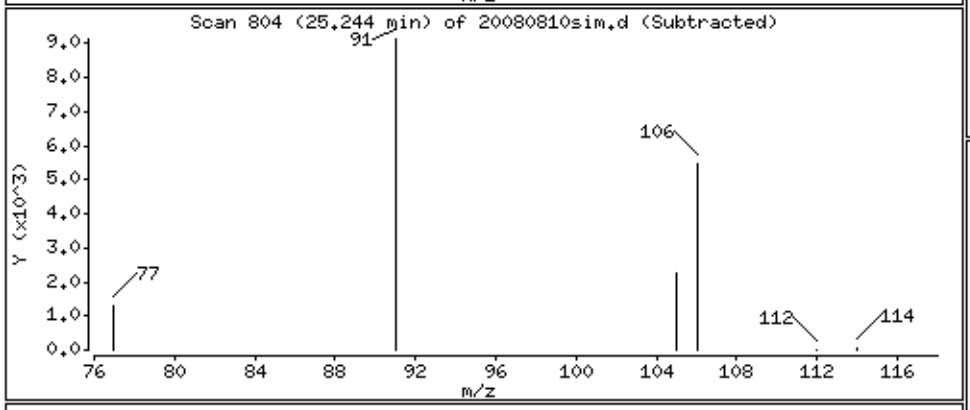
Column diameter: 0.32

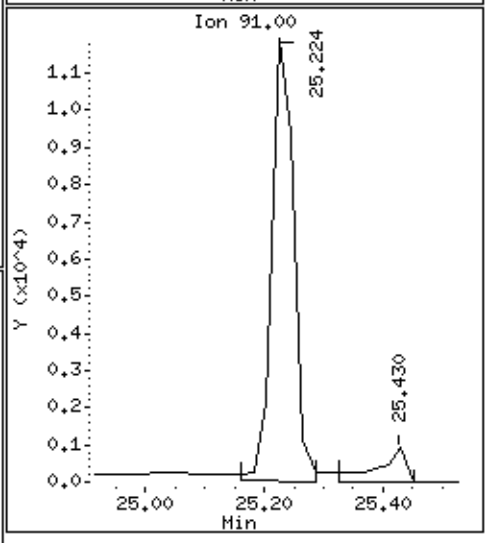
32 o-Xylene

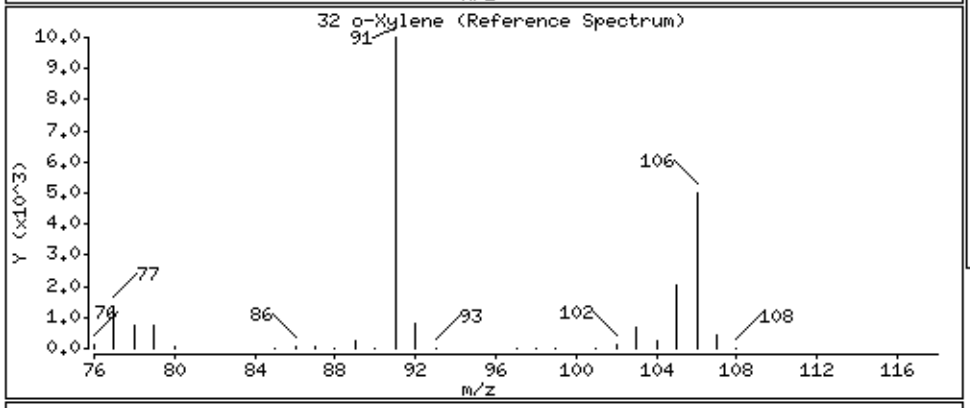
Concentration: 1.014 PPBV

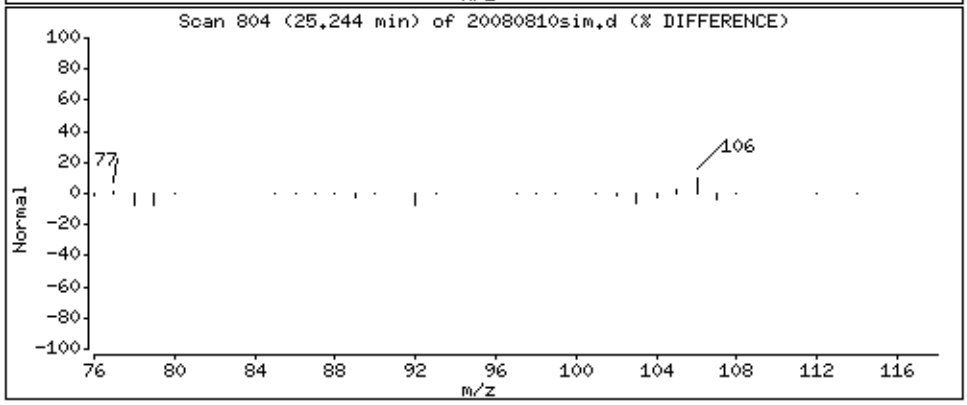












Data File: /chem/msd20.i/08aug17.b/20080810sim.d

Date : 08-AUG-2017 15:11

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 5584

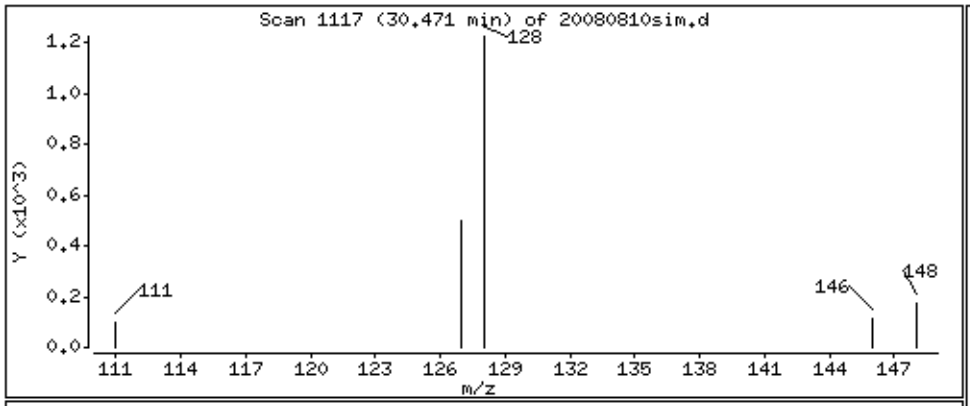
Operator: ef

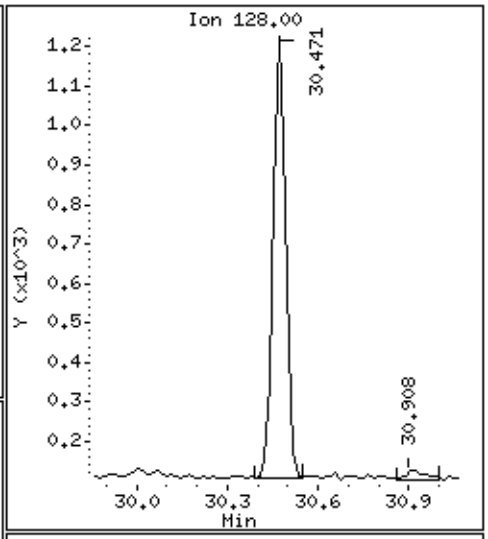
Column phase: RTX-624

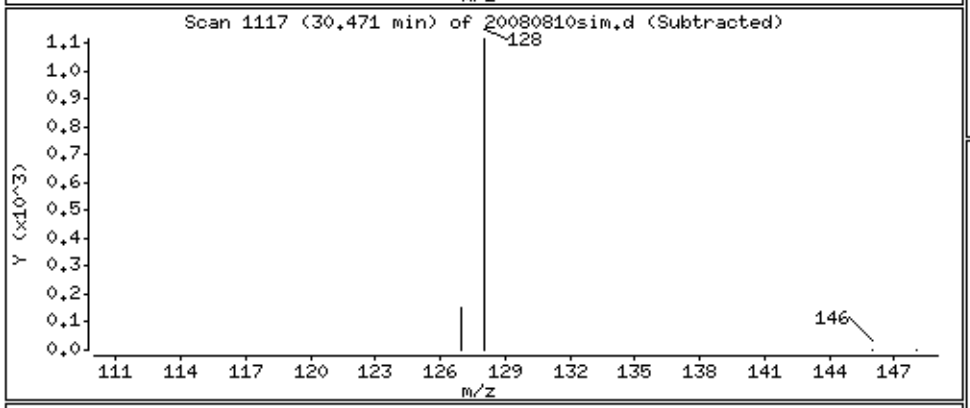
Column diameter: 0.32

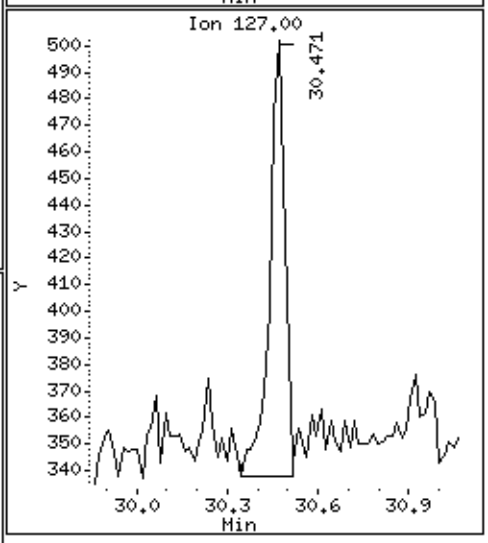
38 Naphthalene

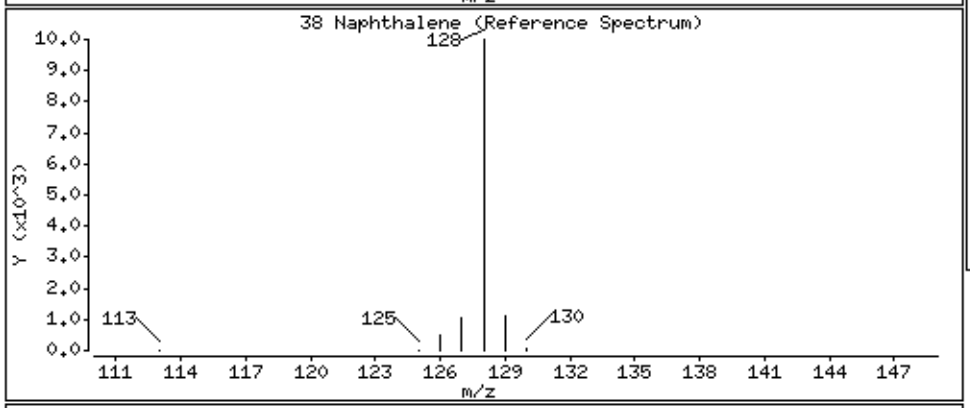
Concentration: 0.2633 PPBV

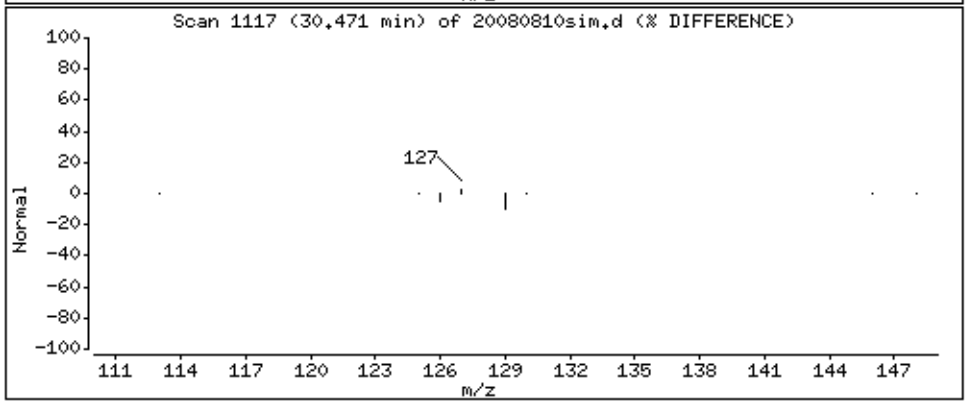












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	CS-140_0817		
Lab ID:	1708092-02A	**Date/Time Analyzed:**	8/8/17 04:04 PM
Date/Time Collected:	8/3/17 05:19 PM	**Dilution Factor:**	1.70
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20080811sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0093	0.027	0.27	0.31
Ethyl Benzene	100-41-4	0.010	0.037	0.15	0.054 J
m,p-Xylene	108-38-3	0.012	0.037	0.30	0.19 J
Naphthalene	91-20-3	0.036	0.071	0.44	0.13 J
o-Xylene	95-47-6	0.012	0.037	0.15	0.090 J
Toluene	108-88-3	0.0040	0.032	0.13	0.63
Total Xylenes	9999-9999-015	NA	D	0.44	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	110
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080811sim.d
Lab Smp Id: 1708092-02A
Inj Date : 08-AUG-2017 16:04
Operator : ef Inst ID: msd20.i
Smp Info : 250mL# O0967
Misc Info : 6.5"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 1.70000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS			
				ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 13 Bromochloromethane						CAS #: 74-97-5	
17.337	17.340 (1.000)	130	63744	5.00000		80.00- 120.00	100.00
17.337	17.340 (1.000)	128	49427			48.37- 108.37	77.54
17.337	17.340 (1.000)	49	53871			82.84- 142.84	84.51
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
18.882	18.880 (1.000)	114	304313	5.00000		80.00- 120.00	100.00
18.882	18.880 (1.000)	88	39414			0.00- 44.04	12.95
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
24.357	24.356 (1.000)	117	249604	5.00000		80.00- 120.00	100.00
24.357	24.356 (1.000)	82	109719			17.63- 77.63	43.96
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
18.273	18.265 (1.054)	65	81613	4.57534	4.575	80.00- 120.00	100.00
18.273	18.265 (1.054)	67	42556			26.67- 86.67	52.14
$ 22 Toluene-d8						CAS #: 2037-26-5	
21.700	21.698 (1.149)	98	262411	4.89640	4.896	80.00- 120.00	100.00
21.684	21.683 (1.148)	70	25335			0.00- 40.38	9.65

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)								
21.700	21.698	(1.149)	100	166206			33.71- 93.71	63.34
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.963	25.961	(1.066)	174	185645	5.48522	5.485	80.00- 120.00	100.00
25.963	25.961	(1.066)	95	145048			57.01- 117.01	78.13
25.963	25.980	(1.066)	176	182590			68.59- 128.59	98.35
17 Benzene						CAS #: 71-43-2		
18.250	18.244	(0.966)	78	4140	0.05706	0.09701	80.00- 120.00	100.00
18.250	18.244	(0.966)	77	1201			0.00- 53.56	29.01
23 Toluene						CAS #: 108-88-3		
21.856	21.854	(1.157)	91	8020	0.09907	0.1684	80.00- 120.00	100.00
21.856	21.854	(1.157)	92	4562			27.62- 87.62	56.88
30 Ethyl Benzene						CAS #: 100-41-4		
24.481	24.480	(1.005)	106	222	0.00729	0.01239	80.00- 120.00	100.00(a)
24.481	24.480	(1.005)	91	618			281.86- 341.86	278.38
31 m,p-Xylene						CAS #: 108-38-3		
24.646	24.665	(1.012)	106	896	0.02623	0.04459	80.00- 120.00	100.00(a)
24.646	24.645	(1.012)	91	1713			165.84- 225.84	191.18
32 o-Xylene						CAS #: 95-47-6		
25.244	25.243	(1.036)	106	384	0.01214	0.02063	80.00- 120.00	100.00(aM)
25.224	25.222	(1.036)	91	775			174.02- 234.02	201.82
38 Naphthalene						CAS #: 91-20-3		
30.471	30.469	(1.251)	128	385	0.01472	0.02502	80.00- 120.00	100.00(a)
30.471	30.469	(1.251)	127	149			0.00- 43.90	38.70
M 39 Total Xylene						CAS #: 1330-20-7		
				1280	0.03837	0.06523		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080811sim.d
Lab Smp Id: 1708092-02A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 6.5"Hg -> 4.9psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	63744	-34.85
20 1,4-Difluorobenze	453999	272399	635599	304313	-32.97
28 Chlorobenzene-d5	343223	205934	480512	249604	-27.28

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	-0.01
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.01
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-02A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 6.5"Hg -> 4.9psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.575	91.51	70-130
$ 22 Toluene-d8	5.000	4.896	97.93	70-130
$ 33 4-Bromofluorobenze	5.000	5.485	109.70	70-130

Data File: /chem/msd20.i/08aug17.b/20080811sim.d

Date : 08-AUG-2017 16:04

Client ID:

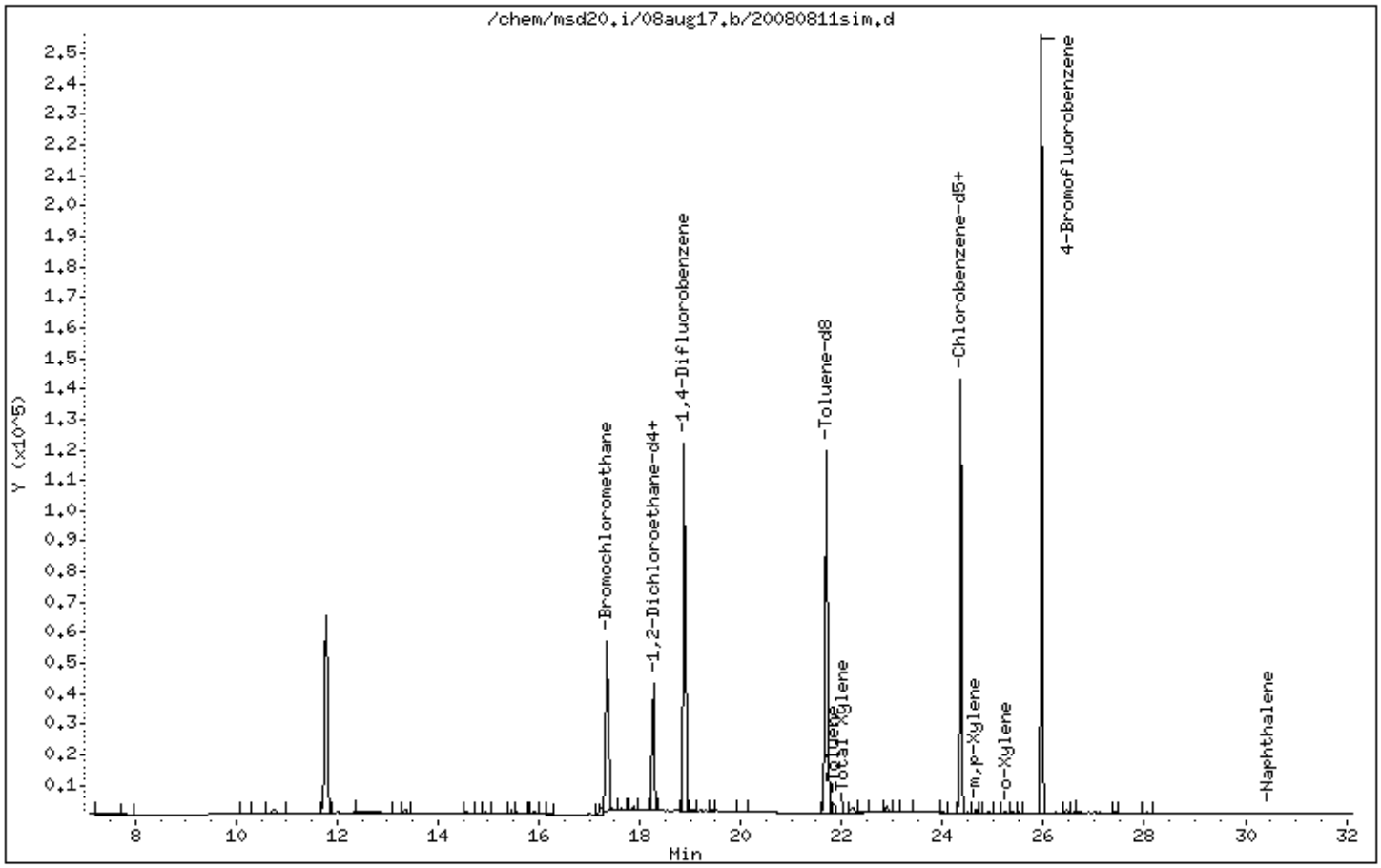
Instrument: msd20.i

Sample Info: 250mL# 00967

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/08aug17.b/20080811sim.d

Date : 08-AUG-2017 16:04

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 00967

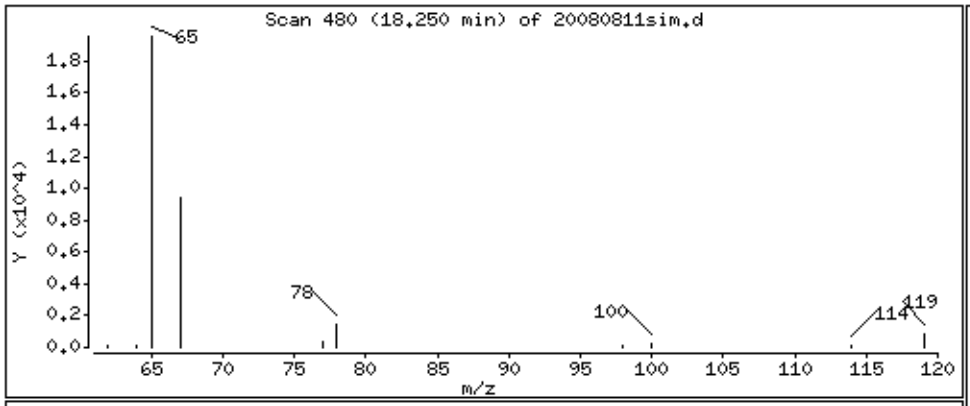
Operator: ef

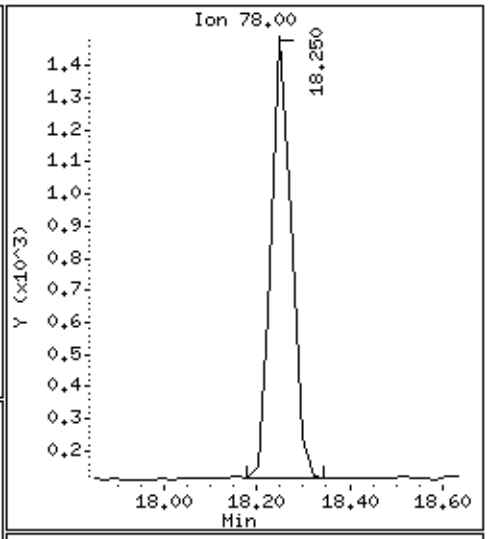
Column phase: RTX-624

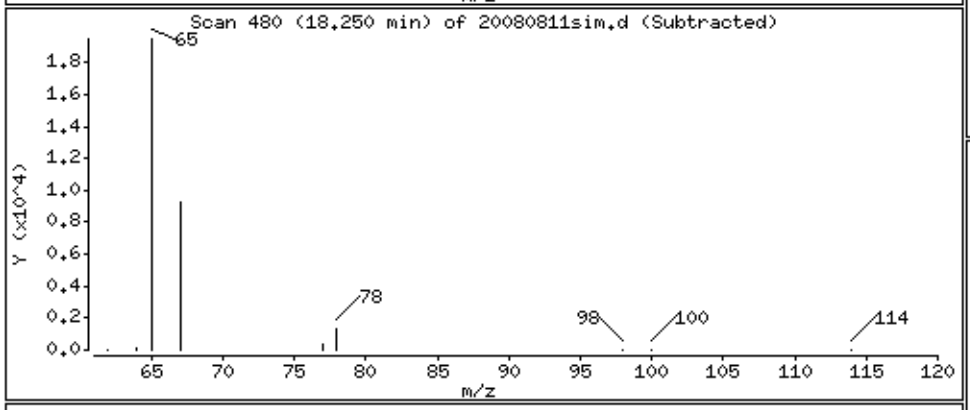
Column diameter: 0.32

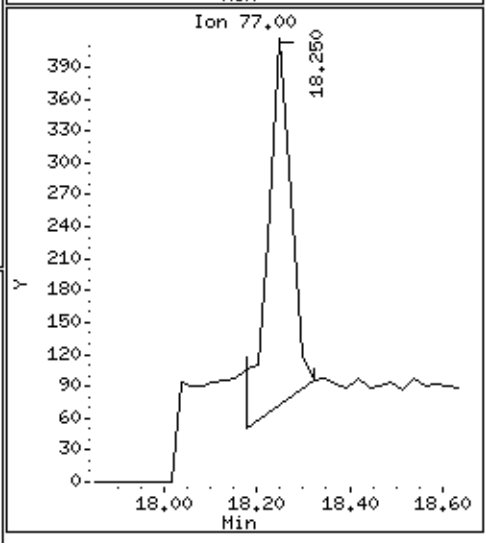
17 Benzene

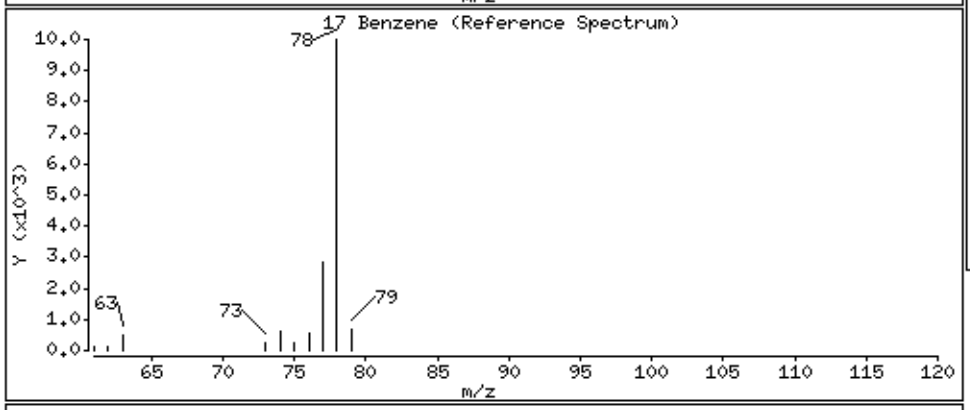
Concentration: 0.09701 PPBV

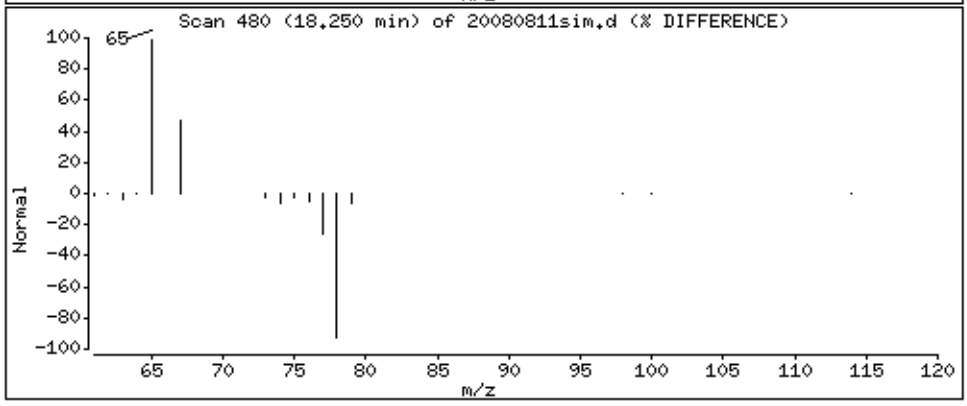












Data File: /chem/msd20.i/08aug17.b/20080811sim.d

Date : 08-AUG-2017 16:04

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 00967

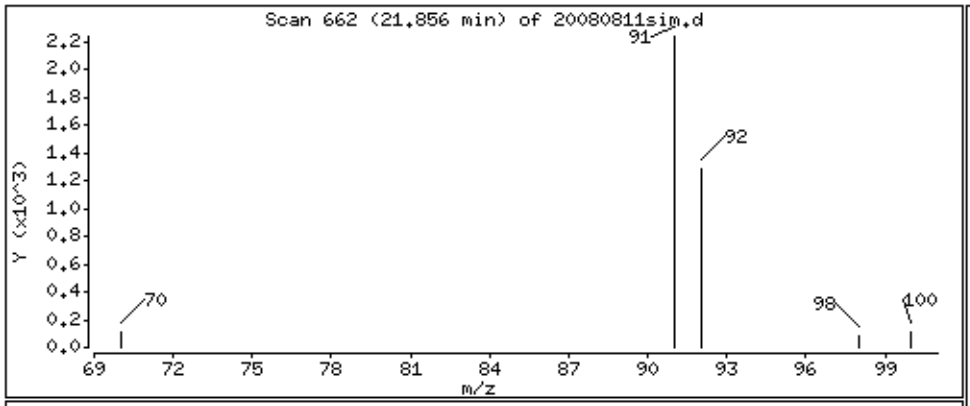
Operator: ef

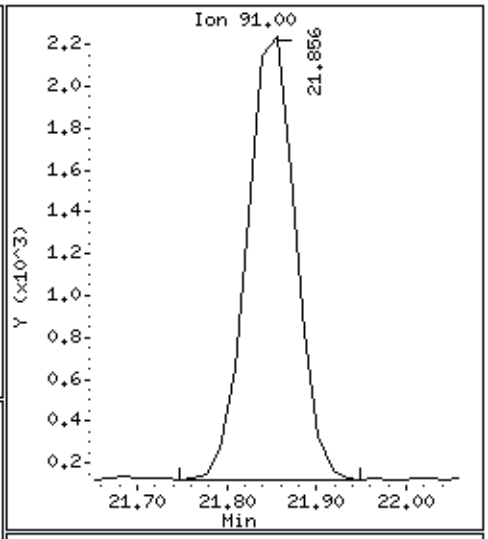
Column phase: RTX-624

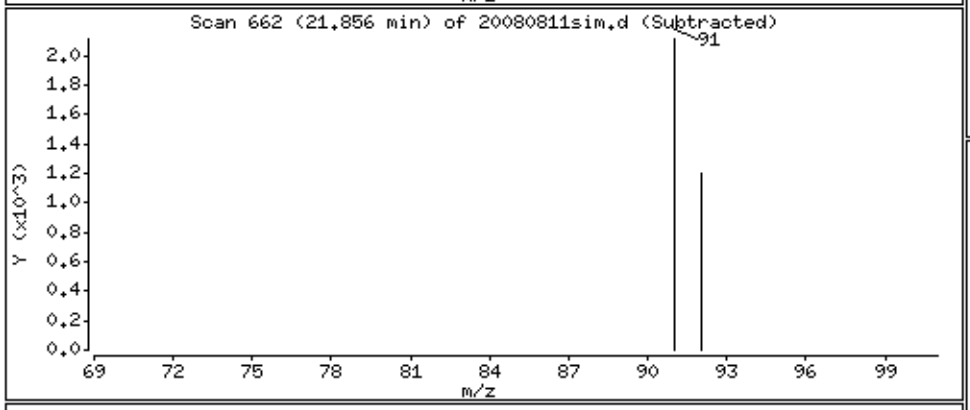
Column diameter: 0.32

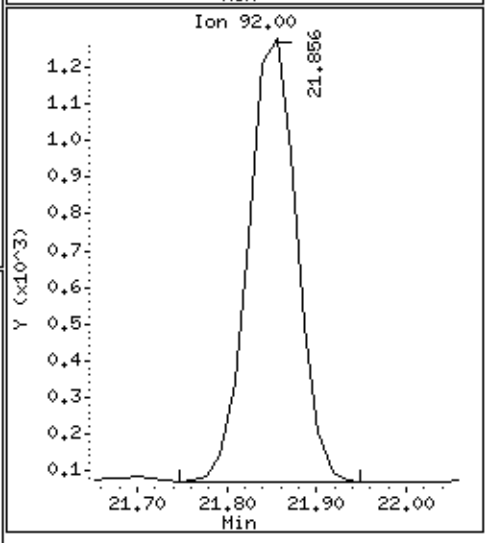
23 Toluene

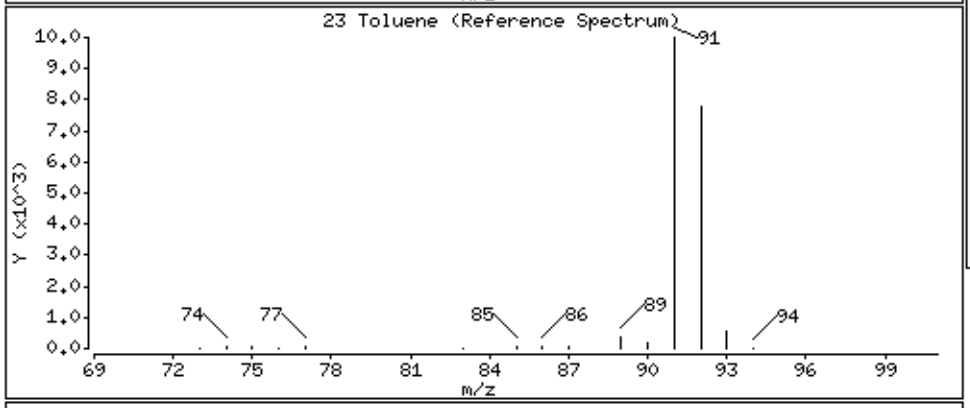
Concentration: 0.1684 PPBV

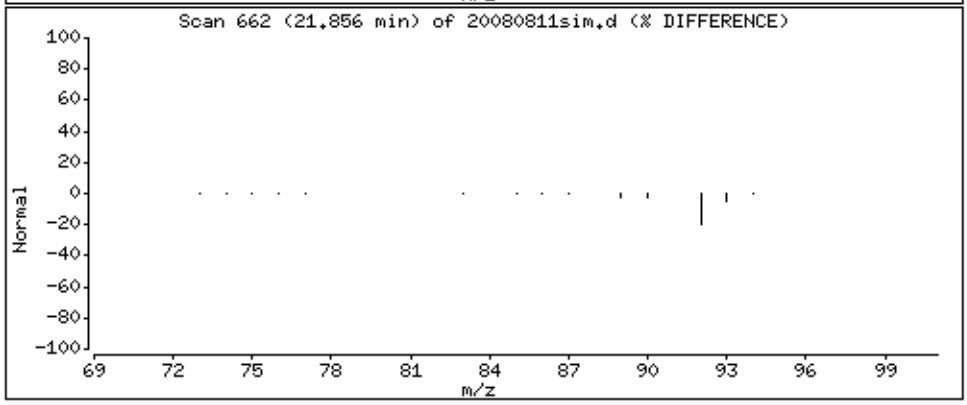












Data File: /chem/msd20.i/08aug17.b/20080811sim.d

Date : 08-AUG-2017 16:04

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 00967

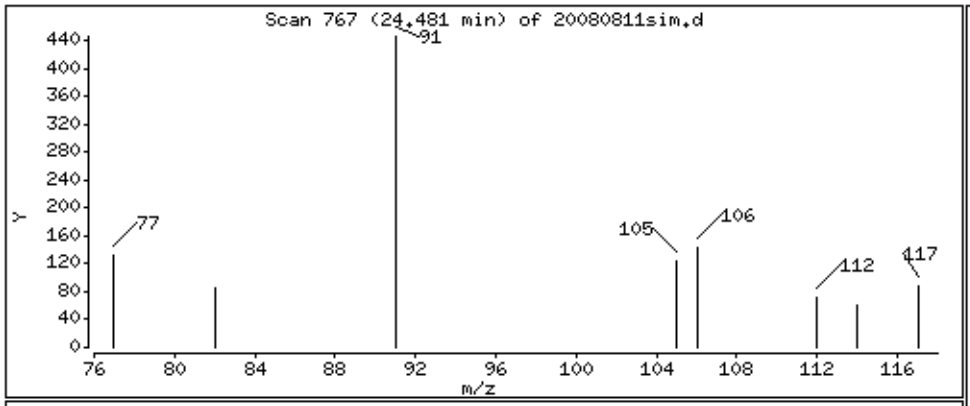
Operator: ef

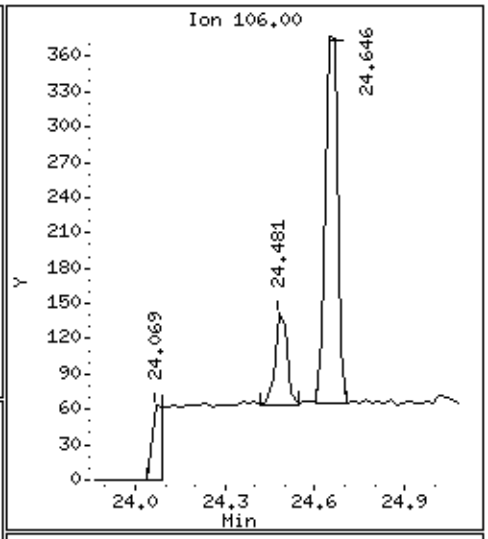
Column phase: RTX-624

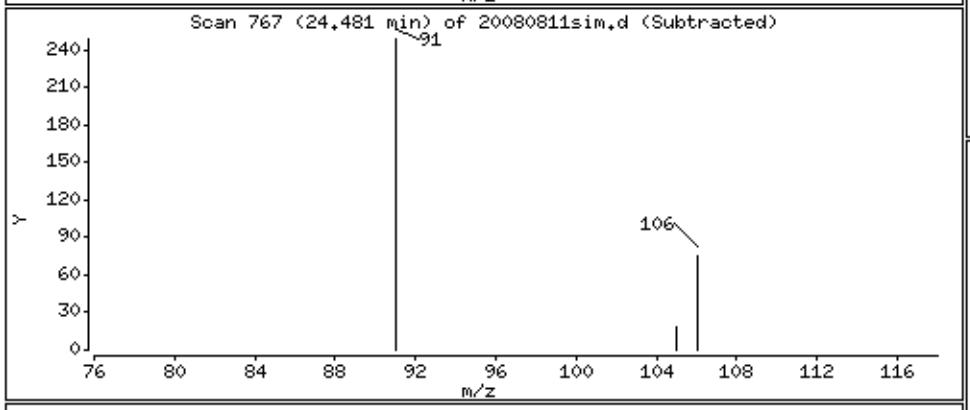
Column diameter: 0.32

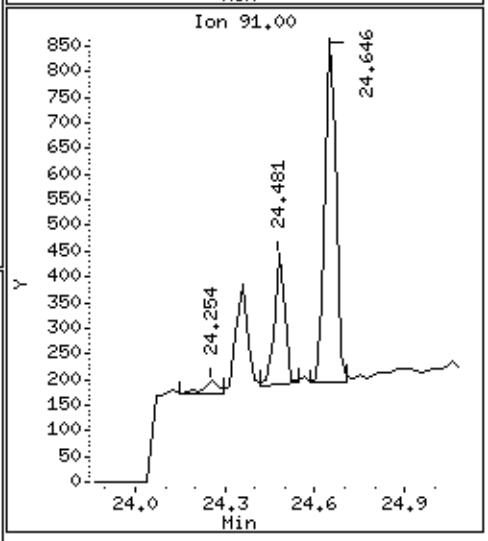
30 Ethyl Benzene

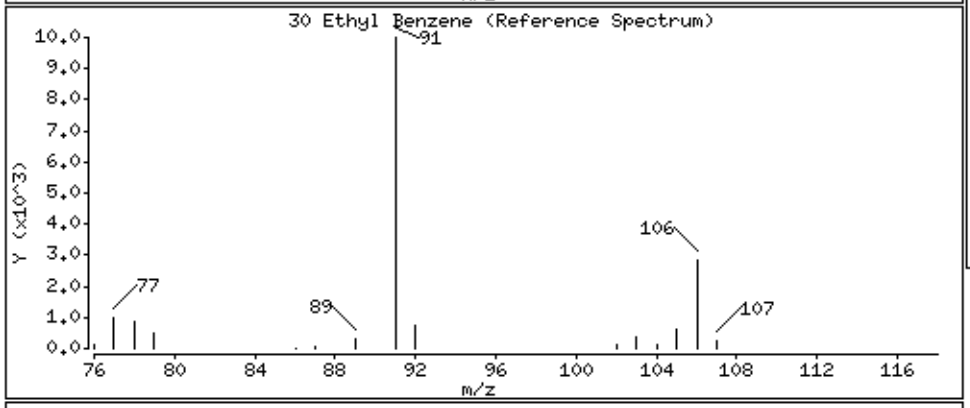
Concentration: 0.01239 PPBV

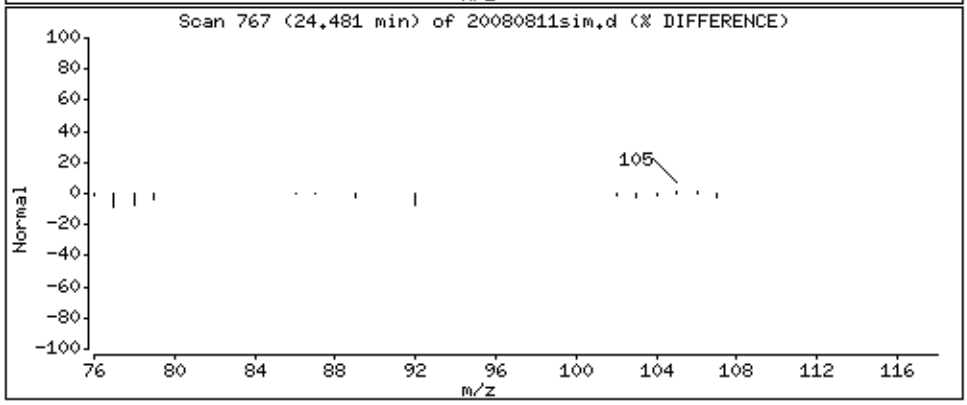












Data File: /chem/msd20.i/08aug17.b/20080811sim.d

Date : 08-AUG-2017 16:04

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 00967

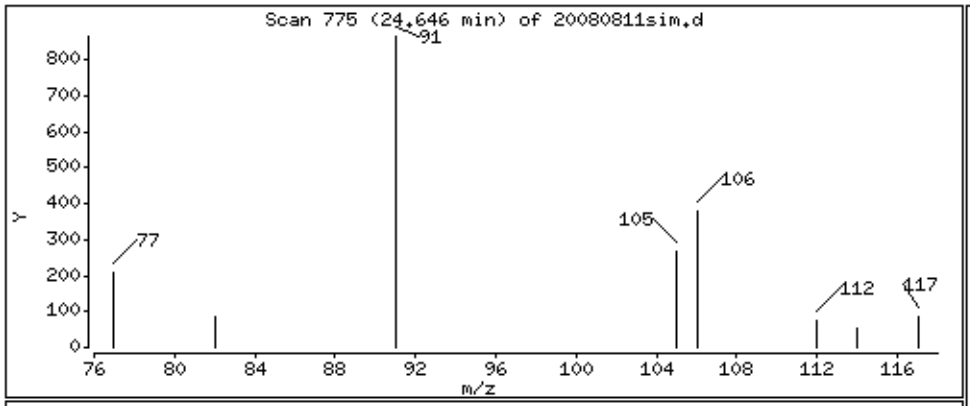
Operator: ef

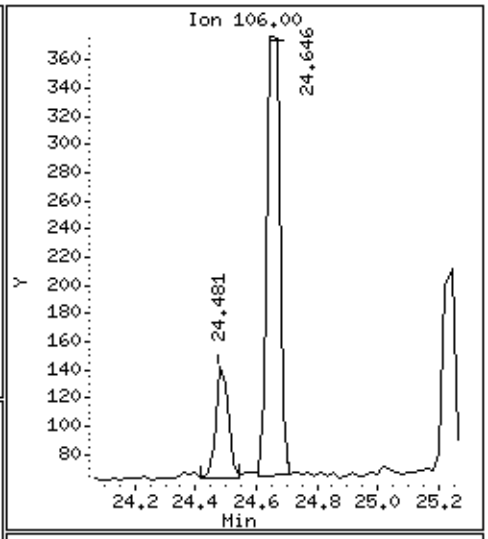
Column phase: RTX-624

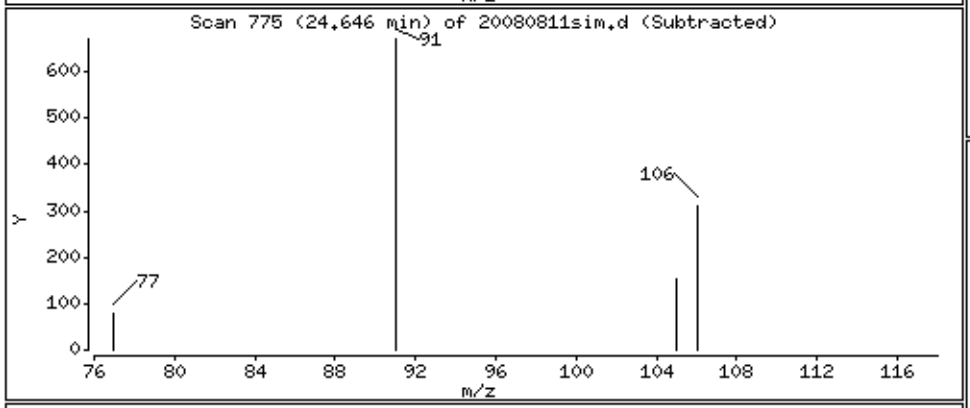
Column diameter: 0.32

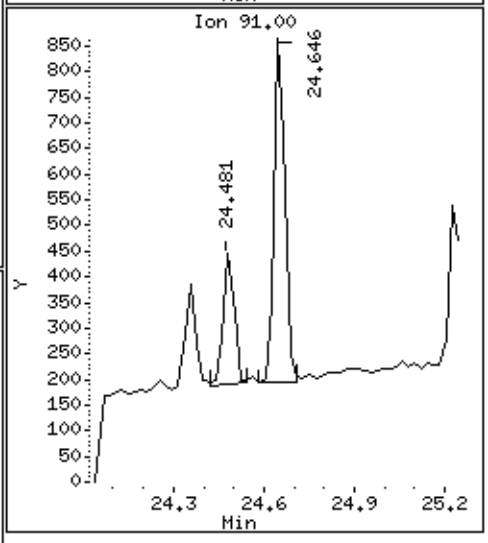
31 m,p-Xylene

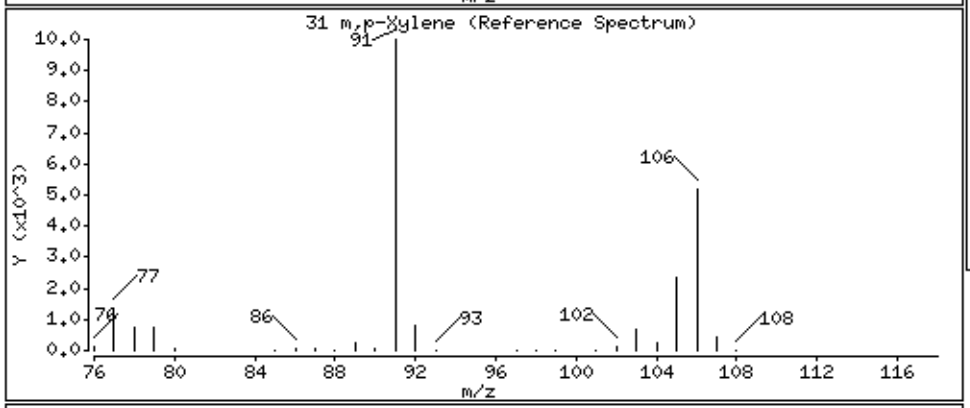
Concentration: 0.04459 PPBV

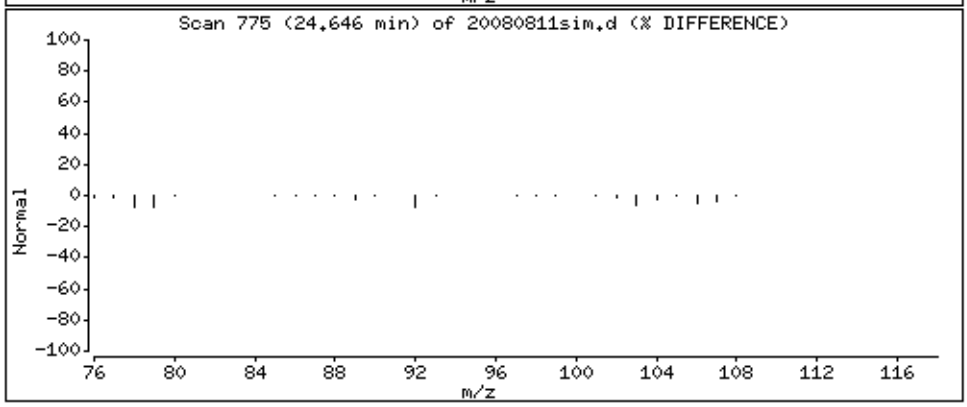












Data File: /chem/msd20.i/08aug17.b/20080811sim.d

Date : 08-AUG-2017 16:04

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 00967

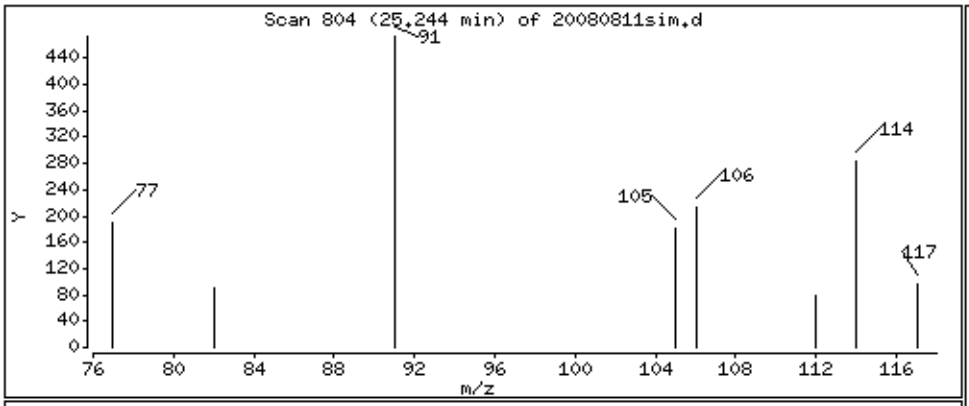
Operator: ef

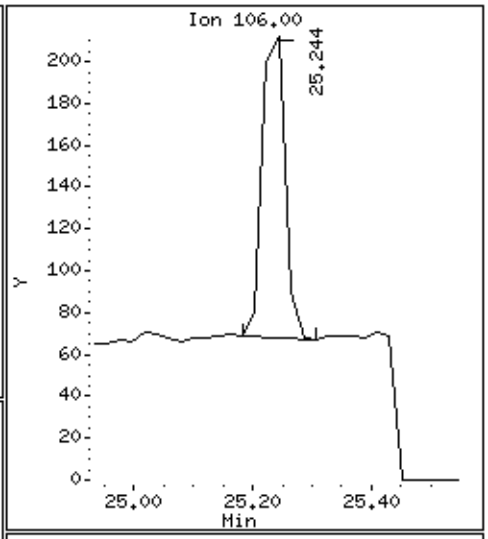
Column phase: RTX-624

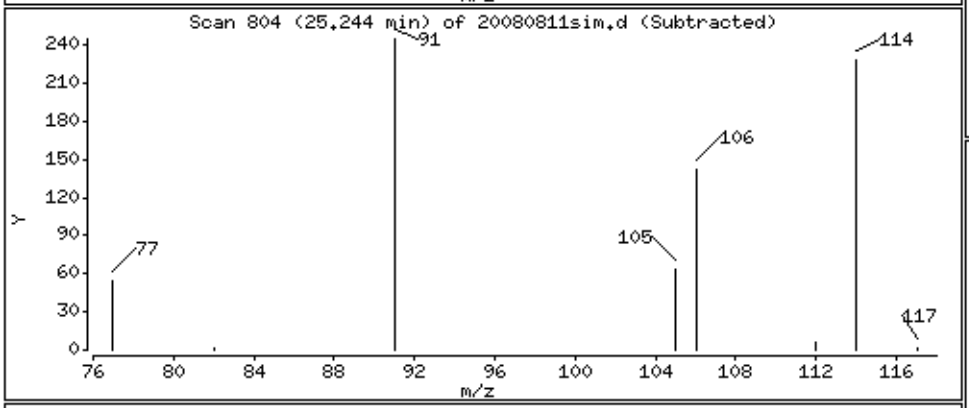
Column diameter: 0.32

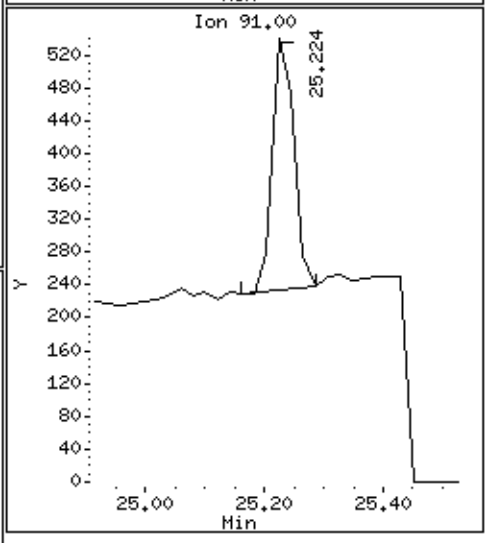
32 o-Xylene

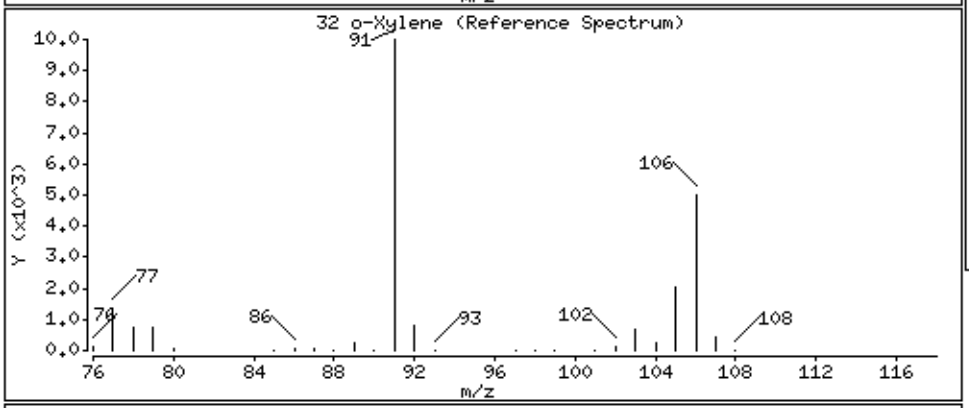
Concentration: 0.02063 PPBV

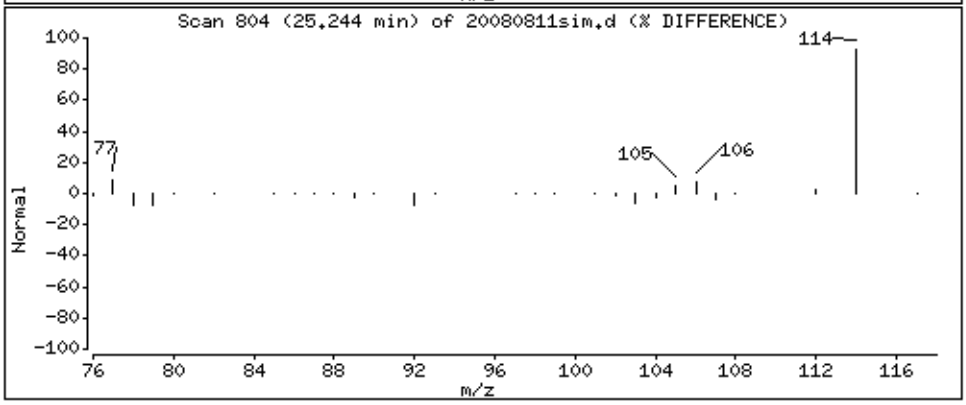












Data File: /chem/msd20.i/08aug17.b/20080811sim.d

Date : 08-AUG-2017 16:04

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 00967

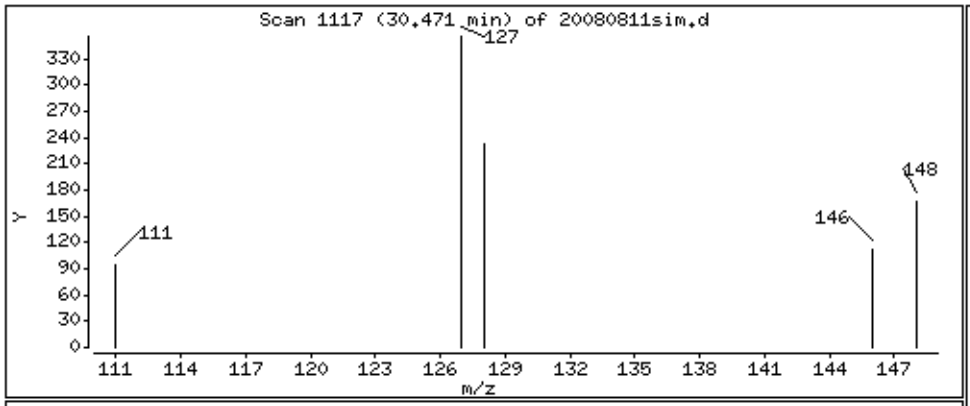
Operator: ef

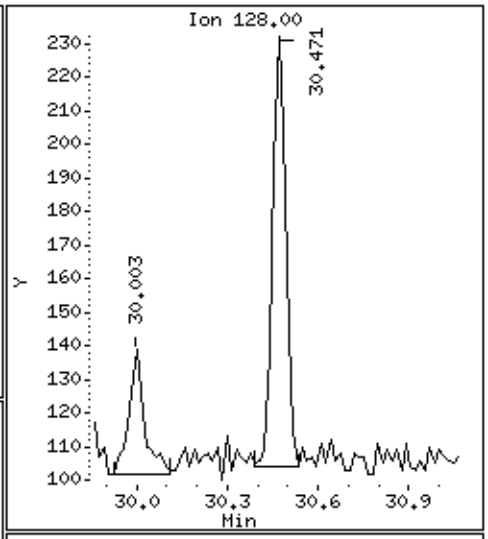
Column phase: RTX-624

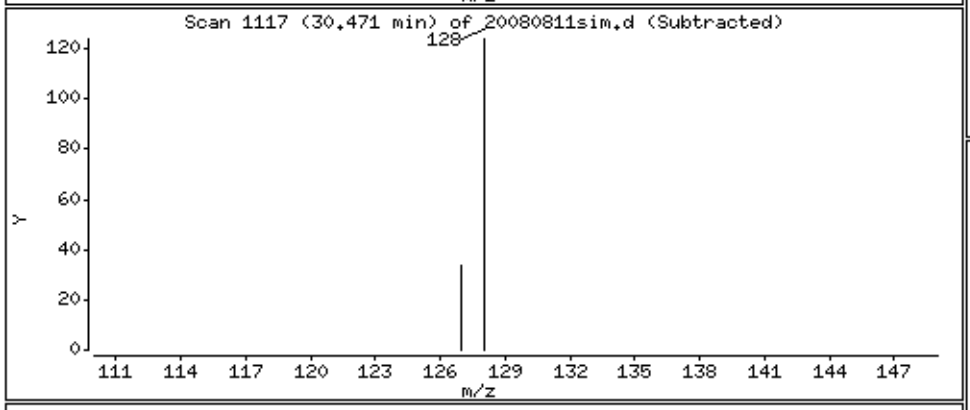
Column diameter: 0.32

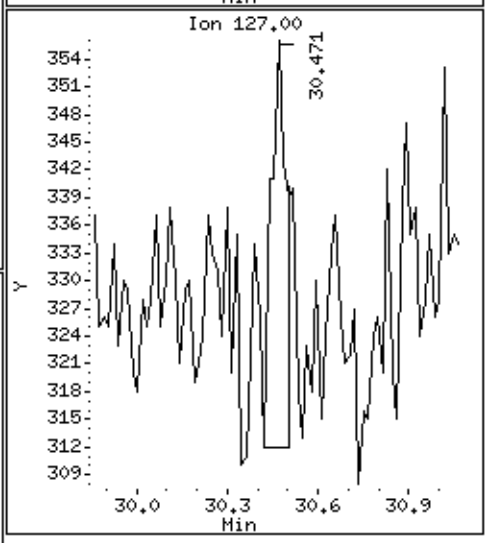
38 Naphthalene

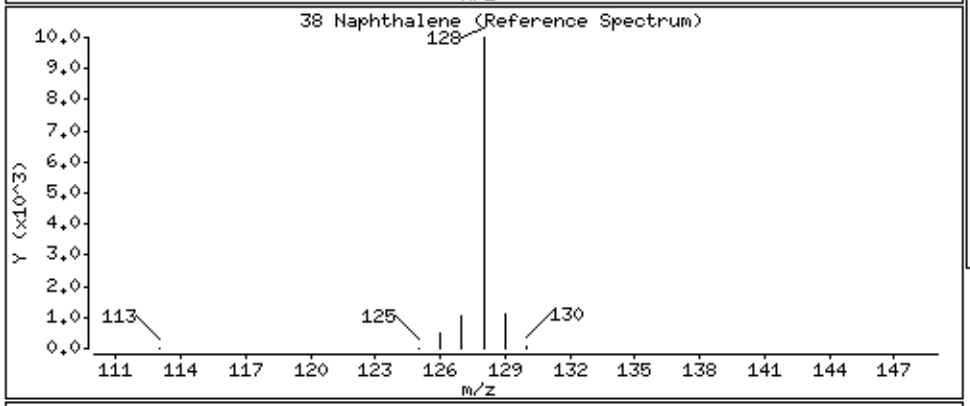
Concentration: 0.02502 PPBV

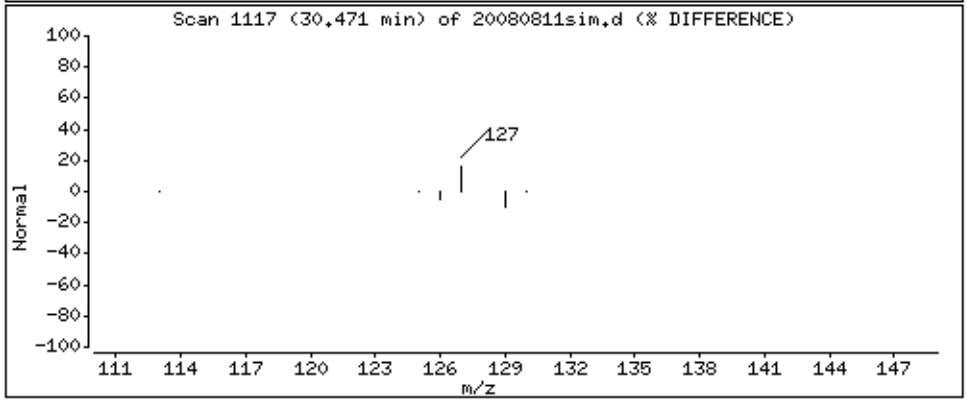












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	CS-040_0817		
Lab ID:	1708092-03A	**Date/Time Analyzed:**	8/7/17 03:37 PM
Date/Time Collected:	8/3/17 05:19 PM	**Dilution Factor:**	1.81
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20080710sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0099	0.029	0.29	0.32
Ethyl Benzene	100-41-4	0.011	0.039	0.16	0.039 J
m,p-Xylene	108-38-3	0.013	0.039	0.31	0.12 J
Naphthalene	91-20-3	0.039	0.076	0.47	0.067 J
o-Xylene	95-47-6	0.012	0.039	0.16	0.076 J
Toluene	108-88-3	0.0042	0.034	0.14	0.64
Total Xylenes	9999-9999-015	NA	D	0.47	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	101

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/07aug17.b/20080710sim.d
Lab Smp Id: 1708092-03A
Inj Date : 07-AUG-2017 15:37
Operator : ef Inst ID: msd20.i
Smp Info : 250mL# 34317
Misc Info : 8.0"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 10-Aug-2017 07:13 atoyama Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 1.81000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane							CAS #: 74-97-5	
17.340	17.340 (1.000)	130	56722	5.00000			80.00- 120.00	100.00
17.340	17.340 (1.000)	128	43959				48.37- 108.37	77.50
17.340	17.340 (1.000)	49	53828				82.84- 142.84	94.90
* 20 1,4-Difluorobenzene							CAS #: 540-36-3	
18.881	18.881 (1.000)	114	288277	5.00000			80.00- 120.00	100.00
18.881	18.881 (1.000)	88	39016				0.00- 44.04	13.53
* 28 Chlorobenzene-d5							CAS #: 3114-55-4	
24.356	24.356 (1.000)	117	239217	5.00000			80.00- 120.00	100.00
24.356	24.356 (1.000)	82	111133				17.63- 77.63	46.46
$ 18 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
18.265	18.265 (1.053)	65	86086	5.42358	5.424		80.00- 120.00	100.00
18.265	18.265 (1.053)	67	43627				26.67- 86.67	50.68
$ 22 Toluene-d8							CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	257298	5.06805	5.068		80.00- 120.00	100.00
21.698	21.683 (1.149)	70	26454				0.00- 40.38	10.28

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	161204			33.71- 93.71	62.65
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	173279	5.34216	5.342	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	141033			57.01- 117.01	81.39
25.980	25.980 (1.067)	176	170218			68.59- 128.59	98.23
17 Benzene					CAS #: 71-43-2		
18.265	18.244 (0.967)	78	3866	0.05626	0.1018	80.00- 120.00	100.00
18.265	18.244 (0.967)	77	1338			0.00- 53.56	34.61
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	7157	0.09333	0.1689	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	4042			27.62- 87.62	56.48
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	143	0.00492	0.008900	80.00- 120.00	100.00(a)
24.480	24.480 (1.005)	91	523			281.86- 341.86	364.66
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	514	0.01573	0.02846	80.00- 120.00	100.00(a)
24.645	24.645 (1.012)	91	1050			165.84- 225.84	204.07
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	293	0.00967	0.01751	80.00- 120.00	100.00(a)
25.222	25.222 (1.036)	91	1857			174.02- 234.02	633.33
38 Naphthalene					CAS #: 91-20-3		
30.470	30.469 (1.251)	128	176	0.00705	0.01276	80.00- 120.00	100.00(a)
30.922	30.469 (1.270)	127	126			0.00- 43.90	71.42

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080710sim.d
Lab Smp Id: 1708092-03A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 8.0"Hg -> 4.9psi

Calibration Date: 07-AUG-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	91747	55048	128446	56722	-38.18
20 1,4-Difluorobenze	437272	262363	612181	288277	-34.07
28 Chlorobenzene-d5	350464	210278	490650	239217	-31.74

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 07:14

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-03A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 8.0"Hg -> 4.9psi

	SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18	1,2-Dichloroethane	5.000	5.424	108.47	70-130
$ 22	Toluene-d8	5.000	5.068	101.36	70-130
$ 33	4-Bromofluorobenze	5.000	5.342	106.84	70-130

Data File: /chem/msd20.i/07aug17.b/20080710sim.d

Date : 07-AUG-2017 15:37

Client ID:

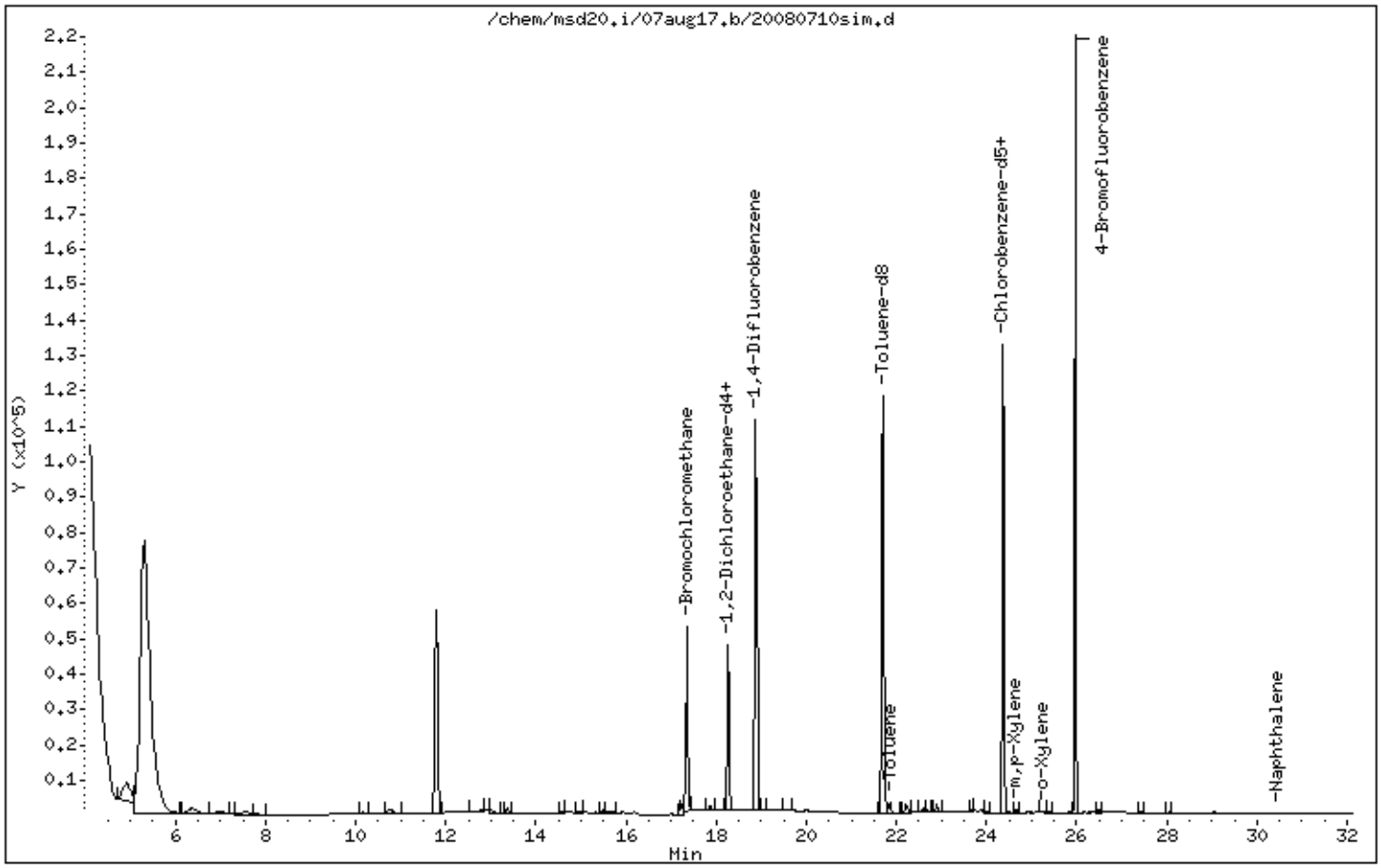
Instrument: msd20.i

Sample Info: 250mL# 34317

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/07aug17.b/20080710sim.d

Date : 07-AUG-2017 15:37

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34317

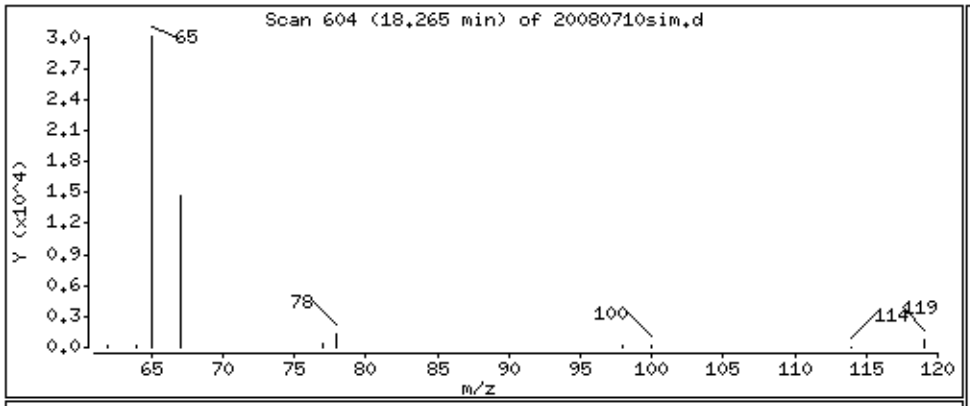
Operator: ef

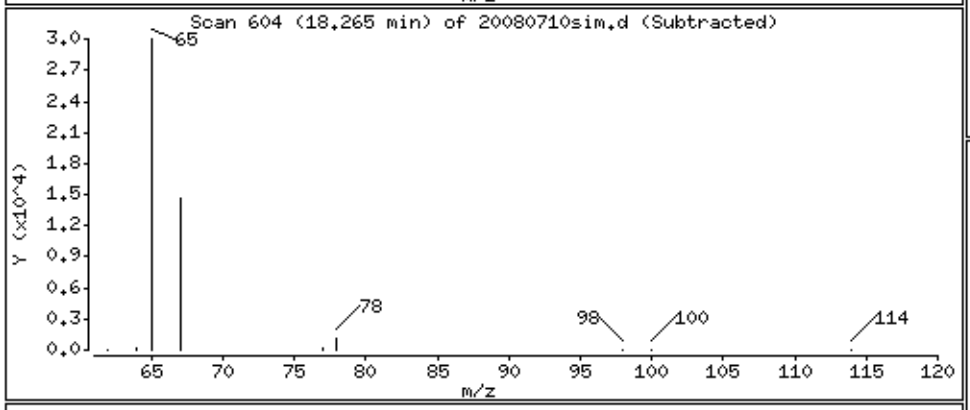
Column phase: RTX-624

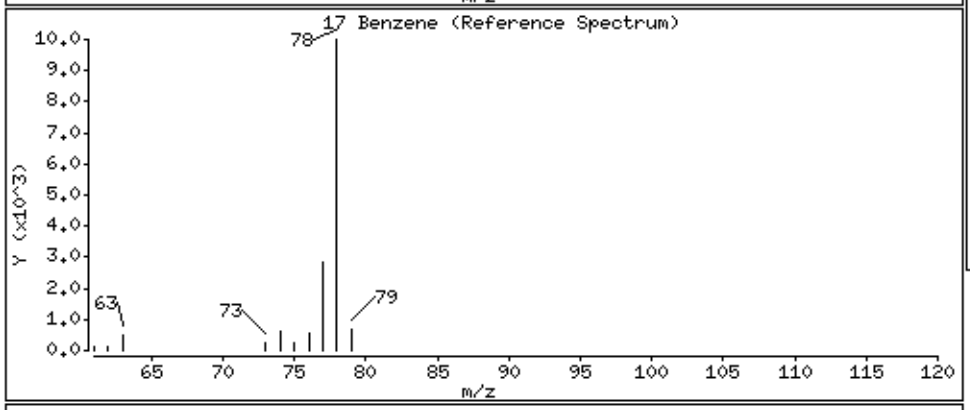
Column diameter: 0.32

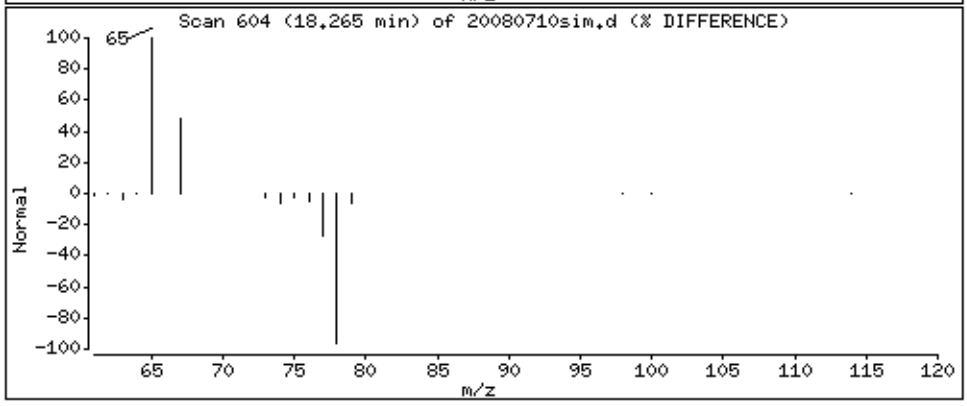
17 Benzene

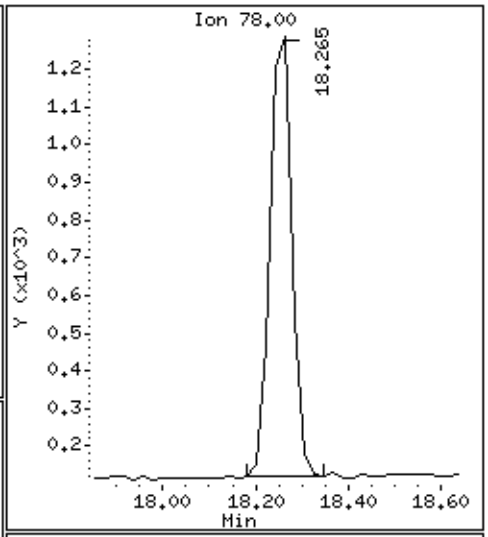
Concentration: 0.1018 PPBV

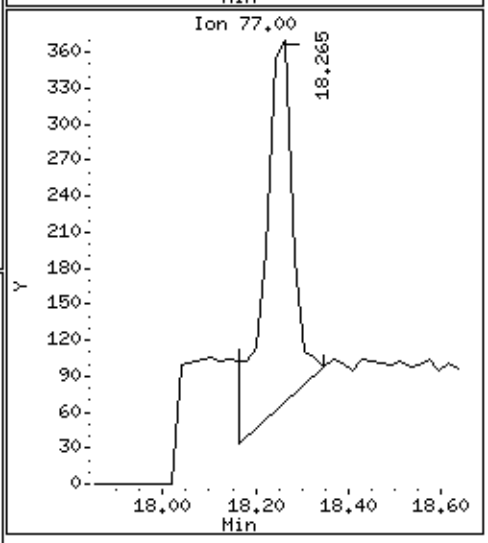












Data File: /chem/msd20.i/07aug17.b/20080710sim.d

Date : 07-AUG-2017 15:37

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34317

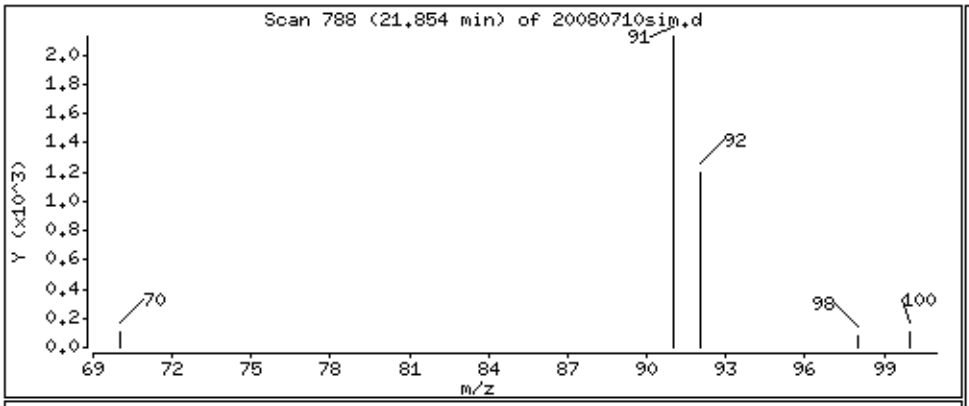
Operator: ef

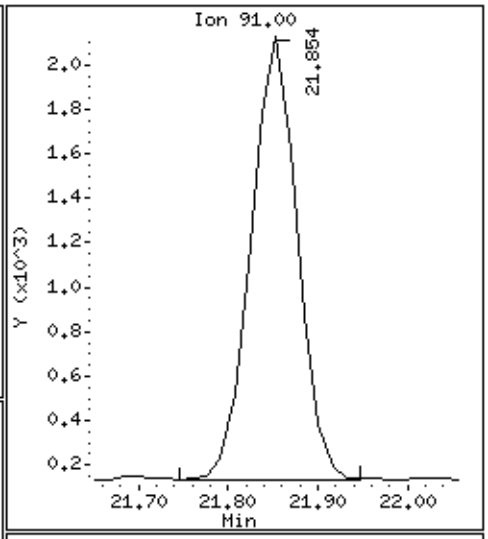
Column phase: RTX-624

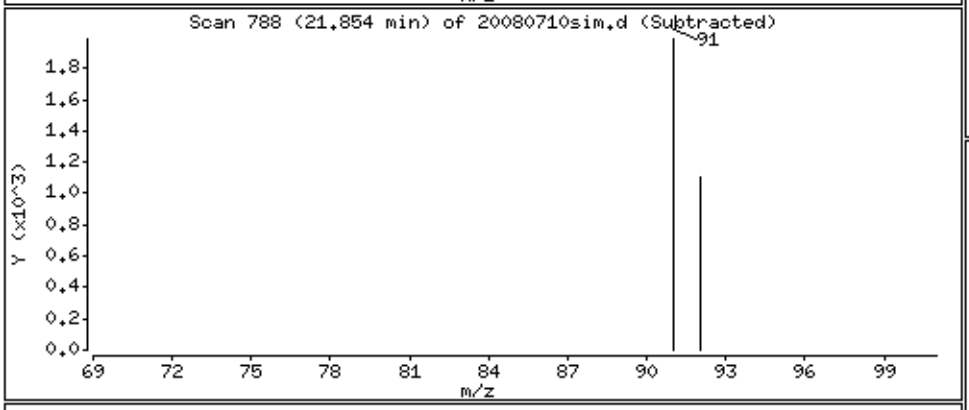
Column diameter: 0.32

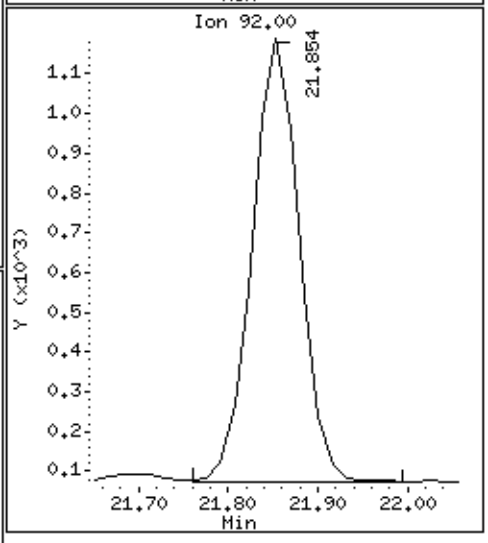
23 Toluene

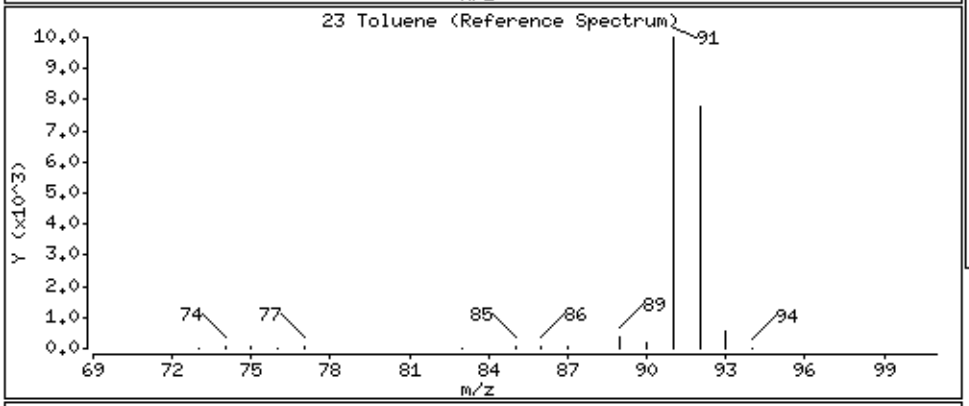
Concentration: 0.1689 PPBV

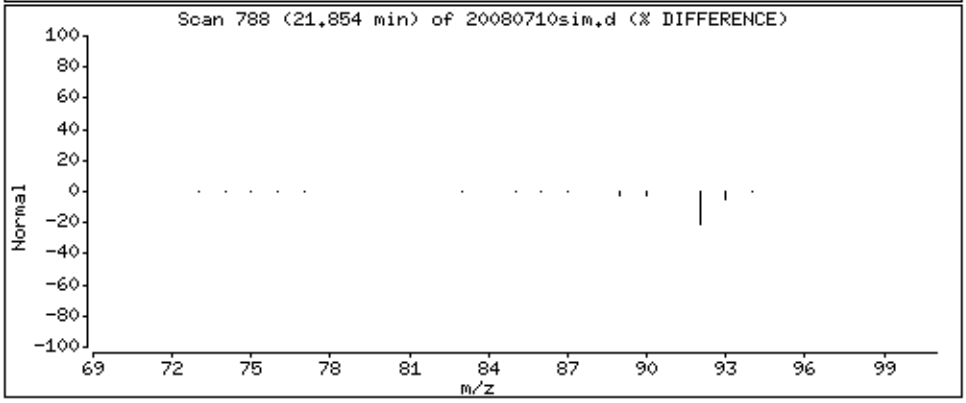












Data File: /chem/msd20.i/07aug17.b/20080710sim.d

Date : 07-AUG-2017 15:37

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34317

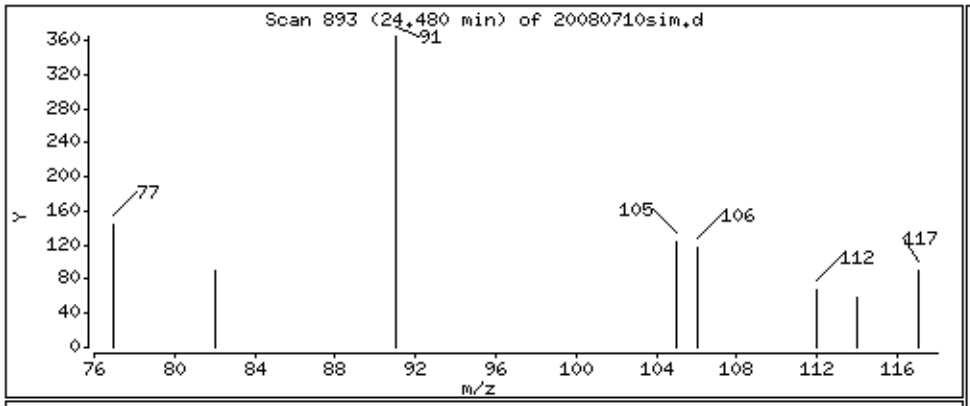
Operator: ef

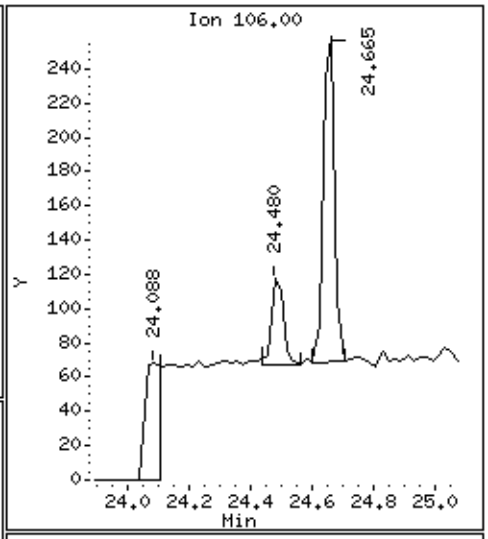
Column phase: RTX-624

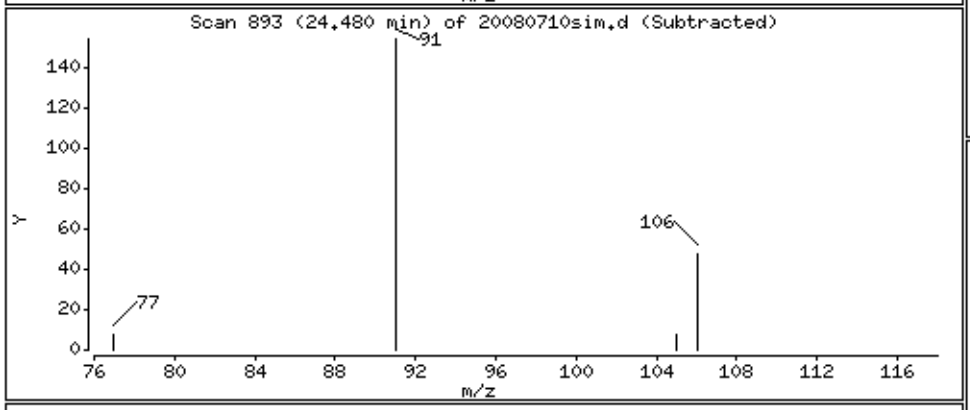
Column diameter: 0.32

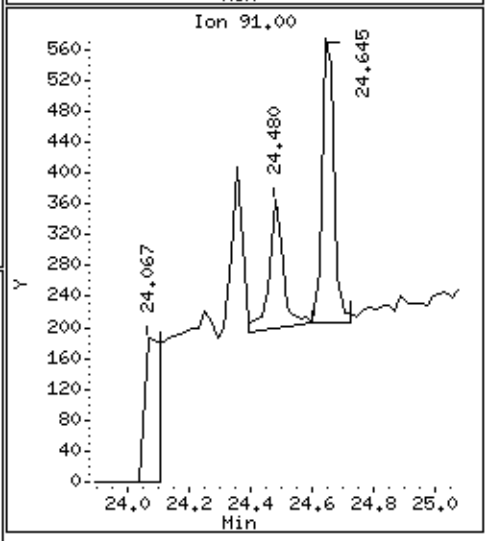
30 Ethyl Benzene

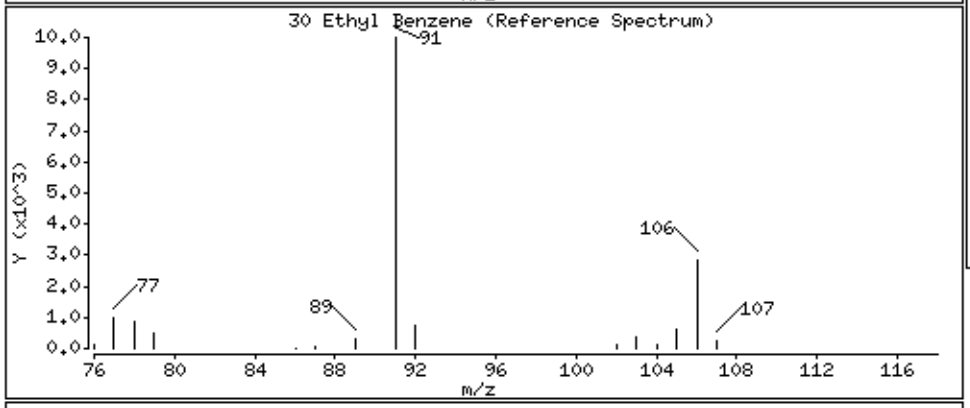
Concentration: 0.008900 PPBV

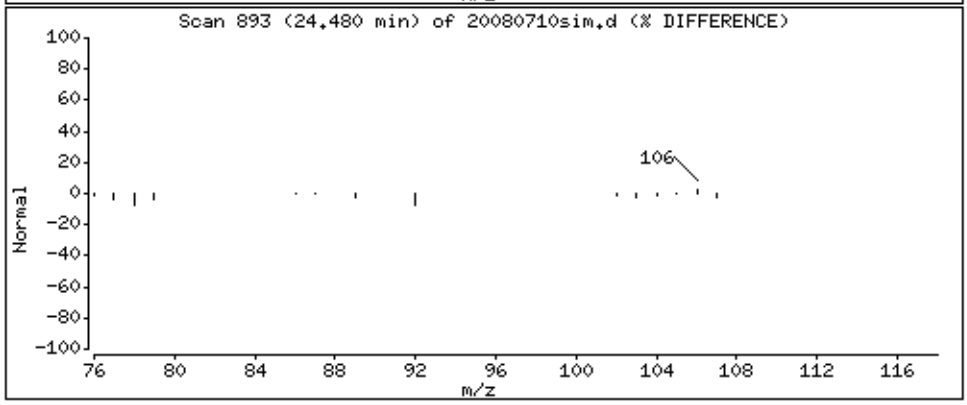












Data File: /chem/msd20.i/07aug17.b/20080710sim.d

Date : 07-AUG-2017 15:37

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34317

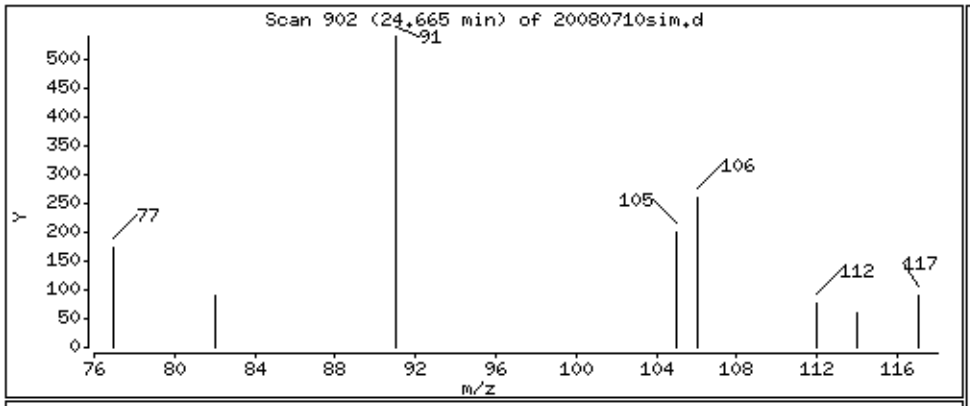
Operator: ef

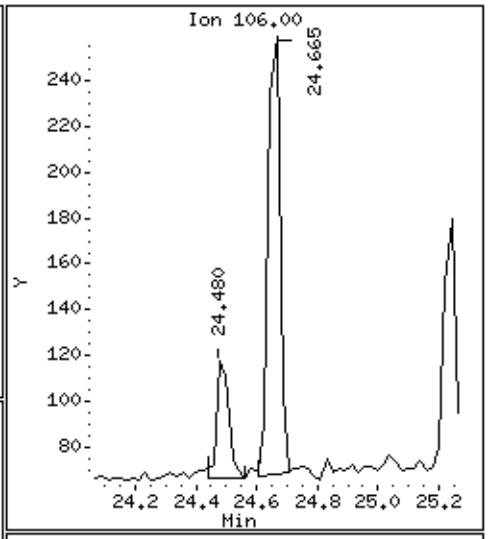
Column phase: RTX-624

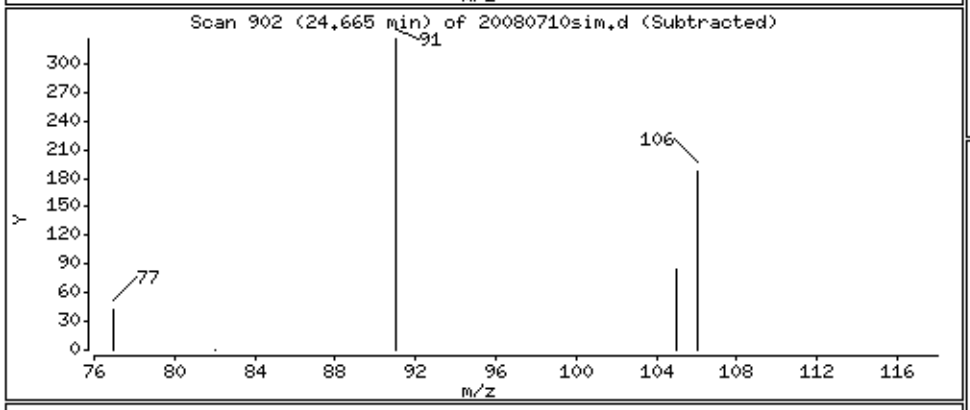
Column diameter: 0.32

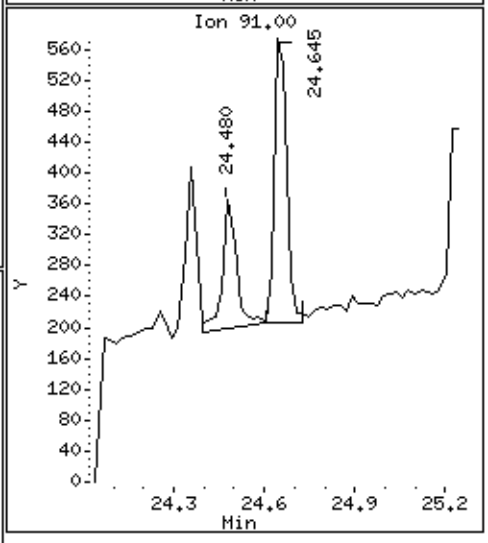
31 m,p-Xylene

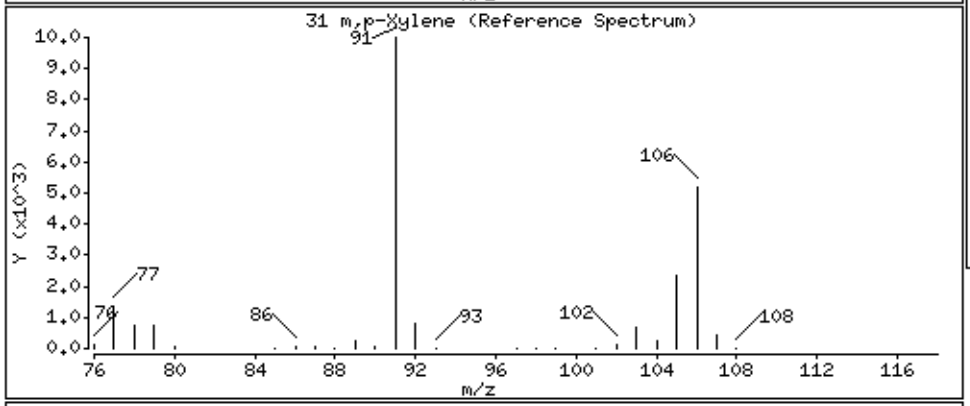
Concentration: 0.02846 PPBV

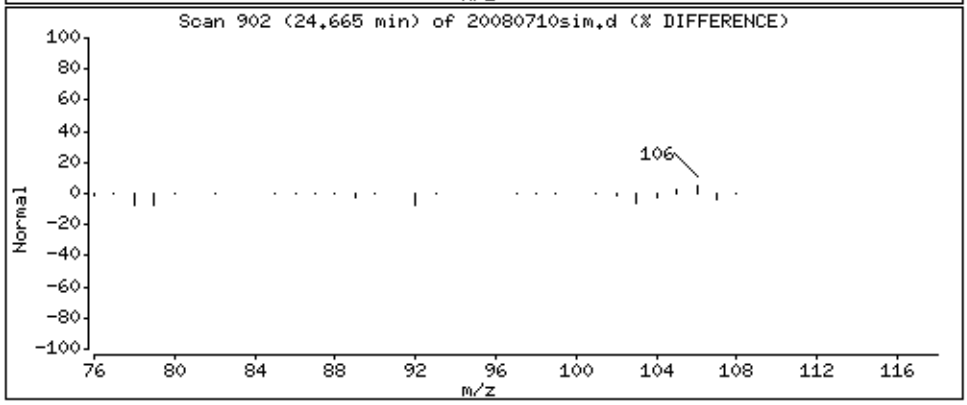












Data File: /chem/msd20.i/07aug17.b/20080710sim.d

Date : 07-AUG-2017 15:37

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34317

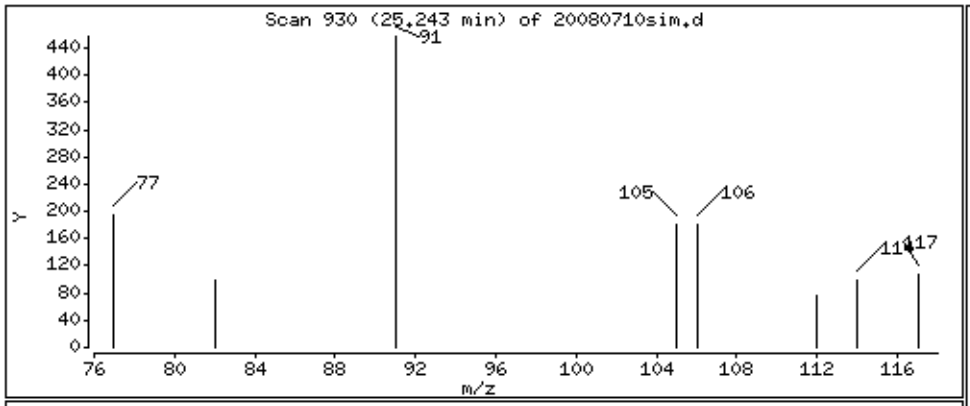
Operator: ef

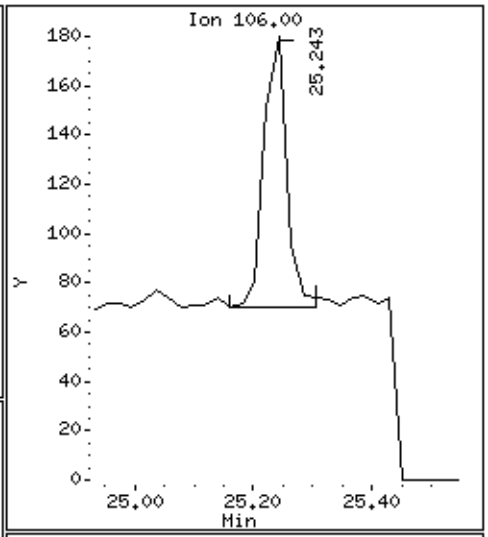
Column phase: RTX-624

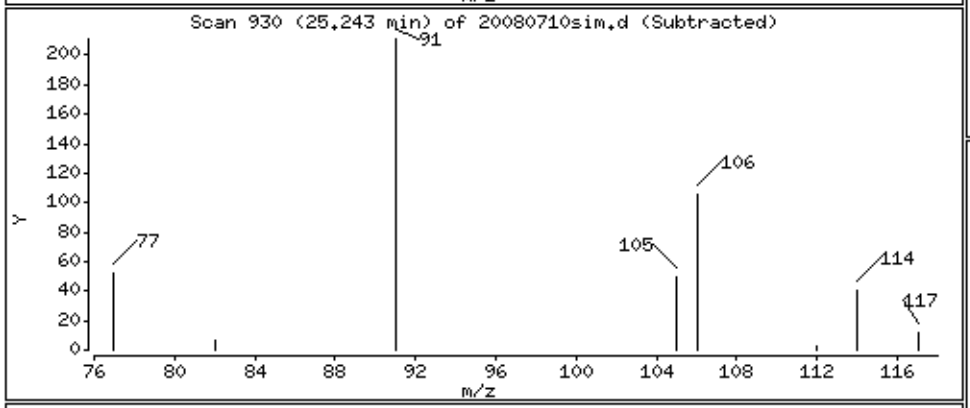
Column diameter: 0.32

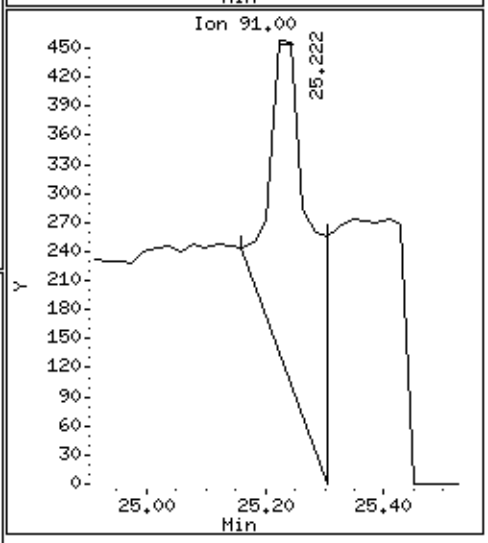
32 o-Xylene

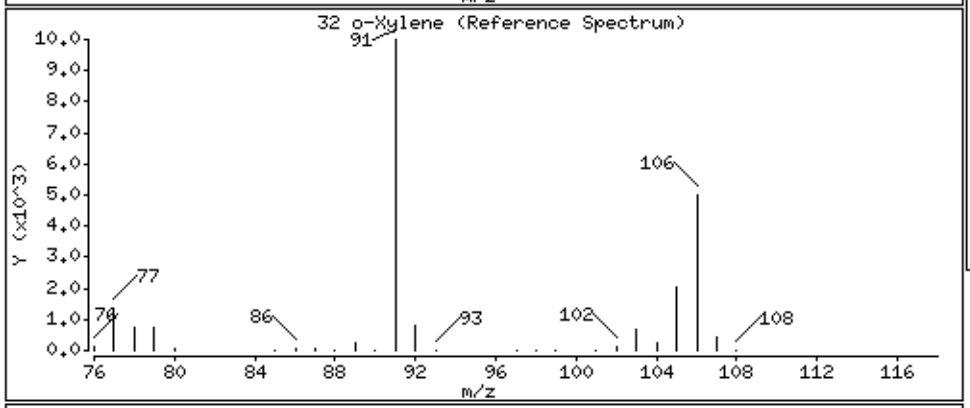
Concentration: 0.01751 PPBV

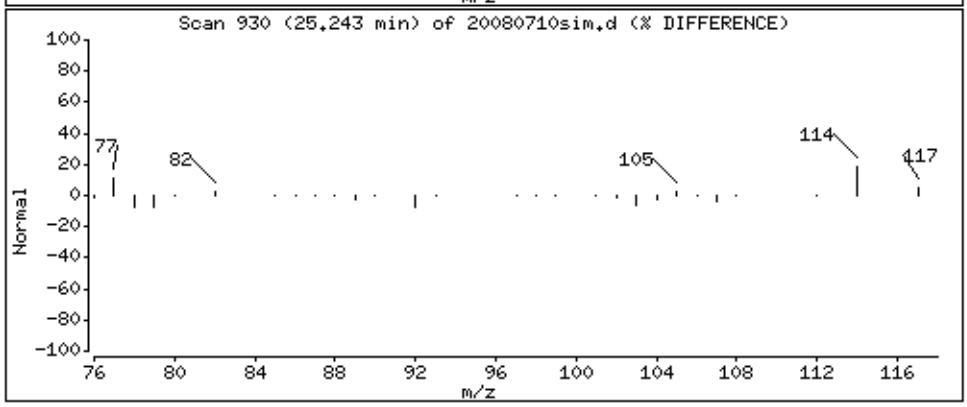












Data File: /chem/msd20.i/07aug17.b/20080710sim.d

Date : 07-AUG-2017 15:37

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34317

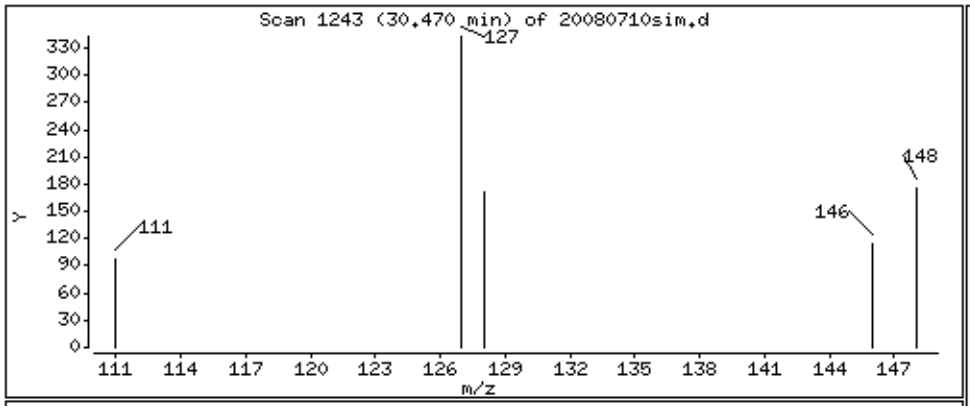
Operator: ef

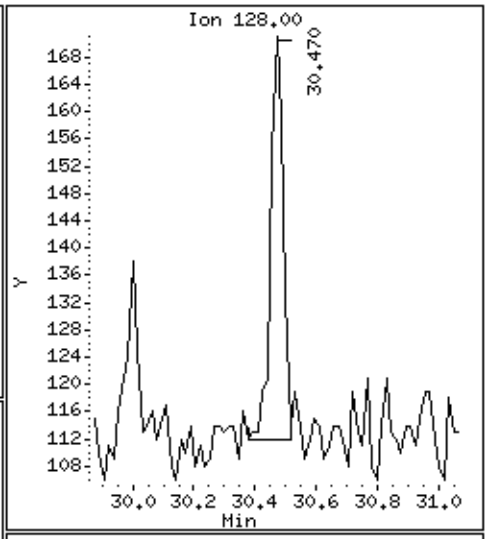
Column phase: RTX-624

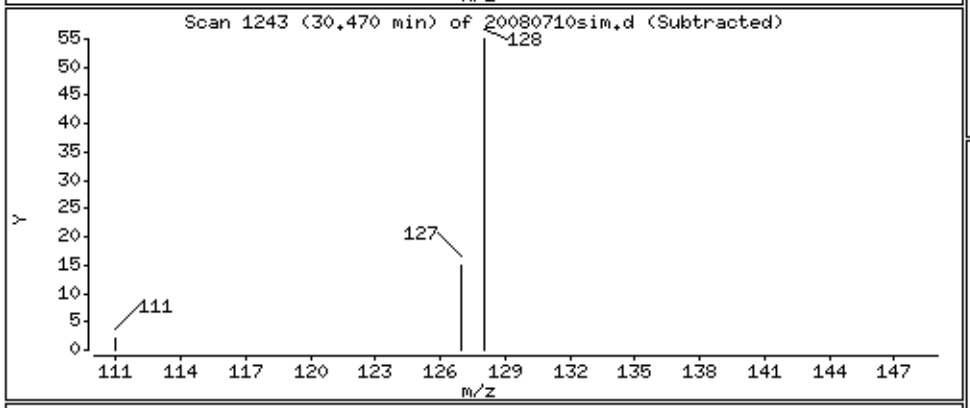
Column diameter: 0.32

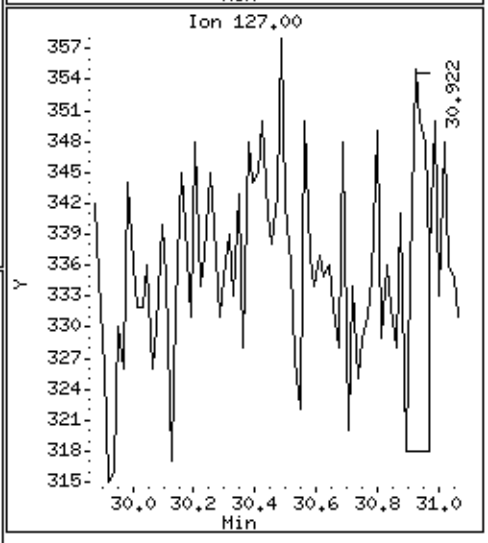
38 Naphthalene

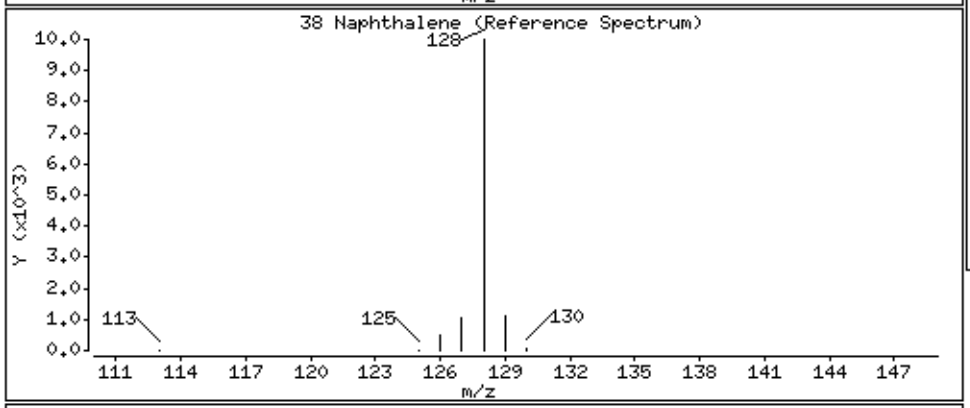
Concentration: 0.01276 PPBV

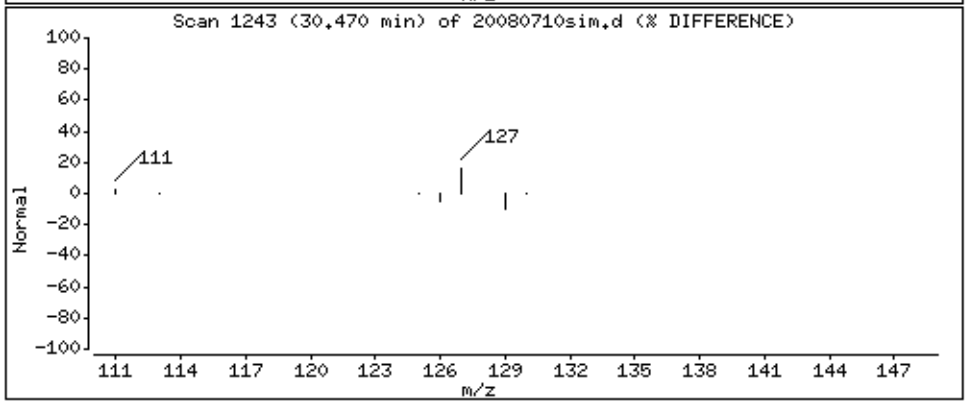












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IA-040_0817		
Lab ID:	1708092-04A	**Date/Time Analyzed:**	8/8/17 04:57 PM
Date/Time Collected:	8/3/17 05:25 PM	**Dilution Factor:**	1.81
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20080812sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0099	0.029	0.29	0.88
Ethyl Benzene	100-41-4	0.011	0.039	0.16	2.3
m,p-Xylene	108-38-3	0.013	0.039	0.31	8.8
Naphthalene	91-20-3	0.039	0.076	0.47	1.6
o-Xylene	95-47-6	0.012	0.039	0.16	3.5
Toluene	108-88-3	0.0042	0.034	0.14	8.7
Total Xylenes	9999-9999-015	NA	D	0.47	12

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	96

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080812sim.d
Lab Smp Id: 1708092-04A
Inj Date : 08-AUG-2017 16:57
Operator : ef Inst ID: msd20.i
Smp Info : 250mL# 34491
Misc Info : 7.8"Hg -> 5.0psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 1.81000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane							CAS #: 74-97-5	
17.338	17.340 (1.000)	130	66827	5.00000			80.00- 120.00	100.00
17.338	17.340 (1.000)	128	51764				48.37- 108.37	77.46
17.338	17.340 (1.000)	49	61333				82.84- 142.84	91.78
* 20 1,4-Difluorobenzene							CAS #: 540-36-3	
18.882	18.880 (1.000)	114	304746	5.00000			80.00- 120.00	100.00
18.882	18.880 (1.000)	88	39283				0.00- 44.04	12.89
* 28 Chlorobenzene-d5							CAS #: 3114-55-4	
24.358	24.356 (1.000)	117	244139	5.00000			80.00- 120.00	100.00
24.358	24.356 (1.000)	82	107771				17.63- 77.63	44.14
$ 18 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
18.274	18.265 (1.054)	65	82310	4.40154	4.402		80.00- 120.00	100.00
18.274	18.265 (1.054)	67	42848				26.67- 86.67	52.06
$ 22 Toluene-d8							CAS #: 2037-26-5	
21.700	21.698 (1.149)	98	258639	4.81916	4.819		80.00- 120.00	100.00
21.684	21.683 (1.148)	70	24991				0.00- 40.38	9.66

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	21.700	21.698 (1.149)	100	163966			33.71- 93.71	63.40
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	25.963	25.961 (1.066)	174	174939	5.28459	5.284	80.00- 120.00	100.00
	25.963	25.961 (1.066)	95	135994			57.01- 117.01	77.74
	25.963	25.980 (1.066)	176	171808			68.59- 128.59	98.21
	17 Benzene					CAS #: 71-43-2		
	18.250	18.244 (0.966)	78	11031	0.15183	0.2748	80.00- 120.00	100.00
	18.250	18.244 (0.966)	77	2883			0.00- 53.56	26.14
	23 Toluene					CAS #: 108-88-3		
	21.856	21.854 (1.157)	91	103049	1.27108	2.301	80.00- 120.00	100.00
	21.856	21.854 (1.157)	92	58678			27.62- 87.62	56.94
	30 Ethyl Benzene					CAS #: 100-41-4		
	24.481	24.480 (1.005)	106	8687	0.29157	0.5277	80.00- 120.00	100.00
	24.481	24.480 (1.005)	91	27008			281.86- 341.86	310.90
	31 m,p-Xylene					CAS #: 108-38-3		
	24.646	24.665 (1.012)	106	37581	1.12485	2.036	80.00- 120.00	100.00
	24.646	24.645 (1.012)	91	71731			165.84- 225.84	190.87
	32 o-Xylene					CAS #: 95-47-6		
	25.245	25.243 (1.036)	106	13672	0.44184	0.7997	80.00- 120.00	100.00
	25.224	25.222 (1.036)	91	28239			174.02- 234.02	206.55
	38 Naphthalene					CAS #: 91-20-3		
	30.471	30.469 (1.251)	128	4366	0.17065	0.3089	80.00- 120.00	100.00
	30.471	30.469 (1.251)	127	785			0.00- 43.90	17.98
M	39 Total Xylene					CAS #: 1330-20-7		
				51253	1.56669	2.836		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080812sim.d
Lab Smp Id: 1708092-04A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 7.8"Hg -> 5.0psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	66827	-31.69
20 1,4-Difluorobenze	453999	272399	635599	304746	-32.88
28 Chlorobenzene-d5	343223	205934	480512	244139	-28.87

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	-0.01
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.01
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 08:53

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-04A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 7.8"Hg -> 5.0psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.402	88.03	70-130
$ 22 Toluene-d8	5.000	4.819	96.38	70-130
$ 33 4-Bromofluorobenze	5.000	5.284	105.69	70-130

Data File: /chem/msd20.i/08aug17.b/20080812sim.d

Date : 08-AUG-2017 16:57

Client ID:

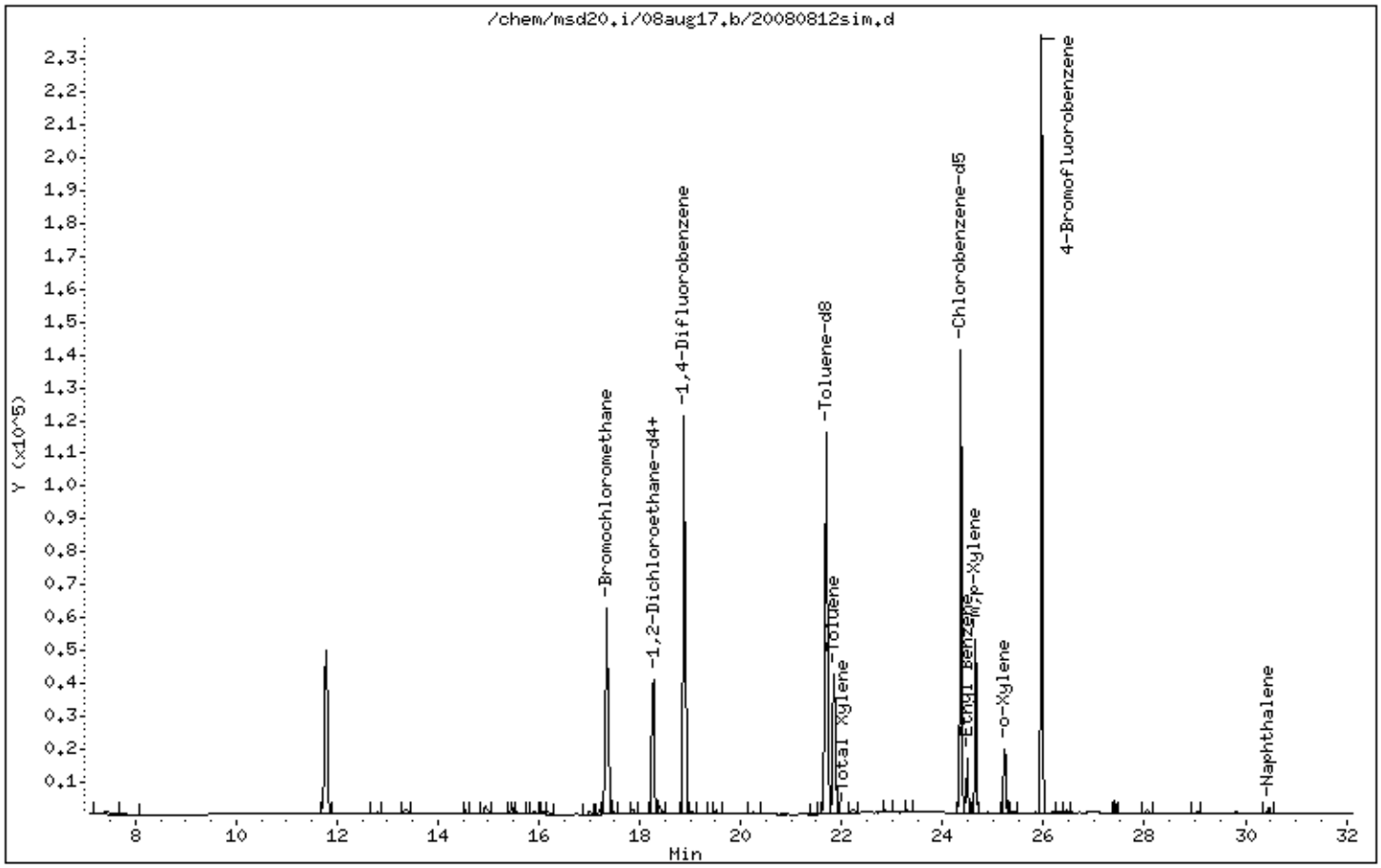
Instrument: msd20.i

Sample Info: 250mL# 34491

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/08aug17.b/20080812sim.d

Date : 08-AUG-2017 16:57

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34491

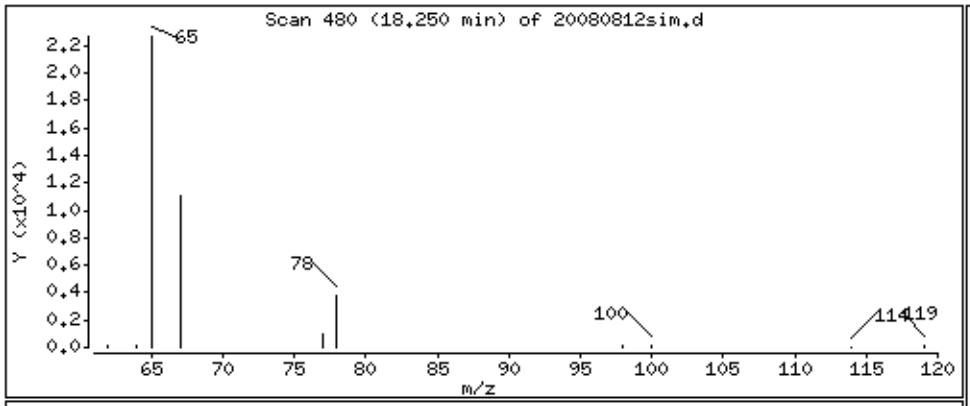
Operator: ef

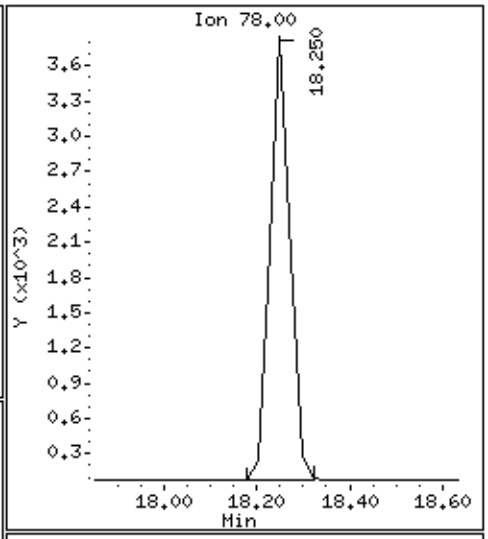
Column phase: RTX-624

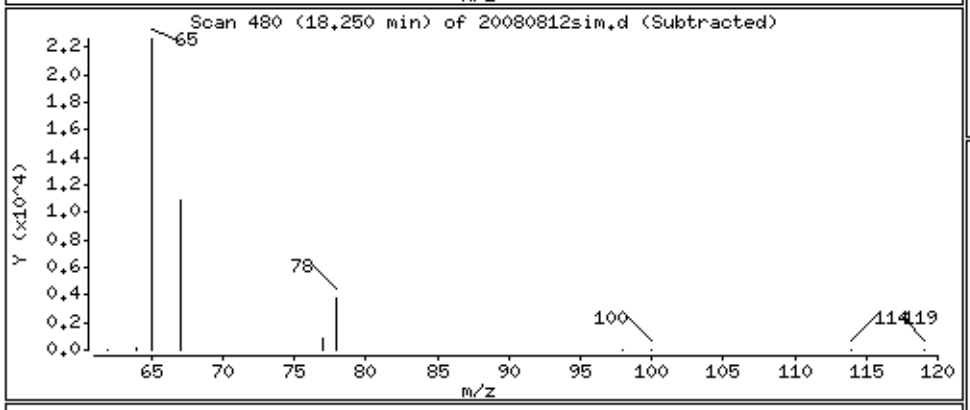
Column diameter: 0.32

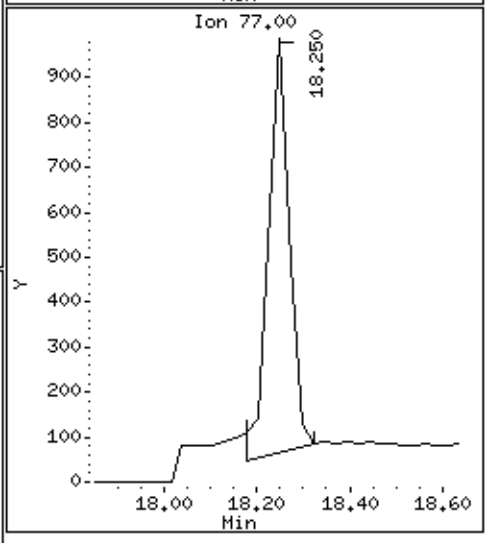
17 Benzene

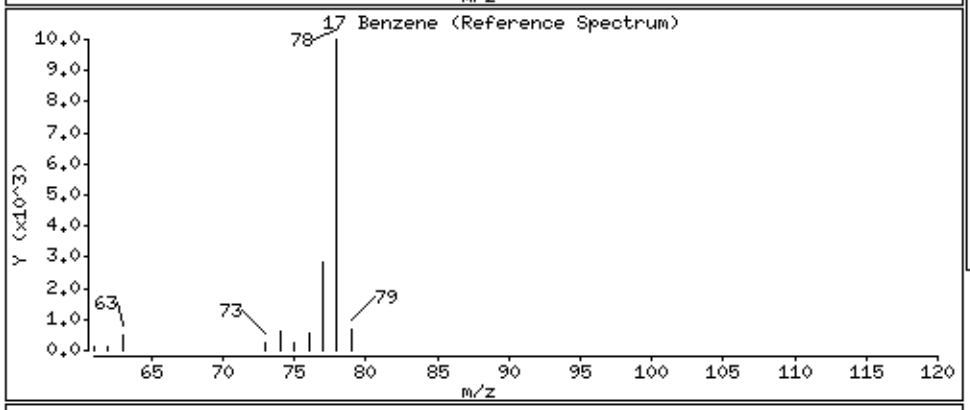
Concentration: 0.2748 PPBV

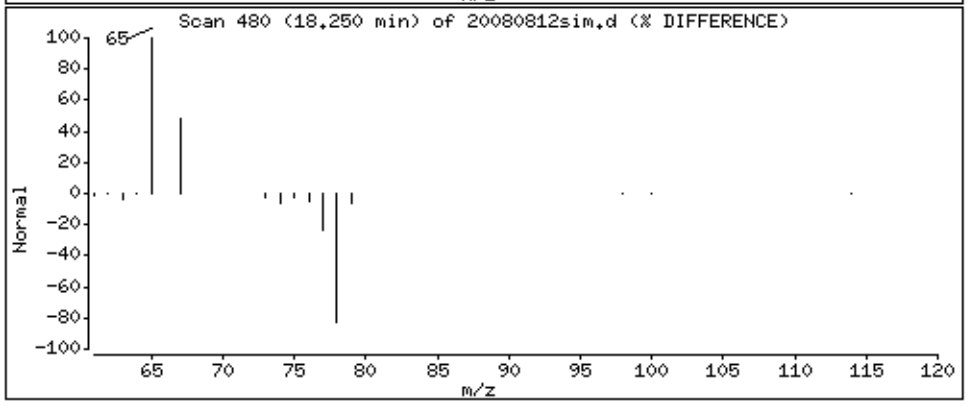












Data File: /chem/msd20.i/08aug17.b/20080812sim.d

Date : 08-AUG-2017 16:57

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34491

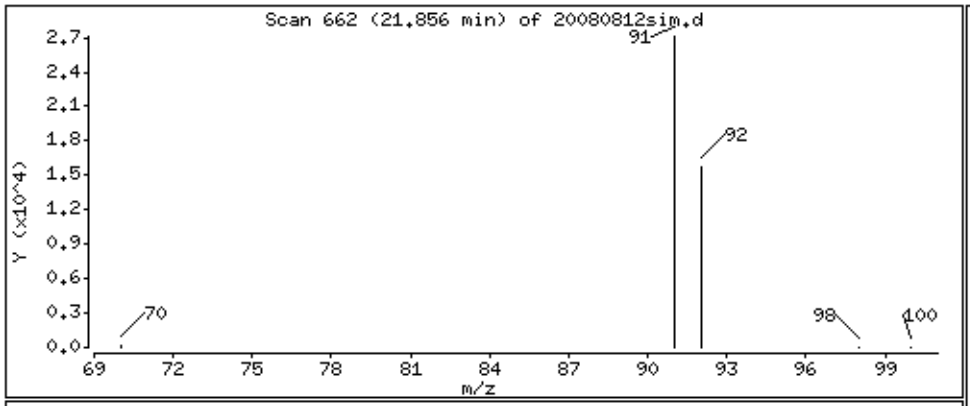
Operator: ef

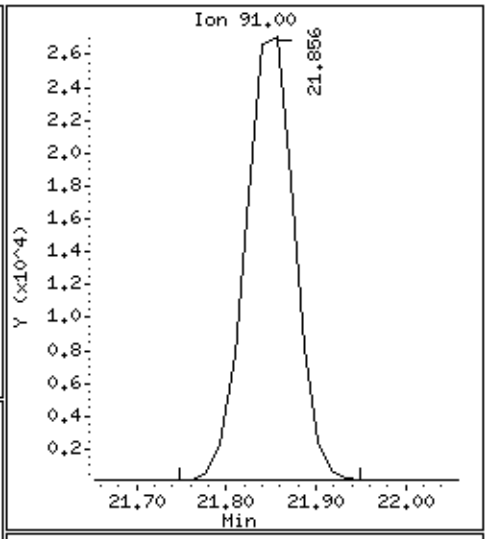
Column phase: RTX-624

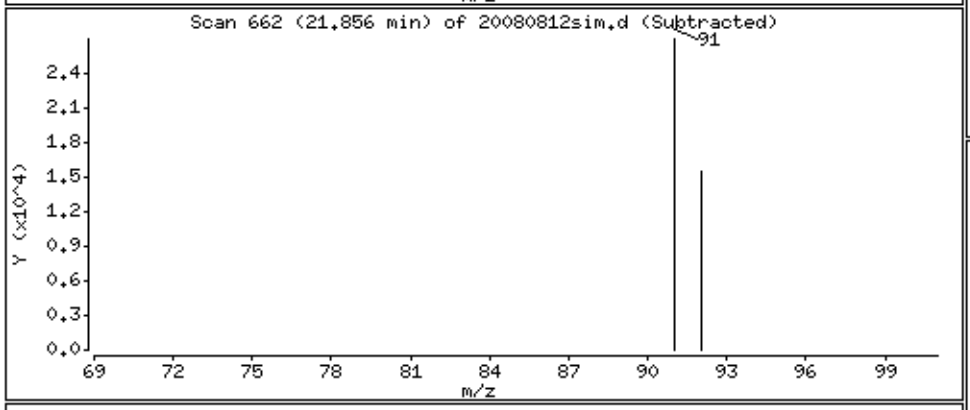
Column diameter: 0.32

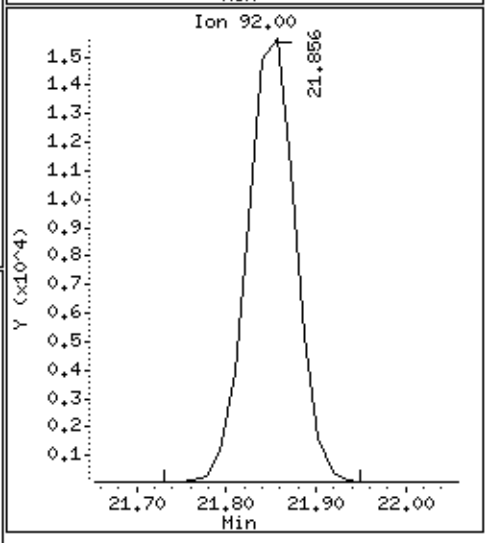
23 Toluene

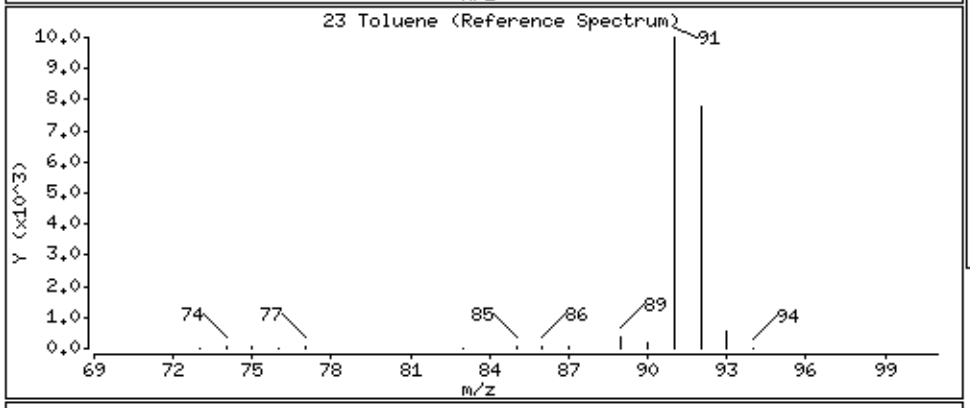
Concentration: 2.301 PPBV

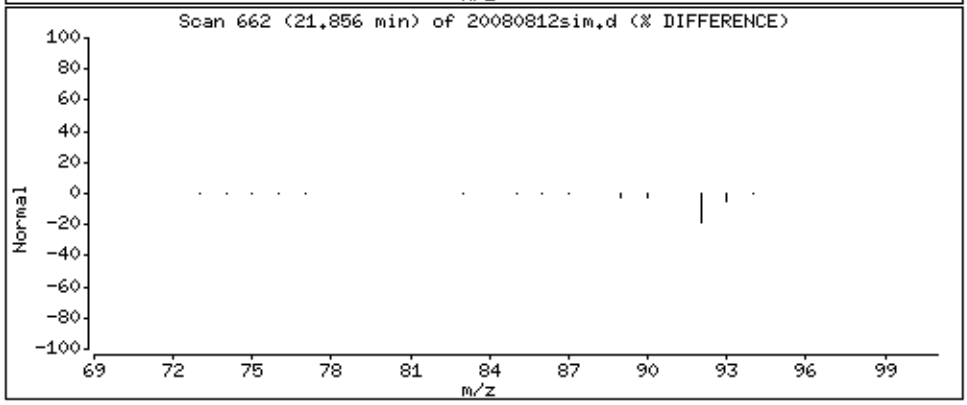












Data File: /chem/msd20.i/08aug17.b/20080812sim.d

Date : 08-AUG-2017 16:57

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34491

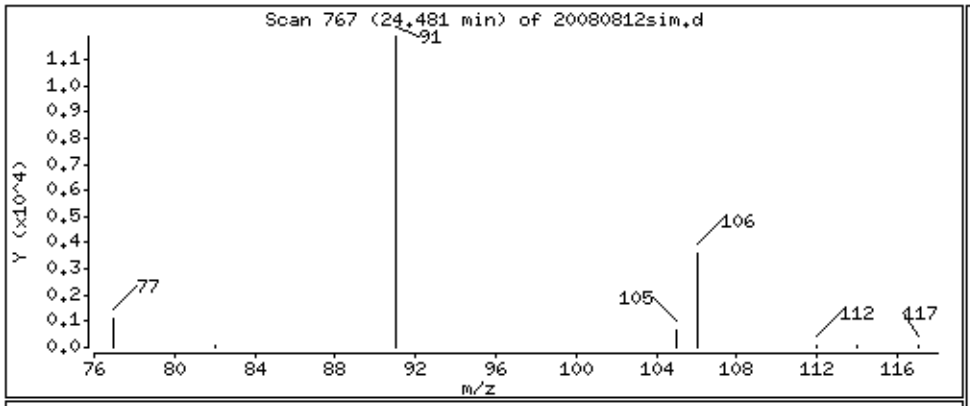
Operator: ef

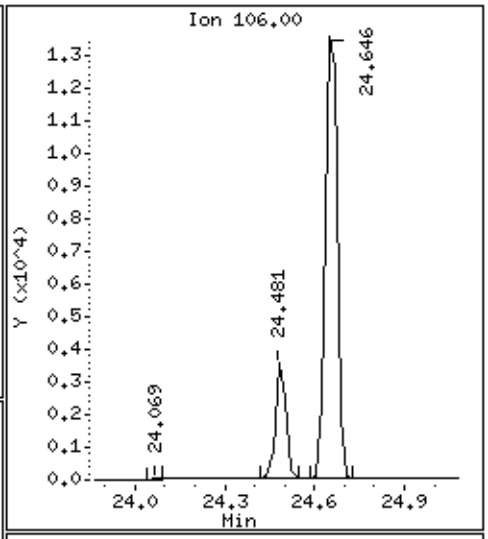
Column phase: RTX-624

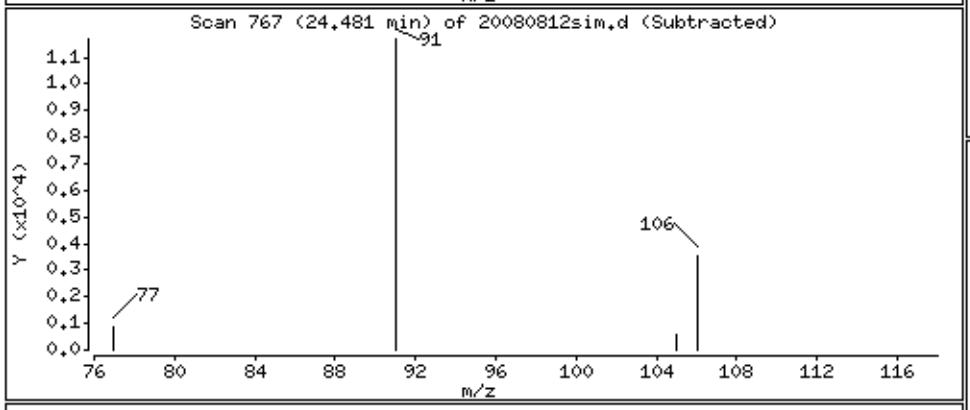
Column diameter: 0.32

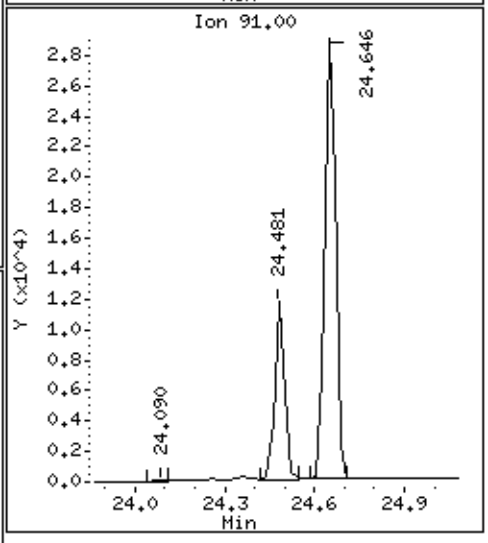
30 Ethyl Benzene

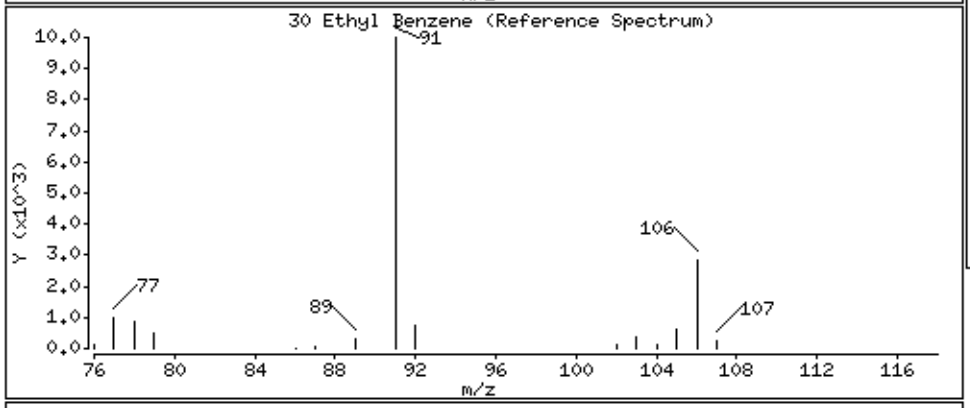
Concentration: 0.5277 PPBV

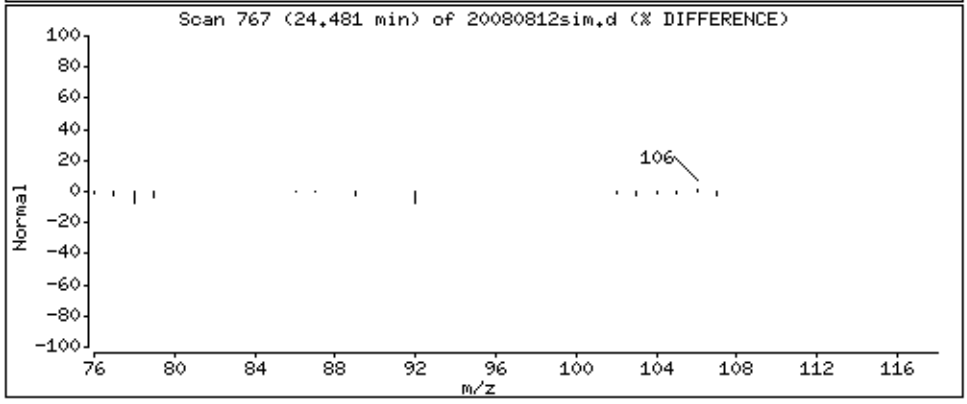












Data File: /chem/msd20.i/08aug17.b/20080812sim.d

Date : 08-AUG-2017 16:57

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34491

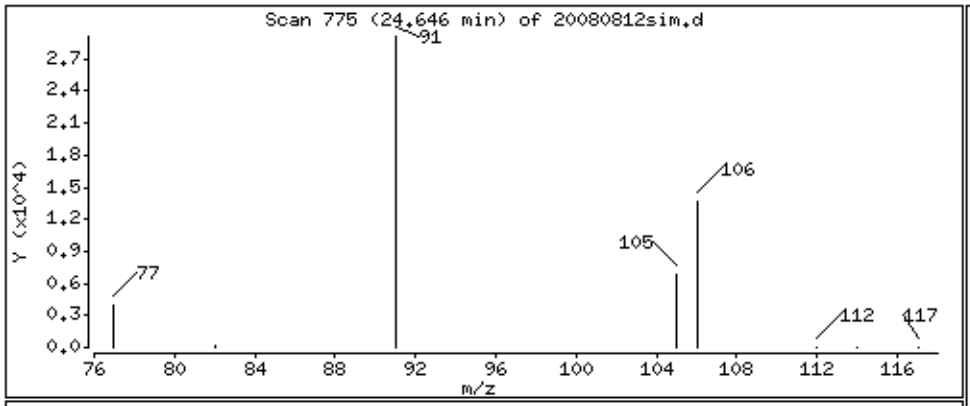
Operator: ef

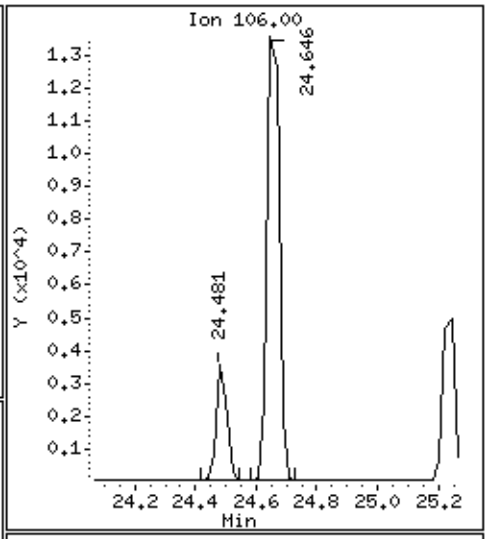
Column phase: RTX-624

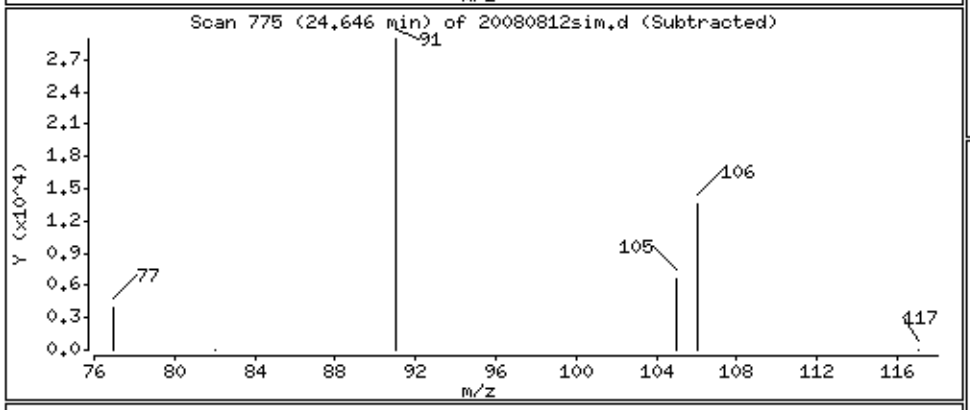
Column diameter: 0.32

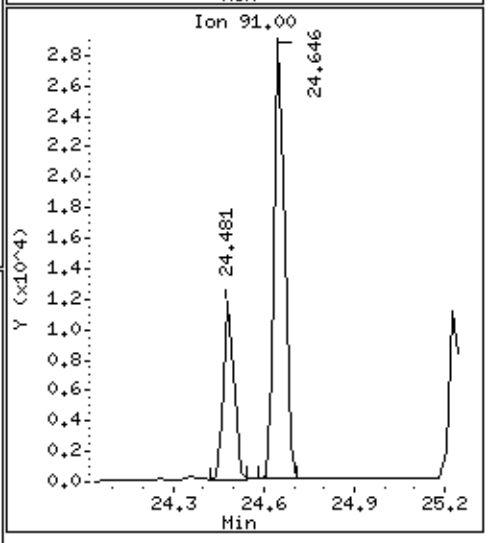
31 m,p-Xylene

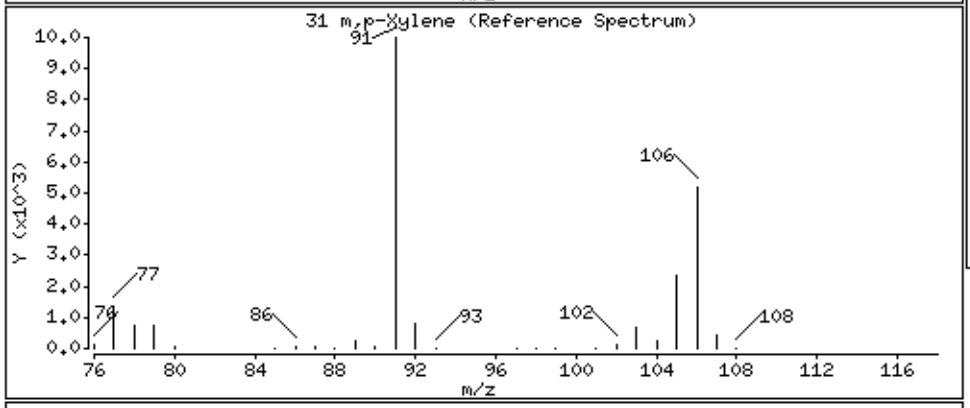
Concentration: 2.036 PPBV

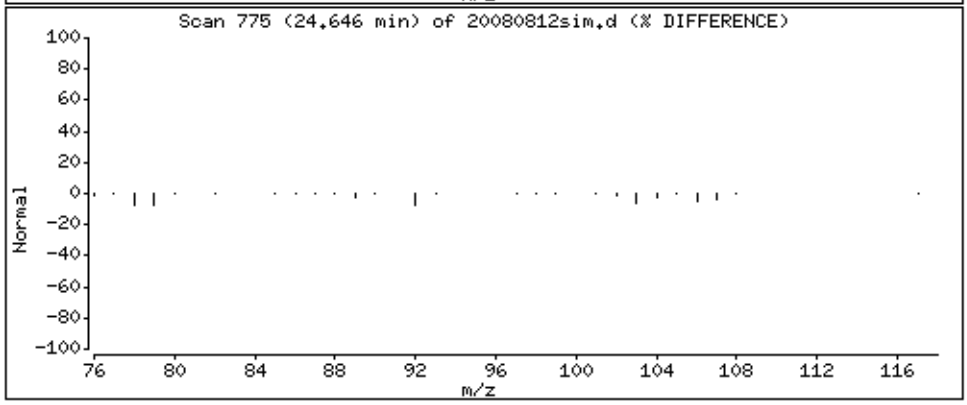












Data File: /chem/msd20.i/08aug17.b/20080812sim.d

Date : 08-AUG-2017 16:57

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34491

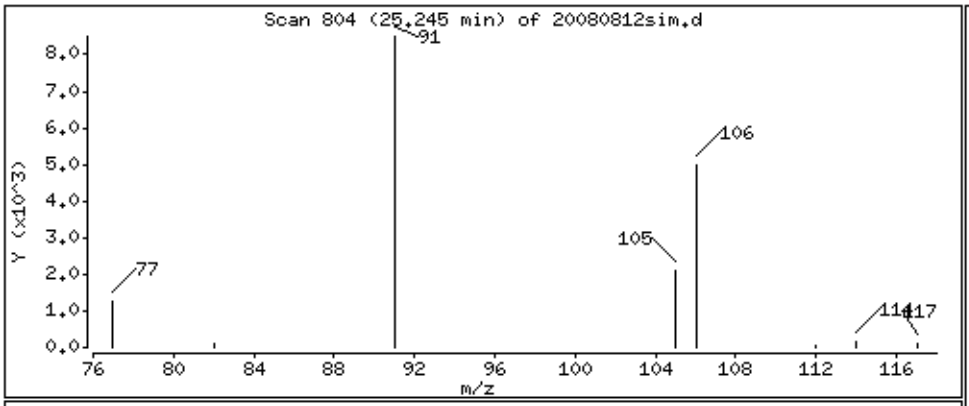
Operator: ef

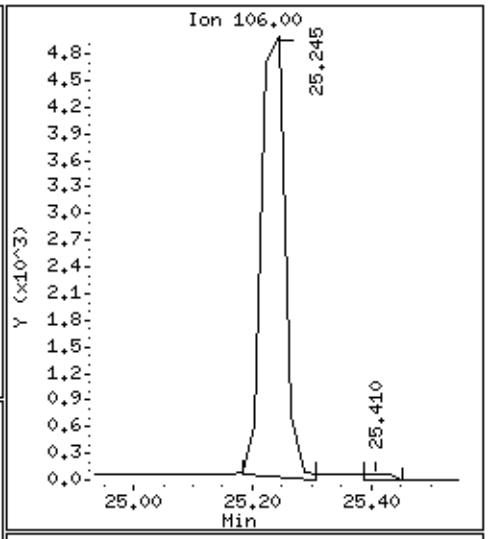
Column phase: RTX-624

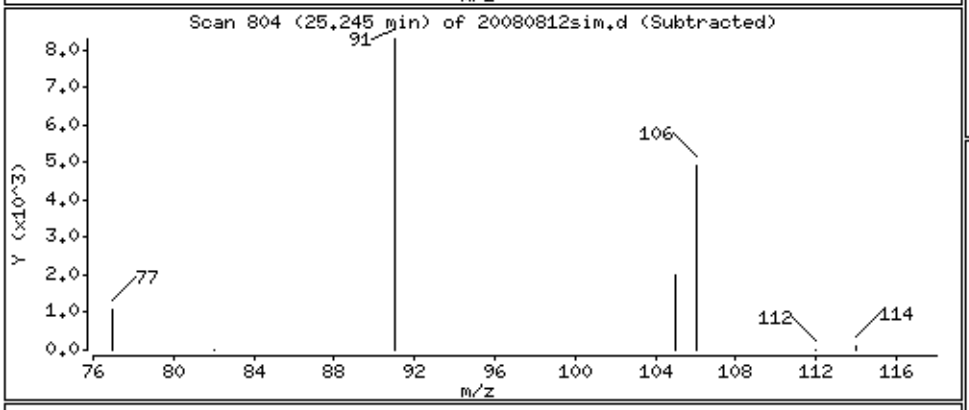
Column diameter: 0.32

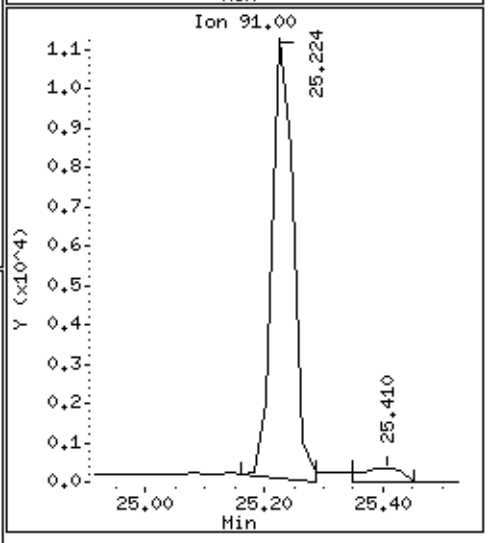
32 o-Xylene

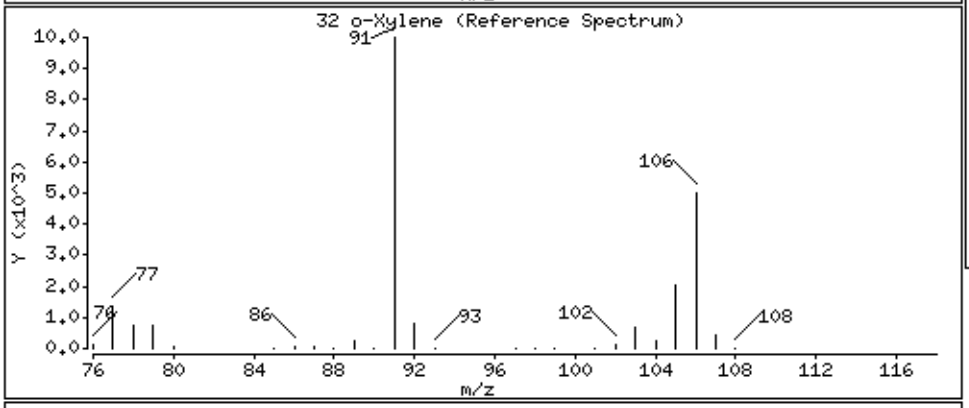
Concentration: 0.7997 PPBV

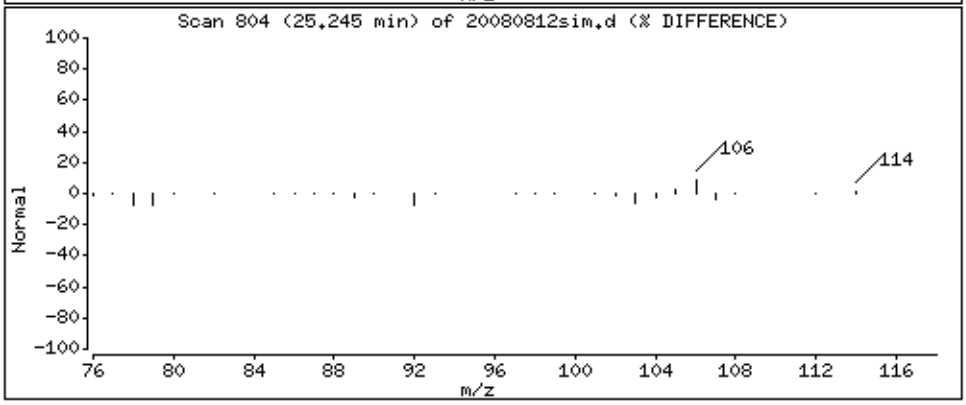












Data File: /chem/msd20.i/08aug17.b/20080812sim.d

Date : 08-AUG-2017 16:57

Client ID:

Instrument: msd20.i

Sample Info: 250mL# 34491

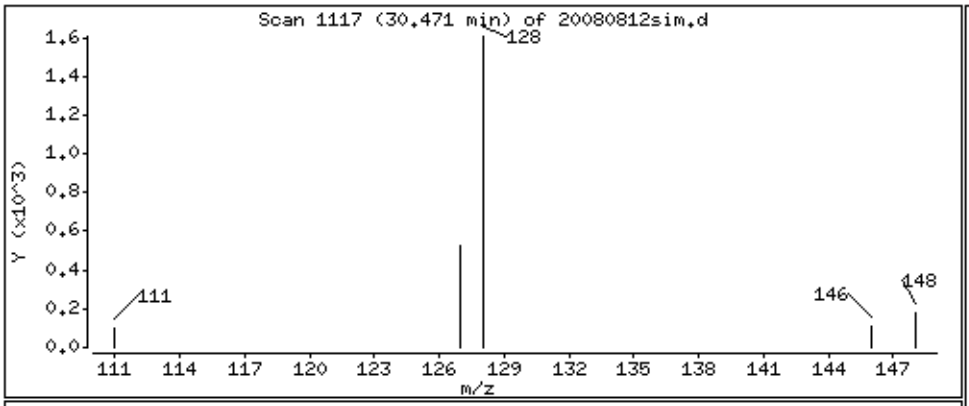
Operator: ef

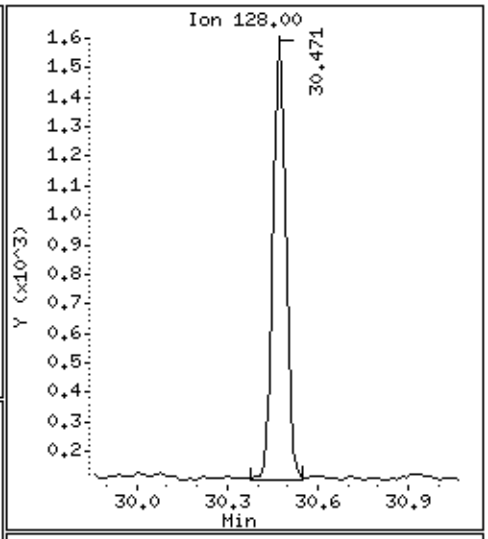
Column phase: RTX-624

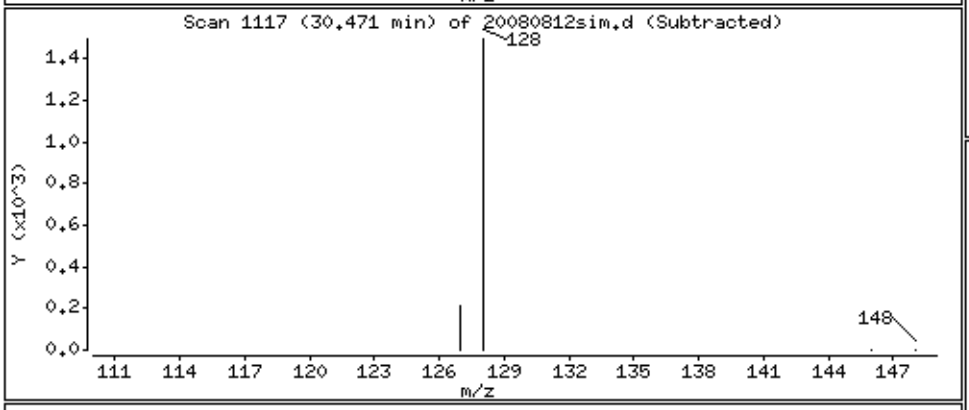
Column diameter: 0.32

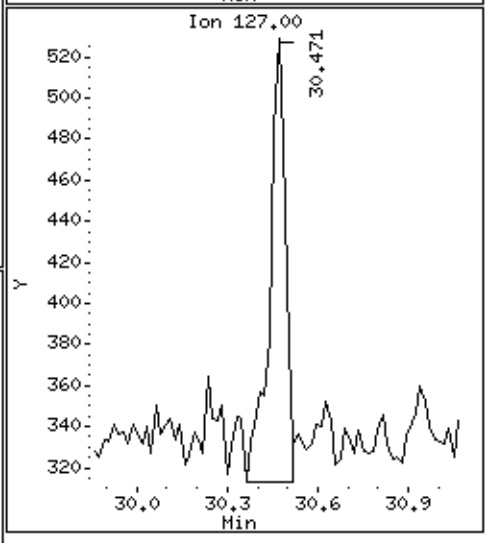
38 Naphthalene

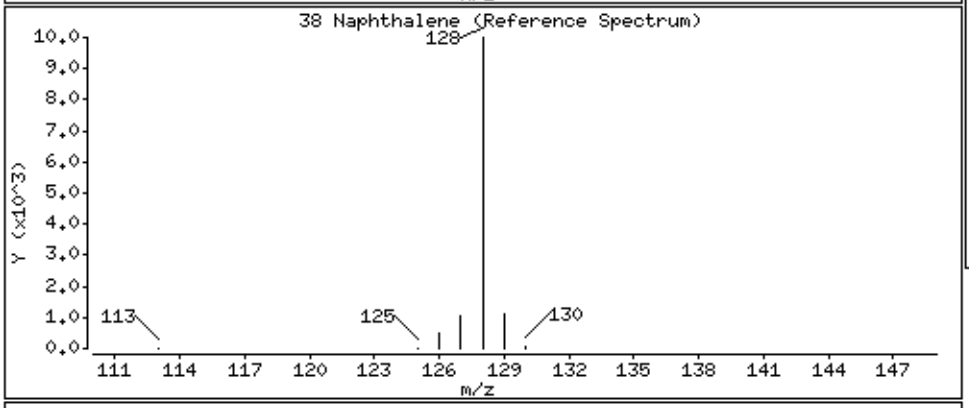
Concentration: 0.3089 PPBV

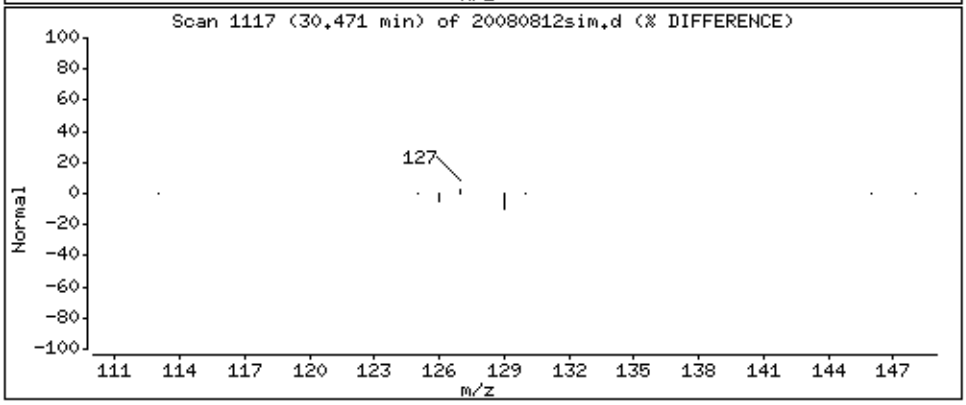












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	OA-040_0817		
Lab ID:	1708092-05A	**Date/Time Analyzed:**	8/9/17 07:41 AM
Date/Time Collected:	8/3/17 05:22 PM	**Dilution Factor:**	1.82
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20080819sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0099	0.029	0.29	0.43
Ethyl Benzene	100-41-4	0.011	0.040	0.16	0.30
m,p-Xylene	108-38-3	0.013	0.040	0.32	1.0
Naphthalene	91-20-3	0.039	0.076	0.48	2.7
o-Xylene	95-47-6	0.012	0.040	0.16	0.47
Toluene	108-88-3	0.0042	0.034	0.14	2.5
Total Xylenes	9999-9999-015	NA	D	0.47	1.5

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	97

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080819sim.d
Lab Smp Id: 1708092-05A
Inj Date : 09-AUG-2017 07:41
Operator : sw Inst ID: msd20.i
Smp Info : 250mL#34378
Misc Info : 7.8"Hg-5.1psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 1.82000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 13 Bromochloromethane						CAS #: 74-97-5		
17.338	17.340 (1.000)	130	58517	5.00000		80.00- 120.00		100.00
17.338	17.340 (1.000)	128	45041			48.37- 108.37		76.97
17.338	17.340 (1.000)	49	48957			82.84- 142.84		83.66
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
18.882	18.880 (1.000)	114	294095	5.00000		80.00- 120.00		100.00
18.882	18.880 (1.000)	88	37595			0.00- 44.04		12.78
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
24.358	24.356 (1.000)	117	232886	5.00000		80.00- 120.00		100.00
24.358	24.356 (1.000)	82	102236			17.63- 77.63		43.90
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
18.274	18.265 (1.054)	65	77200	4.71454	4.714	80.00- 120.00		100.00
18.274	18.265 (1.054)	67	40135			26.67- 86.67		51.99
$ 22 Toluene-d8						CAS #: 2037-26-5		
21.700	21.698 (1.149)	98	252420	4.87362	4.874	80.00- 120.00		100.00
21.684	21.683 (1.148)	70	24406			0.00- 40.38		9.67

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)								
21.700	21.698	(1.149)	100	159492			33.71- 93.71	63.19
$ 33 4-Bromofluorobenzene							CAS #: 460-00-4	
25.963	25.961	(1.066)	174	169811	5.37755	5.378	80.00- 120.00	100.00
25.963	25.961	(1.066)	95	129549			57.01- 117.01	76.29
25.963	25.980	(1.066)	176	166887			68.59- 128.59	98.28
17 Benzene							CAS #: 71-43-2	
18.250	18.244	(0.966)	78	5182	0.07391	0.1345	80.00- 120.00	100.00
18.250	18.244	(0.966)	77	1242			0.00- 53.56	23.97
23 Toluene							CAS #: 108-88-3	
21.856	21.854	(1.157)	91	28742	0.36736	0.6686	80.00- 120.00	100.00
21.856	21.854	(1.157)	92	16489			27.62- 87.62	57.37
30 Ethyl Benzene							CAS #: 100-41-4	
24.481	24.480	(1.005)	106	1084	0.03814	0.06942	80.00- 120.00	100.00
24.481	24.480	(1.005)	91	3352			281.86- 341.86	309.23
31 m,p-Xylene							CAS #: 108-38-3	
24.646	24.665	(1.012)	106	4149	0.13019	0.2369	80.00- 120.00	100.00
24.646	24.645	(1.012)	91	7927			165.84- 225.84	191.06
32 o-Xylene							CAS #: 95-47-6	
25.245	25.243	(1.036)	106	1761	0.05966	0.1086	80.00- 120.00	100.00
25.224	25.222	(1.036)	91	4319			174.02- 234.02	245.26
38 Naphthalene							CAS #: 91-20-3	
30.471	30.469	(1.251)	128	6824	0.27962	0.5089	80.00- 120.00	100.00
30.471	30.469	(1.251)	127	1024			0.00- 43.90	15.01
M 39 Total Xylene							CAS #: 1330-20-7	
				5910	0.18985	0.3455		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080819sim.d
Lab Smp Id: 1708092-05A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 7.8"Hg-5.1psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	58517	-40.19 <-
20 1,4-Difluorobenze	453999	272399	635599	294095	-35.22
28 Chlorobenzene-d5	343223	205934	480512	232886	-32.15

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	-0.01
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.01
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 08:54

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-05A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 7.8"Hg-5.1psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.714	94.29	70-130
$ 22 Toluene-d8	5.000	4.874	97.47	70-130
$ 33 4-Bromofluorobenze	5.000	5.378	107.55	70-130

Data File: /chem/msd20.i/08aug17.b/20080819sim.d

Date : 09-AUG-2017 07:41

Client ID:

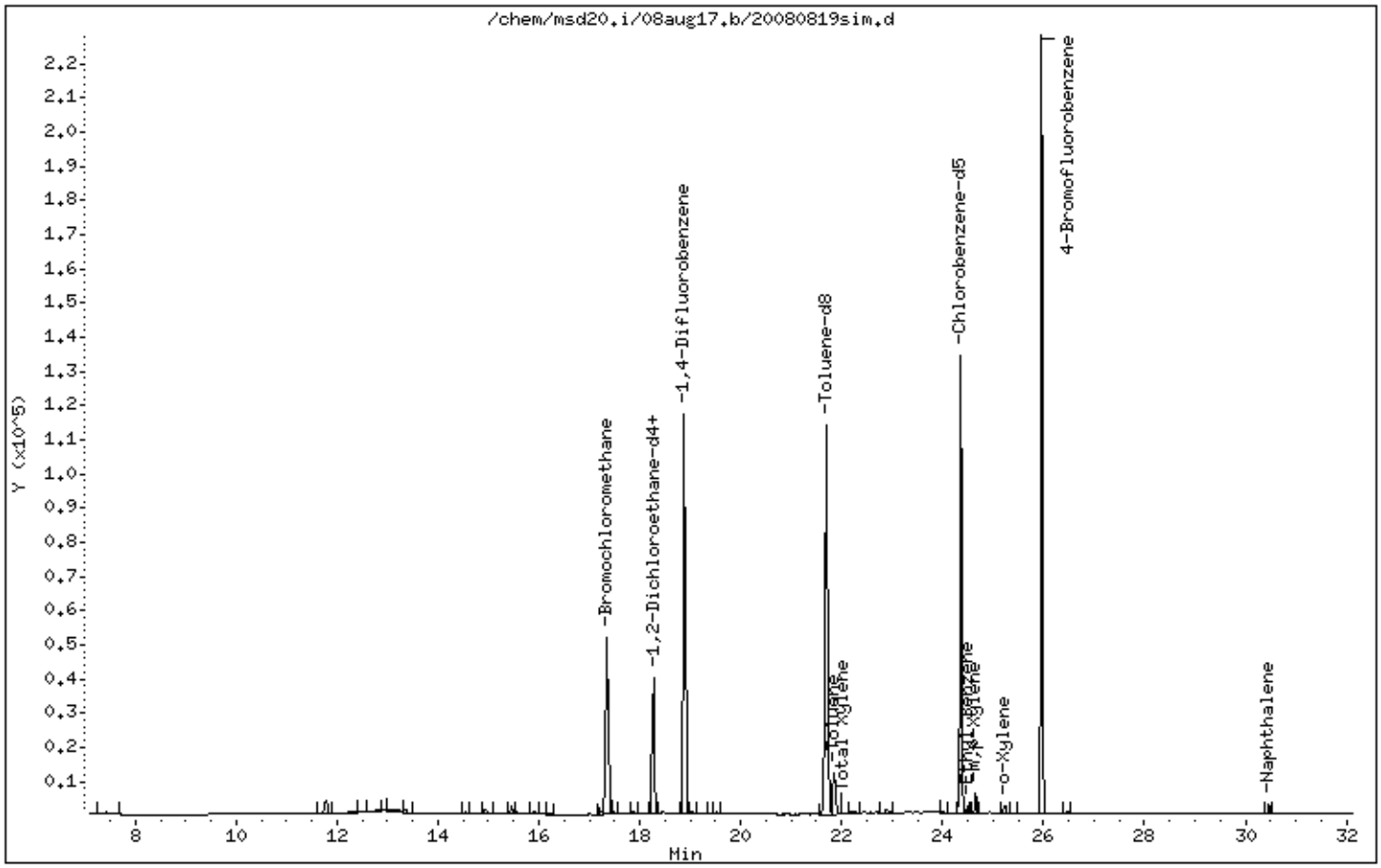
Instrument: msd20.i

Sample Info: 250mL#34378

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/08aug17.b/20080819sim.d

Date : 09-AUG-2017 07:41

Client ID:

Instrument: msd20.i

Sample Info: 250mL#34378

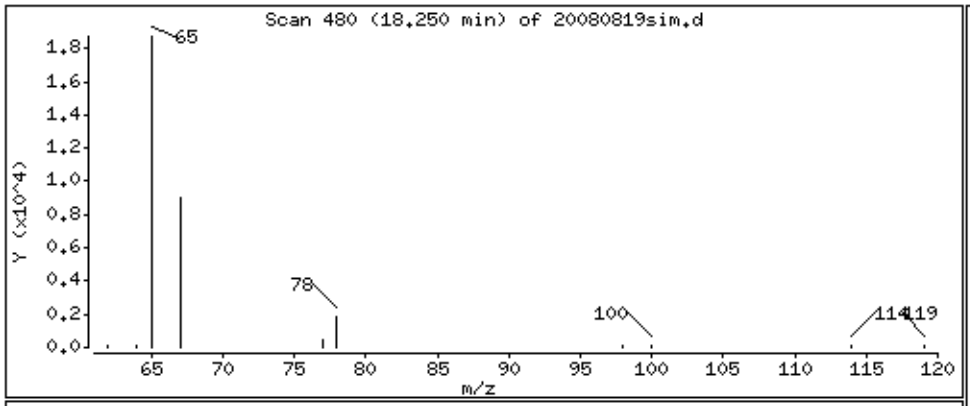
Operator: sw

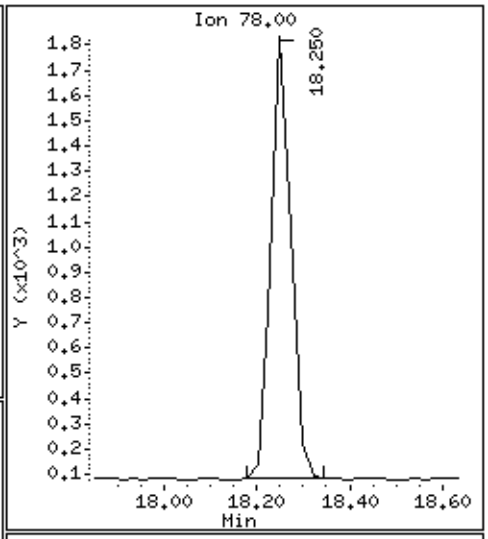
Column phase: RTX-624

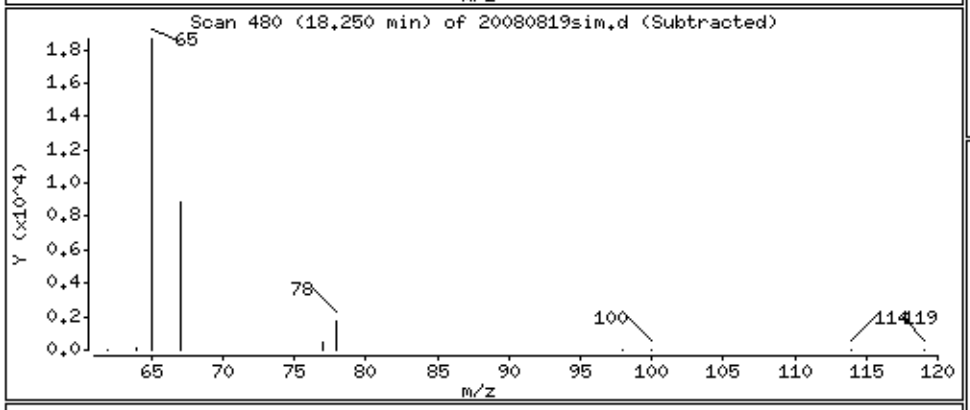
Column diameter: 0.32

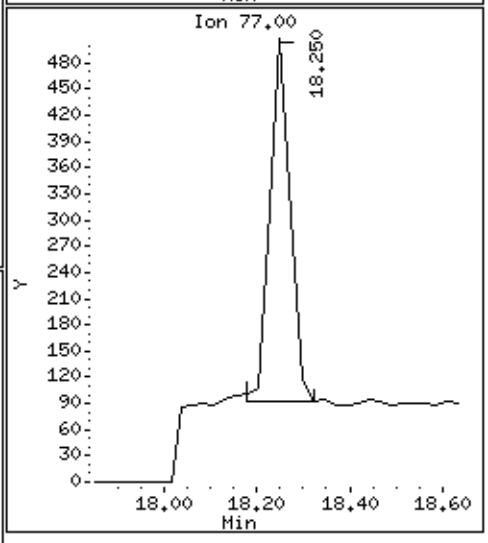
17 Benzene

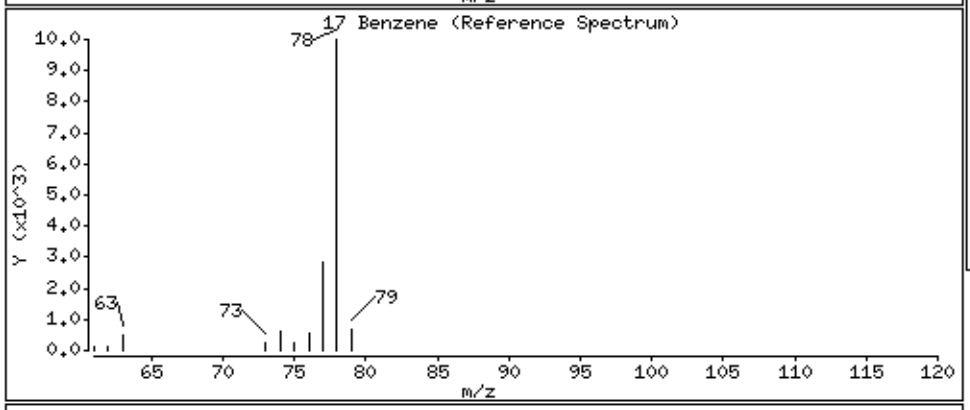
Concentration: 0.1345 PPBV

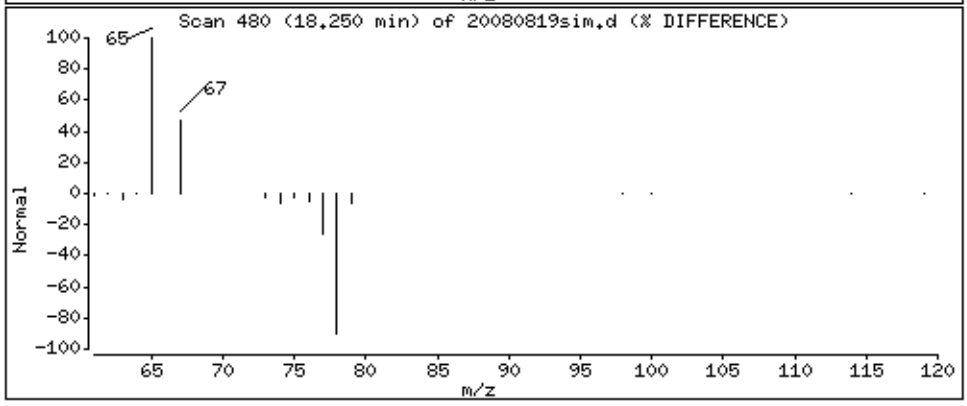












Data File: /chem/msd20.i/08aug17.b/20080819sim.d

Date : 09-AUG-2017 07:41

Client ID:

Instrument: msd20.i

Sample Info: 250mL#34378

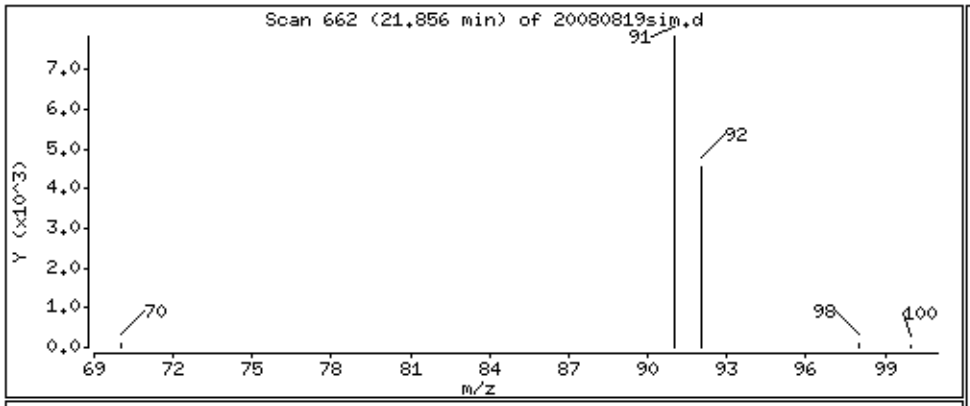
Operator: sw

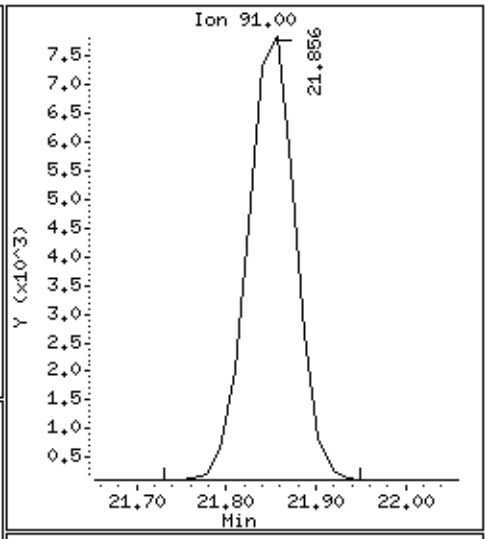
Column phase: RTX-624

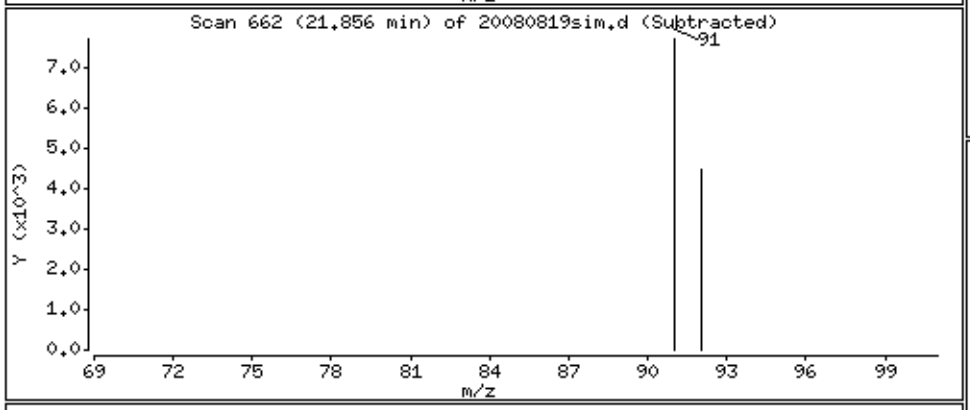
Column diameter: 0.32

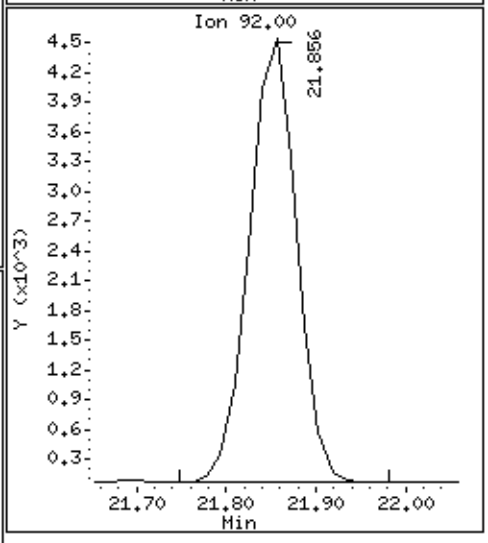
23 Toluene

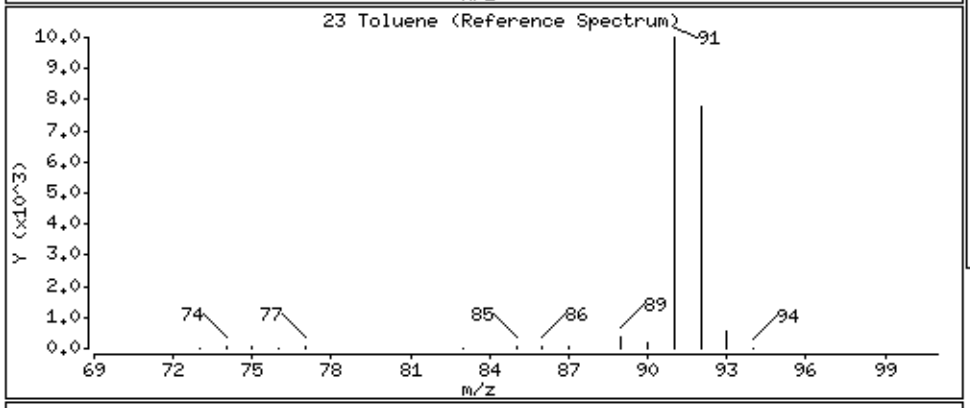
Concentration: 0.6686 PPBV

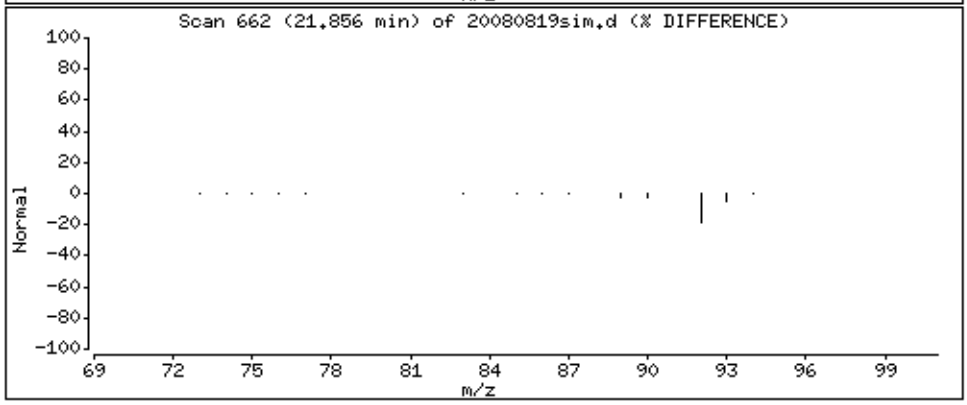












Data File: /chem/msd20.i/08aug17.b/20080819sim.d

Date : 09-AUG-2017 07:41

Client ID:

Instrument: msd20.i

Sample Info: 250mL#34378

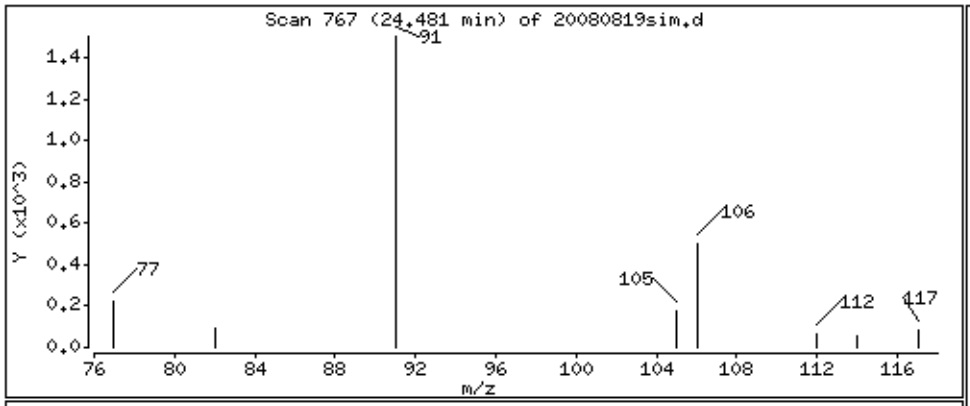
Operator: sw

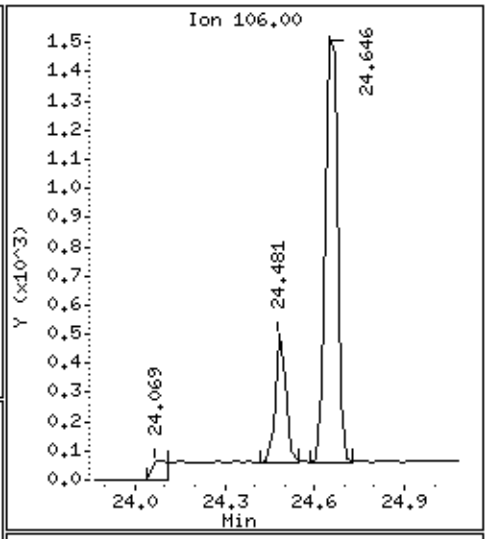
Column phase: RTX-624

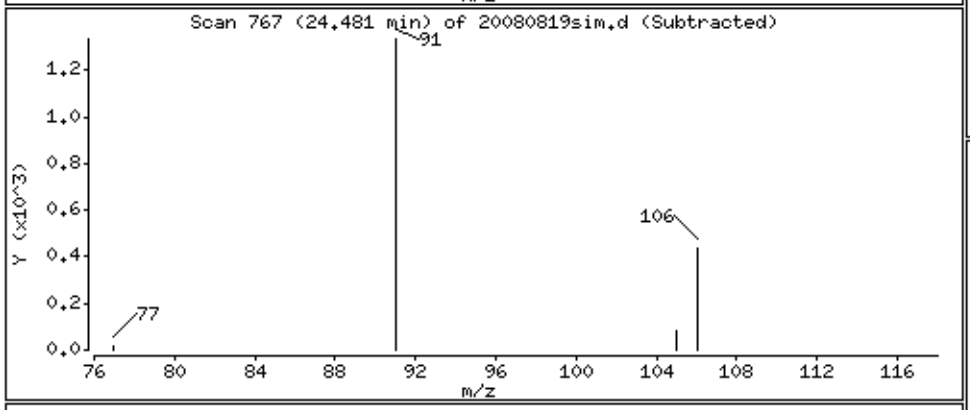
Column diameter: 0.32

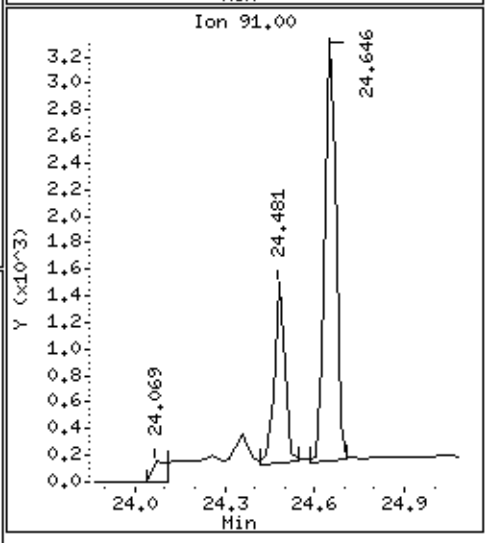
30 Ethyl Benzene

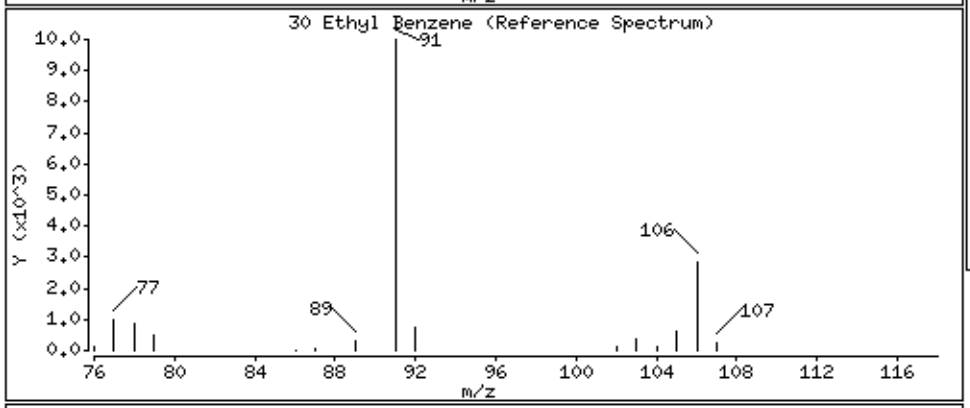
Concentration: 0.06942 PPBV

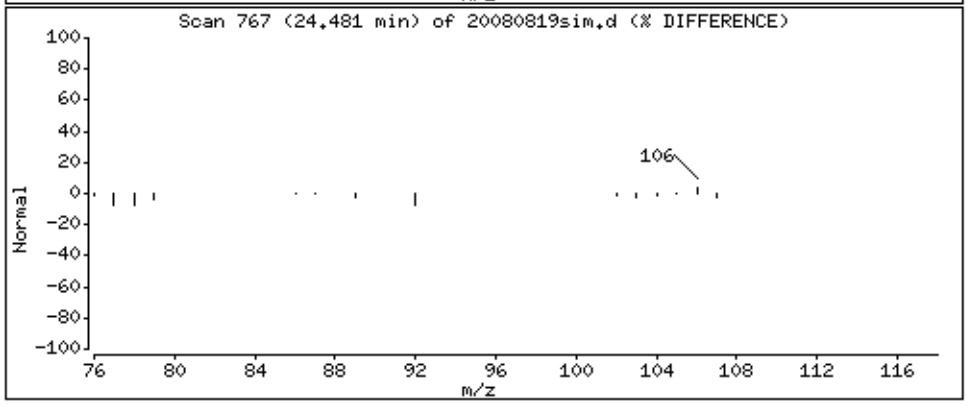












Data File: /chem/msd20.i/08aug17.b/20080819sim.d

Date : 09-AUG-2017 07:41

Client ID:

Instrument: msd20.i

Sample Info: 250mL#34378

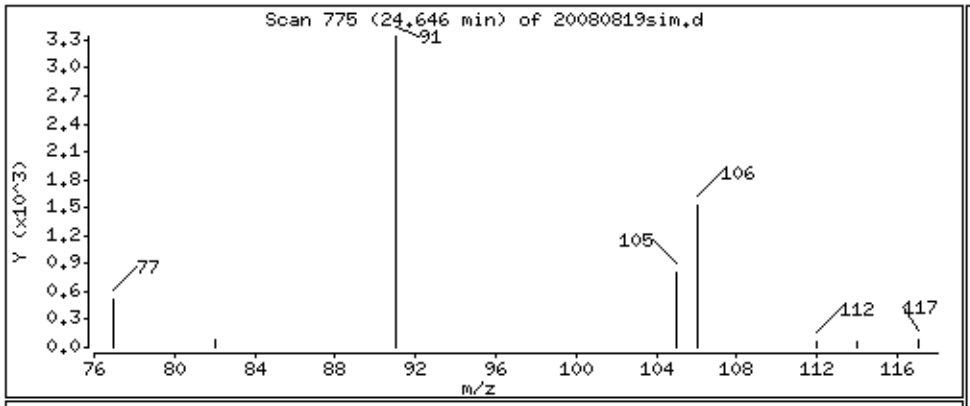
Operator: sw

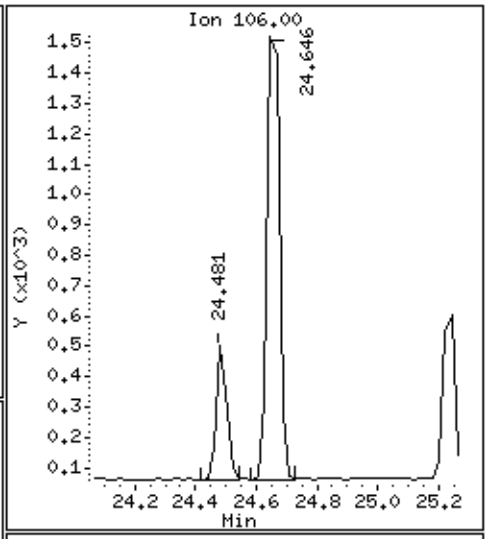
Column phase: RTX-624

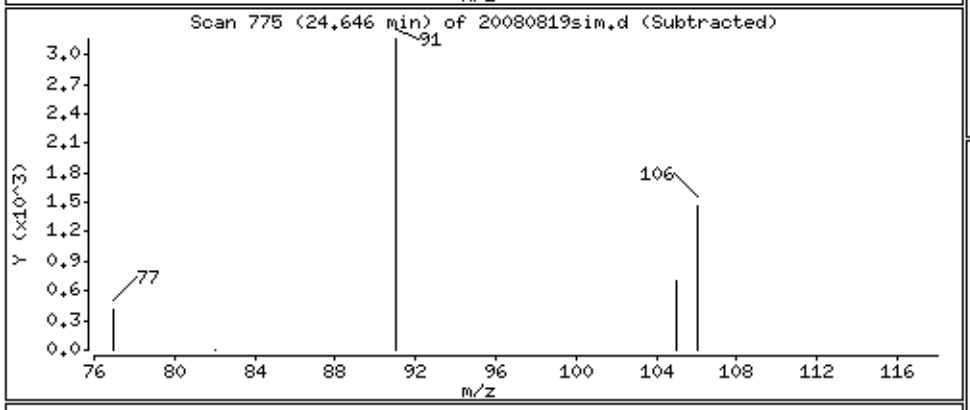
Column diameter: 0.32

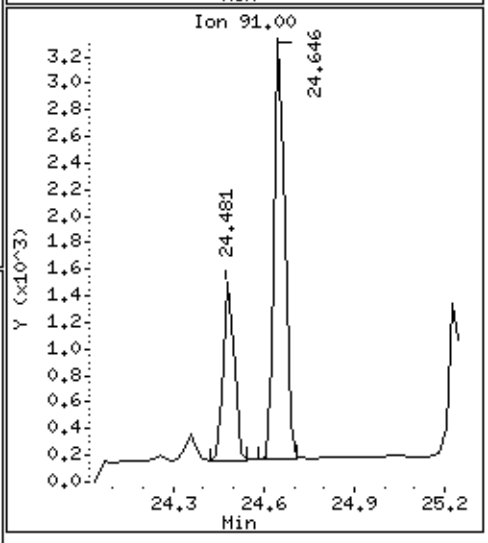
31 m,p-Xylene

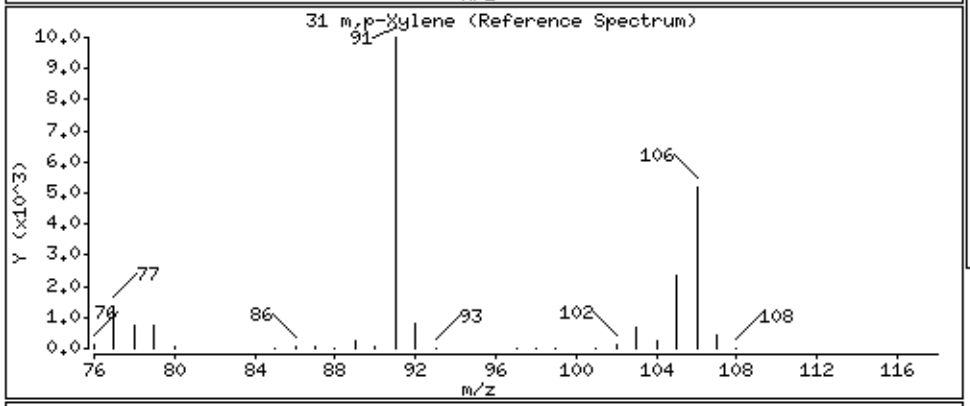
Concentration: 0.2369 PPBV

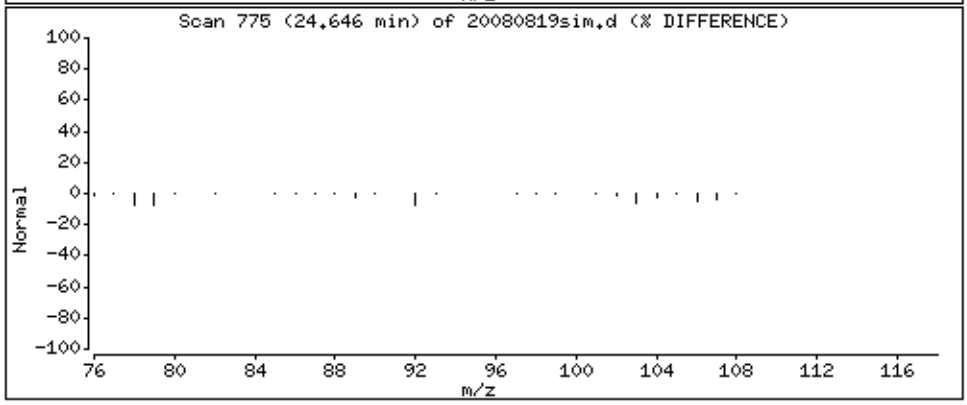












Data File: /chem/msd20.i/08aug17.b/20080819sim.d

Date : 09-AUG-2017 07:41

Client ID:

Instrument: msd20.i

Sample Info: 250mL#34378

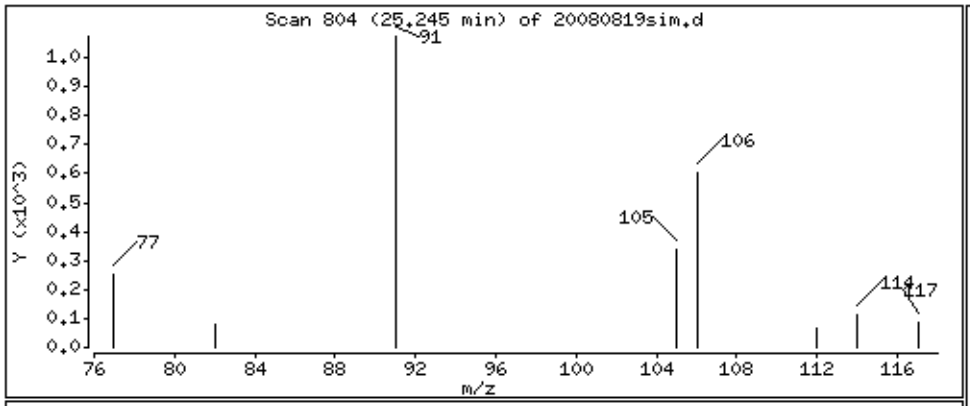
Operator: sw

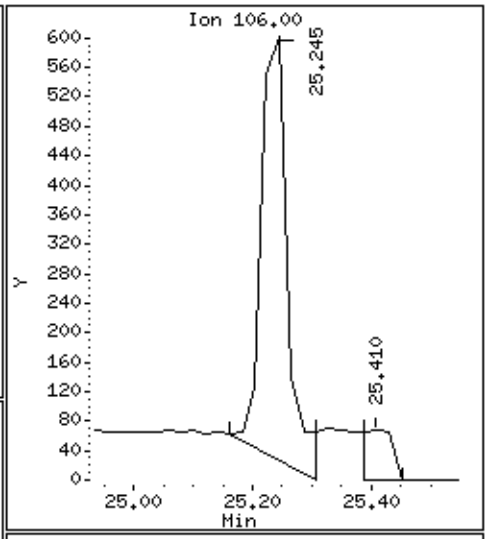
Column phase: RTX-624

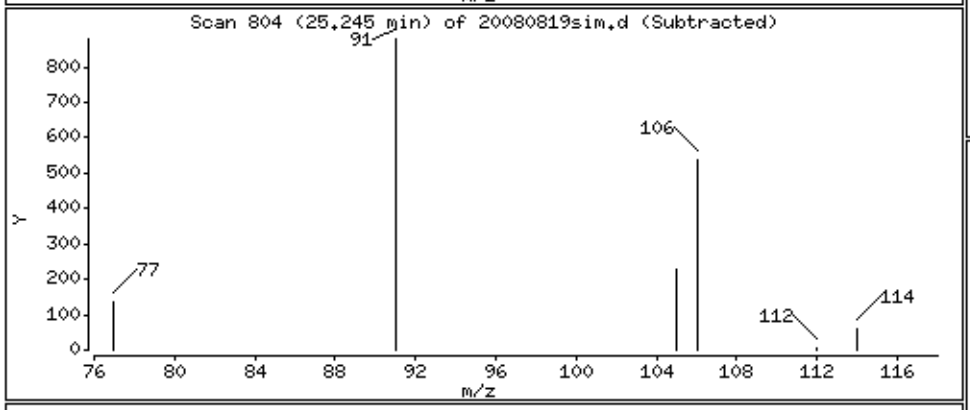
Column diameter: 0.32

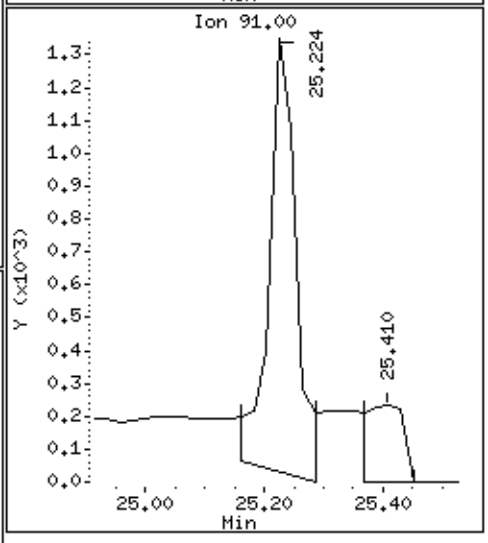
32 o-Xylene

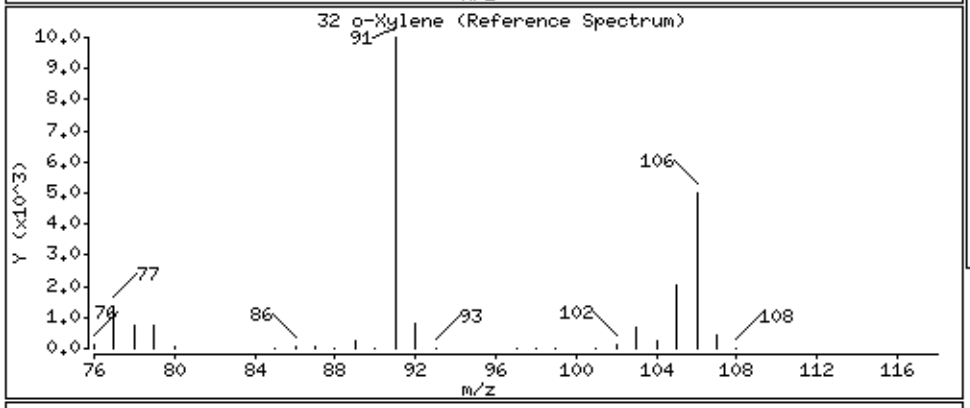
Concentration: 0.1086 PPBV

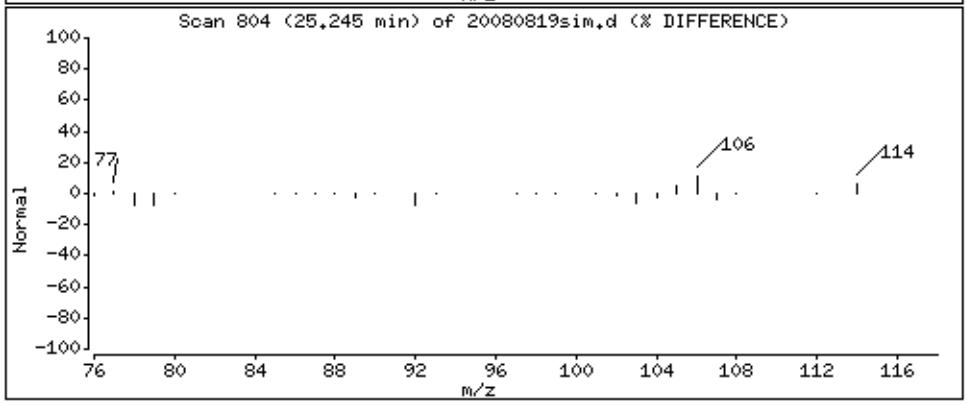












Data File: /chem/msd20.i/08aug17.b/20080819sim.d

Date : 09-AUG-2017 07:41

Client ID:

Instrument: msd20.i

Sample Info: 250mL#34378

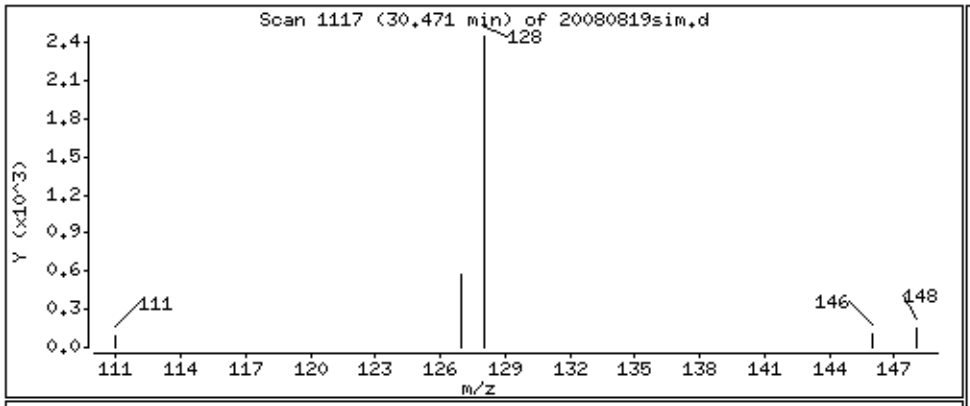
Operator: sw

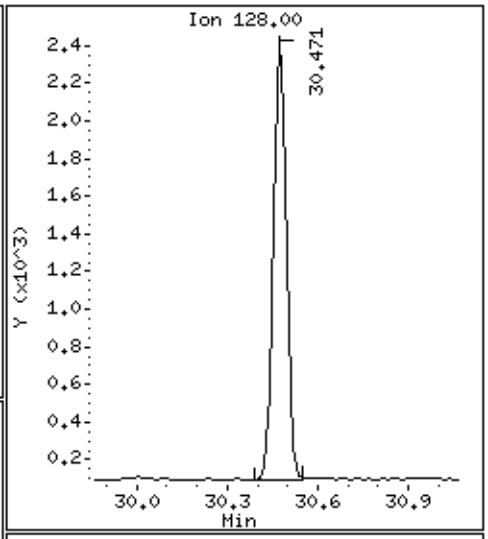
Column phase: RTX-624

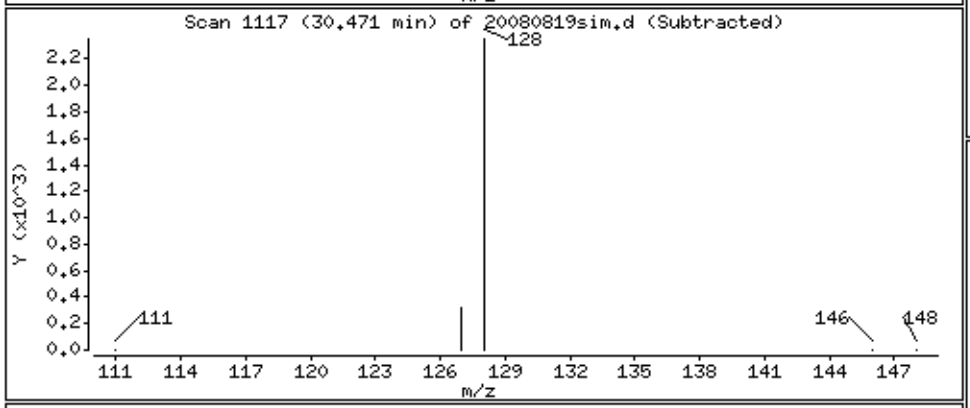
Column diameter: 0.32

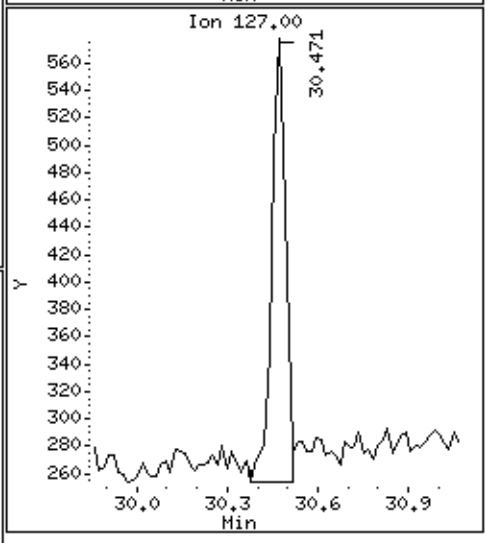
38 Naphthalene

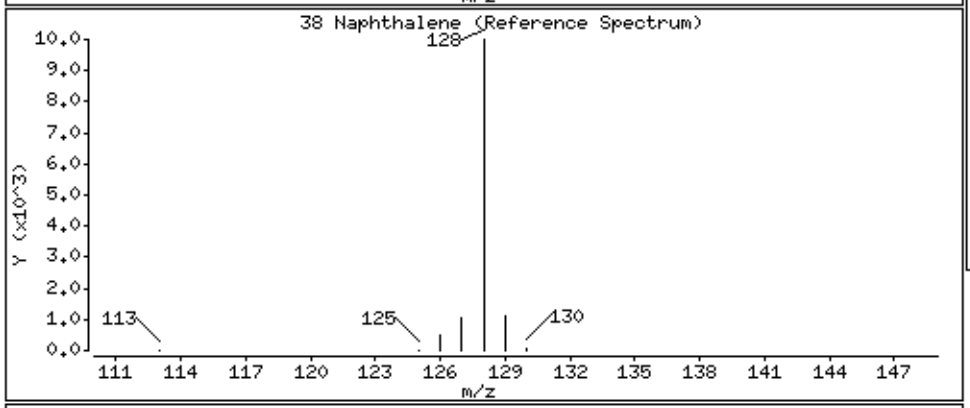
Concentration: 0.5089 PPBV

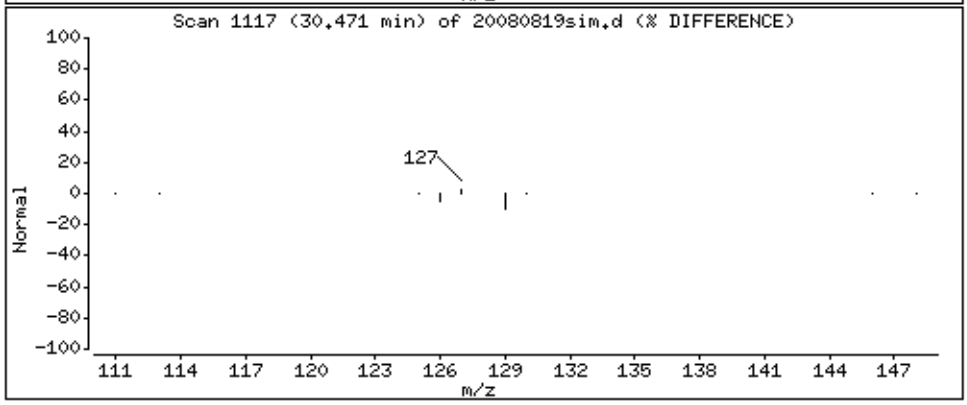












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	OA-012_0817		
Lab ID:	1708092-06A	**Date/Time Analyzed:**	8/9/17 03:39 PM
Date/Time Collected:	8/3/17 05:54 PM	**Dilution Factor:**	1.94
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msde.i / e080910sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.039	0.039	0.31	0.35
Ethyl Benzene	100-41-4	0.015	0.050	0.17	0.22
m,p-Xylene	108-38-3	0.014	0.050	0.34	0.64
Naphthalene	91-20-3	0.062	0.081	0.51	1.9
o-Xylene	95-47-6	0.010	0.050	0.17	0.24
Toluene	108-88-3	0.0099	0.044	0.15	1.8
Total Xylenes	9999-9999-015	NA	D	0.50	0.87

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	104
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080910sim.d
Lab Smp Id: 1708092-06A
Inj Date : 09-AUG-2017 15:39
Operator : ef Inst ID: msde.i
Smp Info : 250mL# N2753
Misc Info : 9.4"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:18 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1
Dil Factor: 1.94000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.390	15.405 (1.000)	130	145971	5.00000		80.00- 120.00	100.00
	15.390	15.405 (1.000)	128	113033			47.34- 107.34	77.44
	15.390	15.405 (1.000)	49	173667			83.88- 143.88	118.97
	17 Benzene					CAS #: 71-43-2		
	16.206	16.197 (0.968)	78	6950	0.05687	0.1103	80.00- 120.00	100.00
	16.206	16.197 (0.968)	77	2329			0.00- 53.90	33.51
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.206	16.197 (1.053)	65	238368	5.20295	5.203	80.00- 120.00	100.00
	16.206	16.197 (1.053)	67	100895			18.02- 78.02	42.33
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	16.736	16.727 (1.000)	114	490322	5.00000		80.00- 120.00	100.00
	16.736	16.727 (1.000)	88	73891			0.00- 44.94	15.07
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.276	19.267 (1.152)	98	373867	5.00546	5.005	80.00- 120.00	100.00
	19.276	19.267 (1.152)	70	44168			0.00- 41.37	11.81

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.276	19.267 (1.152)	100	238533			33.76- 93.76	63.80
	23 Toluene					CAS #: 108-88-3		
	19.433	19.424 (1.161)	91	36739	0.24340	0.4722	80.00- 120.00	100.00
	19.433	19.424 (1.161)	92	20702			27.48- 87.48	56.35
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	22.173	22.170 (1.000)	117	456280	5.00000		80.00- 120.00	100.00
	22.173	22.170 (1.000)	82	191261			11.87- 71.87	41.92
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.297	22.294 (1.006)	106	1561	0.02574	0.04993	80.00- 120.00	100.00
	22.297	22.294 (1.006)	91	4791			287.72- 347.72	306.93
	31 m,p-Xylene					CAS #: 108-38-3		
	22.484	22.460 (1.014)	106	5430	0.07651	0.1484	80.00- 120.00	100.00
	22.463	22.460 (1.013)	91	11675			182.04- 242.04	215.00
	32 o-Xylene					CAS #: 95-47-6		
	23.085	23.082 (1.041)	106	1919	0.02908	0.05641	80.00- 120.00	100.00
	23.085	23.082 (1.041)	91	4372			192.45- 252.45	227.80
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.850	23.847 (1.076)	174	308281	5.02892	5.029	80.00- 120.00	100.00
	23.850	23.847 (1.076)	95	294244			66.14- 126.14	95.45
	23.850	23.847 (1.076)	176	299365			67.55- 127.55	97.11
	38 Naphthalene					CAS #: 91-20-3		
	27.729	27.703 (1.251)	128	16657	0.18325	0.3555	80.00- 120.00	100.00
	27.729	27.703 (1.251)	127	2287			0.00- 42.95	13.73
M	39 Total Xylene					CAS #: 1330-20-7		
				7349	0.10559	0.2048		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080910sim.d
Lab Smp Id: 1708092-06A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 9.4"Hg -> 4.9psi

Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	145971	7.01
20 1,4-Difluorobenze	468904	281342	656466	490322	4.57
28 Chlorobenzene-d5	424491	254695	594287	456280	7.49

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.39	-0.09
20 1,4-Difluorobenze	16.73	16.40	17.06	16.74	0.06
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 07:23

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 09Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-06A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 9.4"Hg -> 4.9psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.203	104.06	70-130
$ 22 Toluene-d8	5.000	5.005	100.11	70-130
$ 33 4-Bromofluorobenze	5.000	5.029	100.58	70-130

Data File: /chem/msde.i/09Aug2017.b/e080910sim.d

Date : 09-AUG-2017 15:39

Client ID:

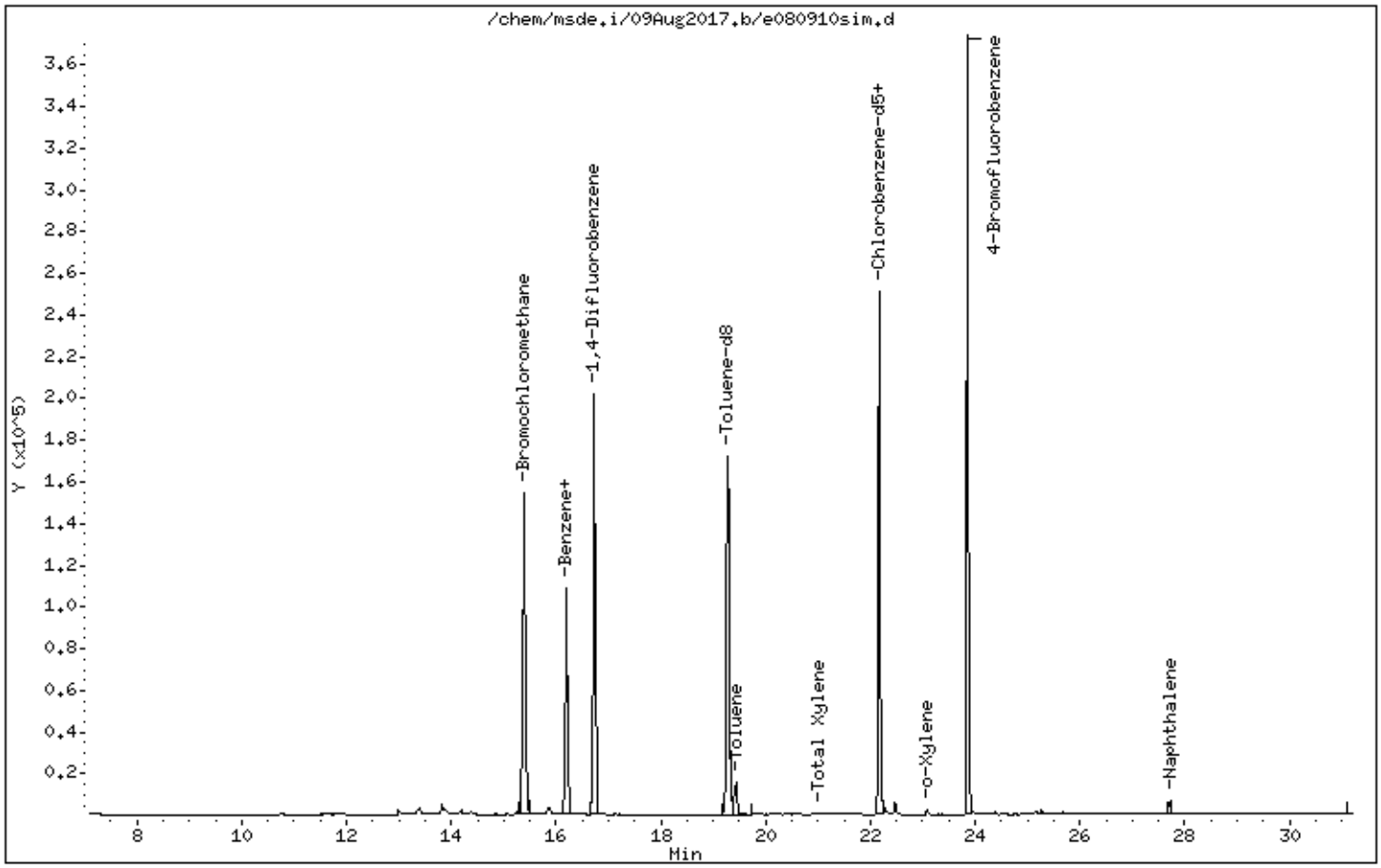
Instrument: msde.i

Sample Info: 250mL# N2753

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msde.i/09Aug2017.b/e080910sim.d

Date : 09-AUG-2017 15:39

Client ID:

Instrument: msde.i

Sample Info: 250mL# N2753

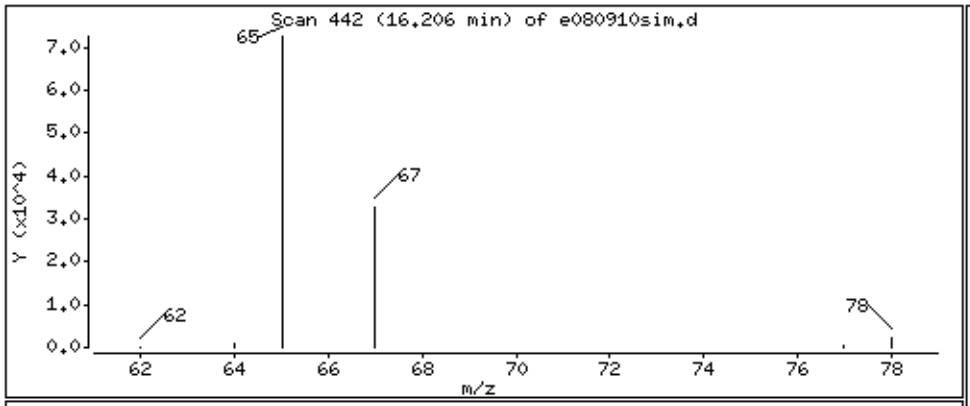
Operator: ef

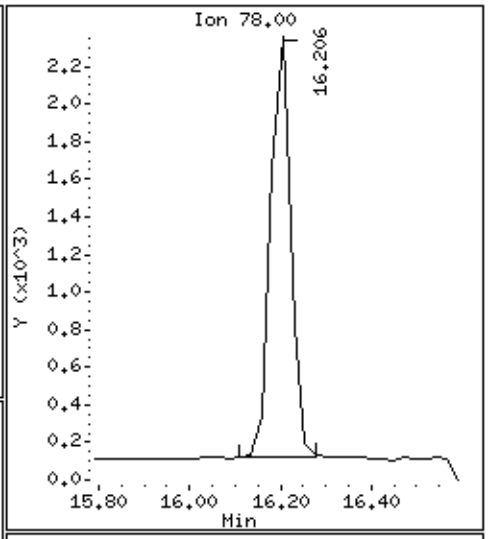
Column phase: RTX-624

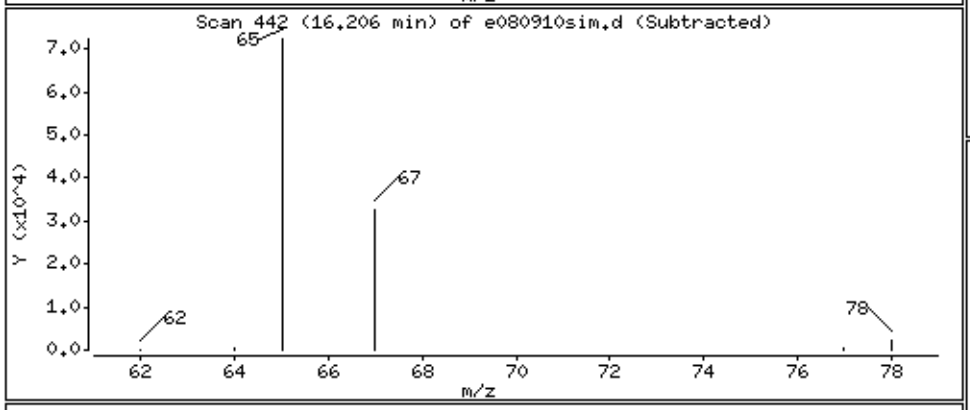
Column diameter: 0.32

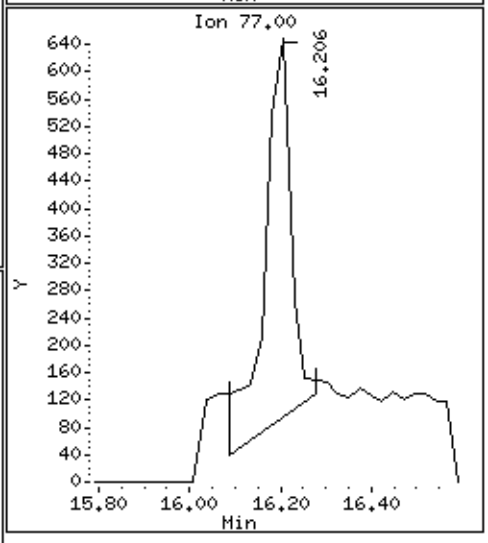
17 Benzene

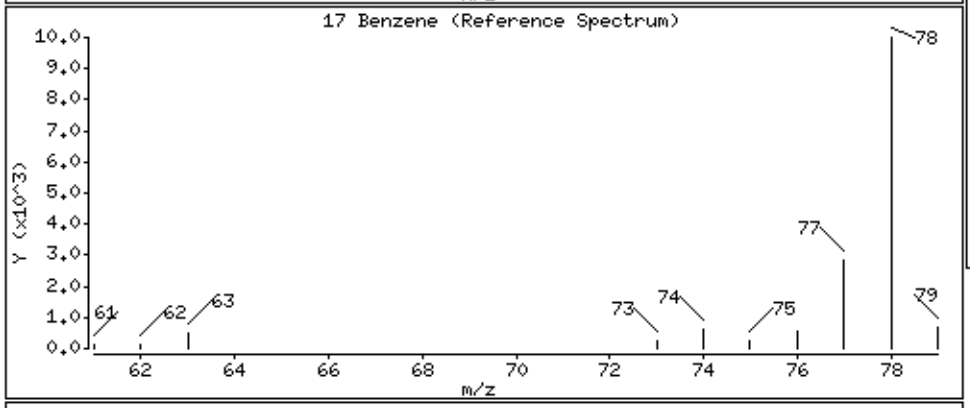
Concentration: 0.1103 PPBV

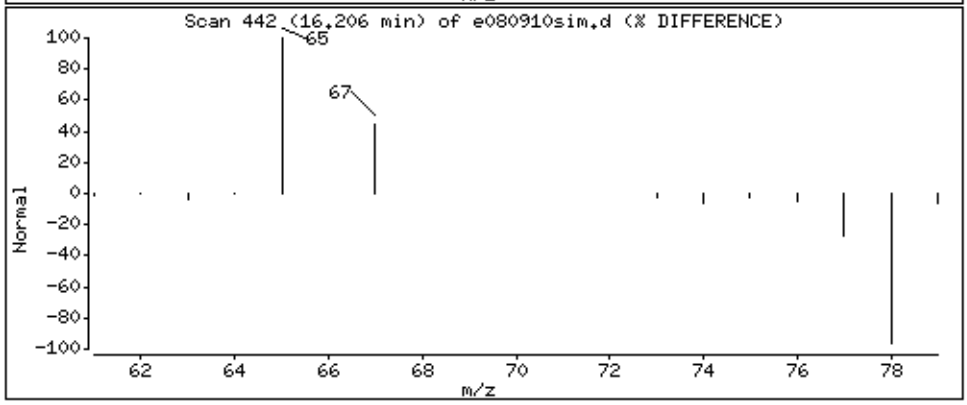












Data File: /chem/msde.i/09Aug2017.b/e080910sim.d

Date : 09-AUG-2017 15:39

Client ID:

Instrument: msde.i

Sample Info: 250mL# N2753

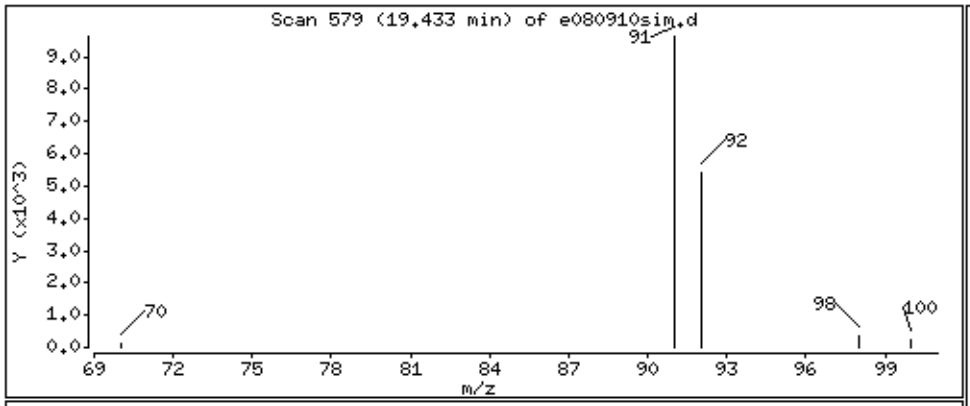
Operator: ef

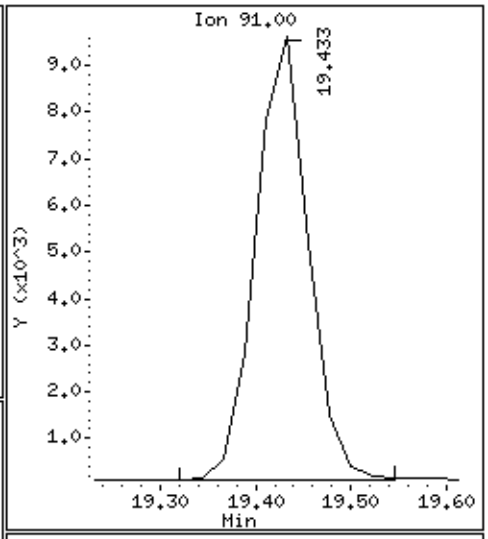
Column phase: RTX-624

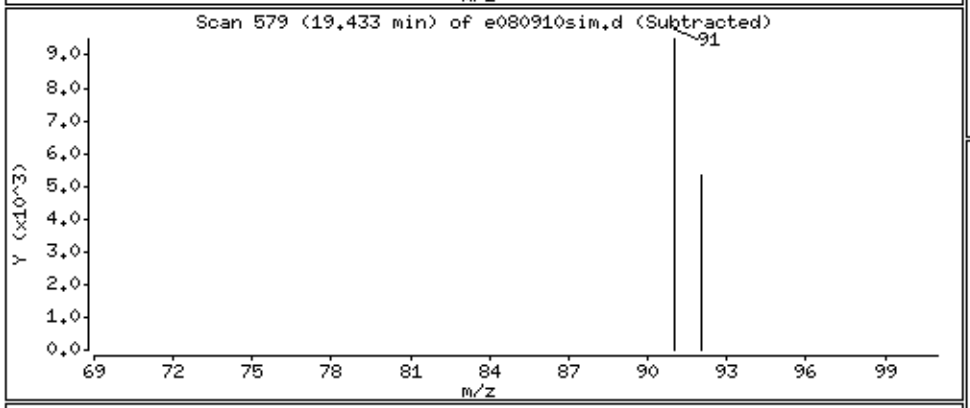
Column diameter: 0.32

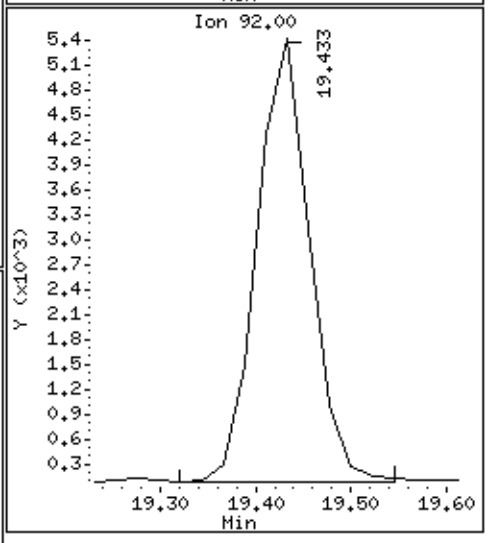
23 Toluene

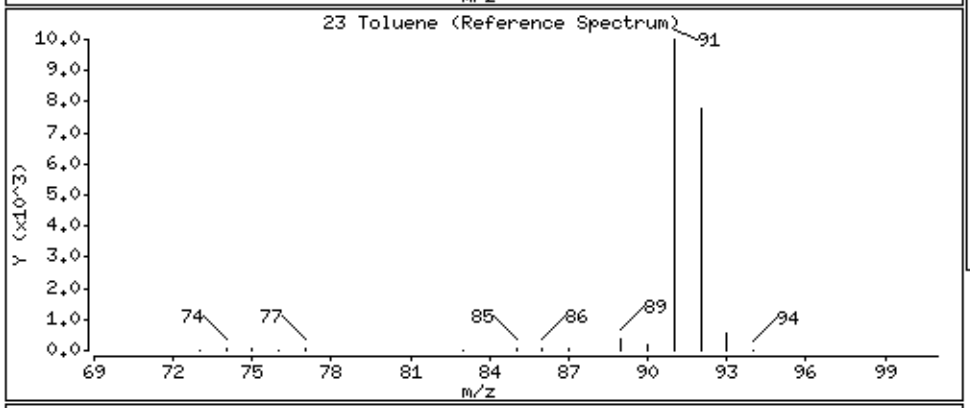
Concentration: 0.4722 PPBV

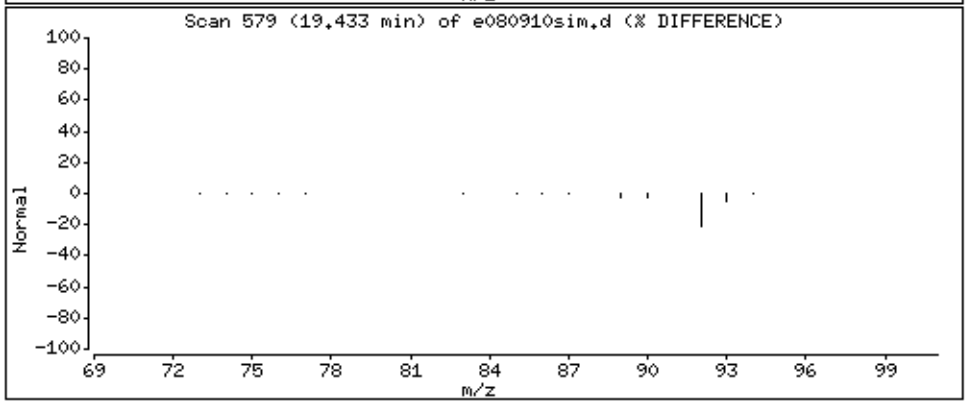












Data File: /chem/msde.i/09Aug2017.b/e080910sim.d

Date : 09-AUG-2017 15:39

Client ID:

Instrument: msde.i

Sample Info: 250mL# N2753

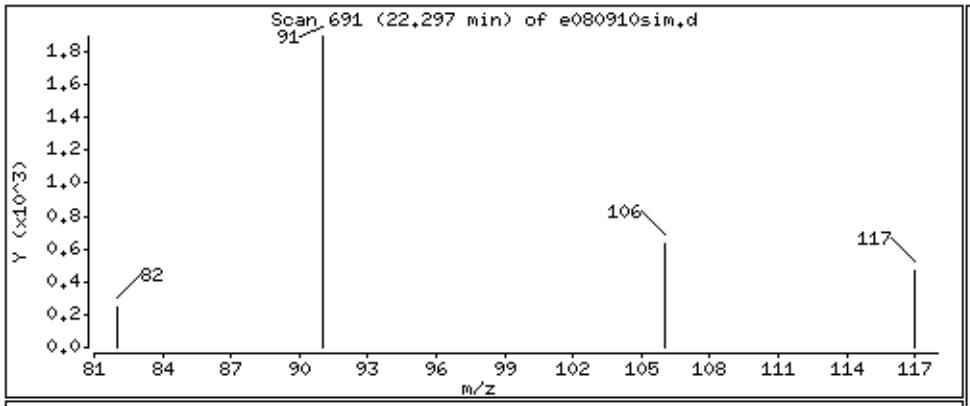
Operator: ef

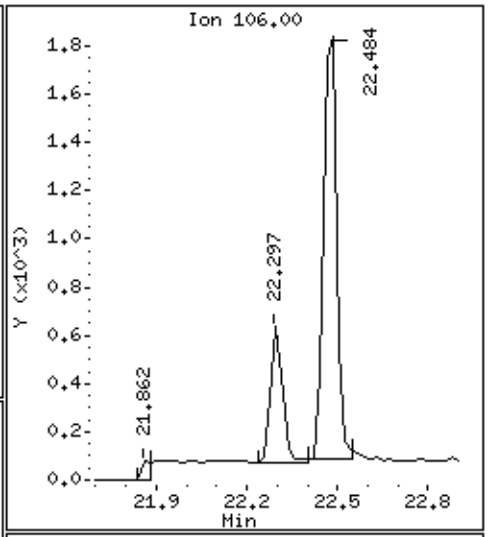
Column phase: RTX-624

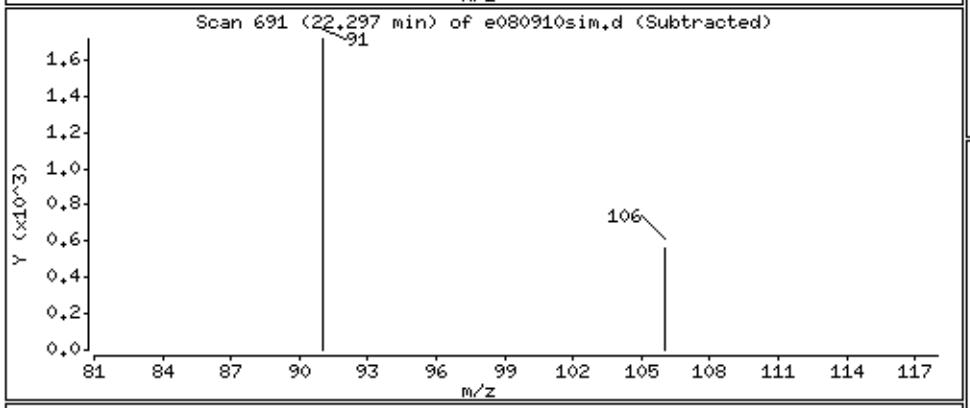
Column diameter: 0.32

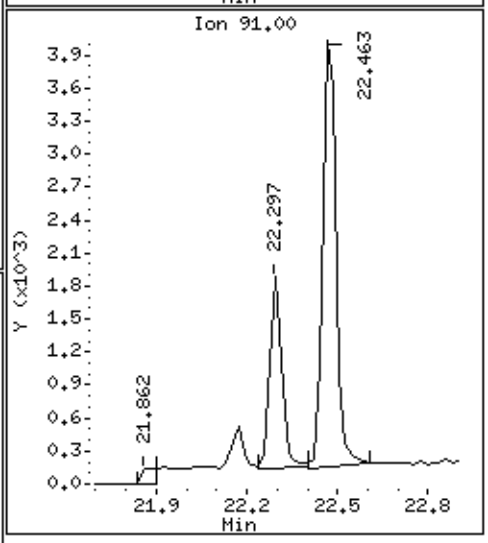
30 Ethyl Benzene

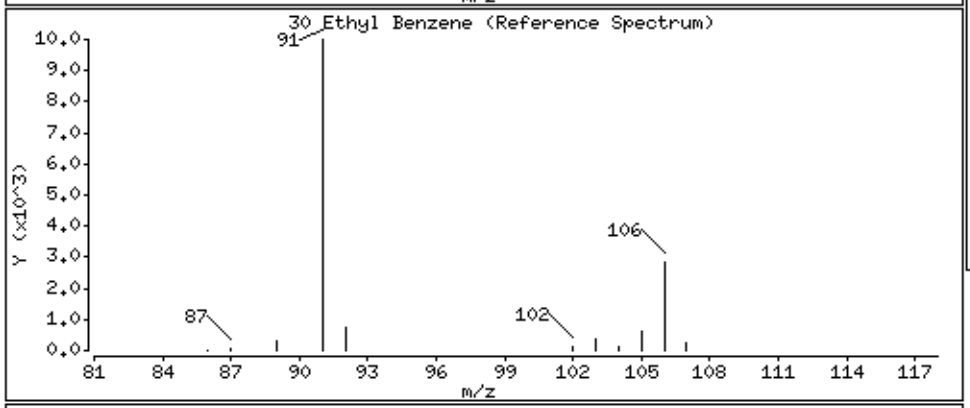
Concentration: 0.04993 PPBV

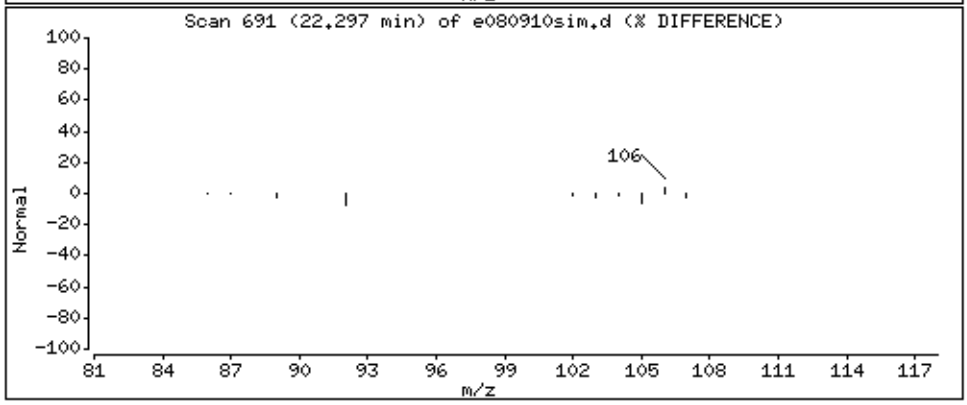












Data File: /chem/msde.i/09Aug2017.b/e080910sim.d

Date : 09-AUG-2017 15:39

Client ID:

Instrument: msde.i

Sample Info: 250mL# N2753

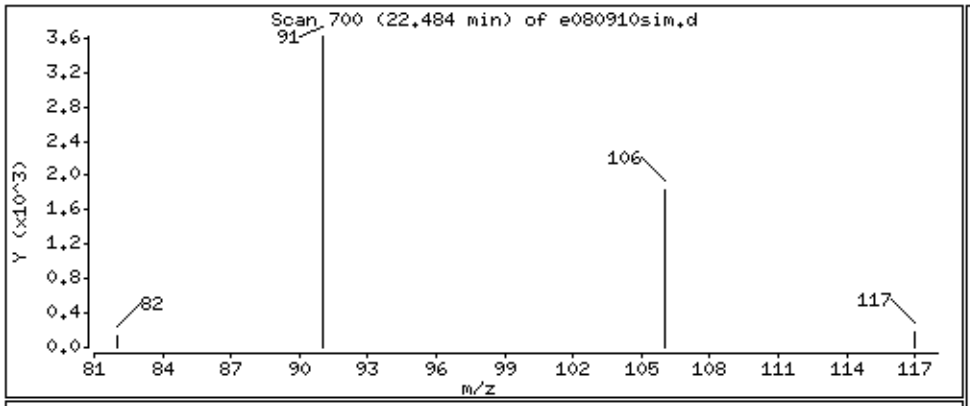
Operator: ef

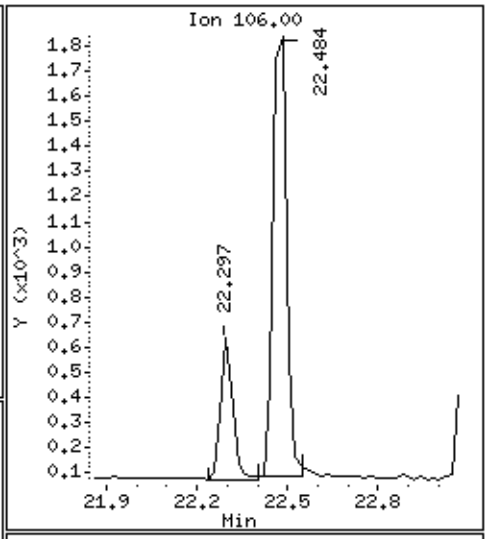
Column phase: RTX-624

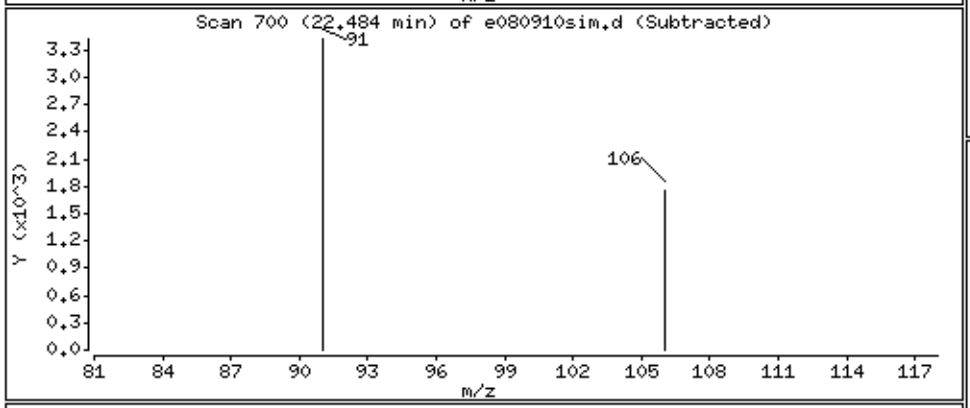
Column diameter: 0.32

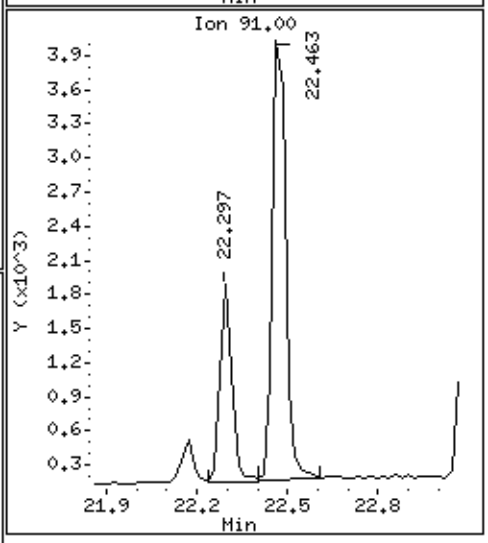
31 m,p-Xylene

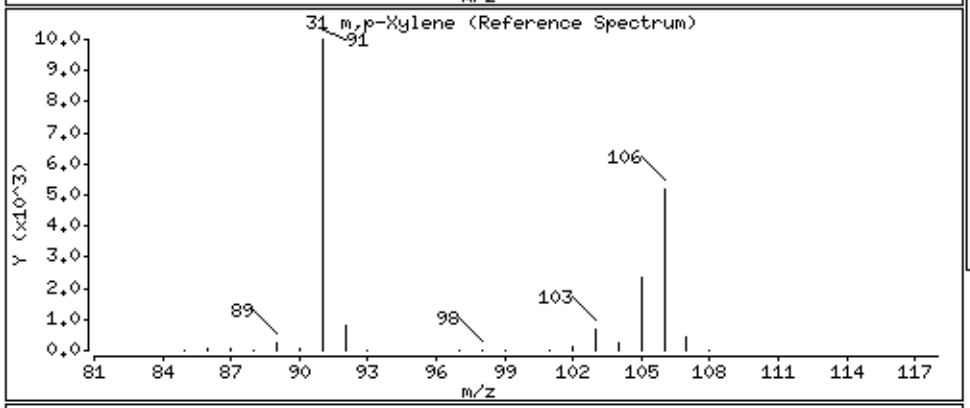
Concentration: 0.1484 PPBV

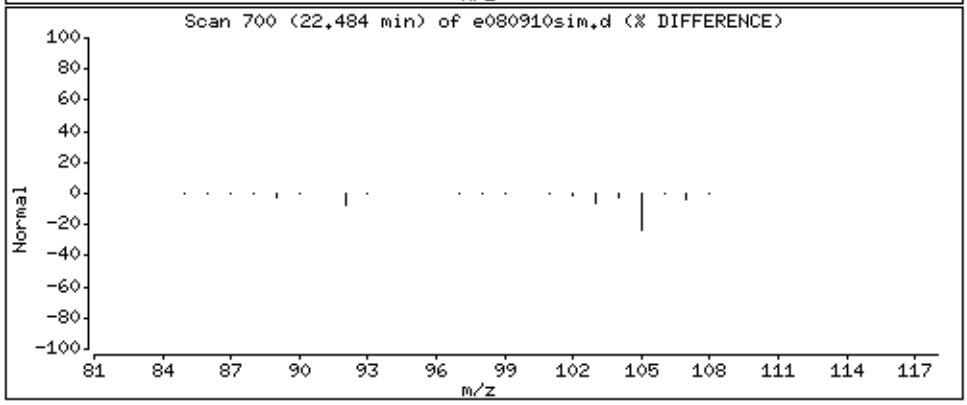












Data File: /chem/msde.i/09Aug2017.b/e080910sim.d

Date : 09-AUG-2017 15:39

Client ID:

Instrument: msde.i

Sample Info: 250mL# N2753

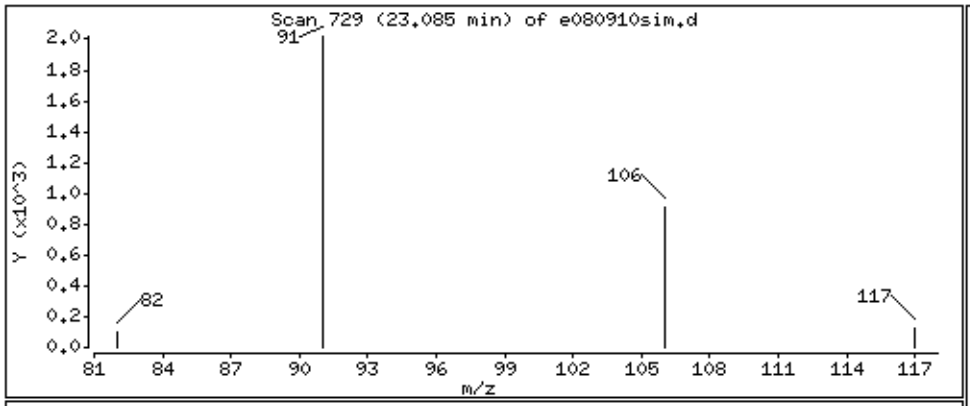
Operator: ef

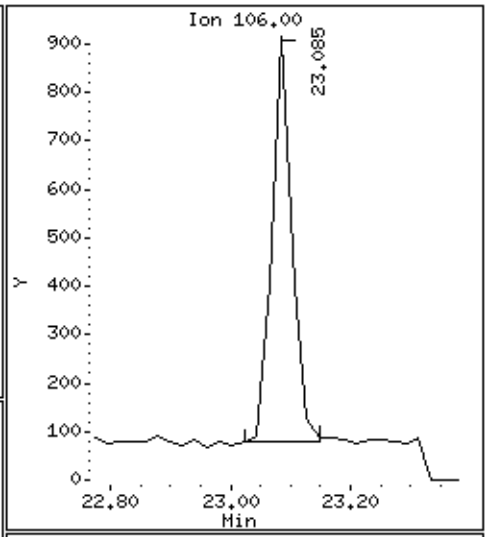
Column phase: RTX-624

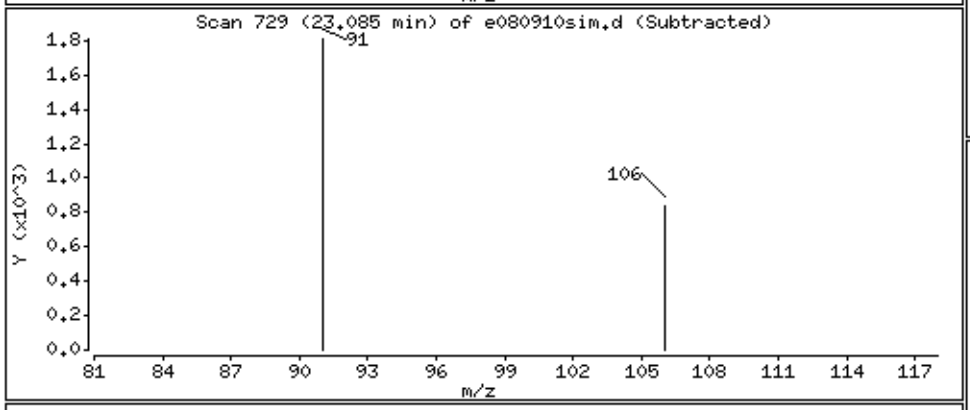
Column diameter: 0.32

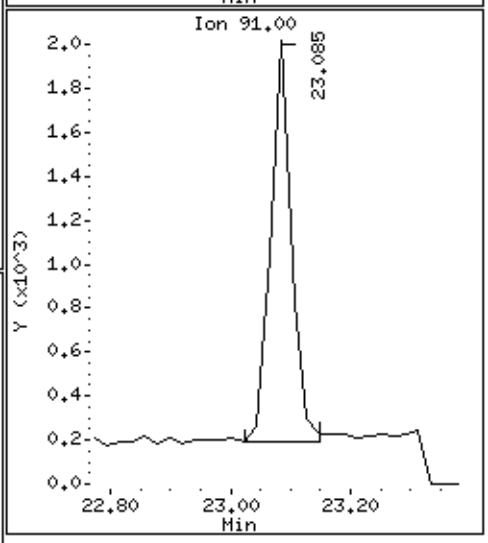
32 o-Xylene

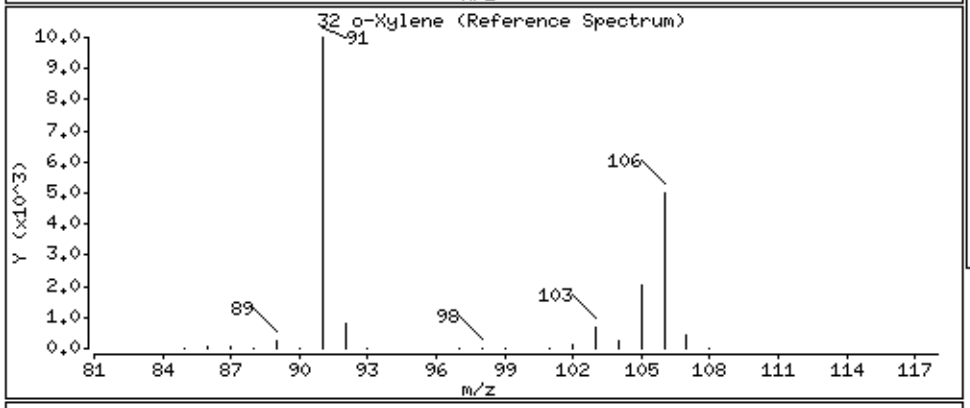
Concentration: 0.05641 PPBV

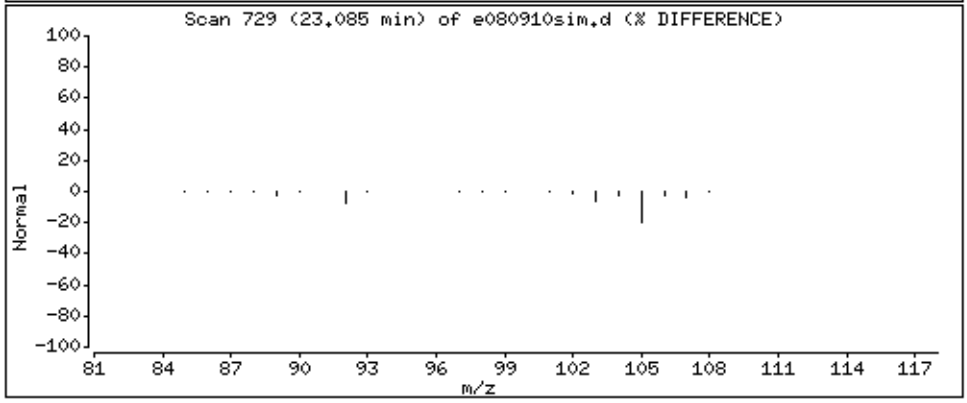












Data File: /chem/msde.i/09Aug2017.b/e080910sim.d

Date : 09-AUG-2017 15:39

Client ID:

Instrument: msde.i

Sample Info: 250mL# N2753

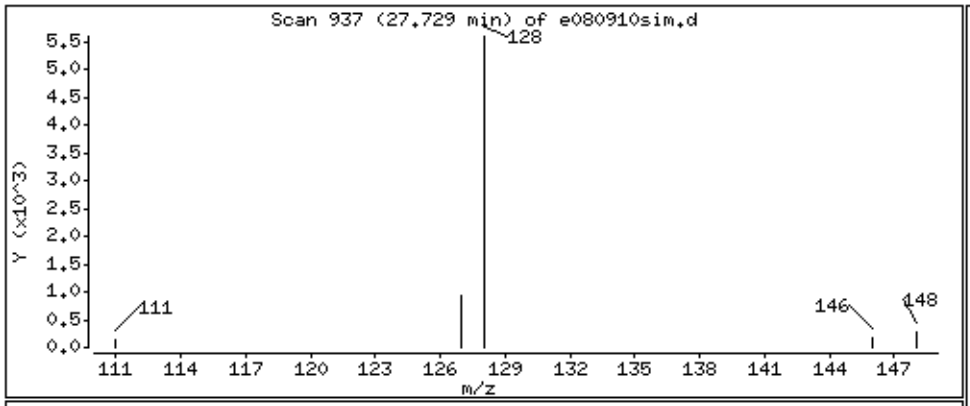
Operator: ef

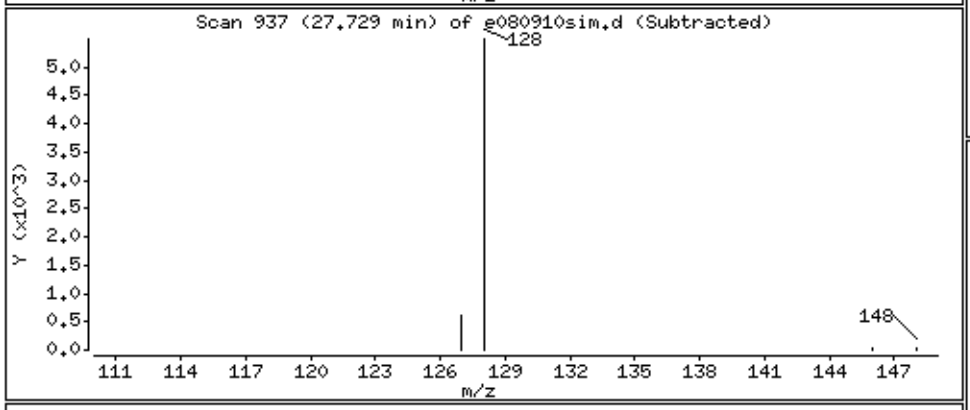
Column phase: RTX-624

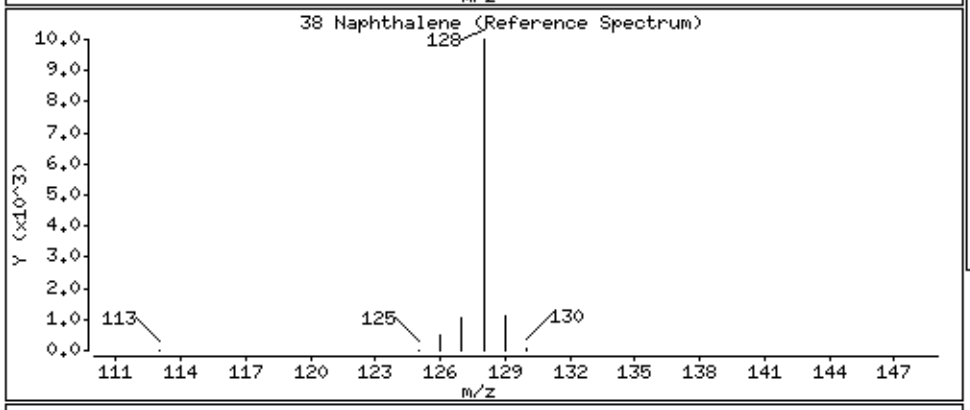
Column diameter: 0.32

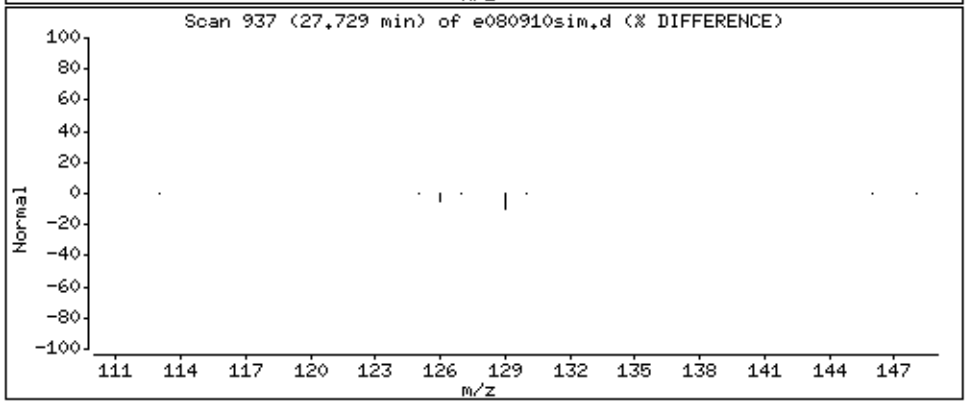
38 Naphthalene

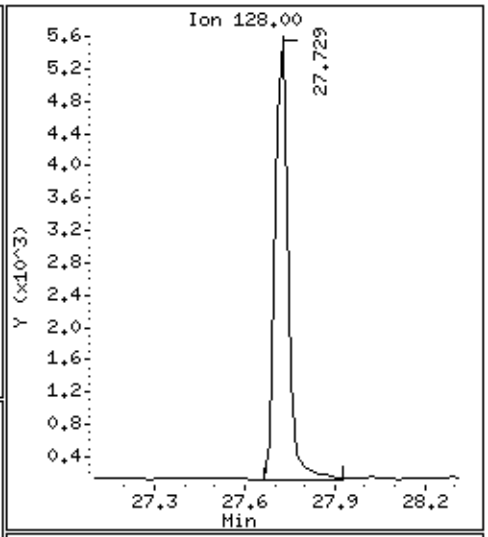
Concentration: 0.3555 PPBV

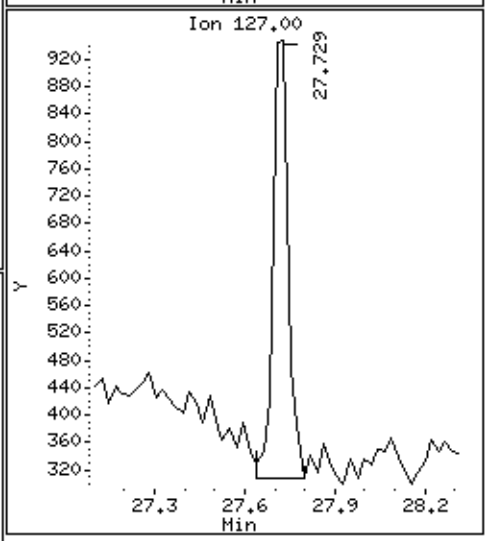












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAD-012_0817		
Lab ID:	1708092-07A	**Date/Time Analyzed:**	8/8/17 10:53 PM
Date/Time Collected:	8/3/17 05:45 PM	**Dilution Factor:**	1.60
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20080818sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0087	0.026	0.26	2.1
Ethyl Benzene	100-41-4	0.0098	0.035	0.14	3.0
m,p-Xylene	108-38-3	0.012	0.035	0.28	11
Naphthalene	91-20-3	0.034	0.067	0.42	1.5
o-Xylene	95-47-6	0.011	0.035	0.14	4.0
Toluene	108-88-3	0.0037	0.030	0.12	20
Total Xylenes	9999-9999-015	NA	D	0.42	16

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	96

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080818sim.d
Lab Smp Id: 1708092-07A
Inj Date : 08-AUG-2017 22:53
Operator : ea Inst ID: msd20.i
Smp Info : 250mL#O0312
Misc Info : 4.9"Hg-5psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 1.60000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane							CAS #: 74-97-5	
17.337	17.340 (1.000)	130	63457	5.00000			80.00- 120.00	100.00
17.337	17.340 (1.000)	128	48902				48.37- 108.37	77.06
17.337	17.340 (1.000)	49	58141				82.84- 142.84	91.62
* 20 1,4-Difluorobenzene							CAS #: 540-36-3	
18.882	18.880 (1.000)	114	289029	5.00000			80.00- 120.00	100.00
18.882	18.880 (1.000)	88	37062				0.00- 44.04	12.82
* 28 Chlorobenzene-d5							CAS #: 3114-55-4	
24.358	24.356 (1.000)	117	230780	5.00000			80.00- 120.00	100.00
24.358	24.356 (1.000)	82	101195				17.63- 77.63	43.85
$ 18 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
18.274	18.265 (1.054)	65	78517	4.42168	4.422		80.00- 120.00	100.00
18.274	18.265 (1.054)	67	40755				26.67- 86.67	51.91
$ 22 Toluene-d8							CAS #: 2037-26-5	
21.700	21.698 (1.149)	98	245318	4.81952	4.820		80.00- 120.00	100.00
21.684	21.683 (1.148)	70	24508				0.00- 40.38	9.99

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)								
21.700	21.698	(1.149)	100	155468			33.71- 93.71	63.37
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.963	25.961	(1.066)	174	165354	5.28419	5.284	80.00- 120.00	100.00
25.963	25.961	(1.066)	95	146780			57.01- 117.01	88.77
25.982	25.980	(1.067)	176	162463			68.59- 128.59	98.25
17 Benzene						CAS #: 71-43-2		
18.250	18.244	(0.966)	78	28634	0.41555	0.6649	80.00- 120.00	100.00
18.250	18.244	(0.966)	77	6972			0.00- 53.56	24.35
23 Toluene						CAS #: 108-88-3		
21.856	21.854	(1.157)	91	249057	3.23911	5.182	80.00- 120.00	100.00
21.856	21.854	(1.157)	92	141382			27.62- 87.62	56.77
30 Ethyl Benzene						CAS #: 100-41-4		
24.481	24.480	(1.005)	106	12024	0.42693	0.6831	80.00- 120.00	100.00
24.481	24.480	(1.005)	91	38013			281.86- 341.86	316.14
31 m,p-Xylene						CAS #: 108-38-3		
24.646	24.665	(1.012)	106	52256	1.65464	2.647	80.00- 120.00	100.00
24.646	24.645	(1.012)	91	98898			165.84- 225.84	189.26
32 o-Xylene						CAS #: 95-47-6		
25.244	25.243	(1.036)	106	16827	0.57528	0.9204	80.00- 120.00	100.00
25.224	25.222	(1.036)	91	34831			174.02- 234.02	206.99
38 Naphthalene						CAS #: 91-20-3		
30.471	30.469	(1.251)	128	4369	0.18066	0.2890	80.00- 120.00	100.00
30.471	30.469	(1.251)	127	657			0.00- 43.90	15.04
M 39 Total Xylene						CAS #: 1330-20-7		
				69083	2.22992	3.568		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080818sim.d
Lab Smp Id: 1708092-07A
Analysis Type: VOA
Quant Type: ISTD
Operator: ea
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 4.9"Hg-5psi

Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	63457	-35.14
20 1,4-Difluorobenze	453999	272399	635599	289029	-36.34
28 Chlorobenzene-d5	343223	205934	480512	230780	-32.76

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	-0.01
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.01
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 08:54

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-07A
Level: LOW Operator: ea
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 4.9"Hg-5psi

	SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18	1,2-Dichloroethane	5.000	4.422	88.43	70-130
$ 22	Toluene-d8	5.000	4.820	96.39	70-130
$ 33	4-Bromofluorobenze	5.000	5.284	105.68	70-130

Data File: /chem/msd20.i/08aug17.b/20080818sim.d

Date : 08-AUG-2017 22:53

Client ID:

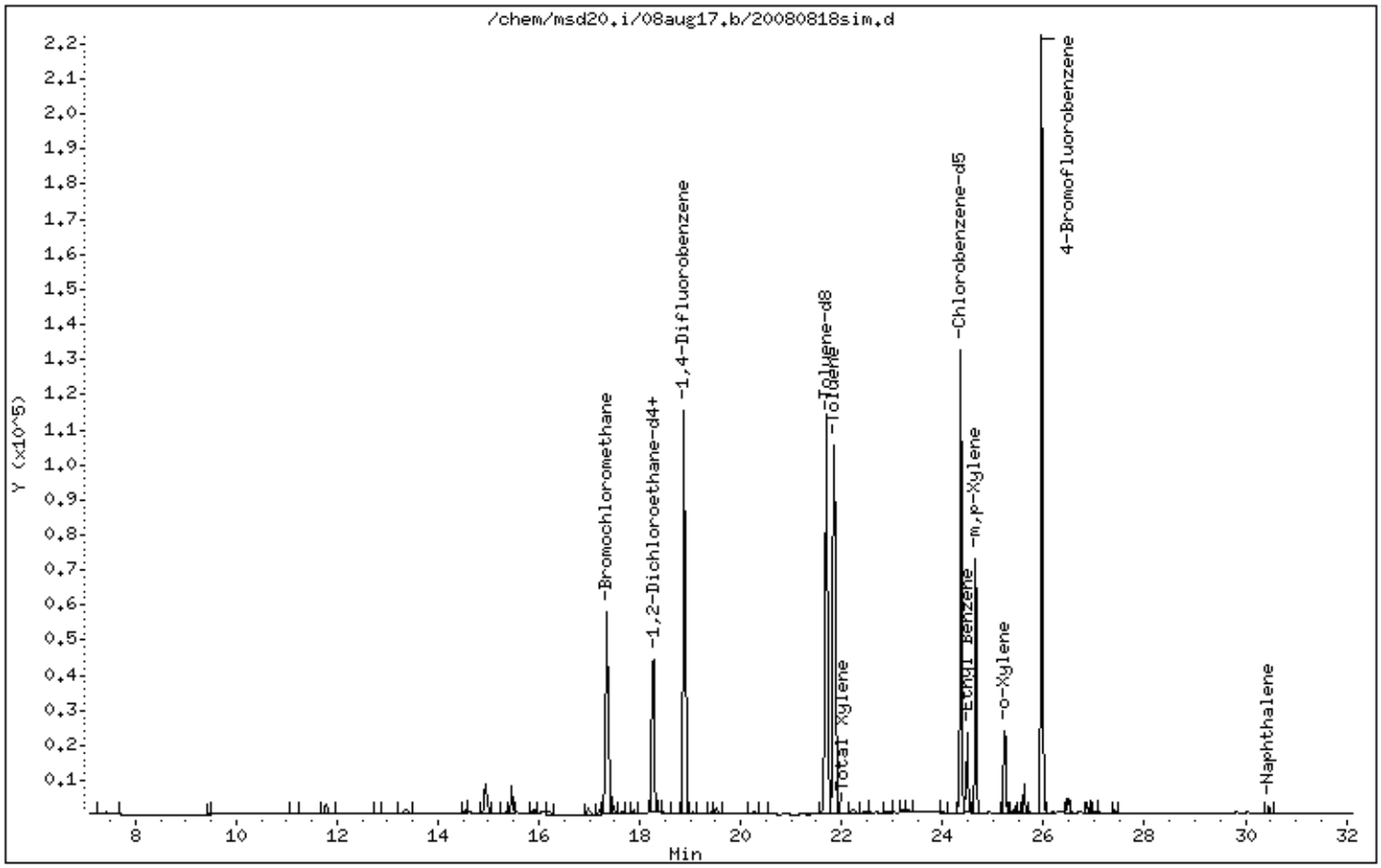
Instrument: msd20.i

Sample Info: 250mL#00312

Operator: ea

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/08aug17.b/20080818sim.d

Date : 08-AUG-2017 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL#00312

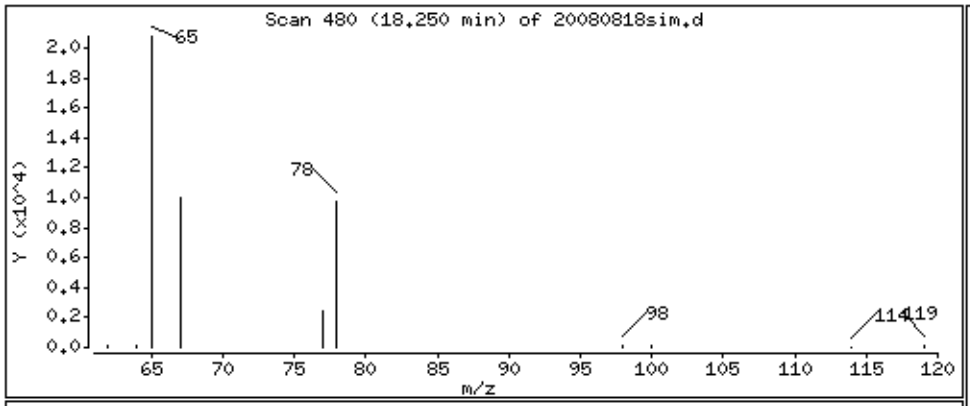
Operator: ea

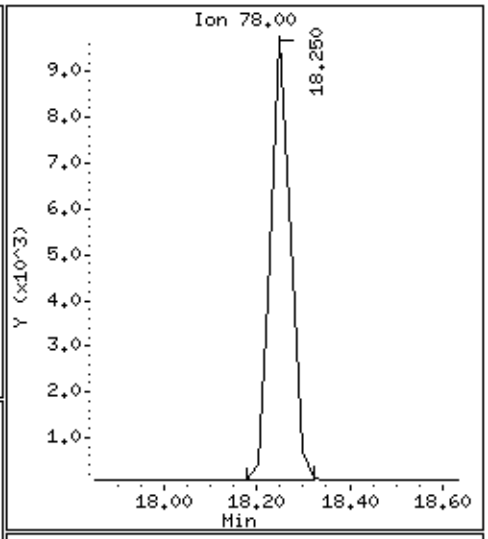
Column phase: RTX-624

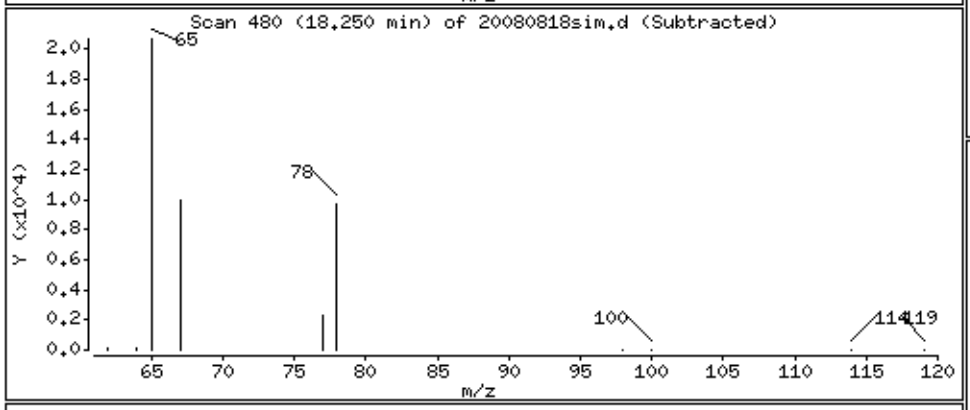
Column diameter: 0.32

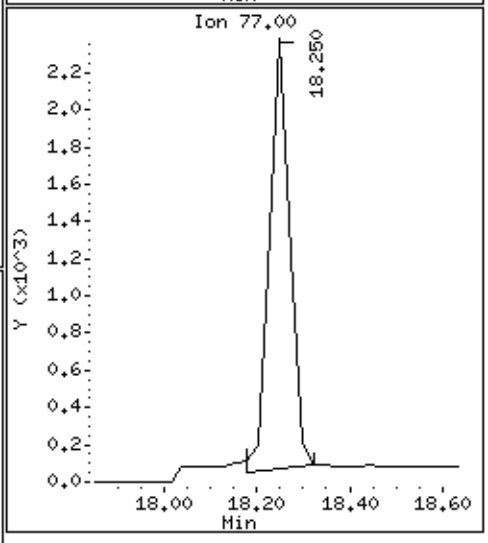
17 Benzene

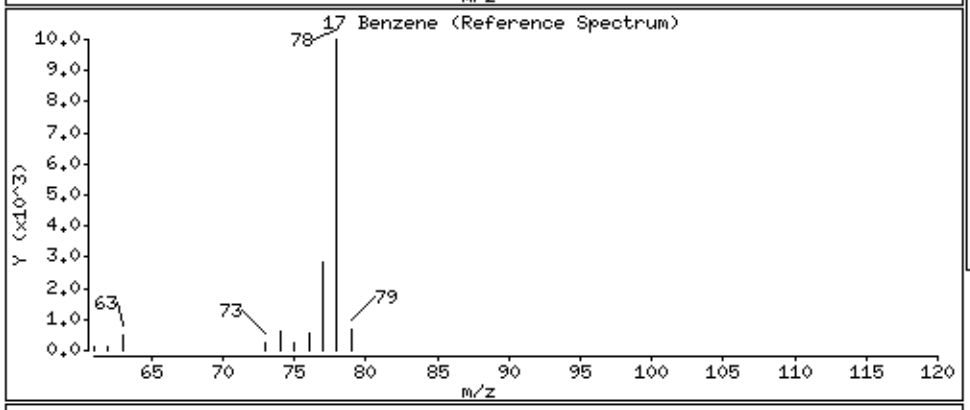
Concentration: 0.6649 PPBV

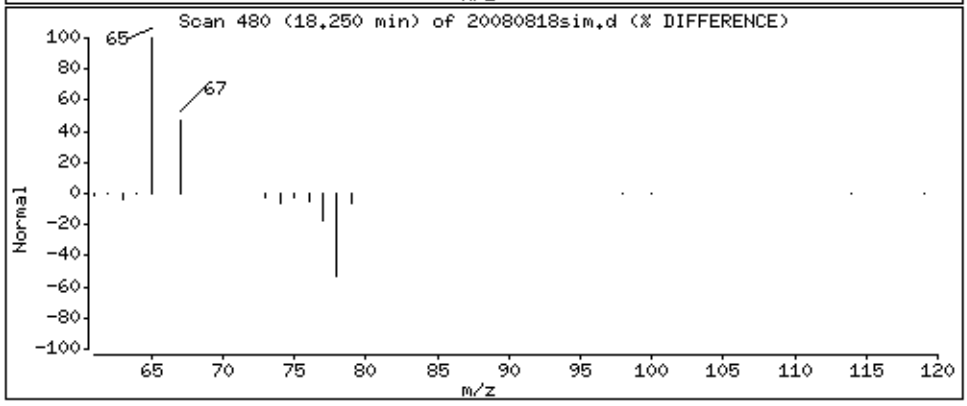












Data File: /chem/msd20.i/08aug17.b/20080818sim.d

Date : 08-AUG-2017 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL#00312

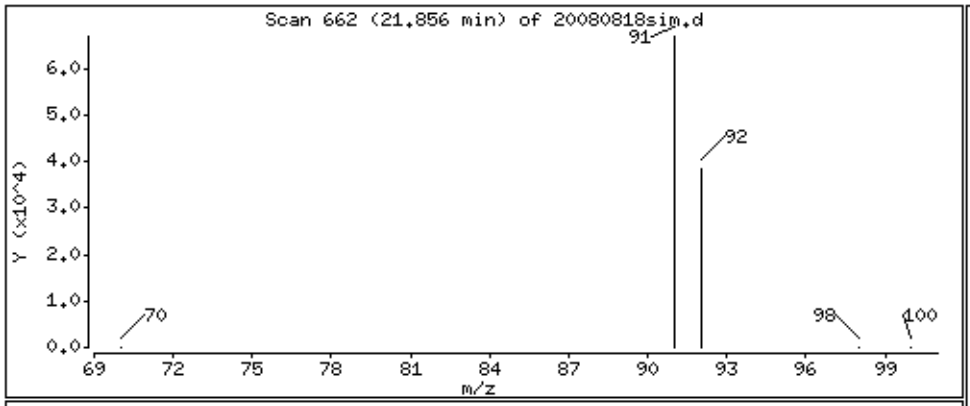
Operator: ea

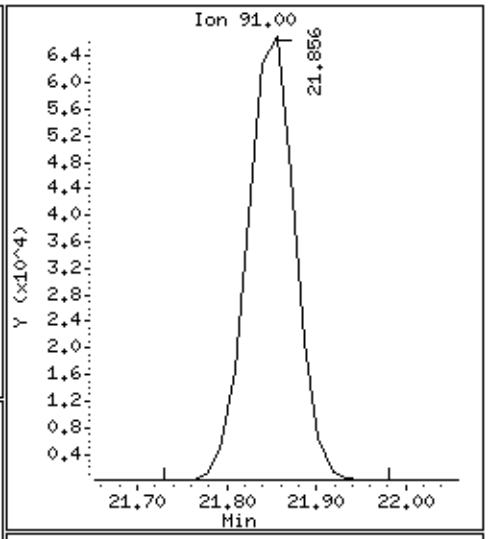
Column phase: RTX-624

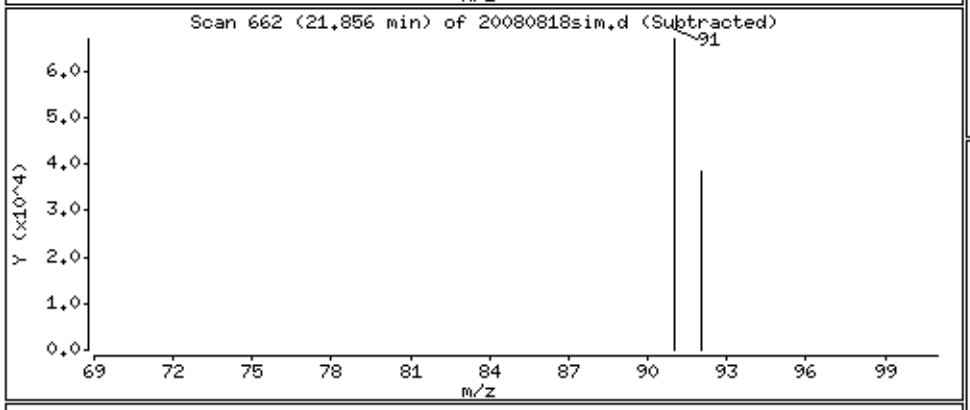
Column diameter: 0.32

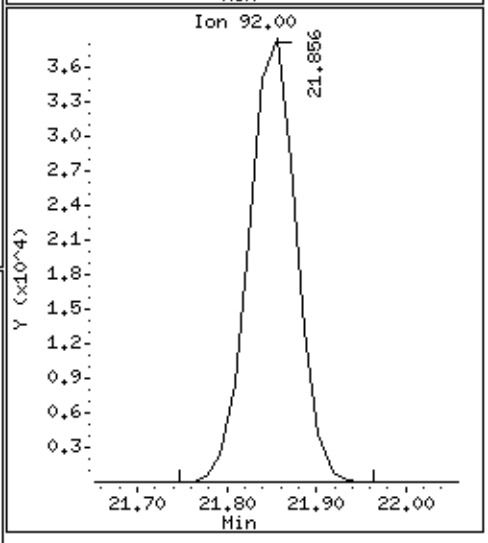
23 Toluene

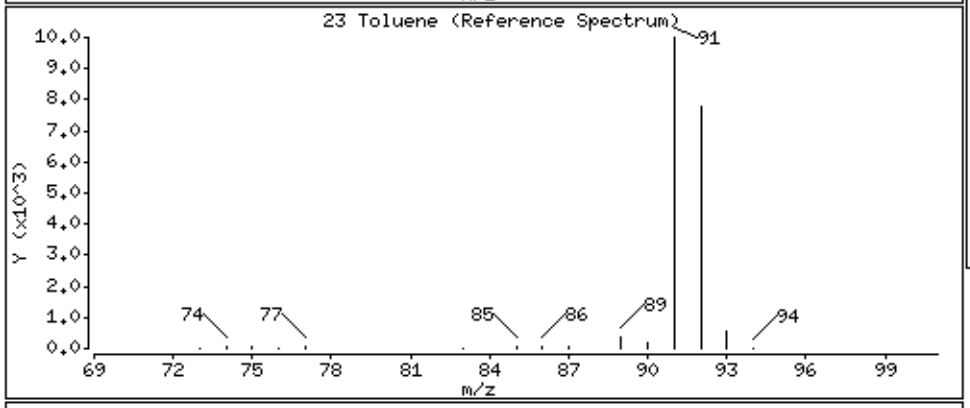
Concentration: 5.182 PPBV

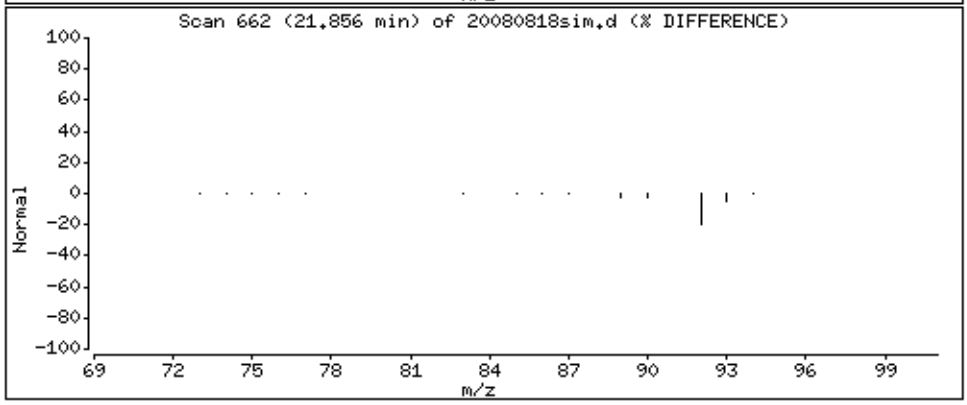












Data File: /chem/msd20.i/08aug17.b/20080818sim.d

Date : 08-AUG-2017 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL#00312

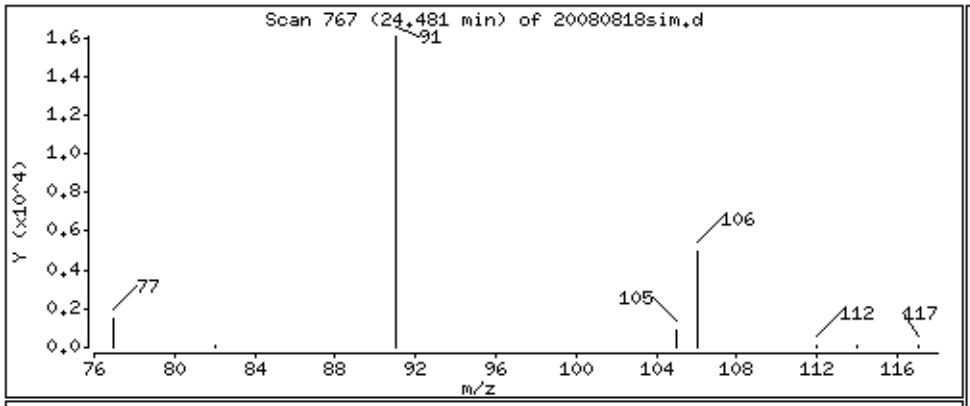
Operator: ea

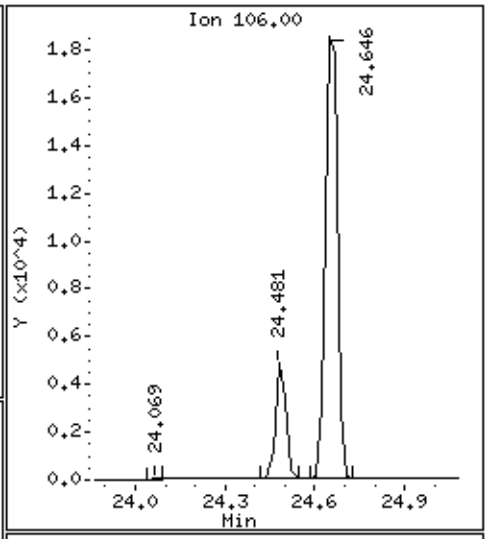
Column phase: RTX-624

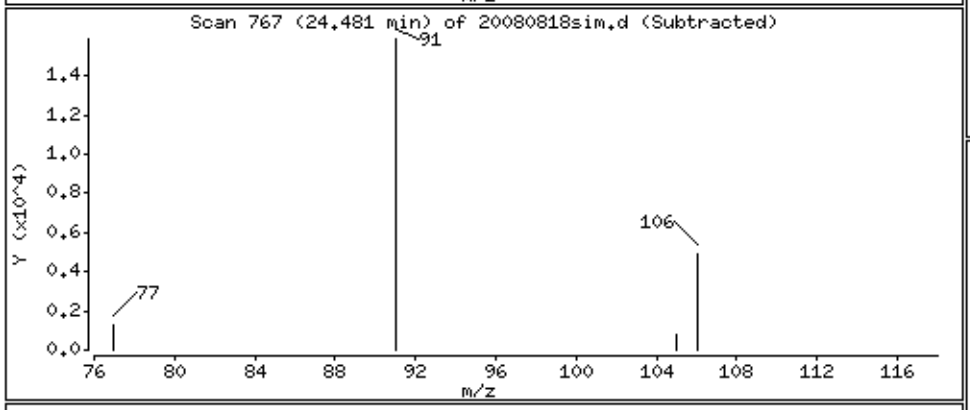
Column diameter: 0.32

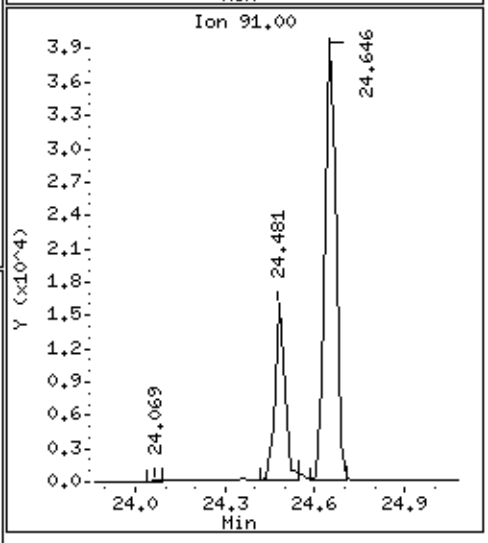
30 Ethyl Benzene

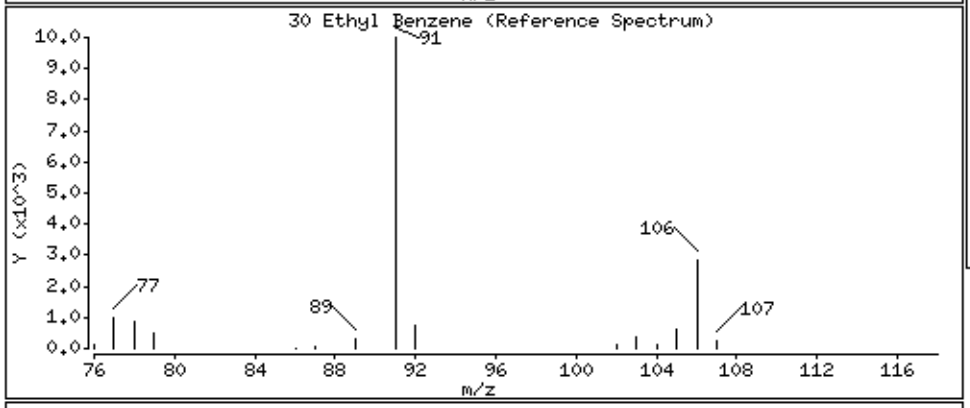
Concentration: 0.6831 PPBV

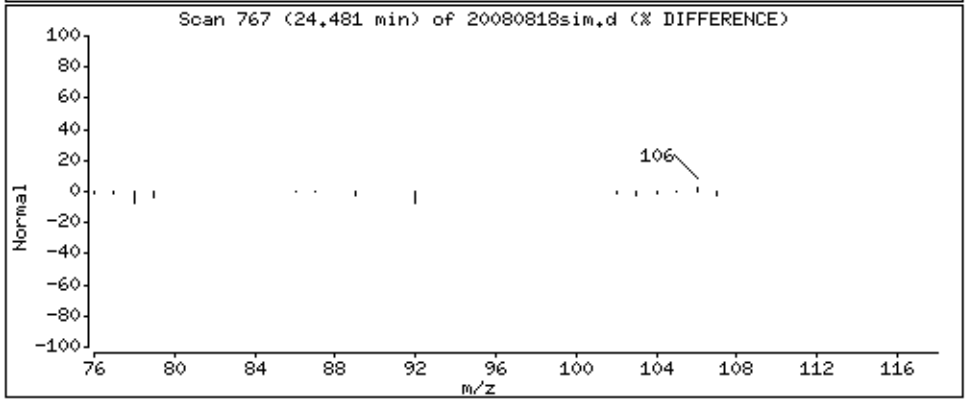












Data File: /chem/msd20.i/08aug17.b/20080818sim.d

Date : 08-AUG-2017 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL#00312

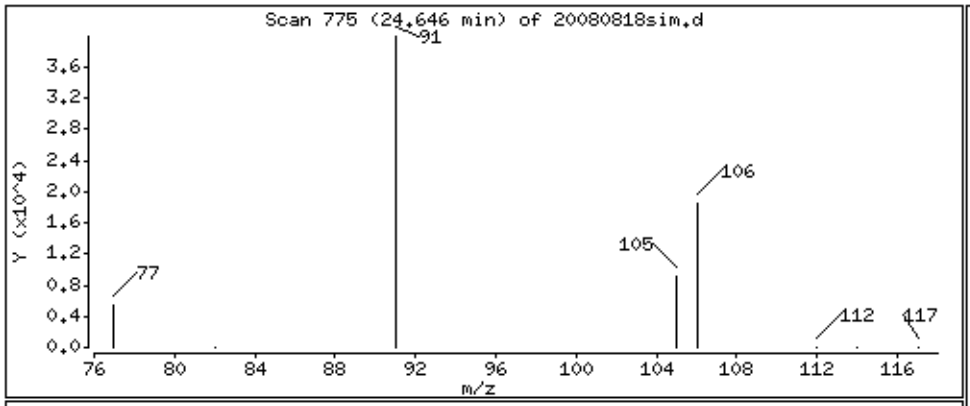
Operator: ea

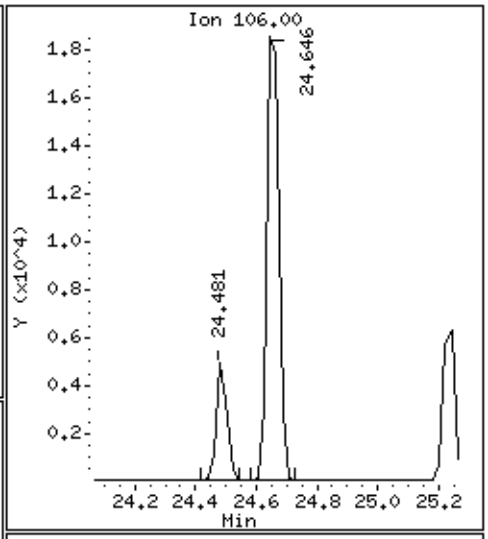
Column phase: RTX-624

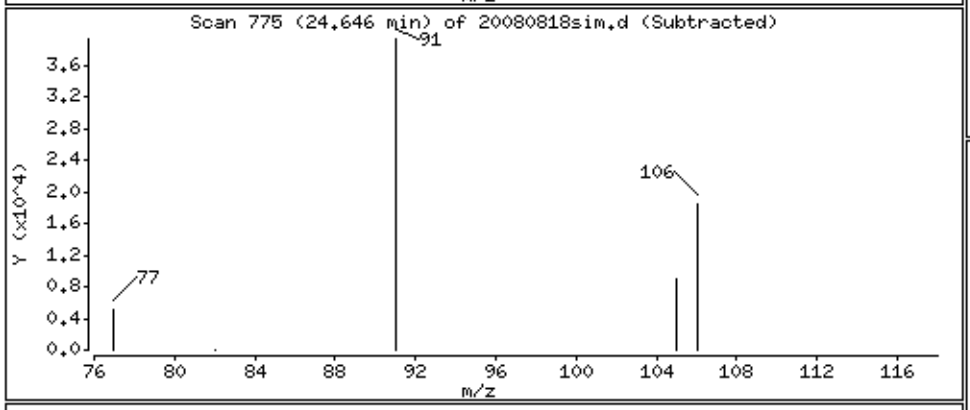
Column diameter: 0.32

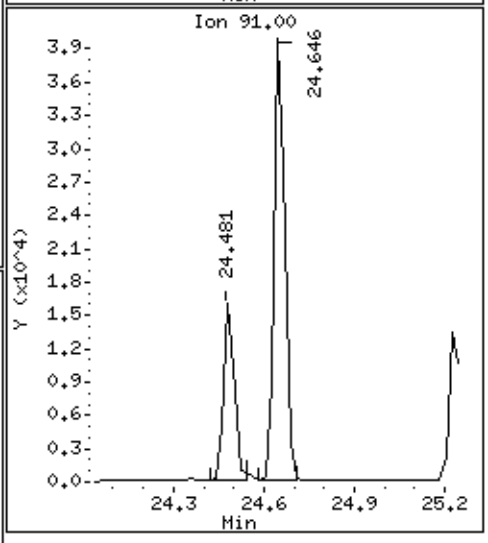
31 m,p-Xylene

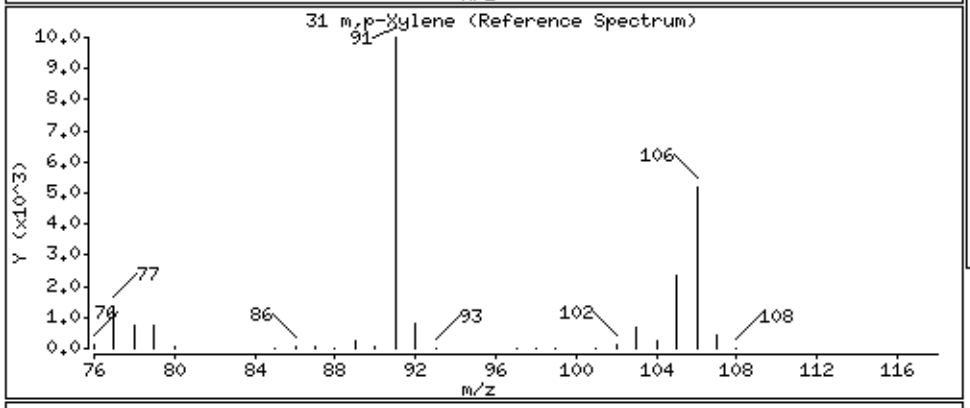
Concentration: 2.647 PPBV

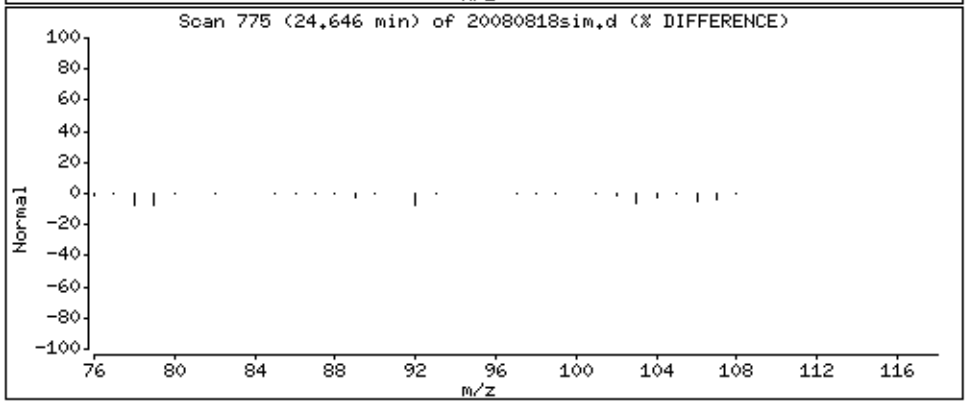












Data File: /chem/msd20.i/08aug17.b/20080818sim.d

Date : 08-AUG-2017 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL#00312

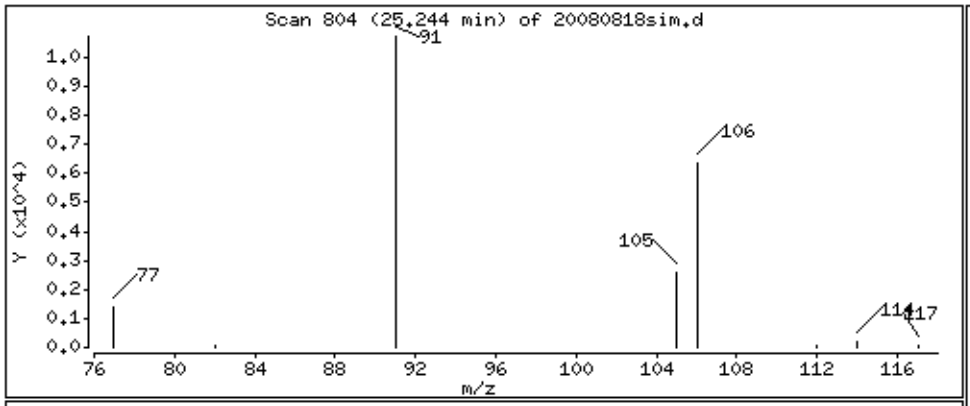
Operator: ea

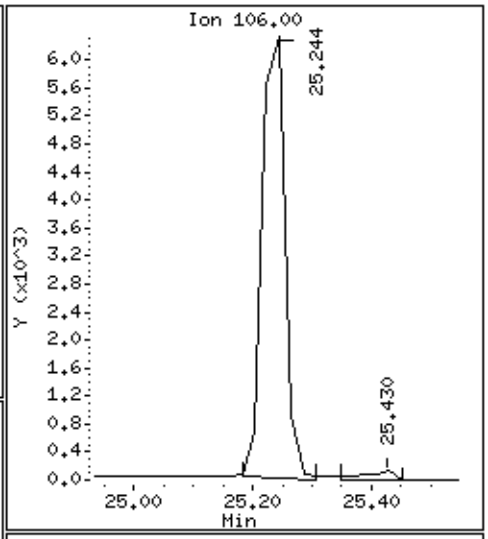
Column phase: RTX-624

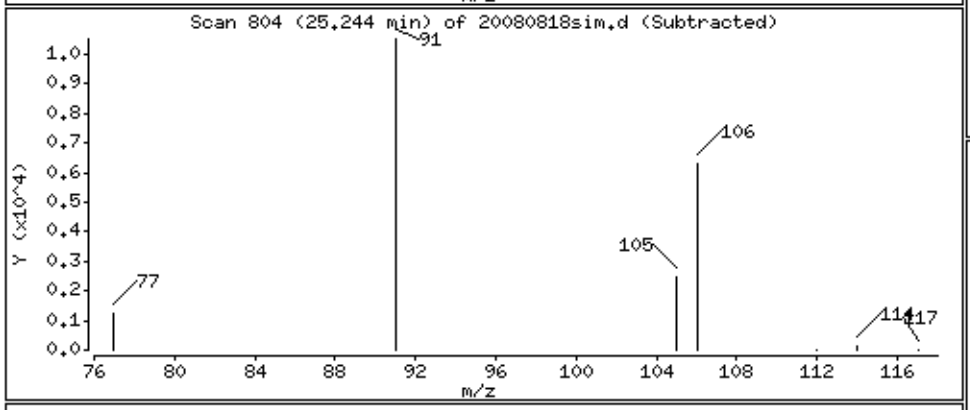
Column diameter: 0.32

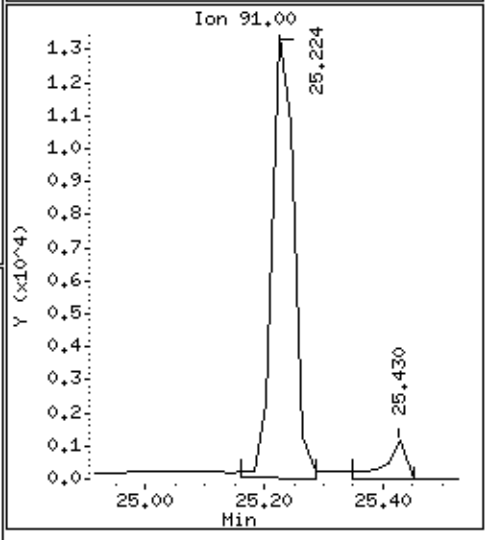
32 o-Xylene

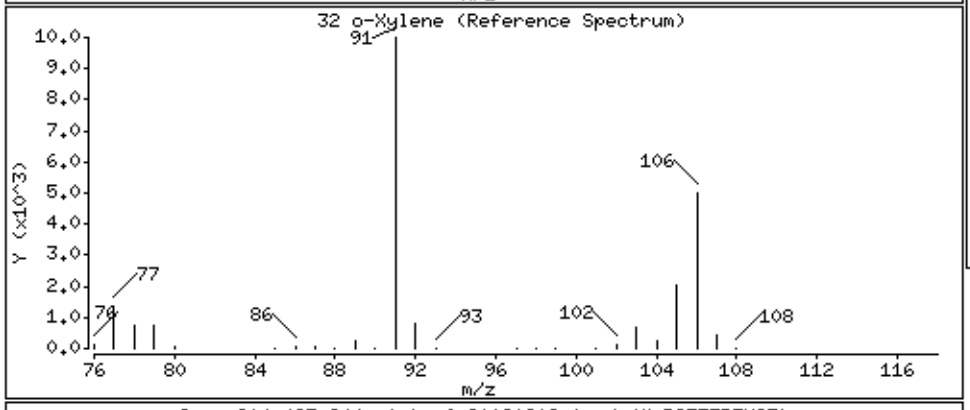
Concentration: 0.9204 PPBV

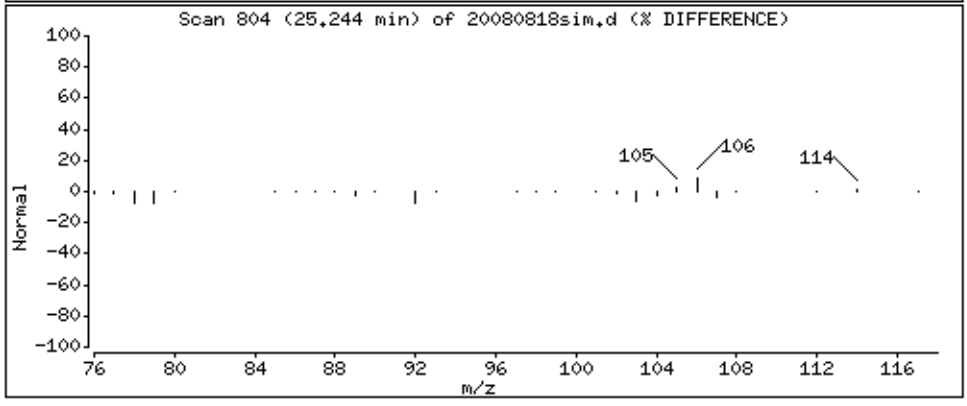












Data File: /chem/msd20.i/08aug17.b/20080818sim.d

Date : 08-AUG-2017 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL#00312

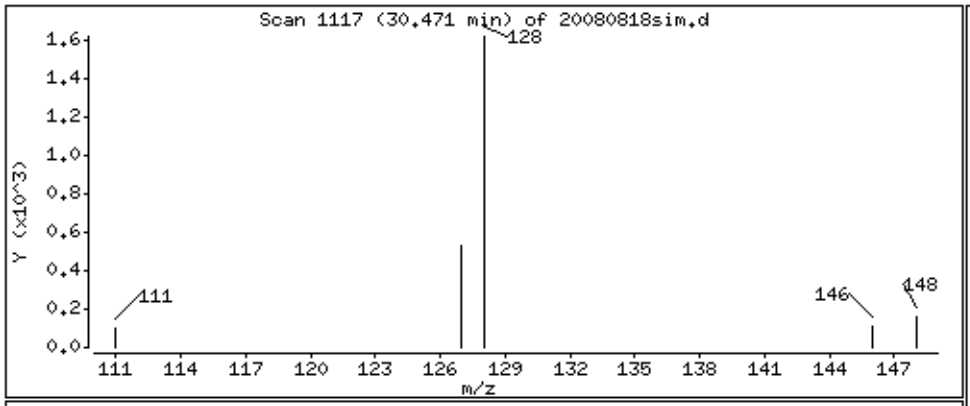
Operator: ea

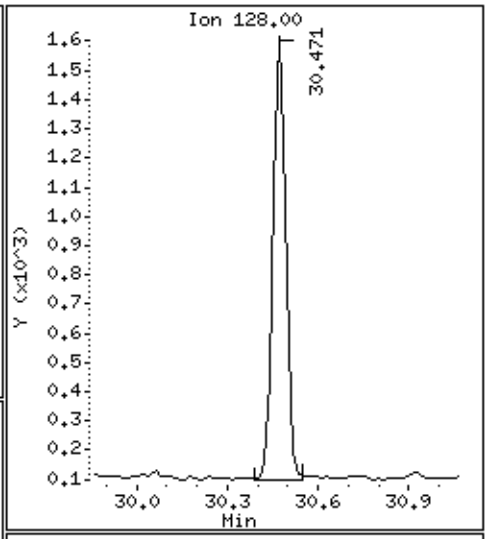
Column phase: RTX-624

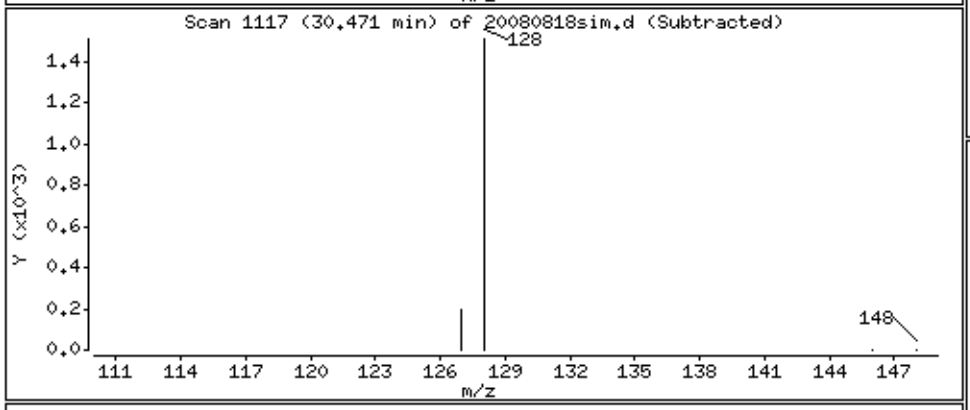
Column diameter: 0.32

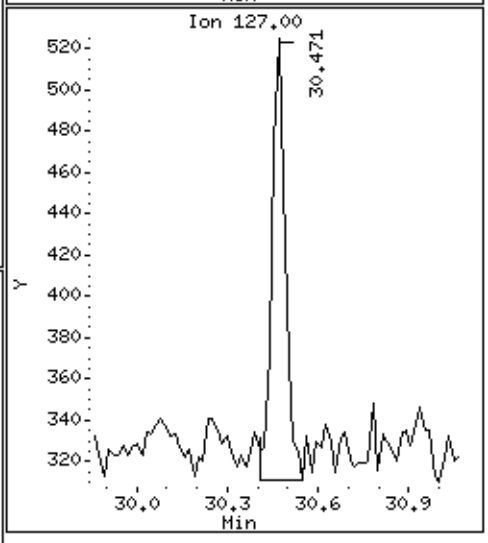
38 Naphthalene

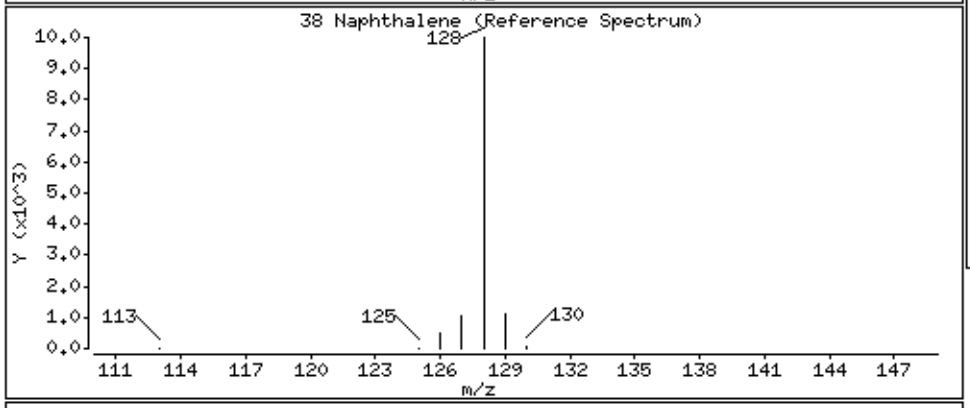
Concentration: 0.2890 PPBV

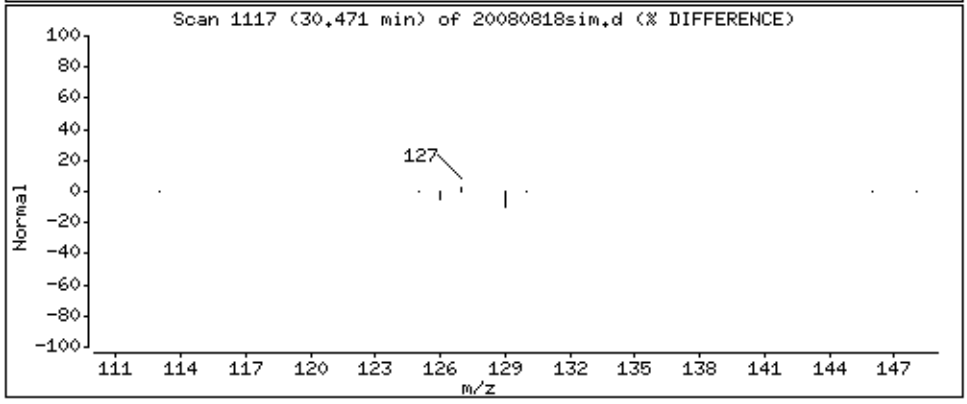












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	IAD-112_0817		
Lab ID:	1708092-08A	**Date/Time Analyzed:**	8/9/17 04:27 PM
Date/Time Collected:	8/3/17 05:45 PM	**Dilution Factor:**	1.88
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msde.i / e080911sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.038	0.038	0.30	2.0
Ethyl Benzene	100-41-4	0.015	0.049	0.16	2.4
m,p-Xylene	108-38-3	0.013	0.049	0.33	9.6
Naphthalene	91-20-3	0.060	0.079	0.49	0.62
o-Xylene	95-47-6	0.0099	0.049	0.16	3.3
Toluene	108-88-3	0.0096	0.042	0.14	17
Total Xylenes	9999-9999-015	NA	D	0.49	13

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080911sim.d
Lab Smp Id: 1708092-08A
Inj Date : 09-AUG-2017 16:27
Operator : ef Inst ID: msde.i
Smp Info : 250mL# 13858
Misc Info : 8.6"Hg -> 5.0psi
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:18 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1
Dil Factor: 1.88000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.390	15.405 (1.000)	130	144579	5.00000		80.00- 120.00	100.00
	15.390	15.405 (1.000)	128	112397			47.34- 107.34	77.74
	15.390	15.405 (1.000)	49	172639			83.88- 143.88	119.41
	17 Benzene					CAS #: 71-43-2		
	16.206	16.197 (0.968)	78	40944	0.34128	0.6416	80.00- 120.00	100.00
	16.206	16.197 (0.968)	77	10995			0.00- 53.90	26.85
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.182	16.197 (1.051)	65	234289	5.16316	5.163	80.00- 120.00	100.00
	16.182	16.197 (1.051)	67	99478			18.02- 78.02	42.46
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	16.736	16.727 (1.000)	114	481319	5.00000		80.00- 120.00	100.00
	16.736	16.727 (1.000)	88	72616			0.00- 44.94	15.09
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.276	19.267 (1.152)	98	367888	5.01754	5.018	80.00- 120.00	100.00
	19.276	19.267 (1.152)	70	44364			0.00- 41.37	12.06

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	19.276	19.267 (1.152)	100	233873			33.76- 93.76	63.57
	23 Toluene					CAS #: 108-88-3		
	19.433	19.424 (1.161)	91	364128	2.45742	4.620	80.00- 120.00	100.00
	19.433	19.424 (1.161)	92	206154			27.48- 87.48	56.62
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	22.173	22.170 (1.000)	117	448911	5.00000		80.00- 120.00	100.00
	22.173	22.170 (1.000)	82	189474			11.87- 71.87	42.21
	30 Ethyl Benzene					CAS #: 100-41-4		
	22.297	22.294 (1.006)	106	17286	0.28964	0.5445	80.00- 120.00	100.00
	22.297	22.294 (1.006)	91	56412			287.72- 347.72	326.34
	31 m,p-Xylene					CAS #: 108-38-3		
	22.463	22.460 (1.013)	106	82184	1.17686	2.212	80.00- 120.00	100.00
	22.463	22.460 (1.013)	91	174367			182.04- 242.04	212.17
	32 o-Xylene					CAS #: 95-47-6		
	23.085	23.082 (1.041)	106	26053	0.40118	0.7542	80.00- 120.00	100.00
	23.085	23.082 (1.041)	91	58804			192.45- 252.45	225.71
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.850	23.847 (1.076)	174	320328	5.31122	5.311	80.00- 120.00	100.00
	23.850	23.847 (1.076)	95	338032			66.14- 126.14	105.53
	23.850	23.847 (1.076)	176	310532			67.55- 127.55	96.94
	38 Naphthalene					CAS #: 91-20-3		
	27.729	27.703 (1.251)	128	5616	0.06280	0.1181	80.00- 120.00	100.00
	27.729	27.703 (1.251)	127	829			0.00- 42.95	14.77
M	39 Total Xylene					CAS #: 1330-20-7		
				108238	1.57804	2.967		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080911sim.d
Lab Smp Id: 1708092-08A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 8.6"Hg -> 5.0psi

Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	144579	5.98
20 1,4-Difluorobenze	468904	281342	656466	481319	2.65
28 Chlorobenzene-d5	424491	254695	594287	448911	5.75

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.39	-0.09
20 1,4-Difluorobenze	16.73	16.40	17.06	16.74	0.06
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 10-Aug-2017 07:23

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 09Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-08A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 8.6"Hg -> 5.0psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.163	103.26	70-130
$ 22 Toluene-d8	5.000	5.018	100.35	70-130
$ 33 4-Bromofluorobenze	5.000	5.311	106.22	70-130

Data File: /chem/msde.i/09Aug2017.b/e080911sim.d

Date : 09-AUG-2017 16:27

Client ID:

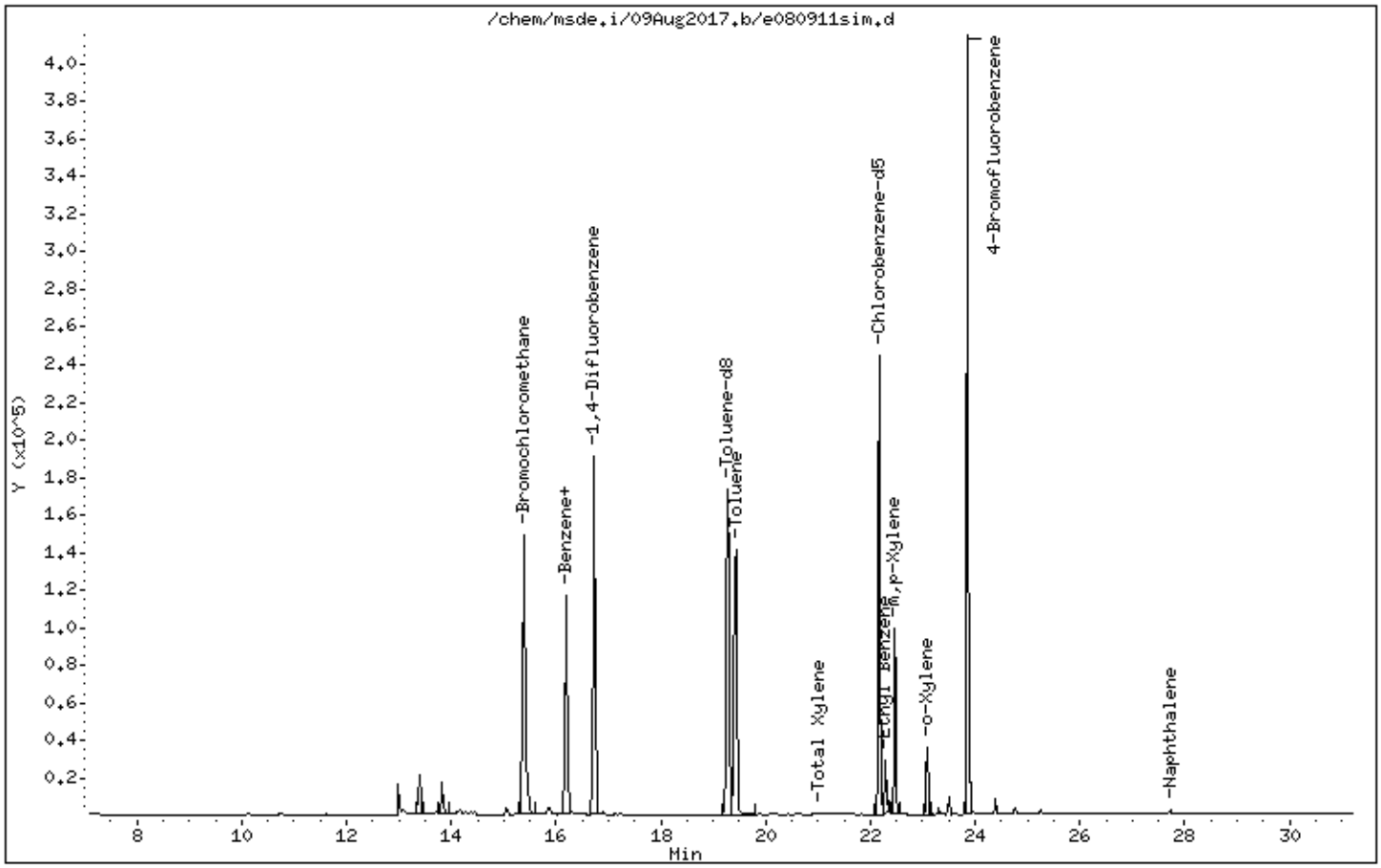
Instrument: msde.i

Sample Info: 250mL# 13858

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msde.i/09Aug2017.b/e080911sim.d

Date : 09-AUG-2017 16:27

Client ID:

Instrument: msde.i

Sample Info: 250mL# 13858

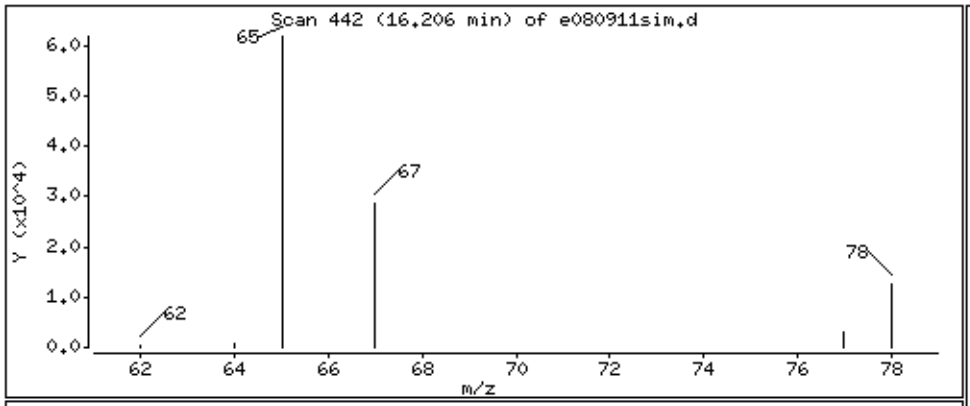
Operator: ef

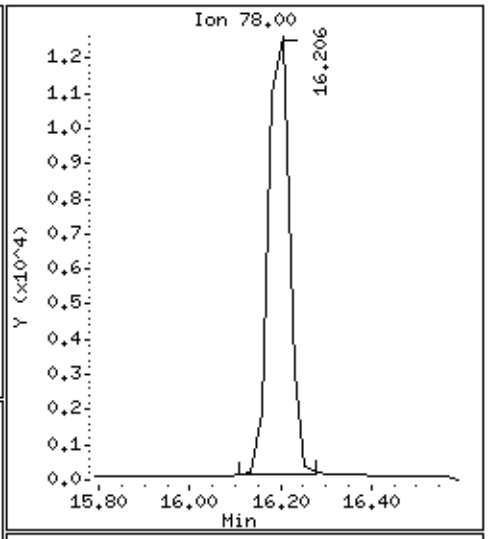
Column phase: RTX-624

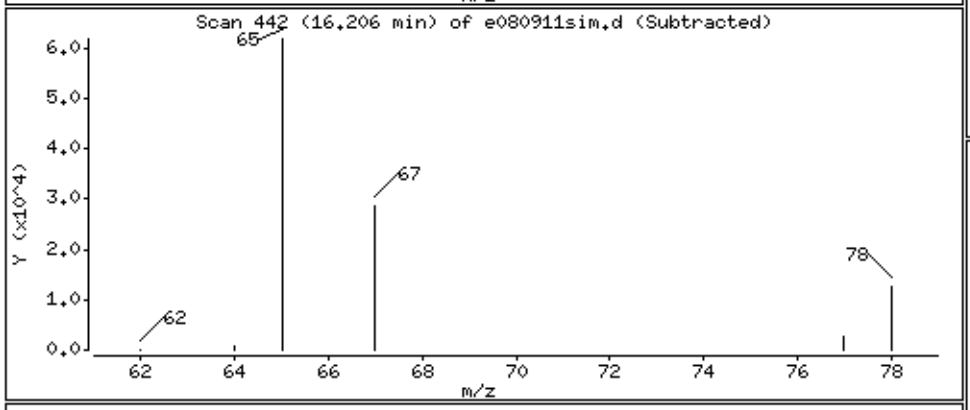
Column diameter: 0.32

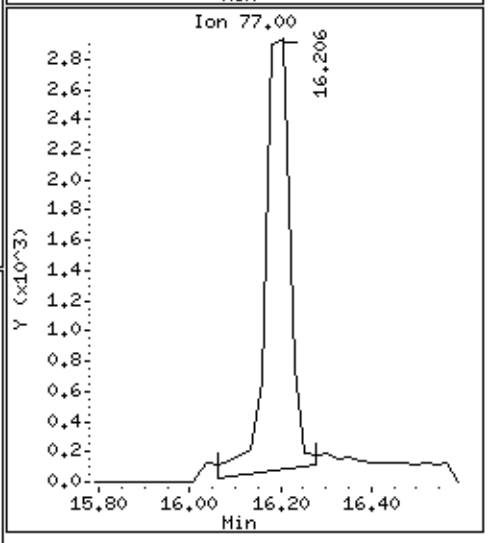
17 Benzene

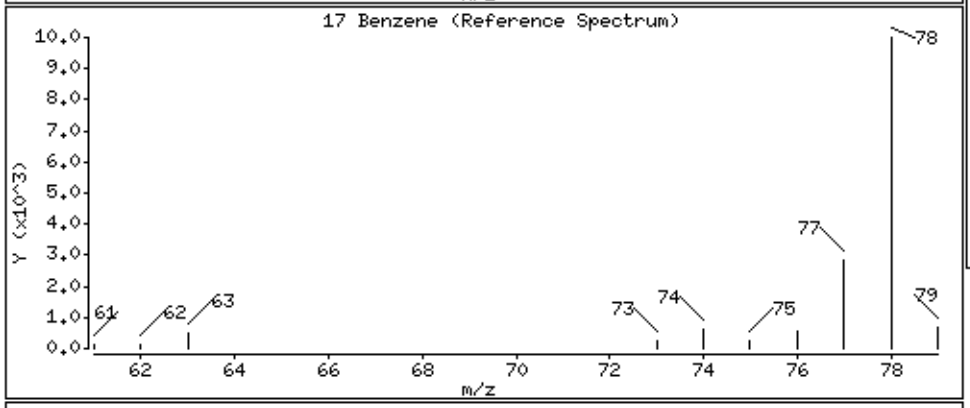
Concentration: 0.6416 PPBV

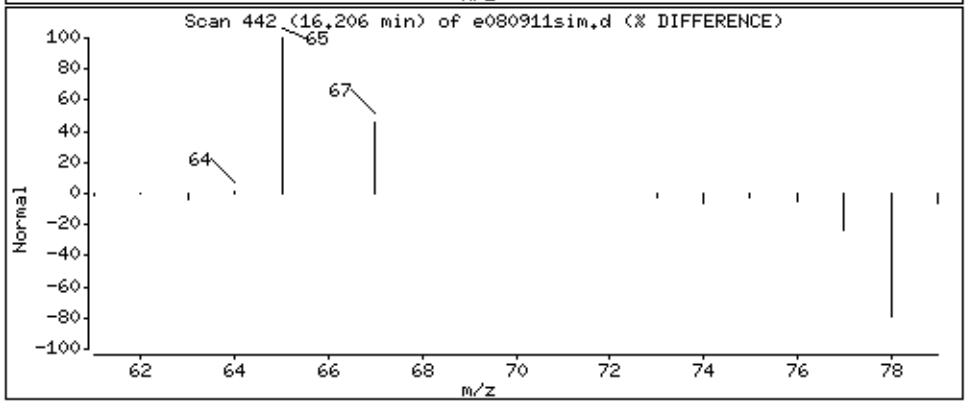












Data File: /chem/msde.i/09Aug2017.b/e080911sim.d

Date : 09-AUG-2017 16:27

Client ID:

Instrument: msde.i

Sample Info: 250mL# 13858

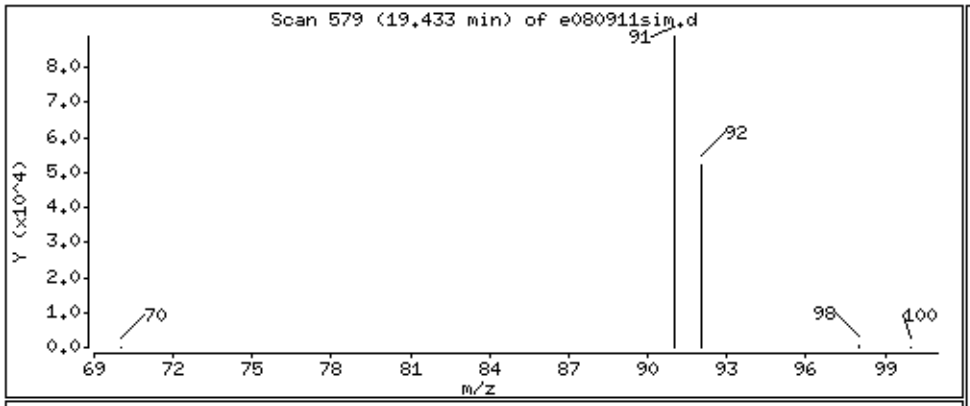
Operator: ef

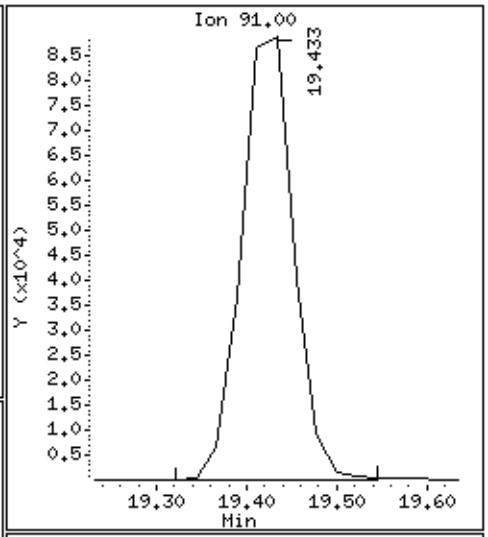
Column phase: RTX-624

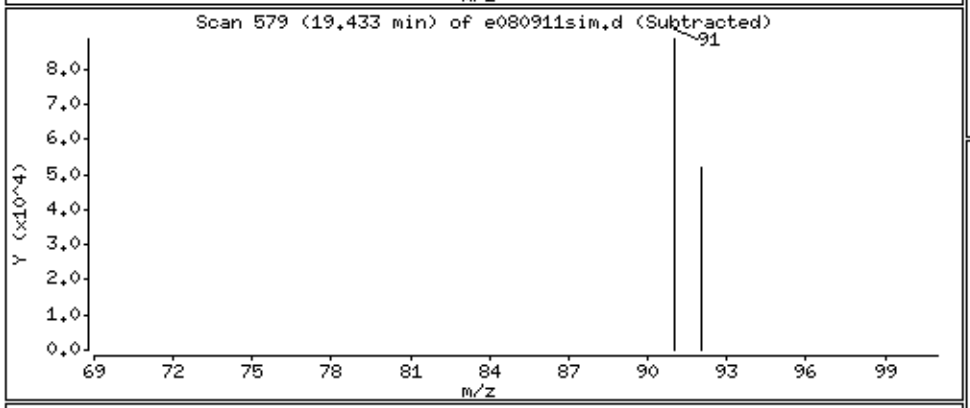
Column diameter: 0.32

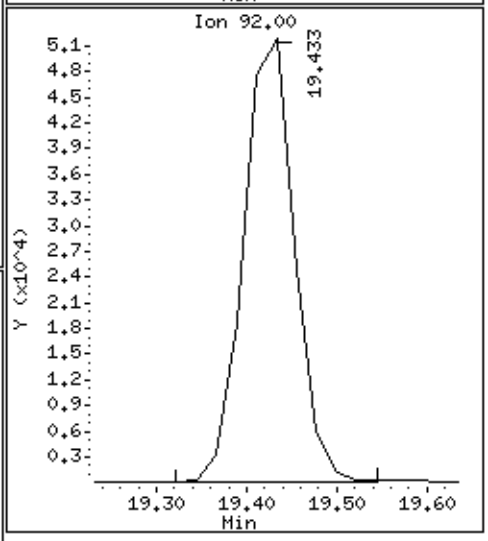
23 Toluene

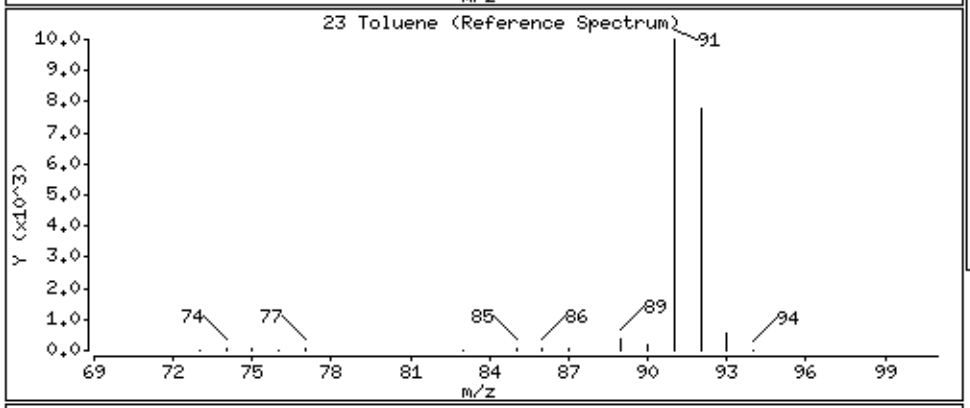
Concentration: 4.620 PPBV

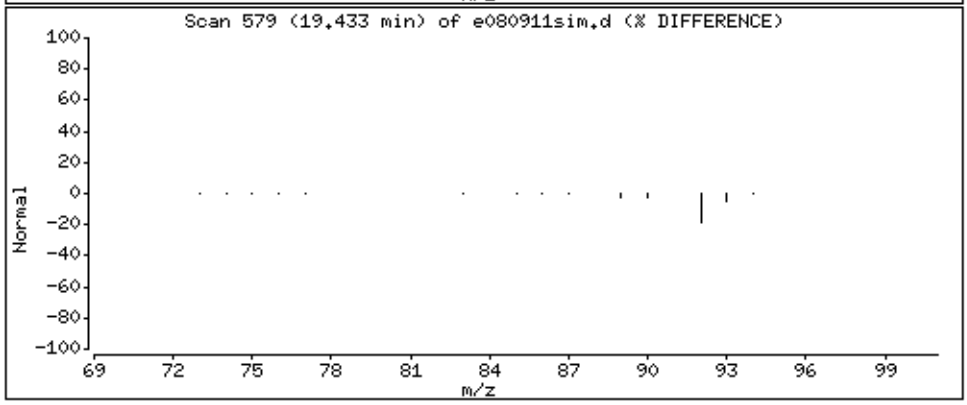












Data File: /chem/msde.i/09Aug2017.b/e080911sim.d

Date : 09-AUG-2017 16:27

Client ID:

Instrument: msde.i

Sample Info: 250mL# 13858

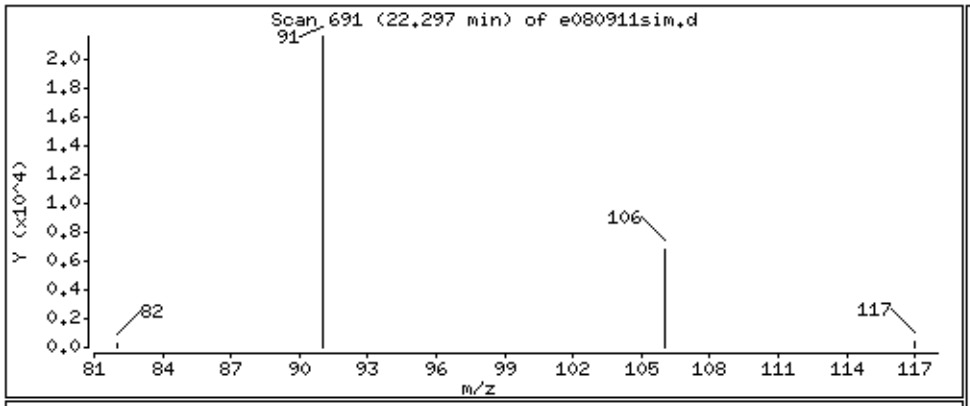
Operator: ef

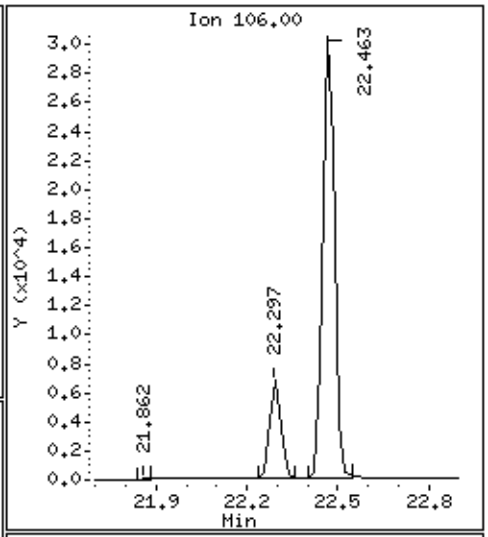
Column phase: RTX-624

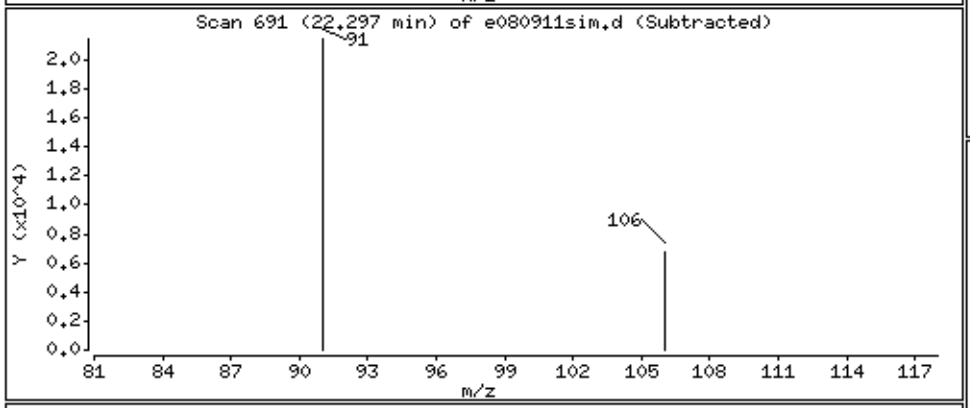
Column diameter: 0.32

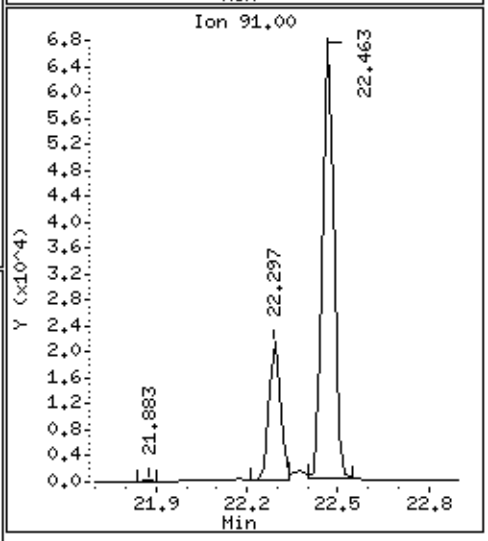
30 Ethyl Benzene

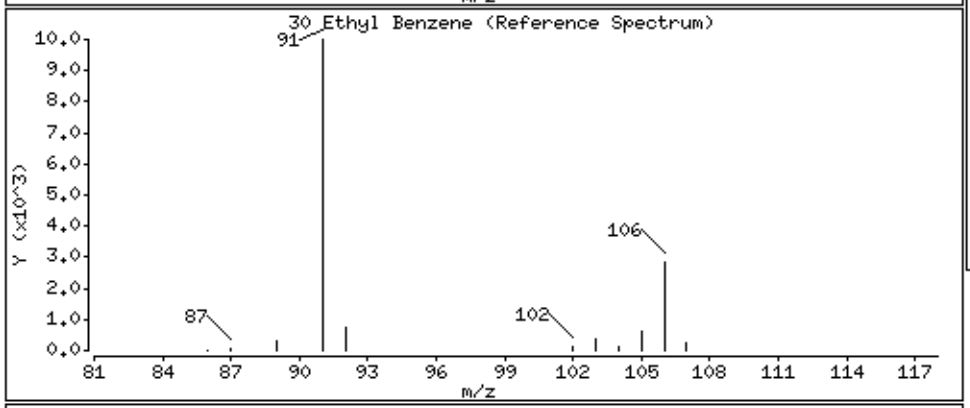
Concentration: 0.5445 PPBV

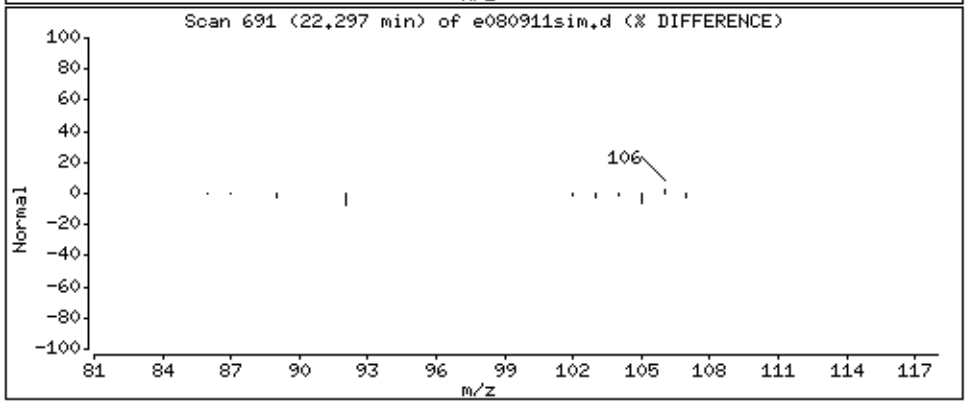












Data File: /chem/msde.i/09Aug2017.b/e080911sim.d

Date : 09-AUG-2017 16:27

Client ID:

Instrument: msde.i

Sample Info: 250mL# 13858

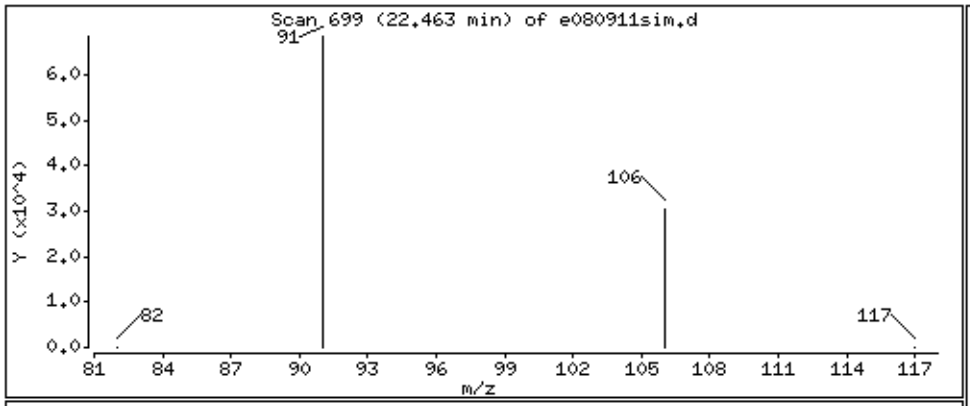
Operator: ef

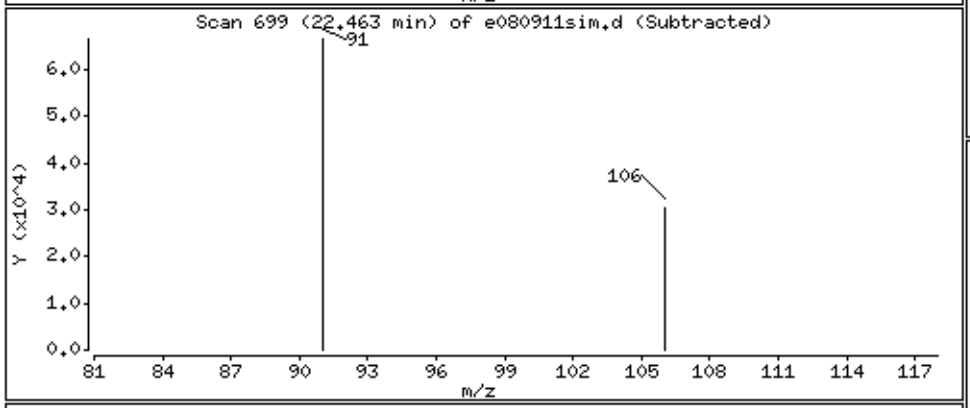
Column phase: RTX-624

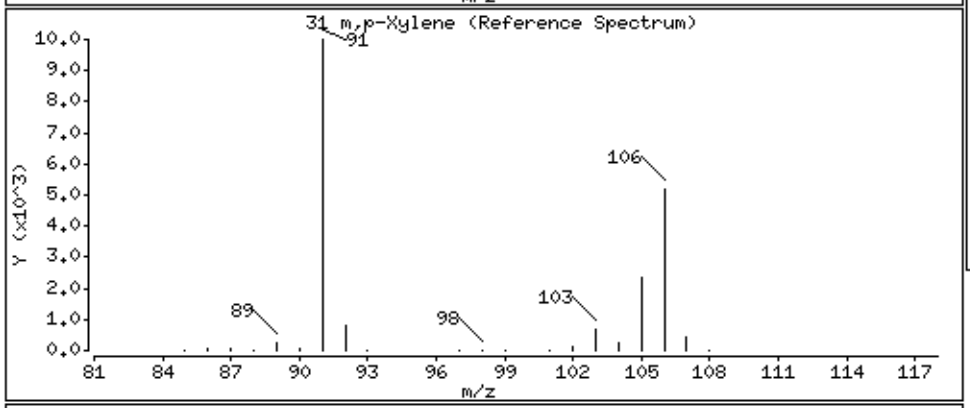
Column diameter: 0.32

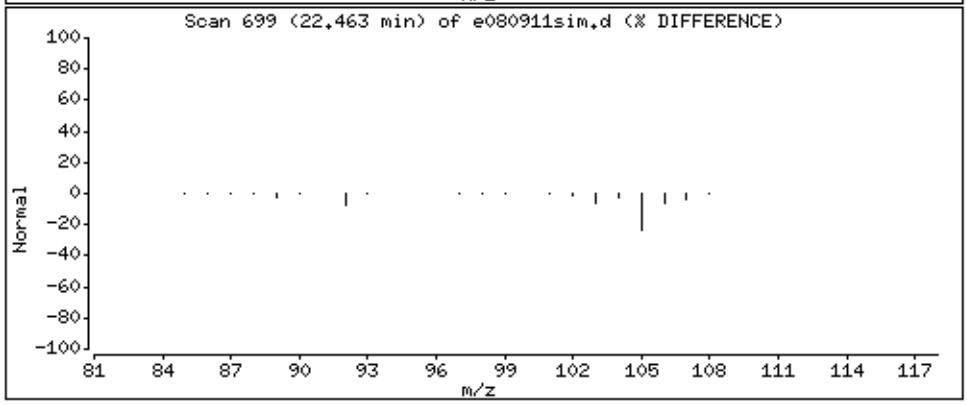
31 m,p-Xylene

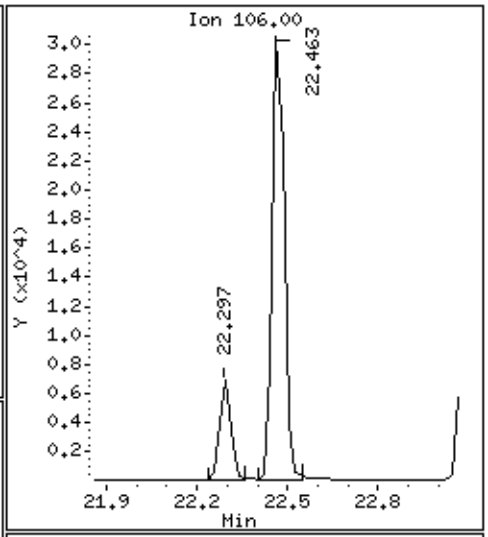
Concentration: 2.212 PPBV

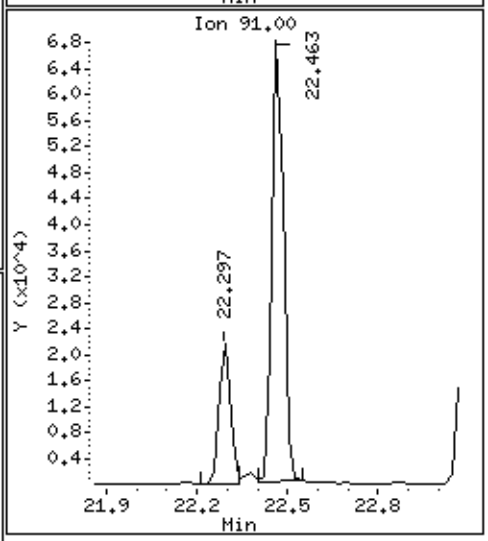












Data File: /chem/msde.i/09Aug2017.b/e080911sim.d

Date : 09-AUG-2017 16:27

Client ID:

Instrument: msde.i

Sample Info: 250mL# 13858

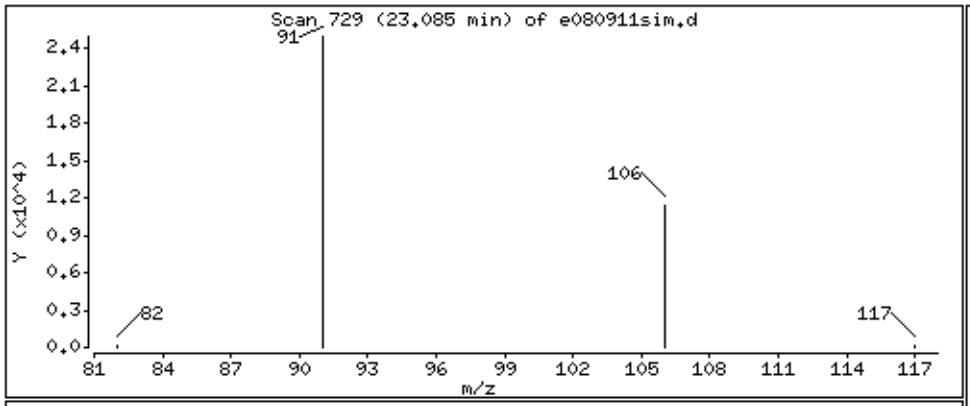
Operator: ef

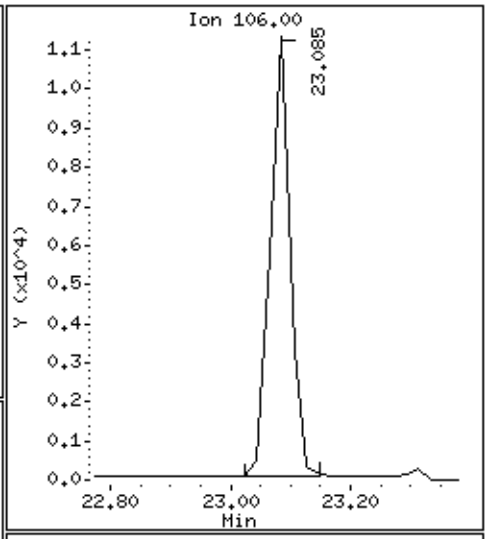
Column phase: RTX-624

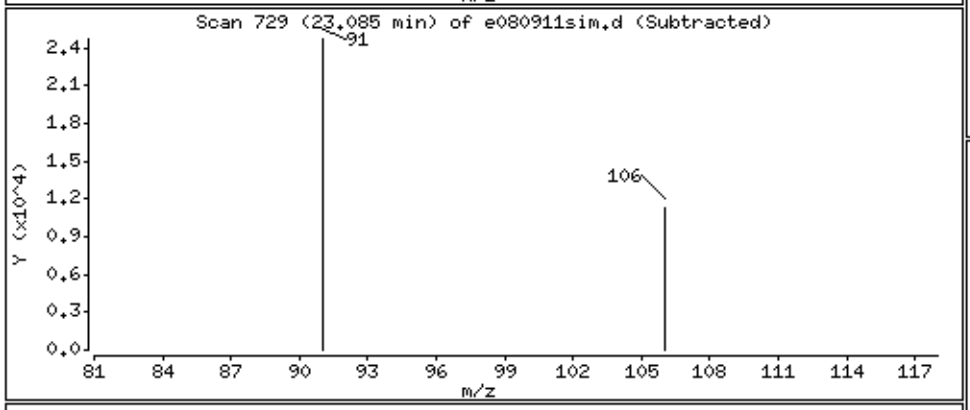
Column diameter: 0.32

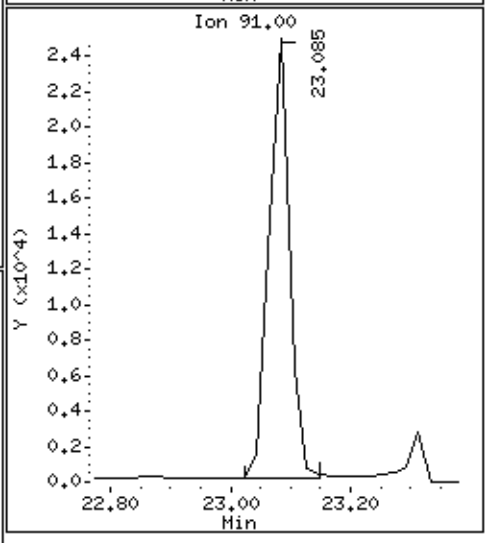
32 o-Xylene

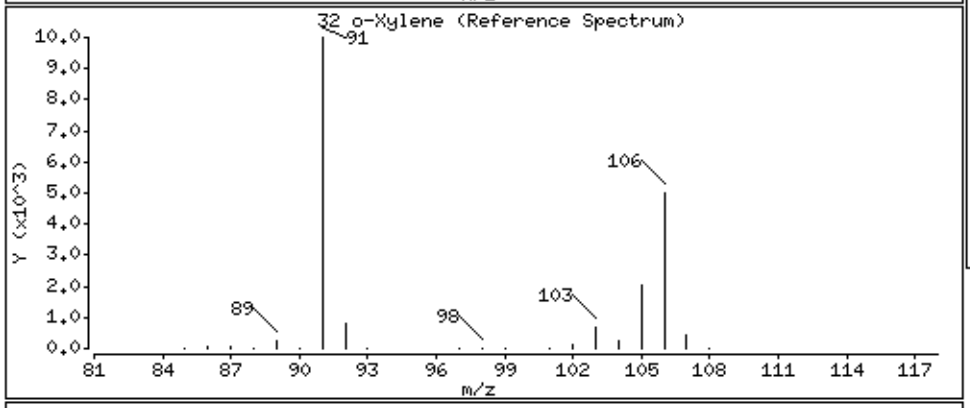
Concentration: 0.7542 PPBV

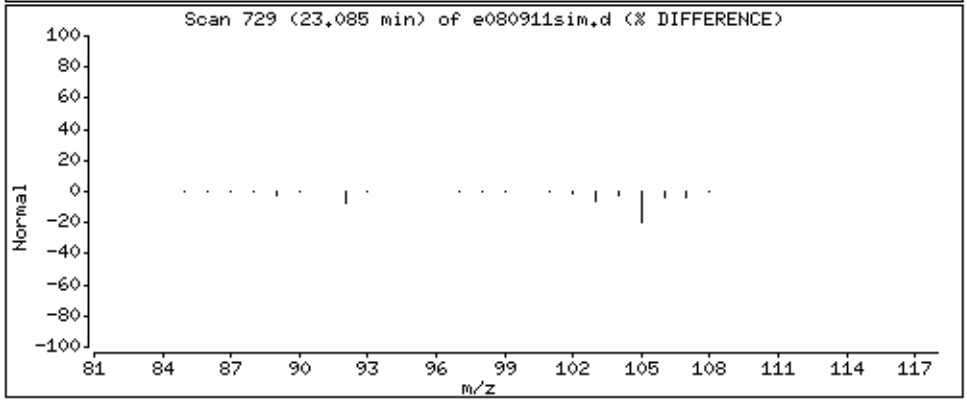












Data File: /chem/msde.i/09Aug2017.b/e080911sim.d

Date : 09-AUG-2017 16:27

Client ID:

Instrument: msde.i

Sample Info: 250mL# 13858

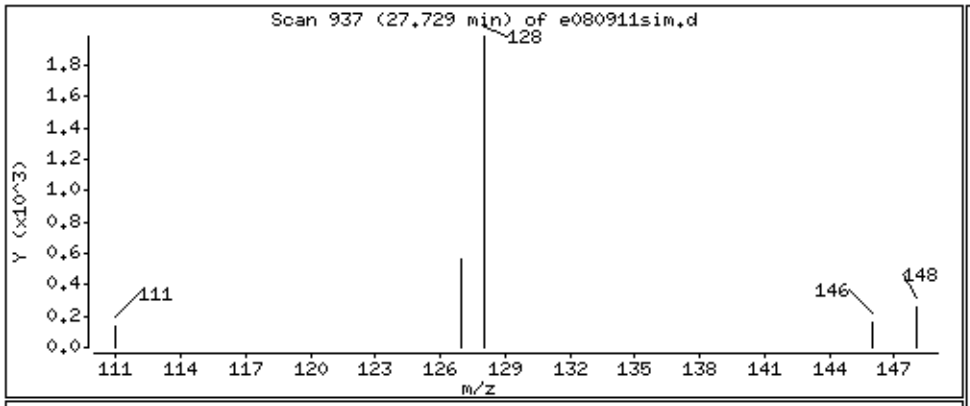
Operator: ef

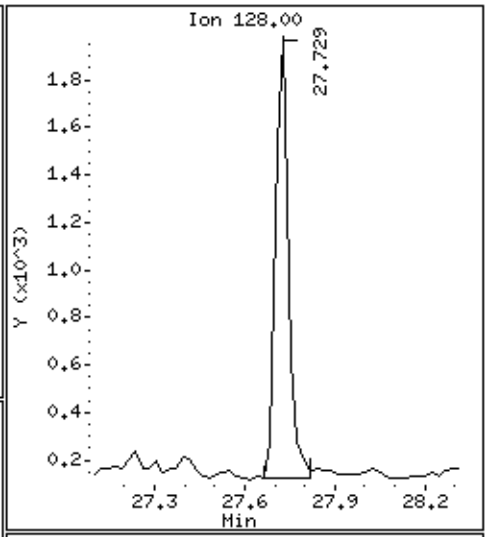
Column phase: RTX-624

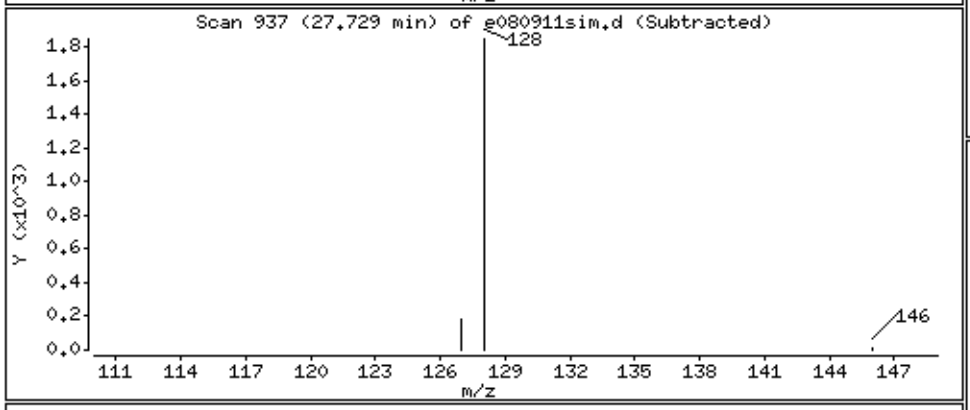
Column diameter: 0.32

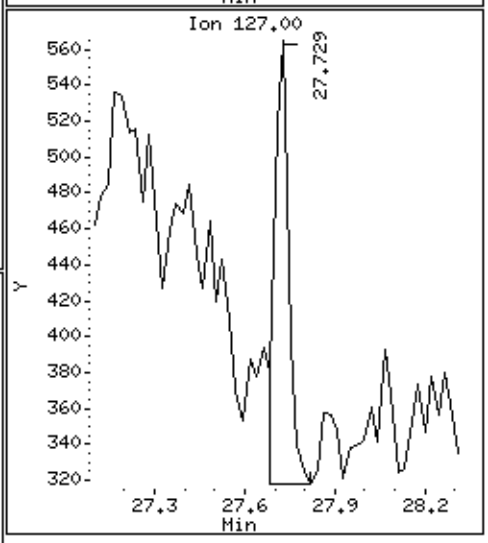
38 Naphthalene

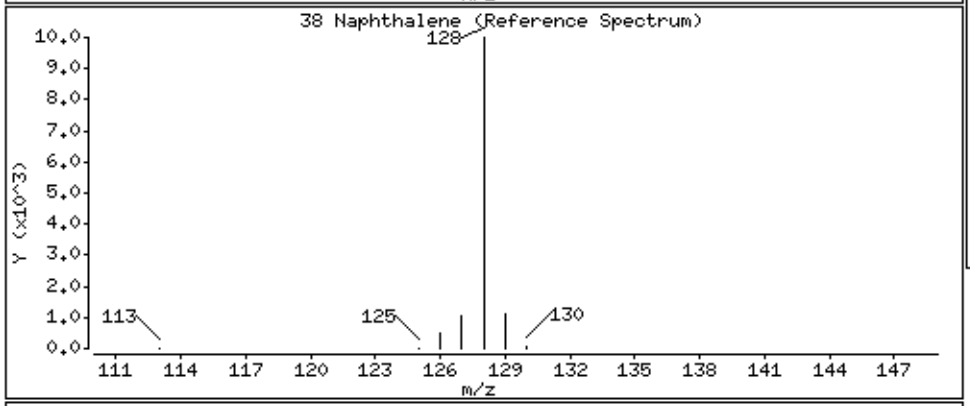
Concentration: 0.1181 PPBV

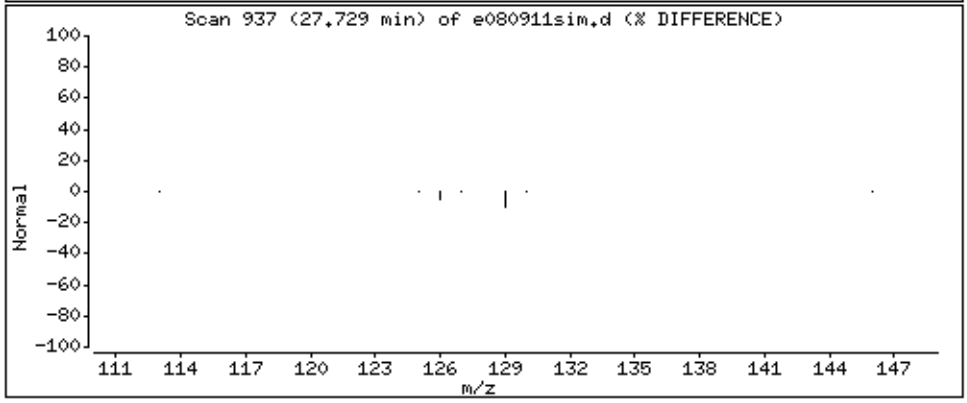












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	BATCH TO SIM BLANK 1		
Lab ID:	1708092-09A	**Date/Time Analyzed:**	8/9/17 05:15 PM
Date/Time Collected:	8/3/17 12:00 AM	**Dilution Factor:**	1.00
Media:	6 Liter Summa Canister	**Instrument/Filename:**	msde.i / e080912sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.020	0.020	0.16	0.023 J
Ethyl Benzene	100-41-4	0.0079	0.026	0.087	0.0088 J
m,p-Xylene	108-38-3	0.0071	0.026	0.17	0.018 J
Naphthalene	91-20-3	0.032	0.042	0.26	Not Detected U
o-Xylene	95-47-6	0.0052	0.026	0.087	0.0091 J
Toluene	108-88-3	0.0051	0.023	0.075	0.050 J
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	102

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080912sim.d
Lab Smp Id: 1708092-09A
Inj Date : 09-AUG-2017 17:15
Operator : EA Inst ID: msde.i
Smp Info : 250mL#O0388
Misc Info : 29.8"Hg -> 5.1psi
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:18 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 13 Bromochloromethane						CAS #: 74-97-5		
15.390	15.405 (1.000)	130	144558	5.00000		80.00- 120.00		100.00
15.390	15.405 (1.000)	128	111356			47.34- 107.34		77.03
15.390	15.405 (1.000)	49	168332			83.88- 143.88		116.45
17 Benzene						CAS #: 71-43-2		
16.206	16.197 (0.968)	78	833	0.00718	0.007184	80.00- 120.00		100.00(a)
16.182	16.197 (0.967)	77	567			0.00- 53.90		68.11
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.182	16.197 (1.051)	65	229836	5.06575	5.066	80.00- 120.00		100.00
16.182	16.197 (1.051)	67	97982			18.02- 78.02		42.63
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
16.736	16.727 (1.000)	114	465637	5.00000		80.00- 120.00		100.00
16.736	16.727 (1.000)	88	70021			0.00- 44.94		15.04
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.276	19.267 (1.152)	98	361314	5.09383	5.094	80.00- 120.00		100.00
19.276	19.267 (1.152)	70	41988			0.00- 41.37		11.62

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)								
19.276	19.267	(1.152)	100	230014			33.76- 93.76	63.66
23 Toluene						CAS #: 108-88-3		
19.433	19.424	(1.161)	91	1924	0.01342	0.01342	80.00- 120.00	100.00(a)
19.433	19.424	(1.161)	92	1111			27.48- 87.48	57.79
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
22.173	22.170	(1.000)	117	438476	5.00000		80.00- 120.00	100.00
22.173	22.170	(1.000)	82	183656			11.87- 71.87	41.89
30 Ethyl Benzene						CAS #: 100-41-4		
22.297	22.294	(1.006)	106	118	0.00203	0.002027	80.00- 120.00	100.00(a)
22.297	22.294	(1.006)	91	322			287.72- 347.72	272.63
31 m,p-Xylene						CAS #: 108-38-3		
22.484	22.460	(1.014)	106	282	0.00414	0.004139	80.00- 120.00	100.00(a)
22.484	22.460	(1.014)	91	589			182.04- 242.04	208.82
32 o-Xylene						CAS #: 95-47-6		
23.085	23.082	(1.041)	106	133	0.00210	0.002098	80.00- 120.00	100.00(a)
23.085	23.082	(1.041)	91	415			192.45- 252.45	312.15
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.850	23.847	(1.076)	174	282173	4.78994	4.790	80.00- 120.00	100.00
23.850	23.847	(1.076)	95	271272			66.14- 126.14	96.14
23.850	23.847	(1.076)	176	273916			67.55- 127.55	97.07

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080912sim.d
Lab Smp Id: 1708092-09A
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 29.8"Hg -> 5.1psi

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	144558	5.97
20 1,4-Difluorobenze	468904	281342	656466	465637	-0.70
28 Chlorobenzene-d5	424491	254695	594287	438476	3.29

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.39	-0.09
20 1,4-Difluorobenze	16.73	16.40	17.06	16.74	0.06
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 09Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-09A
Level: LOW Operator: EA
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 29.8"Hg -> 5.1psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.066	101.31	70-130
$ 22 Toluene-d8	5.000	5.094	101.88	70-130
$ 33 4-Bromofluorobenze	5.000	4.790	95.80	70-130

Data File: /chem/msde.i/09Aug2017.b/e080912sim.d

Date : 09-AUG-2017 17:15

Client ID:

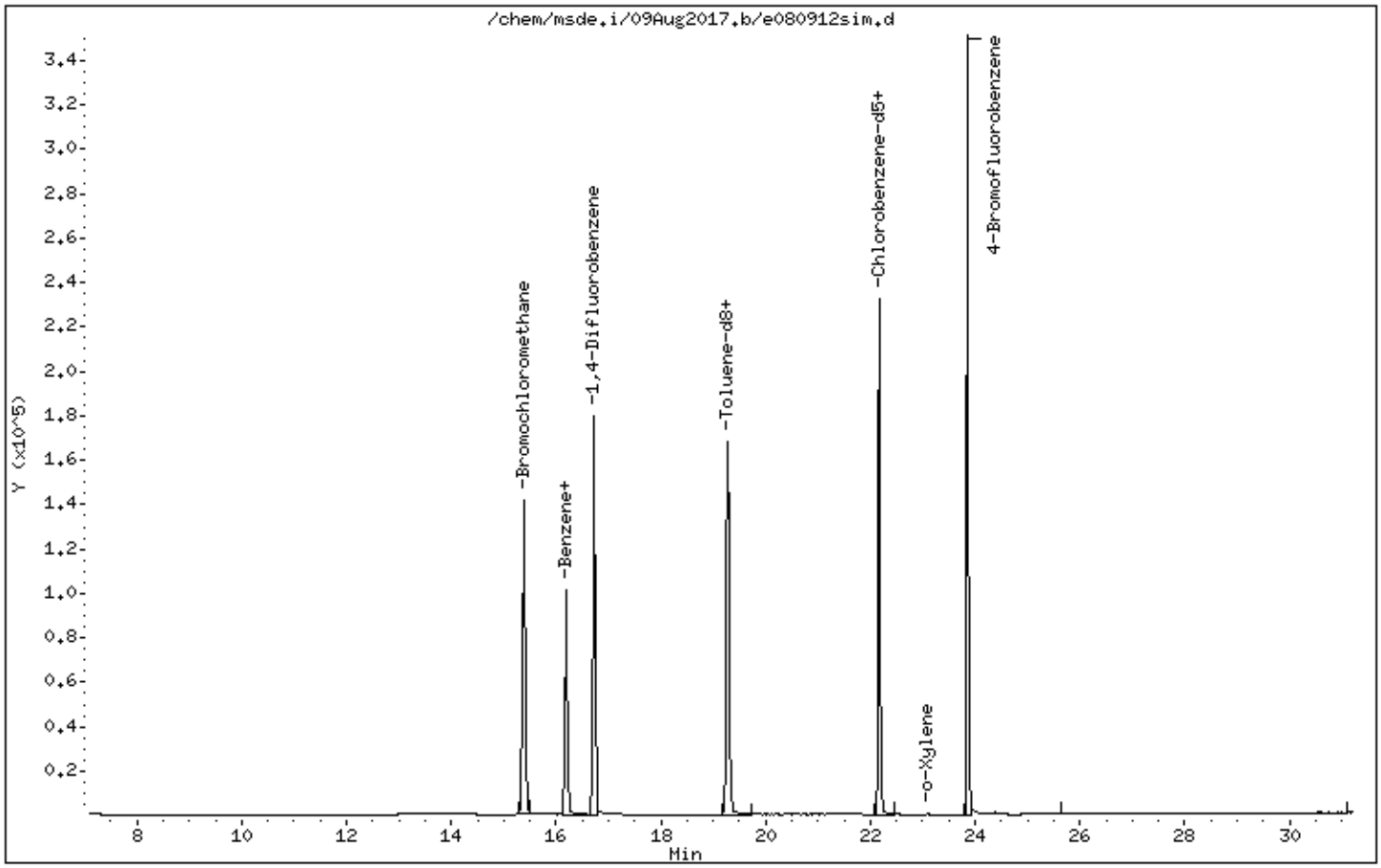
Instrument: msde.i

Sample Info: 250mL#00388

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msde.i/09Aug2017.b/e080912sim.d

Date : 09-AUG-2017 17:15

Client ID:

Instrument: msde.i

Sample Info: 250mL#00388

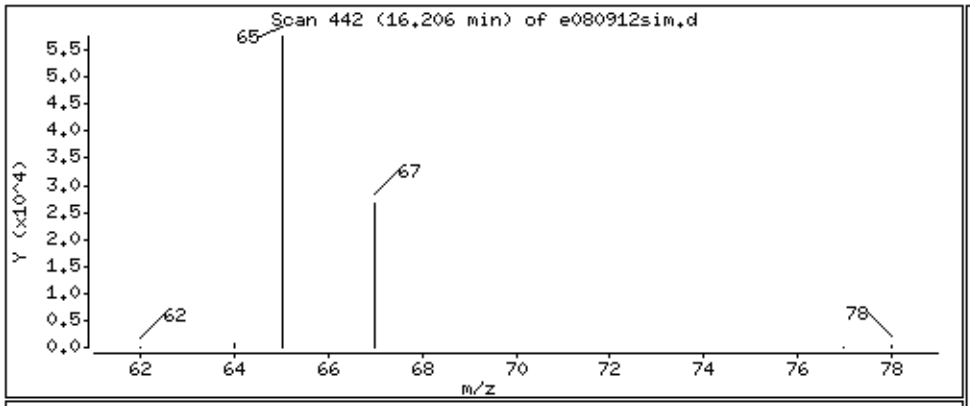
Operator: EA

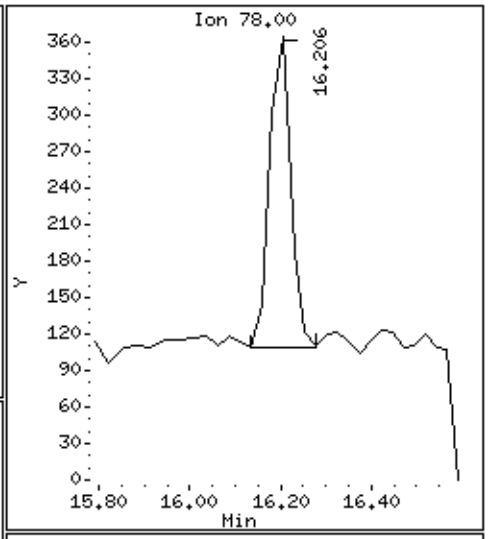
Column phase: RTX-624

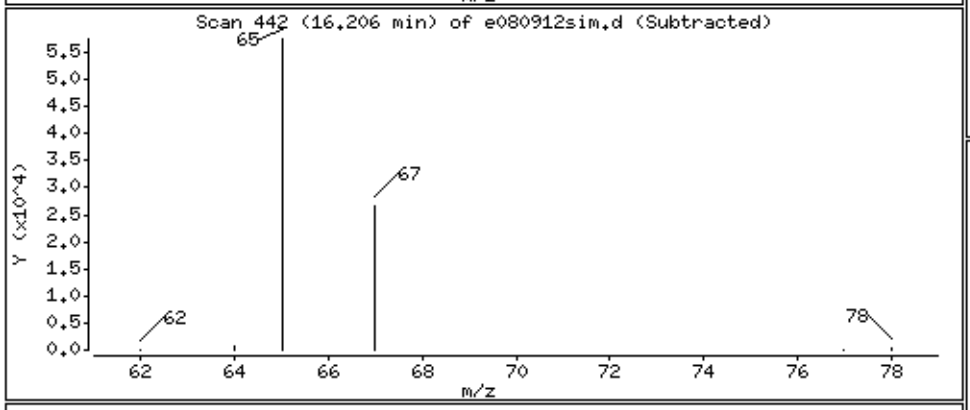
Column diameter: 0.32

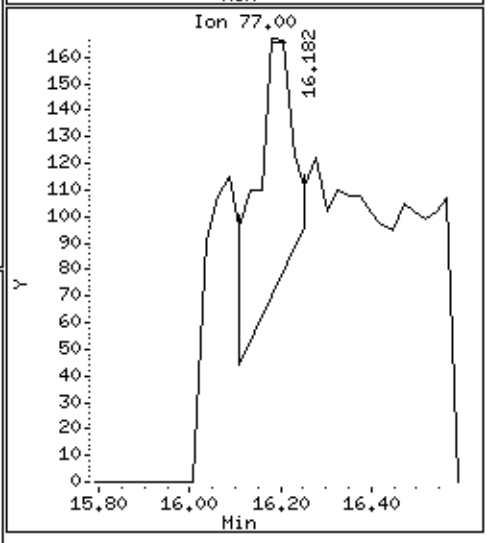
17 Benzene

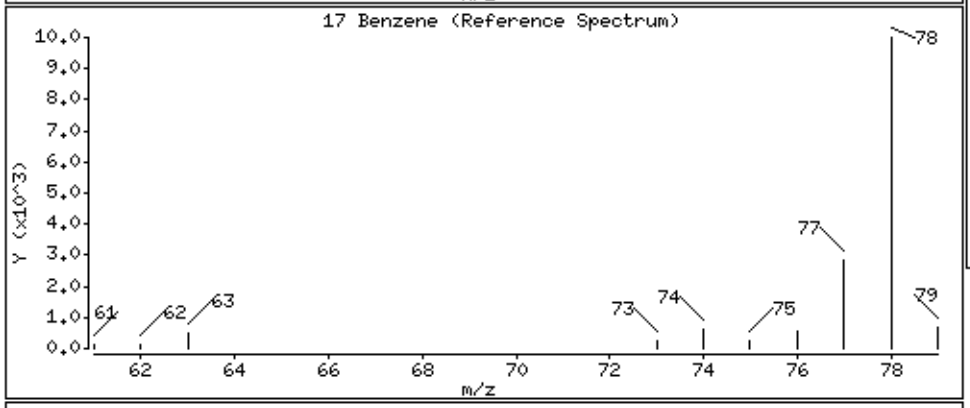
Concentration: 0.007184 PPBV

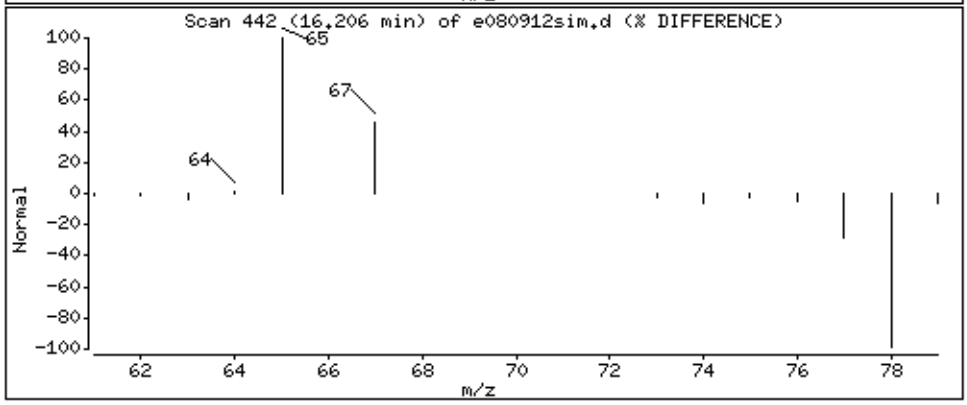












Data File: /chem/msde.i/09Aug2017.b/e080912sim.d

Date : 09-AUG-2017 17:15

Client ID:

Instrument: msde.i

Sample Info: 250mL#00388

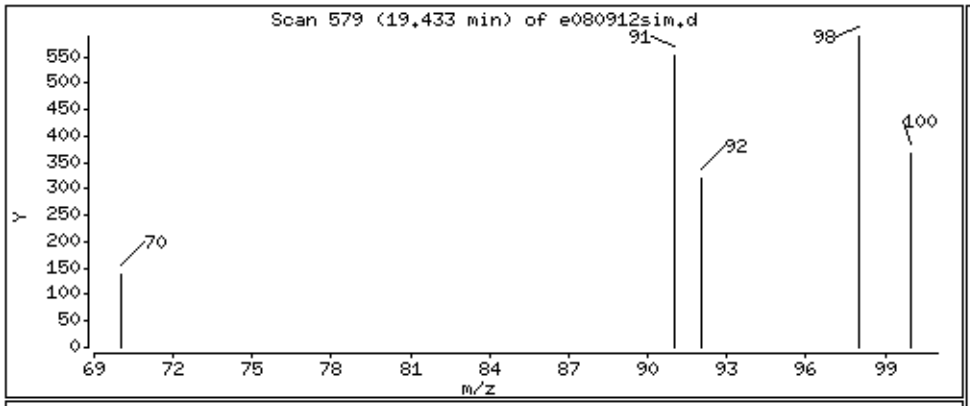
Operator: EA

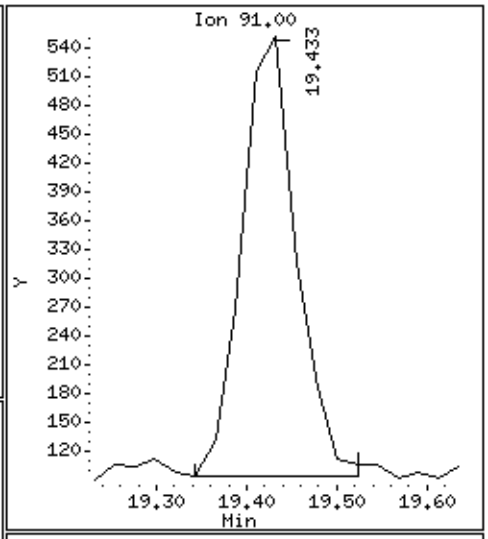
Column phase: RTX-624

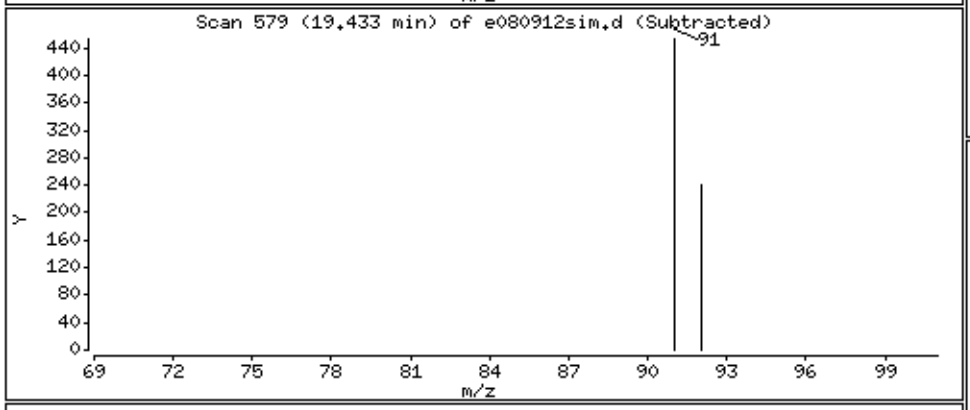
Column diameter: 0.32

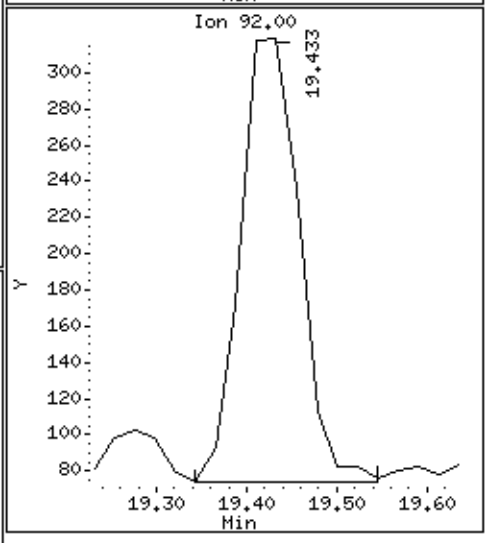
23 Toluene

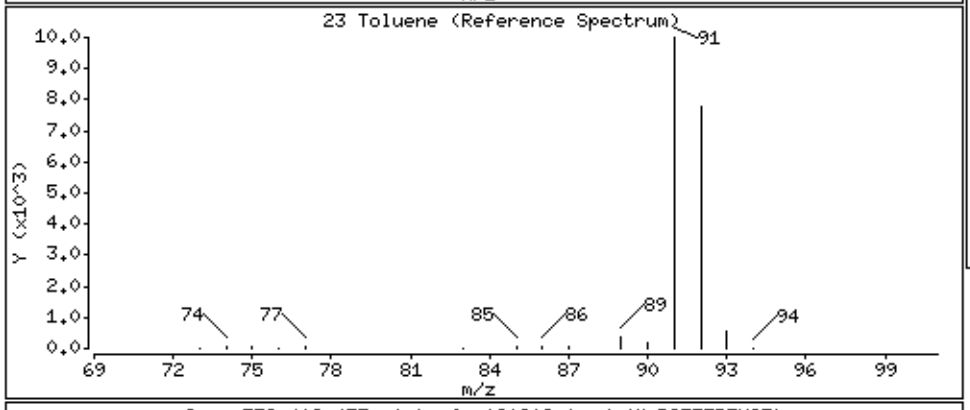
Concentration: 0.01342 PPBV

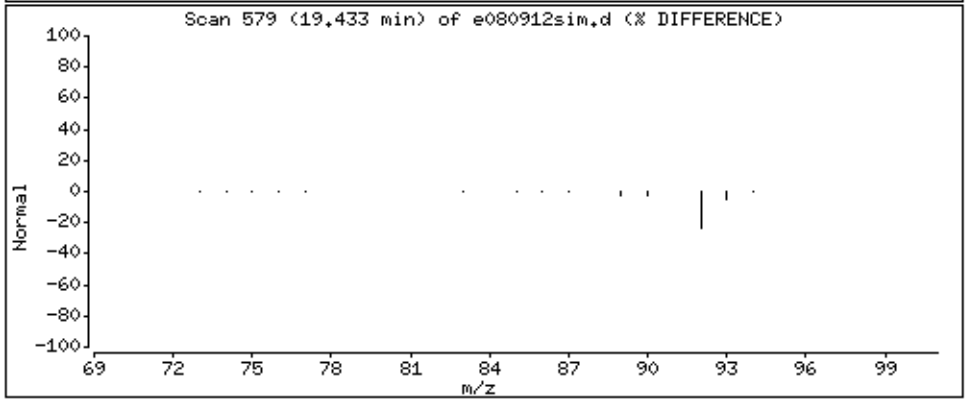












Data File: /chem/msde.i/09Aug2017.b/e080912sim.d

Date : 09-AUG-2017 17:15

Client ID:

Instrument: msde.i

Sample Info: 250mL#00388

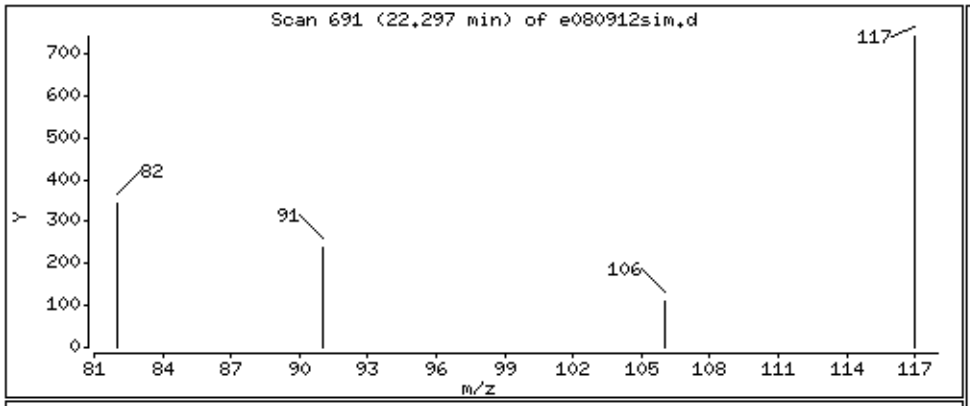
Operator: EA

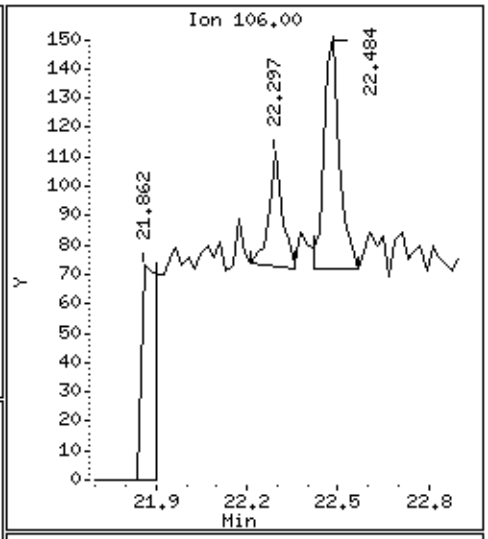
Column phase: RTX-624

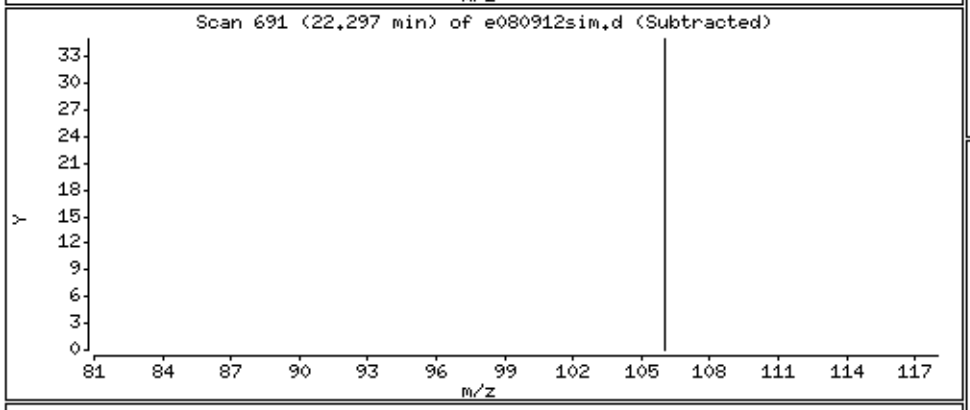
Column diameter: 0.32

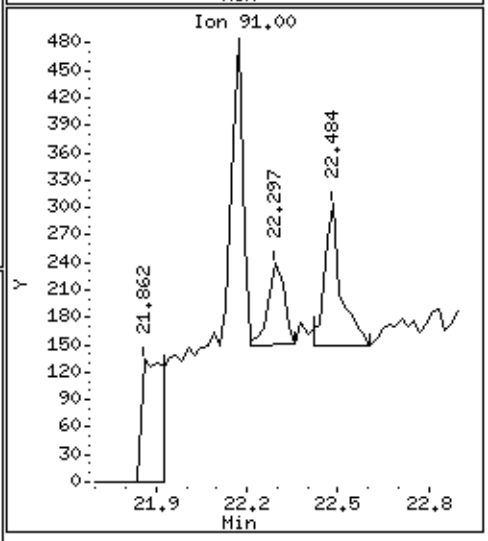
30 Ethyl Benzene

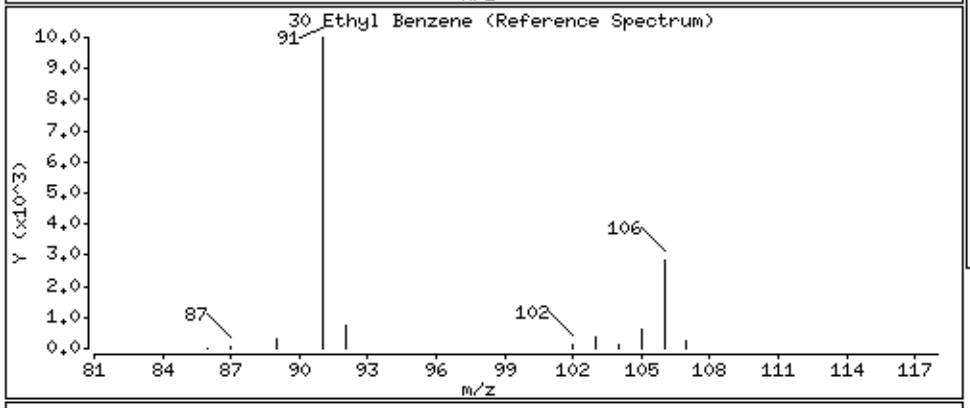
Concentration: 0.002027 PPBV

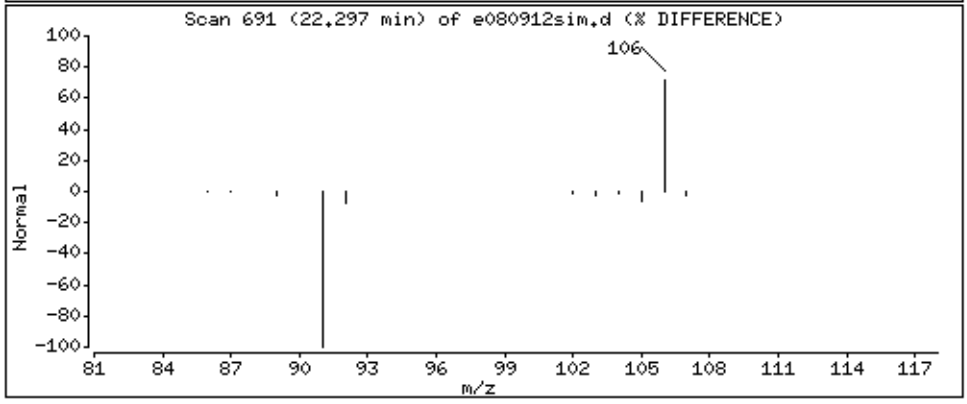












Data File: /chem/msde.i/09Aug2017.b/e080912sim.d

Date : 09-AUG-2017 17:15

Client ID:

Instrument: msde.i

Sample Info: 250mL#00388

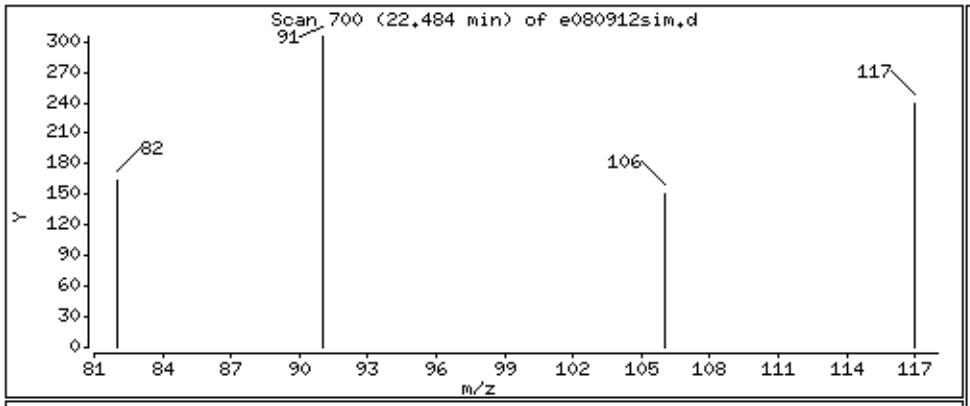
Operator: EA

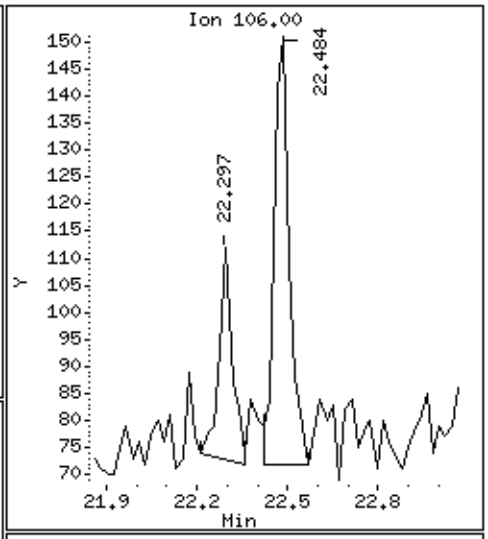
Column phase: RTX-624

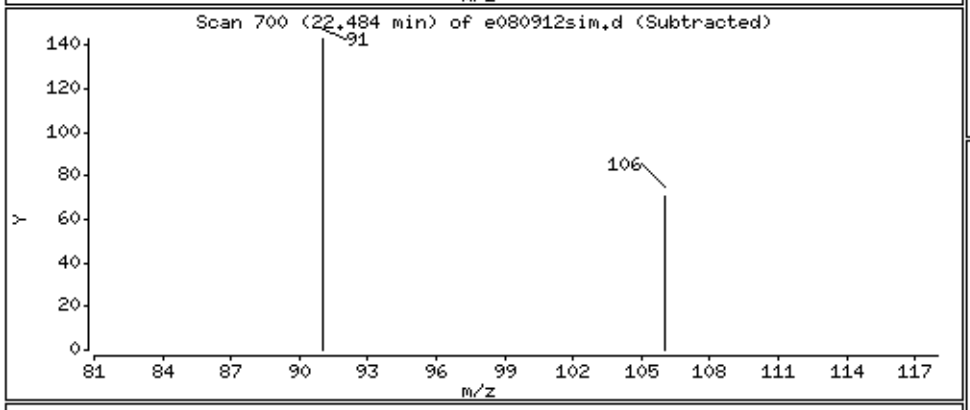
Column diameter: 0.32

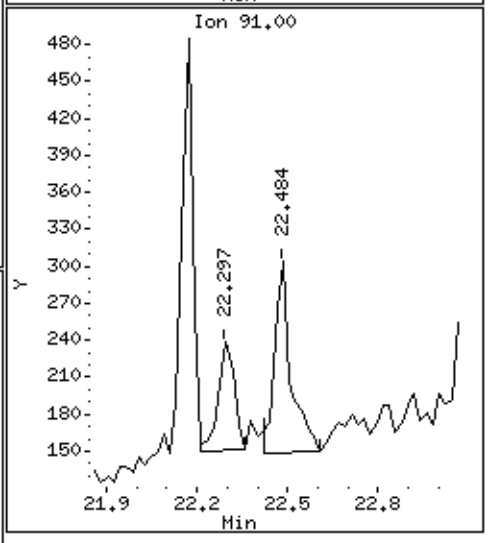
31 m,p-Xylene

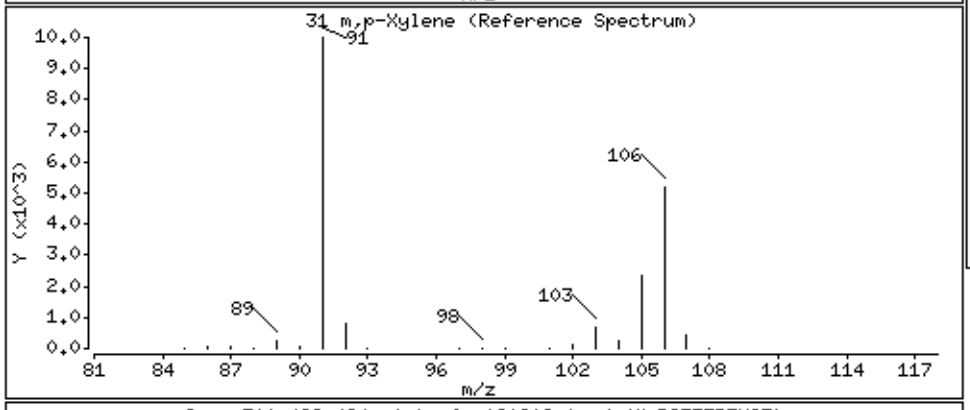
Concentration: 0.004139 PPBV

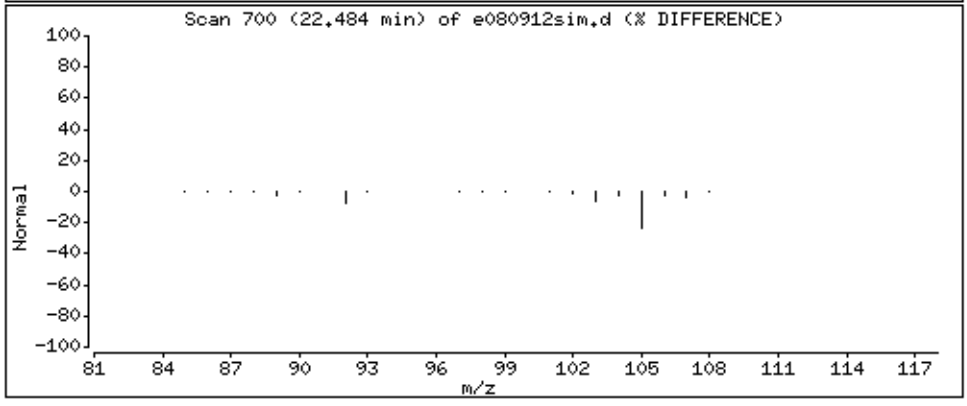












Data File: /chem/msde.i/09Aug2017.b/e080912sim.d

Date : 09-AUG-2017 17:15

Client ID:

Instrument: msde.i

Sample Info: 250mL#00388

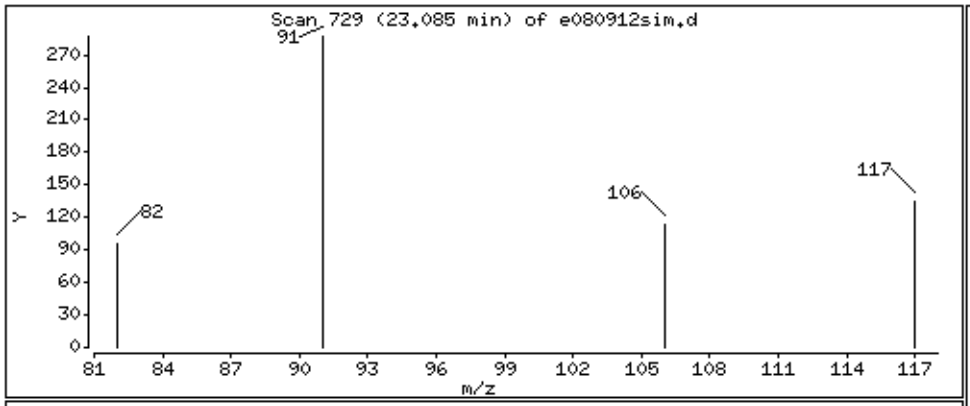
Operator: EA

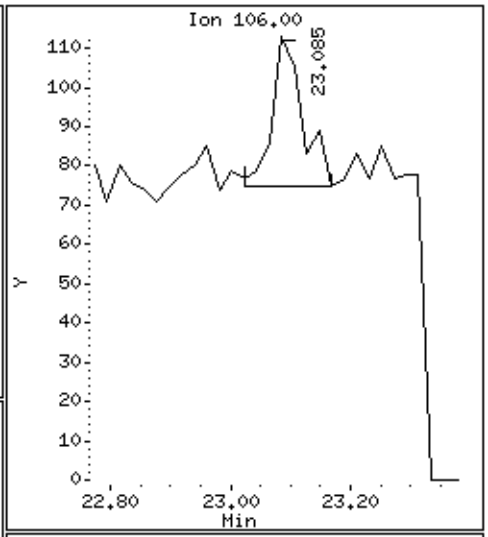
Column phase: RTX-624

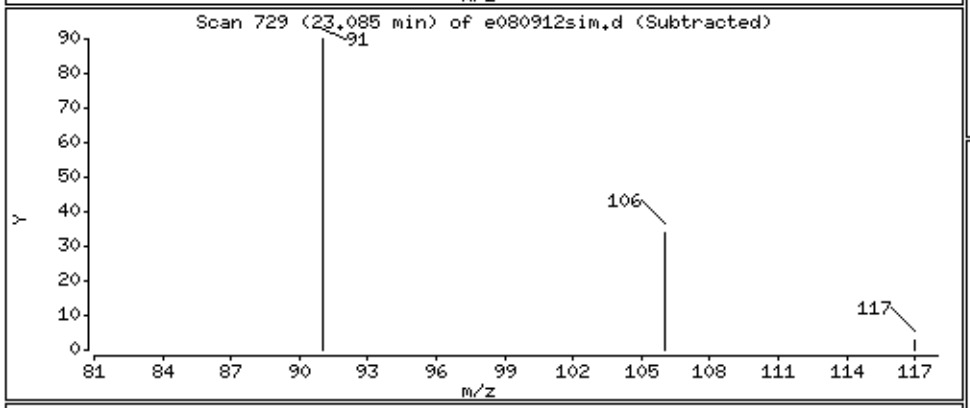
Column diameter: 0.32

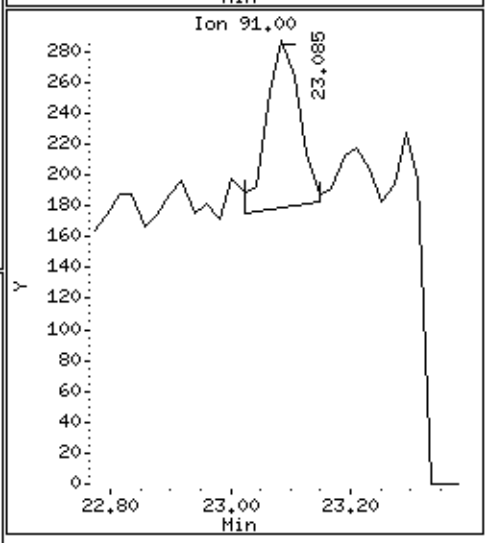
32 o-Xylene

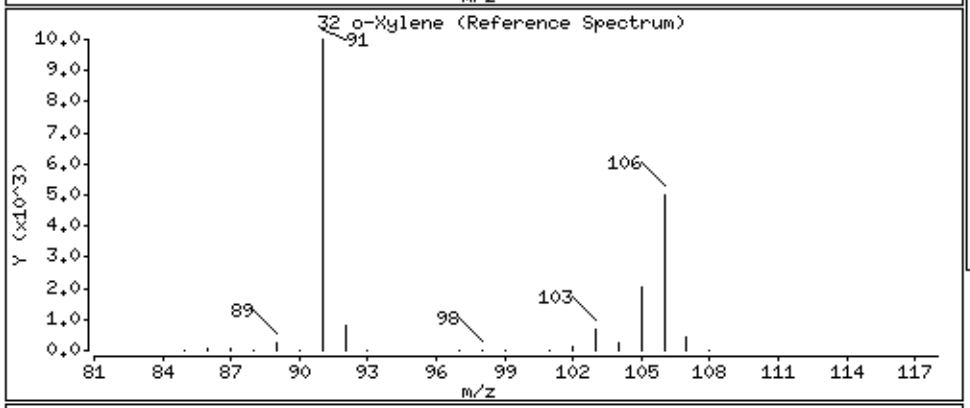
Concentration: 0.002098 PPBV

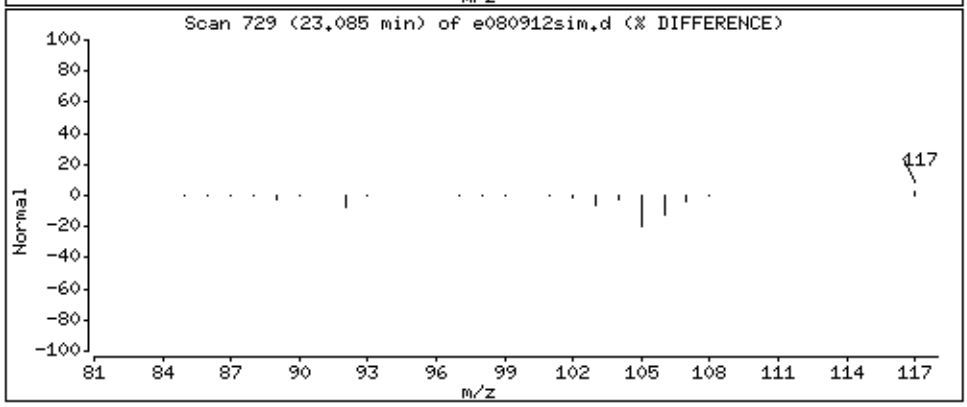












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	BATCH TO SIM BLANK 2		
Lab ID:	1708092-10A	**Date/Time Analyzed:**	8/9/17 06:01 PM
Date/Time Collected:	8/3/17 12:00 AM	**Dilution Factor:**	1.00
Media:	6 Liter Summa Canister	**Instrument/Filename:**	msde.i / e080913sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.020	0.020	0.16	0.028 J
Ethyl Benzene	100-41-4	0.0079	0.026	0.087	Not Detected U
m,p-Xylene	108-38-3	0.0071	0.026	0.17	0.0081 J
Naphthalene	91-20-3	0.032	0.042	0.26	Not Detected U
o-Xylene	95-47-6	0.0052	0.026	0.087	Not Detected U
Toluene	108-88-3	0.0051	0.023	0.075	0.014 J
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	102

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080913sim.d
Lab Smp Id: 1708092-10A
Inj Date : 09-AUG-2017 18:01
Operator : EA Inst ID: msde.i
Smp Info : 250mL#N0446
Misc Info : 29.8"Hg -> 5.0psi
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:18 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
15.390	15.405 (1.000)	130	144660	5.00000			80.00- 120.00	100.00
15.390	15.405 (1.000)	128	111945				47.34- 107.34	77.39
15.390	15.405 (1.000)	49	170070				83.88- 143.88	117.57
17 Benzene						CAS #: 71-43-2		
16.206	16.197 (0.968)	78	1043	0.00888	0.008880		80.00- 120.00	100.00(a)
16.206	16.197 (0.968)	77	1012				0.00- 53.90	97.02
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.182	16.197 (1.051)	65	232123	5.11255	5.112		80.00- 120.00	100.00
16.182	16.197 (1.051)	67	99285				18.02- 78.02	42.77
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
16.736	16.727 (1.000)	114	471230	5.00000			80.00- 120.00	100.00
16.736	16.727 (1.000)	88	71528				0.00- 44.94	15.18
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.276	19.267 (1.152)	98	366382	5.10398	5.104		80.00- 120.00	100.00
19.276	19.267 (1.152)	70	43007				0.00- 41.37	11.74

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)								
19.276	19.267	(1.152)	100	233195			33.76- 93.76	63.65
23 Toluene						CAS #: 108-88-3		
19.433	19.424	(1.161)	91	525	0.00362	0.003619	80.00- 120.00	100.00(a)
19.433	19.424	(1.161)	92	270			27.48- 87.48	51.40
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
22.173	22.170	(1.000)	117	442177	5.00000		80.00- 120.00	100.00
22.173	22.170	(1.000)	82	186438			11.87- 71.87	42.16
31 m,p-Xylene						CAS #: 108-38-3		
22.484	22.460	(1.014)	106	129	0.00188	0.001875	80.00- 120.00	100.00(a)
22.484	22.460	(1.014)	91	267			182.04- 242.04	206.73
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.850	23.847	(1.076)	174	288202	4.85132	4.851	80.00- 120.00	100.00
23.850	23.847	(1.076)	95	274393			66.14- 126.14	95.21
23.850	23.847	(1.076)	176	278195			67.55- 127.55	96.53

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080913sim.d
Lab Smp Id: 1708092-10A
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 29.8"Hg -> 5.0psi

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	144660	6.04
20 1,4-Difluorobenze	468904	281342	656466	471230	0.50
28 Chlorobenzene-d5	424491	254695	594287	442177	4.17

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.39	-0.10
20 1,4-Difluorobenze	16.73	16.40	17.06	16.74	0.06
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.01

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 09Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1708092-10A
Level: LOW Operator: EA
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 29.8"Hg -> 5.0psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.112	102.25	70-130
$ 22 Toluene-d8	5.000	5.104	102.08	70-130
$ 33 4-Bromofluorobenze	5.000	4.851	97.03	70-130

Data File: /chem/msde.i/09Aug2017.b/e080913sim.d

Date : 09-AUG-2017 18:01

Client ID:

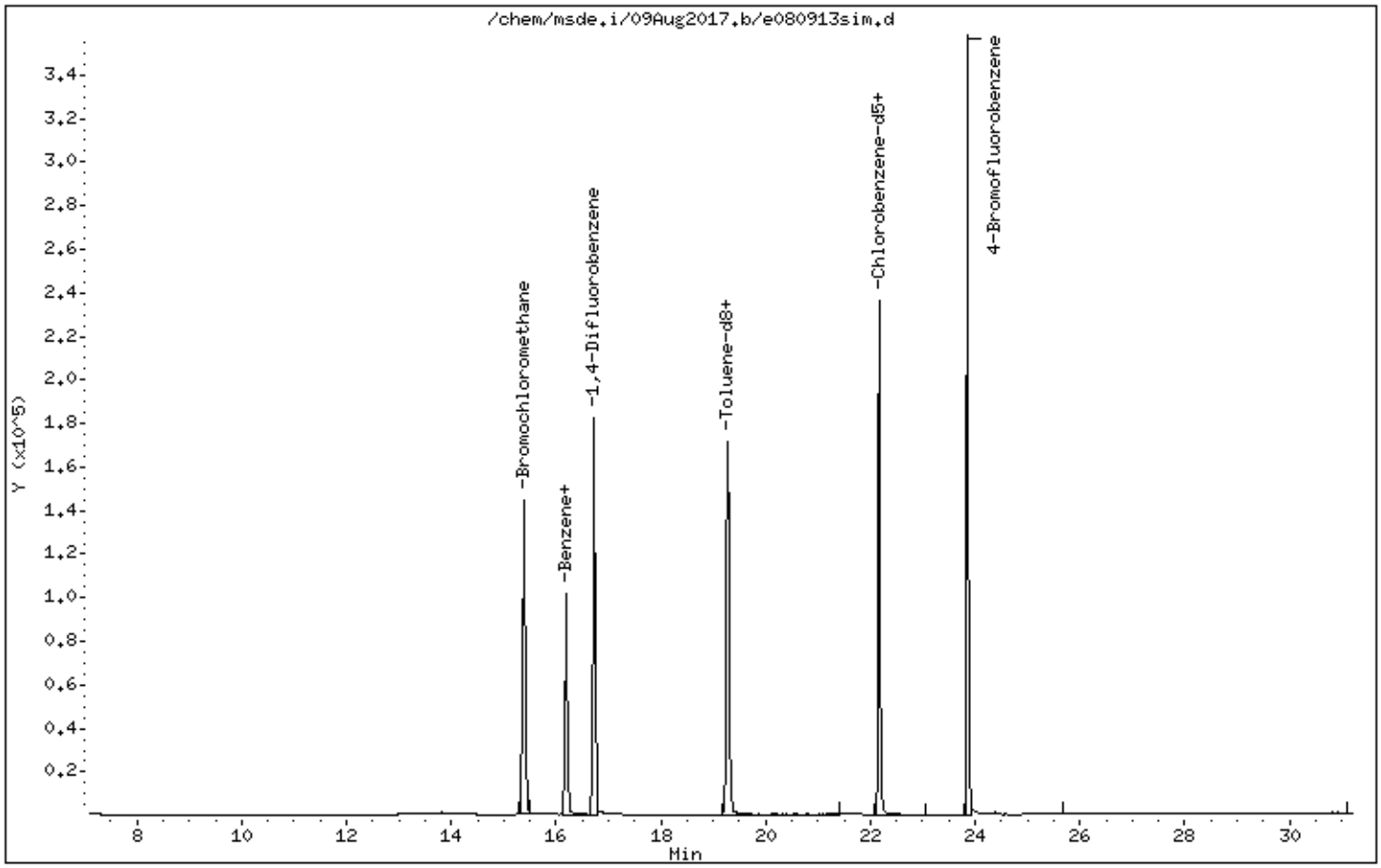
Instrument: msde.i

Sample Info: 250mL#N0446

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msde.i/09Aug2017.b/e080913sim.d

Date : 09-AUG-2017 18:01

Client ID:

Instrument: msde.i

Sample Info: 250mL#N0446

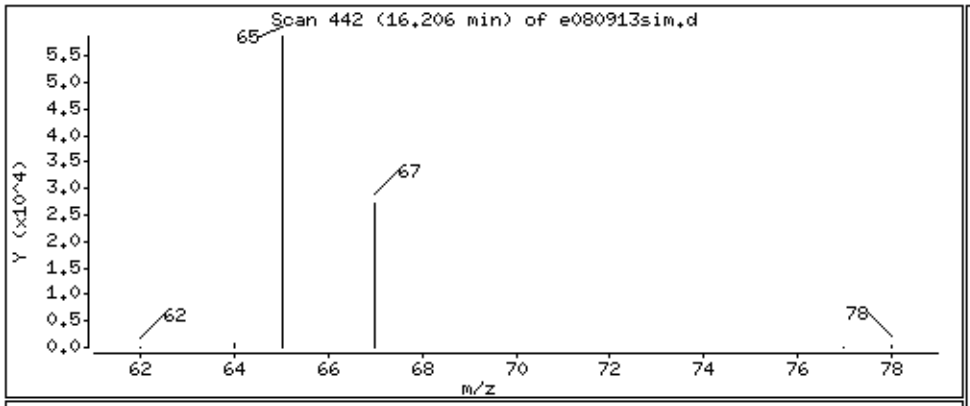
Operator: EA

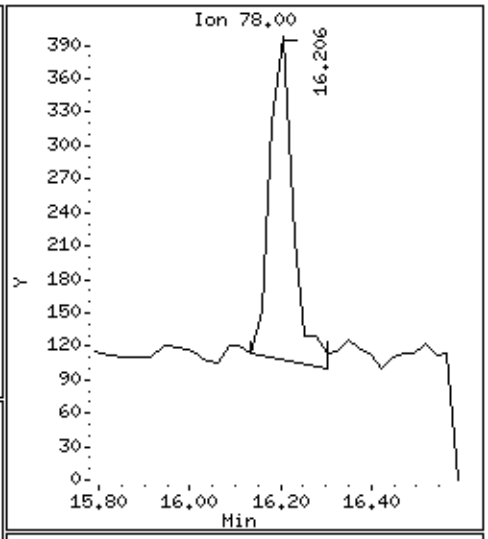
Column phase: RTX-624

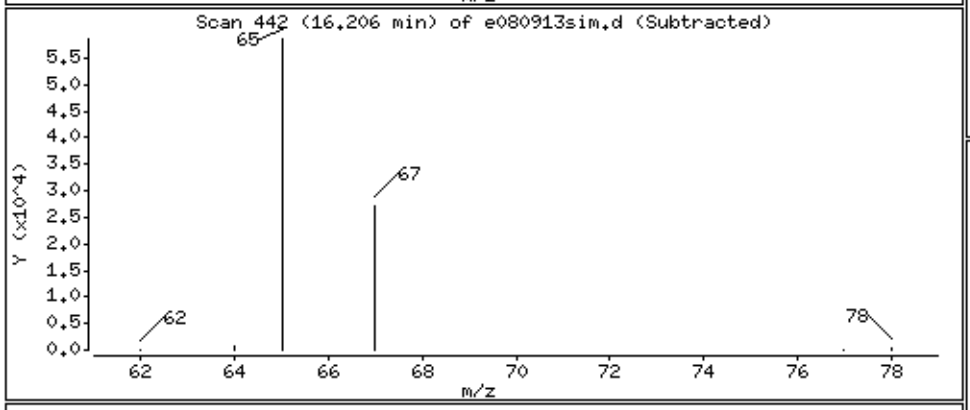
Column diameter: 0.32

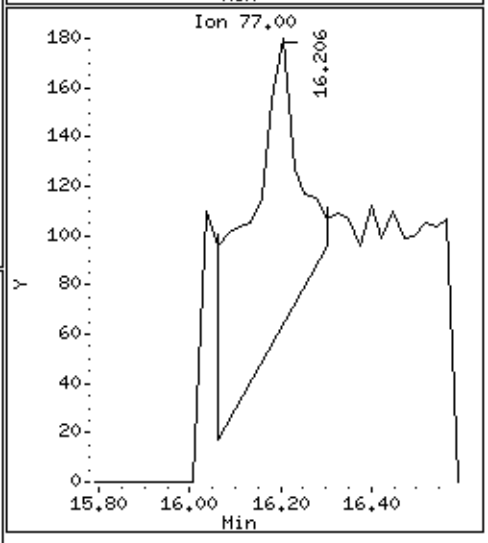
17 Benzene

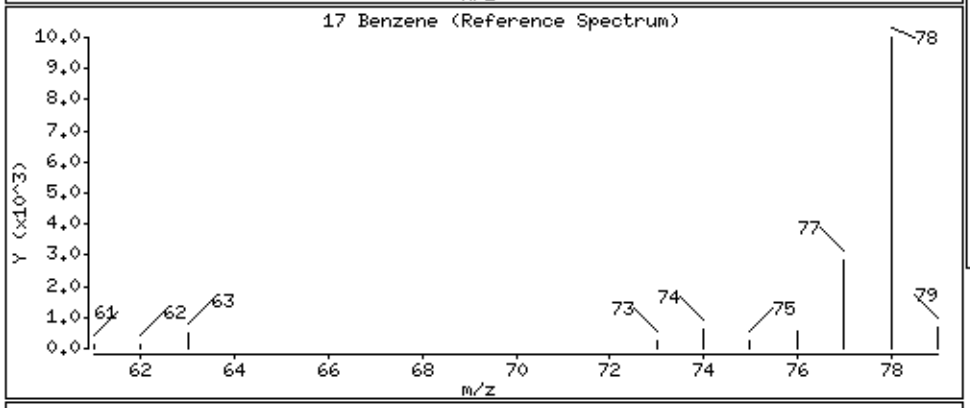
Concentration: 0.008880 PPBV

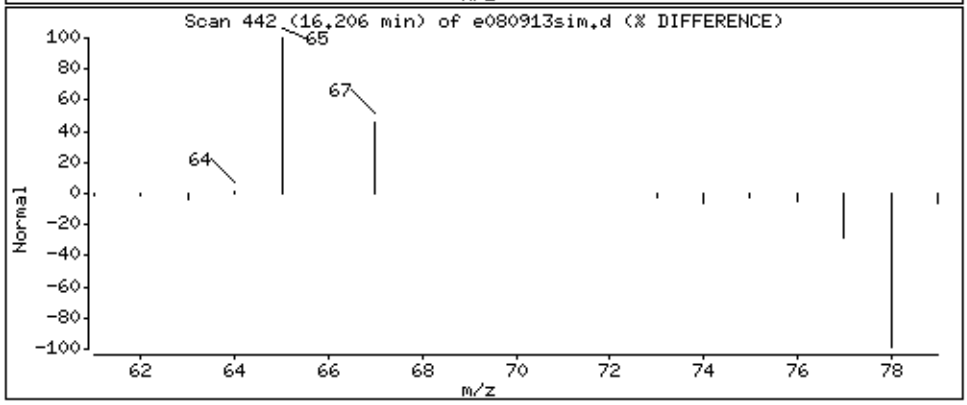












Data File: /chem/msde.i/09Aug2017.b/e080913sim.d

Date : 09-AUG-2017 18:01

Client ID:

Instrument: msde.i

Sample Info: 250mL#N0446

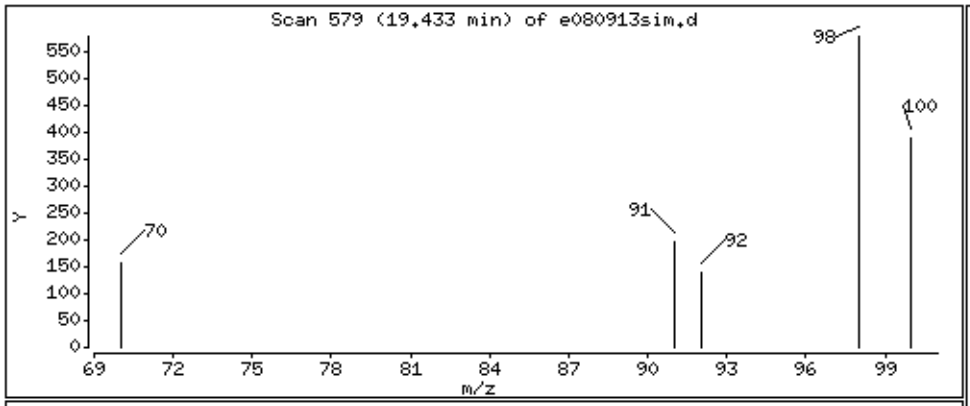
Operator: EA

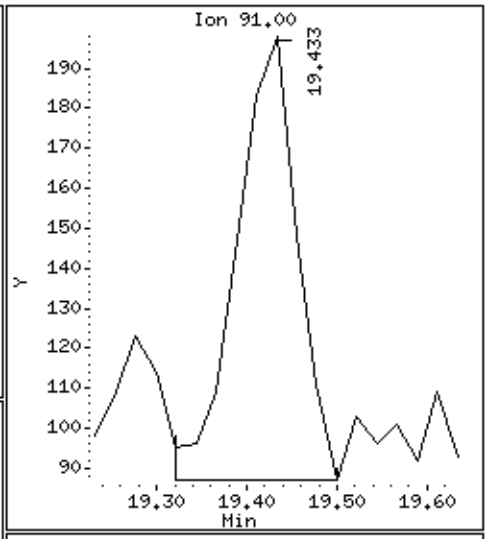
Column phase: RTX-624

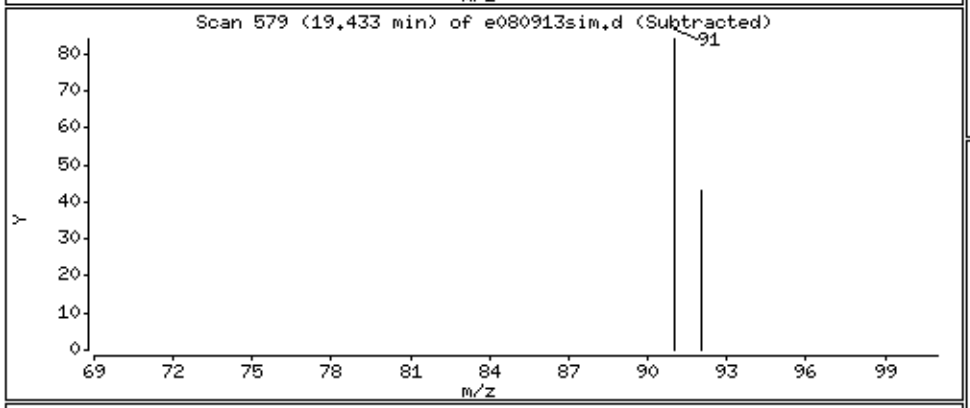
Column diameter: 0.32

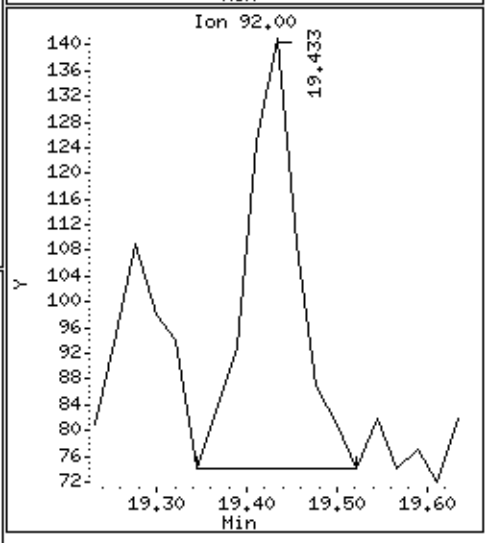
23 Toluene

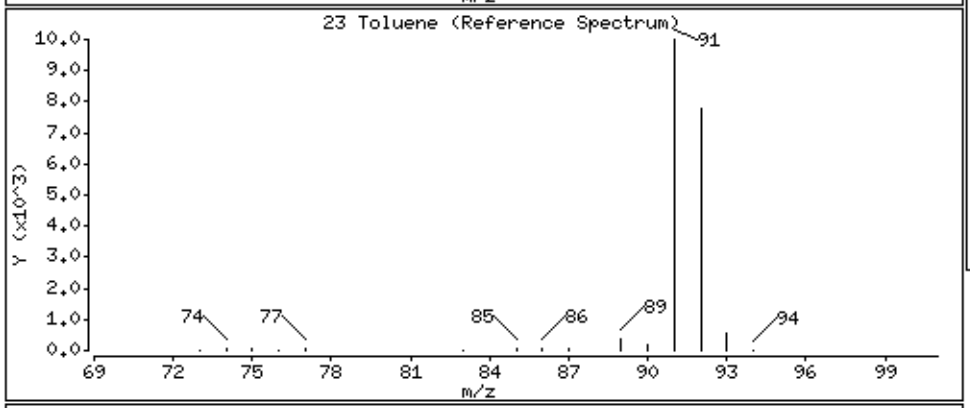
Concentration: 0.003619 PPBV

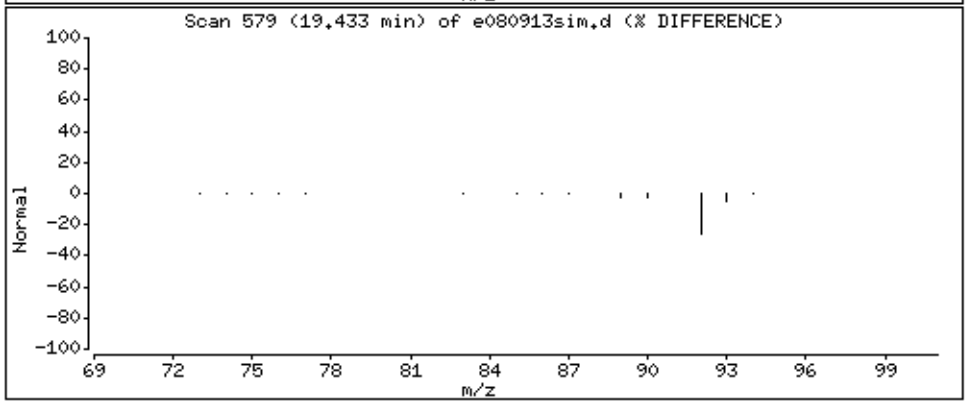












Data File: /chem/msde.i/09Aug2017.b/e080913sim.d

Date : 09-AUG-2017 18:01

Client ID:

Instrument: msde.i

Sample Info: 250mL#N0446

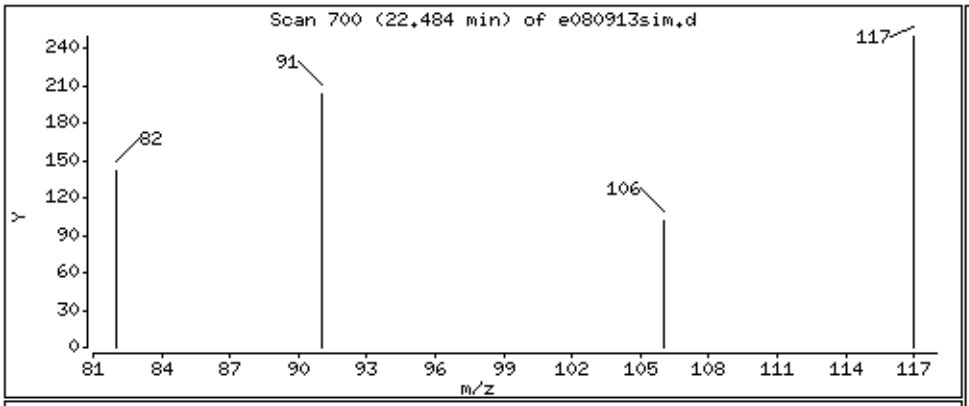
Operator: EA

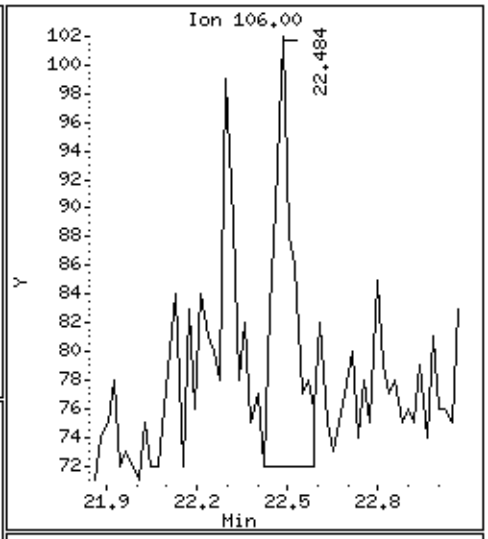
Column phase: RTX-624

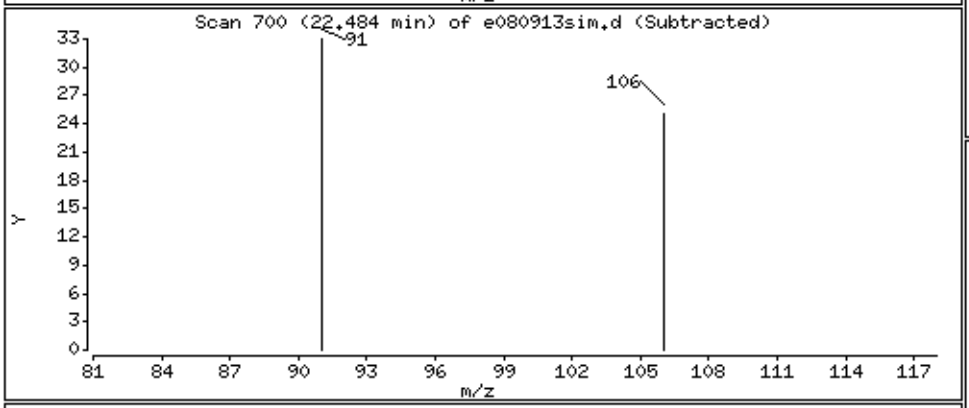
Column diameter: 0.32

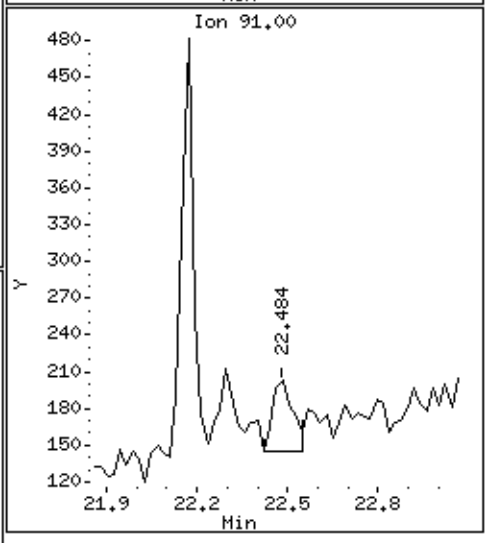
31 m,p-Xylene

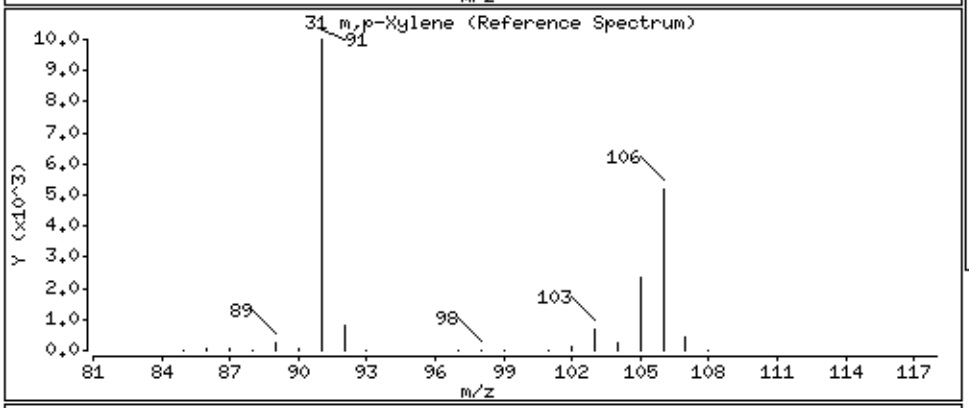
Concentration: 0.001875 PPBV

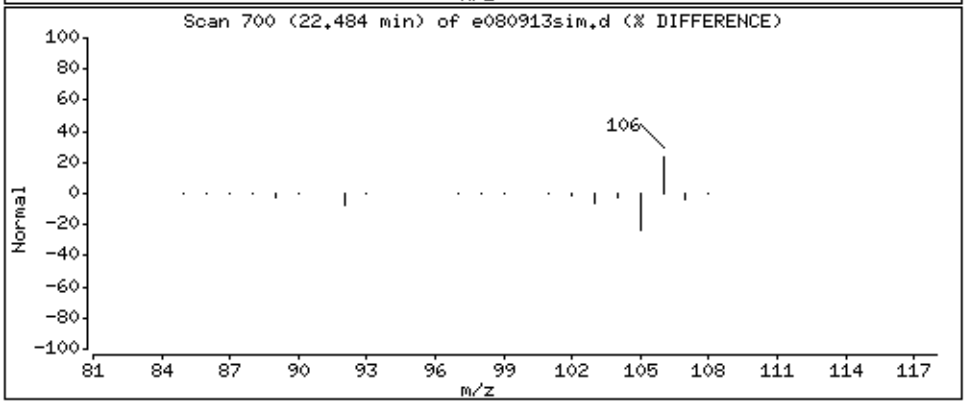












QC Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	Lab Blank		
Lab ID:	1708092-11A	**Date/Time Analyzed:**	8/7/17 01:25 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080707sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0055	0.016	0.16	0.017 J
Ethyl Benzene	100-41-4	0.0061	0.022	0.087	Not Detected U
m,p-Xylene	108-38-3	0.0072	0.022	0.17	Not Detected U
Naphthalene	91-20-3	0.021	0.042	0.26	Not Detected U
o-Xylene	95-47-6	0.0068	0.022	0.087	Not Detected U
Toluene	108-88-3	0.0023	0.019	0.075	0.0064 J
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	97

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/07aug17.b/20080707sima.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 07-AUG-2017 13:25
Operator : ef Inst ID: msd20.i
Smp Info : 250mL# 34202
Misc Info : Humid
Comment : SIM - GC/MS
Method : /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 14:35 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane							CAS #: 74-97-5	
17.340	17.340 (1.000)	130	79386	5.00000			80.00- 120.00	100.00
17.340	17.340 (1.000)	128	62841				48.37- 108.37	79.16
17.340	17.340 (1.000)	49	80369				82.84- 142.84	101.24
* 20 1,4-Difluorobenzene							CAS #: 540-36-3	
18.881	18.881 (1.000)	114	346578	5.00000			80.00- 120.00	100.00
18.881	18.881 (1.000)	88	47190				0.00- 44.04	13.62
* 28 Chlorobenzene-d5							CAS #: 3114-55-4	
24.356	24.356 (1.000)	117	278796	5.00000			80.00- 120.00	100.00
24.356	24.356 (1.000)	82	130809				17.63- 77.63	46.92
$ 18 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
18.265	18.265 (1.053)	65	107684	4.84742	4.847		80.00- 120.00	100.00
18.265	18.265 (1.053)	67	56215				26.67- 86.67	52.20
$ 22 Toluene-d8							CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	297403	4.87259	4.872		80.00- 120.00	100.00
21.698	21.698 (1.149)	70	29987				0.00- 40.38	10.08

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.698	21.698	(1.149)	100	188258			33.71- 93.71	63.30
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.980	25.980	(1.067)	174	197657	5.22863	5.229	80.00- 120.00	100.00
25.961	25.980	(1.066)	95	164604			57.01- 117.01	83.28
25.980	25.980	(1.067)	176	193984			68.59- 128.59	98.14
17 Benzene						CAS #: 71-43-2		
18.265	18.244	(0.967)	78	443	0.00536	0.005361	80.00- 120.00	100.00(a)
18.265	18.244	(0.967)	77	120			0.00- 53.56	27.09
23 Toluene						CAS #: 108-88-3		
21.838	21.854	(1.157)	91	158	0.00171	0.001714	80.00- 120.00	100.00(a)
21.854	21.854	(1.157)	92	143			27.62- 87.62	90.51

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080707sima.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: Humid

Calibration Date: 07-AUG-2017
Calibration Time: 09:02
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	91747	55048	128446	79386	-13.47
20 1,4-Difluorobenze	437272	262363	612181	346578	-20.74
28 Chlorobenzene-d5	350464	210278	490650	278796	-20.45

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.847	96.95	70-130
$ 22 Toluene-d8	5.000	4.872	97.45	70-130
$ 33 4-Bromofluorobenze	5.000	5.229	104.57	70-130

Data File: /chem/msd20.i/07aug17.b/20080707sima.d

Date : 07-AUG-2017 13:25

Client ID: Lab Blank

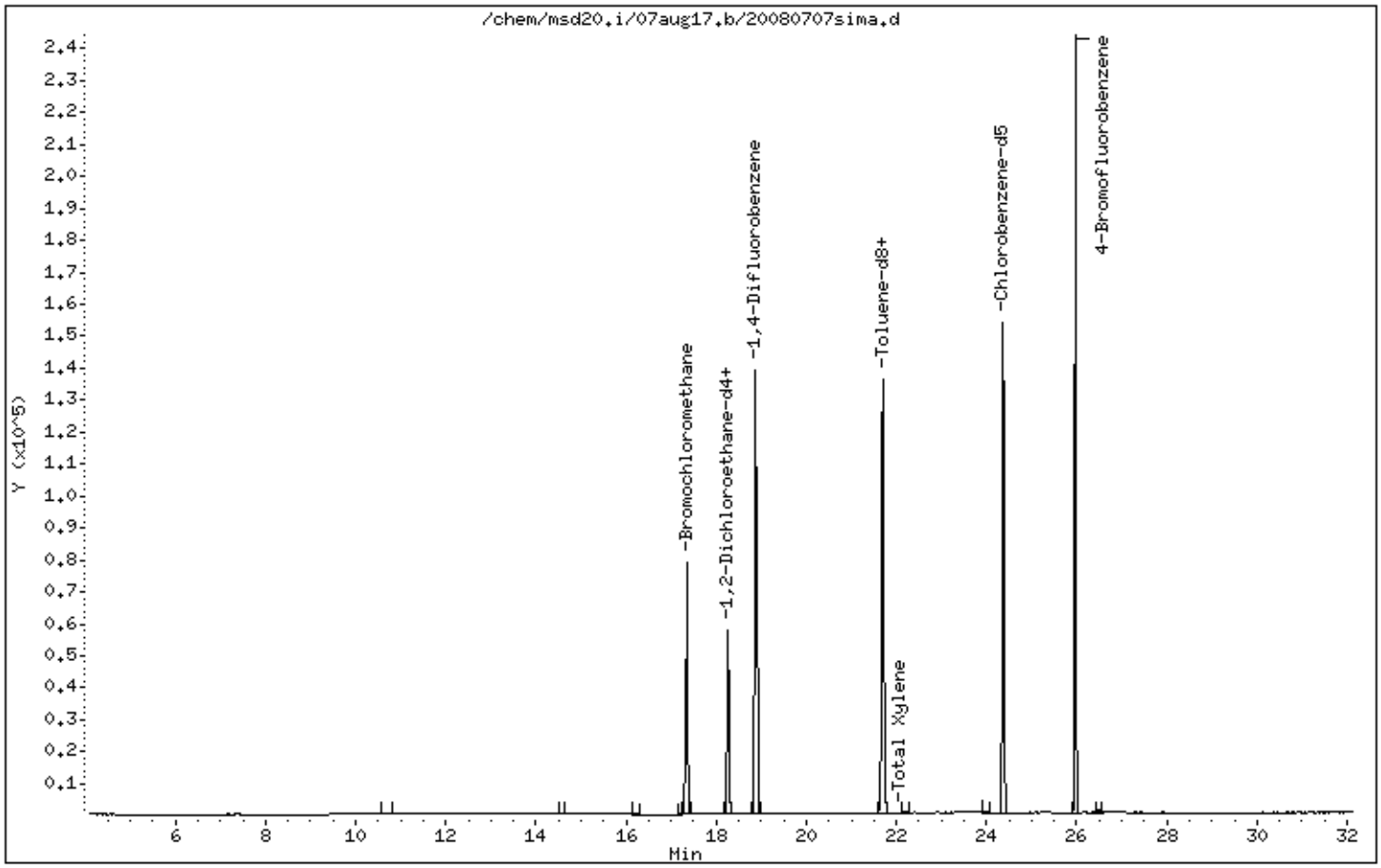
Instrument: msd20.i

Sample Info: 250mL# 34202

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/07aug17.b/20080707sima.d

Date : 07-AUG-2017 13:25

Client ID: Lab Blank

Instrument: msd20.i

Sample Info: 250mL# 34202

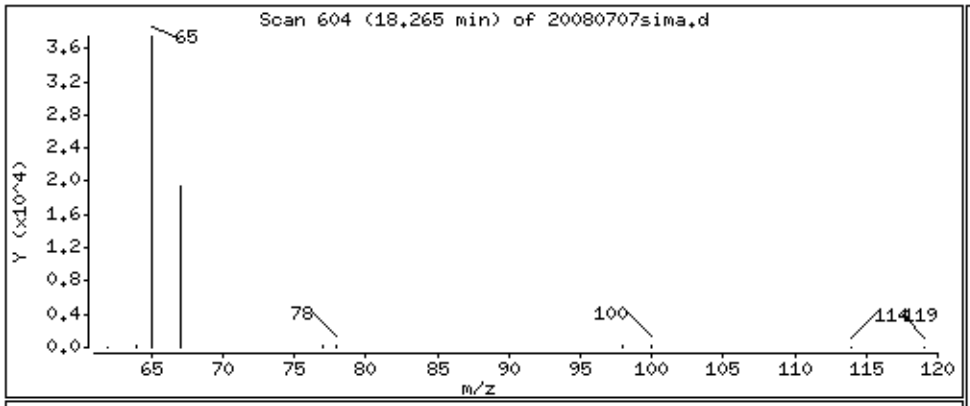
Operator: ef

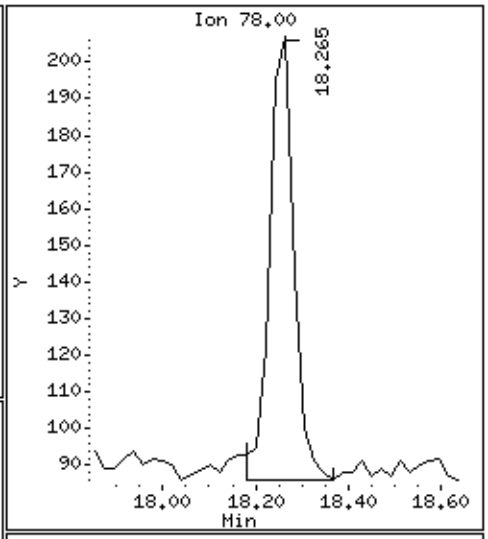
Column phase: RTX-624

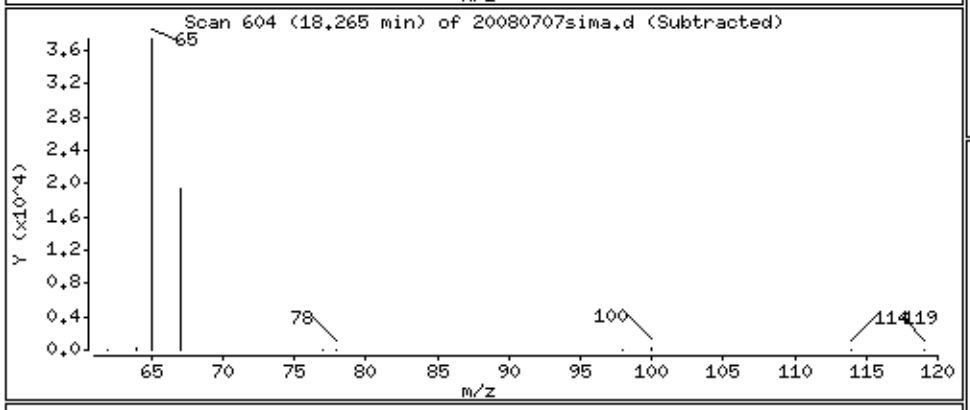
Column diameter: 0.32

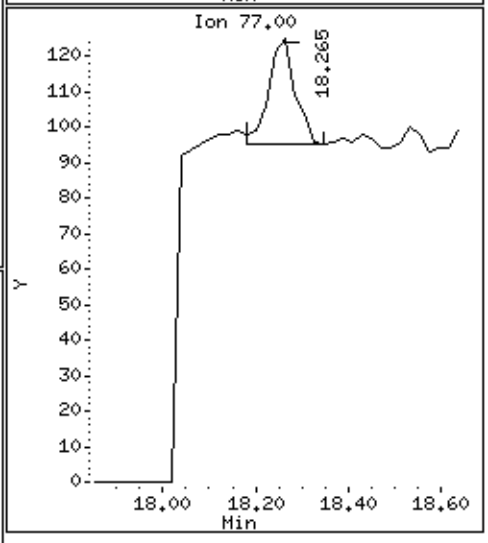
17 Benzene

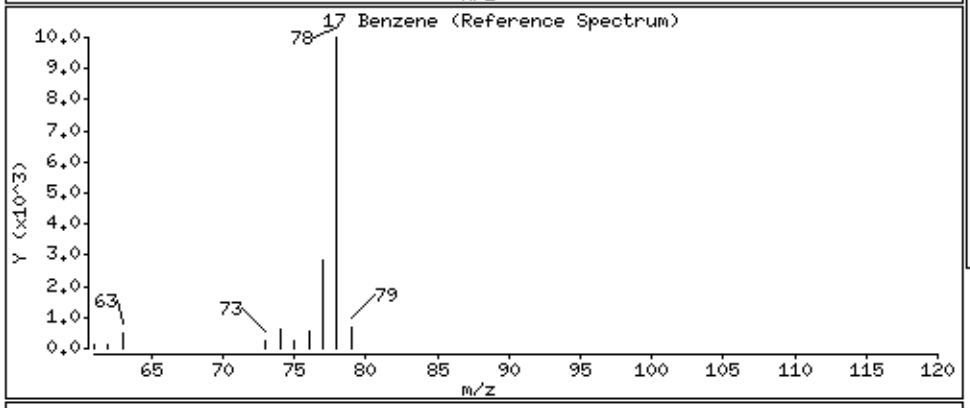
Concentration: 0.005361 PPBV

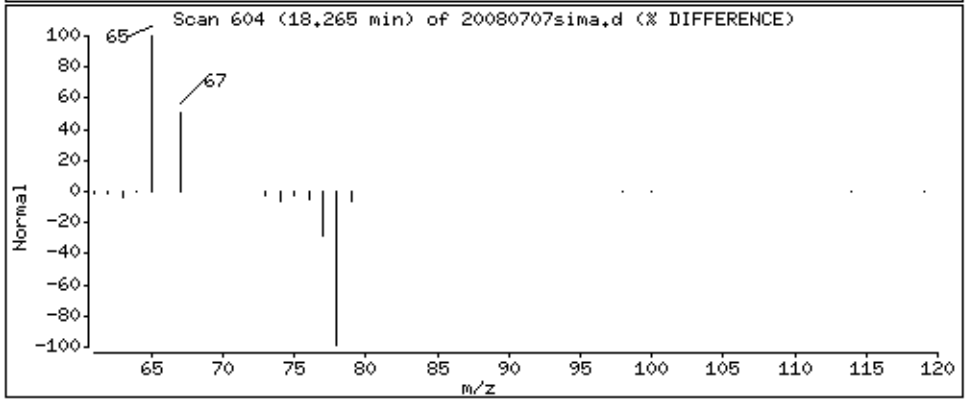












Data File: /chem/msd20.i/07aug17.b/20080707sima.d

Date : 07-AUG-2017 13:25

Client ID: Lab Blank

Instrument: msd20.i

Sample Info: 250mL# 34202

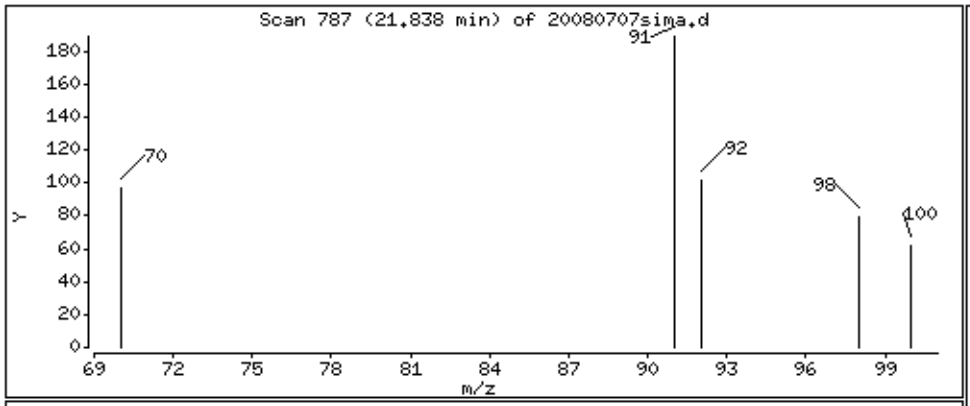
Operator: ef

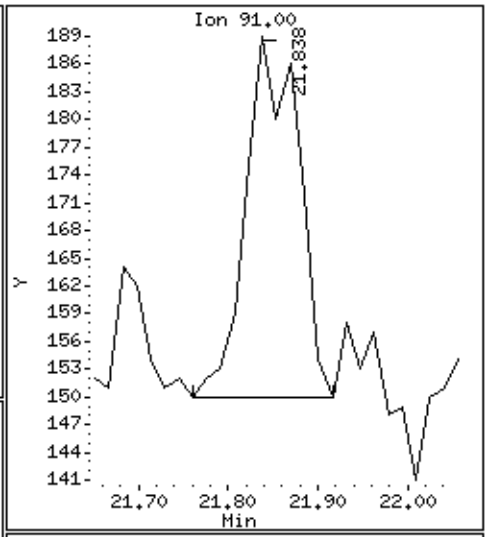
Column phase: RTX-624

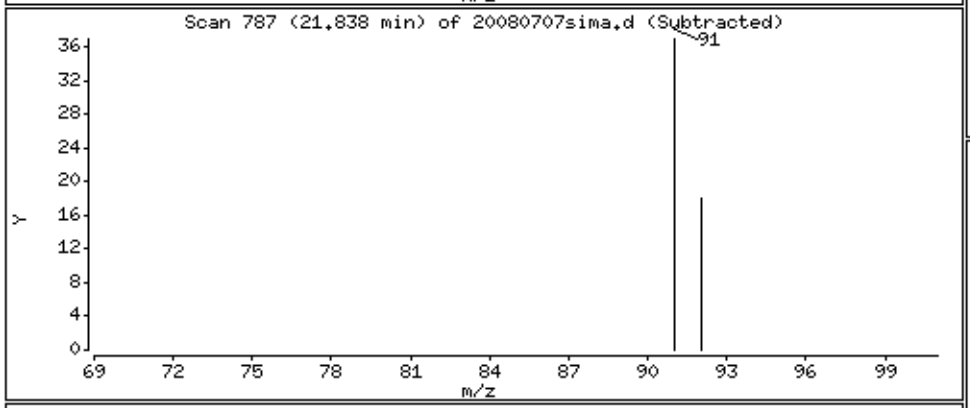
Column diameter: 0.32

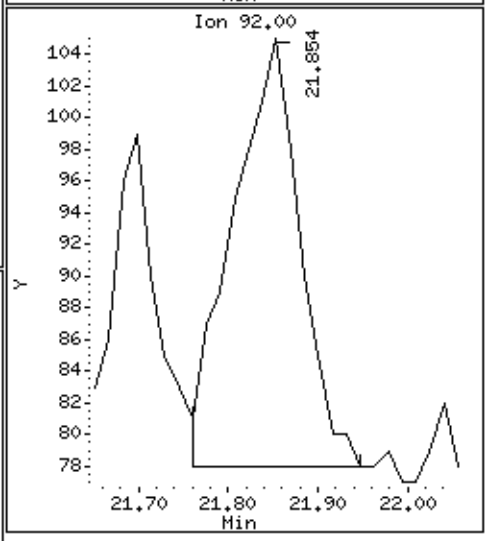
23 Toluene

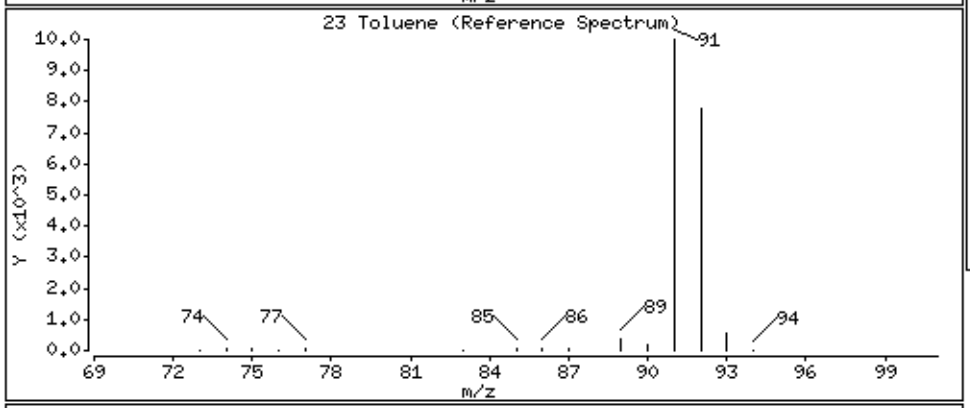
Concentration: 0.001714 PPBV

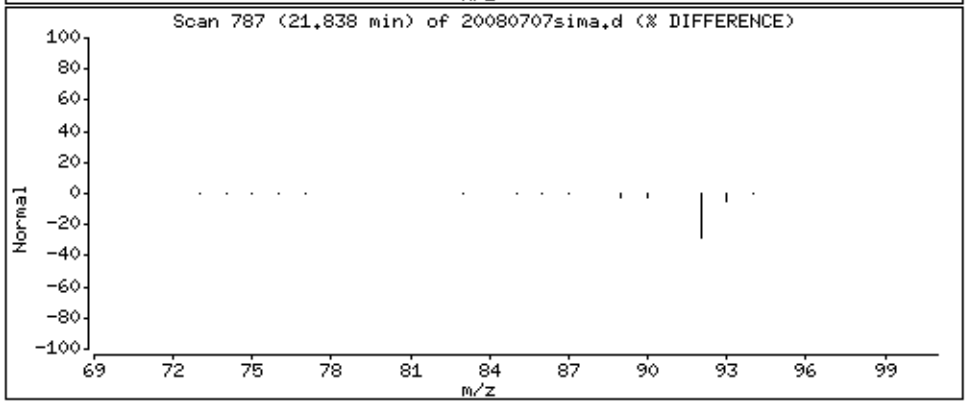












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	Lab Blank		
Lab ID:	1708092-11B	**Date/Time Analyzed:**	8/8/17 02:18 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080809sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.0055	0.016	0.16	0.017 J
Ethyl Benzene	100-41-4	0.0061	0.022	0.087	Not Detected U
m,p-Xylene	108-38-3	0.0072	0.022	0.17	Not Detected U
Naphthalene	91-20-3	0.021	0.042	0.26	Not Detected U
o-Xylene	95-47-6	0.0068	0.022	0.087	Not Detected U
Toluene	108-88-3	0.0023	0.019	0.075	0.0089 J
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	96

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080809sima.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 08-AUG-2017 14:18
Operator : ef Inst ID: msd20.i
Smp Info : 250mL# 34202
Misc Info : Humid
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH221104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane							CAS #: 74-97-5	
17.340	17.340 (1.000)	130	79133	5.00000			80.00- 120.00	100.00
17.340	17.340 (1.000)	128	62855				48.37- 108.37	79.43
17.340	17.340 (1.000)	49	70783				82.84- 142.84	89.45
* 20 1,4-Difluorobenzene							CAS #: 540-36-3	
18.881	18.880 (1.000)	114	381811	5.00000			80.00- 120.00	100.00
18.881	18.880 (1.000)	88	50223				0.00- 44.04	13.15
* 28 Chlorobenzene-d5							CAS #: 3114-55-4	
24.356	24.356 (1.000)	117	300967	5.00000			80.00- 120.00	100.00
24.356	24.356 (1.000)	82	136293				17.63- 77.63	45.29
$ 18 1,2-Dichloroethane-d4							CAS #: 17060-07-0	
18.265	18.265 (1.053)	65	102332	4.62123	4.621		80.00- 120.00	100.00
18.265	18.265 (1.053)	67	54168				26.67- 86.67	52.93
$ 22 Toluene-d8							CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	323508	4.81118	4.811		80.00- 120.00	100.00
21.698	21.683 (1.149)	70	30551				0.00- 40.38	9.44

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.698	21.698	(1.149)	100	205994			33.71- 93.71	63.68
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.980	25.961	(1.067)	174	207996	5.09681	5.097	80.00- 120.00	100.00
25.961	25.961	(1.066)	95	167805			57.01- 117.01	80.68
25.980	25.980	(1.067)	176	204095			68.59- 128.59	98.12
17 Benzene						CAS #: 71-43-2		
18.265	18.244	(0.967)	78	496	0.00545	0.005449	80.00- 120.00	100.00(a)
18.265	18.244	(0.967)	77	304			0.00- 53.56	61.29
23 Toluene						CAS #: 108-88-3		
21.854	21.854	(1.157)	91	241	0.00237	0.002373	80.00- 120.00	100.00(a)
21.839	21.854	(1.157)	92	171			27.62- 87.62	70.95

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080809sima.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: Humid

Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	79133	-19.12
20 1,4-Difluorobenze	453999	272399	635599	381811	-15.90
28 Chlorobenzene-d5	343223	205934	480512	300967	-12.31

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH221104.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.621	92.42	70-130
$ 22 Toluene-d8	5.000	4.811	96.22	70-130
$ 33 4-Bromofluorobenze	5.000	5.097	101.94	70-130

Data File: /chem/msd20.i/08aug17.b/20080809sima.d

Date : 08-AUG-2017 14:18

Client ID: Lab Blank

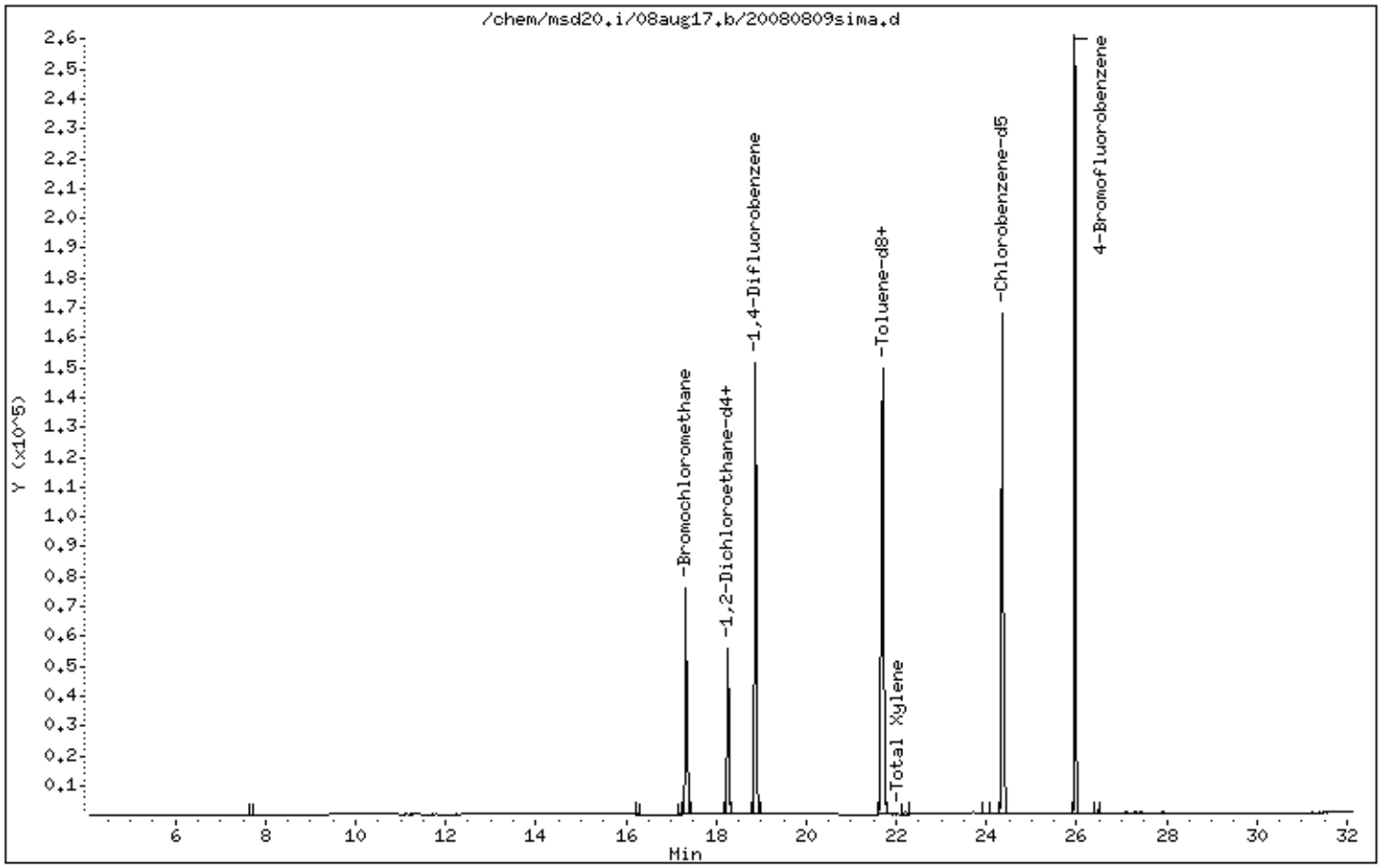
Instrument: msd20.i

Sample Info: 250mL# 34202

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/08aug17.b/20080809sima.d

Date : 08-AUG-2017 14:18

Client ID: Lab Blank

Instrument: msd20.i

Sample Info: 250mL# 34202

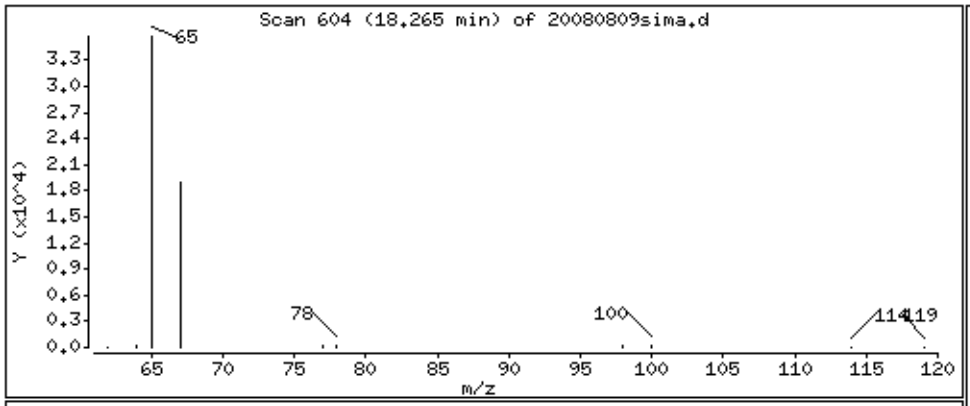
Operator: ef

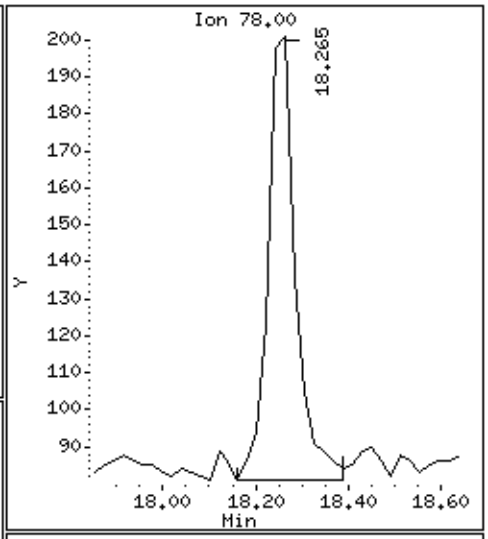
Column phase: RTX-624

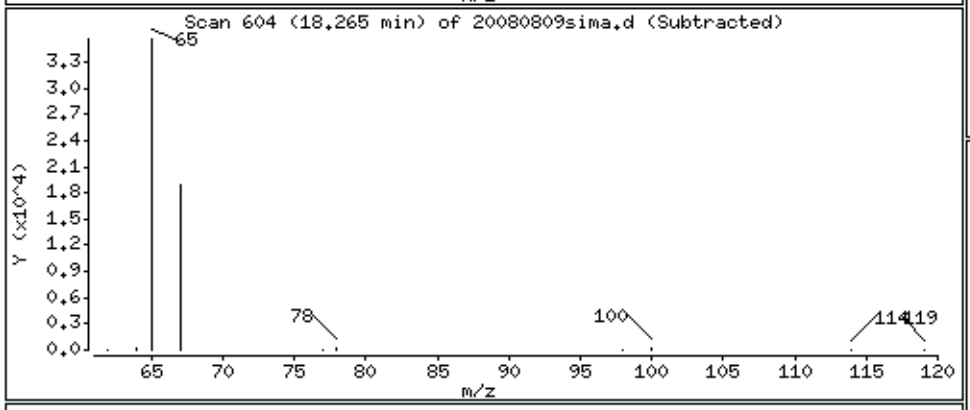
Column diameter: 0.32

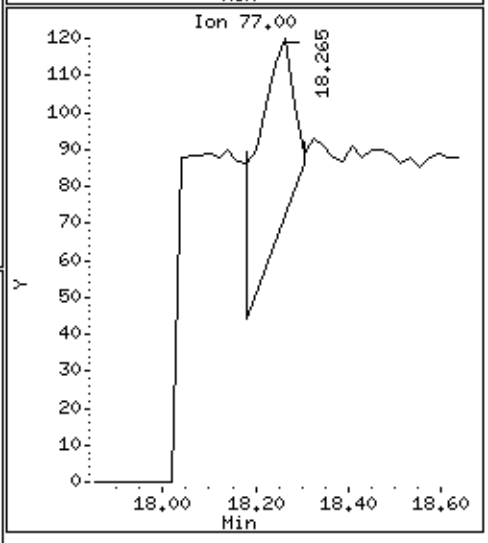
17 Benzene

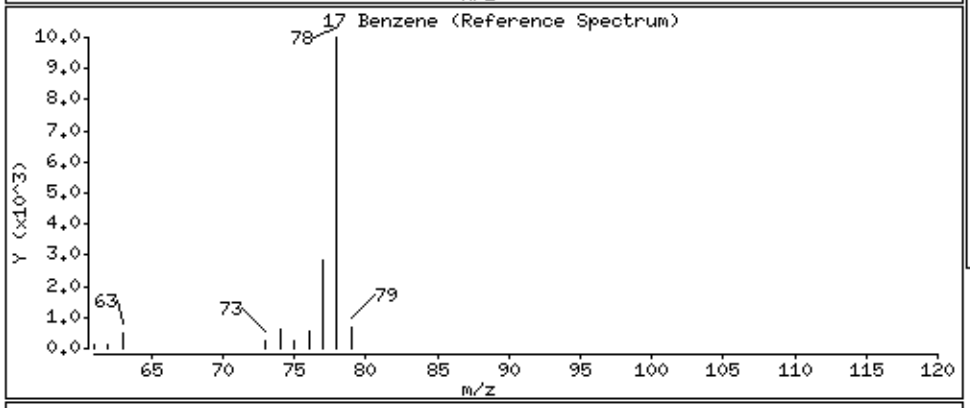
Concentration: 0.005449 PPBV

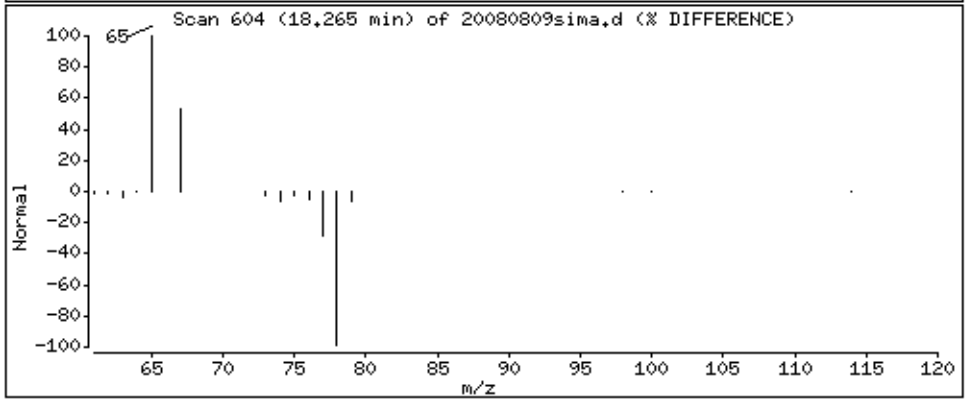












Data File: /chem/msd20.i/08aug17.b/20080809sima.d

Date : 08-AUG-2017 14:18

Client ID: Lab Blank

Instrument: msd20.i

Sample Info: 250mL# 34202

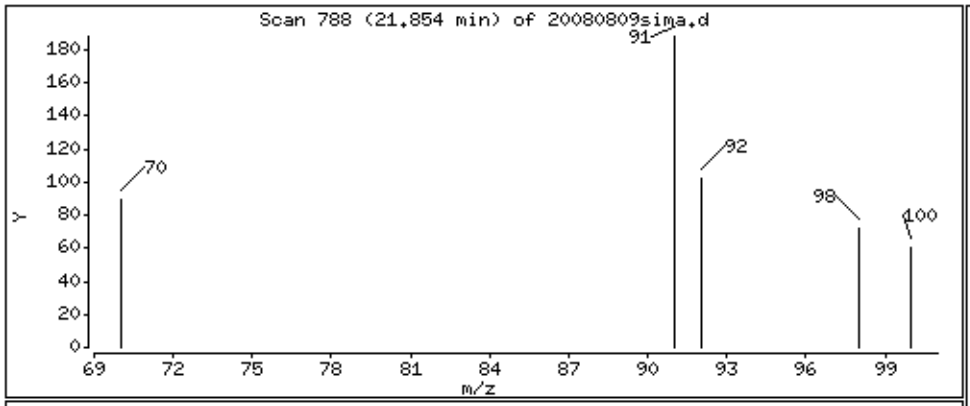
Operator: ef

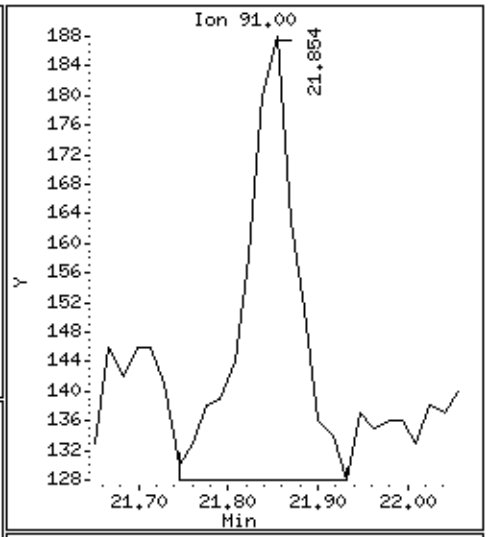
Column phase: RTX-624

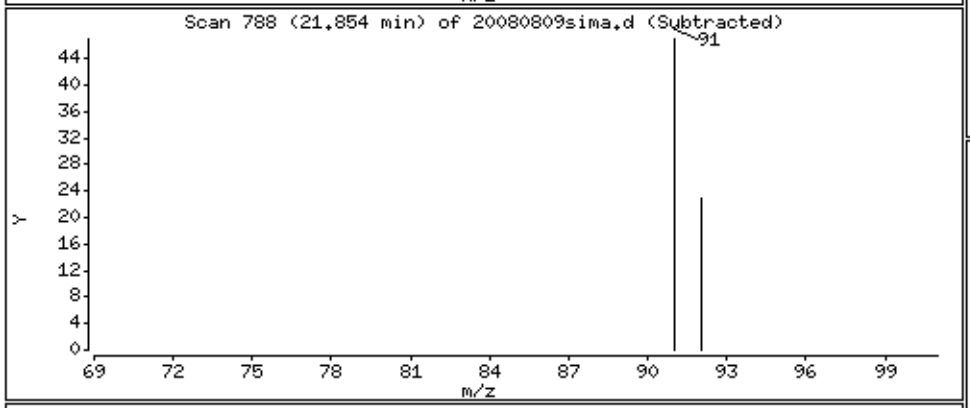
Column diameter: 0.32

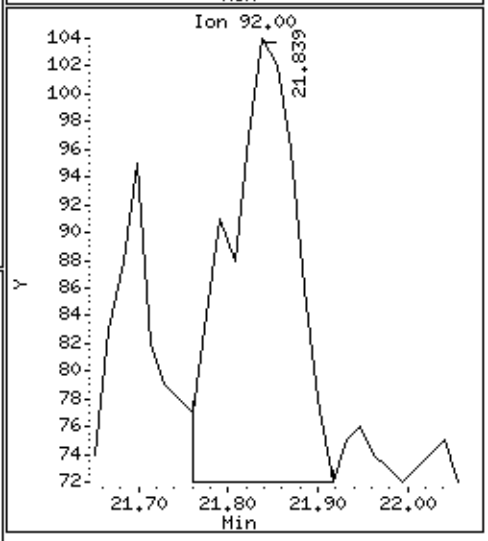
23 Toluene

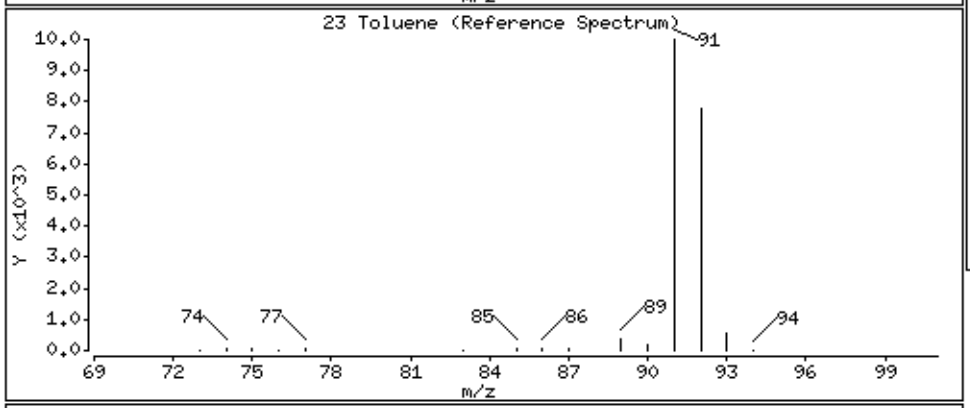
Concentration: 0.002373 PPBV

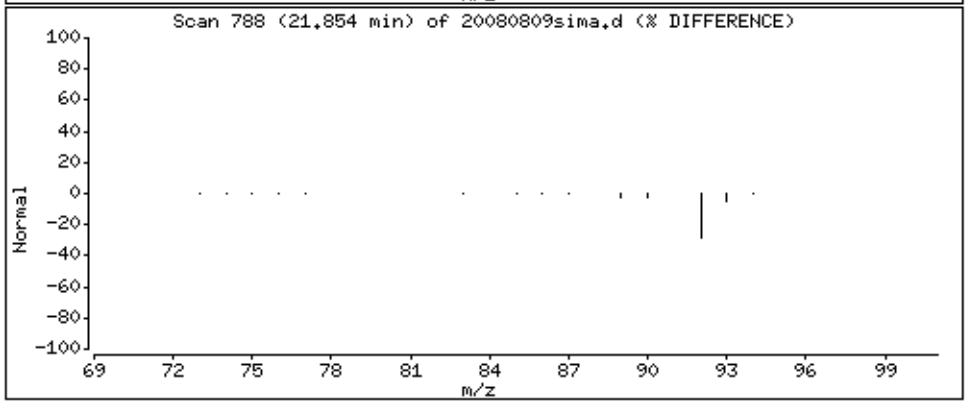












MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	Lab Blank		
Lab ID:	1708092-11C	**Date/Time Analyzed:**	8/9/17 02:49 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msde.i / e080909sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.020	0.020	0.16	0.028 J
Ethyl Benzene	100-41-4	0.0079	0.026	0.087	Not Detected U
m,p-Xylene	108-38-3	0.0071	0.026	0.17	Not Detected U
Naphthalene	91-20-3	0.032	0.042	0.26	Not Detected U
o-Xylene	95-47-6	0.0052	0.026	0.087	0.011 J
Toluene	108-88-3	0.0051	0.023	0.075	0.010 J
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080909sima.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 09-AUG-2017 14:49
Operator : ef Inst ID: msde.i
Smp Info : 250mL# 34202
Misc Info : Humid
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:18 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
*	13 Bromochloromethane					CAS #: 74-97-5		
	15.405	15.405 (1.000)	130	123046	5.00000		80.00- 120.00	100.00
	15.405	15.405 (1.000)	128	95103			47.34- 107.34	77.29
	15.374	15.405 (1.000)	49	148357			83.88- 143.88	120.57
	17 Benzene					CAS #: 71-43-2		
	16.197	16.197 (0.968)	78	900	0.00869	0.008692	80.00- 120.00	100.00(a)
	16.197	16.197 (0.968)	77	411			0.00- 53.90	45.75
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.197	16.197 (1.051)	65	195833	5.07091	5.071	80.00- 120.00	100.00
	16.197	16.197 (1.051)	67	83354			18.02- 78.02	42.56
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	16.727	16.727 (1.000)	114	415429	5.00000		80.00- 120.00	100.00
	16.727	16.727 (1.000)	88	61682			0.00- 44.94	14.85
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.289	19.267 (1.153)	98	316069	4.99451	4.994	80.00- 120.00	100.00
	19.267	19.267 (1.152)	70	36749			0.00- 41.37	11.63

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
19.289	19.267	(1.153)	100	200745			33.76- 93.76	63.51
23 Toluene						CAS #: 108-88-3		
19.446	19.424	(1.163)	91	352	0.00275	0.002752	80.00- 120.00	100.00(a)
19.423	19.424	(1.161)	92	180			27.48- 87.48	51.14
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
22.170	22.170	(1.000)	117	392673	5.00000		80.00- 120.00	100.00
22.170	22.170	(1.000)	82	160335			11.87- 71.87	40.83
32 o-Xylene						CAS #: 95-47-6		
23.082	23.082	(1.041)	106	141	0.00248	0.002482	80.00- 120.00	100.00(a)
23.082	23.082	(1.041)	91	109			192.45- 252.45	77.18
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.847	23.847	(1.076)	174	262311	4.97216	4.972	80.00- 120.00	100.00
23.847	23.847	(1.076)	95	249986			66.14- 126.14	95.30
23.869	23.847	(1.077)	176	254910			67.55- 127.55	97.18

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080909sima.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: Humid

Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	123046	-9.80
20 1,4-Difluorobenze	468904	281342	656466	415429	-11.40
28 Chlorobenzene-d5	424491	254695	594287	392673	-7.50

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 09Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.071	101.42	70-130
$ 22 Toluene-d8	5.000	4.994	99.89	70-130
$ 33 4-Bromofluorobenze	5.000	4.972	99.44	70-130

Data File: /chem/msde.i/09Aug2017.b/e080909sima.d

Date : 09-AUG-2017 14:49

Client ID: Lab Blank

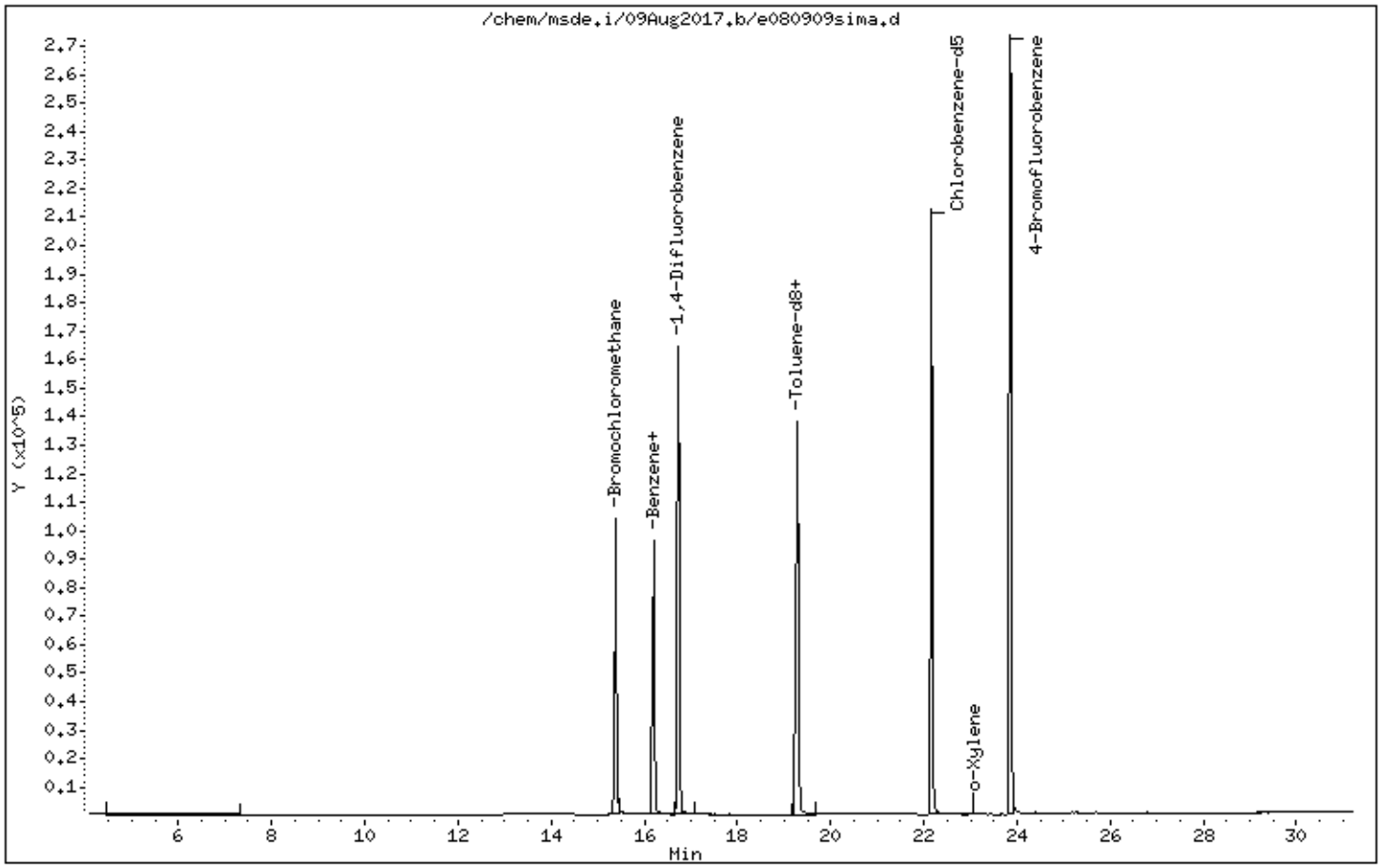
Instrument: msde.i

Sample Info: 250mL# 34202

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msde.i/09Aug2017.b/e080909sima.d

Date : 09-AUG-2017 14:49

Client ID: Lab Blank

Instrument: msde.i

Sample Info: 250mL# 34202

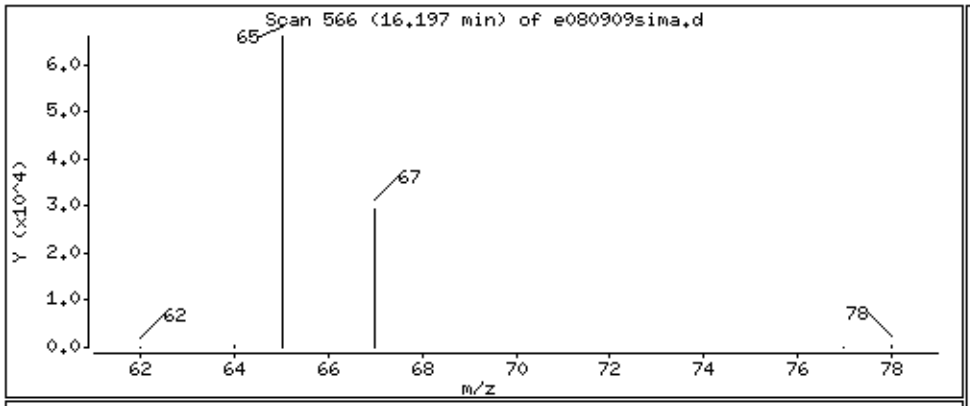
Operator: ef

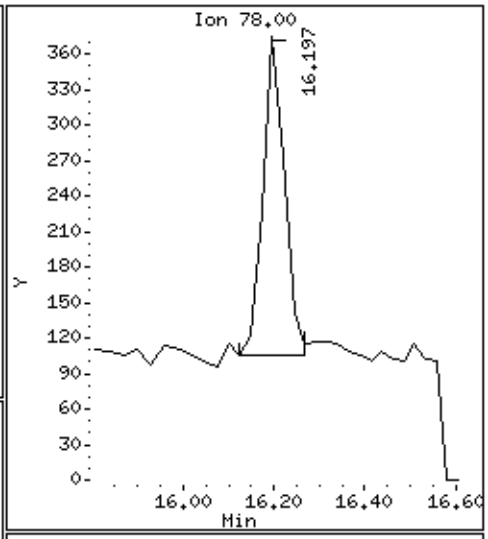
Column phase: RTX-624

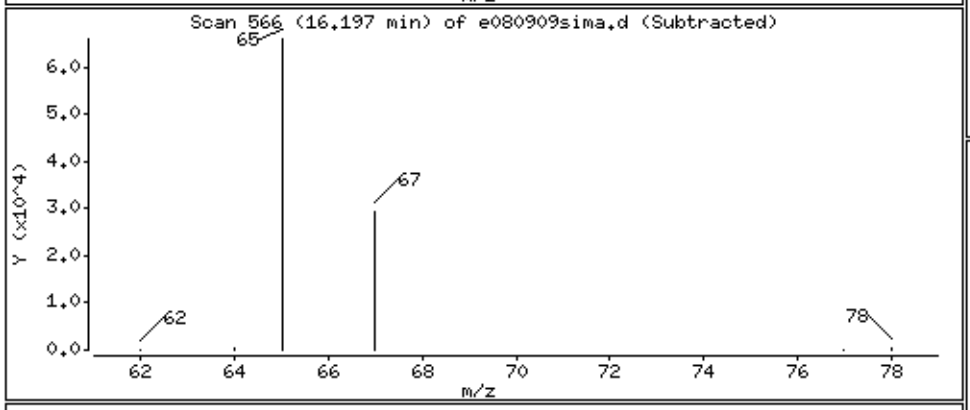
Column diameter: 0.32

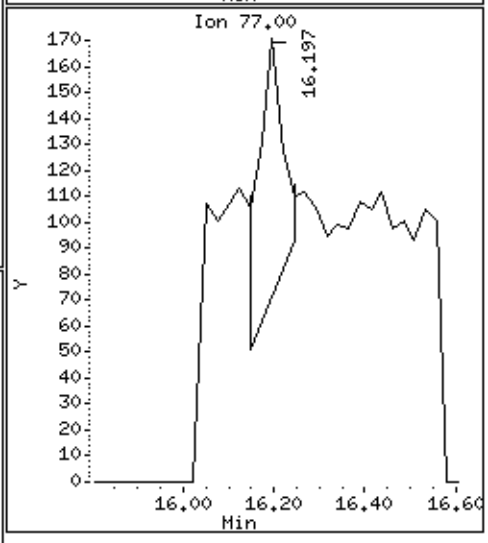
17 Benzene

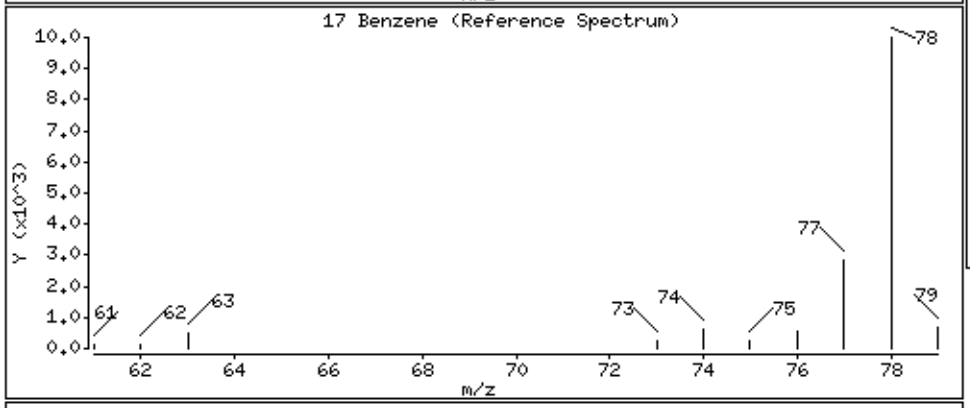
Concentration: 0.008692 PPBV

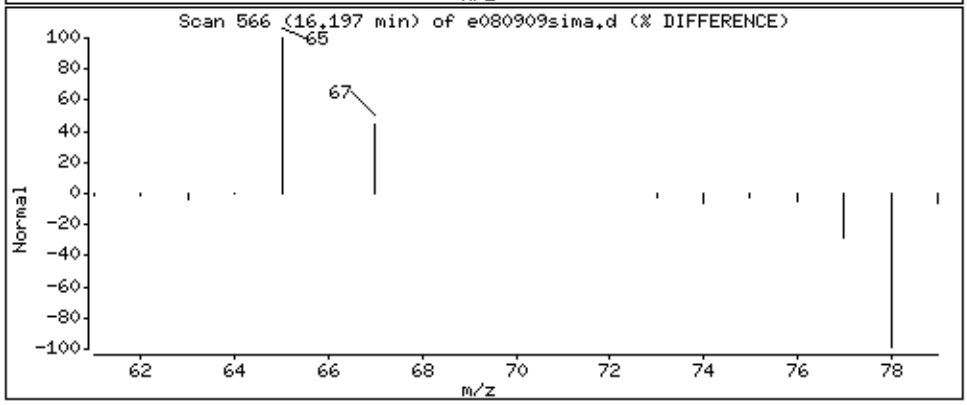












Data File: /chem/msde.i/09Aug2017.b/e080909sima.d

Date : 09-AUG-2017 14:49

Client ID: Lab Blank

Instrument: msde.i

Sample Info: 250mL# 34202

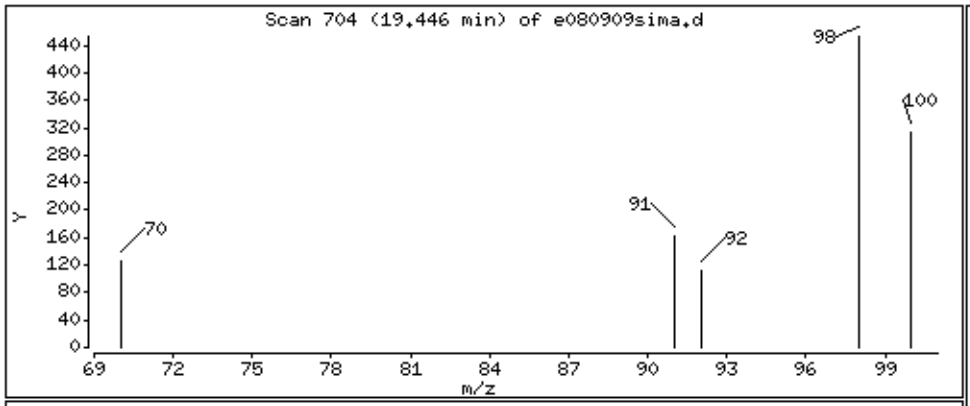
Operator: ef

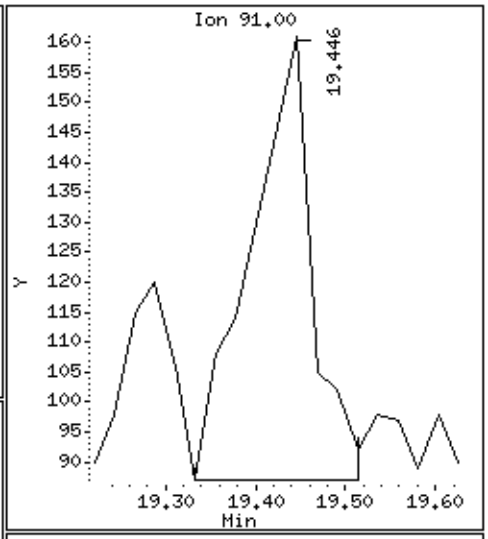
Column phase: RTX-624

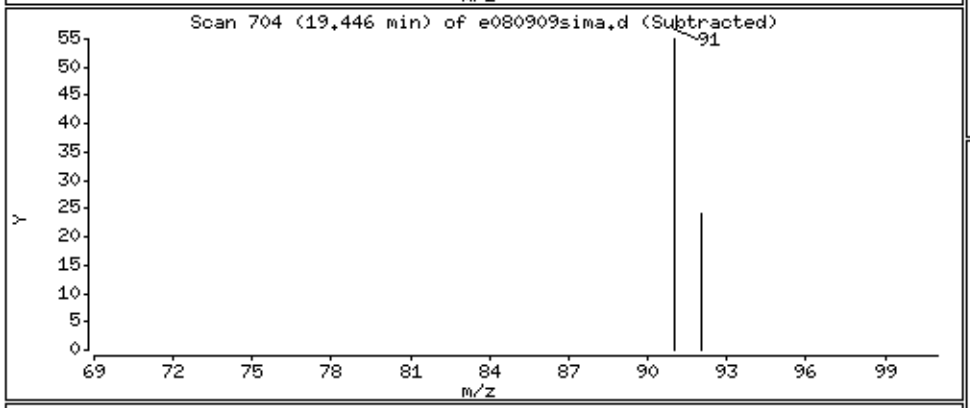
Column diameter: 0.32

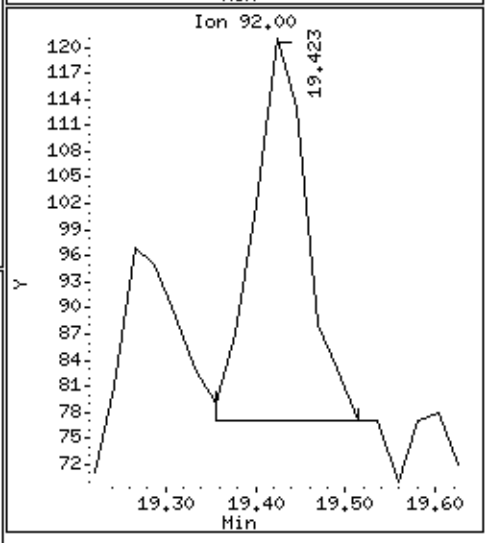
23 Toluene

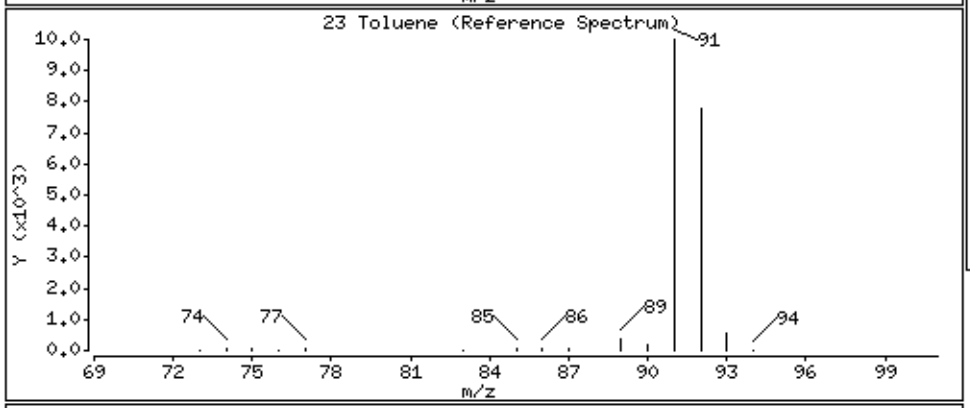
Concentration: 0.002752 PPBV

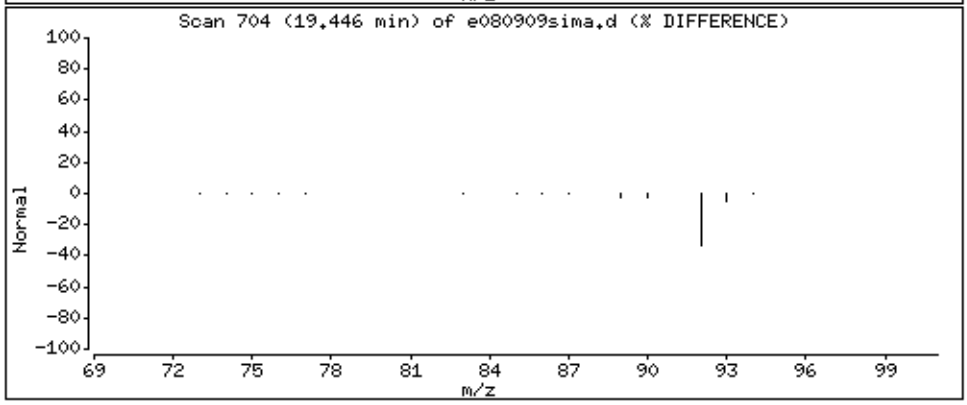












Data File: /chem/msde.i/09Aug2017.b/e080909sima.d

Date : 09-AUG-2017 14:49

Client ID: Lab Blank

Instrument: msde.i

Sample Info: 250mL# 34202

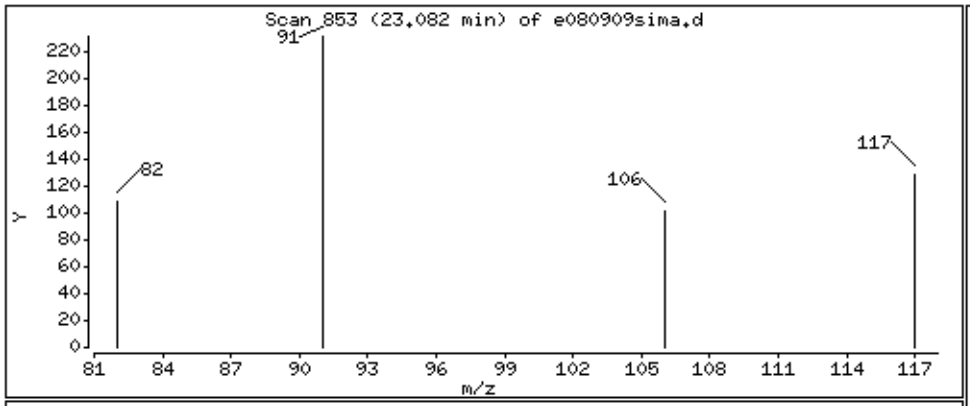
Operator: ef

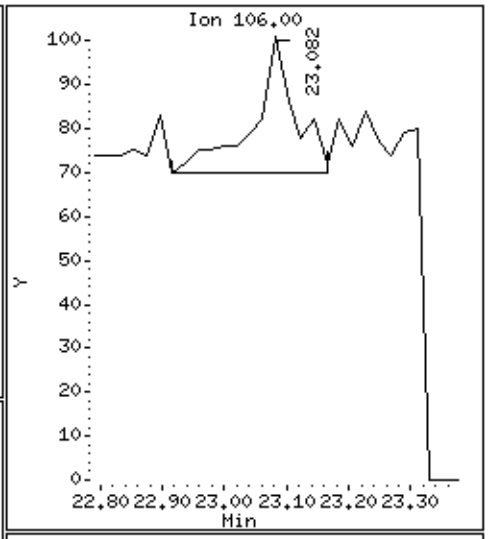
Column phase: RTX-624

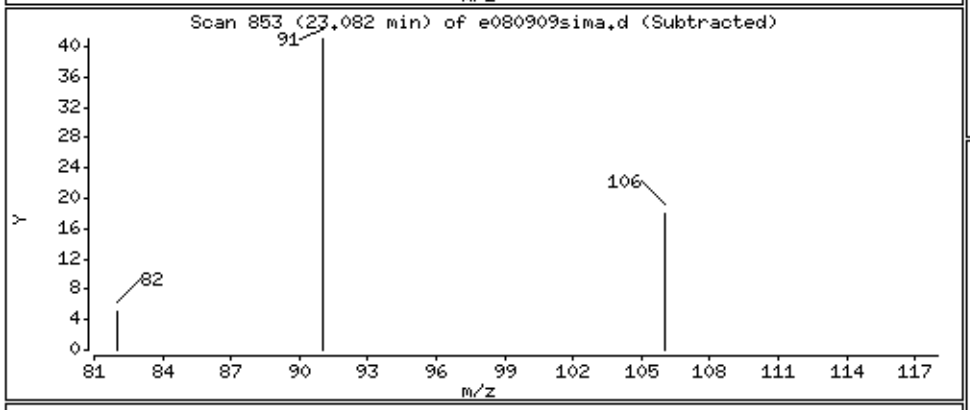
Column diameter: 0.32

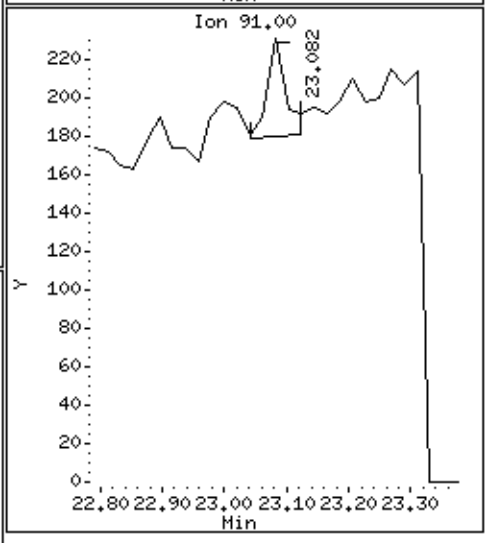
32 o-Xylene

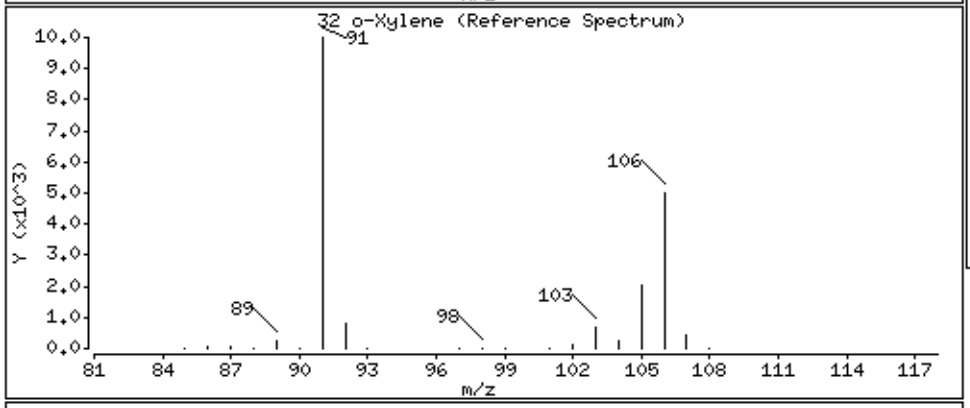
Concentration: 0.002482 PPBV

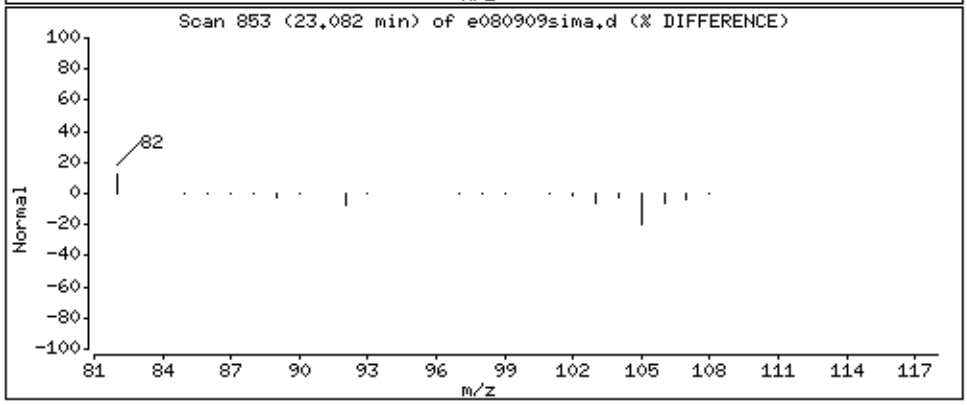












LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-15 GC/MS SIM

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1708092

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	TOTAL OUT
01	IAU-012_0817	88		97		106				0
02	CS-140_0817	92		98		110				0
03	CS-040_0817	108		101		107				0
04	IA-040_0817	88		96		106				0
05	OA-040_0817	94		97		108				0
06	OA-012_0817	104		100		100				0
07	IAD-012_0817	88		96		106				0
08	IAD-112_0817	103		100		106				0
09	BATCH TO SIM BLANK 1	101		102		96				0
10	BATCH TO SIM BLANK 2	102		102		97				0
11	Lab Blank	97		97		104				0
12	Lab Blank	92		96		102				0
13	Lab Blank	101		100		99				0
14	CCV	96		99		105				0
15	CCV	86		89		106				0
16	CCV	95		100		103				0
17	LCS	93		103		100				0
18	LCSD	95		100		103				0
19	LCS	82		97		104				0
20	LCSD	86		96		105				0
21	LCS	95		102		103				0
22	LCSD	96		101		102				0
23										0
24										0

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1708092

Lab File ID: 20080702sim.d | Date Analyzed: 08/07/2017

Instrument ID: msd20.i | Time Analyzed: 09:02 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	350464		24.36		437272		18.88		91747		17.34	
	UPPER LIMIT	490650		24.69		612181		19.21		128446		17.67	
	LOWER LIMIT	210278		24.03		262363		18.55		55048		17.01	
	CLIENT SAMPLE NO												
01	CS-040_0817	239217		24.36		288277		18.88		56722		17.34	
02	Lab Blank	278796		24.36		346578		18.88		79386		17.34	
03	CCV	350464		24.36		437272		18.88		91747		17.34	
04	LCS	343237		24.36		406572		18.88		86447		17.34	
05	LCSD	313861		24.36		375668		18.88		81675		17.34	
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1708092

Lab File ID: 20080804sim.d | Date Analyzed: 08/08/2017

Instrument ID: msd20.i | Time Analyzed: 10:00 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	343223		24.36		453999		18.88		97835		17.34	
	UPPER LIMIT	480512		24.69		635599		19.21		136969		17.67	
	LOWER LIMIT	205934		24.03		272399		18.55		58701		17.01	
	CLIENT SAMPLE NO												
01	IAU-012_0817	240862		24.36		295529		18.88		66132		17.34	
02	CS-140_0817	249604		24.36		304313		18.88		63744		17.34	
03	IA-040_0817	244139		24.36		304746		18.88		66827		17.34	
04	OA-040_0817	232886		24.36		294095		18.88		58517	*	17.34	
05	IAD-012_0817	230780		24.36		289029		18.88		63457		17.34	
06	Lab Blank	300967		24.36		381811		18.88		79133		17.34	
07	CCV	343223		24.36		453999		18.88		97835		17.34	
08	LCS	337113		24.36		416772		18.88		91007		17.34	
09	LCSD	300174		24.36		368066		18.88		78975		17.34	
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1708092

Lab File ID: e080902sim.d | Date Analyzed: 08/09/2017

Instrument ID: msde.i | Time Analyzed: 08:53 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	424491		22.17		468904		16.73		136415		15.4	
	UPPER LIMIT	594287		22.50		656466		17.06		190981		15.74	
	LOWER LIMIT	254695		21.84		281342		16.40		81849		15.08	
	CLIENT SAMPLE NO												
01	OA-012_0817	456280		22.17		490322		16.74		145971		15.39	
02	IAD-112_0817	448911		22.17		481319		16.74		144579		15.39	
03	BATCH TO SIM BLANK 1	438476		22.17		465637		16.74		144558		15.39	
04	BATCH TO SIM BLANK 2	442177		22.17		471230		16.74		144660		15.39	
05	Lab Blank	392673		22.17		415429		16.73		123046		15.4	
06	CCV	424491		22.17		468904		16.73		136415		15.4	
07	LCS	437408		22.17		475863		16.73		139548		15.4	
08	LCSD	437627		22.17		478830		16.73		139474		15.4	
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 20080704sim.d & 20080703sim.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 8/7/17 & 8/7/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	89		94		5.5	
100-41-4	Ethyl Benzene	105		106		0.95	
108-38-3	m,p-Xylene	106		105		0.95	
91-20-3	Naphthalene	69		73		5.6	
95-47-6	o-Xylene	107		108		0.93	
108-88-3	Toluene	104		98		5.9	
9999-9999-015	Total Xylenes	106		106		0	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 20080806sim.d & 20080805sim.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 8/8/17 & 8/8/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	89		91		2.2	
100-41-4	Ethyl Benzene	107		106		0.94	
108-38-3	m,p-Xylene	107		106		0.94	
91-20-3	Naphthalene	70		67		4.4	
95-47-6	o-Xylene	111		113		1.8	
108-88-3	Toluene	98		97		1.0	
9999-9999-015	Total Xylenes	109		110		0.91	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: e080907sim.d & e080903sim.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 8/9/17 & 8/9/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	90		88		2.2	
100-41-4	Ethyl Benzene	106		104		1.9	
108-38-3	m,p-Xylene	107		105		1.9	
91-20-3	Naphthalene	68		66		3.0	
95-47-6	o-Xylene	107		105		1.9	
108-88-3	Toluene	97		94		3.1	
9999-9999-015	Total Xylenes	107		105		1.9	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 11:42
End Cal Date : 04-AUG-2017 08:20
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Cal Date : 07-Aug-2017 09:09 efinn
Curve Type : Average

Calibration File Names:
Level 3: /chem/msd20.i/03aug17.b/20080304sim.d
Level 4: /chem/msd20.i/03aug17.b/20080305sim.d
Level 5: /chem/msd20.i/03aug17.b/20080306sim.d
Level 6: /chem/msd20.i/03aug17.b/20080307sim.d
Level 7: /chem/msd20.i/03aug17.b/20080308sim.d
Level 8: /chem/msd20.i/03aug17.b/20080309sim.d
Level 12: /chem/msd20.i/03aug17.b/20080310sim.d
Level 13: /chem/msd20.i/03aug17.b/20080316sim.d
Level 15: /chem/msd20.i/03aug17.b/20080312sim.d

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	20.000 Level 15					
1 Freon 12	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
2 Freon 114	+++++	3.24478	2.80897	3.03226	2.81216	2.87384		
	3.00186	3.14357	2.70228				2.95247	6.269
3 Chloromethane	+++++	+++++	1.27834	1.58488	1.30698	1.22312		
	1.23521	1.31772	1.02277				1.28129	13.001
4 Vinyl Chloride	+++++	1.42990	1.43202	1.34403	1.18866	1.20552		
	1.48914	1.46940	1.22628				1.34812	9.254
5 Chloroethane	+++++	+++++	0.68492	0.57967	0.51870	0.55101		
	0.71202	0.75654	0.63250				0.63363	13.943
6 Freon 11	+++++	4.06711	3.83502	4.23250	3.74418	3.74004		
	4.53730	4.29705	4.25248				4.08821	7.145
7 Freon 113	+++++	3.79736	3.64224	3.46949	3.14504	3.10679		
	3.66432	3.47432	3.00092				3.41256	8.620

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 11:42
End Cal Date : 04-AUG-2017 08:20
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Cal Date : 07-Aug-2017 09:09 efinn
Curve Type : Average

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	20.000 Level 15					
8 1,1-Dichloroethene	1.22095	1.06588	0.97452	1.06902	0.96353	0.95012		
	1.11322	1.05197	0.90404				1.03481	9.432
9 Methyl tert-butyl ether	+++++	4.61969	3.92563	4.91912	4.10325	4.33016		
	4.66003	4.73045	4.07305				4.42017	8.185
10 trans-1,2-Dichloroethene	1.27019	1.18635	1.01627	1.20113	0.98762	1.07947		
	1.12103	1.14478	1.00158				1.11205	8.853
11 1,1-Dichloroethane	+++++	2.81529	2.50782	3.02507	2.50764	2.65082		
	2.83112	2.80264	2.55035				2.71134	6.892
12 cis-1,2-Dichloroethene	1.32434	1.28587	1.13620	1.27438	1.11070	1.11310		
	1.19370	1.16994	1.08428				1.18806	7.351
14 Chloroform	3.77609	3.89950	4.02601	4.70657	3.98454	3.85565		
	3.94742	3.88944	3.48928				3.95272	8.183
15 1,1,1-Trichloroethane	+++++	3.95449	3.96649	4.40460	4.05355	3.78677		
	4.05592	3.86175	3.49878				3.94779	6.542
16 Carbon Tetrachloride	+++++	1.51371	1.64967	3.17920	3.31829	3.24876		
	3.90749	3.90937	3.53581				3.03279	30.923
17 Benzene	1.58097	1.44759	1.18521	1.22357	1.07522	1.06982		
	1.13908	1.05288	0.95397				1.19203	16.910
19 1,2-Dichloroethane	0.48594	0.53577	0.48584	0.51864	0.47491	0.47496		
	0.50130	0.47760	0.42954				0.48717	6.187

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 11:42
End Cal Date : 04-AUG-2017 08:20
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Cal Date : 07-Aug-2017 09:09 efinn
Curve Type : Average

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	20.000 Level 15					
21 Trichloroethene	0.63201	0.58347	0.57442	0.63431	0.57996	0.56993		
	0.62046	0.58435	0.55818				0.59301	4.773
23 Toluene	+++++	1.64337	1.31807	1.38174	1.26710	1.28869		
	1.29732	1.24790	1.19704				1.33015	10.330
24 trans-1,3-Dichloropropene	+++++	0.62416	0.74971	0.81922	0.77806	0.75103		
	0.75528	0.74419	0.73932				0.74512	7.421
25 1,1,2-Trichloroethane	0.83938	0.49783	0.64085	0.63494	0.60097	0.60469		
	0.59954	0.61210	0.54338				0.61930	15.175
26 Tetrachloroethene	1.06865	0.93499	0.98565	1.00417	0.97008	0.94829		
	0.94754	0.95210	0.85838				0.96332	5.886
27 1,2-Dibromoethane (EDB)	1.04108	1.00441	0.93312	1.12627	0.98209	0.97815		
	1.01170	0.98960	0.89642				0.99587	6.521
29 Chlorobenzene	+++++	1.36902	1.31081	1.49786	1.26560	1.27663		
	1.37849	1.28842	1.20455				1.32392	6.791
30 Ethyl Benzene	+++++	0.62979	0.60441	0.67076	0.59986	0.59406		
	0.64089	0.57206	0.56962				0.61018	5.709
31 m,p-Xylene	+++++	0.72548	0.64606	0.75918	0.64747	0.66535		
	0.72325	0.66995	0.63713				0.68423	6.635
32 o-Xylene	+++++	0.62041	0.56489	0.70129	0.61799	0.63247		
	0.66433	0.63415	0.63427				0.63372	6.160

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 11:42
End Cal Date : 04-AUG-2017 08:20
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Cal Date : 07-Aug-2017 09:09 efinn
Curve Type : Average

	0.01000	0.02000	0.05000	0.10000	0.50000	1.000	___	
Compound	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	RRF	% RSD
	5.000	10.000	20.000					
	Level 12	Level 13	Level 15					
34 1,1,2,2-Tetrachloroethane	1.56225	1.48222	1.22491	1.42859	1.17831	1.28978		
	1.24639	1.13403	1.09502				1.29350	12.559
35 1,3-Dichlorobenzene	+++++	1.18202	1.01216	1.21514	1.14760	1.07876		
	1.17239	1.12710	1.05680				1.12400	6.169
36 1,4-Dichlorobenzene	1.12753	1.04568	0.92625	1.10881	1.03495	1.01114		
	1.10106	1.02292	1.04536				1.04708	5.831
37 1,2-Dichlorobenzene	+++++	1.05882	0.88839	1.09349	0.99307	0.95354		
	1.07032	1.02969	0.98533				1.00908	6.726
38 Naphthalene	+++++	+++++	+++++	+++++	0.51762	0.48560		
	0.52555	0.59194	0.49910				0.52396	7.842
M 39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
$ 18 1,2-Dichloroethane-d4	1.43890	1.49243	1.46347	1.49263	1.36884	1.37812		
	1.32481	1.37161	1.26160				1.39916	5.635
$ 22 Toluene-d8	0.86461	1.01861	0.87701	0.82471	0.87751	0.87402		
	0.81715	0.85588	0.91547				0.88055	6.760
$ 33 4-Bromofluorobenzene	0.64651	0.68909	0.62812	0.65648	0.69633	0.70583		
	0.67972	0.68443	0.71518				0.67797	4.238

Calibration History

Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Start Cal Date: 03-AUG-2017 11:42
End Cal Date : 04-AUG-2017 08:20

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 3 , Cal Amount: 0.01000		
03-AUG-2017 11:42	Level3	/chem/msd20.i/03aug17.b/20080304sim.d
Cal Level: 4 , Cal Amount: 0.02000		
03-AUG-2017 12:22	Level4	/chem/msd20.i/03aug17.b/20080305sim.d
Cal Level: 5 , Cal Amount: 0.05000		
03-AUG-2017 13:06	AT12	/chem/msd20.i/03aug17.b/20080306sim.d
Cal Level: 6 , Cal Amount: 0.10000		
03-AUG-2017 13:44	AT12	/chem/msd20.i/03aug17.b/20080307sim.d
Cal Level: 7 , Cal Amount: 0.50000		
03-AUG-2017 14:23	AT12	/chem/msd20.i/03aug17.b/20080308sim.d
Cal Level: 8 , Cal Amount: 1.00000		
03-AUG-2017 15:05	AT12	/chem/msd20.i/03aug17.b/20080309sim.d
Cal Level: 12, Cal Amount: 5.00000		
03-AUG-2017 16:10	AT12	/chem/msd20.i/03aug17.b/20080310sim.d
Cal Level: 13, Cal Amount: 10.00000		
04-AUG-2017 08:20	AT12	/chem/msd20.i/03aug17.b/20080316sim.d

Cal Level: 15, Cal Amount: 20.00000		
03-AUG-2017 18:19	AT12	/chem/msd20.i/03aug17.b/20080312sim.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 13

Ccal Level: 13, Ccal Amount: 10.000		
04-AUG-2017 08:20	AT12	/chem/msd20.i/03aug17.b/20080316sima.d
Ccal Level: 13, Ccal Amount: 10.000		
04-AUG-2017 08:20	AT12	/chem/msd20.i/03aug17.b/20080316sim.d

Curve Name: 2017s0803A

Initial Calibration Narrative

An initial calibration curve was analyzed on 8/03/17 on MSD-20.

