# SITE A VAPOR INTRUSION INVESTIGATION REPORT NEW BRIGHTON/ARDEN HILLS SUPERFUND SITE

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Commander Twin Cities Army Ammunition Plant 470 Hwy 96 West, Suite 100 Shoreview, Minnesota 55126

### **Prepared for:**

Commander Twin Cities Army Ammunition Plant 470 Hwy 96 West, Suite 100 Shoreview, Minnesota 55126



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

#### REGION 5 77 WEST JACKSON BOULEVARD CHICAGO, IL 60604-3590

February 20, 2014

REPLY TO THE ATTENTION OF:

SR-6J

Mr. Michael R. Fix Commander's Representative Twin Cities Army Ammunition Plant 470 West Highway 96 - Suite 100 Shoreview, MN 55126-3218

Subject:

Consistency Test for the Site A Vapor Intrusion Investigation Report, New

Brighton/Arden Hills Superfund Site

Dear Mr. Fix:

The U.S. Environmental Protection Agency (EPA) and the Minnesota Pollution Control Agency (MPCA) have completed review of the subject Site A Vapor Intrusion Investigation Report, New Brighton/Arden Hills Superfund Site. Our review included review of the following documentation:

- 1. Site A Vapor Intrusion Investigation Report, New Brighton/Arden Hills Superfund Site, Draft-Final Report, December 2013;
- 2. MPCA comments (January 22, 2014) and Army responses/redline revisions (February 6, 2014);
- 3. USEPA comments (January 23, 2014) and Army responses/redline revisions (February 6, 2014);

Based upon the referenced documentation and the changes and redline revisions indicated in the responses to the regulators' comments, EPA and MPCA have determined that, in accordance with Chapter XIV of the TCAAP Federal Facility Agreement, the <a href="Site A Vapor Intrusion">Site A Vapor Intrusion</a> Investigation Report, New Brighton Arden Hills Superfund Site passes the Consistency Test.

If you have any questions, please contact Tom Barounis of the EPA at (312) 353-5577 or Amy Hadiaris of the MPCA at (651) 757-2402.

Sincerely,

Tom Barounis

Remedial Project Manager

U.S. Environmental Protection Agency

Amy Hadiaris Project Manager

Minnesota Pollution Control Agency

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### **APPENDICES**

- A Information on Buried Utilities
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# **List of Acronyms**

Army - United States Army

COC - Chemical of Concern

CSM - Conceptual Site Model

FFA - Federal Facility Agreement

FY - Fiscal Year

GPS - Global Positioning System

IRIS - Integrated Risk Information System

ISV - Intrusion Screening Value

LCS - Laboratory Control Sample

LNAPL - Light Non-Aqueous Phase Liquid

μg/L - Micrograms per Liter

μg/m<sup>3</sup> - Micrograms per Cubic Meter

MDH - Minnesota Department of Health

MNA - Monitored Natural Attenuation

MNARNG - Minnesota Army National Guard

MPCA - Minnesota Pollution Control Agency

MS - Matrix Spike

MS/MSD - Matrix Spike / Matrix Spike Duplicate

NPL - National Priorities List

OU - Operable Unit

PPB - Parts per Billion

QA - Quality Assurance

QAPP - Quality Assurance Project Plan

QC - Quality Control

RL - Reporting Limit

ROD - Record of Decision

# List of Acronyms (cont'd)

RPD - Relative Percent Difference

TCAAP - Twin Cities Army Ammunition Plant

USEPA - United States Environmental Protection Agency

VOC - Volatile Organic Compound

Wenck - Wenck Associates, Inc.

### 1.0 Introduction

This report documents a soil vapor investigation conducted in the vicinity of Site A at the New Brighton/Arden Hills Superfund Site, associated with the Twin Cities Army Ammunition Plant (TCAAP). The purpose of the investigation was to acquire definitive soil vapor results relative to the volatile organic compound (VOC) contamination at Site A, and thus determine the potential for any vapor intrusion into residences located along the north side of County Road I. A vapor intrusion report had been prepared previously: *Off-TCAAP Vapor Intrusion Pathway Analysis, Operable Unit 1, Operable Unit 3, and Operable Unit 2 (Site A)*, prepared by Tecumseh/Wenck Installation Support Services, May 2005. This report concluded that the vapor intrusion pathway for the off-Site Site A plume is incomplete, since the concentrations in groundwater were below the U.S. Environmental Protection Agency (USEPA) generic screening criteria. However, in December 2012, the Minnesota Pollution Control Agency (MPCA) requested that soil gas sampling be conducted since their 2008/2010 vapor intrusion guidance is newer than the 2005 report, and since that guidance states that groundwater screening levels should not be used as a single line of evidence for decisions regarding vapor intrusion risk.

Based on this MPCA request, the Army conducted the investigation work described herein.

#### 1.1 TCAAP BACKGROUND

TCAAP was constructed between August 1941 and January 1943 in the northern portion of the Minneapolis – St. Paul metropolitan area, in Ramsey County, and is surrounded by the cities of New Brighton, Arden Hills, Mounds View, and Shoreview, Minnesota (Figure 1-1).

TCAAP primarily produced and proof-tested small-caliber ammunition and related materials for the Army. Other uses included manufacture of munitions-related components, handling/storage of strategic and critical materials for other government agencies, and various non-military tenant activities. Production began in 1942 and then alternated between periods of activity and standby related to wars. The last manufacturing operations ceased in 2005.

During periods of activity, solvents were utilized as part of some manufacturing operations. Disposal of solvents and other wastes at the TCAAP property resulted in soil contamination and also groundwater contamination, which has migrated beyond the original TCAAP boundary. Groundwater contamination was first discovered in July 1981, which led to investigation of the soil and groundwater on and off the TCAAP property. It was determined that TCAAP was the source of contamination, and so the TCAAP property and area of affected groundwater contamination was placed on the National Priorities List (NPL) in 1983 as the New Brighton/Arden Hills Superfund Site.

Since 1983, when the New Brighton/Arden Hills Superfund Site was placed on the NPL, the size of TCAAP has periodically shrunk as a result of property transfers. Some property has been transferred out of federal-ownership to Ramsey County and the City of Arden Hills. Other property is still owned by the federal government, but control has been reassigned to the Army Reserve or the National Guard Bureau. The National Guard Bureau has licensed the property it controls to the Minnesota Army National Guard (MNARNG). Figure 1-2 shows the property presently under federal ownership, along with the organizations responsible for control. These property transfers do not alter the responsibilities of the U.S. Army under the Federal Facility Agreement (FFA), signed in 1987 between the Army, the USEPA, and the MPCA.

Operable Unit 2 (OU2) includes all soil, sediment, surface water, and groundwater contamination on the original TCAAP property (Figure 1-1). A number of known and potential contaminant source areas have been identified on the original TCAAP property, including Site A.

#### 1.2 SITE A BACKGROUND

Site A is located on the property licensed to the MNARNG, as shown on Figure 1-2. Shallow groundwater at Site A has been impacted by VOCs and antimony. The selected remedy in the OU2 Record of Decision (ROD) incorporates the use of a groundwater extraction system, which began operation May 31, 1994. The groundwater system was shut off (with regulatory approval) on September 4, 2008, while implementation of Monitored Natural Attenuation (MNA) is evaluated as a potential remedy component in lieu of groundwater extraction and discharge. The groundwater system has not been removed and will be kept in place in the event that MNA does not adequately control plume migration and one or more extraction wells need to be restarted. The decision to proceed with MNA was based in part on the June 2000 MPCA and USEPA natural attenuation study at this site, and also on follow-up MPCA/USEPA microcosm studies that have verified that abiotic degradation of VOCs in Site A groundwater is occurring at substantial rates. Such degradation acts to reduce contaminant mass and mobility by breaking down the contaminants as they move downgradient. The decision to proceed with MNA was also based on the absence of any likely receptors. The closest potential groundwater receptor is located approximately 1,000 feet downgradient from 01U352 (EW-2) and 01U353 (EW-3), and this domestic well has not been operable for many years (and even when it was, the water was only used for irrigation purposes). Beyond this unlikely receptor, there are no other existing downgradient receptors between it and Rice Creek, which is approximately 1,800 feet away.

The Conceptual Site Model (CSM) is that VOCs in groundwater may be a source for VOCs in the soil vapor in the immediate vicinity of groundwater impacted by VOCs and, if present in soil vapor at sufficiently high levels, may result in vapor intrusion into residences located along the north side of County Road I, most of which presumably have basements. Shallow groundwater is present in the Site A vicinity (Unit 1 aquifer) at a depth of approximately 15 feet below ground surface, and generally flows to the west/northwest as it crosses County Road I. Prior investigation work at Site A determined that the source of VOC contamination was the "1945 Trench". Remediation of the VOC-contaminated soils in the source area was completed in FY 2003, with 688 cubic yards of contaminated soil excavated and transported off-site to a

permitted disposal facility (see Figures 1-3 and 1-4 for the location of the soil excavation area at the former 1945 Trench). The Site A Former 1945 Trench Closeout Report received regulatory consistency in FY 2004. Hence, the groundwater VOC plume is the expected potential source area for VOCs in soil vapor. Soils above the water table are generally described as silty sand or sand, which would allow for movement of soil vapor. Available information on buried utilities in the vicinity is included in Appendix A. This information suggests that utility corridors do not provide any preferential vapor migration pathways of concern. There are no water main or sanitary sewer lines located along County Road I between Fairview Avenue and Aldine Street, which eliminates the potential vapor migration pathway where vapor follows residential service lines extending from sanitary sewer lines or water mains directly up to the point of service line entry into a residence. Also, no storm sewer lines are present along County Road I. The only utility that presents a potential vapor migration pathway is the City of St. Paul water lines (two 60-inch pipes). However, these lines run only in an east-west direction for a long distance, and even if vapor were to migrate within these pathways, there are no "branches" or services lines extending from these lines into the residential area, hence no migration pathway of concern exists.

In the Unit 1 groundwater at Site A, tetrachloroethene and trichloroethene continue to be degraded to cis-1,2-dichloroethene via natural attenuation (likely through an abiotic process involving the presence of the mineral magnetite in soils). This degradation generally occurs within the distance between the source area and the first line of extraction wells (EW-1 through 4). Figure 1-3 indicates that in June 2013, tetrachloroethene only exceeded 1 microgram per liter (μg/L) in wells upgradient from the first line of recovery wells, with only one result exceeding the cleanup level of 7 μg/L (01U126 at 8.9 μg/L). Trichloroethene results are very low throughout the plume, never exceeding 4 μg/L in June 2013 (see Table 1-1), and well below the groundwater cleanup level of 30 μg/L. Cis-1,2-dicholorethene continues to be degraded as the plume migrates. In June 2013, the maximum cis-1,2-dicholorethene concentration was 510 μg/L at 01U139 (Figure 1-4). On the north side of County Road I, the only Site A VOC detected in wells 01U901 through 904 was cis-1,2-dicholorethene, with the highest detection being 57 μg/L at 01U904 (versus the groundwater cleanup level of 70 μg/L).

### 1.3 INVESTIGATION QAPP

The planned sampling locations and the field and analytical procedures were described in the *Quality Assurance Project Plan for Site A Vapor Intrusion Investigation* (Wenck, Revision 2, June 4, 2013). Investigation work was conducted in accordance with this Quality Assurance Project Plan (QAPP), which was approved by the USEPA and MPCA on June 17, 2013.

### 2.0 Investigation Results

#### 2.1 SAMPLING PROCEDURES

The sampling procedures are described in greater detail in Appendix B. In summary, 10 soil gas probes were installed along the north side of County Road I to facilitate soil gas sample collection (Figure 2-1). The locations were placed on approximately 100-foot centers, though Locations 8 and 9 were adjusted slightly due to the presence of thick tree cover. These locations extend beyond the edges of the cis-1,2-dichloroethene plume in both directions. Soil gas samples were grab samples collected at a depth of 6 feet below ground surface, which complies with MPCA guidance. This guidance suggests sample collection at least 3 feet below ground surface and not less than 2 feet above the water table, and notes that soil gas samples are typically collected at depths from 3 to 8 feet. The depth of 6 feet placed the sample collection location at approximately half the depth to groundwater, which is approximately 15 feet. The line of probes was located as far north as possible without having to be located on the parcels of individual residences, which would have greatly complicated property access (many different property owners would have been involved).

In addition to the above line of probes, to provide an indication of soil gas concentrations in a worst-case area, one soil gas sample was collected approximately 10 feet west of the highest cis-1,2-dichloroethene concentration in groundwater in the June 2013 sampling event (well 01U139). Also, to provide additional data south of County Road I, three soil gas samples were collected along the northern edge of TCAAP, just inside the fence and within the plume footprint. The probe depth for sampling these four locations was also 6 feet (grab sample).

Soil gas samples were collected using Summa Canisters, with analysis for VOCs by EPA Method TO-15 by Pace Analytical Services, Minneapolis, Minnesota. The list of VOCs analyzed included the 6 Site A shallow groundwater Chemicals of Concern (COCs) that are

chlorinated: cis-1,2-dichloroethene, trichloroethene, tetrachloroethene, 1,1-dichloroethene, 1,2-dichloroethane, and chloroform. Of these, cis-1,2-dichloroethene is of primary importance given that it is the only VOC detected in groundwater on the north side of County Road I. Among the 7 VOCs that are Site A groundwater COCs, one petroleum-related compound (benzene) was not analyzed, since it was deemed far more likely to be related to an unknown (non-TCAAP) petroleum source along County Road I (i.e., contamination resulting from road or utility construction and/or general road use). Benzene is not a primary COC at Site A. The majority of wells have no detectable benzene and it is not detectable in any of the wells north of County Road I. Lastly, though it is not a COC in groundwater, vinyl chloride was added to the list of reported analytes, since it is a potential degradation product of other chlorinated VOCs.

#### 2.2 INVESTIGATION RESULTS

The soil gas sampling at the 14 locations shown on Figure 2-1 was conducted by Wenck (and a soil probe subcontractor) on July 22 and 23, 2013. Analytical results are shown in Table 2-1. For reference, this table also shows the applicable action levels for each VOC. As identified in the approved QAPP, the action levels shown in this table are the MPCA Residential 10X Intrusion Screening Values (ISVs) that are used for soil gas risk evaluations. Values below 10X the ISVs are not considered to pose a risk to receptors. The following should also be noted:

- 1) The MPCA does not have a Residential X10 ISV for cis-1,2-dichloroethene. MPCA has recommended using 600 micrograms per cubic meter ( $\mu g/m^3$ ) as a screening value for the Residential X10 ISV, which uses trans-1,2-dichloroethene as a surrogate.
- 2) The MPCA has recommended using an interim trichloroethene Residential X10 ISV of  $20 \,\mu\text{g/m}^3$  in vapor intrusion investigations, due to recent changes to trichloroethene toxicity values in the USEPA's Integrated Risk Information System (IRIS).
- 3) Vinyl chloride is not a COC in Site A groundwater; however, the MPCA requested that vinyl chloride also be reported since it is a potential degradation product of other chlorinated VOCs.

The results shown in Table 2-1 suggest that no significant VOC concentrations are present in soil gas in the vicinity of the 14 samples collected. With the exception of tetrachloroethene, no analytes were detected in any of the 14 samples. Tetrachloroethene was detected in every sample at an extremely uniform concentration of approximately 4 to 7 µg/m<sup>3</sup>; however, these detections do not appear to be real. First, the tetrachloroethene concentrations are far too uniform to actually exist in the environment across these 14 widely-spaced sample locations. Second, cis-1,2-dichloroethene was detected in groundwater in many of the wells in the soil gas sampling vicinity, and yet was consistently not detectable in all of the soil vapor samples; and conversely, tetrachloroethene, which was not detectable in groundwater in any of the wells in the soil gas sampling vicinity, had all soil vapor samples show its detection. This significant inconsistency cannot be explained, suggesting that these tetrachloroethene detections do not reflect actual concentrations in soil gas at Site A. It seems most likely that the reported tetrachloroethene detections reflect a field or laboratory source of contamination. The laboratory reviewed their available information for this sample set with regard to any potential laboratory source of contamination/carryover, and they have indicated that they found no definitive evidence of that. Wenck also researched the possibility of detecting tetrachloroethene due to contamination from polyethylene tubing, which was used to connect the soil gas probe to each Summa Canister that was used to collect a sample. In one study (Hayes et al., 2006), air was drawn through a short segment of polyethylene tubing and then analyzed for VOCs, and this study found 0.2 parts per billion (ppb) tetrachloroethene (0.2 ppb is approximately 1.4 µg/m<sup>3</sup>). This result is relatively close to the uniform detection levels shown in Table 2-1. Given a uniform sampling depth (6 feet), and hence a uniform length of tubing, a relatively uniform detection of tetrachloroethene could potentially have resulted from the tubing itself. Finally, while the tetrachloroethene detections appear to be an artifact (contamination) from either a field or laboratory source, even if the tetrachloroethene detections were actually present in Site A soil gas, the 4 to 7 μg/m<sup>3</sup> level is approaching two orders of magnitude below the tetrachloroethene soil gas action level of 200 µg/m<sup>3</sup> (Residential x10 ISV), which would support a conclusion that there is no significant soil vapor risk due to tetrachloroethene.

The reason cis-1,2-dichlorethene could not be detected in soil gas (even though frequently detected in groundwater) is most likely due to the suspected presence a layer of "clean water" (i.e., containing no VOCs) at the top of the Unit 1 aquifer. While there are no actual nested monitoring wells at the site, the well screen for 01U125 only extends a few feet into the top of the Unit 1 aquifer, versus the well screens for most Site A monitoring wells which either fully (or nearly fully) penetrate the aquifer. Sampling of 01U125 was ceased in 1999 precisely because it only penetrated the upper few feet and because its water quality results between 1987 and 1999 (i.e., consistently non-detect) did not match other higher-concentration wells in the immediate vicinity. A clean layer of water at the top of a surficial aquifer (when it is not an LNAPL site) can easily occur as groundwater travels downgradient from a source area, since ongoing infiltration of precipitation continually adds clean water to the top. If such a clean layer does exist on the north side of County Road I, which is a considerable distance downgradient in terms of precipitation "building up" this layer, it can act as an effective barrier to the upward migration of contaminant vapors from the "underlying" VOC plume (as noted on Page 9 of the MPCA 2010 Vapor Intrusion Technical Support Document).

#### 2.3 DATA USABILITY

Sampling and analysis were conducted in accordance with the QAPP (Wenck, 2013). Refer to this QAPP for details regarding sampling/analytical methods and procedures. All samples collected for this project were analyzed by Pace Analytical Services at their Minneapolis, Minnesota location. Pace Analytical Services is a certified environmental laboratory with the Minnesota Department of Health (MDH). The analytical report is included in Attachment B.2 of Appendix B.

All of the analytical data (100%) was validated by Diane Short & Associates, Lakewood, Colorado (see Appendix B). The Wenck data usability assessment, which provides an overall assessment of the usability of the data collected for this project, is provided in Appendix B. Based on this data usability assessment, the project data are deemed to have met the data quality

objectives specified in the QAPP and to be fully usable for the purpose of determining that VOC concentrations in soil vapor on the north side of County Road I are less than 10 times the MPCA Residential ISVs. No data was rejected, and no data qualifiers were applied.

### 3.0 Conclusions

Based on the Site A vapor intrusion investigation results presented herein, the following conclusions are made:

- All soil gas results were well below the MPCA Residential 10X Intrusion Screening
   Values (ISVs) that are used for soil gas risk evaluations. Values below 10X the ISVs are
   not considered to pose a risk to receptors, per the MPCA 2008/2010 vapor intrusion
   guidance.
- The soil gas results shown in Table 2-1 suggest that no significant VOC concentrations are present in soil gas in the vicinity of the 14 samples collected. With the exception of tetrachloroethene, no analytes were detected in any of the 14 samples.
- The low detections of tetrachloroethene appear to be an artifact (contamination) from either a field or laboratory source. However, even <u>if</u> the tetrachloroethene detections were actually present in Site A soil gas, the 4 to 7 µg/m³ level is approaching two orders of magnitude below the tetrachloroethene soil gas action level of 200 µg/m³ (Residential x10 ISV), which would support a conclusion that there is no significant soil vapor risk due to tetrachloroethene.
- No further vapor intrusion investigation work is warranted.

### 4.0 References

- Hayes, H. C., D. J. Benton, and N. Khan, September 2006. *Impact of Sampling Media on Soil Gas Measurements*.
- Minnesota Pollution Control Agency and U.S. Environmental Protection Agency, June 2000. Evaluation of Natural Attenuation of Chlorinated Solvents in Ground Water at the Twin Cities Army Ammunition Plant – Site A.
- Minnesota Pollution Control Agency, September 2008. *Risk-Based Guidance for the Vapor Intrusion Pathway*. (Including February 2009 ISV Update)
- Minnesota Pollution Control Agency, August 2010. Vapor Intrusion Technical Support Document.
- Shaw Environmental, Inc., January 2004. Final Remedial Action Completion and Shallow Soil Sites Close Out Report, Volume VIII Site A Former 1945 Trench Activities. Revision 2.
- Tecumseh/Wenck Installation Support Services, May 2005. Off-TCAAP Vapor Intrusion Pathway Analysis, Operable Unit 1, Operable Unit 3, and Operable Unit 2 (Site A).
- Wenck Associates, Inc., June 4, 2013. *Quality Assurance Project Plan, Site A Vapor Intrusion Investigation. Revision 2.*

# **Tables**

Table 1-1
Site A Groundwater Quality Data

### Fiscal Year 2013

### Site A Vapor Intrusion Investigation

			Tetra- chloro- ethene (µg/l)	Tri- chloro- ethene (µg/l)	cis-1,2-Di- chloro- ethene (µg/l)	1,1-Di- chloro- ethene (µg/l)	1,2-Di- chloro- ethane (µg/l)	Chloro- form (µg/l)	Benzene (µg/l)	Antimony (µg/l)
Site A Cleanup Level (1)			7	30	70	6	4	60	10	6
01U039		12/19/12	<1	<1	<1	<1	<1	<1	<1	
01U039		6/26/13	<1	<1	<1	<1	<1	<1	<1	
01U102		6/25/13	JP 0.72	<1	<1	<1	<1	<1	<1	
01U103		6/25/13	<1	<1	<1	<1	<1	<1	<1	2.8
01U103	D	6/25/13								2.9
01U108		6/25/13	JP 0.72	<1	<1	<1	<1	<1	<1	
01U115		6/26/13	<1	JP 0.44	2.3	<1	<1	<1	<1	
01U115	D	6/26/13	<1	JP 0.45	2.3	<1	<1	<1	<1	
01U116		6/26/13	<1	JP 0.94	JP 0.66	<1	<1	<1	<1	
01U117		6/25/13	2.2	1.4	15	<1	<1	<1	<1	
01U126		6/25/13	8.9	4.0	<1	<1	<1	<1	<1	
01U138		6/25/13	<1	JP 0.50	<1	<1	<1	<1	<1	
01U139		12/19/12	<1	1.5	400	JP 0.44	<1	<1	9.5	
01U139		6/27/13	<1	1.1	510	JP 0.76	<1	<1	16	
01U140		12/19/12	<1	<1	82	<1	<1	<1	JP 0.75	
01U140		6/26/13	<1	<1	59	<1	<1	<1	JP 0.72	
01U140	D	6/26/13	<1	<1	59	<1	<1	<2	JP 0.63	
01U157		12/19/12	<1	1.6	96	<1	<1	<1	JP 0.55	
01U157		6/26/13	<1	1.7	31	<1	<1	<1	JP 0.30	
01U157	D	6/26/13	<1	1.8	32	<1	<1	<1	<1	
01U158		12/19/12	<1	JP 0.92	58	<1	<1	<1	JP 0.77	
01U158		6/27/13	<1	1.2	54	<1	<1	<1	JP 0.73	
01U158	D	6/27/13	<1	1.2	55	<1	<1	<1	JP 0.73	
01U350		6/25/13	2.8	JP 0.75	<1	<1	<1	<1	<1	
01U901		12/18/12	<1	<1	<1	<1	<1	<1	<1	
01U901		6/24/13	<1	<1	<1	<1	<1	<1	<1	
01U902		12/18/12	<1	<1	8.3	<1	<1	<1	<1	
01U902		6/24/13	<1	<1	15	<1	<1	<1	<1	<1
01U903		6/24/13	<1	<1	<1	<1	<1	<1	<1	
01U904		12/18/12	<1	<1	32	<1	<1	<1	<1	
01U904		6/24/13	<1	<1	57	<1	<1	<1	<1	<1

Table 1-1
Site A Groundwater Quality Data

### Fiscal Year 2013

### Site A Vapor Intrusion Investigation

		Tetra- chloro- ethene (µg/l)	Tri- chloro- ethene (µg/l)	cis-1,2-Di- chloro- ethene (µg/l)	1,1-Di- chloro- ethene (µg/l)	1,2-Di- chloro- ethane (µg/l)	Chloro- form (µg/l)	Benzene (µg/l)	Antimony (µg/l)
Site A Cleanup Level (1)		7	30	70	6	4	60	10	6
Extraction Wells:									
01U351 (EW-1)	6/25/13	<1	JP 0.51	JP 0.85	<1	<1	<1	<1	
01U352 (EW-2)	12/26/12	<1	<1	6.7	<1	<1	<1	<1	
01U352 (EW-2)	6/26/13	<1	<1	9.2	<1	<1	<1	<1	
01U353 (EW-3)	12/26/12	<1	JP 0.32	43	<1	<1	<1	JP 0.74	
01U353 (EW-3) D	12/26/12	<1	<1	42	<1	<1	<1	JP 0.69	
01U353 (EW-3)	6/26/13	<1	JP 0.51	140	<1	<1	<1	3.5	
01U354 (EW-4)	12/26/12	<1	JP 0.54	<1	<1	<1	<1	<1	
01U354 (EW-4)	6/25/13	<1	JP 0.84	<1	<1	<1	<1	<1	
01U355 (EW-5)	12/26/12	<1	JP 0.89	72	<1	<1	<1	2.4	
01U355 (EW-5)	6/27/13	<1	JP 0.70	43	<1	<1	<1	1.7	
01U356 (EW-6)	12/19/12	<1	JP 0.57	78	<1	<1	<1	1.7	
01U356 (EW-6)	6/27/13	<1	JP 0.67	97	<1	<1	<1	1.6	
01U357 (EW-7) 01U357 (EW-7)	12/19/12 6/26/13	<1 <1	<1 <1	<b>80</b> 55	<1 <1	<1 <1	<1 <1	1.7 1.2	
010357 (EVV-7)	0/20/13	<1	<1	55	< 1	<1	<1	1.2	
01U358 (EW-8)	12/19/12	<1	<1	JP 0.45	<1	<1	<1	<1	
01U358 (EW-8) D	12/19/12	<1	<1	JP 0.52	<1	<1	<1	<1	
01U358 (EW-8)	6/26/13	<1	<1	JP 0.49	<1	<1	<1	<1	

#### Notes:

(1) Cleanup levels for Site A Shallow Groundwater are from Table 1 of the OU2 ROD. Bolding (in red color) indicates exceedance of the cleanup level.

--- Not Sampled.

D Duplicate sample.

JP The value is below the reporting level, but above the method detection limit. Results should be considered estimated.

Table 2-1 Soil Gas VOC Results

#### Site A Vapor Intrusion Investigation

Sample Location No.	Field Sample ID	Sample Depth (ft)	Date Collected	Tetrachloro- ethene	Trichloro- ethene	cis-1,2-Dichloro- ethene	1,2-Dichloro- ethane	1,1-Dichloro- ethene	Chloroform	Vinyl Chloride
			Action Level:	200	20	600	4	2,000	1,000	10
1 1 D	SG07221301 SG07221302	6 6	7/22/13 7/22/13	5.4 4.7	< 0.79 < 0.79	< 1.2 < 1.2	< 0.59 < 0.59	< 1.2 < 1.2	< 1.4 < 1.4	< 0.37 < 0.37
2	SG07221303	6	7/22/13	7.2	< 1.1	< 1.6	< 0.82	< 1.6	< 2.0	< 0.52
3	SG07221304	6	7/22/13	5.5	< 0.82	< 1.2	< 0.61	< 1.2	< 1.5	< 0.39
4	SG07221305	6	7/22/13	5.3	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37
5	SG07221306	6	7/22/13	5.8	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37
6	SG07221307	6	7/22/13	5.4	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37
7	SG07221308	6	7/22/13	5.1	< 0.82	< 1.2	< 0.61	< 1.2	< 1.5	< 0.39
8	SG07221309	6	7/22/13	4.9	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37
9	SG07221310	6	7/22/13	5.0	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37
10	SG07221311	6	7/22/13	5.2	< 0.82	< 1.2	< 0.61	< 1.2	< 1.5	< 0.39
11	SG07231301	6	7/23/13	4.3	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37
11 D	SG07231302	6	7/23/13	4.4	< 0.82	< 1.2	< 0.61	< 1.2	< 1.5	< 0.39
12	SG07221314	6	7/22/13	7.3	< 0.89	< 1.3	< 0.66	< 1.3	< 1.6	< 0.42
13	SG07221313	6	7/22/13	5.3	< 0.82	< 1.2	< 0.61	< 1.2	< 1.5	< 0.39
14	SG07221312	6	7/22/13	5.7	< 0.85	< 1.3	< 0.64	< 1.3	< 1.5	< 0.40

Notes:

Results are µg/m<sup>3</sup>

D = Duplicate

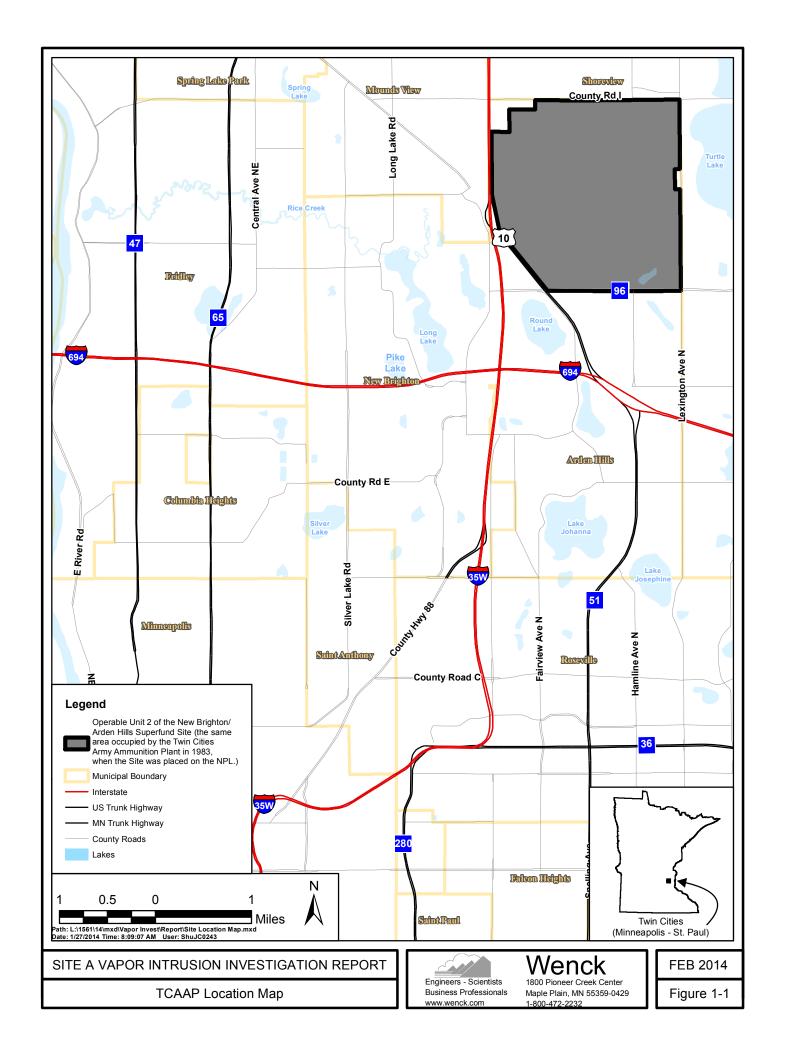
Sample Depth = Approximate depth (in feet) below ground surface from which a discrete soil gas sample was collected.

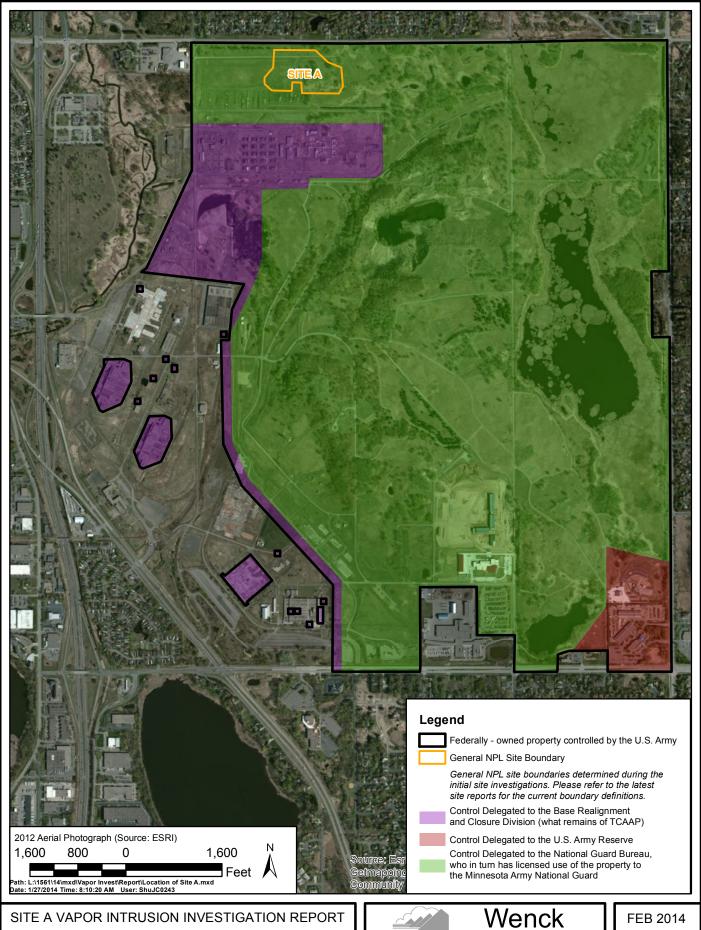
The Action Level shown is the MPCA Residential 10X Intrusion Screening Value (ISV) appropriate for soil gas risk evaluations. Values below 10X the ISVs are not considered to pose a risk to receptors. Note the following:

- The MPCA does not have a Residential X10 ISV for cis-1,2-dichloroethene. MPCA has recommended using 600 µg/m³ as a screening value for the Residential X10 ISV, which uses trans-1,2-dichloroethene as a surrogate.
- The MPCA has recommended using an interim trichloroethene Residential X10 ISV of 20 µg/m³ in vapor intrusion investigations, due to recent changes to trichloroethene toxicity values in the USEPA's Integrated Risk Information System (IRIS).
- Vinyl chloride is not a Contaminant of Concern in Site A groundwater; however, the MPCA requested that vinyl chloride also be reported since it is a potential degradation product of other chlorinated VOCs.

<sup>&</sup>lt; = Less than the Reporting Limit (RL)

# **Figures**



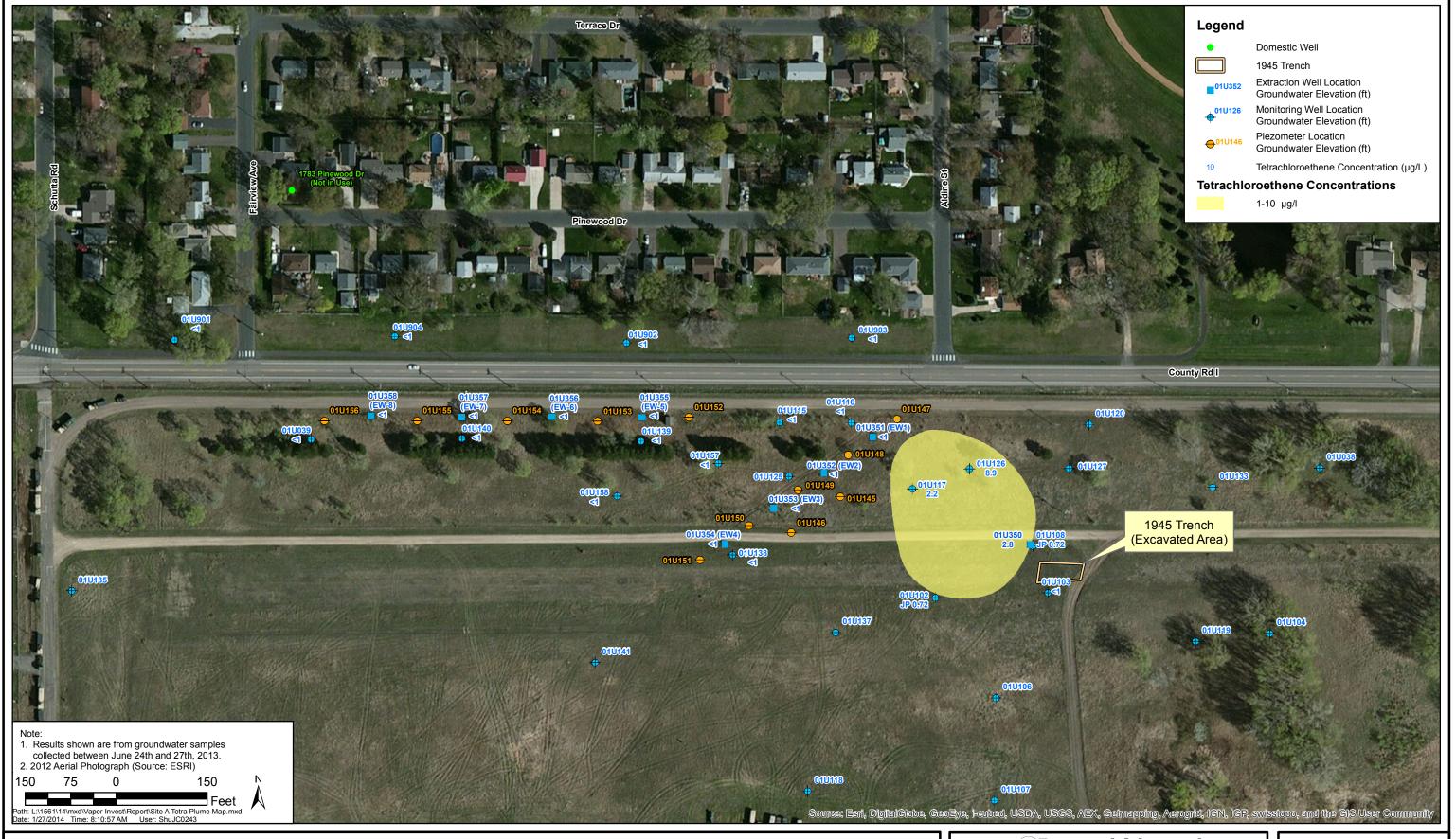


Location of Site A



1800 Pioneer Creek Center Maple Plain, MN 55359-0429

Figure 1-2



SITE A VAPOR INTRUSION INVESTIGATION REPORT

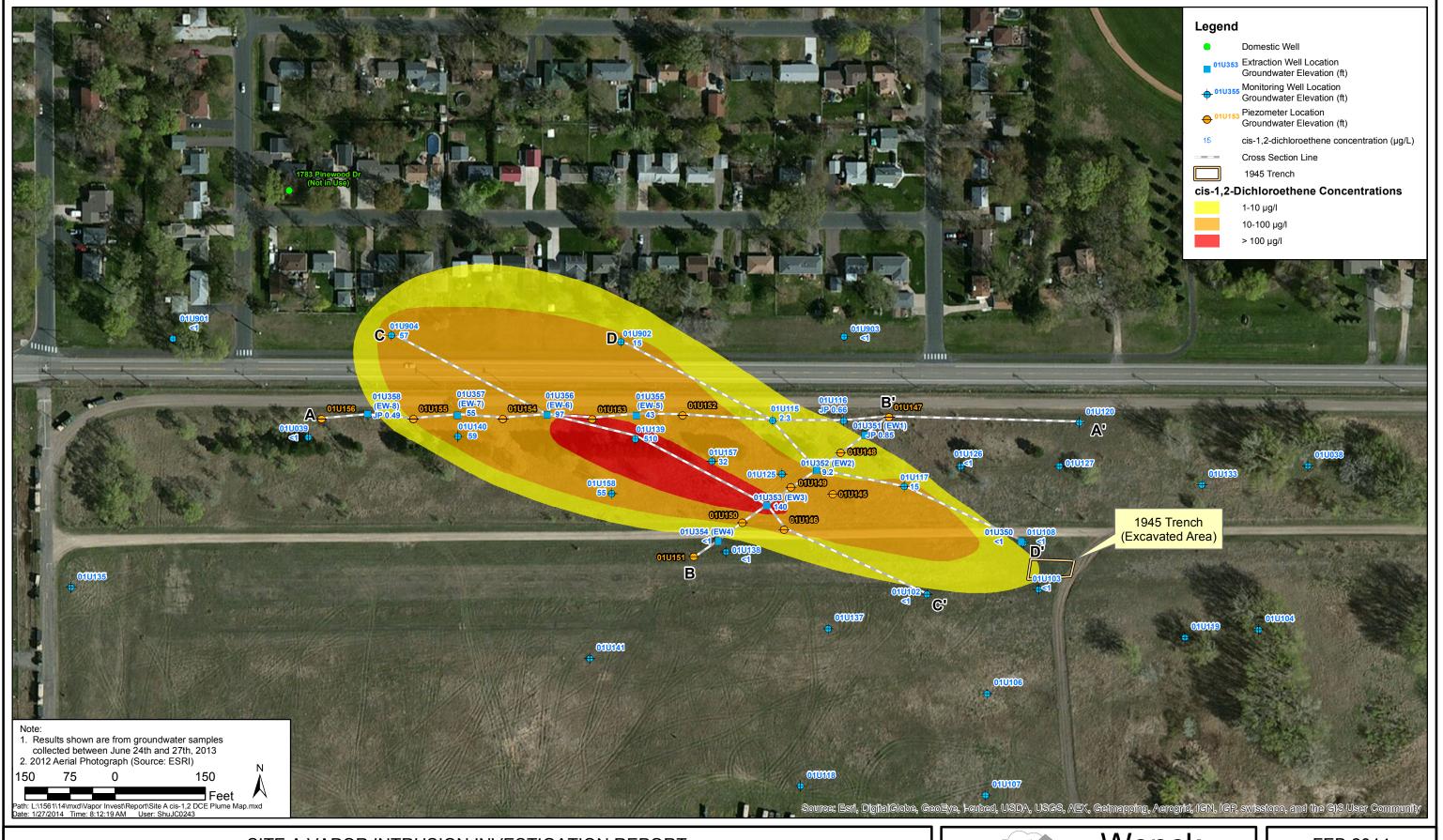
Site A, Unit 1 Groundwater, Tetrachloroethene Isoconcentration Map, Summer 2013



Wenck

1800 Pioneer Creek Center Maple Plain, MN 55359-0429 1-800-472-2232 FEB 2014

Figure 1-3



SITE A VAPOR INTRUSION INVESTIGATION REPORT

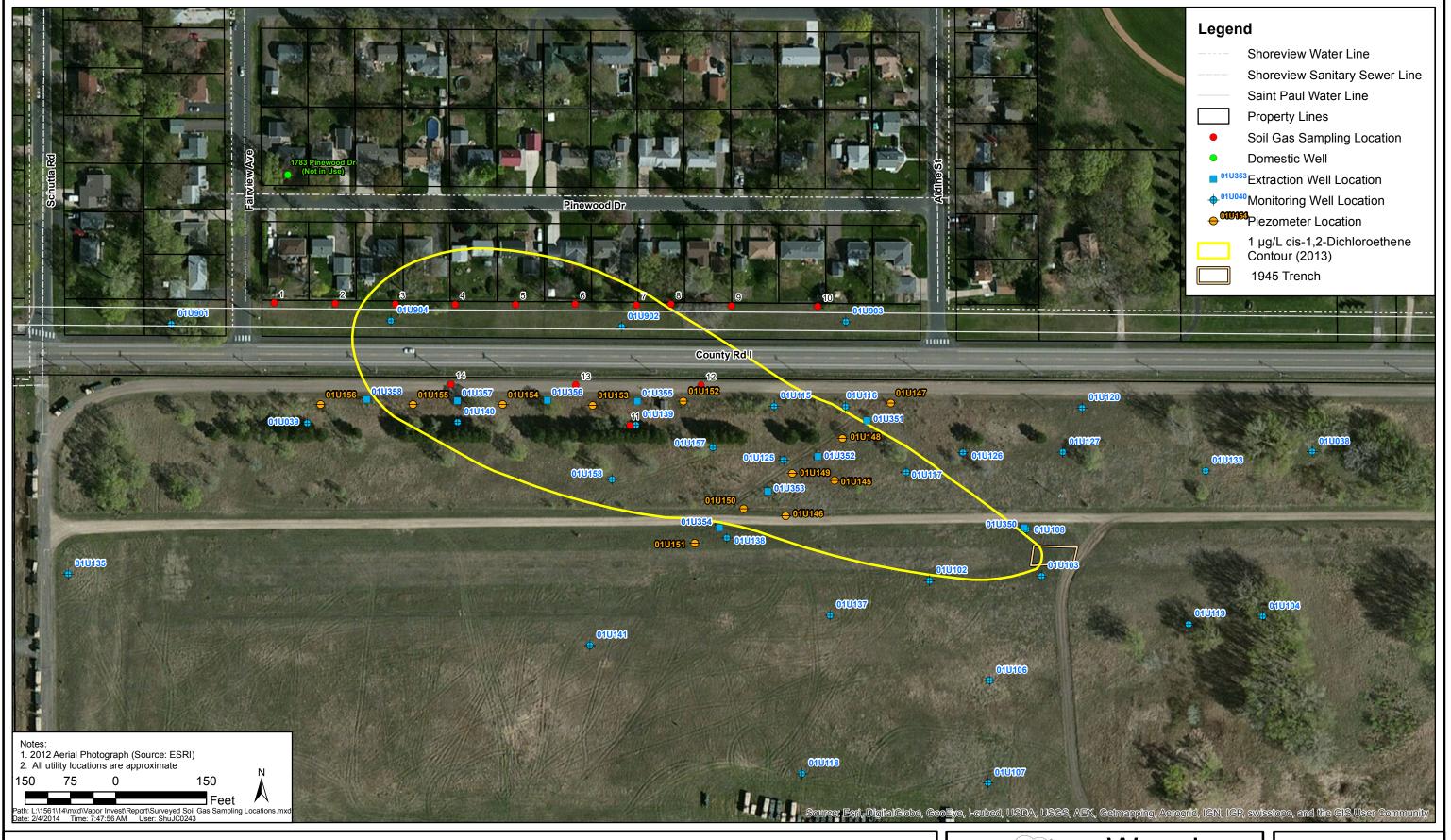
Site A, Unit 1 Groundwater, cis-1,2-Dichloroethene Isoconcentration Map, Summer 2013



# Wenck

1800 Pioneer Creek Center Maple Plain, MN 55359-0429 1-800-472-2232 FEB 2014

Figure 1-4



SITE A VAPOR INTRUSION INVESTIGATION REPORT

Soil Gas Sampling Locations



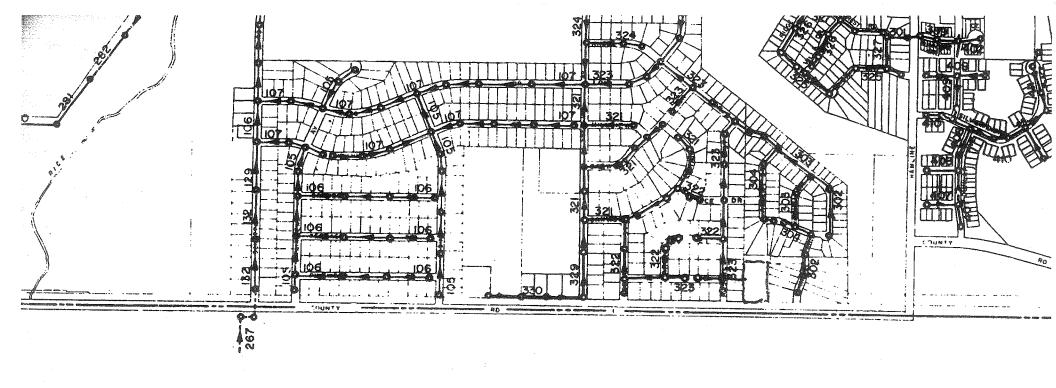
Wenck

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Figure 2-1

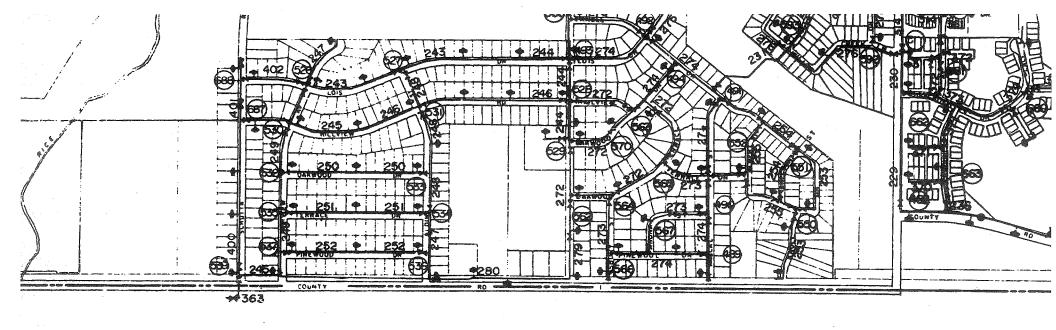
# Appendix A

# **Information on Buried Utilities**



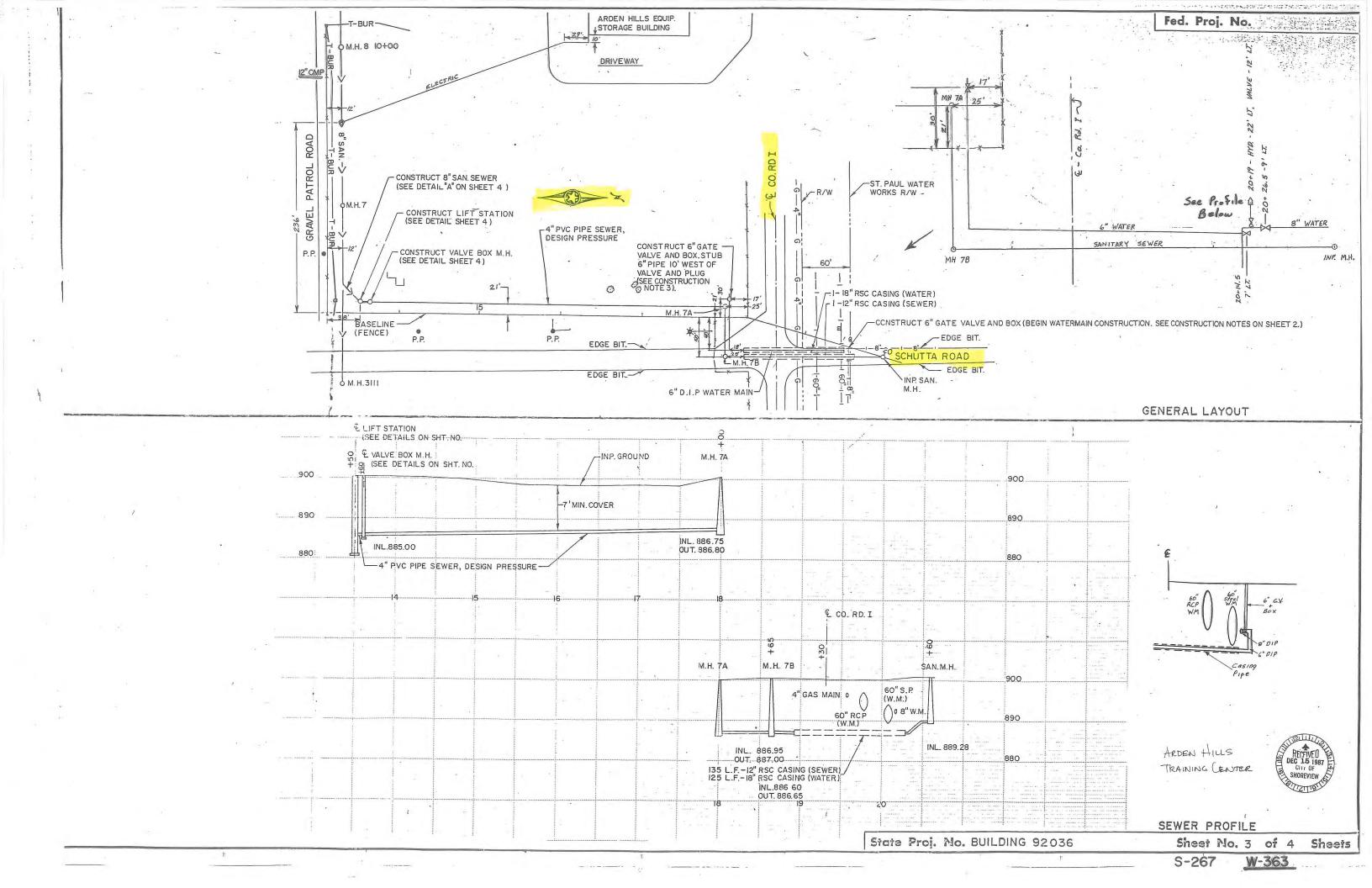
# SANITARY SEWER INDEX MAP

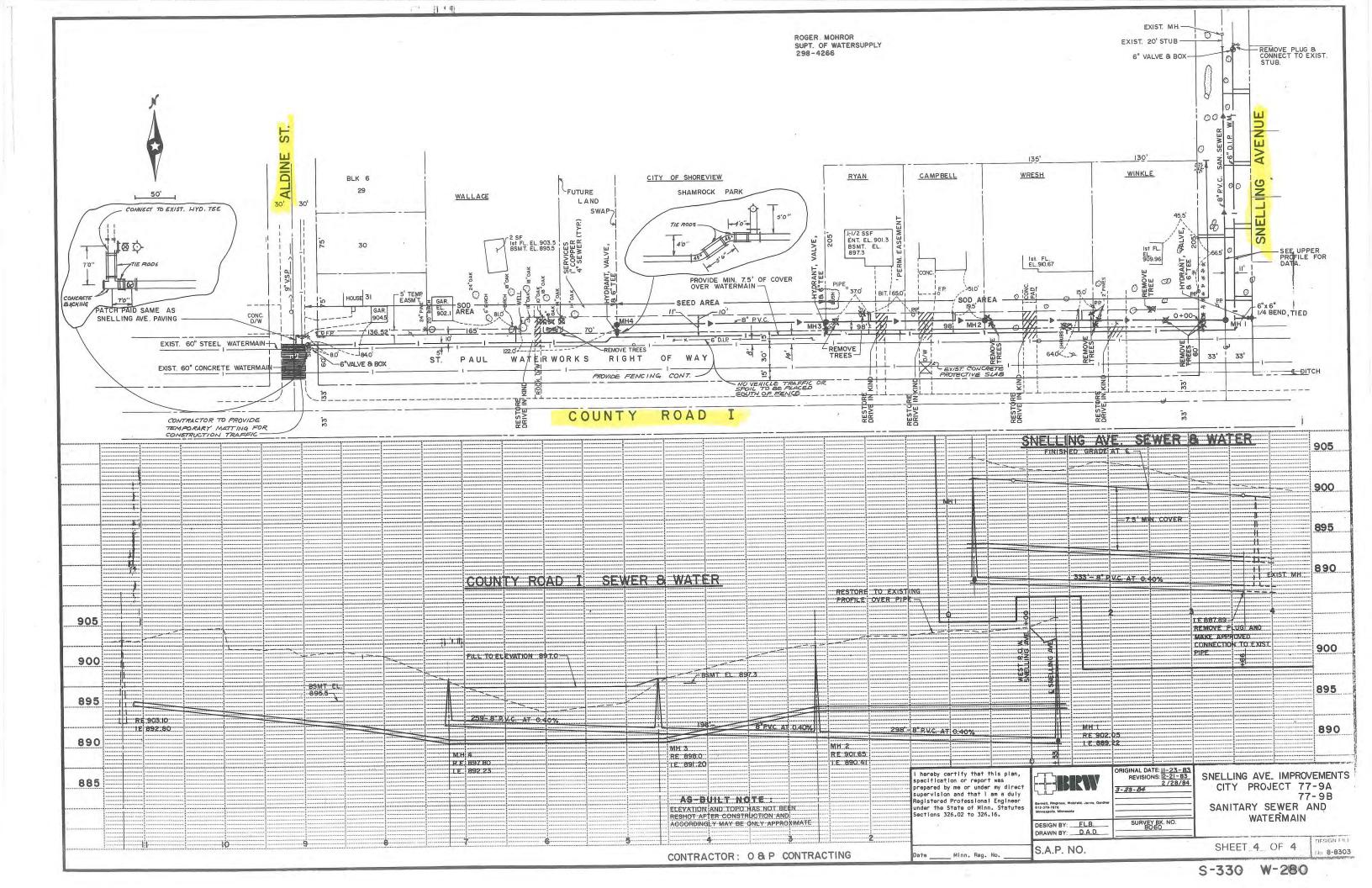
ET NO.	PROJECT NO.	SHEET NO.	PROJECT NO.
3 1 7 8 9-115A 11-129A 53	OTHER ENGINEERS O.S.M. 65-4A O.S.M. 65-6 8 65-3 O.S.M. 66-1A O.S.M. 66-9A O.S.M. 67-1A O.S.M. 77-4 S.E.H. 68-7 O.S.M. 77-4 S.E.H. 68-9 O.S.M. 68-10 O.S.M. 68-10 O.S.M. 68-11 O.S.M. BRIGADOON PLAT 3 O.S.M. CARLEY	329-330 33I-333 334 335-357 338-340 34I-349 350-355 356-357 358 359-372 373-379 380-381 382-383 384-388	77-9A B.R.W. 82-IO CARLEY 82-I2 R. NELSON 82-I6 D.C. OLSON 83-7A S.E.H. 83-9 CARLEY 83-IO D.C. OLSON 83-24 D.C. OLSON 83-26 SUBURBAN 84-8 MERILA 84-9, 84-26 D.C. OL 84-I5 WESTWOOD 84-21 R. NELSON

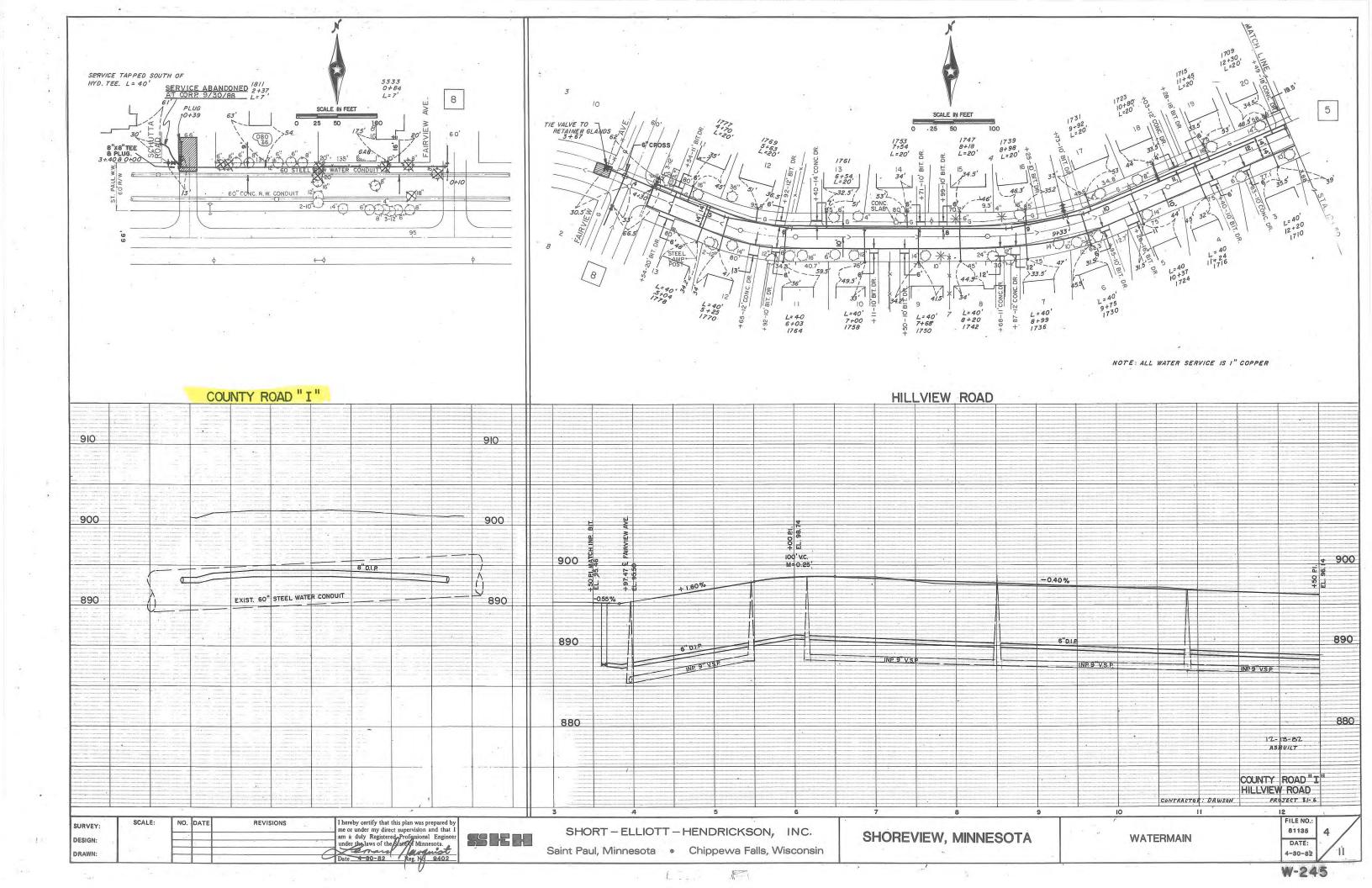


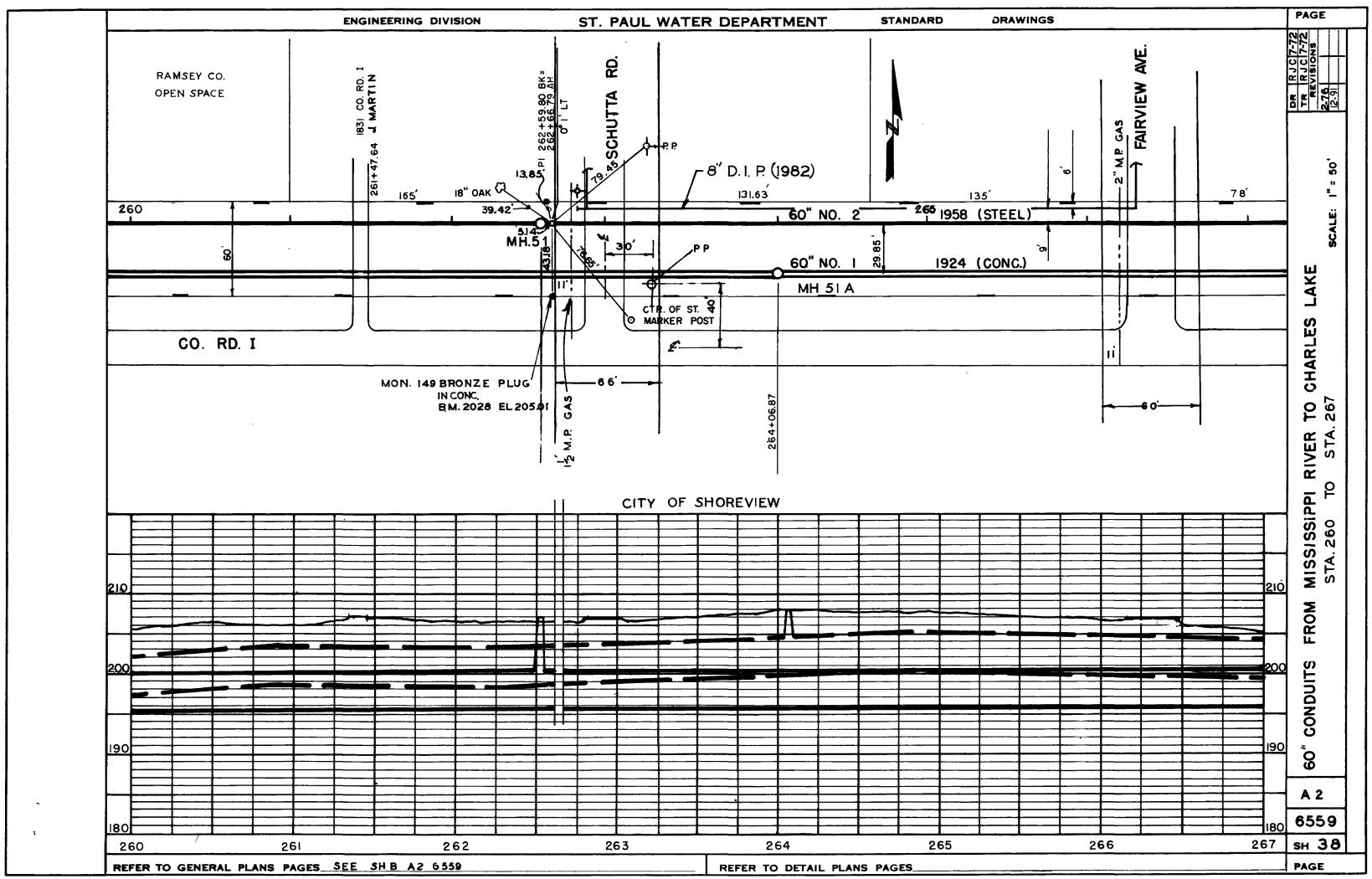
# WATER MAIN INDEX MAP

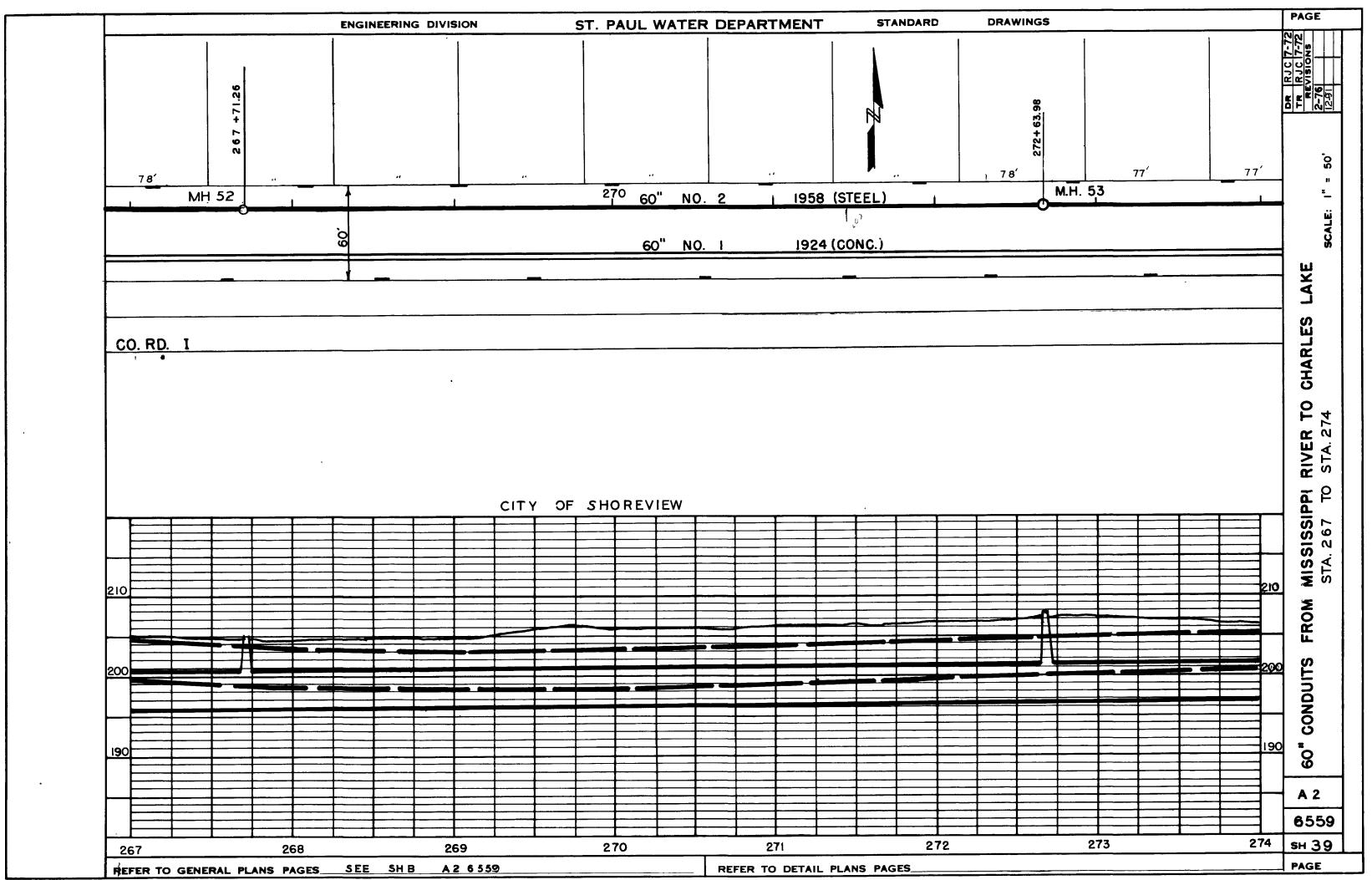
PROJECT NO.	SHEET NO.	PROJECT NO.
MINN WATER CO. MINN WATER CO. 65-4A O.S.M. 67-5 O.S.M. 68-6B O.S.M. 68-5, 68-19 O.S.M. 68-12 O.S.M. 68-12 O.S.M. 68-1 Ph. B O.S.M. BRIGADOON PLAT 3 O.S.M. CENTRAL WATER CO. 68-1 PHASE C O.S.M. 69-3, 5, 9 & 10 O.S.M. 70-1 & 70 - 5B O.S.M. 71-2 O.S.M. 71-5 O.S.M. 72-1, 2, 3A O.S.M.	320-332 333-338 339-340 341 342-346 347-348 349 350 351 352 353 354 355-356 357 358-360 361	84-8 MERILA 84-9 OLSON 84-15 WESTWOOD 83-26 SUBURBAN 84-23 CARLEY 85-11 CARLEY 85-10 CARLEY 84-26 OLSON 76-5 S.E.H. 85-20 CARLEY 85-30 D. BROWN 85-31 CARLEY 85-32 SUBURBAN 86-1 J.R. HILL 86-7 CARLEY 86-21 MATEFFY 2-PVD-86 MERILA
73-1,1A, 3, 4A, 4C, 10 O.S.M. 74-2A-2B-2C, 74-4, 74-9R, 74-11, 74-3, 0.54	363 364	84-24 MNDOT

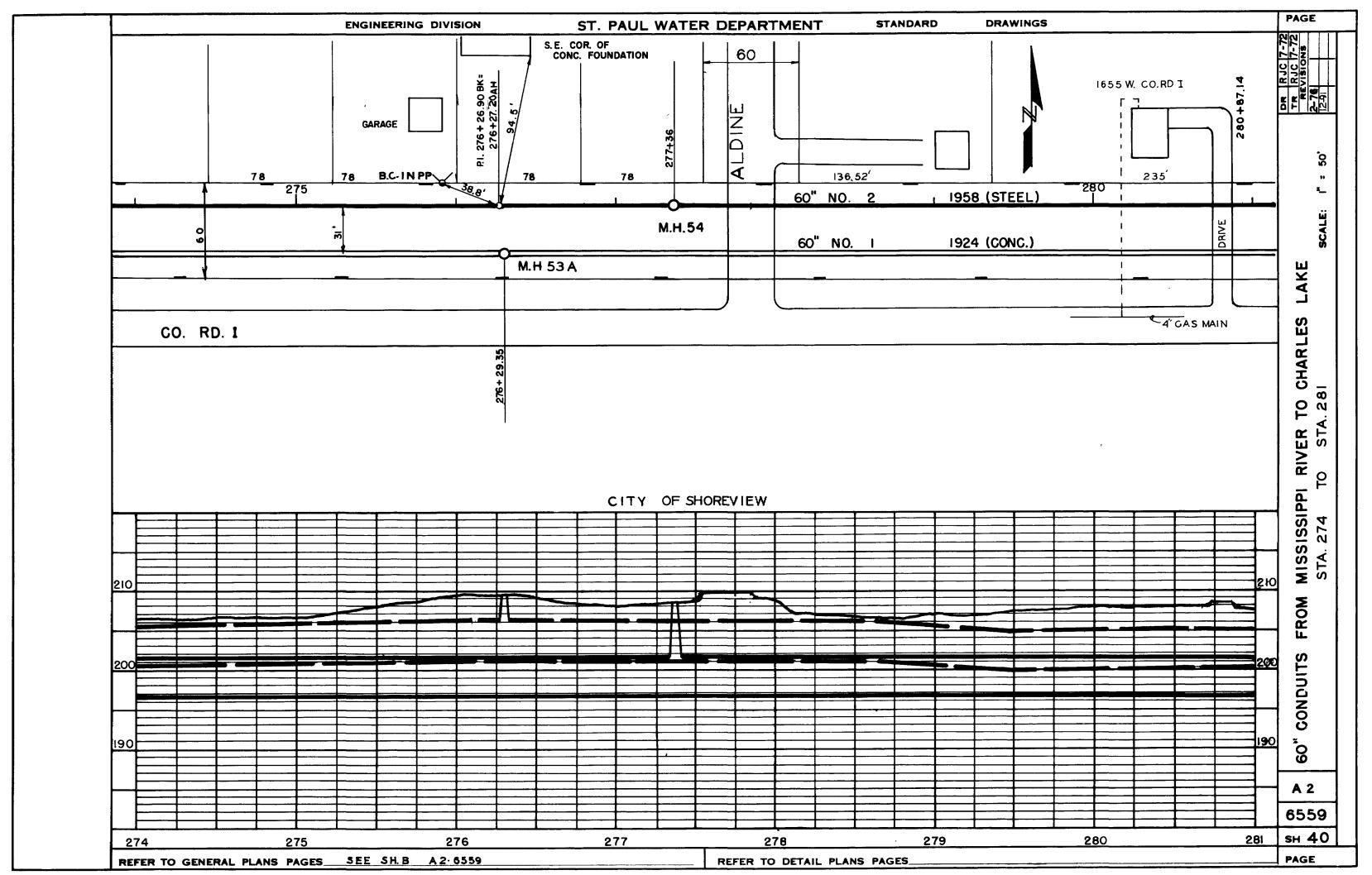












# Appendix B

# **Data Usability Assessment**

## Appendix B

## **Data Usability Assessment**

## Site A Vapor Intrusion Investigation

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- B.2 QC Sample and Data Validation Frequency
- B.3 Method Blank Results
- B.4 Laboratory Control Sample (LCS) Results
- B.5 Surrogate Results
- B.6 Laboratory Duplicate Results
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## **ATTACHMENTS**

- B.1 Field Audit Form
- B.2 Analytical Report on CD-ROM (Pace Analytical Services)
- B.3 Field Data Validation Form
- B.4 Analytical Data Validation Report

### **Introduction**

This appendix provides an assessment of data usability for the analytical data generated during the July 2013 soil gas sampling in the Site A vicinity, as specified in the Quality Assurance Project Plan for Site A Vapor Intrusion Investigation (Wenck, Revision 2, June 4, 2013). Note that all references to the "QAPP" within this appendix refer to the above QAPP. The intent of this sampling was to acquire definitive soil vapor results relative to the volatile organic compound (VOC) contamination at Site A, and thus determine the potential for any vapor intrusion into residences located along the north side of County Road I.

### **Summary of Field Work**

The sampling described in this section was conducted by Wenck (and a soil probe subcontractor) on July 22 and 23, 2013.

Ten (10) soil gas probes were installed along the north side of County Road I to facilitate soil gas sample collection. The locations were placed on approximately 100-foot centers (two were shifted slightly due to the presence of trees) and extended beyond the edges of the cis-1,2-dichloroethene plume in both directions. Soil gas samples were grab samples collected at a depth of 6 feet below ground surface, which complies with MPCA guidance. This guidance suggests sample collection at least 3 feet below ground surface and not less than 2 feet above the water table, and notes that soil gas samples are typically collected at depths from 3 to 8 feet. The depth of 6 feet placed the sample collection location approximately half the depth to the groundwater level, which is approximately 15 feet. The line of probes was located as far north as possible without having to be located on the parcels of individual residences, which would have greatly complicated property access (many different property owners would have been involved).

In addition to the above line of probes, to provide an indication of soil gas concentrations in a worst-case area, one soil gas sample was collected approximately 10 feet west of the highest cis-1,2-dichloroethene concentration in groundwater in the December 2012

sampling event (well 01U139). Also, to provide additional data south of County Road I, three soil gas samples were collected along the northern edge of TCAAP, just inside the fence and within the plume footprint. The probe depth for sampling these four locations was also 6 feet (grab sample).

Equipment used in the probing operations was steam-cleaned prior to arrival at the Site. The sampler was driven to the specified 6-foot depth below grade, and then the borehole was sealed at the surface with bentonite grout to prevent short circuiting to the surface during sample collection. After sealing, the protective sheath covering the stainless steel inner screen was retracted to expose approximately one foot of the screen to the formation.

New disposable nitrile gloves were worn for each sample location. After exposing the sample zone, the sampler was equipped with a new piece of polyethylene tubing. Prior to collecting the sample, a minimum of three volumes (i.e., total volume of the sampling point and tube) was purged using a graduated syringe. Prior to attaching the tubing the Summa Canister, a vacuum gauge was connected to the canister to verify that the vacuum level shown on the regulator assembly matched the stated vacuum level. After sample collection, the vacuum gauge was rechecked to verify that the sample canister was adequately filled and an organic vapor detector (PID) was connected to the tubing (the highest reading was recorded in the field notes and on the chain of custody form).

The borehole was not sealed (and was not required to be sealed given that no water table was intersected).

Soil gas samples were collected for analysis by EPA Method TO-15 by Pace Analytical Services, Minneapolis, Minnesota. The VOC list included the six (6) Site A shallow groundwater Chemicals of Concern (COCs) that are chlorinated: cis-1,2-dichloroethene, trichloroethene, tetrachloroethene, 1,1-dichloroethene, 1,2-dichloroethane, and chloroform. Of these, cis-1,2-dichloroethene is of primary importance given that it is the

only VOC detected in groundwater on the north side of County Road I. Among the 7 VOCs that are Site A COCs, one petroleum-related compound (benzene) was not analyzed, since it was deemed far more likely to be related to an unknown (non-TCAAP) petroleum source along County Road I (i.e., contamination resulting from road or utility construction and/or general road use). Benzene is not a primary COC at Site A: the majority of wells have no detectable benzene and it is not detectable in any of the wells north of County Road I. Lastly, though it is not a COC in groundwater, vinyl chloride was added to the list of reported analytes, since it is a potential degradation product of other chlorinated VOCs.

All samples were labeled with a unique sample number with consistent format, date, parameters to be analyzed, site ID, and sampler's initials. Samples that were collected as field duplicates were collected, numbered, packaged, and shipped in the same manner as other samples and were submitted "blind" to the laboratory.

Field personnel were responsible for sample custody from the time of collection until the time of delivery to the laboratory. Samples were kept in the secure possession of the sampler, meaning that they were either within sight of the sampler, in the sampler's secure vehicle, within a locked building at TCAAP, or within the secure office of the sampling firm. Chain-of-custody forms for chemical analyses were Pace Analytical Services standard forms, which were completed in ink. Sample canisters were hand delivered to the laboratory.

### Field Audit

The field audit specified in the QAPP was conducted by the Wenck QA Manager on July 22, 2013 (the first day of sampling). The Field Audit Form, signed by the QA Manager and the sampler, is included in Attachment B.1. The audit confirmed that soil gas sampling, custody, and shipping procedures were in accordance with the QAPP.

### **Laboratory Analysis**

Samples were analyzed by the laboratory specified in the QAPP, using the analytical method specified therein. Specifically, Pace Analytical Services (Minneapolis, Minnesota) analyzed soil gas (air) samples using the following method:

• VOCs EPA Method TO-15

The analytical report for this project is included on CD-ROM in Attachment B.2.

### **Completeness**

The field and analytical completeness goals specified in the QAPP were both 95%. Completeness information is shown in Table B.1. Field completeness was 100% (i.e., all of the planned samples were collected), and analytical completeness was 100% (i.e., all of the samples that were collected were analyzed by the laboratory and produced valid data). Hence, QAPP-specified field and analytical completeness goals were met.

### Field Data Validation

The QAPP specified that 100% of the data receive field data validation, and this requirement was met. Field data validation was performed by the Wenck QA manager, as specified in the QAPP, and is documented on the Field Data Validation Form included in Attachment B.3. The QAPP requirements were documented as having been met for all items reviewed.

### **Analytical Data Validation**

The QAPP required that 100% of the data receive full analytical data validation, and this requirement was met (Table B.2). Analytical data validation was performed by Diane Short & Associates, as specified in the QAPP, and is documented in the Analytical Data Validation Report included in Attachment B.4. The QAPP requirements were documented as having been met, and all data were found to be usable, with no data qualification required.

### **Reporting Limits**

The reporting limits that were achieved for the project were in compliance with the QAPP. In all cases the achieved reporting limits were low enough to be below the Action Level that is applicable to soil gas (the MPCA Residential 10X Intrusion Screening Value [ISV]), thus allowing an acceptable comparison thereto.

### **QC Sample Frequency**

An analysis of the actual frequency of QC sample collection (field duplicates) versus the QAPP goal is shown in Table B.2. Field duplicates have a collection goal of 10%. The actual QC sample frequency of 14% met the QAPP goal.

### **Blanks**

The results for method blanks are shown in Table B.3. There were no detections reported in either method blank. These results suggest that there were no significant impacts from laboratory sources of contamination.

### **Laboratory Control Samples**

Laboratory control sample (LCS) results are shown in Tables B.4. All LCS percent recoveries were within the QC limit of 60 to 130% for all seven analytes. The average recoveries ranged from 93 to 102%, with a combined average recovery of 98%. These results show very good laboratory accuracy. Based on the LCS results, there is no indication of a significant bias for any of the analytes.

### **Surrogates**

Surrogate recovery results are shown in Table B.5. All surrogate recoveries were within the QC limit of 50 to 130%. The range of recoveries for the three surrogates was 98 to 107%; 91 to 115%; and 85 to 89%. Overall, these results show very good laboratory accuracy.

### **Laboratory Duplicates**

Laboratory duplicate results are shown in Table B.6. The QC limit is 25% (or plus or minus two times the RL if the sample or duplicate result is less than five times the RL). All of the results were within the QC limits. For most results, the plus or minus two times the RL criteria was applicable and was met in all of those cases. Where results were high enough to warrant calculation of RPDs, the RPD results were 2% or less. Overall, these results show very good laboratory accuracy.

### Field Duplicates

Field duplicates were delivered to the laboratory "blind", i.e., the laboratory did not know which parent sample a duplicate was associated with. Field duplicate results are shown in Table B.7.

All of the results were within the QC limit of 50% (or plus or minus the four times the RL if the sample or duplicate result is less than five times the RL). The plus or minus four times the RL criteria was applicable to all results and was met in all cases. These results show very good field/laboratory precision, and suggest that sample heterogeneity is not a significant issue for the Site A soil gas samples.

### **Data Usability Conclusion**

Based on this data usability assessment, the project data are deemed to have met the data quality objectives specified in the QAPP and to be fully usable for the purpose of determining that VOC concentrations in soil vapor on the north side of County Road I are less than 10 times the MPCA Residential ISVs. No data was rejected, nor have any data qualifiers been applied.

# **Tables**

# Table B.1 Completeness Summary

### Site A Vapor Intrusion Investigation

	Number of VOC	Number of VOC	Number of VOC
Sampling Event	Samples	Samples	Samples
	Planned	Collected	Analyzed
July 2013	14	14	14
Project Total	14	14	14
	Actual Field Completeness: Field Completeness Goal:	100% 95%	
	Actual Analytical Completeness:		100%
	Analytical Completeness Goal:		95%

# Table B.2 QC Sample and Data Validation Frequency

## Site A Vapor Intrusion Investigation

		VOCs	
Sampling Event	Number of Samples	Number of Field Duplicates	Number with Full Data Validation
July 2013	14	2	14
Project Total	14	2	14
Froject Total	14	2	14
Percentages		14.3%	100.0%
QAPP Goal		10%	100%
Goal Met for Project?		Yes	Yes

# Table B.3 Method Blank Results

Site A Vapor Intrusion Investigation

	Tetrachloro-	Trichloro-	cis-1,2-Dichloro-	1,2-Dichloro-	1,1-Dichloro-		Vinyl	
Sampling Event	ethene	ethene	ethene	ethane	ethene	Chloroform	Chloride	Qualifiers
	(µg/m³)	(µg/m <sup>3</sup> )	(µg/m³)	(µg/m <sup>3</sup> )	(µg/m³)	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(if any)
July 2013 July 2013	< 0.69 < 0.69	< 0.55 < 0.55	< 0.81 < 0.81	< 0.41 < 0.41	< 0.81 < 0.81	< 0.99 < 0.99	< 0.26 < 0.26	None None

### Notes:

< = Less than the Reporting Limit (RL)

Table B.4 **Laboratory Control Sample (LCS) Results** 

Site A Vapor Intrusion Investigation

			Р	ercent Recovery				
Sampling Event	Tetrachloro- ethene	Trichloro- ethene	cis-1,2-Dichloro- ethene	1,2-Dichloro- ethane	1,1-Dichloro- ethene	Chloroform	Vinyl Chloride	Qualifiers
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(if any)
QC Limits:	60-130	60-130	60-130	60-130	60-130	60-130	60-130	
July 2013	99	93	99	104	96	102	96	(None)
July 2013	104	95	97	100	91	100	90	(None)
Average Recovery:	102	94	98	102	94	101	93	
Combined Average Recovery for All VOCs:	98							

## Table B.5 Surrogate Results

## Site A Vapor Intrusion Investigation

Sampling Event	Toluene-d8 % Recovery Range	1,4-Dichlorobenzene-d4  % Recovery  Range	Hexane-d14 % Recovery Range	Qualifiers (if any)
QC Limits:	50-130	50-130	50-130	•
July 2013	98-107	91-115	85-89	(None)

# Table B.6 Laboratory Duplicate Results

Site A Vapor Intrusion Investigation

Sampling Event	Tetrachloro- ethene (RPD)	Trichloro- ethene (RPD)	cis-1,2-Dichloro- ethene (RPD)	1,2-Dichloro- ethane (RPD)	1,1-Dichloro- ethene (RPD)	Chloroform (RPD)	Vinyl Chloride (RPD)	Qualifiers (if any)
July 2013	1.0	+ 2xRL	+ 2xRL	+ 2xRL	+ 2xRL	+ 2xRL	+ 2xRL	(None)
July 2013 <sup>(1)</sup>	0.3	_ 2	_ 2	<u>+</u> 2xRL	<u>+</u> 2xRL	<u>+</u> 2xRL	<u>+</u> 2xRL	(None)
Average Recovery:	0.7	2	2					

### Notes:

QC Limit is 25% RPD, or  $\pm$  2 x Reporting Limit (RL) if the sample or duplicate value is less than 5 times the RL.

RPD = Relative Percent Difference

<sup>(1)</sup> The parent sample for this laboratory duplicate was not a sample originating from TCAAP.

<sup>(2)</sup> Average Recovery excludes consideration of results that are indicated to be  $\pm$  2xRL.

Table B.7
Field Duplicate Results

Site A Vapor Intrusion Investigation

Sample Location	Date Collected	Tetrachloro- ethene (µg/m³)	Trichloro- ethene (µg/m³)	cis-1,2-Dichloro- ethene (µg/m³)	1,2-Dichloro- ethane (µg/m³)	1,1-Dichloro- ethene (µg/m³)	Chloroform (µg/m³)	Vinyl Chloride (µg/m³)	Qualifiers (if any)
1 (SG07221301)	7/22/13	5.4	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37	
1D (SG07221302)	7/22/13	4.7	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37	
	RPD	: <u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	(None)
11 (SG07231301)	7/23/13	4.3	< 0.79	< 1.2	< 0.59	< 1.2	< 1.4	< 0.37	
11D (SG07231302)	7/23/13	4.4	< 0.82	< 1.2	< 0.61	< 1.2	< 1.5	< 0.39	
,	RPD	: <u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	<u>+</u> 4xRL	(None)
	Average Recovery	:							

### Notes:

 $\overline{\text{QC Limit}}$  is 50% RPD, or  $\pm$  4 x Reporting Limit (RL) if the sample or duplicate value is less than 5 times the RL.

RPD = Relative Percent Difference

# **Attachment B.1**

# **Field Audit Form**

QAPP for Site A

Vapor Intrusion Investigation

Revision: 2 Date: 06/04/13

Appendix C

Page 1 of 4

## **FIELD AUDIT FORM**

The state of the s	
Site/Event: Site A Vapor Intrusion Investigation	`20
Sampling Firm:	<u> </u>
Auditor's Name(s): READ DEFENS HENTHEY LIBA	
(print & sign)	
Sampler's Name(s): Ryan Lefers	
(print & sign)	
Date Conducted: 7 2713	
Are the sample containers that are being used in accordance with QAPP, with regard to	(Yes)
container size and type, use of correct preservatives, and were copies of the Batch	No
Certification for bottle cleanliness received and properly filed?	(circle one)
Comments:	
Is sample labeling being performed in accordance with the procedures in QAPP SOP F-1	(Yes)
with regard to including all required information, using proper sample numbering format,	No
and labeling of field duplicates to be blind to the laboratory?	(circle one)
Comments:	
Is sample collection being performed in accordance with the procedures in QAPP SOP F-1	(Yes)
with regard to use of proper equipment, sealing probe rod at ground surface before	No
sampling, use of clean nitrile gloves at each location, and sample collection procedures?	(circle one)
Comments:	
at Sb+4	
It as it was at deportunity the procedures in accordance with the procedures in	Vad
Is equipment decontamination being performed in accordance with the procedures in	(Yes
QAPP SOP F-2, with regard to type of decontamination fluids, decontamination of sampling equipment between sampling locations, and spent decontamination fluid disposal?	(circle one)
	(circle one)
Comments:	

QAPP for Site A Vapor Intrusion Investigation

Revision: 2 Date: 06/04/13 Appendix C Page 2 of 4

## FIELD AUDIT FORM (cont'd)

Have sampling personnel received adequate training, in accordance with the QAPP?	Yes No
Comments:	(circle one)
Is field documentation being performed in accordance with procedures in QAPP SOP F-1 with regard to completing logbooks (bound, entries in ink, cross-outs are initialed, required information is documented)?	Yes No (circle one)
Comments:	
Is field documentation being performed in accordance with procedures in QAPP SOP F-1 with regard to completing Chain-of-Custody forms (entries in ink, cross-outs are initialed, required information is properly filled out, shipping bill number is documented, and all transfers are documented with signature/date/time)?	No (circle one)
Comments:	
Is sample packing and delivery being performed in accordance with the procedures in	(Yes)
QAPP SOP F-1?	No (circle one)
comments: plan to have a counier pick up samples at end of project.	
end of project.	

QAPP for Site A

Vapor Intrusion Investigation Revision: 2

Date: 06/04/13

Appendix C

Page 3 of 4

## FIELD AUDIT FORM (cont'd)

Additional Comments:
none
Action Items (if any):
none

QAPP for Site A Vapor Intrusion Investigation Revision: 2 Date: 06/04/13 Appendix C Page 4 of 4

## FIELD AUDIT FORM (cont'd)

Follow-up Audits (if any):
Follow-up Audits (if any):

# **Attachment B.2**

# Analytical Report on CD-ROM (Pace Analytical Services, Minneapolis, MN)

# ATTACHMENT B.2 Analytical Report on CD-ROM (Pace Analytical Services, Minneapolis, MN)

Sampling Event	<u>Parameters</u>	Pace Project Number
July 2013	VOCs in Air (TO15)	10236207

(612)607-1700



July 30, 2013

Mr. Matt Bowers Wenck Associates, Inc. 1800 Pioneer Creek Ctr. Maple Plain, MN 55359

RE: Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

### Dear Mr. Bowers:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

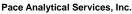
Mariah Peronto

Mariah K Pento

mariah.peronto@pacelabs.com Project Manager

**Enclosures** 







1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

### **CERTIFICATIONS**

Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414

A2LA Certification #: 2926.01 Alaska Certification #: UST-078 Alaska Certification #MN00064 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace

Connecticut Certification #: PH-0256 EPA Region 8 Certification #: Pace Florida/NELAP Certification #: E87605

Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Manyland Certification #: 322

Maryland Certification #: 322 Michigan DEQ Certification #: 9909 Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT CERT0092

Nevada Certification #: MN\_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001

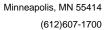
Pennsylvania Certification #: 68-00563 Puerto Rico Certification

Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

### **REPORT OF LABORATORY ANALYSIS**

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### **SAMPLE SUMMARY**

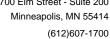
Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10236207001	SG07221301	Air	07/22/13 09:50	07/23/13 15:30
10236207002	SG07221302	Air	07/22/13 00:00	07/23/13 15:30
10236207003	SG07221303	Air	07/22/13 10:45	07/23/13 15:30
10236207004	SG07221304	Air	07/22/13 11:10	07/23/13 15:30
10236207005	SG07221305	Air	07/22/13 11:30	07/23/13 15:30
10236207006	SG07221306	Air	07/22/13 11:55	07/23/13 15:30
10236207007	SG07221307	Air	07/22/13 13:00	07/23/13 15:30
10236207008	SG07221308	Air	07/22/13 13:20	07/23/13 15:30
10236207009	SG07221309	Air	07/22/13 13:40	07/23/13 15:30
10236207010	SG07221310	Air	07/22/13 14:10	07/23/13 15:30
10236207011	SG07221311	Air	07/22/13 14:40	07/23/13 15:30
10236207012	SG07221312	Air	07/22/13 15:15	07/23/13 15:30
10236207013	SG07221313	Air	07/22/13 15:35	07/23/13 15:30
10236207014	SG07221314	Air	07/22/13 16:05	07/23/13 15:30
10236207015	SG07231301	Air	07/23/13 08:30	07/23/13 15:30
10236207016	SG07231302	Air	07/23/13 00:00	07/23/13 15:30

### **REPORT OF LABORATORY ANALYSIS**

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### **SAMPLE ANALYTE COUNT**

Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10236207001	SG07221301	TO-15	DR1	10
10236207002	SG07221302	TO-15	DR1	10
10236207003	SG07221303	TO-15	DR1	10
10236207004	SG07221304	TO-15	DR1	10
10236207005	SG07221305	TO-15	DR1	10
10236207006	SG07221306	TO-15	DR1	10
10236207007	SG07221307	TO-15	DR1	10
10236207008	SG07221308	TO-15	DR1	10
10236207009	SG07221309	TO-15	DR1	10
10236207010	SG07221310	TO-15	DR1	10
10236207011	SG07221311	TO-15	DR1	10
10236207012	SG07221312	TO-15	DR1	10
10236207013	SG07221313	TO-15	DR1	10
10236207014	SG07221314	TO-15	DR1	10
10236207015	SG07231301	TO-15	DR1	10
10236207016	SG07231302	TO-15	DR1	10

### **REPORT OF LABORATORY ANALYSIS**

(612)607-1700



### **PROJECT NARRATIVE**

Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Method: TO-15

**Description:** TO15 MSV AIR **Client:** Wenck Associates, Inc.

Date: July 30, 2013

### **General Information:**

16 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

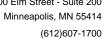
### **Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

### **REPORT OF LABORATORY ANALYSIS**

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Project: 1561-12-02 Site A Vapor TCAAP

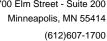
Pace Project No.: 10236207

Sample: SG07221301	Lab ID: 10236207001	Collected: 07/22/13	3 09:50	Received: 07/23/13 15:30	) Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyze	ed CAS No. Qu	ual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.4	1.44	07/26/13 1	4:08 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.59	1.44	07/26/13 1	4:08 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.44	07/26/13 1	4:08 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.44	07/26/13 1	4:08 156-59-2	
Tetrachloroethene	<b>5.4</b> ug/m3	0.99	1.44	07/26/13 1	4:08 127-18-4	
Trichloroethene	ND ug/m3	0.79	1.44	07/26/13 1	4:08 79-01-6	
Vinyl chloride	ND ug/m3	0.37	1.44	07/26/13 1	4:08 75-01-4	
Surrogates	-					
Toluene-d8 (S)	102 %	62-129	1.44	07/26/13 1	4:08 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	99 %	72-131	1.44	07/26/13 1	4:08 3855-82-1	
Hexane-d14 (S)	87 %	75-125	1.44	07/26/13 1	4:08 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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Date: 07/30/2013 04:01 PM





Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Date: 07/30/2013 04:01 PM

10236207

Sample: SG07221302	Lab ID: 10236207002	Collected: 07/22/13	3 00:00	Received: 07/23/13 15:3	0 Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyz	ed CAS No. C	Qual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.4	1.44	07/26/13 (	05:34 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.59	1.44	07/26/13 (	5:34 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.44	07/26/13 (	)5:34 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.44	07/26/13 (	)5:34 156-59-2	
Tetrachloroethene	<b>4.7</b> ug/m3	0.99	1.44	07/26/13 (	05:34 127-18-4	
Trichloroethene	ND ug/m3	0.79	1.44	07/26/13 (	5:34 79-01-6	
Vinyl chloride	ND ug/m3	0.37	1.44	07/26/13 (	)5:34 75-01-4	
Surrogates	_					
Toluene-d8 (S)	99 %	62-129	1.44	07/26/13 (	5:34 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	94 %	72-131	1.44	07/26/13 (	)5:34 3855-82-1	
Hexane-d14 (S)	85 %	75-125	1.44	07/26/13 (	05:34 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**





Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221303	Lab ID: 10236207003	Collected: 07/22/13	10:45	Received: 07/23/13 15:30	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	2.0	2	07/26/13 14:3	9 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.82	2	07/26/13 14:3	9 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.6	2	07/26/13 14:3	9 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.6	2	07/26/13 14:3	9 156-59-2	
Tetrachloroethene	<b>7.2</b> ug/m3	1.4	2	07/26/13 14:3	9 127-18-4	
Trichloroethene	ND ug/m3	1.1	2	07/26/13 14:3	9 79-01-6	
Vinyl chloride	ND ug/m3	0.52	2	07/26/13 14:3	9 75-01-4	
Surrogates	-					
Toluene-d8 (S)	100 %	62-129	2	07/26/13 14:3	9 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	93 %	72-131	2	07/26/13 14:3	9 3855-82-1	
Hexane-d14 (S)	89 %	75-125	2	07/26/13 14:3	9 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Date: 07/30/2013 04:01 PM

Sample: SG07221304	Lab ID: 10236207004	Collected: 07/22/13	3 11:10	Received: 07/23/13 15:30	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.5	1.49	07/26/13 04:3	34 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.61	1.49	07/26/13 04:3	34 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 04:3	34 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 04:3	34 156-59-2	
Tetrachloroethene	<b>5.5</b> ug/m3	1.0	1.49	07/26/13 04:3	34 127-18-4	
Trichloroethene	ND ug/m3	0.82	1.49	07/26/13 04:3	34 79-01-6	
Vinyl chloride	ND ug/m3	0.39	1.49	07/26/13 04:3	34 75-01-4	
Surrogates	-					
Toluene-d8 (S)	103 %	62-129	1.49	07/26/13 04:3	34 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	94 %	72-131	1.49	07/26/13 04:3	34 3855-82-1	
Hexane-d14 (S)	85 %	75-125	1.49	07/26/13 04:3	34 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**





Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Date: 07/30/2013 04:01 PM

Sample: SG07221305	Lab ID: 10236207005	Collected: 07/22/1	3 11:30	Received: 07	7/23/13 15:30 N	/latrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15						
Chloroform	ND ug/m3	1.4	1.44		07/25/13 21:26	67-66-3	
1,2-Dichloroethane	ND ug/m3	0.59	1.44		07/25/13 21:26	107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.44		07/25/13 21:26	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.44		07/25/13 21:26	156-59-2	
Tetrachloroethene	<b>5.3</b> ug/m3	0.99	1.44		07/25/13 21:26	127-18-4	
Trichloroethene	ND ug/m3	0.79	1.44		07/25/13 21:26	79-01-6	
Vinyl chloride	ND ug/m3	0.37	1.44		07/25/13 21:26	75-01-4	
Surrogates	-						
Toluene-d8 (S)	102 %	62-129	1.44		07/25/13 21:26	2037-26-5	
1,4-Dichlorobenzene-d4 (S)	92 %	72-131	1.44		07/25/13 21:26	3855-82-1	
Hexane-d14 (S)	86 %	75-125	1.44		07/25/13 21:26	21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**





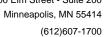
Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221306	Lab ID: 10236207006	Collected: 07/22/13 11:55		Received: 07	7/23/13 15:30 N	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15						
Chloroform	ND ug/m3	1.4	1.44		07/26/13 02:32	67-66-3	
1,2-Dichloroethane	ND ug/m3	0.59	1.44		07/26/13 02:32	107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.44		07/26/13 02:32	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.44		07/26/13 02:32	156-59-2	
Tetrachloroethene	<b>5.8</b> ug/m3	0.99	1.44		07/26/13 02:32	127-18-4	
Trichloroethene	ND ug/m3	0.79	1.44		07/26/13 02:32	79-01-6	
Vinyl chloride	ND ug/m3	0.37	1.44		07/26/13 02:32	75-01-4	
Surrogates	-						
Toluene-d8 (S)	105 %	62-129	1.44		07/26/13 02:32	2037-26-5	
1,4-Dichlorobenzene-d4 (S)	94 %	72-131	1.44		07/26/13 02:32	3855-82-1	
Hexane-d14 (S)	88 %	75-125	1.44		07/26/13 02:32	21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

Date: 07/30/2013 04:01 PM





Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

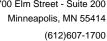
Date: 07/30/2013 04:01 PM

10236207

Sample: SG07221307	Lab ID: 10236207007	Collected: 07/22/1	3 13:00	Received: 07	7/23/13 15:30 N	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15						
Chloroform	ND ug/m3	1.4	1.44		07/25/13 23:59	67-66-3	
1,2-Dichloroethane	ND ug/m3	0.59	1.44		07/25/13 23:59	107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.44		07/25/13 23:59	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.44		07/25/13 23:59	156-59-2	
Tetrachloroethene	<b>5.4</b> ug/m3	0.99	1.44		07/25/13 23:59	127-18-4	
Trichloroethene	ND ug/m3	0.79	1.44		07/25/13 23:59	79-01-6	
Vinyl chloride	ND ug/m3	0.37	1.44		07/25/13 23:59	75-01-4	
Surrogates	-						
Toluene-d8 (S)	102 %	62-129	1.44		07/25/13 23:59	2037-26-5	
1,4-Dichlorobenzene-d4 (S)	94 %	72-131	1.44		07/25/13 23:59	3855-82-1	
Hexane-d14 (S)	88 %	75-125	1.44		07/25/13 23:59	21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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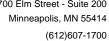
Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221308	Lab ID: 10236207008	Collected: 07/22/13 13:20		Received: 07/23/13 15:30	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyzed	d CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.5	1.49	07/26/13 01	:31 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.61	1.49	07/26/13 01	:31 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 01	:31 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 01	:31 156-59-2	
Tetrachloroethene	<b>5.1</b> ug/m3	1.0	1.49	07/26/13 01	:31 127-18-4	
Trichloroethene	ND ug/m3	0.82	1.49	07/26/13 01	:31 79-01-6	
Vinyl chloride	ND ug/m3	0.39	1.49	07/26/13 01	:31 75-01-4	
Surrogates	-					
Toluene-d8 (S)	104 %	62-129	1.49	07/26/13 01	:31 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	93 %	72-131	1.49	07/26/13 01	:31 3855-82-1	
Hexane-d14 (S)	87 %	75-125	1.49	07/26/13 01	:31 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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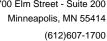
Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221309	Lab ID: 10236207009	Collected: 07/22/13	13:40	Received: 07/23/13 15:30	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyze	d CAS No. Qu	ual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.4	1.44	07/26/13 03	3:02 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.59	1.44	07/26/13 03	3:02 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.44	07/26/13 03	3:02 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.44	07/26/13 03	3:02 156-59-2	
Tetrachloroethene	<b>4.9</b> ug/m3	0.99	1.44	07/26/13 03	3:02 127-18-4	
Trichloroethene	ND ug/m3	0.79	1.44	07/26/13 03	3:02 79-01-6	
Vinyl chloride	ND ug/m3	0.37	1.44	07/26/13 03	3:02 75-01-4	
Surrogates	_					
Toluene-d8 (S)	103 %	62-129	1.44	07/26/13 03	3:02 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	91 %	72-131	1.44	07/26/13 03	3:02 3855-82-1	
Hexane-d14 (S)	85 %	75-125	1.44	07/26/13 03	3:02 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221310	Lab ID: 10236207010	Collected: 07/22/13	14:10	Received: 07/23/13 15:30	Matrix: Air
Parameters	Results Units	Report Limit	DF	Prepared Analyzed	CAS No. Qua
TO15 MSV AIR	Analytical Method: TO-15				
Chloroform	ND ug/m3	1.4 1	.44	07/26/13 01:	00 67-66-3
1,2-Dichloroethane	ND ug/m3	0.59 1	.44	07/26/13 01:	00 107-06-2
1,1-Dichloroethene	ND ug/m3	1.2 1	.44	07/26/13 01:	00 75-35-4
cis-1,2-Dichloroethene	ND ug/m3	1.2 1	.44	07/26/13 01:	00 156-59-2
Tetrachloroethene	<b>5.0</b> ug/m3	0.99 1	.44	07/26/13 01:	00 127-18-4
Trichloroethene	ND ug/m3	0.79 1	.44	07/26/13 01:	00 79-01-6
Vinyl chloride	ND ug/m3	0.37 1	.44	07/26/13 01:	00 75-01-4
Surrogates	-				
Toluene-d8 (S)	101 %	62-129 1	.44	07/26/13 01:	00 2037-26-5
1,4-Dichlorobenzene-d4 (S)	93 %	72-131 1	.44	07/26/13 01:	00 3855-82-1
Hexane-d14 (S)	88 %	75-125 1	.44	07/26/13 01:	00 21666-38-6

### **REPORT OF LABORATORY ANALYSIS**

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Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221311	Lab ID: 10236207011	Collected: 07/22/13	14:40	Received: 07/23/13 15:30	Matrix: Air
Parameters	Results Units	Report Limit	DF	Prepared Analyzed	CAS No. Qua
TO15 MSV AIR	Analytical Method: TO-15				
Chloroform	ND ug/m3	1.5	1.49	07/25/13 22	27 67-66-3
1,2-Dichloroethane	ND ug/m3	0.61	1.49	07/25/13 22	27 107-06-2
1,1-Dichloroethene	ND ug/m3	1.2	1.49	07/25/13 22	27 75-35-4
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.49	07/25/13 22	27 156-59-2
Tetrachloroethene	<b>5.2</b> ug/m3	1.0	1.49	07/25/13 22	27 127-18-4
Trichloroethene	ND ug/m3	0.82	1.49	07/25/13 22	27 79-01-6
Vinyl chloride	ND ug/m3	0.39	1.49	07/25/13 22	27 75-01-4
Surrogates	-				
Toluene-d8 (S)	99 %	62-129	1.49	07/25/13 22	27 2037-26-5
1,4-Dichlorobenzene-d4 (S)	99 %	72-131	1.49	07/25/13 22	27 3855-82-1
Hexane-d14 (S)	86 %	75-125	1.49	07/25/13 22	27 21666-38-6

### **REPORT OF LABORATORY ANALYSIS**

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Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221312	Lab ID: 10236207012	Collected: 07/22/13	15:15	Received: 07/23/13 15:30	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyze	d CAS No. Q	ual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.5	1.55	07/25/13 20	):25 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.64	1.55	07/25/13 20	):25 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.3	1.55	07/25/13 20	):25 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.3	1.55	07/25/13 20	):25 156-59-2	
Tetrachloroethene	<b>5.7</b> ug/m3	1.1	1.55	07/25/13 20	):25 127-18-4	
Trichloroethene	ND ug/m3	0.85	1.55	07/25/13 20	):25 79-01-6	
Vinyl chloride	ND ug/m3	0.40	1.55	07/25/13 20	):25 75-01-4	
Surrogates	_					
Toluene-d8 (S)	100 %	62-129	1.55	07/25/13 20	):25 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	94 %	72-131	1.55	07/25/13 20	):25 3855-82-1	
Hexane-d14 (S)	88 %	75-125	1.55	07/25/13 20	):25 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221313	Lab ID: 10236207013	Collected: 07/22/1	3 15:35	Received: 07/23/13 15:30	Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.5	1.49	07/26/13 03:3	3 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.61	1.49	07/26/13 03:3	3 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 03:3	3 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 03:3	3 156-59-2	
Tetrachloroethene	<b>5.3</b> ug/m3	1.0	1.49	07/26/13 03:3	3 127-18-4	
Trichloroethene	ND ug/m3	0.82	1.49	07/26/13 03:3	3 79-01-6	
Vinyl chloride	ND ug/m3	0.39	1.49	07/26/13 03:3	3 75-01-4	
Surrogates	-					
Toluene-d8 (S)	107 %	62-129	1.49	07/26/13 03:3	3 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	96 %	72-131	1.49	07/26/13 03:3	3 3855-82-1	
Hexane-d14 (S)	89 %	75-125	1.49	07/26/13 03:3	3 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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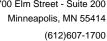
Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07221314	Lab ID: 10236207014	Collected: 07/22/1	3 16:05	Received: 07	7/23/13 15:30 N	fatrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15						
Chloroform	ND ug/m3	1.6	1.61		07/26/13 02:01	67-66-3	
1,2-Dichloroethane	ND ug/m3	0.66	1.61		07/26/13 02:01	107-06-2	
1,1-Dichloroethene	ND ug/m3	1.3	1.61		07/26/13 02:01	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.3	1.61		07/26/13 02:01	156-59-2	
Tetrachloroethene	<b>7.3</b> ug/m3	1.1	1.61		07/26/13 02:01	127-18-4	
Trichloroethene	ND ug/m3	0.89	1.61		07/26/13 02:01	79-01-6	
Vinyl chloride	ND ug/m3	0.42	1.61		07/26/13 02:01	75-01-4	
Surrogates	_						
Toluene-d8 (S)	98 %	62-129	1.61		07/26/13 02:01	2037-26-5	
1,4-Dichlorobenzene-d4 (S)	115 %	72-131	1.61		07/26/13 02:01	3855-82-1	
Hexane-d14 (S)	85 %	75-125	1.61		07/26/13 02:01	21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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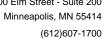
Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07231301	Lab ID: 10236207015	Collected: 07/23/13 08:30		Received: 07/23/13 15:30		Matrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15						
Chloroform	ND ug/m3	1.4	1.44		07/26/13 05:04	67-66-3	
1,2-Dichloroethane	ND ug/m3	0.59	1.44		07/26/13 05:04	107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.44		07/26/13 05:04	75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.44		07/26/13 05:04	156-59-2	
Tetrachloroethene	<b>4.3</b> ug/m3	0.99	1.44		07/26/13 05:04	127-18-4	
Trichloroethene	ND ug/m3	0.79	1.44		07/26/13 05:04	79-01-6	
Vinyl chloride	ND ug/m3	0.37	1.44		07/26/13 05:04	75-01-4	
Surrogates	-						
Toluene-d8 (S)	102 %	62-129	1.44		07/26/13 05:04	2037-26-5	
1,4-Dichlorobenzene-d4 (S)	101 %	72-131	1.44		07/26/13 05:04	3855-82-1	
Hexane-d14 (S)	86 %	75-125	1.44		07/26/13 05:04	21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Sample: SG07231302	Lab ID: 10236207016	Collected: 07/23/1	3 00:00	Received: 07/23/13 15:30	Matrix: Air	•
Parameters	Results Units	Report Limit	DF	Prepared Analyze	d CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15					
Chloroform	ND ug/m3	1.5	1.49	07/26/13 00	):30 67-66-3	
1,2-Dichloroethane	ND ug/m3	0.61	1.49	07/26/13 00	0:30 107-06-2	
1,1-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 00	):30 75-35-4	
cis-1,2-Dichloroethene	ND ug/m3	1.2	1.49	07/26/13 00	):30 156-59-2	
Tetrachloroethene	<b>4.4</b> ug/m3	1.0	1.49	07/26/13 00	):30 127-18-4	
Trichloroethene	ND ug/m3	0.82	1.49	07/26/13 00	):30 79-01-6	
Vinyl chloride	ND ug/m3	0.39	1.49	07/26/13 00	):30 75-01-4	
Surrogates	-					
Toluene-d8 (S)	98 %	62-129	1.49	07/26/13 00	0:30 2037-26-5	
1,4-Dichlorobenzene-d4 (S)	108 %	72-131	1.49	07/26/13 00	):30 3855-82-1	
Hexane-d14 (S)	87 %	75-125	1.49	07/26/13 00	0:30 21666-38-6	

### **REPORT OF LABORATORY ANALYSIS**

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(612)607-1700



### **QUALITY CONTROL DATA**

Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

QC Batch: AIR/17870 Analysis Method: TO-15

QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level

Associated Lab Samples: 10236207002, 10236207004, 10236207005, 10236207006, 10236207007, 10236207008, 10236207009,

10236207010, 10236207011, 10236207012, 10236207013, 10236207014, 10236207015, 10236207016

METHOD BLANK: 1487046 Matrix: Air

Associated Lab Samples: 10236207002, 10236207004, 10236207005, 10236207006, 10236207007, 10236207008, 10236207009,

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/m3	ND	0.81	07/25/13 14:47	
1,2-Dichloroethane	ug/m3	ND	0.41	07/25/13 14:47	
Chloroform	ug/m3	ND	0.99	07/25/13 14:47	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	07/25/13 14:47	
Tetrachloroethene	ug/m3	ND	0.69	07/25/13 14:47	
Trichloroethene	ug/m3	ND	0.55	07/25/13 14:47	
Vinyl chloride	ug/m3	ND	0.26	07/25/13 14:47	

Parameter	Units	- I -		LCS LCS Result % Rec		Qualifiers
1,1-Dichloroethene	ug/m3	40.3	38.9	96	64-136	
1,2-Dichloroethane	ug/m3	41.2	42.8	104	66-136	
Chloroform	ug/m3	49.7	50.7	102	66-129	
cis-1,2-Dichloroethene	ug/m3	40.3	39.8	99	73-135	
Tetrachloroethene	ug/m3	69	68.1	99	66-135	
Trichloroethene	ua/m3	54.6	51.0	93	68-134	

cis-1,2-Dichioroethene	ug/m3	40.3	39.8	99	73-135
Tetrachloroethene	ug/m3	69	68.1	99	66-135
Trichloroethene	ug/m3	54.6	51.0	93	68-134
Vinyl chloride	ug/m3	26	25.1	96	64-134
1,4-Dichlorobenzene-d4 (S)	%			105	72-131
Hexane-d14 (S)	%			94	75-125
Toluene-d8 (S)	%			102	62-129

SAMPLE DUPLICATE: 1487813

Date: 07/30/2013 04:01 PM

LABORATORY CONTROL SAMPLE: 1487047

0, 22 20. 2.0,2						
		10236207012	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
1,1-Dichloroethene	ug/m3	ND ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	5.7	5.6	1	25	
Trichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	
1,4-Dichlorobenzene-d4 (S)	%	94	94	.2		
Hexane-d14 (S)	%	88	88	.004		
Toluene-d8 (S)	%	100	100	.3		

### **REPORT OF LABORATORY ANALYSIS**

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### **QUALITY CONTROL DATA**

Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

QC Batch: AIR/17876 Analysis Method: TO-15

QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level

Associated Lab Samples: 10236207001, 10236207003

METHOD BLANK: 1488122 Matrix: Air

Associated Lab Samples: 10236207001, 10236207003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/m3	ND ND	0.81	07/26/13 13:38	
1,2-Dichloroethane	ug/m3	ND	0.41	07/26/13 13:38	
Chloroform	ug/m3	ND	0.99	07/26/13 13:38	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	07/26/13 13:38	
Tetrachloroethene	ug/m3	ND	0.69	07/26/13 13:38	
Trichloroethene	ug/m3	ND	0.55	07/26/13 13:38	
Vinyl chloride	ug/m3	ND	0.26	07/26/13 13:38	

LABORATORY CONTROL SAMPLE: 1488123

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1.1-Dichloroethene	ug/m3	40.3	36.7	91	64-136	
1,2-Dichloroethane	ug/m3	41.2	41.2	100	66-136	
Chloroform	ug/m3	49.7	49.5	100	66-129	
cis-1,2-Dichloroethene	ug/m3	40.3	39.0	97	73-135	
Tetrachloroethene	ug/m3	69	71.9	104	66-135	
Trichloroethene	ug/m3	54.6	52.2	95	68-134	
Vinyl chloride	ug/m3	26	23.4	90	64-134	
1,4-Dichlorobenzene-d4 (S)	%			106	72-131	
Hexane-d14 (S)	%			87	75-125	
Toluene-d8 (S)	%			99	62-129	

SAMPLE DUPLICATE: 1489056

Date: 07/30/2013 04:01 PM

Parameter	Units	5083964004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethene	ug/m3		ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
Chloroform	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	9.3	9.1	2	25	
Tetrachloroethene	ug/m3	8.4	8.3	.3	25	
Trichloroethene	ug/m3	6.0	6.1	2	25	
Vinyl chloride	ug/m3	ND	ND		25	

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(612)607-1700



### **QUALIFIERS**

Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

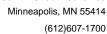
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 07/30/2013 04:01 PM

### **REPORT OF LABORATORY ANALYSIS**

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### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 1561-12-02 Site A Vapor TCAAP

Pace Project No.: 10236207

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
10236207001	SG07221301	TO-15	AIR/17876		
10236207002	SG07221302	TO-15	AIR/17870		
10236207003	SG07221303	TO-15	AIR/17876		
10236207004	SG07221304	TO-15	AIR/17870		
10236207005	SG07221305	TO-15	AIR/17870		
10236207006	SG07221306	TO-15	AIR/17870		
10236207007	SG07221307	TO-15	AIR/17870		
10236207008	SG07221308	TO-15	AIR/17870		
10236207009	SG07221309	TO-15	AIR/17870		
10236207010	SG07221310	TO-15	AIR/17870		
10236207011	SG07221311	TO-15	AIR/17870		
10236207012	SG07221312	TO-15	AIR/17870		
10236207013	SG07221313	TO-15	AIR/17870		
10236207014	SG07221314	TO-15	AIR/17870		
10236207015	SG07231301	TO-15	AIR/17870		
10236207016	SG07231302	TO-15	AIR/17870		

### **REPORT OF LABORATORY ANALYSIS**

Custody

ICG

といわり

S S

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

### 700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

OFIGINAL

Chark Chark

Tachloroemene

# AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

N/A N/A N/A Samples Intact Y/N SAMPLE CONDITIONS Clean Air Act Pace Lab ID Other ö Sealed Cooler Reporting Units
ug/m² Mg/m³
PPBV PPMV N/A N/A RCRA 8 3 X TIME 3 800 10746 Page: T Section of the second C Ò Other N/A N/A N/A N/A Keceived on Voluntary Clean Up Dry Clean Emissions O° ni qmeT 2 Z Program = Superfund Location of Sampling by State Report Level DATE UST Control Number ACCEPTED BY / AFFILIATION Persoto Melissa winksharke Number Summa S Pace Project Manager/Sales Rep. Marta M SAMPLER NAME AND SIGNATURE (Final Field - psig) ? -125 0 5.30 TIME 3 92-SSA 3 2 32-CZ-2 G C Z (Initial Field - psig) Canister Pressure せいいろ 7123/13 DATE TIME COMPOSITE Pace Quote Reference: Invoice Information: DATE Company Name: COLLECTED ches/wash Pace Profile #: RELINQUISHED BY / AFFILIATION OFIT 2350 Section C Sis OFI Address: 9:50 200 3 23.20 Attention: 0.1 TIME SLC0.2/1/22/13 DATE Sapor てのしてい 80225 ල දැ 0 0 J, Ţ CO 7 Ç 5 a C Required Project Information: MEDIA CODE Project Number: 1561 Math Project Name: S. C. MEDIA
Tedlar Bag
Tellar Summa Can 1LC
6 Liter Summa Can 6LC
Low Volume Puff
High Volume Puff
Hygh Volume Puff
PM10 Purchase Order No.: Section B Report To: Copy To: Cist 12-Orcherochure CACKCA Fax: C3>47x4x1 Section D Required Client Information 1,2 - Oichloroethane 1,1 - Orches ethere M boser @ week. Con terrachiero emerc Marche Man, MN 55359 Sample IDs MUST BE UNIQUE AIR SAMPLE ID 602122109 7 27 17 17 17 17 5607221308 5607221307 5607221309 S60112120S 56072213092 5607221302 3001221098 12121005 2001221095 SG07221301 Analyze Fri Address 1800 Planese Required Client Information: Sompany: Menck Requested Due Date/TAT: Phone: # MBTI

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# AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

	Emissions Clean Air Act	an CRA Other	Reporting Units	PPBV PPMV Other	Other	Pace Lab ID	£ (0)	7	Š	2/2		олдан колдонализмализмализмализмализмализмализмализм	and the second s		CONDITIONS		N/A	N/A N/A N/A	N/A N/A N/A	Temp in °C Received on Ice Custody Sealed Cooler Samples Intact
L C C C	UST Superfund Emi	Voluntary Clean Up Dry Clean	Location of	y State	Report Level II. III. IV.	Method:		The second of th	× 1						DATE TIME S	5720 1570				
				٤		Flow Control Number				The second secon					BY / AFFILIATION					DATE Signed (MM / DD / YY)
Sinkhelter	ocossovanska kasa se munacani dimma daga mananing minakaning kasa dimental kasa dimental kasa dimental kasa di		kinakésésésésésésésésésésésésésésésésésésés	ariah Rean	•	Canister Pressure (Final Field - psig)  Summon Can  Number an and Can  Reference of the Can  Can  Can  Can  Can  Can  Can  Can	0	de la constant		2-					TIME ACCEPTED	5:30 /2			1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	NATURE Le-Ros
	.54	The second secon	ference:	Pace Project Manager/Sales Rep.	A manufacture of the contract	Camister Pressure Canister Pressure (Initial Field - psig)		12-	12-	22-	and the second s		***************************************		DATE TIN	N23115 15%				SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER:
	Company Name	Address:	Pace Quote Reference:		Pace Profile #:	COLLECTED COMPOSITE START COMPOSINE START COMP	7122113 15:35	7/22/13 16:05	3113 255 Free	7123/13			Statement the desired passeous and accordance to the accordance of the statement of the sta	and an about of the state of th	BY / AFFILIATION	5/Werk				SAMI
Information: Att Bowers				TC A Veger	70-21-195	MEDIA CODE	21/20219	N.	1 4.27723/13						RELINQUISHED BY /	Kir Left	<b>1</b>			
Required Project Information:	Copy To:	55.	Purchase Order No.:	Project Name: S. C.	Project Number: 1566	Nedra Codes  NEDBA Cade Reg Libre Summa Can - ILC Libre Summa Can				ERPANYALISIA (ANTAKA MARKAMANIA MARKAMANIA MARKAMANIA MARKAMANIA MARKAMANIA MARKAMANIA MARKAMANIA MARKAMANIA M	AND THE REPORT OF THE PROPERTY		de til med belygget til de med med stem stem stem stem stem stem stem stem				.1	politic		7 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Required Client Information: Company: M. C. C.	Address: 1 & co. O. O. Co. Co.	Made Man AN SS 359	さるので	Phone: Cra-veno Pax: -474-4242	Requested Due Date/TAT:	'Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	5607221313	56012213	5601221301	2021221095					Comments:	AND AZE FOR !	17 Destoration			324

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Document Name: Air Sample Condition Upon Receipt

Document No.: F-MN-A-106-rev.07 Document Revised: 28Jan2013 Page 1 of 1 Issuing Authority:

<u> </u>		F-MN-A-106		Pace Min		THE RESERVE	
Sample Condition Co	Client Name:	p	roject #:	0#:10	2362	207	
	Wenck		IA	VT.			
Courier:	Fed Ex UPS	USPS Clie	ent				
	Commercial Pace	Other:					
racking Number:	glate de principal de la constante de la const		1	0236201			
ustody Seal on Cooler/I	Box Present? Yes	⊠No Seals Inta	act? Yes	No Optional: Pro	oj. Due Date:	Proj. Name:	
ncking Material: B	Bubble Wrap 🔀 Bubble	Bags Foam I	None Other:_				
mp. (TO17 and TO13 same emp should be above free	ples only) (°C): zing to 6°C			sed: B88A91216		1 1 mm 1 miles	72337080 B//3
				Co	mments:		
Chain of Custody Present	t?	∑Yes □No	□N/A 1.	·	·		
Chain of Custody Filled O	Out?	XYes □No	□N/A 2.	PANANTO 00704A14TECTITO CONTROLOGICE TO CONTROLOGICE TO CONTRA CO	manne en ante e ventramente e éco	manarations	
Chain of Custody Relinqu	ished?	Yes No	□N/A 3.				
Sampler Name and/or Sig	gnature on COC?	∑Yes	□N/A 4.		<del></del>		
Samples Arrived within H	lold Time?	Yes No	□N/A 5.				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Short Hold Time Analysis	s (<72 hr)?	☐Yes 📈 No	□N/A 6.				
Rush Turn Around Time	Requested?	☐Yes ☒No	□N/A 7.				**************************************
Sufficient Volume?		☑Yes ☐No	□N/A 8.				
			<b>—</b>				
Correct Containers Used	?		□N/A   9.				
-Pace Containers Used -Pace Containers Used			□N/A   9.				
-Pace Containers Used -Pace Containers Used Containers Intact?							
-Pace Containers Used	d?	Yes No	□N/A 10.	mple 14	35 lok	eled	56072
-Pace Containers Used Containers Intact?	i 4 Vac g	Yes No	□N/A 10.	mple 14	is lot	æled	\$60D
-Pace Containers Used Containers Intact?  Media: KCan 5	i 4 Vac g	Yes No	□N/A 10. 11. 502	mple 14		æled missers	
-Pace Containers Used Containers Intact? Media: (Con Sample Labels Match COn Samples Received:	i 4 Vac g	Yes No  Yes No  Yes No  Yes No	□N/A 10. 11. 502	aple 14		celed	\$6072
-Pace Containers Used Containers Intact? Media: (Con 6) Sample Labels Match CO Samples Received:	17 ; 4 Vac g c?	Yes No  Yes No  Yes No  Yes No	□N/A 10. □N/A 11. 502 □N/A 12.	mple (4	Coo.	Alone G	
-Pace Containers Used Containers Intact? Media: (Can 6) Sample Labels Match CO Samples Received: Can Sample Number	d?  GAVAC 9  C?	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. 502. □ N/A 12. □ N/A 12.		C@ Stand- Number	Alone G	
-Pace Containers Used Containers Intact? Media:	1?  14 Vac 9  C?  C?  Can ID  face 21 46  11 2132	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. 502. □ N/A 12. □ N/A 12.	Sample I	C@ Stand- Number	Alone G	an ID 2152 2151
-Pace Containers Used Containers Intact? Media:	c?  Can ID  Can ID	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. 502. □ N/A 12. □ N/A 12.	Sample I	Co Stand- Number	Alone G C	an ID 2152
-Pace Containers Used Containers Intact? Media:	1?  14 Vac 9  C?  C?  Can ID  face 21 46  11 2132	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. 502. □ N/A 12. □ N/A 12.	Sample I	Stand-Number	Alone G C	an ID 2152 2151
-Pace Containers Used Containers Intact? Media:	1?  14 Vac 9  C?  C?  Can ID  face 21 46  11 2132	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. Sociontrollers	Sample I	Stand-Number	Alone G  C  FOCE  11  11	an ID 2152 2151
-Pace Containers Used Containers Intact?  Media: (Can 6) Sample Labels Match CO  Samples Received:  Can  Sample Number  607221301  1103  1106	1?  Gran ID  Face 2146  11 2132  11 2179  11 2173	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. Sociontrollers	Sample I	Co Stand- Number 13 11 12 13 2213	Alone G  C  FOCE  11  11	an ID 2152 2151
-Pace Containers Used Containers Intact? Media: // Con 6 Sample Labels Match CO  Samples Received:  Can Sample Number 60722(301 11 02 11 03 11 06 11 06	1?  3 4 Vac 9  C?  C?  Can ID  face 21 46  11 2132  11 2173  11 2097  11 2191	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. Sociontrollers	Sample I	Stand-Number	Alone G	an ID 2152 2151
-Pace Containers Used Containers Intact?  Media: KCana Sample Labels Match CO  Samples Received:  Can Sample Number  60722(301 11 03 11 04 11 06 11 06	1?  Gran ID  Face 2146  11 2132  11 2179  11 2173	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. Sociontrollers	Sample I	Co Stand- Number 13 11 12 13 2213	Alone G	an ID 2152 2151
-Pace Containers Used Containers Intact?  Media:	19 4 Vac 9 C? C? Can ID face 21 46 11 2132 11 2179 11 2191 11 2191 11 2190 11 2190	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. Sociontrollers	Sample I	Co Stand- Number 13 11 12 13 2213	Alone G	an ID 2152 2151
-Pace Containers Used Containers Intact?  Media: KCang Sample Labels Match CO  Samples Received:  Can  Sample Number  CO72213 0 1  11 02  11 03  11 06  11 06  11 07	1?  3 4 Vac 9  C?  C?  Can ID  face 21 46  11 2132  11 2173  11 2097  11 2191	Yes No  Yes No  Yes No  Yes No  Flow Co	□ N/A 10. □ N/A 11. Sociontrollers	Sample I	Co Stand- Number 13 11 12 13 2213	Alone G	an ID 2152 2151
-Pace Containers Used Containers Intact?  Media: KCand Sample Labels Match CO Samples Received:  Can Sample Number  CO72213 0 1 11 02 11 03 11 06 11 07 11 06 11 07 11 06 11 07 11 06 11 07	17 17 18 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Yes No Yes No Care Jest No Flow Co Sample Number	□ N/A 10. □ N/A 10. □ 11.	Sample     \$60772     \$607	Co Stand- Number 13 11 12 13 2213	Alone G  C  Li  i)  i)	an ID  2152  2151  0533  0162  0443
-Pace Containers Used Containers Intact?  Media: KCan de Sample Labels Match CO  Samples Received:  Can  Sample Number  C722/3 0 (  1/ 02  1/ 03  1/ 05  1/ 06  1/ 07  1/ 06  1/ 07  1/ 06  1/ 07  1/ 06  1/ 07  1/ 07  1/ 06  1/ 07  1/ 07  1/ 07  1/ 07  1/ 07  1/ 07  1/ 08  IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	17 17 18 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Yes No Yes No Yes No Yes No Sample Number	□N/A 10. □N/A 11. Sociontrollers □N/A 12.	Sample     \$60722     \$607     \$607     \$11     Field Data	Co Stand Number 13 11 12 13 22213 2301 02	Alone G  C  Li  i)  i)	an ID  2152  2151  0533  0162  0443
-Pace Containers Used Containers Intact?  Media:	17 17 18 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Yes No  Yes No  Yes No  Yes No  Flow Co  Sample Number	□N/A 10. □N/A 11. Sociontrollers □N/A 12. □N/A	Sample     \$60722     \$607     \$607     \$11     Field Data	Co Stand Number 13 11 12 13 22213 2301 02	Alone G  C  Li  i)  i)	an ID  2152  2151  0533  0962  0445  135
-Pace Containers Used Containers Intact?  Media:	17 17 18 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Yes No Yes No Yes No Yes No Sample Number	□N/A 10. □N/A 11. Sociontrollers □N/A 12.	Sample     \$60722     \$607     \$607     \$11     Field Data	Co Stand Number 13 11 12 13 22213 2301 02	Alone G  C  Li  i)  i)	an ID  2152  2151  0533  0962  0449  135

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hold, incorrect preservative, out of temp, incorrect containers)

**Fraction: TO15** 

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Instrument: 10AIRD Method:

Misc. Prep. Info: ISTD Lot: 8137-92-17 Surrogate Lot: 8137-92-17 Cal. Standard: 8137-94-4/8137-94-5 Column: J&W DB-5 0.32mm Helium Tune Standard: 8137-92-17

Path/File	Lab ID	Matrix/Batch	Туре	DF pH	Method	Date & Time	Oper.	Comments
20501BFB.D	BFB	L/	Tune	1	50NG_BFB	7/24/13 12:36	DR1	
20502.D	CCAL	G/	CCal	1	TO15_203-13	7/24/13 13:04	DR1	
20503BFB.D	BFB	L/	Tune	1	50NG_BFB	7/24/13 13:45	DR1	
20504.D	CAL1	G/	Ical	1	TO15_205-13	7/24/13 14:12	DR1	
20505.D	CAL2	G/	Ical	1	TO15_205-13	7/24/13 14:40	DR1	
20506.D	CAL3	G/	Ical	1	TO15_205-13	7/24/13 15:08	DR1	
20507.D	CAL4	G/	Ical	1	TO15_205-13	7/24/13 15:36	DR1	
20508.D	CAL5	G/	Ical	1	TO15_205-13	7/24/13 16:06	DR1	
20509.D	CAL6	G/	Ical	1	TO15_205-13	7/24/13 16:39	DR1	
20510.D	ICV	G/	LCS	1	TO15_205-13	7/24/13 17:07	DR1	8137-85-16
20511L.D	1486238	G/17860	LCS	1	TO15_205-13	7/24/13 17:35	DR1	
20511.D	LCS	G/	LCS	1	TO15_205-13	7/24/13 17:35	DR1	
20511LT.D	1486802	G/17866	LCS	1	TO15_205-13	7/24/13 17:35	DR1	
20512.D	0	G/	Sample	1	TO15_205-13	7/24/13 18:03	DR1	
20513.D	BLANK	G/	Blank	1	TO15_205-13	7/24/13 18:33	DR1	
20513L.D	1486237	G/17860	Blank	1	TO15_205-13	7/24/13 18:33	DR1	
20513LT.D	1486801	G/17866	Blank	1	TO15_205-13	7/24/13 18:33	DR1	
20514.D	10235314003	G/17856	Sample	1984	TO15_205-13	7/24/13 19:01	DR1	
20515.D	3098565001	G/17860	Sample	4.032	TO15 205-13	7/24/13 19:31	DR1	
20516.D	10235314001	G/17860		1.49	TO15_205-13	7/24/13 20:01	DR1	
20517.D	10236127003	G/17866	Sample		TO15_205-13	7/24/13 20:32	DR1	
20518.D	1486906	G/17866	Duplicate		TO15_205-13	7/24/13 21:03	DR1	
20519.D	10236127001	G/17866	Sample		TO15_205-13	7/24/13 21:33	DR1	
20520.D	-DUP	G/17866	Duplicate		TO15_205-13	7/24/13 22:03	DR1	
20521.D	10236127002	G/17866	Sample		TO15_205-13	7/24/13 22:34	DR1	
20522.D	10236188001	G/17860		1.8	TO15_205-13	7/24/13 23:06	DR1	
20523.D	10235407018	G/17860	Sample	451.584	TO15_205-13	7/24/13 23:34	DR1	
20524.D	10235407016	G/17860	Sample	935.424	TO15_205-13	7/25/13 00:02	DR1	
20525.D	10235407012	G/17860	Sample	4.742	TO15_205-13	7/25/13 00:32	DR1	
20526.D	10235407015	G/17860	Sample	225.792	TO15_205-13	7/25/13 00:59	DR1	
20527.D	10235407013	G/17848	Sample	24.555	TO15_205-13	7/25/13 01:27	DR1	
20528.D	10235407017	G/17860	Sample	3034.64	TO15_205-13	7/25/13 01:54	DR1	
20529.D	10235407014	G/17860	Sample	4.742	TO15_205-13	7/25/13 02:25	DR1	
20530.D	92165848002	G/17860	Sample	1.44	TO15_205-13	7/25/13 02:55	DR1	
20531.D	92165848001	G/17860	•	1.7956	TO15_205-13	7/25/13 03:26	DR1	
20532.D	10236055002	G/17860	•	1.8	TO15_205-13	7/25/13 03:56	DR1	
20533.D	10236055001	G/17860	•	1.74	TO15_205-13	7/25/13 04:27	DR1	
20534.D	10235583003	G/17860		1.94	TO15_205-13	7/25/13 04:58	DR1	
20535.D	10235583001	G/17860		1.8	TO15_205-13	7/25/13 05:28	DR1	
20536.D	10235583002	G/17860		1.8	TO15_205-13	7/25/13 06:00	DR1	
20537.D	0	G/	Sample	1	TO15_205-13	7/25/13 07:28	DR1	
20538.D	CERT	G/		1	TO15_205-13	7/25/13 07:59	DR1	
20539.D	CERT	G/	Sample	1	TO15_205-13	7/25/13 08:42	DR1	
20540.D	10236188001	G/17860		1152	TO15_205-13	7/25/13 09:11	DR1	
20541.D	CERT	G/	Sample	1	TO15_205-13	7/25/13 09:42	DR1	
20542.D	CERT	G/		1	TO15_205-13	7/25/13 10:12	DR1	



Instrument: 10AIRD Method: Misc. Prep. Info: Surrogate Lot: 8137-92-17

Column: J&W DB-5 0.32mm Helium Tune Standard: 8137-92-17 ISTD Lot: 8137-92-17 Cal. Standard: 8137-94-4/8137-94-5

Path/File	Lab ID	Matrix/Batch	Type	DF	рН	Method	Date & Time	Oper.	Comments
20543.D	CERT	G/	Sample	1		TO15_205-13	7/25/13 10:44	DR1	
20544.D	92165848002	G/17860	Sample	460.8		TO15_205-13	7/25/13 11:11	DR1	
20545.D	92165848001	G/17860	Sample	574.592		TO15_205-13	7/25/13 11:39	DR1	
20546.D	10235407015	G/17860	Sample	1806.336		TO15_205-13	7/25/13 12:13	DR1	

Check Maintenance Items Performed:

Changed septum Clipped column
Cleaned liner Changed trap - Lot #
Replaced/Cleaned gold seal Cleaned MS Source

Changed column - Lot # Other minor parts replaced No maintenance performed today

Additional Comments:

File Path 1: U:\10AIRD.I\072413.B\

Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 07/25/2013 12:52

Reviewed By/Date:

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Instrument: 10AIRD Method: Misc. Prep. Info: Surrogate Lot: 8137-92-17 Column: J&W DB-5 0.32mm Helium Tune Standard: 8137-92-17 ISTD Lot: 8137-92-17 Cal. Standard: 8137-94-5

Path/File	Lab ID	Matrix/Batch	Туре	DF į	рН	Method	Date & Time	Oper.	Comments
20601BFB.D	BFB	L/	Tune	1		50NG_BFB	7/25/13 12:41	DR1	
20602.D	CCAL	G/	CCal	1		TO15_205-13	7/25/13 13:08	DR1	
20602L.D	1487047	G/17870	LCS	1		TO15_205-13	7/25/13 13:08	DR1	
20603.D	0	G/	Sample	1		TO15_205-13	7/25/13 13:46	DR1	
20604.D	CERT	G/	Sample	1		TO15_205-13	7/25/13 14:17	DR1	
20605L.D	1487046	G/17870	Blank	1		TO15_205-13	7/25/13 14:47	CJR	
20605.D	BLANK	G/	Blank	1		TO15_205-13	7/25/13 14:47	CJR	
20606.D	92165855006	G/17861	Sample	1.39		TO15_205-13	7/25/13 15:37	CJR	
20607.D	92165855007	G/17861	Sample	3.36		TO15_205-13	7/25/13 16:07	CJR	
20608.D	92165165001	G/17861	Sample	9879.552		TO15_205-13	7/25/13 16:35	CJR	
20609.D	10235541011	G/17863	Sample	268.8		TO15_205-13	7/25/13 17:02	DR1	
20610.D	10235407018	G/17870	Sample	451.58		TO15_205-13	7/25/13 17:30	DR1	
20611.D	10235583003	G/17870	Sample	3.2592		TO15_205-13	7/25/13 18:00	DR1	
20612.D	10235583002	G/17870	Sample	60.48		TO15_205-13	7/25/13 18:28	DR1	
20613.D	10235583001	G/17870	Sample	36		TO15_205-13	7/25/13 18:56	DR1	
20614.D	10236055001	G/17870	Sample	1.74		TO15_205-13	7/25/13 19:27	DR1	
20615.D	10236055002	G/17870	Sample	18		TO15_205-13	7/25/13 19:55	DR1	
20616.D	10236207012	G/17870	Sample	1.55		TO15_205-13	7/25/13 20:25	DR1	
20617.D	1487813	G/17870	Duplicate	1.55		TO15_205-13	7/25/13 20:56	DR1	
20618.D	10236207005	G/17870	Sample	1.44		TO15_205-13	7/25/13 21:26	DR1	
20619.D	-DUP	G/17870	Duplicate	1.44		TO15_205-13	7/25/13 21:57	DR1	
20620.D	10236207011	G/17870	Sample	1.49		TO15_205-13	7/25/13 22:27	DR1	
20621.D	MISINJ	G/	Sample	1		TO15_205-13	7/25/13 22:58	DR1	
20622.D	10236207001	G/17870	Sample	1.44		TO15_205-13	7/25/13 23:29	DR1	
20623.D	10236207007	G/17870	Sample	1.44		TO15_205-13	7/25/13 23:59	DR1	
20624.D	10236207016	G/17870	Sample	1.49		TO15_205-13	7/26/13 00:30	DR1	
20625.D	10236207010	G/17870	Sample	1.44		TO15_205-13	7/26/13 01:00	DR1	
20626.D	10236207008	G/17870	Sample	1.49		TO15_205-13	7/26/13 01:31	DR1	
20627.D	10236207014	G/17870		1.61		TO15_205-13	7/26/13 02:01	DR1	
20628.D	10236207006	G/17870	Sample	1.44		TO15_205-13	7/26/13 02:32	DR1	
20629.D	10236207009	G/17870	Sample	1.44		TO15_205-13	7/26/13 03:02	DR1	
20630.D	10236207013	G/17870	Sample	1.49		TO15_205-13	7/26/13 03:33	DR1	
20631.D	10236207003	G/17870	Sample	1.49		TO15_205-13	7/26/13 04:03	DR1	
20632.D	10236207004	G/17870	Sample	1.49		TO15_205-13	7/26/13 04:34	DR1	
20633.D	10236207015	G/17870	Sample	1.44		TO15_205-13	7/26/13 05:04	DR1	
20634.D	10236207002	G/17870	Sample	1.44		TO15_205-13	7/26/13 05:34	DR1	
20635.D	0	G/	Sample	1		TO15_205-13	7/26/13 07:23	DR1	
20636.D	CERT	G/	Sample	1		TO15_205-13	7/26/13 07:53	DR1	
20637.D	CERT	G/	Sample	1		TO15_205-13	7/26/13 08:24	DR1	
20638.D	CERT	G/	Sample	1		TO15_205-13	7/26/13 08:54	DR1	
20639.D	CERT	G/	Sample	1		TO15_205-13	7/26/13 09:25	DR1	
20640.D	CERT	G/	Sample	1		TO15_205-13	7/26/13 09:55	DR1	
20641.D	10235583003	G/17870	Sample	32.592		TO15_205-13	7/26/13 10:22	DR1	

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Pace Analytical

**Instrument Run Log** 

Misc. Prep. Info: Instrument: 10AIRD Method:

Surrogate Lot: 8137-92-17 Cal. Standard: 8137-94-5 Column: J&W DB-5 0.32mm Helium Tune Standard: 8137-92-17 ISTD Lot: 8137-92-17

Path/File Lab ID Matrix/Batch Type pH Method Date & Time Oper. Comments

Check Maintenance Items Performed:

Changed septum Cleaned liner Replaced/Cleaned gold seal Additional Comments:

Clipped column Changed trap - Lot # Cleaned MS Source

Changed column - Lot # Other minor parts replaced No maintenance performed today

File Path 1: U:\10AIRD.I\072513.B\

Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 07/26/2013 11:20

Reviewed By/Date:



Instrument: 10AIRD Method: Misc. Prep. Info: Surrogate Lot: 8137-92-17 Column: J&W DB-5 0.32mm Helium Tune Standard: 8137-92-17 ISTD Lot: 8137-92-17 Cal. Standard: 8137-94-5

Path/File	Lab ID	Matrix/Batch	Туре	DF	рН	Method	Date & Time	Oper.	Comments
20701BFB.D	BFB	L/	Tune	1		50NG_BFB	7/26/13 10:59	DR1	
20702A.D	1488129	G/17877	LCS	1		TO15_205-13	7/26/13 11:27	DR1	
20702.D	CCAL	G/	CCal	1		TO15_205-13	7/26/13 11:27	DR1	
20702L.D	1488123	G/17876	LCS	1		TO15_205-13	7/26/13 11:27	DR1	
20703.D	0	G/	Sample	1		TO15_205-13	7/26/13 12:06	DR1	
20704.D	IC	G/	Sample	1		TO15_205-13	7/26/13 12:37	DR1	
20705.D	IC	G/	Sample	1		TO15_205-13	7/26/13 13:07	DR1	
20706A.D	1488128	G/17877	Blank	1		TO15_205-13	7/26/13 13:38	DR1	
20706.D	IC	G/	Sample	1		TO15_205-13	7/26/13 13:38	DR1	
20706L.D	1488122	G/17876	Blank	1		TO15_205-13	7/26/13 13:38	DR1	
20707.D	10236207001	G/17876	Sample	1.44		TO15_205-13	7/26/13 14:08	DR1	
20708.D	10236207003	G/17876	Sample	1.9966		TO15_205-13	7/26/13 14:39	DR1	
20709.D	5083964003	G/17876	Sample	1.49		TO15_205-13	7/26/13 15:10	DR1	
20710.D	-DUP	G/17876	Duplicate	1.49		TO15_205-13	7/26/13 15:40	DR1	
20711.D	5083964004	G/17876	Sample	1.61		TO15_205-13	7/26/13 16:11	DR1	
20712.D	1489056	G/17876	Duplicate	1.61		TO15_205-13	7/26/13 16:41	DR1	
20713.D	5083964002	G/17876	Sample	1.55		TO15_205-13	7/26/13 17:11	DR1	
20714.D	5083964005	G/17876	Sample	1.61		TO15_205-13	7/26/13 17:42	DR1	
20715.D	5083964001	G/17876	Sample	1.55		TO15_205-13	7/26/13 18:12	DR1	
20716.D	10236154001	G/17876	Sample	1.55		TO15_205-13	7/26/13 18:43	DR1	
20717.D	10235747001	G/17876	Sample	1.44		TO15_205-13	7/26/13 19:13	DR1	
20718.D	60149323002	G/17876	Sample	2.88		TO15_205-13	7/26/13 19:44	DR1	
20719.D	60149323004	G/17876	Sample	3.36		TO15_205-13	7/26/13 20:14	DR1	
20720.D	60149323003	G/17876	Sample	2.52		TO15_205-13	7/26/13 20:45	DR1	
20721.D	60149323001	G/17876	Sample	1.61		TO15_205-13	7/26/13 21:15	DR1	
20722.D	10235724004	G/17876	Sample	2.24		TO15_205-13	7/26/13 21:45	DR1	
20723.D	10235724003	G/17876	Sample	1.75		TO15_205-13	7/26/13 22:16	DR1	
20724.D	10235724002	G/17876	Sample	1.44		TO15_205-13	7/26/13 22:46	DR1	
20725.D	10235724001	G/17876	Sample	1.49		TO15_205-13	7/26/13 23:17	DR1	
20726.D	92166053002	G/17877	Sample	5427.2		TO15_205-13	7/26/13 23:44	DR1	
20727.D	92166053001	G/17877	Sample	4684.8		TO15_205-13	7/27/13 00:12	DR1	
20728.D	92165843014	G/17877	Sample	28.8		TO15_205-13	7/27/13 00:40	DR1	

Check Maintenance Items Performed:

Changed septum Clipped column
Cleaned liner Changed trap - Lot #
Replaced/Cleaned gold seal Cleaned MS Source

Changed column - Lot #
Other minor parts replaced
No maintenance performed today

Additional Comments:

File Path 1: U:\10AIRD.I\072613.B\

Matrix Codes: [G]as, [L]iquid, [S]olid, [N]one

Run order verified:

Report Date: 07/29/2013 10:02

Reviewed By/Date:

10236207 34 of 1066

### Pace Analytical Services, Inc.

### INITIAL CALIBRATION DATA

Start Cal Date : 24-JUL-2013 14:12
End Cal Date : 24-JUL-2013 16:39
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\\chem\\10airD.i\\072413.b\\T015\_205-13.m
Last Edit : 25-Jul-2013 07:24 drandall

Calibration File Names:
Level 1: \\192.168.10.12\chem\10airD.i\072413.b\20504.d
Level 2: \\192.168.10.12\chem\10airD.i\072413.b\20505.d
Level 3: \\192.168.10.12\chem\10airD.i\072413.b\20506.d
Level 4: \\192.168.10.12\chem\10airD.i\072413.b\20507.d
Level 5: \\192.168.10.12\chem\10airD.i\072413.b\20508.d
Level 6: \\192.168.10.12\chem\10airD.i\072413.b\20509.d

	0	0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Co	efficients		%RSD
Compound		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6  Curve	ь	m1	m2	or R^2
							-				= ======
1 Propylene		598	1467	6143	71678	157114	250479 LINR	0.01178	0.12694		0.99975
2 Dichlorodifluoromethane		1.43246	1.32113	1.22674	1.14182	1.09950	1.07322 AVRG	1	1.21581		11.48450
3 Dichlorotetrafluoroethane		1.11341	1.06704	0.95137	0.93521	0.90890	0.88582 AVRG		0.97696		9.38917
4 Chloromethane	- 1	0.31940	0.29952	0.26705	0.26552	0.25638	0.25767 AVRG	1	0.27759		9.30020
5 Vinyl chloride	- 1	0.31750	0.30128	0.25711	0.26370	0.25834	0.26285 AVRG	1	0.27680		9.35276
6 1,3-Butadiene	1	0.16194	0.17560	0.15335	0.15959	0.16383	0.16597 AVRG		0.16338		4.52467
7 Bromomethane		0.40114	0.37484	0.33324	0.32543	0.31711	0.33977 AVRG	1	0.34859		9.33181
8 Chloroethane	- 1	0.16090	0.15011	0.13470	0.13144	0.13322	0.13911 AVRG		0.14158		8.19071
9 Ethanol	- 1	+++++	0.17340	0.14098	0.13185	0.14137	0.13662 AVRG		0.14485		11.33865
10 Vinyl Bromide	- 1	0.41645	0.35630	0.31628	0.32922	0.32382	0.32603 AVRG		0.34468		10.94397
11 Acrolein	- 1	363	810	4505	54068	119156	186644 LINR	0.01058	0.09508		0.99996
12 Trichlorofluoromethane	- 1	1.61247	1.49119	1.29644	1.26067	1.16852	1.10598 AVRG		1.32254		14.64731
13 Acetone	- 1	1.02754	0.71171	0.60438	0.56416	0.54027	0.52960 AVRG	1	0.66294		28.72546
14 Isopropyl Alcohol	- 1	0.55980	0.44585	0.37839	0.42507	0.40480	0.39495 AVRG	1	0.43481		15.08550
		1	1		1		1 1	1	1		1

### Pace Analytical Services, Inc.

### INITIAL CALIBRATION DATA

Start Cal Date : 24-JUL-2013 14:12
End Cal Date : 24-JUL-2013 16:39
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE : \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m
Last Edit : 25-Jul-2013 07:24 drandall

_		(	0.10000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Co	efficients		%RSD
ŀ	Compound	1	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6  Curve	b	m1	m2	or R^2
	15 1,1-Dichloroethene		0.69524	0.61381	0.56027	0.57962	0.54206	0.53803 AVRG		0.58817		10.09075
	16 Acrylonitrile	1	849	1826	9857	115367	241605	391459 LINR	0.00921	0.19772		0.99939
	17 Tert Butyl Alcohol		0.91482	0.69932	0.63043	0.65700	0.64368	0.62771 AVRG	1	0.69550		15.89595
	18 Freon 113	- 1	1.05094	0.96017	0.85709	0.84408	0.79934	0.78398 AVRG	1	0.88260		11.68176
	19 Methylene chloride	- 1	+++++	0.48865	0.36844	0.35064	0.33361	0.33667 AVRG	1	0.37560		17.22004
	20 Allyl Chloride		0.13629	0.12876	0.13554	0.14859	0.14622	0.15018 AVRG	1	0.14093		6.11285
	21 Carbon Disulfide		1.43900	1.13586	0.97937	1.02953	0.97719	0.99714 AVRG	1	1.09302		16.42210
	22 trans-1,2-dichloroethene	- 1	0.40165	0.39391	0.35093	0.37957	0.36926	0.37201 AVRG	1	0.37789		4.82214
	23 Methyl Tert Butyl Ether	- 1	1.07521	0.76673	0.85830	0.95677	0.96146	0.97525 AVRG	1	0.93229		11.41282
	24 Vinyl Acetate	- 1	3142	6380	32699	416883	905164	1398540 LINR	0.00496	0.71491		0.99995
1	25 1,1-Dichloroethane		0.70487	0.70266	0.62701	0.65432	0.63050	0.61784 AVRG	1	0.65620		5.90805
	27 Methyl Ethyl Ketone		0.15832	0.13227	0.14470	0.16617	0.15913	0.16031 AVRG	1	0.15348		8.18968
	28 n-Hexane		0.47376	0.47204	0.42595	0.43358	0.40785	0.42071 AVRG	1	0.43898		6.28412
1	29 cis-1,2-Dichloroethene	- 1	1627	3243	16249	190331	428292	707334 LINR	0.02871	0.35638		0.99840
1	30 Ethyl Acetate	- 1	2362	3382	21971	272944	634668	1019802 LINR	0.02944	0.51752		0.99906
1	31 Chloroform		0.86922	0.81173	0.75122	0.81969	0.81704	0.83396 AVRG	1	0.81714		4.70047
	32 Tetrahydrofuran		496	899	6892	108934	244926	406611 LINR	0.03952	0.20548		0.99828
1	33 1,1,1-Trichloroethane		0.87541	0.81208	0.82264	0.92208	0.91288	0.91132 AVRG	1	0.87607		5.51314
1	34 1,2-Dichloroethane	- 1	0.64223	0.57320	0.55849	0.64167	0.61406	0.61121 AVRG	1	0.60681		5.71153
1	35 Benzene	- 1	3866	6919	35586	484923	1114889	1855595 LINR	0.03936	0.93578		0.99779
1	36 Carbon tetrachloride	1	0.96077	0.91675	0.88117	1.00998	0.95921	0.91712 AVRG	1	0.94083		4.80517
1	37 Cyclohexane		1091	2029	12525	178983	425277	704383 LINR	0.04622	0.35619		0.99752
1				1			1		1	1		11

### Pace Analytical Services, Inc.

### INITIAL CALIBRATION DATA

Start Cal Date : 24-JUL-2013 14:12
End Cal Date : 24-JUL-2013 16:39
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE : \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m
Last Edit : 25-Jul-2013 07:24 drandall

1		0.1000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Co	efficients		%RSD
1	Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6  Curve	b	m1	m2	or R^2
	39 2,2,4-Trimethylpentane	3648			560310	1296294	2147818 LINR	0.03967	1.08443		0.99794
	40 Heptane	933	3  1829	13056	180631	425068	703828 LINR	0.04426	0.35581		0.99772
	41 1,2-Dichloropropane	1161	.  2299	11313	146979	339638	561074 LINR	0.03676	0.28321		0.99807
	42 Trichloroethene	1310	2666	13513	189383	456634	772238 LINR	0.05412	0.38914		0.99596
	43 1,4-Dioxane	115	5  261	5139	88039	205659	325591 LINR	0.03657	0.16650		0.99943
	44 Bromodichloromethane	4590	8253	43225	537547	1161953	1833083 LINR	0.00896	0.93207		0.99992
- 1	45 Methyl Isobutyl Ketone	1457	7  2363	16374	268956	615766	1009496 LINR	0.03942	0.51160		0.99861
	46 cis-1,3-Dichloropropene	1505	5  2984	19995	281800	633437	1040841 LINR	0.03346	0.52632		0.99872
	47 trans-1,3-Dichloropropene	1295	5  2580	17366	319593	735267	1194806 LINR	0.04005	0.60720		0.99889
	49 Toluene	4344	7427	42639	624331	1475852	2421853 LINR	0.04255	1.22656		0.99805
	50 1,1,2-Trichloroethane	1705	3196	16004	218875	509640	838093 LINR	0.03816	0.42372		0.99817
	51 Methyl Butyl Ketone	861	.  1784	14464	268647	605329	998198 LINR	0.03306	1.30701		0.99938
- 1	52 Dibromochloromethane	2691	.  5177	29111	413209	928734	1468306 LINR	0.01262	1.93390		0.99986
- 1	53 1,2-Dibromoethane	2229	3897	23125	341622	786329	1277318 LINR	0.02598	1.67375		0.99944
	54 Tetrachloroethene	2078	3660	20377	309066	740015	1219067 LINR	0.03791	1.59481		0.99846
	56 Chlorobenzene	3413	5466	29337	407316	957687	1594094 LINR	0.03465	2.07757		0.99840
	57 Ethyl Benzene	3265	5838	47007	804065	1848303	3011647 LINR	0.03156	3.95191		0.99943
	58 m&p-Xylene	2647	4157	38768	647710	1467337	2396346 LINR	0.02928	3.14174		0.99955
	59 Bromoform	3066	6  4685	26790	435698	999486	1614133 LINR	0.02565	2.11935		0.99957
	60 Styrene	1161	.  2016	20488	412859	959097	1618524 LINR	0.04725	2.11282		0.99820
	61 o-Xylene	1 2665	5  4816	44715	687174	1539287	2464397 LINR	0.01991	3.24224		0.99988
	62 1,1,2,2-Tetrachloroethane	3123	5330	25903	391648	881865	1439646 LINR	0.02235	1.88281		0.99956
			11			1			1_		_11

### Pace Analytical Services, Inc.

### INITIAL CALIBRATION DATA

Start Cal Date : 24-JUL-2013 14:12
End Cal Date : 24-JUL-2013 16:39
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m
Last Edit : 25-Jul-2013 07:24 drandall

1		(	0.10000000	0.2000000	1.0000	10.0000	20.0000	30.0000	Co	efficients		%RSD
	Compound		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6  Curve	b	m1	m2	or R^2
	63 Isopropylbenzene	-	5790	1	52278	851143	1944777	3146350 LINR	0.02562	4.12955		0.99959
1	64 N-Propylbenzene		3862	5957	53920	1024653	2328723	3774204 LINR	0.03032	4.96212	1	0.99963
	65 4-Ethyltoluene		2549	4151	41970	781913	1819880	2938195 LINR	0.03372	3.86831	1	0.99944
	66 1,3,5-Trimethylbenzene	1	2418	4492	40316	697148	1587896	2587970 LINR	0.03055	3.39602	1	0.99954
	67 1,2,4-Trimethylbenzene		1655	3040	28266	656662	1531165	2499072 LINR	0.04064	3.28754	1	0.99921
	68 1,3-Dichlorobenzene	- [	1991	3029	20428	395622	937380	1545425 LINR	0.04208	2.02585	1	0.99868
	69 Sec- Butylbenzene	- 1	2907	5351	49537	931653	2122231	3461034 LINR	0.03252	4.54449	1	0.99952
	71 Benzyl Chloride	1	2868	4461	26556	569442	1311772	2162623 LINR	0.03829	2.83460	1	0.99909
	72 1,4-Dichlorobenzene		2775	4268	22882	384440	904829	1513446 LINR	0.04096	1.97456	1	0.99824
1	73 1,2-Dichlorobenzene	- 1	1775	2665	16908	330351	775997	1275151 LINR	0.03946	1.67222	1	0.99891
	74 N-Butylbenzene	- 1	1934	3605	38681	720417	1634656	2639238 LINR	0.02928	3.47325	1	0.99971
	75 1,2,4-Trichlorobenzene	- 1	1081	1682	10899	208176	551490	940377 QUAD	0.02914	1.01334	-0.05787	0.99878
	76 Naphthalene	- 1	927	1699	13607	319830	852884	1458422 QUAD	0.03500	0.65478	-0.02448	0.99870
ŀ	77 Hexachlorobutadiene	-	2045	3393	17285	239804	607525	1000076 LINR	0.04565	1.30960	- 1	0.99712
==	26 Hexane-d14(S)		0.49106	0.488921	0.486691	0.482851	0.47958	0.46826 AVRG		0.482891		1.71410
1\$	48 Toluene-d8 (S)	i	0.657571	0.67014	0.684421	0.729901	0.71034	0.73800 AVRG	i	0.698401	i	4.69008
\$	70 1,4-dichlorobenzene-d4 (S)	i	0.36999	0.34931	0.41300	0.42277	0.44335	0.42345 AVRG	i	0.40365	i	8.93768
				1		1						

### Pace Analytical Services, Inc.

### INITIAL CALIBRATION DATA

Start Cal Date : 24-JUL-2013 14:12
End Cal Date : 24-JUL-2013 16:39
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m
Last Edit : 25-Jul-2013 07:24 drandall

|Average %RSD Results. |Calculated Average %RSD = 22.19441 |Maximun Average %RSD = 40.00000 |\* Passed Average %RSD Test.