The instrument was set up to do Full Scan and Selective Ion Monitoring (SIM) simultaneously.

BFB Tune File: 20080301.
ICAL: Zero (0) out.
ICV: Zero (0) out. File 20080317sim.
DOD 5.0 ICV: Zero (0) out. File 20080317sima.
DOD 4.2 ICV: Zero (0) out. File 20080317simc.
Naphthalene recovery = 69.2%

No curve for Freon 12 due to peak splitting.

The reporting limit for Vinyl Chloride was raised from 0.01ppbv to 0.02ppbv due to poor peak quality of the secondary ion at the RL.

The 10ppbv point (global level 13) was rerun due to low IS recoveries in the initial run.

Naphthalene was calibrated from 0.05ppbv to 2.0ppbv.

The following compounds were calibrated down to a special RL of 0.005ppbv:

The 0.005ppbv point was not included in the ICAL.

*The quantitation ion peak (62 amu) is sufficiently resolved for accurate quantification of 1,2-Dichloroethane (1,2-DCA) at the special reporting limit of 0.005 ppbv. However, the confirmation mass ion peak (64 amu) for 1,2-DCA is not baseline-resolved from the surrogate 1,2-Dichloroethane-d4 peak. Identification of 1,2-DCA based on the presence and abundance ratio of confirmation ion is less reliable at the lowest concentrations due to this interference with the surrogate's mass ion 64 peak.

MDL was analyzed on February 9th, 10th, and 13th, 2017.

Eurofins Air Toxics, Inc.

MSD-20

Logbook #2863

BFB Verification of 176/174 m/z Ratio: 196,352/200,832 x 100 = 97.77%	
Method Name: 20170803a.m/20170803a.m	

LL
~~GLM~~
DB 8/4/17

IS/S Std. #: 2850-189		Exp. Date: 9/15/17
BCM	128,035	87,014
1,4-DFB	396,419	411,474
CB-d5	323,902	338,225

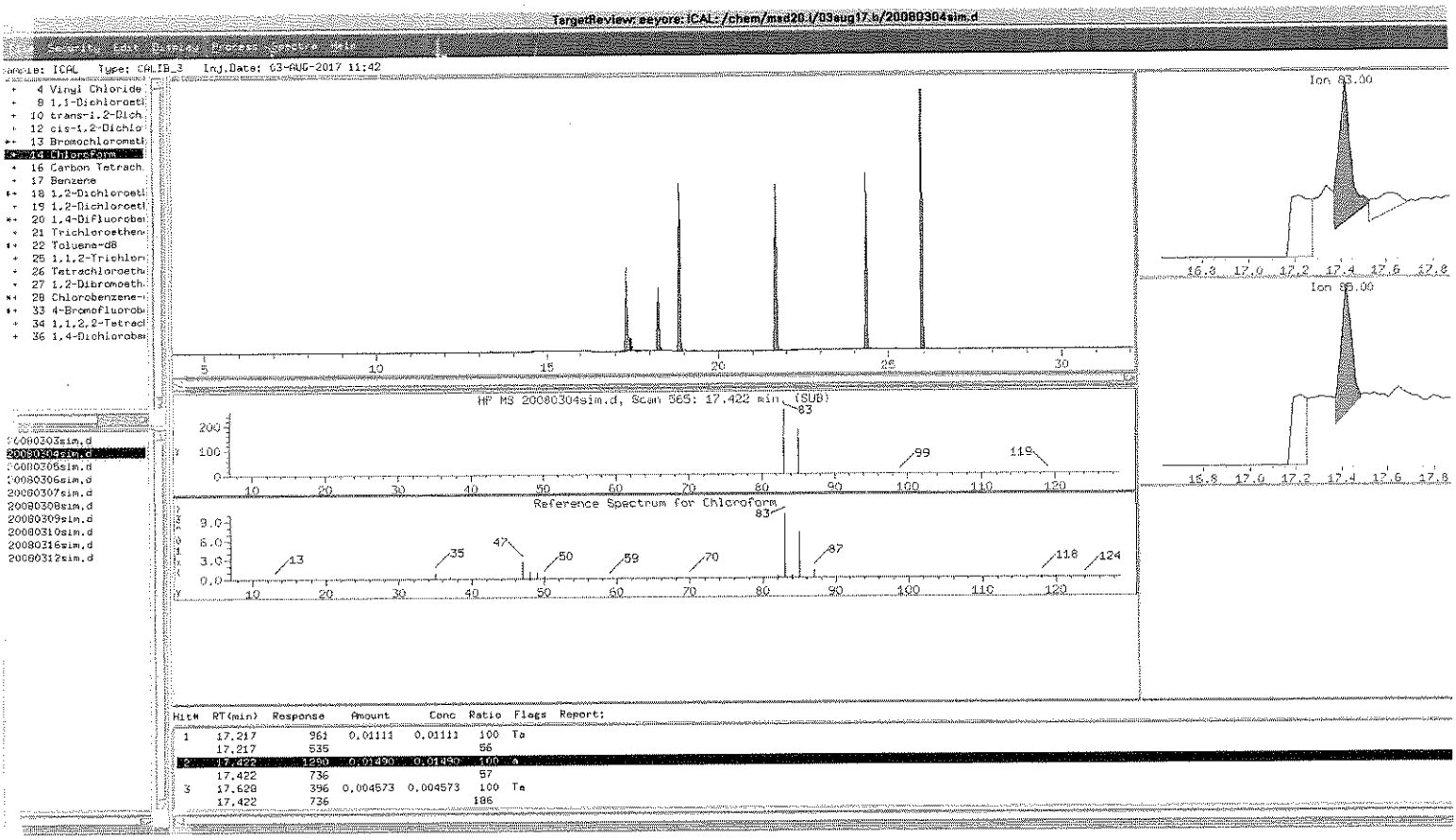
Verified CCV IS vs ICAL mid-point (-40%D): ok DB

SOP# (Circle one): 6 / (83) / (38) / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

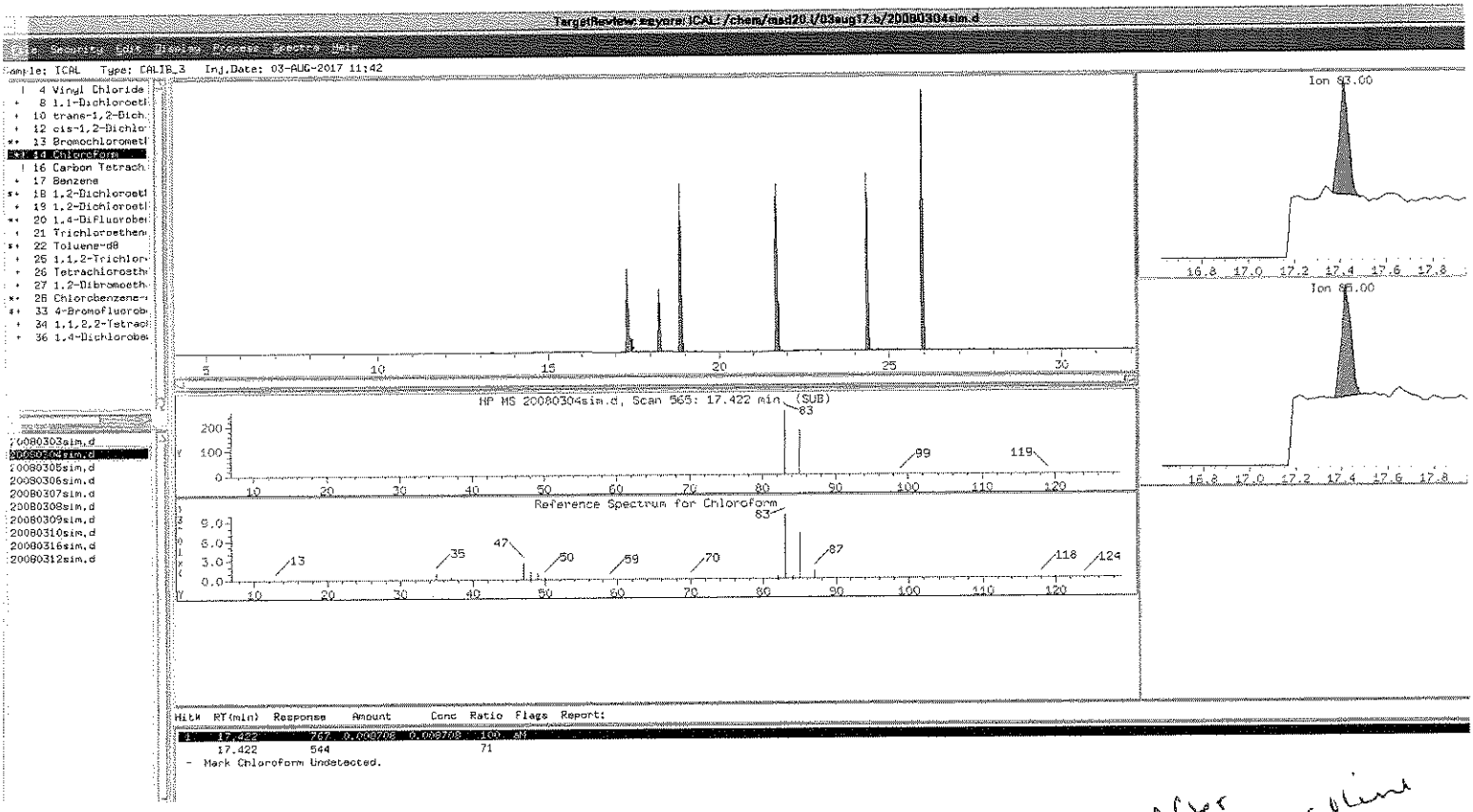
	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	20080301	BFB Tune Check	2810-89	50ng	2.0ml	1.00	DB	8-3-17	0952	DB	
2	X	02	System Blank	25236	Humid	250ml	1.00			1008		
DB 8/4/17 3	✓	03	ICAL Level 2	2850-276	DB 8/3/17 ~~0.005ppbv~~ 0.005ppbv	25ml				1053		exp. 9/27/17 2nd IS ok
4	✓	04	ICAL Level 3	↓	0.01ppbv (0.05ppbv)	50ml				1142		
5	✓	05	4		0.02ppbv (0.05ppbv)	100ml				1222		
6	✓	06	5	↓	0.05ppbv (0.05ppbv)	250ml				1306		
7	✓	07	6	2850-277	0.1ppbv (1.0ppbv)	25ml				1344		exp. 9/27/17
8	✓	08	7	2850-277	0.5ppbv (1.0ppbv)	125ml				1423		
9	✓	09	8	↓	1.0ppbv (1.0ppbv)	250ml				1505		
10	✓	10	12	2850-224	5.0ppbv (50ppbv)	25ml				1610		exp. 9/27/17
11	X	11	13	↓	10ppbv (50ppbv)	50mL		MB		1732		IS ↓
12	✓	12	15		20ppbv (50ppbv)	100mL		MB		1819		
13	✓	13	16	↓	40ppbv (50ppbv)	200mL		MB		1914		
14	X	14	System Blank	25236	Humid	250mL		MB		2000		
15	✓	15	↓	↓	↓	↓	↓	MB	↓	2059		
16	✓	16	ICAL Level 13	2850-224	10ppbv (50ppbv)	50ml	1.00	DB	8-4-17	0820		
17	✓	17	ICV	2850-247	10ppbv (50ppbv)	50ml	1.00	DB	8-4-17	0910	↓	exp 10/7/17

Reviewed By

8/4/17
Date


TargetReview: eeyore: ICAL: /chem/msd20.i/03aug17.b/20080304sim.d
Security Edit Samples Process Spectra Help
Type: CALIB_3 Inj.Date: 03-AUG-2017 11:42
4 Vinyl Chloride
9 1,1-Dichloroeth
10 trans-1,2-Dich
12 cis-1,2-Dichlo
13 Bromochlorometh
14 Chloroform
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroeth
19 1,2-Dichloroeth
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
28 Chlorobenzene-
33 4-Bromofluorob
34 1,1,2,2-Tetrach
36 1,4-Dichlorobe
20080303sim.d
20080304sim.d
20080306sim.d
20080306sim.d
20080307sim.d
20080308sim.d
20080309sim.d
20080310sim.d
20080316sim.d
20080312sim.d
Ion 83.00
Ion 99.00
HP MS 20080304sim.d, Scan 565: 17.422 min (SUB)
Reference Spectrum for Chloroform
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 17.217 961 0.01111 0.01111 100 Ta
17.217 535 56
2 17.422 1290 0.01490 0.01490 100 A
17.422 736 57
3 17.628 396 0.004573 0.004573 100 Ta
17.422 736 186

Before



After
Sixed baseline
VB 8/4/17

BO 8/7/17

TargetReview: seyure: ICAL: /chem/msd20.i/03aug17.b/20080305sim.d

File Search Edit Library Process Spectra Help

ample: ICAL Type: CALIB_4 Inj.Date: 03-AUG-2017 12:22

- 2 Freon 114
- 4 Vinyl Chloride
- 6 Freon 11
- 8 1,1-Dichloroeth
- 7 Freon 113
- 9 Methyl tert-bu
- 11 1,1-Dichloroeth
- 10 trans-1,2-Dich
- 12 cis-1,2-Dichlo
- 13 Bromochloromeths
- 14 Chloroform
- 15 1,1,1-Trichlor
- 16 Carbon Tetrach
- 17 Benzene
- 18 1,2-Dichloroeth
- 19 1,2-Dichloroeth
- 20 1,4-Difluorobe
- 21 Trichloroethen
- 22 Toluene-d8
- 23 Toluene
- 24 trans-1,3-Dich
- 25 1,1,2-Trichlor
- 26 Tetrachloroeth
- 27 1,2-Dibromoeth
- 28 Chlorobenzene-

20080303sim.d
20080304sim.d
20080305sim.d
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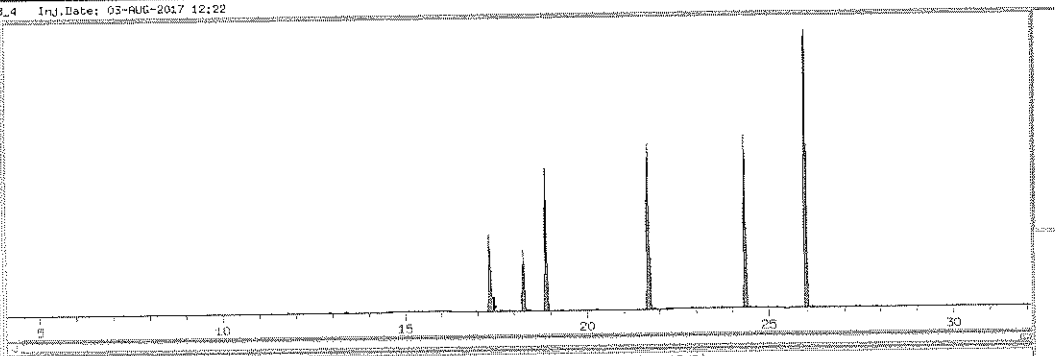
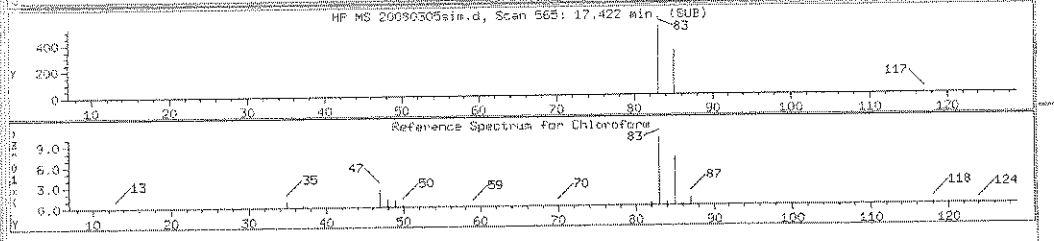
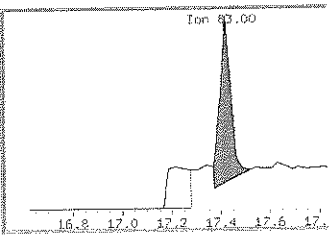
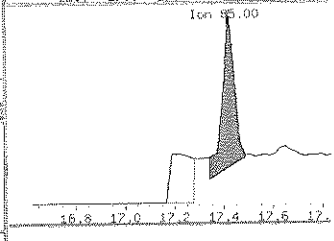
20080309sim.d
20080310sim.d
20080316sim.d
20080312sim.d





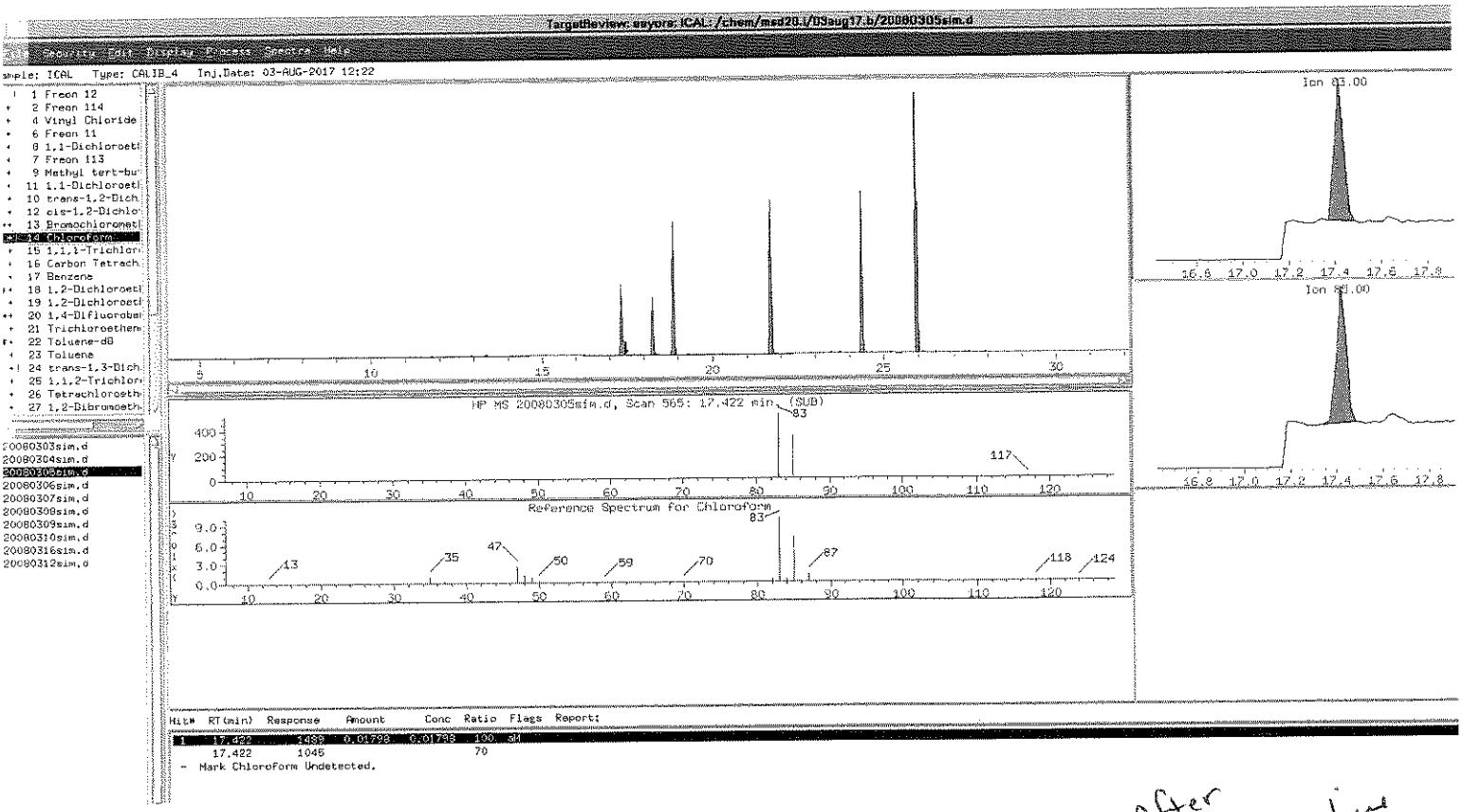




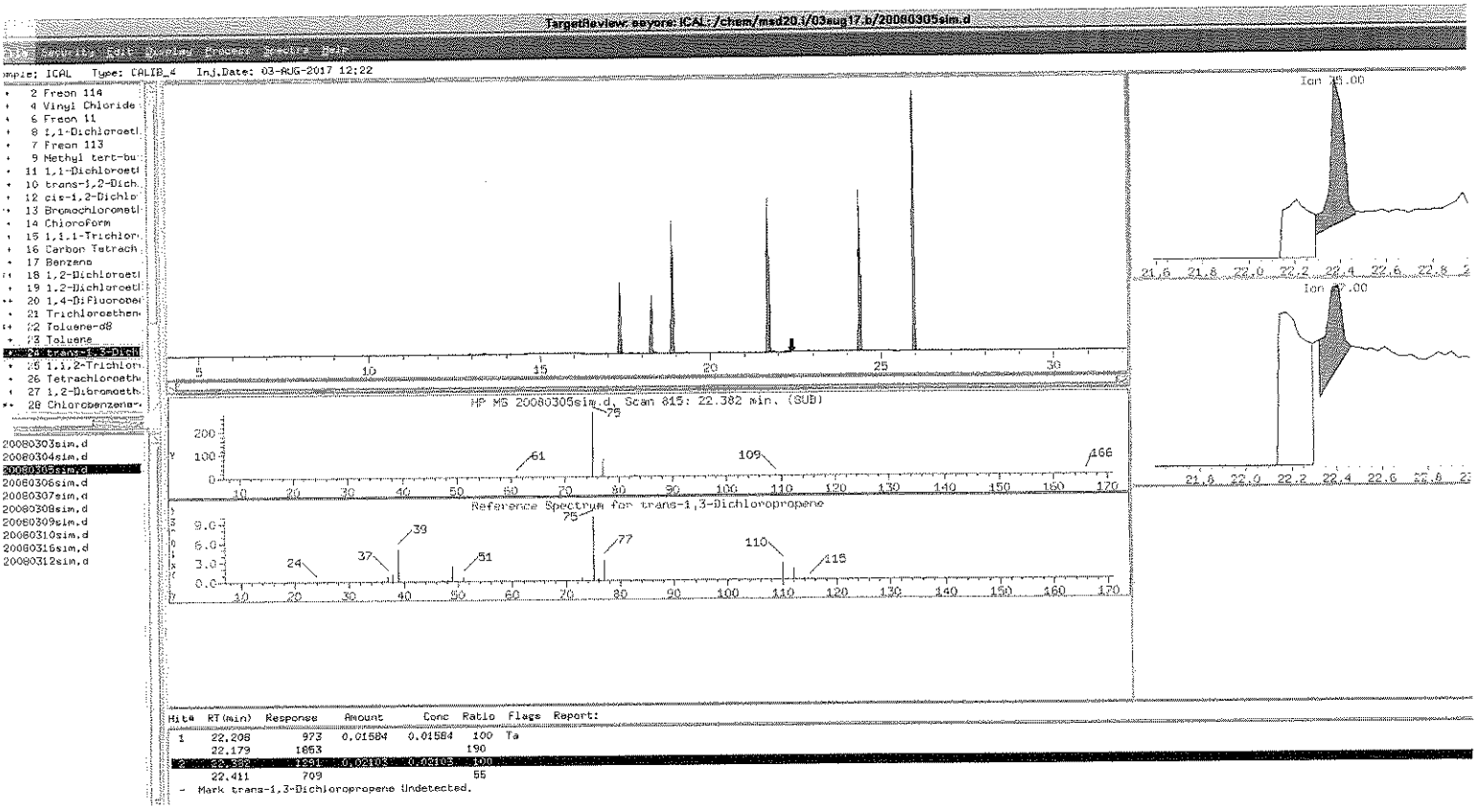
Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	17.216	924	0.01179	0.01179	100	Ta	
	17.186	727			79		
2	17.422	1874	0.02382	0.02382	100		
	17.422	1322			71		

- Mark Chloroform Undetected.

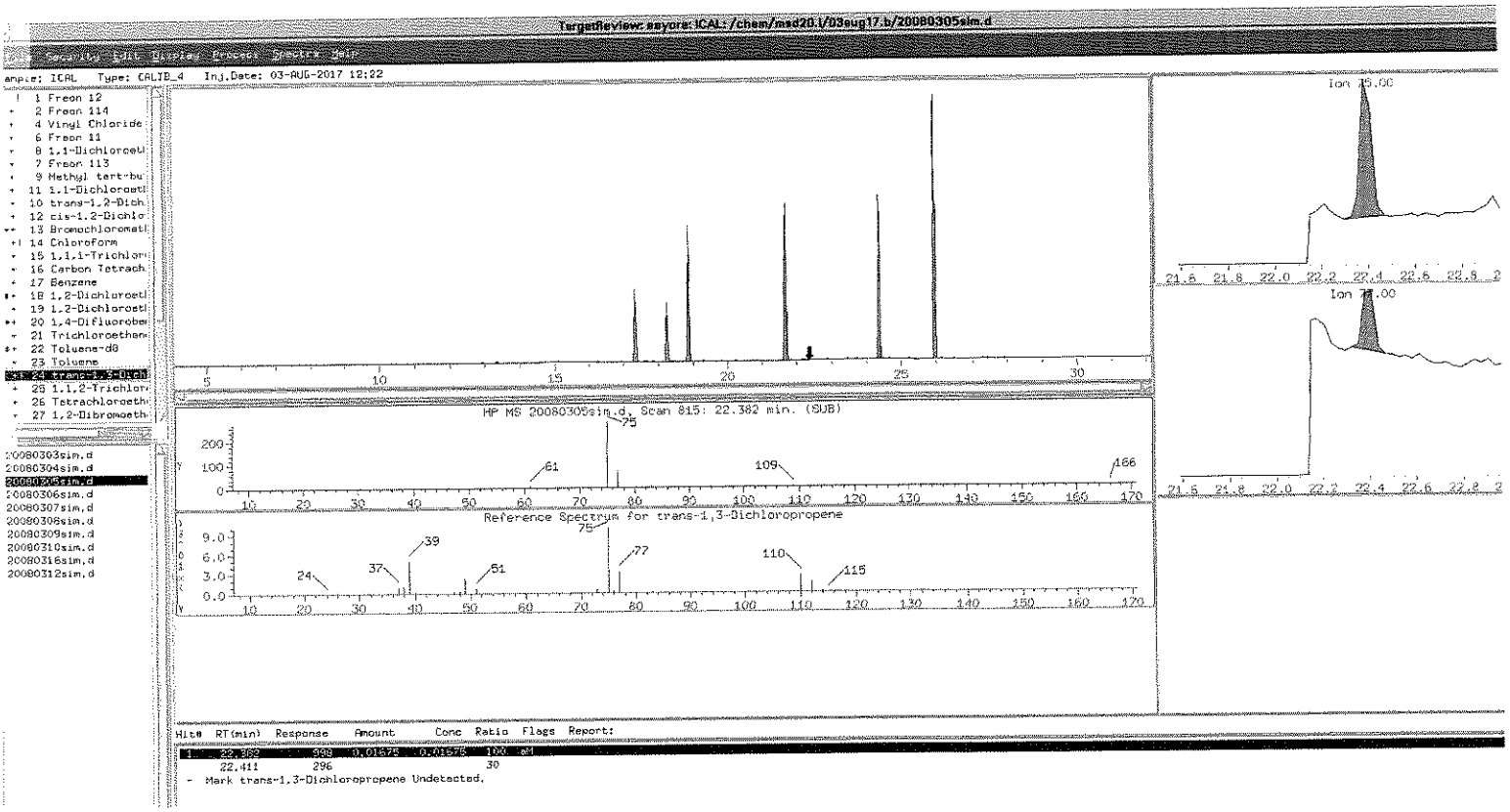
Before



After
fixed baseline
DB
8/4/17
8/7/17

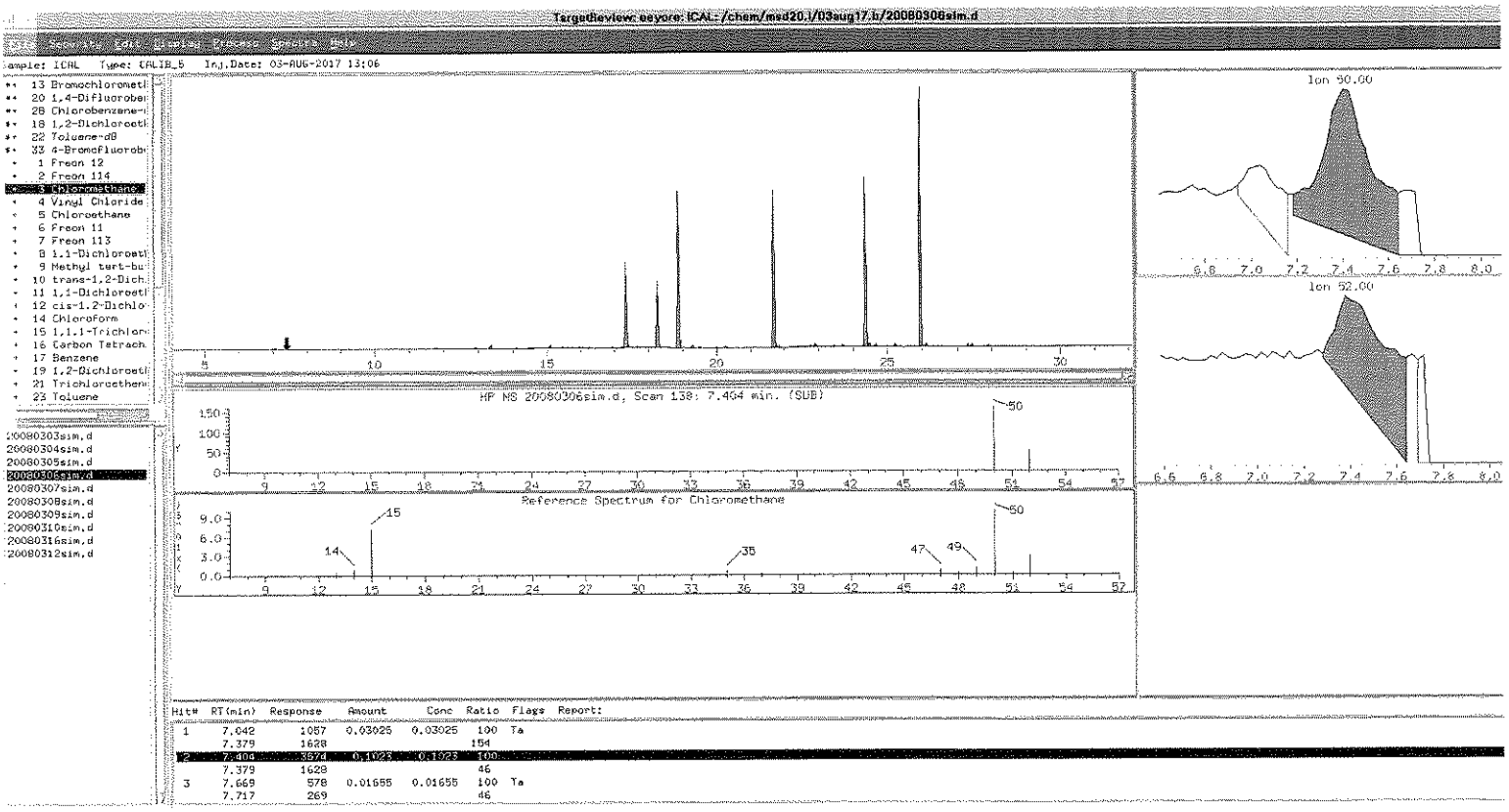

TargetReview: seyore: ICAL: /chem/msd20.i/03aug17.b/20080305sim.d
mple: ICAL Type: CALIB_4 Inj.Date: 03-AUG-2017 12:22
2 Freon 114
4 Vinyl Chloride
6 Freon 11
8 1,1-Dichloroeth
7 Freon 113
9 Methyl tert-bu
11 1,1-Dichloroeth
10 trans-1,2-Dich
12 cis-1,2-Dichlo
13 Bromochlorometh
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroeth
19 1,2-Dichloroeth
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
28 Chlorobenzene-
20080303sim.d
20080304sim.d
20080305sim.d
20080306sim.d
20080307sim.d
20080308sim.d
20080309sim.d
20080310sim.d
20080316sim.d
20080312sim.d
Ion 75.00
Ion 77.00
HP MS 20080305sim.d Scan 815: 22.382 min. (SUB)
Reference Spectrum for trans-1,3-Dichloropropene
Hits RT(min) Response Amount Conc Ratio Flags Report:
1 22.208 973 0.01584 0.01584 100 Ta
22.179 1853 190
2 22.382 1281 0.02103 0.02103 100
22.411 709 55
- Mark trans-1,3-Dichloropropene Undetected.

Before



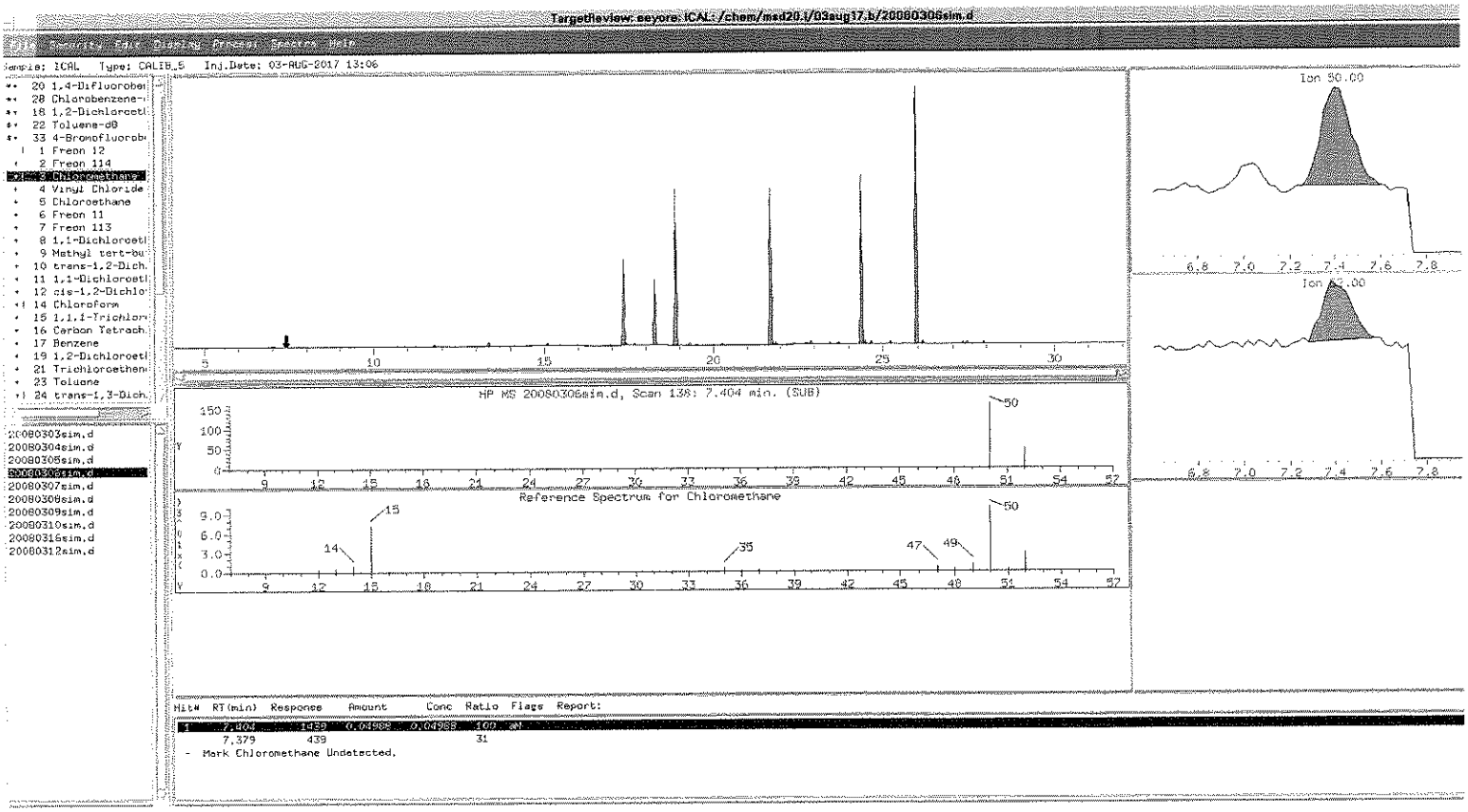
After
DB 8/4/17
fixed baseline

8/7/17



Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	7.042	1057	0.03025	0.03025	100	Ta	
	7.379	1628			154		
2	7.404	3574	0.1025	0.1025	100		
	7.379	1628			46		
3	7.669	578	0.01655	0.01655	100	Ta	
	7.717	269			46		

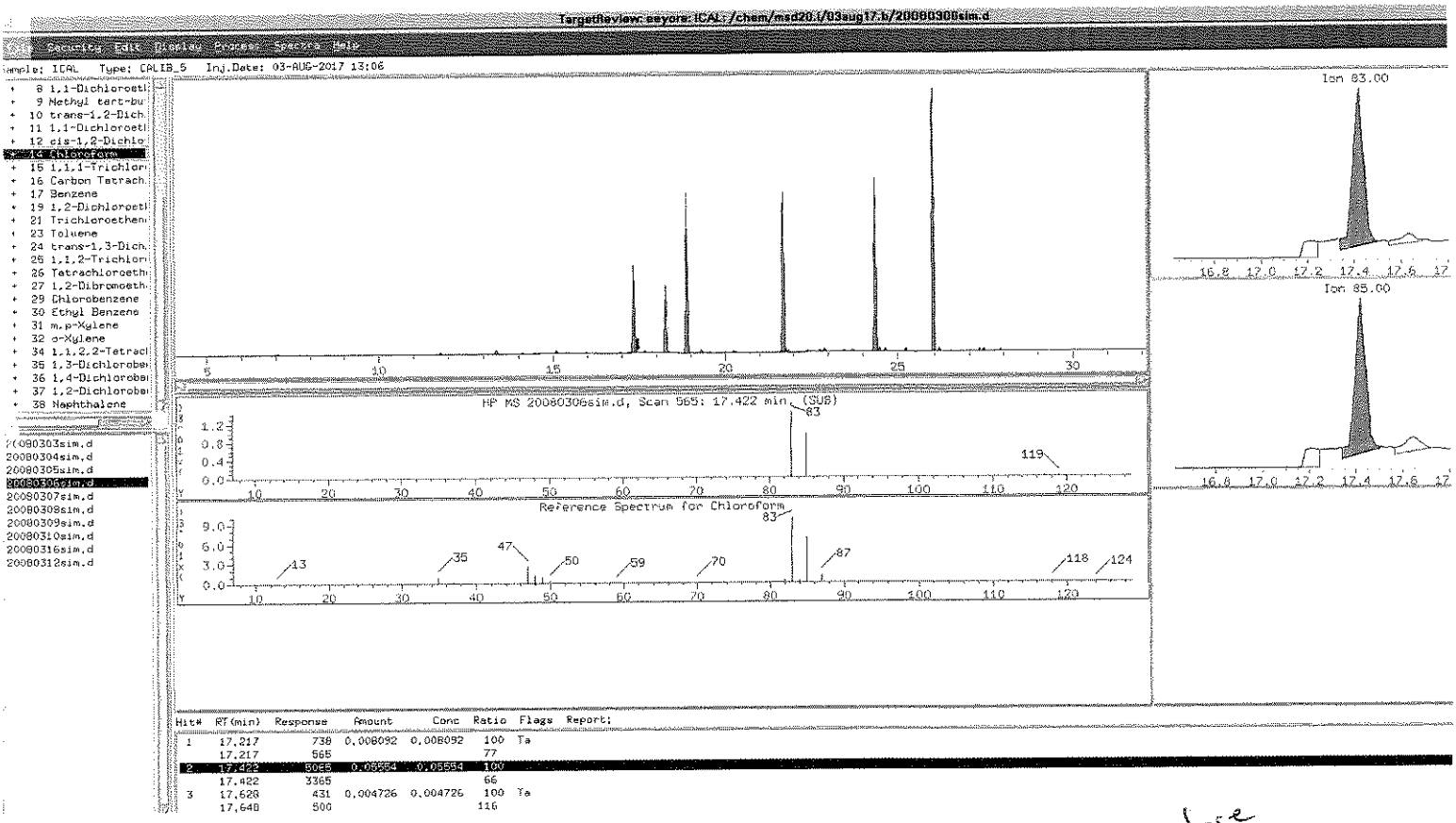
Before



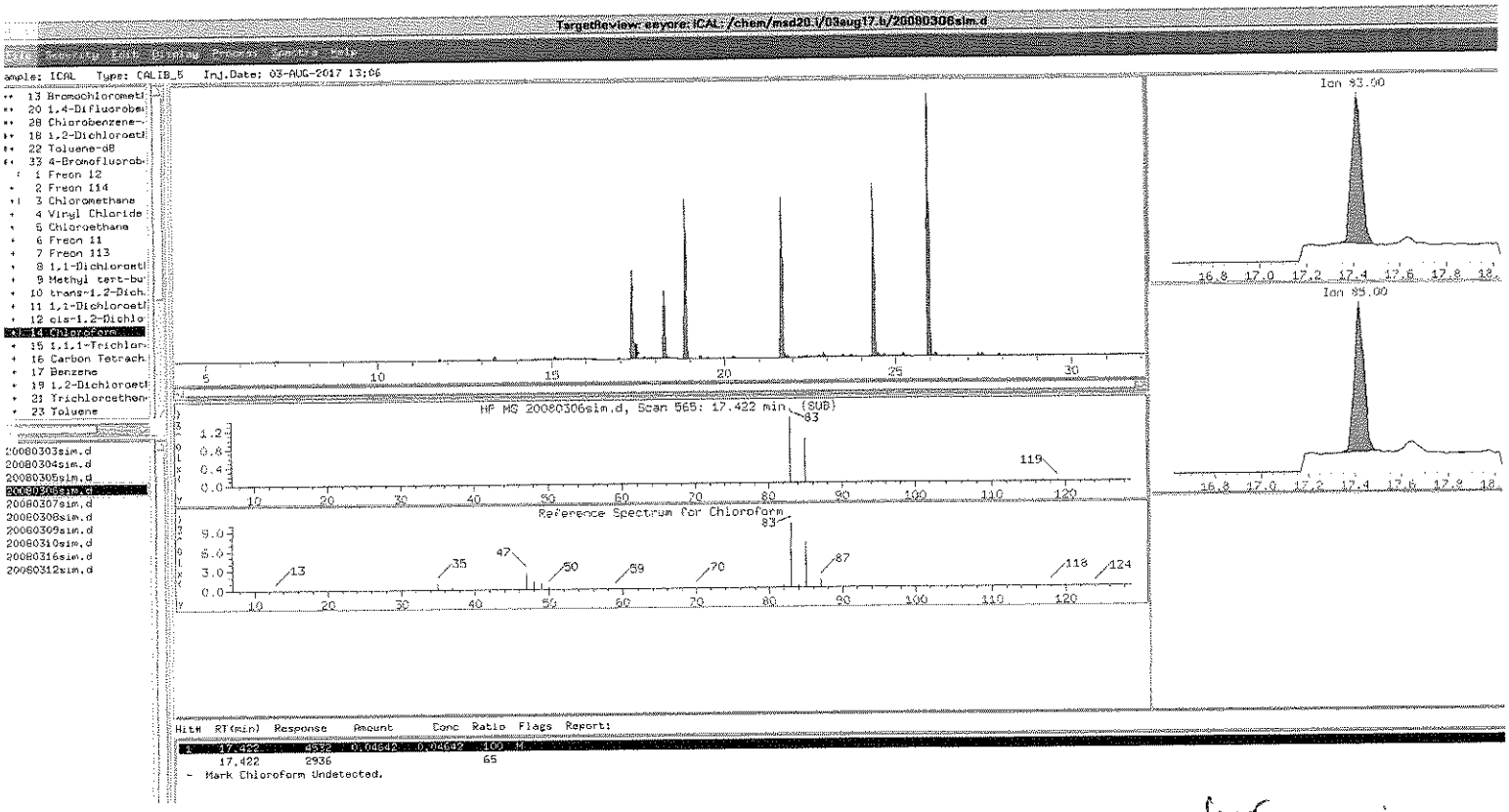
After fixed baseline

DB 8/4/17

ST 8/7/17


Targetreview.easycore: ICAL: /chem/msd20.t/03aug17.b/20080308sim.d
Security Edit Display Process Spectra Help
Sample: ICAL Type: CALIB_5 Inj.Date: 03-AUG-2017 13:06
8 1,1-Dichloroeth
9 Methyl tert-bu
10 trans-1,2-Dich
11 1,1-Dichloroeth
12 cis-1,2-Dichlo
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
19 1,2-Dichloroeth
21 Trichloroethen
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
29 Chlorobenzene
30 Ethyl Benzene
31 m,p-Xylene
32 o-Xylene
34 1,1,2,2-Tetrach
35 1,3-Dichlorobe
36 1,4-Dichlorobe
37 1,2-Dichlorobe
38 Naphthalene
20080303sim.d
20080304sim.d
20080305sim.d
20080306sim.d
20080307sim.d
20080308sim.d
20080309sim.d
20080310sim.d
20080316sim.d
20080312sim.d
HP MS 20080306sim.d, Scan 565: 17.422 min (SUB)
Reference Spectrum for Chloroform
Ion 83.00
Ion 85.00
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 17.217 738 0.008092 0.008092 100 Ta
17.217 565 77
2 17.422 5055 0.05554 0.05554 100
17.422 3365 66
3 17.628 431 0.004726 0.004726 100 Ta
17.648 500 116

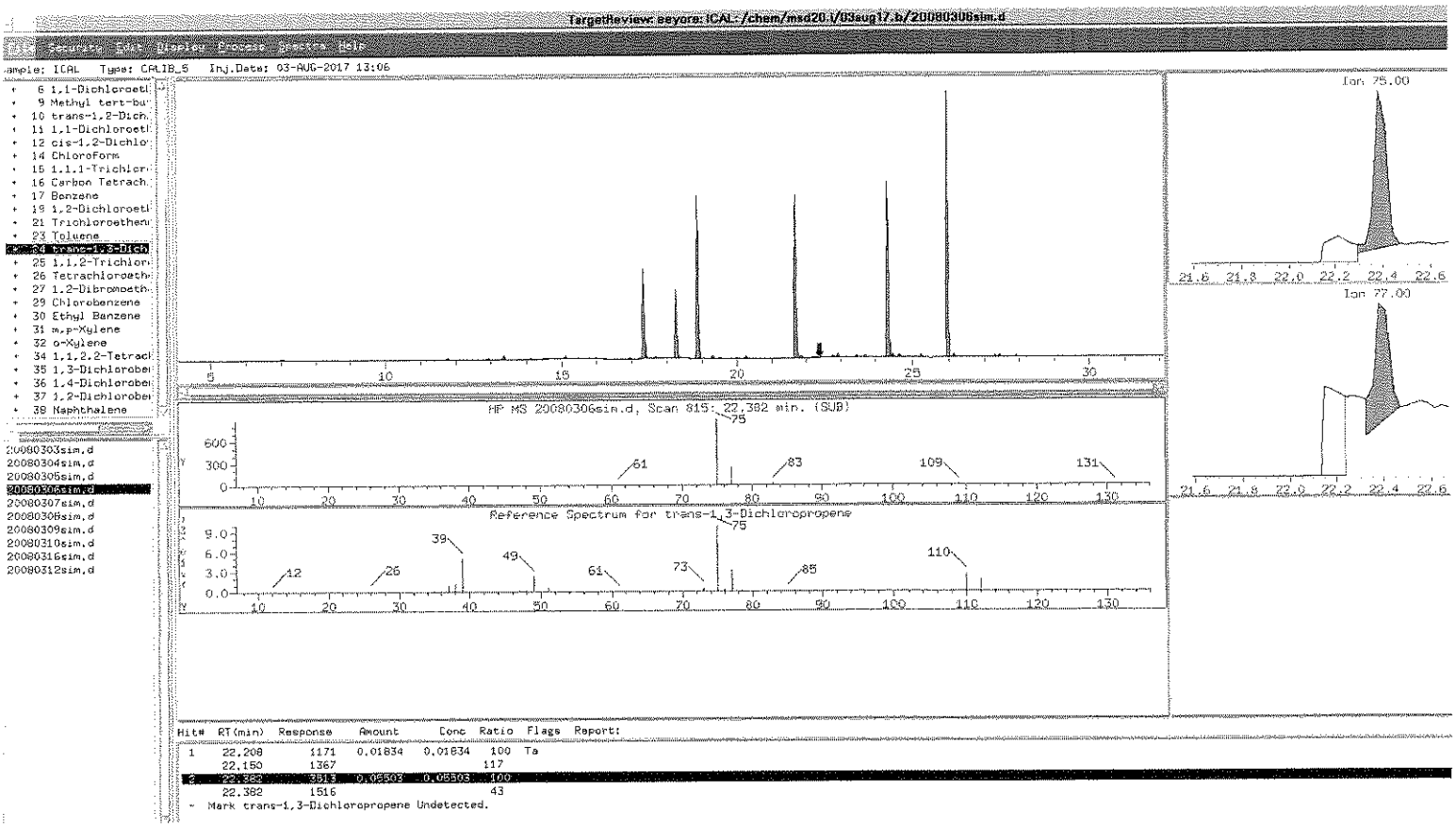
Before



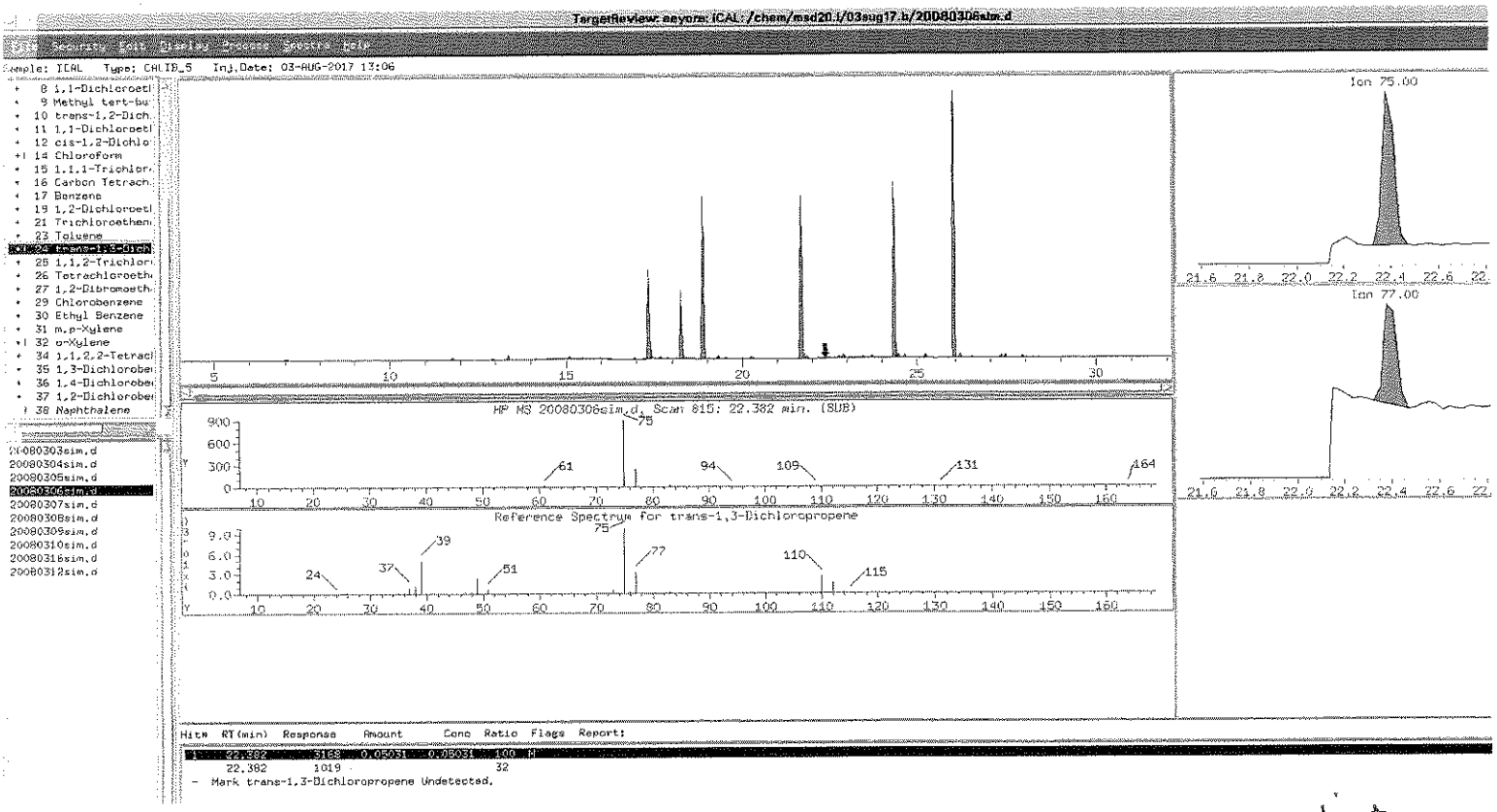
After fixed baseline

DB 8/4/17

8/7/17


TargetReview: sayora: ICAL: /chem/msd20.i/03aug17.b/20080306sim.d
Sample: ICAL Type: CALIB_5 Inj.Date: 03-AUG-2017 13:06
6 1,1-Dichloroeth
9 Methyl tert-bu
10 trans-1,2-Dich
11 1,1-Dichloroeth
12 cis-1,2-Dichlo
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
19 1,2-Dichloroeth
21 Trichloroethen
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
29 Chlorobenzene
30 Ethyl Benzene
31 m,p-Xylene
32 o-Xylene
34 1,1,2,2-Tetrach
35 1,3-Dichlorobe
36 1,4-Dichlorobe
37 1,2-Dichlorobe
38 Naphthalene
20080303sim.d
20080304sim.d
20080305sim.d
20080306sim.d
20080307sim.d
20080308sim.d
20080309sim.d
20080310sim.d
20080311sim.d
20080312sim.d
MF MS 20080306sim.d, Scan 815: 22.382 min. (SUB)
Reference Spectrum for trans-1,3-Dichloropropene
Ion 75.00
Ion 77.00
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 22.208 1171 0.01834 0.01834 100 Ta
22.150 1367 117
2 22.382 3313 0.05503 0.05503 100
22.382 1516 43
Mark trans-1,3-Dichloropropene Undetected.

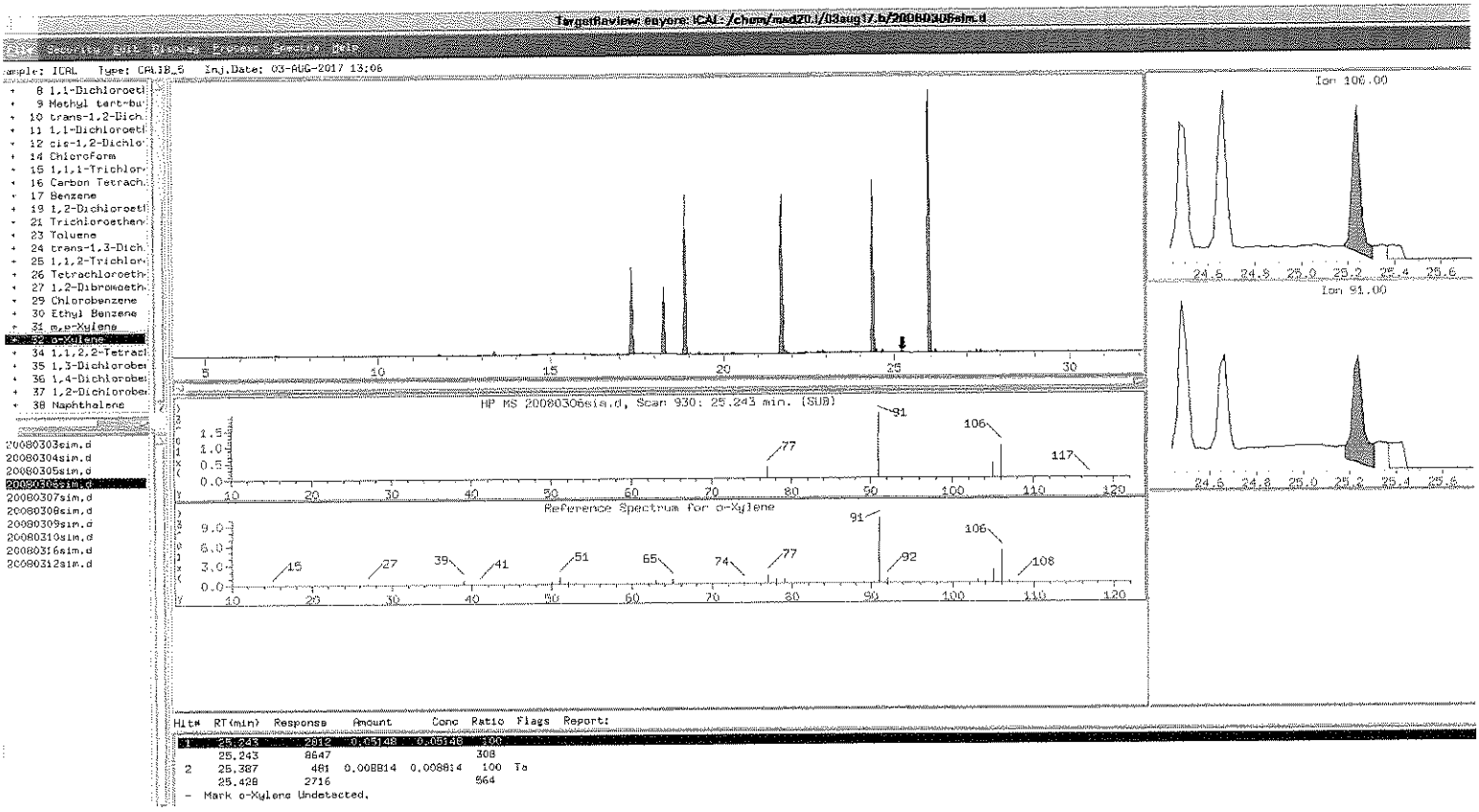
Before



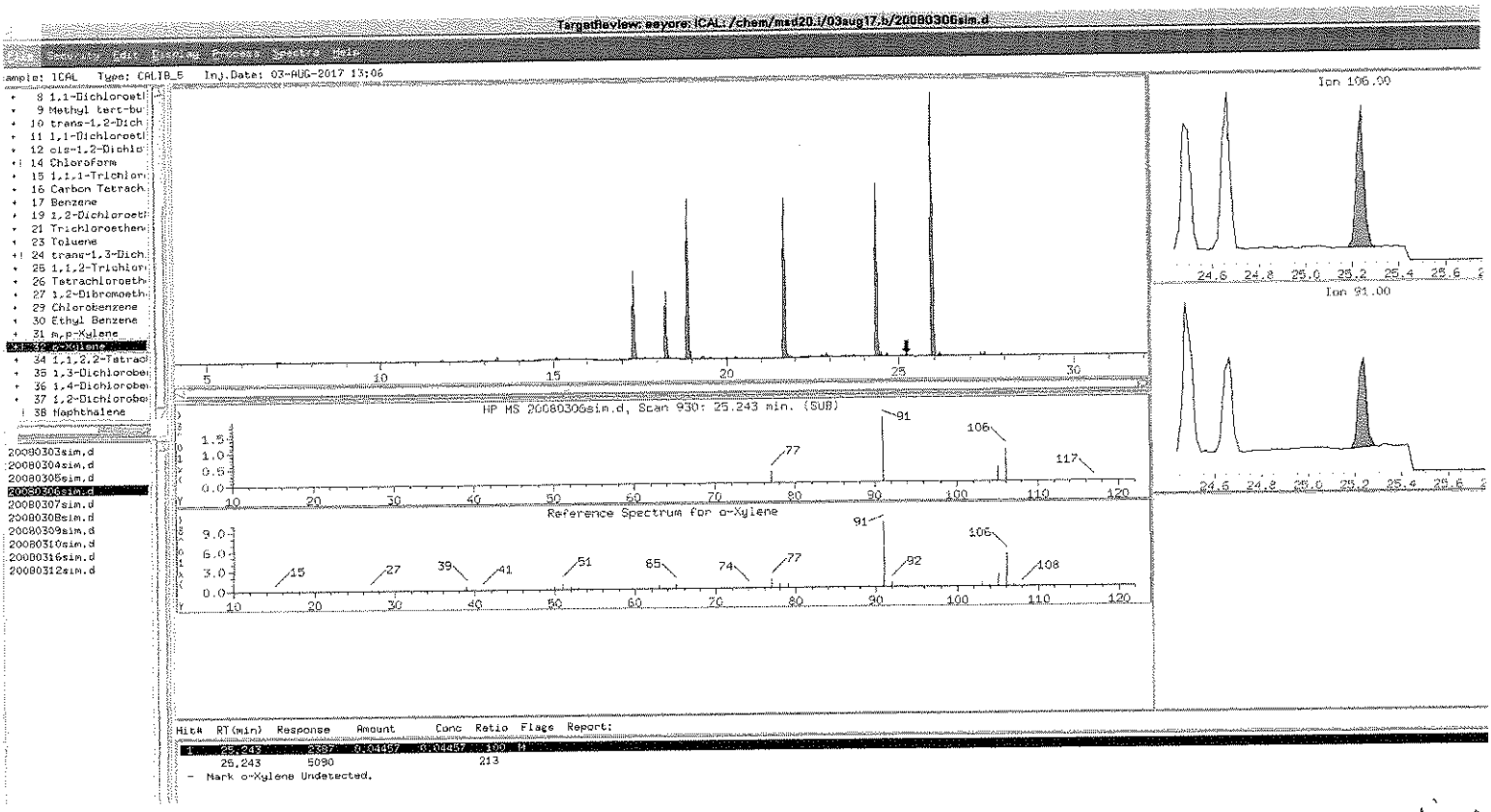
After fixed baseline

DB 8/4/17

SJ 8/7/17


TargetReview: eeyore: ICAL: /chem/ms020.i/03aug17.b/20080306sim.d
Sample: ICAL Type: CALIB_5 Inj.Date: 03-AUG-2017 13:06
9 1,1-Dichloroeth
9 Methyl tert-bu
10 trans-1,2-Dich
11 1,1-Dichloroeth
12 cis-1,2-Dichlo
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroeth
21 Trichloroethen
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
29 Chlorobenzene
30 Ethyl Benzene
31 m,p-Xylene
32 o-Xylene
34 1,1,2,2-Tetrach
35 1,3-Dichlorobe
36 1,4-Dichlorobe
37 1,2-Dichlorobe
38 Naphthalene
20080303sim.d
20080304sim.d
20080305sim.d
20080306sim.d
20080307sim.d
20080308sim.d
20080309sim.d
20080310sim.d
20080316sim.d
20080312sim.d
Ion 106.00
Ion 91.00
HP MS 20080306sim.d, Scan 930: 25.243 min. (SUB)
Reference Spectrum for o-Xylene
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 25.243 2812 0.05148 0.05148 100
25.243 8647 308
2 25.387 481 0.008814 0.008814 100 Ta
25.428 2716 564
- Mark o-Xylene Undetected.

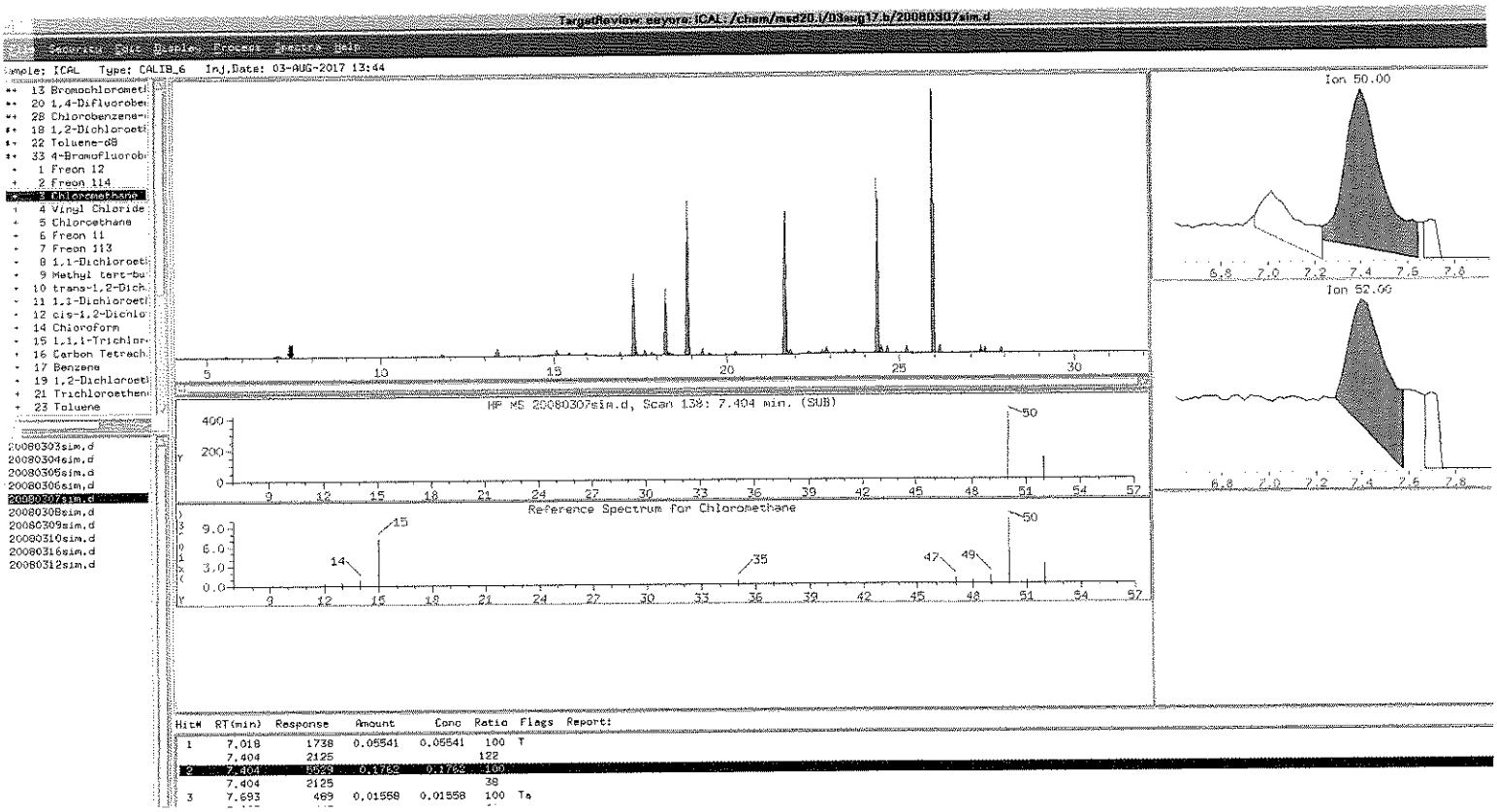
Before



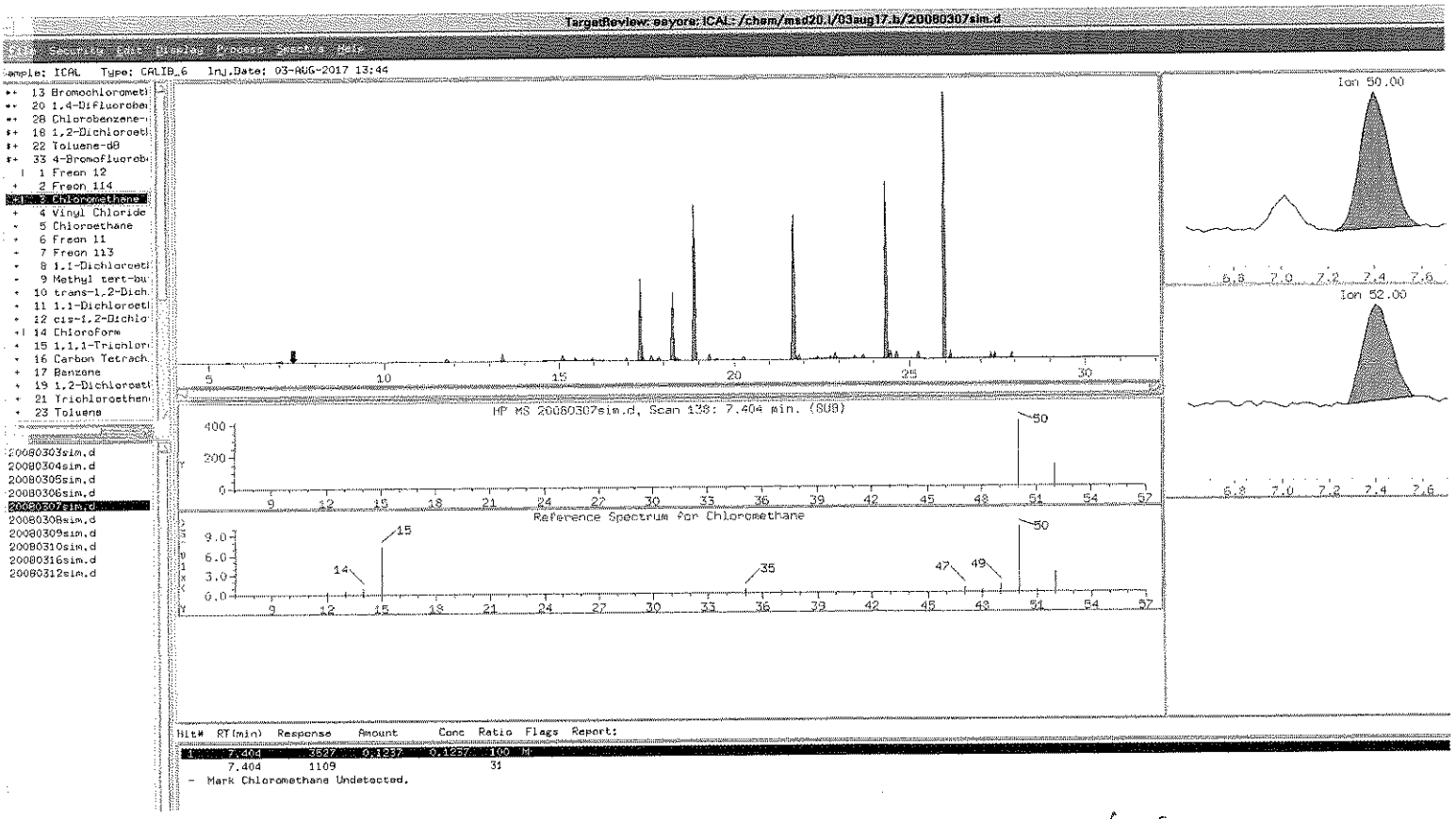
After fixed baseline

OB 8/4/17

8/7/17


TargetReview: easyro: ICAL: /chem/msd20.i/03aug17.b/20080307sim.d
Sample: ICAL Type: CALIB_6 Inj.Date: 03-AUG-2017 13:44
13 Bromochloromeths
20 1,4-Difluorobe
28 Chlorobenzene-
18 1,2-Dichloroeth
22 Toluene-d8
33 4-Bromofluorob
1 Freon 12
2 Freon 114
3 Chloromethane
4 Vinyl Chloride
5 Chloroethane
6 Freon 11
7 Freon 113
8 1,1-Dichloroeth
9 Methyl tert-bu
10 trans-1,2-Dich
11 1,1-Dichloroeth
12 cis-1,2-Dichlo
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
19 1,2-Dichloroeth
21 Trichloroethene
23 Toluene
20080303sim.d
20080304sim.d
20080305sim.d
20080306sim.d
20080307sim.d
20080308sim.d
20080309sim.d
20080310sim.d
20080311sim.d
20080312sim.d
MF MS 20080307sim.d, Scan 139: 7.404 min. (SUB)
Reference Spectrum for Chloromethane
Ion 50.00
Ion 52.00
Hit# RT(min) Response Amount Conc Ratio Flags Report
1 7.018 1738 0.05541 0.05541 100 T
7.404 2125 122
2 7.404 5523 0.1762 0.1762 100
7.404 2125 38
3 7.693 489 0.01558 0.01558 100 Ta

Before



After
fixed baseline
DB 8/4/17

SS 8/7/17

TargetReview.eeyore: ICAL: /chem/msd20.i/03aug17.b/20080307sim.d

Sample: ICAL Type: CALIB_6 Inj.Date: 03-AUG-2017 13:44

- 8 1,1-Dichloroetl
- 9 Methyl tert-bu
- 10 trans-1,2-Dich
- 11 1,1-Dichloroetl
- 12 cis-1,2-Dichlo
- 14 Chloroform
- 15 1,1,1-Trichlor
- 16 Carbon Tetrach
- 17 Benzene
- 19 1,2-Dichloroetl
- 21 Trichloroethen
- 23 Toluene
- 24 trans-1,3-Dich
- 25 1,1,2-Trichlor
- 26 Tetrachloroeth
- 27 1,2-Dibromoeth
- 29 Chlorobenzene
- 30 Ethyl Benzene
- 31 m,p-Xylene
- 32 o-Xylene
- 34 1,1,2,2-Tetrach
- 35 1,3-Dichlorobe
- 36 1,4-Dichlorobe
- 37 1,2-Dichlorobe
- 38 Naphthalene

20080303sim.d
20080304sim.d
20080305sim.d
20080306sim.d
20080307sim.d
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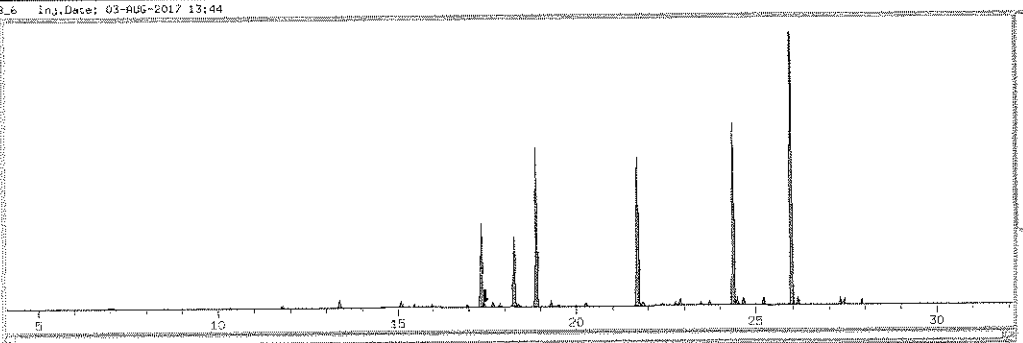
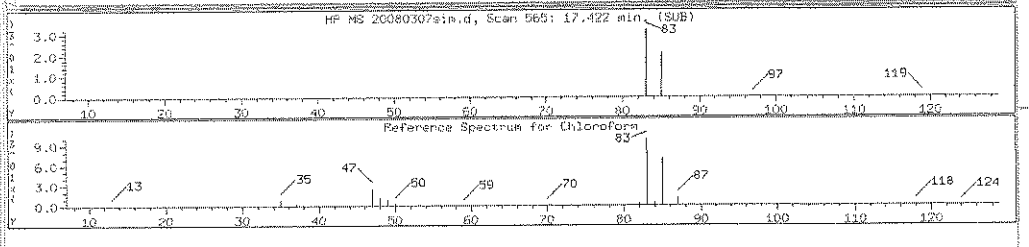
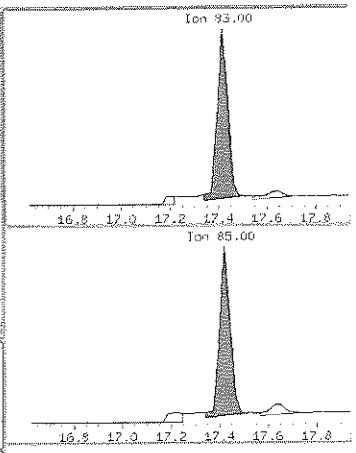
20080310sim.d
20080311sim.d
20080312sim.d

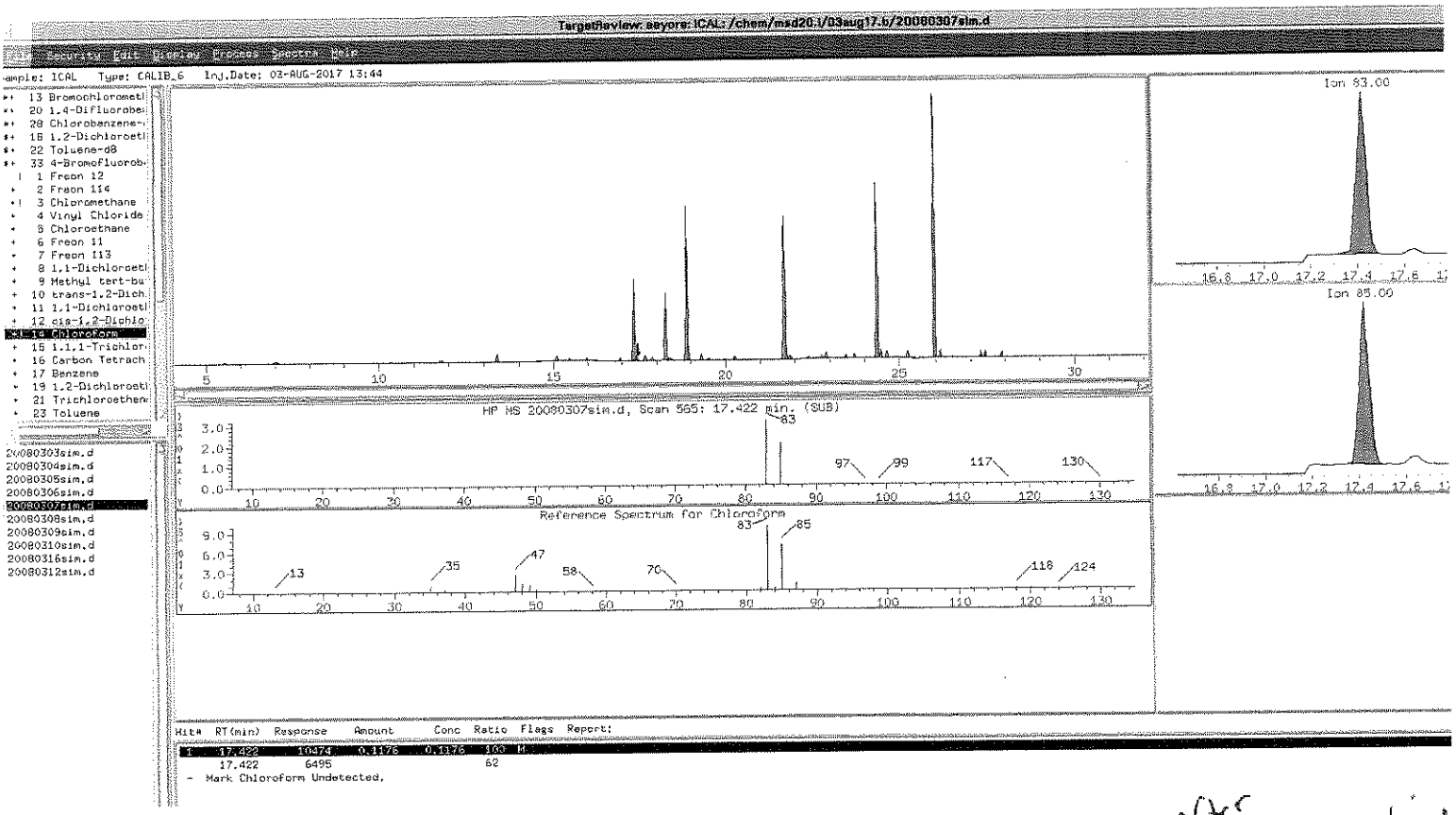






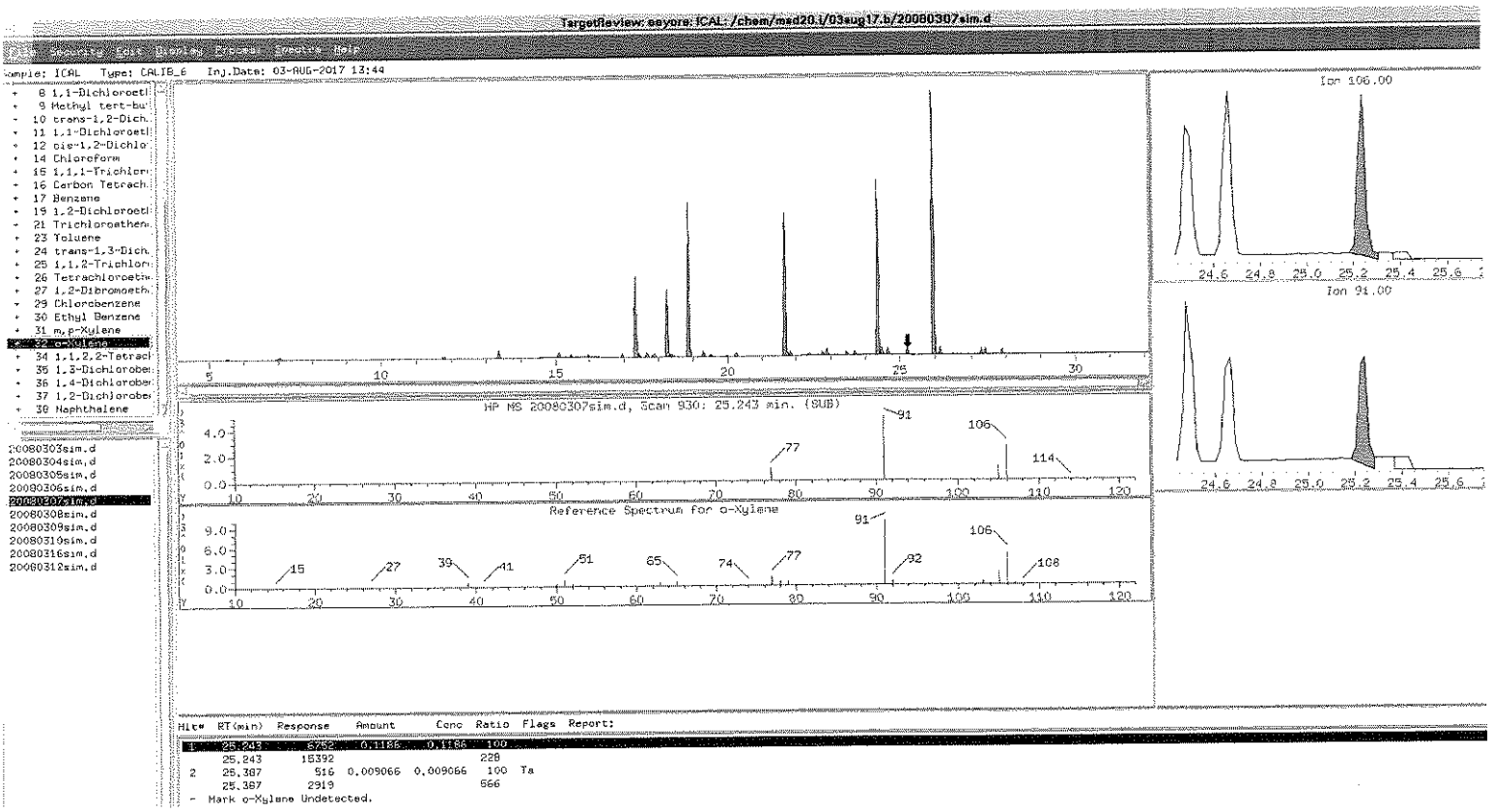
Als#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	17.186	442	0.004965	0.004965	100	Ta	
	17.216	544			123		
2	17.422	10487	0.1175	0.1175	100		
	17.422	6884			66		
3	17.648	701	0.007873	0.007873	100	Ta	
	17.628	614			88		

Before

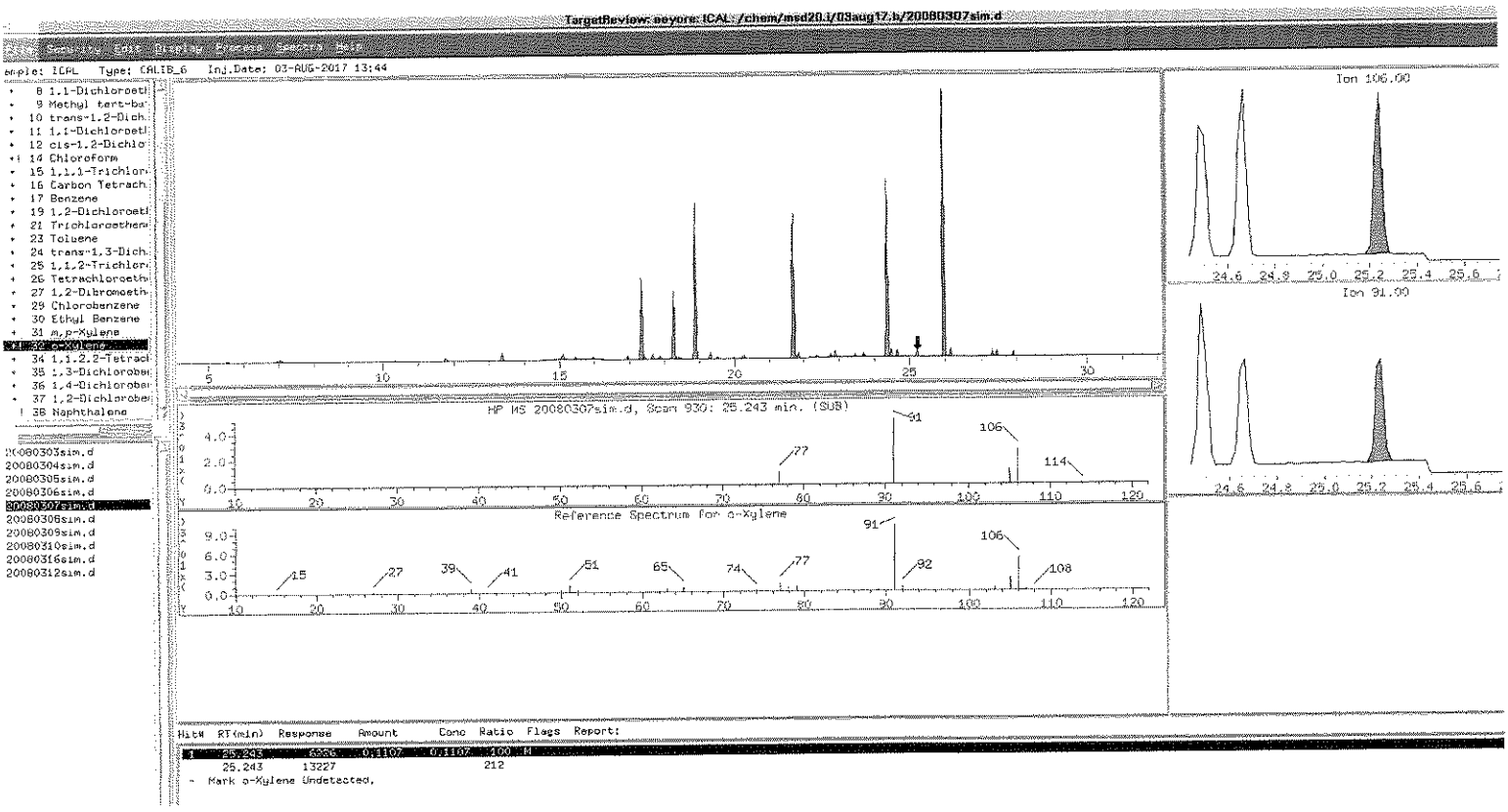


After fixed baseline
DB
8/4/17

8/7/17


TargetReview: easyora: ICAL: /chem/msd20.i/03aug17.b/20080307sim.d
File Acquire Edit Display Process Operate Help
Sample: ICAL Type: CALIB_6 Inj.Date: 03-AUG-2017 13:44
8 1,1-Dichloroetl
9 Methyl tert-bu
10 trans-1,2-Dich
11 1,1-Dichloroetl
12 cis-1,2-Dichlo
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroetl
21 Trichloroethen
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
29 Chlorobenzene
30 Ethyl Benzene
31 m,p-Xylene
32 o-Xylene
34 1,1,2,2-Tetrach
35 1,3-Dichlorobe
36 1,4-Dichlorobe
37 1,2-Dichlorobe
38 Naphthalene
20080303sim.d
20080304sim.d
20080305sim.d
20080306sim.d
20080307sim.d
20080308sim.d
20080309sim.d
20080310sim.d
20080316sim.d
20080312sim.d
Ion 106.00
Ion 91.00
HP MS 20080307sim.d, Scan 930: 25.243 min. (SUB)
Reference Spectrum for o-Xylene
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 25.243 5752 0.1185 0.1185 100
25.243 18392 228
2 25.387 516 0.009066 0.009066 100 Ta
25.387 2919 666
- Mark o-Xylene Undetected.

Before



After fixed baseline

DB 8/4/17

SB 8/7/17

Modified EPA Methods TO-14A/TO-15 SIM
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane
Target Compounds:
Dichlorodifluoromethane (Fr12)
Freon 114
Chloromethane
Vinyl Chloride
Chloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
Methyl tert-butyl ether
1,1-Dichloroethane
cis-1,2-Dichloroethene
Chloroform
1,1,1-Trichloroethane
Carbon Tetrachloride
Surrogates:
1,2-Dichloroethane-d4

1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Trichloroethene
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
1,1,2-Trichloroethane
Tetrachloroethene
1,2-Dibromoethane
Ethyl Benzene
m,p-Xylene
o-Xylene
1,1,2,2-Tetrachloroethane
1,4-Dichlorobenzene
Naphthalene
Surrogates:
Bromofluorobenzene

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080317sim.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 04-AUG-2017 09:10
Operator : db Inst ID: msd20.i
Smp Info : 50mL# 2850-247
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS			
				ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 13 Bromochloromethane						CAS #: 74-97-5	
17.340	17.340 (1.000)	130	94253	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	74059			48.37- 108.37	78.58
17.340	17.340 (1.000)	49	107688			82.84- 142.84	114.25
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
18.881	18.881 (1.000)	114	428574	5.00000		80.00- 120.00	100.00
18.881	18.881 (1.000)	88	60433			0.00- 44.04	14.10
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
24.356	24.376 (1.000)	117	337104	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	161985			17.63- 77.63	48.05
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
18.265	18.265 (1.053)	65	123608	4.68657	4.686	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	67303			26.67- 86.67	54.45
$ 22 Toluene-d8						CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	349924	4.63621	4.636	80.00- 120.00	100.00
21.683	21.698 (1.148)	70	36146			0.00- 40.38	10.33

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	224597			33.71- 93.71	64.18
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	232895	5.09517	5.095	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	199129			57.01- 117.01	85.50
25.980	25.980 (1.067)	176	226982			68.59- 128.59	97.46
1 Freon 12					CAS #: 75-71-8		
5.499	5.499 (0.317)	85	696313			80.00- 120.00	100.00(aR)
5.499	5.499 (0.317)	87	226149			2.69- 62.69	32.48
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	584532	10.5026	10.503	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	188789			2.13- 62.13	32.30
3 Chloromethane					CAS #: 74-87-3		
7.404	7.379 (0.427)	50	235619	9.75520	9.755	80.00- 120.00	100.00
7.404	7.379 (0.427)	52	75976			2.25- 62.25	32.25
4 Vinyl Chloride					CAS #: 75-01-4		
8.383	8.366 (0.483)	62	287004	11.2936	11.294	80.00- 120.00	100.00
8.383	8.366 (0.483)	64	92662			1.90- 61.90	32.29
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	151194	12.6583	12.658	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	48388			2.24- 62.24	32.00
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	870998	11.3021	11.302	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	575464			35.63- 95.63	66.07
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	612123	9.51550	9.515	80.00- 120.00	100.00
13.384	13.384 (0.772)	153	395951			35.29- 95.29	64.68
13.356	13.356 (0.770)	101	660627			79.29- 139.29	107.92
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.384	13.356 (0.772)	98	187512	9.61269	9.613	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	436263			208.11- 268.11	232.66
13.356	13.356 (0.770)	96	290857			127.31- 187.31	155.11
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.086 (0.870)	73	822301	9.86881	9.869	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	171566			0.00- 51.54	20.86
15.059	15.059 (0.868)	41	148456			0.00- 49.49	18.05

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	175339	8.36430	8.364	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	343096			166.64- 226.64	195.68
15.114	15.114 (0.872)	96	272894			124.18- 184.18	155.64
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	498812	9.75946	9.759	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	161168			2.52- 62.52	32.31
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	252938	11.2941	11.294	80.00- 120.00	100.00
16.958	16.958 (0.978)	61	450043			148.56- 208.56	177.93
16.958	16.958 (0.978)	96	386692			123.96- 183.96	152.88
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	758685	10.1821	10.182	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	503493			36.46- 96.46	66.36
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	754408	10.1374	10.137	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	492382			35.34- 95.34	65.27
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	736417	12.8812	12.881	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	757030			71.93- 131.93	102.80
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	949576	9.29362	9.294	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	224000			0.00- 53.56	23.59
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	427299	10.2329	10.233	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	140294			3.03- 63.03	32.83
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	520616	10.2424	10.242	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	471149			60.20- 120.20	90.50
19.304	19.304 (1.022)	97	306471			29.00- 89.00	58.87
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	1065194	9.34267	9.343	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	613248			27.62- 87.62	57.57
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.919)	75	545059	10.8498	10.850	80.00- 120.00	100.00
22.382	22.382 (0.919)	77	172493			2.20- 62.20	31.65

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	420029	10.0597	10.060	80.00- 120.00	100.00
22.760	22.760 (0.934)	99	266620			33.48- 93.48	63.48
22.760	22.760 (0.934)	83	353192			54.60- 114.60	84.09
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	681828	10.4981	10.498	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	445178			35.95- 95.95	65.29
22.905	22.905 (0.940)	131	432522			34.23- 94.23	63.44
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.689 (0.973)	107	689998	10.2766	10.277	80.00- 120.00	100.00
23.719	23.719 (0.974)	109	669365			66.39- 126.39	97.01
29 Chlorobenzene					CAS #: 108-90-7		
24.418	24.418 (1.003)	112	925512	10.3687	10.369	80.00- 120.00	100.00
24.418	24.418 (1.003)	114	305366			2.92- 62.92	32.99
24.397	24.397 (1.002)	77	471232			21.68- 81.68	50.92
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	434062	10.5511	10.551	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	1360201			281.86- 341.86	313.37
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	496141	10.7549	10.755	80.00- 120.00	100.00
24.665	24.665 (1.013)	91	970717			165.84- 225.84	195.65
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	476753	11.1583	11.158	80.00- 120.00	100.00
25.243	25.243 (1.036)	91	970224			174.02- 234.02	203.51
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	850228	9.74934	9.749	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	565678			35.95- 95.95	66.53
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.308 (1.121)	146	807187	10.6516	10.652	80.00- 120.00	100.00
27.305	27.308 (1.121)	148	526707			35.53- 95.53	65.25
27.305	27.308 (1.121)	111	280540			4.70- 64.70	34.76
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.417 (1.126)	146	744010	10.5391	10.539	80.00- 120.00	100.00
27.430	27.417 (1.126)	148	487995			35.55- 95.55	65.59
27.414	27.417 (1.126)	111	250652			3.83- 63.83	33.69
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.901 (1.145)	146	733181	10.7768	10.777	80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)								
27.913	27.901	(1.146)	148	479935			35.05- 95.05	65.46
27.897	27.901	(1.145)	111	264523			6.25- 66.25	36.08
38 Naphthalene						CAS #: 91-20-3		
30.469	30.473	(1.251)	128	24446	0.69203	0.6920	80.00- 120.00	100.00
30.469	30.473	(1.251)	127	3088			0.00- 43.90	12.63

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080317sim.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: ICV
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	94253	8.32
20 1,4-Difluorobenze	411474	246884	576064	428574	4.16
28 Chlorobenzene-d5	338225	202935	473515	337104	-0.33

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.36	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 03aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: db
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
1	Freon 12	10.000	0.000	0.00*	70-130
2	Freon 114	10.000	10.503	105.03	70-130
3	Chloromethane	10.000	9.755	97.55	70-130
4	Vinyl Chloride	10.000	11.294	112.94	70-130
5	Chloroethane	10.000	12.658	126.58	70-130
6	Freon 11	10.000	11.302	113.02	70-130
7	Freon 113	10.000	9.515	95.15	70-130
8	1,1-Dichloroethene	10.000	9.613	96.13	70-130
9	Methyl tert-butyl	10.000	9.869	98.69	70-130
10	trans-1,2-Dichloro	10.000	8.364	83.64	70-130
11	1,1-Dichloroethane	10.000	9.759	97.59	70-130
12	cis-1,2-Dichloroet	10.000	11.294	112.94	70-130
14	Chloroform	10.000	10.182	101.82	70-130
15	1,1,1-Trichloroeth	10.000	10.137	101.37	70-130
16	Carbon Tetrachlori	10.000	12.881	128.81	60-140
17	Benzene	10.000	9.294	92.94	70-130
19	1,2-Dichloroethane	10.000	10.233	102.33	70-130
21	Trichloroethene	10.000	10.242	102.42	70-130
23	Toluene	10.000	9.343	93.43	70-130
24	trans-1,3-Dichloro	10.000	10.850	108.50	70-130
25	1,1,2-Trichloroeth	10.000	10.060	100.60	70-130
26	Tetrachloroethene	10.000	10.498	104.98	70-130
27	1,2-Dibromoethane	10.000	10.277	102.77	70-130
29	Chlorobenzene	10.000	10.369	103.69	70-130
30	Ethyl Benzene	10.000	10.551	105.51	70-130
31	m,p-Xylene	10.000	10.755	107.55	70-130
32	o-Xylene	10.000	11.158	111.58	70-130
34	1,1,2,2-Tetrachlor	10.000	9.749	97.49	70-130
35	1,3-Dichlorobenzen	10.000	10.652	106.52	70-130
36	1,4-Dichlorobenzen	10.000	10.539	105.39	70-130
37	1,2-Dichlorobenzen	10.000	10.777	107.77	70-130
38	Naphthalene	1.000	0.6920	69.20	60-140

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 03aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: db
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.686	93.73	70-130
$ 22 Toluene-d8	5.000	4.636	92.72	70-130
$ 33 4-Bromofluorobenze	5.000	5.095	101.90	70-130

Data File: /chem/msd20.i/03aug17.b/20080317sim.d

Date : 04-AUG-2017 09:10

Client ID: ICV

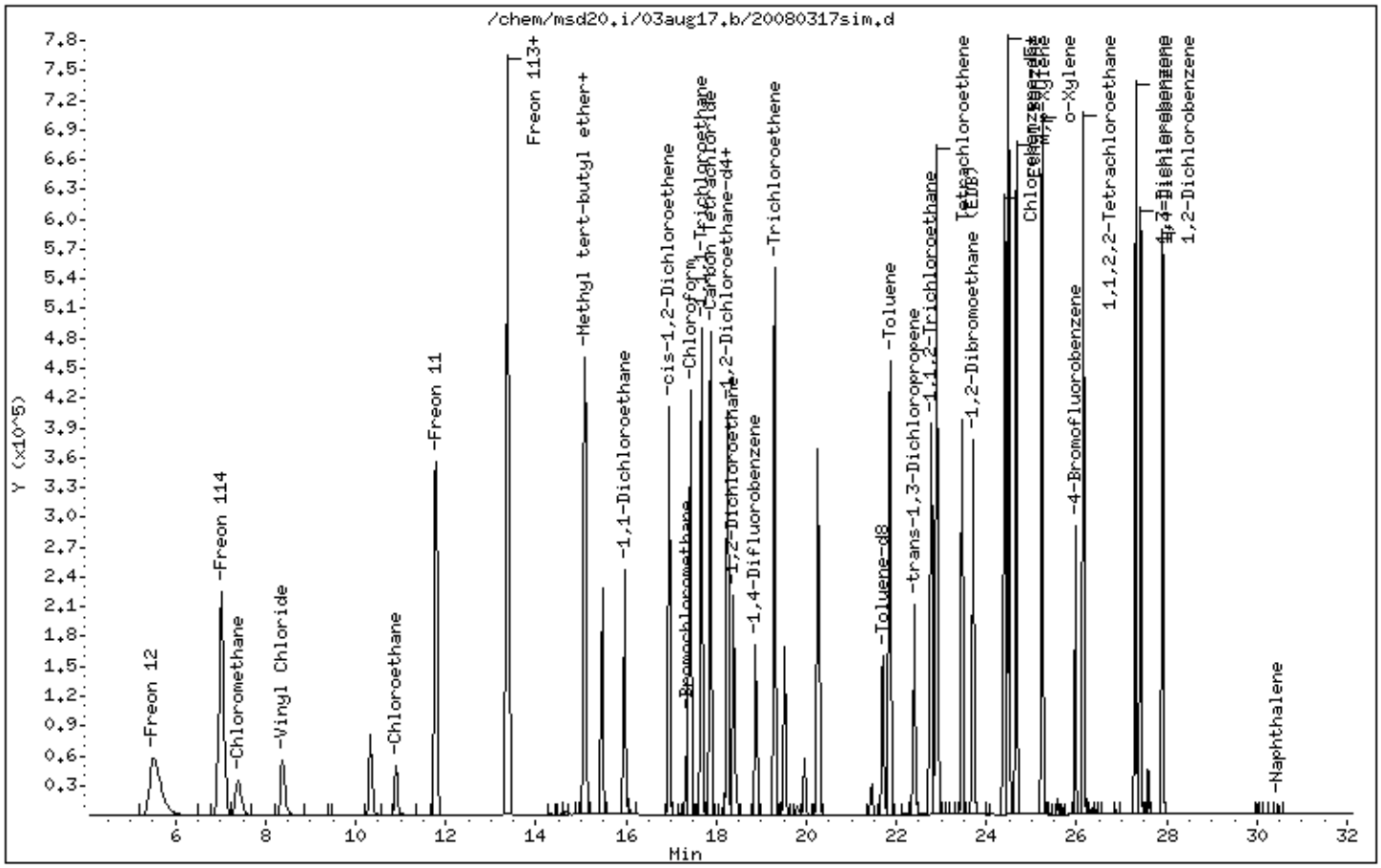
Instrument: msd20.i

Sample Info: 50mL# 2850-247

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080304sim.d
Lab Smp Id: ICAL Client Smp ID: Level 3
Inj Date : 03-AUG-2017 11:42
Operator : db Inst ID: msd20.i
Smp Info : 50mL# 2850-276
Misc Info : 0.01ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 11:42 Cal File: 20080304sim.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level3.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
8 1,1-Dichloroethene						CAS #: 75-35-4		
13.356	13.356 (0.770)	98	248	0.01000	0.01180	80.00- 120.00	100.00	
13.356	13.356 (0.770)	61	535			208.11- 268.11	215.73	
13.356	13.356 (0.770)	96	397			127.31- 187.31	160.08	
10 trans-1,2-Dichloroethene						CAS #: 156-60-5		
15.114	15.114 (0.872)	98	258	0.01000	0.01142	80.00- 120.00	100.00(a)	
15.114	15.114 (0.872)	61	471			166.64- 226.64	182.56	
15.114	15.114 (0.872)	96	502			124.18- 184.18	194.57	
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
16.958	16.958 (0.978)	98	269	0.01000	0.01115	80.00- 120.00	100.00(a)	
16.937	16.937 (0.977)	61	460			148.56- 208.56	171.00	
16.958	16.958 (0.978)	96	483			123.96- 183.96	179.55	
* 13 Bromochloromethane						CAS #: 74-97-5		
17.340	17.340 (1.000)	130	101560	5.00000		80.00- 120.00	100.00	
17.340	17.340 (1.000)	128	79558			48.37- 108.37	78.34	
17.340	17.340 (1.000)	49	111124			82.84- 142.84	109.42	

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	767	0.01000	0.009553	80.00- 120.00	100.00(aM)
17.422	17.422 (1.005)	85	544			36.46- 96.46	70.93
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	1656	0.01000	0.01326	80.00- 120.00	100.00(a)
18.244	18.244 (0.966)	77	757			0.00- 53.56	45.71
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	146135	5.00000	5.142	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	76546			26.67- 86.67	52.38
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	509	0.01000	0.009975	80.00- 120.00	100.00(a)
18.388	18.388 (0.974)	64	178			3.03- 63.03	34.97
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.881	18.881 (1.000)	114	523728	5.00000		80.00- 120.00	100.00
18.881	18.881 (1.000)	88	75694			0.00- 44.04	14.45
21 Trichloroethene					CAS #: 79-01-6		
19.305	19.305 (1.022)	130	662	0.01000	0.01066	80.00- 120.00	100.00(a)
19.305	19.305 (1.022)	95	638			60.20- 120.20	96.37
19.305	19.305 (1.022)	97	413			29.00- 89.00	62.39
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	452820	5.00000	4.909	80.00- 120.00	100.00
21.698	21.698 (1.149)	70	47740			0.00- 40.38	10.54
21.698	21.698 (1.149)	100	289273			33.71- 93.71	63.88
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	670	0.01000	0.01355	80.00- 120.00	100.00(a)
22.760	22.760 (0.934)	99	367			33.48- 93.48	54.78
22.760	22.760 (0.934)	83	519			54.60- 114.60	77.46
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	853	0.01000	0.01109	80.00- 120.00	100.00(a)
22.905	22.905 (0.940)	129	691			35.95- 95.95	81.01
22.905	22.905 (0.940)	131	979			34.23- 94.23	114.77
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.690 (0.973)	107	831	0.01000	0.01045	80.00- 120.00	100.00(a)
23.719	23.719 (0.974)	109	761			66.39- 126.39	91.58
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.356	24.356 (1.000)	117	399103	5.00000		80.00- 120.00	100.00

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
* 28 Chlorobenzene-d5 (continued)								
24.356	24.356	(1.000)	82	194163			17.63- 77.63	48.65
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.980	25.980	(1.067)	174	258024	5.00000	4.768	80.00- 120.00	100.00
25.961	25.961	(1.066)	95	231498			57.01- 117.01	89.72
25.980	25.980	(1.067)	176	254005			68.59- 128.59	98.44
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.151	26.151	(1.074)	83	1247	0.01000	0.01208	80.00- 120.00	100.00(a)
26.151	26.151	(1.074)	85	741			35.95- 95.95	59.42
36 1,4-Dichlorobenzene						CAS #: 106-46-7		
27.430	27.430	(1.126)	146	900	0.01000	0.01077	80.00- 120.00	100.00(a)
27.430	27.430	(1.126)	148	567			35.55- 95.55	63.00
27.414	27.414	(1.126)	111	318			3.83- 63.83	35.33

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080304sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 3
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 0.01ppbv (0.05ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	101560	16.72
20 1,4-Difluorobenze	411474	246884	576064	523728	27.28
28 Chlorobenzene-d5	338225	202935	473515	399103	18.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.36	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080304sim.d

Date : 03-AUG-2017 11:42

Client ID: Level 3

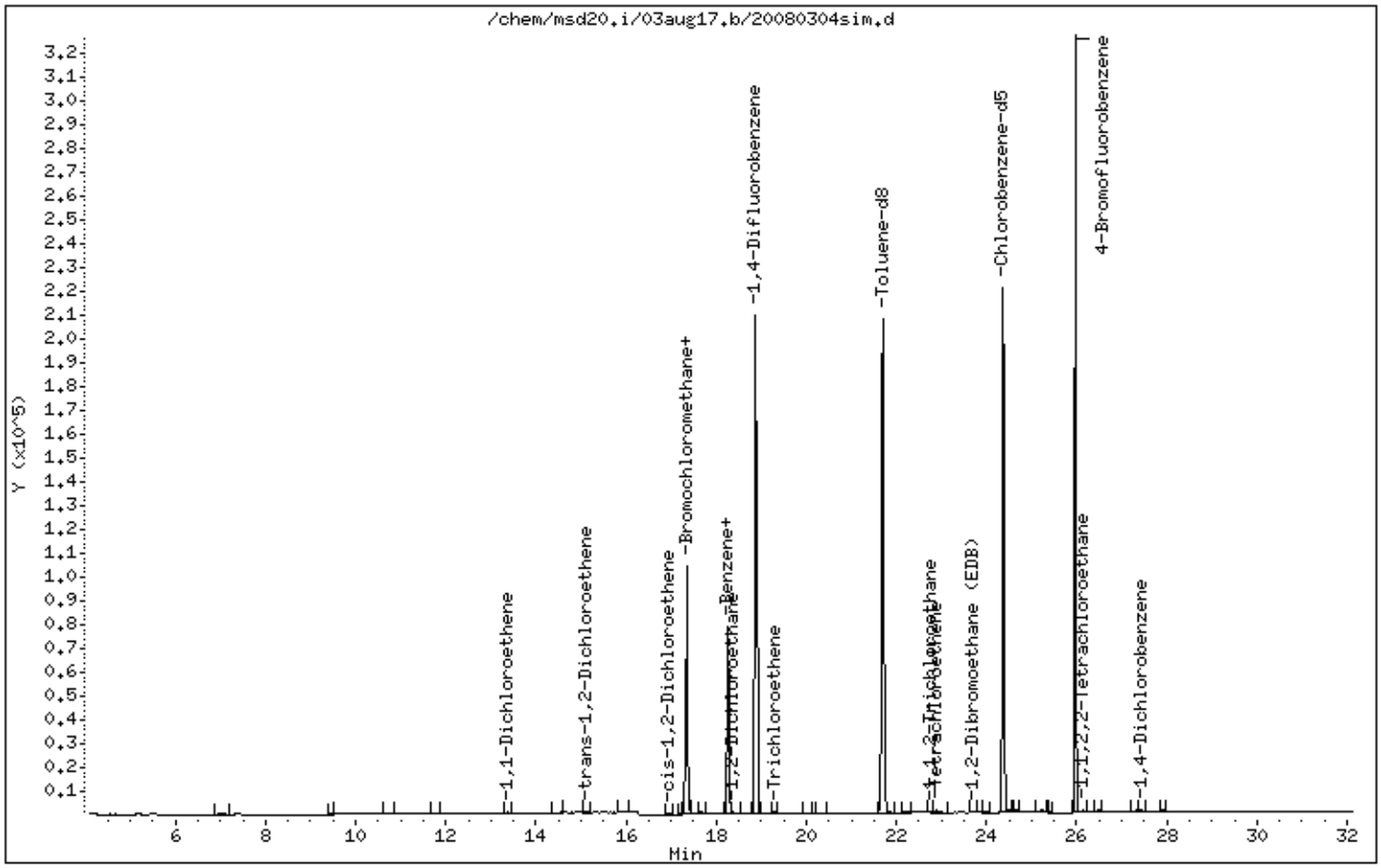
Instrument: msd20.i

Sample Info: 50mL# 2850-276

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080305sim.d
Lab Smp Id: ICAL Client Smp ID: Level 4
Inj Date : 03-AUG-2017 12:22
Operator : db Inst ID: msd20.i
Smp Info : 100mL# 2850-276
Misc Info : 0.02ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 12:22 Cal File: 20080305sim.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level4.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
2 Freon 114					CAS #: 76-14-2		
7.042	7.042 (0.406)	135	1239	0.02000	0.02198	80.00- 120.00	100.00
7.042	7.042 (0.406)	137	404			2.13- 62.13	32.61
4 Vinyl Chloride					CAS #: 75-01-4		
8.383	8.383 (0.483)	62	546	0.02000	0.02121	80.00- 120.00	100.00
8.383	8.383 (0.483)	64	238			1.90- 61.90	43.59
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	1553	0.02000	0.01990	80.00- 120.00	100.00(a)
11.786	11.786 (0.680)	103	1059			35.63- 95.63	68.19
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.384	13.384 (0.772)	98	407	0.02000	0.02060	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	941			208.11- 268.11	231.20
13.384	13.384 (0.772)	96	618			127.31- 187.31	151.84
7 Freon 113					CAS #: 76-13-1		
13.384	13.384 (0.772)	151	1450	0.02000	0.02226	80.00- 120.00	100.00
13.384	13.384 (0.772)	153	969			35.29- 95.29	66.83

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
7 Freon 113 (continued)								
13.384	13.384	(0.772)	101	1608			79.29- 139.29	110.90
9 Methyl tert-butyl ether						CAS #: 1634-04-4		
15.114	15.114	(0.872)	73	1764	0.02000	0.02090	80.00- 120.00	100.00(a)
15.086	15.086	(0.870)	57	364			0.00- 51.54	20.63
15.086	15.086	(0.870)	41	357			0.00- 49.49	20.24
11 1,1-Dichloroethane						CAS #: 75-34-3		
15.965	15.965	(0.921)	63	1075	0.02000	0.02077	80.00- 120.00	100.00
15.965	15.965	(0.921)	65	360			2.52- 62.52	33.49
10 trans-1,2-Dichloroethene						CAS #: 156-60-5		
15.114	15.114	(0.872)	98	453	0.02000	0.02134	80.00- 120.00	100.00(a)
15.114	15.114	(0.872)	61	843			166.64- 226.64	186.09
15.114	15.114	(0.872)	96	680			124.18- 184.18	150.11
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
16.958	16.958	(0.978)	98	491	0.02000	0.02165	80.00- 120.00	100.00
16.958	16.958	(0.978)	61	815			148.56- 208.56	165.99
16.958	16.958	(0.978)	96	736			123.96- 183.96	149.90
* 13 Bromochloromethane						CAS #: 74-97-5		
17.340	17.340	(1.000)	130	95461	5.00000		80.00- 120.00	100.00
17.340	17.340	(1.000)	128	74010			48.37- 108.37	77.53
17.340	17.340	(1.000)	49	104293			82.84- 142.84	109.25
14 Chloroform						CAS #: 67-66-3		
17.422	17.422	(1.005)	83	1489	0.02000	0.01973	80.00- 120.00	100.00(aM)
17.422	17.422	(1.005)	85	1045			36.46- 96.46	70.18
15 1,1,1-Trichloroethane						CAS #: 71-55-6		
17.669	17.669	(1.019)	97	1510	0.02000	0.02003	80.00- 120.00	100.00
17.669	17.669	(1.019)	99	982			35.34- 95.34	65.03
16 Carbon Tetrachloride						CAS #: 56-23-5		
17.875	17.875	(1.031)	119	578	0.02000	0.009982	80.00- 120.00	100.00(a)
17.875	17.875	(1.031)	117	612			71.93- 131.93	105.88
17 Benzene						CAS #: 71-43-2		
18.265	18.265	(0.967)	78	2610	0.02000	0.02429	80.00- 120.00	100.00(a)
18.244	18.244	(0.966)	77	978			0.00- 53.56	37.47
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
18.265	18.265	(1.053)	65	142469	5.00000	5.333	80.00- 120.00	100.00
18.265	18.265	(1.053)	67	74834			26.67- 86.67	52.53

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
19 1,2-Dichloroethane						CAS #: 107-06-2	
18.388	18.388 (0.974)	62	966	0.02000	0.02200	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	319			3.03- 63.03	33.02
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
18.880	18.880 (1.000)	114	450750	5.00000		80.00- 120.00	100.00
18.880	18.880 (1.000)	88	63393			0.00- 44.04	14.06
21 Trichloroethene						CAS #: 79-01-6	
19.304	19.304 (1.022)	130	1052	0.02000	0.01968	80.00- 120.00	100.00(a)
19.282	19.282 (1.021)	95	949			60.20- 120.20	90.21
19.304	19.304 (1.022)	97	661			29.00- 89.00	62.83
$ 22 Toluene-d8						CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	459139	5.00000	5.784	80.00- 120.00	100.00
21.698	21.698 (1.149)	70	48608			0.00- 40.38	10.59
21.698	21.698 (1.149)	100	292399			33.71- 93.71	63.68
23 Toluene						CAS #: 108-88-3	
21.854	21.854 (1.157)	91	2963	0.02000	0.02471	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	1685			27.62- 87.62	56.87
24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
22.382	22.382 (0.918)	75	998	0.02000	0.01675	80.00- 120.00	100.00(aM)
22.411	22.411 (0.919)	77	296			2.20- 62.20	29.66
25 1,1,2-Trichloroethane						CAS #: 79-00-5	
22.760	22.760 (0.934)	97	796	0.02000	0.01608	80.00- 120.00	100.00(a)
22.760	22.760 (0.934)	99	528			33.48- 93.48	66.33
22.760	22.760 (0.934)	83	712			54.60- 114.60	89.45
26 Tetrachloroethene						CAS #: 127-18-4	
22.905	22.905 (0.940)	166	1495	0.02000	0.01941	80.00- 120.00	100.00(a)
22.905	22.905 (0.940)	129	1057			35.95- 95.95	70.70
22.905	22.905 (0.940)	131	1500			34.23- 94.23	100.33
27 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
23.689	23.689 (0.972)	107	1606	0.02000	0.02017	80.00- 120.00	100.00
23.719	23.719 (0.973)	109	1504			66.39- 126.39	93.65
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
24.376	24.376 (1.000)	117	399738	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	195793			17.63- 77.63	48.98
29 Chlorobenzene						CAS #: 108-90-7	
24.418	24.418 (1.002)	112	2189	0.02000	0.02068	80.00- 120.00	100.00

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
29 Chlorobenzene (continued)								
24.418	24.418	(1.002)	114	886			2.92- 62.92	40.48
24.356	24.356	(0.999)	77	5103			21.68- 81.68	233.12
30 Ethyl Benzene						CAS #: 100-41-4		
24.500	24.500	(1.005)	106	1007	0.02000	0.02064	80.00- 120.00	100.00
24.480	24.480	(1.004)	91	3338			281.86- 341.86	331.48
31 m,p-Xylene						CAS #: 108-38-3		
24.665	24.665	(1.012)	106	1160	0.02000	0.02120	80.00- 120.00	100.00(a)
24.665	24.665	(1.012)	91	2469			165.84- 225.84	212.84
32 o-Xylene						CAS #: 95-47-6		
25.243	25.243	(1.036)	106	992	0.02000	0.01958	80.00- 120.00	100.00(a)
25.243	25.243	(1.036)	91	4441			174.02- 234.02	447.68
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.980	25.980	(1.066)	174	275454	5.00000	5.082	80.00- 120.00	100.00
25.961	25.961	(1.065)	95	248880			57.01- 117.01	90.35
25.980	25.980	(1.066)	176	271215			68.59- 128.59	98.46
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.151	26.151	(1.073)	83	2370	0.02000	0.02292	80.00- 120.00	100.00
26.151	26.151	(1.073)	85	1432			35.95- 95.95	60.42
35 1,3-Dichlorobenzene						CAS #: 541-73-1		
27.305	27.305	(1.120)	146	1890	0.02000	0.02103	80.00- 120.00	100.00
27.305	27.305	(1.120)	148	1264			35.53- 95.53	66.88
27.305	27.305	(1.120)	111	715			4.70- 64.70	37.83
36 1,4-Dichlorobenzene						CAS #: 106-46-7		
27.414	27.414	(1.125)	146	1672	0.02000	0.01997	80.00- 120.00	100.00(a)
27.430	27.430	(1.125)	148	1072			35.55- 95.55	64.11
27.414	27.414	(1.125)	111	616			3.83- 63.83	36.84
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.897	27.897	(1.144)	146	1693	0.02000	0.02098	80.00- 120.00	100.00
27.913	27.913	(1.145)	148	1090			35.05- 95.05	64.38
27.897	27.897	(1.144)	111	672			6.25- 66.25	39.69

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080305sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 4
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 0.02ppbv (0.05ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	95461	9.71
20 1,4-Difluorobenze	411474	246884	576064	450750	9.55
28 Chlorobenzene-d5	338225	202935	473515	399738	18.19

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.38	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080305sim.d

Date : 03-AUG-2017 12:22

Client ID: Level 4

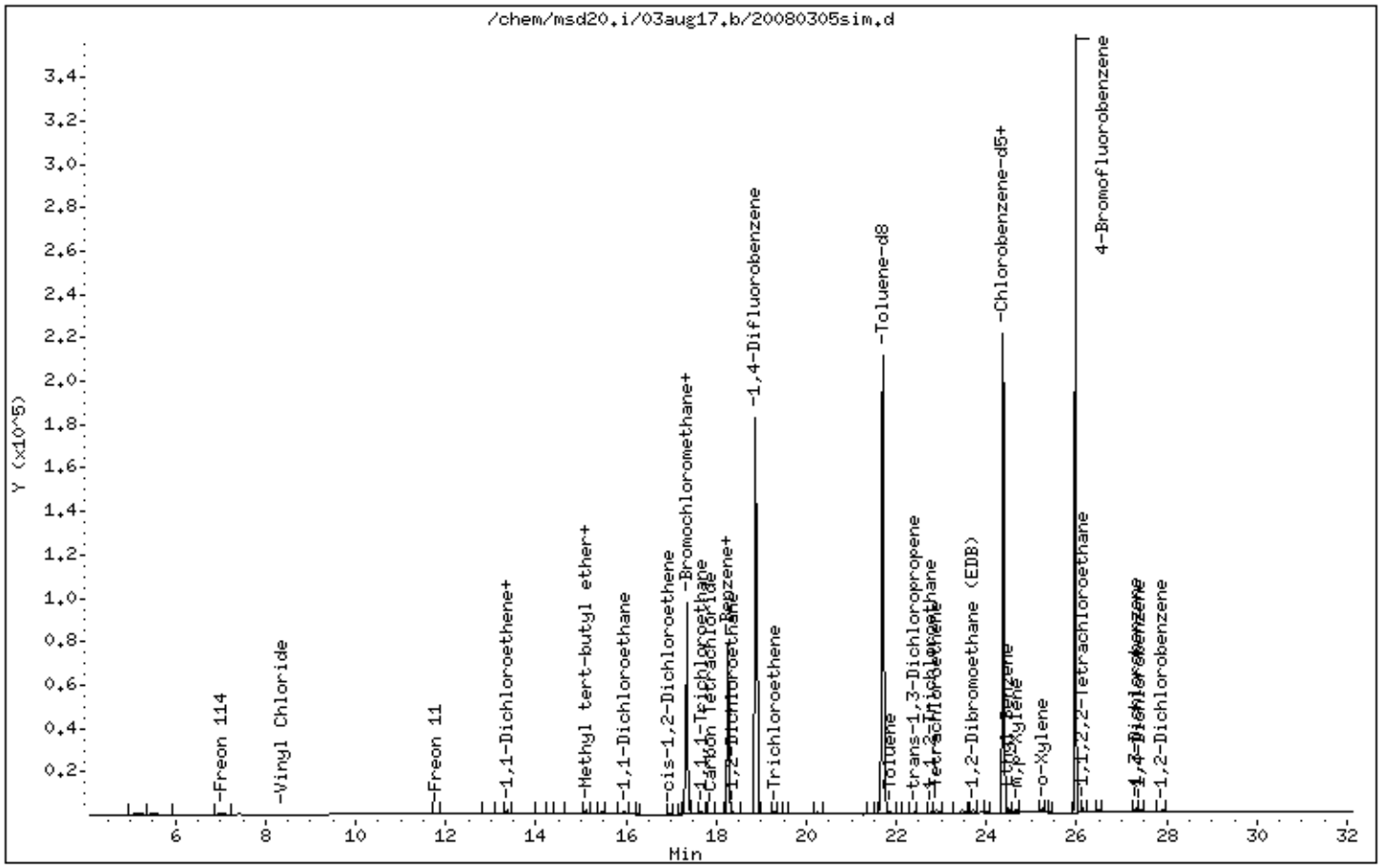
Instrument: msd20.i

Sample Info: 100mL# 2850-276

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080306sim.d
Lab Smp Id: ICAL Client Smp ID: Level 5
Inj Date : 03-AUG-2017 13:06
Operator : db Inst ID: msd20.i
Smp Info : 250mL# 2850-276
Misc Info : 0.05ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 13:06 Cal File: 20080306sim.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 13 Bromochloromethane						CAS #: 74-97-5		
17.340	17.340 (1.000)	130	112568	5.00000		80.00- 120.00		100.00
17.340	17.340 (1.000)	128	88548			48.37- 108.37		78.66
17.340	17.340 (1.000)	49	126534			82.84- 142.84		112.41
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
18.880	18.880 (1.000)	114	530625	5.00000		80.00- 120.00		100.00
18.880	18.880 (1.000)	88	78234			0.00- 44.04		14.74
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
24.376	24.376 (1.000)	117	422562	5.00000		80.00- 120.00		100.00
24.356	24.356 (1.000)	82	205165			17.63- 77.63		48.55
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	164740	5.00000	5.230	80.00- 120.00		100.00
18.265	18.265 (1.053)	67	86334			26.67- 86.67		52.41
$ 22 Toluene-d8						CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	465361	5.00000	4.980	80.00- 120.00		100.00
21.698	21.698 (1.149)	70	49383			0.00- 40.38		10.61

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	296733			33.71- 93.71	63.76
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.066)	174	265421	5.00000	4.632	80.00- 120.00	100.00
25.961	25.961 (1.065)	95	239495			57.01- 117.01	90.23
25.980	25.980 (1.066)	176	262248			68.59- 128.59	98.80
2 Freon 114					CAS #: 76-14-2		
7.042	7.042 (0.406)	135	3162	0.05000	0.04757	80.00- 120.00	100.00
7.042	7.042 (0.406)	137	1156			2.13- 62.13	36.56
3 Chloromethane					CAS #: 74-87-3		
7.404	7.404 (0.427)	50	1439	0.05000	0.04988	80.00- 120.00	100.00(aM)
7.379	7.379 (0.426)	52	439			2.25- 62.25	30.51
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	1612	0.05000	0.05311	80.00- 120.00	100.00
8.383	8.383 (0.483)	64	570			1.90- 61.90	35.36
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	771	0.05000	0.05405	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	281			2.24- 62.24	36.45
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	4317	0.05000	0.04690	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	2856			35.63- 95.63	66.16
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	4100	0.05000	0.05336	80.00- 120.00	100.00
13.384	13.384 (0.772)	153	2686			35.29- 95.29	65.51
13.356	13.356 (0.770)	101	4510			79.29- 139.29	110.00
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	1097	0.05000	0.04709	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	2622			208.11- 268.11	239.02
13.356	13.356 (0.770)	96	1732			127.31- 187.31	157.89
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.086 (0.870)	73	4419	0.05000	0.04440	80.00- 120.00	100.00(a)
15.086	15.086 (0.870)	57	838			0.00- 51.54	18.96
15.086	15.086 (0.870)	41	802			0.00- 49.49	18.15
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	1144	0.05000	0.04569	80.00- 120.00	100.00(a)
15.114	15.114 (0.872)	61	2261			166.64- 226.64	197.64

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene (continued)							
15.114	15.114 (0.872)	96	1754			124.18- 184.18	153.32
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	2823	0.05000	0.04625	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	891			2.52- 62.52	31.56
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	1279	0.05000	0.04782	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	2448			148.56- 208.56	191.40
16.958	16.958 (0.978)	96	2054			123.96- 183.96	160.59
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	4532	0.05000	0.05093	80.00- 120.00	100.00(M)
17.422	17.422 (1.005)	85	2936			36.46- 96.46	64.78
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	4465	0.05000	0.05024	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	2874			35.34- 95.34	64.37
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	1857	0.05000	0.02720	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	1862			71.93- 131.93	100.27
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	6289	0.05000	0.04971	80.00- 120.00	100.00(a)
18.244	18.244 (0.966)	77	2323			0.00- 53.56	36.94
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	2578	0.05000	0.04986	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	833			3.03- 63.03	32.31
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	3048	0.05000	0.04843	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	2813			60.20- 120.20	92.29
19.304	19.304 (1.022)	97	1825			29.00- 89.00	59.88
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	6994	0.05000	0.04954	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	4026			27.62- 87.62	57.56
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.918)	75	3168	0.05000	0.05031	80.00- 120.00	100.00(M)
22.382	22.382 (0.918)	77	1019			2.20- 62.20	32.17
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	2708	0.05000	0.05174	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane (continued)							
22.760	22.760 (0.934)	99	1676			33.48- 93.48	61.89
22.760	22.760 (0.934)	83	2268			54.60- 114.60	83.75
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	4165	0.05000	0.05116	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	3157			35.95- 95.95	75.80
22.905	22.905 (0.940)	131	4464			34.23- 94.23	107.18
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.689	23.689 (0.972)	107	3943	0.05000	0.04685	80.00- 120.00	100.00
23.719	23.719 (0.973)	109	3718			66.39- 126.39	94.29
29 Chlorobenzene					CAS #: 108-90-7		
24.418	24.418 (1.002)	112	5539	0.05000	0.04950	80.00- 120.00	100.00
24.418	24.418 (1.002)	114	1942			2.92- 62.92	35.06
24.480	24.480 (1.004)	77	769			21.68- 81.68	13.88
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.004)	106	2554	0.05000	0.04953	80.00- 120.00	100.00
24.480	24.480 (1.004)	91	8841			281.86- 341.86	346.16
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.012)	106	2730	0.05000	0.04721	80.00- 120.00	100.00
24.665	24.665 (1.012)	91	5764			165.84- 225.84	211.14
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	2387	0.05000	0.04457	80.00- 120.00	100.00(M)
25.243	25.243 (1.036)	91	5090			174.02- 234.02	213.24
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.073)	83	5176	0.05000	0.04735	80.00- 120.00	100.00
26.151	26.151 (1.073)	85	3224			35.95- 95.95	62.29
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.120)	146	4277	0.05000	0.04502	80.00- 120.00	100.00
27.305	27.305 (1.120)	148	2875			35.53- 95.53	67.22
27.305	27.305 (1.120)	111	1511			4.70- 64.70	35.33
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.430	27.430 (1.125)	146	3914	0.05000	0.04423	80.00- 120.00	100.00
27.430	27.430 (1.125)	148	2558			35.55- 95.55	65.36
27.414	27.414 (1.125)	111	1320			3.83- 63.83	33.73
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.913	27.913 (1.145)	146	3754	0.05000	0.04402	80.00- 120.00	100.00

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)							
27.913	27.913 (1.145)	148	2557			35.05- 95.05	68.11
27.897	27.897 (1.144)	111	1429			6.25- 66.25	38.07

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080306sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 5
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 0.05ppbv (0.05ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	112568	29.37
20 1,4-Difluorobenze	411474	246884	576064	530625	28.96
28 Chlorobenzene-d5	338225	202935	473515	422562	24.94

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.38	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080306sim.d

Date : 03-AUG-2017 13:06

Client ID: Level 5

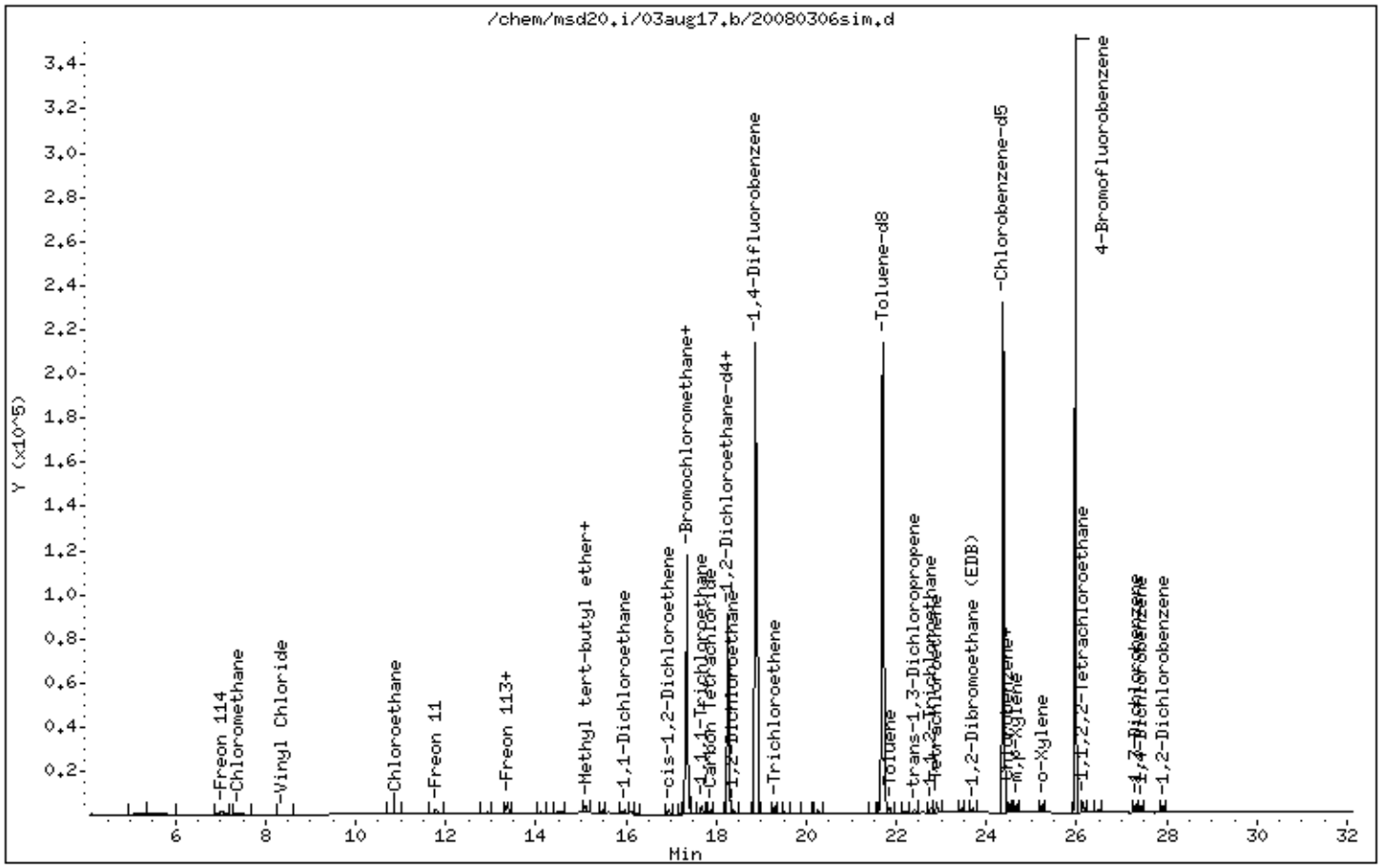
Instrument: msd20.i

Sample Info: 250mL# 2850-276

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080307sim.d
Lab Smp Id: ICAL Client Smp ID: Level 6
Inj Date : 03-AUG-2017 13:44
Operator : db Inst ID: msd20.i
Smp Info : 25mL# 2850-277
Misc Info : 0.1ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 13:44 Cal File: 20080307sim.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	==========	=====
* 13 Bromochloromethane						CAS #: 74-97-5		
17.340	17.340 (1.000)	130	111270	5.00000			80.00- 120.00	100.00
17.340	17.340 (1.000)	128	86003				48.37- 108.37	77.29
17.340	17.340 (1.000)	49	135292				82.84- 142.84	121.59
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
18.880	18.880 (1.000)	114	545944	5.00000			80.00- 120.00	100.00
18.880	18.880 (1.000)	88	80510				0.00- 44.04	14.75
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
24.356	24.356 (1.000)	117	443899	5.00000			80.00- 120.00	100.00
24.356	24.356 (1.000)	82	224714				17.63- 77.63	50.62
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	166085	5.00000	5.334		80.00- 120.00	100.00
18.265	18.265 (1.053)	67	88233				26.67- 86.67	53.13
$ 22 Toluene-d8						CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	450243	5.00000	4.683		80.00- 120.00	100.00
21.698	21.698 (1.149)	70	47719				0.00- 40.38	10.60

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	284133			33.71- 93.71	63.11
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	291409	5.00000	4.842	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	271421			57.01- 117.01	93.14
25.980	25.980 (1.067)	176	287037			68.59- 128.59	98.50
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	6748	0.10000	0.1027	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	2196			2.13- 62.13	32.54
3 Chloromethane					CAS #: 74-87-3		
7.404	7.404 (0.427)	50	3527	0.10000	0.1237	80.00- 120.00	100.00(M)
7.404	7.404 (0.427)	52	1109			2.25- 62.25	31.44
4 Vinyl Chloride					CAS #: 75-01-4		
8.383	8.383 (0.483)	62	2991	0.10000	0.09970	80.00- 120.00	100.00
8.383	8.383 (0.483)	64	1002			1.90- 61.90	33.50
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	1290	0.10000	0.09148	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	449			2.24- 62.24	34.81
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	9419	0.10000	0.1035	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	5988			35.63- 95.63	63.57
7 Freon 113					CAS #: 76-13-1		
13.384	13.384 (0.772)	151	7721	0.10000	0.1017	80.00- 120.00	100.00
13.384	13.384 (0.772)	153	5104			35.29- 95.29	66.11
13.384	13.384 (0.772)	101	8693			79.29- 139.29	112.59
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.384	13.384 (0.772)	98	2379	0.10000	0.1033	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	5758			208.11- 268.11	242.03
13.384	13.384 (0.772)	96	3897			127.31- 187.31	163.81
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.086 (0.870)	73	10947	0.10000	0.1113	80.00- 120.00	100.00
15.086	15.086 (0.870)	57	2273			0.00- 51.54	20.76
15.086	15.086 (0.870)	41	2106			0.00- 49.49	19.24
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	2673	0.10000	0.1080	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	5526			166.64- 226.64	206.73

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene (continued)							
15.114	15.114 (0.872)	96	4194			124.18- 184.18	156.90
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	6732	0.10000	0.1116	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	2139			2.52- 62.52	31.77
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	2836	0.10000	0.1073	80.00- 120.00	100.00
16.958	16.958 (0.978)	61	5269			148.56- 208.56	185.79
16.958	16.958 (0.978)	96	4457			123.96- 183.96	157.16
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	10474	0.10000	0.1191	80.00- 120.00	100.00(M)
17.422	17.422 (1.005)	85	6495			36.46- 96.46	62.01
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	9802	0.10000	0.1116	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	6255			35.34- 95.34	63.81
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	7075	0.10000	0.1048	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	7319			71.93- 131.93	103.45
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	13360	0.10000	0.1026	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	3574			0.00- 53.56	26.75
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	5663	0.10000	0.1065	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	1839			3.03- 63.03	32.47
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	6926	0.10000	0.1070	80.00- 120.00	100.00
19.304	19.304 (1.022)	95	6404			60.20- 120.20	92.46
19.304	19.304 (1.022)	97	4220			29.00- 89.00	60.93
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	15087	0.10000	0.1039	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	8719			27.62- 87.62	57.79
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.919)	75	7273	0.10000	0.1099	80.00- 120.00	100.00
22.382	22.382 (0.919)	77	2633			2.20- 62.20	36.20
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	5637	0.10000	0.1025	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane (continued)							
22.760	22.760 (0.934)	99	3506			33.48- 93.48	62.20
22.760	22.760 (0.934)	83	4886			54.60- 114.60	86.68
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	8915	0.10000	0.1042	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	6019			35.95- 95.95	67.52
22.905	22.905 (0.940)	131	6038			34.23- 94.23	67.73
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.689	23.689 (0.973)	107	9999	0.10000	0.1131	80.00- 120.00	100.00
23.719	23.719 (0.974)	109	9448			66.39- 126.39	94.49
29 Chlorobenzene					CAS #: 108-90-7		
24.418	24.418 (1.003)	112	13298	0.10000	0.1131	80.00- 120.00	100.00
24.418	24.418 (1.003)	114	4455			2.92- 62.92	33.50
24.397	24.397 (1.002)	77	11603			21.68- 81.68	87.25
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	5955	0.10000	0.1099	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	19802			281.86- 341.86	332.53
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	6740	0.10000	0.1110	80.00- 120.00	100.00
24.665	24.665 (1.013)	91	13925			165.84- 225.84	206.60
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	6226	0.10000	0.1107	80.00- 120.00	100.00(M)
25.243	25.243 (1.036)	91	13227			174.02- 234.02	212.45
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	12683	0.10000	0.1104	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	8225			35.95- 95.95	64.85
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	10788	0.10000	0.1081	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	6970			35.53- 95.53	64.61
27.305	27.305 (1.121)	111	3923			4.70- 64.70	36.36
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	9844	0.10000	0.1059	80.00- 120.00	100.00
27.430	27.430 (1.126)	148	6362			35.55- 95.55	64.63
27.414	27.414 (1.126)	111	3422			3.83- 63.83	34.76
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	9708	0.10000	0.1084	80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)								
27.913	27.913	(1.146)	148	6142			35.05- 95.05	63.27
27.897	27.897	(1.145)	111	3635			6.25- 66.25	37.44

QC Flag Legend

M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080307sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 6
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 0.1ppbv (1.0ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	111270	27.88
20 1,4-Difluorobenze	411474	246884	576064	545944	32.68
28 Chlorobenzene-d5	338225	202935	473515	443899	31.24

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.36	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080307sim.d

Date : 03-AUG-2017 13:44

Client ID: Level 6

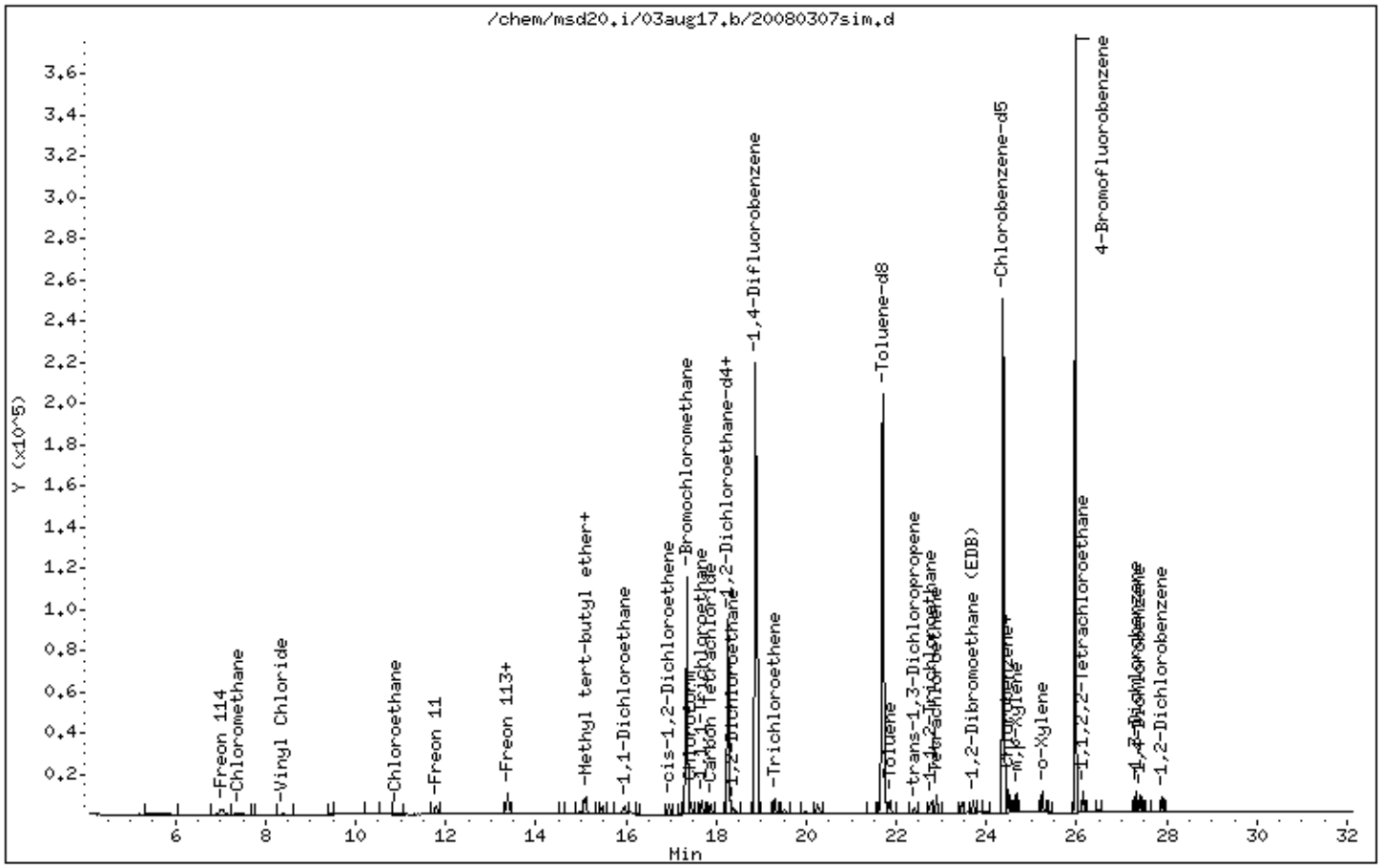
Instrument: msd20.i

Sample Info: 25mL# 2850-277

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080308sim.d
Lab Smp Id: ICAL Client Smp ID: Level 7
Inj Date : 03-AUG-2017 14:23
Operator : db Inst ID: msd20.i
Smp Info : 125mL# 2850-277
Misc Info : 0.5ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 14:23 Cal File: 20080308sim.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.340	17.340 (1.000)	130	105051	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	83813			48.37- 108.37	79.78
17.340	17.340 (1.000)	49	122141			82.84- 142.84	116.27
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.880	18.880 (1.000)	114	475502	5.00000		80.00- 120.00	100.00
18.880	18.880 (1.000)	88	73514			0.00- 44.04	15.46
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.356	24.356 (1.000)	117	380587	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	182865			17.63- 77.63	48.05
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	143798	5.00000	4.892	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	74958			26.67- 86.67	52.13
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	417259	5.00000	4.983	80.00- 120.00	100.00
21.698	21.698 (1.149)	70	44097			0.00- 40.38	10.57

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	266247			33.71- 93.71	63.81
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	265015	5.00000	5.135	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	232445			57.01- 117.01	87.71
25.980	25.980 (1.067)	176	263873			68.59- 128.59	99.57
2 Freon 114					CAS #: 76-14-2		
7.042	7.042 (0.406)	135	29542	0.50000	0.4762	80.00- 120.00	100.00
7.042	7.042 (0.406)	137	9511			2.13- 62.13	32.19
3 Chloromethane					CAS #: 74-87-3		
7.404	7.404 (0.427)	50	13730	0.50000	0.5100	80.00- 120.00	100.00
7.404	7.404 (0.427)	52	4607			2.25- 62.25	33.55
4 Vinyl Chloride					CAS #: 75-01-4		
8.383	8.383 (0.483)	62	12487	0.50000	0.4408	80.00- 120.00	100.00
8.383	8.383 (0.483)	64	4170			1.90- 61.90	33.39
5 Chloroethane					CAS #: 75-00-3		
10.918	10.918 (0.630)	64	5449	0.50000	0.4093	80.00- 120.00	100.00
10.918	10.918 (0.630)	66	1734			2.24- 62.24	31.82
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	39333	0.50000	0.4579	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	25172			35.63- 95.63	64.00
7 Freon 113					CAS #: 76-13-1		
13.384	13.384 (0.772)	151	33039	0.50000	0.4608	80.00- 120.00	100.00
13.384	13.384 (0.772)	153	21185			35.29- 95.29	64.12
13.384	13.384 (0.772)	101	36618			79.29- 139.29	110.83
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.384	13.384 (0.772)	98	10122	0.50000	0.4656	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	24095			208.11- 268.11	238.05
13.384	13.384 (0.772)	96	15926			127.31- 187.31	157.34
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.086 (0.870)	73	43105	0.50000	0.4641	80.00- 120.00	100.00
15.086	15.086 (0.870)	57	8764			0.00- 51.54	20.33
15.086	15.086 (0.870)	41	8189			0.00- 49.49	19.00
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	10375	0.50000	0.4440	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	20576			166.64- 226.64	198.32

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene (continued)							
15.114	15.114 (0.872)	96	16458			124.18- 184.18	158.63
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	26343	0.50000	0.4624	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	8418			2.52- 62.52	31.96
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	11668	0.50000	0.4674	80.00- 120.00	100.00
16.958	16.958 (0.978)	61	21531			148.56- 208.56	184.53
16.958	16.958 (0.978)	96	18011			123.96- 183.96	154.36
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	41858	0.50000	0.5040	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	26996			36.46- 96.46	64.49
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	42583	0.50000	0.5134	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	27321			35.34- 95.34	64.16
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	34859	0.50000	0.5471	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	35170			71.93- 131.93	100.89
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	51127	0.50000	0.4510	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	12361			0.00- 53.56	24.18
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	22582	0.50000	0.4874	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	7308			3.03- 63.03	32.36
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	27577	0.50000	0.4890	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	25937			60.20- 120.20	94.05
19.304	19.304 (1.022)	97	16900			29.00- 89.00	61.28
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	60251	0.50000	0.4763	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	34437			27.62- 87.62	57.16
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.919)	75	29612	0.50000	0.5221	80.00- 120.00	100.00
22.382	22.382 (0.919)	77	9988			2.20- 62.20	33.73
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	22872	0.50000	0.4852	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane (continued)							
22.760	22.760 (0.934)	99	14125			33.48- 93.48	61.76
22.760	22.760 (0.934)	83	19960			54.60- 114.60	87.27
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	36920	0.50000	0.5035	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	24943			35.95- 95.95	67.56
22.905	22.905 (0.940)	131	25009			34.23- 94.23	67.74
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.689	23.689 (0.973)	107	37377	0.50000	0.4931	80.00- 120.00	100.00
23.719	23.719 (0.974)	109	35157			66.39- 126.39	94.06
29 Chlorobenzene					CAS #: 108-90-7		
24.397	24.397 (1.002)	112	48167	0.50000	0.4780	80.00- 120.00	100.00
24.418	24.418 (1.003)	114	15645			2.92- 62.92	32.48
24.397	24.397 (1.002)	77	28532			21.68- 81.68	59.24
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	22830	0.50000	0.4915	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	72966			281.86- 341.86	319.61
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	24642	0.50000	0.4731	80.00- 120.00	100.00
24.665	24.665 (1.013)	91	50862			165.84- 225.84	206.40
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	23520	0.50000	0.4876	80.00- 120.00	100.00
25.243	25.243 (1.036)	91	52015			174.02- 234.02	221.15
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	44845	0.50000	0.4555	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	29472			35.95- 95.95	65.72
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	43676	0.50000	0.5105	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	27926			35.53- 95.53	63.94
27.305	27.305 (1.121)	111	15369			4.70- 64.70	35.19
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	39389	0.50000	0.4942	80.00- 120.00	100.00
27.430	27.430 (1.126)	148	25295			35.55- 95.55	64.22
27.414	27.414 (1.126)	111	13421			3.83- 63.83	34.07
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	37795	0.50000	0.4921	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)							
27.913	27.913 (1.146)	148	24159			35.05- 95.05	63.92
27.897	27.897 (1.145)	111	13567			6.25- 66.25	35.90
38 Naphthalene					CAS #: 91-20-3		
30.469	30.469 (1.251)	128	1970	0.05000	0.04939	80.00- 120.00	100.00(a)
30.485	30.485 (1.252)	127	342			0.00- 43.90	17.36

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080308sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 7
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 0.5ppbv (1.0ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	105051	20.73
20 1,4-Difluorobenze	411474	246884	576064	475502	15.56
28 Chlorobenzene-d5	338225	202935	473515	380587	12.52

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.36	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080308sim.d

Date : 03-AUG-2017 14:23

Client ID: Level 7

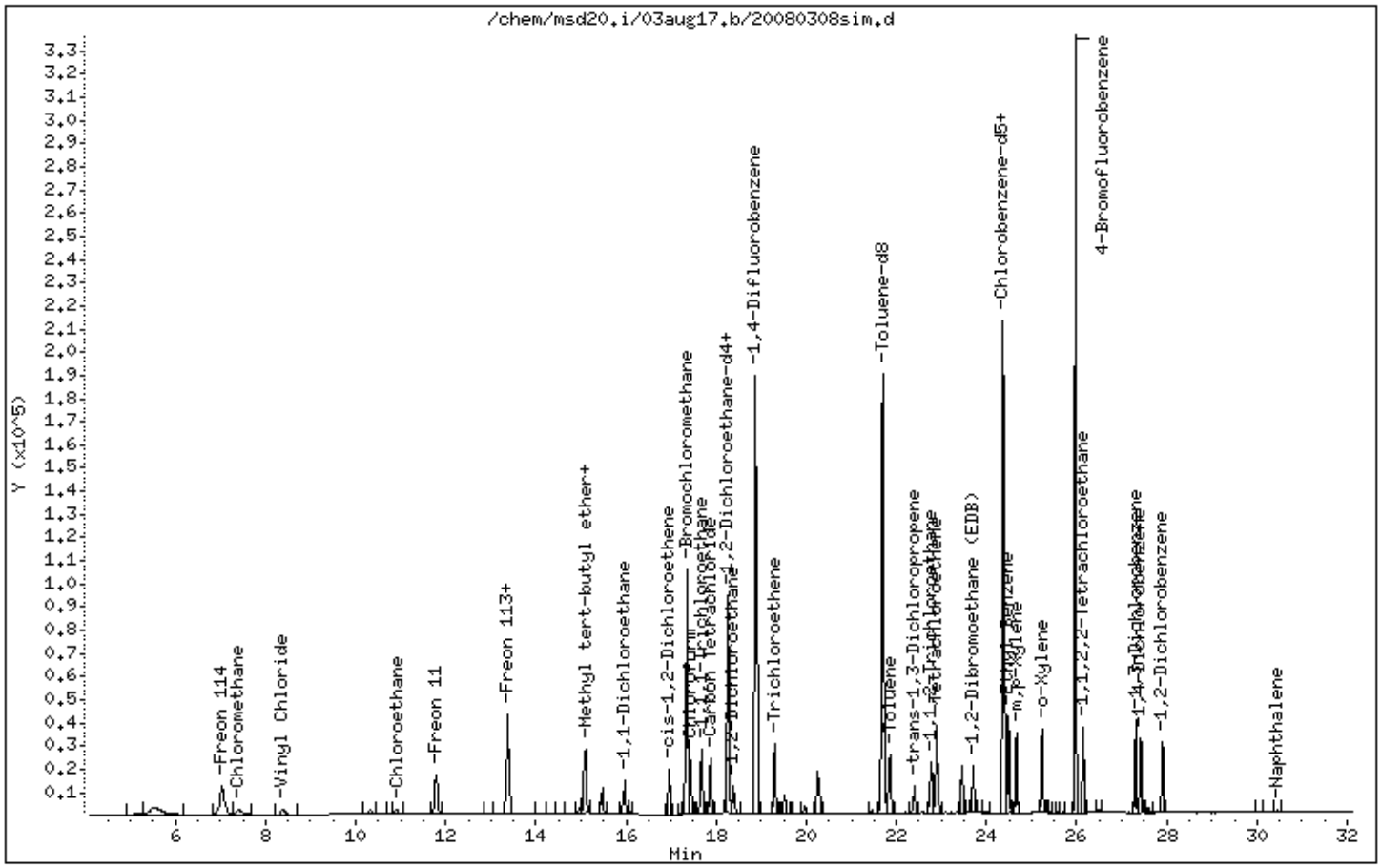
Instrument: msd20.i

Sample Info: 125mL# 2850-277

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080309sim.d
Lab Smp Id: ICAL Client Smp ID: Level 8
Inj Date : 03-AUG-2017 15:05
Operator : db Inst ID: msd20.i
Smp Info : 250mL# 2850-277
Misc Info : 1.0ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 15:05 Cal File: 20080309sim.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.340	17.340 (1.000)	130	101114	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	79396			48.37- 108.37	78.52
17.340	17.340 (1.000)	49	119976			82.84- 142.84	118.65
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.881	18.881 (1.000)	114	448992	5.00000		80.00- 120.00	100.00
18.881	18.881 (1.000)	88	63436			0.00- 44.04	14.13
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.356	24.356 (1.000)	117	373968	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	179839			17.63- 77.63	48.09
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	139347	5.00000	4.925	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	73483			26.67- 86.67	52.73
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	392429	5.00000	4.963	80.00- 120.00	100.00
21.698	21.698 (1.149)	70	40756			0.00- 40.38	10.39

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	250170			33.71- 93.71	63.75
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	263956	5.00000	5.205	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	238709			57.01- 117.01	90.44
25.980	25.980 (1.067)	176	259825			68.59- 128.59	98.43
2 Freon 114					CAS #: 76-14-2		
7.042	7.042 (0.406)	135	58117	1.00000	0.9734	80.00- 120.00	100.00
7.042	7.042 (0.406)	137	18776			2.13- 62.13	32.31
3 Chloromethane					CAS #: 74-87-3		
7.428	7.428 (0.428)	50	24735	1.00000	0.9546	80.00- 120.00	100.00
7.428	7.428 (0.428)	52	9338			2.25- 62.25	37.75
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	24379	1.00000	0.8942	80.00- 120.00	100.00
8.383	8.383 (0.483)	64	7888			1.90- 61.90	32.36
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	11143	1.00000	0.8696	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	3615			2.24- 62.24	32.44
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	75634	1.00000	0.9148	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	48719			35.63- 95.63	64.41
7 Freon 113					CAS #: 76-13-1		
13.384	13.384 (0.772)	151	62828	1.00000	0.9104	80.00- 120.00	100.00
13.384	13.384 (0.772)	153	40522			35.29- 95.29	64.50
13.356	13.356 (0.770)	101	68433			79.29- 139.29	108.92
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.384	13.384 (0.772)	98	19214	1.00000	0.9182	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	45868			208.11- 268.11	238.72
13.356	13.356 (0.770)	96	30583			127.31- 187.31	159.17
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.086 (0.870)	73	87568	1.00000	0.9796	80.00- 120.00	100.00
15.086	15.086 (0.870)	57	19591			0.00- 51.54	22.37
15.086	15.086 (0.870)	41	16777			0.00- 49.49	19.16
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	21830	1.00000	0.9707	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	44488			166.64- 226.64	203.79

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene (continued)							
15.114	15.114 (0.872)	96	34116			124.18- 184.18	156.28
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	53607	1.00000	0.9777	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	17173			2.52- 62.52	32.03
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	22510	1.00000	0.9369	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	41512			148.56- 208.56	184.42
16.958	16.958 (0.978)	96	35237			123.96- 183.96	156.54
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	77972	1.00000	0.9754	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	50985			36.46- 96.46	65.39
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	76579	1.00000	0.9592	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	49588			35.34- 95.34	64.75
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	65699	1.00000	1.071	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	68083			71.93- 131.93	103.63
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	96068	1.00000	0.8975	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	23090			0.00- 53.56	24.04
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	42651	1.00000	0.9750	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	14061			3.03- 63.03	32.97
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	51179	1.00000	0.9611	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	46806			60.20- 120.20	91.46
19.304	19.304 (1.022)	97	30390			29.00- 89.00	59.38
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	115722	1.00000	0.9688	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	65764			27.62- 87.62	56.83
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.383	22.383 (0.919)	75	56172	1.00000	1.008	80.00- 120.00	100.00
22.383	22.383 (0.919)	77	18301			2.20- 62.20	32.58
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	45227	1.00000	0.9764	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane (continued)							
22.760	22.760 (0.934)	99	28337			33.48- 93.48	62.66
22.760	22.760 (0.934)	83	38654			54.60- 114.60	85.47
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	70926	1.00000	0.9844	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	47986			35.95- 95.95	67.66
22.905	22.905 (0.940)	131	47570			34.23- 94.23	67.07
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.690 (0.973)	107	73159	1.00000	0.9822	80.00- 120.00	100.00
23.719	23.719 (0.974)	109	68825			66.39- 126.39	94.08
29 Chlorobenzene					CAS #: 108-90-7		
24.418	24.418 (1.003)	112	95484	1.00000	0.9643	80.00- 120.00	100.00
24.418	24.418 (1.003)	114	30970			2.92- 62.92	32.43
24.397	24.397 (1.002)	77	52179			21.68- 81.68	54.65
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	44432	1.00000	0.9736	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	143528			281.86- 341.86	323.03
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	49764	1.00000	0.9724	80.00- 120.00	100.00
24.665	24.665 (1.013)	91	99218			165.84- 225.84	199.38
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	47305	1.00000	0.9980	80.00- 120.00	100.00
25.243	25.243 (1.036)	91	102137			174.02- 234.02	215.91
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	96467	1.00000	0.9971	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	62303			35.95- 95.95	64.58
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	80684	1.00000	0.9598	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	51758			35.53- 95.53	64.15
27.305	27.305 (1.121)	111	27871			4.70- 64.70	34.54
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	75627	1.00000	0.9657	80.00- 120.00	100.00
27.430	27.430 (1.126)	148	48685			35.55- 95.55	64.38
27.414	27.414 (1.126)	111	24993			3.83- 63.83	33.05
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	71319	1.00000	0.9450	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)							
27.913	27.913 (1.146)	148	45707			35.05- 95.05	64.09
27.897	27.897 (1.145)	111	25395			6.25- 66.25	35.61
38 Naphthalene					CAS #: 91-20-3		
30.469	30.469 (1.251)	128	3632	0.10000	0.09268	80.00- 120.00	100.00
30.469	30.469 (1.251)	127	360			0.00- 43.90	9.91

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080309sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 8
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 1.0ppbv (1.0ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	101114	16.20
20 1,4-Difluorobenze	411474	246884	576064	448992	9.12
28 Chlorobenzene-d5	338225	202935	473515	373968	10.57

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.36	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080309sim.d

Date : 03-AUG-2017 15:05

Client ID: Level 8

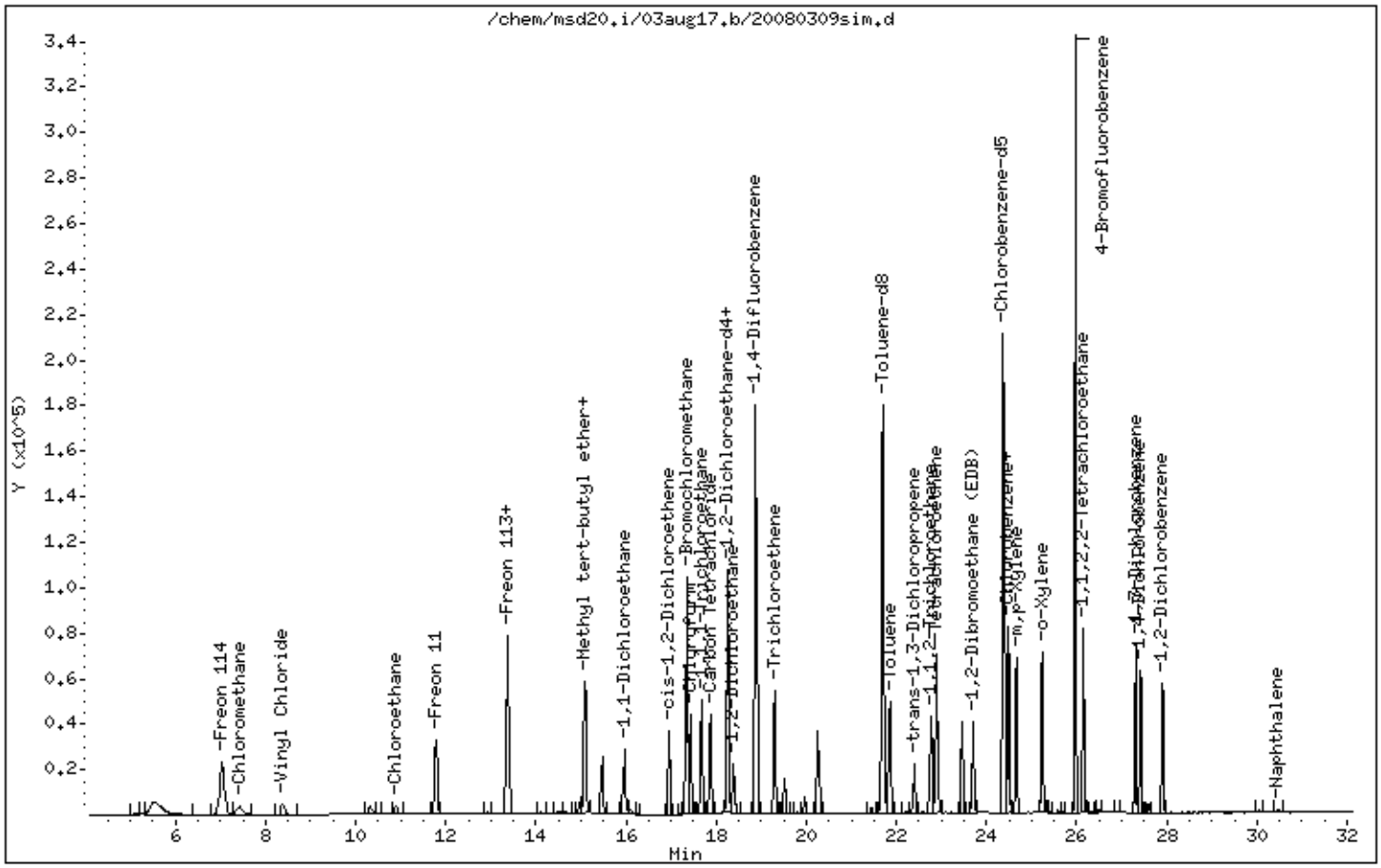
Instrument: msd20.i

Sample Info: 250mL# 2850-277

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080310sim.d
Lab Smp Id: ICAL Client Smp ID: Level 12
Inj Date : 03-AUG-2017 16:10
Operator : db Inst ID: msd20.i
Smp Info : 25mL# 2850-224
Misc Info : 5.0ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 16:10 Cal File: 20080310sim.d
Als bottle: 1 Calibration Sample, Level: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.340	17.340 (1.000)	130	98682	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	76220			48.37- 108.37	77.24
17.340	17.340 (1.000)	49	110503			82.84- 142.84	111.98
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.881	18.881 (1.000)	114	442031	5.00000		80.00- 120.00	100.00
18.881	18.881 (1.000)	88	62432			0.00- 44.04	14.12
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.356	24.356 (1.000)	117	378992	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	181893			17.63- 77.63	47.99
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	130735	5.00000	4.734	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	71533			26.67- 86.67	54.72
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	361204	5.00000	4.640	80.00- 120.00	100.00
21.683	21.683 (1.148)	70	37170			0.00- 40.38	10.29

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	229683			33.71- 93.71	63.59
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	257609	5.00000	5.013	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	224695			57.01- 117.01	87.22
25.980	25.980 (1.067)	176	254764			68.59- 128.59	98.90
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	296230	5.00000	5.084	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	95158			2.13- 62.13	32.12
3 Chloromethane					CAS #: 74-87-3		
7.379	7.379 (0.426)	50	121893	5.00000	4.820	80.00- 120.00	100.00
7.379	7.379 (0.426)	52	38638			2.25- 62.25	31.70
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	146951	5.00000	5.523	80.00- 120.00	100.00
8.366	8.366 (0.482)	64	46997			1.90- 61.90	31.98
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	70264	5.00000	5.619	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	22422			2.24- 62.24	31.91
6 Freon 11					CAS #: 75-69-4		
11.762	11.762 (0.678)	101	447750	5.00000	5.549	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	291535			35.63- 95.63	65.11
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	361602	5.00000	5.369	80.00- 120.00	100.00
13.356	13.356 (0.770)	153	233772			35.29- 95.29	64.65
13.356	13.356 (0.770)	101	397878			79.29- 139.29	110.03
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	109855	5.00000	5.379	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	261249			208.11- 268.11	237.81
13.356	13.356 (0.770)	96	171759			127.31- 187.31	156.35
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.086 (0.870)	73	459861	5.00000	5.271	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	98586			0.00- 51.54	21.44
15.059	15.059 (0.868)	41	90354			0.00- 49.49	19.65
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	110625	5.00000	5.040	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	219430			166.64- 226.64	198.35

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene (continued)							
15.114	15.114 (0.872)	96	172569			124.18- 184.18	155.99
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	279381	5.00000	5.221	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	89596			2.52- 62.52	32.07
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	117797	5.00000	5.024	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	213932			148.56- 208.56	181.61
16.958	16.958 (0.978)	96	182192			123.96- 183.96	154.67
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	389539	5.00000	4.993	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	256193			36.46- 96.46	65.77
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	400246	5.00000	5.137	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	259970			35.34- 95.34	64.95
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	385599	5.00000	6.442	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	398957			71.93- 131.93	103.46
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	503510	5.00000	4.778	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	119452			0.00- 53.56	23.72
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	221590	5.00000	5.145	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	72499			3.03- 63.03	32.72
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	274262	5.00000	5.231	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	247775			60.20- 120.20	90.34
19.304	19.304 (1.022)	97	162222			29.00- 89.00	59.15
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	573456	5.00000	4.876	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	328875			27.62- 87.62	57.35
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.919)	75	286246	5.00000	5.068	80.00- 120.00	100.00
22.382	22.382 (0.919)	77	90890			2.20- 62.20	31.75
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	227221	5.00000	4.840	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane (continued)							
22.760	22.760 (0.934)	99	143721			33.48- 93.48	63.25
22.760	22.760 (0.934)	83	190889			54.60- 114.60	84.01
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	359110	5.00000	4.918	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	239652			35.95- 95.95	66.73
22.905	22.905 (0.940)	131	232990			34.23- 94.23	64.88
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.690 (0.973)	107	383428	5.00000	5.079	80.00- 120.00	100.00
23.719	23.719 (0.974)	109	367856			66.39- 126.39	95.94
29 Chlorobenzene					CAS #: 108-90-7		
24.418	24.418 (1.003)	112	522437	5.00000	5.206	80.00- 120.00	100.00
24.418	24.418 (1.003)	114	172047			2.92- 62.92	32.93
24.397	24.397 (1.002)	77	272000			21.68- 81.68	52.06
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	242894	5.00000	5.252	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	767277			281.86- 341.86	315.89
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	274106	5.00000	5.285	80.00- 120.00	100.00
24.665	24.665 (1.013)	91	538348			165.84- 225.84	196.40
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	251776	5.00000	5.241	80.00- 120.00	100.00
25.243	25.243 (1.036)	91	528820			174.02- 234.02	210.04
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	472373	5.00000	4.818	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	310586			35.95- 95.95	65.75
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	444325	5.00000	5.215	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	288518			35.53- 95.53	64.93
27.305	27.305 (1.121)	111	155739			4.70- 64.70	35.05
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	417294	5.00000	5.258	80.00- 120.00	100.00
27.430	27.430 (1.126)	148	271982			35.55- 95.55	65.18
27.414	27.414 (1.126)	111	142791			3.83- 63.83	34.22
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	405642	5.00000	5.303	80.00- 120.00	100.00

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)							
27.913	27.913 (1.146)	148	264133			35.05- 95.05	65.11
27.897	27.897 (1.145)	111	148990			6.25- 66.25	36.73
38 Naphthalene					CAS #: 91-20-3		
30.469	30.469 (1.251)	128	19918	0.50000	0.5015	80.00- 120.00	100.00
30.469	30.469 (1.251)	127	2664			0.00- 43.90	13.37

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080310sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 12
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 5.0ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	98682	13.41
20 1,4-Difluorobenze	411474	246884	576064	442031	7.43
28 Chlorobenzene-d5	338225	202935	473515	378992	12.05

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.36	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080310sim.d

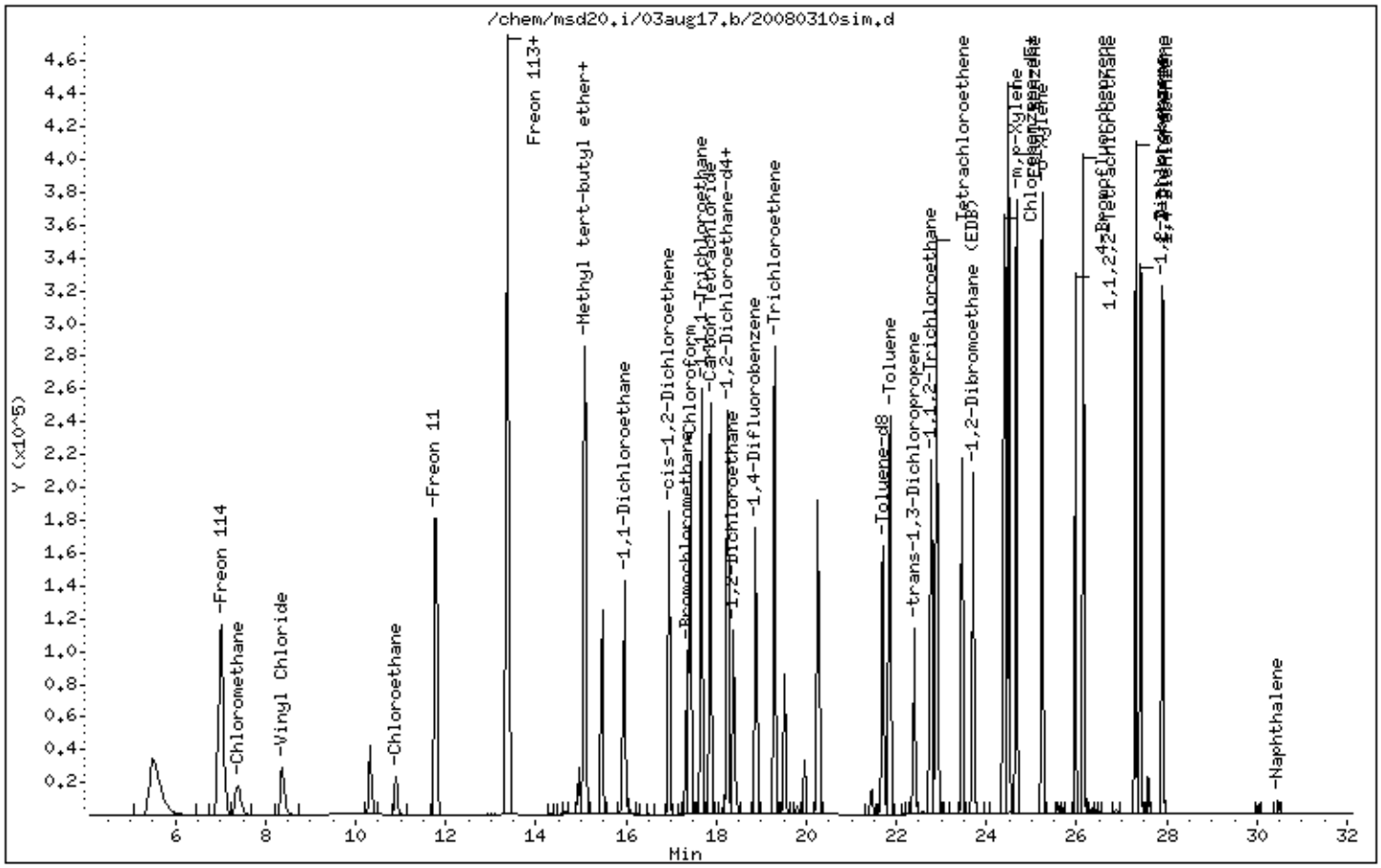
Date : 03-AUG-2017 16:10

Client ID: Level 12 Instrument: msd20.i

Sample Info: 25mL# 2850-224

Operator: db

Column phase: RTX-624 Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080316sim.d
Lab Smp Id: ICAL Client Smp ID: Level 13
Inj Date : 04-AUG-2017 08:20
Operator : db Inst ID: msd20.i
Smp Info : 50mL #2850-224; ICAL; Level 13
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 Calibration Sample, Level: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 13 Bromochloromethane					CAS #: 74-97-5			
17.340	17.340 (1.000)	130	87014	5.00000		80.00- 120.00		100.00
17.340	17.340 (1.000)	128	68194			48.37- 108.37		78.37
17.340	17.340 (1.000)	49	98189			82.84- 142.84		112.84
* 20 1,4-Difluorobenzene					CAS #: 540-36-3			
18.881	18.881 (1.000)	114	411474	5.00000		80.00- 120.00		100.00
18.881	18.881 (1.000)	88	57790			0.00- 44.04		14.04
* 28 Chlorobenzene-d5					CAS #: 3114-55-4			
24.376	24.376 (1.000)	117	338225	5.00000		80.00- 120.00		100.00
24.356	24.356 (1.000)	82	161101			17.63- 77.63		47.63
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
18.265	18.265 (1.053)	65	119349	5.00000	4.902	80.00- 120.00		100.00
18.265	18.265 (1.053)	67	67641			26.67- 86.67		56.67
$ 22 Toluene-d8					CAS #: 2037-26-5			
21.698	21.698 (1.149)	98	352171	5.00000	4.860	80.00- 120.00		100.00
21.698	21.698 (1.149)	70	36550			0.00- 40.38		10.38

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	224375			33.71- 93.71	63.71
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.066)	174	231493	5.00000	5.048	80.00- 120.00	100.00
25.961	25.961 (1.065)	95	201412			57.01- 117.01	87.01
25.980	25.980 (1.066)	176	228218			68.59- 128.59	98.59
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	547069	10.0000	10.647	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	175785			2.13- 62.13	32.13
3 Chloromethane					CAS #: 74-87-3		
7.379	7.379 (0.426)	50	229321	10.0000	10.284	80.00- 120.00	100.00
7.379	7.379 (0.426)	52	73959			2.25- 62.25	32.25
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	255716	10.0000	10.900	80.00- 120.00	100.00
8.366	8.366 (0.482)	64	81570			1.90- 61.90	31.90
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	131660	10.0000	11.940	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	42451			2.24- 62.24	32.24
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	747807	10.0000	10.511	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	490764			35.63- 95.63	65.63
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	604629	10.0000	10.181	80.00- 120.00	100.00
13.384	13.384 (0.772)	153	394771			35.29- 95.29	65.29
13.356	13.356 (0.770)	101	660803			79.29- 139.29	109.29
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	183073	10.0000	10.166	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	435920			208.11- 268.11	238.11
13.356	13.356 (0.770)	96	287997			127.31- 187.31	157.31
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.086 (0.870)	73	823231	10.0000	10.702	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	177348			0.00- 51.54	21.54
15.059	15.059 (0.868)	41	160478			0.00- 49.49	19.49
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	199223	10.0000	10.294	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	391743			166.64- 226.64	196.64

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene (continued)							
15.114	15.114 (0.872)	96	307166			124.18- 184.18	154.18
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	487737	10.0000	10.337	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	158613			2.52- 62.52	32.52
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	203602	10.0000	9.847	80.00- 120.00	100.00
16.958	16.958 (0.978)	61	363543			148.56- 208.56	178.56
16.958	16.958 (0.978)	96	313469			123.96- 183.96	153.96
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	676871	10.0000	9.840	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	449841			36.46- 96.46	66.46
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	672052	10.0000	9.782	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	439114			35.34- 95.34	65.34
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	680339	10.0000	12.890	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	693463			71.93- 131.93	101.93
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	866465	10.0000	8.833	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	204114			0.00- 53.56	23.56
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	393037	10.0000	9.804	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	129816			3.03- 63.03	33.03
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	480886	10.0000	9.854	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	433759			60.20- 120.20	90.20
19.304	19.304 (1.022)	97	283721			29.00- 89.00	59.00
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	1026953	10.0000	9.382	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	591765			27.62- 87.62	57.62
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.918)	75	503406	10.0000	9.987	80.00- 120.00	100.00
22.382	22.382 (0.918)	77	162115			2.20- 62.20	32.20
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	414055	10.0000	9.884	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane (continued)							
22.760	22.760 (0.934)	99	262853			33.48- 93.48	63.48
22.760	22.760 (0.934)	83	350272			54.60- 114.60	84.60
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	644049	10.0000	9.884	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	424726			35.95- 95.95	65.95
22.905	22.905 (0.940)	131	413698			34.23- 94.23	64.23
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.689	23.689 (0.972)	107	669416	10.0000	9.937	80.00- 120.00	100.00
23.719	23.719 (0.973)	109	645220			66.39- 126.39	96.39
29 Chlorobenzene					CAS #: 108-90-7		
24.418	24.418 (1.002)	112	871553	10.0000	9.732	80.00- 120.00	100.00
24.418	24.418 (1.002)	114	286876			2.92- 62.92	32.92
24.397	24.397 (1.001)	77	450378			21.68- 81.68	51.68
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.004)	106	386973	10.0000	9.375	80.00- 120.00	100.00
24.480	24.480 (1.004)	91	1206832			281.86- 341.86	311.86
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.012)	106	453187	10.0000	9.791	80.00- 120.00	100.00
24.665	24.665 (1.012)	91	887514			165.84- 225.84	195.84
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	428971	10.0000	10.007	80.00- 120.00	100.00
25.243	25.243 (1.036)	91	875166			174.02- 234.02	204.02
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.073)	83	767114	10.0000	8.767	80.00- 120.00	100.00
26.151	26.151 (1.073)	85	505946			35.95- 95.95	65.95
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.308	27.308 (1.120)	146	762426	10.0000	10.028	80.00- 120.00	100.00
27.308	27.308 (1.120)	148	499598			35.53- 95.53	65.53
27.308	27.308 (1.120)	111	264533			4.70- 64.70	34.70
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.417	27.417 (1.125)	146	691952	10.0000	9.769	80.00- 120.00	100.00
27.417	27.417 (1.125)	148	453544			35.55- 95.55	65.55
27.417	27.417 (1.125)	111	234082			3.83- 63.83	33.83
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.901	27.901 (1.145)	146	696536	10.0000	10.204	80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)								
27.901	27.901	(1.145)	148	453076			35.05- 95.05	65.05
27.901	27.901	(1.145)	111	252508			6.25- 66.25	36.25
38 Naphthalene						CAS #: 91-20-3		
30.473	30.473	(1.250)	128	40042	1.00000	1.130	80.00- 120.00	100.00
30.473	30.473	(1.250)	127	5564			0.00- 43.90	13.90

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080316sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: db
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 13
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	87014	0.00
20 1,4-Difluorobenze	411474	246884	576064	411474	0.00
28 Chlorobenzene-d5	338225	202935	473515	338225	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.38	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080316sim.d

Date : 04-AUG-2017 08:20

Client ID: Level 13

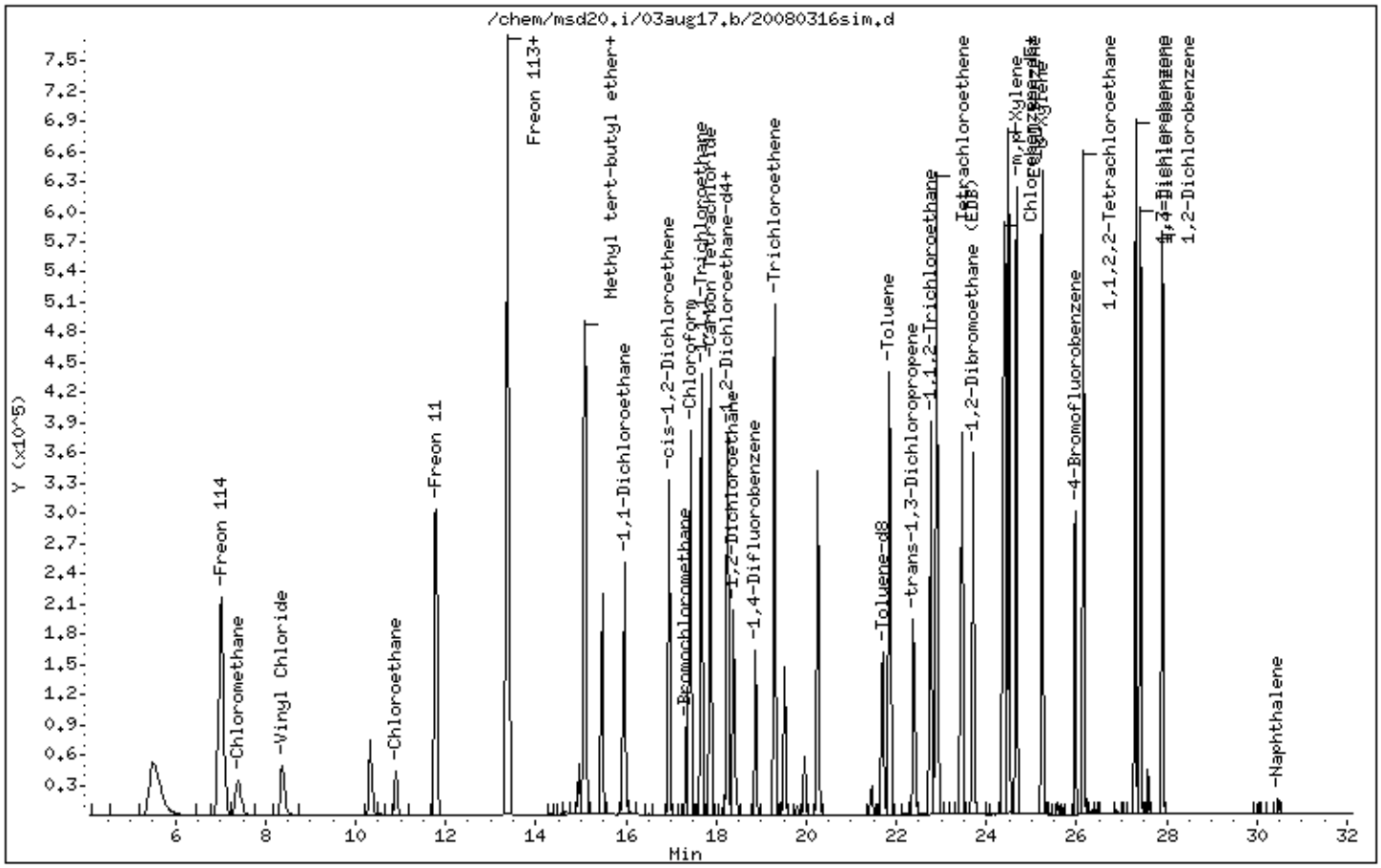
Instrument: msd20.i

Sample Info: 50mL #2850-224; ICAL; Level 13

Operator: db

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/03aug17.b/20080312sim.d
Lab Smp Id: ICAL Client Smp ID: Level 15
Inj Date : 03-AUG-2017 18:19
Operator : mjs Inst ID: msd20.i
Smp Info : 100mL #2850-224
Misc Info : 20ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 18:19 Cal File: 20080312sim.d
Als bottle: 1 Calibration Sample, Level: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 13 Bromochloromethane						CAS #: 74-97-5		
17.340	17.340 (1.000)	130	92378	5.00000		80.00- 120.00		100.00
17.340	17.340 (1.000)	128	71066			48.37- 108.37		76.93
17.340	17.340 (1.000)	49	104860			82.84- 142.84		113.51
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
18.880	18.880 (1.000)	114	410713	5.00000		80.00- 120.00		100.00
18.880	18.880 (1.000)	88	57941			0.00- 44.04		14.11
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
24.376	24.376 (1.000)	117	342673	5.00000		80.00- 120.00		100.00
24.356	24.356 (1.000)	82	164057			17.63- 77.63		47.88
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	116544	5.00000	4.508	80.00- 120.00		100.00
18.265	18.265 (1.053)	67	65413			26.67- 86.67		56.13
$ 22 Toluene-d8						CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	375996	5.00000	5.198	80.00- 120.00		100.00
21.698	21.698 (1.149)	70	39180			0.00- 40.38		10.42

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.698	21.698	(1.149)	100	238743			33.71- 93.71	63.50
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.980	25.980	(1.066)	174	245074	5.00000	5.274	80.00- 120.00	100.00
25.961	25.961	(1.065)	95	214668			57.01- 117.01	87.59
25.980	25.980	(1.066)	176	239607			68.59- 128.59	97.77
2 Freon 114						CAS #: 76-14-2		
7.018	7.018	(0.405)	135	998526	20.0000	18.305	80.00- 120.00	100.00
7.018	7.018	(0.405)	137	324347			2.13- 62.13	32.48
3 Chloromethane						CAS #: 74-87-3		
7.404	7.404	(0.427)	50	377926	20.0000	15.965	80.00- 120.00	100.00
7.404	7.404	(0.427)	52	125475			2.25- 62.25	33.20
4 Vinyl Chloride						CAS #: 75-01-4		
8.366	8.366	(0.482)	62	453126	20.0000	18.192	80.00- 120.00	100.00
8.366	8.366	(0.482)	64	146779			1.90- 61.90	32.39
5 Chloroethane						CAS #: 75-00-3		
10.894	10.894	(0.628)	64	233718	20.0000	19.965	80.00- 120.00	100.00
10.894	10.894	(0.628)	66	75031			2.24- 62.24	32.10
6 Freon 11						CAS #: 75-69-4		
11.762	11.762	(0.678)	101	1571344	20.0000	20.804	80.00- 120.00	100.00(A)
11.786	11.786	(0.680)	103	1041169			35.63- 95.63	66.26
7 Freon 113						CAS #: 76-13-1		
13.356	13.356	(0.770)	151	1108877	20.0000	17.588	80.00- 120.00	100.00
13.384	13.384	(0.772)	153	727407			35.29- 95.29	65.60
13.356	13.356	(0.770)	101	1191640			79.29- 139.29	107.46
8 1,1-Dichloroethene						CAS #: 75-35-4		
13.356	13.356	(0.770)	98	334052	20.0000	17.472	80.00- 120.00	100.00
13.356	13.356	(0.770)	61	787800			208.11- 268.11	235.83
13.356	13.356	(0.770)	96	523489			127.31- 187.31	156.71
9 Methyl tert-butyl ether						CAS #: 1634-04-4		
15.086	15.086	(0.870)	73	1505042	20.0000	18.429	80.00- 120.00	100.00
15.059	15.059	(0.868)	57	328484			0.00- 51.54	21.83
15.059	15.059	(0.868)	41	299970			0.00- 49.49	19.93
10 trans-1,2-Dichloroethene						CAS #: 156-60-5		
15.114	15.114	(0.872)	98	370094	20.0000	18.013	80.00- 120.00	100.00
15.114	15.114	(0.872)	61	715467			166.64- 226.64	193.32

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene (continued)							
15.114	15.114 (0.872)	96	573662			124.18- 184.18	155.00
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	942386	20.0000	18.812	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	305722			2.52- 62.52	32.44
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	400656	20.0000	18.253	80.00- 120.00	100.00
16.958	16.958 (0.978)	61	714767			148.56- 208.56	178.40
16.958	16.958 (0.978)	96	614525			123.96- 183.96	153.38
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	1289330	20.0000	17.655	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	861269			36.46- 96.46	66.80
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	1292842	20.0000	17.725	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	851847			35.34- 95.34	65.89
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	1306524	20.0000	23.317	80.00- 120.00	100.00(A)
17.875	17.875 (1.031)	117	1325487			71.93- 131.93	101.45
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	1567232	20.0000	16.006	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	369002			0.00- 53.56	23.54
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	705669	20.0000	17.634	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	235498			3.03- 63.03	33.37
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	917002	20.0000	18.825	80.00- 120.00	100.00
19.304	19.304 (1.022)	95	827033			60.20- 120.20	90.19
19.304	19.304 (1.022)	97	544001			29.00- 89.00	59.32
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	1966563	20.0000	17.998	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	1143352			27.62- 87.62	58.14
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.918)	75	1013378	20.0000	19.844	80.00- 120.00	100.00
22.382	22.382 (0.918)	77	327487			2.20- 62.20	32.32
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	744803	20.0000	17.548	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane (continued)							
22.760	22.760 (0.934)	99	473743			33.48- 93.48	63.61
22.760	22.760 (0.934)	83	621992			54.60- 114.60	83.51
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	1176578	20.0000	17.821	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	792796			35.95- 95.95	67.38
22.905	22.905 (0.940)	131	755330			34.23- 94.23	64.20
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.689	23.689 (0.972)	107	1228717	20.0000	18.003	80.00- 120.00	100.00
23.719	23.719 (0.973)	109	1188629			66.39- 126.39	96.74
29 Chlorobenzene					CAS #: 108-90-7		
24.418	24.418 (1.002)	112	1651068	20.0000	18.197	80.00- 120.00	100.00
24.418	24.418 (1.002)	114	549394			2.92- 62.92	33.28
24.397	24.397 (1.001)	77	844412			21.68- 81.68	51.14
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.004)	106	780776	20.0000	18.670	80.00- 120.00	100.00
24.480	24.480 (1.004)	91	2400646			281.86- 341.86	307.47
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.012)	106	873314	20.0000	18.623	80.00- 120.00	100.00
24.665	24.665 (1.012)	91	1674997			165.84- 225.84	191.80
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	869385	20.0000	20.017	80.00- 120.00	100.00(A)
25.243	25.243 (1.036)	91	1755153			174.02- 234.02	201.88
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.073)	83	1500936	20.0000	16.931	80.00- 120.00	100.00
26.151	26.151 (1.073)	85	1001262			35.95- 95.95	66.71
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.120)	146	1448548	20.0000	18.804	80.00- 120.00	100.00
27.305	27.305 (1.120)	148	961124			35.53- 95.53	66.35
27.305	27.305 (1.120)	111	510621			4.70- 64.70	35.25
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.125)	146	1432868	20.0000	19.967	80.00- 120.00	100.00
27.430	27.430 (1.125)	148	944958			35.55- 95.55	65.95
27.414	27.414 (1.125)	111	493816			3.83- 63.83	34.46
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.144)	146	1350578	20.0000	19.529	80.00- 120.00	100.00

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene (continued)								
27.913	27.913	(1.145)	148	890451			35.05- 95.05	65.93
27.897	27.897	(1.144)	111	494954			6.25- 66.25	36.65
38 Naphthalene						CAS #: 91-20-3		
30.469	30.469	(1.250)	128	68411	2.00000	1.905	80.00- 120.00	100.00
30.469	30.469	(1.250)	127	8902			0.00- 43.90	13.01

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080312sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Calibration Date: 04-AUG-2017
Calibration Time: 08:20
Client Smp ID: Level 15
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/03aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 20ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	87014	52208	121820	92378	6.16
20 1,4-Difluorobenze	411474	246884	576064	410713	-0.18
28 Chlorobenzene-d5	338225	202935	473515	342673	1.32

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.38	24.05	24.71	24.38	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/03aug17.b/20080312sim.d

Date : 03-AUG-2017 18:19

Client ID: Level 15

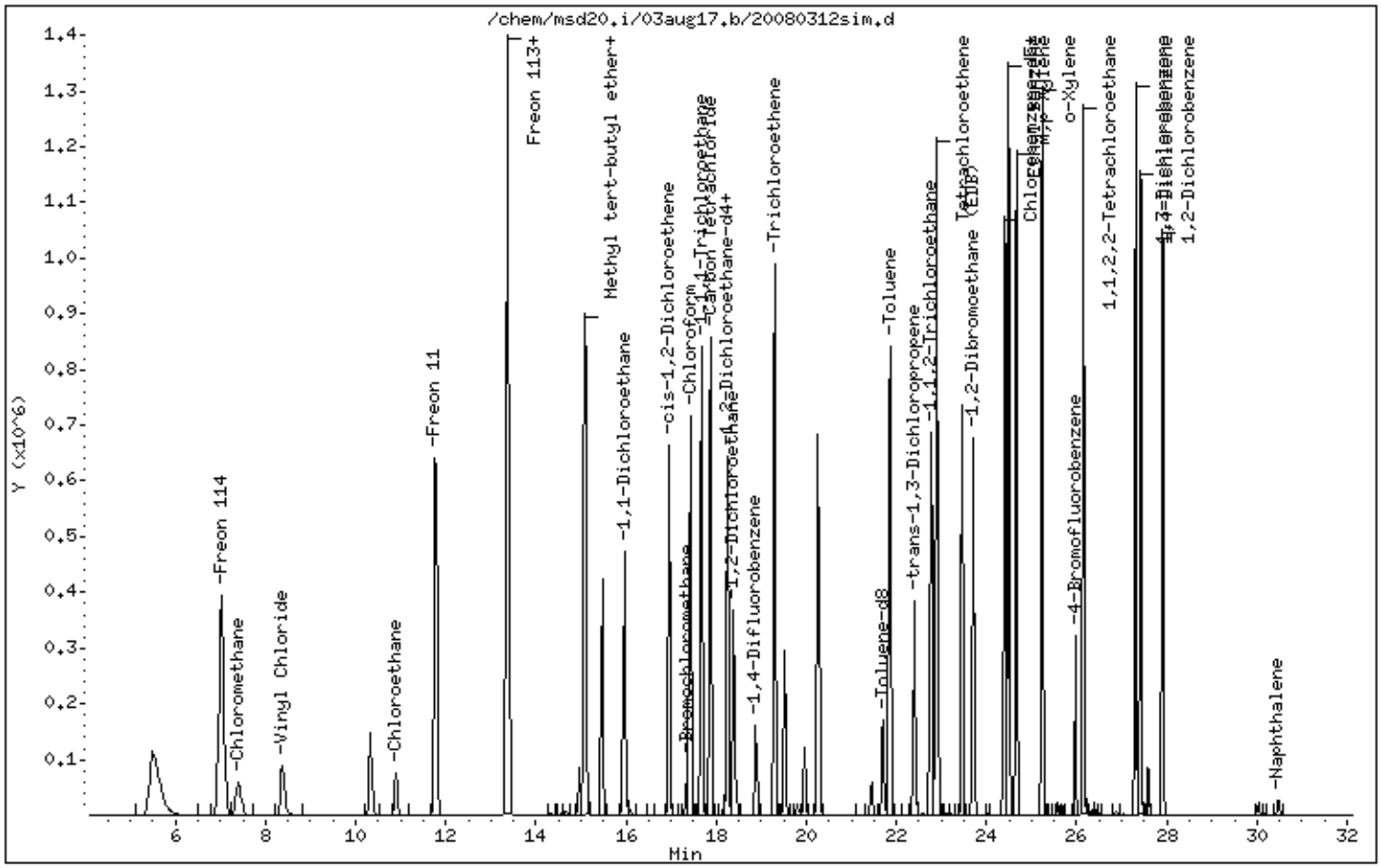
Instrument: msd20.i

Sample Info: 100mL #2850-224

Operator: mjs

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 12:12
End Cal Date : 03-AUG-2017 19:28
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Cal Date : 04-Aug-2017 09:17 efinn
Curve Type : Average

Calibration File Names:
Level 2: /chem/msde.i/03Aug2017.b/e080302sim.d
Level 3: /chem/msde.i/03Aug2017.b/e080303sim.d
Level 4: /chem/msde.i/03Aug2017.b/e080304sim.d
Level 5: /chem/msde.i/03Aug2017.b/e080305sim.d
Level 6: /chem/msde.i/03Aug2017.b/e080306sim.d
Level 7: /chem/msde.i/03Aug2017.b/e080307sim.d
Level 8: /chem/msde.i/03Aug2017.b/e080308sim.d
Level 12: /chem/msde.i/03Aug2017.b/e080309sim.d
Level 13: /chem/msde.i/03Aug2017.b/e080310sim.d
Level 15: /chem/msde.i/03Aug2017.b/e080311sim.d

Compound	0.00500 Level 2	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD
	1.000 Level 8	5.000 Level 12	10.000 Level 13	20.000 Level 15				
1 Freon 12	+++++	+++++	5.34839	5.05939	6.06037	5.03477		
	4.86906	5.54038	5.01555	4.63407			5.19525	8.574
2 Freon 114	+++++	+++++	4.52166	4.07773	4.55029	3.90096		
	3.80473	4.28063	3.89777	3.66911			4.08786	8.092
3 Chloromethane	+++++	+++++	+++++	+++++	+++++	1.42834		
	1.35853	1.60857	1.43741	1.31873			1.43031	7.772
4 Vinyl Chloride	+++++	1.27267	1.46223	1.15507	1.40649	1.20895		
	1.17177	1.35449	1.24969	1.16958			1.27233	8.777
5 Chloroethane	+++++	+++++	+++++	0.72341	0.76217	0.56937		
	0.55557	0.63801	0.57891	0.53964			0.62387	14.033
6 Freon 11	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 12:12
End Cal Date : 03-AUG-2017 19:28
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Cal Date : 04-Aug-2017 09:17 efinn
Curve Type : Average

Compound	0.00500 Level 2 / 1.000 Level 8	0.01000 Level 3 / 5.000 Level 12	0.02000 Level 4 / 10.000 Level 13	0.05000 Level 5 / 20.000 Level 15	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD
7 Freon 113	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++
8 1,1-Dichloroethene	1.23160 / 0.94932	1.19601 / 1.05047	1.16416 / 0.97886	1.05013 / 0.93176	1.14306	0.96378	1.06592	10.375
9 Methyl tert-butyl ether	+++++ / 3.57813	+++++ / 4.34064	4.02863 / 4.00872	3.67509 / 3.75762	3.95064	3.51669	3.85702	7.145
10 trans-1,2-Dichloroethene	+++++ / 0.97241	1.31101 / 1.11779	1.16416 / 1.03458	1.10297 / 0.97555	1.14113	0.97623	1.08843	10.314
11 1,1-Dichloroethane	+++++ / 2.90500	+++++ / 3.27939	3.35375 / 3.00810	3.06779 / 2.79327	3.38373	2.92525	3.08954	7.220
12 cis-1,2-Dichloroethene	1.53570 / 1.00984	1.44901 / 1.19613	1.27664 / 1.09994	1.16921 / 1.03927	1.23125	1.01141	1.20184	14.937
14 Chloroform	4.77436 / 3.86362	3.99436 / 4.35241	4.71475 / 3.93769	4.34194 / 3.67298	4.56800	3.93137	4.21515	9.173
15 1,1,1-Trichloroethane	+++++ / 5.04774	+++++ / 5.74930	5.84142 / 5.20002	5.49552 / 4.79502	6.03572	5.18230	5.41838	7.968
16 Carbon Tetrachloride	7.70131 / 5.72365	7.04571 / 6.67195	6.64190 / 6.02231	6.16088 / 5.57918	6.89494	5.86937	6.43112	10.483
17 Benzene	+++++ / 1.06936	+++++ / 1.22111	1.72201 / 1.11027	1.37871 / 1.03704	1.32518	1.10659	1.24628	18.292

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 12:12
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Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Cal Date : 04-Aug-2017 09:17 efinn
Curve Type : Average

Compound	0.00500 Level 2	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD
	1.000 Level 8	5.000 Level 12	10.000 Level 13	20.000 Level 15				
19 1,2-Dichloroethane	1.34386	1.22458	1.07820	1.07494	1.09142	0.98883		
	0.97624	1.08667	0.99668	0.93690			1.07983	11.435
21 Trichloroethene	1.17890	1.11834	0.97459	0.93834	0.97852	0.83891		
	0.82410	0.92334	0.83632	0.79549			0.94068	13.591
23 Toluene	+++++	+++++	1.78296	1.67758	1.62128	1.42196		
	1.38409	1.59136	1.45648	1.37835			1.53926	9.777
24 trans-1,3-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++
25 1,1,2-Trichloroethane	+++++	0.80149	0.69099	0.68458	0.73648	0.63098		
	0.61723	0.72891	0.65260	0.62861			0.68577	8.918
26 Tetrachloroethene	1.59595	1.46660	1.31139	1.27089	1.32375	1.15308		
	1.12042	1.31571	1.18686	1.13306			1.28777	11.866
27 1,2-Dibromoethane (EDB)	1.59832	1.45105	1.36344	1.29511	1.22382	1.06883		
	1.05213	1.24568	1.14215	1.08444			1.25250	14.290
29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++
30 Ethyl Benzene	+++++	+++++	0.63476	0.66085	0.68317	0.61781		
	0.60634	0.75170	0.69772	0.66574			0.66476	7.083
31 m,p-Xylene	+++++	+++++	0.79150	0.74511	0.79490	0.68648		
	0.70787	0.88616	0.82491	0.78555			0.77781	8.247

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

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Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Cal Date : 04-Aug-2017 09:17 efinn
Curve Type : Average

Compound	0.00500 Level 2	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD
	1.000 Level 8	5.000 Level 12	10.000 Level 13	20.000 Level 15				
32 o-Xylene	+++++	+++++	0.75381	0.71188	0.72979	0.65702		
	0.64803	0.81092	0.75248	0.72264			0.72332	7.333
34 1,1,2,2-Tetrachloroethane	1.36390	1.09576	1.06072	0.99246	1.04381	0.91228		
	0.88398	1.05484	0.92818	0.90163			1.02376	13.837
35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++
36 1,4-Dichlorobenzene	+++++	1.84700	1.57762	1.49379	1.41892	1.28767		
	1.28407	1.47478	1.35715	1.28452			1.44728	12.628
37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++
38 Naphthalene	+++++	+++++	+++++	+++++	1.18183	1.04730		
	0.98263	0.92428	0.95080	0.89004			0.99614	10.601
M 39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++
$ 18 1,2-Dichloroethane-d4	1.56477	1.57658	1.58189	1.60730	1.58527	1.57683		
	1.58544	1.55803	1.50979	1.54694			1.56929	1.701
$ 22 Toluene-d8	0.75977	0.76035	0.75708	0.76601	0.75647	0.76096		
	0.76968	0.76232	0.76004	0.76394			0.76166	0.527
$ 33 4-Bromofluorobenzene	0.64750	0.65140	0.66463	0.66558	0.66070	0.67149		
	0.68024	0.69616	0.67918	0.70066			0.67175	2.612

Calibration History

Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Start Cal Date: 03-AUG-2017 12:12
End Cal Date : 03-AUG-2017 19:28

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 2 , Cal Amount: 0.00500		
03-AUG-2017 12:12	Level2	/chem/msde.i/03Aug2017.b/e080302sim.d
Cal Level: 3 , Cal Amount: 0.01000		
03-AUG-2017 12:56	Level3	/chem/msde.i/03Aug2017.b/e080303sim.d
Cal Level: 4 , Cal Amount: 0.02000		
03-AUG-2017 13:39	Level4	/chem/msde.i/03Aug2017.b/e080304sim.d
Cal Level: 5 , Cal Amount: 0.05000		
03-AUG-2017 14:24	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080305sim.d
Cal Level: 6 , Cal Amount: 0.10000		
03-AUG-2017 15:06	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080306sim.d
Cal Level: 7 , Cal Amount: 0.50000		
03-AUG-2017 15:48	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080307sim.d
Cal Level: 8 , Cal Amount: 1.00000		
03-AUG-2017 16:29	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080308sim.d
Cal Level: 12, Cal Amount: 5.00000		
03-AUG-2017 17:28	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080309sim.d

Cal Level: 13, Cal Amount: 10.00000		
03-AUG-2017 18:16	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080310sim.d
Cal Level: 15, Cal Amount: 20.00000		
03-AUG-2017 19:28	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080311sim.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 13

Ccal Level: 13, Ccal Amount: 10.000		
03-AUG-2017 18:16	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080310sima.d
Ccal Level: 13, Ccal Amount: 10.000		
03-AUG-2017 18:16	HILOcrvFULL	/chem/msde.i/03Aug2017.b/e080310sim.d

Curve Name: E17$_S$0803A

Initial Calibration Narrative

An initial calibration curve was analyzed on 8/3/17 on MSD-E.
The instrument was set up to do full scan and selective ion monitoring (SIM) simultaneously.
Tune File: E080301.
ICAL: Zero (0) out.
ICV: Zero (0) out. File E080314sim.
DOD 5.0 ICV: Zero (0) out. File E080314sima.
DOD 4.2 ICV: Zero (0) out. File E080314simc.
Naphthalene recovery = 61%.

Benzene was calibrated from 0.02ppbv to 20ppbv.
Naphthalene was calibrated from 0.01ppbv-2.0ppbv.*

*The secondary mass ion peak, 127 amu, for Naphthalene shows baseline interference at the special reporting limit of 0.01ppbv. Identification of Naphthalene is however reliable at the lowest concentrations based on the presence and abundance ratio of the secondary ion. The spectrum of Naphthalene in this ICAL point will be used as the reference to determine the ion ratio target in the samples for this ICAL.

The following compounds were calibrated down to a special RL of 0.005ppbv:

1,1-Dichloroethene
cis-1,2-Dichloroethene
Chloroform
Carbon Tetrachloride
1,2-Dichloroethane*
Trichloroethene
Tetrachloroethene
1,2-Dibromomethane (EDB)
1,1,2,2-Tetrachloroethane

*The quantitation ion peak (62 amu) is sufficiently resolved for accurate quantification of 1,2-Dichloroethane (1,2-DCA) at the special reporting limit of 0.005 ppbv. However, the confirmation mass ion peak (64 amu) for 1,2-DCA is not baseline-resolved from the surrogate 1,2-Dichloroethane-d4 peak. Identification of 1,2-DCA based on the presence and abundance ratio of confirmation ion is less reliable at the lowest concentrations due to this interference with the surrogate's mass ion 64 peak.

The following compounds were not included in the ICAL:

Freon 11
Freon 113
trans-1,3-Dichloropropene
Chlorobenzene
1,3-Dichlorobenzene
1,2-Dichlorobenzene

MDL was analyzed on 10/19/16.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 03-AUG-2017 12:12
End Cal Date : 03-AUG-2017 19:28
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Cal Date : 04-Aug-2017 09:10 efinn
Curve Type : Average

Calibration File Names:
Level 2: /chem/msde.i/03Aug2017.b/e080302sim.d
Level 3: /chem/msde.i/03Aug2017.b/e080303sim.d
Level 4: /chem/msde.i/03Aug2017.b/e080304sim.d
Level 5: /chem/msde.i/03Aug2017.b/e080305sim.d
Level 6: /chem/msde.i/03Aug2017.b/e080306sim.d
Level 7: /chem/msde.i/03Aug2017.b/e080307sim.d
Level 8: /chem/msde.i/03Aug2017.b/e080308sim.d
Level 12: /chem/msde.i/03Aug2017.b/e080309sim.d
Level 13: /chem/msde.i/03Aug2017.b/e080310sim.d
Level 15: /chem/msde.i/03Aug2017.b/e080311sim.d

8/4/17

Compound	0.00500 Level 2	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	___ RRF	% RSD
	1.000 Level 8	5.000 Level 12	10.000 Level 13	20.000 Level 15				
1 Freon 12	+++++	+++++	5.34839	5.05939	6.06037	5.03477		
	4.86906	5.54038	5.01555	4.63407			5.19525	8.574
2 Freon 114	+++++	+++++	4.52166	4.07773	4.55029	3.90096		
	3.80473	4.28063	3.89777	3.66911			4.08786	8.092
3 Chloromethane	+++++	+++++	+++++	+++++	+++++	1.42834		
	1.35853	1.60857	1.43741	1.31873			1.43031	7.772
4 Vinyl Chloride	+++++	1.27267	1.46223	1.15507	1.40649	1.20895		
	1.17177	1.35449	1.24969	1.16958			1.27233	8.777
5 Chloroethane	+++++	+++++	+++++	0.72341	0.76217	0.56937		
	0.55557	0.63801	0.57891	0.53964			0.62387	14.033
6 Freon 11	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++			+++++	+++++

Flow meter # 576126 Exp. 4/5/18

Eurofins Air Toxics, Inc. Nominal Flow: 24.1 mL/min **MSD-E** **Logbook #2885**

Actual Flow: 25.5 mL/min

BFB Verification of 176/174 m/z Ratio: (435392/454272) x100 = 95.84	
Method Name: E17L0803A / E17S0803A	

IS/S Std. #: 2850-2866	Exp. Date: 10/18/17
BCM N/A	Sum: 1443666
1,4-DFB	498300
CB-d5	452069

Verified CCV IS vs ICAL mid-point (-40%D): EF

SOP# (Circle one): 6 / (83) / (38) / 91 / 109 / 132 Method (Circle one): ~~TO-14A~~ / TO-15 / TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	Verified Vol. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	/	E080301	35B TUNE CHECK	2810-89	50mg	2.0mL	EF	1.00	EF	8/3/17	1152	EF	
2	/	02	ICAL LEVEL 2	2850-2865	0.005ppbv	25mL	EF	1.00	EF		1212	EF	Exp. 11/3/17
3	/	03	3		0.01ppbv	50mL	EF	1.00	EF		1252	EF	
4	/	04	4		0.02ppbv	100mL	EF	1.00	EF		1339	EF	
5	/	05	5		0.05ppbv	250mL	EF	1.00	EF		1424	EF	
6	/	06	6	2850-2866	0.1ppbv	25mL	EF	1.00	EF		1506	EF	Exp. 11/3/17
7	/	07	7		0.5ppbv	125mL	EF	1.00	EF		1548	EF	
8	/	08	8		1.0ppbv	~~125mL~~ 250mL EF 8/3/17	EF	1.00	EF		1629	EF	
9	/	09	12	2850-2881	5.0ppbv	25mL	EA		EA		1726	EF	
10	/	10	13		10ppbv	50mL	EA		EA		1816	EF	
11	/	11	15		20ppbv	100mL EF 8/3/17	EA		EA		1926	EF	
12	/	12	16		40ppbv	~~200mL~~ EF 8/3/17	EA		EA		2013	EF	200ml
13	X	13	system blank	34202	Humid	250mL	EA		EA		2115	EF	
14	/	14	ICV (50ppbv)	2858-2879	10ppbv	50mL	EA		EA		2213 EF 8/4/17	EF	
15													
16													
17													EF 8/4/17

LF
Reviewed

8/4/17
Date

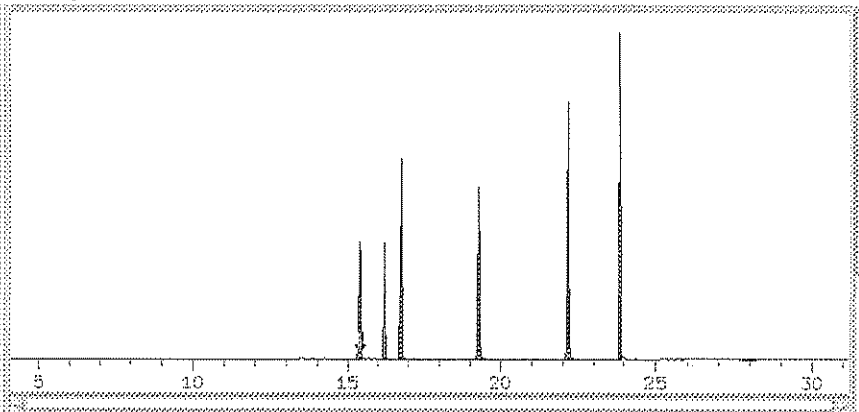
TargetReview: eeyore: ICAL: /chem/ms_de.i/03Aug2017.b/e080302sim.d

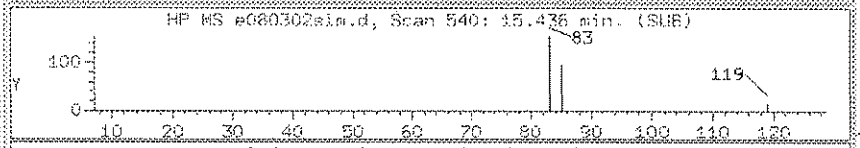
File Search Edit Review Peaks Spectra Help

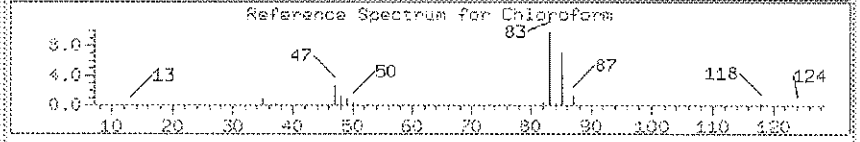
Sample: ICAL Type: SAMPLE Inj.Date: 03-AUG-2017 12:12

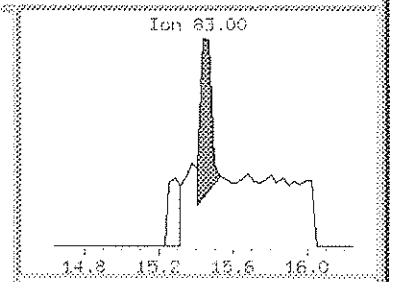
	4	Vinyl Chloride
+	8	1,1-Dichloroetl
+	12	cis-1,2-Dichlo
*+	13	Bromochlorometl
+	14	Chloroform
+	16	Carbon Tetrach.
$+	18	1,2-Dichloroetl
+	19	1,2-Dichloroetl
*+	20	1,4-Difluorobe
+	21	Trichloroethen
$+	22	Toluene-d8
+	26	Tetrachloroeth
+	27	1,2-Dibromoeth.
*+	28	Chlorobenzene-
$+	33	4-Bromofluorob
+	34	1,1,2,2-Tetrac

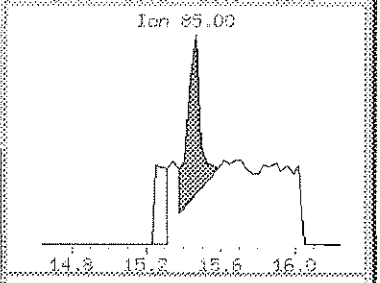
e080302sim.d







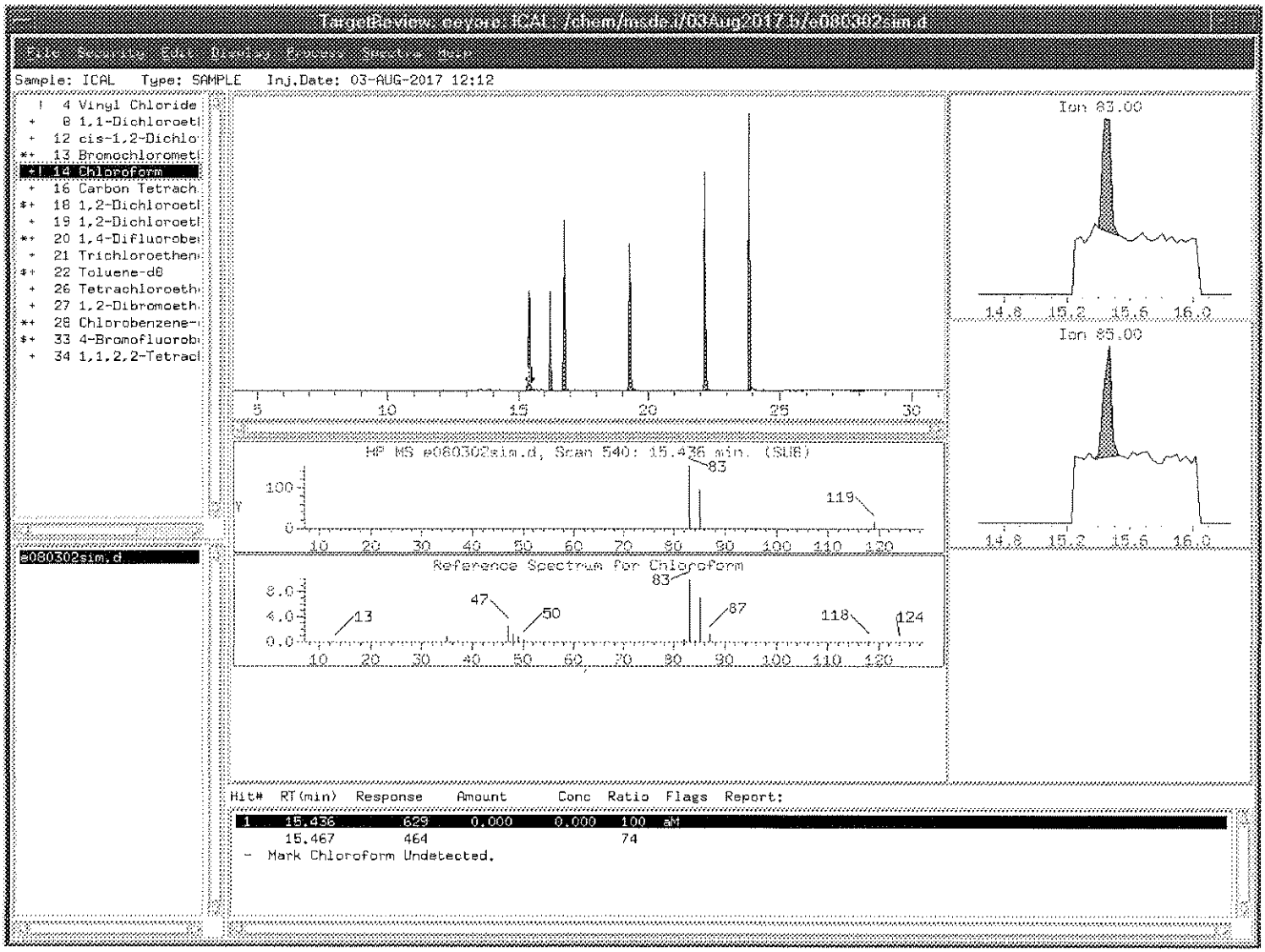




Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	15.282	382	0.000	0.000	100	a	
	15.251	385			101		
2	15.436	836	0.000	0.000	100	a	
	15.467	845			101		

- Mark Chloroform Undetected.

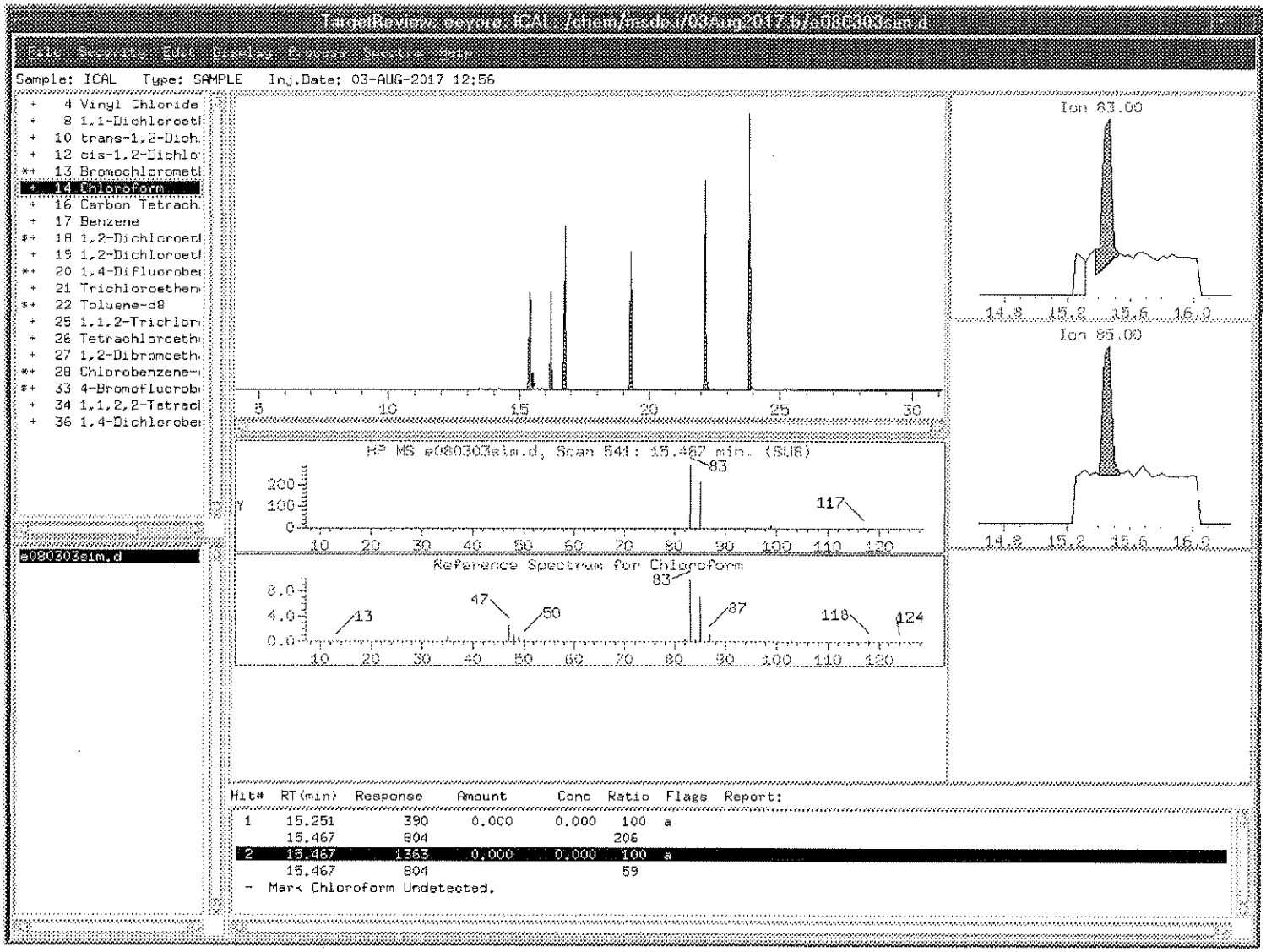
Bison



After 8 5/4/17

Correct Baseline	
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Error Subtraction	
Peak Misidentified	
Corrected Peak Integration	

8/4/17
AG



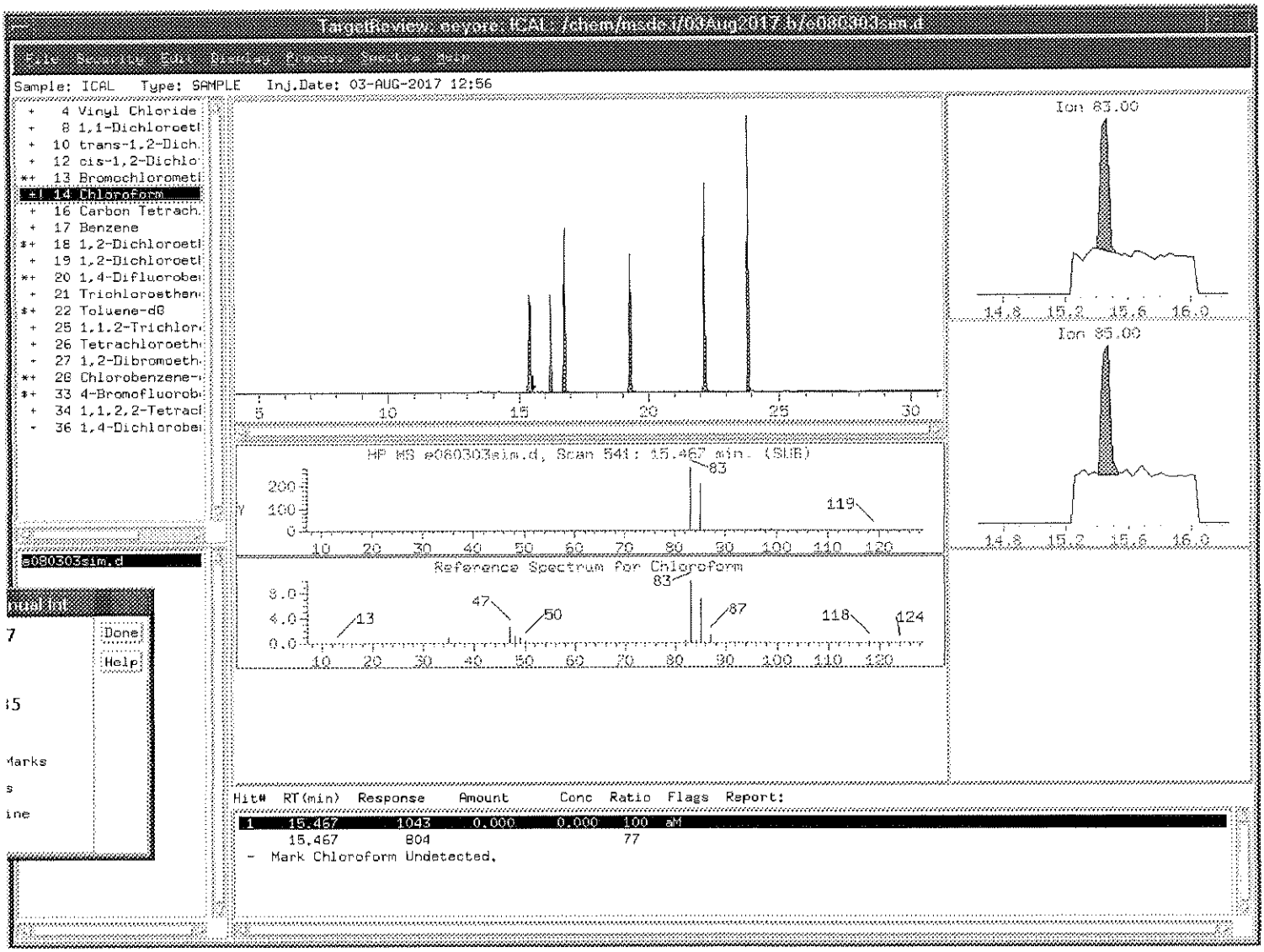
Retain

After

Correct Baseline
Split Peak
Merge Peak
Zoom In
Change Parameter
System Peak Subtraction
Peak Misidentified
Corrected Peak Integration

8/4/17

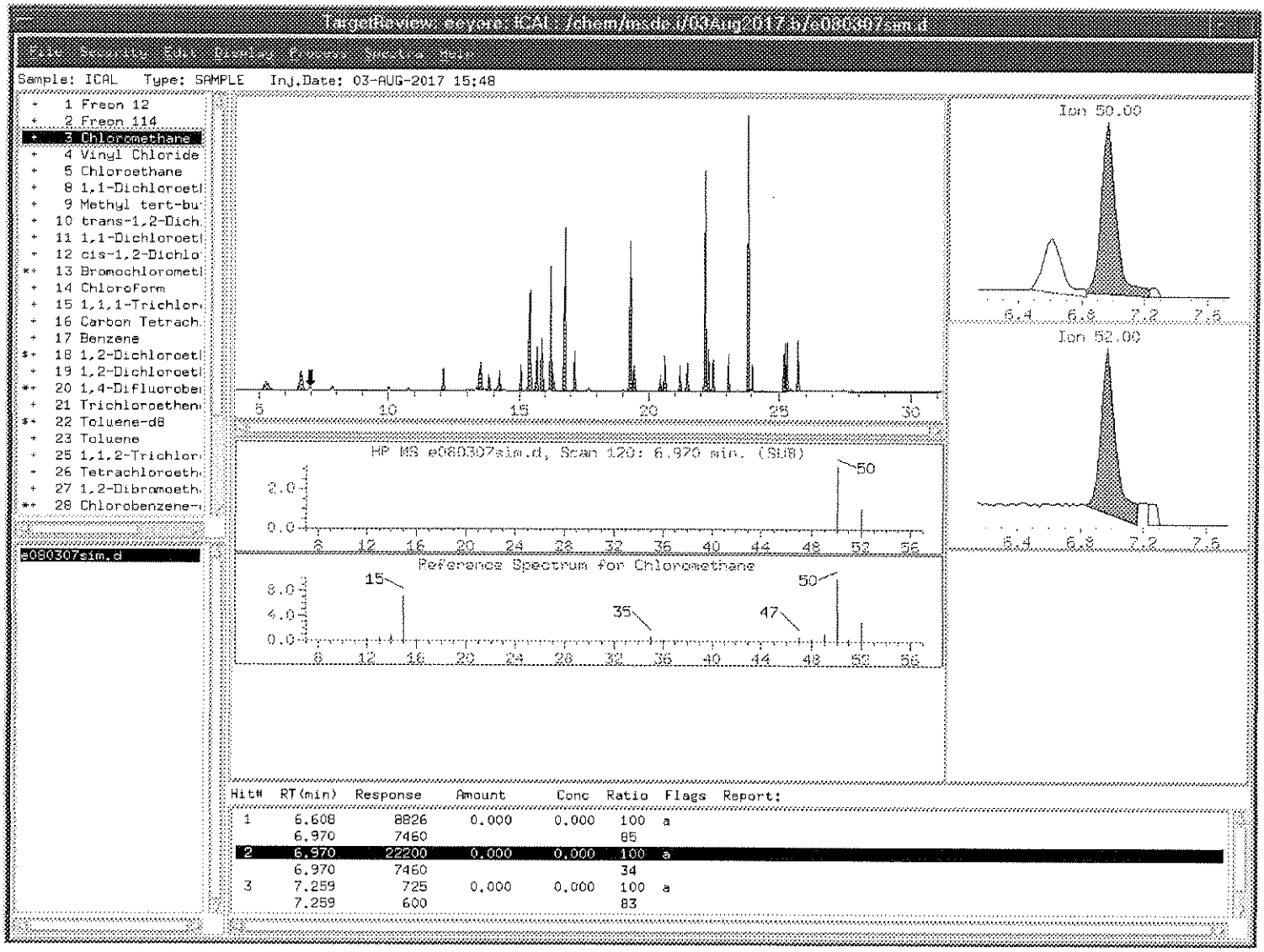
8/4/17



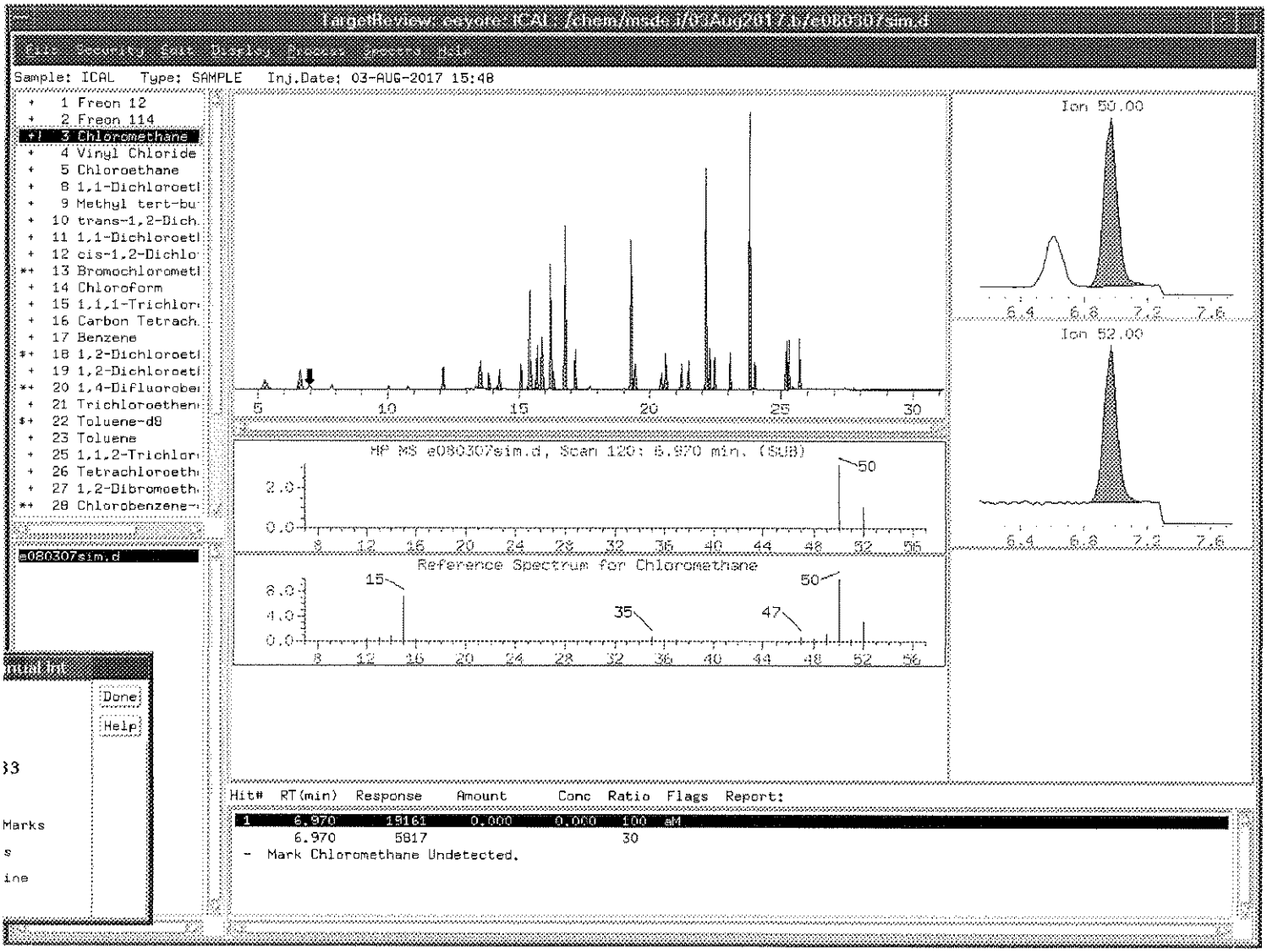
8/4/17

After SS 8/4/17

Correct Baseline	>
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	


TargetReview: eeyore: ICAL: /chem/ms.dc.003/Aug.2017.b/e080307sim.d
File Search Edit Display Process Spectra Help
Sample: ICAL Type: SAMPLE Inj.Date: 03-AUG-2017 15:48
1 Freon 12
2 Freon 114
3 Chloromethane
4 Vinyl Chloride
5 Chloroethane
8 1,1-Dichloroetl
9 Methyl tert-bu
10 trans-1,2-Dich
11 1,1-Dichloroetl
12 cis-1,2-Dichlo
13 Bromochlorometl
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroetl
19 1,2-Dichloroetl
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
23 Toluene
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
28 Chlorobenzene-
e080307sim.d
Ion 50.00
Ion 52.00
HP MS e080307sim.d, Scan 120: 6.970 min. (SUB)
Reference Spectrum for Chloromethane
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 6.608 8826 0.000 0.000 100 a
6.970 7460 85
2 6.970 22200 0.000 0.000 100 a
6.970 7460 34
3 7.259 725 0.000 0.000 100 a
7.259 600 83

Before



After 8/4/17

Correct Baseline	X
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

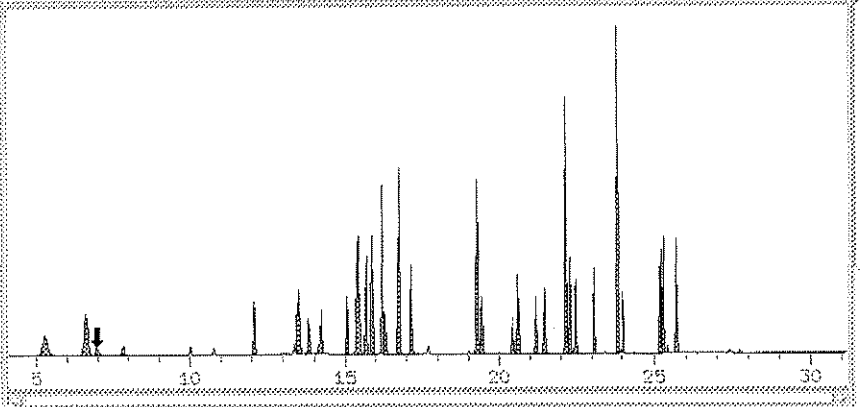
8/4/17

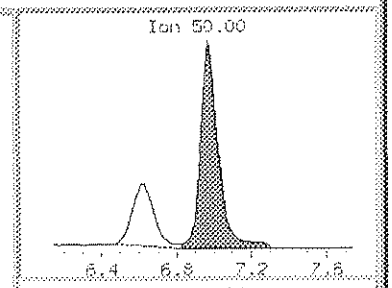
TargetReview: ecy01.s ICAL: /chem/ms.d/03Aug2017.b/e080308sim.d

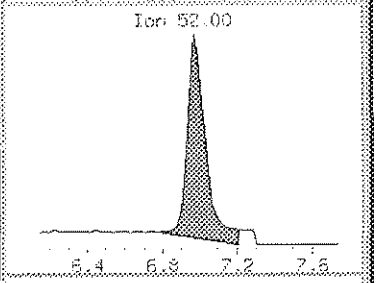
File Scaling Edit Display Process Spectra Help

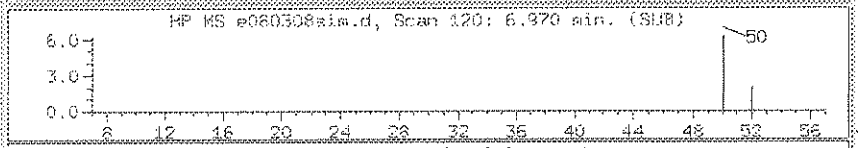
Sample: ICAL Type: SAMPLE Inj.Date: 03-AUG-2017 16:29

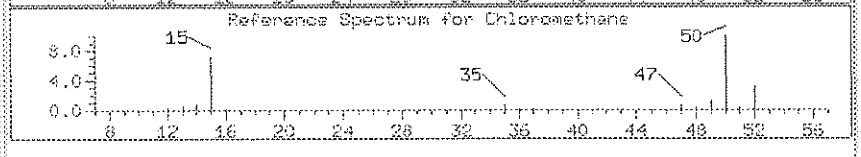
+	1	Freon 12
+	2	Freon 114
+	3	Chloromethane
+	4	Vinyl Chloride
+	5	Chloroethane
+	8	1,1-Dichloroetl
+	9	Methyl tert-bu
+	10	trans-1,2-Dich
+	11	1,1-Dichloroetl
+	12	cis-1,2-Dichlo
*+	13	Bromochlorometl
+	14	Chloroform
+	15	1,1,1-Trichlor
+	16	Carbon Tetrach
+	17	Benzene
$+	18	1,2-Dichloroetl
+	19	1,2-Dichloroetl
*+	20	1,4-Difluorobe
+	21	Trichloroethen
$+	22	Toluene-d8
+	23	Toluene
+	25	1,1,2-Trichlor
+	26	Tetrachloroeth
+	27	1,2-Dibromoeth
*+	28	Chlorobenzene-







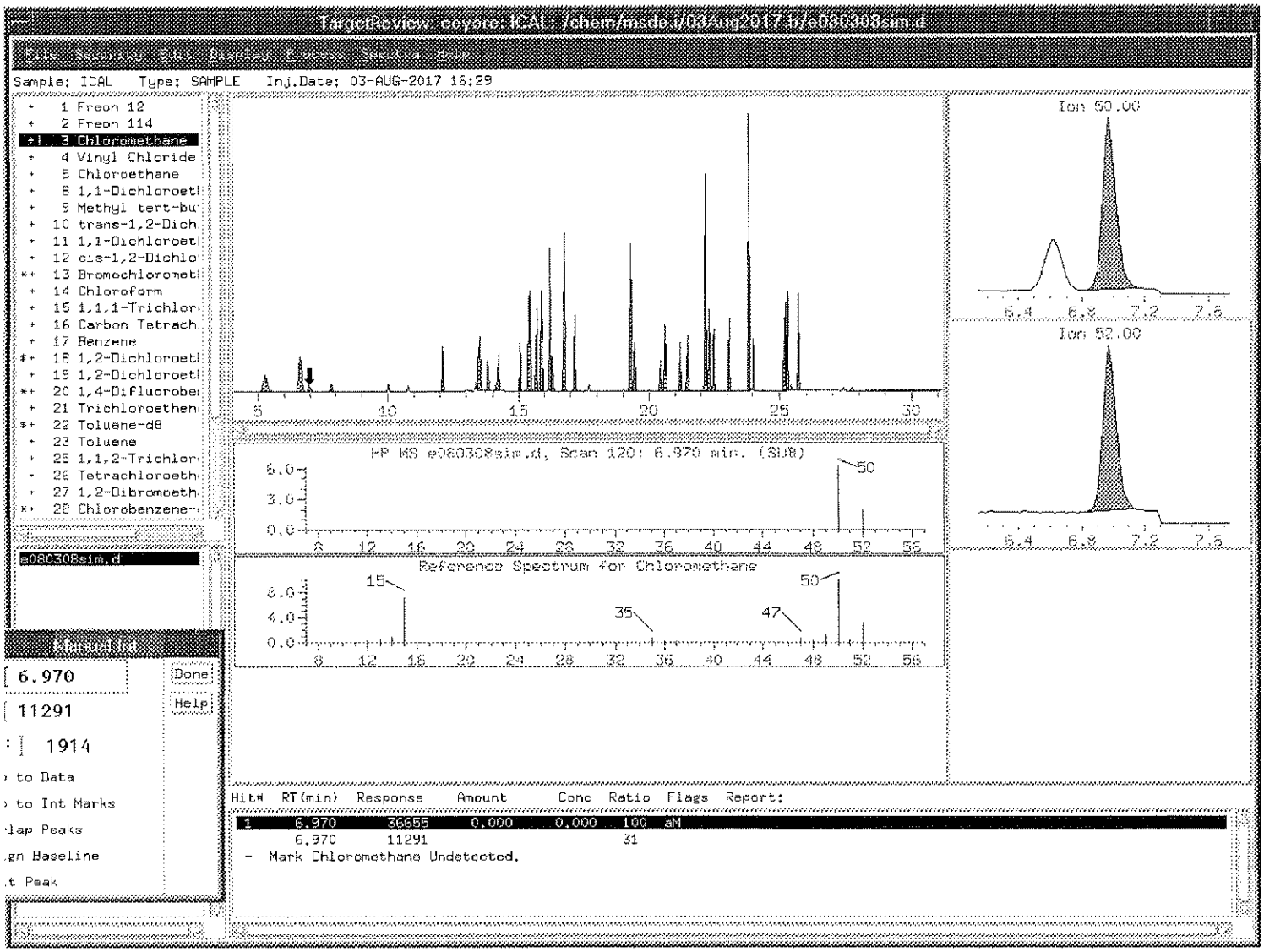




e080308sim.d

Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	6.632	15441	0.000	0.000	100	a	
	6.970	13723			89		
2	6.970	42091	0.000	0.000	100	a	
	6.970	13723			33		

- Mark Chloromethane Undetected.



After

8/4/17

Correct Baseline	✓
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

8/4/17
AT

Modified EPA Methods TO-14A/TO-15 SIM
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane
Target Compounds:
Dichlorodifluoromethane (Fr12)
Freon 114
Chloromethane
Vinyl Chloride
Chloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
Methyl tert-butyl ether
1,1-Dichloroethane
cis-1,2-Dichloroethene
Chloroform
1,1,1-Trichloroethane
Carbon Tetrachloride
Surrogates:
1,2-Dichloroethane-d4

1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Trichloroethene
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
1,1,2-Trichloroethane
Tetrachloroethene
1,2-Dibromoethane
Ethyl Benzene
m,p-Xylene
o-Xylene
1,1,2,2-Tetrachloroethane
1,4-Dichlorobenzene
Naphthalene
Surrogates:
Bromofluorobenzene

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080314sim.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 03-AUG-2017 22:13
Operator : ea Inst ID: msde.i
Smp Info : 50mL#2850-279
Misc Info : 10ppbv(50ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT09.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.258	5.258 (0.341)	85	1467565	9.88152	9.882	80.00- 120.00	100.00
5.258	5.258 (0.341)	87	474235			2.36- 62.36	32.31
2 Freon 114					CAS #: 76-14-2		
6.584	6.584 (0.427)	135	1168568	9.99979	10.00	80.00- 120.00	100.00
6.584	6.584 (0.427)	137	376161			2.19- 62.19	32.19
3 Chloromethane					CAS #: 74-87-3		
6.946	6.921 (0.451)	50	409627	10.0182	10.018	80.00- 120.00	100.00
6.946	6.945 (0.451)	52	130814			1.74- 61.74	31.94
4 Vinyl Chloride					CAS #: 75-01-4		
7.793	7.793 (0.506)	62	363891	10.0047	10.005	80.00- 120.00	100.00
7.793	7.793 (0.506)	64	106785			0.00- 59.24	29.35
5 Chloroethane					CAS #: 75-00-3		
9.999	9.980 (0.649)	64	171418	9.61164	9.612	80.00- 120.00	100.00
9.999	9.980 (0.649)	66	52729			1.37- 61.37	30.76

					CONCENTRATIONS ON-COL	FINAL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.094	12.094 (0.785)	98	280777	9.21452	9.214	80.00- 120.00	100.00
	12.094	12.075 (0.785)	61	870440			279.95- 339.95	310.01
	12.094	12.075 (0.785)	96	438393			125.30- 185.30	156.14
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.492	13.492 (0.876)	73	1122348	10.1791	10.179	80.00- 120.00	100.00
	13.465	13.465 (0.874)	57	274819			0.00- 54.88	24.49
	13.465	13.465 (0.874)	41	306466			0.00- 57.95	27.31
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.879)	98	256891	8.25627	8.256	80.00- 120.00	100.00
	13.520	13.520 (0.878)	61	648747			224.47- 284.47	252.54
	13.547	13.547 (0.879)	96	398675			125.79- 185.79	155.19
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.924)	63	841561	9.52852	9.528	80.00- 120.00	100.00
	14.233	14.233 (0.924)	65	260130			0.76- 60.76	30.91
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.978)	98	347205	10.1058	10.106	80.00- 120.00	100.00
	15.060	15.060 (0.978)	61	803801			202.87- 262.87	231.51
	15.060	15.060 (0.978)	96	535707			124.41- 184.41	154.29
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.405	15.405 (1.000)	130	142934	5.00000		80.00- 120.00	100.00
	15.405	15.374 (1.000)	128	110161			47.34- 107.34	77.07
	15.436	15.436 (1.000)	49	156342			83.88- 143.88	109.38
	14 Chloroform						CAS #: 67-66-3	
	15.436	15.436 (1.002)	83	1124231	9.32987	9.330	80.00- 120.00	100.00
	15.436	15.436 (1.002)	85	764650			38.09- 98.09	68.02
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.018)	97	1479686	9.55285	9.553	80.00- 120.00	100.00
	15.682	15.682 (1.018)	99	963175			35.38- 95.38	65.09
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.030)	119	1713239	9.31889	9.319	80.00- 120.00	100.00
	15.867	15.867 (1.030)	117	1755971			72.55- 132.55	102.49
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	1098904	9.03963	9.040	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	264158			0.00- 53.90	24.04
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.051)	65	211411	4.71258	4.712	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	98922			18.02- 78.02	46.79
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	974723	9.25409	9.254	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	303500			1.11- 61.11	31.14
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	487710	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	73110			0.00- 44.94	14.99
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	829110	9.03600	9.036	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	693662			53.60- 113.60	83.66
17.136	17.136 (1.024)	97	452155			24.58- 84.58	54.54
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	372378	5.01222	5.012	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	42144			0.00- 41.37	11.32
19.289	19.289 (1.153)	100	236528			33.76- 93.76	63.52
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	1433466	9.54738	9.547	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	825575			27.48- 87.48	57.59
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	587645	9.65912	9.659	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	371071			33.18- 93.18	63.15
20.424	20.424 (0.921)	83	435178			44.41- 104.41	74.05
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	1066162	9.33215	9.332	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	845496			49.11- 109.11	79.30
20.616	20.616 (0.930)	131	854690			49.75- 109.75	80.17
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	1022016	9.19769	9.198	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	1017451			69.10- 129.10	99.55
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	443580	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	185057			11.87- 71.87	41.72
30 Ethyl Benzene					CAS #: 100-41-4		
22.295	22.294 (1.006)	106	622523	10.5557	10.556	80.00- 120.00	100.00
22.295	22.294 (1.006)	91	1979876			287.72- 347.72	318.04

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
	31 m,p-Xylene					CAS #: 108-38-3		
	22.481	22.460 (1.014)	106	738816	10.7068	10.707	80.00- 120.00	100.00
	22.481	22.460 (1.014)	91	1567237			182.04- 242.04	212.13
	32 o-Xylene					CAS #: 95-47-6		
	23.082	23.082 (1.041)	106	686628	10.7001	10.700	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	1531499			192.45- 252.45	223.05
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.847	23.847 (1.076)	174	306557	5.14397	5.144	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	293132			66.14- 126.14	95.62
	23.869	23.847 (1.077)	176	298542			67.55- 127.55	97.39
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	24.026	24.026 (1.084)	83	842512	9.27635	9.276	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	586981			39.61- 99.61	69.67
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	25.260	25.260 (1.139)	146	1231833	9.59393	9.594	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	799451			34.93- 94.93	64.90
	25.260	25.260 (1.139)	111	453476			6.87- 66.87	36.81
	38 Naphthalene					CAS #: 91-20-3		
	27.726	27.726 (1.251)	128	54047	0.61157	0.6116	80.00- 120.00	100.00
	27.726	27.726 (1.251)	127	7015			0.00- 42.95	12.98

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080314sim.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: ea
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: ICV
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv(50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	142934	-0.99
20 1,4-Difluorobenze	498300	298980	697620	487710	-2.13
28 Chlorobenzene-d5	452069	271241	632897	443580	-1.88

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.41	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 03Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: ea
Data Type: MS DATA SampleType: LCS
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: AT09.sub
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv(50ppbv)

	SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1 Freon 12	10.000	9.882	98.82	70-130
	2 Freon 114	10.000	10.00	100.00	70-130
	3 Chloromethane	10.000	10.018	100.18	70-130
	4 Vinyl Chloride	10.000	10.005	100.05	70-130
	5 Chloroethane	10.000	9.612	96.12	70-130
	8 1,1-Dichloroethene	10.000	9.214	92.15	70-130
	9 Methyl tert-butyl	10.000	10.179	101.79	70-130
	10 trans-1,2-Dichloro	10.000	8.256	82.56	70-130
	11 1,1-Dichloroethane	10.000	9.528	95.29	70-130
	12 cis-1,2-Dichloroet	10.000	10.106	101.06	70-130
	14 Chloroform	10.000	9.330	93.30	70-130
	15 1,1,1-Trichloroeth	10.000	9.553	95.53	70-130
	16 Carbon Tetrachlori	10.000	9.319	93.19	60-140
	17 Benzene	10.000	9.040	90.40	70-130
	19 1,2-Dichloroethane	10.000	9.254	92.54	70-130
	21 Trichloroethene	10.000	9.036	90.36	70-130
	23 Toluene	10.000	9.547	95.47	70-130
	25 1,1,2-Trichloroeth	10.000	9.659	96.59	70-130
	26 Tetrachloroethene	10.000	9.332	93.32	70-130
	27 1,2-Dibromoethane	10.000	9.198	91.98	70-130
	30 Ethyl Benzene	10.000	10.556	105.56	70-130
	31 m,p-Xylene	10.000	10.707	107.07	70-130
	32 o-Xylene	10.000	10.700	107.00	70-130
	34 1,1,2,2-Tetrachlor	10.000	9.276	92.76	70-130
	36 1,4-Dichlorobenzen	10.000	9.594	95.94	70-130
	38 Naphthalene	1.000	0.6116	61.16	60-140

	SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$	18 1,2-Dichloroethane	5.000	4.712	94.25	70-130

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 22 Toluene-d8	5.000	5.012	100.24	70-130
$ 33 4-Bromofluorobenze	5.000	5.144	102.88	70-130

Data File: /chem/msde.i/03Aug2017.b/e080314sim.d

Date : 03-AUG-2017 22:13

Client ID: ICV

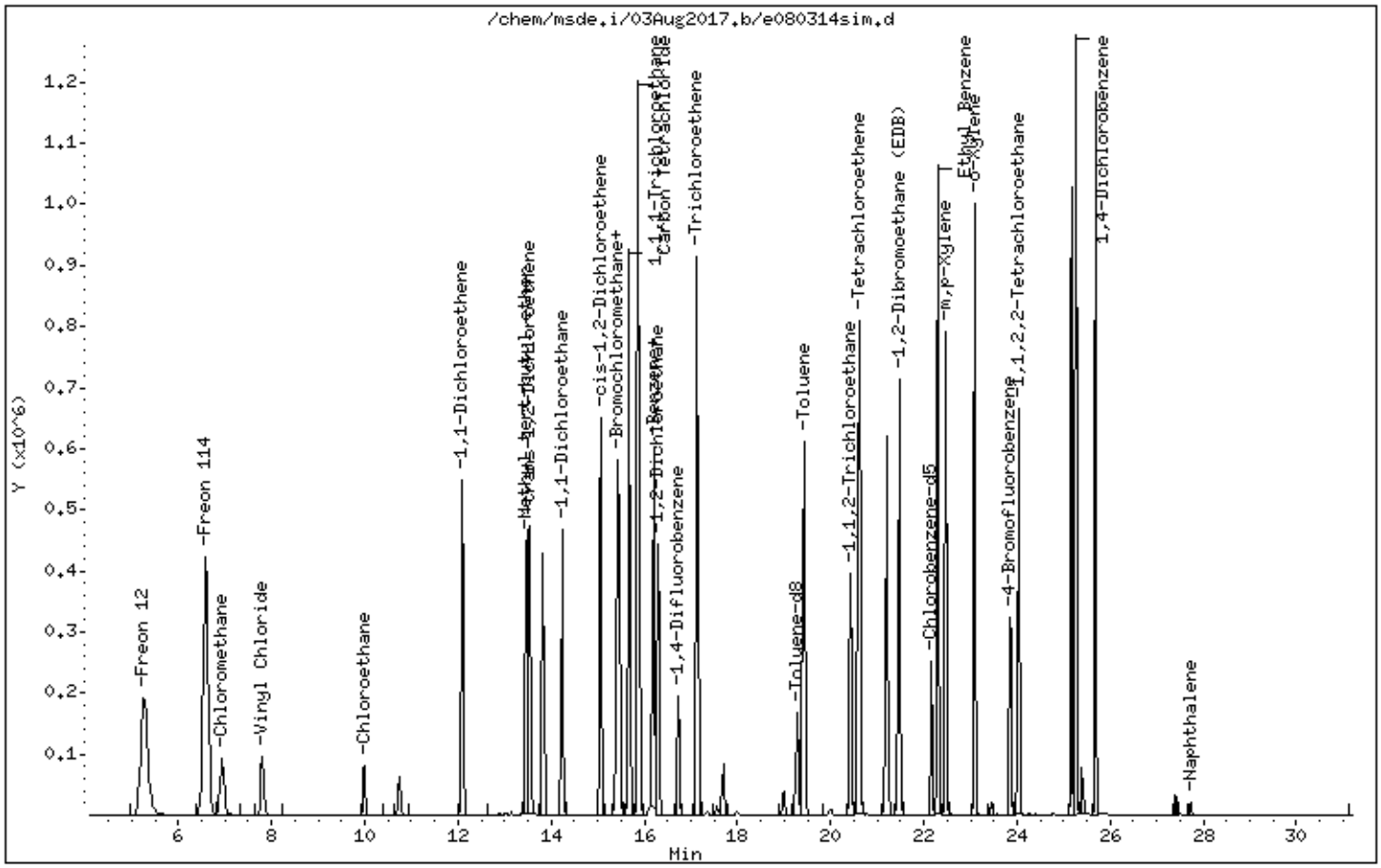
Instrument: msde.i

Sample Info: 50mL#2850-279

Operator: ea

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080302sim.d
Lab Smp Id: ICAL Client Smp ID: Level 2
Inj Date : 03-AUG-2017 12:12
Operator : ef Inst ID: msde.i
Smp Info : 25mL# 2850-285
Misc Info : 0.005ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:09 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 12:12 Cal File: e080302sim.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 3.10000
Integrator: HP RTE Compound Sublist: Level2.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
8 1,1-Dichloroethene					CAS #: 75-35-4		
12.113	12.113 (0.786)	98	162	0.00500	0.005777	80.00- 120.00	100.00(a)
12.113	12.113 (0.786)	61	562			279.95- 339.95	346.91
12.113	12.113 (0.786)	96	490			125.30- 185.30	302.47
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
15.060	15.060 (0.978)	98	202	0.00500	0.006389	80.00- 120.00	100.00(a)
15.060	15.060 (0.978)	61	483			202.87- 262.87	239.11
15.079	15.079 (0.979)	96	532			124.41- 184.41	263.37
* 13 Bromochloromethane					CAS #: 74-97-5		
15.405	15.405 (1.000)	130	131536	5.00000		80.00- 120.00	100.00
15.405	15.405 (1.000)	128	101003			47.34- 107.34	76.79
15.374	15.374 (1.000)	49	158672			83.88- 143.88	120.63
14 Chloroform					CAS #: 67-66-3		
15.436	15.436 (1.002)	83	628	0.00500	0.005663	80.00- 120.00	100.00(aM)
15.467	15.467 (1.004)	85	464			38.09- 98.09	73.89
16 Carbon Tetrachloride					CAS #: 56-23-5		
15.867	15.867 (1.030)	119	1013	0.00500	0.005988	80.00- 120.00	100.00(a)

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride (continued)							
	15.867	15.867 (1.030)	117	1094			72.55- 132.55	108.00
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	16.197	16.197 (1.051)	65	205824	5.00000	4.986	80.00- 120.00	100.00
	16.197	16.197 (1.051)	67	88614			18.02- 78.02	43.05
	19 1,2-Dichloroethane					CAS #: 107-06-2		
	16.293	16.293 (0.974)	62	611	0.00500	0.006222	80.00- 120.00	100.00(a)
	16.317	16.317 (0.976)	64	229			1.11- 61.11	37.48
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	16.727	16.727 (1.000)	114	454662	5.00000		80.00- 120.00	100.00
	16.727	16.727 (1.000)	88	67958			0.00- 44.94	14.95
	21 Trichloroethene					CAS #: 79-01-6		
	17.136	17.136 (1.024)	130	536	0.00500	0.006266	80.00- 120.00	100.00(a)
	17.136	17.136 (1.024)	95	529			53.60- 113.60	98.69
	17.136	17.136 (1.024)	97	299			24.58- 84.58	55.78
$	22 Toluene-d8					CAS #: 2037-26-5		
	19.289	19.289 (1.153)	98	345438	5.00000	4.988	80.00- 120.00	100.00
	19.267	19.267 (1.152)	70	39439			0.00- 41.37	11.42
	19.289	19.289 (1.153)	100	218743			33.76- 93.76	63.32
	26 Tetrachloroethene					CAS #: 127-18-4		
	20.616	20.616 (0.930)	166	674	0.00500	0.006196	80.00- 120.00	100.00(a)
	20.616	20.616 (0.930)	129	568			49.11- 109.11	84.27
	20.616	20.616 (0.930)	131	599			49.75- 109.75	88.87
	27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
	21.495	21.495 (0.970)	107	675	0.00500	0.006380	80.00- 120.00	100.00(a)
	21.495	21.495 (0.970)	109	664			69.10- 129.10	98.37
*	28 Chlorobenzene-d5					CAS #: 3114-55-4		
	22.170	22.170 (1.000)	117	422318	5.00000		80.00- 120.00	100.00
	22.170	22.170 (1.000)	82	175068			11.87- 71.87	41.45
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.847	23.847 (1.076)	174	273449	5.00000	4.819	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	263504			66.14- 126.14	96.36
	23.869	23.869 (1.077)	176	265224			67.55- 127.55	96.99
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	24.026	24.026 (1.084)	83	576	0.00500	0.006661	80.00- 120.00	100.00(a)
	24.049	24.049 (1.085)	85	395			39.61- 99.61	68.58

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080302sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 2
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 0.005ppbv (0.05ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	131536	-8.89
20 1,4-Difluorobenze	498300	298980	697620	454662	-8.76
28 Chlorobenzene-d5	452069	271241	632897	422318	-6.58

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080302sim.d

Date : 03-AUG-2017 12:12

Client ID: Level 2

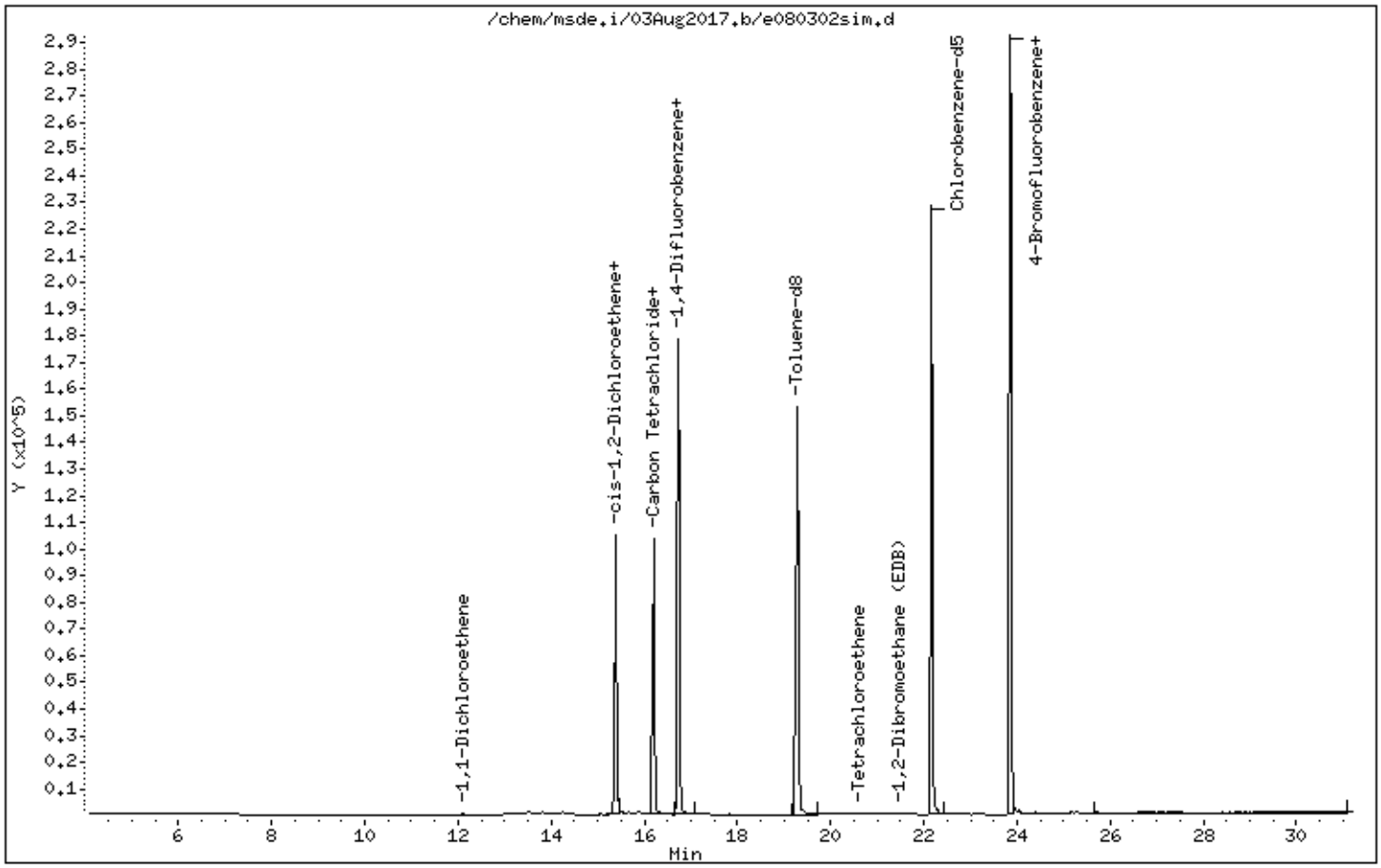
Instrument: msde.i

Sample Info: 25mL# 2850-285

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080303sim.d
Lab Smp Id: ICAL Client Smp ID: Level 3
Inj Date : 03-AUG-2017 12:56
Operator : ef Inst ID: msde.i
Smp Info : 50mL# 2850-285
Misc Info : 0.01ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 12:56 Cal File: e080303sim.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 3.10000
Integrator: HP RTE Compound Sublist: Level3.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========		=======	=======	============	=====
4 Vinyl Chloride						CAS #: 75-01-4		
7.810	7.810 (0.507)	62	332	0.01000	0.01000	80.00- 120.00		100.00
7.810	7.810 (0.507)	64	126			0.00- 59.24		37.95
8 1,1-Dichloroethene						CAS #: 75-35-4		
12.113	12.113 (0.786)	98	312	0.01000	0.01122	80.00- 120.00		100.00
12.094	12.094 (0.785)	61	953			279.95- 339.95		305.45
12.094	12.094 (0.785)	96	598			125.30- 185.30		191.67
10 trans-1,2-Dichloroethene						CAS #: 156-60-5		
13.547	13.547 (0.879)	98	342	0.01000	0.01204	80.00- 120.00		100.00(a)
13.547	13.547 (0.879)	61	914			224.47- 284.47		267.25
13.547	13.547 (0.879)	96	719			125.79- 185.79		210.23
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
15.060	15.060 (0.978)	98	378	0.01000	0.01206	80.00- 120.00		100.00(a)
15.060	15.060 (0.978)	61	814			202.87- 262.87		215.34
15.060	15.060 (0.978)	96	556			124.41- 184.41		147.09
* 13 Bromochloromethane						CAS #: 74-97-5		
15.405	15.405 (1.000)	130	130434	5.00000		80.00- 120.00		100.00

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE					
* 13 Bromochloromethane (continued)								
15.405	15.405 (1.000)	128	100082				47.34- 107.34	76.73
15.374	15.374 (1.000)	49	157047				83.88- 143.88	120.40
14 Chloroform						CAS #: 67-66-3		
15.467	15.467 (1.004)	83	1042	0.01000	0.009476		80.00- 120.00	100.00(aM)
15.467	15.467 (1.004)	85	804				38.09- 98.09	77.16
16 Carbon Tetrachloride						CAS #: 56-23-5		
15.867	15.867 (1.030)	119	1838	0.01000	0.01096		80.00- 120.00	100.00(a)
15.867	15.867 (1.030)	117	1997				72.55- 132.55	108.65
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.197	16.197 (1.051)	65	205640	5.00000	5.023		80.00- 120.00	100.00
16.197	16.197 (1.051)	67	88325				18.02- 78.02	42.95
19 1,2-Dichloroethane						CAS #: 107-06-2		
16.293	16.293 (0.974)	62	1095	0.01000	0.01134		80.00- 120.00	100.00(a)
16.293	16.293 (0.974)	64	443				1.11- 61.11	40.46
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
16.727	16.727 (1.000)	114	447093	5.00000			80.00- 120.00	100.00
16.727	16.727 (1.000)	88	66624				0.00- 44.94	14.90
21 Trichloroethene						CAS #: 79-01-6		
17.136	17.136 (1.024)	130	1000	0.01000	0.01189		80.00- 120.00	100.00(a)
17.136	17.136 (1.024)	95	866				53.60- 113.60	86.60
17.136	17.136 (1.024)	97	482				24.58- 84.58	48.20
$ 22 Toluene-d8						CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	339949	5.00000	4.991		80.00- 120.00	100.00
19.267	19.267 (1.152)	70	39178				0.00- 41.37	11.52
19.289	19.289 (1.153)	100	215970				33.76- 93.76	63.53
25 1,1,2-Trichloroethane						CAS #: 79-00-5		
20.424	20.424 (0.921)	97	670	0.01000	0.01169		80.00- 120.00	100.00(a)
20.424	20.424 (0.921)	99	443				33.18- 93.18	66.12
20.424	20.424 (0.921)	83	464				44.41- 104.41	69.25
26 Tetrachloroethene						CAS #: 127-18-4		
20.616	20.616 (0.930)	166	1226	0.01000	0.01139		80.00- 120.00	100.00(a)
20.616	20.616 (0.930)	129	977				49.11- 109.11	79.69
20.616	20.616 (0.930)	131	983				49.75- 109.75	80.18
27 1,2-Dibromoethane (EDB)						CAS #: 106-93-4		
21.495	21.495 (0.970)	107	1213	0.01000	0.01158		80.00- 120.00	100.00(a)

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
27 1,2-Dibromoethane (EDB) (continued)							
21.495	21.495 (0.970)	109	1096			69.10- 129.10	90.35
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	417974	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	172995			11.87- 71.87	41.39
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
23.847	23.847 (1.076)	174	272270	5.00000	4.848	80.00- 120.00	100.00
23.847	23.847 (1.076)	95	260814			66.14- 126.14	95.79
23.847	23.847 (1.076)	176	264171			67.55- 127.55	97.03
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
24.026	24.026 (1.084)	83	916	0.01000	0.01070	80.00- 120.00	100.00(a)
24.026	24.026 (1.084)	85	647			39.61- 99.61	70.63
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
25.282	25.282 (1.140)	146	1544	0.01000	0.01276	80.00- 120.00	100.00(a)
25.282	25.282 (1.140)	148	1014			34.93- 94.93	65.67
25.260	25.260 (1.139)	111	482			6.87- 66.87	31.22

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080303sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 3
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 0.01ppbv (0.05ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	130434	-9.65
20 1,4-Difluorobenze	498300	298980	697620	447093	-10.28
28 Chlorobenzene-d5	452069	271241	632897	417974	-7.54

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.41	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080303sim.d

Date : 03-AUG-2017 12:56

Client ID: Level 3

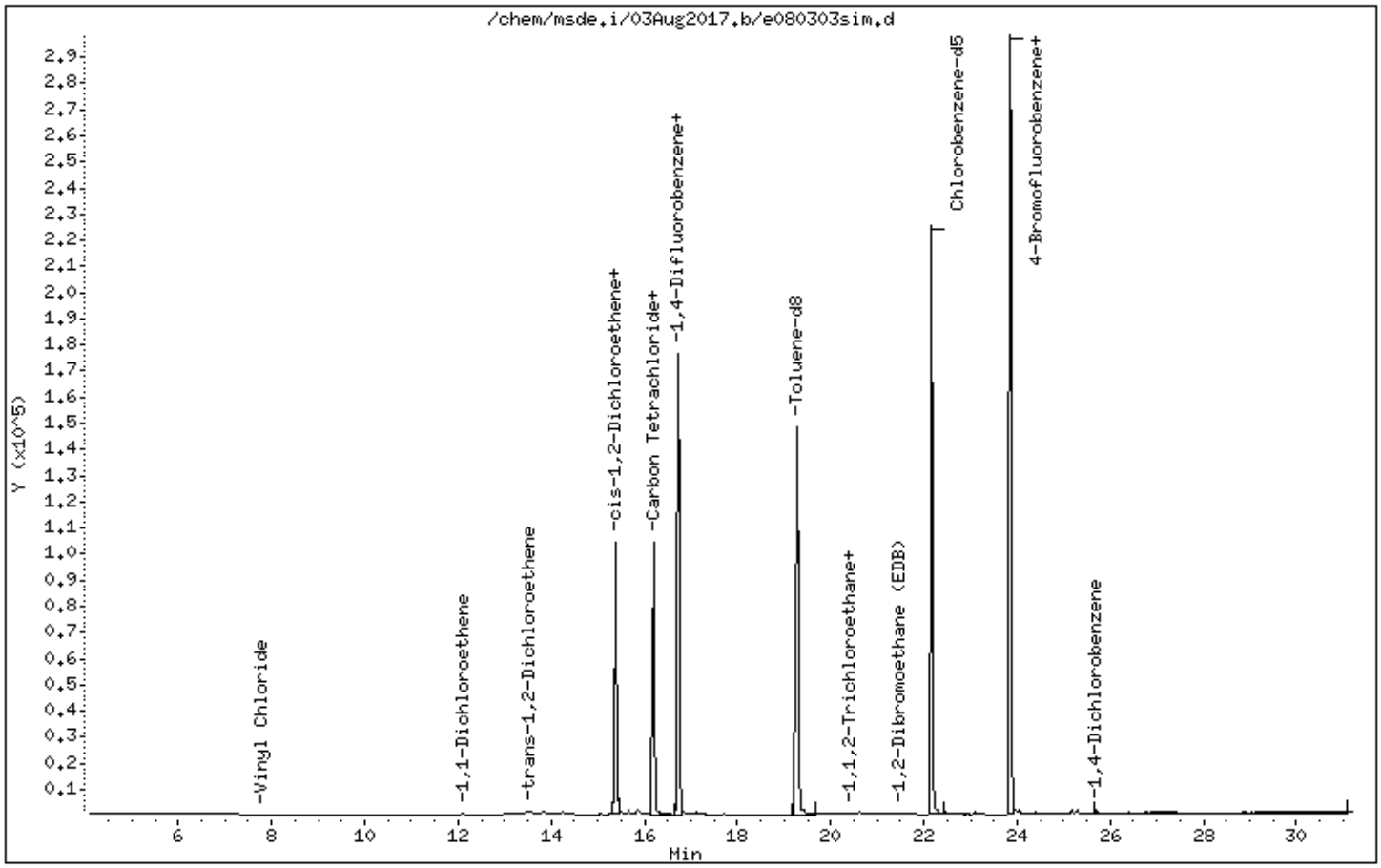
Instrument: msde.i

Sample Info: 50mL# 2850-285

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080304sim.d
Lab Smp Id: ICAL Client Smp ID: Level 4
Inj Date : 03-AUG-2017 13:39
Operator : ef Inst ID: msde.i
Smp Info : 100mL# 2850-285
Misc Info : 0.02ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 13:39 Cal File: e080304sim.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 3.10000
Integrator: HP RTE Compound Sublist: Level4.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
1 Freon 12						CAS #: 75-71-8		
5.307	5.307	(0.344)	85	2853	0.02000	0.02059	80.00- 120.00	100.00
5.258	5.258	(0.341)	87	874			2.36- 62.36	30.63
2 Freon 114						CAS #: 76-14-2		
6.608	6.608	(0.429)	135	2412	0.02000	0.02212	80.00- 120.00	100.00
6.608	6.608	(0.429)	137	822			2.19- 62.19	34.08
4 Vinyl Chloride						CAS #: 75-01-4		
7.828	7.828	(0.508)	62	780	0.02000	0.02298	80.00- 120.00	100.00
7.810	7.810	(0.507)	64	245			0.00- 59.24	31.41
8 1,1-Dichloroethene						CAS #: 75-35-4		
12.113	12.113	(0.786)	98	621	0.02000	0.02184	80.00- 120.00	100.00
12.113	12.113	(0.786)	61	1819			279.95- 339.95	292.91
12.094	12.094	(0.785)	96	1171			125.30- 185.30	188.57
9 Methyl tert-butyl ether						CAS #: 1634-04-4		
13.492	13.492	(0.876)	73	2149	0.02000	0.02089	80.00- 120.00	100.00(a)
13.492	13.492	(0.876)	57	487			0.00- 54.88	22.66

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
9 Methyl tert-butyl ether (continued)							
13.492	13.492 (0.876)	41	681			0.00- 57.95	31.69
11 1,1-Dichloroethane					CAS #: 75-34-3		
14.233	14.233 (0.924)	63	1789	0.02000	0.02171	80.00- 120.00	100.00
14.233	14.233 (0.924)	65	574			0.76- 60.76	32.08
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
13.547	13.547 (0.879)	98	621	0.02000	0.02139	80.00- 120.00	100.00(a)
13.547	13.547 (0.879)	61	1507			224.47- 284.47	242.67
13.547	13.547 (0.879)	96	1141			125.79- 185.79	183.74
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
15.060	15.060 (0.978)	98	681	0.02000	0.02124	80.00- 120.00	100.00
15.060	15.060 (0.978)	61	1446			202.87- 262.87	212.33
15.060	15.060 (0.978)	96	1139			124.41- 184.41	167.25
* 13 Bromochloromethane					CAS #: 74-97-5		
15.405	15.405 (1.000)	130	133358	5.00000		80.00- 120.00	100.00
15.405	15.405 (1.000)	128	103244			47.34- 107.34	77.42
15.374	15.374 (1.000)	49	160172			83.88- 143.88	120.11
14 Chloroform					CAS #: 67-66-3		
15.436	15.436 (1.002)	83	2515	0.02000	0.02237	80.00- 120.00	100.00
15.467	15.467 (1.004)	85	1736			38.09- 98.09	69.03
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
15.682	15.682 (1.018)	97	3116	0.02000	0.02156	80.00- 120.00	100.00
15.682	15.682 (1.018)	99	2001			35.38- 95.38	64.22
16 Carbon Tetrachloride					CAS #: 56-23-5		
15.867	15.867 (1.030)	119	3543	0.02000	0.02066	80.00- 120.00	100.00
15.867	15.867 (1.030)	117	3665			72.55- 132.55	103.44
17 Benzene					CAS #: 71-43-2		
16.197	16.197 (0.968)	78	3108	0.02000	0.02763	80.00- 120.00	100.00(a)
16.197	16.197 (0.968)	77	1289			0.00- 53.90	41.47
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
16.197	16.197 (1.051)	65	210958	5.00000	5.040	80.00- 120.00	100.00
16.197	16.197 (1.051)	67	90172			18.02- 78.02	42.74
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	1946	0.02000	0.01997	80.00- 120.00	100.00(a)
16.293	16.293 (0.974)	64	684			1.11- 61.11	35.15

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	451217	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	67291			0.00- 44.94	14.91
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	1759	0.02000	0.02072	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	1497			53.60- 113.60	85.11
17.136	17.136 (1.024)	97	1059			24.58- 84.58	60.20
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	341609	5.00000	4.970	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	39565			0.00- 41.37	11.58
19.289	19.289 (1.153)	100	218123			33.76- 93.76	63.85
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	3218	0.02000	0.02317	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	1833			27.48- 87.48	56.96
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	1155	0.02000	0.02015	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	777			33.18- 93.18	67.27
20.424	20.424 (0.921)	83	865			44.41- 104.41	74.89
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	2192	0.02000	0.02037	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	1847			49.11- 109.11	84.26
20.616	20.616 (0.930)	131	1774			49.75- 109.75	80.93
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	2279	0.02000	0.02177	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	2111			69.10- 129.10	92.63
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	417876	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	175306			11.87- 71.87	41.95
30 Ethyl Benzene					CAS #: 100-41-4		
22.295	22.295 (1.006)	106	1061	0.02000	0.01910	80.00- 120.00	100.00(a)
22.295	22.295 (1.006)	91	3987			287.72- 347.72	375.78
31 m,p-Xylene					CAS #: 108-38-3		
22.481	22.481 (1.014)	106	1323	0.02000	0.02035	80.00- 120.00	100.00(a)
22.481	22.481 (1.014)	91	2910			182.04- 242.04	219.95
32 o-Xylene					CAS #: 95-47-6		
23.082	23.082 (1.041)	106	1260	0.02000	0.02084	80.00- 120.00	100.00

					AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE					
32 o-Xylene (continued)								
23.082	23.082 (1.041)	91	2940				192.45- 252.45	233.33
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.847	23.847 (1.076)	174	277734	5.00000		4.947	80.00- 120.00	100.00
23.847	23.847 (1.076)	95	266496				66.14- 126.14	95.95
23.869	23.869 (1.077)	176	270312				67.55- 127.55	97.33
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
24.026	24.026 (1.084)	83	1773	0.02000		0.02072	80.00- 120.00	100.00
24.026	24.026 (1.084)	85	1247				39.61- 99.61	70.33
36 1,4-Dichlorobenzene						CAS #: 106-46-7		
25.282	25.282 (1.140)	146	2637	0.02000		0.02180	80.00- 120.00	100.00
25.282	25.282 (1.140)	148	1654				34.93- 94.93	62.72
25.260	25.260 (1.139)	111	1078				6.87- 66.87	40.88

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080304sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 4
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 0.02ppbv (0.05ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	133358	-7.63
20 1,4-Difluorobenze	498300	298980	697620	451217	-9.45
28 Chlorobenzene-d5	452069	271241	632897	417876	-7.56

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.41	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080304sim.d

Date : 03-AUG-2017 13:39

Client ID: Level 4

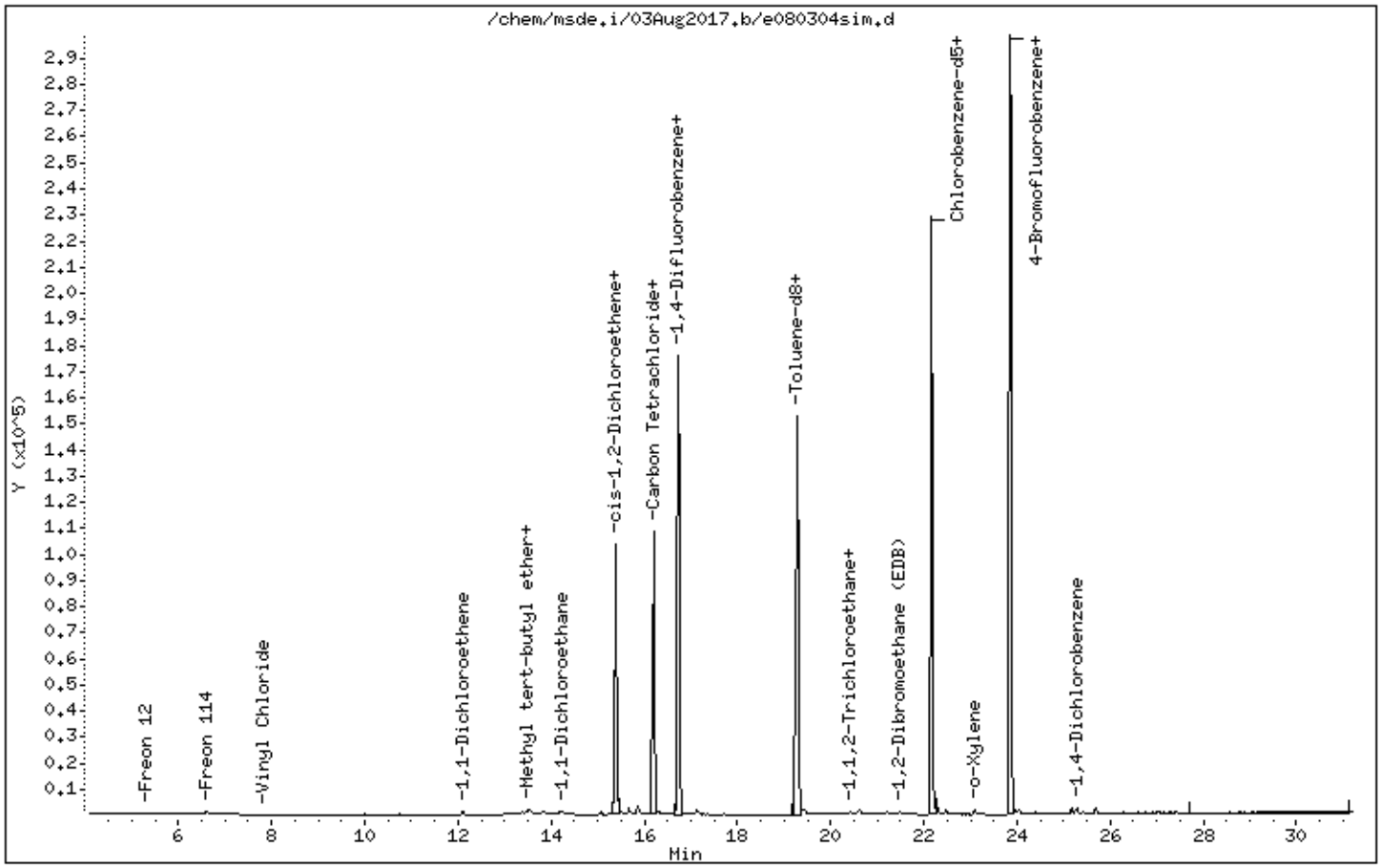
Instrument: msde.i

Sample Info: 100mL# 2850-285

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080305sim.d
Lab Smp Id: ICAL Client Smp ID: Level 5
Inj Date : 03-AUG-2017 14:24
Operator : ef Inst ID: msde.i
Smp Info : 250mL# 2850-285
Misc Info : 0.05ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 14:24 Cal File: e080305sim.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.282	5.282 (0.343)	85	6798	0.05000	0.04869	80.00- 120.00	100.00(a)
5.282	5.282 (0.343)	87	2232			2.36- 62.36	32.83
2 Freon 114					CAS #: 76-14-2		
6.632	6.632 (0.431)	135	5479	0.05000	0.04988	80.00- 120.00	100.00(a)
6.632	6.632 (0.431)	137	1707			2.19- 62.19	31.16
4 Vinyl Chloride					CAS #: 75-01-4		
7.828	7.828 (0.508)	62	1552	0.05000	0.04539	80.00- 120.00	100.00(a)
7.828	7.828 (0.508)	64	467			0.00- 59.24	30.09
5 Chloroethane					CAS #: 75-00-3		
9.999	9.999 (0.649)	64	972	0.05000	0.05798	80.00- 120.00	100.00
9.999	9.999 (0.649)	66	319			1.37- 61.37	32.82
8 1,1-Dichloroethene					CAS #: 75-35-4		
12.113	12.113 (0.786)	98	1411	0.05000	0.04926	80.00- 120.00	100.00(a)
12.094	12.094 (0.785)	61	4278			279.95- 339.95	303.19
12.094	12.094 (0.785)	96	2445			125.30- 185.30	173.28

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.492	13.492 (0.876)	73	4938	0.05000	0.04764	80.00- 120.00	100.00(a)
	13.492	13.492 (0.876)	57	1230			0.00- 54.88	24.91
	13.492	13.492 (0.876)	41	1425			0.00- 57.95	28.86
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.879)	98	1482	0.05000	0.05067	80.00- 120.00	100.00
	13.547	13.547 (0.879)	61	3663			224.47- 284.47	247.17
	13.547	13.547 (0.879)	96	2579			125.79- 185.79	174.02
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.924)	63	4122	0.05000	0.04965	80.00- 120.00	100.00(a)
	14.233	14.233 (0.924)	65	1205			0.76- 60.76	29.23
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.978)	98	1571	0.05000	0.04864	80.00- 120.00	100.00(a)
	15.060	15.060 (0.978)	61	3548			202.87- 262.87	225.84
	15.060	15.060 (0.978)	96	2414			124.41- 184.41	153.66
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.405	15.405 (1.000)	130	134364	5.00000		80.00- 120.00	100.00
	15.405	15.405 (1.000)	128	103436			47.34- 107.34	76.98
	15.374	15.374 (1.000)	49	162196			83.88- 143.88	120.71
	14 Chloroform						CAS #: 67-66-3	
	15.467	15.467 (1.004)	83	5834	0.05000	0.05150	80.00- 120.00	100.00
	15.467	15.467 (1.004)	85	3881			38.09- 98.09	66.52
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.018)	97	7384	0.05000	0.05071	80.00- 120.00	100.00
	15.682	15.682 (1.018)	99	4821			35.38- 95.38	65.29
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.030)	119	8278	0.05000	0.04790	80.00- 120.00	100.00(a)
	15.867	15.867 (1.030)	117	8681			72.55- 132.55	104.87
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	6177	0.05000	0.05531	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	1845			0.00- 53.90	29.87
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.051)	65	215963	5.00000	5.121	80.00- 120.00	100.00
	16.197	16.197 (1.051)	67	92043			18.02- 78.02	42.62
	19 1,2-Dichloroethane						CAS #: 107-06-2	
	16.293	16.293 (0.974)	62	4816	0.05000	0.04977	80.00- 120.00	100.00(a)

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
19 1,2-Dichloroethane (continued)							
16.317	16.317 (0.976)	64	1530			1.11- 61.11	31.77
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	448027	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	67526			0.00- 44.94	15.07
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	4204	0.05000	0.04988	80.00- 120.00	100.00(a)
17.136	17.136 (1.024)	95	3555			53.60- 113.60	84.56
17.136	17.136 (1.024)	97	2317			24.58- 84.58	55.11
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	343193	5.00000	5.028	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	39711			0.00- 41.37	11.57
19.289	19.289 (1.153)	100	218565			33.76- 93.76	63.69
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	7516	0.05000	0.05449	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	4130			27.48- 87.48	54.95
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	2884	0.05000	0.04991	80.00- 120.00	100.00(a)
20.424	20.424 (0.921)	99	1862			33.18- 93.18	64.56
20.424	20.424 (0.921)	83	2165			44.41- 104.41	75.07
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	5354	0.05000	0.04934	80.00- 120.00	100.00(a)
20.616	20.616 (0.930)	129	4212			49.11- 109.11	78.67
20.616	20.616 (0.930)	131	4286			49.75- 109.75	80.05
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	5456	0.05000	0.05170	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	5280			69.10- 129.10	96.77
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	421278	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	174178			11.87- 71.87	41.35
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	2784	0.05000	0.04970	80.00- 120.00	100.00(a)
22.294	22.294 (1.006)	91	8856			287.72- 347.72	318.10
31 m,p-Xylene					CAS #: 108-38-3		
22.481	22.481 (1.014)	106	3139	0.05000	0.04790	80.00- 120.00	100.00(a)
22.481	22.481 (1.014)	91	6920			182.04- 242.04	220.45

					AMOUNTS			
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
32 o-Xylene							CAS #: 95-47-6	
23.082	23.082	(1.041)	106	2999	0.05000	0.04921	80.00- 120.00	100.00(a)
23.082	23.082	(1.041)	91	6591			192.45- 252.45	219.77
$ 33 4-Bromofluorobenzene							CAS #: 460-00-4	
23.847	23.847	(1.076)	174	280394	5.00000	4.954	80.00- 120.00	100.00
23.847	23.847	(1.076)	95	266535			66.14- 126.14	95.06
23.869	23.869	(1.077)	176	271795			67.55- 127.55	96.93
34 1,1,2,2-Tetrachloroethane							CAS #: 79-34-5	
24.026	24.026	(1.084)	83	4181	0.05000	0.04847	80.00- 120.00	100.00(a)
24.026	24.026	(1.084)	85	2815			39.61- 99.61	67.33
36 1,4-Dichlorobenzene							CAS #: 106-46-7	
25.260	25.260	(1.139)	146	6293	0.05000	0.05161	80.00- 120.00	100.00
25.282	25.282	(1.140)	148	3900			34.93- 94.93	61.97
25.260	25.260	(1.139)	111	2279			6.87- 66.87	36.21

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080305sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 5
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 0.05ppbv (0.05ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	134364	-6.93
20 1,4-Difluorobenze	498300	298980	697620	448027	-10.09
28 Chlorobenzene-d5	452069	271241	632897	421278	-6.81

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080305sim.d

Date : 03-AUG-2017 14:24

Client ID: Level 5

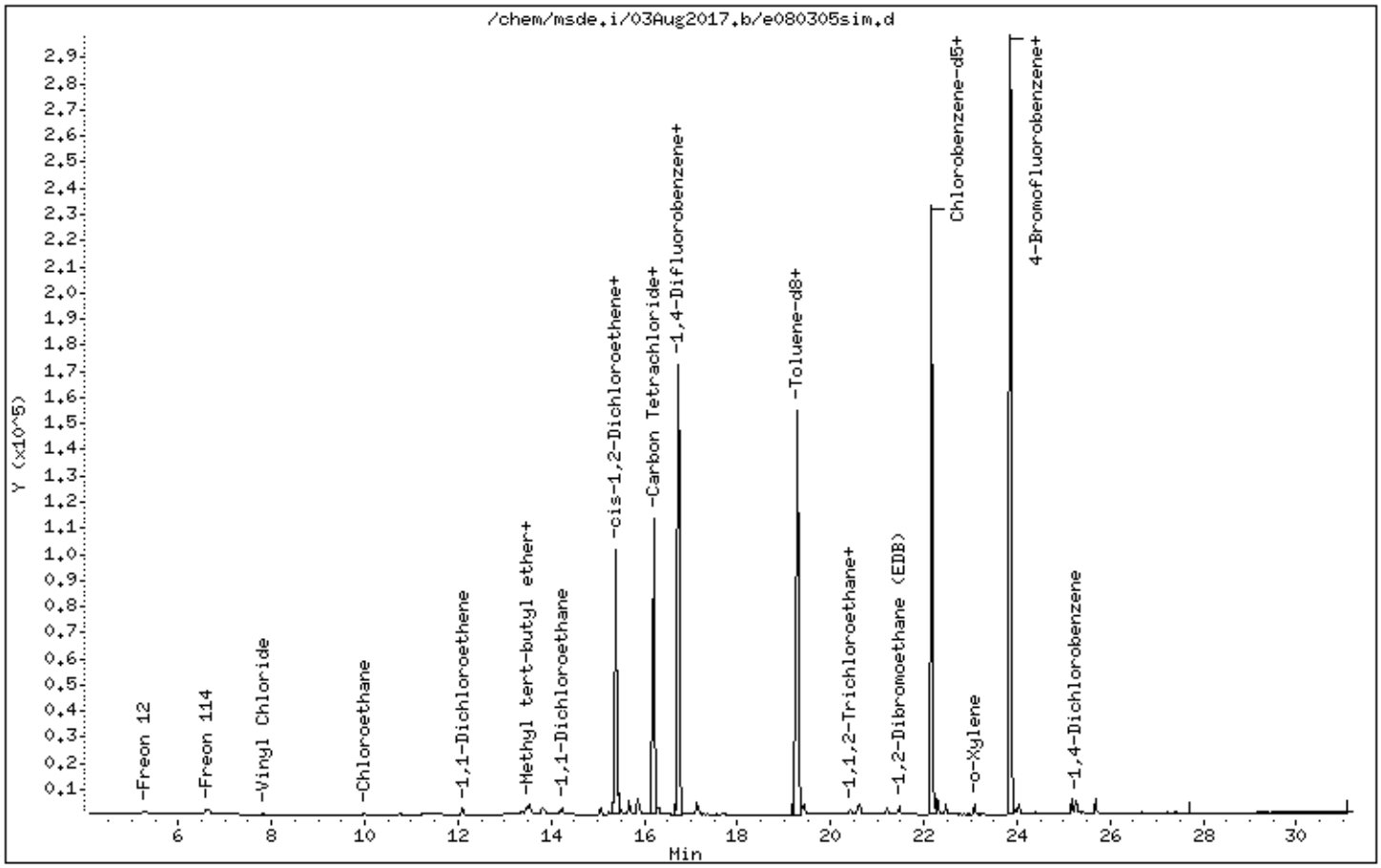
Instrument: msde.i

Sample Info: 250mL# 2850-285

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080306sim.d
Lab Smp Id: ICAL Client Smp ID: Level 6
Inj Date : 03-AUG-2017 15:06
Operator : ef Inst ID: msde.i
Smp Info : 25mL# 2850-286
Misc Info : 0.1ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 15:06 Cal File: e080306sim.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.282	5.282 (0.343)	85	15736	0.10000	0.1166	80.00- 120.00	100.00
5.258	5.258 (0.341)	87	5194			2.36- 62.36	33.01
2 Freon 114					CAS #: 76-14-2		
6.584	6.584 (0.427)	135	11815	0.10000	0.1113	80.00- 120.00	100.00
6.608	6.608 (0.429)	137	4004			2.19- 62.19	33.89
4 Vinyl Chloride					CAS #: 75-01-4		
7.828	7.828 (0.508)	62	3652	0.10000	0.1105	80.00- 120.00	100.00
7.810	7.810 (0.507)	64	1216			0.00- 59.24	33.30
5 Chloroethane					CAS #: 75-00-3		
9.999	9.999 (0.649)	64	1979	0.10000	0.1222	80.00- 120.00	100.00
9.999	9.999 (0.649)	66	1041			1.37- 61.37	52.60
8 1,1-Dichloroethene					CAS #: 75-35-4		
12.113	12.113 (0.786)	98	2968	0.10000	0.1072	80.00- 120.00	100.00
12.113	12.113 (0.786)	61	8855			279.95- 339.95	298.35
12.113	12.113 (0.786)	96	4633			125.30- 185.30	156.10

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
13.492	13.492 (0.876)	73	10258	0.10000	0.1024	80.00- 120.00	100.00
13.492	13.492 (0.876)	57	2650			0.00- 54.88	25.83
13.492	13.492 (0.876)	41	3332			0.00- 57.95	32.48
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
13.547	13.547 (0.879)	98	2963	0.10000	0.1048	80.00- 120.00	100.00
13.547	13.547 (0.879)	61	7656			224.47- 284.47	258.39
13.547	13.547 (0.879)	96	4801			125.79- 185.79	162.03
11 1,1-Dichloroethane					CAS #: 75-34-3		
14.233	14.233 (0.924)	63	8786	0.10000	0.1095	80.00- 120.00	100.00
14.233	14.233 (0.924)	65	2640			0.76- 60.76	30.05
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
15.060	15.060 (0.978)	98	3197	0.10000	0.1024	80.00- 120.00	100.00
15.060	15.060 (0.978)	61	7187			202.87- 262.87	224.80
15.060	15.060 (0.978)	96	5040			124.41- 184.41	157.65
* 13 Bromochloromethane					CAS #: 74-97-5		
15.405	15.405 (1.000)	130	129827	5.00000		80.00- 120.00	100.00
15.405	15.405 (1.000)	128	100466			47.34- 107.34	77.38
15.374	15.374 (1.000)	49	158027			83.88- 143.88	121.72
14 Chloroform					CAS #: 67-66-3		
15.466	15.466 (1.004)	83	11861	0.10000	0.1084	80.00- 120.00	100.00
15.466	15.466 (1.004)	85	8095			38.09- 98.09	68.25
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
15.682	15.682 (1.018)	97	15672	0.10000	0.1114	80.00- 120.00	100.00
15.682	15.682 (1.018)	99	10320			35.38- 95.38	65.85
16 Carbon Tetrachloride					CAS #: 56-23-5		
15.867	15.867 (1.030)	119	17903	0.10000	0.1072	80.00- 120.00	100.00
15.867	15.867 (1.030)	117	18311			72.55- 132.55	102.28
17 Benzene					CAS #: 71-43-2		
16.197	16.197 (0.968)	78	11797	0.10000	0.1063	80.00- 120.00	100.00
16.197	16.197 (0.968)	77	3086			0.00- 53.90	26.16
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
16.197	16.197 (1.051)	65	205811	5.00000	5.051	80.00- 120.00	100.00
16.197	16.197 (1.051)	67	87402			18.02- 78.02	42.47
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	9716	0.10000	0.1011	80.00- 120.00	100.00

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
19 1,2-Dichloroethane (continued)							
16.317	16.317 (0.976)	64	3108			1.11- 61.11	31.99
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	445110	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	66330			0.00- 44.94	14.90
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	8711	0.10000	0.1040	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	7432			53.60- 113.60	85.32
17.136	17.136 (1.024)	97	4588			24.58- 84.58	52.67
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	336711	5.00000	4.966	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	38763			0.00- 41.37	11.51
19.289	19.289 (1.153)	100	213306			33.76- 93.76	63.35
23 Toluene					CAS #: 108-88-3		
19.423	19.423 (1.161)	91	14433	0.10000	0.1053	80.00- 120.00	100.00
19.423	19.423 (1.161)	92	7962			27.48- 87.48	55.17
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	6051	0.10000	0.1074	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	4013			33.18- 93.18	66.32
20.424	20.424 (0.921)	83	4430			44.41- 104.41	73.21
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	10876	0.10000	0.1028	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	8807			49.11- 109.11	80.98
20.616	20.616 (0.930)	131	8926			49.75- 109.75	82.07
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	10055	0.10000	0.09771	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	9913			69.10- 129.10	98.59
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	410804	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	171362			11.87- 71.87	41.71
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	5613	0.10000	0.1028	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	18275			287.72- 347.72	325.58
31 m,p-Xylene					CAS #: 108-38-3		
22.481	22.481 (1.014)	106	6531	0.10000	0.1022	80.00- 120.00	100.00
22.481	22.481 (1.014)	91	13356			182.04- 242.04	204.50

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	32 o-Xylene						CAS #: 95-47-6	
	23.082	23.082 (1.041)	106	5996	0.10000	0.1009	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	13593			192.45- 252.45	226.70
$	33 4-Bromofluorobenzene						CAS #: 460-00-4	
	23.847	23.847 (1.076)	174	271418	5.00000	4.918	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	259388			66.14- 126.14	95.57
	23.869	23.869 (1.077)	176	263374			67.55- 127.55	97.04
	34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5	
	24.026	24.026 (1.084)	83	8576	0.10000	0.1020	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	5949			39.61- 99.61	69.37
	36 1,4-Dichlorobenzene						CAS #: 106-46-7	
	25.260	25.260 (1.139)	146	11658	0.10000	0.09804	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	7363			34.93- 94.93	63.16
	25.260	25.260 (1.139)	111	4310			6.87- 66.87	36.97
	38 Naphthalene						CAS #: 91-20-3	
	27.726	27.726 (1.251)	128	971	0.01000	0.01186	80.00- 120.00	100.00(a)
	27.748	27.748 (1.252)	127	262			0.00- 42.95	26.98

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080306sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 6
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 0.1ppbv (1.0ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	129827	-10.07
20 1,4-Difluorobenze	498300	298980	697620	445110	-10.67
28 Chlorobenzene-d5	452069	271241	632897	410804	-9.13

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080306sim.d

Date : 03-AUG-2017 15:06

Client ID: Level 6

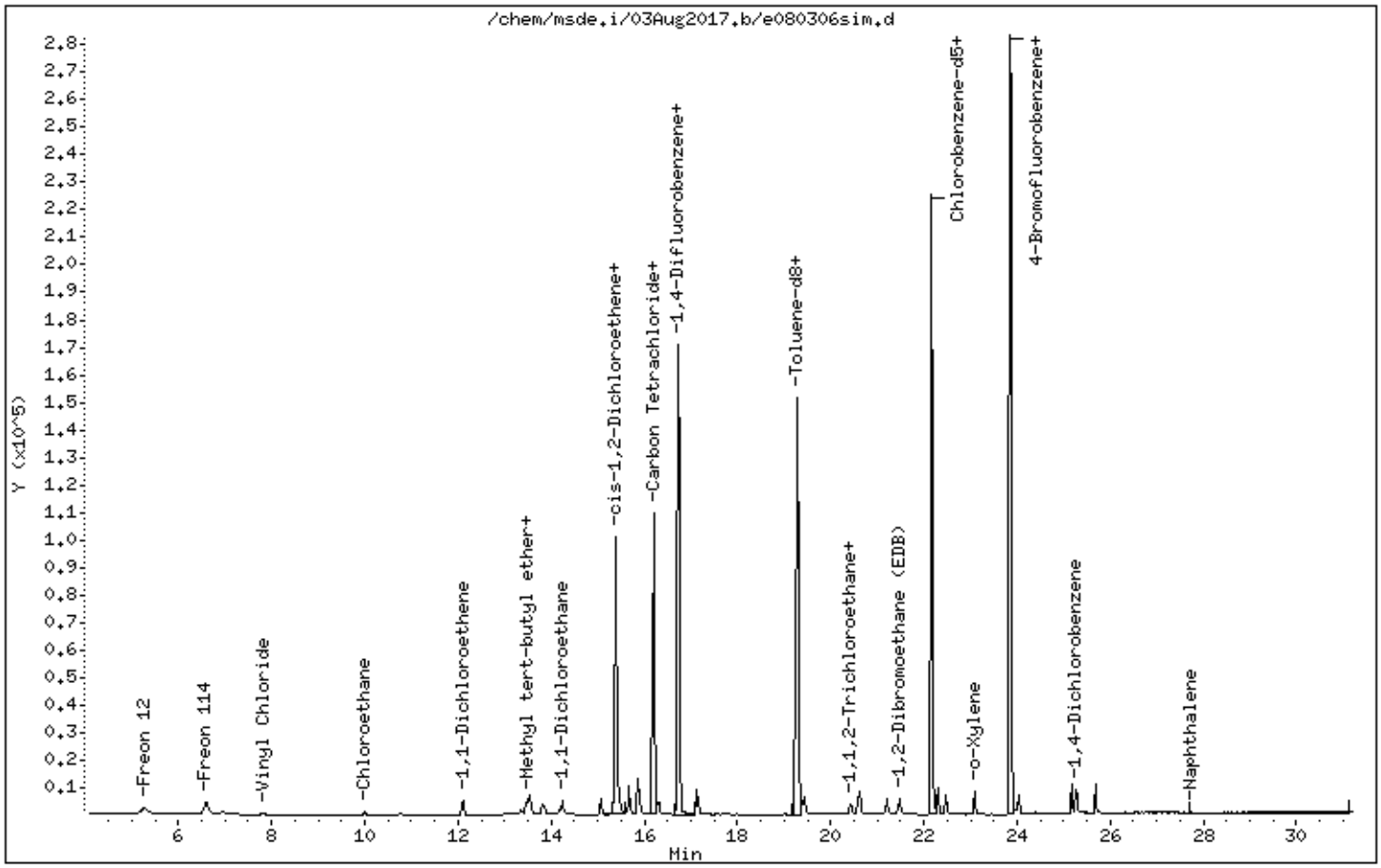
Instrument: msde.i

Sample Info: 25mL# 2850-286

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080307sim.d
Lab Smp Id: ICAL Client Smp ID: Level 7
Inj Date : 03-AUG-2017 15:48
Operator : ef Inst ID: msde.i
Smp Info : 125mL# 2850-286
Misc Info : 0.5ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 15:48 Cal File: e080307sim.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
1 Freon 12					CAS #: 75-71-8			
5.282	5.282 (0.343)	85	67541	0.50000	0.4846	80.00- 120.00		100.00
5.282	5.282 (0.343)	87	22011			2.36- 62.36		32.59
2 Freon 114					CAS #: 76-14-2			
6.608	6.608 (0.429)	135	52331	0.50000	0.4771	80.00- 120.00		100.00
6.608	6.608 (0.429)	137	16640			2.19- 62.19		31.80
3 Chloromethane					CAS #: 74-87-3			
6.970	6.970 (0.452)	50	19161	0.50000	0.4993	80.00- 120.00		100.00(M)
6.970	6.970 (0.452)	52	5816			1.74- 61.74		30.35
4 Vinyl Chloride					CAS #: 75-01-4			
7.828	7.828 (0.508)	62	16218	0.50000	0.4751	80.00- 120.00		100.00
7.828	7.828 (0.508)	64	4948			0.00- 59.24		30.51
5 Chloroethane					CAS #: 75-00-3			
9.999	9.999 (0.649)	64	7638	0.50000	0.4563	80.00- 120.00		100.00
10.018	10.018 (0.650)	66	2472			1.37- 61.37		32.36

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.113	12.113 (0.786)	98	12929	0.50000	0.4521	80.00- 120.00	100.00
	12.113	12.113 (0.786)	61	40304			279.95- 339.95	311.73
	12.113	12.113 (0.786)	96	20067			125.30- 185.30	155.21
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.492	13.492 (0.876)	73	47176	0.50000	0.4559	80.00- 120.00	100.00
	13.492	13.492 (0.876)	57	11767			0.00- 54.88	24.94
	13.492	13.492 (0.876)	41	14118			0.00- 57.95	29.93
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.879)	98	13096	0.50000	0.4484	80.00- 120.00	100.00
	13.547	13.547 (0.879)	61	33488			224.47- 284.47	255.71
	13.547	13.547 (0.879)	96	20743			125.79- 185.79	158.39
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.924)	63	39242	0.50000	0.4734	80.00- 120.00	100.00
	14.233	14.233 (0.924)	65	11847			0.76- 60.76	30.19
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.978)	98	13568	0.50000	0.4208	80.00- 120.00	100.00
	15.060	15.060 (0.978)	61	32416			202.87- 262.87	238.92
	15.060	15.060 (0.978)	96	21749			124.41- 184.41	160.30
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.405	15.405 (1.000)	130	134149	5.00000		80.00- 120.00	100.00
	15.405	15.405 (1.000)	128	103581			47.34- 107.34	77.21
	15.374	15.374 (1.000)	49	167037			83.88- 143.88	124.52
	14 Chloroform						CAS #: 67-66-3	
	15.467	15.467 (1.004)	83	52739	0.50000	0.4663	80.00- 120.00	100.00
	15.467	15.467 (1.004)	85	35919			38.09- 98.09	68.11
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.018)	97	69520	0.50000	0.4782	80.00- 120.00	100.00
	15.682	15.682 (1.018)	99	44656			35.38- 95.38	64.23
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.030)	119	78737	0.50000	0.4563	80.00- 120.00	100.00
	15.867	15.867 (1.030)	117	82269			72.55- 132.55	104.49
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	49748	0.50000	0.4440	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	11788			0.00- 53.90	23.70
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.051)	65	211530	5.00000	5.024	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	88808			18.02- 78.02	41.98
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	44454	0.50000	0.4579	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	13773			1.11- 61.11	30.98
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	449561	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	67080			0.00- 44.94	14.92
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	37714	0.50000	0.4459	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	31842			53.60- 113.60	84.43
17.136	17.136 (1.024)	97	20707			24.58- 84.58	54.91
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	342098	5.00000	4.995	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	39416			0.00- 41.37	11.52
19.289	19.289 (1.153)	100	217576			33.76- 93.76	63.60
23 Toluene					CAS #: 108-88-3		
19.423	19.423 (1.161)	91	63926	0.50000	0.4619	80.00- 120.00	100.00
19.423	19.423 (1.161)	92	36070			27.48- 87.48	56.42
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	26437	0.50000	0.4600	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	16611			33.18- 93.18	62.83
20.424	20.424 (0.921)	83	19738			44.41- 104.41	74.66
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	48312	0.50000	0.4477	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	38587			49.11- 109.11	79.87
20.616	20.616 (0.930)	131	38522			49.75- 109.75	79.74
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	44782	0.50000	0.4267	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	44343			69.10- 129.10	99.02
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	418981	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	173159			11.87- 71.87	41.33
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	25885	0.50000	0.4647	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	83020			287.72- 347.72	320.73

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
31 m,p-Xylene						CAS #: 108-38-3		
22.481	22.481	(1.014)	106	28762	0.50000	0.4413	80.00- 120.00	100.00
22.481	22.481	(1.014)	91	63864			182.04- 242.04	222.04
32 o-Xylene						CAS #: 95-47-6		
23.082	23.082	(1.041)	106	27528	0.50000	0.4542	80.00- 120.00	100.00
23.082	23.082	(1.041)	91	61398			192.45- 252.45	223.04
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.847	23.847	(1.076)	174	281343	5.00000	4.998	80.00- 120.00	100.00
23.847	23.847	(1.076)	95	269905			66.14- 126.14	95.93
23.869	23.869	(1.077)	176	274177			67.55- 127.55	97.45
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
24.026	24.026	(1.084)	83	38223	0.50000	0.4456	80.00- 120.00	100.00
24.026	24.026	(1.084)	85	26233			39.61- 99.61	68.63
36 1,4-Dichlorobenzene						CAS #: 106-46-7		
25.260	25.260	(1.139)	146	53951	0.50000	0.4448	80.00- 120.00	100.00
25.260	25.260	(1.139)	148	34492			34.93- 94.93	63.93
25.260	25.260	(1.139)	111	19608			6.87- 66.87	36.34
38 Naphthalene						CAS #: 91-20-3		
27.726	27.726	(1.251)	128	4388	0.05000	0.05257	80.00- 120.00	100.00
27.726	27.726	(1.251)	127	515			0.00- 42.95	11.74

QC Flag Legend

M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080307sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 7
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 0.5ppbv (1.0ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	134149	-7.08
20 1,4-Difluorobenze	498300	298980	697620	449561	-9.78
28 Chlorobenzene-d5	452069	271241	632897	418981	-7.32

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080307sim.d

Date : 03-AUG-2017 15:48

Client ID: Level 7

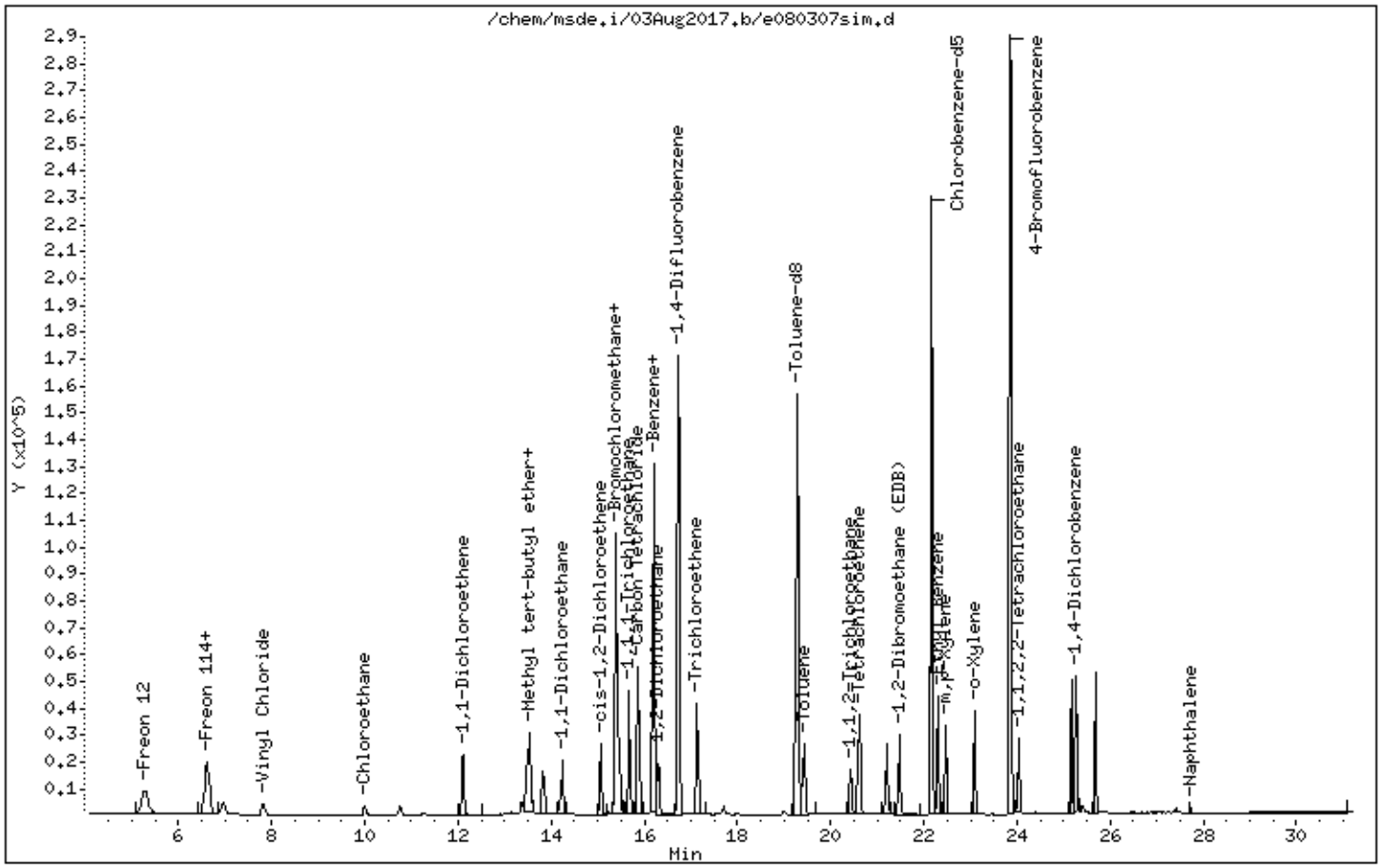
Instrument: msde.i

Sample Info: 125mL# 2850-286

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080308sim.d
Lab Smp Id: ICAL Client Smp ID: Level 8
Inj Date : 03-AUG-2017 16:29
Operator : ef Inst ID: msde.i
Smp Info : 250mL# 2850-286
Misc Info : 1.0ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 16:29 Cal File: e080308sim.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
1 Freon 12					CAS #: 75-71-8			
5.282	5.282 (0.343)	85	131374	1.00000	0.9372	80.00- 120.00		100.00
5.282	5.282 (0.343)	87	42564			2.36- 62.36		32.40
2 Freon 114					CAS #: 76-14-2			
6.632	6.632 (0.431)	135	102657	1.00000	0.9307	80.00- 120.00		100.00
6.632	6.632 (0.431)	137	32631			2.19- 62.19		31.79
3 Chloromethane					CAS #: 74-87-3			
6.970	6.970 (0.452)	50	36655	1.00000	0.9498	80.00- 120.00		100.00(M)
6.970	6.970 (0.452)	52	11290			1.74- 61.74		30.80
4 Vinyl Chloride					CAS #: 75-01-4			
7.828	7.828 (0.508)	62	31616	1.00000	0.9210	80.00- 120.00		100.00
7.828	7.828 (0.508)	64	9422			0.00- 59.24		29.80
5 Chloroethane					CAS #: 75-00-3			
10.018	10.018 (0.650)	64	14990	1.00000	0.8905	80.00- 120.00		100.00
10.018	10.018 (0.650)	66	4783			1.37- 61.37		31.91

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.094	12.094 (0.785)	98	25614	1.00000	0.8906	80.00- 120.00	100.00
	12.094	12.094 (0.785)	61	80949			279.95- 339.95	316.03
	12.094	12.094 (0.785)	96	40657			125.30- 185.30	158.73
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.492	13.492 (0.876)	73	96543	1.00000	0.9277	80.00- 120.00	100.00
	13.492	13.492 (0.876)	57	23834			0.00- 54.88	24.69
	13.492	13.492 (0.876)	41	28534			0.00- 57.95	29.56
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.879)	98	26237	1.00000	0.8934	80.00- 120.00	100.00
	13.547	13.547 (0.879)	61	67358			224.47- 284.47	256.73
	13.547	13.547 (0.879)	96	40741			125.79- 185.79	155.28
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.924)	63	78381	1.00000	0.9403	80.00- 120.00	100.00
	14.233	14.233 (0.924)	65	23553			0.76- 60.76	30.05
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.978)	98	27247	1.00000	0.8402	80.00- 120.00	100.00
	15.060	15.060 (0.978)	61	64637			202.87- 262.87	237.23
	15.060	15.060 (0.978)	96	42541			124.41- 184.41	156.13
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.405	15.405 (1.000)	130	134907	5.00000		80.00- 120.00	100.00
	15.405	15.405 (1.000)	128	103300			47.34- 107.34	76.57
	15.374	15.374 (1.000)	49	174127			83.88- 143.88	129.07
	14 Chloroform						CAS #: 67-66-3	
	15.467	15.467 (1.004)	83	104246	1.00000	0.9166	80.00- 120.00	100.00
	15.467	15.467 (1.004)	85	70530			38.09- 98.09	67.66
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.018)	97	136195	1.00000	0.9316	80.00- 120.00	100.00
	15.682	15.682 (1.018)	99	87523			35.38- 95.38	64.26
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.030)	119	154432	1.00000	0.8900	80.00- 120.00	100.00
	15.867	15.867 (1.030)	117	161441			72.55- 132.55	104.54
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	96664	1.00000	0.8580	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	23076			0.00- 53.90	23.87
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.051)	65	213887	5.00000	5.051	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	91251			18.02- 78.02	42.66
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	88247	1.00000	0.9041	80.00- 120.00	100.00
16.317	16.317 (0.976)	64	27335			1.11- 61.11	30.98
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	451973	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	67254			0.00- 44.94	14.88
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	74494	1.00000	0.8761	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	61613			53.60- 113.60	82.71
17.136	17.136 (1.024)	97	39936			24.58- 84.58	53.61
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	347876	5.00000	5.053	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	39558			0.00- 41.37	11.37
19.289	19.289 (1.153)	100	219981			33.76- 93.76	63.24
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	125114	1.00000	0.8992	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	70534			27.48- 87.48	56.38
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	51753	1.00000	0.9001	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	32606			33.18- 93.18	63.00
20.424	20.424 (0.921)	83	38251			44.41- 104.41	73.91
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	93944	1.00000	0.8700	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	75191			49.11- 109.11	80.04
20.616	20.616 (0.930)	131	75209			49.75- 109.75	80.06
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	88218	1.00000	0.8400	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	87214			69.10- 129.10	98.86
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	419234	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	174257			11.87- 71.87	41.57
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	50840	1.00000	0.9121	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	163886			287.72- 347.72	322.36

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	31 m,p-Xylene						CAS #: 108-38-3	
	22.481	22.481 (1.014)	106	59353	1.00000	0.9101	80.00- 120.00	100.00
	22.481	22.481 (1.014)	91	126069			182.04- 242.04	212.41
	32 o-Xylene						CAS #: 95-47-6	
	23.082	23.082 (1.041)	106	54335	1.00000	0.8959	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	122878			192.45- 252.45	226.15
$	33 4-Bromofluorobenzene						CAS #: 460-00-4	
	23.847	23.847 (1.076)	174	285180	5.00000	5.063	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	272079			66.14- 126.14	95.41
	23.869	23.869 (1.077)	176	276253			67.55- 127.55	96.87
	34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5	
	24.026	24.026 (1.084)	83	74119	1.00000	0.8635	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	51174			39.61- 99.61	69.04
	36 1,4-Dichlorobenzene						CAS #: 106-46-7	
	25.260	25.260 (1.139)	146	107665	1.00000	0.8872	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	68554			34.93- 94.93	63.67
	25.260	25.260 (1.139)	111	38929			6.87- 66.87	36.16
	38 Naphthalene						CAS #: 91-20-3	
	27.726	27.726 (1.251)	128	8239	0.10000	0.09864	80.00- 120.00	100.00
	27.726	27.726 (1.251)	127	1197			0.00- 42.95	14.53

QC Flag Legend

M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080308sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 8
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 1.0ppbv (1.0ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	134907	-6.55
20 1,4-Difluorobenze	498300	298980	697620	451973	-9.30
28 Chlorobenzene-d5	452069	271241	632897	419234	-7.26

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080308sim.d

Date : 03-AUG-2017 16:29

Client ID: Level 8

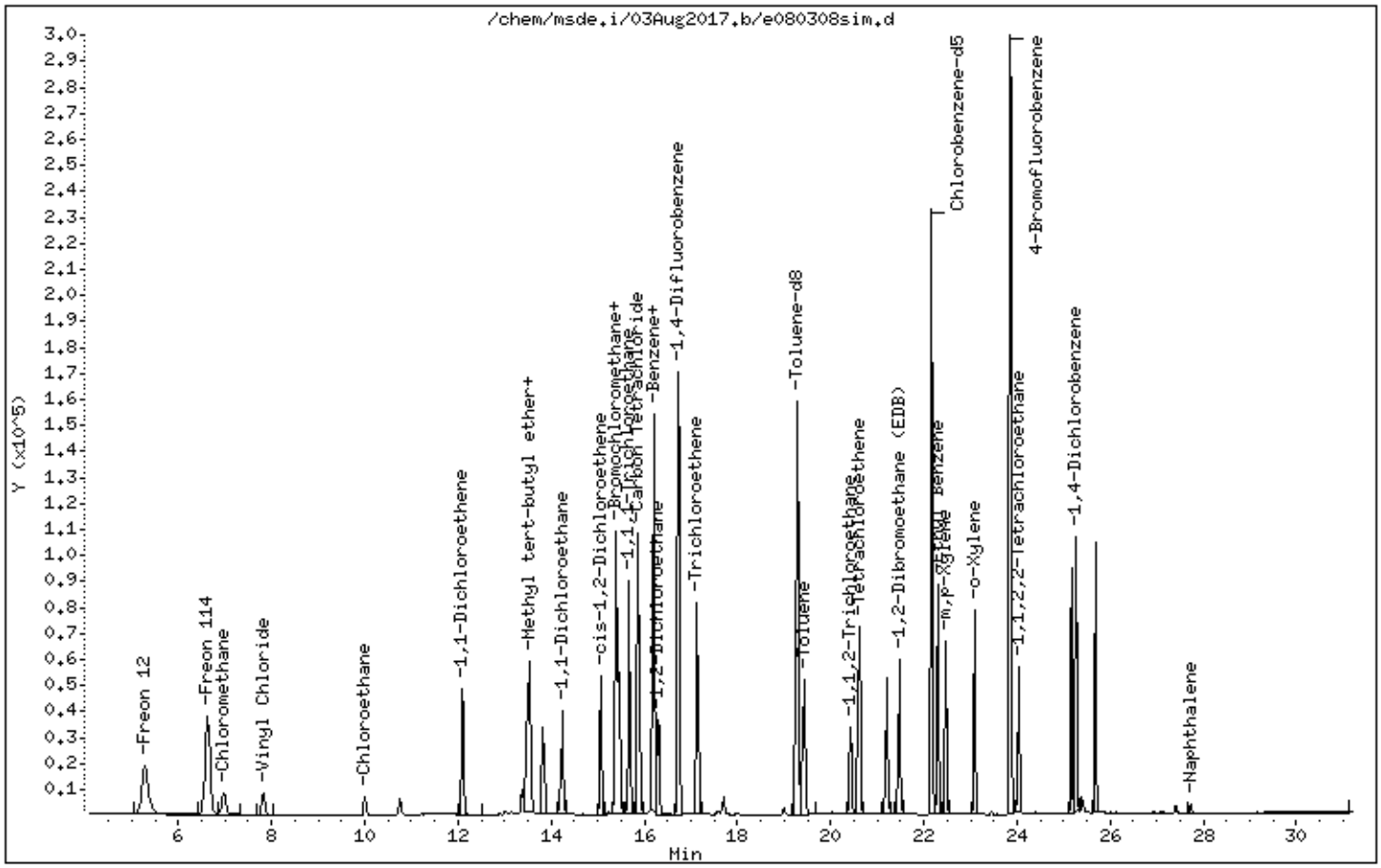
Instrument: msde.i

Sample Info: 250mL# 2850-286

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080309sim.d
Lab Smp Id: ICAL Client Smp ID: Level 12
Inj Date : 03-AUG-2017 17:28
Operator : ea Inst ID: msde.i
Smp Info : 25mL# 2850-281
Misc Info : 5.0ppbv (50pbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 17:28 Cal File: e080309sim.d
Als bottle: 1 Calibration Sample, Level: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.258	5.258 (0.342)	85	778485	5.00000	5.332	80.00- 120.00	100.00
5.258	5.258 (0.342)	87	250977			2.36- 62.36	32.24
2 Freon 114					CAS #: 76-14-2		
6.560	6.560 (0.427)	135	601475	5.00000	5.236	80.00- 120.00	100.00
6.560	6.560 (0.427)	137	191871			2.19- 62.19	31.90
3 Chloromethane					CAS #: 74-87-3		
6.921	6.921 (0.450)	50	226022	5.00000	5.623	80.00- 120.00	100.00
6.921	6.921 (0.450)	52	68500			1.74- 61.74	30.31
4 Vinyl Chloride					CAS #: 75-01-4		
7.776	7.776 (0.506)	62	190321	5.00000	5.323	80.00- 120.00	100.00
7.776	7.776 (0.506)	64	55841			0.00- 59.24	29.34
5 Chloroethane					CAS #: 75-00-3		
9.980	9.980 (0.649)	64	89648	5.00000	5.113	80.00- 120.00	100.00
9.980	9.980 (0.649)	66	27679			1.37- 61.37	30.88

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.094	12.094 (0.787)	98	147603	5.00000	4.928	80.00- 120.00	100.00
	12.075	12.075 (0.785)	61	462772			279.95- 339.95	313.52
	12.094	12.094 (0.787)	96	231997			125.30- 185.30	157.18
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.465	13.465 (0.876)	73	609907	5.00000	5.627	80.00- 120.00	100.00
	13.465	13.465 (0.876)	57	149256			0.00- 54.88	24.47
	13.465	13.465 (0.876)	41	169617			0.00- 57.95	27.81
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.881)	98	157062	5.00000	5.135	80.00- 120.00	100.00
	13.519	13.519 (0.879)	61	403086			224.47- 284.47	256.64
	13.519	13.519 (0.879)	96	245111			125.79- 185.79	156.06
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.926)	63	460791	5.00000	5.307	80.00- 120.00	100.00
	14.233	14.233 (0.926)	65	140621			0.76- 60.76	30.52
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.980)	98	168069	5.00000	4.976	80.00- 120.00	100.00
	15.041	15.041 (0.978)	61	392860			202.87- 262.87	233.75
	15.060	15.060 (0.980)	96	260285			124.41- 184.41	154.87
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.374	15.374 (1.000)	130	140511	5.00000		80.00- 120.00	100.00
	15.374	15.374 (1.000)	128	107818			47.34- 107.34	76.73
	15.374	15.374 (1.000)	49	177670			83.88- 143.88	126.45
	14 Chloroform						CAS #: 67-66-3	
	15.436	15.436 (1.004)	83	611561	5.00000	5.163	80.00- 120.00	100.00
	15.436	15.436 (1.004)	85	416270			38.09- 98.09	68.07
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.020)	97	807840	5.00000	5.305	80.00- 120.00	100.00
	15.682	15.682 (1.020)	99	525682			35.38- 95.38	65.07
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.032)	119	937482	5.00000	5.187	80.00- 120.00	100.00
	15.867	15.867 (1.032)	117	966028			72.55- 132.55	103.04
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	592004	5.00000	4.899	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	141816			0.00- 53.90	23.96
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.054)	65	218921	5.00000	4.964	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.054)	67	103169			18.02- 78.02	47.13
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	526825	5.00000	5.032	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	163185			1.11- 61.11	30.98
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	484809	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	71856			0.00- 44.94	14.82
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	447645	5.00000	4.908	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	373601			53.60- 113.60	83.46
17.136	17.136 (1.024)	97	242757			24.58- 84.58	54.23
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.267	19.267 (1.152)	98	369579	5.00000	5.004	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	41995			0.00- 41.37	11.36
19.267	19.267 (1.152)	100	235212			33.76- 93.76	63.64
23 Toluene					CAS #: 108-88-3		
19.423	19.423 (1.161)	91	771505	5.00000	5.169	80.00- 120.00	100.00
19.423	19.423 (1.161)	92	441500			27.48- 87.48	57.23
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	318471	5.00000	5.314	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	199538			33.18- 93.18	62.65
20.424	20.424 (0.921)	83	234235			44.41- 104.41	73.55
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	574850	5.00000	5.108	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	450671			49.11- 109.11	78.40
20.616	20.616 (0.930)	131	454834			49.75- 109.75	79.12
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	544253	5.00000	4.973	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	542808			69.10- 129.10	99.73
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	436913	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	183254			11.87- 71.87	41.94
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	328429	5.00000	5.654	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	1060904			287.72- 347.72	323.02

					AMOUNTS			
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	31 m,p-Xylene					CAS #: 108-38-3		
	22.460	22.460 (1.013)	106	387177	5.00000	5.696	80.00- 120.00	100.00
	22.460	22.460 (1.013)	91	823212			182.04- 242.04	212.62
	32 o-Xylene					CAS #: 95-47-6		
	23.082	23.082 (1.041)	106	354302	5.00000	5.606	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	793723			192.45- 252.45	224.02
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.847	23.847 (1.076)	174	304160	5.00000	5.182	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	291924			66.14- 126.14	95.98
	23.847	23.847 (1.076)	176	296678			67.55- 127.55	97.54
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	24.026	24.026 (1.084)	83	460874	5.00000	5.152	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	319521			39.61- 99.61	69.33
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	25.260	25.260 (1.139)	146	644349	5.00000	5.095	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	417920			34.93- 94.93	64.86
	25.260	25.260 (1.139)	111	232167			6.87- 66.87	36.03
	38 Naphthalene					CAS #: 91-20-3		
	27.726	27.726 (1.251)	128	40383	0.50000	0.4639	80.00- 120.00	100.00
	27.726	27.726 (1.251)	127	5158			0.00- 42.95	12.77

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080309sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ea
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 12
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 5.0ppbv (50pbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	140511	-2.67
20 1,4-Difluorobenze	498300	298980	697620	484809	-2.71
28 Chlorobenzene-d5	452069	271241	632897	436913	-3.35

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.37	-0.20
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080309sim.d

Date : 03-AUG-2017 17:28

Client ID: Level 12

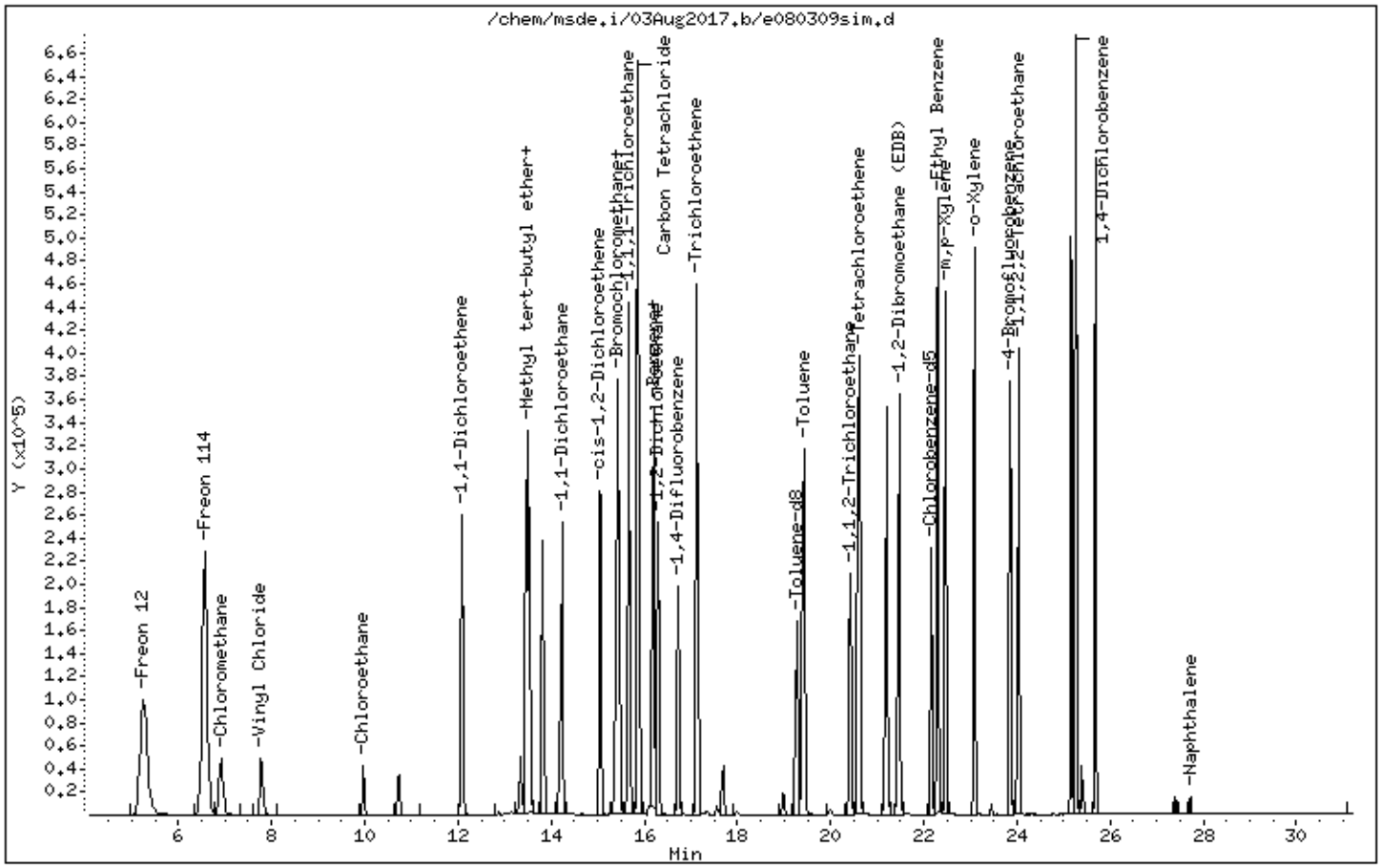
Instrument: msde.i

Sample Info: 25mL# 2850-281

Operator: ea

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080310sim.d
Lab Smp Id: ICAL Client Smp ID: Level 13
Inj Date : 03-AUG-2017 18:16
Operator : ea Inst ID: msde.i
Smp Info : 50mL# 2850-281
Misc Info : 10ppbv (50pbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 18:16 Cal File: e080310sim.d
Als bottle: 1 Calibration Sample, Level: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.282	5.282 (0.343)	85	1448151	10.0000	9.654	80.00- 120.00	100.00
5.282	5.282 (0.343)	87	468560			2.36- 62.36	32.36
2 Freon 114					CAS #: 76-14-2		
6.584	6.584 (0.427)	135	1125411	10.0000	9.535	80.00- 120.00	100.00
6.584	6.584 (0.427)	137	362239			2.19- 62.19	32.19
3 Chloromethane					CAS #: 74-87-3		
6.945	6.945 (0.451)	50	415026	10.0000	10.050	80.00- 120.00	100.00
6.945	6.945 (0.451)	52	131744			1.74- 61.74	31.74
4 Vinyl Chloride					CAS #: 75-01-4		
7.810	7.810 (0.507)	62	360825	10.0000	9.822	80.00- 120.00	100.00
7.810	7.810 (0.507)	64	105512			0.00- 59.24	29.24
5 Chloroethane					CAS #: 75-00-3		
9.999	9.999 (0.649)	64	167149	10.0000	9.279	80.00- 120.00	100.00
9.999	9.999 (0.649)	66	52432			1.37- 61.37	31.37

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.094	12.094 (0.785)	98	282629	10.0000	9.183	80.00- 120.00	100.00
	12.094	12.094 (0.785)	61	876006			279.95- 339.95	309.95
	12.094	12.094 (0.785)	96	438922			125.30- 185.30	155.30
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.492	13.492 (0.876)	73	1157446	10.0000	10.393	80.00- 120.00	100.00
	13.465	13.465 (0.874)	57	287991			0.00- 54.88	24.88
	13.465	13.465 (0.874)	41	323521			0.00- 57.95	27.95
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.879)	98	298717	10.0000	9.505	80.00- 120.00	100.00
	13.547	13.547 (0.879)	61	760149			224.47- 284.47	254.47
	13.547	13.547 (0.879)	96	465372			125.79- 185.79	155.79
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.924)	63	868534	10.0000	9.736	80.00- 120.00	100.00
	14.233	14.233 (0.924)	65	267150			0.76- 60.76	30.76
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.978)	98	317589	10.0000	9.152	80.00- 120.00	100.00
	15.060	15.060 (0.978)	61	739579			202.87- 262.87	232.87
	15.060	15.060 (0.978)	96	490397			124.41- 184.41	154.41
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.405	15.405 (1.000)	130	144366	5.00000		80.00- 120.00	100.00
	15.405	15.405 (1.000)	128	111659			47.34- 107.34	77.34
	15.436	15.436 (1.000)	49	164401			83.88- 143.88	113.88
	14 Chloroform						CAS #: 67-66-3	
	15.436	15.436 (1.002)	83	1136937	10.0000	9.342	80.00- 120.00	100.00
	15.467	15.467 (1.004)	85	774156			38.09- 98.09	68.09
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.018)	97	1501411	10.0000	9.597	80.00- 120.00	100.00
	15.682	15.682 (1.018)	99	981566			35.38- 95.38	65.38
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.030)	119	1738835	10.0000	9.364	80.00- 120.00	100.00
	15.867	15.867 (1.030)	117	1783173			72.55- 132.55	102.55
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	1106497	10.0000	8.909	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	264420			0.00- 53.90	23.90
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.051)	65	217963	5.00000	4.810	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	104670			18.02- 78.02	48.02
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	993292	10.0000	9.230	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	309055			1.11- 61.11	31.11
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	498300	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	74432			0.00- 44.94	14.94
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	833479	10.0000	8.890	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	696820			53.60- 113.60	83.60
17.136	17.136 (1.024)	97	454908			24.58- 84.58	54.58
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	378728	5.00000	4.989	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	43058			0.00- 41.37	11.37
19.289	19.289 (1.153)	100	241464			33.76- 93.76	63.76
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	1451527	10.0000	9.462	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	834397			27.48- 87.48	57.48
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	590040	10.0000	9.516	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	372780			33.18- 93.18	63.18
20.424	20.424 (0.921)	83	439072			44.41- 104.41	74.41
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	1073086	10.0000	9.216	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	848955			49.11- 109.11	79.11
20.616	20.616 (0.930)	131	855740			49.75- 109.75	79.75
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	1032661	10.0000	9.119	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	1023394			69.10- 129.10	99.10
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	452069	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	189259			11.87- 71.87	41.87
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	630831	10.0000	10.496	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	2004279			287.72- 347.72	317.72

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	31 m,p-Xylene					CAS #: 108-38-3		
	22.481	22.481 (1.014)	106	745832	10.0000	10.606	80.00- 120.00	100.00
	22.460	22.460 (1.013)	91	1581467			182.04- 242.04	212.04
	32 o-Xylene					CAS #: 95-47-6		
	23.082	23.082 (1.041)	106	680345	10.0000	10.403	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	1513404			192.45- 252.45	222.45
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.847	23.847 (1.076)	174	307038	5.00000	5.055	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	295183			66.14- 126.14	96.14
	23.869	23.869 (1.077)	176	299506			67.55- 127.55	97.55
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	24.026	24.026 (1.084)	83	839203	10.0000	9.066	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	584133			39.61- 99.61	69.61
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	25.260	25.260 (1.139)	146	1227047	10.0000	9.377	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	796714			34.93- 94.93	64.93
	25.260	25.260 (1.139)	111	452398			6.87- 66.87	36.87
	38 Naphthalene					CAS #: 91-20-3		
	27.726	27.726 (1.251)	128	85965	1.00000	0.9545	80.00- 120.00	100.00
	27.726	27.726 (1.251)	127	11132			0.00- 42.95	12.95

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080310sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ea
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 13
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv (50pbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	144366	0.00
20 1,4-Difluorobenze	498300	298980	697620	498300	0.00
28 Chlorobenzene-d5	452069	271241	632897	452069	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080310sim.d

Date : 03-AUG-2017 18:16

Client ID: Level 13

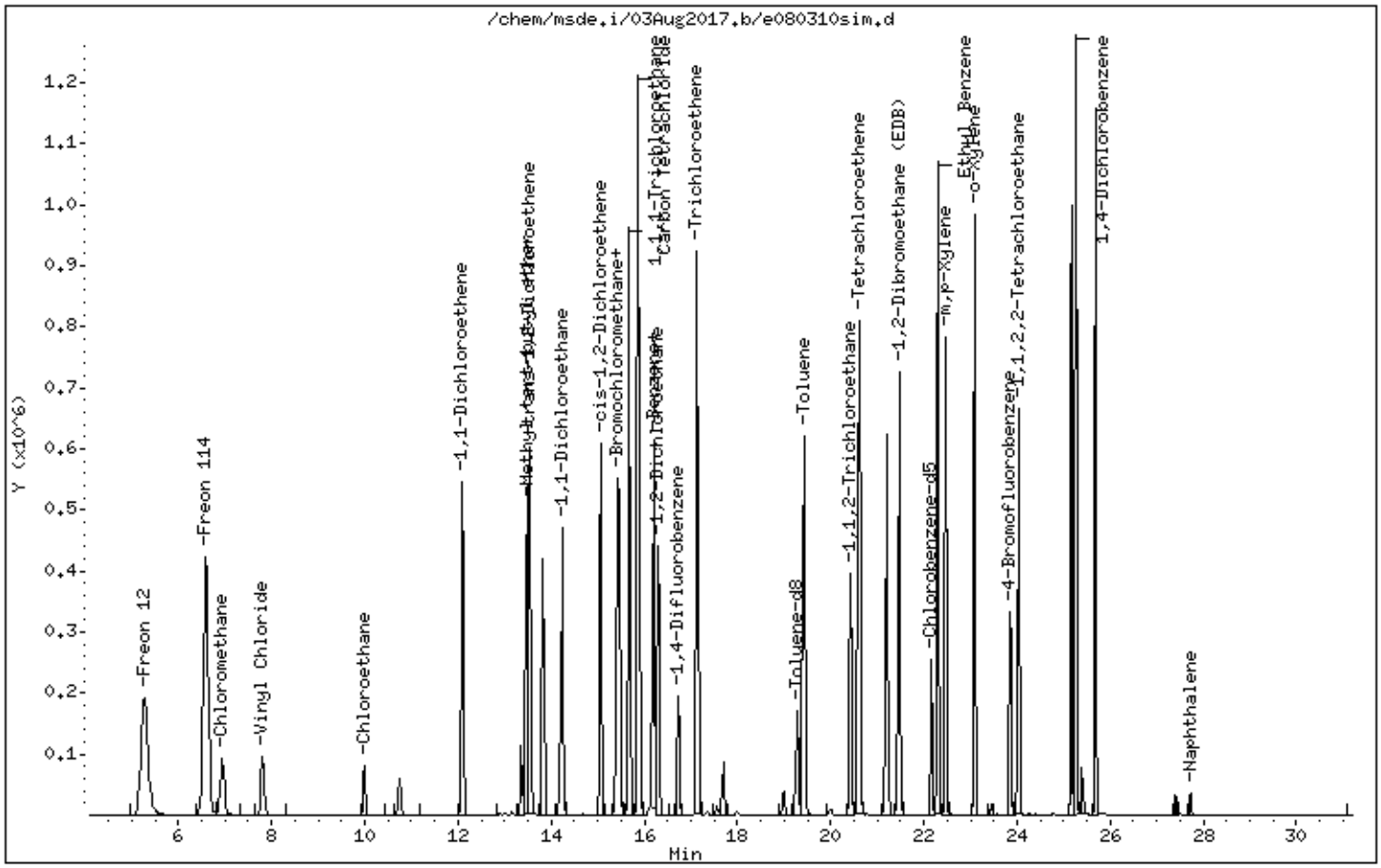
Instrument: msde.i

Sample Info: 50mL# 2850-281

Operator: ea

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/03Aug2017.b/e080311sim.d
Lab Smp Id: ICAL Client Smp ID: Level 15
Inj Date : 03-AUG-2017 19:28
Operator : ea Inst ID: msde.i
Smp Info : 100mL# 2850-281
Misc Info : 20ppbv (50pbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 04-Aug-2017 09:10 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1 Calibration Sample, Level: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.258	5.258 (0.341)	85	2795472	20.0000	17.840	80.00- 120.00	100.00
5.258	5.258 (0.341)	87	910246			2.36- 62.36	32.56
2 Freon 114					CAS #: 76-14-2		
6.584	6.584 (0.427)	135	2213366	20.0000	17.951	80.00- 120.00	100.00
6.584	6.584 (0.427)	137	714828			2.19- 62.19	32.30
3 Chloromethane					CAS #: 74-87-3		
6.921	6.921 (0.449)	50	795513	20.0000	18.440	80.00- 120.00	100.00
6.945	6.945 (0.451)	52	251923			1.74- 61.74	31.67
4 Vinyl Chloride					CAS #: 75-01-4		
7.793	7.793 (0.506)	62	705542	20.0000	18.385	80.00- 120.00	100.00
7.793	7.793 (0.506)	64	207977			0.00- 59.24	29.48
5 Chloroethane					CAS #: 75-00-3		
9.980	9.980 (0.648)	64	325533	20.0000	17.300	80.00- 120.00	100.00
9.980	9.980 (0.648)	66	101313			1.37- 61.37	31.12

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.094	12.094 (0.785)	98	562078	20.0000	17.483	80.00- 120.00	100.00
	12.075	12.075 (0.784)	61	1731697			279.95- 339.95	308.09
	12.075	12.075 (0.784)	96	873317			125.30- 185.30	155.37
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.492	13.492 (0.876)	73	2266760	20.0000	19.484	80.00- 120.00	100.00
	13.465	13.465 (0.874)	57	561187			0.00- 54.88	24.76
	13.465	13.465 (0.874)	41	620856			0.00- 57.95	27.39
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.879)	98	588492	20.0000	17.926	80.00- 120.00	100.00
	13.520	13.520 (0.878)	61	1475698			224.47- 284.47	250.76
	13.547	13.547 (0.879)	96	907452			125.79- 185.79	154.20
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.924)	63	1685025	20.0000	18.082	80.00- 120.00	100.00
	14.233	14.233 (0.924)	65	521810			0.76- 60.76	30.97
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.978)	98	626934	20.0000	17.295	80.00- 120.00	100.00
	15.060	15.060 (0.978)	61	1445458			202.87- 262.87	230.56
	15.060	15.060 (0.978)	96	963130			124.41- 184.41	153.63
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.405	15.405 (1.000)	130	150811	5.00000		80.00- 120.00	100.00
	15.374	15.374 (1.000)	128	117575			47.34- 107.34	77.96
	15.436	15.436 (1.000)	49	429846			83.88- 143.88	285.02
	14 Chloroform						CAS #: 67-66-3	
	15.436	15.436 (1.002)	83	2215703	20.0000	17.428	80.00- 120.00	100.00
	15.436	15.436 (1.002)	85	1521558			38.09- 98.09	68.67
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.018)	97	2892568	20.0000	17.699	80.00- 120.00	100.00
	15.682	15.682 (1.018)	99	1898379			35.38- 95.38	65.63
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.030)	119	3365609	20.0000	17.350	80.00- 120.00	100.00
	15.867	15.867 (1.030)	117	3450097			72.55- 132.55	102.51
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	2107412	20.0000	16.642	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	507954			0.00- 53.90	24.10
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.051)	65	233296	5.00000	4.929	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	113081			18.02- 78.02	48.47
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	1903919	20.0000	17.353	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	602888			1.11- 61.11	31.67
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	508035	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	75524			0.00- 44.94	14.87
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	1616552	20.0000	16.913	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	1358515			53.60- 113.60	84.04
17.136	17.136 (1.024)	97	890159			24.58- 84.58	55.07
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.289 (1.153)	98	388107	5.00000	5.015	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	43780			0.00- 41.37	11.28
19.289	19.289 (1.153)	100	247646			33.76- 93.76	63.81
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	2801007	20.0000	17.909	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	1618374			27.48- 87.48	57.78
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	1155038	20.0000	18.333	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	723485			33.18- 93.18	62.64
20.424	20.424 (0.921)	83	848380			44.41- 104.41	73.45
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	2081927	20.0000	17.597	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	1625439			49.11- 109.11	78.07
20.616	20.616 (0.930)	131	1646690			49.75- 109.75	79.09
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	1992600	20.0000	17.316	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	1993333			69.10- 129.10	100.04
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	459360	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	193296			11.87- 71.87	42.08
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	1223252	20.0000	20.029	80.00- 120.00	100.00(A)
22.294	22.294 (1.006)	91	3843239			287.72- 347.72	314.18

					AMOUNTS CAL-AMT	AMOUNTS ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE		(PPBV)	(PPBV)	TARGET RANGE	RATIO
31 m,p-Xylene						CAS #: 108-38-3		
22.460	22.460 (1.013)	106	1443405	20.0000		20.199	80.00- 120.00	100.00(A)
22.460	22.460 (1.013)	91	3024663				182.04- 242.04	209.55
32 o-Xylene						CAS #: 95-47-6		
23.082	23.082 (1.041)	106	1327811	20.0000		19.981	80.00- 120.00	100.00
23.082	23.082 (1.041)	91	2957712				192.45- 252.45	222.75
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
23.847	23.847 (1.076)	174	321854	5.00000		5.215	80.00- 120.00	100.00
23.847	23.847 (1.076)	95	307948				66.14- 126.14	95.68
23.847	23.847 (1.076)	176	314501				67.55- 127.55	97.72
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
24.026	24.026 (1.084)	83	1656696	20.0000		17.614	80.00- 120.00	100.00
24.026	24.026 (1.084)	85	1157273				39.61- 99.61	69.85
36 1,4-Dichlorobenzene						CAS #: 106-46-7		
25.260	25.260 (1.139)	146	2360231	20.0000		17.751	80.00- 120.00	100.00
25.260	25.260 (1.139)	148	1541013				34.93- 94.93	65.29
25.260	25.260 (1.139)	111	877254				6.87- 66.87	37.17
38 Naphthalene						CAS #: 91-20-3		
27.726	27.726 (1.251)	128	163539	2.00000		1.787	80.00- 120.00	100.00
27.726	27.726 (1.251)	127	21195				0.00- 42.95	12.96

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080311sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ea
Calibration Date: 03-AUG-2017
Calibration Time: 18:16
Client Smp ID: Level 15
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/03Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 20ppbv (50pbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	144366	86620	202112	150811	4.46
20 1,4-Difluorobenze	498300	298980	697620	508035	1.95
28 Chlorobenzene-d5	452069	271241	632897	459360	1.61

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/03Aug2017.b/e080311sim.d

Date : 03-AUG-2017 19:28

Client ID: Level 15

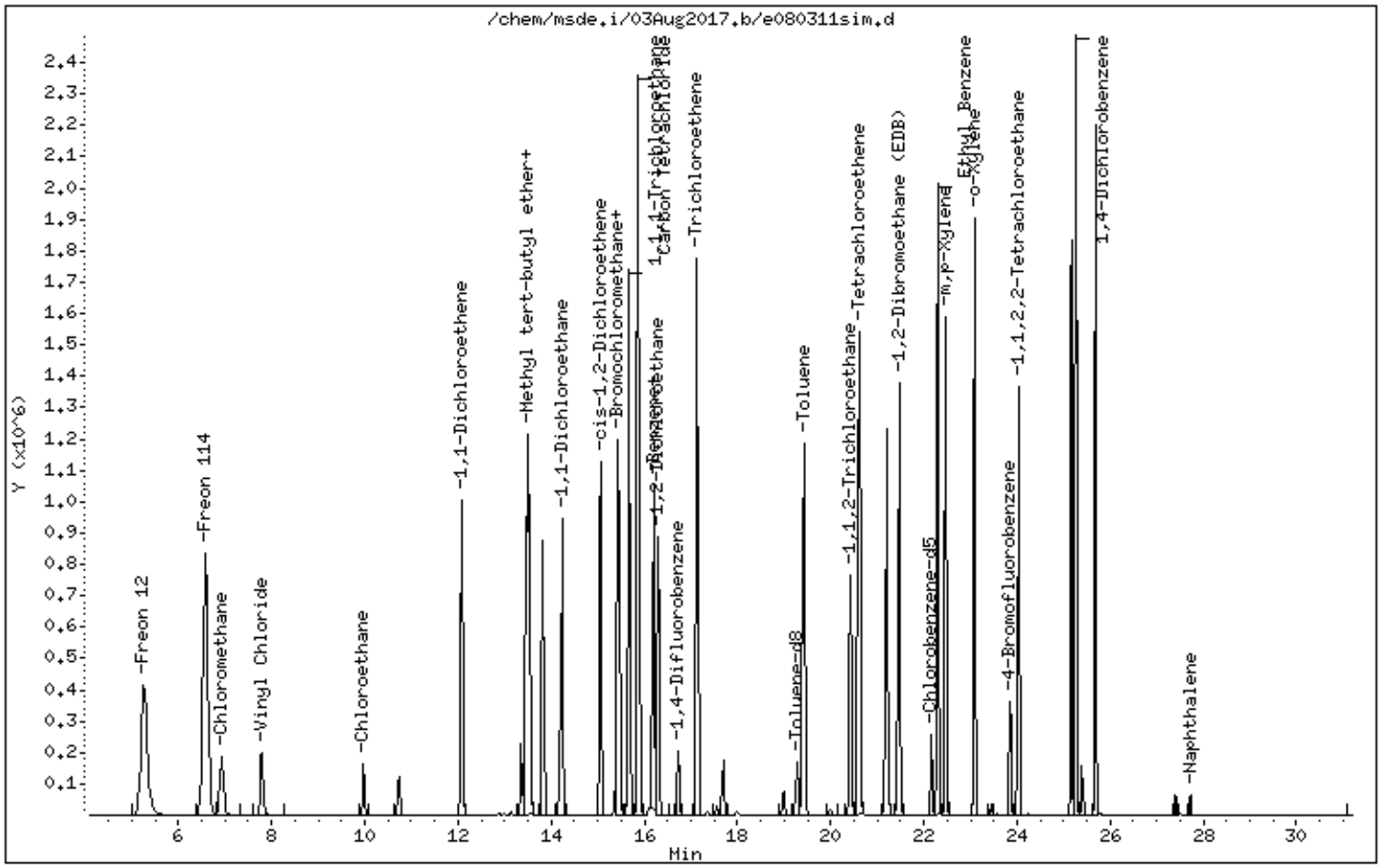
Instrument: msde.i

Sample Info: 100mL# 2850-281

Operator: ea

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics, Inc. 2Q 2017 TO-14A/TO-15 SIM Limit of Detections (LODs) Effective 07-01-17						
CAS #	Analyte	Molecular Weight (MW)	LOD (ppbv)	LOQ (ppbv)	LOD (ug/m3)	LOQ (ug/m3)
71-55-6	1,1,1-Trichloroethane	133.42	0.006	0.02	0.03274	0.10914
79-34-5	1,1,2,2-Tetrachloroethane	167.86	0.006	0.02	0.04119	0.13731
79-00-5	1,1,2-Trichloroethane	133.42	0.006	0.02	0.03274	0.10914
75-34-3	1,1-Dichloroethane	98.97	0.006	0.02	0.02429	0.08096
75-35-4	1,1-Dichloroethene	96.95	0.006	0.01	0.02379	0.03965
106-93-4	1,2-Dibromoethane (EDB)	187.88	0.006	0.02	0.04611	0.15369
107-06-2	1,2-Dichloroethane	98.96	0.006	0.02	0.02428	0.08095
106-46-7	1,4-Dichlorobenzene	147.01	0.006	0.02	0.03608	0.12025
71-43-2	Benzene*	78.11	0.00631	0.05	0.02016	0.15973
56-23-5	Carbon Tetrachloride	153.84	0.006	0.02	0.03775	0.12584
75-00-3	Chloroethane	64.52	0.03	0.05	0.07917	0.13194
67-66-3	Chloroform	119.39	0.006	0.02	0.0293	0.09766
74-87-3	Chloromethane	50.49	0.03	0.05	0.06195	0.10325
156-59-2	cis-1,2-Dichloroethene	96.94	0.006	0.02	0.02379	0.0793
100-41-4	Ethyl Benzene	106.16	0.006	0.02	0.02605	0.08684
76-14-2	Freon 114	170.93	0.006	0.02	0.04195	0.13982
75-71-8	Freon 12	120.92	0.006	0.02	0.02967	0.09891
108-38-3	m,p-Xylene	106.17	0.006	0.04	0.02605	0.17369
1634-04-4	Methyl tert-butyl ether	88.15	0.006	0.1	0.02163	0.36053
91-20-3	Naphthalene	128.17	0.008	0.05	0.04194	0.26211
95-47-6	o-Xylene	106.17	0.006	0.02	0.02605	0.08685
127-18-4	Tetrachloroethene	165.85	0.006	0.02	0.0407	0.13566
108-88-3	Toluene	92.13	0.006	0.02	0.02261	0.07536
156-60-5	trans-1,2-Dichloroethene	96.94	0.006	0.1	0.02379	0.39648
79-01-6	Trichloroethene	131.39	0.006	0.02	0.03224	0.10748
75-01-4	Vinyl Chloride	62.5	0.006	0.01	0.01534	0.02556

ppbv - part per billion by volume

Concentration (ug/m3) = Concentration (ppbv)*MW/24.45

Instrument ID - msde.i file msde.i/22May2017.b/e052223sim.d msde.i/22May2017.b/e052224sim.d msde.i/22May2017.b/e052225sim.d

*LOD was less then the MDL therefore was raised to equal the MDL value.

Report Date : 20-Oct-2016 08:41

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msde.i/19Oct2016.b/e1611011a.m/e16s1011a.m
Batch File: /chem/msde.i/19Oct2016.b
Inst ID: msde.i

0.01ppbv SIM MDL:
 # 2819-81 (0.05ppbv); 50mL load.
0.05ppbv SIM MDL:
 # 2819-81 (0.05ppbv); 250mL load.
Naphthalene 0.05ppbv SIM MDL:
2819-82 (1.0ppbv, 0.1ppbv for Naphthalene); 125mL load.

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	e101909sim	e101910sim	e101911sim	e101912sim	e101913sim	e101914sim	e101915sim	e101916sim
INJ.DATE:	19-OCT-2016	19-OCT-2016	19-OCT-2016	19-OCT-2016	19-OCT-2016	19-OCT-2016	19-OCT-2016	19-OCT-2016
INJ.TIME:	14:49	15:32	16:17	17:12	18:25	19:08	19:53	20:51

RL (ppbv)

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
1 Freon 12	9.69	10.02	10.46	9.70	8.89	9.80	9.42	9.96	9.74	0.46	1.38	20
2 Freon 114	9.06	10.80	9.85	9.81	9.59	7.71	9.43	9.08	9.41	0.88	2.64	20
3 Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4 Vinyl Chloride	8.16	10.80	9.69	8.89	9.63	10.45	7.99	9.11	9.34	1.00	3.01	10
5 Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
6 Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7 Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8 1,1-Dichloroethene	8.85	10.99	10.40	8.22	8.52	8.19	7.91	11.61	9.34	1.44	4.32	10
9 Methyl tert-butyl ethe	8.94	9.79	9.25	8.98	8.70	7.83	8.58	8.99	8.88	0.56	1.68	25
10 trans-1,2-Dichloroethe	9.19	9.94	8.19	8.80	8.59	9.18	9.87	8.47	9.03	0.64	1.91	20
11 1,1-Dichloroethane	9.71	9.68	9.73	9.24	8.93	8.58	8.26	8.76	9.11	0.57	1.70	20
12 cis-1,2-Dichloroethene	8.39	9.44	9.02	8.91	9.78	8.33	9.62	8.53	9.00	0.57	1.69	20
* 13 Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14 Chloroform	9.95	10.30	8.74	9.73	8.54	9.04	9.23	9.58	9.39	0.61	1.83	20
15 1,1,1-Trichloroethane	10.51	11.35	10.41	10.22	10.45	10.01	9.41	9.68	10.26	0.59	1.77	20
16 Carbon Tetrachloride	8.37	8.60	8.11	8.08	8.28	8.10	8.00	7.72	8.16	0.26	0.79	20
17 Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

MDL Verification:
0.01ppbv: # 2819-81 (0.05ppbv); 30mL load (0.006ppbv).
0.05ppbv: # 2819-81 (0.05ppbv); 150mL load (0.03ppbv).
Naphthalene: # 2819-82 (1.0ppbv); 20mL load (0.008ppbv).

Reviewer 1 _____ Date: 10/20/16
Reviewer 2 _____ Date: 10/21/16

$\bar{x}$ = 0.00169
$2\bar{x}$ = 0.00338
$3\bar{x}$ = 0.00507
$4\bar{x}$ = 0.00676

All 0.01ppbv compounds: The ratio of the mean recovered concentration and the MDL value is between 1 and 20.

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msde.i/19Oct2016.b/e16l1011a.m/e16s1011a.m
Batch File: /chem/msde.i/19Oct2016.b
Inst ID: msde.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
$	18 1,2-Dichloroethane-d4	5034.88	5045.29	5038.98	5027.45	5057.02	5029.90	5050.29	5015.63	5037.43	13.37	40.08	
	19 1,2-Dichloroethane	10.19	9.60	10.13	9.78	9.35	9.20	9.87	8.66	9.60	0.51	1.54	20
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	21 Trichloroethene	9.89	9.56	9.11	9.80	9.09	9.08	9.45	9.00	9.37	0.35	1.06	20
$	22 Toluene-d8	4950.52	4934.18	4942.31	4920.36	4909.90	4935.37	4925.66	4912.85	4928.89	14.24	42.69	
	23 Toluene	9.97	9.97	10.54	10.10	9.52	9.48	9.45	9.15	9.77	0.45	1.35	20
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	25 1,1,2-Trichloroethane	10.56	9.76	9.39	9.07	10.22	9.92	9.22	8.50	9.58	0.66	1.99	20
	26 Tetrachloroethene	9.33	9.06	8.74	8.83	8.60	8.48	8.61	8.34	8.75	0.32	0.96	20
	27 1,2-Dibromoethane (EDB	9.52	9.48	9.09	9.25	9.41	9.06	9.10	8.97	9.23	0.21	0.64	20
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	30 Ethyl Benzene	9.72	9.29	9.99	9.07	8.70	9.25	8.82	8.03	9.11	0.61	1.83	20
	31 m,p-Xylene	8.73	8.70	9.17	8.89	8.32	9.22	8.08	7.65	8.59	0.54	1.63	40
	32 o-Xylene	9.18	8.16	8.85	8.98	9.32	8.60	8.55	8.35	8.75	0.40	1.21	20
$	33 4-Bromofluorobenzene	4929.88	4925.78	4902.70	4938.10	4955.12	4891.20	4875.12	4821.60	4904.94	42.60	127.71	
	34 1,1,2,2-Tetrachloroeth	9.28	10.30	9.67	9.37	9.83	9.22	9.12	9.24	9.50	0.40	1.21	20
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	36 1,4-Dichlorobenzene	9.53	9.56	9.59	9.72	9.25	9.24	9.59	8.60	9.39	0.36	1.08	20
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
M	~~39 Total Xylene~~	~~17.92~~	~~16.86~~	~~18.02~~	~~17.07~~	~~17.64~~	~~17.82~~	~~16.83~~	~~16.00~~	~~17.34~~	~~0.75~~	~~2.24~~	N/a

10/21/16

Report Date : 20-Oct-2016 09:28

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msde.i/19Oct2016.b/e1611011a.m/e16s1011a.m
Batch File: /chem/msde.i/19Oct2016.b
Inst ID: msde.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	e101917sim	e101918sim	e101919sim	e101920sim	e101921sim	e101922sim	e101923sim	e101924sim
INJ.DATE:	19-OCT-2016	19-OCT-2016	19-OCT-2016	20-OCT-2016	20-OCT-2016	20-OCT-2016	20-OCT-2016	20-OCT-2016
INJ.TIME:	21:33	22:16	23:00	05:33	06:14	07:07	07:51	08:37

ug/L (PPTV)

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3	Chloromethane	45.27	42.00	41.99	49.43	38.62	40.01	38.54	38.71	41.82	3.85	11.55	50
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5	Chloroethane	47.24	50.56	43.06	45.45	44.59	41.75	43.14	38.04	44.23	3.74	11.21	60
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
17	Benzene	59.01	57.39	57.45	56.67	55.24	54.05	53.65	53.21	55.83	2.11	6.31	80

Reviewer 1 _____ Date: 10/20/16
Reviewer 2 _____ Date: 10/21/16

$\bar{x}$ = 0.00969
$2\bar{x}$ = 0.0194
$3\bar{x}$ = 0.0291
$4\bar{x}$ = 0.0388

All 0.05ppbv compounds: The ratio of the mean recovered concentration and the MDL value is between 1 and 20.

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msde.i/19Oct2016.b/e1611011a.m/e16s1011a.m
Batch File: /chem/msde.i/19Oct2016.b
Inst ID: msde.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
$	18 1,2-Dichloroethane-d4	5270.28	5358.39	5393.53	5297.76	5417.75	5324.24	5333.91	5353.30	5343.65	48.18	144.44
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	22 Toluene-d8	5005.11	5043.79	5037.75	5002.81	5002.75	5029.80	5036.88	5012.09	5021.37	17.42	52.23
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	33 4-Bromofluorobenzene	4890.09	4921.60	4919.43	4852.17	4806.61	4922.57	4918.73	4844.14	4884.42	44.70	134.02
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msde.i/18Oct2016.b/e1611011a.m/e16s1011a.m
Batch File: /chem/msde.i/18Oct2016.b
Inst ID: msde.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	e101813sim	e101814sim	e101815sim	e101816sim	e101817sim	e101818sim	e101819sim	e101820sim
INJ.DATE:	18-OCT-2016	18-OCT-2016	18-OCT-2016	18-OCT-2016	18-OCT-2016	19-OCT-2016	19-OCT-2016	19-OCT-2016
INJ.TIME:	19:40	20:36	21:21	22:07	22:52	06:03	06:44	07:25

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3	Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5	Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
17	Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Reviewer 1 _____ Date: 10/20/16
Reviewer 2 _____ Date: 10/21/16

$\bar{x}$ = 0.00603
$2\bar{x}$ = 0.01216
$3\bar{x}$ = 0.01824

Naphthalene: The ratio of the mean recovered concentration and the MDL value is between 1 and 20.

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msde.i/18Oct2016.b/e1611011a.m/e16s1011a.m
Batch File: /chem/msde.i/18Oct2016.b
Inst ID: msde.i

Re(RFV)

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
$	18 1,2-Dichloroethane-d4	5022.54	5038.90	5031.03	5065.90	5109.99	5001.35	5036.11	5088.09	5049.24	36.05	108.07	
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$	22 Toluene-d8	4962.16	4949.48	4940.20	4964.24	4957.97	4953.56	4970.39	4985.57	4960.44	13.79	41.34	
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$	33 4-Bromofluorobenzene	4950.14	4945.63	4931.47	4945.16	4963.34	4906.08	4919.35	4960.93	4940.26	19.97	59.88	
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
	38 Naphthalene	39.52	39.48	37.99	41.21	41.78	40.67	38.34	35.51	39.31	2.03	6.08	50
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Eurofins Air Toxics, Inc. 2Q 2017 TO-14A/TO-15 SIM Limit of Detections (LODs) Effective 07-01-17						
CAS #	Analyte	Molecular Weight (MW)	LOD (ppbv)	LOQ (ppbv)	LOD (ug/m3)	LOQ (ug/m3)
71-55-6	1,1,1-Trichloroethane	133.42	0.005	0.02	0.02728	0.10914
79-34-5	1,1,2,2-Tetrachloroethane	167.86	0.005	0.02	0.03433	0.13731
79-00-5	1,1,2-Trichloroethane	133.42	0.005	0.02	0.02728	0.10914
75-34-3	1,1-Dichloroethane	98.97	0.005	0.02	0.02024	0.08096
75-35-4	1,1-Dichloroethene	96.95	0.005	0.01	0.01983	0.03965
106-93-4	1,2-Dibromoethane (EDB)	187.88	0.005	0.02	0.03842	0.15369
107-06-2	1,2-Dichloroethane	98.96	0.005	0.02	0.02024	0.08095
106-46-7	1,4-Dichlorobenzene	147.01	0.005	0.02	0.03006	0.12025
71-43-2	Benzene	78.11	0.005	0.05	0.01597	0.15973
56-23-5	Carbon Tetrachloride	153.84	0.005	0.02	0.03146	0.12584
75-00-3	Chloroethane	64.52	0.02	0.05	0.05278	0.13194
67-66-3	Chloroform	119.39	0.005	0.02	0.02442	0.09766
74-87-3	Chloromethane	50.49	0.02	0.05	0.0413	0.10325
156-59-2	cis-1,2-Dichloroethene	96.94	0.005	0.02	0.01982	0.0793
100-41-4	Ethyl Benzene	106.16	0.005	0.02	0.02171	0.08684
76-14-2	Freon 114	170.93	0.005	0.02	0.03496	0.13982
75-71-8	Freon 12	120.92	0.005	0.02	0.02473	0.09891
108-38-3	m,p-Xylene	106.17	0.005	0.04	0.02171	0.17369
1634-04-4	Methyl tert-butyl ether	88.15	0.005	0.1	0.01803	0.36053
91-20-3	Naphthalene	128.17	0.008	0.05	0.04194	0.26211
95-47-6	o-Xylene	106.17	0.005	0.02	0.02171	0.08685
127-18-4	Tetrachloroethene	165.85	0.005	0.02	0.03392	0.13566
108-88-3	Toluene	92.13	0.005	0.02	0.01884	0.07536
156-60-5	trans-1,2-Dichloroethene	96.94	0.005	0.1	0.01982	0.39648
79-01-6	Trichloroethene	131.39	0.005	0.02	0.02687	0.10748
75-01-4	Vinyl Chloride	62.5	0.005	0.01	0.01278	0.02556

ppbv - part per billion by volume

Concentration (ug/m3) = Concentration (ppbv)*MW/24.45

Instrument ID - msd20.i file msd20.i/21apr17.b/20042118sim.d msd20.i/21apr17.b/20042119sim.d msd20.i/21apr17.b/20042120sim.d

Report Date : 13-Feb-2017 09:36

T015 Sim MDL

0.01ppbv (0.05ppbv)

2819-270(50mL)

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/09Feb2017.b/201710208a.m/2017s0208a.m
Batch File: /chem/msd20.i/09Feb2017.b
Inst ID: msd20.i

MDL Verification

0.0065 ppbv (0.05ppbv) 5 pt 2/14/17 25mL

2819-270 (~~30mL~~) 13 24 pt 2/14/17

20026924 pt 2/14/17

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20020906sim	20020907sim	20020908sim	20020909sim	20020910sim	20020911sim	20020912sim	20020913sim
INJ.DATE:	09-FEB-2017	09-FEB-2017	09-FEB-2017	09-FEB-2017	09-FEB-2017	09-FEB-2017	09-FEB-2017	09-FEB-2017
INJ.TIME:	18:17	19:00	19:40	20:21	21:01	21:40	22:20	22:59

Qc (ppbv)

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
1 Freon 12	11.03	10.11	9.81	10.06	9.28	9.92	10.32	9.86	10.05	0.50	1.50	20
2 Freon 114	11.52	10.88	10.56	10.84	11.49	10.35	10.95	9.93	10.82	0.54	1.62	20
3 Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4 Vinyl Chloride	9.02	8.23	8.40	9.07	8.75	8.52	8.64	8.44	8.63	0.30	0.89	10
5 Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
6 Freon 11	11.02	10.84	10.89	11.03	11.26	10.70	10.84	11.21	10.97	0.19	0.58	20
7 Freon 113	11.88	11.39	11.72	11.53	11.56	12.02	11.47	11.58	11.65	0.21	0.63	20
8 1,1-Dichloroethene	10.76	10.73	9.68	9.94	9.65	10.32	9.30	9.85	10.03	0.53	1.58	10
9 Methyl tert-butyl ethe	9.04	8.83	8.61	8.81	8.51	8.26	7.66	7.86	8.45	0.49	1.46	100
10 trans-1,2-Dichloroethe	10.69	10.10	9.66	9.43	9.42	9.39	9.69	8.70	9.63	0.58	1.74	100
11 1,1-Dichloroethane	9.88	9.41	9.55	9.54	9.24	9.41	9.47	9.41	9.49	0.19	0.55	20
12 cis-1,2-Dichloroethene	10.05	9.55	9.09	9.31	9.22	8.64	9.54	9.19	9.32	0.41	1.23	20
* 13 Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14 Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
15 1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
16 Carbon Tetrachloride	6.90	6.77	6.40	6.63	6.72	6.33	6.18	6.15	6.51	0.28	0.85	20
17 Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Reviewer 1 _____ Date: 2/14/17
Reviewer 2 _____ Date: 2/14/17

$\bar{x}$ = 0.00138

$2\bar{x}$ = 0.00276

$3\bar{x}$ = 0.00414

$4\bar{x}$ = 0.00551

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/09Feb2017.b/2017l0208a.m/2017s0208a.m
Batch File: /chem/msd20.i/09Feb2017.b
Inst ID: msd20.i

Rep (PFW)

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
$	18 1,2-Dichloroethane-d4	4983.34	4995.49	5015.88	5057.20	5066.31	5084.78	5039.85	5070.76	5039.20	37.24	111.65	
	19 1,2-Dichloroethane	10.96	10.03	11.60	11.41	11.01	11.29	11.02	11.27	11.07	0.47	1.42	20
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	21 Trichloroethene	11.25	10.55	10.75	10.89	11.49	10.91	11.22	11.16	11.03	0.31	0.92	20
$	22 Toluene-d8	4862.06	4875.26	4890.09	4913.26	4903.13	4905.72	4895.60	4918.69	4895.48	19.17	57.48	
	23 Toluene	11.96	12.15	12.17	12.04	12.03	11.75	11.64	11.69	11.93	0.21	0.62	20
	24 trans-1,3-Dichloroprop	9.05	8.07	8.61	8.75	8.41	8.04	7.15	7.53	8.20	0.63	1.90	20
	25 1,1,2-Trichloroethane	11.07	10.16	10.56	9.84	10.34	10.02	9.96	10.30	10.28	0.39	1.18	20
	26 Tetrachloroethene	11.08	10.71	10.92	10.58	10.96	10.53	10.65	10.71	10.77	0.20	0.59	20
	27 1,2-Dibromoethane (EDB	10.88	10.65	10.67	10.57	9.97	10.16	10.23	9.80	10.36	0.38	1.14	20
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	29 Chlorobenzene	11.56	11.22	11.47	11.01	11.29	10.95	11.48	11.43	11.30	0.23	0.68	20
	30 Ethyl Benzene	10.47	10.10	9.96	9.53	9.53	9.45	9.32	9.01	9.67	0.47	1.41	20
	31 m,p-Xylene	10.74	10.24	10.12	10.36	9.61	9.57	9.26	9.23	9.89	0.55	1.66	40
	32 o-Xylene	10.10	10.44	9.94	9.32	9.00	9.21	9.23	9.28	9.56	0.52	1.56	20
$	33 4-Bromofluorobenzene	5147.04	5146.45	5142.28	5062.91	5090.21	5007.75	5069.69	5058.70	5090.63	50.80	152.28	
	34 1,1,2,2-Tetrachloroeth	11.19	10.51	10.28	10.00	10.10	10.24	10.05	10.28	10.33	0.38	1.15	20
	35 1,3-Dichlorobenzene	16.09	14.88	14.72	14.31	14.15	13.63	13.57	13.70	14.38	0.85	2.54	20
	36 1,4-Dichlorobenzene	16.50	15.59	14.80	13.63	13.99	14.01	13.28	13.36	14.40	1.15	3.45	20
	37 1,2-Dichlorobenzene	16.36	15.19	14.41	14.37	14.70	13.35	13.71	13.49	14.45	1.00	2.99	20
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
M	39 Total Xylene	41.59	40.32	38.81	38.41	37.25	36.81	37.71	36.40	38.41	1.79	5.35	

2/14/17

TO15 Sim MDL

0.05ppbv (0.05ppbv)
2819-270; 250mL

MDL verification

0.02ppbv / 0.05ppbv
2819-270; 100mL
20021325

Report Date : 13-Feb-2017 09:37

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/09Feb2017.b/2017l0208a.m/2017s0208a.m
Batch File: /chem/msd20.i/09Feb2017.b
Inst ID: msd20.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20020914sim	20020915sim	20020916sim	20020917sim	20020918sim	20020919sim	20020920sim	20020921sim
INJ.DATE:	09-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017
INJ.TIME:	23:50	00:39	05:49	06:30	07:09	07:58	08:41	10:39

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3	Chloromethane	51.82	46.33	45.70	49.45	48.37	46.17	46.79	46.34	47.62	2.12	6.35	50
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5	Chloroethane	57.54	64.38	66.00	63.34	67.31	63.19	62.03	60.54	63.04	3.08	9.23	50
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
17	Benzene	47.00	47.26	48.07	47.13	47.06	47.29	47.42	48.63	47.48	0.57	1.71	50

Reviewer 1 _____ Date: 2/14/17
Reviewer 2 _____ Date: 2/14/17

$\bar{x}$ = 0.0057b
2$\bar{x}$ = 0.0115
3$\bar{x}$ = 0.0173
4$\bar{x}$ = 0.0231

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/09Feb2017.b/2017l0208a.m/2017s0208a.m
Batch File: /chem/msd20.i/09Feb2017.b
Inst ID: msd20.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
$	18 1,2-Dichloroethane-d4	5519.76	5499.03	5483.32	5522.21	5493.99	5475.87	5336.39	5432.33	5470.36	61.06	183.07
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	22 Toluene-d8	4881.79	4878.42	4932.13	4897.45	4874.56	4927.17	4886.15	4991.79	4908.68	40.06	120.11
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	33 4-Bromofluorobenzene	4852.95	4778.31	4763.61	4622.26	4725.62	4676.56	4741.39	4804.41	4745.64	72.48	217.30
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

TO15 SimMDL

0.02ppbv (0.05ppb) Page 1
2819-270, 100mL

Report Date : 13-Feb-2017 09:13

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/10Feb2017.b/20171020 8a.m/2017s0208a.m
Batch File: /chem/msd20.i/10Feb2017.b
Inst ID: msd20.i

MDL Verification

0.02ppbv (0.05ppbv)
2819-270; 100mL
20021325

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20021005sim	20021006sim	20021007sim	20021008sim	20021009sim	20021010sim	20021011sim	20021012sim
INJ.DATE:	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017	10-FEB-2017
INJ.TIME:	18:15	18:57	19:35	20:20	21:00	21:39	22:18	22:57

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3	Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5	Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14	Chloroform	21.79	20.06	21.85	22.03	22.00	22.00	20.26	22.08	21.51	0.84	2.51	20
15	1,1,1-Trichloroethane	20.71	20.33	21.29	20.83	20.47	21.01	21.17	20.77	20.82	0.33	0.98	20
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
17	Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Reviewer 1 _____ Date: 2/14/17
Reviewer 2 _____ Date: 2/14/17

$\bar{x}$ = 0.00175
2$\bar{x}$ = 0.00349
3$\bar{x}$ = 0.00523
4$\bar{x}$ = 0.00698

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/10Feb2017.b/2017l0208a.m/2017s0208a.m
Batch File: /chem/msd20.i/10Feb2017.b
Inst ID: msd20.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
$	18 1,2-Dichloroethane-d4	5124.12	5161.65	5192.50	5236.42	5233.38	5215.27	5217.71	5200.34	5197.67	38.23	114.60
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	22 Toluene-d8	4952.55	4934.47	4922.82	4959.08	4955.49	4952.63	4958.34	4972.09	4950.93	15.38	46.12
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	33 4-Bromofluorobenzene	4962.13	4940.14	4941.65	4854.19	4802.19	4823.08	4789.11	4785.02	4862.19	74.52	223.40
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

TO15 Sim MDL Naph

0.005 ppbv (0.01 ppbv) 2819-271 (125mL)

MDL Verification

0.008 ppbv (0.1 ppbv) 2819-271; 20mL

Report Date : 14-Feb-2017 09:21

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/13Feb2017.b/2017l0208a.m/2017s0208a.m
Batch File: /chem/msd20.i/13Feb2017.b
Inst ID: msd20.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20021314sim	20021315sim	20021316sim	20021317sim	20021318sim	20021319sim	20021320sim	20021321sim
INJ.DATE:	13-FEB-2017	13-FEB-2017	13-FEB-2017	13-FEB-2017	13-FEB-2017	13-FEB-2017	13-FEB-2017	13-FEB-2017
INJ.TIME:	15:42	16:21	17:08	17:47	18:26	19:07	19:51	20:30

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3	Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5	Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
17	Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Reviewer 1 _____ Date: 2/15/17
Reviewer 2 _____ Date: 2/14/17

$\bar{x} = 0.004$ ppbv

$2\bar{x} = 0.008$ ppbv

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/13Feb2017.b/2017l0208a.m/2017s0208a.m
Batch File: /chem/msd20.i/13Feb2017.b
Inst ID: msd20.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
$	18 1,2-Dichloroethane-d4	5145.09	5135.78	5161.25	5136.28	5159.06	5170.04	5190.17	5188.71	5160.80	21.39	64.14
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	22 Toluene-d8	4873.04	4873.20	4875.13	4855.62	4853.83	4879.61	4872.46	4888.81	4871.46	11.64	34.91
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	33 4-Bromofluorobenzene	4900.36	4882.15	4916.85	4969.96	4974.28	4871.41	4843.84	4943.65	4912.81	47.17	141.43
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	38 Naphthalene	38.44	41.02	41.10	43.05	42.19	40.93	42.08	40.78	41.20	1.37	4.10
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

RL (ppbv)

50

MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	CCV		
Lab ID:	1708092-12A	**Date/Time Analyzed:**	8/7/17 09:02 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080702sim

Compound	CAS#	%Recovery
Benzene	71-43-2	88
Ethyl Benzene	100-41-4	101
m,p-Xylene	108-38-3	105
Naphthalene	91-20-3	109
o-Xylene	95-47-6	106
Toluene	108-88-3	94
Total Xylenes	9999-9999-015	106

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd20.i Injection Date: 07-AUG-2017 09:02
Lab File ID: 20080702sim.d Init. Cal. Date(s): 03-AUG-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 11:42 08:20
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m

			MIN		MAX	
COMPOUND	RRF / AMOUNT	RF10	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
$ 18 1,2-Dichloroethane-d4	1.39916	1.34045	0.010	4.19607	30.00000	Averaged
$ 22 Toluene-d8	0.88055	0.87130	0.010	1.05089	30.00000	Averaged
$ 33 4-Bromofluorobenzene	0.67797	0.71180	0.010	-4.99001	30.00000	Averaged
1 Freon 12	++++	3.75637	0.010	++++	30.00000	Averaged <-
2 Freon 114	2.95247	2.87300	0.010	2.69136	30.00000	Averaged
3 Chloromethane	1.28129	1.07490	0.010	16.10834	30.00000	Averaged
4 Vinyl Chloride	1.34812	1.24897	0.010	7.35440	30.00000	Averaged
5 Chloroethane	0.63363	0.72142	0.010	-13.85660	30.00000	Averaged
6 Freon 11	4.08821	4.54773	0.010	-11.24027	30.00000	Averaged
7 Freon 113	3.41256	3.59349	0.010	-5.30188	30.00000	Averaged
8 1,1-Dichloroethene	1.03481	1.08272	0.010	-4.62988	30.00000	Averaged
9 Methyl tert-butyl ether	4.42017	4.37612	0.010	0.99657	30.00000	Averaged
10 trans-1,2-Dichloroethene	1.11205	1.07290	0.010	3.51996	30.00000	Averaged
11 1,1-Dichloroethane	2.71134	2.67735	0.010	1.25389	30.00000	Averaged
12 cis-1,2-Dichloroethene	1.18806	1.23718	0.010	-4.13518	30.00000	Averaged
14 Chloroform	3.95272	3.64402	0.010	7.80996	30.00000	Averaged
15 1,1,1-Trichloroethane	3.94779	3.85141	0.010	2.44156	30.00000	Averaged
16 Carbon Tetrachloride	3.03279	3.94744	0.010	-30.15872	40.00000	Averaged
17 Benzene	1.19203	1.04486	0.010	12.34629	30.00000	Averaged
19 1,2-Dichloroethane	0.48717	0.45739	0.010	6.11273	30.00000	Averaged
21 Trichloroethene	0.59301	0.60156	0.010	-1.44187	30.00000	Averaged
23 Toluene	1.33015	1.25456	0.010	5.68293	30.00000	Averaged
24 trans-1,3-Dichloropropene	0.74512	0.81454	0.010	-9.31672	30.00000	Averaged
25 1,1,2-Trichloroethane	0.61930	0.63708	0.010	-2.87089	30.00000	Averaged
26 Tetrachloroethene	0.96332	0.98747	0.010	-2.50753	30.00000	Averaged
27 1,2-Dibromoethane (EDB)	0.99587	1.01402	0.010	-1.82212	30.00000	Averaged
29 Chlorobenzene	1.32392	1.32121	0.010	0.20501	30.00000	Averaged
30 Ethyl Benzene	0.61018	0.61471	0.010	-0.74185	30.00000	Averaged
31 m,p-Xylene	0.68423	0.71853	0.010	-5.01171	30.00000	Averaged
32 o-Xylene	0.63372	0.67391	0.010	-6.34111	30.00000	Averaged
34 1,1,2,2-Tetrachloroethane	1.29350	1.21417	0.010	6.13309	30.00000	Averaged
35 1,3-Dichlorobenzene	1.12400	1.16301	0.010	-3.47067	30.00000	Averaged
36 1,4-Dichlorobenzene	1.04708	1.07718	0.010	-2.87435	30.00000	Averaged
37 1,2-Dichlorobenzene	1.00908	1.05084	0.010	-4.13837	30.00000	Averaged
38 Naphthalene	0.52396	0.57044	0.010	-8.87087	40.00000	Averaged
M 39 Total Xylene	++++	1.39244	0.010	++++	30.00000	Averaged <-

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/07aug17.b/20080702sim.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 07-AUG-2017 09:02
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 2850-224
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 10-Aug-2017 07:13 atoyama Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.340	17.340 (1.000)	130	91747	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	70297			48.37- 108.37	76.62
17.340	17.340 (1.000)	49	99457			82.84- 142.84	108.40
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.881	18.881 (1.000)	114	437272	5.00000		80.00- 120.00	100.00
18.881	18.881 (1.000)	88	61144			0.00- 44.04	13.98
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.356	24.356 (1.000)	117	350464	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	168110			17.63- 77.63	47.97
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	122982	5.00000	4.790	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	68963			26.67- 86.67	56.08
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	380994	5.00000	4.947	80.00- 120.00	100.00
21.683	21.683 (1.148)	70	38910			0.00- 40.38	10.21

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	242640			33.71- 93.71	63.69
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	249459	5.00000	5.250	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	215507			57.01- 117.01	86.39
25.980	25.980 (1.067)	176	245774			68.59- 128.59	98.52
1 Freon 12					CAS #: 75-71-8		
5.499	5.499 (0.317)	85	689272	10.0000		80.00- 120.00	100.00(a)
5.499	5.499 (0.317)	87	224571			2.69- 62.69	32.58
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	527179	10.0000	9.731	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	169865			2.13- 62.13	32.22
3 Chloromethane					CAS #: 74-87-3		
7.379	7.379 (0.426)	50	197237	10.0000	8.389	80.00- 120.00	100.00
7.379	7.379 (0.426)	52	63557			2.25- 62.25	32.22
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	229179	10.0000	9.264	80.00- 120.00	100.00
8.366	8.366 (0.482)	64	73982			1.90- 61.90	32.28
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	132377	10.0000	11.386	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	42807			2.24- 62.24	32.34
6 Freon 11					CAS #: 75-69-4		
11.762	11.762 (0.678)	101	834482	10.0000	11.124	80.00- 120.00	100.00
11.762	11.762 (0.678)	103	552983			35.63- 95.63	66.27
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	659384	10.0000	10.530	80.00- 120.00	100.00
13.356	13.356 (0.770)	153	429020			35.29- 95.29	65.06
13.356	13.356 (0.770)	101	709696			79.29- 139.29	107.63
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	198672	10.0000	10.463	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	462333			208.11- 268.11	232.71
13.356	13.356 (0.770)	96	311646			127.31- 187.31	156.86
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.059	15.059 (0.868)	73	802992	10.0000	9.900	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	163109			0.00- 51.54	20.31
15.059	15.059 (0.868)	41	143205			0.00- 49.49	17.83

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	196871	10.0000	9.648	80.00- 120.00	100.00
15.086	15.086 (0.870)	61	381437			166.64- 226.64	193.75
15.114	15.114 (0.872)	96	306692			124.18- 184.18	155.78
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	491277	10.0000	9.875	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	158944			2.52- 62.52	32.35
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	227016	10.0000	10.414	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	399606			148.56- 208.56	176.03
16.958	16.958 (0.978)	96	347263			123.96- 183.96	152.97
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	668655	10.0000	9.219	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	445227			36.46- 96.46	66.59
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	706710	10.0000	9.756	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	464305			35.34- 95.34	65.70
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	724331	10.0000	13.016	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	745024			71.93- 131.93	102.86
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	913778	10.0000	8.765	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	215043			0.00- 53.56	23.53
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	400006	10.0000	9.389	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	131885			3.03- 63.03	32.97
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	526090	10.0000	10.144	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	473519			60.20- 120.20	90.01
19.304	19.304 (1.022)	97	310820			29.00- 89.00	59.08
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	1097169	10.0000	9.432	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	634793			27.62- 87.62	57.86
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.919)	75	570935	10.0000	10.932	80.00- 120.00	100.00
22.382	22.382 (0.919)	77	184180			2.20- 62.20	32.26

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane						CAS #: 79-00-5	
22.760	22.760 (0.934)	97	446545	10.0000	10.287	80.00- 120.00	100.00
22.760	22.760 (0.934)	99	284392			33.48- 93.48	63.69
22.760	22.760 (0.934)	83	372617			54.60- 114.60	83.44
26 Tetrachloroethene						CAS #: 127-18-4	
22.905	22.905 (0.940)	166	692147	10.0000	10.251	80.00- 120.00	100.00
22.876	22.876 (0.939)	129	454994			35.95- 95.95	65.74
22.905	22.905 (0.940)	131	443346			34.23- 94.23	64.05
27 1,2-Dibromoethane (EDB)						CAS #: 106-93-4	
23.690	23.690 (0.973)	107	710753	10.0000	10.182	80.00- 120.00	100.00
23.690	23.690 (0.973)	109	681941			66.39- 126.39	95.95
29 Chlorobenzene						CAS #: 108-90-7	
24.397	24.397 (1.002)	112	926073	10.0000	9.979	80.00- 120.00	100.00
24.418	24.418 (1.003)	114	305896			2.92- 62.92	33.03
24.397	24.397 (1.002)	77	464249			21.68- 81.68	50.13
30 Ethyl Benzene						CAS #: 100-41-4	
24.480	24.480 (1.005)	106	430867	10.0000	10.074	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	1332990			281.86- 341.86	309.37
31 m,p-Xylene						CAS #: 108-38-3	
24.665	24.665 (1.013)	106	503635	10.0000	10.501	80.00- 120.00	100.00
24.645	24.645 (1.012)	91	961875			165.84- 225.84	190.99
32 o-Xylene						CAS #: 95-47-6	
25.243	25.243 (1.036)	106	472362	10.0000	10.634	80.00- 120.00	100.00
25.222	25.222 (1.036)	91	964830			174.02- 234.02	204.26
34 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5	
26.151	26.151 (1.074)	83	851045	10.0000	9.387	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	566671			35.95- 95.95	66.59
35 1,3-Dichlorobenzene						CAS #: 541-73-1	
27.305	27.305 (1.121)	146	815183	10.0000	10.347	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	534623			35.53- 95.53	65.58
27.305	27.305 (1.121)	111	283227			4.70- 64.70	34.74
36 1,4-Dichlorobenzene						CAS #: 106-46-7	
27.414	27.414 (1.126)	146	755023	10.0000	10.287	80.00- 120.00	100.00
27.414	27.414 (1.126)	148	494914			35.55- 95.55	65.55
27.414	27.414 (1.126)	111	253510			3.83- 63.83	33.58
37 1,2-Dichlorobenzene						CAS #: 95-50-1	
27.897	27.897 (1.145)	146	736564	10.0000	10.414	80.00- 120.00	100.00

					AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
37 1,2-Dichlorobenzene (continued)								
27.897	27.897	(1.145)	148	481967			35.05- 95.05	65.43
27.897	27.897	(1.145)	111	265766			6.25- 66.25	36.08
38 Naphthalene						CAS #: 91-20-3		
30.469	30.469	(1.251)	128	39984	1.00000	1.089	80.00- 120.00	100.00
30.469	30.469	(1.251)	127	5264			0.00- 43.90	13.17
M 39 Total Xylene						CAS #: 1330-20-7		
				975997	10.0000	21.135		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080702sim.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 07-AUG-2017
Calibration Time: 09:02
Client Smp ID: CCV
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	91747	55048	128446	91747	0.00
20 1,4-Difluorobenze	437272	262363	612181	437272	0.00
28 Chlorobenzene-d5	350464	210278	490650	350464	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/07aug17.b/20080702sim.d

Date : 07-AUG-2017 09:02

Client ID: CCV

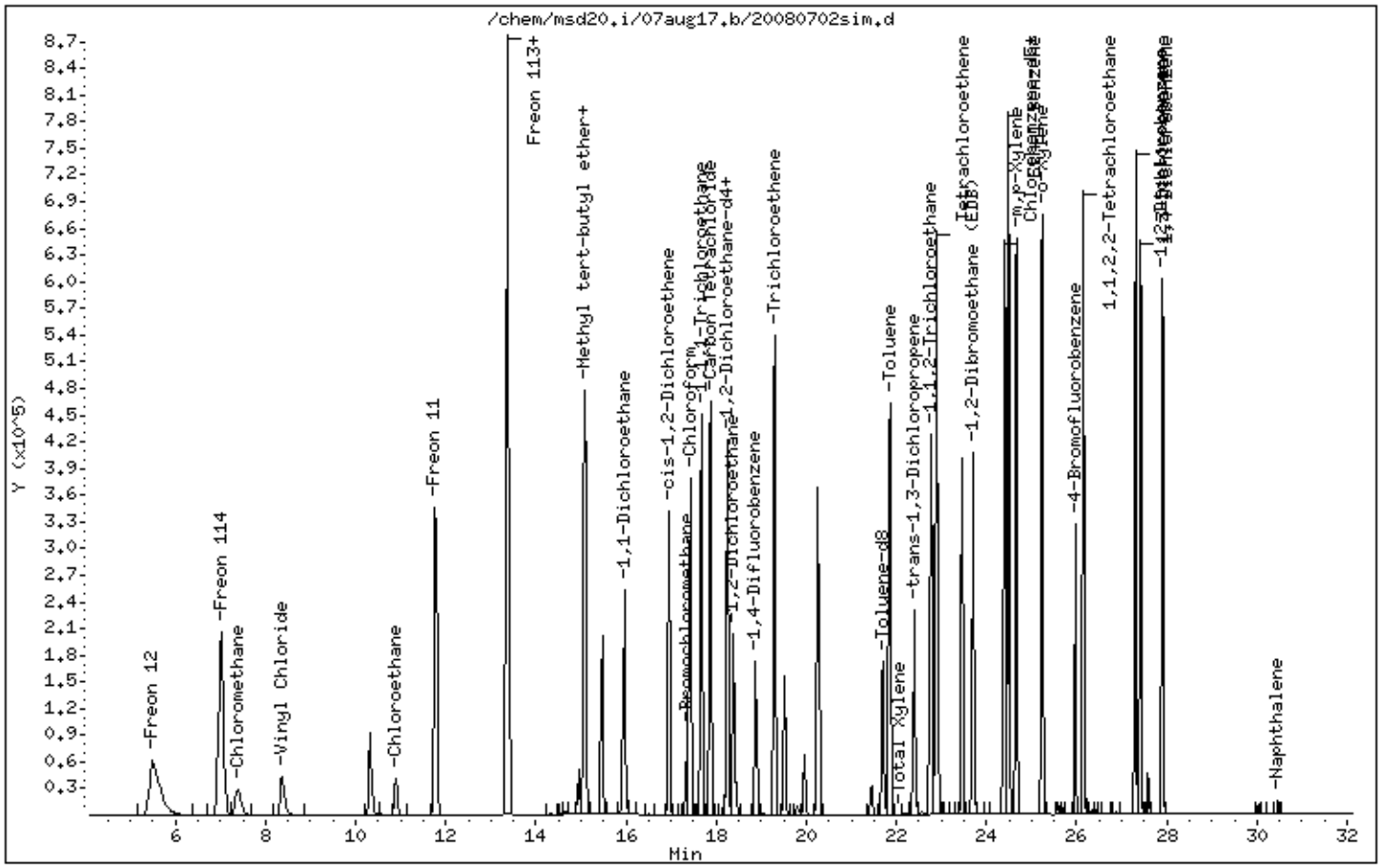
Instrument: msd20.i

Sample Info: 50mL# 2850-224

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	CCV		
Lab ID:	1708092-12B	**Date/Time Analyzed:**	8/8/17 10:00 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080804sim

Compound	CAS#	%Recovery
Benzene	71-43-2	86
Ethyl Benzene	100-41-4	97
m,p-Xylene	108-38-3	101
Naphthalene	91-20-3	97
o-Xylene	95-47-6	101
Toluene	108-88-3	83
Total Xylenes	9999-9999-015	101

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	86
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	89

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd20.i Injection Date: 08-AUG-2017 10:00
Lab File ID: 20080804sim.d Init. Cal. Date(s): 03-AUG-2017 04-AUG-2017
Analysis Type: AIR Init. Cal. Times: 11:42 08:20
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m

			MIN		MAX	
COMPOUND	RRF / AMOUNT	RF10	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
$ 18 1,2-Dichloroethane-d4	1.39916	1.20178	0.010	14.10694	30.00000	Averaged
$ 22 Toluene-d8	0.88055	0.78352	0.010	11.01919	30.00000	Averaged
$ 33 4-Bromofluorobenzene	0.67797	0.71824	0.010	-5.94067	30.00000	Averaged
1 Freon 12	++++	3.91496	0.010	++++	30.00000	Averaged <-
2 Freon 114	2.95247	3.18776	0.010	-7.96943	30.00000	Averaged
3 Chloromethane	1.28129	1.09873	0.010	14.24840	30.00000	Averaged
4 Vinyl Chloride	1.34812	1.31128	0.010	2.73229	30.00000	Averaged
5 Chloroethane	0.63363	0.58397	0.010	7.83621	30.00000	Averaged
6 Freon 11	4.08821	3.84778	0.010	5.88105	30.00000	Averaged
7 Freon 113	3.41256	3.25038	0.010	4.75260	30.00000	Averaged
8 1,1-Dichloroethene	1.03481	0.93818	0.010	9.33746	30.00000	Averaged
9 Methyl tert-butyl ether	4.42017	4.40532	0.010	0.33610	30.00000	Averaged
10 trans-1,2-Dichloroethene	1.11205	1.12371	0.010	-1.04880	30.00000	Averaged
11 1,1-Dichloroethane	2.71134	2.51229	0.010	7.34147	30.00000	Averaged
12 cis-1,2-Dichloroethene	1.18806	1.12523	0.010	5.28851	30.00000	Averaged
14 Chloroform	3.95272	3.63401	0.010	8.06318	30.00000	Averaged
15 1,1,1-Trichloroethane	3.94779	3.66054	0.010	7.27643	30.00000	Averaged
16 Carbon Tetrachloride	3.03279	3.72661	0.010	-22.87744	40.00000	Averaged
17 Benzene	1.19203	1.02228	0.010	14.24065	30.00000	Averaged
19 1,2-Dichloroethane	0.48717	0.41546	0.010	14.71852	30.00000	Averaged
21 Trichloroethene	0.59301	0.55696	0.010	6.07945	30.00000	Averaged
23 Toluene	1.33015	1.10517	0.010	16.91391	30.00000	Averaged
24 trans-1,3-Dichloropropene	0.74512	0.73023	0.010	1.99853	30.00000	Averaged
25 1,1,2-Trichloroethane	0.61930	0.59618	0.010	3.73342	30.00000	Averaged
26 Tetrachloroethene	0.96332	0.95036	0.010	1.34530	30.00000	Averaged
27 1,2-Dibromoethane (EDB)	0.99587	0.95293	0.010	4.31148	30.00000	Averaged
29 Chlorobenzene	1.32392	1.26875	0.010	4.16740	30.00000	Averaged
30 Ethyl Benzene	0.61018	0.59000	0.010	3.30817	30.00000	Averaged
31 m,p-Xylene	0.68423	0.68879	0.010	-0.66538	30.00000	Averaged
32 o-Xylene	0.63372	0.64120	0.010	-1.17915	30.00000	Averaged
34 1,1,2,2-Tetrachloroethane	1.29350	1.12671	0.010	12.89479	30.00000	Averaged
35 1,3-Dichlorobenzene	1.12400	1.09081	0.010	2.95271	30.00000	Averaged
36 1,4-Dichlorobenzene	1.04708	1.00831	0.010	3.70297	30.00000	Averaged
37 1,2-Dichlorobenzene	1.00908	0.95354	0.010	5.50457	30.00000	Averaged
38 Naphthalene	0.52396	0.50664	0.010	3.30654	40.00000	Averaged
M 39 Total Xylene	++++	1.32998	0.010	++++	30.00000	Averaged <-

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080804sim.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 08-AUG-2017 10:00
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 2850-224
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 13 Bromochloromethane					CAS #: 74-97-5			
17.340	17.340 (1.000)	130	97835	5.00000		80.00- 120.00		100.00
17.340	17.340 (1.000)	128	75843			48.37- 108.37		77.52
17.340	17.340 (1.000)	49	95498			82.84- 142.84		97.61
* 20 1,4-Difluorobenzene					CAS #: 540-36-3			
18.880	18.880 (1.000)	114	453999	5.00000		80.00- 120.00		100.00
18.880	18.880 (1.000)	88	61673			0.00- 44.04		13.58
* 28 Chlorobenzene-d5					CAS #: 3114-55-4			
24.356	24.356 (1.000)	117	343223	5.00000		80.00- 120.00		100.00
24.356	24.356 (1.000)	82	153929			17.63- 77.63		44.85
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
18.265	18.265 (1.053)	65	117576	5.00000	4.295	80.00- 120.00		100.00
18.265	18.265 (1.053)	67	67953			26.67- 86.67		57.79
$ 22 Toluene-d8					CAS #: 2037-26-5			
21.698	21.698 (1.149)	98	355718	5.00000	4.449	80.00- 120.00		100.00
21.683	21.683 (1.148)	70	33595			0.00- 40.38		9.44

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	227459			33.71- 93.71	63.94
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.961	25.961 (1.066)	174	246517	5.00000	5.297	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	203715			57.01- 117.01	82.64
25.980	25.980 (1.067)	176	242867			68.59- 128.59	98.52
1 Freon 12					CAS #: 75-71-8		
5.523	5.523 (0.319)	85	766041	10.0000		80.00- 120.00	100.00(a)
5.523	5.523 (0.319)	87	249131			2.69- 62.69	32.52
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	623749	10.0000	10.797	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	201195			2.13- 62.13	32.26
3 Chloromethane					CAS #: 74-87-3		
7.403	7.403 (0.427)	50	214988	10.0000	8.575	80.00- 120.00	100.00
7.403	7.403 (0.427)	52	69575			2.25- 62.25	32.36
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	256579	10.0000	9.727	80.00- 120.00	100.00
8.366	8.366 (0.482)	64	83578			1.90- 61.90	32.57
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	114266	10.0000	9.216	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	37197			2.24- 62.24	32.55
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	752895	10.0000	9.412	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	494511			35.63- 95.63	65.68
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	636001	10.0000	9.525	80.00- 120.00	100.00
13.383	13.383 (0.772)	153	415032			35.29- 95.29	65.26
13.356	13.356 (0.770)	101	657359			79.29- 139.29	103.36
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	183574	10.0000	9.066	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	396355			208.11- 268.11	215.91
13.356	13.356 (0.770)	96	285987			127.31- 187.31	155.79
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.059	15.059 (0.868)	73	861988	10.0000	9.966	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	173535			0.00- 51.54	20.13
15.059	15.059 (0.868)	41	140450			0.00- 49.49	16.29

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	219876	10.0000	10.105	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	404183			166.64- 226.64	183.82
15.114	15.114 (0.872)	96	340849			124.18- 184.18	155.02
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	491580	10.0000	9.266	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	159933			2.52- 62.52	32.53
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	220173	10.0000	9.471	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	365613			148.56- 208.56	166.06
16.958	16.958 (0.978)	96	337696			123.96- 183.96	153.38
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	711066	10.0000	9.194	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	471276			36.46- 96.46	66.28
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	716257	10.0000	9.272	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	469716			35.34- 95.34	65.58
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	729186	10.0000	12.288	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	746631			71.93- 131.93	102.39
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	928229	10.0000	8.576	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	218559			0.00- 53.56	23.55
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	377240	10.0000	8.528	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	124815			3.03- 63.03	33.09
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	505716	10.0000	9.392	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	442091			60.20- 120.20	87.42
19.282	19.282 (1.021)	97	292384			29.00- 89.00	57.82
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	1003494	10.0000	8.309	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	579273			27.62- 87.62	57.73
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.382	22.382 (0.919)	75	501263	10.0000	9.800	80.00- 120.00	100.00
22.382	22.382 (0.919)	77	159125			2.20- 62.20	31.74

				AMOUNTS				
					CAL-AMT	ON-COL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane							CAS #: 79-00-5	
22.760	22.760	(0.934)	97	409243	10.0000	9.627	80.00- 120.00	100.00
22.760	22.760	(0.934)	99	258082			33.48- 93.48	63.06
22.760	22.760	(0.934)	83	336886			54.60- 114.60	82.32
26 Tetrachloroethene							CAS #: 127-18-4	
22.905	22.905	(0.940)	166	652369	10.0000	9.865	80.00- 120.00	100.00
22.876	22.876	(0.939)	129	424295			35.95- 95.95	65.04
22.905	22.905	(0.940)	131	413301			34.23- 94.23	63.35
27 1,2-Dibromoethane (EDB)							CAS #: 106-93-4	
23.689	23.689	(0.973)	107	654138	10.0000	9.569	80.00- 120.00	100.00
23.689	23.689	(0.973)	109	625358			66.39- 126.39	95.60
29 Chlorobenzene							CAS #: 108-90-7	
24.397	24.397	(1.002)	112	870929	10.0000	9.583	80.00- 120.00	100.00
24.397	24.397	(1.002)	114	286073			2.92- 62.92	32.85
24.397	24.397	(1.002)	77	416810			21.68- 81.68	47.86
30 Ethyl Benzene							CAS #: 100-41-4	
24.480	24.480	(1.005)	106	405001	10.0000	9.669	80.00- 120.00	100.00
24.480	24.480	(1.005)	91	1223245			281.86- 341.86	302.04
31 m,p-Xylene							CAS #: 108-38-3	
24.665	24.665	(1.013)	106	472815	10.0000	10.066	80.00- 120.00	100.00
24.645	24.645	(1.012)	91	889364			165.84- 225.84	188.10
32 o-Xylene							CAS #: 95-47-6	
25.243	25.243	(1.036)	106	440147	10.0000	10.118	80.00- 120.00	100.00
25.222	25.222	(1.036)	91	882317			174.02- 234.02	200.46
34 1,1,2,2-Tetrachloroethane							CAS #: 79-34-5	
26.151	26.151	(1.074)	83	773423	10.0000	8.710	80.00- 120.00	100.00
26.151	26.151	(1.074)	85	506455			35.95- 95.95	65.48
35 1,3-Dichlorobenzene							CAS #: 541-73-1	
27.305	27.305	(1.121)	146	748780	10.0000	9.705	80.00- 120.00	100.00
27.305	27.305	(1.121)	148	497113			35.53- 95.53	66.39
27.305	27.305	(1.121)	111	255365			4.70- 64.70	34.10
36 1,4-Dichlorobenzene							CAS #: 106-46-7	
27.414	27.414	(1.126)	146	692148	10.0000	9.630	80.00- 120.00	100.00
27.414	27.414	(1.126)	148	454386			35.55- 95.55	65.65
27.414	27.414	(1.126)	111	225128			3.83- 63.83	32.53
37 1,2-Dichlorobenzene							CAS #: 95-50-1	
27.897	27.897	(1.145)	146	654551	10.0000	9.450	80.00- 120.00	100.00

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
37 1,2-Dichlorobenzene (continued)							
27.897	27.897 (1.145)	148	425365			35.05- 95.05	64.99
27.897	27.897 (1.145)	111	228282			6.25- 66.25	34.88
38 Naphthalene					CAS #: 91-20-3		
30.469	30.469 (1.251)	128	34778	1.00000	0.9669	80.00- 120.00	100.00
30.469	30.469 (1.251)	127	4619			0.00- 43.90	13.28
M 39 Total Xylene					CAS #: 1330-20-7		
			912962	10.0000	20.184		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080804sim.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Client Smp ID: CCV
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	97835	0.00
20 1,4-Difluorobenze	453999	272399	635599	453999	0.00
28 Chlorobenzene-d5	343223	205934	480512	343223	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/08aug17.b/20080804sim.d

Date : 08-AUG-2017 10:00

Client ID: CCV

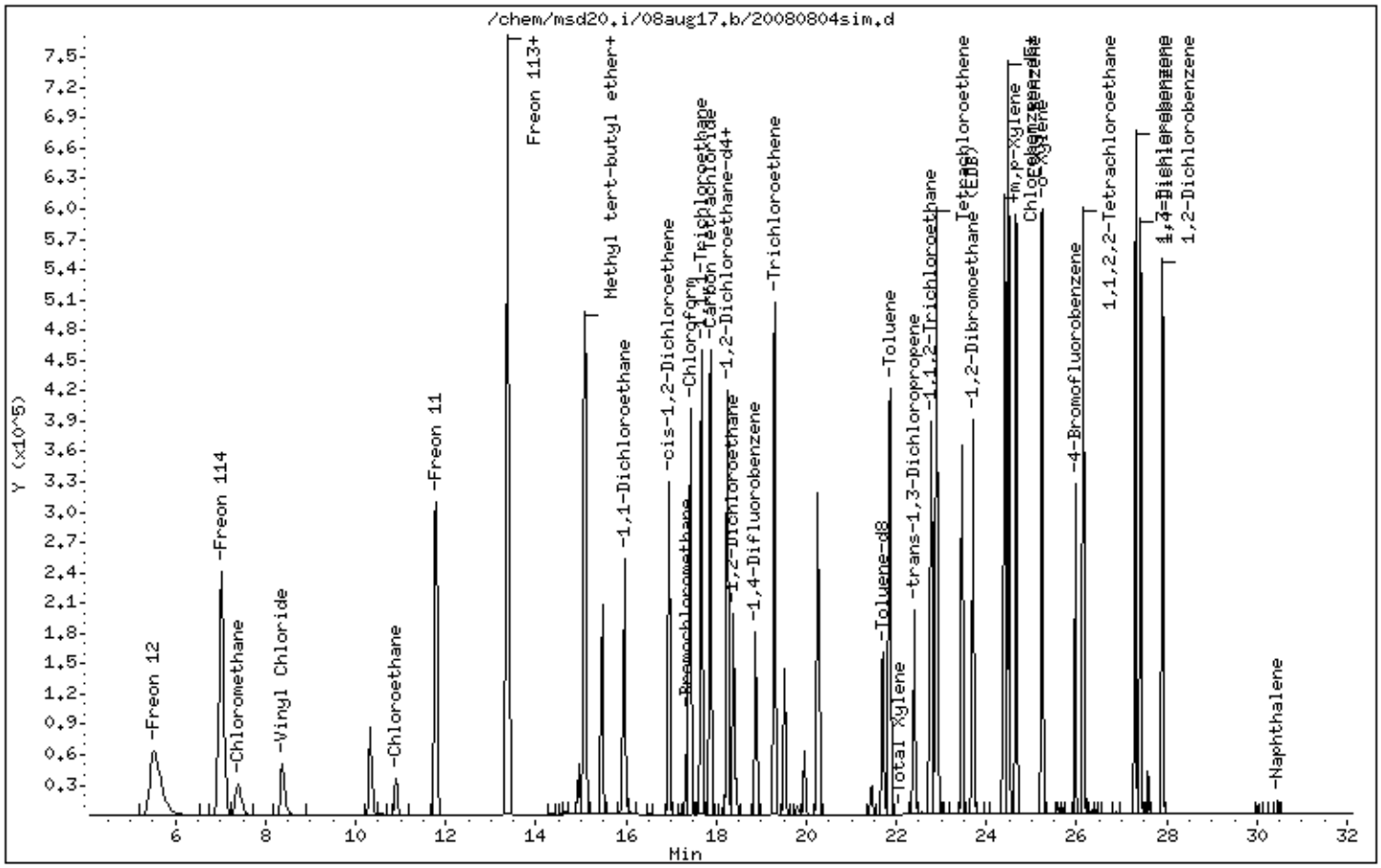
Instrument: msd20.i

Sample Info: 50mL# 2850-224

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	CCV		
Lab ID:	1708092-12C	**Date/Time Analyzed:**	8/9/17 08:53 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msde.i / e080902sim

Compound	CAS#	%Recovery
Benzene	71-43-2	96
Ethyl Benzene	100-41-4	114
m,p-Xylene	108-38-3	116
Naphthalene	91-20-3	102
o-Xylene	95-47-6	113
Toluene	108-88-3	103
Total Xylenes	9999-9999-015	115

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	100

Report Date: 09-Aug-2017 15:17

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msde.i Injection Date: 09-AUG-2017 08:53
Lab File ID: e080902sim.d Init. Cal. Date(s): 03-AUG-2017 03-AUG-2017
Analysis Type: AIR Init. Cal. Times: 12:12 19:28
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m

	COMPOUND	RRF / AMOUNT	RF10	MIN RRF	MIN %D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
	1 Freon 12	5.19525	5.47670	0.010	-5.41748	30.00000	Averaged	
	2 Freon 114	4.08786	4.23463	0.010	-3.59049	30.00000	Averaged	
	3 Chloromethane	1.43031	1.55391	0.010	-8.64083	30.00000	Averaged	
	4 Vinyl Chloride	1.27233	1.35712	0.010	-6.66464	30.00000	Averaged	
	5 Chloroethane	0.62387	0.63078	0.010	-1.10766	30.00000	Averaged	
	8 1,1-Dichloroethene	1.06592	1.04776	0.010	1.70306	30.00000	Averaged	
	9 Methyl tert-butyl ether	3.85702	4.34178	0.010	-12.56819	30.00000	Averaged	
	10 trans-1,2-Dichloroethene	1.08843	1.10657	0.010	-1.66684	30.00000	Averaged	
	11 1,1-Dichloroethane	3.08954	3.21219	0.010	-3.96986	30.00000	Averaged	
	12 cis-1,2-Dichloroethene	1.20184	1.18490	0.010	1.40939	30.00000	Averaged	
	14 Chloroform	4.21515	4.23232	0.010	-0.40739	30.00000	Averaged	
	15 1,1,1-Trichloroethane	5.41838	5.56032	0.010	-2.61954	30.00000	Averaged	
	16 Carbon Tetrachloride	6.43112	6.44211	0.010	-0.17084	40.00000	Averaged	
	17 Benzene	1.24628	1.20156	0.010	3.58824	30.00000	Averaged	
$	18 1,2-Dichloroethane-d4	1.56929	1.49313	0.010	4.85305	30.00000	Averaged	
	19 1,2-Dichloroethane	1.07983	1.06542	0.010	1.33403	30.00000	Averaged	
	21 Trichloroethene	0.94068	0.90433	0.010	3.86419	30.00000	Averaged	
$	22 Toluene-d8	0.76166	0.76173	0.010	-0.00882	30.00000	Averaged	
	23 Toluene	1.53926	1.58089	0.010	-2.70482	30.00000	Averaged	
	25 1,1,2-Trichloroethane	0.68577	0.70510	0.010	-2.81994	30.00000	Averaged	
	26 Tetrachloroethene	1.28777	1.29410	0.010	-0.49169	30.00000	Averaged	
	27 1,2-Dibromoethane (EDB)	1.25250	1.22610	0.010	2.10785	30.00000	Averaged	
	30 Ethyl Benzene	0.66476	0.75700	0.010	-13.87569	30.00000	Averaged	
	31 m,p-Xylene	0.77781	0.90347	0.010	-16.15518	30.00000	Averaged	
	32 o-Xylene	0.72332	0.82073	0.010	-13.46712	30.00000	Averaged	
$	33 4-Bromofluorobenzene	0.67175	0.69233	0.010	-3.06337	30.00000	Averaged	
	34 1,1,2,2-Tetrachloroethane	1.02376	0.99965	0.010	2.35426	30.00000	Averaged	
	36 1,4-Dichlorobenzene	1.44728	1.48196	0.010	-2.39617	30.00000	Averaged	
	38 Naphthalene	0.99614	1.01816	0.010	-2.21008	40.00000	Averaged	
M	39 Total Xylene	++++	1.72420	0.010	++++	30.00000	Averaged	<-

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080902sim.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 09-AUG-2017 08:53
Operator : ef Inst ID: msde.i
Smp Info : 50mL# 2850-284
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:17 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT09.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.282	5.282 (0.343)	85	1494208	10.0000	10.542	80.00- 120.00	100.00
5.282	5.282 (0.343)	87	482882			2.36- 62.36	32.32
2 Freon 114					CAS #: 76-14-2		
6.608	6.608 (0.429)	135	1155335	10.0000	10.359	80.00- 120.00	100.00
6.608	6.608 (0.429)	137	372000			2.19- 62.19	32.20
3 Chloromethane					CAS #: 74-87-3		
6.946	6.946 (0.451)	50	423952	10.0000	10.864	80.00- 120.00	100.00
6.946	6.946 (0.451)	52	132819			1.74- 61.74	31.33
4 Vinyl Chloride					CAS #: 75-01-4		
7.810	7.810 (0.507)	62	370264	10.0000	10.666	80.00- 120.00	100.00
7.810	7.810 (0.507)	64	107983			0.00- 59.24	29.16
5 Chloroethane					CAS #: 75-00-3		
9.999	9.999 (0.649)	64	172095	10.0000	10.111	80.00- 120.00	100.00
9.999	9.999 (0.649)	66	53110			1.37- 61.37	30.86

				AMOUNTS				
					CAL-AMT	ON-COL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4	
	12.094	12.094 (0.785)	98	285861	10.0000	9.830	80.00- 120.00	100.00
	12.094	12.094 (0.785)	61	886235			279.95- 339.95	310.02
	12.094	12.094 (0.785)	96	444901			125.30- 185.30	155.64
	9 Methyl tert-butyl ether						CAS #: 1634-04-4	
	13.492	13.492 (0.876)	73	1184567	10.0000	11.257	80.00- 120.00	100.00
	13.465	13.465 (0.874)	57	291744			0.00- 54.88	24.63
	13.465	13.465 (0.874)	41	325005			0.00- 57.95	27.44
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5	
	13.547	13.547 (0.879)	98	301905	10.0000	10.167	80.00- 120.00	100.00
	13.547	13.547 (0.879)	61	767237			224.47- 284.47	254.13
	13.547	13.547 (0.879)	96	468589			125.79- 185.79	155.21
	11 1,1-Dichloroethane						CAS #: 75-34-3	
	14.233	14.233 (0.924)	63	876381	10.0000	10.397	80.00- 120.00	100.00
	14.233	14.233 (0.924)	65	268261			0.76- 60.76	30.61
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2	
	15.060	15.060 (0.978)	98	323277	10.0000	9.859	80.00- 120.00	100.00
	15.060	15.060 (0.978)	61	749357			202.87- 262.87	231.80
	15.060	15.060 (0.978)	96	497374			124.41- 184.41	153.85
*	13 Bromochloromethane						CAS #: 74-97-5	
	15.405	15.405 (1.000)	130	136415	5.00000		80.00- 120.00	100.00
	15.405	15.405 (1.000)	128	104385			47.34- 107.34	76.52
	15.374	15.374 (1.000)	49	172930			83.88- 143.88	126.77
	14 Chloroform						CAS #: 67-66-3	
	15.436	15.436 (1.002)	83	1154704	10.0000	10.041	80.00- 120.00	100.00
	15.436	15.436 (1.002)	85	786744			38.09- 98.09	68.13
	15 1,1,1-Trichloroethane						CAS #: 71-55-6	
	15.682	15.682 (1.018)	97	1517021	10.0000	10.262	80.00- 120.00	100.00
	15.682	15.682 (1.018)	99	992958			35.38- 95.38	65.45
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	15.867	15.867 (1.030)	119	1757600	10.0000	10.017	80.00- 120.00	100.00
	15.867	15.867 (1.030)	117	1800961			72.55- 132.55	102.47
	17 Benzene						CAS #: 71-43-2	
	16.197	16.197 (0.968)	78	1126836	10.0000	9.641	80.00- 120.00	100.00
	16.197	16.197 (0.968)	77	269331			0.00- 53.90	23.90
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	16.197	16.197 (1.051)	65	203685	5.00000	4.757	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	98239			18.02- 78.02	48.23
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	999164	10.0000	9.866	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	314180			1.11- 61.11	31.44
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	468904	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	69612			0.00- 44.94	14.85
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	848092	10.0000	9.614	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	708650			53.60- 113.60	83.56
17.136	17.136 (1.024)	97	461202			24.58- 84.58	54.38
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.267	19.267 (1.152)	98	357178	5.00000	5.000	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	40633			0.00- 41.37	11.38
19.289	19.289 (1.153)	100	228091			33.76- 93.76	63.86
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	1482573	10.0000	10.270	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	855042			27.48- 87.48	57.67
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	598620	10.0000	10.282	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	376505			33.18- 93.18	62.90
20.424	20.424 (0.921)	83	439253			44.41- 104.41	73.38
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	1098671	10.0000	10.049	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	862680			49.11- 109.11	78.52
20.616	20.616 (0.930)	131	871233			49.75- 109.75	79.30
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	1040934	10.0000	9.789	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	1035752			69.10- 129.10	99.50
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	424491	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	178073			11.87- 71.87	41.95
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	642680	10.0000	11.388	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	2045545			287.72- 347.72	318.28

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	31 m,p-Xylene					CAS #: 108-38-3		
	22.460	22.460 (1.013)	106	767029	10.0000	11.616	80.00- 120.00	100.00
	22.460	22.460 (1.013)	91	1621866			182.04- 242.04	211.45
	32 o-Xylene					CAS #: 95-47-6		
	23.082	23.082 (1.041)	106	696787	10.0000	11.347	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	1554142			192.45- 252.45	223.04
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.847	23.847 (1.076)	174	293889	5.00000	5.153	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	283628			66.14- 126.14	96.51
	23.847	23.847 (1.076)	176	286749			67.55- 127.55	97.57
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	24.026	24.026 (1.084)	83	848689	10.0000	9.764	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	590223			39.61- 99.61	69.55
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	25.260	25.260 (1.139)	146	1258157	10.0000	10.240	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	823764			34.93- 94.93	65.47
	25.260	25.260 (1.139)	111	457401			6.87- 66.87	36.35
	38 Naphthalene					CAS #: 91-20-3		
	27.703	27.703 (1.250)	128	86440	1.00000	1.022	80.00- 120.00	100.00
	27.703	27.703 (1.250)	127	11253			0.00- 42.95	13.02
M	39 Total Xylene					CAS #: 1330-20-7		
				1463816	10.0000	22.962		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080902sim.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Client Smp ID: CCV
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	136415	0.00
20 1,4-Difluorobenze	468904	281342	656466	468904	0.00
28 Chlorobenzene-d5	424491	254695	594287	424491	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/09Aug2017.b/e080902sim.d

Date : 09-AUG-2017 08:53

Client ID: CCV

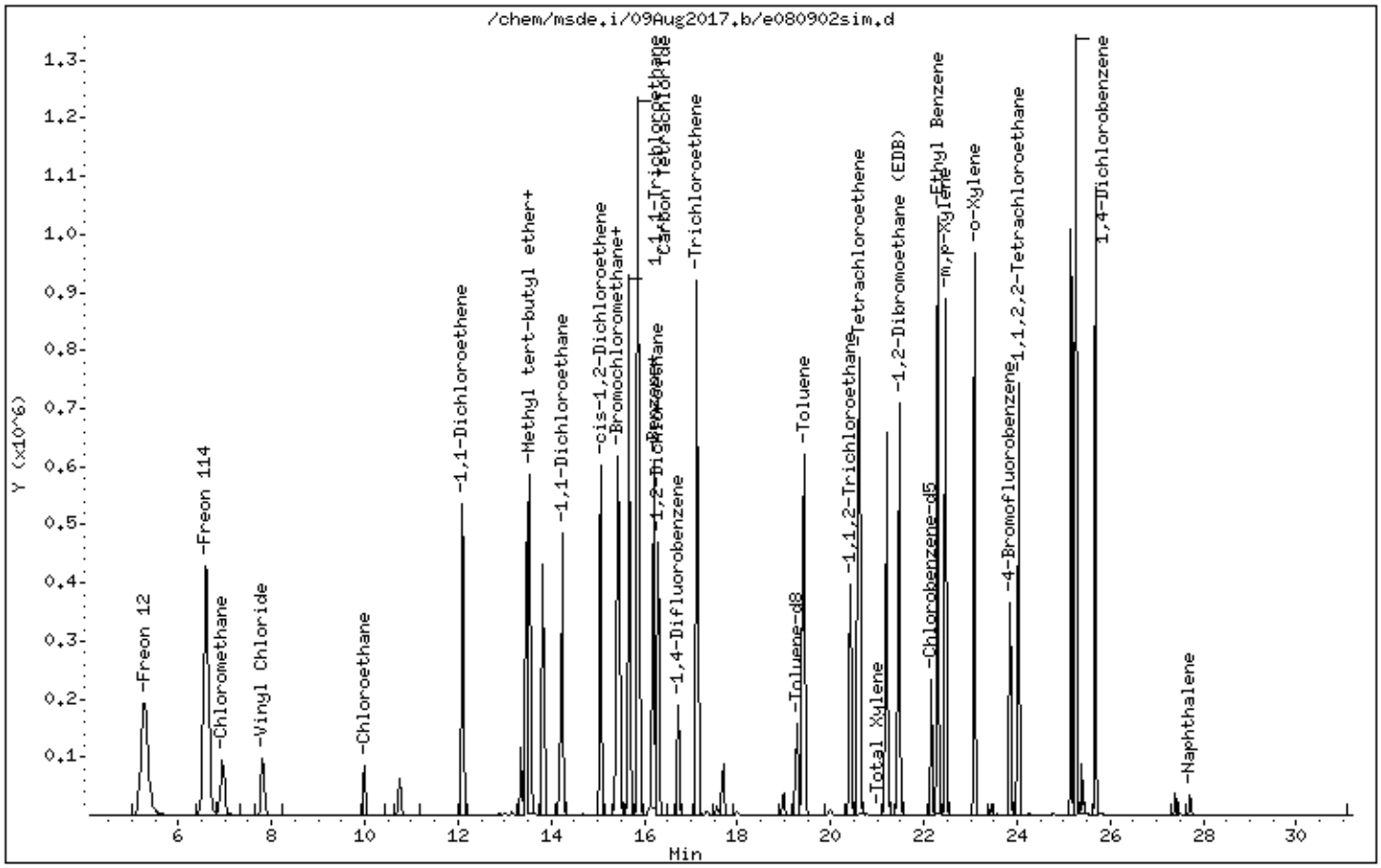
Instrument: msde.i

Sample Info: 50mL# 2850-284

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCS		
Lab ID:	1708092-13A	**Date/Time Analyzed:**	8/7/17 09:49 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080703sim

Compound	CAS#	%Recovery
Benzene	71-43-2	89
Ethyl Benzene	100-41-4	105
m,p-Xylene	108-38-3	106
Naphthalene	91-20-3	69
o-Xylene	95-47-6	107
Toluene	108-88-3	104
Total Xylenes	9999-9999-015	106

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	103

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1	Freon 12	10.000	0.000	0.00*	70-130
	2	Freon 114	10.000	12.386	123.86	70-130
	3	Chloromethane	10.000	10.496	104.96	70-130
	4	Vinyl Chloride	10.000	11.339	113.39	70-130
	5	Chloroethane	10.000	12.871	128.71	70-130
	6	Freon 11	10.000	11.780	117.80	70-130
	7	Freon 113	10.000	10.797	107.97	70-130
	8	1,1-Dichloroethene	10.000	10.800	108.00	70-130
	9	Methyl tert-butyl	10.000	11.447	114.47	70-130
	10	trans-1,2-Dichloro	10.000	9.696	96.96	70-130
	11	1,1-Dichloroethane	10.000	11.133	111.33	70-130
	12	cis-1,2-Dichloroet	10.000	11.752	117.52	70-130
	14	Chloroform	10.000	10.246	102.46	70-130
	15	1,1,1-Trichloroeth	10.000	10.407	104.07	70-130
	16	Carbon Tetrachlori	10.000	13.329	133.29	60-140
	17	Benzene	10.000	8.943	89.43	70-130
	19	1,2-Dichloroethane	10.000	9.912	99.12	70-130
	21	Trichloroethene	10.000	10.741	107.41	70-130
	23	Toluene	10.000	10.443	104.43	70-130
	24	trans-1,3-Dichloro	10.000	11.427	114.27	70-130
	25	1,1,2-Trichloroeth	10.000	10.696	106.96	70-130
	26	Tetrachloroethene	10.000	10.909	109.09	70-130
	27	1,2-Dibromoethane	10.000	10.118	101.18	70-130
	29	Chlorobenzene	10.000	10.382	103.82	70-130
	30	Ethyl Benzene	10.000	10.497	104.97	70-130
	31	m,p-Xylene	10.000	10.572	105.72	70-130
	32	o-Xylene	10.000	10.733	107.33	70-130
	34	1,1,2,2-Tetrachlor	10.000	9.302	93.02	70-130
	35	1,3-Dichlorobenzen	10.000	10.671	106.71	70-130
	36	1,4-Dichlorobenzen	10.000	10.545	105.45	70-130
	37	1,2-Dichlorobenzen	10.000	10.859	108.59	70-130
	38	Naphthalene	1.000	0.6896	68.96	60-140
M	39	Total Xylene	20.000	21.305	106.53	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.632	92.64	70-130
$ 22 Toluene-d8	5.000	5.168	103.36	70-130
$ 33 4-Bromofluorobenze	5.000	5.016	100.31	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/07aug17.b/20080703sim.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 07-AUG-2017 09:49
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 2850-247
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 14:35 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS			
				ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 13 Bromochloromethane						CAS #: 74-97-5	
17.340	17.340 (1.000)	130	86447	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	67603			48.37- 108.37	78.20
17.340	17.340 (1.000)	49	94362			82.84- 142.84	109.16
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
18.881	18.881 (1.000)	114	406572	5.00000		80.00- 120.00	100.00
18.881	18.881 (1.000)	88	55624			0.00- 44.04	13.68
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
24.356	24.356 (1.000)	117	343237	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	163346			17.63- 77.63	47.59
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
18.265	18.265 (1.053)	65	112048	4.63189	4.632	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	60948			26.67- 86.67	54.39
$ 22 Toluene-d8						CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	370019	5.16776	5.168	80.00- 120.00	100.00
21.698	21.698 (1.149)	70	37606			0.00- 40.38	10.16

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.698	21.698	(1.149)	100	235838			33.71- 93.71	63.74
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.980	25.980	(1.067)	174	233434	5.01571	5.016	80.00- 120.00	100.00
25.961	25.980	(1.066)	95	197972			57.01- 117.01	84.81
25.980	25.980	(1.067)	176	229622			68.59- 128.59	98.37
1 Freon 12						CAS #: 75-71-8		
5.499	5.499	(0.317)	85	717716			80.00- 120.00	100.00(aR)
5.499	5.499	(0.317)	87	232913			2.69- 62.69	32.45
2 Freon 114						CAS #: 76-14-2		
7.018	7.018	(0.405)	135	632258	12.3860	12.386	80.00- 120.00	100.00
7.018	7.018	(0.405)	137	205879			2.13- 62.13	32.56
3 Chloromethane						CAS #: 74-87-3		
7.380	7.379	(0.426)	50	232518	10.4961	10.496	80.00- 120.00	100.00
7.380	7.379	(0.426)	52	78277			2.25- 62.25	33.66
4 Vinyl Chloride						CAS #: 75-01-4		
8.366	8.366	(0.482)	62	264287	11.3388	11.339	80.00- 120.00	100.00
8.366	8.366	(0.482)	64	85435			1.90- 61.90	32.33
5 Chloroethane						CAS #: 75-00-3		
10.894	10.894	(0.628)	64	141006	12.8714	12.871	80.00- 120.00	100.00
10.894	10.894	(0.628)	66	45232			2.24- 62.24	32.08
6 Freon 11						CAS #: 75-69-4		
11.762	11.762	(0.678)	101	832654	11.7802	11.780	80.00- 120.00	100.00
11.786	11.762	(0.680)	103	546291			35.63- 95.63	65.61
7 Freon 113						CAS #: 76-13-1		
13.356	13.356	(0.770)	151	637049	10.7972	10.797	80.00- 120.00	100.00
13.384	13.356	(0.772)	153	413928			35.29- 95.29	64.98
13.356	13.356	(0.770)	101	681745			79.29- 139.29	107.02
8 1,1-Dichloroethene						CAS #: 75-35-4		
13.356	13.356	(0.770)	98	193231	10.8003	10.800	80.00- 120.00	100.00
13.356	13.356	(0.770)	61	449577			208.11- 268.11	232.66
13.356	13.356	(0.770)	96	303973			127.31- 187.31	157.31
9 Methyl tert-butyl ether						CAS #: 1634-04-4		
15.086	15.059	(0.870)	73	874780	11.4467	11.447	80.00- 120.00	100.00
15.059	15.059	(0.868)	57	178617			0.00- 51.54	20.42
15.059	15.059	(0.868)	41	155367			0.00- 49.49	17.76

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	186417	9.69579	9.696	80.00- 120.00	100.00
15.114	15.086 (0.872)	61	356157			166.64- 226.64	191.05
15.114	15.114 (0.872)	96	289154			124.18- 184.18	155.11
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	521873	11.1327	11.133	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	170550			2.52- 62.52	32.68
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	241390	11.7517	11.752	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	416886			148.56- 208.56	172.70
16.958	16.958 (0.978)	96	371303			123.96- 183.96	153.82
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	700200	10.2458	10.246	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	466434			36.46- 96.46	66.61
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	710306	10.4067	10.407	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	467184			35.34- 95.34	65.77
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	698898	13.3288	13.329	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	714691			71.93- 131.93	102.26
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	866886	8.94346	8.943	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	205343			0.00- 53.56	23.69
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	392652	9.91202	9.912	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	128858			3.03- 63.03	32.82
21 Trichloroethene					CAS #: 79-01-6		
19.305	19.304 (1.022)	130	517935	10.7410	10.741	80.00- 120.00	100.00
19.282	19.304 (1.021)	95	461784			60.20- 120.20	89.16
19.305	19.304 (1.022)	97	301469			29.00- 89.00	58.21
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	1129498	10.4428	10.443	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	653655			27.62- 87.62	57.87
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.383	22.382 (0.919)	75	584520	11.4274	11.427	80.00- 120.00	100.00
22.383	22.382 (0.919)	77	187540			2.20- 62.20	32.08

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	454717	10.6959	10.696	80.00- 120.00	100.00
22.760	22.760 (0.934)	99	287937			33.48- 93.48	63.32
22.760	22.760 (0.934)	83	380697			54.60- 114.60	83.72
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	721397	10.9089	10.909	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	470554			35.95- 95.95	65.23
22.905	22.905 (0.940)	131	458721			34.23- 94.23	63.59
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.690 (0.973)	107	691680	10.1176	10.118	80.00- 120.00	100.00
23.690	23.690 (0.973)	109	667373			66.39- 126.39	96.49
29 Chlorobenzene					CAS #: 108-90-7		
24.397	24.397 (1.002)	112	943564	10.3821	10.382	80.00- 120.00	100.00
24.418	24.397 (1.003)	114	312884			2.92- 62.92	33.16
24.397	24.397 (1.002)	77	479780			21.68- 81.68	50.85
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	439695	10.4971	10.497	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	1365295			281.86- 341.86	310.51
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	496569	10.5718	10.572	80.00- 120.00	100.00
24.645	24.665 (1.012)	91	963474			165.84- 225.84	194.03
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	466934	10.7332	10.733	80.00- 120.00	100.00
25.222	25.243 (1.036)	91	961703			174.02- 234.02	205.96
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	825933	9.30152	9.302	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	545184			35.95- 95.95	66.01
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	823338	10.6706	10.671	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	538905			35.53- 95.53	65.45
27.305	27.305 (1.121)	111	285325			4.70- 64.70	34.65
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	757970	10.5450	10.545	80.00- 120.00	100.00
27.430	27.414 (1.126)	148	494324			35.55- 95.55	65.22
27.414	27.414 (1.126)	111	250986			3.83- 63.83	33.11
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	752185	10.8586	10.859	80.00- 120.00	100.00

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
37 1,2-Dichlorobenzene (continued)								
27.897	27.897	(1.145)	148	486630			35.05- 95.05	64.70
27.897	27.897	(1.145)	111	269559			6.25- 66.25	35.84
38 Naphthalene						CAS #: 91-20-3		
30.470	30.469	(1.251)	128	24803	0.68957	0.6896	80.00- 120.00	100.00
30.470	30.469	(1.251)	127	3460			0.00- 43.90	13.95
M 39 Total Xylene						CAS #: 1330-20-7		
				963503	21.3051	21.305		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080703sim.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 07-AUG-2017
Calibration Time: 09:02
Client Smp ID: LCS
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	91747	55048	128446	86447	-5.78
20 1,4-Difluorobenze	437272	262363	612181	406572	-7.02
28 Chlorobenzene-d5	350464	210278	490650	343237	-2.06

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/07aug17.b/20080703sim.d

Date : 07-AUG-2017 09:49

Client ID: LCS

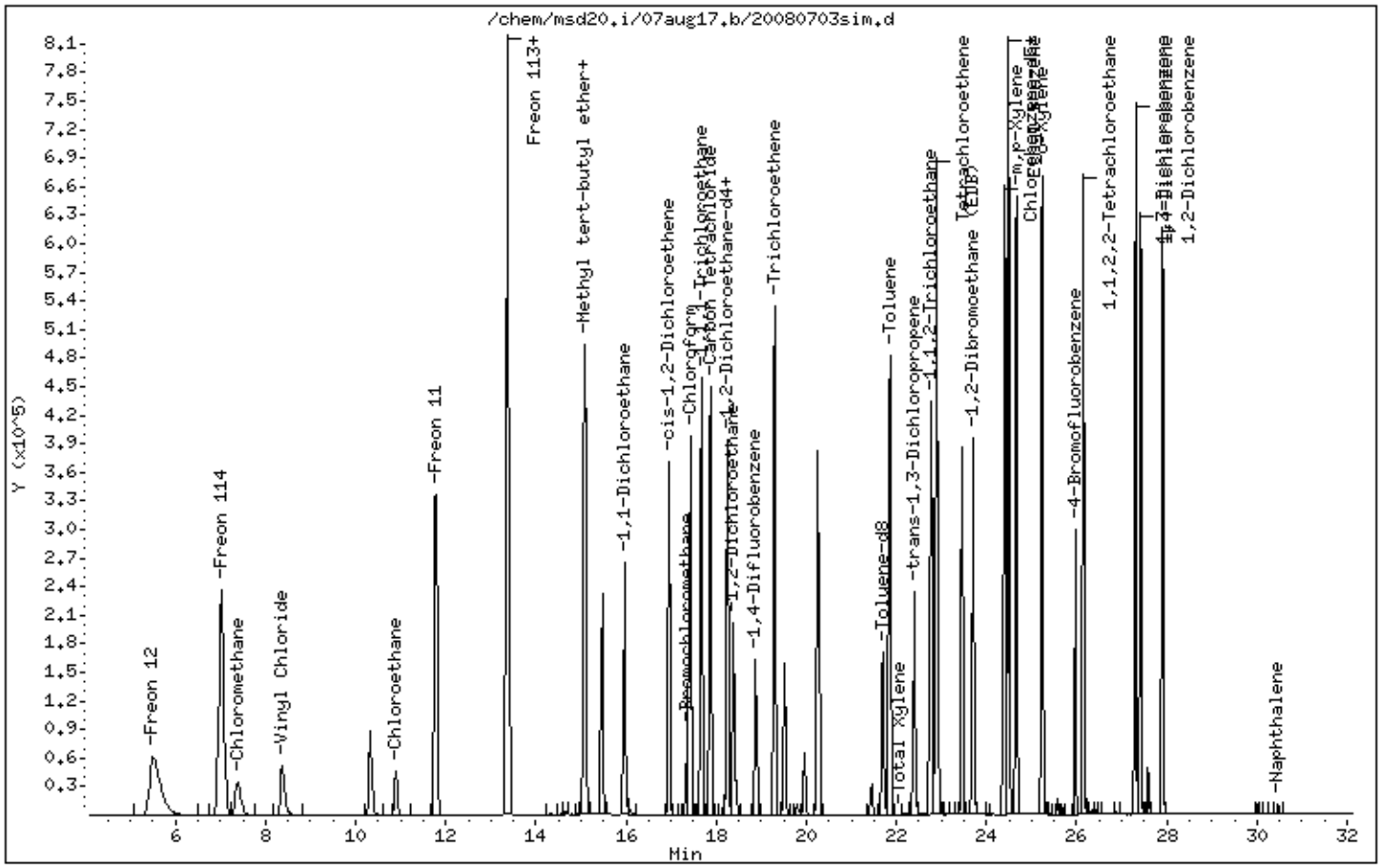
Instrument: msd20.i

Sample Info: 50mL# 2850-247

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCSD		
Lab ID:	1708092-13AA	**Date/Time Analyzed:**	8/7/17 10:34 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080704sim

Compound	CAS#	%Recovery
Benzene	71-43-2	94
Ethyl Benzene	100-41-4	106
m,p-Xylene	108-38-3	105
Naphthalene	91-20-3	73
o-Xylene	95-47-6	108
Toluene	108-88-3	98
Total Xylenes	9999-9999-015	106

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	100

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1	Freon 12	10.000	0.000	0.00*	70-130
	2	Freon 114	10.000	11.382	113.82	70-130
	3	Chloromethane	10.000	9.917	99.17	70-130
	4	Vinyl Chloride	10.000	10.972	109.72	70-130
	5	Chloroethane	10.000	13.394	133.94*	70-130
	6	Freon 11	10.000	12.341	123.41	70-130
	7	Freon 113	10.000	11.282	112.83	70-130
	8	1,1-Dichloroethene	10.000	11.215	112.15	70-130
	9	Methyl tert-butyl	10.000	11.326	113.26	70-130
	10	trans-1,2-Dichloro	10.000	9.595	95.95	70-130
	11	1,1-Dichloroethane	10.000	10.446	104.46	70-130
	12	cis-1,2-Dichloroet	10.000	11.552	115.52	70-130
	14	Chloroform	10.000	10.128	101.28	70-130
	15	1,1,1-Trichloroeth	10.000	10.648	106.48	70-130
	16	Carbon Tetrachlori	10.000	13.929	139.29	60-140
	17	Benzene	10.000	9.392	93.92	70-130
	19	1,2-Dichloroethane	10.000	10.759	107.59	70-130
	21	Trichloroethene	10.000	10.789	107.89	70-130
	23	Toluene	10.000	9.762	97.62	70-130
	24	trans-1,3-Dichloro	10.000	10.493	104.93	70-130
	25	1,1,2-Trichloroeth	10.000	9.876	98.76	70-130
	26	Tetrachloroethene	10.000	10.208	102.08	70-130
	27	1,2-Dibromoethane	10.000	10.308	103.08	70-130
	29	Chlorobenzene	10.000	10.377	103.77	70-130
	30	Ethyl Benzene	10.000	10.580	105.80	70-130
	31	m,p-Xylene	10.000	10.484	104.84	70-130
	32	o-Xylene	10.000	10.835	108.35	70-130
	34	1,1,2,2-Tetrachlor	10.000	9.437	94.37	70-130
	35	1,3-Dichlorobenzen	10.000	10.651	106.51	70-130
	36	1,4-Dichlorobenzen	10.000	10.518	105.18	70-130
	37	1,2-Dichlorobenzen	10.000	10.773	107.73	70-130
	38	Naphthalene	1.000	0.7340	73.40	60-140
M	39	Total Xylene	20.000	21.319	106.59	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 07aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.773	95.45	70-130
$ 22 Toluene-d8	5.000	5.011	100.22	70-130
$ 33 4-Bromofluorobenze	5.000	5.146	102.91	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/07aug17.b/20080704sim.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 07-AUG-2017 10:34
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 2850-247
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 07-Aug-2017 14:35 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS			
				ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 13 Bromochloromethane					CAS #: 74-97-5		
17.340	17.340 (1.000)	130	81675	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	63919			48.37- 108.37	78.26
17.340	17.340 (1.000)	49	87665			82.84- 142.84	107.33
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.881	18.881 (1.000)	114	375668	5.00000		80.00- 120.00	100.00
18.881	18.881 (1.000)	88	50875			0.00- 44.04	13.54
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.356	24.356 (1.000)	117	313861	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	146423			17.63- 77.63	46.65
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.265	18.265 (1.053)	65	109082	4.77274	4.773	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	58648			26.67- 86.67	53.77
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.698	21.698 (1.149)	98	331522	5.01099	5.011	80.00- 120.00	100.00
21.683	21.698 (1.148)	70	33437			0.00- 40.38	10.09

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	210100			33.71- 93.71	63.37
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.980 (1.067)	174	218982	5.14557	5.146	80.00- 120.00	100.00
25.961	25.980 (1.066)	95	182708			57.01- 117.01	83.44
25.980	25.980 (1.067)	176	216194			68.59- 128.59	98.73
1 Freon 12					CAS #: 75-71-8		
5.524	5.499 (0.319)	85	677916			80.00- 120.00	100.00(aR)
5.524	5.499 (0.319)	87	220015			2.69- 62.69	32.45
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	548934	11.3819	11.382	80.00- 120.00	100.00
7.042	7.018 (0.406)	137	177089			2.13- 62.13	32.26
3 Chloromethane					CAS #: 74-87-3		
7.380	7.379 (0.426)	50	207556	9.91673	9.917	80.00- 120.00	100.00
7.404	7.379 (0.427)	52	67515			2.25- 62.25	32.53
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	241614	10.9717	10.972	80.00- 120.00	100.00
8.366	8.366 (0.482)	64	78103			1.90- 61.90	32.33
5 Chloroethane					CAS #: 75-00-3		
10.895	10.894 (0.628)	64	138633	13.3941	13.394	80.00- 120.00	100.00(R)
10.895	10.894 (0.628)	66	44532			2.24- 62.24	32.12
6 Freon 11					CAS #: 75-69-4		
11.762	11.762 (0.678)	101	824153	12.3411	12.341	80.00- 120.00	100.00
11.786	11.762 (0.680)	103	541765			35.63- 95.63	65.74
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	628934	11.2825	11.282	80.00- 120.00	100.00
13.384	13.356 (0.772)	153	407259			35.29- 95.29	64.75
13.356	13.356 (0.770)	101	676146			79.29- 139.29	107.51
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	189577	11.2152	11.215	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	441805			208.11- 268.11	233.05
13.356	13.356 (0.770)	96	297086			127.31- 187.31	156.71
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.087	15.059 (0.870)	73	817762	11.3258	11.326	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	164436			0.00- 51.54	20.11
15.059	15.059 (0.868)	41	142174			0.00- 49.49	17.39

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	174297	9.59507	9.595	80.00- 120.00	100.00
15.114	15.086 (0.872)	61	331352			166.64- 226.64	190.11
15.114	15.114 (0.872)	96	271658			124.18- 184.18	155.86
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	462655	10.4461	10.446	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	149404			2.52- 62.52	32.29
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	224180	11.5516	11.552	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	390721			148.56- 208.56	174.29
16.958	16.958 (0.978)	96	345680			123.96- 183.96	154.20
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	653915	10.1276	10.128	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	434196			36.46- 96.46	66.40
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	686669	10.6481	10.648	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	449441			35.34- 95.34	65.45
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	690062	13.9292	13.929	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	706187			71.93- 131.93	102.34
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	841165	9.39200	9.392	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	197965			0.00- 53.56	23.53
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	393800	10.7588	10.759	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	128954			3.03- 63.03	32.75
21 Trichloroethene					CAS #: 79-01-6		
19.304	19.304 (1.022)	130	480709	10.7891	10.789	80.00- 120.00	100.00
19.282	19.304 (1.021)	95	426853			60.20- 120.20	88.80
19.304	19.304 (1.022)	97	279776			29.00- 89.00	58.20
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	975600	9.76194	9.762	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	561279			27.62- 87.62	57.53
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.383	22.382 (0.919)	75	490794	10.4931	10.493	80.00- 120.00	100.00
22.383	22.382 (0.919)	77	158430			2.20- 62.20	32.28

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	383942	9.87641	9.876	80.00- 120.00	100.00
22.760	22.760 (0.934)	99	243501			33.48- 93.48	63.42
22.760	22.760 (0.934)	83	327635			54.60- 114.60	85.33
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	617289	10.2083	10.208	80.00- 120.00	100.00
22.905	22.905 (0.940)	129	404239			35.95- 95.95	65.49
22.905	22.905 (0.940)	131	396250			34.23- 94.23	64.19
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.690 (0.973)	107	644390	10.3081	10.308	80.00- 120.00	100.00
23.719	23.690 (0.974)	109	619252			66.39- 126.39	96.10
29 Chlorobenzene					CAS #: 108-90-7		
24.397	24.397 (1.002)	112	862359	10.3767	10.377	80.00- 120.00	100.00
24.418	24.397 (1.003)	114	284830			2.92- 62.92	33.03
24.397	24.397 (1.002)	77	432543			21.68- 81.68	50.16
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	405258	10.5805	10.580	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	1248761			281.86- 341.86	308.14
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	450310	10.4843	10.484	80.00- 120.00	100.00
24.665	24.665 (1.013)	91	875258			165.84- 225.84	194.37
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	431005	10.8346	10.835	80.00- 120.00	100.00
25.222	25.243 (1.036)	91	881561			174.02- 234.02	204.54
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	766249	9.43704	9.437	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	504129			35.95- 95.95	65.79
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	751478	10.6509	10.651	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	495965			35.53- 95.53	66.00
27.305	27.305 (1.121)	111	257556			4.70- 64.70	34.27
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	691311	10.5178	10.518	80.00- 120.00	100.00
27.430	27.414 (1.126)	148	453915			35.55- 95.55	65.66
27.414	27.414 (1.126)	111	228389			3.83- 63.83	33.04
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	682402	10.7732	10.773	80.00- 120.00	100.00

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
37 1,2-Dichlorobenzene (continued)								
27.913	27.897	(1.146)	148	446098			35.05- 95.05	65.37
27.897	27.897	(1.145)	111	241211			6.25- 66.25	35.35
38 Naphthalene						CAS #: 91-20-3		
30.469	30.469	(1.251)	128	24142	0.73401	0.7340	80.00- 120.00	100.00
30.469	30.469	(1.251)	127	3162			0.00- 43.90	13.10
M 39 Total Xylene						CAS #: 1330-20-7		
				881315	21.3189	21.319		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080704sim.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 07-AUG-2017
Calibration Time: 09:02
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/07aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	91747	55048	128446	81675	-10.98
20 1,4-Difluorobenze	437272	262363	612181	375668	-14.09
28 Chlorobenzene-d5	350464	210278	490650	313861	-10.44

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/07aug17.b/20080704sim.d

Date : 07-AUG-2017 10:34

Client ID: LCSD

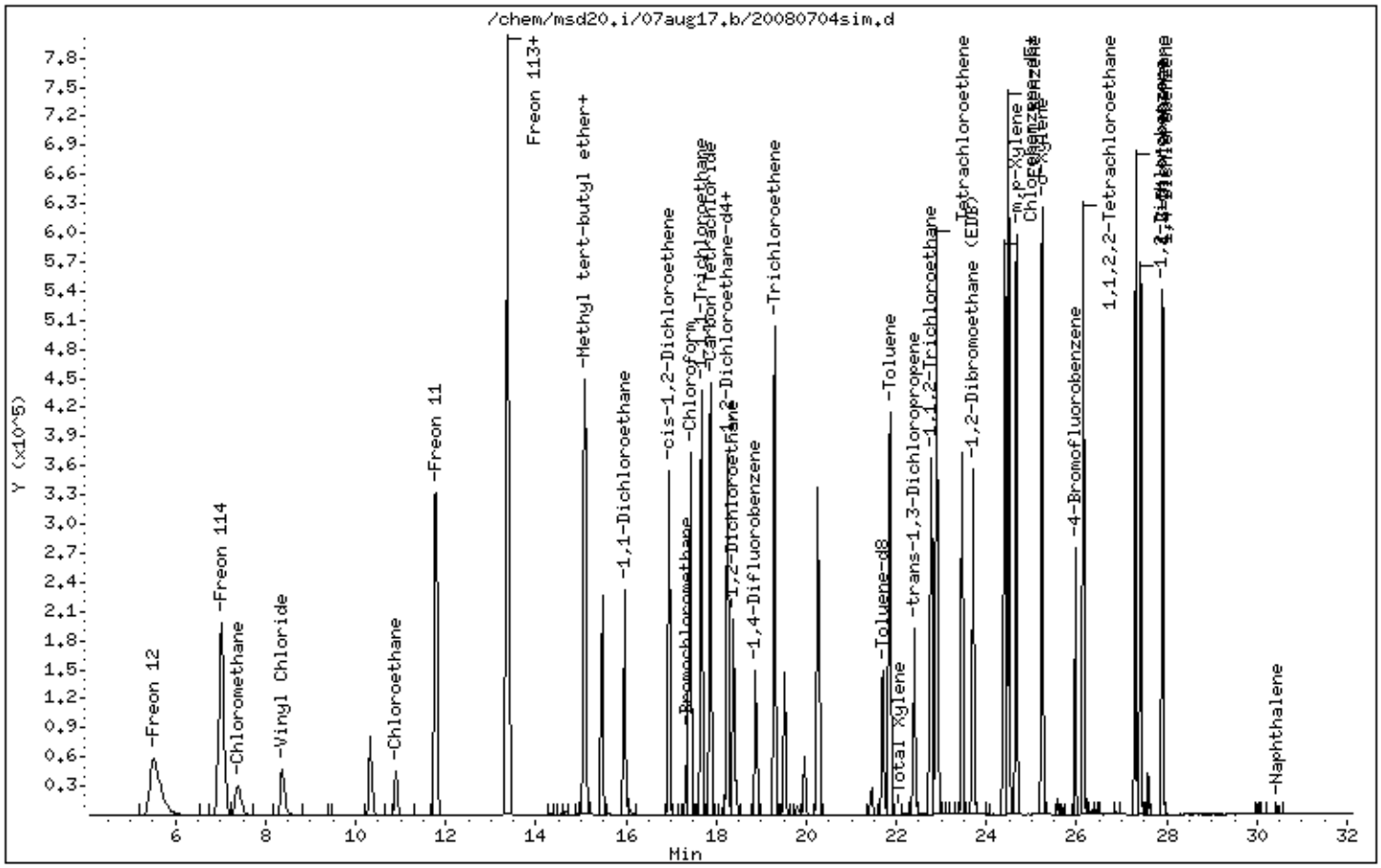
Instrument: msd20.i

Sample Info: 50mL# 2850-247

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCS		
Lab ID:	1708092-13B	**Date/Time Analyzed:**	8/8/17 10:59 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080805sim

Compound	CAS#	%Recovery
Benzene	71-43-2	89
Ethyl Benzene	100-41-4	107
m,p-Xylene	108-38-3	107
Naphthalene	91-20-3	70
o-Xylene	95-47-6	111
Toluene	108-88-3	98
Total Xylenes	9999-9999-015	109

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	82
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	97

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1	Freon 12	10.000	0.000	0.00*	70-130
	2	Freon 114	10.000	11.499	114.99	70-130
	3	Chloromethane	10.000	8.974	89.74	70-130
	4	Vinyl Chloride	10.000	10.518	105.18	70-130
	5	Chloroethane	10.000	10.541	105.41	70-130
	6	Freon 11	10.000	10.618	106.18	70-130
	7	Freon 113	10.000	10.666	106.66	70-130
	8	1,1-Dichloroethene	10.000	10.217	102.17	70-130
	9	Methyl tert-butyl	10.000	10.156	101.56	70-130
	10	trans-1,2-Dichloro	10.000	8.936	89.36	70-130
	11	1,1-Dichloroethane	10.000	9.861	98.61	70-130
	12	cis-1,2-Dichloroet	10.000	11.202	112.02	70-130
	14	Chloroform	10.000	9.716	97.16	70-130
	15	1,1,1-Trichloroeth	10.000	10.129	101.29	70-130
	16	Carbon Tetrachlori	10.000	12.781	127.81	60-140
	17	Benzene	10.000	8.891	88.91	70-130
	19	1,2-Dichloroethane	10.000	9.136	91.36	70-130
	21	Trichloroethene	10.000	10.511	105.11	70-130
	23	Toluene	10.000	9.788	97.89	70-130
	24	trans-1,3-Dichloro	10.000	10.759	107.59	70-130
	25	1,1,2-Trichloroeth	10.000	10.642	106.42	70-130
	26	Tetrachloroethene	10.000	10.844	108.45	70-130
	27	1,2-Dibromoethane	10.000	10.538	105.38	70-130
	29	Chlorobenzene	10.000	10.471	104.71	70-130
	30	Ethyl Benzene	10.000	10.719	107.19	70-130
	31	m,p-Xylene	10.000	10.685	106.85	70-130
	32	o-Xylene	10.000	11.077	110.77	70-130
	34	1,1,2,2-Tetrachlor	10.000	9.270	92.70	70-130
	35	1,3-Dichlorobenzen	10.000	10.881	108.81	70-130
	36	1,4-Dichlorobenzen	10.000	10.765	107.65	70-130
	37	1,2-Dichlorobenzen	10.000	11.022	110.22	70-130
	38	Naphthalene	1.000	0.6962	69.62	60-140
M	39	Total Xylene	20.000	21.762	108.81	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.120	82.40	70-130
$ 22 Toluene-d8	5.000	4.841	96.83	70-130
$ 33 4-Bromofluorobenze	5.000	5.196	103.92	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080805sim.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 08-AUG-2017 10:59
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 2850-247
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS			
				ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 13 Bromochloromethane						CAS #: 74-97-5	
17.340	17.340 (1.000)	130	91007	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	70098			48.37- 108.37	77.02
17.340	17.340 (1.000)	49	87209			82.84- 142.84	95.83
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
18.881	18.880 (1.000)	114	416772	5.00000		80.00- 120.00	100.00
18.881	18.880 (1.000)	88	55340			0.00- 44.04	13.28
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
24.356	24.356 (1.000)	117	337113	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	155158			17.63- 77.63	46.03
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
18.265	18.265 (1.053)	65	104927	4.12018	4.120	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	57814			26.67- 86.67	55.10
$ 22 Toluene-d8						CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	355344	4.84134	4.841	80.00- 120.00	100.00
21.683	21.683 (1.148)	70	33917			0.00- 40.38	9.54

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	227383			33.71- 93.71	63.99
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.961	25.961 (1.066)	174	237504	5.19586	5.196	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	194285			57.01- 117.01	81.80
25.980	25.980 (1.067)	176	234723			68.59- 128.59	98.83
1 Freon 12					CAS #: 75-71-8		
5.499	5.523 (0.317)	85	765448			80.00- 120.00	100.00(aR)
5.524	5.523 (0.319)	87	249563			2.69- 62.69	32.60
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	617961	11.4993	11.499	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	200115			2.13- 62.13	32.38
3 Chloromethane					CAS #: 74-87-3		
7.380	7.403 (0.426)	50	209290	8.97420	8.974	80.00- 120.00	100.00
7.380	7.403 (0.426)	52	68365			2.25- 62.25	32.67
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	258086	10.5180	10.518	80.00- 120.00	100.00
8.366	8.366 (0.482)	64	83783			1.90- 61.90	32.46
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	121568	10.5410	10.541	80.00- 120.00	100.00
10.894	10.894 (0.628)	66	39007			2.24- 62.24	32.09
6 Freon 11					CAS #: 75-69-4		
11.762	11.786 (0.678)	101	790101	10.6180	10.618	80.00- 120.00	100.00
11.762	11.786 (0.678)	103	526900			35.63- 95.63	66.69
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	662474	10.6656	10.666	80.00- 120.00	100.00
13.356	13.383 (0.770)	153	429821			35.29- 95.29	64.88
13.356	13.356 (0.770)	101	682425			79.29- 139.29	103.01
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	192441	10.2172	10.217	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	413262			208.11- 268.11	214.75
13.356	13.356 (0.770)	96	298774			127.31- 187.31	155.25
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.059	15.059 (0.868)	73	817074	10.1559	10.156	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	162965			0.00- 51.54	19.94
15.059	15.059 (0.868)	41	131480			0.00- 49.49	16.09

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	180872	8.93602	8.936	80.00- 120.00	100.00
15.086	15.114 (0.870)	61	325832			166.64- 226.64	180.15
15.114	15.114 (0.872)	96	278147			124.18- 184.18	153.78
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	486650	9.86115	9.861	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	157126			2.52- 62.52	32.29
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	242242	11.2023	11.202	80.00- 120.00	100.00
16.937	16.937 (0.977)	61	399204			148.56- 208.56	164.80
16.958	16.958 (0.978)	96	374272			123.96- 183.96	154.50
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	698987	9.71557	9.716	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	465364			36.46- 96.46	66.58
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	727835	10.1292	10.129	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	473614			35.34- 95.34	65.07
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	705512	12.7808	12.781	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	718300			71.93- 131.93	101.81
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	883399	8.89078	8.891	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	208527			0.00- 53.56	23.61
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	371000	9.13623	9.136	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	123558			3.03- 63.03	33.30
21 Trichloroethene					CAS #: 79-01-6		
19.305	19.304 (1.022)	130	519546	10.5108	10.511	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	454577			60.20- 120.20	87.50
19.282	19.282 (1.021)	97	299016			29.00- 89.00	57.55
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	1085298	9.78856	9.788	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	628700			27.62- 87.62	57.93
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.383	22.382 (0.919)	75	540491	10.7586	10.759	80.00- 120.00	100.00
22.383	22.382 (0.919)	77	174615			2.20- 62.20	32.31

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	444357	10.6421	10.642	80.00- 120.00	100.00
22.760	22.760 (0.934)	99	279941			33.48- 93.48	63.00
22.760	22.760 (0.934)	83	368171			54.60- 114.60	82.85
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	704345	10.8445	10.844	80.00- 120.00	100.00
22.876	22.876 (0.939)	129	453467			35.95- 95.95	64.38
22.905	22.905 (0.940)	131	440740			34.23- 94.23	62.57
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.689 (0.973)	107	707557	10.5379	10.538	80.00- 120.00	100.00
23.690	23.689 (0.973)	109	684416			66.39- 126.39	96.73
29 Chlorobenzene					CAS #: 108-90-7		
24.397	24.397 (1.002)	112	934647	10.4708	10.471	80.00- 120.00	100.00
24.397	24.397 (1.002)	114	306691			2.92- 62.92	32.81
24.397	24.397 (1.002)	77	448012			21.68- 81.68	47.93
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	440989	10.7192	10.719	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	1331557			281.86- 341.86	301.95
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	492913	10.6846	10.685	80.00- 120.00	100.00
24.645	24.645 (1.012)	91	929827			165.84- 225.84	188.64
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	473307	11.0774	11.077	80.00- 120.00	100.00
25.222	25.222 (1.036)	91	927514			174.02- 234.02	195.96
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	808487	9.27045	9.270	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	532512			35.95- 95.95	65.87
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	824622	10.8814	10.881	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	541582			35.53- 95.53	65.68
27.305	27.305 (1.121)	111	280087			4.70- 64.70	33.97
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	759955	10.7647	10.765	80.00- 120.00	100.00
27.414	27.414 (1.126)	148	496099			35.55- 95.55	65.28
27.414	27.414 (1.126)	111	247141			3.83- 63.83	32.52
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	749907	11.0224	11.022	80.00- 120.00	100.00

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
37 1,2-Dichlorobenzene (continued)								
27.897	27.897	(1.145)	148	487174			35.05- 95.05	64.96
27.897	27.897	(1.145)	111	262566			6.25- 66.25	35.01
38 Naphthalene						CAS #: 91-20-3		
30.470	30.469	(1.251)	128	24595	0.69621	0.6962	80.00- 120.00	100.00
30.470	30.469	(1.251)	127	3124			0.00- 43.90	12.70
M 39 Total Xylene						CAS #: 1330-20-7		
				966220	21.7620	21.762		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080805sim.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Client Smp ID: LCS
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	91007	-6.98
20 1,4-Difluorobenze	453999	272399	635599	416772	-8.20
28 Chlorobenzene-d5	343223	205934	480512	337113	-1.78

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/08aug17.b/20080805sim.d

Date : 08-AUG-2017 10:59

Client ID: LCS

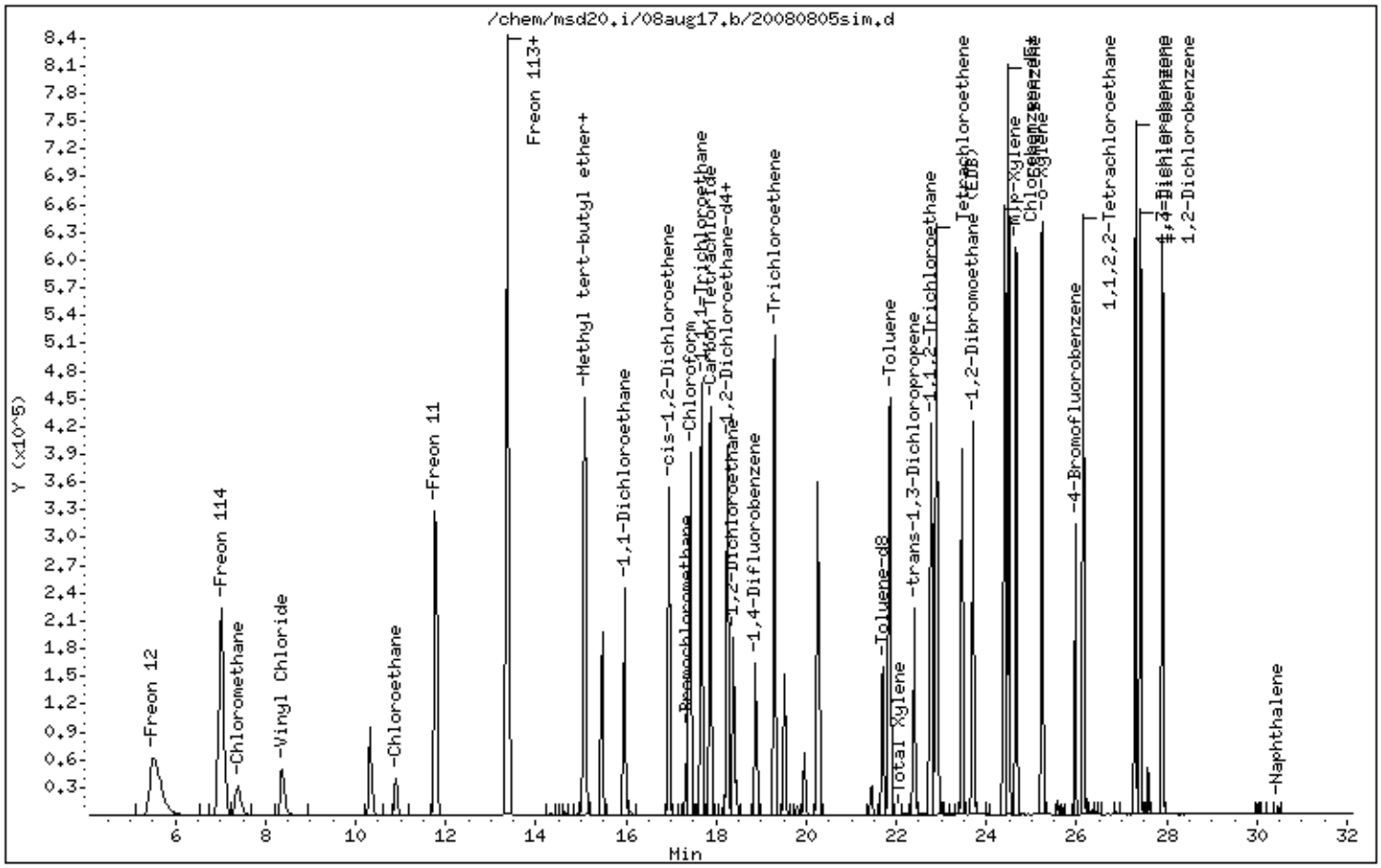
Instrument: msd20.i

Sample Info: 50mL# 2850-247

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCSD		
Lab ID:	1708092-13BB	**Date/Time Analyzed:**	8/8/17 11:46 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20080806sim

Compound	CAS#	%Recovery
Benzene	71-43-2	91
Ethyl Benzene	100-41-4	106
m,p-Xylene	108-38-3	106
Naphthalene	91-20-3	67
o-Xylene	95-47-6	113
Toluene	108-88-3	97
Total Xylenes	9999-9999-015	110

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	86
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	96

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE	COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1	Freon 12	10.000	0.000	0.00*	70-130
	2	Freon 114	10.000	12.785	127.85	70-130
	3	Chloromethane	10.000	9.310	93.10	70-130
	4	Vinyl Chloride	10.000	11.052	110.52	70-130
	5	Chloroethane	10.000	13.798	137.99*	70-130
	6	Freon 11	10.000	11.881	118.81	70-130
	7	Freon 113	10.000	11.286	112.86	70-130
	8	1,1-Dichloroethene	10.000	10.858	108.58	70-130
	9	Methyl tert-butyl	10.000	10.329	103.29	70-130
	10	trans-1,2-Dichloro	10.000	9.188	91.88	70-130
	11	1,1-Dichloroethane	10.000	10.094	100.94	70-130
	12	cis-1,2-Dichloroet	10.000	11.630	116.30	70-130
	14	Chloroform	10.000	10.290	102.90	70-130
	15	1,1,1-Trichloroeth	10.000	10.577	105.77	70-130
	16	Carbon Tetrachlori	10.000	13.552	135.52	60-140
	17	Benzene	10.000	9.142	91.42	70-130
	19	1,2-Dichloroethane	10.000	9.420	94.20	70-130
	21	Trichloroethene	10.000	10.704	107.05	70-130
	23	Toluene	10.000	9.730	97.30	70-130
	24	trans-1,3-Dichloro	10.000	10.768	107.69	70-130
	25	1,1,2-Trichloroeth	10.000	10.552	105.52	70-130
	26	Tetrachloroethene	10.000	11.095	110.95	70-130
	27	1,2-Dibromoethane	10.000	10.631	106.31	70-130
	29	Chlorobenzene	10.000	10.527	105.27	70-130
	30	Ethyl Benzene	10.000	10.618	106.18	70-130
	31	m,p-Xylene	10.000	10.620	106.20	70-130
	32	o-Xylene	10.000	11.341	113.41	70-130
	34	1,1,2,2-Tetrachlor	10.000	9.406	94.06	70-130
	35	1,3-Dichlorobenzen	10.000	11.079	110.79	70-130
	36	1,4-Dichlorobenzen	10.000	10.870	108.70	70-130
	37	1,2-Dichlorobenzen	10.000	11.300	113.00	70-130
	38	Naphthalene	1.000	0.6678	66.78	60-140
M	39	Total Xylene	20.000	21.961	109.81	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 08aug17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.280	85.59	70-130
$ 22 Toluene-d8	5.000	4.792	95.83	70-130
$ 33 4-Bromofluorobenze	5.000	5.263	105.26	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/08aug17.b/20080806sim.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 08-AUG-2017 11:46
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 2850-247
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Meth Date : 08-Aug-2017 16:00 efinn Quant Type: ISTD
Cal Date : 04-AUG-2017 08:20 Cal File: 20080316sim.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS			
				ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
* 13 Bromochloromethane						CAS #: 74-97-5	
17.340	17.340 (1.000)	130	78975	5.00000		80.00- 120.00	100.00
17.340	17.340 (1.000)	128	61750			48.37- 108.37	78.19
17.340	17.340 (1.000)	49	75864			82.84- 142.84	96.06
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
18.881	18.880 (1.000)	114	368066	5.00000		80.00- 120.00	100.00
18.881	18.880 (1.000)	88	48750			0.00- 44.04	13.24
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
24.356	24.356 (1.000)	117	300174	5.00000		80.00- 120.00	100.00
24.356	24.356 (1.000)	82	134324			17.63- 77.63	44.75
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
18.265	18.265 (1.053)	65	94579	4.27965	4.280	80.00- 120.00	100.00
18.265	18.265 (1.053)	67	52080			26.67- 86.67	55.07
$ 22 Toluene-d8						CAS #: 2037-26-5	
21.698	21.698 (1.149)	98	310597	4.79167	4.792	80.00- 120.00	100.00
21.698	21.683 (1.149)	70	29205			0.00- 40.38	9.40

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.698	21.698 (1.149)	100	197610			33.71- 93.71	63.62
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.980	25.961 (1.067)	174	214219	5.26317	5.263	80.00- 120.00	100.00
25.961	25.961 (1.066)	95	172242			57.01- 117.01	80.40
25.980	25.980 (1.067)	176	211357			68.59- 128.59	98.66
1 Freon 12					CAS #: 75-71-8		
5.499	5.523 (0.317)	85	725448			80.00- 120.00	100.00(aR)
5.524	5.523 (0.319)	87	236425			2.69- 62.69	32.59
2 Freon 114					CAS #: 76-14-2		
7.018	7.018 (0.405)	135	596206	12.7847	12.785	80.00- 120.00	100.00
7.018	7.018 (0.405)	137	193233			2.13- 62.13	32.41
3 Chloromethane					CAS #: 74-87-3		
7.380	7.403 (0.426)	50	188408	9.30962	9.310	80.00- 120.00	100.00
7.404	7.403 (0.427)	52	64087			2.25- 62.25	34.02
4 Vinyl Chloride					CAS #: 75-01-4		
8.366	8.366 (0.482)	62	235335	11.0519	11.052	80.00- 120.00	100.00
8.366	8.366 (0.482)	64	76481			1.90- 61.90	32.50
5 Chloroethane					CAS #: 75-00-3		
10.894	10.894 (0.628)	64	138097	13.7985	13.798	80.00- 120.00	100.00(R)
10.894	10.894 (0.628)	66	44758			2.24- 62.24	32.41
6 Freon 11					CAS #: 75-69-4		
11.786	11.786 (0.680)	101	767172	11.8806	11.881	80.00- 120.00	100.00
11.786	11.786 (0.680)	103	503579			35.63- 95.63	65.64
7 Freon 113					CAS #: 76-13-1		
13.356	13.356 (0.770)	151	608322	11.2858	11.286	80.00- 120.00	100.00
13.384	13.383 (0.772)	153	394827			35.29- 95.29	64.90
13.356	13.356 (0.770)	101	626566			79.29- 139.29	103.00
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.356	13.356 (0.770)	98	177472	10.8580	10.858	80.00- 120.00	100.00
13.356	13.356 (0.770)	61	378221			208.11- 268.11	213.12
13.356	13.356 (0.770)	96	276951			127.31- 187.31	156.05
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.086	15.059 (0.870)	73	721111	10.3286	10.329	80.00- 120.00	100.00
15.059	15.059 (0.868)	57	142232			0.00- 51.54	19.72
15.059	15.059 (0.868)	41	113115			0.00- 49.49	15.69

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.114	15.114 (0.872)	98	161384	9.18795	9.188	80.00- 120.00	100.00
15.114	15.114 (0.872)	61	285627			166.64- 226.64	176.99
15.114	15.114 (0.872)	96	249722			124.18- 184.18	154.74
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.965	15.965 (0.921)	63	432301	10.0944	10.094	80.00- 120.00	100.00
15.965	15.965 (0.921)	65	140491			2.52- 62.52	32.50
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.958	16.958 (0.978)	98	218245	11.6302	11.630	80.00- 120.00	100.00
16.958	16.937 (0.978)	61	354494			148.56- 208.56	162.43
16.958	16.958 (0.978)	96	337010			123.96- 183.96	154.42
14 Chloroform					CAS #: 67-66-3		
17.422	17.422 (1.005)	83	642455	10.2903	10.290	80.00- 120.00	100.00
17.422	17.422 (1.005)	85	425822			36.46- 96.46	66.28
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.669	17.669 (1.019)	97	659538	10.5771	10.577	80.00- 120.00	100.00
17.669	17.669 (1.019)	99	431692			35.34- 95.34	65.45
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.875	17.875 (1.031)	119	649164	13.5517	13.552	80.00- 120.00	100.00
17.875	17.875 (1.031)	117	664344			71.93- 131.93	102.34
17 Benzene					CAS #: 71-43-2		
18.244	18.244 (0.966)	78	802189	9.14181	9.142	80.00- 120.00	100.00
18.244	18.244 (0.966)	77	187542			0.00- 53.56	23.38
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.388	18.388 (0.974)	62	337829	9.42026	9.420	80.00- 120.00	100.00
18.388	18.388 (0.974)	64	111864			3.03- 63.03	33.11
21 Trichloroethene					CAS #: 79-01-6		
19.305	19.304 (1.022)	130	467288	10.7045	10.704	80.00- 120.00	100.00
19.282	19.282 (1.021)	95	402797			60.20- 120.20	86.20
19.305	19.282 (1.022)	97	266788			29.00- 89.00	57.09
23 Toluene					CAS #: 108-88-3		
21.854	21.854 (1.157)	91	952774	9.73044	9.730	80.00- 120.00	100.00
21.854	21.854 (1.157)	92	548133			27.62- 87.62	57.53
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.383	22.382 (0.919)	75	481711	10.7685	10.768	80.00- 120.00	100.00
22.383	22.382 (0.919)	77	154666			2.20- 62.20	32.11

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.760	22.760 (0.934)	97	392303	10.5516	10.552	80.00- 120.00	100.00
22.760	22.760 (0.934)	99	249331			33.48- 93.48	63.56
22.760	22.760 (0.934)	83	318464			54.60- 114.60	81.18
26 Tetrachloroethene					CAS #: 127-18-4		
22.905	22.905 (0.940)	166	641670	11.0953	11.095	80.00- 120.00	100.00
22.905	22.876 (0.940)	129	413242			35.95- 95.95	64.40
22.905	22.905 (0.940)	131	404499			34.23- 94.23	63.04
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.690	23.689 (0.973)	107	635623	10.6315	10.631	80.00- 120.00	100.00
23.690	23.689 (0.973)	109	606346			66.39- 126.39	95.39
29 Chlorobenzene					CAS #: 108-90-7		
24.397	24.397 (1.002)	112	836733	10.5274	10.527	80.00- 120.00	100.00
24.418	24.397 (1.003)	114	274519			2.92- 62.92	32.81
24.397	24.397 (1.002)	77	396899			21.68- 81.68	47.43
30 Ethyl Benzene					CAS #: 100-41-4		
24.480	24.480 (1.005)	106	388957	10.6179	10.618	80.00- 120.00	100.00
24.480	24.480 (1.005)	91	1173438			281.86- 341.86	301.69
31 m,p-Xylene					CAS #: 108-38-3		
24.665	24.665 (1.013)	106	436249	10.6201	10.620	80.00- 120.00	100.00
24.645	24.645 (1.012)	91	825023			165.84- 225.84	189.12
32 o-Xylene					CAS #: 95-47-6		
25.243	25.243 (1.036)	106	431487	11.3413	11.341	80.00- 120.00	100.00
25.222	25.222 (1.036)	91	857090			174.02- 234.02	198.64
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.151	26.151 (1.074)	83	730459	9.40646	9.406	80.00- 120.00	100.00
26.151	26.151 (1.074)	85	482705			35.95- 95.95	66.08
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.305	27.305 (1.121)	146	747608	11.0791	11.079	80.00- 120.00	100.00
27.305	27.305 (1.121)	148	489300			35.53- 95.53	65.45
27.305	27.305 (1.121)	111	249496			4.70- 64.70	33.37
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.414	27.414 (1.126)	146	683315	10.8702	10.870	80.00- 120.00	100.00
27.430	27.414 (1.126)	148	448181			35.55- 95.55	65.59
27.414	27.414 (1.126)	111	219981			3.83- 63.83	32.19
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.897	27.897 (1.145)	146	684552	11.3000	11.300	80.00- 120.00	100.00

					CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT	(REL RT)	MASS	RESPONSE				
37 1,2-Dichlorobenzene (continued)								
27.913	27.897	(1.146)	148	442861			35.05- 95.05	64.69
27.897	27.897	(1.145)	111	234780			6.25- 66.25	34.30
38 Naphthalene						CAS #: 91-20-3		
30.470	30.469	(1.251)	128	21005	0.66776	0.6678	80.00- 120.00	100.00
30.470	30.469	(1.251)	127	2744			0.00- 43.90	13.06
M 39 Total Xylene						CAS #: 1330-20-7		
				867736	21.9614	21.961		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20080806sim.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 08-AUG-2017
Calibration Time: 10:00
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR
Method File: /chem/msd20.i/08aug17.b/2017l0803a.m/2017s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	97835	58701	136969	78975	-19.28
20 1,4-Difluorobenze	453999	272399	635599	368066	-18.93
28 Chlorobenzene-d5	343223	205934	480512	300174	-12.54

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.34	17.01	17.67	17.34	0.00
20 1,4-Difluorobenze	18.88	18.55	19.21	18.88	0.00
28 Chlorobenzene-d5	24.36	24.03	24.69	24.36	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/08aug17.b/20080806sim.d

Date : 08-AUG-2017 11:46

Client ID: LCSD

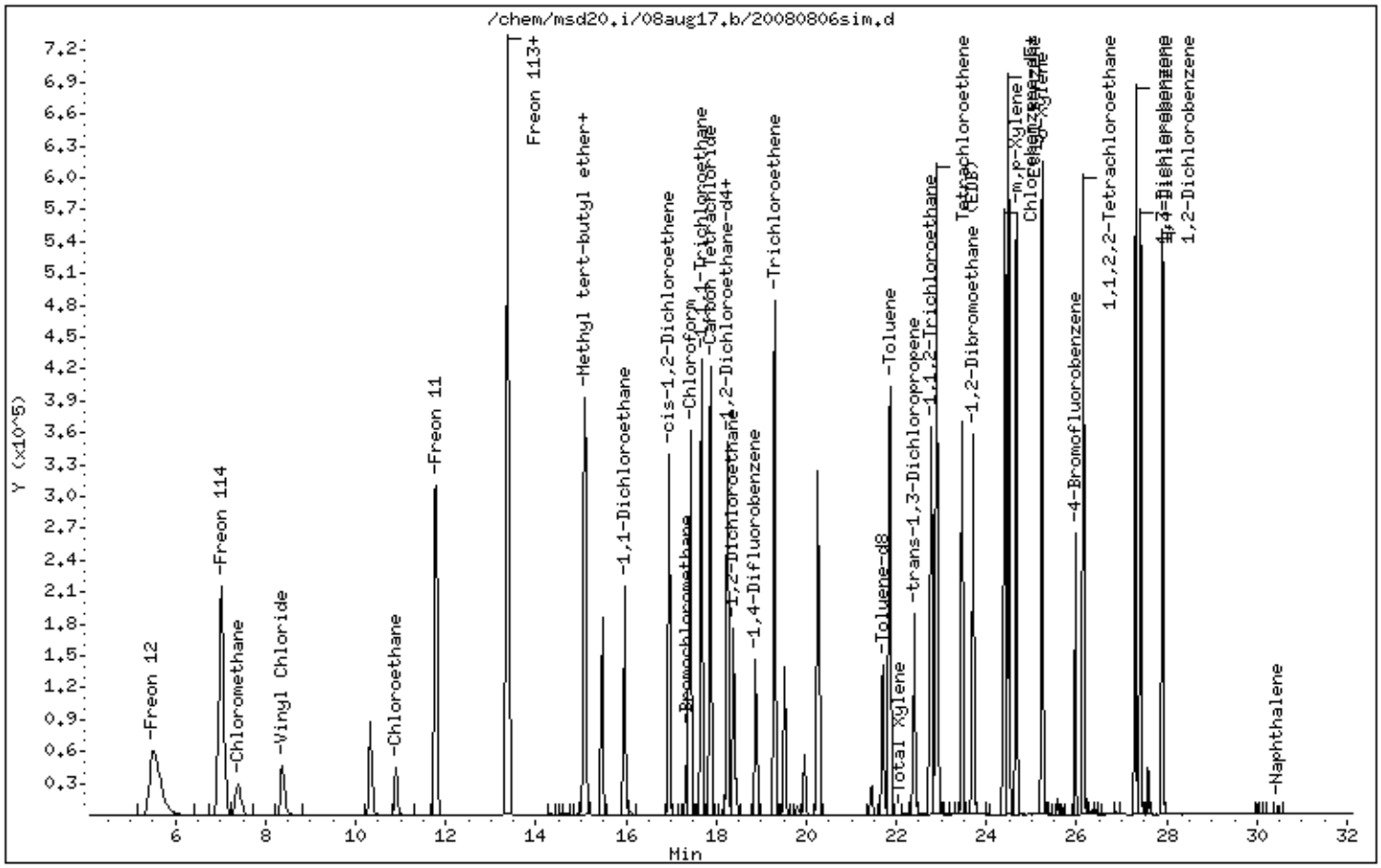
Instrument: msd20.i

Sample Info: 50mL# 2850-247

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCS		
Lab ID:	1708092-13C	**Date/Time Analyzed:**	8/9/17 09:37 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msde.i / e080903sim

Compound	CAS#	%Recovery
Benzene	71-43-2	90
Ethyl Benzene	100-41-4	106
m,p-Xylene	108-38-3	107
Naphthalene	91-20-3	68
o-Xylene	95-47-6	107
Toluene	108-88-3	97
Total Xylenes	9999-9999-015	107

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 09Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: AT09.sub
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1 Freon 12	10.000	10.091	100.91	70-130
	2 Freon 114	10.000	10.136	101.37	70-130
	3 Chloromethane	10.000	10.172	101.72	70-130
	4 Vinyl Chloride	10.000	10.207	102.07	70-130
	5 Chloroethane	10.000	9.775	97.75	70-130
	8 1,1-Dichloroethene	10.000	9.141	91.41	70-130
	9 Methyl tert-butyl	10.000	10.160	101.60	70-130
	10 trans-1,2-Dichloro	10.000	8.198	81.98	70-130
	11 1,1-Dichloroethane	10.000	9.579	95.79	70-130
	12 cis-1,2-Dichloroet	10.000	10.008	100.08	70-130
	14 Chloroform	10.000	9.320	93.20	70-130
	15 1,1,1-Trichloroeth	10.000	9.634	96.34	70-130
	16 Carbon Tetrachlori	10.000	8.802	88.02	60-140
	17 Benzene	10.000	8.976	89.76	70-130
	19 1,2-Dichloroethane	10.000	9.322	93.22	70-130
	21 Trichloroethene	10.000	9.020	90.20	70-130
	23 Toluene	10.000	9.670	96.70	70-130
	25 1,1,2-Trichloroeth	10.000	9.664	96.64	70-130
	26 Tetrachloroethene	10.000	9.489	94.89	70-130
	27 1,2-Dibromoethane	10.000	9.072	90.72	70-130
	30 Ethyl Benzene	10.000	10.609	106.09	70-130
	31 m,p-Xylene	10.000	10.665	106.65	70-130
	32 o-Xylene	10.000	10.677	106.77	70-130
	34 1,1,2,2-Tetrachlor	10.000	9.178	91.78	70-130
	36 1,4-Dichlorobenzen	10.000	9.470	94.70	70-130
	38 Naphthalene	1.000	0.6754	67.54	60-140
M	39 Total Xylene	20.000	21.342	106.71	70-130

	SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$	18 1,2-Dichloroethane	5.000	4.742	94.84	70-130

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 22 Toluene-d8	5.000	5.076	101.52	70-130
$ 33 4-Bromofluorobenze	5.000	5.158	103.16	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080903sim.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 09-AUG-2017 09:37
Operator : ef Inst ID: msde.i
Smp Info : 50mL# 2850-280
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:17 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT09.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.282	5.282 (0.343)	85	1463148	10.0909	10.091	80.00- 120.00	100.00
5.282	5.282 (0.343)	87	472473			2.36- 62.36	32.29
2 Freon 114					CAS #: 76-14-2		
6.608	6.608 (0.429)	135	1156489	10.1366	10.136	80.00- 120.00	100.00
6.608	6.608 (0.429)	137	371155			2.19- 62.19	32.09
3 Chloromethane					CAS #: 74-87-3		
6.970	6.946 (0.452)	50	406057	10.1719	10.172	80.00- 120.00	100.00
6.970	6.946 (0.452)	52	129980			1.74- 61.74	32.01
4 Vinyl Chloride					CAS #: 75-01-4		
7.828	7.810 (0.508)	62	362448	10.2069	10.207	80.00- 120.00	100.00
7.828	7.810 (0.508)	64	107371			0.00- 59.24	29.62
5 Chloroethane					CAS #: 75-00-3		
9.999	9.999 (0.649)	64	170200	9.77493	9.775	80.00- 120.00	100.00
10.018	9.999 (0.650)	66	52095			1.37- 61.37	30.61

	RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
	8 1,1-Dichloroethene						CAS #: 75-35-4		
	12.113	12.094	(0.786)	98	271943	9.14116	9.141	80.00- 120.00	100.00
	12.094	12.094	(0.785)	61	849844			279.95- 339.95	312.51
	12.094	12.094	(0.785)	96	425196			125.30- 185.30	156.35
	9 Methyl tert-butyl ether						CAS #: 1634-04-4		
	13.492	13.492	(0.876)	73	1093654	10.1596	10.160	80.00- 120.00	100.00
	13.465	13.465	(0.874)	57	270286			0.00- 54.88	24.71
	13.465	13.465	(0.874)	41	302184			0.00- 57.95	27.63
	10 trans-1,2-Dichloroethene						CAS #: 156-60-5		
	13.547	13.547	(0.879)	98	249030	8.19784	8.198	80.00- 120.00	100.00
	13.547	13.547	(0.879)	61	632160			224.47- 284.47	253.85
	13.547	13.547	(0.879)	96	388362			125.79- 185.79	155.95
	11 1,1-Dichloroethane						CAS #: 75-34-3		
	14.233	14.233	(0.924)	63	825969	9.57892	9.579	80.00- 120.00	100.00
	14.233	14.233	(0.924)	65	253979			0.76- 60.76	30.75
	12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
	15.060	15.060	(0.978)	98	335713	10.0085	10.008	80.00- 120.00	100.00
	15.060	15.060	(0.978)	61	783548			202.87- 262.87	233.40
	15.060	15.060	(0.978)	96	518252			124.41- 184.41	154.37
*	13 Bromochloromethane						CAS #: 74-97-5		
	15.405	15.405	(1.000)	130	139548	5.00000		80.00- 120.00	100.00
	15.405	15.405	(1.000)	128	107485			47.34- 107.34	77.02
	15.374	15.374	(1.000)	49	173683			83.88- 143.88	124.46
	14 Chloroform						CAS #: 67-66-3		
	15.436	15.436	(1.002)	83	1096422	9.31990	9.320	80.00- 120.00	100.00
	15.436	15.436	(1.002)	85	748557			38.09- 98.09	68.27
	15 1,1,1-Trichloroethane						CAS #: 71-55-6		
	15.682	15.682	(1.018)	97	1456853	9.63369	9.634	80.00- 120.00	100.00
	15.682	15.682	(1.018)	99	948404			35.38- 95.38	65.10
	16 Carbon Tetrachloride						CAS #: 56-23-5		
	15.867	15.867	(1.030)	119	1579818	8.80171	8.802	80.00- 120.00	100.00
	15.867	15.867	(1.030)	117	1622464			72.55- 132.55	102.70
	17 Benzene						CAS #: 71-43-2		
	16.197	16.197	(0.968)	78	1064709	8.97640	8.976	80.00- 120.00	100.00
	16.197	16.197	(0.968)	77	256410			0.00- 53.90	24.08
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
	16.197	16.197	(1.051)	65	207701	4.74223	4.742	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	97080			18.02- 78.02	46.74
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	958072	9.32247	9.322	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	299109			1.11- 61.11	31.22
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	475863	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	71246			0.00- 44.94	14.97
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	807516	9.01977	9.020	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	678650			53.60- 113.60	84.04
17.136	17.136 (1.024)	97	441910			24.58- 84.58	54.72
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.267	19.267 (1.152)	98	367938	5.07575	5.076	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	41487			0.00- 41.37	11.28
19.289	19.289 (1.153)	100	234970			33.76- 93.76	63.86
23 Toluene					CAS #: 108-88-3		
19.424	19.424 (1.161)	91	1416678	9.67048	9.670	80.00- 120.00	100.00
19.424	19.424 (1.161)	92	812092			27.48- 87.48	57.32
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	579758	9.66395	9.664	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	362334			33.18- 93.18	62.50
20.424	20.424 (0.921)	83	427320			44.41- 104.41	73.71
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	1069041	9.48940	9.489	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	832180			49.11- 109.11	77.84
20.616	20.616 (0.930)	131	844251			49.75- 109.75	78.97
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	994037	9.07212	9.072	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	988021			69.10- 129.10	99.39
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	437408	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	184957			11.87- 71.87	42.28
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	616941	10.6087	10.609	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	1944191			287.72- 347.72	315.13

					CONCENTRATIONS ON-COL	FINAL		
	RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
	31 m,p-Xylene					CAS #: 108-38-3		
	22.460	22.460 (1.013)	106	725699	10.6651	10.665	80.00- 120.00	100.00
	22.460	22.460 (1.013)	91	1534779			182.04- 242.04	211.49
	32 o-Xylene					CAS #: 95-47-6		
	23.082	23.082 (1.041)	106	675621	10.6771	10.677	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	1511538			192.45- 252.45	223.73
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.847	23.847 (1.076)	174	303107	5.15785	5.158	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	291952			66.14- 126.14	96.32
	23.847	23.847 (1.076)	176	294549			67.55- 127.55	97.18
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	24.026	24.026 (1.084)	83	821936	9.17750	9.178	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	570385			39.61- 99.61	69.40
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	25.260	25.260 (1.139)	146	1199020	9.47015	9.470	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	780824			34.93- 94.93	65.12
	25.260	25.260 (1.139)	111	439308			6.87- 66.87	36.64
	38 Naphthalene					CAS #: 91-20-3		
	27.703	27.703 (1.250)	128	58854	0.67536	0.6754	80.00- 120.00	100.00
	27.703	27.703 (1.250)	127	8088			0.00- 42.95	13.74
M	39 Total Xylene					CAS #: 1330-20-7		
				1401320	21.3422	21.342		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080903sim.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Client Smp ID: LCS
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	139548	2.30
20 1,4-Difluorobenze	468904	281342	656466	475863	1.48
28 Chlorobenzene-d5	424491	254695	594287	437408	3.04

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/09Aug2017.b/e080903sim.d

Date : 09-AUG-2017 09:37

Client ID: LCS

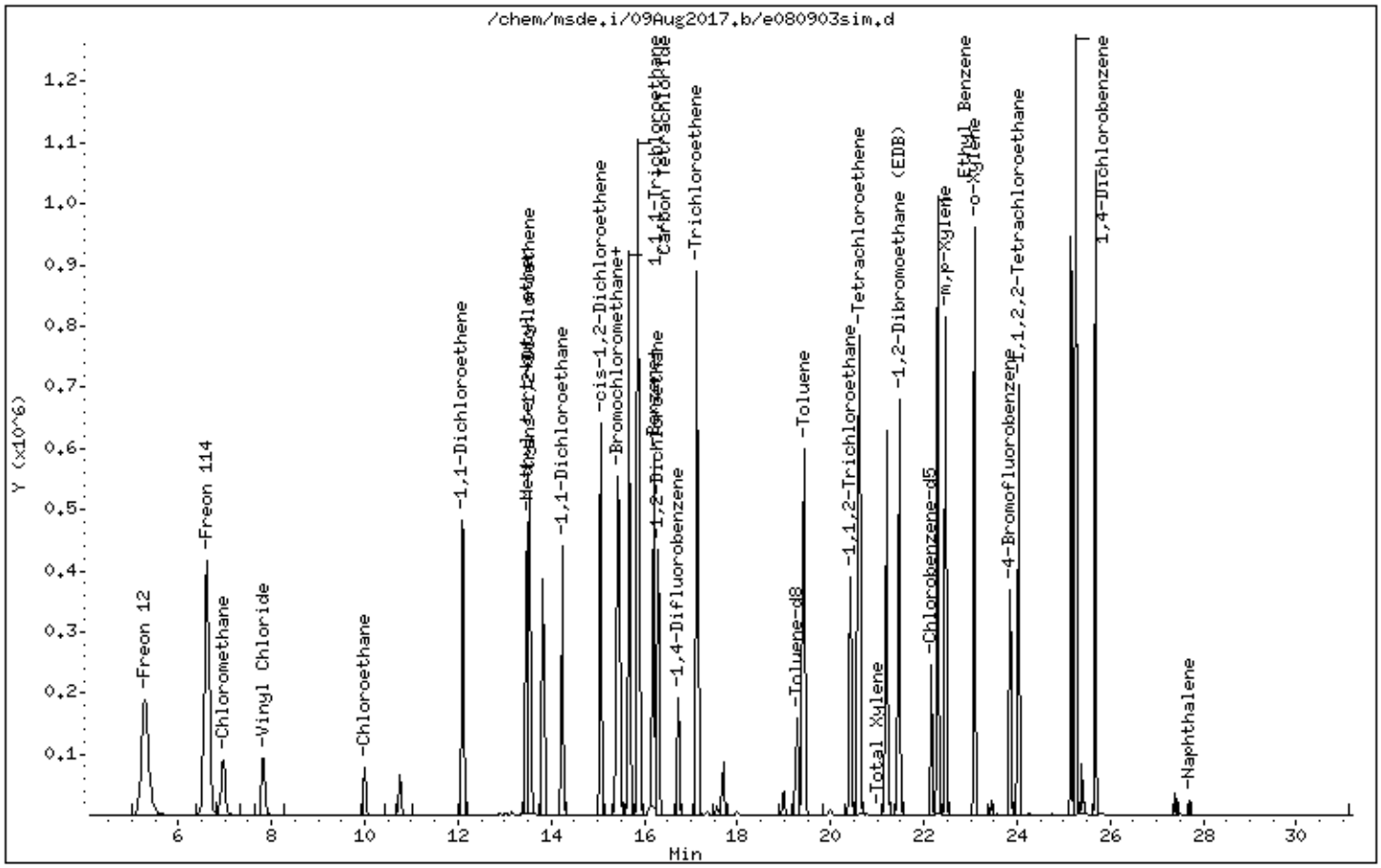
Instrument: msde.i

Sample Info: 50mL# 2850-280

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Former Tronox-Springfield, Mo

Client ID:	LCSD		
Lab ID:	1708092-13CC	**Date/Time Analyzed:**	8/9/17 12:37 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msde.i / e080907sim

Compound	CAS#	%Recovery
Benzene	71-43-2	88
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	105
Naphthalene	91-20-3	66
o-Xylene	95-47-6	105
Toluene	108-88-3	94
Total Xylenes	9999-9999-015	105

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	101

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 09Aug2017
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT09.spk Quant Type: ISTD
Sublist File: AT09.sub
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1 Freon 12	10.000	9.722	97.23	70-130
	2 Freon 114	10.000	9.847	98.47	70-130
	3 Chloromethane	10.000	9.702	97.02	70-130
	4 Vinyl Chloride	10.000	9.775	97.75	70-130
	5 Chloroethane	10.000	9.461	94.61	70-130
	8 1,1-Dichloroethene	10.000	9.037	90.37	70-130
	9 Methyl tert-butyl	10.000	10.136	101.36	70-130
	10 trans-1,2-Dichloro	10.000	8.062	80.62	70-130
	11 1,1-Dichloroethane	10.000	9.435	94.35	70-130
	12 cis-1,2-Dichloroet	10.000	9.955	99.55	70-130
	14 Chloroform	10.000	9.212	92.12	70-130
	15 1,1,1-Trichloroeth	10.000	9.458	94.58	70-130
	16 Carbon Tetrachlori	10.000	8.660	86.60	60-140
	17 Benzene	10.000	8.811	88.11	70-130
	19 1,2-Dichloroethane	10.000	9.133	91.33	70-130
	21 Trichloroethene	10.000	8.834	88.34	70-130
	23 Toluene	10.000	9.392	93.92	70-130
	25 1,1,2-Trichloroeth	10.000	9.413	94.13	70-130
	26 Tetrachloroethene	10.000	9.186	91.86	70-130
	27 1,2-Dibromoethane	10.000	9.031	90.31	70-130
	30 Ethyl Benzene	10.000	10.393	103.93	70-130
	31 m,p-Xylene	10.000	10.494	104.94	70-130
	32 o-Xylene	10.000	10.486	104.86	70-130
	34 1,1,2,2-Tetrachlor	10.000	8.952	89.52	70-130
	36 1,4-Dichlorobenzen	10.000	9.272	92.72	70-130
	38 Naphthalene	1.000	0.6557	65.57	60-140
M	39 Total Xylene	20.000	20.980	104.90	70-130

	SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$	18 1,2-Dichloroethane	5.000	4.798	95.96	70-130

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 22 Toluene-d8	5.000	5.040	100.81	70-130
$ 33 4-Bromofluorobenze	5.000	5.108	102.16	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msde.i/09Aug2017.b/e080907sim.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 09-AUG-2017 12:37
Operator : ef Inst ID: msde.i
Smp Info : 50mL# 2850-280
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Meth Date : 09-Aug-2017 15:17 efinn Quant Type: ISTD
Cal Date : 03-AUG-2017 19:28 Cal File: e080311sim.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT09.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.282	5.282 (0.343)	85	1408994	9.72254	9.722	80.00- 120.00	100.00
5.282	5.282 (0.343)	87	456334			2.36- 62.36	32.39
2 Freon 114					CAS #: 76-14-2		
6.584	6.608 (0.427)	135	1122816	9.84667	9.847	80.00- 120.00	100.00
6.584	6.608 (0.427)	137	362169			2.19- 62.19	32.26
3 Chloromethane					CAS #: 74-87-3		
6.945	6.946 (0.451)	50	387080	9.70166	9.702	80.00- 120.00	100.00
6.945	6.946 (0.451)	52	123460			1.74- 61.74	31.90
4 Vinyl Chloride					CAS #: 75-01-4		
7.793	7.810 (0.506)	62	346922	9.77484	9.775	80.00- 120.00	100.00
7.810	7.810 (0.507)	64	102562			0.00- 59.24	29.56
5 Chloroethane					CAS #: 75-00-3		
9.999	9.999 (0.649)	64	164647	9.46103	9.461	80.00- 120.00	100.00
9.999	9.999 (0.649)	66	51247			1.37- 61.37	31.13

					CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT	(REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
8 1,1-Dichloroethene						CAS #: 75-35-4		
12.094	12.094	(0.785)	98	268699	9.03691	9.037	80.00- 120.00	100.00
12.094	12.094	(0.785)	61	836754			279.95- 339.95	311.41
12.094	12.094	(0.785)	96	418854			125.30- 185.30	155.88
9 Methyl tert-butyl ether						CAS #: 1634-04-4		
13.492	13.492	(0.876)	73	1090549	10.1361	10.136	80.00- 120.00	100.00
13.465	13.465	(0.874)	57	262950			0.00- 54.88	24.11
13.465	13.465	(0.874)	41	297023			0.00- 57.95	27.24
10 trans-1,2-Dichloroethene						CAS #: 156-60-5		
13.547	13.547	(0.879)	98	244787	8.06243	8.062	80.00- 120.00	100.00
13.519	13.547	(0.878)	61	623547			224.47- 284.47	254.73
13.547	13.547	(0.879)	96	378613			125.79- 185.79	154.67
11 1,1-Dichloroethane						CAS #: 75-34-3		
14.233	14.233	(0.924)	63	813097	9.43465	9.435	80.00- 120.00	100.00
14.233	14.233	(0.924)	65	249689			0.76- 60.76	30.71
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
15.060	15.060	(0.978)	98	333748	9.95516	9.955	80.00- 120.00	100.00
15.060	15.060	(0.978)	61	774213			202.87- 262.87	231.98
15.060	15.060	(0.978)	96	515019			124.41- 184.41	154.31
* 13 Bromochloromethane						CAS #: 74-97-5		
15.405	15.405	(1.000)	130	139474	5.00000		80.00- 120.00	100.00
15.405	15.405	(1.000)	128	107472			47.34- 107.34	77.06
15.374	15.374	(1.000)	49	175239			83.88- 143.88	125.64
14 Chloroform						CAS #: 67-66-3		
15.436	15.436	(1.002)	83	1083128	9.21178	9.212	80.00- 120.00	100.00
15.436	15.436	(1.002)	85	738204			38.09- 98.09	68.15
15 1,1,1-Trichloroethane						CAS #: 71-55-6		
15.682	15.682	(1.018)	97	1429593	9.45845	9.458	80.00- 120.00	100.00
15.682	15.682	(1.018)	99	932922			35.38- 95.38	65.26
16 Carbon Tetrachloride						CAS #: 56-23-5		
15.867	15.867	(1.030)	119	1553646	8.66048	8.660	80.00- 120.00	100.00
15.867	15.867	(1.030)	117	1592972			72.55- 132.55	102.53
17 Benzene						CAS #: 71-43-2		
16.197	16.197	(0.968)	78	1051625	8.81115	8.811	80.00- 120.00	100.00
16.197	16.197	(0.968)	77	251882			0.00- 53.90	23.95
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
16.197	16.197	(1.051)	65	210029	4.79793	4.798	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
16.197	16.197 (1.051)	67	97122			18.02- 78.02	46.24
19 1,2-Dichloroethane					CAS #: 107-06-2		
16.293	16.293 (0.974)	62	944430	9.13278	9.133	80.00- 120.00	100.00
16.293	16.293 (0.974)	64	293554			1.11- 61.11	31.08
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
16.727	16.727 (1.000)	114	478830	5.00000		80.00- 120.00	100.00
16.727	16.727 (1.000)	88	71898			0.00- 44.94	15.02
21 Trichloroethene					CAS #: 79-01-6		
17.136	17.136 (1.024)	130	795838	8.83425	8.834	80.00- 120.00	100.00
17.136	17.136 (1.024)	95	668686			53.60- 113.60	84.02
17.136	17.136 (1.024)	97	435658			24.58- 84.58	54.74
$ 22 Toluene-d8					CAS #: 2037-26-5		
19.289	19.267 (1.153)	98	367666	5.04057	5.040	80.00- 120.00	100.00
19.267	19.267 (1.152)	70	41709			0.00- 41.37	11.34
19.289	19.289 (1.153)	100	234413			33.76- 93.76	63.76
23 Toluene					CAS #: 108-88-3		
19.423	19.424 (1.161)	91	1384525	9.39243	9.392	80.00- 120.00	100.00
19.423	19.424 (1.161)	92	797864			27.48- 87.48	57.63
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
20.424	20.424 (0.921)	97	564994	9.41314	9.413	80.00- 120.00	100.00
20.424	20.424 (0.921)	99	354156			33.18- 93.18	62.68
20.424	20.424 (0.921)	83	420172			44.41- 104.41	74.37
26 Tetrachloroethene					CAS #: 127-18-4		
20.616	20.616 (0.930)	166	1035361	9.18584	9.186	80.00- 120.00	100.00
20.616	20.616 (0.930)	129	819802			49.11- 109.11	79.18
20.616	20.616 (0.930)	131	825330			49.75- 109.75	79.71
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
21.468	21.468 (0.968)	107	990032	9.03105	9.031	80.00- 120.00	100.00
21.468	21.468 (0.968)	109	988862			69.10- 129.10	99.88
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
22.170	22.170 (1.000)	117	437627	5.00000		80.00- 120.00	100.00
22.170	22.170 (1.000)	82	183783			11.87- 71.87	42.00
30 Ethyl Benzene					CAS #: 100-41-4		
22.294	22.294 (1.006)	106	604724	10.3934	10.393	80.00- 120.00	100.00
22.294	22.294 (1.006)	91	1916735			287.72- 347.72	316.96

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
	31 m,p-Xylene					CAS #: 108-38-3		
	22.481	22.460 (1.014)	106	714413	10.4940	10.494	80.00- 120.00	100.00
	22.460	22.460 (1.013)	91	1512051			182.04- 242.04	211.65
	32 o-Xylene					CAS #: 95-47-6		
	23.082	23.082 (1.041)	106	663840	10.4857	10.486	80.00- 120.00	100.00
	23.082	23.082 (1.041)	91	1483404			192.45- 252.45	223.46
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	23.847	23.847 (1.076)	174	300319	5.10785	5.108	80.00- 120.00	100.00
	23.847	23.847 (1.076)	95	289683			66.14- 126.14	96.46
	23.847	23.847 (1.076)	176	292633			67.55- 127.55	97.44
	34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
	24.026	24.026 (1.084)	83	802120	8.95176	8.952	80.00- 120.00	100.00
	24.026	24.026 (1.084)	85	556682			39.61- 99.61	69.40
	36 1,4-Dichlorobenzene					CAS #: 106-46-7		
	25.260	25.260 (1.139)	146	1174550	9.27224	9.272	80.00- 120.00	100.00
	25.260	25.260 (1.139)	148	768573			34.93- 94.93	65.44
	25.260	25.260 (1.139)	111	433046			6.87- 66.87	36.87
	38 Naphthalene					CAS #: 91-20-3		
	27.726	27.703 (1.251)	128	57172	0.65573	0.6557	80.00- 120.00	100.00
	27.703	27.703 (1.250)	127	7110			0.00- 42.95	12.44
M	39 Total Xylene					CAS #: 1330-20-7		
				1378253	20.9797	20.980		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msde.i
Lab File ID: e080907sim.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Calibration Date: 09-AUG-2017
Calibration Time: 08:53
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR
Method File: /chem/msde.i/09Aug2017.b/e17l0803a.m/e17s0803a.m
Misc Info: 10ppbv (50ppbv)

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	136415	81849	190981	139474	2.24
20 1,4-Difluorobenze	468904	281342	656466	478830	2.12
28 Chlorobenzene-d5	424491	254695	594287	437627	3.09

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	15.40	15.07	15.73	15.40	0.00
20 1,4-Difluorobenze	16.73	16.40	17.06	16.73	0.00
28 Chlorobenzene-d5	22.17	21.84	22.50	22.17	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msde.i/09Aug2017.b/e080907sim.d

Date : 09-AUG-2017 12:37

Client ID: LCSD

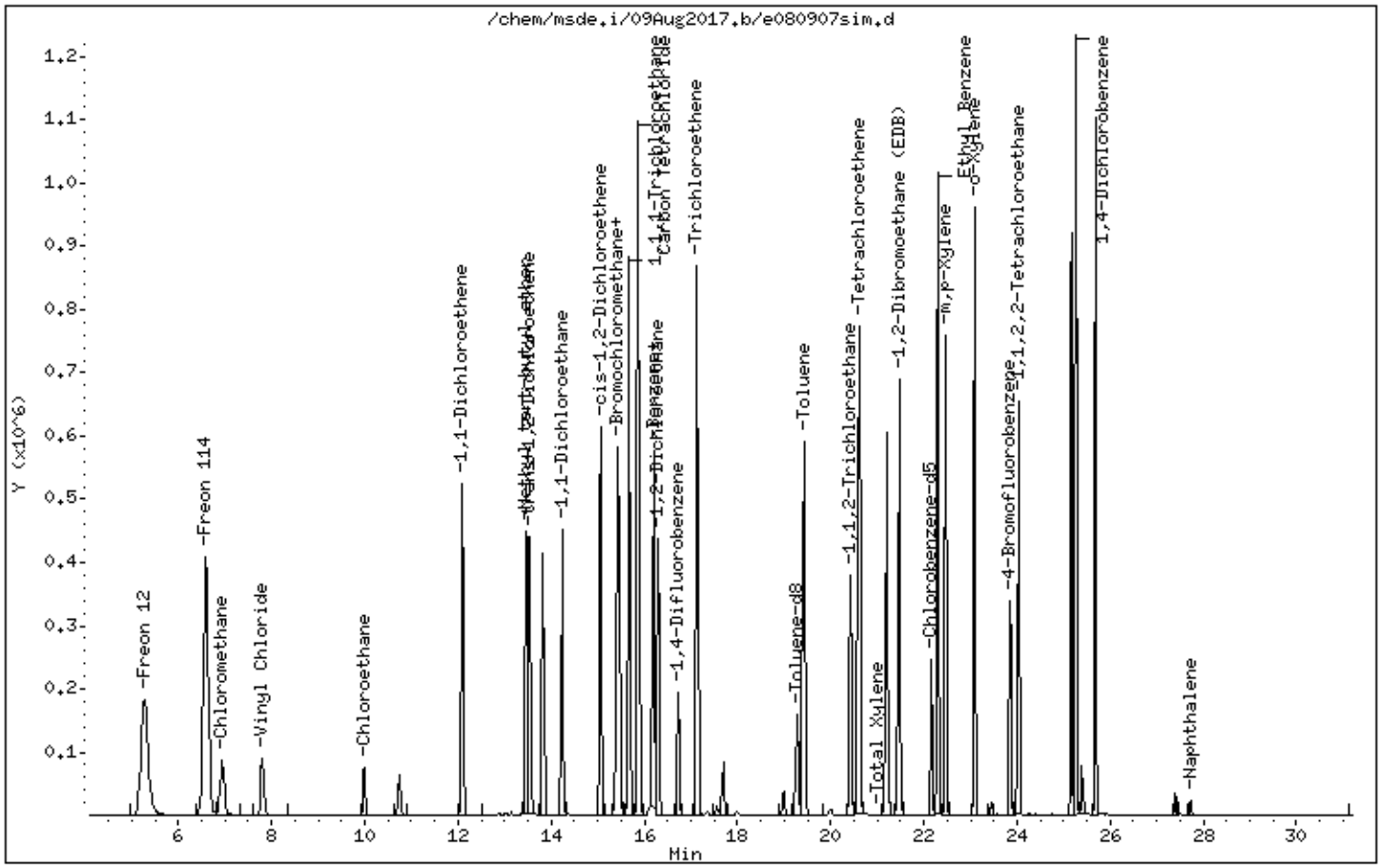
Instrument: msde.i

Sample Info: 50mL# 2850-280

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics, Inc. **MSD-20** **Logbook #2863**

BFB Verification of 176/174 m/z Ratio: (20415.2/21613.8)*100 = 96.77	
Method Name: 2017L080A / 2017S0803A	

IS/S Std. #: 2650 - 189	Exp. Date: 9/15/17
BCM LL: N/A	SIM: 91747
1,4-DFB	43717
CB-d5	350464

Verified CCV IS vs ICAL mid-point (-40%D): SF

SOP# (Circle one): 6 / 83 / 88 / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1		20080701	BFB TUNE CHECK	2810-189	50 ng	2.0 mL	1.00	SF	8/7/17	~~0902~~ 0835	SF	
2		02	CCV (50 ppbv)	2850-244	10 ppbv	50 mL	1.00	SF		0902	SF	Exp. 9/22/17
3		03	LCS (50 ppbv)	2850-247	10 ppbv	50 mL	1.00	SF		0949	SF	Exp. 9/7/17
4		04	LCSD (50 ppbv)	2850-247	10 ppbv	50 mL	1.00	SF		1034	SF	Exp 10/7/17
5	X	05	LAB BLANK	252316	Humid	250 mL	1.00	SF		1139	SF	
6	X	06	LAB BLANK	252316	Humid	250mL	1.00	SF		1233	SF	
7		~~07~~	~~1708092 - 01A~~	~~5584~~	~~10.8" Hg · 4.9 psi~~	~~250mL~~	~~2.08~~	~~SF~~		~~1326~~	~~SF~~	~~Exp 8/7/17~~
8		20080707	LAB BLANK	824202	Humid	250mL	1.00	SF	8/7/17 SF 8/7/17	1325	SF	Analyzed 8/7/17
9	N/A	08	1708092 - 01A	5584	10.8" Hg · 4.9 psi	250mL	2.08	SF	8/7/17	1420	SF	Wrong Analysis Method
10	N/A	09	- 02A	808967	6.5" Hg · 4.9 psi	250mL	1.70	SF		1459	SF	
11		10	- 03A	34317	8.0" Hg · 4.9 psi	250mL	1.81	SF		1637	SF	
12	X	11	~~01A~~	~~5584~~	~~10.8" Hg · 4.9 psi~~	~~250mL~~	~~2.08~~	~~SF~~		1616	MB	~~Exp 8/7/17~~
13	X	12	- 02A	808967	6.5" Hg → 4.9 psi	250mL	1.70	MB		1654	MB	
14	X	13	- 01A	5584	10.8" Hg → 4.9 psi	250mL	2.08	MB		1748	MB	
15												
16												
17												SF 8/8/17

Reviewed

8/8/17
Date

Eurofins Air Toxics, Inc.

MSD-20

Logbook #2863

BFB Verification of 176/174 m/z Ratio: (221376/221764) x100 = 99.37	
Method Name: ~~[illegible]~~ 20170803A/B, 20170803A	

EF 8/9/17

IS/S Std. #: 2850 - 189		Exp. Date: 9/15/17
BCM	~~In: 97835~~	Sm: 97835
1,4-DFB	~~453999~~	453997
CB-d5	~~343223~~	343223

Verified CCV IS vs ICAL mid-point (-40%D): EF 8/9/17

SOP# (Circle one): 6 / (83) (38) / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	X	20170801	BFB Tune check	2850-89	50ng	2.0mL	1.00	EF	8/9/17	0846	EF	174 out, High
2	X	02	BFB Tune check	2850-89	50ng	2.0mL	1.00	EF		0858	EF	
3		03	BFB Tune check	2850-89	50ng	2.0mL	1.00	EF		0939	EF	Lowered Ion Focus 110 (122)
4		04	ccv (50ppbv)	2850-224	10ppbv	50mL	1.00	EF		1000	EF	Exp. 9/27/17 ϕ am
5		05	LCS (50ppbv)	2850-247	10ppbv	50mL	1.00	EF		1057	EF	Exp. 10/7/17 ϕ am
6		06	LCSD (50ppbv)	2850-244	10ppbv	50mL	1.00	EF		1146	EF	Exp 10/7/17
7	X	07	LAB Blank	34394	Humid	250mL	1.00	EF		1226	EF	
8	X	08	LAB Blank	34394	Humid	250mL	1.00	EF		1314	EF	
9		09	LAB Blank	34202	Humid	250mL	1.00	EF		1418	EF	
10		10	17080902-01A	5584	10.8"Hg-4.9psi	250mL	2.08	EF		1511	EF	
11		11	-02A	60967	6.5"Hg-4.9psi	250mL	1.70	EF		1604	EF	
12		12	-04A	34491	7.8"Hg-5.0psi	250mL	1.81	EF		1657	EA	
13	X	13	BA=~~05A~~ dl 8/9/17	34317	8.0"Hg-4.9psi	1	1.81	EA		1741	EA	not needed
14	X	14	-05A	34378	7.8"Hg-5.1psi	1	1.82	EA		1826	EA	IS out
15	X	15	-06A	N2753	9.4"Hg-4.9psi	25mL	19.4	EA		2001	EA	overdil
16	X	16	system blank	NA	Dry	50mL	1.00	EA		2045	EA	
17	✓	17	system blank	↓	↓	250mL	1.00	EA	↓	2100	EA	

Reviewed

8/9/17
Date

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
18	✓	20170818	17090092 - 17A	10312	4.9"Hg-5psi	250mL	1.60	tD	8/9/17	2253	SW	
19	X	19	-05A	34378	7.8"Hg→5.1psi	250mL	1.82	SW	8/9/17	0741	SW	IS out OK, FINAL is NOT used.
20	✓	20	CCV (50ppbv)	2450-224	10psig	50mL	1.00	SW		0824	ES	3 TEMP. OK
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38											ZS	8/9/17
39												

Reviewed

8/9/17
Date

Eurofins Air Toxics, Inc.

MSD-E

Logbook #2885

BFB Verification of 176/174 m/z Ratio:	(460544/479104)x100 = 96.13
Method Name:	E170803A / E17S0803A

IS/S Std. #: 2850-266	Exp. Date: 10/18/17
BCM IS: 123615	SIM: 136415
1,4-DFB 465012	468904
CB-d5 414154	424491

Verified CCV IS vs ICAL mid-point (-40%D): SS

SOP# (Circle one): 6 / (83) / (38) / 91 / 109 / 132

Method (Circle one): (TO-14A/TO-15/TO-17)

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	Verified Vol. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	E080901	BFB Tune check	~~2850~~ 2610-89	50ng	2.0µL	SS	1.00	SS	8/9/17	0831	SS	
2	✓	02	CCV (50ppbv)	2850-284	10ppbv	50mL	SS	1.00	SS		0853	SS	Exp. 11/3/17 Ø ow
3	✓	03	LCS (50ppbv)	2850-280	10ppbv	50mL	SS	1.00	SS		0937	SS	Exp. 11/2/17 Ø ow
4	N/A	04	LCSD (50ppbv)	2850-280	10ppbv	50mL	SS	1.00	SS		N/A	N/A	Exp. 11/2/17
5	✓	05	System Blank	34202	Humid	250mL	SS	1.00	SS		1103	SS	
6	N/A	06	LCS (50ppbv)	2850-280	10ppbv	50mL	SS	1.00	SS		1149	SS	wrong can Exp. 11/2/17
7	✓	07	LCSD (50ppbv)	2850-280	10ppbv	50mL	SS	1.00	SS		1237	SS	Exp. 11/2/17
8	N/A	08	Lab Blank	34202	Humid	250mL	SS	1.00	SS		N/A	N/A	
9	✓	09	Lab Blank	34202	Humid	250mL	SS	1.00	SS		1449	SS	~~[illegible]~~ SS 8/9/17
10	✓	10	1708072-06A	N2753	9.4"Hg 4.9psi	250mL	SS	1.94	SS		1539	SS	
11	✓	11	-08A	13858	9.6"Hg 5.0psi	250mL	SS	1.88	SS		1627	tA	
12	✓	12	-09A	D0388	29.8"Hg -5.1psi	250mL	tA	1.00	tA		1715	tA	J flag hits TB ↓
13	✓	13	-10A	N0446	29.8"Hg -5psi	250mL	tA	1.00	tA		1801	tA	
14	✓	14	1708069-04A	1576	6.3"Hg -5.1psi		tA	1.71	tA		1844	tA	wrong method used
15	✓	15	-13A	N0453	8.4"Hg -5.1psi		tA	1.87	tA		1940	tA	
16		14	-02A	3736	8.6"Hg -5psi		tA	1.37	tA		2025	tA	
17		17	-01A	N2928	11.0"Hg -5psi			2.12	tA				

tA 8/9/17

[signature] Reviewed

8/9/17 Date

Eurofins Air Toxics Inc.