1	Curve	Formula	I	Units	I
	-		=		I
1	Averaged   .	Amt = Rsp/m1	Ĺ	Response	ĺ
1	Linear   .	Amt = b + Rsp/m1	ĺ	Response	ĺ
1	Quad   .	$Amt = b + m1*Rsp + m2*Rsp^2$	ĺ	Response	ĺ
1	I		Ĺ		ĺ

Report Date: 25-Jul-2013 07:28

### Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072413.b\20504.d

Lab Smp Id: CAL1
Inj Date : 24-JUL-2013 14:12
Operator : DR1 Inst ID: 10airD.i

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\\chem\\10airD.i\\072413.b\\T015 205-13.m

Meth Date : 25-Jul-2013 07:24 drandall Quant Type: ISTD

Cal Date : 24-JUL-2013 14:12 Cal File: 20504.d

Calibration Sample, Level: 1

Als bottle: 4
Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

### Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf Cpnd Variable	1.000	Dilution Factor ng unit correction factor Local Compound Variable

						AMOUN	TS
	QUANT SIG					CAL-AMT	ON-COL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)
	====	====	=======	= =======		======	======
1 Propylene	41	2.988	2.988	(0.491)	598	0.10000	0.0866(M)
2 Dichlorodifluoromethane	85	3.011	3.011	(0.495)	8324	0.10000	0.118
3 Dichlorotetrafluoroethane	85	3.103	3.103	(0.510)	6470	0.10000	0.114
4 Chloromethane	50	3.106	3.106	(0.510)	1856	0.10000	0.115(M)
5 Vinyl chloride	62	3.195	3.195	(0.525)	1845	0.10000	0.115(M)
6 1,3-Butadiene	54	3.234	3.234	(0.531)	941	0.10000	0.0991
7 Bromomethane	94	3.398	3.398	(0.558)	2331	0.10000	0.115(M)
8 Chloroethane	64	3.447	3.447	(0.566)	935	0.10000	0.100(M)
9 Ethanol	31	3.529	3.529	(0.580)	1615	0.10000	0.162(M)
10 Vinyl Bromide	106	3.581	3.581	(0.588)	2420	0.10000	0.121(M)
11 Acrolein	56	3.722	3.722	(0.612)	363	0.10000	0.0817(M)
12 Trichlorofluoromethane	101	3.696	3.696	(0.607)	9370	0.10000	0.122(M)
13 Acetone	43	3.782	3.782	(0.621)	5971	0.10000	0.161(M)
14 Isopropyl Alcohol	45	3.785	3.785	(0.622)	3253	0.10000	0.132(M)
15 1,1-Dichloroethene	61	3.982	3.982	(0.654)	4040	0.10000	0.118
16 Acrylonitrile	53	4.034	4.034	(0.663)	849	0.10000	0.101(M)
17 Tert Butyl Alcohol	59	4.008	4.008	(0.658)	5316	0.10000	0.100(M)
18 Freon 113	101	4.034	4.034	(0.663)	6107	0.10000	0.119
19 Methylene chloride	49	4.096	4.096	(0.673)	3700	0.10000	0.152
20 Allyl Chloride	76	4.109	4.109	(0.675)	792	0.10000	0.0938(M)
21 Carbon Disulfide	76	4.231	4.231	(0.695)	8362	0.10000	0.132(M)
22 trans-1,2-dichloroethene	96	4.421	4.421	(0.726)	2334	0.10000	0.106(M)
23 Methyl Tert Butyl Ether	73	4.477	4.477	(0.735)	6248	0.10000	0.100

### Data File: $\192.168.10.12\chem\10airD.i\072413.b\20504.d$ Report Date: 25-Jul-2013 07:28

							AMOUN	ITS	
		QUANT SIG					CAL-AMT	ON-COL	
Co	ompounds	MASS ====	RT ====	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)	
_	24 Vinyl Acetate	43	4.601		(0.756)	3142	0.10000	0.0805(M)	
	25 1,1-Dichloroethane	63	4.578		(0.752)	4096	0.10000	0.107	
Ş	26 Hexane-d14(S)	66	4.696		(0.772)	285354	10.0000	10.2	
	27 Methyl Ethyl Ketone	72	4.818		(0.792)	920	0.10000	0.114 (M)	
	28 n-Hexane	57	4.815		(0.791)	2753	0.10000	0.103	
	29 cis-1,2-Dichloroethene	96	4.972		(0.817)	1627	0.10000	0.0892	
	30 Ethyl Acetate	43	5.024		(0.825)	2362	0.10000	0.100(M)	
	31 Chloroform	83	5.110		(0.839)	5051	0.10000	0.106(M)	
	32 Tetrahydrofuran	42	5.352		(0.879)	496	0.10000	0.0535(M)	
	33 1,1,1-Trichloroethane	97	5.595		(0.919)	5087	0.10000	0.0999(M)	
	34 1,2-Dichloroethane	62	5.615		(0.922)	3732	0.10000	0.110(M)	
	35 Benzene	78	5.880		(0.966)	3866	0.10000	0.0873	
	36 Carbon tetrachloride	117	5.900		(0.969)	5583	0.10000	0.102	
	37 Cyclohexane	56	5.913		(0.971)	1091	0.10000	0.0630(M)	
*	38 1,4-Difluorobenzene	114	6.087		(1.000)	581097	10.0000	,	
	39 2,2,4-Trimethylpentane	57	6.261		(1.029)	3648	0.10000	0.0740(M)	
	40 Heptane	43	6.438		(1.058)	933	0.10000	0.0573(M)	
	41 1,2-Dichloropropane	63	6.503		(1.068)	1161	0.10000	0.100(M)	
	42 Trichloroethene	130	6.536		(1.074)	1310	0.10000	0.0788 (M)	
	43 1,4-Dioxane	88	6.730		(1.106)	115	0.10000	0.100(M)	
	44 Bromodichloromethane	83	6.648		(1.092)	4590	0.10000	0.0935	
	45 Methyl Isobutyl Ketone	43	7.241		(1.190)	1457	0.10000	0.0733(M)	
	46 cis-1,3-Dichloropropene	75	7.281		(1.196)	1505	0.10000	0.0648 (M)	
	47 trans-1,3-Dichloropropene	75	7.776		(1.277)	1295	0.10000	0.0490(M)	
\$	48 Toluene-d8 (S)	98	7.841		(1.288)	382112	10.0000	9.42	
7	49 Toluene	91	7.940		(1.304)	4344	0.10000	0.0795	
	50 1,1,2-Trichloroethane	97	7.940		(1.304)	1705	0.10000	0.0851(M)	
	51 Methyl Butyl Ketone	43	8.268		(0.853)	861	0.10000	0.0531 (M)	
	52 Dibromochloromethane	129	8.556		(0.883)	2691	0.10000	0.0904 (M)	
	53 1,2-Dibromoethane	107	8.825		(0.911)	2229	0.10000	0.0923	
	54 Tetrachloroethene	166	8.917		(0.920)	2078	0.10000	0.0902 (M)	
*	55 Chlorobenzene - d5	117	9.688		(1.000)	180160	10.0000	0 • 0 0 0 0 2 (1 1)	
	56 Chlorobenzene	112	9.733		(1.005)	3413	0.10000	0.104(M)	
	57 Ethyl Benzene	91	10.042		(1.037)	3265	0.10000	0.0577 (M)	
	58 m&p-Xylene	91	10.209		(1.054)	2647	0.10000	0.0646(M)	
	59 Bromoform	173	10.648		(1.099)	3066	0.10000	0.0966(M)	
	60 Styrene	104	10.711		(1.106)	1161	0.10000	0.0482 (M)	
	61 o-Xylene	91	10.786		(1.113)	2665	0.10000	0.0622 (M)	
	62 1,1,2,2-Tetrachloroethane	83	11.088		(1.145)	3123	0.10000	0.103	
	63 Isopropylbenzene	105	11.455		(1.182)	5790	0.10000	0.0945(M)	
	64 N-Propylbenzene	91		12.121		3862	0.10000	0.141(M)	
	65 4-Ethyltoluene	105		12.311		2549	0.10000	0.0479(M)	
	66 1,3,5-Trimethylbenzene	105		12.419		2418	0.10000	0.0554 (M)	
	67 1,2,4-Trimethylbenzene	105		13.013		1655	0.10000	0.0435(M)	
	68 1,3-Dichlorobenzene	146		13.373		1991	0.10000	0.0717 (M)	
	69 Sec- Butylbenzene	105		13.393		2907	0.10000	0.0514 (M)	
\$	70 1,4-dichlorobenzene-d4 (S)	150		13.449		66658	10.0000	8.44 (M)	
7	71 Benzyl Chloride	91		13.482		2868	0.10000	0.0805(M)	
	72 1,4-Dichlorobenzene	146		13.492		2775	0.10000	0.0970(M)	
	73 1,2-Dichlorobenzene	146		14.042		1775	0.10000	0.0970(M) 0.0821(M)	
	74 N-Butylbenzene	91		14.331		1934	0.10000	0.0462(M)	
	75 1,2,4-Trichlorobenzene	180		16.692		1934	0.10000	0.0462(M) 0.0668(M)	
	76 Naphthalene	128		16.873		927	0.10000	0.0405(M)	
	77 Hexachlorobutadiene	225		17.230		2045	0.10000	0.102 (M)	
	' , Hevaciiiotobafaateiie	220	11.430	11.430	(1.17)	2040	0.10000	0.102(M)	

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Data File:  $\192.168.10.12\chem\10airD.i\072413.b\20504.d$  Report Date: 25-Jul-2013 07:28

QC Flag Legend

M - Compound response manually integrated.

Report Date: 25-Jul-2013 07:28

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20504.d

Lab Smp Id: CAL1 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	=======	========	=======	========	=====
38 1,4-Difluorobenze	579775	347865	811685	581097	0.23
55 Chlorobenzene - d	221404	132842	309966	180160	-18.63

		RT 1	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.06
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	-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.

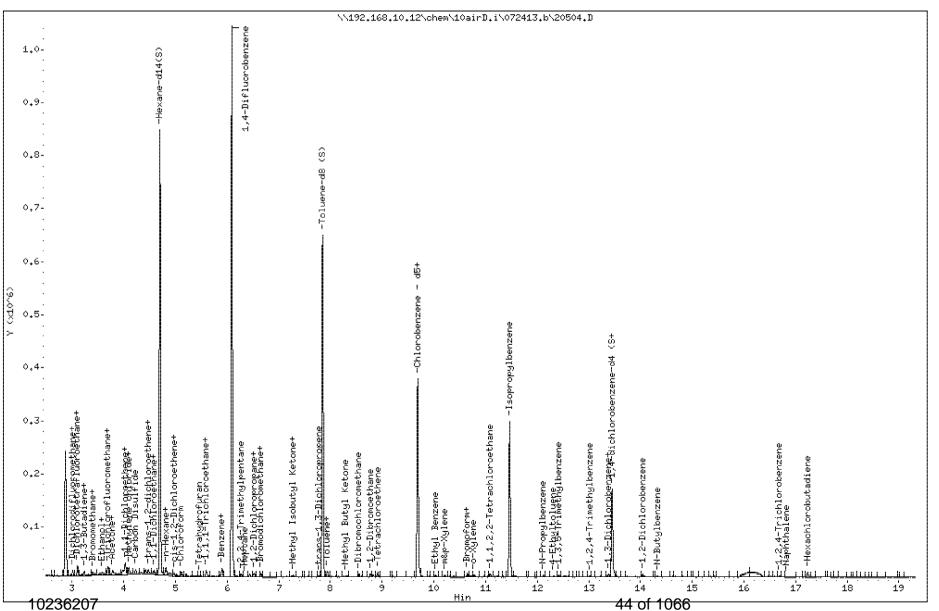
Data File: \\192,168,10,12\chem\10airD,i\072413,b\20504,D

Date : 24-JUL-2013 14:12

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

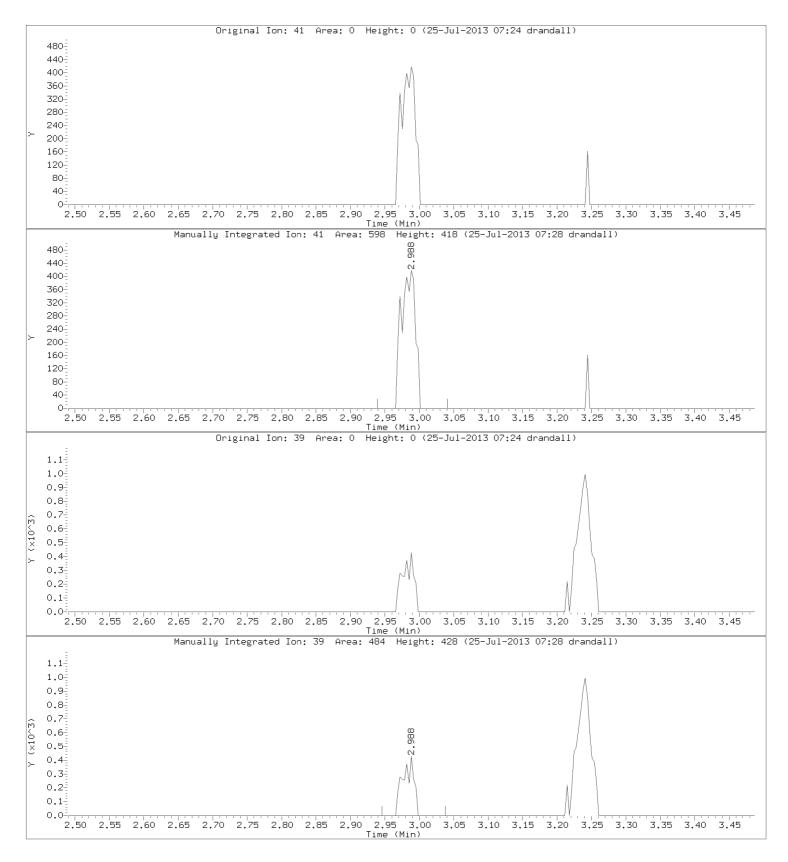
Column phase: J&W DB-5 Column diameter: 0,32



Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Propylene CAS Number: 76-14-2

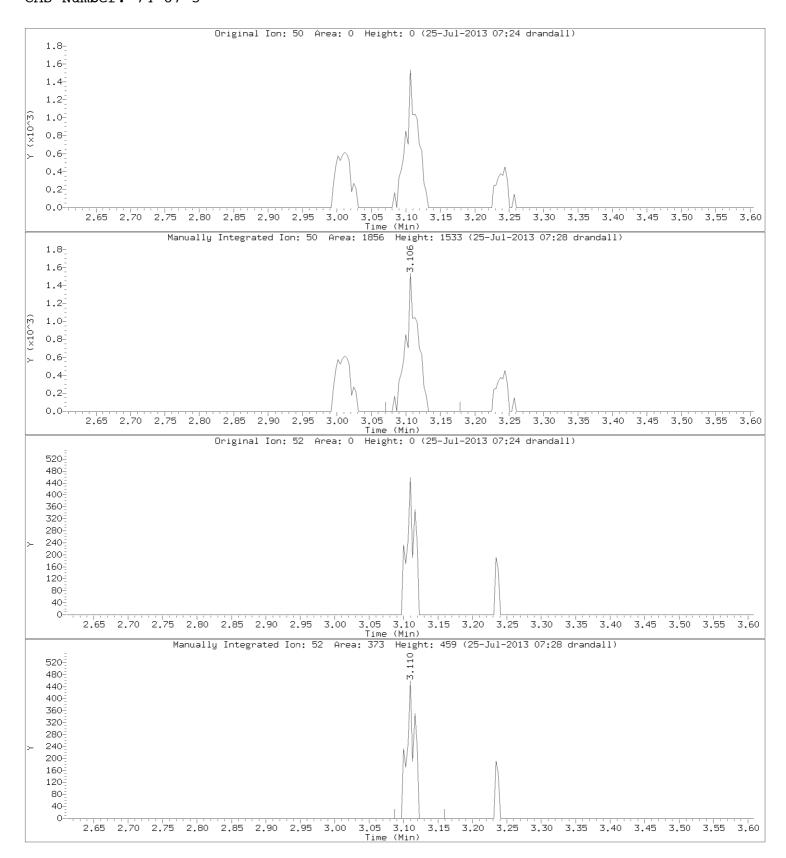


10236207 45 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Chloromethane CAS Number: 74-87-3



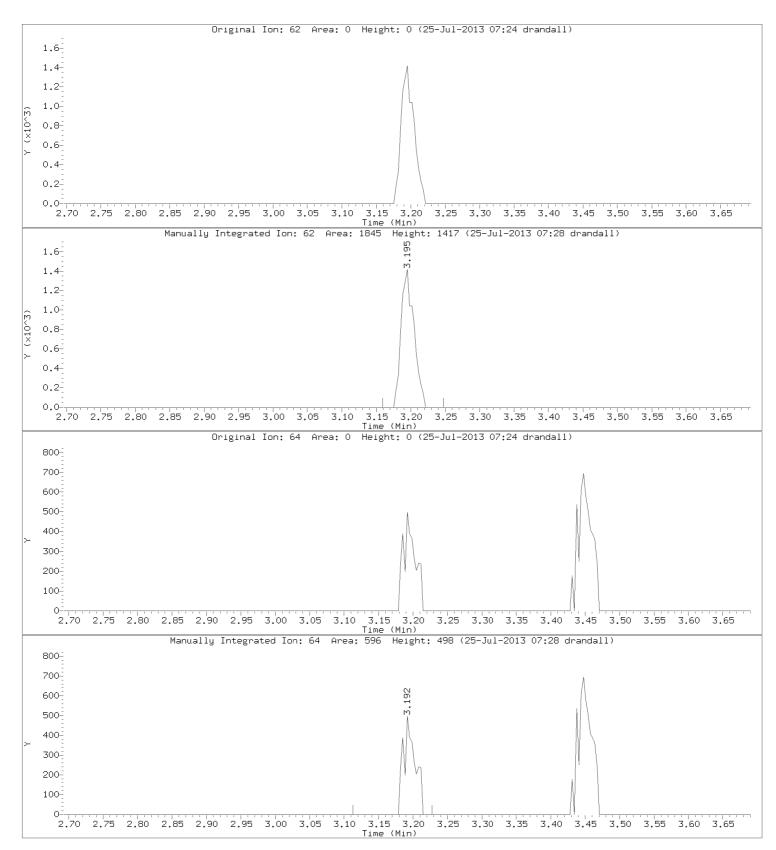
10236207 46 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Vinyl chloride

CAS Number: 75-01-4

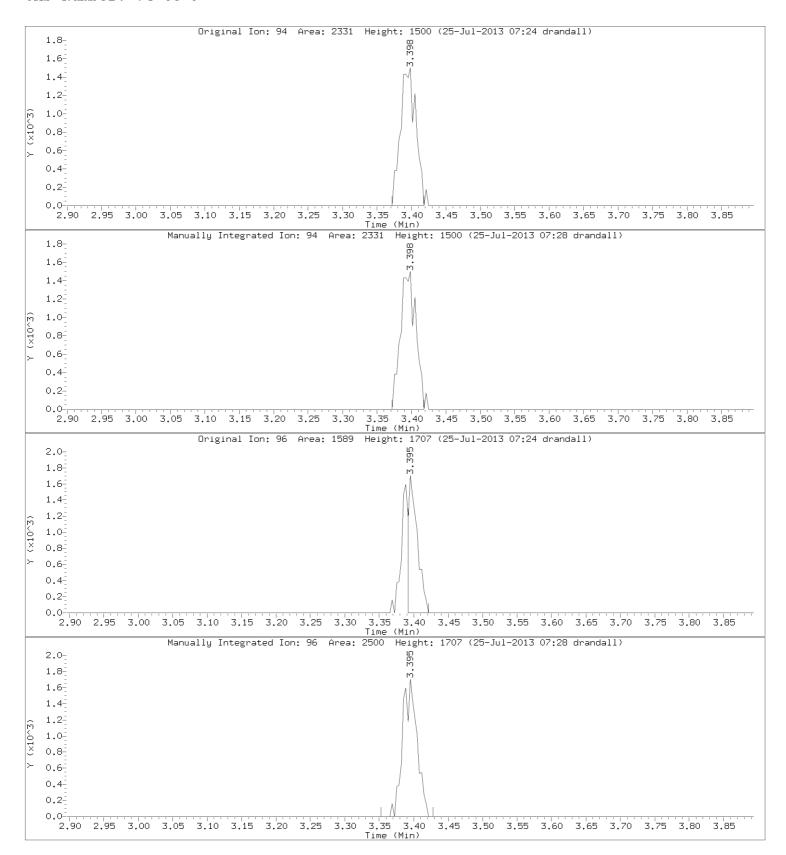


10236207 47 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Bromomethane CAS Number: 74-83-9

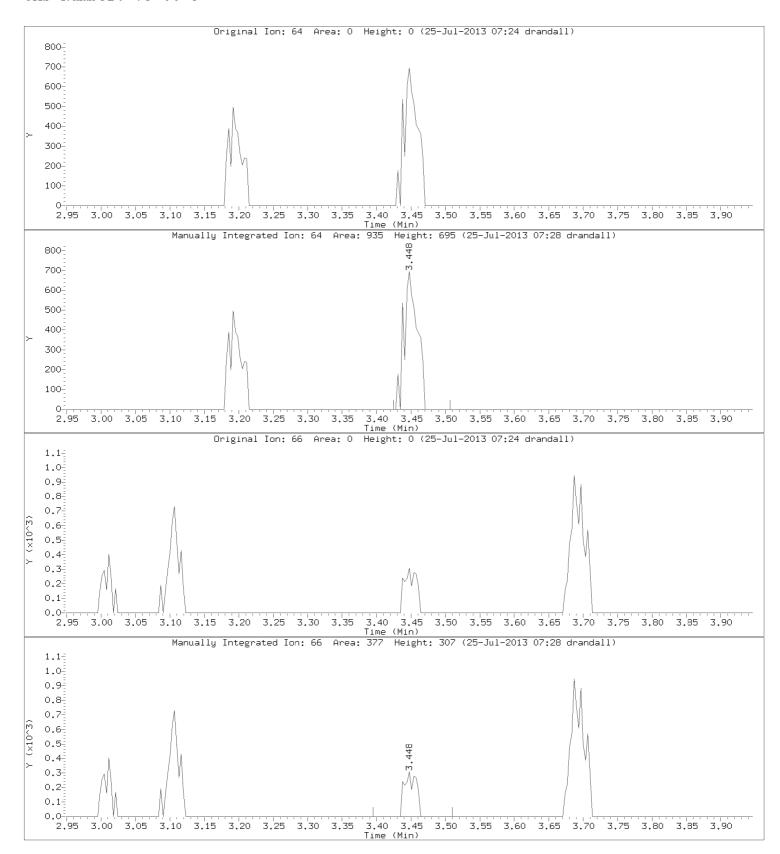


10236207 48 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Chloroethane CAS Number: 75-00-3

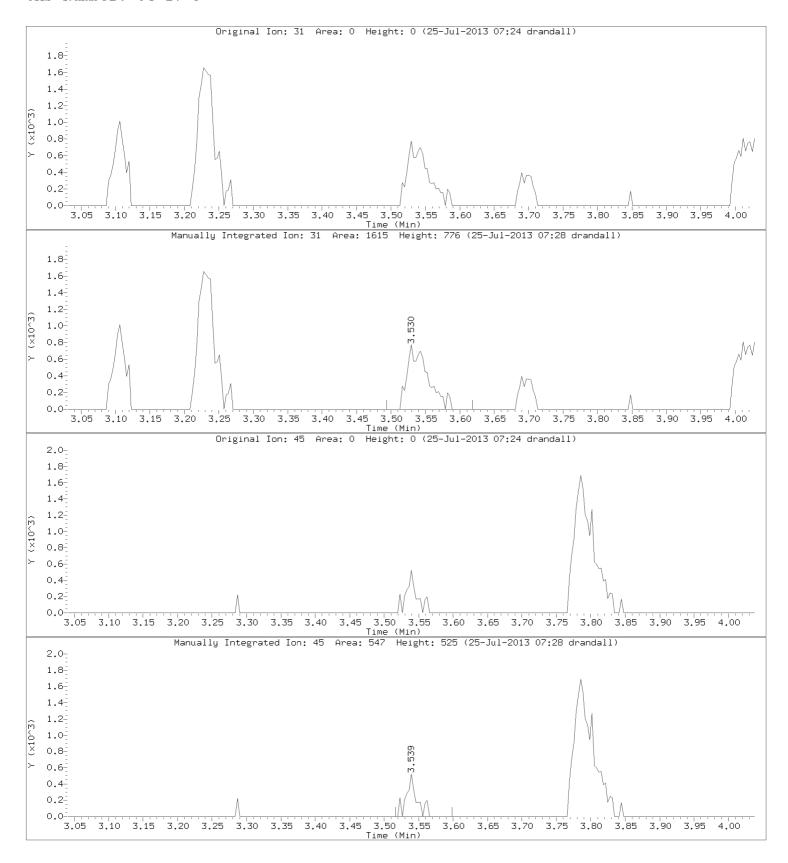


10236207 49 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Ethanol CAS Number: 64-17-5

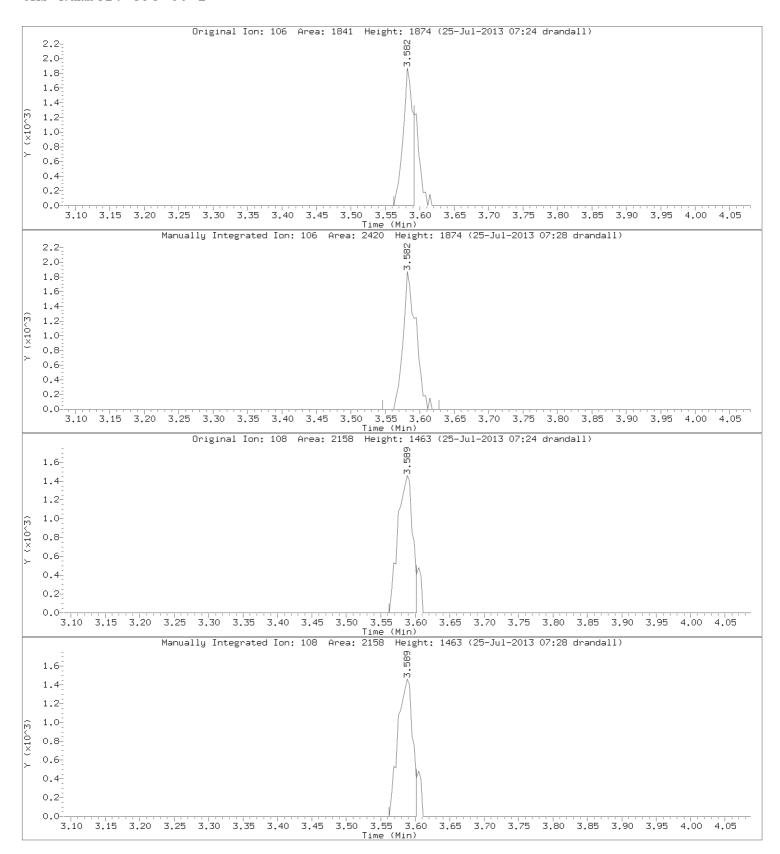


10236207 50 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Vinyl Bromide CAS Number: 593-60-2



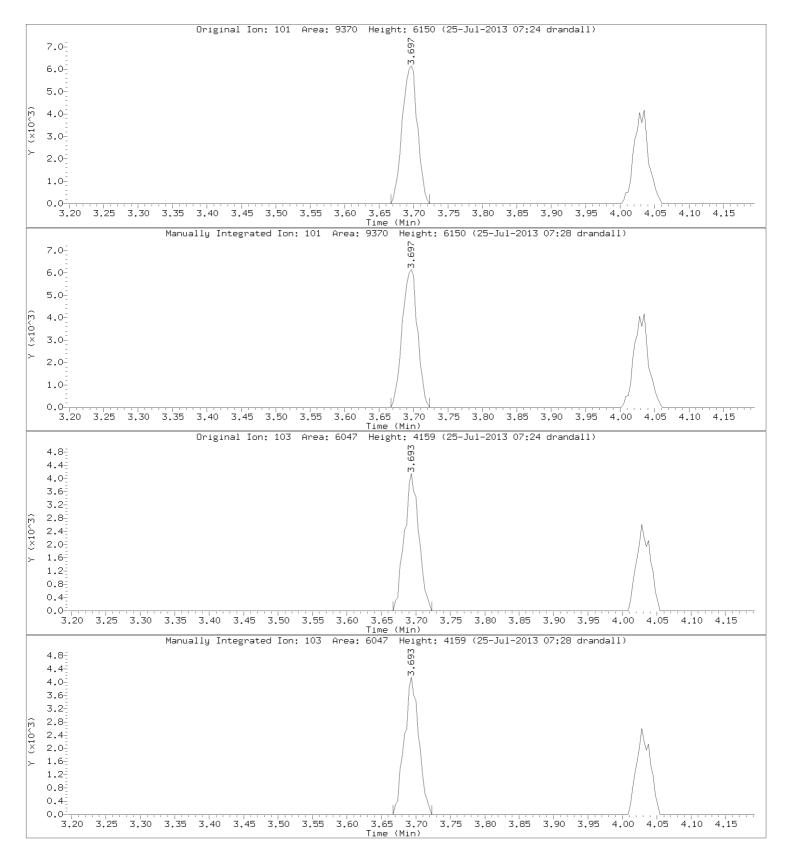
10236207 51 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Trichlorofluoromethane

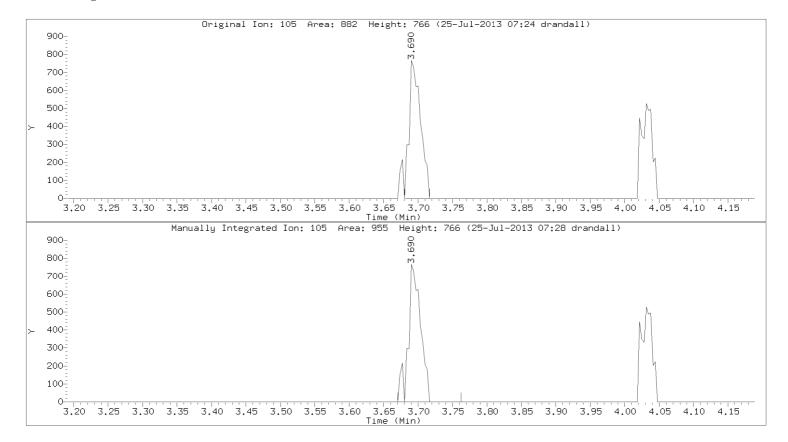
CAS Number: 75-69-4



10236207 52 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

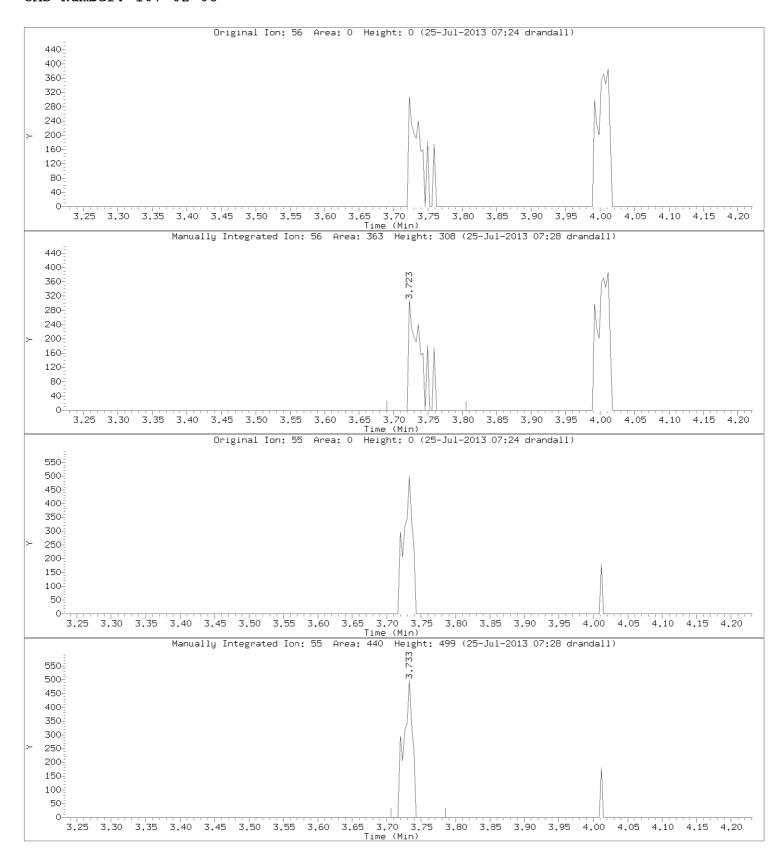


10236207 53 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Acrolein CAS Number: 107-02-08

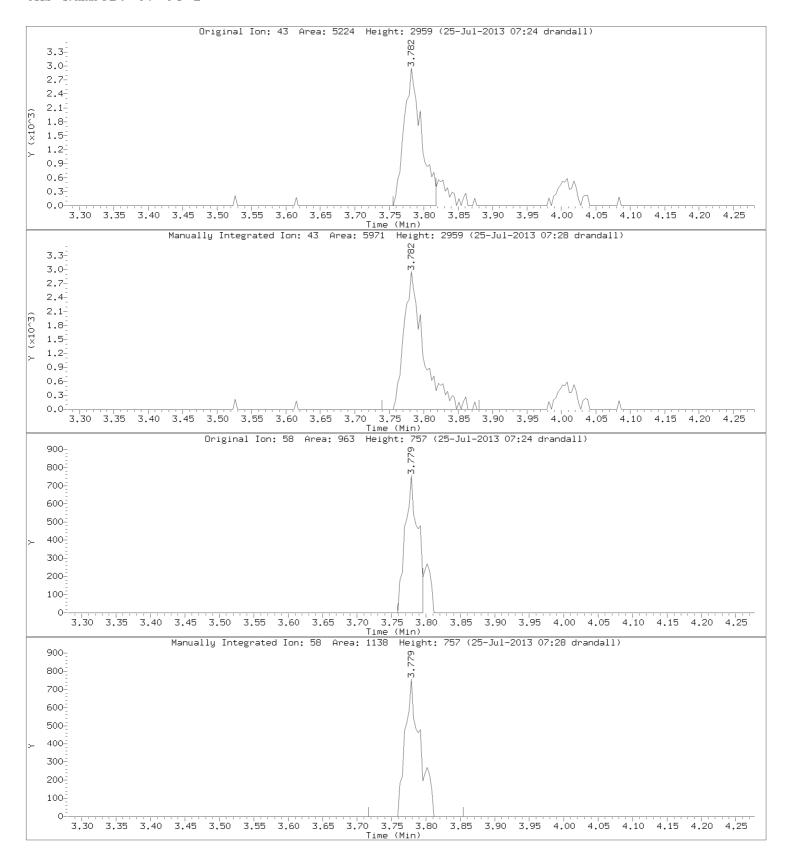


10236207 54 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Acetone CAS Number: 67-64-1



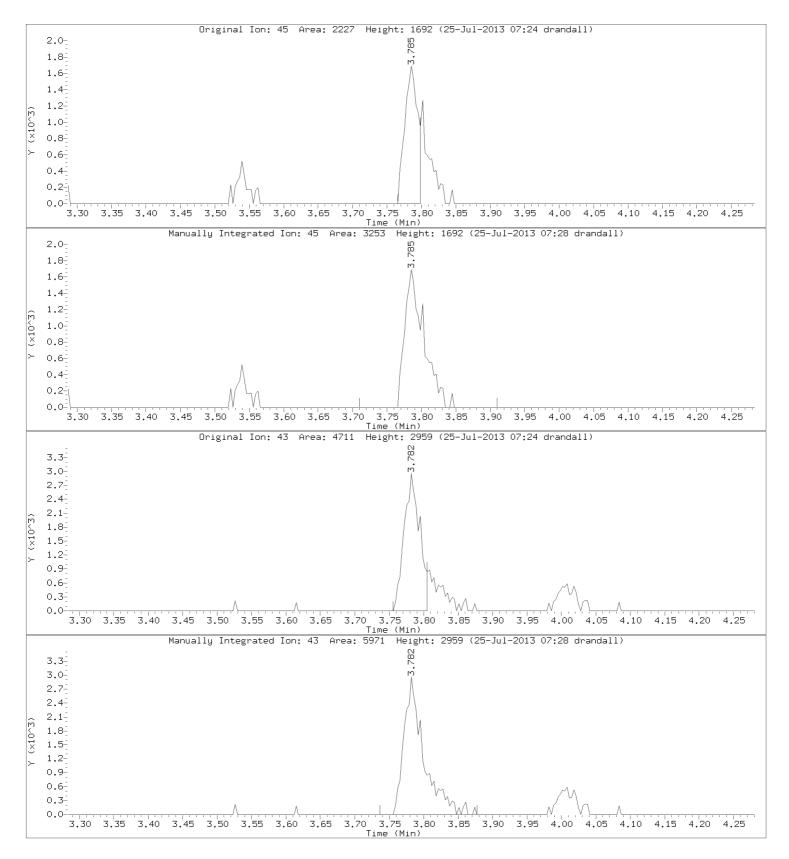
10236207 55 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Isopropyl Alcohol

CAS Number: 67-63-0



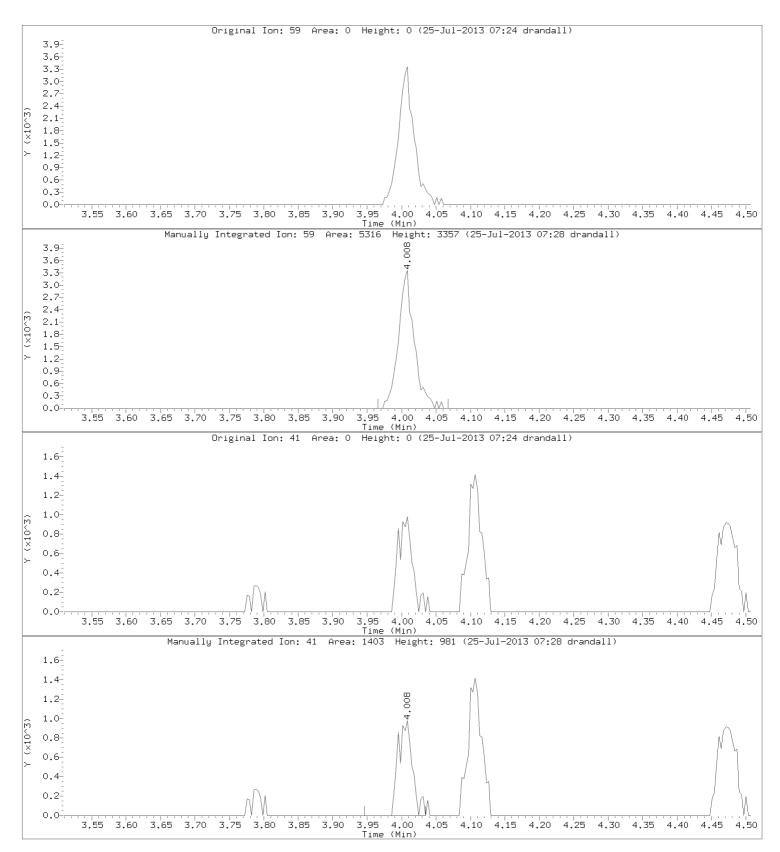
10236207 56 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0

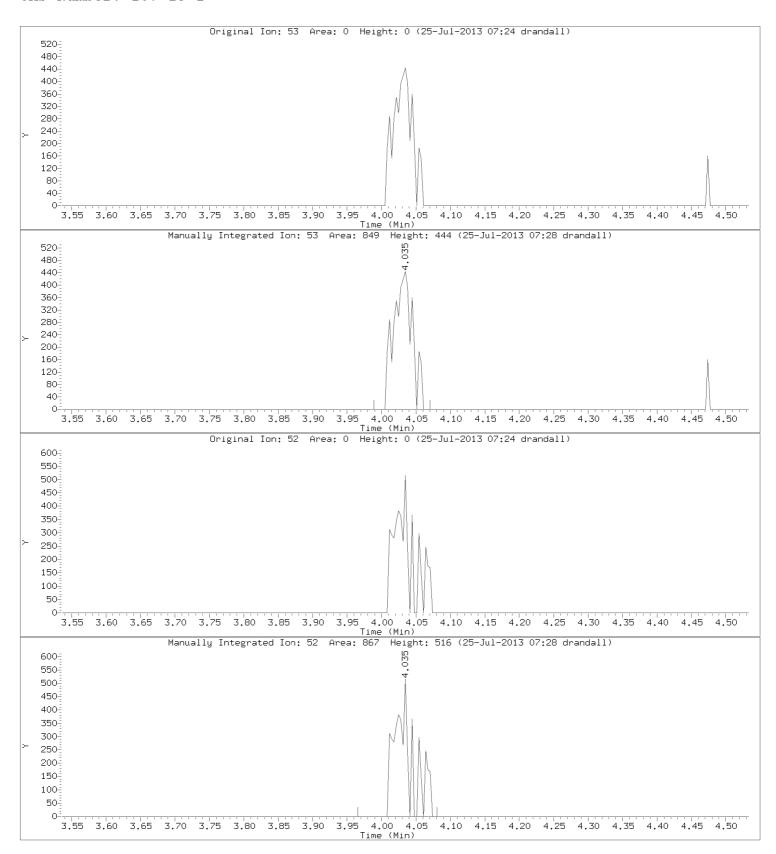


10236207 57 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Acrylonitrile CAS Number: 107-13-1

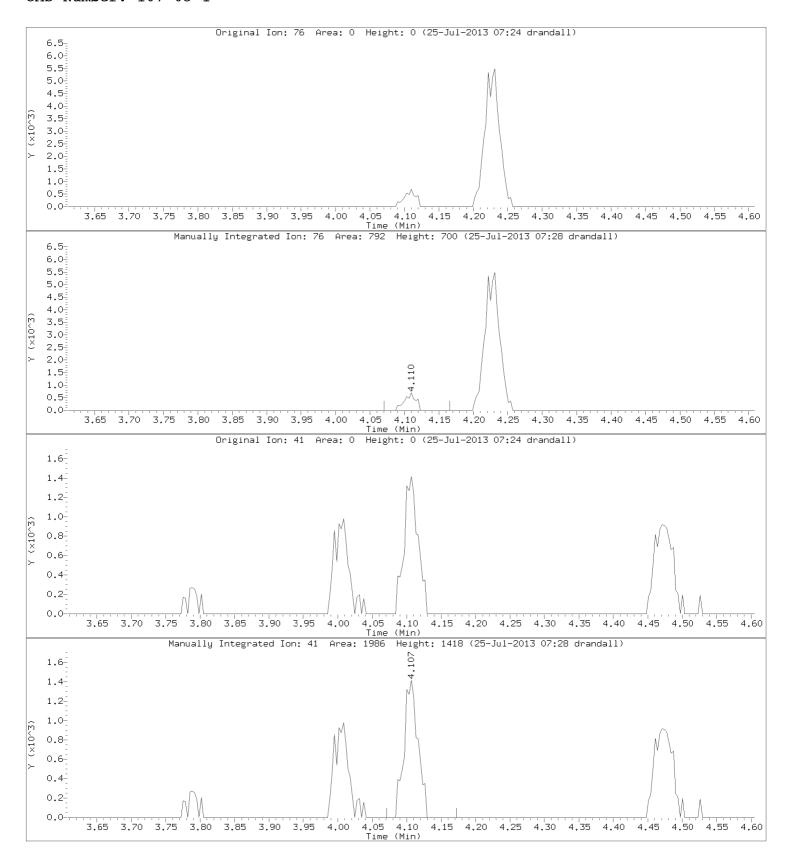


10236207 58 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

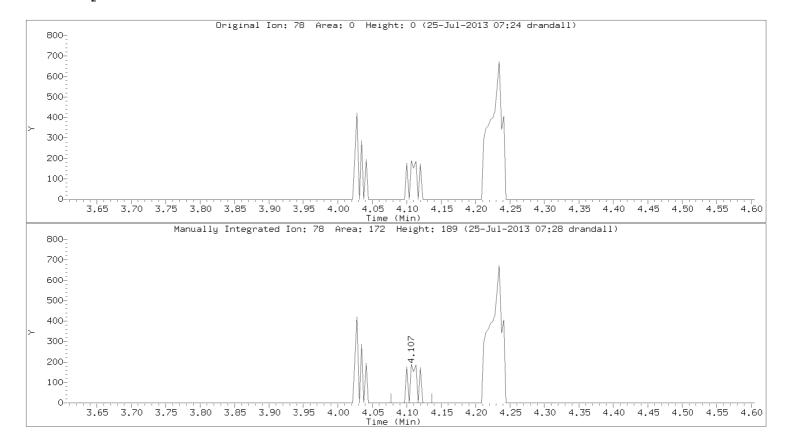
Compound: Allyl Chloride CAS Number: 107-05-1



10236207 59 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



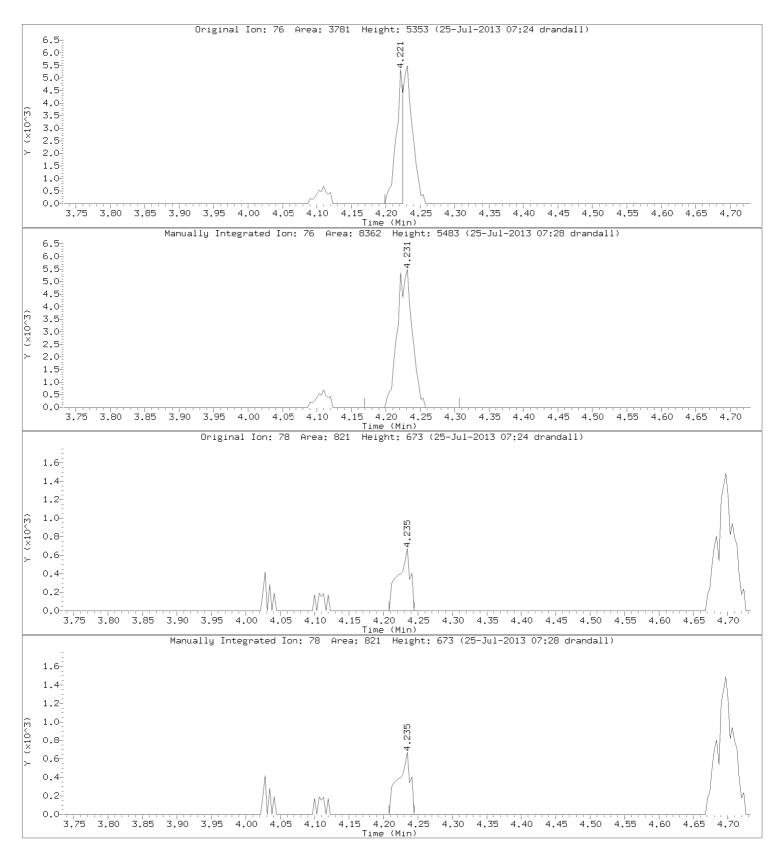
10236207 60 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Carbon Disulfide

CAS Number: 75-15-0



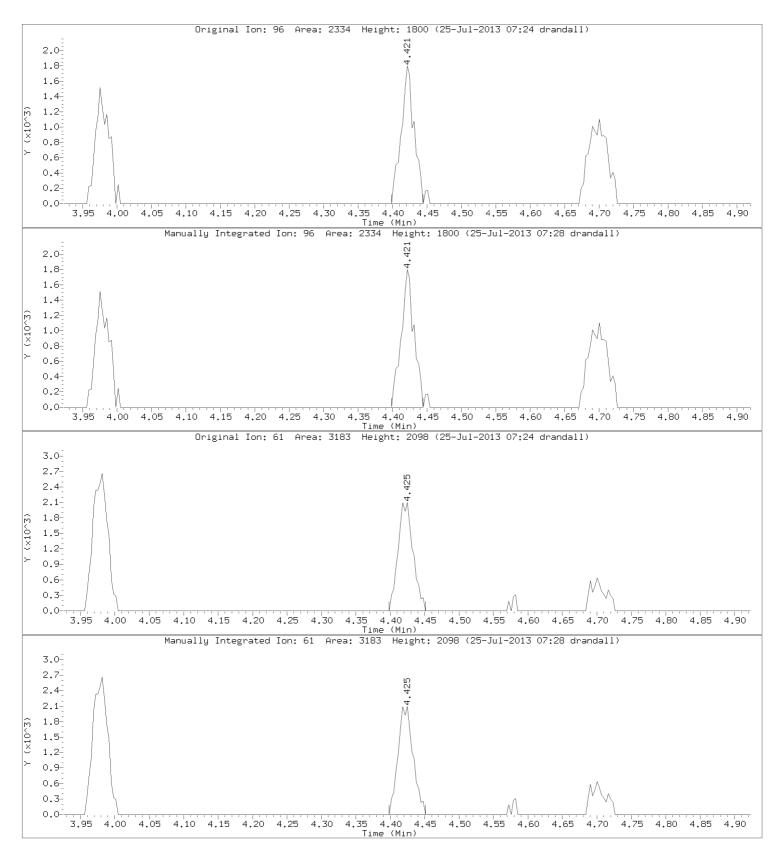
10236207 61 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: trans-1,2-dichloroethene

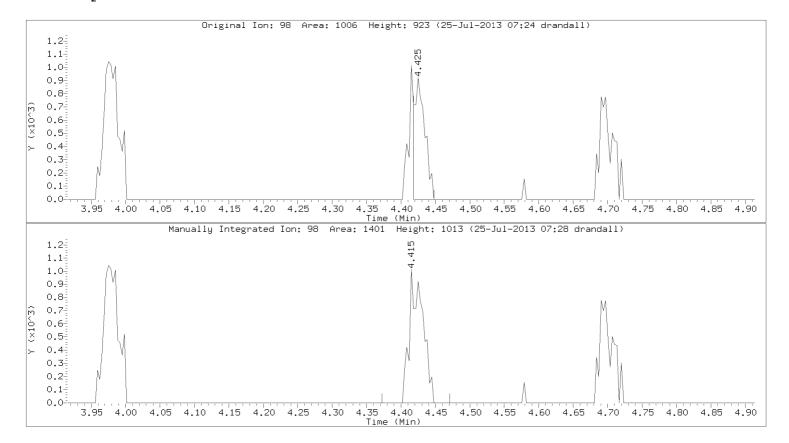
CAS Number: 156-60-5



10236207 62 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

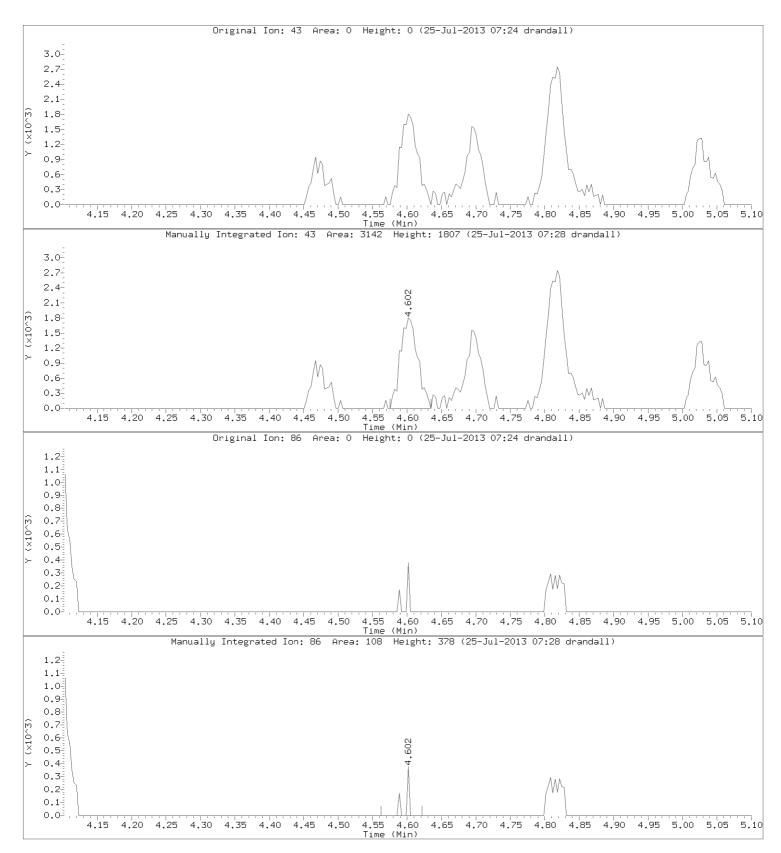


10236207 63 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Vinyl Acetate CAS Number: 108-05-4



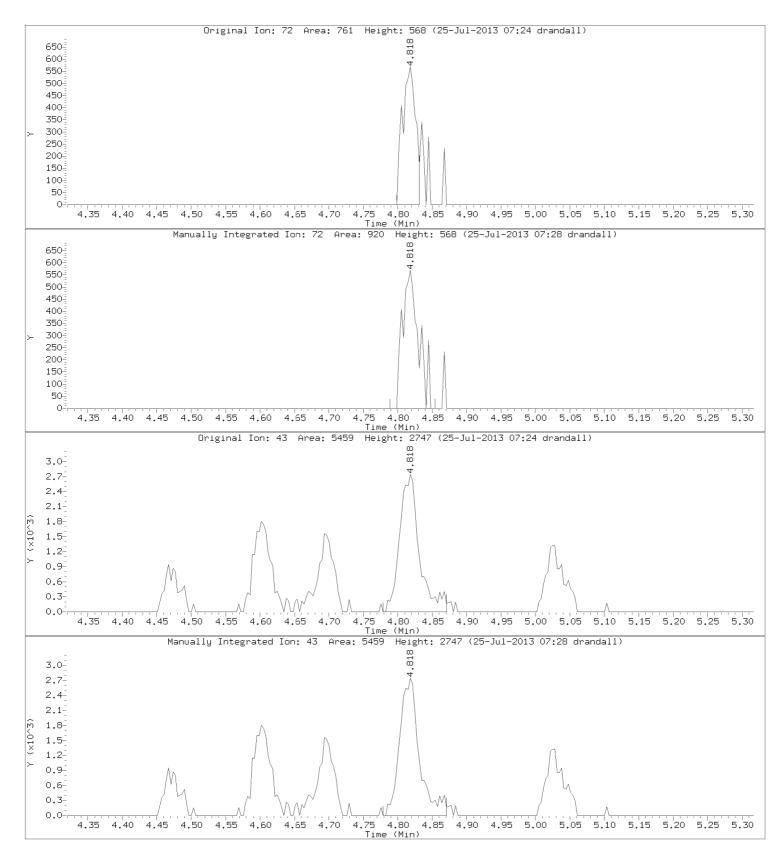
10236207 64 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Methyl Ethyl Ketone

CAS Number: 78-93-3

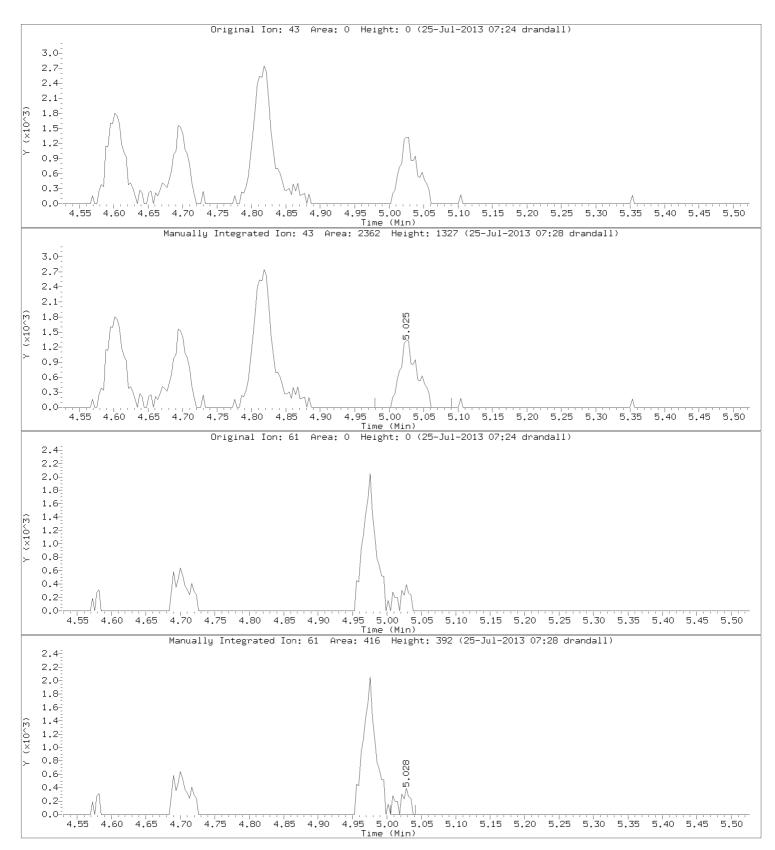


10236207 65 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

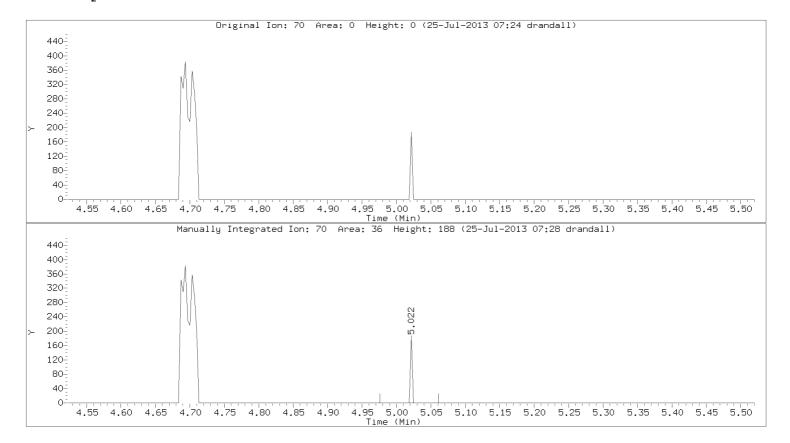
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 66 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

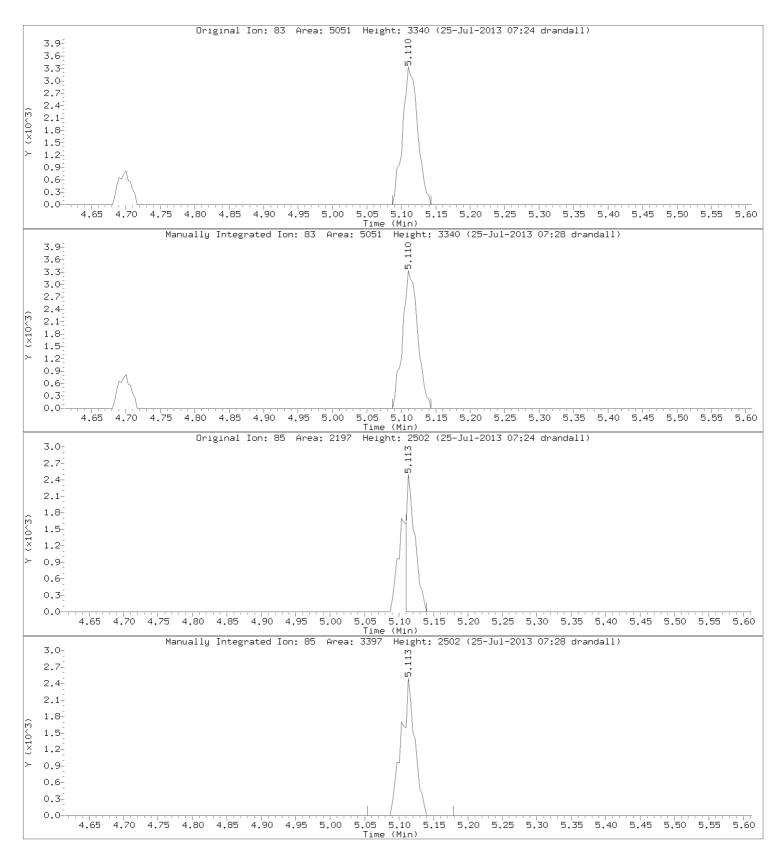


10236207 67 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

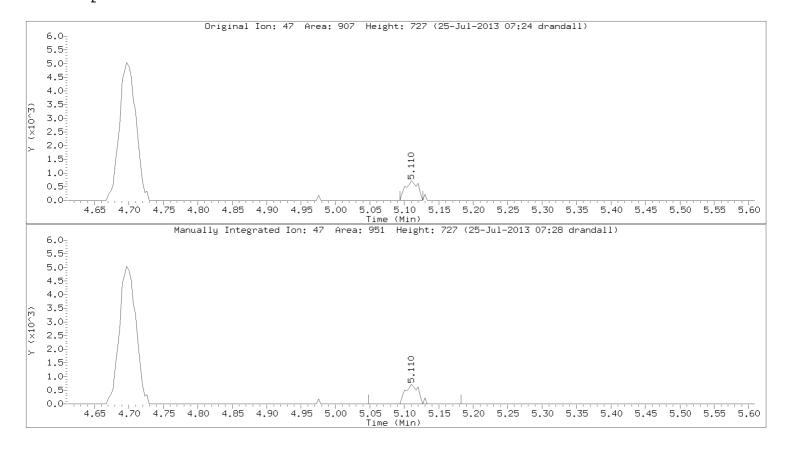
Compound: Chloroform CAS Number: 67-66-3



10236207 68 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



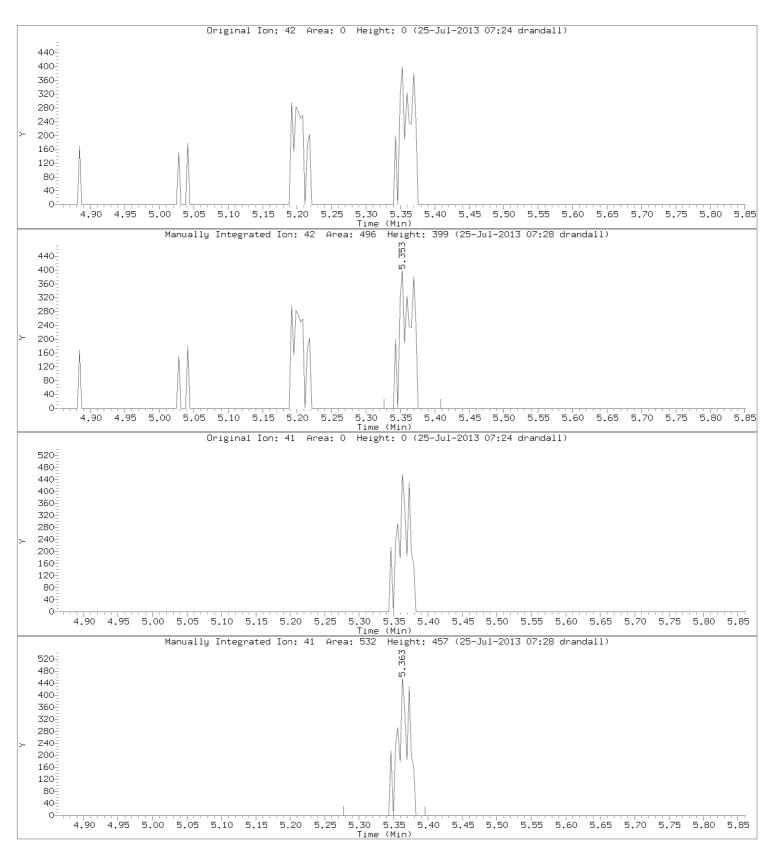
10236207 69 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Tetrahydrofuran

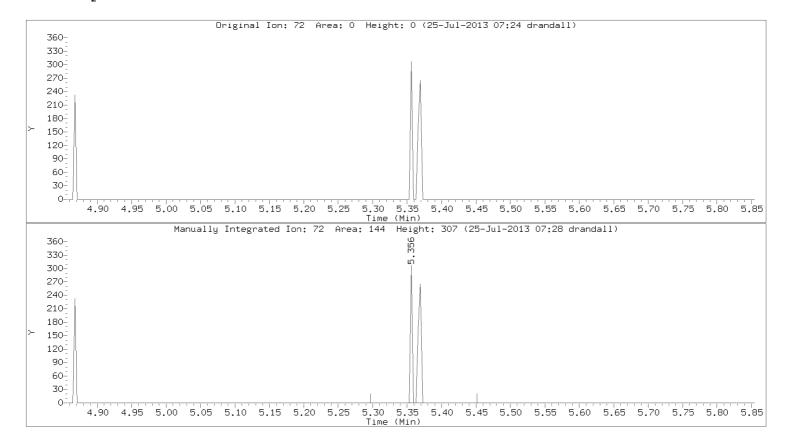
CAS Number: 109-99-9



10236207 70 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



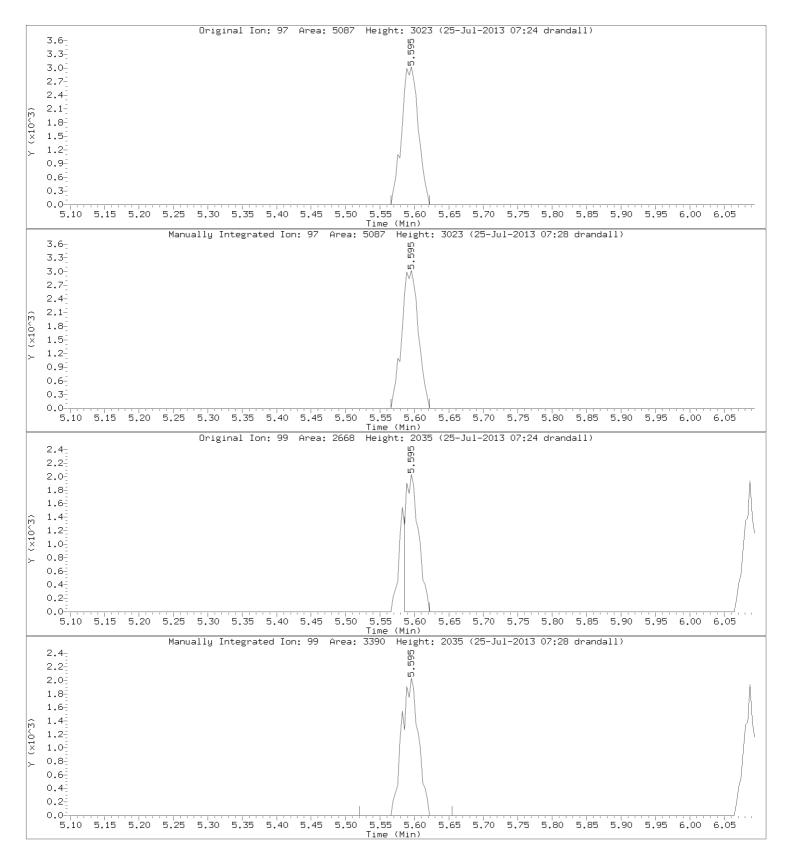
10236207 71 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,1,1-Trichloroethane

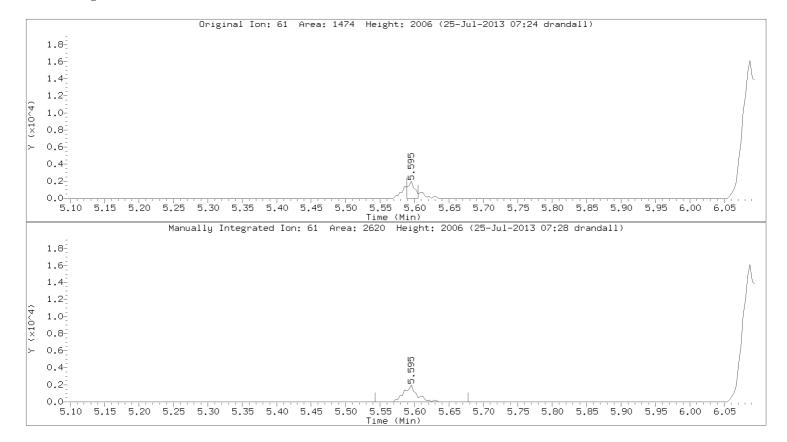
CAS Number: 71-55-6



10236207 72 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



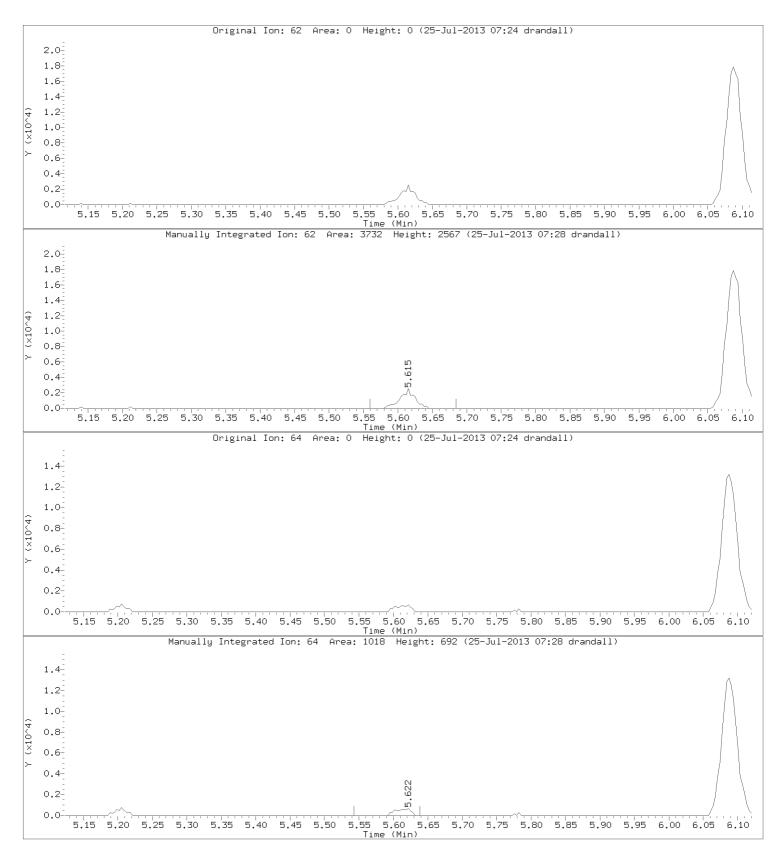
10236207 73 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,2-Dichloroethane

CAS Number: 107-06-2

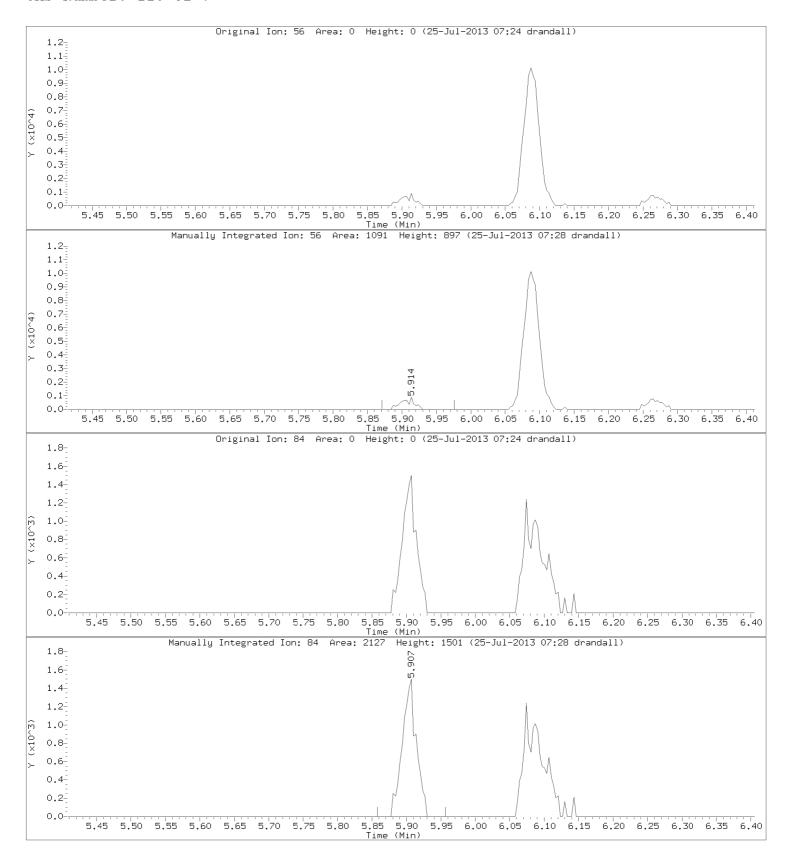


10236207 74 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

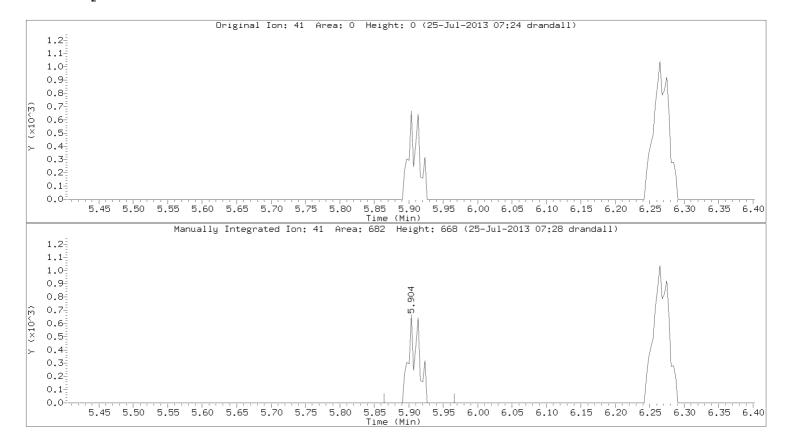
Compound: Cyclohexane CAS Number: 110-82-7



10236207 75 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



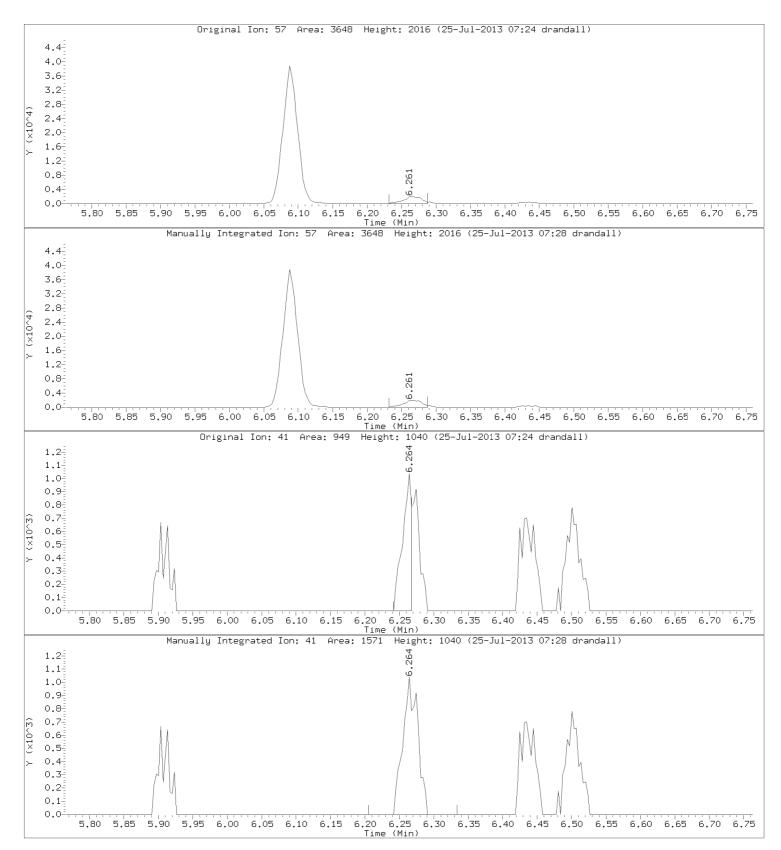
10236207 76 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 2,2,4-Trimethylpentane

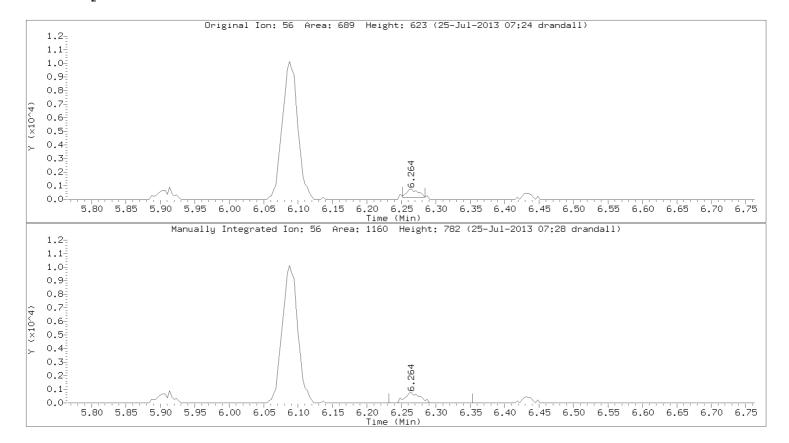
CAS Number: 540-84-1



10236207 77 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

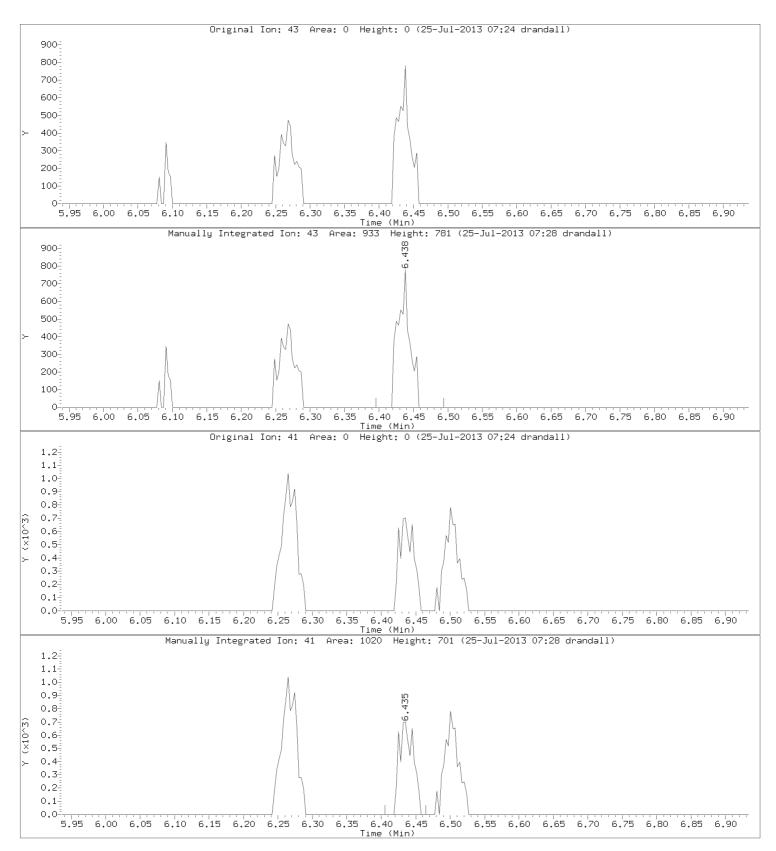


10236207 78 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Heptane CAS Number: 142-82-5



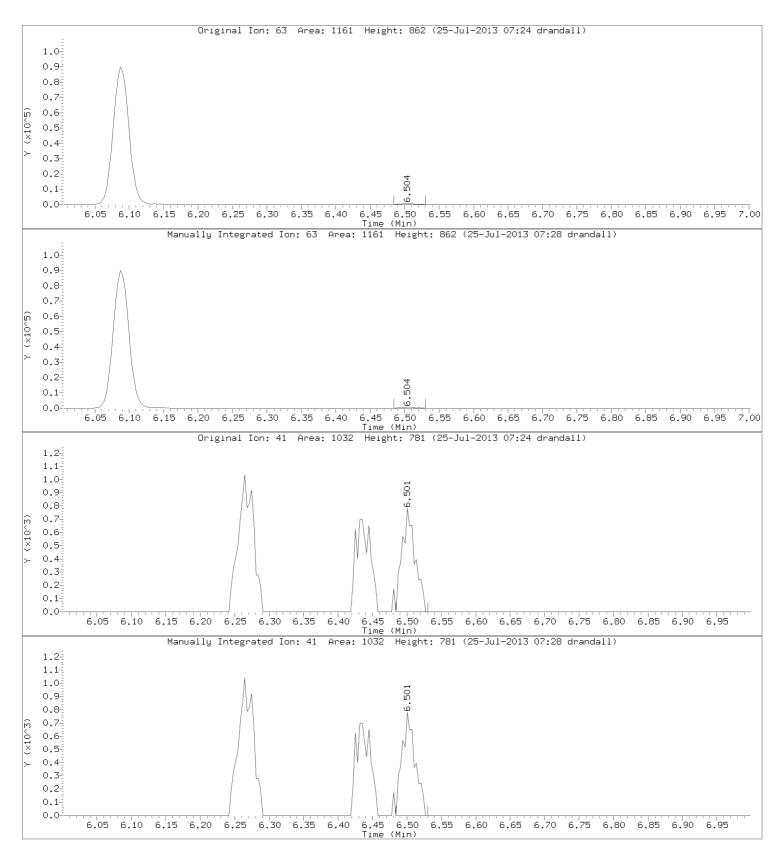
10236207 79 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,2-Dichloropropane

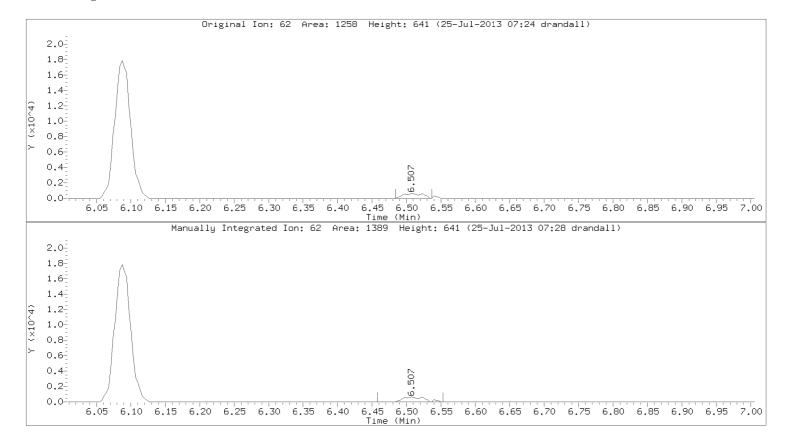
CAS Number: 78-87-5



10236207 80 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



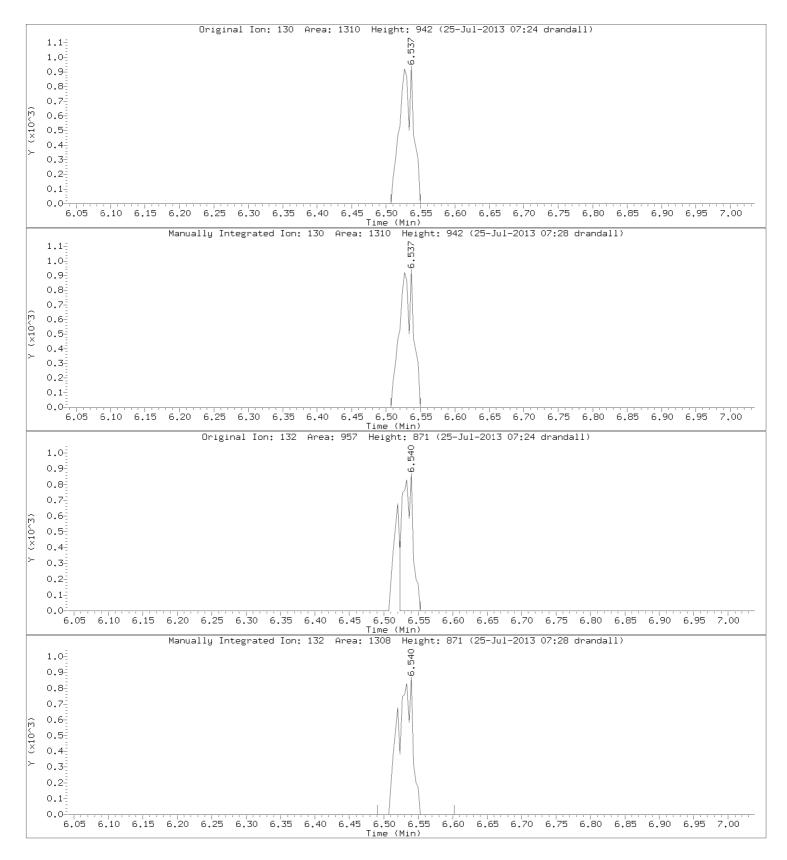
10236207 81 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Trichloroethene

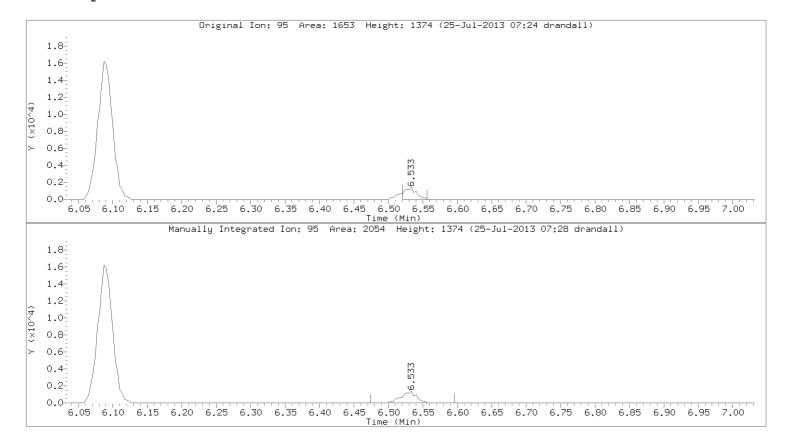
CAS Number: 79-01-6



10236207 82 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

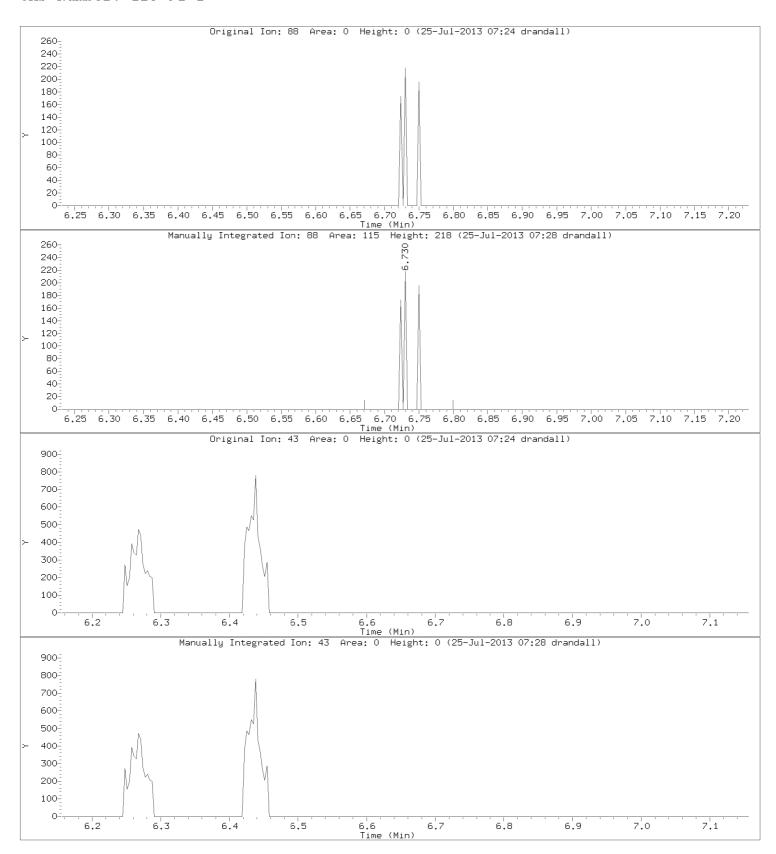


10236207 83 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,4-Dioxane CAS Number: 123-91-1



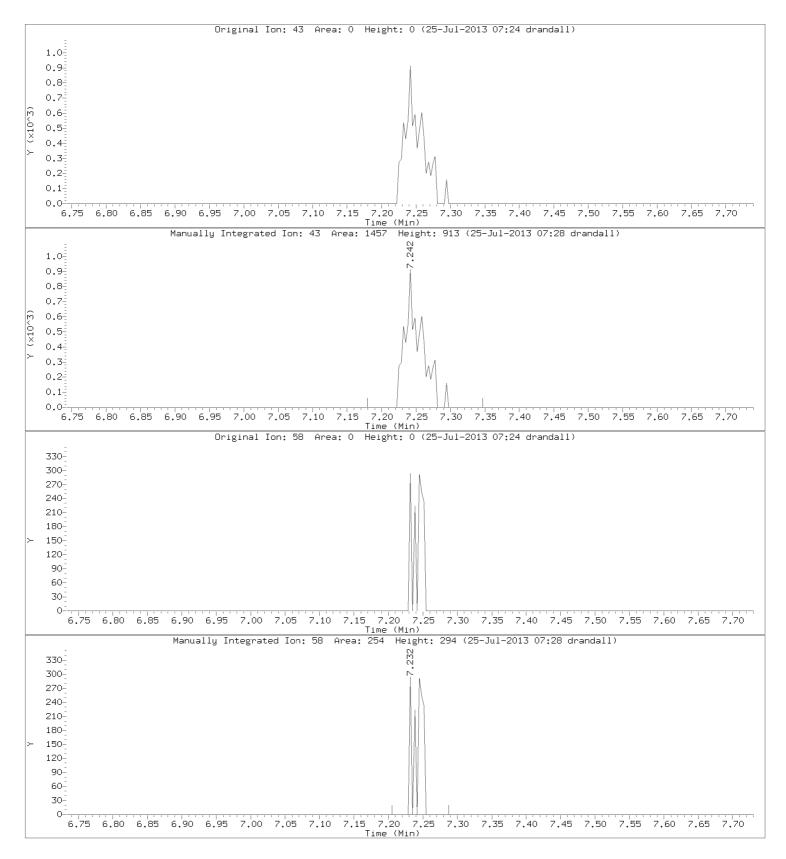
10236207 84 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Methyl Isobutyl Ketone

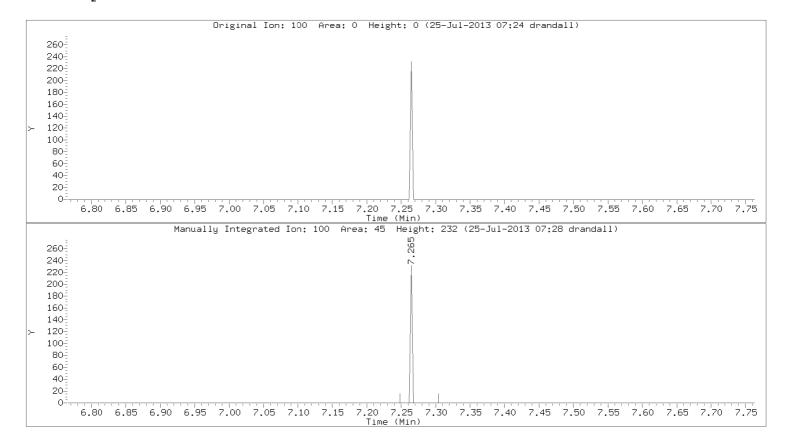
CAS Number: 108-10-1



10236207 85 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



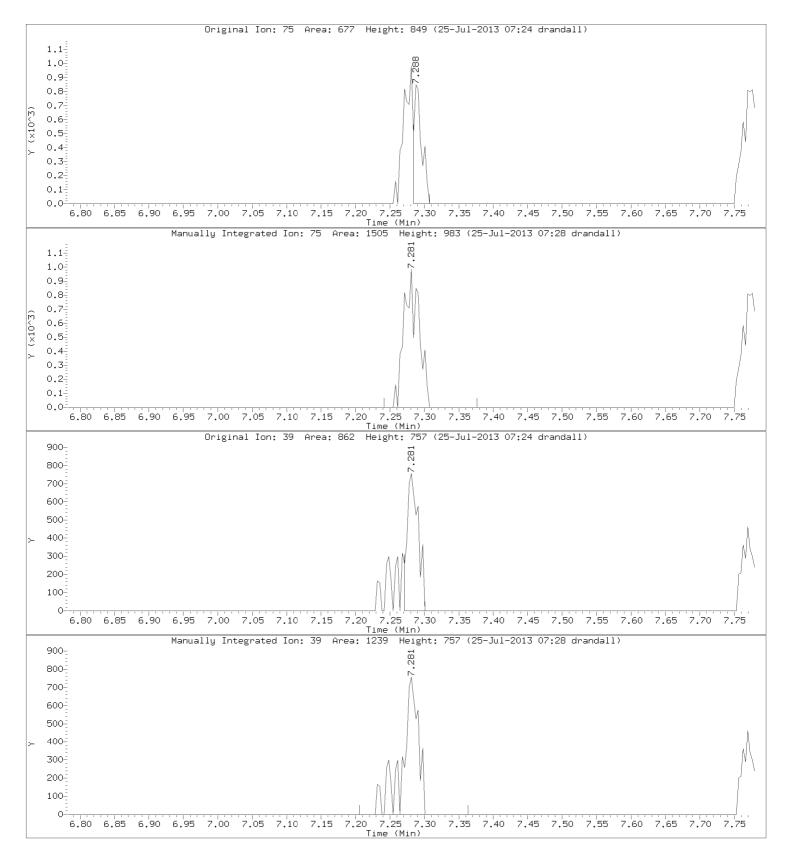
10236207 86 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: cis-1,3-Dichloropropene

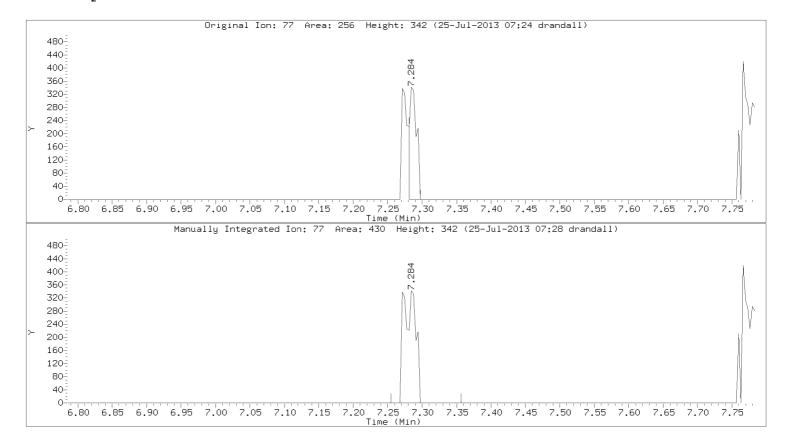
CAS Number: 10061-01-5



10236207 87 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



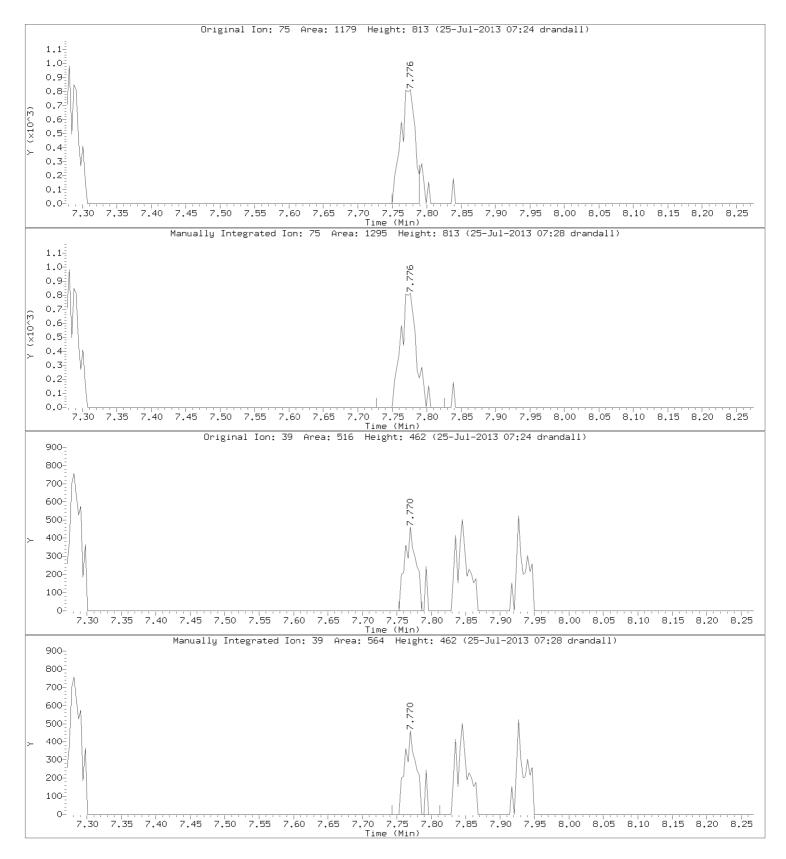
10236207 88 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: trans-1,3-Dichloropropene

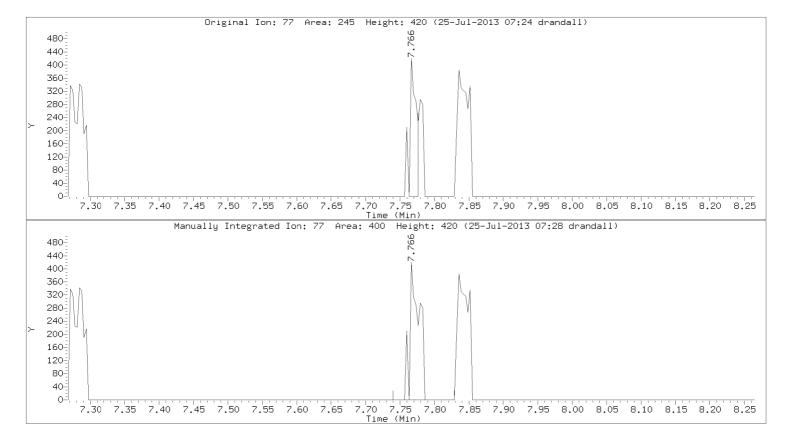
CAS Number: 10061-02-6



10236207 89 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



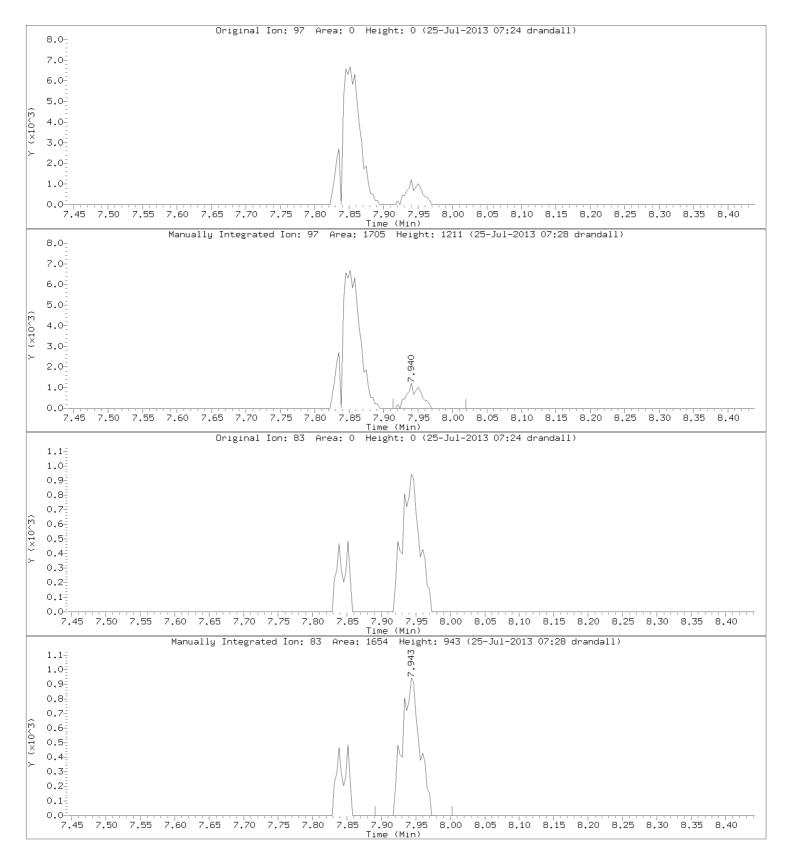
10236207 90 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,1,2-Trichloroethane

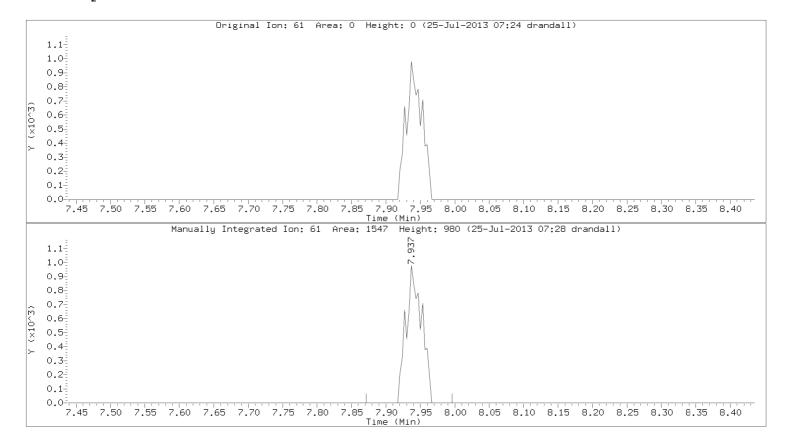
CAS Number: 79-00-5



10236207 91 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



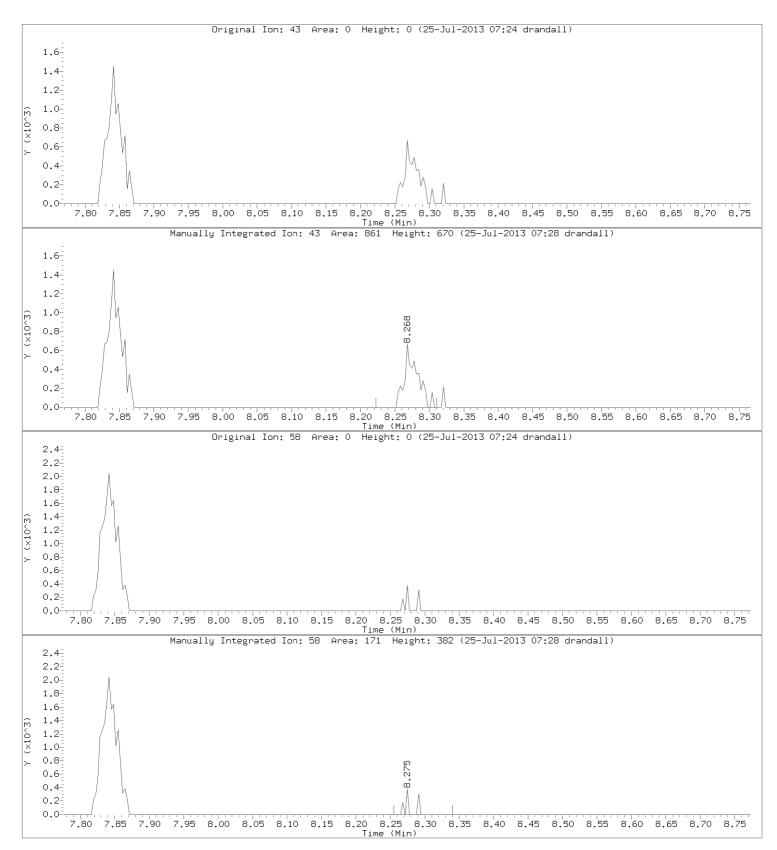
10236207 92 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Methyl Butyl Ketone

CAS Number: 591-78-6



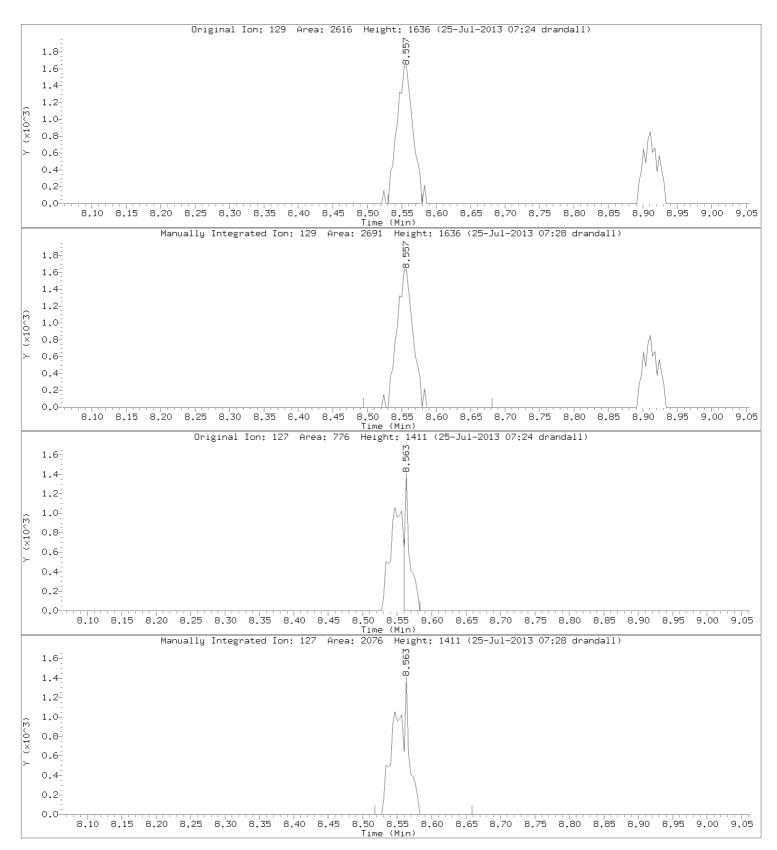
10236207 93 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Dibromochloromethane

CAS Number: 124-48-1



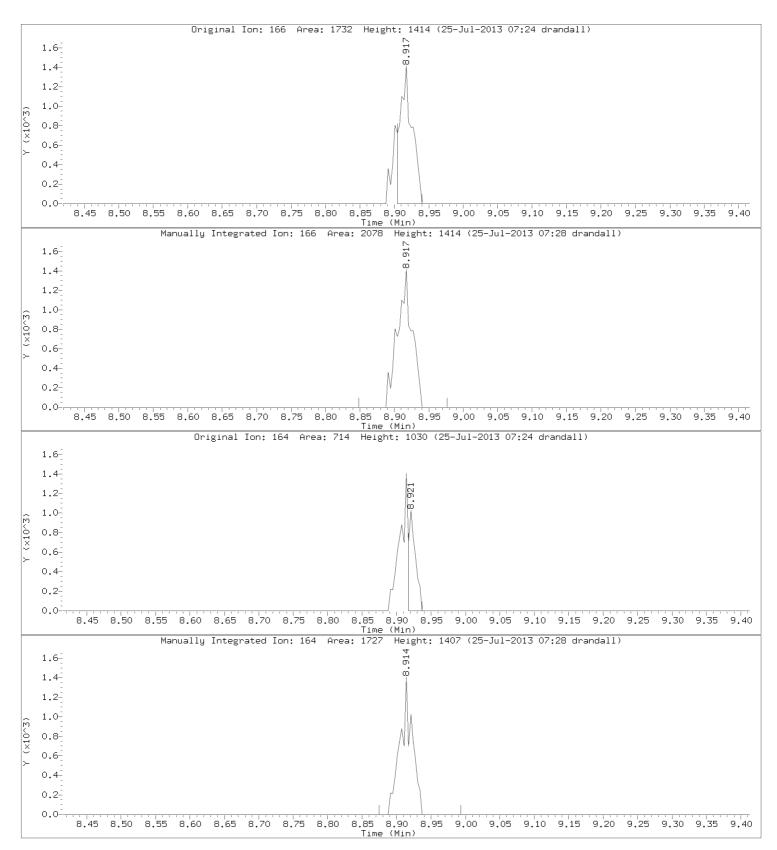
10236207 94 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Tetrachloroethene

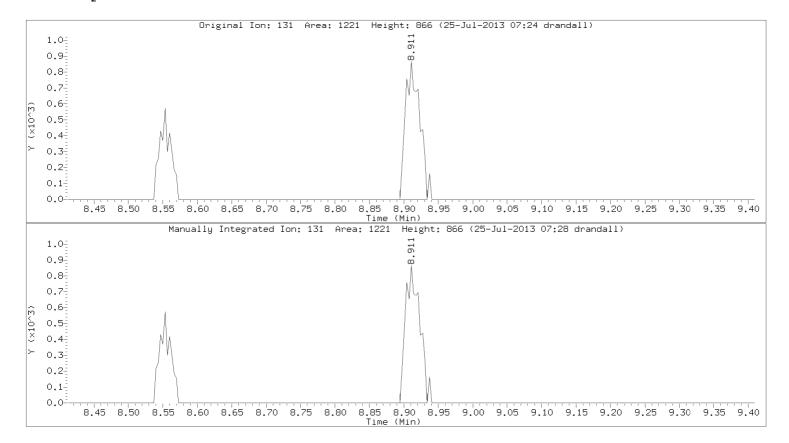
CAS Number: 127-18-4



10236207 95 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

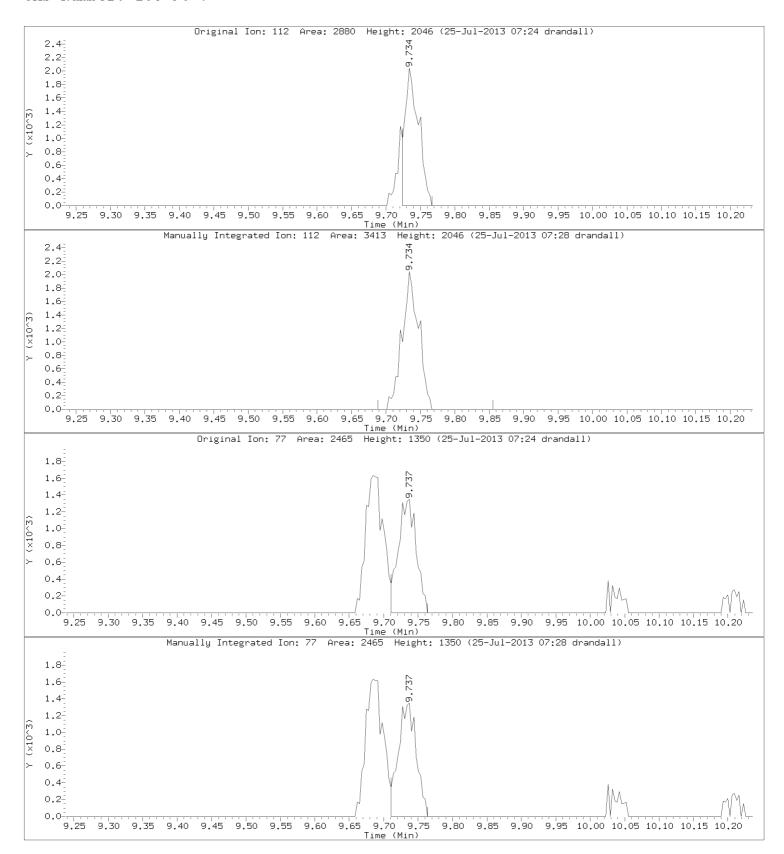


10236207 96 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

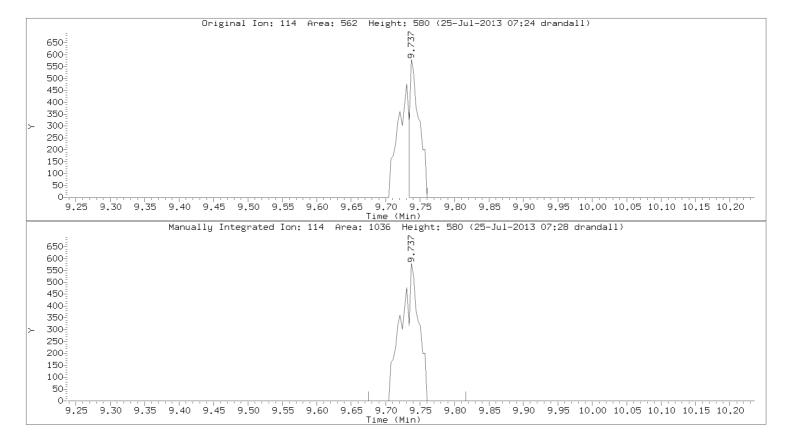
Compound: Chlorobenzene CAS Number: 108-90-7



10236207 97 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

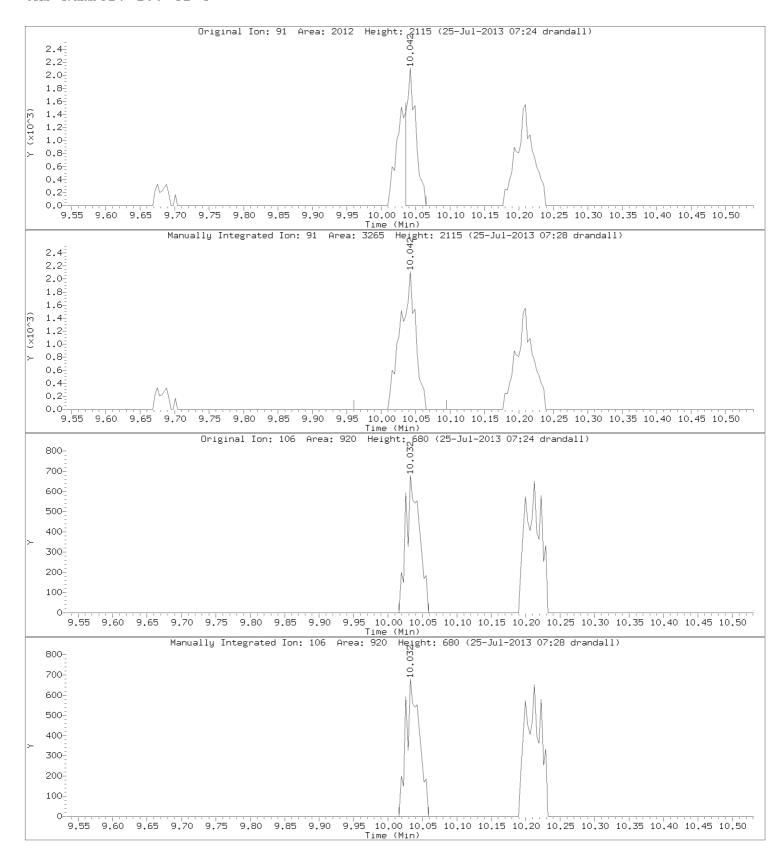


10236207 98 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Ethyl Benzene CAS Number: 100-41-4

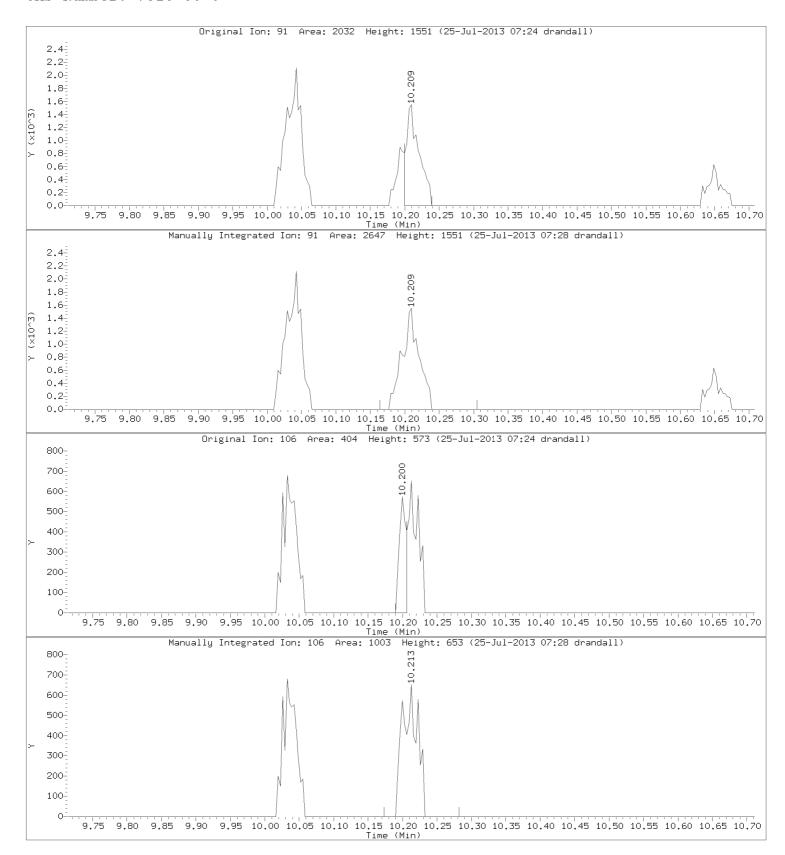


10236207 99 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: m&p-Xylene CAS Number: 7816-60-0

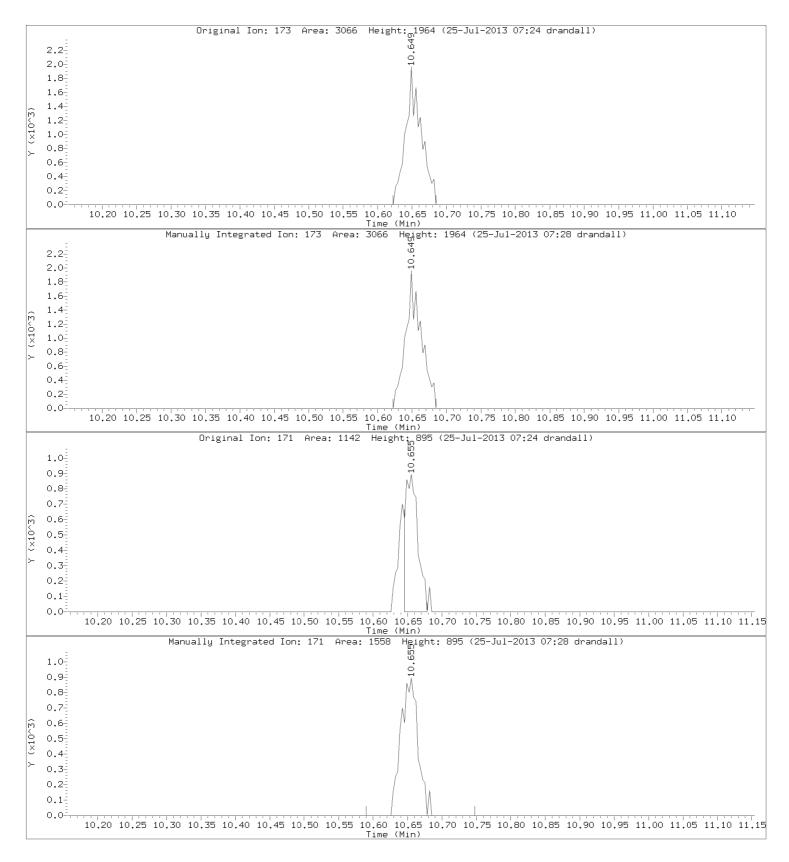


10236207 100 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Bromoform CAS Number: 75-25-2

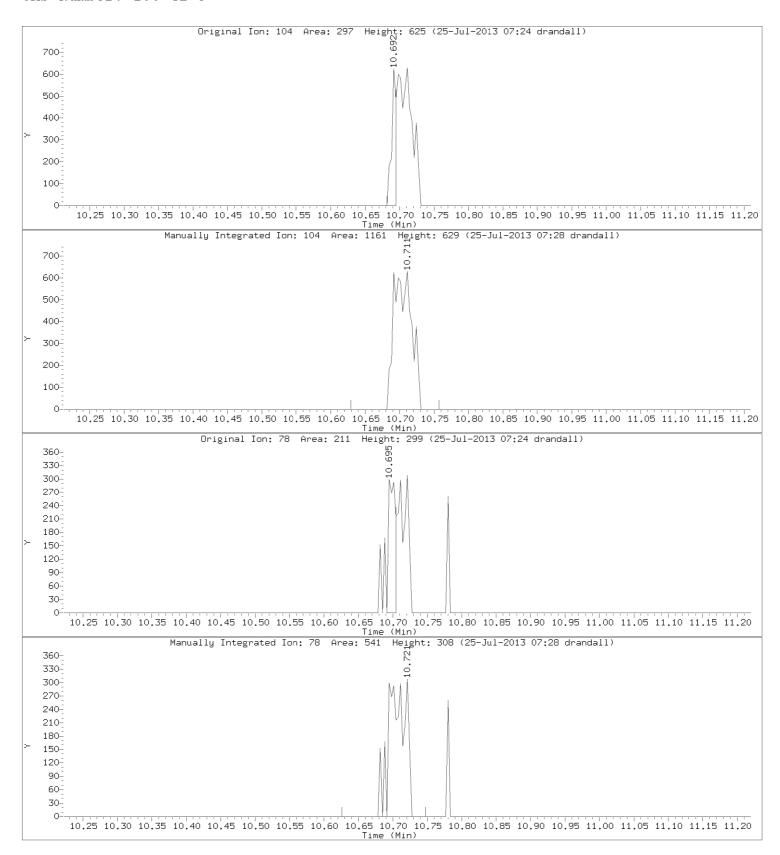


10236207 101 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

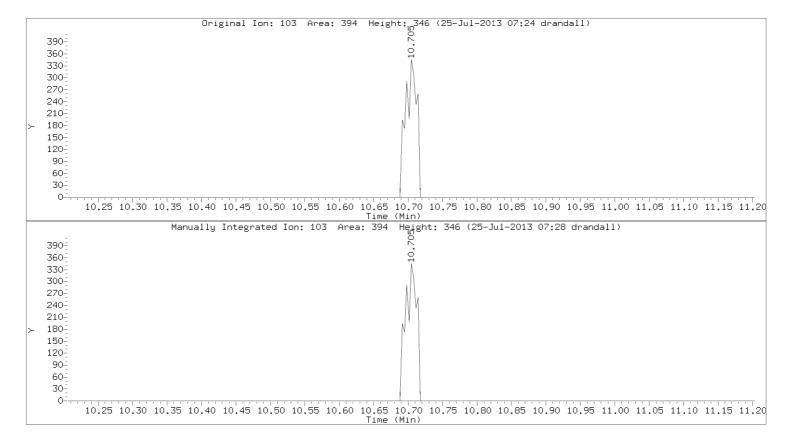
Compound: Styrene CAS Number: 100-42-5



10236207 102 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

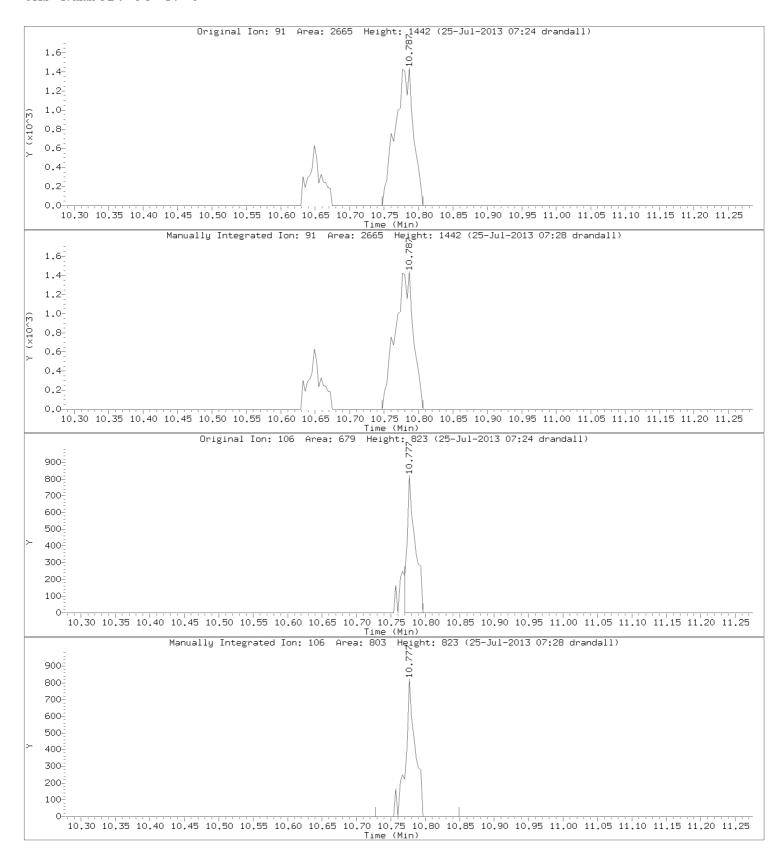


10236207 103 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: o-Xylene CAS Number: 95-47-6



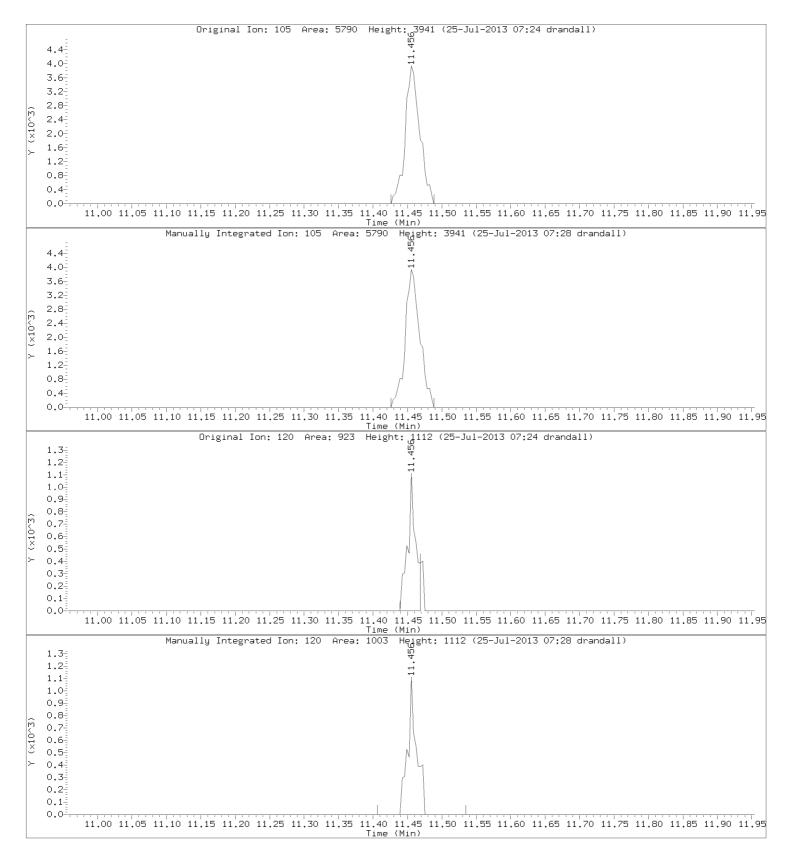
10236207 104 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Isopropylbenzene

CAS Number:



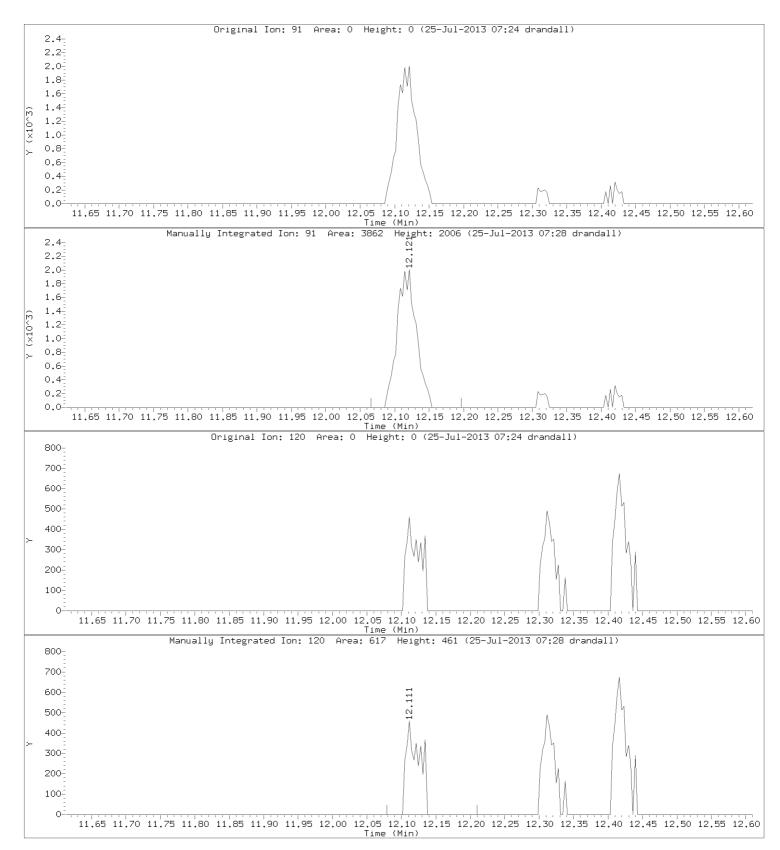
10236207 105 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: N-Propylbenzene

CAS Number: 103-65-1

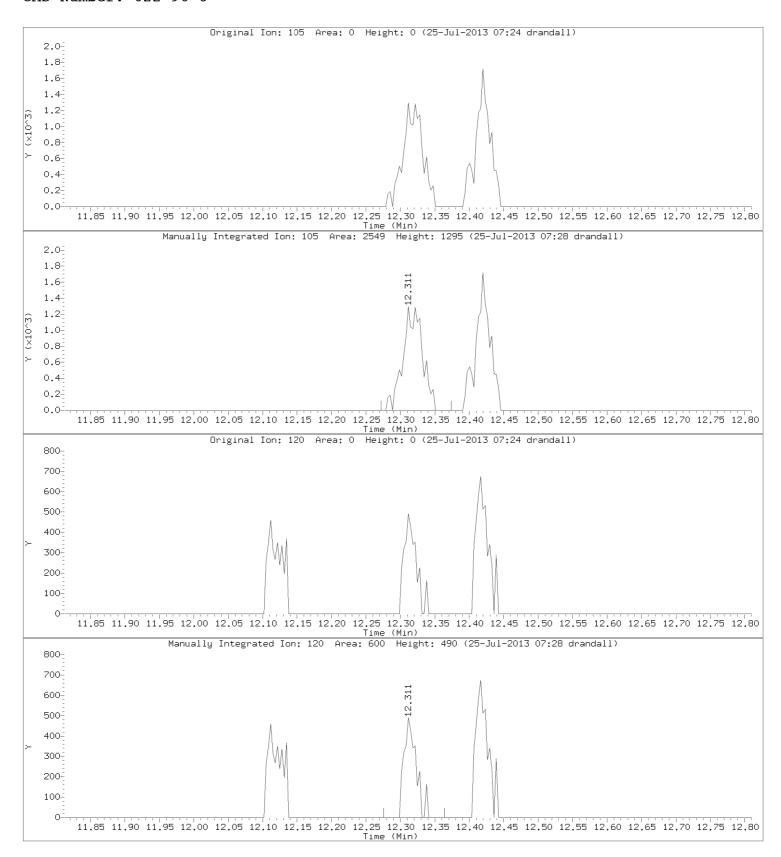


10236207 106 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

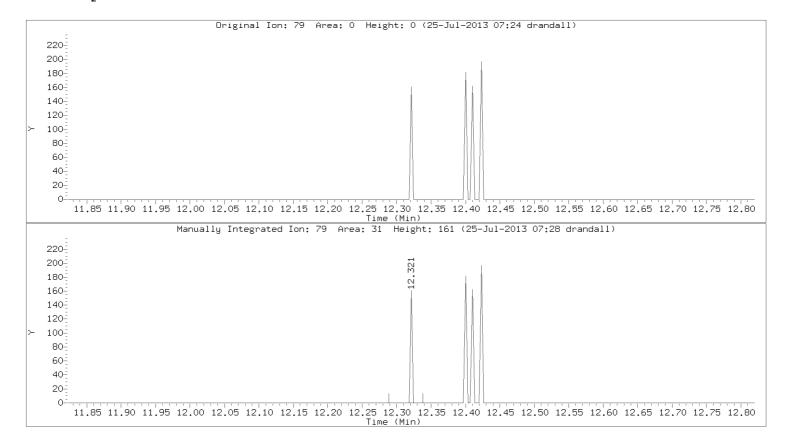
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 107 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



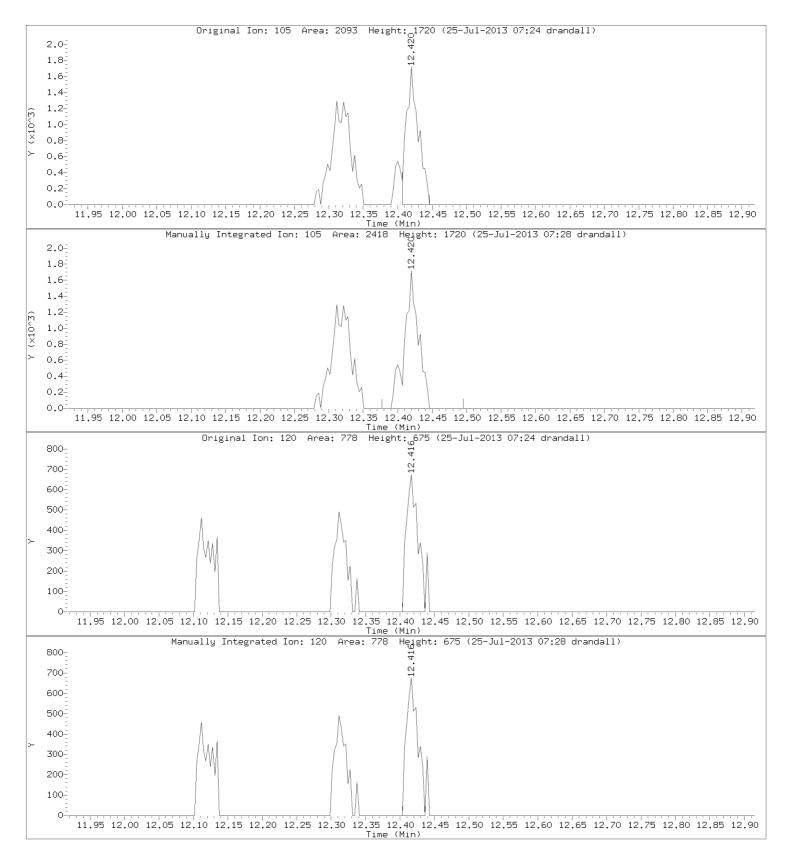
10236207 108 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



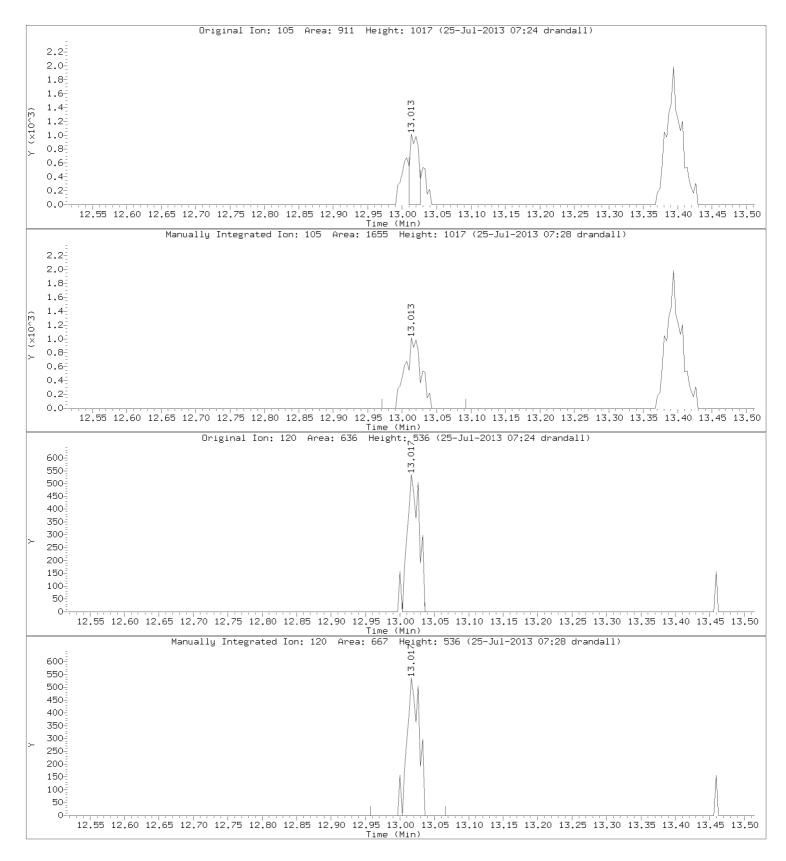
10236207 109 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,2,4-Trimethylbenzene

CAS Number: 95-63-6



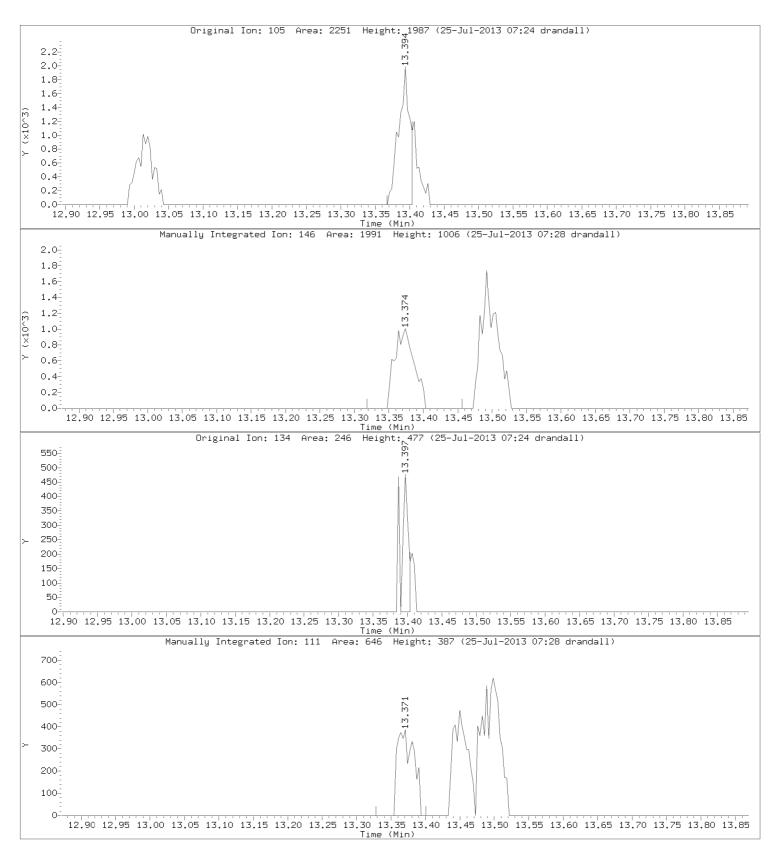
10236207 110 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,3-Dichlorobenzene

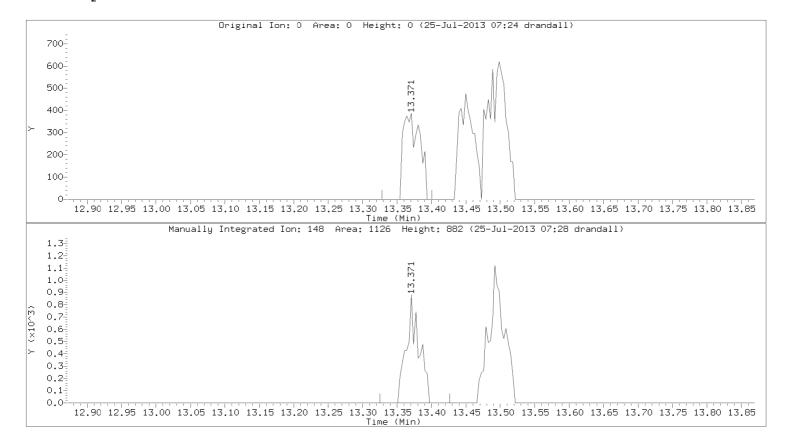
CAS Number: 541-73-1



10236207 111 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



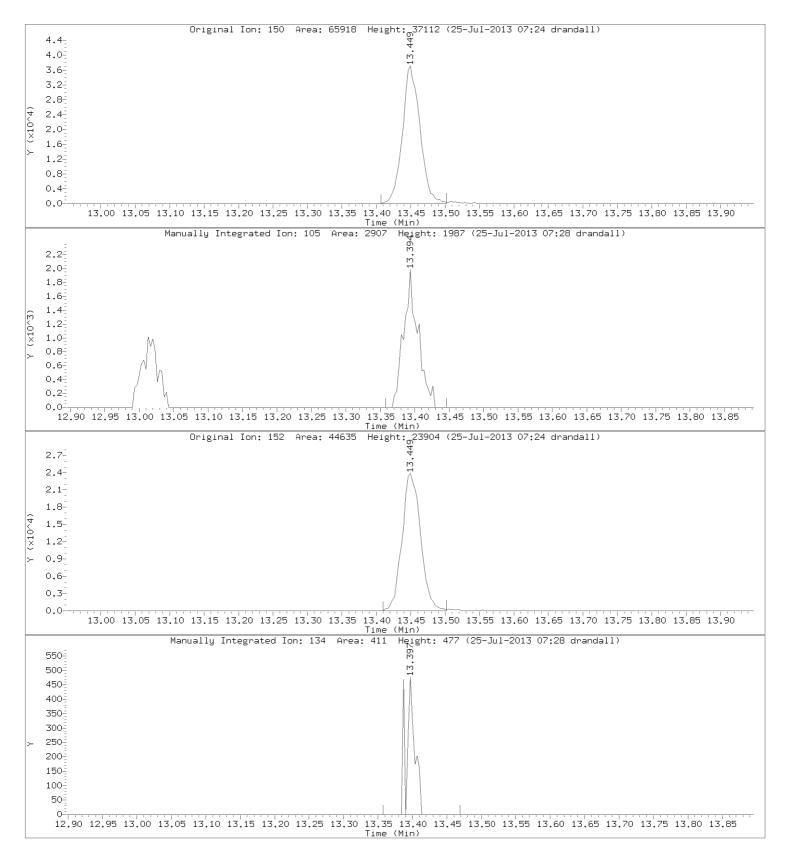
10236207 112 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Sec- Butylbenzene

CAS Number: 135-98-8



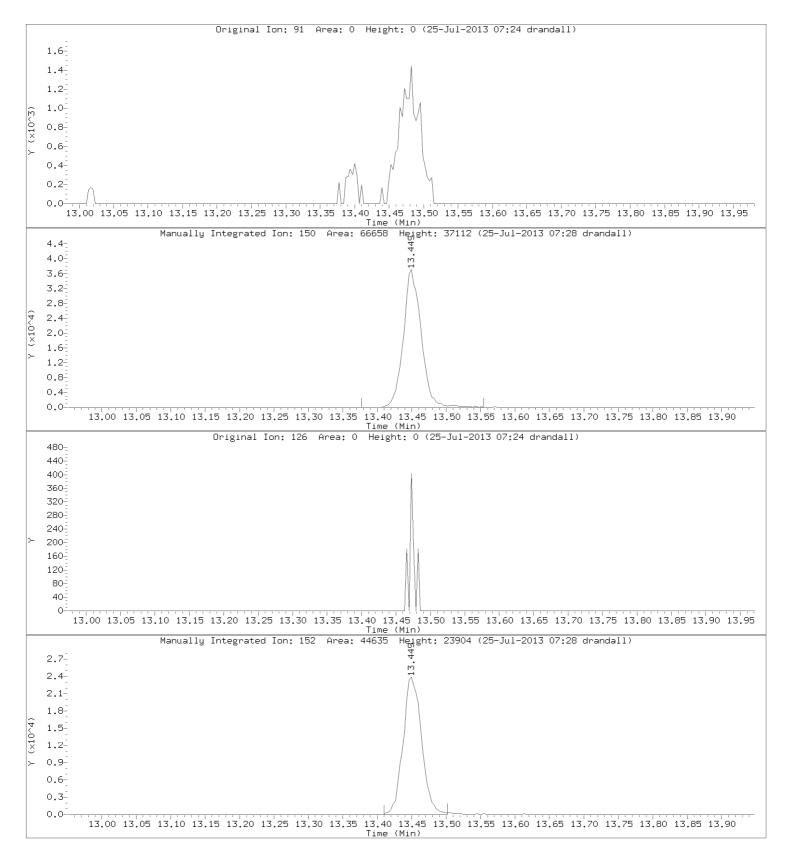
10236207 113 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,4-dichlorobenzene-d4 (S)

CAS Number:



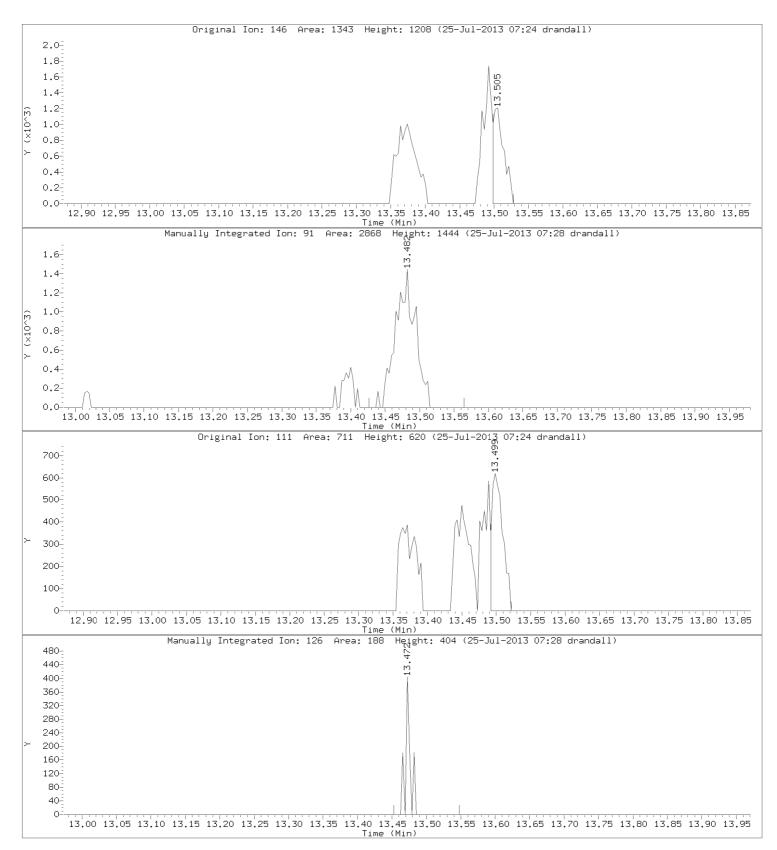
10236207 114 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Benzyl Chloride

CAS Number: 100-44-7



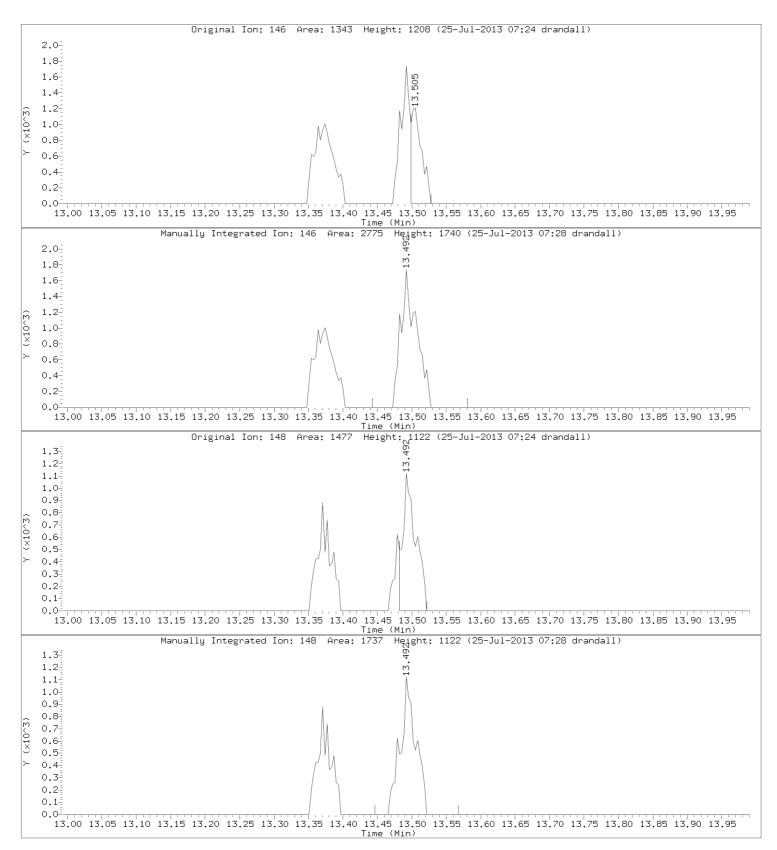
10236207 115 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,4-Dichlorobenzene

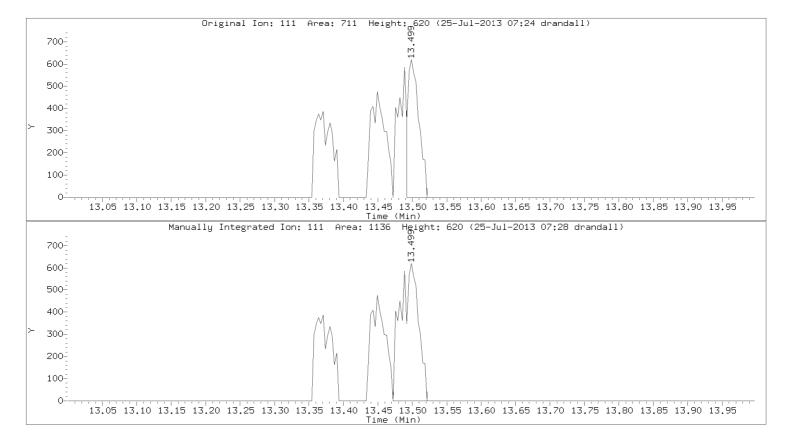
CAS Number: 106-46-7



10236207 116 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



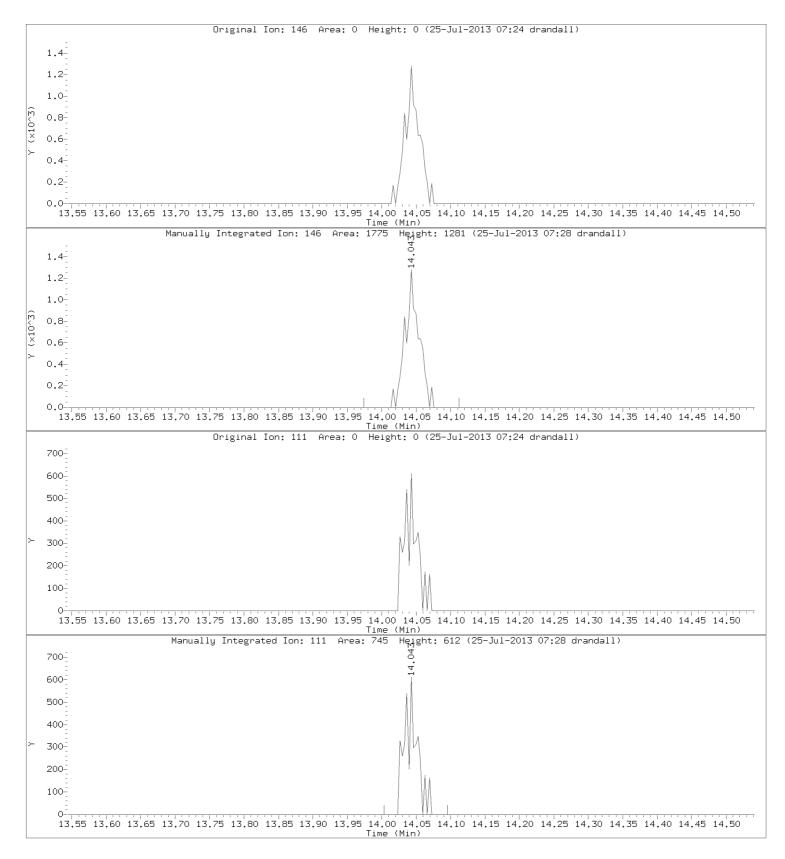
10236207 117 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,2-Dichlorobenzene

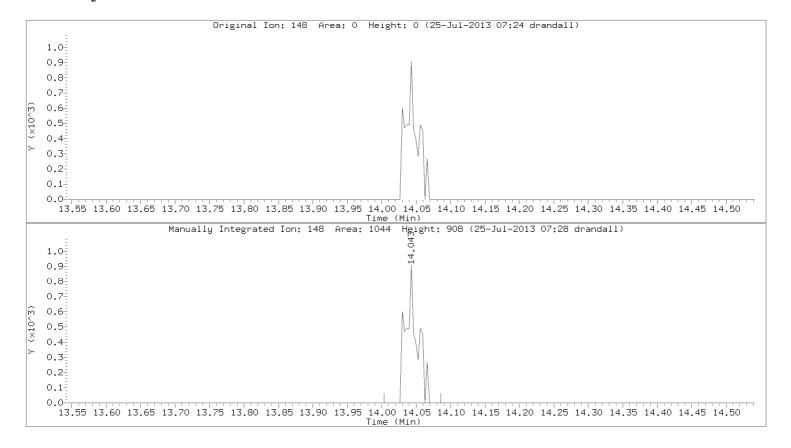
CAS Number: 95-50-1



10236207 118 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

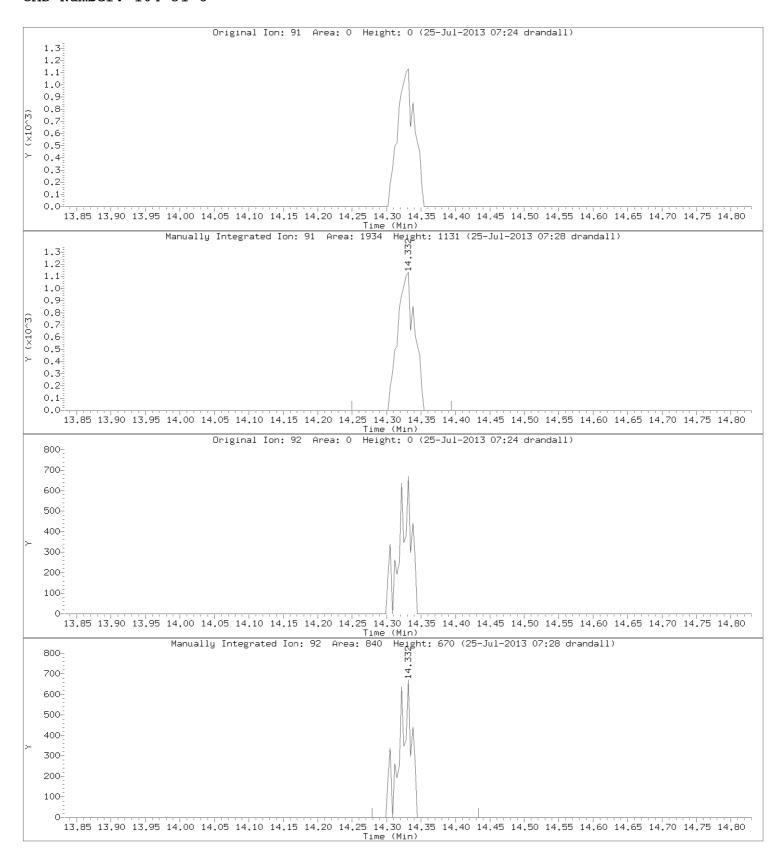


10236207 119 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: N-Butylbenzene CAS Number: 104-51-8



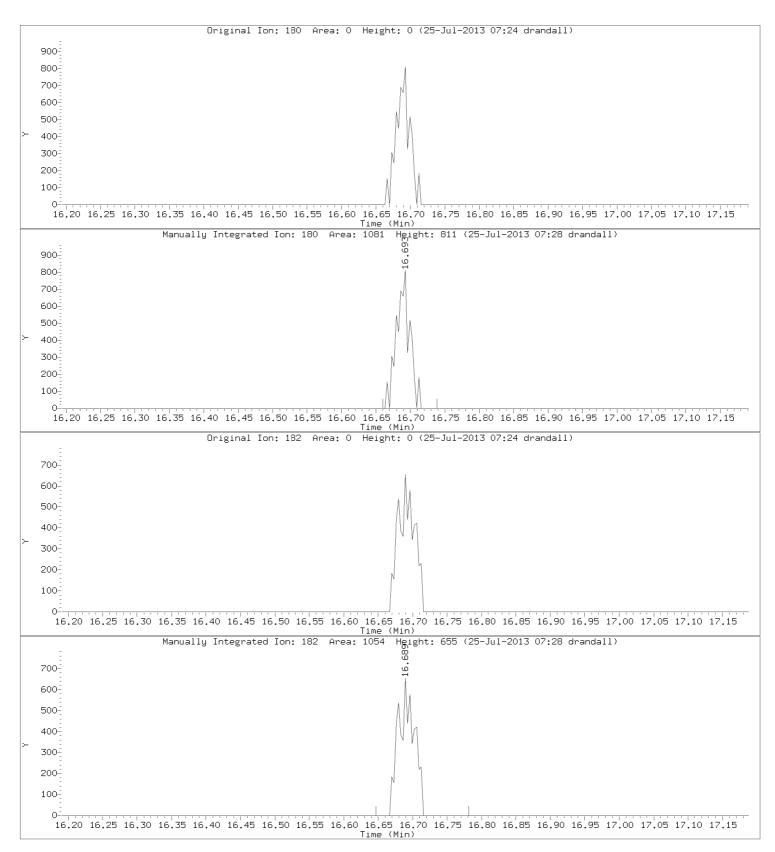
10236207 120 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: 1,2,4-Trichlorobenzene

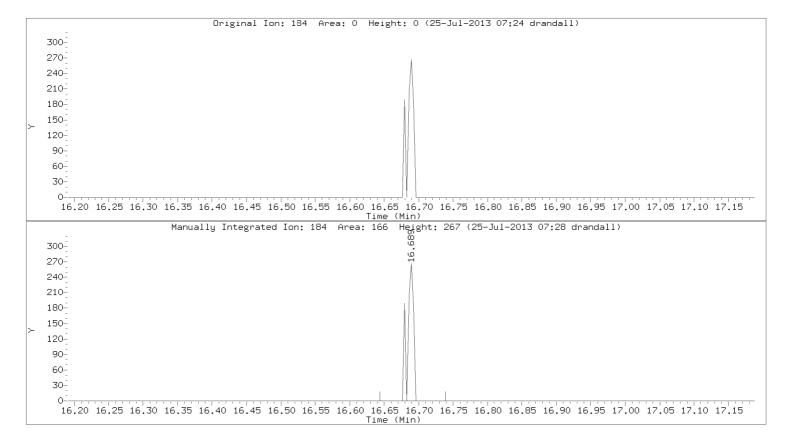
CAS Number: 95-63-6



10236207 121 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

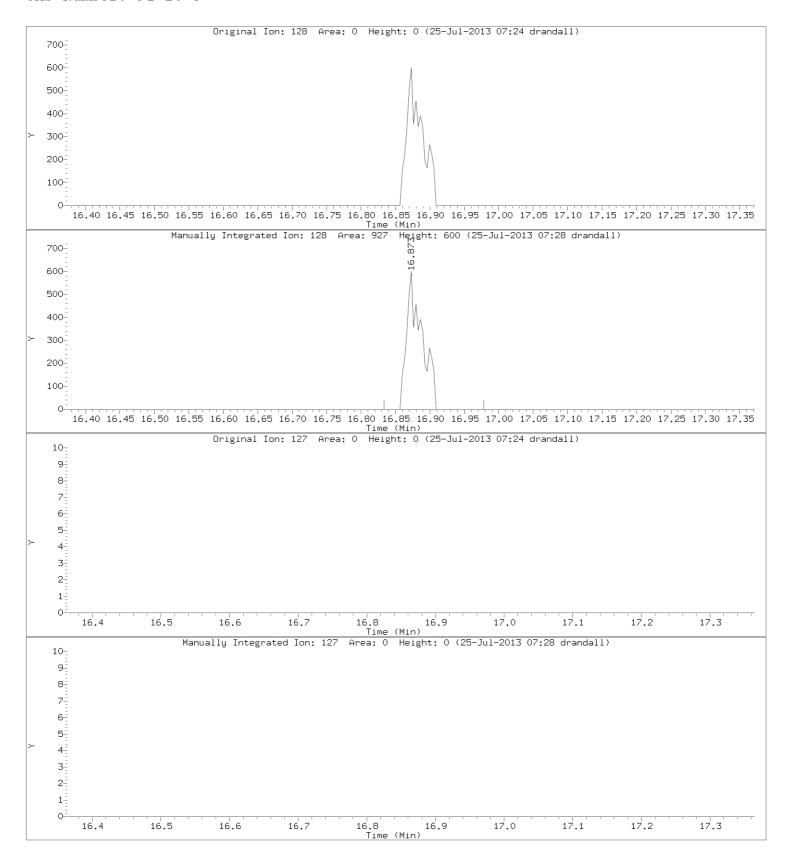


10236207 122 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Naphthalene CAS Number: 91-20-3



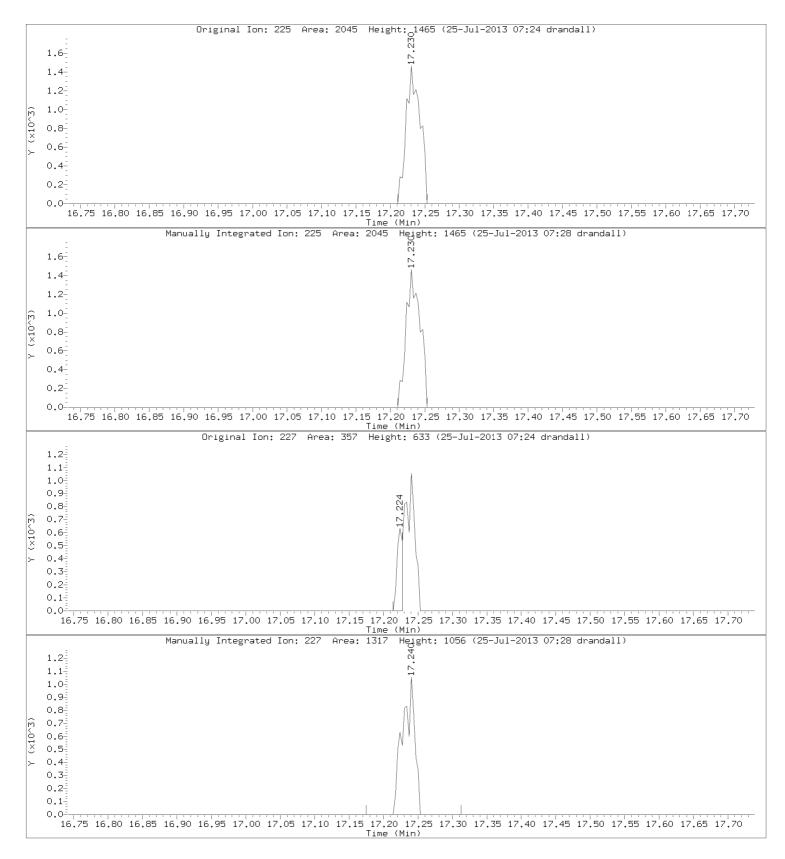
10236207 123 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1

Compound: Hexachlorobutadiene

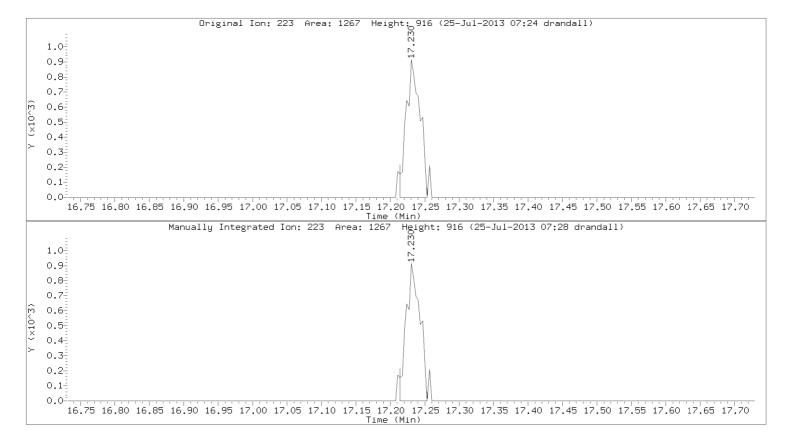
CAS Number: 87-68-3



10236207 124 of 1066

Injection Date: 24-JUL-2013 14:12

Instrument: 10airD.i Lab Sample ID: CAL1



10236207 125 of 1066

Report Date: 25-Jul-2013 07:30

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072413.b\20505.d

Lab Smp Id: CAL2
Inj Date : 24-JUL-2013 14:40
Operator : DR1 Inst ID: 10airD.i

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10\.12\chem\10airD.i\072413.b\T015\205-13.m

Meth Date : 25-Jul-2013\07:24\drandall\Quant\Type:\ISTD Cal File: 20505.d

Cal Date : 24-JUL-2013 14:40 Als bottle: 5 Dil Factor: 1.00000 Calibration Sample, Level: 2

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

						AMOUNTS	
	QUANT SIG MASS			REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL ( ppbv)
Compounds		RT	EXP RT				
1 Propylene	==== 41	2.981		(0.490)	1467	0.20000	====== 0.216(M)
2 Dichlorodifluoromethane	85	3.008		(0.494)	15032	0.20000	0.217
3 Dichlorotetrafluoroethane	85	3.106		(0.510)	12141	0.20000	0.218
4 Chloromethane	50	3,106		(0.510)	3408	0.20000	0.216(M)
5 Vinyl chloride	62	3.195		(0.525)	3428	0.20000	0.218(M)
6 1,3-Butadiene	54	3.237	3.237	(0.532)	1998	0.20000	0.215
7 Bromomethane	94	3.395	3.395	(0.557)	4265	0.20000	0.215(M)
8 Chloroethane	64	3.447	3.447	(0.566)	1708	0.20000	0.193(M)
9 Ethanol	31	3.545	3.545	(0.582)	1973	0.20000	0.201(M)
10 Vinyl Bromide	106	3.588	3.588	(0.589)	4054	0.20000	0.207
11 Acrolein	56	3.736	3.736	(0.613)	810	0.20000	0.174(M)
12 Trichlorofluoromethane	101	3.696	3.696	(0.607)	16967	0.20000	0.226
13 Acetone	43	3.778	3.778	(0.620)	8098	0.20000	0.215(M)
14 Isopropyl Alcohol	45	3.788	3.788	(0.622)	5073	0.20000	0.205(M)
15 1,1-Dichloroethene	61	3.975	3.975	(0.653)	6984	0.20000	0.209
16 Acrylonitrile	53	4.031	4.031	(0.662)	1826	0.20000	0.195(M)
17 Tert Butyl Alcohol	59	4.005	4.005	(0.658)	7957	0.20000	0.173(M)
18 Freon 113	101	4.031	4.031	(0.662)	10925	0.20000	0.218
19 Methylene chloride	49	4.093	4.093	(0.672)	5560	0.20000	0.233(M)
20 Allyl Chloride	76	4.110	4.110	(0.675)	1465	0.20000	0.181(M)
21 Carbon Disulfide	76	4.228	4.228	(0.694)	12924	0.20000	0.208
22 trans-1,2-dichloroethene	96	4.421	4.421	(0.726)	4482	0.20000	0.208
23 Methyl Tert Butyl Ether	73	4.474	4.474	(0.735)	8724	0.20000	0.166(M)

10236207 126 of 1066

## Data File: $\192.168.10.12\chem\10airD.i\072413.b\20505.d$ Report Date: 25-Jul-2013 07:30

							AMOUN	ITS
		QUANT SIG					CAL-AMT	ON-COL
Cc	mpounds 	MASS ====	RT 	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)
	24 Vinyl Acetate	43	4.601		(0.756)	6380	0.20000	0.173(M)
	25 1,1-Dichloroethane	63	4.582	4.582	(0.752)	7995	0.20000	0.214
\$	26 Hexane-d14(S)	66	4.697	4.697	(0.771)	278149	10.0000	10.1
	27 Methyl Ethyl Ketone	72	4.815		(0.791)	1505	0.20000	0.174(M)
	28 n-Hexane	57	4.811	4.811	(0.790)	5371	0.20000	0.205
	29 cis-1,2-Dichloroethene	96	4.982	4.982	(0.818)	3243	0.20000	0.182
	30 Ethyl Acetate	43	5.028	5.028	(0.826)	3382	0.20000	0.169(M)
	31 Chloroform	83	5.116	5.116	(0.840)	9236	0.20000	0.199(M)
	32 Tetrahydrofuran	42	5.359	5.359	(0.880)	899	0.20000	0.108(M)
	33 1,1,1-Trichloroethane	97	5.592	5.592	(0.918)	9240	0.20000	0.185(M)
	34 1,2-Dichloroethane	62	5.615	5.615	(0.922)	6522	0.20000	0.189(M)
	35 Benzene	78	5.877	5.877	(0.965)	6919	0.20000	0.160
	36 Carbon tetrachloride	117	5.900	5.900	(0.969)	10431	0.20000	0.195
	37 Cyclohexane	56	5.910	5.910	(0.970)	2029	0.20000	0.130(M)
*	38 1,4-Difluorobenzene	114	6.090	6.090	(1.000)	568909	10.0000	
	39 2,2,4-Trimethylpentane	57	6.267	6.267	(1.029)	7149	0.20000	0.148
	40 Heptane	43	6.431	6.431	(1.056)	1829	0.20000	0.124(M)
	41 1,2-Dichloropropane	63	6.507	6.507	(1.068)	2299	0.20000	0.201(M)
	42 Trichloroethene	130	6.526	6.526	(1.072)	2666	0.20000	0.158(M)
	43 1,4-Dioxane	88	6.743	6.743	(1.107)	261	0.20000	0.215(M)
	44 Bromodichloromethane	83	6.651		(1.092)	8253	0.20000	0.172
	45 Methyl Isobutyl Ketone	43	7.245		(1.190)	2363	0.20000	0.112(M)
	46 cis-1,3-Dichloropropene	75	7.281		(1.195)	2984	0.20000	0.131(M)
	47 trans-1,3-Dichloropropene	75	7.773		(1.276)	2580	0.20000	0.109(M)
\$	48 Toluene-d8 (S)	98	7.841		(1.288)	381246	10.0000	9.60
	49 Toluene	91	7.927		(1.302)	7427	0.20000	0.139
	50 1,1,2-Trichloroethane	97	7.943		(1.304)	3196	0.20000	0.163(M)
	51 Methyl Butyl Ketone	43	8.268	8.268	(0.853)	1784	0.20000	0.108(M)
	52 Dibromochloromethane	129	8.556	8.556	(0.883)	5177	0.20000	0.170(M)
	53 1,2-Dibromoethane	107	8.825	8.825	(0.911)	3897	0.20000	0.155(M)
	54 Tetrachloroethene	166	8.910	8.910	(0.920)	3660	0.20000	0.157(M)
*	55 Chlorobenzene - d5	117	9.688		(1.000)	179791	10.0000	
	56 Chlorobenzene	112	9.737	9.737	(1.005)	5466	0.20000	0.168
	57 Ethyl Benzene	91	10.039	10.039	(1.036)	5838	0.20000	0.112(M)
	58 m&p-Xylene	91	10.212	10.212	(1.054)	4157	0.20000	0.101(M)
	59 Bromoform	173	10.652		(1.100)	4685	0.20000	0.148(M)
	60 Styrene	104	10.701	10.701	(1.105)	2016	0.20000	0.0815(M)
	61 o-Xylene	91	10.776		(1.112)	4816	0.20000	0.109(M)
	62 1,1,2,2-Tetrachloroethane	83	11.091		(1.145)	5330	0.20000	0.177
	63 Isopropylbenzene	105	11.462		(1.183)	8781	0.20000	0.144
	64 N-Propylbenzene	91	12.111		(1.250)	5957	0.20000	0.174 (M)
	65 4-Ethyltoluene	105	12.311		(1.271)	4151	0.20000	0.0869(M)
	66 1,3,5-Trimethylbenzene	105	12.423		(1.282)	4492	0.20000	0.103(M)
	67 1,2,4-Trimethylbenzene	105	13.016		(1.344)	3040	0.20000	0.0801 (M)
	68 1,3-Dichlorobenzene	146	13.367		(1.380)	3029	0.20000	0.114 (M)
	69 Sec- Butylbenzene	105	13.397		(1.383)	5351	0.20000	0.0947(M)
\$	70 1,4-dichlorobenzene-d4 (S)	150		13.449		62802	10.0000	7.97
7	71 Benzyl Chloride	91		13.485		4461	0.20000	0.121(M)
	72 1,4-Dichlorobenzene	146	13.495		(1.393)	4268	0.20000	0.150(M)
	73 1,2-Dichlorobenzene	146	14.043		(1.450)	2665	0.20000	0.130(M)
	74 N-Butylbenzene	91	14.328		(1.479)	3605	0.20000	0.0846(M)
	75 1,2,4-Trichlorobenzene	180		16.689		1682	0.20000	0.0040(M) 0.113(M)
	76 Naphthalene	128	16.873		(1.723) $(1.742)$	1699	0.20000	0.0830(M)
	77 Hexachlorobutadiene	225	17.237		(1.742)	3393	0.20000	0.0030 (M) 0.170 (M)
	Hevacutotophradielle	44J	11.431	11.231	(1.77)	رورر	0.20000	O. 1 (M)

10236207 127 of 1066

Data File:  $\192.168.10.12\chem\10airD.i\072413.b\20505.d$  Report Date: 25-Jul-2013 07:30

QC Flag Legend

M - Compound response manually integrated.

10236207 128 of 1066

Report Date: 25-Jul-2013 07:30

Pace Analytical Services, Inc.

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20505.d

Lab Smp Id: CAL2 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

## Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	441U%
38 1,4-Difluorobenze	579775	=======	811685	568909	====== -1.87
55 Chlorobenzene - d	221404	132842	309966	179791	-18.80

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	-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.

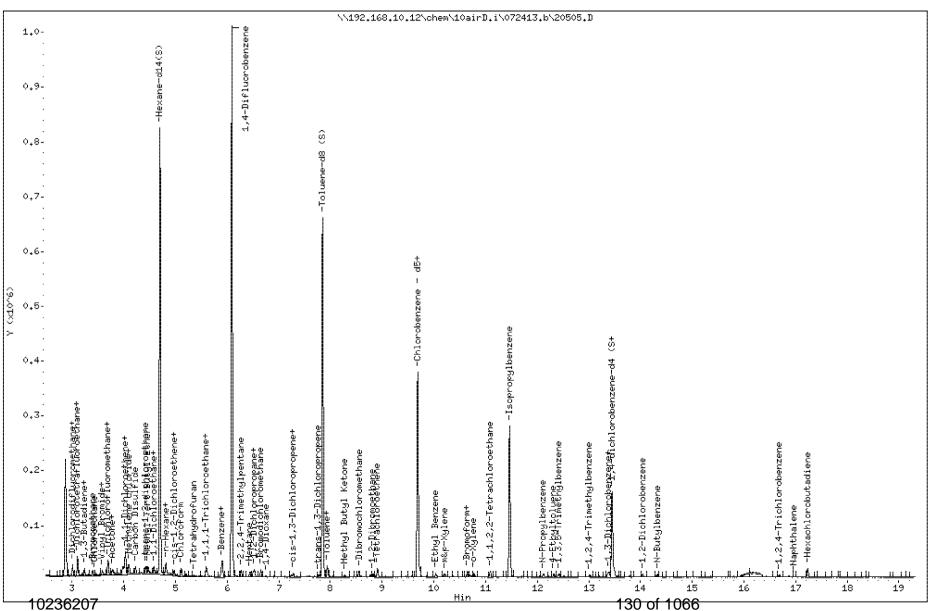
10236207 129 of 1066 Data File: \\192,168,10,12\chem\10airD,i\072413,b\20505,D

Date : 24-JUL-2013 14:40

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

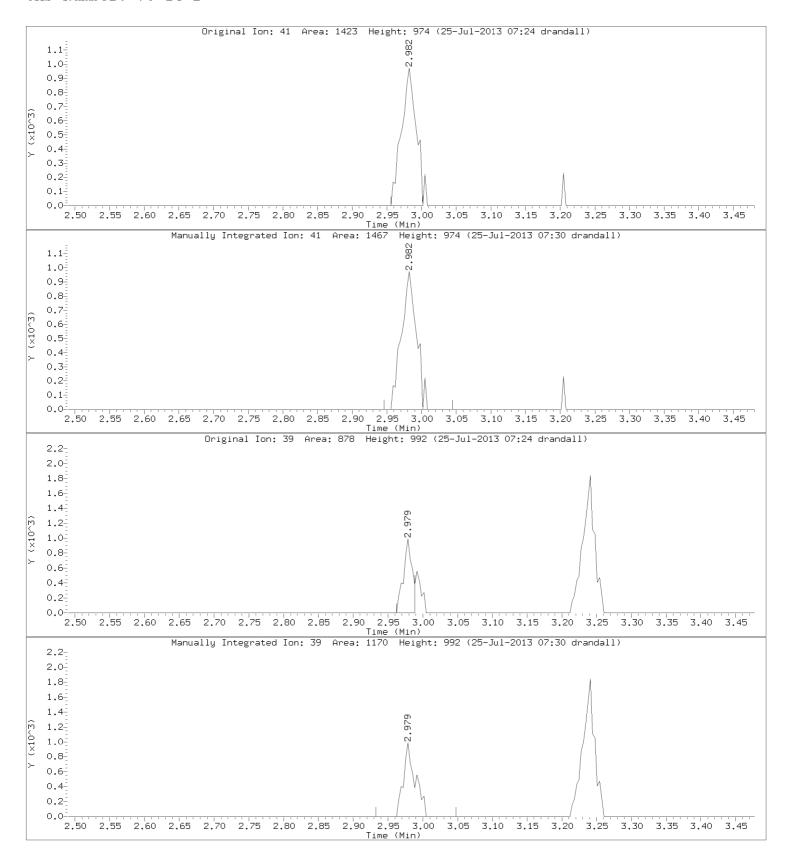
Column phase: J&W DB-5 Column diameter: 0,32



Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Propylene CAS Number: 76-14-2

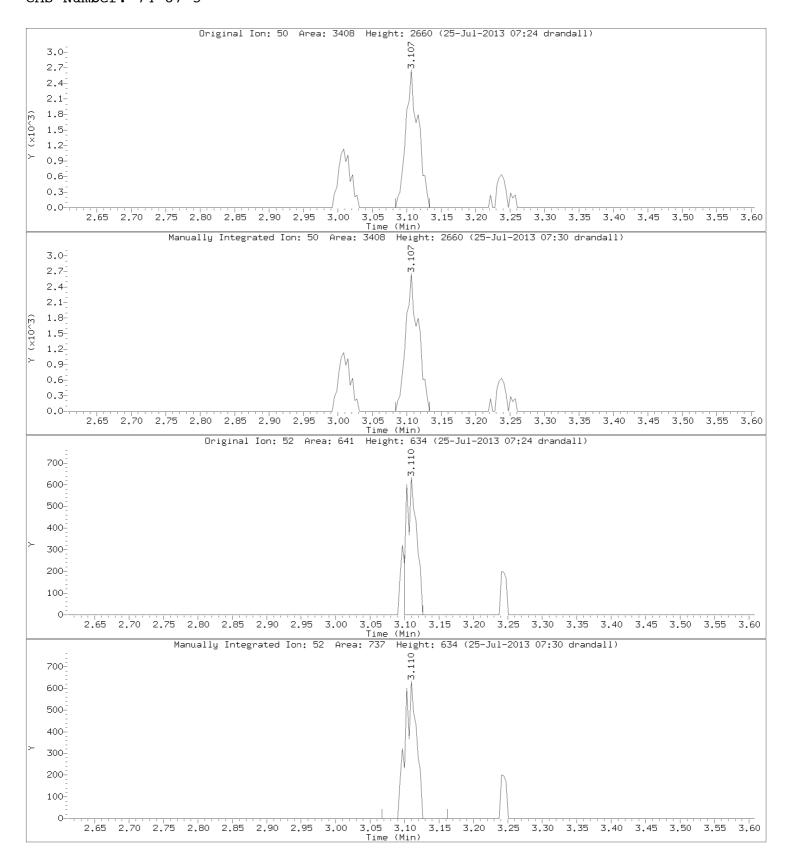


10236207 131 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Chloromethane CAS Number: 74-87-3



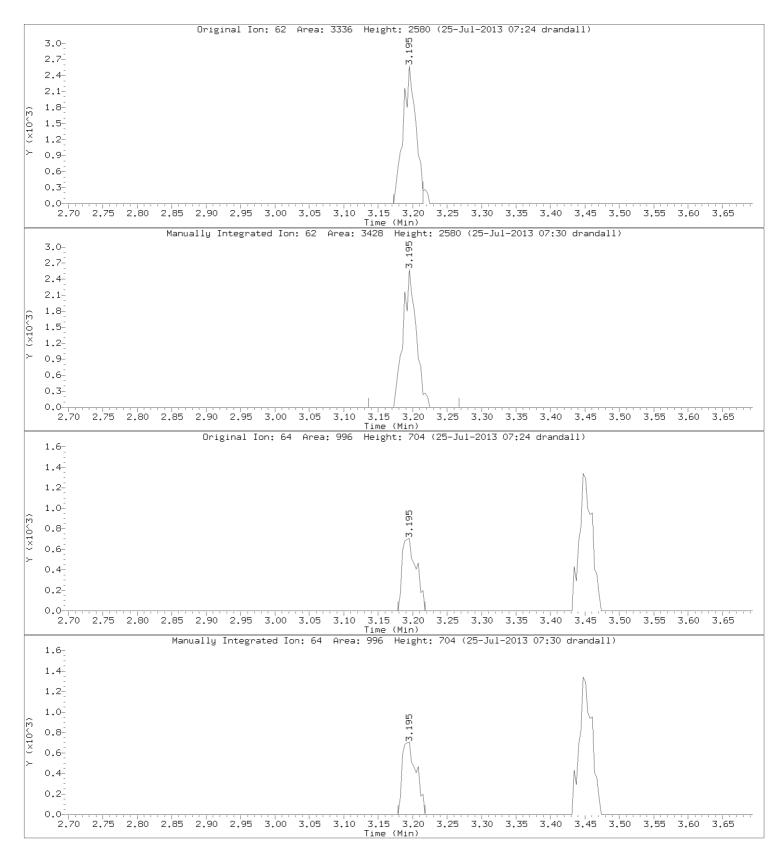
10236207 132 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Vinyl chloride

CAS Number: 75-01-4

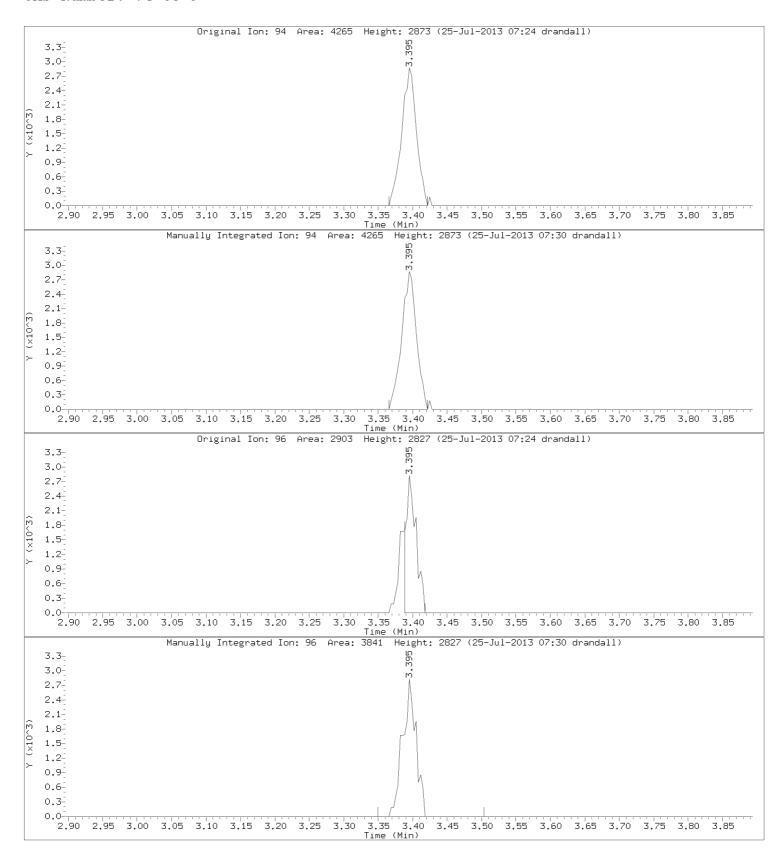


10236207 133 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Bromomethane CAS Number: 74-83-9

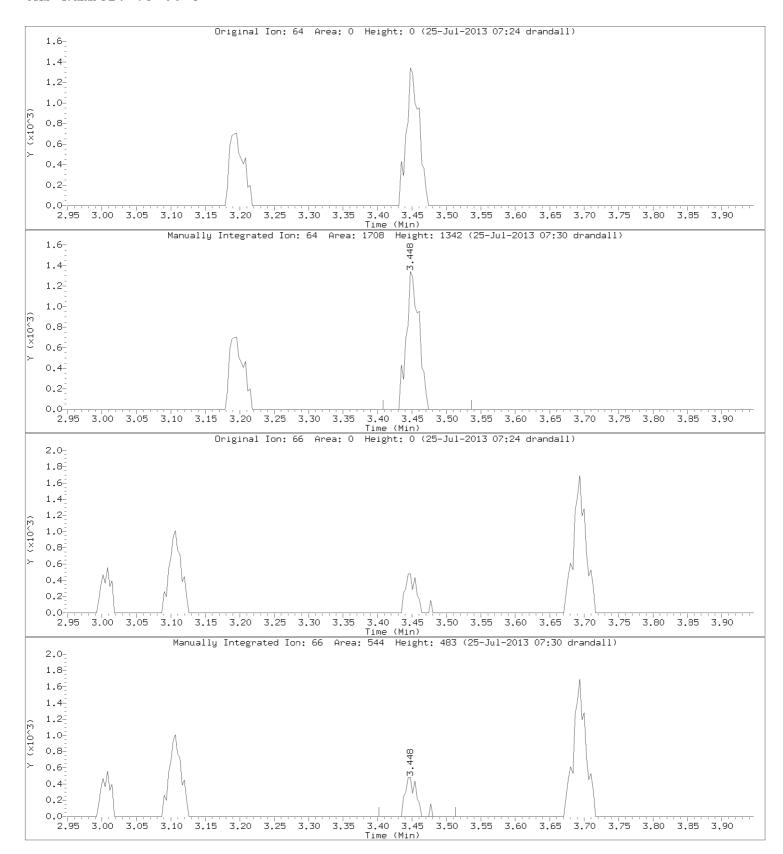


10236207 134 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Chloroethane CAS Number: 75-00-3

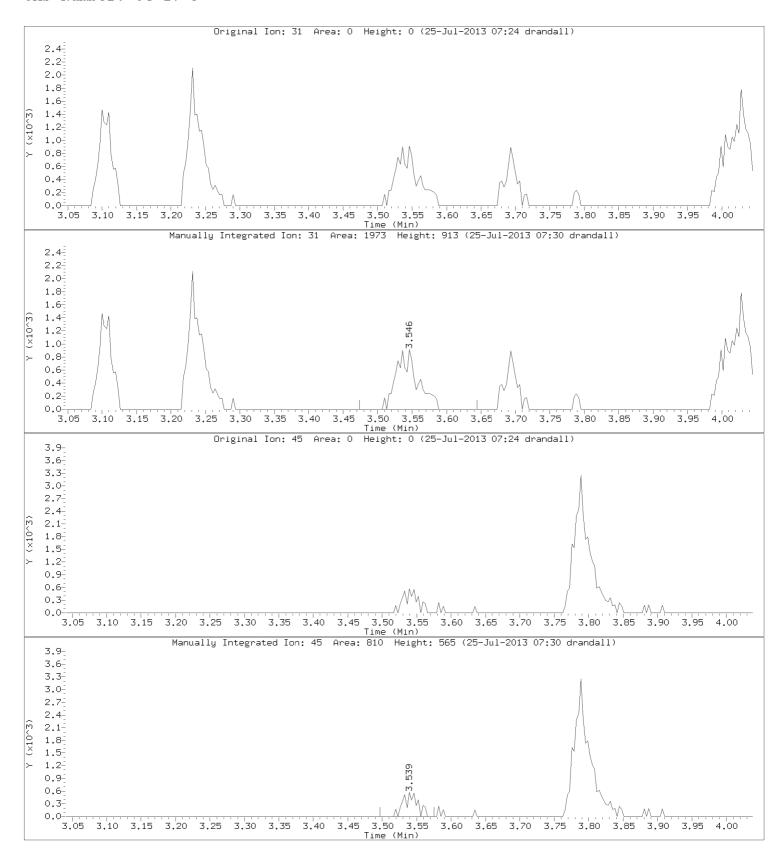


10236207 135 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Ethanol CAS Number: 64-17-5

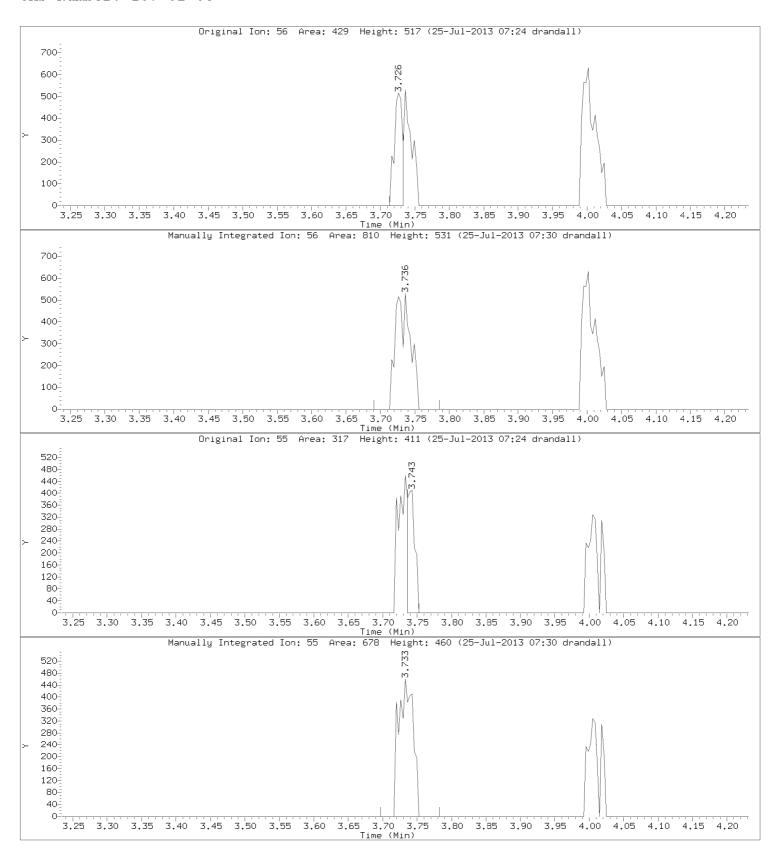


10236207 136 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Acrolein CAS Number: 107-02-08

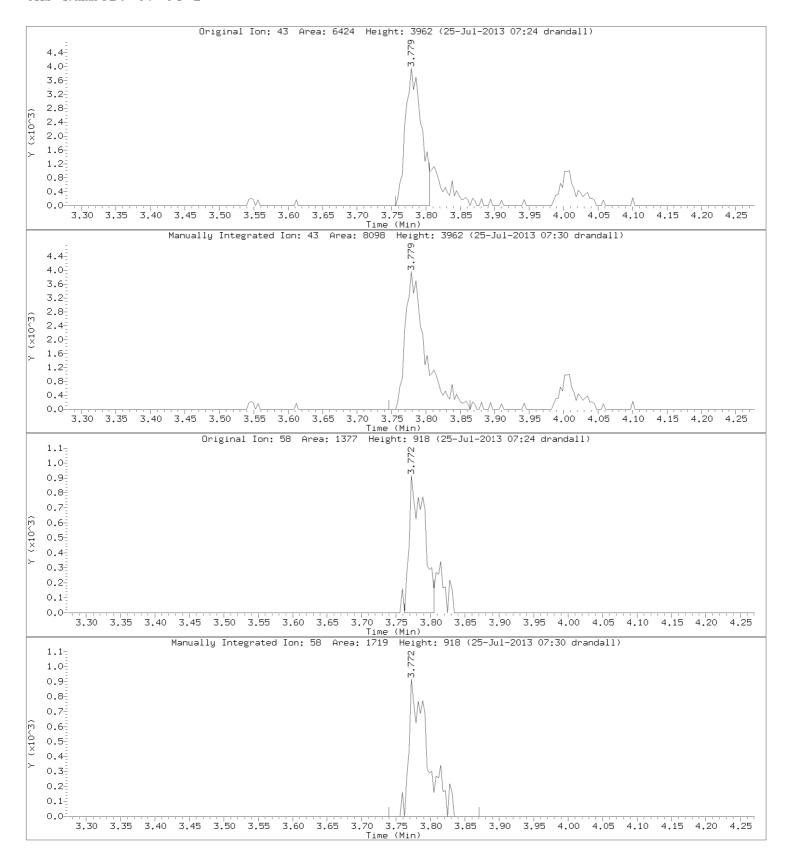


10236207 137 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Acetone CAS Number: 67-64-1



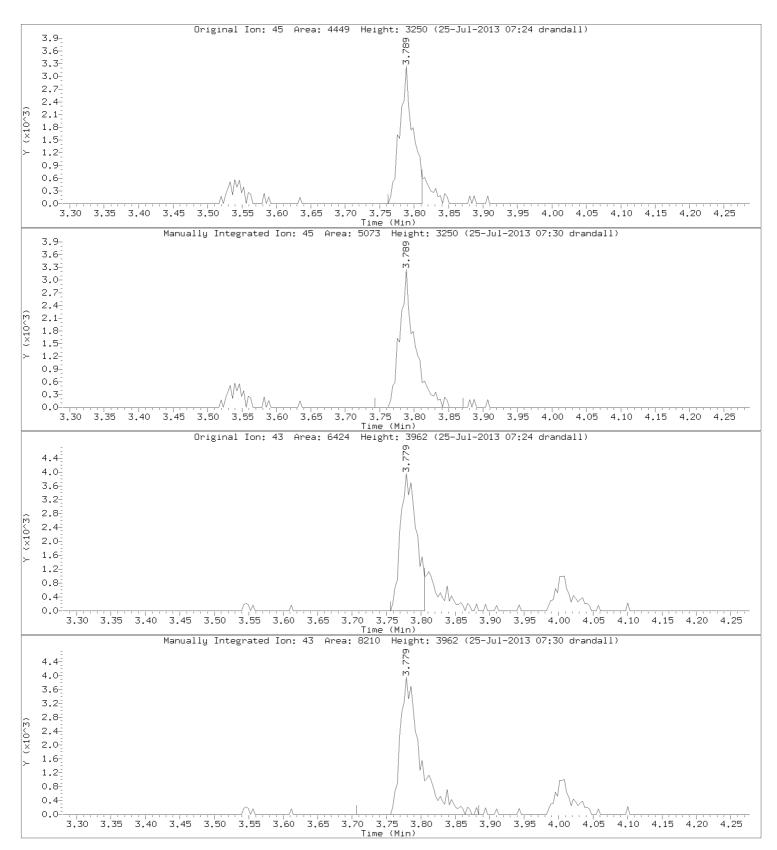
10236207 138 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Isopropyl Alcohol

CAS Number: 67-63-0



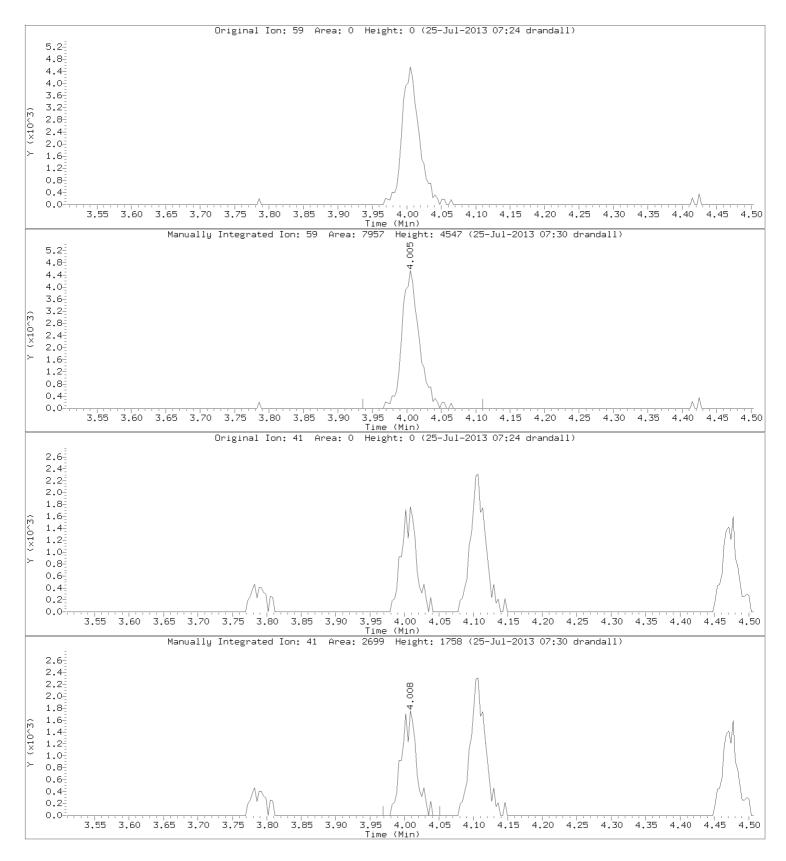
10236207 139 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0

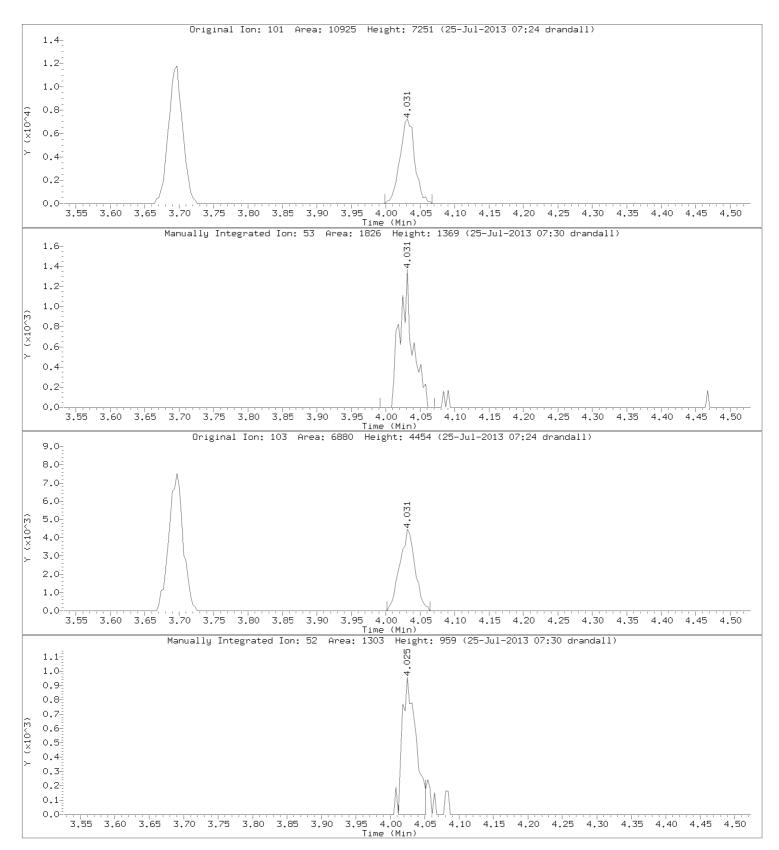


10236207 140 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Acrylonitrile CAS Number: 107-13-1



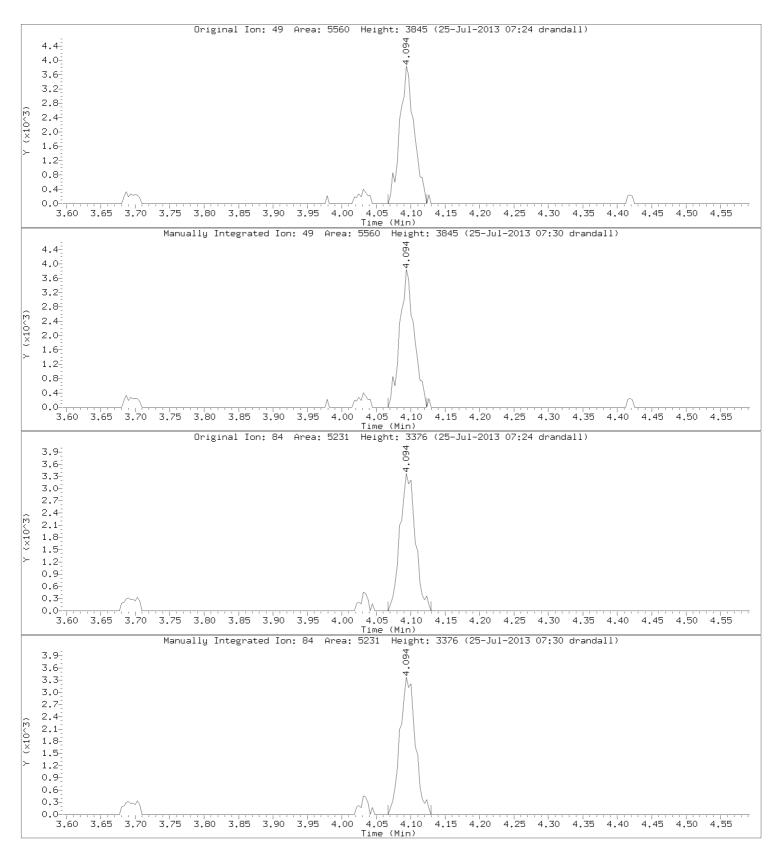
10236207 141 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Methylene chloride

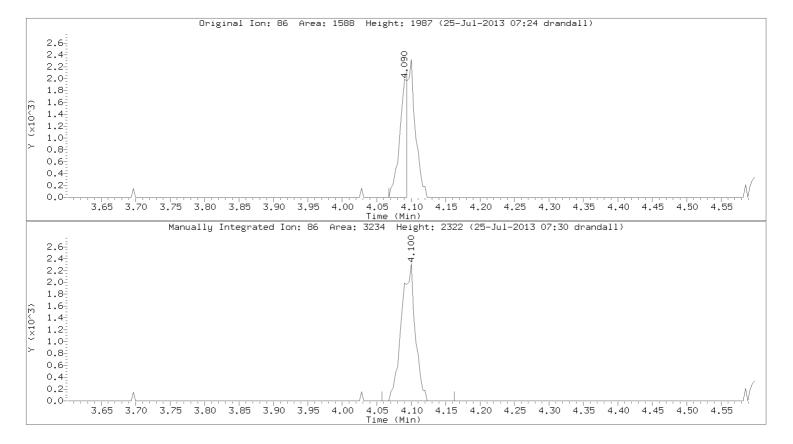
CAS Number: 75-09-2



10236207 142 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

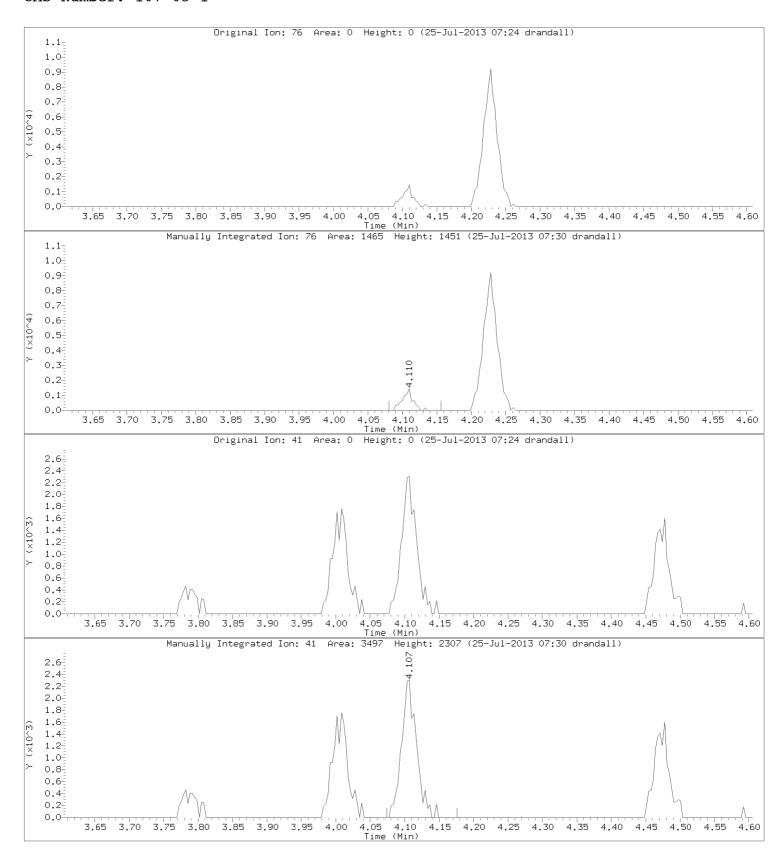


10236207 143 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

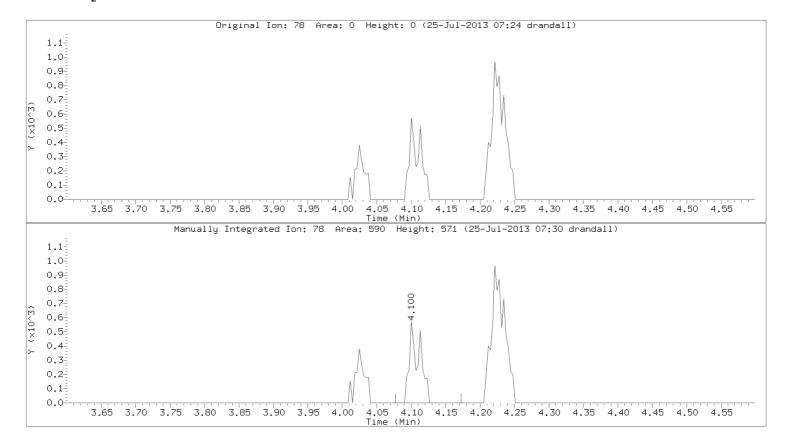
Compound: Allyl Chloride CAS Number: 107-05-1



10236207 144 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



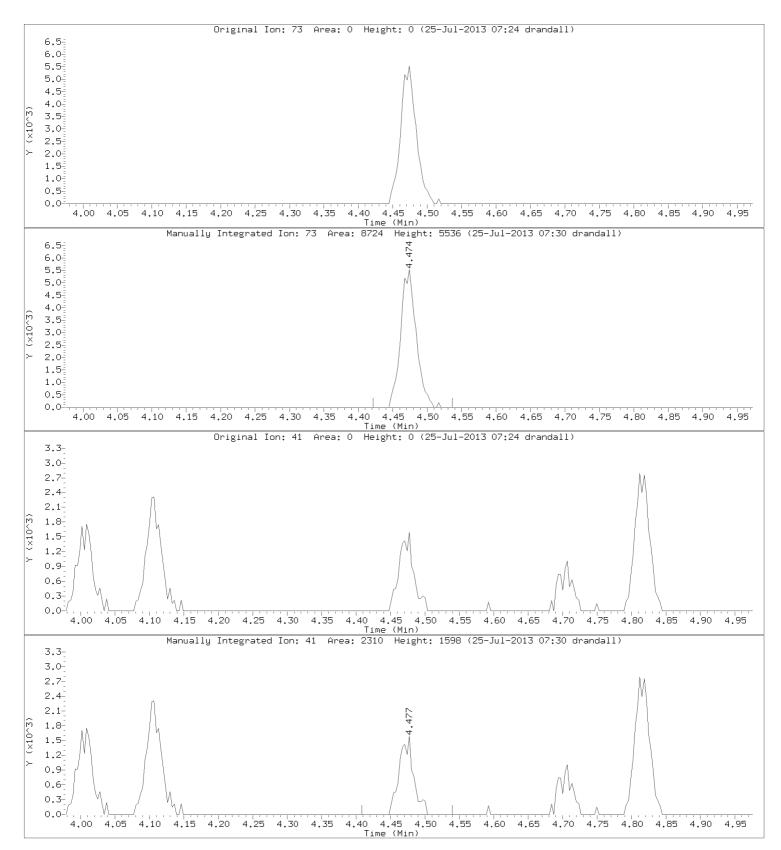
10236207 145 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

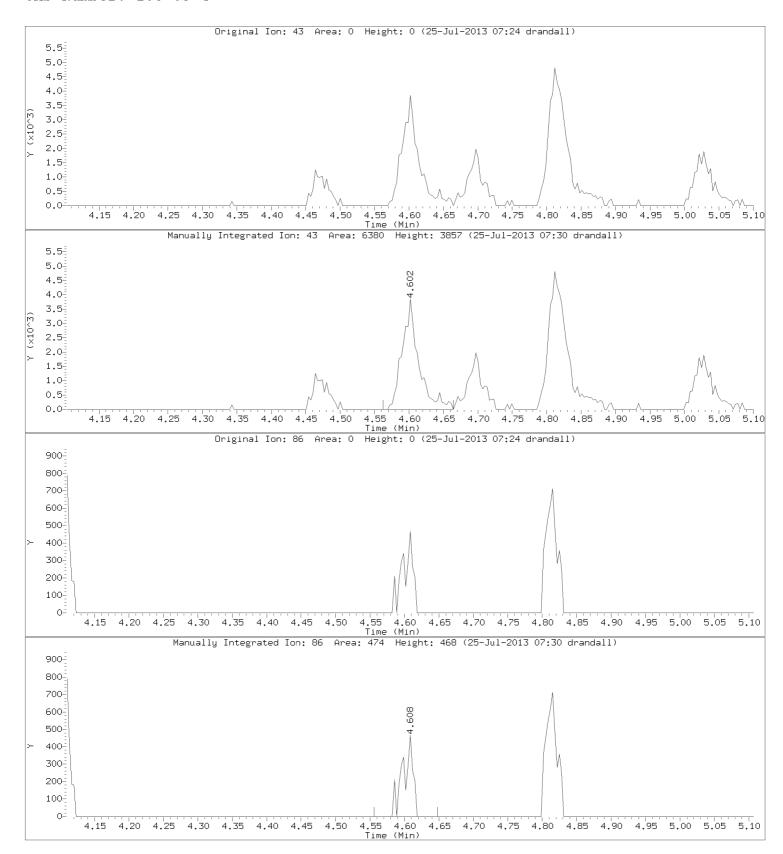


10236207 146 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Vinyl Acetate CAS Number: 108-05-4



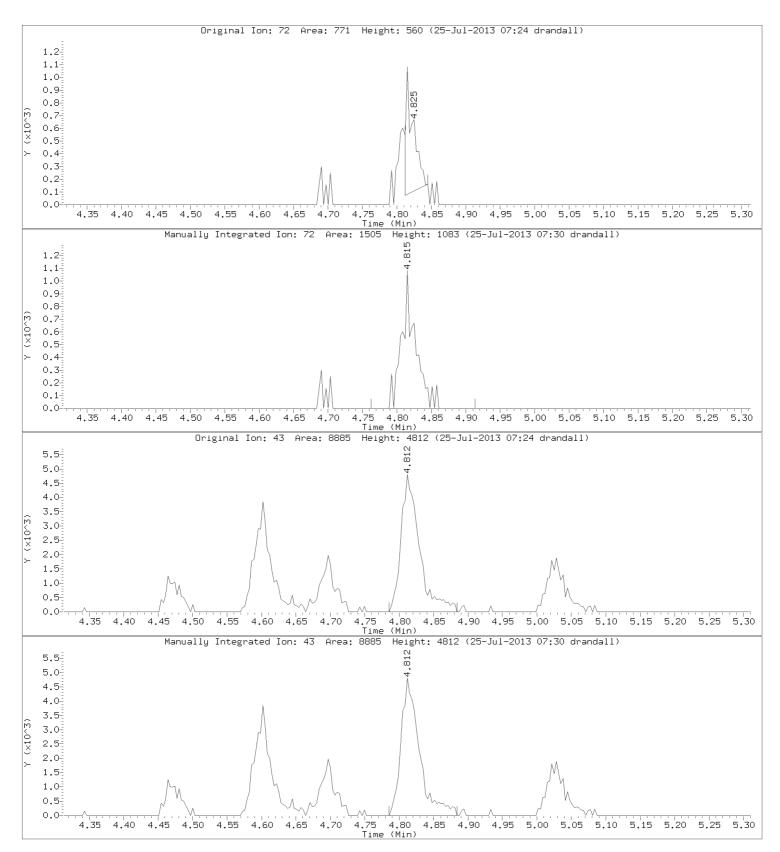
10236207 147 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Methyl Ethyl Ketone

CAS Number: 78-93-3

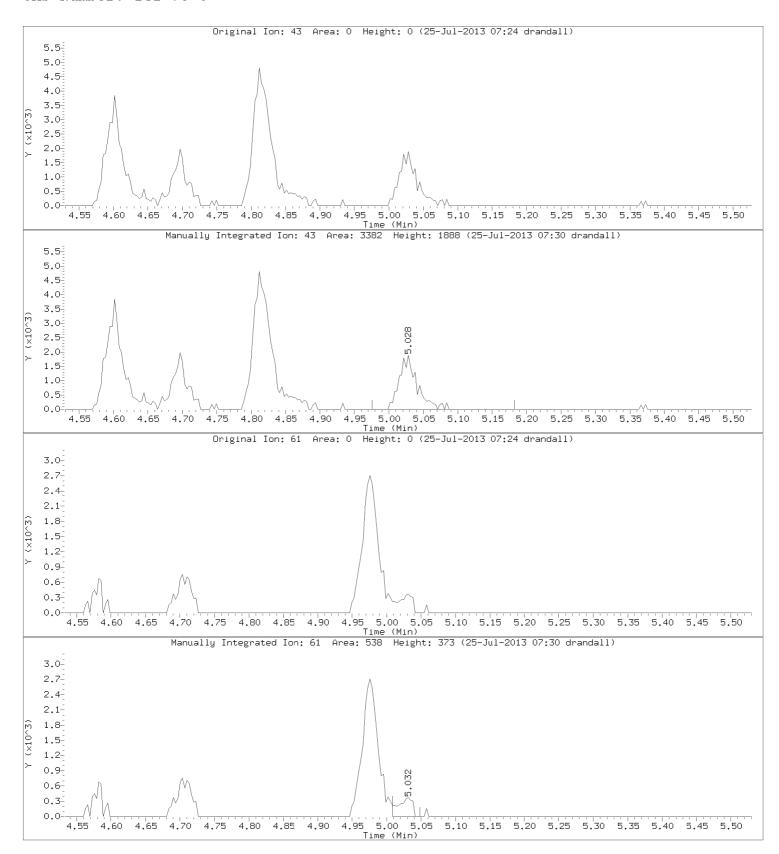


10236207 148 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

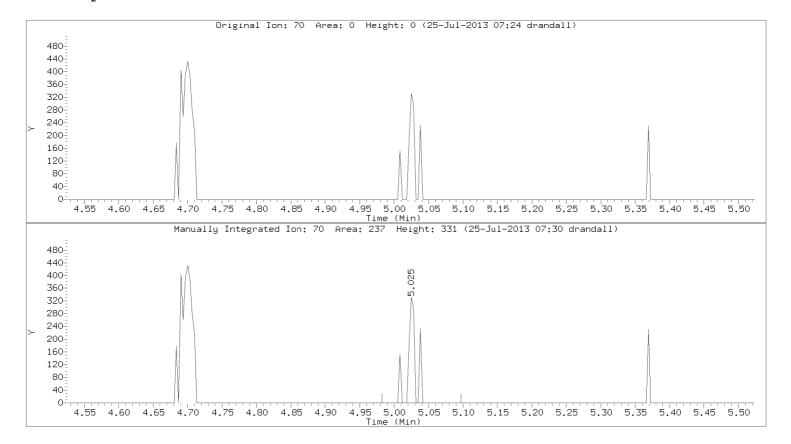
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 149 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

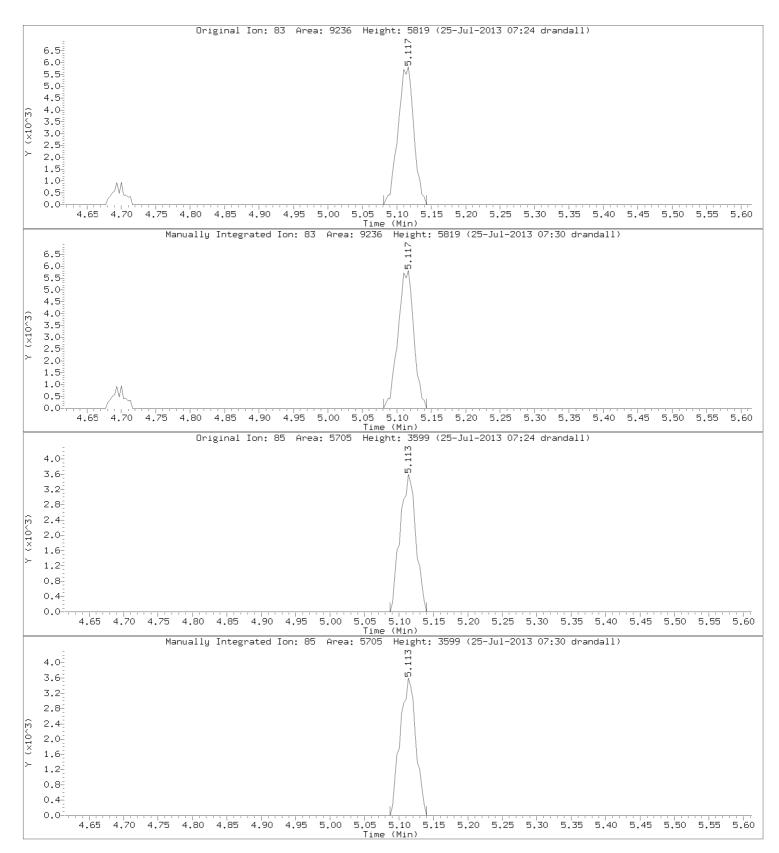


10236207 150 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

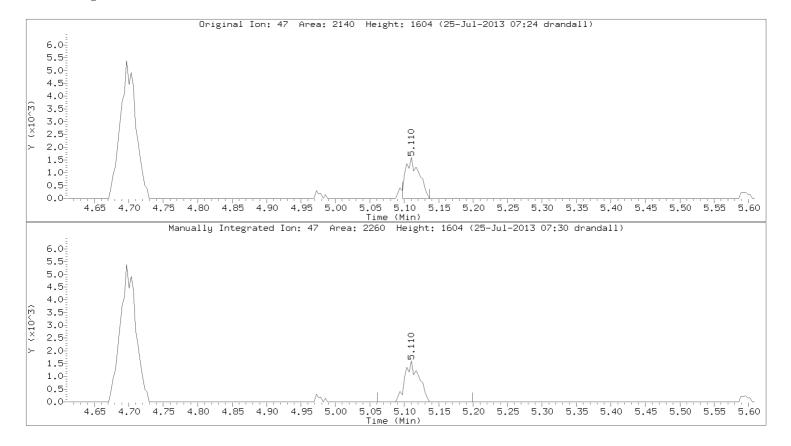
Compound: Chloroform CAS Number: 67-66-3



10236207 151 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



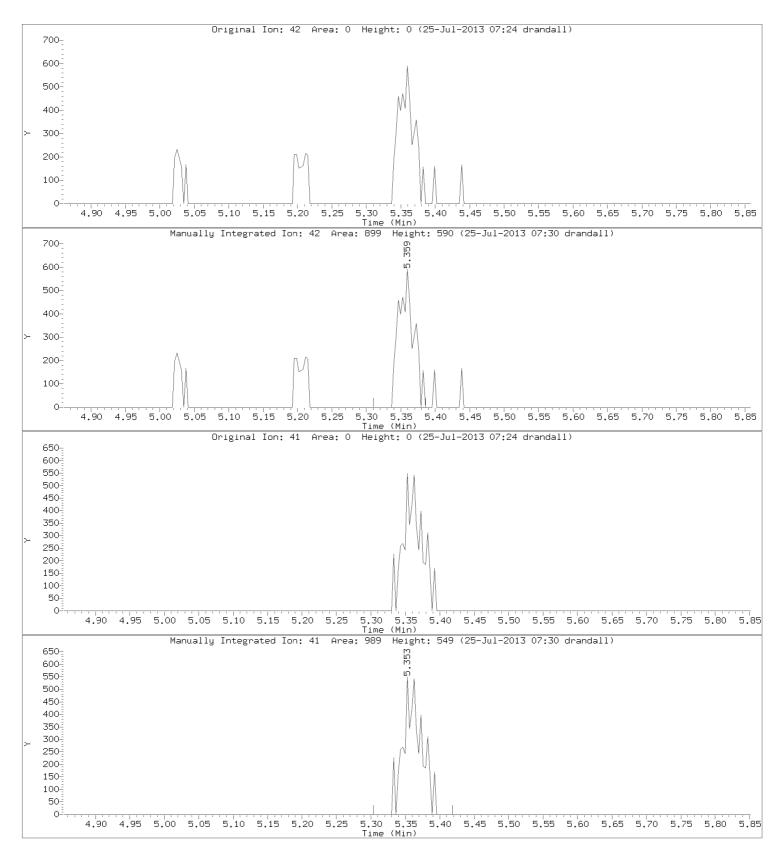
10236207 152 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Tetrahydrofuran

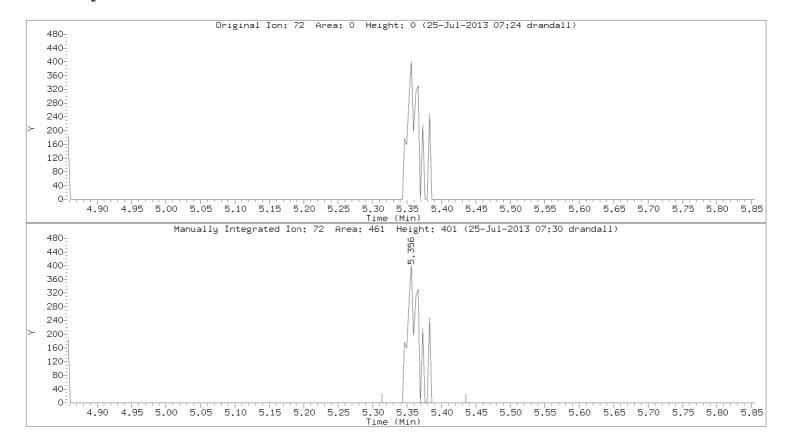
CAS Number: 109-99-9



10236207 153 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



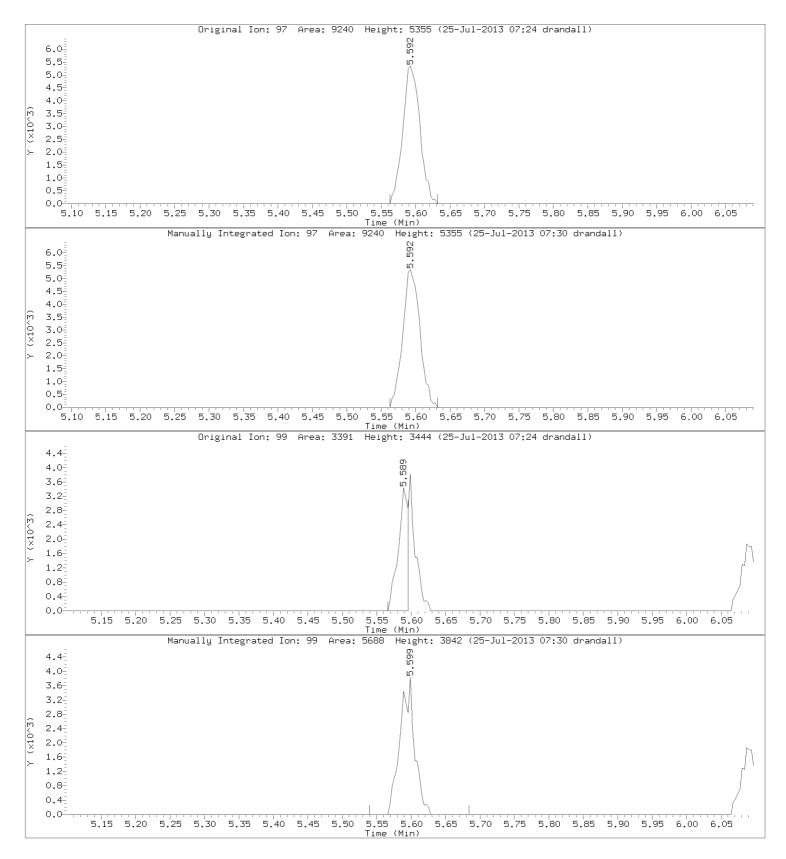
10236207 154 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,1,1-Trichloroethane

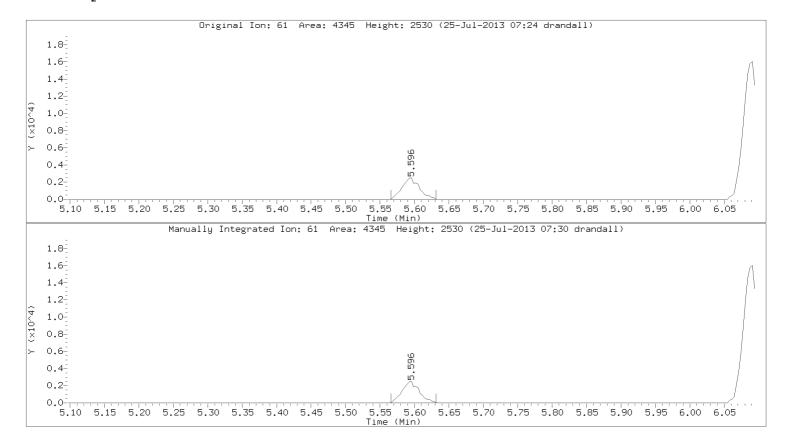
CAS Number: 71-55-6



10236207 155 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



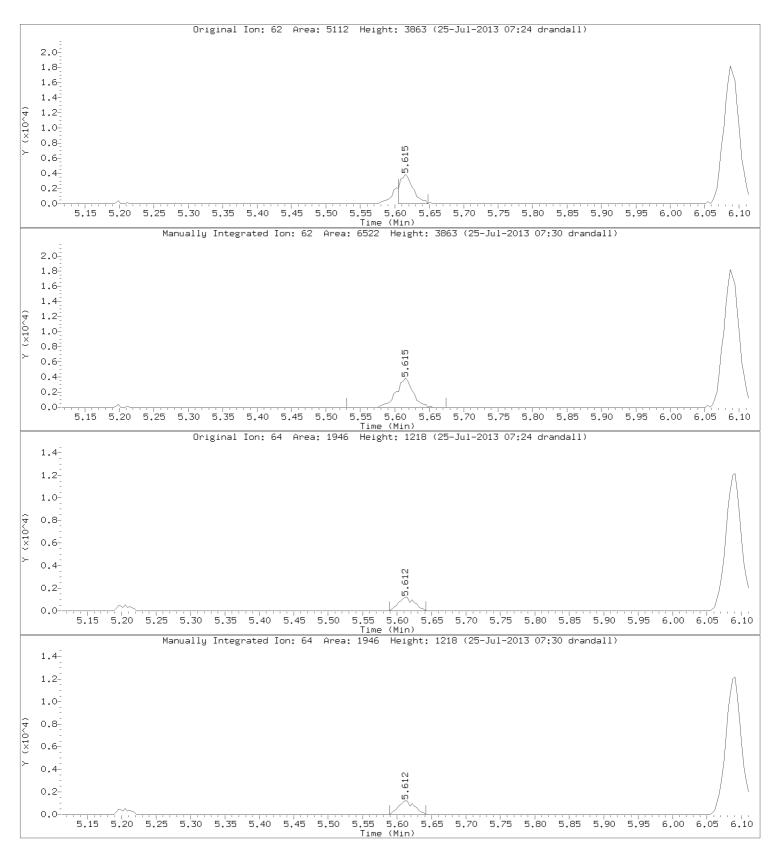
10236207 156 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,2-Dichloroethane

CAS Number: 107-06-2

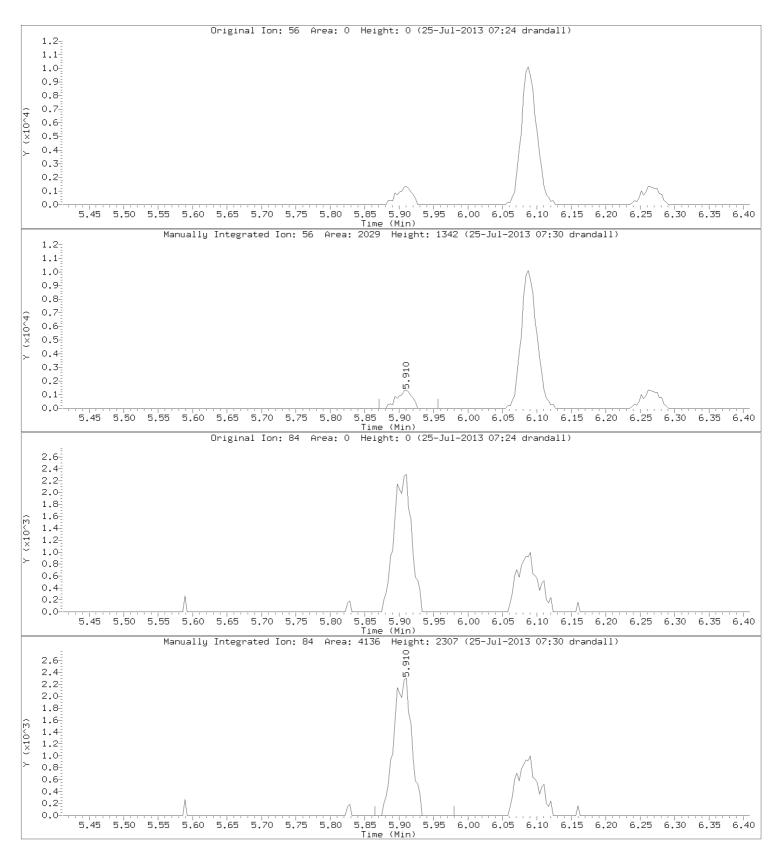


10236207 157 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

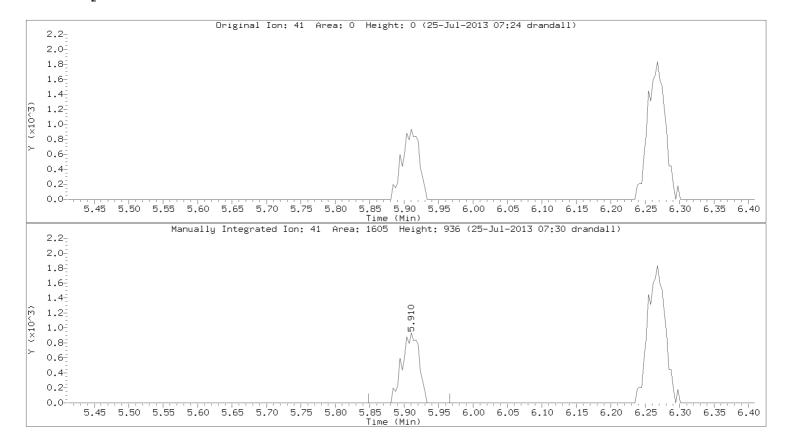
Compound: Cyclohexane CAS Number: 110-82-7



10236207 158 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

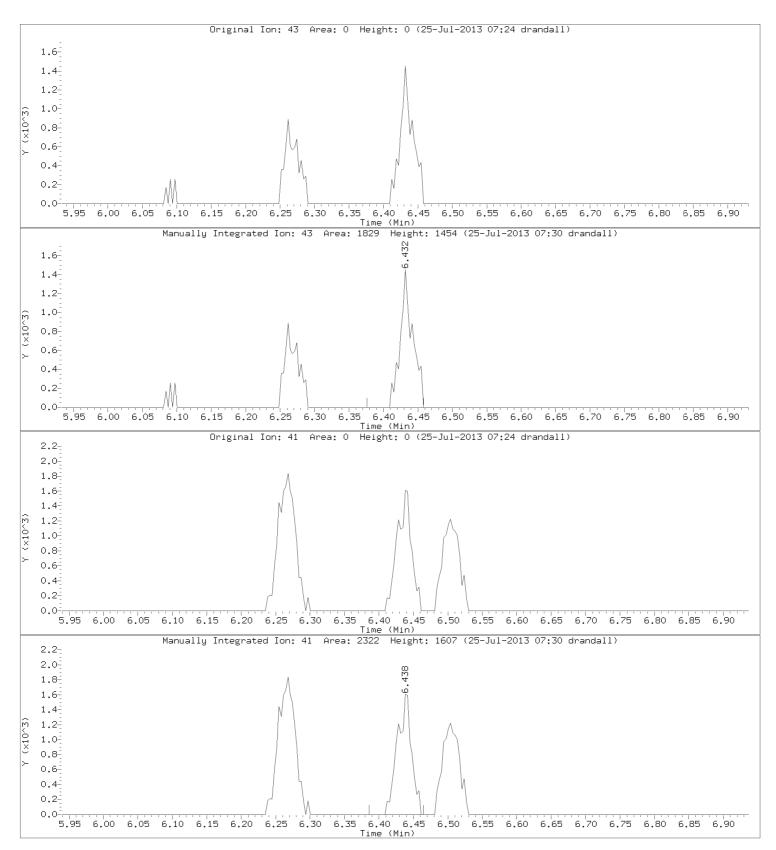


10236207 159 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Heptane CAS Number: 142-82-5



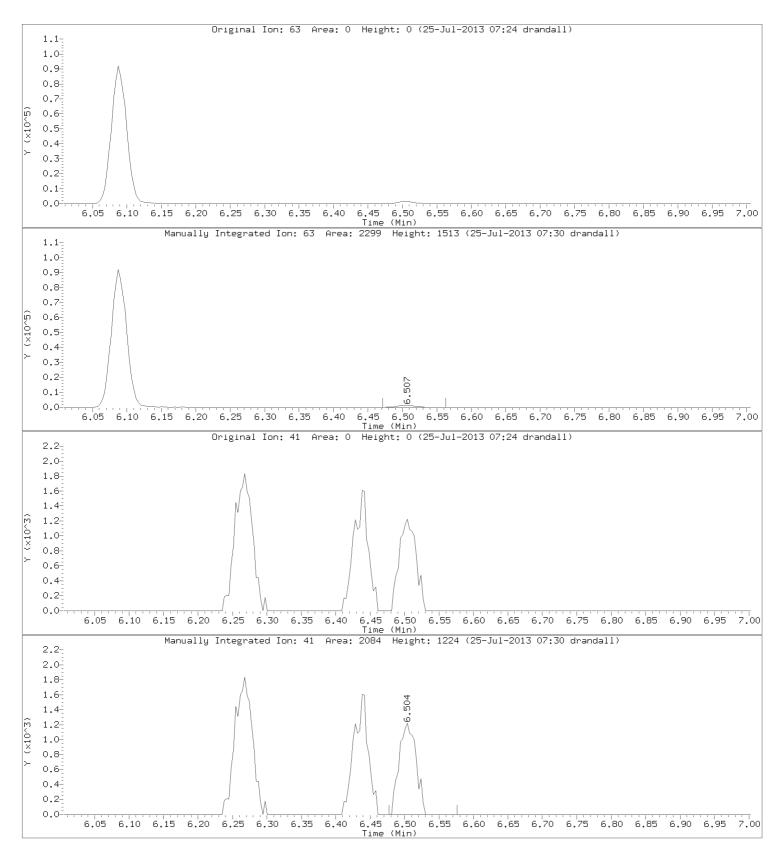
10236207 160 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,2-Dichloropropane

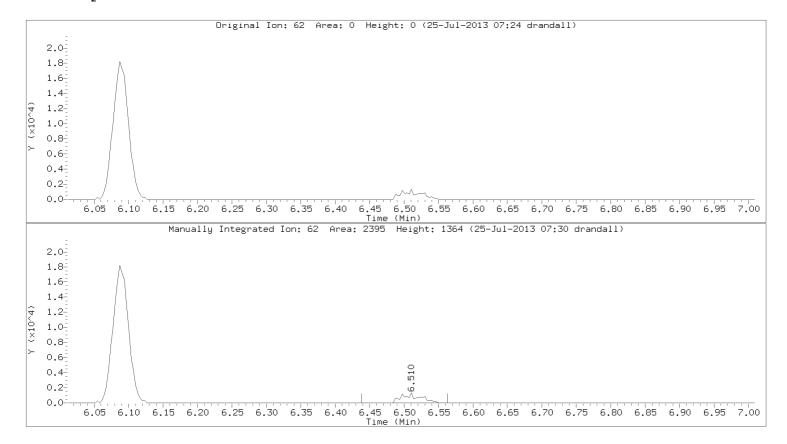
CAS Number: 78-87-5



10236207 161 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



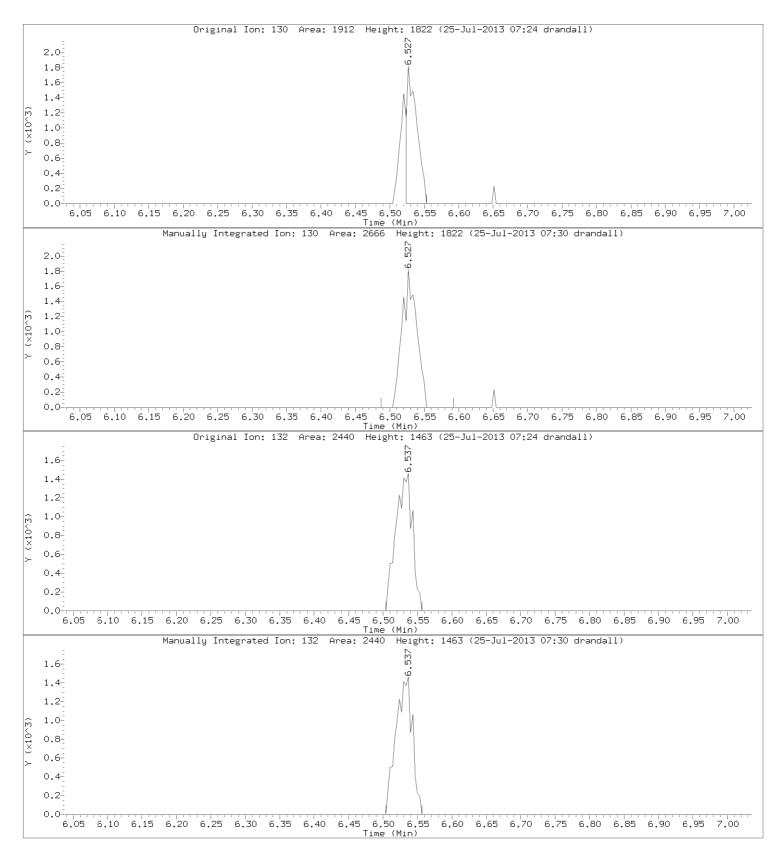
10236207 162 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Trichloroethene

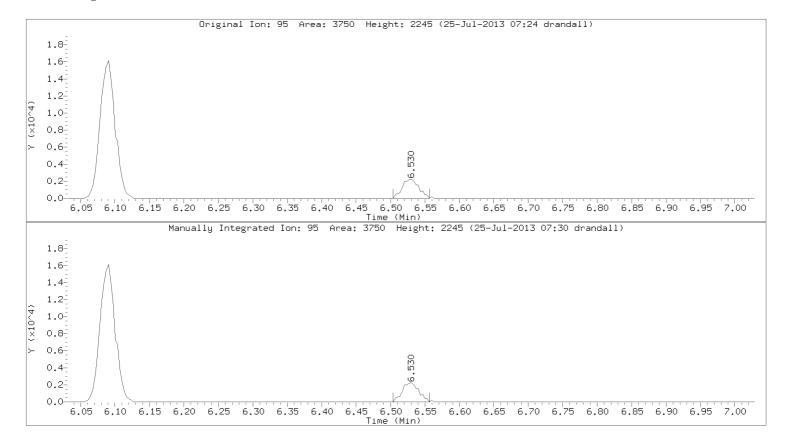
CAS Number: 79-01-6



10236207 163 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

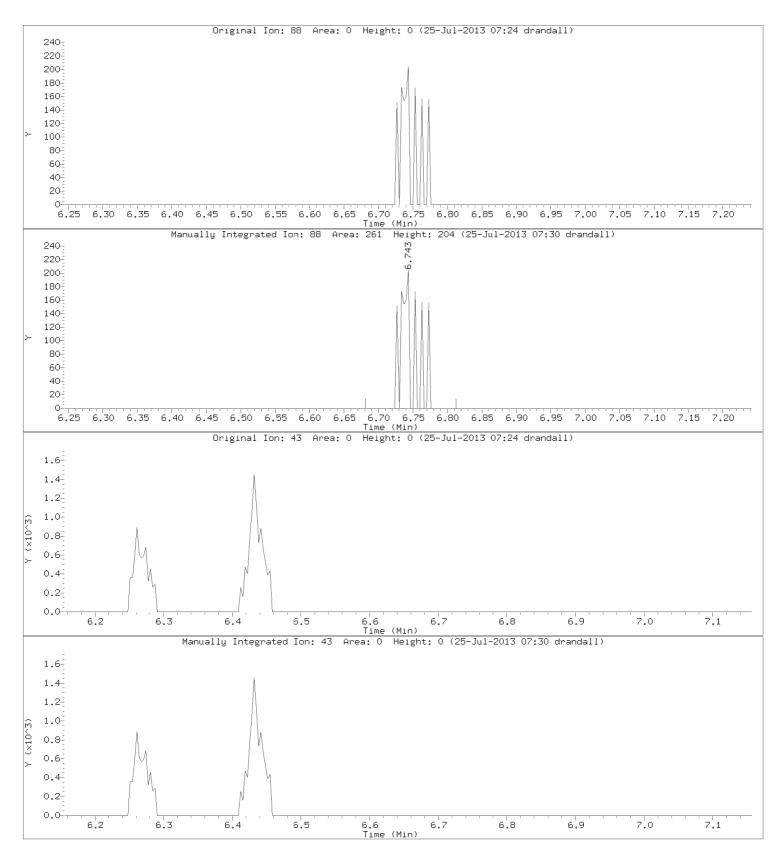


10236207 164 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,4-Dioxane CAS Number: 123-91-1



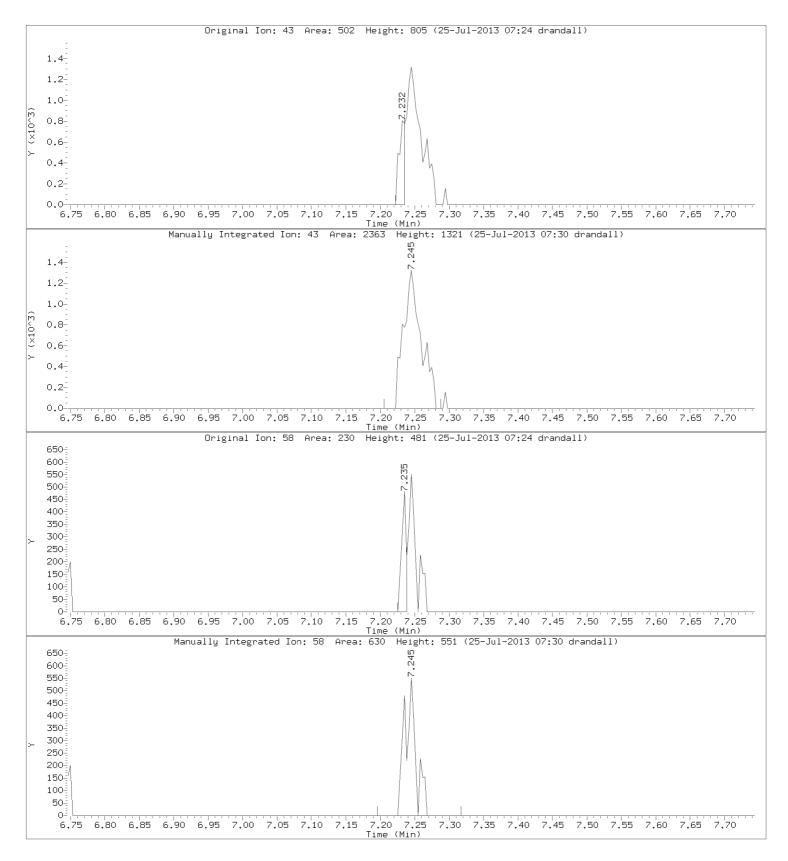
10236207 165 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Methyl Isobutyl Ketone

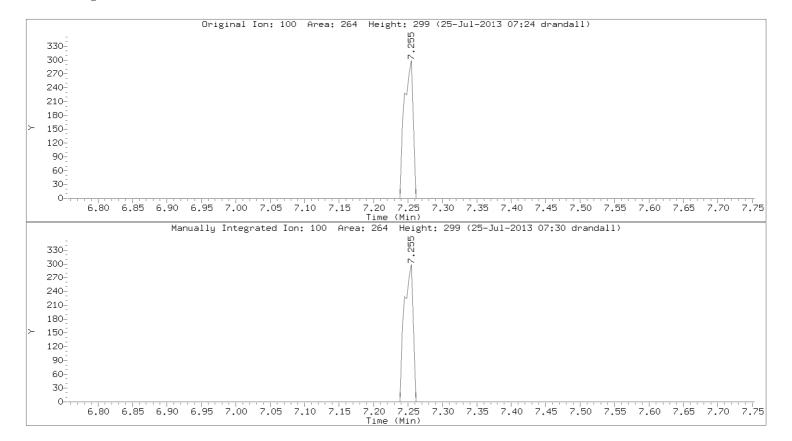
CAS Number: 108-10-1



10236207 166 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



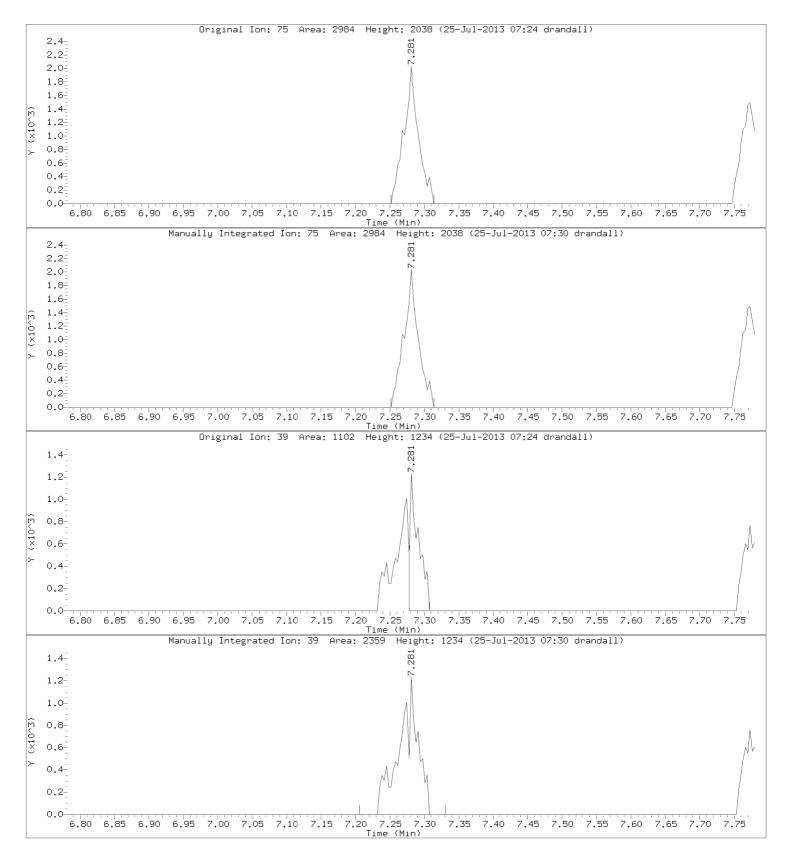
10236207 167 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: cis-1,3-Dichloropropene

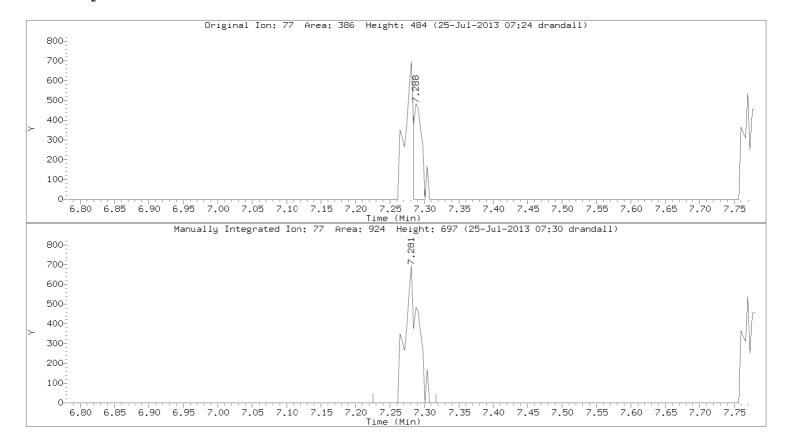
CAS Number: 10061-01-5



10236207 168 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



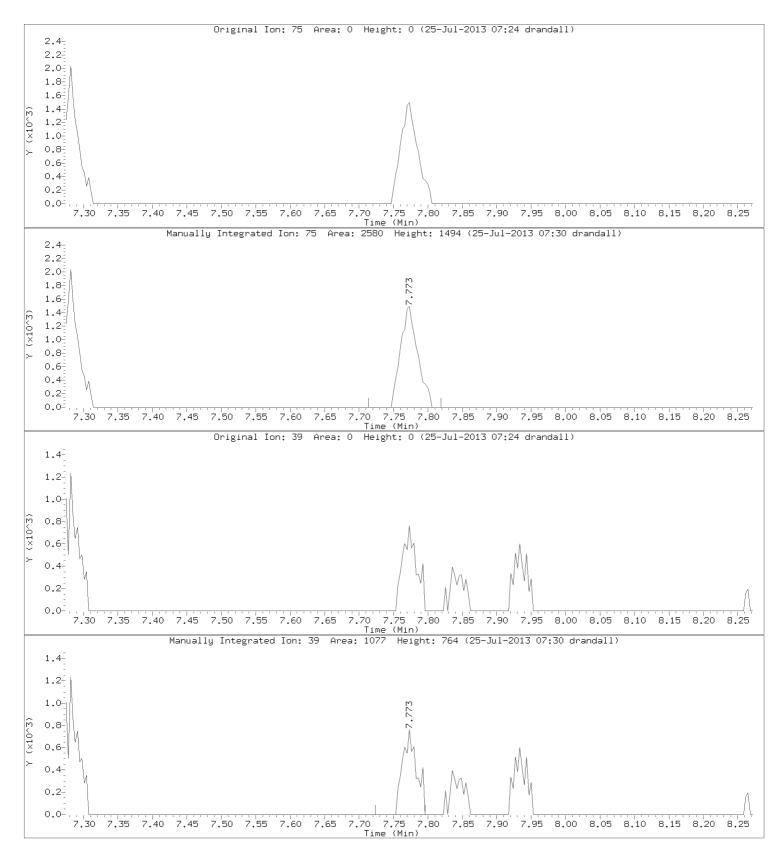
10236207 169 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: trans-1,3-Dichloropropene

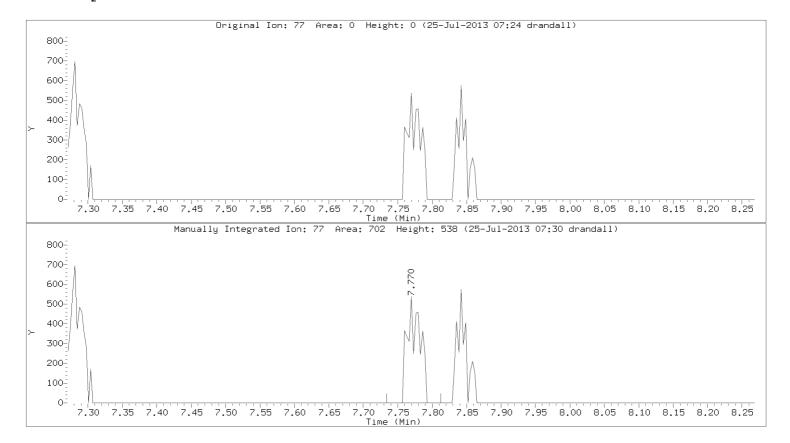
CAS Number: 10061-02-6



10236207 170 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



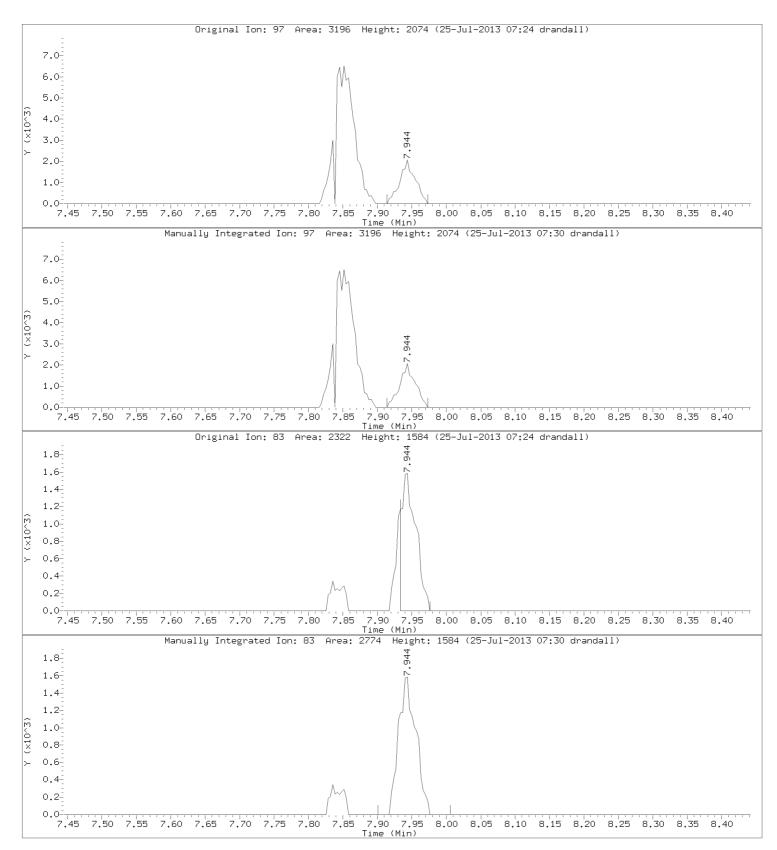
10236207 171 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,1,2-Trichloroethane

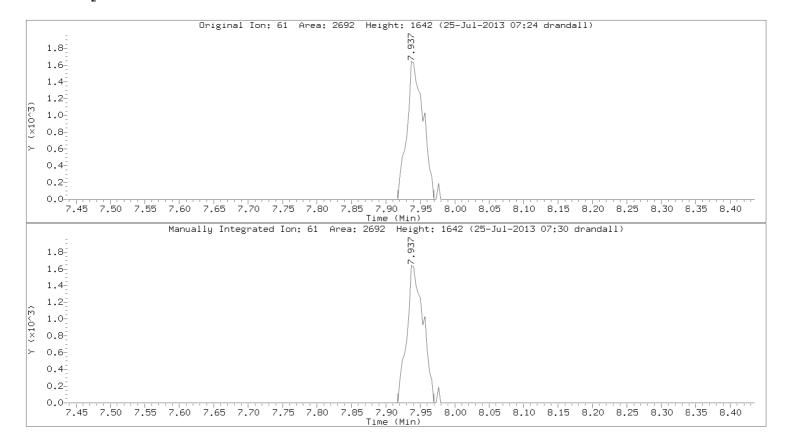
CAS Number: 79-00-5



10236207 172 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



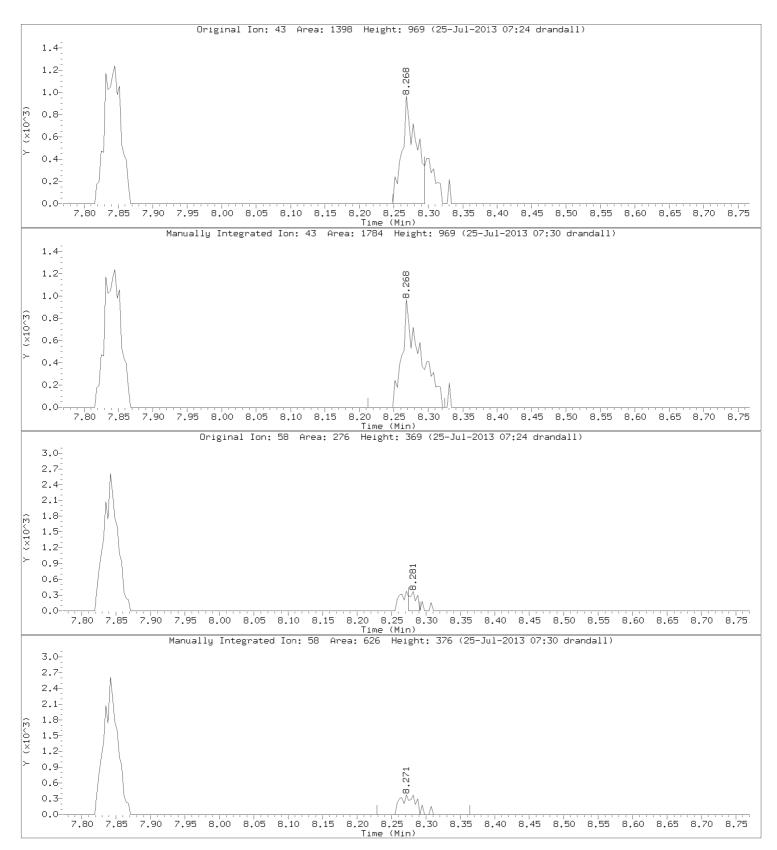
10236207 173 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Methyl Butyl Ketone

CAS Number: 591-78-6



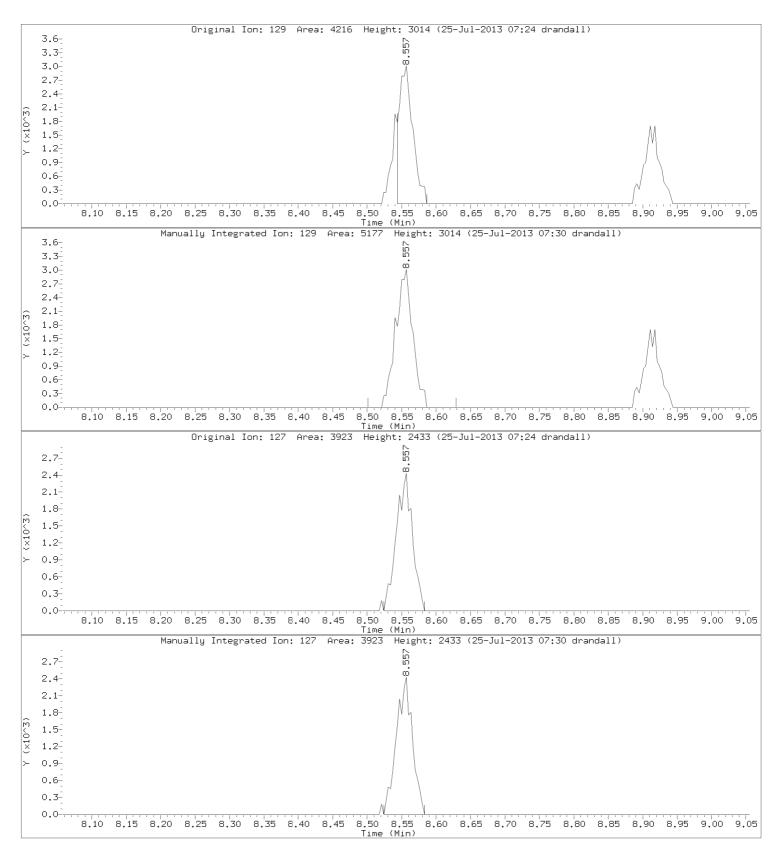
10236207 174 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Dibromochloromethane

CAS Number: 124-48-1



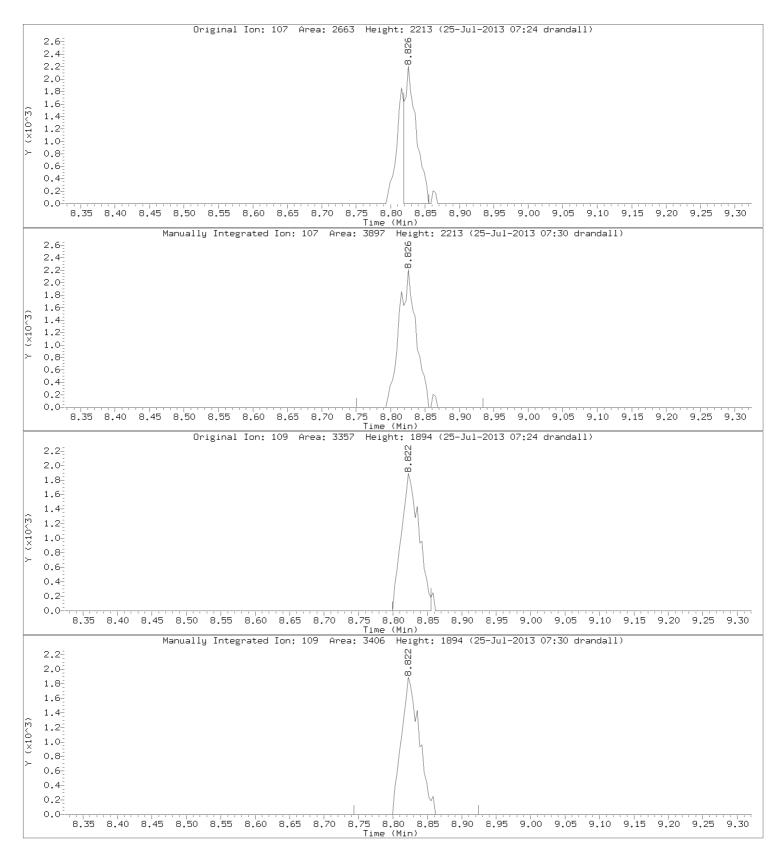
10236207 175 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,2-Dibromoethane

CAS Number: 106-93-4



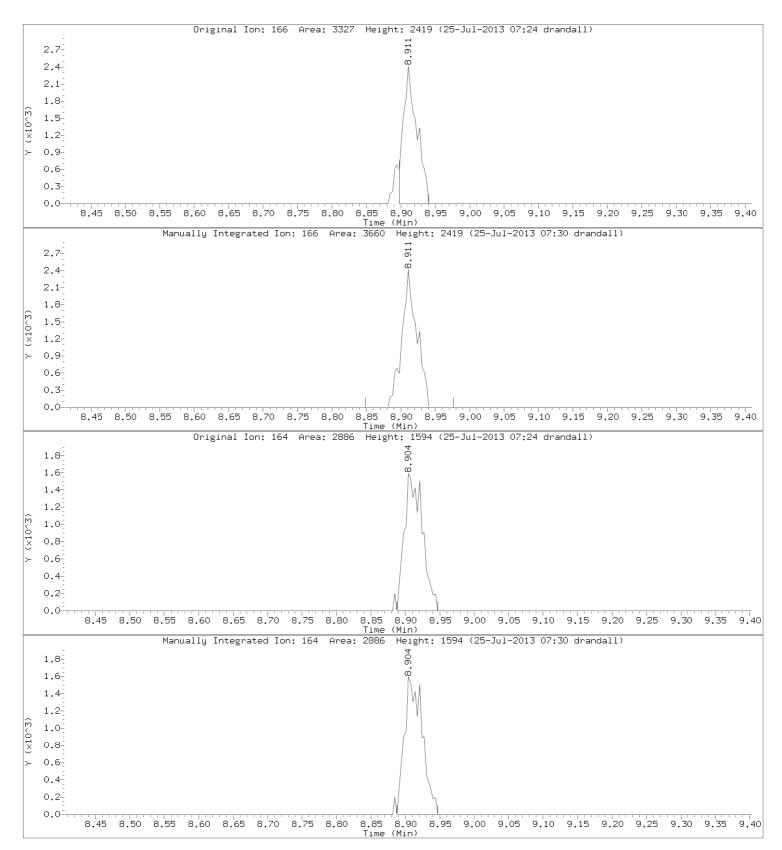
10236207 176 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Tetrachloroethene

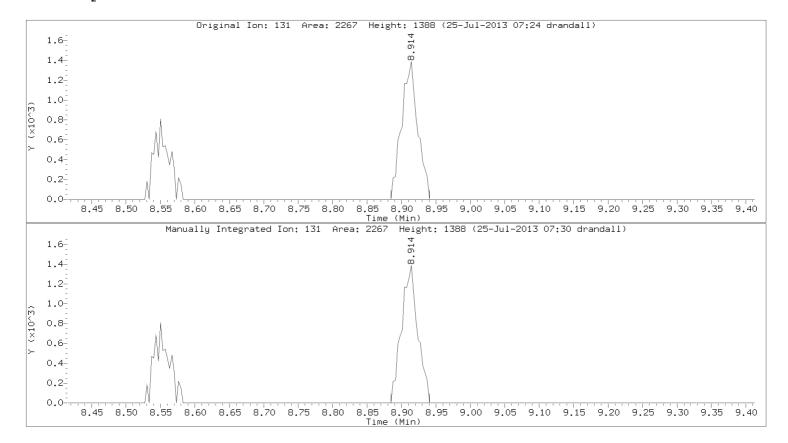
CAS Number: 127-18-4



10236207 177 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

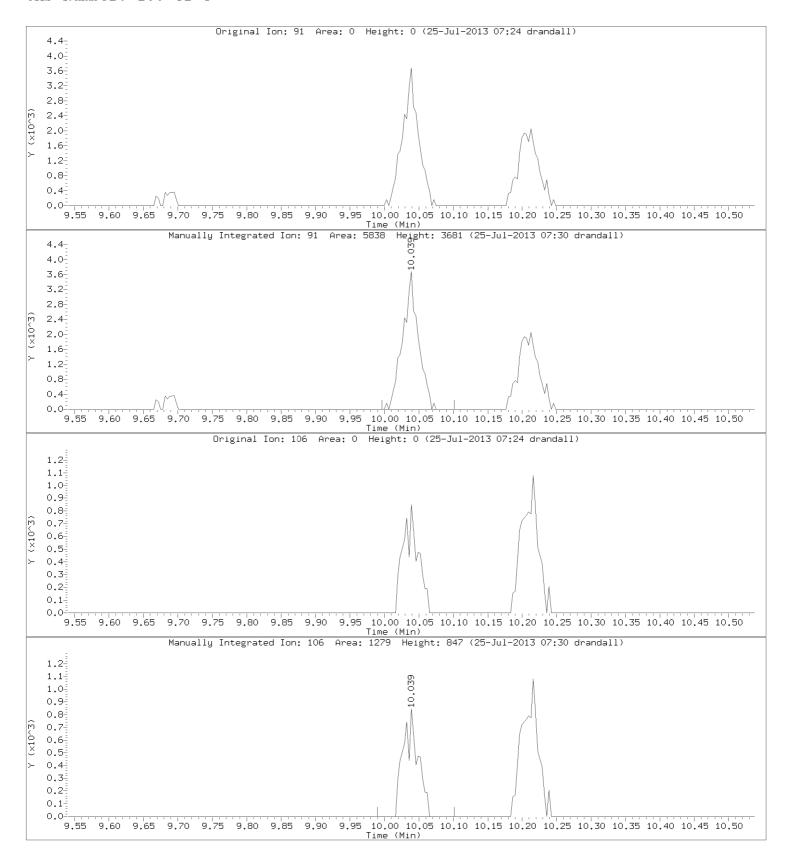


10236207 178 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Ethyl Benzene CAS Number: 100-41-4

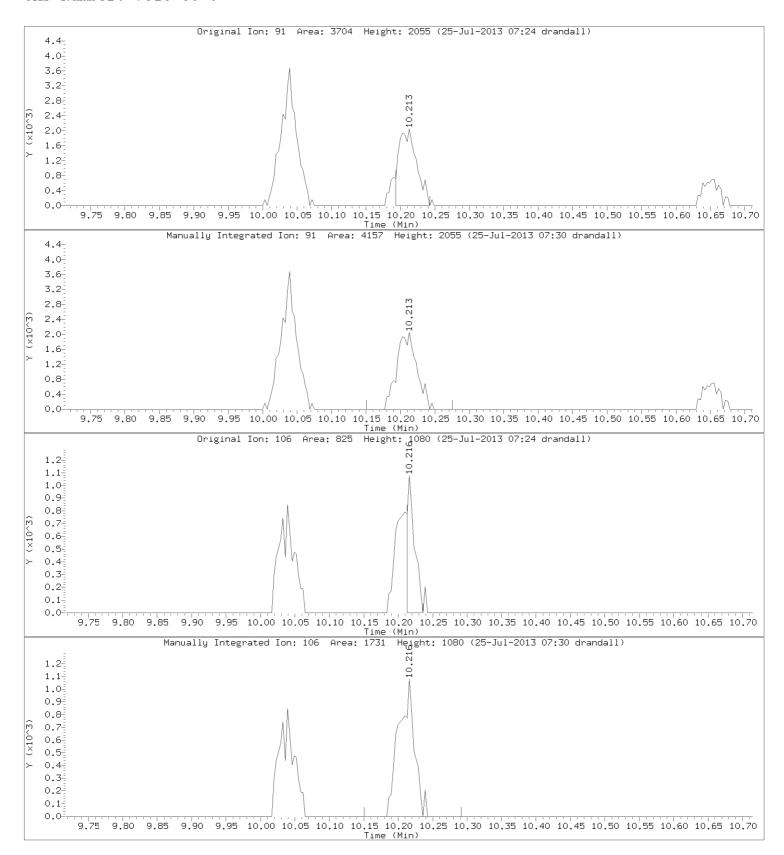


10236207 179 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: m&p-Xylene CAS Number: 7816-60-0

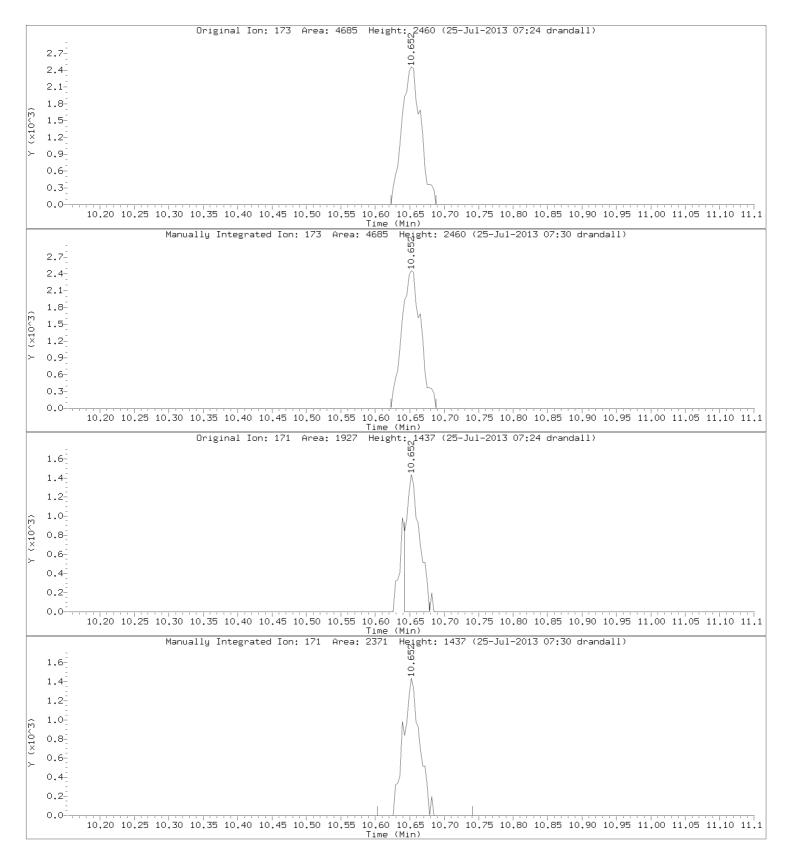


10236207 180 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Bromoform CAS Number: 75-25-2

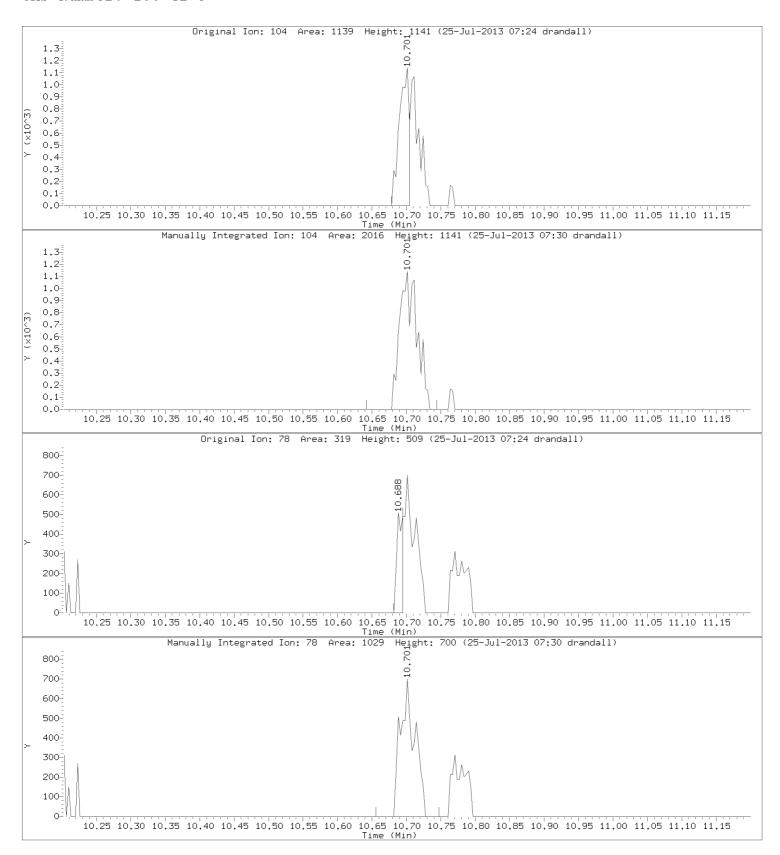


10236207 181 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

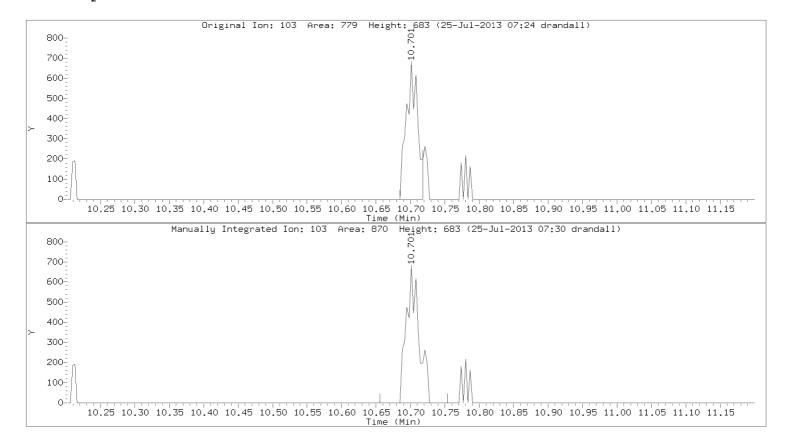
Compound: Styrene CAS Number: 100-42-5



10236207 182 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

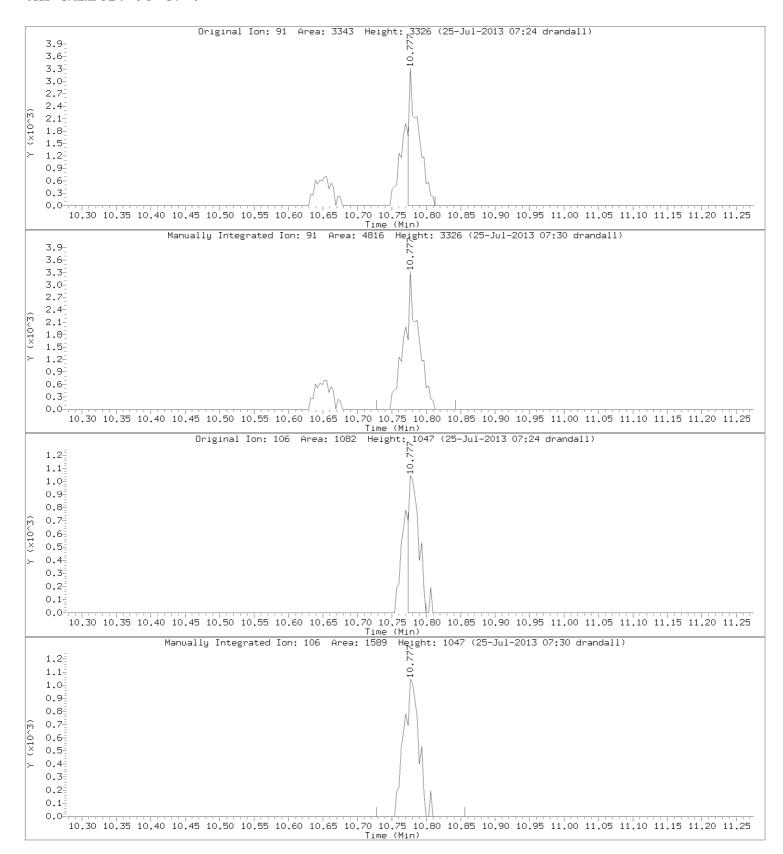


10236207 183 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: o-Xylene CAS Number: 95-47-6



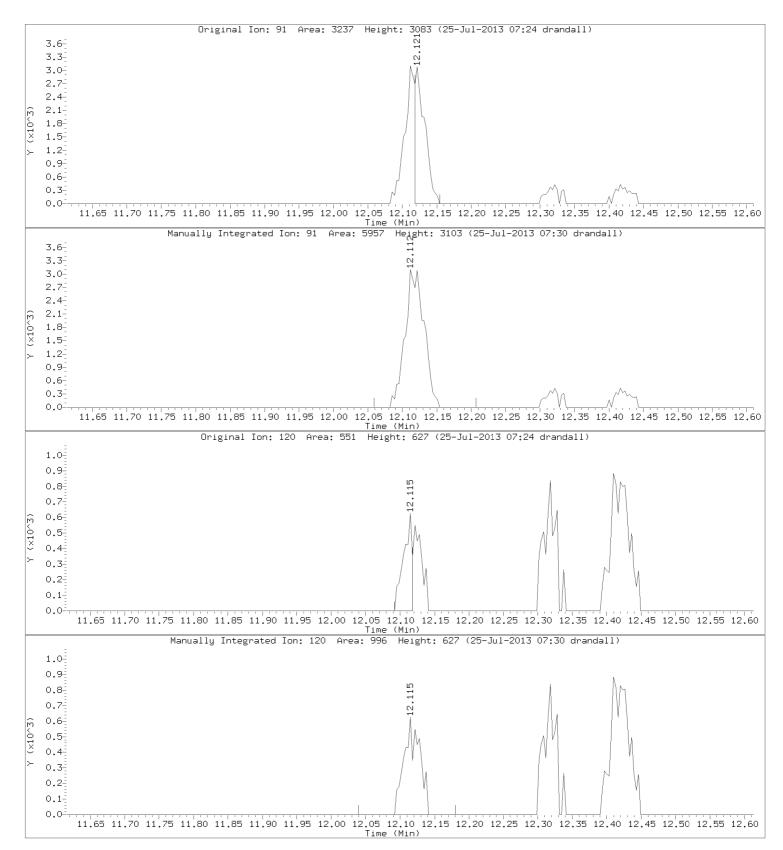
10236207 184 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: N-Propylbenzene

CAS Number: 103-65-1

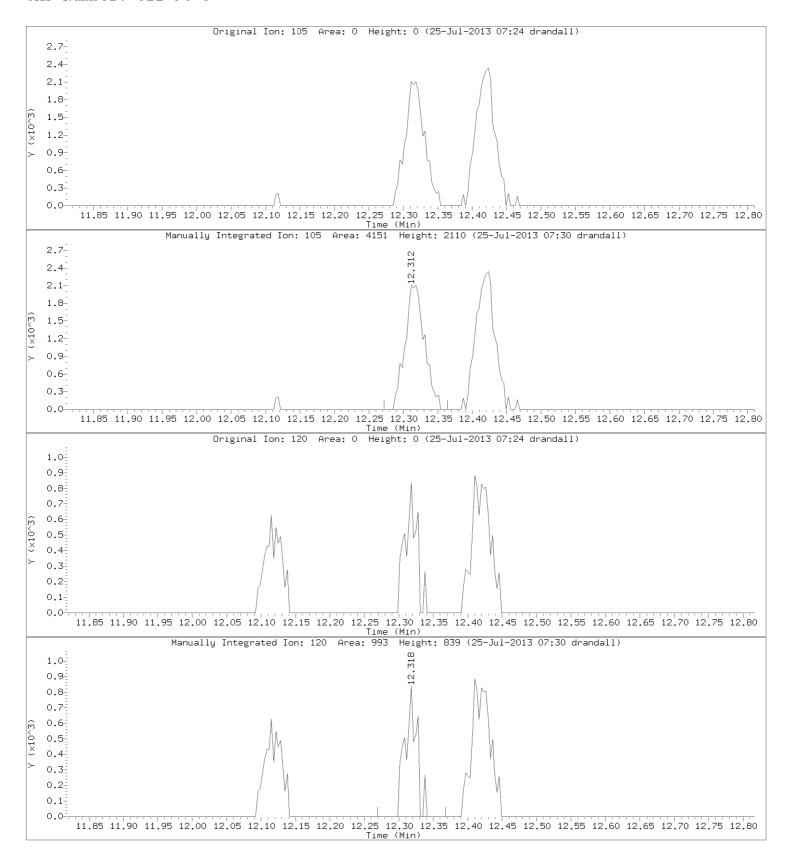


10236207 185 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

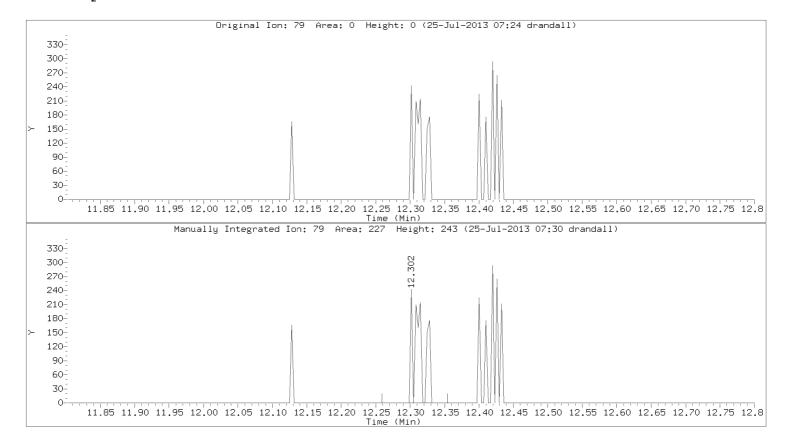
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 186 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



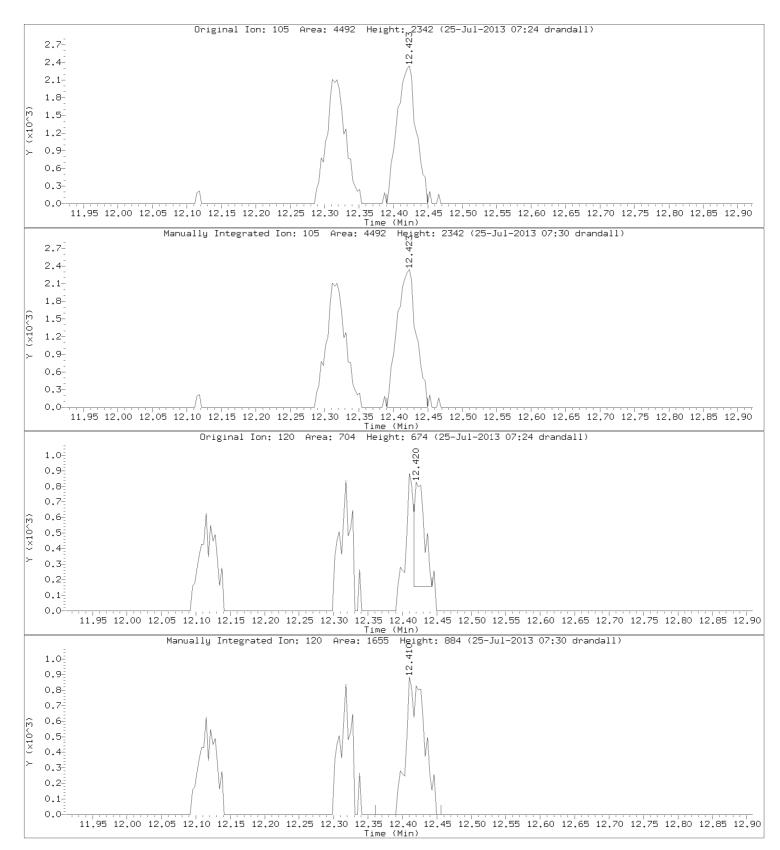
10236207 187 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



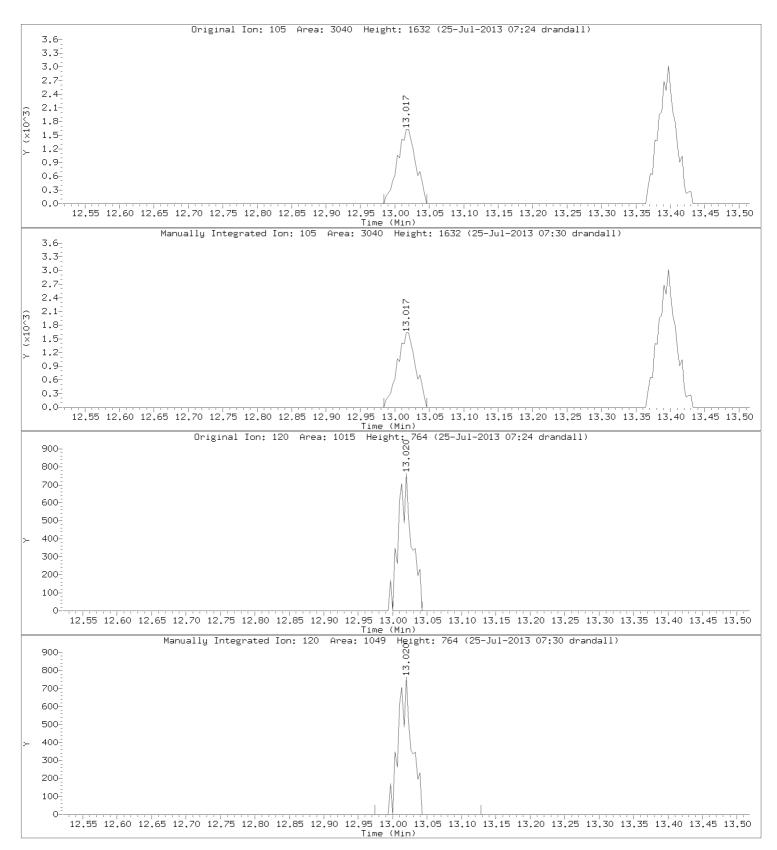
10236207 188 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,2,4-Trimethylbenzene

CAS Number: 95-63-6



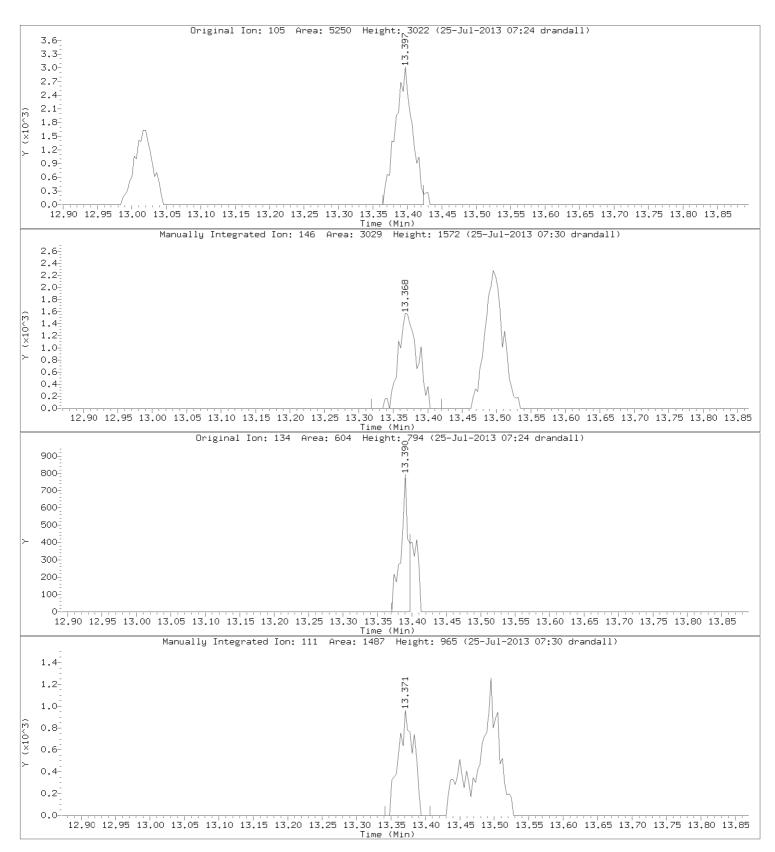
10236207 189 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,3-Dichlorobenzene

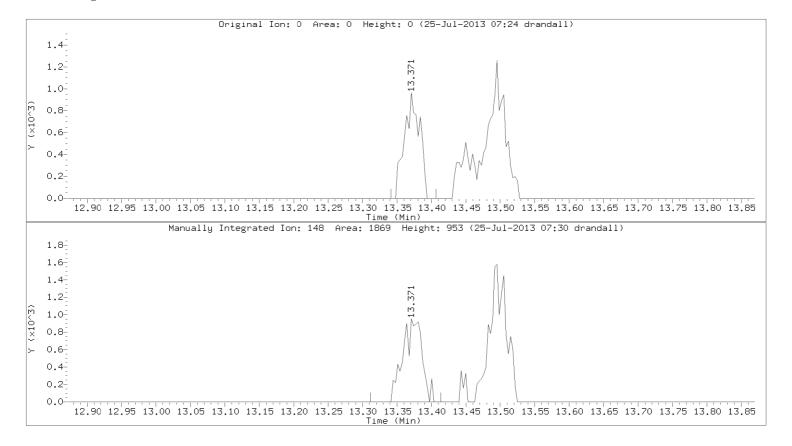
CAS Number: 541-73-1



10236207 190 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



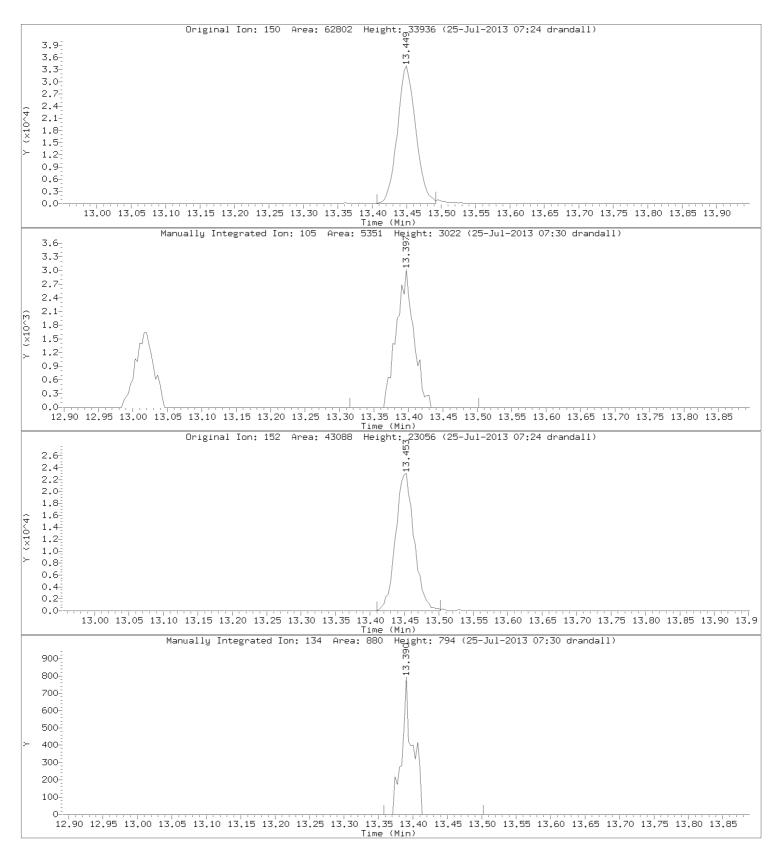
10236207 191 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Sec- Butylbenzene

CAS Number: 135-98-8



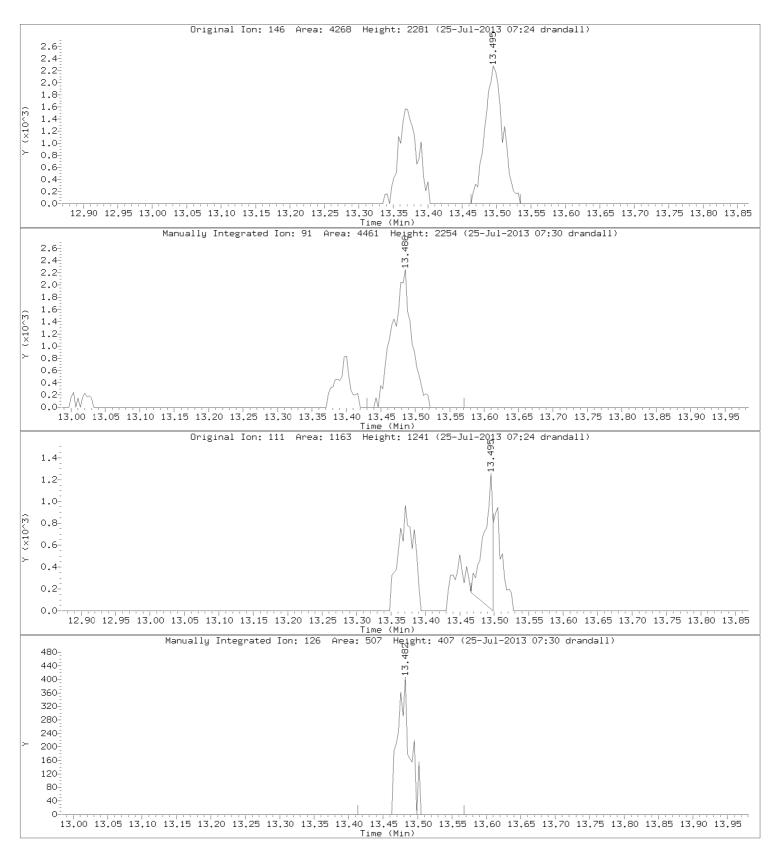
10236207 192 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Benzyl Chloride

CAS Number: 100-44-7



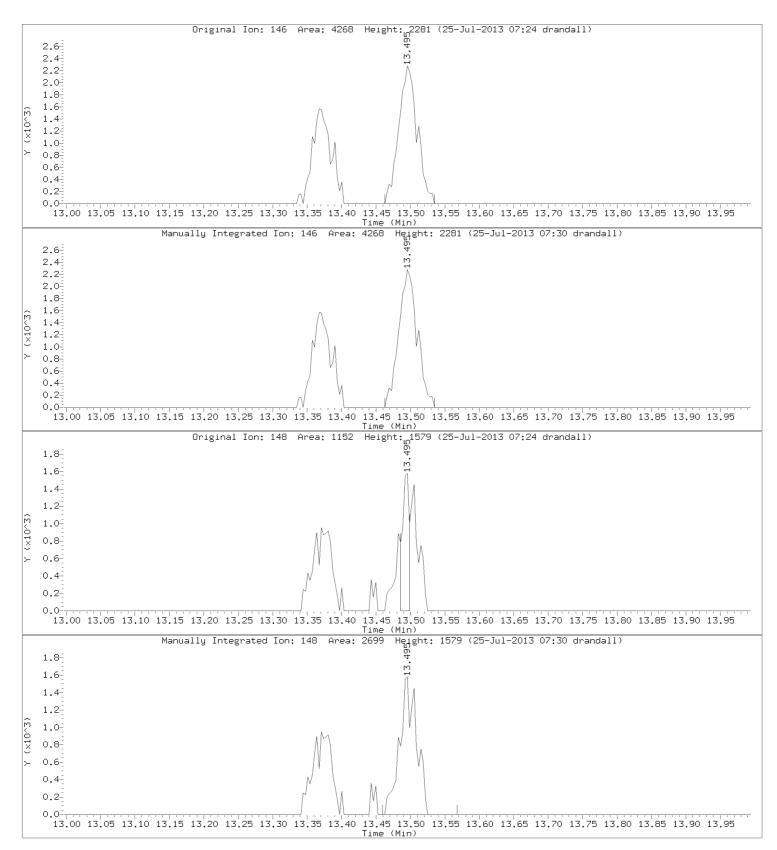
10236207 193 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,4-Dichlorobenzene

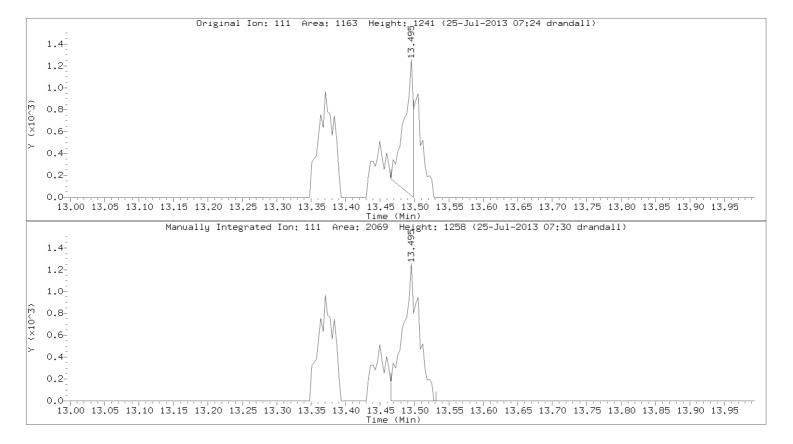
CAS Number: 106-46-7



10236207 194 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



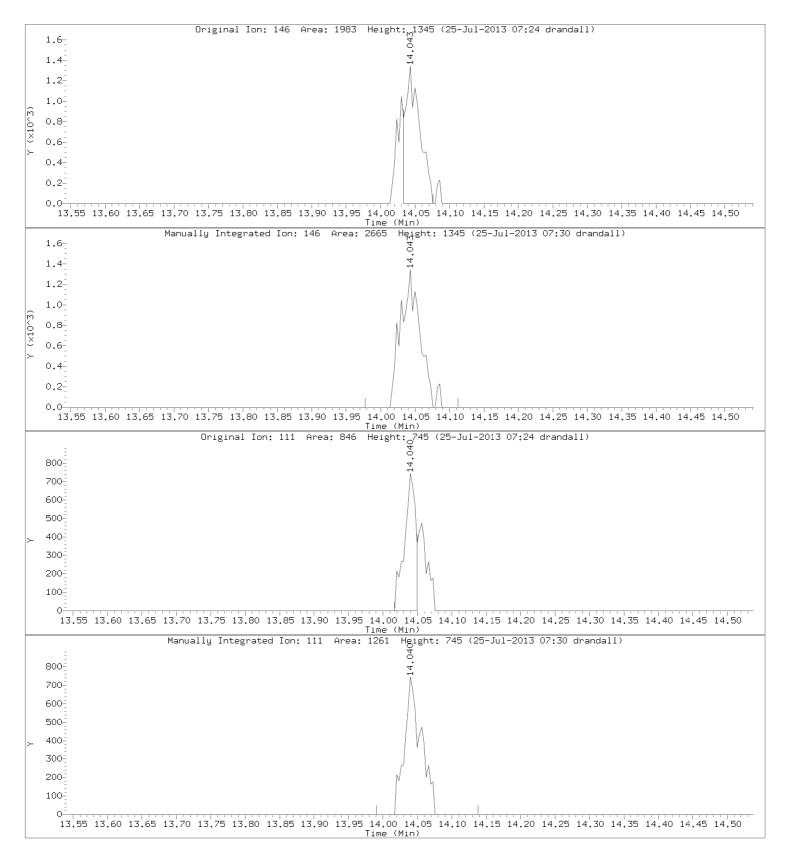
10236207 195 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,2-Dichlorobenzene

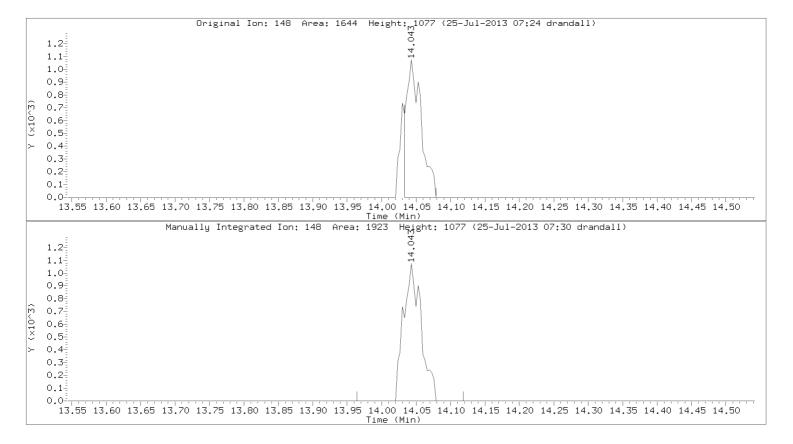
CAS Number: 95-50-1



10236207 196 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

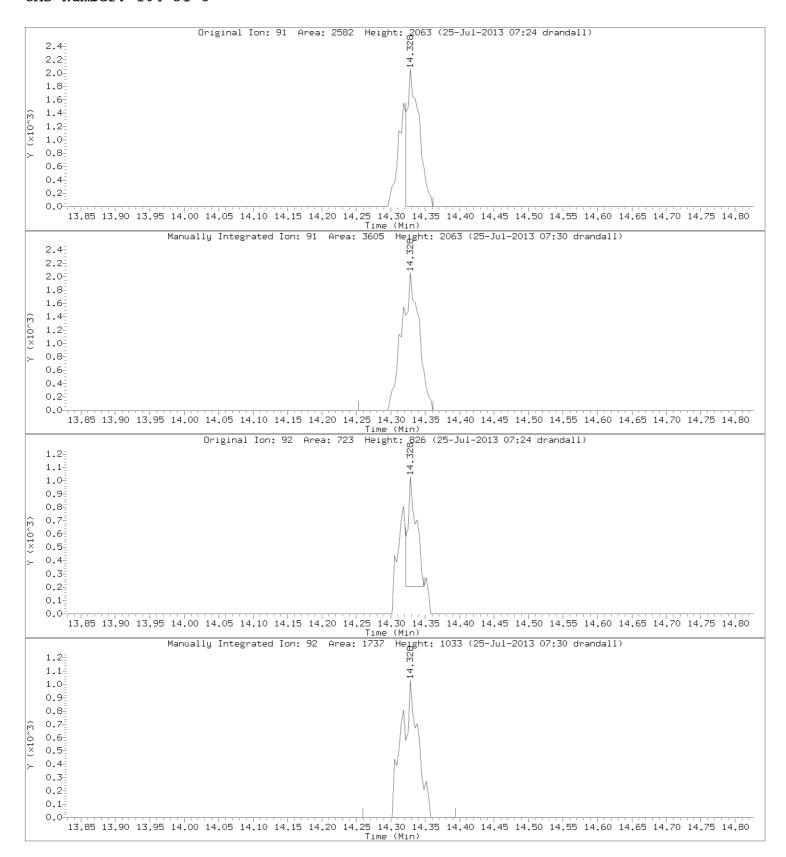


10236207 197 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: N-Butylbenzene CAS Number: 104-51-8



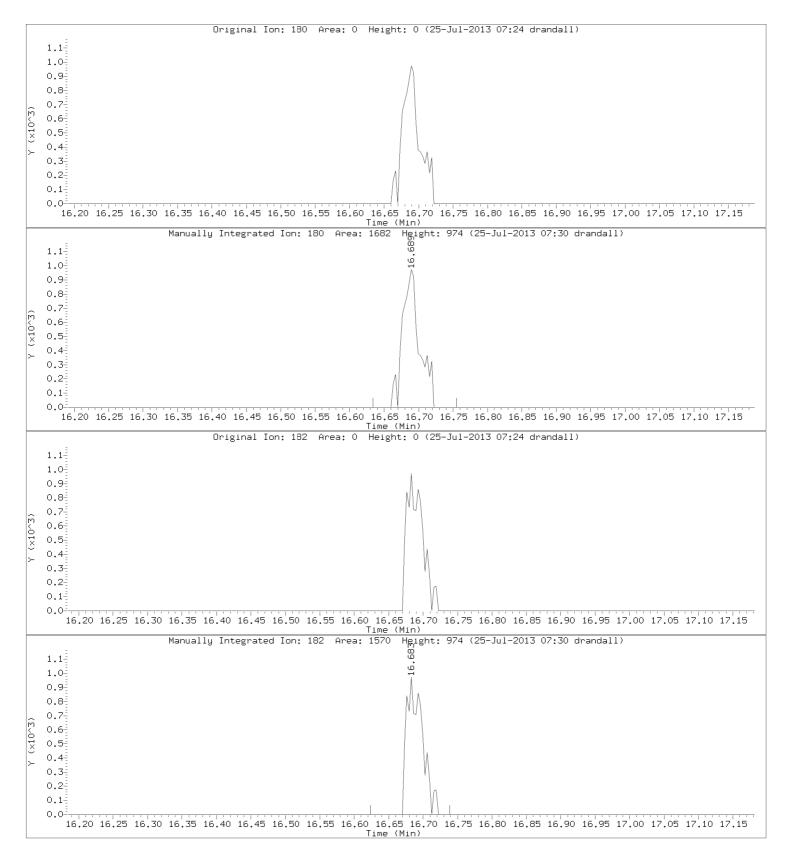
10236207 198 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: 1,2,4-Trichlorobenzene

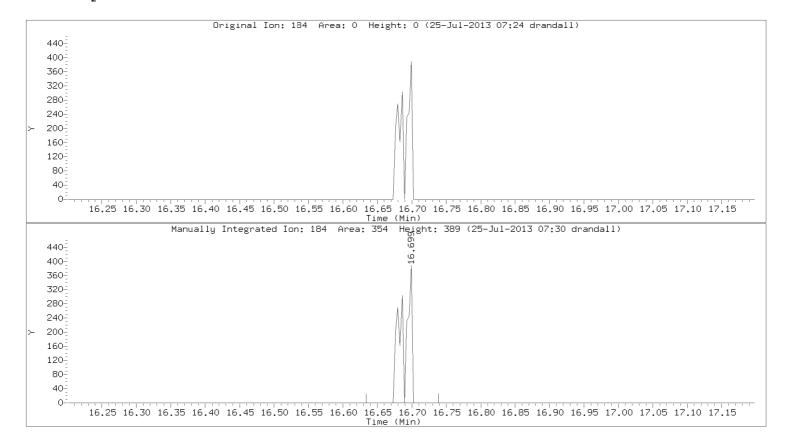
CAS Number: 95-63-6



10236207 199 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

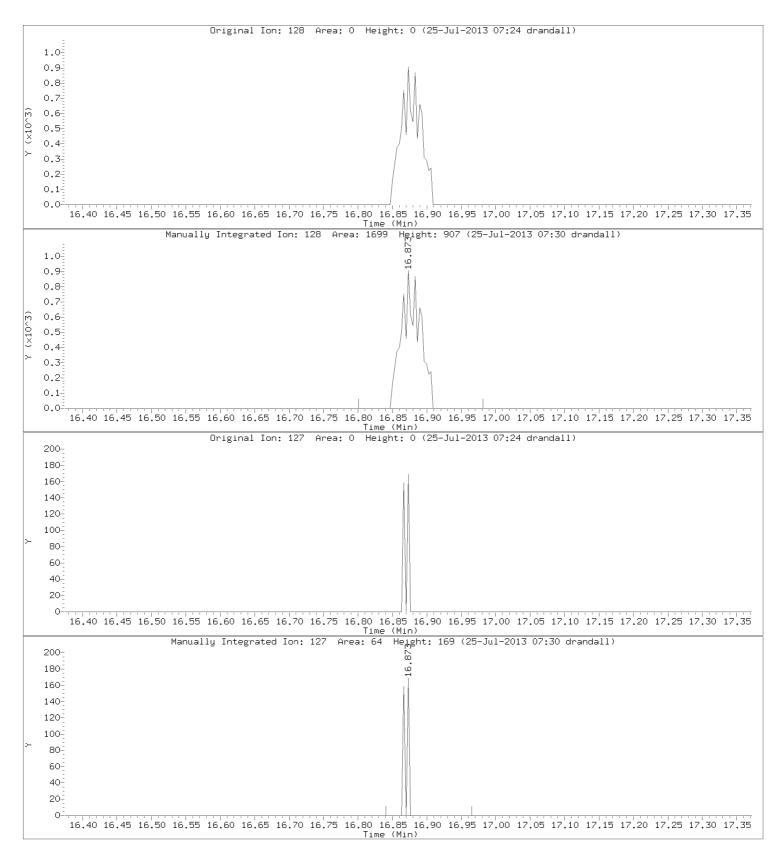


10236207 200 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Naphthalene CAS Number: 91-20-3



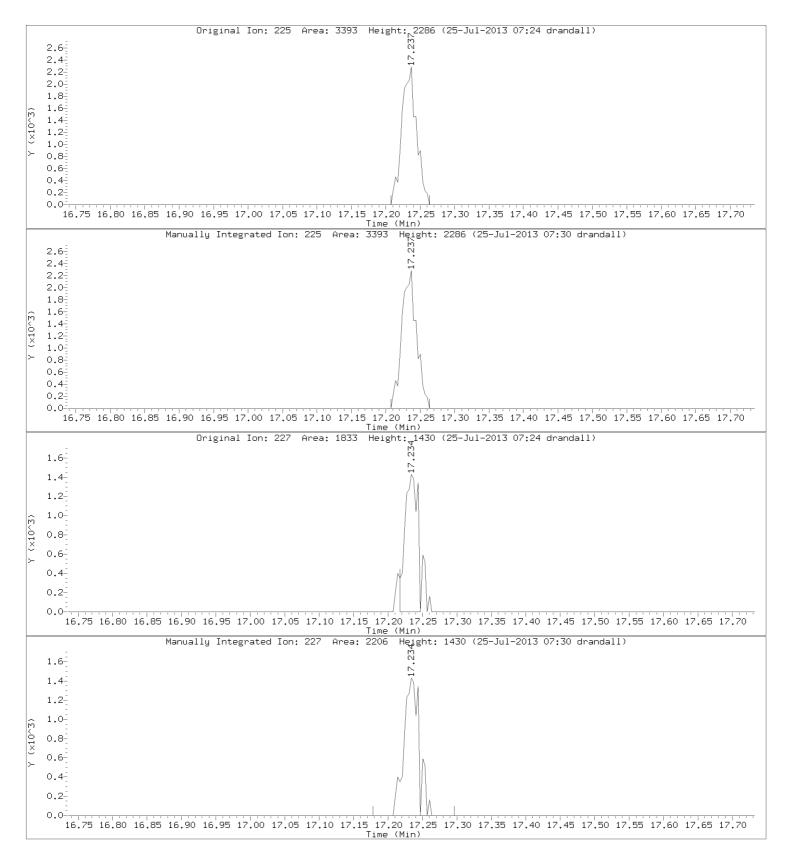
10236207 201 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2

Compound: Hexachlorobutadiene

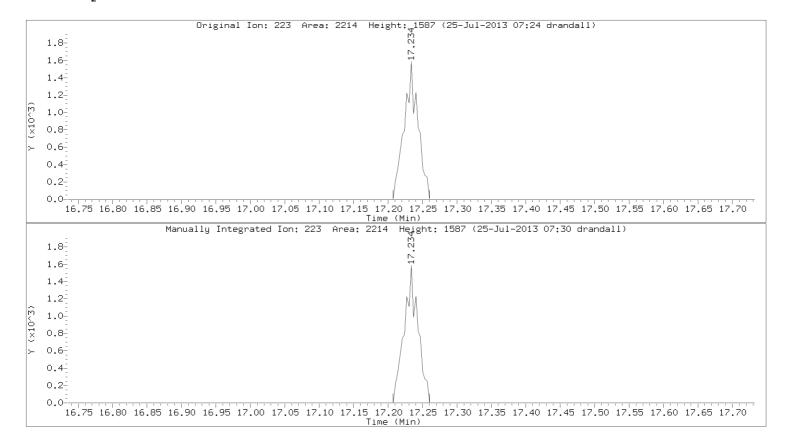
CAS Number: 87-68-3



10236207 202 of 1066

Injection Date: 24-JUL-2013 14:40

Instrument: 10airD.i Lab Sample ID: CAL2



10236207 203 of 1066

Report Date: 25-Jul-2013 07:32

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072413.b\20506.d

Lab Smp Id: CAL3
Inj Date : 24-JUL-2013 15:08

: DR1 Inst ID: 10airD.i Operator

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072413.b\T015 205-13.m

Meth Date: 25-Jul-2013 07:24 drandall Quant Type: ISTD

Cal File: 20506.d Cal Date : 24-JUL-2013 15:08 Calibration Sample, Level: 3

Als bottle: 6
Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

### Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

						AMOUNTS	
Compounds	QUANT SIG MASS ====	RT 	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
1 Propylene	41	2.981		(0.490)	6143	1.00000	0.920
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	68516	1.00000	1.01
3 Dichlorotetrafluoroethane	85	3.106	3.106	(0.510)	53136	1.00000	0.974
4 Chloromethane	50	3.109	3.109	(0.511)	14915	1.00000	0.962
5 Vinyl chloride	62	3.191	3.191	(0.524)	14360	1.00000	0.929
6 1,3-Butadiene	54	3.234	3.234	(0.531)	8565	1.00000	0.939
7 Bromomethane	94	3.391	3.391	(0.557)	18612	1.00000	0.956
8 Chloroethane	64	3.447	3.447	(0.566)	7523	1.00000	0.907(M)
9 Ethanol	31	3.516	3.516	(0.578)	7874	1.00000	0.844(M)
10 Vinyl Bromide	106	3.585	3.585	(0.589)	17665	1.00000	0.918(M)
11 Acrolein	56	3.706	3.706	(0.609)	4505	1.00000	0.974(M)
12 Trichlorofluoromethane	101	3.693	3.693	(0.607)	72409	1.00000	0.980
13 Acetone	43	3.752	3.752	(0.616)	33756	1.00000	0.912(M)
14 Isopropyl Alcohol	45	3.765	3.765	(0.619)	21134	1.00000	0.870
15 1,1-Dichloroethene	61	3.975	3.975	(0.653)	31292	1.00000	0.952
16 Acrylonitrile	53	4.001	4.001	(0.657)	9857	1.00000	0.987(M)
17 Tert Butyl Alcohol	59	3.985	3.985	(0.655)	35211	1.00000	0.843(M)
18 Freon 113	101	4.031	4.031	(0.662)	47870	1.00000	0.971
19 Methylene chloride	49	4.093	4.093	(0.672)	20578	1.00000	0.879
20 Allyl Chloride	76	4.110	4.110	(0.675)	7570	1.00000	0.962(M)
21 Carbon Disulfide	76	4.228	4.228	(0.695)	54700	1.00000	0.896
22 trans-1,2-dichloroethene	96	4.418	4.418	(0.726)	19600	1.00000	0.929
23 Methyl Tert Butyl Ether	73	4.460	4.460	(0.733)	47938	1.00000	0.954(M)

10236207 204 of 1066

# Data File: $\192.168.10.12\chem\10airD.i\072413.b\20506.d$ Report Date: 25-Jul-2013 07:32

						AMOUNTS	
	QUANT SIG					CAL-AMT	ON-COL
Compounds	MASS ====	RT ====	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)
24 Vinyl Acetate	43	4.582		(0.753)	32699	1.00000	0.916(M)
25 1,1-Dichloroethane	63	4.578	4.578	(0.752)	35020	1.00000	0.956
\$ 26 Hexane-d14(S)	66	4.697	4.697	(0.772)	271828	10.0000	10.1
27 Methyl Ethyl Ketone	72	4.792		(0.787)	8082	1.00000	0.951
28 n-Hexane	57	4.815		(0.791)	23790	1.00000	0.925
29 cis-1,2-Dichloroethene	e 96	4.972		(0.817)	16249	1.00000	0.927
30 Ethyl Acetate	43	5.005	5.005	(0.822)	21971	1.00000	1.08(M)
31 Chloroform	83	5.110	5.110	(0.839)	41957	1.00000	0.919
32 Tetrahydrofuran	42	5.329	5.329	(0.876)	6892	1.00000	0.845(M)
33 1,1,1-Trichloroethane	97	5.595	5.595	(0.919)	45946	1.00000	0.939
34 1,2-Dichloroethane	62	5.611		(0.922)	31193	1.00000	0.920
35 Benzene	78	5.877	5.877	(0.966)	35586	1.00000	0.836
36 Carbon tetrachloride	117	5.900	5.900	(0.969)	49215	1.00000	0.936
37 Cyclohexane	56	5.907	5.907	(0.970)	12525	1.00000	0.844(M)
* 38 1,4-Difluorobenzene	114	6.087	6.087	(1.000)	558520	10.0000	
39 2,2,4-Trimethylpentane	e 57	6.264	6.264	(1.029)	41700	1.00000	0.880
40 Heptane	43	6.435	6.435	(1.057)	13056	1.00000	0.898
41 1,2-Dichloropropane	63	6.500	6.500	(1.068)	11313	1.00000	1.00(M)
42 Trichloroethene	130	6.530	6.530	(1.073)	13513	1.00000	0.814
43 1,4-Dioxane	88	6.687	6.687	(1.099)	5139	1.00000	2.05(M)
44 Bromodichloromethane	83	6.648	6.648	(1.092)	43225	1.00000	0.916
45 Methyl Isobutyl Ketone	e 43	7.228	7.228	(1.187)	16374	1.00000	0.794
46 cis-1,3-Dichloroproper	ne 75	7.277	7.277	(1.196)	19995	1.00000	0.896
47 trans-1,3-Dichloroprop		7.773	7.773	(1.277)	17366	1.00000	0.746
\$ 48 Toluene-d8 (S)	98	7.841		(1.288)	382265	10.0000	9.80
49 Toluene	91	7.933		(1.303)	42639	1.00000	0.812
50 1,1,2-Trichloroethane	97	7.940		(1.304)	16004	1.00000	0.831
51 Methyl Butyl Ketone	43	8.255		(0.852)	14464	1.00000	0.819
52 Dibromochloromethane	129	8.550		(0.883)	29111	1.00000	0.893
53 1,2-Dibromoethane	107	8.822		(0.911)	23125	1.00000	0.861
54 Tetrachloroethene	166	8.910		(0.920)	20377	1.00000	0.819
* 55 Chlorobenzene - d5	117	9.688	9.688	(1.000)	192217	10.0000	
56 Chlorobenzene	112	9.737	9.737	(1.005)	29337	1.00000	0.843
57 Ethyl Benzene	91	10.039	10.039	(1.036)	47007	1.00000	0.847
58 m&p-Xylene	91	10.209	10.209	(1.054)	38768	1.00000	0.879
59 Bromoform	173	10.652	10.652	(1.100)	26790	1.00000	0.791(M)
60 Styrene	104	10.704	10.704	(1.105)	20488	1.00000	0.774
61 o-Xylene	91	10.773	10.773	(1.112)	44715	1.00000	0.950
62 1,1,2,2-Tetrachloroeth	nane 83	11.088	11.088	(1.145)	25903	1.00000	0.804
63 Isopropylbenzene	105	11.452	11.452	(1.182)	52278	1.00000	0.800
64 N-Propylbenzene	91	12.114	12.114	(1.250)	53920	1.00000	1.27(M)
65 4-Ethyltoluene	105	12.314	12.314	(1.271)	41970	1.00000	0.822
66 1,3,5-Trimethylbenzene	e 105	12.416	12.416	(1.282)	40316	1.00000	0.865
67 1,2,4-Trimethylbenzene	105	13.016	13.016	(1.344)	28266	1.00000	0.696
68 1,3-Dichlorobenzene	146	13.367	13.367	(1.380)	20428	1.00000	0.726(H)
69 Sec- Butylbenzene	105	13.393	13.393	(1.382)	49537	1.00000	0.820
\$ 70 1,4-dichlorobenzene-da	1 (S) 150	13.446	13.446	(1.388)	79385	10.0000	9.43
71 Benzyl Chloride	91	13.475	13.475	(1.391)	26556	1.00000	0.671(M)
72 1,4-Dichlorobenzene	146	13.495	13.495	(1.393)	22882	1.00000	0.750
73 1,2-Dichlorobenzene	146	14.039	14.039	(1.449)	16908	1.00000	0.714
74 N-Butylbenzene	91	14.325	14.325	(1.479)	38681	1.00000	0.850
75 1,2,4-Trichlorobenzene	180	16.676	16.676	(1.721)	10899	1.00000	0.686
76 Naphthalene	128	16.863	16.863	(1.741)	13607	1.00000	0.622(M)
77 Hexachlorobutadiene	225	17.233	17.233	(1.779)	17285	1.00000	0.813

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Report Date: 25-Jul-2013 07:32

## QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

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Report Date: 25-Jul-2013 07:32

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20506.d

Lab Smp Id: CAL3
Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT TANDARD LOWER UPPER			HTTT %
======================================	=======	=======	=======	SAMPLE =======	======
38 1,4-Difluorobenze 55 Chlorobenzene - d	579775 221404	347865 132842	811685 309966	558520 192217	-3.67 -13.18

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	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.