Data file : /var/chem/msd20.i/03aug17.b/20080301.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 03-AUG-2017 09:52
Operator : db Inst ID: msd20.i
Smp Info : 2.0uL 2810-89; BFB; BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msd20.i/03aug17.b/bfb60.m
Meth Date : 23-Feb-2015 08:54 efinn Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
6.813	6.640	0.173	95	177450			100.00- 100.00	88.34
6.813	6.640	0.173	50	31726			8.00- 40.00	17.88
6.813	6.640	0.173	75	90126			30.00- 66.00	50.79
6.813	6.640	0.173	96	11241			5.00- 9.00	6.33
6.813	6.640	0.173	173	2342			0.00- 1.99	1.17
6.813	6.640	0.173	174	200874			50.00- 120.00	113.20
6.813	6.640	0.173	175	15248			4.00- 9.00	7.59
6.813	6.640	0.173	176	196369			93.00- 101.00	97.76
6.813	6.640	0.173	177	12710			5.00- 9.00	6.47

Eurofins Air Toxics Inc.

Data file : /chem/msde.i/03Aug2017.b/e080301.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 03-AUG-2017 11:52
Operator : ef Inst ID: msde.i
Smp Info : 2.0uL #2810-89; BFB; BFB
Misc Info : 50ng
Comment :
Method : /chem/msde.i/03Aug2017.b/bfb60.m
Meth Date : 03-Oct-2014 15:46 ejakob Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
6.063	6.235	-0.172	95	465536			100.00- 100.00	100.00
6.063	6.235	-0.172	50	128024			8.00- 40.00	27.50
6.063	6.235	-0.172	75	248704			30.00- 66.00	53.42
6.063	6.235	-0.172	96	31656			5.00- 9.00	6.80
6.063	6.235	-0.172	173	0			0.00- 1.99	0.00
6.063	6.235	-0.172	174	454272			50.00- 120.00	97.58
6.063	6.235	-0.172	175	33896			4.00- 9.00	7.46
6.063	6.235	-0.172	176	435392			93.00- 101.00	95.84
6.063	6.235	-0.172	177	29160			5.00- 9.00	6.70

Data File: /chem/msde.i/03Aug2017.b/e080301.d

Date : 03-AUG-2017 11:52

Client ID: BFB

Instrument: msde.i

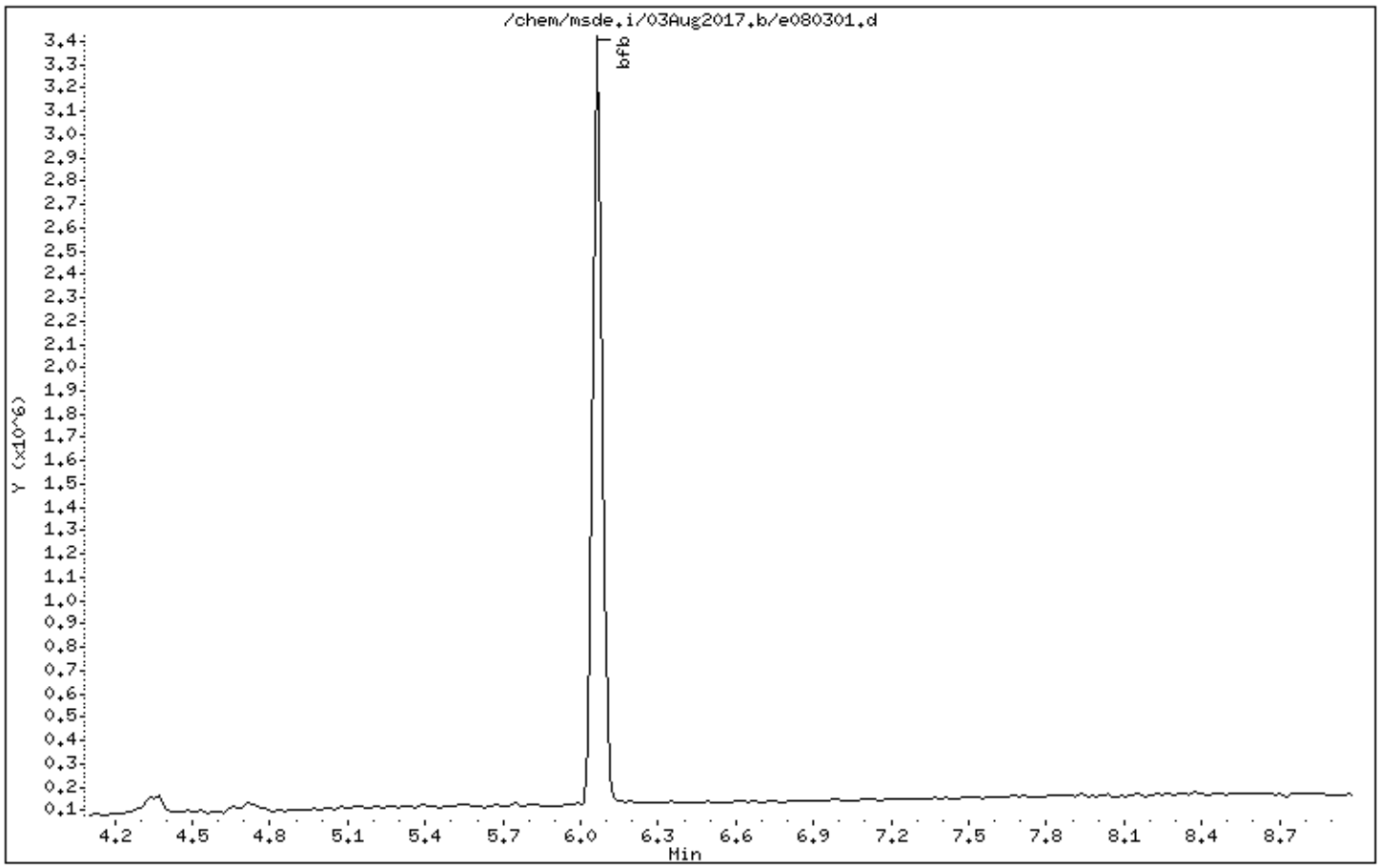
Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0

Operator: ef

Column phase: Rtx-624

Column diameter: 2.00



Data File: /chem/msde.i/03Aug2017.b/e080301.d

Date : 03-AUG-2017 11:52

Client ID: BFB

Instrument: msde.i

Sample Info: 2.0uL #2810-89; BFB; BFB

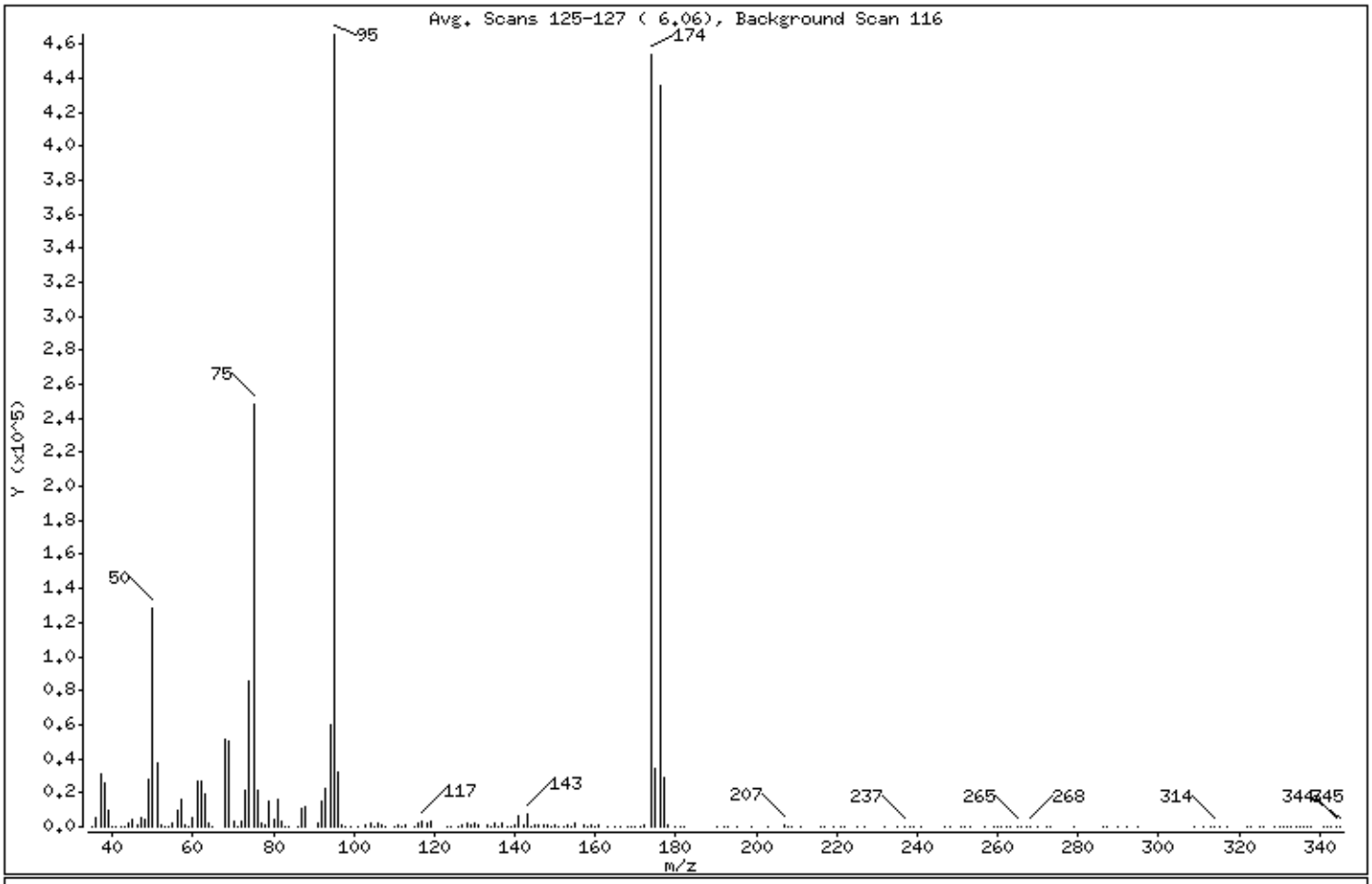
Volume Injected (uL): 1.0

Operator: ef

Column phase: Rtx-624

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	27.50
75	30.00 - 66.00% of mass 95	53.42
96	5.00 - 9.00% of mass 95	6.80
173	Less than 1.99% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	97.58
175	4.00 - 9.00% of mass 174	7.28 (7.46)
176	93.00 - 101.00% of mass 174	93.52 (95.84)
177	5.00 - 9.00% of mass 176	6.26 (6.70)

Date : 03-AUG-2017 11:52

Client ID: BFB Instrument: msde.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Rtx-624 Column diameter: 2.00

Data File: e080301.d
Spectrum: Avg. Scans 125-127 (6.06), Background Scan 116
Location of Maximum: 95.00
Number of points: 200

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	63	91.00	1966	151.00	210	251.00	100
36.00	5543	92.00	14874	152.00	303	252.00	260
37.00	31264	93.00	22344	153.00	605	253.00	416
38.00	26120	94.00	59696	154.00	356	257.00	247
39.00	10098	95.00	465536	155.00	1840	259.00	54
40.00	273	96.00	31656	157.00	1170	260.00	17
41.00	112	97.00	1047	158.00	142	261.00	250
42.00	268	98.00	49	159.00	997	262.00	407
43.00	373	99.00	94	160.00	36	263.00	143
44.00	2584	101.00	127	161.00	1298	265.00	423
45.00	4782	103.00	742	163.00	65	266.00	39
46.00	601	104.00	2374	165.00	507	267.00	284
47.00	5618	105.00	474	166.00	40	268.00	277
48.00	4218	106.00	2320	168.00	213	270.00	155
49.00	27352	107.00	756	169.00	150	272.00	84
50.00	128024	108.00	166	170.00	343	273.00	110
51.00	37592	110.00	418	171.00	313	279.00	36
52.00	1330	111.00	896	172.00	1400	286.00	119
53.00	365	112.00	221	174.00	454272	287.00	34
54.00	182	113.00	567	175.00	33896	290.00	43
55.00	1642	115.00	438	176.00	435392	292.00	171
56.00	9120	116.00	2158	177.00	29160	295.00	35
57.00	15682	117.00	3496	178.00	866	309.00	53
58.00	572	118.00	2056	180.00	236	311.00	38
59.00	268	119.00	2992	181.00	79	313.00	54
60.00	5507	123.00	344	182.00	50	314.00	125
61.00	26832	124.00	437	190.00	163	315.00	66
62.00	26832	126.00	250	192.00	67	317.00	40
63.00	19648	127.00	638	193.00	143	322.00	121
64.00	1912	128.00	2107	195.00	502	323.00	101
65.00	419	129.00	1242	199.00	55	325.00	24
68.00	51272	130.00	2160	203.00	17	326.00	200
69.00	50832	131.00	880	207.00	695	329.00	290
70.00	3446	133.00	693	208.00	507	330.00	141
71.00	286	134.00	346	209.00	510	331.00	360

Date : 03-AUG-2017 11:52

Client ID: BFB Instrument: msde.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Rtx-624 Column diameter: 2.00

Data File: e080301.d
Spectrum: Avg. Scans 125-127 (6.06), Background Scan 116
Location of Maximum: 95.00
Number of points: 200

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	2893	135.00	1733	211.00	327	332.00	104
73.00	21432	136.00	134	216.00	116	333.00	49
74.00	85592	137.00	1654	217.00	40	334.00	191
75.00	248704	138.00	150	219.00	104	335.00	311
76.00	21096	139.00	419	221.00	95	336.00	14
77.00	1908	140.00	708	222.00	54	337.00	122
78.00	1503	141.00	6692	225.00	96	338.00	85
79.00	14820	142.00	1026	227.00	35	341.00	294
80.00	3984	143.00	7330	232.00	150	342.00	230
81.00	15690	144.00	438	235.00	172	343.00	119
82.00	3083	145.00	706	237.00	271	344.00	366
83.00	518	146.00	1015	238.00	78	345.00	24
84.00	228	147.00	1056	239.00	190		
86.00	243	148.00	1341	241.00	41		
87.00	11187	149.00	499	247.00	16		
88.00	11962	150.00	730	248.00	182		

Eurofins Air Toxics Inc.

Data file : /var/chem/msd20.i/07aug17.b/20080701.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 07-AUG-2017 08:35
Operator : ef Inst ID: msd20.i
Smp Info : 2.0uL 2810-89; BFB; BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msd20.i/07aug17.b/bfb60.m
Meth Date : 23-Feb-2015 08:54 efinn Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
6.820	6.640	0.180	95	198186			100.00- 100.00	91.68
6.820	6.640	0.180	50	35219			8.00- 40.00	17.77
6.820	6.640	0.180	75	95949			30.00- 66.00	48.41
6.820	6.640	0.180	96	13152			5.00- 9.00	6.64
6.820	6.640	0.180	173	2391			0.00- 1.99	1.11
6.820	6.640	0.180	174	216170			50.00- 120.00	109.07
6.820	6.640	0.180	175	16168			4.00- 9.00	7.48
6.820	6.640	0.180	176	209176			93.00- 101.00	96.76
6.820	6.640	0.180	177	13775			5.00- 9.00	6.59

Data File: /chem/msd20.i/07aug17.b/20080701.d

Date : 07-AUG-2017 08:35

Client ID: BFB

Instrument: msd20.i

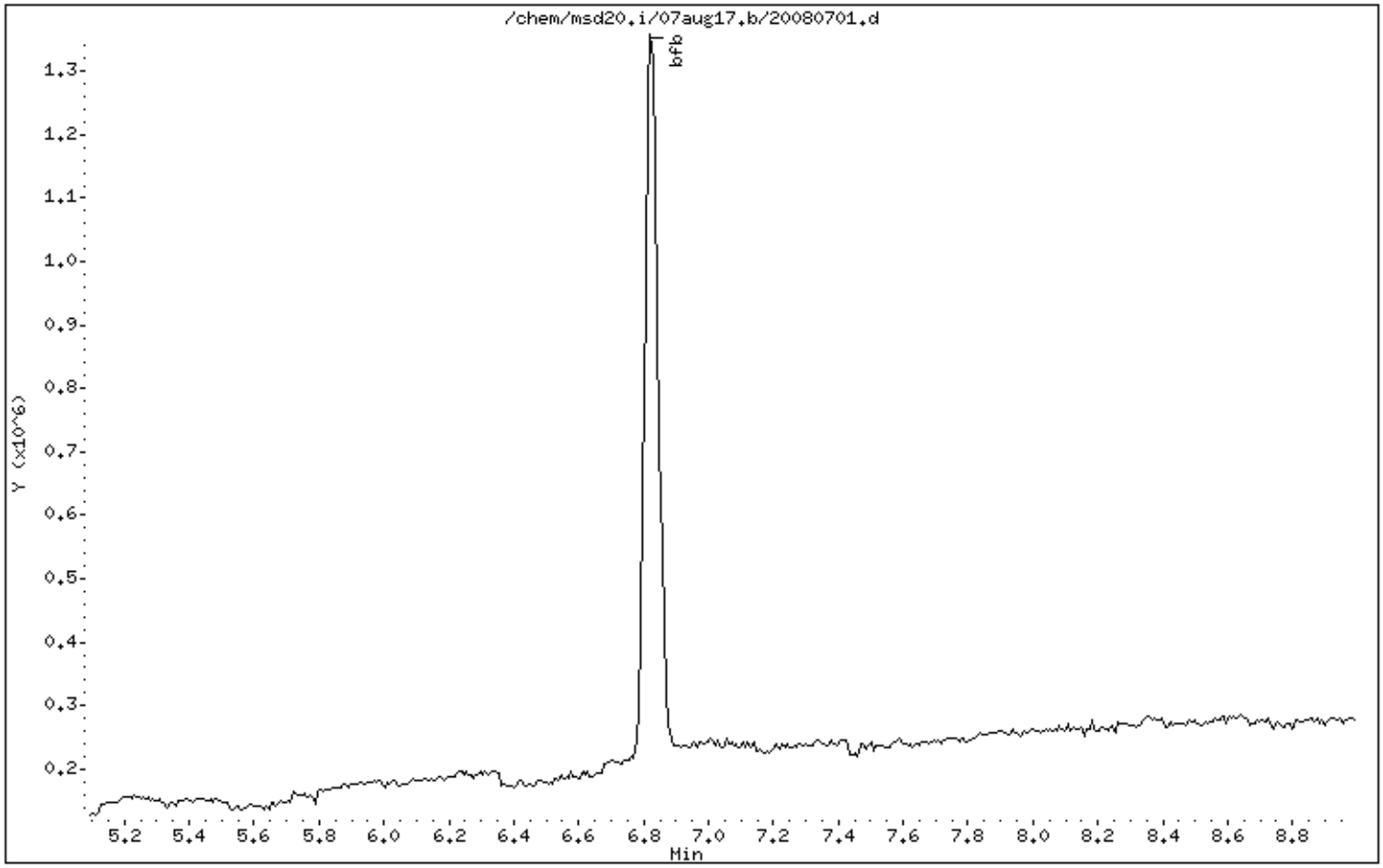
Sample Info: 2.0uL 2810-89; BFB; BFB

Volume Injected (uL): 1.0

Operator: ef

Column phase:

Column diameter: 2.00



Data File: /chem/msd20.i/07aug17.b/20080701.d

Date : 07-AUG-2017 08:35

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL 2810-89; BFB; BFB

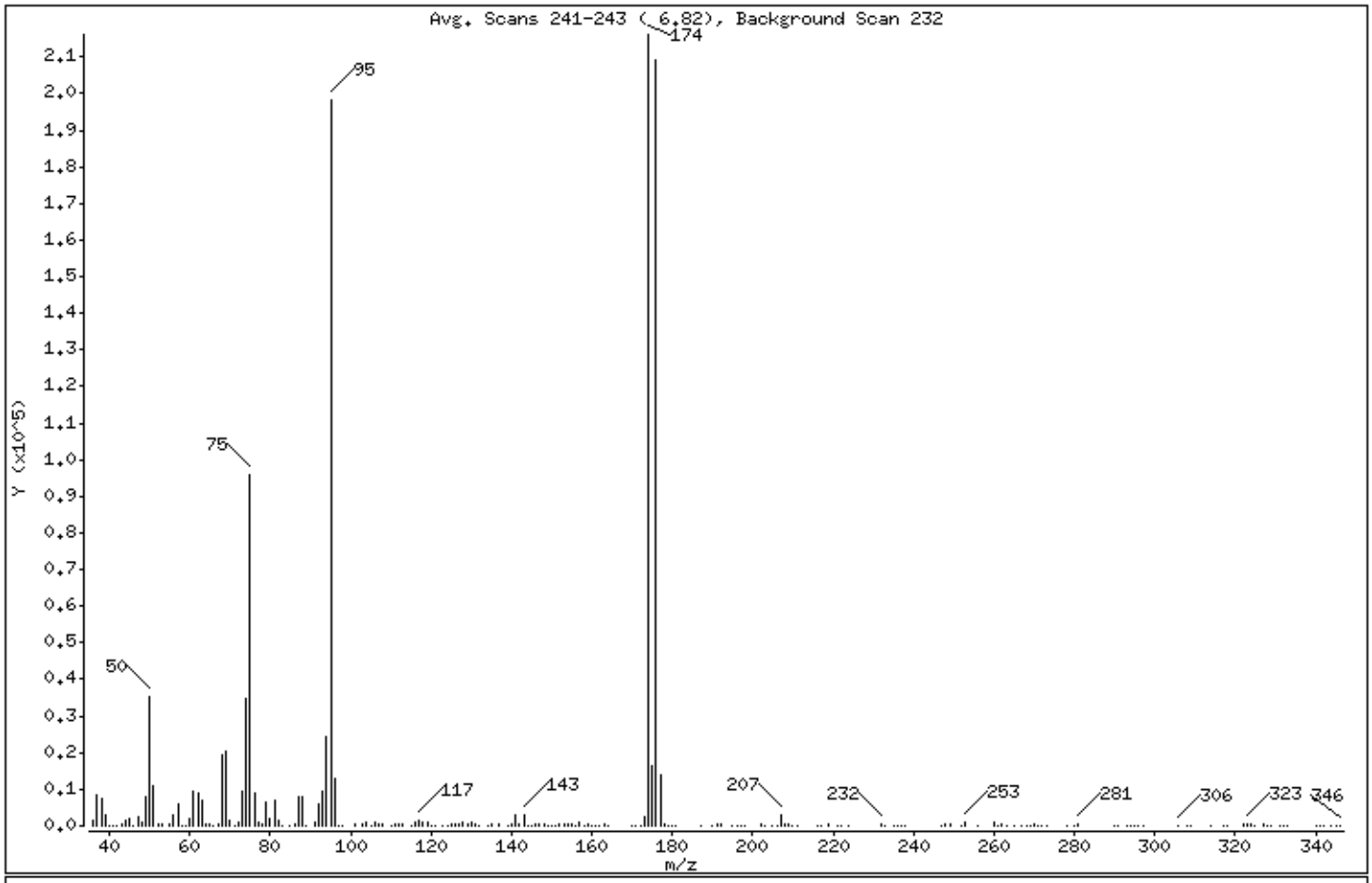
Volume Injected (uL): 1.0

Operator: ef

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	17.77
75	30.00 - 66.00% of mass 95	48.41
96	5.00 - 9.00% of mass 95	6.64
173	Less than 1.99% of mass 174	1.21 (1.11)
174	50.00 - 120.00% of mass 95	109.07
175	4.00 - 9.00% of mass 174	8.16 (7.48)
176	93.00 - 101.00% of mass 174	105.55 (96.76)
177	5.00 - 9.00% of mass 176	6.95 (6.59)

Date : 07-AUG-2017 08:35

Client ID: BFB Instrument: msd20.i

Sample Info: 2.0uL 2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 20080701.d
Spectrum: Avg. Scans 241-243 (6.82), Background Scan 232
Location of Maximum: 174.00
Number of points: 208

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1726	92.00	6210	154.00	254	248.00	261
37.00	8517	93.00	9432	155.00	651	249.00	457
38.00	7634	94.00	24496	156.00	18	252.00	129
39.00	2981	95.00	198144	157.00	753	253.00	1071
40.00	166	96.00	13152	158.00	101	256.00	97
41.00	52	97.00	12	159.00	456	260.00	765
42.00	64	98.00	77	160.00	82	261.00	128
43.00	342	101.00	264	161.00	220	262.00	372
44.00	1360	103.00	624	162.00	20	263.00	229
45.00	1743	104.00	788	163.00	566	265.00	76
46.00	103	105.00	184	164.00	137	267.00	83
47.00	2365	106.00	1053	170.00	119	268.00	221
48.00	1112	107.00	253	171.00	197	269.00	61
49.00	7734	108.00	377	172.00	122	270.00	297
50.00	35216	110.00	54	173.00	2391	271.00	192
51.00	10783	111.00	364	174.00	216128	272.00	123
52.00	412	112.00	317	175.00	16168	273.00	121
53.00	359	113.00	255	176.00	209152	278.00	73
55.00	530	115.00	12	177.00	13775	280.00	52
56.00	2942	116.00	838	178.00	399	281.00	731
57.00	5746	117.00	1478	179.00	1	290.00	60
58.00	167	118.00	1007	180.00	91	291.00	67
59.00	189	119.00	1076	181.00	176	293.00	121
60.00	1970	120.00	93	187.00	33	294.00	52
61.00	9641	121.00	99	190.00	23	295.00	19
62.00	9163	123.00	10	191.00	475	296.00	67
63.00	6768	124.00	81	192.00	352	297.00	59
64.00	692	125.00	280	195.00	149	306.00	173
65.00	251	126.00	307	196.00	45	308.00	109
66.00	78	127.00	289	197.00	42	309.00	110
67.00	390	128.00	773	198.00	52	314.00	80
68.00	19488	129.00	372	202.00	299	317.00	7
69.00	20544	130.00	1088	203.00	7	318.00	74
70.00	1545	131.00	280	205.00	151	322.00	310
71.00	5	132.00	46	206.00	201	323.00	389

Date : 07-AUG-2017 08:35

Client ID: BFB Instrument: msd20.i

Sample Info: 2.0uL 2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 20080701.d
Spectrum: Avg. Scans 241-243 (6.82), Background Scan 232
Location of Maximum: 174.00
Number of points: 208

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	1140	134.00	16	207.00	3229	324.00	277
73.00	9610	135.00	628	208.00	590	325.00	55
74.00	34600	137.00	453	209.00	501	327.00	382
75.00	95944	139.00	26	210.00	108	328.00	119
76.00	8784	140.00	388	211.00	52	329.00	92
77.00	1202	141.00	2823	216.00	65	331.00	166
78.00	649	142.00	406	217.00	114	332.00	196
79.00	6417	143.00	2834	219.00	355	333.00	64
80.00	2064	144.00	135	221.00	190	340.00	55
81.00	6906	145.00	190	222.00	57	341.00	55
82.00	1495	146.00	309	224.00	52	342.00	12
83.00	154	147.00	254	232.00	364	344.00	174
85.00	35	148.00	687	233.00	106	345.00	202
86.00	272	149.00	220	235.00	29	346.00	133
87.00	7901	150.00	157	236.00	56		
88.00	8188	151.00	29	237.00	183		
89.00	53	152.00	350	238.00	60		
91.00	1111	153.00	337	247.00	11		

Eurofins Air Toxics Inc.

Data file : /var/chem/msd20.i/08aug17.b/20080803.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 08-AUG-2017 09:39
Operator : ef Inst ID: msd20.i
Smp Info : 2.0uL 2810-89; BFB; BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msd20.i/08aug17.b/bfb60.m
Meth Date : 23-Feb-2015 08:54 efinn Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
6.820	6.640	0.180	95	187711			100.00- 100.00	84.26
6.820	6.640	0.180	50	30530			8.00- 40.00	16.26
6.820	6.640	0.180	75	88086			30.00- 66.00	46.93
6.820	6.640	0.180	96	12685			5.00- 9.00	6.76
6.820	6.640	0.180	173	1585			0.00- 1.99	0.71
6.820	6.640	0.180	174	222784			50.00- 120.00	118.68
6.820	6.640	0.180	175	16500			4.00- 9.00	7.41
6.820	6.640	0.180	176	221435			93.00- 101.00	99.39
6.820	6.640	0.180	177	14975			5.00- 9.00	6.76

Data File: /chem/msd20.i/08aug17.b/20080803.d

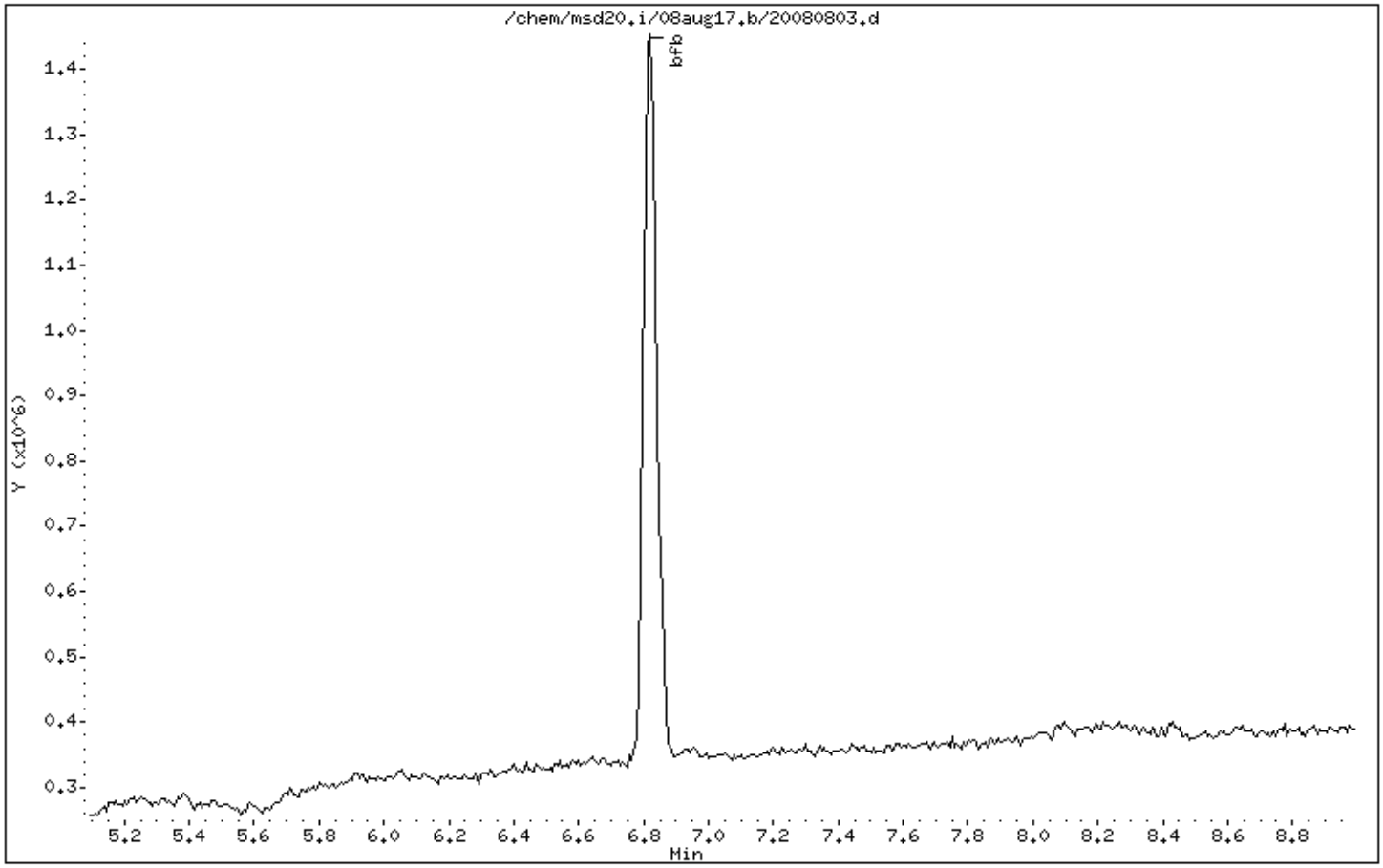
Date : 08-AUG-2017 09:39

Client ID: BFB Instrument: msd20.i

Sample Info: 2.0uL 2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00



Data File: /chem/msd20.i/08aug17.b/20080803.d

Date : 08-AUG-2017 09:39

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL 2810-89; BFB; BFB

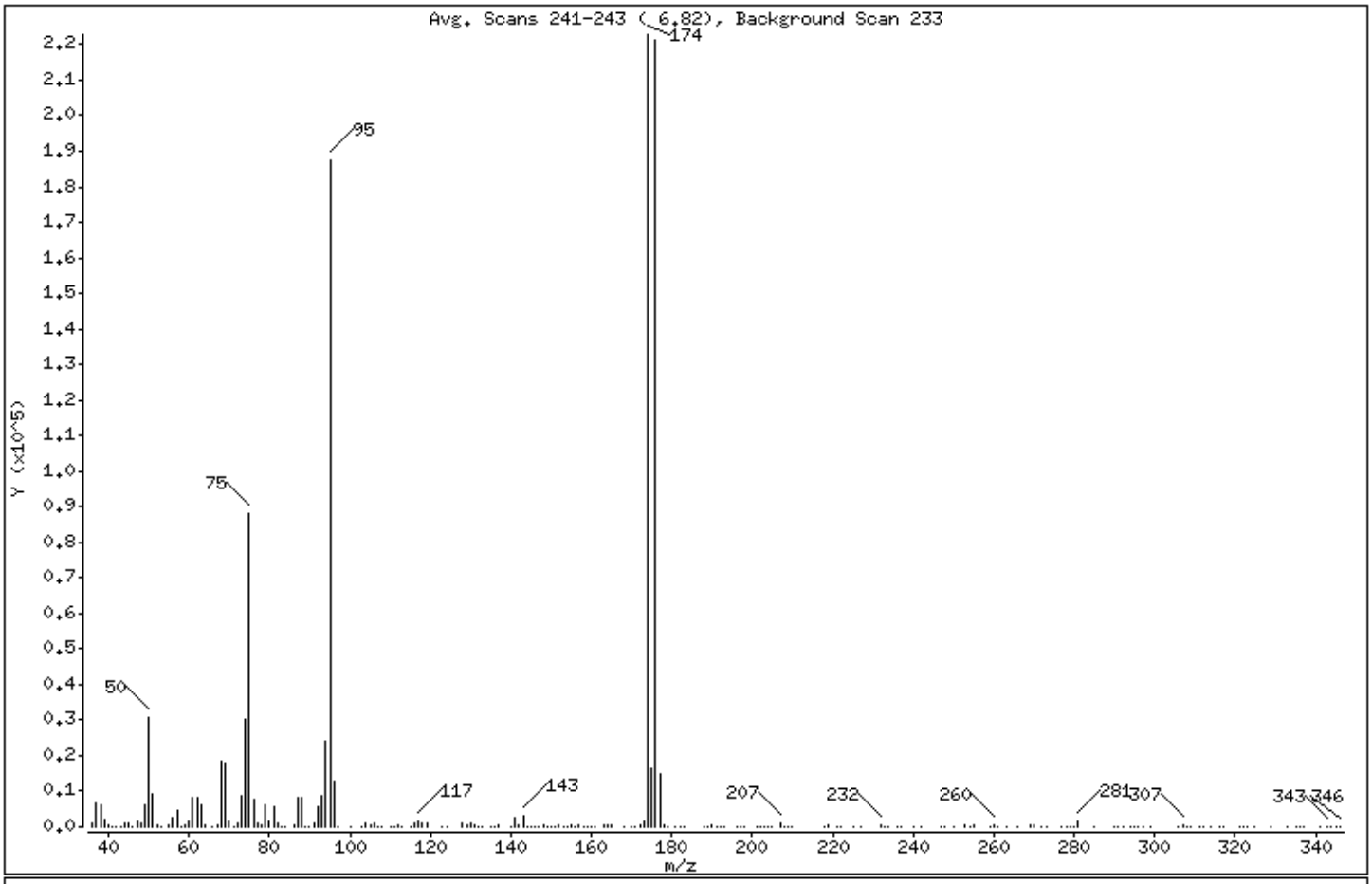
Volume Injected (uL): 1.0

Operator: ef

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	16.26
75	30.00 - 66.00% of mass 95	46.93
96	5.00 - 9.00% of mass 95	6.76
173	Less than 1.99% of mass 174	0.84 (0.71)
174	50.00 - 120.00% of mass 95	118.68
175	4.00 - 9.00% of mass 174	8.79 (7.41)
176	93.00 - 101.00% of mass 174	117.97 (99.39)
177	5.00 - 9.00% of mass 176	7.98 (6.76)

Date : 08-AUG-2017 09:39

Client ID: BFB Instrument: msd20.i

Sample Info: 2.0uL 2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 20080803.d
Spectrum: Avg. Scans 241-243 (6.82), Background Scan 233
Location of Maximum: 174.00
Number of points: 208

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1228	92.00	5497	160.00	172	253.00	334
37.00	6682	93.00	8466	161.00	108	254.00	35
38.00	6365	94.00	23992	163.00	382	255.00	289
39.00	2053	95.00	187648	164.00	341	259.00	84
40.00	343	96.00	12685	165.00	285	260.00	515
41.00	138	97.00	16	168.00	52	261.00	36
42.00	17	100.00	56	170.00	64	263.00	1
43.00	162	103.00	97	171.00	80	266.00	102
44.00	1017	104.00	775	172.00	293	269.00	568
45.00	1039	105.00	364	173.00	1585	270.00	521
46.00	205	106.00	876	174.00	222784	272.00	89
47.00	1754	107.00	254	175.00	16496	273.00	44
48.00	986	108.00	25	176.00	221376	277.00	198
49.00	6285	110.00	104	177.00	14975	278.00	105
50.00	30528	111.00	238	178.00	389	279.00	148
51.00	9414	112.00	257	179.00	256	280.00	160
52.00	479	113.00	70	181.00	135	281.00	1553
53.00	196	115.00	192	182.00	59	285.00	52
55.00	405	116.00	936	183.00	108	290.00	2
56.00	2699	117.00	1314	188.00	114	291.00	123
57.00	4647	118.00	984	189.00	157	292.00	115
58.00	46	119.00	821	190.00	409	294.00	80
59.00	274	123.00	112	191.00	41	295.00	67
60.00	1303	124.00	246	192.00	106	296.00	10
61.00	8063	128.00	1171	193.00	208	297.00	70
62.00	8337	129.00	612	196.00	222	299.00	16
63.00	6009	130.00	1021	197.00	113	306.00	196
64.00	705	131.00	505	198.00	90	307.00	317
66.00	178	132.00	140	201.00	52	308.00	44
67.00	284	133.00	132	202.00	53	309.00	23
68.00	18272	135.00	233	203.00	101	311.00	13
69.00	18120	136.00	80	204.00	148	312.00	145
70.00	1526	137.00	424	205.00	149	314.00	104
71.00	20	140.00	102	207.00	1154	316.00	163
72.00	1022	141.00	2312	208.00	251	317.00	7

Date : 08-AUG-2017 09:39

Client ID: BFB Instrument: msd20.i

Sample Info: 2.0uL 2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 20080803.d
Spectrum: Avg. Scans 241-243 (6.82), Background Scan 233
Location of Maximum: 174.00
Number of points: 208

m/z	Y	m/z	Y	m/z	Y	m/z	Y
73.00	8808	142.00	406	209.00	166	321.00	59
74.00	30176	143.00	2835	210.00	12	322.00	159
75.00	88080	144.00	136	218.00	141	323.00	204
76.00	7516	145.00	140	219.00	372	325.00	213
77.00	1109	146.00	243	221.00	1	329.00	45
78.00	671	147.00	235	222.00	22	333.00	106
79.00	6233	148.00	517	225.00	42	335.00	91
80.00	1669	149.00	144	227.00	86	336.00	43
81.00	5596	150.00	104	232.00	448	337.00	19
82.00	1016	151.00	124	233.00	137	341.00	45
83.00	217	152.00	332	234.00	23	343.00	253
84.00	126	153.00	246	236.00	116	344.00	222
86.00	351	154.00	93	237.00	84	345.00	222
87.00	7960	155.00	729	240.00	25	346.00	123
88.00	8386	156.00	80	242.00	56		
89.00	93	157.00	619	247.00	182		
90.00	47	158.00	23	248.00	24		
91.00	820	159.00	172	250.00	77		

Eurofins Air Toxics Inc.

Data file : /chem/msde.i/09Aug2017.b/e080901.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 09-AUG-2017 08:31
Operator : ef Inst ID: msde.i
Smp Info : 2.0uL #2810-89; BFB; BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msde.i/09Aug2017.b/bfb60.m
Meth Date : 09-Aug-2017 08:41 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
6.063	6.235	-0.172	95	483865			100.00- 100.00	100.00
6.063	6.235	-0.172	50	128644			8.00- 40.00	26.59
6.063	6.235	-0.172	75	257425			30.00- 66.00	53.20
6.063	6.235	-0.172	96	31996			5.00- 9.00	6.61
6.063	6.235	-0.172	173	0			0.00- 1.99	0.00
6.063	6.235	-0.172	174	479104			50.00- 120.00	99.02
6.063	6.235	-0.172	175	36477			4.00- 9.00	7.61
6.063	6.235	-0.172	176	460593			93.00- 101.00	96.14
6.063	6.235	-0.172	177	30630			5.00- 9.00	6.65

Data File: /chem/msde.i/09Aug2017.b/e080901.d

Date : 09-AUG-2017 08:31

Client ID: BFB

Instrument: msde.i

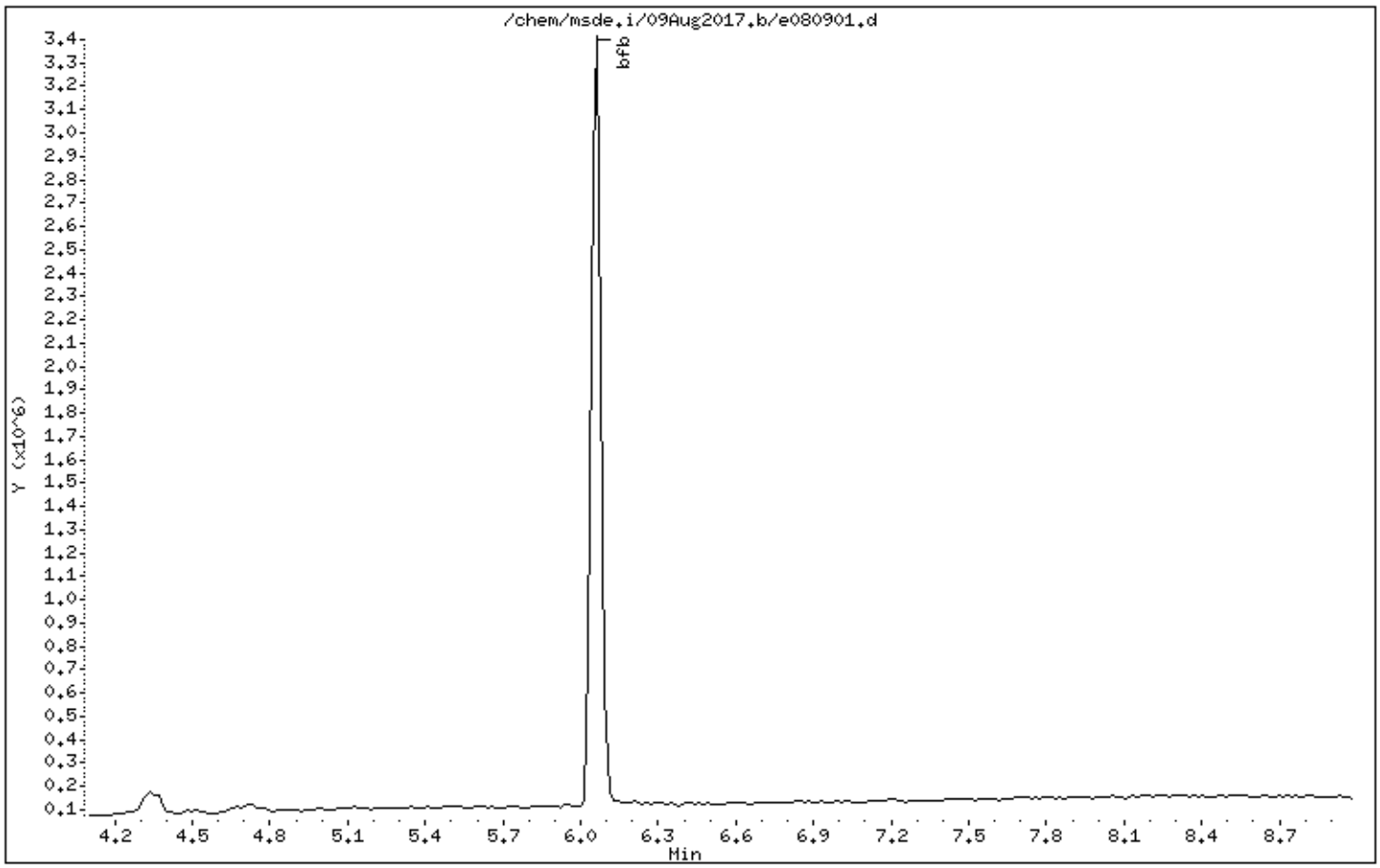
Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0

Operator: ef

Column phase: Rtx-624

Column diameter: 2.00



Data File: /chem/msde.i/09Aug2017.b/e080901.d

Date : 09-AUG-2017 08:31

Client ID: BFB

Instrument: msde.i

Sample Info: 2.0uL #2810-89; BFB; BFB

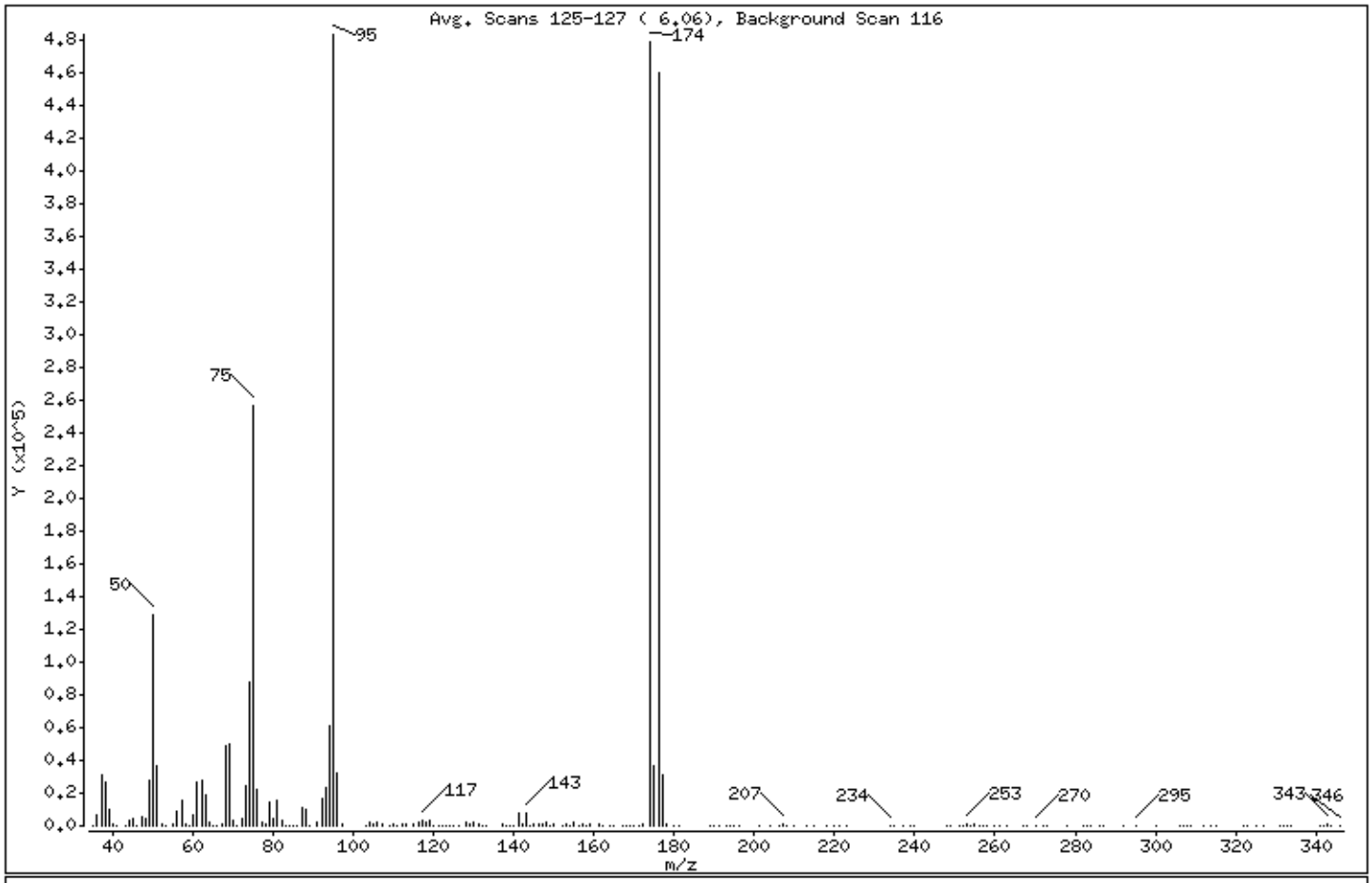
Volume Injected (uL): 1.0

Operator: ef

Column phase: Rtx-624

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	26.59
75	30.00 - 66.00% of mass 95	53.20
96	5.00 - 9.00% of mass 95	6.61
173	Less than 1.99% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	99.02
175	4.00 - 9.00% of mass 174	7.54 (7.61)
176	93.00 - 101.00% of mass 174	95.19 (96.14)
177	5.00 - 9.00% of mass 176	6.33 (6.65)

Date : 09-AUG-2017 08:31

Client ID: BFB Instrument: msde.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Rtx-624 Column diameter: 2.00

Data File: e080901.d
Spectrum: Avg. Scans 125-127 (6.06), Background Scan 116
Location of Maximum: 95.00
Number of points: 198

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	162	87.00	11460	149.00	462	240.00	35
36.00	6602	88.00	10297	150.00	790	248.00	136
37.00	31192	89.00	93	152.00	203	249.00	265
38.00	26616	91.00	2103	153.00	778	251.00	140
39.00	10543	92.00	16616	154.00	334	252.00	142
40.00	1147	93.00	23584	155.00	2017	253.00	1003
41.00	264	94.00	61424	156.00	299	254.00	55
43.00	435	95.00	483840	157.00	1578	255.00	637
44.00	3409	96.00	31992	158.00	258	256.00	103
45.00	4815	97.00	1031	159.00	903	257.00	150
46.00	382	103.00	328	161.00	886	258.00	48
47.00	5344	104.00	2442	162.00	192	260.00	19
48.00	3927	105.00	852	164.00	106	261.00	369
49.00	27584	106.00	2104	165.00	88	263.00	175
50.00	128640	107.00	590	167.00	230	267.00	166
51.00	37208	109.00	242	168.00	84	268.00	177
52.00	1350	110.00	606	169.00	40	270.00	521
53.00	148	111.00	412	170.00	464	272.00	138
55.00	1356	112.00	712	171.00	367	273.00	68
56.00	9234	113.00	668	172.00	1272	278.00	46
57.00	16047	115.00	906	174.00	479104	282.00	285
58.00	900	116.00	2097	175.00	36472	283.00	43
59.00	117	117.00	3800	176.00	460544	284.00	275
60.00	6395	118.00	2347	177.00	30624	286.00	39
61.00	26816	119.00	3308	178.00	832	287.00	98
62.00	28288	120.00	157	180.00	11	292.00	61
63.00	19144	121.00	184	181.00	178	295.00	222
64.00	2260	122.00	219	189.00	37	300.00	33
65.00	496	123.00	469	190.00	36	306.00	134
66.00	120	124.00	342	191.00	347	307.00	64
67.00	1612	125.00	53	193.00	132	308.00	67
68.00	49360	126.00	155	194.00	164	309.00	109
69.00	50288	128.00	2239	195.00	8	312.00	77
70.00	3499	129.00	1162	196.00	196	314.00	130
71.00	324	130.00	2275	201.00	38	315.00	127

Data File: /chem/msde.i/09Aug2017.b/e080901.d

Date : 09-AUG-2017 08:31

Client ID: BFB

Instrument: msde.i

Sample Info: 2.0uL #2810-89; BFB; BFB

Volume Injected (uL): 1.0

Operator: ef

Column phase: Rtx-624

Column diameter: 2.00

Data File: e080901.d

Spectrum: Avg. Scans 125-127 (6.06), Background Scan 116

Location of Maximum: 95.00

Number of points: 198

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	4241	131.00	979	204.00	124	322.00	480
73.00	24352	132.00	526	206.00	209	323.00	133
74.00	88016	133.00	62	207.00	832	325.00	121
75.00	257408	137.00	1613	208.00	491	327.00	365
76.00	22072	138.00	289	210.00	83	331.00	106
77.00	2693	139.00	190	213.00	76	332.00	68
78.00	570	140.00	437	215.00	40	333.00	62
79.00	14439	141.00	7720	218.00	196	334.00	82
80.00	3955	142.00	1022	220.00	89	341.00	201
81.00	15254	143.00	7940	221.00	15	342.00	85
82.00	2892	144.00	409	223.00	45	343.00	657
83.00	245	145.00	759	234.00	486	344.00	240
84.00	34	146.00	1244	235.00	94	346.00	56
85.00	106	147.00	1454	237.00	70		
86.00	161	148.00	1782	239.00	186		

Shipping/ Receiving Documents

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct _____ WO # _____ Sample #s _____ _____

COC#: 3

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: Multistate Environmental Trust, LLC

Project Manager: Brian Wice-CH2M HILL P.O.#

Sampler: Shirley Steinmacher, Katie Rabe PN 690813.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection	Check all analyses requested: TO-15 TOTAL SCAN	TO-15 SIM BTEXN	ASTM D 1946				Canister Vacuum/Pressure: Initial	Final	Lab Use Only: Receipt	Final (psig)	Turn Around Time: Normal / Rush! Specify: 72 H TAT FORM 1
01A	IAU-012_0817	1145	8/1/17 8/3/17	1837-1750		X					28.66	9.78			Remarks:
02A	CS-140_0817	6L0387		1821-1719							28.35	5.66			
03A	CS-040_0817	34317		1821-1719							28.55	7.00			
04A	IA-040_0817	02003		1808-1725							28.37	6.83			
05A	OA-040_0817	01921		1818-1722							28.64	6.83			
06A	OA-012_0817	6L1626		1852-1754							28.57	8.50			
07A	IAD-012_0817	6L0693		1843-1745							28.53	3.46			
08A	IAD-112_0817	00894	8/2/17 8/3/17	1843-1745		X					28.33	7.43			

Relinquished by:	Date	Time	Received by:	Date	Time	
	8/4/17	1830	FEDEX	8/4/17	1830	Level IV Data Required? Yes / No (Circle One)
Relinquished by:	Date	Time	Received by:	Date	Time	Specific EDD format Required? Yes / No (Circle One)
				08/5/17	0947	
Relinquished by:	Date	Time	Received by:	Date	Time	
						708094

Lab Use Only

Shipper Name:

Custody Seals Intact? Yes No (None) Temp: NA Note: primary TCL VOC BETXN Ile

Sample Condition Upon Receipt: Good

1708092

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct _____ WO # _____ Sample #s: _____

COC#: 4

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and International laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. C.O.T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct: _____

Project Name: Multistate Environmental Trust EIC

Project Manager: Brian Wied-CH2M HILL P.O.#

Sampler: Shirley Steinmetzger, Katie Rabe PN 690213.01.01.01

Site Name: Former Tronox Facility-Springfield, Mo

Lab ID	Sample Identification	Can #	Date of Collection	Time of Collection	Check all analyses requested: TO-15 TOTAL SCAN	TO-15 SIM BTEX/N	ASTM D 1946				Canister Vacuum/Pressure: Initial	Final	Lab Use Only: Receipt	Final (psig)	Turn Around Time: Normal / Rush! Specify: 72 hr TAT FORM 1	Remarks
01A	BATCH TO SIM BLANK 1	6L0738	8/3/17	--		X					28.60	--				*
02A	BATCH ID SIM BLANK 2	6L0079	8/3/17	--		X					28.62	--				**

	Date	Time	Received by:	Date	Time	
Relinquished by:	8/4/17	1830	FED EX	8/4/17	1830	Level IV Data Required? Yes / No (Circle One)
Relinquished by:	Date	Time	Received by: GATL	08/05/17	0947	Specific EDD format Required? Yes / No (Circle One)
Relinquished by:	Date	Time	Received by:	Date	Time	1708097

Lab Use Only

Shipper Name:

Custody Seal's Intact? Yes No None Temp: N/A Note: primary TOL VOC BCTXN, He

Sample Condition Upon Receipt: Good. 1708092

Eurofins Air Toxics, Inc. 180 Blue Ravine Rd. Suite B Folsom, CA 95630 (916) 985-1000 Fax: (916) 351-8279

* BLANK ASSOCIATED WITH CLEANING BATCH # 03BC072420 17 and SAMPLE ID TAN-004_0817

** BLANK ASSOCIATED WITH CLEANING BATCH # 03BA072420 17 and SAMPLE IDs 04-004_0817 and TAD-004_0817

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SAMPLE RECEIPT SUMMARY

WORKORDER 1708092

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep: N/A

Date Promised: 08/10/17 12:00 pm
Date Completed: 8/10/17
Date Received: 8/5/17
PO#: Springfield, MO
Project#: 690813.01.01.01 Former Tronox-Springfield, Mo
Total $: $ 3,194.00
Logged By: AB

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	IAU-012_0817	Modified TO-15 SIM	8/3/2017	10.8 "Hg	$180.00
02A	CS-140_0817	Modified TO-15 SIM	8/3/2017	6.5 "Hg	$180.00
03A	CS-040_0817	Modified TO-15 SIM	8/3/2017	8.0 "Hg	$180.00
04A	IA-040_0817	Modified TO-15 SIM	8/3/2017	7.8 "Hg	$180.00
05A	OA-040_0817	Modified TO-15 SIM	8/3/2017	7.8 "Hg	$180.00
06A	OA-012_0817	Modified TO-15 SIM	8/3/2017	9.4 "Hg	$180.00
07A	IAD-012_0817	Modified TO-15 SIM	8/3/2017	4.9 "Hg	$180.00
08A	IAD-112_0817	Modified TO-15 SIM	8/3/2017	8.6 "Hg	$180.00
09A	BATCH TO SIM BLANK 1	Modified TO-15 SIM	8/3/2017	29.8 "Hg	$180.00
10A	BATCH TO SIM BLANK 2	Modified TO-15 SIM	8/3/2017	29.8 "Hg	$180.00
11A	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00
11B	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00
11C	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00
12A	CCV	Modified TO-15 SIM	NA	NA	$0.00
12B	CCV	Modified TO-15 SIM	NA	NA	$0.00
12C	CCV	Modified TO-15 SIM	NA	NA	$0.00
13A	LCS	Modified TO-15 SIM	NA	NA	$0.00
13AA	LCSD	Modified TO-15 SIM	NA	NA	$0.00
13B	LCS	Modified TO-15 SIM	NA	NA	$0.00
13BB	LCSD	Modified TO-15 SIM	NA	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox Facility/22104

BILL TO: Accounts Payable/Atlanta
CH2M Hill
6600 Peachtree Dunwoody Road
Building 400, Suite 600
Atlanta, GA 30328

Analysis Code: pptv

TERMS:

Reporting Method: Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

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SAMPLE RECEIPT SUMMARY Continued

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep: N/A

Date Promised: 08/10/17 12:00 pm
Date Completed: 8/10/17
Date Received: 8/5/17
PO#: Springfield, MO
Project#: 690813.01.01.01 Former Tronox-Springfield, Mo
Total $: $ 3,194.00
Logged By: AB

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
13C	LCS	Modified TO-15 SIM	NA	NA	$0.00
13CC	LCSD	Modified TO-15 SIM	NA	NA	$0.00

Misc. Charges	6 Liter Summa Canister (4) @ $30.00 each., Shipment 114263	$120.00
	6 Liter Summa Canister (SIM Certified) (11) @ $60.00 each., Shipment 11	$660.00
	Flow Controller-24 hr (6) @ $30.00 each., Shipment 114263	$180.00
	Flow Controller-24 hr (SIM Certified) (9) @ $30.00 each., Shipment 11426	$270.00
	Client Specific EDD (10) @ $5.00 each.	$50.00
	eCVP (10) @ $5.00 each.	$50.00
	Duplicate Sampling T (SIM Certified) (8) @ $8.00 each.	$64.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox Facility/22104

BILL TO: Accounts Payable/Atlanta
CH2M Hill
6600 Peachtree Dunwoody Road
Building 400, Suite 600
Atlanta, GA 30328

Analysis Code: pptv

TERMS:

Reporting Method: Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

Sample Discrepancy Report

Identification

Initiated By: AB **Project ID:**22104 **PM**: BSW **Date:** 8/5/2017 **Discrepancy Type:** ☒ **1.** ☐ **2.** ☐ **3.**

Workorder(s) affected:1708092 **Sample(s) affected:** 06A

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube) was received broken, however sample was intact.
1.2. ☐ No brass cap on canister.
1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.
1.4. ☐ Sampling year not documented on COC but noted on sample tag.
1.5. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C but less than 6°C.

Notify Lab for further determination:

1.6. ☐ Tedlar bag received with minimal volume.

Narration Required in Lab Narrative and Sample Confirmation:

1.7. ☐ COC was not filled out in ink.
1.8. ☐ COC improperly relinquished / received.
☐ Signature missing ☐ date missing ☐ time missing.
1.9. ☐ Sample ID on tags do not match the COC.
1.10. ☒ Can numbers do not match the COC.
1.11. ☐ Sampling date discrepancy.
1.12. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).
1.13. ☐ ID-none on the sample Tag/Blank.
1.14. ☐ Other (describe below).

Initials: _____ Date: _____

Describe the Discrepancy: 1.10 - 06A

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.
2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.
2.3. ☐ Incorrect sampling media / container for analysis requested.
2.4. ☐ Number of samples on the COC does not match the number of samples that were received.
2.5. ☐ Samples were received expired.
2.6. ☐ Sampling date is not documented for ☐ *some* / ☐ *any* samples (check one).
2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.
2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.
2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.
2.10. ☐ Sorbent samples -sampling volume was not provided.
2.11. ☐ Flow controller used – canister samples received at ambient or under pressure.
2.12. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
☐ Canister valve was open.
☐ Brass nut was loose/not present.
☐ Sample can be analyzed.
☐ Sample cannot be analyzed.
2.13. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. and the final recorded vac. on the COC.
☐ Canister passed leak check in lab <2psi, no evidence sample was compromised.
☐ Canister failed lab leak check, canister found to be leaking. Canister sample compromised.
2.14. ☐ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).
2.15. ☐ Canister Trip Blank received at low vacuum (<25"Hg).
2.16. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).
2.17. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐

Describe the Discrepancy: _____

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ Sample loss due to instrument malfunction / broken glassware.

3.6. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.7. ☐ Reporting Limit was raised.

3.8. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.9. ☐ Sample Trip Blank has a reportable level(s) of target compound(s) present. Re-analysis confirmed the initial result.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

_____

_____

How Does this Affect Client: _____

_____

_____

Project Manager Use Only

Project Manager Notification ☐ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☐ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials:_____ Date: _____

☐ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials:_____ Person notified: _____ Date: _____

☐ Waiting for Client Reply

Comments: _____

_____

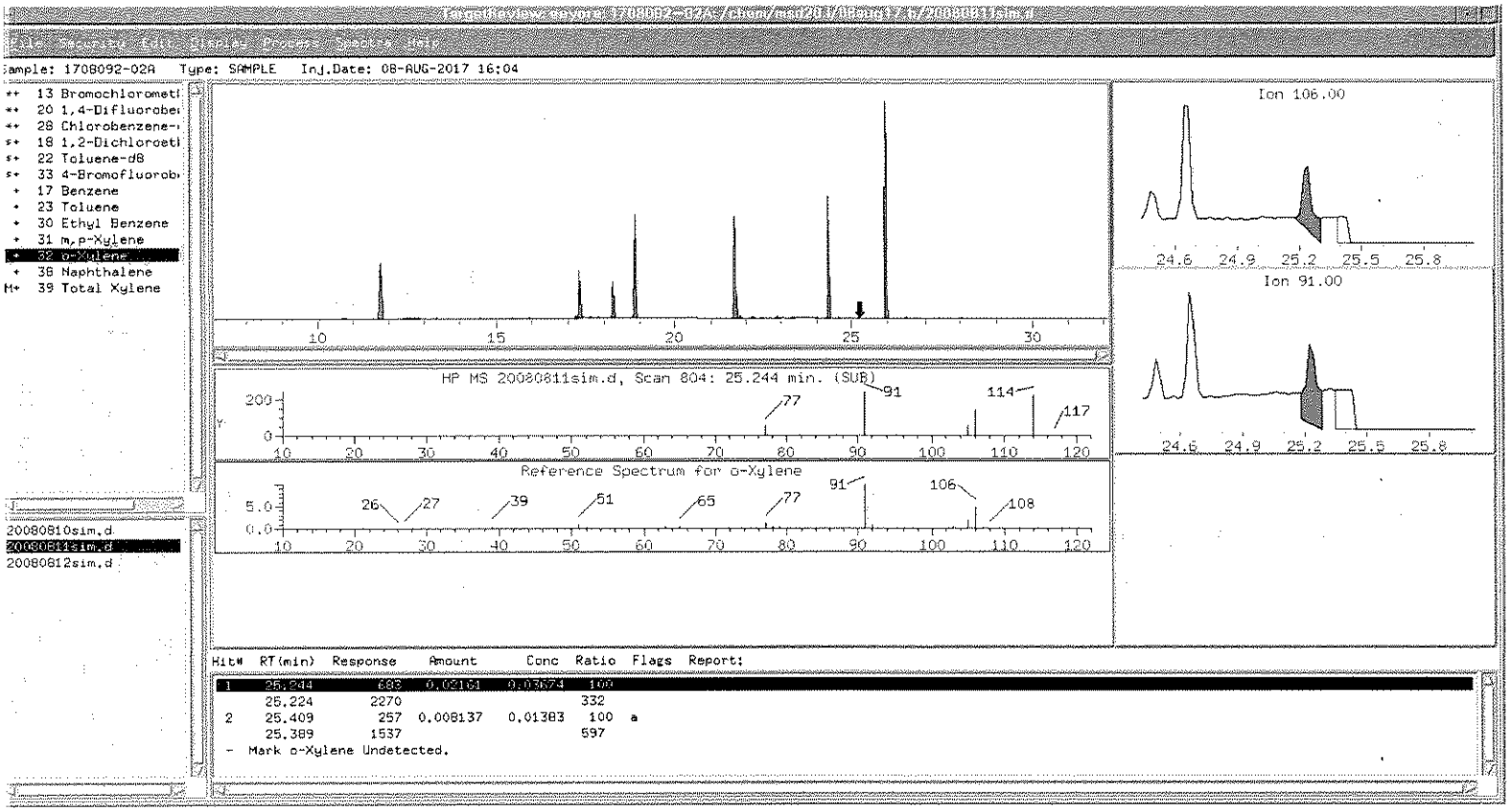
☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐

☐ **Additional notifications attached.**

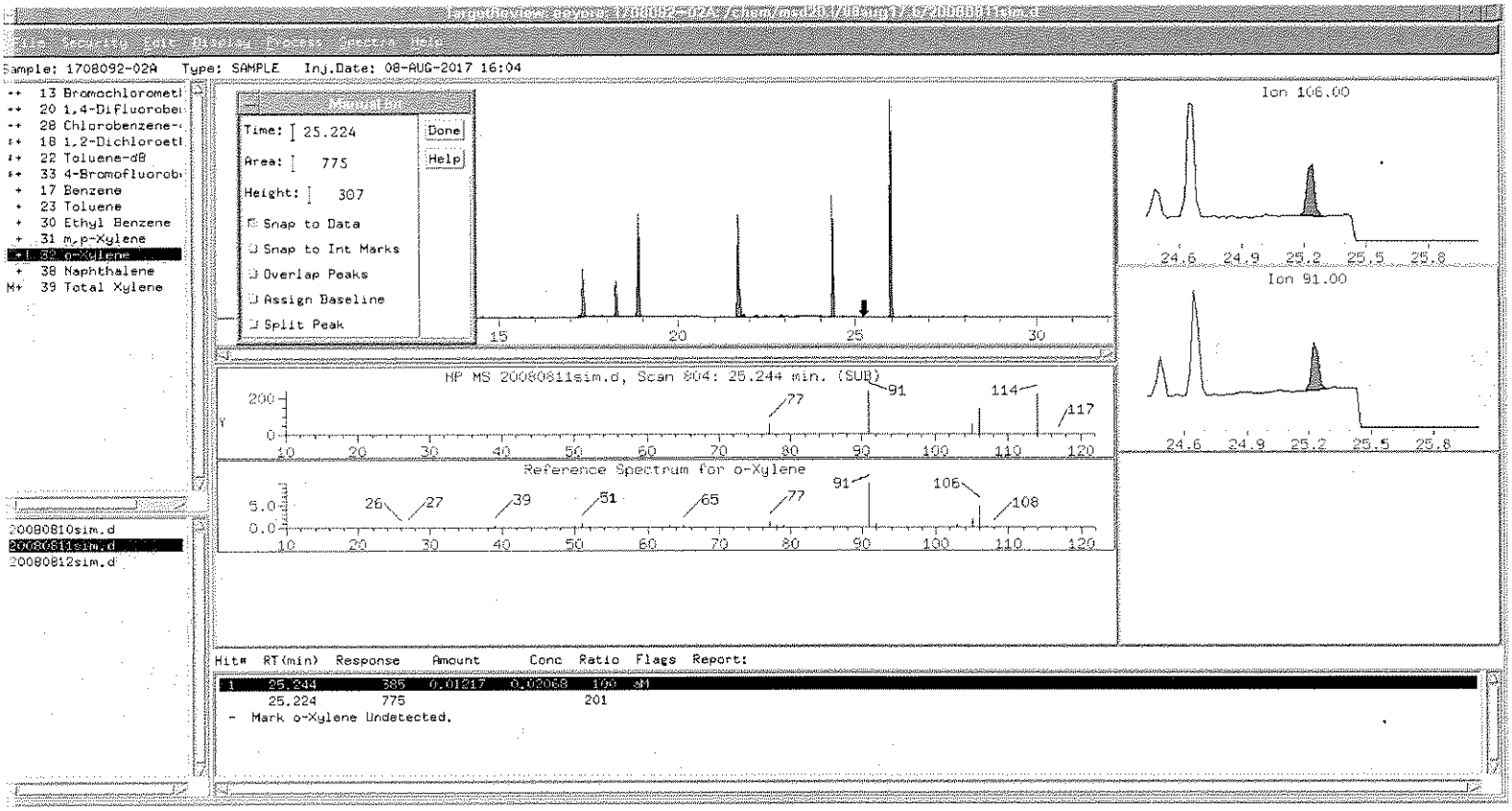
Additional Comments:

_____

Other Records


Sample: 1708092-02A Type: SAMPLE Inj.Date: 08-AUG-2017 16:04
13 Bromochlorometh
20 1,4-Difluorobe
28 Chlorobenzene-
18 1,2-Dichloroeth
22 Toluene-d8
33 4-Bromofluorob
17 Benzene
23 Toluene
30 Ethyl Benzene
31 m,p-Xylene
32 o-Xylene
38 Naphthalene
39 Total Xylene
Ion 106.00
Ion 91.00
HP MS 20080811sim.d, Scan 804: 25.244 min. (SUB)
Reference Spectrum for o-Xylene
20080810sim.d
20080811sim.d
20080812sim.d
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 25.244 688 0.02161 0.03674 100
25.224 2270 332
2 25.409 257 0.008137 0.01383 100 a
25.389 1537 597
- Mark o-Xylene Undetected.

Before



After

Correct Baseline	8/10/17 AG
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} - [\text{Init. Pressure (“Hg)})*(14.7\text{psi}/30\text{”Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
0.0	1.34	2.02
0.2	1.35	2.03
0.4	1.36	2.05
0.5	1.36	2.05
0.6	1.37	2.06
0.8	1.38	2.08
1.0	1.39	2.09
1.2	1.40	2.10
1.4	1.40	2.12
1.5	1.41	2.13
1.6	1.42	2.13
1.8	1.42	2.15
2.0	1.44	2.16
2.2	1.45	2.18
2.4	1.46	2.20
2.5	1.46	2.20
2.6	1.47	2.21
2.8	1.48	2.23
3.0	1.49	2.24
3.2	1.50	2.26
3.4	1.51	2.28
3.5	1.52	2.29
3.6	1.52	2.30
3.8	1.53	2.31
4.0	1.55	2.33
4.2	1.56	2.35
4.4	1.57	2.37
4.5	1.58	2.38
4.6	1.58	2.39
4.8	1.60	2.40
5.0	1.61	2.42
5.2	1.62	2.44
5.4	1.63	2.46
5.5	1.64	2.47
5.6	1.65	2.48
5.8	1.66	2.50
6.0	1.68	2.52
6.2	1.69	2.55
6.4	1.70	2.57
6.5	1.71	2.58
6.6	1.72	2.59
6.8	1.73	2.61
7.0	1.75	2.64
7.2	1.76	2.66
7.4	1.78	2.68
7.5	1.79	2.69
7.6	1.79	2.70

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
7.7	1.80	2.72
7.8	1.81	2.73
8.0	1.83	2.76
8.2	1.84	2.78
8.4	1.86	2.81
8.5	1.87	2.82
8.6	1.88	2.83
8.8	1.90	2.86
9.0	1.91	2.89
9.2	1.93	2.91
9.4	1.95	2.94
9.5	1.96	2.96
9.6	1.97	2.97
9.8	1.99	3.00
10.0	2.01	3.03
10.2	2.03	3.06
10.4	2.05	3.09
10.5	2.06	3.11
10.6	2.07	3.12
10.8	2.09	3.16
11.0	2.12	3.19
11.2	2.14	3.22
11.4	2.16	3.26
11.5	2.17	3.28
11.6	2.18	3.29
11.8	2.21	3.33
12.0	2.23	3.37
12.2	2.26	3.40
12.4	2.28	3.44
12.5	2.30	3.46
12.6	2.31	3.48
12.8	2.34	3.52
13.0	2.36	3.56
13.2	2.39	3.61
13.4	2.42	3.65
13.5	2.44	3.67
13.6	2.45	3.70
13.8	2.48	3.74
14.0	2.51	3.79
14.2	2.54	3.84
14.4	2.58	3.88
14.5	2.59	3.91
14.6	2.61	3.94
14.8	2.64	3.99
15.0	2.68	4.04
15.2	2.72	4.10
15.4	2.75	4.15

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
15.5	2.77	4.18
15.6	2.79	4.21
15.8	2.83	4.27
16.0	2.87	4.33
16.2	2.91	4.39
16.4	2.96	4.46
16.5	2.98	4.49
16.6	3.00	4.52
16.8	3.05	4.59
17.0	3.09	4.66
17.2	3.14	4.74
17.4	3.19	4.81
17.5	3.22	4.85
17.6	3.24	4.89
17.8	3.30	4.97
18.0	3.35	5.05
18.2	3.41	5.14
18.4	3.47	5.22
18.5	3.50	5.27
18.6	3.53	5.32
18.8	3.59	5.41
19.0	3.65	5.51
19.2	3.72	5.61
19.4	3.79	5.72
19.5	3.83	5.77
19.6	3.87	5.83
19.8	3.94	5.94
20.0	4.02	6.06
20.2	4.10	6.18
20.4	4.19	6.31
20.5	4.23	6.38
20.6	4.28	6.45
20.8	4.37	6.59
21.0	4.47	6.73
21.2	4.57	6.89
21.4	4.67	7.05
21.5	4.73	7.13
21.6	4.79	7.22
21.8	4.90	7.39
22.0	5.03	7.58
22.4	5.29	7.98

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
22.5	5.36	8.08
22.6	5.43	8.19
22.8	5.58	8.42
23.0	5.74	8.66
23.2	5.91	8.91
23.4	6.09	9.18
23.5	6.19	9.32
23.6	6.28	9.47
23.8	6.48	9.78
24.0	6.70	10.10
24.2	6.93	10.45
24.4	7.18	10.82
24.5	7.31	11.02
24.6	7.45	11.22
24.8	7.73	11.66
25.0	8.04	12.12
25.2	8.38	12.63
25.4	8.74	13.18
25.5	8.93	13.47
25.6	9.14	13.78
25.8	9.57	14.43
26.0	10.05	15.15
26.2	10.58	15.95
26.4	11.17	16.84
26.5	11.49	17.32
26.6	11.82	17.83
26.8	12.56	18.94
27.0	13.40	20.20
27.2	14.36	21.65
27.4	15.46	23.31
27.5	16.08	24.24
27.6	16.75	25.26
27.8	18.27	27.55
28.0	20.10	30.31
28.2	22.34	33.67
28.4	25.13	37.88
28.5	26.80	40.41
28.6	28.72	43.29
28.8	33.50	50.51
29.0	40.20	60.61

Compound Listing

Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

CAS Number	Compound	Detection Limit ppbv	Type
71-43-2	Benzene	0.050	
108-88-3	Toluene	0.020	
100-41-4	Ethyl Benzene	0.020	
9999-9999-015	Total Xylenes	0.060	
91-20-3	Naphthalene	0.050	
17060-07-0	1,2-Dichloroethane-d4		
2037-26-5	Toluene-d8		
460-00-4	4-Bromofluorobenzene		
108-38-3	m,p-Xylene	0.040	
95-47-6	o-Xylene	0.020	

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Media Certification Report

Canister Number: 6L# 5584
Can#: 114263-5584
Date : 07/22/17 1:17
Data File: o072128.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		97.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	101.00	% Recovery
Toluene-d8	2037-26-5	0.250	100.00	% Recovery

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Media Certification Report

www.airtoxics.com
1-800-985-5955

Canister Number: 6L# 0967
Can#: 114263-0967
Date : 07/22/17 9:46
Data File: o072144.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		106.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	101.00	% Recovery
Toluene-d8	2037-26-5	0.250	96.00	% Recovery

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Media Certification Report

www.airtoxics.com
1-800-985-5955

Canister Number: 6L# 34317
Can#: 114263-34317
Date : 07/21/17 21:04
Data File: o072120.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		106.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	101.00	% Recovery
Toluene-d8	2037-26-5	0.250	96.00	% Recovery

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Media Certification Report

Canister Number: 6L# 34491
Can#: 114263-34491
Date : 07/22/17 3:59
Data File: o072133.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		111.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	101.00	% Recovery
Toluene-d8	2037-26-5	0.250	96.00	% Recovery

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Media Certification Report

Canister Number: 6L# 34378
Can#: 114263-34378
Date : 07/22/17 0:45
Data File: o072127.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		110.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	100.00	% Recovery
Toluene-d8	2037-26-5	0.250	94.00	% Recovery

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Media Certification Report

Canister Number: 6L# 2753
Can#: 114263-2753
Date : 07/21/17 22:38
Data File: o072123.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		98.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	102.00	% Recovery
Toluene-d8	2037-26-5	0.250	95.00	% Recovery

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Media Certification Report

www.airtoxics.com
1-800-985-5955

Canister Number: 6L# 0312
Can#: 114263-0312
Date : 07/22/17 8:43
Data File: o072142.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		105.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	101.00	% Recovery
Toluene-d8	2037-26-5	0.250	98.00	% Recovery

eurofins | Air Toxics

Media Certification Report

Canister Number: 6L# 13858
Can#: 114263-13858
Date : 07/21/17 20:33
Data File: o072119.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.025	ND	ppbv
Benzene	71-43-2	0.250	ND	ppbv
Ethyl Benzene	100-41-4	0.010	ND	ppbv
Ethyl Benzene	100-41-4	0.250	ND	ppbv
m,p-Xylene	108-38-3	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.250	ND	ppbv
Naphthalene	91-20-3	0.025	ND	ppbv
Naphthalene	91-20-3	0.500	ND	ppbv
o-Xylene	95-47-6	0.010	ND	ppbv
o-Xylene	95-47-6	0.250	ND	ppbv
Toluene	108-88-3	0.010	ND	ppbv
Toluene	108-88-3	0.250	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		106.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.250	100.00	% Recovery
Toluene-d8	2037-26-5	0.250	95.00	% Recovery

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 05/24/17
Workorder # 1708093	Form F1.27	Revision #14	Revision Date: 05/24/17	Page 1 of 2

S1	S2	S3	S4	D	*Section 1* – Spec Out				
					Initials/Instrument/Date	**S1:** ES MSD20 8/7/17	**S2:** ES MSD20 8/8/17	**S3:** ES 8/9/17 MSE	**S4:**
X	X			■	Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
X	X			■	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
N/A	N/A			■	Manual Integrations included and approved				
X	X			✓	Chain of Custody verified for special comments (add comments below)				
X	X			■	Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				

Profile, analyses, reporting, special notes and unusual circumstances:

Φ out in Lv. TOAL Xylenes S3: Φ out in QC.
S2: Φ out use Monitored normal with Extend Solvent Dry

A1	A2	A3	A4	D	*Section 2* – Sample Analysis				
					Initials/Date	**A1:** ES 8/8/17	**A2:** ES 8/8/17	**A3:** TD 8/10/17	**A4:** ES 8/9/17 8/9/17
X	X	✓	X	✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, Canister #s Verified and dilution ranges are met per SOP (ex. Over-ranged/overdiluted)				
N/A	N/A	N/A	N/A	N/A	**a)** Tedlar Bag IDs verified against COC **b)** Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
X	N/A	N	N/A	✓	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
X	X	✓	X	■	12/24 Hr clock time & Hold Time met for all samples				
X	X	N/A	X	✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
X	X	N/A	X	✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: A1: OSA = Full load. A2: OSA, ~~OSA~~ = Full loads 8/9/17 UHL LOBA FD olc
A2: ~~OSA~~ Full Loads DEA, OBA, OSA, LCD Full Loads TB < RL
A4: OSA, OTA = Full Loads, OSA: First is out olc

D1	D2	D3	D4	T	3T	*Section 3* – Target Data Reduction	**Technical Review Needed? Circle one: Yes/No**		**T:**	
						Initials/Instrument/Date	**D1:** ES 8/10/17	**D2:**	**D3:**	**D4:**
N/A					■	CAR # *(if applicable)*				
✓					■	Spectra Verified *(documentation of spectral defense included if applicable)*				
N/A					■	TICs resemble reference spectra/ TICs between sample dups. are consistent *(if applicable)*				
✓						Lab Narrative is correct				
N/A					■	TPH/NMOC calculations complete and included in folder				

Special notes:

A	3T	*Section 4*- Atlas Data Entry	**Lumen verified and included in folder**	**Circle one:** Yes/No
		Initials/Date: ES 8/10/17	**3rd Tier:** *(needed only for DOD or per client request)*	
✓		Sample Discrepancy Report (SDR) complete and approved *(if applicable)*		
✓		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder #:				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Workorder #:				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

Type I Data Package

Prepared for:

Greenfield Environmental
PO Box 1189
Helena MT 59624

Project: Springfield, MO
Surface Water and Water Samples
Collected on 08/02/17

SDG# SMO01

GROUP	SAMPLE NUMBERS
1833793	9137935-9137937

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by: Dana M Kauffman

Dana M. Kauffman
Manager

Date: 08/17/2017

Any questions or concerns you might have regarding this data package should be directed to your client representative, Katherine Klinefelter at (717) 556-7256.

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Table of Contents for SDG# SMO01

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Sample Reference List for SDG Number SMO01 with a Data Package Type of I

13107 - Greenfield Environmental

Project: Springfield, MO

Lab Sample Number	Client Sample ID	Collection Date	Date Received
9137935	SW-004_0817	08/02/2017 11:06	08/03/2017 09:40
9137936	SW-104_0817	08/02/2017 11:00	08/03/2017 09:40
9137937	Trip-1_0817	08/02/2017 08:00	08/03/2017 09:40

eurofins | Lancaster Laboratories

Sample pH Log

SDG: SMO01

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	Res. Cl. Present?	Corrective Substance	CS Lot #	Record Date	Employee
9137935	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	8/8/2017 8:36:57PM	10165
9137936	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	8/8/2017 8:36:57PM	10165
9137937	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	8/8/2017 8:36:57PM	10165

Check Code Key
PK = Original container checked - pH is within the correct range. (No preservative was added)
PA = Original container checked - pH adjusted to correct range. (Preservative was added)
PV = Volatile container checked
PC = pH checked (unpreserved container)
SPK = Subsampled from an original container. Original container checked - pH is within correct range
SPA = Subsampled from an original container. Subsample container checked - pH adjusted to correct range.
SPC = Subsampled from an original container. pH checked (unpreserved container).
SUP = Subsampled from original container. Unable to be preserved due to the matrix of the sample.
UP = Unable to preserve due to matrix of the sample.
NA = Not applicable

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

01163 GC/MS VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030B, December 1996.

10335 VOCs- 5ml Water by 8260B

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 8260B, December 1996

Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Greenfield Environmental
PO Box 1189
Helena MT 59624

Report Date: August 10, 2017

Project: Springfield, MO

Submittal Date: 08/03/2017
Group Number: 1833793
SDG: SMO01
PO Number: SPRINGFIELD, MO
State of Sample Origin: MO

Client Sample Description	Lancaster Labs (ELLE) #
SW-004_0817 Grab Surface Water	9137935
SW-104_0817 Grab Surface Water	9137936
Trip-1_0817 Water	9137937

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	CH2M Hill, Inc.	Attn: Brian Wied
Electronic Copy To	CH2M Hill, Inc.	Attn: Katie Rabe
Electronic Copy To	CH2M Hill, Inc.	Attn: Chemistry Mailbox
Electronic Copy To	CH2M Hill, Inc.	Attn: Mike Bedan
Electronic Copy To	CH2M Hill, Inc.	Attn: Mark Stinnett

Respectfully Submitted,

Katherine A. Klinefelter

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Sample Description: SW-004_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137935
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:06 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW004 SDG#: SMO01-01

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Cyclohexane	110-82-7	N.D.	2	5	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,2-Dibromoethane	106-93-4	N.D.	0.5	1	1
10335	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10335	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10335	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10335	Dichlorodifluoromethane	75-71-8	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	Freon 113	76-13-1	N.D.	2	10	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	Isopropylbenzene	98-82-8	N.D.	1	5	1
10335	Methyl Acetate	79-20-9	N.D.	1	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylcyclohexane	108-87-2	N.D.	1	5	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Naphthalene	91-20-3	N.D.	1	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	m+p-Xylene	179601-23-1	N.D.	0.5	1	1
10335	o-Xylene	95-47-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: SW-004_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137935
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:06 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW004 SDG#: SMO01-01

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	TCL4.3+Naph 8260B w/RPD20%	SW-846 8260B	1	4172202AA	08/08/2017 18:30	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4172202AA	08/08/2017 18:30	Daniel H Heller	1

*=This limit was used in the evaluation of the final result

Sample Description: SW-104_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137936
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:00 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW104 SDG#: SMO01-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Cyclohexane	110-82-7	N.D.	2	5	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,2-Dibromoethane	106-93-4	N.D.	0.5	1	1
10335	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10335	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10335	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10335	Dichlorodifluoromethane	75-71-8	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	Freon 113	76-13-1	N.D.	2	10	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	Isopropylbenzene	98-82-8	N.D.	1	5	1
10335	Methyl Acetate	79-20-9	N.D.	1	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylcyclohexane	108-87-2	N.D.	1	5	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Naphthalene	91-20-3	N.D.	1	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	m+p-Xylene	179601-23-1	N.D.	0.5	1	1
10335	o-Xylene	95-47-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: SW-104_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137936
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:00 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW104 SDG#: SMO01-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	TCL4.3+Naph 8260B w/RPD20%	SW-846 8260B	1	4172202AA	08/08/2017 18:53	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4172202AA	08/08/2017 18:53	Daniel H Heller	1

*=This limit was used in the evaluation of the final result

Sample Description: Trip-1_0817 Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137937
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 08:00

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

T1817 SDG#: SMO01-03TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Cyclohexane	110-82-7	N.D.	2	5	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,2-Dibromoethane	106-93-4	N.D.	0.5	1	1
10335	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10335	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10335	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10335	Dichlorodifluoromethane	75-71-8	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	Freon 113	76-13-1	N.D.	2	10	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	Isopropylbenzene	98-82-8	N.D.	1	5	1
10335	Methyl Acetate	79-20-9	N.D.	1	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylcyclohexane	108-87-2	N.D.	1	5	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Naphthalene	91-20-3	N.D.	1	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	m+p-Xylene	179601-23-1	N.D.	0.5	1	1
10335	o-Xylene	95-47-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: Trip-1_0817 Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137937
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 08:00

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

T1817 SDG#: SMO01-03TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	TCL4.3+Naph 8260B w/RPD20%	SW-846 8260B	1	4172202AA	08/08/2017 18:08	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4172202AA	08/08/2017 18:08	Daniel H Heller	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Greenfield Environmental
Group Number: 1833793
Reported: 08/10/2017 12:40

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: 4172202AA	Sample number(s): 9137935-9137937		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Cyclohexane	N.D.	2	5
1,2-Dibromo-3-chloropropane	N.D.	2	5
Dibromochloromethane	N.D.	0.5	1
1,2-Dibromoethane	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	1	5
1,3-Dichlorobenzene	N.D.	1	5
1,4-Dichlorobenzene	N.D.	1	5
Dichlorodifluoromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
Freon 113	N.D.	2	10
2-Hexanone	N.D.	3	10
Isopropylbenzene	N.D.	1	5
Methyl Acetate	N.D.	1	5
Methyl Tertiary Butyl Ether	N.D.	0.5	1
4-Methyl-2-pentanone	N.D.	3	10
Methylcyclohexane	N.D.	1	5
Methylene Chloride	N.D.	2	4
Naphthalene	N.D.	1	5
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Greenfield Environmental
Group Number: 1833793
Reported: 08/10/2017 12:40

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,2,4-Trichlorobenzene	N.D.	1	5
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Trichlorofluoromethane	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
m+p-Xylene	N.D.	0.5	1
o-Xylene	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: 4172202AA	Sample number(s): 9137935-9137937								
Acetone	150	138.51	150	133.35	92	89	50-168	4	20
Benzene	20	19.77	20	18.91	99	95	78-120	4	20
Bromodichloromethane	20	18.87	20	18.06	94	90	80-120	4	20
Bromoform	20	17.07	20	16.7	85	84	64-120	2	20
Bromomethane	20	19.19	20	17.93	96	90	49-121	7	20
2-Butanone	150	148.95	150	143.33	99	96	53-140	4	20
Carbon Disulfide	20	19.33	20	18.46	97	92	63-122	5	20
Carbon Tetrachloride	20	19.76	20	18.81	99	94	76-123	5	20
Chlorobenzene	20	19.29	20	18.58	96	93	80-120	4	20
Chloroethane	20	18.03	20	17.05	90	85	51-121	6	20
Chloroform	20	20.3	20	19.2	101	96	80-120	6	20
Chloromethane	20	18.44	20	17.2	92	86	57-120	7	20
Cyclohexane	20	17.65	20	16.89	88	84	67-121	4	20
1,2-Dibromo-3-chloropropane	20	19.38	20	18.54	97	93	59-120	4	20
Dibromochloromethane	20	18.42	20	17.64	92	88	78-120	4	20
1,2-Dibromoethane	20	19.01	20	18.55	95	93	75-120	2	20
1,2-Dichlorobenzene	20	18.79	20	18.35	94	92	80-120	2	20
1,3-Dichlorobenzene	20	18.69	20	18.17	93	91	80-120	3	20
1,4-Dichlorobenzene	20	19.02	20	18.45	95	92	80-120	3	20
Dichlorodifluoromethane	20	18.36	20	17.36	92	87	54-122	6	20
1,1-Dichloroethane	20	19.87	20	19.06	99	95	80-120	4	20
1,2-Dichloroethane	20	20.19	20	19.19	101	96	66-128	5	20
1,1-Dichloroethene	20	21.26	20	19.99	106	100	76-124	6	20
cis-1,2-Dichloroethene	20	20.32	20	19.74	102	99	80-120	3	20
trans-1,2-Dichloroethene	20	20.8	20	19.78	104	99	80-120	5	20
1,2-Dichloropropane	20	19.54	20	18.78	98	94	80-120	4	20
cis-1,3-Dichloropropene	20	18.79	20	18.54	94	93	75-120	1	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Greenfield Environmental
Reported: 08/10/2017 12:40

Group Number: 1833793

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
trans-1,3-Dichloropropene	20	18.48	20	18.31	92	92	76-120	1	20
Ethylbenzene	20	19.38	20	18.64	97	93	78-120	4	20
Freon 113	20	20.47	20	19.36	102	97	68-129	6	20
2-Hexanone	100	75.49	100	72.87	75	73	49-137	4	20
Isopropylbenzene	20	19.49	20	18.64	97	93	80-120	4	20
Methyl Acetate	20	19.05	20	18.81	95	94	61-137	1	20
Methyl Tertiary Butyl Ether	20	17.88	20	17.52	89	88	75-120	2	20
4-Methyl-2-pentanone	100	95.69	100	91.04	96	91	56-131	5	20
Methylcyclohexane	20	19.39	20	18.8	97	94	66-126	3	20
Methylene Chloride	20	19.35	20	18.54	97	93	80-120	4	20
Naphthalene	20	18.24	20	17.75	91	89	59-120	3	20
Styrene	20	19.44	20	18.74	97	94	80-120	4	20
1,1,2,2-Tetrachloroethane	20	18.66	20	17.95	93	90	72-120	4	20
Tetrachloroethene	20	19.6	20	19.24	98	96	80-129	2	20
Toluene	20	19.58	20	18.91	98	95	80-120	3	20
1,2,4-Trichlorobenzene	20	17.44	20	16.93	87	85	58-120	3	20
1,1,1-Trichloroethane	20	19.42	20	18.64	97	93	67-120	4	20
1,1,2-Trichloroethane	20	19.49	20	18.83	97	94	80-120	3	20
Trichloroethene	20	19.54	20	19.08	98	95	80-120	2	20
Trichlorofluoromethane	20	19.67	20	18.44	98	92	57-134	6	20
Vinyl Chloride	20	18.63	20	17.01	93	85	63-121	9	20
m+p-Xylene	40	38.96	40	37.72	97	94	80-120	3	20
o-Xylene	20	18.88	20	18.11	94	91	80-120	4	20
Xylene (Total)	60	57.83	60	55.83	96	93	80-120	4	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: TCL4.3+Naph 8260B w/RPD20%
Batch number: 4172202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9137935	103	101	99	99
9137936	103	102	99	100
9137937	102	104	98	100
Blank	102	102	99	99
LCS	101	103	99	101
LCSD	101	99	99	101
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Greenfield Environmental
Group Number: 1833793
Reported: 08/10/2017 12:40

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only
Acct. # 13107 Group # 1833793 Sample # 9137935-37

COC # 535366

Client Information

Client: Greenfield Environmental	Acct. #:
Project Name/#: Former Tronex Facility	PWSID #:
Project Manager: Brian Weid - CH2M	P.O. #:
Sampler: Shirley Steinmacher	Quote #:
State where samples were collected: MO	For Compliance: Yes ☐ No ☒

Matrix

Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ Surface ☒ NPDES ☐ | Other: ____

Analysis Requested

Preservation Codes: H

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	SW-846, Method 8260B VOC TCL Retg3 thaphthalene
SW-004_0817	08/02/17	11:06	X		2	X
SW-104_0817	8/02/17	11:00	X		1	X
Trip-1-0817	8/02/17	0800	X		2	X

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)
Standard 10-day Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed:

E-mail address: mark.steinert@ch2m.com GN AChem @ch2m.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	08/02/17	08:00			
				8/3/17	0941C

EDD Required? Yes No
If yes, format:

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS FedEx Other

Temperature upon receipt 1.6 °C

1833793

Katherine Klinefelter

From: Stinnett, Mark/GNV <Mark.Stinnett@CH2M.com>
Sent: Monday, August 07, 2017 9:52 AM
To: Katherine Klinefelter
Subject: Former Tronox Facility - Springfield Mo

Hi Kathy,

No further VOA samples will be collected for this effort. The field team shut down on Saturday. However, the project team is requesting a 5 Day TAT for Form 1 data on the aqueous samples currently in house. Being that the samples arrived last week this change order (5 Day TAT) would take affect on the day of request (today) and that would also include a 35% surcharge (if I remember your lab's rates correctly) on the unit cost. Further, there will be confirmation sampling to take place toward the end of August for this site and may include additional VOC aqueous sampling. We should discuss.

Thank you.

Mark

CH2MHILL

Mark Stinnett
Project Chemist-CH2M HILL
GNV CHEM GROUP
352-384-7180 Direct line
352-335-7991 Switchboard
mstinnet@ch2m.com

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 190686

Group Number(s): 1833793

Client: Greenfield

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	08/03/2017 9:40
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	MO		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Karen Diem (3060) at 15:06 on 08/03/2017

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-02	1.6	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17601-5994

T : 717-656-2300
F : 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	non-detect
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Volatiles by GC/MS Data

Case Narrative/Conformance Summary

Volatiles by GC/MS

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Case Narrative/Conformance Summary

CLIENT: Greenfield Environmental
SDG: SMO01

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
9137935	SW-004_0817	X		1	
9137936	SW-104_0817	X		1	
9137937	Trip-1_0817	X		1	Trip Blank

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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Case Narrative/Conformance Summary

CLIENT: Greenfield Environmental
SDG: SMO01

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

Volatiles by GC/MS

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Quality Control Reference List
GC/MS Volatiles

CLIENT: Greenfield Environmental
SDG: SMO01

Fraction: Volatiles by GC/MS

Analysis	Batch Number	Sample Number	Analysis Date
TCL4.3+Naph 8260B w/RPD20%	4172202AA	VBLK411	08/08/2017 09:50:00
		LCS411	08/08/2017 10:13:00
		LCD411	08/08/2017 10:39:00
		9137935	08/08/2017 18:30:00
		9137936	08/08/2017 18:53:00
		9137937	08/08/2017 18:08:00

Quality Control Summary
Method Blank
GC/MS Volatiles
SDG: SMO01
Matrix: LIQUID

Fraction: Volatiles by GC/MS

4172202AA / VBLK411 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Dichlorodifluoromethane	08/08/17	N.D.	ug/l	0.5	1
Chloromethane	08/08/17	N.D.	ug/l	0.5	1
Vinyl Chloride	08/08/17	N.D.	ug/l	0.5	1
Bromomethane	08/08/17	N.D.	ug/l	0.5	1
Chloroethane	08/08/17	N.D.	ug/l	0.5	1
Trichlorofluoromethane	08/08/17	N.D.	ug/l	0.5	1
1,1-Dichloroethene	08/08/17	N.D.	ug/l	0.5	1
Acetone	08/08/17	N.D.	ug/l	6	20
Freon 113	08/08/17	N.D.	ug/l	2	10
Carbon Disulfide	08/08/17	N.D.	ug/l	1	5
Methyl Acetate	08/08/17	N.D.	ug/l	1	5
Methylene Chloride	08/08/17	N.D.	ug/l	2	4
trans-1,2-Dichloroethene	08/08/17	N.D.	ug/l	0.5	1
Methyl Tertiary Butyl Ether	08/08/17	N.D.	ug/l	0.5	1
1,1-Dichloroethane	08/08/17	N.D.	ug/l	0.5	1
2-Butanone	08/08/17	N.D.	ug/l	3	10
cis-1,2-Dichloroethene	08/08/17	N.D.	ug/l	0.5	1
Chloroform	08/08/17	N.D.	ug/l	0.5	1
1,1,1-Trichloroethane	08/08/17	N.D.	ug/l	0.5	1
Cyclohexane	08/08/17	N.D.	ug/l	2	5
Carbon Tetrachloride	08/08/17	N.D.	ug/l	0.5	1
Benzene	08/08/17	N.D.	ug/l	0.5	1
1,2-Dichloroethane	08/08/17	N.D.	ug/l	0.5	1
Trichloroethene	08/08/17	N.D.	ug/l	0.5	1
Methylcyclohexane	08/08/17	N.D.	ug/l	1	5
1,2-Dichloropropane	08/08/17	N.D.	ug/l	0.5	1
Bromodichloromethane	08/08/17	N.D.	ug/l	0.5	1
cis-1,3-Dichloropropene	08/08/17	N.D.	ug/l	0.5	1
4-Methyl-2-pentanone	08/08/17	N.D.	ug/l	3	10
Toluene	08/08/17	N.D.	ug/l	0.5	1
trans-1,3-Dichloropropene	08/08/17	N.D.	ug/l	0.5	1
1,1,2-Trichloroethane	08/08/17	N.D.	ug/l	0.5	1
Tetrachloroethene	08/08/17	N.D.	ug/l	0.5	1
2-Hexanone	08/08/17	N.D.	ug/l	3	10
Dibromochloromethane	08/08/17	N.D.	ug/l	0.5	1
1,2-Dibromoethane	08/08/17	N.D.	ug/l	0.5	1
Chlorobenzene	08/08/17	N.D.	ug/l	0.5	1
Ethylbenzene	08/08/17	N.D.	ug/l	0.5	1
m+p-Xylene	08/08/17	N.D.	ug/l	0.5	1
o-Xylene	08/08/17	N.D.	ug/l	0.5	1
Xylene (Total)	08/08/17	N.D.	ug/l	0.5	1
Styrene	08/08/17	N.D.	ug/l	1	5
Bromoform	08/08/17	N.D.	ug/l	0.5	4
Isopropylbenzene	08/08/17	N.D.	ug/l	1	5
1,1,2,2-Tetrachloroethane	08/08/17	N.D.	ug/l	0.5	1

Fraction: Volatiles by GC/MS

4172202AA / VBLK411 **Analyte**	**Analysis Date**	**Blank Results**	**Units**	**MDL**	**LOQ**
1,3-Dichlorobenzene	08/08/17	N.D.	ug/l	1	5
1,4-Dichlorobenzene	08/08/17	N.D.	ug/l	1	5
1,2-Dichlorobenzene	08/08/17	N.D.	ug/l	1	5
1,2-Dibromo-3-chloropropane	08/08/17	N.D.	ug/l	2	5
1,2,4-Trichlorobenzene	08/08/17	N.D.	ug/l	1	5
Naphthalene	08/08/17	N.D.	ug/l	1	5

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Quality Control Summary
Surrogates
GC/MS Volatiles
SDG: SMO01
Matrix: LIQUID

Fraction: Volatiles by GC/MS

4172202AA	1,2-Dichloroethane-d4		4-Bromofluorobenzene		Dibromofluoromethane		Toluene-d8	
	Spike Added	50 ug/l	Spike Added	50 ug/l	Spike Added	50 ug/l	Spike Added	50 ug/l
Sample	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
VBLK411	102	77 - 113	99	78 - 113	102	80 - 116	99	80 - 113
LCS411	103	77 - 113	101	78 - 113	101	80 - 116	99	80 - 113
LCD411	99	77 - 113	101	78 - 113	101	80 - 116	99	80 - 113
9137935	101	77 - 113	99	78 - 113	103	80 - 116	99	80 - 113
9137936	102	77 - 113	100	78 - 113	103	80 - 116	99	80 - 113
9137937	104	77 - 113	100	78 - 113	102	80 - 116	98	80 - 113

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: SMO01
Matrix: LIQUID

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCS411 LCSD: LCD411	Batch: **4172202AA** (Sample number(s): 9137935-9137937)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Dichlorodifluoromethane	20	18.36	17.36	92	87	54-122	6	20
Chloromethane	20	18.44	17.2	92	86	57-120	7	20
Vinyl Chloride	20	18.63	17.01	93	85	63-121	9	20
Bromomethane	20	19.19	17.93	96	90	49-121	7	20
Chloroethane	20	18.03	17.05	90	85	51-121	6	20
Trichlorofluoromethane	20	19.67	18.44	98	92	57-134	6	20
1,1-Dichloroethene	20	21.26	19.99	106	100	76-124	6	20
Acetone	150	138.51	133.35	92	89	50-168	4	20
Freon 113	20	20.47	19.36	102	97	68-129	6	20
Carbon Disulfide	20	19.33	18.46	97	92	63-122	5	20
Methyl Acetate	20	19.05	18.81	95	94	61-137	1	20
Methylene Chloride	20	19.35	18.54	97	93	80-120	4	20
trans-1,2-Dichloroethene	20	20.8	19.78	104	99	80-120	5	20
Methyl Tertiary Butyl Ether	20	17.88	17.52	89	88	75-120	2	20
1,1-Dichloroethane	20	19.87	19.06	99	95	80-120	4	20
2-Butanone	150	148.95	143.33	99	96	53-140	4	20
cis-1,2-Dichloroethene	20	20.32	19.74	102	99	80-120	3	20
Chloroform	20	20.3	19.2	101	96	80-120	6	20
1,1,1-Trichloroethane	20	19.42	18.64	97	93	67-120	4	20
Cyclohexane	20	17.65	16.89	88	84	67-121	4	20
Carbon Tetrachloride	20	19.76	18.81	99	94	76-123	5	20
Benzene	20	19.77	18.91	99	95	78-120	4	20
1,2-Dichloroethane	20	20.19	19.19	101	96	66-128	5	20
Trichloroethene	20	19.54	19.08	98	95	80-120	2	20
Methylcyclohexane	20	19.39	18.8	97	94	66-126	3	20
1,2-Dichloropropane	20	19.54	18.78	98	94	80-120	4	20
Bromodichloromethane	20	18.87	18.06	94	90	80-120	4	20
cis-1,3-Dichloropropene	20	18.79	18.54	94	93	75-120	1	20
4-Methyl-2-pentanone	100	95.69	91.04	96	91	56-131	5	20
Toluene	20	19.58	18.91	98	95	80-120	3	20
trans-1,3-Dichloropropene	20	18.48	18.31	92	92	76-120	1	20
1,1,2-Trichloroethane	20	19.49	18.83	97	94	80-120	3	20
Tetrachloroethene	20	19.6	19.24	98	96	80-129	2	20
2-Hexanone	100	75.49	72.87	75	73	49-137	4	20
Dibromochloromethane	20	18.42	17.64	92	88	78-120	4	20
1,2-Dibromoethane	20	19.01	18.55	95	93	75-120	2	20
Chlorobenzene	20	19.29	18.58	96	93	80-120	4	20
Ethylbenzene	20	19.38	18.64	97	93	78-120	4	20
m+p-Xylene	40	38.96	37.72	97	94	80-120	3	20
o-Xylene	20	18.88	18.11	94	91	80-120	4	20
Xylene (Total)	60	57.83	55.83	96	93	80-120	4	20
Styrene	20	19.44	18.74	97	94	80-120	4	20

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCS411 LCSD: LCD411 **Analyte**	Batch: **4172202AA** (Sample number(s): 9137935-9137937) **Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Bromoform	20	17.07	16.7	85	84	64-120	2	20
Isopropylbenzene	20	19.49	18.64	97	93	80-120	4	20
1,1,2,2-Tetrachloroethane	20	18.66	17.95	93	90	72-120	4	20
1,3-Dichlorobenzene	20	18.69	18.17	93	91	80-120	3	20
1,4-Dichlorobenzene	20	19.02	18.45	95	92	80-120	3	20
1,2-Dichlorobenzene	20	18.79	18.35	94	92	80-120	2	20
1,2-Dibromo-3-chloropropane	20	19.38	18.54	97	93	59-120	4	20
1,2,4-Trichlorobenzene	20	17.44	16.93	87	85	58-120	3	20
Naphthalene	20	18.24	17.75	91	89	59-120	3	20

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_SMO01___

Lab File ID: 4l26t01.d BFB Injection Date: 07/26/17

Instrument ID: HP23297 BFB Injection Time: 08:31

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.62
75	30.0 - 60.0% of mass 95	45.46
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.82
173	Less than 2.0% of mass 174	0.00 (0.00)1
174	Greater than 50.0% of mass 95	89.08
175	5.0 - 9.0% of mass 174	6.25 (7.01)1
176	Greater than 95.0%, but less than 101.0% of mass 174	86.57 (97.19)1
177	5.0 - 9.0% of mass 176	5.84 (6.75)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD300	4l26l01.d	07/26/17	10:10
02	VSTD100	4l26l02.d	07/26/17	10:32
03	VSTD50	4l26l03.d	07/26/17	10:55
04	VSTD20	4l26l04.d	07/26/17	11:18
05	VSTD10	4l26l05.d	07/26/17	11:40
06	0.5PPB - 0.5PPB	4l26m01.d	07/26/17	12:49
07	LG4ICV	4l26v01.d	07/26/17	13:12
08	VSTD1	4l26l08.d	07/26/17	13:35
09	VSTD4	4l26l09.d	07/26/17	17:03

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_SMO01___

Lab File ID: 4g08t01.d BFB Injection Date: 08/08/17

Instrument ID: HP23297 BFB Injection Time: 08:51

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.08
75	30.0 - 60.0% of mass 95	46.75
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.62
173	Less than 2.0% of mass 174	0.00 (0.00)1
174	Greater than 50.0% of mass 95	90.23
175	5.0 - 9.0% of mass 174	6.60 (7.31)1
176	Greater than 95.0%, but less than 101.0% of mass 174	86.55 (95.91)1
177	5.0 - 9.0% of mass 176	5.75 (6.64)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	4g08c01.d	08/08/17	09:28
02	VBLK411	4g08b11.d	08/08/17	09:50
03	VBLK479	4g08b01.d	08/08/17	09:50
04	LCS411	4g08l01.d	08/08/17	10:13
05	LCS479	4g08s01.d	08/08/17	10:13
06	LCD411	4g08l02.d	08/08/17	10:39
07	LCD479	4g08s02.d	08/08/17	10:39
08	9138514	4g08s03.d	08/08/17	11:19
09	9138515	4g08s04.d	08/08/17	11:41
10	9138705	4g08s05.d	08/08/17	12:04
11	9138706	4g08s06.d	08/08/17	12:27
12	9138516	4g08s07.d	08/08/17	12:50
13	9138703	4g08s09.d	08/08/17	13:35
14	9138704	4g08s10.d	08/08/17	13:58
15	9140741	4g08s11.d	08/08/17	14:20
16	9139596	4g08s12.d	08/08/17	14:43
17	9137994	4g08s13.d	08/08/17	15:06
18	9137994DL	4g08s14.d	08/08/17	15:29
19	9137996	4g08s15.d	08/08/17	15:51
20	9137997	4g08s16.d	08/08/17	16:14
21	9140421	4g08s17.d	08/08/17	16:37
22	9140447	4g08s18.d	08/08/17	16:59

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_SMO01___

Lab File ID: 4g08t01.d BFB Injection Date: 08/08/17

Instrument ID: HP23297 BFB Injection Time: 08:51

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.08
75	30.0 - 60.0% of mass 95	46.75
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.62
173	Less than 2.0% of mass 174	0.00 (0.00)1
174	Greater than 50.0% of mass 95	90.23
175	5.0 - 9.0% of mass 174	6.60 (7.31)1
176	Greater than 95.0%, but less than 101.0% of mass 174	86.55 (95.91)1
177	5.0 - 9.0% of mass 176	5.75 (6.64)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
23	9132942	4g08s19.d	08/08/17	17:22
24	9132942DL	4g08s20.d	08/08/17	17:45
25	9137937	4g08s21.d	08/08/17	18:08
26	9137935	4g08s22.d	08/08/17	18:30
27	9137936	4g08s23.d	08/08/17	18:53

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 Calibration Date(s): 07/26/17 07/26/17

Heated Purge: (Y/N) Y Calibration Times: 10:10 17:03

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = 4126108.d RRF 4 = 4126109.d RRF 10= 4126105.d
RRF 20= 4126104.d RRF 50= 4126103.d RRF100= 4126102.d RRF300= 4126101.d

COMPOUND	RRF 1	RRF 4	RRF 10	RRF 20	RRF 50	RRF100	RRF300	RRF	% RSD	CAL. METHOD
Dichlorodifluoromethane	0.2094	0.2920	0.2562	0.2444	0.2660	0.3199	0.2747	0.2661	13	AVG
Chloromethane	#0.2943	0.3119	0.2765	0.2796	0.2962	0.3330	0.3043	0.2994	6	AVG #
1,3-Butadiene	0.3737	0.3877	0.2627	0.2565	0.2363	0.2360	0.2210	0.2820	24	2NDDEG
Vinyl Chloride	*0.2632	0.3021	0.2703	0.2634	0.2789	0.3233	0.2842	0.2836	8	AVG *
Bromomethane	0.1929	0.2223	0.1791	0.1778	0.1899	0.2130	0.1943	0.1956	8	AVG
Chloroethane	0.1621	0.1677	0.1485	0.1426	0.1545	0.1716	0.1511	0.1569	7	AVG
Dichlorofluoromethane		0.3940	0.7120	0.3470	0.3920	0.3937	0.3807	0.4366	31	2NDDEG
n-Pentane	0.4215	0.5431	0.4139	0.4038	0.4264	0.4331	0.4134	0.4365	11	AVG
Trichlorofluoromethane	0.2656	0.3302	0.2811	0.2738	0.2973	0.3475	0.3031	0.2998	10	AVG
Ethanol	0.1033	0.0935	0.1050	0.1014	0.1052	0.1018	0.0957	0.1008	5	AVG
Freon 123a	0.2017	0.3164	0.2493	0.2768	0.2792	0.2781	0.2695	0.2673	13	AVG
Acrolein	1.3412	1.6740	1.7023	1.3413	1.8066	1.7135	1.3441	1.5604	13	AVG
1,1-Dichloroethene	*0.1388	0.2223	0.1759	0.1939	0.1962	0.1960	0.1945	0.1882	14	AVG *
1,1-Dichloroethene(2)	*0.0618	0.1104	0.0883	0.0988	0.1007	0.1001	0.1003	0.0944	17	AVG *
Acetone	0.8085	0.8352	0.8377	0.6931	0.9469	0.8883	0.7305	0.8200	11	AVG
Freon 113	0.1324	0.2198	0.1772	0.1805	0.1975	0.2061	0.1992	0.1875	15	AVG
2-Propanol	0.6916	0.7414	0.6386	0.6686	0.7173	0.7097	0.7137	0.6973	5	AVG
Methyl Iodide	0.2825	0.4195	0.3436	0.3851	0.3885	0.3865	0.3851	0.3701	12	AVG
Carbon Disulfide	0.4530	0.7479	0.6094	0.6794	0.7027	0.7062	0.7104	0.6584	15	AVG
Allyl Chloride	0.3384	0.4528	0.4010	0.4122	0.3915	0.4345	0.4162	0.4067	9	AVG
Methyl Acetate	0.3809	0.4553	0.3701	0.3979	0.3615	0.4081	0.3873	0.3944	8	AVG
Methylene Chloride	0.2420	0.2859	0.2276	0.2516	0.2521	0.2486	0.2464	0.2506	7	AVG
t-Butyl alcohol	1.0814	1.2103	1.0470	1.1128	1.1514	1.1672	1.1376	1.1297	5	AVG
Acrylonitrile		0.1923	0.1883	0.1674	0.2355	0.2136	0.1805	0.1962	13	AVG
trans-1,2-Dichloroethene	0.1601	0.2591	0.2088	0.2366	0.2392	0.2359	0.2353	0.2250	14	AVG
Methyl Tertiary Butyl Ether	0.5670	0.7890	0.6762	0.7608	0.7706	0.7657	0.7487	0.7254	11	AVG
n-Hexane		0.3983	0.3276	0.3605	0.4077	0.4021	0.4007	0.3828	8	AVG
1,1-Dichloroethane	#0.3218	0.4870	0.3944	0.4454	0.4490	0.4438	0.4404	0.4260	12	AVG #
di-Isopropyl ether	0.6684	0.9300	0.7960	0.9027	0.9119	0.9088	0.8882	0.8580	11	AVG
2-Chloro-1,3-butadiene	0.2463	0.3961	0.3322	0.3689	0.3804	0.3815	0.3842	0.3557	15	AVG
Ethyl t-butyl ether	0.6016	0.7873	0.6748	0.7712	0.7889	0.7824	0.7672	0.7391	10	AVG
cis-1,2-Dichloroethene	0.1904	0.2930	0.2390	0.2657	0.2718	0.2703	0.2700	0.2572	13	AVG
2-Butanone	0.2416	0.2824	0.2894	0.2470	0.3481	0.3243	0.2712	0.2863	14	AVG
2,2-Dichloropropane	0.1897	0.3051	0.2592	0.2856	0.2992	0.3038	0.3104	0.2790	15	AVG
Propionitrile	1.1676	1.5100	1.2719	1.3105	1.3333	1.3539	1.3013	1.3212	8	AVG
Methacrylonitrile	0.1577	0.1987	0.1731	0.1883	0.1961	0.1954	0.1932	0.1860	8	AVG
Bromochloromethane	0.1164	0.1541	0.1319	0.1357	0.1292	0.1445	0.1388	0.1358	9	AVG
Tetrahydrofuran	0.9513	1.1960	1.1895	0.9415	1.3293	1.2579	1.0417	1.1296	13	AVG
Chloroform	*0.2975	0.4468	0.3612	0.4053	0.4077	0.4068	0.4070	0.3903	12	AVG *
1,1,1-Trichloroethane	0.2670	0.3990	0.3160	0.3439	0.3367	0.3405	0.3445	0.3354	12	AVG
Cyclohexane		0.4826	0.3885	0.4170	0.4563	0.4647	0.4531	0.4437	8	AVG
Cyclohexane(2)		0.3729	0.3137	0.3281	0.3623	0.3693	0.3604	0.3511	7	AVG
Cyclohexane(3)		0.1394	0.1126	0.1218	0.1346	0.1368	0.1344	0.1299	8	AVG
1,1-Dichloropropene	0.2214	0.3745	0.3071	0.3378	0.3408	0.3429	0.3415	0.3237	15	AVG
Carbon Tetrachloride	0.1757	0.2795	0.2368	0.2621	0.2714	0.2786	0.2882	0.2560	15	AVG
Isobutyl Alcohol	0.3932	0.4724	0.3979	0.4283	0.4274	0.4401	0.4329	0.4275	6	AVG
Benzene	0.7939	1.1247	0.9357	1.0249	1.0263	1.0195	1.0057	0.9901	10	AVG
1,2-Dichloroethane	0.2781	0.3535	0.2896	0.3273	0.3291	0.3285	0.3275	0.3191	8	AVG
1,2-Dichloroethane(2)		0.0324	0.0271	0.0320	0.0320	0.0320	0.0320	0.0313	7	AVG
t-Amyl methyl ether	0.5738	0.7592	0.6564	0.7402	0.7645	0.7563	0.7489	0.7142	10	AVG
n-Heptane	0.3097	0.4594	0.3757	0.4211	0.4701	0.4523	0.4579	0.4209	14	AVG
n-Butanol	0.2973	0.3562	0.3083	0.3389	0.3578	0.3677	0.3588	0.3407	8	AVG

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 Calibration Date(s): 07/26/17 07/26/17

Heated Purge: (Y/N) Y Calibration Times: 10:10 17:03

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = 4126108.d RRF 4 = 4126109.d RRF 10= 4126105.d
RRF 20= 4126104.d RRF 50= 4126103.d RRF100= 4126102.d RRF300= 4126101.d

COMPOUND	RRF 1	RRF 4	RRF 10	RRF 20	RRF 50	RRF100	RRF300	RRF	% RSD	CAL. METHOD
Trichloroethene	0.1929	0.2753	0.2313	0.2572	0.2534	0.2543	0.2562	0.2458	11	AVG
Methylcyclohexane	0.3193	0.4940	0.4079	0.3965	0.4009	0.4677	0.4427	0.4184	14	AVG
Methylcyclohexane(2)	0.1313	0.2076	0.1742	0.1718	0.1720	0.2011	0.1913	0.1785	14	AVG
1,2-Dichloropropane	*0.2311	0.2977	0.2559	0.2814	0.2851	0.2833	0.2817	0.2737	8	AVG *
Dibromomethane	0.1312	0.1850	0.1520	0.1714	0.1737	0.1738	0.1751	0.1660	11	AVG
1,4-Dioxane	0.0971	0.0896	0.0858	0.0881	0.0953	0.0954	0.0897	0.0916	5	AVG
Methyl Methacrylate	0.2356	0.2957	0.2457	0.2864	0.2905	0.2943	0.2974	0.2779	9	AVG
Bromodichloromethane	0.2194	0.3038	0.2587	0.2973	0.3117	0.3145	0.3252	0.2901	13	AVG
2-Nitropropane	0.0733	0.0984	0.1025	0.0919	0.1370	0.1336	0.1159	0.1075	21	2NDDEG
2-Chloroethyl Vinyl Ether	0.1702	0.2326	0.2255	0.2587	0.2390	0.2653	0.2476	0.2341	13	AVG
cis-1,3-Dichloropropene	0.2884	0.4026	0.3472	0.4088	0.4291	0.4343	0.4422	0.3932	14	AVG
4-Methyl-2-pentanone		0.5104	0.5251	0.4521	0.6356	0.6181	0.4805	0.5370	14	AVG
Toluene	*0.6679	0.9360	0.8002	0.8707	0.8668	0.8583	0.8383	0.8340	10	AVG *
trans-1,3-Dichloropropene	0.3577	0.4633	0.4107	0.4850	0.5128	0.5242	0.5271	0.4687	14	AVG
Ethyl Methacrylate	0.4701	0.6041	0.5241	0.6013	0.6230	0.6189	0.6110	0.5789	10	AVG
1,1,2-Trichloroethane	0.3112	0.3730	0.3147	0.3436	0.3489	0.3435	0.3398	0.3392	6	AVG
Tetrachloroethene	0.2737	0.4366	0.3545	0.3735	0.3803	0.3784	0.3807	0.3682	13	AVG
1,3-Dichloropropane	0.5068	0.6222	0.5208	0.5759	0.5794	0.5756	0.5632	0.5634	7	AVG
2-Hexanone	0.4053	0.5261	0.5610	0.4761	0.6619	0.6632	0.4927	0.5409	18	2NDDEG
Dibromochloromethane	0.2388	0.3359	0.2875	0.3337	0.3535	0.3621	0.3735	0.3264	15	AVG
1,2-Dibromoethane	0.3037	0.3913	0.3311	0.3738	0.3787	0.3754	0.3755	0.3613	9	AVG
Chlorobenzene	#0.8203	1.0754	0.8930	0.9834	0.9828	0.9705	0.9573	0.9546	8	AVG #
1,1,1,2-Tetrachloroethane	0.2464	0.3325	0.2776	0.3145	0.3253	0.3271	0.3375	0.3087	11	AVG
Ethylbenzene	*1.2742	1.7241	1.4992	1.6367	1.6499	1.6286	1.5752	1.5697	9	AVG *
m+p-Xylene	0.4950	0.6831	0.5949	0.6545	0.6638	0.6576	0.6489	0.6283	10	AVG
o-Xylene	0.4799	0.6648	0.5871	0.6535	0.6605	0.6568	0.6551	0.6225	11	AVG
Styrene	0.7908	1.1084	0.9613	1.0848	1.1106	1.1075	1.1010	1.0378	12	AVG
Bromoform	#0.2028	0.2620	0.2173	0.2564	0.2841	0.2921	0.3124	0.2610	15	AVG #
Isopropylbenzene	1.1872	1.6571	1.4607	1.6379	1.6595	1.6131	1.5648	1.5400	11	AVG
Cyclohexanone	0.2902	0.3344	0.3390	0.3341	0.3319	0.3551	0.3399	0.3321	6	AVG
Bromobenzene	0.6806	0.8925	0.7392	0.7993	0.8188	0.8033	0.8267	0.7943	9	AVG
1,1,2,2-Tetrachloroethane	#1.0478	1.2814	0.9914	1.1100	1.1250	1.0756	1.0442	1.0965	8	AVG #
1,2,3-Trichloropropane	0.3216	0.3688	0.2812	0.3111	0.3153	0.3032	0.3019	0.3147	9	AVG
trans-1,4-Dichloro-2-butene	0.2019	0.3020	0.2533	0.2894	0.3095	0.3041	0.2909	0.2787	14	AVG
n-Propylbenzene	2.7065	3.7788	3.2926	3.5729	3.6688	3.4365	3.1903	3.3780	11	AVG
2-Chlorotoluene	0.5749	0.7928	0.6650	0.7154	0.7429	0.7131	0.7064	0.7015	10	AVG
4-Chlorotoluene	0.6252	0.8325	0.7005	0.7644	0.7814	0.7476	0.7447	0.7423	9	AVG
1,3,5-Trimethylbenzene	1.7891	2.5503	2.2772	2.5156	2.6050	2.4640	2.3826	2.3691	12	AVG
tert-Butylbenzene	0.3677	0.5150	0.4536	0.5011	0.5516	0.5115	0.5294	0.4900	13	AVG
Pentachloroethane	0.3242	0.4492	0.4094	0.4503	0.4300	0.4827	0.4907	0.4338	13	AVG
1,2,4-Trimethylbenzene	1.8858	2.6338	2.3821	2.6021	2.6854	2.5589	2.4863	2.4621	11	AVG
sec-Butylbenzene	2.4398	3.4447	2.9934	3.2748	3.4394	3.1871	3.0220	3.1145	11	AVG
1,3-Dichlorobenzene	1.2489	1.6423	1.4129	1.5333	1.5779	1.5036	1.5210	1.4914	9	AVG
p-Isopropyltoluene	2.0505	2.8832	2.5641	2.8252	2.9873	2.7956	2.7254	2.6902	12	AVG
1,4-Dichlorobenzene	1.4149	1.7008	1.4538	1.5601	1.6058	1.5447	1.5521	1.5474	6	AVG
1,2,3-Trimethylbenzene	2.2287	2.9224	2.5786	2.6346	2.4906	2.6880	2.4981	2.5773	8	AVG
Benzyl Chloride		1.5809	1.4242	1.7548	1.9603	1.9773	2.0381	1.7893	14	AVG
1,3-Diethylbenzene	1.3223	1.8258	1.6354	1.6657	1.5778	1.6918	1.6209	1.6200	9	AVG
1,4-Diethylbenzene	1.3801	1.9259	1.7084	1.7193	1.6329	1.7502	1.6934	1.6872	10	AVG
1,2-Dichlorobenzene	1.3175	1.6068	1.3864	1.4854	1.5285	1.4659	1.4757	1.4666	6	AVG
n-Butylbenzene	1.1290	1.5282	1.3508	1.4544	1.5269	1.4140	1.3964	1.4000	10	AVG
1,2-Diethylbenzene	1.1596	1.5181	1.3420	1.3943	1.3159	1.4211	1.3776	1.3612	8	AVG

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 Calibration Date(s): 07/26/17 07/26/17

Heated Purge: (Y/N) Y Calibration Times: 10:10 17:03

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

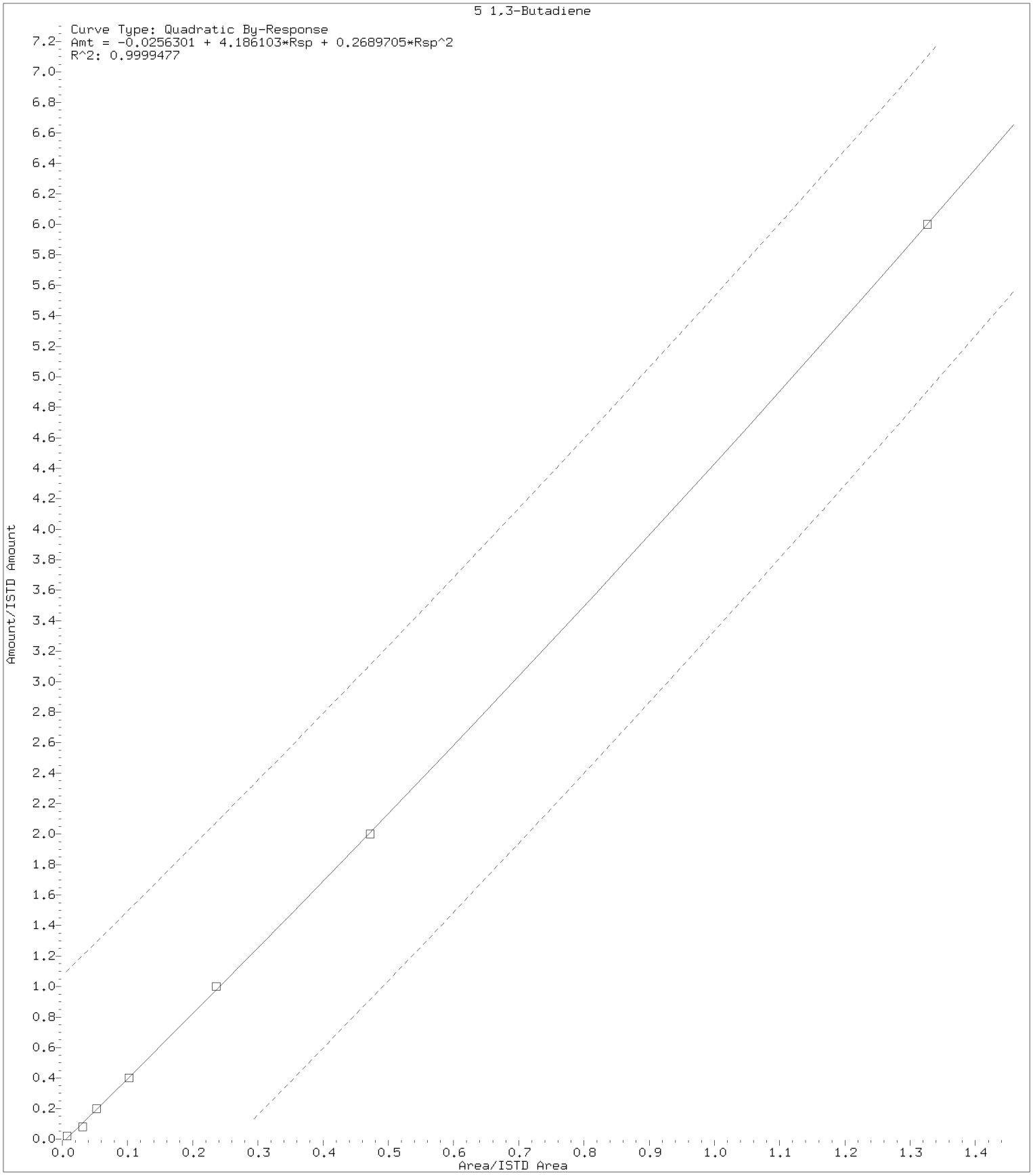
LAB FILE ID: RRF 1 = 4126l08.d RRF 4 = 4126l09.d RRF 10= 4126l05.d
RRF 20= 4126l04.d RRF 50= 4126l03.d RRF100= 4126l02.d RRF300= 4126l01.d

COMPOUND	RRF 1	RRF 4	RRF 10	RRF 20	RRF 50	RRF100	RRF300	RRF	% RSD	CAL. METHOD
1,2-Dibromo-3-chloropropane	0.2283	0.2484	0.2217	0.2630	0.2712	0.2666	0.2656	0.2521	8	AVG
1,3,5-Trichlorobenzene	1.0959	1.2342	1.0422	1.1434	1.1976	1.1176	1.1345	1.1379	6	AVG
1,2,4-Trichlorobenzene	1.1900	1.1449	1.0131	1.1027	1.1606	1.0868	1.0909	1.1127	5	AVG
Hexachlorobutadiene	0.5440	0.5359	0.4584	0.5187	0.5532	0.4991	0.5067	0.5166	6	AVG
Naphthalene	3.5361	3.7729	3.3537	3.8034	3.9199	3.7056	3.3908	3.6403	6	AVG
1,2,3-Trichlorobenzene	1.1560	1.1052	0.9916	1.0732	1.1042	1.0422	1.0260	1.0712	5	AVG
2-Methylnaphthalene	2.4119	2.0419	2.2936	2.3773	2.2408	2.3990	2.0524	2.2596	7	AVG
Dibromofluoromethane	0.2346	0.2357	0.2321	0.2333	0.2366	0.2358	0.2393	0.2353	1	AVG
Dibromofluoromethane(2)	0.2378	0.2418	0.2368	0.2398	0.2424	0.2411	0.2437	0.2405	1	AVG
1,2-Dichloroethane-d4	0.0601	0.0603	0.0586	0.0596	0.0597	0.0594	0.0593	0.0596	1	AVG
1,2-Dichloroethane-d4(2)	0.2682	0.2675	0.2603	0.2645	0.2674	0.2664	0.2708	0.2664	1	AVG
1,2-Dichloroethane-d4(3)	0.0387	0.0380	0.0373	0.0376	0.0381	0.0376	0.0378	0.0378	1	AVG
Toluene-d8	1.3139	1.3338	1.3389	1.3327	1.3150	1.3067	1.2807	1.3174	2	AVG
Toluene-d8(2)	0.8558	0.8650	0.8637	0.8629	0.8514	0.8514	0.8367	0.8553	1	AVG
4-Bromofluorobenzene	0.4661	0.4697	0.4718	0.4677	0.4683	0.4708	0.4650	0.4685	1	AVG
4-Bromofluorobenzene(2)	0.4276	0.4299	0.4301	0.4237	0.4221	0.4254	0.4229	0.4259	1	AVG

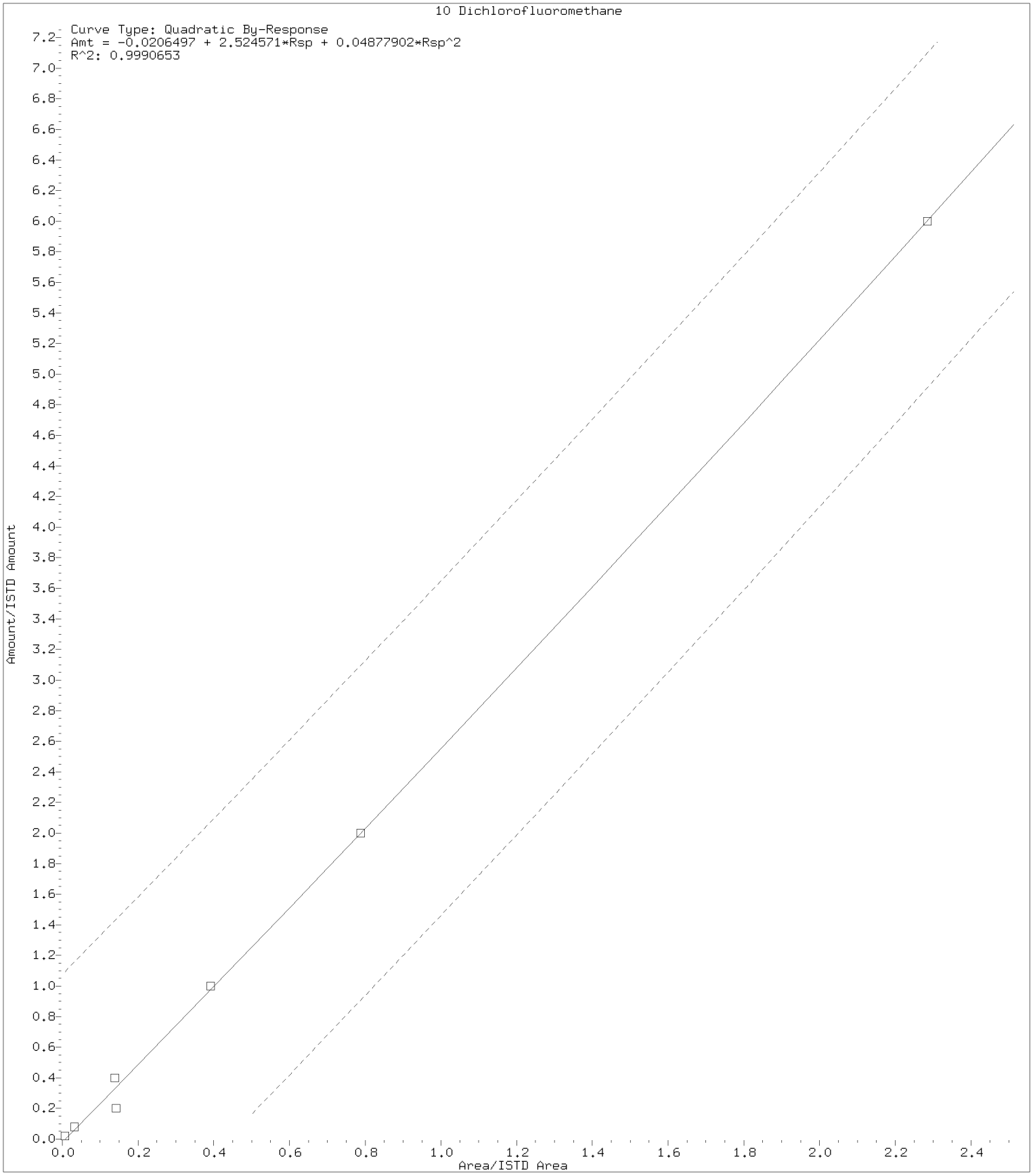
Average %RSD 10

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

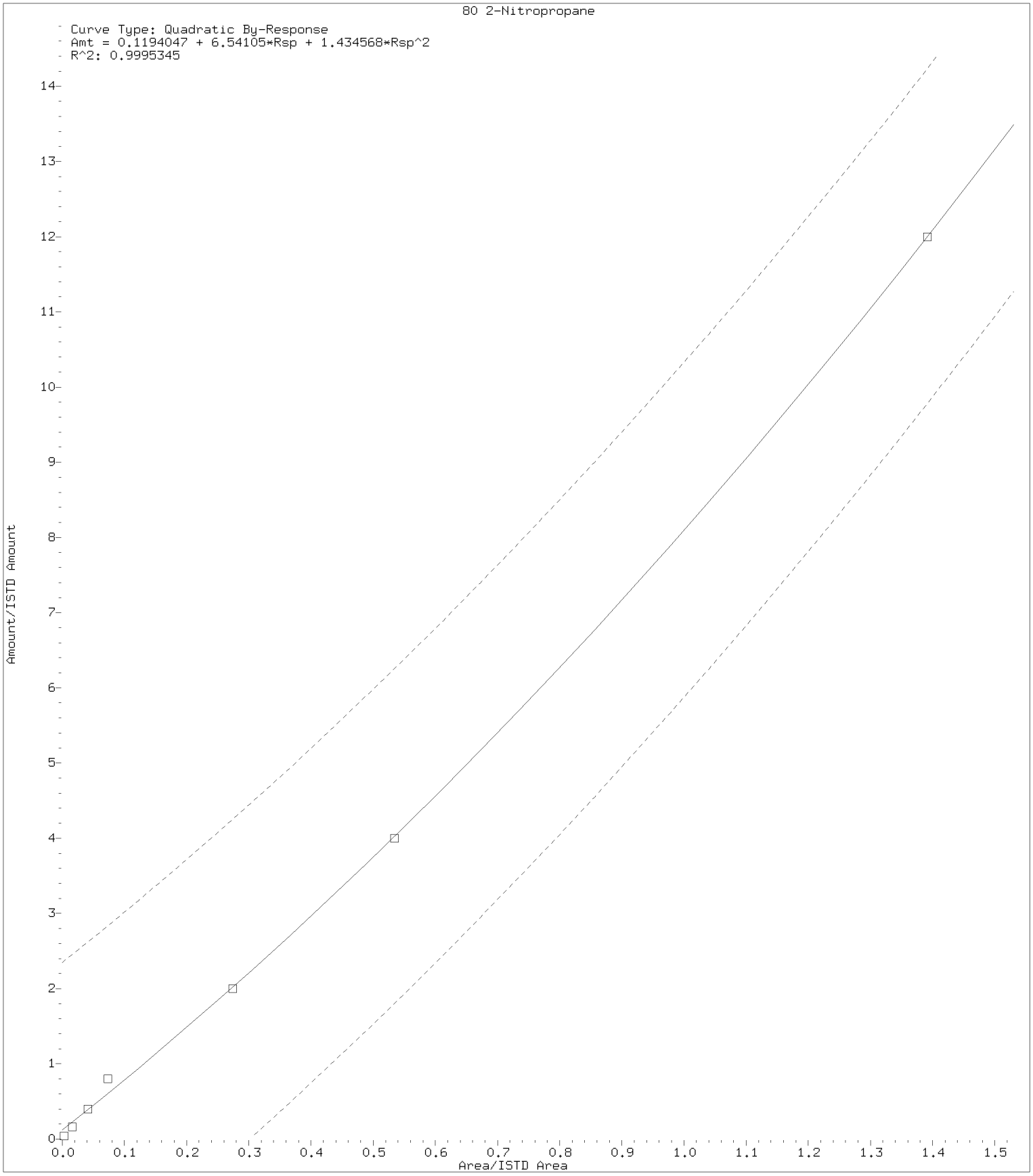
FORM VI VOA



Digitally signed by Patrick T. Herres on 07/26/2017 at 18:39.
Target 3.5 esignature user ID: pth10165



Digitally signed by Patrick T. Herres on 07/26/2017 at 18:39.
Target 3.5 esignature user ID: pth10165



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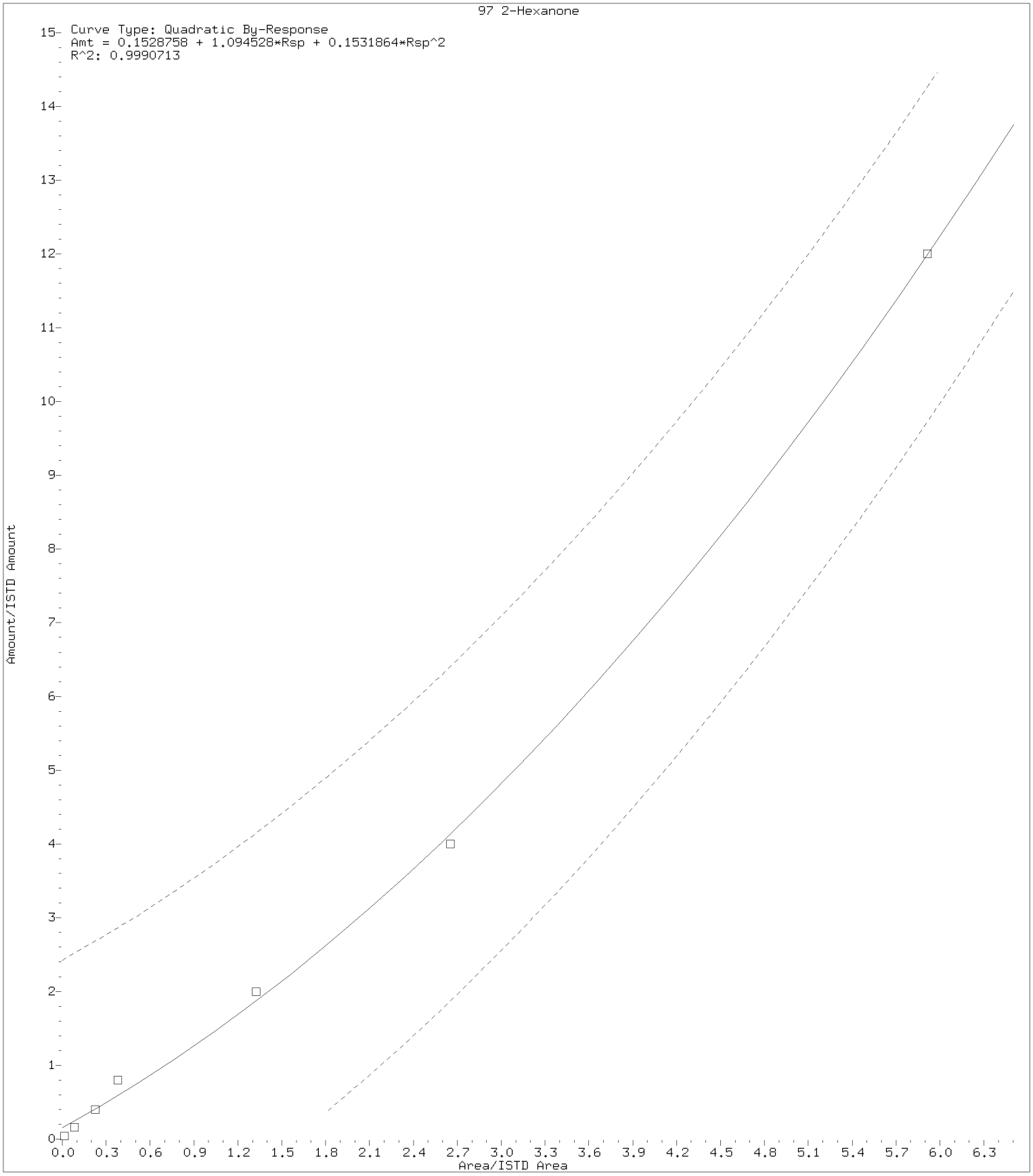
Target 3.5 esignature user ID: pth10165



Digitally signed by Patrick T. Herres on 07/26/2017 at 18:39.
Target 3.5 esignature user ID: pth10165

Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

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/chem/HP23297.i/17jul26i.b/4l26l03.d	VSTD050
/chem/HP23297.i/17jul26i.b/4l26l04.d	VSTD020
/chem/HP23297.i/17jul26i.b/4l26l05.d	VSTD010
/chem/HP23297.i/17jul26i.b/4l26l08.d	VSTD001
/chem/HP23297.i/17jul26i.b/4l26l09.d	VSTD004

Area Summary

File ID:

Internal Standard Name	4l26l01.d	4l26l02.d	4l26l03.d	4l26l04.d	4l26l05.d	4l26l08.d	4l26l09.d	Avg. Area	%RSD	In Spec
t-Butyl alcohol-d10	385775	377871	404375	375896	370860	442152	356082	387573	7	Yes
Fluorobenzene	1172250	1184763	1232195	1182410	1230378	1446033	1207454	1236498	8	Yes
Chlorobenzene-d5	904525	895994	926560	882322	904335	1084599	895359	927671	8	Yes
1,4-Dichlorobenzene-d4	518057	504495	507574	486298	497950	604326	493158	515980	8	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

Internal Standard Name	4l26l01.d	4l26l02.d	4l26l03.d	4l26l04.d	4l26l05.d	4l26l08.d	4l26l09.d	Avg. RT
t-Butyl alcohol-d10	4.191	4.191	4.191	4.185	4.185	4.197	4.185	4.189
Fluorobenzene	7.744	7.744	7.750	7.744	7.744	7.750	7.744	7.746
Chlorobenzene-d5	11.218	11.218	11.218	11.218	11.218	11.218	11.218	11.218
1,4-Dichlorobenzene-d4	13.097	13.098	13.098	13.097	13.097	13.097	13.098	13.097

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 07/26/2017 at 18:38.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 ICV Date: 07/26/17 Time: 13:12

Lab File ID: 4l26v01.d Init. Calib. Date(s): 07/26/17 07/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

	COMPOUND	$\overline{RRF}$	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT	
	Dichlorodifluoromethane	0.2661	0.2343	17.61	20	-12	
#	Chloromethane	0.2994	0.2855	19.07	20	-5	#
	1,3-Butadiene	0.2820	0.2977	23.84	20	19	
*	Vinyl Chloride	0.2836	0.2751	19.40	20	-3	*
	Bromomethane	0.1956	0.1908	19.51	20	-2	
	Chloroethane	0.1569	0.1518	19.36	20	-3	
	Dichlorofluoromethane	0.4366	0.3345	15.90	20	-20	
	n-Pentane	0.4365	0.4230	19.38	20	-3	
	Trichlorofluoromethane	0.2998	0.3017	20.13	20	1	
	Ethanol	0.1008	0.1051	521.20	500	4	
	Freon 123a	0.2673	0.2741	20.51	20	3	
	Acrolein	1.5604	1.4798	142.25	150	-5	
*	1,1-Dichloroethene	0.1882	0.2030	21.57	20	8	*
	Acetone	0.8200	0.8144	148.97	150	-1	
	Freon 113	0.1875	0.1979	21.11	20	6	
	2-Propanol	0.6973	0.7083	152.37	150	2	
	Methyl Iodide	0.3701	0.3729	20.15	20	1	
	Carbon Disulfide	0.6584	0.6456	19.61	20	-2	
	Allyl Chloride	0.4067	0.3854	18.95	20	-5	
	Methyl Acetate	0.3944	0.3634	18.42	20	-8	
	Methylene Chloride	0.2506	0.2500	19.95	20	0	
	t-Butyl alcohol	1.1297	1.1331	200.60	200	0	
	Acrylonitrile	0.1962	0.1853	94.42	100	-6	
	trans-1,2-Dichloroethene	0.2250	0.2384	21.19	20	6	
	Methyl Tertiary Butyl Ether	0.7254	0.7160	19.74	20	-1	
	n-Hexane	0.3828	0.3558	18.59	20	-7	
#	1,1-Dichloroethane	0.4260	0.4309	20.23	20	1	#
	di-Isopropyl ether	0.8580	0.8772	20.45	20	2	
	2-Chloro-1,3-butadiene	0.3557	0.3560	20.02	20	0	
	Ethyl t-butyl ether	0.7391	0.7197	19.48	20	-3	
	cis-1,2-Dichloroethene	0.2572	0.2682	20.86	20	4	
	2-Butanone	0.2863	0.2622	137.40	150	-8	
	2,2-Dichloropropane	0.2790	0.2740	19.64	20	-2	
	Propionitrile	1.3212	1.3455	152.76	150	2	
	Methacrylonitrile	0.1860	0.1887	152.11	150	1	
	Bromochloromethane	0.1358	0.1329	19.57	20	-2	

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 ICV Date: 07/26/17 Time: 13:12

Lab File ID: 4l26v01.d Init. Calib. Date(s): 07/26/17 07/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

	COMPOUND	$\overline{RRF}$	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT	
	Tetrahydrofuran	1.1296	1.1458	101.43	100	1	
*	Chloroform	0.3903	0.3960	20.29	20	1	*
	1,1,1-Trichloroethane	0.3354	0.3211	19.15	20	-4	
	Cyclohexane	0.4437	0.4214	19.00	20	-5	
	1,1-Dichloropropene	0.3237	0.3218	19.88	20	-1	
	Carbon Tetrachloride	0.2560	0.2513	19.63	20	-2	
	Isobutyl Alcohol	0.4275	0.4232	494.97	500	-1	
	Benzene	0.9901	1.0027	20.25	20	1	
	1,2-Dichloroethane	0.3191	0.3144	19.71	20	-1	
	t-Amyl methyl ether	0.7142	0.6906	19.34	20	-3	
	n-Heptane	0.4209	0.3974	18.88	20	-6	
	n-Butanol	0.3407	0.3338	979.79	1000	-2	
	Trichloroethene	0.2458	0.2460	20.01	20	0	
	Methylcyclohexane	0.4184	0.4142	19.80	20	-1	
*	1,2-Dichloropropane	0.2737	0.2776	20.28	20	1	*
	Dibromomethane	0.1660	0.1648	19.85	20	-1	
	1,4-Dioxane	0.0916	0.0855	466.99	500	-7	
	Methyl Methacrylate	0.2779	0.2664	19.17	20	-4	
	Bromodichloromethane	0.2901	0.2783	19.19	20	-4	
	2-Nitropropane	0.1075	0.0941	18.38	20	-8	
	2-Chloroethyl Vinyl Ether	0.2341	0.2259	19.30	20	-3	
	cis-1,3-Dichloropropene	0.3932	0.3868	19.67	20	-2	
	4-Methyl-2-pentanone	0.5370	0.5108	95.12	100	-5	
*	Toluene	0.8340	0.8466	20.30	20	2	*
	trans-1,3-Dichloropropene	0.4687	0.4570	19.50	20	-2	
	Ethyl Methacrylate	0.5789	0.5809	20.07	20	0	
	1,1,2-Trichloroethane	0.3392	0.3412	20.12	20	1	
	Tetrachloroethene	0.3682	0.3668	19.92	20	0	
	1,3-Dichloropropane	0.5634	0.5574	19.79	20	-1	
	2-Hexanone	0.5409	0.5141	72.01	100	-28	
	Dibromochloromethane	0.3264	0.3148	19.29	20	-4	
	1,2-Dibromoethane	0.3613	0.3602	19.94	20	0	
#	Chlorobenzene	0.9546	0.9592	20.09	20	0	#
	1,1,1,2-Tetrachloroethane	0.3087	0.3003	19.46	20	-3	
*	Ethylbenzene	1.5697	1.6040	20.44	20	2	*
	m+p-Xylene	0.6283	0.6446	41.04	40	3	

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 ICV Date: 07/26/17 Time: 13:12

Lab File ID: 4l26v01.d Init. Calib. Date(s): 07/26/17 07/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

	COMPOUND	$\overline{RRF}$	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT	
	o-Xylene	0.6225	0.6238	20.04	20	0	
	Styrene	1.0378	1.0603	20.43	20	2	
#	Bromoform	0.2610	0.2356	18.05	20	-10	#
	Isopropylbenzene	1.5400	1.5585	20.24	20	1	
	Cyclohexanone	0.3321	0.3266	491.67	500	-2	
	Bromobenzene	0.7943	0.7782	19.59	20	-2	
#	1,1,2,2-Tetrachloroethane	1.0965	1.0647	19.42	20	-3	#
	1,2,3-Trichloropropane	0.3147	0.3031	19.26	20	-4	
	trans-1,4-Dichloro-2-butene	0.2787	0.2975	106.73	100	7	
	n-Propylbenzene	3.3780	3.4158	20.22	20	1	
	2-Chlorotoluene	0.7015	0.7010	19.99	20	0	
	4-Chlorotoluene	0.7423	0.7364	19.84	20	-1	
	1,3,5-Trimethylbenzene	2.3691	2.3669	19.98	20	0	
	tert-Butylbenzene	0.4900	0.4863	19.85	20	-1	
	Pentachloroethane	0.4338	0.4126	19.02	20	-5	
	1,2,4-Trimethylbenzene	2.4621	2.4730	20.09	20	0	
	sec-Butylbenzene	3.1145	3.1009	19.91	20	0	
	1,3-Dichlorobenzene	1.4914	1.4559	19.52	20	-2	
	p-Isopropyltoluene	2.6902	2.6937	20.03	20	0	
	1,4-Dichlorobenzene	1.5474	1.5060	19.46	20	-3	
	1,2,3-Trimethylbenzene	2.5773	2.5701	19.94	20	0	
	Benzyl Chloride	1.7893	1.5747	17.60	20	-12	
	1,3-Diethylbenzene	1.6200	1.5639	19.31	20	-3	
	1,4-Diethylbenzene	1.6872	1.6374	19.41	20	-3	
	1,2-Dichlorobenzene	1.4666	1.4363	19.59	20	-2	
	n-Butylbenzene	1.4000	1.3531	19.33	20	-3	
	1,2-Diethylbenzene	1.3612	1.3405	19.70	20	-2	
	1,2-Dibromo-3-chloropropane	0.2521	0.2439	19.35	20	-3	
	1,3,5-Trichlorobenzene	1.1379	1.0747	18.89	20	-6	
	1,2,4-Trichlorobenzene	1.1127	1.0293	18.50	20	-7	
	Hexachlorobutadiene	0.5166	0.4524	17.51	20	-12	
	Naphthalene	3.6403	3.5698	19.61	20	-2	
	1,2,3-Trichlorobenzene	1.0712	0.9947	18.57	20	-7	
	2-Methylnaphthalene	2.2596	1.9670	17.41	20	-13	

Average %Drift 4

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

^

Lancaster Laboratories
Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP23297.i/17jul26i.b/4126108.d
/chem/HP23297.i/17jul26i.b/4126109.d
/chem/HP23297.i/17jul26i.b/4126105.d
/chem/HP23297.i/17jul26i.b/4126104.d
/chem/HP23297.i/17jul26i.b/4126103.d
/chem/HP23297.i/17jul26i.b/4126102.d
/chem/HP23297.i/17jul26i.b/4126101.d

File /chem/HP23297.i/17jul26i.b/4126103.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP23297.i/17aug08a.b/4g08c01.d

RT Summary

Internal Standard Name	File ID: 4g08c01.d	ICAL RT	In Spec
t-Butyl alcohol-d10	4.203	4.191	Yes
Fluorobenzene	7.750	7.750	Yes
Chlorobenzene-d5	11.218	11.218	Yes
1,4-Dichlorobenzene-d4	13.097	13.098	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: 4g08c01.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl alcohol-d10	387341	404375	202188	808750	Yes
Fluorobenzene	1182228	1232195	616098	2464390	Yes
Chlorobenzene-d5	903376	926560	463280	1853120	Yes
1,4-Dichlorobenzene-d4	511050	507574	253787	1015148	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments:

report generated on 08/08/2017 at 10:38

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 Calibration Date: 08/08/17 Time: 09:28

Lab File ID: 4g08c01.d Init. Calib. Date(s): 07/26/17 07/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

	COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT	
	Dichlorodifluoromethane	0.2661	0.2604	48.92	50	-2	
#	Chloromethane	0.2994	0.2902	48.46	50	-3	#
	1,3-Butadiene	0.2820	0.3159	66.18	50	32	
*	Vinyl Chloride	0.2836	0.2815	49.63	50	-1	*
	Bromomethane	0.1956	0.1963	50.19	50	0	
	Chloroethane	0.1569	0.1584	50.47	50	1	
	n-Pentane	0.4365	0.3993	45.74	50	-9	
	Trichlorofluoromethane	0.2998	0.3281	54.72	50	9	
	Ethanol	0.1008	0.0859	1064.54	1250	-15	
	Freon 123a	0.2673	0.1489	49.78	50	0	
	Acrolein	1.5604	1.4794	474.04	500	-5	
*	1,1-Dichloroethene	0.1882	0.1896	50.36	50	1	*
*	1,1-Dichloroethene(2)	0.0944	0.0983	52.10	50	4	*
	Acetone	0.8200	0.8512	103.80	100	4	
	Freon 113	0.1875	0.1953	52.06	50	4	
	2-Propanol	0.6973	0.6509	233.36	250	-7	
	Methyl Iodide	0.3701	0.3755	50.72	50	1	
	Carbon Disulfide	0.6584	0.6846	51.98	50	4	
	Allyl Chloride	0.4067	0.3715	45.68	50	-9	
	Methyl Acetate	0.3944	0.3792	48.07	50	-4	
	Methylene Chloride	0.2506	0.2382	47.52	50	-5	
	t-Butyl alcohol	1.1297	1.0975	242.88	250	-3	
	Acrylonitrile	0.1962	0.2023	51.55	50	3	
	trans-1,2-Dichloroethene	0.2250	0.2288	50.84	50	2	
	Methyl Tertiary Butyl Ether	0.7254	0.6911	47.64	50	-5	
	n-Hexane	0.3828	0.3690	48.19	50	-4	
#	1,1-Dichloroethane	0.4260	0.4241	49.77	50	0	#
	di-Isopropyl ether	0.8580	0.8217	47.88	50	-4	
	2-Chloro-1,3-butadiene	0.3557	0.3682	51.77	50	4	
	Ethyl t-butyl ether	0.7391	0.6972	47.17	50	-6	
	cis-1,2-Dichloroethene	0.2572	0.2572	50.01	50	0	
	2-Butanone	0.2863	0.3069	107.21	100	7	
	2,2-Dichloropropane	0.2790	0.2867	51.38	50	3	
	Propionitrile	1.3212	1.3305	251.76	250	1	
	Methacrylonitrile	0.1860	0.1907	128.10	125	2	
	Bromochloromethane	0.1358	0.1307	48.11	50	-4	

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 Calibration Date: 08/08/17 Time: 09:28

Lab File ID: 4g08c01.d Init. Calib. Date(s): 07/26/17 07/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

	COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT	
	Tetrahydrofuran	1.1296	1.1868	105.06	100	5	
*	Chloroform	0.3903	0.4007	51.32	50	3	*
	1,1,1-Trichloroethane	0.3354	0.3335	49.73	50	-1	
	Cyclohexane	0.4437	0.4250	47.90	50	-4	
	Cyclohexane(2)	0.3511	0.3398	48.39	50	-3	
	Cyclohexane(3)	0.1299	0.1241	47.76	50	-4	
	1,1-Dichloropropene	0.3237	0.3327	51.39	50	3	
	Carbon Tetrachloride	0.2560	0.2712	52.97	50	6	
	Isobutyl Alcohol	0.4275	0.4301	628.90	625	1	
	Benzene	0.9901	0.9812	49.55	50	-1	
	1,2-Dichloroethane	0.3191	0.3267	51.19	50	2	
	1,2-Dichloroethane(2)	0.0313	0.0308	49.24	50	-2	
	t-Amyl methyl ether	0.7142	0.6781	47.47	50	-5	
	n-Heptane	0.4209	0.4175	49.60	50	-1	
	n-Butanol	0.3407	0.3504	1285.46	1250	3	
	Trichloroethene	0.2458	0.2484	50.52	50	1	
	Methylcyclohexane	0.4184	0.4054	48.44	50	-3	
	Methylcyclohexane(2)	0.1785	0.1757	49.22	50	-2	
*	1,2-Dichloropropane	0.2737	0.2679	48.93	50	-2	*
	Dibromomethane	0.1660	0.1683	50.68	50	1	
	1,4-Dioxane	0.0916	0.0905	617.76	625	-1	
	Methyl Methacrylate	0.2779	0.2807	50.49	50	1	
	Bromodichloromethane	0.2901	0.3037	52.34	50	5	
	2-Nitropropane	0.1075	0.1311	96.63	100	-3	
	2-Chloroethyl Vinyl Ether	0.2341	0.2296	49.02	50	-2	
	cis-1,3-Dichloropropene	0.3932	0.4069	51.74	50	3	
	4-Methyl-2-pentanone	0.5370	0.5551	103.37	100	3	
*	Toluene	0.8340	0.8213	49.24	50	-2	*
	trans-1,3-Dichloropropene	0.4687	0.4836	51.59	50	3	
	Ethyl Methacrylate	0.5789	0.5789	49.99	50	0	
	1,1,2-Trichloroethane	0.3392	0.3312	48.51	50	-3	
	Tetrachloroethene	0.3682	0.3644	49.48	50	-1	
	1,3-Dichloropropane	0.5634	0.5496	48.78	50	-2	
	2-Hexanone	0.5409	0.5907	82.99	100	-17	
	Dibromochloromethane	0.3264	0.3402	52.10	50	4	
	1,2-Dibromoethane	0.3613	0.3639	50.36	50	1	

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 Calibration Date: 08/08/17 Time: 09:28

Lab File ID: 4g08c01.d Init. Calib. Date(s): 07/26/17 07/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

	COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT	
#	Chlorobenzene	0.9546	0.9389	49.18	50	-2	#
	1,1,1,2-Tetrachloroethane	0.3087	0.3090	50.05	50	0	
*	Ethylbenzene	1.5697	1.5659	49.88	50	0	*
	m+p-Xylene	0.6283	0.6237	99.27	100	-1	
	o-Xylene	0.6225	0.6159	49.47	50	-1	
	Styrene	1.0378	1.0518	50.68	50	1	
#	Bromoform	0.2610	0.2756	52.79	50	6	#
	Isopropylbenzene	1.5400	1.5379	49.93	50	0	
	Cyclohexanone	0.3321	0.3446	648.62	625	4	
	Bromobenzene	0.7943	0.7634	48.05	50	-4	
#	1,1,2,2-Tetrachloroethane	1.0965	1.0447	47.64	50	-5	#
	1,2,3-Trichloropropane	0.3147	0.3035	48.21	50	-4	
	trans-1,4-Dichloro-2-butene	0.2787	0.2024	90.77	125	-27	
	n-Propylbenzene	3.3780	3.3021	48.88	50	-2	
	2-Chlorotoluene	0.7015	0.6797	48.44	50	-3	
	4-Chlorotoluene	0.7423	0.7121	47.97	50	-4	
	1,3,5-Trimethylbenzene	2.3691	2.3471	49.54	50	-1	
	tert-Butylbenzene	0.4900	0.5208	49.53	50	-1	
	Pentachloroethane	0.4338	0.4161	47.96	50	-4	
	1,2,4-Trimethylbenzene	2.4621	2.4243	49.23	50	-2	
	sec-Butylbenzene	3.1145	3.0201	48.49	50	-3	
	1,3-Dichlorobenzene	1.4914	1.4535	48.73	50	-3	
	p-Isopropyltoluene	2.6902	2.6366	49.00	50	-2	
	1,4-Dichlorobenzene	1.5474	1.4920	48.21	50	-4	
	1,2,3-Trimethylbenzene	2.5773	2.3811	46.19	50	-8	
	Benzyl Chloride	1.7893	1.8803	52.54	50	5	
	1,3-Diethylbenzene	1.6200	1.4865	45.88	50	-8	
	1,4-Diethylbenzene	1.6872	1.5499	45.93	50	-8	
	1,2-Dichlorobenzene	1.4666	1.4163	48.29	50	-3	
	n-Butylbenzene	1.4000	1.3491	48.18	50	-4	
	1,2-Diethylbenzene	1.3612	1.2538	46.06	50	-8	
	1,2-Dibromo-3-chloropropane	0.2521	0.2672	53.00	50	6	
	1,3,5-Trichlorobenzene	1.1379	1.0680	46.93	50	-6	
	1,2,4-Trichlorobenzene	1.1127	1.0208	45.87	50	-8	
	Hexachlorobutadiene	0.5166	0.4844	46.88	50	-6	
	Naphthalene	3.6403	3.4993	48.06	50	-4	

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP23297 Calibration Date: 08/08/17 Time: 09:28

Lab File ID: 4g08c01.d Init. Calib. Date(s): 07/26/17 07/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT
1,2,3-Trichlorobenzene	1.0712	0.9660	45.09	50	-10
2-Methylnaphthalene	2.2596	1.9064	42.19	50	-16
Dibromofluoromethane	0.2353	0.2413	51.26	50	3
Dibromofluoromethane(2)	0.2405	0.2454	51.02	50	2
1,2-Dichloroethane-d4	0.0596	0.0594	49.89	50	0
1,2-Dichloroethane-d4(2)	0.2664	0.2759	51.77	50	4
1,2-Dichloroethane-d4(3)	0.0378	0.0377	49.86	50	0
Toluene-d8	1.3174	1.3105	49.74	50	-1
Toluene-d8(2)	0.8553	0.8504	49.71	50	-1
4-Bromofluorobenzene	0.4685	0.4765	50.86	50	2
4-Bromofluorobenzene(2)	0.4259	0.4347	51.03	50	2

Average %Drift 4

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_SMO01___

Lab File ID (Standard): 4g08c01.d Date Analyzed: 08/08/17

Instrument ID: HP23297 Time Analyzed: 09:28

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	387341	4.203	1182228	7.750	903376	11.218	511050	13.097
UPPER LIMIT	774682	4.703	2364456	8.250	1806752	11.718	1022100	13.597
LOWER LIMIT	193670	3.703	591114	7.250	451688	10.718	255525	12.597
LAB SAMPLE ID								
01 VBLK479	397458	4.197	1179908	7.750	905945	11.218	500933	13.097
02 VBLK411	397458	4.197	1179908	7.750	905945	11.218	500933	13.097
03 LCS479	407270	4.197	1175046	7.744	903875	11.218	503695	13.098
04 LCS411	407270	4.197	1175046	7.744	903875	11.218	503695	13.098
05 LCD479	416318	4.191	1234938	7.744	945268	11.218	521928	13.097
06 LCD411	416318	4.191	1234938	7.744	945268	11.218	521928	13.097
07 9138514	443499	4.185	1340892	7.738	1018050	11.218	553285	13.097
08 9138515	389087	4.203	1178233	7.750	892809	11.217	495670	13.097
09 9138705	382353	4.191	1167387	7.744	889593	11.217	487317	13.097
10 9138706	376462	4.191	1175664	7.744	901600	11.218	498546	13.097
11 9138516	397222	4.191	1237305	7.744	932229	11.217	511574	13.097
12 9138703	415249	4.185	1248097	7.744	962879	11.218	536371	13.097
13 9138704	294391	4.185	1165637	7.744	888831	11.217	494387	13.097
14 9140741	394116	4.203	1277707	7.750	968695	11.217	533828	13.097
15 9139596	391043	4.191	1246748	7.744	960163	11.218	538458	13.097
16 9137994	413700	4.197	1269844	7.744	977527	11.218	535605	13.097
17 9137994DL	398580	4.203	1259229	7.750	961539	11.218	523287	13.097
18 9137996	392043	4.197	1222888	7.744	937657	11.218	528786	13.098
19 9137997	378771	4.197	1200757	7.744	913812	11.218	501155	13.097
20 9140421	366793	4.197	1154913	7.744	882598	11.217	498283	13.097
21 9140447	368828	4.197	1138627	7.750	881882	11.218	490288	13.097
22 9132942	371264	4.191	1175391	7.750	907207	11.217	537088	13.097

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_SMO01___

Lab File ID (Standard): 4g08c01.d Date Analyzed: 08/08/17

Instrument ID: HP23297 Time Analyzed: 09:28

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	387341	4.203	1182228	7.750	903376	11.218	511050	13.097
UPPER LIMIT	774682	4.703	2364456	8.250	1806752	11.718	1022100	13.597
LOWER LIMIT	193670	3.703	591114	7.250	451688	10.718	255525	12.597
LAB SAMPLE ID								
23 9132942DL	415740	4.191	1204056	7.750	923711	11.218	515291	13.097
24 9137937	396864	4.197	1191244	7.744	919981	11.218	516238	13.097
25 9137935	409875	4.203	1201600	7.750	926444	11.218	513158	13.097
26 9137936	373701	4.185	1146155	7.744	881543	11.218	488316	13.097

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

Sample Data

Volatiles by GC/MS

Fraction: Volatiles by GC/MS

10335: TCL4.3+Naph 8260B w/RPD20% Analyte Name	Default MDL	Default LOQ	Units
Dichlorodifluoromethane	0.5	1	ug/l
Chloromethane	0.5	1	ug/l
Vinyl Chloride	0.5	1	ug/l
Bromomethane	0.5	1	ug/l
Chloroethane	0.5	1	ug/l
Trichlorofluoromethane	0.5	1	ug/l
1,1-Dichloroethene	0.5	1	ug/l
Acetone	6	20	ug/l
Freon 113	2	10	ug/l
Carbon Disulfide	1	5	ug/l
Methyl Acetate	1	5	ug/l
Methylene Chloride	2	4	ug/l
trans-1,2-Dichloroethene	0.5	1	ug/l
Methyl Tertiary Butyl Ether	0.5	1	ug/l
1,1-Dichloroethane	0.5	1	ug/l
2-Butanone	3	10	ug/l
cis-1,2-Dichloroethene	0.5	1	ug/l
Chloroform	0.5	1	ug/l
1,1,1-Trichloroethane	0.5	1	ug/l
Cyclohexane	2	5	ug/l
Carbon Tetrachloride	0.5	1	ug/l
Benzene	0.5	1	ug/l
1,2-Dichloroethane	0.5	1	ug/l
Trichloroethene	0.5	1	ug/l
Methylcyclohexane	1	5	ug/l
1,2-Dichloropropane	0.5	1	ug/l
Bromodichloromethane	0.5	1	ug/l
cis-1,3-Dichloropropene	0.5	1	ug/l
4-Methyl-2-pentanone	3	10	ug/l
Toluene	0.5	1	ug/l
trans-1,3-Dichloropropene	0.5	1	ug/l
1,1,2-Trichloroethane	0.5	1	ug/l
Tetrachloroethene	0.5	1	ug/l
2-Hexanone	3	10	ug/l
Dibromochloromethane	0.5	1	ug/l
1,2-Dibromoethane	0.5	1	ug/l
Chlorobenzene	0.5	1	ug/l
Ethylbenzene	0.5	1	ug/l
m+p-Xylene	0.5	1	ug/l
o-Xylene	0.5	1	ug/l
Xylene (Total)	0.5	1	ug/l
Styrene	1	5	ug/l
Bromoform	0.5	4	ug/l
Isopropylbenzene	1	5	ug/l
1,1,2,2-Tetrachloroethane	0.5	1	ug/l
1,3-Dichlorobenzene	1	5	ug/l
1,4-Dichlorobenzene	1	5	ug/l

Fraction: Volatiles by GC/MS

10335: TCL4.3+Naph 8260B w/RPD20% Analyte Name	Default MDL	Default LOQ	Units
1,2-Dichlorobenzene	1	5	ug/l
1,2-Dibromo-3-chloropropane	2	5	ug/l
1,2,4-Trichlorobenzene	1	5	ug/l
Naphthalene	1	5	ug/l

SW004 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 9137935

Data file: /chem/HP23297.i/17aug08a.b/4g08s22.d Injection date and time: **08-AUG-2017 18:30**
Data file Sample Info. Line: SW004;9137935;1;0;;SMO01;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
29) t-Butyl alcohol-d10	4.203	(0.000)	431	65	409875	(6)	250.00	
66) Fluorobenzene	7.750	(0.000)	1014	96	1201600	(2)	50.00	
101) Chlorobenzene-d5	11.218	(0.000)	1584	117	926444	(3)	50.00	
132) 1,4-Dichlorobenzene-d4	13.097	(0.000)	1893	152	513158	(0)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
52) Dibromofluoromethane	(2)	6.850	(0.000)	113	290340	51.333	103%		80 - 116
57) 1,2-Dichloroethane-d4	(2)	7.312	(0.000)	102	72616	50.731	101%		77 - 113
84) Toluene-d8	(3)	9.764	(0.000)	98	1206113	49.412	99%		80 - 113
115) 4-Bromofluorobenzene	(3)	12.221	(-0.001)	95	429257	49.450	99%		78 - 113

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
3) Dichlorodifluoromethane	(2)				Not Detected					0.5	1
4) Chloromethane	(2)				Not Detected					0.5	1
6) Vinyl Chloride	(2)				Not Detected					0.5	1
8) Bromomethane	(2)				Not Detected					0.5	1
9) Chloroethane	(2)				Not Detected					0.5	1
12) Trichlorofluoromethane	(2)				Not Detected					0.5	1
17) 1,1-Dichloroethene	(2)				Not Detected					0.5	1
18) Acetone	(1)				Not Detected					6	20
19) Freon 113	(2)				Not Detected					2	10
23) Carbon Disulfide	(2)				Not Detected					1	5
27) Methyl Acetate	(2)				Not Detected					1	5
28) Methylene Chloride	(2)				Not Detected					2	4
32) trans-1,2-Dichloroethene	(2)				Not Detected					0.5	1
33) Methyl Tertiary Butyl Ether	(2)				Not Detected					0.5	1
36) 1,1-Dichloroethane	(2)				Not Detected					0.5	1
42) cis-1,2-Dichloroethene	(2)				Not Detected					0.5	1
44) 2-Butanone	(2)				Not Detected					3	10
51) Chloroform	(2)				Not Detected					0.5	1
53) 1,1,1-Trichloroethane	(2)				Not Detected					0.5	1
54) Cyclohexane	(2)				Not Detected					2	5
56) Carbon Tetrachloride	(2)				Not Detected					0.5	1
60) Benzene	(2)				Not Detected					0.5	1
61) 1,2-Dichloroethane	(2)				Not Detected					0.5	1
71) Trichloroethene	(2)				Not Detected					0.5	1
73) Methylcyclohexane	(2)				Not Detected					1	5
74) 1,2-Dichloropropane	(2)				Not Detected					0.5	1
79) Bromodichloromethane	(2)				Not Detected					0.5	1
82) cis-1,3-Dichloropropene	(2)				Not Detected					0.5	1
83) 4-Methyl-2-pentanone	(2)				Not Detected					3	10
89) Toluene	(3)				Not Detected					0.5	1
90) trans-1,3-Dichloropropene	(3)				Not Detected					0.5	1

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:24. Target 3.5 esignature user ID: dhh02035

Data file: /chem/HP23297.i/17aug08a.b/4g08s22.d Injection date and time: **08-AUG-2017 18:30**
Data file Sample Info. Line: SW004;9137935;1;0;;SMO01;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

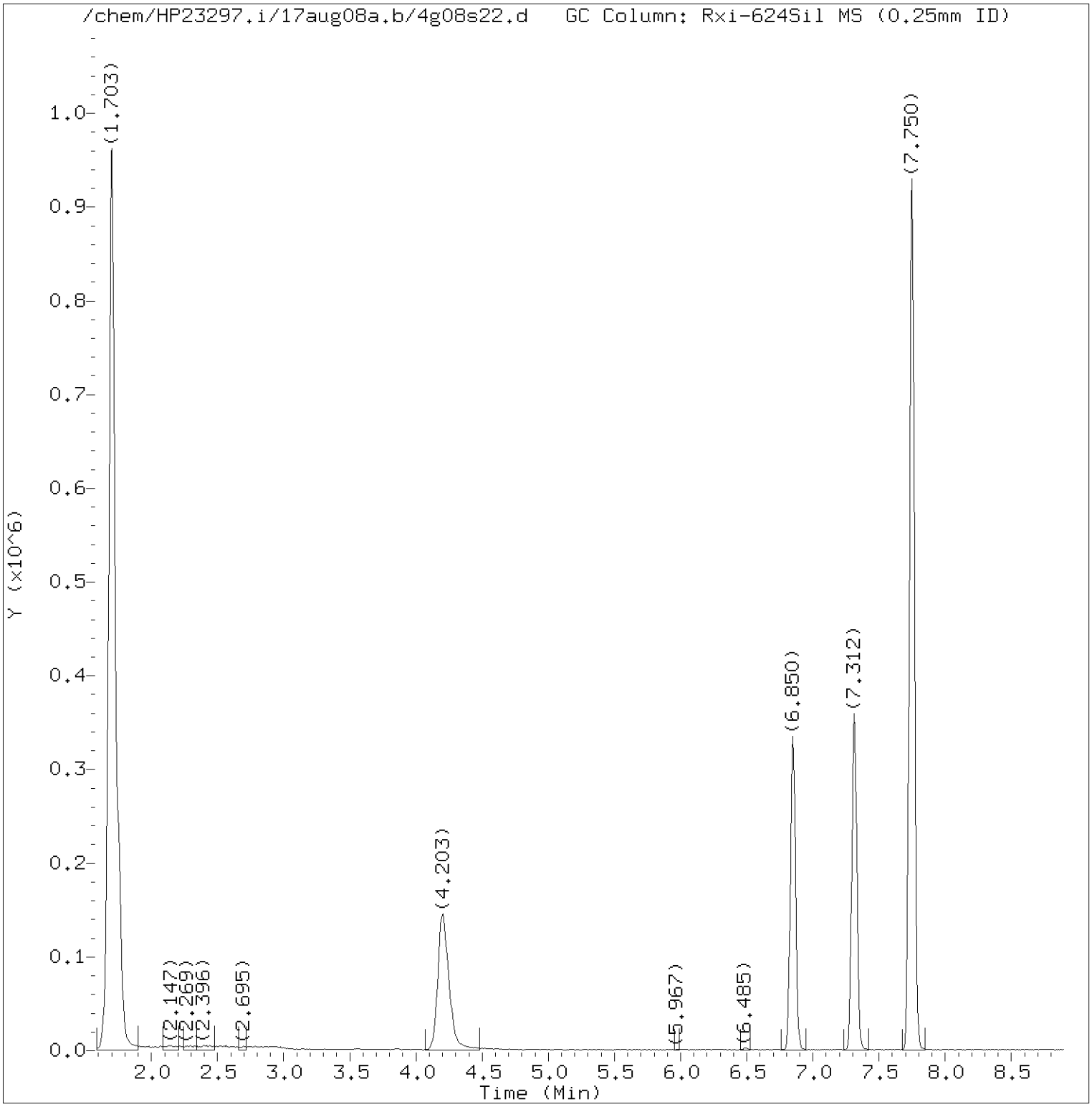
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
93) 1,1,2-Trichloroethane	(3)				Not Detected					0.5	1
94) Tetrachloroethene	(3)				Not Detected					0.5	1
97) 2-Hexanone	(3)				Not Detected					3	10
98) Dibromochloromethane	(3)				Not Detected					0.5	1
100) 1,2-Dibromoethane	(3)				Not Detected					0.5	1
103) Chlorobenzene	(3)				Not Detected					0.5	1
105) Ethylbenzene	(3)				Not Detected					0.5	1
107) m+p-Xylene	(3)				Not Detected					0.5	1
108) o-Xylene	(3)				Not Detected					0.5	1
109) Xylene (Total)	(3)				Not Detected					0.5	1
110) Styrene	(3)				Not Detected					1	5
111) Bromoform	(3)				Not Detected					0.5	4
112) Isopropylbenzene	(3)				Not Detected					1	5
117) 1,1,2,2-Tetrachloroethane	(4)				Not Detected					0.5	1
130) 1,3-Dichlorobenzene	(4)				Not Detected					1	5
134) 1,4-Dichlorobenzene	(4)				Not Detected					1	5
139) 1,2-Dichlorobenzene	(4)				Not Detected					1	5
143) 1,2-Dibromo-3-chloropropane	(4)				Not Detected					2	5
147) 1,2,4-Trichlorobenzene	(4)				Not Detected					1	5
149) Naphthalene	(4)				Not Detected					1	5

Total number of targets = 51

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:24. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/09/2017 at 15:46. PARALLAX ID: jeb12641



Total Ion Chromatogram (TIC)

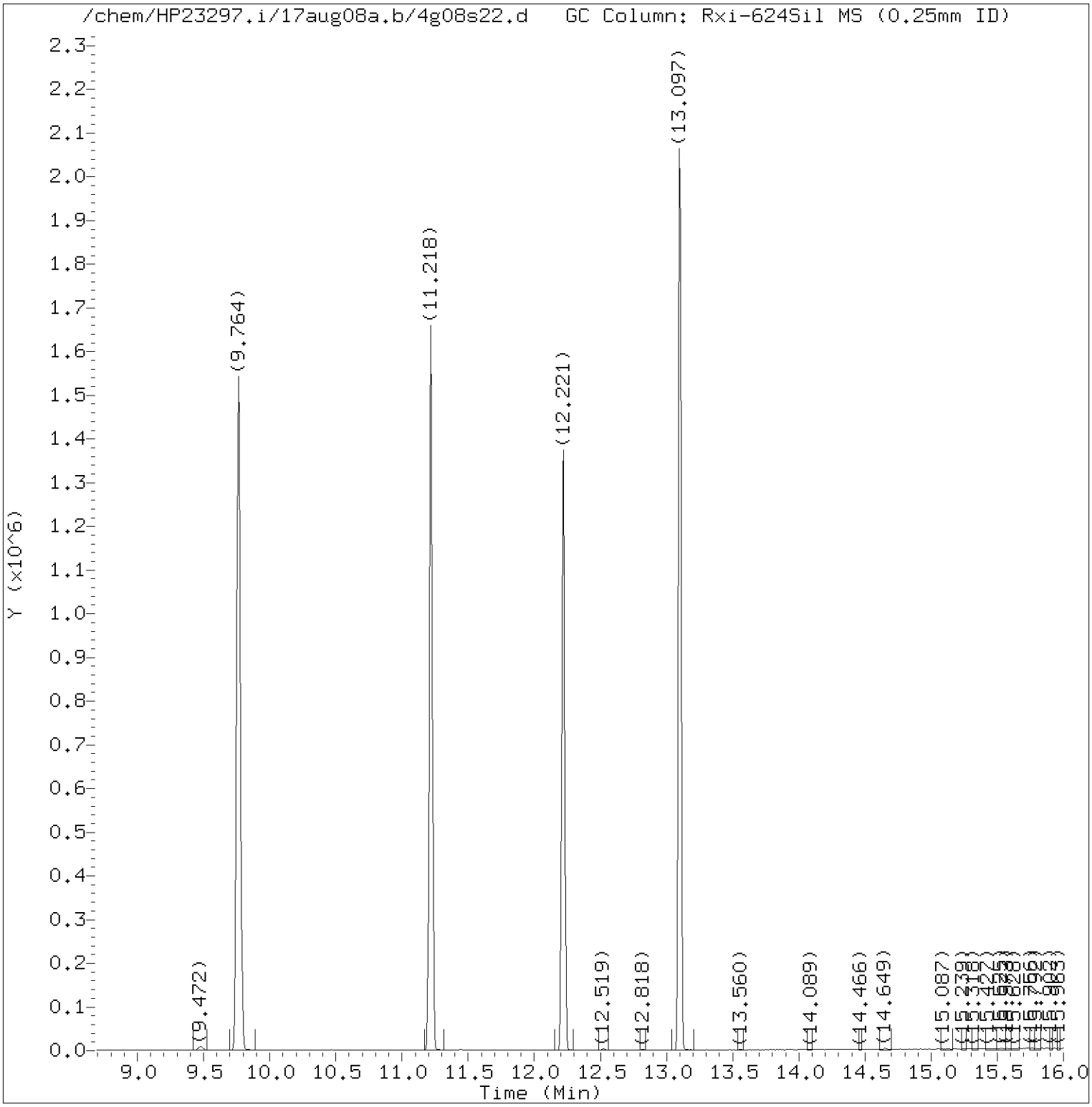
Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s22.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:30 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: SW004 Lab Sample ID: 9137935

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s22.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:30 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: SW004 Lab Sample ID: 9137935

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s22.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:30 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: SW004 Lab Sample ID: 9137935

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
29)*t-Butyl alcohol-d10	(1)	4.203	65	409875	250.000
52)$Dibromofluoromethane	(2)	6.850	113	290340	51.333
57)$1,2-Dichloroethane-d4	(2)	7.312	102	72616	50.731
66)*Fluorobenzene	(2)	7.750	96	1201600	50.000
84)$Toluene-d8	(3)	9.764	98	1206113	49.412
101)*Chlorobenzene-d5	(3)	11.218	117	926444	50.000
115)$4-Bromofluorobenzene	(3)	12.221	95	429257	49.450
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	513158	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035

SW104 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 9137936

Data file: /chem/HP23297.i/17aug08a.b/4g08s23.d Injection date and time: **08-AUG-2017 18:53**
Data file Sample Info. Line: SW104;9137936;1;0;;SMO01;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
29) t-Butyl alcohol-d10	4.185	(0.018)	428	65	373701	(-4)	250.00	
66) Fluorobenzene	7.744	(0.006)	1013	96	1146155	(-3)	50.00	
101) Chlorobenzene-d5	11.218	(0.000)	1584	117	881543	(-2)	50.00	
132) 1,4-Dichlorobenzene-d4	13.097	(0.000)	1893	152	488316	(-4)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
52) Dibromofluoromethane	(2)	6.843	(0.000)	113	276592	51.268	103%		80 - 116
57) 1,2-Dichloroethane-d4	(2)	7.312	(-0.001)	102	69299	50.756	102%		77 - 113
84) Toluene-d8	(3)	9.764	(0.000)	98	1151401	49.573	99%		80 - 113
115) 4-Bromofluorobenzene	(3)	12.215	(0.000)	95	411335	49.799	100%		78 - 113

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
3) Dichlorodifluoromethane	(2)				Not Detected					0.5	1
4) Chloromethane	(2)				Not Detected					0.5	1
6) Vinyl Chloride	(2)				Not Detected					0.5	1
8) Bromomethane	(2)				Not Detected					0.5	1
9) Chloroethane	(2)				Not Detected					0.5	1
12) Trichlorofluoromethane	(2)				Not Detected					0.5	1
17) 1,1-Dichloroethene	(2)				Not Detected					0.5	1
18) Acetone	(1)				Not Detected					6	20
19) Freon 113	(2)				Not Detected					2	10
23) Carbon Disulfide	(2)				Not Detected					1	5
27) Methyl Acetate	(2)				Not Detected					1	5
28) Methylene Chloride	(2)				Not Detected					2	4
32) trans-1,2-Dichloroethene	(2)				Not Detected					0.5	1
33) Methyl Tertiary Butyl Ether	(2)				Not Detected					0.5	1
36) 1,1-Dichloroethane	(2)				Not Detected					0.5	1
42) cis-1,2-Dichloroethene	(2)				Not Detected					0.5	1
44) 2-Butanone	(2)				Not Detected					3	10
51) Chloroform	(2)				Not Detected					0.5	1
53) 1,1,1-Trichloroethane	(2)				Not Detected					0.5	1
54) Cyclohexane	(2)				Not Detected					2	5
56) Carbon Tetrachloride	(2)				Not Detected					0.5	1
60) Benzene	(2)				Not Detected					0.5	1
61) 1,2-Dichloroethane	(2)				Not Detected					0.5	1
71) Trichloroethene	(2)				Not Detected					0.5	1
73) Methylcyclohexane	(2)				Not Detected					1	5
74) 1,2-Dichloropropane	(2)				Not Detected					0.5	1
79) Bromodichloromethane	(2)				Not Detected					0.5	1
82) cis-1,3-Dichloropropene	(2)				Not Detected					0.5	1
83) 4-Methyl-2-pentanone	(2)				Not Detected					3	10
89) Toluene	(3)				Not Detected					0.5	1
90) trans-1,3-Dichloropropene	(3)				Not Detected					0.5	1

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:24. Target 3.5 esignature user ID: dhh02035

Data file: /chem/HP23297.i/17aug08a.b/4g08s23.d Injection date and time: **08-AUG-2017 18:53**
Data file Sample Info. Line: SW104;9137936;1;0;;SMO01;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

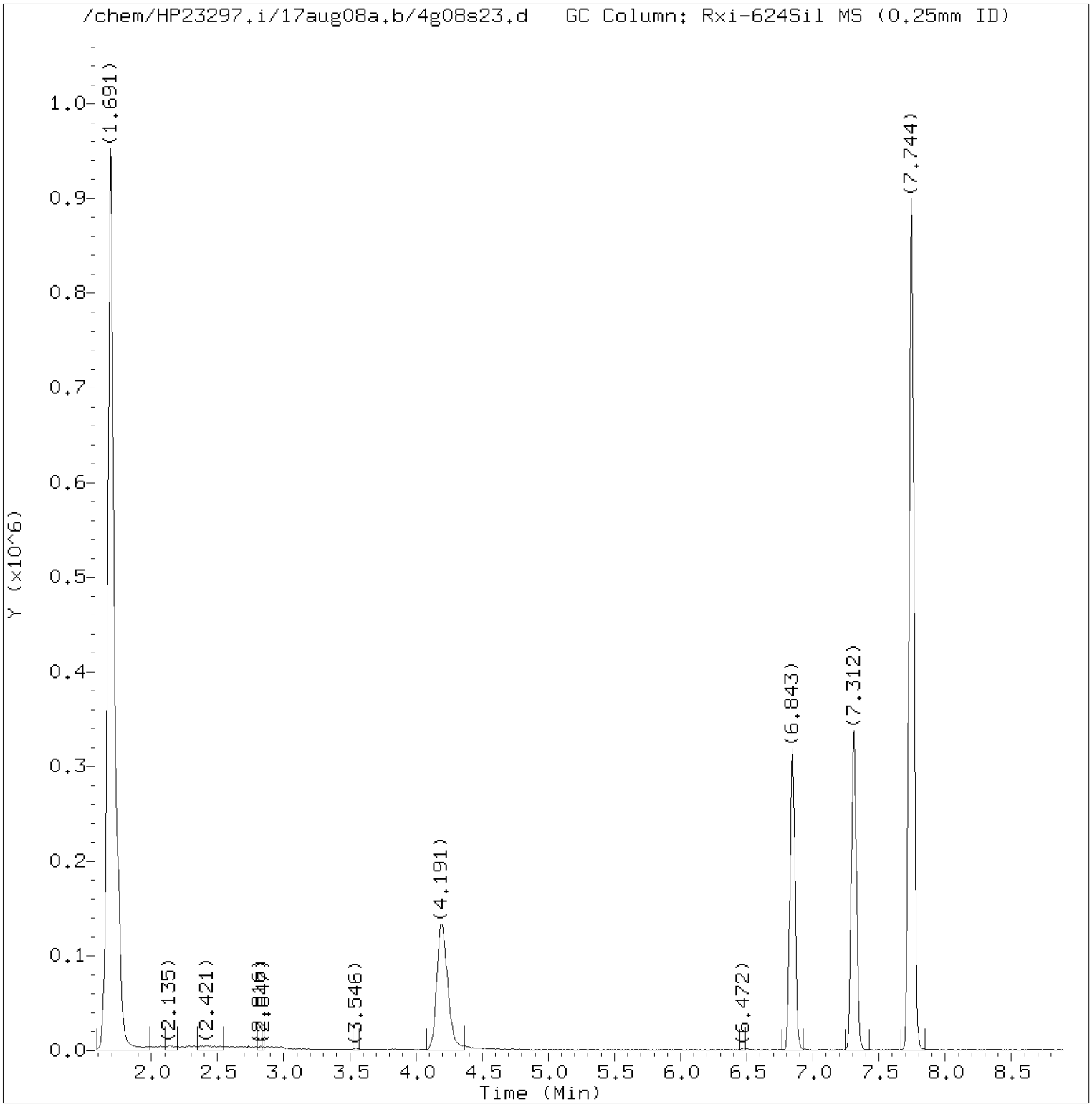
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
93) 1,1,2-Trichloroethane	(3)				Not Detected					0.5	1
94) Tetrachloroethene	(3)				Not Detected					0.5	1
97) 2-Hexanone	(3)				Not Detected					3	10
98) Dibromochloromethane	(3)				Not Detected					0.5	1
100) 1,2-Dibromoethane	(3)				Not Detected					0.5	1
103) Chlorobenzene	(3)				Not Detected					0.5	1
105) Ethylbenzene	(3)				Not Detected					0.5	1
107) m+p-Xylene	(3)				Not Detected					0.5	1
108) o-Xylene	(3)				Not Detected					0.5	1
109) Xylene (Total)	(3)				Not Detected					0.5	1
110) Styrene	(3)				Not Detected					1	5
111) Bromoform	(3)				Not Detected					0.5	4
112) Isopropylbenzene	(3)				Not Detected					1	5
117) 1,1,2,2-Tetrachloroethane	(4)				Not Detected					0.5	1
130) 1,3-Dichlorobenzene	(4)				Not Detected					1	5
134) 1,4-Dichlorobenzene	(4)				Not Detected					1	5
139) 1,2-Dichlorobenzene	(4)				Not Detected					1	5
143) 1,2-Dibromo-3-chloropropane	(4)				Not Detected					2	5
147) 1,2,4-Trichlorobenzene	(4)				Not Detected					1	5
149) Naphthalene	(4)				Not Detected					1	5

Total number of targets = 51

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:24. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/09/2017 at 15:46. PARALLAX ID: jeb12641



Total Ion Chromatogram (TIC)

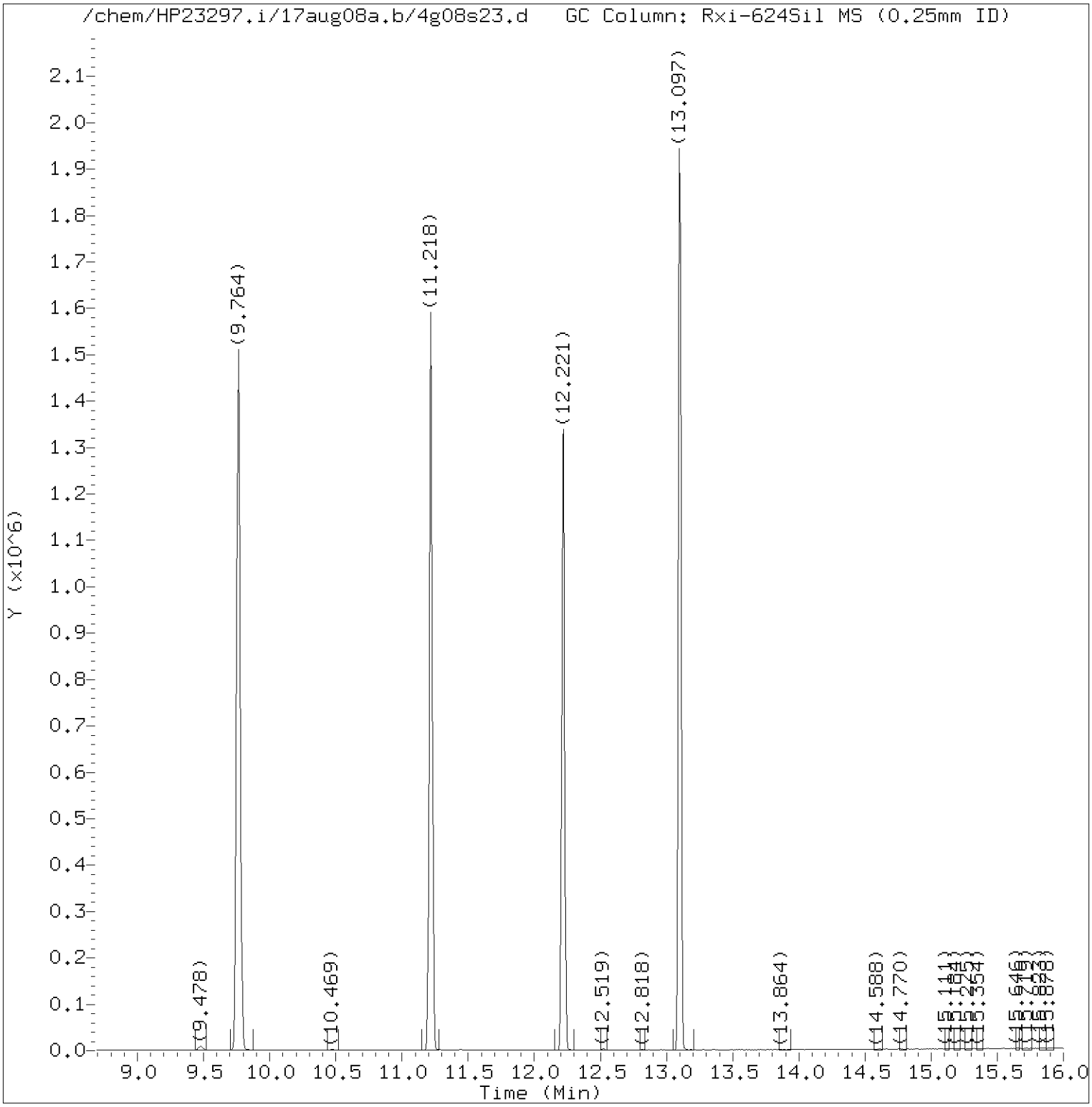
Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s23.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:53 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: SW104 Lab Sample ID: 9137936

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s23.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:53 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: SW104 Lab Sample ID: 9137936

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s23.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:53 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: SW104 Lab Sample ID: 9137936

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
29)*t-Butyl alcohol-d10	(1)	4.185	65	373701	250.000
52)$Dibromofluoromethane	(2)	6.843	113	276592	51.268
57)$1,2-Dichloroethane-d4	(2)	7.312	102	69299	50.756
66)*Fluorobenzene	(2)	7.744	96	1146155	50.000
84)$Toluene-d8	(3)	9.764	98	1151401	49.573
101)*Chlorobenzene-d5	(3)	11.218	117	881543	50.000
115)$4-Bromofluorobenzene	(3)	12.215	95	411335	49.799
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	488316	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035

T1817 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 9137937

Data file: /chem/HP23297.i/17aug08a.b/4g08s21.d Injection date and time: **08-AUG-2017 18:08**
Data file Sample Info. Line: T1817;9137937;1;0;;SMO01;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
29) t-Butyl alcohol-d10	4.197	(0.006)	430	65	396864	(2)	250.00	
66) Fluorobenzene	7.744	(0.006)	1013	96	1191244	(1)	50.00	
101) Chlorobenzene-d5	11.218	(0.000)	1584	117	919981	(2)	50.00	
132) 1,4-Dichlorobenzene-d4	13.097	(0.000)	1893	152	516238	(1)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
52) Dibromofluoromethane	(2)	6.843	(0.000)	113	286723	51.134	102%		80 - 116
57) 1,2-Dichloroethane-d4	(2)	7.306	(0.000)	102	73697	51.934	104%		77 - 113
84) Toluene-d8	(3)	9.764	(0.000)	98	1189952	49.092	98%		80 - 113
115) 4-Bromofluorobenzene	(3)	12.215	(0.000)	95	432548	50.180	100%		78 - 113

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
3) Dichlorodifluoromethane	(2)				Not Detected					0.5	1
4) Chloromethane	(2)				Not Detected					0.5	1
6) Vinyl Chloride	(2)				Not Detected					0.5	1
8) Bromomethane	(2)				Not Detected					0.5	1
9) Chloroethane	(2)				Not Detected					0.5	1
12) Trichlorofluoromethane	(2)				Not Detected					0.5	1
17) 1,1-Dichloroethene	(2)				Not Detected					0.5	1
18) Acetone	(1)				Not Detected					6	20
19) Freon 113	(2)				Not Detected					2	10
23) Carbon Disulfide	(2)				Not Detected					1	5
27) Methyl Acetate	(2)				Not Detected					1	5
28) Methylene Chloride	(2)				Not Detected					2	4
32) trans-1,2-Dichloroethene	(2)				Not Detected					0.5	1
33) Methyl Tertiary Butyl Ether	(2)				Not Detected					0.5	1
36) 1,1-Dichloroethane	(2)				Not Detected					0.5	1
42) cis-1,2-Dichloroethene	(2)				Not Detected					0.5	1
44) 2-Butanone	(2)				Not Detected					3	10
51) Chloroform	(2)				Not Detected					0.5	1
53) 1,1,1-Trichloroethane	(2)				Not Detected					0.5	1
54) Cyclohexane	(2)				Not Detected					2	5
56) Carbon Tetrachloride	(2)				Not Detected					0.5	1
60) Benzene	(2)				Not Detected					0.5	1
61) 1,2-Dichloroethane	(2)				Not Detected					0.5	1
71) Trichloroethene	(2)				Not Detected					0.5	1
73) Methylcyclohexane	(2)				Not Detected					1	5
74) 1,2-Dichloropropane	(2)				Not Detected					0.5	1
79) Bromodichloromethane	(2)				Not Detected					0.5	1
82) cis-1,3-Dichloropropene	(2)				Not Detected					0.5	1
83) 4-Methyl-2-pentanone	(2)				Not Detected					3	10
89) Toluene	(3)				Not Detected					0.5	1
90) trans-1,3-Dichloropropene	(3)				Not Detected					0.5	1

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:24. Target 3.5 esignature user ID: dhh02035

Data file: /chem/HP23297.i/17aug08a.b/4g08s21.d Injection date and time: **08-AUG-2017 18:08**
Data file Sample Info. Line: T1817;9137937;1;0;;SMO01;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

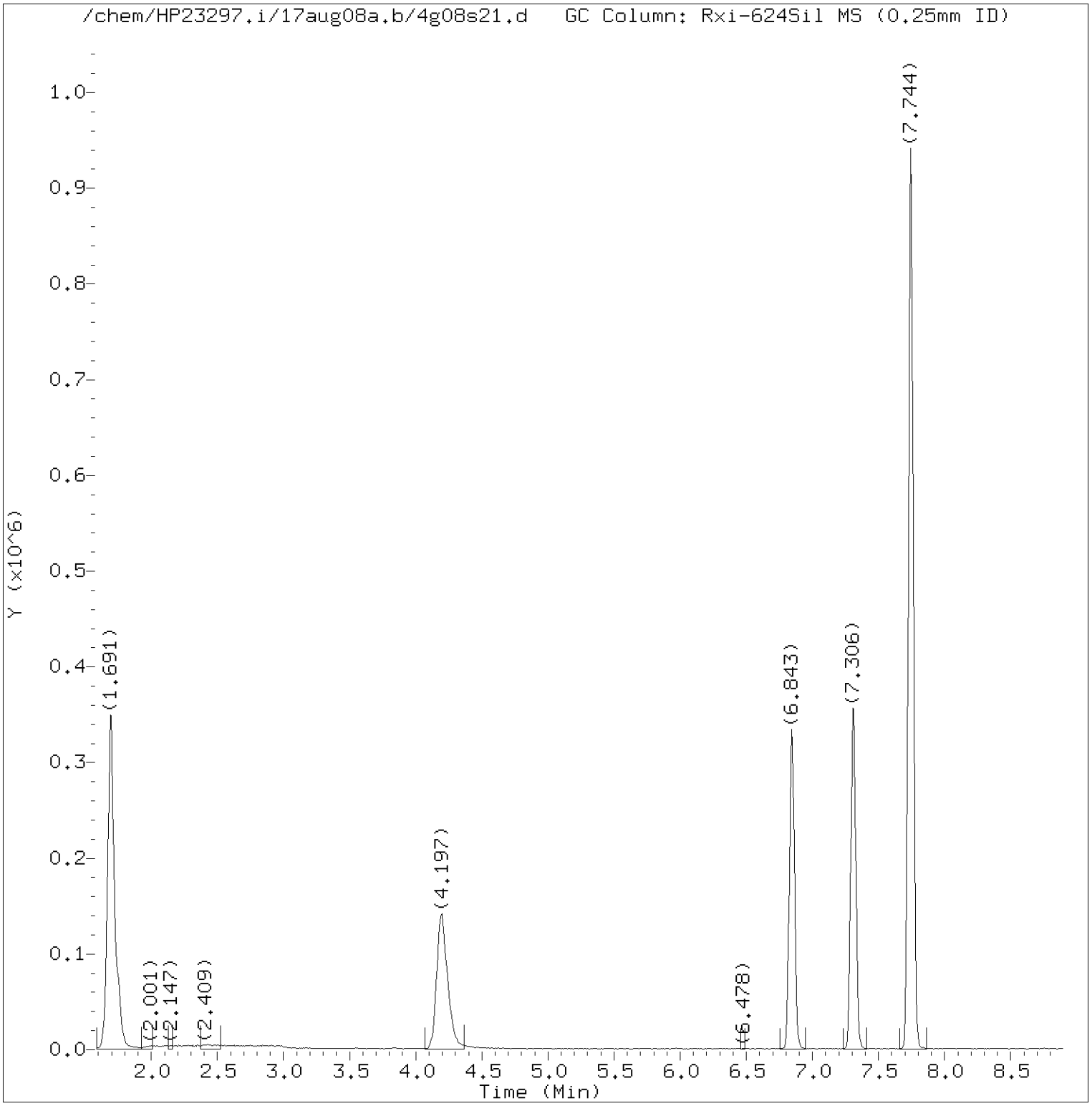
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
93) 1,1,2-Trichloroethane	(3)				Not Detected					0.5	1
94) Tetrachloroethene	(3)				Not Detected					0.5	1
97) 2-Hexanone	(3)				Not Detected					3	10
98) Dibromochloromethane	(3)				Not Detected					0.5	1
100) 1,2-Dibromoethane	(3)				Not Detected					0.5	1
103) Chlorobenzene	(3)				Not Detected					0.5	1
105) Ethylbenzene	(3)				Not Detected					0.5	1
107) m+p-Xylene	(3)				Not Detected					0.5	1
108) o-Xylene	(3)				Not Detected					0.5	1
109) Xylene (Total)	(3)				Not Detected					0.5	1
110) Styrene	(3)				Not Detected					1	5
111) Bromoform	(3)				Not Detected					0.5	4
112) Isopropylbenzene	(3)				Not Detected					1	5
117) 1,1,2,2-Tetrachloroethane	(4)				Not Detected					0.5	1
130) 1,3-Dichlorobenzene	(4)				Not Detected					1	5
134) 1,4-Dichlorobenzene	(4)				Not Detected					1	5
139) 1,2-Dichlorobenzene	(4)				Not Detected					1	5
143) 1,2-Dibromo-3-chloropropane	(4)				Not Detected					2	5
147) 1,2,4-Trichlorobenzene	(4)				Not Detected					1	5
149) Naphthalene	(4)				Not Detected					1	5

Total number of targets = 51

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:24. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/09/2017 at 15:46. PARALLAX ID: jeb12641



Total Ion Chromatogram (TIC)

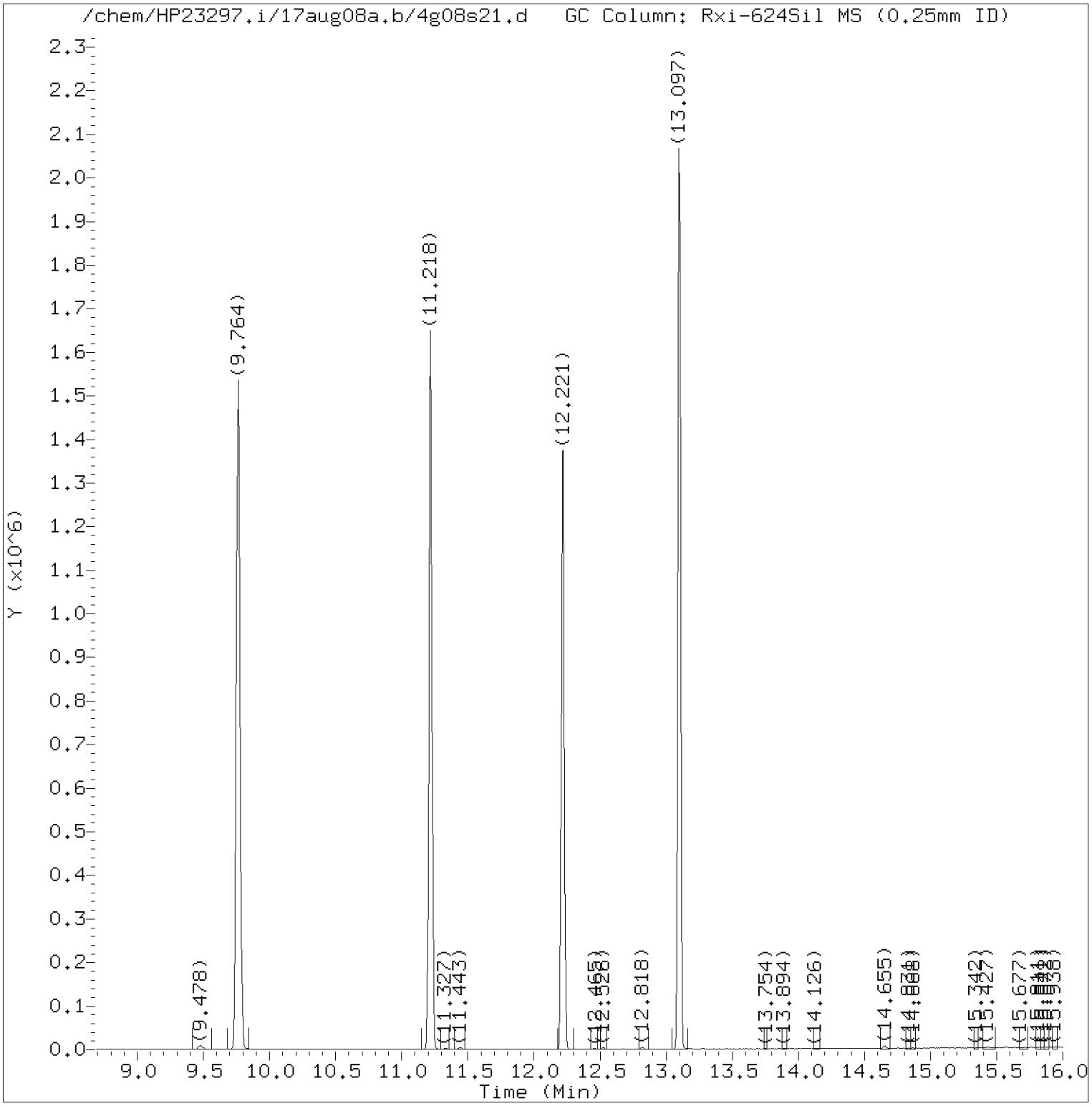
Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s21.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:08 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: T1817 Lab Sample ID: 9137937

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s21.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:08 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: T1817 Lab Sample ID: 9137937

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08s21.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 18:08 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:24 dhh02035

Sample Name: T1817 Lab Sample ID: 9137937

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
29)*t-Butyl alcohol-d10	(1)	4.197	65	396864	250.000
52)$Dibromofluoromethane	(2)	6.843	113	286723	51.134
57)$1,2-Dichloroethane-d4	(2)	7.306	102	73697	51.934
66)*Fluorobenzene	(2)	7.744	96	1191244	50.000
84)$Toluene-d8	(3)	9.764	98	1189952	49.092
101)*Chlorobenzene-d5	(3)	11.218	117	919981	50.000
115)$4-Bromofluorobenzene	(3)	12.215	95	432548	50.180
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	516238	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:24.
Target 3.5 esignature user ID: dhh02035

Standards Data

Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP23297 **HP #01**

Data Directory Path is - d:\DATA\17JUL26I\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
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DHH02035	4L26X01.D	BLANK	07/26/2017	08:53		
DHH02035	4L26X02.D	BLANK	07/26/2017	09:16		
DHH02035	4L26X03.D	BLANK	07/26/2017	09:47		
DHH02035	4L26l01.D	VSTD300	07/26/2017	10:10		
DHH02035	4L26l02.D	VSTD100	07/26/2017	10:32		
DHH02035	4L26l03.D	VSTD050	07/26/2017	10:55		
DHH02035	4L26l04.D	VSTD020	07/26/2017	11:18		
DHH02035	4L26l05.D	VSTD010	07/26/2017	11:40		
DHH02035	4L26l06.D	VSTD004	07/26/2017	12:04		
DHH02035	4L26l07.D	VSTD001	07/26/2017	12:26		
DHH02035	4L26M01.D	0.5PPB	07/26/2017	12:49		
DHH02035	4L26V01.D	LG4ICV	07/26/2017	13:12		
DHH02035	4L26l08.D	VSTD001	07/26/2017	13:35		
DHH02035	4L26M02.D	0.5PPB	07/26/2017	13:57		
DHH02035	4L26X04.D	BLANK	07/26/2017	16:40		
DHH02035	4L26l09.D	VSTD004	07/26/2017	17:03		

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP23297 **HP #01**

Data Directory Path is - d:\DATA\17aug08a\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
dhh02035	4G08T01.D	50NGBFB	08/08/2017	08:51	4172201AA	
dhh02035	4G08x01.D	VBLK479	08/08/2017	09:05	4172201AA	
dhh02035	4G08C01.D	VSTD050	08/08/2017	09:28	4172201AA	
dhh02035	4G08B01.D	VBLK479	08/08/2017	09:50	4172201AA	
dhh02035	4G08S01.D	LCS479	08/08/2017	10:13	4172201AA	
dhh02035	4G08S02.D	LCD479	08/08/2017	10:39	4172201AA	
dhh02035	4G08S03.D	9138514	08/08/2017	11:19	4172201AA	
dhh02035	4G08S04.D	9138515	08/08/2017	11:41	4172201AA	
dhh02035	4G08S05.D	9138705	08/08/2017	12:04	4172201AA	
dhh02035	4G08S06.D	9138706	08/08/2017	12:27	4172201AA	
dhh02035	4G08S07.D	9138516	08/08/2017	12:50	4172201AA	5
dhh02035	4G08S08.D	9138516DL	08/08/2017	13:12	4172201AA	50
dhh02035	4G08S09.D	9138703	08/08/2017	13:35	4172201AA	
dhh02035	4G08S10.D	9138704	08/08/2017	13:58	4172201AA	
dhh02035	4G08S11.D	9140741	08/08/2017	14:20	4172201AA	
dhh02035	4G08S12.D	9139596	08/08/2017	14:43	4172201AA	
dhh02035	4G08S13.D	9137994	08/08/2017	15:06	4172201AA	
dhh02035	4G08S14.D	9137994DL	08/08/2017	15:29	4172201AA	10
dhh02035	4G08S15.D	9137996	08/08/2017	15:51	4172201AA	
dhh02035	4G08S16.D	9137997	08/08/2017	16:14	4172201AA	
dhh02035	4G08S17.D	9140421	08/08/2017	16:37	4172201AA	
dhh02035	4G08S18.D	9140447	08/08/2017	16:59	4172201AA	
dhh02035	4G08S19.D	9132942	08/08/2017	17:22	4172201AA	2
dhh02035	4G08S20.D	9132942DL	08/08/2017	17:45	4172201AA	20
dhh02035	4G08S21.D	9137937	08/08/2017	18:08	4172202AA	
dhh02035	4G08S22.D	9137935	08/08/2017	18:30	4172202AA	
dhh02035	4G08S23.D	9137936	08/08/2017	18:53	4172202AA	

Data File: /chem/HP23297.i/17jul26i.b/4126t01.d

Date : 26-JUL-2017 08:31

Client ID: feb20-17

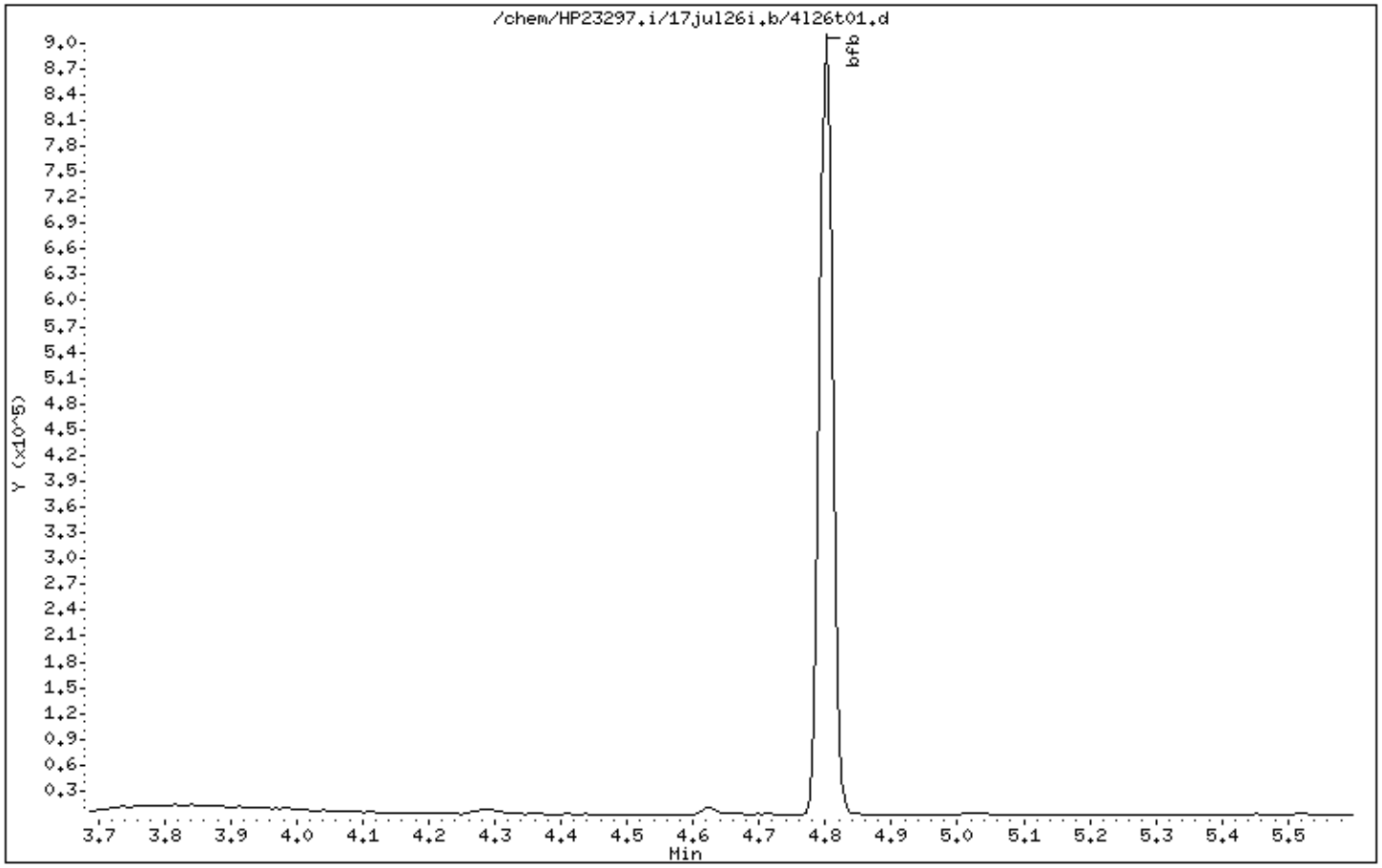
Instrument: HP23297.i

Sample Info: feb20-17;50NGBFB;1;3;;;;;

Operator: DHH02035

Column phase: Rxi-624Sil MS

Column diameter: 0.25



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Target 3.5 esignature user ID: pth10165

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Date : 26-JUL-2017 08:31

Client ID: feb20-17

Instrument: HP23297.i

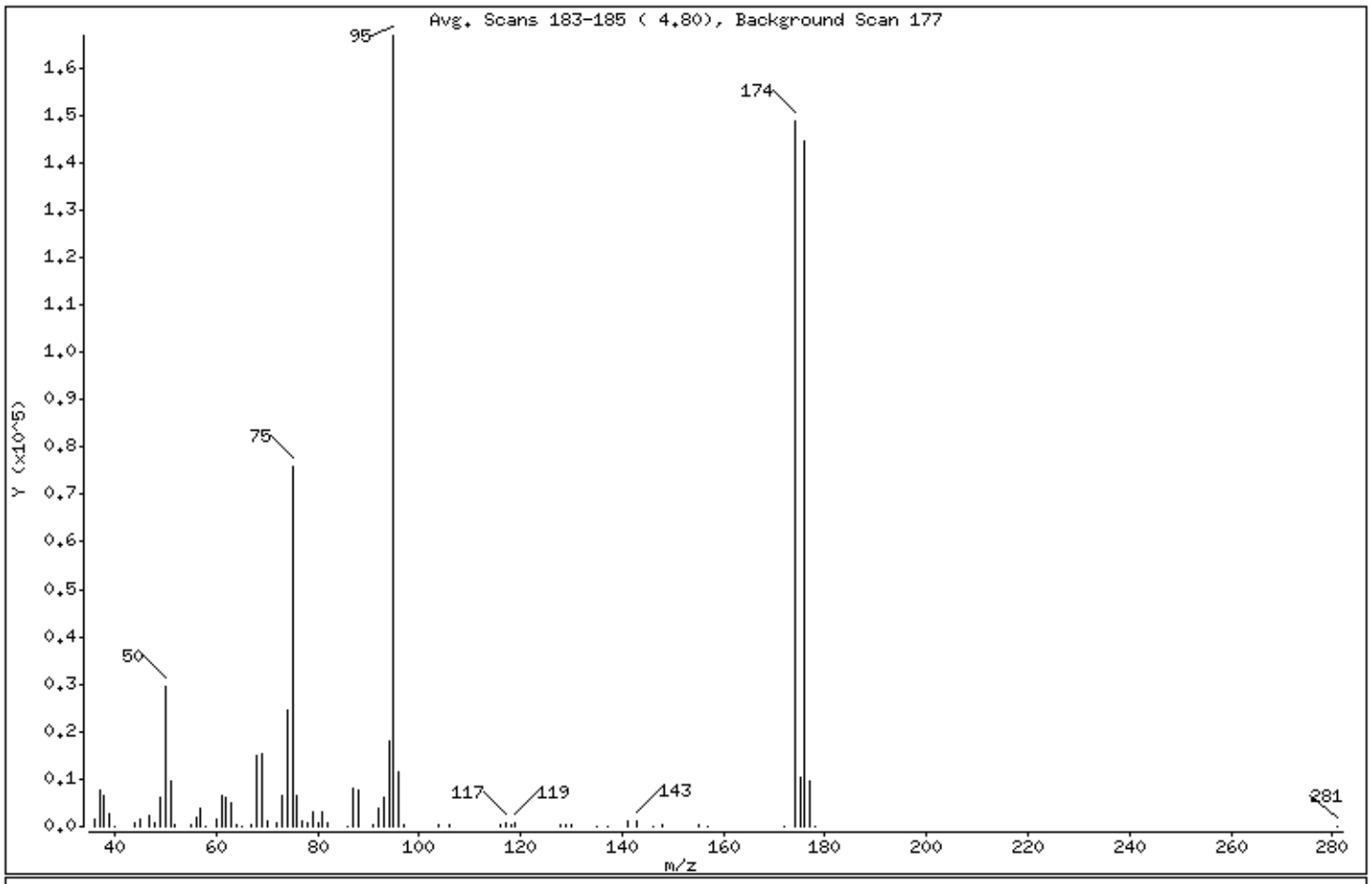
Sample Info: feb20-17;50NGBFB;1;3;;;;;

Operator: DHH02035

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.62
75	30.00 - 60.00% of mass 95	45.46
96	5.00 - 9.00% of mass 95	6.82
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	89.08
175	5.00 - 9.00% of mass 174	6.25 (7.01)
176	95.00 - 101.00% of mass 174	86.57 (97.19)
177	5.00 - 9.00% of mass 176	5.84 (6.75)

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Date : 26-JUL-2017 08:31

Client ID: feb20-17 Instrument: HP23297.i

Sample Info: feb20-17;50NGBFB;1;3;;;;;

Operator: DHH02035

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: 4126t01.d
Spectrum: Avg. Scans 183-185 (4.80), Background Scan 177
Location of Maximum: 95.00
Number of points: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1349	62.00	6224	86.00	92	135.00	177
37.00	7827	63.00	4897	87.00	7957	137.00	126
38.00	6666	64.00	553	88.00	7806	141.00	1262
39.00	2712	65.00	191	91.00	405	143.00	1316
40.00	53	67.00	406	92.00	3877	146.00	103
44.00	754	68.00	14835	93.00	6119	148.00	333
45.00	1429	69.00	15159	94.00	17856	155.00	446
47.00	2404	70.00	1153	95.00	166720	157.00	187
48.00	883	72.00	756	96.00	11365	172.00	104
49.00	6052	73.00	6700	97.00	258	174.00	148544
50.00	29376	74.00	24536	104.00	520	175.00	10420
51.00	9542	75.00	75800	106.00	487	176.00	144320
52.00	361	76.00	6456	116.00	434	177.00	9743
55.00	395	77.00	1023	117.00	767	178.00	164
56.00	2095	78.00	776	118.00	481	281.00	87
57.00	3882	79.00	3062	119.00	697		
58.00	117	80.00	914	128.00	445		
60.00	1410	81.00	3222	129.00	209		
61.00	6553	82.00	687	130.00	538		

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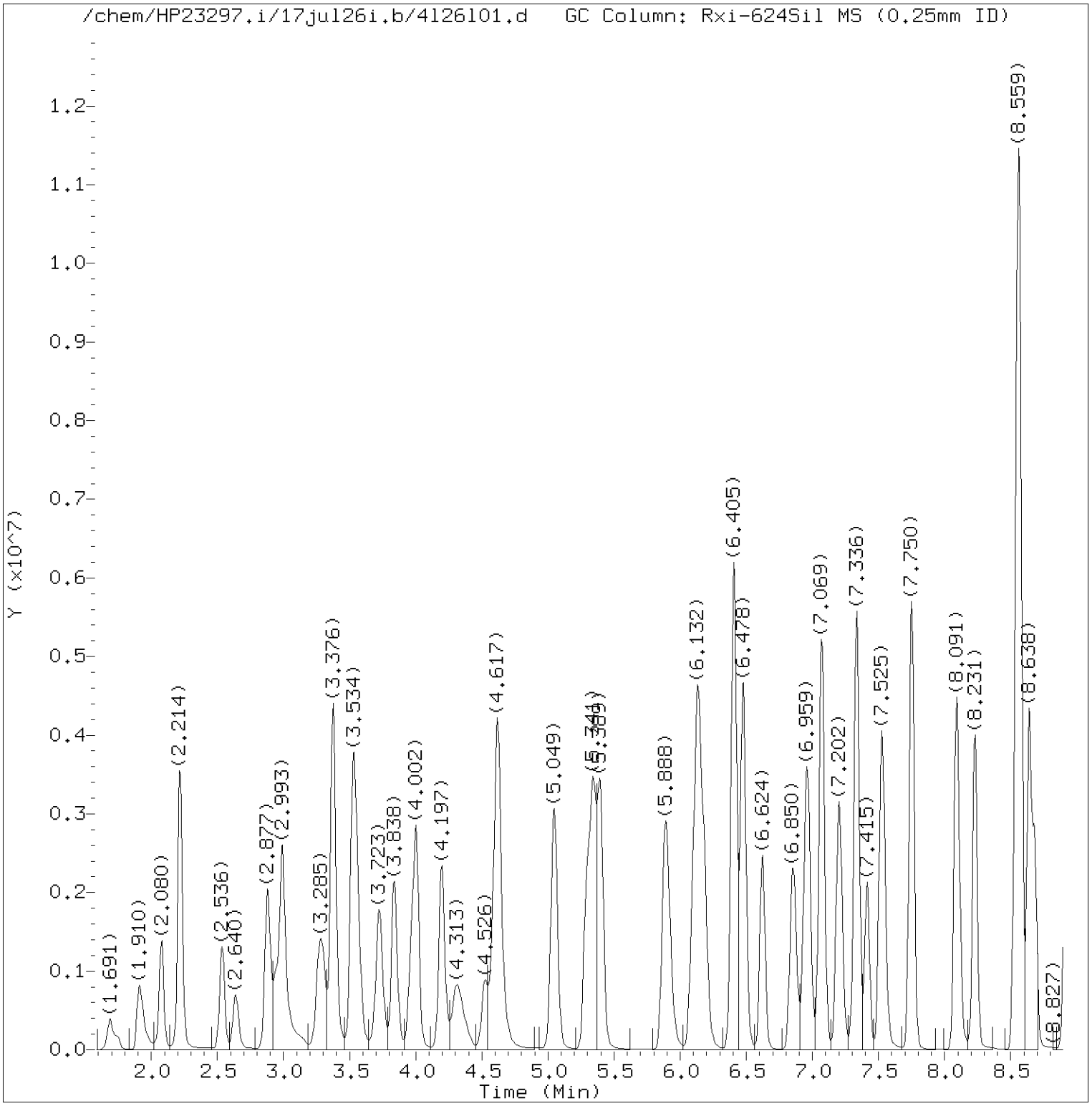


Total Ion Chromatogram (TIC)

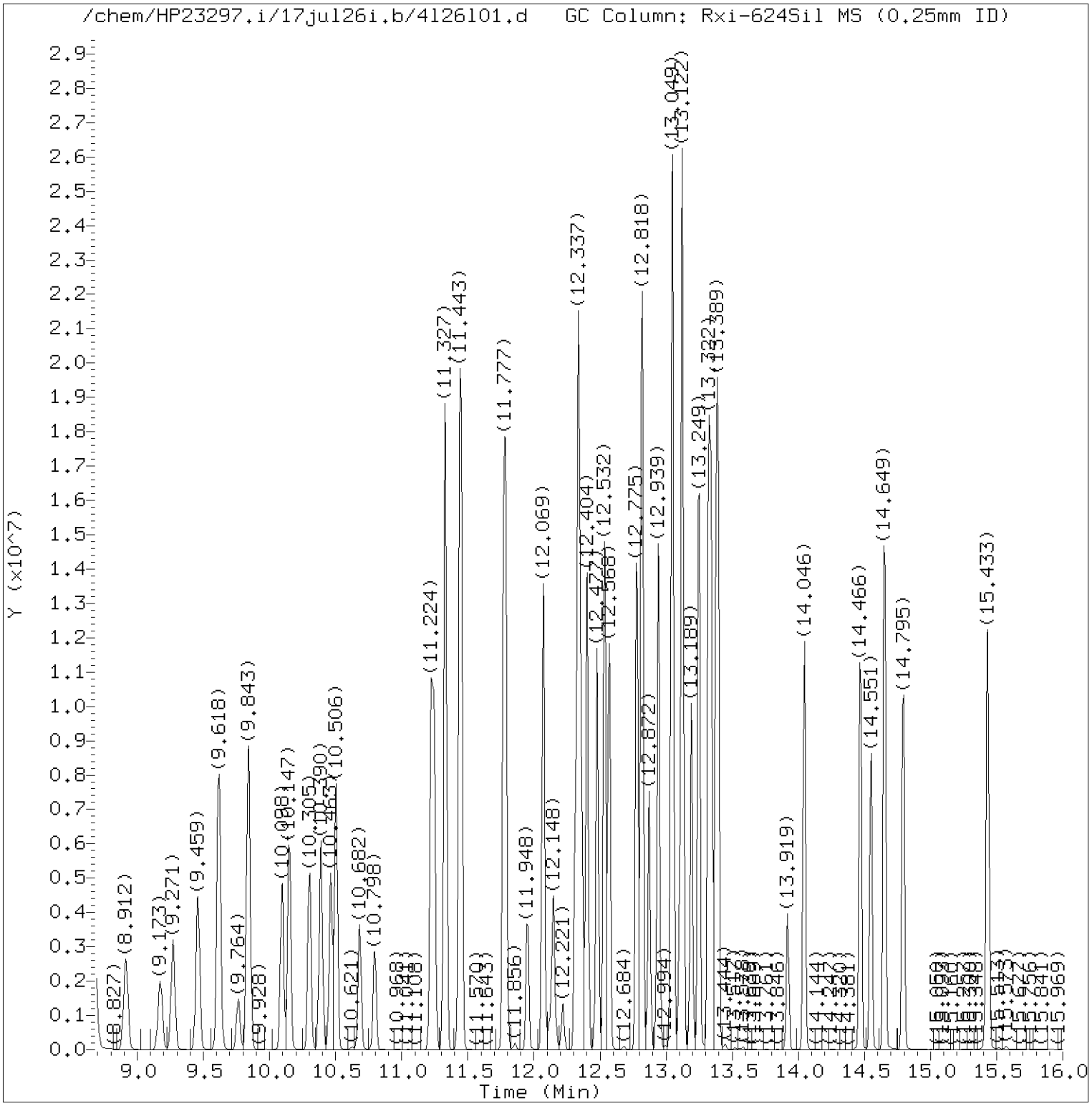
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

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Sample Name: VSTD300 Lab Sample ID: VSTD300

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Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.910	85	1932281	309.720
4) Chloromethane	(2)	2.080	50	2140374	304.925
6) Vinyl Chloride	(2)	2.208	62	1999018	300.611
5) 1,3-Butadiene	(2)	2.220	39	1554702	299.966
8) Bromomethane	(2)	2.536	94	1366316	297.933
9) Chloroethane	(2)	2.640	64	1062704	288.910
10) Dichlorofluoromethane	(2)	2.877	67	2677739	300.034
12) Trichlorofluoromethane	(2)	2.944	101	2131500	303.261
11) n-Pentane	(2)	2.993	43	2907664	284.158
13) Ethanol	(1)	3.053	45	1107258	7115.712
15) Freon 123a	(2)	3.285	67	1895353	302.466
16) Acrolein	(1)	3.376	56	6222418	2584.166
17) 1,1-Dichloroethene	(2)	3.522	96	1367995	310.012
17) 1,1-Dichloroethene	(2)	3.522	63	705642	318.986
18) Acetone	(1)	3.540	58	676354	534.506
19) Freon 113	(2)	3.552	101	1401246	318.679
21) 2-Propanol	(1)	3.704	45	1651985	1535.338
22) Methyl Iodide	(2)	3.729	142	2708906	312.171
23) Carbon Disulfide	(2)	3.838	76	4996649	323.682
27) Methyl Acetate	(2)	3.966	43	2723994	294.566
25) Allyl Chloride	(2)	4.002	41	2927116M	307.006
29)*t-Butyl alcohol-d10	(1)	4.191	65	385775	250.000
28) Methylene Chloride	(2)	4.197	84	1733046	294.980
30) t-Butyl alcohol	(1)	4.319	59	2633202	1510.549
31) Acrylonitrile	(2)	4.526	53	1269244	275.861
33) Methyl Tertiary Butyl Ether	(2)	4.605	73	5266129	309.632
32) trans-1,2-Dichloroethene	(2)	4.623	96	1655103	313.746
34) n-Hexane	(2)	5.049	57	2818524	314.018
36) 1,1-Dichloroethane	(2)	5.292	63	3097694	310.164
38) di-Isopropyl ether	(2)	5.341	45	6247485	310.575
39) 2-Chloro-1,3-butadiene	(2)	5.402	53	2702317	324.084
40) Ethyl t-butyl ether	(2)	5.888	59	5396307	311.430
44) 2-Butanone	(2)	6.095	43	3814454	568.333
43) 1,2-Dichloroethene (Total)	(2)		96	3554387	628.745
42) cis-1,2-Dichloroethene	(2)	6.132	96	1899284	314.999
45) 2,2-Dichloropropane	(2)	6.150	77	2183096	333.743
47) Propionitrile	(1)	6.180	54	3012062	1477.414
48) Methacrylonitrile	(2)	6.405	67	3397223	778.820

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Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
49) Bromochloromethane	(2)	6.472	128	976319	306.652
50) Tetrahydrofuran	(1)	6.478	71	964436	553.291
51) Chloroform	(2)	6.624	83	2862434	312.791
52)$Dibromofluoromethane	(2)	6.843	113	280514	50.837
52)$Dibromofluoromethane	(2)	6.843	111	285622	50.663
53) 1,1,1-Trichloroethane	(2)	6.856	97	2422941	308.159
54) Cyclohexane	(2)	6.959	56	3186681	306.347
54) Cyclohexane	(2)	6.959	84	2534566	307.892
54) Cyclohexane	(2)	6.959	69	945046	310.220
55) 1,1-Dichloropropene	(2)	7.069	75	2401984	316.501
56) Carbon Tetrachloride	(2)	7.075	117	2026754	337.641
58) Isobutyl Alcohol	(1)	7.202	41	2505301M	3798.047
57)$1,2-Dichloroethane-d4	(2)	7.312	102	69511	49.778
57)$1,2-Dichloroethane-d4	(2)	7.312	65	317448	50.819
57)$1,2-Dichloroethane-d4	(2)	7.312	104	44315	49.928
60) Benzene	(2)	7.336	78	7073499	304.717
61) 1,2-Dichloroethane	(2)	7.415	62	2303153	307.869
61) 1,2-Dichloroethane	(2)	7.415	98	225149	307.177
65) t-Amyl methyl ether	(2)	7.525	73	5267687	314.602
66)*Fluorobenzene	(2)	7.744	96	1172250	50.000
67) n-Heptane	(2)	7.750	43	3220813	326.398
69) n-Butanol	(1)	8.091	56	4152023	7897.547
71) Trichloroethene	(2)	8.231	95	1802006	312.696
73) Methylcyclohexane	(2)	8.541	83	3113561	317.391
73) Methylcyclohexane	(2)	8.547	98	1345585	321.594
74) 1,2-Dichloropropane	(2)	8.571	63	1981317	308.732
77) Methyl Methacrylate	(2)	8.638	69	2091820	321.003
76) 1,4-Dioxane	(1)	8.650	88	519072M	3673.440
75) Dibromomethane	(2)	8.681	93	1231212	316.347
79) Bromodichloromethane	(2)	8.912	83	2287313	336.336
80) 2-Nitropropane	(2)	9.173	41	1630867	599.806
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	1741742	317.293
82) cis-1,3-Dichloropropene	(2)	9.459	75	3110180	337.350
83) 4-Methyl-2-pentanone	(2)	9.618	43	6759693	536.932
84)$Toluene-d8	(3)	9.764	98	1158401	48.607
84)$Toluene-d8	(3)	9.764	100	756806	48.914
89) Toluene	(3)	9.843	92	4549593	301.535
91) 1,3-Dichloropropene (total)	(3)		100	5970956	674.746

M = Compound was manually integrated.
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on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) trans-1,3-Dichloropropene	(3)	10.098	75	2860776	337.395
92) Ethyl Methacrylate	(3)	10.147	69	3316102	316.630
93) 1,1,2-Trichloroethane	(3)	10.305	97	1844134	300.490
94) Tetrachloroethene	(3)	10.390	166	2066173	310.168
95) 1,3-Dichloropropane	(3)	10.463	76	3056491	299.877
97) 2-Hexanone	(3)	10.506	43	5348295	599.012
98) Dibromochloromethane	(3)	10.682	129	2027003	343.244
100) 1,2-Dibromoethane	(3)	10.798	107	2037633	311.733
101)*Chlorobenzene-d5	(3)	11.218	117	904525	50.000
103) Chlorobenzene	(3)	11.248	112	5195262	300.822
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	1831876	328.018
105) Ethylbenzene	(3)	11.327	91	8548893	301.052
107) m+p-Xylene	(3)	11.443	106	7043547	619.717
109) Xylene (Total)	(3)		106	10598993	935.416
108) o-Xylene	(3)	11.771	106	3555446	315.699
110) Styrene	(3)	11.789	104	5975489	318.284
111) Bromoform	(3)	11.954	173	1695219	359.029
112) Isopropylbenzene	(3)	12.069	105	8492501	304.826
113) Cyclohexanone	(1)	12.148	55	1966621	3837.678
115)$4-Bromofluorobenzene	(3)	12.215	95	420570	49.624
115)$4-Bromofluorobenzene	(3)	12.221	174	382502	49.640
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	3245597	285.684
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	2260462	782.742
116) Bromobenzene	(4)	12.337	156	2569703	312.224
118) 1,2,3-Trichloropropane	(4)	12.361	110	938313	287.747
120) n-Propylbenzene	(4)	12.404	91	9916422	283.323
121) 2-Chlorotoluene	(4)	12.477	126	2195587	302.068
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	7405880	301.706
122) 4-Chlorotoluene	(4)	12.568	126	2314675	300.948
125) tert-Butylbenzene	(4)	12.781	134	1645591M	324.128
126) Pentachloroethane	(4)	12.811	167	1525345	339.362
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	7728156	302.949
128) sec-Butylbenzene	(4)	12.939	105	9393256	291.088
130) 1,3-Dichlorobenzene	(4)	13.043	146	4727918	305.960
131) p-Isopropyltoluene	(4)	13.049	119	8471469	303.927
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	518057	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	4824344	300.896
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	7764846	290.778

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on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
136) Benzyl Chloride	(4)	13.189	91	6335173	341.723
137) 1,3-Diethylbenzene	(4)	13.249	119	5038173	300.166
138) 1,4-Diethylbenzene	(4)	13.322	119	5263803	301.114
140) n-Butylbenzene	(4)	13.341	92	4340475	299.236
139) 1,2-Dichlorobenzene	(4)	13.377	146	4586849	301.856
141) 1,2-Diethylbenzene	(4)	13.389	119	4282034	303.606
142) Diethylbenzene (total)	(4)		100	14584010	904.886
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	825445	316.016
145) 1,3,5-Trichlorobenzene	(4)	14.046	180	3526475	299.103
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	3390882	294.118
148) Hexachlorobutadiene	(4)	14.551	225	1575048	294.268
149) Naphthalene	(4)	14.649	128	10539665	279.432
150) 1,2,3-Trichlorobenzene	(4)	14.795	180	3189009	287.326
151) 2-Methylnaphthalene	(4)	15.433	142	6379436	272.490

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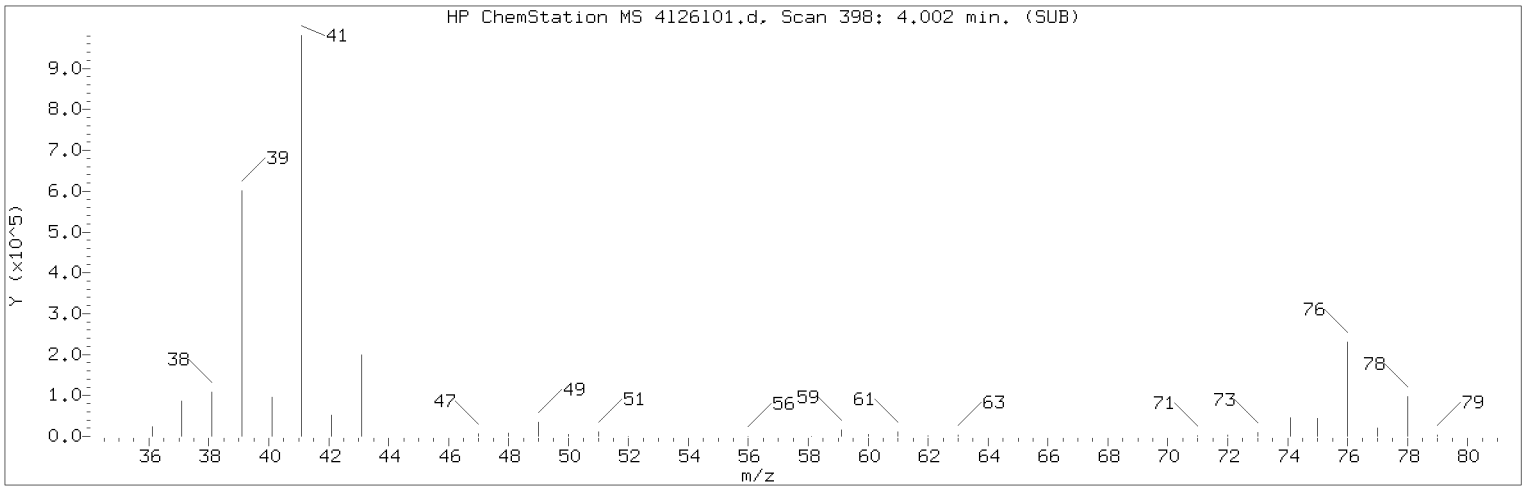
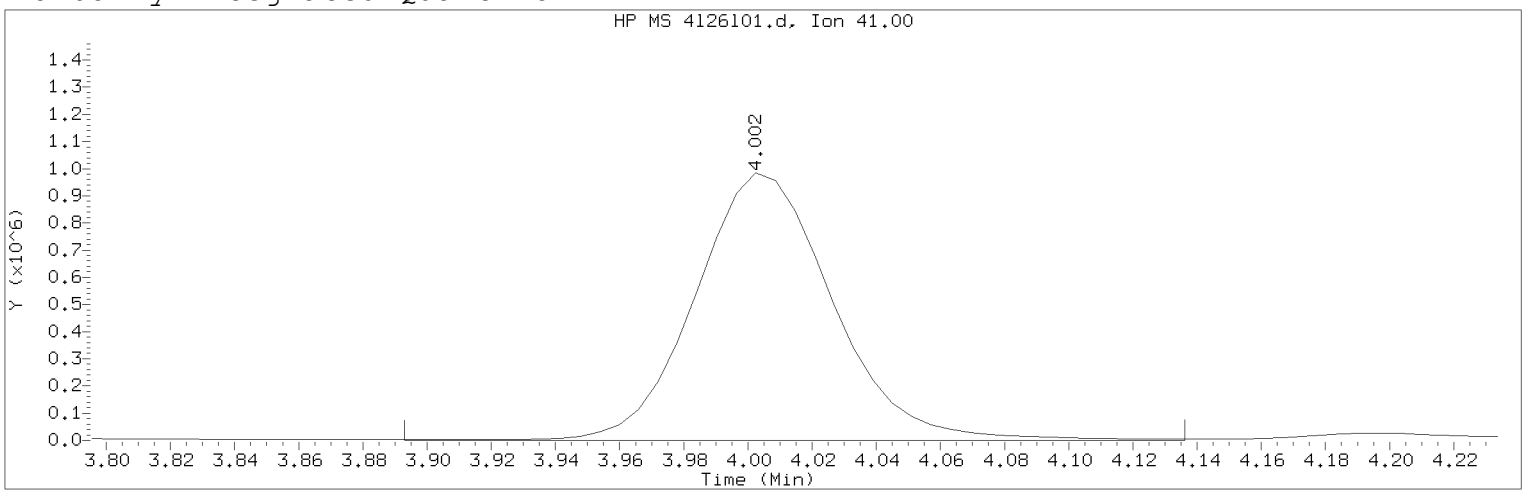
Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

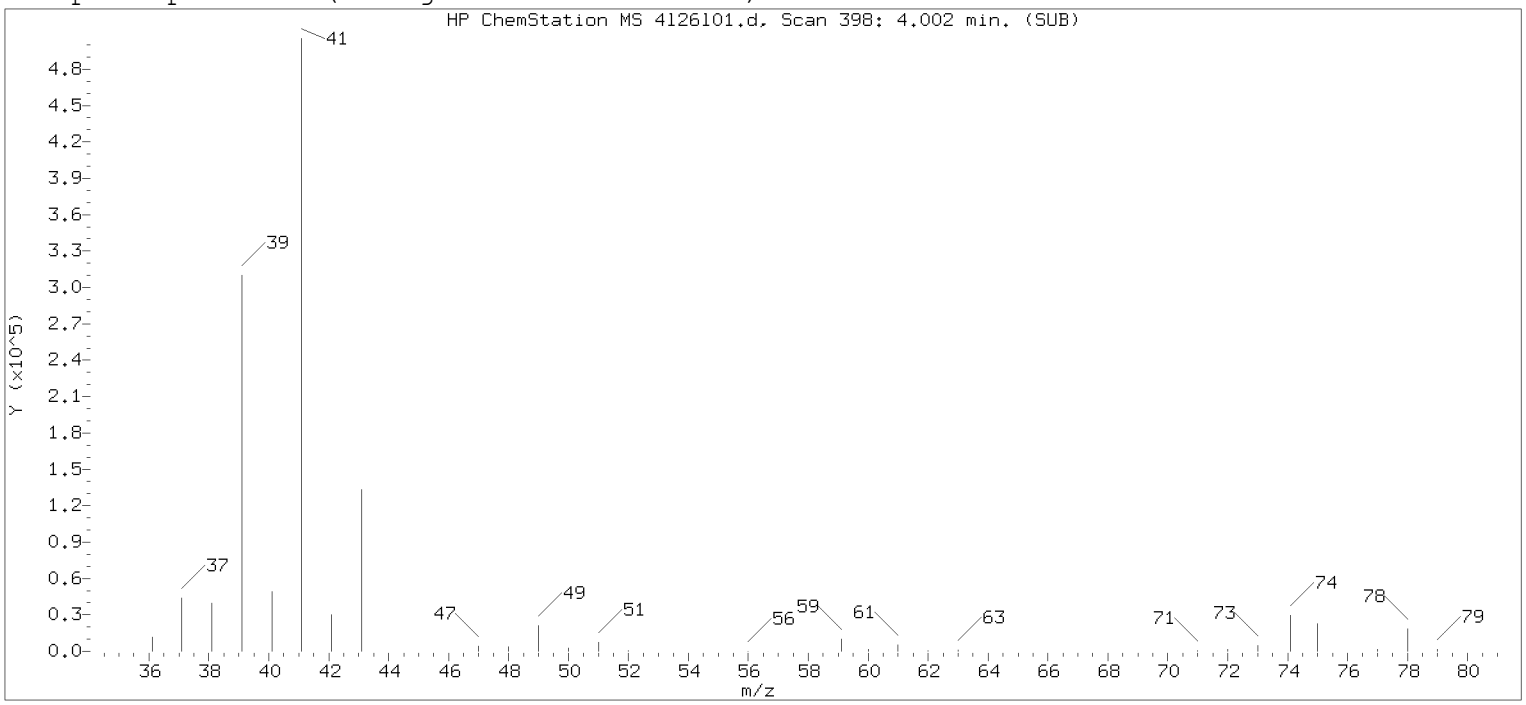
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 398
Retention Time (minutes): 4.002
Quant Ion : 41.00
Area (flag) : 2927116M
On-Column Amount (ng) : 307.0062
Integration start scan : 379 Integration stop scan: 419
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

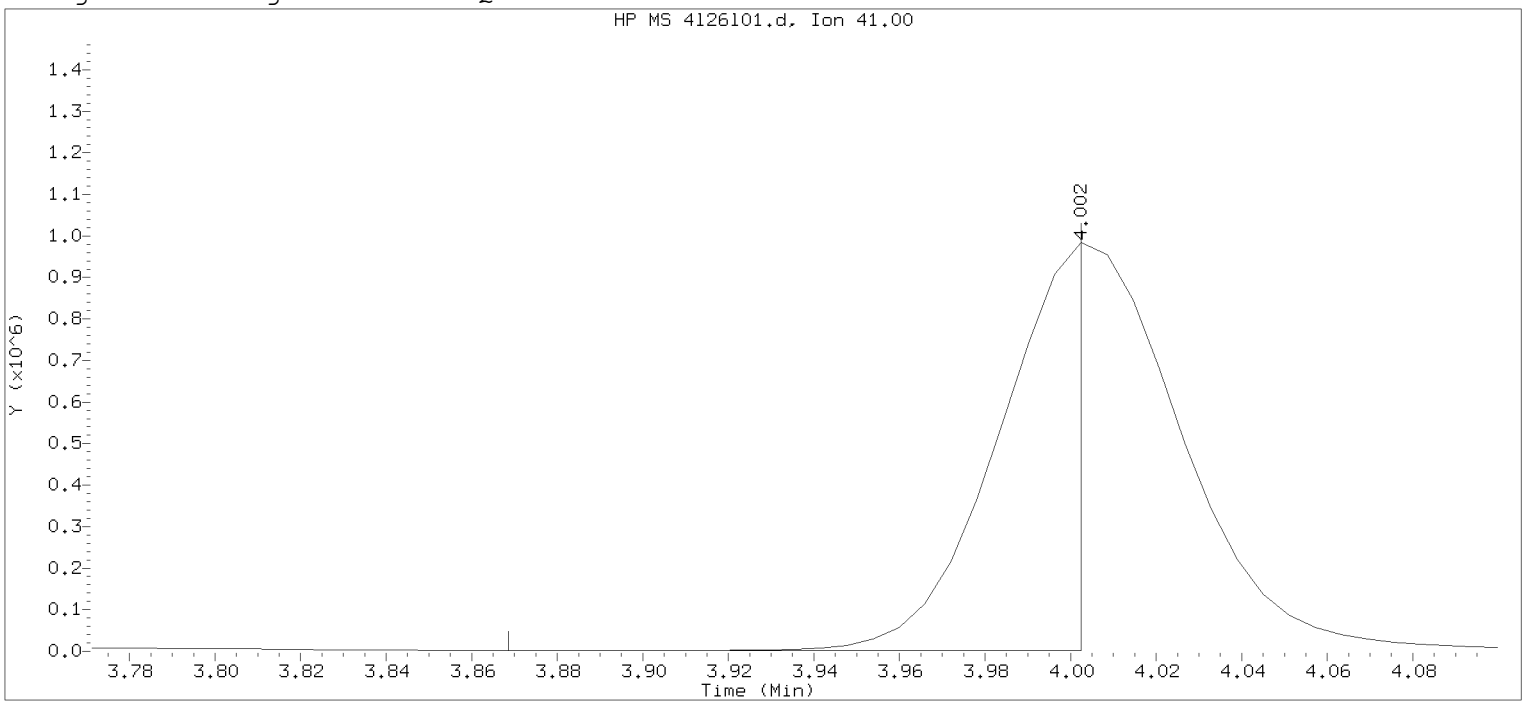
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 10:28
Date, time and analyst ID of latest file update: 26-Jul-2017 10:28 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 398
Retention Time (minutes): 4.002
Quant Ion : 41.00
Area : 1276344
On-column Amount (ng) : 104.0370
Integration start scan : 375 Integration stop scan: 397
Y at integration start : 1469 Y at integration end: 1469

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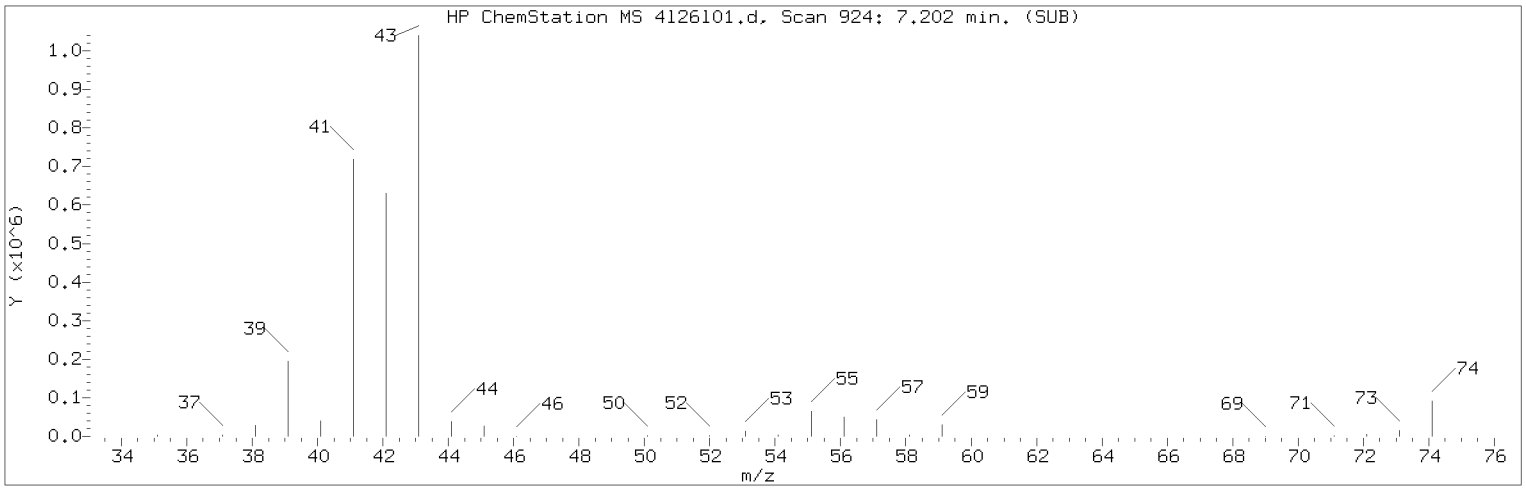
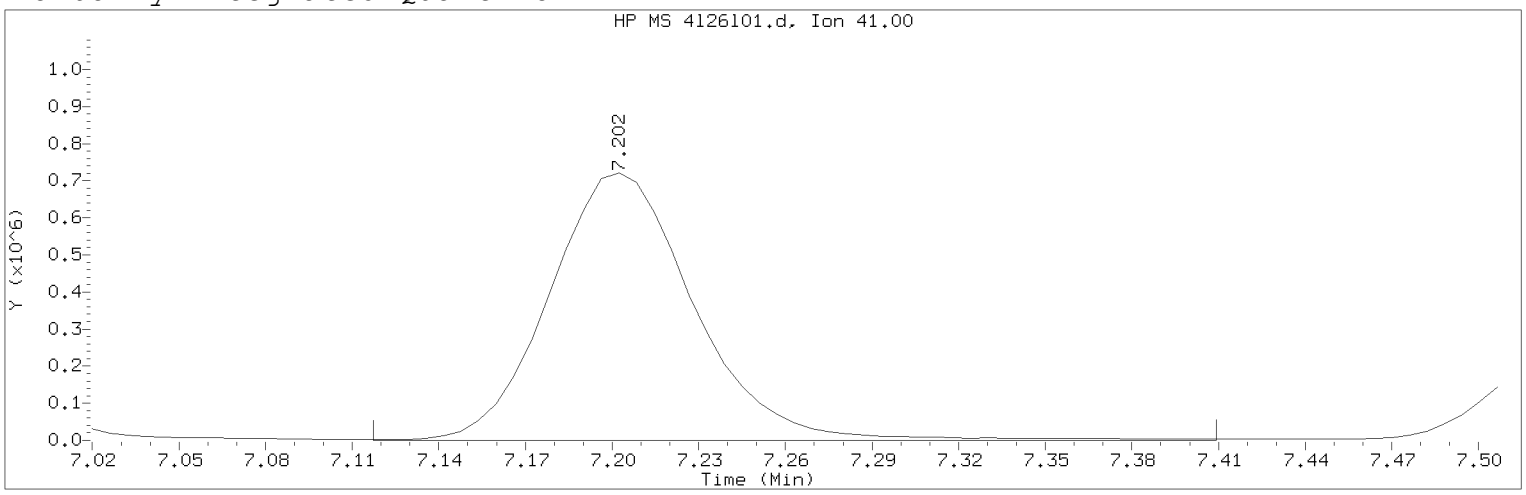
Target 3.5 esignature user option 17

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

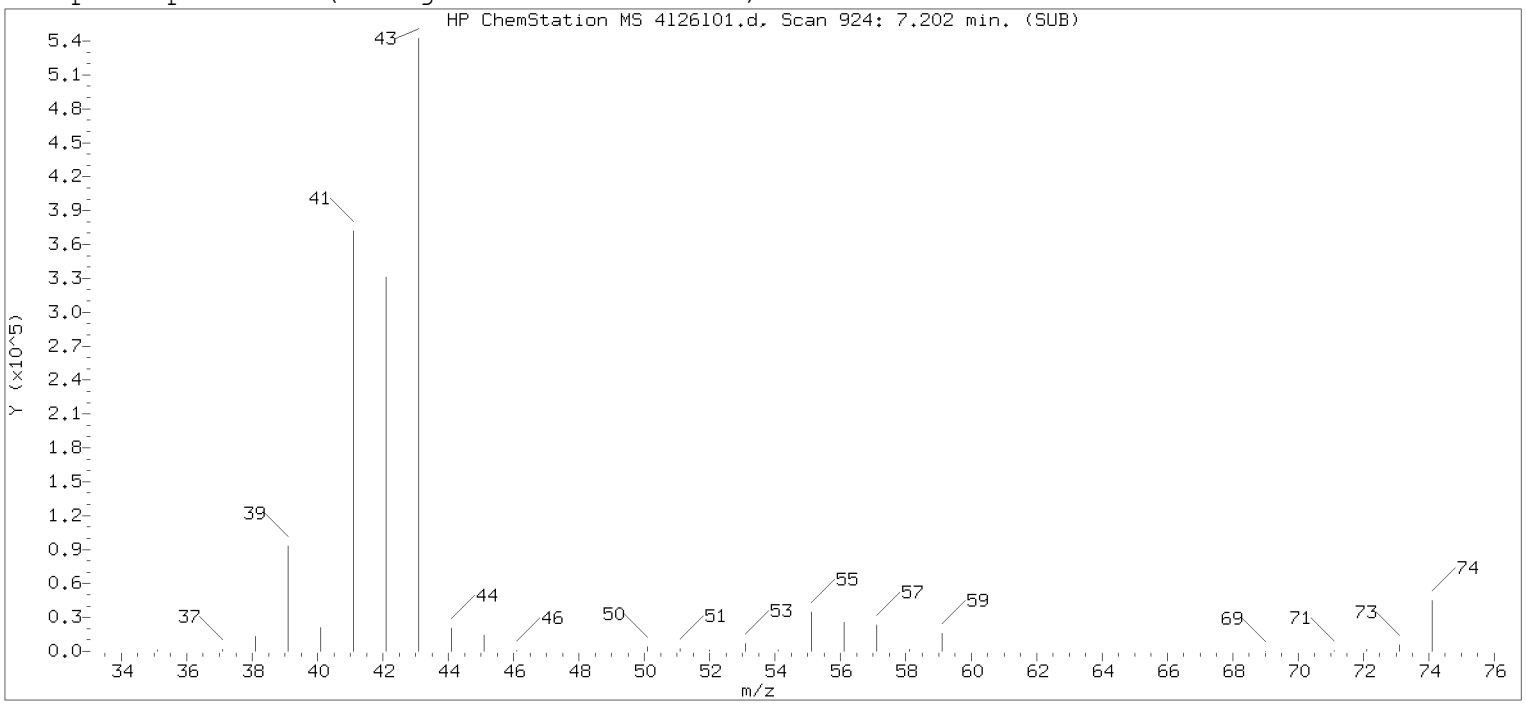
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 924
Retention Time (minutes): 7.202
Quant Ion : 41.00
Area (flag) : 2505301M
On-Column Amount (ng) : 3798.0470
Integration start scan : 909 Integration stop scan: 957
Y at integration start : -1 Y at integration end: -1