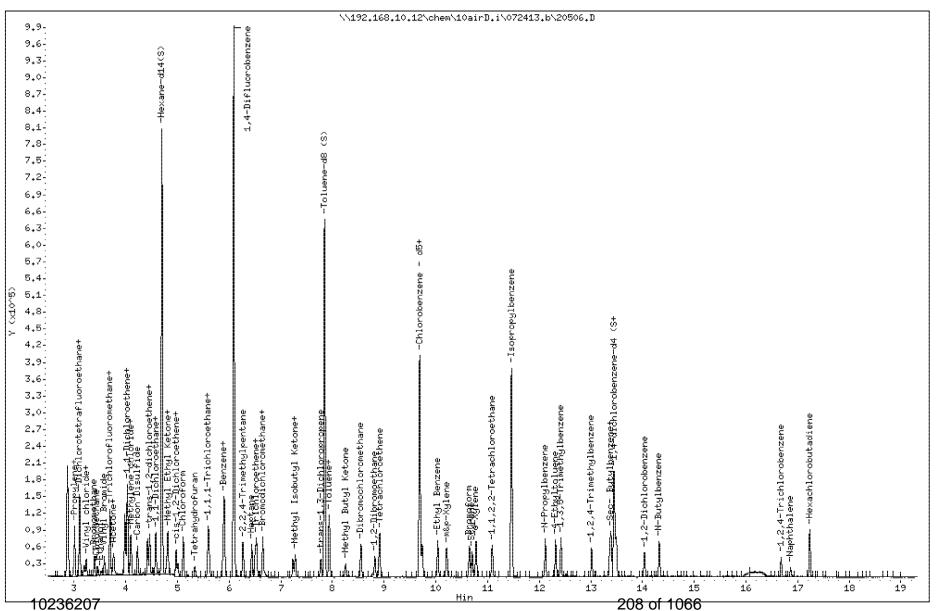
10236207 207 of 1066 Data File: \\192,168,10,12\chem\10airD,i\072413,b\20506,D

Date : 24-JUL-2013 15:08

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

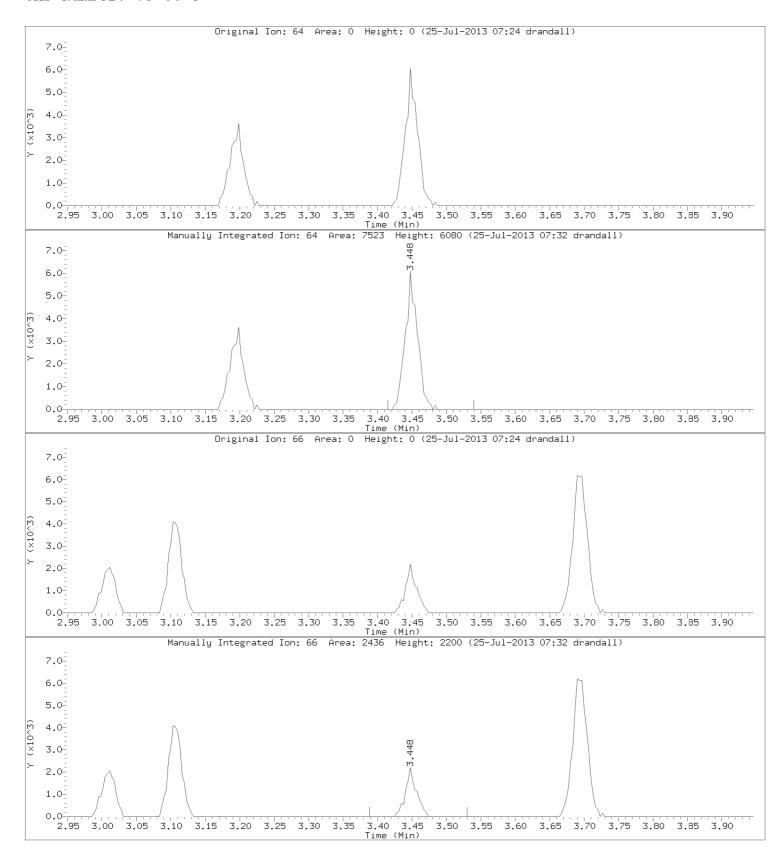
Column phase: J&W DB-5 Column diameter: 0,32



Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Chloroethane CAS Number: 75-00-3

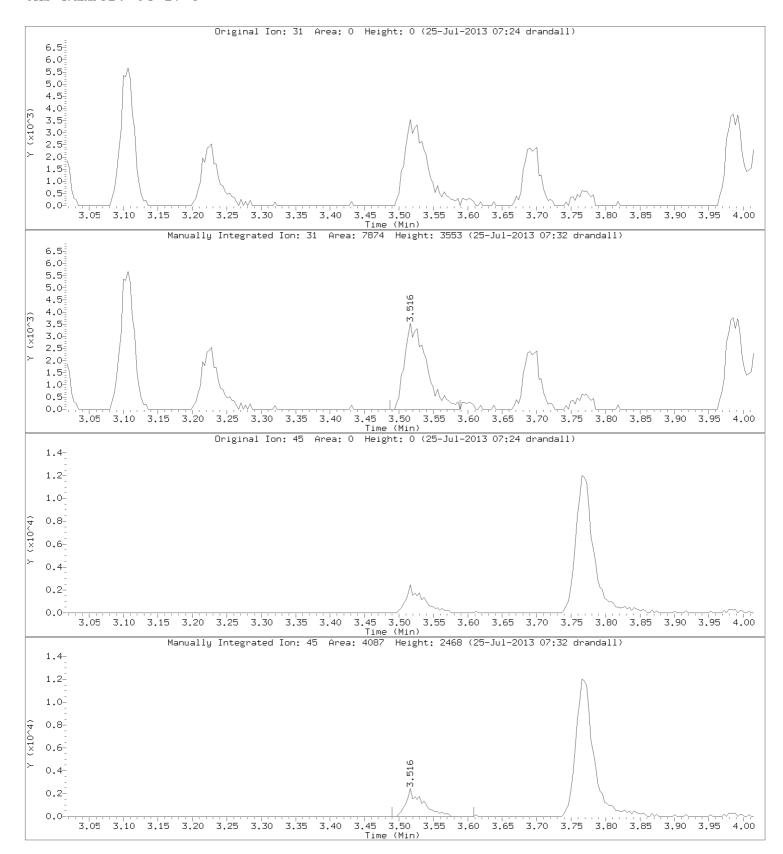


10236207 209 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Ethanol CAS Number: 64-17-5

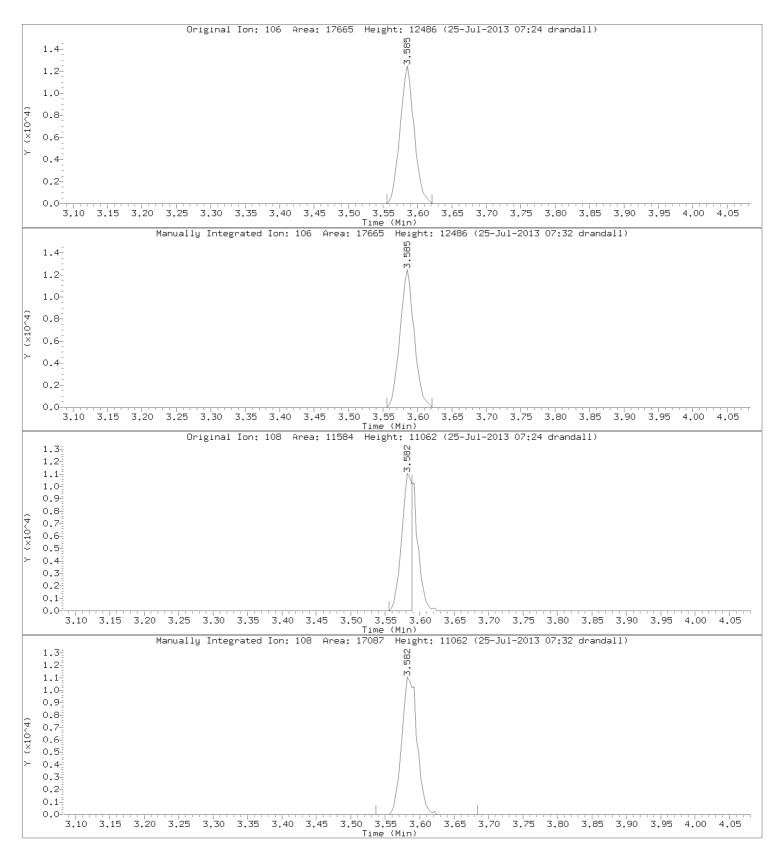


10236207 210 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Vinyl Bromide CAS Number: 593-60-2

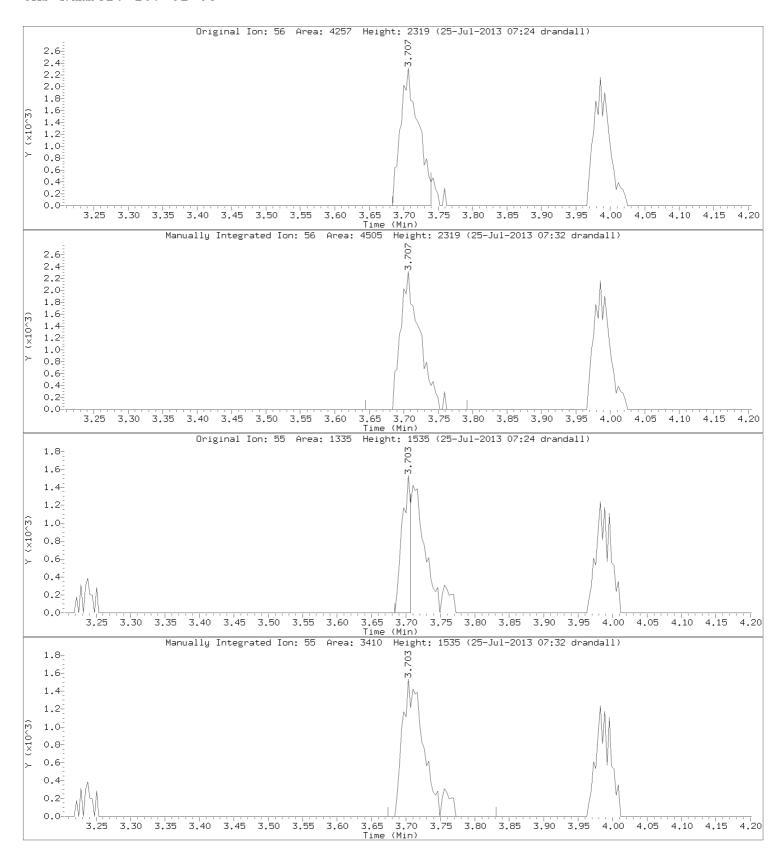


10236207 211 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Acrolein CAS Number: 107-02-08

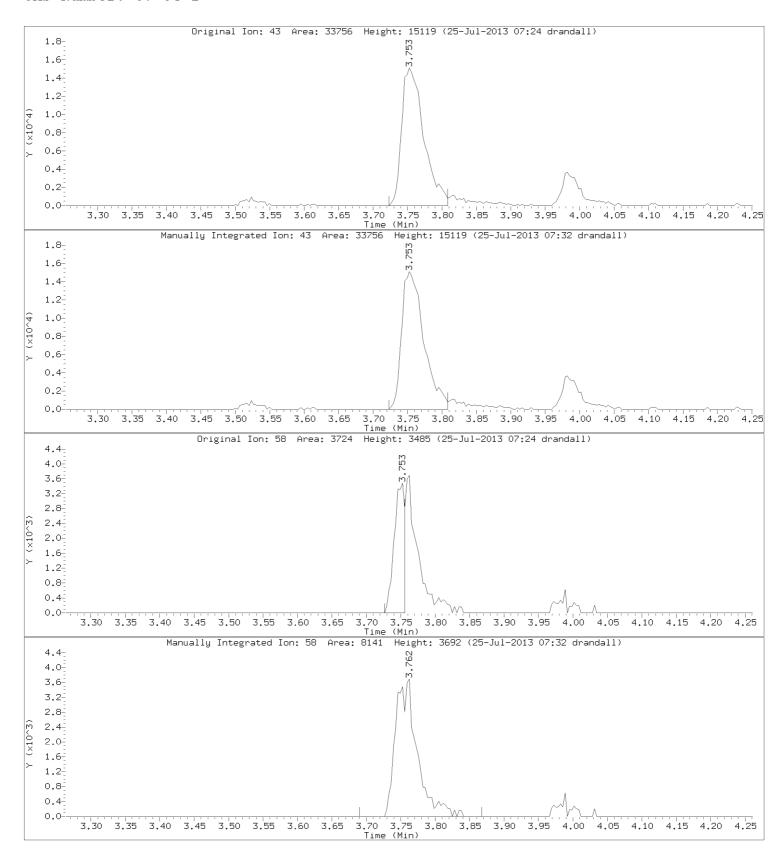


10236207 212 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Acetone CAS Number: 67-64-1



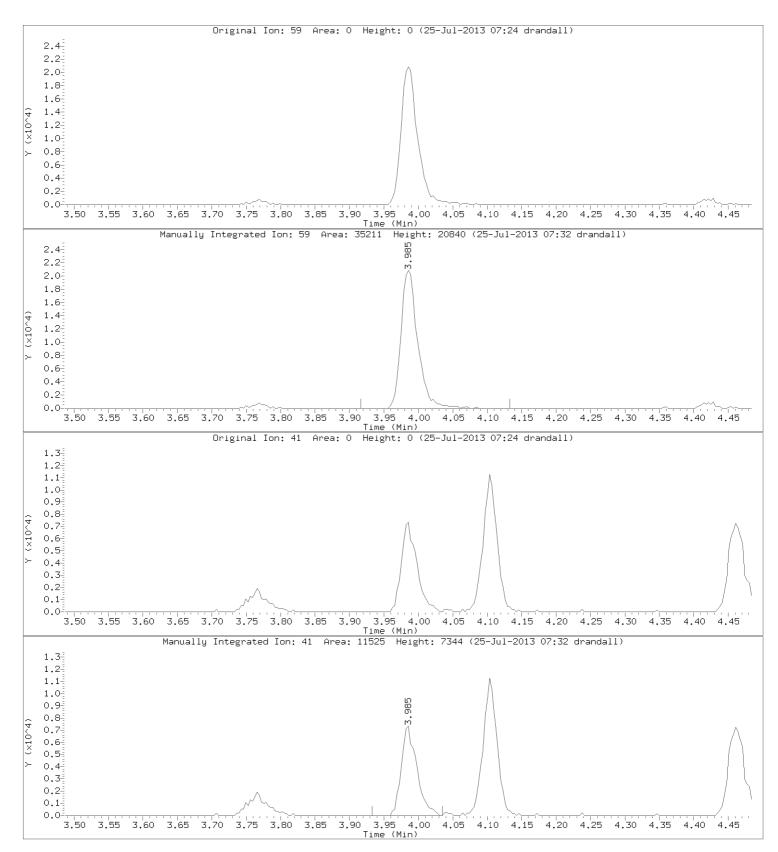
10236207 213 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0

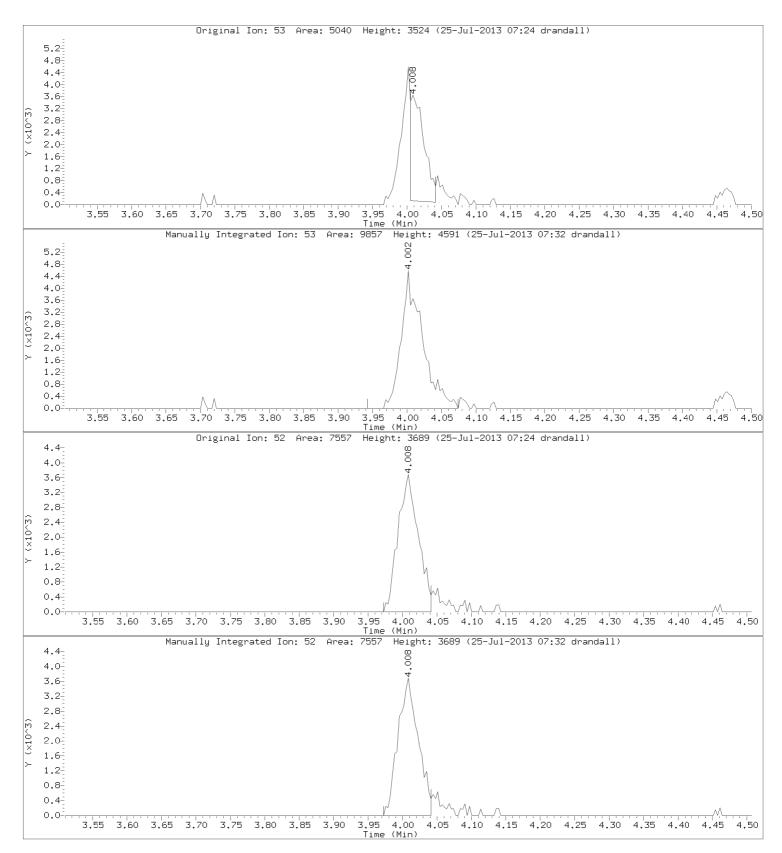


10236207 214 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Acrylonitrile CAS Number: 107-13-1

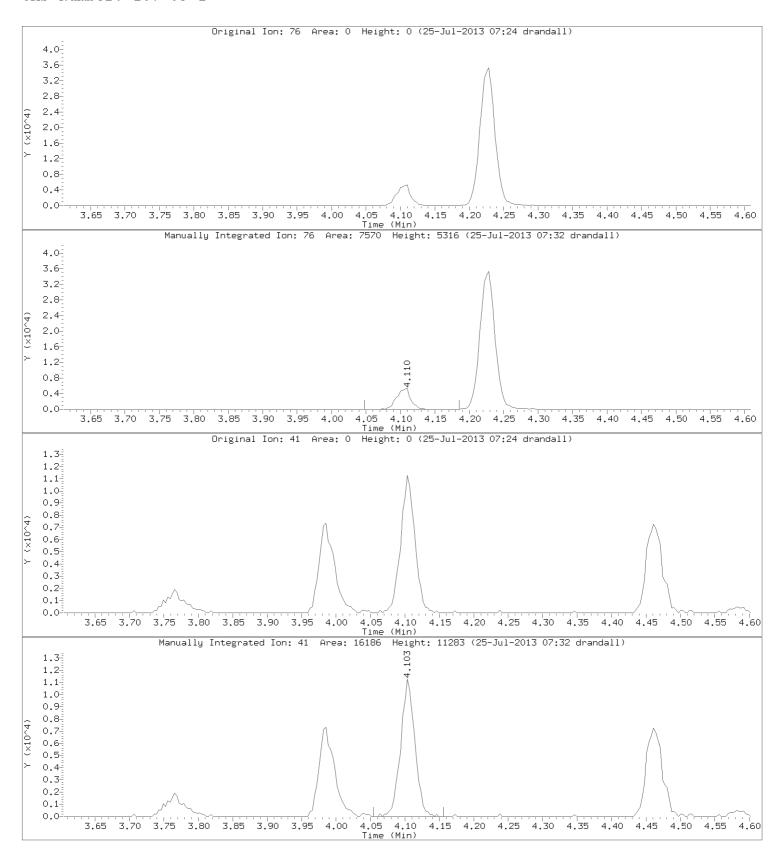


10236207 215 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

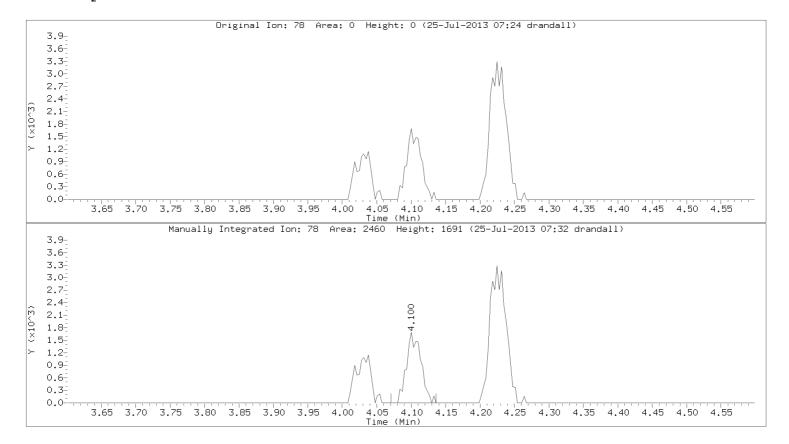
Compound: Allyl Chloride CAS Number: 107-05-1



10236207 216 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3



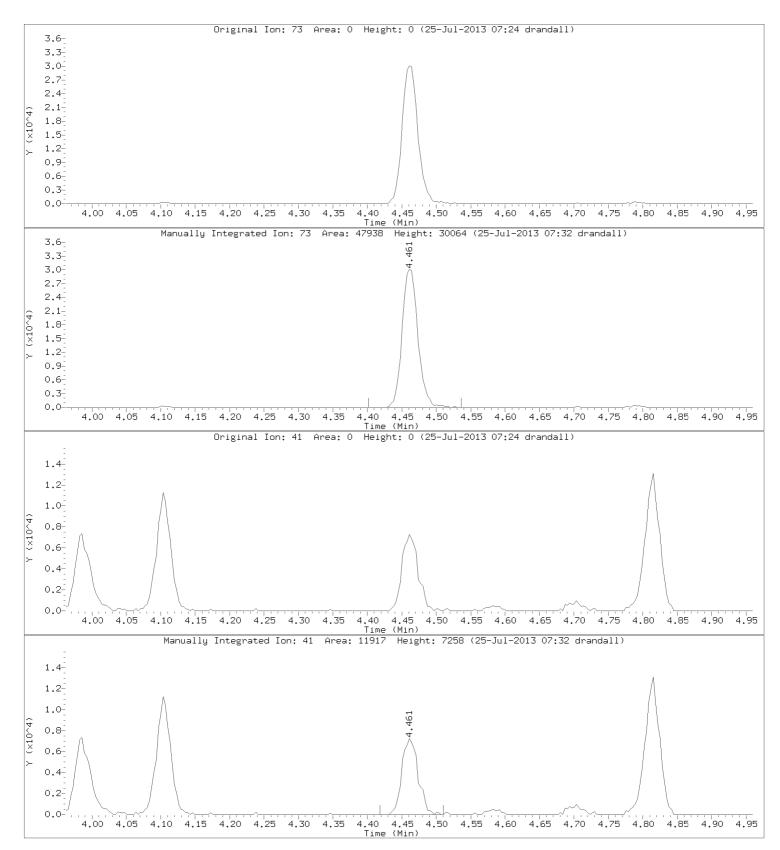
10236207 217 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

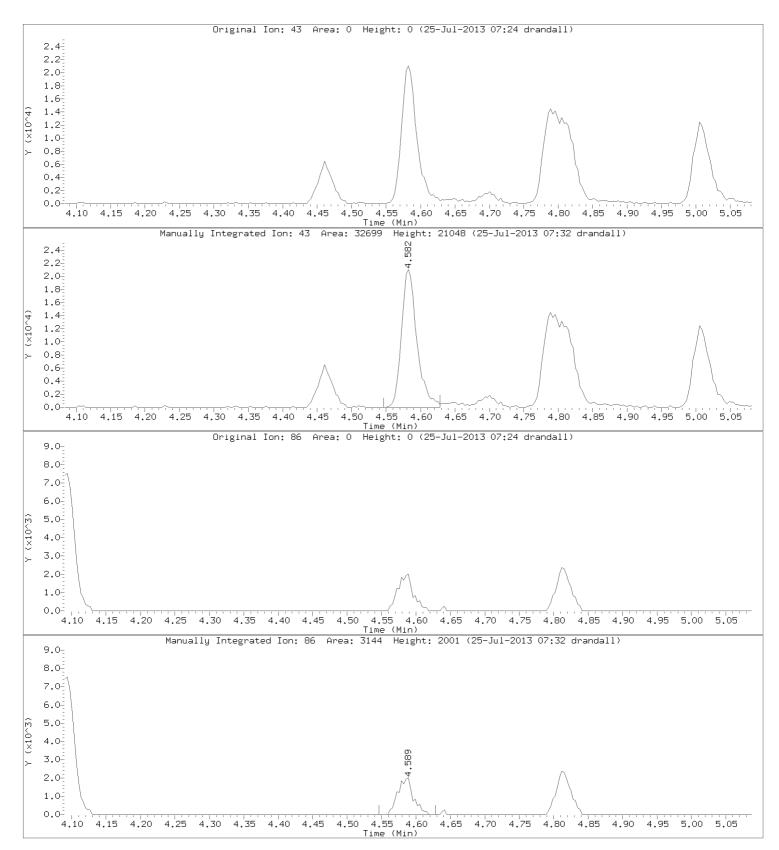


10236207 218 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Vinyl Acetate CAS Number: 108-05-4

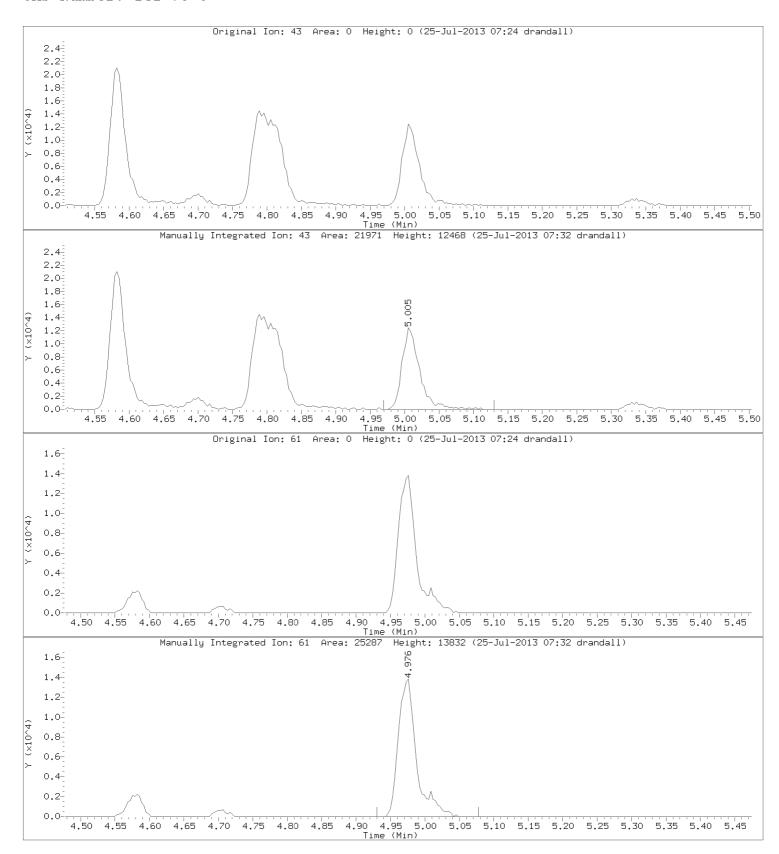


10236207 219 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

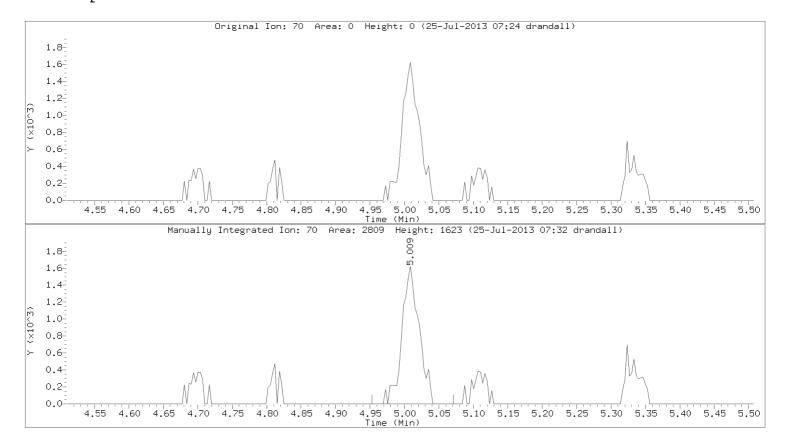
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 220 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3



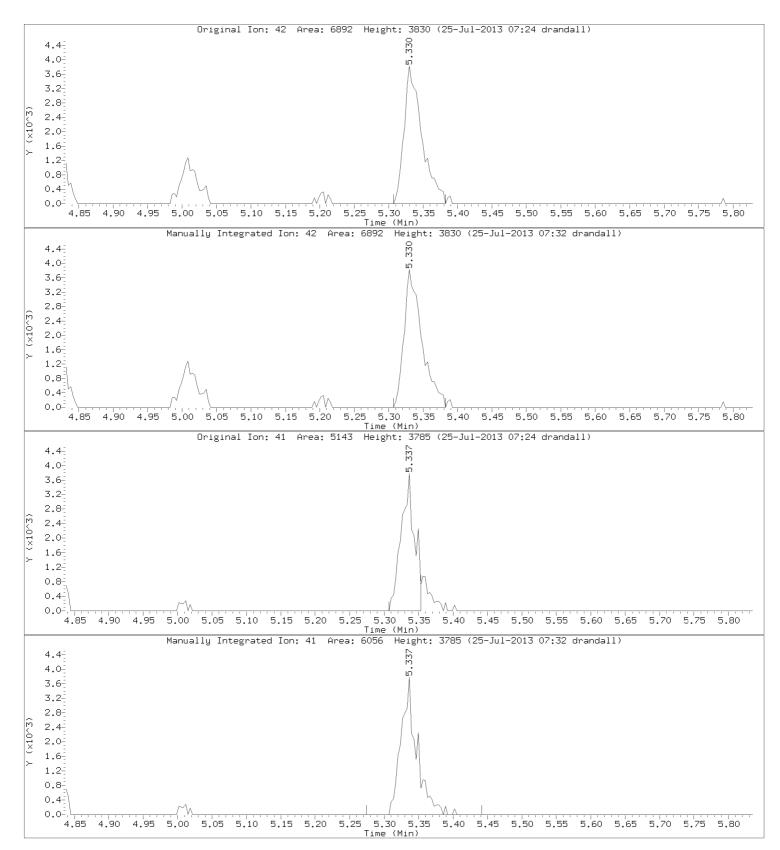
10236207 221 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Tetrahydrofuran

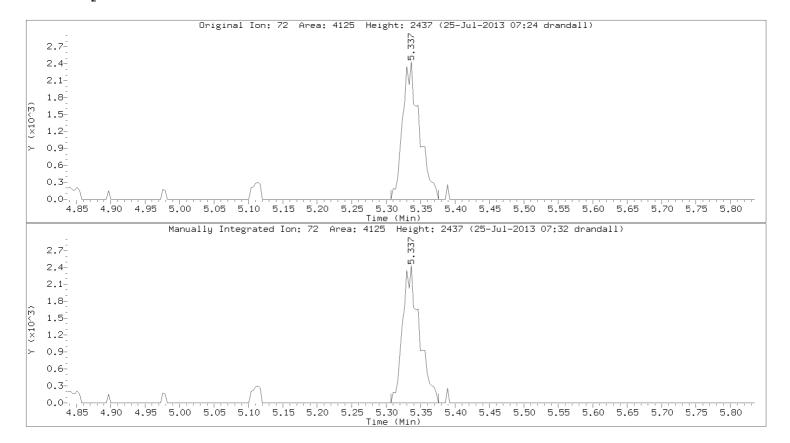
CAS Number: 109-99-9



10236207 222 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

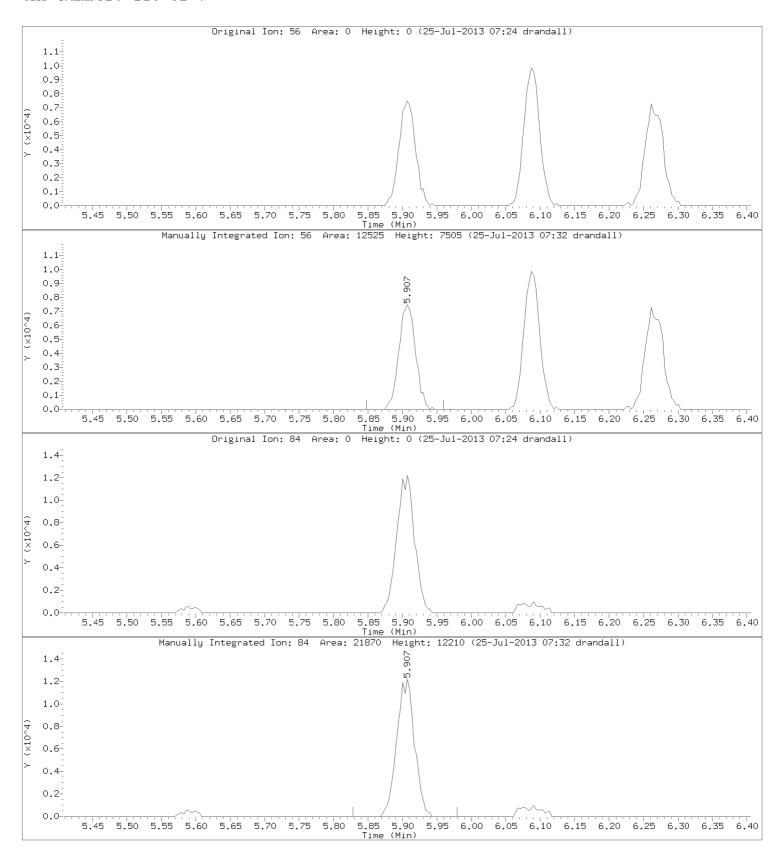


10236207 223 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

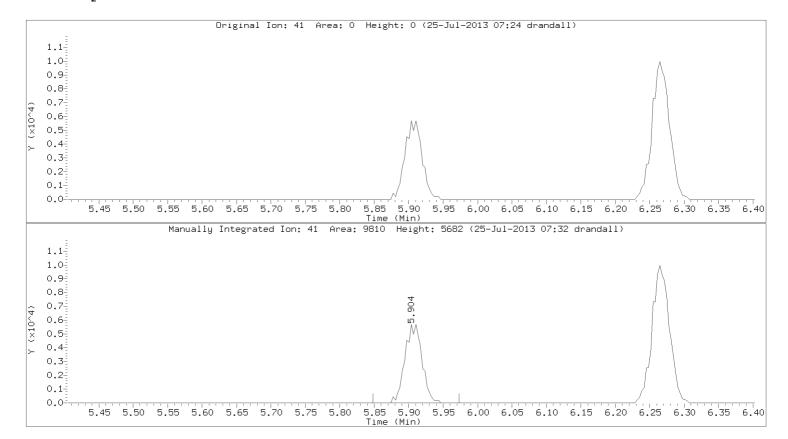
Compound: Cyclohexane CAS Number: 110-82-7



10236207 224 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3



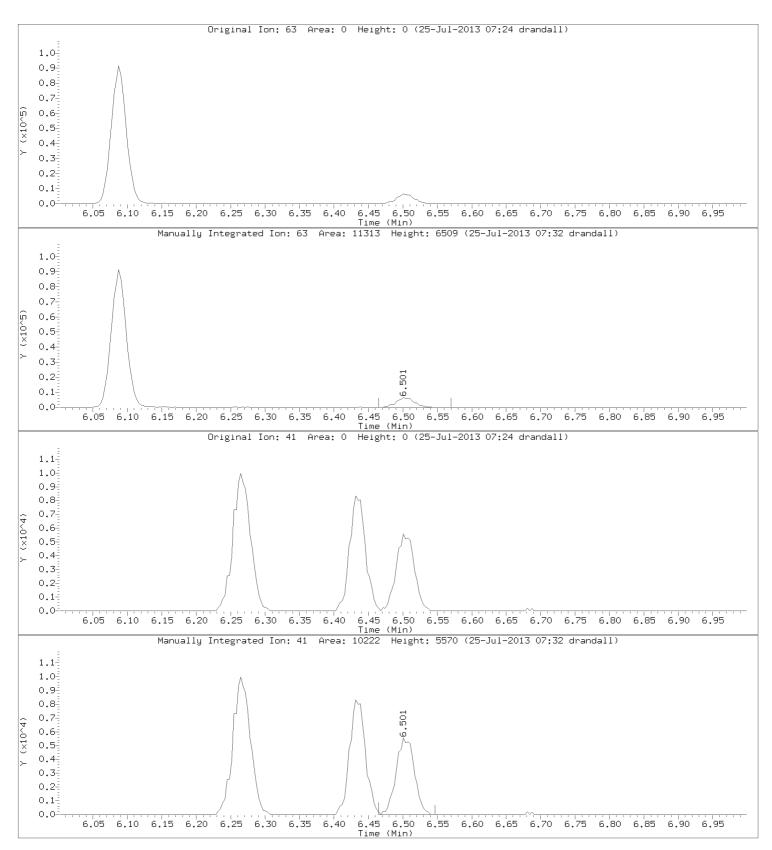
10236207 225 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: 1,2-Dichloropropane

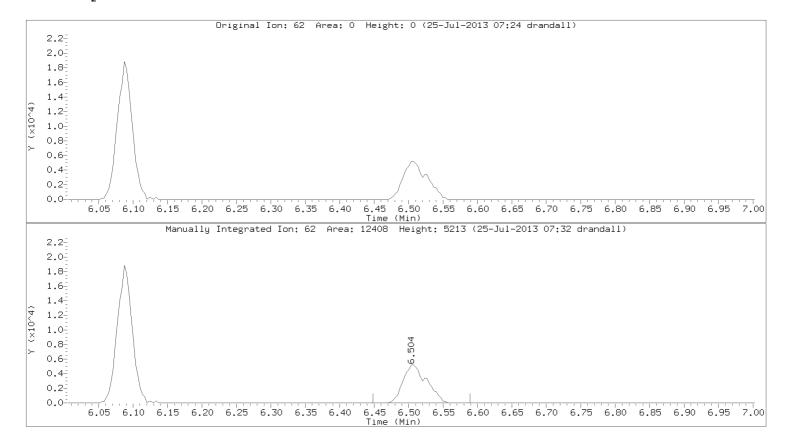
CAS Number: 78-87-5



10236207 226 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

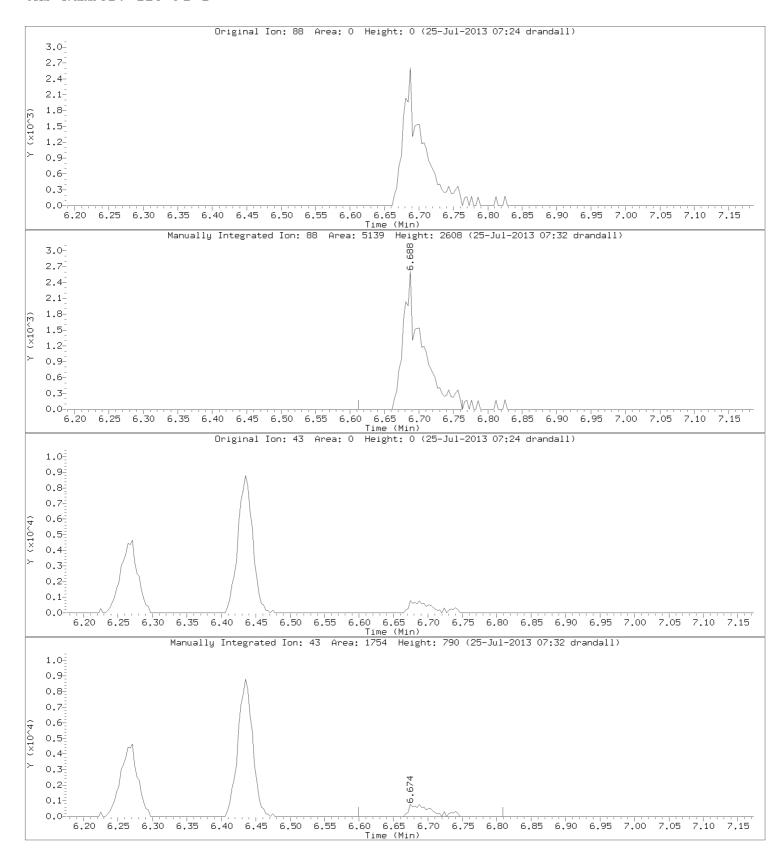


10236207 227 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: 1,4-Dioxane CAS Number: 123-91-1

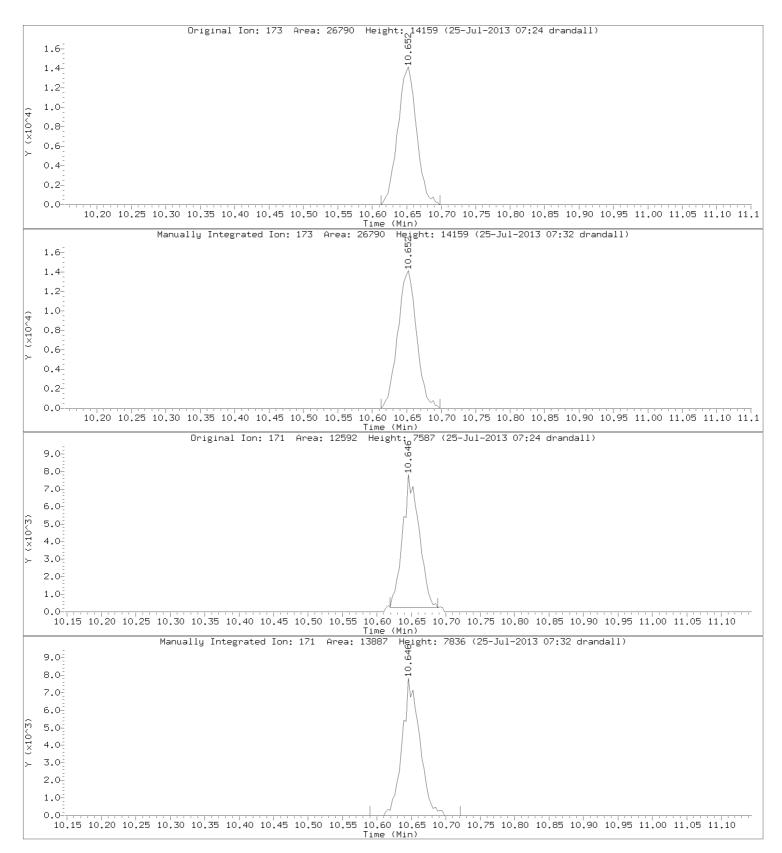


10236207 228 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Bromoform CAS Number: 75-25-2



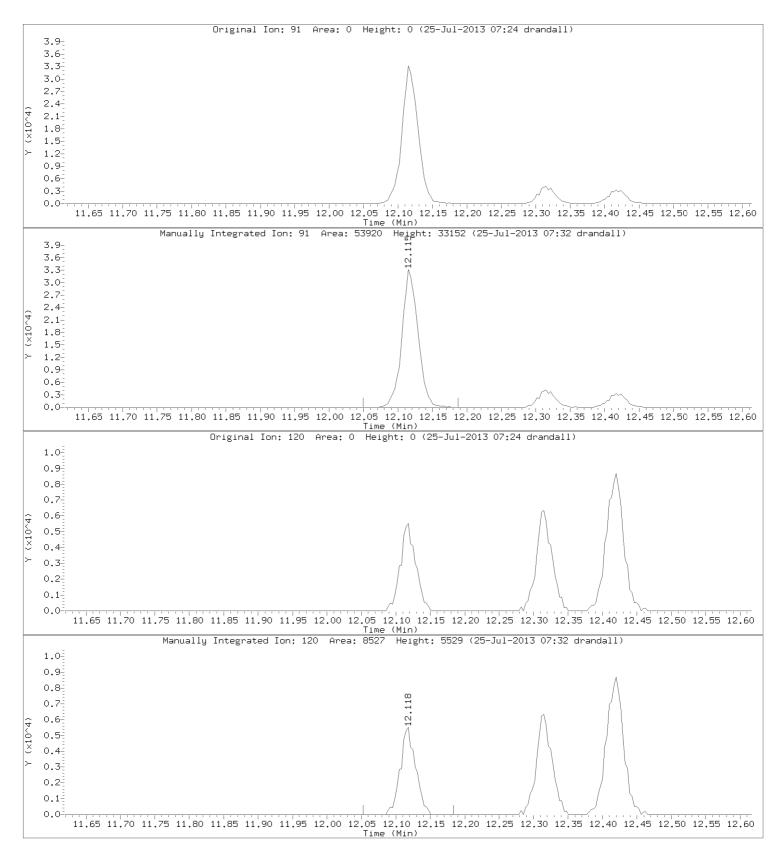
10236207 229 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: N-Propylbenzene

CAS Number: 103-65-1



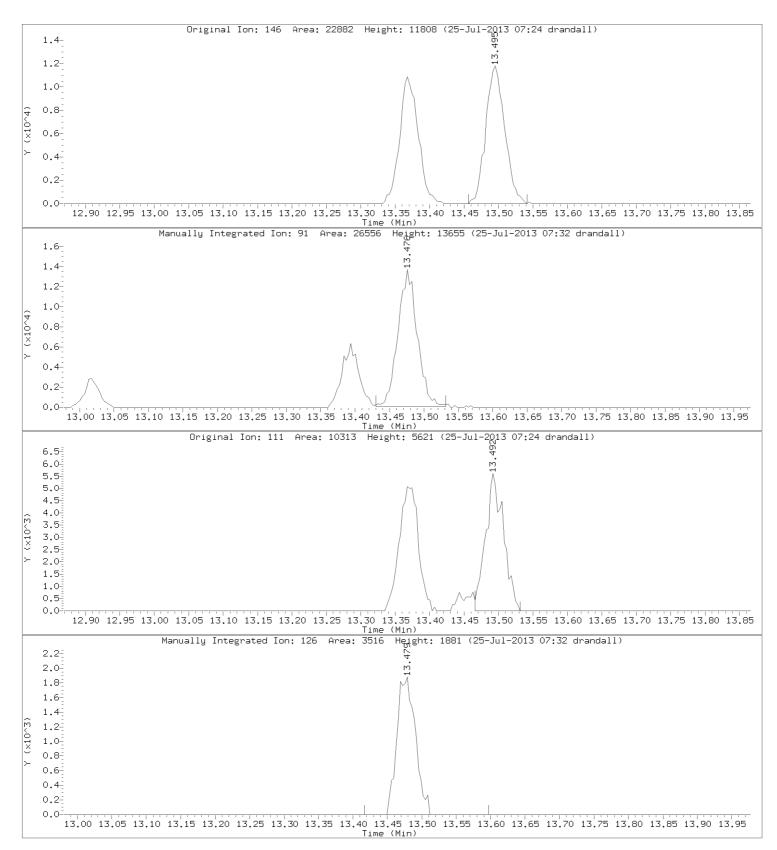
10236207 230 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Benzyl Chloride

CAS Number: 100-44-7

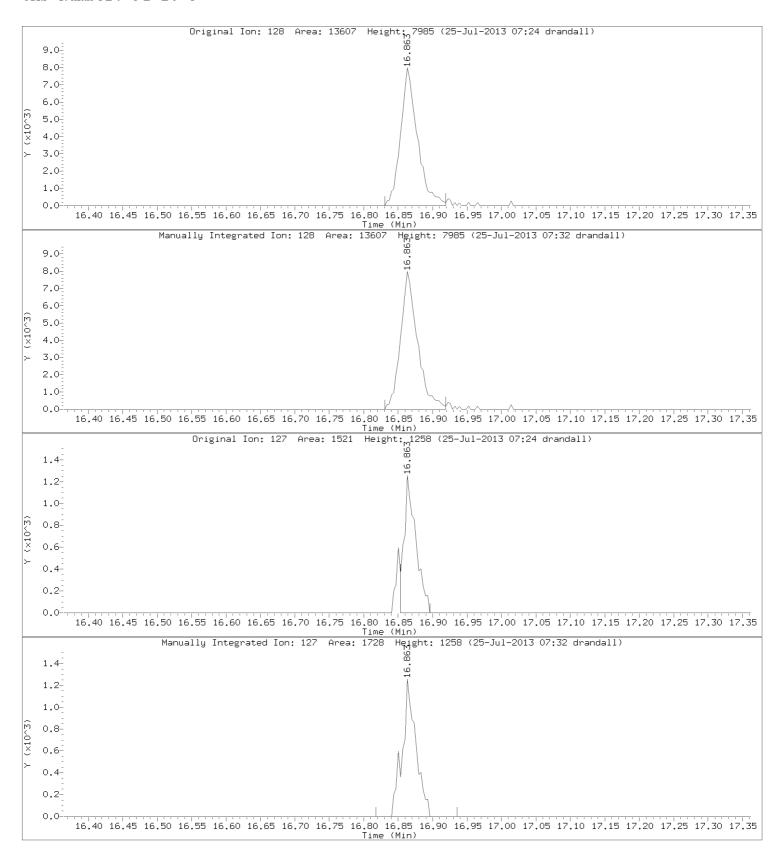


10236207 231 of 1066

Injection Date: 24-JUL-2013 15:08

Instrument: 10airD.i Lab Sample ID: CAL3

Compound: Naphthalene CAS Number: 91-20-3



10236207 232 of 1066

Report Date: 25-Jul-2013 07:33

#### Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072413.b\20507.d

Lab Smp Id: CAL4
Inj Date : 24-JUL-2013 15:36

: DR1 Inst ID: 10airD.i Operator

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072413.b\T015 205-13.m

Meth Date: 25-Jul-2013 07:24 drandall Quant Type: ISTD Cal File: 20507.d

Cal Date : 24-JUL-2013 15:36 Als bottle: 7 Dil Factor: 1.00000 Calibration Sample, Level: 4

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

### Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

						AMOUNTS	
Compounds	QUANT SIG MASS ====	RT 	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
1 Propylene	41	2.981		(0.490)	71678	10.0000	10.3
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	662001	10.0000	9.39
3 Dichlorotetrafluoroethane	85	3.103	3.103	(0.510)	542211	10.0000	9.57
4 Chloromethane	50	3.106	3.106	(0.510)	153942	10.0000	9.56
5 Vinyl chloride	62	3.191	3.191	(0.524)	152886	10.0000	9.53
6 1,3-Butadiene	54	3.237	3.237	(0.532)	92526	10.0000	9.77
7 Bromomethane	94	3.391	3.391	(0.557)	188679	10.0000	9.34
8 Chloroethane	64	3.447	3.447	(0.566)	76204	10.0000	9.11(M)
9 Ethanol	31	3.500	3.500	(0.575)	76446	10.0000	7.89
10 Vinyl Bromide	106	3.585	3.585	(0.589)	190876	10.0000	9.55
11 Acrolein	56	3.683	3.683	(0.605)	54068	10.0000	11.3
12 Trichlorofluoromethane	101	3.693	3.693	(0.606)	730906	10.0000	9.53
13 Acetone	43	3.729	3.729	(0.612)	327086	10.0000	8.51
14 Isopropyl Alcohol	45	3.752	3.752	(0.616)	246446	10.0000	9.78
15 1,1-Dichloroethene	61	3.975	3.975	(0.653)	336052	10.0000	9.85
16 Acrylonitrile	53	3.985	3.985	(0.654)	115367	10.0000	11.1
17 Tert Butyl Alcohol	59	3.982	3.982	(0.654)	380914	10.0000	9.06(M)
18 Freon 113	101	4.031	4.031	(0.662)	489374	10.0000	9.56
19 Methylene chloride	49	4.090	4.090	(0.672)	203294	10.0000	8.37
20 Allyl Chloride	76	4.106	4.106	(0.674)	86149	10.0000	10.5
21 Carbon Disulfide	76	4.224	4.224	(0.694)	596896	10.0000	9.42
22 trans-1,2-dichloroethene	96	4.421	4.421	(0.726)	220067	10.0000	10.0
23 Methyl Tert Butyl Ether	73	4.457	4.457	(0.732)	554709	10.0000	10.5(M)

10236207 233 of 1066

# Data File: $\192.168.10.12\chem\10airD.i\072413.b\20507.d$ Report Date: 25-Jul-2013 07:33

							AMOUNTS	
		QUANT SIG					CAL-AMT	ON-COL
C:	ompounds 	MASS ====	RT	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)
	24 Vinyl Acetate	43	4.575		(0.751)	416883	10.0000	11.2
	25 1,1-Dichloroethane	63	4.582	4.582	(0.752)	379360	10.0000	9.97
\$	26 Hexane-d14(S)	66	4.697		(0.771)	279944	10.0000	10.0
	27 Methyl Ethyl Ketone	72	4.775		(0.784)	96344	10.0000	10.9
	28 n-Hexane	57	4.815		(0.791)	251379	10.0000	9.61(M)
	29 cis-1,2-Dichloroethene	96	4.975		(0.817)	190331	10.0000	10.5
	30 Ethyl Acetate	43	4.998		(0.821)	272944	10.0000	12.0(M)
	31 Chloroform	83	5.116		(0.840)	475236	10.0000	10.0
	32 Tetrahydrofuran	42	5.313		(0.872)	108934	10.0000	12.9
	33 1,1,1-Trichloroethane	97	5.595	5.595	(0.919)	534598	10.0000	10.5
	34 1,2-Dichloroethane	62	5.611		(0.921)	372025	10.0000	10.6
	35 Benzene	78	5.884		(0.966)	484923	10.0000	11.0
	36 Carbon tetrachloride	117	5.903		(0.969)	585564	10.0000	10.7
	37 Cyclohexane	56	5.907		(0.970)	178983	10.0000	11.6
*	38 1,4-Difluorobenzene	114	6.090		(1.000)	579775	10.0000	
	39 2,2,4-Trimethylpentane	57	6.267		(1.029)	560310	10.0000	11.4
	40 Heptane	43	6.438		(1.057)	180631	10.0000	12.0
	41 1,2-Dichloropropane	63	6.507		(1.068)	146979	10.0000	11.8(M)
	42 Trichloroethene	130	6.530		(1.072)	189383	10.0000	11.0
	43 1,4-Dioxane	88	6.651		(1.092)	88039	10.0000	21.2(M)
	44 Bromodichloromethane	83	6.651		(1.092)	537547	10.0000	11.0
	45 Methyl Isobutyl Ketone	43	7.225		(1.186)	268956	10.0000	12.6
	46 cis-1,3-Dichloropropene	75	7.277		(1.195)	281800	10.0000	12.2
	47 trans-1,3-Dichloropropene	75	7.769		(1.276)	319593	10.0000	13.2
\$	48 Toluene-d8 (S)	98	7.845		(1.288)	423180	10.0000	10.4
7	49 Toluene	91	7.937		(1.303)	624331	10.0000	11.4
	50 1,1,2-Trichloroethane	97	7.946		(1.305)	218875	10.0000	11.0
	51 Methyl Butyl Ketone	43	8.241		(0.851)	268647	10.0000	13.2
	52 Dibromochloromethane	129	8.556		(0.883)	413209	10.0000	11.0
	53 1,2-Dibromoethane	107	8.822		(0.911)	341622	10.0000	11.0
	54 Tetrachloroethene	166	8.914		(0.920)	309066	10.0000	10.8
*	55 Chlorobenzene - d5	117	9.688		(1.000)	221404	10.0000	10.0
	56 Chlorobenzene	112	9.737		(1.005)	407316	10.0000	10.2
	57 Ethyl Benzene	91	10.039		(1.036)	804065	10.0000	12.6
	58 m&p-Xylene	91	10.209		(1.054)	647710	10.0000	12.7
	59 Bromoform	173	10.652		(1.100)	435698	10.0000	11.2
	60 Styrene	104	10.701		(1.105)	412859	10.0000	13.5
	61 o-Xylene	91	10.780		(1.113)	687174	10.0000	12.7
	62 1,1,2,2-Tetrachloroethane	83	11.091		(1.115)	391648	10.0000	10.6
	63 Isopropylbenzene	105	11.455		(1.143)	851143	10.0000	11.3
	64 N-Propylbenzene	91		12.114		1024653	10.0000	16.5(M)
	65 4-Ethyltoluene	105						
	66 1,3,5-Trimethylbenzene		12.314		(1.271)	781913	10.0000	13.3
	67 1,2,4-Trimethylbenzene	105		12.419		697148	10.0000	13.0
		105		13.016		656662	10.0000	14.0
	68 1,3-Dichlorobenzene	146	13.367		(1.380)	395622	10.0000	12.2
٥	69 Sec- Butylbenzene	105		13.393		931653	10.0000	13.4
\$	70 1,4-dichlorobenzene-d4 (S)	150		13.452		93604	10.0000	9.65
	71 Benzyl Chloride	91		13.475		569442	10.0000	12.5
	72 1,4-Dichlorobenzene	146		13.498		384440	10.0000	10.9
	73 1,2-Dichlorobenzene	146		14.036		330351	10.0000	12.1
	74 N-Butylbenzene	91		14.321		720417	10.0000	13.7
	75 1,2,4-Trichlorobenzene	180		16.679		208176	10.0000	11.4
	76 Naphthalene	128		16.859		319830	10.0000	12.7
	77 Hexachlorobutadiene	225	17.233	17.233	(1.779)	239804	10.0000	9.79

10236207 234 of 1066

Data File:  $\192.168.10.12\chem\10airD.i\072413.b\20507.d$  Report Date: 25-Jul-2013 07:33

QC Flag Legend

M - Compound response manually integrated.

10236207 235 of 1066

Report Date: 25-Jul-2013 07:33

Pace Analytical Services, Inc.

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Level: LOW

Sample Type: AIR

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20507.d

Lab Smp Id: CAL4
Analysis Type: VOA

Quant Type: ISTD

Operator: DR1 Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DIFF
38 1,4-Difluorobenze	579775	347865	811685	579775	0.00
55 Chlorobenzene - d	221404	132842	309966	221404	

		RT 1	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d		9.36	10.02	9.69	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.

10236207 236 of 1066 Data File: \\192,168,10,12\chem\10airD,i\072413,b\20507,D

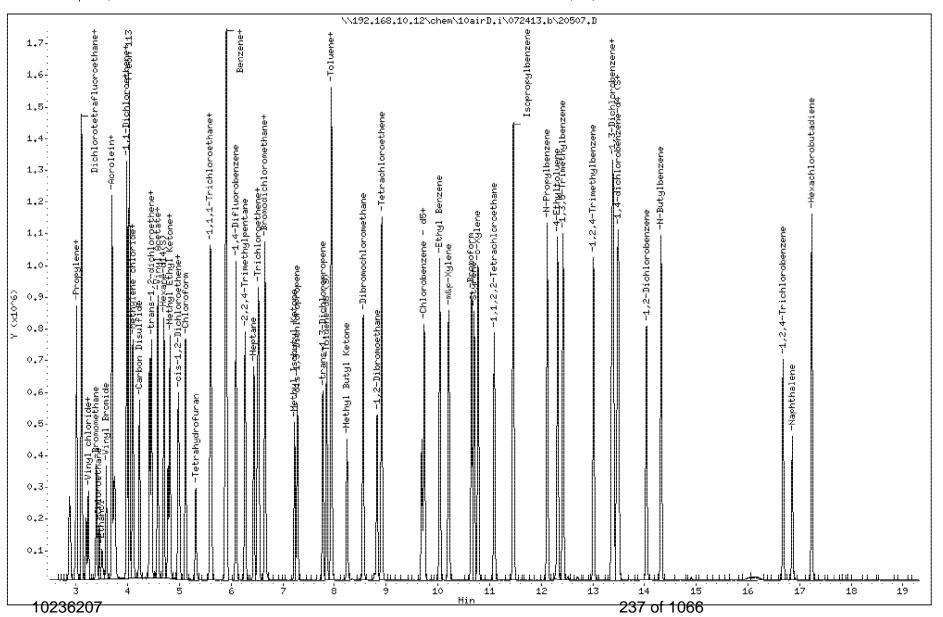
Date : 24-JUL-2013 15:36

Client ID: Sample Info:

Instrument: 10airD.i

Operator: DR1

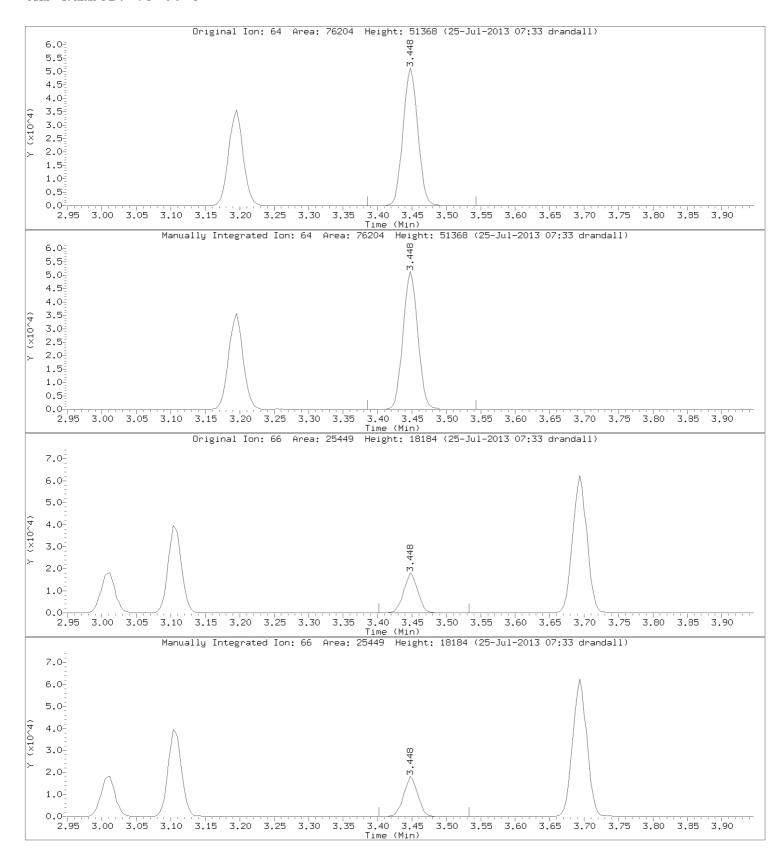
Column phase: J&W DB-5 Column phase: J&W DB-5



Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

Compound: Chloroethane CAS Number: 75-00-3



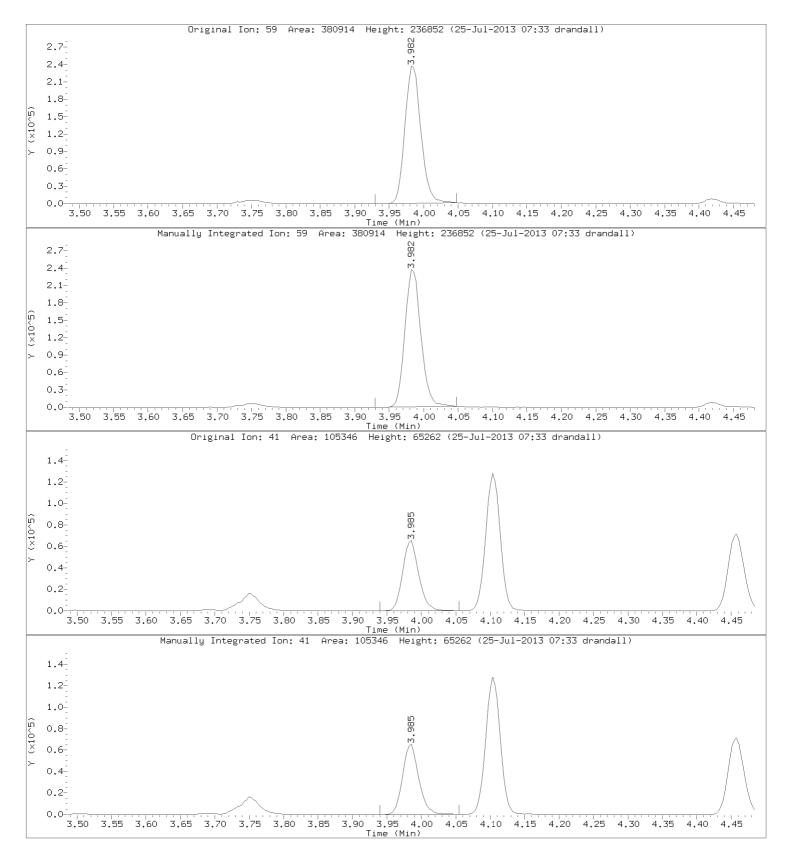
10236207 238 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



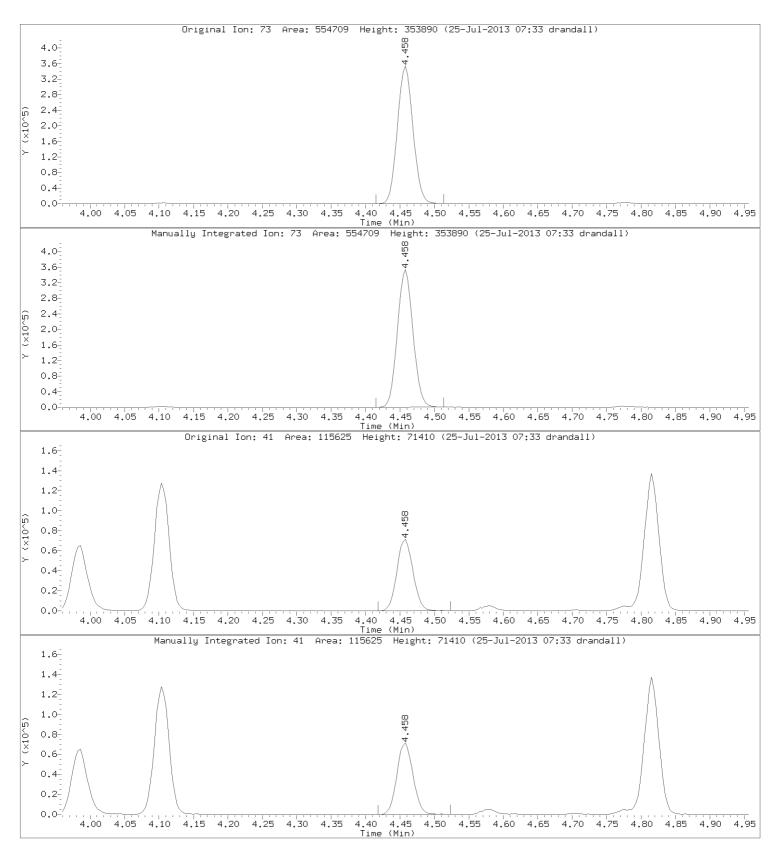
10236207 239 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

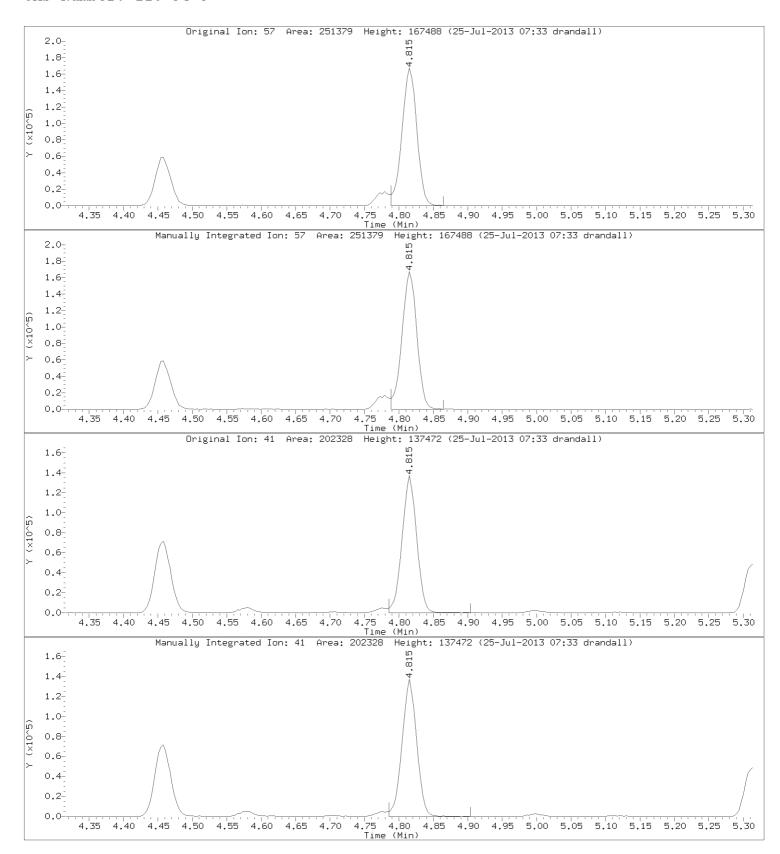


10236207 240 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

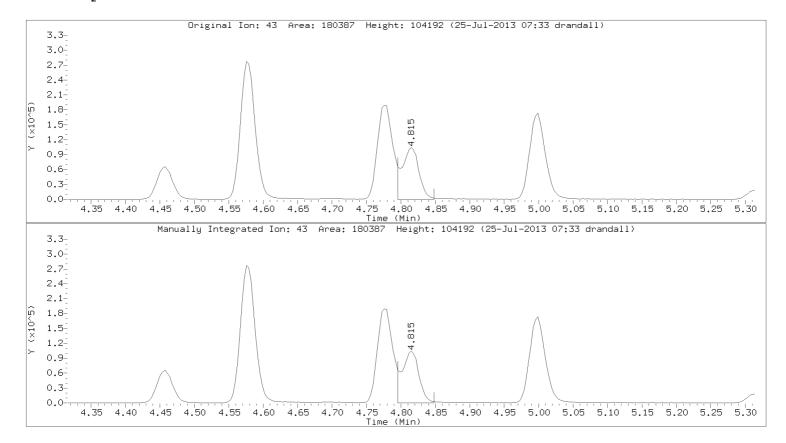
Compound: n-Hexane CAS Number: 110-54-3



10236207 241 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

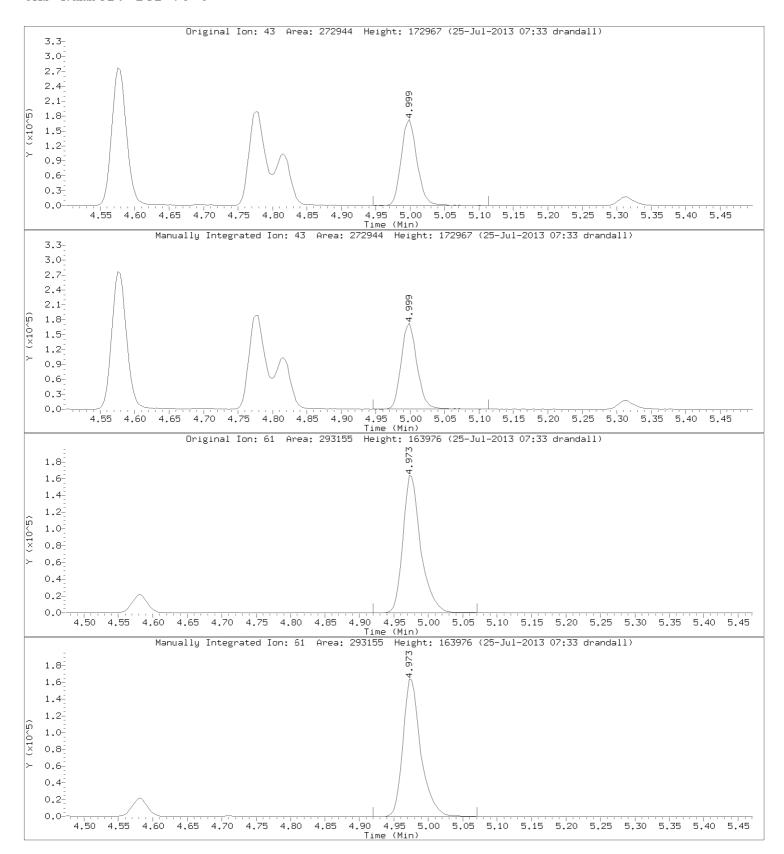


10236207 242 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

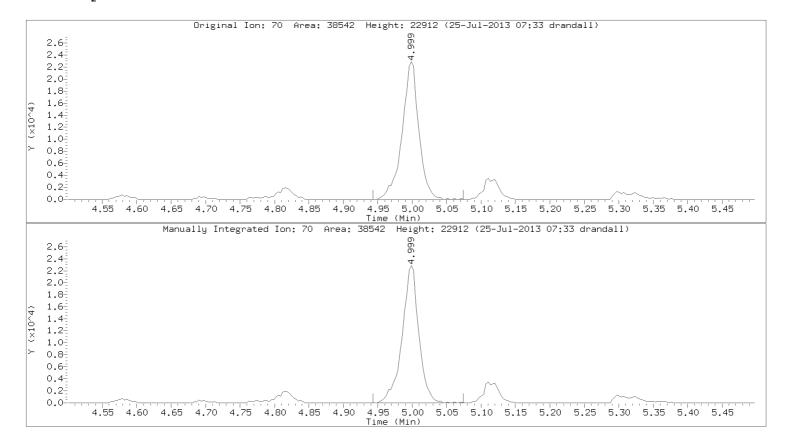
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 243 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4



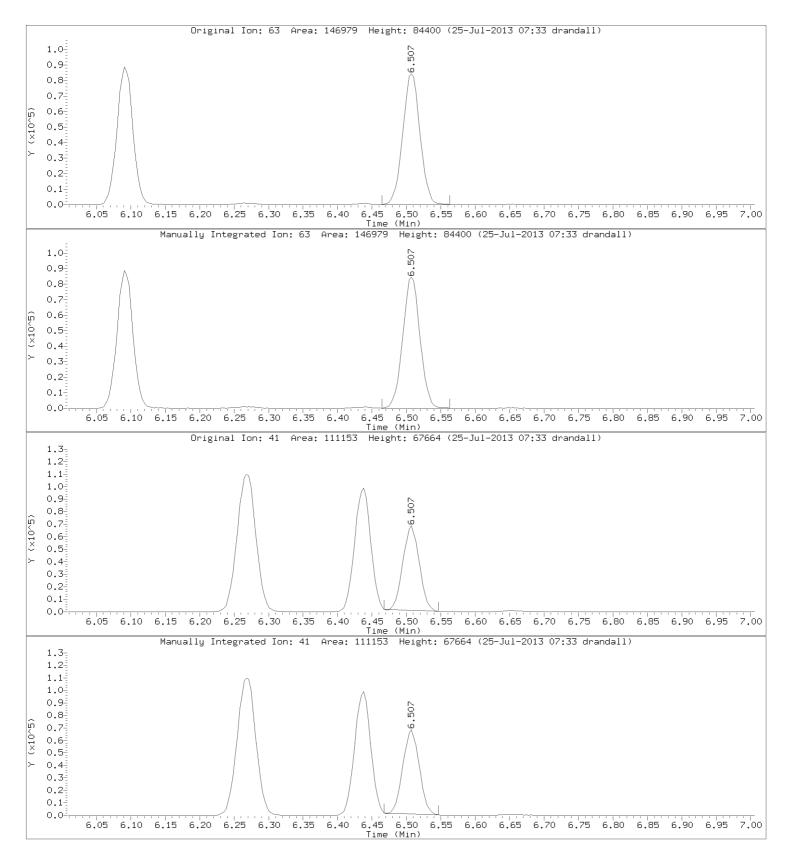
10236207 244 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

Compound: 1,2-Dichloropropane

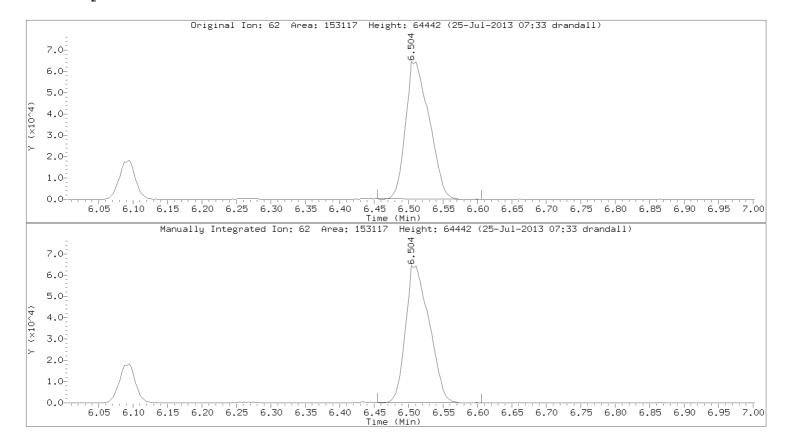
CAS Number: 78-87-5



10236207 245 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

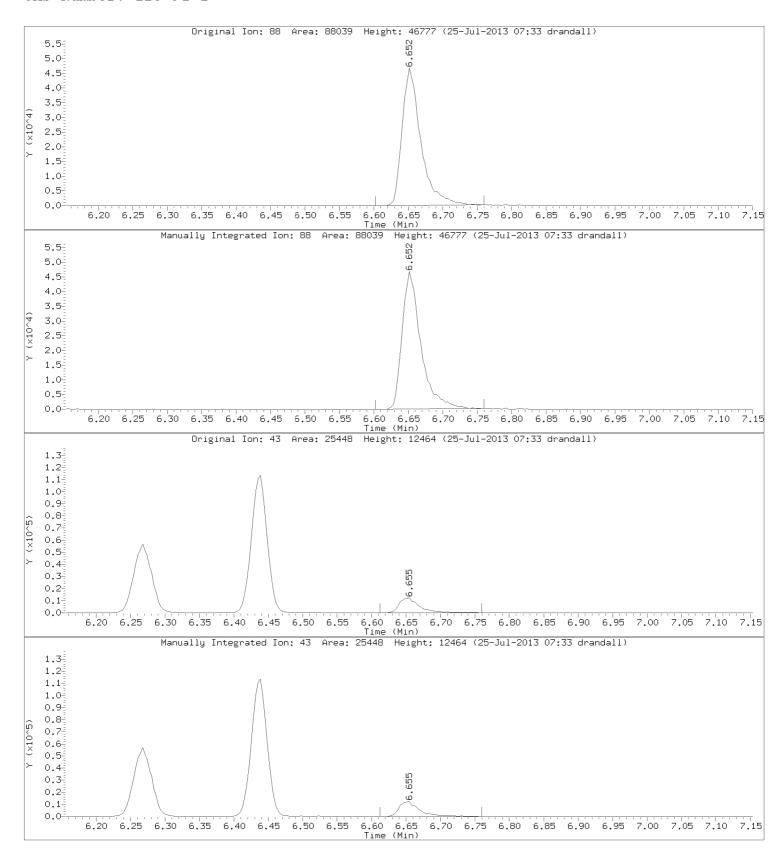


10236207 246 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

Compound: 1,4-Dioxane CAS Number: 123-91-1



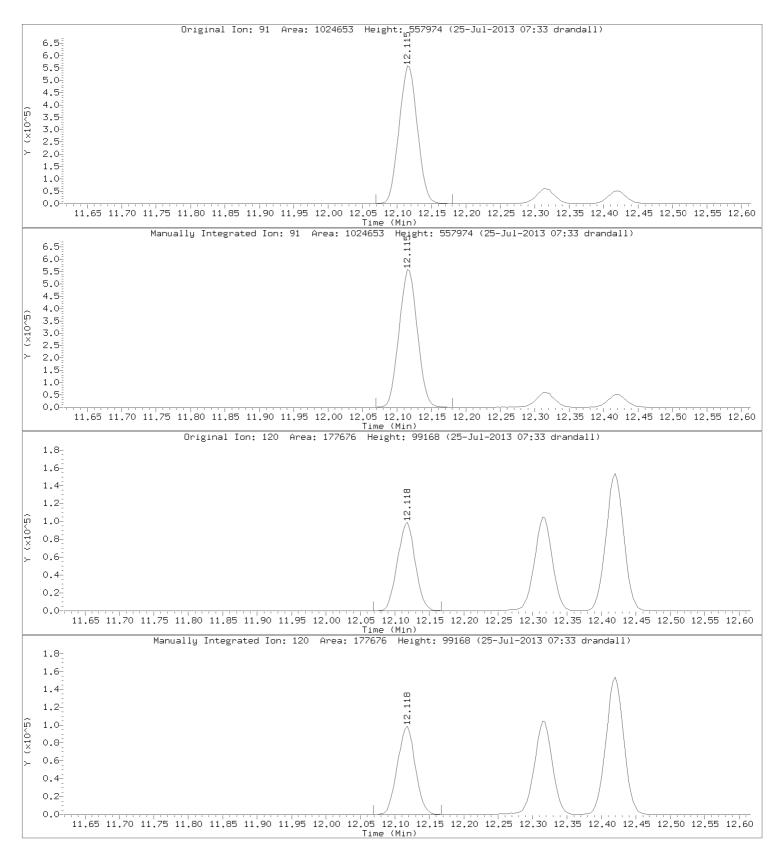
10236207 247 of 1066

Injection Date: 24-JUL-2013 15:36

Instrument: 10airD.i Lab Sample ID: CAL4

Compound: N-Propylbenzene

CAS Number: 103-65-1



10236207 248 of 1066

Report Date: 25-Jul-2013 07:33

#### Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072413.b\20508.d

Lab Smp Id: CAL5
Inj Date : 24-JUL-2013 16:06

: DR1 Inst ID: 10airD.i Operator

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072413.b\T015 205-13.m

Meth Date: 25-Jul-2013 07:24 drandall Cal Date: 24-JUL-2013 16:06 Quant Type: ISTD Cal File: 20508.d

Calibration Sample, Level: 5

Als bottle: 8
Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

### Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

						AMOUNTS	
Compounds	QUANT SIG MASS	RT 	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
1 Propylene	41	2.978		(0.489)	157114	20.0000	20.8
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	1390239	20.0000	18.1
3 Dichlorotetrafluoroethane	85	3.106	3.106	(0.510)	1149246	20.0000	18.6
4 Chloromethane	50	3.106	3.106	(0.510)	324175	20.0000	18.5
5 Vinyl chloride	62	3.191	3.191	(0.524)	326650	20.0000	18.7
6 1,3-Butadiene	54	3.237	3.237	(0.531)	207148	20.0000	20.0
7 Bromomethane	94	3.391	3.391	(0.557)	400968	20.0000	18.2
8 Chloroethane	64	3.447	3.447	(0.566)	168452	20.0000	18.8(M)
9 Ethanol	31	3.496	3.496	(0.574)	178754	20.0000	16.9
10 Vinyl Bromide	106	3.585	3.585	(0.588)	409450	20.0000	18.8
11 Acrolein	56	3.687	3.687	(0.605)	119156	20.0000	22.8
12 Trichlorofluoromethane	101	3.693	3.693	(0.606)	1477511	20.0000	17.7
13 Acetone	43	3.729	3.729	(0.612)	683130	20.0000	16.3
14 Isopropyl Alcohol	45	3.755	3.755	(0.616)	511845	20.0000	18.6
15 1,1-Dichloroethene	61	3.978	3.978	(0.653)	685394	20.0000	18.4
16 Acrylonitrile	53	3.985	3.985	(0.654)	241605	20.0000	21.4
17 Tert Butyl Alcohol	59	3.988	3.988	(0.655)	813889	20.0000	18.2(M)
18 Freon 113	101	4.031	4.031	(0.662)	1010707	20.0000	18.1
19 Methylene chloride	49	4.093	4.093	(0.672)	421832	20.0000	15.9
20 Allyl Chloride	76	4.106	4.106	(0.674)	184884	20.0000	20.8
21 Carbon Disulfide	76	4.228	4.228	(0.694)	1235591	20.0000	17.9
22 trans-1,2-dichloroethene	96	4.421	4.421	(0.726)	466907	20.0000	19.5
23 Methyl Tert Butyl Ether	73	4.457	4.457	(0.731)	1215697	20.0000	20.8 (M)

10236207 249 of 1066

# Data File: $\192.168.10.12\chem\10airD.i\072413.b\20508.d$ Report Date: 25-Jul-2013 07:33

Со							AMOUNTS	
	mpounds	QUANT SIG MASS ====	RT ====	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
	24 Vinyl Acetate	43	4.579	4.579	(0.751)	905164	20.0000	22.4
	25 1,1-Dichloroethane	63	4.582	4.582	(0.752)	797222	20.0000	19.2
\$	26 Hexane-d14(S)	66	4.700	4.700	(0.771)	303200	10.0000	9.93
	27 Methyl Ethyl Ketone	72	4.779	4.779	(0.784)	201205	20.0000	20.9
	28 n-Hexane	57	4.815	4.815	(0.790)	515693	20.0000	18.4 (M)
	29 cis-1,2-Dichloroethene	96	4.975	4.975	(0.817)	428292	20.0000	21.6
	30 Ethyl Acetate	43	4.998	4.998	(0.820)	634668	20.0000	24.2(M)
	31 Chloroform	83	5.120	5.120	(0.840)	1033090	20.0000	20.0
	32 Tetrahydrofuran	42	5.313	5.313	(0.872)	244926	20.0000	26.5
	33 1,1,1-Trichloroethane	97	5.598	5.598	(0.919)	1154273	20.0000	20.8
	34 1,2-Dichloroethane	62	5.618	5.618	(0.922)	776434	20.0000	20.2
	35 Benzene	78	5.887	5.887	(0.966)	1114889	20.0000	23.1
	36 Carbon tetrachloride	117	5.903		(0.969)	1212850	20.0000	20.4
	37 Cyclohexane	56	5.910	5.910	(0.970)	425277	20.0000	25.3
*	38 1,4-Difluorobenzene	114	6.094		(1.000)	632216	10.0000	
	39 2,2,4-Trimethylpentane	57	6.271		(1.029)	1296294	20.0000	24.2
	40 Heptane	43	6.438		(1.056)	425068	20.0000	25.8
	41 1,2-Dichloropropane	63	6.510		(1.068)	339638	20.0000	23.8 (M)
	42 Trichloroethene	130	6.533		(1.072)	456634	20.0000	24.3
	43 1,4-Dioxane	88	6.648		(1.091)	205659	20.0000	36.2 (AM)
	44 Bromodichloromethane	83	6.654		(1.092)	1161953	20.0000	21.8
	45 Methyl Isobutyl Ketone	43	7.225		(1.186)	615766	20.0000	26.4
	46 cis-1,3-Dichloropropene	75	7.281		(1.195)	633437	20.0000	25.1
	47 trans-1,3-Dichloropropene	75	7.773		(1.276)	735267	20.0000	27.9
\$	48 Toluene-d8 (S)	98	7.848		(1.288)	449088	10.0000	10.2
Ÿ	49 Toluene	91	7.940		(1.303)	1475852	20.0000	24.8
	50 1,1,2-Trichloroethane	97	7.946		(1.304)	509640	20.0000	23.4
	51 Methyl Butyl Ketone	43	8.245			605329		27.5
	52 Dibromochloromethane		8.560		(0.851)		20.0000	27.9
		129			(0.883)	928734	20.0000	
	53 1,2-Dibromoethane	107	8.829		(0.911)	786329	20.0000	23.5
.6.	54 Tetrachloroethene	166	8.917		(0.920)	740015	20.0000	23.9
*	55 Chlorobenzene - d5	117	9.691		(1.000)	239389	10.0000	00.1
	56 Chlorobenzene	112	9.740		(1.005)	957687	20.0000	22.1
	57 Ethyl Benzene	91	10.039		(1.036)	1848303	20.0000	26.8
	58 m&p-Xylene	91	10.212		(1.054)	1467337	20.0000	26.7
	59 Bromoform	173	10.655		(1.099)	999486	20.0000	23.7
	60 Styrene	104	10.704		(1.105)	959097	20.0000	29.1
	61 o-Xylene	91	10.783		(1.113)	1539287	20.0000	26.3
	62 1,1,2,2-Tetrachloroethane	83	11.091		(1.144)	881865	20.0000	22.0
	63 Isopropylbenzene	105	11.459	11.459		1944777	20.0000	23.9
	64 N-Propylbenzene	91		12.118		2328723	20.0000	30.2 (AM)
	65 4-Ethyltoluene	105	12.318	12.318	(1.271)	1819880	20.0000	28.6
	66 1,3,5-Trimethylbenzene	105	12.423	12.423	(1.282)	1587896	20.0000	27.4
	67 1,2,4-Trimethylbenzene	105	13.020	13.020	(1.343)	1531165	20.0000	30.3(A)
	68 1,3-Dichlorobenzene	146	13.374	13.374	(1.380)	937380	20.0000	26.8
	69 Sec- Butylbenzene	105	13.400	13.400	(1.383)	2122231	20.0000	28.2
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.456	13.456	(1.388)	106134	10.0000	10.1
	71 Benzyl Chloride	91	13.482	13.482	(1.391)	1311772	20.0000	26.6
	72 1,4-Dichlorobenzene	146	13.505	13.505	(1.394)	904829	20.0000	23.8
	73 1,2-Dichlorobenzene	146	14.039	14.039	(1.449)	775997	20.0000	26.3
	74 N-Butylbenzene	91	14.325	14.325	(1.478)	1634656	20.0000	28.8
	75 1,2,4-Trichlorobenzene	180		16.679		551490	20.0000	27.9
	76 Naphthalene	128		16.860		852884	20.0000	31.3(A)
								22.9

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Report Date: 25-Jul-2013 07:33

## QC Flag Legend

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

M - Compound response manually integrated.

10236207 251 of 1066

Report Date: 25-Jul-2013 07:33

Pace Analytical Services, Inc.

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20508.d

Lab Smp Id: CAL5 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
=======================================	========	========	=======	=======	======
38 1,4-Difluorobenze			811685	632216	9.05
55 Chlorobenzene - d	221404	132842	309966	239389	8.12

		RT I	IMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.06
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	0.04

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.

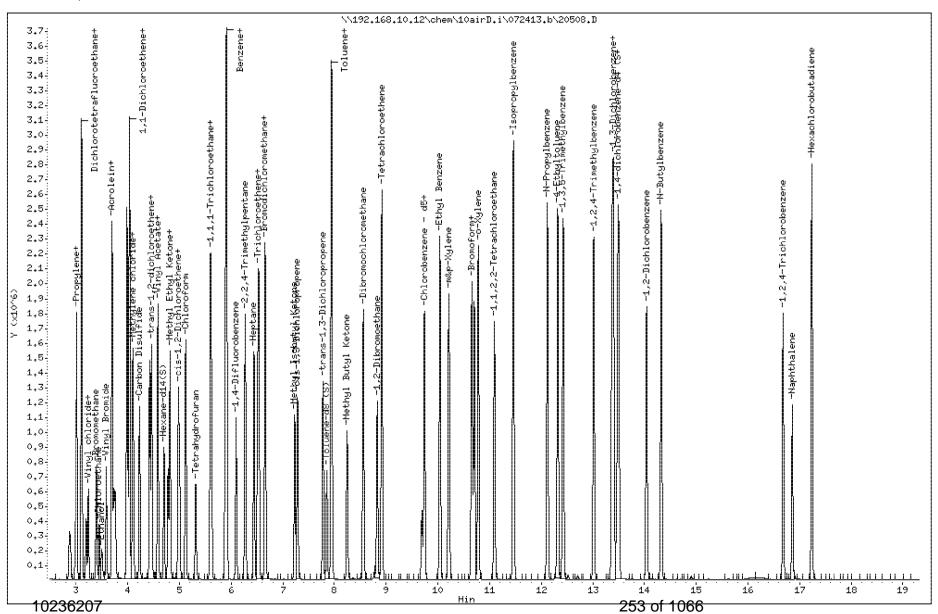
10236207 252 of 1066 Data File: \\192,168,10,12\chem\10airD,i\072413,b\20508,D

Date : 24-JUL-2013 16:06

Client ID: Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

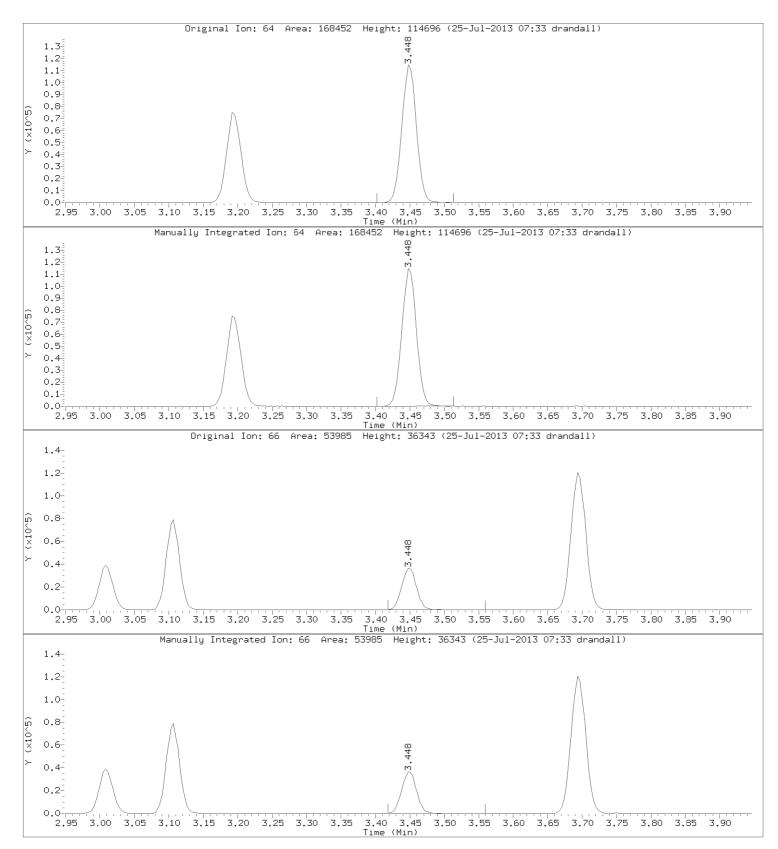


Instrument: 10airD.i

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

Compound: Chloroethane CAS Number: 75-00-3



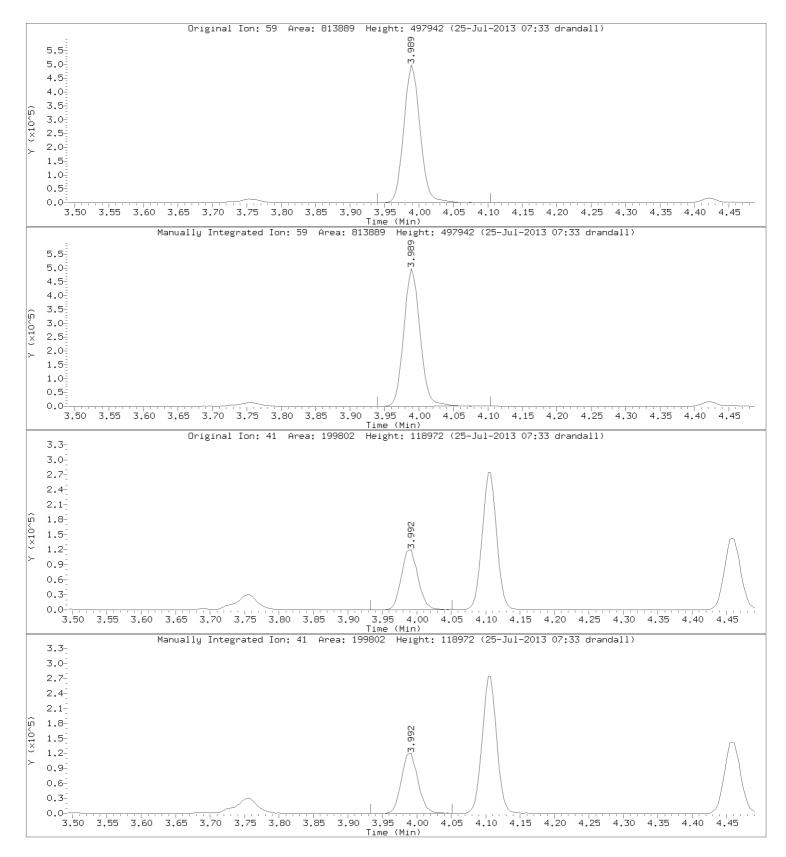
10236207 254 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



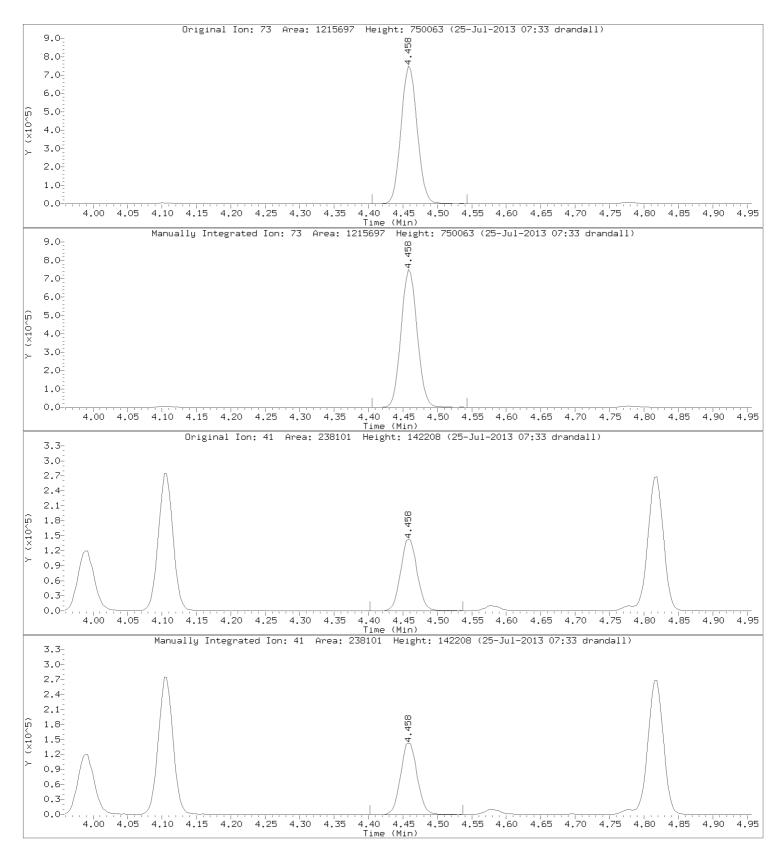
10236207 255 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

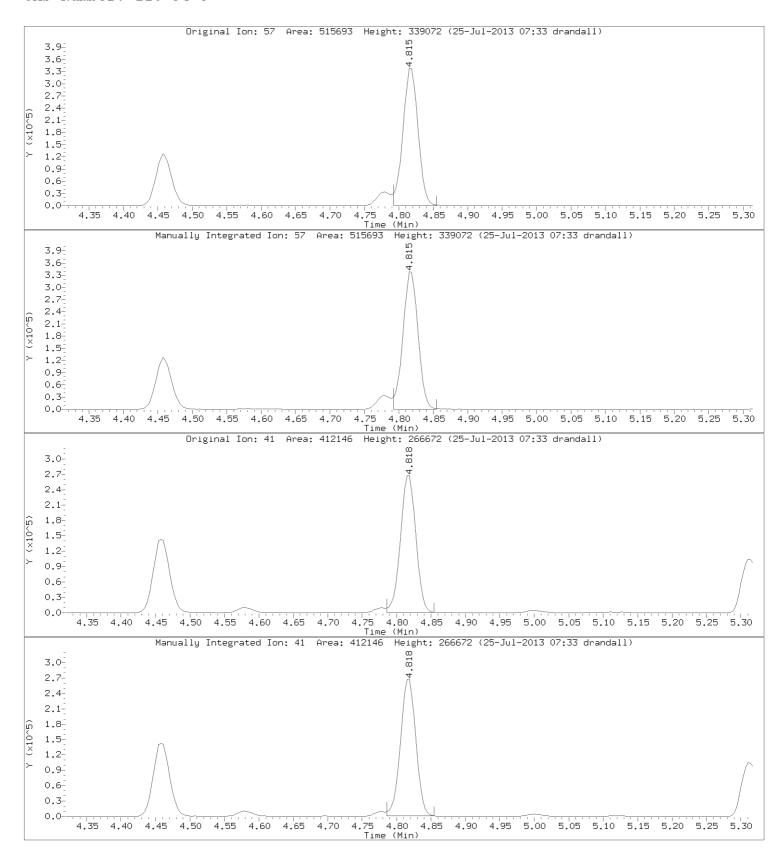


10236207 256 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

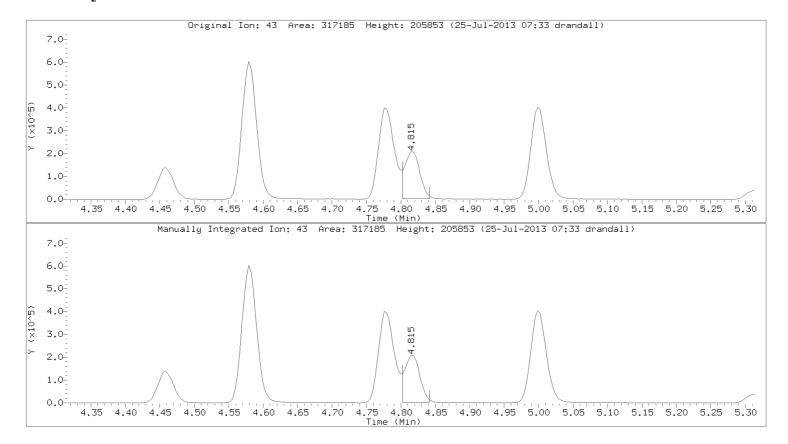
Compound: n-Hexane CAS Number: 110-54-3



10236207 257 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

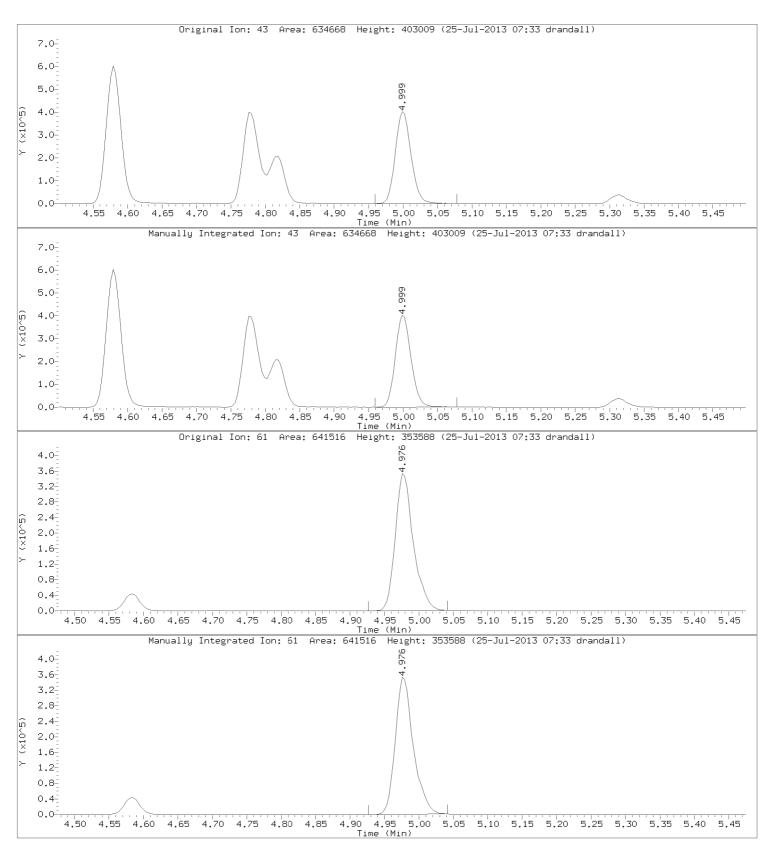


10236207 258 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

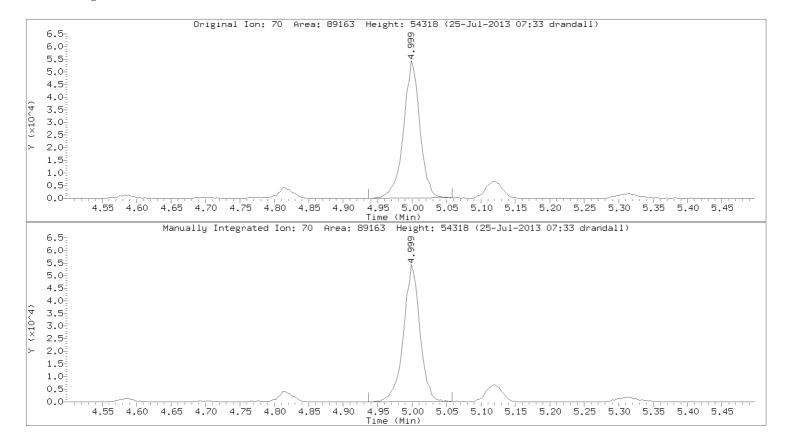
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 259 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5



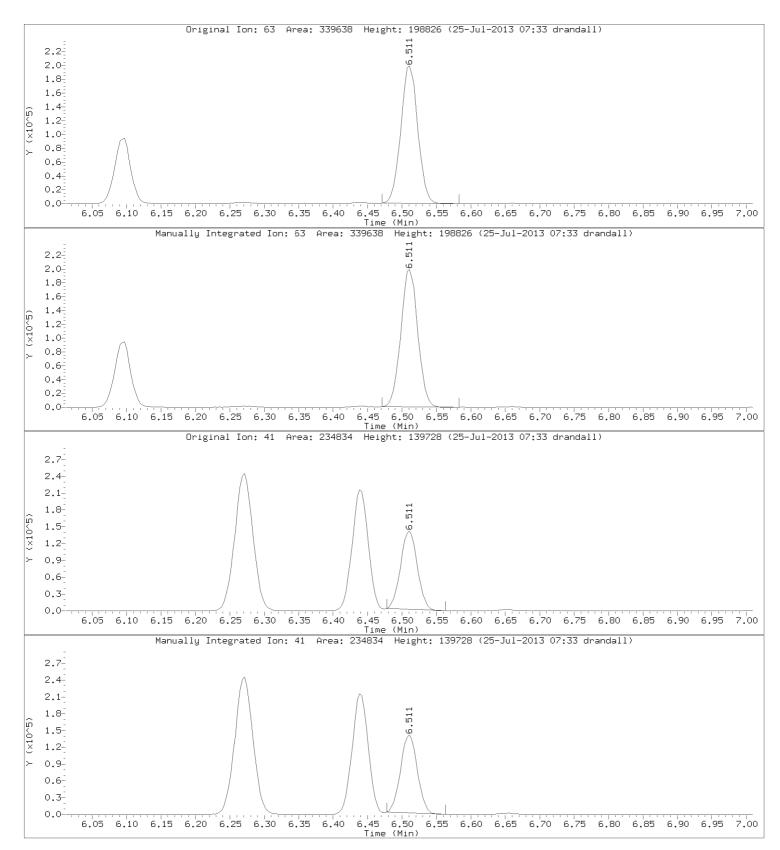
10236207 260 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

Compound: 1,2-Dichloropropane

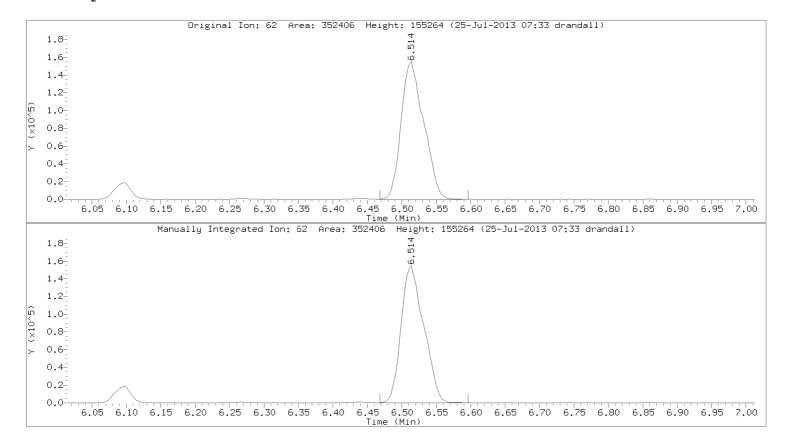
CAS Number: 78-87-5



10236207 261 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

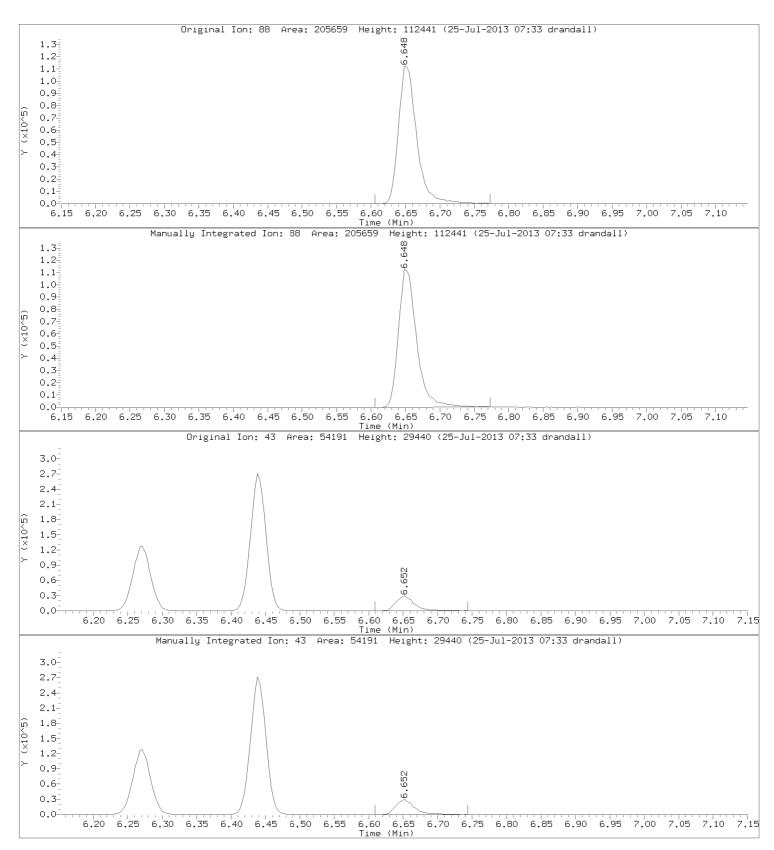


10236207 262 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

Compound: 1,4-Dioxane CAS Number: 123-91-1



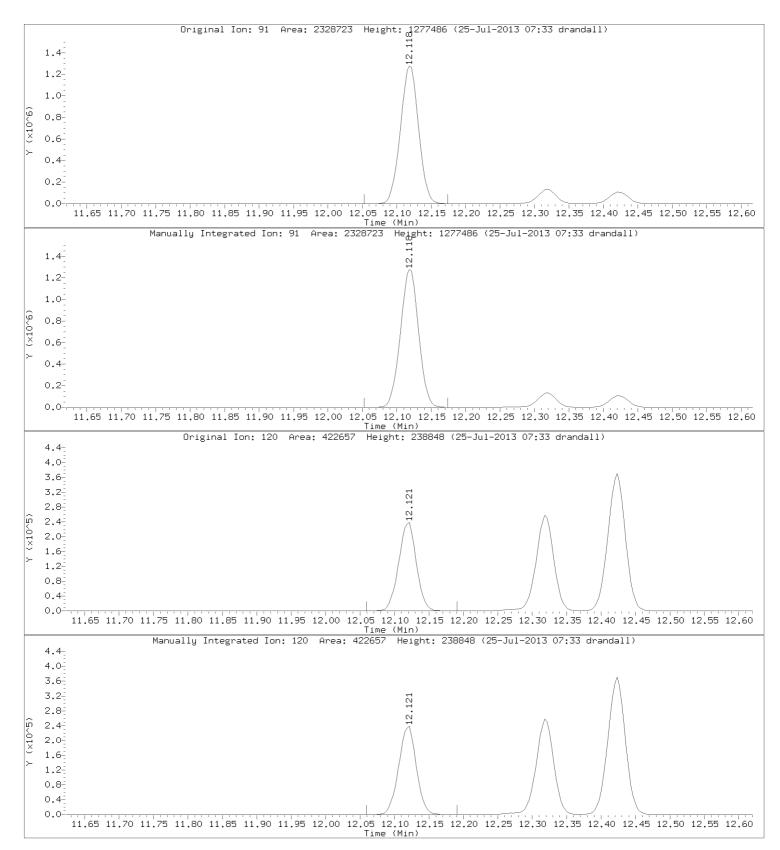
10236207 263 of 1066

Injection Date: 24-JUL-2013 16:06

Instrument: 10airD.i Lab Sample ID: CAL5

Compound: N-Propylbenzene

CAS Number: 103-65-1



10236207 264 of 1066

Report Date: 25-Jul-2013 07:35

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072413.b\20509.d

Lab Smp Id: CAL6
Inj Date : 24-JUL-2013 16:39

: DR1 Inst ID: 10airD.i Operator

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072413.b\T015 205-13.m

Meth Date: 25-Jul-2013 07:24 drandall Cal Date: 24-JUL-2013 16:39 Quant Type: ISTD Cal File: 20509.d

Calibration Sample, Level: 6

Als bottle: 9
Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

						AMOUNTS	
Compounds	QUANT SIG MASS ====	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
1 Propylene	41	2.981		(0.489)	250479	30.0000	32.0(A)
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	2108870	30.0000	26.5
3 Dichlorotetrafluoroethane	85	3.106	3.106	(0.510)	1740618	30.0000	27.2
4 Chloromethane	50	3.106	3.106	(0.510)	506310	30.0000	27.8
5 Vinyl chloride	62	3.195	3.195	(0.524)	516487	30.0000	28.5
6 1,3-Butadiene	54	3.237	3.237	(0.531)	326126	30.0000	30.5(A)
7 Bromomethane	94	3.391	3.391	(0.557)	667634	30.0000	29.2
8 Chloroethane	64	3.447	3.447	(0.566)	273343	30.0000	29.5(M)
9 Ethanol	31	3.493	3.493	(0.573)	268455	30.0000	24.5
10 Vinyl Bromide	106	3.585	3.585	(0.588)	640635	30.0000	28.4
11 Acrolein	56	3.683	3.683	(0.604)	186644	30.0000	34.4(A)
12 Trichlorofluoromethane	101	3.693	3.693	(0.606)	2173225	30.0000	25.1
13 Acetone	43	3.726	3.726	(0.611)	1040664	30.0000	24.0
14 Isopropyl Alcohol	45	3.755	3.755	(0.616)	776064	30.0000	27.2
15 1,1-Dichloroethene	61	3.978	3.978	(0.653)	1057221	30.0000	27.4
16 Acrylonitrile	53	3.985	3.985	(0.654)	391459	30.0000	33.4(A)
17 Tert Butyl Alcohol	59	3.988	3.988	(0.655)	1233445	30.0000	27.1(M)
18 Freon 113	101	4.031	4.031	(0.662)	1540502	30.0000	26.6
19 Methylene chloride	49	4.093	4.093	(0.672)	661558	30.0000	24.1
20 Allyl Chloride	76	4.106	4.106	(0.674)	295107	30.0000	32.0(A)
21 Carbon Disulfide	76	4.224	4.224	(0.693)	1959368	30.0000	27.4
22 trans-1,2-dichloroethene	96	4.421	4.421	(0.726)	730991	30.0000	29.5
23 Methyl Tert Butyl Ether	73	4.457	4.457	(0.731)	1916359	30.0000	31.4 (AM)

# Data File: $\192.168.10.12\chem\10airD.i\072413.b\20509.d$ Report Date: 25-Jul-2013 07:35

						AMOUN	TS
mpounds	QUANT SIG MASS ====	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL (ppbv)
24 Vinyl Acetate	43	4.579		(0.751)	1398540	30.0000	33.4(A)
25 1,1-Dichloroethane	63	4.582	4.582	(0.752)	1214048	30.0000	28.2
26 Hexane-d14(S)	66	4.700	4.700	(0.771)	306707	10.0000	9.70
27 Methyl Ethyl Ketone	72	4.779	4.779	(0.784)	315011	30.0000	31.3(AM)
28 n-Hexane	57	4.818	4.818	(0.791)	826689	30.0000	28.8 (M)
29 cis-1,2-Dichloroethene	96	4.979	4.979	(0.817)	707334	30.0000	34.4(A)
30 Ethyl Acetate	43	4.998	4.998	(0.820)	1019802	30.0000	36.1(AM)
31 Chloroform	83	5.120	5.120	(0.840)	1638710	30.0000	30.6(A)
32 Tetrahydrofuran	42	5.310	5.310	(0.871)	406611	30.0000	42.5(A)
33 1,1,1-Trichloroethane	97	5.598	5.598	(0.919)	1790721	30.0000	31.2(A)
34 1,2-Dichloroethane	62	5.618	5.618	(0.922)	1201020	30.0000	30.2(A)
35 Benzene	78	5.887	5.887	(0.966)	1855595	30.0000	37.2(A)
36 Carbon tetrachloride	117	5.907		(0.969)	1802120	30.0000	29.2
37 Cyclohexane	56	5.910		(0.970)	704383	30.0000	40.5(A)
38 1,4-Difluorobenzene	114	6.094		(1.000)	654995	10.0000	
39 2,2,4-Trimethylpentane	57	6.271		(1.029)	2147818	30.0000	38.7(A)
40 Heptane	43	6.441		(1.057)	703828	30.0000	41.3(A)
41 1,2-Dichloropropane	63	6.513		(1.069)	561074	30.0000	36.4 (AM)
42 Trichloroethene	130	6.533		(1.072)	772238	30.0000	39.7(A)
43 1,4-Dioxane	88	6.651		(1.091)	325591	30.0000	48.5(AM)
44 Bromodichloromethane	83	6.654		(1.092)	1833083	30.0000	33.1(A)
45 Methyl Isobutyl Ketone	43	7.228		(1.186)	1009496	30.0000	41.7(A)
46 cis-1,3-Dichloropropene	75	7.281		(1.195)	1040841	30.0000	39.8(A)
47 trans-1,3-Dichloropropene	75	7.773		(1.276)	1194806	30.0000	43.8(A)
48 Toluene-d8 (S)	98	7.848		(1.288)	483387	10.0000	10.6
49 Toluene (3)	91	7.940		(1.303)	2421853	30.0000	
50 1,1,2-Trichloroethane	97	7.940		(1.305)	838093		39.3(A)
						30.0000	37.1(A)
51 Methyl Butyl Ketone	43	8.245		(0.851)	998198	30.0000	42.7(A)
52 Dibromochloromethane	129	8.560		(0.883)	1468306	30.0000	34.0(A)
53 1,2-Dibromoethane	107	8.828		(0.911)	1277318	30.0000	35.9(A)
54 Tetrachloroethene	166	8.917		(0.920)	1219067	30.0000	37.0(A)
55 Chlorobenzene - d5	117	9.691		(1.000)	254595	10.0000	04.0471
56 Chlorobenzene	112	9.740		(1.005)	1594094	30.0000	34.6(A)
57 Ethyl Benzene	91	10.039		(1.036)	3011647	30.0000	41.0(A)
58 m&p-Xylene	91	10.212		(1.054)	2396346	30.0000	41.0(A)
59 Bromoform	173	10.658		(1.100)	1614133	30.0000	36.0(A)
60 Styrene	104	10.708		(1.105)	1618524	30.0000	46.2(A)
61 o-Xylene	91	10.783		(1.113)	2464397	30.0000	39.5(A)
62 1,1,2,2-Tetrachloroethane	83	11.094		(1.145)	1439646	30.0000	33.7(A)
63 Isopropylbenzene	105	11.458		(1.182)	3146350	30.0000	36.3(A)
64 N-Propylbenzene	91		12.121		3774204	30.0000	42.3(AM)
65 4-Ethyltoluene	105		12.321		2938195	30.0000	43.5(A)
66 1,3,5-Trimethylbenzene	105		12.426		2587970	30.0000	41.9(A)
67 1,2,4-Trimethylbenzene	105		13.019		2499072	30.0000	46.5(A)
68 1,3-Dichlorobenzene	146		13.374		1545425	30.0000	41.5(A)
69 Sec- Butylbenzene	105		13.403		3461034	30.0000	43.3(A)
70 1,4-dichlorobenzene-d4 (S)	150		13.459		107808	10.0000	10.5(M)
71 Benzyl Chloride	91		13.485		2162623	30.0000	41.2(A)
72 1,4-Dichlorobenzene	146	13.508	13.508	(1.394)	1513446	30.0000	37.4(A)
73 1,2-Dichlorobenzene	146	14.043	14.043	(1.449)	1275151	30.0000	40.7(A)
74 N-Butylbenzene	91	14.325	14.325	(1.478)	2639238	30.0000	43.8(A)
75 1,2,4-Trichlorobenzene	180	16.682	16.682	(1.721)	940377	30.0000	44.7(A)
76 Naphthalene	128	16.860	16.860	(1.740)	1458422	30.0000	50.3(A)
77 Hexachlorobutadiene	225	17.237	17 237	(1.779)	1000076	30.0000	35.5(A)

Report Date: 25-Jul-2013 07:35

# QC Flag Legend

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

M - Compound response manually integrated.

10236207 267 of 1066

Report Date: 25-Jul-2013 07:35

Pace Analytical Services, Inc.

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20509.d

Lab Smp Id: CAL6
Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF 
38 1,4-Difluorobenze 55 Chlorobenzene - d	579775 221404	347865 132842	811685 309966	654995 254595	12.97 14.99

		RT 1	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	0.03

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: \\192,168,10,12\chem\10airD,i\072413,b\20509,D

Date : 24-JUL-2013 16:39

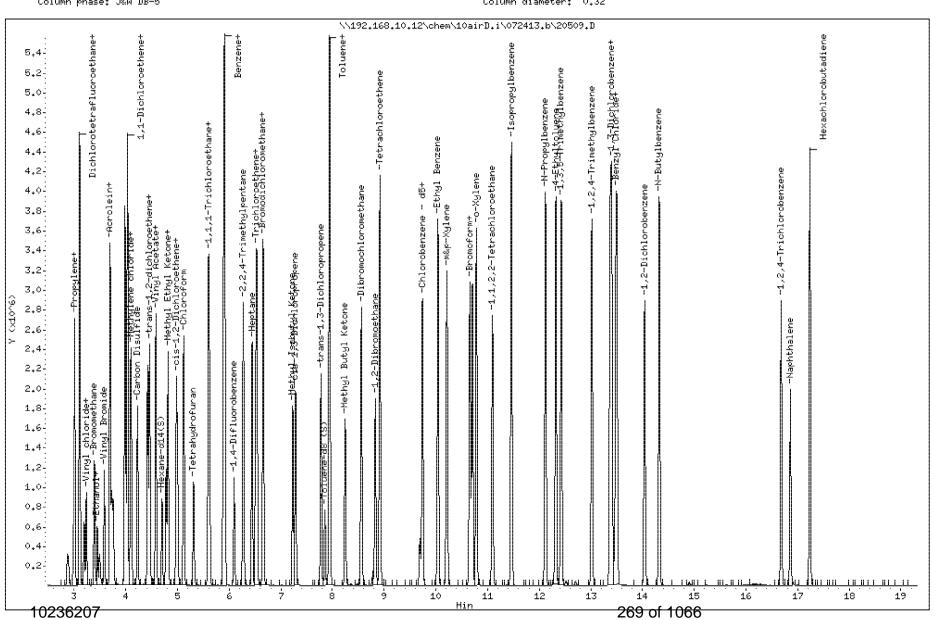
Client ID: Sample Info:

Column phase: J&W DB-5

Instrument: 10airD.i

Operator: DR1

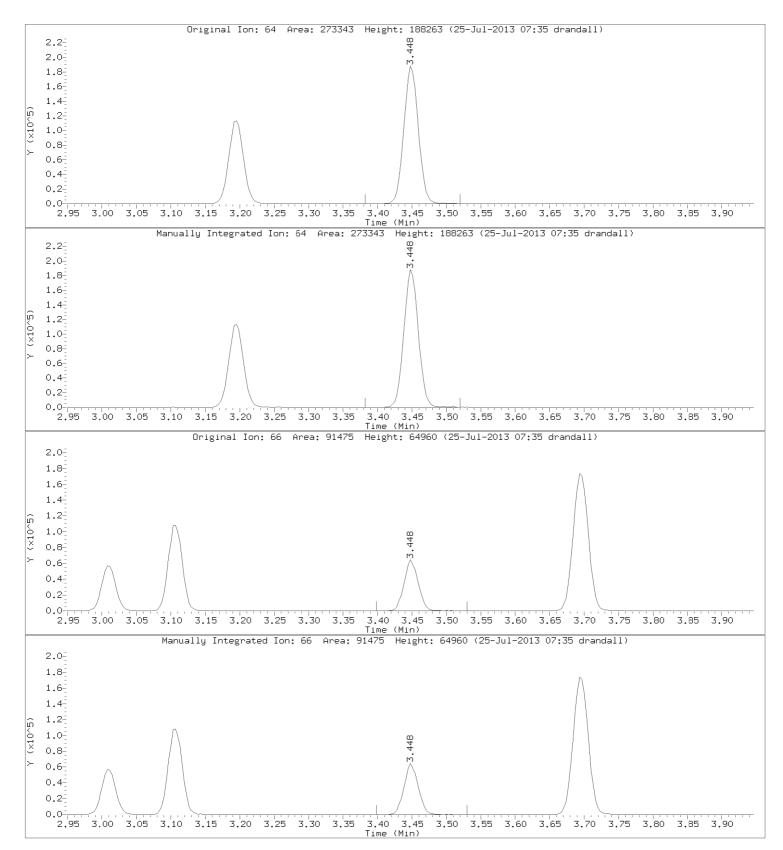
Column diameter: 0.32



Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: Chloroethane CAS Number: 75-00-3



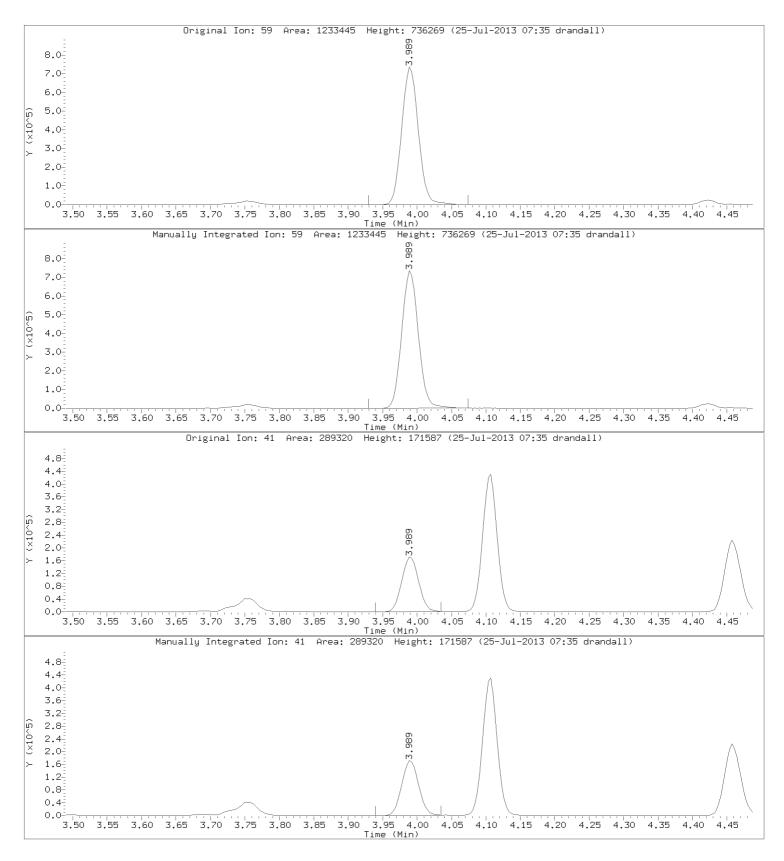
10236207 270 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



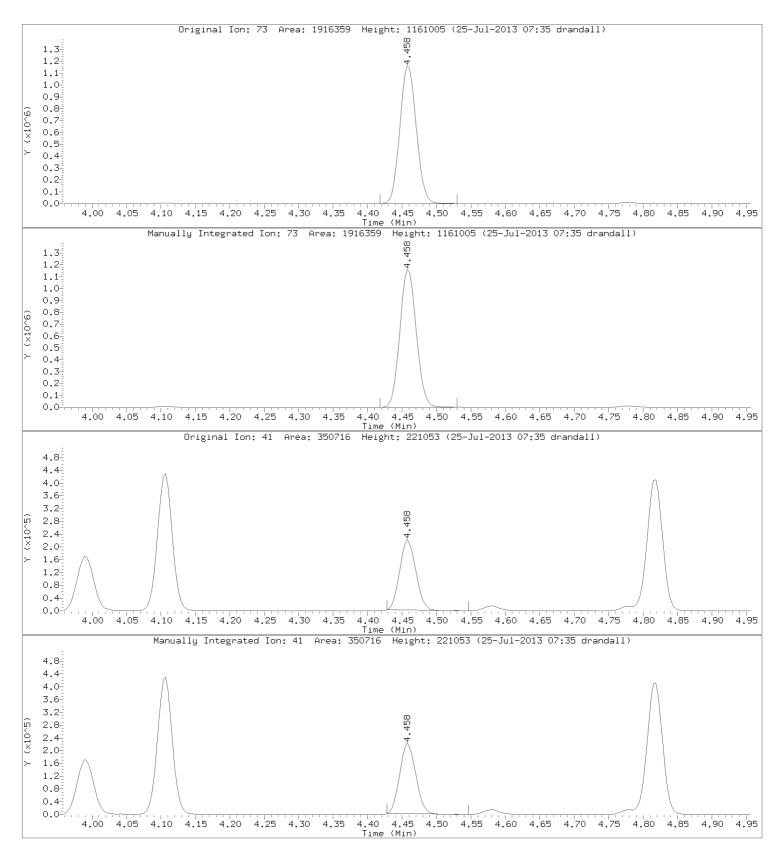
10236207 271 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4



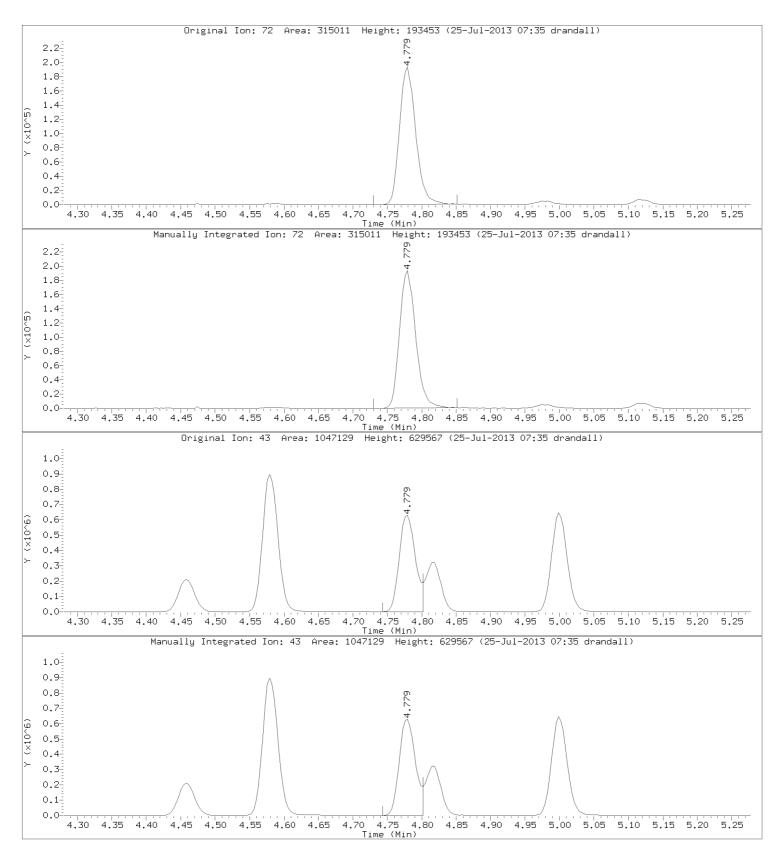
10236207 272 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: Methyl Ethyl Ketone

CAS Number: 78-93-3

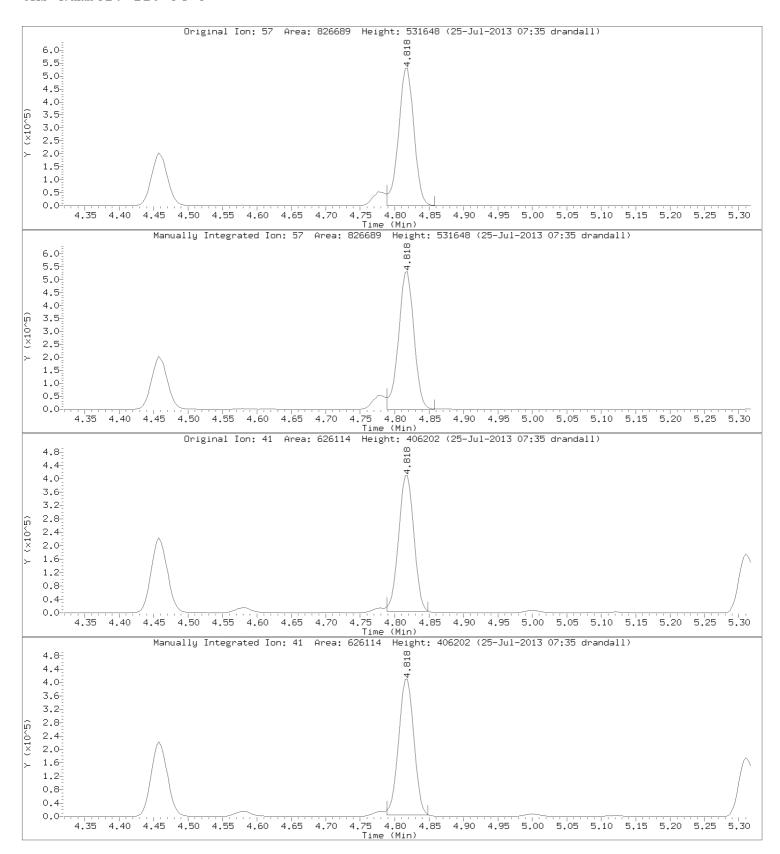


10236207 273 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

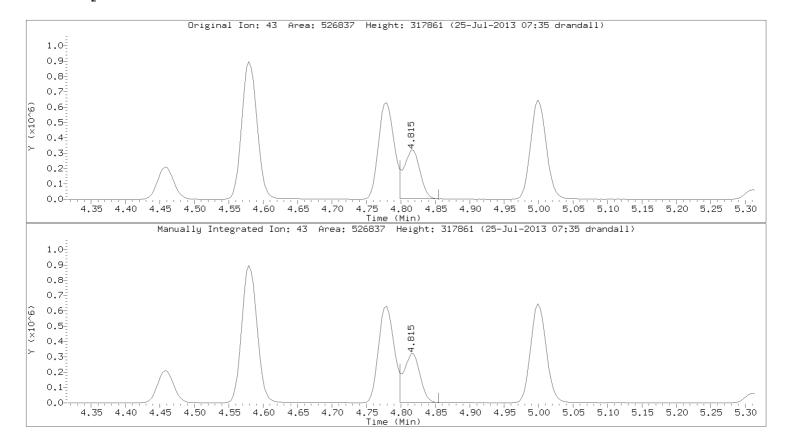
Compound: n-Hexane CAS Number: 110-54-3



10236207 274 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

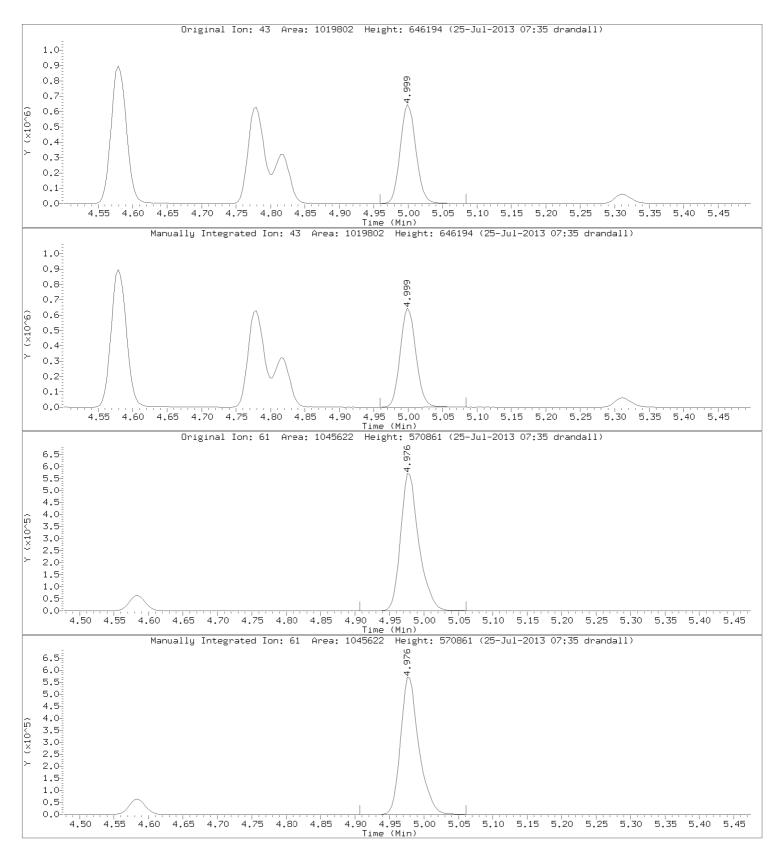


10236207 275 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

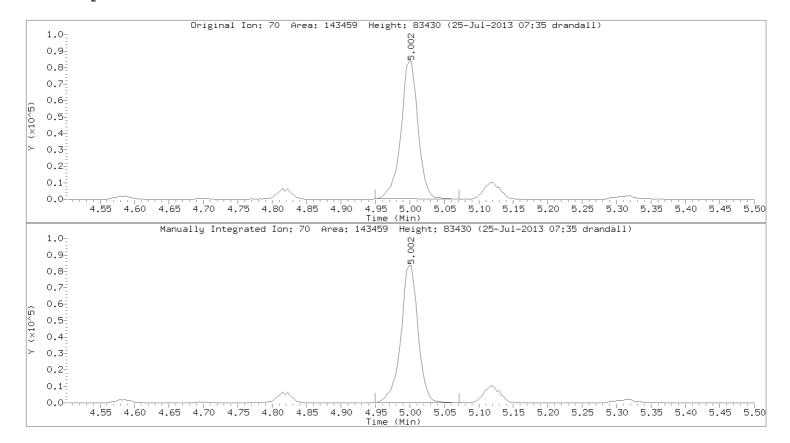
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 276 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6



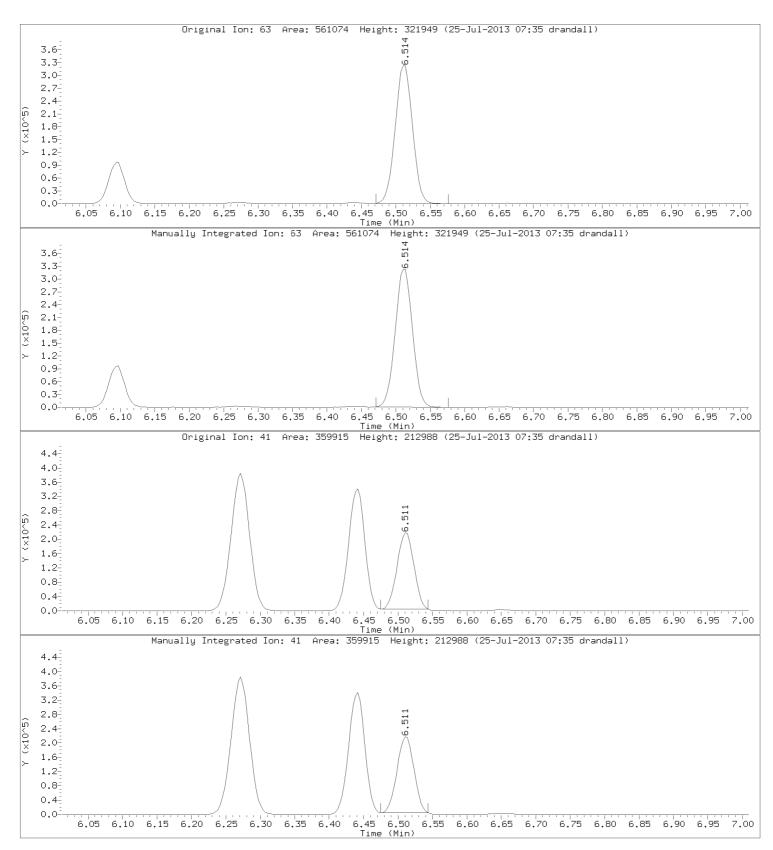
10236207 277 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: 1,2-Dichloropropane

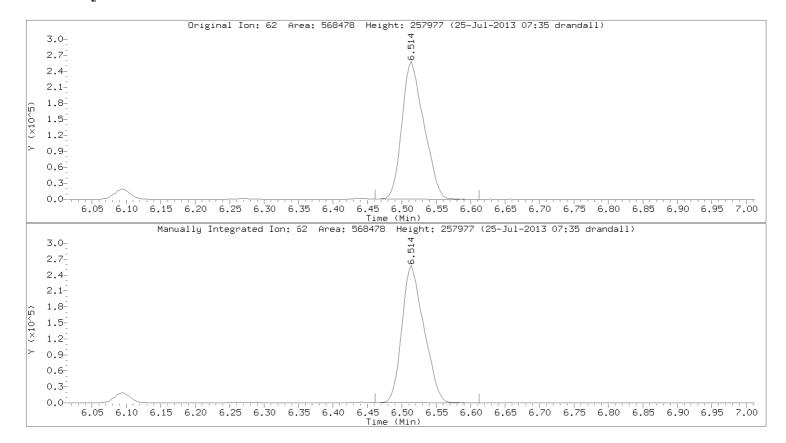
CAS Number: 78-87-5



10236207 278 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

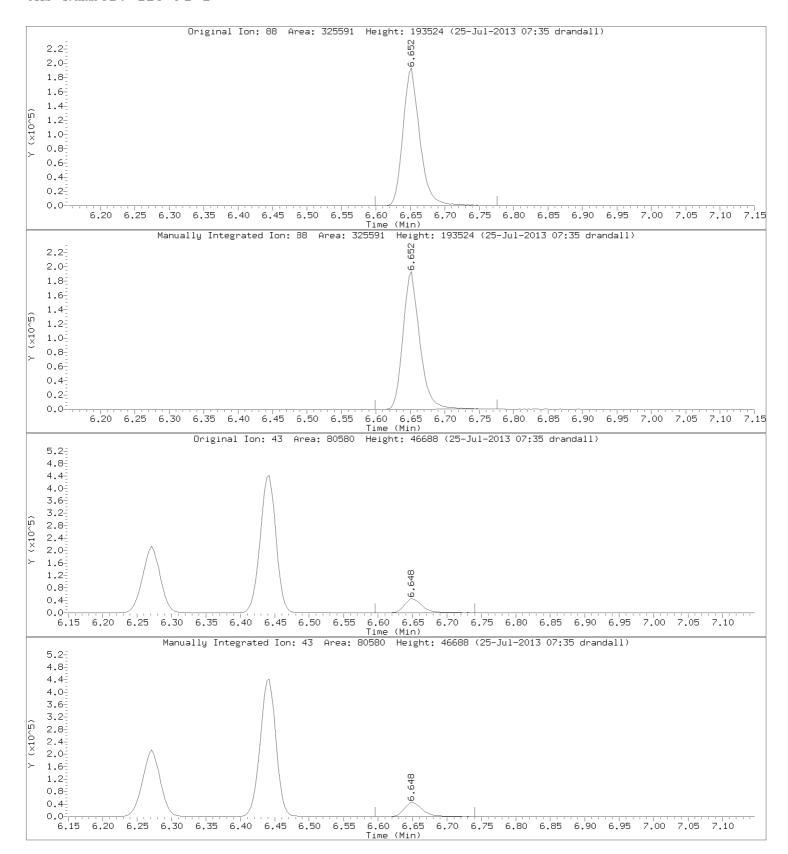


10236207 279 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: 1,4-Dioxane CAS Number: 123-91-1



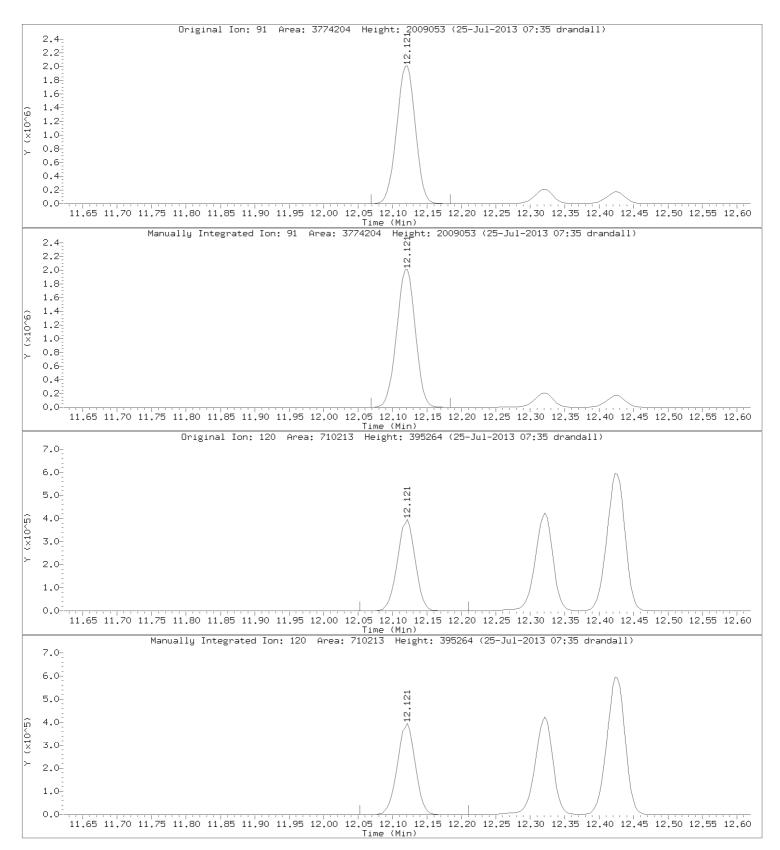
10236207 280 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: N-Propylbenzene

CAS Number: 103-65-1



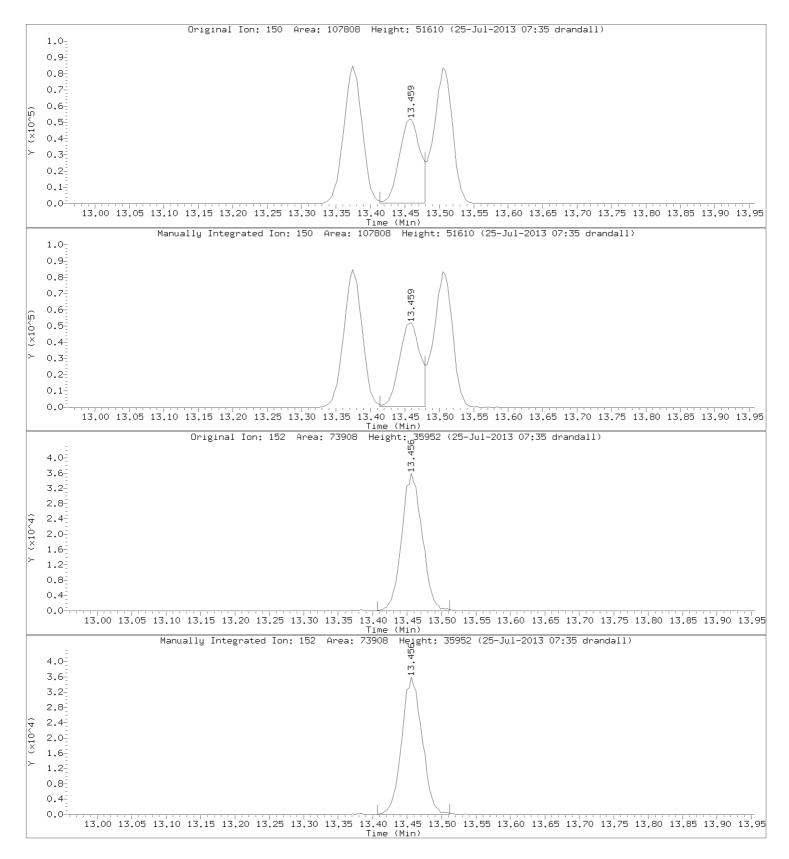
10236207 281 of 1066

Injection Date: 24-JUL-2013 16:39

Instrument: 10airD.i Lab Sample ID: CAL6

Compound: 1,4-dichlorobenzene-d4 (S)

CAS Number:



10236207 282 of 1066

Report Date: 25-Jul-2013 07:46

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072413.b\20510.d Lab Smp Id: ICV Inj Date: 24-JUL-2013 17:07

: DR1 Inst ID: 10airD.i Operator

Smp Info Misc Info:

Comment : Volatile Organic COMPOUNDS in Air

Method : \\192.168.10.12\chem\10airD.i\072413.b\T015 205-13.m

Meth Date: 25-Jul-2013 07:45 drandall Quant Type: ISTD Cal Date: 24-JUL-2013 16:39
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Cal File: 20509.d QC Sample: LCS

Compound Sublist: all.sub

Target Version: 4.14 Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS	
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv)	FINAL (ppbv) =====
1 Propylene	41	2.978		(0.489)	82724	9.89466	9.89
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	716844	8.84547	8.84
3 Dichlorotetrafluoroethane	85	3.103	3.107	(0.509)	571092	8.76985	8.77
4 Chloromethane	50	3.106	3.107	(0.510)	181470	9.80769	9.81
5 Vinyl chloride	62	3.191	3.195	(0.524)	169313	9.17687	9.18
6 1,3-Butadiene	54	3.234	3.238	(0.531)	103670	9.51965	9.52
7 Bromomethane	94	3.391	3.392	(0.557)	152039	6.54342	6.54
8 Chloroethane	64	3.447	3.448	(0.566)	69096	7.32175	7.32(M)
9 Ethanol	31	3.496	3.494	(0.574)	82849	8.58115	8.58
10 Vinyl Bromide	106	3.582	3.585	(0.588)	213692	9.30101	9.30
11 Acrolein	56	3.683	3.684	(0.604)	47053	7.53024	7.53
12 Trichlorofluoromethane	101	3.693	3.694	(0.606)	751132	8.52057	8.52
13 Acetone	43	3.729	3.726	(0.612)	371328	8.40317	8.40
14 Isopropyl Alcohol	45	3.752	3.756	(0.616)	292012	10.0754	10.1
15 1,1-Dichloroethene	61	3.978	3.979	(0.653)	421428	10.7494	10.7
16 Acrylonitrile	53	3.985	3.985	(0.654)	119899	9.18960	9.19
17 Tert Butyl Alcohol	59	3.982	3.989	(0.653)	412448	8.89688	8.90(M)
18 Freon 113	101	4.031	4.030	(0.662)	479488	8.15037	8.15
19 Methylene chloride	49	4.090	4.094	(0.671)	238437	9.52370	9.52
20 Allyl Chloride	76	4.103	4.107	(0.673)	92229	9.81811	9.82
21 Carbon Disulfide	76	4.224	4.224	(0.693)	452992	6.21766	6.22
22 trans-1,2-dichloroethene	96	4.418	4.422	(0.725)	257509	10.2233	10.2
23 Methyl Tert Butyl Ether	73	4.457	4.458	(0.731)	622686	10.0203	10.0(M)

# Data File: $\192.168.10.12\chem\10airD.i\072413.b\20510.d$ Report Date: 25-Jul-2013 07:46

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	mpounds 	MASS ====	RT ====	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)	
	24 Vinyl Acetate	43	4.575		(0.751)	480925	10.1418	10.1	
	25 1,1-Dichloroethane	63	4.579	4.582	(0.751)	427257	9.76820	9.77	
\$	26 Hexane-d14(S)	66	4.697	4.700	(0.771)	310399	9.64343	9.64	
	27 Methyl Ethyl Ketone	72	4.775	4.779	(0.784)	111278	10.8769	10.9	
	28 n-Hexane	57	4.815	4.818	(0.790)	282241	9.64577	9.64 (M)	
	29 cis-1,2-Dichloroethene	96	4.972	4.979	(0.816)	221843	9.62593	9.62	
	30 Ethyl Acetate	43	4.995	4.999	(0.820)	354768	10.5789	10.6(M)	
	31 Chloroform	83	5.113	5.120	(0.839)	567369	10.4167	10.4	
	32 Tetrahydrofuran	42	5.310	5.310	(0.871)	140902	10.6828	10.7	
	33 1,1,1-Trichloroethane	97	5.595	5.599	(0.918)	595374	10.1957	10.2	
	34 1,2-Dichloroethane	62	5.615	5.619	(0.921)	446376	11.0359	11.0	
	35 Benzene	78	5.880	5.887	(0.965)	598217	9.98416	9.98	
	36 Carbon tetrachloride	117	5.903	5.907	(0.969)	625025	9.96661	9.97	
	37 Cyclohexane	56	5.907	5.910	(0.969)	221669	9.79877	9.80	
*	38 1,4-Difluorobenzene	114	6.094	6.094	(1.000)	666557	10.0000		
	39 2,2,4-Trimethylpentane	57	6.267	6.271	(1.029)	661268	9.54492	9.54	
	40 Heptane	43	6.435	6.442	(1.056)	241554	10.6274	10.6	
	41 1,2-Dichloropropane	63	6.507	6.514	(1.068)	176330	9.70822	9.71(M)	
	42 Trichloroethene	130	6.530	6.533	(1.072)	236350	9.65321	9.65	
	43 1,4-Dioxane	88	6.651	6.652	(1.091)	105819	9.90066	9.90(M)	
	44 Bromodichloromethane	83	6.651	6.655	(1.091)	619672	10.0637	10.1	
	45 Methyl Isobutyl Ketone	43	7.225	7.229	(1.186)	326124	9.95773	9.96	
	46 cis-1,3-Dichloropropene	75	7.277	7.281	(1.194)	378384	11.1202	11.1	
	47 trans-1,3-Dichloropropene	75	7.769	7.773	(1.275)	359736	9.28869	9.29	
\$	48 Toluene-d8 (S)	98	7.845	7.848	(1.287)	497431	10.6855	10.7	
	49 Toluene	91	7.937	7.940	(1.302)	759946	9.72069	9.72	
	50 1,1,2-Trichloroethane	97	7.943	7.950	(1.303)	238370	8.82148	8.82	
	51 Methyl Butyl Ketone	43	8.242	8.244	(0.851)	300821	8.99734	9.00	
	52 Dibromochloromethane	129	8.556	8.560	(0.883)	443258	8.75700	8.76	
	53 1,2-Dibromoethane	107	8.825	8.829	(0.911)	382474	8.86458	8.86	
	54 Tetrachloroethene	166	8.914	8.918	(0.920)	353095	8.71614	8.72	
¥	55 Chlorobenzene - d5	117	9.688	9.691	(1.000)	265567	10.0000		
	56 Chlorobenzene	112	9.737	9.741	(1.005)	504554	9.49143	9.49	
	57 Ethyl Benzene	91	10.035	10.039	(1.036)	934596	9.22077	9.22	
	58 m&p-Xylene	91	10.209	10.213	(1.054)	1624726	19.7660	19.8	
	59 Bromoform	173	10.652	10.659	(1.100)	517930	9.45872	9.46	
	60 Styrene	104	10.701	10.708	(1.105)	573893	10.7005	10.7	
	61 o-Xylene	91	10.780	10.783	(1.113)	692755	8.24471	8.24	
	62 1,1,2,2-Tetrachloroethane	83	11.091	11.095	(1.145)	499732	10.2179	10.2	
	63 Isopropylbenzene	105	11.455	11.459	(1.182)	994036	9.32028	9.32	
	64 N-Propylbenzene	91	12.114	12.121	(1.250)	1155090	9.06862	9.07	
	65 4-Ethyltoluene	105	12.314	12.321	(1.271)	802508	8.14908	8.15(M)	
	66 1,3,5-Trimethylbenzene	105	12.419	12.426	(1.282)	800283	9.17911	9.18	
	67 1,2,4-Trimethylbenzene	105	13.016	13.020	(1.344)	751420	9.01308	9.01	
	68 1,3-Dichlorobenzene	146	13.370	13.374	(1.380)	498621	9.68893	9.69	
	69 Sec- Butylbenzene	105	13.397	13.404	(1.383)	1095389	9.40150	9.40	
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.449	13.459	(1.388)	110439	10.3026	10.3	
	71 Benzyl Chloride	91	13.479		(1.391)	691251	9.56559	9.56	
	72 1,4-Dichlorobenzene	146	13.498	13.509	(1.393)	483206	9.62441	9.62	
	73 1,2-Dichlorobenzene	146	14.039	14.043	(1.449)	421856	9.89397	9.89	
	74 N-Butylbenzene	91	14.321	14.325	(1.478)	887410	9.91371	9.91	
	75 1,2,4-Trichlorobenzene	180	16.679	16.683	(1.722)	361454	13.0115	13.0(R)	
	76 Naphthalene	128	16.856	16.860	(1.740)	577528	13.4316	13.4(R)	
	77 Hexachlorobutadiene	225	17.233	17.236	(1.779)	407124	12.1626	12.2	

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Report Date: 25-Jul-2013 07:46

# QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

10236207 285 of 1066

Report Date: 25-Jul-2013 07:46

Pace Analytical Services, Inc.

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20510.d

Lab Smp Id: ICV Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DIFF
38 1,4-Difluorobenze	579775	347865	811685		14.97
55 Chlorobenzene - d	221404	132842	309966		19.95

		RT 1	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	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: 25-Jul-2013 07:46

## Pace Analytical Services, Inc.

## RECOVERY REPORT

Client Name: Client SDG: 072413.b

Fraction: VOA Sample Matrix: GAS

Lab Smp Id: ICV

Level: LOW Operator: DR1

Data Type: MS DATA SampleType: LCS

SpikeList File: SSV.spk Quant Type: ISTD

Sublist File: all.sub

Method File: \\192.168.10.12\chem\10airD.i\072413.b\T015\_205-13.m

Misc Info:

	CONC	CONC	ક	<del>                                     </del>
SPIKE COMPOUND	ADDED	RECOVERED	RECOVERED	LIMITS
	ppbv	ppbv	1.200121.22	
	PP.	PP		
1 Propylene	10.1	9.89	97.97	60-140
2 Dichlorodifluorome	9.60	8.84	92.14	60-140
3 Dichlorotetrafluor	9.70	8.77	90.41	60-140
4 Chloromethane	10.8	9.81	90.81	60-140
5 Vinyl chloride	9.60	9.18	95.59	60-140
6 1,3-Butadiene	9.90	9.52	96.16	60-140
7 Bromomethane	7.20	6.54	90.88	60-140
8 Chloroethane	7.60	7.32	96.34	60-140
9 Ethanol	7.90	8.58	108.62	60-140
10 Vinyl Bromide	9.70	9.30	95.89	60-140
12 Trichlorofluoromet	9.90	8.52	86.07	60-140
13 Acetone	9.40	8.40	89.40	60-140
14 Isopropyl Alcohol	10.2	10.1	98.78	60-140
15 1,1-Dichloroethene	11.5	10.7	93.47	60-140
18 Freon 113	9.30	8.15	87.64	60-140
19 Methylene chloride	9.90	9.52	96.20	60-140
21 Carbon Disulfide	10.0	6.22	62.18	60-140
22 trans-1,2-dichloro	10.2	10.2	100.23	60-140
23 Methyl Tert Butyl	9.60	10.0	104.38	60-140
25 1,1-Dichloroethane	10.2	9.77	95.77	60-140
24 Vinyl Acetate	10.3	10.1	98.46	60-140
27 Methyl Ethyl Keton	10.2	10.9	106.64	60-140
28 n-Hexane	10.1	9.64	95.50	60-140
29 cis-1,2-Dichloroet	10.1	9.62	95.31	60-140
30 Ethyl Acetate	10.7	10.6	98.87	60-140
31 Chloroform	10.9	10.4	95.57	60-140
32 Tetrahydrofuran	10.8	10.7	98.91	60-140
33 1,1,1-Trichloroeth		10.2	102.99	60-140
34 1,2-Dichloroethane	11.0	11.0	100.33	60-140
35 Benzene	10.6	9.98	94.19	60-140
36 Carbon tetrachlori	10.2	9.97	97.71	60-140
37 Cyclohexane	10.5	9.80	93.32	60-140
* 38 1,4-Difluorobenzen	0.000	10.0	0.00	0-0
39 2,2,4-Trimethylpen	10.0	9.54	95.45	60-140
40 Heptane	11.3	10.6	94.05	60-140
41 1,2-Dichloropropan	10.1	9.71	96.12	60-140
42 Trichloroethene	9.50	9.65	101.61	60-140
44 Bromodichlorometha	9.80	10.1	102.69	60-140
43 1,4-Dioxane	9.70	9.90	102.07	60-140
45 Methyl Isobutyl Ke	9.80	9.96	101.61	60-140

Data File:  $\192.168.10.12\chem\10airD.i\072413.b\20510.d$  Report Date: 25-Jul-2013 07:46

SPIKE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
46 cis-1,3-Dichloropr 47 trans-1,3-Dichloro 49 Toluene 50 1,1,2-Trichloroeth 51 Methyl Butyl Keton 52 Dibromochlorometha 53 1,2-Dibromoethane 54 Tetrachloroethene * 55 Chlorobenzene - d5 56 Chlorobenzene 57 Ethyl Benzene 58 m&p-Xylene 59 Bromoform 60 Styrene 61 o-Xylene 62 1,1,2,2-Tetrachlor 63 Isopropylbenzene 64 N-Propylbenzene 65 4-Ethyltoluene 66 1,3,5-Trimethylben 67 1,2,4-Trimethylben 69 Sec- Butylbenzene 68 1,3-Dichlorobenzen 71 Benzyl Chloride 72 1,4-Dichlorobenzen 73 1,2-Dichlorobenzen 74 N-Butylbenzene 75 1,2,4-Trichloroben 76 Naphthalene 77 Hexachlorobutadien	11.6 9.90 10.4 9.60 9.70 9.30 9.60 0.000 10.3 9.90 20.2 9.80 11.6 9.30 9.00	11.1 9.29 9.72 8.82 9.00 8.76 8.86 8.72 10.0 9.49 9.22 19.8 9.46 10.7 8.24 10.2 9.32 9.07 8.15 9.18 9.01 9.40 9.56 9.69 9.56 9.62 9.89 9.91 13.0 13.4 12.2	95.86 93.83 93.47 91.89 92.76 94.16 92.34 90.79 0.00 92.15 93.14 97.85 96.52 92.25 88.65 109.87 100.22 101.89 98.18 95.62 100.15 100.02 96.89 97.61 99.22 102.00 104.35 142.98* 144.43* 133.66	

SURROGATE COMPOUND	CONC ADDED ppbv	CONC RECOVERED ppbv	% RECOVERED	LIMITS
\$ 26 Hexane-d14(S)	10.0	9.64	96.43	70-130
\$ 48 Toluene-d8 (S)	10.0	10.7	106.85	70-130
\$ 70 1,4-dichlorobenzen	10.0	10.3	103.03	70-130

Data File: \\192,168,10,12\chem\10airD,i\072413,b\20510,D

Date : 24-JUL-2013 17:07

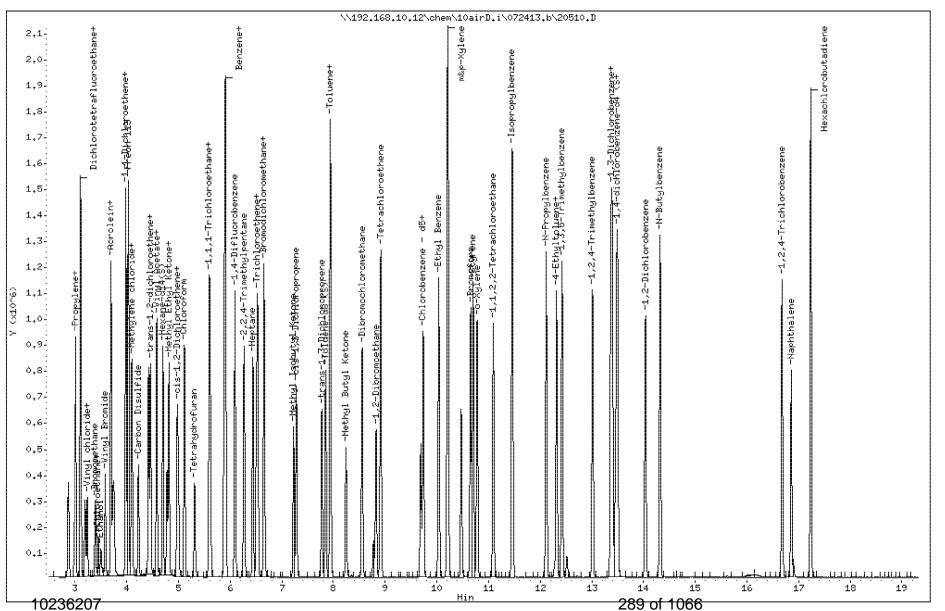
Client ID: Sample Info:

Operator: DR1

Column diameter: 0.32

Instrument: 10airD.i

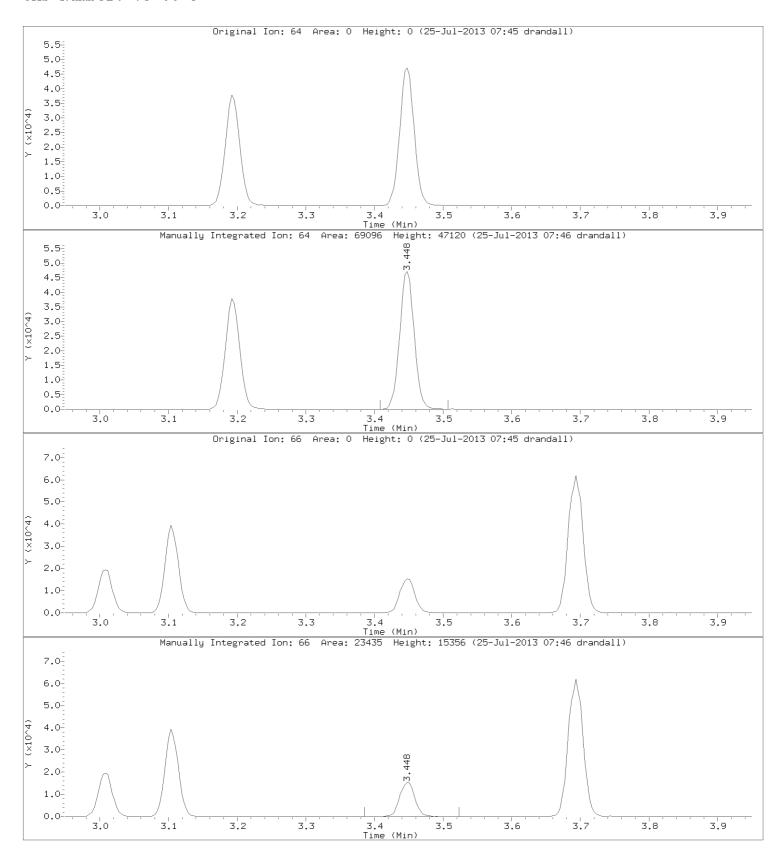
Column phase: J&W DB-5



Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

Compound: Chloroethane CAS Number: 75-00-3



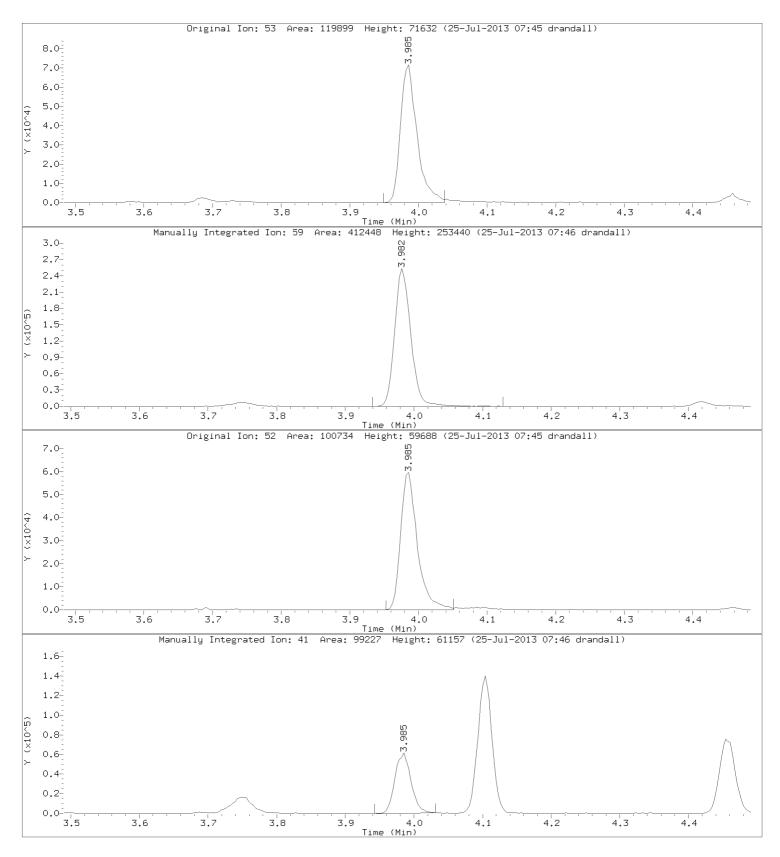
10236207 290 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



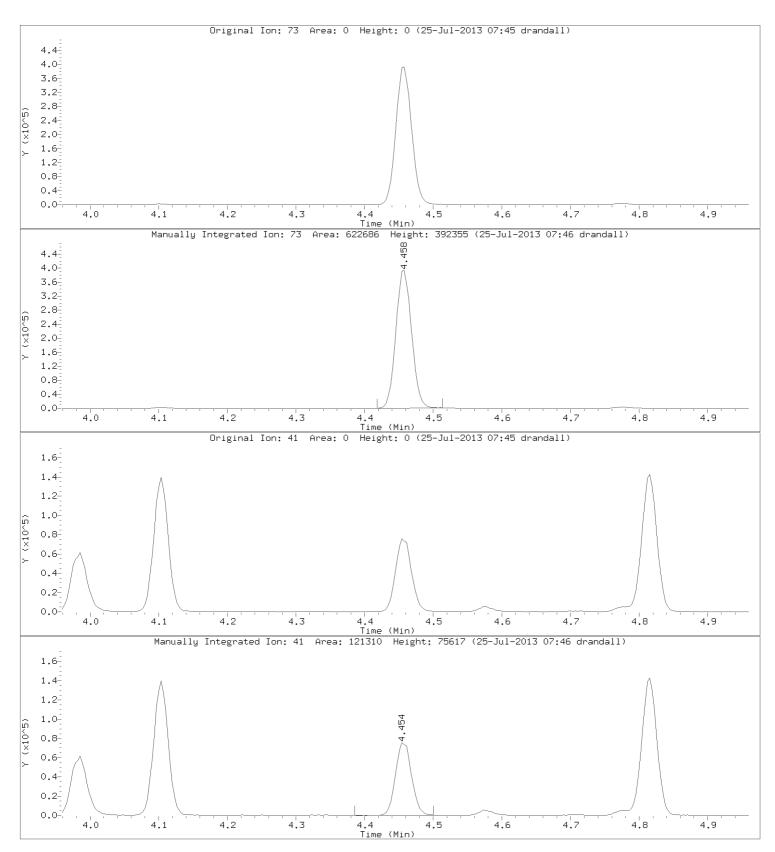
10236207 291 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

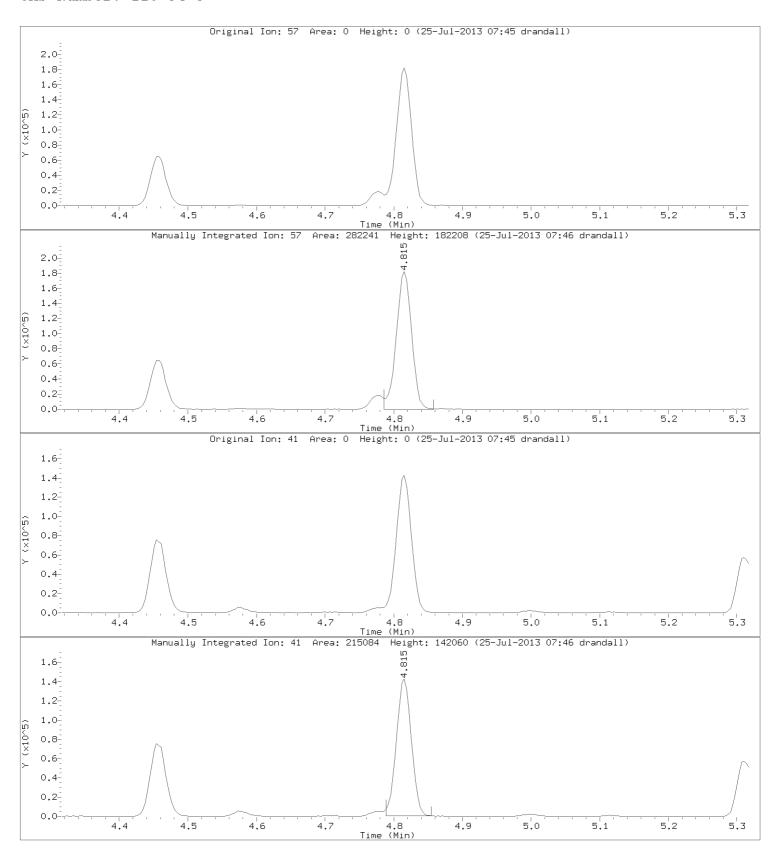


10236207 292 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

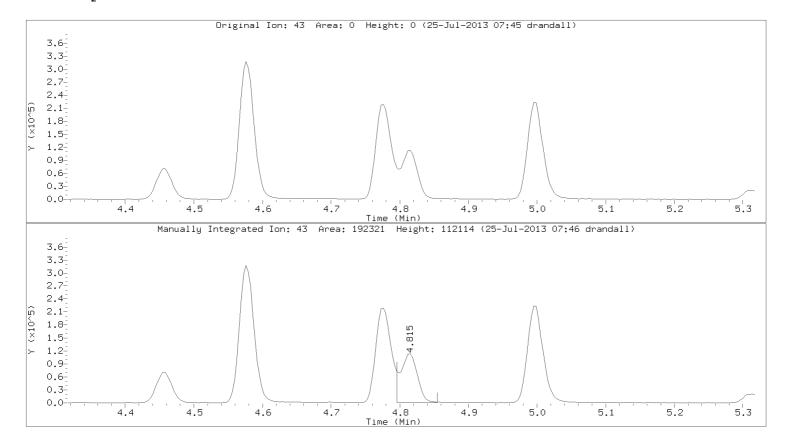
Compound: n-Hexane CAS Number: 110-54-3



10236207 293 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

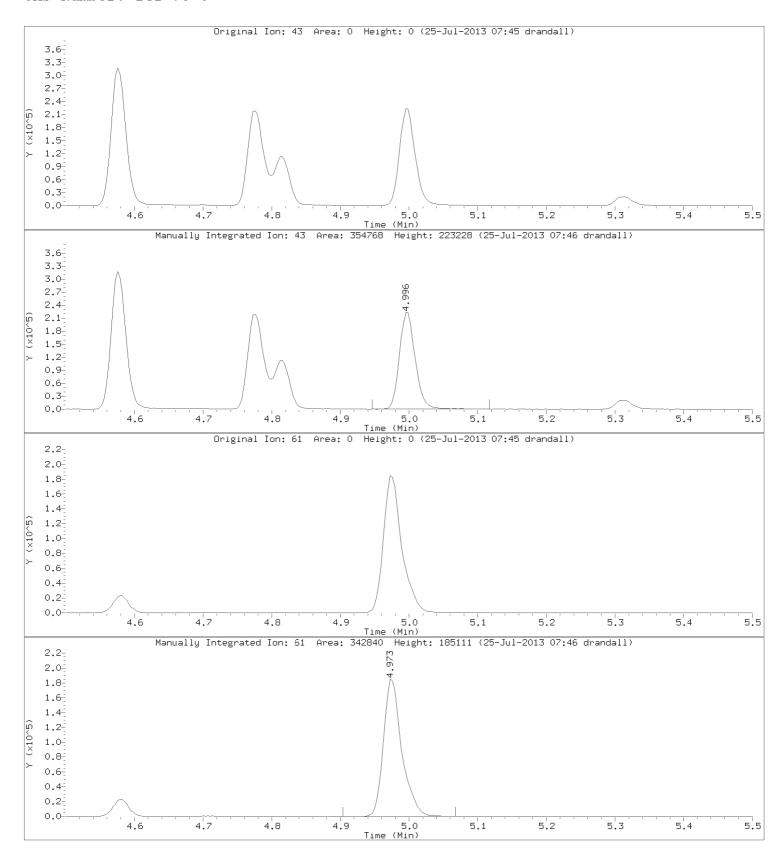


10236207 294 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

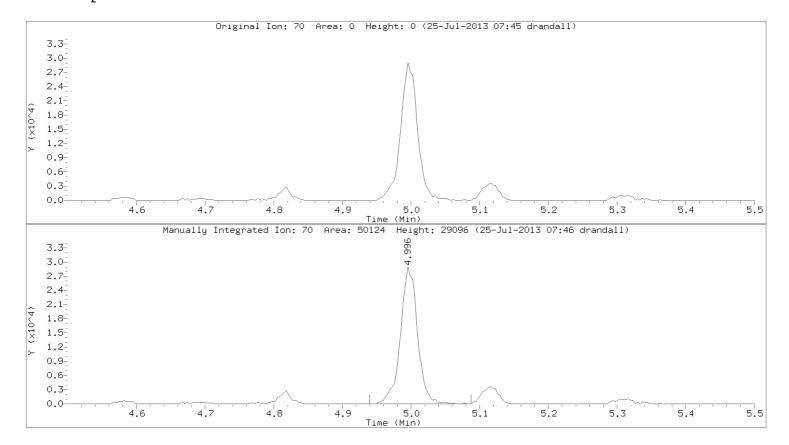
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 295 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV



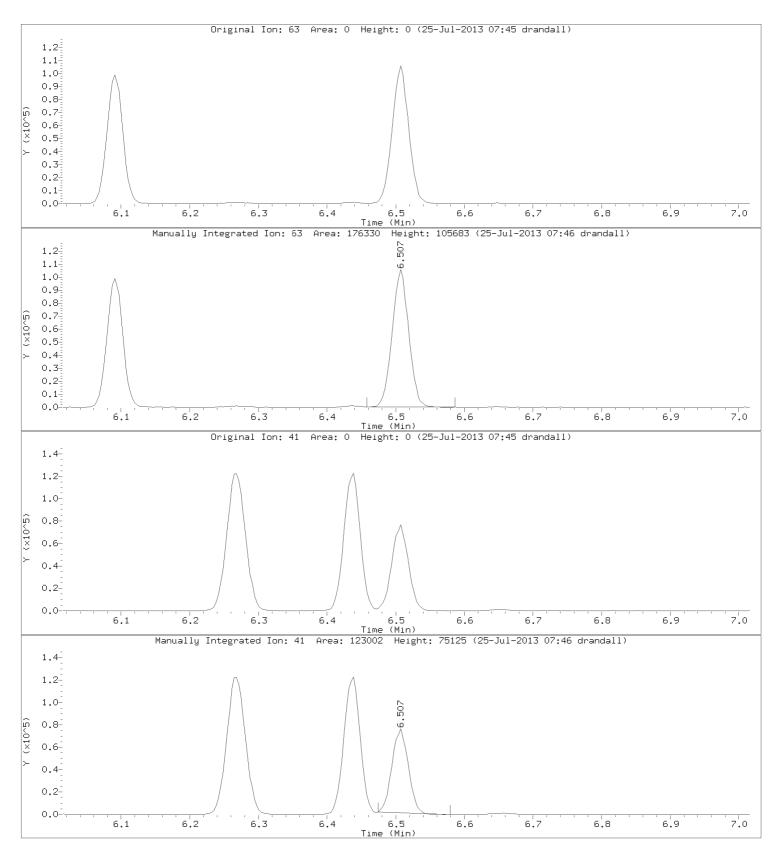
10236207 296 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

Compound: 1,2-Dichloropropane

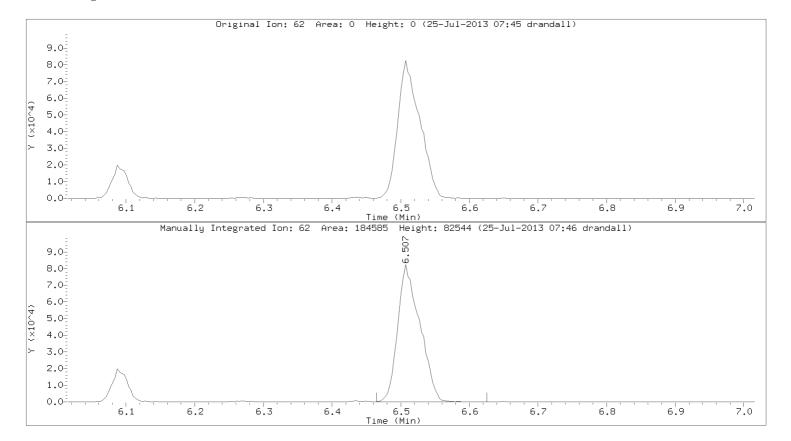
CAS Number: 78-87-5



10236207 297 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

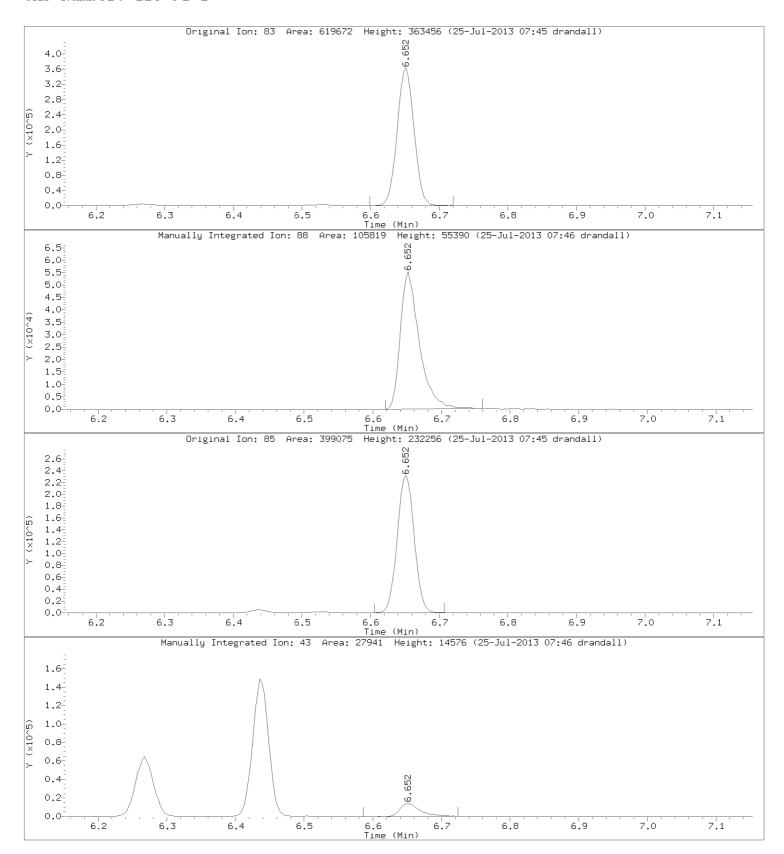


10236207 298 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

Compound: 1,4-Dioxane CAS Number: 123-91-1

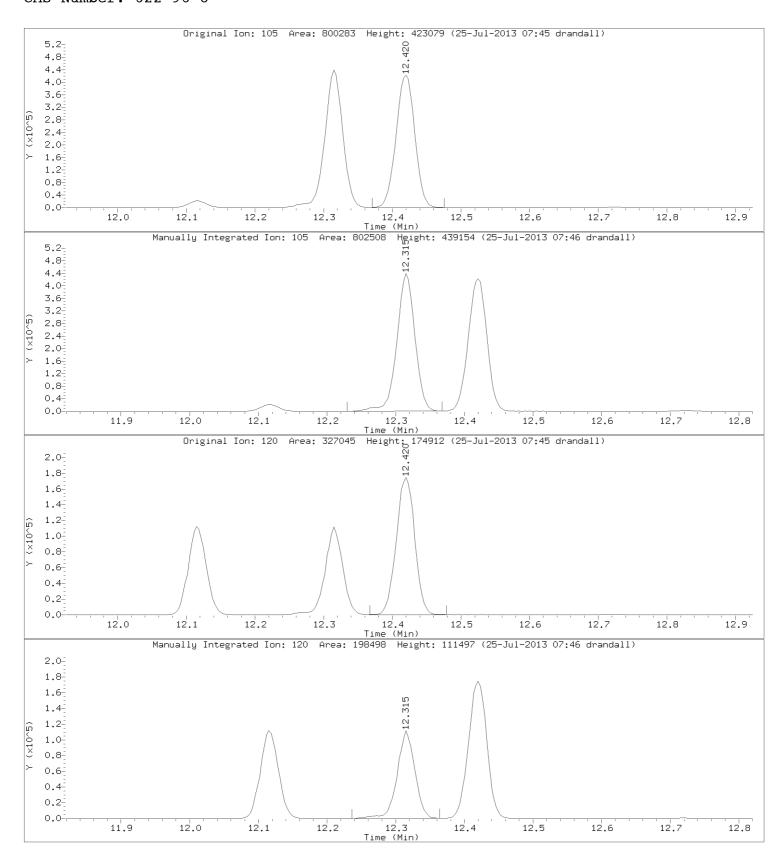


10236207 299 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV

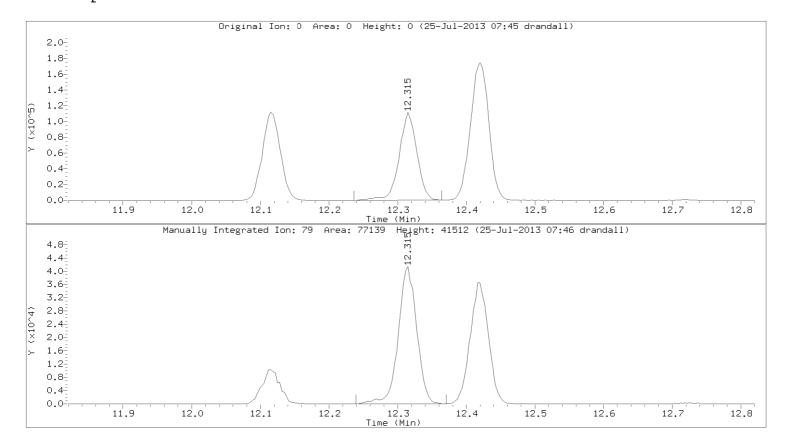
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 300 of 1066

Injection Date: 24-JUL-2013 17:07

Instrument: 10airD.i Lab Sample ID: ICV



10236207 301 of 1066

## 5A - FORM V VOA VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK BROMOFLUOROBENZENE (BFB)

EPA SAIVIF	LE NO.
BFB	

Lab Name: Pace Analytical Contract:

 Lab Code:
 PASI
 Case No.:
 SAS No.:
 SDG No.:
 10236207

 Lab File ID:
 20503BFB.D
 BFB Injection Date: 07/24/2013

Instrument ID: 10AIRD BFB Injection Time: 13:45

GC Column: J&W DB-5 ID: 0.32 (mm)

		% RELATIVE	
m/e	ION ABUNDANCE CRITERIA	ABUNDANCE	
95	Base Peak, 100% relative abundance	100.00	
50	8.00 - 40.00% of mass 95	20.02	
75	30.00 - 66.00% of mass 95	62.66	
96	5.00 - 9.00% of mass 95	7.03	
173	Less than 2.00% of mass 174	0.63	( 0.78)
174	50.00 - 120.00% of mass 95	81.70	
175	4.00 - 9.00% of mass 174	6.61	( 8.09)
176	93.00 - 101.00% of mass 174	78.31	( 95.85)
177	5.00 - 9.00% of mass 176	5.32	( 6.79)

## 1 - Value is %mass 174 2 - Value is %mass 176

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
CAL1	CAL1	20504.D	07/24/2013	14:12
CAL2	CAL2	20505.D	07/24/2013	14:40
CAL3	CAL3	20506.D	07/24/2013	15:08
CAL4	CAL4	20507.D	07/24/2013	15:36
CAL5	CAL5	20508.D	07/24/2013	16:06
CAL6	CAL6	20509.D	07/24/2013	16:39
ICV (LCS)	ICV	20510.D	07/24/2013	17:07
LCS (LCS)	LCS	20511.D	07/24/2013	17:35
BLANK (BLK)	BLANK	20513.D	07/24/2013	18:33

10236207 302 of 1066

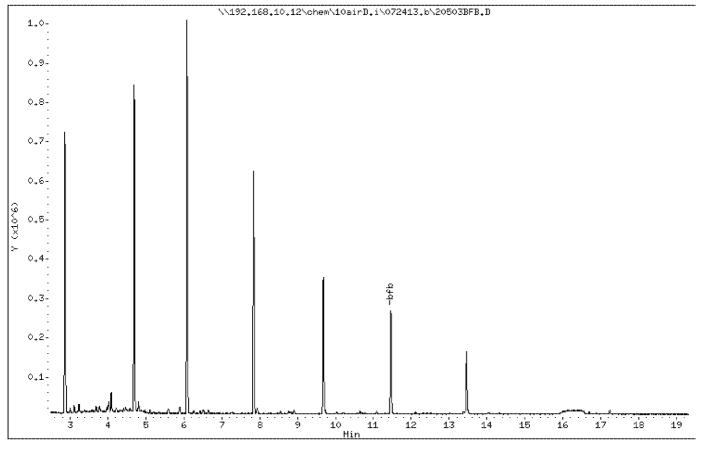
Date : 24-JUL-2013 13:45

Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 303 of 1066

Date : 24-JUL-2013 13:45

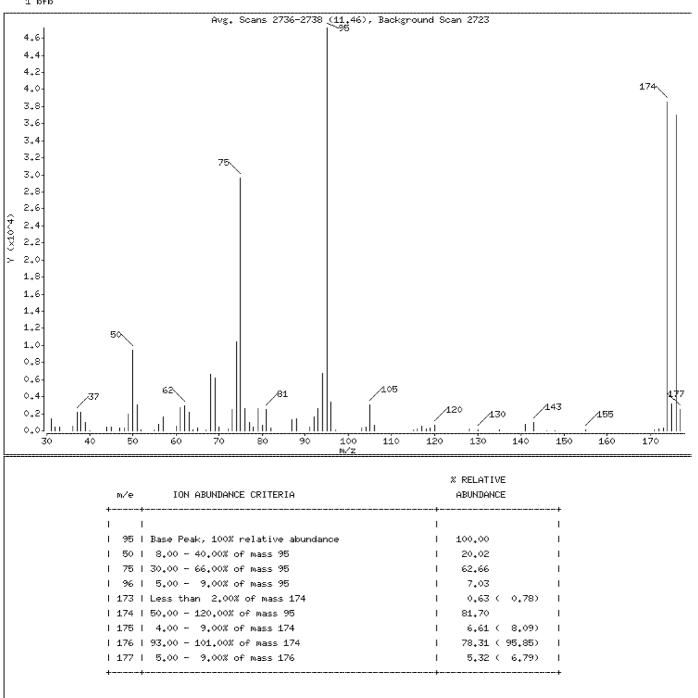
Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

1 bfb



10236207 304 of 1066

Date : 24-JUL-2013 13:45

Client ID: BFB Instrument: 10airD.i

Sample Info;

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

Data File: 20503BFB.D

Spectrum: Avg. Scans 2736-2738 (11.46), Background Scan 2723

Location of Maximum: 95.00 Number of points: 74

Y	m/z	Υ .	m/z	Y +	m/z	Y +-	m/z
378	119,00	2521 I		588 I	60,00	L435 I	31.00
687	120,00	336 T	82,00	2704	61.00	386 T	32,00
203	128.00	1273 I	87.00	2927	62,00	398 T	33,00
71	130,00	1366 I	88.00	2224	63,00	551. I	36.00
61		439 l	91.00	130	64,00	2215 I	•
774	141,00	-		335 I	65,00	200 I	38.00
944	143.00	2601 I	93,00	107 I	67.00	L011 I	39,00
51	146,00	67 <b>11</b>	94.00	6577 I	68,00	12 I	40.00
52	148,00	47216 I	95.00	6137 l	69,00	433 T	44.00
57	155.00	3320 I	96,00	487 I	70,00	448 I	
93	171.00	-	97,00	235 I	72,00	299 I	47.00
204	172,00	339 T	103,00	2498 I	73,00	310 T	48.00
299	173,00	449 T	104.00	10422 I	74.00	2007	49,00
38576	174.00	3041 I	105.00	29584 I	75.00	9453 T	50,00
	-	611.	<u>.</u>	2637 I	76,00	3006 I	
	176.00	-		949	77,00	111	52,00
2511	177,00	169 I	116,00	461 l	78,00	114 I	55,00
		498 T	117,00	2655 I	79,00	805	56,00
		217	118,00	623 I	80,00	L607 I	57,00

10236207 305 of 1066

## 5A - FORM V VOA VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.	
BFB	

Lab Name: Pace Analytical Contract:

 Lab Code:
 PASI
 Case No.:
 SAS No.:
 SDG No.:
 10236207

 Lab File ID:
 20601BFB.D
 BFB Injection Date: 07/25/2013

Instrument ID: 10AIRD BFB Injection Time: 12:41

GC Column: J&W DB-5 ID: 0.32 (mm)

		% RELATIVE	
m/e	ION ABUNDANCE CRITERIA	ABUNDANCE	
95	Base Peak, 100% relative abundance	100.00	
50	8.00 - 40.00% of mass 95	22.16	
75	30.00 - 66.00% of mass 95	59.70	
96	5.00 - 9.00% of mass 95	6.49	
173	Less than 2.00% of mass 174	0.42	( 0.57)
174	50.00 - 120.00% of mass 95	73.98	
175	4.00 - 9.00% of mass 174	6.44	( 8.70)
176	93.00 - 101.00% of mass 174	74.54	(100.76)
177	5.00 - 9.00% of mass 176	5.08	( 6.82)

## 1 - Value is %mass 174 2 - Value is %mass 176

			1	
EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
CCAL	CCAL	20602.D	07/25/2013	13:08
LCS for HBN 260869 [AIR/	1487047	20602L.D	07/25/2013	13:08
BLANK for HBN 260869 [AI	1487046	20605L.D	07/25/2013	14:47
BLANK (BLK)	BLANK	20605.D	07/25/2013	14:47
SG07221312	10236207012	20616.D	07/25/2013	20:25
SG07221312(1485631DUP	1487813-DUP	20617.D	07/25/2013	20:56
SG07221305	10236207005	20618.D	07/25/2013	21:26
SG07221311	10236207011	20620.D	07/25/2013	22:27
SG07221307	10236207007	20623.D	07/25/2013	23:59
SG07231302	10236207016	20624.D	07/26/2013	00:30
SG07221310	10236207010	20625.D	07/26/2013	01:00
SG07221308	10236207008	20626.D	07/26/2013	01:31
SG07221314	10236207014	20627.D	07/26/2013	02:01
SG07221306	10236207006	20628.D	07/26/2013	02:32
SG07221309	10236207009	20629.D	07/26/2013	03:02
SG07221313	10236207013	20630.D	07/26/2013	03:33
SG07221304	10236207004	20632.D	07/26/2013	04:34
SG07231301	10236207015	20633.D	07/26/2013	05:04
SG07221302	10236207002	20634.D	07/26/2013	05:34
	SAMPLE NO.  CCAL  LCS for HBN 260869 [AIR/ BLANK for HBN 260869 [AI BLANK (BLK)  SG07221312  SG07221312(1485631DUP  SG07221305  SG07221307  SG07221307  SG07221300  SG07221310  SG07221310  SG07221308  SG07221306  SG07221309  SG07221309  SG07221304  SG07231301	SAMPLE NO.         SAMPLE ID           CCAL         CCAL           LCS for HBN 260869 [AIR/         1487047           BLANK for HBN 260869 [AI         1487046           BLANK (BLK)         BLANK           SG07221312         10236207012           SG07221312(1485631DUP         1487813-DUP           SG07221305         10236207005           SG07221311         10236207011           SG07221307         10236207007           SG07221310         10236207016           SG07221310         10236207010           SG07221308         10236207008           SG07221314         10236207014           SG07221309         10236207009           SG07221313         10236207001           SG07221304         10236207004           SG07231301         10236207015	SAMPLE NO.         SAMPLE ID         FILE ID           CCAL         20602.D           LCS for HBN 260869 [AIR/         1487047         20602L.D           BLANK for HBN 260869 [AI         1487046         20605L.D           BLANK (BLK)         BLANK         20605.D           SG07221312         10236207012         20616.D           SG07221312(1485631DUP         1487813-DUP         20617.D           SG07221305         10236207005         20618.D           SG07221311         10236207011         20620.D           SG07221307         10236207007         20623.D           SG07221300         10236207016         20624.D           SG07221310         10236207010         20625.D           SG07221308         10236207008         20626.D           SG07221306         10236207014         20627.D           SG07221309         10236207009         20629.D           SG07221313         10236207013         20630.D           SG07221304         10236207004         20632.D           SG07231301         10236207015         20633.D	SAMPLE NO.         SAMPLE ID         FILE ID         ANALYZED           CCAL         CCAL         20602.D         07/25/2013           LCS for HBN 260869 [AIR/         1487047         20602L.D         07/25/2013           BLANK for HBN 260869 [AI         1487046         20605L.D         07/25/2013           BLANK (BLK)         BLANK         20605.D         07/25/2013           SG07221312         10236207012         20616.D         07/25/2013           SG07221312(1485631DUP         1487813-DUP         20617.D         07/25/2013           SG07221305         10236207005         20618.D         07/25/2013           SG07221311         10236207011         20620.D         07/25/2013           SG07221307         10236207007         20623.D         07/25/2013           SG07221310         10236207016         20624.D         07/26/2013           SG07221310         10236207008         20626.D         07/26/2013           SG07221308         10236207004         20627.D         07/26/2013           SG07221306         10236207006         20628.D         07/26/2013           SG07221309         10236207009         20629.D         07/26/2013           SG07221304         10236207004         20632.D

10236207 306 of 1066

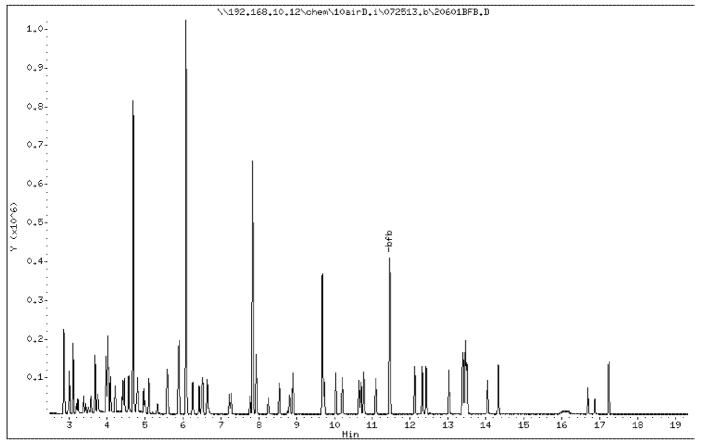
Date : 25-JUL-2013 12:41

Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 307 of 1066

Date : 25-JUL-2013 12:41

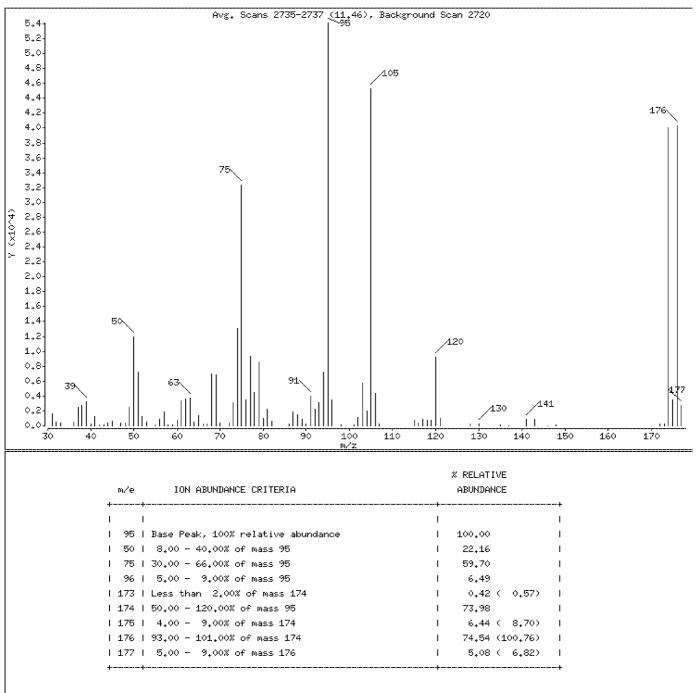
Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

1 bfb



10236207 308 of 1066

Date : 25-JUL-2013 12:41

Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

Data File: 20601BFB.D

Spectrum: Avg. Scans 2735-2737 (11.46), Background Scan 2720

Location of Maximum: 95.00 Number of points: 87

	m/z	Y		m/z	Y		m/z	Y		m/z	Y
+-	31,00	1567	-+ 	57,00	1843	+- 	80,00	1003	ı	115,00	706
I	32,00	554	Ī	58,00	176	ı	81,00	2272	ı	116,00	370
ı	33,00	420	I	59,00	156	I	82,00	580	I	117.00	813 I
I	36,00	508	I	60,00	685	I	86,00	230	I	118,00	695 I
I	37,00	2434	1	61,00	3337	1	87,00	1859	I	119.00	760 I
1	38.00	2726	1	62,00	3613	+- 	88.00	1542	† 	120,00	9198
ı	39,00	3205	Ī	63,00	3780	I	89,00	888	I	121,00	937
I	40,00	270	Ī	64,00	554	ı	90,00	190	ı	128,00	249 I
ı	41.00	1205	I	65,00	1374	I	91.00	3936	ı	130.00	187 I
1	42,00	122	I	66,00	208	I	92,00	2285	I	135,00	88 I
+-			-+			+-	~~ ~~		+-		
	43.00	70		67.00	212		93.00			137.00	51 I
!	44.00	434		68.00	7007		94.00	7268			872 I
1	45.00	564	!	69,00		1	95.00	54112		-	849 I
	47.00	418	!	70,00		1	96.00	3511			51 I
+-	48.00	354	 	72,00	362 	 +-	98,00	1.33	 	148.00	146
i	49,00	2507	i	73,00	3159	i	101.00	175	ı	172.00	282 I
I	50,00	11991	I	74.00	13013	I	102,00	1107	I	173,00	227
I	51,00	7253	I	75.00	32304	I	103,00	5693	I	174,00	40032 I
ı	52,00	1271	I	76.00	3437	I	104.00	1962	I	175.00	3484 I
1	53,00	492	1	77,00	9380	I	105.00	45312	I	176.00	40336 I
1	55,00	72	- <del></del>	78,00	4527	+- I	106,00	4408	ı	177,00	2751 I
1	56.00	910	I	79,00	8624	I	107,00	203	I		I
+-			-+-			+-			+		

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## 5A - FORM V VOA VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.	
BFB	

Lab Name: Pace Analytical Contract:

 Lab Code:
 PASI
 Case No.:
 SAS No.:
 SDG No.:
 10236207

 Lab File ID:
 20701BFB.D
 BFB Injection Date: 07/26/2013

Instrument ID: 10AIRD BFB Injection Time: 10:59

GC Column: J&W DB-5 ID: 0.32 (mm)

		% RELATIVE	
m/e	ION ABUNDANCE CRITERIA	ABUNDANCE	
95	Base Peak, 100% relative abundance	100.00	
50	8.00 - 40.00% of mass 95	22.94	
75	30.00 - 66.00% of mass 95	61.54	
96	5.00 - 9.00% of mass 95	7.02	
173	Less than 2.00% of mass 174	0.96	( 1.17)
174	50.00 - 120.00% of mass 95	81.95	
175	4.00 - 9.00% of mass 174	6.06	( 7.39)
176	93.00 - 101.00% of mass 174	76.55	( 93.41)
177	5.00 - 9.00% of mass 176	5.31	( 6.93)

## 1 - Value is %mass 174 2 - Value is %mass 176

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
CCAL	CCAL	20702.D	07/26/2013	11:27
LCS for HBN 261056 [AIR/	1488123	20702L.D	07/26/2013	11:27
BLANK for HBN 261056 [AI	1488122	20706L.D	07/26/2013	13:38
SG07221301	10236207001	20707.D	07/26/2013	14:08
SG07221303	10236207003	20708.D	07/26/2013	14:39
Basement(1485672DUP)	1489056-DUP	20712.D	07/26/2013	16:41

10236207 310 of 1066

Date : 26-JUL-2013 10:59

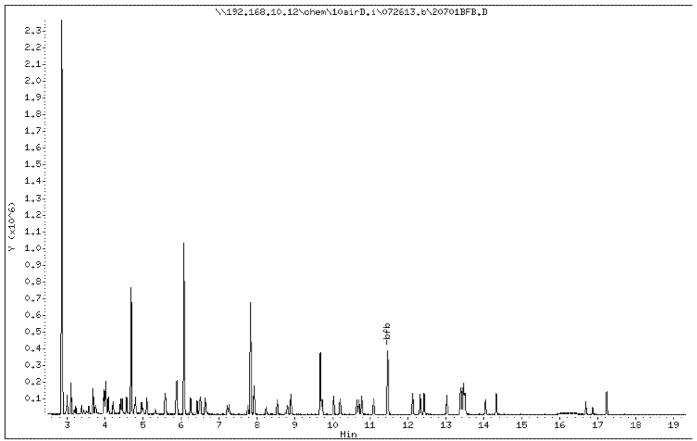
Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Page 1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 311 of 1066

Date : 26-JUL-2013 10:59

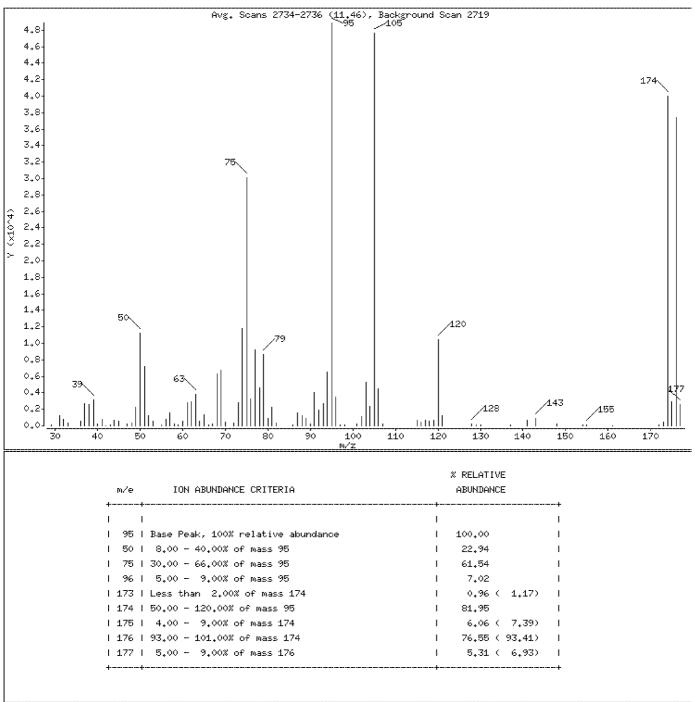
Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

1 bfb



10236207 312 of 1066

Date : 26-JUL-2013 10:59

Client ID: BFB Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

Data File: 20701BFB.D

Spectrum: Avg. Scans 2734-2736 (11.46), Background Scan 2719

Location of Maximum: 95.00 Number of points: 91

	m/z	Y		m/z	Y		m/z	Y		m/z	Y	
+	29,00	106	-+ 	57,00	1625	+-	81,00	2263	1	116.00	438	+
ī	31,00	1274	ī	58,00	230	ı	82,00	365	ı	117,00	657	ı
1	32,00	793	ī	59,00	139	ı	86.00	111	ı	118,00	606	ı
1	33,00	367	ī	60,00	528	ı	87,00	1532	I	119,00	656	ı
1	36,00	540	I	61,00	2799	I	88,00	1259	I	120,00	10410	ı
+						+-			+-			+
I	37,00	2647	I	62,00	2932	I	89,00	852	I	121,00	1244	١
1	38.00	2530	I	63,00	3774	I	90,00	224	I	128,00	169	I
T	39,00	3197	I	64.00	512	I	91,00	4063	I	129,00	57	I
1	40,00	241	I	65,00	1353	I	92,00	1929	I	130,00	120	١
I	41,00	812	I	66.00	92	I	93,00	2715	I	137,00	124	I
+						+-			+-			+
1	42,00	53	I	67.00	265	I	94,00	6465	I	141.00	723	١
I	43,00	127	I	68,00	6272	I	95,00	48880	I	143.00	890	١
1	44.00	700	I	69,00	6789	I	96,00	3429	I	148,00	200	I
1	45,00	562	I	70,00	448	I	97,00	60	I	154.00	62	١
I	47,00	228	I	72,00	313	I	98,00	59	I	155.00	118	I
+						+-			+			+
I	48.00	283	I	73,00	2835	I	101,00	183	I	161.00	53	I
I	49,00	2243	I	74.00	11792	I	102,00	1097	I	172,00	61	I
1	50,00	11211	I	75.00	30080	I	103,00	5291	I	173,00	468	١
1	51,00	7201	I	76.00	3289	I	104,00	2342	I	174.00	40056	١
I	52,00	1209	I	77,00	9256	I	105,00	47632	I	175.00	2962	I
+						+-			+-			+
I	53,00	516	I	78,00	4557	I	106,00	4525	I	176.00	37416	١
1	55,00	77	I	79,00	8674	I	107,00	220	I	177.00	2594	I
I	56,00	802	I	80,00	850	I	115,00	717	I			I
+						+-			+-			+

10236207 313 of 1066

Report Date: 25-Jul-2013 13:32

# Pace Analytical Services, Inc.

#### CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 25-JUL-2013 13:08

Lab File ID: 20602.d Init. Cal. Date(s): 24-JUL-2013
Analysis Type: AIR Init. Cal. Times: 14:12
Lab Sample ID: CCAL Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m Init. Cal. Date(s): 24-JUL-2013 24-JUL-2013 Init. Cal. Times: 14:12 16:39 Quant Type: ISTD

		I		MIN		MAX	
COMPOUND	RRF / AMOUNT	RF10				%D / %DRIFT	'
 1 Propylene	10.00000	9.86590	0.12374		'		'
2 Dichlorodifluoromethane	1.21581	1.13984	1.13984	0.010	-6.24859	30.00000	Averaged
3 Dichlorotetrafluoroethane	0.97696	0.91327	0.91327	0.010	-6.51927	30.00000	Averaged
4 Chloromethane	0.27759	0.25982	0.25982	0.010	-6.39948	30.00000	Averaged
5 Vinyl chloride	0.27680	0.26711	0.26711	0.010	-3.49996	30.00000	Average
6 1,3-Butadiene	0.16338	0.16139	0.16139	0.010	-1.21570	30.00000	Average
7 Bromomethane	0.34859	0.32098	0.32098	0.010	-7.92056	30.00000	Average
8 Chloroethane	0.14158	0.13091	0.13091	0.010	-7.53589	30.00000	Average
9 Ethanol	0.14485	0.15347	0.15347	0.100	5.95733	30.00000	Average
10 Vinyl Bromide	0.34468	0.32740	0.32740	0.010	-5.01552	30.00000	Average
11 Acrolein	10.00000	9.82560	0.09242	0.010	-1.74402	30.00000	Linea
12 Trichlorofluoromethane	1.32254	1.21525	1.21525	0.010	-8.11233	30.00000	Average
13 Acetone	0.66294	0.55478	0.55478	0.010	-16.31617	30.00000	Averaged
14 Isopropyl Alcohol	0.43481	0.42843	0.42843	0.010	-1.46824	30.00000	Average
15 1,1-Dichloroethene	0.58817	0.56757	0.56757	0.010	-3.50203	30.00000	Average
16 Acrylonitrile	10.00000	9.81192	0.19218	0.010	-1.88085	30.00000	Linea
17 Tert Butyl Alcohol	0.69550	0.66689	0.66689	0.100	-4.11235	30.00000	Average
18 Freon 113	0.88260	0.82709	0.82709	0.010	-6.28887	30.00000	Average
19 Methylene chloride	0.37560	0.34247	0.34247	0.010	-8.82079	30.00000	Average
20 Allyl Chloride	0.14093	0.14363	0.14363	0.010	1.91489	30.00000	Average
21 Carbon Disulfide	1.09302	0.99789	0.99789	0.010	-8.70293		
22 trans-1,2-dichloroethene	0.37789	0.36658	0.36658	0.010	-2.99154	30.00000	Average
23 Methyl Tert Butyl Ether	0.93229	0.96008	0.96008	0.010	2.98141	30.00000	Average
24 Vinyl Acetate	10.00000	9.79759	0.69690	0.010	-2.02406	30.00000	Linea
25 1,1-Dichloroethane	0.65620	0.64146	0.64146	0.010	-2.24611	30.00000	Average
\$ 26 Hexane-d14(S)	0.48289	0.45235	0.45235	0.200	-6.32498	30.00000	Average
27 Methyl Ethyl Ketone	0.15348	0.16161	0.16161	0.010	5.29290	30.00000	Average
28 n-Hexane	0.43898	0.42096	0.42096	0.010	-4.10585	30.00000	Average
29 cis-1,2-Dichloroethene	10.00000	9.88721	0.34213	0.010	-1.12789	30.00000	Linea
30 Ethyl Acetate	10.00000	9.84445	0.49423	0.010	-1.55546	30.00000	Linea
31 Chloroform	0.81714	0.83442	0.83442	0.010	2.11439	30.00000	Average
32 Tetrahydrofuran	10.00000	9.88538	0.19500	0.010	-1.14622	30.00000	
33 1,1,1-Trichloroethane	0.87607	0.91853	0.91853	0.010	4.84686	30.00000	Average
34 1,2-Dichloroethane	0.60681	0.63127	0.63127	0.010	4.02999	30.00000	Average
35 Benzene	10.00000	9.52375	0.85439	0.300	-4.76253	30.00000	Linea
36 Carbon tetrachloride	0.94083	0.98326	0.98326	0.010	4.50922	30.00000	Average
37 Cyclohexane	10.00000	9.35800	0.31686	0.010	-6.42004	30.00000	Linea
39 2,2,4-Trimethylpentane	10.00000	9.64286	1.00269	0.010	-3.57144	30.00000	Linea
10 Heptane	10.00000	9.44060	0.32016	0.010	-5.59397	30.00000	Linea
11 1,2-Dichloropropane	10.00000	9.57040	0.26064	0.010	-4.29604	30.00000	Linea
12 Trichloroethene	10.00000	9.33880	0.34235				
43 1,4-Dioxane	10.00000	10.40616	0.16717				
44 Bromodichloromethane	10.00000	10.02806	0.92634				
		·			ı	ı	I

Report Date: 25-Jul-2013 13:32

# Pace Analytical Services, Inc.

#### CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 25-JUL-2013 13:08

Init. Cal. Date(s): 24-JUL-2013 24-JUL-2013 Init. Cal. Times: 14:12 16:39 Quant Type: ISTD Lab File ID: 20602.d Analysis Type: AIR

Lab Sample ID: CCAL Quant Type: ISTD Method: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

			CCAL   MIN	1	MAX	
COMPOUND	RRF / AMOUNT	RF10	, , ,	%D / %DRIFT		
45 Methyl Isobutyl Ketone	10.00000	9.73183	  0.47771 0.010	-2.68169	30,00000	
46 cis-1,3-Dichloropropene	10.00000	9.83676	0.50012 0.010	-1.63238	30.00000	Linear
47 trans-1,3-Dichloropropene	10.00000	9.70777	0.56514 0.010	-2.92225	30.00000	Linear
\$ 48 Toluene-d8 (S)	0.69840	0.71301	0.71301 0.200	2.09238	30.00000	Averaged
49 Toluene	10.00000	9.52756	1.11642 0.300	-4.72441	30.00000	Linear
50 1,1,2-Trichloroethane	10.00000	9.37789	0.38119 0.010	-6.22111	30.00000	Linear
51 Methyl Butyl Ketone	10.00000	10.28491	1.30104 0.010	2.84911	30.00000	Linear
52 Dibromochloromethane	10.00000	10.36308	1.97970 0.010	3.63078	30.00000	Linear
53 1,2-Dibromoethane	10.00000	10.16279	1.65750 0.010	1.62793	30.00000	Linear
54 Tetrachloroethene	10.00000	9.87631	1.51461 0.010	-1.23688	30.00000	Linear
56 Chlorobenzene	10.00000	10.05883	2.01779 0.010	0.58833	30.00000	Linear
57 Ethyl Benzene	10.00000	10.20189	3.90698 0.300	2.01887	30.00000	Linear
58 m&p-Xylene	10.00000	10.19958	3.11244 0.300	1.99575	30.00000	Linea
59 Bromoform	10.00000	10.08342	2.08268 0.010	0.83423	30.00000	Linear
60 Styrene	10.00000	9.95082	2.00261 0.010	-0.49175	30.00000	Linear
61 o-Xylene	10.00000	10.28015	3.26853 0.300	2.80154	30.00000	Linear
62 1,1,2,2-Tetrachloroethane	10.00000	10.07166	1.85422 0.010	0.71661	30.00000	Linear
63 Isopropylbenzene	10.00000	10.25177	4.12773 0.010	2.51769	30.00000	Linear
64 N-Propylbenzene	10.00000	10.29390	4.95752 0.010	2.93899	30.00000	Linear
65 4-Ethyltoluene	10.00000	10.20646	3.81773 0.010	2.06465	30.00000	Linear
66 1,3,5-Trimethylbenzene	10.00000	10.24346	3.37495 0.010	2.43464	30.00000	Linear
67 1,2,4-Trimethylbenzene	10.00000	10.08199	3.18090 0.010	0.81994	30.00000	Linear
68 1,3-Dichlorobenzene	10.00000	9.93065	1.92654 0.010	-0.69353	30.00000	Linear
69 Sec- Butylbenzene	10.00000	10.19955	4.48739 0.010	1.99552	30.00000	Linear
\$ 70 1,4-dichlorobenzene-d4 (S)	0.40365	0.42288	0.42288 0.200	4.76481	30.00000	Averaged
71 Benzyl Chloride	10.00000	9.99918	2.72583 0.010	-0.00824	30.00000	Linear
72 1,4-Dichlorobenzene	10.00000	9.94269	1.88237 0.010	-0.57313	30.00000	Linear
73 1,2-Dichlorobenzene	10.00000	10.15983	1.63297 0.010	1.59831	30.00000	Linear
74 N-Butylbenzene	10.00000	10.42549	3.51932 0.010	4.25485	30.00000	Linear
75 1,2,4-Trichlorobenzene	10.00000	10.75219	1.10162 0.010	7.52193	30.00000	Quadratio
76 Naphthalene	10.00000	11.03420	1.74567 0.010	10.34204	30.00000	Quadratio
77 Hexachlorobutadiene	10.00000	10.20176	1.27624 0.010	2.01757	30.00000	Linea
		1		1		

Average %D / Drift F	Results.
Calculated Average 8	%D/Drift = 3.72032
Maximun Average %D/I	Drift = 30.00000
* Passed Average %D/	/Drift Test.

Report Date: 25-Jul-2013 13:31

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20602.d

Lab Smp Id: CCAL
Inj Date : 25-JUL-2013 13:08

: DR1 Inst ID: 10airD.i Operator

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m Method

Meth Date: 25-Jul-2013 13:31 drandall Cal Date: 24-JUL-2013 16:39 Als bottle: 2 Dil Factor: 1.00000 Quant Type: ISTD Cal File: 20509.d

Continuing Calibration Sample

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

#### Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

						AMOUNTS	
Compounds	QUANT SIG MASS ====	RT 	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	ON-COL ( ppbv)
1 Propylene	41	2.978		(0.489)	75482	10.0000	9.86
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	695301	10.0000	9.38
3 Dichlorotetrafluoroethane	85	3.103	3.107	(0.510)	557092	10.0000	9.35
4 Chloromethane	50	3.103	3.107	(0.510)	158492	10.0000	9.36
5 Vinyl chloride	62	3.191	3.195	(0.524)	162935	10.0000	9.65
6 1,3-Butadiene	54	3.234	3.238	(0.531)	98449	10.0000	9.88
7 Bromomethane	94	3.391	3.392	(0.557)	195796	10.0000	9.21
8 Chloroethane	64	3.447	3.448	(0.566)	79855	10.0000	9.25(M)
9 Ethanol	31	3.496	3.494	(0.574)	93619	10.0000	10.6
10 Vinyl Bromide	106	3.585	3.585	(0.589)	199711	10.0000	9.50
11 Acrolein	56	3.683	3.684	(0.605)	56373	10.0000	9.82
12 Trichlorofluoromethane	101	3.693	3.694	(0.606)	741303	10.0000	9.19
13 Acetone	43	3.726	3.726	(0.612)	338413	10.0000	8.37
14 Isopropyl Alcohol	45	3.746	3.756	(0.615)	261340	10.0000	9.85
15 1,1-Dichloroethene	61	3.978	3.979	(0.653)	346218	10.0000	9.65
16 Acrylonitrile	53	3.982	3.985	(0.654)	117231	10.0000	9.81
17 Tert Butyl Alcohol	59	3.982	3.989	(0.654)	406804	10.0000	9.59(M)
18 Freon 113	101	4.028	4.030	(0.661)	504525	10.0000	9.37
19 Methylene chloride	49	4.090	4.094	(0.672)	208908	10.0000	9.12
20 Allyl Chloride	76	4.100	4.107	(0.673)	87613	10.0000	10.2
21 Carbon Disulfide	76	4.224	4.224	(0.694)	608712	10.0000	9.13
22 trans-1,2-dichloroethene	96	4.418	4.422	(0.725)	223616	10.0000	9.70
23 Methyl Tert Butyl Ether	73	4.454	4.458	(0.731)	585648	10.0000	10.3(M)

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20602.d$ Report Date: 25-Jul-2013 13:31

							AMOUN	TS
C	ompounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppbv)	( ppbv)
==	24 Vinyl Acetate	43	4.575	4.579	(0.751)	425105	10.0000	9.80
	25 1,1-Dichloroethane	63	4.579	4.582	(0.752)	391291	10.0000	9.78
\$	26 Hexane-d14(S)	66	4.697	4.700	(0.771)	275933	10.0000	9.37
	27 Methyl Ethyl Ketone	72	4.775	4.779	(0.784)	98581	10.0000	10.5
	28 n-Hexane	57	4.815	4.818	(0.791)	256783	10.0000	9.59(M)
	29 cis-1,2-Dichloroethene	96	4.972	4.979	(0.816)	208699	10.0000	9.89
	30 Ethyl Acetate	43	4.995	4.999	(0.820)	301480	10.0000	9.84(M)
	31 Chloroform	83	5.113	5.120	(0.840)	508994	10.0000	10.2
	32 Tetrahydrofuran	42	5.310	5.310	(0.872)	118951	10.0000	9.88
	33 1,1,1-Trichloroethane	97	5.595		(0.919)	560301	10.0000	10.5
	34 1,2-Dichloroethane	62	5.612		(0.921)	385071	10.0000	10.4
	35 Benzene	78	5.880		(0.966)	521175	10.0000	9.52
	36 Carbon tetrachloride	117	5.903		(0.969)	599785	10.0000	10.4
	37 Cyclohexane	56	5.907		(0.970)	193283	10.0000	9.36
*	38 1,4-Difluorobenzene	114	6.090		(1.000)	609998	10.0000	J.00
	39 2,2,4-Trimethylpentane	57	6.267		(1.029)	611636	10.0000	9.64
	40 Heptane	43	6.435		(1.023)	195298	10.0000	9.44
	41 1,2-Dichloropropane	63	6.507		(1.068)	158987	10.0000	9.57 (M)
	42 Trichloroethene	130	6.530		(1.000)	208832	10.0000	9.34
	43 1.4-Dioxane	88	6.648		(1.072)	101974	10.0000	10.4 (M)
	44 Bromodichloromethane	83	6.651		(1.092)	565063	10.0000	10.4 (M)
							10.0000	
	45 Methyl Isobutyl Ketone	43	7.222		(1.186)	291402		9.73
	46 cis-1,3-Dichloropropene	75	7.277		(1.195)	305073	10.0000	9.84
	47 trans-1,3-Dichloropropene	75	7.769		(1.276)	344734	10.0000	9.71
\$	48 Toluene-d8 (S)	98	7.845		(1.288)	434934	10.0000	10.2
	49 Toluene	91	7.933		(1.303)	681013	10.0000	9.53
	50 1,1,2-Trichloroethane	97	7.943		(1.304)	232525	10.0000	9.38
	51 Methyl Butyl Ketone	43	8.242		(0.851)	288670	10.0000	10.3
	52 Dibromochloromethane	129	8.553		(0.883)	439250	10.0000	10.4
	53 1,2-Dibromoethane	107	8.825		(0.911)	367762	10.0000	10.2
	54 Tetrachloroethene	166	8.914		(0.920)	336058	10.0000	9.88
*	55 Chlorobenzene - d5	117	9.688		(1.000)	221877	10.0000	
	56 Chlorobenzene	112	9.737		(1.005)	447702	10.0000	10.0
	57 Ethyl Benzene	91	10.035		(1.036)	866868	10.0000	10.2
	58 m&p-Xylene	91	10.206	10.213	(1.053)	690579	10.0000	10.2
	59 Bromoform	173	10.652	10.659	(1.100)	462098	10.0000	10.1
	60 Styrene	104	10.701	10.708	(1.105)	444333	10.0000	9.95
	61 o-Xylene	91	10.776	10.783	(1.112)	725211	10.0000	10.3
	62 1,1,2,2-Tetrachloroethane	83	11.088	11.095	(1.145)	411409	10.0000	10.1
	63 Isopropylbenzene	105	11.455	11.459	(1.182)	915849	10.0000	10.2
	64 N-Propylbenzene	91	12.114	12.121	(1.250)	1099960	10.0000	10.3(M)
	65 4-Ethyltoluene	105	12.314	12.321	(1.271)	847066	10.0000	10.2
	66 1,3,5-Trimethylbenzene	105	12.419	12.426	(1.282)	748823	10.0000	10.2
	67 1,2,4-Trimethylbenzene	105	13.016	13.020	(1.344)	705769	10.0000	10.1
	68 1,3-Dichlorobenzene	146	13.367	13.374	(1.380)	427455	10.0000	9.93
	69 Sec- Butylbenzene	105	13.393	13.404	(1.382)	995649	10.0000	10.2
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.449	13.459	(1.388)	93827	10.0000	10.5
	71 Benzyl Chloride	91	13.475		(1.391)	604799	10.0000	10.0
	72 1,4-Dichlorobenzene	146	13.498		(1.393)	417655	10.0000	9.94
	73 1,2-Dichlorobenzene	146	14.036		(1.449)	362318	10.0000	10.2
	74 N-Butylbenzene	91	14.321		(1.478)	780856	10.0000	10.4
	75 1,2,4-Trichlorobenzene	180		16.683		244424	10.0000	10.8
	76 Naphthalene	128		16.860		387324	10.0000	11.0
	77 Hexachlorobutadiene	225		17.236		283169	10.0000	10.2
		223	1,.200	1200	( + + / / 2 /	200100	10.0000	± ∨ • ∠

10236207 317 of 1066

Data File:  $\192.168.10.12\chem\10airD.i\072513.b\20602.d$  Report Date: 25-Jul-2013 13:31

QC Flag Legend

M - Compound response manually integrated.

Report Date: 25-Jul-2013 13:31

Pace Analytical Services, Inc.

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 24-JUL-2013 Calibration Time: 15:36 Instrument ID: 10airD.i

Lab File ID: 20602.d

Lab Smp Id: CCAL Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info:

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

L COMPOUND L STANDARD	LOWER	UPPER	SAMPLE	%DTFF
38 1,4-Difluorobenze 57977	= ========	========	609998	5.21
55 Chlorobenzene – d 22140		309966	221877	0.21

		RT I	IMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	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.

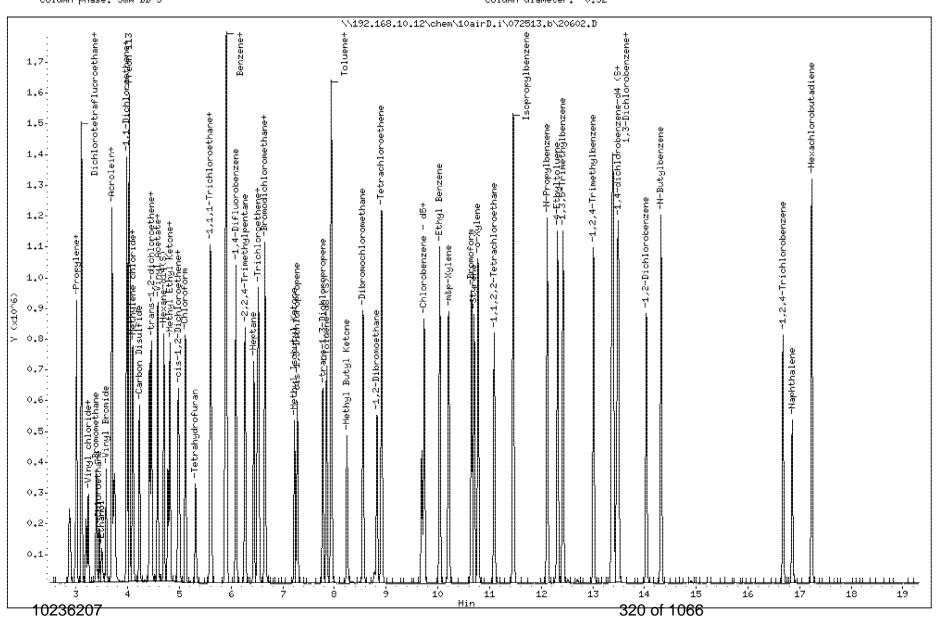
Data File: \\192,168,10,12\chem\10airD,i\072513,b\20602,D

Date : 25-JUL-2013 13:08

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

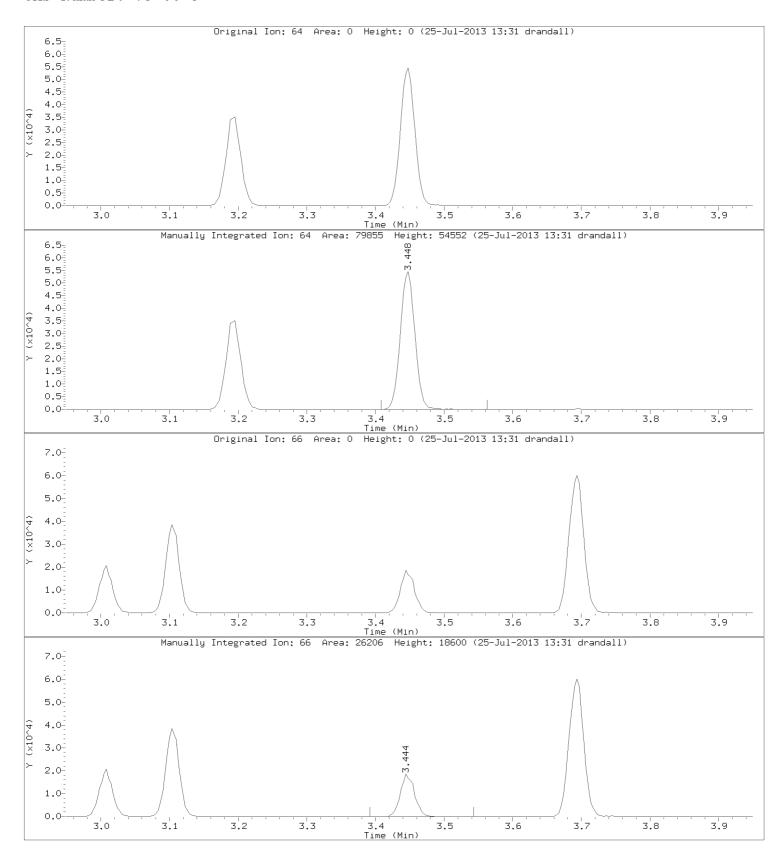
Column phase: J&W DB-5 Column diameter: 0.32



Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: Chloroethane CAS Number: 75-00-3



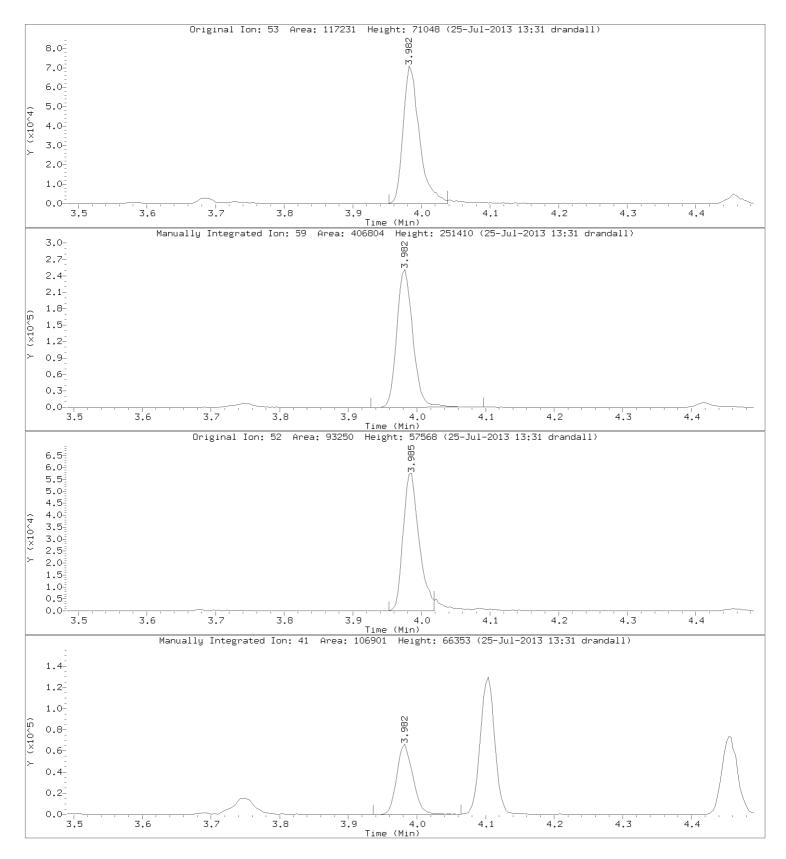
10236207 321 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



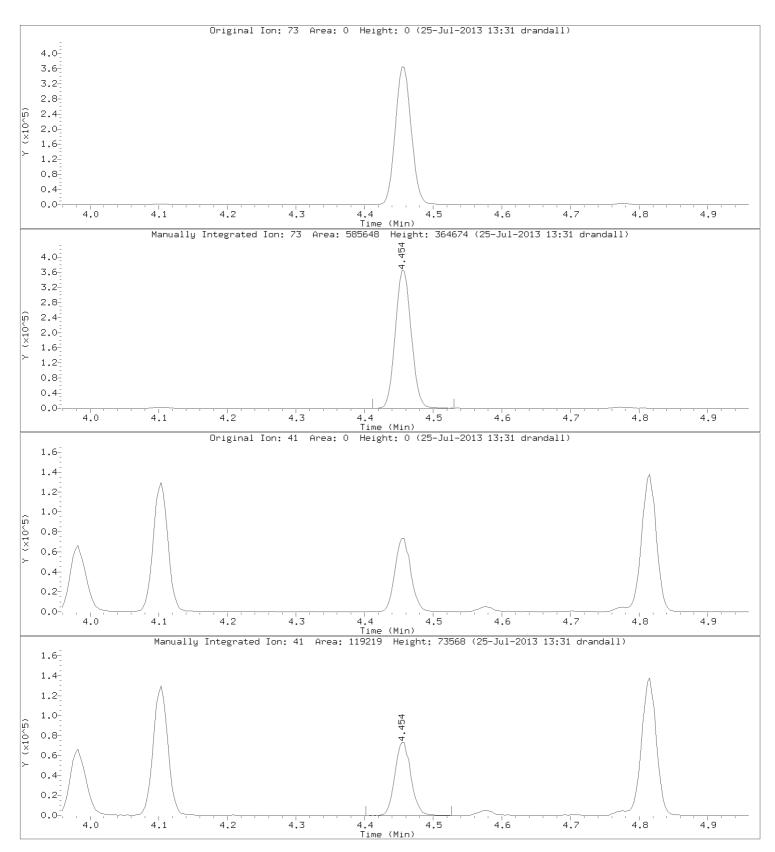
10236207 322 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

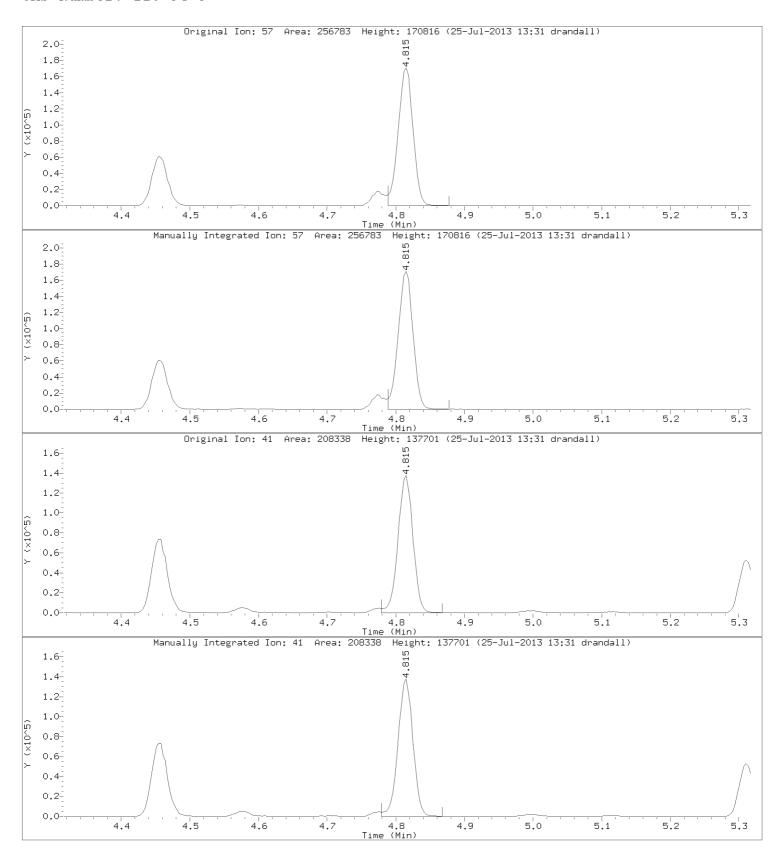


10236207 323 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

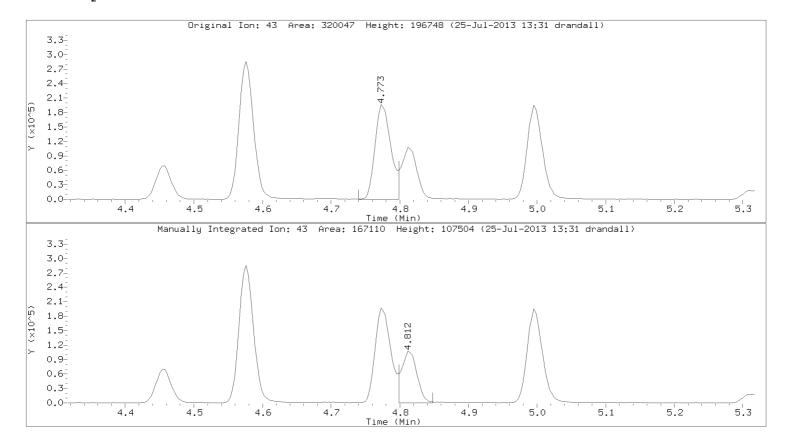
Compound: n-Hexane CAS Number: 110-54-3



10236207 324 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

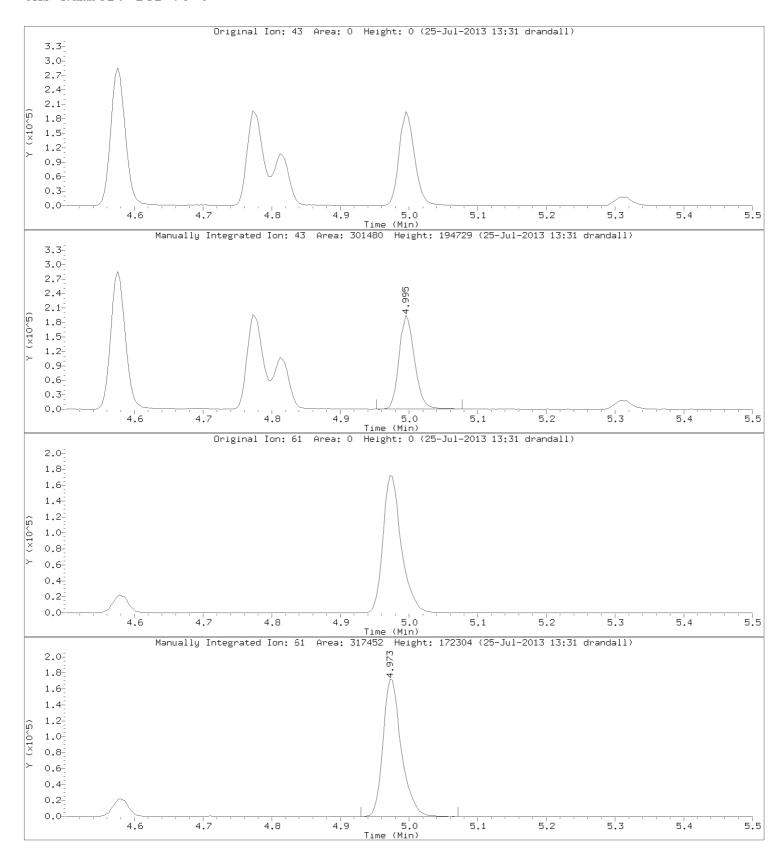


10236207 325 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

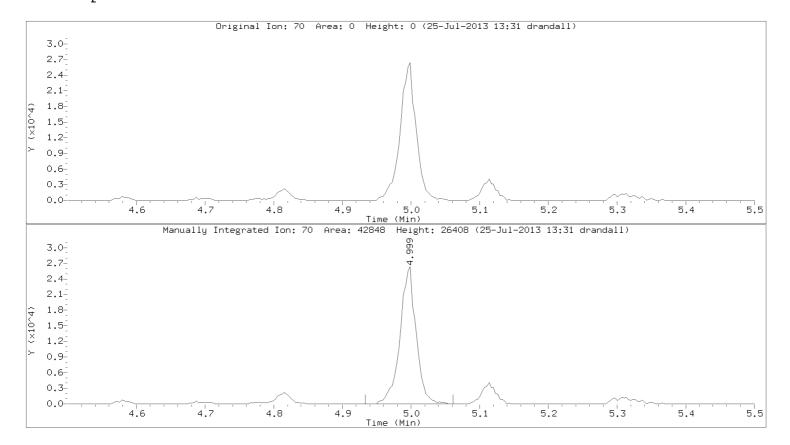
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 326 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL



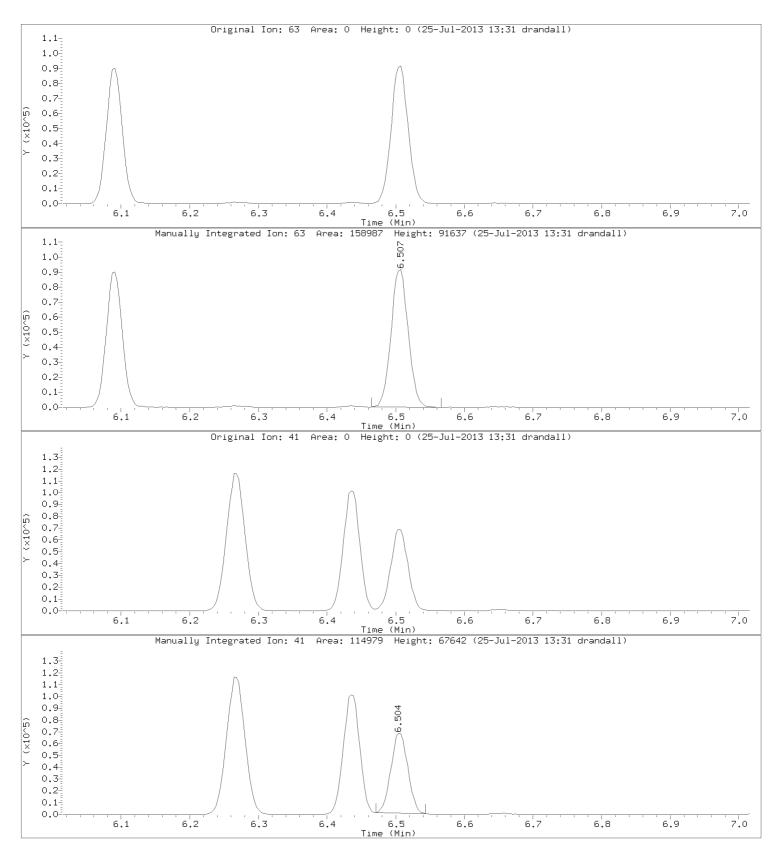
10236207 327 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: 1,2-Dichloropropane

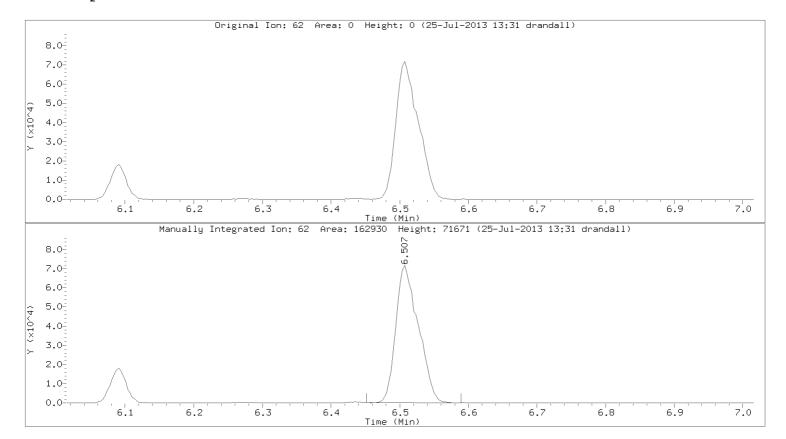
CAS Number: 78-87-5



10236207 328 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

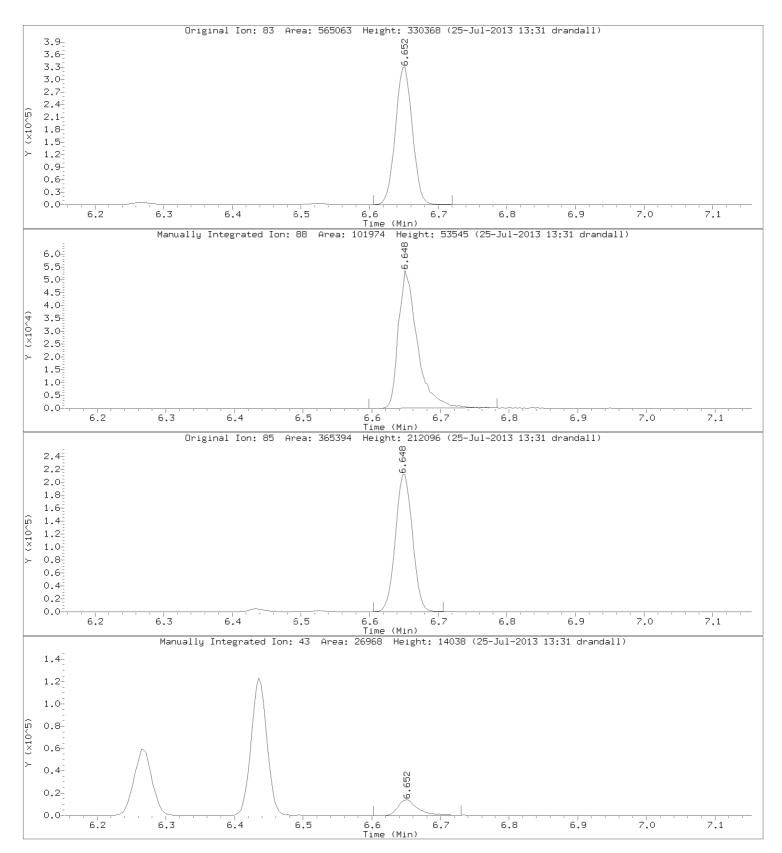


10236207 329 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: 1,4-Dioxane CAS Number: 123-91-1



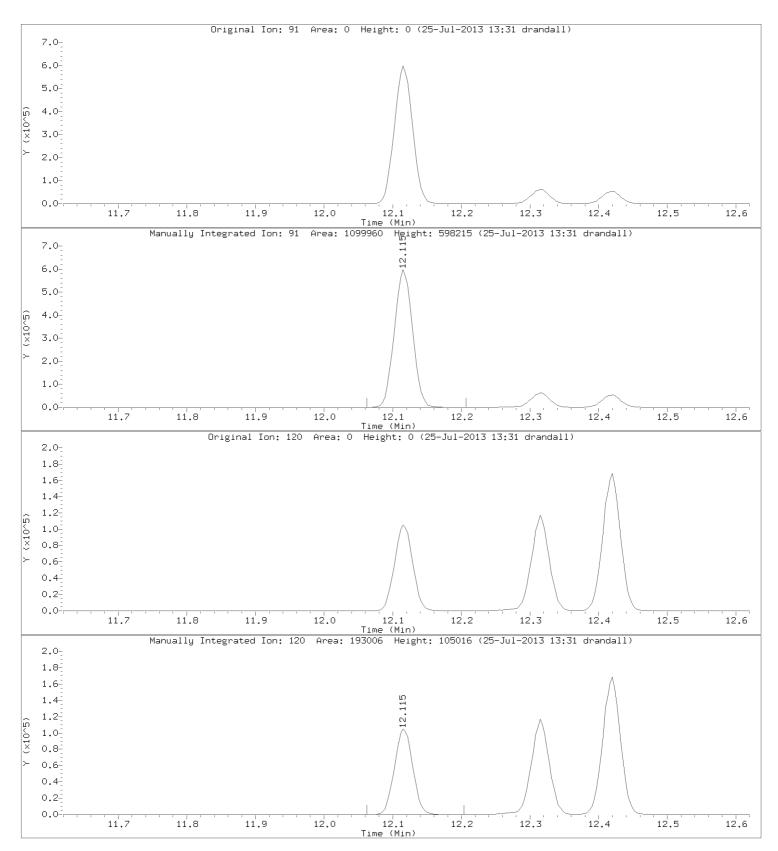
10236207 330 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: N-Propylbenzene

CAS Number: 103-65-1



10236207 331 of 1066

Report Date: 26-Jul-2013 11:50

# Pace Analytical Services, Inc.

#### CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 26-JUL-2013 11:27

Lab File ID: 20702.d Init. Cal. Date(s): 24-JUL-2013
Analysis Type: AIR Init. Cal. Times: 14:12
Lab Sample ID: CCAL Quant Type: ISTD
Method: \\192.168.10.12\chem\10airD.i\072613.b\T015\_205-13.m Init. Cal. Date(s): 24-JUL-2013 24-JUL-2013 Init. Cal. Times: 14:12 16:39 Quant Type: ISTD

		ı		MIN		MAX	l
COMPOUND	RRF / AMOUNT	RF10	RRF10			%D / %DRIFT	
			'				
1 Propylene	10.00000	9.68302					
2 Dichlorodifluoromethane	1.21581	1.09261					
3 Dichlorotetrafluoroethane	0.97696	0.87332					
4 Chloromethane	0.27759	0.24991	0.24991				_
5 Vinyl chloride	0.27680	0.24904					
6 1,3-Butadiene	0.16338	0.15587					_
7 Bromomethane	0.34859	0.30133					
8 Chloroethane	0.14158	0.12861					_
9 Ethanol	0.14485	0.14238					_
10 Vinyl Bromide	0.34468	0.31335	0.31335	0.010	-9.09057	30.00000	Averaged
11 Acrolein	10.00000	9.23601					
12 Trichlorofluoromethane	1.32254	1.15900	1.15900	0.010			Averaged
13 Acetone	0.66294	0.54822	0.54822	0.010			Averaged
14 Isopropyl Alcohol	0.43481	0.41017	0.41017	0.010	-5.66721	30.00000	Averaged
15 1,1-Dichloroethene	0.58817	0.53509	0.53509	0.010	-9.02504	30.00000	Averaged
16 Acrylonitrile	10.00000	9.14851	0.17907	0.010	-8.51493	30.00000	Linear
17 Tert Butyl Alcohol	0.69550	0.64840	0.64840	0.100	-6.77187	30.00000	Averaged
18 Freon 113	0.88260	0.78115	0.78115	0.010	-11.49442	30.00000	Averaged
19 Methylene chloride	0.37560	0.32638	0.32638	0.010	-13.10567	30.00000	Averaged
20 Allyl Chloride	0.14093	0.13357	0.13357	0.010	-5.22312	30.00000	Averaged
21 Carbon Disulfide	1.09302	0.93466	0.93466	0.010	-14.48812	30.00000	Averaged
22 trans-1,2-dichloroethene	0.37789	0.35144	0.35144	0.010	-7.00050	30.00000	Averaged
23 Methyl Tert Butyl Ether	0.93229	0.91270	0.91270	0.010	-2.10068	30.00000	Averaged
24 Vinyl Acetate	10.00000	9.05537	0.64383	0.010	-9.44629	30.00000	Linear
25 1,1-Dichloroethane	0.65620	0.61388	0.61388	0.010	-6.44970	30.00000	Averaged
\$ 26 Hexane-d14(S)	0.48289	0.41933	0.41933	0.200	-13.16252	30.00000	Averaged
27 Methyl Ethyl Ketone	0.15348	0.15418	0.15418	0.010	0.45067	30.00000	Averaged
28 n-Hexane	0.43898	0.40348	0.40348	0.010	-8.08634	30.00000	Averaged
29 cis-1,2-Dichloroethene	10.00000	9.68457	0.33491	0.010	-3.15432	30.00000	Linear
30 Ethyl Acetate	10.00000	9.59157	0.48114	0.010	-4.08428	30.00000	Linear
31 Chloroform	0.81714	0.81520	0.81520	0.010	-0.23719	30.00000	Averaged
32 Tetrahydrofuran	10.00000	10.00648	0.19749	0.010	0.06480	30.00000	Linear
33 1,1,1-Trichloroethane	0.87607	0.89506	0.89506	0.010	2.16746	30.00000	Averaged
34 1,2-Dichloroethane	0.60681	0.60812	0.60812	0.010	0.21562	30.00000	Averaged
35 Benzene	10.00000	9.50220	0.85237	0.300	-4.97801	30.00000	Linear
36 Carbon tetrachloride	0.94083	0.94834				30.00000	Averaged
37 Cyclohexane	10.00000	9.42726	0.31933	0.010	-5.72743	30.00000	Linear
39 2,2,4-Trimethylpentane	10.00000	9.54097	0.99164	0.010	-4.59033	30.00000	Linear
40 Heptane	10.00000	9.50538	0.32247	0.010	-4.94617	30.00000	Linear
41 1,2-Dichloropropane	10.00000	9.59806					
42 Trichloroethene	10.00000	9.54760					Linear
43 1,4-Dioxane	10.00000	9.93338					
44 Bromodichloromethane	10.00000	9.75224	0.90063				
							I

Report Date: 26-Jul-2013 11:50

# Pace Analytical Services, Inc.

#### CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 10airD.i Injection Date: 26-JUL-2013 11:27

Init. Cal. Date(s): 24-JUL-2013 24-JUL-2013 Init. Cal. Times: 14:12 16:39 Quant Type: ISTD Lab File ID: 20702.d Analysis Type: AIR

Lab Sample ID: CCAL Quant Type: ISTD Method: \\192.168.10.12\chem\10airD.i\072613.b\T015\_205-13.m

		1	CCAL   MIN		MAX	[
COMPOUND	RRF / AMOUNT	RF10		%D / %DRIFT		
45 Methyl Isobutyl Ketone	10.00000	======================================	  0.47028 0.010		'	
46 cis-1,3-Dichloropropene	10.000001	9.74254	0.49516 0.010			
47 trans-1,3-Dichloropropene	10.000001	9.67640	0.56323 0.010			
\$ 48 Toluene-d8 (S)	0.69840	0.68786	0.68786 0.200			
49 Toluene	10.000001	9.35999	1.09586 0.300			-
50 1,1,2-Trichloroethane	10.000001	9.29503	0.37768 0.010			
51 Methyl Butyl Ketone	10.00000	10.65349	1.34921 0.010	6.53485	30.00000	Linear
52 Dibromochloromethane	10.00000	10.75867	2.05620 0.010	7.58666	30.00000	Linear
53 1,2-Dibromoethane	10.00000	10.55842	1.72372 0.010	5.58424	30.00000	Linear
54 Tetrachloroethene	10.00000	10.42289	1.60178 0.010	4.22886	30.00000	Linear
56 Chlorobenzene	10.00000	10.58173	2.12643 0.010	5.81731	30.00000	Linear
57 Ethyl Benzene	10.00000	10.40364	3.98671 0.300	4.03645	30.00000	Linear
58 m&p-Xylene	10.00000	10.61190	3.24198 0.300	6.11900	30.00000	Linear
59 Bromoform	10.00000	10.43978	2.15820 0.010	4.39781	30.00000	Linear
60 Styrene	10.00000	10.46391	2.11102 0.010	4.63911	30.00000	Linear
61 o-Xylene	10.00000	10.57107	3.36285 0.300	5.71068	30.00000	Linear
62 1,1,2,2-Tetrachloroethane	10.00000	10.47069	1.92935 0.010	4.70690	30.00000	Linear
63 Isopropylbenzene	10.00000	10.65678	4.29499 0.010	6.56781	30.00000	Linear
64 N-Propylbenzene	10.00000	10.60500	5.11189 0.010	6.05001	30.00000	Linear
65 4-Ethyltoluene	10.00000	10.70303	4.00982 0.010	7.03031	30.00000	Linear
66 1,3,5-Trimethylbenzene	10.00000	10.58698	3.49160 0.010	5.86978	30.00000	Linear
67 1,2,4-Trimethylbenzene	10.00000	10.63979	3.36428 0.010	6.39789	30.00000	Linear
68 1,3-Dichlorobenzene	10.00000	10.52466	2.04688 0.010	5.24660	30.00000	Linear
69 Sec- Butylbenzene	10.00000	10.53703	4.64076 0.010	5.37029	30.00000	Linear
\$ 70 1,4-dichlorobenzene-d4 (S)	0.40365	0.42948	0.42948 0.200	6.39968	30.00000	Averaged
71 Benzyl Chloride	10.00000	10.19494	2.78132 0.010	1.94939	30.00000	Linear
72 1,4-Dichlorobenzene	10.00000	10.34341	1.96150 0.010	3.43411	30.00000	Linear
73 1,2-Dichlorobenzene	10.00000	10.66009	1.71662 0.010	6.60089	30.00000	Linear
74 N-Butylbenzene	10.00000	10.71099	3.61848 0.010	7.10995	30.00000	Linear
75 1,2,4-Trichlorobenzene	10.00000	11.37217	1.17193 0.010	13.72171	30.00000	Quadratic
76 Naphthalene	10.00000	11.75605	1.87317 0.010	17.56053	30.00000	Quadratic
77 Hexachlorobutadiene	10.00000	10.59956	1.32834 0.010	5.99561	30.00000	Linear

Average %D / Drift Results	5.
Calculated Average %D/Drii	Et = 6.30035
Maximun Average %D/Drift	= 30.00000
* Passed Average %D/Drift	Test.
1	

Report Date: 26-Jul-2013 11:50

# Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072613.b\20702.d

Lab Smp Id: CCAL
Inj Date : 26-JUL-2013 11:27
Operator : DR1 Inst ID: 10airD.i

Smp Info Misc Info:

: Volatile Organic COMPOUNDS in Air Comment

: \\192.168.10.12\chem\10airD.i\072613.b\T015 205-13.m Method

Meth Date: 26-Jul-2013 11:48 drandall Cal Date: 24-JUL-2013 16:39 Als bottle: 2 Dil Factor: 1.00000 Quant Type: ISTD Cal File: 20509.d

Continuing Calibration Sample

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

	QUANT SIG MASS		EXP RT	REL RT	RESPONSE	AMOUNTS	
		RT				CAL-AMT ( ppbv)	ON-COL (ppbv)
Compounds							
1 Propylene	==== 41	2.982		(0.490)	79046	10.0000	9.68
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	711305	10.0000	8.99
3 Dichlorotetrafluoroethane	85	3.103	3.107	(0.510)	568543	10.0000	8.94
4 Chloromethane	50	3.106	3.107	(0.510)	162697	10.0000	9.00
5 Vinyl chloride	62	3.191	3.195	(0.524)	162130	10.0000	9.00
6 1,3-Butadiene	54	3.234	3.238	(0.531)	101476	10.0000	9.54
7 Bromomethane	94	3.388	3.392	(0.556)	196168	10.0000	8.64
8 Chloroethane	64	3.444	3.448	(0.566)	83730	10.0000	9.08(M)
9 Ethanol	31	3.500	3.494	(0.575)	92692	10.0000	9.83
10 Vinyl Bromide	106	3.582	3.585	(0.588)	203995	10.0000	9.09
11 Acrolein	56	3.683	3.684	(0.605)	56514	10.0000	9.24
12 Trichlorofluoromethane	101	3.693	3.694	(0.606)	754524	10.0000	8.76
13 Acetone	43	3.729	3.726	(0.612)	356898	10.0000	8.27
14 Isopropyl Alcohol	45	3.749	3.756	(0.616)	267026	10.0000	9.43
15 1,1-Dichloroethene	61	3.978	3.979	(0.653)	348349	10.0000	9.10
16 Acrylonitrile	53	3.985	3.985	(0.654)	116574	10.0000	9.15
17 Tert Butyl Alcohol	59	3.982	3.989	(0.654)	422115	10.0000	9.32(M)
18 Freon 113	101	4.031	4.030	(0.662)	508538	10.0000	8.85
19 Methylene chloride	49	4.090	4.094	(0.672)	212477	10.0000	8.69
20 Allyl Chloride	76	4.103	4.107	(0.674)	86955	10.0000	9.48
21 Carbon Disulfide	76	4.224	4.224	(0.694)	608475	10.0000	8.55
22 trans-1,2-dichloroethene	96	4.418	4.422	(0.725)	228789	10.0000	9.30
23 Methyl Tert Butyl Ether	73	4.457	4.458	(0.732)	594181	10.0000	9.79(M)

# Data File: $\192.168.10.12\chem\10airD.i\072613.b\20702.d$ Report Date: 26-Jul-2013 11:50

							AMOUNTS	
		QUANT SIG MASS ====					CAL-AMT	ON-COL
Co	ompounds		RT	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)
	24 Vinyl Acetate	43	4.575		(0.751)	419144	10.0000	9.06(M)
	25 1,1-Dichloroethane	63	4.579	4.582	(0.752)	399643	10.0000	9.36
Ş	26 Hexane-d14(S)	66	4.697	4.700	(0.771)	272991	10.0000	8.68
	27 Methyl Ethyl Ketone	72	4.775	4.779	(0.784)	100371	10.0000	10.0
	28 n-Hexane	57	4.815		(0.791)	262673	10.0000	9.19(M)
	29 cis-1,2-Dichloroethene	96	4.972		(0.816)	218030	10.0000	9.68
	30 Ethyl Acetate	43	4.995		(0.820)	313231	10.0000	9.59(M)
	31 Chloroform	83	5.116		(0.840)	530708	10.0000	9.98
	32 Tetrahydrofuran	42	5.310		(0.872)	128569	10.0000	10.0
	33 1,1,1-Trichloroethane	97	5.595	5.599	(0.919)	582693	10.0000	10.2
	34 1,2-Dichloroethane	62	5.612		(0.921)	395894	10.0000	10.0
	35 Benzene	78	5.884		(0.966)	554905	10.0000	9.50
	36 Carbon tetrachloride	117	5.903	5.907	(0.969)	617383	10.0000	10.1
	37 Cyclohexane	56	5.907	5.910	(0.970)	207885	10.0000	9.43
*	38 1,4-Difluorobenzene	114	6.090	6.094	(1.000)	651013	10.0000	
	39 2,2,4-Trimethylpentane	57	6.267		(1.029)	645568	10.0000	9.54
	40 Heptane	43	6.435	6.442	(1.057)	209930	10.0000	9.50
	41 1,2-Dichloropropane	63	6.503		(1.068)	170187	10.0000	9.60(M)
	42 Trichloroethene	130	6.530		(1.072)	228163	10.0000	9.55
	43 1,4-Dioxane	88	6.651		(1.092)	103706	10.0000	9.93(M)
	44 Bromodichloromethane	83	6.651		(1.092)	586320	10.0000	9.75
	45 Methyl Isobutyl Ketone	43	7.222		(1.186)	306158	10.0000	9.59
	46 cis-1,3-Dichloropropene	75	7.281	7,281	(1.195)	322357	10.0000	9.74
	47 trans-1,3-Dichloropropene	75	7.769		(1.276)	366673	10.0000	9.68
\$	48 Toluene-d8 (S)	98	7.845		(1.288)	447804	10.0000	9.85
	49 Toluene	91	7.937		(1.303)	713422	10.0000	9.36
	50 1,1,2-Trichloroethane	97	7.943		(1.304)	245874	10.0000	9.30
	51 Methyl Butyl Ketone	43	8.242		(0.851)	302691	10.0000	10.6
	52 Dibromochloromethane	129	8.553		(0.883)	461303	10.0000	10.8
	53 1,2-Dibromoethane	107	8.822		(0.911)	386712	10.0000	10.6
	54 Tetrachloroethene	166	8.914		(0.920)	359355	10.0000	10.4
火	55 Chlorobenzene - d5	117	9.688		(1.000)	224347	10.0000	
	56 Chlorobenzene	112	9.737		(1.005)	477058	10.0000	10.6
	57 Ethyl Benzene	91	10.035		(1.036)	894406	10.0000	10.4
	58 m&p-Xylene	91	10.206		(1.053)	727329	10.0000	10.6
	59 Bromoform	173	10.652		(1.100)	484186	10.0000	10.4
	60 Styrene	104	10.701		(1.105)	473600	10.0000	10.5
	61 o-Xylene	91	10.776		(1.112)	754445	10.0000	10.6
	62 1,1,2,2-Tetrachloroethane	83	11.091		(1.145)	432844	10.0000	10.5
	63 Isopropylbenzene	105	11.455		(1.182)	963567	10.0000	10.6
	64 N-Propylbenzene	91		12.121		1146838	10.0000	10.6(M)
	65 4-Ethyltoluene	105	12.314		(1.271)	899590	10.0000	10.7
	66 1,3,5-Trimethylbenzene	105		12.426		783331	10.0000	10.6
	67 1,2,4-Trimethylbenzene	105		13.020		754766	10.0000	10.6
	68 1,3-Dichlorobenzene	146		13.374		459211	10.0000	10.5
	69 Sec- Butylbenzene	105	13.397		(1.383)	1041140	10.0000	10.5
\$	70 1,4-dichlorobenzene-d4 (S)	150		13.459		96352	10.0000	10.6
7	71 Benzyl Chloride	91		13.486		623981	10.0000	10.2
	72 1,4-Dichlorobenzene	146		13.509		440056	10.0000	10.3
	73 1,2-Dichlorobenzene	146		14.043		385119	10.0000	10.7
	74 N-Butylbenzene	91		14.325		811796	10.0000	10.7
	75 1,2,4-Trichlorobenzene	180		16.683		262919	10.0000	11.4
	76 Naphthalene	128		16.860		420239	10.0000	11.4
	77 Hexachlorobutadiene	225		17.236		298009	10.0000	10.6
	' , Hevaciitofobafaatelle	220	11.400	11.200	(1.17)	20000	10.0000	10.0

10236207 335 of 1066

Data File:  $\192.168.10.12\chem\10airD.i\072613.b\20702.d$  Report Date: 26-Jul-2013 11:50

QC Flag Legend

M - Compound response manually integrated.

Report Date: 26-Jul-2013 11:50

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20702.d

Lab Smp Id: CCAL Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1

Method File: \\192.168.10.12\chem\10airD.i\072613.b\T015\_205-13.m

Misc Info:

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
=======================================	=======	========	=======	=======	======
38 1,4-Difluorobenze	579775		811685	651013	12.29
55 Chlorobenzene - d	221404	132842	309966	224347	1.33

		RT I	IMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	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: \\192,168,10,12\chem\10airD,i\072613,b\20702,D

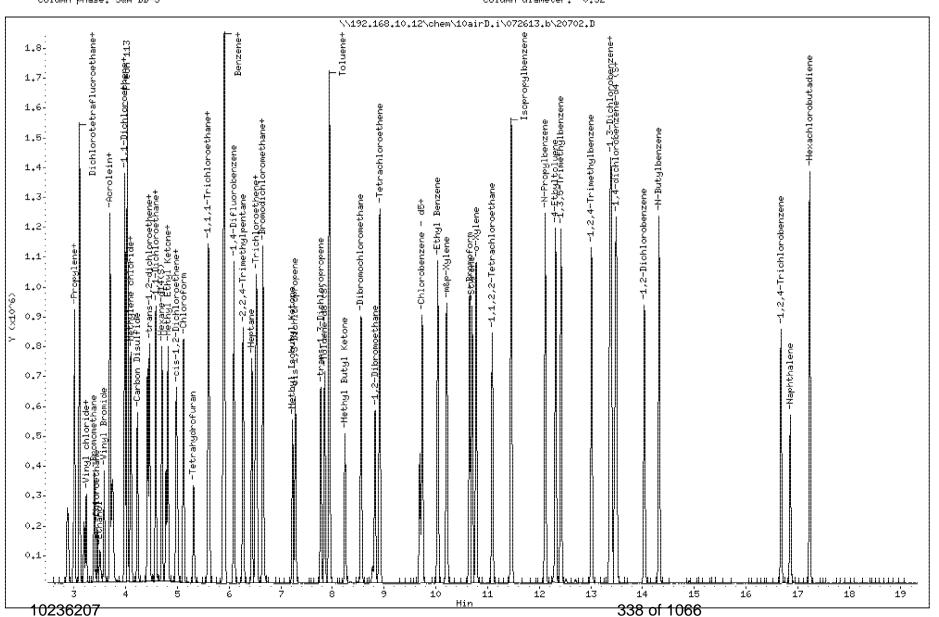
Date : 26-JUL-2013 11:27

Client ID: Sample Info:

Instrument: 10airD.i

Operator: DR1

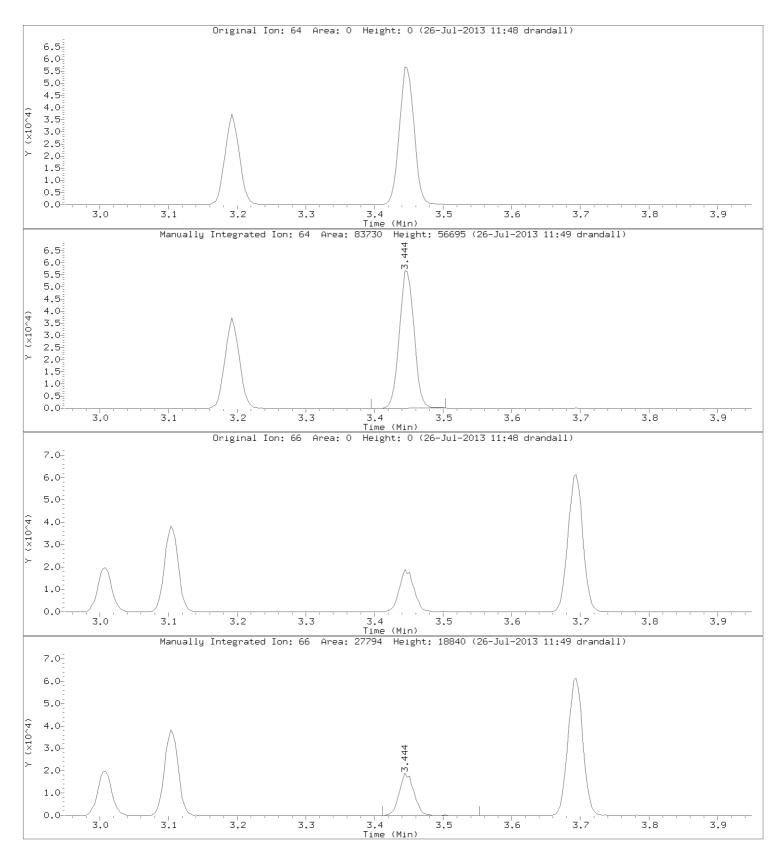
Column phase: J&W DB-5 Column diameter: 0.32



Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: Chloroethane CAS Number: 75-00-3



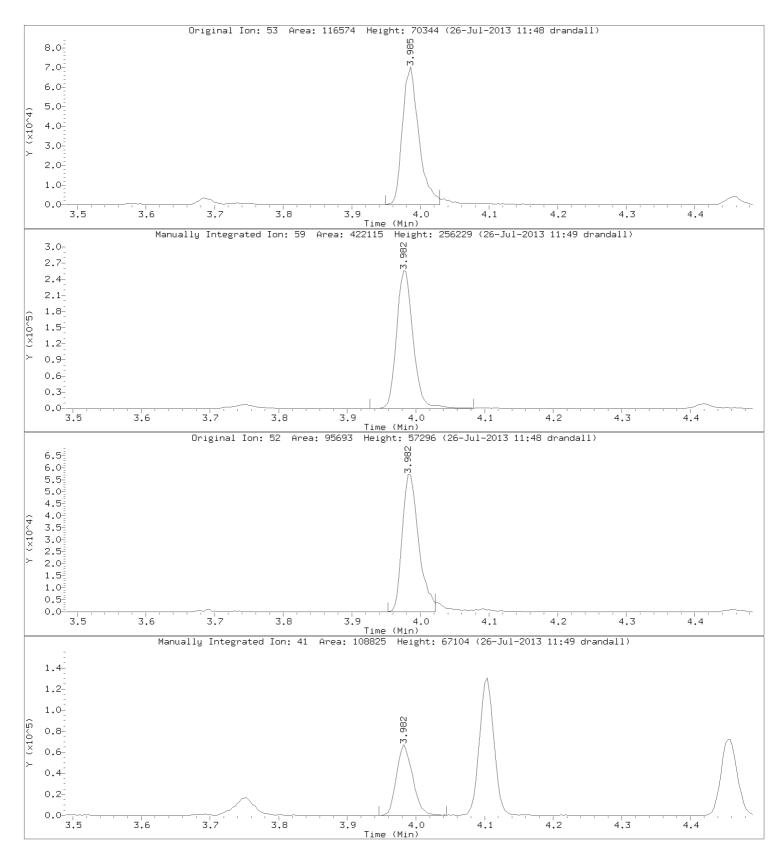
10236207 339 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



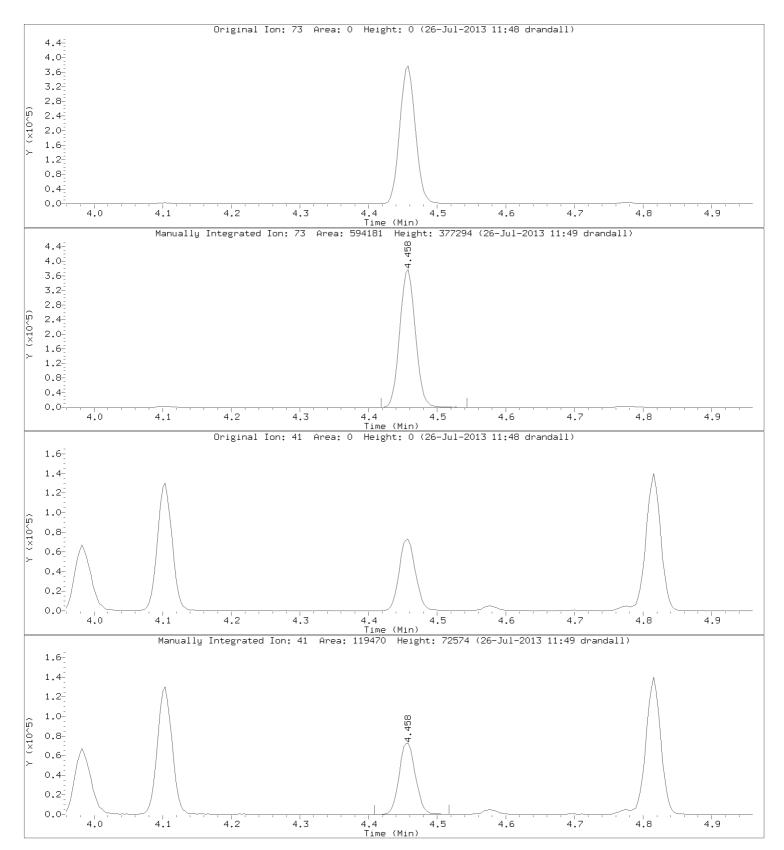
10236207 340 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

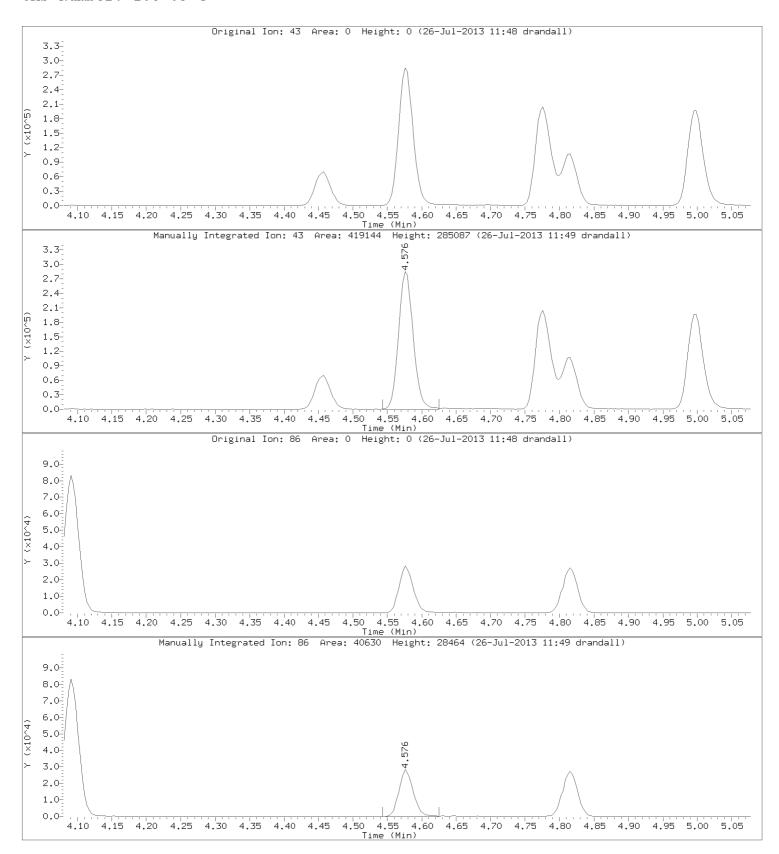


10236207 341 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: Vinyl Acetate CAS Number: 108-05-4

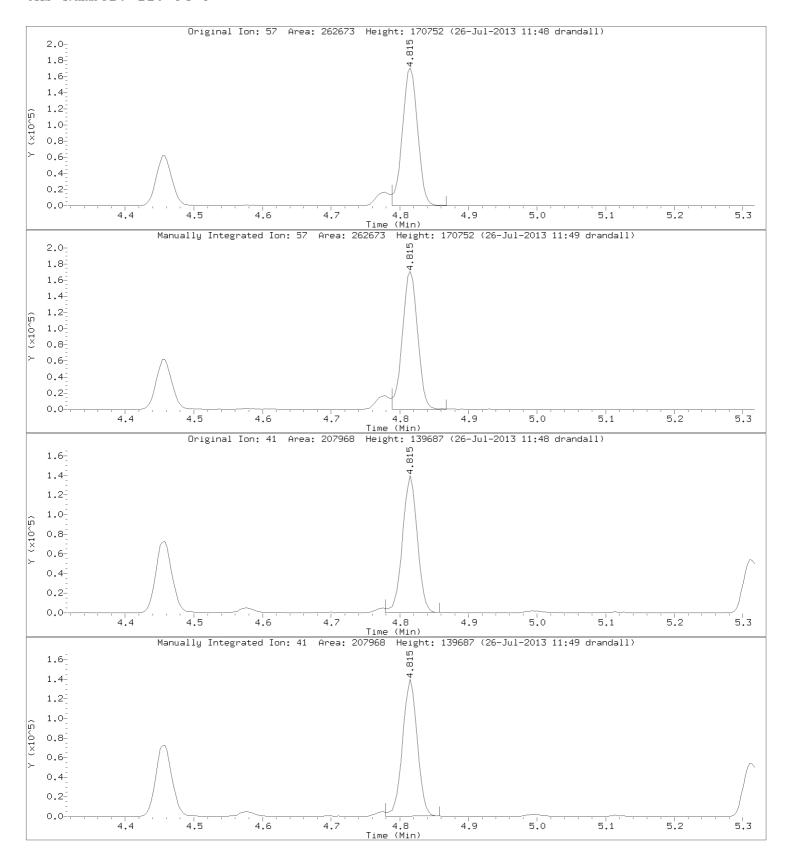


10236207 342 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

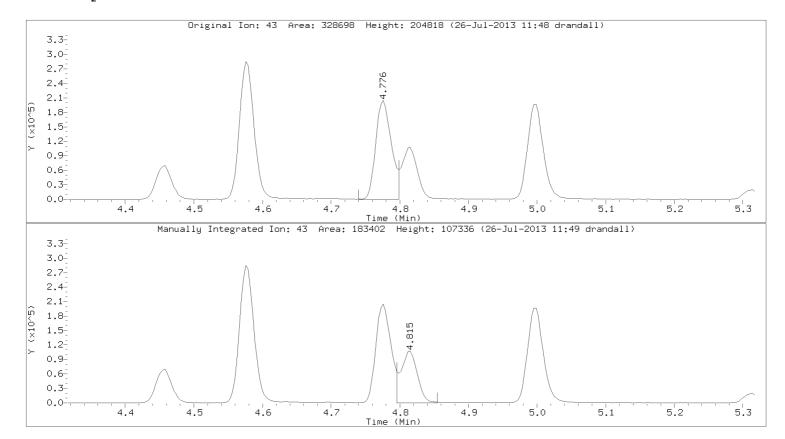
Compound: n-Hexane CAS Number: 110-54-3



10236207 343 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

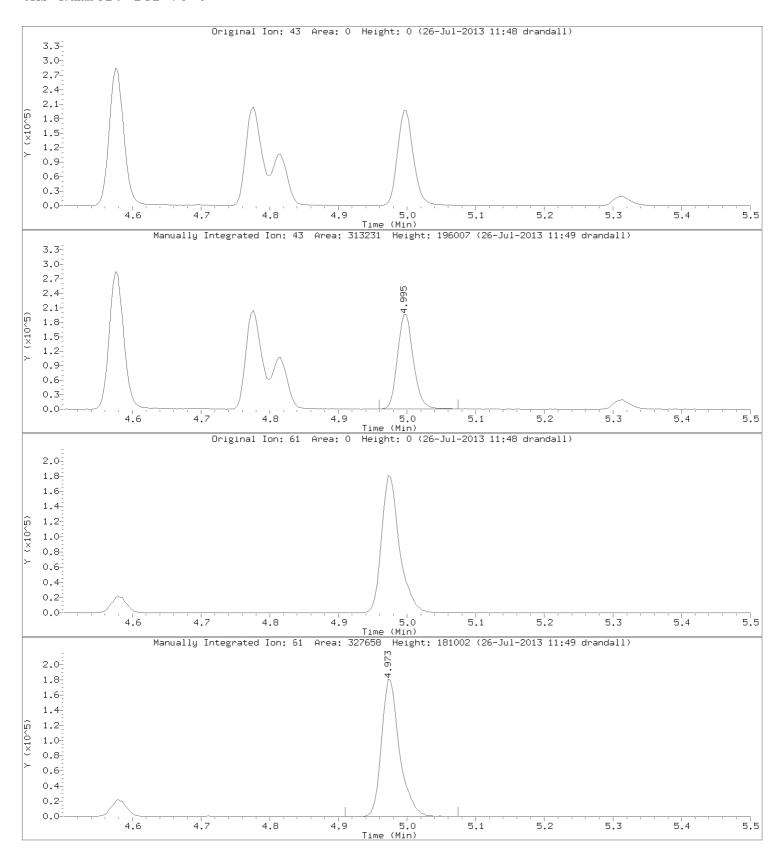


10236207 344 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

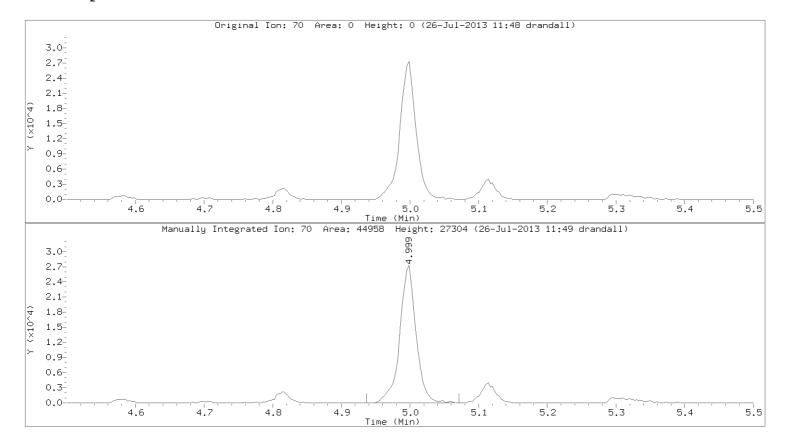
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 345 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL



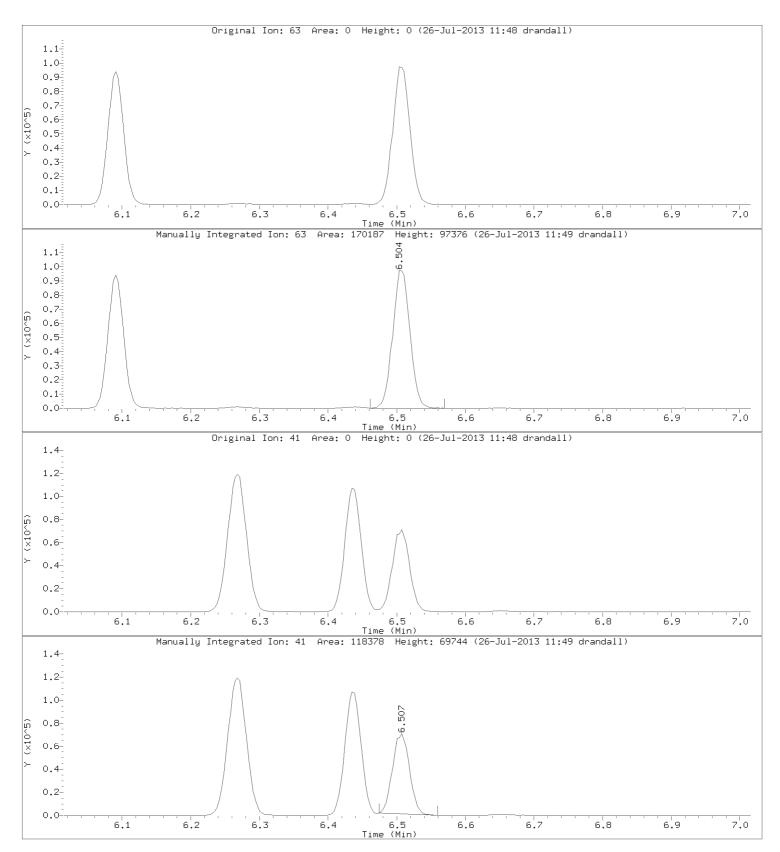
10236207 346 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: 1,2-Dichloropropane

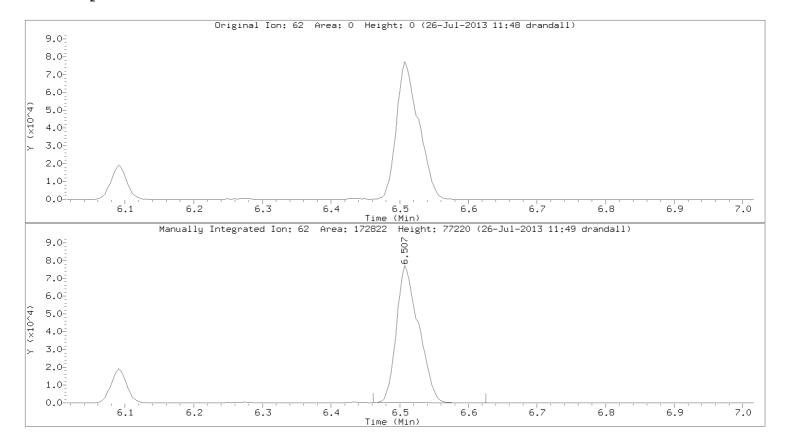
CAS Number: 78-87-5



10236207 347 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

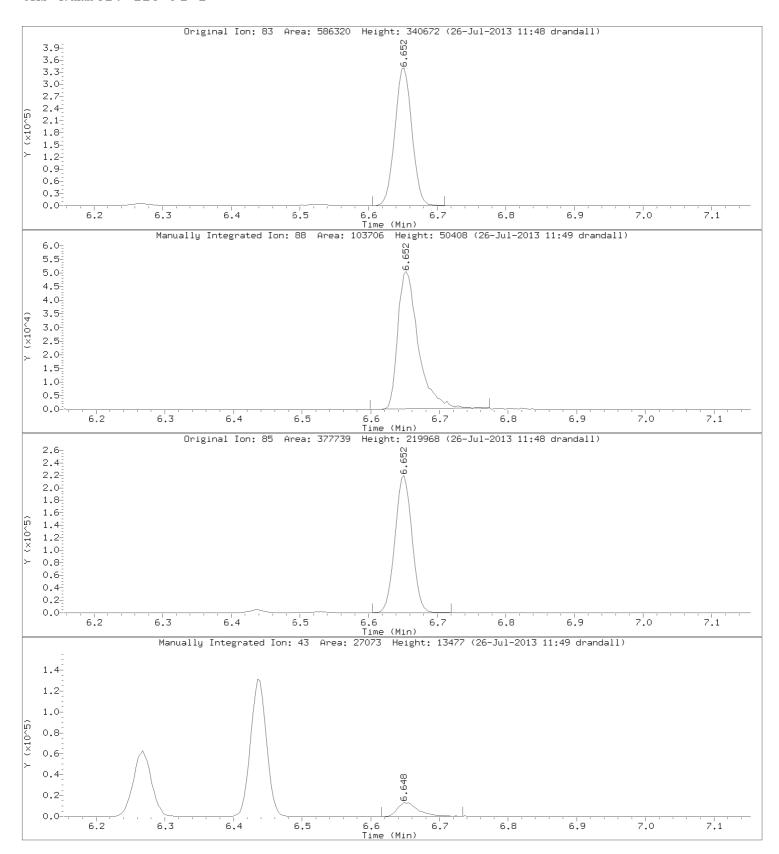


10236207 348 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: 1,4-Dioxane CAS Number: 123-91-1



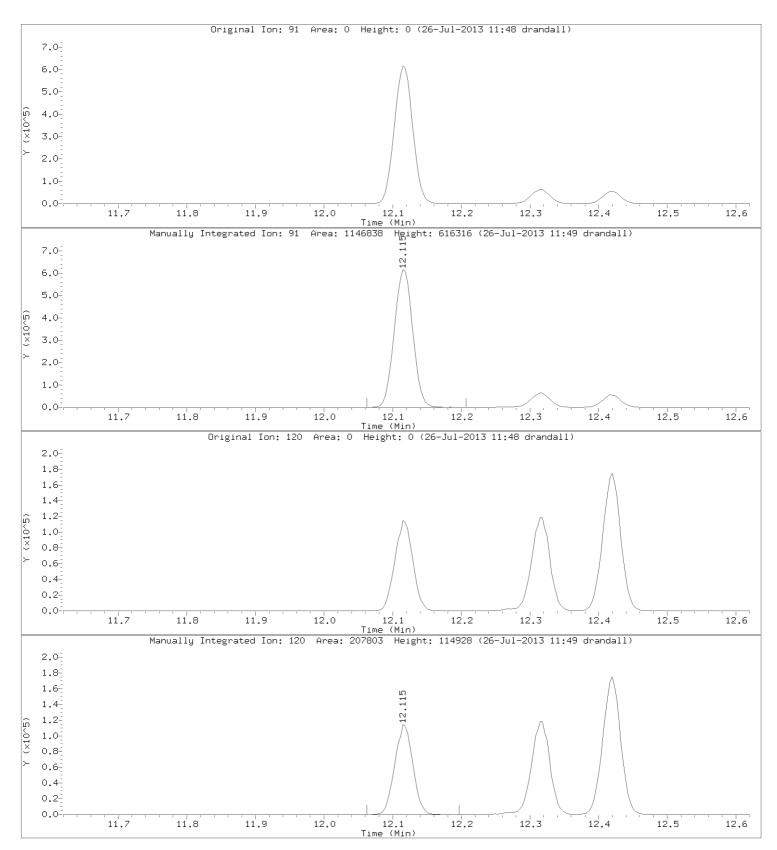
10236207 349 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: CCAL

Compound: N-Propylbenzene

CAS Number: 103-65-1



10236207 350 of 1066

Report Date: 26-Jul-2013 09:26

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20605L.d
Lab Smp Id: 1487046
Inj Date: 25-JUL-2013 14:47
Operator: CJR
Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 5 QC Sample: BLANK

Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

			CONCENTRATIONS	
	QUANT SIG		ON-COLUMN FINAI	
Compounds	MASS	RT EXP RT REL RT RESPONSE	// (ppbv) (ppbv	
1 Propylene	41	Compound Not Detected.		
2 Dichlorodifluoromethane	85	Compound Not Detected.		
3 Dichlorotetrafluoroethane	85	Compound Not Detected.		
4 Chloromethane	50	Compound Not Detected.		
5 Vinyl chloride	62	Compound Not Detected.		
6 1,3-Butadiene	54	Compound Not Detected.		
7 Bromomethane	94	Compound Not Detected.		
8 Chloroethane	64	Compound Not Detected.		
9 Ethanol	31	Compound Not Detected.		
10 Vinyl Bromide	106	Compound Not Detected.		
11 Acrolein	56	Compound Not Detected.		
12 Trichlorofluoromethane	101	Compound Not Detected.		
13 Acetone	43	Compound Not Detected.		
14 Isopropyl Alcohol	45	Compound Not Detected.		
15 1,1-Dichloroethene	61	Compound Not Detected.		
16 Acrylonitrile	53	Compound Not Detected.		
17 Tert Butyl Alcohol	59	Compound Not Detected.		
18 Freon 113	101	Compound Not Detected.		
19 Methylene chloride	49	Compound Not Detected.		
20 Allyl Chloride	76	Compound Not Detected.		
21 Carbon Disulfide	76	Compound Not Detected.		
22 trans-1,2-dichloroethene	96	Compound Not Detected.		
23 Methyl Tert Butyl Ether	73	Compound Not Detected.		

# Data File: \\192.168.10.12\chem\10airD.i\072513.b\20605L.d Report Date: 26-Jul-2013 09:26

			CONCENTRATIONS
	QUANT SIG		ON-COLUMN FINAL
Compounds	MASS 	RT EXP RT REL RT RESPONSE	(ppbv) (ppbv)
24 Vinyl Acetate	43	Compound Not Detected.	
25 1,1-Dichloroethane	63	Compound Not Detected.	
\$ 26 Hexane-d14(S)	66	4.693 4.700 (0.771) 255210	9.89273 9.89
27 Methyl Ethyl Ketone	72	Compound Not Detected.	
28 n-Hexane	57	Compound Not Detected.	
29 cis-1,2-Dichloroethene	96	Compound Not Detected.	
30 Ethyl Acetate	43	Compound Not Detected.	
31 Chloroform	83	Compound Not Detected.	
32 Tetrahydrofuran	42	Compound Not Detected.	
33 1,1,1-Trichloroethane	97	Compound Not Detected.	
34 1,2-Dichloroethane	62	Compound Not Detected.	
35 Benzene	78	Compound Not Detected.	
36 Carbon tetrachloride	117	Compound Not Detected.	
37 Cyclohexane	56	Compound Not Detected.	
* 38 1,4-Difluorobenzene	114	6.087 6.094 (1.000) 534232	10.0000
39 2,2,4-Trimethylpentane	57	Compound Not Detected.	
40 Heptane	43	Compound Not Detected.	
41 1,2-Dichloropropane	63	Compound Not Detected.	
42 Trichloroethene	130	Compound Not Detected.	
43 1,4-Dioxane	88	Compound Not Detected.	
44 Bromodichloromethane	83	Compound Not Detected.	
45 Methyl Isobutyl Ketone	43	Compound Not Detected.	
46 cis-1,3-Dichloropropene	75	Compound Not Detected.	
47 trans-1,3-Dichloroprope	ne 75	Compound Not Detected.	
\$ 48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 350080	9.38287 9.38
49 Toluene	91	Compound Not Detected.	
50 1,1,2-Trichloroethane	97	Compound Not Detected.	
51 Methyl Butyl Ketone	43	Compound Not Detected.	
52 Dibromochloromethane	129	Compound Not Detected.	
53 1,2-Dibromoethane	107	Compound Not Detected.	
54 Tetrachloroethene	166	Compound Not Detected.	
* 55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 173580	10.0000
56 Chlorobenzene	112	Compound Not Detected.	
57 Ethyl Benzene	91	Compound Not Detected.	
58 m&p-Xylene	91	Compound Not Detected.	
59 Bromoform	173	Compound Not Detected.	
60 Styrene	104	Compound Not Detected.	
61 o-Xylene	91	Compound Not Detected.	
62 1,1,2,2-Tetrachloroetha	ne 83	Compound Not Detected.	
63 Isopropylbenzene	105	Compound Not Detected.	
64 N-Propylbenzene	91	Compound Not Detected.	
65 4-Ethyltoluene	105	Compound Not Detected.	
66 1,3,5-Trimethylbenzene	105	Compound Not Detected.	
67 1,2,4-Trimethylbenzene	105	Compound Not Detected.	
68 1,3-Dichlorobenzene	146	Compound Not Detected.	
69 Sec- Butylbenzene	105	Compound Not Detected.	
\$ 70 1,4-dichlorobenzene-d4	(S) 150	13.452 13.459 (1.389) 49196	7.02150 7.02
71 Benzyl Chloride	91	Compound Not Detected.	
72 1,4-Dichlorobenzene	146	Compound Not Detected.	
73 1,2-Dichlorobenzene	146	Compound Not Detected.	
74 N-Butylbenzene	91	Compound Not Detected.	
75 1,2,4-Trichlorobenzene	180	Compound Not Detected.	
76 Naphthalene	128	Compound Not Detected.	
77 Hexachlorobutadiene	225	Compound Not Detected.	

Report Date: 26-Jul-2013 09:26

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Report Date: 26-Jul-2013 09:26

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20605L.d

Lab Smp Id: 1487046 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: CJR
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
38 1,4-Difluorobenze	579775	347865	811685	534232	-7.86
55 Chlorobenzene - d	221404	132842	309966	173580	-21.60

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

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.

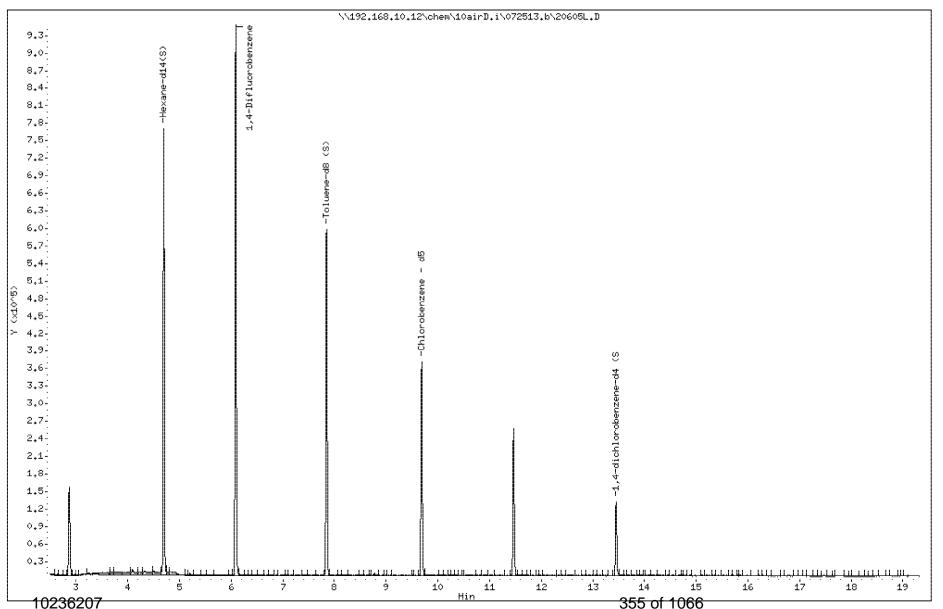
Data File: \\192,168,10,12\chem\10airD,i\072513,b\20605L,D

Date : 25-JUL-2013 14:47

Client ID: Sample Info: Instrument: 10airD.i

Operator: CJR

Column phase: J&W DB-5 Column diameter: 0.32



Data File: \\192.168.10.12\chem\10airD.i\072513.b/20605L.d Injection Date: 25-JUL-2013 14:47

Instrument: 10airD.i Lab Sample ID: 1487046

NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Report Date: 29-Jul-2013 09:25

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072613.b\20706L.d
Lab Smp Id: 1488122
Inj Date: 26-JUL-2013 13:38
Operator: DR1
Inst ID: 10airD.i

Smp Info :

Misc Info: 17876

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072613.b\T015 205-13.m

Meth Date: 26-Jul-2013 11:48 drandall Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 6 QC Sample: BLANK

Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14 Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

	QUANT SIG		CONCENTRATIONS ON-COLUMN FINAL
Compounds	MASS	RT EXP RT REL RT RESPONSE	( ppbv) ( ppbv)
1 Propylene	41	Compound Not Detected.	
2 Dichlorodifluoromethane	85	Compound Not Detected.	
3 Dichlorotetrafluoroethane	85	Compound Not Detected.	
4 Chloromethane	50	Compound Not Detected.	
5 Vinyl chloride	62	Compound Not Detected.	
6 1,3-Butadiene	54	Compound Not Detected.	
7 Bromomethane	94	Compound Not Detected.	
8 Chloroethane	64	Compound Not Detected.	
9 Ethanol	31	Compound Not Detected.	
10 Vinyl Bromide	106	Compound Not Detected.	
11 Acrolein	56	Compound Not Detected.	
12 Trichlorofluoromethane	101	Compound Not Detected.	
13 Acetone	43	Compound Not Detected.	
14 Isopropyl Alcohol	45	Compound Not Detected.	
15 1,1-Dichloroethene	61	Compound Not Detected.	
16 Acrylonitrile	53	Compound Not Detected.	
17 Tert Butyl Alcohol	59	Compound Not Detected.	
18 Freon 113	101	Compound Not Detected.	
19 Methylene chloride	49	Compound Not Detected.	
20 Allyl Chloride	76	Compound Not Detected.	
21 Carbon Disulfide	76	Compound Not Detected.	
22 trans-1,2-dichloroethene	96	Compound Not Detected.	
23 Methyl Tert Butyl Ether	73	Compound Not Detected.	

# Data File: \\192.168.10.12\chem\10airD.i\072613.b\20706L.d Report Date: 29-Jul-2013 09:25

Cc	mpounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)
==	24 Vinyl Acetate	==== 43	Compound Not Detected.	
	25 1,1-Dichloroethane	63	Compound Not Detected.	
Ş	26 Hexane-d14(S)	66	4.697 4.700 (0.772) 247314	9.40849 9.41
	27 Methyl Ethyl Ketone	72	Compound Not Detected.	
	28 n-Hexane	57	Compound Not Detected.	
	29 cis-1,2-Dichloroethene	96	Compound Not Detected.	
	30 Ethyl Acetate	43	Compound Not Detected.	
	31 Chloroform	83	Compound Not Detected.	
	32 Tetrahydrofuran	42	Compound Not Detected.	
	33 1,1,1-Trichloroethane	97	Compound Not Detected.	
	34 1,2-Dichloroethane	62	Compound Not Detected.	
	35 Benzene	78	Compound Not Detected.	
	36 Carbon tetrachloride	117	Compound Not Detected.	
	37 Cyclohexane	56	Compound Not Detected.	
*	38 1,4-Difluorobenzene	114	6.087 6.094 (1.000) 544349	10.0000
	39 2,2,4-Trimethylpentane	57	Compound Not Detected.	
	40 Heptane	43	Compound Not Detected.	
	41 1,2-Dichloropropane	63	Compound Not Detected.	
	42 Trichloroethene	130	Compound Not Detected.	
	43 1,4-Dioxane	88	Compound Not Detected.	
	44 Bromodichloromethane	83	Compound Not Detected.	
	45 Methyl Isobutyl Ketone	43	Compound Not Detected.	
	46 cis-1,3-Dichloropropene	75	Compound Not Detected.	
	47 trans-1,3-Dichloropropene	75	Compound Not Detected.	0.74005
\$	48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 370627	9.74895 9.75
	49 Toluene	91	Compound Not Detected.	
	50 1,1,2-Trichloroethane	97 43	Compound Not Detected.	
	51 Methyl Butyl Ketone 52 Dibromochloromethane	43 129	Compound Not Detected. Compound Not Detected.	
	53 1,2-Dibromoethane	107	Compound Not Detected.	
	54 Tetrachloroethene	166	Compound Not Detected.	
*	55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 182794	10.0000
	56 Chlorobenzene	112	Compound Not Detected.	10.0000
	57 Ethyl Benzene	91	Compound Not Detected.	
	58 m&p-Xylene	91	Compound Not Detected.	
	59 Bromoform	173	Compound Not Detected.	
	60 Styrene	104	Compound Not Detected.	
	61 o-Xylene	91	Compound Not Detected.	
	62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.	
	63 Isopropylbenzene	105	Compound Not Detected.	
	64 N-Propylbenzene	91	Compound Not Detected.	
	65 4-Ethyltoluene	105	Compound Not Detected.	
	66 1,3,5-Trimethylbenzene	105	Compound Not Detected.	
	67 1,2,4-Trimethylbenzene	105	Compound Not Detected.	
	68 1,3-Dichlorobenzene	146	Compound Not Detected.	
	69 Sec- Butylbenzene	105	Compound Not Detected.	
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.452 13.459 (1.389) 53342	7.22948 7.23
	71 Benzyl Chloride	91	Compound Not Detected.	
	72 1,4-Dichlorobenzene	146	Compound Not Detected.	
	73 1,2-Dichlorobenzene	146	Compound Not Detected.	
	74 N-Butylbenzene	91	Compound Not Detected.	
	75 1,2,4-Trichlorobenzene	180	Compound Not Detected.	
	76 Naphthalene	128	Compound Not Detected.	
	77 Hexachlorobutadiene	225	Compound Not Detected.	