Reason for manual integration: improper integration

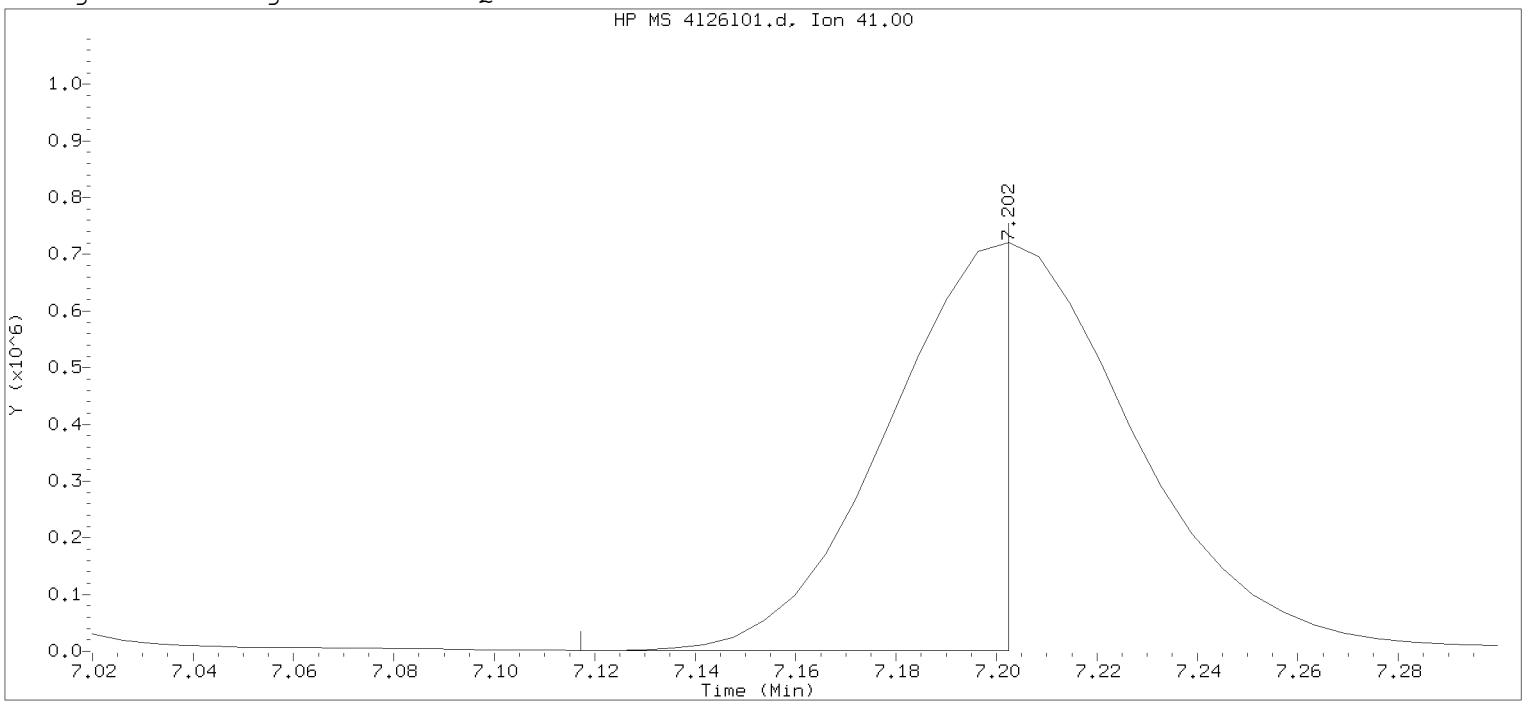
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 10:28
Date, time and analyst ID of latest file update: 26-Jul-2017 10:28 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 924
Retention Time (minutes): 7.202
Quant Ion : 41.00
Area : 1171449
On-column Amount (ng) : 1335.2652
Integration start scan : 909 Integration stop scan: 923
Y at integration start : 1671 Y at integration end: 1671

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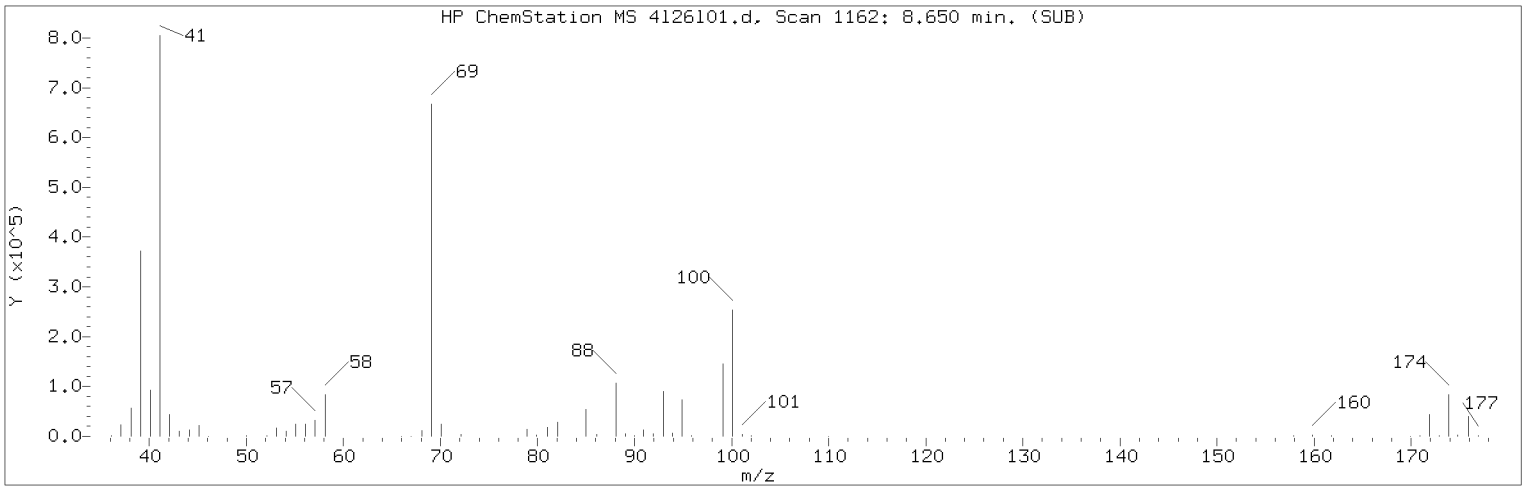
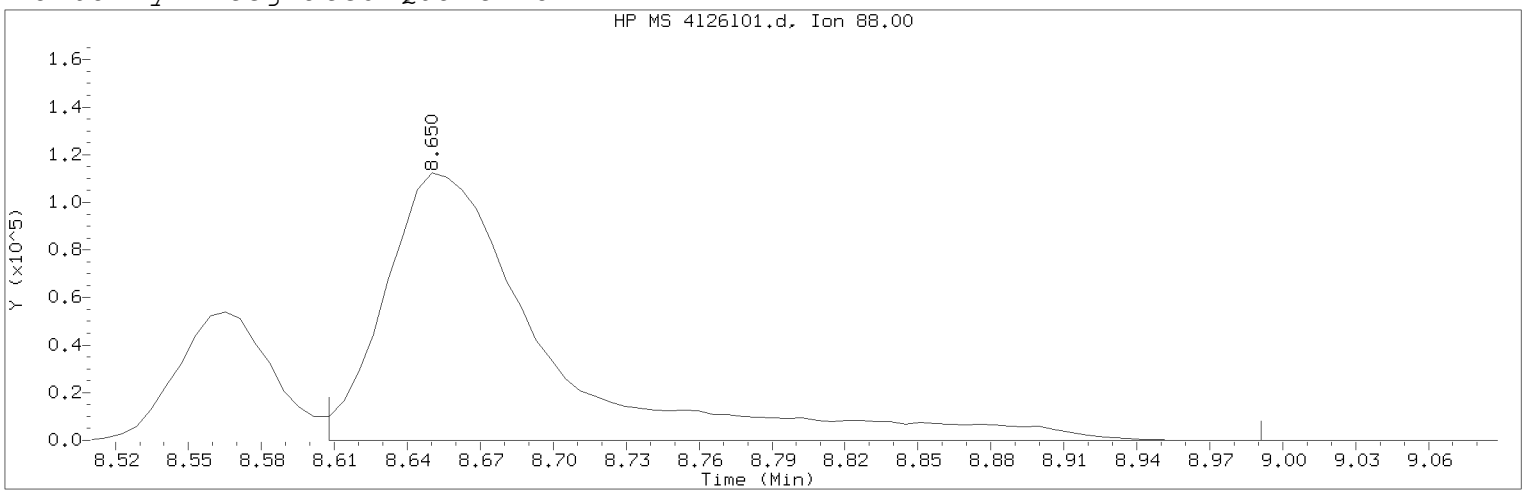
Target 3.5 esignature user option 0189

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

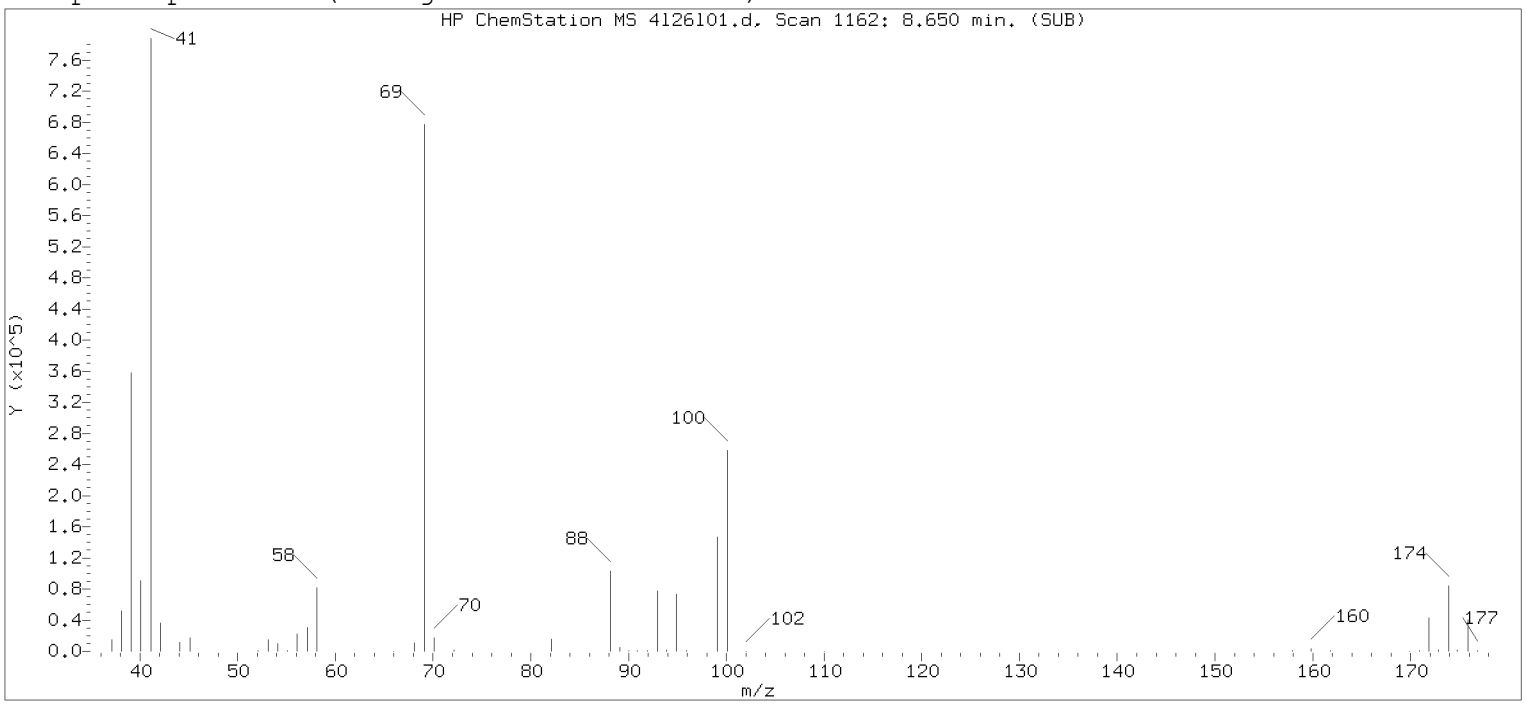
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area (flag) : 519072M
On-Column Amount (ng) : 3673.4405
Integration start scan : 1154 Integration stop scan: 1217
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

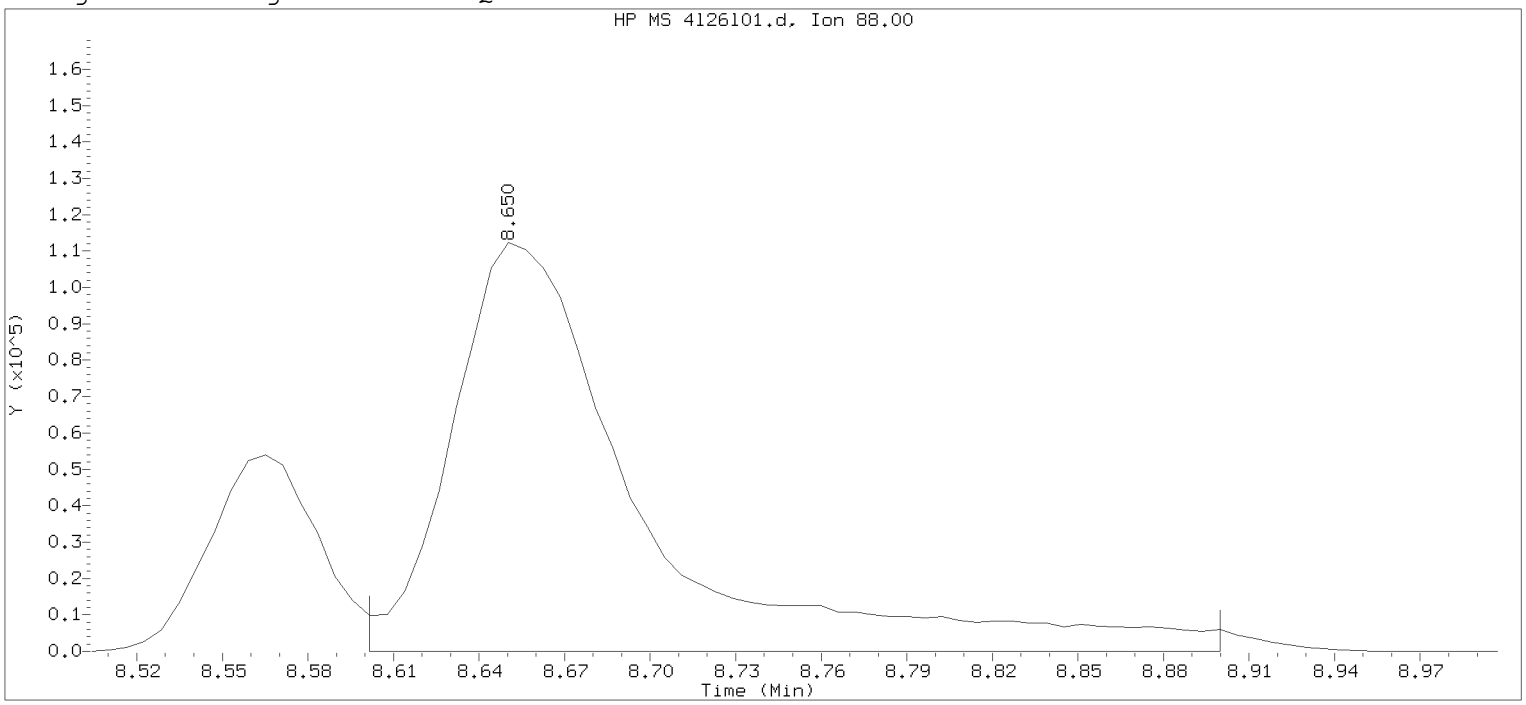
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 10:28
Date, time and analyst ID of latest file update: 26-Jul-2017 10:28 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area : 514423
On-column Amount (ng) : 2404.0142
Integration start scan : 1153 Integration stop scan: 1202
Y at integration start : 0 Y at integration end: 0

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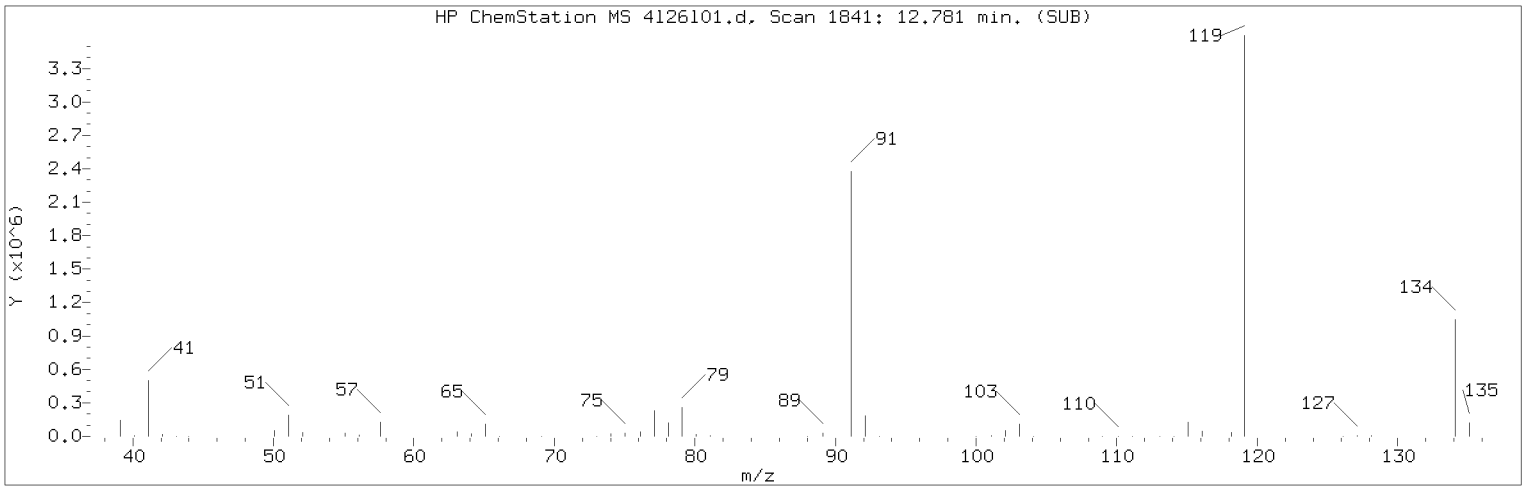
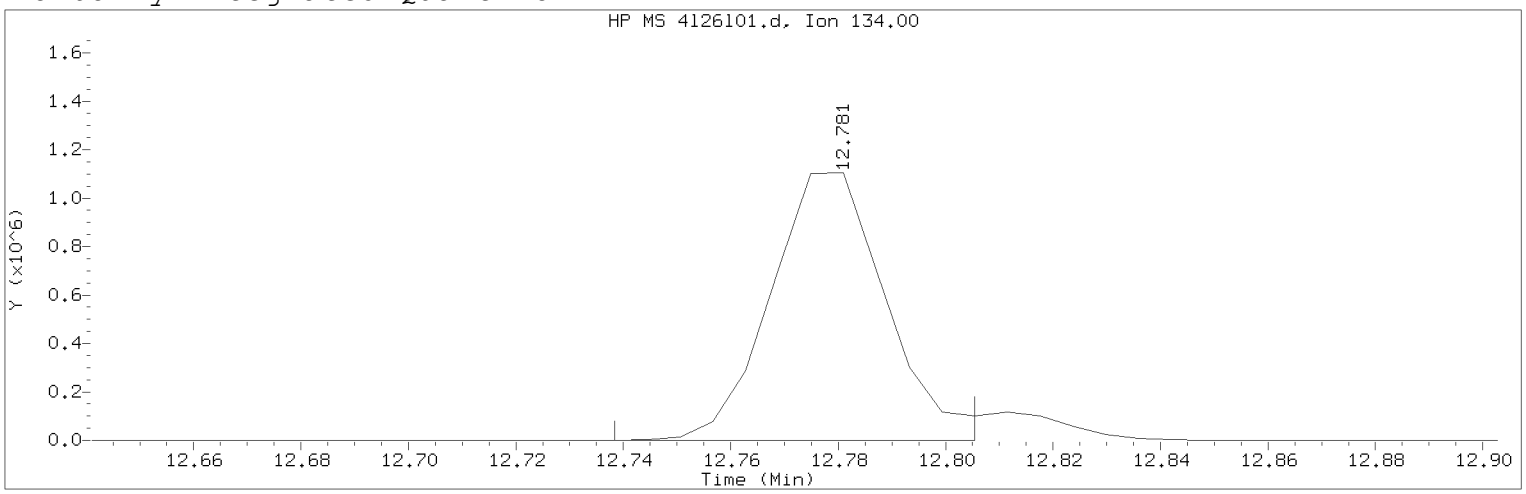
Target 3.5 esignature user option 01

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD300 Lab Sample ID: VSTD300

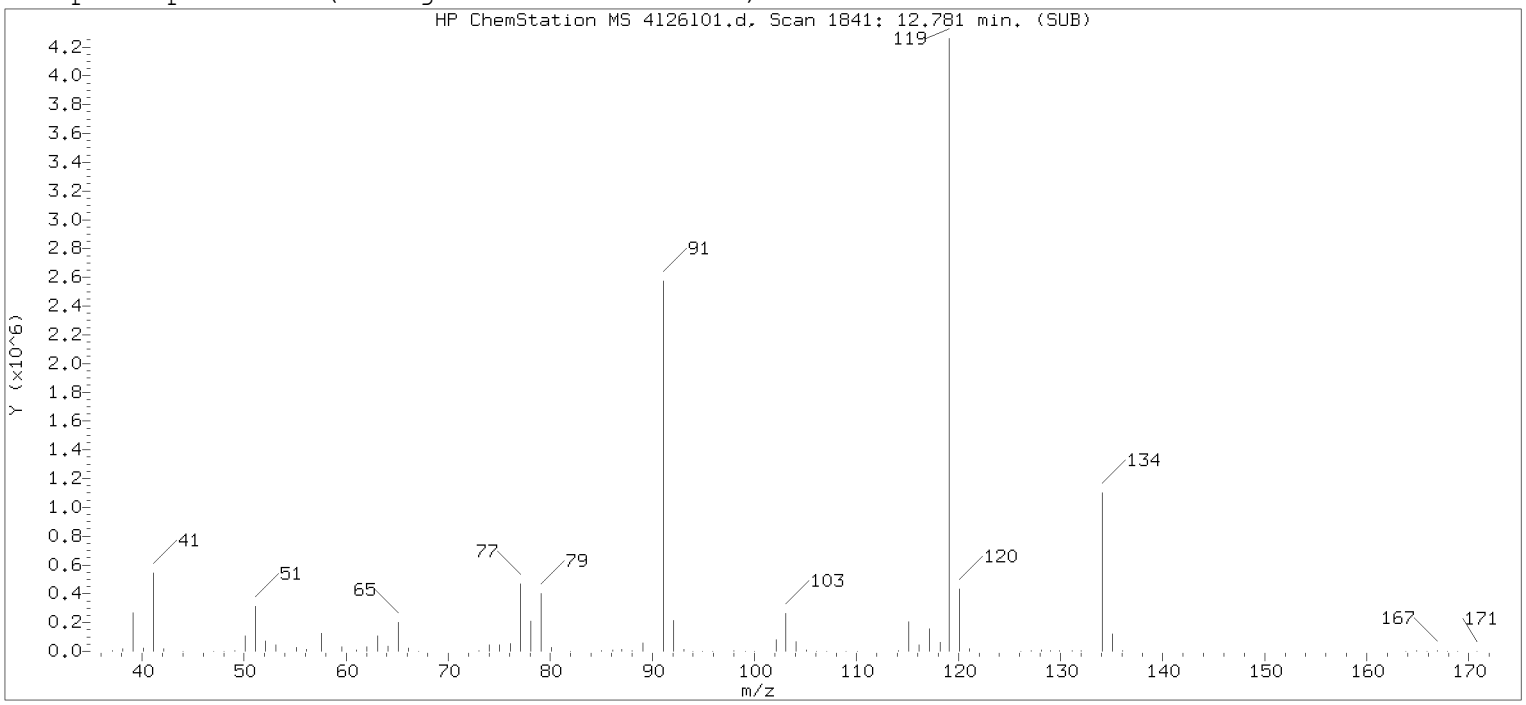
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1841
Retention Time (minutes): 12.781
Quant Ion : 134.00
Area (flag) : 1645591M
On-Column Amount (ng) : 324.1280
Integration start scan : 1833 Integration stop scan: 1844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

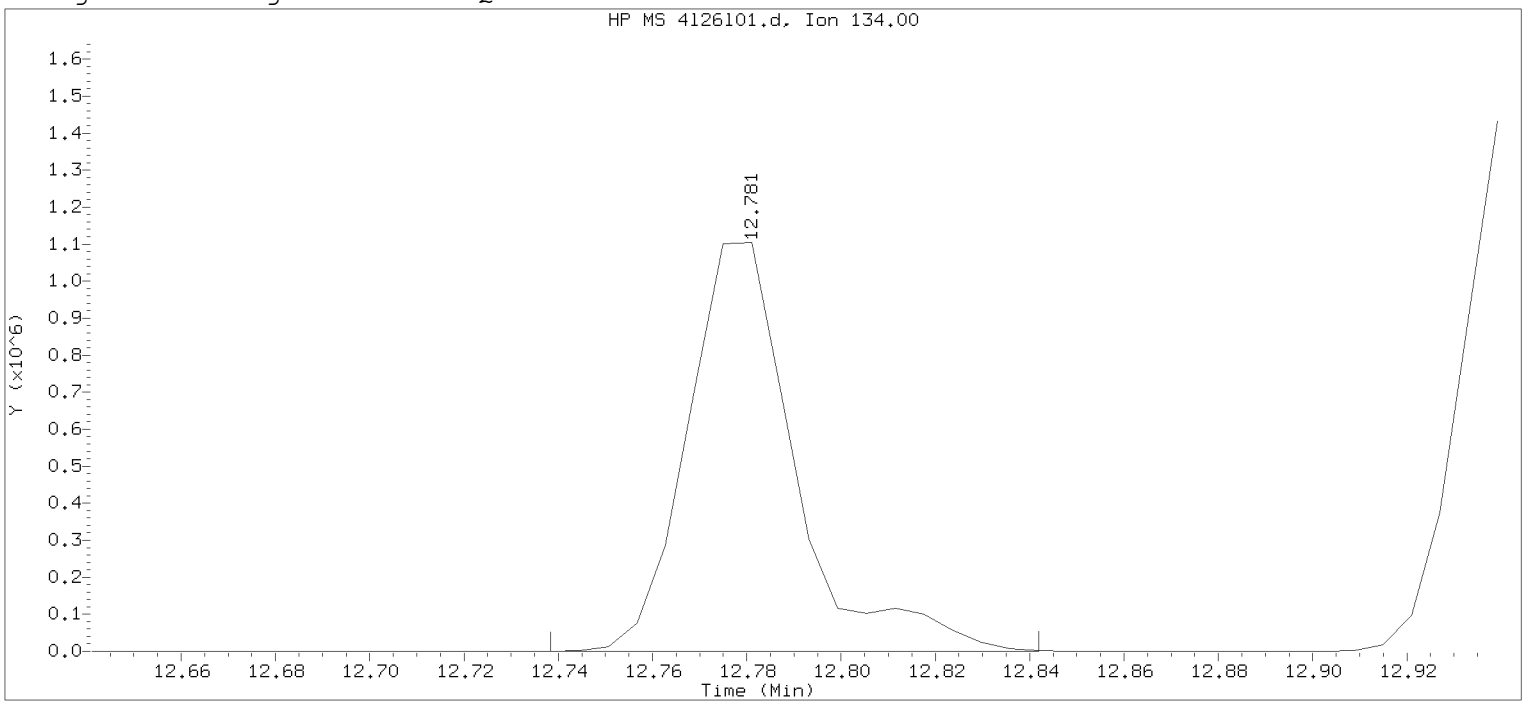
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:10 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 10:28
Date, time and analyst ID of latest file update: 26-Jul-2017 10:28 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1841
Retention Time (minutes): 12.781
Quant Ion : 134.00
Area : 1757732
On-column Amount (ng) : 223.6551
Integration start scan : 1833 Integration stop scan: 1850
Y at integration start : 0 Y at integration end: 0

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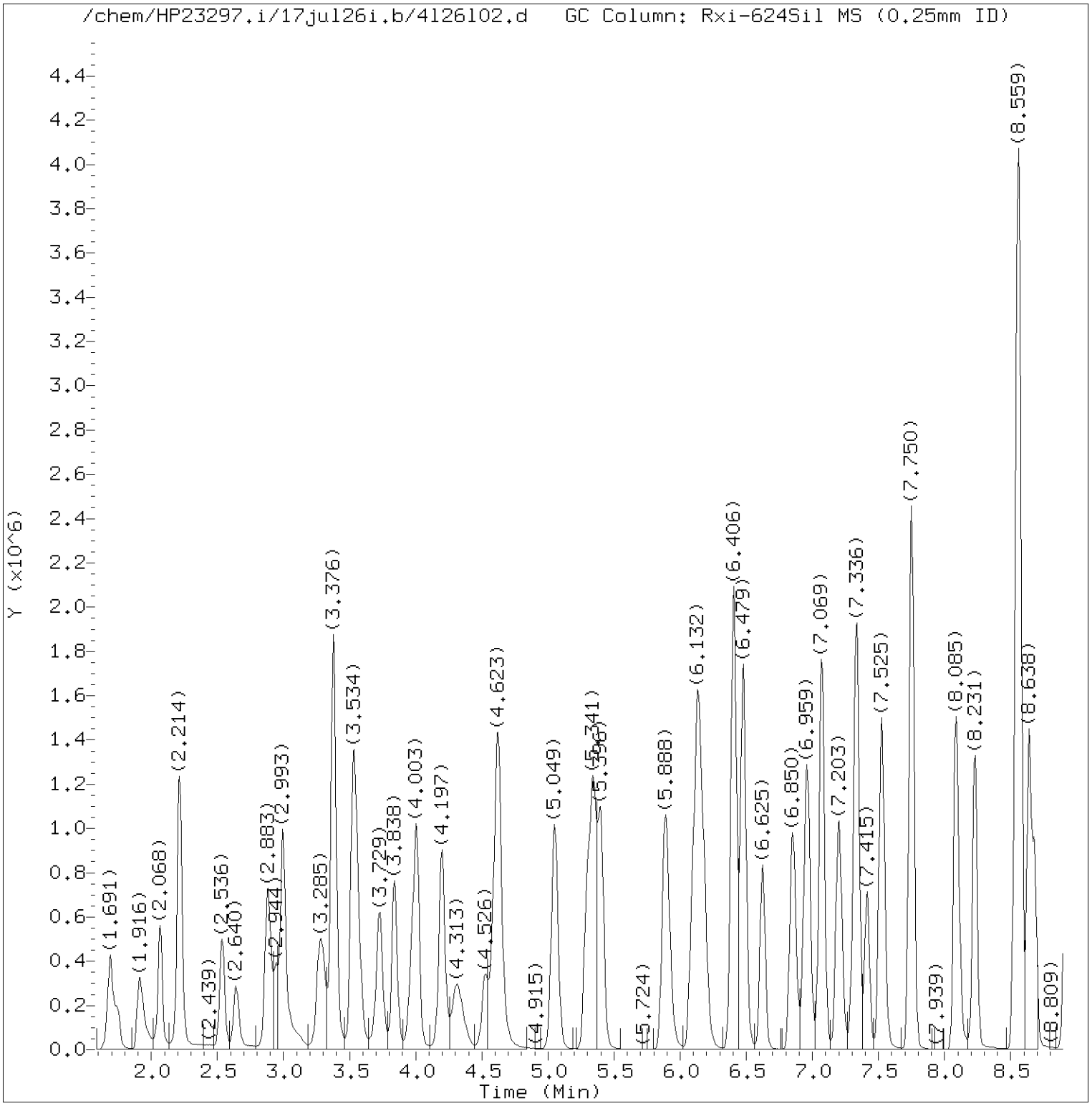
Target 3.5 esignature user option 0193



Total Ion Chromatogram (TIC)

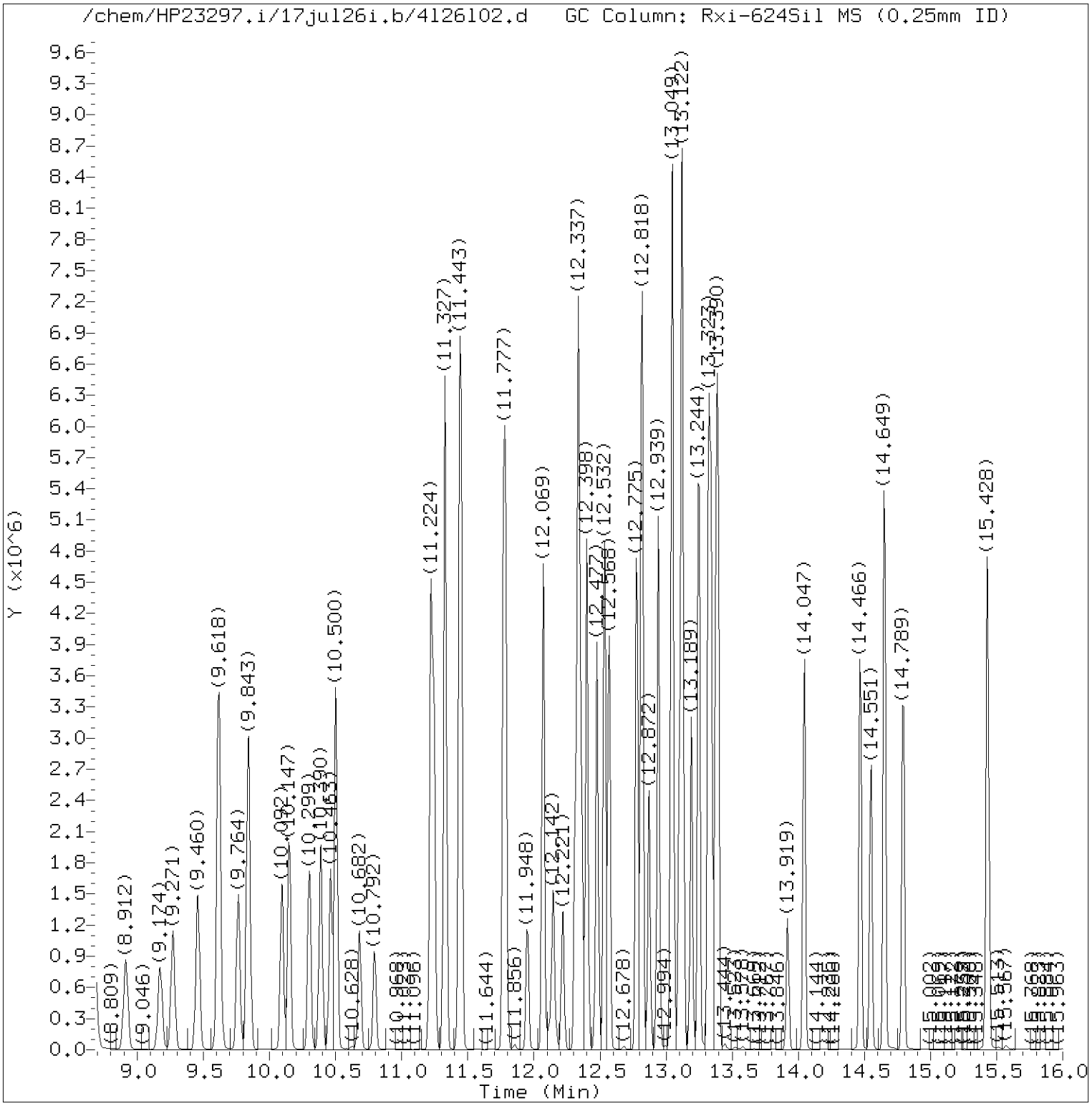
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.916	85	758090	120.229
4) Chloromethane	(2)	2.068	50	789072	111.227
6) Vinyl Chloride	(2)	2.208	62	766151	113.996
5) 1,3-Butadiene	(2)	2.220	39	559298	100.523
8) Bromomethane	(2)	2.536	94	504666	108.883
9) Chloroethane	(2)	2.640	64	406722	109.405
10) Dichlorofluoromethane	(2)	2.877	67	932998	99.885
12) Trichlorofluoromethane	(2)	2.944	101	823302	115.899
11) n-Pentane	(2)	2.993	43	1026166	99.225
13) Ethanol	(1)	3.054	45	384639	2523.559
15) Freon 123a	(2)	3.285	67	658921	104.042
16) Acrolein	(1)	3.376	56	2589944	1098.100
17) 1,1-Dichloroethene	(2)	3.522	96	464495	104.151
17) 1,1-Dichloroethene	(2)	3.522	63	237274	106.127
18) Acetone	(1)	3.540	58	268519	216.643
19) Freon 113	(2)	3.552	101	488381	109.897
21) 2-Propanol	(1)	3.704	45	536382	508.935
22) Methyl Iodide	(2)	3.729	142	915926	104.435
23) Carbon Disulfide	(2)	3.838	76	1673379	107.256
27) Methyl Acetate	(2)	3.972	43	967082	103.473
25) Allyl Chloride	(2)	4.009	41	1029657	106.853
29)*t-Butyl alcohol-d10	(1)	4.191	65	377871	250.000
28) Methylene Chloride	(2)	4.197	84	588983	99.191
30) t-Butyl alcohol	(1)	4.313	59	882084	516.596
31) Acrylonitrile	(2)	4.526	53	506042	108.823
33) Methyl Tertiary Butyl Ether	(2)	4.605	73	1814271	105.547
32) trans-1,2-Dichloroethene	(2)	4.623	96	559036	104.853
34) n-Hexane	(2)	5.049	57	952876	105.041
36) 1,1-Dichloroethane	(2)	5.292	63	1051693	104.191
38) di-Isopropyl ether	(2)	5.341	45	2153537	105.926
39) 2-Chloro-1,3-butadiene	(2)	5.402	53	904077	107.279
40) Ethyl t-butyl ether	(2)	5.888	59	1853962	105.865
44) 2-Butanone	(2)	6.095	43	1536873	226.567
43) 1,2-Dichloroethene (Total)	(2)		96	1199470	209.948
42) cis-1,2-Dichloroethene	(2)	6.132	96	640434	105.095
45) 2,2-Dichloropropane	(2)	6.150	77	719947	108.900
47) Propionitrile	(1)	6.180	54	1023191	512.372
48) Methacrylonitrile	(2)	6.406	67	1157423	262.539

* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
49) Bromochloromethane	(2)	6.479	128	342485	106.435
50) Tetrahydrofuran	(1)	6.479	71	380258	222.715
51) Chloroform	(2)	6.625	83	963887	104.216
52)$Dibromofluoromethane	(2)	6.844	113	279340	50.090
52)$Dibromofluoromethane	(2)	6.844	111	285617	50.127
53) 1,1,1-Trichloroethane	(2)	6.856	97	806891	101.540
54) Cyclohexane	(2)	6.959	56	1101135	104.738
54) Cyclohexane	(2)	6.959	84	875130	105.186
54) Cyclohexane	(2)	6.959	69	324173	105.289
55) 1,1-Dichloropropene	(2)	7.069	75	812457	105.924
56) Carbon Tetrachloride	(2)	7.069	117	660115	108.808
58) Isobutyl Alcohol	(1)	7.196	41	831523	1286.960
57)$1,2-Dichloroethane-d4	(2)	7.306	102	70405	49.886
57)$1,2-Dichloroethane-d4	(2)	7.306	65	315608	49.991
57)$1,2-Dichloroethane-d4	(2)	7.306	104	44510	49.618
60) Benzene	(2)	7.336	78	2415830	102.972
61) 1,2-Dichloroethane	(2)	7.415	62	778418	102.954
61) 1,2-Dichloroethane	(2)	7.415	98	75868	102.416
65) t-Amyl methyl ether	(2)	7.525	73	1792077	105.898
66)*Fluorobenzene	(2)	7.744	96	1184763	50.000
67) n-Heptane	(2)	7.750	43	1071713	107.461
69) n-Butanol	(1)	8.085	56	1389497	2698.240
71) Trichloroethene	(2)	8.231	95	602599	103.463
73) Methylcyclohexane	(2)	8.547	83	1108295	111.784
73) Methylcyclohexane	(2)	8.547	98	476439	112.666
74) 1,2-Dichloropropane	(2)	8.565	63	671321	103.501
77) Methyl Methacrylate	(2)	8.638	69	697305	105.876
76) 1,4-Dioxane	(1)	8.650	88	180202M	1301.954
75) Dibromomethane	(2)	8.681	93	411745	104.676
79) Bromodichloromethane	(2)	8.912	83	745165	108.415
80) 2-Nitropropane	(2)	9.174	41	633140	201.232
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	628518	113.288
82) cis-1,3-Dichloropropene	(2)	9.460	75	1029165	110.451
83) 4-Methyl-2-pentanone	(2)	9.618	43	2929436	230.232
84)$Toluene-d8	(3)	9.764	98	1170808	49.595
84)$Toluene-d8	(3)	9.764	100	762878	49.775
89) Toluene	(3)	9.843	92	1537991	102.905
91) 1,3-Dichloropropene (total)	(3)		100	1968530	222.293

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) trans-1,3-Dichloropropene	(3)	10.092	75	939365	111.842
92) Ethyl Methacrylate	(3)	10.147	69	1109083	106.906
93) 1,1,2-Trichloroethane	(3)	10.299	97	615525	101.251
94) Tetrachloroethene	(3)	10.390	166	678036	102.754
95) 1,3-Dichloropropane	(3)	10.463	76	1031389	102.155
97) 2-Hexanone	(3)	10.500	43	2376966	206.731
98) Dibromochloromethane	(3)	10.682	129	648857	110.921
100) 1,2-Dibromoethane	(3)	10.792	107	672637	103.885
101)*Chlorobenzene-d5	(3)	11.218	117	895994	50.000
103) Chlorobenzene	(3)	11.248	112	1739079	101.657
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	586241	105.973
105) Ethylbenzene	(3)	11.327	91	2918471	103.753
107) m+p-Xylene	(3)	11.443	106	2356984	209.350
109) Xylene (Total)	(3)		106	3534033	314.859
108) o-Xylene	(3)	11.771	106	1177049	105.509
110) Styrene	(3)	11.790	104	1984563	106.714
111) Bromoform	(3)	11.948	173	523518	111.931
112) Isopropylbenzene	(3)	12.069	105	2890695	104.745
113) Cyclohexanone	(1)	12.142	55	670999	1336.781
115)$4-Bromofluorobenzene	(3)	12.215	95	421875	50.252
115)$4-Bromofluorobenzene	(3)	12.221	174	381192	49.941
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	1085269	98.096
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	766997	272.732
116) Bromobenzene	(4)	12.337	156	810546	101.130
118) 1,2,3-Trichloropropane	(4)	12.361	110	305948	96.346
120) n-Propylbenzene	(4)	12.398	91	3467367	101.730
121) 2-Chlorotoluene	(4)	12.477	126	719543	101.656
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	2486140	104.005
122) 4-Chlorotoluene	(4)	12.568	126	754357	100.716
125) tert-Butylbenzene	(4)	12.775	134	516109M	104.389
126) Pentachloroethane	(4)	12.812	167	487008	111.263
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	2581915	103.934
128) sec-Butylbenzene	(4)	12.939	105	3215797	102.334
130) 1,3-Dichlorobenzene	(4)	13.043	146	1517123	100.817
131) p-Isopropyltoluene	(4)	13.049	119	2820741	103.919
132)*1,4-Dichlorobenzene-d4	(4)	13.098	152	504495	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	1558563	99.821
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	2712182	104.296

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on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

	Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
136)	Benzyl Chloride	(4)	13.189	91	1995026	110.506
137)	1,3-Diethylbenzene	(4)	13.250	119	1707052	104.437
138)	1,4-Diethylbenzene	(4)	13.323	119	1765913	103.734
140)	n-Butylbenzene	(4)	13.341	92	1426718	101.003
139)	1,2-Dichlorobenzene	(4)	13.377	146	1479065	99.952
141)	1,2-Diethylbenzene	(4)	13.390	119	1433897	104.399
142)	Diethylbenzene (total)	(4)		100	4906862	312.571
143)	1,2-Dibromo-3-chloropropane	(4)	13.919	75	269013	105.758
145)	1,3,5-Trichlorobenzene	(4)	14.047	180	1127632	98.213
147)	1,2,4-Trichlorobenzene	(4)	14.466	180	1096586	97.672
148)	Hexachlorobutadiene	(4)	14.551	225	503570	96.612
149)	Naphthalene	(4)	14.649	128	3738958	101.794
150)	1,2,3-Trichlorobenzene	(4)	14.795	180	1051600	97.295
151)	2-Methylnaphthalene	(4)	15.428	142	2420610	106.173

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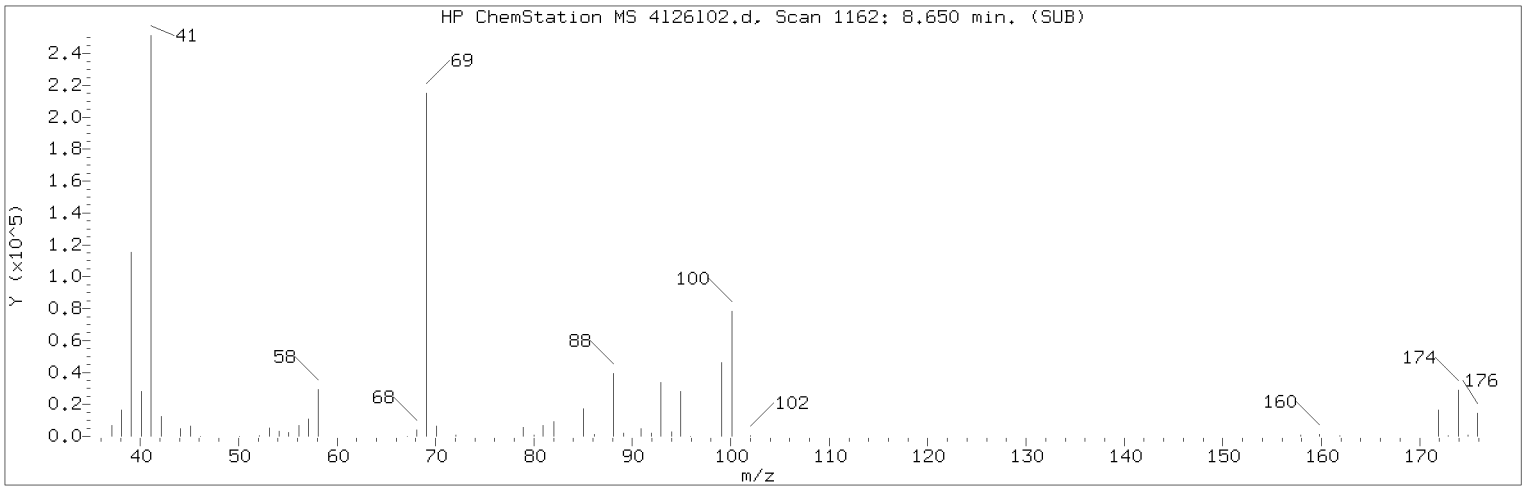
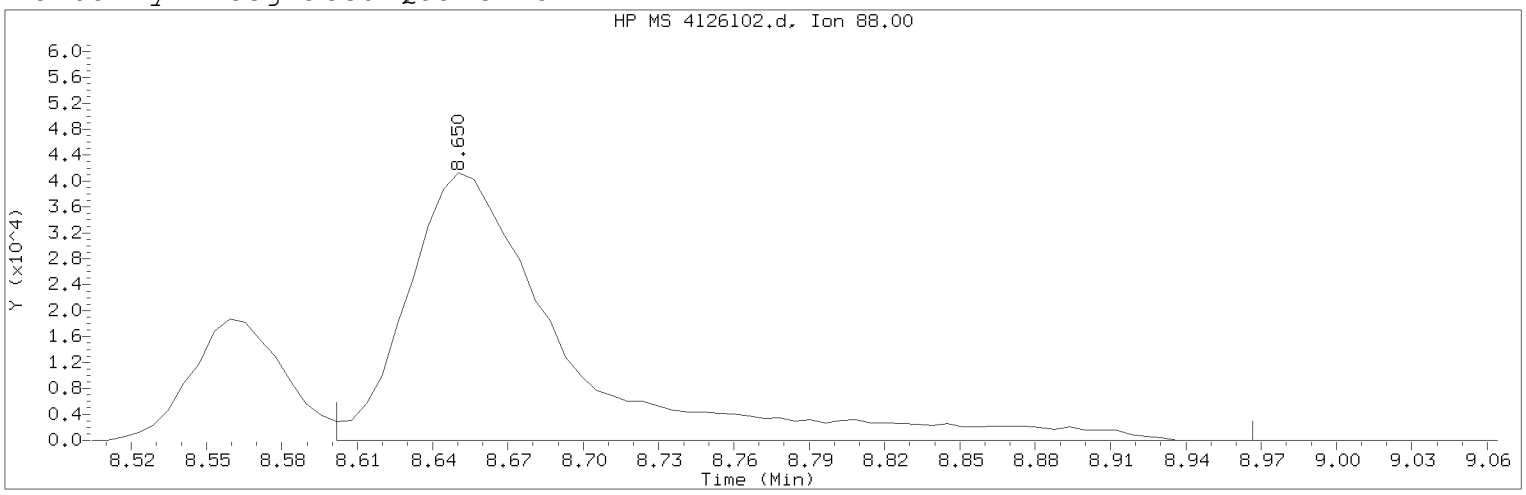
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126102.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

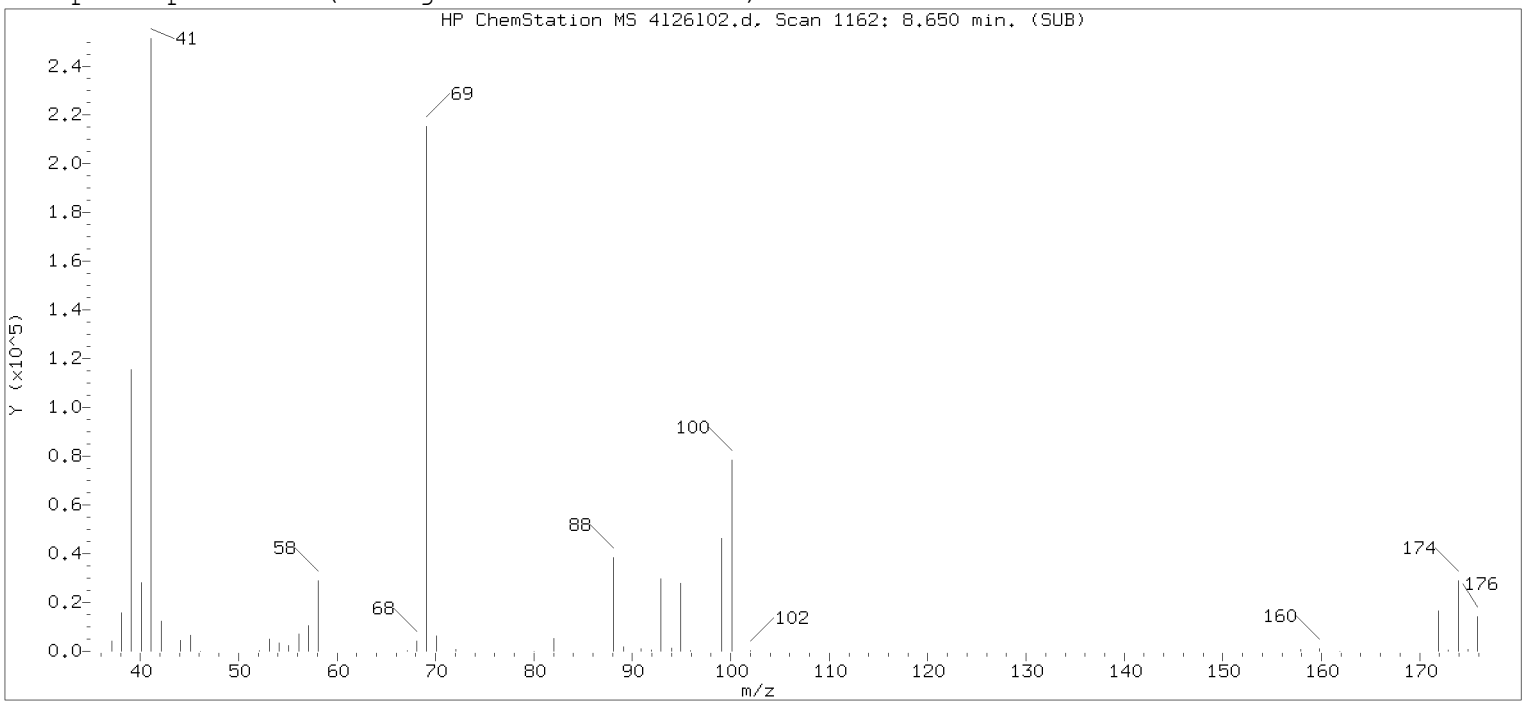
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area (flag) : 180202M
On-Column Amount (ng) : 1301.9537
Integration start scan : 1153 Integration stop scan: 1213
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

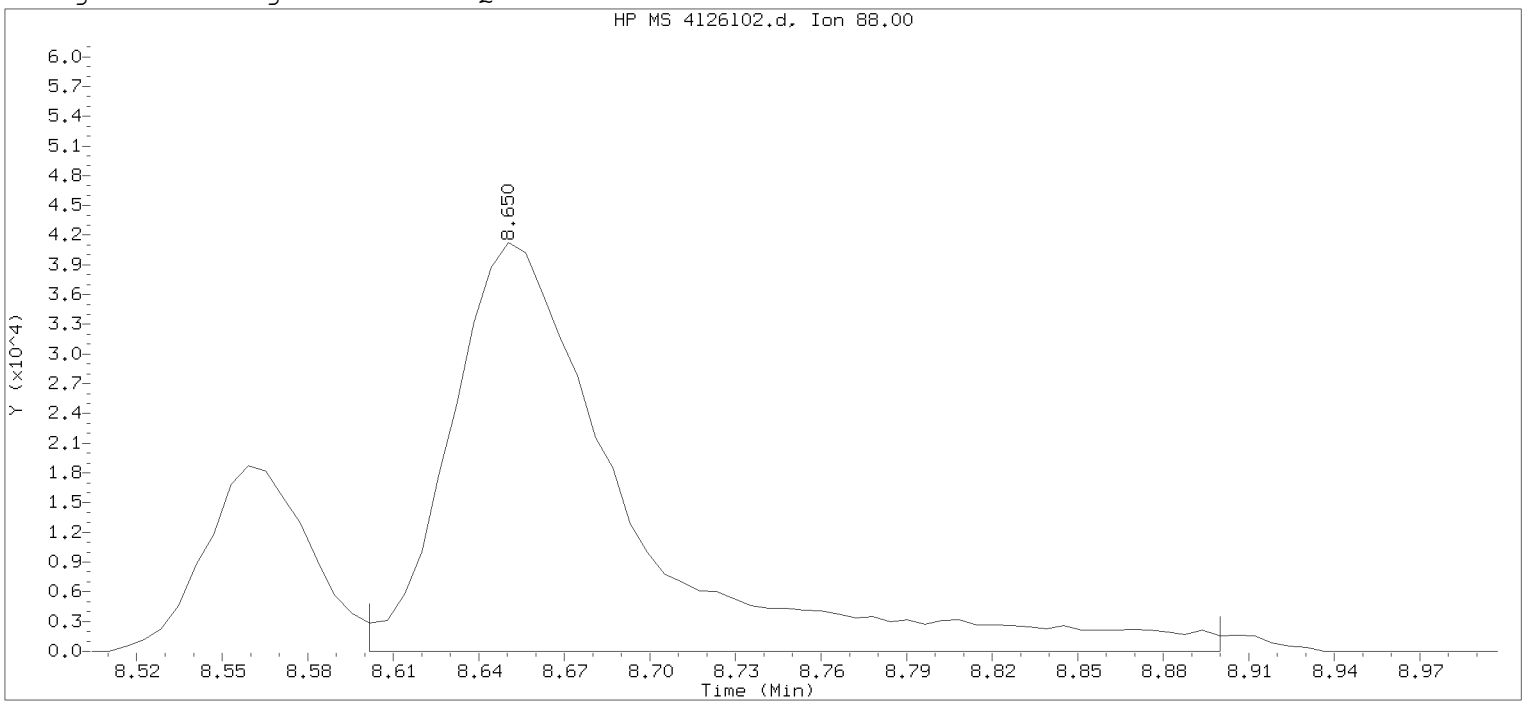
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126102.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

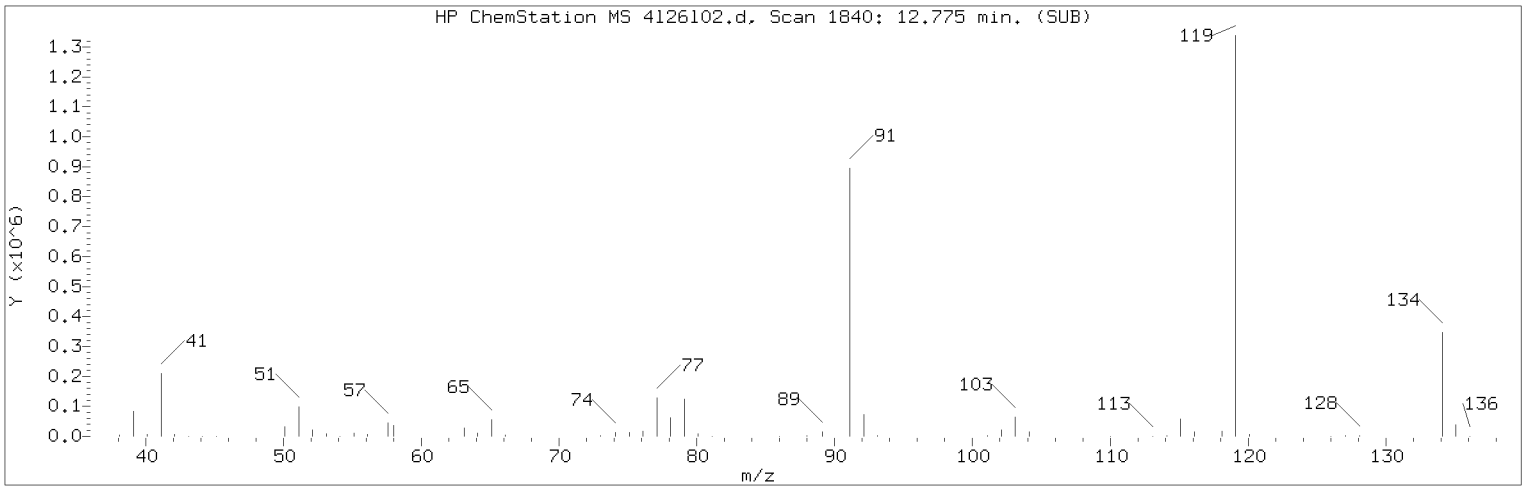
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 10:50
Date, time and analyst ID of latest file update: 26-Jul-2017 10:50 Automation

Sample Name: VSTD100 Lab Sample ID: VSTD100

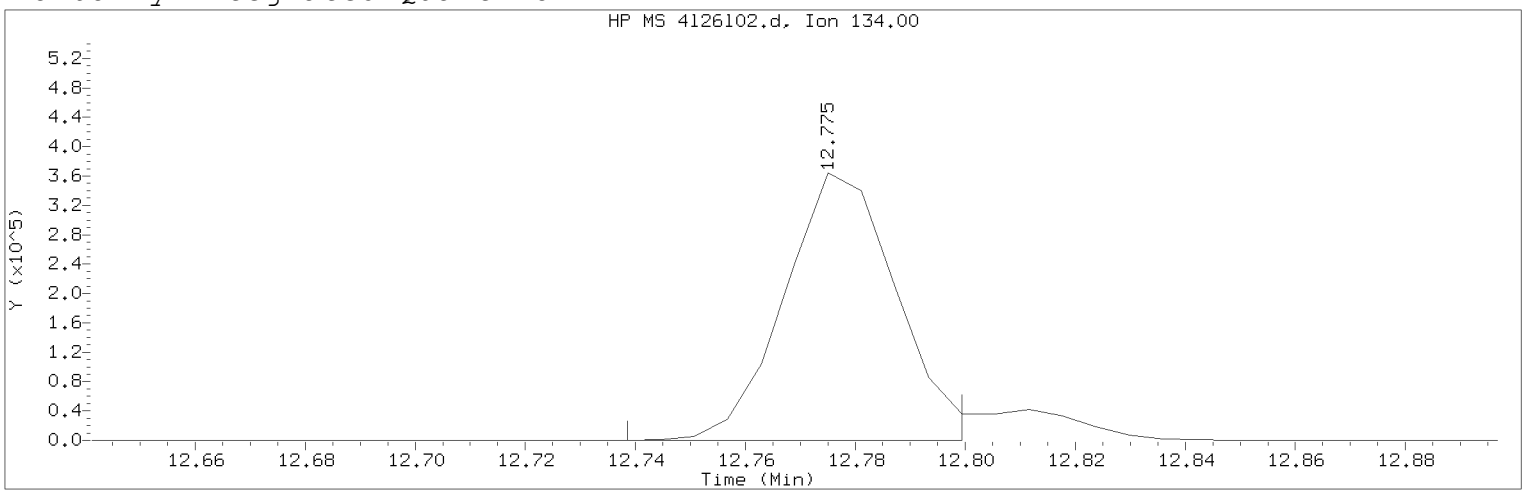
Compound Number	: 76		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1162		
Retention Time (minutes)	: 8.650		
Quant Ion	: 88.00		
Area	: 177588		
On-column Amount (ng)	: 911.0092		
Integration start scan	: 1153	Integration stop scan:	1202
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD100 Lab Sample ID: VSTD100

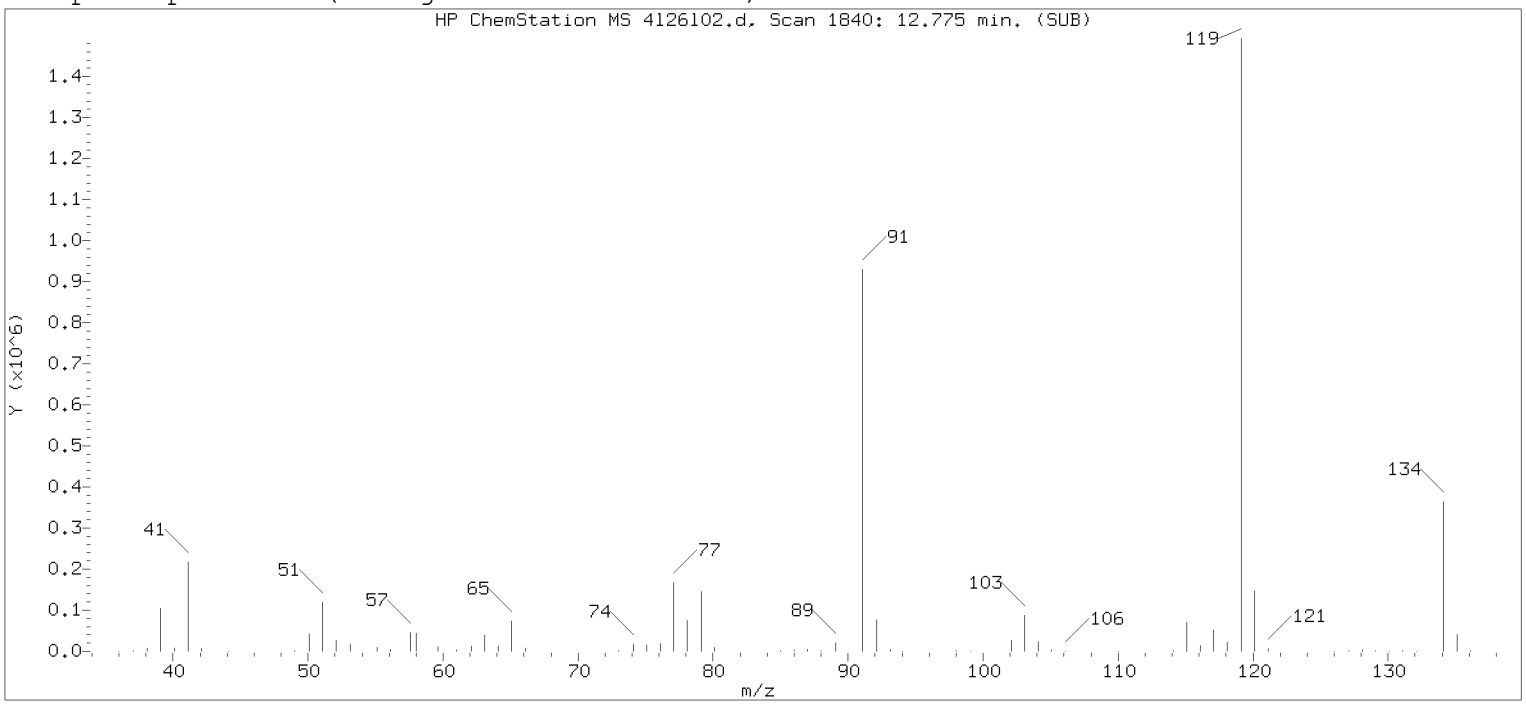
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area (flag) : 516109M
On-Column Amount (ng) : 104.3895
Integration start scan : 1833 Integration stop scan: 1843
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

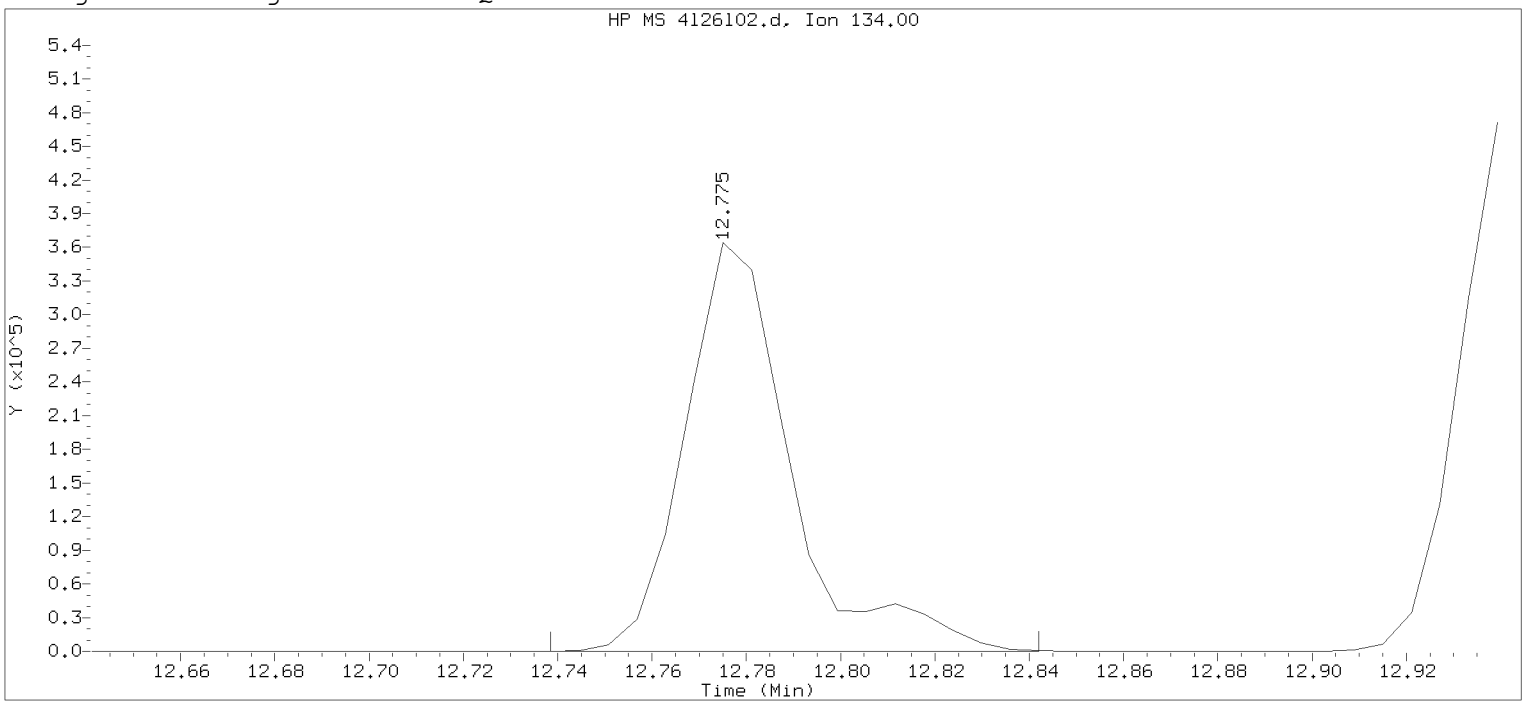
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



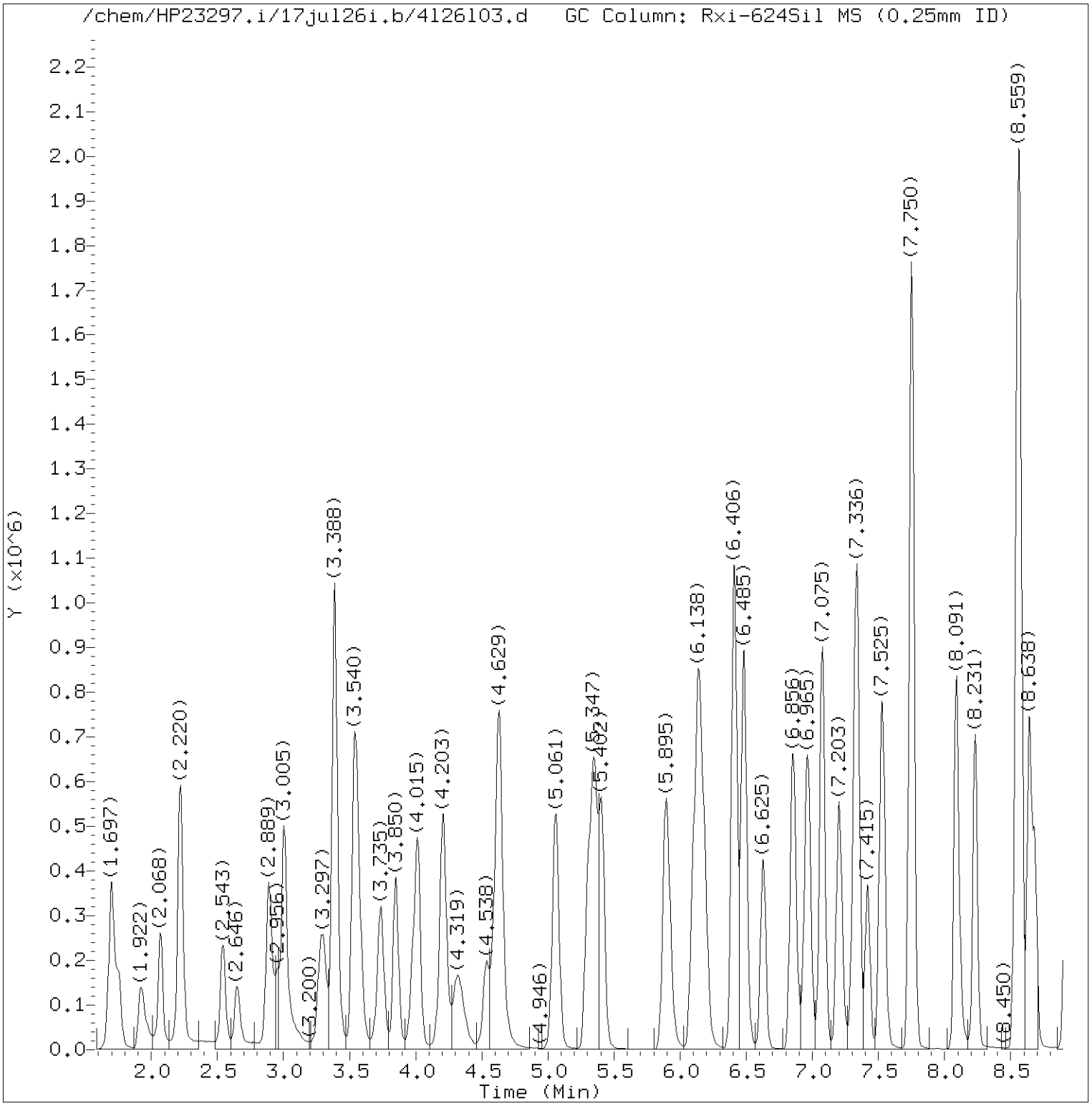
Data File: /chem/HP23297.i/17jul26i.b/4126l02.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:32 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 10:50
Date, time and analyst ID of latest file update: 26-Jul-2017 10:50 Automation

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area : 566935
On-column Amount (ng) : 78.6125
Integration start scan : 1833 Integration stop scan: 1850
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved.



Total Ion Chromatogram (TIC)

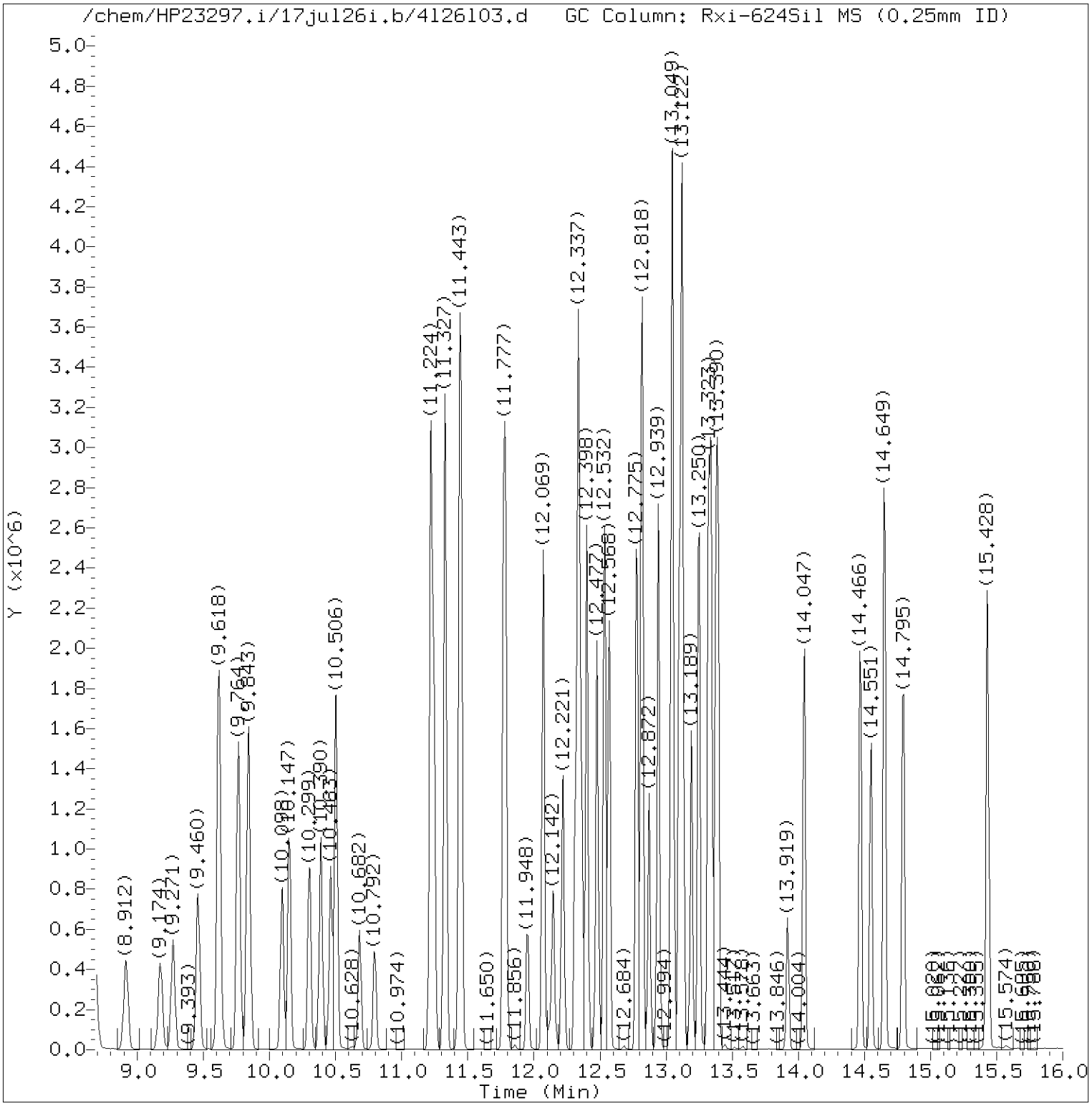
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.922	85	327808	49.987
4) Chloromethane	(2)	2.068	50	364916	49.458
6) Vinyl Chloride	(2)	2.208	62	343661	49.165
5) 1,3-Butadiene	(2)	2.226	39	291114	48.919
8) Bromomethane	(2)	2.543	94	234000	48.543
9) Chloroethane	(2)	2.646	64	190371	49.237
10) Dichlorofluoromethane	(2)	2.883	67	483021	48.824
12) Trichlorofluoromethane	(2)	2.950	101	366339	49.586
11) n-Pentane	(2)	3.005	43	525398	48.848
13) Ethanol	(1)	3.066	45	212781	1304.524
15) Freon 123a	(2)	3.285	67	344017M	52.228
16) Acrolein	(1)	3.388	56	1461049	578.863
17) 1,1-Dichloroethene	(2)	3.534	96	241744	52.118
17) 1,1-Dichloroethene	(2)	3.534	63	124074	53.359
18) Acetone	(1)	3.552	58	153160	115.471
19) Freon 113	(2)	3.571	101	243404	52.663
21) 2-Propanol	(1)	3.717	45	290077	257.194
22) Methyl Iodide	(2)	3.741	142	478742	52.486
23) Carbon Disulfide	(2)	3.850	76	865837	53.360
27) Methyl Acetate	(2)	3.978	43	445414	45.823
25) Allyl Chloride	(2)	4.015	41	482365	48.131
29)*t-Butyl alcohol-d10	(1)	4.191	65	404375	250.000
28) Methylene Chloride	(2)	4.209	84	310631	50.300
30) t-Butyl alcohol	(1)	4.319	59	465584	254.799
31) Acrylonitrile	(2)	4.532	53	290235	60.012
33) Methyl Tertiary Butyl Ether	(2)	4.611	73	949500	53.112
32) trans-1,2-Dichloroethene	(2)	4.635	96	294763	53.158
34) n-Hexane	(2)	5.061	57	502407	53.251
36) 1,1-Dichloroethane	(2)	5.298	63	553290	52.704
38) di-Isopropyl ether	(2)	5.353	45	1123638	53.141
39) 2-Chloro-1,3-butadiene	(2)	5.408	53	468781	53.485
40) Ethyl t-butyl ether	(2)	5.895	59	972031	53.368
43) 1,2-Dichloroethene (Total)	(2)		96	629702	106.005
44) 2-Butanone	(2)	6.101	43	857761	121.584
42) cis-1,2-Dichloroethene	(2)	6.138	96	334939	52.848
45) 2,2-Dichloropropane	(2)	6.156	77	368661	53.618
47) Propionitrile	(1)	6.187	54	539140	252.284
48) Methacrylonitrile	(2)	6.412	67	603966	131.724

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
49) Bromochloromethane	(2)	6.479	128	159236	47.581
50) Tetrahydrofuran	(1)	6.485	71	215017	117.680
51) Chloroform	(2)	6.625	83	502388	52.227
52)$Dibromofluoromethane	(2)	6.844	113	291584	50.273
52)$Dibromofluoromethane	(2)	6.850	111	298641	50.396
53) 1,1,1-Trichloroethane	(2)	6.862	97	414819	50.192
54) Cyclohexane	(2)	6.965	56	562216	51.419
54) Cyclohexane	(2)	6.965	84	446398	51.589
54) Cyclohexane	(2)	6.959	69	165819	51.784
55) 1,1-Dichloropropene	(2)	7.075	75	419906	52.638
56) Carbon Tetrachloride	(2)	7.075	117	334462	53.008
58) Isobutyl Alcohol	(1)	7.203	41	432039	624.846
57)$1,2-Dichloroethane-d4	(2)	7.312	102	73523	50.090
57)$1,2-Dichloroethane-d4	(2)	7.312	65	329482	50.180
57)$1,2-Dichloroethane-d4	(2)	7.312	104	46917	50.288
60) Benzene	(2)	7.336	78	1264644	51.829
61) 1,2-Dichloroethane	(2)	7.422	62	405477	51.564
61) 1,2-Dichloroethane	(2)	7.415	98	39424	51.171
65) t-Amyl methyl ether	(2)	7.525	73	942010	53.523
66)*Fluorobenzene	(2)	7.750	96	1232195	50.000
67) n-Heptane	(2)	7.756	43	579236	55.844
69) n-Butanol	(1)	8.091	56	723337	1312.571
71) Trichloroethene	(2)	8.231	95	312250	51.548
73) Methylcyclohexane	(2)	8.547	83	493954	47.903
73) Methylcyclohexane	(2)	8.547	98	211895	48.179
74) 1,2-Dichloropropane	(2)	8.571	63	351356	52.085
77) Methyl Methacrylate	(2)	8.638	69	357955	52.258
76) 1,4-Dioxane	(1)	8.656	88	96322M	650.310
75) Dibromomethane	(2)	8.681	93	213987	52.307
79) Bromodichloromethane	(2)	8.912	83	384014	53.720
80) 2-Nitropropane	(2)	9.174	41	337723	100.998
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	294483	51.036
82) cis-1,3-Dichloropropene	(2)	9.460	75	528772	54.564
83) 4-Methyl-2-pentanone	(2)	9.618	43	1566486	118.375
84)$Toluene-d8	(3)	9.764	98	1218417	49.909
84)$Toluene-d8	(3)	9.764	100	788830	49.771
89) Toluene	(3)	9.843	92	803179	51.967
91) 1,3-Dichloropropene (total)	(3)		100	1003955	109.273

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) trans-1,3-Dichloropropene	(3)	10.098	75	475183	54.710
92) Ethyl Methacrylate	(3)	10.147	69	577206	53.802
93) 1,1,2-Trichloroethane	(3)	10.299	97	323258	51.420
94) Tetrachloroethene	(3)	10.390	166	352331	51.633
95) 1,3-Dichloropropane	(3)	10.463	76	536880	51.421
97) 2-Hexanone	(3)	10.506	43	1226532	93.509
98) Dibromochloromethane	(3)	10.682	129	327552	54.147
100) 1,2-Dibromoethane	(3)	10.792	107	350843	52.398
101)*Chlorobenzene-d5	(3)	11.218	117	926560	50.000
103) Chlorobenzene	(3)	11.248	112	910615	51.474
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	301368	52.680
105) Ethylbenzene	(3)	11.327	91	1528746	52.555
107) m+p-Xylene	(3)	11.443	106	1230083	105.653
109) Xylene (Total)	(3)		106	1842116	158.705
108) o-Xylene	(3)	11.771	106	612033	53.052
110) Styrene	(3)	11.790	104	1029062	53.509
111) Bromoform	(3)	11.948	173	263200	54.417
112) Isopropylbenzene	(3)	12.069	105	1537667	53.880
113) Cyclohexanone	(1)	12.142	55	335519	624.618
115)$4-Bromofluorobenzene	(3)	12.215	95	433917	49.981
115)$4-Bromofluorobenzene	(3)	12.221	174	391056	49.543
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	571030	51.301
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	392689	138.787
116) Bromobenzene	(4)	12.337	156	415609	51.540
118) 1,2,3-Trichloropropane	(4)	12.361	110	160014	50.084
120) n-Propylbenzene	(4)	12.398	91	1862185	54.304
121) 2-Chlorotoluene	(4)	12.477	126	377061	52.947
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	1322242	54.979
122) 4-Chlorotoluene	(4)	12.568	126	396607	52.631
125) tert-Butylbenzene	(4)	12.775	134	280003M	56.291
126) Pentachloroethane	(4)	12.812	167	218241	49.558
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	1363059	54.536
128) sec-Butylbenzene	(4)	12.939	105	1745759	55.217
130) 1,3-Dichlorobenzene	(4)	13.043	146	800879	52.898
131) p-Isopropyltoluene	(4)	13.049	119	1516258	55.522
132)*1,4-Dichlorobenzene-d4	(4)	13.098	152	507574	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	815056	51.885
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	1264189	48.319

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on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
136) Benzyl Chloride	(4)	13.189	91	995006	54.780
137) 1,3-Diethylbenzene	(4)	13.250	119	800864	48.700
138) 1,4-Diethylbenzene	(4)	13.323	119	828840	48.393
140) n-Butylbenzene	(4)	13.341	92	775039	54.535
139) 1,2-Dichlorobenzene	(4)	13.377	146	775806	52.109
141) 1,2-Diethylbenzene	(4)	13.390	119	667915	48.335
142) Diethylbenzene (total)	(4)		100	2297619	145.427
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	137629	53.779
145) 1,3,5-Trichlorobenzene	(4)	14.047	180	607875	52.623
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	589108	52.153
148) Hexachlorobutadiene	(4)	14.551	225	280794	53.544
149) Naphthalene	(4)	14.649	128	1989642	53.840
150) 1,2,3-Trichlorobenzene	(4)	14.795	180	560438	51.538
151) 2-Methylnaphthalene	(4)	15.428	142	1137372	49.585

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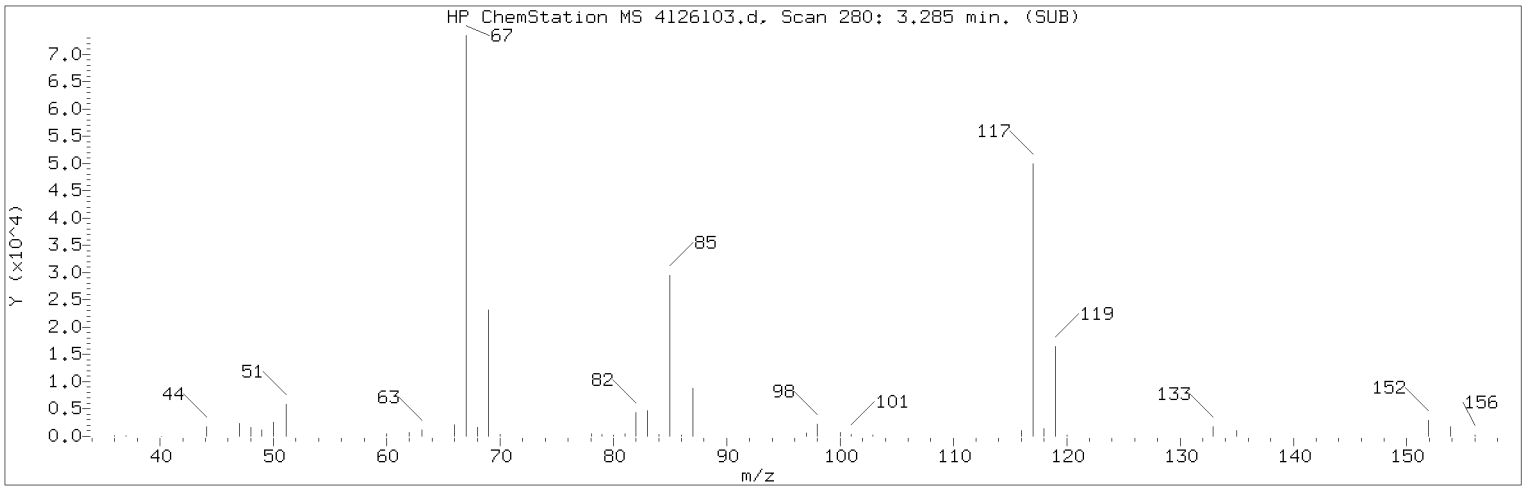
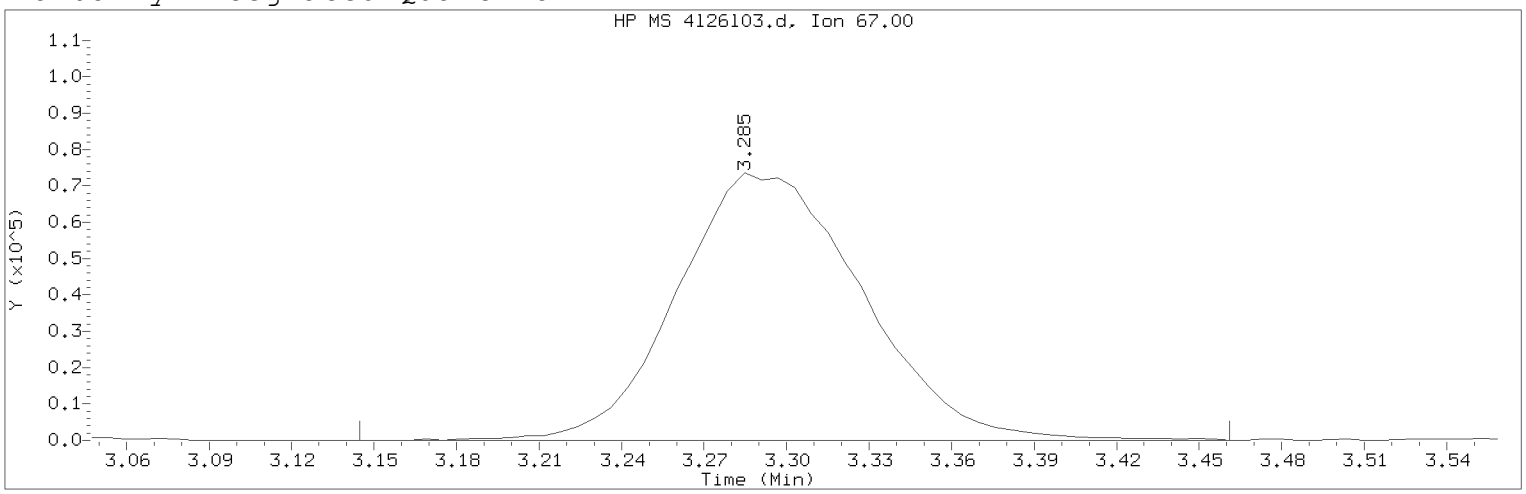
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

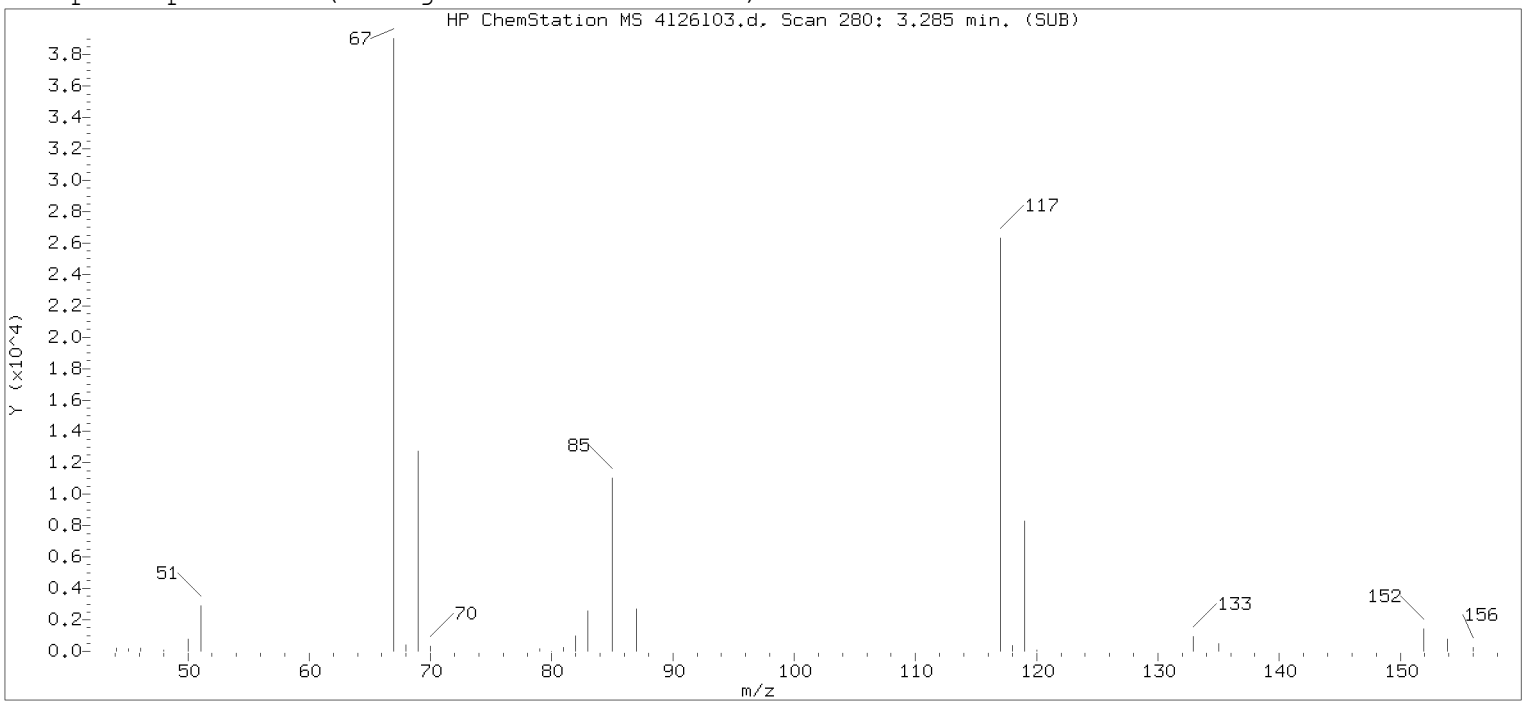
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 280
Retention Time (minutes): 3.285
Quant Ion : 67.00
Area (flag) : 344017M
On-Column Amount (ng) : 52.2285
Integration start scan : 256 Integration stop scan: 308
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

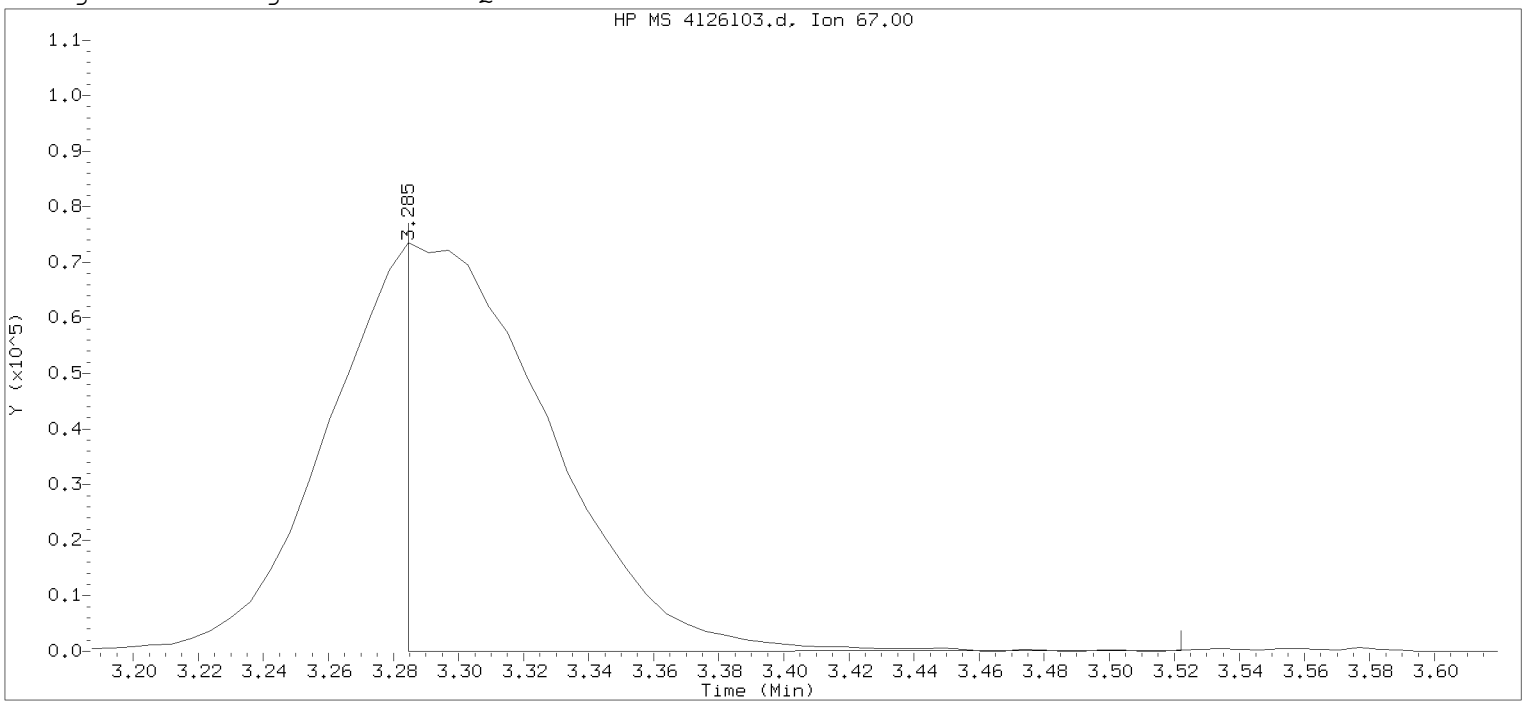
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

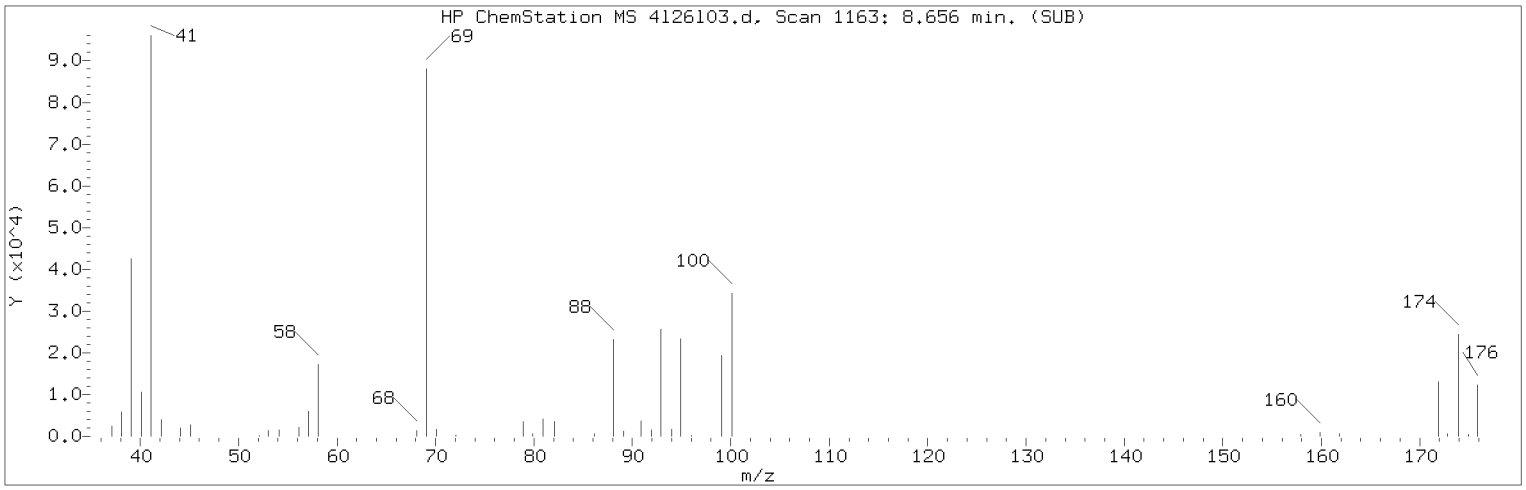
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:13
Date, time and analyst ID of latest file update: 26-Jul-2017 11:13 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

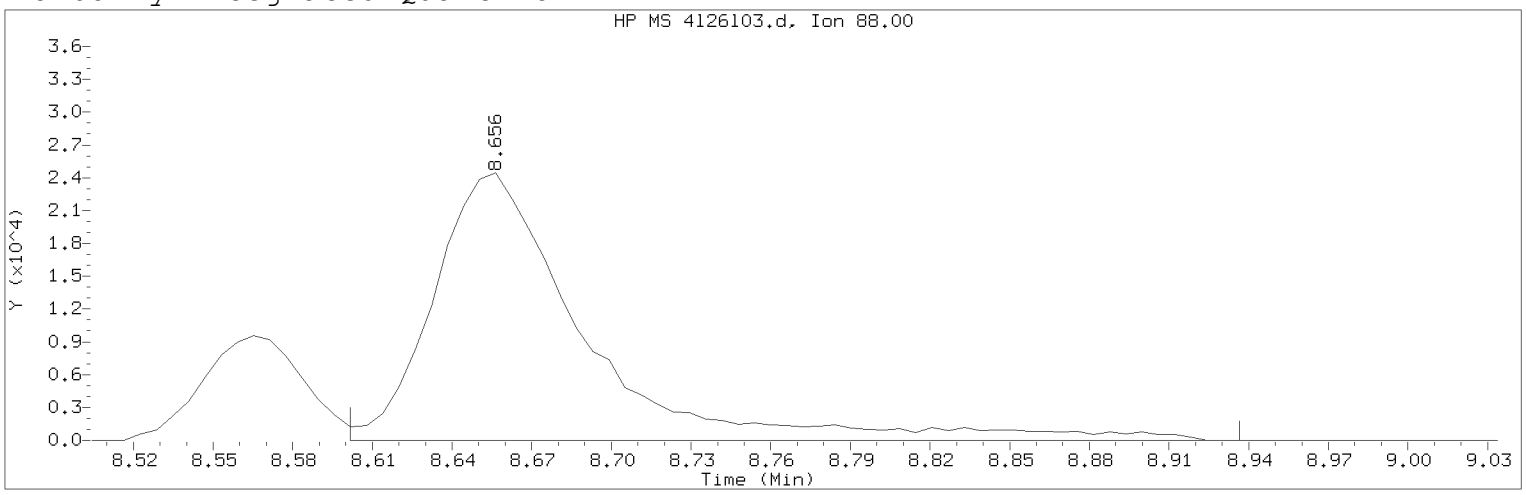
Compound Number	: 15		
Compound Name	: Freon 123a		
Scan Number	: 280		
Retention Time (minutes)	: 3.285		
Quant Ion	: 67.00		
Area	: 215727		
On-column Amount (ng)	: 36.3412		
Integration start scan	: 279	Integration stop scan:	318
Y at integration start	: 0	Y at integration end:	129

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved 07/27/2017

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126103.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

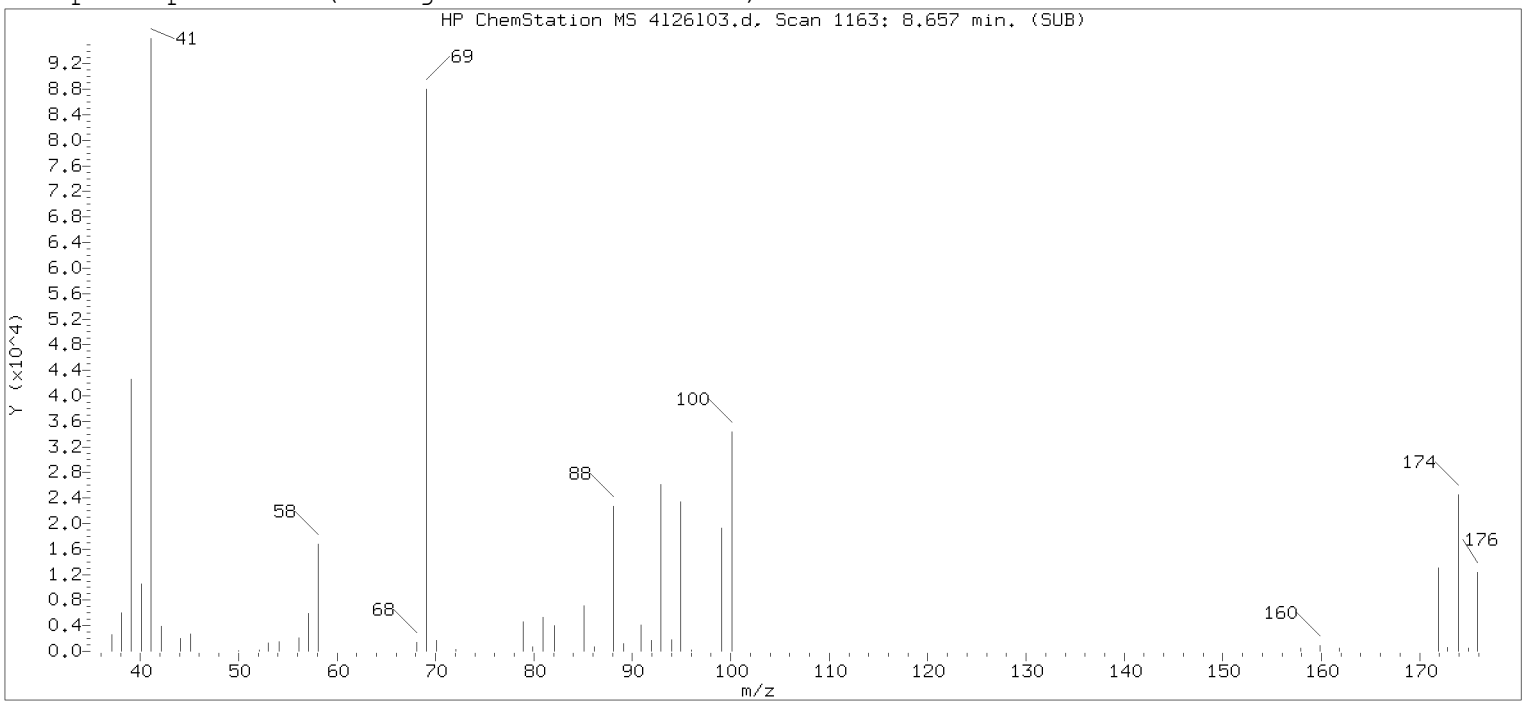
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1163
Retention Time (minutes): 8.656
Quant Ion : 88.00
Area (flag) : 96322M
On-Column Amount (ng) : 650.3104
Integration start scan : 1153 Integration stop scan: 1208
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

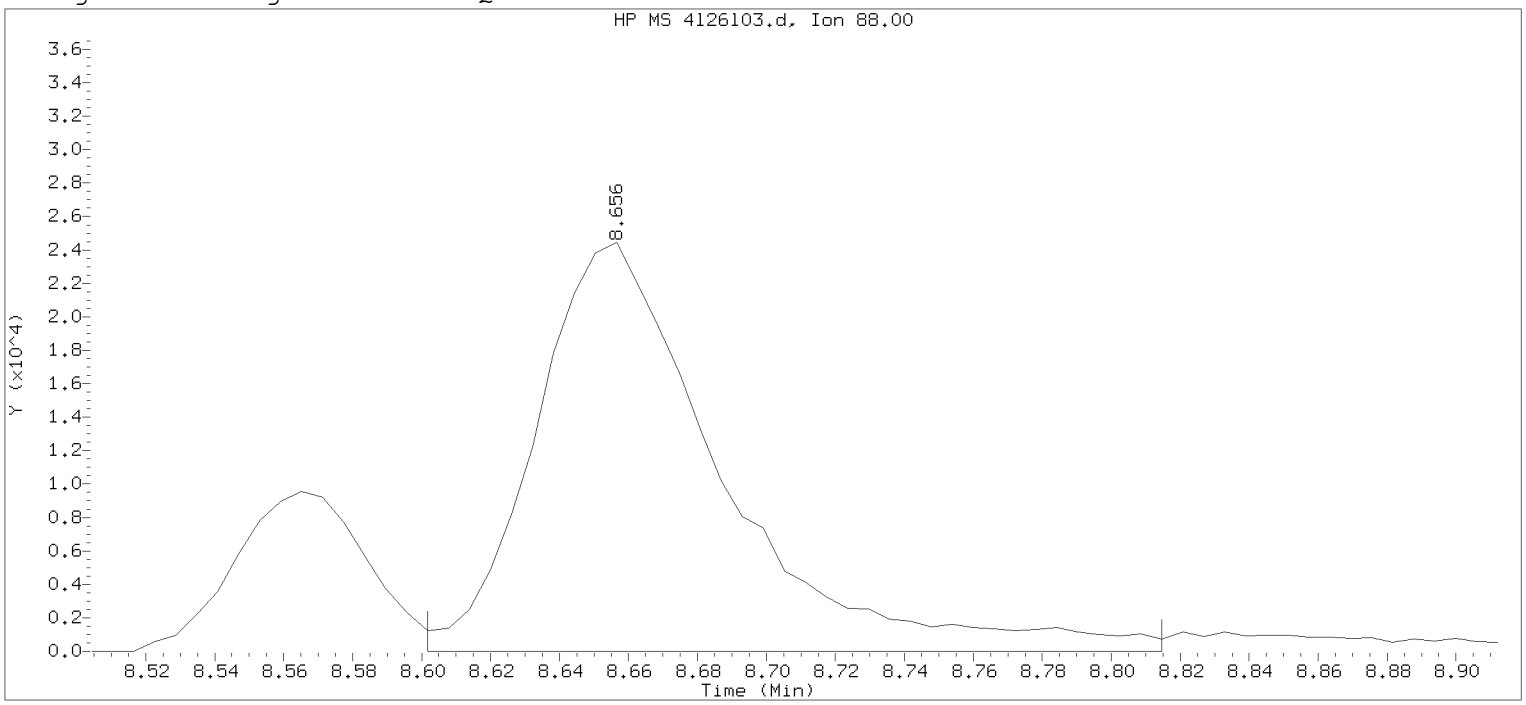
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126103.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

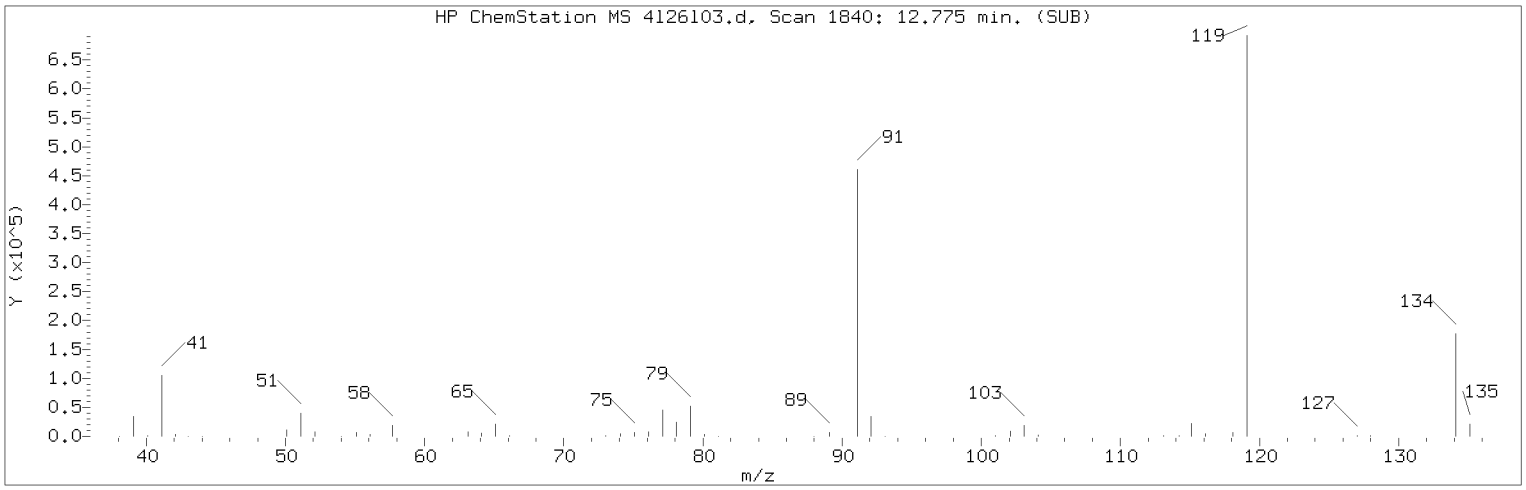
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:13
Date, time and analyst ID of latest file update: 26-Jul-2017 11:13 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

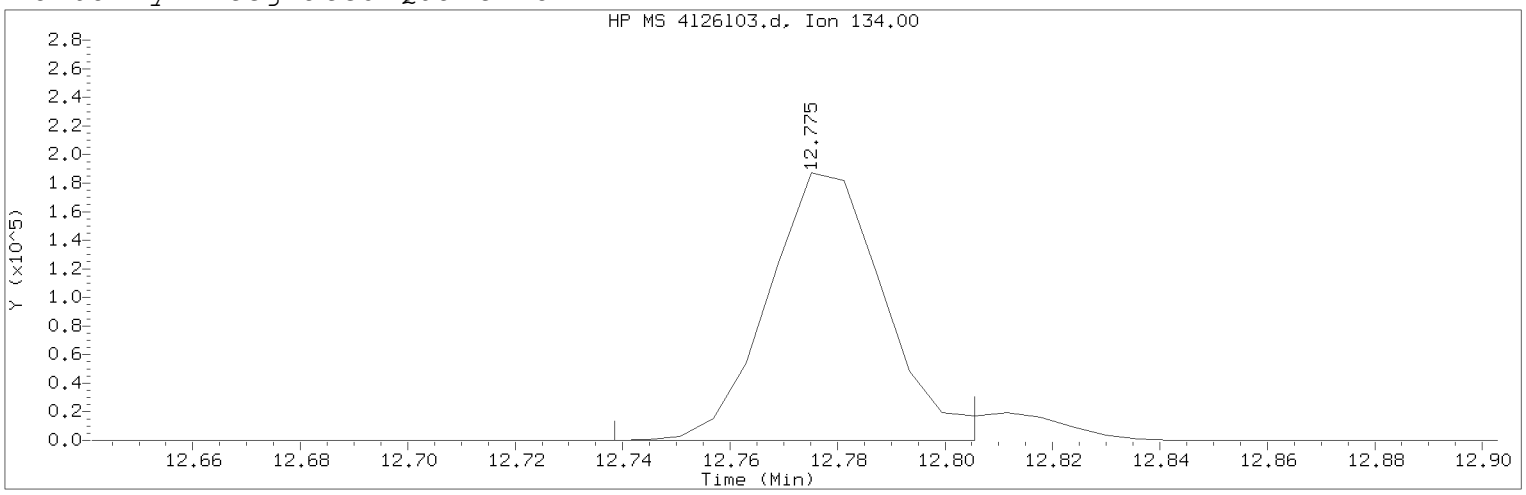
Compound Number	: 76		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1163		
Retention Time (minutes)	: 8.656		
Quant Ion	: 88.00		
Area	: 91098		
On-column Amount (ng)	: 613.9758		
Integration start scan	: 1153	Integration stop scan:	1188
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126103.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

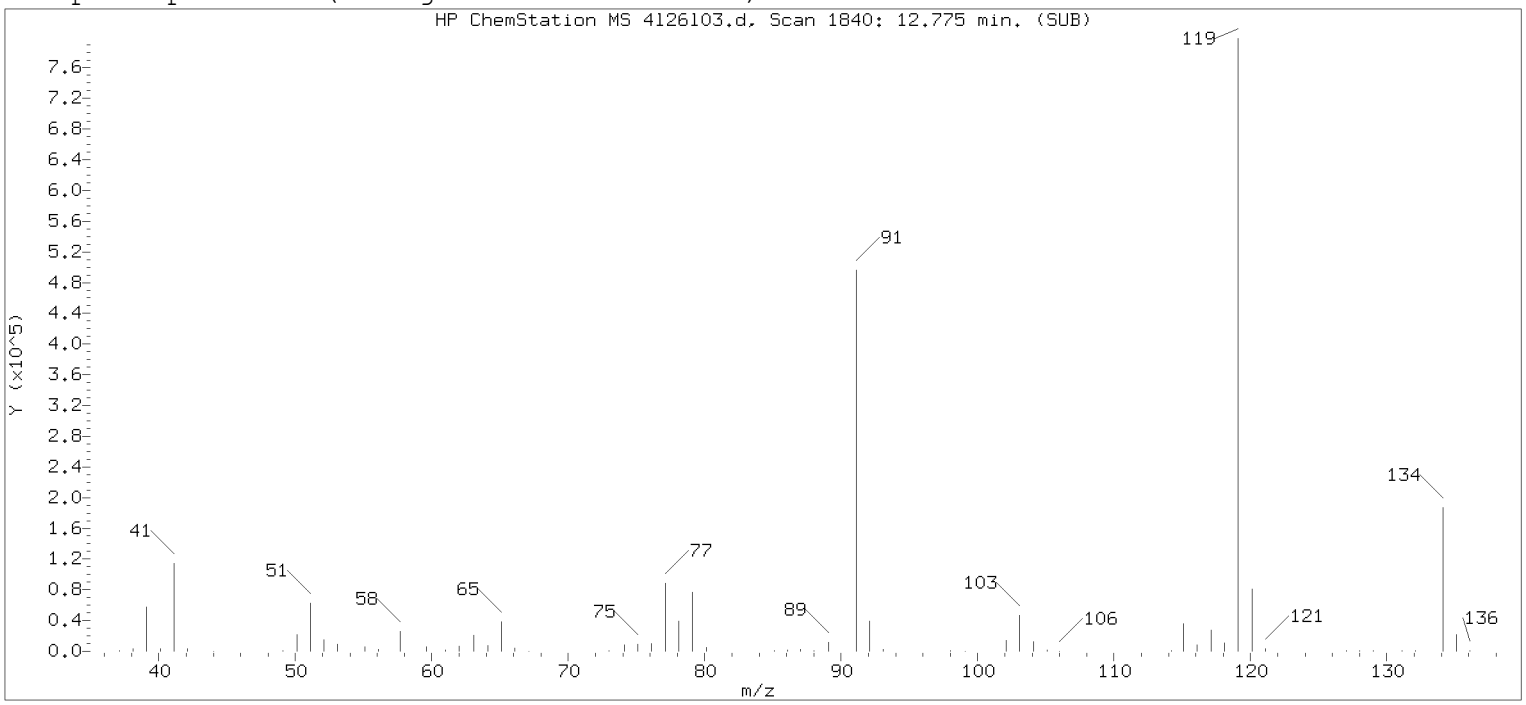
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area (flag) : 280003M
On-Column Amount (ng) : 56.2906
Integration start scan : 1833 Integration stop scan: 1844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

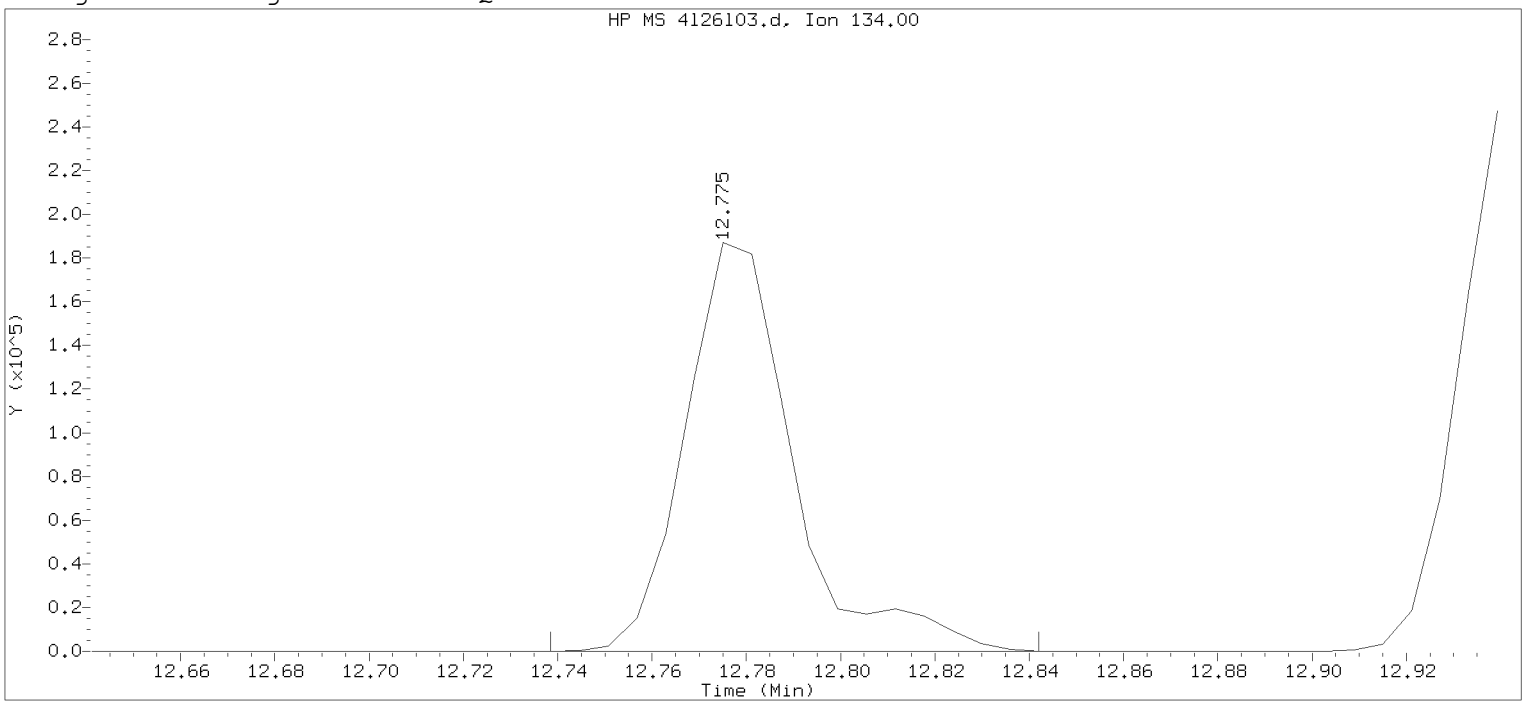
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



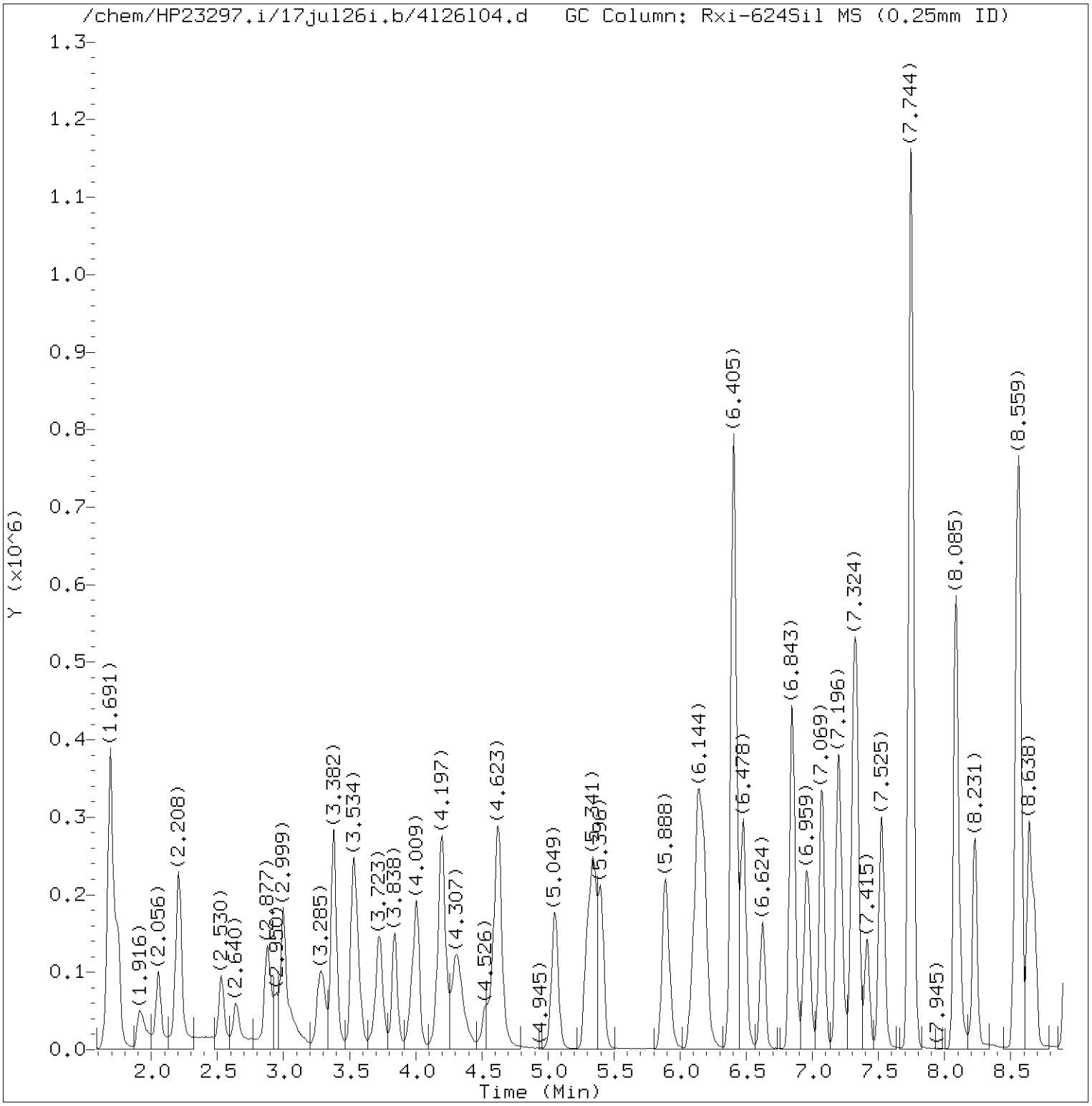
Data File: /chem/HP23297.i/17jul26i.b/4126l03.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 10:55 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:13
Date, time and analyst ID of latest file update: 26-Jul-2017 11:13 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area : 298032
On-column Amount (ng) : 54.0974
Integration start scan : 1833 Integration stop scan: 1850
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved.



Total Ion Chromatogram (TIC)

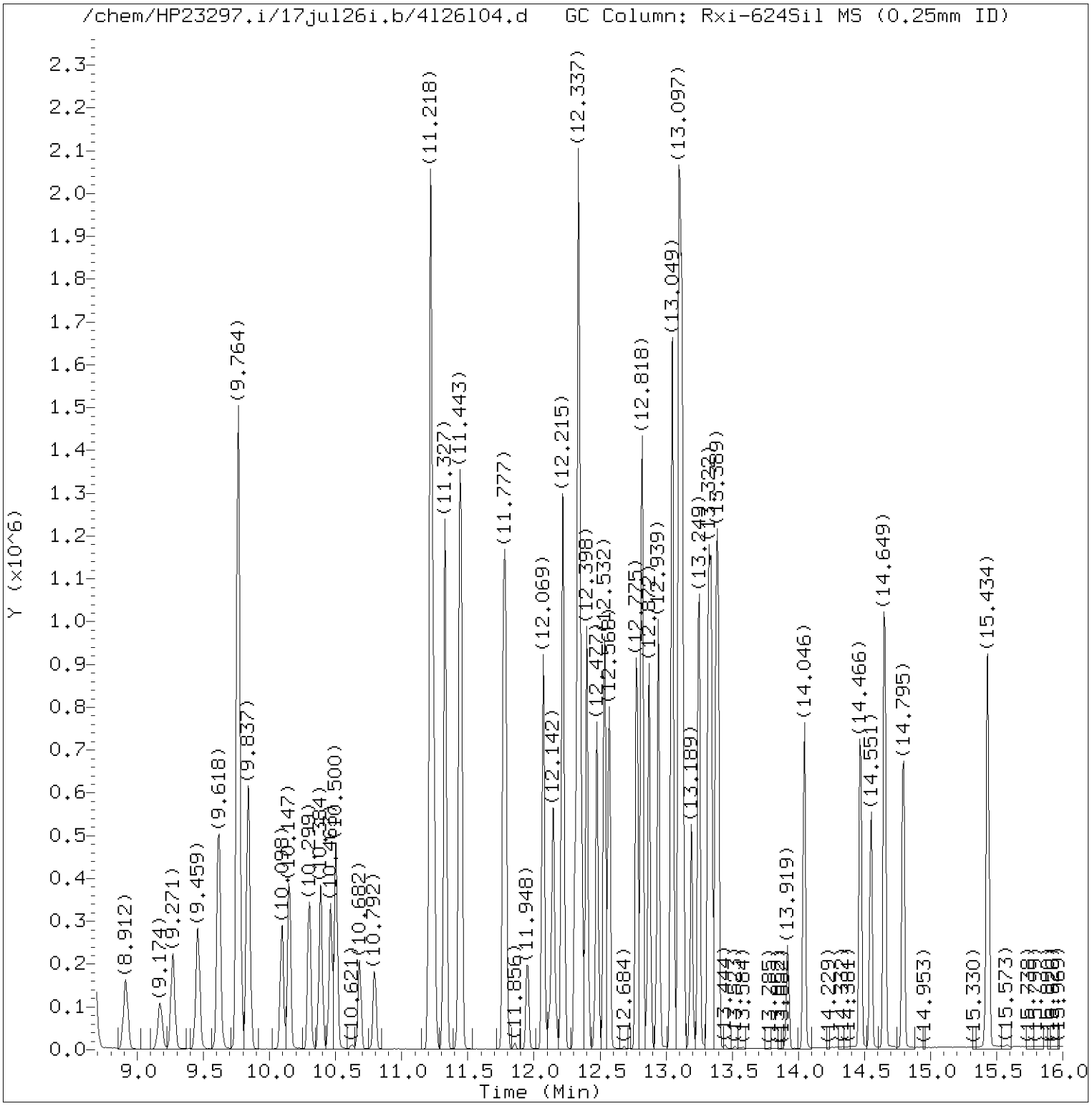
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.916	85	115596	18.369
4) Chloromethane	(2)	2.056	50	132233	18.676
6) Vinyl Chloride	(2)	2.190	62	124561	18.570
5) 1,3-Butadiene	(2)	2.214	39	121309	20.334
8) Bromomethane	(2)	2.530	94	84097	18.180
9) Chloroethane	(2)	2.640	64	67458	18.182
10) Dichlorofluoromethane	(2)	2.877	67	164122	16.535
12) Trichlorofluoromethane	(2)	2.944	101	129502	18.267
11) n-Pentane	(2)	2.999	43	190995	18.505
13) Ethanol	(1)	3.053	45	152417	1005.239
15) Freon 123a	(2)	3.285	67	130925	20.714
16) Acrolein	(1)	3.382	56	403355	171.915
17) 1,1-Dichloroethene	(2)	3.522	96	91691	20.600
17) 1,1-Dichloroethene	(2)	3.528	63	46743	20.949
18) Acetone	(1)	3.546	58	41683M	33.807
19) Freon 113	(2)	3.552	101	85391	19.253
21) 2-Propanol	(1)	3.710	45	201054	191.768
22) Methyl Iodide	(2)	3.729	142	182137	20.809
23) Carbon Disulfide	(2)	3.838	76	321344	20.638
27) Methyl Acetate	(2)	3.966	43	188175	20.174
25) Allyl Chloride	(2)	4.009	41	194972	20.274
29)*t-Butyl alcohol-d10	(1)	4.185	65	375896	250.000
28) Methylene Chloride	(2)	4.197	84	118983	20.078
30) t-Butyl alcohol	(1)	4.313	59	334647	197.017
31) Acrylonitrile	(2)	4.526	53	79152	17.055
33) Methyl Tertiary Butyl Ether	(2)	4.605	73	359845	20.976
32) trans-1,2-Dichloroethene	(2)	4.629	96	111922	21.034
34) n-Hexane	(2)	5.055	57	170513	18.834
36) 1,1-Dichloroethane	(2)	5.292	63	210648	20.910
38) di-Isopropyl ether	(2)	5.341	45	426929	21.041
39) 2-Chloro-1,3-butadiene	(2)	5.402	53	174474	20.745
40) Ethyl t-butyl ether	(2)	5.888	59	364759	20.870
44) 2-Butanone	(2)	6.095	43	233619	34.509
43) 1,2-Dichloroethene (Total)	(2)		96	237600	41.699
42) cis-1,2-Dichloroethene	(2)	6.132	96	125678	20.665
45) 2,2-Dichloropropane	(2)	6.150	77	135056	20.469
47) Propionitrile	(1)	6.180	54	394084	198.378
48) Methacrylonitrile	(2)	6.405	67	445208	101.188

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
49) Bromochloromethane	(2)	6.478	128	64180	19.985
50) Tetrahydrofuran	(1)	6.485	71	56627	33.340
51) Chloroform	(2)	6.624	83	191706	20.769
52)$Dibromofluoromethane	(2)	6.843	113	275891	49.570
52)$Dibromofluoromethane	(2)	6.843	111	283486	49.852
53) 1,1,1-Trichloroethane	(2)	6.856	97	162630	20.506
54) Cyclohexane	(2)	6.959	56	197233	18.798
54) Cyclohexane	(2)	6.953	84	155202	18.692
54) Cyclohexane	(2)	6.953	69	57604M	18.747
55) 1,1-Dichloropropene	(2)	7.069	75	159764	20.871
56) Carbon Tetrachloride	(2)	7.075	117	123940	20.470
58) Isobutyl Alcohol	(1)	7.196	41	321995	500.975
57)$1,2-Dichloroethane-d4	(2)	7.306	102	70447	50.015
57)$1,2-Dichloroethane-d4	(2)	7.306	65	312796	49.644
57)$1,2-Dichloroethane-d4	(2)	7.306	104	44463	49.664
60) Benzene	(2)	7.336	78	484759	20.703
61) 1,2-Dichloroethane	(2)	7.415	62	154779	20.512
61) 1,2-Dichloroethane	(2)	7.415	98	15156	20.500
65) t-Amyl methyl ether	(2)	7.525	73	350077	20.728
66)*Fluorobenzene	(2)	7.744	96	1182410	50.000
67) n-Heptane	(2)	7.756	43	199149	20.008
69) n-Butanol	(1)	8.085	56	509546	994.677
71) Trichloroethene	(2)	8.231	95	121623	20.923
73) Methylcyclohexane	(2)	8.541	83	187542	18.953
73) Methylcyclohexane	(2)	8.541	98	81268	19.256
74) 1,2-Dichloropropane	(2)	8.565	63	133069	20.557
77) Methyl Methacrylate	(2)	8.638	69	135456	20.608
76) 1,4-Dioxane	(1)	8.650	88	66219M	480.944
75) Dibromomethane	(2)	8.681	93	81043	20.644
79) Bromodichloromethane	(2)	8.912	83	140617	20.499
80) 2-Nitropropane	(2)	9.174	41	86898	30.393
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	122367	22.100
82) cis-1,3-Dichloropropene	(2)	9.459	75	193333	20.790
83) 4-Methyl-2-pentanone	(2)	9.618	43	427643	33.676
84)$Toluene-d8	(3)	9.764	98	1175854	50.581
84)$Toluene-d8	(3)	9.764	100	761315	50.443
89) Toluene	(3)	9.837	92	307280	20.878
91) 1,3-Dichloropropene (total)	(3)		100	364488	41.484

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.

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Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) trans-1,3-Dichloropropene	(3)	10.098	75	171155	20.694
92) Ethyl Methacrylate	(3)	10.147	69	212224	20.774
93) 1,1,2-Trichloroethane	(3)	10.299	97	121269	20.257
94) Tetrachloroethene	(3)	10.390	166	131808	20.285
95) 1,3-Dichloropropane	(3)	10.463	76	203261	20.444
97) 2-Hexanone	(3)	10.500	43	336077	29.600
98) Dibromochloromethane	(3)	10.682	129	117783	20.447
100) 1,2-Dibromoethane	(3)	10.792	107	131917	20.690
101)*Chlorobenzene-d5	(3)	11.218	117	882322	50.000
103) Chlorobenzene	(3)	11.242	112	347067	20.602
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	111009	20.378
105) Ethylbenzene	(3)	11.327	91	577652	20.854
107) m+p-Xylene	(3)	11.443	106	462011	41.672
109) Xylene (Total)	(3)		106	692650	62.667
108) o-Xylene	(3)	11.771	106	230639	20.994
110) Styrene	(3)	11.789	104	382863	20.906
111) Bromoform	(3)	11.954	173	90484	19.646
112) Isopropylbenzene	(3)	12.069	105	578046	21.270
113) Cyclohexanone	(1)	12.148	55	251187	503.050
115)$4-Bromofluorobenzene	(3)	12.215	95	412633	49.912
115)$4-Bromofluorobenzene	(3)	12.221	174	373823	49.735
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	215919	20.247
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	281511	103.846
116) Bromobenzene	(4)	12.337	156	155475	20.124
118) 1,2,3-Trichloropropane	(4)	12.361	110	60524	19.773
120) n-Propylbenzene	(4)	12.398	91	695003	21.154
121) 2-Chlorotoluene	(4)	12.477	126	139166	20.397
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	489324	21.236
122) 4-Chlorotoluene	(4)	12.568	126	148697	20.596
125) tert-Butylbenzene	(4)	12.775	134	97480	20.454
126) Pentachloroethane	(4)	12.811	167	87601	20.762
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	506158	21.138
128) sec-Butylbenzene	(4)	12.939	105	637017	21.030
130) 1,3-Dichlorobenzene	(4)	13.043	146	298252	20.561
131) p-Isopropyltoluene	(4)	13.049	119	549559	21.004
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	486298	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	303462	20.163
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	512483	20.445

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$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
136) Benzyl Chloride	(4)	13.189	91	341341	19.615
137) 1,3-Diethylbenzene	(4)	13.249	119	324001	20.564
138) 1,4-Diethylbenzene	(4)	13.322	119	334432	20.381
140) n-Butylbenzene	(4)	13.341	92	282900	20.777
139) 1,2-Dichlorobenzene	(4)	13.377	146	288944	20.257
141) 1,2-Diethylbenzene	(4)	13.389	119	271209	20.485
142) Diethylbenzene (total)	(4)		100	929642	61.430
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	51159	20.865
145) 1,3,5-Trichlorobenzene	(4)	14.046	180	222416	20.097
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	214503	19.821
148) Hexachlorobutadiene	(4)	14.551	225	100902	20.083
149) Naphthalene	(4)	14.649	128	739831	20.896
150) 1,2,3-Trichlorobenzene	(4)	14.795	180	208763	20.038
151) 2-Methylnaphthalene	(4)	15.434	142	462430	21.042

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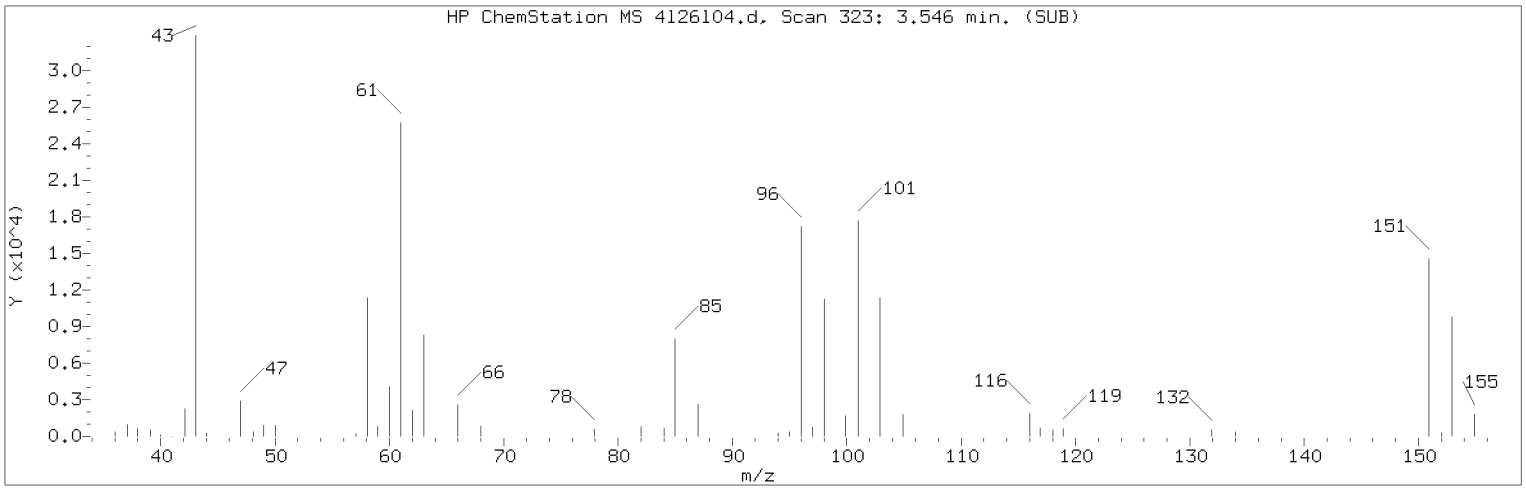
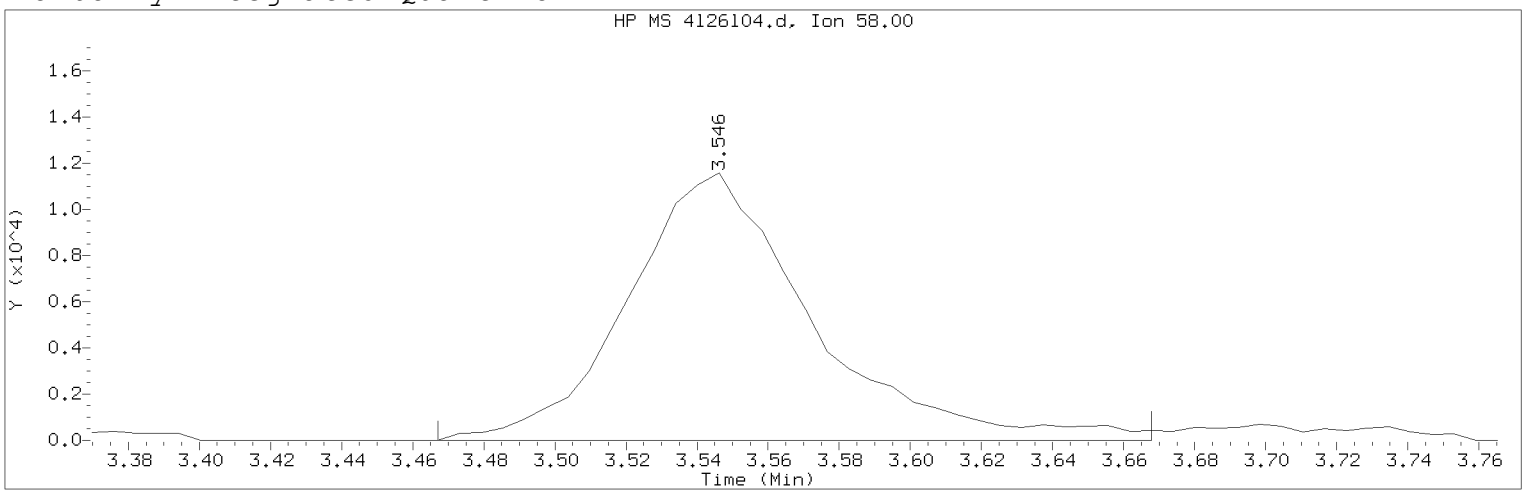
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

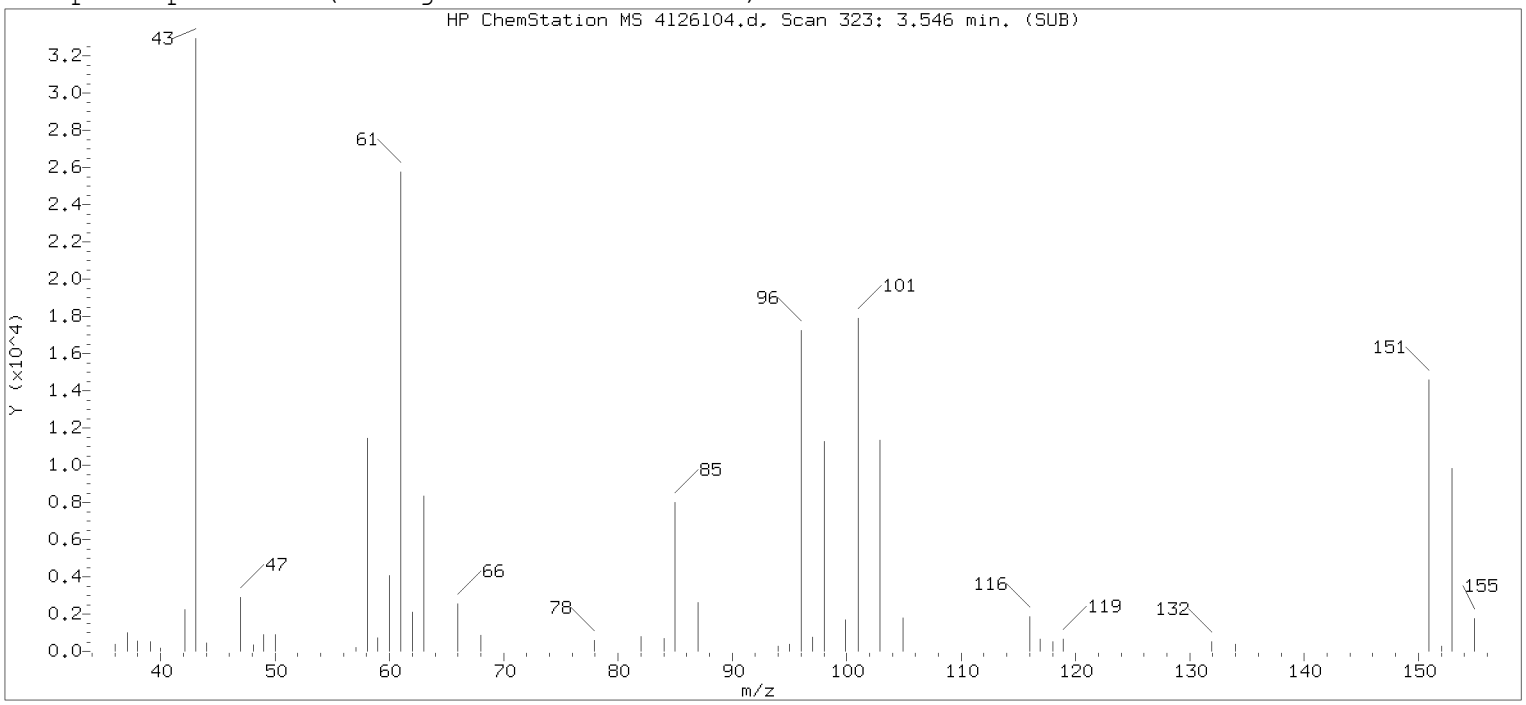
Compound Number : 18
Compound Name : Acetone
Scan Number : 323
Retention Time (minutes): 3.546
Quant Ion : 58.00
Area (flag) : 41683M
On-Column Amount (ng) : 33.8068
Integration start scan : 309 Integration stop scan: 342
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

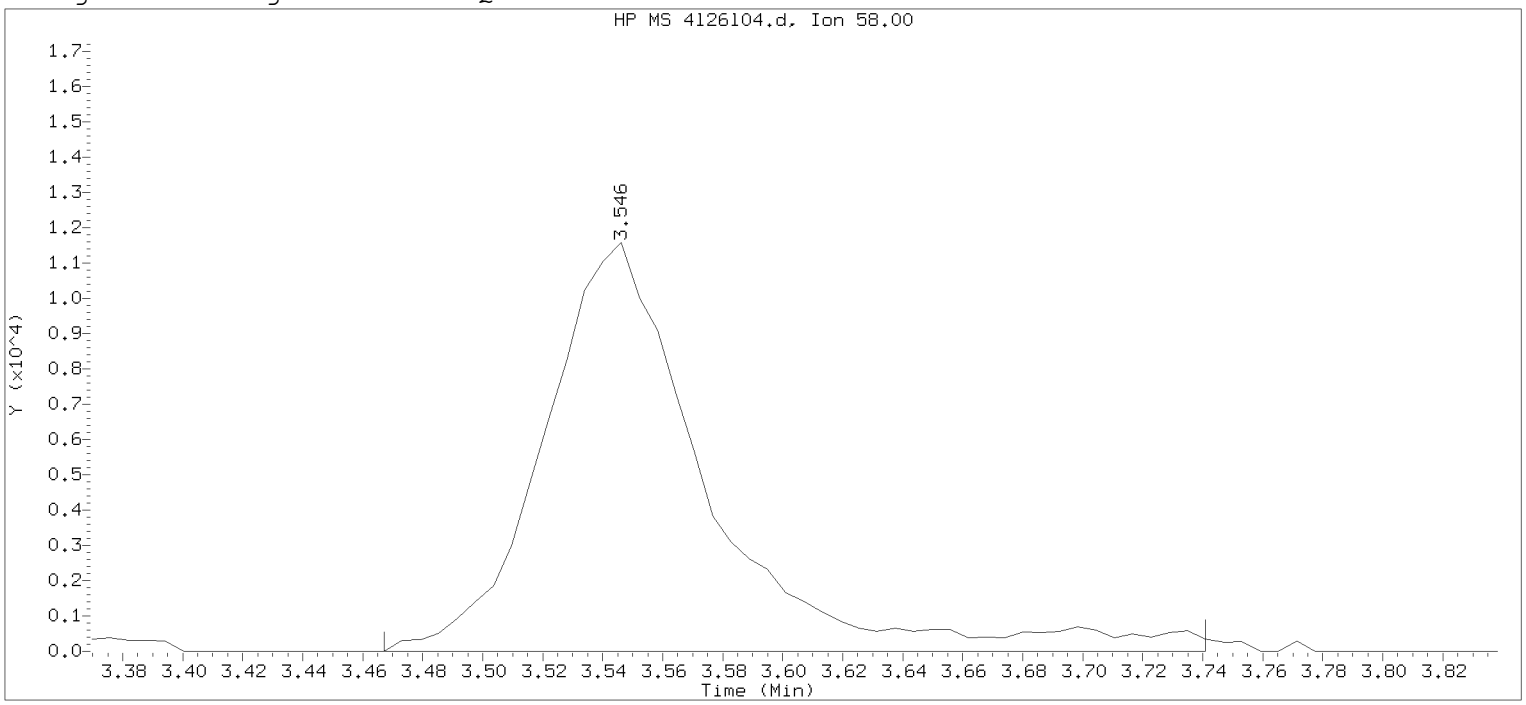
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

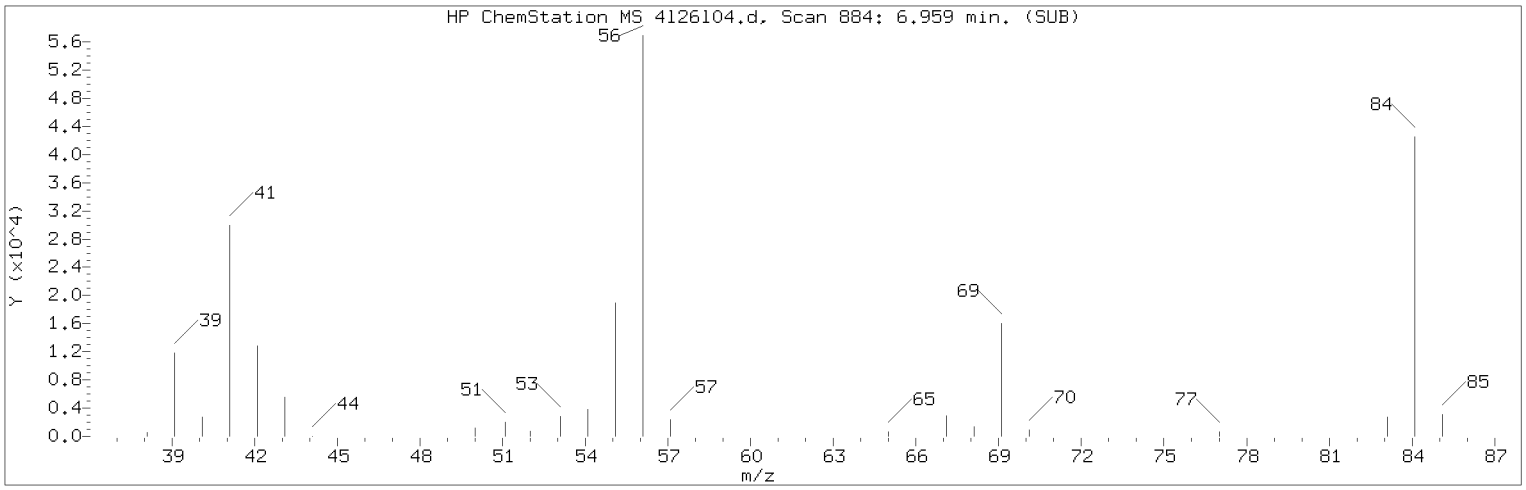
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:35
Date, time and analyst ID of latest file update: 26-Jul-2017 11:35 Automation

Sample Name: VSTD020 Lab Sample ID: VSTD020

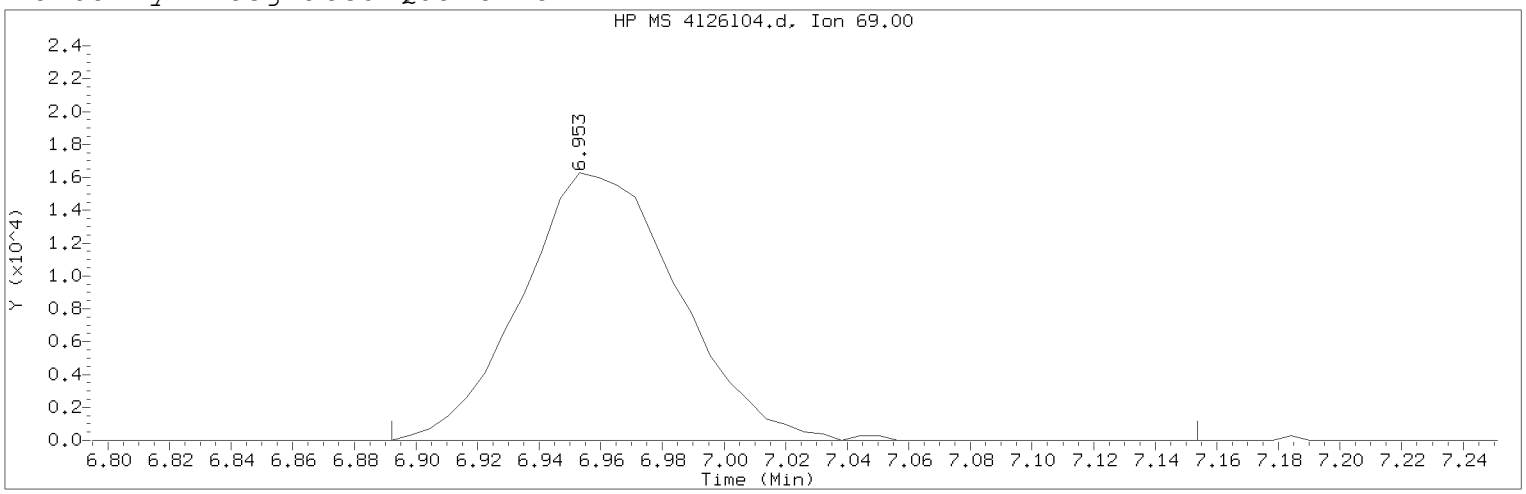
Compound Number	: 18		
Compound Name	: Acetone		
Scan Number	: 323		
Retention Time (minutes)	: 3.546		
Quant Ion	: 58.00		
Area	: 43821		
On-column Amount (ng)	: 35.3881		
Integration start scan	: 309	Integration stop scan:	354
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

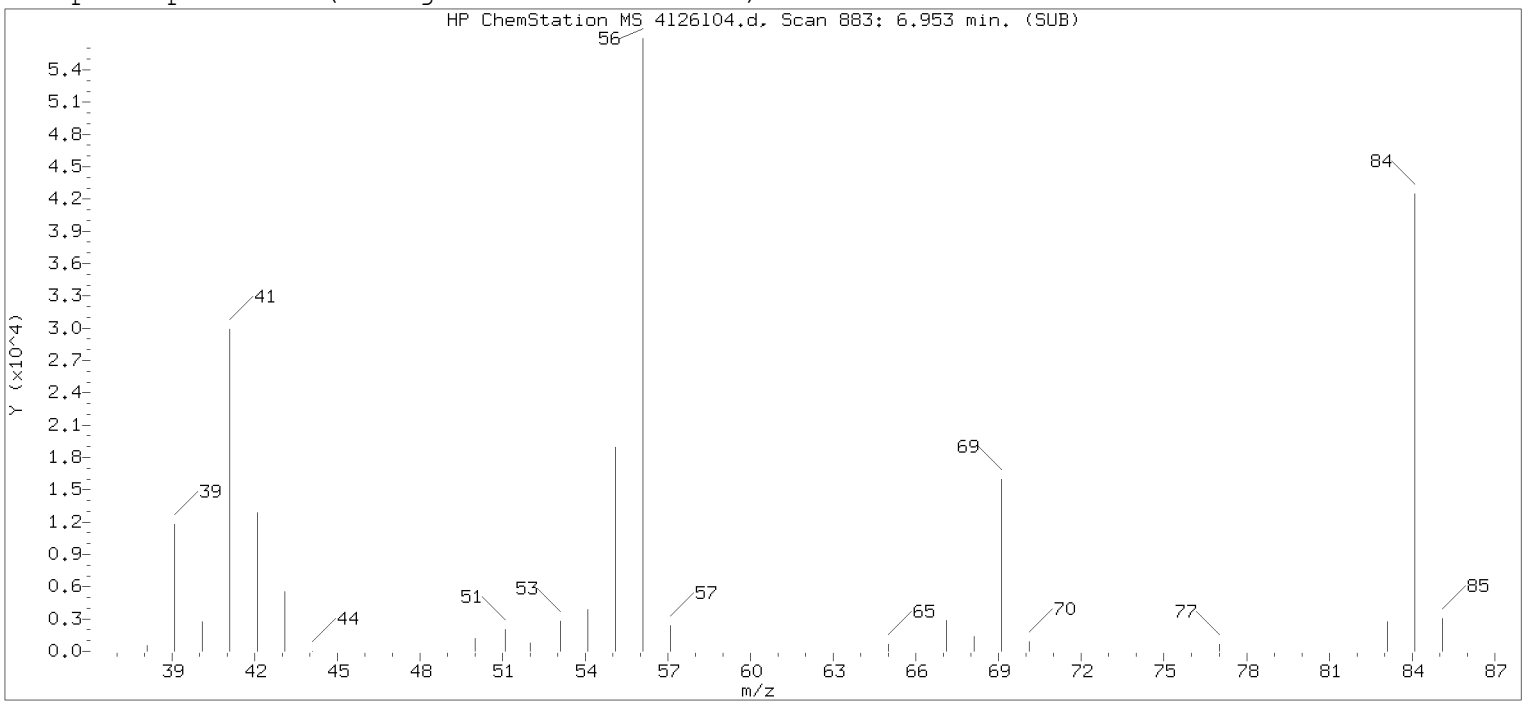
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 883
Retention Time (minutes): 6.953
Quant Ion : 69.00
Area (flag) : 57604M
On-Column Amount (ng) : 18.7465
Integration start scan : 872 Integration stop scan: 915
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

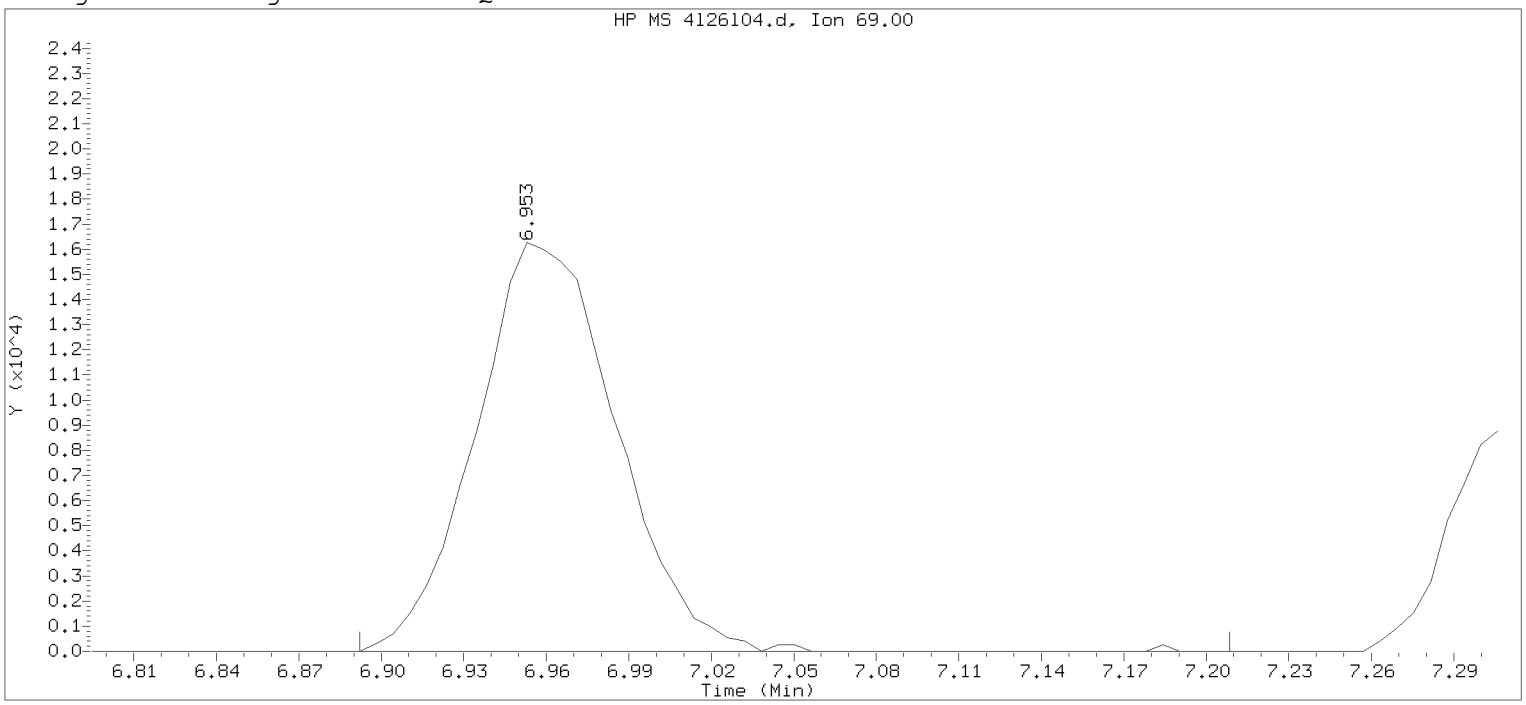
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

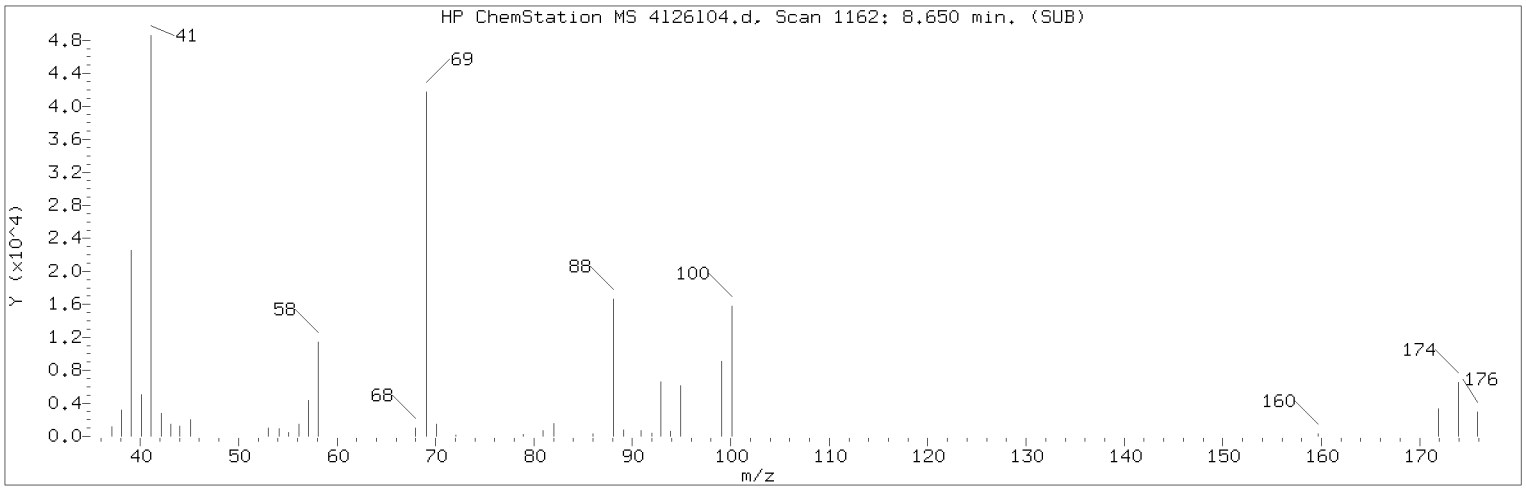
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:35
Date, time and analyst ID of latest file update: 26-Jul-2017 11:35 Automation

Sample Name: VSTD020 Lab Sample ID: VSTD020

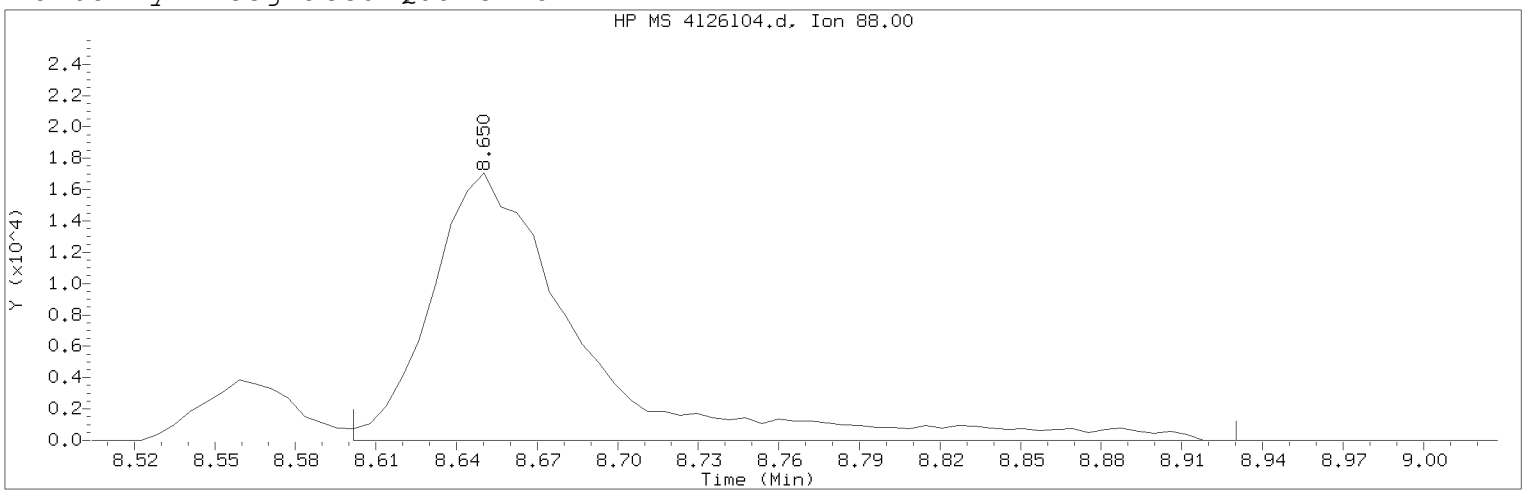
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 883
Retention Time (minutes): 6.953
Quant Ion : 69.00
Area : 57697
On-column Amount (ng) : 18.4927
Integration start scan : 872 Integration stop scan: 924
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l04.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD020 Lab Sample ID: VSTD020

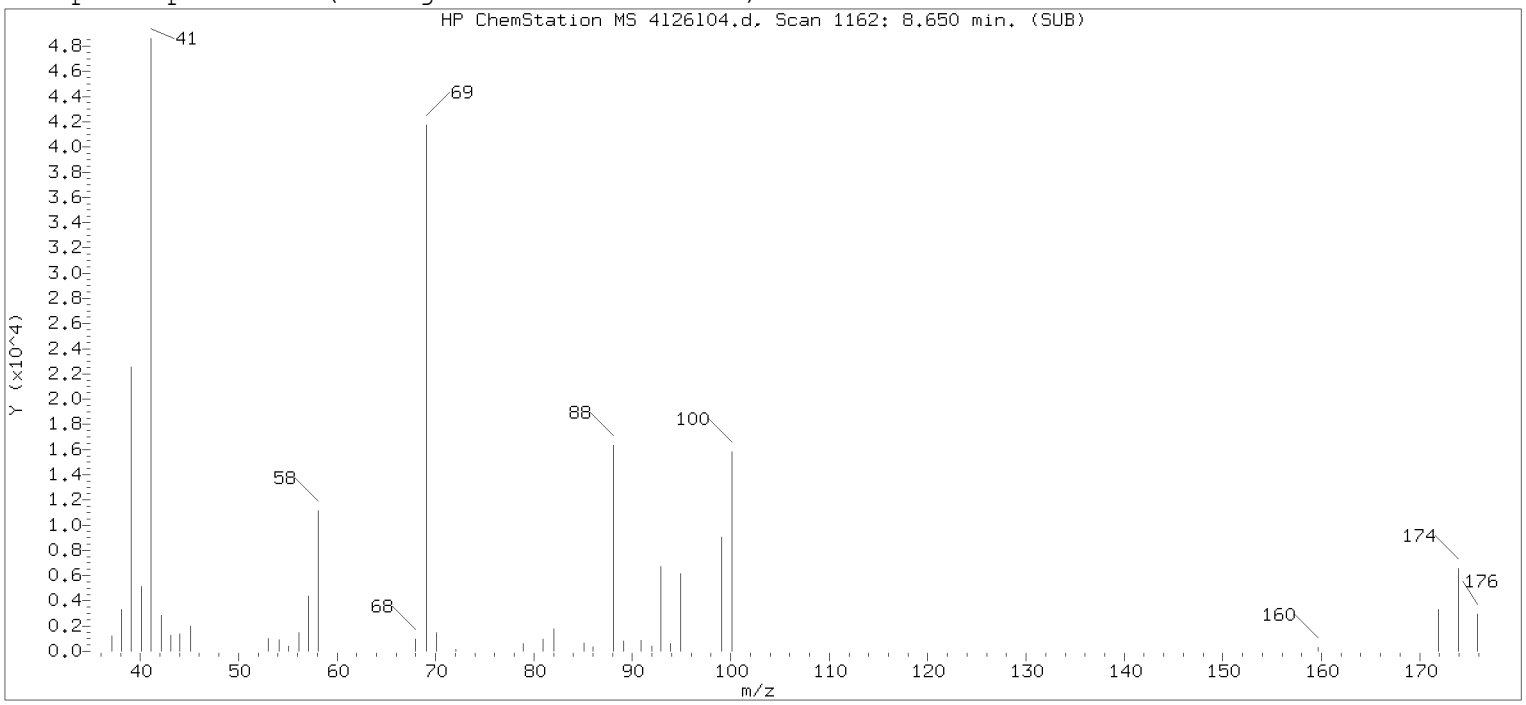
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area (flag) : 66219M
On-Column Amount (ng) : 480.9439
Integration start scan : 1153 Integration stop scan: 1207
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

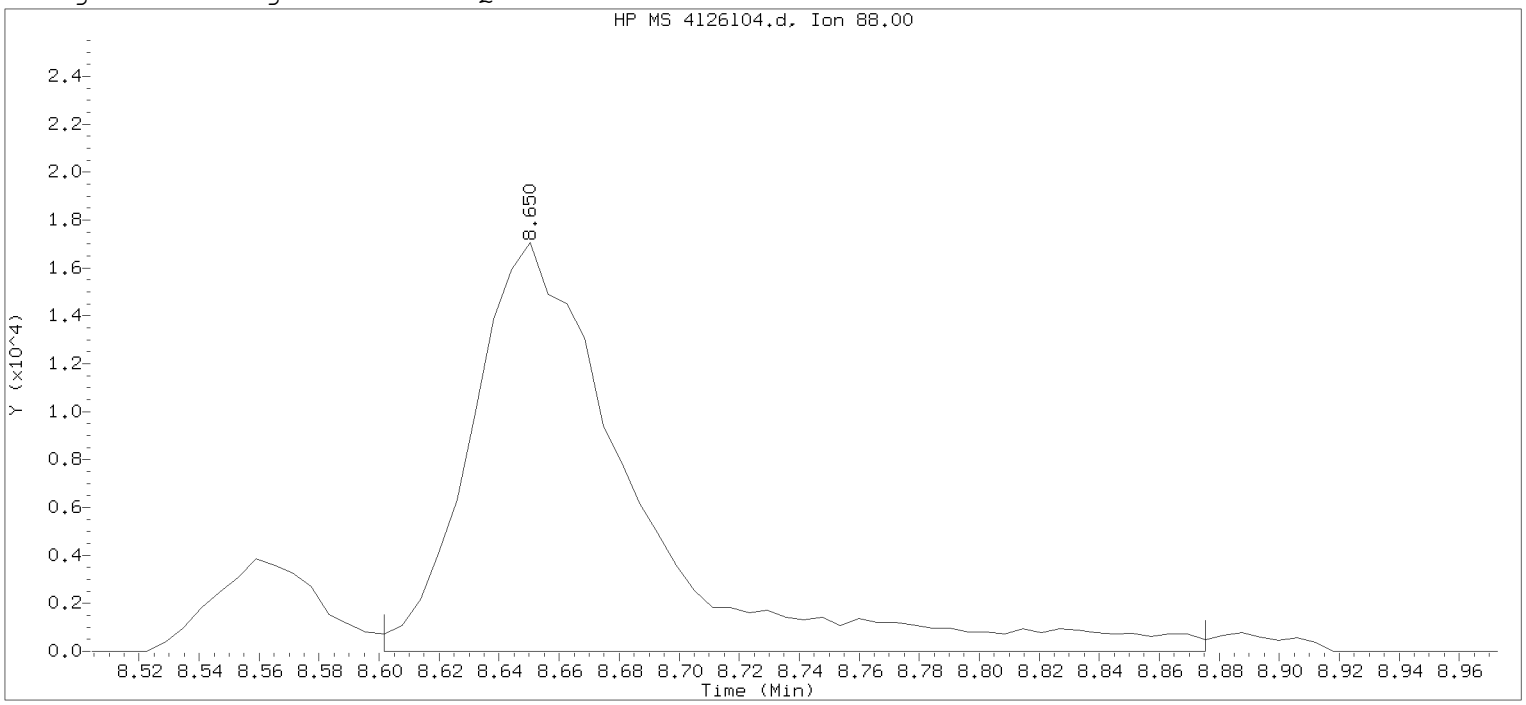
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:33.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



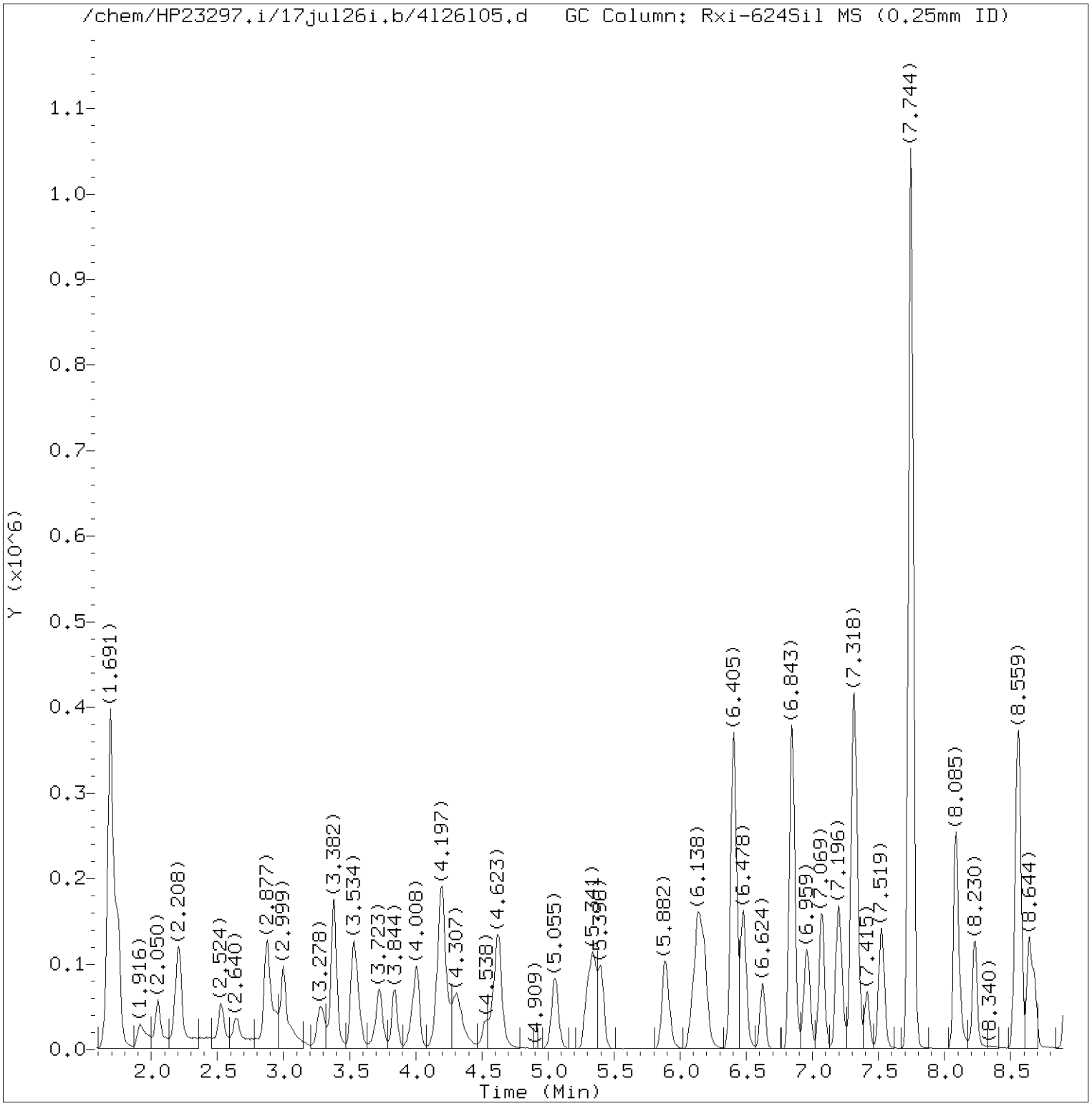
Data File: /chem/HP23297.i/17jul26i.b/4126104.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:18 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:35
Date, time and analyst ID of latest file update: 26-Jul-2017 11:35 Automation

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area : 64735
On-column Amount (ng) : 476.6547
Integration start scan : 1153 Integration stop scan: 1198
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:33.
Target 3.5 esignature user approved.



Total Ion Chromatogram (TIC)

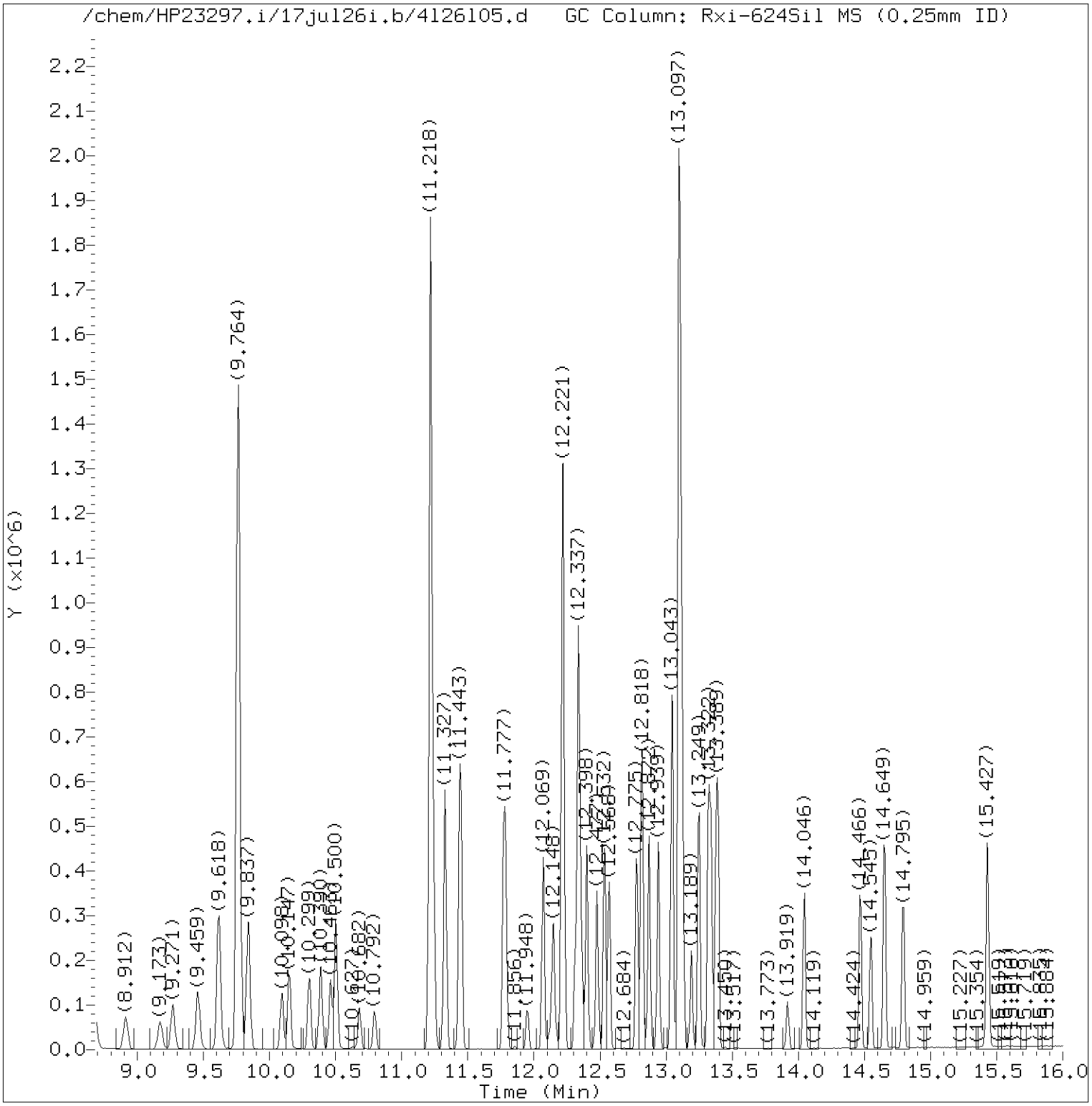
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.916	85	63034	9.626
4) Chloromethane	(2)	2.050	50	68049	9.236
6) Vinyl Chloride	(2)	2.190	62	66520	9.531
5) 1,3-Butadiene	(2)	2.214	39	64637M	9.751
8) Bromomethane	(2)	2.524	94	44071	9.156
9) Chloroethane	(2)	2.640	64	36548	9.467
10) Dichlorofluoromethane	(2)	2.877	67	175206	16.992
12) Trichlorofluoromethane	(2)	2.938	101	69168	9.376
11) n-Pentane	(2)	2.999	43	101844	9.483
13) Ethanol	(1)	3.059	45	77853M	520.438
15) Freon 123a	(2)	3.278	67	61337	9.326
16) Acrolein	(1)	3.382	56	252529	109.093
17) 1,1-Dichloroethene	(2)	3.522	96	43278	9.344
17) 1,1-Dichloroethene	(2)	3.522	63	21736	9.362
18) Acetone	(1)	3.540	58	24853M	20.431
19) Freon 113	(2)	3.546	101	43598	9.447
21) 2-Propanol	(1)	3.710	45	94736	91.588
22) Methyl Iodide	(2)	3.729	142	84551	9.283
23) Carbon Disulfide	(2)	3.844	76	149963	9.256
27) Methyl Acetate	(2)	3.978	43	91069	9.383
25) Allyl Chloride	(2)	4.008	41	98675	9.860
29)*t-Butyl alcohol-d10	(1)	4.185	65	370860	250.000
28) Methylene Chloride	(2)	4.197	84	56006	9.082
30) t-Butyl alcohol	(1)	4.307	59	155323	92.685
31) Acrylonitrile	(2)	4.532	53	46325	9.593
33) Methyl Tertiary Butyl Ether	(2)	4.599	73	166389	9.321
32) trans-1,2-Dichloroethene	(2)	4.629	96	51375	9.279
34) n-Hexane	(2)	5.055	57	80619	8.558
36) 1,1-Dichloroethane	(2)	5.298	63	97064	9.260
38) di-Isopropyl ether	(2)	5.341	45	195864	9.277
39) 2-Chloro-1,3-butadiene	(2)	5.408	53	81737	9.339
40) Ethyl t-butyl ether	(2)	5.888	59	166063	9.131
44) 2-Butanone	(2)	6.095	43	142448	20.221
43) 1,2-Dichloroethene (Total)	(2)		96	110184	18.571
42) cis-1,2-Dichloroethene	(2)	6.132	96	58809	9.293
45) 2,2-Dichloropropane	(2)	6.144	77	63788	9.291
47) Propionitrile	(1)	6.186	54	188672	96.265
48) Methacrylonitrile	(2)	6.405	67	212937	46.510

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
49) Bromochloromethane	(2)	6.478	128	32449	9.710
50) Tetrahydrofuran	(1)	6.478	71	35291	21.060
51) Chloroform	(2)	6.624	83	88878	9.253
52)$Dibromofluoromethane	(2)	6.843	113	285528	49.301
52)$Dibromofluoromethane	(2)	6.843	111	291383	49.243
53) 1,1,1-Trichloroethane	(2)	6.856	97	77770	9.424
54) Cyclohexane	(2)	6.959	56	95597	8.756
54) Cyclohexane	(2)	6.959	84	77200	8.935
54) Cyclohexane	(2)	6.965	69	27720	8.669
56) Carbon Tetrachloride	(2)	7.069	117	58270	9.249
55) 1,1-Dichloropropene	(2)	7.075	75	75576	9.488
58) Isobutyl Alcohol	(1)	7.196	41	147562	232.701
57)$1,2-Dichloroethane-d4	(2)	7.312	102	72040	49.152
57)$1,2-Dichloroethane-d4	(2)	7.306	65	320264	48.848
57)$1,2-Dichloroethane-d4	(2)	7.312	104	45872	49.240
60) Benzene	(2)	7.336	78	230242	9.450
61) 1,2-Dichloroethane	(2)	7.415	62	71275	9.077
61) 1,2-Dichloroethane	(2)	7.415	98	6660	8.657
65) t-Amyl methyl ether	(2)	7.525	73	161525	9.191
66)*Fluorobenzene	(2)	7.744	96	1230378	50.000
67) n-Heptane	(2)	7.750	43	92457M	8.927
69) n-Butanol	(1)	8.085	56	228707	452.518
71) Trichloroethene	(2)	8.224	95	56907	9.408
73) Methylcyclohexane	(2)	8.541	83	100363	9.747
73) Methylcyclohexane	(2)	8.541	98	42864	9.760
74) 1,2-Dichloropropane	(2)	8.565	63	62963	9.347
77) Methyl Methacrylate	(2)	8.638	69	60454	8.839
76) 1,4-Dioxane	(1)	8.650	88	31812M	234.186
75) Dibromomethane	(2)	8.681	93	37409	9.158
79) Bromodichloromethane	(2)	8.912	83	63650	8.917
80) 2-Nitropropane	(2)	9.173	41	50453M	19.502
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	55500	9.633
82) cis-1,3-Dichloropropene	(2)	9.453	75	85437	8.829
83) 4-Methyl-2-pentanone	(2)	9.618	43	258426	19.557
84)$Toluene-d8	(3)	9.764	98	1210822	50.817
84)$Toluene-d8	(3)	9.764	100	781095	50.494
89) Toluene	(3)	9.837	92	144728	9.594
91) 1,3-Dichloropropene (total)	(3)		100	159724	17.592

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) trans-1,3-Dichloropropene	(3)	10.092	75	74287	8.763
92) Ethyl Methacrylate	(3)	10.147	69	94785	9.052
93) 1,1,2-Trichloroethane	(3)	10.305	97	56923M	9.277
94) Tetrachloroethene	(3)	10.390	166	64114	9.627
95) 1,3-Dichloropropane	(3)	10.463	76	94197	9.244
97) 2-Hexanone	(3)	10.500	43	202927	20.310
98) Dibromochloromethane	(3)	10.682	129	52002	8.808
100) 1,2-Dibromoethane	(3)	10.792	107	59876	9.162
101)*Chlorobenzene-d5	(3)	11.218	117	904335	50.000
103) Chlorobenzene	(3)	11.248	112	161517	9.354
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	50216	8.994
105) Ethylbenzene	(3)	11.327	91	271151	9.551
107) m+p-Xylene	(3)	11.443	106	215202	18.938
109) Xylene (Total)	(3)		106	321393	28.369
108) o-Xylene	(3)	11.771	106	106191	9.431
110) Styrene	(3)	11.789	104	173876	9.263
111) Bromoform	(3)	11.954	173	39301	8.325
112) Isopropylbenzene	(3)	12.069	105	264192	9.485
113) Cyclohexanone	(1)	12.142	55	125721	255.199
115)$4-Bromofluorobenzene	(3)	12.215	95	426626	50.349
115)$4-Bromofluorobenzene	(3)	12.221	174	388963	50.489
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	98737M	9.042
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	126150	45.446
116) Bromobenzene	(4)	12.337	156	73618	9.306
118) 1,2,3-Trichloropropane	(4)	12.361	110	28005	8.935
120) n-Propylbenzene	(4)	12.398	91	327909	9.747
121) 2-Chlorotoluene	(4)	12.477	126	66231	9.480
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	226783	9.612
122) 4-Chlorotoluene	(4)	12.568	126	69762	9.437
125) tert-Butylbenzene	(4)	12.775	134	45177	9.258
126) Pentachloroethane	(4)	12.811	167	40777	9.438
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	237233	9.675
128) sec-Butylbenzene	(4)	12.939	105	298110	9.611
130) 1,3-Dichlorobenzene	(4)	13.043	146	140714	9.474
131) p-Isopropyltoluene	(4)	13.049	119	255358	9.531
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	497950	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	144780	9.395
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	256803	10.005

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Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

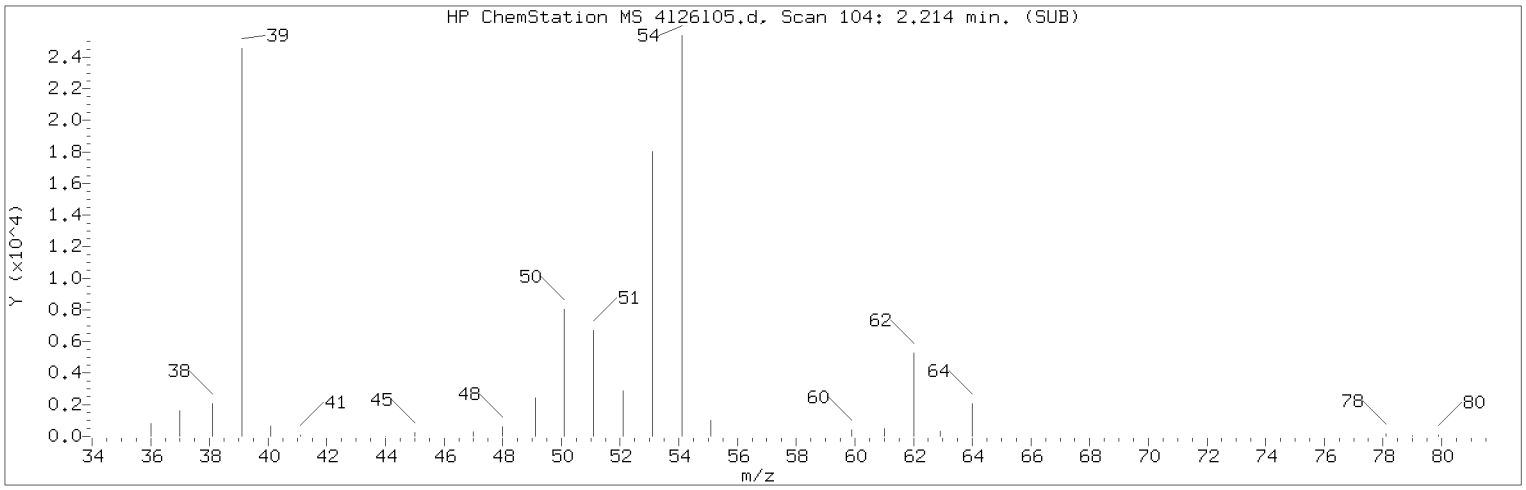
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

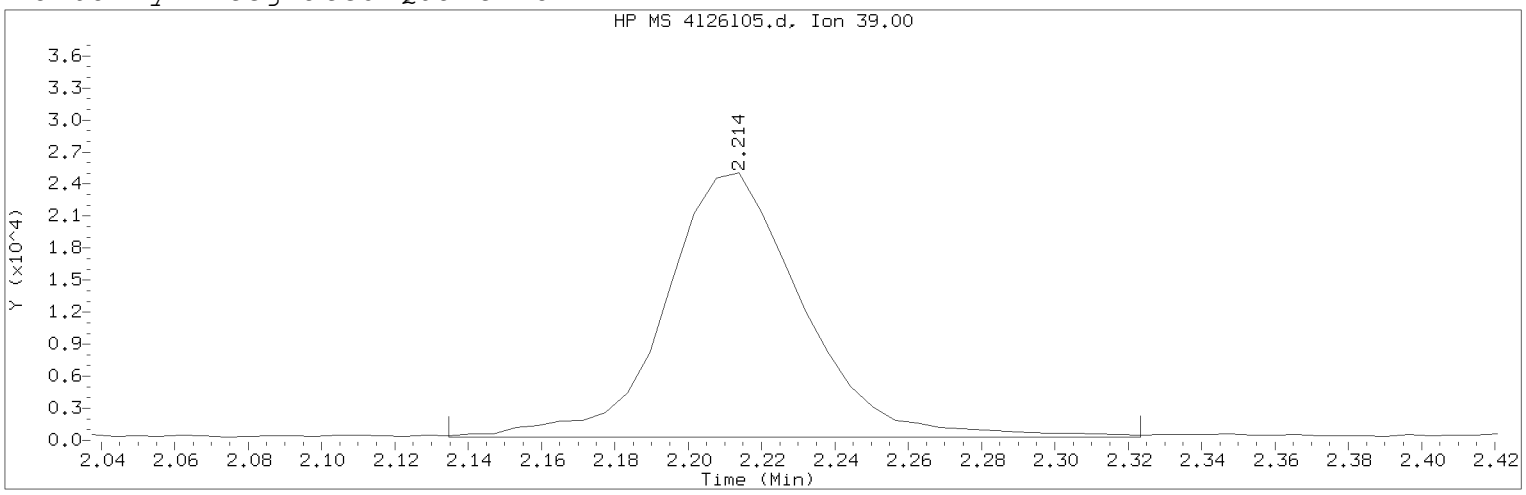
	Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
136)	Benzyl Chloride	(4)	13.189	91	141839	7.960
137)	1,3-Diethylbenzene	(4)	13.249	119	162869	10.095
138)	1,4-Diethylbenzene	(4)	13.322	119	170135	10.126
140)	n-Butylbenzene	(4)	13.341	92	134531	9.649
139)	1,2-Dichlorobenzene	(4)	13.377	146	138070	9.453
141)	1,2-Diethylbenzene	(4)	13.389	119	133648	9.859
142)	Diethylbenzene (total)	(4)		100	466652	30.079
143)	1,2-Dibromo-3-chloropropane	(4)	13.919	75	22079	8.794
145)	1,3,5-Trichlorobenzene	(4)	14.046	180	103788	9.158
147)	1,2,4-Trichlorobenzene	(4)	14.466	180	100890	9.104
148)	Hexachlorobutadiene	(4)	14.551	225	45657	8.875
149)	Naphthalene	(4)	14.649	128	333998	9.213
150)	1,2,3-Trichlorobenzene	(4)	14.795	180	98757	9.257
151)	2-Methylnaphthalene	(4)	15.433	142	228415	10.150

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

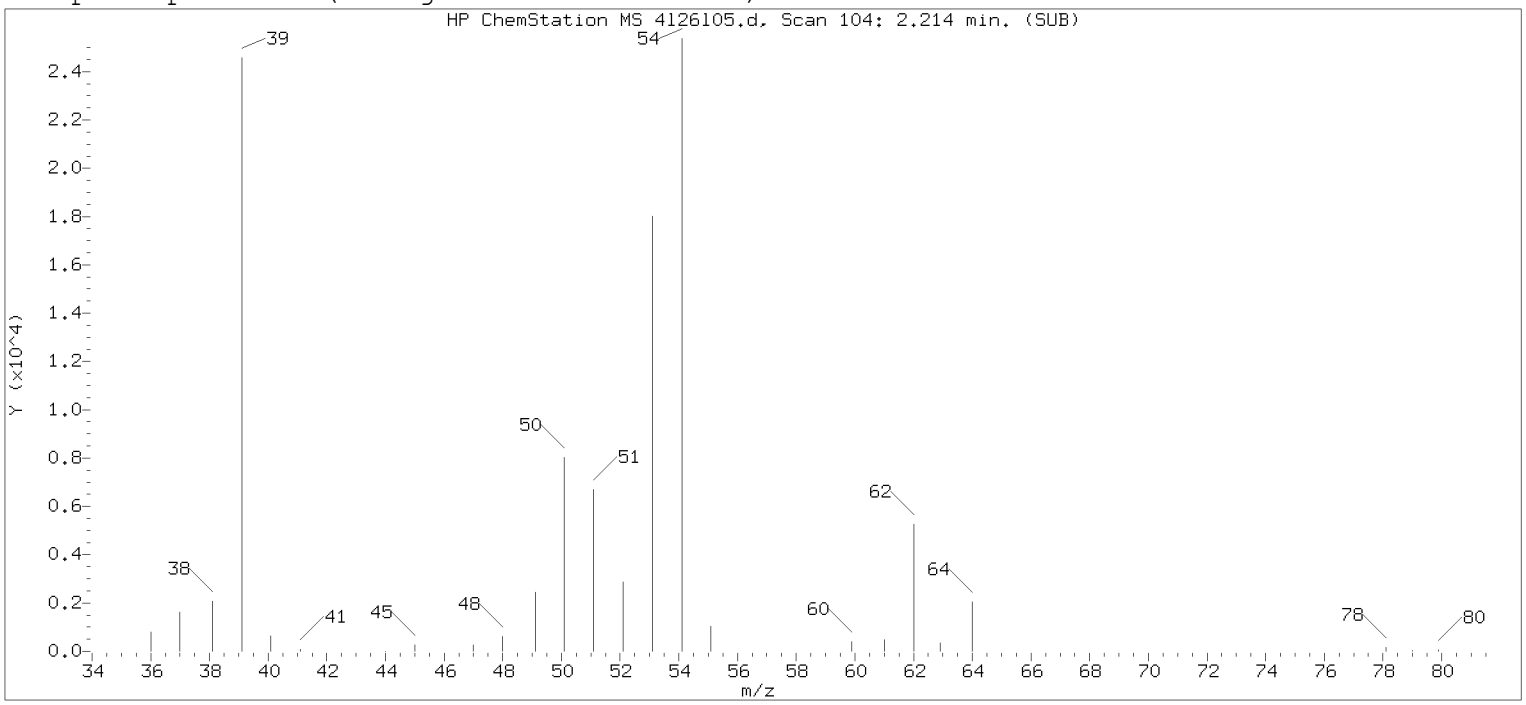
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 104
Retention Time (minutes): 2.214
Quant Ion : 39.00
Area (flag) : 64637M
On-Column Amount (ng) : 9.7513
Integration start scan : 90 Integration stop scan: 121
Y at integration start : 296 Y at integration end: 296

Reason for manual integration: improper integration

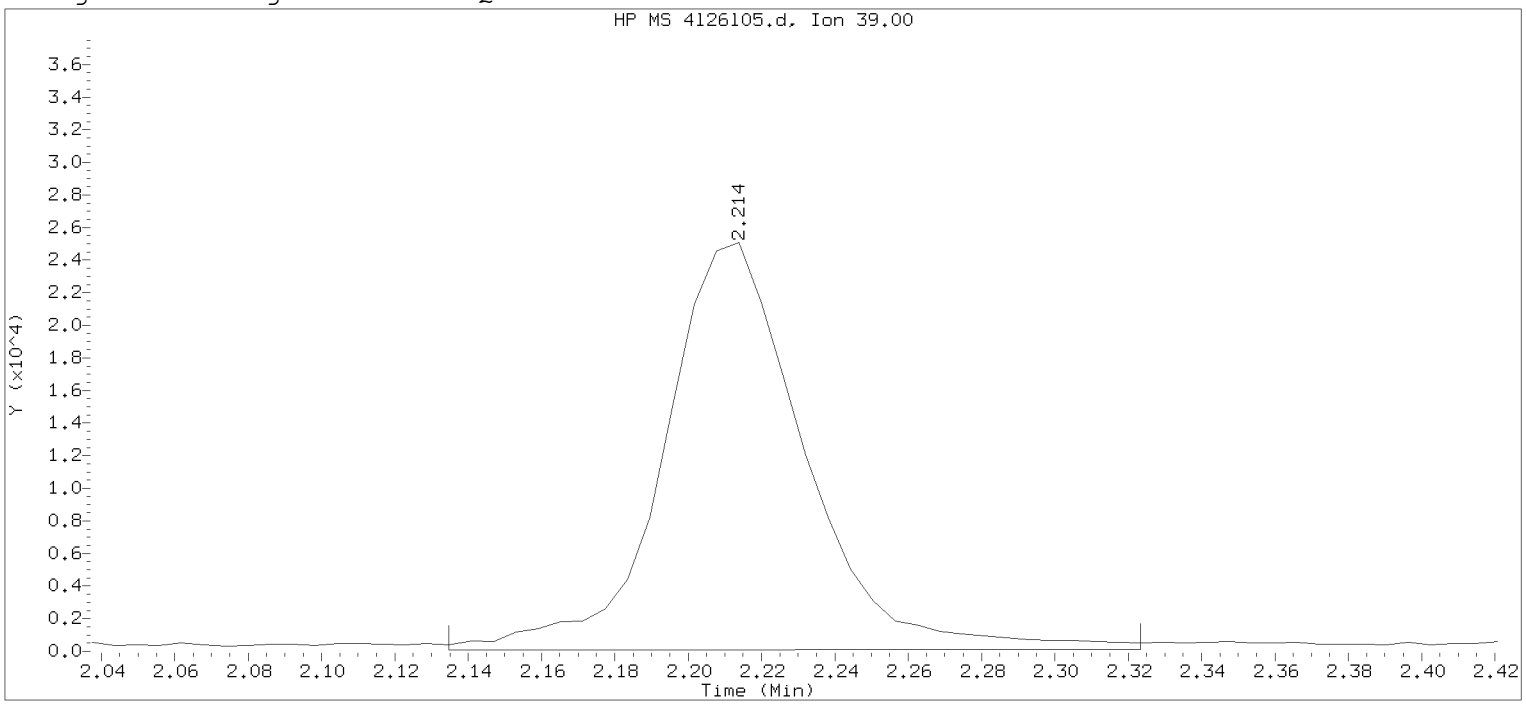
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

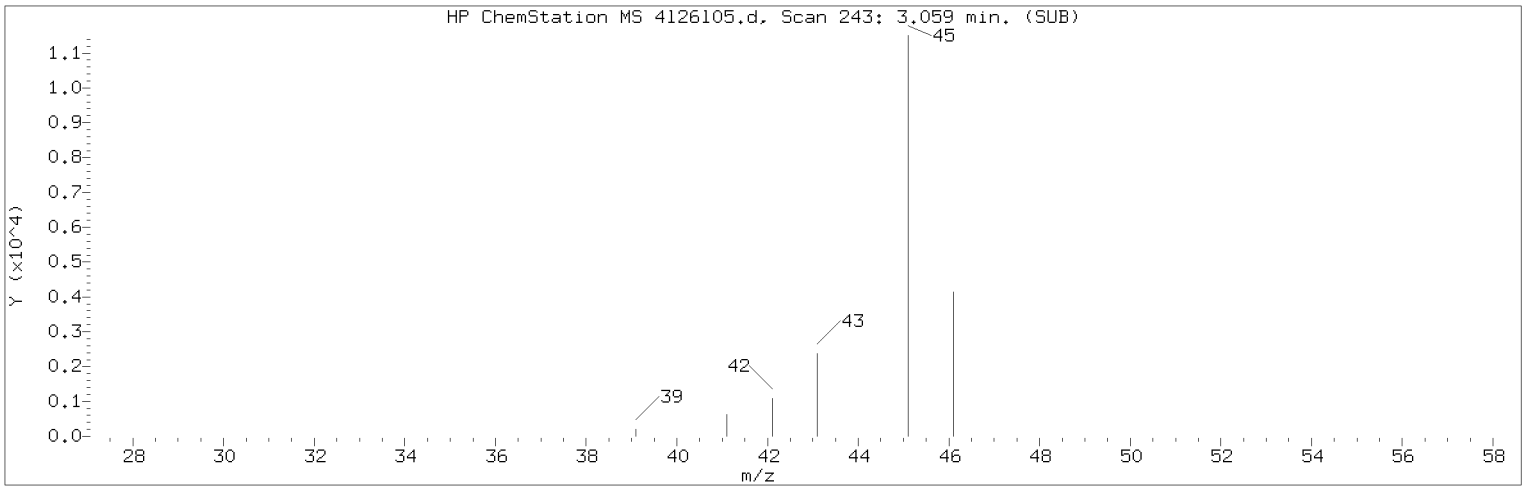
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

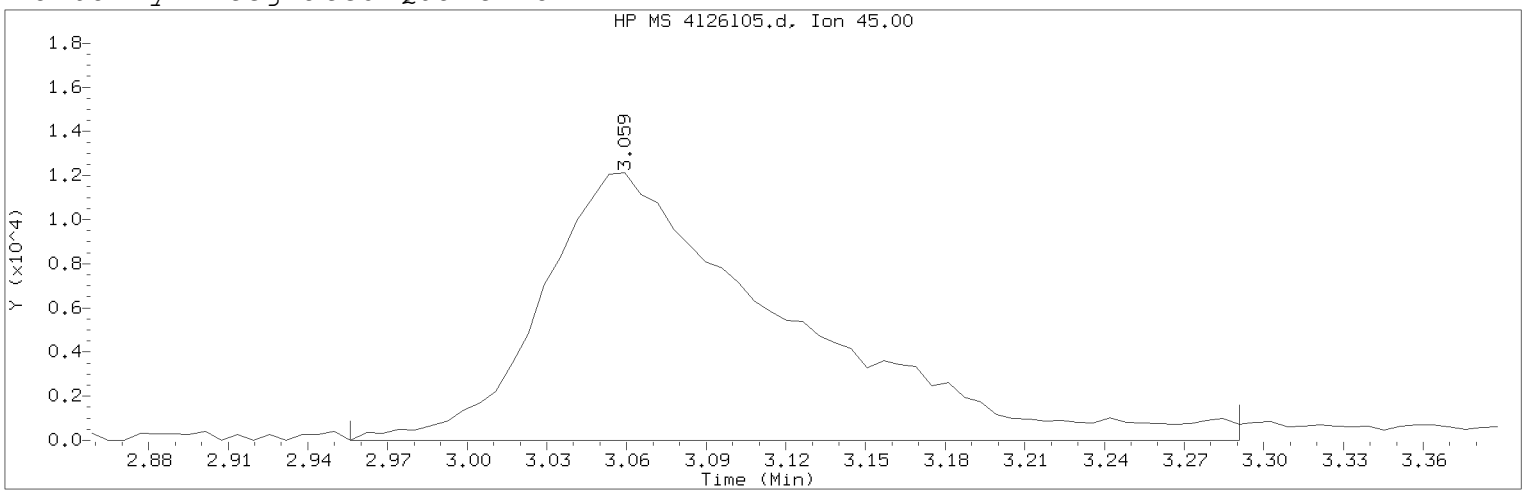
Compound Number	: 5		
Compound Name	: 1,3-Butadiene		
Scan Number	: 104		
Retention Time (minutes)	: 2.214		
Quant Ion	: 39.00		
Area	: 66793		
On-column Amount (ng)	: 11.1130		
Integration start scan	: 90	Integration stop scan:	121
Y at integration start	: 67	Y at integration end:	134

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approval

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

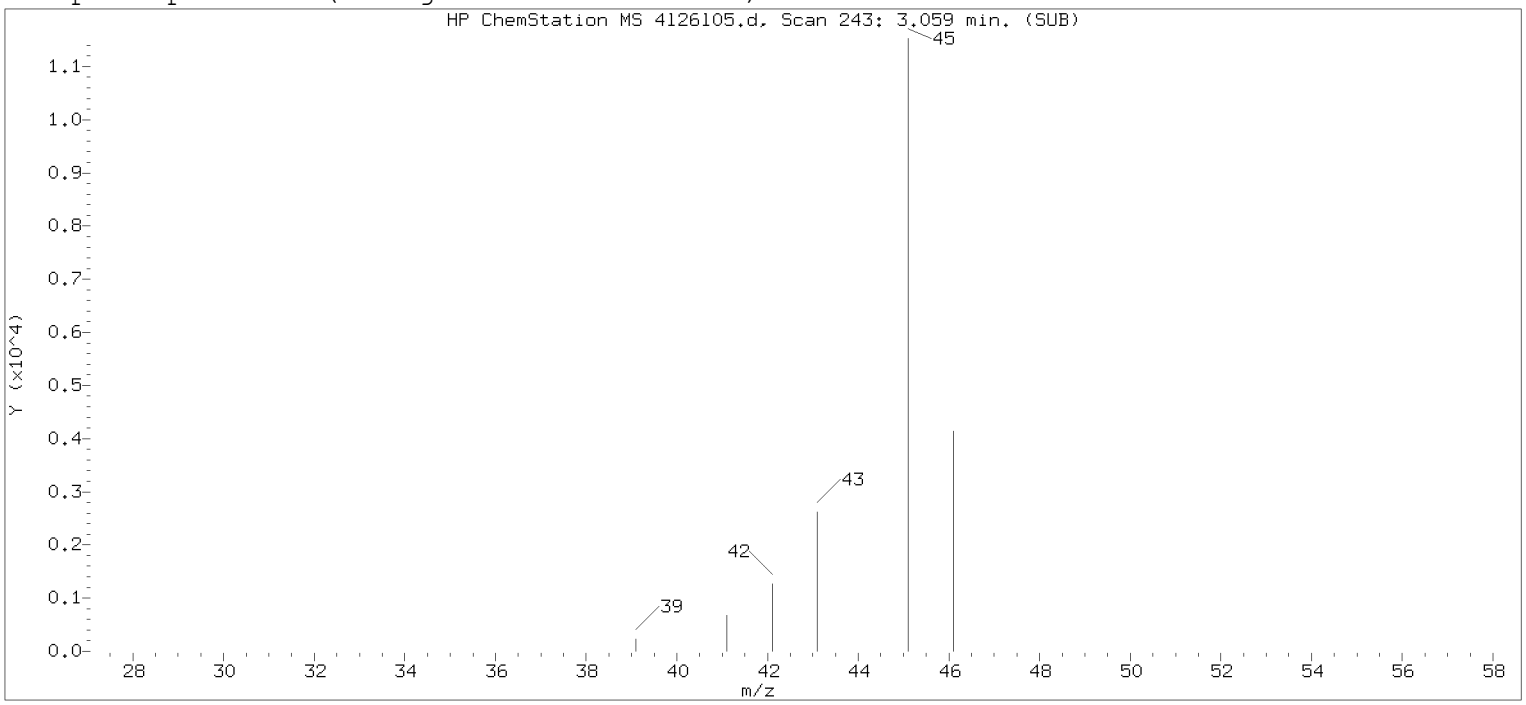
Compound Number : 13
Compound Name : Ethanol
Scan Number : 243
Retention Time (minutes): 3.059
Quant Ion : 45.00
Area (flag) : 77853M
On-Column Amount (ng) : 520.4380
Integration start scan : 225 Integration stop scan: 280
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

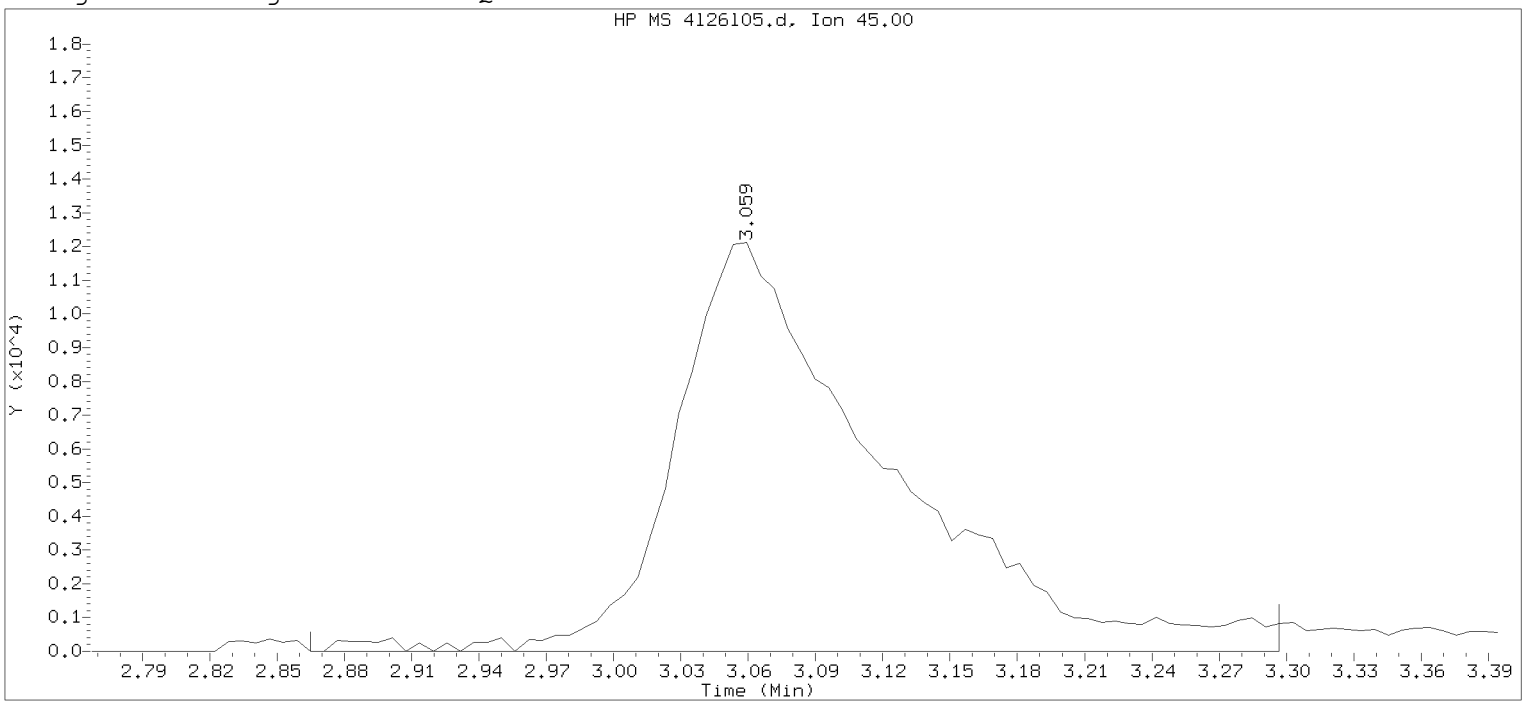
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

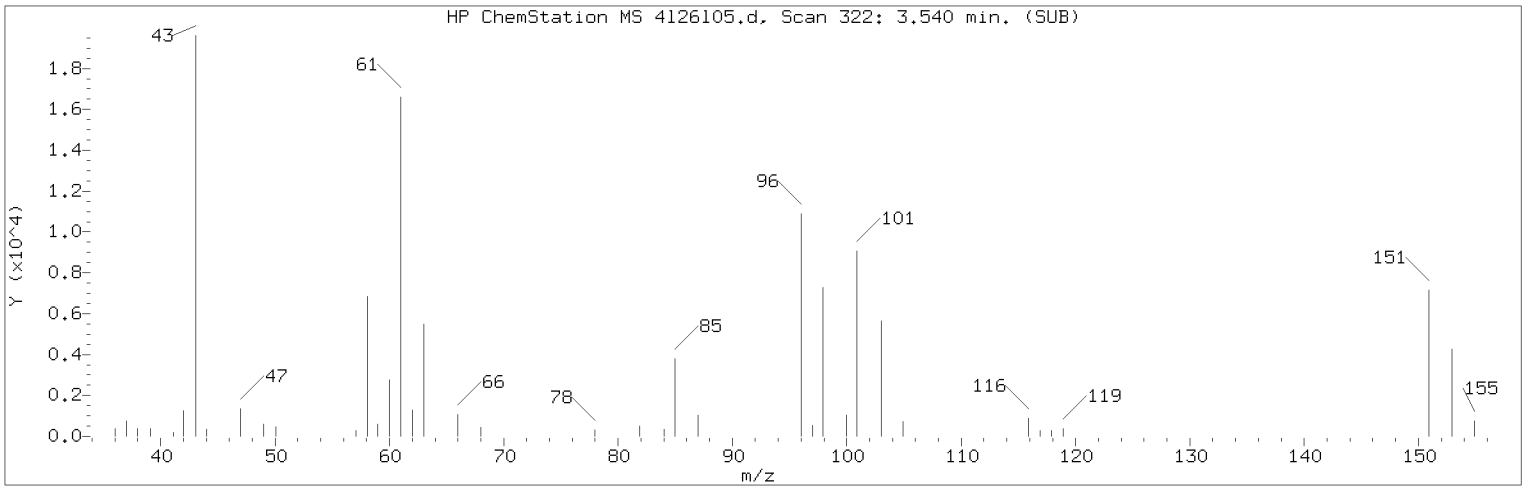
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

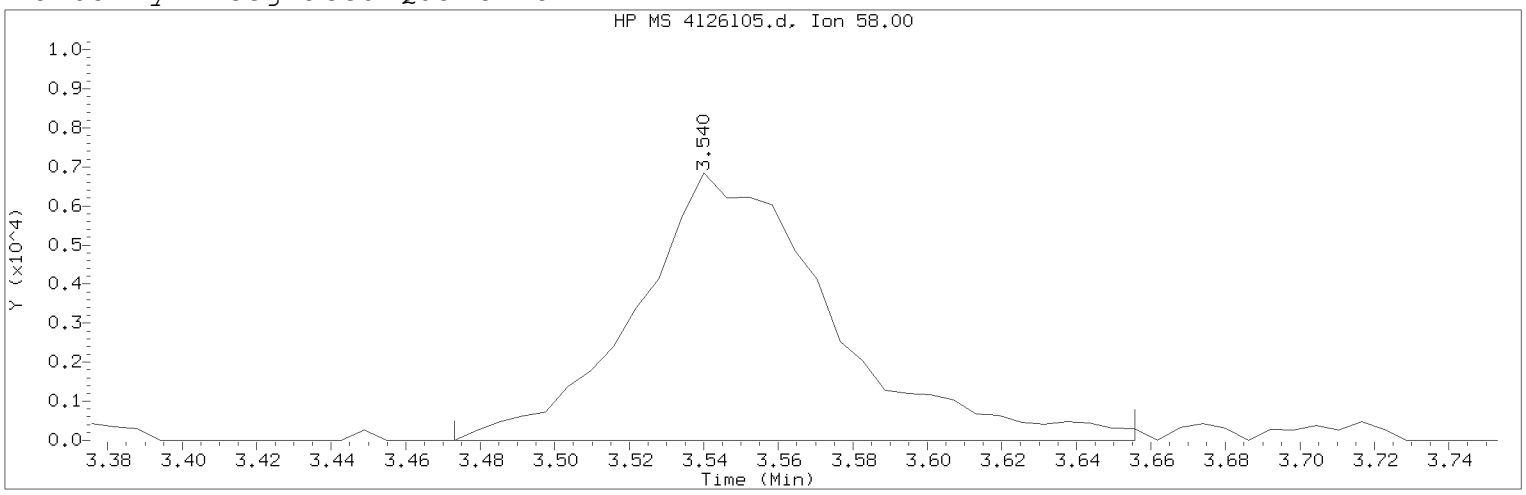
Compound Number : 13
Compound Name : Ethanol
Scan Number : 243
Retention Time (minutes): 3.059
Quant Ion : 45.00
Area : 79104
On-column Amount (ng) : 522.0518
Integration start scan : 210 Integration stop scan: 281
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

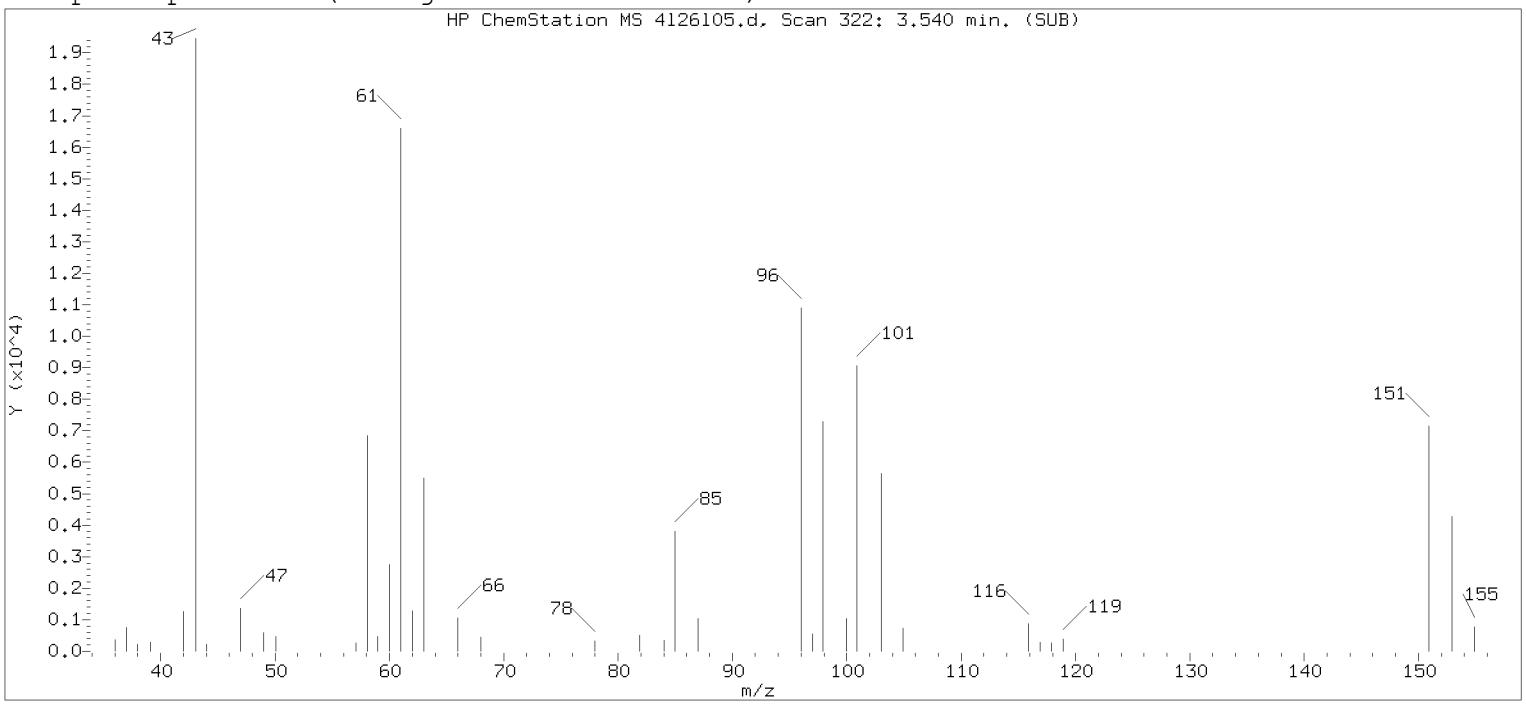
Compound Number : 18
Compound Name : Acetone
Scan Number : 322
Retention Time (minutes): 3.540
Quant Ion : 58.00
Area (flag) : 24853M
On-Column Amount (ng) : 20.4306
Integration start scan : 310 Integration stop scan: 340
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

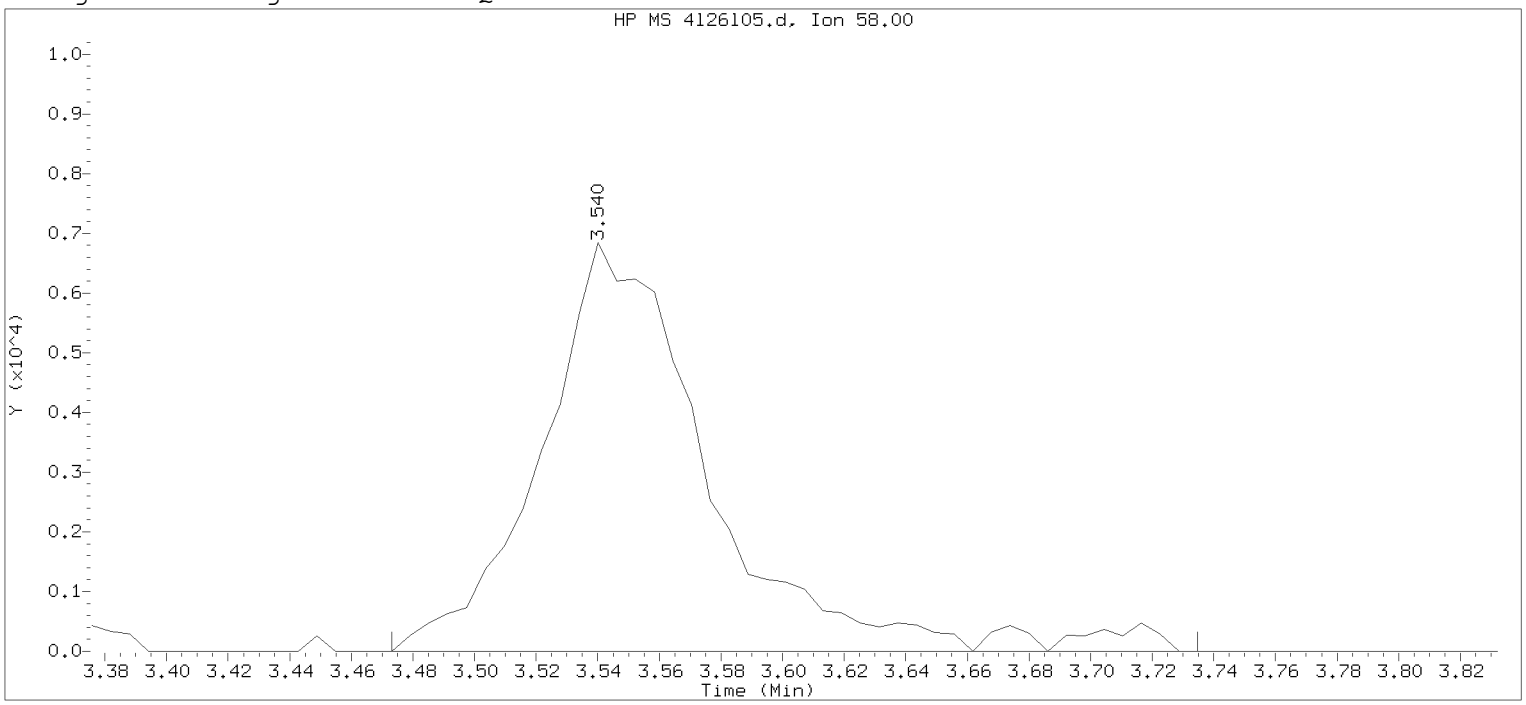
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

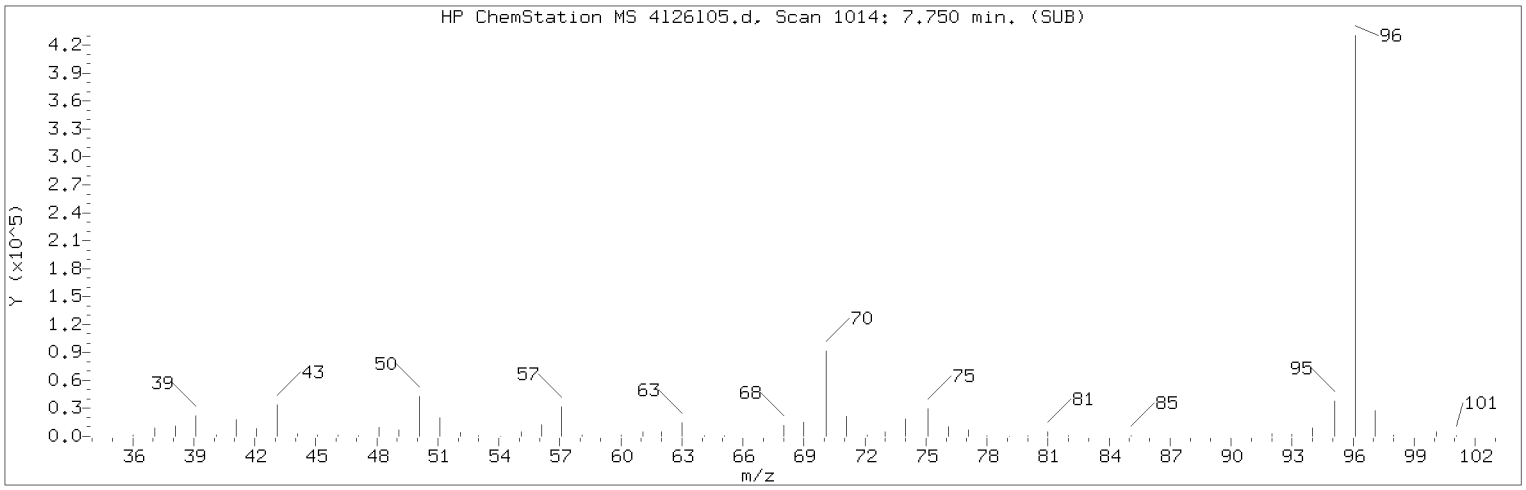
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

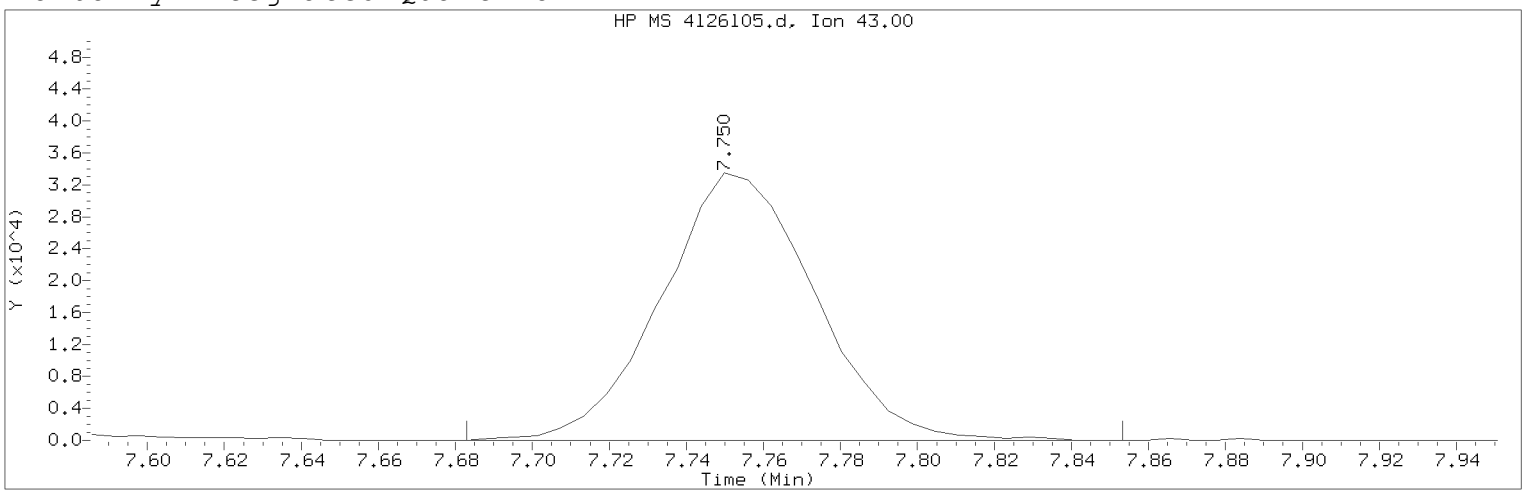
Compound Number	: 18		
Compound Name	: Acetone		
Scan Number	: 322		
Retention Time (minutes)	: 3.540		
Quant Ion	: 58.00		
Area	: 25937		
On-column Amount (ng)	: 20.9725		
Integration start scan	: 310	Integration stop scan:	353
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approval

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126105.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

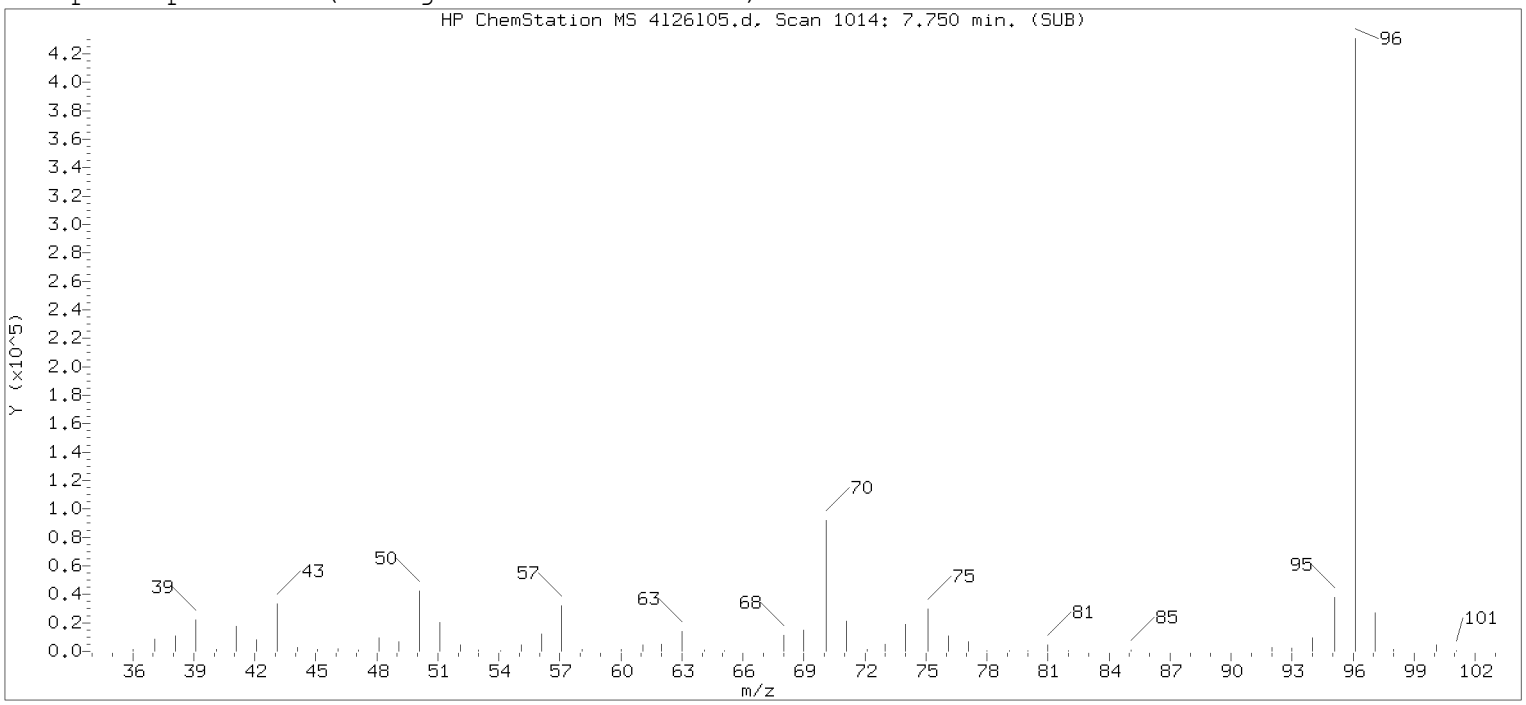
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1014
Retention Time (minutes): 7.750
Quant Ion : 43.00
Area (flag) : 92457M
On-Column Amount (ng) : 8.9270
Integration start scan : 1002 Integration stop scan: 1030
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

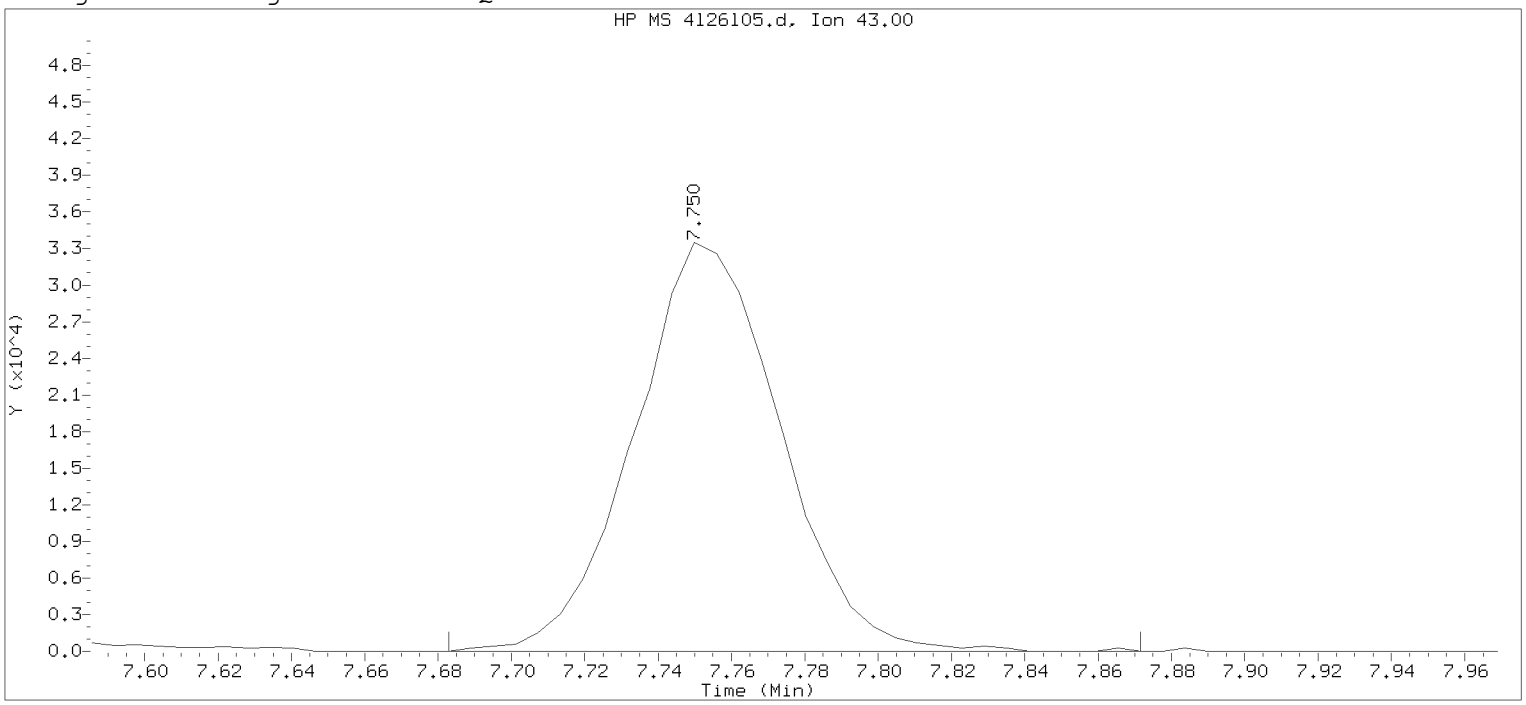
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126105.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

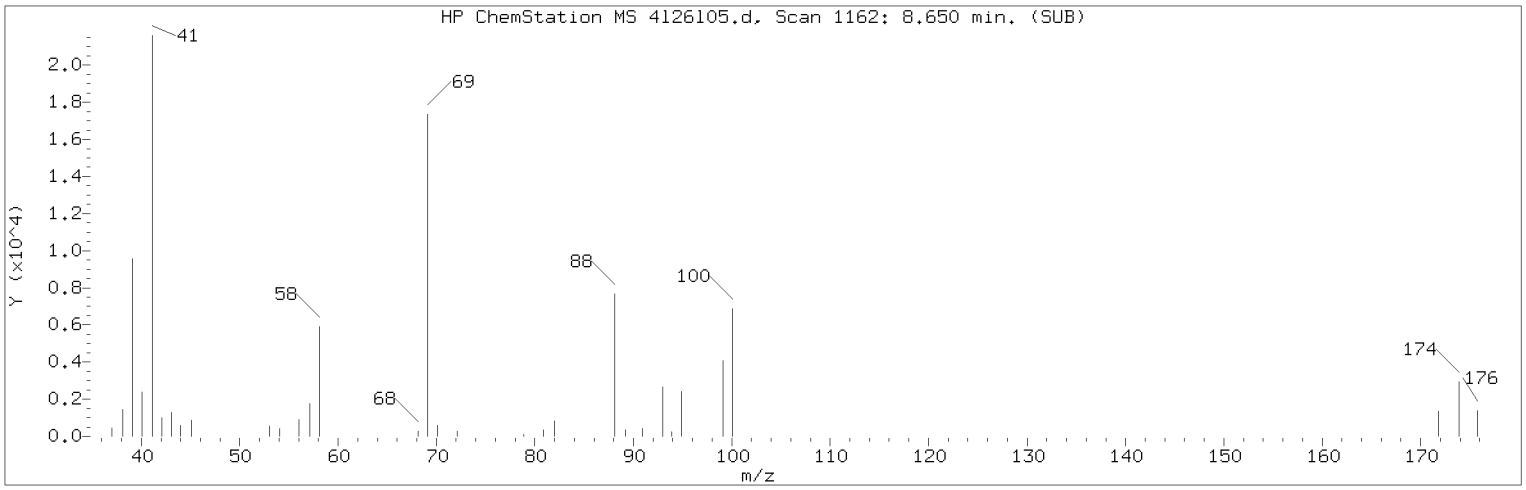
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

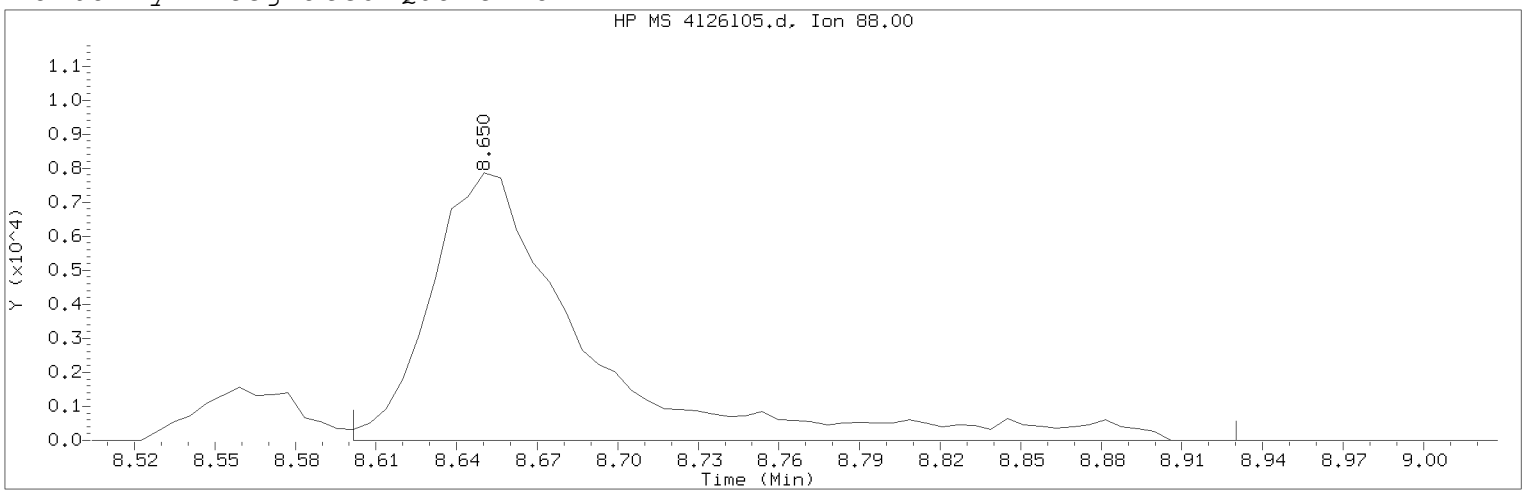
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1014
Retention Time (minutes): 7.750
Quant Ion : 43.00
Area : 92552
On-column Amount (ng) : 8.6365
Integration start scan : 1002 Integration stop scan: 1033
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126105.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

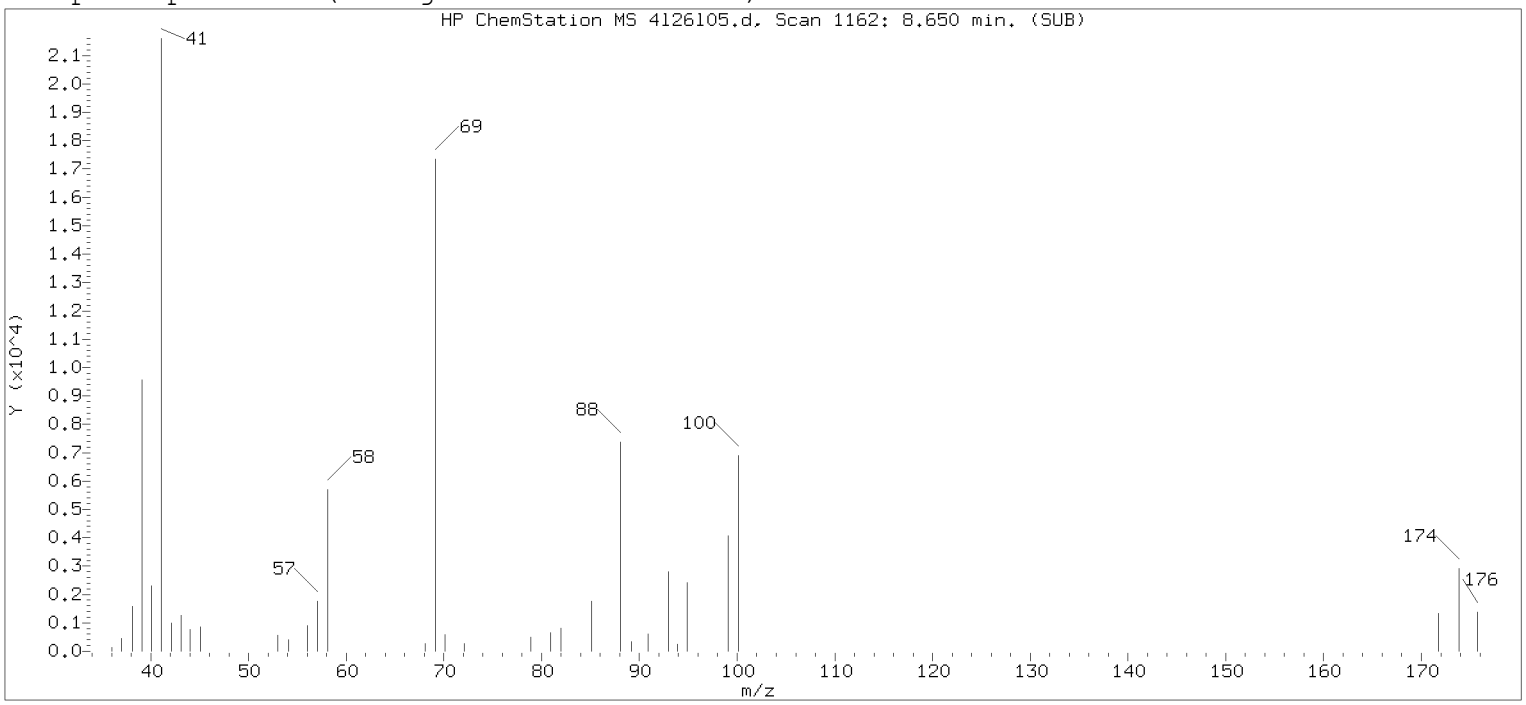
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area (flag) : 31812M
On-Column Amount (ng) : 234.1858
Integration start scan : 1153 Integration stop scan: 1207
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

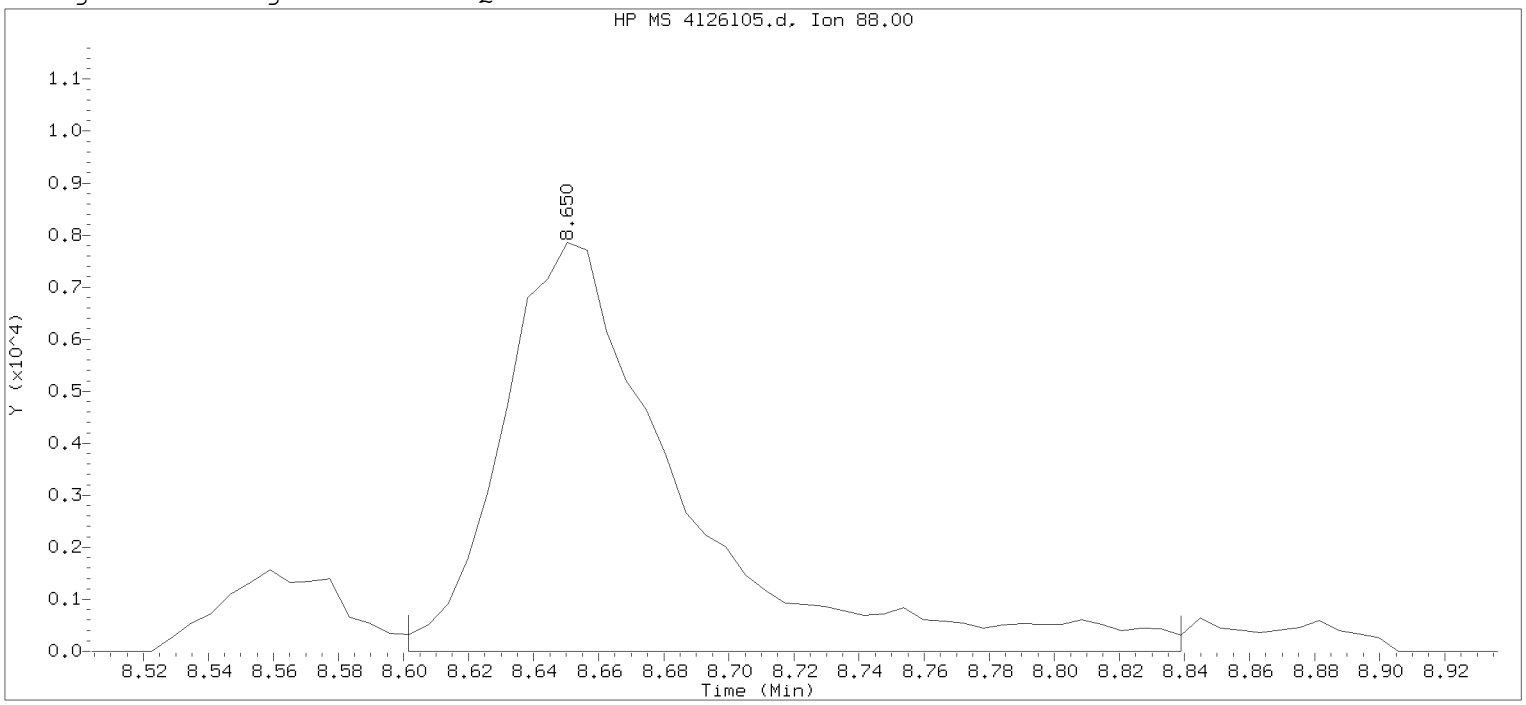
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

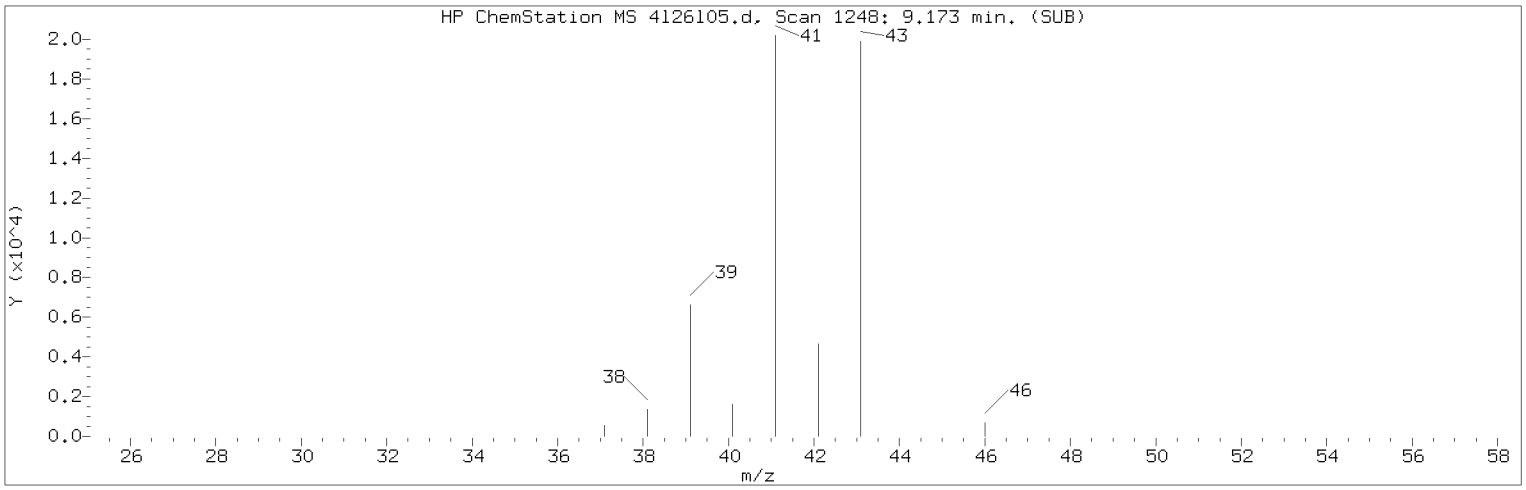
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

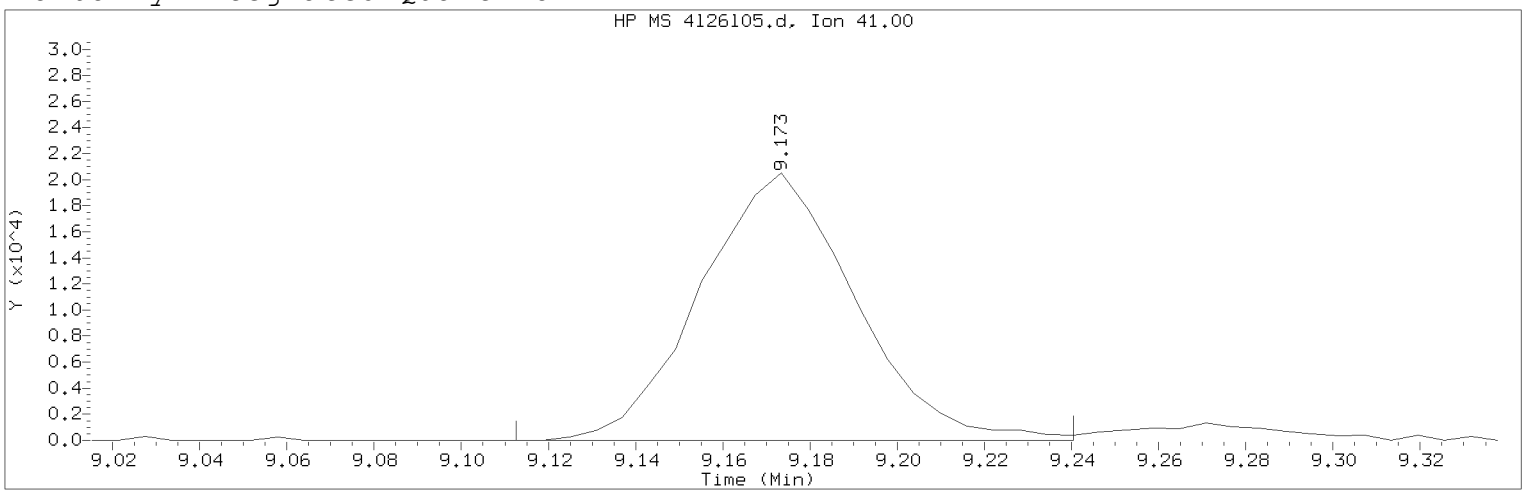
Compound Number	: 76		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1162		
Retention Time (minutes)	: 8.650		
Quant Ion	: 88.00		
Area	: 30127		
On-column Amount (ng)	: 229.4638		
Integration start scan	: 1153	Integration stop scan:	1192
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approval

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

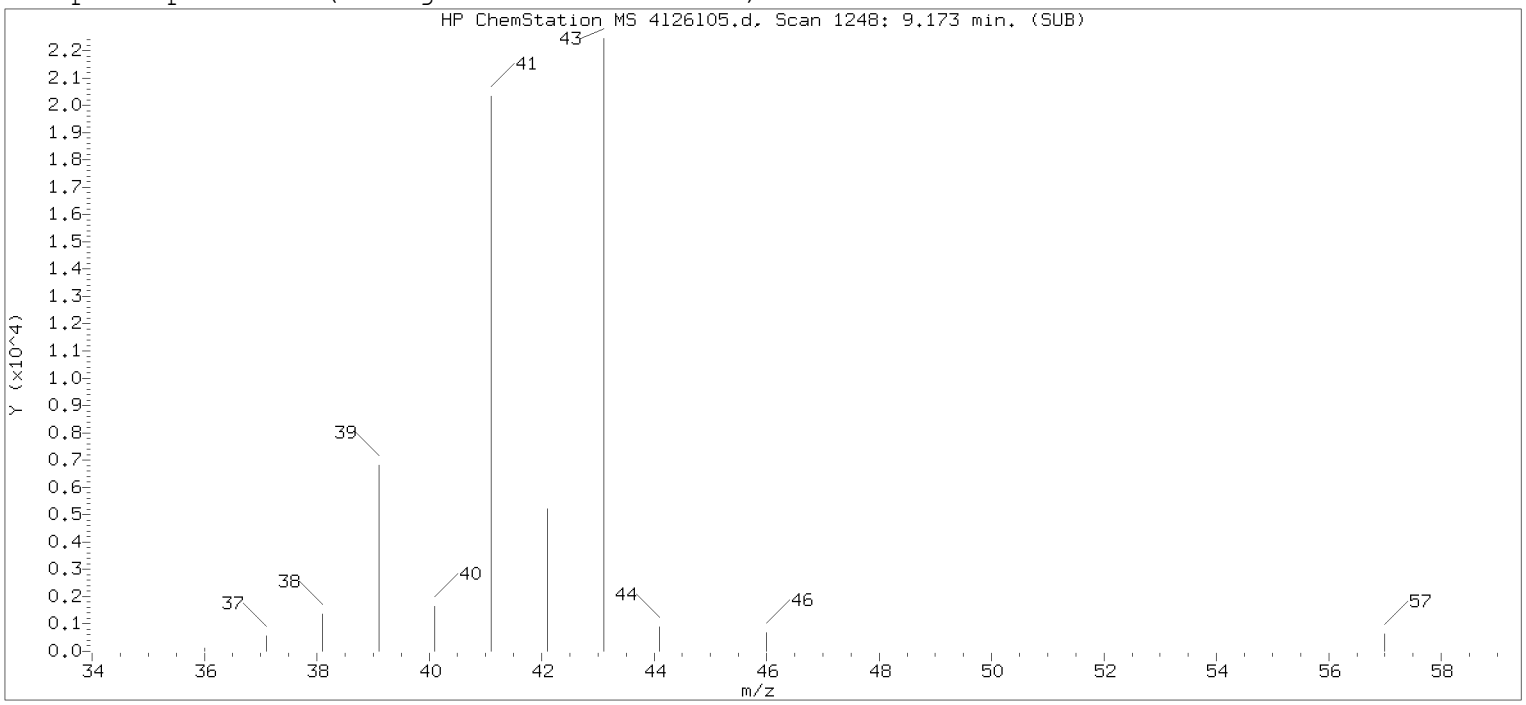
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1248
Retention Time (minutes): 9.173
Quant Ion : 41.00
Area (flag) : 50453M
On-Column Amount (ng) : 19.5020
Integration start scan : 1237 Integration stop scan: 1258
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

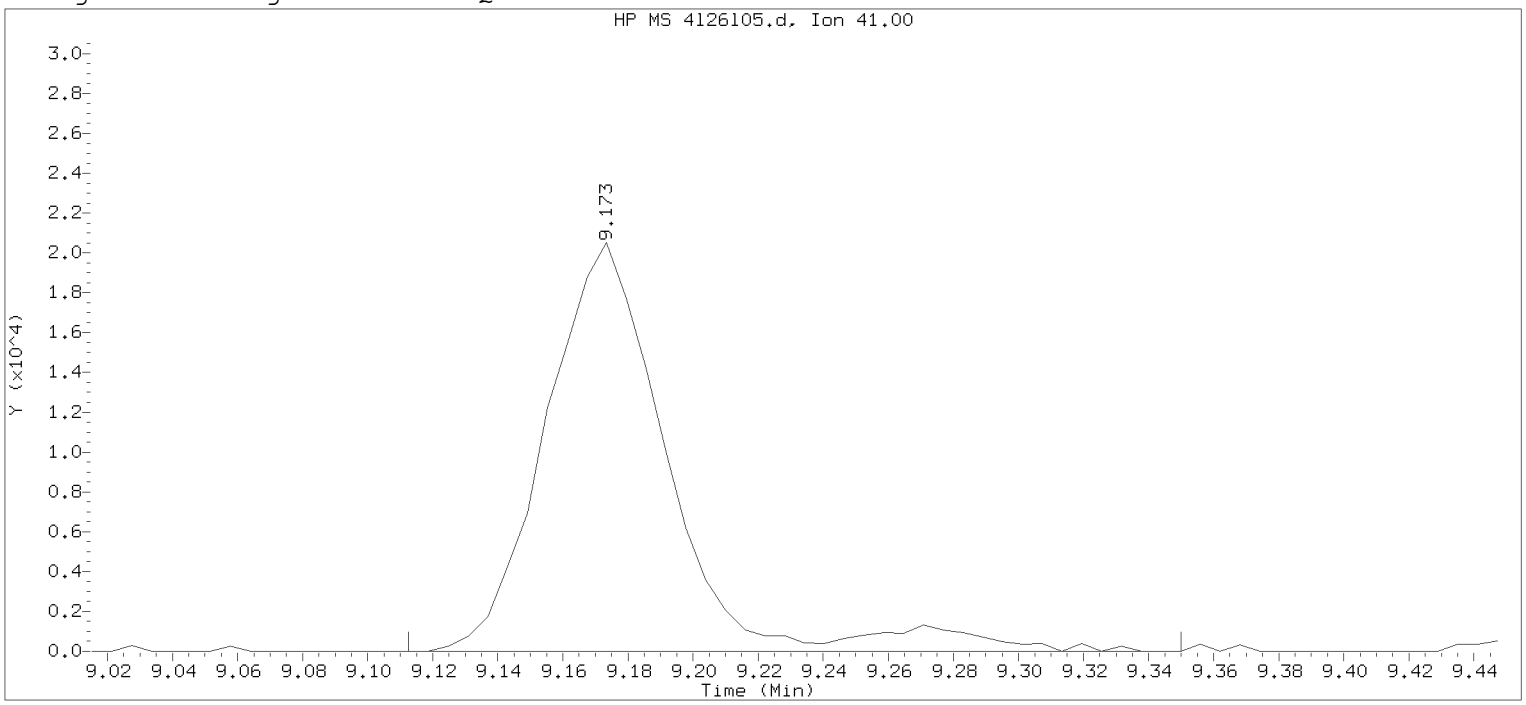
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

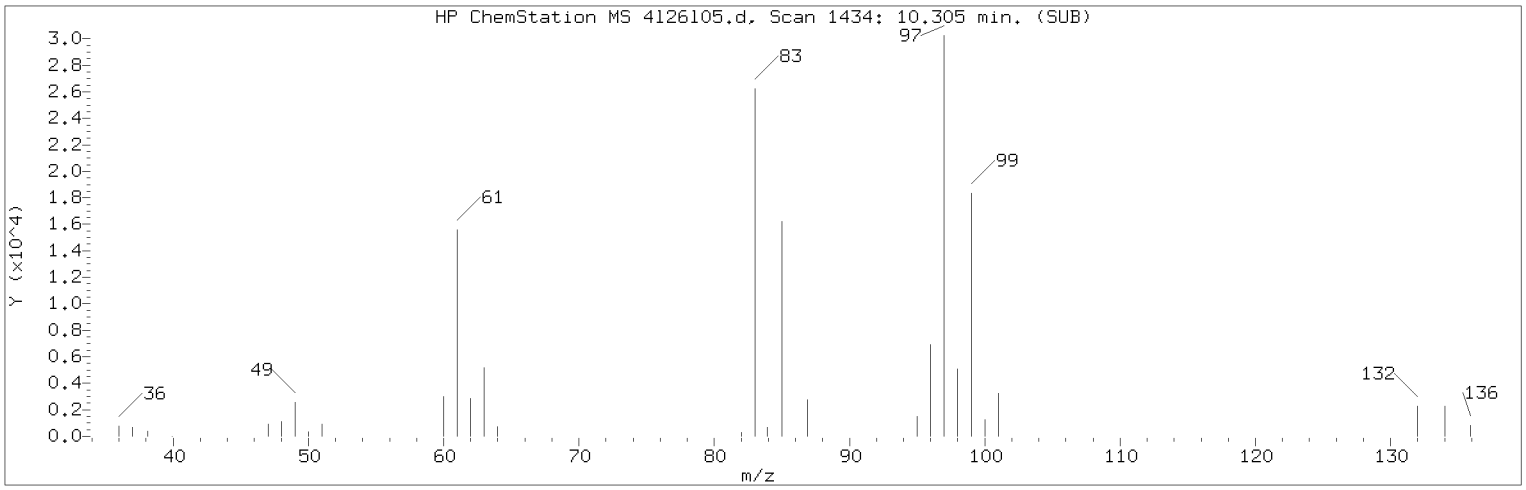
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

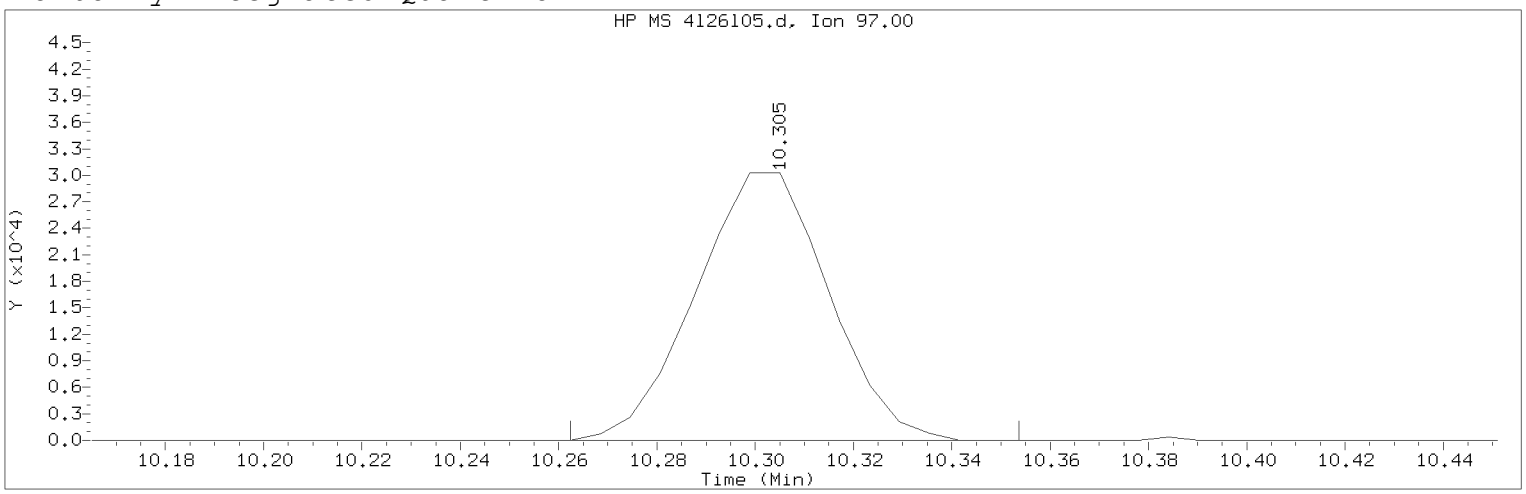
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1248
Retention Time (minutes): 9.173
Quant Ion : 41.00
Area : 53818
On-column Amount (ng) : 18.6040
Integration start scan : 1237 Integration stop scan: 1276
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

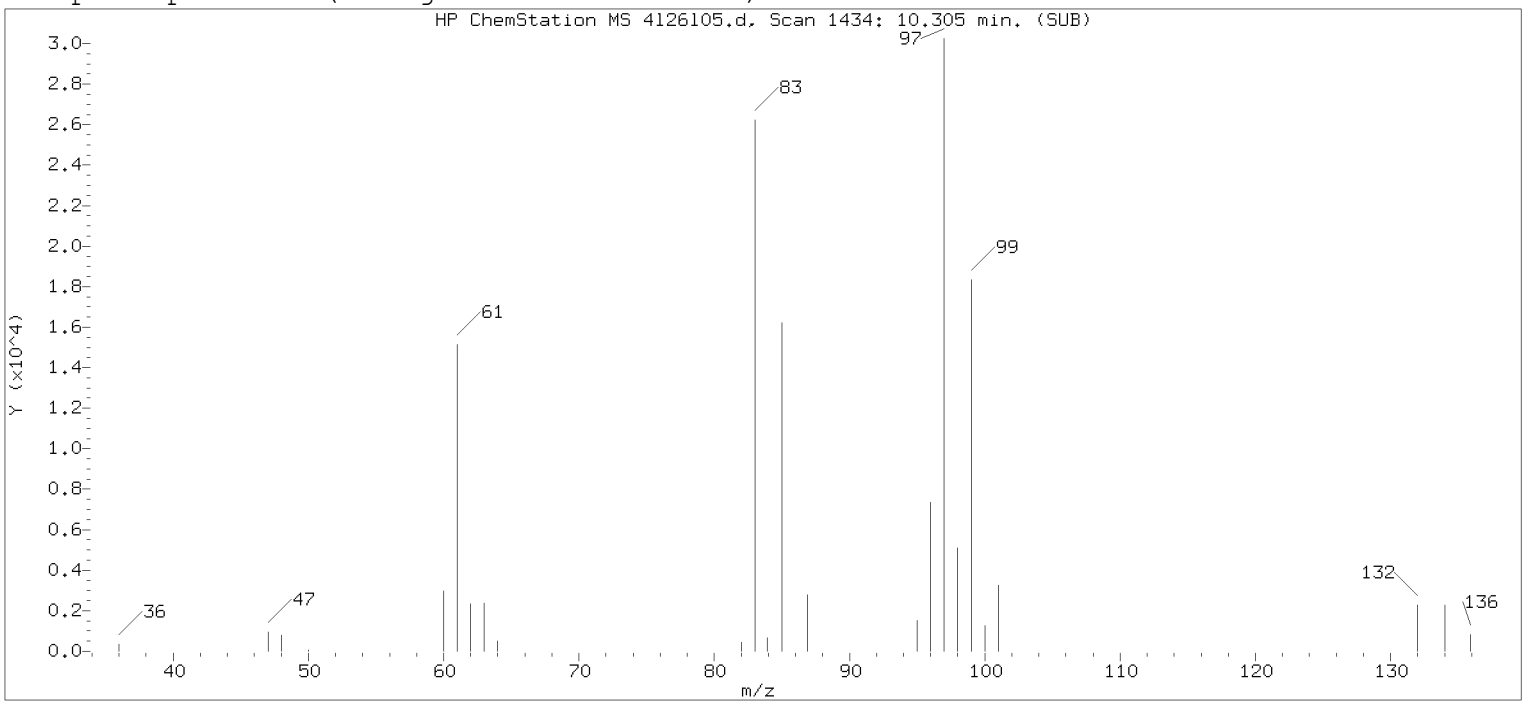
Compound Number : 93
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1434
Retention Time (minutes): 10.305
Quant Ion : 97.00
Area (flag) : 56923M
On-Column Amount (ng) : 9.2772
Integration start scan : 1426 Integration stop scan: 1441
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

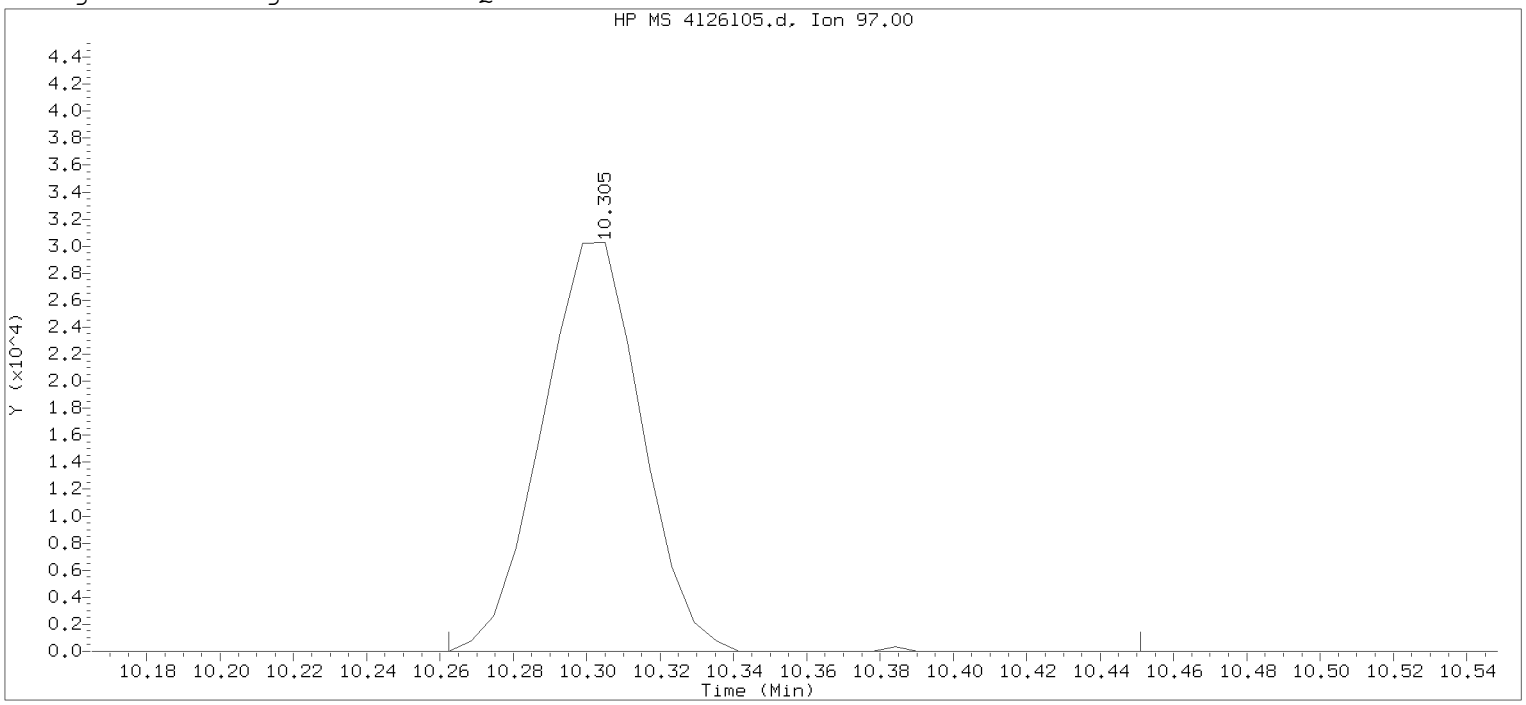
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

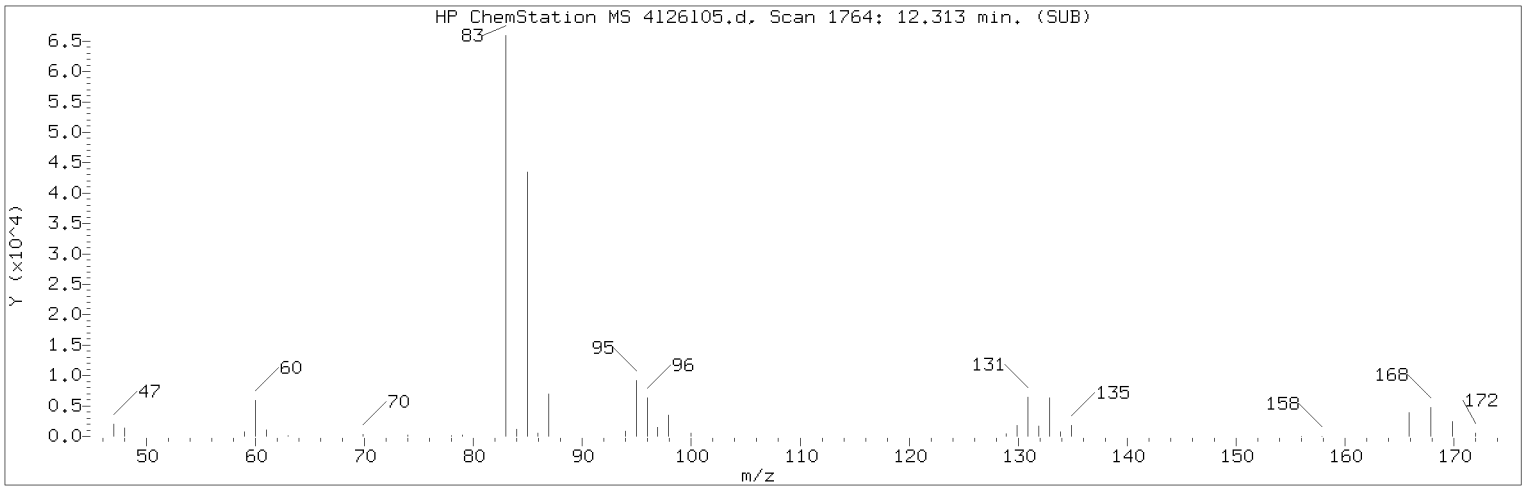
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

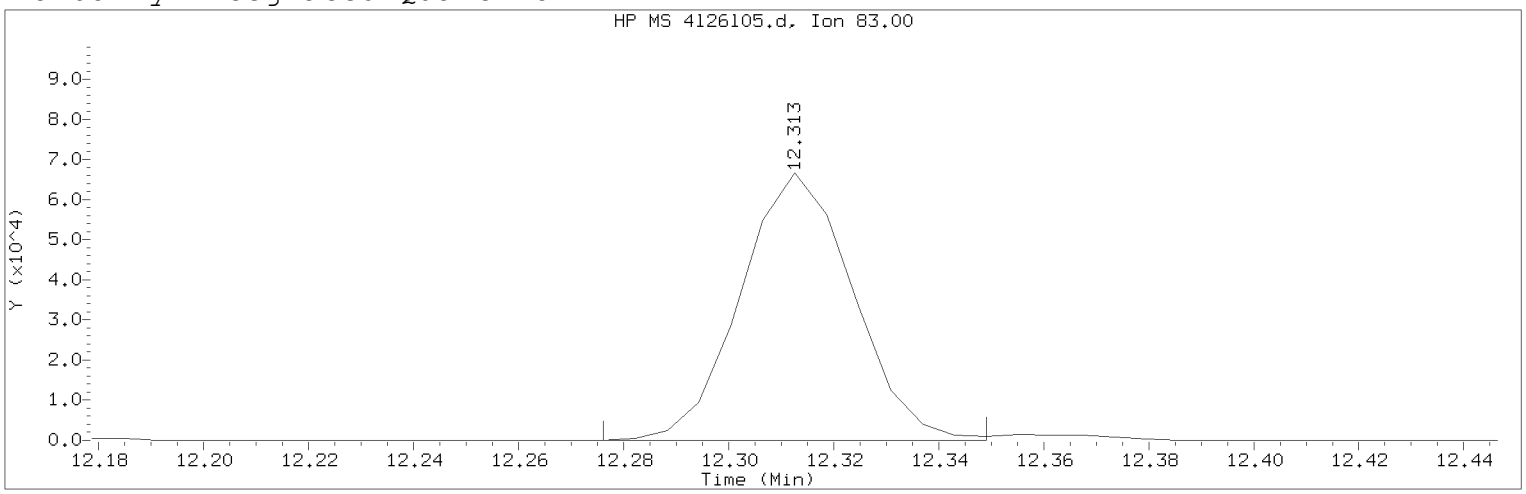
Compound Number	: 93		
Compound Name	: 1,1,2-Trichloroethane		
Scan Number	: 1434		
Retention Time (minutes)	: 10.305		
Quant Ion	: 97.00		
Area	: 57051		
On-column Amount (ng)	: 9.3257		
Integration start scan	: 1426	Integration stop scan:	1457
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD010 Lab Sample ID: VSTD010

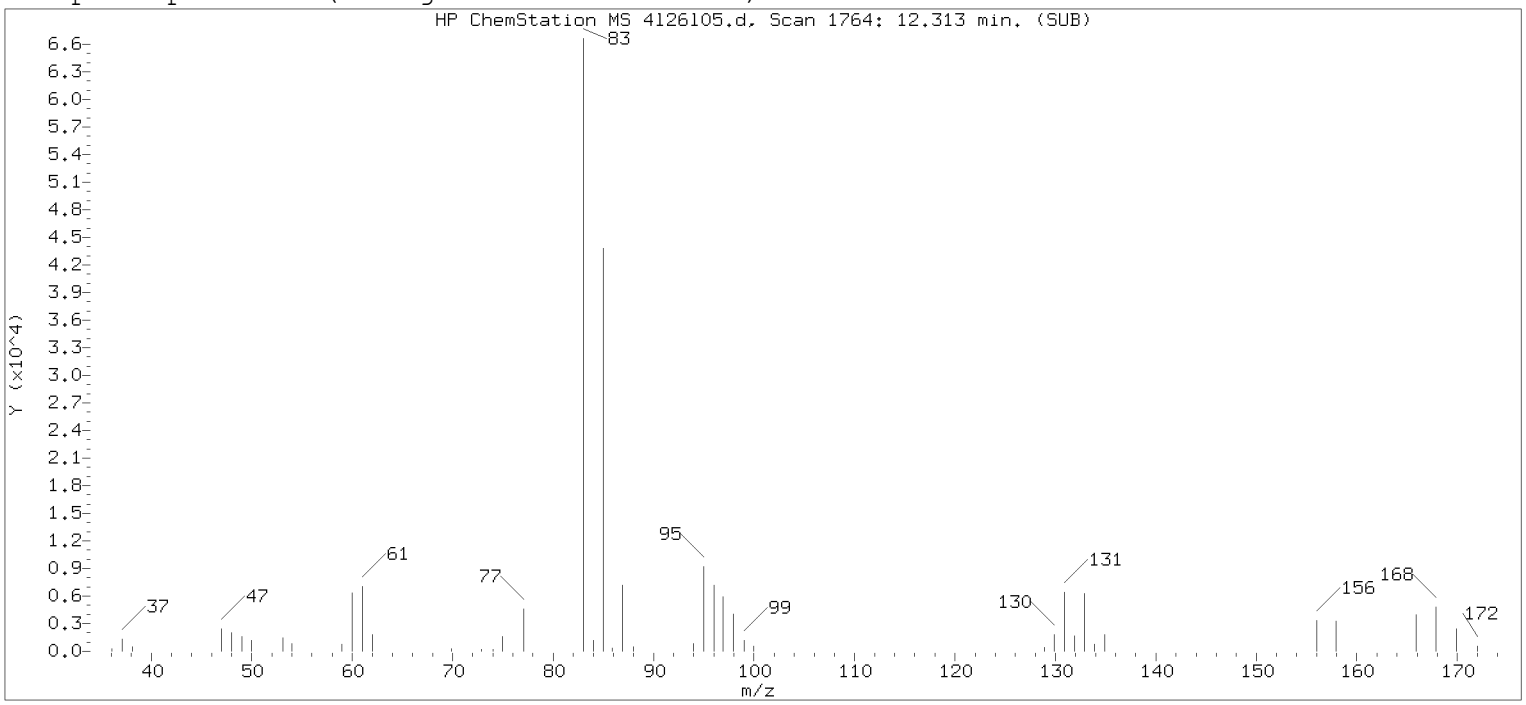
Compound Number : 117
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1764
Retention Time (minutes): 12.313
Quant Ion : 83.00
Area (flag) : 98737M
On-Column Amount (ng) : 9.0420
Integration start scan : 1757 Integration stop scan: 1769
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

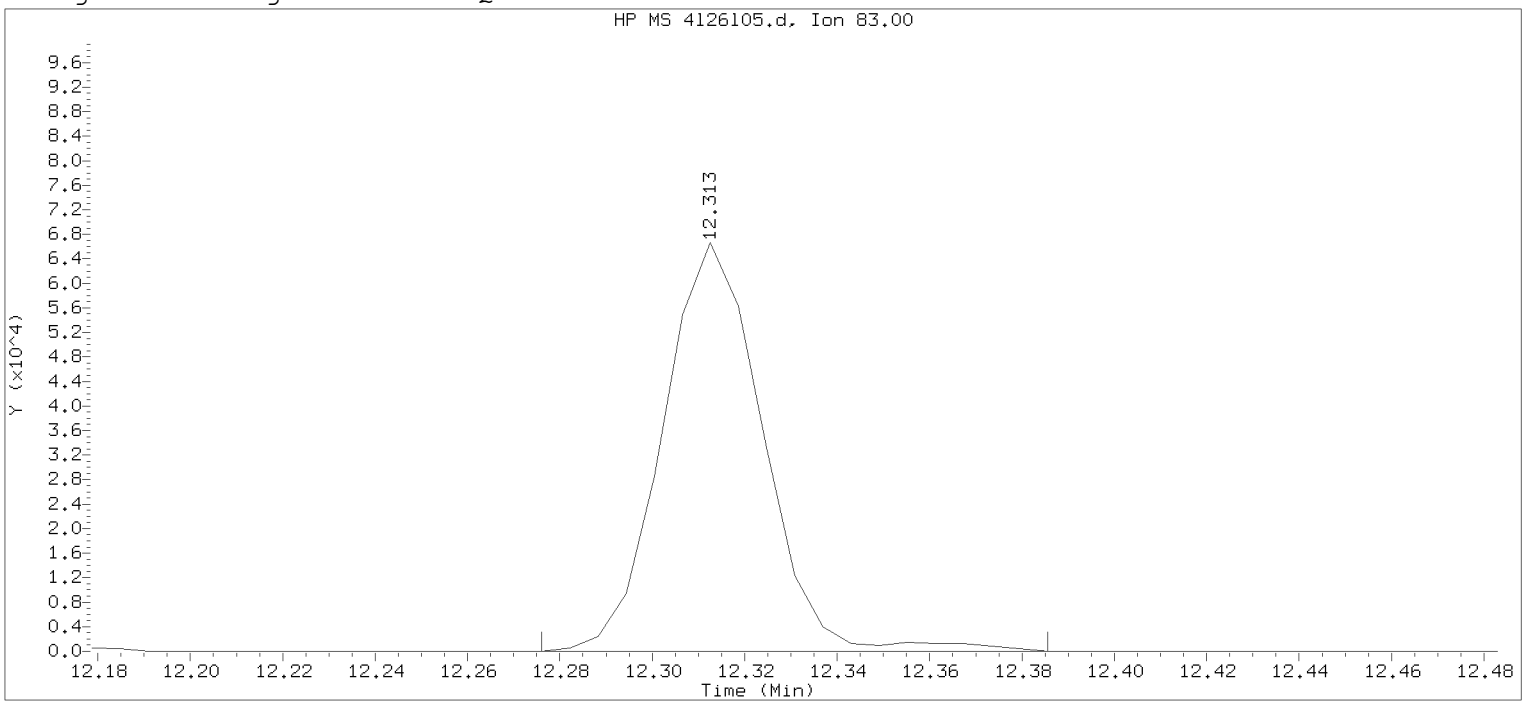
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



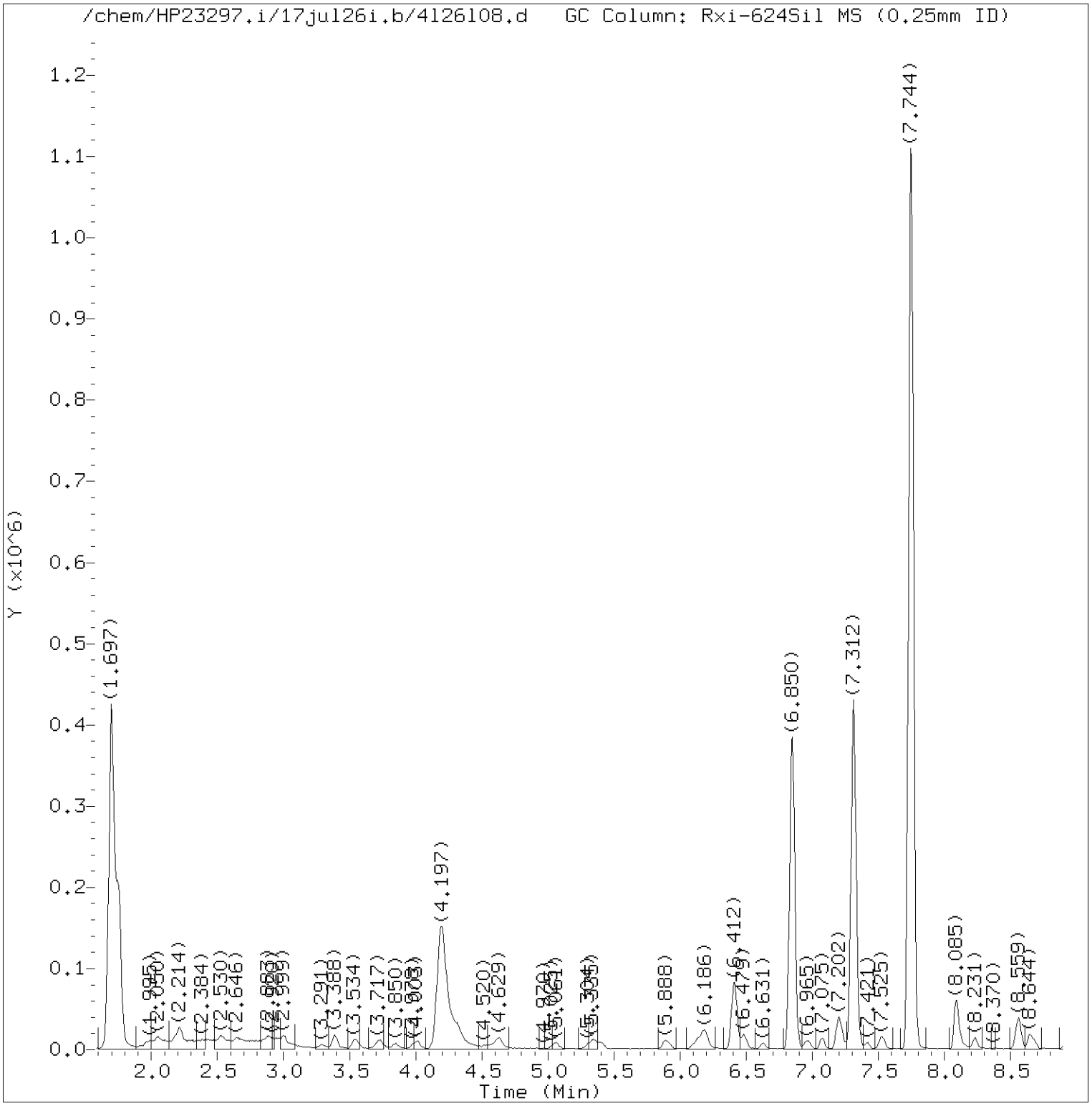
Data File: /chem/HP23297.i/17jul26i.b/4126l05.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 11:40 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 11:58
Date, time and analyst ID of latest file update: 26-Jul-2017 11:58 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 117
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1764
Retention Time (minutes): 12.313
Quant Ion : 83.00
Area : 100598
On-column Amount (ng) : 9.4142
Integration start scan : 1757 Integration stop scan: 1775
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.