Report Date: 29-Jul-2013 09:25

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Report Date: 29-Jul-2013 09:25

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 26-JUL-2013 Calibration Time: 11:27 Instrument ID: 10airD.i

Lab File ID: 20706L.d

Lab Smp Id: 1488122 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072613.b\T015\_205-13.m

Misc Info: 17876

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT	SAMPLE	*DTFF
38 1,4-Difluorobenze 55 Chlorobenzene - d	571114511145 ======== 579775 221404	=======	======================================	544349 182794	-6.11 -17.44

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

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: \\192,168,10,12\chem\10airD,i\072613,b\20706L,D

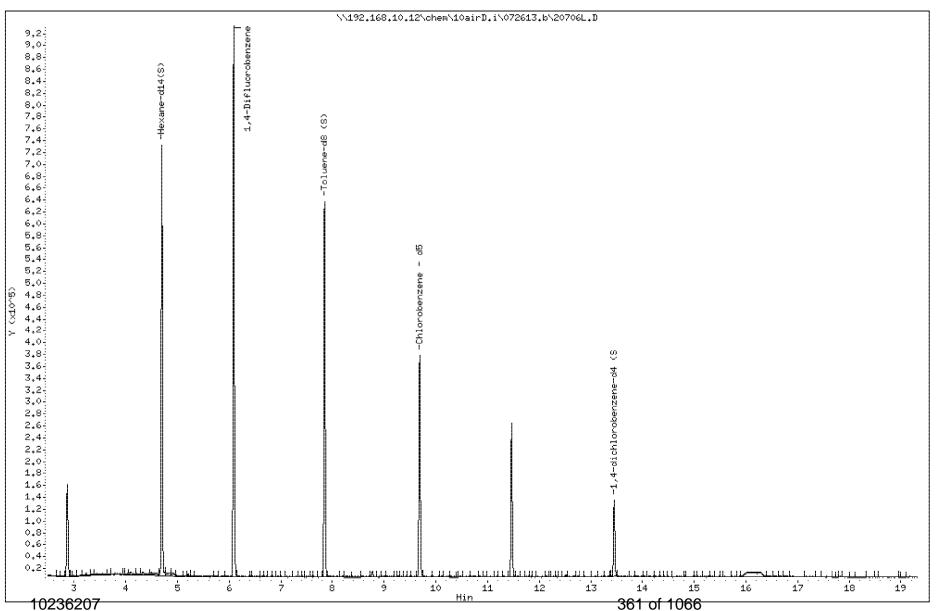
Date : 26-JUL-2013 13:38

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Injection Date: 26-JUL-2013 13:38

Instrument: 10airD.i Lab Sample ID: 1488122

NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

10236207 362 of 1066

Report Date: 26-Jul-2013 09:26

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20602L.d
Lab Smp Id: 1487047
Inj Date: 25-JUL-2013 13:08
Operator: DR1
Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date : 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date : 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 2 QC Sample: LCS

Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

### Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf Cpnd Variable	1.000	Dilution Factor ng unit correction factor Local Compound Variable

						CONCENTRA	ATIONS
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv)	FINAL (ppbv)
1 Propylene	==== 41	==== 2.978		(0.489)	75482	9.86590	9.86
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	695301	9.37514	9.38
3 Dichlorotetrafluoroethane	85	3.103	3.107	(0.510)	557092	9.34807	9.35
4 Chloromethane	50	3.103	3.107	(0.510)	158492	9.36005	9.36
5 Vinyl chloride	62	3.191	3.195	(0.524)	162935	9.65000	9.65
6 1,3-Butadiene	54	3.234	3.238	(0.531)	98449	9.87843	9.88
7 Bromomethane	94	3.391	3.392	(0.557)	195796	9.20794	9.21
8 Chloroethane	64	3.447	3.448	(0.566)	79855	9.24641	9.25(M)
9 Ethanol	31	3.496	3.494	(0.574)	93619	10.5957	10.6
10 Vinyl Bromide	106	3.585	3.585	(0.589)	199711	9.49845	9.50
11 Acrolein	56	3.683	3.684	(0.605)	56373	9.82560	9.82
12 Trichlorofluoromethane	101	3.693	3.694	(0.606)	741303	9.18877	9.19
13 Acetone	43	3.726	3.726	(0.612)	338413	8.36838	8.37
14 Isopropyl Alcohol	45	3.746	3.756	(0.615)	261340	9.85318	9.85
15 1,1-Dichloroethene	61	3.978	3.979	(0.653)	346218	9.64980	9.65
16 Acrylonitrile	53	3.982	3.985	(0.654)	117231	9.81192	9.81
17 Tert Butyl Alcohol	59	3.982	3.989	(0.654)	406804	9.58876	9.59(M)
18 Freon 113	101	4.028	4.030	(0.661)	504525	9.37111	9.37
19 Methylene chloride	49	4.090	4.094	(0.672)	208908	9.11792	9.12
20 Allyl Chloride	76	4.100	4.107	(0.673)	87613	10.1915	10.2
21 Carbon Disulfide	76	4.224	4.224	(0.694)	608712	9.12971	9.13
22 trans-1,2-dichloroethene	96	4.418	4.422	(0.725)	223616	9.70085	9.70
23 Methyl Tert Butyl Ether	73	4.454	4.458	(0.731)	585648	10.2981	10.3(M)

# Data File: \\192.168.10.12\chem\10airD.i\072513.b\20602L.d Report Date: 26-Jul-2013 09:26

		OUTNE GEG					CONCENTR	ATIONS FINAL
Co	mpounds	QUANT SIG MASS ====	RT ====	EXP RT	REL RT	RESPONSE	ON-COLUMN (ppbv) ======	rinal (ppbv)
	24 Vinyl Acetate	43	4.575	4.579	(0.751)	425105	9.79759	9.80
	25 1,1-Dichloroethane	63	4.579	4.582	(0.752)	391291	9.77539	9.78
\$	26 Hexane-d14(S)	66	4.697	4.700	(0.771)	275933	9.36750	9.37
	27 Methyl Ethyl Ketone	72	4.775	4.779	(0.784)	98581	10.5293	10.5
	28 n-Hexane	57	4.815	4.818	(0.791)	256783	9.58942	9.59(M)
	29 cis-1,2-Dichloroethene	96	4.972	4.979	(0.816)	208699	9.88721	9.89
	30 Ethyl Acetate	43	4.995	4.999	(0.820)	301480	9.84445	9.84 (M)
	31 Chloroform	83	5.113	5.120	(0.840)	508994	10.2114	10.2
	32 Tetrahydrofuran	42	5.310		(0.872)	118951	9.88538	9.88
	33 1,1,1-Trichloroethane	97	5.595		(0.919)	560301	10.4847	10.5
	34 1,2-Dichloroethane	62	5.612		(0.921)	385071	10.4030	10.4
	35 Benzene	78	5.880		(0.966)	521175	9.52375	9.52
	36 Carbon tetrachloride	117	5.903		(0.969)	599785	10.4509	10.4
	37 Cyclohexane	56	5.907		(0.970)	193283	9.35800	9.36
*	38 1,4-Difluorobenzene	114	6.090		(1.000)	609998	10.0000	
	39 2,2,4-Trimethylpentane	57	6.267		(1.029)	611636	9.64286	9.64
	40 Heptane	43	6.435		(1.057)	195298	9.44060	9.44
	41 1,2-Dichloropropane	63	6.507		(1.068)	158987	9.57040	9.57 (M)
	42 Trichloroethene	130	6.530		(1.072)	208832	9.33880	9.34
	43 1,4-Dioxane	88	6.648		(1.092)	101974	10.4062	10.4 (M)
	44 Bromodichloromethane	83	6.651		(1.092)	565063	10.0281	10.0
	45 Methyl Isobutyl Ketone	43	7.222		(1.186)	291402	9.73183	9.73
	46 cis-1,3-Dichloropropene	75	7.277		(1.195)	305073	9.83676	9.84
	47 trans-1,3-Dichloropropene	75	7.769		(1.276)	344734	9.70777	9.71
\$	48 Toluene-d8 (S)	98	7.845		(1.288)	434934	10.2092	10.2
	49 Toluene	91	7.933		(1.303)	681013	9.52756	9.53
	50 1,1,2-Trichloroethane	97	7.943		(1.304)	232525	9.37789	9.38
	51 Methyl Butyl Ketone	43	8.242		(0.851)	288670	10.2849	10.3
	52 Dibromochloromethane	129	8.553		(0.883)	439250	10.3631	10.4
	53 1,2-Dibromoethane	107	8.825		(0.911)	367762	10.1628	10.2
	54 Tetrachloroethene	166	8.914		(0.920)	336058	9.87631	9.88
*	55 Chlorobenzene - d5	117	9.688		(1.000)	221877	10.0000	
	56 Chlorobenzene	112	9.737		(1.005)	447702	10.0588	10.0
	57 Ethyl Benzene	91	10.035		(1.036)	866868	10.2019	10.2
	58 m&p-Xylene	91	10.206		(1.053)	690579	10.1996	10.2
	59 Bromoform	173	10.652		(1.100)	462098	10.0834	10.1
	60 Styrene	104	10.701		(1.105)	444333	9.95082	9.95
	61 o-Xylene	91			(1.112)	725211	10.2802	10.3
	62 1,1,2,2-Tetrachloroethane	83	11.088		(1.145)	411409	10.0717	10.1
	63 Isopropylbenzene	105	11.455		(1.182)	915849	10.2518	10.2
	64 N-Propylbenzene	91	12.114		(1.250)	1099960	10.2939	10.3(M)
	65 4-Ethyltoluene	105		12.321		847066	10.2065	10.2
	66 1,3,5-Trimethylbenzene	105		12.426		748823	10.2435	10.2
	67 1,2,4-Trimethylbenzene	105	13.016		(1.344)	705769	10.0820	10.1
	68 1,3-Dichlorobenzene	146	13.367		(1.380)	427455	9.93065	9.93
Ś	69 Sec- Butylbenzene	105	13.393		(1.382)	995649	10.1996	10.2
Ş	70 1,4-dichlorobenzene-d4 (S) 71 Benzyl Chloride	150		13.459	(1.388)	93827	10.4765	10.5
	-	91	13.475			604799	9.99918	10.0
	72 1,4-Dichlorobenzene	146	13.498		(1.393)	417655	9.94269	9.94
	73 1,2-Dichlorobenzene	146	14.036		(1.449)	362318	10.1598	10.2
	74 N-Butylbenzene	91	14.321	14.325		780856	10.4255	10.4
	75 1,2,4-Trichlorobenzene	180		16.683		244424	10.7522	10.8
	76 Naphthalene	128	16.856		(1.740)	387324	11.0342	11.0
	77 Hexachlorobutadiene	225	11.233	17.236	(1.779)	283169	10.2018	10.2

10236207 364 of 1066

Data File: \\192.168.10.12\chem\10airD.i\072513.b\20602L.d Report Date: 26-Jul-2013 09:26

QC Flag Legend

M - Compound response manually integrated.

Report Date: 26-Jul-2013 09:26

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20602L.d

Lab Smp Id: 1487047 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LIMIT 'ANDARD LOWER UPPER			%DTFF
=======================================	========	========	=======	SAMPLE =======	======
38 1,4-Difluorobenze 55 Chlorobenzene - d	579775 221404	347865 132842	811685 309966	609998 221877	5.21 0.21
	221404			221877	

		RT 1	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d		9.36	10.02	9.69	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.

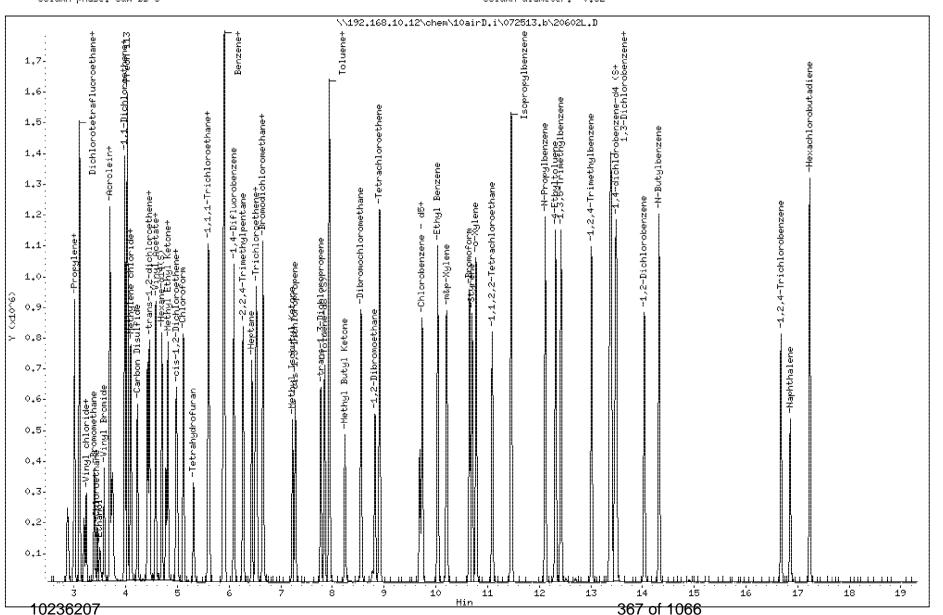
Date : 25-JUL-2013 13:08

Client ID: Sample Info:

Instrument: 10airD.i

Operator: DR1

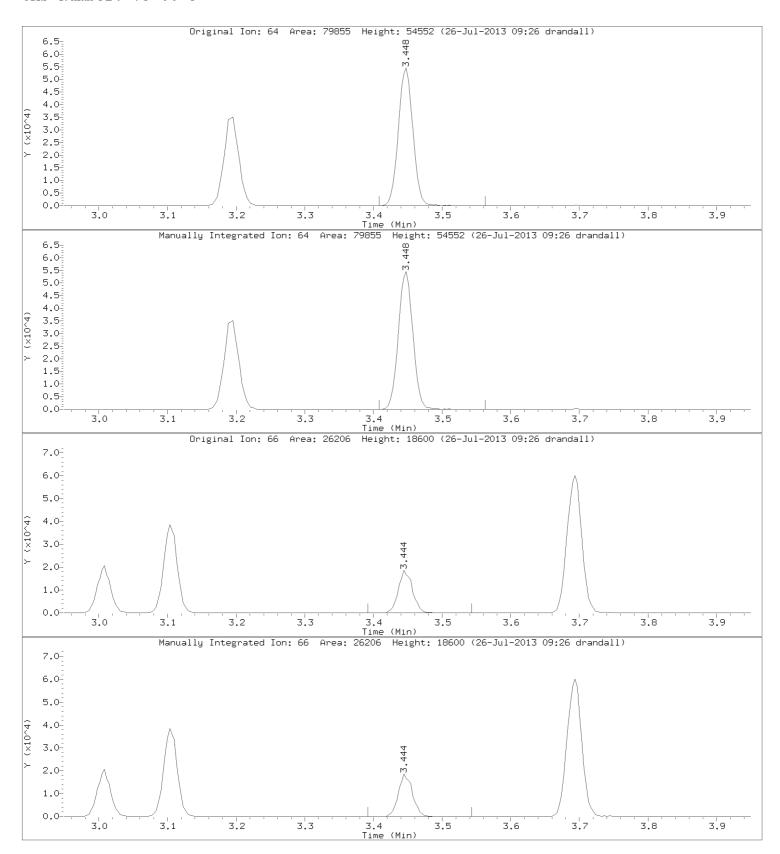
Column phase: J&W DB-5 Column diameter: 0,32



Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i
Lab Sample ID: 1487047

Compound: Chloroethane CAS Number: 75-00-3



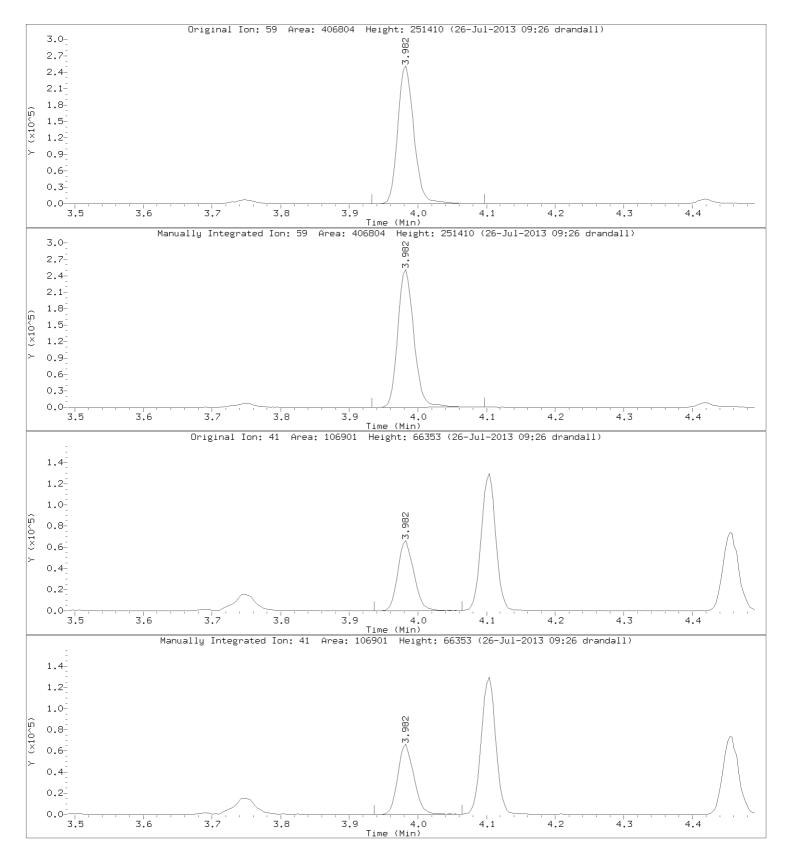
10236207 368 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



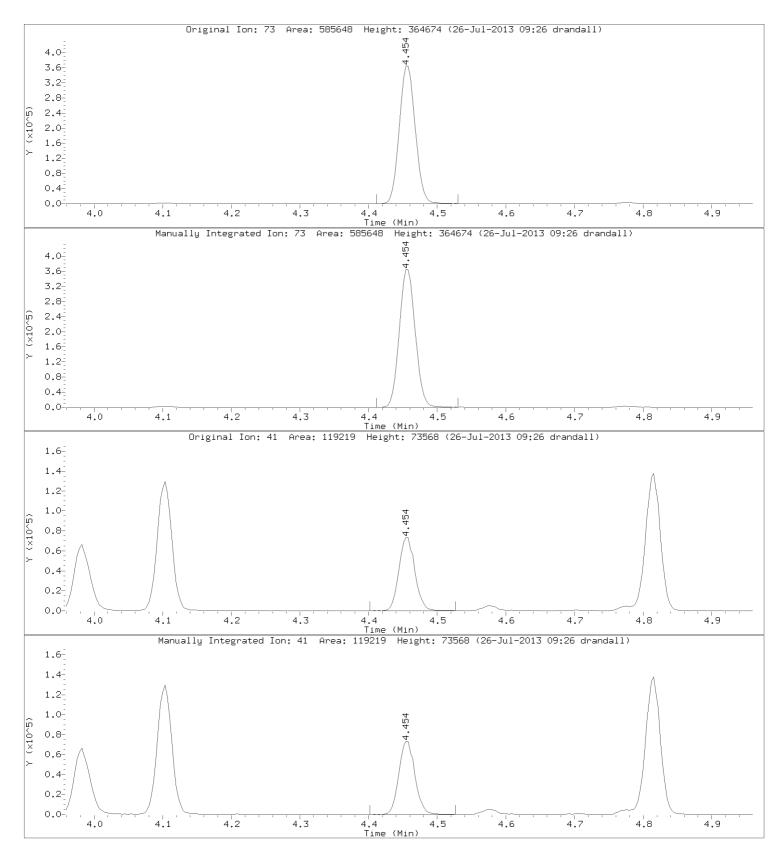
10236207 369 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

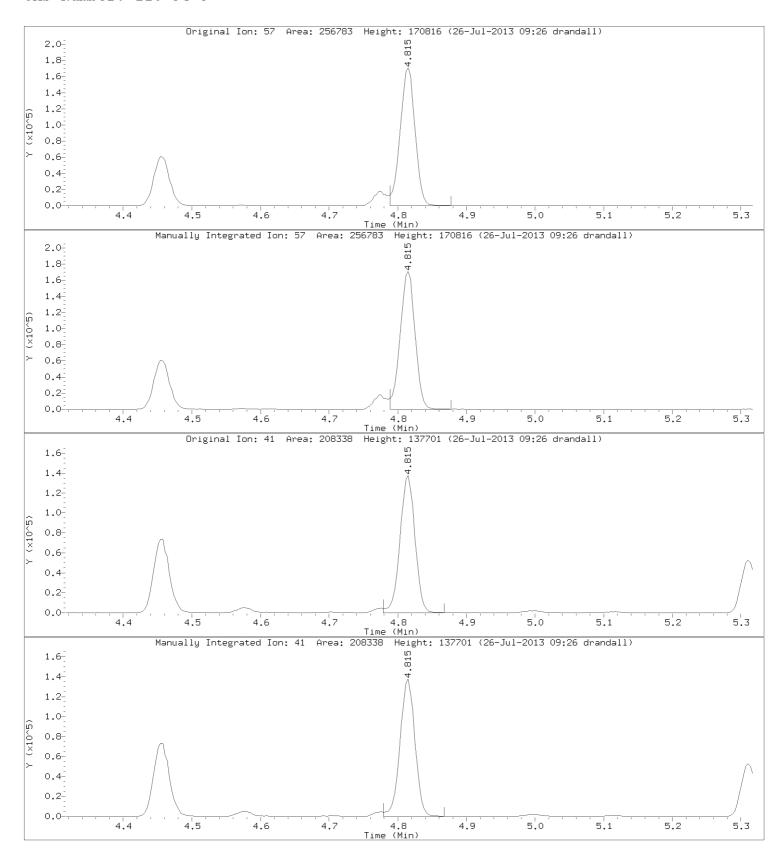


10236207 370 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

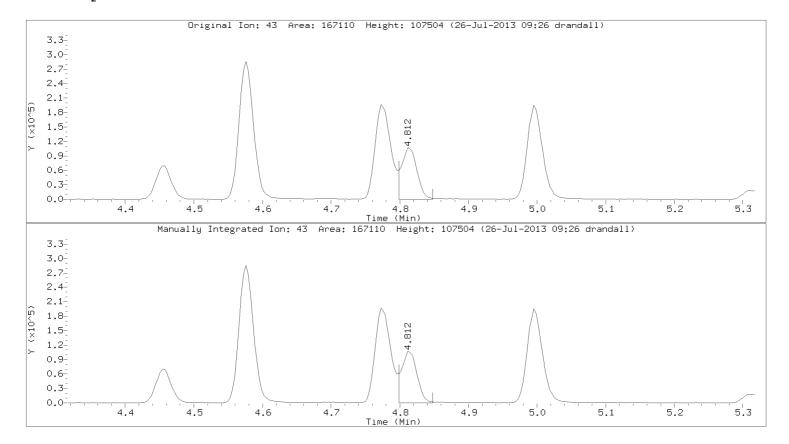
Compound: n-Hexane CAS Number: 110-54-3



10236207 371 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

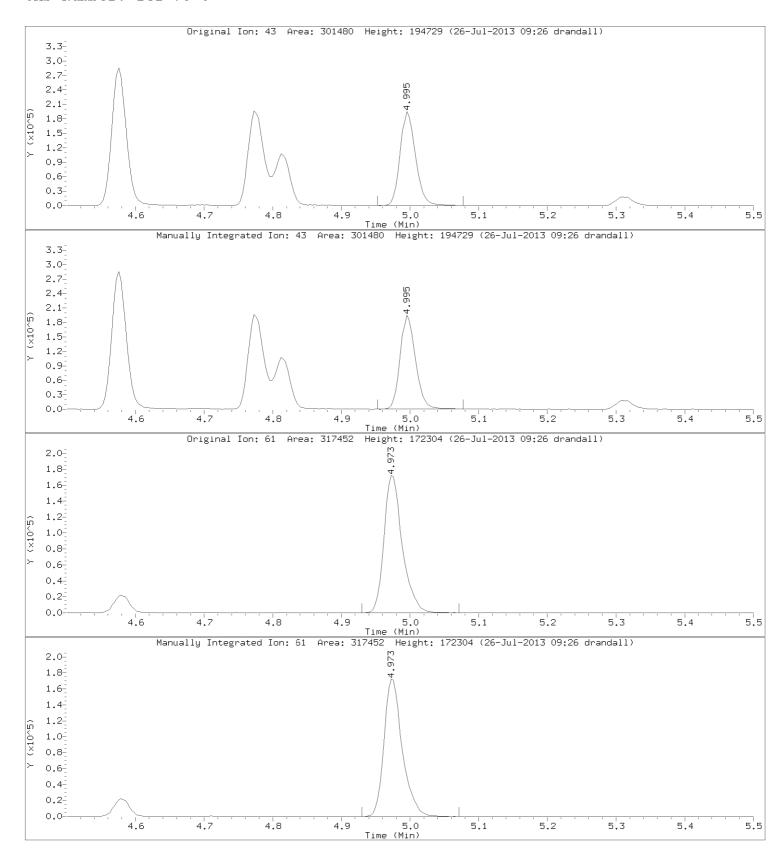


10236207 372 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i
Lab Sample ID: 1487047

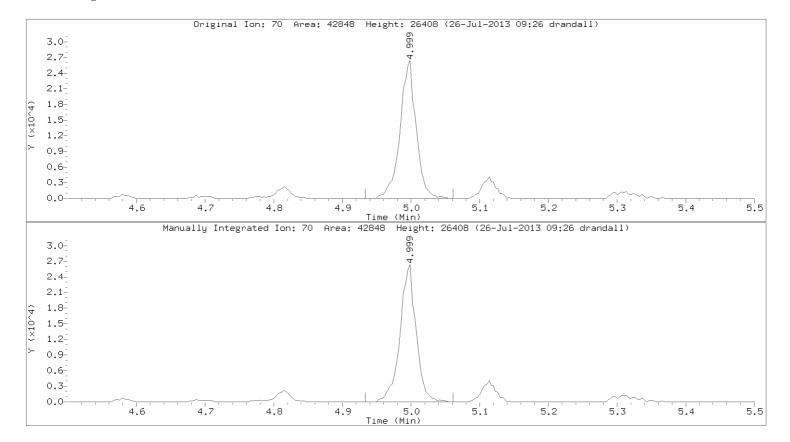
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 373 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

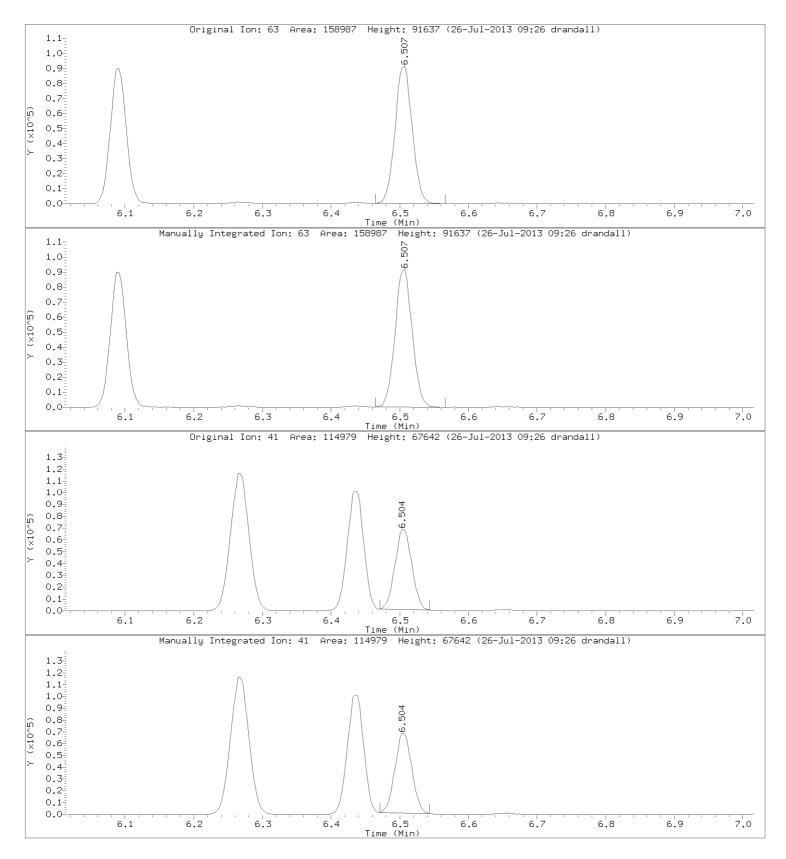


10236207 374 of 1066

Injection Date: 25-JUL-2013 13:08

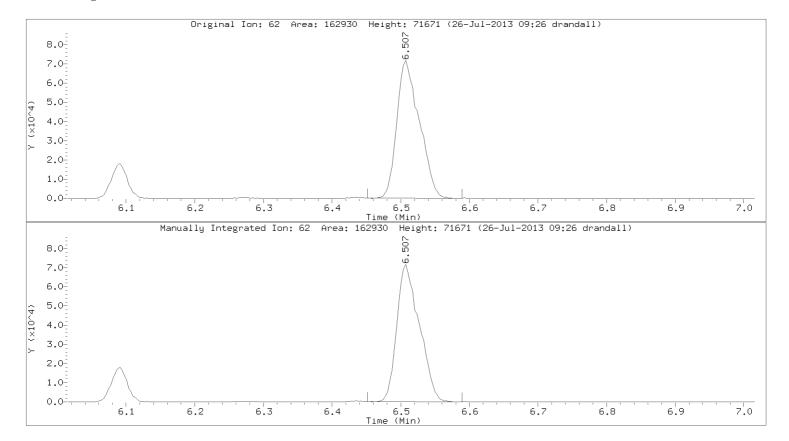
Instrument: 10airD.i Lab Sample ID: 1487047

Compound: 1,2-Dichloropropane CAS Number: 78-87-5



Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

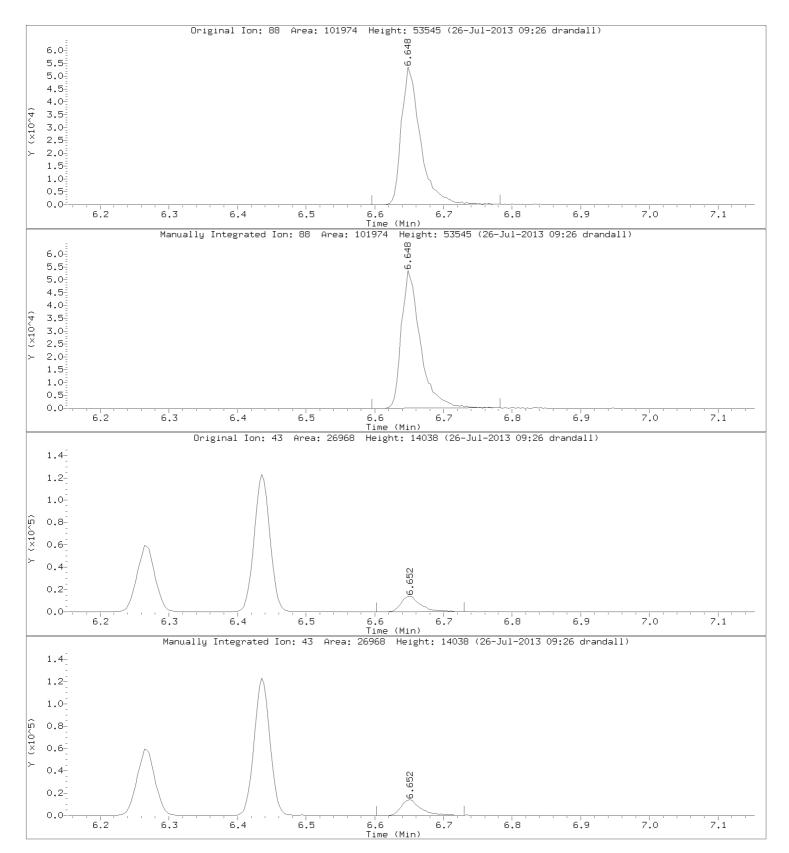


10236207 376 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

Compound: 1,4-Dioxane CAS Number: 123-91-1



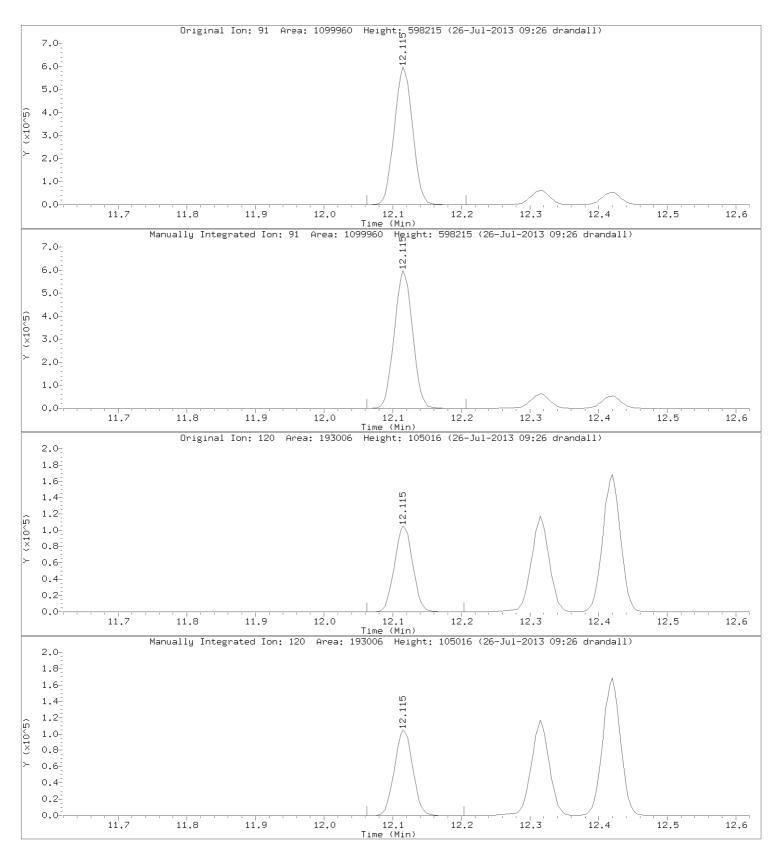
10236207 377 of 1066

Injection Date: 25-JUL-2013 13:08

Instrument: 10airD.i Lab Sample ID: 1487047

Compound: N-Propylbenzene

CAS Number: 103-65-1



10236207 378 of 1066

Report Date: 29-Jul-2013 09:25

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072613.b\20702L.d
Lab Smp Id: 1488123
Inj Date: 26-JUL-2013 11:27
Operator: DR1
Inst ID: 10airD.i

Smp Info :

Misc Info: 17876

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072613.b\T015 205-13.m

Meth Date : 26-Jul-2013 11:48 drandall Quant Type: ISTD

Cal Date : 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 2 QC Sample: LCS

Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

# Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

					RESPONSE	CONCENTRATIONS	
Compounds	QUANT SIG MASS ====	RT	EXP RT	REL RT		( ppbv)	FINAL ( ppbv)
1 Propylene	41	2.982		(0.490)	79046	9.68302	9.68
2 Dichlorodifluoromethane	85	3.008	3.008	(0.494)	711305	8.98669	8.99
3 Dichlorotetrafluoroethane	85	3.103	3.107	(0.510)	568543	8.93917	8.94
4 Chloromethane	50	3.106	3.107	(0.510)	162697	9.00304	9.00
5 Vinyl chloride	62	3.191	3.195	(0.524)	162130	8.99736	9.00
6 1,3-Butadiene	54	3.234	3.238	(0.531)	101476	9.54067	9.54
7 Bromomethane	94	3.388	3.392	(0.556)	196168	8.64422	8.64
8 Chloroethane	64	3.444	3.448	(0.566)	83730	9.08429	9.08(M)
9 Ethanol	31	3.500	3.494	(0.575)	92692	9.82988	9.83
10 Vinyl Bromide	106	3.582	3.585	(0.588)	203995	9.09094	9.09
11 Acrolein	56	3.683	3.684	(0.605)	56514	9.23601	9.24
12 Trichlorofluoromethane	101	3.693	3.694	(0.606)	754524	8.76341	8.76
13 Acetone	43	3.729	3.726	(0.612)	356898	8.26946	8.27
14 Isopropyl Alcohol	45	3.749	3.756	(0.616)	267026	9.43328	9.43
15 1,1-Dichloroethene	61	3.978	3.979	(0.653)	348349	9.09750	9.10
16 Acrylonitrile	53	3.985	3.985	(0.654)	116574	9.14851	9.15
17 Tert Butyl Alcohol	59	3.982	3.989	(0.654)	422115	9.32281	9.32(M)
18 Freon 113	101	4.031	4.030	(0.662)	508538	8.85056	8.85
19 Methylene chloride	49	4.090	4.094	(0.672)	212477	8.68943	8.69
20 Allyl Chloride	76	4.103	4.107	(0.674)	86955	9.47769	9.48
21 Carbon Disulfide	76	4.224	4.224	(0.694)	608475	8.55119	8.55
22 trans-1,2-dichloroethene	96	4.418	4.422	(0.725)	228789	9.29995	9.30
23 Methyl Tert Butyl Ether	73	4.457	4.458	(0.732)	594181	9.78993	9.79(M)

# Data File: \\192.168.10.12\chem\10airD.i\072613.b\20702L.d Report Date: 29-Jul-2013 09:25

Co	mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTR ON-COLUMN ( ppbv)	ATIONS FINAL ( ppbv)
	24 Vinyl Acetate	==== 43	4.575		(0.751)	419144	9.05537	9.06(M)
	25 1,1-Dichloroethane	63	4.579		(0.751)	399643	9.35503	9.36
S	26 Hexane-d14(S)	66	4.697		(0.771)	272991	8.68375	8.68
4	27 Methyl Ethyl Ketone	72	4.775		(0.784)	100371	10.0451	10.0
	28 n-Hexane	57	4.815		(0.791)	262673	9.19137	9.19(M)
	29 cis-1,2-Dichloroethene	96	4.972		(0.816)	218030	9.68457	9.68
	30 Ethyl Acetate	43	4.995		(0.820)	313231	9.59157	9.59(M)
	31 Chloroform	83	5.116	5.120	(0.840)	530708	9.97628	9.98
	32 Tetrahydrofuran	42	5.310	5.310	(0.872)	128569	10.0065	10.0
	33 1,1,1-Trichloroethane	97	5.595	5.599	(0.919)	582693	10.2167	10.2
	34 1,2-Dichloroethane	62	5.612	5.619	(0.921)	395894	10.0216	10.0
	35 Benzene	78	5.884	5.887	(0.966)	554905	9.50220	9.50
	36 Carbon tetrachloride	117	5.903	5.907	(0.969)	617383	10.0798	10.1
	37 Cyclohexane	56	5.907	5.910	(0.970)	207885	9.42726	9.43
*	38 1,4-Difluorobenzene	114	6.090	6.094	(1.000)	651013	10.0000	
	39 2,2,4-Trimethylpentane	57	6.267	6.271	(1.029)	645568	9.54097	9.54
	40 Heptane	43	6.435	6.442	(1.057)	209930	9.50538	9.50
	41 1,2-Dichloropropane	63	6.503	6.514	(1.068)	170187	9.59806	9.60(M)
	42 Trichloroethene	130	6.530		(1.072)	228163	9.54760	9.55
	43 1,4-Dioxane	88	6.651		(1.092)	103706	9.93338	9.93(M)
	44 Bromodichloromethane	83	6.651		(1.092)	586320	9.75224	9.75
	45 Methyl Isobutyl Ketone	43	7.222		(1.186)	306158	9.58659	9.59
	46 cis-1,3-Dichloropropene	75	7.281		(1.195)	322357	9.74254	9.74
	47 trans-1,3-Dichloropropene	75	7.769		(1.276)	366673	9.67640	9.68
\$	48 Toluene-d8 (S)	98	7.845		(1.288)	447804	9.84910	9.85
	49 Toluene	91	7.937		(1.303)	713422	9.35999	9.36
	50 1,1,2-Trichloroethane	97	7.943		(1.304)	245874	9.29503	9.30
	51 Methyl Butyl Ketone	43	8.242		(0.851)	302691	10.6535	10.6
	52 Dibromochloromethane	129	8.553		(0.883)	461303	10.7587	10.8
	53 1,2-Dibromoethane 54 Tetrachloroethene	107	8.822		(0.911)	386712	10.5584	10.6
4	55 Chlorobenzene - d5	166 117	8.914 9.688		(0.920)	359355	10.4229	10.4
	56 Chlorobenzene	112	9.737		(1.000) (1.005)	224347 477058	10.0000 10.5817	10.6
	57 Ethyl Benzene	91	10.035		(1.036)	894406	10.4036	10.4
	58 m&p-Xylene	91	10.206		(1.053)	727329	10.4030	10.4
	59 Bromoform	173	10.652		(1.100)	484186	10.4398	10.4
	60 Styrene	104	10.701		(1.105)	473600	10.4639	10.5
	61 o-Xylene	91	10.776		(1.112)	754445	10.5711	10.6
	62 1,1,2,2-Tetrachloroethane	83	11.091		(1.145)	432844	10.4707	10.5
	63 Isopropylbenzene	105	11.455		(1.182)	963567	10.6568	10.6
	64 N-Propylbenzene	91	12.114		(1.250)	1146838	10.6050	10.6(M)
	65 4-Ethyltoluene	105		12.321		899590	10.7030	10.7
	66 1,3,5-Trimethylbenzene	105		12.426		783331	10.5870	10.6
	67 1,2,4-Trimethylbenzene	105		13.020		754766	10.6398	10.6
	68 1,3-Dichlorobenzene	146	13.370	13.374	(1.380)	459211	10.5247	10.5
	69 Sec- Butylbenzene	105	13.397	13.404	(1.383)	1041140	10.5370	10.5
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.452	13.459	(1.389)	96352	10.6400	10.6
	71 Benzyl Chloride	91	13.475	13.486	(1.391)	623981	10.1949	10.2
	72 1,4-Dichlorobenzene	146	13.498	13.509	(1.393)	440056	10.3434	10.3
	73 1,2-Dichlorobenzene	146	14.036	14.043	(1.449)	385119	10.6601	10.7
	74 N-Butylbenzene	91	14.321	14.325	(1.478)	811796	10.7110	10.7
	75 1,2,4-Trichlorobenzene	180	16.679	16.683	(1.722)	262919	11.3722	11.4
	76 Naphthalene	128	16.856	16.860	(1.740)	420239	11.7561	11.8
	77 Hexachlorobutadiene	225	17.233	17.236	(1.779)	298009	10.5996	10.6

10236207 380 of 1066

Data File: \\192.168.10.12\chem\10airD.i\072613.b\20702L.d Report Date: 29-Jul-2013 09:25

QC Flag Legend

M - Compound response manually integrated.

Report Date: 29-Jul-2013 09:25

Pace Analytical Services, Inc.

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 26-JUL-2013 Calibration Time: 11:27 Instrument ID: 10airD.i

Lab File ID: 20702L.d

Lab Smp Id: 1488123 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072613.b\T015\_205-13.m

Misc Info: 17876

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
=======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	579775		811685	651013	12.29
55 Chlorobenzene - d	221404	132842	309966	224347	1.33

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d		9.36	10.02	9.69	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.

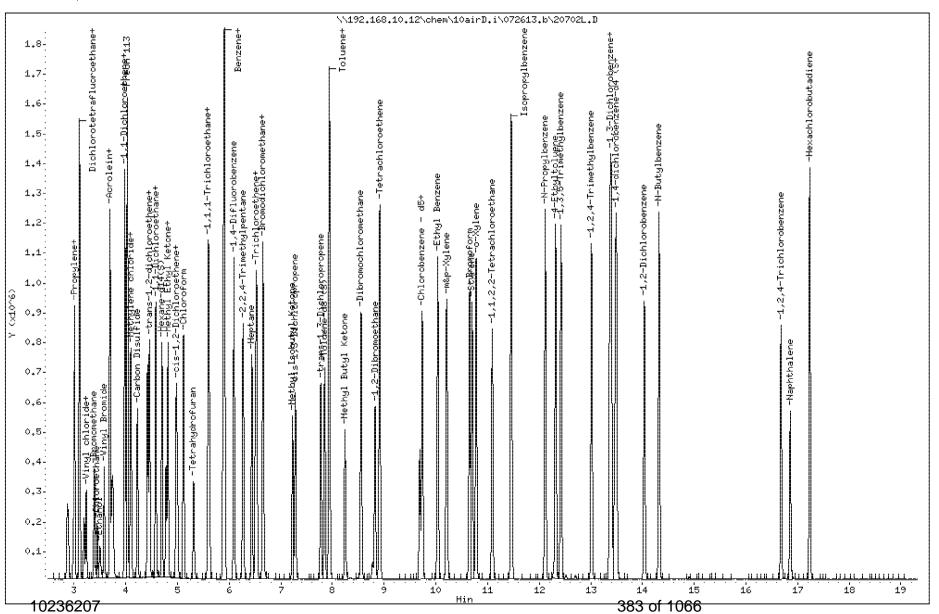
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Date : 26-JUL-2013 11:27

Client ID: Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

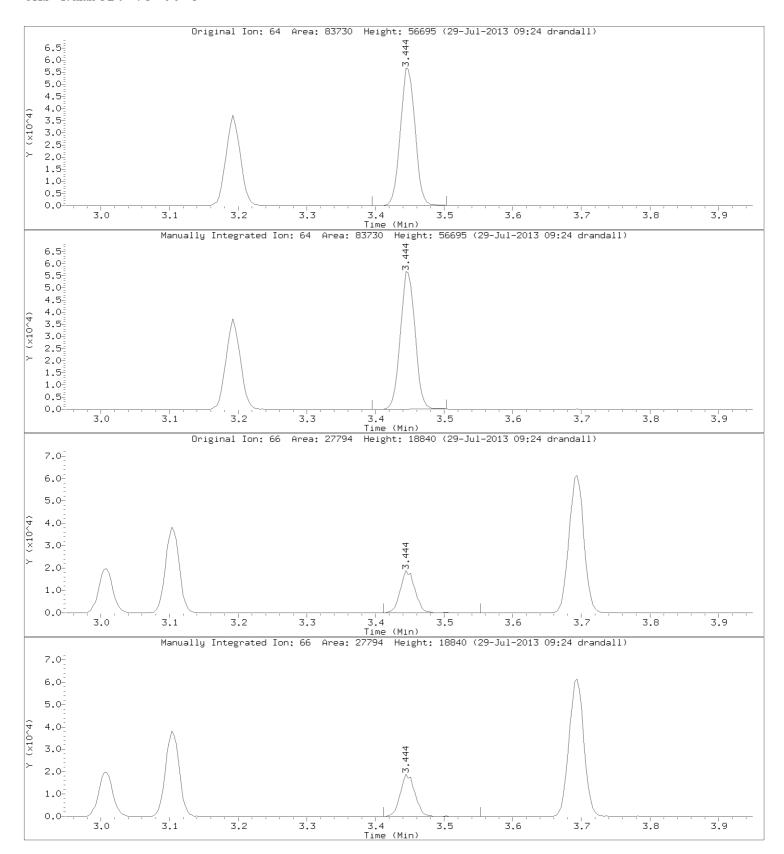


Instrument: 10airD.i

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

Compound: Chloroethane CAS Number: 75-00-3



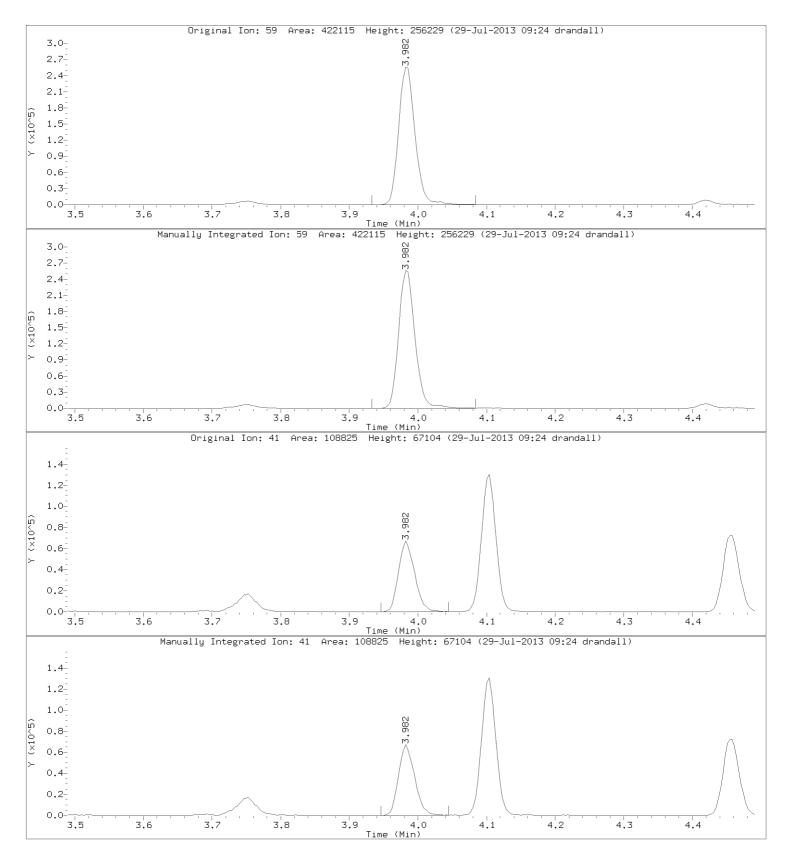
10236207 384 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



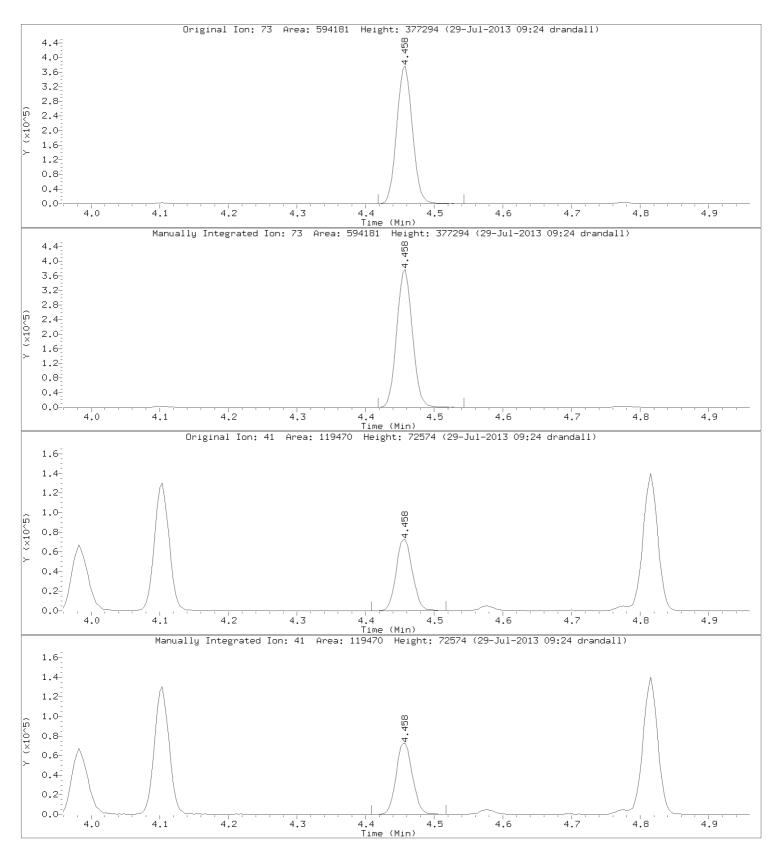
10236207 385 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4

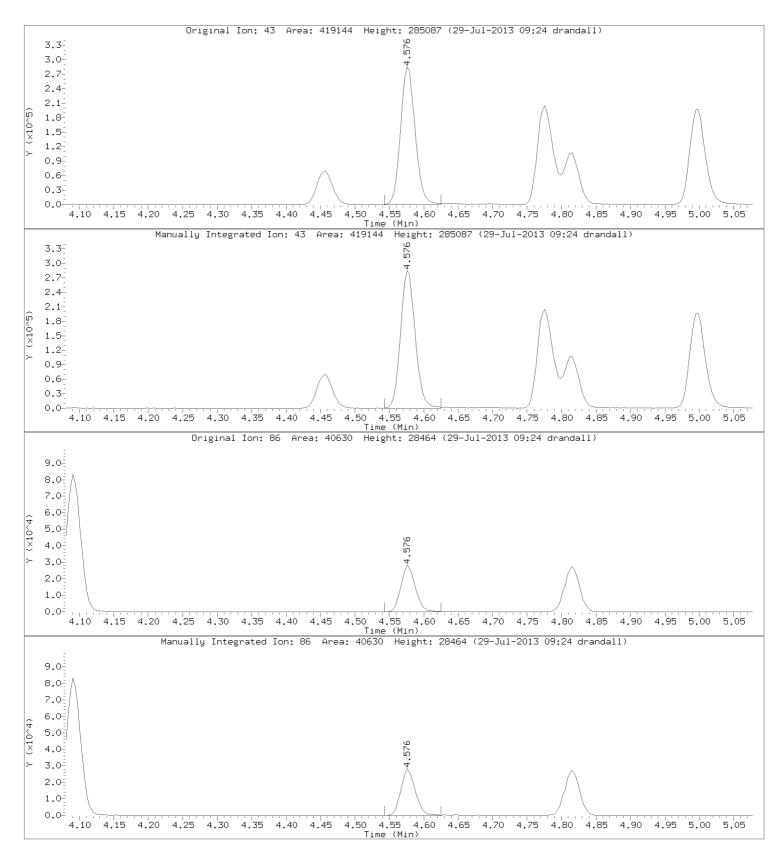


10236207 386 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i
Lab Sample ID: 1488123

Compound: Vinyl Acetate CAS Number: 108-05-4

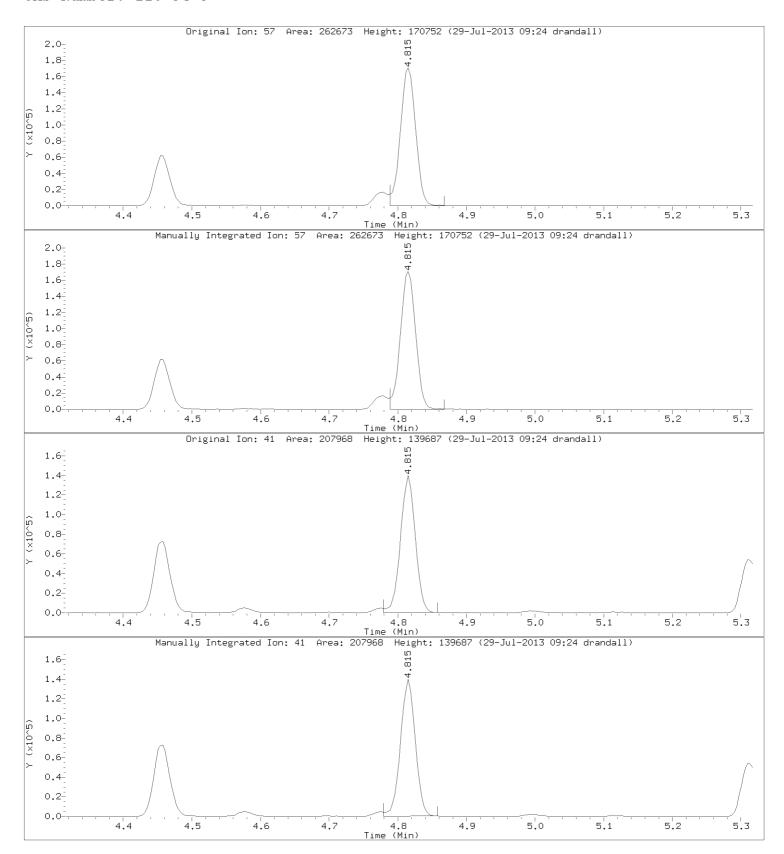


10236207 387 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

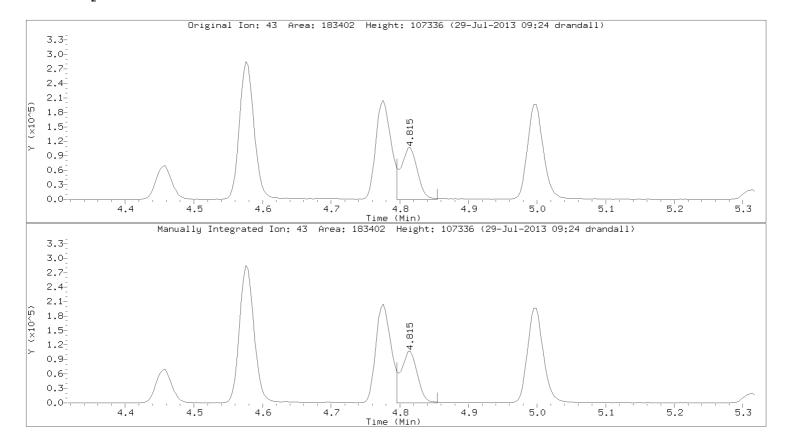
Compound: n-Hexane CAS Number: 110-54-3



10236207 388 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

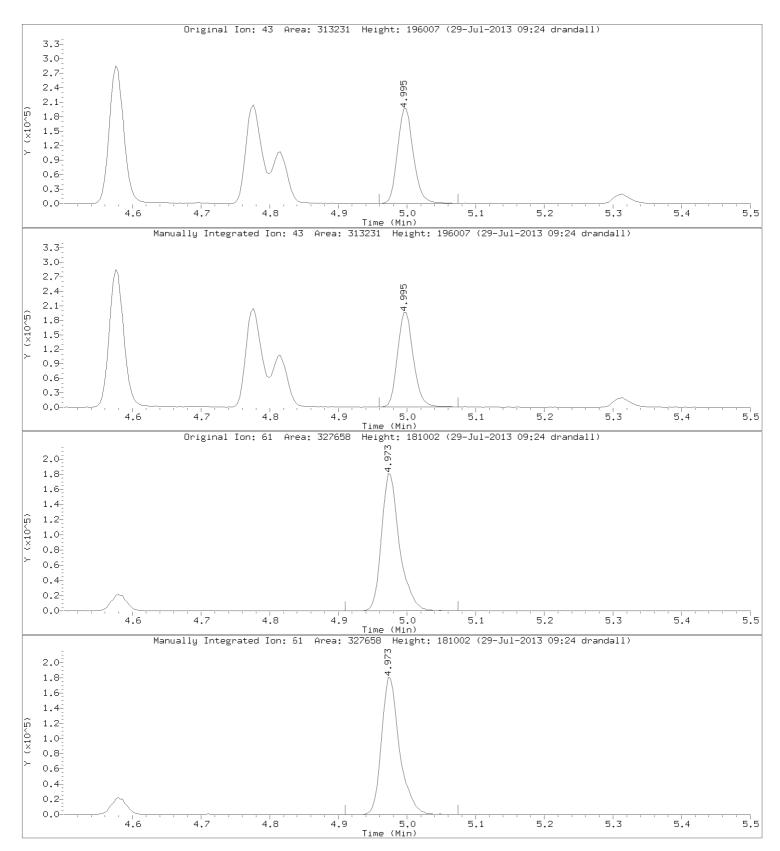


10236207 389 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

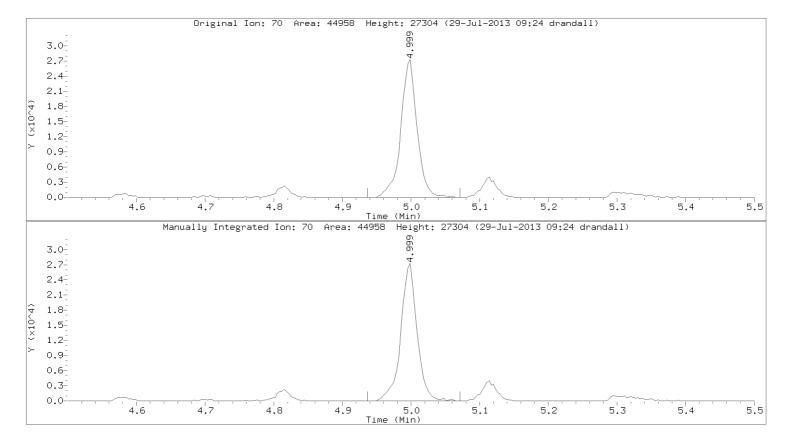
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 390 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

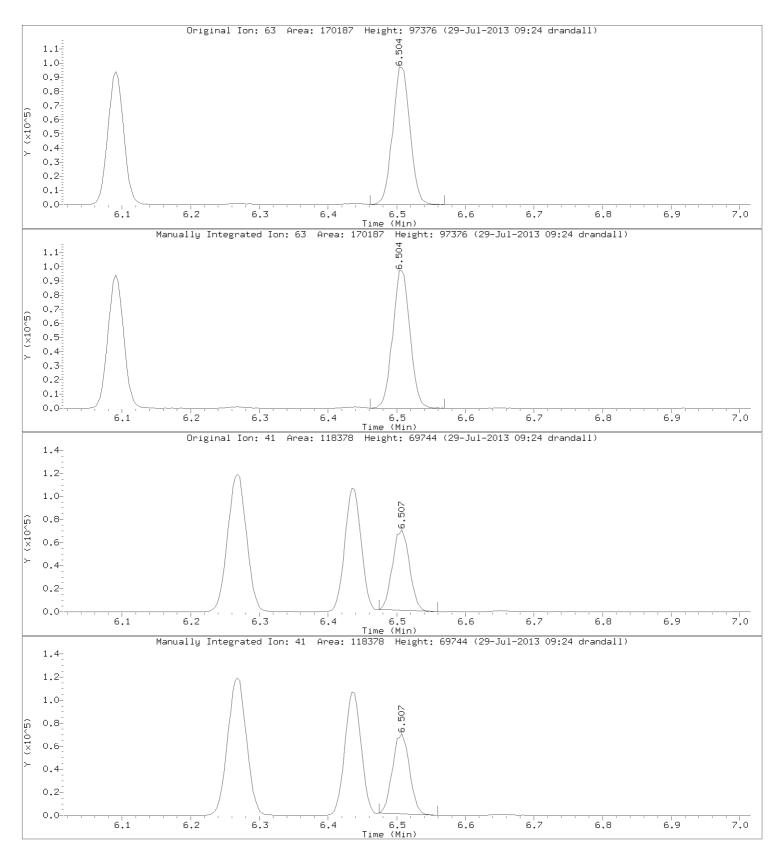


10236207 391 of 1066

Injection Date: 26-JUL-2013 11:27

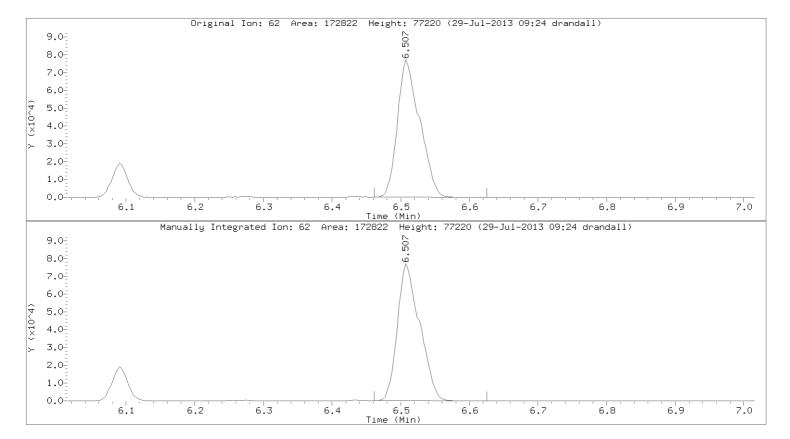
Instrument: 10airD.i Lab Sample ID: 1488123

Compound: 1,2-Dichloropropane CAS Number: 78-87-5



Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

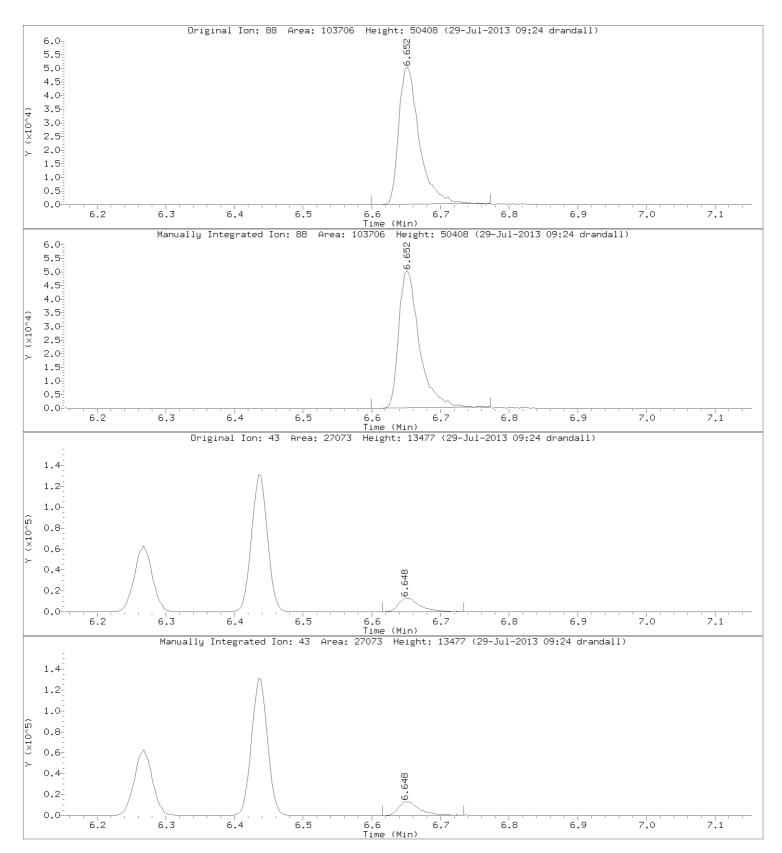


10236207 393 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i Lab Sample ID: 1488123

Compound: 1,4-Dioxane CAS Number: 123-91-1



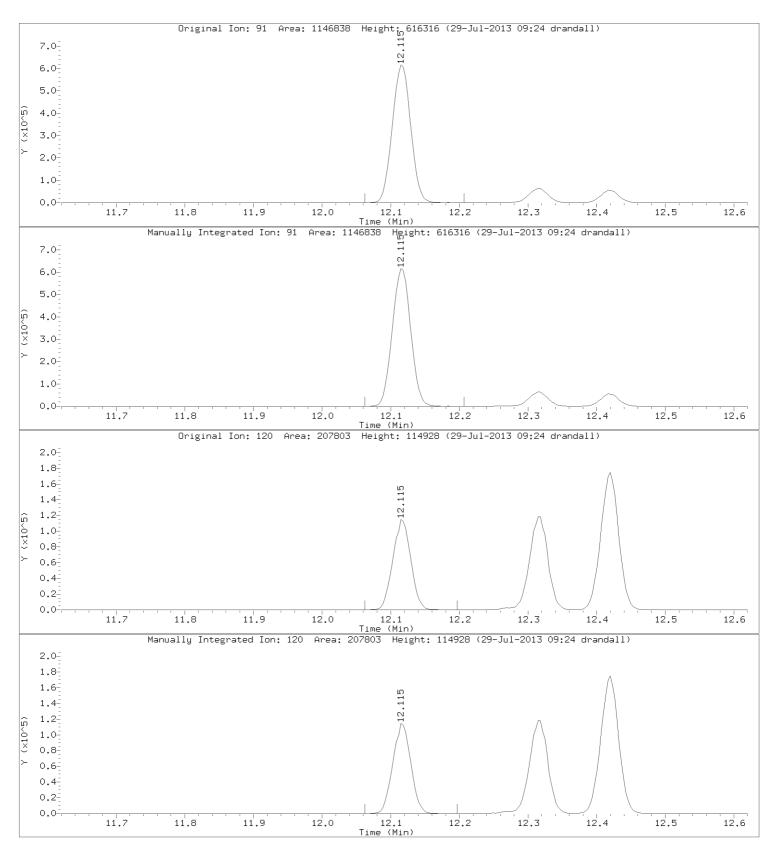
10236207 394 of 1066

Injection Date: 26-JUL-2013 11:27

Instrument: 10airD.i
Lab Sample ID: 1488123

Compound: N-Propylbenzene

CAS Number: 103-65-1



10236207 395 of 1066

Report Date: 29-Jul-2013 07:41

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072613.b\20707.d Lab Smp Id: 10236207001 Inj Date: 26-JUL-2013 14:08 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17876

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072613.b\T015 205-13.m

Meth Date : 26-Jul-2013 11:48 drandall Quant Type: ISTD

Cal Date : 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 7

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: chlorinated.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

			CONCENTRA	ATIONS
Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	ON-COLUMN (ppbv)	FINAL
Compounds	====	REL KI KESFONSE	( ppbv/	( ppbv)
5 Vinyl chloride	62	Compound Not Detected.		
8 Chloroethane	64	Compound Not Detected.		
14 Isopropyl Alcohol	45	Compound Not Detected.		
15 1,1-Dichloroethene	61	Compound Not Detected.		
18 Freon 113	101	Compound Not Detected.		
22 trans-1,2-dichloroethene	96	Compound Not Detected.		
25 1,1-Dichloroethane	63	Compound Not Detected.		
\$ 26 Hexane-d14(S)	66	4.703 4.700 (0.772) 263053	8.72892	8.73
29 cis-1,2-Dichloroethene	96	Compound Not Detected.		
31 Chloroform	83	Compound Not Detected.		
33 1,1,1-Trichloroethane	97	Compound Not Detected.		
34 1,2-Dichloroethane	62	Compound Not Detected.		
36 Carbon tetrachloride	117	Compound Not Detected.		
* 38 1,4-Difluorobenzene	114	6.090 6.094 (1.000) 624067	10.0000	
42 Trichloroethene	130	Compound Not Detected.		
47 trans-1,3-Dichloropropene	75	Compound Not Detected.		
\$ 48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 442432	10.1511	10.2
50 1,1,2-Trichloroethane	97	Compound Not Detected.		
54 Tetrachloroethene	166	8.904 8.918 (0.919) 6223	0.54605	0.786(M)
* 55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 233792	10.0000	
62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.		
\$ 70 1.4-dichlorobenzene-d4 (S)	150	13.449 13.459 (1.389) 93756	9.93503	9.94

Data File:  $\192.168.10.12\chem\10airD.i\072613.b\20707.d$  Report Date: 29-Jul-2013 07:41

QC Flag Legend

M - Compound response manually integrated.

Report Date: 29-Jul-2013 07:41

Pace Analytical Services, Inc.

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 26-JUL-2013 Calibration Time: 11:27 Instrument ID: 10airD.i

Lab File ID: 20707.d

Lab Smp Id: 10236207001 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072613.b\T015\_205-13.m

Misc Info: 17876

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	=======	=======	=====
38 1,4-Difluorobenze	579775	347865	811685	624067	7.64
55 Chlorobenzene - d	221404	132842	309966	233792	5.60

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

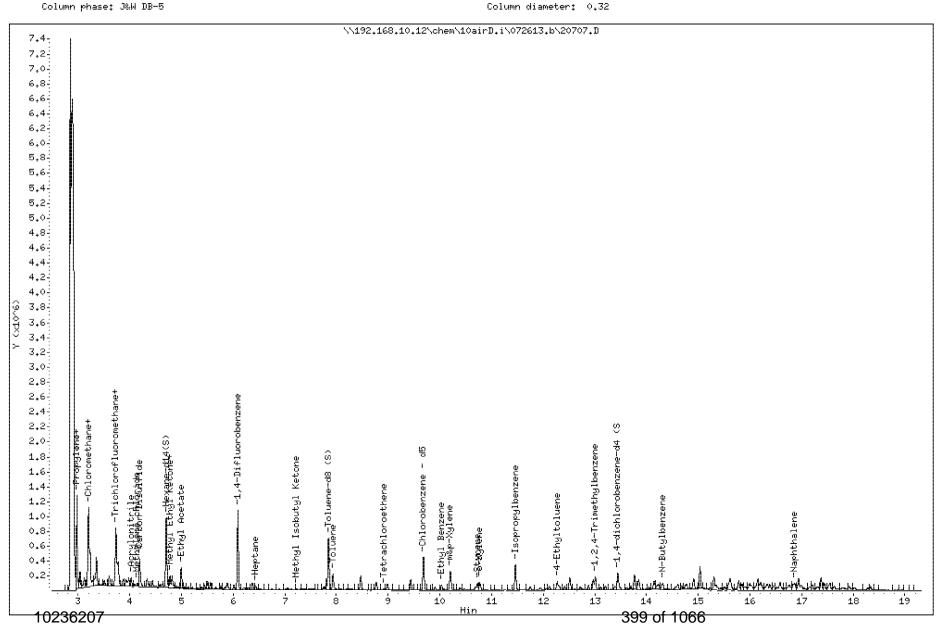
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 14:08

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column diameter: 0.32



Data File: \\192,168,10,12\chem\10airD,i\072613,b\20707,D

Date : 26-JUL-2013 14:08

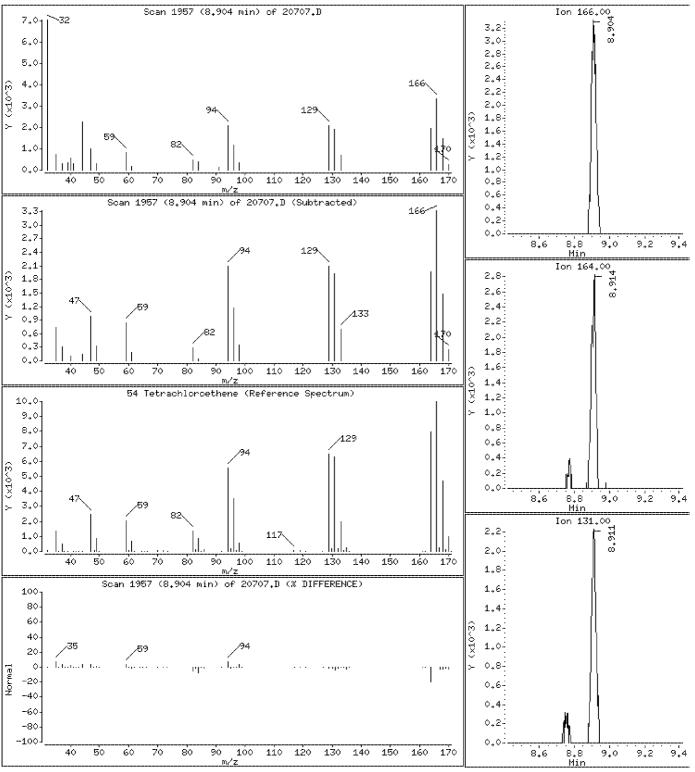
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 400 of 1066

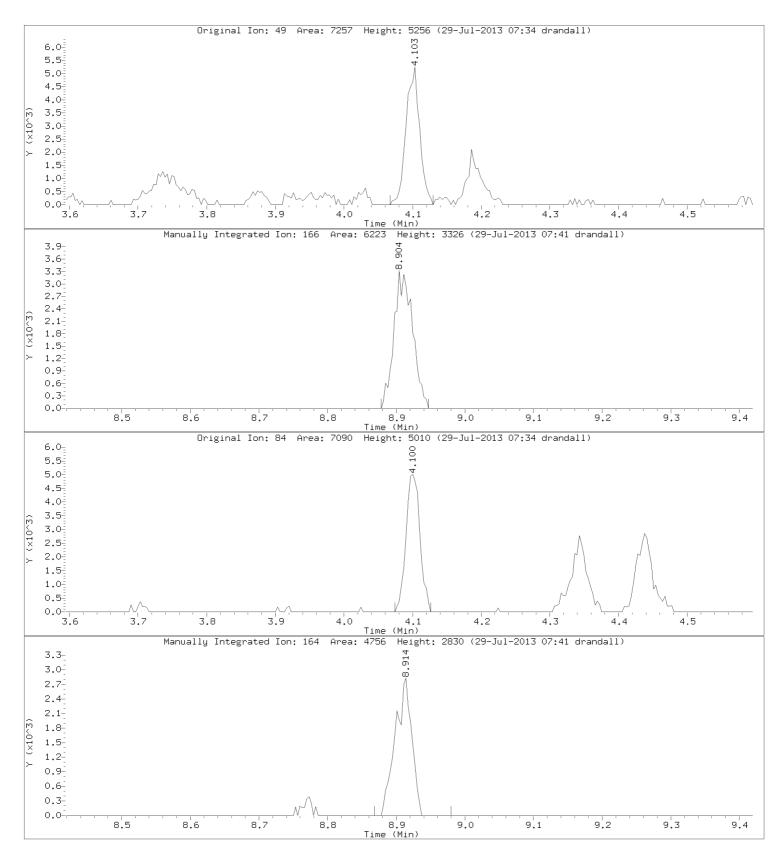
Injection Date: 26-JUL-2013 14:08

Instrument: 10airD.i

Lab Sample ID: 10236207001

Compound: Tetrachloroethene

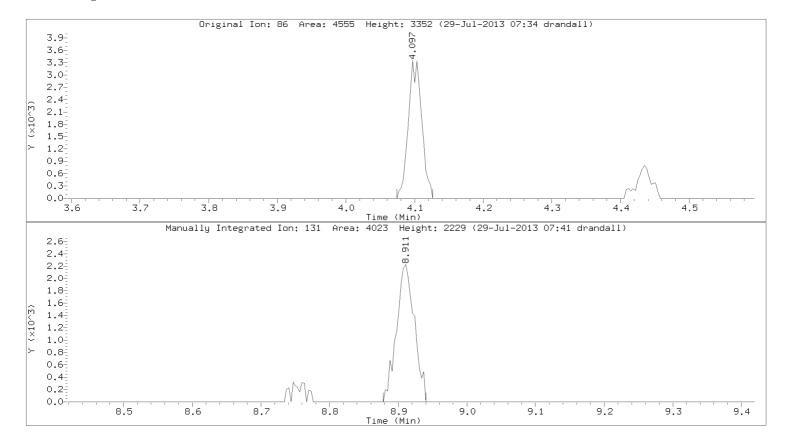
CAS Number: 127-18-4



10236207 401 of 1066

Injection Date: 26-JUL-2013 14:08

Instrument: 10airD.i Lab Sample ID: 10236207001



Report Date: 26-Jul-2013 10:32

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20634.d Lab Smp Id: 10236207002 Inj Date: 26-JUL-2013 05:34 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 34

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf	1.440 1.000	Dilution Factor ng unit correction factor
Cpnd Variable		Lócal Compound Variable

			CONCENTRATIONS
Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	ON-COLUMN FINAL (ppbv) (ppbv)
1 Propylene	==== 41	Compound Not Detected.	======
2 Dichlorodifluoromethane	85	2.995 3.008 (0.492) 23233	0.25480 0.367
3 Dichlorotetrafluoroethane	85	Compound Not Detected.	
4 Chloromethane	50	Compound Not Detected.	
5 Vinyl chloride	62	Compound Not Detected.	
6 1,3-Butadiene	54	Compound Not Detected.	
7 Bromomethane	94	Compound Not Detected.	
8 Chloroethane	64	Compound Not Detected.	
9 Ethanol	31	3.500 3.494 (0.575) 20312	1.86986 2.69(M)
10 Vinyl Bromide	106	Compound Not Detected.	
11 Acrolein	56	Compound Not Detected.	
12 Trichlorofluoromethane	101	3.693 3.694 (0.606) 14369	0.14487 0.209(M)
13 Acetone	43	3.729 3.726 (0.612) 477264	9.59939 13.8
14 Isopropyl Alcohol	45	Compound Not Detected.	
15 1,1-Dichloroethene	61	Compound Not Detected.	
16 Acrylonitrile	53	Compound Not Detected.	
17 Tert Butyl Alcohol	59	3.982 3.989 (0.654) 72838	1.39645 2.01
18 Freon 113	101	Compound Not Detected.	
19 Methylene chloride	49	4.100 4.094 (0.673) 5848	0.20761 0.299
20 Allyl Chloride	76	Compound Not Detected.	
21 Carbon Disulfide	76	4.221 4.224 (0.693) 10895	0.13291 0.191
22 trans-1,2-dichloroethene	96	Compound Not Detected.	
23 Methyl Tert Butyl Ether	73	Compound Not Detected.	

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20634.d$ Report Date: 26-Jul-2013 10:32

			CONCENTRATIONS
		QUANT SIG	ON-COLUMN FINAL
	ompounds 	MASS ====	RT EXP RT REL RT RESPONSE (ppbv) (ppbv)
	24 Vinyl Acetate	43	Compound Not Detected.
	25 1,1-Dichloroethane	63	Compound Not Detected.
\$	26 Hexane-d14(S)	66	4.703 4.700 (0.772) 307746 8.49773 8.50
	27 Methyl Ethyl Ketone	72	4.772 4.779 (0.784) 27277 2.36970 3.41(9
	28 n-Hexane	57	4.818 4.818 (0.791) 16144 0.49037 0.706(9
	29 cis-1,2-Dichloroethene	96	Compound Not Detected.
	30 Ethyl Acetate	43	4.995 4.999 (0.820) 147625 4.09805 5.90((
	31 Chloroform	83	Compound Not Detected.
	32 Tetrahydrofuran	42	Compound Not Detected.
	33 1,1,1-Trichloroethane	97	Compound Not Detected.
	34 1,2-Dichloroethane	62	Compound Not Detected.
	35 Benzene	78	5.880 5.887 (0.966) 14571 0.60118 0.866(N
	36 Carbon tetrachloride	117	Compound Not Detected.
	37 Cyclohexane	56	Compound Not Detected.
*	38 1,4-Difluorobenzene	114	6.090 6.094 (1.000) 749960 10.0000
	39 2,2,4-Trimethylpentane	57	Compound Not Detected.
	40 Heptane	43	6.431 6.442 (1.056) 4438 0.60893 0.877(
	41 1,2-Dichloropropane	63	Compound Not Detected.
	42 Trichloroethene	130	Compound Not Detected.
	43 1.4-Dioxane	88	Compound Not Detected.
	44 Bromodichloromethane	83	Compound Not Detected.
	45 Methyl Isobutyl Ketone	43	7.222 7.229 (1.186) 5803 0.54543 0.785(h
	46 cis-1,3-Dichloropropene	75	Compound Not Detected.
	47 trans-1,3-Dichloropropene	75	Compound Not Detected.
Ś	48 Toluene-d8 (S)	98	7.838 7.848 (1.287) 516672 9.86450 9.86
Ÿ	49 Toluene	91	7.933 7.940 (1.303) 64657 1.12841 1.62
	50 1,1,2-Trichloroethane	97	Compound Not Detected.
	51 Methyl Butyl Ketone	43	-
	52 Dibromochloromethane	129	Compound Not Detected.
			Compound Not Detected.
	53 1,2-Dibromoethane	107	Compound Not Detected.
.0.	54 Tetrachloroethene	166	8.907 8.918 (0.920) 4154 0.47371 0.682(N
*	55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 275439 10.0000
	56 Chlorobenzene	112	Compound Not Detected.
	57 Ethyl Benzene	91	10.032 10.039 (1.036) 28541 0.57778 0.832
	58 m&p-Xylene	91	10.199 10.213 (1.053) 100748 1.45706 2.10
	59 Bromoform	173	10.652 10.659 (1.100) 3061 0.30890 0.445(N
	60 Styrene	104	Compound Not Detected.
	61 o-Xylene	91	10.773 10.783 (1.112) 30768 0.54361 0.783
	62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.
	63 Isopropylbenzene	105	Compound Not Detected.
	64 N-Propylbenzene	91	12.114 12.121 (1.251) 13065 0.39875 0.574(
	65 4-Ethyltoluene	105	12.308 12.321 (1.271) 19899 0.52399 0.754(N
	66 1,3,5-Trimethylbenzene	105	12.419 12.426 (1.282) 15942 0.47596 0.685(N
	67 1,2,4-Trimethylbenzene	105	13.013 13.020 (1.344) 73776 1.22111 1.76
	68 1,3-Dichlorobenzene	146	Compound Not Detected.
	69 Sec- Butylbenzene	105	Compound Not Detected.
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.446 13.459 (1.388) 103999 9.35413 9.35
	71 Benzyl Chloride	91	Compound Not Detected.
	72 1,4-Dichlorobenzene	146	Compound Not Detected.
	73 1,2-Dichlorobenzene	146	Compound Not Detected.
	74 N-Butylbenzene	91	Compound Not Detected.
	75 1,2,4-Trichlorobenzene	180	Compound Not Detected.
	76 Naphthalene	128	16.859 16.860 (1.741) 36688 1.21780 1.75
	77 Hexachlorobutadiene	225	Compound Not Detected.

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Report Date: 26-Jul-2013 10:32

CONCENTRATIONS ON-COLUMN FINAL Compounds \_\_\_\_\_

# QC Flag Legend

Q - Qualifier signal failed the ratio test. M - Compound response manually integrated.

H - Operator selected an alternate compound hit.

Report Date: 26-Jul-2013 10:32

Pace Analytical Services, Inc.

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20634.d

Lab Smp Id: 10236207002 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	CHANDADD	AREA	LIMIT	CAMDITE	0.D.T.EE
COMPOUND	STANDARD =======	LOWER	UPPER =======	SAMPLE =======	%DIFF ======
38 1,4-Difluorobenze	579775	347865	811685	749960	29.35
55 Chlorobenzene - d	221404	132842	309966	275439	24.41

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

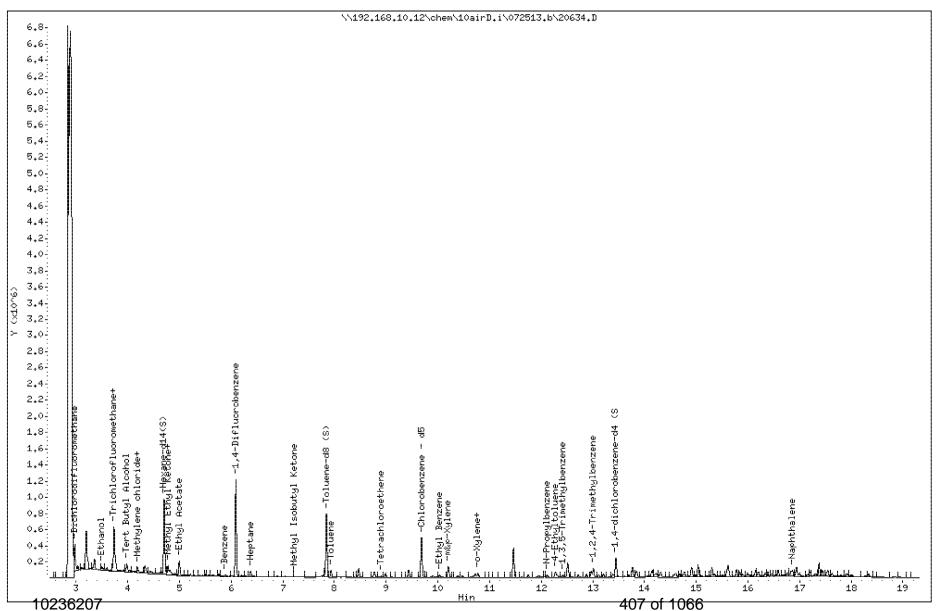
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 05:34

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Data File: \\192,168,10,12\chem\10airD.i\072513.b\20634.D

Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD.i

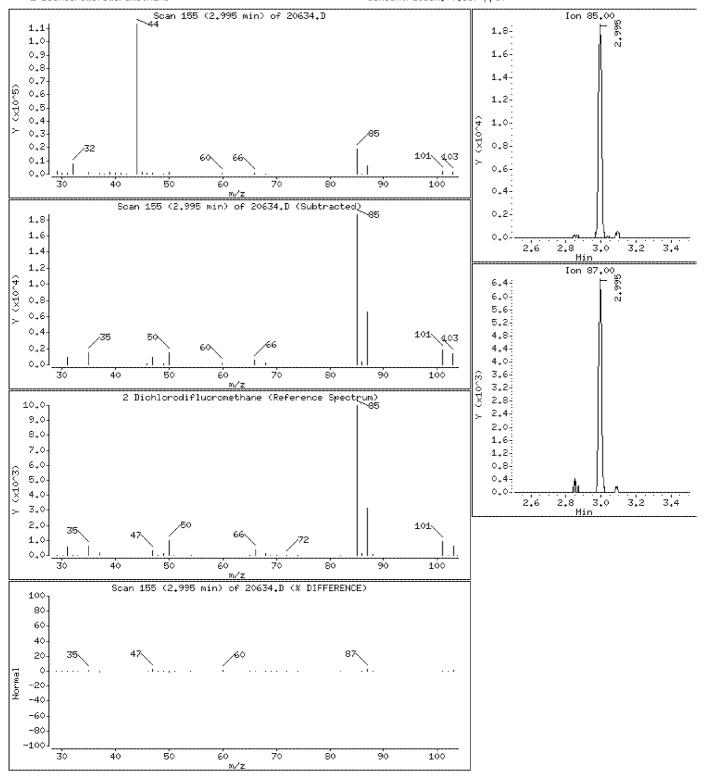
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.367 ppbv



10236207 408 of 1066

Date : 26-JUL-2013 05:34

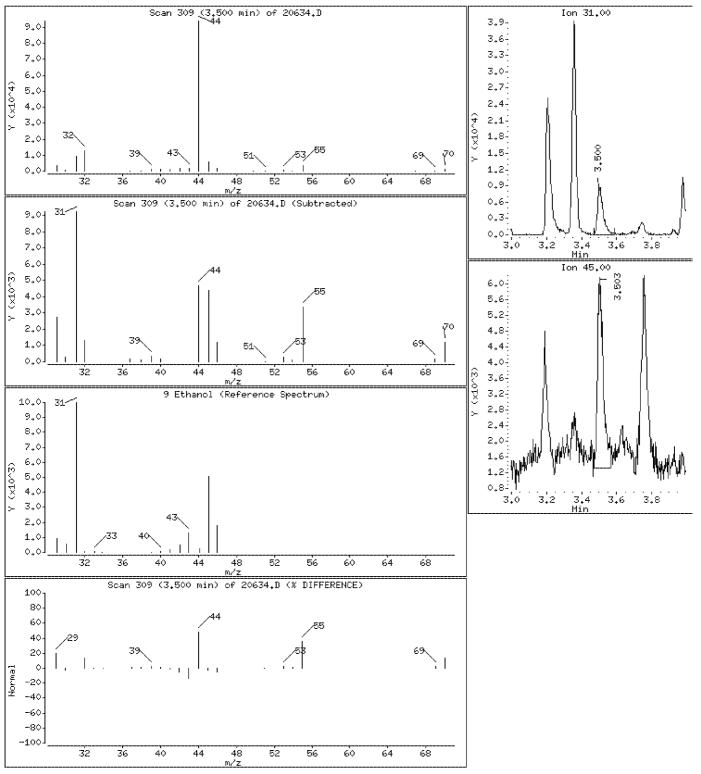
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 409 of 1066

Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD,i

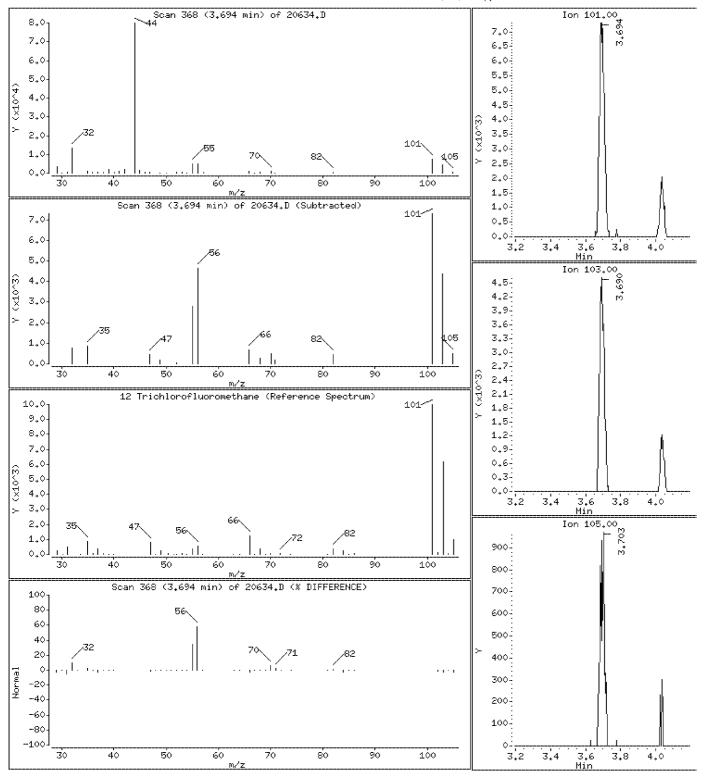
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.209 ppbv



10236207 410 of 1066

Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD,i

Sample Info:

40 20

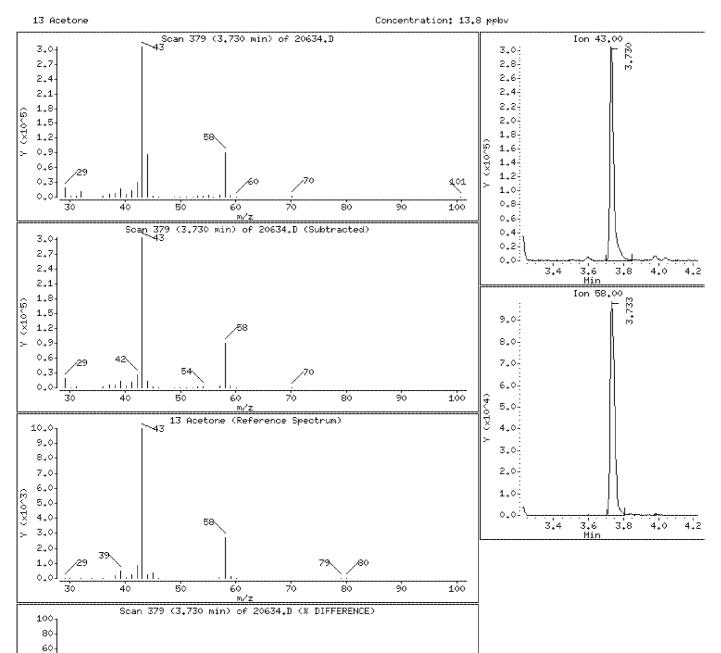
-20 -40 -60 -80

30

40

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 411 of 1066

90

100

70

80

60

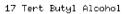
Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD.i

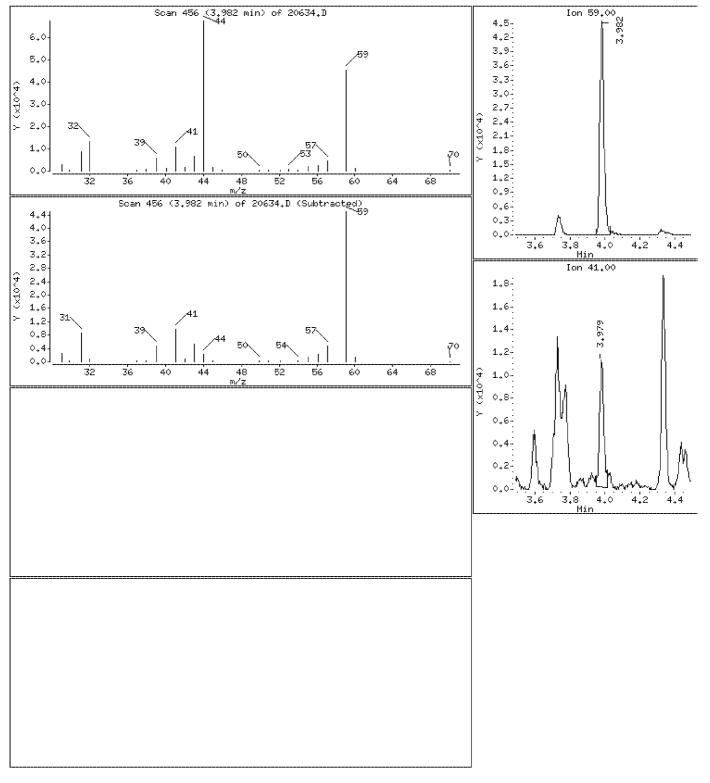
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 2.01 ppbv



10236207 412 of 1066

Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD.i

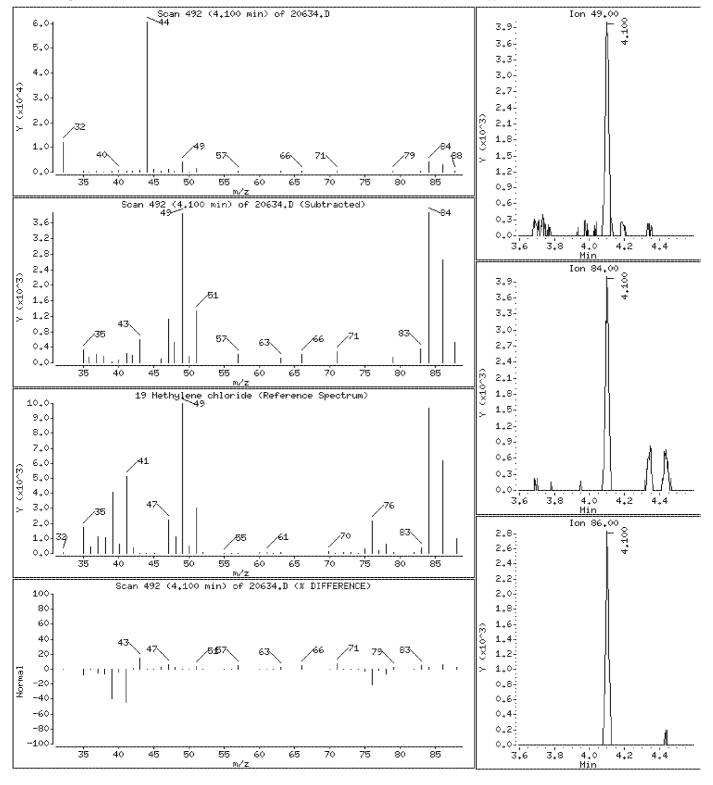
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.299 ppbv



10236207 413 of 1066

Date : 26-JUL-2013 05:34

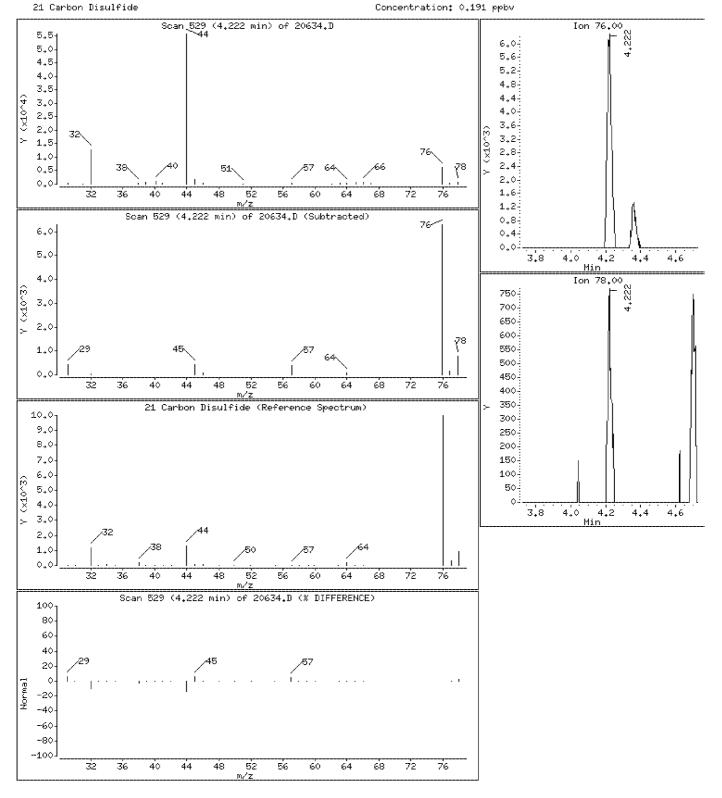
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





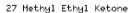
Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD.i

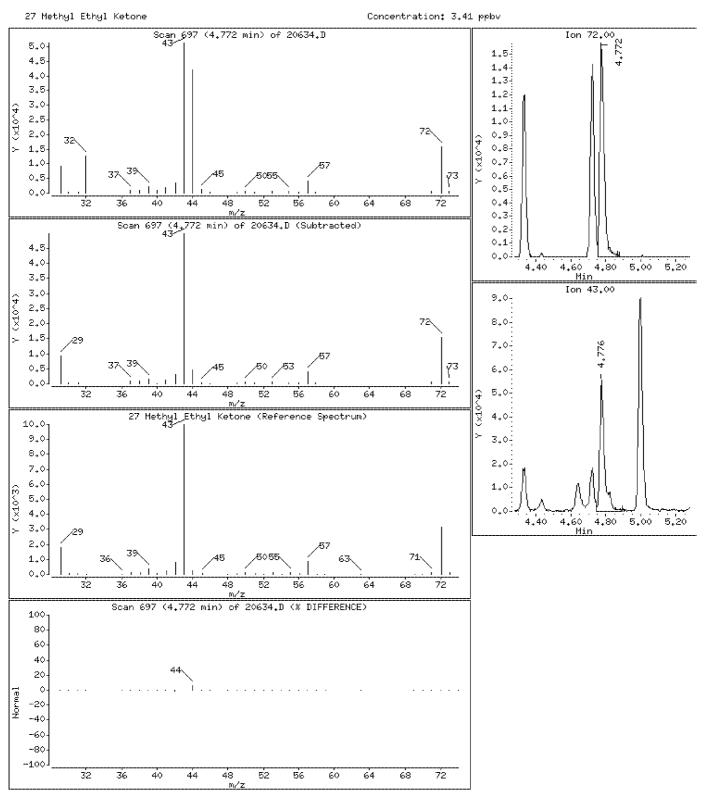
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 3.41 ppbv



Date : 26-JUL-2013 05:34

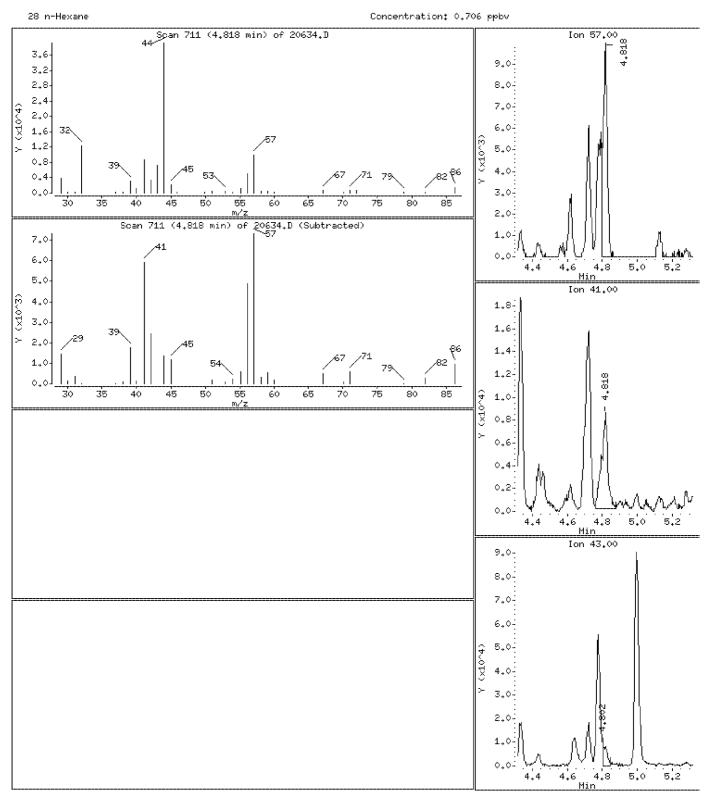
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 0.706 ppbv



Date : 26-JUL-2013 05:34

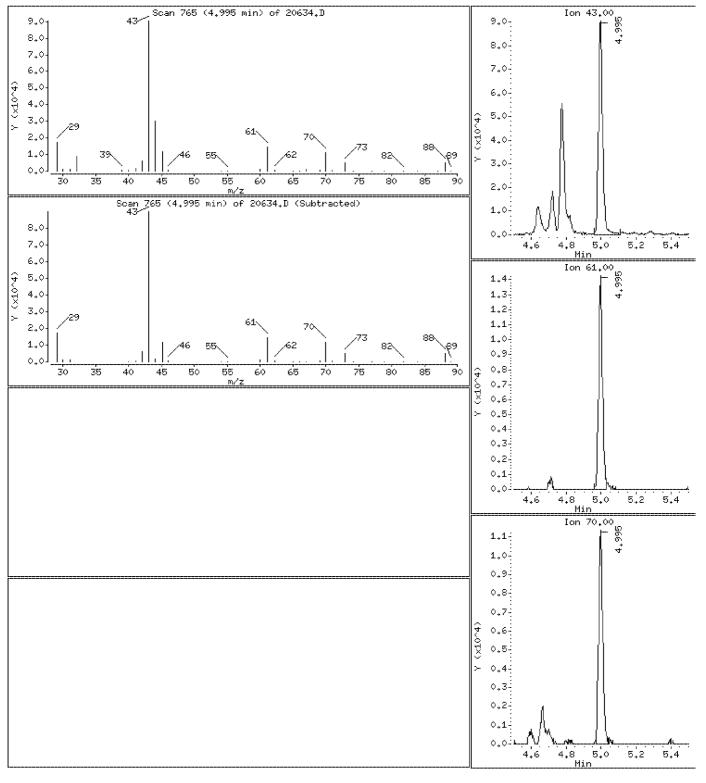
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 417 of 1066

Date : 26-JUL-2013 05:34

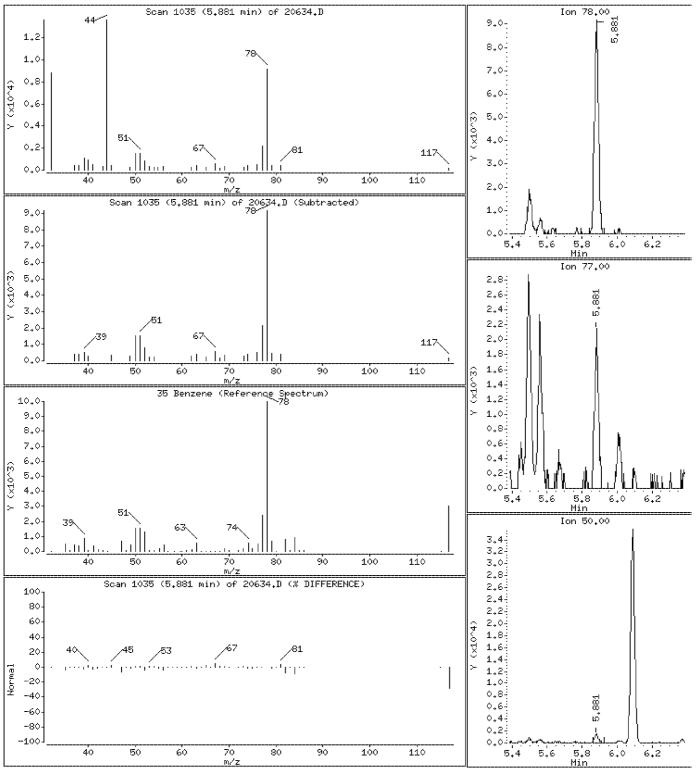
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 418 of 1066

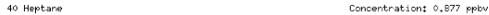
Date : 26-JUL-2013 05:34

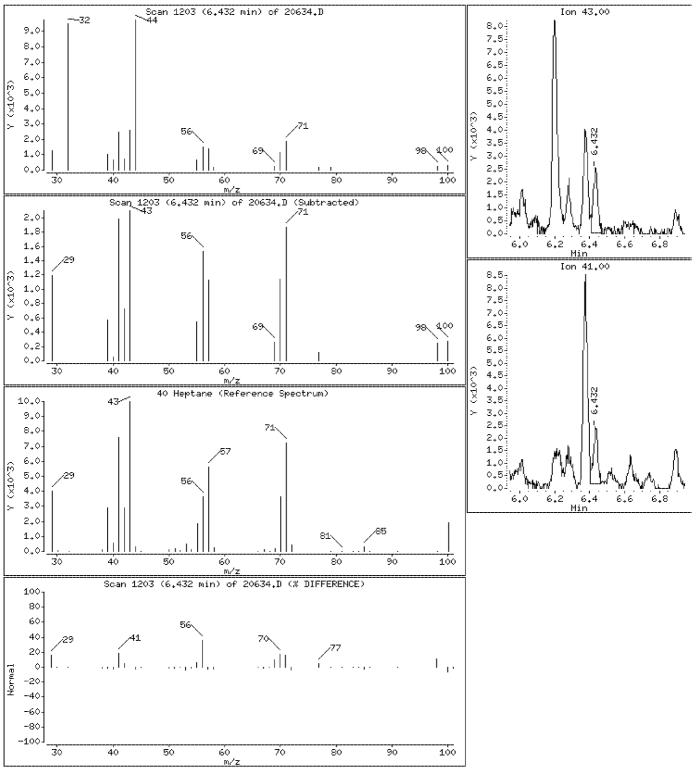
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 419 of 1066

Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD.i

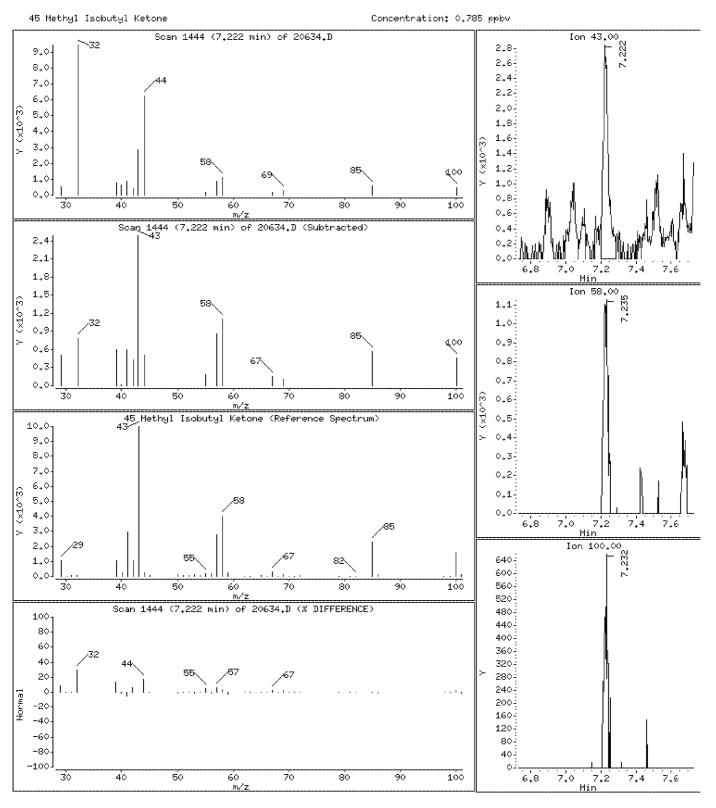
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.785 ppbv



Date : 26-JUL-2013 05:34

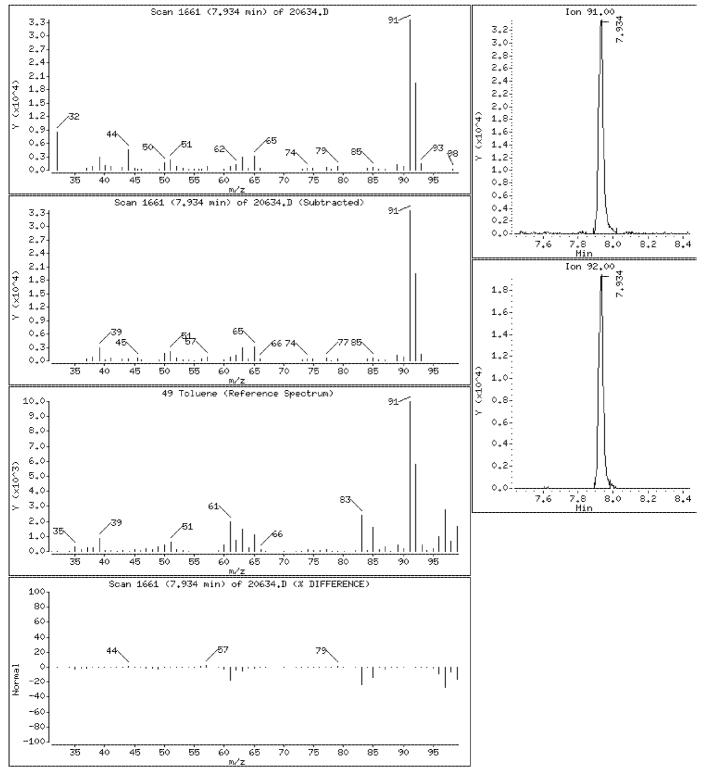
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 421 of 1066

Date : 26-JUL-2013 05:34

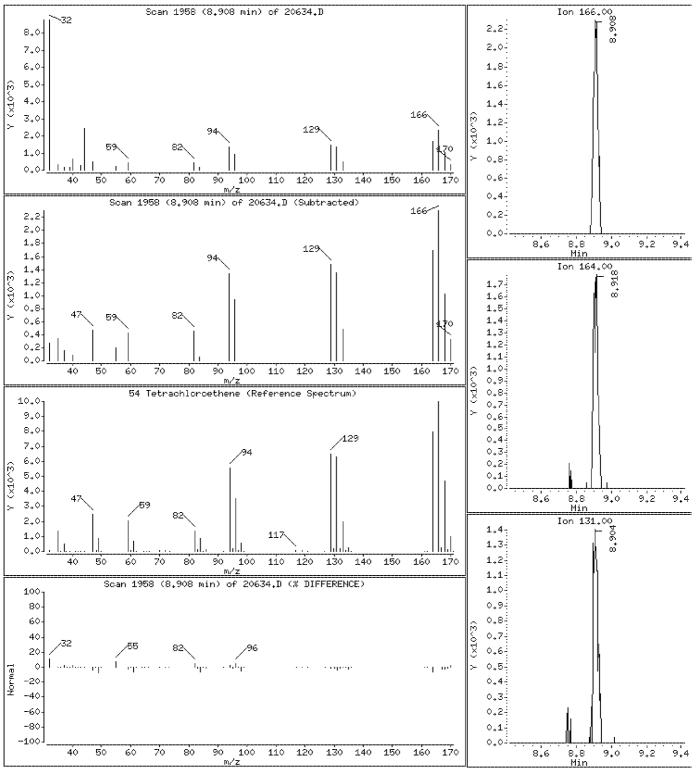
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 422 of 1066

Date : 26-JUL-2013 05:34

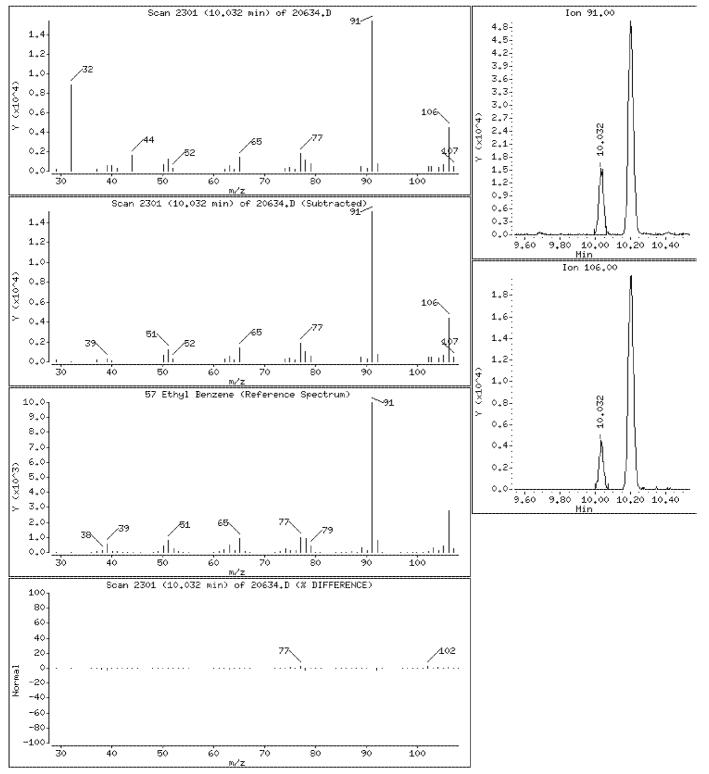
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 423 of 1066

Date : 26-JUL-2013 05:34

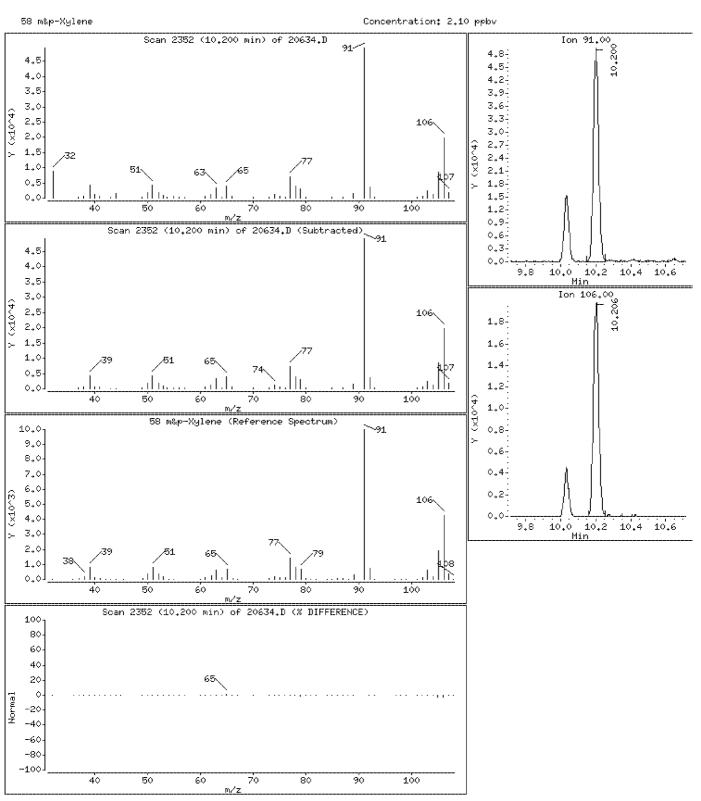
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 05:34

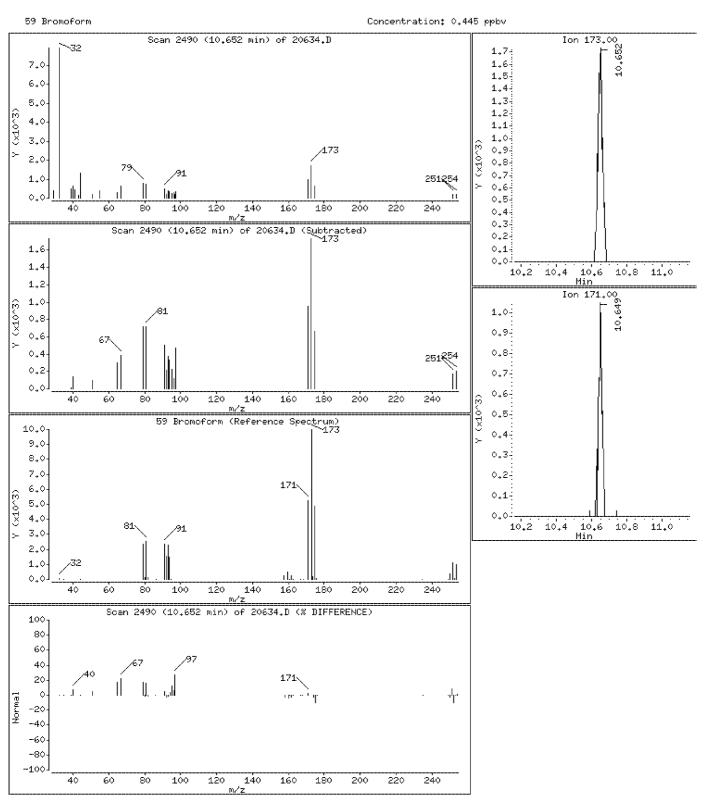
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





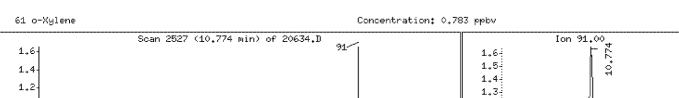
Date : 26-JUL-2013 05:34

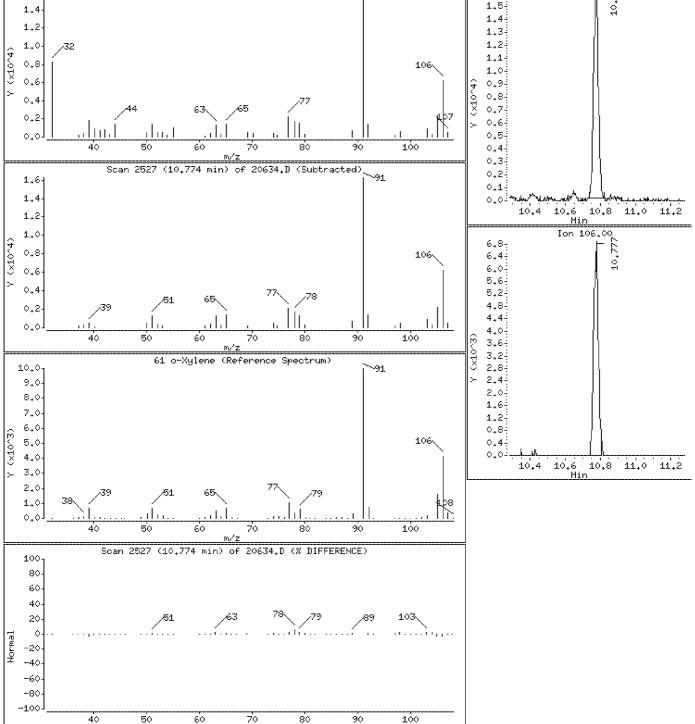
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 426 of 1066

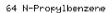
Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD.i

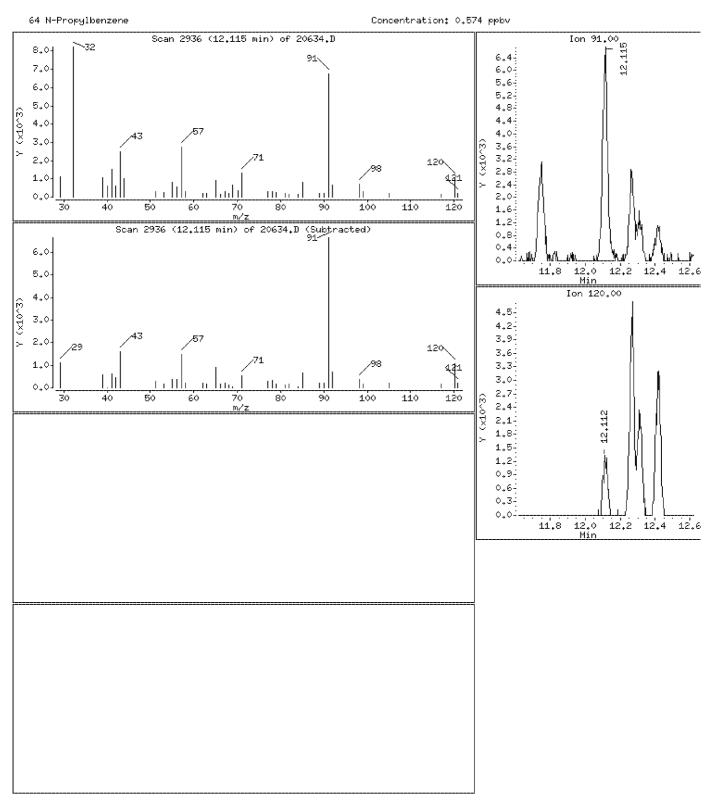
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.574 ppbv



Date : 26-JUL-2013 05:34

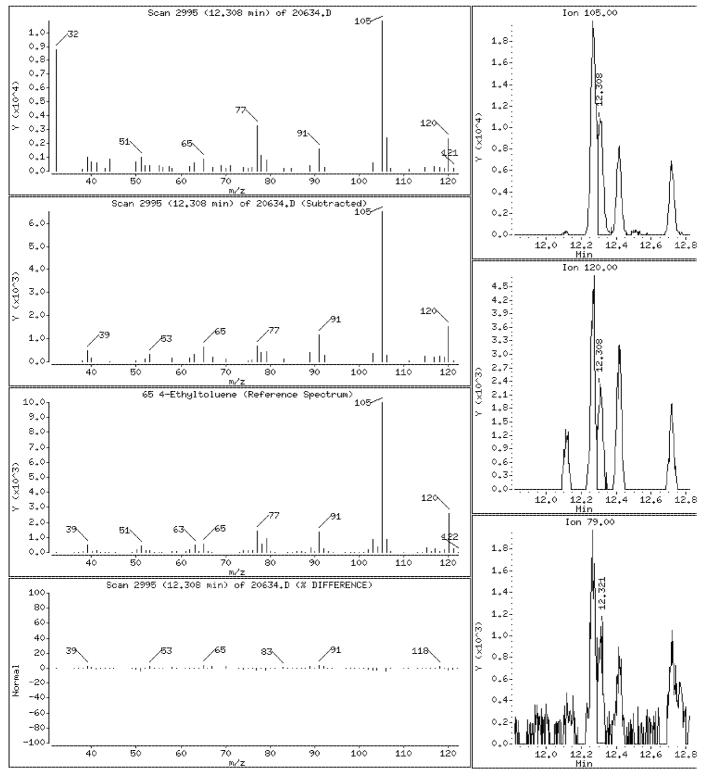
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 428 of 1066

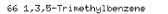
Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD,i

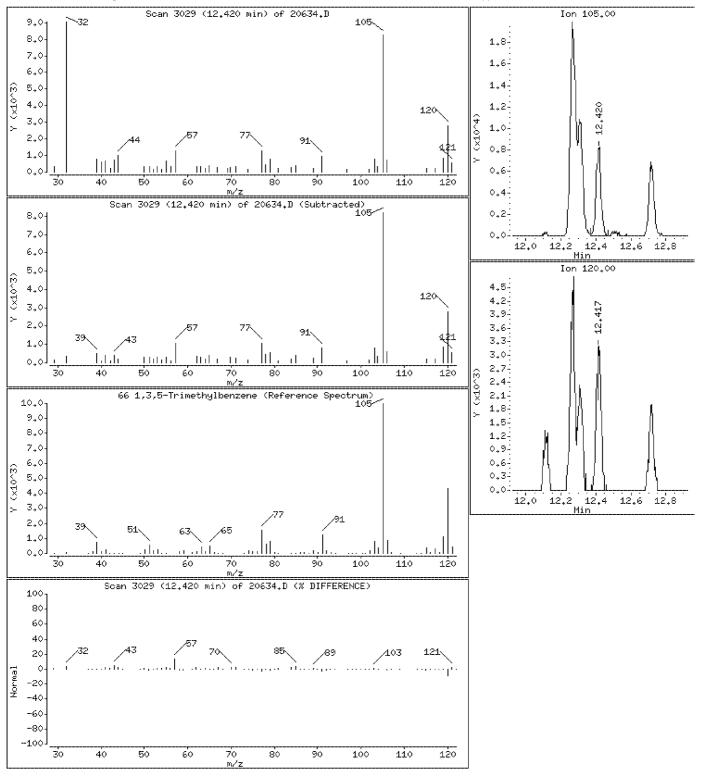
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.685 ppbv



10236207 429 of 1066

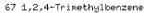
Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD.i

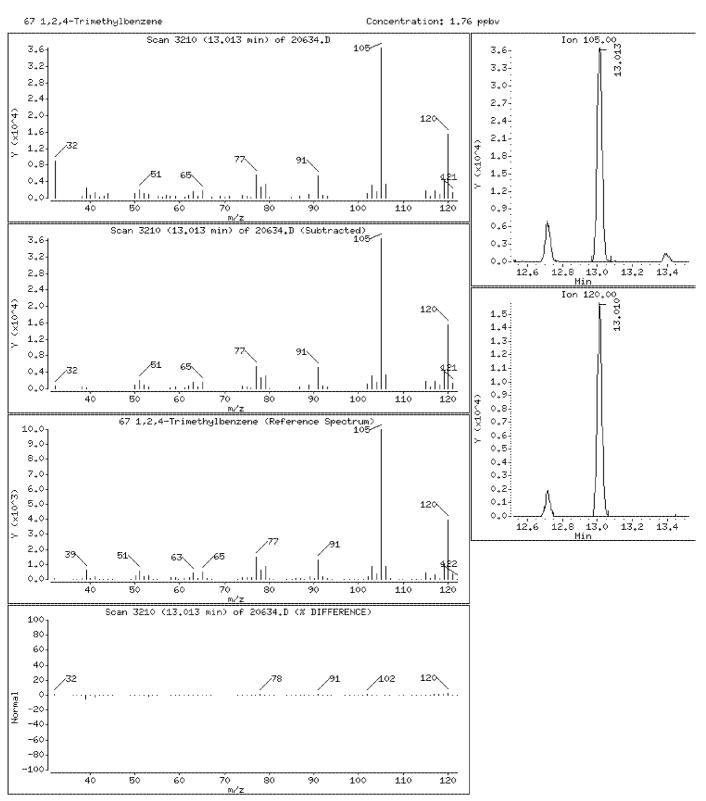
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 1.76 ppbv



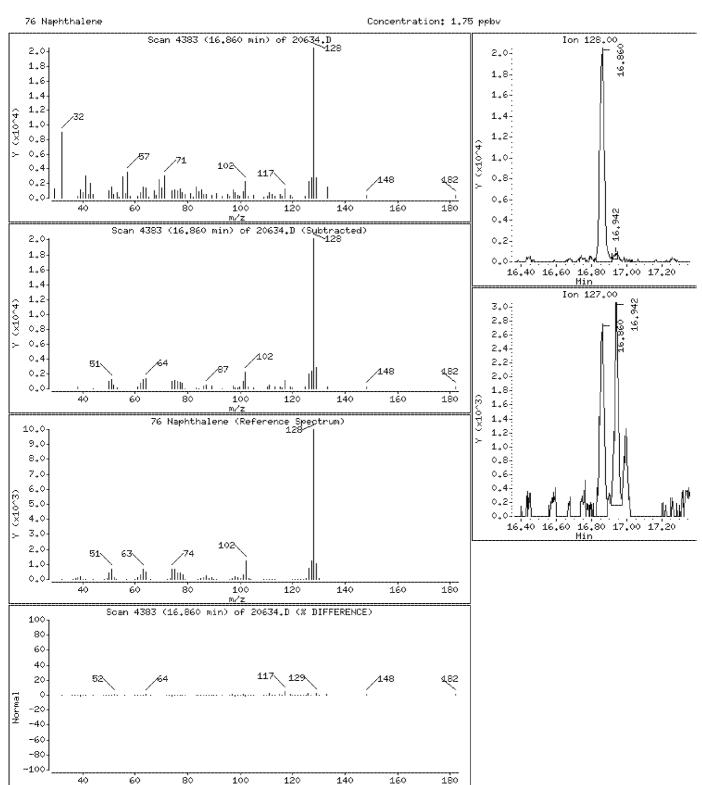
Date : 26-JUL-2013 05:34

Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



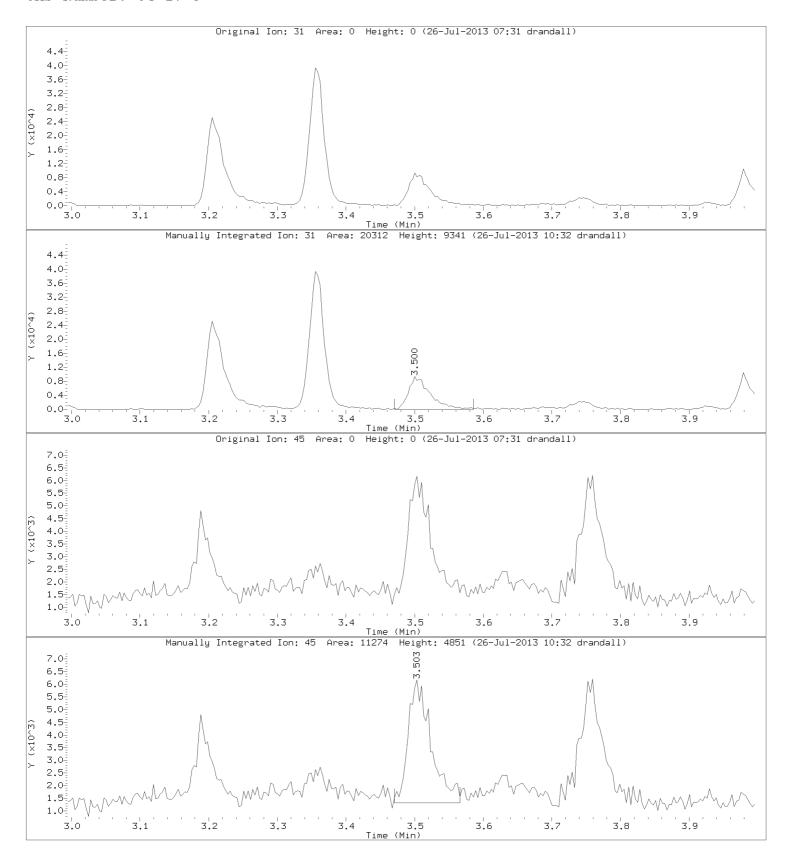
10236207 431 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: Ethanol CAS Number: 64-17-5



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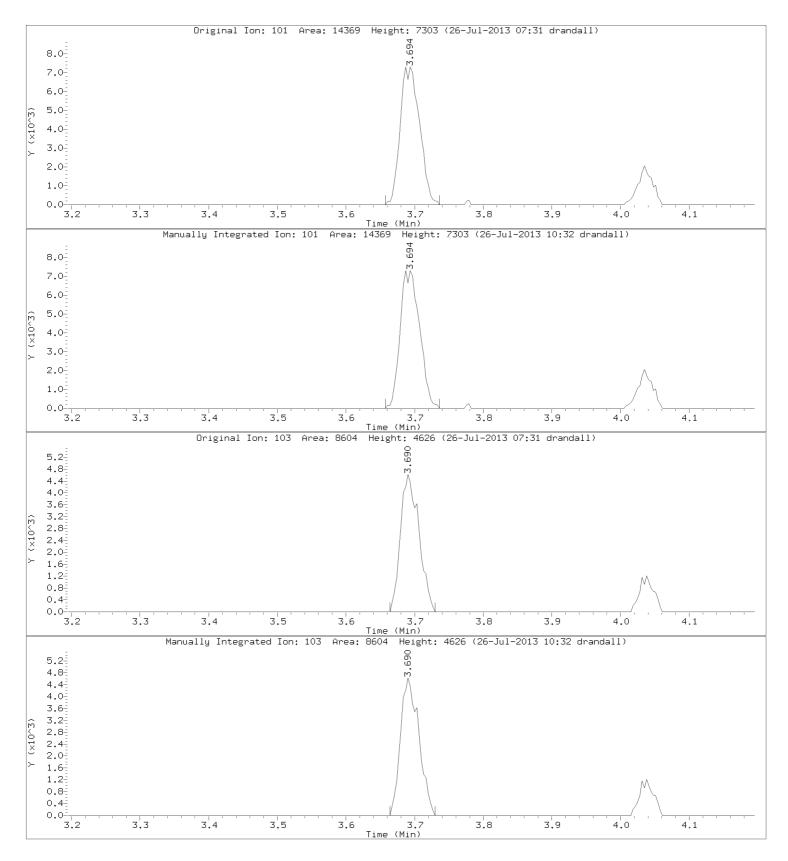
Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: Trichlorofluoromethane

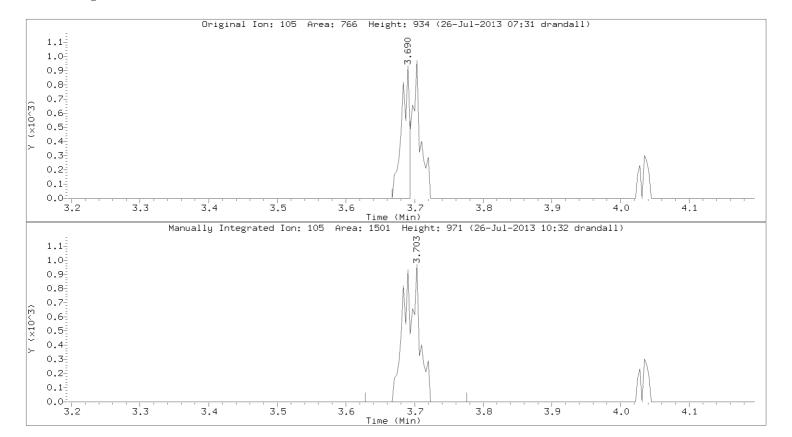
CAS Number: 75-69-4



10236207 433 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i Lab Sample ID: 10236207002

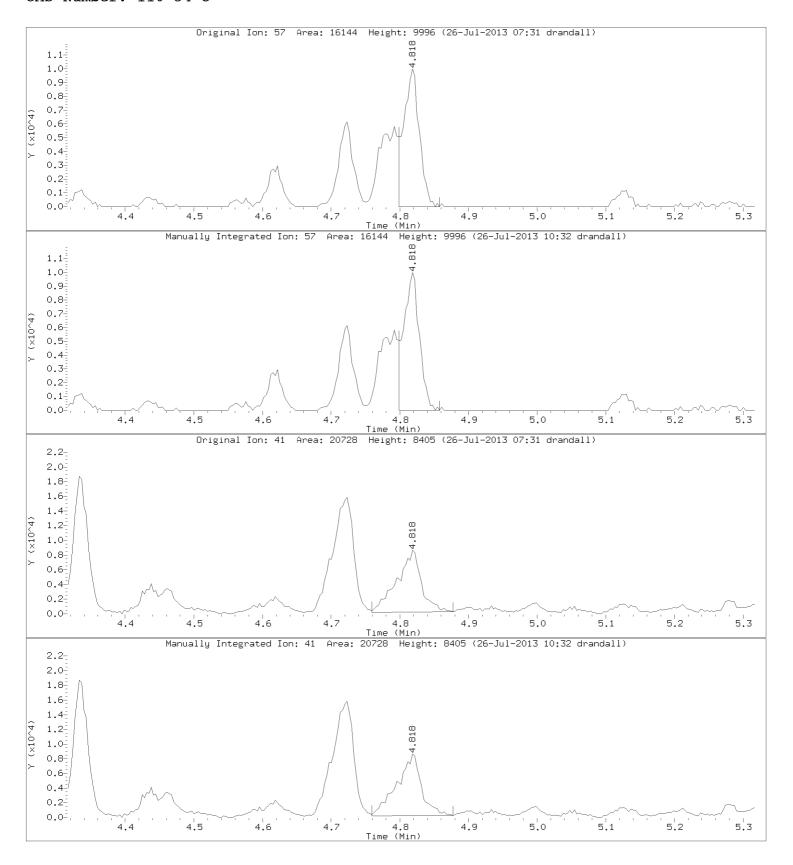


Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

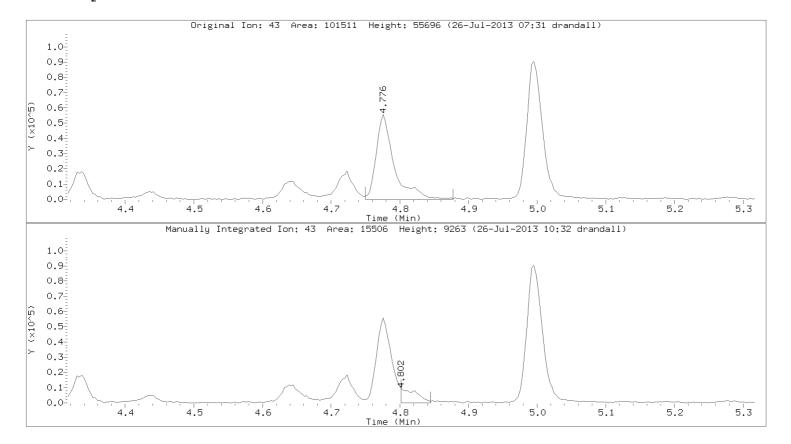
Compound: n-Hexane CAS Number: 110-54-3



10236207 435 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i Lab Sample ID: 10236207002

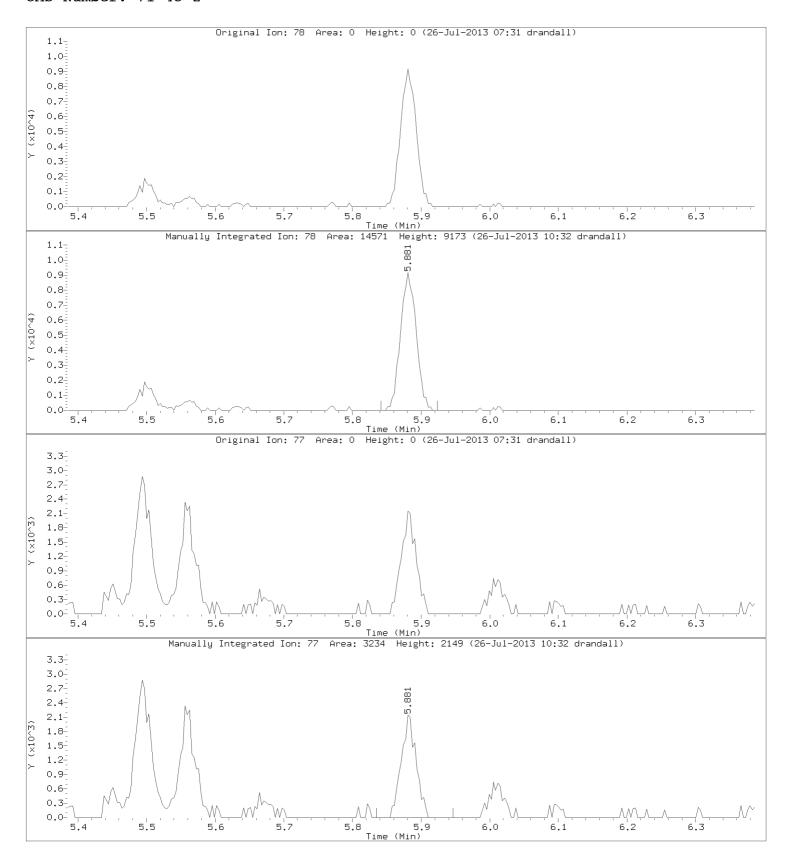


Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

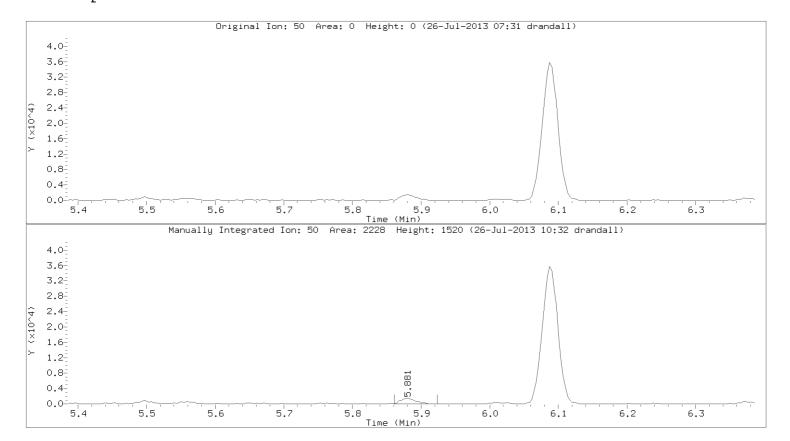
Compound: Benzene CAS Number: 71-43-2



10236207 437 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i Lab Sample ID: 10236207002

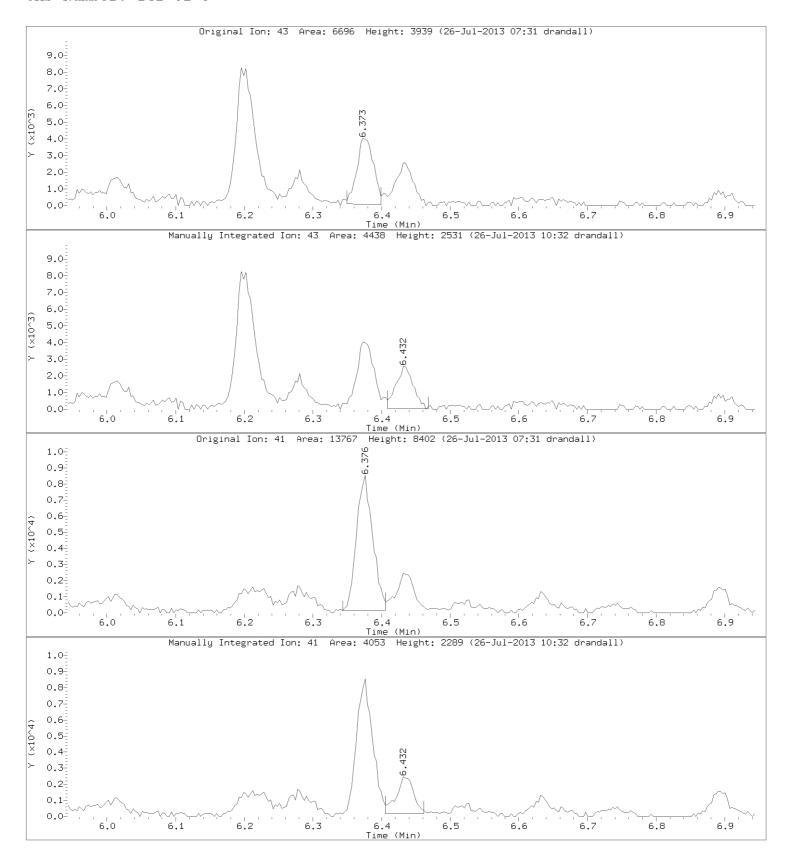


Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: Heptane CAS Number: 142-82-5



10236207 439 of 1066

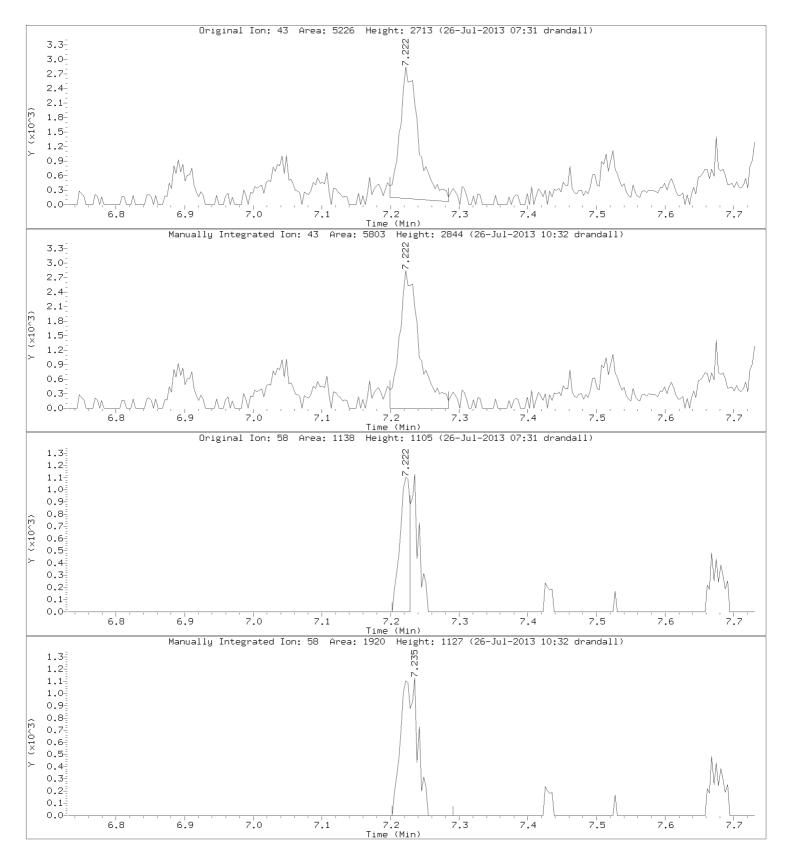
Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: Methyl Isobutyl Ketone

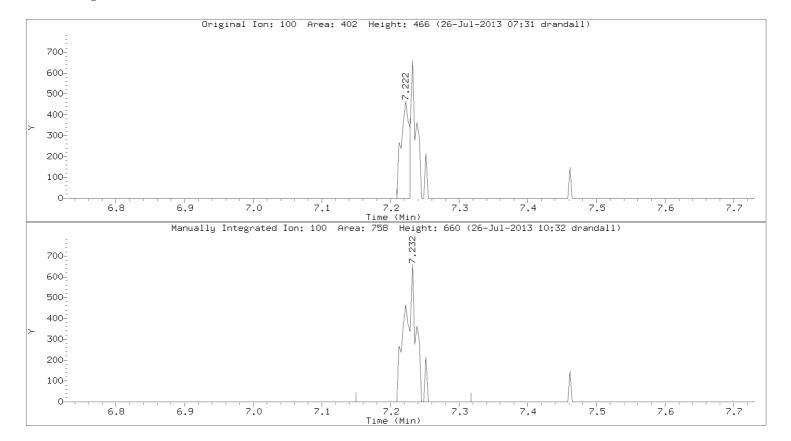
CAS Number: 108-10-1



10236207 440 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i Lab Sample ID: 10236207002



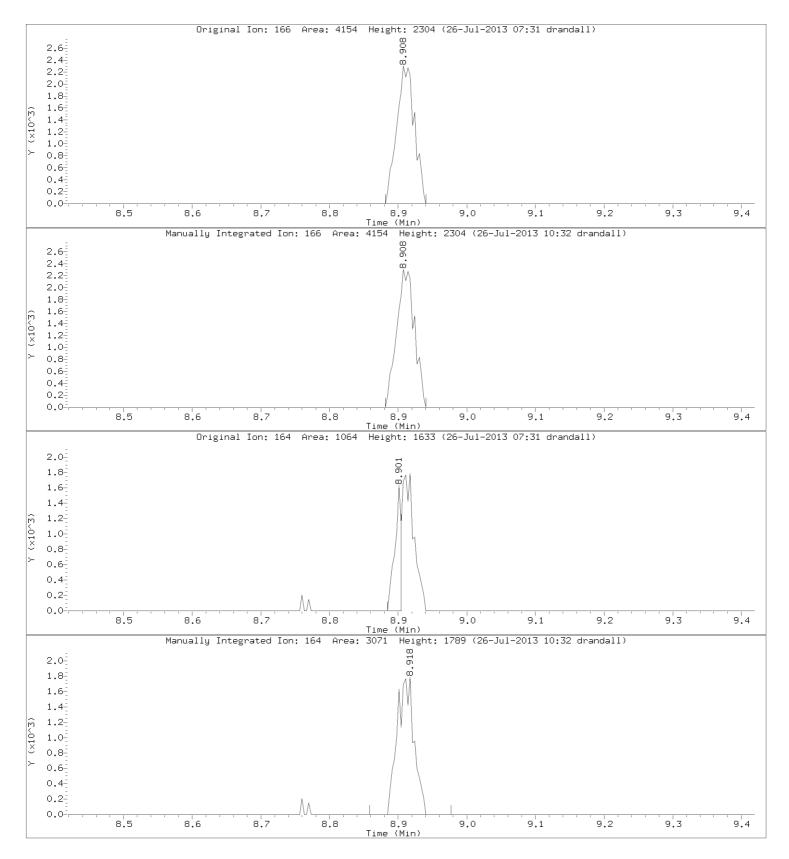
Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: Tetrachloroethene

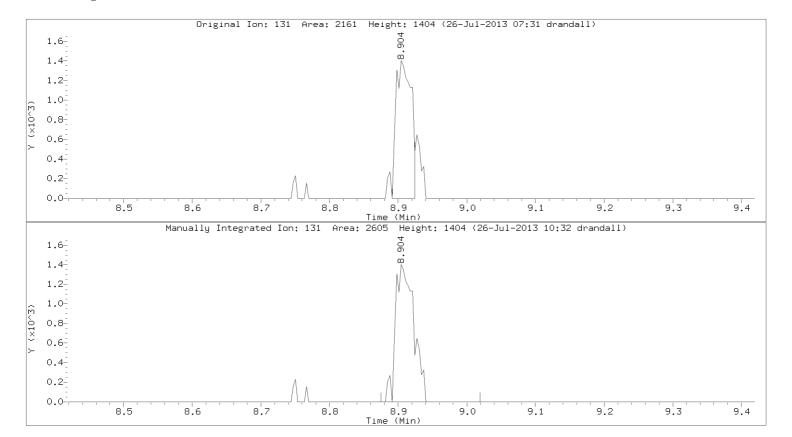
CAS Number: 127-18-4



10236207 442 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i Lab Sample ID: 10236207002

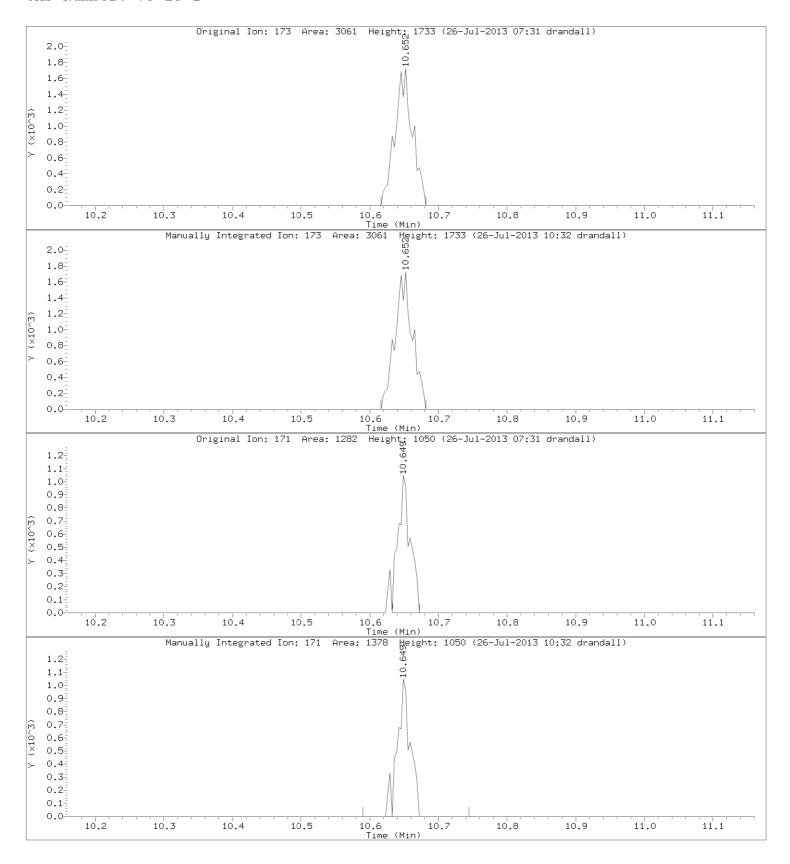


Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: Bromoform CAS Number: 75-25-2



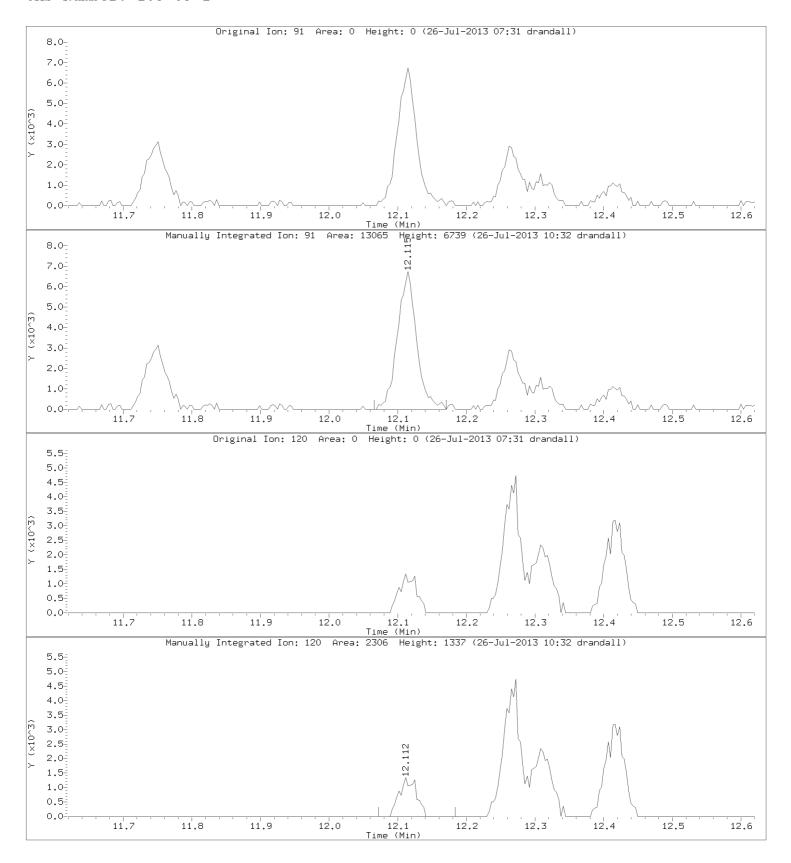
10236207 444 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: N-Propylbenzene CAS Number: 103-65-1



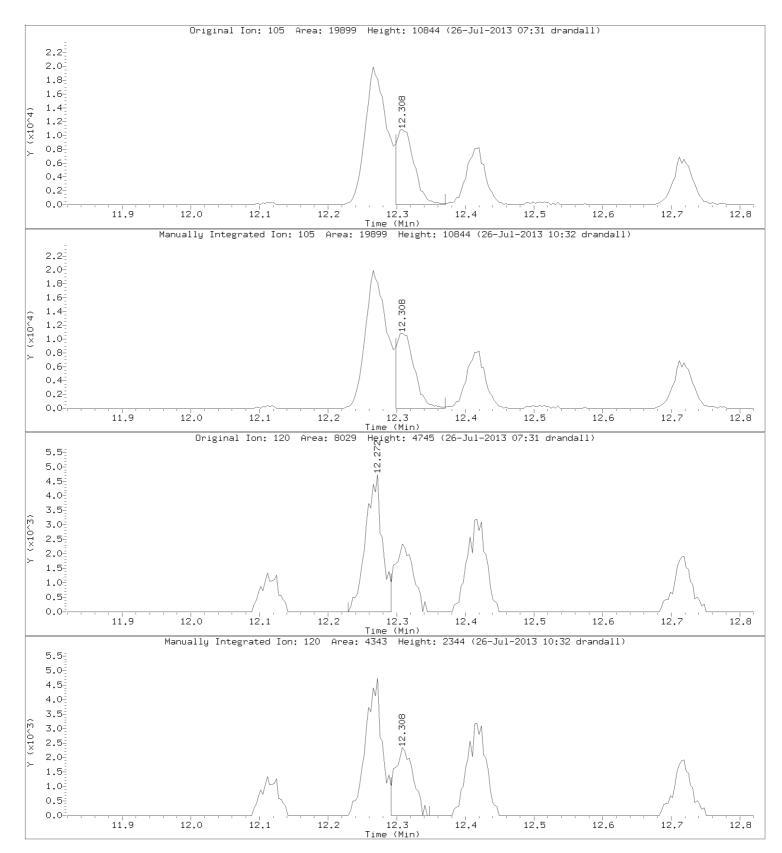
10236207 445 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

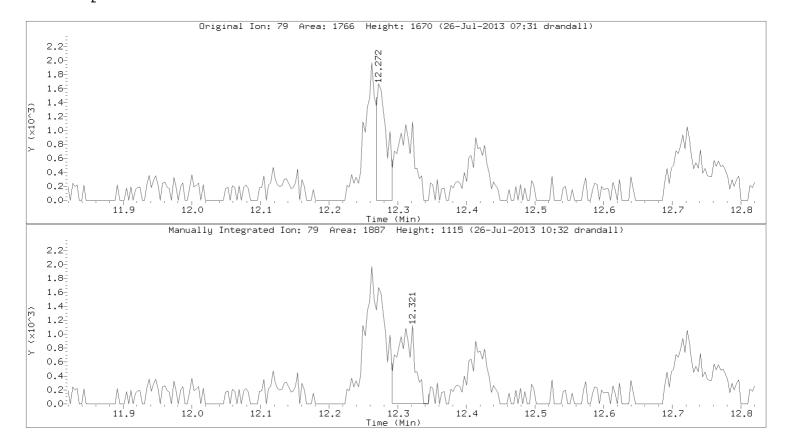
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 446 of 1066

Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i Lab Sample ID: 10236207002



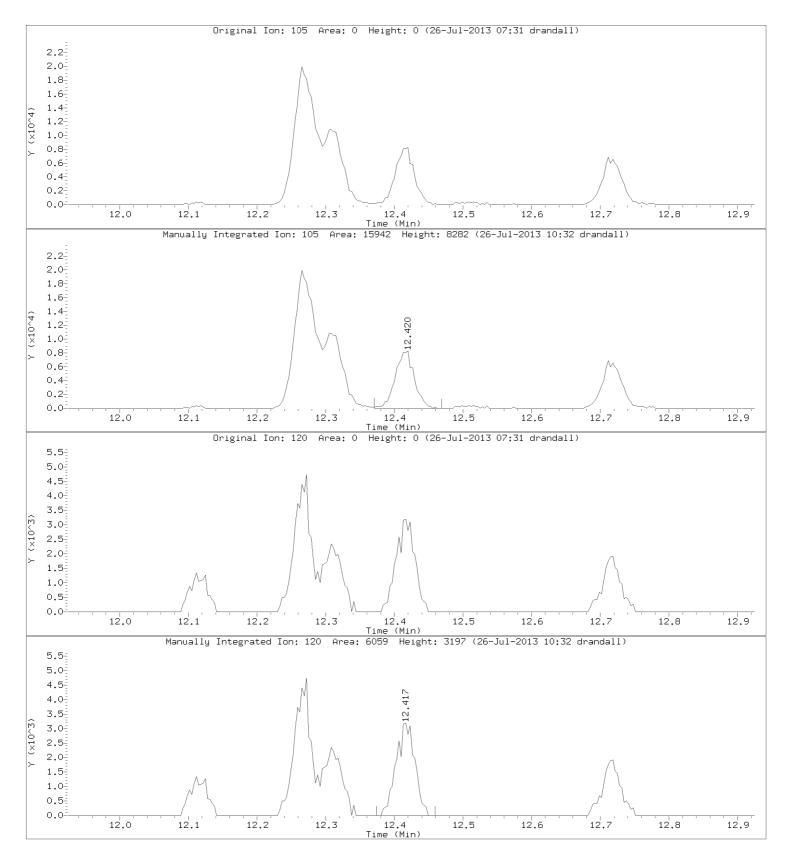
Injection Date: 26-JUL-2013 05:34

Instrument: 10airD.i

Lab Sample ID: 10236207002

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



10236207 448 of 1066

Report Date: 29-Jul-2013 07:41

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072613.b\20708.d Lab Smp Id: 10236207003 Inj Date: 26-JUL-2013 14:39

: DR1 Inst ID: 10airD.i Operator

Smp Info :

Misc Info: 17876

: Volatile Organic COMPOUNDS in Air Comment

Method : \\192.168.10.12\chem\10airD.i\072613.b\T015 205-13.m

Meth Date : 26-Jul-2013 11:48 drandall Quant Type: ISTD

Cal Date : 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 8

Dil Factor: 1.99660

Integrator: HP RTE Compound Sublist: chlorinated.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

	OUANT SIG		ONCENTRATIONS COLUMN FINAL			
Compounds	MASS		opbv) (ppbv)			
5 Vinvl chloride	==== 62	Compound Not Detected.	=====			
8 Chloroethane	64	Compound Not Detected.				
14 Isopropyl Alcohol	45	Compound Not Detected.				
15 1,1-Dichloroethene	61	Compound Not Detected.				
18 Freon 113	101	Compound Not Detected.				
22 trans-1,2-dichloroethene	96	Compound Not Detected.				
25 1,1-Dichloroethane	63	Compound Not Detected.				
\$ 26 Hexane-d14(S)	66	4.697 4.700 (0.772) 302965 8.8	8.87			
29 cis-1,2-Dichloroethene	96	Compound Not Detected.				
31 Chloroform	83	Compound Not Detected.				
33 1,1,1-Trichloroethane	97	Compound Not Detected.				
34 1,2-Dichloroethane	62	Compound Not Detected.				
36 Carbon tetrachloride	117	Compound Not Detected.				
* 38 1,4-Difluorobenzene	114	6.087 6.094 (1.000) 707507 10.	.0000			
42 Trichloroethene	130	Compound Not Detected.				
47 trans-1,3-Dichloropropene	75	Compound Not Detected.				
\$ 48 Toluene-d8 (S)	98	7.838 7.848 (1.288) 495211 10.	.0221 10.0			
50 1,1,2-Trichloroethane	97	Compound Not Detected.				
54 Tetrachloroethene	166	8.910 8.918 (0.920) 6056 0.5	52497 1.05(M)			
* 55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 260406 10.	.0000			
62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.				
\$ 70 1,4-dichlorobenzene-d4 (S)	150	13.446 13.459 (1.388) 97756 9.3	30020 9.30			

Data File:  $\192.168.10.12\chem\10airD.i\072613.b\20708.d$  Report Date: 29-Jul-2013 07:41

QC Flag Legend

M - Compound response manually integrated.