Total Ion Chromatogram (TIC)

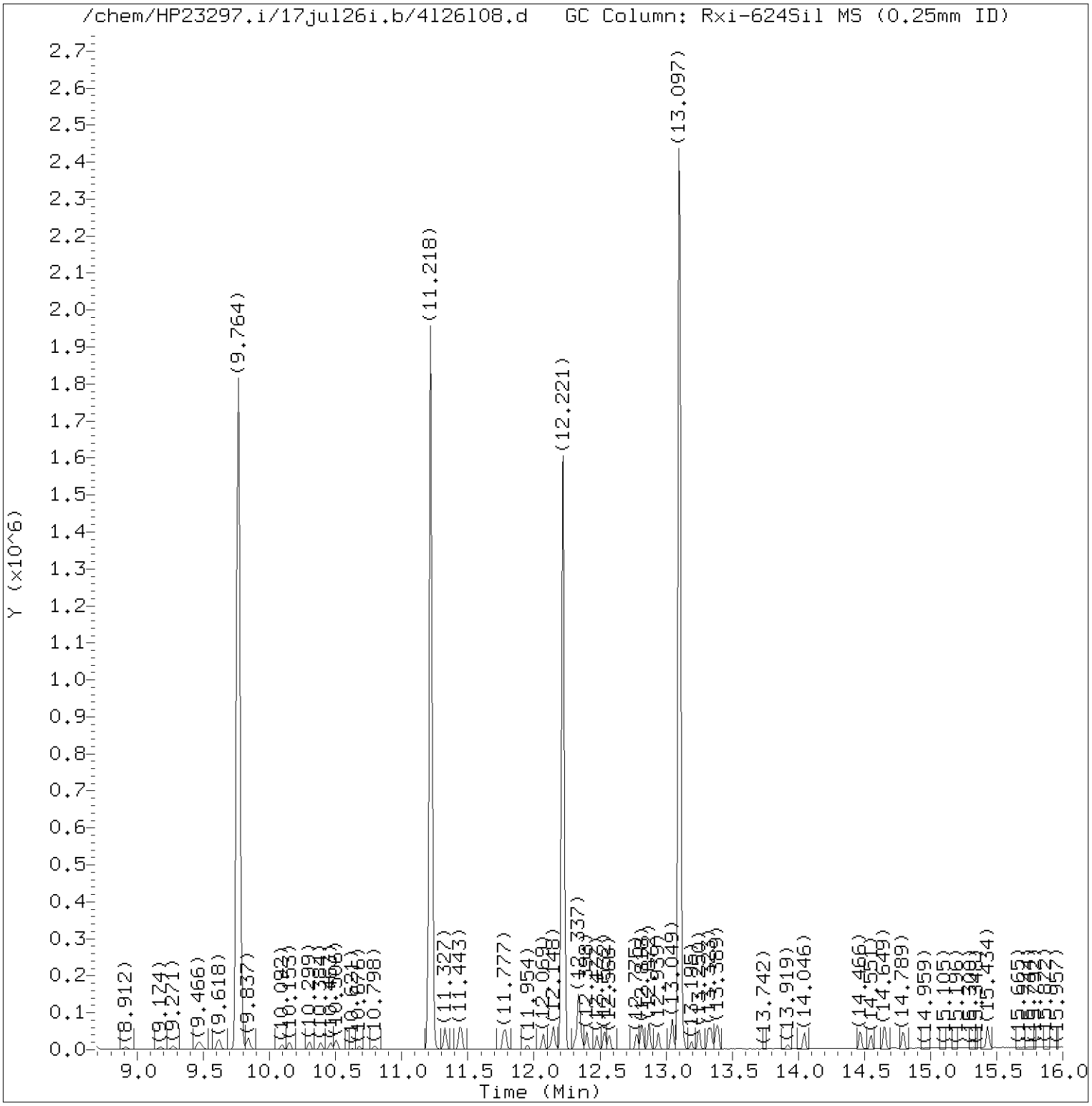
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.922	85	6057	0.787
4) Chloromethane	(2)	2.050	50	8511	0.983
6) Vinyl Chloride	(2)	2.184	62	7613	0.928
5) 1,3-Butadiene	(2)	2.214	39	10808M	0.284
8) Bromomethane	(2)	2.524	94	5579M	0.986
9) Chloroethane	(2)	2.646	64	4689	1.033
10) Dichlorofluoromethane	(2)	2.883	67	9320	0.000
12) Trichlorofluoromethane	(2)	2.944	101	7682	0.886
11) n-Pentane	(2)	2.999	43	12189	0.966
13) Ethanol	(1)	3.060	45	11423	64.049
15) Freon 123a	(2)	3.291	67	5833	0.755
16) Acrolein	(1)	3.388	56	23721	8.595
17) 1,1-Dichloroethene	(2)	3.534	96	4014	0.737
17) 1,1-Dichloroethene	(2)	3.540	63	1787	0.655
18) Acetone	(1)	3.558	58	2860	1.972
19) Freon 113	(2)	3.571	101	3830	0.706
21) 2-Propanol	(1)	3.717	45	24463M	19.837
22) Methyl Iodide	(2)	3.741	142	8169	0.763
23) Carbon Disulfide	(2)	3.844	76	13100	0.688
27) Methyl Acetate	(2)	3.978	43	11016	0.966
25) Allyl Chloride	(2)	4.015	41	9788	0.832
29)*t-Butyl alcohol-d10	(1)	4.197	65	442152	250.000
28) Methylene Chloride	(2)	4.203	84	6999	0.966
30) t-Butyl alcohol	(1)	4.325	59	38252	19.146
31) Acrylonitrile	(2)	4.526	53	4125	0.727
33) Methyl Tertiary Butyl Ether	(2)	4.605	73	16398	0.782
32) trans-1,2-Dichloroethene	(2)	4.635	96	4630	0.712
34) n-Hexane	(2)	5.049	57	7138	0.645
36) 1,1-Dichloroethane	(2)	5.298	63	9308	0.756
38) di-Isopropyl ether	(2)	5.347	45	19332	0.779
39) 2-Chloro-1,3-butadiene	(2)	5.402	53	7122	0.692
40) Ethyl t-butyl ether	(2)	5.882	59	17398	0.814
43) 1,2-Dichloroethene (Total)	(2)		96	10136	1.452
44) 2-Butanone	(2)	6.101	43	13973	1.688
42) cis-1,2-Dichloroethene	(2)	6.132	96	5506	0.740
45) 2,2-Dichloropropane	(2)	6.156	77	5487	0.680
47) Propionitrile	(1)	6.186	54	41299	17.674
48) Methacrylonitrile	(2)	6.412	67	45597	8.474

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
49) Bromochloromethane	(2)	6.485	128	3366	0.857
50) Tetrahydrofuran	(1)	6.485	71	3365	1.684
51) Chloroform	(2)	6.631	83	8604	0.762
52)$Dibromofluoromethane	(2)	6.850	113	339308	49.850
52)$Dibromofluoromethane	(2)	6.844	111	343835	49.442
53) 1,1,1-Trichloroethane	(2)	6.862	97	7721	0.796
54) Cyclohexane	(2)	6.959	56	8435	0.657
54) Cyclohexane	(2)	6.965	84	6504M	0.640
54) Cyclohexane	(2)	6.971	69	2227	0.593
55) 1,1-Dichloropropene	(2)	7.075	75	6402	0.684
56) Carbon Tetrachloride	(2)	7.081	117	5082	0.686
58) Isobutyl Alcohol	(1)	7.202	41	34775	45.997
57)$1,2-Dichloroethane-d4	(2)	7.312	102	86969	50.488
57)$1,2-Dichloroethane-d4	(2)	7.312	65	387788	50.326
57)$1,2-Dichloroethane-d4	(2)	7.312	104	55973	51.123
60) Benzene	(2)	7.342	78	22961	0.802
61) 1,2-Dichloroethane	(2)	7.421	62	8044	0.872
61) 1,2-Dichloroethane	(2)	7.428	98	252	0.279
65) t-Amyl methyl ether	(2)	7.531	73	16594	0.803
67) n-Heptane	(2)	7.750	43	8958	0.736
66)*Fluorobenzene	(2)	7.750	96	1446033	50.000
69) n-Butanol	(1)	8.091	56	52572	87.247
71) Trichloroethene	(2)	8.231	95	5580	0.785
73) Methylcyclohexane	(2)	8.547	83	9235	0.763
73) Methylcyclohexane	(2)	8.547	98	3796	0.735
74) 1,2-Dichloropropane	(2)	8.565	63	6683	0.844
77) Methyl Methacrylate	(2)	8.638	69	6815	0.848
76) 1,4-Dioxane	(1)	8.656	88	8590	53.040
75) Dibromomethane	(2)	8.681	93	3795	0.790
79) Bromodichloromethane	(2)	8.906	83	6346	0.756
80) 2-Nitropropane	(2)	9.167	41	4241M	6.930
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	4923	0.727
82) cis-1,3-Dichloropropene	(2)	9.459	75	8341	0.733
83) 4-Methyl-2-pentanone	(2)	9.618	43	23195	1.494
84)$Toluene-d8	(3)	9.764	98	1425020	49.867
84)$Toluene-d8	(3)	9.764	100	928232	50.033
89) Toluene	(3)	9.837	92	14489	0.801
91) 1,3-Dichloropropene (total)	(3)		100	16100	1.497

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on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) trans-1,3-Dichloropropene	(3)	10.092	75	7759	0.763
92) Ethyl Methacrylate	(3)	10.147	69	10198	0.812
93) 1,1,2-Trichloroethane	(3)	10.299	97	6750	0.917
94) Tetrachloroethene	(3)	10.390	166	5937	0.743
95) 1,3-Dichloropropane	(3)	10.463	76	10994	0.900
97) 2-Hexanone	(3)	10.506	43	17584M	8.533
98) Dibromochloromethane	(3)	10.682	129	5180	0.732
100) 1,2-Dibromoethane	(3)	10.798	107	6587	0.840
101)*Chlorobenzene-d5	(3)	11.218	117	1084599	50.000
103) Chlorobenzene	(3)	11.242	112	17793	0.859
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	5344	0.798
105) Ethylbenzene	(3)	11.327	91	27639	0.812
107) m+p-Xylene	(3)	11.443	106	21473	1.576
109) Xylene (Total)	(3)		106	31882	2.346
108) o-Xylene	(3)	11.771	106	10409	0.771
110) Styrene	(3)	11.789	104	17154	0.762
111) Bromoform	(3)	11.954	173	4399	0.777
112) Isopropylbenzene	(3)	12.069	105	25753	0.771
113) Cyclohexanone	(1)	12.148	55	25663M	43.694
115)$4-Bromofluorobenzene	(3)	12.215	95	505576	49.750
115)$4-Bromofluorobenzene	(3)	12.221	174	463729	50.190
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	12664	0.956
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	24402	7.244
116) Bromobenzene	(4)	12.337	156	8226	0.857
118) 1,2,3-Trichloropropane	(4)	12.367	110	3887	1.022
120) n-Propylbenzene	(4)	12.398	91	32712	0.801
121) 2-Chlorotoluene	(4)	12.477	126	6949	0.820
123) 1,3,5-Trimethylbenzene	(4)	12.538	105	21624	0.755
122) 4-Chlorotoluene	(4)	12.568	126	7556	0.842
125) tert-Butylbenzene	(4)	12.775	134	4444	0.750
126) Pentachloroethane	(4)	12.812	167	3919	0.747
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	22793	0.766
128) sec-Butylbenzene	(4)	12.939	105	29489	0.783
130) 1,3-Dichlorobenzene	(4)	13.043	146	15095	0.837
131) p-Isopropyltoluene	(4)	13.049	119	24783	0.762
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	604326	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	17101	0.914
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	26937	0.865

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on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

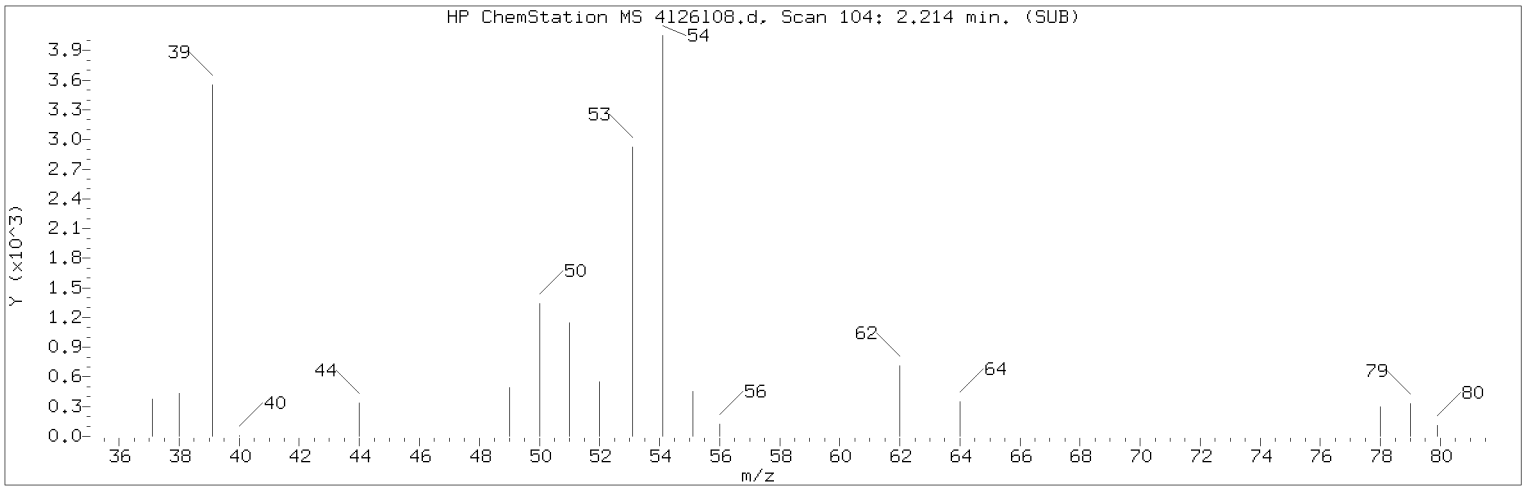
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

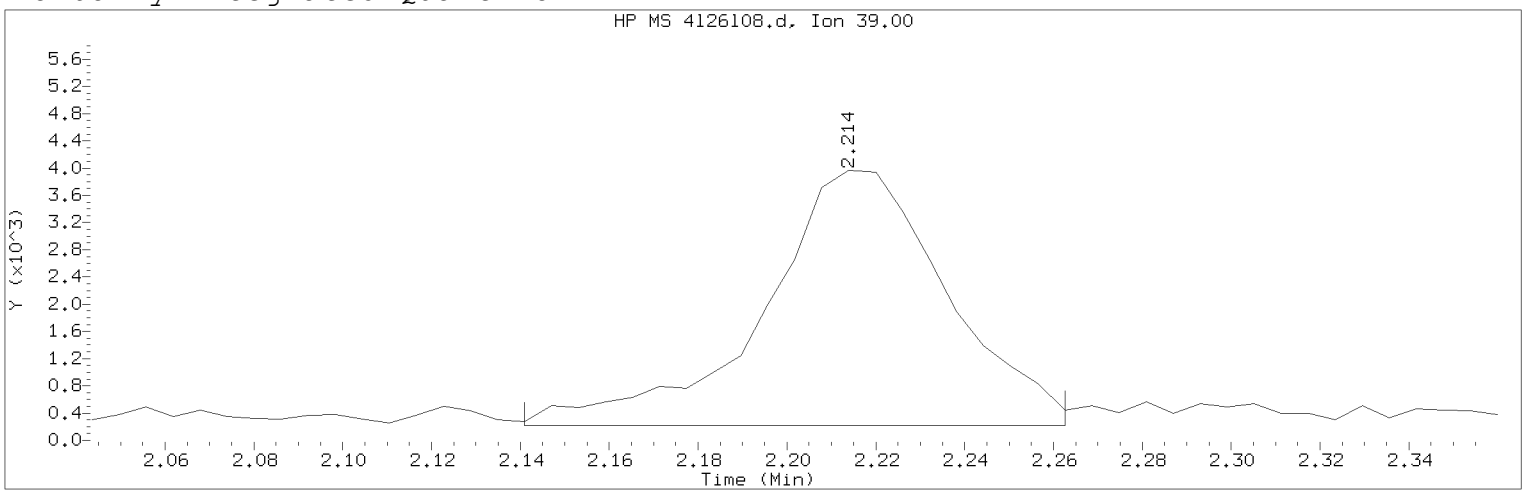
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
136) Benzyl Chloride	(4)	13.195	91	13498	0.624
137) 1,3-Diethylbenzene	(4)	13.250	119	15982	0.816
138) 1,4-Diethylbenzene	(4)	13.323	119	16681	0.818
140) n-Butylbenzene	(4)	13.341	92	13646	0.806
139) 1,2-Dichlorobenzene	(4)	13.377	146	15924	0.898
141) 1,2-Diethylbenzene	(4)	13.389	119	14016	0.852
142) Diethylbenzene (total)	(4)		100	46679	2.486
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	2759	0.905
145) 1,3,5-Trichlorobenzene	(4)	14.046	180	13246	0.963
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	14383	1.069
148) Hexachlorobutadiene	(4)	14.551	225	6575	1.053
149) Naphthalene	(4)	14.655	128	42739	0.971
150) 1,2,3-Trichlorobenzene	(4)	14.795	180	13972	1.079
151) 2-Methylnaphthalene	(4)	15.434	142	29152	1.067

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

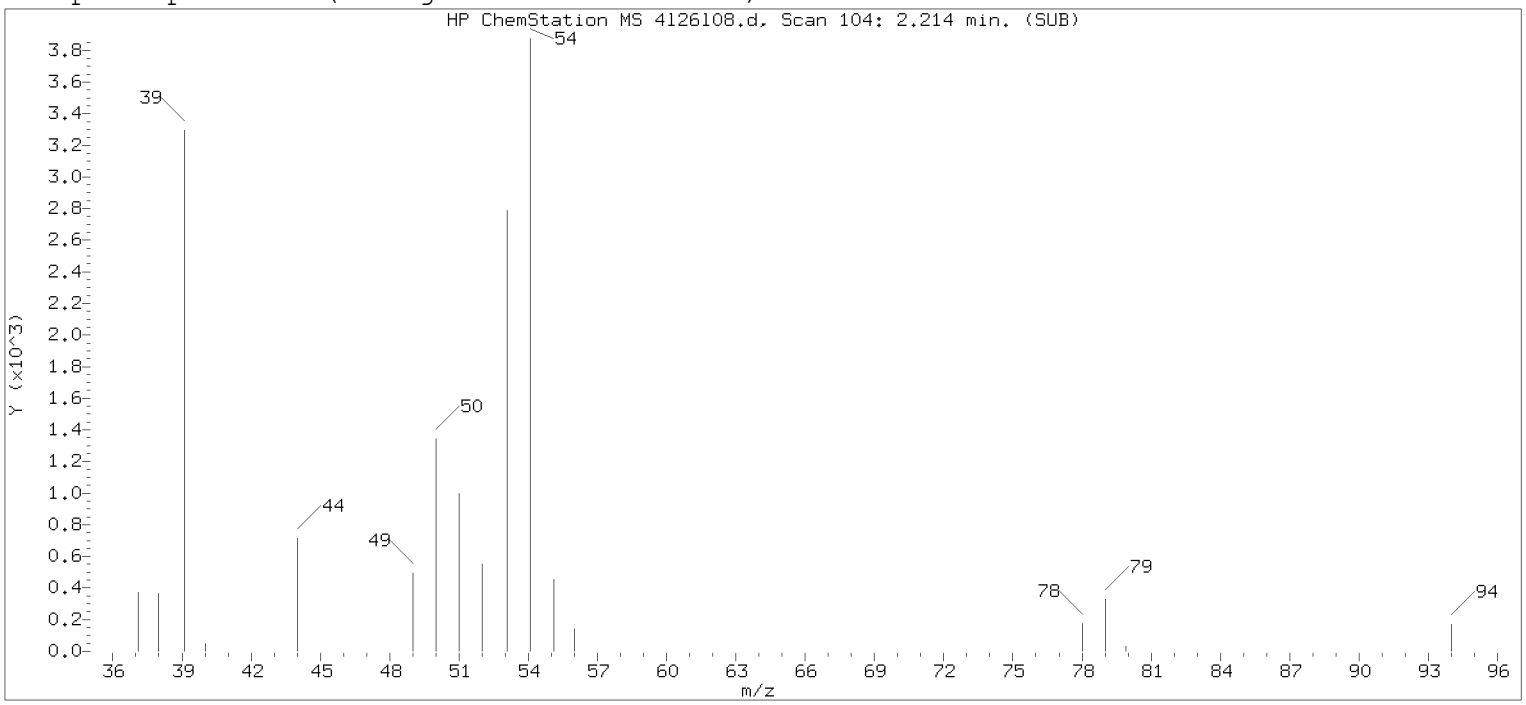
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 104
Retention Time (minutes): 2.214
Quant Ion : 39.00
Area (flag) : 10808M
On-Column Amount (ng) : 0.2836
Integration start scan : 91 Integration stop scan: 111
Y at integration start : 217 Y at integration end: 217

Reason for manual integration: improper integration

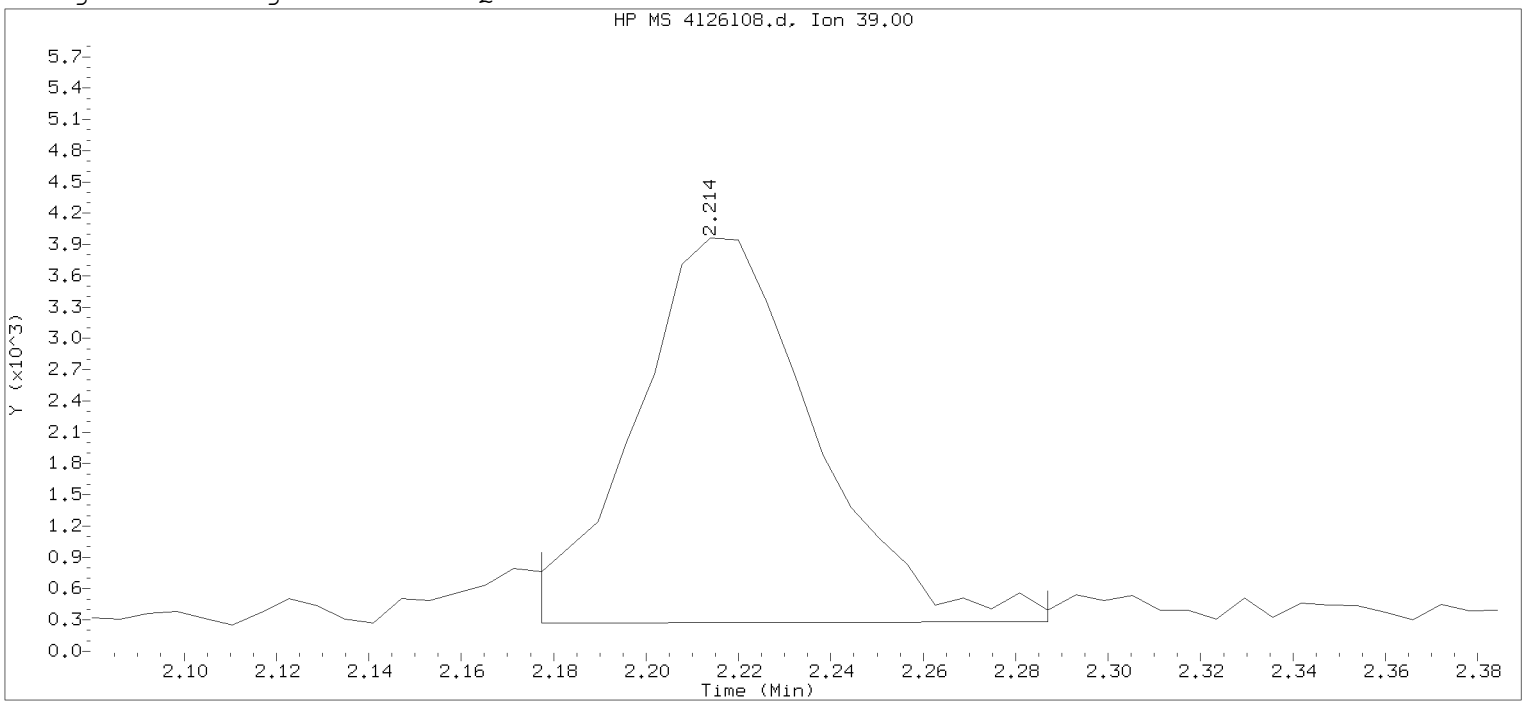
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

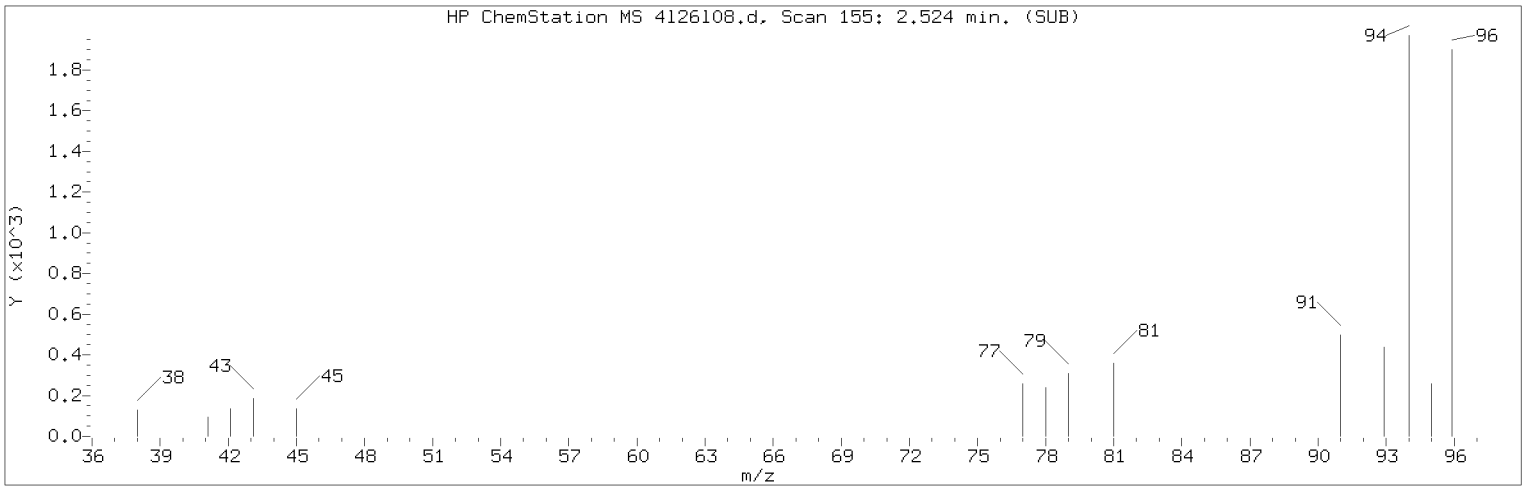
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 13:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:52 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

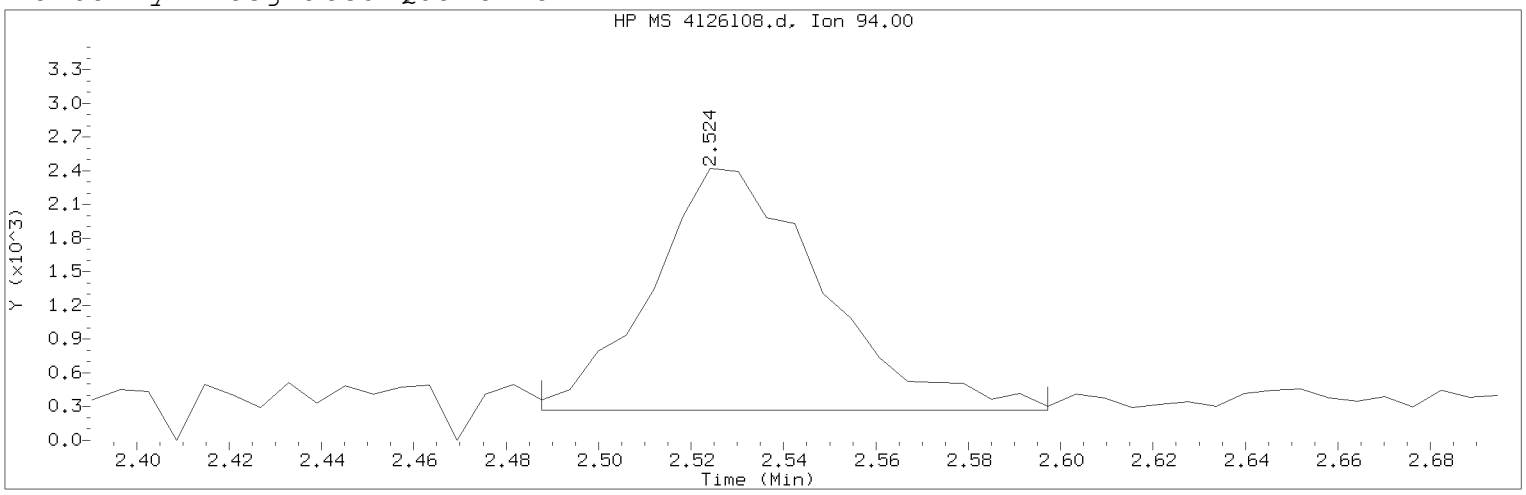
Compound Number	: 5		
Compound Name	: 1,3-Butadiene		
Scan Number	: 104		
Retention Time (minutes)	: 2.214		
Quant Ion	: 39.00		
Area	: 9921		
On-column Amount (ng)	: 1.2151		
Integration start scan	: 97	Integration stop scan:	115
Y at integration start	: 273	Y at integration end:	286

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

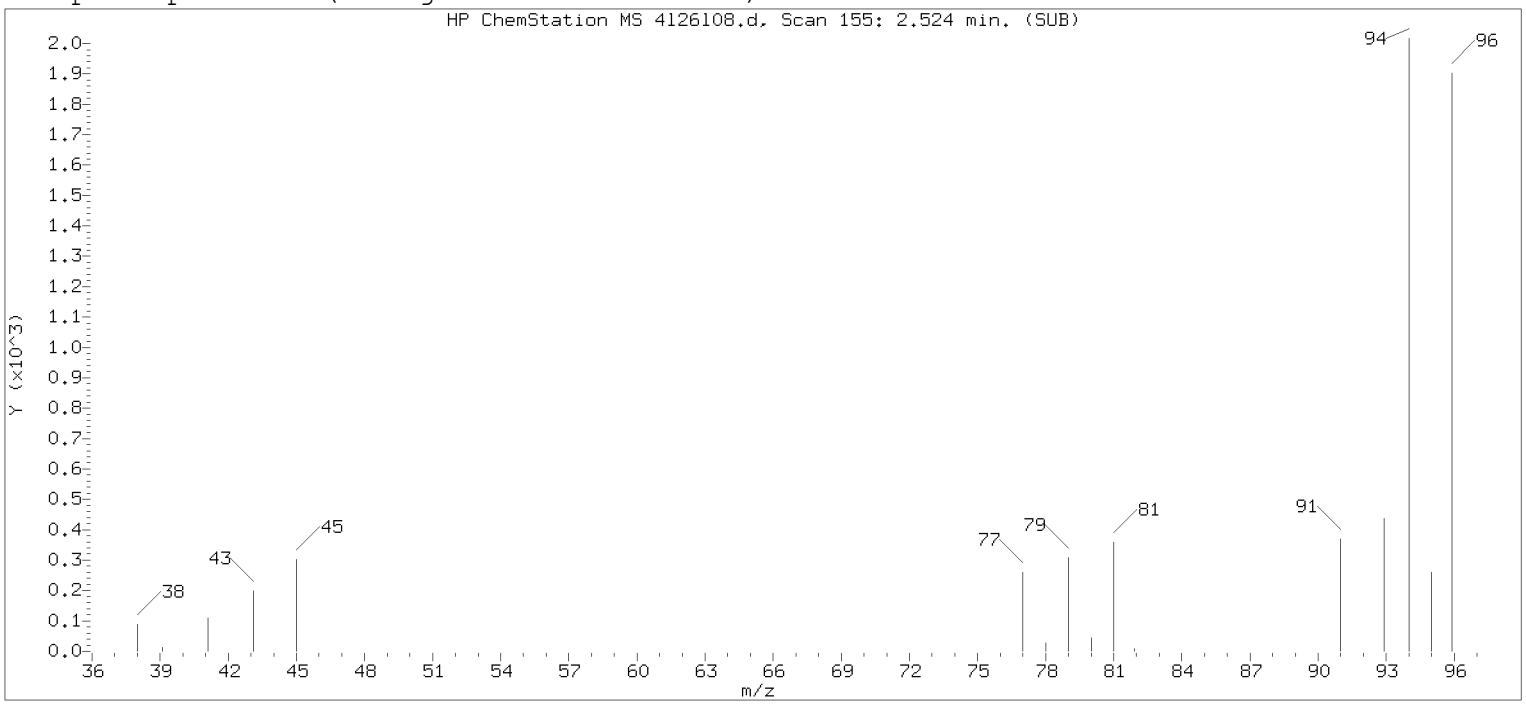
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 155
Retention Time (minutes): 2.524
Quant Ion : 94.00
Area (flag) : 5579M
On-Column Amount (ng) : 0.9862
Integration start scan : 148 Integration stop scan: 166
Y at integration start : 268 Y at integration end: 268

Reason for manual integration: improper integration

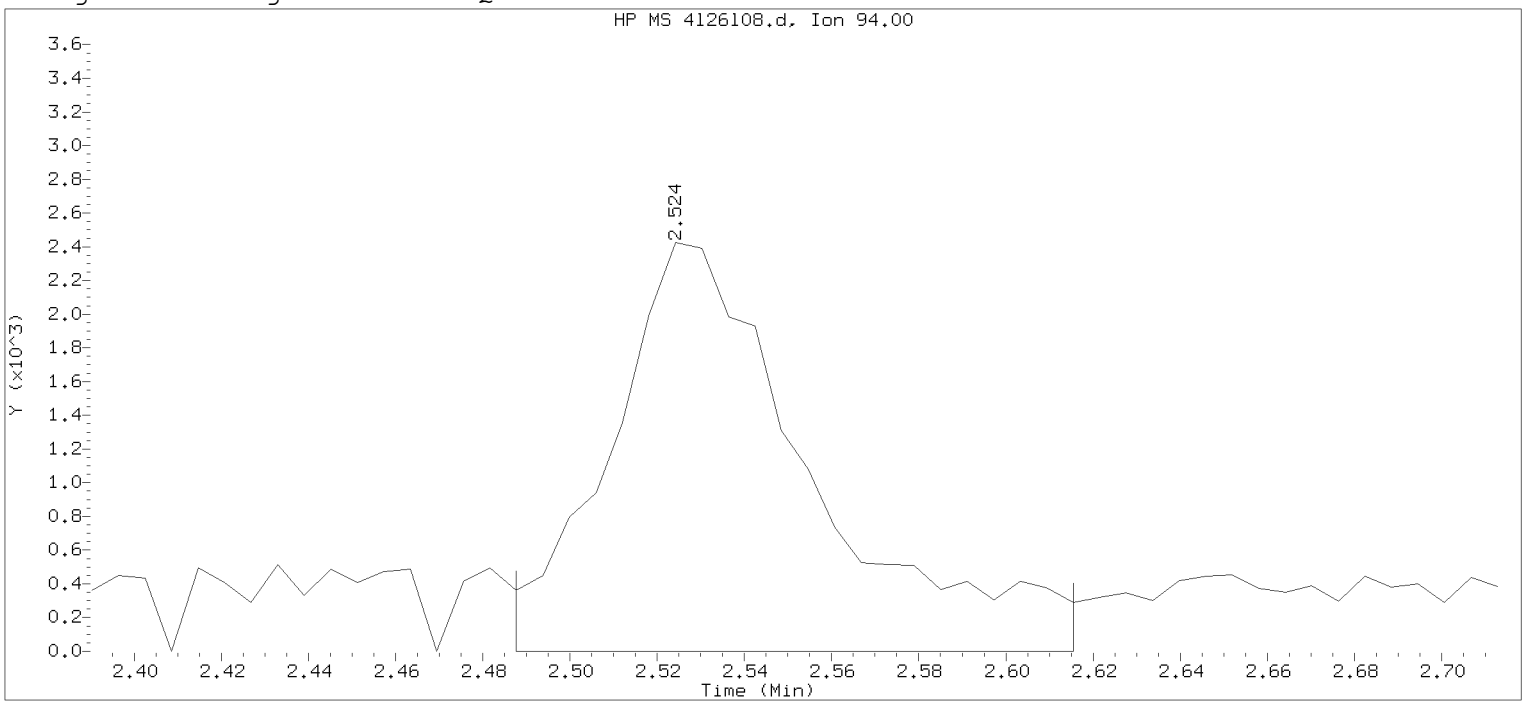
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

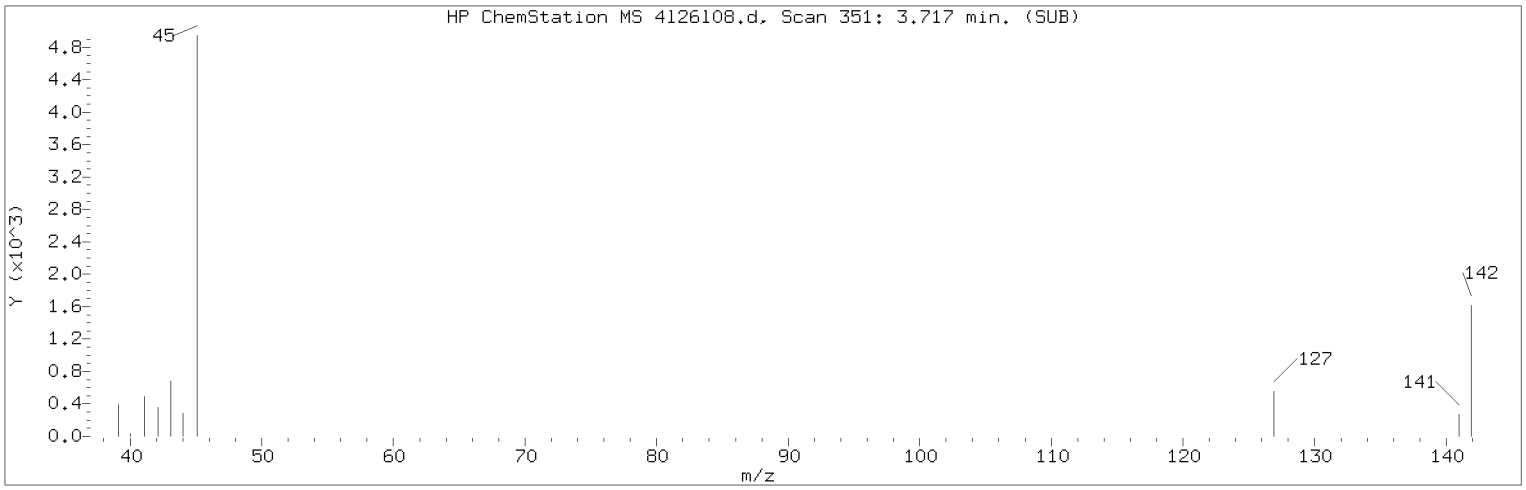
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 13:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:52 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

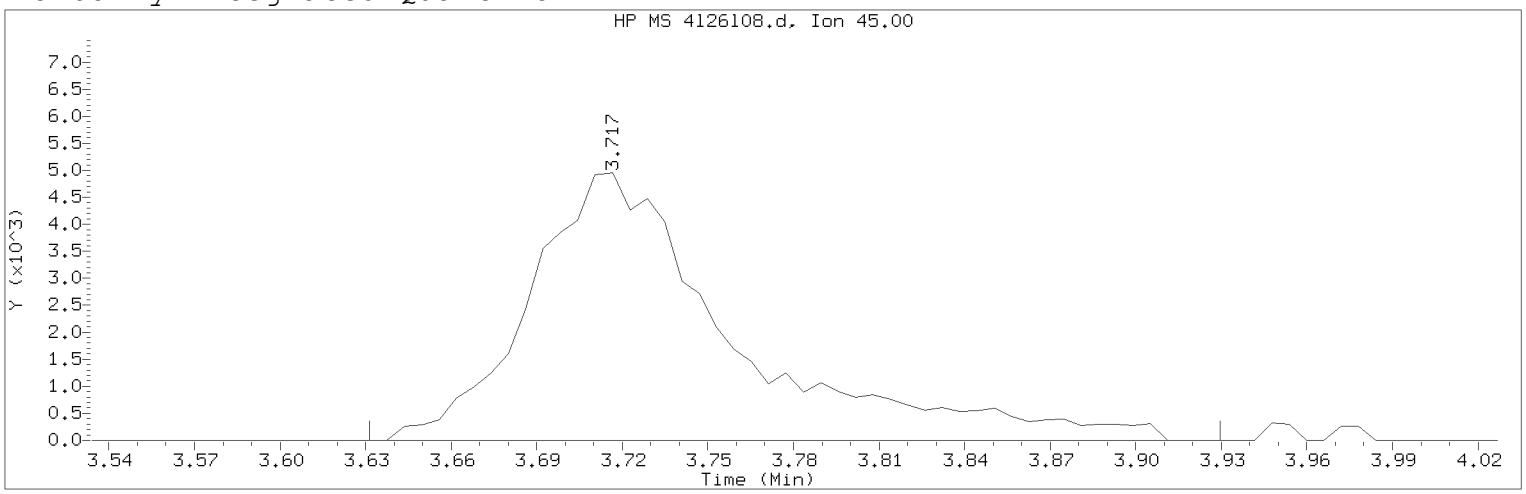
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 155
Retention Time (minutes): 2.524
Quant Ion : 94.00
Area : 7714
On-column Amount (ng) : 1.2547
Integration start scan : 148 Integration stop scan: 169
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

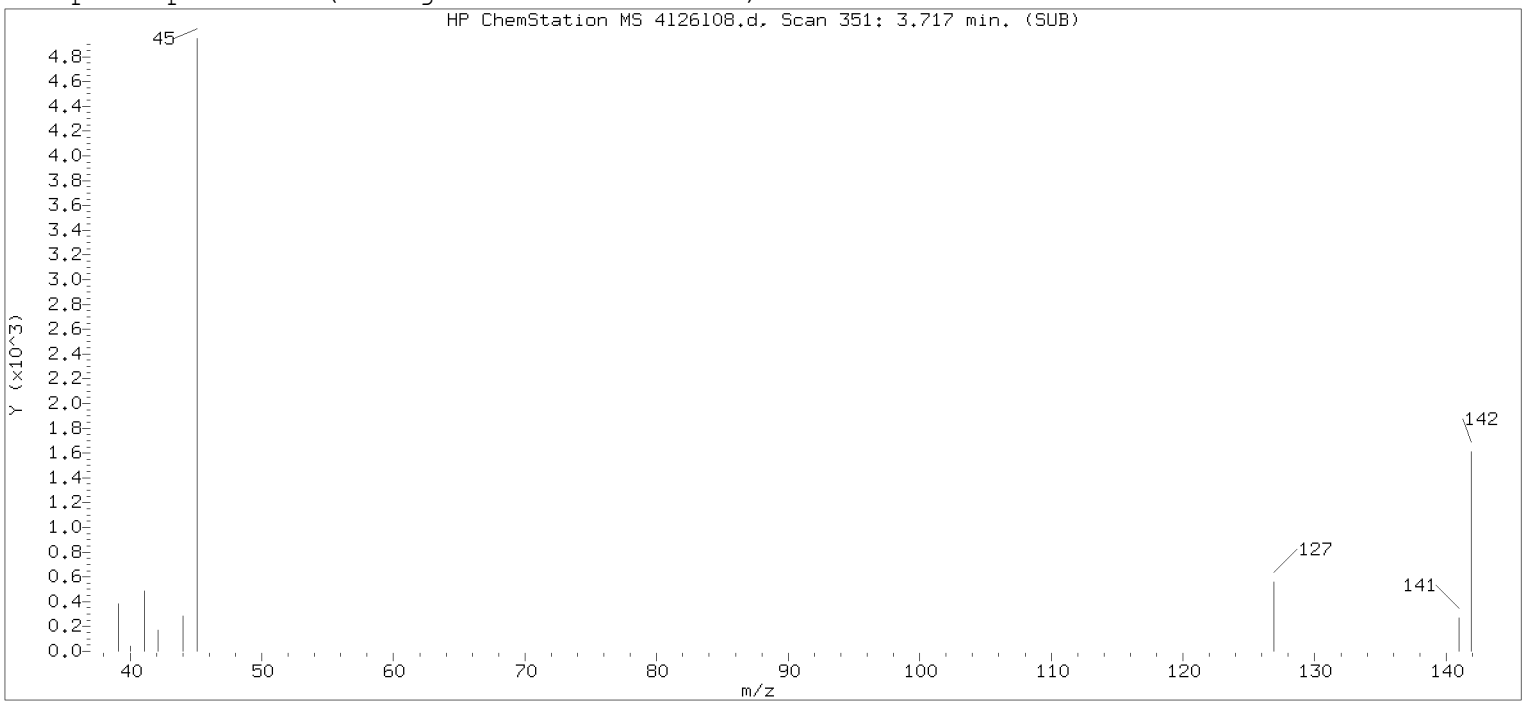
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 351
Retention Time (minutes): 3.717
Quant Ion : 45.00
Area (flag) : 24463M
On-Column Amount (ng) : 19.8367
Integration start scan : 336 Integration stop scan: 385
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

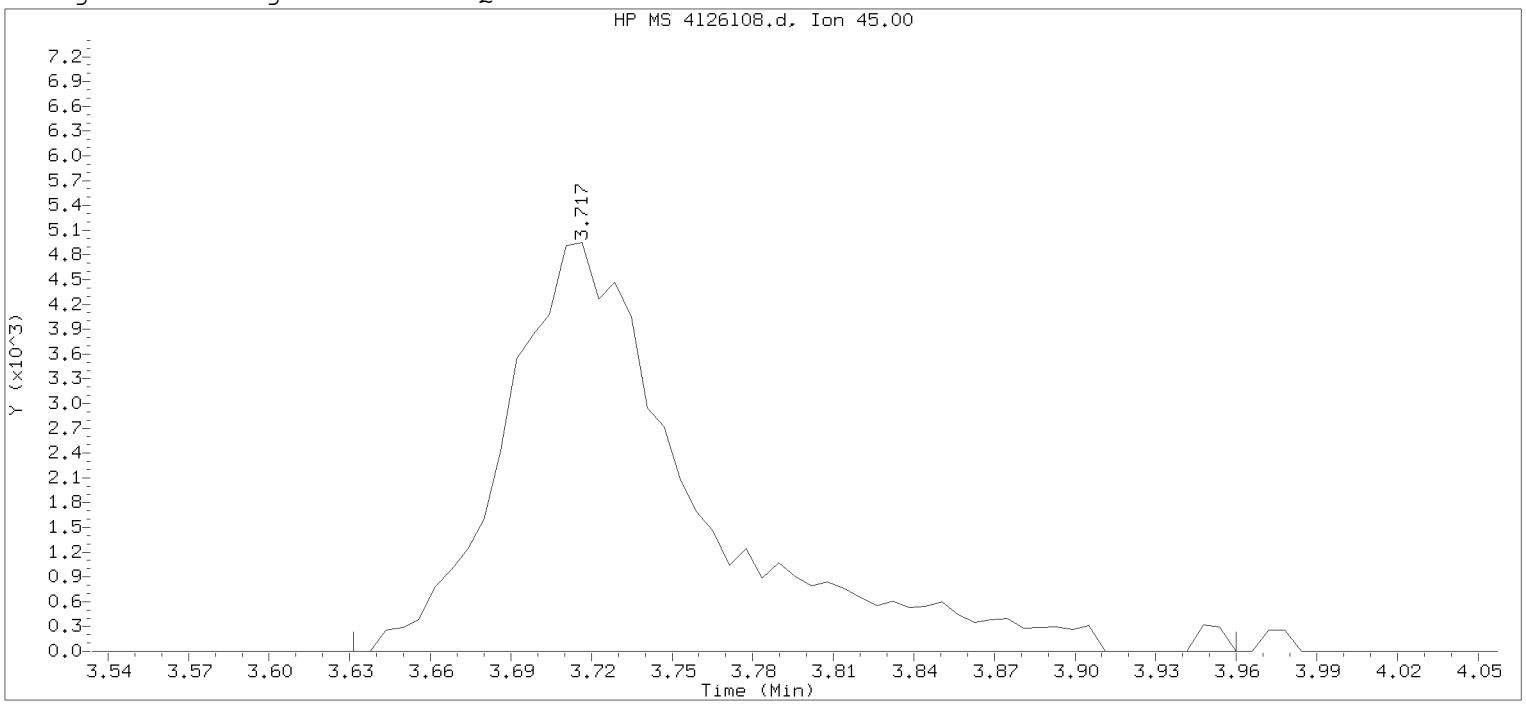
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126108.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

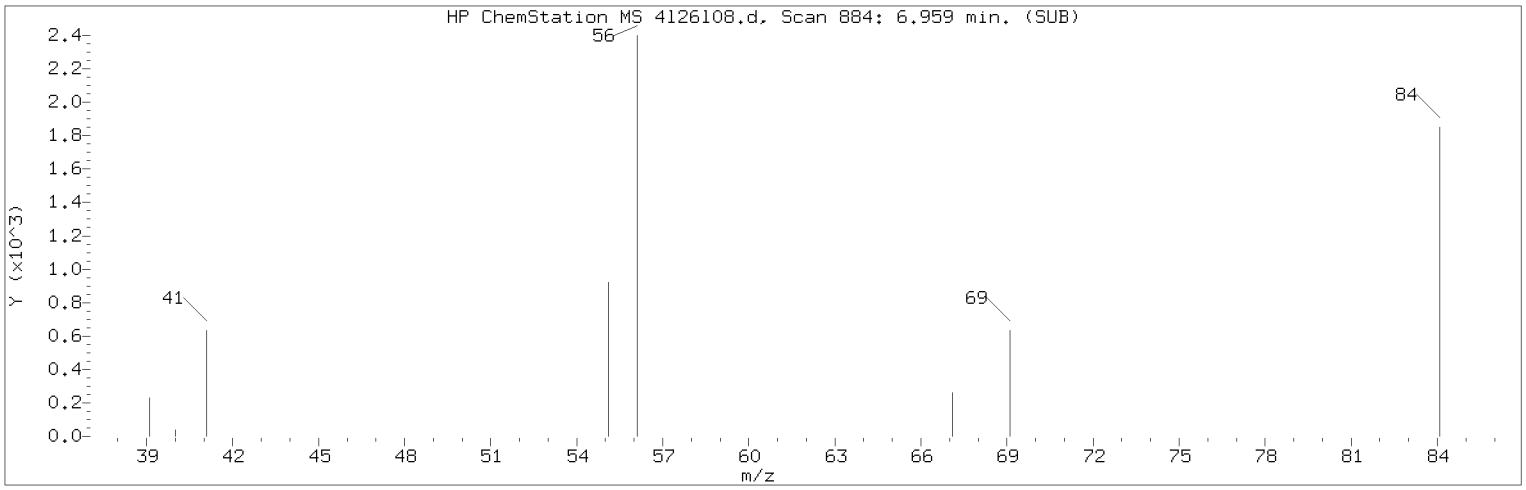
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 13:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:52 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

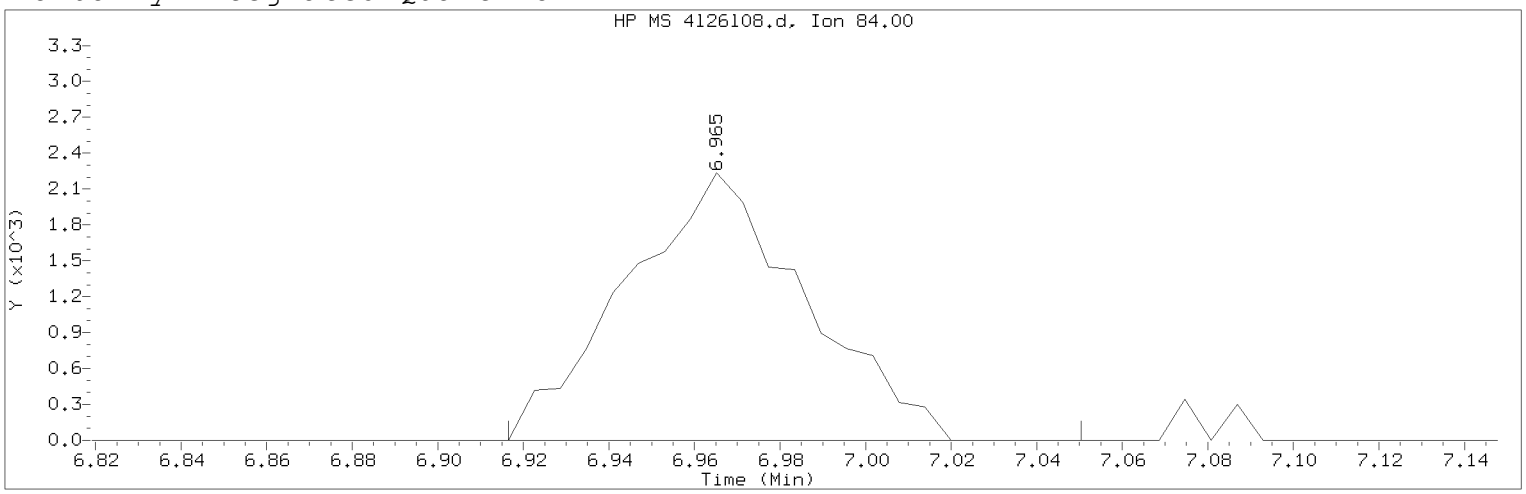
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 351
Retention Time (minutes): 3.717
Quant Ion : 45.00
Area : 24687
On-column Amount (ng) : 20.1901
Integration start scan : 336 Integration stop scan: 390
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

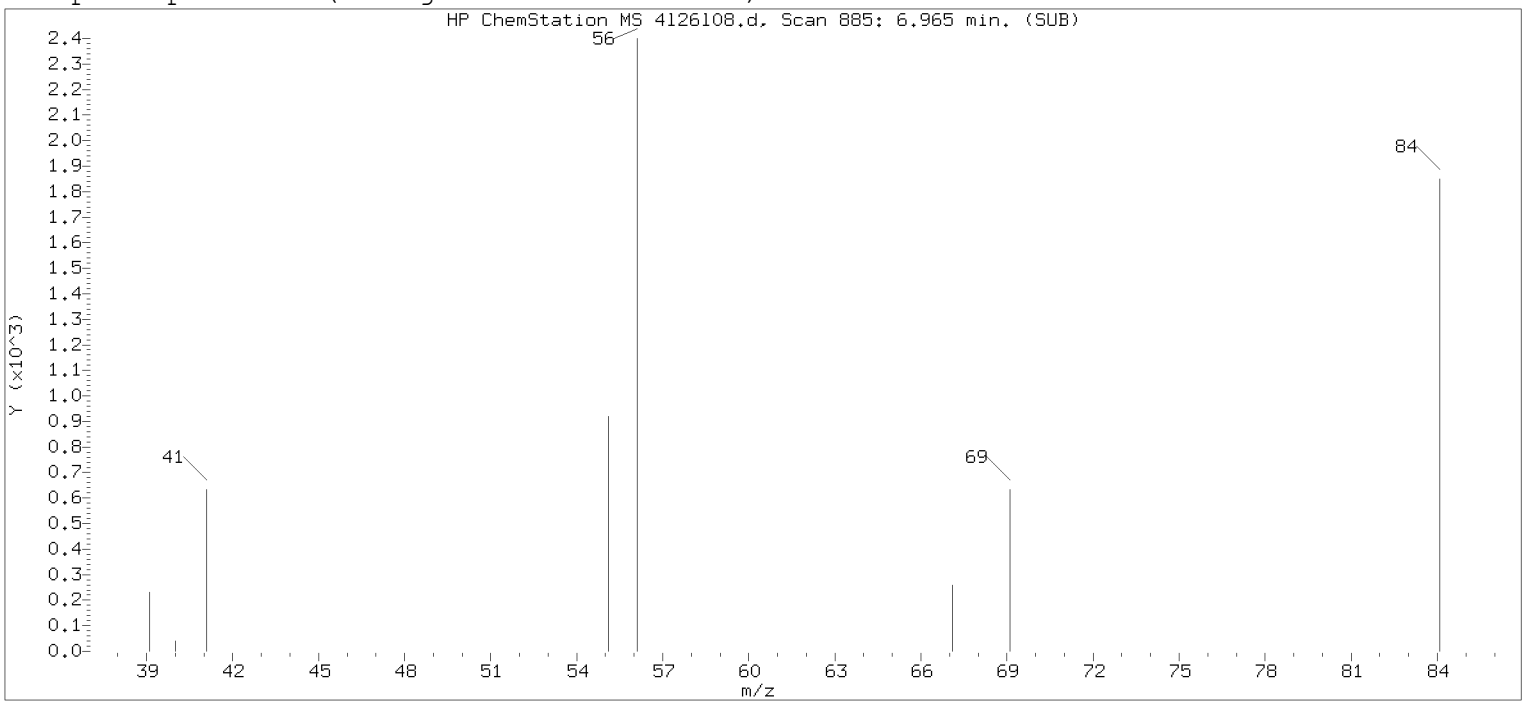
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 885
Retention Time (minutes): 6.965
Quant Ion : 84.00
Area (flag) : 6504M
On-Column Amount (ng) : 0.6405
Integration start scan : 876 Integration stop scan: 898
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

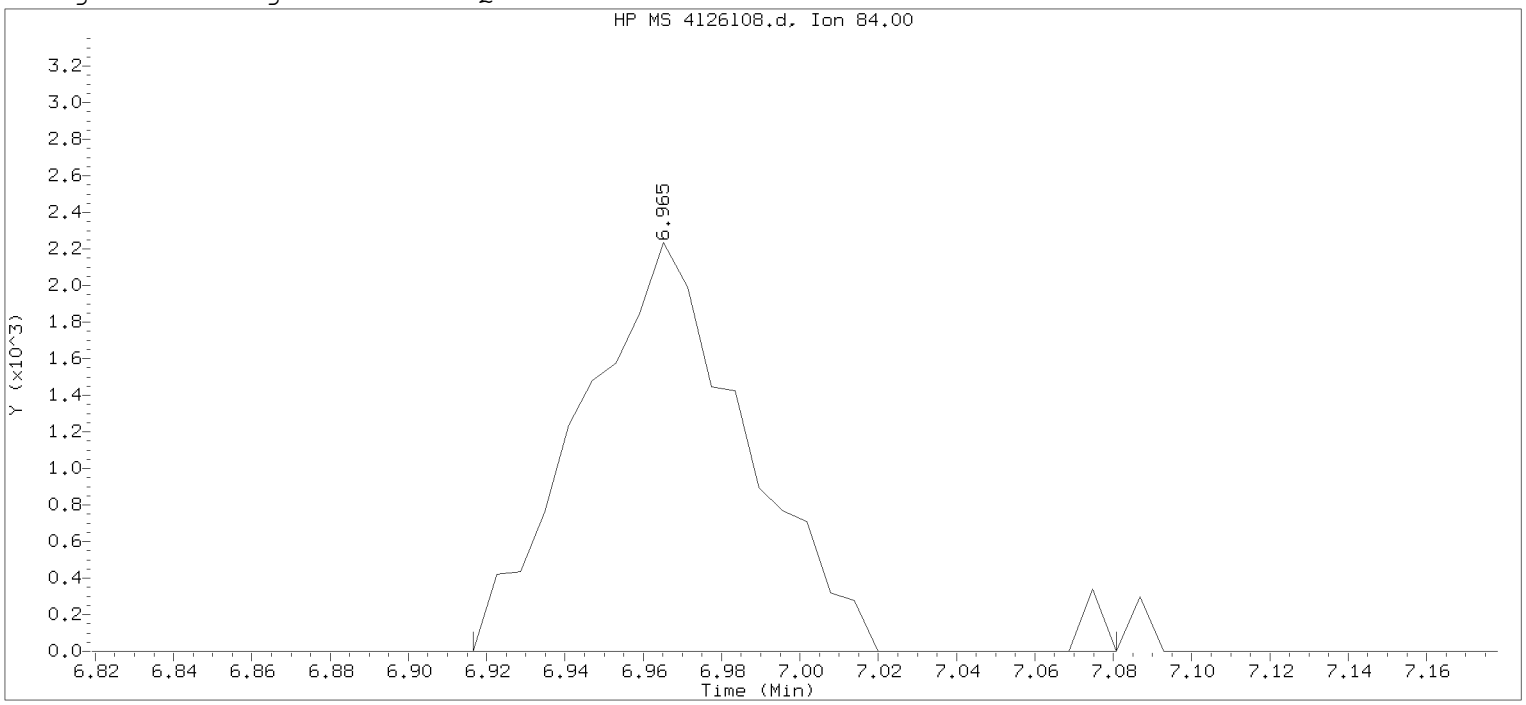
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126108.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

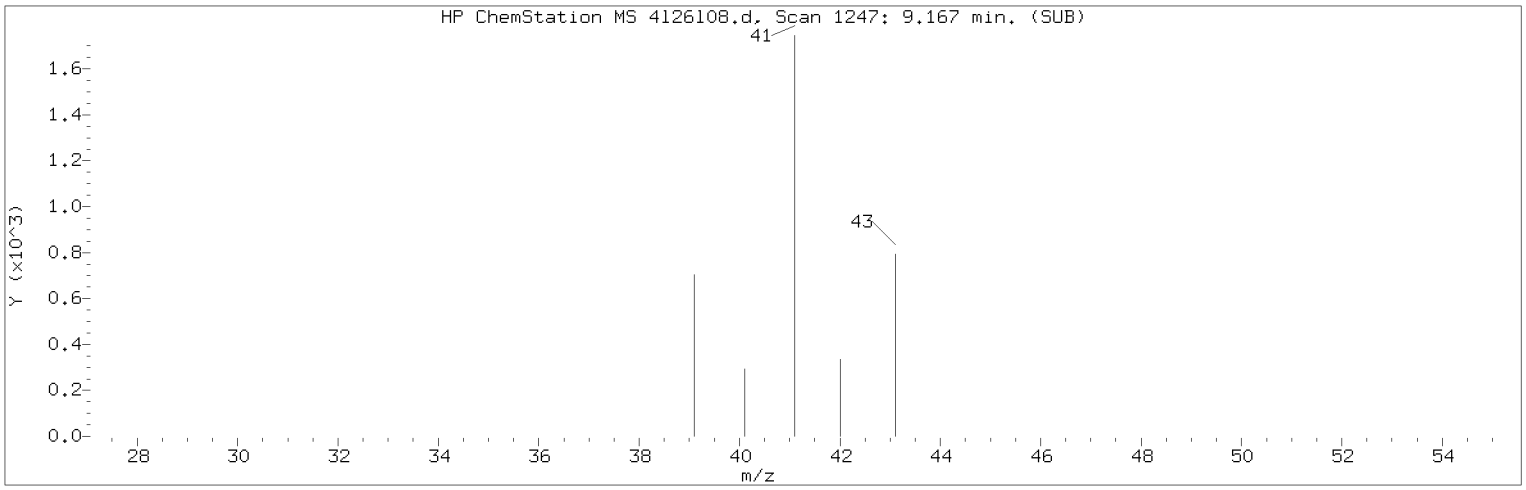
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 13:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:52 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

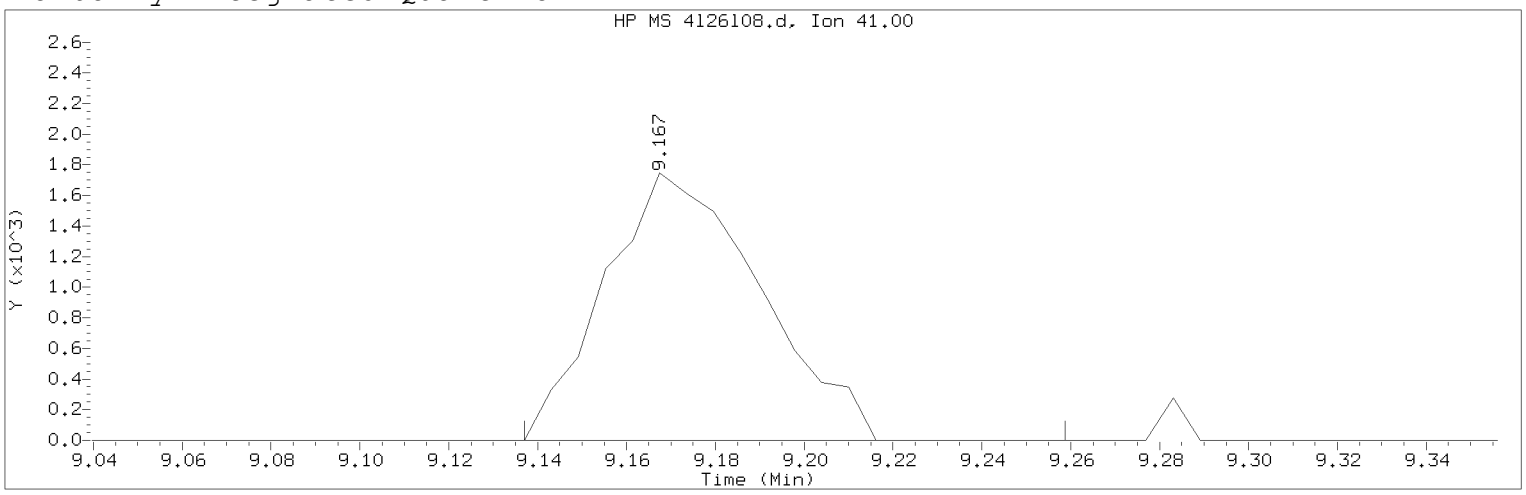
Compound Number	: 54		
Compound Name	: Cyclohexane		
Scan Number	: 885		
Retention Time (minutes)	: 6.965		
Quant Ion	: 84.00		
Area	: 6629		
On-column Amount (ng)	: 0.6894		
Integration start scan	: 876	Integration stop scan:	903
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126108.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

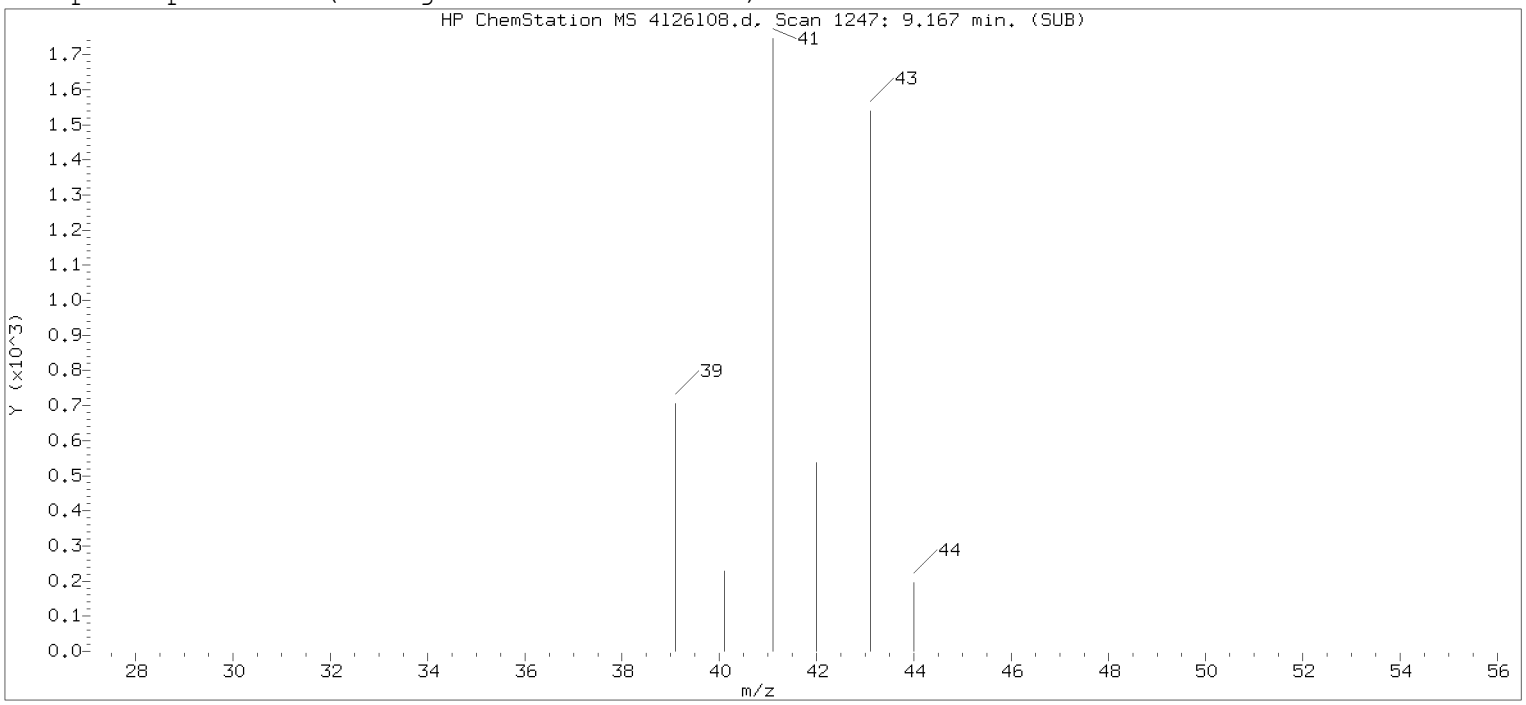
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1247
Retention Time (minutes): 9.167
Quant Ion : 41.00
Area (flag) : 4241M
On-Column Amount (ng) : 6.9300
Integration start scan : 1241 Integration stop scan: 1261
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

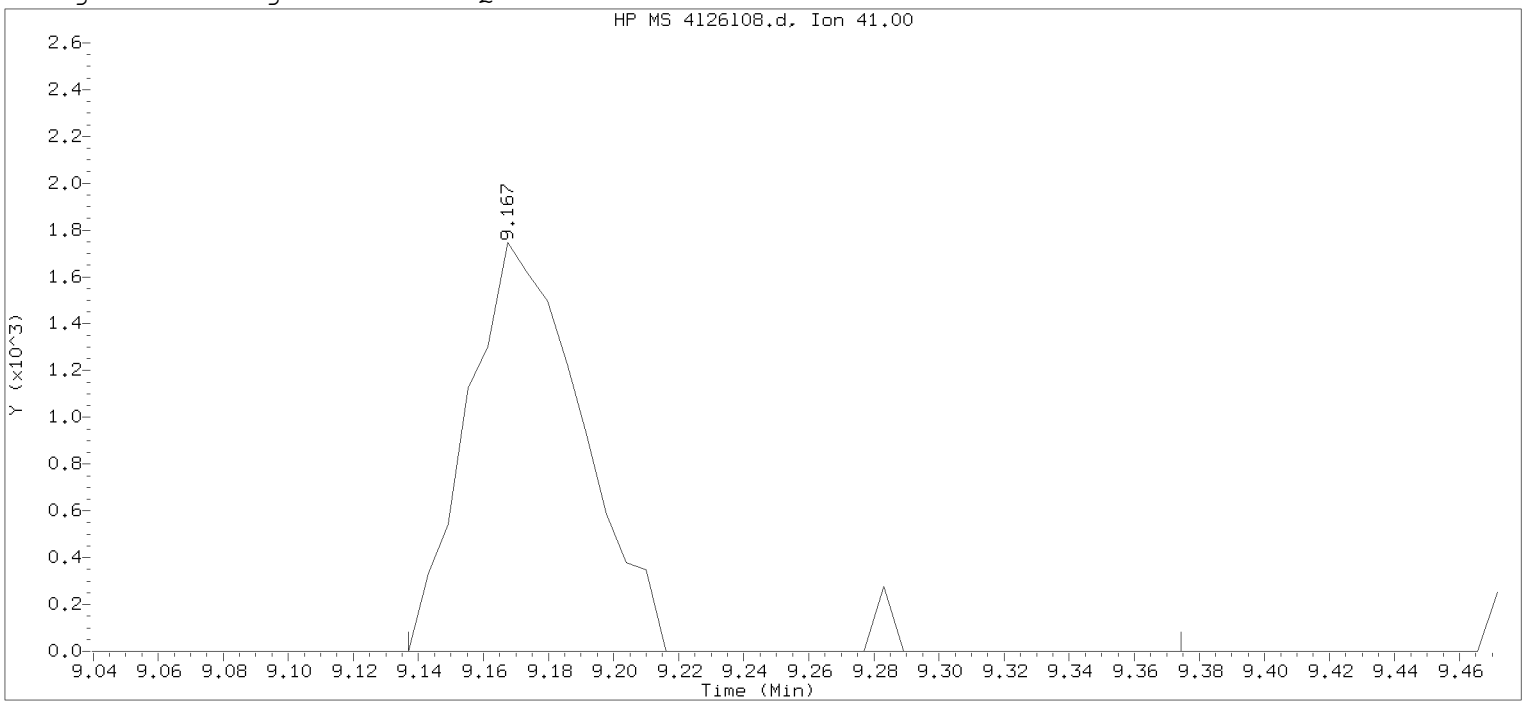
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126108.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

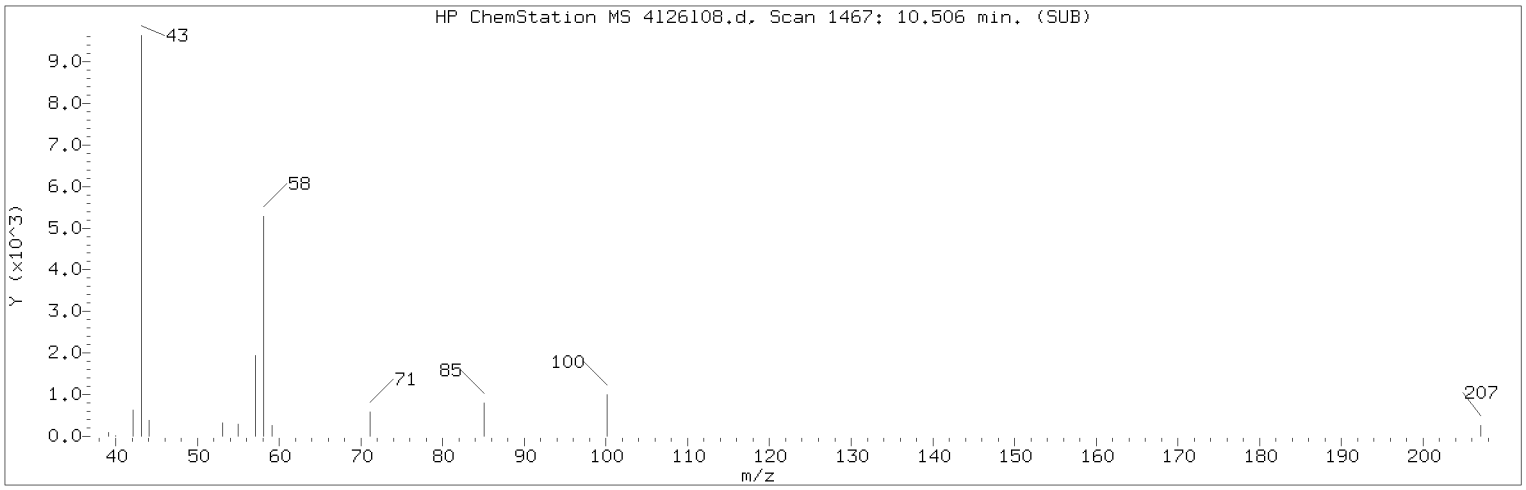
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 13:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:52 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

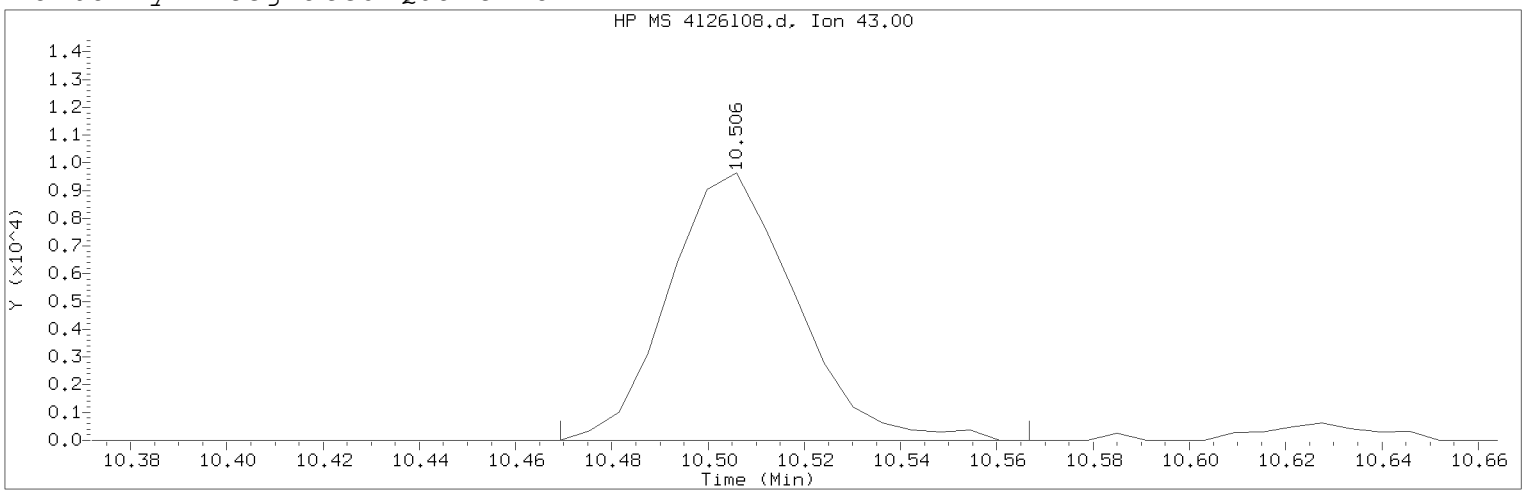
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1247
Retention Time (minutes): 9.167
Quant Ion : 41.00
Area : 4342
On-column Amount (ng) : 1.3767
Integration start scan : 1241 Integration stop scan: 1280
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

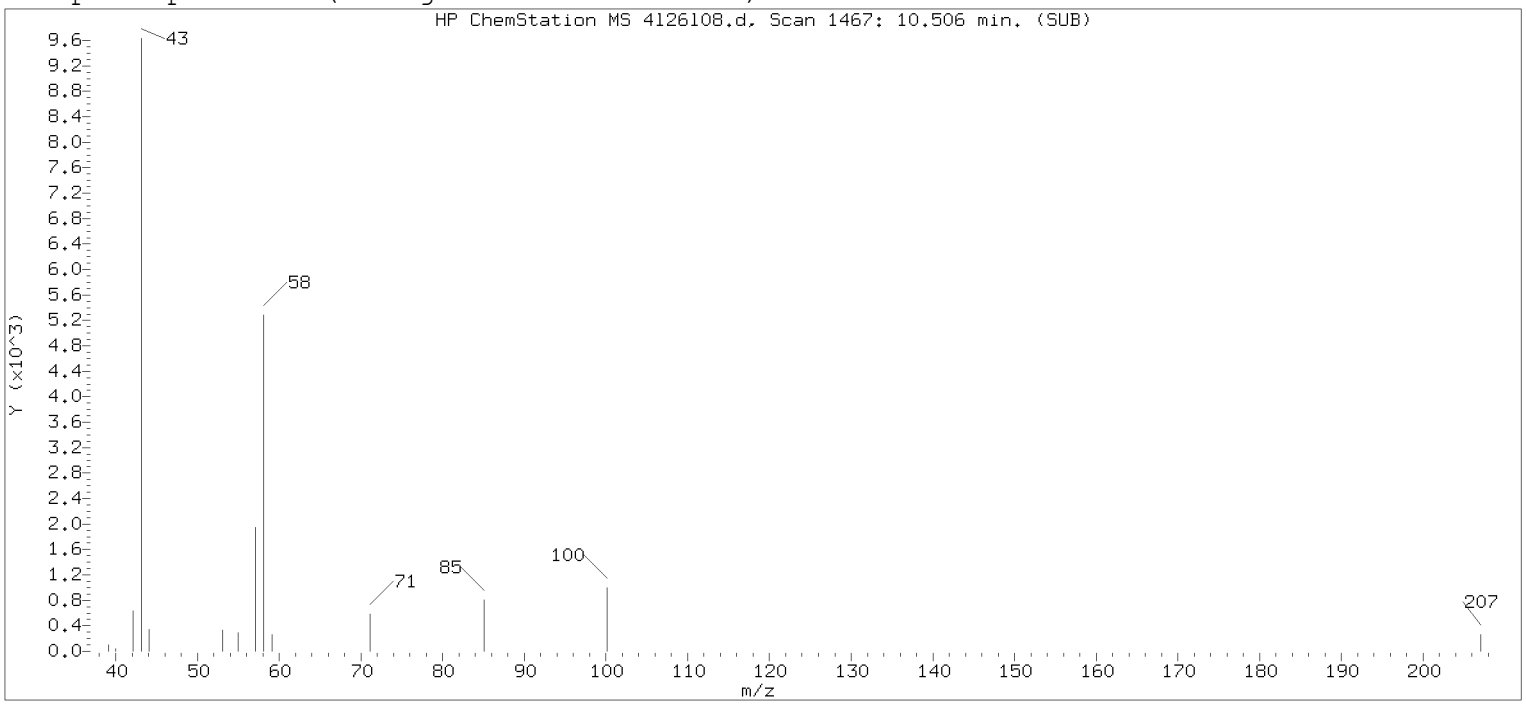
Compound Number : 97
Compound Name : 2-Hexanone
Scan Number : 1467
Retention Time (minutes): 10.506
Quant Ion : 43.00
Area (flag) : 17584M
On-Column Amount (ng) : 8.5331
Integration start scan : 1460 Integration stop scan: 1476
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

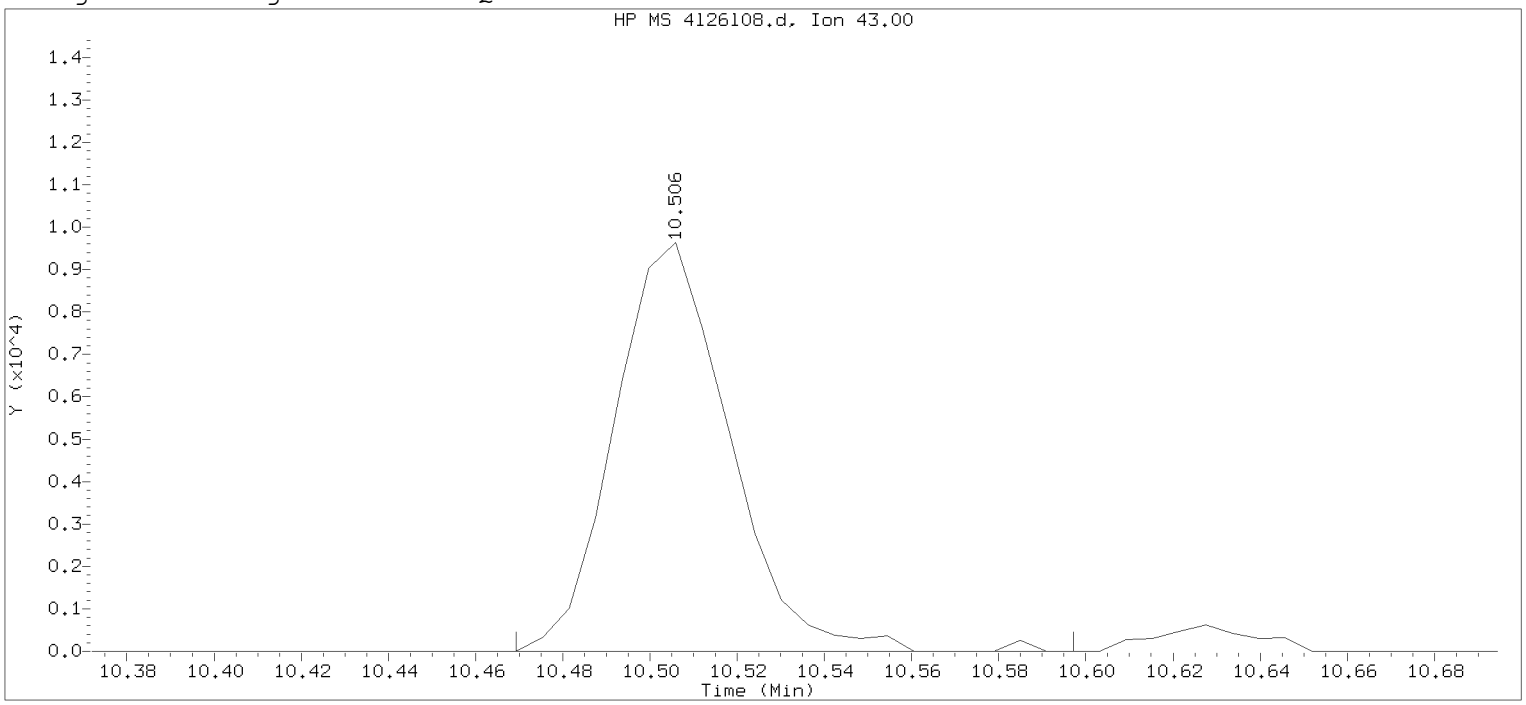
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

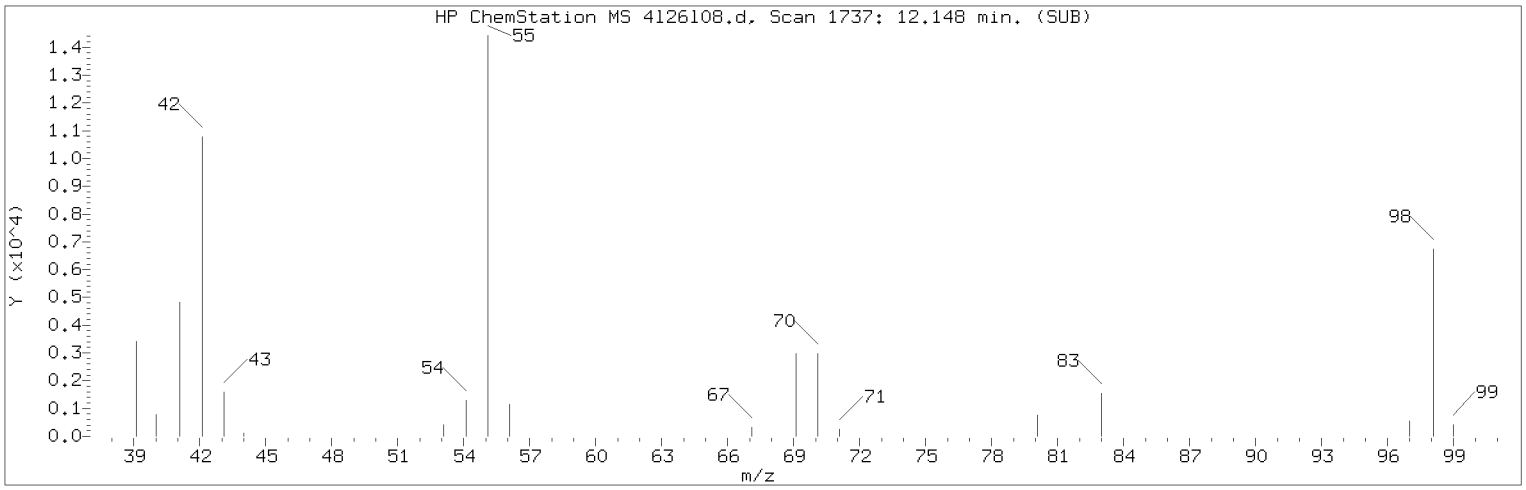
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 13:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:52 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

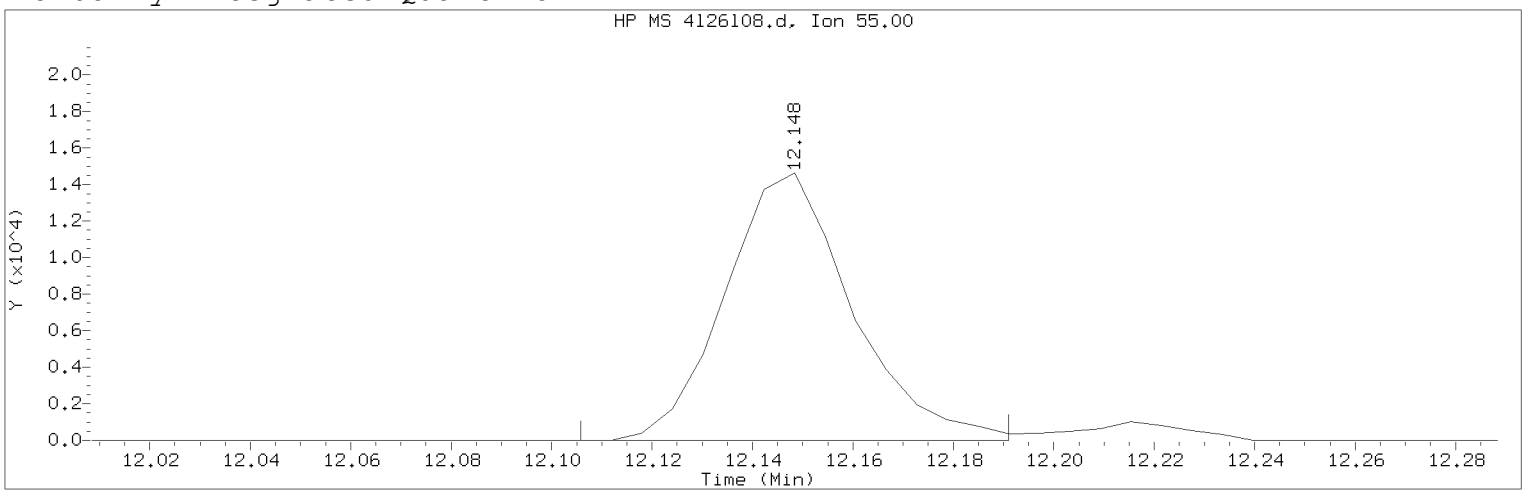
Compound Number	: 97		
Compound Name	: 2-Hexanone		
Scan Number	: 1467		
Retention Time (minutes)	: 10.506		
Quant Ion	: 43.00		
Area	: 17677		
On-column Amount (ng)	: 1.5211		
Integration start scan	: 1460	Integration stop scan:	1481
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD001 Lab Sample ID: VSTD001

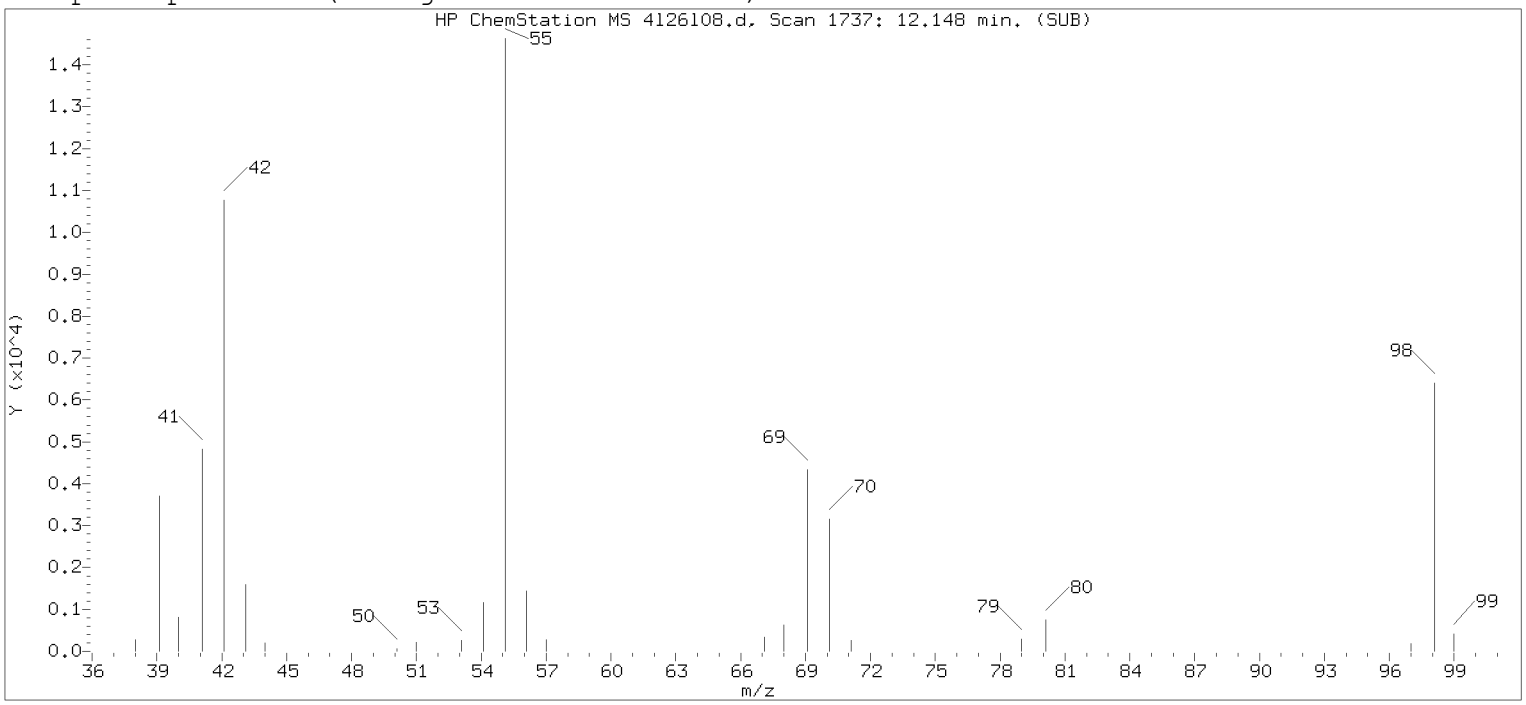
Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1737
Retention Time (minutes): 12.148
Quant Ion : 55.00
Area (flag) : 25663M
On-Column Amount (ng) : 43.6936
Integration start scan : 1729 Integration stop scan: 1743
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

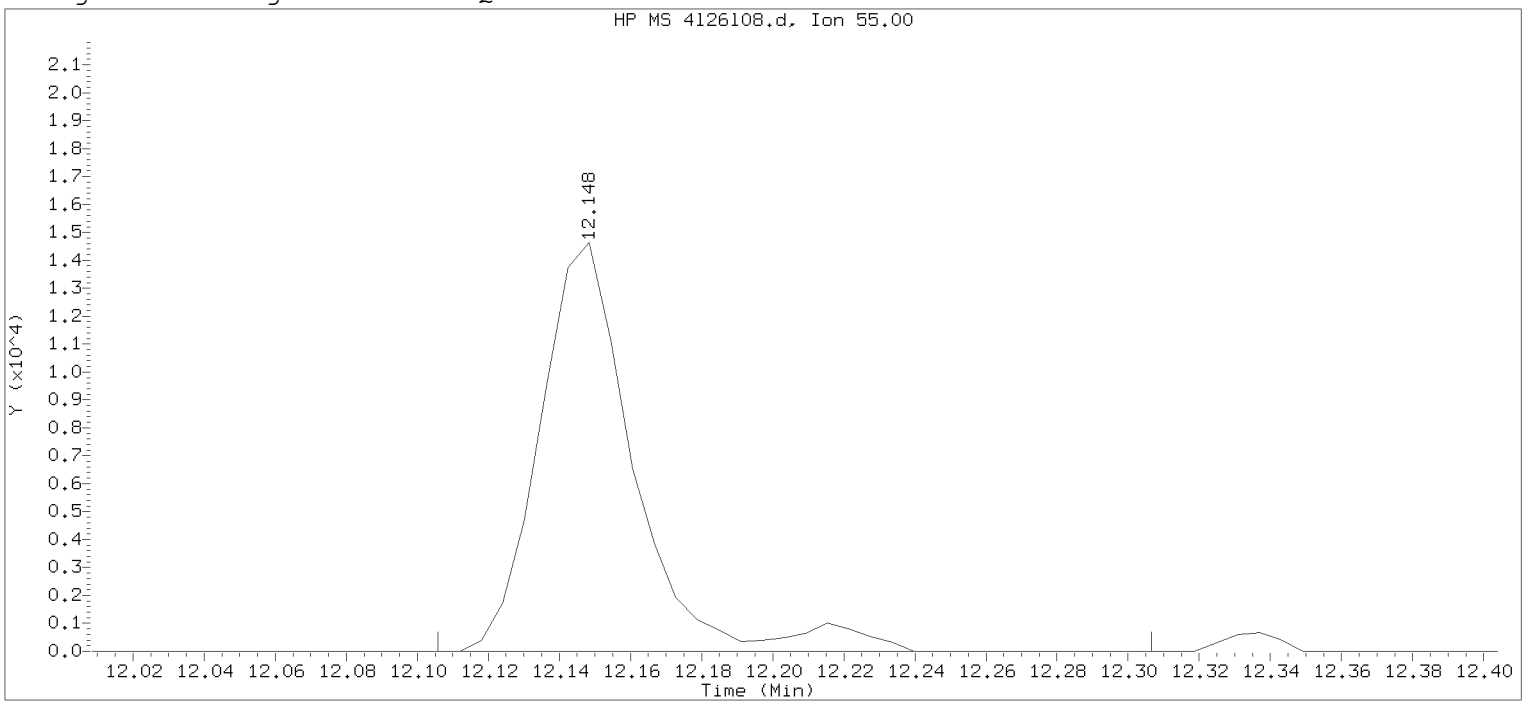
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



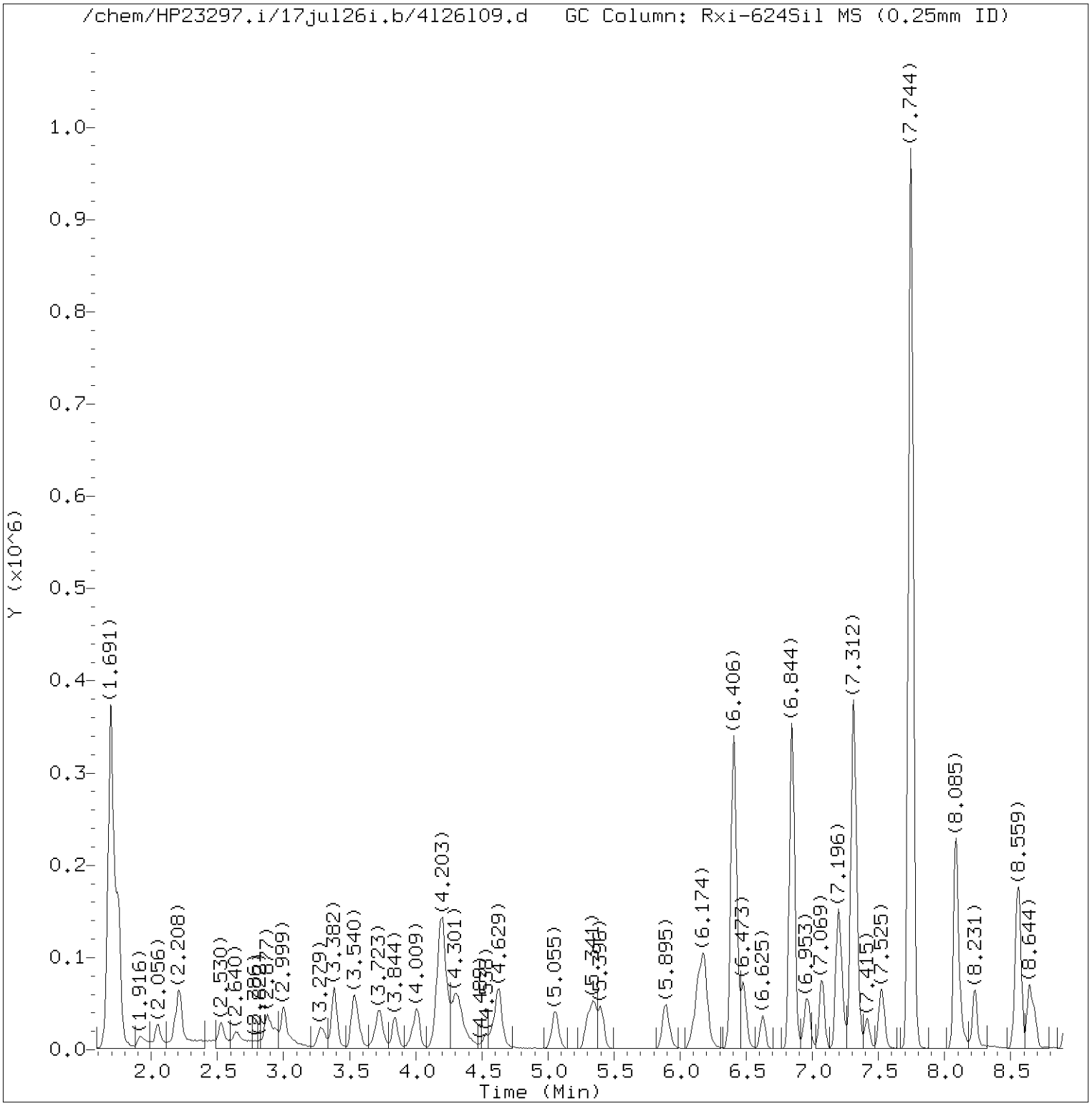
Data File: /chem/HP23297.i/17jul26i.b/4126l08.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:35 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 13:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:52 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1737
Retention Time (minutes): 12.148
Quant Ion : 55.00
Area : 27186
On-column Amount (ng) : 46.1841
Integration start scan : 1729 Integration stop scan: 1762
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.



Total Ion Chromatogram (TIC)

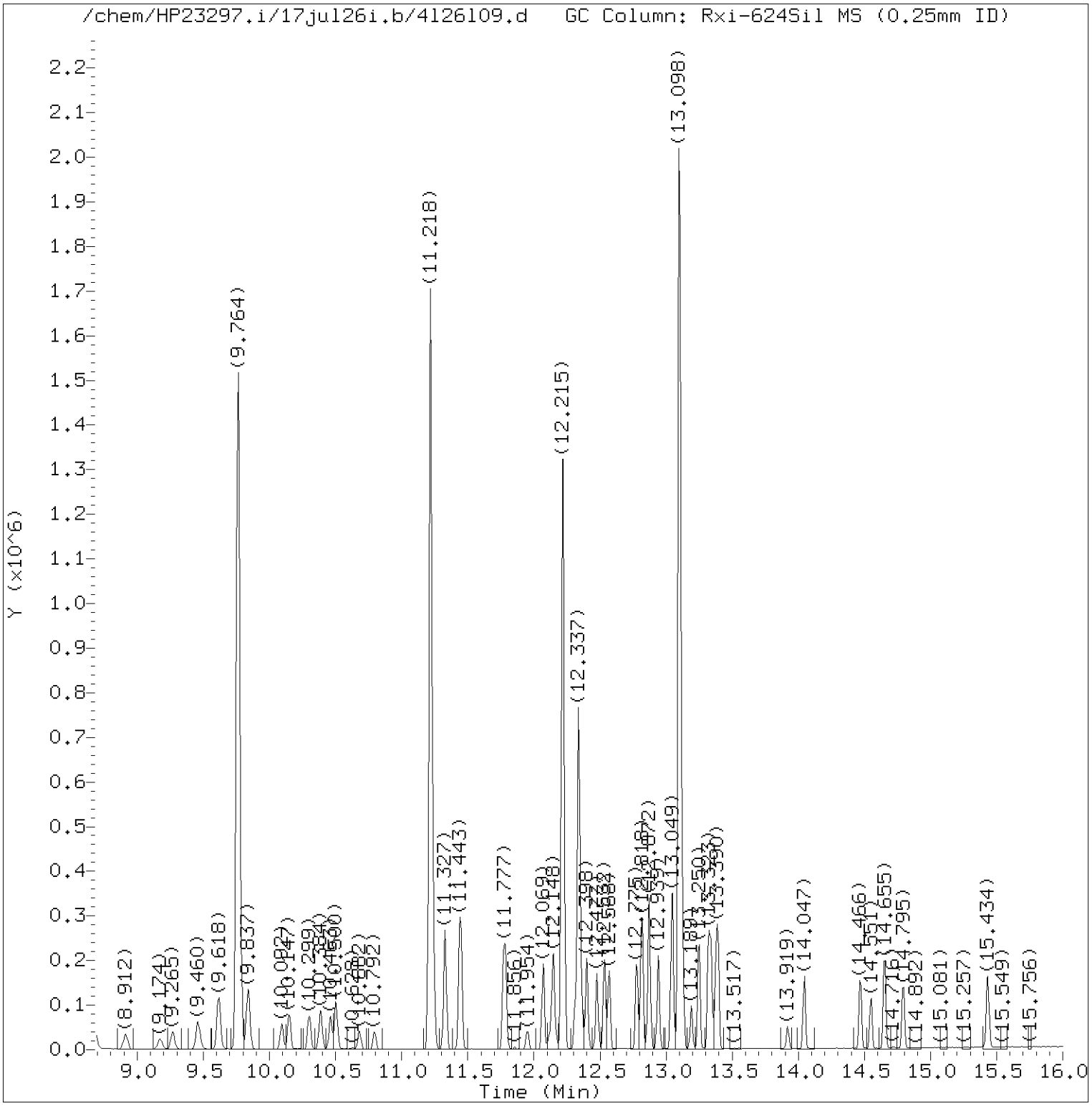
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.916	85	28209	4.390
4) Chloromethane	(2)	2.050	50	30128	4.167
6) Vinyl Chloride	(2)	2.190	62	29180	4.260
5) 1,3-Butadiene	(2)	2.214	39	37451	5.223
8) Bromomethane	(2)	2.530	94	21472	4.546
9) Chloroethane	(2)	2.640	64	16201	4.276
10) Dichlorofluoromethane	(2)	2.877	67	38059	2.949
12) Trichlorofluoromethane	(2)	2.944	101	31897	4.406
11) n-Pentane	(2)	3.005	43	52464	4.978
13) Ethanol	(1)	3.060	45	33297	231.824
15) Freon 123a	(2)	3.279	67	30566	4.736
16) Acrolein	(1)	3.382	56	95371	42.910
17) 1,1-Dichloroethene	(2)	3.528	96	21470	4.724
17) 1,1-Dichloroethene	(2)	3.528	63	10662	4.679
18) Acetone	(1)	3.546	58	9517M	8.148
19) Freon 113	(2)	3.565	101	21233	4.688
21) 2-Propanol	(1)	3.704	45	84477	85.059
22) Methyl Iodide	(2)	3.729	142	40524	4.534
23) Carbon Disulfide	(2)	3.844	76	72245	4.544
27) Methyl Acetate	(2)	3.972	43	43978	4.617
25) Allyl Chloride	(2)	4.009	41	43743	4.454
29)*t-Butyl alcohol-d10	(1)	4.185	65	356082	250.000
28) Methylene Chloride	(2)	4.203	84	27618	4.564
30) t-Butyl alcohol	(1)	4.313	59	137909	85.709
31) Acrylonitrile	(2)	4.532	53	18577	3.920
33) Methyl Tertiary Butyl Ether	(2)	4.617	73	76218	4.351
32) trans-1,2-Dichloroethene	(2)	4.629	96	25026	4.606
34) n-Hexane	(2)	5.049	57	38474	4.162
36) 1,1-Dichloroethane	(2)	5.298	63	47038	4.572
38) di-Isopropyl ether	(2)	5.341	45	89830	4.335
39) 2-Chloro-1,3-butadiene	(2)	5.402	53	38259	4.455
40) Ethyl t-butyl ether	(2)	5.888	59	76055M	4.261
44) 2-Butanone	(2)	6.095	43	54556	7.892
43) 1,2-Dichloroethene (Total)	(2)		96	53329	9.163
42) cis-1,2-Dichloroethene	(2)	6.132	96	28303	4.557
45) 2,2-Dichloropropane	(2)	6.150	77	29473	4.374
47) Propionitrile	(1)	6.180	54	172062	91.434
48) Methacrylonitrile	(2)	6.406	67	191966	42.725

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
49) Bromochloromethane	(2)	6.473	128	14882	4.538
50) Tetrahydrofuran	(1)	6.485	71	13628	8.470
51) Chloroform	(2)	6.631	83	43161	4.579
52)$Dibromofluoromethane	(2)	6.844	113	284629	50.079
52)$Dibromofluoromethane	(2)	6.844	111	291950	50.276
53) 1,1,1-Trichloroethane	(2)	6.862	97	38544	4.759
54) Cyclohexane	(2)	6.953	56	46613	4.350
54) Cyclohexane	(2)	6.965	84	36019	4.248
54) Cyclohexane	(2)	6.959	69	13469	4.292
56) Carbon Tetrachloride	(2)	7.063	117	26997M	4.366
55) 1,1-Dichloropropene	(2)	7.069	75	36172M	4.627
58) Isobutyl Alcohol	(1)	7.196	41	134578	221.034
57)$1,2-Dichloroethane-d4	(2)	7.312	102	72768	50.591
57)$1,2-Dichloroethane-d4	(2)	7.312	65	322940	50.191
57)$1,2-Dichloroethane-d4	(2)	7.306	104	45839	50.139
60) Benzene	(2)	7.336	78	108646	4.544
61) 1,2-Dichloroethane	(2)	7.415	62	34149	4.432
61) 1,2-Dichloroethane	(2)	7.415	98	3134	4.151
65) t-Amyl methyl ether	(2)	7.519	73	73332	4.252
66)*Fluorobenzene	(2)	7.744	96	1207454	50.000
67) n-Heptane	(2)	7.750	43	44375	4.366
69) n-Butanol	(1)	8.085	56	202932	418.184
71) Trichloroethene	(2)	8.231	95	26596	4.481
73) Methylcyclohexane	(2)	8.541	83	47715	4.722
73) Methylcyclohexane	(2)	8.547	98	20057	4.654
74) 1,2-Dichloropropane	(2)	8.565	63	28752	4.350
77) Methyl Methacrylate	(2)	8.638	69	28567	4.256
76) 1,4-Dioxane	(1)	8.650	88	25536	195.786
75) Dibromomethane	(2)	8.681	93	17866	4.457
79) Bromodichloromethane	(2)	8.912	83	29342	4.189
80) 2-Nitropropane	(2)	9.174	41	19013M	11.138
81) 2-Chloroethyl Vinyl Ether	(2)	9.265	63	22469	3.974
82) cis-1,3-Dichloropropene	(2)	9.453	75	38892	4.095
83) 4-Methyl-2-pentanone	(2)	9.618	43	98598	7.603
84)$Toluene-d8	(3)	9.764	98	1194235	50.624
84)$Toluene-d8	(3)	9.764	100	774514	50.570
89) Toluene	(3)	9.843	92	67048	4.489
91) 1,3-Dichloropropene (total)	(3)		100	72081	8.050

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) trans-1,3-Dichloropropene	(3)	10.092	75	33189	3.954
92) Ethyl Methacrylate	(3)	10.147	69	43271	4.174
93) 1,1,2-Trichloroethane	(3)	10.299	97	26720	4.398
94) Tetrachloroethene	(3)	10.390	166	31275	4.743
95) 1,3-Dichloropropane	(3)	10.463	76	44566	4.417
97) 2-Hexanone	(3)	10.500	43	75364	12.304
98) Dibromochloromethane	(3)	10.682	129	24062	4.116
100) 1,2-Dibromoethane	(3)	10.792	107	28028	4.332
101)*Chlorobenzene-d5	(3)	11.218	117	895359	50.000
103) Chlorobenzene	(3)	11.242	112	77029	4.506
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	23815	4.308
105) Ethylbenzene	(3)	11.327	91	123497	4.394
107) m+p-Xylene	(3)	11.443	106	97865	8.699
109) Xylene (Total)	(3)		106	145486	12.970
108) o-Xylene	(3)	11.771	106	47621	4.272
110) Styrene	(3)	11.790	104	79395	4.272
111) Bromoform	(3)	11.954	173	18766	4.015
112) Isopropylbenzene	(3)	12.069	105	118693	4.304
113) Cyclohexanone	(1)	12.148	55	95267M	201.407
115)$4-Bromofluorobenzene	(3)	12.215	95	420578	50.133
115)$4-Bromofluorobenzene	(3)	12.221	174	384898	50.462
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	50553	4.674
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	119131	43.335
116) Bromobenzene	(4)	12.337	156	35211	4.494
118) 1,2,3-Trichloropropane	(4)	12.361	110	14549	4.687
120) n-Propylbenzene	(4)	12.398	91	149082	4.474
121) 2-Chlorotoluene	(4)	12.477	126	31280	4.521
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	100617	4.306
122) 4-Chlorotoluene	(4)	12.568	126	32843	4.486
125) tert-Butylbenzene	(4)	12.775	134	20318M	4.204
126) Pentachloroethane	(4)	12.812	167	17724	4.142
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	103910	4.279
128) sec-Butylbenzene	(4)	12.939	105	135904	4.424
130) 1,3-Dichlorobenzene	(4)	13.043	146	64792	4.405
131) p-Isopropyltoluene	(4)	13.049	119	113751	4.287
132)*1,4-Dichlorobenzene-d4	(4)	13.098	152	493158	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	67103	4.397
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	115297	4.536

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on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

	Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
136)	Benzyl Chloride	(4)	13.189	91	62372	3.534
137)	1,3-Diethylbenzene	(4)	13.250	119	72034	4.508
138)	1,4-Diethylbenzene	(4)	13.323	119	75982	4.566
140)	n-Butylbenzene	(4)	13.341	92	60290	4.366
139)	1,2-Dichlorobenzene	(4)	13.377	146	63392	4.382
141)	1,2-Diethylbenzene	(4)	13.390	119	59895	4.461
142)	Diethylbenzene (total)	(4)		100	207911	13.535
143)	1,2-Dibromo-3-chloropropane	(4)	13.919	75	9800	3.941
145)	1,3,5-Trichlorobenzene	(4)	14.047	180	48694	4.339
147)	1,2,4-Trichlorobenzene	(4)	14.466	180	45168	4.116
148)	Hexachlorobutadiene	(4)	14.551	225	21144	4.150
149)	Naphthalene	(4)	14.655	128	148852	4.146
150)	1,2,3-Trichlorobenzene	(4)	14.795	180	43605	4.127
151)	2-Methylnaphthalene	(4)	15.434	142	80560	3.615

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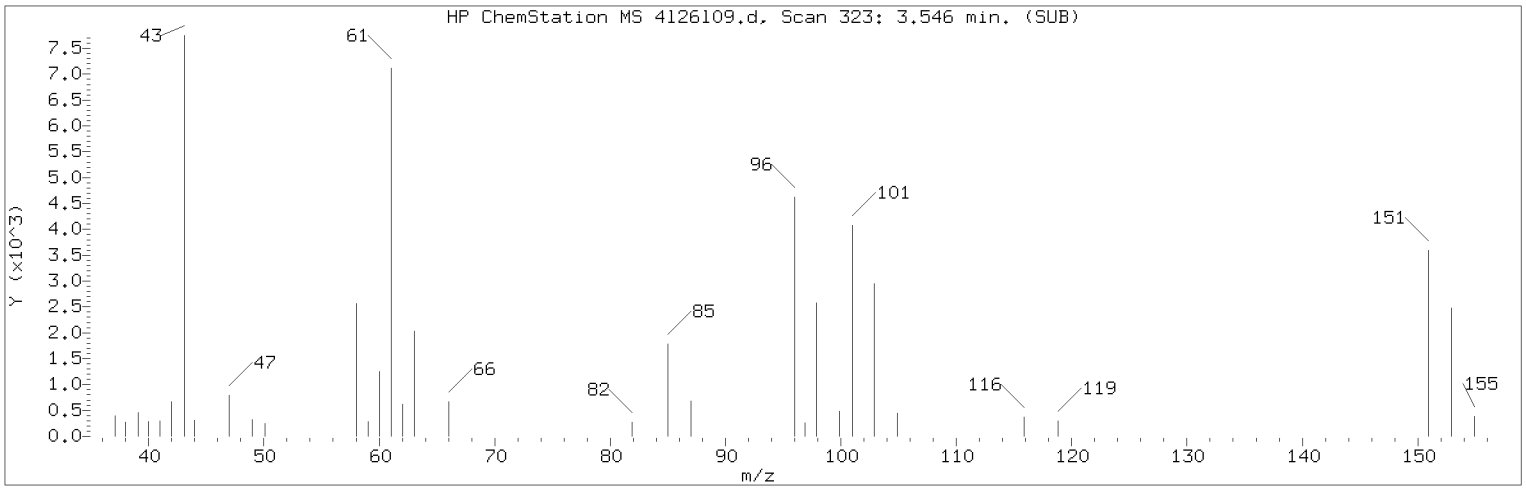
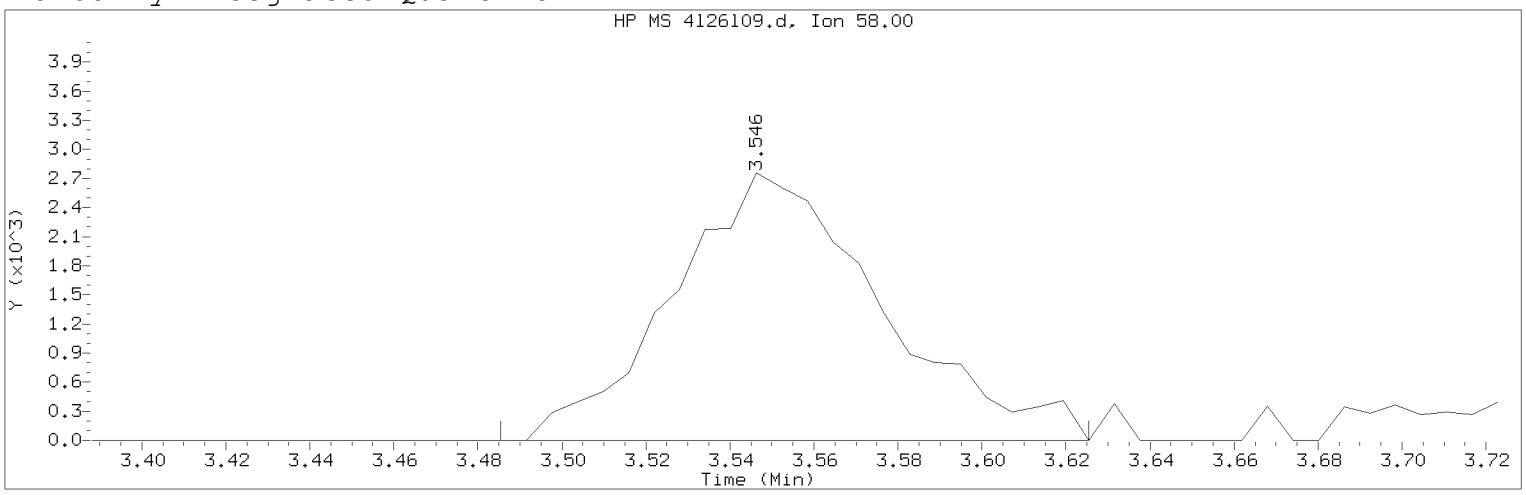
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

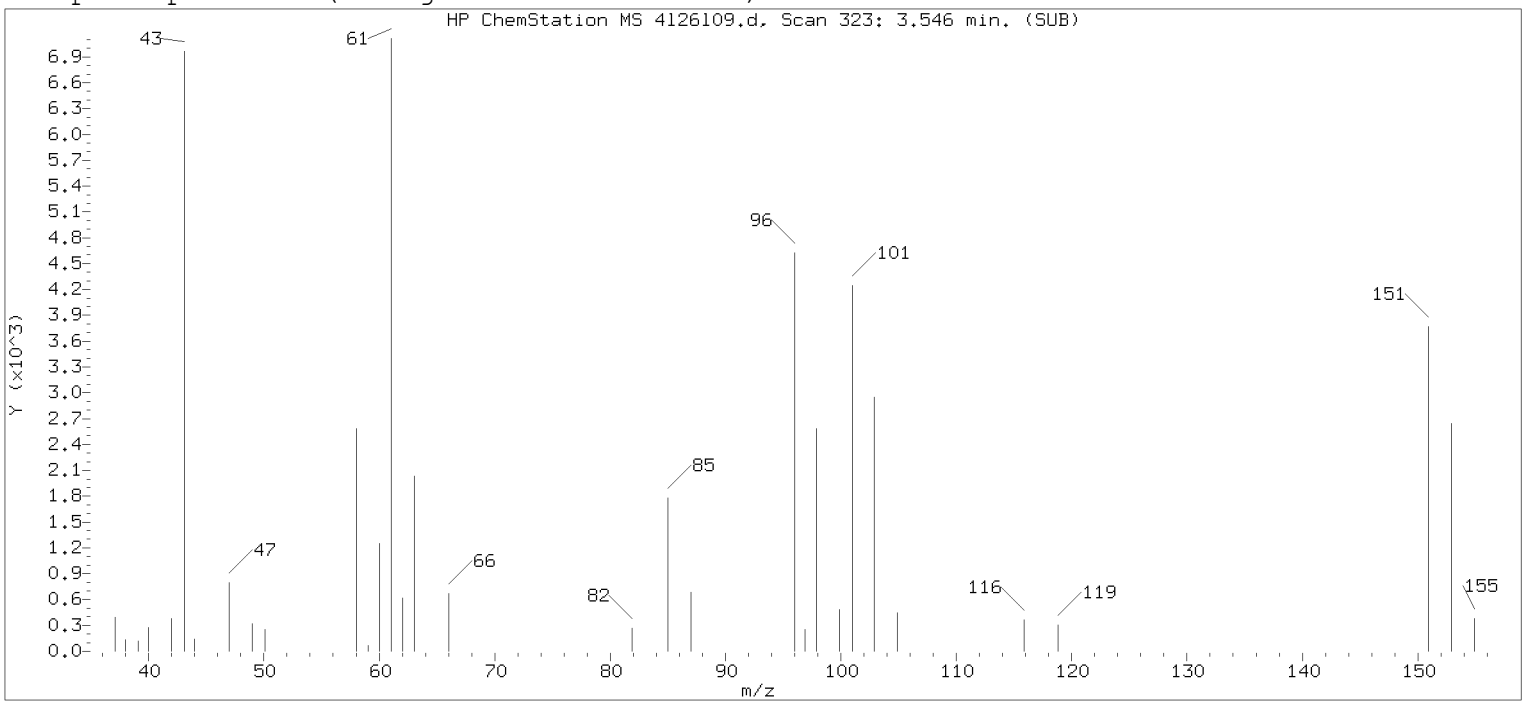
Compound Number : 18
Compound Name : Acetone
Scan Number : 323
Retention Time (minutes): 3.546
Quant Ion : 58.00
Area (flag) : 9517M
On-Column Amount (ng) : 8.1482
Integration start scan : 312 Integration stop scan: 335
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

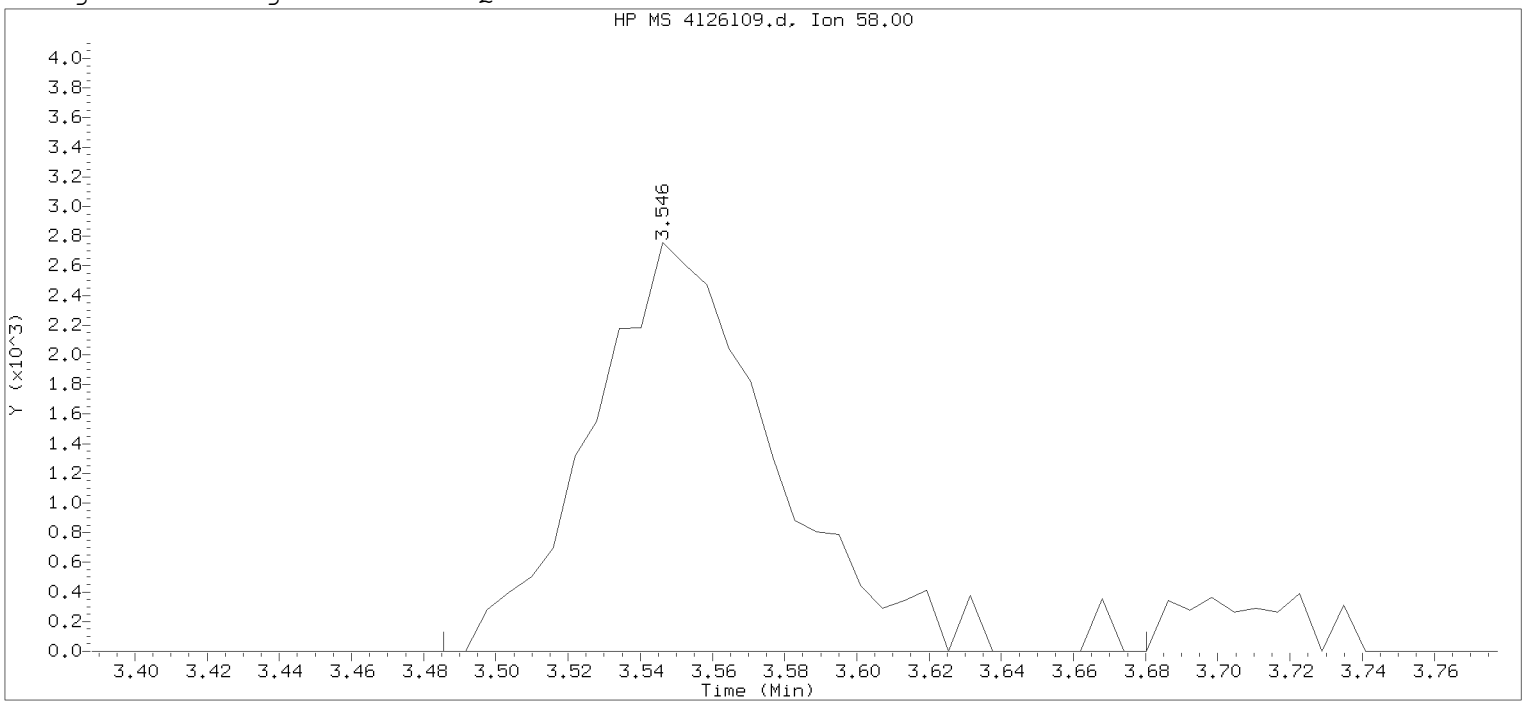
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

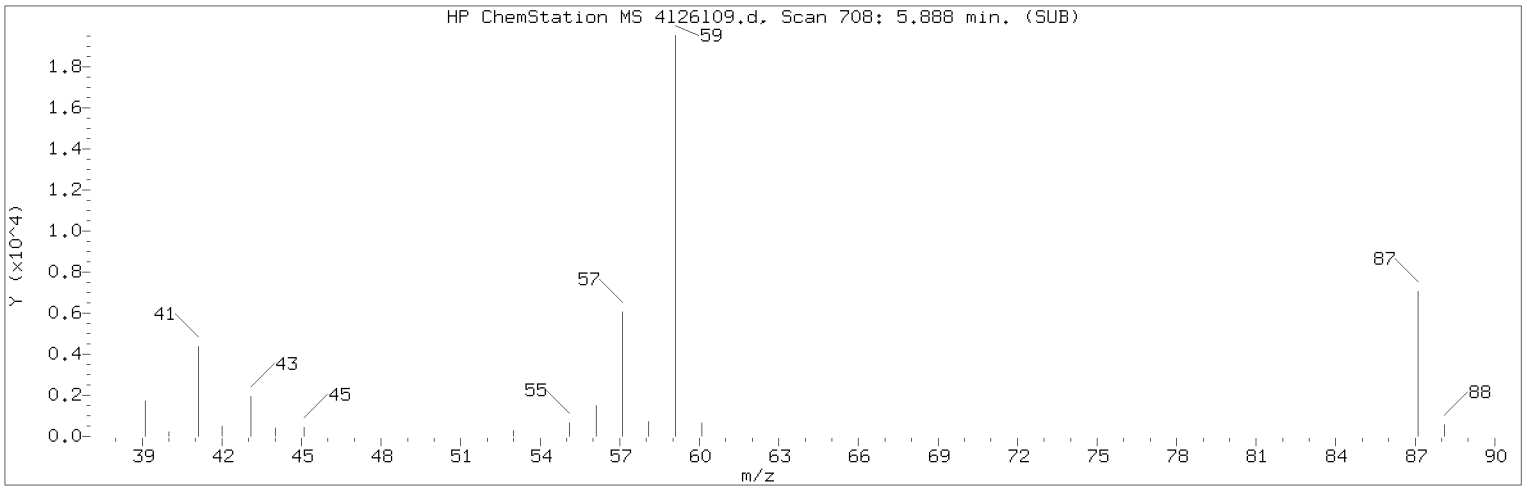
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 17:20
Date, time and analyst ID of latest file update: 26-Jul-2017 17:20 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

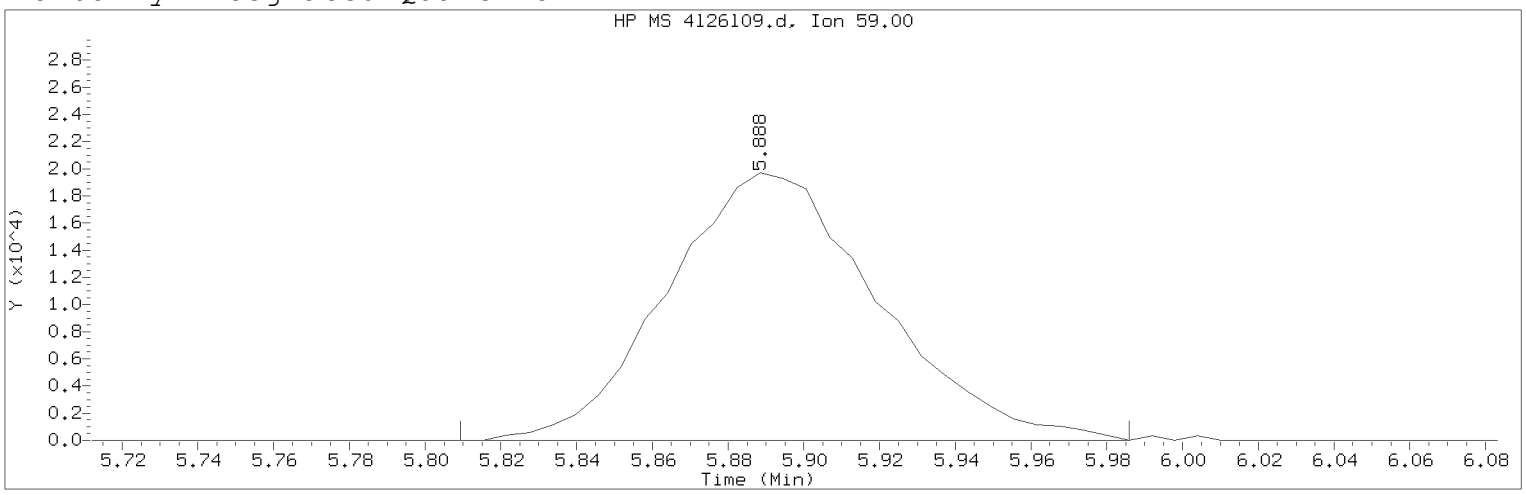
Compound Number	: 18		
Compound Name	: Acetone		
Scan Number	: 323		
Retention Time (minutes)	: 3.546		
Quant Ion	: 58.00		
Area	: 9783		
On-column Amount (ng)	: 8.3423		
Integration start scan	: 312	Integration stop scan:	344
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

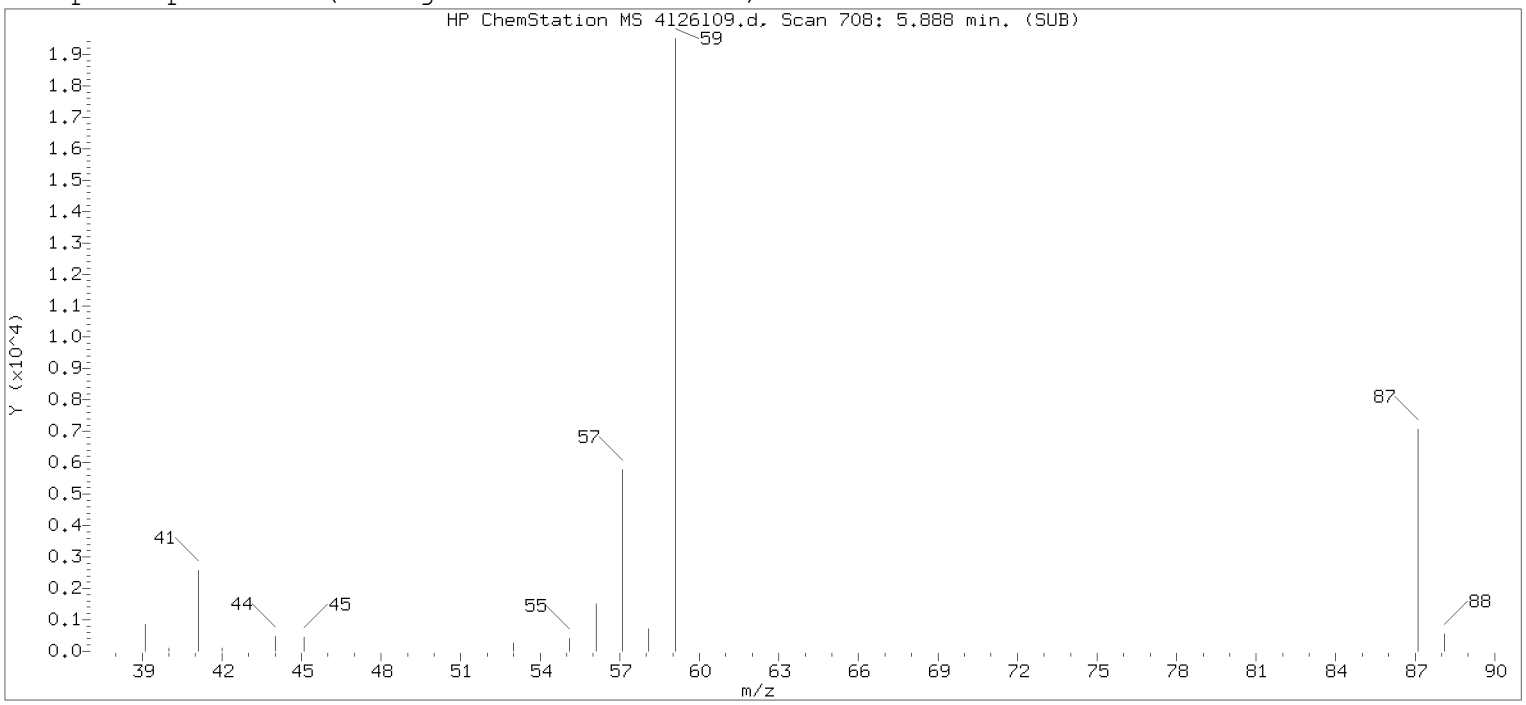
Compound Number : 40
Compound Name : Ethyl t-butyl ether
Scan Number : 708
Retention Time (minutes): 5.888
Quant Ion : 59.00
Area (flag) : 76055M
On-Column Amount (ng) : 4.2613
Integration start scan : 694 Integration stop scan: 723
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

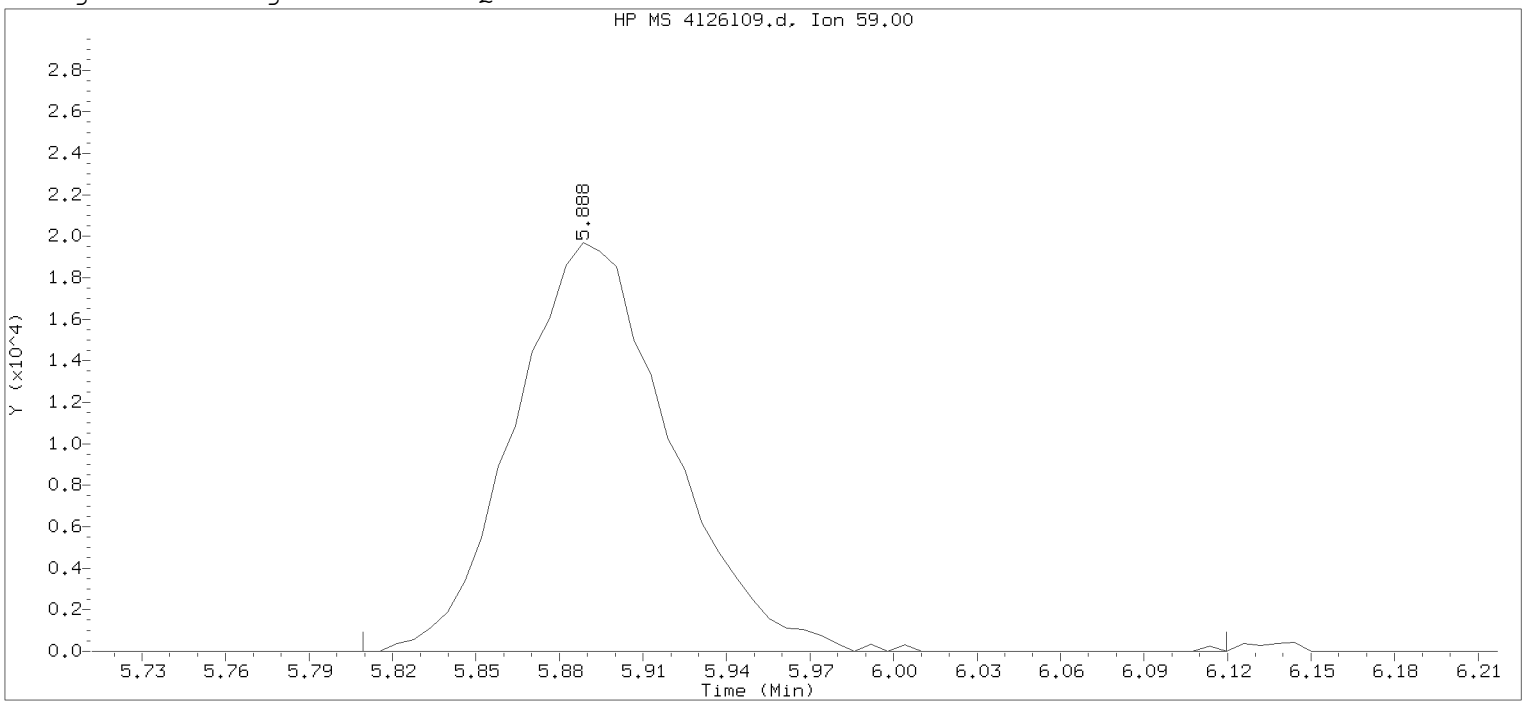
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

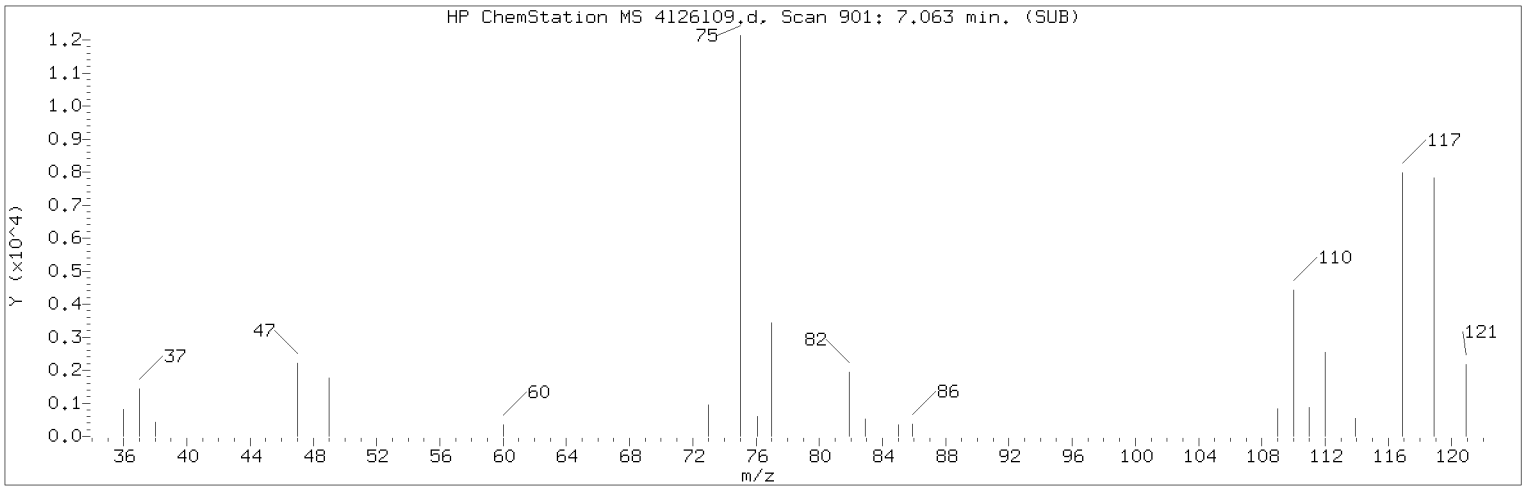
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 17:20
Date, time and analyst ID of latest file update: 26-Jul-2017 17:20 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

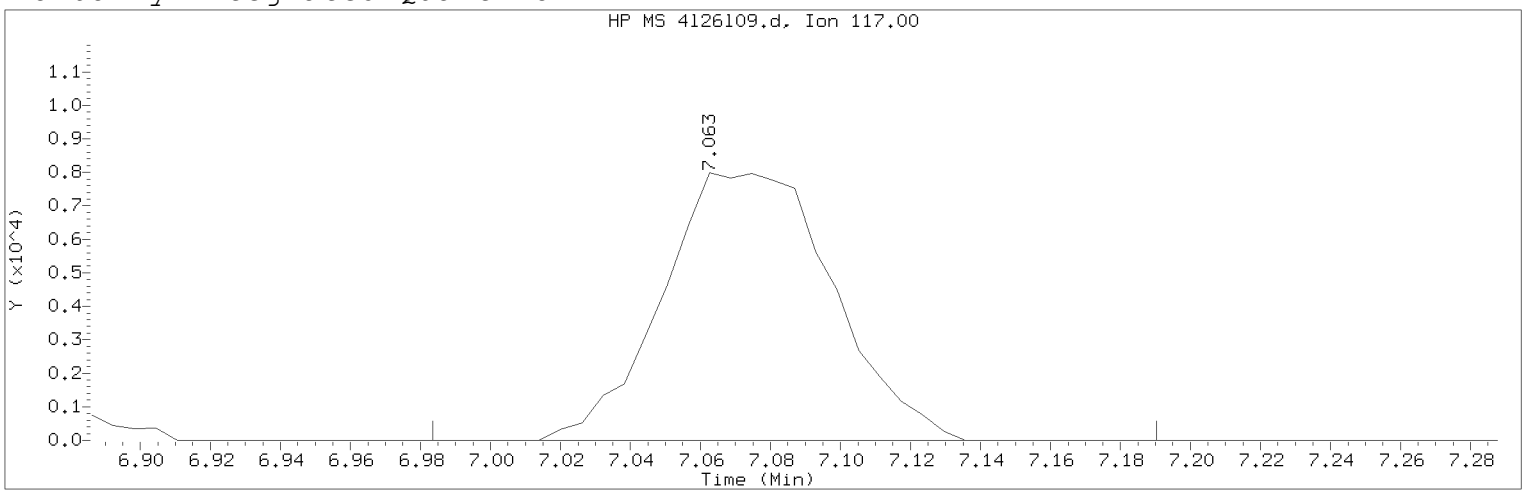
Compound Number : 40
Compound Name : Ethyl t-butyl ether
Scan Number : 708
Retention Time (minutes): 5.888
Quant Ion : 59.00
Area : 76388
On-column Amount (ng) : 4.2771
Integration start scan : 694 Integration stop scan: 745
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved 07/27/2017

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

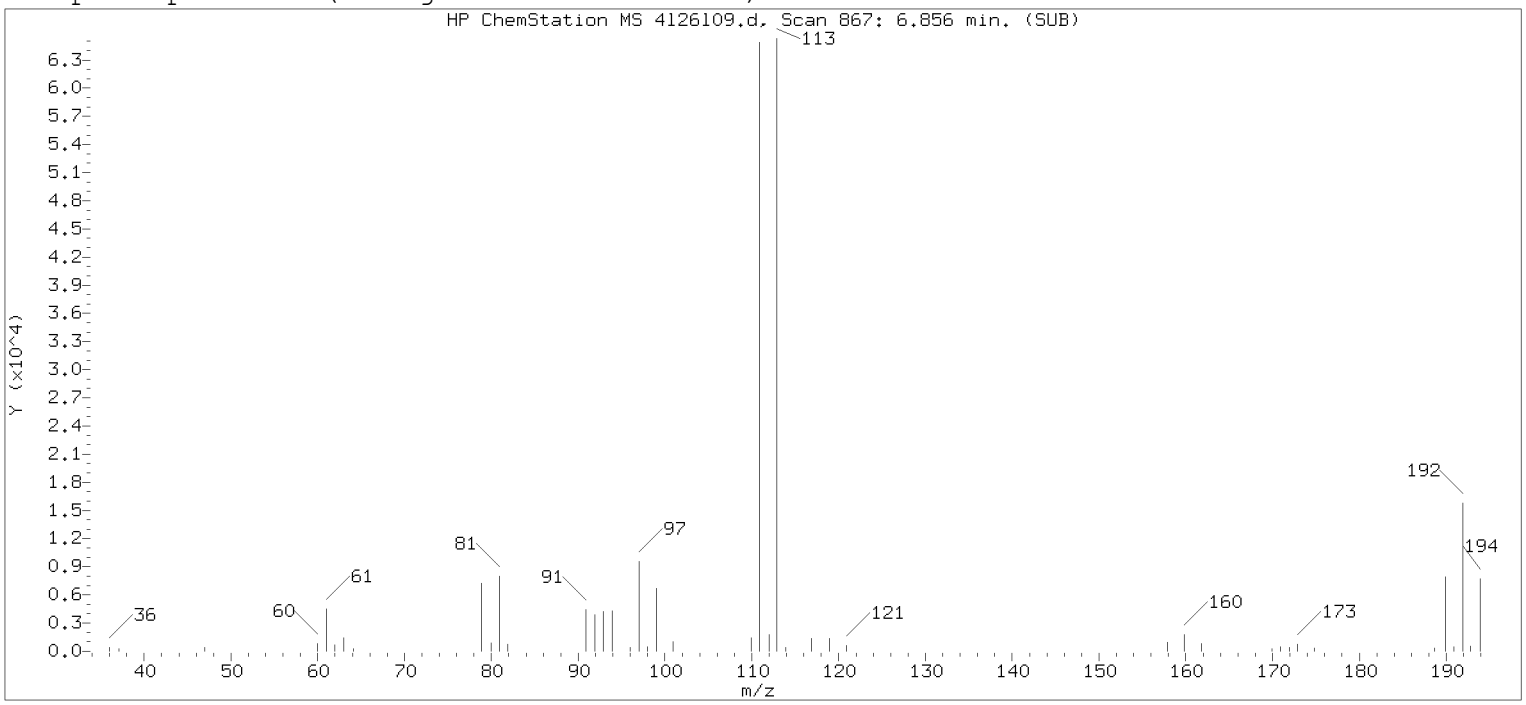
Compound Number : 56
Compound Name : Carbon Tetrachloride
Scan Number : 901
Retention Time (minutes): 7.063
Quant Ion : 117.00
Area (flag) : 26997M
On-Column Amount (ng) : 4.3664
Integration start scan : 887 Integration stop scan: 921
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

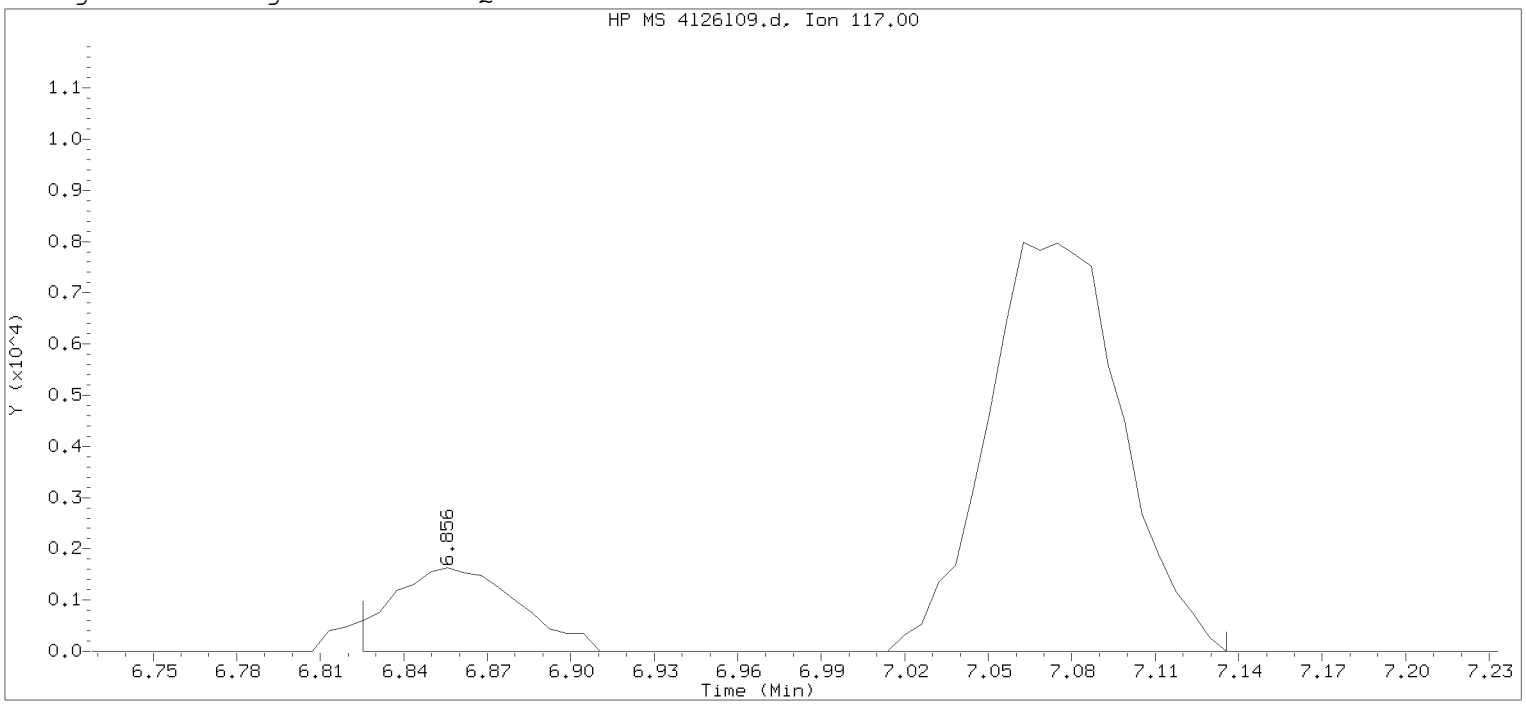
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126109.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

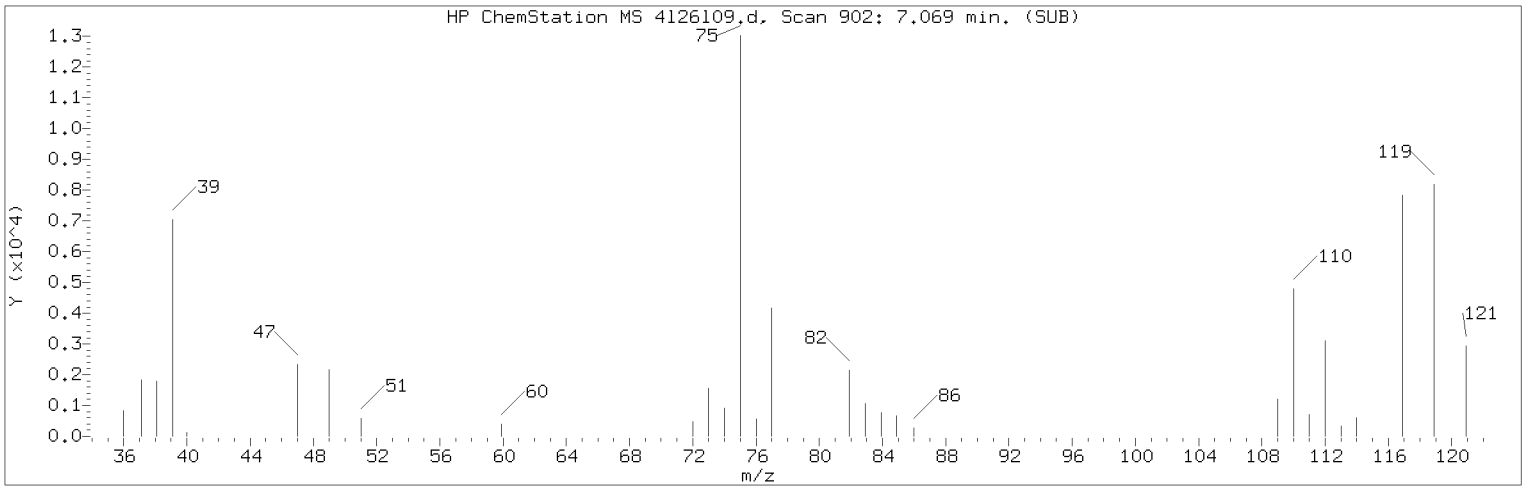
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 17:20
Date, time and analyst ID of latest file update: 26-Jul-2017 17:20 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

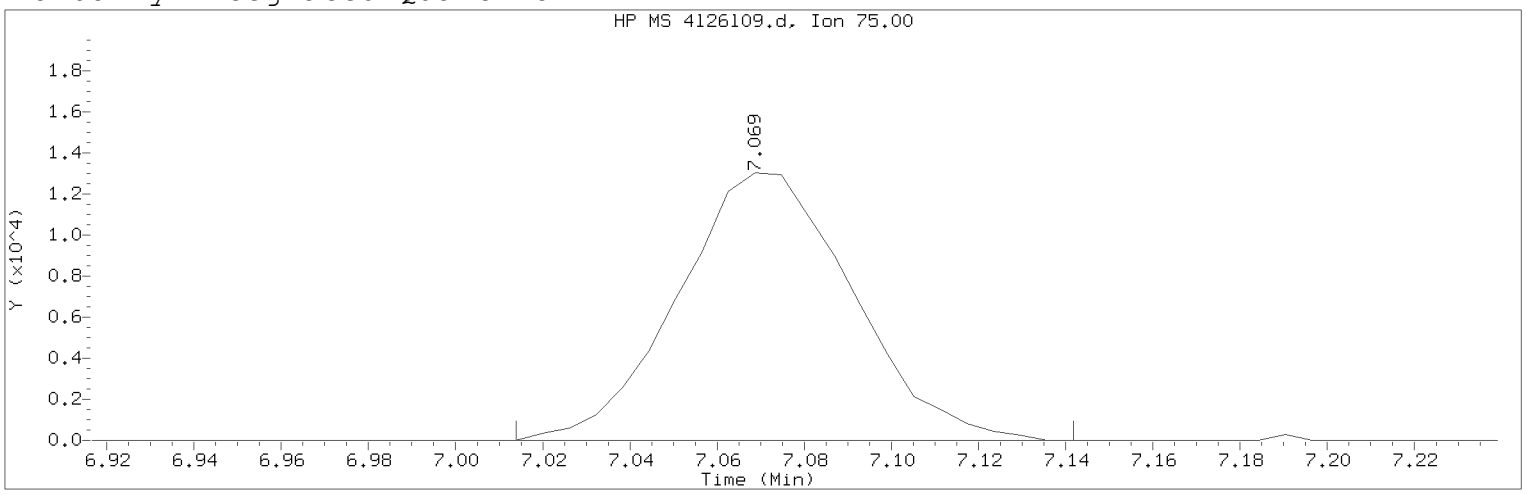
Compound Number : 56
Compound Name : Carbon Tetrachloride
Scan Number : 867
Retention Time (minutes): 6.856
Quant Ion : 117.00
Area : 32069
On-column Amount (ng) : 5.0391
Integration start scan : 861 Integration stop scan: 912
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

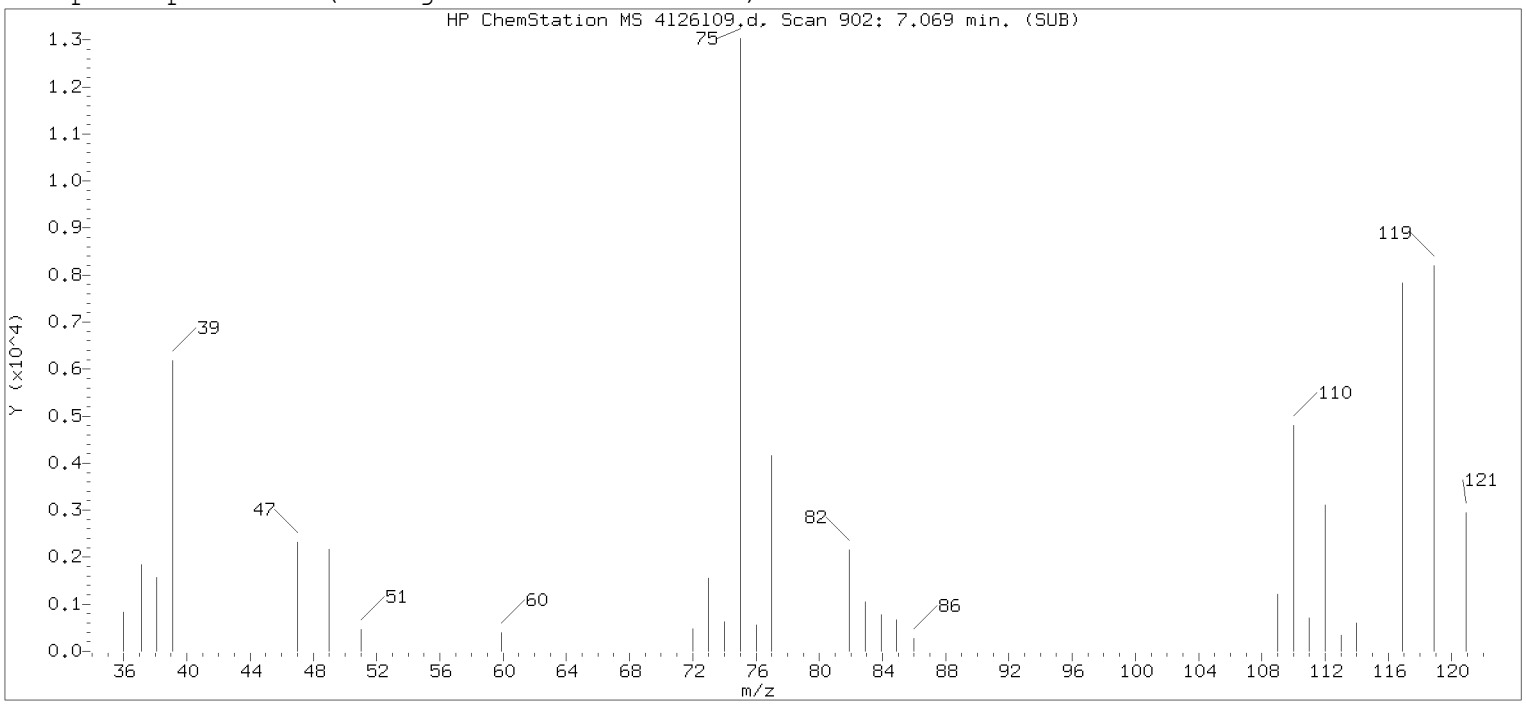
Compound Number : 55
Compound Name : 1,1-Dichloropropene
Scan Number : 902
Retention Time (minutes): 7.069
Quant Ion : 75.00
Area (flag) : 36172M
On-Column Amount (ng) : 4.6273
Integration start scan : 892 Integration stop scan: 913
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

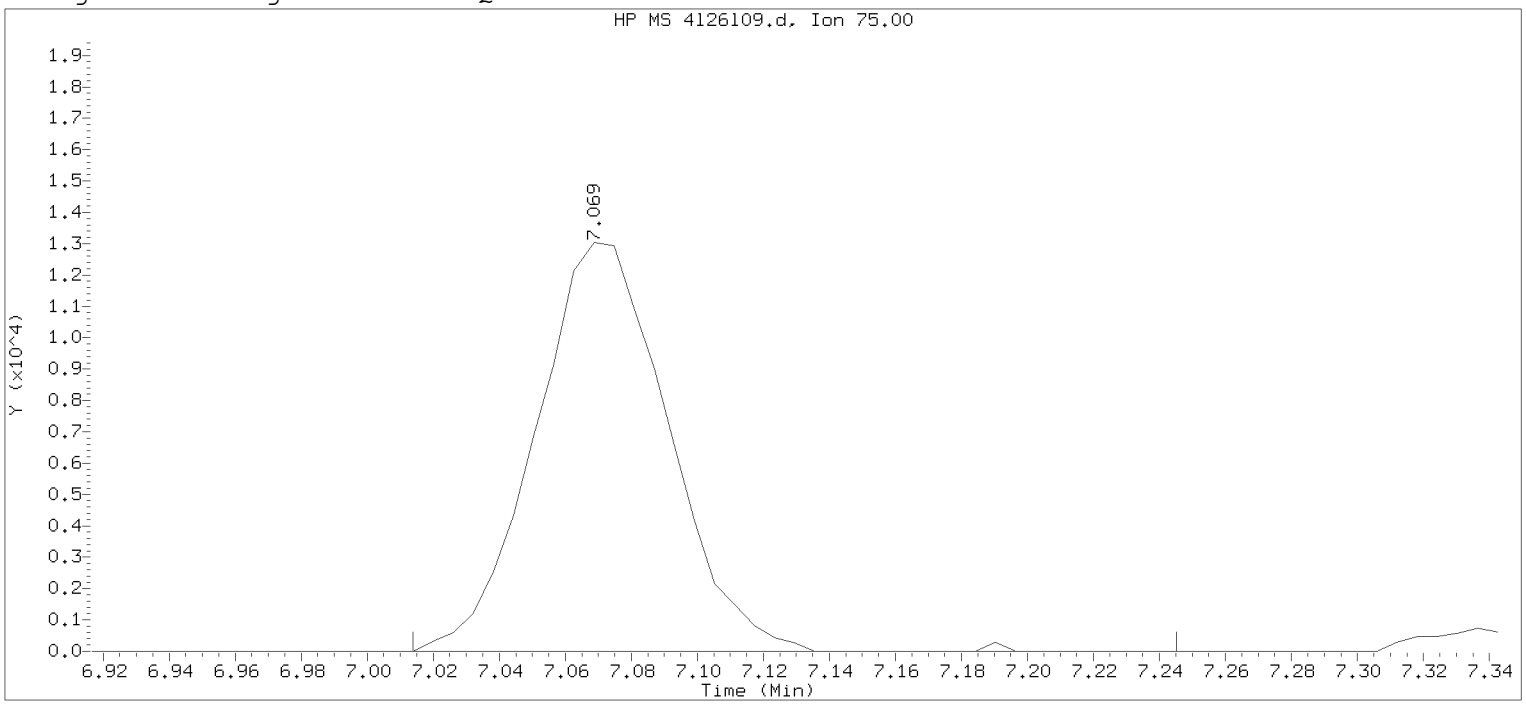
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

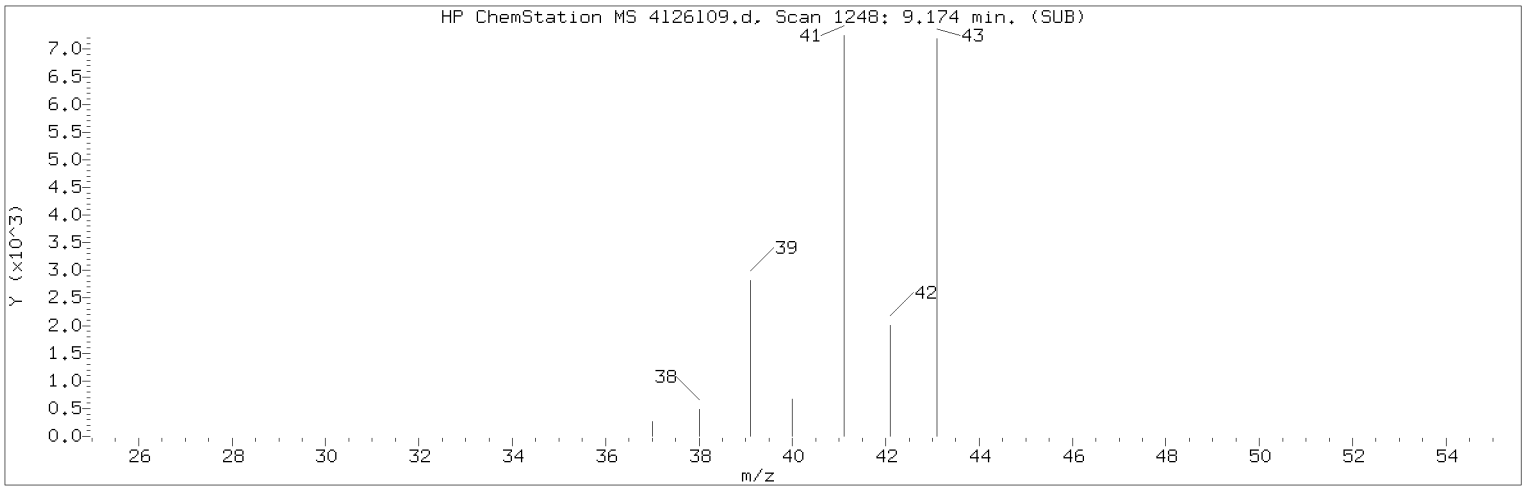
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 17:20
Date, time and analyst ID of latest file update: 26-Jul-2017 17:20 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

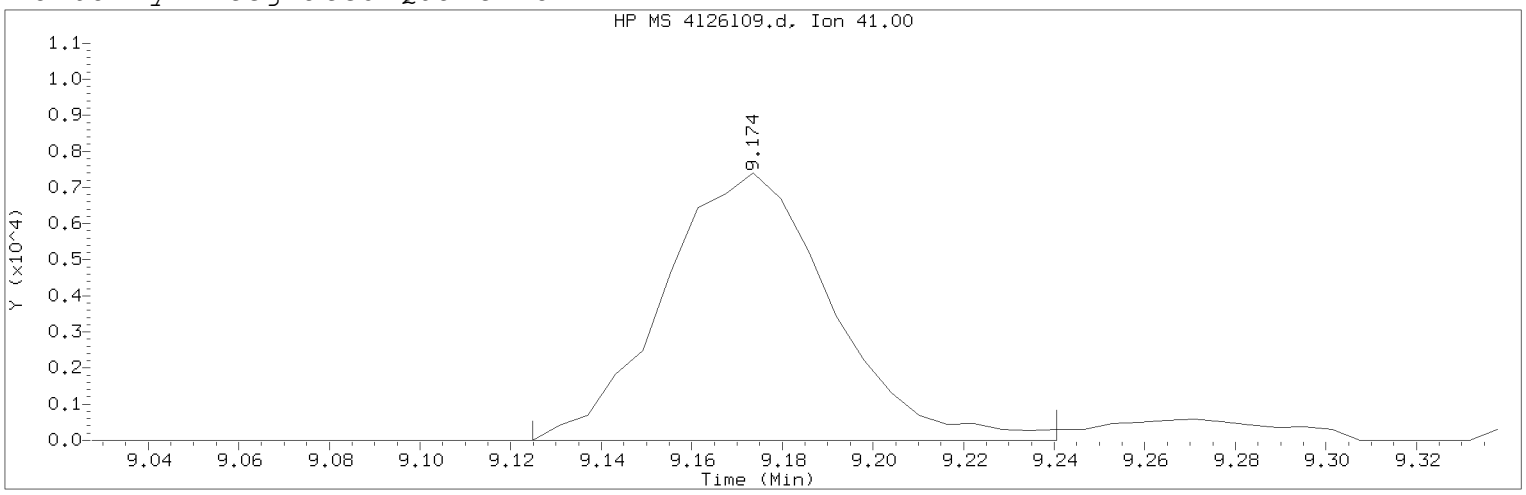
Compound Number	: 55		
Compound Name	: 1,1-Dichloropropene		
Scan Number	: 902		
Retention Time (minutes)	: 7.069		
Quant Ion	: 75.00		
Area	: 36276		
On-column Amount (ng)	: 4.6385		
Integration start scan	: 892	Integration stop scan:	930
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

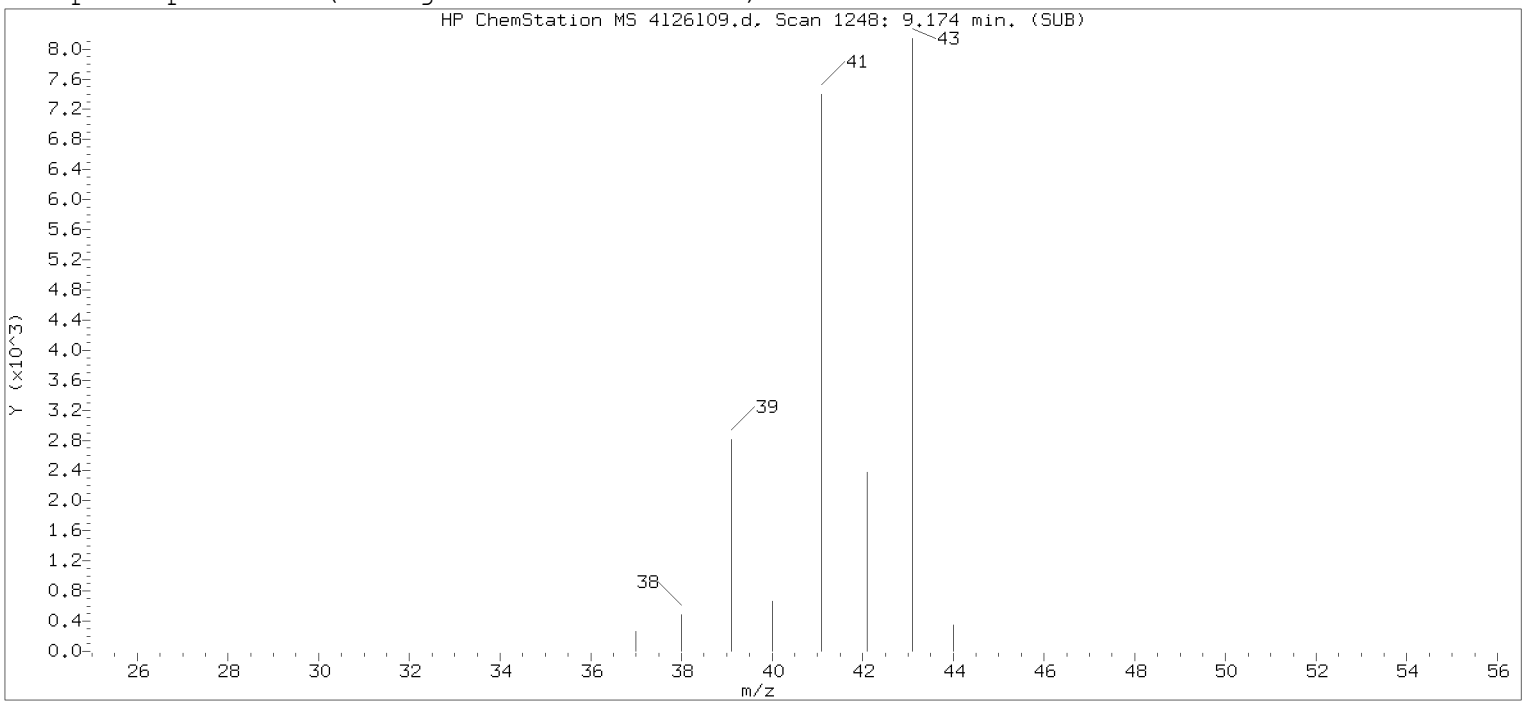
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1248
Retention Time (minutes): 9.174
Quant Ion : 41.00
Area (flag) : 19013M
On-Column Amount (ng) : 11.1379
Integration start scan : 1239 Integration stop scan: 1258
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

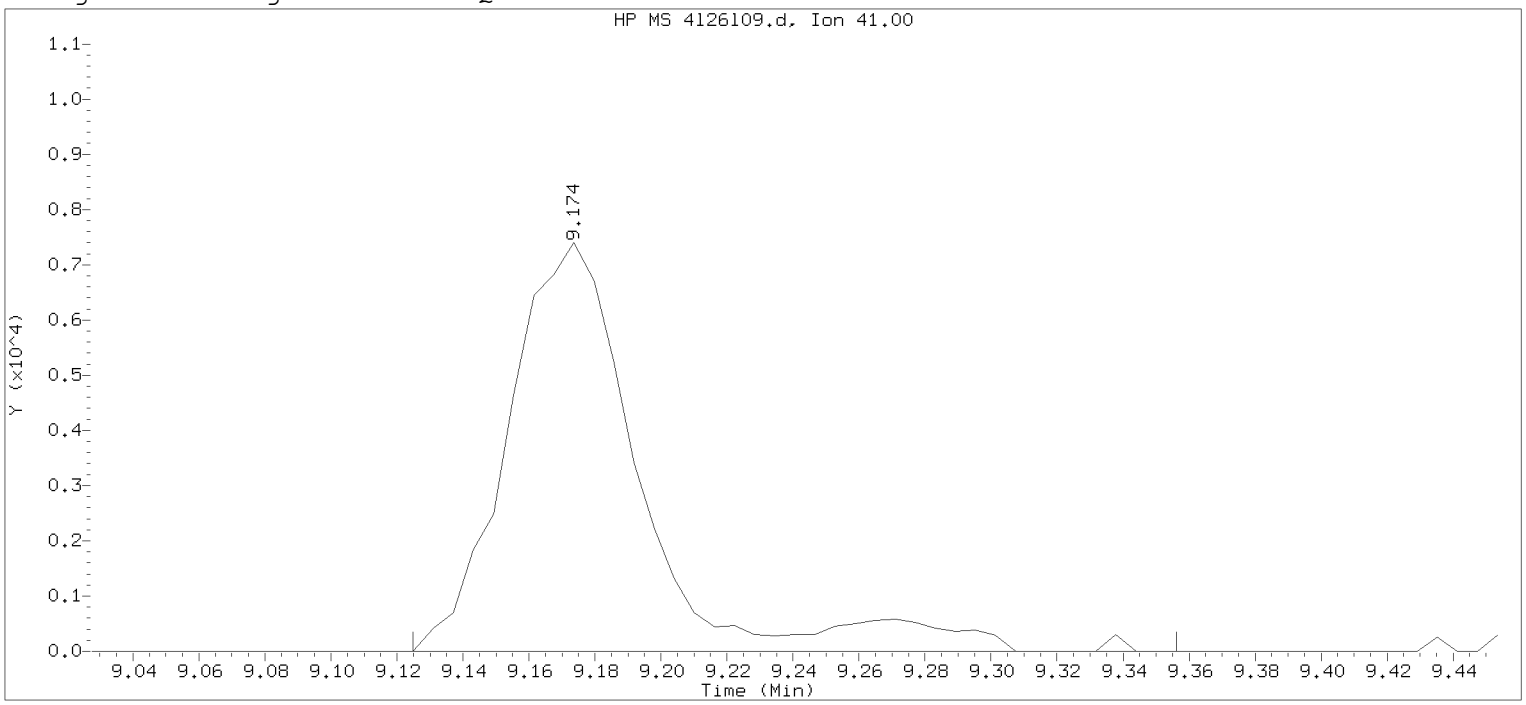
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126109.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

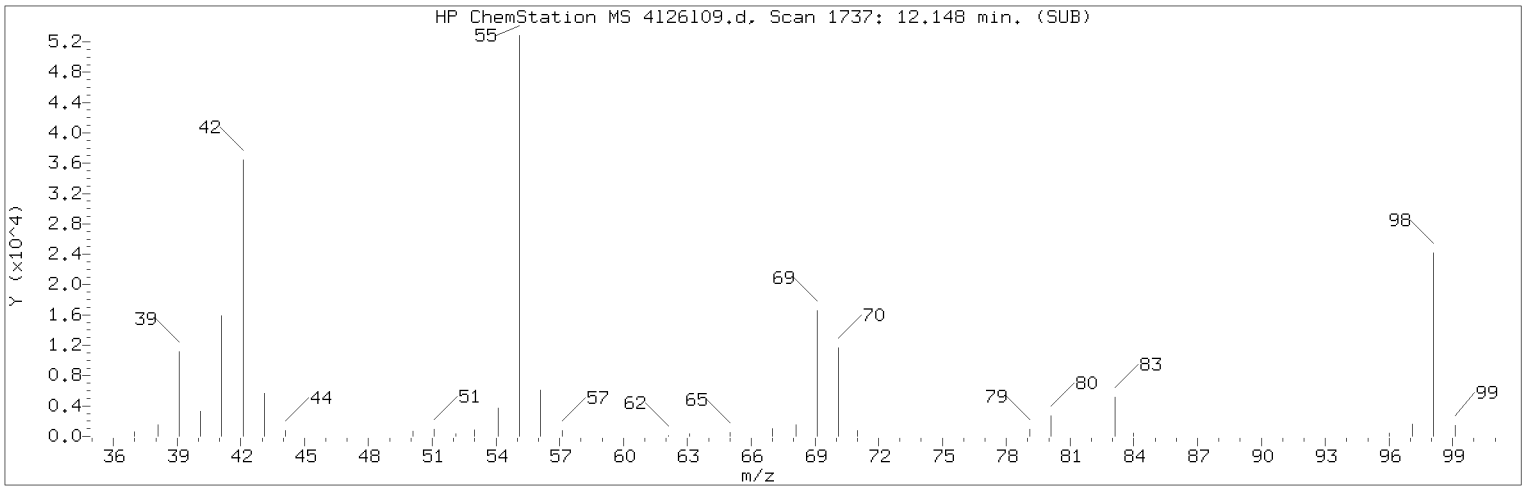
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 17:20
Date, time and analyst ID of latest file update: 26-Jul-2017 17:20 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

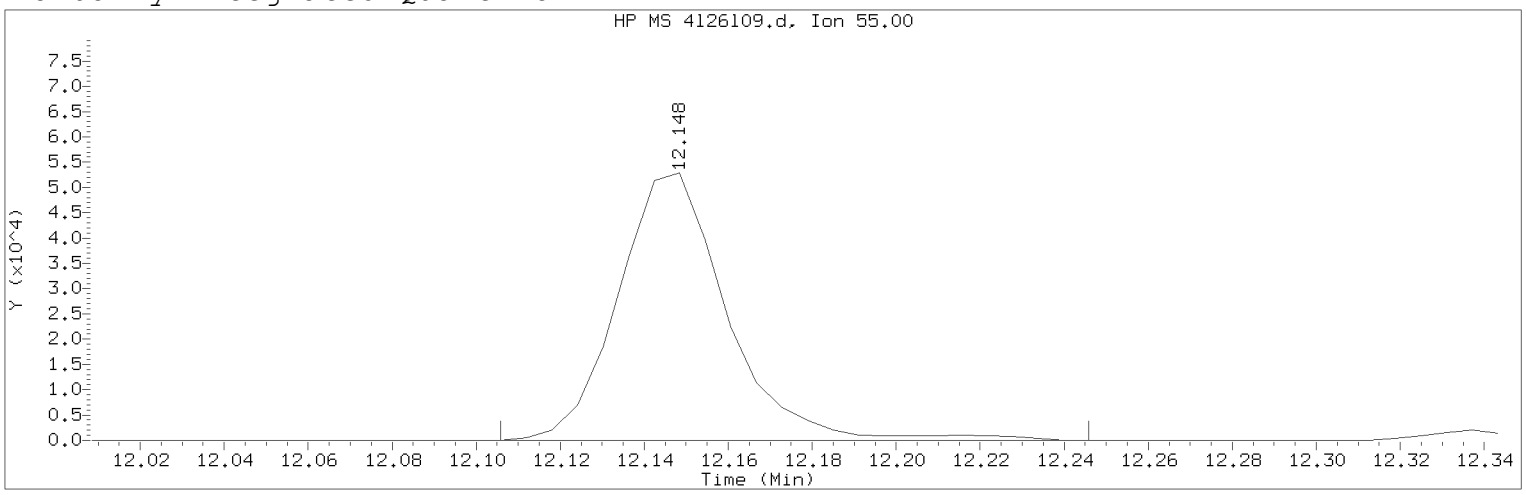
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1248
Retention Time (minutes): 9.174
Quant Ion : 41.00
Area : 20721
On-column Amount (ng) : 11.4832
Integration start scan : 1239 Integration stop scan: 1277
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

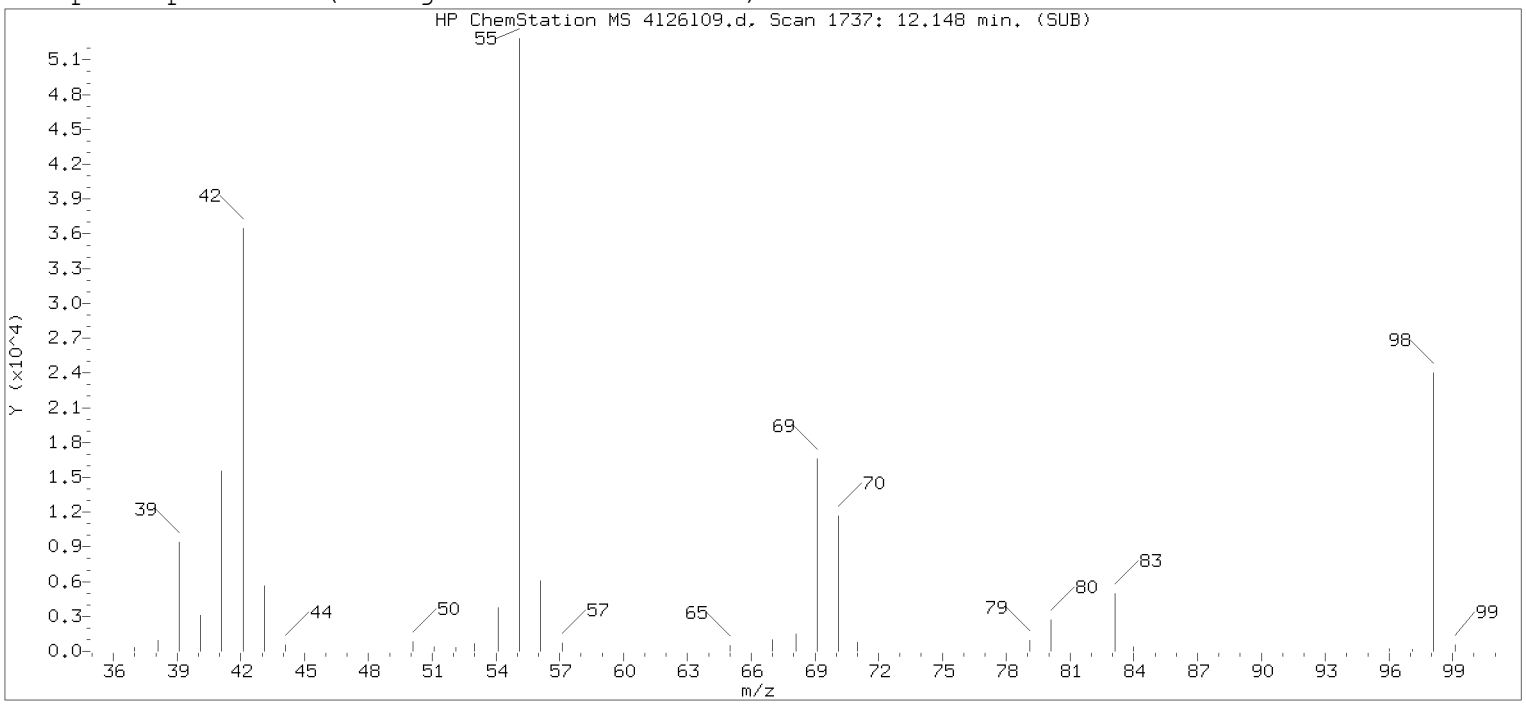
Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1737
Retention Time (minutes): 12.148
Quant Ion : 55.00
Area (flag) : 95267M
On-Column Amount (ng) : 201.4069
Integration start scan : 1729 Integration stop scan: 1752
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

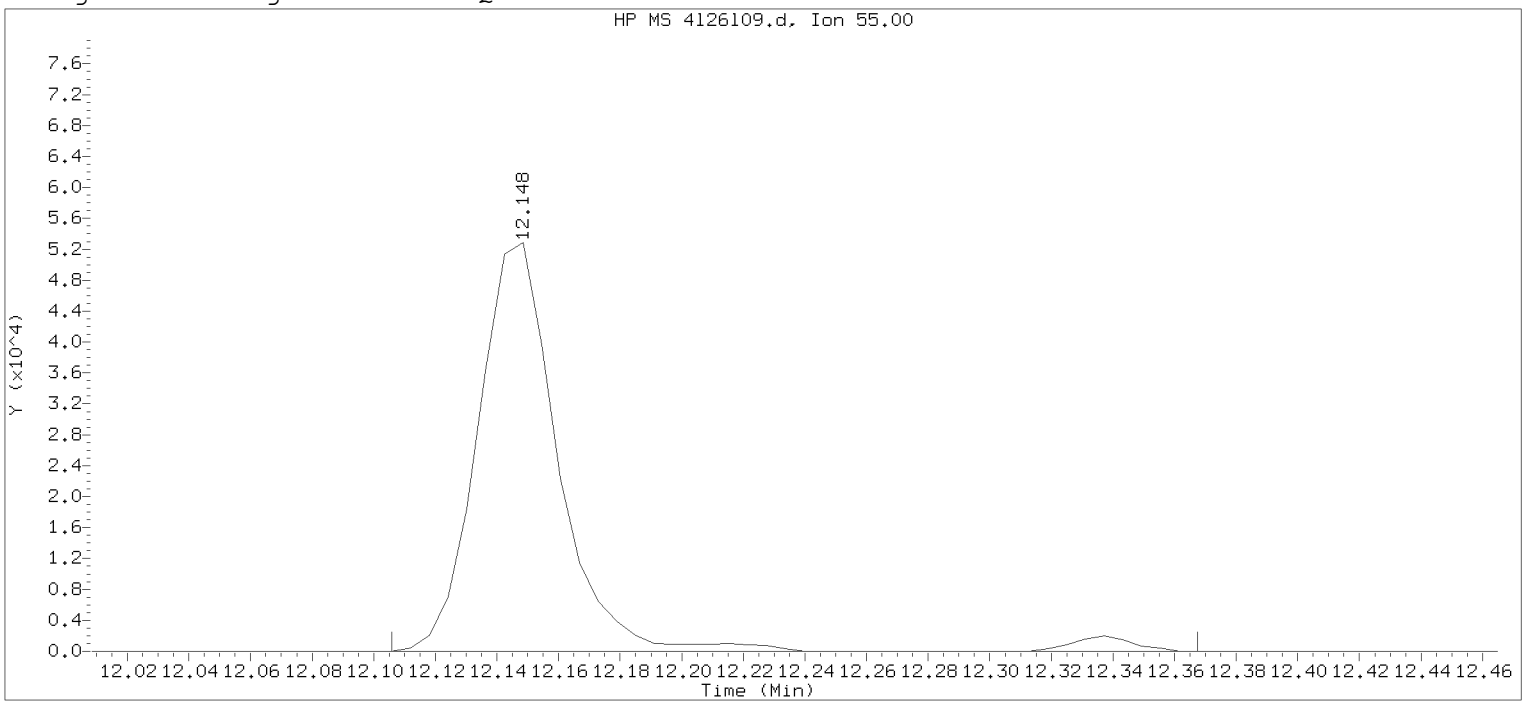
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

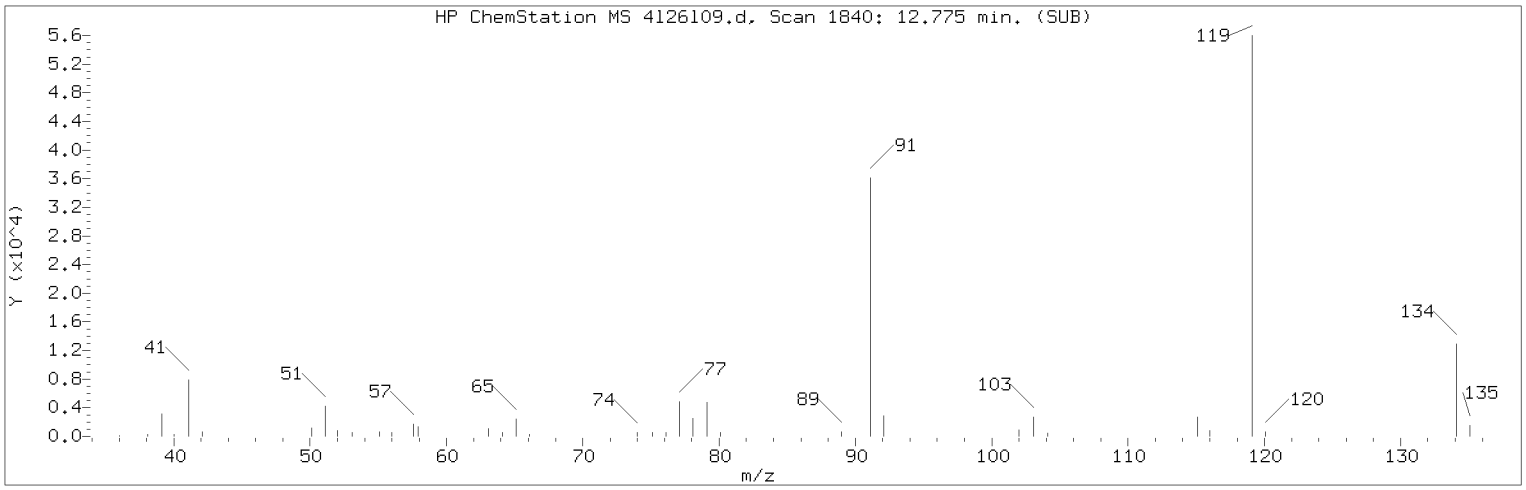
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 17:20
Date, time and analyst ID of latest file update: 26-Jul-2017 17:20 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

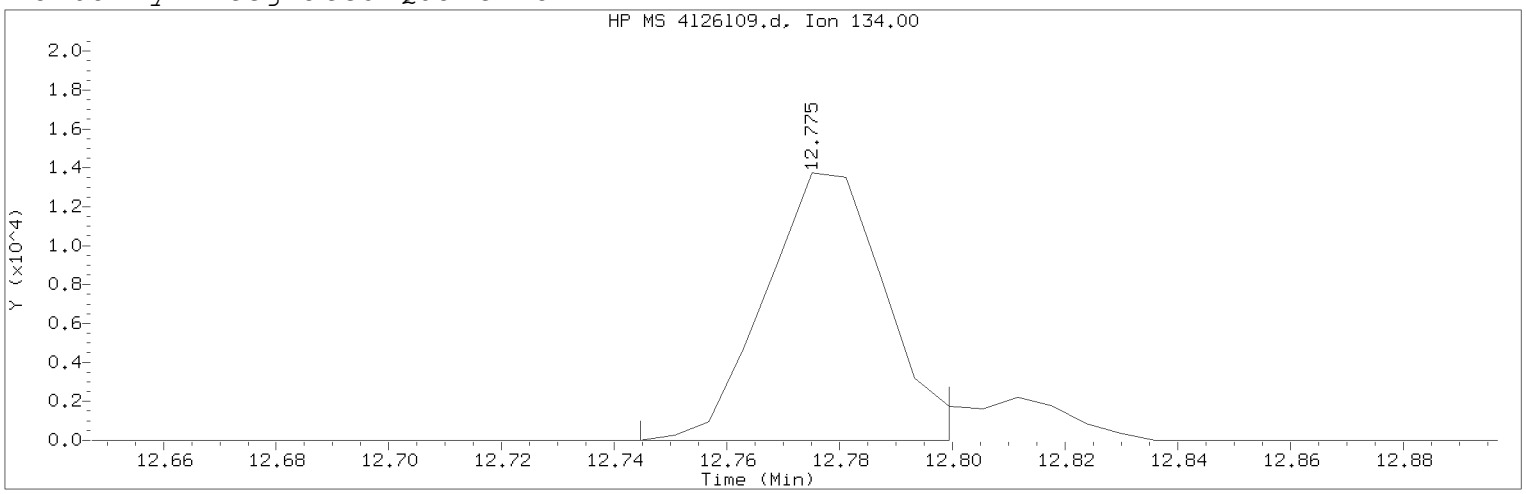
Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1737
Retention Time (minutes): 12.148
Quant Ion : 55.00
Area : 97946
On-column Amount (ng) : 206.2372
Integration start scan : 1729 Integration stop scan: 1772
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:29 pth10165

Sample Name: VSTD004 Lab Sample ID: VSTD004

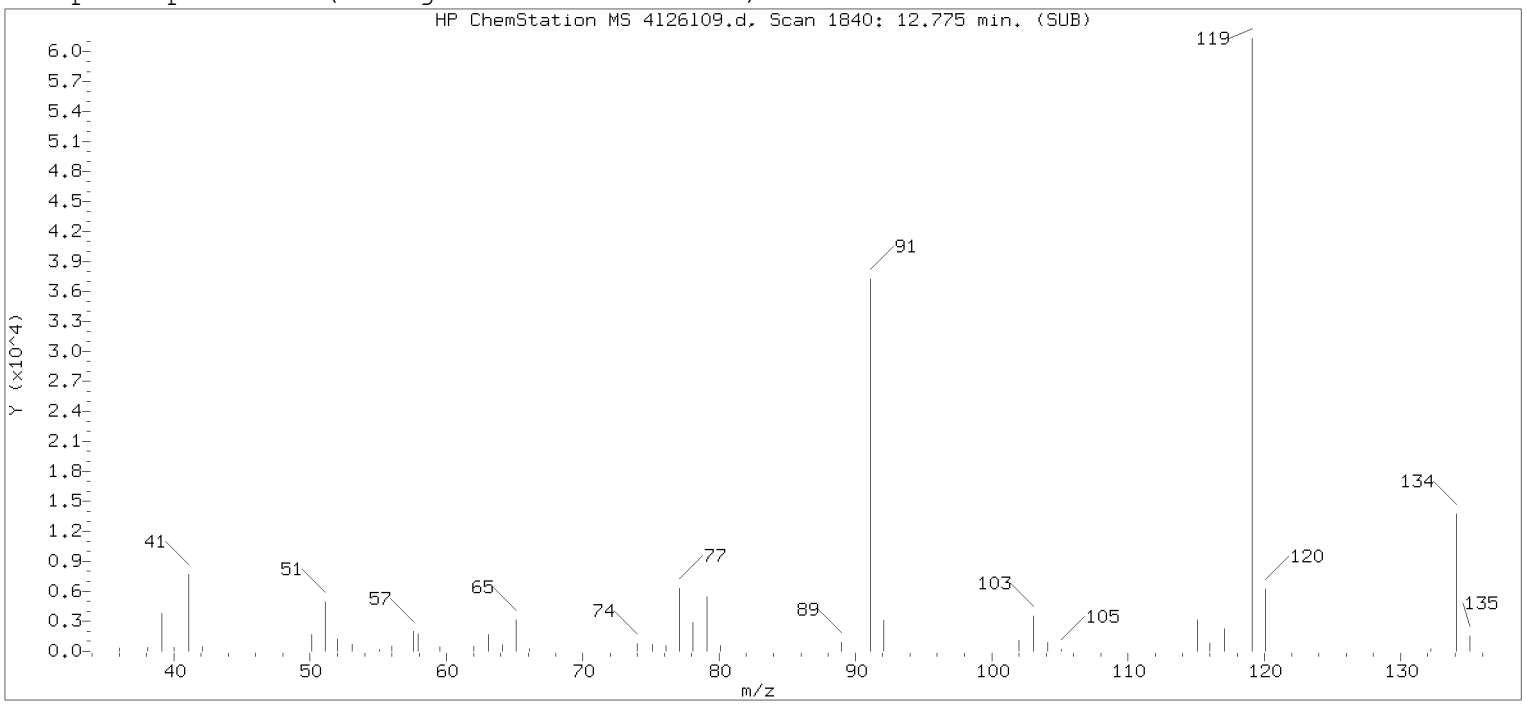
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area (flag) : 20318M
On-Column Amount (ng) : 4.2040
Integration start scan : 1834 Integration stop scan: 1843
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

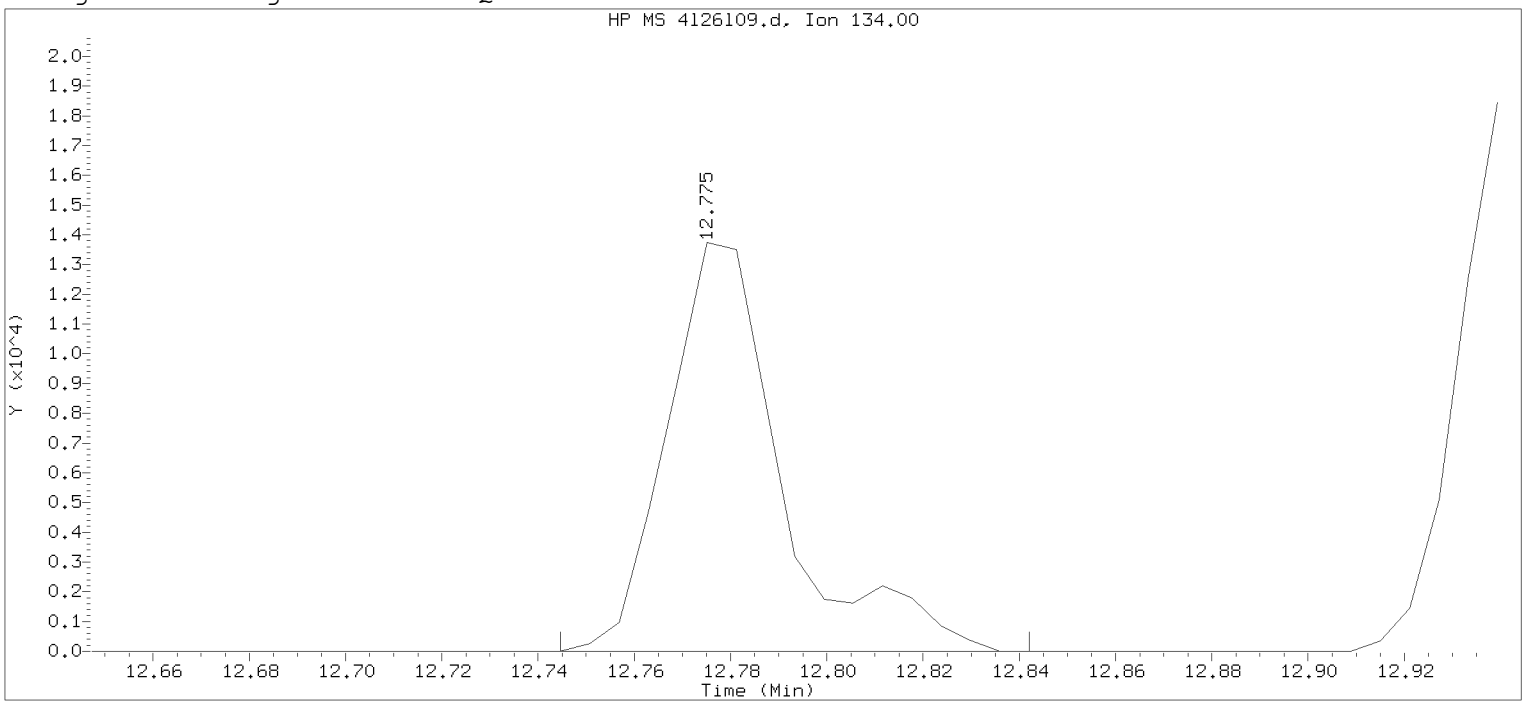
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4126l09.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 17:03 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 17:20
Date, time and analyst ID of latest file update: 26-Jul-2017 17:20 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area : 22798
On-column Amount (ng) : 4.6324
Integration start scan : 1834 Integration stop scan: 1850
Y at integration start : 0 Y at integration end: 0

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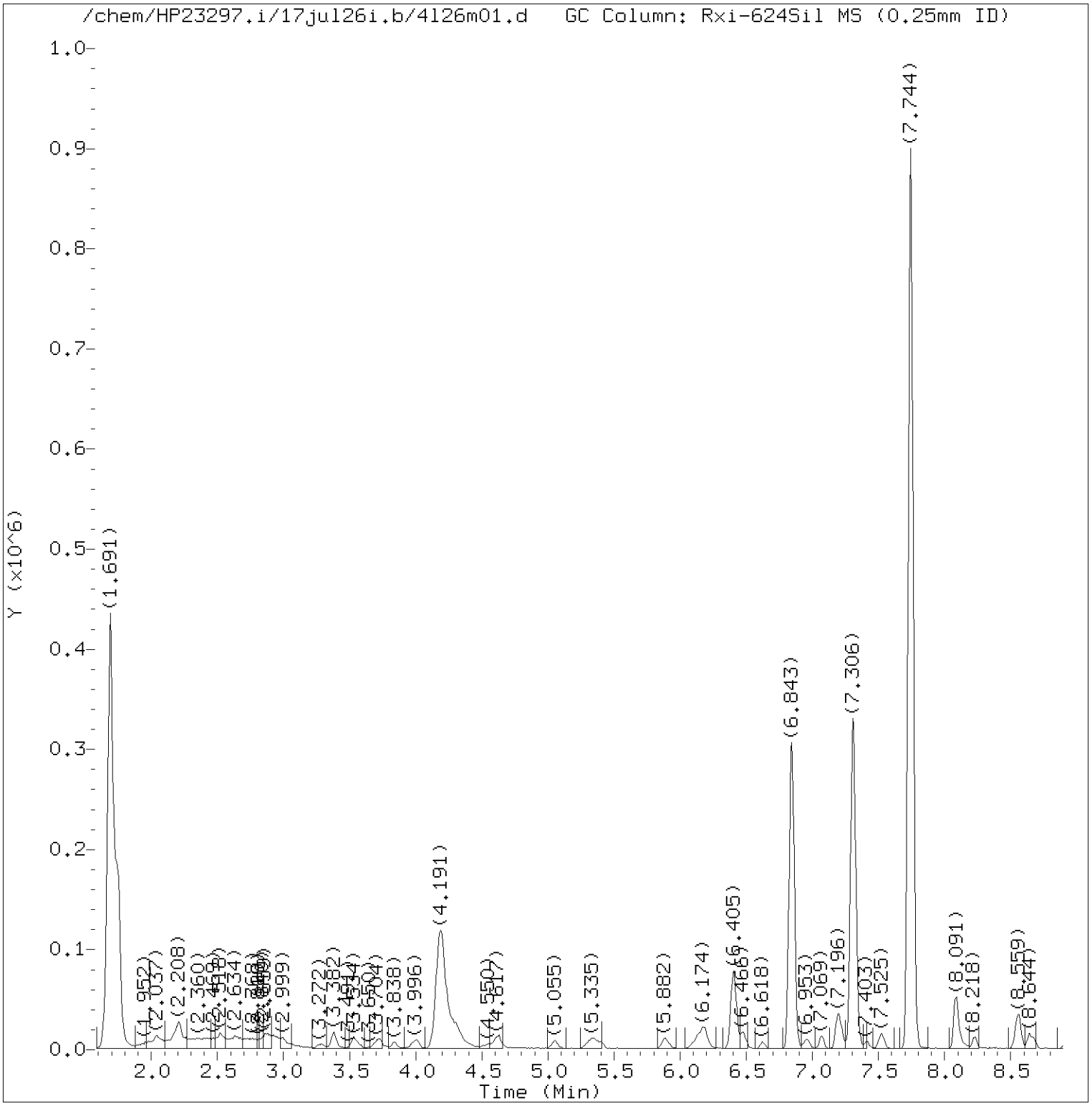
Target 3.5 esignature user approved.



Total Ion Chromatogram (TIC)

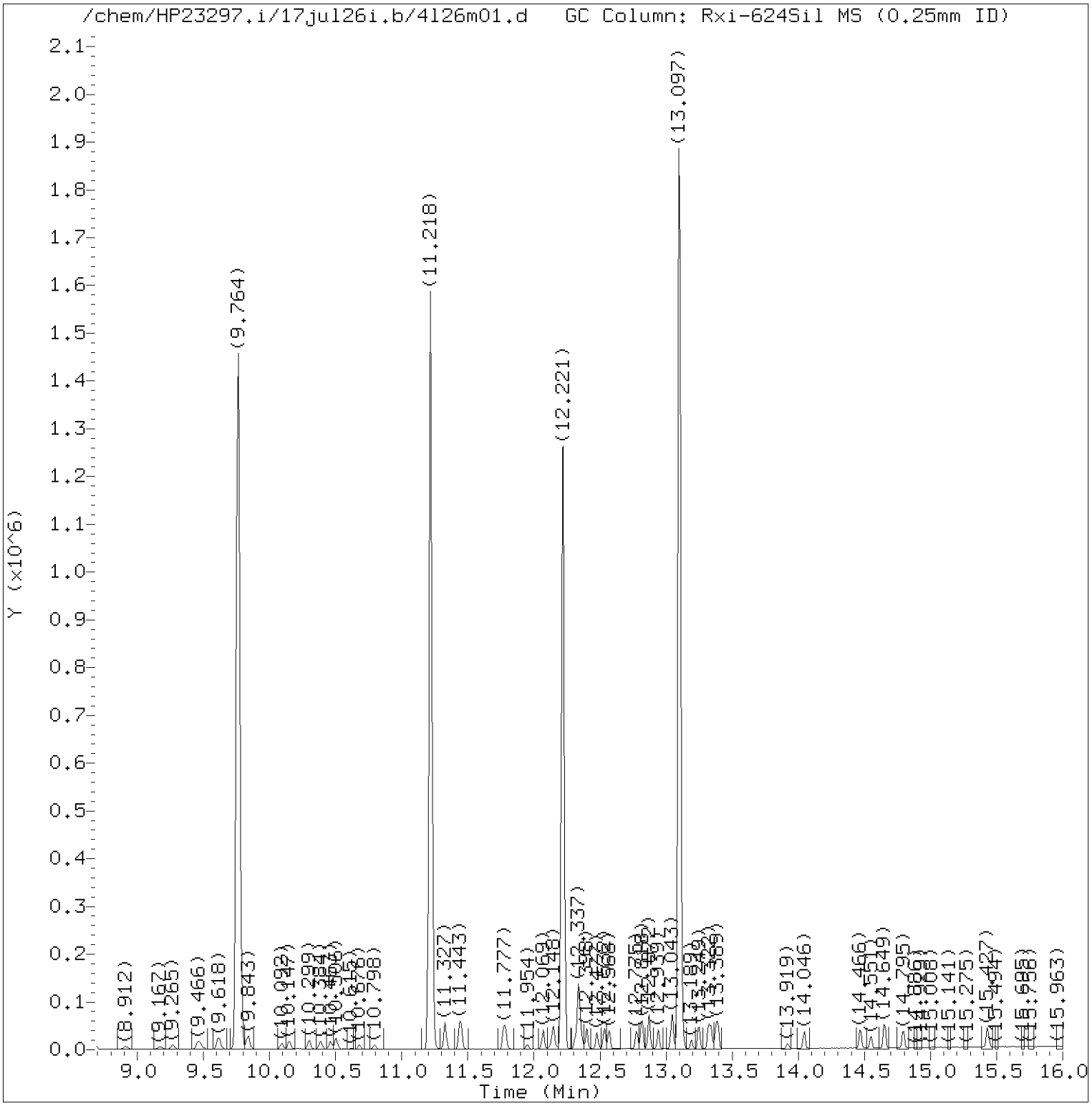
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.910	85	5507	0.890
4) Chloromethane	(2)	2.037	50	7878M	1.131
6) Vinyl Chloride	(2)	2.177	62	7275	1.103
5) 1,3-Butadiene	(2)	2.208	39	11415	0.774
8) Bromomethane	(2)	2.518	94	7095	1.559
9) Chloroethane	(2)	2.640	64	4230M	1.159
12) Trichlorofluoromethane	(2)	2.944	101	7010	1.005
11) n-Pentane	(2)	2.999	43	10905M	1.074
13) Ethanol	(1)	3.066	45	9212	66.306
15) Freon 123a	(2)	3.279	67	5114	0.823
16) Acrolein	(1)	3.382	56	22041	10.252
17) 1,1-Dichloroethene	(2)	3.528	96	3655	0.835
18) Acetone	(1)	3.552	58	2117	1.874
19) Freon 113	(2)	3.564	101	3517	0.806
21) 2-Propanol	(1)	3.704	45	21538M	22.420
22) Methyl Iodide	(2)	3.735	142	7698	0.894
23) Carbon Disulfide	(2)	3.832	76	12096	0.790
27) Methyl Acetate	(2)	3.972	43	10283	1.121
25) Allyl Chloride	(2)	4.009	41	9388	0.992
29)*t-Butyl alcohol-d10	(1)	4.185	65	344434	250.000
28) Methylene Chloride	(2)	4.197	84	6476	1.111
30) t-Butyl alcohol	(1)	4.313	59	34935	22.446
31) Acrylonitrile	(2)	4.538	53	3981	0.872
33) Methyl Tertiary Butyl Ether	(2)	4.605	73	15891	0.942
32) trans-1,2-Dichloroethene	(2)	4.617	96	4423	0.845
34) n-Hexane	(2)	5.055	57	6585	0.739
36) 1,1-Dichloroethane	(2)	5.292	63	9068	0.915
38) di-Isopropyl ether	(2)	5.347	45	19304	0.967
39) 2-Chloro-1,3-butadiene	(2)	5.396	53	6284	0.760
40) Ethyl t-butyl ether	(2)	5.888	59	16133	0.938
44) 2-Butanone	(2)	6.095	43	12690	1.906
43) 1,2-Dichloroethene (Total)	(2)		96	9833	1.749
42) cis-1,2-Dichloroethene	(2)	6.138	96	5410	0.904
45) 2,2-Dichloropropane	(2)	6.144	77	4986	0.768
47) Propionitrile	(1)	6.186	54	39885	21.912
48) Methacrylonitrile	(2)	6.405	67	43835	10.129
49) Bromochloromethane	(2)	6.478	128	3222	1.020
50) Tetrahydrofuran	(1)	6.478	71	2891	1.858

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
51) Chloroform	(2)	6.631	83	8273	0.911
52)$Dibromofluoromethane	(2)	6.843	113	271173	49.532
53) 1,1,1-Trichloroethane	(2)	6.856	97	6919	0.887
54) Cyclohexane	(2)	6.965	56	8317	0.806
56) Carbon Tetrachloride	(2)	7.062	117	4507	0.757
55) 1,1-Dichloropropene	(2)	7.069	75	6326	0.840
58) Isobutyl Alcohol	(1)	7.202	41	33430	56.763
57)$1,2-Dichloroethane-d4	(2)	7.312	102	68955	49.770
60) Benzene	(2)	7.336	78	21401	0.929
61) 1,2-Dichloroethane	(2)	7.415	62	7419	1.000
65) t-Amyl methyl ether	(2)	7.525	73	15708	0.946
66)*Fluorobenzene	(2)	7.744	96	1163066	50.000
67) n-Heptane	(2)	7.750	43	8450	0.863
69) n-Butanol	(1)	8.091	56	44548	94.905
71) Trichloroethene	(2)	8.224	95	4992	0.873
73) Methylcyclohexane	(2)	8.547	83	8354	0.858
74) 1,2-Dichloropropane	(2)	8.571	63	6210	0.975
77) Methyl Methacrylate	(2)	8.644	69	6346	0.982
76) 1,4-Dioxane	(1)	8.650	88	5316M	42.136
75) Dibromomethane	(2)	8.669	93	3719	0.963
79) Bromodichloromethane	(2)	8.906	83	6434	0.954
80) 2-Nitropropane	(2)	9.167	41	4037M	7.106
81) 2-Chloroethyl Vinyl Ether	(2)	9.265	63	4958	0.910
82) cis-1,3-Dichloropropene	(2)	9.453	75	8045	0.880
83) 4-Methyl-2-pentanone	(2)	9.618	43	21402	1.713
84)$Toluene-d8	(3)	9.764	98	1145641	50.868
89) Toluene	(3)	9.837	92	13999	0.982
91) 1,3-Dichloropropene (total)	(3)		100	15162	1.768
90) trans-1,3-Dichloropropene	(3)	10.092	75	7117	0.888
92) Ethyl Methacrylate	(3)	10.147	69	9489	0.959
93) 1,1,2-Trichloroethane	(3)	10.299	97	6401	1.104
94) Tetrachloroethene	(3)	10.384	166	5617	0.892
95) 1,3-Dichloropropane	(3)	10.457	76	10432	1.083
97) 2-Hexanone	(3)	10.506	43	16035M	8.673
98) Dibromochloromethane	(3)	10.676	129	5319	0.953
100) 1,2-Dibromoethane	(3)	10.798	107	6422	1.040
101)*Chlorobenzene-d5	(3)	11.218	117	854796	50.000
103) Chlorobenzene	(3)	11.248	112	17138	1.050

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	4917	0.932
105) Ethylbenzene	(3)	11.327	91	25896	0.965
107) m+p-Xylene	(3)	11.443	106	20364	1.896
109) Xylene (Total)	(3)		106	29999	2.801
108) o-Xylene	(3)	11.771	106	9635	0.905
110) Styrene	(3)	11.789	104	16182	0.912
111) Bromoform	(3)	11.954	173	3970	0.890
112) Isopropylbenzene	(3)	12.069	105	23790	0.904
113) Cyclohexanone	(1)	12.148	55	21169M	46.268
115)$4-Bromofluorobenzene	(3)	12.215	95	402810	50.293
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	11708	1.121
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	21833	8.224
116) Bromobenzene	(4)	12.337	156	7534	0.996
118) 1,2,3-Trichloropropane	(4)	12.361	110	3571	1.191
120) n-Propylbenzene	(4)	12.398	91	30760	0.956
121) 2-Chlorotoluene	(4)	12.477	126	6283	0.940
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	20850	0.924
122) 4-Chlorotoluene	(4)	12.568	126	7324	1.036
125) tert-Butylbenzene	(4)	12.775	134	4146	0.888
126) Pentachloroethane	(4)	12.811	167	3627	0.878
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	21706	0.926
128) sec-Butylbenzene	(4)	12.939	105	26230	0.884
130) 1,3-Dichlorobenzene	(4)	13.043	146	14700	1.035
131) p-Isopropyltoluene	(4)	13.049	119	22378	0.873
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	476244	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	15812	1.073
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	24522	0.999
136) Benzyl Chloride	(4)	13.189	91	12919	0.758
137) 1,3-Diethylbenzene	(4)	13.249	119	14376	0.932
138) 1,4-Diethylbenzene	(4)	13.322	119	15193	0.945
140) n-Butylbenzene	(4)	13.341	92	12093	0.907
139) 1,2-Dichlorobenzene	(4)	13.377	146	15155	1.085
141) 1,2-Diethylbenzene	(4)	13.389	119	12386	0.955
142) Diethylbenzene (total)	(4)		100	41955	2.832
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	2546	1.060
145) 1,3,5-Trichlorobenzene	(4)	14.046	180	11836	1.092
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	11897	1.123
148) Hexachlorobutadiene	(4)	14.551	225	4648	0.945

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on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

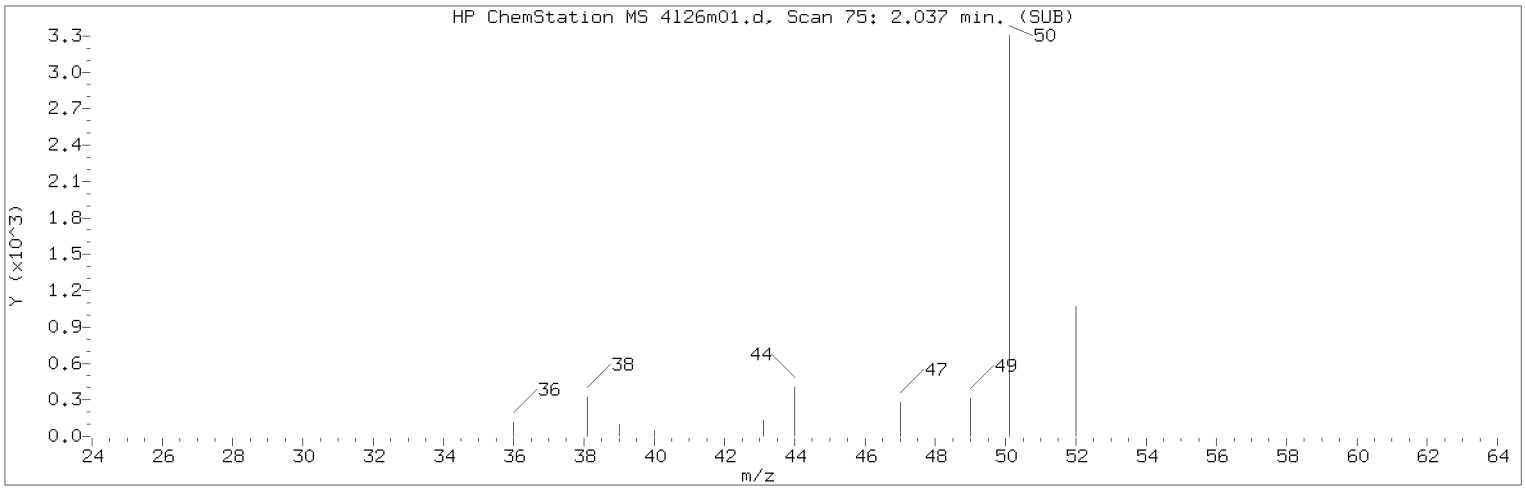
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

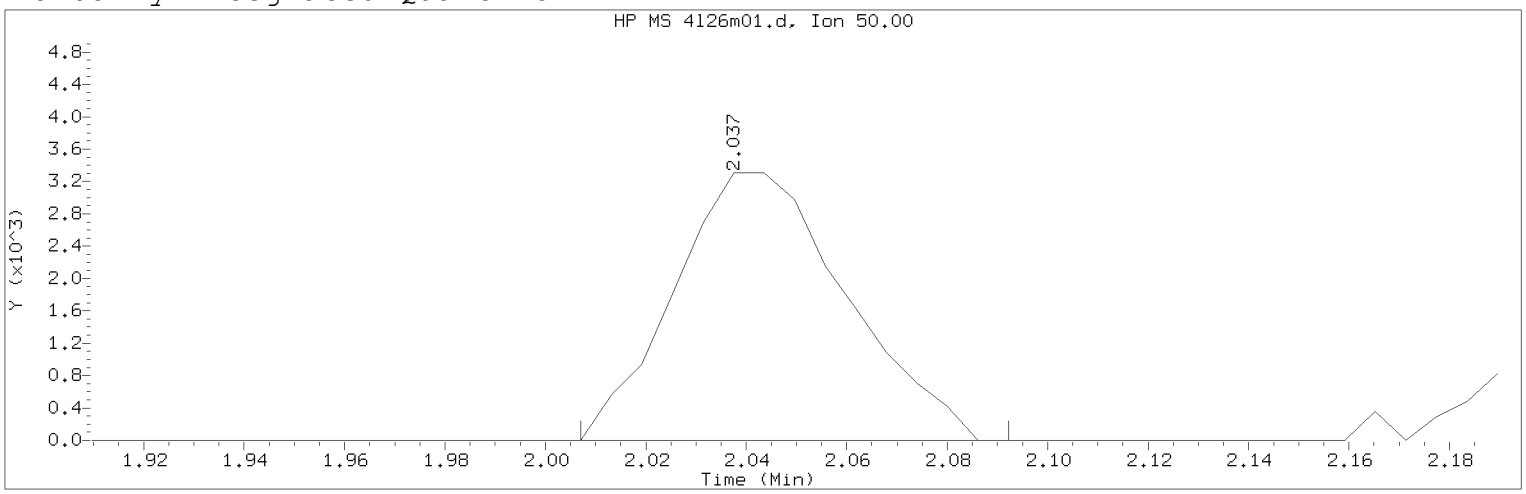
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
149) Naphthalene	(4)	14.649	128	37095	1.070
150) 1,2,3-Trichlorobenzene	(4)	14.795	180	11050	1.083
151) 2-Methylnaphthalene	(4)	15.427	142	21413	0.995

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

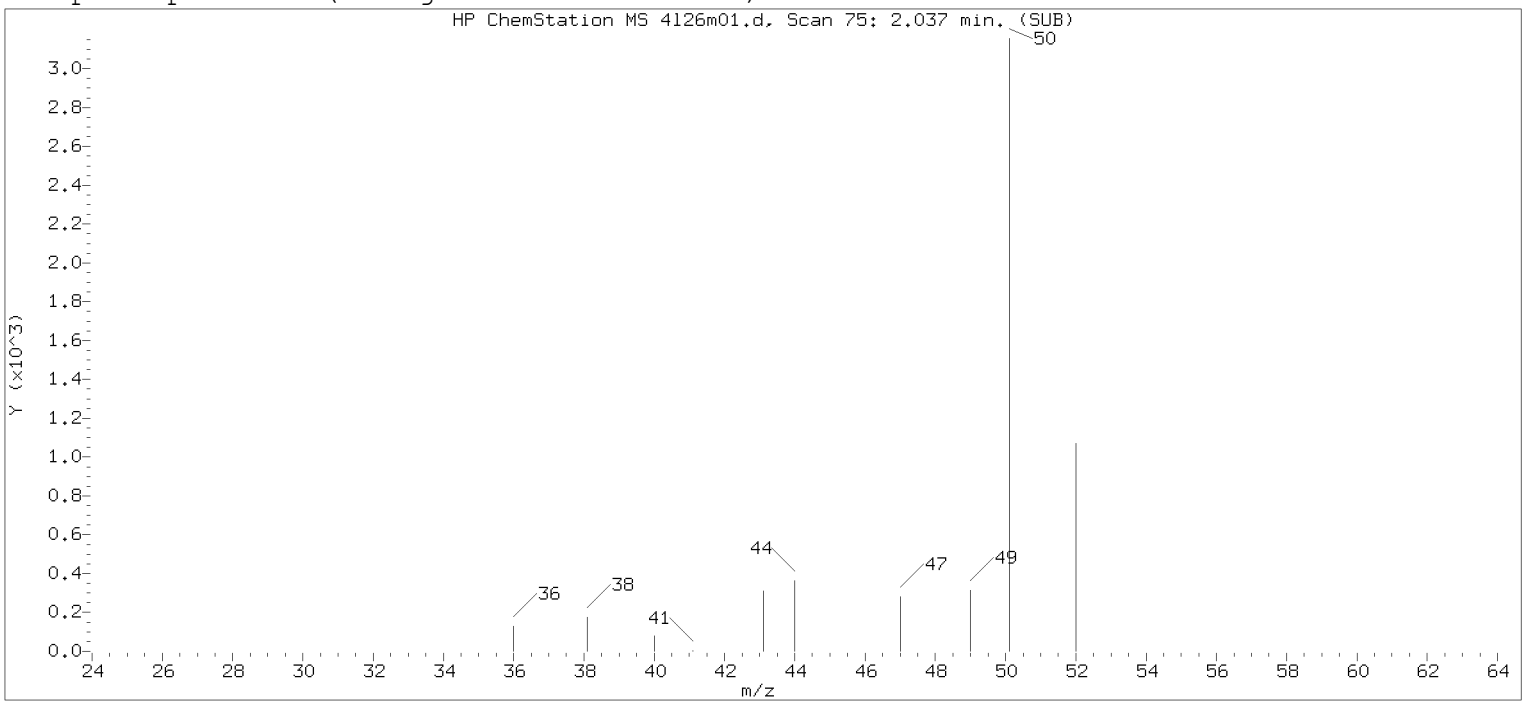
Compound Number : 4
Compound Name : Chloromethane
Scan Number : 75
Retention Time (minutes): 2.037
Quant Ion : 50.00
Area (flag) : 7878M
On-Column Amount (ng) : 1.1312
Integration start scan : 69 Integration stop scan: 83
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

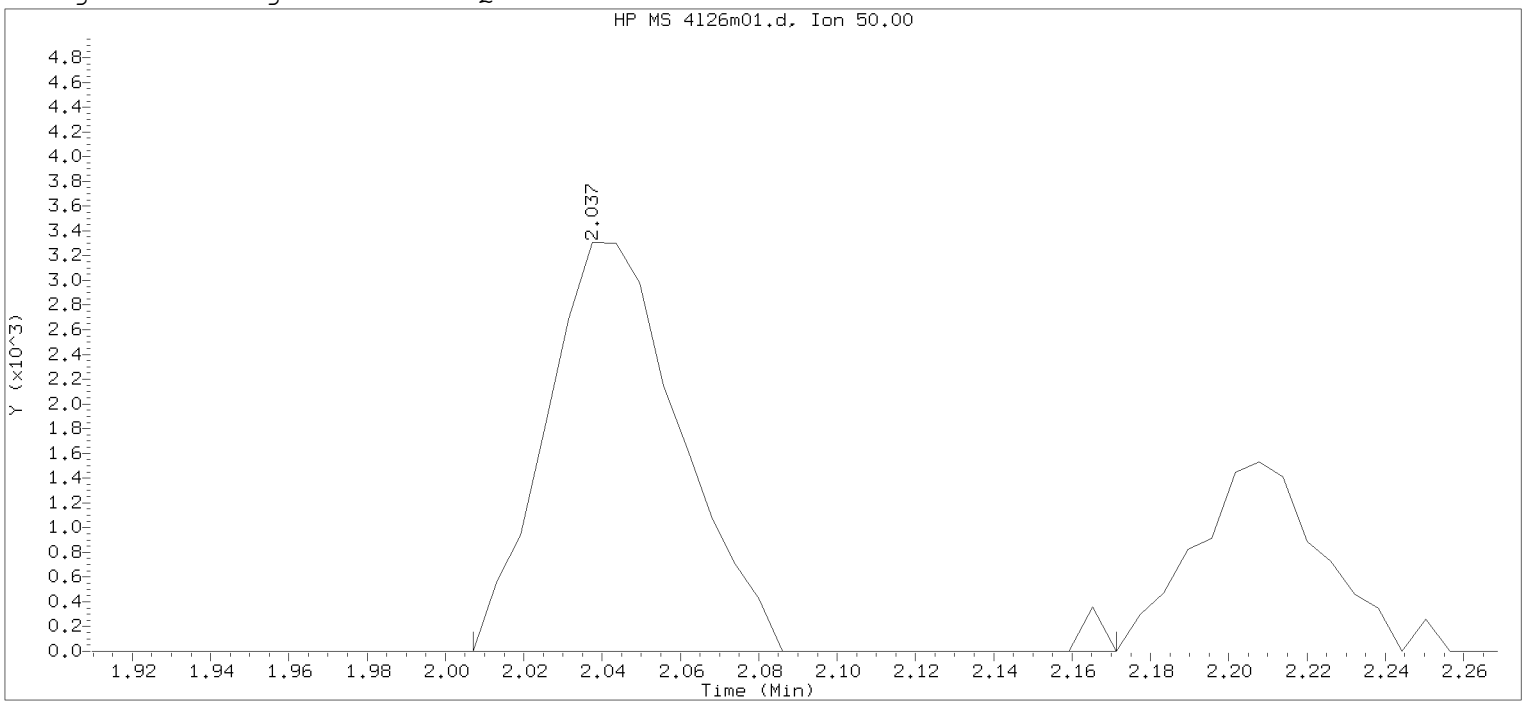
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

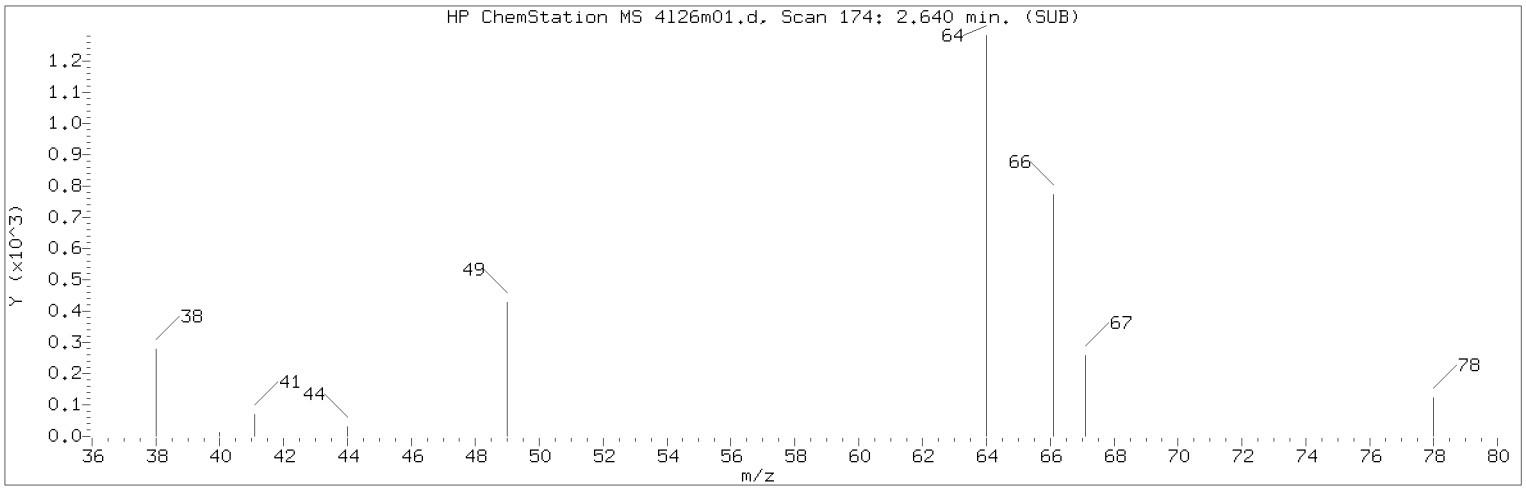
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

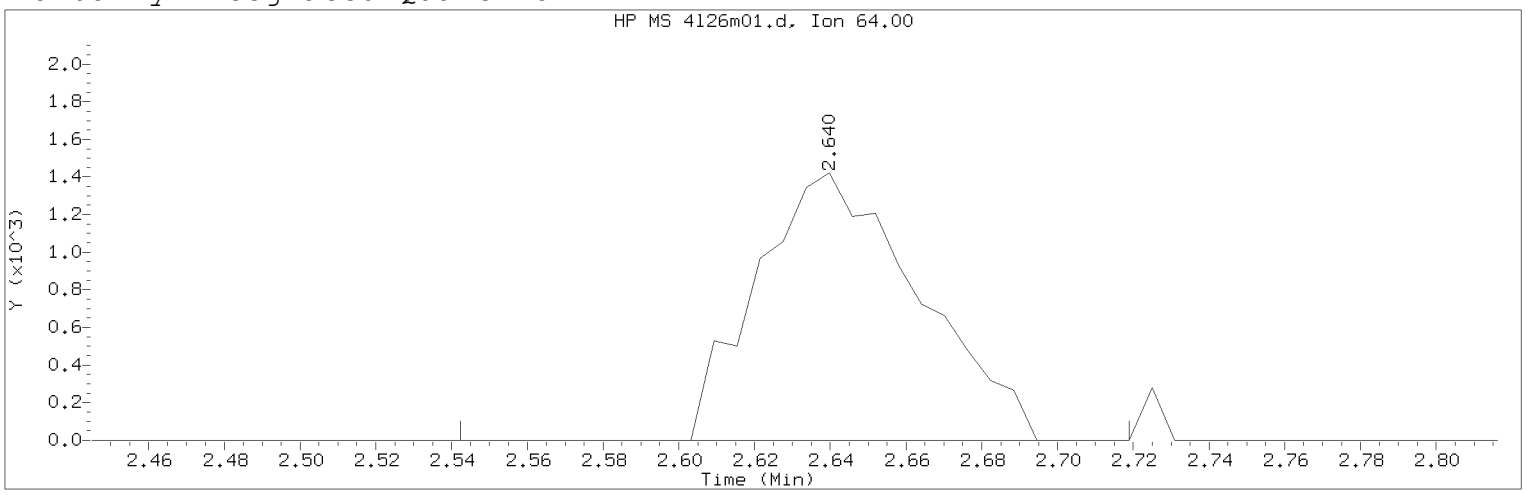
Compound Number	: 4		
Compound Name	: Chloromethane		
Scan Number	: 75		
Retention Time (minutes)	: 2.037		
Quant Ion	: 50.00		
Area	: 8008		
On-column Amount (ng)	: 1.1016		
Integration start scan	: 69	Integration stop scan:	96
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

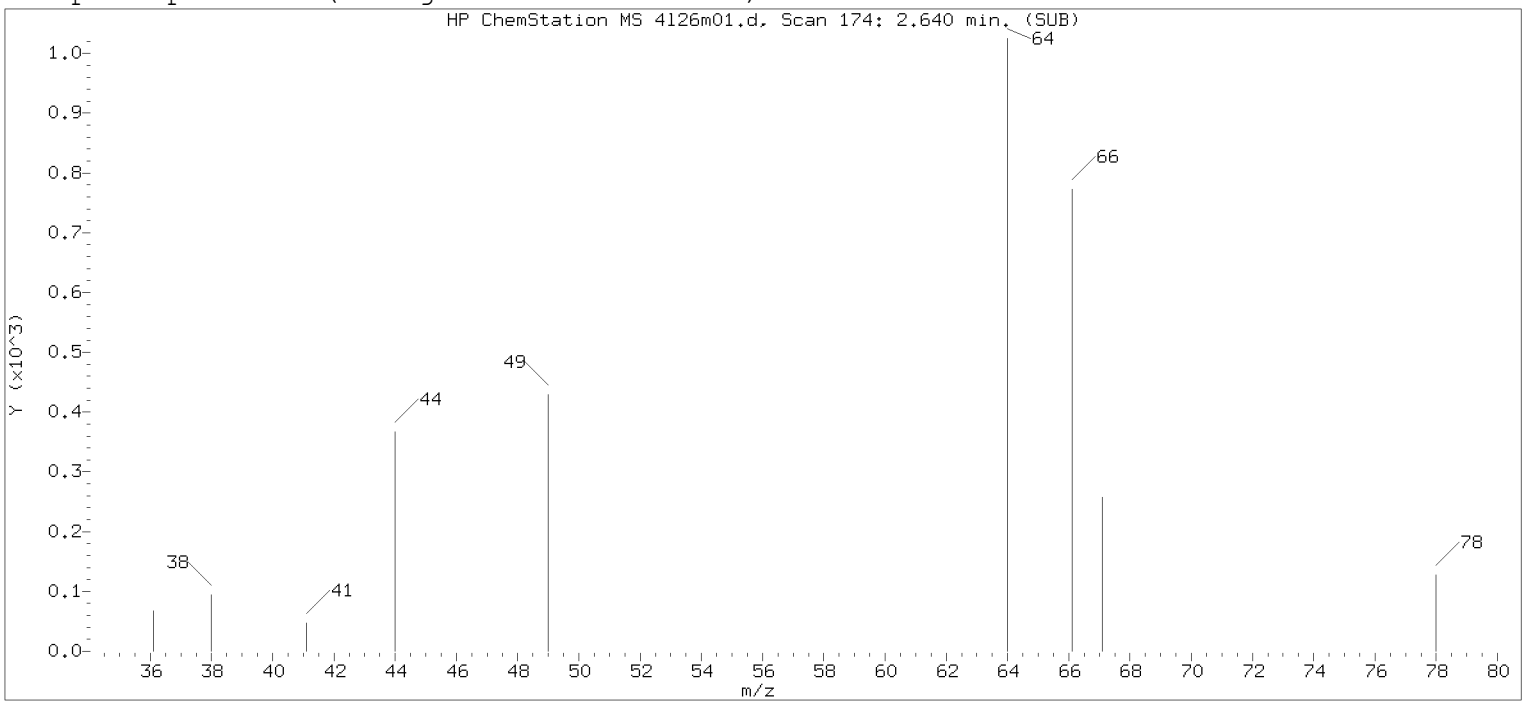
Compound Number : 9
Compound Name : Chloroethane
Scan Number : 174
Retention Time (minutes): 2.640
Quant Ion : 64.00
Area (flag) : 4230M
On-Column Amount (ng) : 1.1591
Integration start scan : 157 Integration stop scan: 186
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

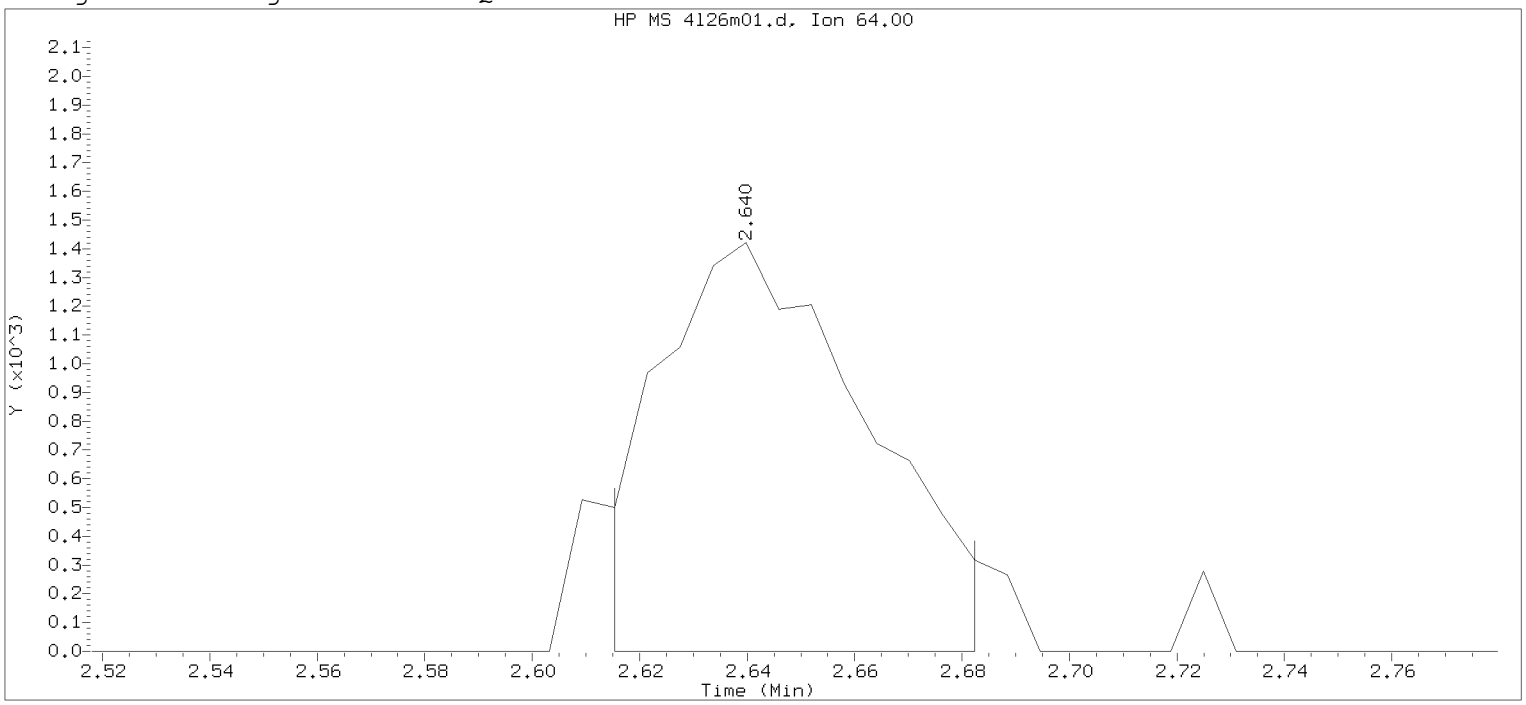
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

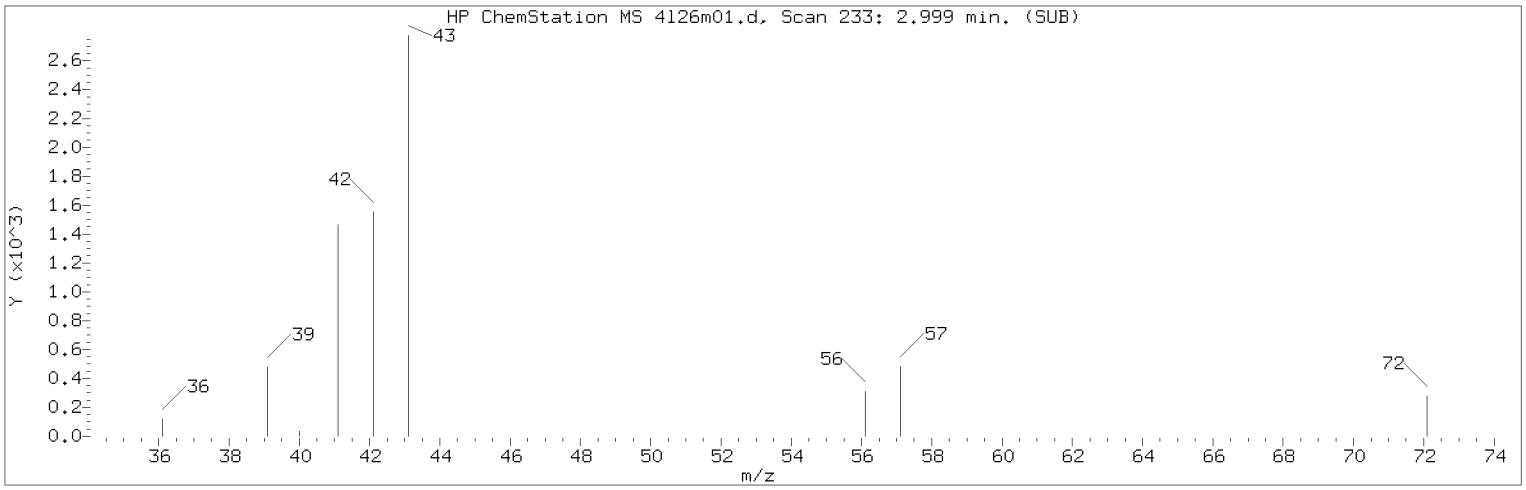
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

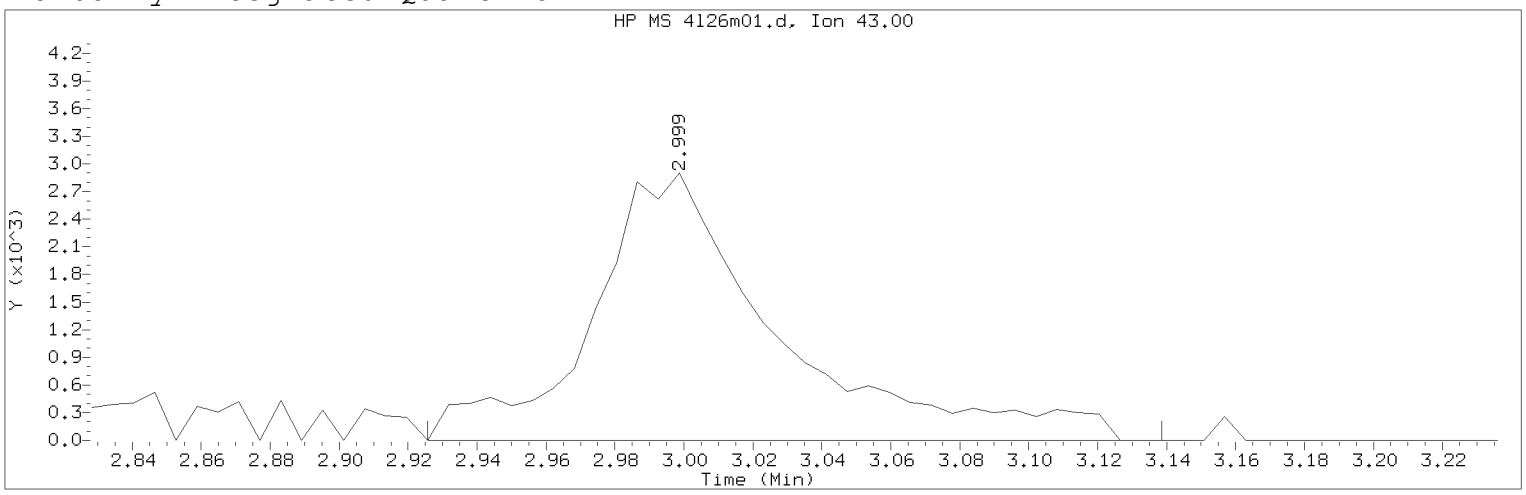
Compound Number : 9
Compound Name : Chloroethane
Scan Number : 174
Retention Time (minutes): 2.640
Quant Ion : 64.00
Area : 3792
On-column Amount (ng) : 1.0258
Integration start scan : 169 Integration stop scan: 180
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approval

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

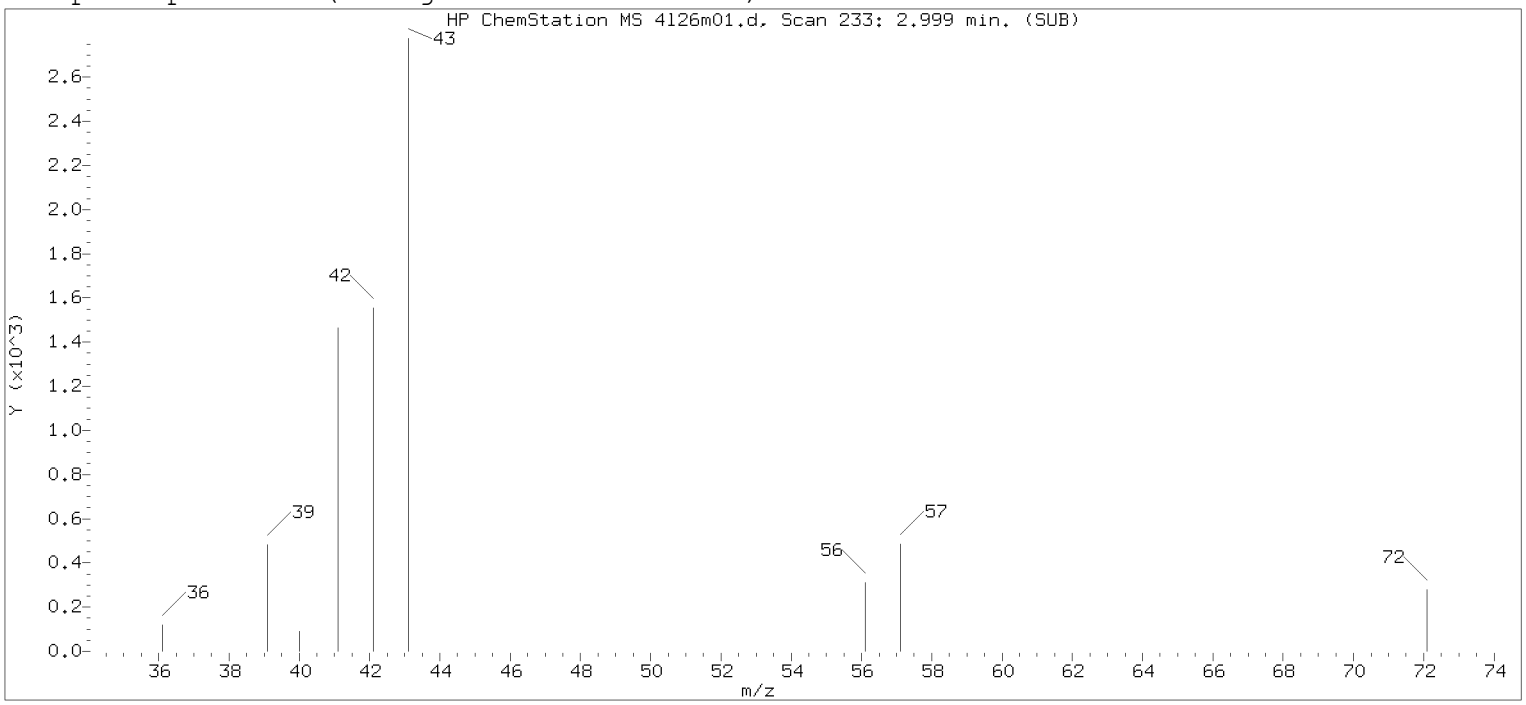
Compound Number : 11
Compound Name : n-Pentane
Scan Number : 233
Retention Time (minutes): 2.999
Quant Ion : 43.00
Area (flag) : 10905M
On-Column Amount (ng) : 1.0741
Integration start scan : 220 Integration stop scan: 255
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

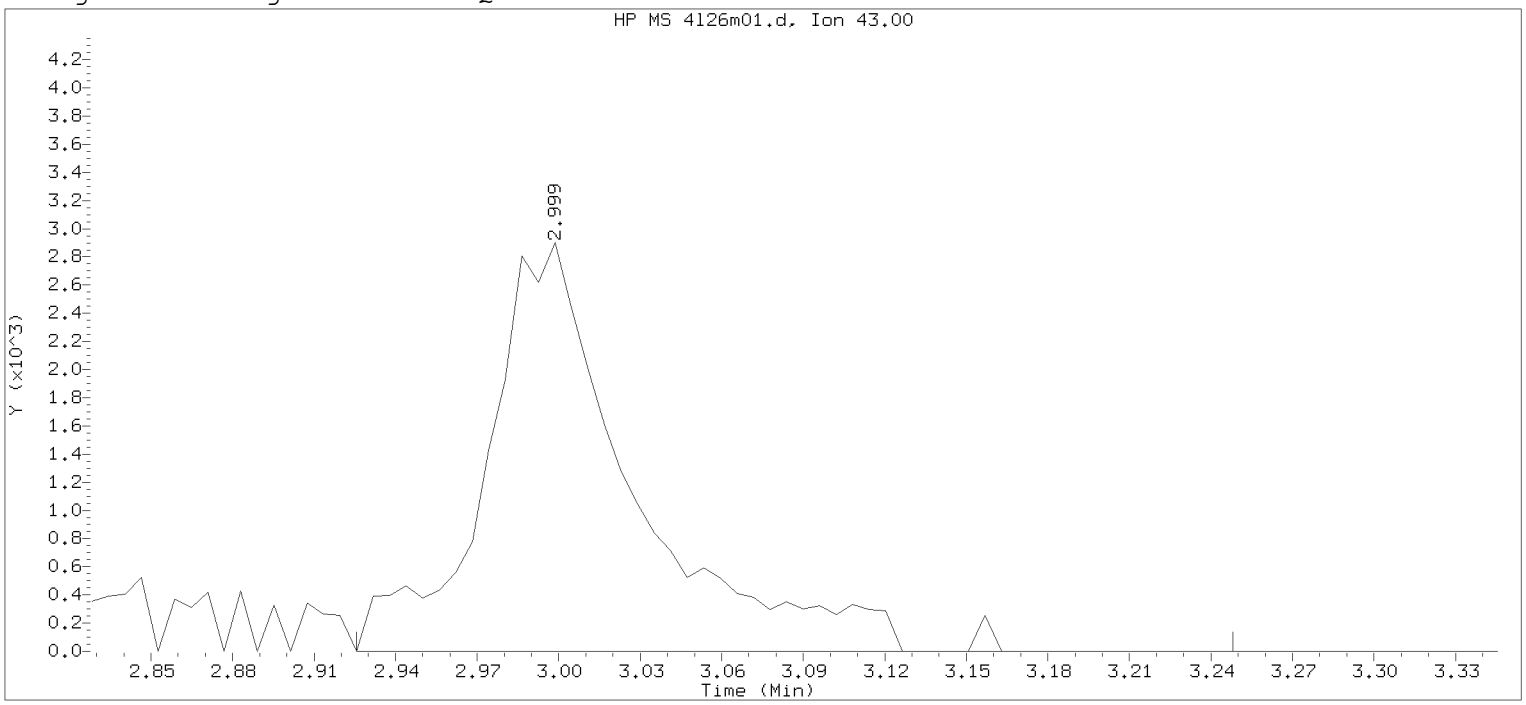
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

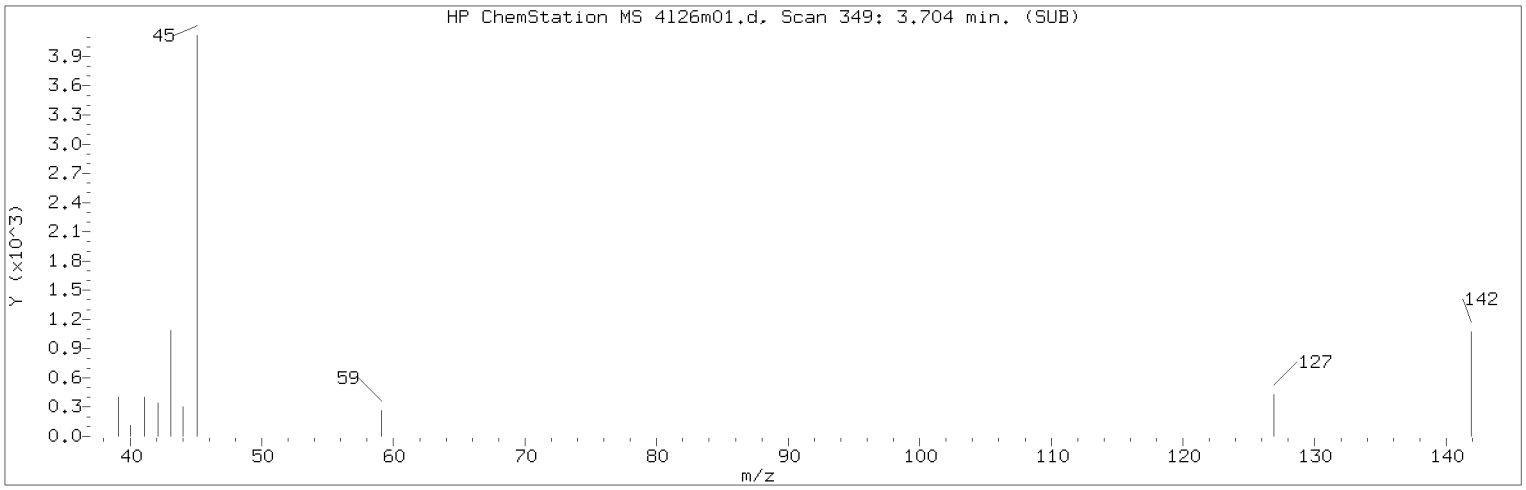
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

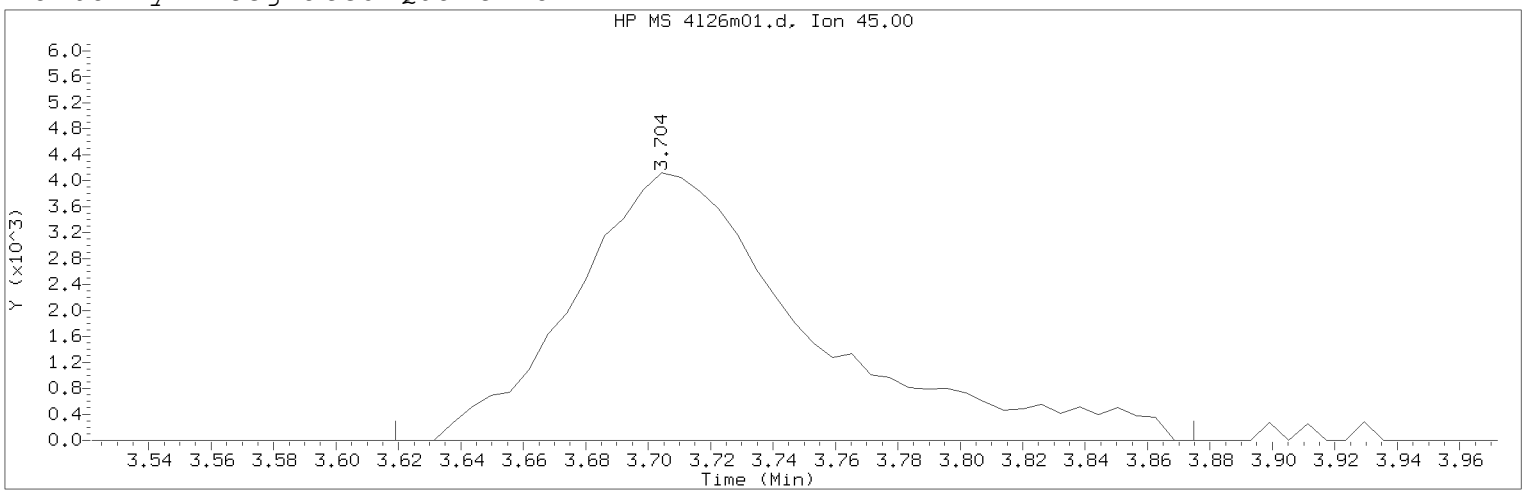
Compound Number	: 11		
Compound Name	: n-Pentane		
Scan Number	: 233		
Retention Time (minutes)	: 2.999		
Quant Ion	: 43.00		
Area	: 10998		
On-column Amount (ng)	: 1.1018		
Integration start scan	: 220	Integration stop scan:	273
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved 07/26/2017

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

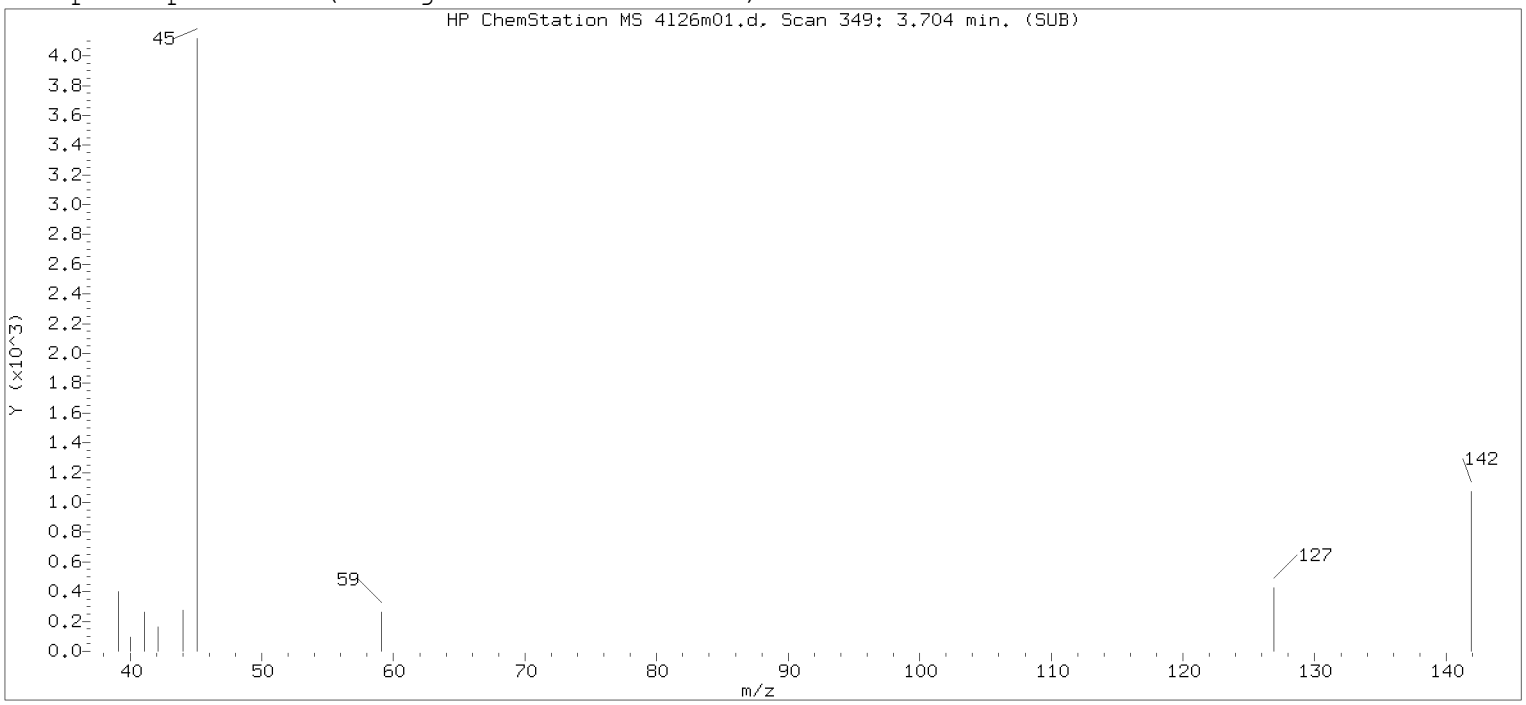
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 349
Retention Time (minutes): 3.704
Quant Ion : 45.00
Area (flag) : 21538M
On-Column Amount (ng) : 22.4198
Integration start scan : 334 Integration stop scan: 376
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

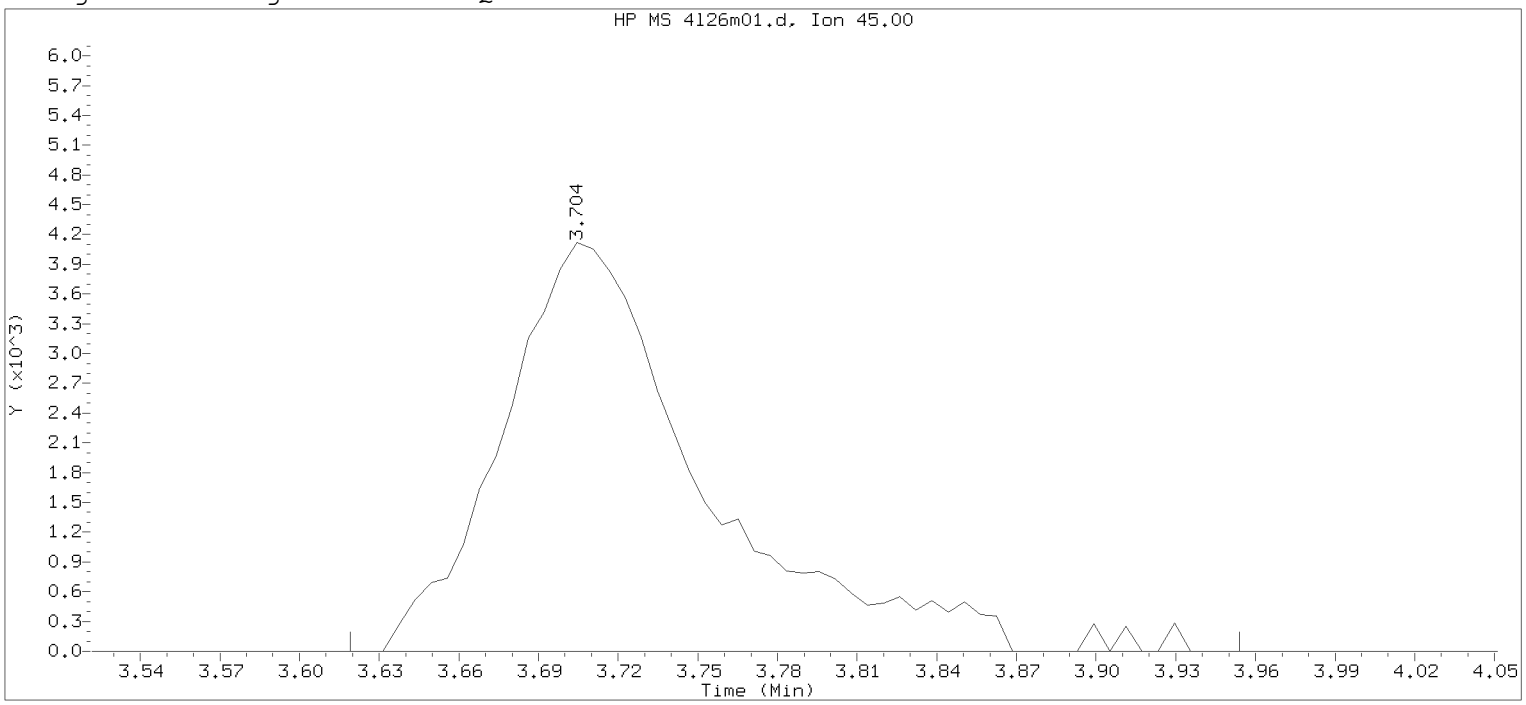
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

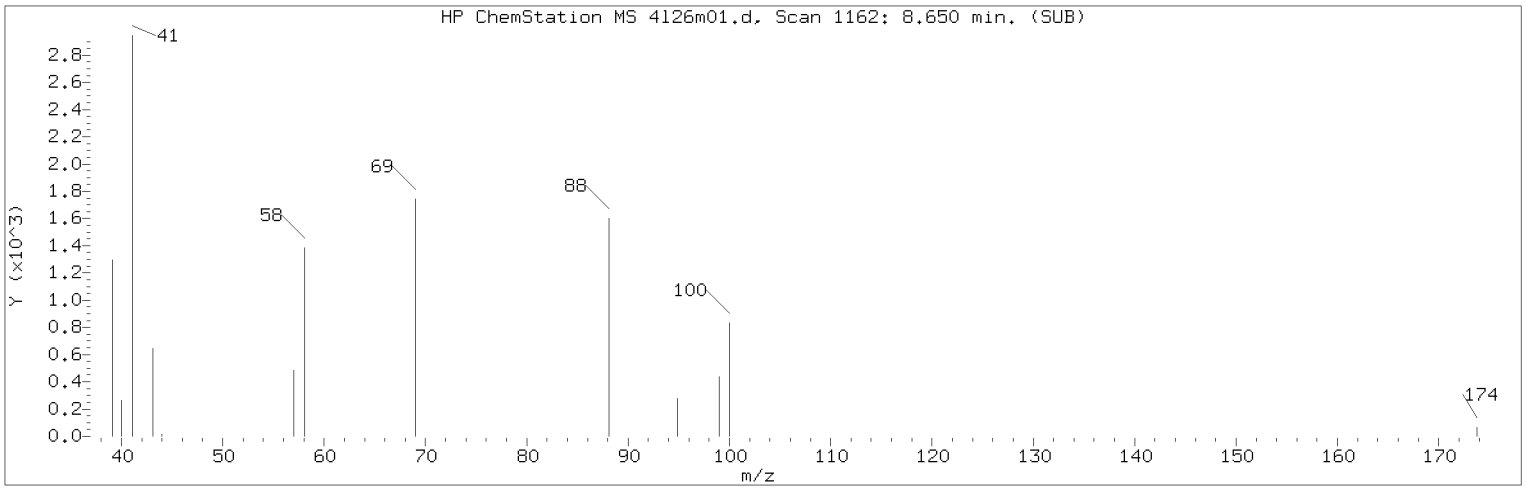
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

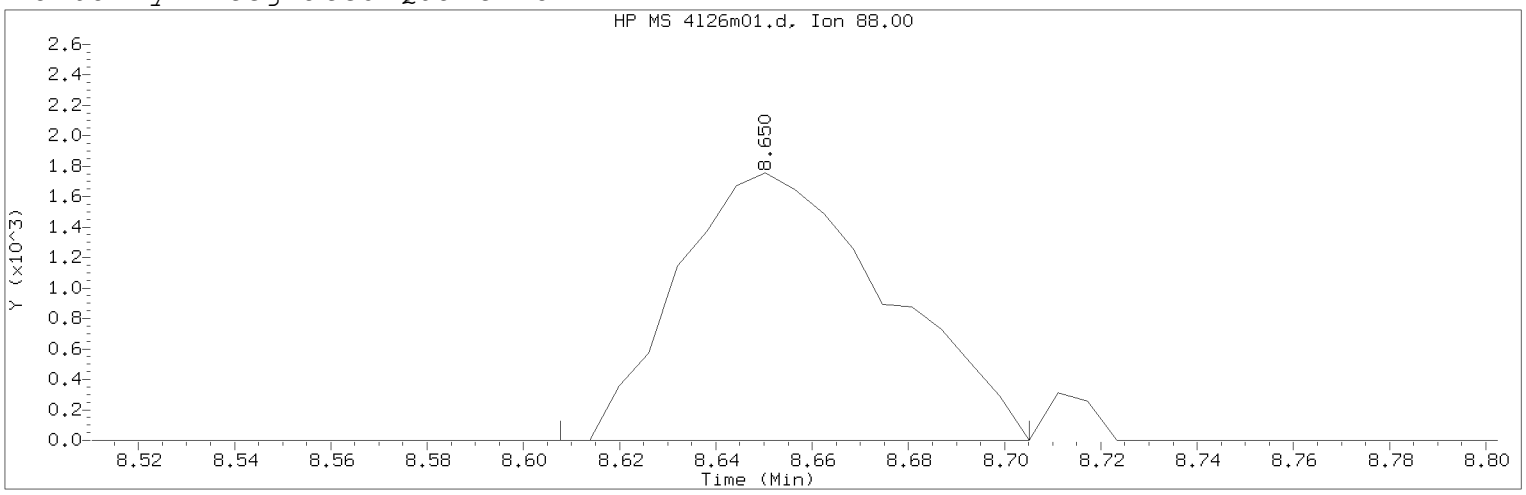
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 349
Retention Time (minutes): 3.704
Quant Ion : 45.00
Area : 21835
On-column Amount (ng) : 22.9601
Integration start scan : 334 Integration stop scan: 389
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved on 07/26/2017

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

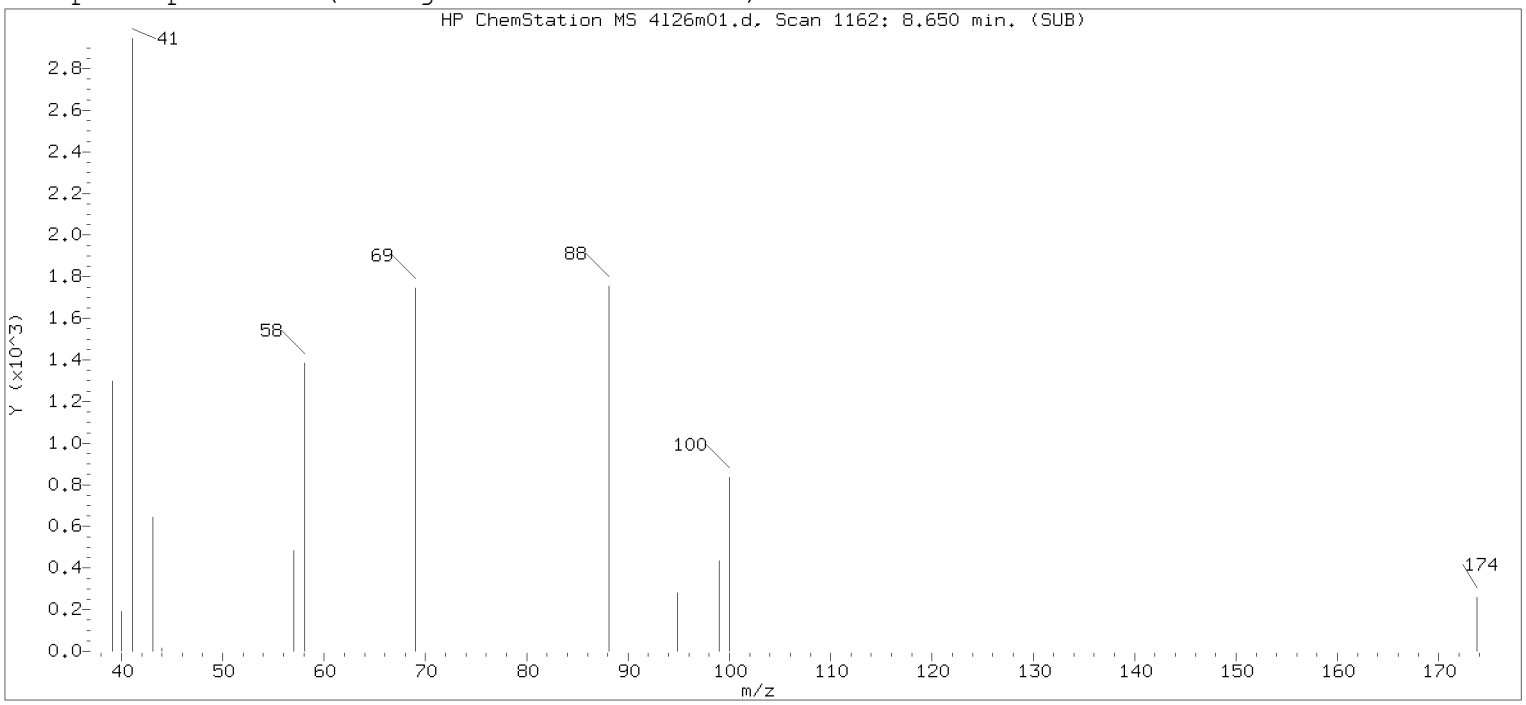
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area (flag) : 5316M
On-Column Amount (ng) : 42.1365
Integration start scan : 1154 Integration stop scan: 1170
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

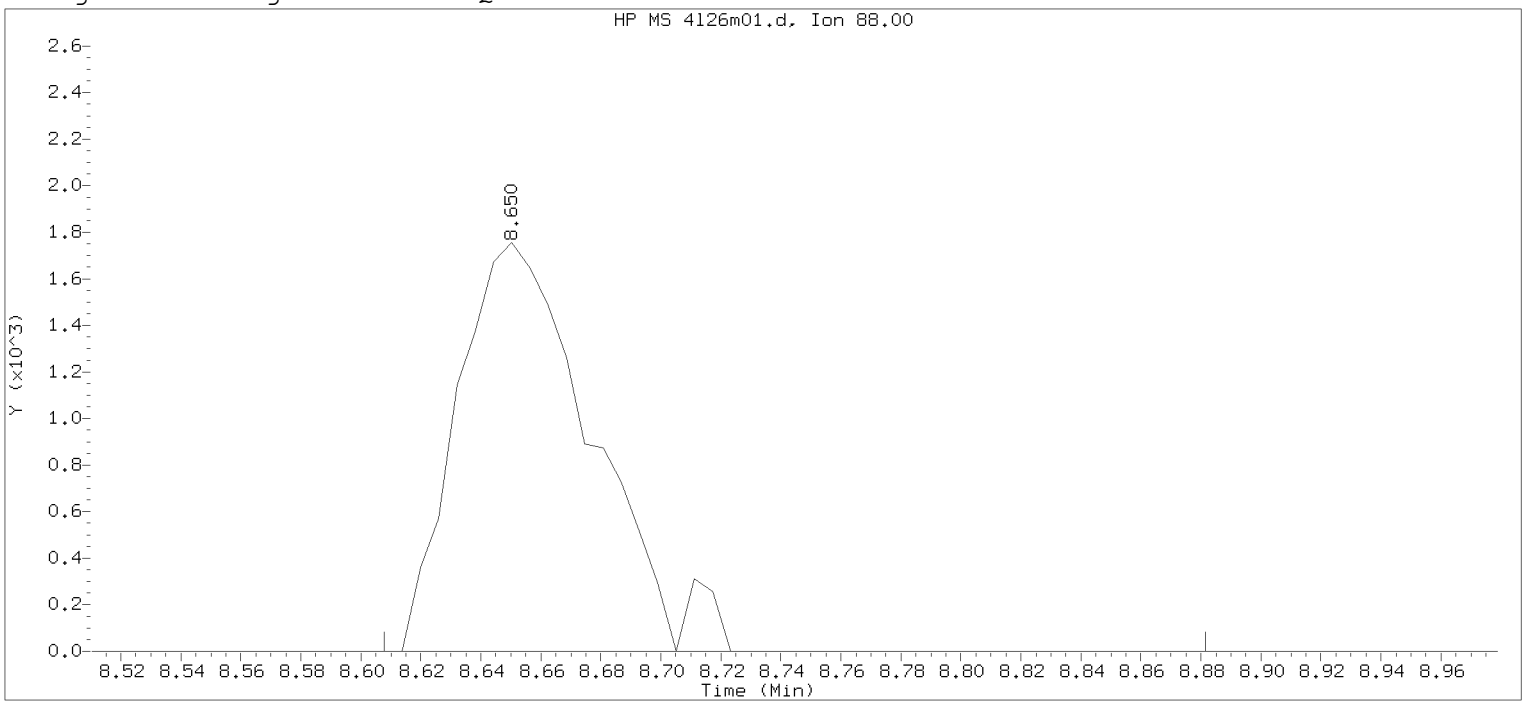
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

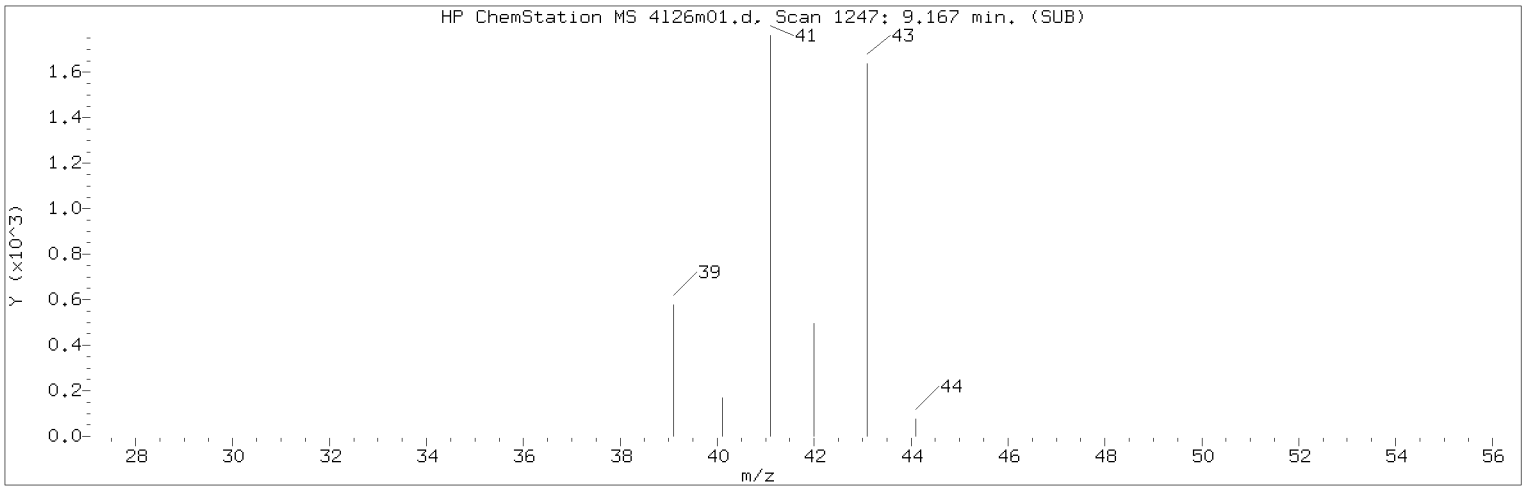
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

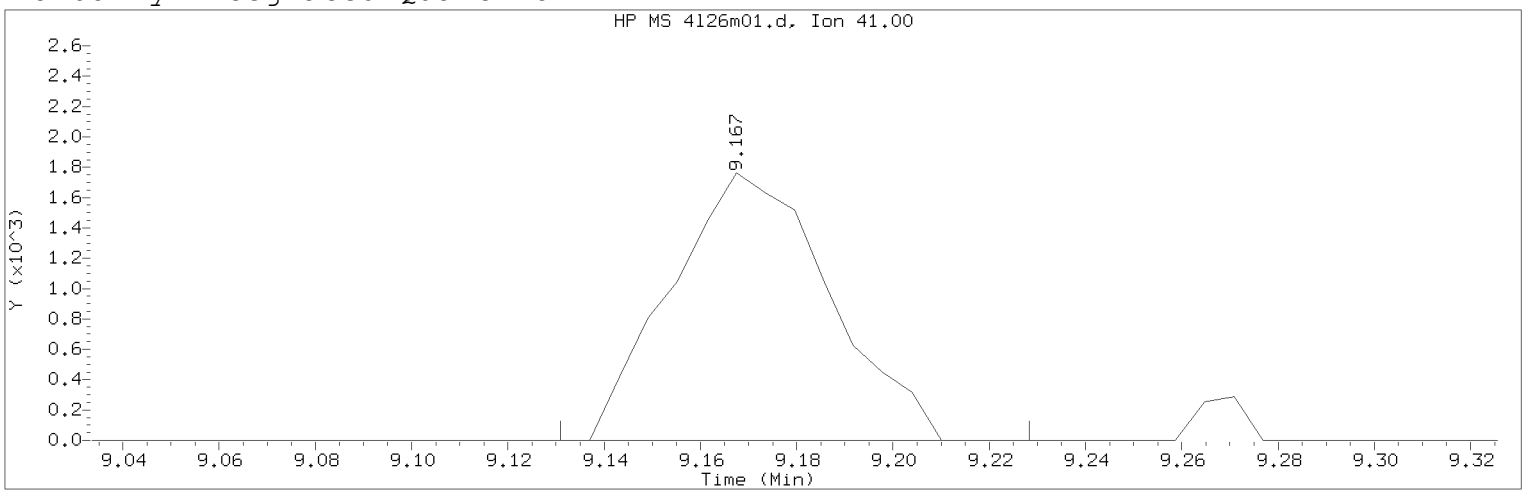
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1162
Retention Time (minutes): 8.650
Quant Ion : 88.00
Area : 5522
On-column Amount (ng) : 46.0530
Integration start scan : 1154 Integration stop scan: 1199
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

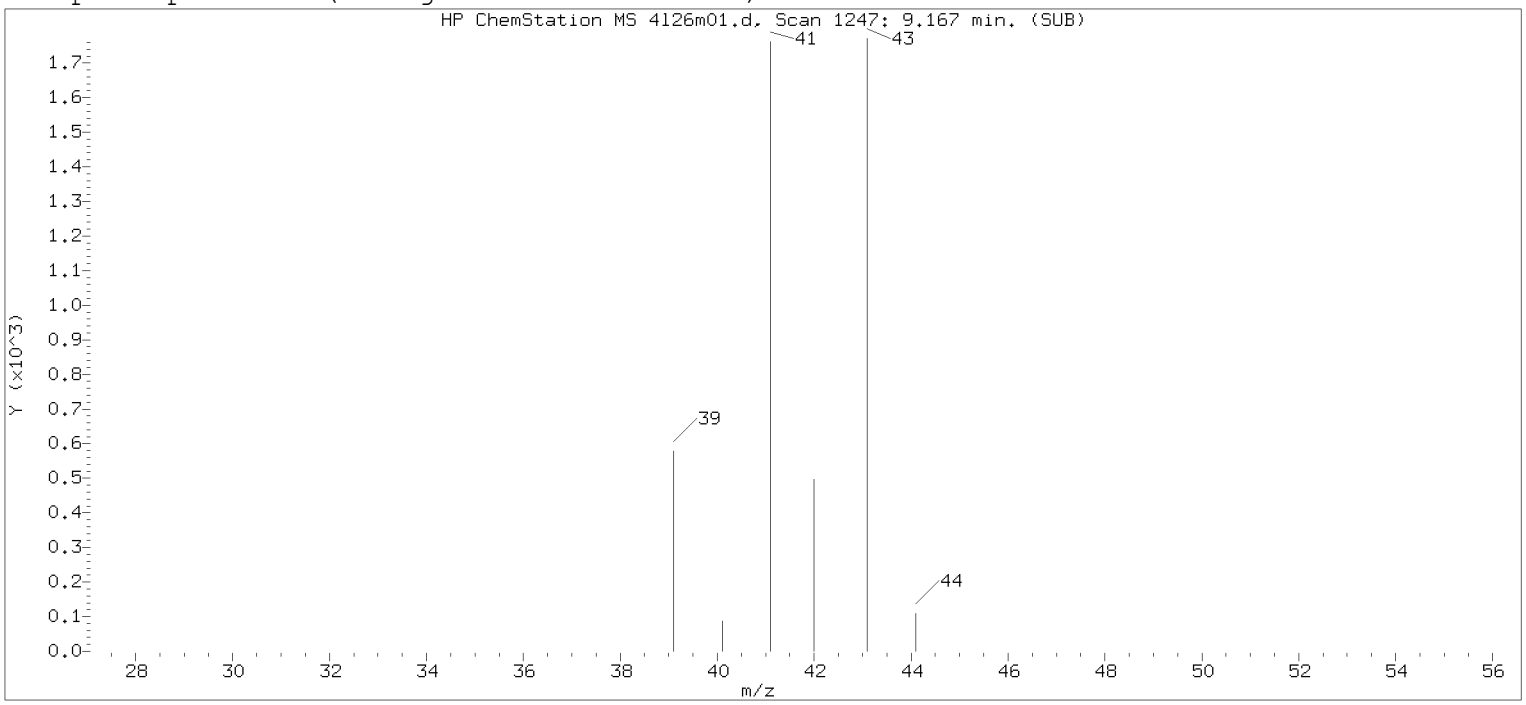
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1247
Retention Time (minutes): 9.167
Quant Ion : 41.00
Area (flag) : 4037M
On-Column Amount (ng) : 7.1063
Integration start scan : 1240 Integration stop scan: 1256
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

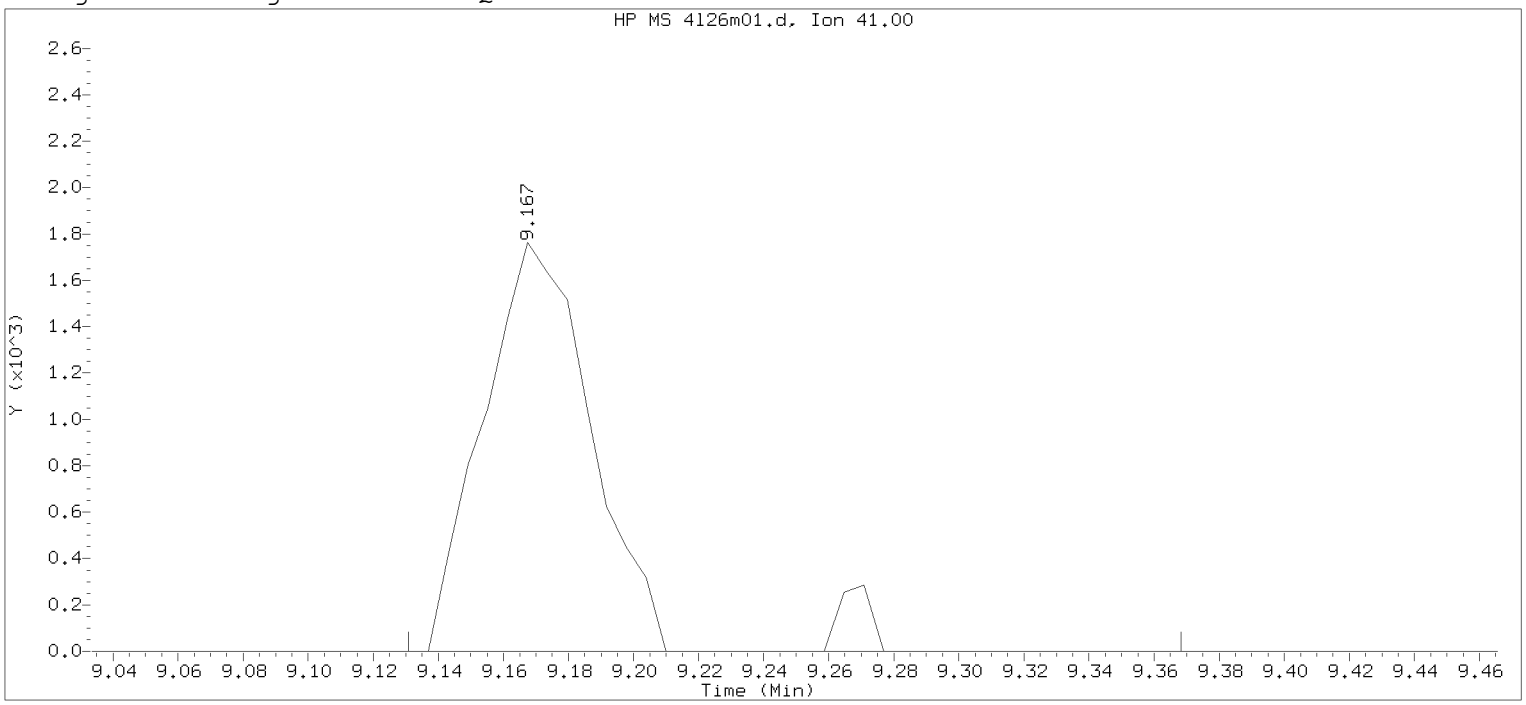
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

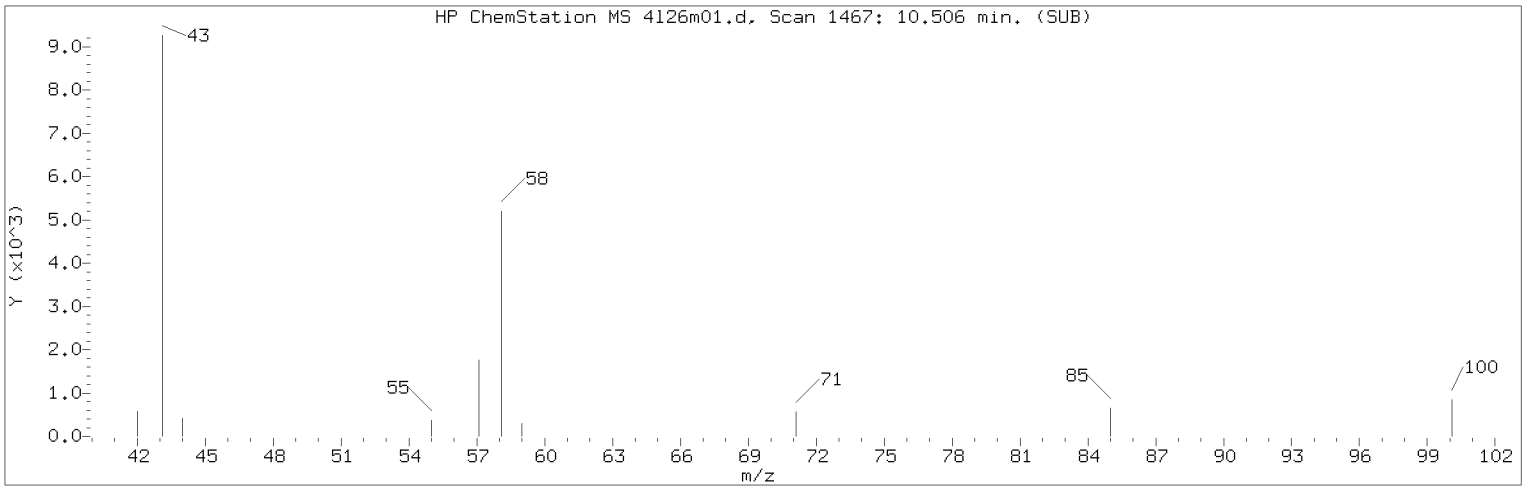
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

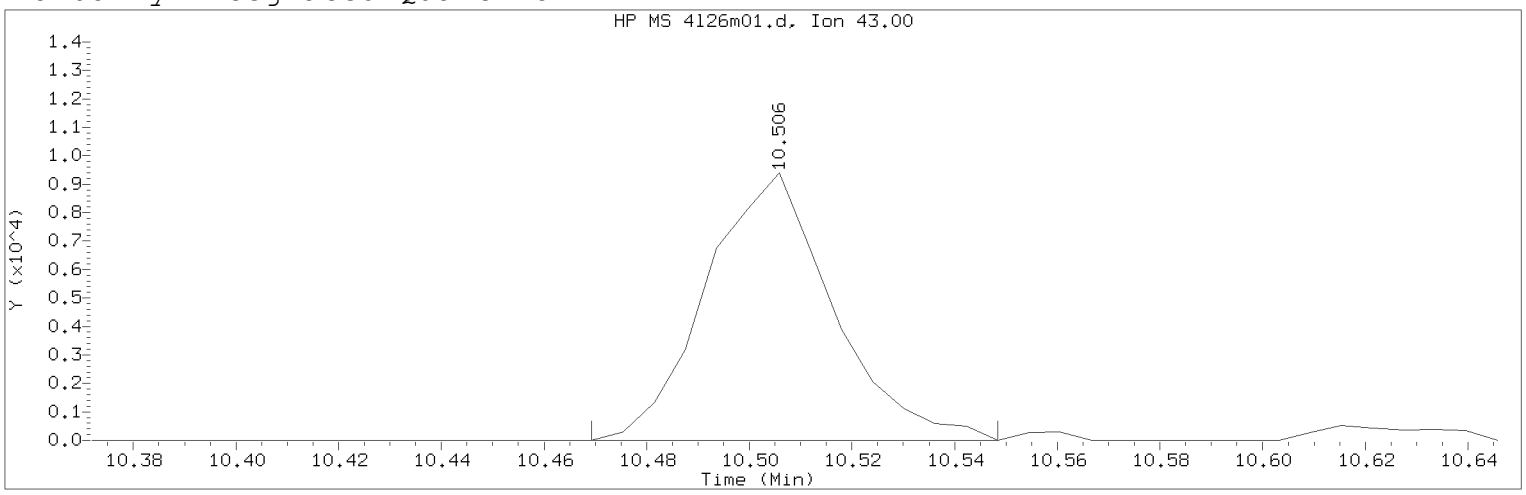
Compound Number : 80
Compound Name : 2-Nitropropane
Scan Number : 1247
Retention Time (minutes): 9.167
Quant Ion : 41.00
Area : 4234
On-column Amount (ng) : 1.5867
Integration start scan : 1240 Integration stop scan: 1279
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

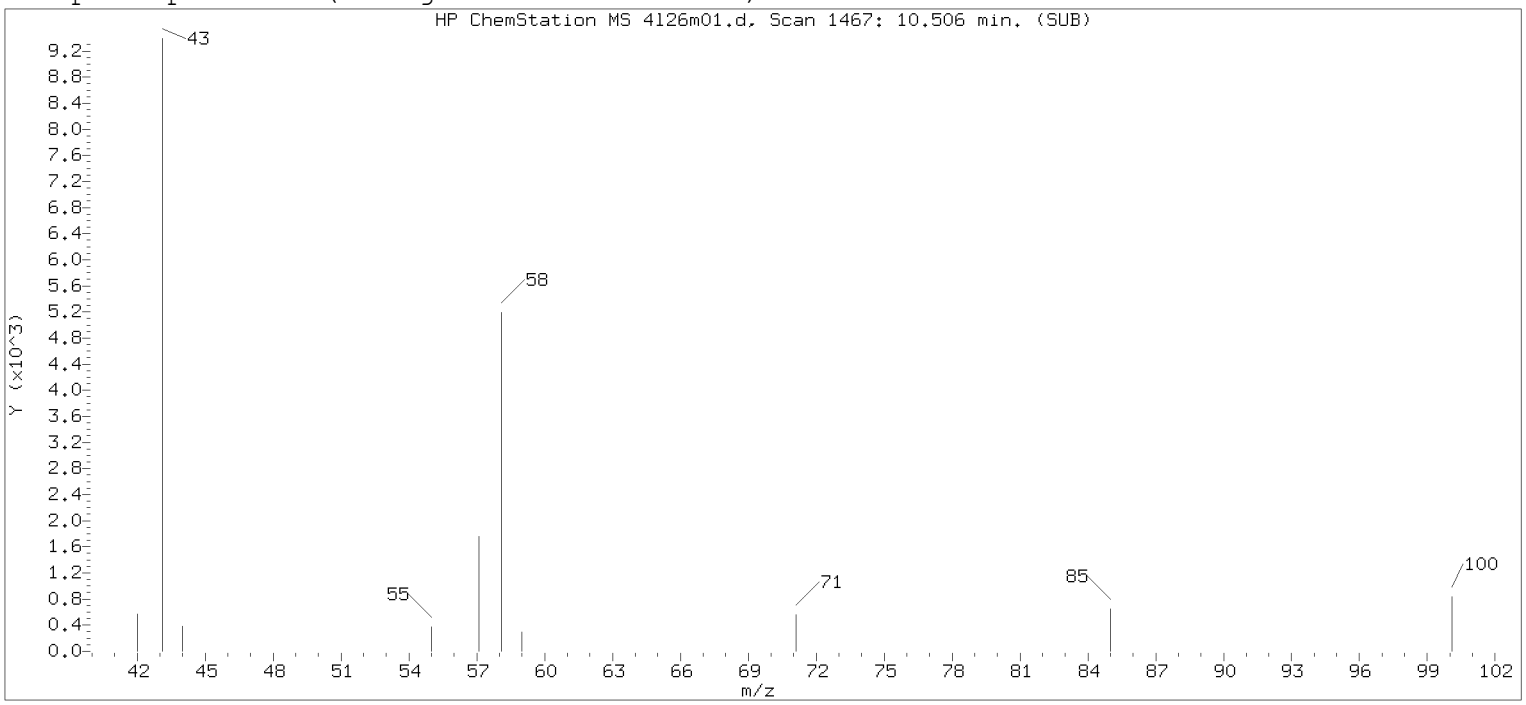
Compound Number : 97
Compound Name : 2-Hexanone
Scan Number : 1467
Retention Time (minutes): 10.506
Quant Ion : 43.00
Area (flag) : 16035M
On-Column Amount (ng) : 8.6731
Integration start scan : 1460 Integration stop scan: 1473
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

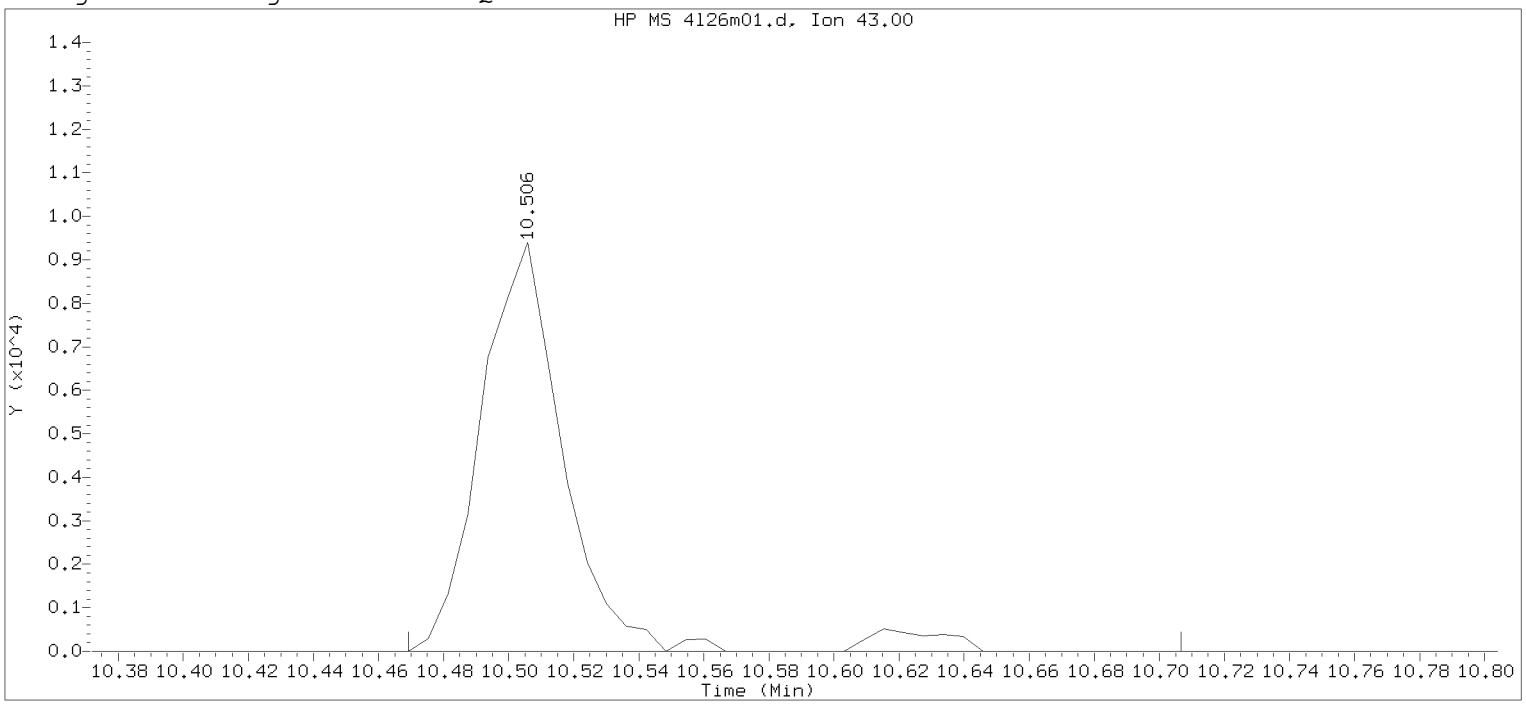
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

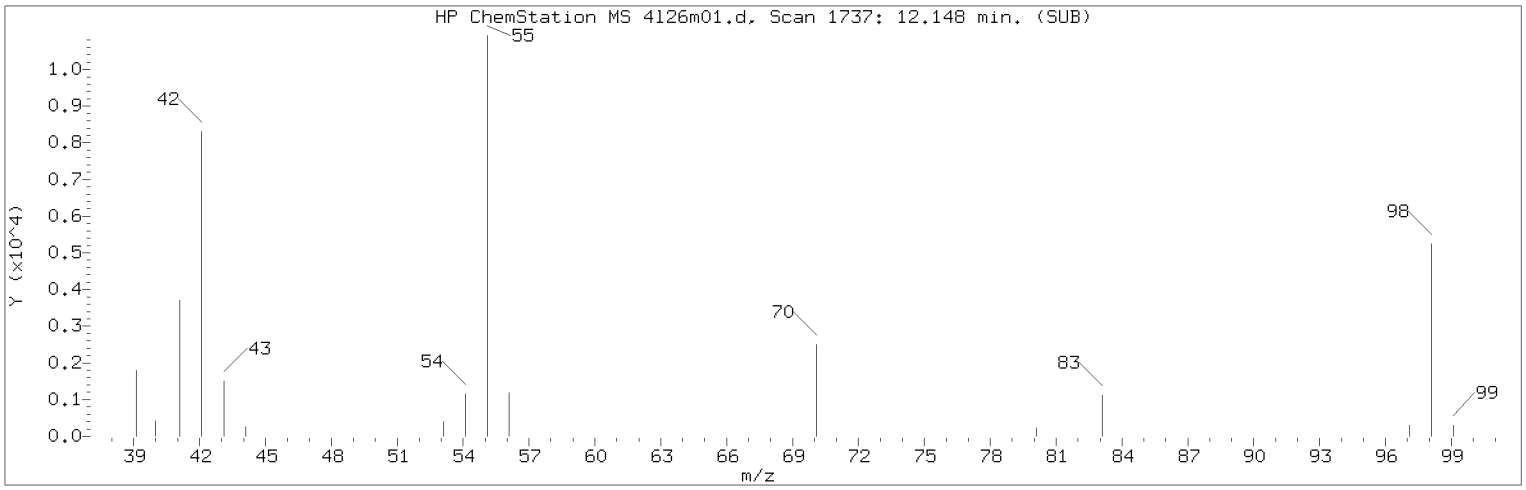
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

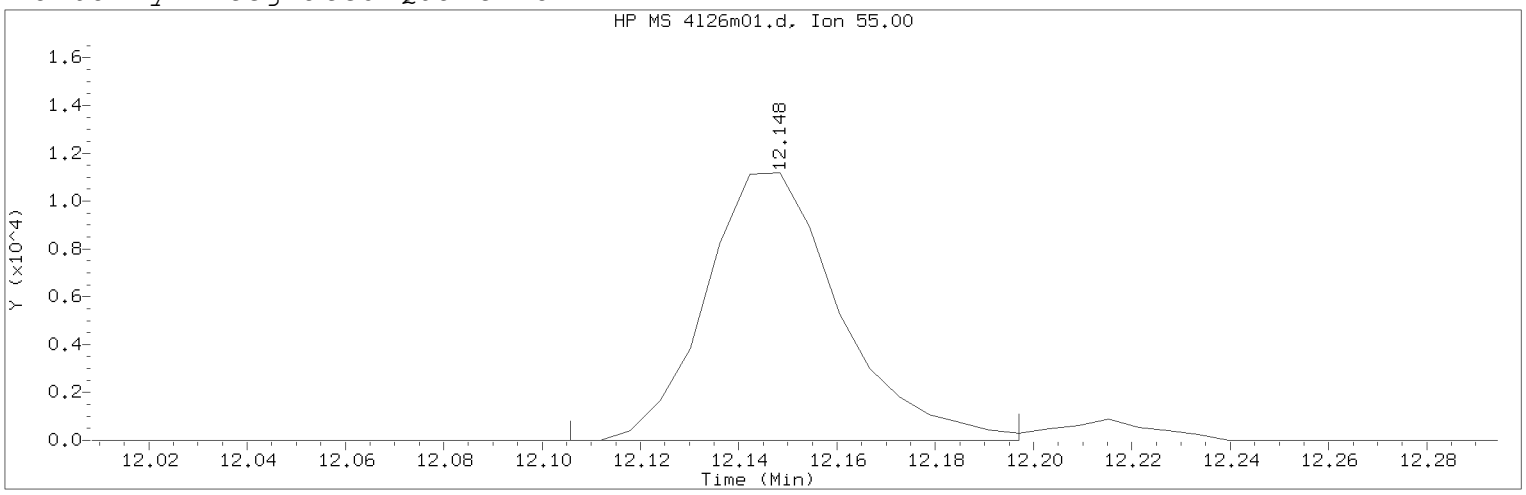
Compound Number : 97
Compound Name : 2-Hexanone
Scan Number : 1467
Retention Time (minutes): 10.506
Quant Ion : 43.00
Area : 17067
On-column Amount (ng) : 1.7919
Integration start scan : 1460 Integration stop scan: 1499
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved on 07/26/2017

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

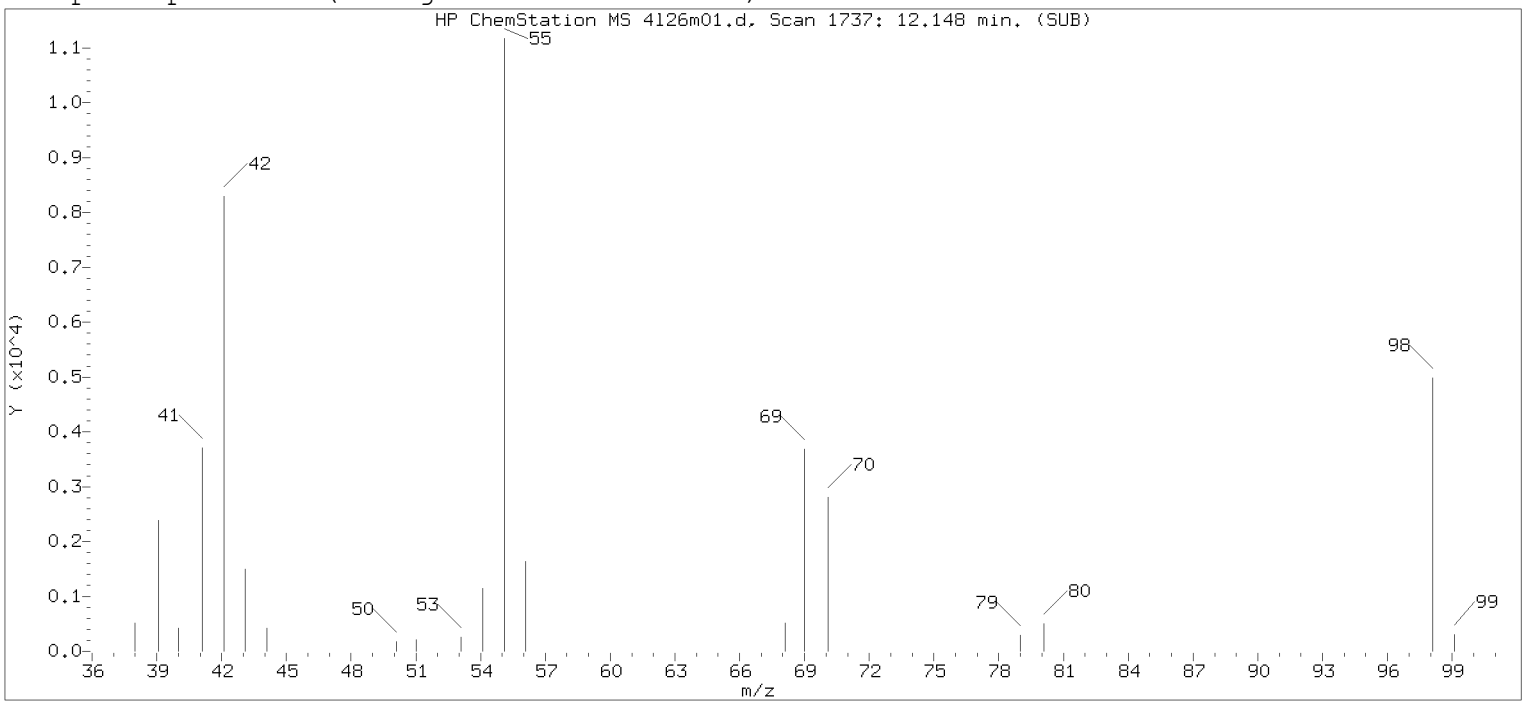
Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1737
Retention Time (minutes): 12.148
Quant Ion : 55.00
Area (flag) : 21169M
On-Column Amount (ng) : 46.2675
Integration start scan : 1729 Integration stop scan: 1744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

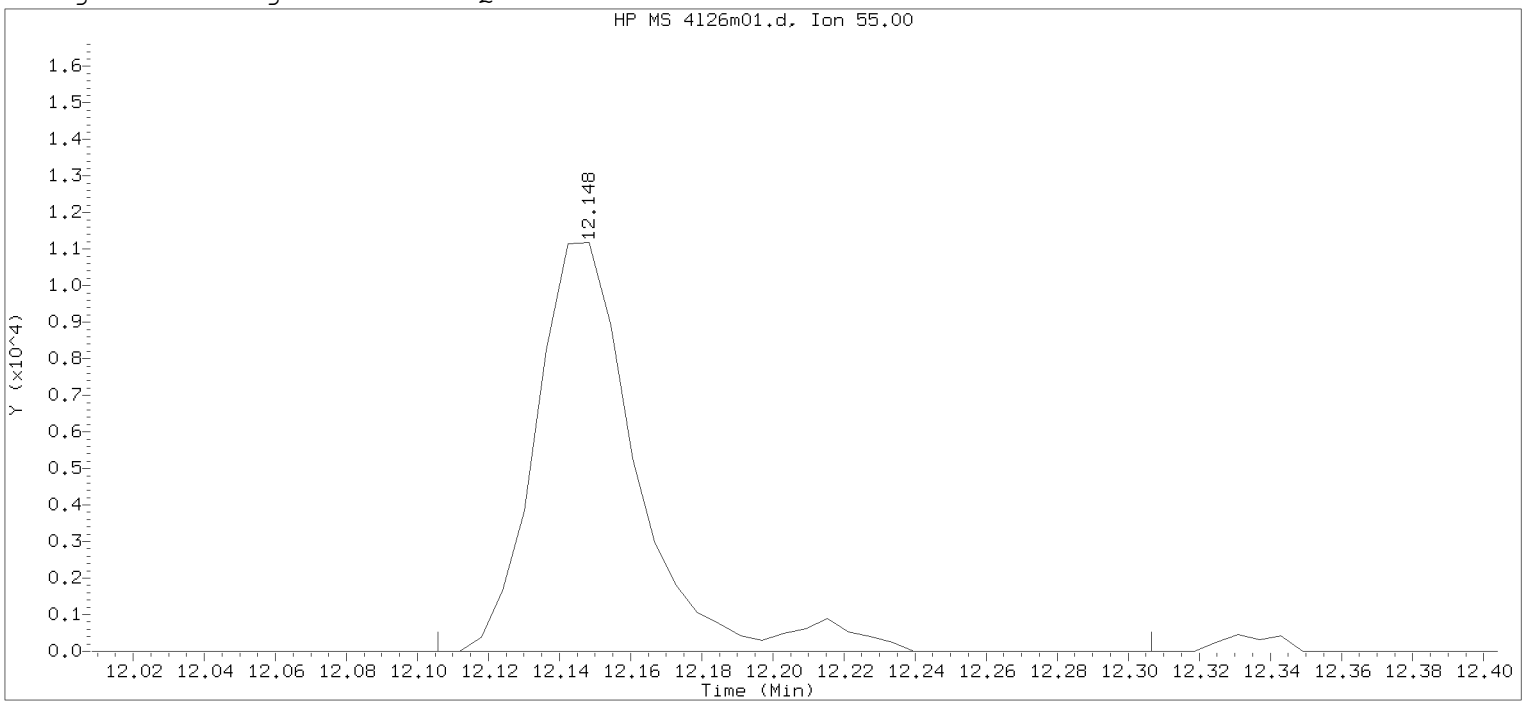
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:37.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



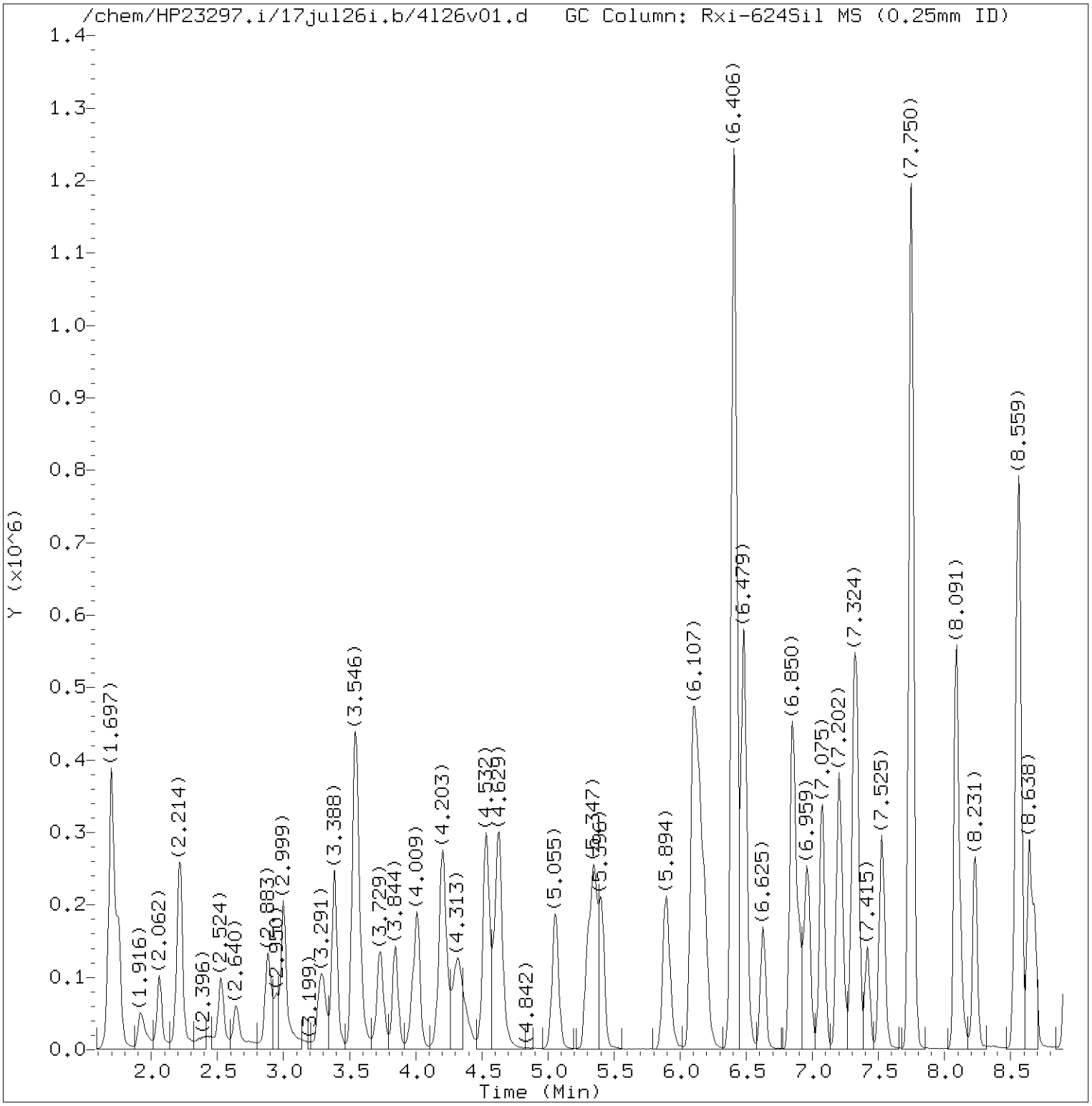
Data File: /chem/HP23297.i/17jul26i.b/4l26m01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 12:49 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:07 Automation

Sample Name: 0.5PPB Lab Sample ID: 0.5PPB

Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1737
Retention Time (minutes): 12.148
Quant Ion : 55.00
Area : 22330
On-column Amount (ng) : 48.0845
Integration start scan : 1729 Integration stop scan: 1762
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.



Total Ion Chromatogram (TIC)

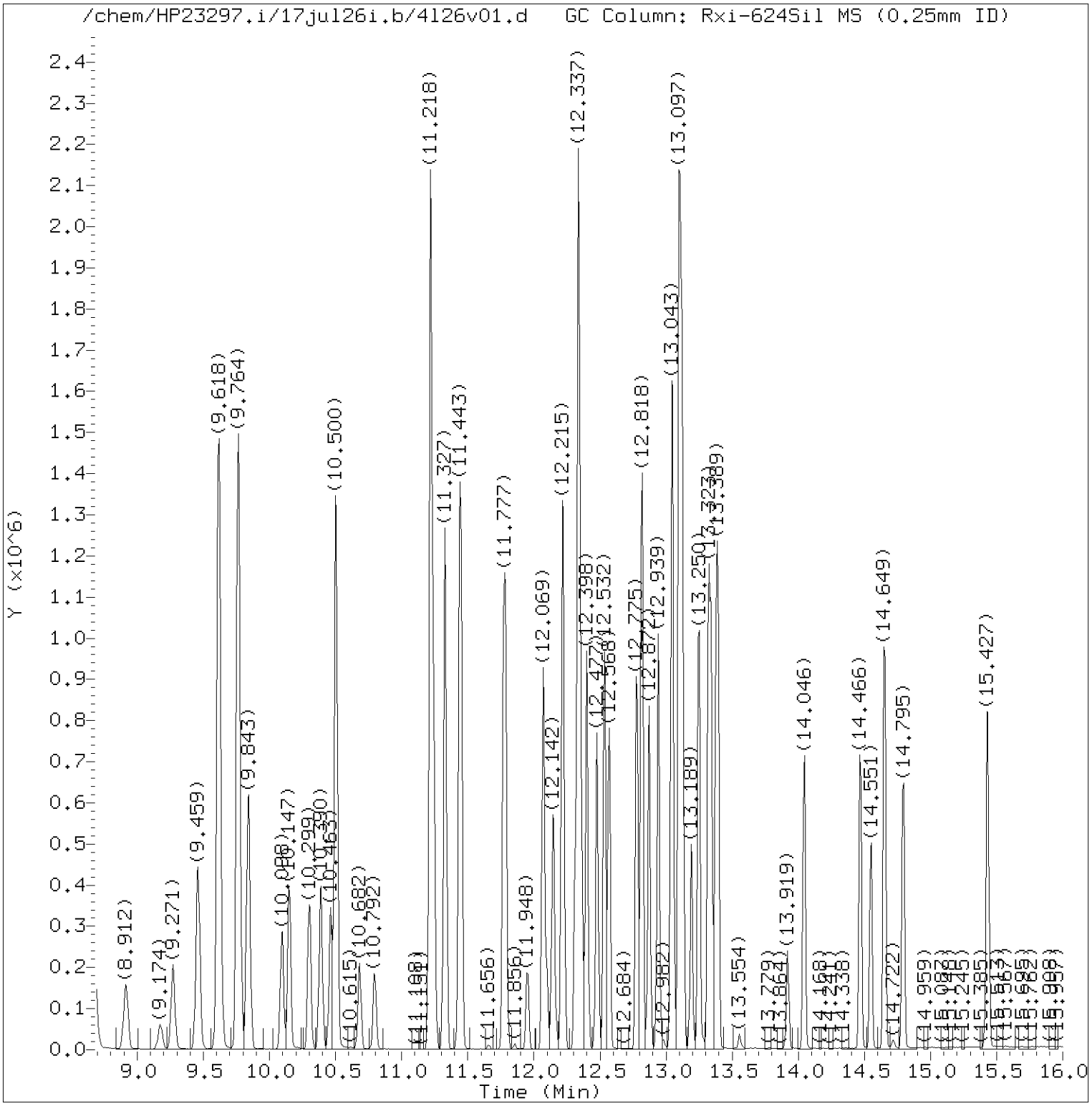
Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.916	85	113745	17.610
4) Chloromethane	(2)	2.062	50	138586	19.070
6) Vinyl Chloride	(2)	2.196	62	133528	19.395
5) 1,3-Butadiene	(2)	2.220	39	144534	23.836
8) Bromomethane	(2)	2.524	94	92626	19.509
9) Chloroethane	(2)	2.640	64	73712	19.356
10) Dichlorofluoromethane	(2)	2.877	67	162400	15.902
12) Trichlorofluoromethane	(2)	2.950	101	146471	20.129
11) n-Pentane	(2)	2.999	43	205361	19.385
13) Ethanol	(1)	3.066	45	79424	521.195
15) Freon 123a	(2)	3.291	67	133075	20.512
16) Acrolein	(1)	3.388	56	335436	142.249
17) 1,1-Dichloroethene	(2)	3.534	96	98560	21.574
18) Acetone	(1)	3.546	58	184601	148.968
19) Freon 113	(2)	3.558	101	96077	21.105
21) 2-Propanol	(1)	3.711	45	160559	152.374
22) Methyl Iodide	(2)	3.735	142	181040	20.151
23) Carbon Disulfide	(2)	3.844	76	313431	19.612
27) Methyl Acetate	(2)	3.978	43	176393	18.424
25) Allyl Chloride	(2)	4.015	41	187070	18.951
29)*t-Butyl alcohol-d10	(1)	4.197	65	377794	250.000
28) Methylene Chloride	(2)	4.203	84	121347	19.950
30) t-Butyl alcohol	(1)	4.325	59	342458	200.603
31) Acrylonitrile	(2)	4.532	53	449783	94.423
33) Methyl Tertiary Butyl Ether	(2)	4.611	73	347581	19.740
32) trans-1,2-Dichloroethene	(2)	4.629	96	115755	21.195
34) n-Hexane	(2)	5.055	57	172748	18.590
36) 1,1-Dichloroethane	(2)	5.298	63	209172	20.230
38) di-Isopropyl ether	(2)	5.347	45	425825	20.447
39) 2-Chloro-1,3-butadiene	(2)	5.408	53	172816	20.019
40) Ethyl t-butyl ether	(2)	5.894	59	349399	19.477
43) 1,2-Dichloroethene (Total)	(2)		96	245959	42.053
44) 2-Butanone	(2)	6.101	43	954753	137.402
42) cis-1,2-Dichloroethene	(2)	6.138	96	130204	20.858
45) 2,2-Dichloropropane	(2)	6.156	77	133013	19.641
47) Propionitrile	(1)	6.187	54	304987	152.756
48) Methacrylonitrile	(2)	6.406	67	686932	152.110
49) Bromochloromethane	(2)	6.479	128	64514	19.572

* = Compound is an internal standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50) Tetrahydrofuran	(1)	6.485	71	173151	101.434
51) Chloroform	(2)	6.625	83	192233	20.290
52)$Dibromofluoromethane	(2)	6.844	113	287944	50.404
53) 1,1,1-Trichloroethane	(2)	6.856	97	155862	19.147
54) Cyclohexane	(2)	6.959	56	204568	18.995
55) 1,1-Dichloropropene	(2)	7.075	75	156210	19.881
56) Carbon Tetrachloride	(2)	7.075	117	122015	19.634
58) Isobutyl Alcohol	(1)	7.202	41	319745	494.975
57)$1,2-Dichloroethane-d4	(2)	7.312	102	73241	50.661
60) Benzene	(2)	7.336	78	486752	20.254
61) 1,2-Dichloroethane	(2)	7.415	62	152622	19.706
65) t-Amyl methyl ether	(2)	7.525	73	335258	19.340
66)*Fluorobenzene	(2)	7.744	96	1213636	50.000
67) n-Heptane	(2)	7.750	43	192907	18.883
69) n-Butanol	(1)	8.091	56	504454	979.790
71) Trichloroethene	(2)	8.231	95	119403	20.013
73) Methylcyclohexane	(2)	8.547	83	201065	19.797
74) 1,2-Dichloropropane	(2)	8.565	63	134741	20.280
77) Methyl Methacrylate	(2)	8.638	69	129338	19.171
76) 1,4-Dioxane	(1)	8.656	88	64622M	466.987
75) Dibromomethane	(2)	8.681	93	79982	19.850
79) Bromodichloromethane	(2)	8.912	83	135100	19.188
80) 2-Nitropropane	(2)	9.174	41	45690	18.385
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	109687	19.300
82) cis-1,3-Dichloropropene	(2)	9.453	75	187775	19.673
83) 4-Methyl-2-pentanone	(2)	9.618	43	1239773M	95.119
84)$Toluene-d8	(3)	9.764	98	1203899	50.062
89) Toluene	(3)	9.843	92	309075	20.301
91) 1,3-Dichloropropene (total)	(3)		100	354620	39.173
90) trans-1,3-Dichloropropene	(3)	10.098	75	166845	19.501
92) Ethyl Methacrylate	(3)	10.147	69	212088	20.069
93) 1,1,2-Trichloroethane	(3)	10.299	97	124569	20.115
94) Tetrachloroethene	(3)	10.390	166	133922	19.923
95) 1,3-Dichloropropane	(3)	10.463	76	203519	19.788
97) 2-Hexanone	(3)	10.500	43	938463	72.010
98) Dibromochloromethane	(3)	10.682	129	114925	19.286
100) 1,2-Dibromoethane	(3)	10.792	107	131513	19.939
101)*Chlorobenzene-d5	(3)	11.218	117	912731	50.000

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
103) Chlorobenzene	(3)	11.242	112	350188	20.095
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	109640	19.456
105) Ethylbenzene	(3)	11.327	91	585613	20.437
107) m+p-Xylene	(3)	11.443	106	470694	41.041
109) Xylene (Total)	(3)		106	698448	61.082
108) o-Xylene	(3)	11.771	106	227754	20.041
110) Styrene	(3)	11.789	104	387100	20.433
111) Bromoform	(3)	11.954	173	85999	18.050
112) Isopropylbenzene	(3)	12.069	105	568991	20.239
113) Cyclohexanone	(1)	12.142	55	246742M	491.666
115)$4-Bromofluorobenzene	(3)	12.215	95	429951	50.275
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	215118	19.420
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	300519	106.730
116) Bromobenzene	(4)	12.337	156	157239	19.595
118) 1,2,3-Trichloropropane	(4)	12.361	110	61230	19.258
120) n-Propylbenzene	(4)	12.398	91	690144	20.224
121) 2-Chlorotoluene	(4)	12.477	126	141636	19.986
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	478215	19.981
122) 4-Chlorotoluene	(4)	12.568	126	148793	19.842
125) tert-Butylbenzene	(4)	12.781	134	98245	19.847
126) Pentachloroethane	(4)	12.812	167	83364	19.022
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	499662	20.089
128) sec-Butylbenzene	(4)	12.939	105	626524	19.913
130) 1,3-Dichlorobenzene	(4)	13.043	146	294158	19.524
131) p-Isopropyltoluene	(4)	13.049	119	544248	20.026
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	505110	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	304273	19.464
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	519283	19.945
136) Benzyl Chloride	(4)	13.189	91	318151	17.601
137) 1,3-Diethylbenzene	(4)	13.250	119	315969	19.307
138) 1,4-Diethylbenzene	(4)	13.323	119	330836	19.410
140) n-Butylbenzene	(4)	13.341	92	273382	19.330
139) 1,2-Dichlorobenzene	(4)	13.377	146	290191	19.587
141) 1,2-Diethylbenzene	(4)	13.389	119	270836	19.695
142) Diethylbenzene (total)	(4)		100	917641	58.413
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	49277	19.349
145) 1,3,5-Trichlorobenzene	(4)	14.046	180	217127	18.888
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	207958	18.500

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

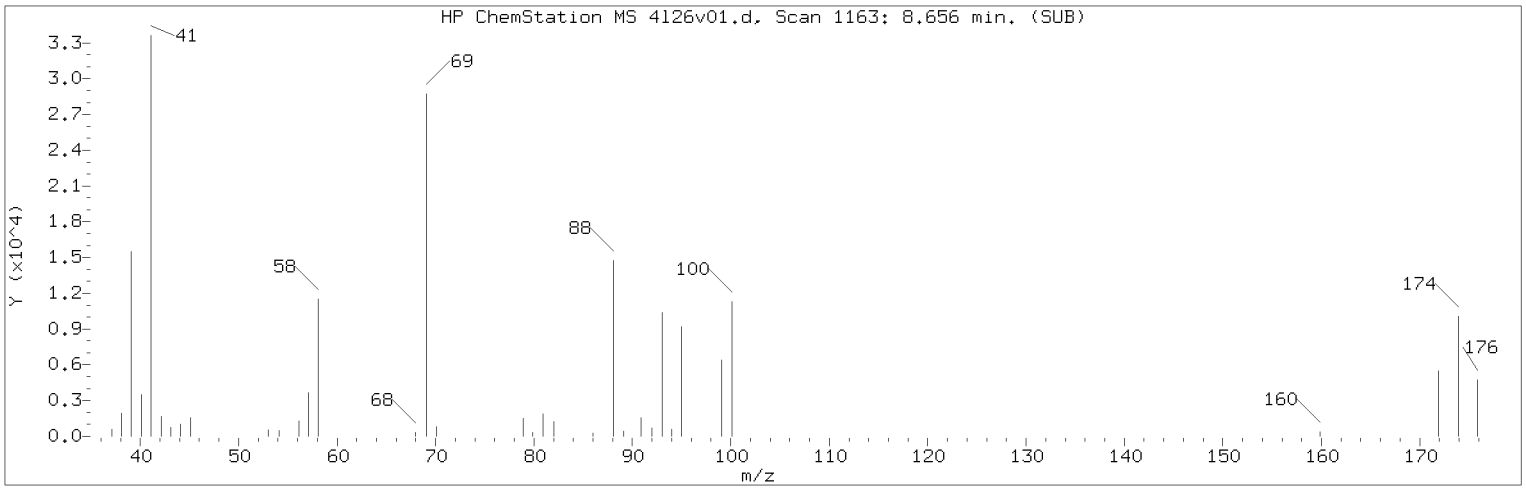
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

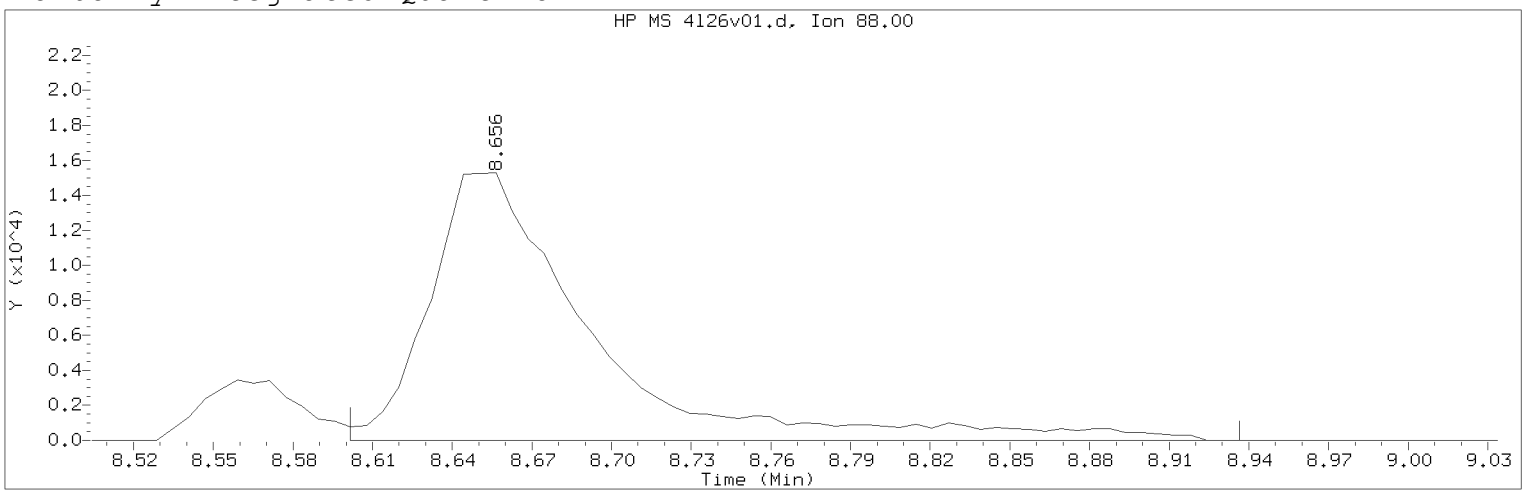
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
148) Hexachlorobutadiene	(4)	14.551	225	91397	17.513
149) Naphthalene	(4)	14.649	128	721261	19.613
150) 1,2,3-Trichlorobenzene	(4)	14.795	180	200979	18.572
151) 2-Methylnaphthalene	(4)	15.427	142	397419	17.410

Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

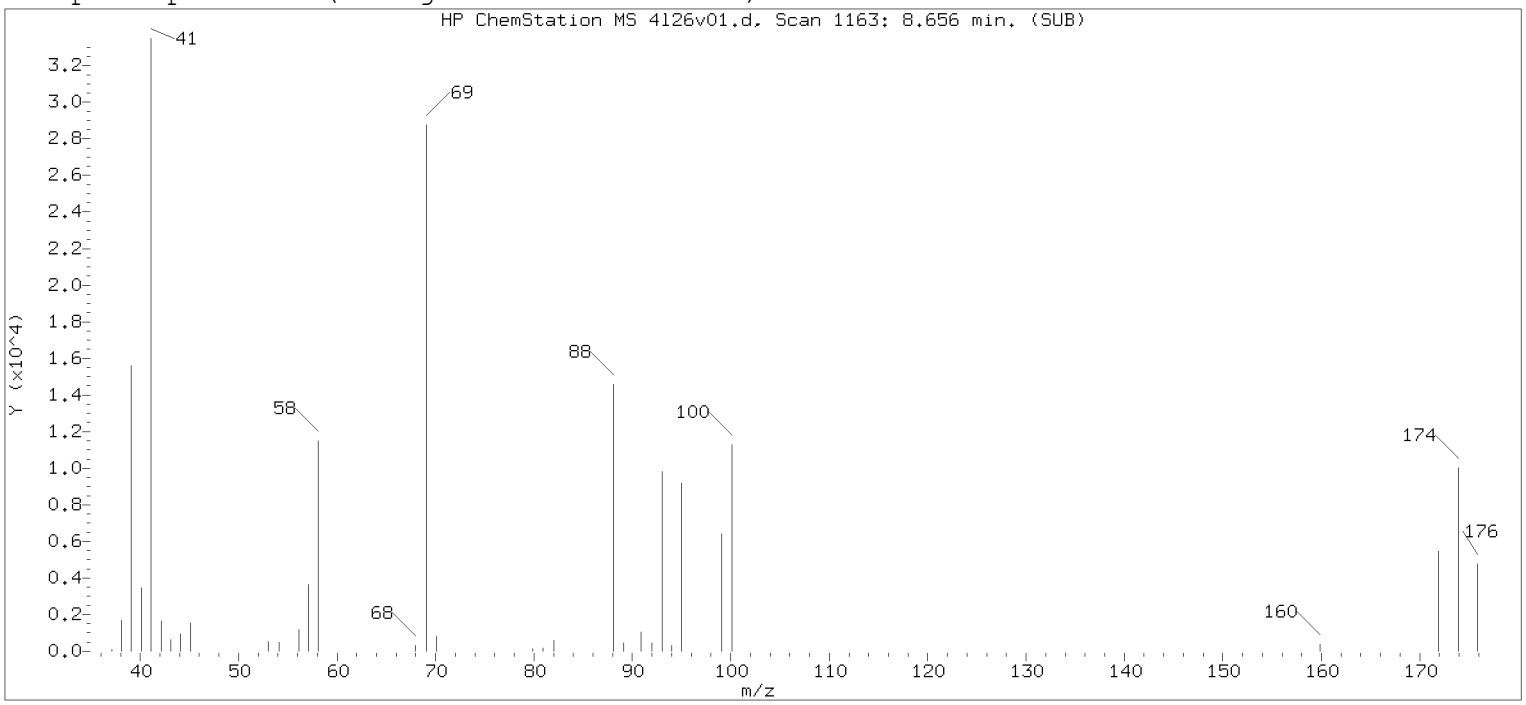
Compound Number : 76
Compound Name : 1,4-Dioxane
Scan Number : 1163
Retention Time (minutes): 8.656
Quant Ion : 88.00
Area (flag) : 64622M
On-Column Amount (ng) : 466.9870
Integration start scan : 1153 Integration stop scan: 1208
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

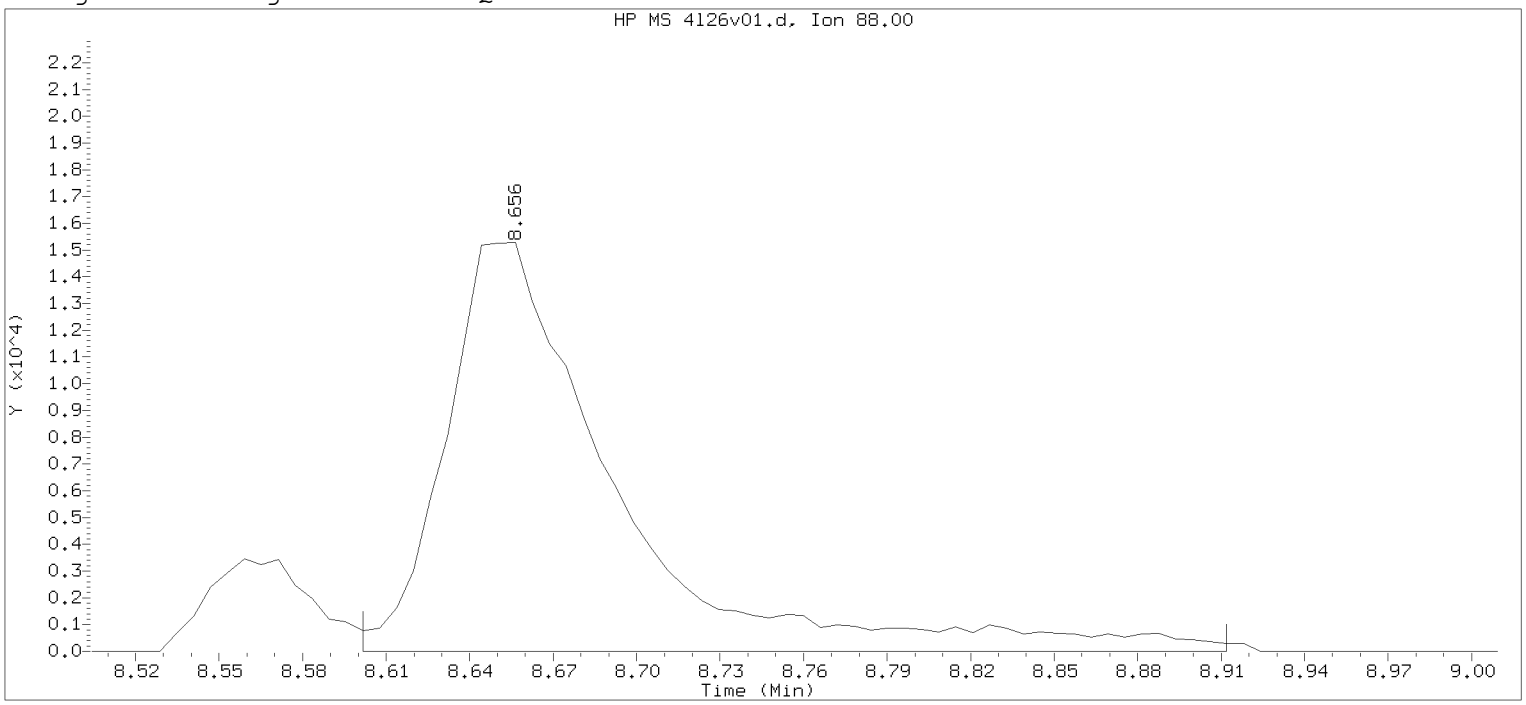
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:42.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

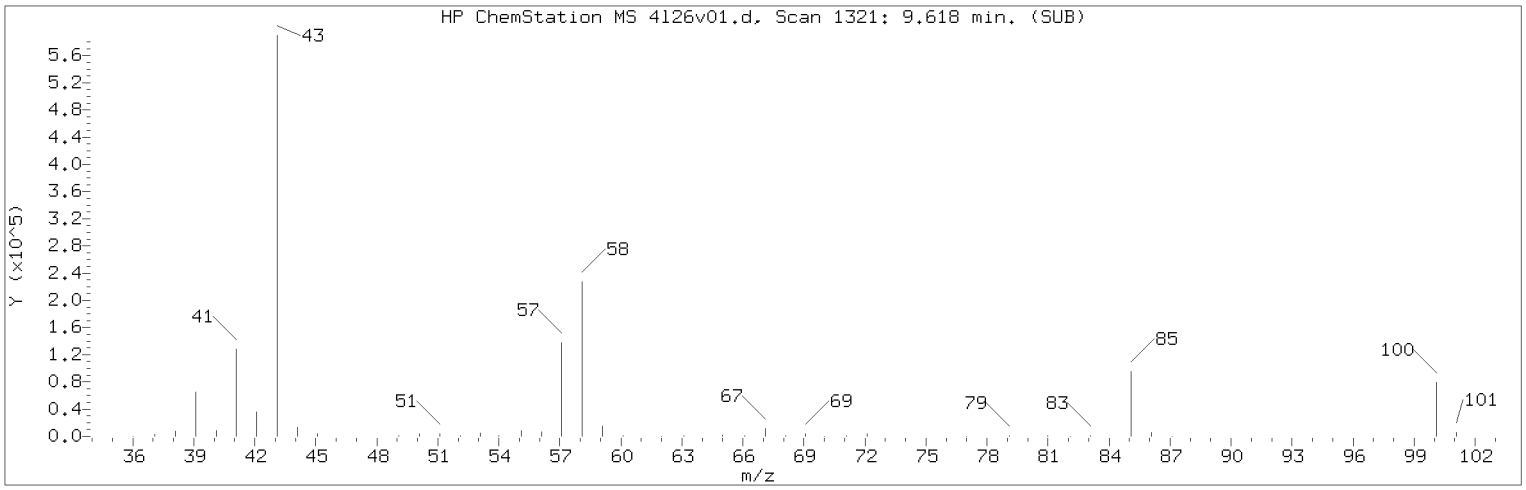
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:29 Automation

Sample Name: LG4ICV Lab Sample ID: LG4ICV

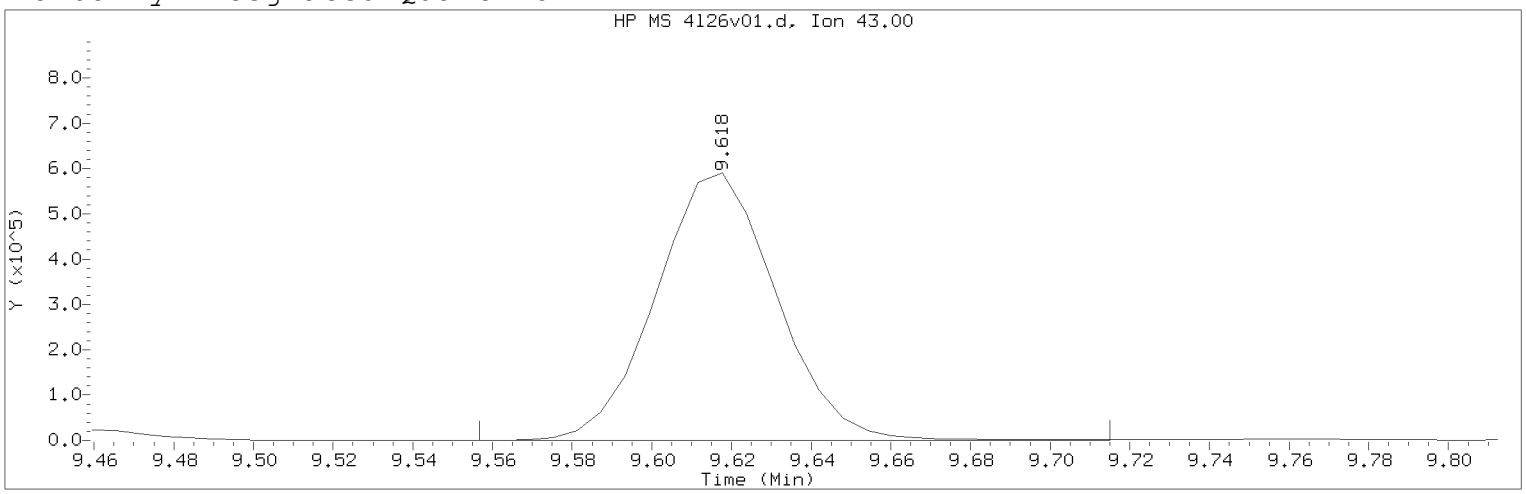
Compound Number	: 76		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1163		
Retention Time (minutes)	: 8.656		
Quant Ion	: 88.00		
Area	: 64326		
On-column Amount (ng)	: 489.0174		
Integration start scan	: 1153	Integration stop scan:	1204
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved 07/27/2017

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

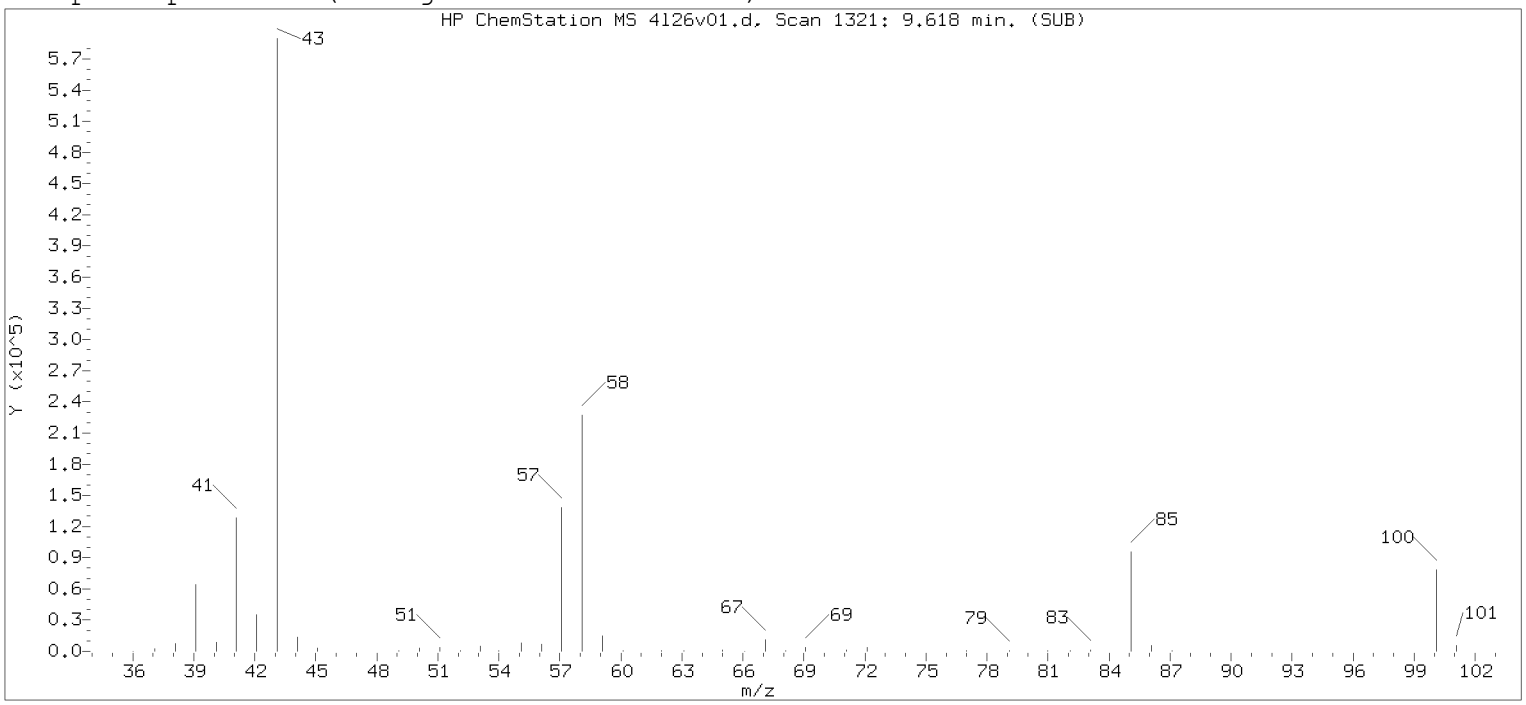
Compound Number : 83
Compound Name : 4-Methyl-2-pentanone
Scan Number : 1321
Retention Time (minutes): 9.618
Quant Ion : 43.00
Area (flag) : 1239773M
On-Column Amount (ng) : 95.1187
Integration start scan : 1310 Integration stop scan: 1336
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

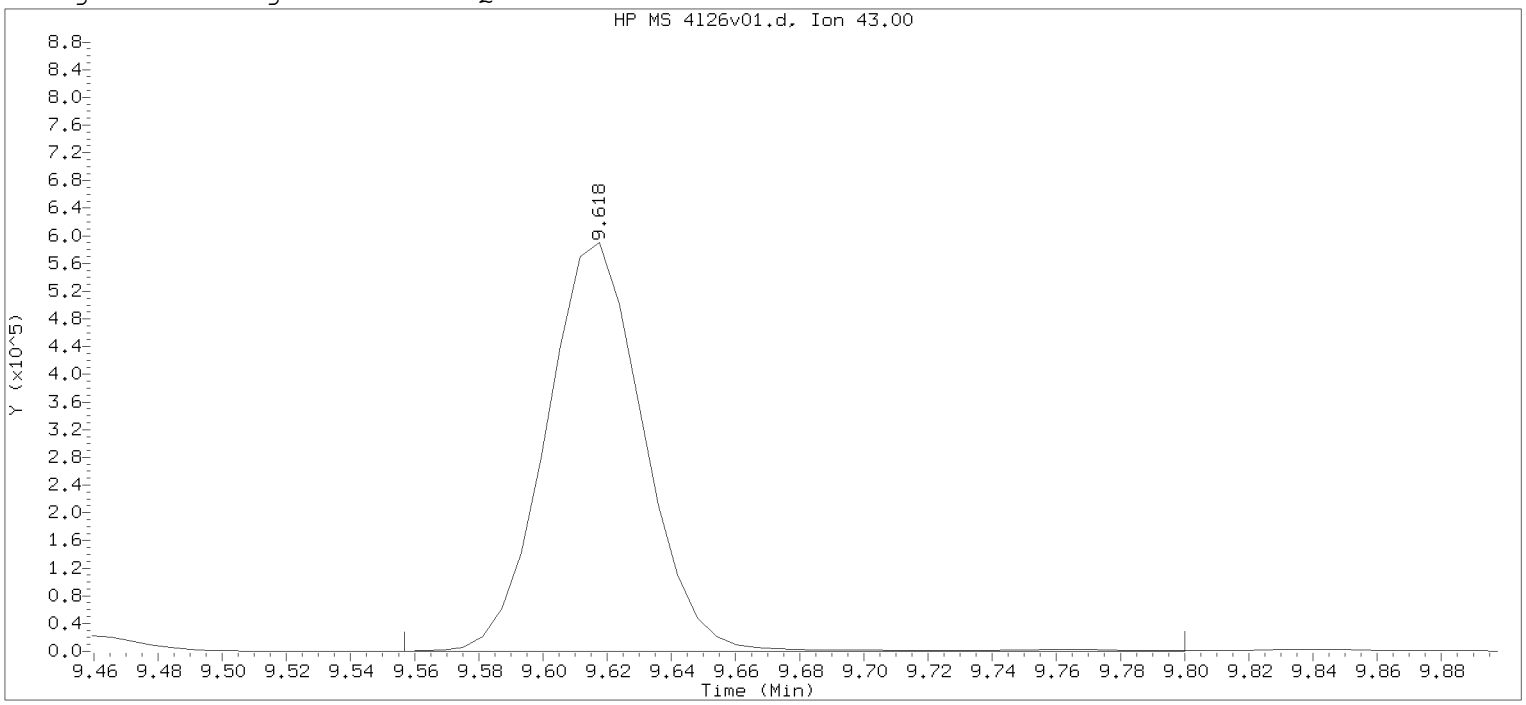
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:42.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

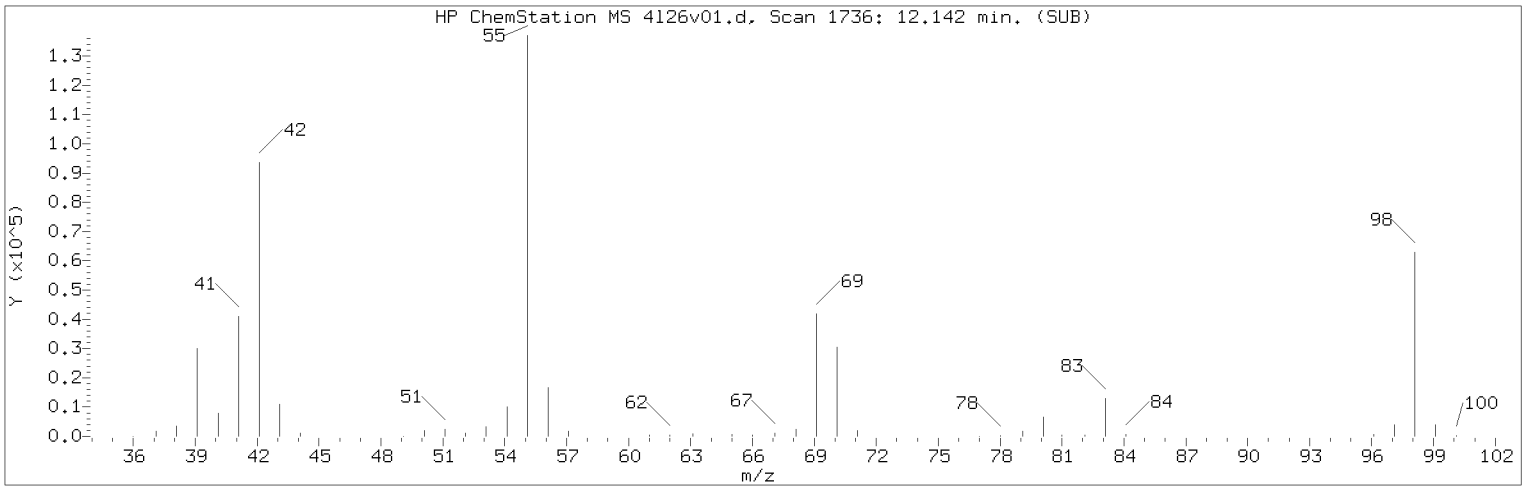
Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:29 Automation

Sample Name: LG4ICV Lab Sample ID: LG4ICV

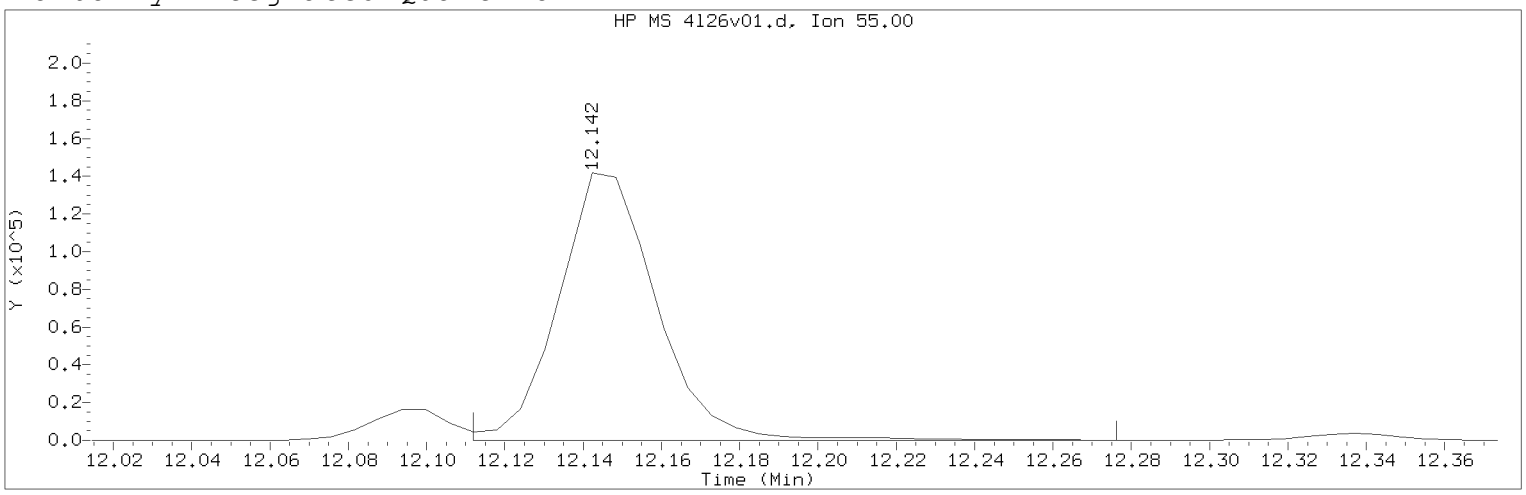
Compound Number : 83
Compound Name : 4-Methyl-2-pentanone
Scan Number : 1321
Retention Time (minutes): 9.618
Quant Ion : 43.00
Area : 1247788
On-column Amount (ng) : 96.8119
Integration start scan : 1310 Integration stop scan: 1350
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user option 1221

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 18:29
Date, time and analyst ID of latest file update: 26-Jul-2017 18:32 pth10165

Sample Name: LG4ICV Lab Sample ID: LG4ICV

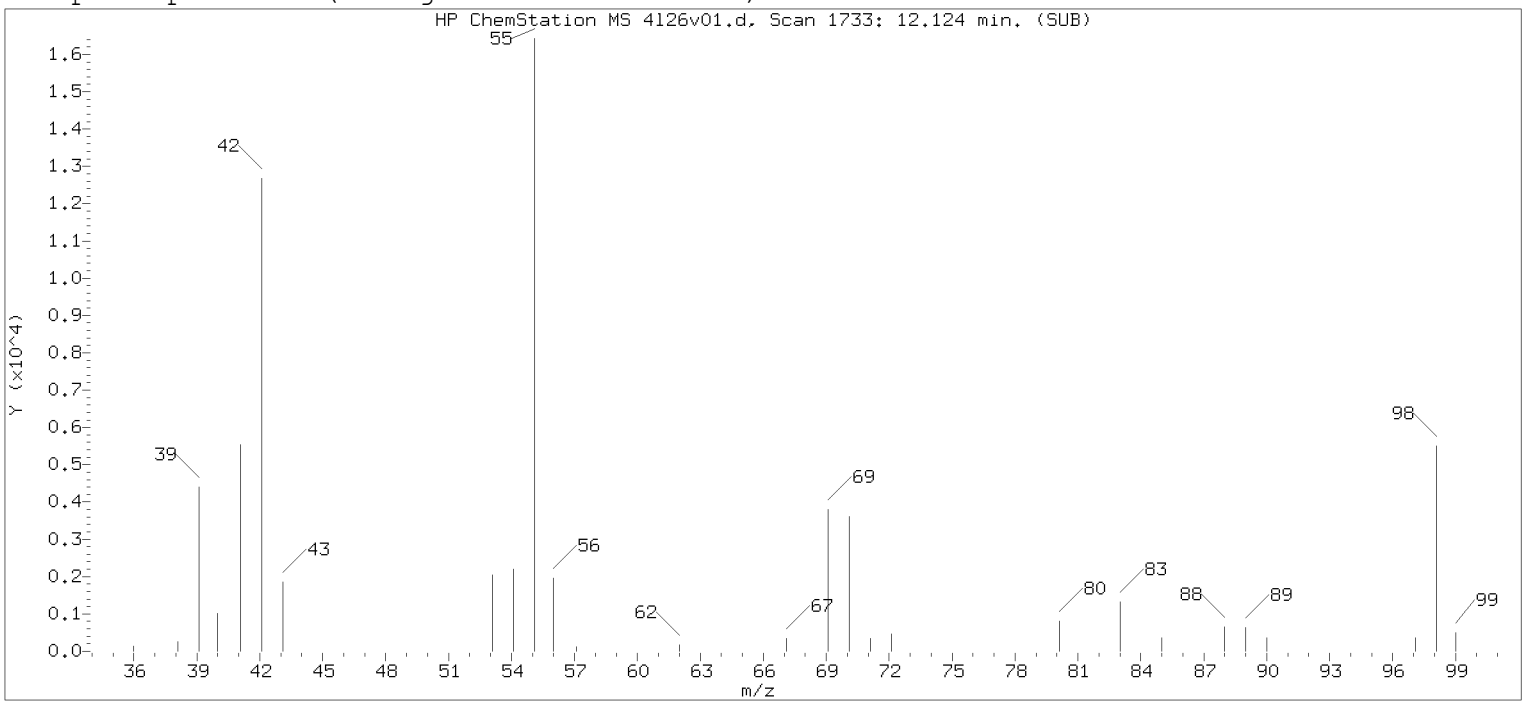
Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1736
Retention Time (minutes): 12.142
Quant Ion : 55.00
Area (flag) : 246742M
On-Column Amount (ng) : 491.6658
Integration start scan : 1730 Integration stop scan: 1757
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

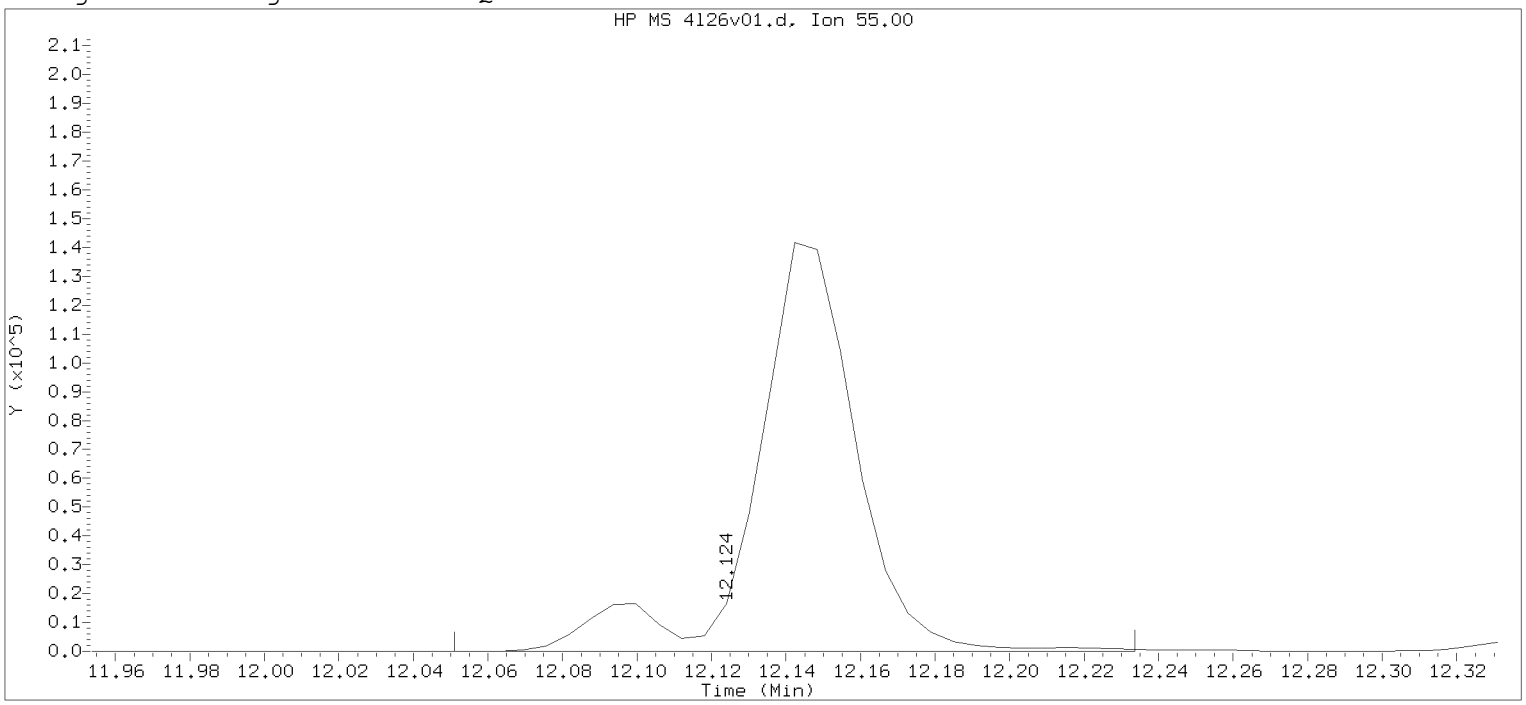
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/26/2017 at 18:34.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/27/2017 at 10:42.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17jul26i.b/4l26v01.d Instrument ID: HP23297.i
Injection date and time: 26-JUL-2017 13:12 Analyst ID: DHH02035

Method used: /chem/HP23297.i/17jul26i.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 12:52
Date, time and analyst ID of latest file update: 26-Jul-2017 13:29 Automation

Sample Name: LG4ICV Lab Sample ID: LG4ICV

Compound Number : 113
Compound Name : Cyclohexanone
Scan Number : 1733
Retention Time (minutes): 12.124
Quant Ion : 55.00
Area : 268258
On-column Amount (ng) : 526.6468
Integration start scan : 1720 Integration stop scan: 1750
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/26/2017 at 18:34.
Target 3.5 esignature user approved.

Data File: /chem/HP23297.i/17aug08a.b/4g08t01.d

Page 1

Date : 08-AUG-2017 08:51

Client ID: BFBfeb20-17

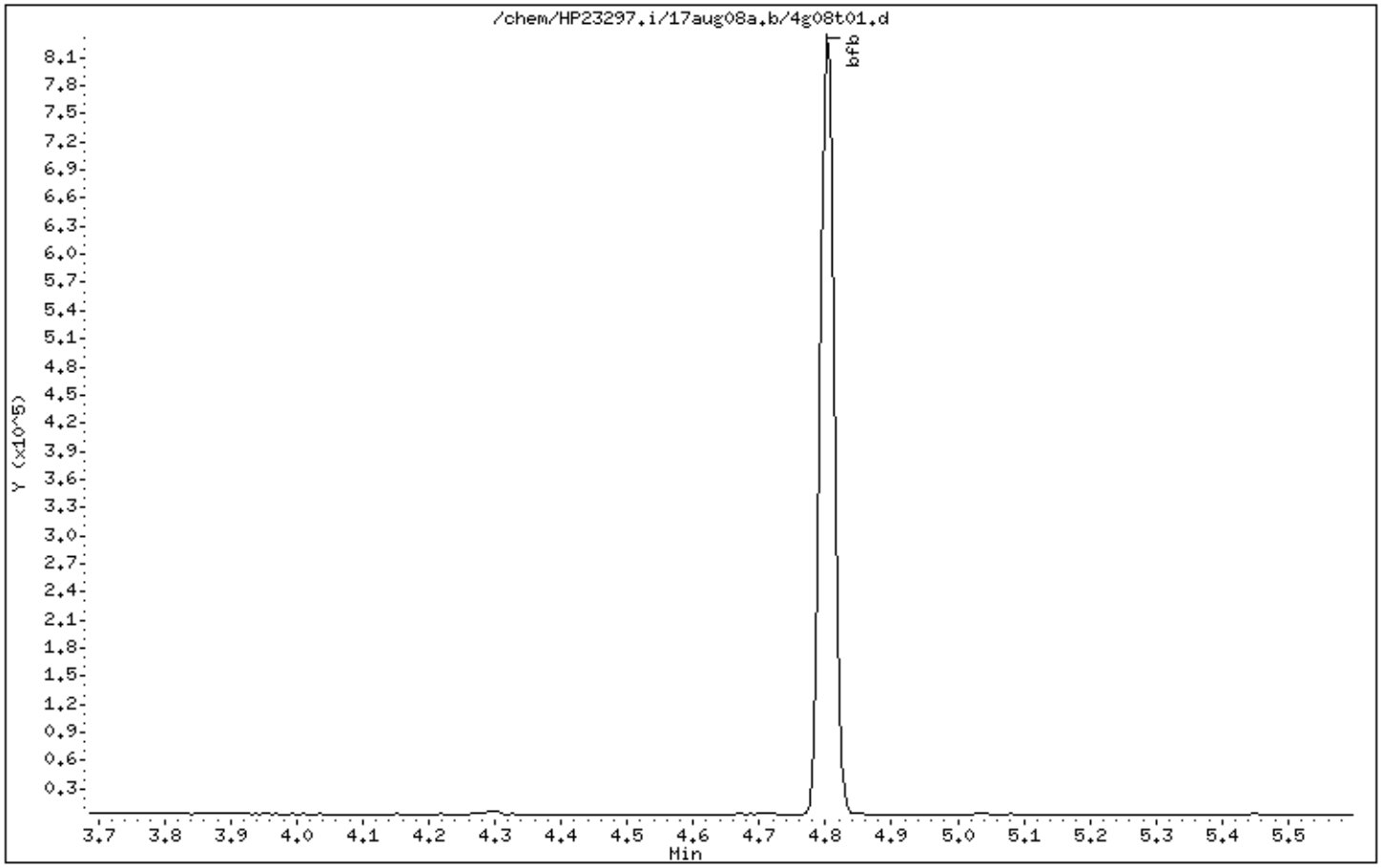
Instrument: HP23297.i

Sample Info: BFBfeb20-17;50NGBFB;1;3;;;;;;

Operator: dhh02035

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Digitally signed by Daniel H. Heller on 08/08/2017 at 10:38.
Target 3.5 esignature user ID: dhh02035

Data File: /chem/HP23297.i/17aug08a.b/4g08t01.d

Date : 08-AUG-2017 08:51

Client ID: BFBfeb20-17

Instrument: HP23297.i

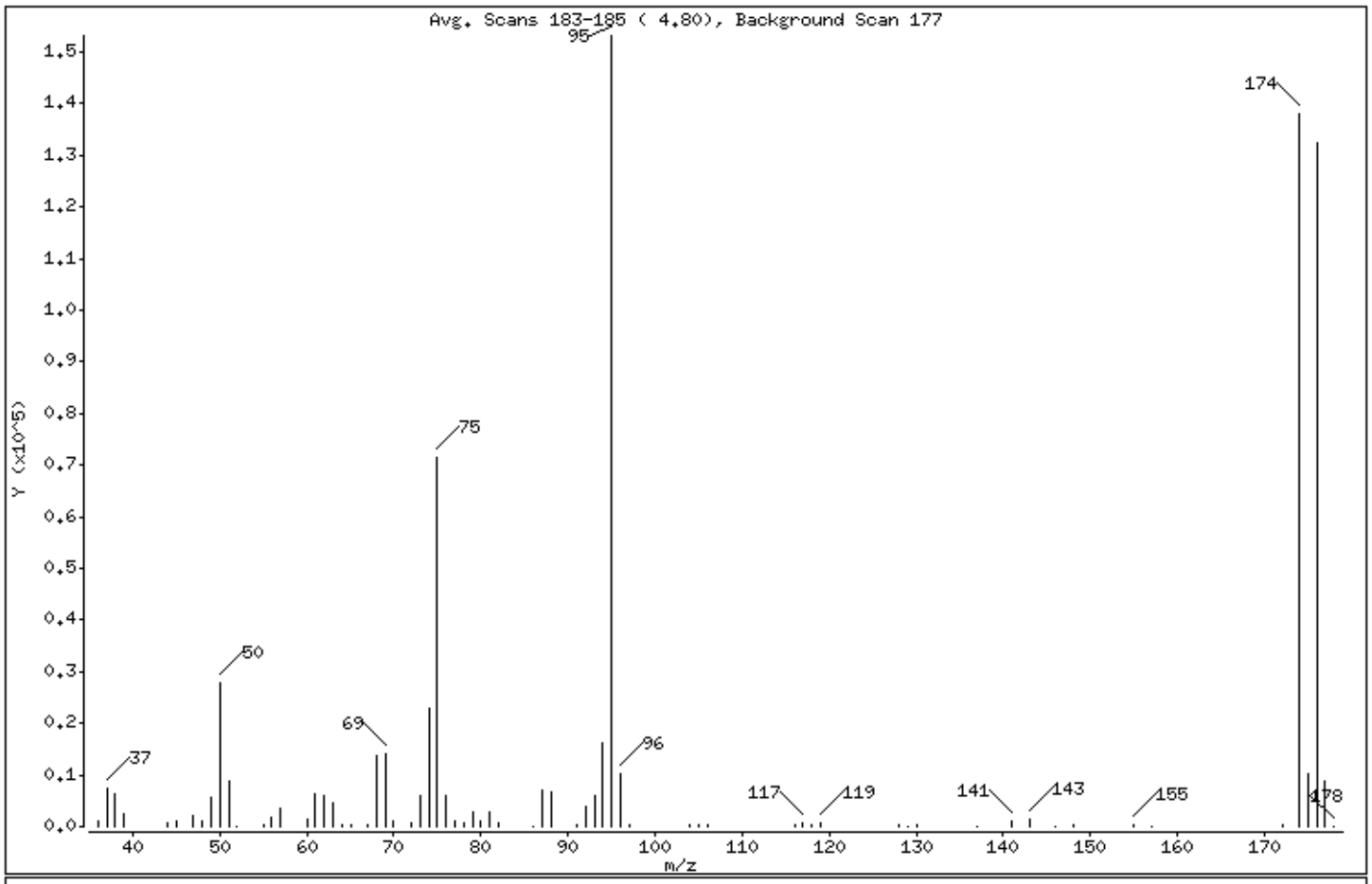
Sample Info: BFBfeb20-17;50NGBFB;1;3;;;;;;

Operator: dhh02035

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.08
75	30.00 - 60.00% of mass 95	46.75
96	5.00 - 9.00% of mass 95	6.62
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	90.23
175	5.00 - 9.00% of mass 174	6.60 (7.31)
176	95.00 - 101.00% of mass 174	86.55 (95.91)
177	5.00 - 9.00% of mass 176	5.75 (6.64)

Digitally signed by Daniel H. Heller on 08/08/2017 at 10:38.
Target 3.5 esignature user ID: dhh02035

Date : 08-AUG-2017 08:51

Client ID: BFBfeb20-17 Instrument: HP23297.i

Sample Info: BFBfeb20-17;50NGBFB;1;3;;;;;;

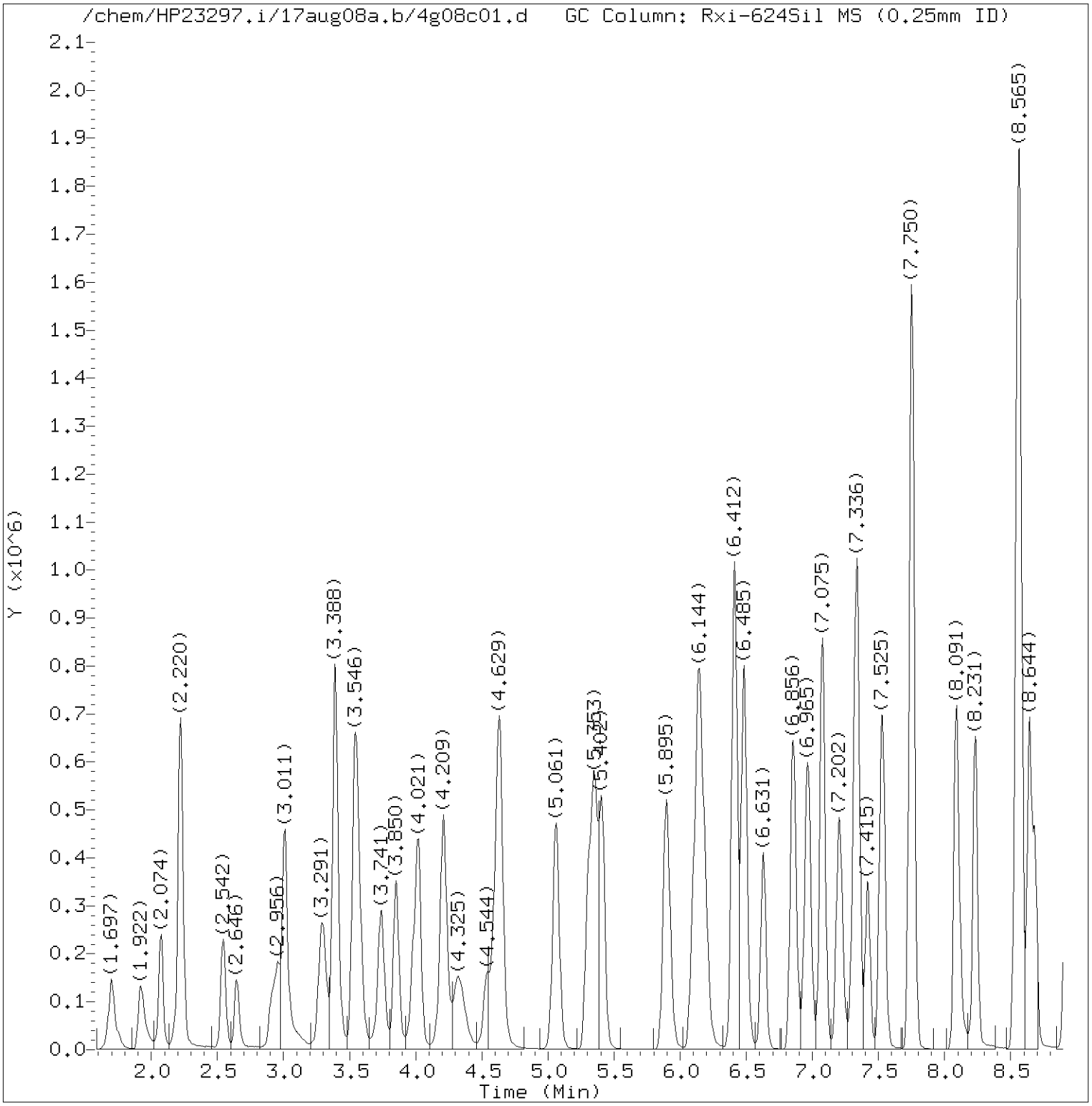
Operator: dhh02035

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: 4g08t01.d
Spectrum: Avg. Scans 183-185 (4.80), Background Scan 177
Location of Maximum: 95.00
Number of points: 69

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1228	63.00	4742	86.00	89	129.00	85
37.00	7431	64.00	420	87.00	7022	130.00	506
38.00	6251	65.00	191	88.00	6858	137.00	94
39.00	2540	67.00	247	91.00	399	141.00	1182
44.00	742	68.00	13841	92.00	3910	143.00	1277
45.00	1193	69.00	14117	93.00	5972	146.00	87
47.00	2140	70.00	1071	94.00	16285	148.00	229
48.00	947	72.00	701	95.00	153152	155.00	235
49.00	5586	73.00	5890	96.00	10135	157.00	120
50.00	27696	74.00	22936	97.00	412	172.00	288
51.00	8739	75.00	71608	104.00	503	174.00	138176
52.00	129	76.00	6018	105.00	199	175.00	10108
55.00	374	77.00	901	106.00	494	176.00	132544
56.00	1807	78.00	620	116.00	488	177.00	8805
57.00	3568	79.00	2809	117.00	809	178.00	175
60.00	1334	80.00	943	118.00	421		
61.00	6235	81.00	2858	119.00	732		
62.00	5951	82.00	625	128.00	455		

Digitally signed by Daniel H. Heller on 08/08/2017 at 10:38.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

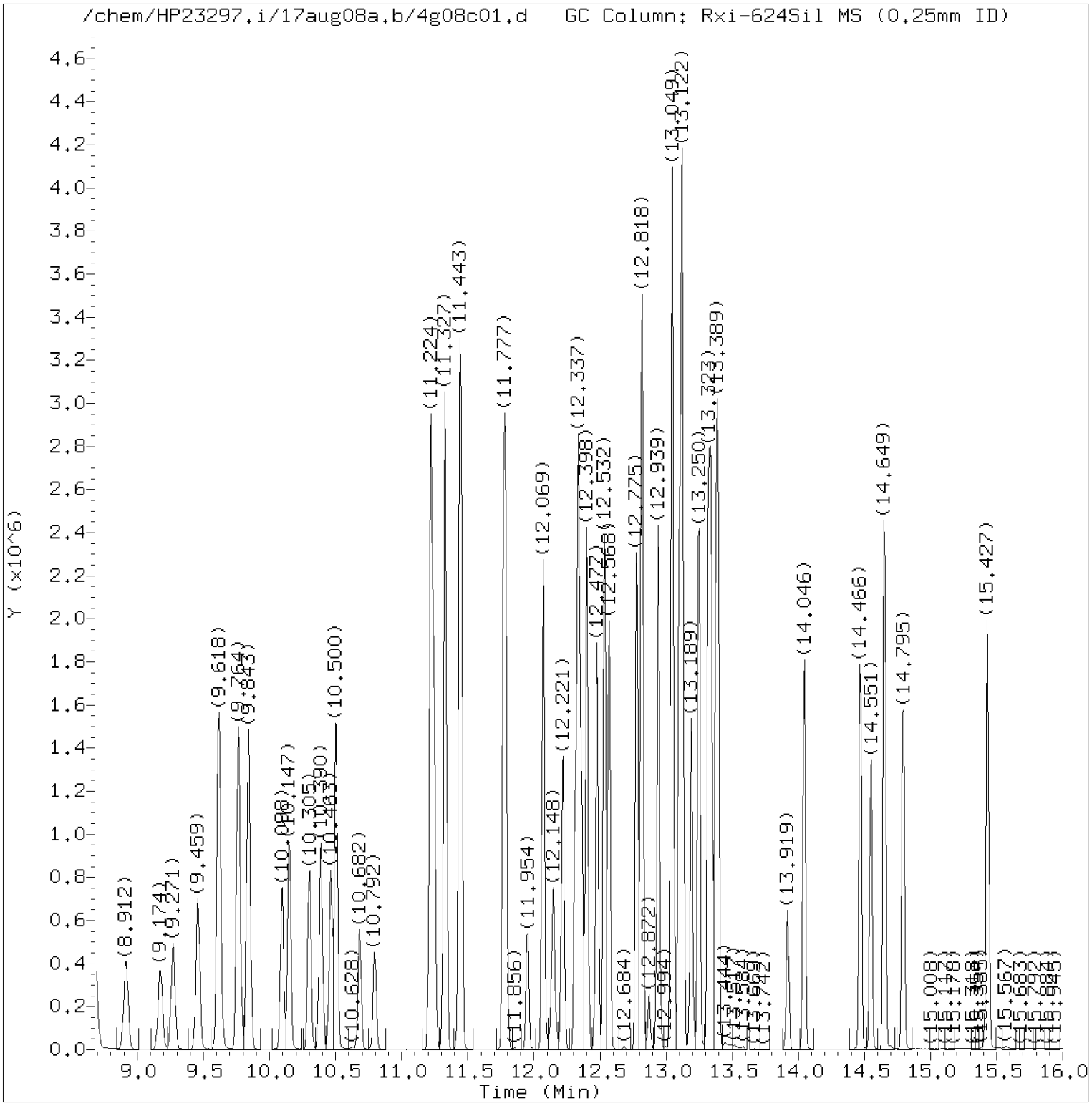
Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.922	85	307809	48.921
4) Chloromethane	(2)	2.074	50	343082	48.464
6) Vinyl Chloride	(2)	2.214	62	332811	49.625
5) 1,3-Butadiene	(2)	2.226	39	373489	66.184
8) Bromomethane	(2)	2.542	94	232120	50.188
9) Chloroethane	(2)	2.646	64	187242	50.475
12) Trichlorofluoromethane	(2)	2.956	101	387868	54.719
11) n-Pentane	(2)	3.011	43	472012	45.739
13) Ethanol	(1)	3.066	45	166323	1064.541
15) Freon 123a	(2)	3.291	67	314572M	49.777
16) Acrolein	(1)	3.388	56	1146071	474.038
17) 1,1-Dichloroethene	(2)	3.534	96	224106	50.358
17) 1,1-Dichloroethene	(2)	3.534	63	116242	52.104
18) Acetone	(1)	3.552	58	131876	103.797
19) Freon 113	(2)	3.564	101	230848	52.058
21) 2-Propanol	(1)	3.717	45	252114	233.365
22) Methyl Iodide	(2)	3.741	142	443879	50.720
23) Carbon Disulfide	(2)	3.850	76	809315	51.985
27) Methyl Acetate	(2)	3.978	43	448282	48.067
25) Allyl Chloride	(2)	4.021	41	439247	45.681
29)*t-Butyl alcohol-d10	(1)	4.203	65	387341	250.000
28) Methylene Chloride	(2)	4.209	84	281562	47.520
30) t-Butyl alcohol	(1)	4.325	59	425103	242.876
31) Acrylonitrile	(2)	4.532	53	239191	51.548
33) Methyl Tertiary Butyl Ether	(2)	4.611	73	817095	47.637
32) trans-1,2-Dichloroethene	(2)	4.641	96	270473	50.839
34) n-Hexane	(2)	5.061	57	436242	48.193
36) 1,1-Dichloroethane	(2)	5.304	63	501341	49.774
38) di-Isopropyl ether	(2)	5.353	45	971427	47.884
39) 2-Chloro-1,3-butadiene	(2)	5.414	53	435325	51.767
40) Ethyl t-butyl ether	(2)	5.895	59	824257	47.168
43) 1,2-Dichloroethene (Total)	(2)		96	574547	100.844
44) 2-Butanone	(2)	6.101	43	725712	107.215
42) cis-1,2-Dichloroethene	(2)	6.138	96	304074	50.005
45) 2,2-Dichloropropane	(2)	6.156	77	338919	51.375
47) Propionitrile	(1)	6.187	54	515347	251.755
48) Methacrylonitrile	(2)	6.412	67	563532	128.100
49) Bromochloromethane	(2)	6.479	128	154470	48.108

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50) Tetrahydrofuran	(1)	6.485	71	183874	105.061
51) Chloroform	(2)	6.631	83	473662	51.322
52)$Dibromofluoromethane	(2)	6.850	113	285273	51.263
52)$Dibromofluoromethane	(2)	6.850	111	290096	51.023
53) 1,1,1-Trichloroethane	(2)	6.862	97	394305	49.726
54) Cyclohexane	(2)	6.965	56	502477	47.897
54) Cyclohexane	(2)	6.965	84	401775	48.395
54) Cyclohexane	(2)	6.965	69	146733	47.760
55) 1,1-Dichloropropene	(2)	7.075	75	393328	51.390
56) Carbon Tetrachloride	(2)	7.075	117	320675	52.971
58) Isobutyl Alcohol	(1)	7.202	41	416527	628.904
57)$1,2-Dichloroethane-d4	(2)	7.312	102	70256	49.887
57)$1,2-Dichloroethane-d4	(2)	7.312	65	326151	51.772
57)$1,2-Dichloroethane-d4	(2)	7.318	104	44627	49.855
60) Benzene	(2)	7.342	78	1160033	49.551
61) 1,2-Dichloroethane	(2)	7.415	62	386219	51.191
61) 1,2-Dichloroethane	(2)	7.422	98	36401	49.244
65) t-Amyl methyl ether	(2)	7.531	73	801629	47.472
66)*Fluorobenzene	(2)	7.750	96	1182228	50.000
67) n-Heptane	(2)	7.756	43	493598	49.599
69) n-Butanol	(1)	8.091	56	678556	1285.461
71) Trichloroethene	(2)	8.231	95	293642	50.525
73) Methylcyclohexane	(2)	8.547	83	479271	48.444
73) Methylcyclohexane	(2)	8.547	98	207689	49.219
74) 1,2-Dichloropropane	(2)	8.571	63	316718	48.935
77) Methyl Methacrylate	(2)	8.638	69	331822	50.490
76) 1,4-Dioxane	(1)	8.656	88	87647	617.765
75) Dibromomethane	(2)	8.681	93	198942	50.685
79) Bromodichloromethane	(2)	8.918	83	358985	52.341
80) 2-Nitropropane	(2)	9.174	41	309915	96.635
81) 2-Chloroethyl Vinyl Ether	(2)	9.271	63	271402	49.024
82) cis-1,3-Dichloropropene	(2)	9.459	75	481102	51.743
83) 4-Methyl-2-pentanone	(2)	9.618	43	1312489	103.373
84)$Toluene-d8	(3)	9.764	98	1183888	49.740
84)$Toluene-d8	(3)	9.764	100	768187	49.712
89) Toluene	(3)	9.843	92	741938	49.236
91) 1,3-Dichloropropene (total)	(3)		100	917994	103.335
90) trans-1,3-Dichloropropene	(3)	10.098	75	436892	51.592

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
92) Ethyl Methacrylate	(3)	10.147	69	522924	49.994
93) 1,1,2-Trichloroethane	(3)	10.305	97	297345M	48.512
94) Tetrachloroethene	(3)	10.390	166	329165	49.476
95) 1,3-Dichloropropane	(3)	10.463	76	496523	48.777
97) 2-Hexanone	(3)	10.500	43	1067258	82.988
98) Dibromochloromethane	(3)	10.682	129	307292	52.102
100) 1,2-Dibromoethane	(3)	10.792	107	328758	50.360
101)*Chlorobenzene-d5	(3)	11.218	117	903376	50.000
103) Chlorobenzene	(3)	11.248	112	848200	49.176
104) 1,1,1,2-Tetrachloroethane	(3)	11.327	131	279135	50.046
105) Ethylbenzene	(3)	11.327	91	1414629	49.880
107) m+p-Xylene	(3)	11.443	106	1126811	99.267
109) Xylene (Total)	(3)		106	1683242	148.737
108) o-Xylene	(3)	11.771	106	556431	49.470
110) Styrene	(3)	11.790	104	950192	50.676
111) Bromoform	(3)	11.954	173	248941	52.790
112) Isopropylbenzene	(3)	12.069	105	1389300	49.930
113) Cyclohexanone	(1)	12.148	55	333736	648.622
115)$4-Bromofluorobenzene	(3)	12.215	95	430468	50.856
115)$4-Bromofluorobenzene	(3)	12.221	174	392676	51.025
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	533881	47.638
119) trans-1,4-Dichloro-2-butene	(4)	12.337	53	258581	90.768
116) Bromobenzene	(4)	12.337	156	390139	48.053
118) 1,2,3-Trichloropropane	(4)	12.361	110	155086	48.211
120) n-Propylbenzene	(4)	12.398	91	1687536	48.876
121) 2-Chlorotoluene	(4)	12.477	126	347343	48.443
123) 1,3,5-Trimethylbenzene	(4)	12.532	105	1199495	49.536
122) 4-Chlorotoluene	(4)	12.568	126	363939	47.967
125) tert-Butylbenzene	(4)	12.775	134	248073M	49.532
126) Pentachloroethane	(4)	12.812	167	212641	47.958
127) 1,2,4-Trimethylbenzene	(4)	12.818	105	1238937	49.233
128) sec-Butylbenzene	(4)	12.939	105	1543448	48.486
130) 1,3-Dichlorobenzene	(4)	13.043	146	742804	48.728
131) p-Isopropyltoluene	(4)	13.049	119	1347444	49.004
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	511050	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	762491	48.209
135) 1,2,3-Trimethylbenzene	(4)	13.122	105	1216856	46.194
136) Benzyl Chloride	(4)	13.189	91	960921	52.543

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

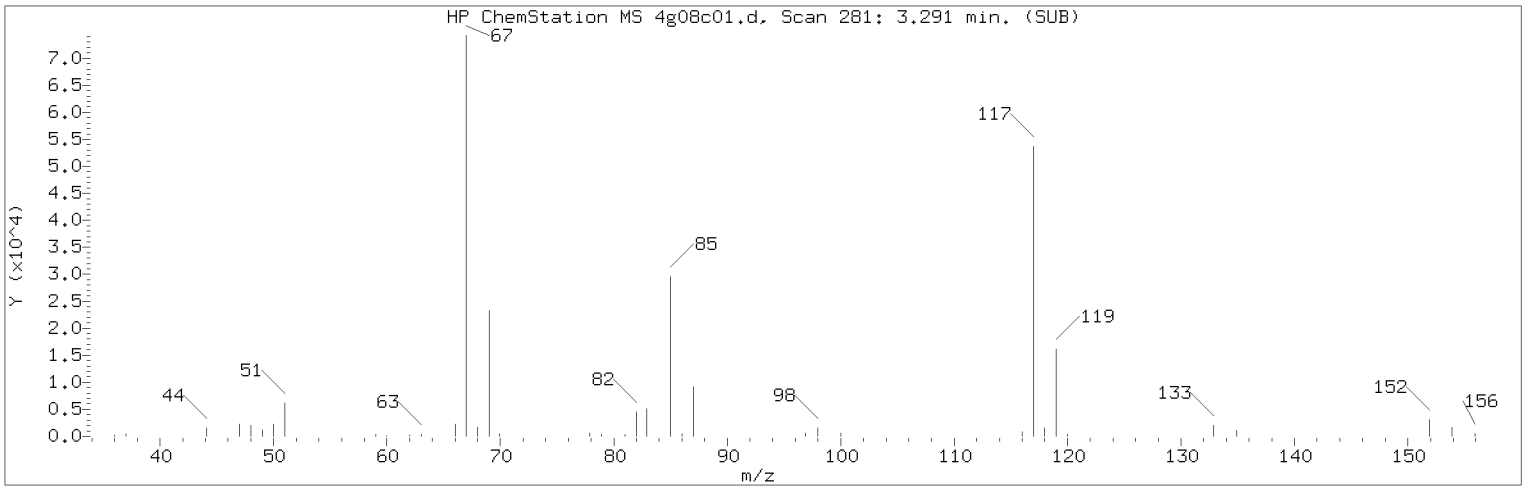
Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

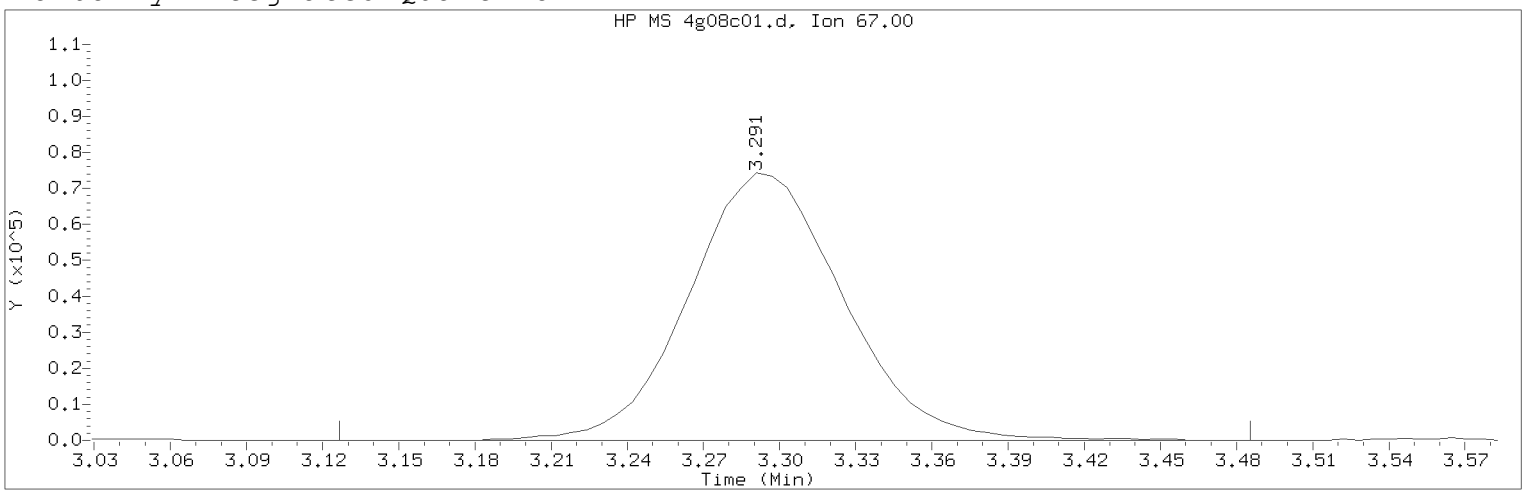
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
137) 1,3-Diethylbenzene	(4)	13.250	119	759681	45.881
138) 1,4-Diethylbenzene	(4)	13.323	119	792076	45.932
140) n-Butylbenzene	(4)	13.341	92	689434	48.182
139) 1,2-Dichlorobenzene	(4)	13.377	146	723811	48.286
141) 1,2-Diethylbenzene	(4)	13.389	119	640776	46.055
142) Diethylbenzene (total)	(4)		100	2192533	137.868
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	136560	52.998
145) 1,3,5-Trichlorobenzene	(4)	14.046	180	545814	46.929
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	521655	45.868
148) Hexachlorobutadiene	(4)	14.551	225	247554	46.885
149) Naphthalene	(4)	14.649	128	1788316	48.063
150) 1,2,3-Trichlorobenzene	(4)	14.795	180	493657	45.088
151) 2-Methylnaphthalene	(4)	15.427	142	974285	42.186

Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

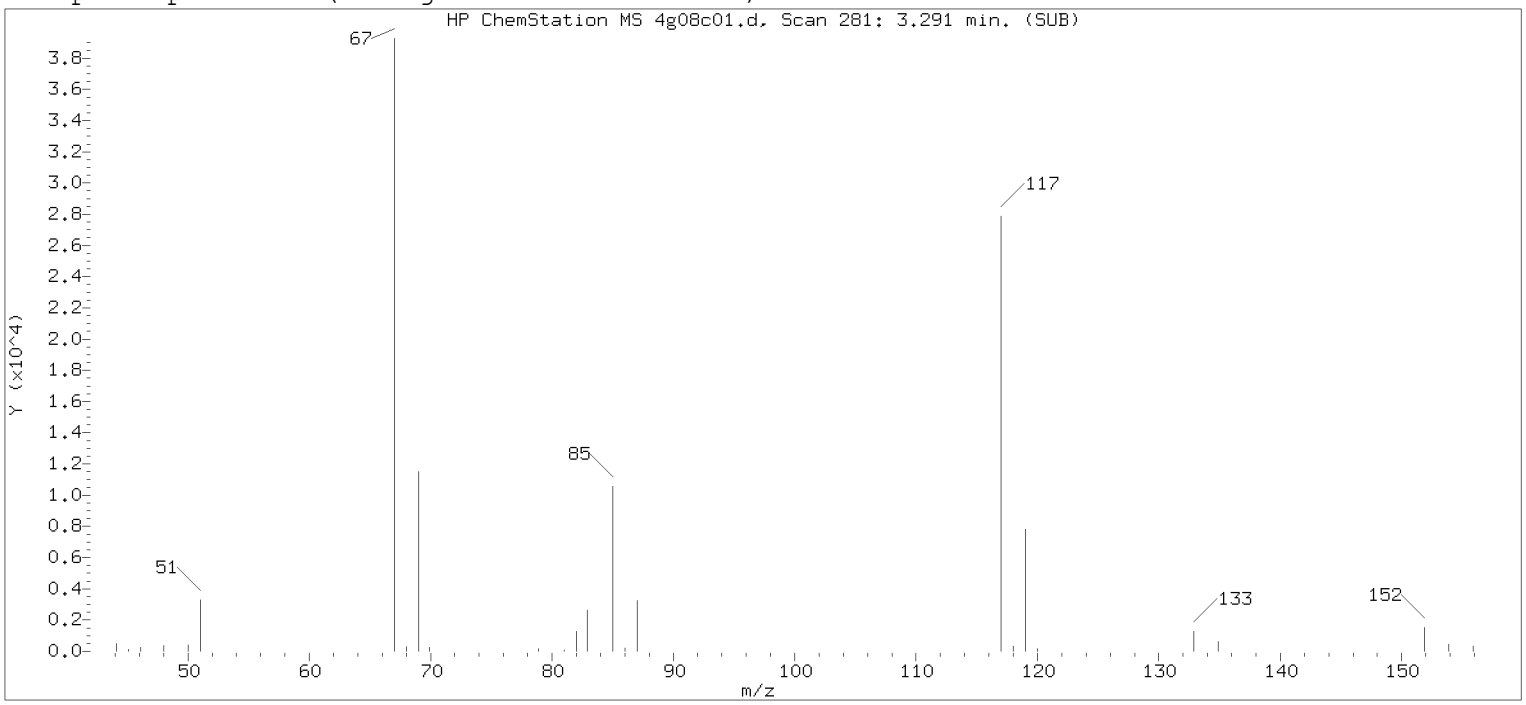
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 281
Retention Time (minutes): 3.291
Quant Ion : 67.00
Area (flag) : 314572M
On-Column Amount (ng) : 49.7768
Integration start scan : 253 Integration stop scan: 312
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

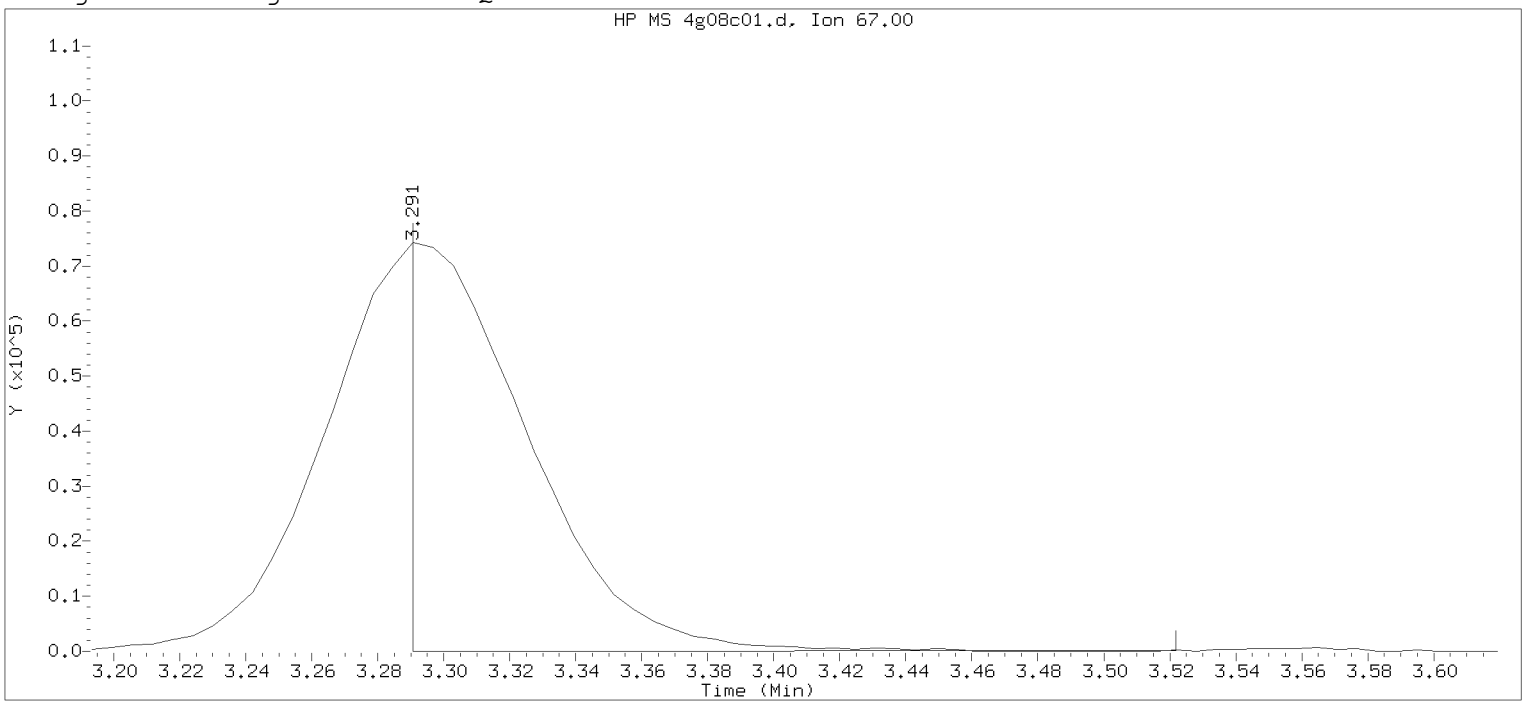
Analyst responsible for change: Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/08/2017 at 23:32.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

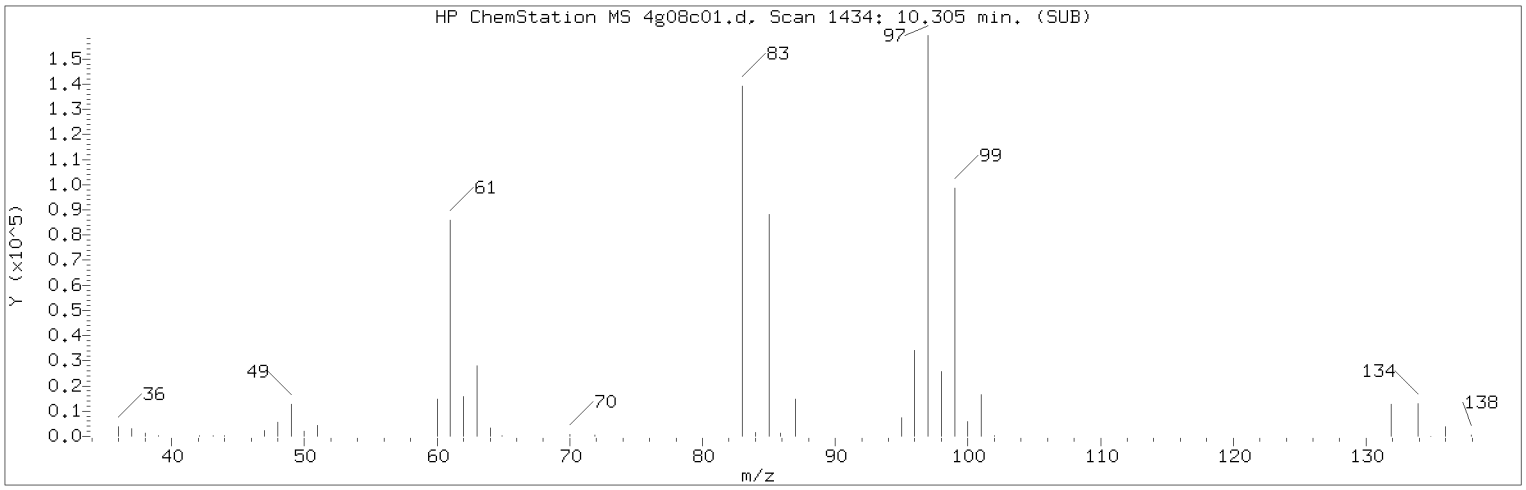
Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 09:45 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

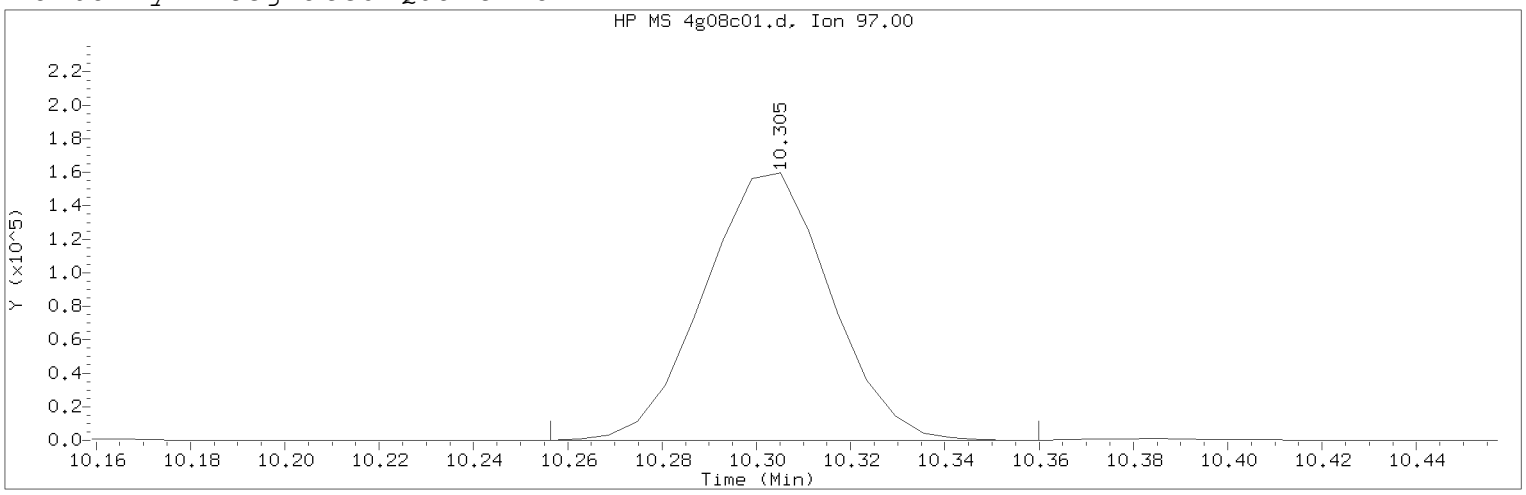
Compound Number	: 15		
Compound Name	: Freon 123a		
Scan Number	: 281		
Retention Time (minutes)	: 3.291		
Quant Ion	: 67.00		
Area	: 176023		
On-column Amount (ng)	: 27.8533		
Integration start scan	: 280	Integration stop scan:	318
Y at integration start	: 0	Y at integration end:	139

Digitally signed by Daniel H. Heller on 08/08/2017 at 10:37.
Target 3.5 esignature user id dhh02035

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

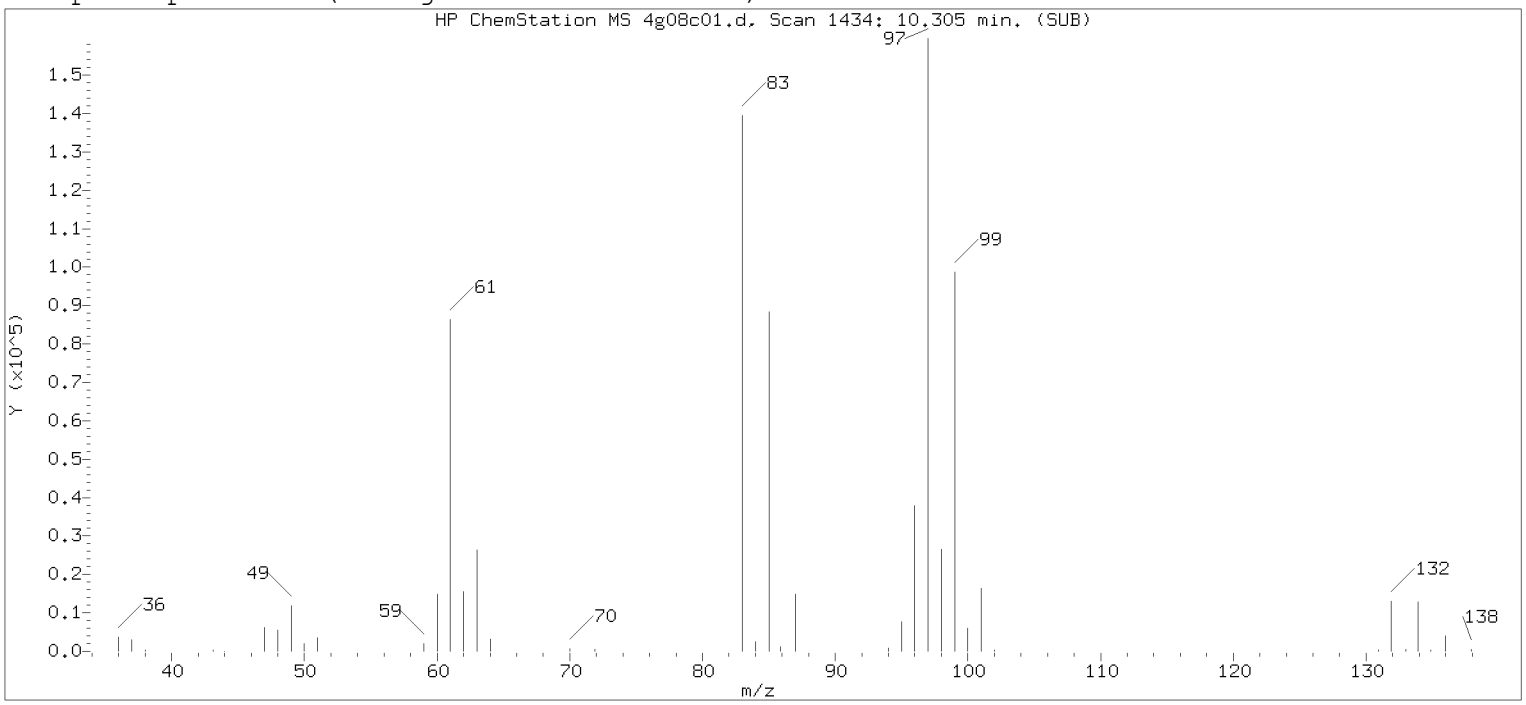
Compound Number : 93
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1434
Retention Time (minutes): 10.305
Quant Ion : 97.00
Area (flag) : 297345M
On-Column Amount (ng) : 48.5122
Integration start scan : 1425 Integration stop scan: 1442
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

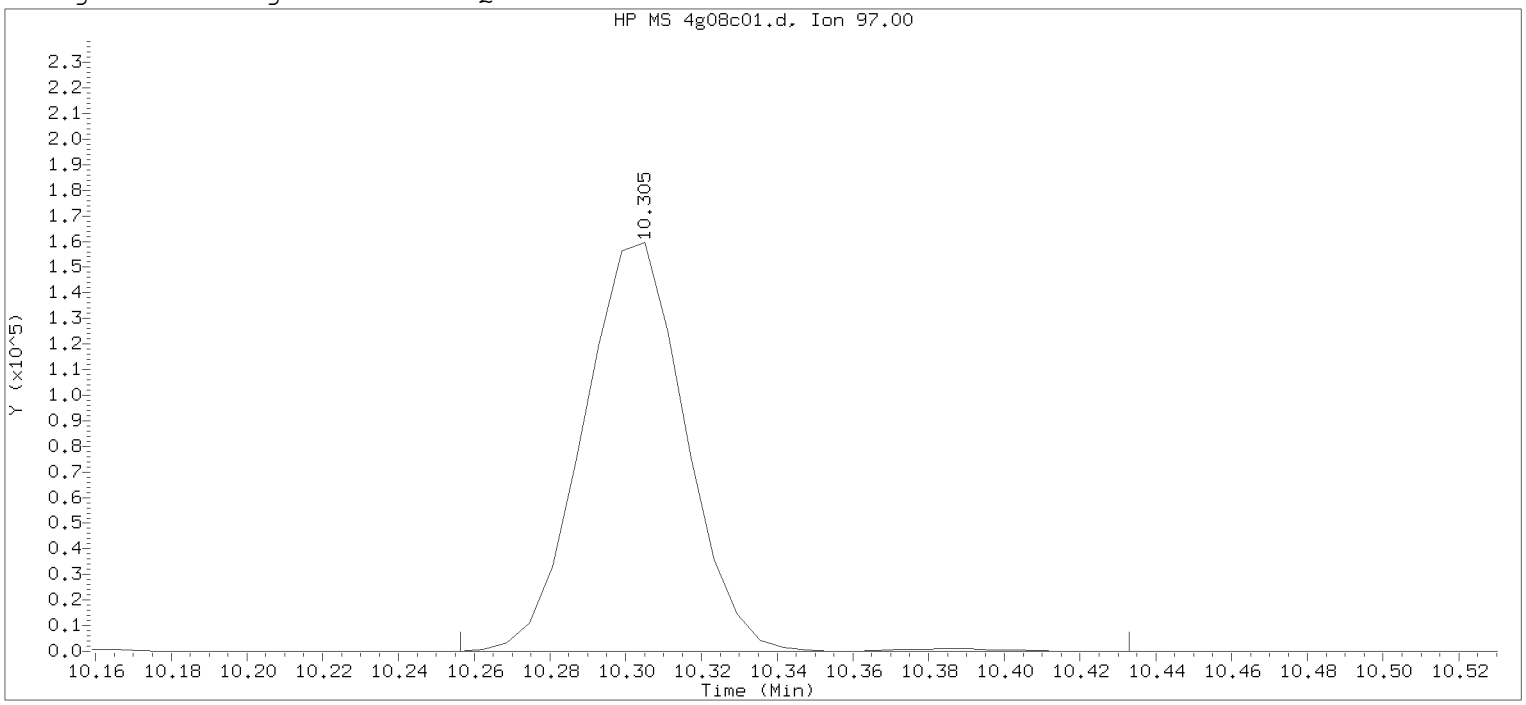
Analyst responsible for change: Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/08/2017 at 23:32.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

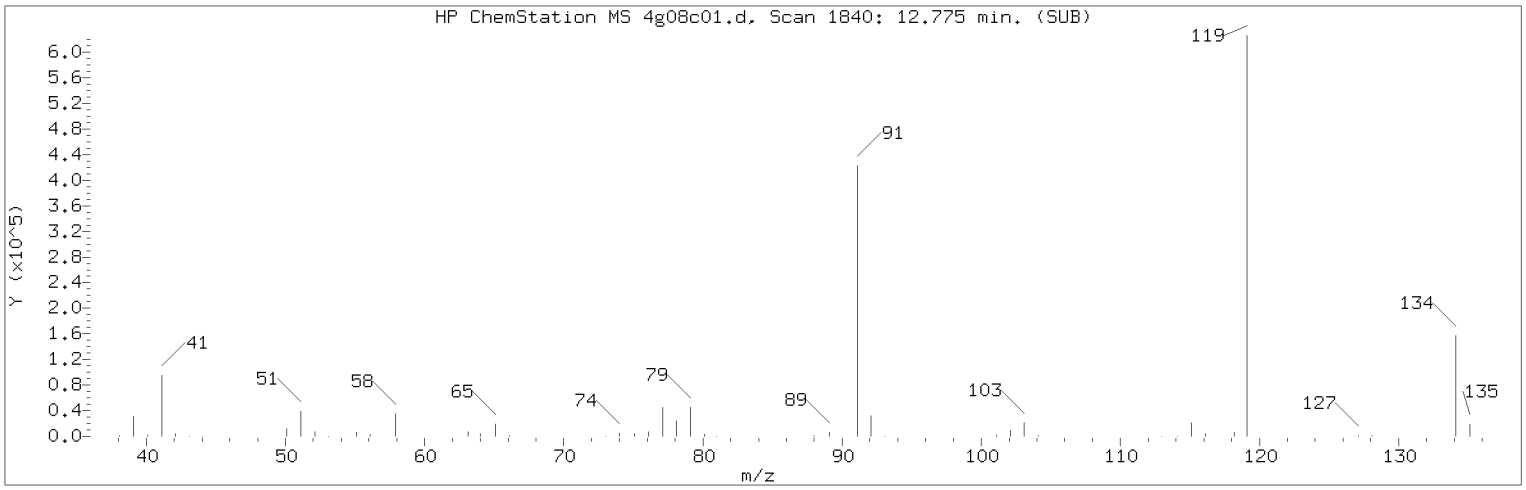
Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 09:45 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

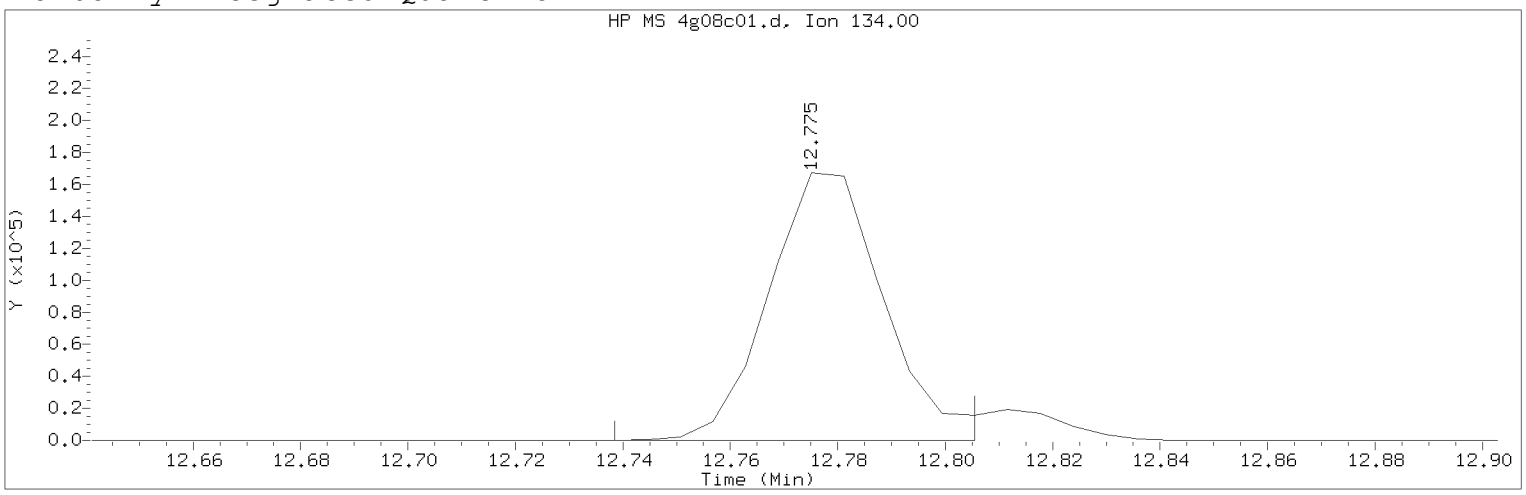
Compound Number : 93
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1434
Retention Time (minutes): 10.305
Quant Ion : 97.00
Area : 299207
On-column Amount (ng) : 48.8160
Integration start scan : 1425 Integration stop scan: 1454
Y at integration start : 0 Y at integration end: 0

Digitally signed by Daniel H. Heller on 08/08/2017 at 10:37.
Target 3.5 esignature user id: dhh02035

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 10:35 dhh02035

Sample Name: VSTD050 Lab Sample ID: VSTD050

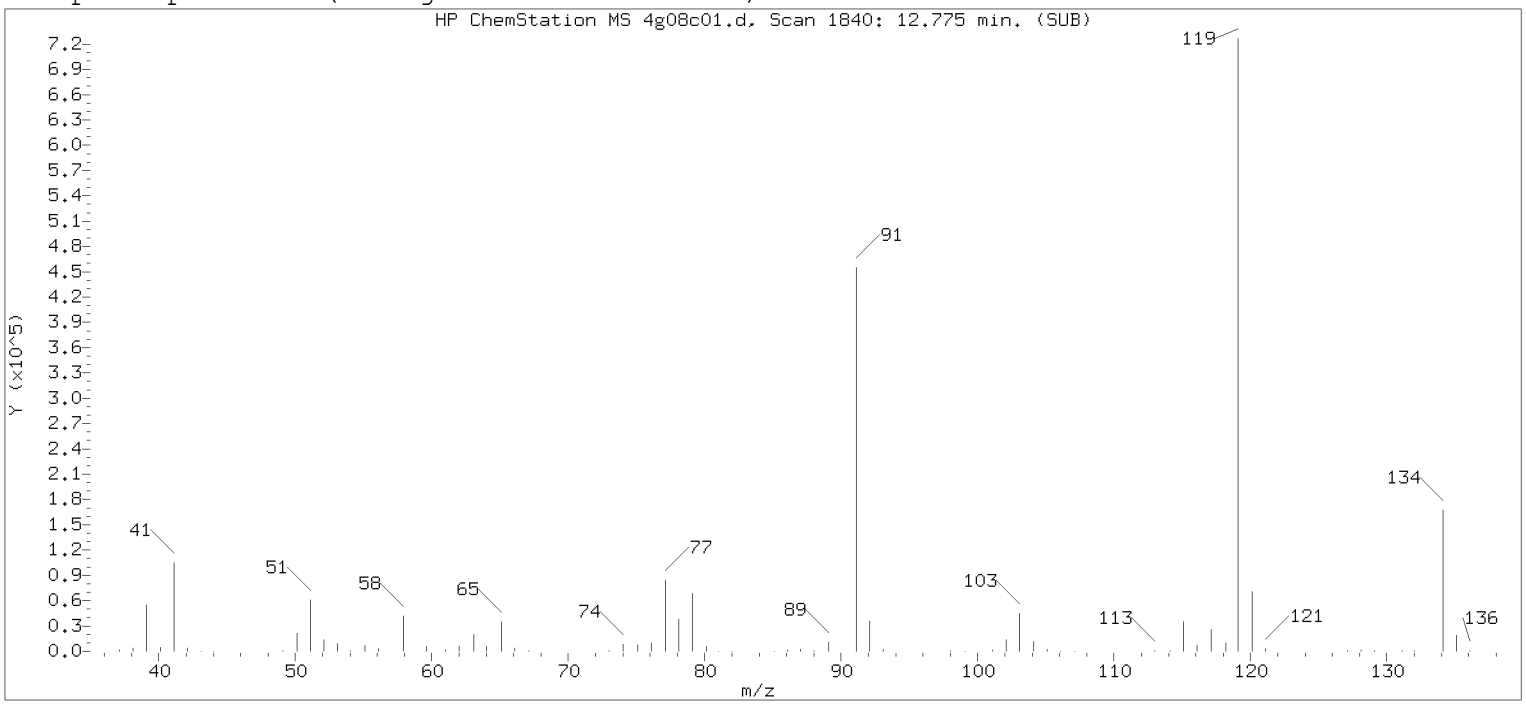
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area (flag) : 248073M
On-Column Amount (ng) : 49.5324
Integration start scan : 1833 Integration stop scan: 1844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

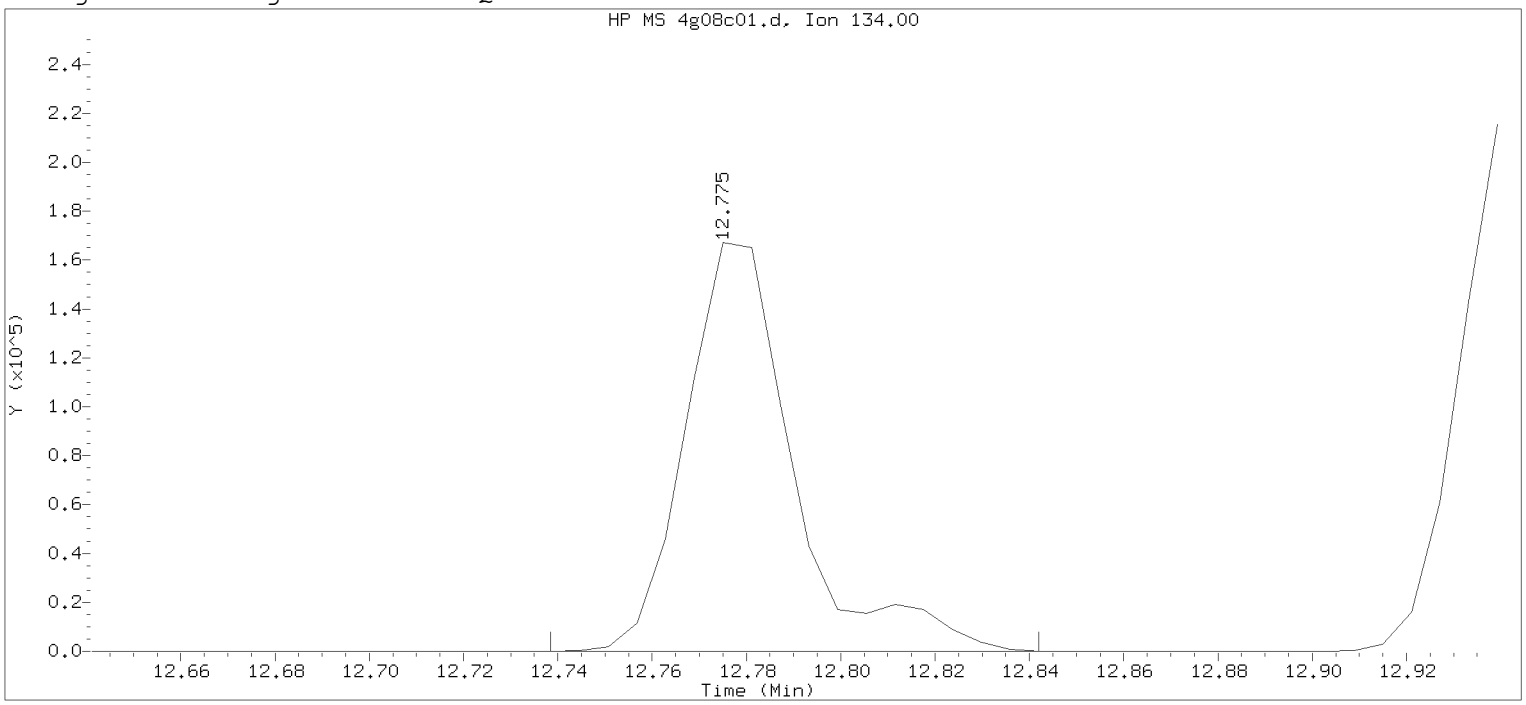
Analyst responsible for change: Digitally signed by Daniel H. Heller
on 08/08/2017 at 10:37.
Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/08/2017 at 23:32.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP23297.i/17aug08a.b/4g08c01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:28 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 8260W-D
Calibration date and time: 08-AUG-2017 09:45
Date, time and analyst ID of latest file update: 08-Aug-2017 09:45 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1840
Retention Time (minutes): 12.775
Quant Ion : 134.00
Area : 266176
On-column Amount (ng) : 53.1469
Integration start scan : 1833 Integration stop scan: 1850
Y at integration start : 0 Y at integration end: 0

Digitally signed by Daniel H. Heller on 08/08/2017 at 10:37.
Target 3.5 esignature user id: dhh02035

Raw QC Data

Volatiles by GC/MS

Data file: /chem/HP23297.i/17aug08a.b/4g08b11.d
Data file Sample Info. Line: VBLK411;VBLK411;1;3;;;MORPD;;;
Date, time and analyst ID of latest file update: 09-Aug-2017 15:17 dhh02035

Injection date and time: **08-AUG-2017 09:50**
Instrument ID: **HP23297.i** Batch: **4172202AA**

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
29) t-Butyl alcohol-d10	4.197	(0.006)	430	65	397458	(3)	250.00	
66) Fluorobenzene	7.750	(0.000)	1014	96	1179908	(0)	50.00	
101) Chlorobenzene-d5	11.218	(0.000)	1584	117	905945	(0)	50.00	
132) 1,4-Dichlorobenzene-d4	13.097	(0.000)	1893	152	500933	(-2)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
52) Dibromofluoromethane	(2)	6.850	(0.000)	113	283765	51.093	102%		80 - 116
57) 1,2-Dichloroethane-d4	(2)	7.312	(0.000)	102	71812	51.092	102%		77 - 113
84) Toluene-d8	(3)	9.764	(0.000)	98	1177467	49.330	99%		80 - 113
115) 4-Bromofluorobenzene	(3)	12.215	(0.000)	95	422004	49.715	99%		78 - 113

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
3) Dichlorodifluoromethane	(2)				Not Detected					0.5	1
4) Chloromethane	(2)				Not Detected					0.5	1
6) Vinyl Chloride	(2)				Not Detected					0.5	1
8) Bromomethane	(2)				Not Detected					0.5	1
9) Chloroethane	(2)				Not Detected					0.5	1
12) Trichlorofluoromethane	(2)				Not Detected					0.5	1
17) 1,1-Dichloroethene	(2)				Not Detected					0.5	1
18) Acetone	(1)				Not Detected					6	20
19) Freon 113	(2)				Not Detected					2	10
23) Carbon Disulfide	(2)				Not Detected					1	5
27) Methyl Acetate	(2)				Not Detected					1	5
28) Methylene Chloride	(2)				Not Detected					2	4
32) trans-1,2-Dichloroethene	(2)				Not Detected					0.5	1
33) Methyl Tertiary Butyl Ether	(2)				Not Detected					0.5	1
36) 1,1-Dichloroethane	(2)				Not Detected					0.5	1
42) cis-1,2-Dichloroethene	(2)				Not Detected					0.5	1
44) 2-Butanone	(2)				Not Detected					3	10
51) Chloroform	(2)				Not Detected					0.5	1
53) 1,1,1-Trichloroethane	(2)				Not Detected					0.5	1
54) Cyclohexane	(2)				Not Detected					2	5
56) Carbon Tetrachloride	(2)				Not Detected					0.5	1
60) Benzene	(2)				Not Detected					0.5	1
61) 1,2-Dichloroethane	(2)				Not Detected					0.5	1
71) Trichloroethene	(2)				Not Detected					0.5	1
73) Methylcyclohexane	(2)				Not Detected					1	5
74) 1,2-Dichloropropane	(2)				Not Detected					0.5	1
79) Bromodichloromethane	(2)				Not Detected					0.5	1
82) cis-1,3-Dichloropropene	(2)				Not Detected					0.5	1
83) 4-Methyl-2-pentanone	(2)				Not Detected					3	10
89) Toluene	(3)				Not Detected					0.5	1
90) trans-1,3-Dichloropropene	(3)				Not Detected					0.5	1

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:17. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP23297.i/17aug08a.b/4g08b11.d Injection date and time: **08-AUG-2017 09:50**
Data file Sample Info. Line: VBLK411;VBLK411;1;3;;;MORPD;;; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:17 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

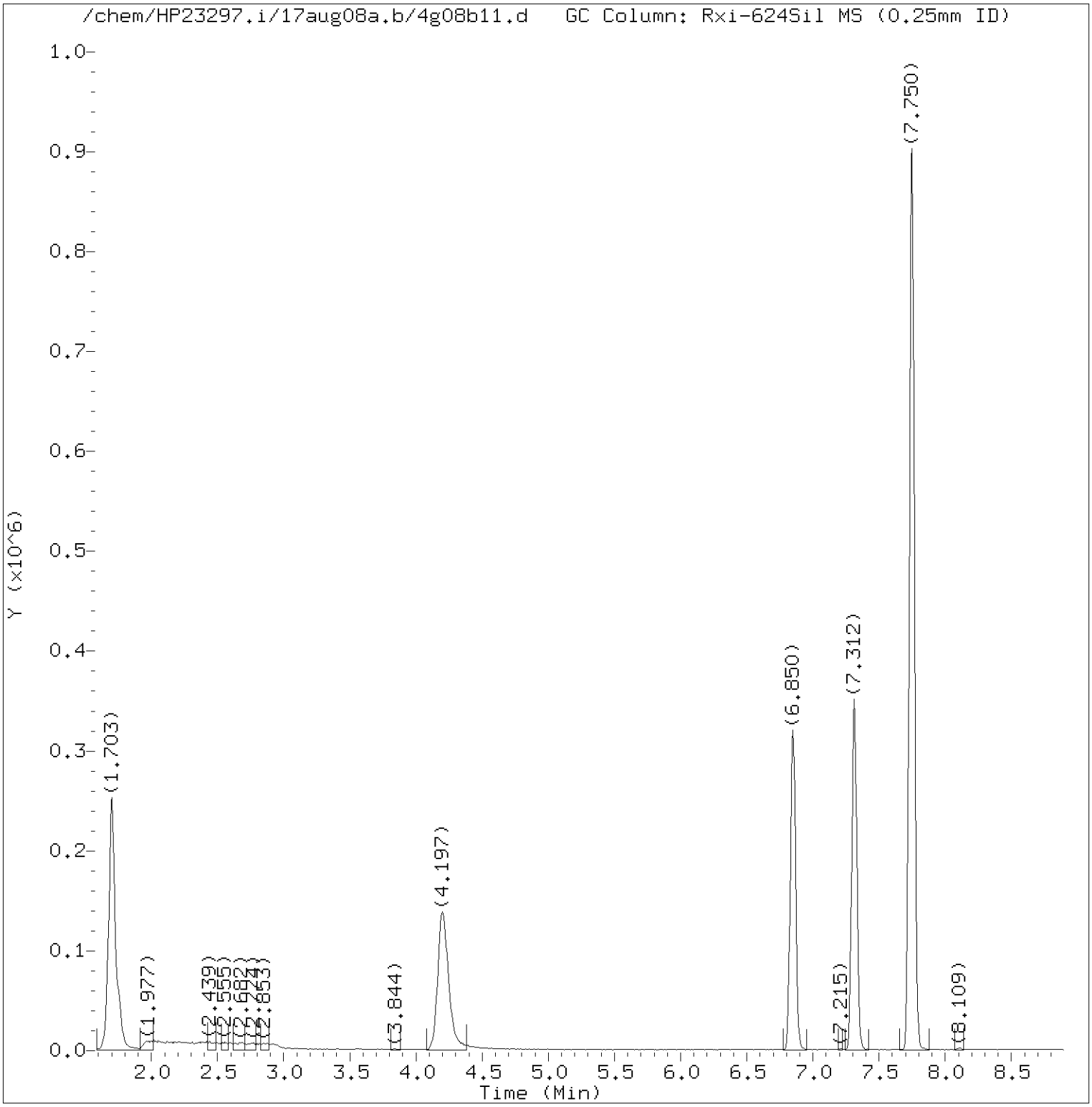
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
93) 1,1,2-Trichloroethane	(3)				Not Detected					0.5	1
94) Tetrachloroethene	(3)				Not Detected					0.5	1
97) 2-Hexanone	(3)				Not Detected					3	10
98) Dibromochloromethane	(3)				Not Detected					0.5	1
100) 1,2-Dibromoethane	(3)				Not Detected					0.5	1
103) Chlorobenzene	(3)				Not Detected					0.5	1
105) Ethylbenzene	(3)				Not Detected					0.5	1
107) m+p-Xylene	(3)				Not Detected					0.5	1
108) o-Xylene	(3)				Not Detected					0.5	1
109) Xylene (Total)	(3)				Not Detected					0.5	1
110) Styrene	(3)				Not Detected					1	5
111) Bromoform	(3)				Not Detected					0.5	4
112) Isopropylbenzene	(3)				Not Detected					1	5
117) 1,1,2,2-Tetrachloroethane	(4)				Not Detected					0.5	1
130) 1,3-Dichlorobenzene	(4)				Not Detected					1	5
134) 1,4-Dichlorobenzene	(4)				Not Detected					1	5
139) 1,2-Dichlorobenzene	(4)				Not Detected					1	5
143) 1,2-Dibromo-3-chloropropane	(4)				Not Detected					2	5
147) 1,2,4-Trichlorobenzene	(4)				Not Detected					1	5
149) Naphthalene	(4)				Not Detected					1	5

Total number of targets = 51

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:17. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/09/2017 at 15:46. PARALLAX ID: jeb12641



Total Ion Chromatogram (TIC)

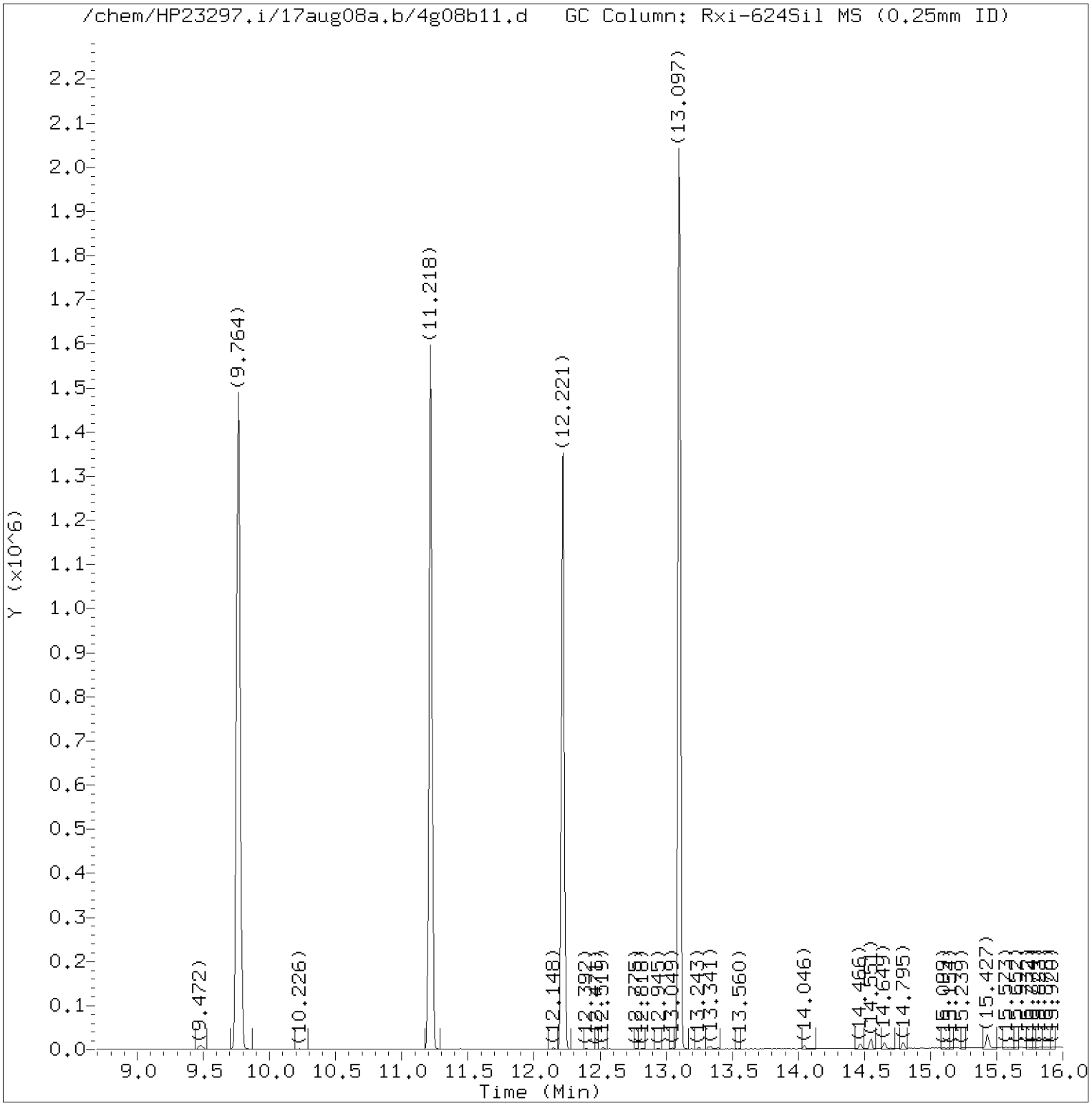
Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08b11.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:50 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:17 dhh02035

Sample Name: VBLK411 Lab Sample ID: VBLK411

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:17.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08b11.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:50 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:17 dhh02035

Sample Name: VBLK411 Lab Sample ID: VBLK411

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:17.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08b11.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 09:50 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:17 dhh02035

Sample Name: VBLK411 Lab Sample ID: VBLK411

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
29)*t-Butyl alcohol-d10	(1)	4.197	65	397458	250.000
52)$Dibromofluoromethane	(2)	6.850	113	283765	51.093
57)$1,2-Dichloroethane-d4	(2)	7.312	102	71812	51.092
66)*Fluorobenzene	(2)	7.750	96	1179908	50.000
84)$Toluene-d8	(3)	9.764	98	1177467	49.330
101)*Chlorobenzene-d5	(3)	11.218	117	905945	50.000
115)$4-Bromofluorobenzene	(3)	12.215	95	422004	49.715
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	500933	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:17.
Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP23297.i/17aug08a.b/4g08l01.d Injection date and time: **08-AUG-2017 10:13**
Data file Sample Info. Line: LCS411;LCS411;1;3;LCS;;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
29) t-Butyl alcohol-d10	4.197	(0.006)	430	65	407270	(5)	250.00	
66) Fluorobenzene	7.744	(0.006)	1013	96	1175046	(-1)	50.00	
101) Chlorobenzene-d5	11.218	(0.000)	1584	117	903875	(0)	50.00	
132) 1,4-Dichlorobenzene-d4	13.098	(0.000)	1893	152	503695	(-1)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
52) Dibromofluoromethane	(2)	6.844	(0.000)	113	279465	50.527	101%		80 - 116
57) 1,2-Dichloroethane-d4	(2)	7.312	(-0.001)	102	72168	51.558	103%		77 - 113
84) Toluene-d8	(3)	9.764	(0.000)	98	1180944	49.588	99%		80 - 113
115) 4-Bromofluorobenzene	(3)	12.221	(-0.001)	95	426843	50.400	101%		78 - 113

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
3) Dichlorodifluoromethane	(2)	1.910	(0.001)	85	114827	18.362	18.36			0.5	1
4) Chloromethane	(2)	2.056	(0.002)	50	129720	18.436	18.44			0.5	1
6) Vinyl Chloride	(2)	2.190	(0.002)	62	124179	18.629	18.63			0.5	1
8) Bromomethane	(2)	2.524	(0.002)	94	88205	19.188	19.19			0.5	1
9) Chloroethane	(2)	2.628	(0.002)	64	66461	18.025	18.03			0.5	1
12) Trichlorofluoromethane	(2)	2.944	(0.001)	101	138600	19.673	19.67			0.5	1
17) 1,1-Dichloroethene	(2)	3.528	(0.000)	96	94043	21.261	21.26			0.5	1
18) Acetone	(1)	3.546	(0.000)	58	185035	138.511	138.51			6	20
19) Freon 113	(2)	3.552	(0.001)	101	90240	20.474	20.47			2	10
23) Carbon Disulfide	(2)	3.838	(0.001)	76	299109	19.330	19.33			1	5
27) Methyl Acetate	(2)	3.972	(0.000)	43	176586	19.050	19.05			1	5
28) Methylene Chloride	(2)	4.203	(0.000)	84	113956	19.350	19.35			2	4
32) trans-1,2-Dichloroethene	(2)	4.629	(0.001)	96	109986	20.800	20.80			0.5	1
33) Methyl Tertiary Butyl Ether	(2)	4.605	(0.000)	73	304754	17.876	17.88			0.5	1
36) 1,1-Dichloroethane	(2)	5.298	(0.000)	63	198872	19.865	19.87			0.5	1
42) cis-1,2-Dichloroethene	(2)	6.138	(-0.000)	96	122792	20.317	20.32			0.5	1
44) 2-Butanone	(2)	6.095	(0.000)	43	1002052	148.945	148.95			3	10
51) Chloroform	(2)	6.625	(0.000)	83	186196	20.298	20.30			0.5	1
53) 1,1,1-Trichloroethane	(2)	6.862	(-0.000)	97	153028	19.416	19.42			0.5	1
54) Cyclohexane	(2)	6.959	(0.000)	56	184030	17.649	17.65			2	5
56) Carbon Tetrachloride	(2)	7.075	(-0.000)	117	118921	19.764	19.76			0.5	1
60) Benzene	(2)	7.336	(0.000)	78	460071	19.772	19.77			0.5	1
61) 1,2-Dichloroethane	(2)	7.415	(-0.000)	62	151375	20.187	20.19			0.5	1
71) Trichloroethene	(2)	8.231	(-0.000)	95	112850	19.536	19.54			0.5	1
73) Methylcyclohexane	(2)	8.541	(-0.000)	83	190664	19.390	19.39			1	5
74) 1,2-Dichloropropane	(2)	8.571	(-0.000)	63	125675	19.536	19.54			0.5	1
79) Bromodichloromethane	(2)	8.912	(-0.000)	83	128632	18.870	18.87			0.5	1
82) cis-1,3-Dichloropropene	(2)	9.460	(-0.000)	75	173671	18.793	18.79			0.5	1
83) 4-Methyl-2-pentanone	(2)	9.618	(-0.000)	43	1207559	95.690	95.69			3	10
89) Toluene	(3)	9.837	(0.000)	92	295251	19.583	19.58			0.5	1
90) trans-1,3-Dichloropropene	(3)	10.092	(0.000)	75	156597	18.482	18.48			0.5	1

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Analysis Summary for GC/MS Volatiles

Data file: /chem/HP23297.i/17aug08a.b/4g08l01.d Injection date and time: **08-AUG-2017 10:13**
Data file Sample Info. Line: LCS411;LCS411;1;3;LCS;;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

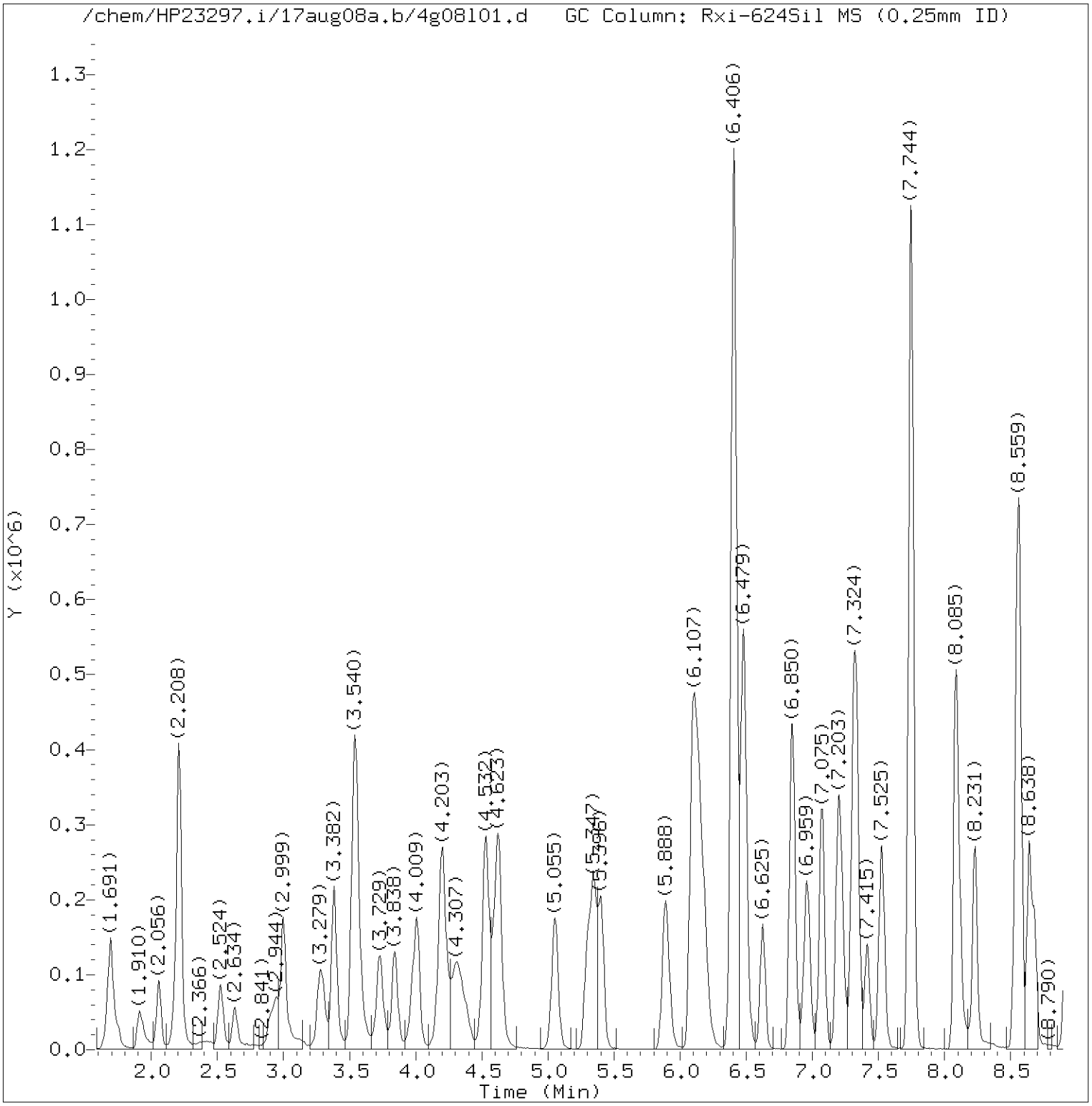
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
93) 1,1,2-Trichloroethane	(3)	10.299(0.000)	97	119543	19.493	19.49			0.5	1
94) Tetrachloroethene	(3)	10.390(-0.000)	166	130488	19.603	19.60			0.5	1
97) 2-Hexanone	(3)	10.500(-0.000)	43	973737	75.489	75.49			3	10
98) Dibromochloromethane	(3)	10.682(-0.000)	129	108708	18.421	18.42			0.5	1
100) 1,2-Dibromoethane	(3)	10.792(-0.000)	107	124184	19.012	19.01			0.5	1
103) Chlorobenzene	(3)	11.242(0.000)	112	332978	19.294	19.29			0.5	1
105) Ethylbenzene	(3)	11.327(0.000)	91	550003	19.382	19.38			0.5	1
107) m+p-Xylene	(3)	11.443(0.000)	106	442447	38.956	38.96			0.5	1
108) o-Xylene	(3)	11.771(0.000)	106	212448	18.877	18.88			0.5	1
109) Xylene (Total)	(3)		106	654895	57.834	57.83			0.5	1
110) Styrene	(3)	11.790(0.000)	104	364672	19.438	19.44			1	5
111) Bromoform	(3)	11.954(0.000)	173	80529	17.067	17.07			0.5	4
112) Isopropylbenzene	(3)	12.069(0.000)	105	542740	19.495	19.49			1	5
117) 1,1,2,2-Tetrachloroethane	(4)	12.313(-0.000)	83	206132	18.662	18.66			0.5	1
130) 1,3-Dichlorobenzene	(4)	13.043(-0.000)	146	280868	18.694	18.69			1	5
134) 1,4-Dichlorobenzene	(4)	13.116(0.000)	146	296480	19.019	19.02			1	5
139) 1,2-Dichlorobenzene	(4)	13.377(0.000)	146	277606	18.790	18.79			1	5
143) 1,2-Dibromo-3-chloropropane	(4)	13.919(0.000)	75	49212	19.378	19.38			2	5
147) 1,2,4-Trichlorobenzene	(4)	14.466(0.000)	180	195455	17.437	17.44			1	5
149) Naphthalene	(4)	14.649(0.000)	128	668811	18.237	18.24			1	5

Total number of targets = 51

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:19. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/09/2017 at 15:46. PARALLAX ID: jeb12641



Total Ion Chromatogram (TIC)

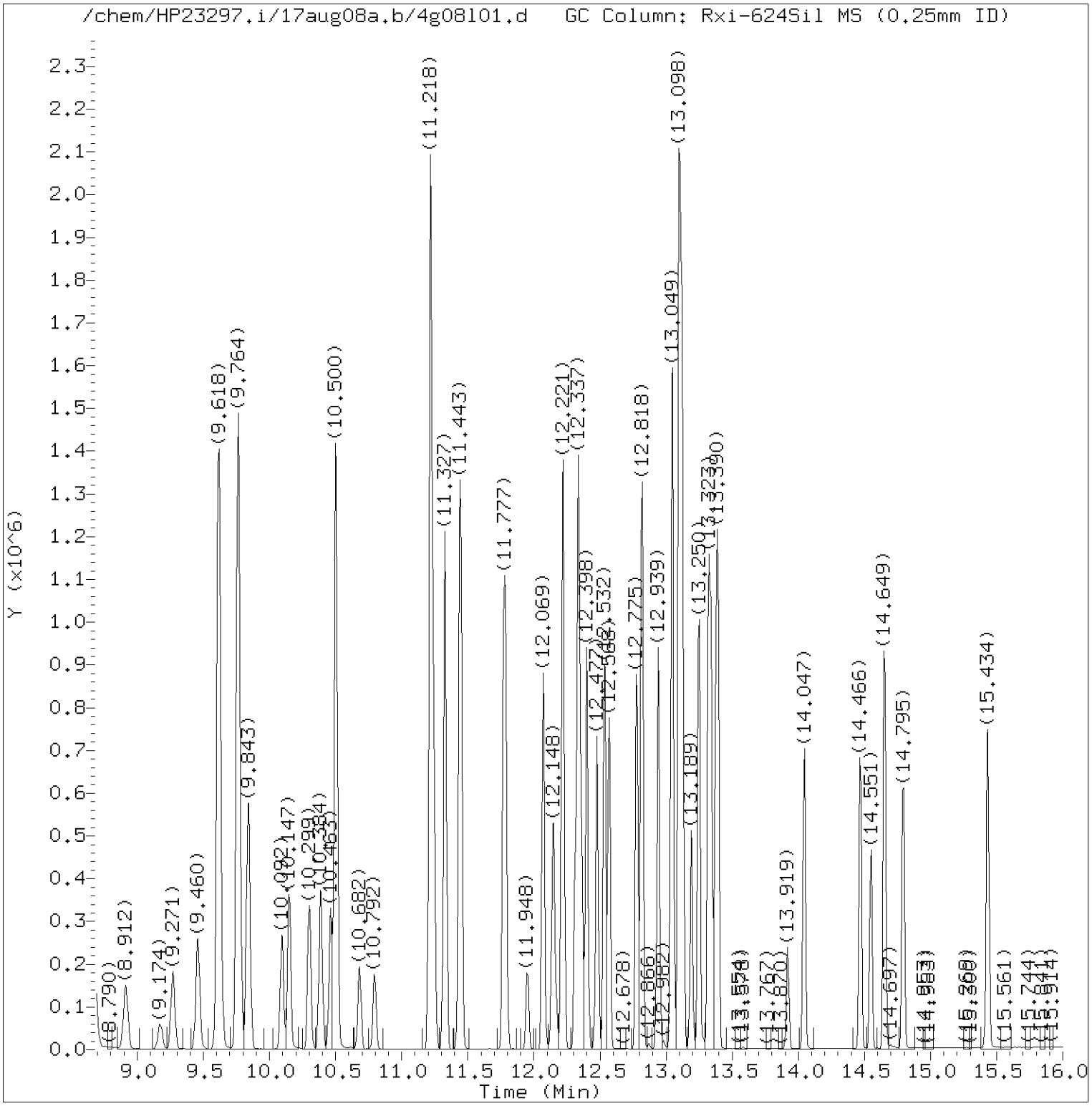
Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:13 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCS411 Lab Sample ID: LCS411

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:13 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCS411 Lab Sample ID: LCS411

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:13 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCS411 Lab Sample ID: LCS411

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.910	85	114827	18.362
4) Chloromethane	(2)	2.056	50	129720	18.436
6) Vinyl Chloride	(2)	2.190	62	124179	18.629
8) Bromomethane	(2)	2.524	94	88205	19.188
9) Chloroethane	(2)	2.628	64	66461	18.025
12) Trichlorofluoromethane	(2)	2.944	101	138600	19.673
17) 1,1-Dichloroethene	(2)	3.528	96	94043	21.261
18) Acetone	(1)	3.546	58	185035	138.511
19) Freon 113	(2)	3.552	101	90240	20.474
23) Carbon Disulfide	(2)	3.838	76	299109	19.330
27) Methyl Acetate	(2)	3.972	43	176586	19.050
29)*t-Butyl alcohol-d10	(1)	4.197	65	407270	250.000
28) Methylene Chloride	(2)	4.203	84	113956	19.350
33) Methyl Tertiary Butyl Ether	(2)	4.605	73	304754	17.876
32) trans-1,2-Dichloroethene	(2)	4.629	96	109986	20.800
36) 1,1-Dichloroethane	(2)	5.298	63	198872	19.865
44) 2-Butanone	(2)	6.095	43	1002052	148.945
42) cis-1,2-Dichloroethene	(2)	6.138	96	122792	20.317
51) Chloroform	(2)	6.625	83	186196	20.298
52)$Dibromofluoromethane	(2)	6.844	113	279465	50.527
53) 1,1,1-Trichloroethane	(2)	6.862	97	153028	19.416
54) Cyclohexane	(2)	6.959	56	184030	17.649
56) Carbon Tetrachloride	(2)	7.075	117	118921	19.764
57)$1,2-Dichloroethane-d4	(2)	7.312	102	72168	51.558
60) Benzene	(2)	7.336	78	460071	19.772
61) 1,2-Dichloroethane	(2)	7.415	62	151375	20.187
66)*Fluorobenzene	(2)	7.744	96	1175046	50.000
71) Trichloroethene	(2)	8.231	95	112850	19.536
73) Methylcyclohexane	(2)	8.541	83	190664	19.390
74) 1,2-Dichloropropane	(2)	8.571	63	125675	19.536
79) Bromodichloromethane	(2)	8.912	83	128632	18.870
82) cis-1,3-Dichloropropene	(2)	9.460	75	173671	18.793
83) 4-Methyl-2-pentanone	(2)	9.618	43	1207559	95.690
84)$Toluene-d8	(3)	9.764	98	1180944	49.588
89) Toluene	(3)	9.837	92	295251	19.583
90) trans-1,3-Dichloropropene	(3)	10.092	75	156597	18.482
93) 1,1,2-Trichloroethane	(3)	10.299	97	119543	19.493
94) Tetrachloroethene	(3)	10.390	166	130488	19.603

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l01.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:13 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCS411 Lab Sample ID: LCS411

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
97) 2-Hexanone	(3)	10.500	43	973737	75.489
98) Dibromochloromethane	(3)	10.682	129	108708	18.421
100) 1,2-Dibromoethane	(3)	10.792	107	124184	19.012
101)*Chlorobenzene-d5	(3)	11.218	117	903875	50.000
103) Chlorobenzene	(3)	11.242	112	332978	19.294
105) Ethylbenzene	(3)	11.327	91	550003	19.382
107) m+p-Xylene	(3)	11.443	106	442447	38.956
109) Xylene (Total)	(3)		106	654895	57.834
108) o-Xylene	(3)	11.771	106	212448	18.877
110) Styrene	(3)	11.790	104	364672	19.438
111) Bromoform	(3)	11.954	173	80529	17.067
112) Isopropylbenzene	(3)	12.069	105	542740	19.495
115)$4-Bromofluorobenzene	(3)	12.221	95	426843	50.400
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	206132	18.662
130) 1,3-Dichlorobenzene	(4)	13.043	146	280868	18.694
132)*1,4-Dichlorobenzene-d4	(4)	13.098	152	503695	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	296480	19.019
139) 1,2-Dichlorobenzene	(4)	13.377	146	277606	18.790
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	49212	19.378
147) 1,2,4-Trichlorobenzene	(4)	14.466	180	195455	17.437
149) Naphthalene	(4)	14.649	128	668811	18.237

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035

Data file: /chem/HP23297.i/17aug08a.b/4g08l02.d Injection date and time: **08-AUG-2017 10:39**
Data file Sample Info. Line: LCD411;LCD411;1;3;LCSD;;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
29) t-Butyl alcohol-d10	4.191	(0.012)	429	65	416318	(7)	250.00	
66) Fluorobenzene	7.744	(0.006)	1013	96	1234938	(4)	50.00	
101) Chlorobenzene-d5	11.218	(0.000)	1584	117	945268	(5)	50.00	
132) 1,4-Dichlorobenzene-d4	13.097	(0.000)	1893	152	521928	(2)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
52) Dibromofluoromethane	(2)	6.844	(0.000)	113	292593	50.335	101%		80 - 116
57) 1,2-Dichloroethane-d4	(2)	7.306	(0.000)	102	72529	49.303	99%		77 - 113
84) Toluene-d8	(3)	9.758	(0.001)	98	1238206	49.716	99%		80 - 113
115) 4-Bromofluorobenzene	(3)	12.215	(0.000)	95	445442	50.293	101%		78 - 113

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
3) Dichlorodifluoromethane	(2)	1.910	(0.001)	85	114067	17.355	17.36			0.5	1
4) Chloromethane	(2)	2.056	(0.002)	50	127167	17.197	17.20			0.5	1
6) Vinyl Chloride	(2)	2.190	(0.002)	62	119138	17.006	17.01			0.5	1
8) Bromomethane	(2)	2.518	(0.002)	94	86623	17.930	17.93			0.5	1
9) Chloroethane	(2)	2.622	(0.002)	64	66079	17.053	17.05			0.5	1
12) Trichlorofluoromethane	(2)	2.938	(0.002)	101	136566	18.444	18.44			0.5	1
17) 1,1-Dichloroethene	(2)	3.516	(0.002)	96	92950	19.995	19.99			0.5	1
18) Acetone	(1)	3.546	(-0.001)	58	182093	133.346	133.35			6	20
19) Freon 113	(2)	3.546	(0.001)	101	89664	19.357	19.36			2	10
23) Carbon Disulfide	(2)	3.838	(0.001)	76	300135	18.456	18.46			1	5
27) Methyl Acetate	(2)	3.972	(0.000)	43	183255	18.811	18.81			1	5
28) Methylene Chloride	(2)	4.197	(0.001)	84	114742	18.539	18.54			2	4
32) trans-1,2-Dichloroethene	(2)	4.623	(0.001)	96	109946	19.784	19.78			0.5	1
33) Methyl Tertiary Butyl Ether	(2)	4.605	(0.000)	73	313868	17.518	17.52			0.5	1
36) 1,1-Dichloroethane	(2)	5.292	(0.001)	63	200528	19.059	19.06			0.5	1
42) cis-1,2-Dichloroethene	(2)	6.132	(0.000)	96	125396	19.741	19.74			0.5	1
44) 2-Butanone	(2)	6.089	(0.000)	43	1013419	143.329	143.33			3	10
51) Chloroform	(2)	6.618	(0.000)	83	185094	19.199	19.20			0.5	1
53) 1,1,1-Trichloroethane	(2)	6.850	(0.000)	97	154384	18.638	18.64			0.5	1
54) Cyclohexane	(2)	6.953	(0.000)	56	185058	16.887	16.89			2	5
56) Carbon Tetrachloride	(2)	7.069	(0.000)	117	118929	18.807	18.81			0.5	1
60) Benzene	(2)	7.330	(0.000)	78	462539	18.914	18.91			0.5	1
61) 1,2-Dichloroethane	(2)	7.409	(0.000)	62	151220	19.188	19.19			0.5	1
71) Trichloroethene	(2)	8.224	(-0.000)	95	115815	19.077	19.08			0.5	1
73) Methylcyclohexane	(2)	8.541	(-0.000)	83	194338	18.805	18.80			1	5
74) 1,2-Dichloropropane	(2)	8.565	(-0.000)	63	126951	18.778	18.78			0.5	1
79) Bromodichloromethane	(2)	8.912	(-0.000)	83	129385	18.060	18.06			0.5	1
82) cis-1,3-Dichloropropene	(2)	9.453	(-0.000)	75	180076	18.541	18.54			0.5	1
83) 4-Methyl-2-pentanone	(2)	9.612	(-0.000)	43	1207442	91.040	91.04			3	10
89) Toluene	(3)	9.837	(0.000)	92	298231	18.914	18.91			0.5	1
90) trans-1,3-Dichloropropene	(3)	10.092	(0.000)	75	162200	18.305	18.31			0.5	1

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Analysis Summary for GC/MS Volatiles

Data file: /chem/HP23297.i/17aug08a.b/4g08l02.d Injection date and time: **08-AUG-2017 10:39**
Data file Sample Info. Line: LCD411;LCD411;1;3;LCSD;;MORPD;;4g08b11; Instrument ID: **HP23297.i** Batch: **4172202AA**
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Blank Data file reference: **/chem/HP23297.i/17aug08a.b/4g08b11.d**

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: **24945**
Calibration date and time (Last Method Edit): 08-AUG-2017 20:13
Mid Level Daily Calibration Standard Reference: **/chem/HP23297.i/17aug08a.b/4g08c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

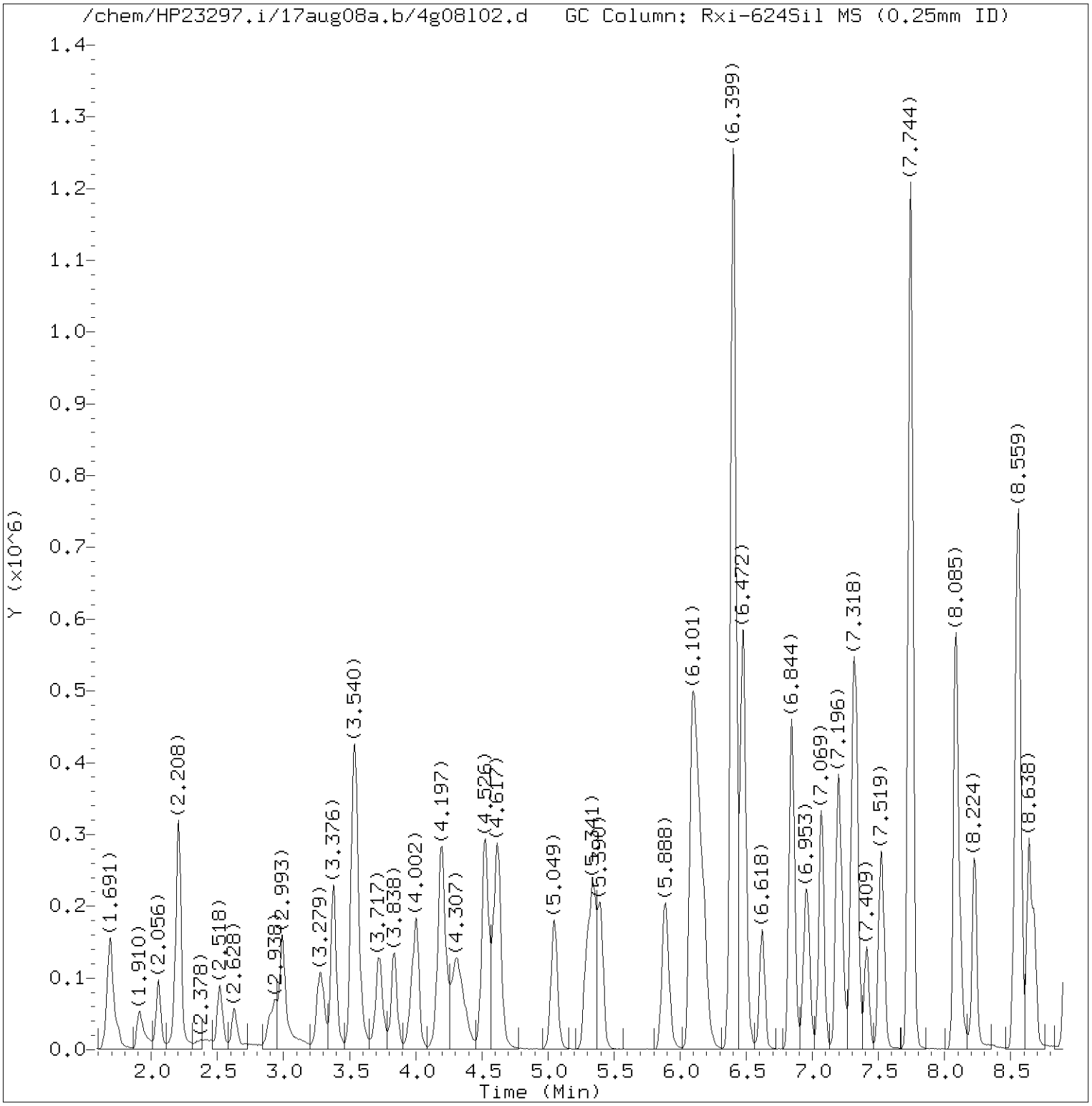
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
93) 1,1,2-Trichloroethane	(3)	10.299(0.000)	97	120777	18.832	18.83			0.5	1
94) Tetrachloroethene	(3)	10.384(0.000)	166	133936	19.239	19.24			0.5	1
97) 2-Hexanone	(3)	10.500(0.000)	43	983404	72.868	72.87			3	10
98) Dibromochloromethane	(3)	10.676(0.000)	129	108863	17.640	17.64			0.5	1
100) 1,2-Dibromoethane	(3)	10.792(0.000)	107	126696	18.547	18.55			0.5	1
103) Chlorobenzene	(3)	11.242(0.000)	112	335346	18.581	18.58			0.5	1
105) Ethylbenzene	(3)	11.327(0.000)	91	553051	18.636	18.64			0.5	1
107) m+p-Xylene	(3)	11.443(0.000)	106	447997	37.717	37.72			0.5	1
108) o-Xylene	(3)	11.771(0.000)	106	213128	18.109	18.11			0.5	1
109) Xylene (Total)	(3)		106	661125	55.826	55.83			0.5	1
110) Styrene	(3)	11.789(0.000)	104	367686	18.741	18.74			1	5
111) Bromoform	(3)	11.954(-0.000)	173	82428	16.705	16.70			0.5	4
112) Isopropylbenzene	(3)	12.069(-0.000)	105	542809	18.644	18.64			1	5
117) 1,1,2,2-Tetrachloroethane	(4)	12.313(0.000)	83	205444	17.949	17.95			0.5	1
130) 1,3-Dichlorobenzene	(4)	13.043(0.000)	146	282905	18.172	18.17			1	5
134) 1,4-Dichlorobenzene	(4)	13.116(-0.000)	146	297949	18.445	18.45			1	5
139) 1,2-Dichlorobenzene	(4)	13.377(-0.000)	146	280986	18.354	18.35			1	5
143) 1,2-Dibromo-3-chloropropane	(4)	13.919(-0.000)	75	48777	18.535	18.54			2	5
147) 1,2,4-Trichlorobenzene	(4)	14.472(-0.000)	180	196684	16.933	16.93			1	5
149) Naphthalene	(4)	14.649(-0.000)	128	674535	17.751	17.75			1	5

Total number of targets = 51

Digitally signed by Daniel H. Heller on 08/09/2017 at 15:19. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 08/09/2017 at 15:46. PARALLAX ID: jeb12641



Total Ion Chromatogram (TIC)

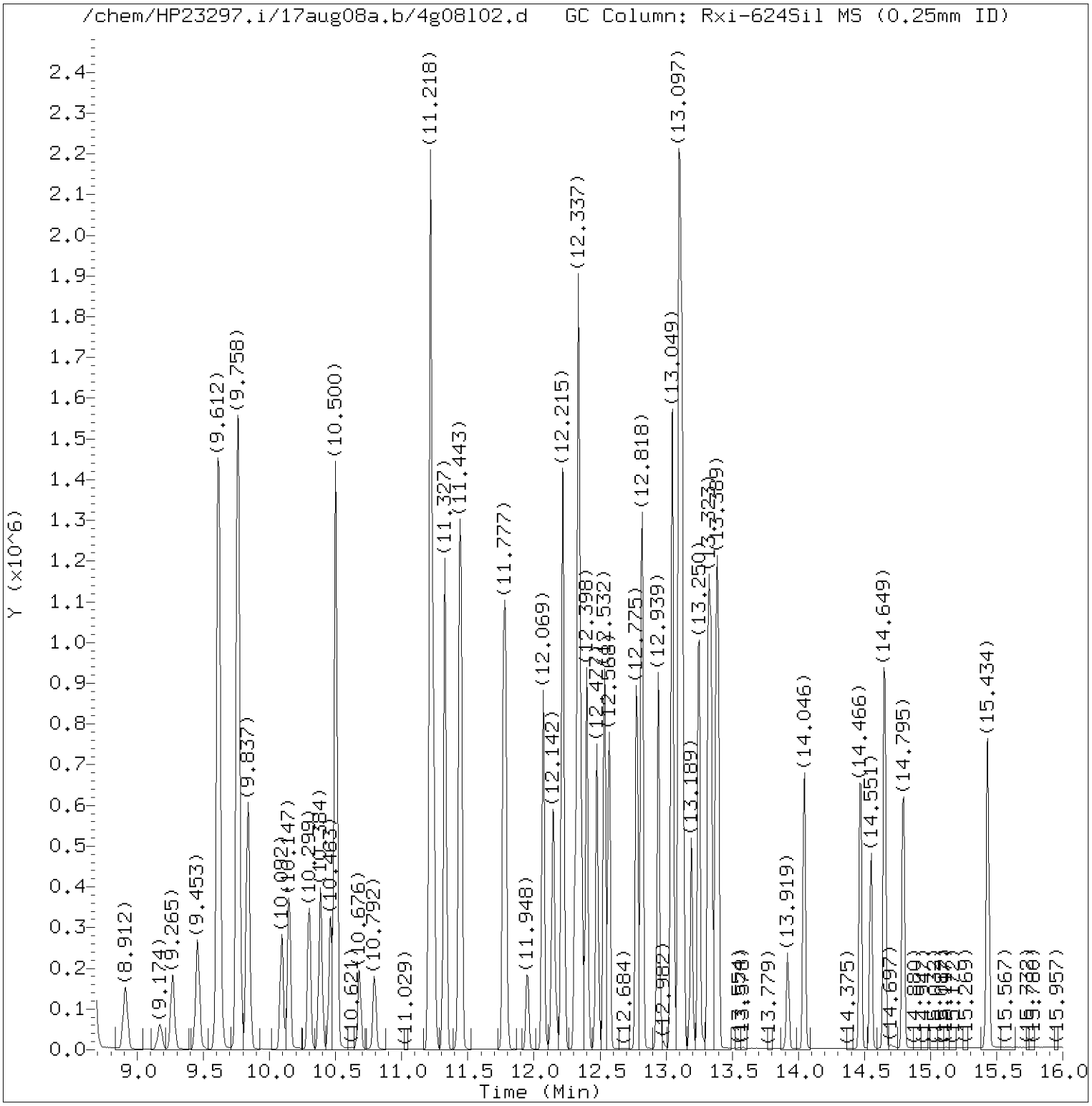
Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l02.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:39 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCD411 Lab Sample ID: LCD411

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l02.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:39 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCD411 Lab Sample ID: LCD411

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l02.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:39 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCD411 Lab Sample ID: LCD411

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
3) Dichlorodifluoromethane	(2)	1.910	85	114067	17.355
4) Chloromethane	(2)	2.056	50	127167	17.197
6) Vinyl Chloride	(2)	2.190	62	119138	17.006
8) Bromomethane	(2)	2.518	94	86623	17.930
9) Chloroethane	(2)	2.622	64	66079	17.053
12) Trichlorofluoromethane	(2)	2.938	101	136566	18.444
17) 1,1-Dichloroethene	(2)	3.516	96	92950	19.995
18) Acetone	(1)	3.546	58	182093	133.346
19) Freon 113	(2)	3.546	101	89664	19.357
23) Carbon Disulfide	(2)	3.838	76	300135	18.456
27) Methyl Acetate	(2)	3.972	43	183255	18.811
29)*t-Butyl alcohol-d10	(1)	4.191	65	416318	250.000
28) Methylene Chloride	(2)	4.197	84	114742	18.539
33) Methyl Tertiary Butyl Ether	(2)	4.605	73	313868	17.518
32) trans-1,2-Dichloroethene	(2)	4.623	96	109946	19.784
36) 1,1-Dichloroethane	(2)	5.292	63	200528	19.059
44) 2-Butanone	(2)	6.089	43	1013419	143.329
42) cis-1,2-Dichloroethene	(2)	6.132	96	125396	19.741
51) Chloroform	(2)	6.618	83	185094	19.199
52)$Dibromofluoromethane	(2)	6.844	113	292593	50.335
53) 1,1,1-Trichloroethane	(2)	6.850	97	154384	18.638
54) Cyclohexane	(2)	6.953	56	185058	16.887
56) Carbon Tetrachloride	(2)	7.069	117	118929	18.807
57)$1,2-Dichloroethane-d4	(2)	7.306	102	72529	49.303
60) Benzene	(2)	7.330	78	462539	18.914
61) 1,2-Dichloroethane	(2)	7.409	62	151220	19.188
66)*Fluorobenzene	(2)	7.744	96	1234938	50.000
71) Trichloroethene	(2)	8.224	95	115815	19.077
73) Methylcyclohexane	(2)	8.541	83	194338	18.805
74) 1,2-Dichloropropane	(2)	8.565	63	126951	18.778
79) Bromodichloromethane	(2)	8.912	83	129385	18.060
82) cis-1,3-Dichloropropene	(2)	9.453	75	180076	18.541
83) 4-Methyl-2-pentanone	(2)	9.612	43	1207442	91.040
84)$Toluene-d8	(3)	9.758	98	1238206	49.716
89) Toluene	(3)	9.837	92	298231	18.914
90) trans-1,3-Dichloropropene	(3)	10.092	75	162200	18.305
93) 1,1,2-Trichloroethane	(3)	10.299	97	120777	18.832
94) Tetrachloroethene	(3)	10.384	166	133936	19.239

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP23297.i/17aug08a.b/4g08l02.d Instrument ID: HP23297.i
Injection date and time: 08-AUG-2017 10:39 Analyst ID: dhh02035

Method used: /chem/HP23297.i/17aug08a.b/m8260b5.m Sublist used: 24945
Calibration date and time: 08-AUG-2017 20:13
Date, time and analyst ID of latest file update: 09-Aug-2017 15:18 dhh02035

Sample Name: LCD411 Lab Sample ID: LCD411

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
97) 2-Hexanone	(3)	10.500	43	983404	72.868
98) Dibromochloromethane	(3)	10.676	129	108863	17.640
100) 1,2-Dibromoethane	(3)	10.792	107	126696	18.547
101)*Chlorobenzene-d5	(3)	11.218	117	945268	50.000
103) Chlorobenzene	(3)	11.242	112	335346	18.581
105) Ethylbenzene	(3)	11.327	91	553051	18.636
107) m+p-Xylene	(3)	11.443	106	447997	37.717
109) Xylene (Total)	(3)		106	661125	55.826
108) o-Xylene	(3)	11.771	106	213128	18.109
110) Styrene	(3)	11.789	104	367686	18.741
111) Bromoform	(3)	11.954	173	82428	16.705
112) Isopropylbenzene	(3)	12.069	105	542809	18.644
115)$4-Bromofluorobenzene	(3)	12.215	95	445442	50.293
117) 1,1,2,2-Tetrachloroethane	(4)	12.313	83	205444	17.949
130) 1,3-Dichlorobenzene	(4)	13.043	146	282905	18.172
132)*1,4-Dichlorobenzene-d4	(4)	13.097	152	521928	50.000
134) 1,4-Dichlorobenzene	(4)	13.116	146	297949	18.445
139) 1,2-Dichlorobenzene	(4)	13.377	146	280986	18.354
143) 1,2-Dibromo-3-chloropropane	(4)	13.919	75	48777	18.535
147) 1,2,4-Trichlorobenzene	(4)	14.472	180	196684	16.933
149) Naphthalene	(4)	14.649	128	674535	17.751

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Daniel H. Heller
on 08/09/2017 at 15:19.
Target 3.5 esignature user ID: dhh02035

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Greenfield Environmental
PO Box 1189
Helena MT 59624

Report Date: August 10, 2017

Project: Springfield, MO

Submittal Date: 08/03/2017
Group Number: 1833793
SDG: SMO01
PO Number: SPRINGFIELD, MO
State of Sample Origin: MO

Client Sample Description	Lancaster Labs (ELLE) #
SW-004_0817 Grab Surface Water	9137935
SW-104_0817 Grab Surface Water	9137936
Trip-1_0817 Water	9137937

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	CH2M Hill, Inc.	Attn: Brian Wied
Electronic Copy To	CH2M Hill, Inc.	Attn: Katie Rabe
Electronic Copy To	CH2M Hill, Inc.	Attn: Chemistry Mailbox
Electronic Copy To	CH2M Hill, Inc.	Attn: Mike Bedan
Electronic Copy To	CH2M Hill, Inc.	Attn: Mark Stinnett

Respectfully Submitted,

Katherine A. Klinefelter

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Sample Description: SW-004_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137935
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:06 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW004 SDG#: SMO01-01

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Cyclohexane	110-82-7	N.D.	2	5	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,2-Dibromoethane	106-93-4	N.D.	0.5	1	1
10335	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10335	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10335	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10335	Dichlorodifluoromethane	75-71-8	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	Freon 113	76-13-1	N.D.	2	10	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	Isopropylbenzene	98-82-8	N.D.	1	5	1
10335	Methyl Acetate	79-20-9	N.D.	1	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylcyclohexane	108-87-2	N.D.	1	5	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Naphthalene	91-20-3	N.D.	1	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	m+p-Xylene	179601-23-1	N.D.	0.5	1	1
10335	o-Xylene	95-47-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: SW-004_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137935
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:06 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW004 SDG#: SMO01-01

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	TCL4.3+Naph 8260B w/RPD20%	SW-846 8260B	1	4172202AA	08/08/2017 18:30	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4172202AA	08/08/2017 18:30	Daniel H Heller	1

*=This limit was used in the evaluation of the final result

Sample Description: SW-104_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137936
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:00 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW104 SDG#: SMO01-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Cyclohexane	110-82-7	N.D.	2	5	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,2-Dibromoethane	106-93-4	N.D.	0.5	1	1
10335	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10335	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10335	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10335	Dichlorodifluoromethane	75-71-8	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	Freon 113	76-13-1	N.D.	2	10	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	Isopropylbenzene	98-82-8	N.D.	1	5	1
10335	Methyl Acetate	79-20-9	N.D.	1	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylcyclohexane	108-87-2	N.D.	1	5	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Naphthalene	91-20-3	N.D.	1	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	m+p-Xylene	179601-23-1	N.D.	0.5	1	1
10335	o-Xylene	95-47-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: SW-104_0817 Grab Surface Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137936
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 11:00 by SS

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

SW104 SDG#: SMO01-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	TCL4.3+Naph 8260B w/RPD20%	SW-846 8260B	1	4172202AA	08/08/2017 18:53	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4172202AA	08/08/2017 18:53	Daniel H Heller	1

*=This limit was used in the evaluation of the final result

Sample Description: Trip-1_0817 Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137937
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 08:00

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

T1817 SDG#: SMO01-03TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Cyclohexane	110-82-7	N.D.	2	5	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,2-Dibromoethane	106-93-4	N.D.	0.5	1	1
10335	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10335	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10335	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10335	Dichlorodifluoromethane	75-71-8	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	Freon 113	76-13-1	N.D.	2	10	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	Isopropylbenzene	98-82-8	N.D.	1	5	1
10335	Methyl Acetate	79-20-9	N.D.	1	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylcyclohexane	108-87-2	N.D.	1	5	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Naphthalene	91-20-3	N.D.	1	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Trichlorofluoromethane	75-69-4	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	m+p-Xylene	179601-23-1	N.D.	0.5	1	1
10335	o-Xylene	95-47-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: Trip-1_0817 Water
Former Tronox Facility / Springfield, MO

ELLE Sample # WW 9137937
ELLE Group # 1833793
Account # 13107

Project Name: Springfield, MO

Collected: 08/02/2017 08:00

Submitted: 08/03/2017 09:40
Reported: 08/10/2017 12:40

Greenfield Environmental
PO Box 1189
Helena MT 59624

T1817 SDG#: SMO01-03TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	TCL4.3+Naph 8260B w/RPD20%	SW-846 8260B	1	4172202AA	08/08/2017 18:08	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4172202AA	08/08/2017 18:08	Daniel H Heller	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Greenfield Environmental
Group Number: 1833793
Reported: 08/10/2017 12:40

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: 4172202AA	Sample number(s): 9137935-9137937		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Cyclohexane	N.D.	2	5
1,2-Dibromo-3-chloropropane	N.D.	2	5
Dibromochloromethane	N.D.	0.5	1
1,2-Dibromoethane	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	1	5
1,3-Dichlorobenzene	N.D.	1	5
1,4-Dichlorobenzene	N.D.	1	5
Dichlorodifluoromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
Freon 113	N.D.	2	10
2-Hexanone	N.D.	3	10
Isopropylbenzene	N.D.	1	5
Methyl Acetate	N.D.	1	5
Methyl Tertiary Butyl Ether	N.D.	0.5	1
4-Methyl-2-pentanone	N.D.	3	10
Methylcyclohexane	N.D.	1	5
Methylene Chloride	N.D.	2	4
Naphthalene	N.D.	1	5
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Greenfield Environmental
Reported: 08/10/2017 12:40

Group Number: 1833793

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,2,4-Trichlorobenzene	N.D.	1	5
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Trichlorofluoromethane	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
m+p-Xylene	N.D.	0.5	1
o-Xylene	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: 4172202AA	Sample number(s): 9137935-9137937								
Acetone	150	138.51	150	133.35	92	89	50-168	4	20
Benzene	20	19.77	20	18.91	99	95	78-120	4	20
Bromodichloromethane	20	18.87	20	18.06	94	90	80-120	4	20
Bromoform	20	17.07	20	16.7	85	84	64-120	2	20
Bromomethane	20	19.19	20	17.93	96	90	49-121	7	20
2-Butanone	150	148.95	150	143.33	99	96	53-140	4	20
Carbon Disulfide	20	19.33	20	18.46	97	92	63-122	5	20
Carbon Tetrachloride	20	19.76	20	18.81	99	94	76-123	5	20
Chlorobenzene	20	19.29	20	18.58	96	93	80-120	4	20
Chloroethane	20	18.03	20	17.05	90	85	51-121	6	20
Chloroform	20	20.3	20	19.2	101	96	80-120	6	20
Chloromethane	20	18.44	20	17.2	92	86	57-120	7	20
Cyclohexane	20	17.65	20	16.89	88	84	67-121	4	20
1,2-Dibromo-3-chloropropane	20	19.38	20	18.54	97	93	59-120	4	20
Dibromochloromethane	20	18.42	20	17.64	92	88	78-120	4	20
1,2-Dibromoethane	20	19.01	20	18.55	95	93	75-120	2	20
1,2-Dichlorobenzene	20	18.79	20	18.35	94	92	80-120	2	20
1,3-Dichlorobenzene	20	18.69	20	18.17	93	91	80-120	3	20
1,4-Dichlorobenzene	20	19.02	20	18.45	95	92	80-120	3	20
Dichlorodifluoromethane	20	18.36	20	17.36	92	87	54-122	6	20
1,1-Dichloroethane	20	19.87	20	19.06	99	95	80-120	4	20
1,2-Dichloroethane	20	20.19	20	19.19	101	96	66-128	5	20
1,1-Dichloroethene	20	21.26	20	19.99	106	100	76-124	6	20
cis-1,2-Dichloroethene	20	20.32	20	19.74	102	99	80-120	3	20
trans-1,2-Dichloroethene	20	20.8	20	19.78	104	99	80-120	5	20
1,2-Dichloropropane	20	19.54	20	18.78	98	94	80-120	4	20
cis-1,3-Dichloropropene	20	18.79	20	18.54	94	93	75-120	1	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Greenfield Environmental
Reported: 08/10/2017 12:40

Group Number: 1833793

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
trans-1,3-Dichloropropene	20	18.48	20	18.31	92	92	76-120	1	20
Ethylbenzene	20	19.38	20	18.64	97	93	78-120	4	20
Freon 113	20	20.47	20	19.36	102	97	68-129	6	20
2-Hexanone	100	75.49	100	72.87	75	73	49-137	4	20
Isopropylbenzene	20	19.49	20	18.64	97	93	80-120	4	20
Methyl Acetate	20	19.05	20	18.81	95	94	61-137	1	20
Methyl Tertiary Butyl Ether	20	17.88	20	17.52	89	88	75-120	2	20
4-Methyl-2-pentanone	100	95.69	100	91.04	96	91	56-131	5	20
Methylcyclohexane	20	19.39	20	18.8	97	94	66-126	3	20
Methylene Chloride	20	19.35	20	18.54	97	93	80-120	4	20
Naphthalene	20	18.24	20	17.75	91	89	59-120	3	20
Styrene	20	19.44	20	18.74	97	94	80-120	4	20
1,1,2,2-Tetrachloroethane	20	18.66	20	17.95	93	90	72-120	4	20
Tetrachloroethene	20	19.6	20	19.24	98	96	80-129	2	20
Toluene	20	19.58	20	18.91	98	95	80-120	3	20
1,2,4-Trichlorobenzene	20	17.44	20	16.93	87	85	58-120	3	20
1,1,1-Trichloroethane	20	19.42	20	18.64	97	93	67-120	4	20
1,1,2-Trichloroethane	20	19.49	20	18.83	97	94	80-120	3	20
Trichloroethene	20	19.54	20	19.08	98	95	80-120	2	20
Trichlorofluoromethane	20	19.67	20	18.44	98	92	57-134	6	20
Vinyl Chloride	20	18.63	20	17.01	93	85	63-121	9	20
m+p-Xylene	40	38.96	40	37.72	97	94	80-120	3	20
o-Xylene	20	18.88	20	18.11	94	91	80-120	4	20
Xylene (Total)	60	57.83	60	55.83	96	93	80-120	4	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: TCL4.3+Naph 8260B w/RPD20%
Batch number: 4172202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9137935	103	101	99	99
9137936	103	102	99	100
9137937	102	104	98	100
Blank	102	102	99	99
LCS	101	103	99	101
LCSD	101	99	99	101
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Greenfield Environmental
Group Number: 1833793
Reported: 08/10/2017 12:40

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only
Acct. # 13107 Group # 1833793 Sample # 9137935-37

COC # 535366

Client Information

Client: Greenfield Environmental	Acct. #:
Project Name/#: Former Tronex Facility	PWSID #:
Project Manager: Brian Weid - CH2M	P.O. #:
Sampler: Shirley Steinmacher	Quote #:
State where samples were collected: MO	For Compliance: Yes ☐ No ☒

Matrix

Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☒ | Other: ____

Analysis Requested

Preservation Codes: H

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	SW-846, Method 8260B VOC TCL Retg3 thaphthalene
SW-004_0817	08/02/17	11:06	X		2	X
SW-104_0817	8/02/17	11:00	X		1	X
Trip-1-0817	8/02/17	0800	X		2	X

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)
Standard 10-day Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Date results are needed:

E-mail address: mark.steinert@ch2m.com GN AChem @ch2m.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	08/02/17	08:00			
				8/3/17	0941C

EDD Required? Yes No
If yes, format:

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 1.6 °C

1833793

Katherine Klinefelter

From: Stinnett, Mark/GNV <Mark.Stinnett@CH2M.com>
Sent: Monday, August 07, 2017 9:52 AM
To: Katherine Klinefelter
Subject: Former Tronox Facility - Springfield Mo

Hi Kathy,

No further VOA samples will be collected for this effort. The field team shut down on Saturday. However, the project team is requesting a 5 Day TAT for Form 1 data on the aqueous samples currently in house. Being that the samples arrived last week this change order (5 Day TAT) would take affect on the day of request (today) and that would also include a 35% surcharge (if I remember your lab's rates correctly) on the unit cost. Further, there will be confirmation sampling to take place toward the end of August for this site and may include additional VOC aqueous sampling. We should discuss.

Thank you.

Mark

CH2MHILL

Mark Stinnett
Project Chemist-CH2M HILL
GNV CHEM GROUP
352-384-7180 Direct line
352-335-7991 Switchboard
mstinnet@ch2m.com

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Sample Administration Receipt Documentation Log

Doc Log ID: 190686

Group Number(s): 1833793

Client: Greenfield

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	08/03/2017 9:40
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	MO		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Karen Diem (3060) at 15:06 on 08/03/2017

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-02	1.6	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T : 717-656-2300
F : 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	non-detect
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.