Report Date: 29-Jul-2013 07:41

Pace Analytical Services, Inc.

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 26-JUL-2013 Calibration Time: 11:27 Instrument ID: 10airD.i

Lab File ID: 20708.d

Lab Smp Id: 10236207003 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072613.b\T015\_205-13.m

Misc Info: 17876

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	=====
38 1,4-Difluorobenze	579775	347865	811685	707507	22.03
55 Chlorobenzene - d	221404	132842	309966	260406	17.62

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	=====
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

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: \\192.168.10.12\chem\10airD.i\072613.b\20708.D

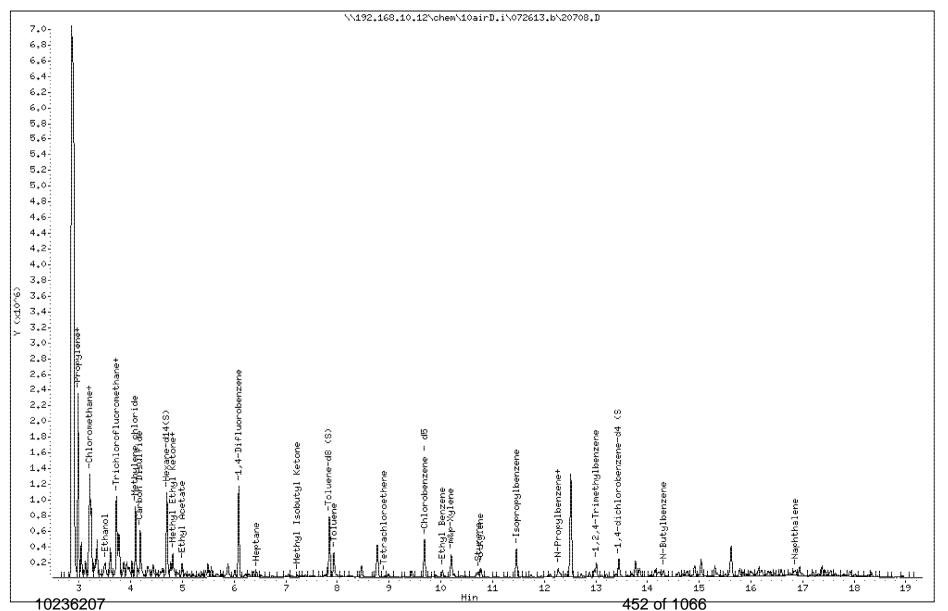
Date : 26-JUL-2013 14:39

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Data File: \\192,168,10,12\chem\10airD,i\072613,b\20708,D

Date : 26-JUL-2013 14:39

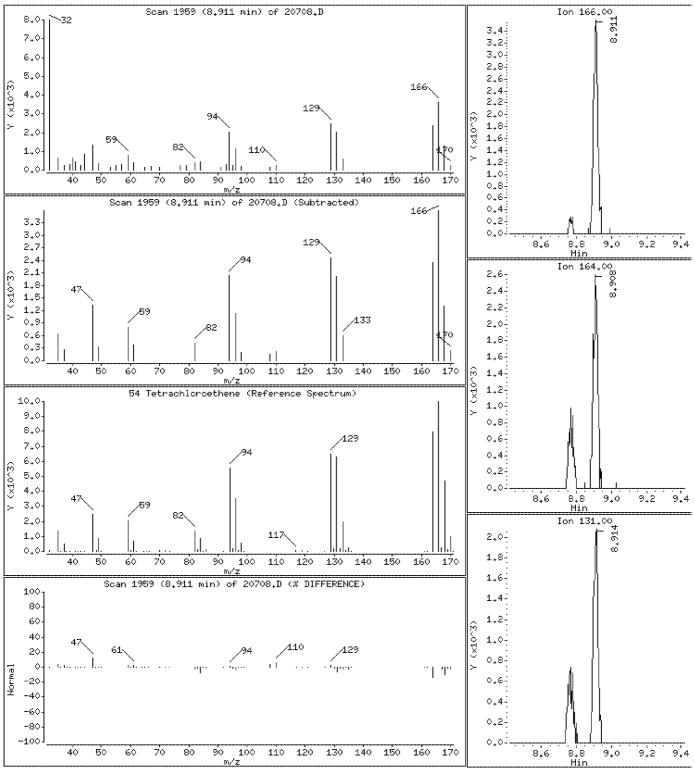
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 453 of 1066

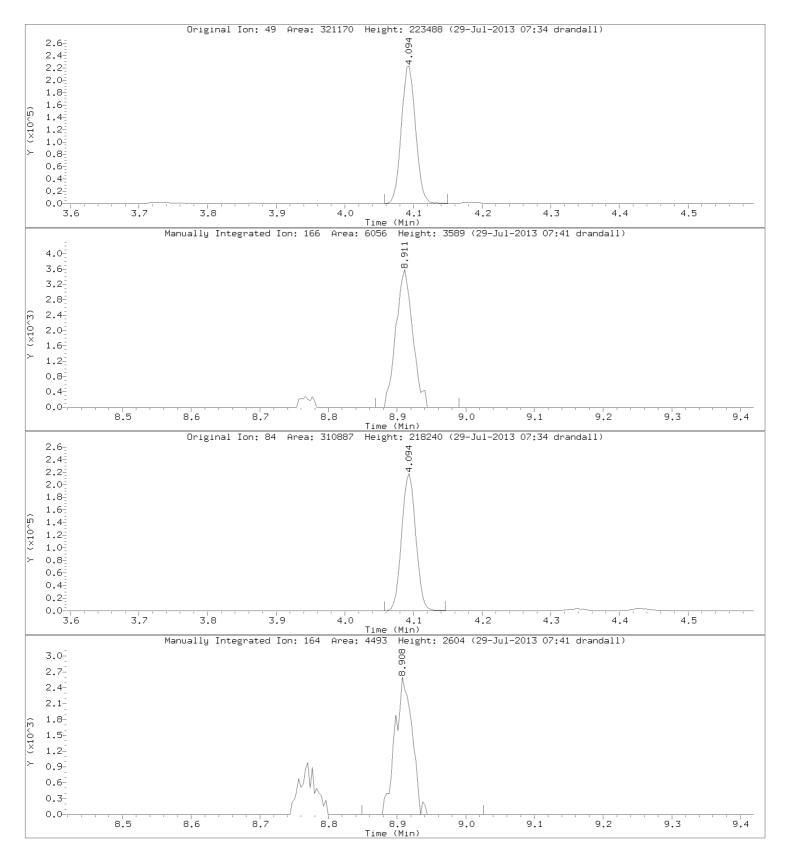
Injection Date: 26-JUL-2013 14:39

Instrument: 10airD.i

Lab Sample ID: 10236207003

Compound: Tetrachloroethene

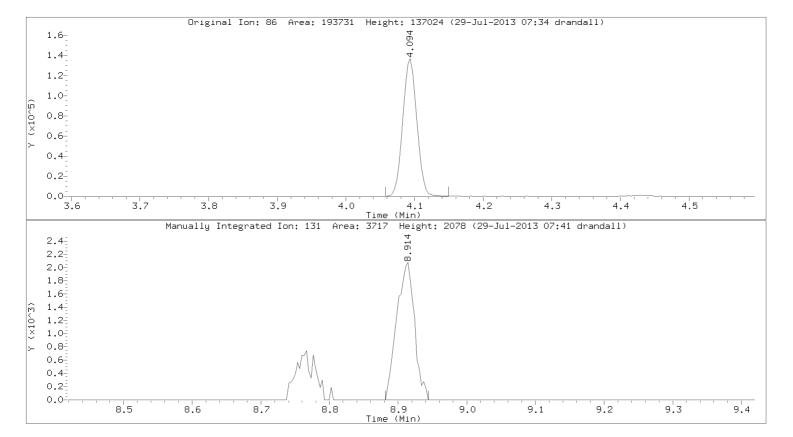
CAS Number: 127-18-4



10236207 454 of 1066

Injection Date: 26-JUL-2013 14:39

Instrument: 10airD.i Lab Sample ID: 10236207003



Report Date: 26-Jul-2013 08:38

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20632.d Lab Smp Id: 10236207004 Inj Date: 26-JUL-2013 04:34 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 32

Dil Factor: 1.49000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14 Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

		CONCENTRATIONS
Compounds	QUANT SIG MASS ====	ON-COLUMN FINAL RT EXP RT REL RT RESPONSE ( ppbv) ( ppbv)
1 Propylene	41	2.968 2.982 (0.487) 706966 75.9324 113(A)
2 Dichlorodifluoromethane	85	2.998 3.008 (0.492) 21548 0.24126 0.359
3 Dichlorotetrafluoroethane	85	Compound Not Detected.
4 Chloromethane	50	Compound Not Detected.
5 Vinyl chloride	62	Compound Not Detected.
6 1,3-Butadiene	54	Compound Not Detected.
7 Bromomethane	94	Compound Not Detected.
8 Chloroethane	64	Compound Not Detected.
9 Ethanol	31	3.516 3.494 (0.577) 27616 2.59540 3.87(M)
10 Vinyl Bromide	106	Compound Not Detected.
11 Acrolein	56	Compound Not Detected.
12 Trichlorofluoromethane	101	3.700 3.694 (0.608) 14324 0.14744 0.220(M)
13 Acetone	43	3.729 3.726 (0.612) 428168 8.79196 13.1(Q)
14 Isopropyl Alcohol	45	Compound Not Detected.
15 1,1-Dichloroethene	61	Compound Not Detected.
16 Acrylonitrile	53	Compound Not Detected.
17 Tert Butyl Alcohol	59	3.988 3.989 (0.655) 32991 0.64573 0.962(QM)
18 Freon 113	101	Compound Not Detected.
19 Methylene chloride	49	Compound Not Detected.
20 Allyl Chloride	76	Compound Not Detected.
21 Carbon Disulfide	76	4.231 4.224 (0.695) 35128 0.43750 0.652
22 trans-1,2-dichloroethene	96	Compound Not Detected.
23 Methyl Tert Butyl Ether	73	Compound Not Detected.

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20632.d$ Report Date: 26-Jul-2013 08:38

				CONCENTRATIONS	
		QUANT SIG		ON-COLUMN FINAL	
Cor	mpounds	MASS	RT EXP RT REL RT RESPONSE	(ppbv) (ppbv)	
===	OA Winel Asstate	==== 43	Compaind Not Detected	======	
	24 Vinyl Acetate 25 1,1-Dichloroethane	43 63	Compound Not Detected.		
c		66	Compound Not Detected. 4.703 4.700 (0.772) 300588	0 47361 0 47	
\$	26 Hexane-d14(S)	72	, ,	8.47361 8.47	
	27 Methyl Ethyl Ketone	72 57	4.775 4.779 (0.784) 32472	2.88000 4.29(Q)	
	28 n-Hexane	_	4.818 4.818 (0.791) 138947	4.30876 6.42(M)	
	29 cis-1,2-Dichloroethene	96	Compound Not Detected.	0.05000 0.077000	
	30 Ethyl Acetate	43	4.998 4.999 (0.821) 67083	2.05900 3.07(QM)	
	31 Chloroform	83	Compound Not Detected.		
	32 Tetrahydrofuran	42	Compound Not Detected.		
	33 1,1,1-Trichloroethane	97	Compound Not Detected.		
	34 1,2-Dichloroethane	62	Compound Not Detected.	00.0706	
	35 Benzene	78	5.880 5.887 (0.966) 1414662	20.9726 31.2	
	36 Carbon tetrachloride	117	Compound Not Detected.		
	37 Cyclohexane	56	Compound Not Detected.		
*	38 1,4-Difluorobenzene	114	6.090 6.094 (1.000) 734601	10.0000	
	39 2,2,4-Trimethylpentane	57	6.267 6.271 (1.029) 79291	1.39199 2.07(QM)	
	40 Heptane	43	6.431 6.442 (1.056) 73182	3.24243 4.83	
	41 1,2-Dichloropropane	63	Compound Not Detected.		
	42 Trichloroethene	130	Compound Not Detected.		
	43 1,4-Dioxane	88	Compound Not Detected.		
	44 Bromodichloromethane	83	Compound Not Detected.		
	45 Methyl Isobutyl Ketone	43	Compound Not Detected.		
	46 cis-1,3-Dichloropropene	75	Compound Not Detected.		
	47 trans-1,3-Dichloropropene	75	Compound Not Detected.		
\$	48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 529919	10.3290 10.3	
	49 Toluene	91	7.933 7.940 (1.303) 1786538	20.2532 30.2	
	50 1,1,2-Trichloroethane	97	Compound Not Detected.		
	51 Methyl Butyl Ketone	43	Compound Not Detected.		
	52 Dibromochloromethane	129	Compound Not Detected.		
	53 1,2-Dibromoethane	107	Compound Not Detected.		
	54 Tetrachloroethene	166	8.910 8.918 (0.920) 7267	0.53985 0.804	
*	55 Chlorobenzene - d5	117	9.681 9.691 (1.000) 283539	10.0000	
	56 Chlorobenzene	112	Compound Not Detected.		
	57 Ethyl Benzene	91	10.032 10.039 (1.036) 326688	3.23109 4.81	
	58 m&p-Xylene	91	10.203 10.213 (1.054) 731282	8.50205 12.7	
	59 Bromoform	173	Compound Not Detected.		
	60 Styrene	104	10.698 10.708 (1.105) 22244	0.84378 1.26	
	61 o-Xylene	91	10.776 10.783 (1.113) 229092	2.69110 4.01	
	62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.		
	63 Isopropylbenzene	105	Compound Not Detected.		
	64 N-Propylbenzene	91	12.114 12.121 (1.251) 41541	0.59842 0.892(M)	
	65 4-Ethyltoluene	105	12.311 12.321 (1.272) 57609	0.86247 1.28(M)	
	66 1,3,5-Trimethylbenzene	105	12.413 12.426 (1.282) 43101	0.75315 1.12(M)	
	67 1,2,4-Trimethylbenzene	105	13.013 13.020 (1.344) 153160	2.04946 3.05	
	68 1,3-Dichlorobenzene	146	Compound Not Detected.		
	69 Sec- Butylbenzene	105	Compound Not Detected.		
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.449 13.459 (1.389) 107897	9.42750 9.43	
т	71 Benzyl Chloride	91	Compound Not Detected.	J•10	
	72 1,4-Dichlorobenzene	146	Compound Not Detected.		
	73 1,2-Dichlorobenzene	146	Compound Not Detected.		
	74 N-Butylbenzene	91	Compound Not Detected.		
	=	180	_		
	75 1,2,4-Trichlorobenzene		Compound Not Detected.	1 35000 2 02	
	76 Naphthalene	128	16.856 16.860 (1.741) 43939	1.35880 2.02	
	77 Hexachlorobutadiene	225	Compound Not Detected.		

Report Date: 26-Jul-2013 08:38

CONCENTRATIONS QUANT SIG

MASS

RT EXP RT REL RT RESPONSE (ppbv) (ppbv)

---
---
---
---
ON-COLUMN FINAL
(ppbv) (ppbv) ON-COLUMN FINAL Compounds \_\_\_\_\_

# QC Flag Legend

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

Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.

Report Date: 26-Jul-2013 08:38

Pace Analytical Services, Inc.

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20632.d

Lab Smp Id: 10236207004 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
38 1,4-Difluorobenze	579775	347865	811685	734601	26.70
55 Chlorobenzene - d	221404	132842	309966	283539	28.06

		RT I	IMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.07

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.

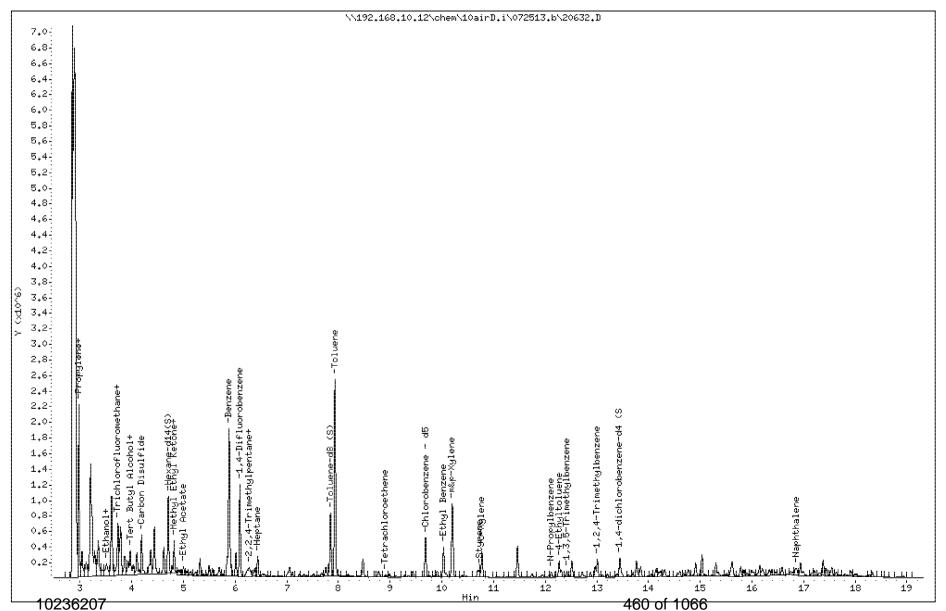
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 26-JUL-2013 04:34

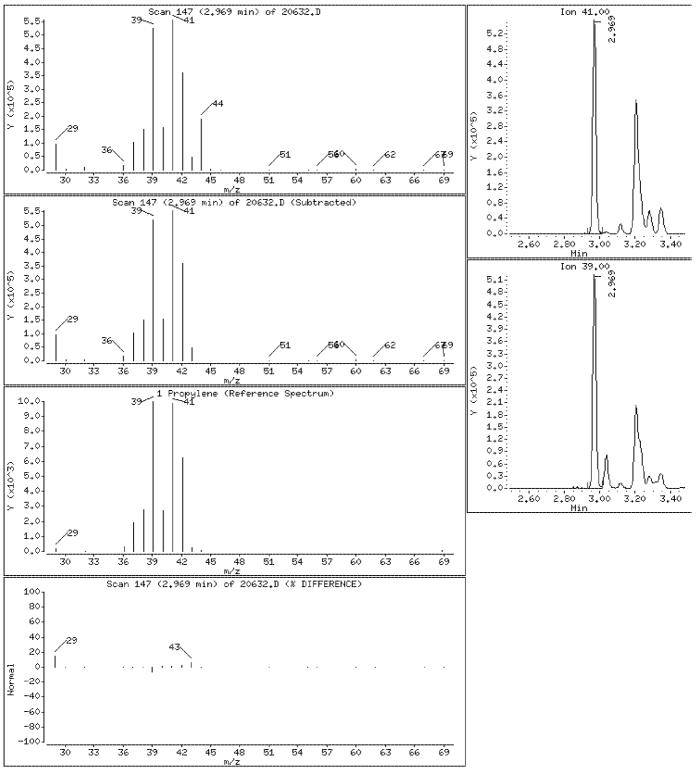
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 461 of 1066

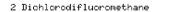
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

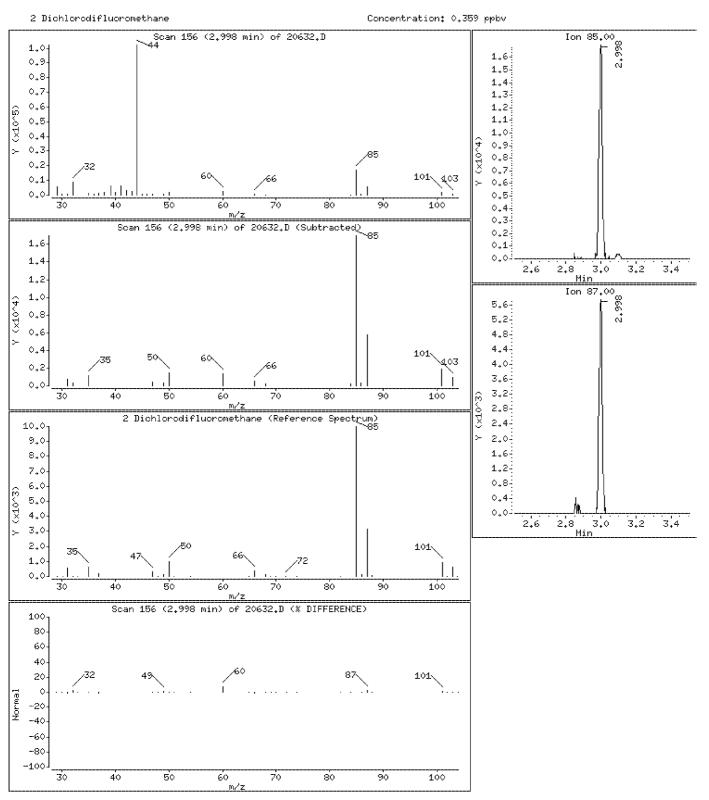
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.359 ppbv



Date : 26-JUL-2013 04:34

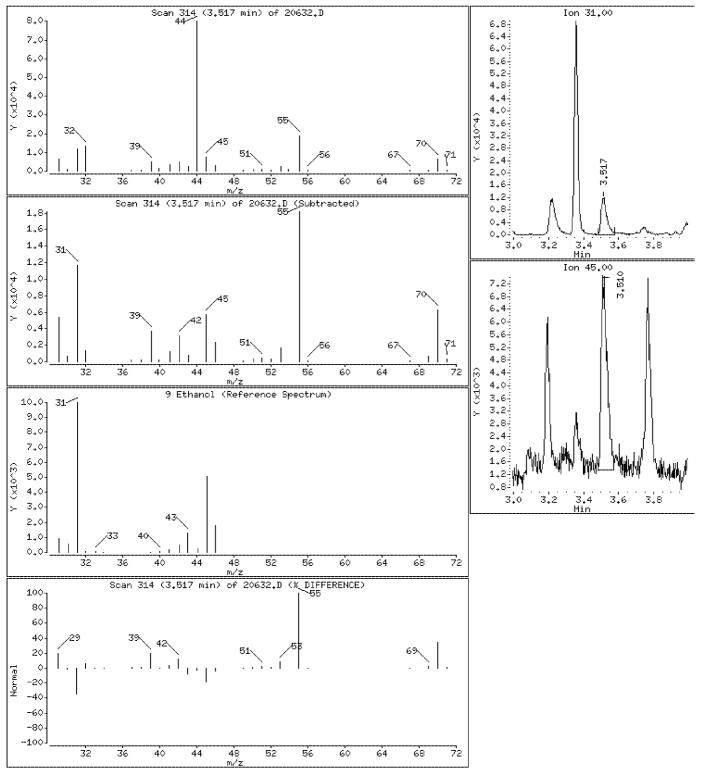
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 463 of 1066

Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

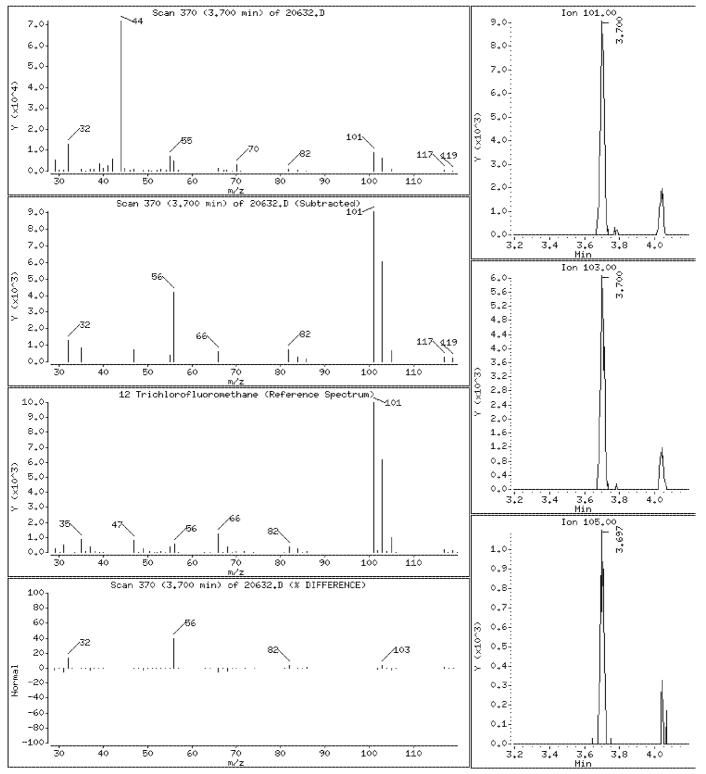
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 464 of 1066

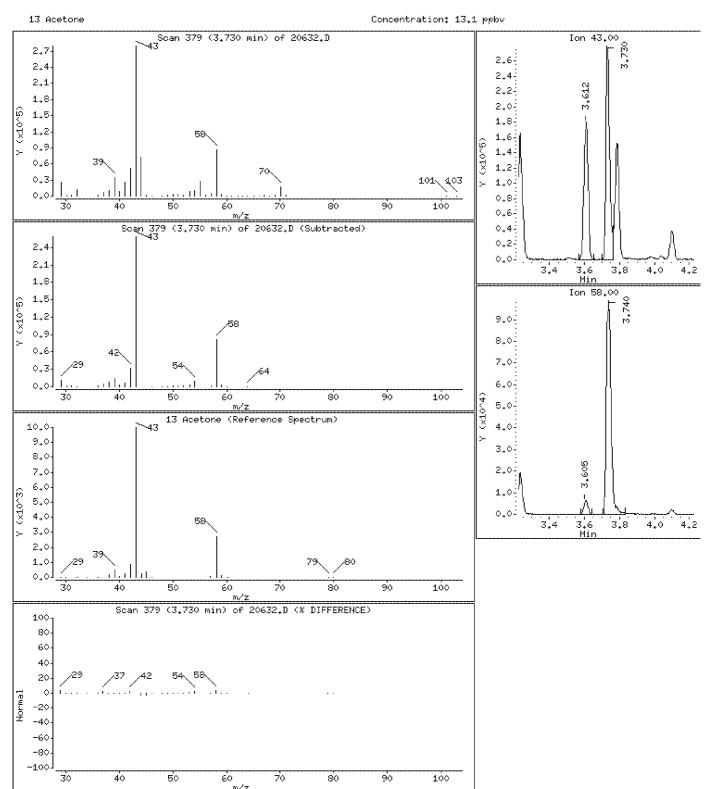
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 465 of 1066

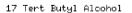
Date : 26-JUL-2013 04:34

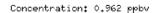
Client ID: Instrument: 10airD.i

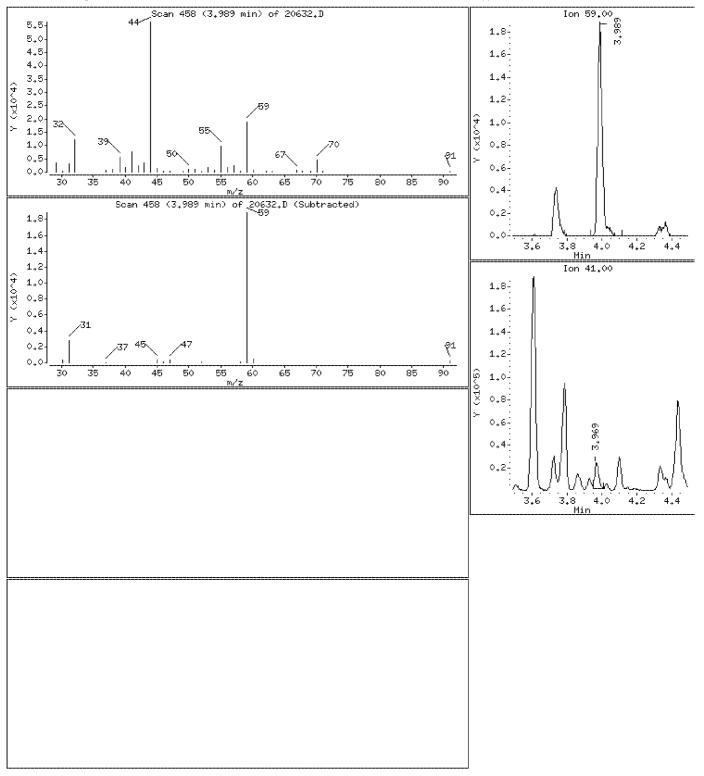
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 466 of 1066

Date : 26-JUL-2013 04:34

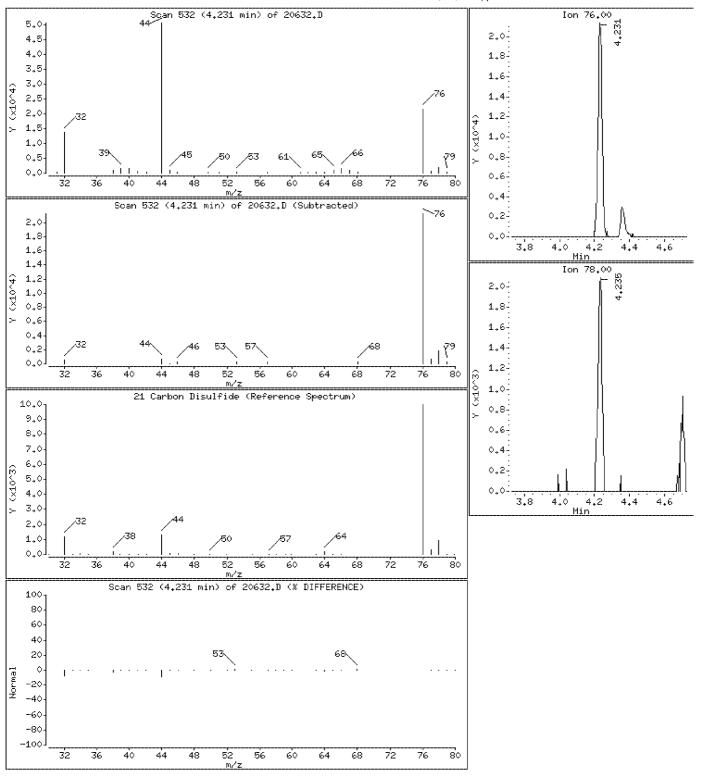
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 467 of 1066

Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

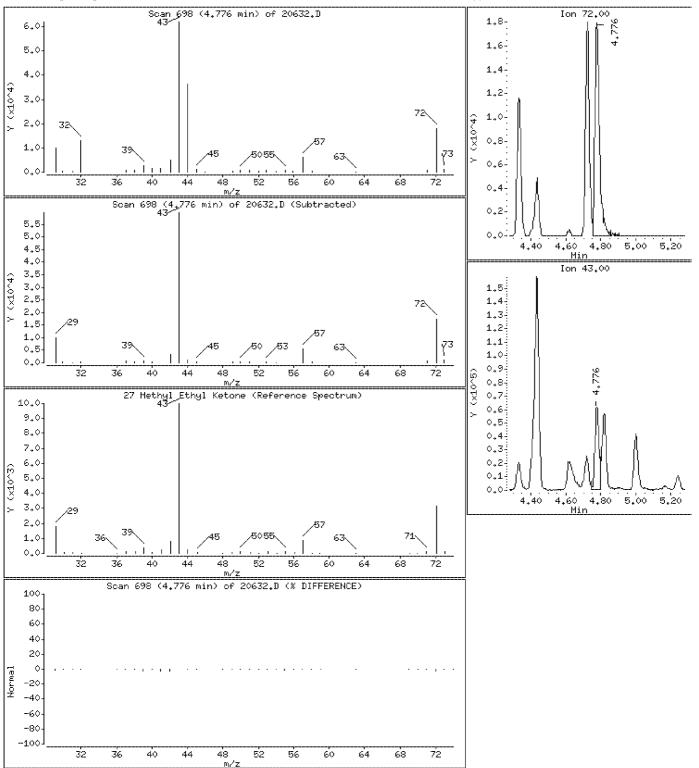
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 468 of 1066

Date : 26-JUL-2013 04:34

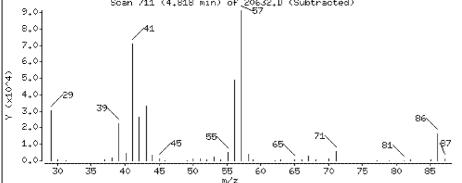
Client ID: Instrument: 10airD.i

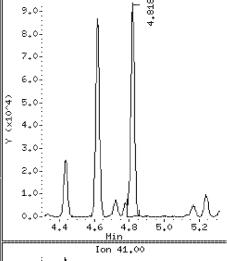
Sample Info:

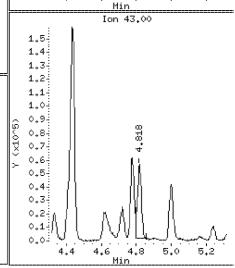
Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

Ion 57,00 28 n-Hexane Concentration: 6.42 ppbv Scan 711 (4.818 min) of 20632.D 9.04 9.04 8.0 8.0-7.0 7.0-6.0 5.0 6.04 4.0







3.0 86 2.0 1.0 0.0 35 Scan 711 (4.818 min) of 20632.D (Subtracted) 7.5-4,818 7.0 6.5 6.0 5.5 5.0 4.5 4.0-3.5 3.04 2.5 2.0-1.5 1.0 0.5 4.4 5.0 4.6 4.8

Date : 26-JUL-2013 04:34

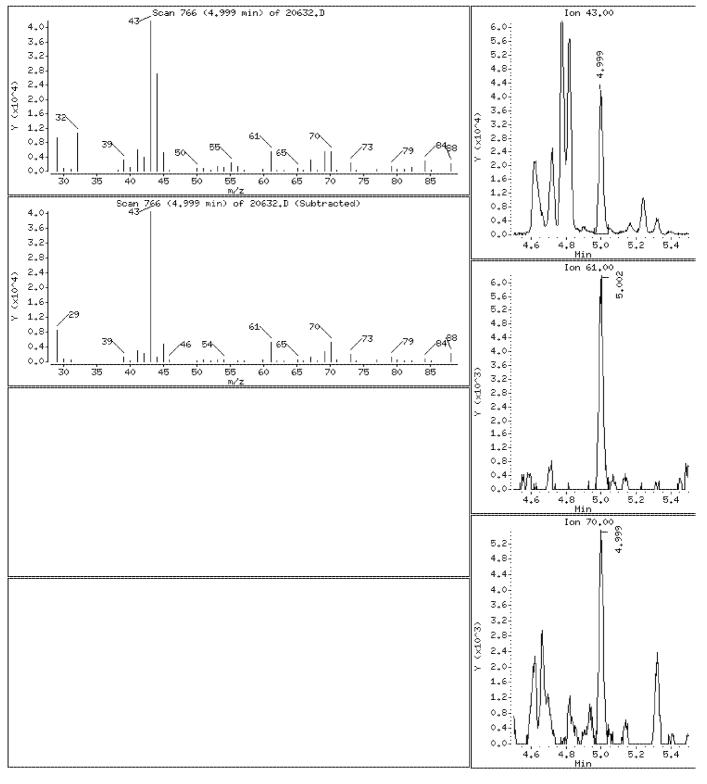
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

30 Ethyl Acetate Concentration: 3.07 ppbv



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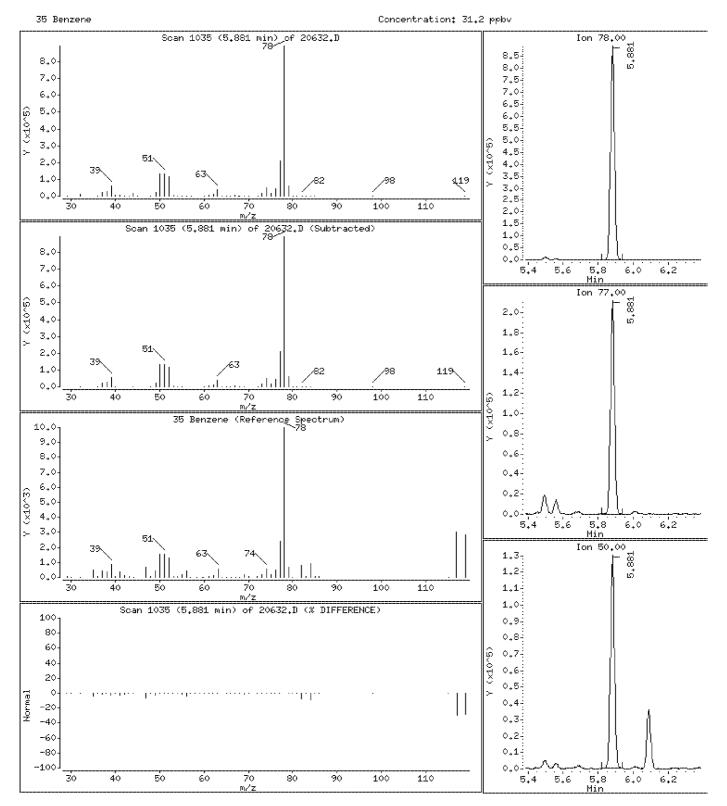
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 471 of 1066

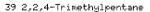
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

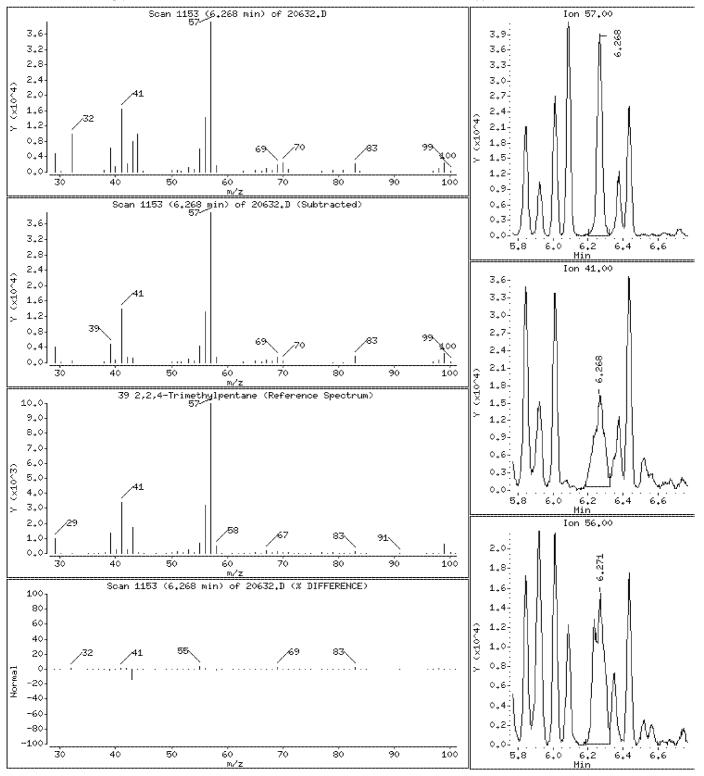
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 472 of 1066

Date : 26-JUL-2013 04:34

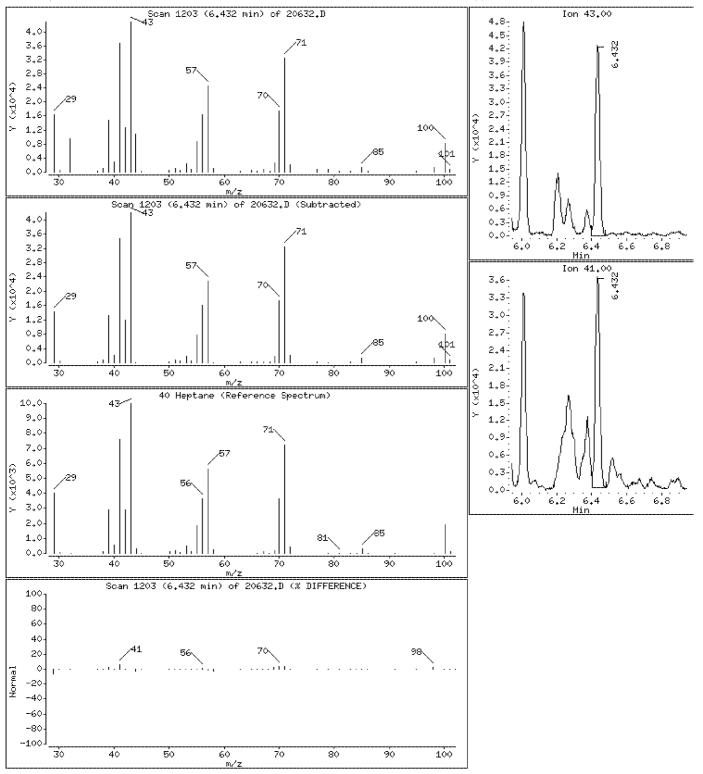
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 473 of 1066

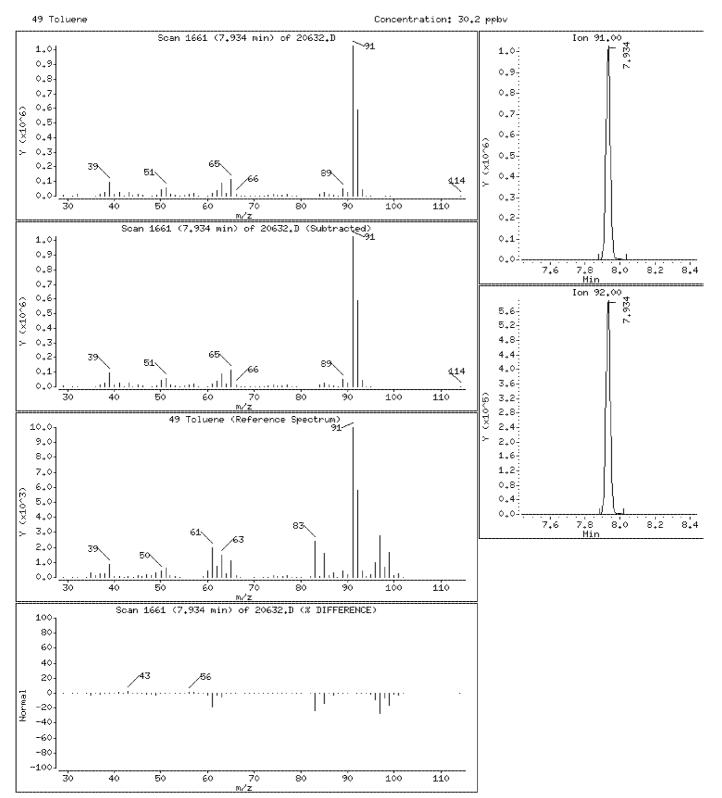
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 474 of 1066

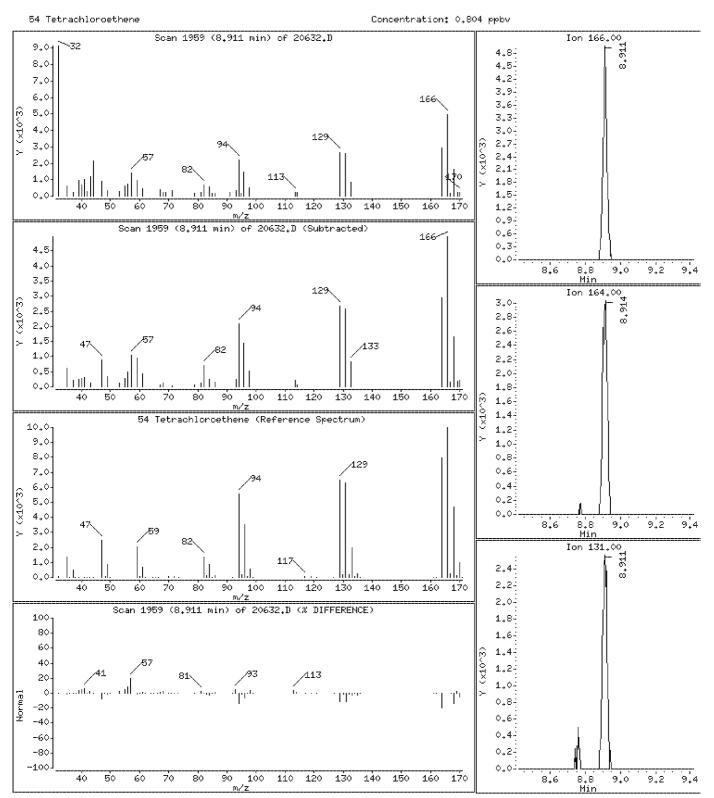
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 475 of 1066

Date : 26-JUL-2013 04:34

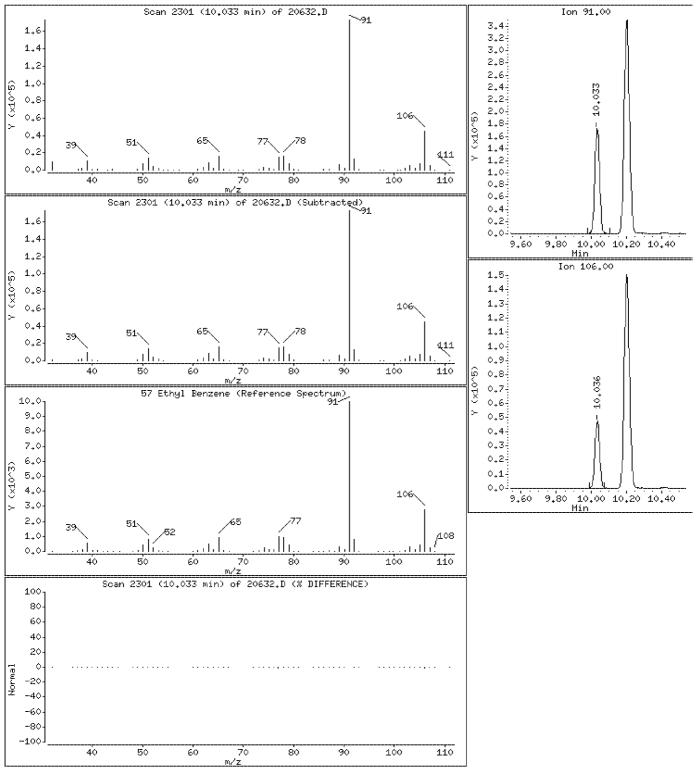
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 476 of 1066

Date : 26-JUL-2013 04:34

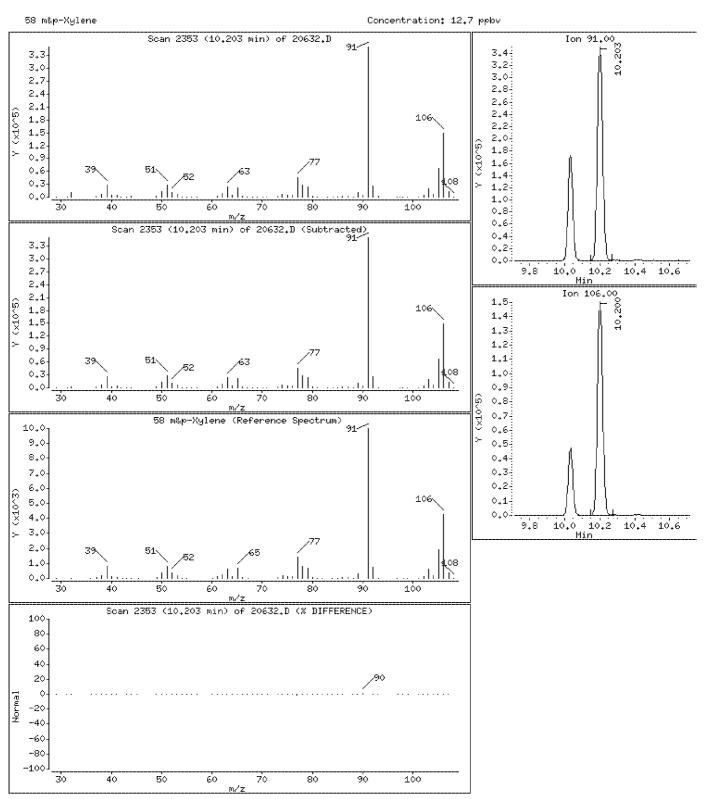
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





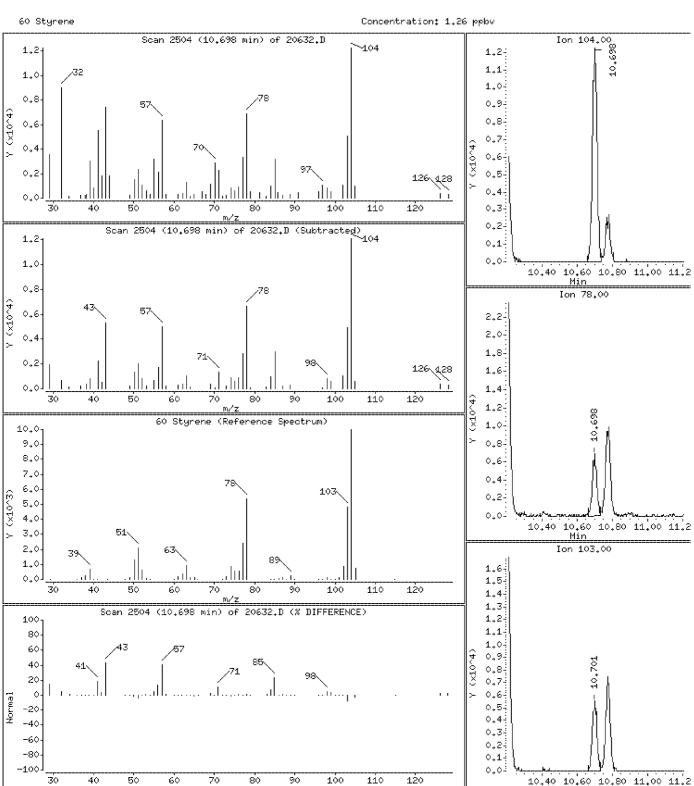
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 478 of 1066

Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

Sample Info:

-40 -60 -80

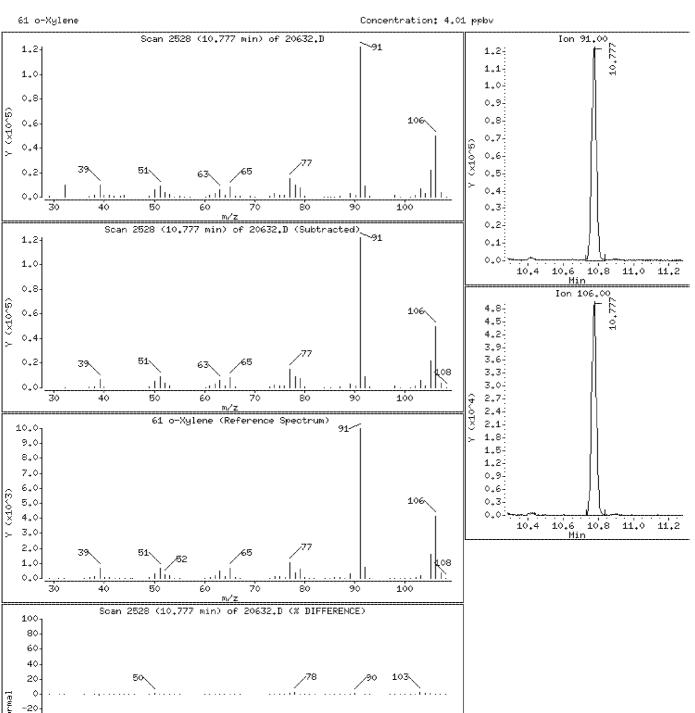
30

40

50

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



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100

80

90

Date : 26-JUL-2013 04:34

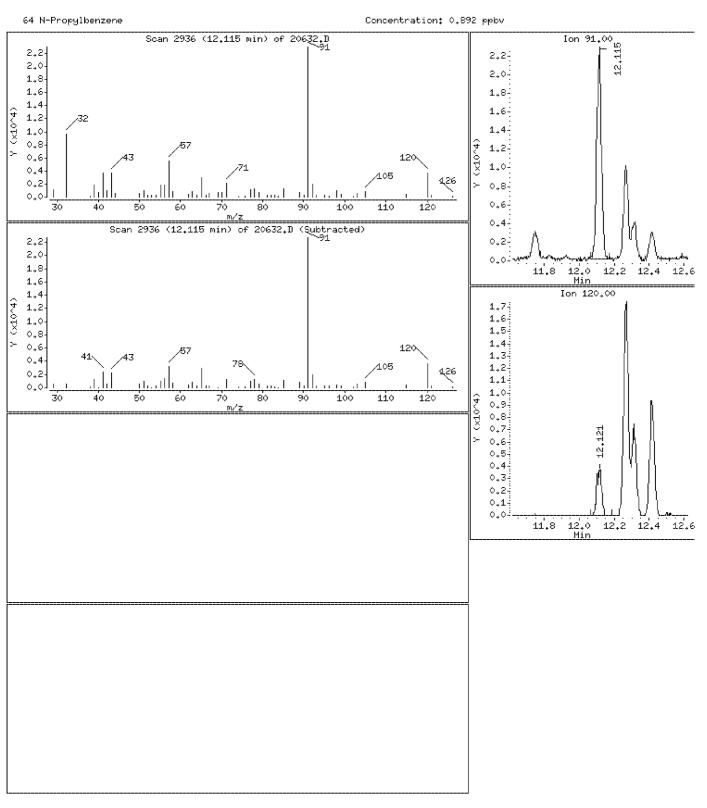
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 04:34

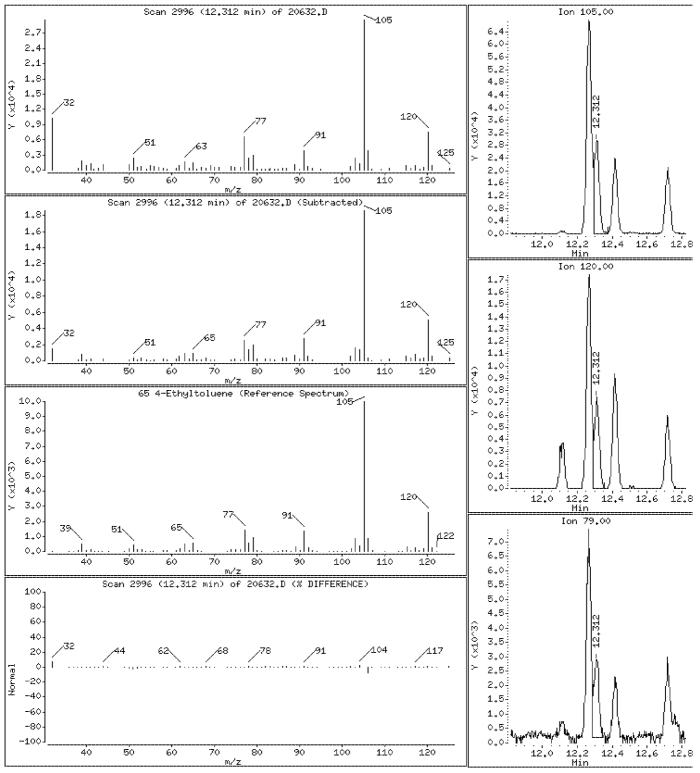
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 481 of 1066

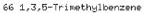
Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

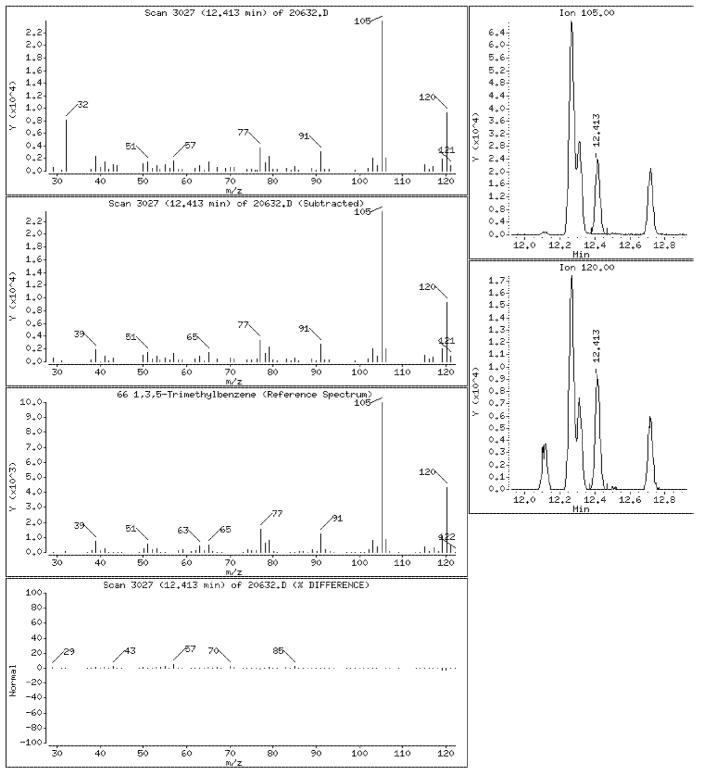
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 482 of 1066

Date : 26-JUL-2013 04:34

Client ID: Instrument: 10airD.i

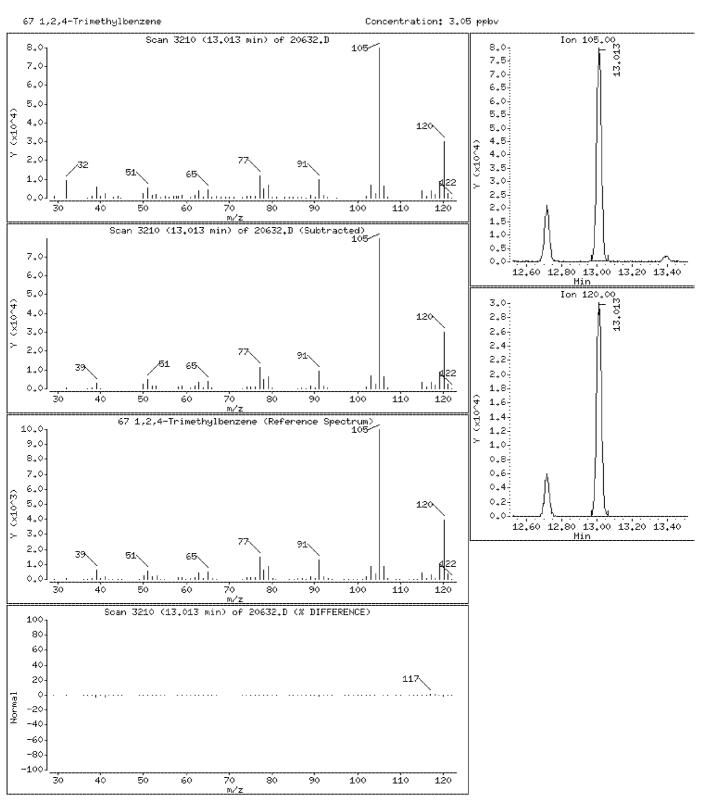
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







Date : 26-JUL-2013 04:34

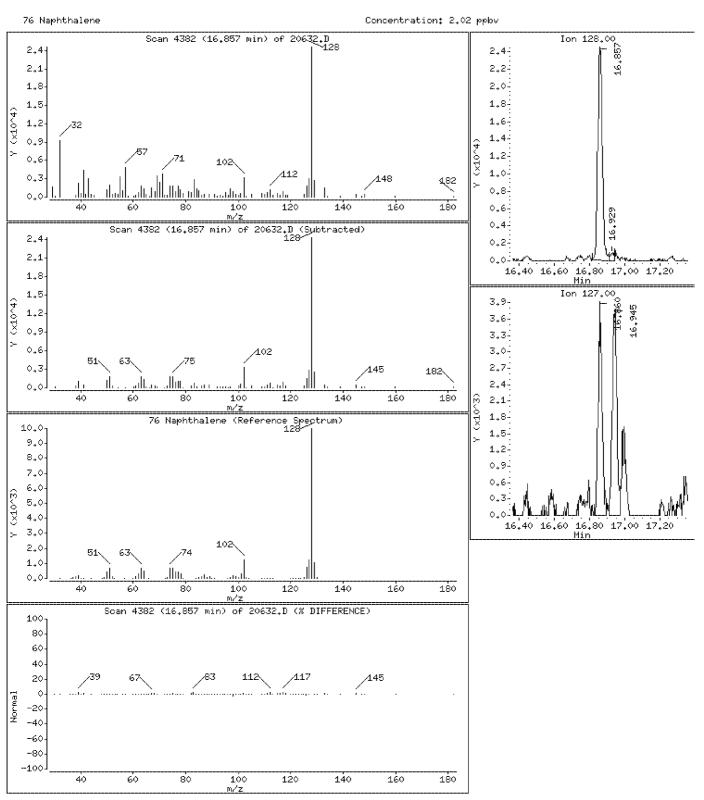
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



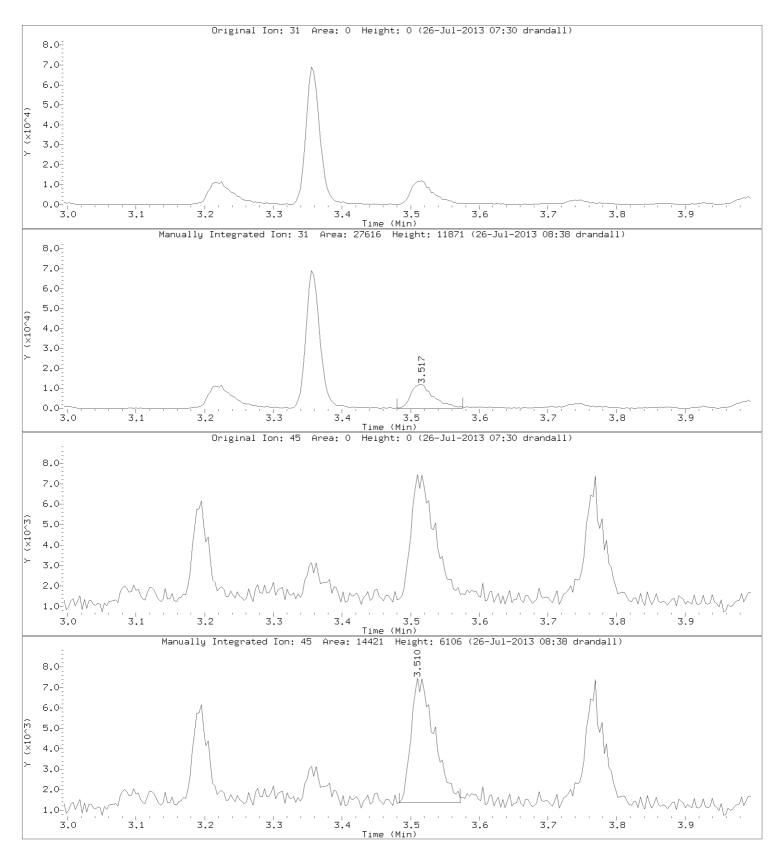


Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

Compound: Ethanol CAS Number: 64-17-5



10236207 485 of 1066

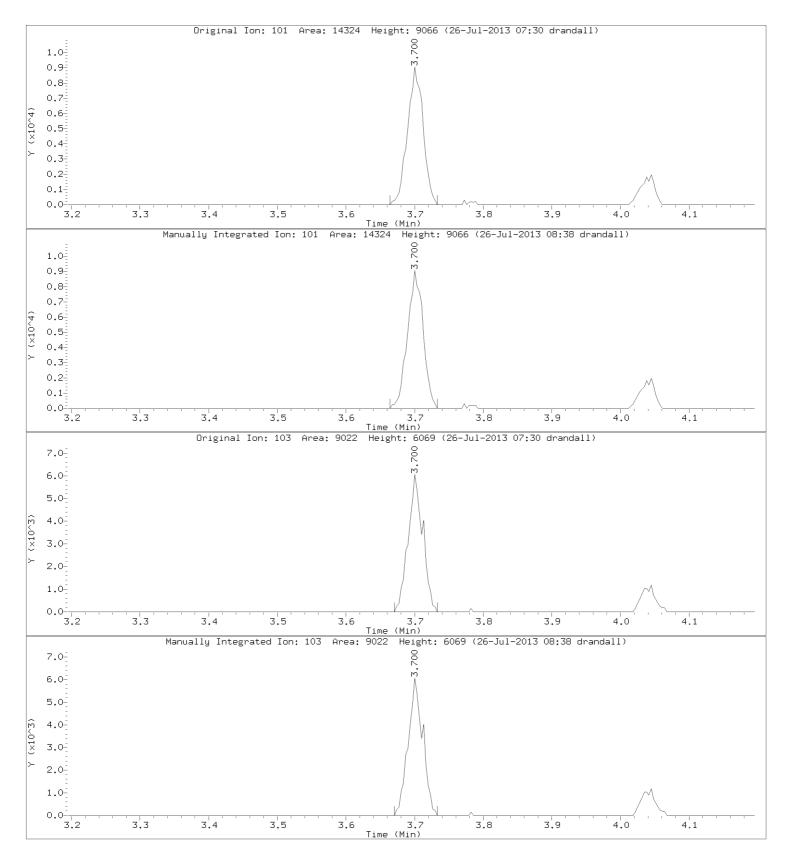
Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

Compound: Trichlorofluoromethane

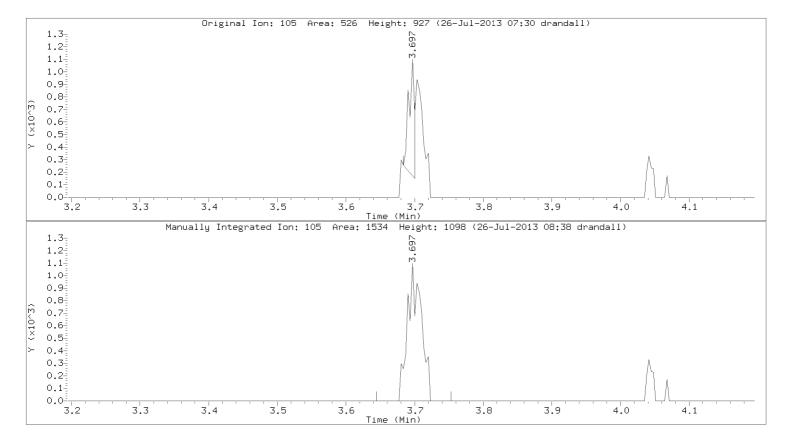
CAS Number: 75-69-4



10236207 486 of 1066

Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i Lab Sample ID: 10236207004



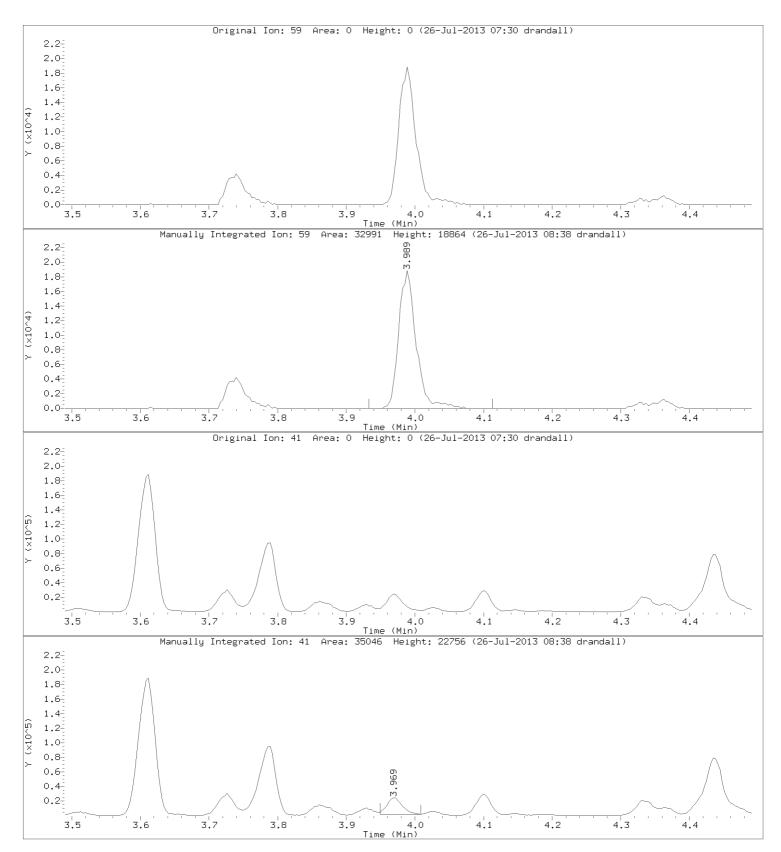
Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



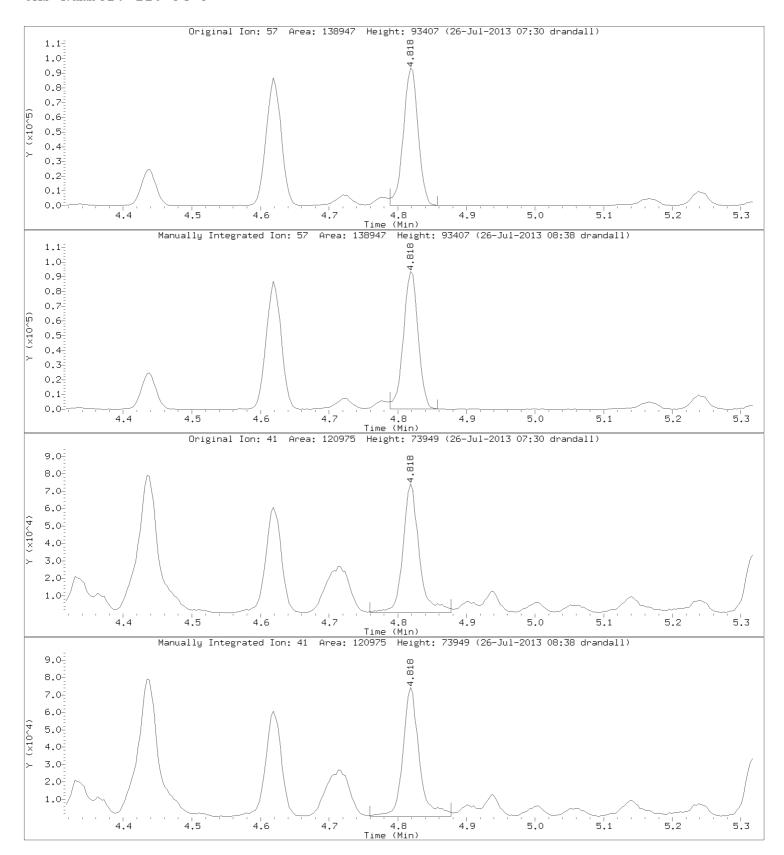
10236207 488 of 1066

Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

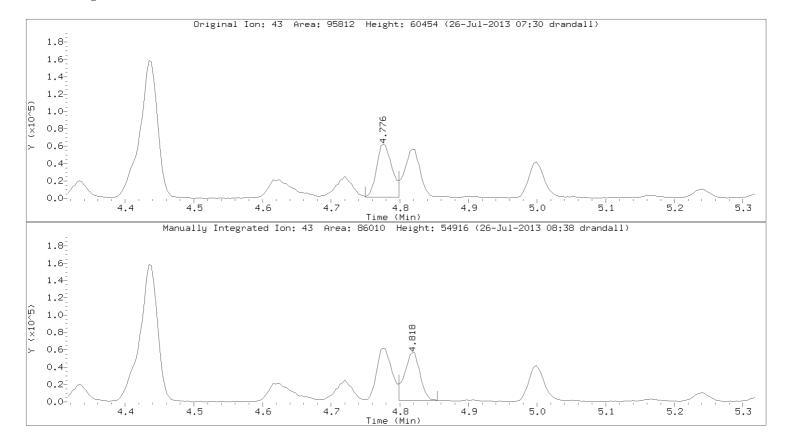
Compound: n-Hexane CAS Number: 110-54-3



10236207 489 of 1066

Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i Lab Sample ID: 10236207004

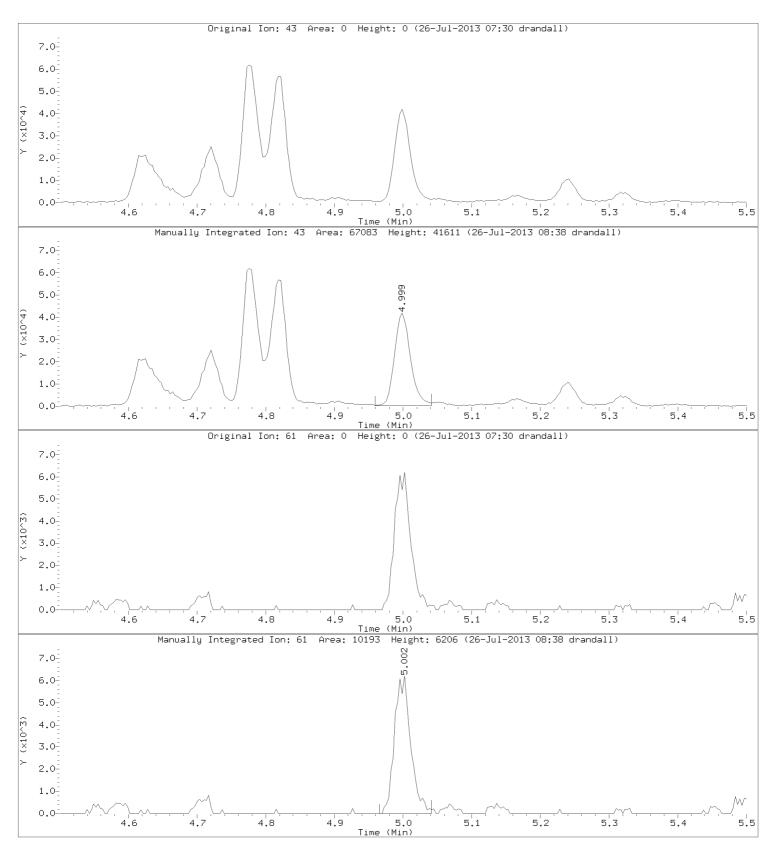


Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

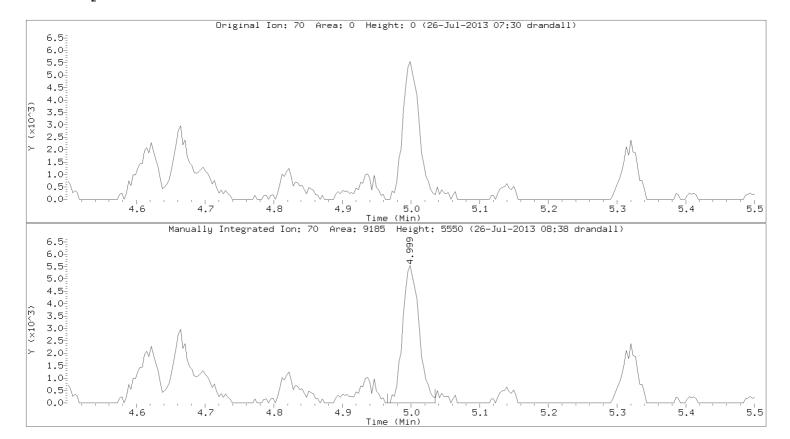
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 491 of 1066

Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i Lab Sample ID: 10236207004



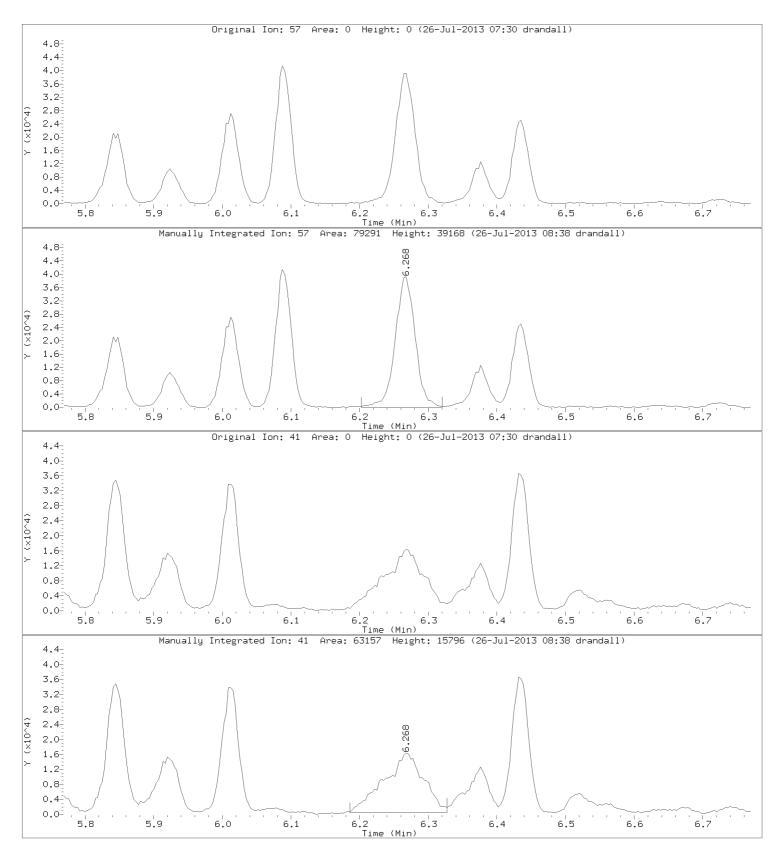
Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

Compound: 2,2,4-Trimethylpentane

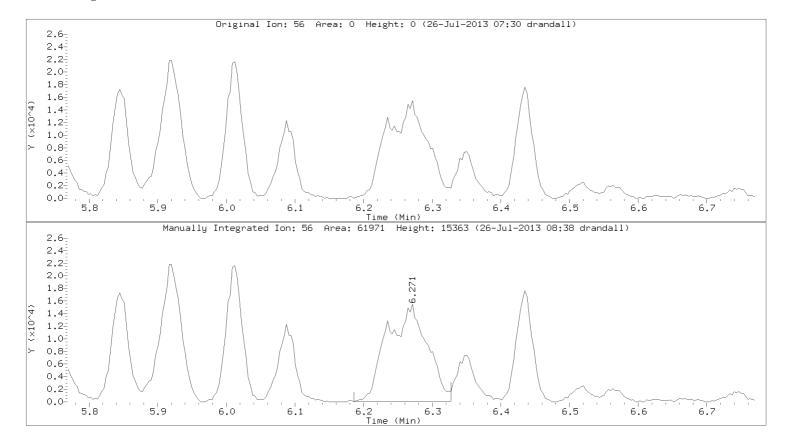
CAS Number: 540-84-1



10236207 493 of 1066

Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i Lab Sample ID: 10236207004

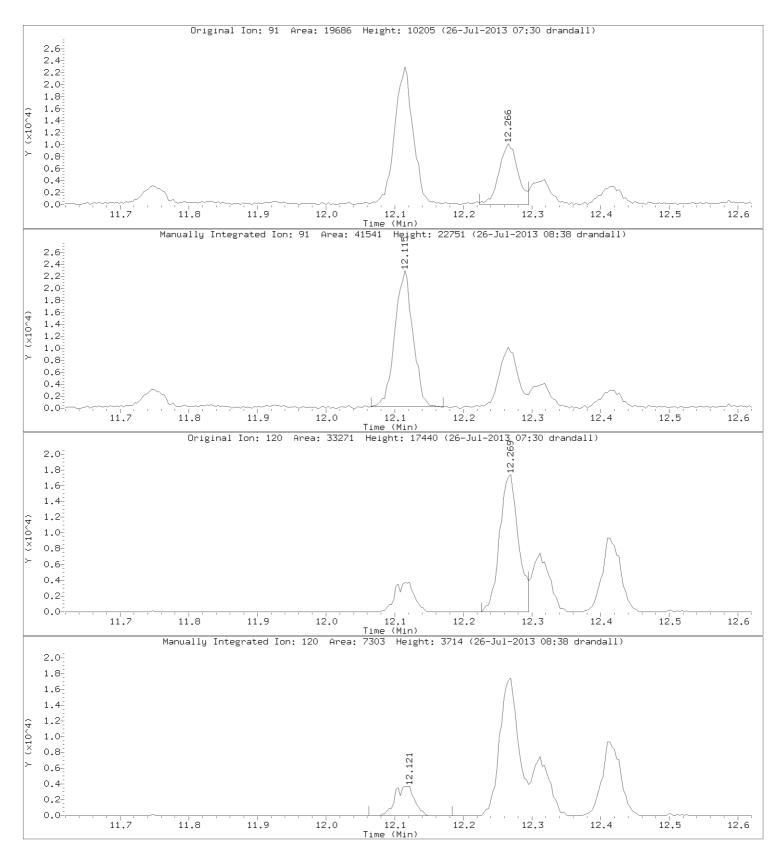


Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

Compound: N-Propylbenzene CAS Number: 103-65-1



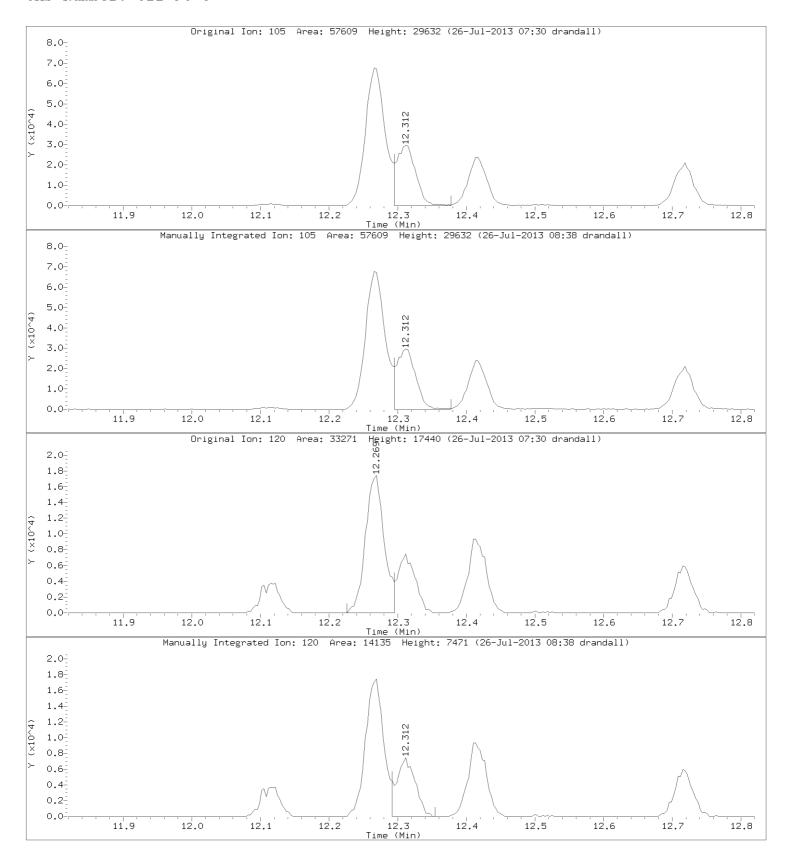
10236207 495 of 1066

Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

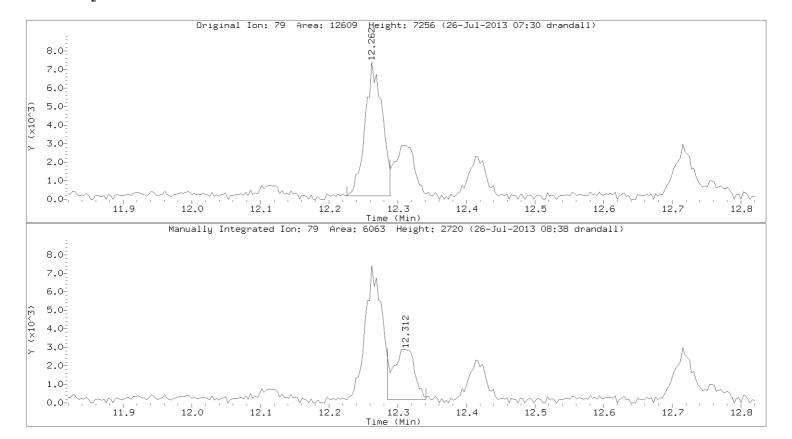
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 496 of 1066

Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i Lab Sample ID: 10236207004



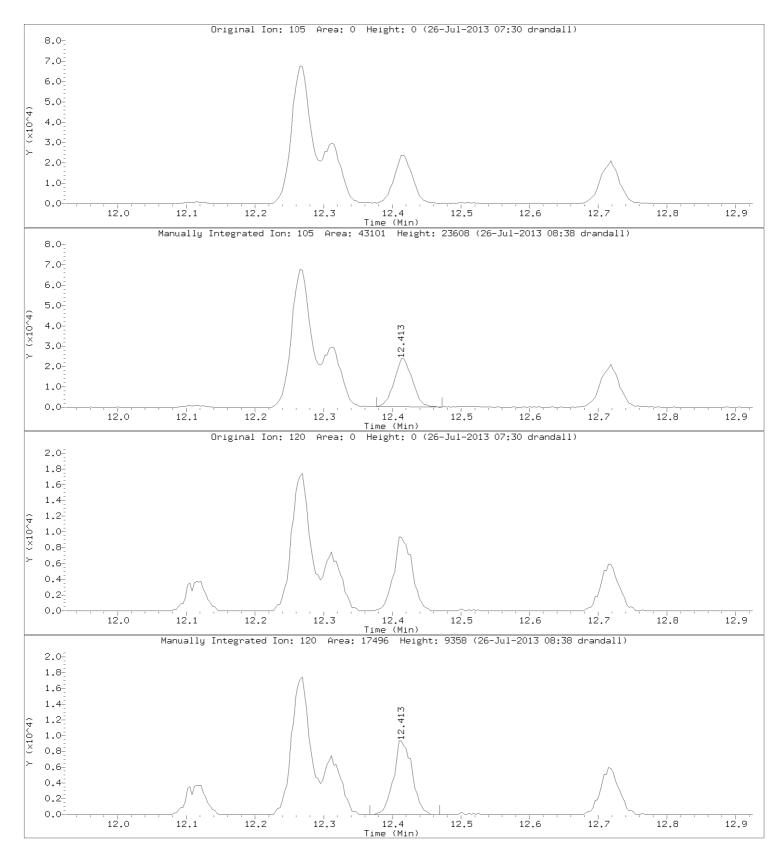
Injection Date: 26-JUL-2013 04:34

Instrument: 10airD.i

Lab Sample ID: 10236207004

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



10236207 498 of 1066

Report Date: 26-Jul-2013 08:08

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20618.d
Lab Smp Id: 10236207005
Inj Date: 25-JUL-2013 21:26
Operator: DR1
Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 18

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)			
1 Propylene	41	2.975 2.982 (0.489) 379497	38.4938 55.4(A)			
2 Dichlorodifluoromethane	85	3.001 3.008 (0.493) 23717	0.25040 0.360			
3 Dichlorotetrafluoroethane	85	Compound Not Detected.				
4 Chloromethane	50	Compound Not Detected.				
5 Vinyl chloride	62	Compound Not Detected.				
6 1,3-Butadiene	54	Compound Not Detected.				
7 Bromomethane	94	Compound Not Detected.				
8 Chloroethane	64	Compound Not Detected.				
9 Ethanol	31	3.493 3.494 (0.574) 74563	6.60791 9.52(M)			
10 Vinyl Bromide	106	6 Compound Not Detected.				
11 Acrolein	56	Compound Not Detected.				
12 Trichlorofluoromethane	101	3.696 3.694 (0.607) 12369	0.12005 0.173			
13 Acetone	43	3.726 3.726 (0.612) 591446	11.4521 16.5			
14 Isopropyl Alcohol	45	Compound Not Detected.				
15 1,1-Dichloroethene	61	Compound Not Detected.				
16 Acrylonitrile	53	Compound Not Detected.				
17 Tert Butyl Alcohol	59	3.978 3.989 (0.654) 72104	1.33079 1.92(M)			
18 Freon 113	101	Compound Not Detected.				
19 Methylene chloride	49	4.100 4.094 (0.674) 8986	0.30710 0.442			
20 Allyl Chloride	76	Compound Not Detected.				
21 Carbon Disulfide	76	4.228 4.224 (0.695) 39975	0.46947 0.676			
22 trans-1,2-dichloroethene	96	Compound Not Detected.				
23 Methyl Tert Butyl Ether	73	Compound Not Detected.				
24 Vinyl Acetate	43	Compound Not Detected.				

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20618.d$ Report Date: 26-Jul-2013 08:08

			CONCENTRATIONS
		QUANT SIG	ON-COLUMN FINAL
Compounds		MASS ====	RT EXP RT REL RT RESPONSE ( ppbv) ( ppbv
	ichloroethane	63	Compound Not Detected.
\$ 26 Hexan	e-d14(S)	66	4.700 4.700 (0.772) 324213 8.61835 8.6
27 Methy.	l Ethyl Ketone	72	4.772 4.779 (0.784) 42779 3.57775 5.3
28 n-Hex	ane	57	4.815 4.818 (0.791) 62047 1.81435 2.6
29 cis <b>-</b> 1	,2-Dichloroethene	96	Compound Not Detected.
30 Ethyl	Acetate	43	4.995 4.999 (0.821) 59520 1.77077 2.5
31 Chlor	oform	83	Compound Not Detected.
32 Tetra	hydrofuran	42	Compound Not Detected.
33 1,1,1	-Trichloroethane	97	Compound Not Detected.
34 1,2-D	ichloroethane	62	Compound Not Detected.
35 Benze:	ne	78	5.880 5.887 (0.966) 177143 2.82349 4.0
36 Carbo	n tetrachloride	117	Compound Not Detected.
37 Cyclo	hexane	56	5.910 5.910 (0.971) 12708 0.92014 1.3
* 38 1,4-D	ifluorobenzene	114	6.087 6.094 (1.000) 779031 10.0000
39 2,2,4	-Trimethylpentane	57	Compound Not Detected.
40 Hepta	ne	43	6.435 6.442 (1.057) 20349 1.17673 1.6
41 1,2-D	ichloropropane	63	Compound Not Detected.
42 Trich	loroethene	130	Compound Not Detected.
43 1,4-D	ioxane	88	Compound Not Detected.
44 Bromo	dichloromethane	83	Compound Not Detected.
45 Methy	l Isobutyl Ketone	43	7.222 7.229 (1.186) 10289 0.65235 0.93
46 cis-1	,3-Dichloropropene	75	Compound Not Detected.
47 trans	-1,3-Dichloropropene	75	Compound Not Detected.
\$ 48 Tolue:	ne-d8 (S)	98	7.841 7.848 (1.288) 557405 10.2451 10.
49 Tolue:	ne	91	7.930 7.940 (1.303) 334825 3.92960 5.6
50 1,1,2	-Trichloroethane	97	Compound Not Detected.
51 Methy	l Butyl Ketone	43	Compound Not Detected.
52 Dibro	mochloromethane	129	Compound Not Detected.
53 1,2-D	ibromoethane	107	Compound Not Detected.
	chloroethene	166	8.914 8.918 (0.920) 7024 0.53002 0.76
* 55 Chlor	obenzene – d5	117	9.684 9.691 (1.000) 291914 10.0000
56 Chlor	obenzene	112	Compound Not Detected.
57 Ethyl	Benzene	91	10.035 10.039 (1.036) 90712 1.10191 1.5
58 m&p-X		91	10.202 10.213 (1.053) 277898 3.32295 4.7
59 Bromo		173	Compound Not Detected.
60 Styre:		104	10.698 10.708 (1.105) 12800 0.68000 0.9
61 o-Xyl		91	10.776 10.783 (1.113) 90802 1.15847 1.6
	,2-Tetrachloroethane	83	Compound Not Detected.
_	opylbenzene	105	Compound Not Detected.
	pylbenzene	91	12.114 12.121 (1.251) 24485 0.47220 0.68
	yltoluene	105	12.308 12.321 (1.271) 33784 0.63641 0.91
	-Trimethylbenzene	105	12.419 12.426 (1.282) 24336 0.55102 0.79
	-Trimethylbenzene	105	13.013 13.020 (1.344) 110265 1.55535 2.2
	ichlorobenzene	146	Compound Not Detected.
	Butylbenzene	105	Compound Not Detected.
	ichlorobenzene-d4 (S)	150	13.449 13.459 (1.389) 108724 9.22721 9.2
_	l Chloride	91	Compound Not Detected.
	ichlorobenzene	146	Compound Not Detected.
	ichlorobenzene	146	Compound Not Detected.
	ylbenzene	91	14.318 14.325 (1.478) 14245 0.43334 0.62
	-Trichlorobenzene	180	Compound Not Detected.
76 Napht		128	16.856 16.860 (1.741) 39467 1.23079 1.
77 Hexac	hlorobutadiene	225	Compound Not Detected.

10236207 500 of 1066

Report Date: 26-Jul-2013 08:08

# QC Flag Legend

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

Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.

10236207 501 of 1066

Report Date: 26-Jul-2013 08:08

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20618.d

Lab Smp Id: 10236207005 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DIFF
38 1,4-Difluorobenze	579775	347865	811685	779031	34.37
55 Chlorobenzene - d	221404	132842	309966	291914	31.85

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

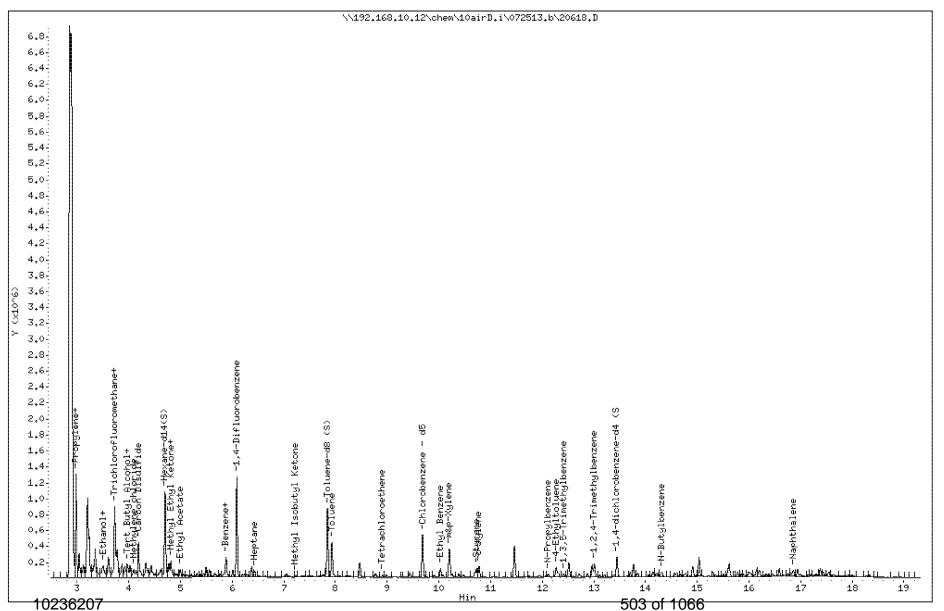
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 25-JUL-2013 21:26

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 25-JUL-2013 21:26

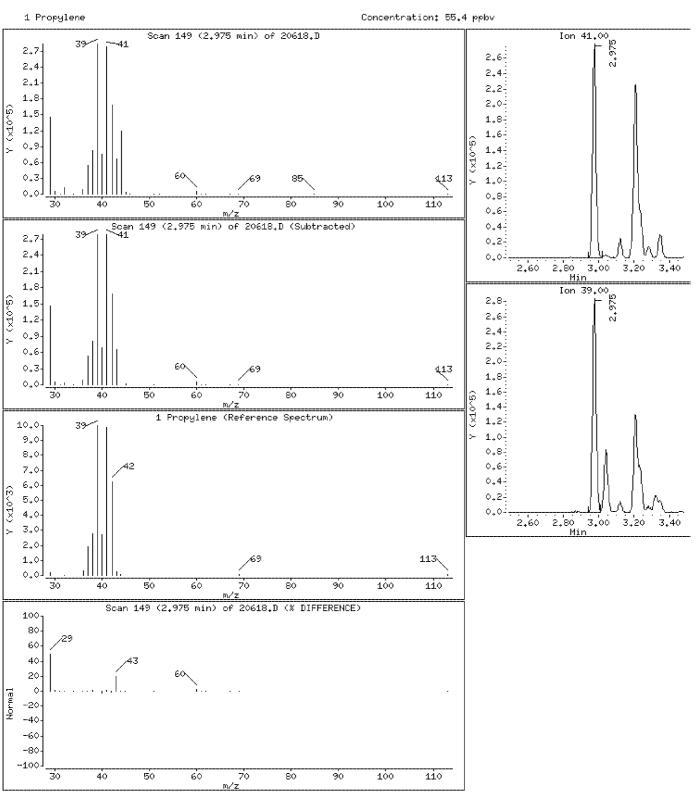
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

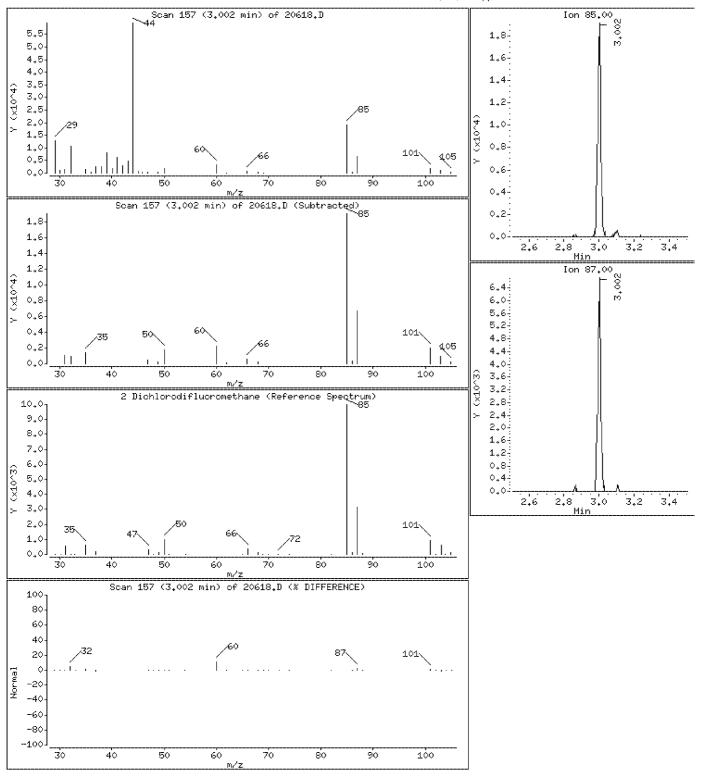
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.360 ppbv



10236207 505 of 1066

Date : 25-JUL-2013 21:26

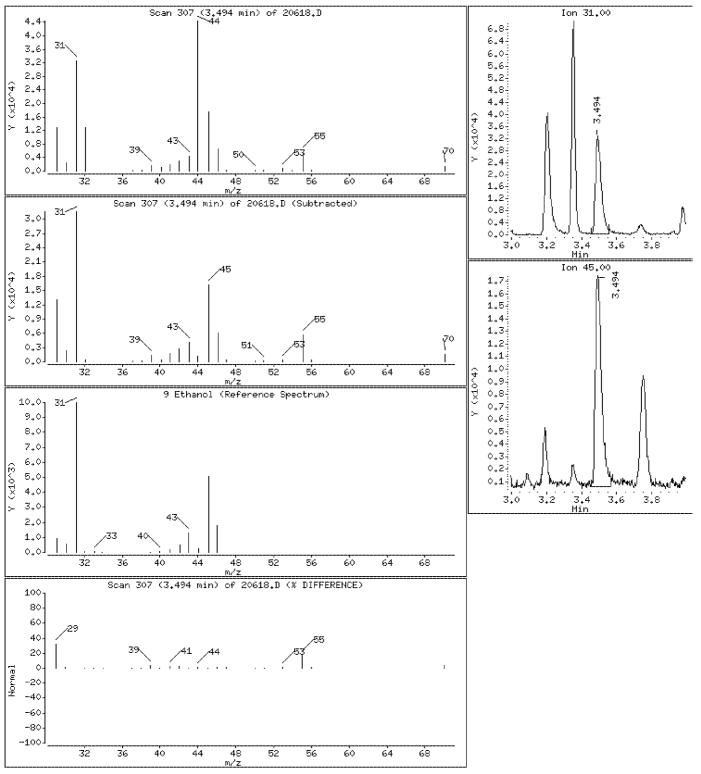
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 506 of 1066

Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

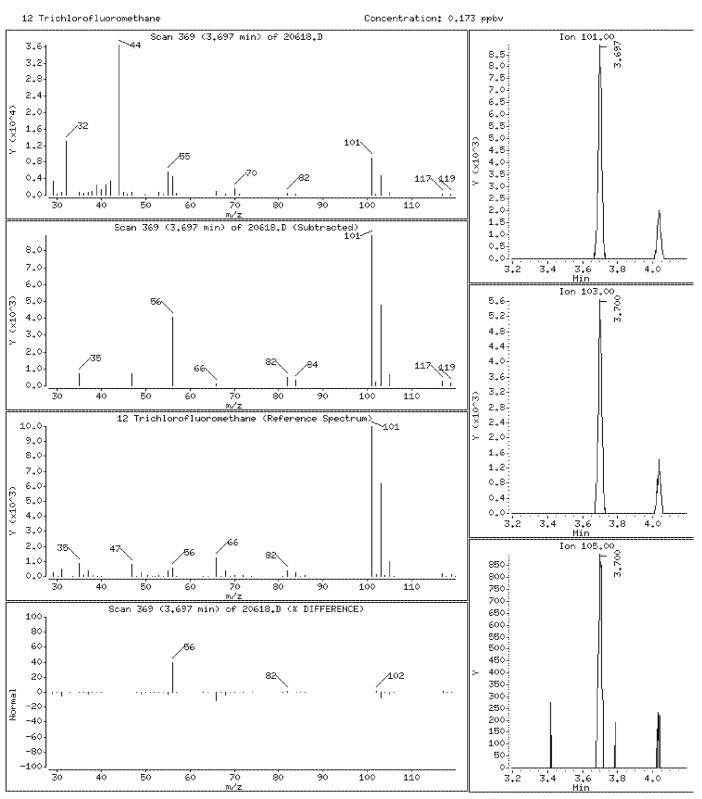
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.173 ppbv



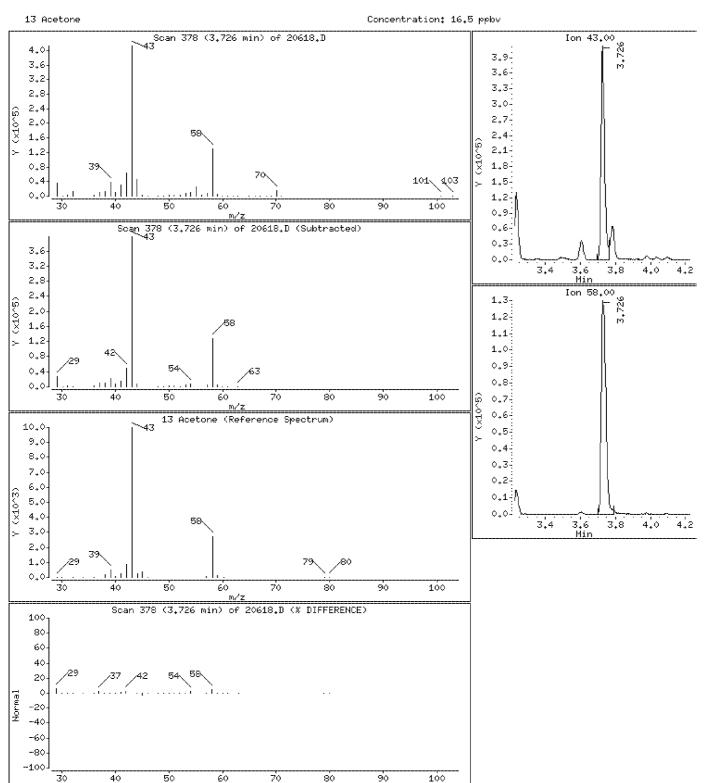
Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 508 of 1066

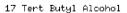
Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

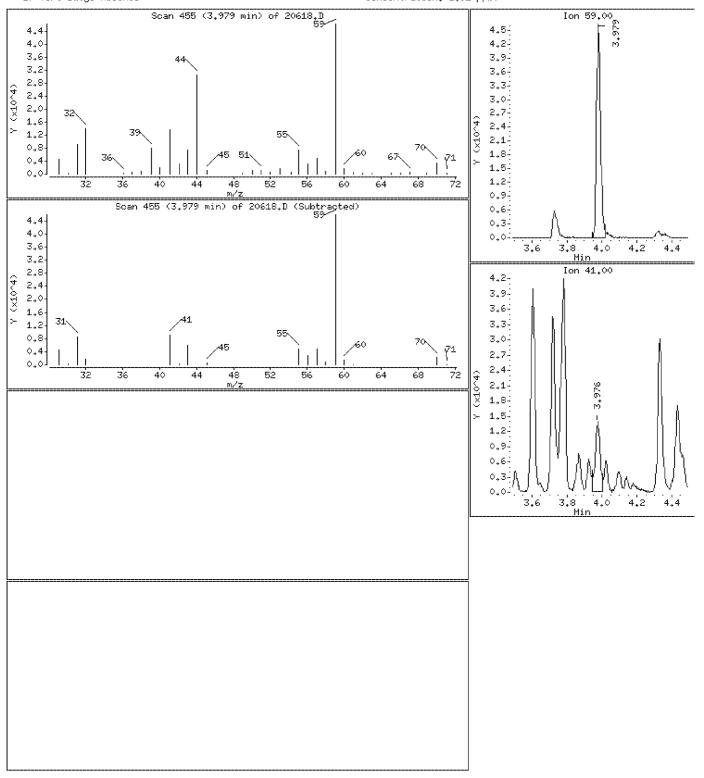
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 509 of 1066

Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

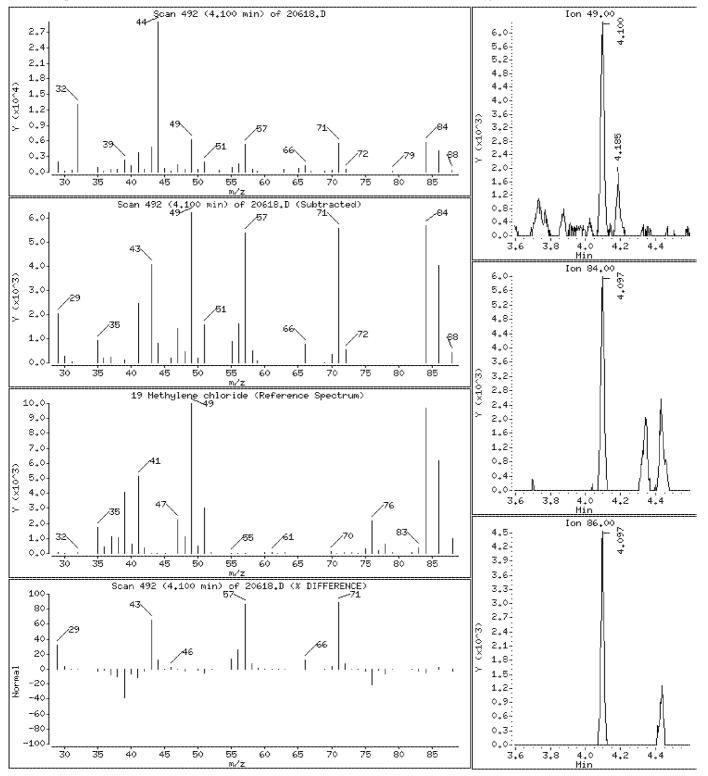
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.442 ppbv



10236207 510 of 1066

Date : 25-JUL-2013 21:26

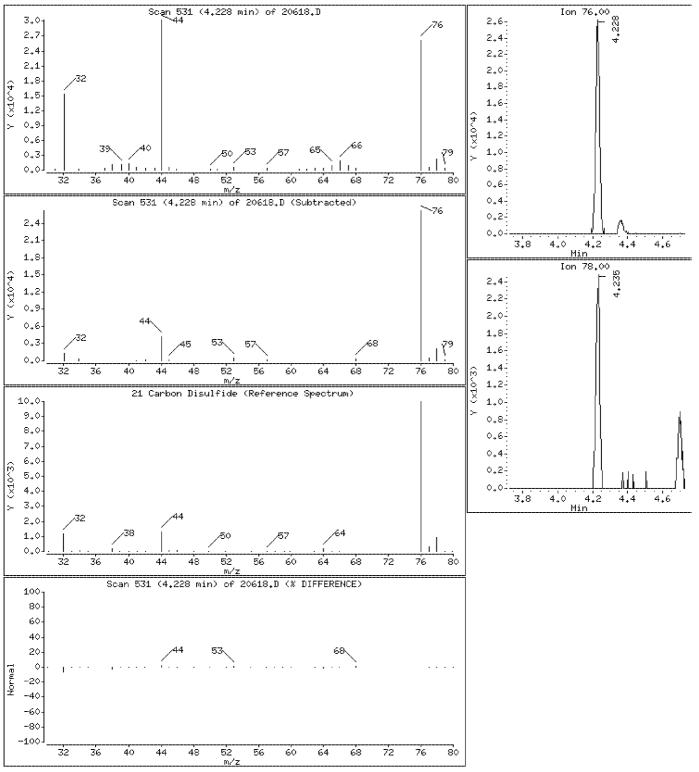
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 511 of 1066

Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

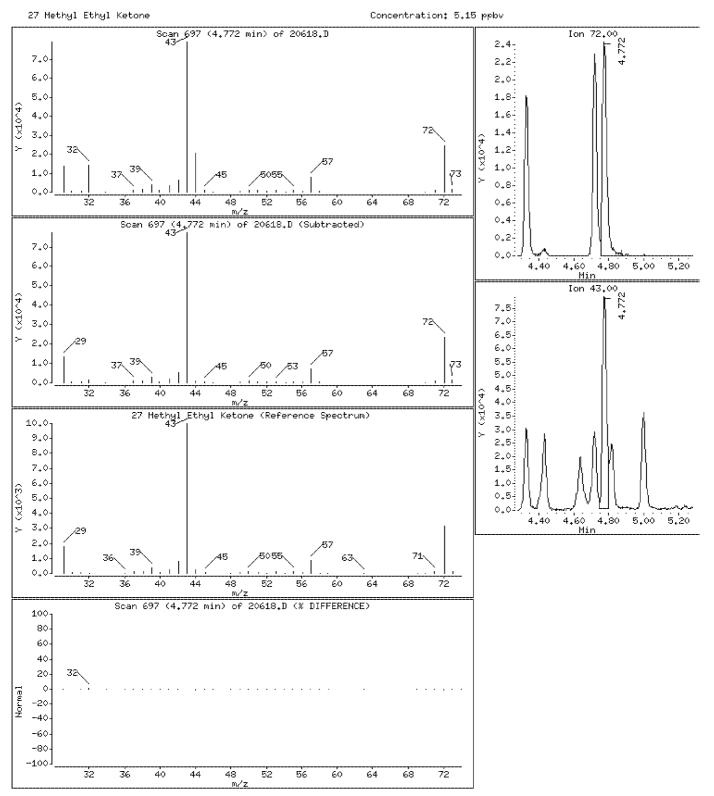
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

27 Methyl Ethyl Ketone

Concentration: 5.15 ppbv



Date : 25-JUL-2013 21:26

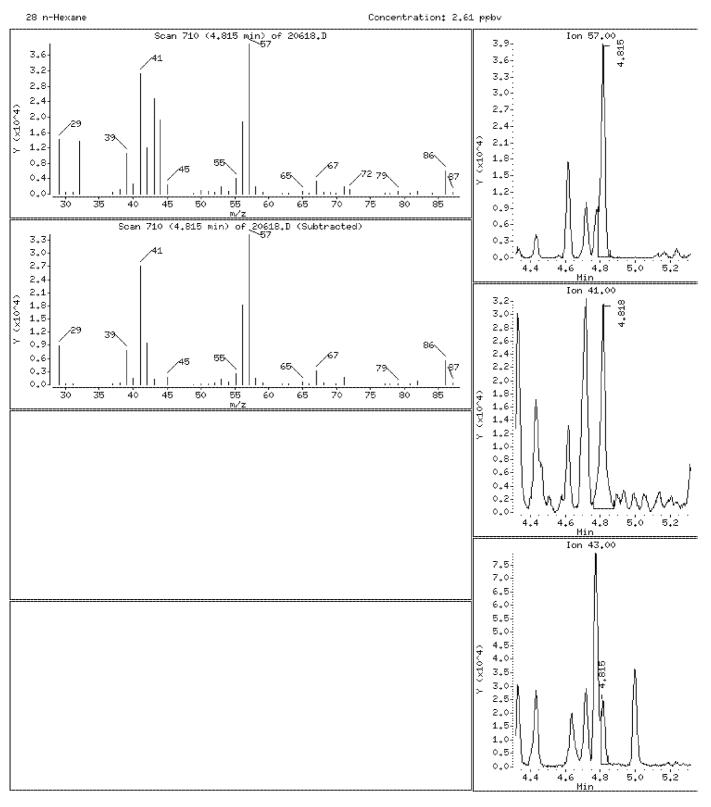
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 2.61 ppbv



Date : 25-JUL-2013 21:26

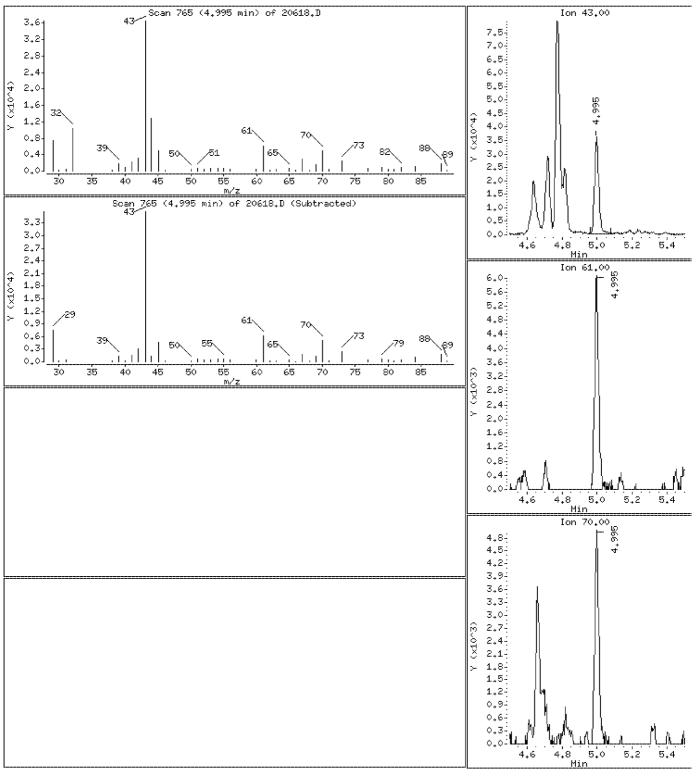
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 514 of 1066

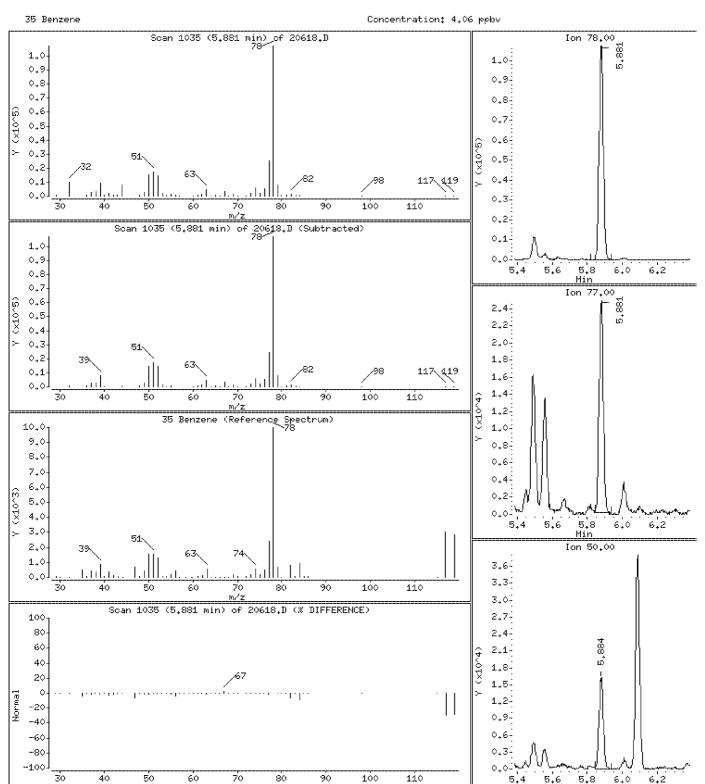
Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 515 of 1066

Date : 25-JUL-2013 21:26

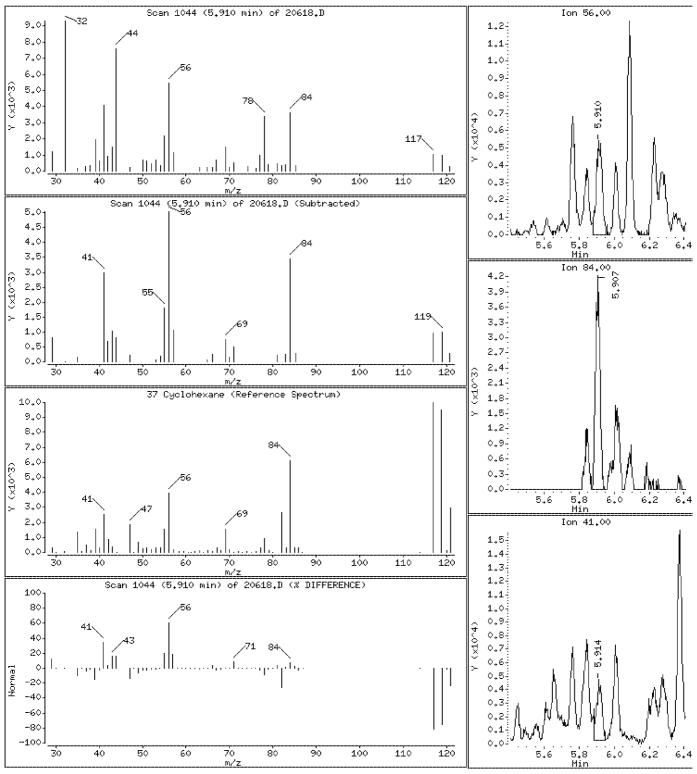
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 516 of 1066

Date : 25-JUL-2013 21:26

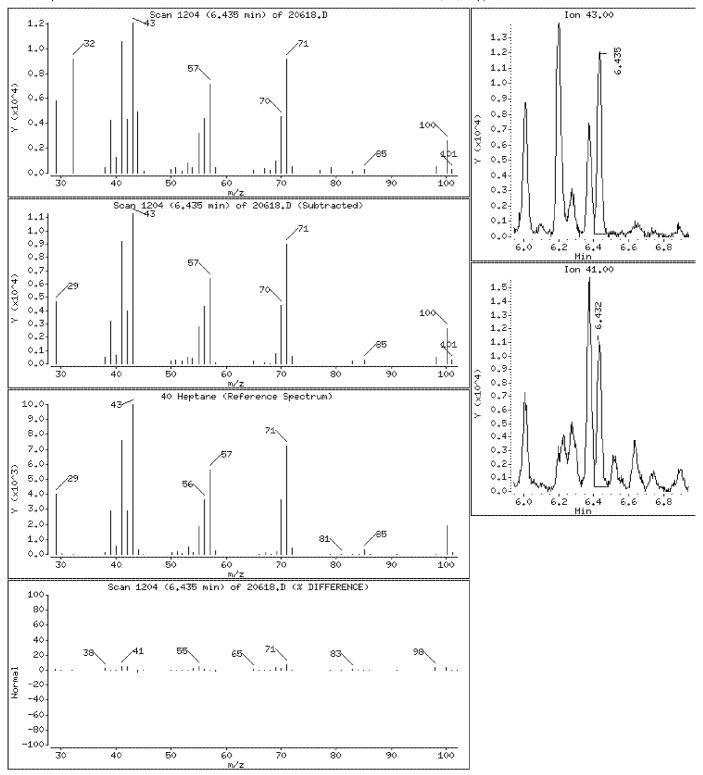
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 517 of 1066

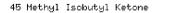
Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

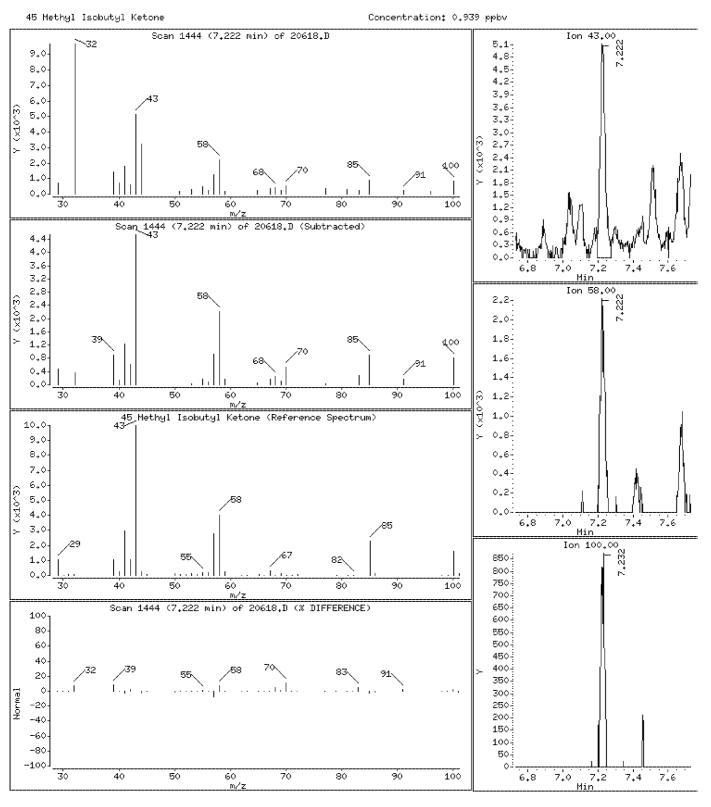
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.939 ppbv



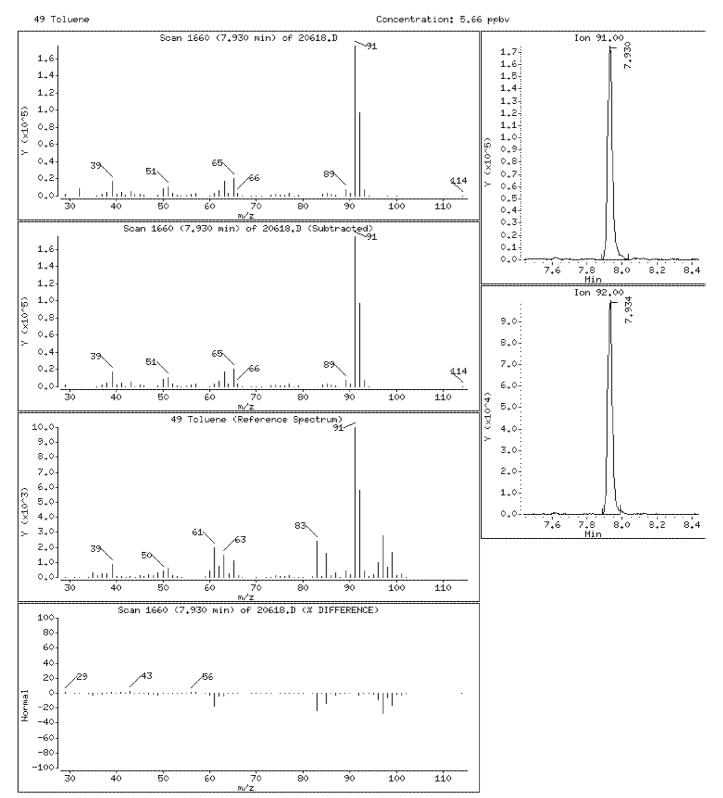
Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 519 of 1066

Date : 25-JUL-2013 21:26

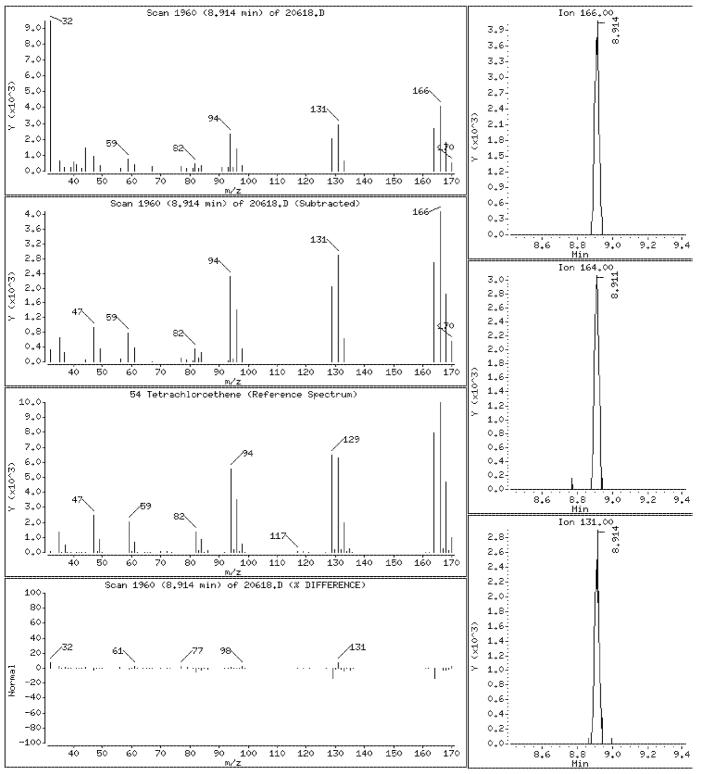
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 520 of 1066

Date : 25-JUL-2013 21:26

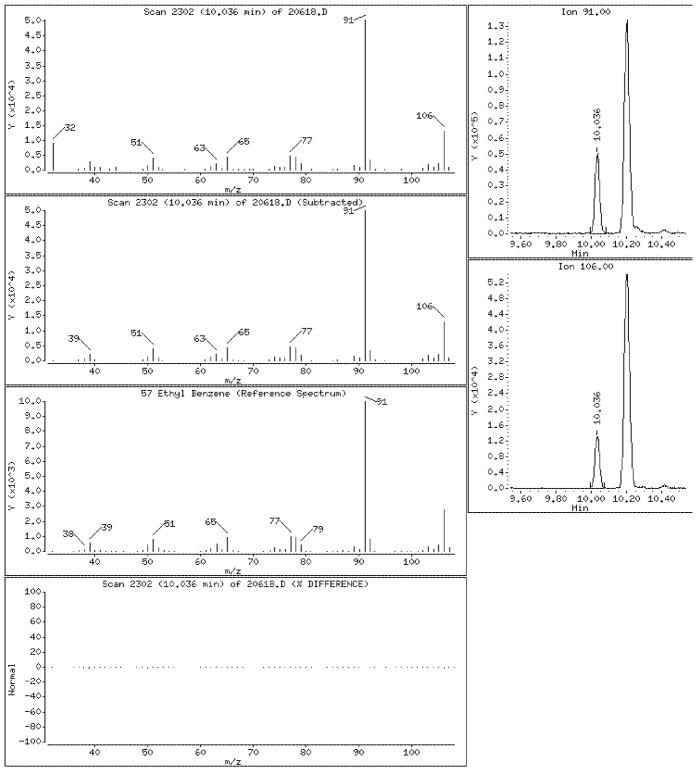
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 521 of 1066

Date : 25-JUL-2013 21:26

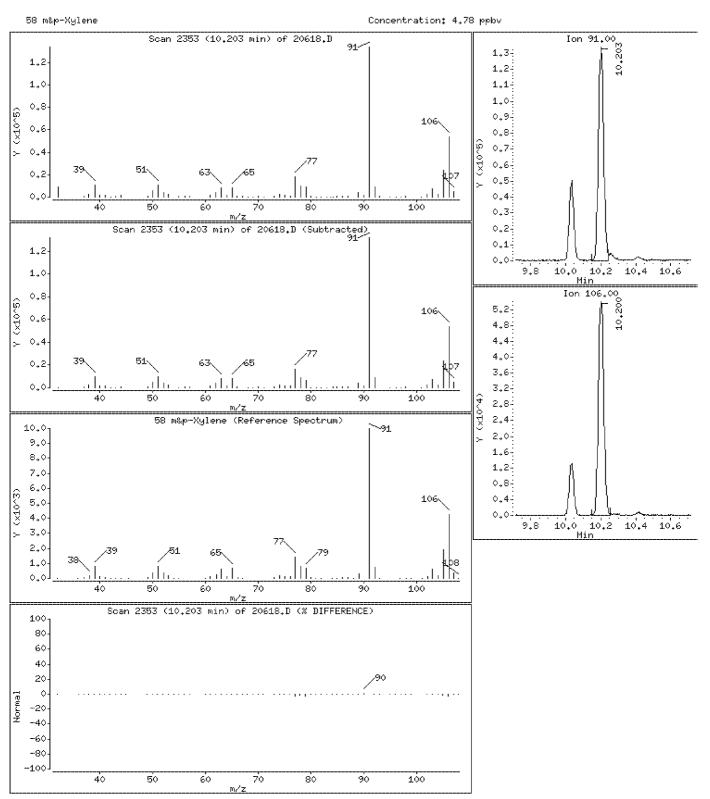
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 21:26

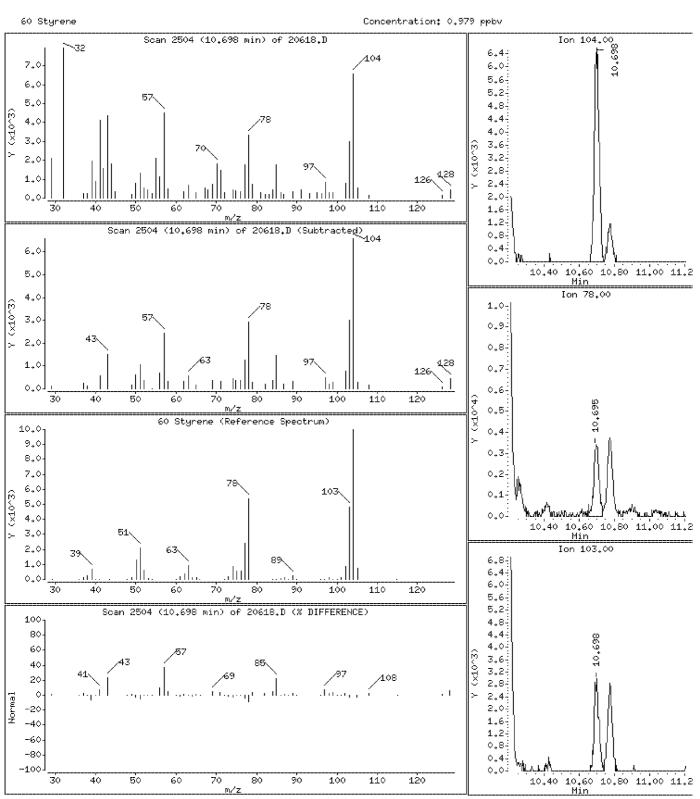
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 21:26

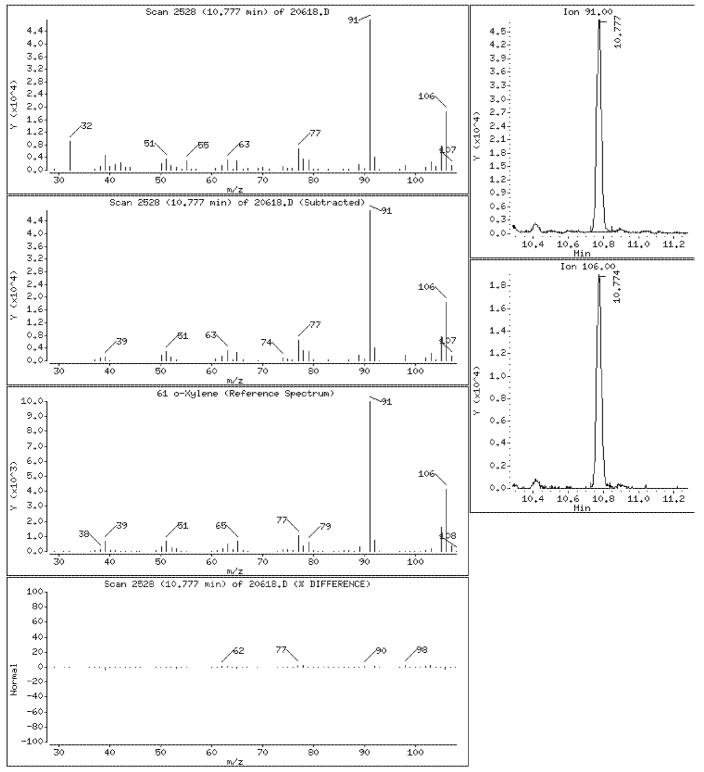
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 524 of 1066

Date : 25-JUL-2013 21:26

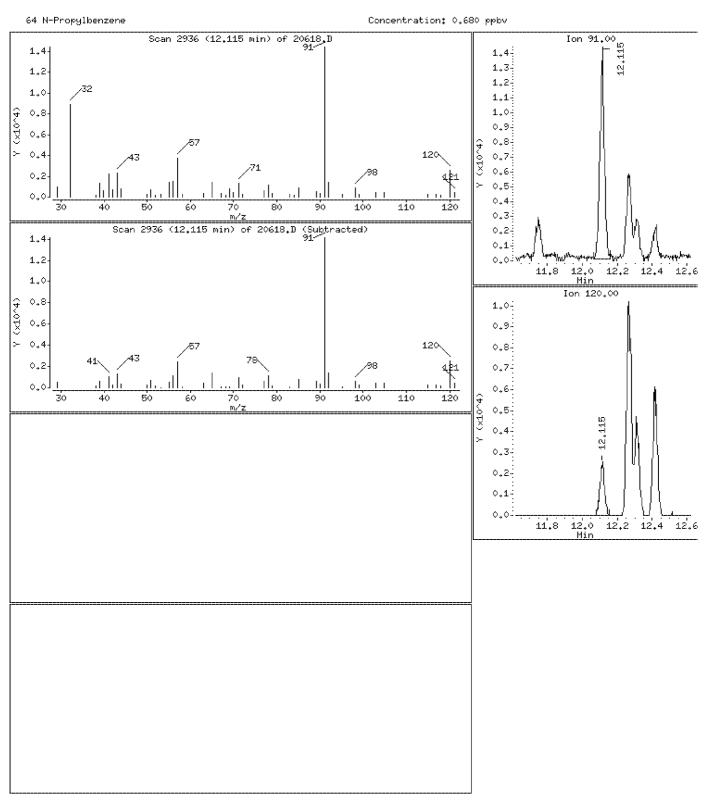
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 21:26

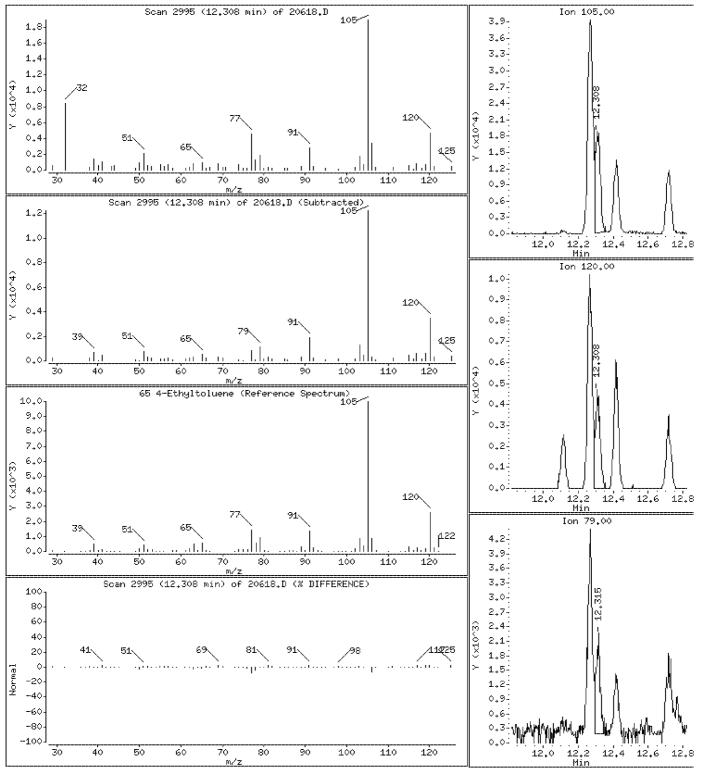
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 526 of 1066

Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

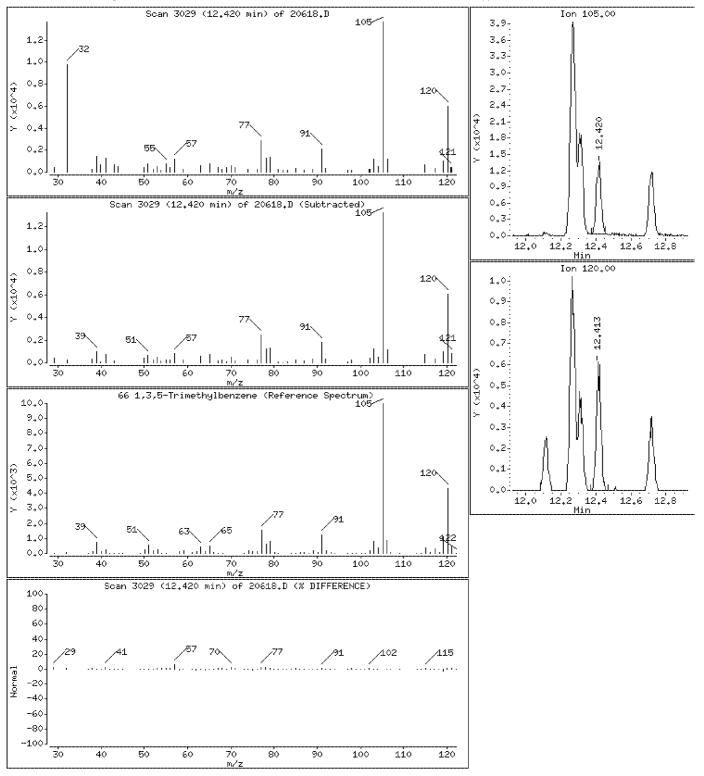
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 527 of 1066

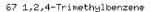
Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

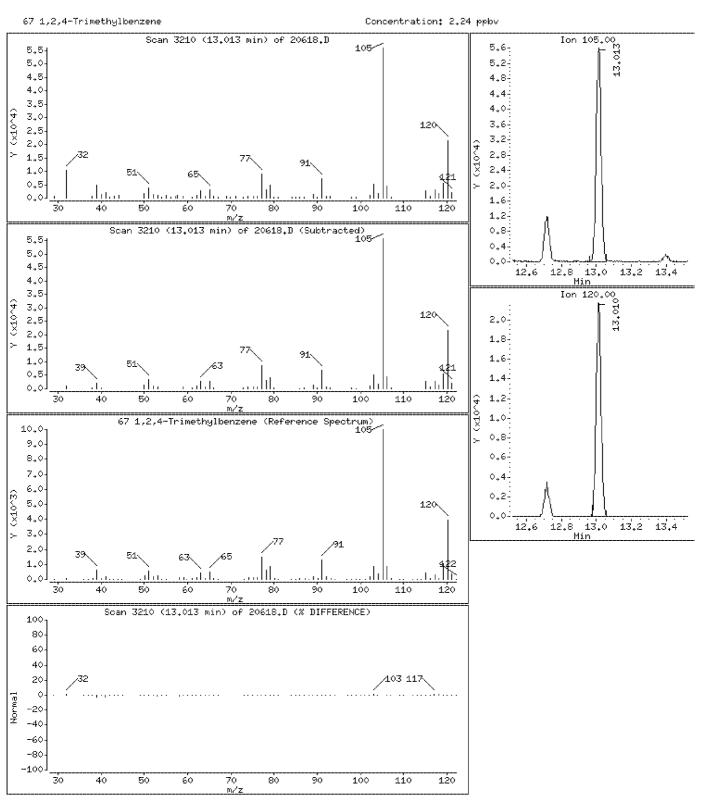
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







Date : 25-JUL-2013 21:26

Client ID: Instrument: 10airD.i

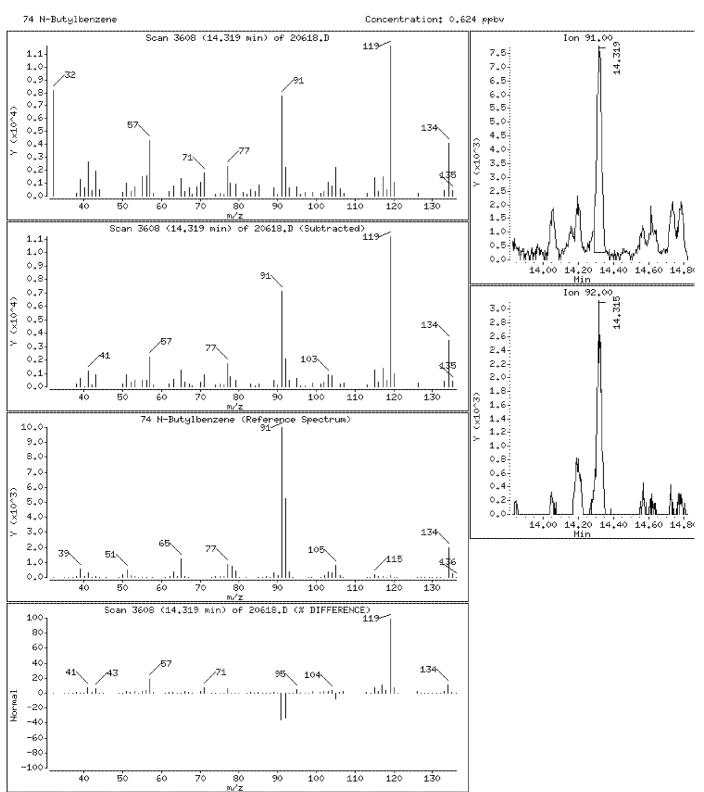
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







Date : 25-JUL-2013 21:26

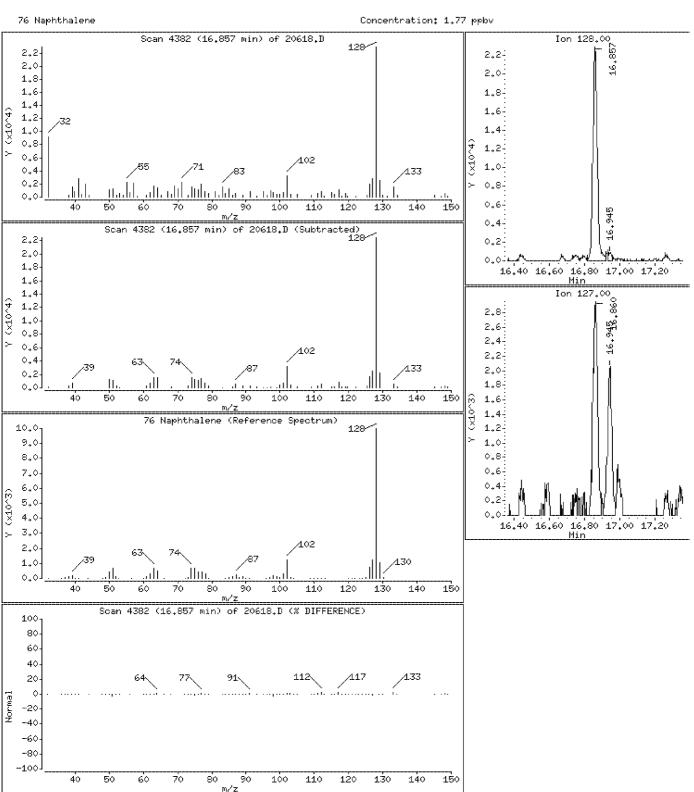
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



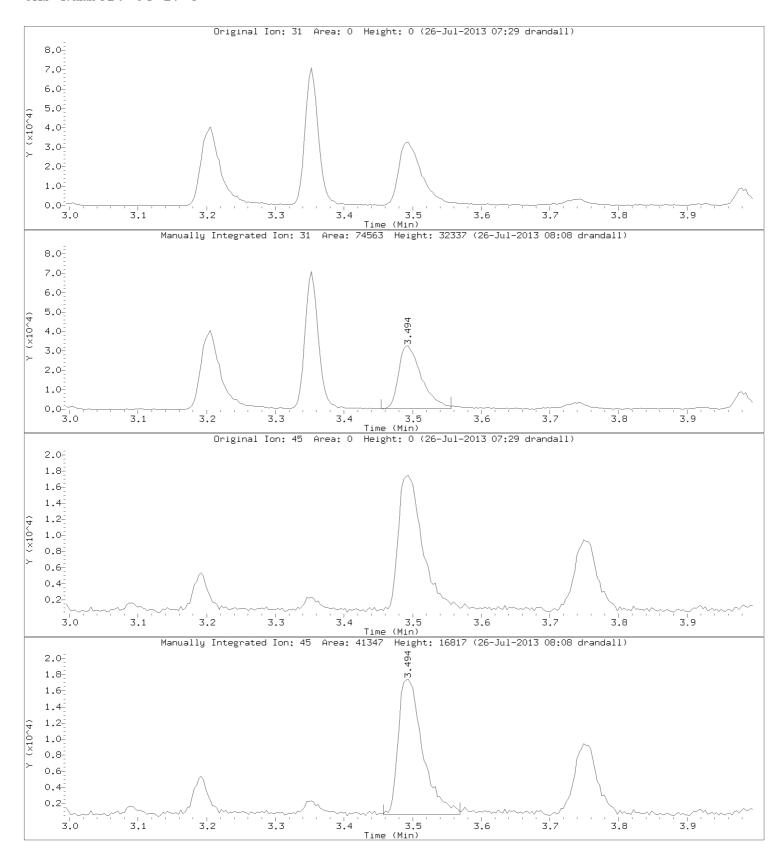


Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: Ethanol CAS Number: 64-17-5



10236207 531 of 1066

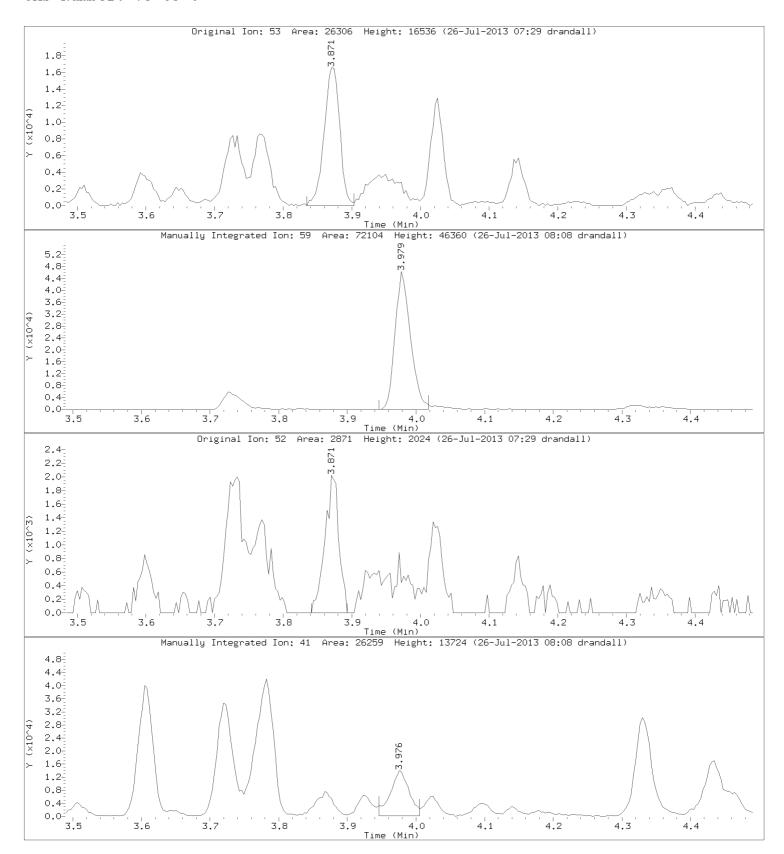
Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



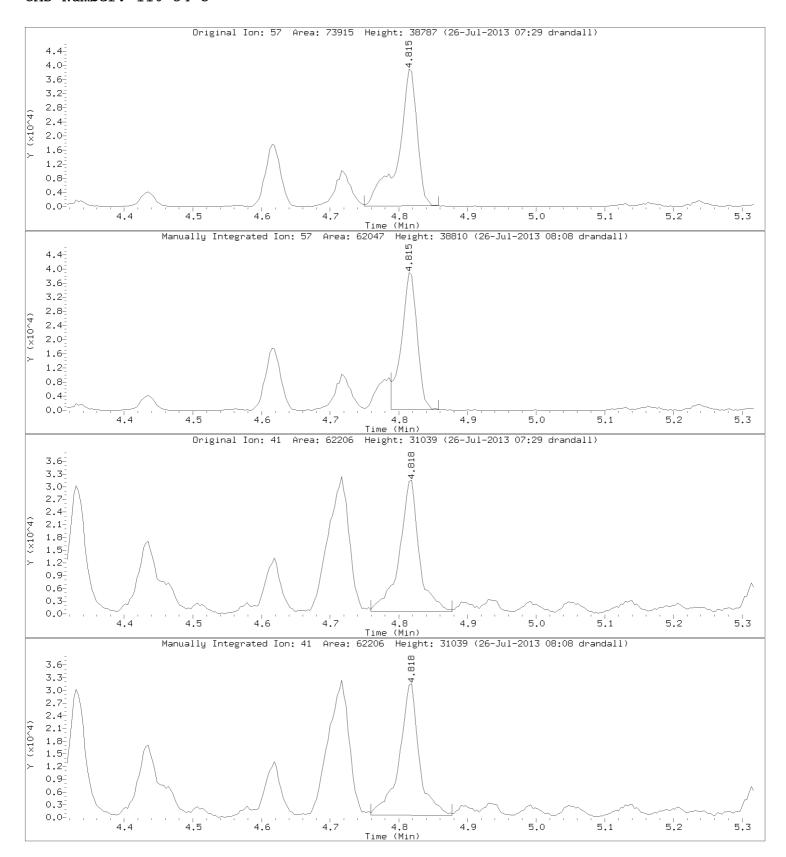
10236207 532 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

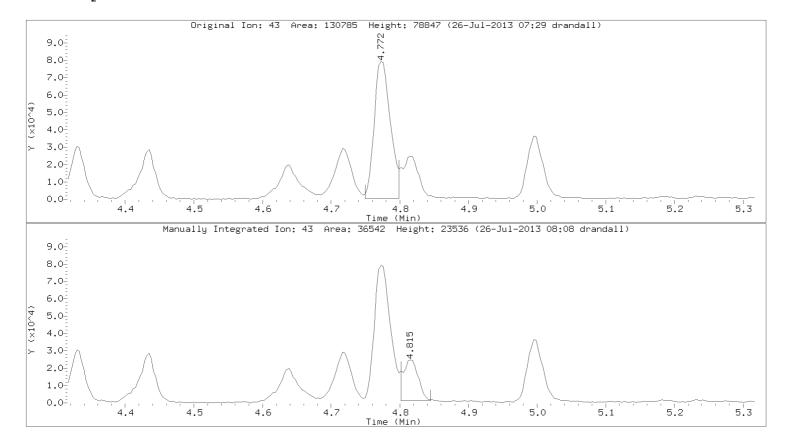
Compound: n-Hexane CAS Number: 110-54-3



10236207 533 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i Lab Sample ID: 10236207005

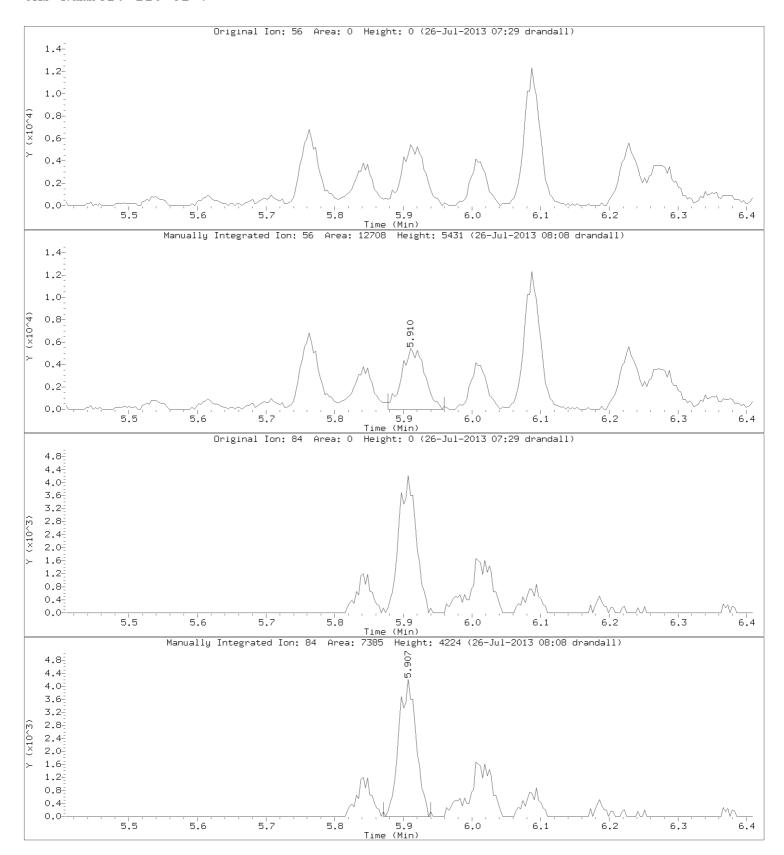


Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

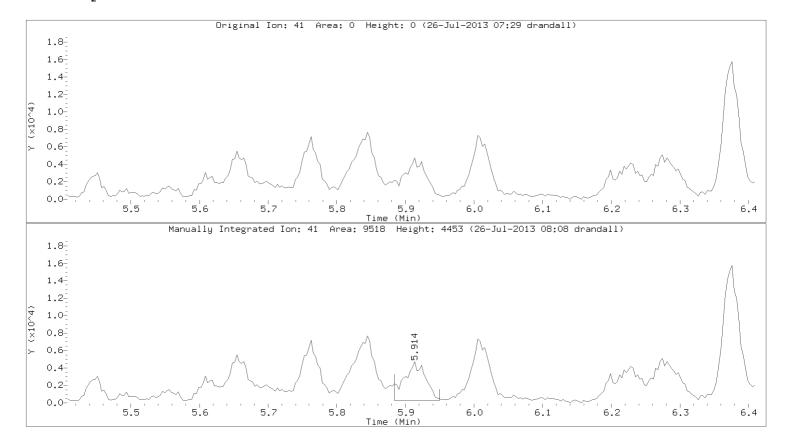
Compound: Cyclohexane CAS Number: 110-82-7



10236207 535 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i Lab Sample ID: 10236207005

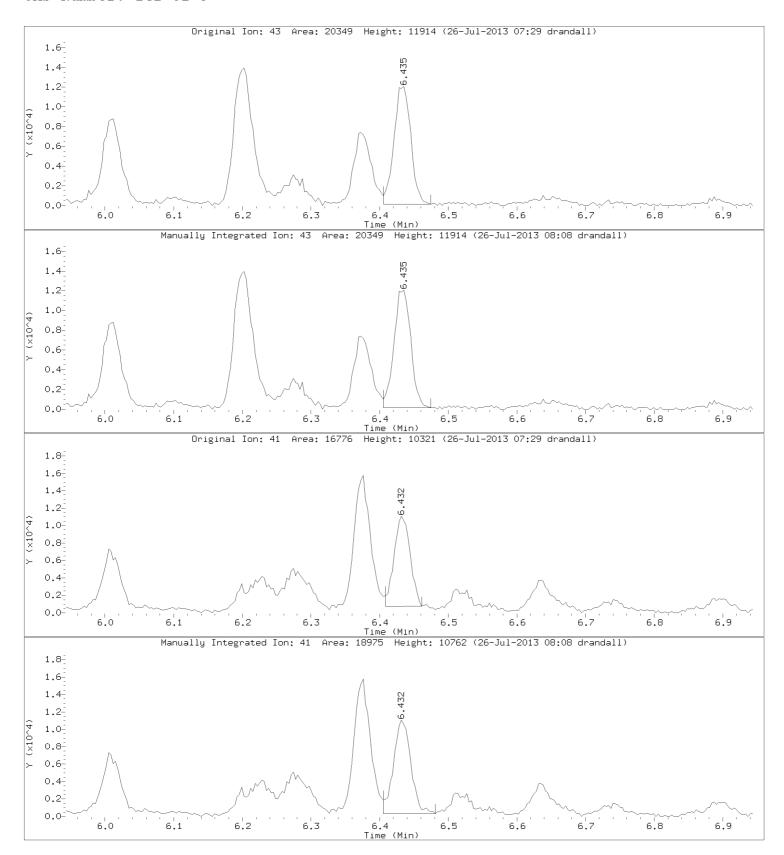


Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: Heptane CAS Number: 142-82-5



10236207 537 of 1066

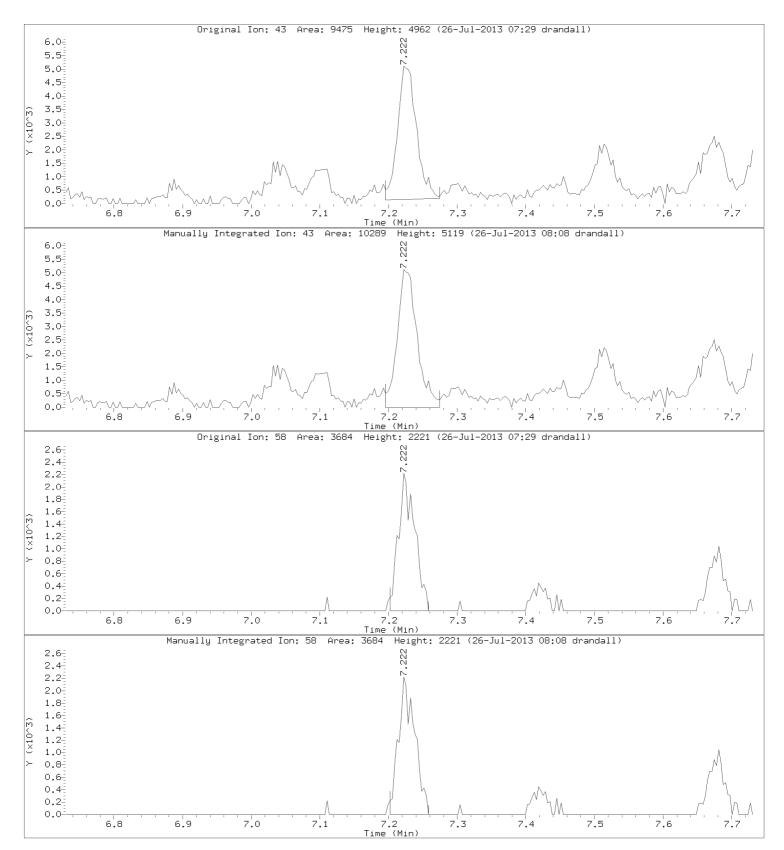
Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: Methyl Isobutyl Ketone

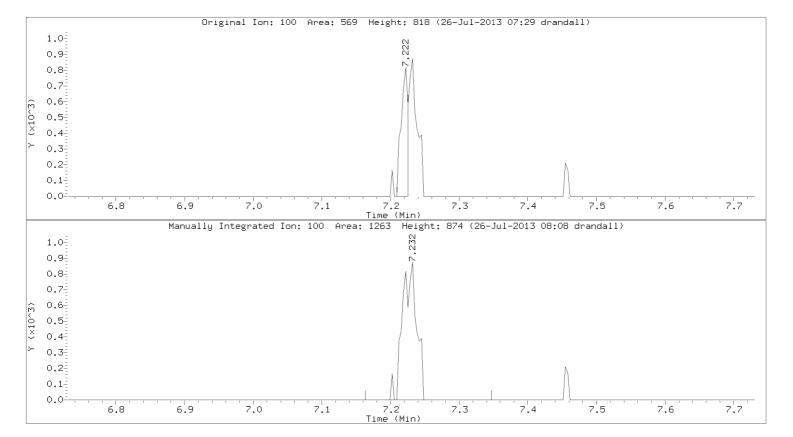
CAS Number: 108-10-1



10236207 538 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i Lab Sample ID: 10236207005



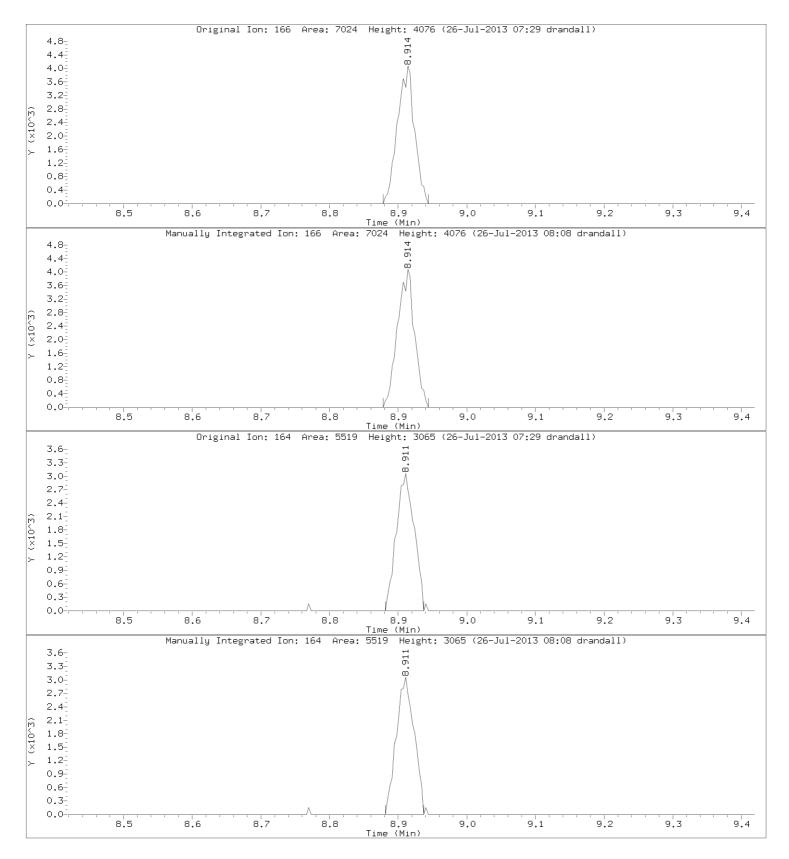
Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: Tetrachloroethene

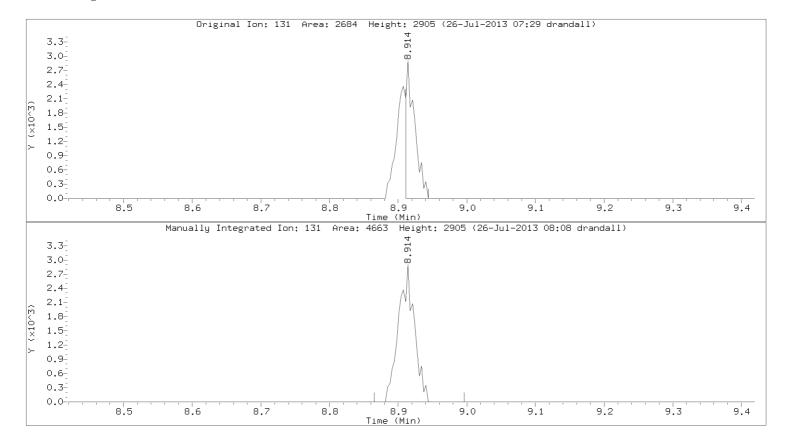
CAS Number: 127-18-4



10236207 540 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i Lab Sample ID: 10236207005

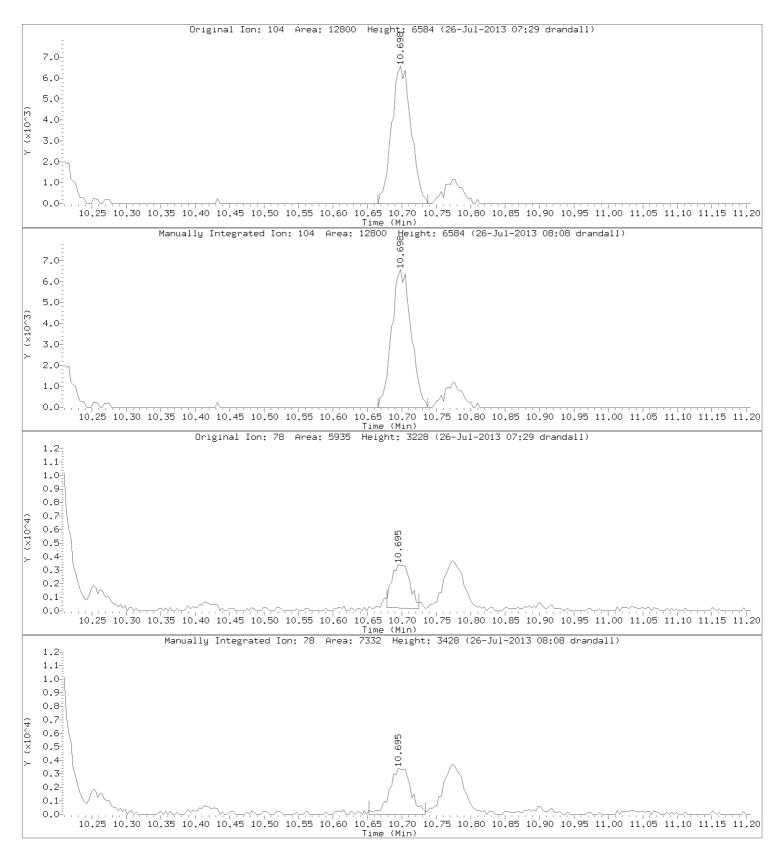


Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

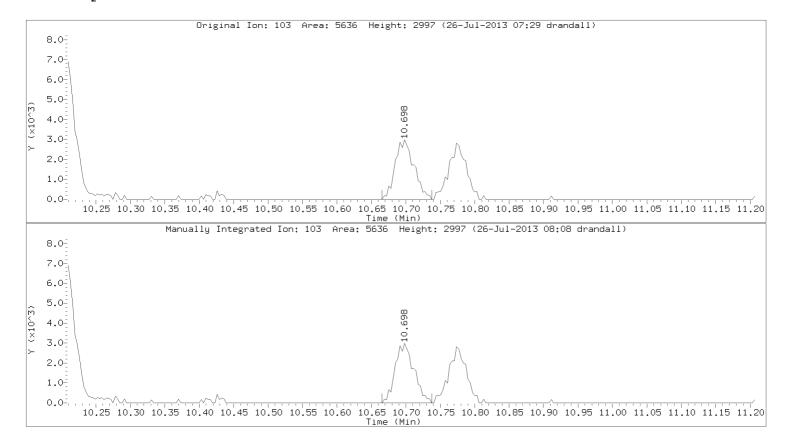
Compound: Styrene CAS Number: 100-42-5



10236207 542 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i Lab Sample ID: 10236207005

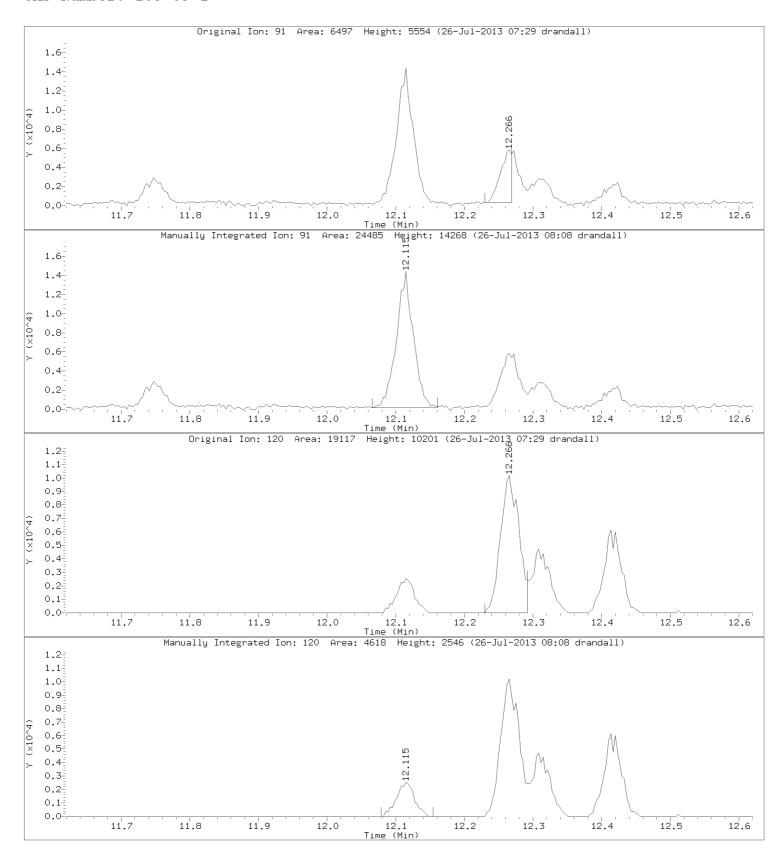


Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: N-Propylbenzene CAS Number: 103-65-1



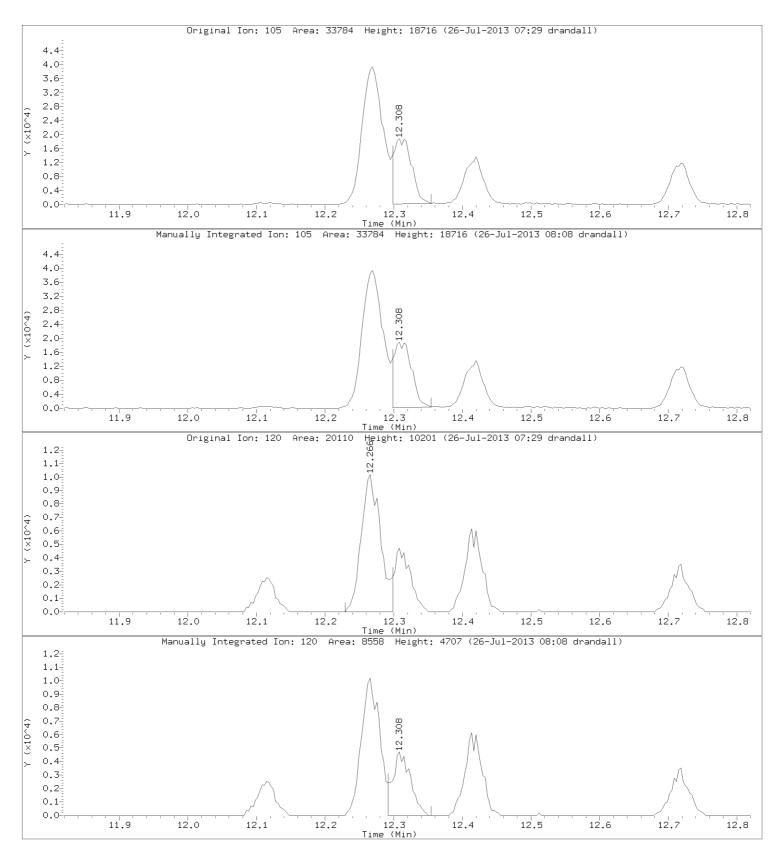
10236207 544 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

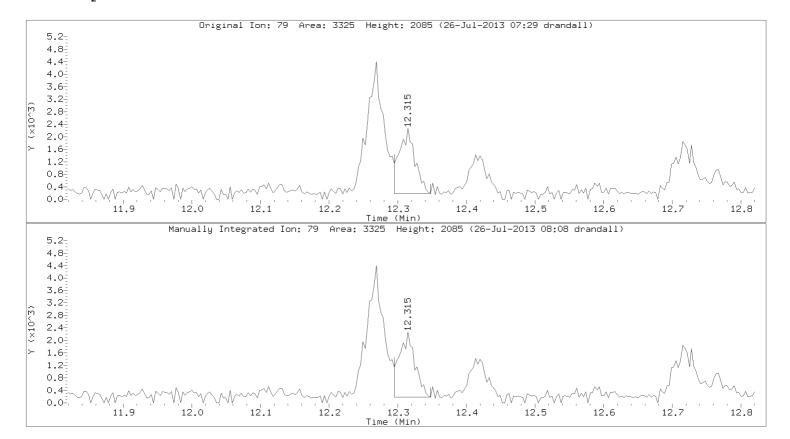
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 545 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i Lab Sample ID: 10236207005



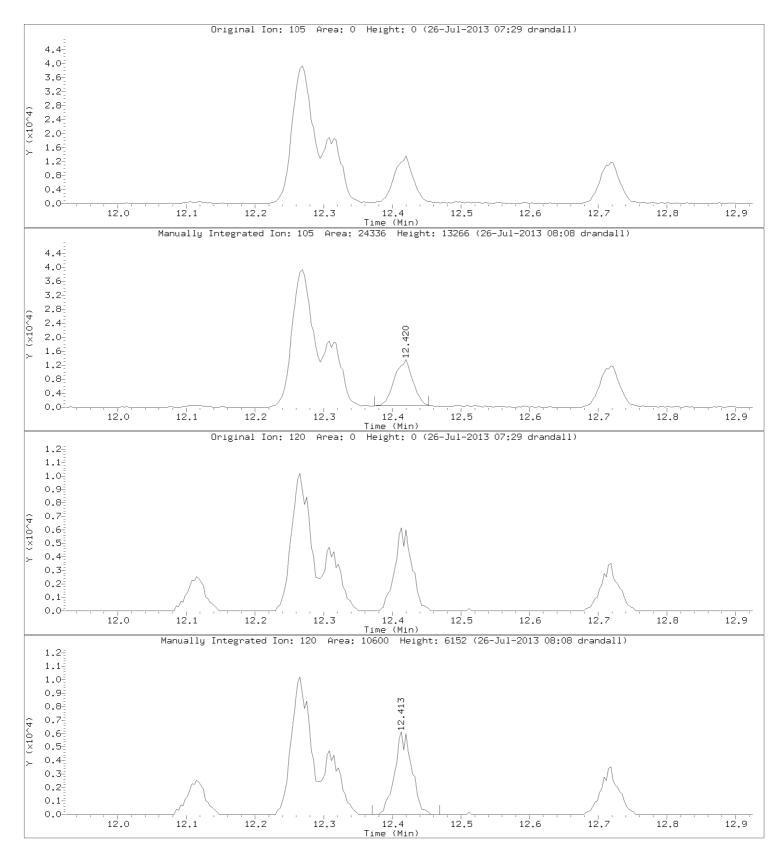
Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



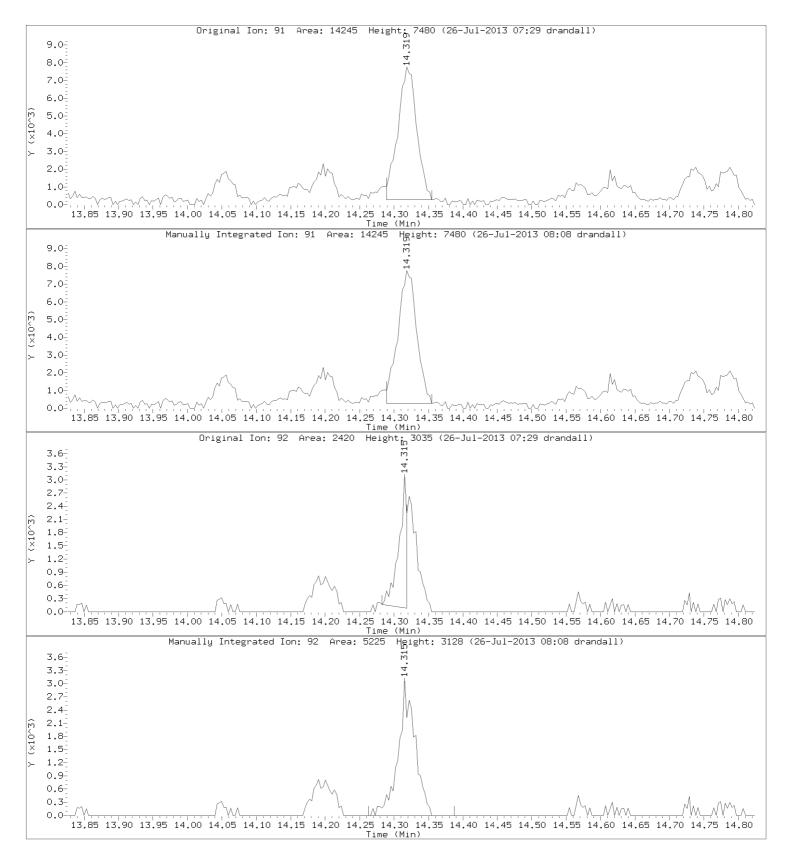
10236207 547 of 1066

Injection Date: 25-JUL-2013 21:26

Instrument: 10airD.i

Lab Sample ID: 10236207005

Compound: N-Butylbenzene CAS Number: 104-51-8



10236207 548 of 1066

Report Date: 26-Jul-2013 08:29

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20628.d Lab Smp Id: 10236207006 Inj Date: 26-JUL-2013 02:32 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 28

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf	1.440 1.000	Dilution Factor ng unit correction factor
Cpnd Variable		Lócal Compound Variable

	QUANT SIG	CONCENTRATIONS ON-COLUMN FINAL					
Compounds	MASS	RT EXP RT REL RT RESPONSE (ppbv) (ppbv)					
1 Propylene	41	2.972 2.982 (0.488) 196861 21.0256 30.3					
2 Dichlorodifluoromethane	85	2.998 3.008 (0.493) 31419 0.34839 0.502					
3 Dichlorotetrafluoroethane	85	Compound Not Detected.					
4 Chloromethane	50	Compound Not Detected.					
5 Vinyl chloride	62	Compound Not Detected.					
6 1,3-Butadiene	54	Compound Not Detected.					
7 Bromomethane	94	Compound Not Detected.					
8 Chloroethane	64	Compound Not Detected.					
9 Ethanol	31	3.493 3.494 (0.574) 74149 6.90150 9.94					
10 Vinyl Bromide	106	Compound Not Detected.					
11 Acrolein	56	3.690 3.684 (0.606) 9983 1.52129 2.19					
12 Trichlorofluoromethane	101	3.700 3.694 (0.608) 13325 0.13583 0.196					
13 Acetone	43	3.726 3.726 (0.612) 471527 9.58897 13.8					
14 Isopropyl Alcohol	45	3.756 3.756 (0.617) 20544 0.63698 0.917					
15 1,1-Dichloroethene	61	Compound Not Detected.					
16 Acrylonitrile	53	Compound Not Detected.					
17 Tert Butyl Alcohol	59	3.982 3.989 (0.654) 37750 0.73175 1.05					
18 Freon 113	101	Compound Not Detected.					
19 Methylene chloride	49	4.093 4.094 (0.672) 8003 0.28725 0.414					
20 Allyl Chloride	76	Compound Not Detected.					
21 Carbon Disulfide	76	4.224 4.224 (0.694) 22606 0.27883 0.402					
22 trans-1,2-dichloroethene	96	Compound Not Detected.					
23 Methyl Tert Butyl Ether	73	Compound Not Detected.					

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20628.d$ Report Date: 26-Jul-2013 08:29

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
Co	mpounds	MASS	RT	EXP RT	REL RT	RESPONSE	( ppbv)	( ppbv)	
==	04.77. 3.7	====						======	
	24 Vinyl Acetate	43	_		t Detecte				
^	25 1,1-Dichloroethane	63	-		t Detecte		0.00070	0.00	
Ş	26 Hexane-d14(S)	66	4.700		(0.772)	316271	8.82979	8.83	
	27 Methyl Ethyl Ketone	72	4.772		(0.784)	33060	2.90389	4.18	
	28 n-Hexane	57	4.815		(0.791)	40973	1.25833	1.81(M)	
	29 cis-1,2-Dichloroethene	96	-		t Detecte		1 46000	0.10/014	
	30 Ethyl Acetate	43	4.995		(0.821)	45122	1.46990	2.12(QM)	
	31 Chloroform	83	-		t Detecte				
	32 Tetrahydrofuran	42	-		t Detecte				
	33 1,1,1-Trichloroethane	97	-		t Detecte				
	34 1,2-Dichloroethane	62	_		t Detecte				
	35 Benzene	78	5.881		(0.966)	192528	3.16727	4.56	
	36 Carbon tetrachloride	117	Comp		t Detecte				
	37 Cyclohexane	56	5.913		(0.971)	7800	0.75739	1.09(QM)	
*	38 1,4-Difluorobenzene	114	6.087	6.094	(1.000)	741750	10.0000		
	39 2,2,4-Trimethylpentane	57	6.267		(1.030)	11464	0.53917	0.776(QM)	
	40 Heptane	43	6.431		(1.057)	13863	0.96788	1.39(M)	
	41 1,2-Dichloropropane	63	Comp	oound No	t Detecte	ed.			
	42 Trichloroethene	130	Comp	oound No	t Detecte	ed.			
	43 1,4-Dioxane	88	Comp	oound No	t Detecte	ed.			
	44 Bromodichloromethane	83	Comp	oound No	t Detecte	ed.			
	45 Methyl Isobutyl Ketone	43	7.228	7.229	(1.187)	8882	0.62825	0.905(M)	
	46 cis-1,3-Dichloropropene	75	Comp	oound No	t Detecte	ed.			
	47 trans-1,3-Dichloropropene	75	Comp	oound No	t Detecte	ed.			
\$	48 Toluene-d8 (S)	98	7.838	7.848	(1.288)	544110	10.5033	10.5	
	49 Toluene	91	7.930	7.940	(1.303)	359177	4.37339	6.30	
	50 1,1,2-Trichloroethane	97	Comp	oound No	t Detecte	ed.			
	51 Methyl Butyl Ketone	43	8.245	8.244	(0.851)	8484	0.55191	0.795	
	52 Dibromochloromethane	129	Comp	ound No	t Detecte	ed.			
	53 1,2-Dibromoethane	107	Comp	oound No	t Detecte	ed.			
	54 Tetrachloroethene	166	8.907	8.918	(0.920)	9759	0.58779	0.846	
*	55 Chlorobenzene - d5	117	9.685		(1.000)	293286	10.0000		
	56 Chlorobenzene	112	Comp	oound No	t Detecte	ed.			
	57 Ethyl Benzene	91	10.032			100853	1.18572	1.71	
	58 m&p-Xylene	91	10.199			308902	3.64525	5.25	
	59 Bromoform	173			t Detecte				
	60 Styrene	104	-	10.708		13872	0.69633	1.00	
	61 o-Xylene	91	10.773			98445	1.23436	1.78	
	62 1,1,2,2-Tetrachloroethane	83			t Detecte				
	63 Isopropylbenzene	105	=		t Detecte				
	64 N-Propylbenzene	91	12.114			28146	0.49656	0.715(M)	
	65 4-Ethyltoluene	105	12.311			44221	0.72701	1.05 (M)	
	66 1,3,5-Trimethylbenzene	105	12.416			35870	0.66567	0.958	
	67 1,2,4-Trimethylbenzene	105	13.013			152466	1.98766	2.86	
	68 1,3-Dichlorobenzene	146			t Detecte		1.50/00	2.00	
			_						
ė	69 Sec- Butylbenzene	105	~		t Detecte		0 30306	0 20	
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.449			111080	9.38306	9.38	
	71 Benzyl Chloride	91	-		t Detecte				
	72 1,4-Dichlorobenzene	146	~		t Detecte				
	73 1,2-Dichlorobenzene	146	-		t Detecte				
	74 N-Butylbenzene	91	-		t Detecte				
	75 1,2,4-Trichlorobenzene	180	_		t Detecte			_	
	76 Naphthalene	128	16.860	16.860	(1.741)	47583	1.40587	2.02	
	77 Hexachlorobutadiene	225			t Detecte				

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Report Date: 26-Jul-2013 08:29

# QC Flag Legend

Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.

10236207 551 of 1066

Report Date: 26-Jul-2013 08:29

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20628.d

Lab Smp Id: 10236207006 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	$\mathtt{SAMPLE}$	%DIFF
=======================================	========	========	========	========	=====
38 1,4-Difluorobenze	579775	347865	811685	741750	27.94
55 Chlorobenzene - d	221404	132842	309966	293286	32.47

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

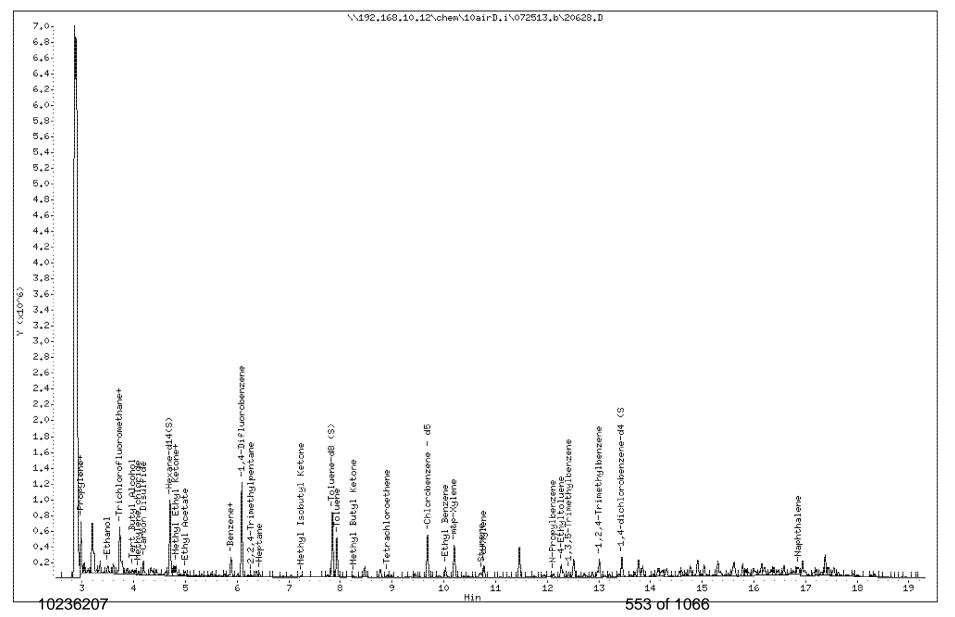
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 02:32

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 26-JUL-2013 02:32

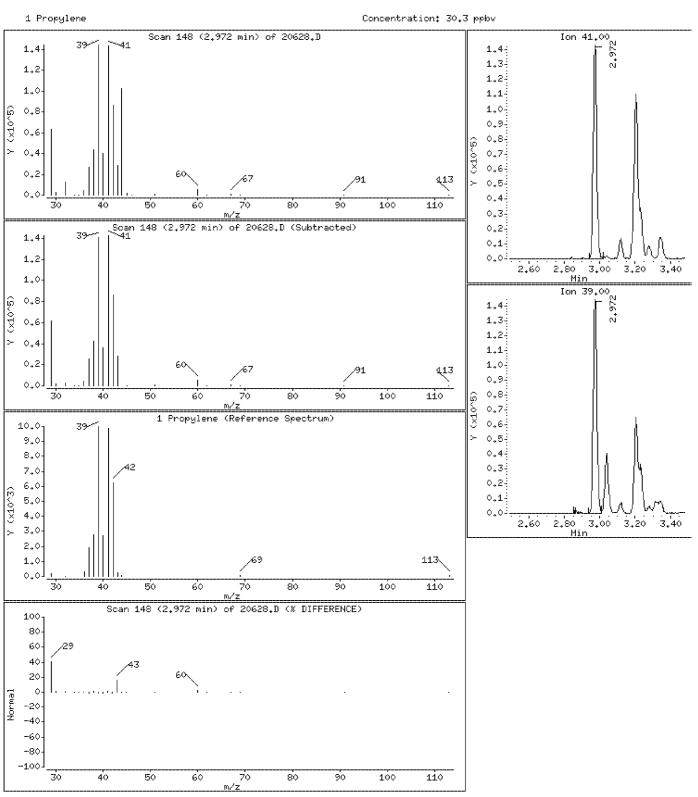
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





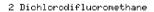
Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

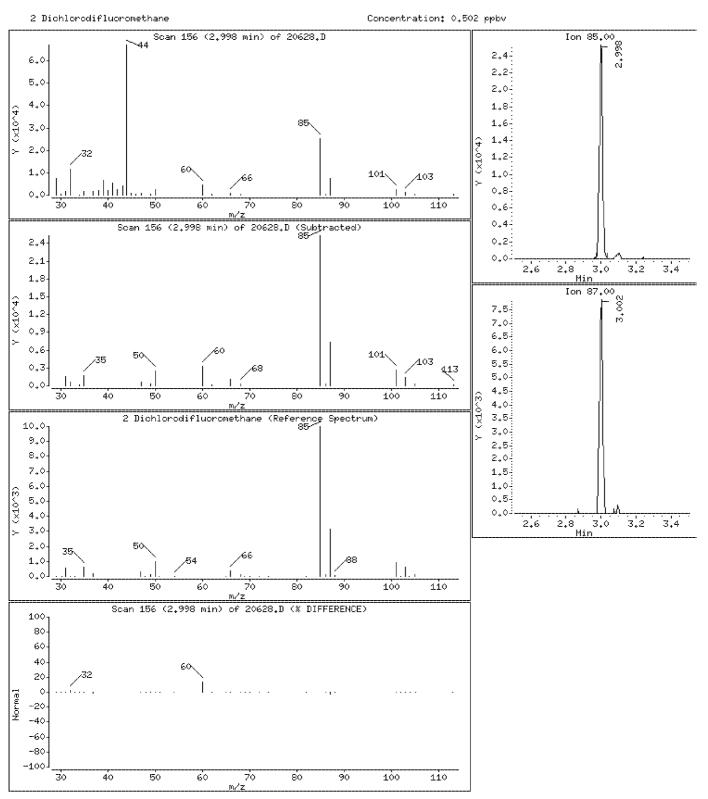
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.502 ppbv



Date : 26-JUL-2013 02:32

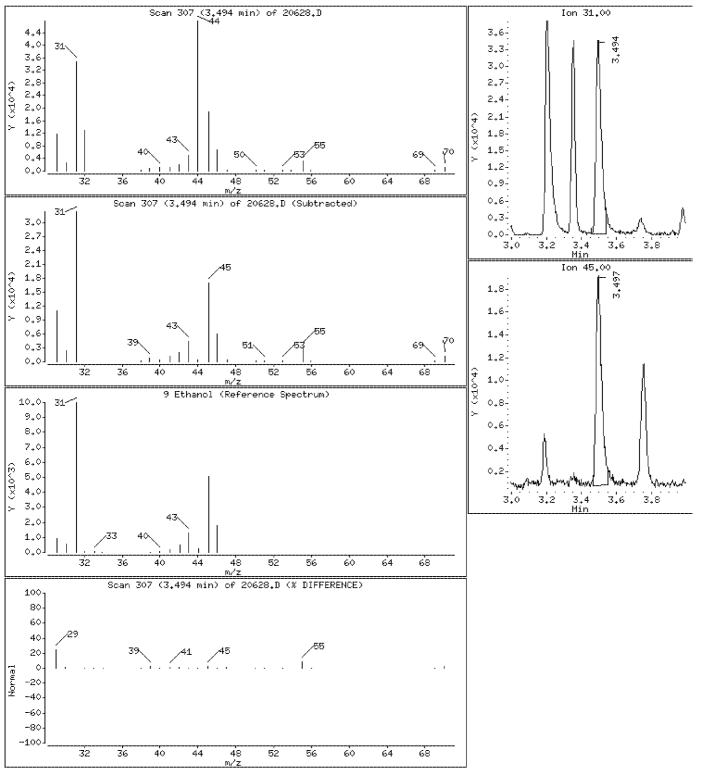
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 556 of 1066

Date : 26-JUL-2013 02:32

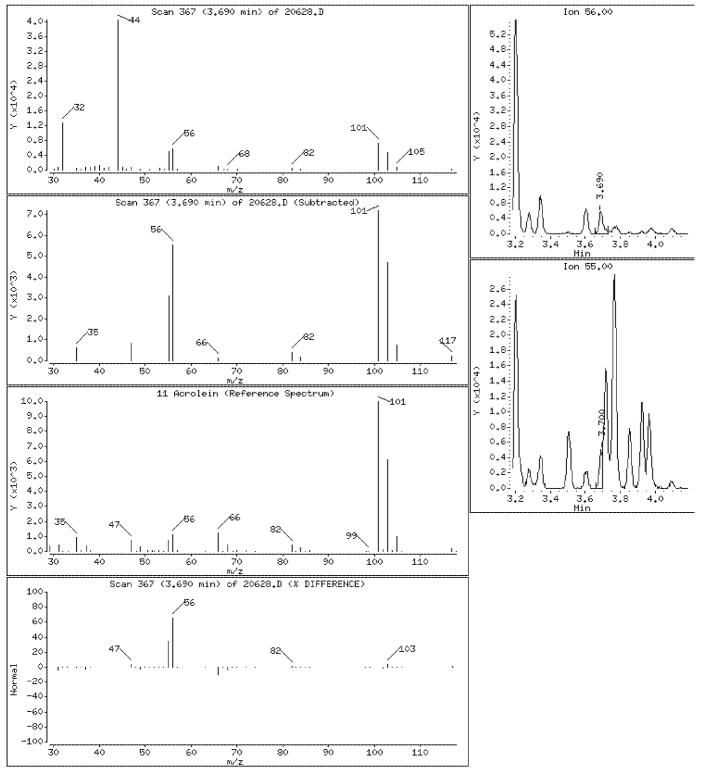
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 557 of 1066

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

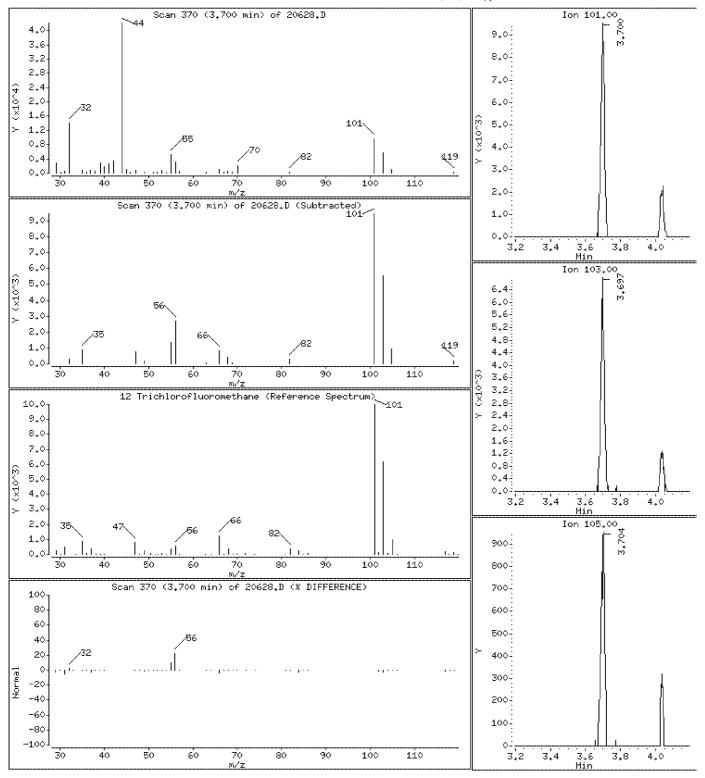
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.196 ppbv



10236207 558 of 1066

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

Sample Info:

30

40

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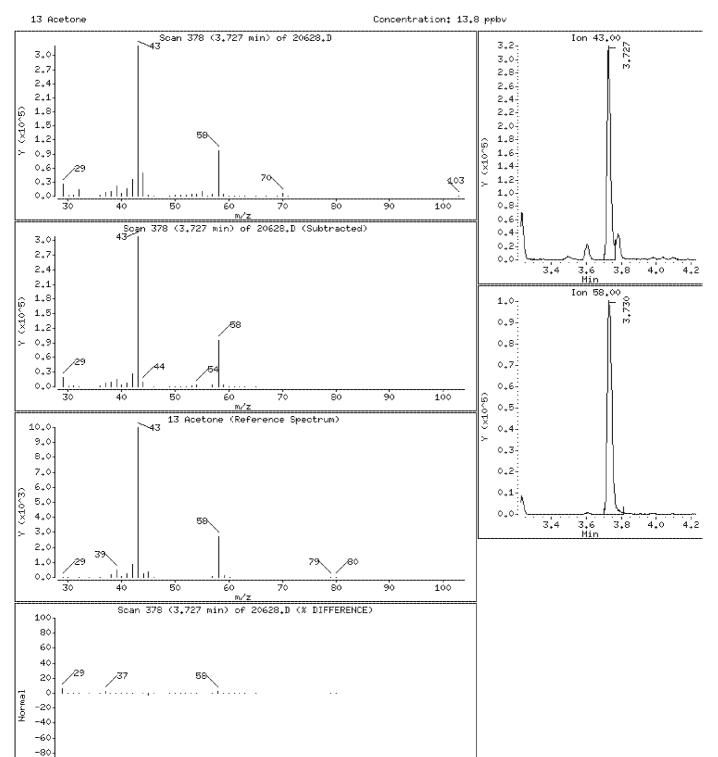
60

70

80

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 559 of 1066

100

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

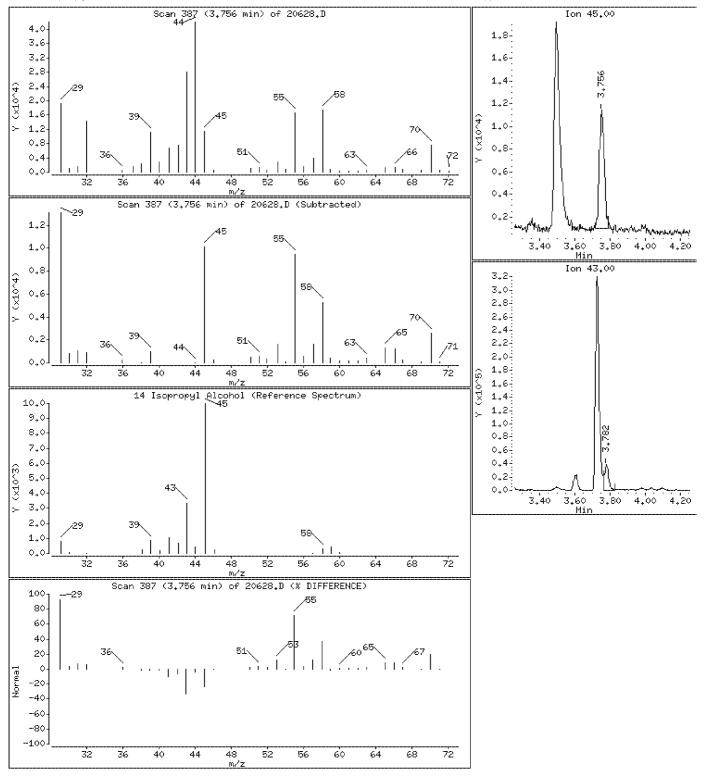
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.917 ppbv



10236207 560 of 1066

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

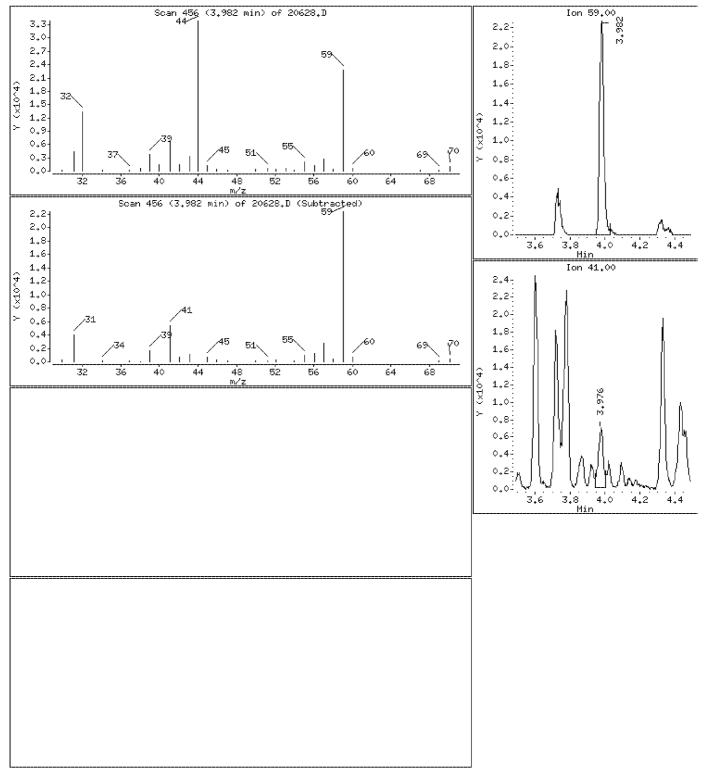
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 561 of 1066

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

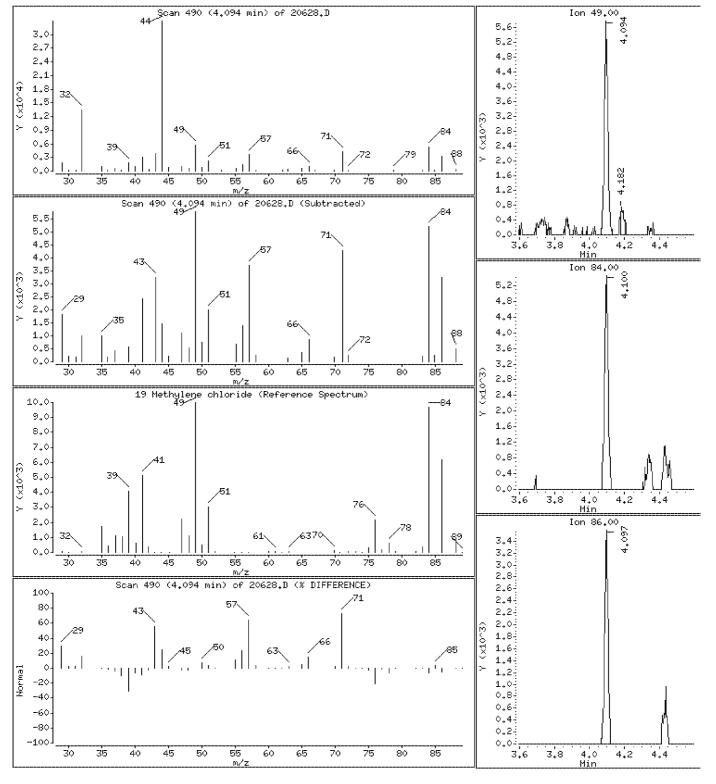
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.414 ppbv



10236207 562 of 1066

Date : 26-JUL-2013 02:32

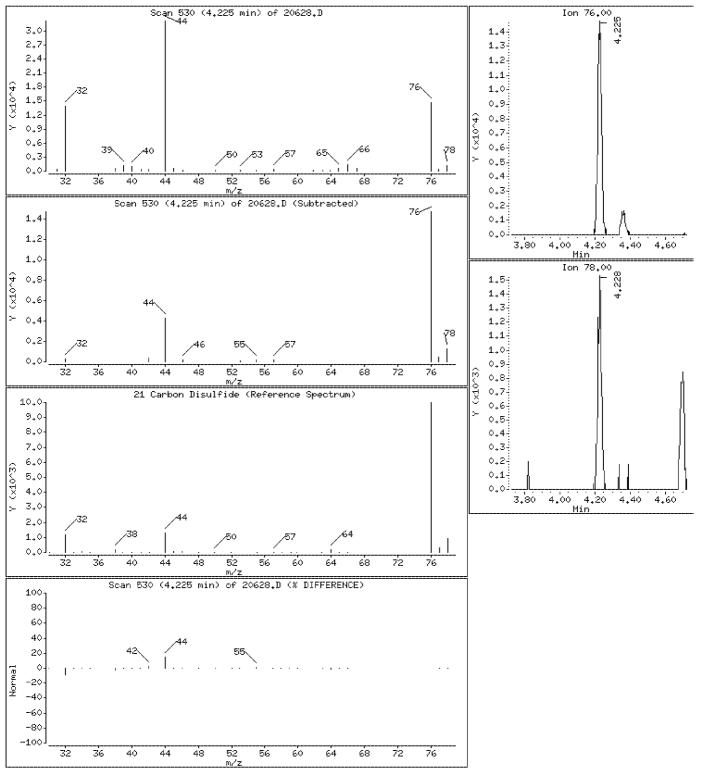
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 563 of 1066

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

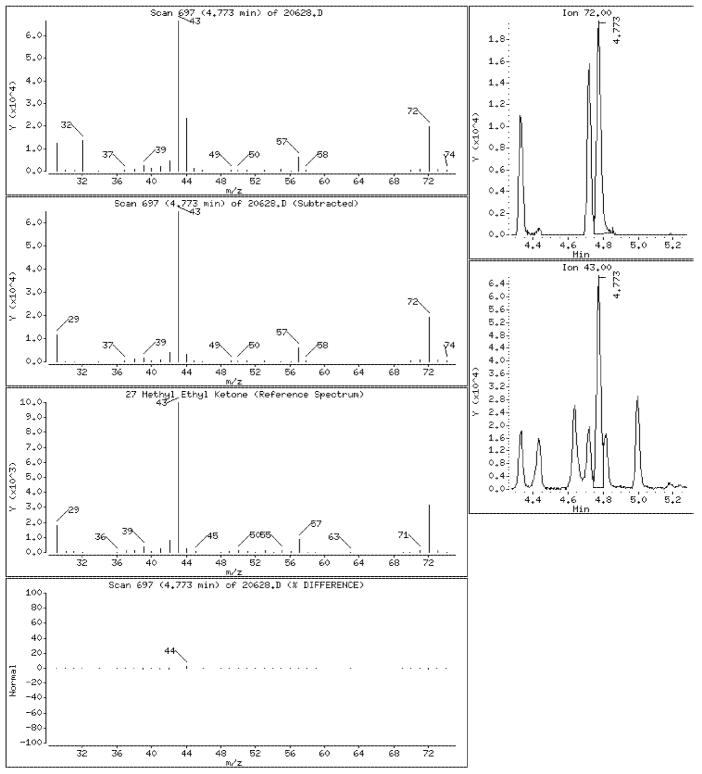
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 4.18 ppbv



10236207 564 of 1066

Date : 26-JUL-2013 02:32

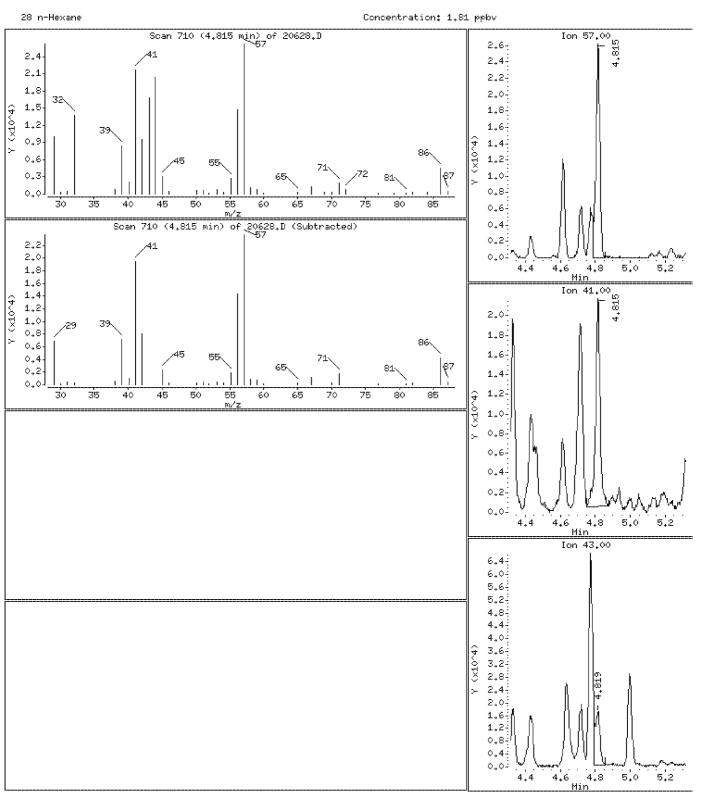
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 02:32

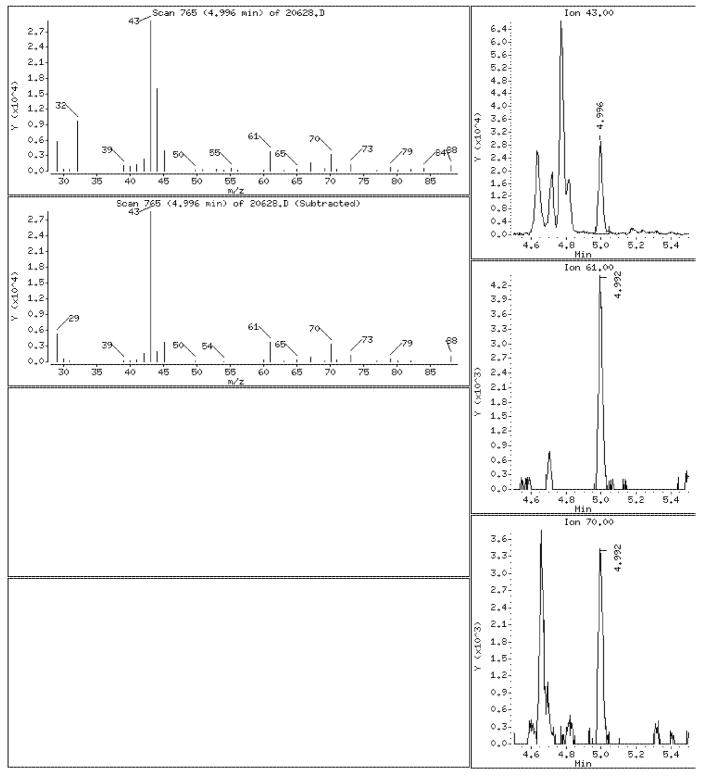
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

30 Ethyl Acetate Concentration: 2.12 ppbv



10236207 566 of 1066

Date : 26-JUL-2013 02:32

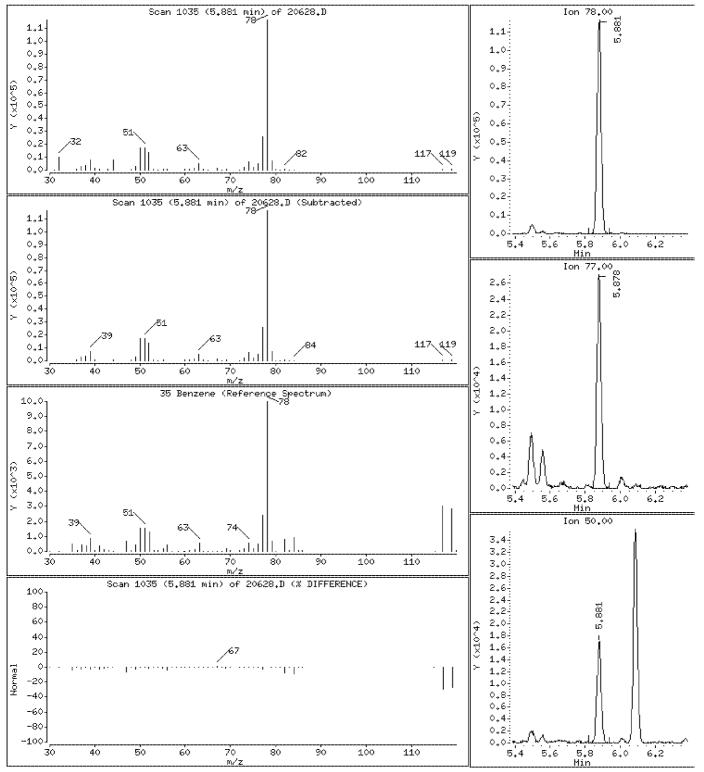
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 567 of 1066

Date : 26-JUL-2013 02:32

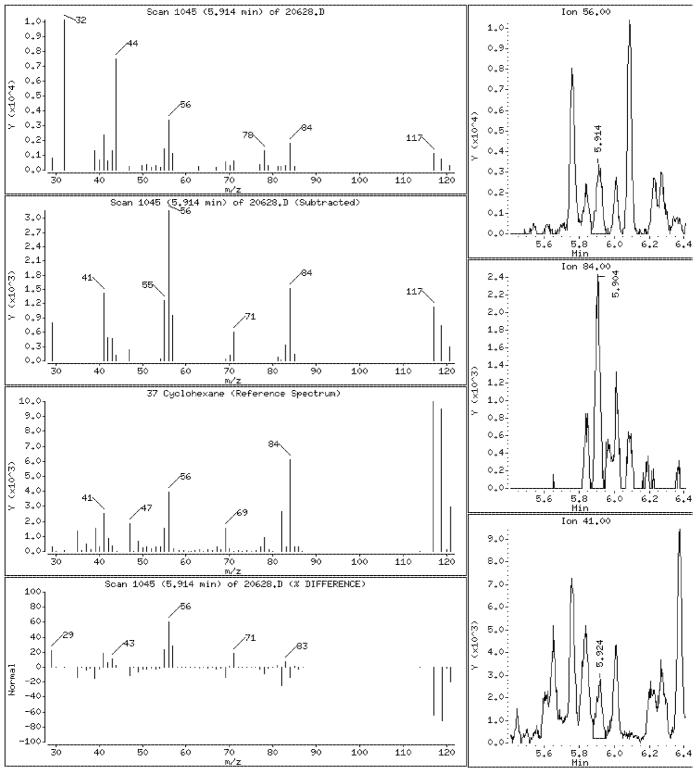
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 568 of 1066

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

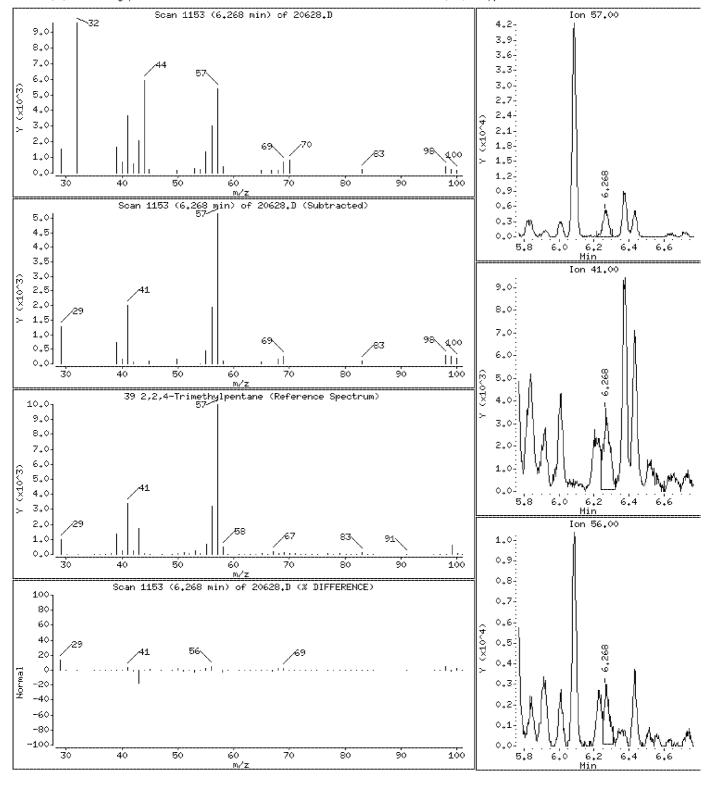
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

39 2,2,4-Trimethylpentane

Concentration: 0.776 ppbv



10236207 569 of 1066

Date : 26-JUL-2013 02:32

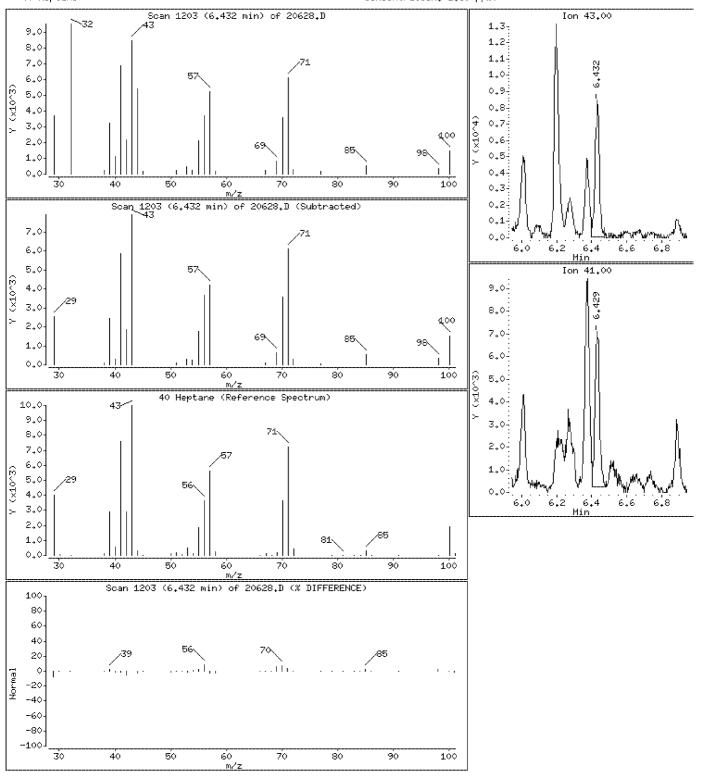
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 570 of 1066

Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

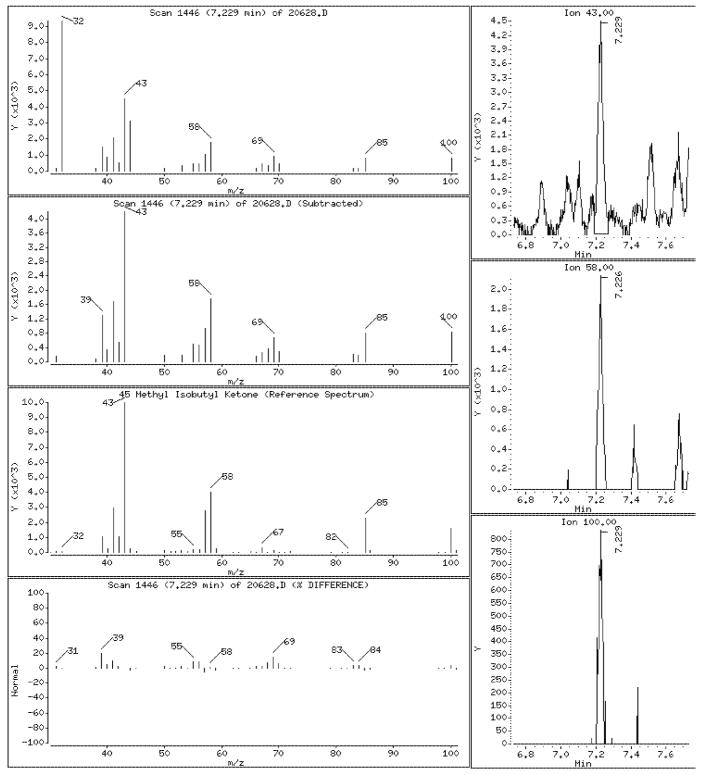
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.905 ppbv



10236207 571 of 1066

Date : 26-JUL-2013 02:32

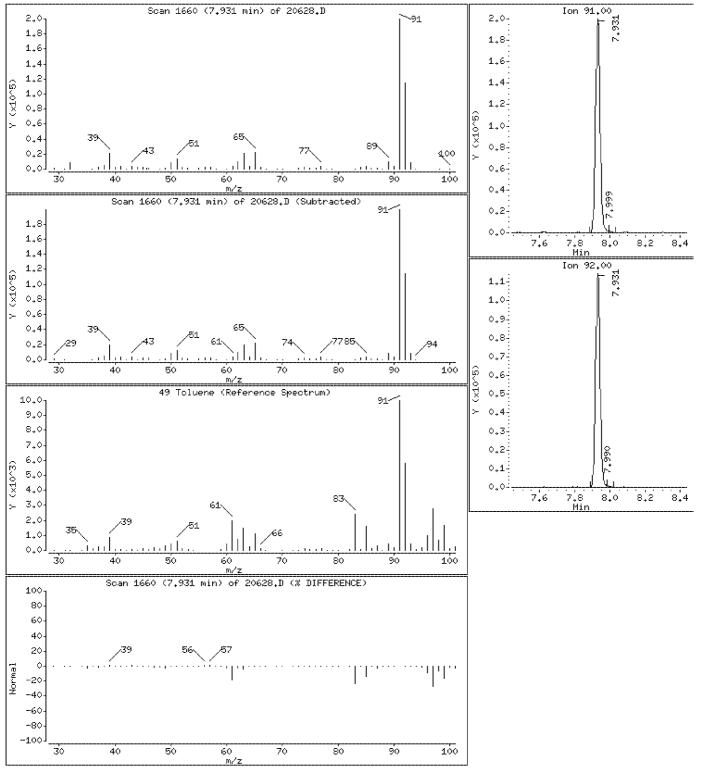
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 572 of 1066

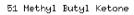
Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

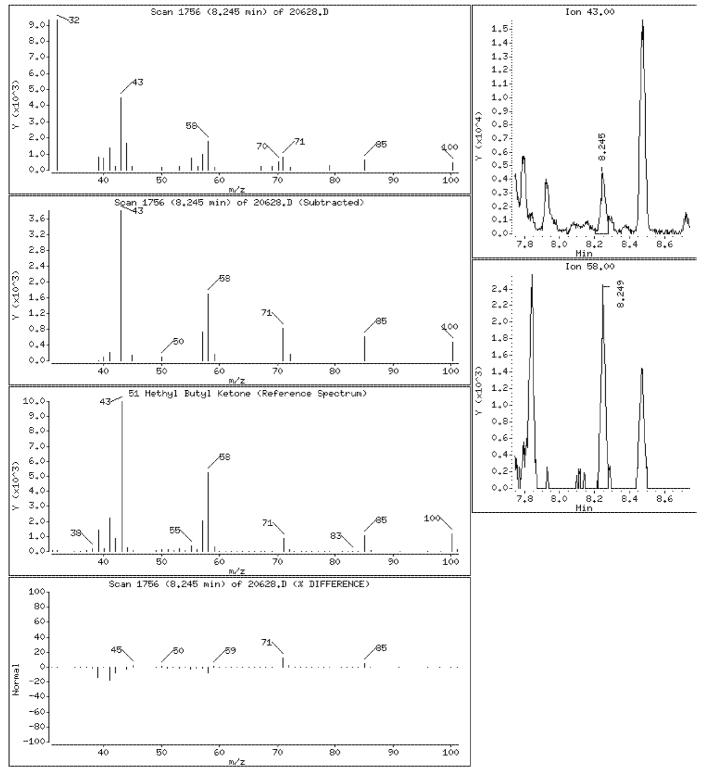
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.795 ppbv



10236207 573 of 1066

Date : 26-JUL-2013 02:32

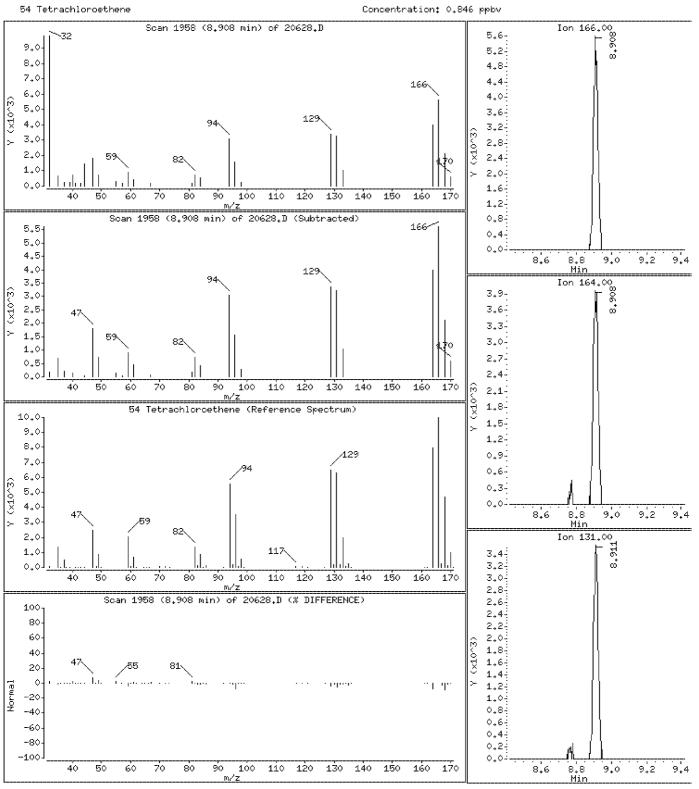
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 02:32

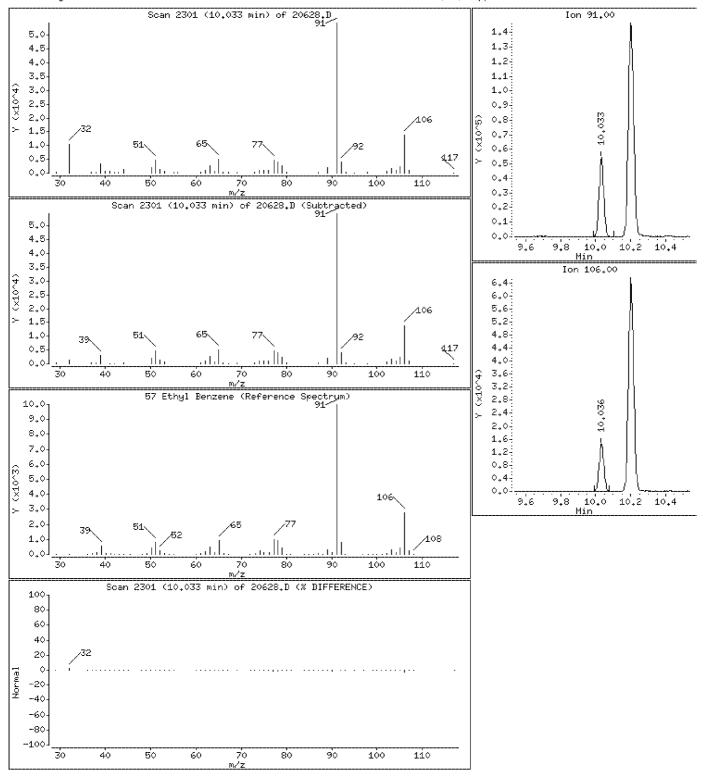
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 575 of 1066

50

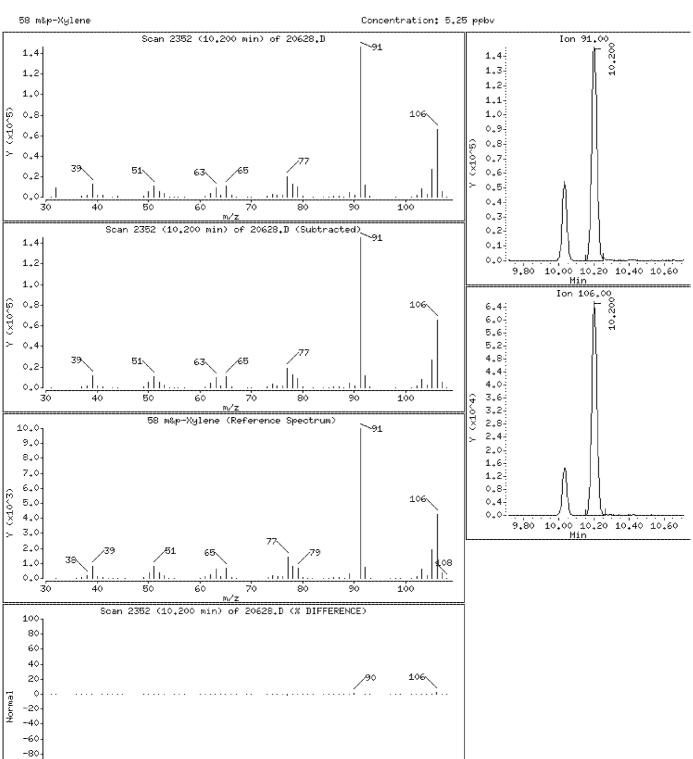
Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 576 of 1066

100

80

90

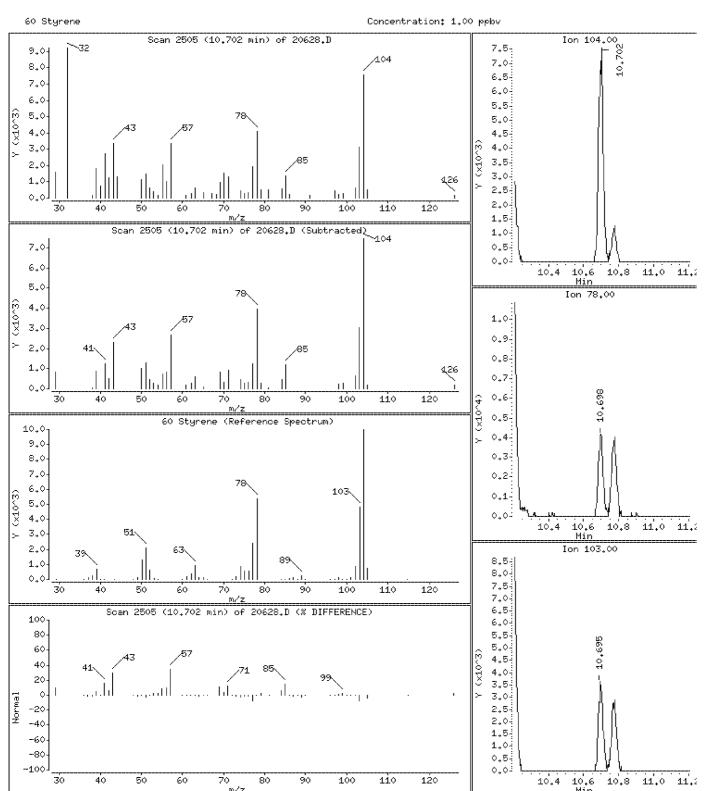
Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 577 of 1066

Date : 26-JUL-2013 02:32

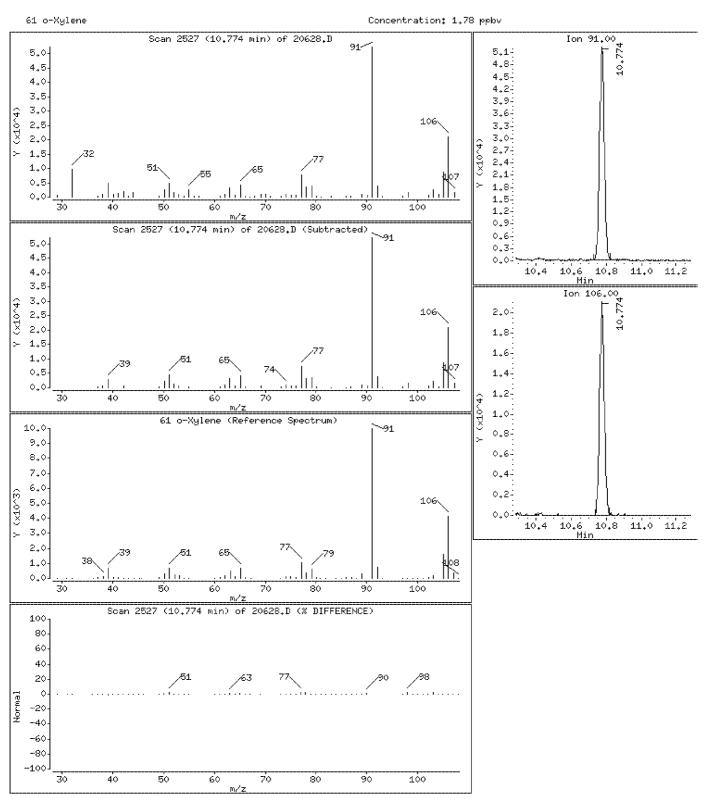
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 02:32

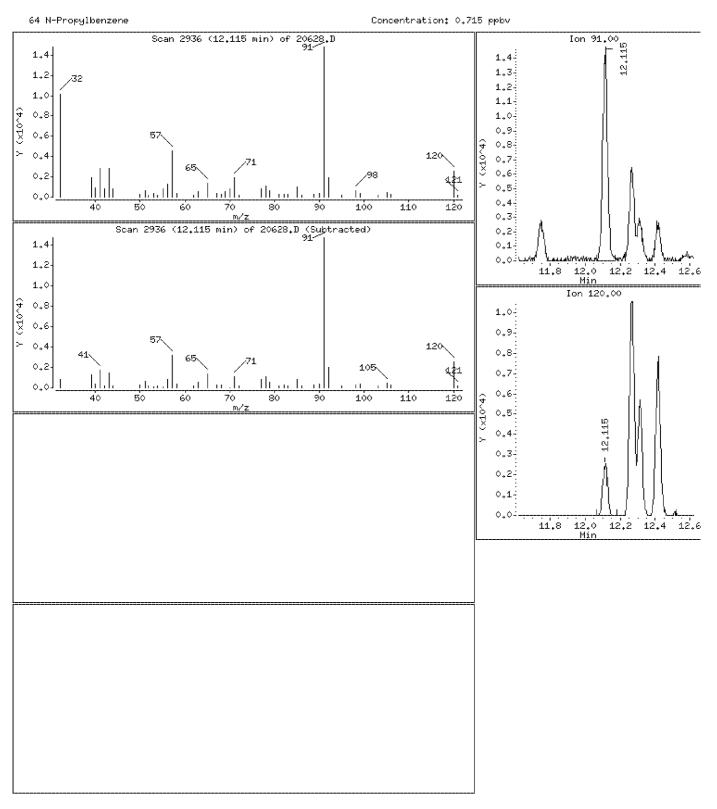
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 02:32

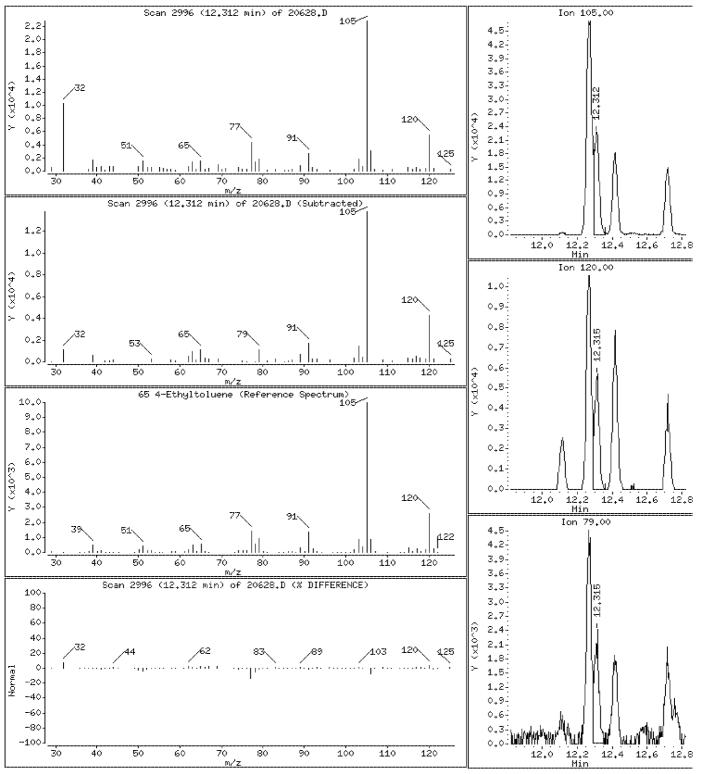
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 580 of 1066

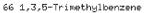
Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

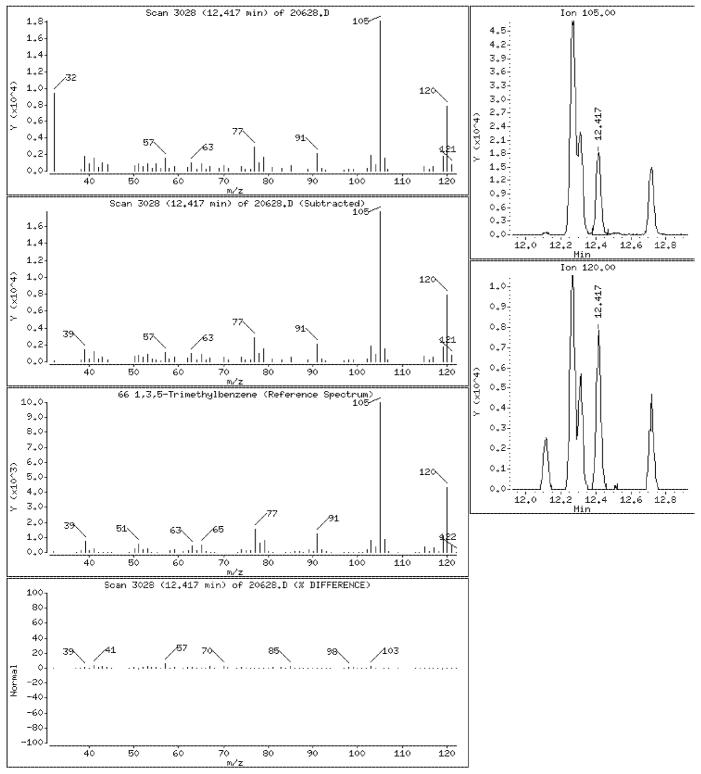
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.958 ppbv



10236207 581 of 1066

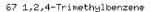
Date : 26-JUL-2013 02:32

Client ID: Instrument: 10airD.i

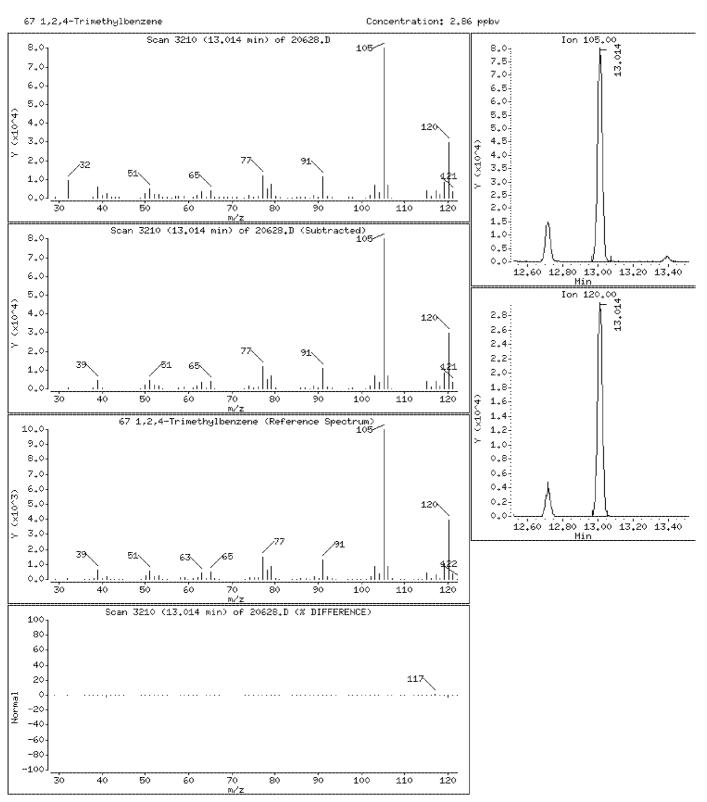
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 2.86 ppbv



Date : 26-JUL-2013 02:32

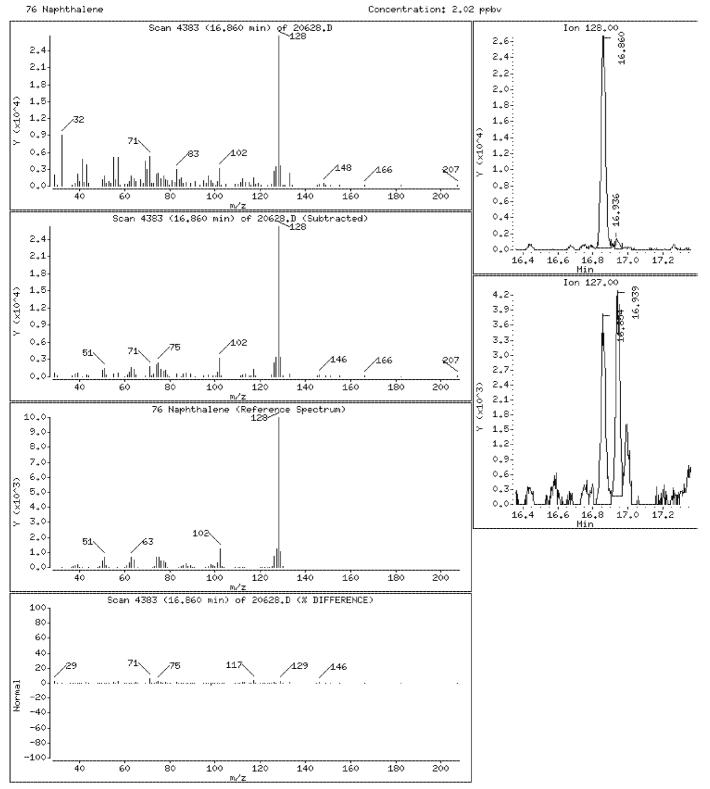
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



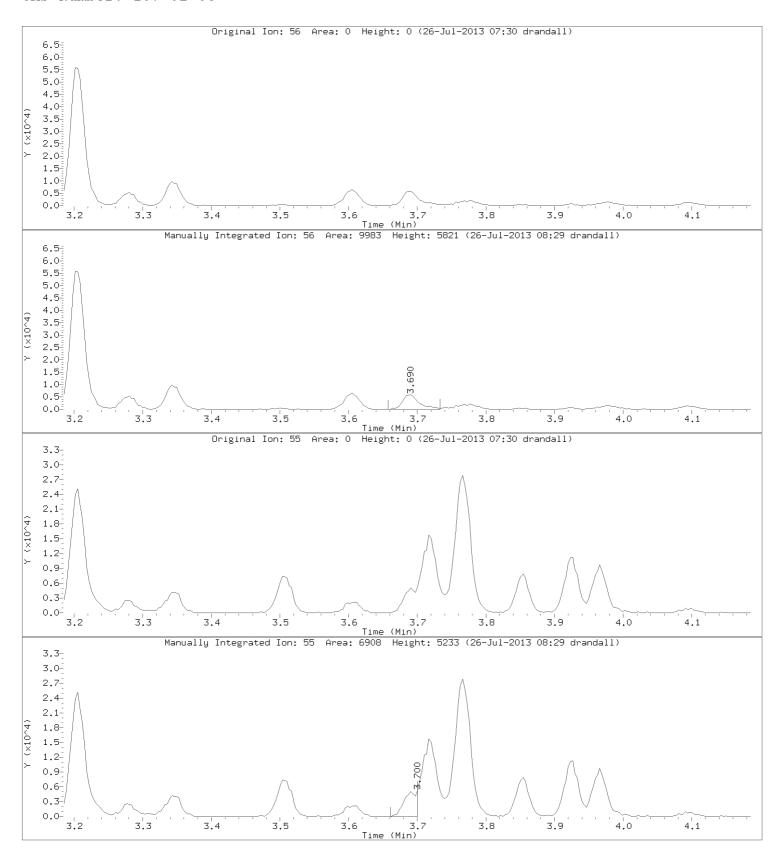


Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: Acrolein CAS Number: 107-02-08



10236207 584 of 1066

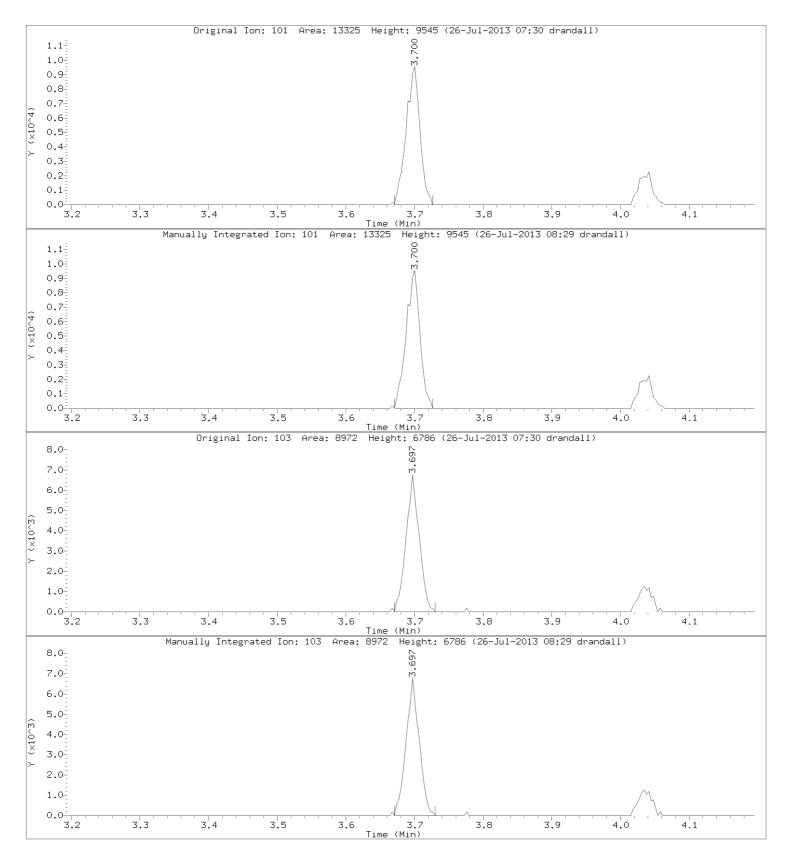
Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: Trichlorofluoromethane

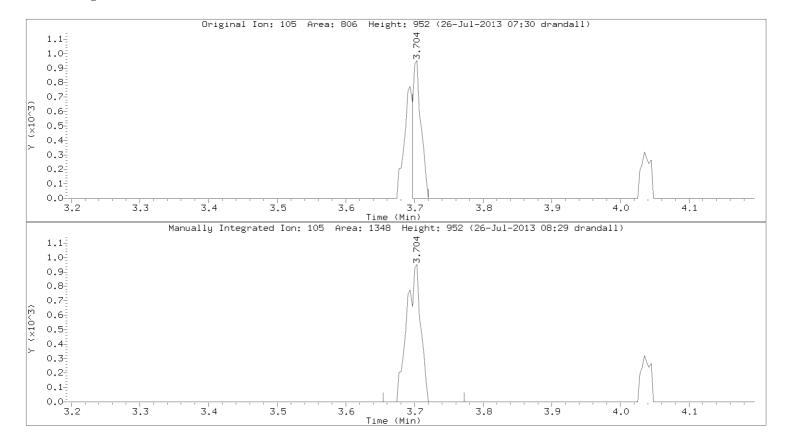
CAS Number: 75-69-4



10236207 585 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i Lab Sample ID: 10236207006



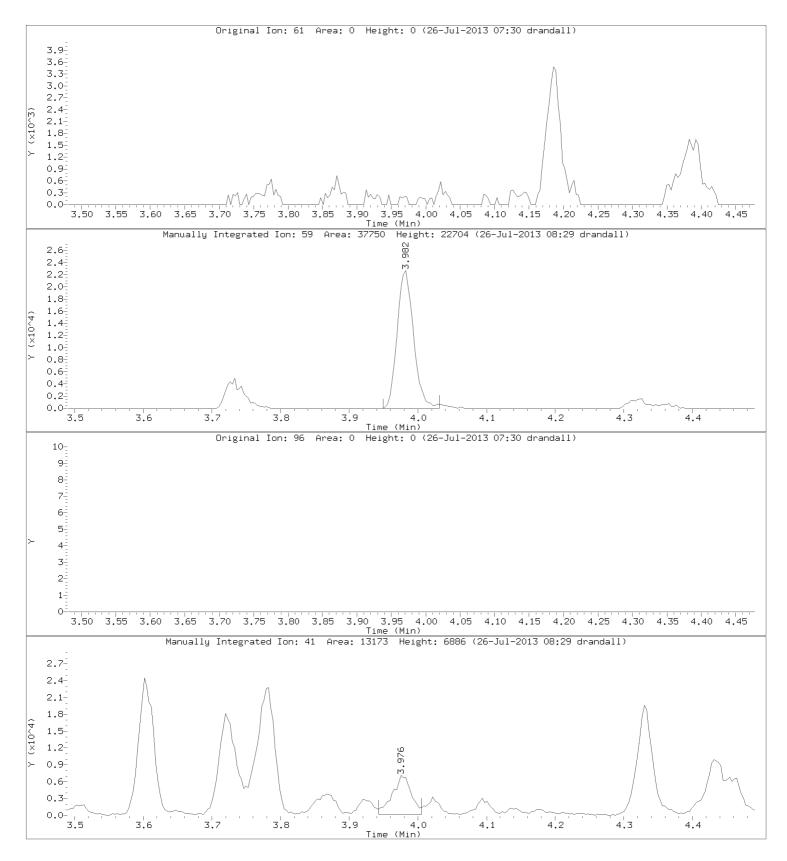
Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



10236207 587 of 1066

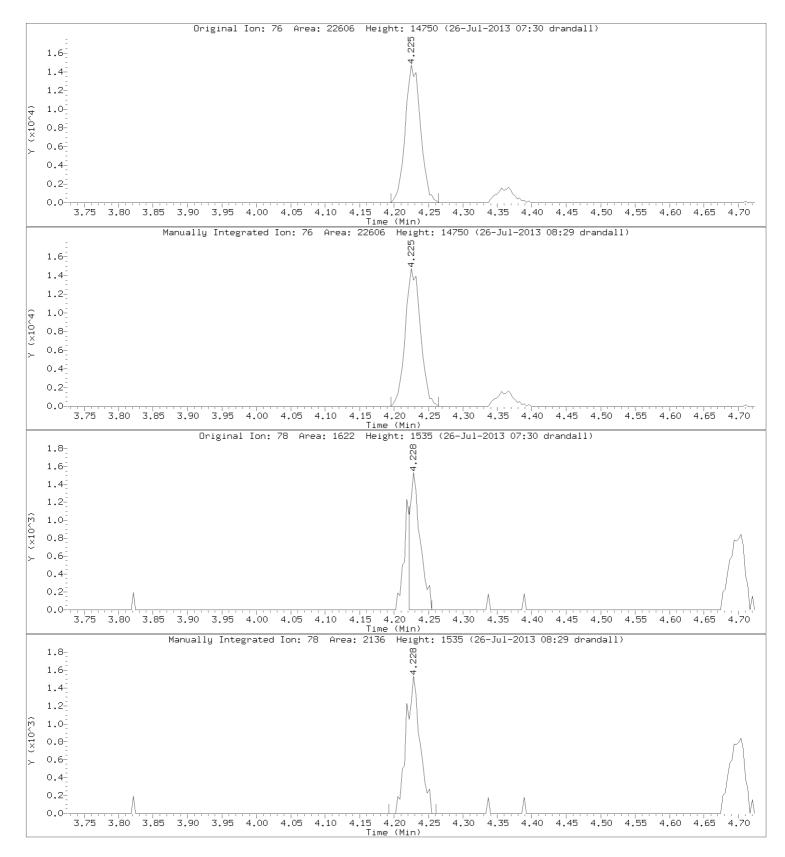
Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: Carbon Disulfide

CAS Number: 75-15-0



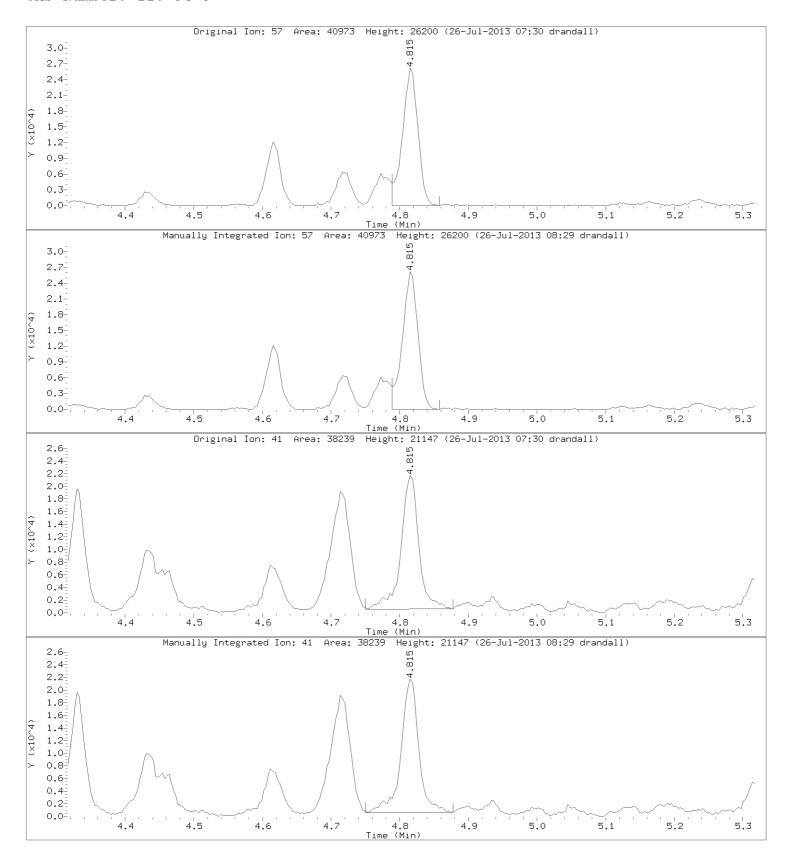
10236207 588 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

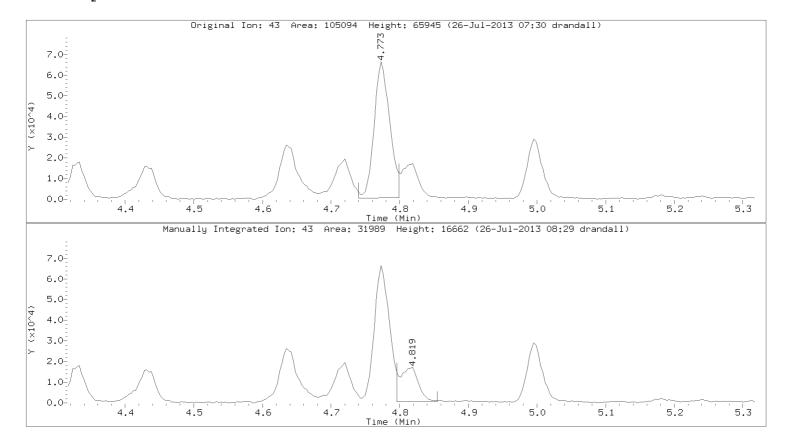
Compound: n-Hexane CAS Number: 110-54-3



10236207 589 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i Lab Sample ID: 10236207006

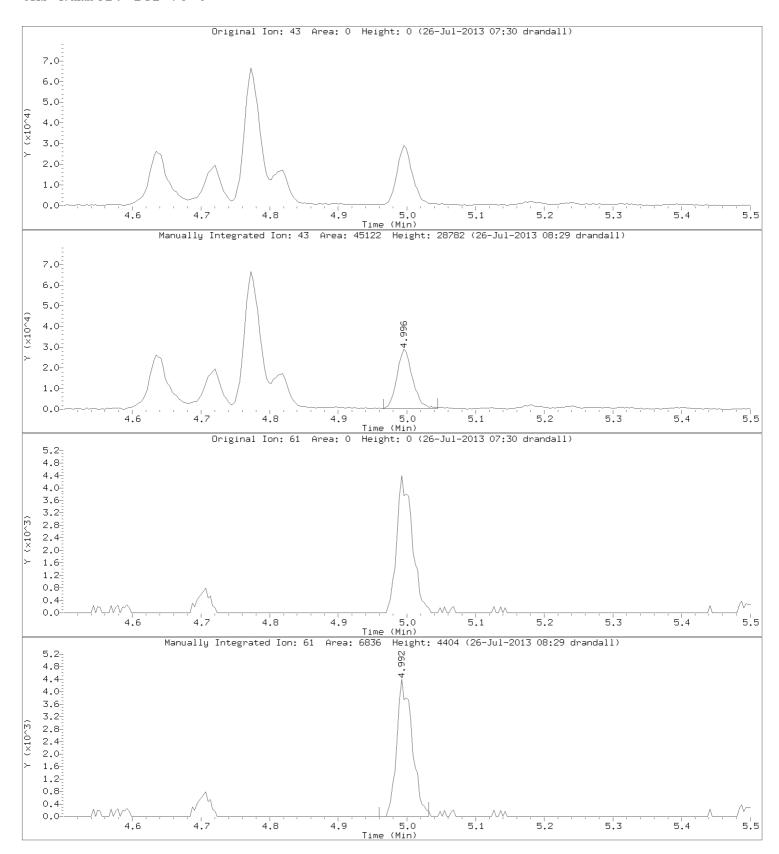


Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

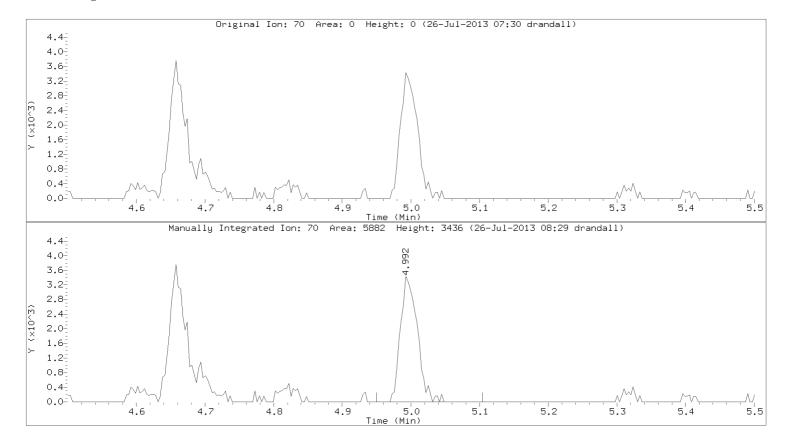
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 591 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i Lab Sample ID: 10236207006

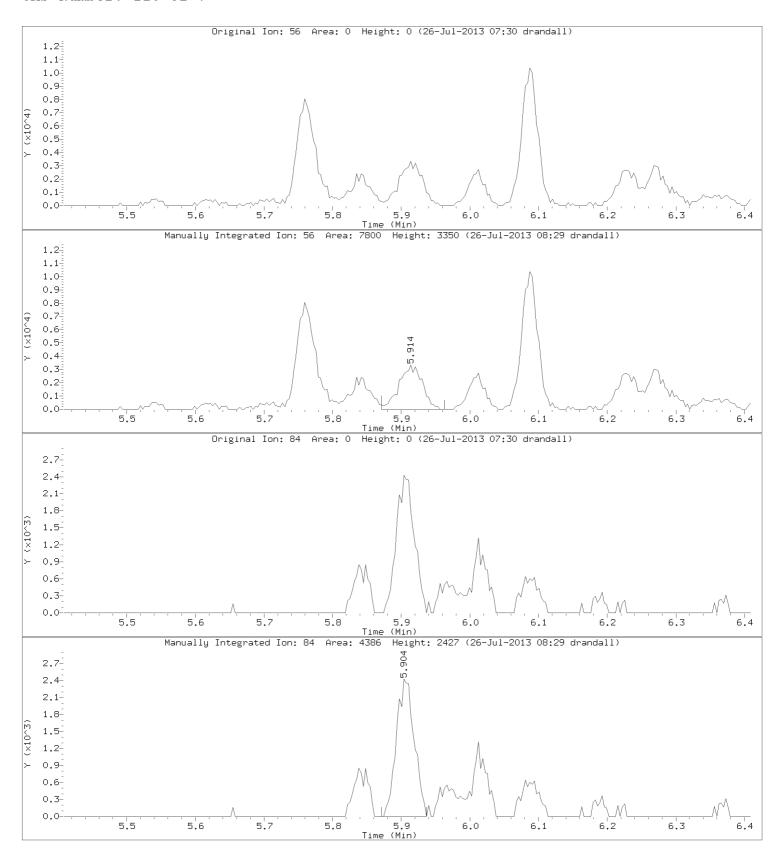


Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

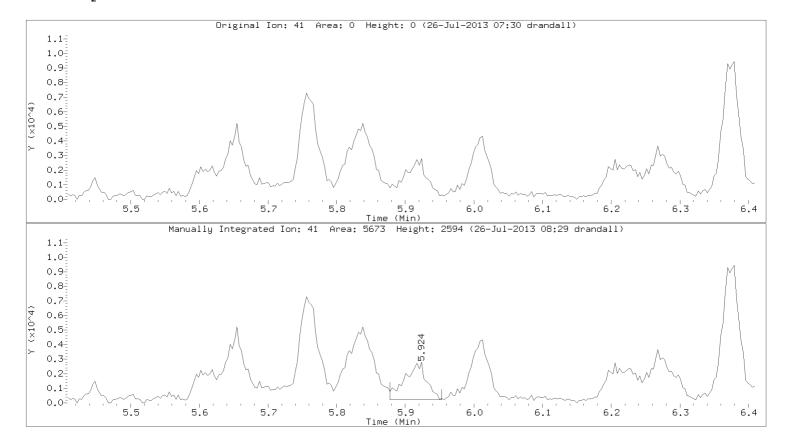
Compound: Cyclohexane CAS Number: 110-82-7



10236207 593 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i Lab Sample ID: 10236207006



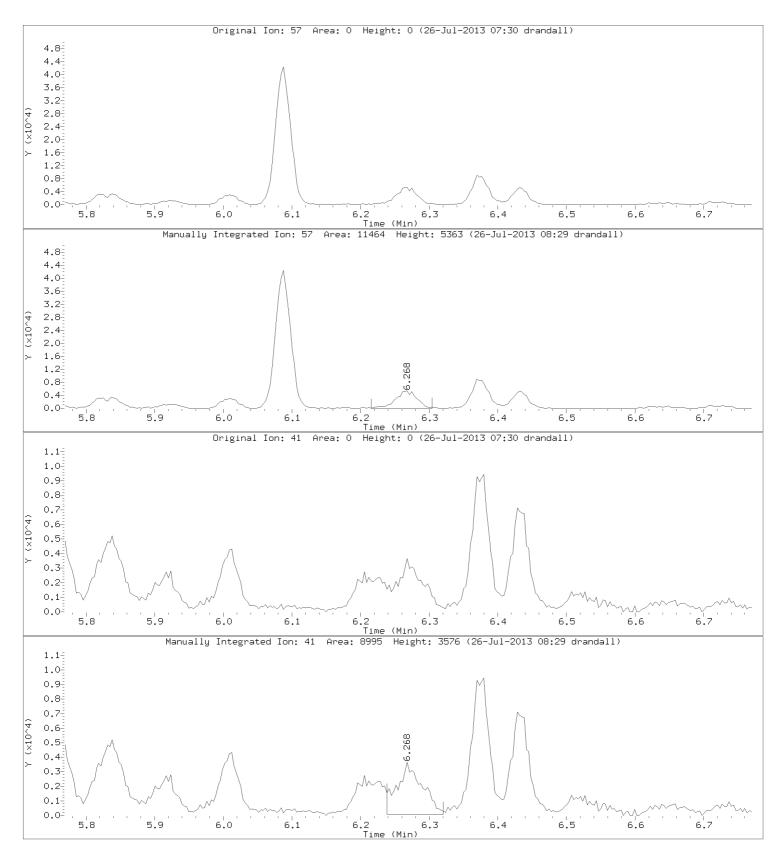
Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: 2,2,4-Trimethylpentane

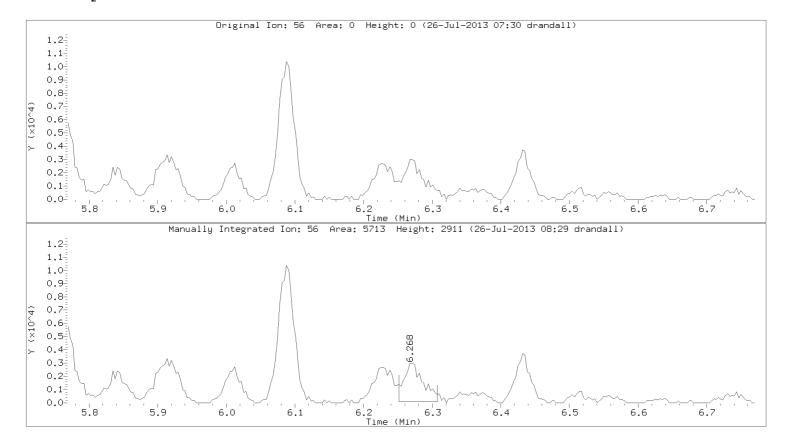
CAS Number: 540-84-1



10236207 595 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i Lab Sample ID: 10236207006

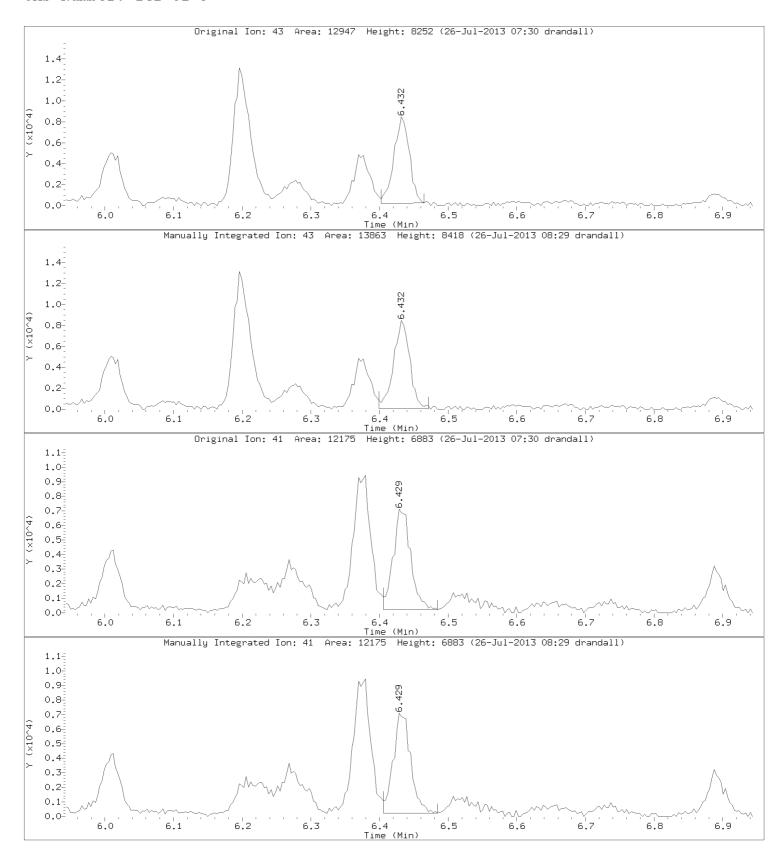


Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: Heptane CAS Number: 142-82-5



10236207 597 of 1066

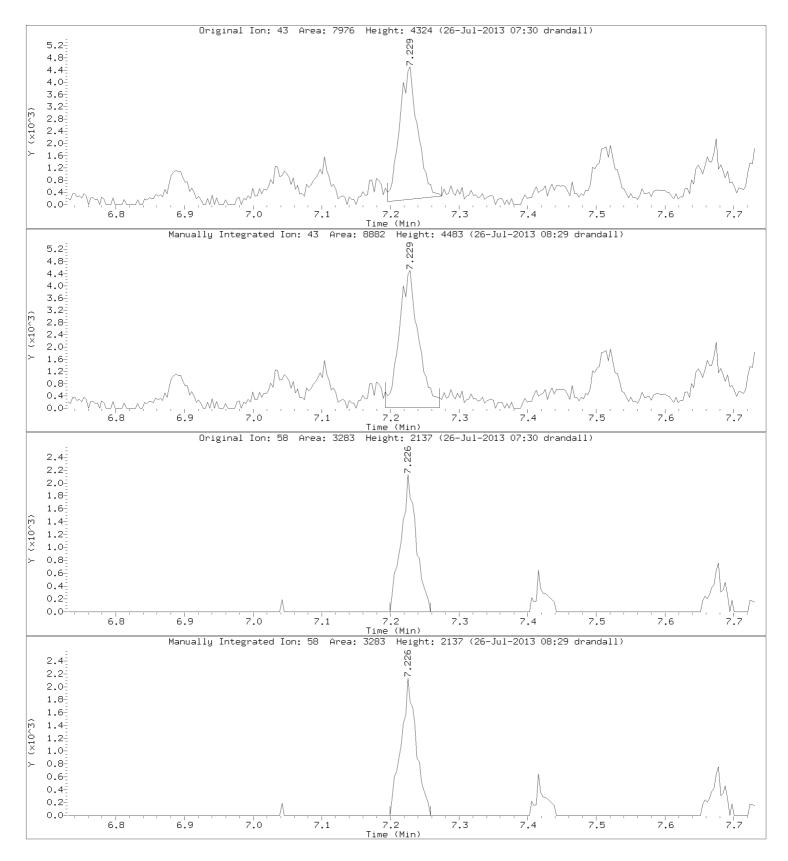
Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: Methyl Isobutyl Ketone

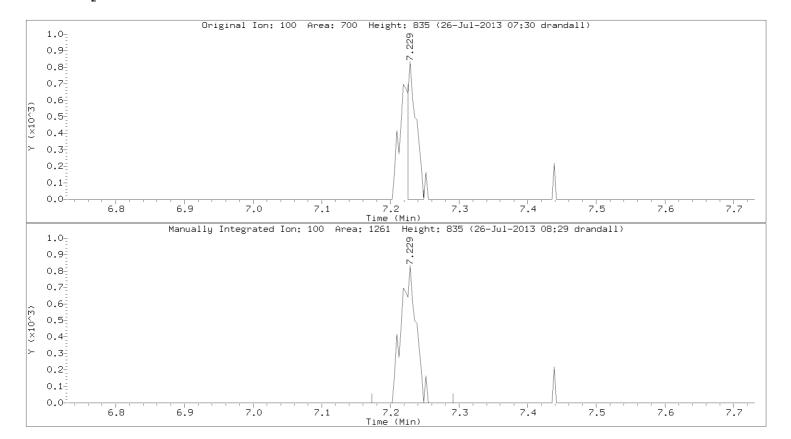
CAS Number: 108-10-1



10236207 598 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i Lab Sample ID: 10236207006

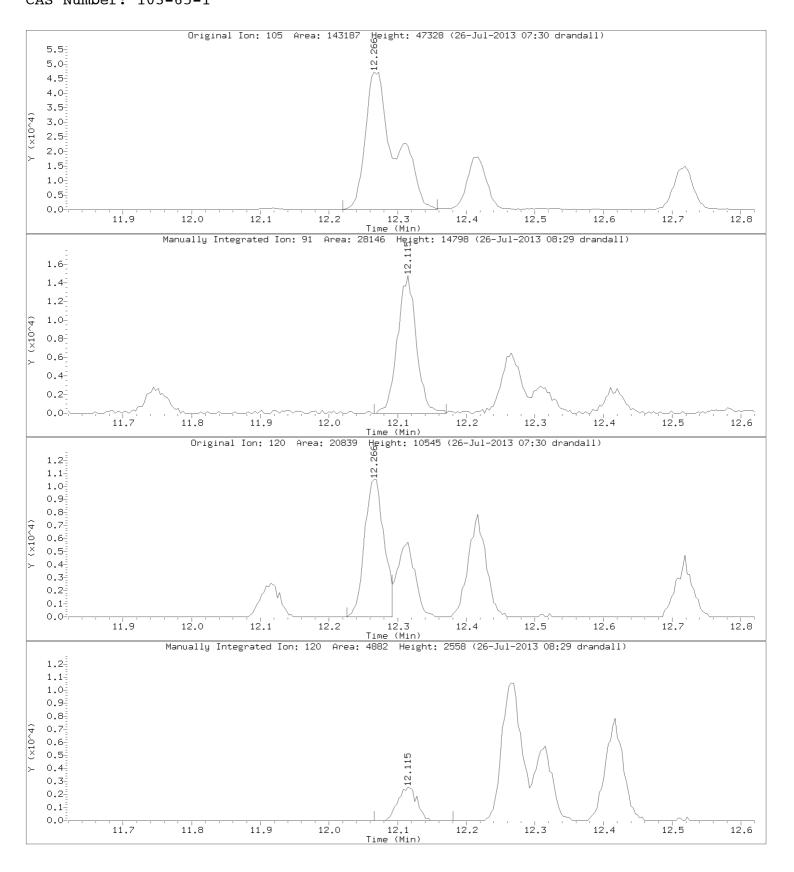


Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

Compound: N-Propylbenzene CAS Number: 103-65-1



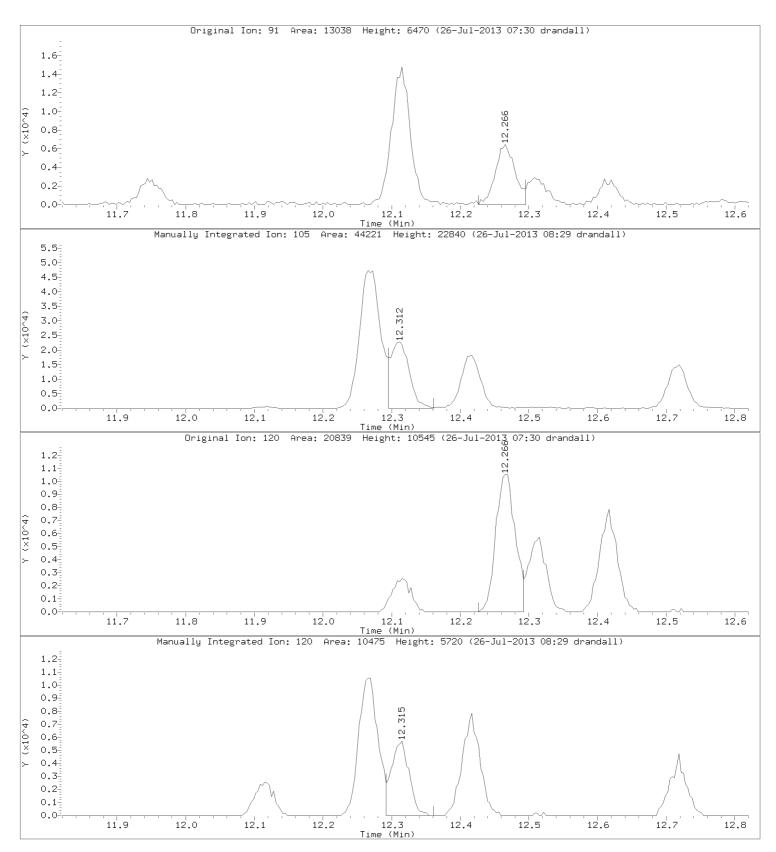
10236207 600 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i

Lab Sample ID: 10236207006

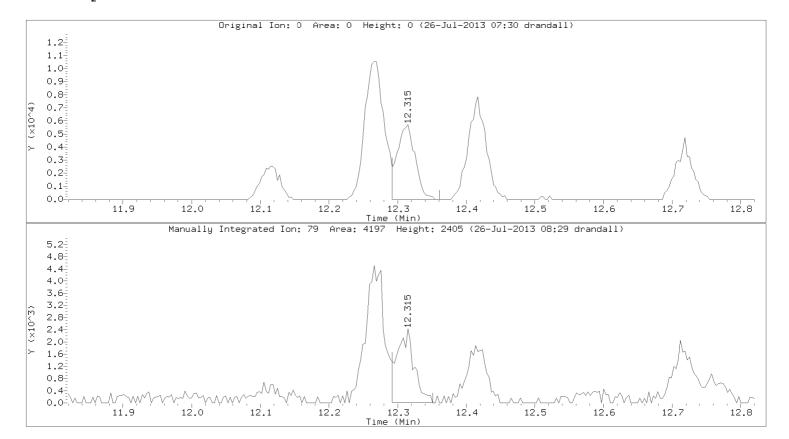
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 601 of 1066

Injection Date: 26-JUL-2013 02:32

Instrument: 10airD.i Lab Sample ID: 10236207006



Report Date: 26-Jul-2013 08:13

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20623.d Lab Smp Id: 10236207007 Inj Date: 25-JUL-2013 23:59 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 23

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)		
1 Propylene	41	2.972 2.982 (0.488) 128536	14.1495 20.4		
2 Dichlorodifluoromethane	85	2.998 3.008 (0.493) 26671	0.30398 0.438		
3 Dichlorotetrafluoroethane	85	Compound Not Detected.			
4 Chloromethane	50	Compound Not Detected.			
5 Vinyl chloride	62	Compound Not Detected.			
6 1,3-Butadiene	54	Compound Not Detected.			
7 Bromomethane	94	Compound Not Detected.			
8 Chloroethane	64	Compound Not Detected.			
9 Ethanol	31	3.506 3.494 (0.576) 19187	1.83561 2.64 (M)		
10 Vinyl Bromide	106	Compound Not Detected.			
11 Acrolein	56	3.696 3.684 (0.607) 5360	0.88695 1.28(QM)		
12 Trichlorofluoromethane	101	3.693 3.694 (0.607) 13341	0.13978 0.201(M)		
13 Acetone	43	3.732 3.726 (0.613) 314576	6.57548 9.47(M)		
14 Isopropyl Alcohol	45	Compound Not Detected.			
15 1,1-Dichloroethene	61	Compound Not Detected.			
16 Acrylonitrile	53	Compound Not Detected.			
17 Tert Butyl Alcohol	59	3.985 3.989 (0.655) 32676	0.65105 0.938(M)		
18 Freon 113	101	Compound Not Detected.			
19 Methylene chloride	49	4.100 4.094 (0.674) 6382	0.23545 0.339		
20 Allyl Chloride	76	Compound Not Detected.			
21 Carbon Disulfide	76	4.221 4.224 (0.693) 22235	0.28190 0.406		
22 trans-1,2-dichloroethene	96	Compound Not Detected.			
23 Methyl Tert Butyl Ether	73	Compound Not Detected.			
24 Vinyl Acetate	43	Compound Not Detected.			

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20623.d$ Report Date: 26-Jul-2013 08:13

			CONCENTRATIONS
		QUANT SIG	ON-COLUMN FINAL
Cc	ompounds	MASS	RT EXP RT REL RT RESPONSE (ppbv) (ppbv)
	25 1,1-Dichloroethane	==== 63	Compound Not Detected.
Ś	26 Hexane-d14(S)	66	4.700 4.700 (0.772) 306293 8.78951 8.79
7	27 Methyl Ethyl Ketone	72	4.778 4.779 (0.785) 26485 2.39118 3.44 (Q)
	28 n-Hexane	57	4.818 4.818 (0.792) 27071 0.85455 1.23 (M)
	29 cis-1,2-Dichloroethene	96	Compound Not Detected.
	30 Ethyl Acetate	43	4.998 4.999 (0.821) 34350 1.21422 1.75(Q)
	31 Chloroform	83	Compound Not Detected.
	32 Tetrahydrofuran	42	Compound Not Detected.
	33 1,1,1-Trichloroethane	97	Compound Not Detected.
	34 1,2-Dichloroethane	62	Compound Not Detected.
	35 Benzene	78	5.884 5.887 (0.967) 41253 1.00444 1.45
	36 Carbon tetrachloride	117	Compound Not Detected.
		56	
4	37 Cyclohexane 38 1,4-Difluorobenzene	114	5.916 5.910 (0.972) 4345 0.63120 0.909(QM) 6.087 6.094 (1.000) 721641 10.0000
,,	39 2,2,4-Trimethylpentane	57	Compound Not Detected.
		43	6.431 6.442 (1.057) 7377 0.72992 1.05(M)
	40 Heptane	43 63	Compound Not Detected.
	41 1,2-Dichloropropane 42 Trichloroethene	130	
		130	Compound Not Detected.
	43 1,4-Dioxane		Compound Not Detected.
	44 Bromodichloromethane	83	Compound Not Detected.
	45 Methyl Isobutyl Ketone	43	Compound Not Detected.
	46 cis-1,3-Dichloropropene	75	Compound Not Detected.
	47 trans-1,3-Dichloropropene	75	Compound Not Detected.
\$	48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 513411 10.1869 10.2
	49 Toluene	91	7.930 7.940 (1.303) 120570 1.78768 2.57
	50 1,1,2-Trichloroethane	97	Compound Not Detected.
	51 Methyl Butyl Ketone	43	8.248 8.244 (0.852) 5598 0.48753 0.702(M)
	52 Dibromochloromethane	129	Compound Not Detected.
	53 1,2-Dibromoethane	107	Compound Not Detected.
	54 Tetrachloroethene	166	8.910 8.918 (0.920) 7081 0.54185 0.780
*	55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 272899 10.0000
	56 Chlorobenzene	112	Compound Not Detected.
	57 Ethyl Benzene	91	10.032 10.039 (1.036) 44953 0.73240 1.05
	58 m&p-Xylene	91	10.202 10.213 (1.053) 154999 2.10065 3.02
	59 Bromoform	173	Compound Not Detected.
	60 Styrene	104	10.694 10.708 (1.104) 5660 0.57063 0.822
	61 o-Xylene	91	10.776 10.783 (1.113) 49067 0.75363 1.08
	62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.
	63 Isopropylbenzene	105	Compound Not Detected.
	64 N-Propylbenzene	91	12.111 12.121 (1.251) 18268 0.43807 0.631(M)
	65 4-Ethyltoluene	105	12.311 12.321 (1.271) 33516 0.65472 0.943(M)
	66 1,3,5-Trimethylbenzene	105	12.416 12.426 (1.282) 27477 0.60201 0.867
	67 1,2,4-Trimethylbenzene	105	13.009 13.020 (1.343) 129970 1.85504 2.67
	68 1,3-Dichlorobenzene	146	Compound Not Detected.
	69 Sec- Butylbenzene	105	Compound Not Detected.
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.449 13.459 (1.389) 103278 9.37574 9.38
	71 Benzyl Chloride	91	Compound Not Detected.
	72 1,4-Dichlorobenzene	146	Compound Not Detected.
	73 1,2-Dichlorobenzene	146	Compound Not Detected.
	74 N-Butylbenzene	91	Compound Not Detected.
	75 1,2,4-Trichlorobenzene	180	Compound Not Detected.
	76 Naphthalene	128	16.859 16.860 (1.741) 39914 1.30243 1.88
	77 Hexachlorobutadiene	225	Compound Not Detected.

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Report Date: 26-Jul-2013 08:13

# QC Flag Legend

 ${\tt Q}$  - Qualifier signal failed the ratio test. M - Compound response manually integrated.

10236207 605 of 1066

Report Date: 26-Jul-2013 08:13

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20623.d

Lab Smp Id: 10236207007 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DIFF
38 1,4-Difluorobenze	579775	347865	811685	721641	24.47
55 Chlorobenzene - d	221404	132842	309966	272899	23.26

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.06
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

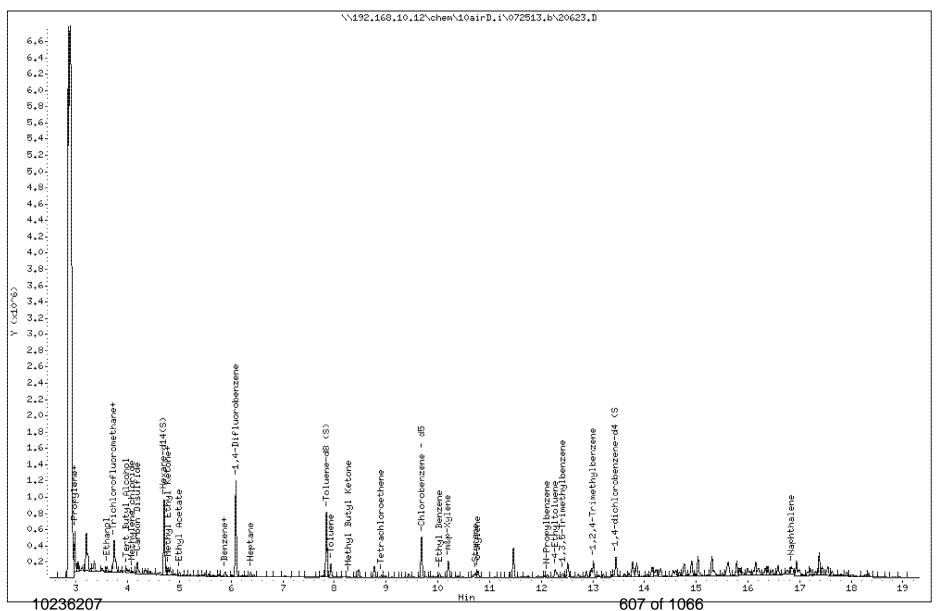
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 25-JUL-2013 23:59

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 25-JUL-2013 23:59

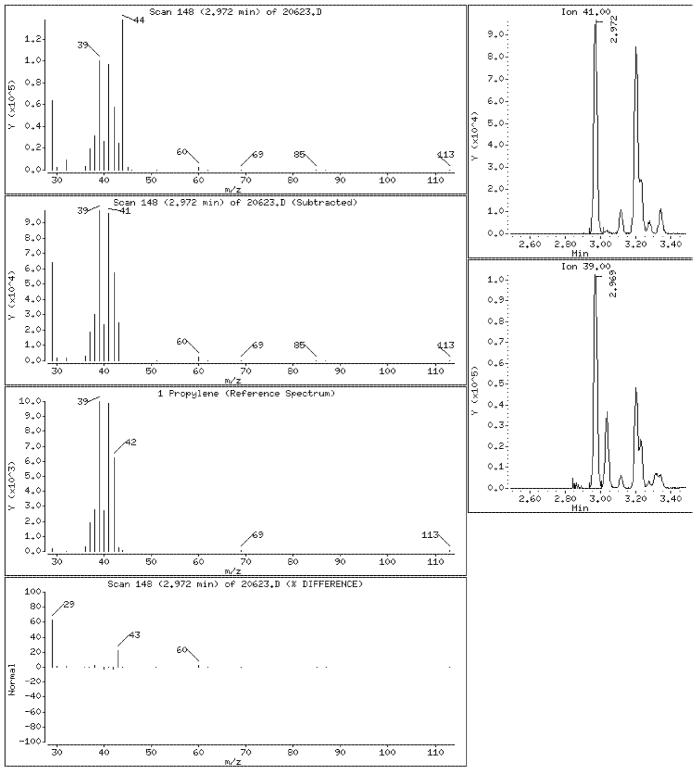
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 608 of 1066

Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

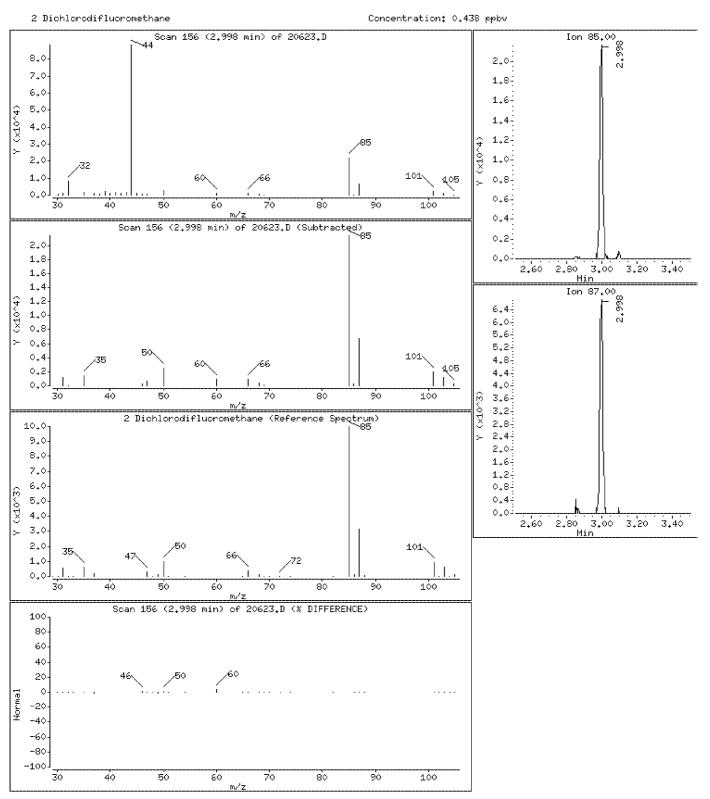
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.438 ppbv



Date : 25-JUL-2013 23:59

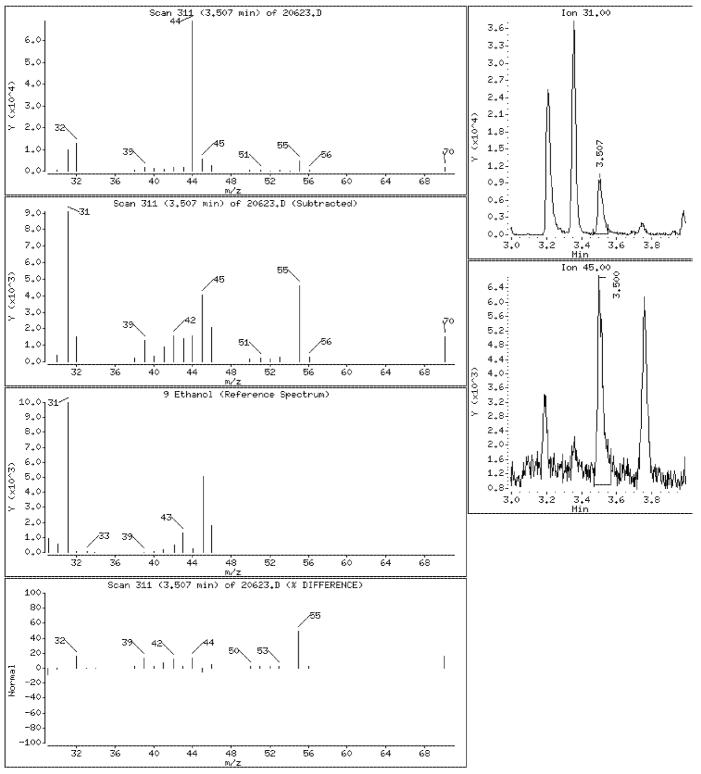
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 610 of 1066

Date : 25-JUL-2013 23:59

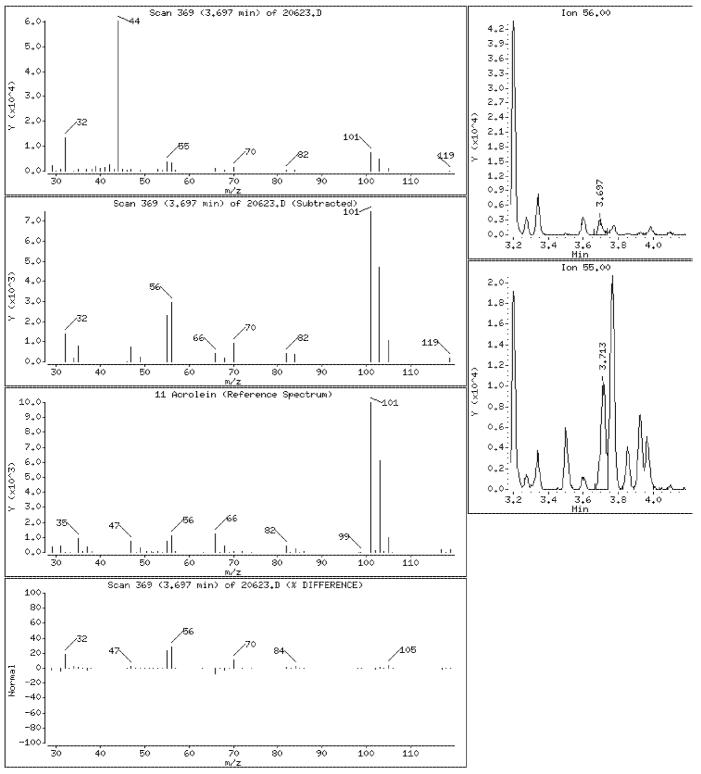
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 611 of 1066

Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

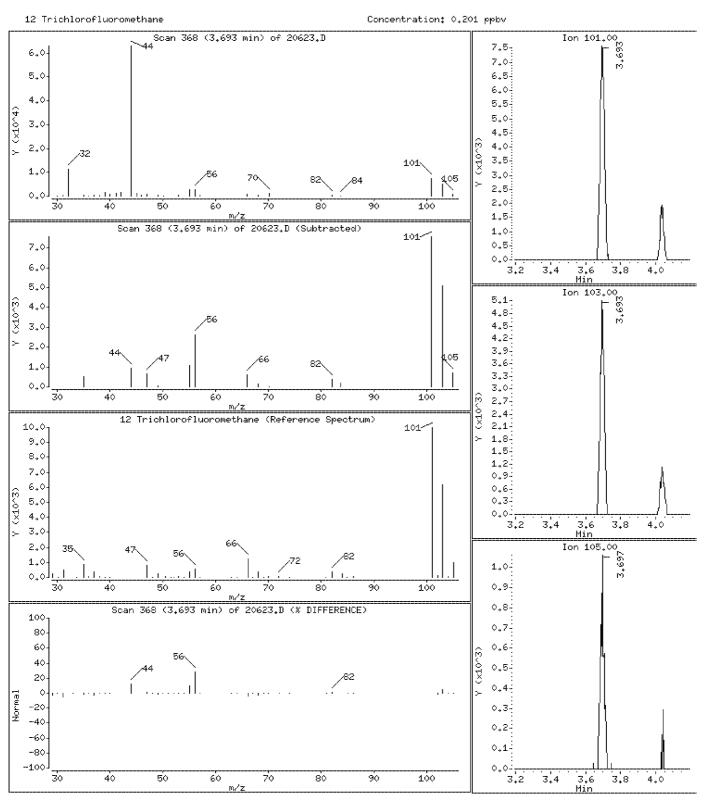
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.201 ppbv



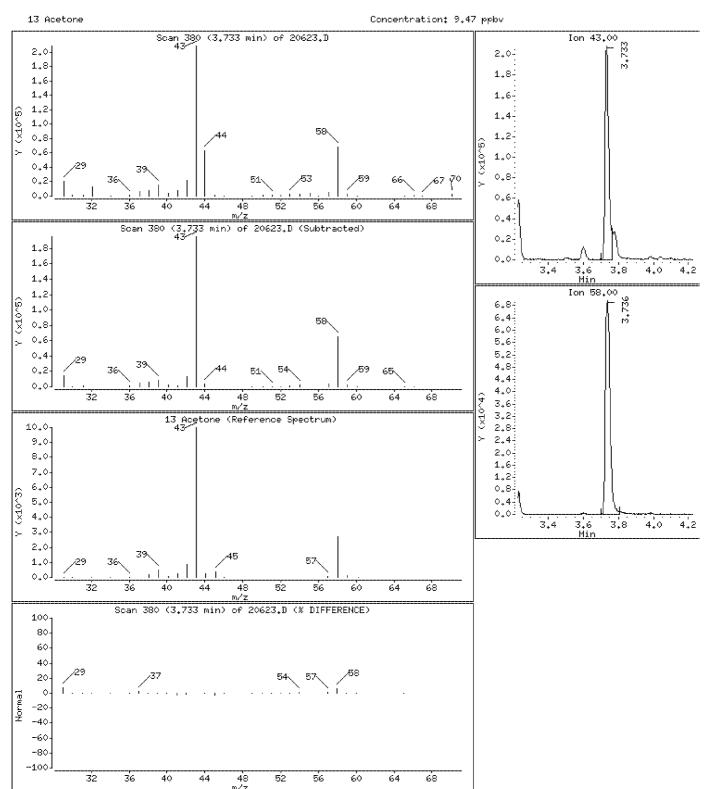
Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 613 of 1066

Date : 25-JUL-2013 23:59

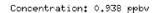
Client ID: Instrument: 10airD.i

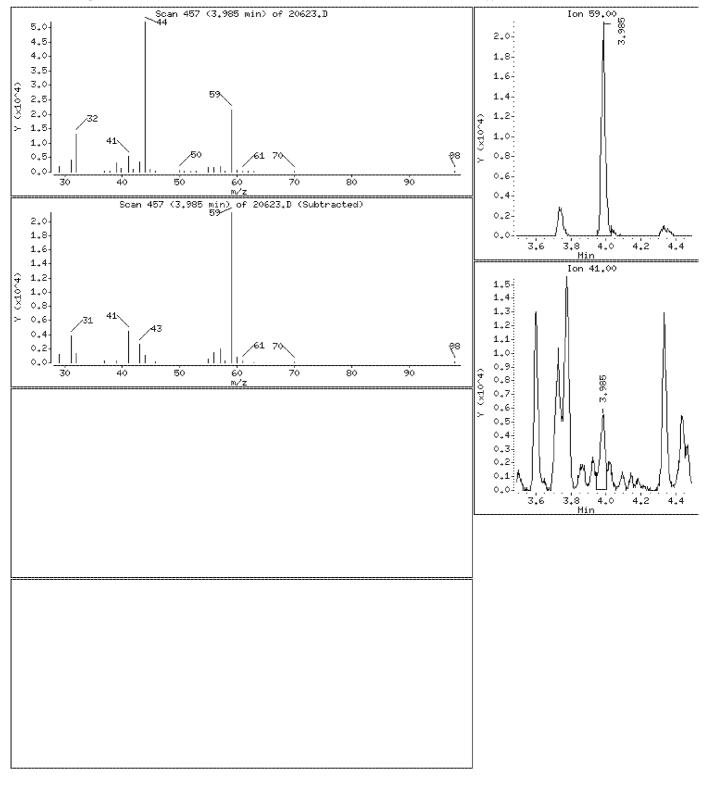
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 614 of 1066

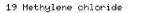
Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

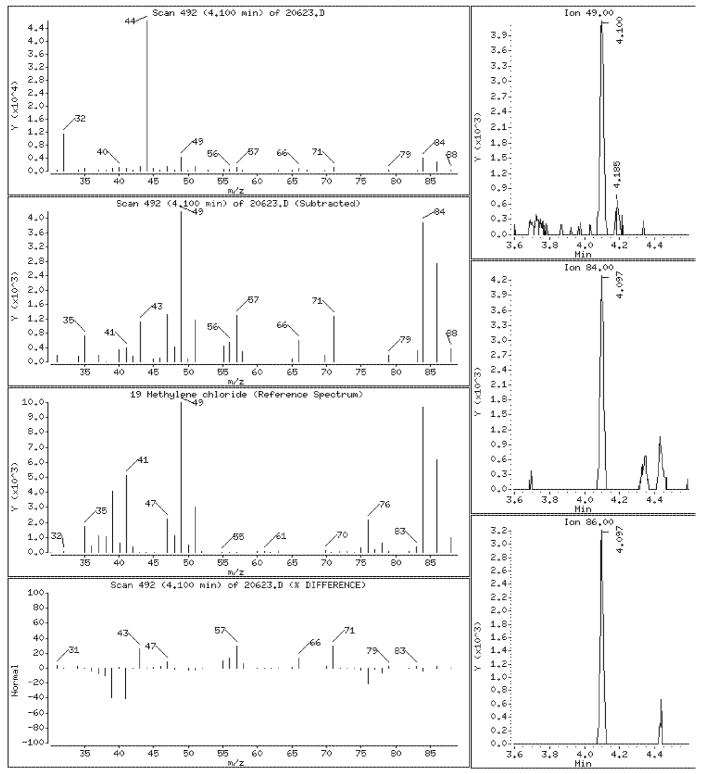
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.339 ppbv



10236207 615 of 1066

Date : 25-JUL-2013 23:59

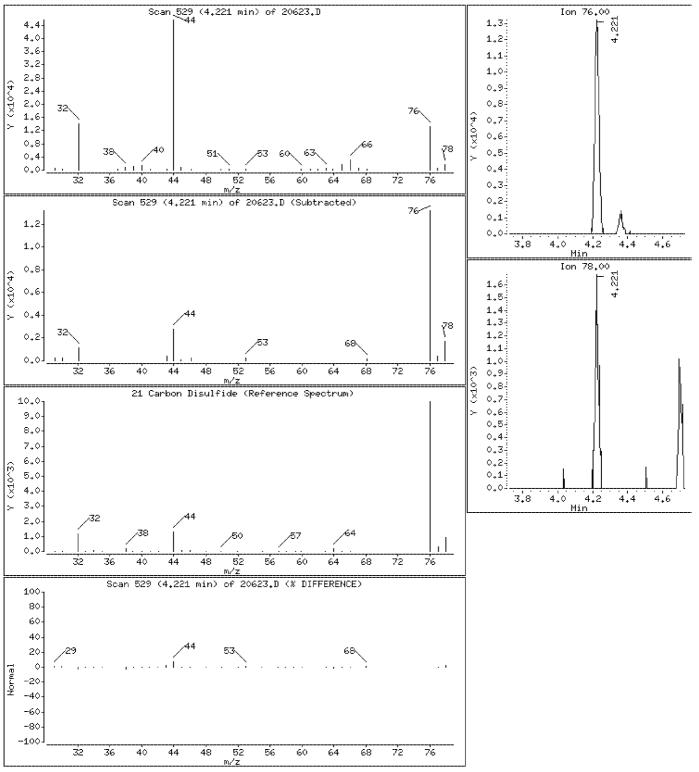
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 616 of 1066

Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

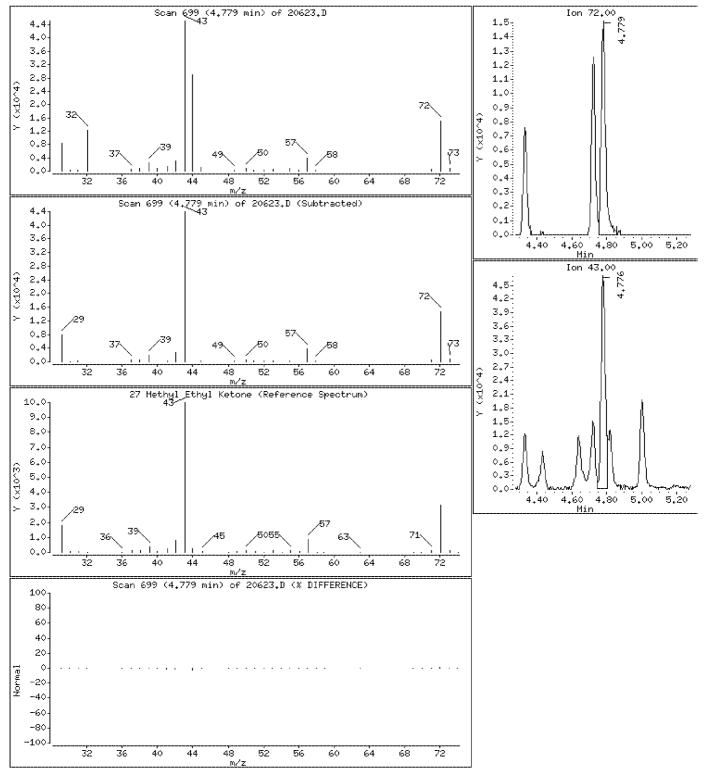
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 3.44 ppbv



10236207 617 of 1066

Date : 25-JUL-2013 23:59

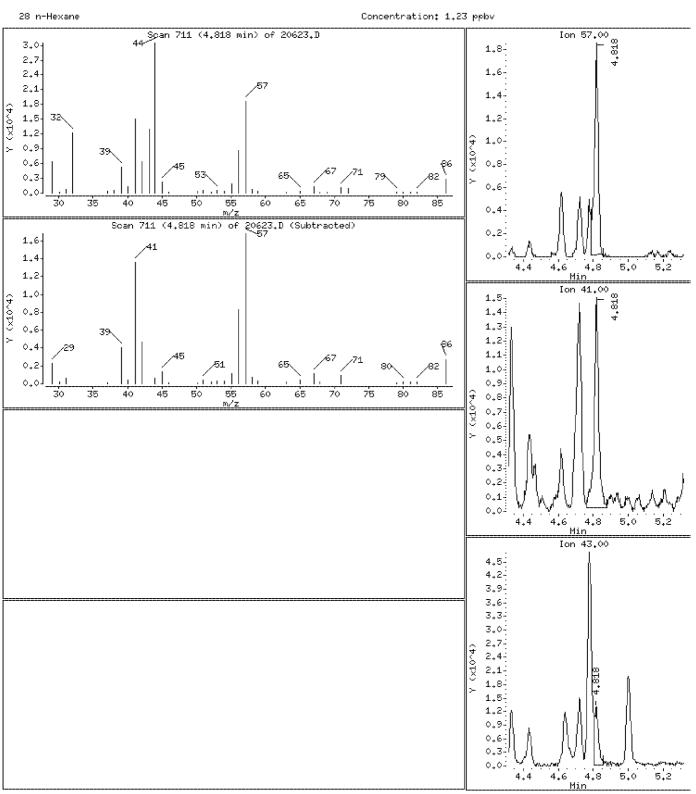
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 23:59

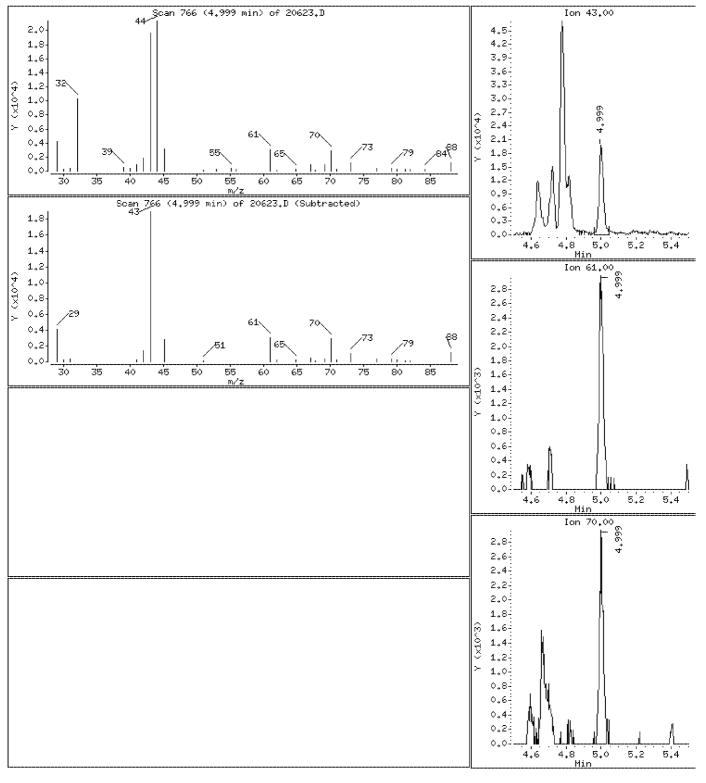
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 619 of 1066

Date : 25-JUL-2013 23:59

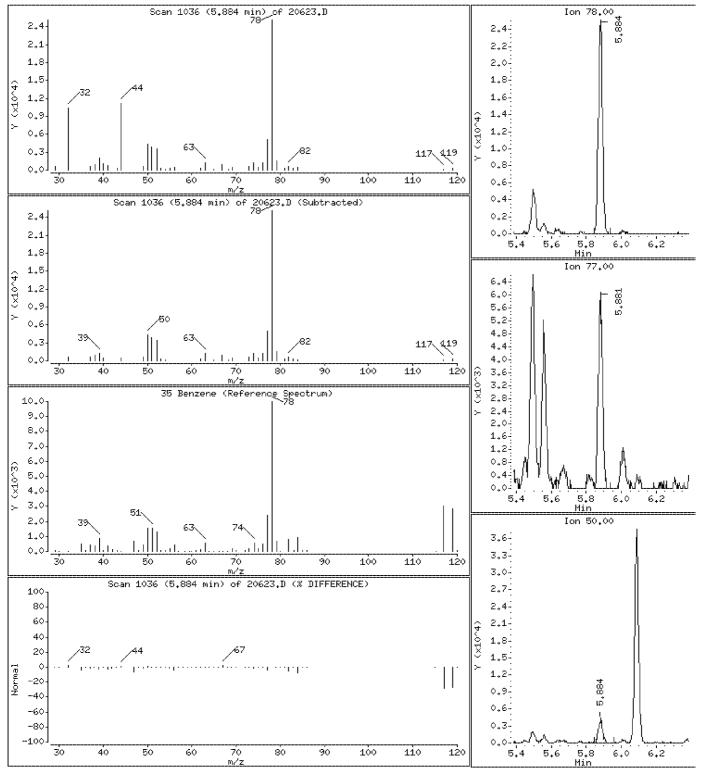
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 620 of 1066

Date : 25-JUL-2013 23:59

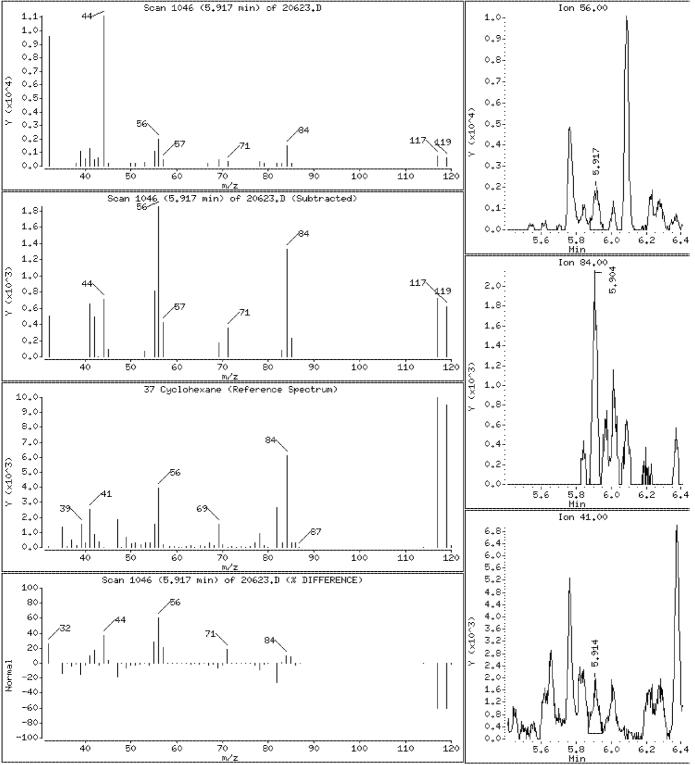
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 621 of 1066

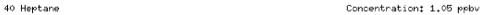
Date : 25-JUL-2013 23:59

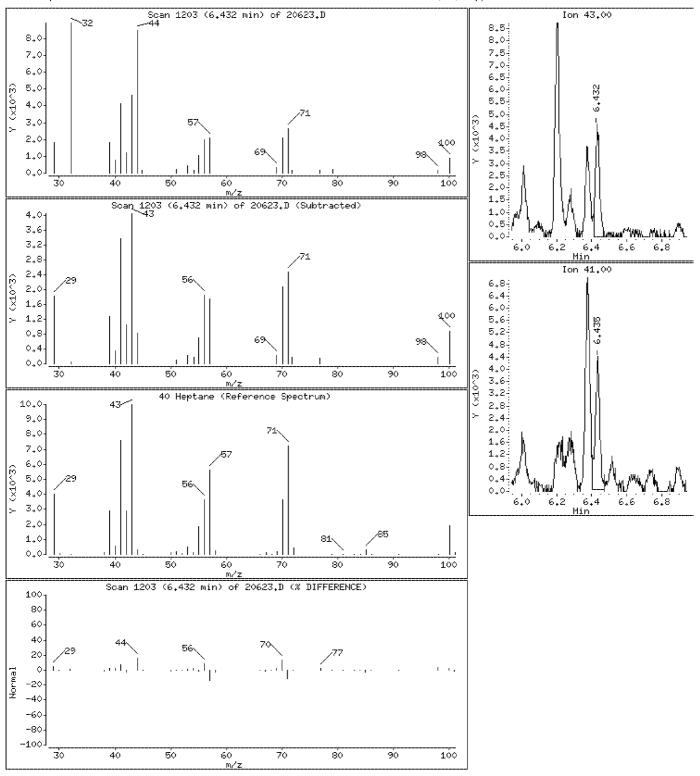
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 622 of 1066

Date : 25-JUL-2013 23:59

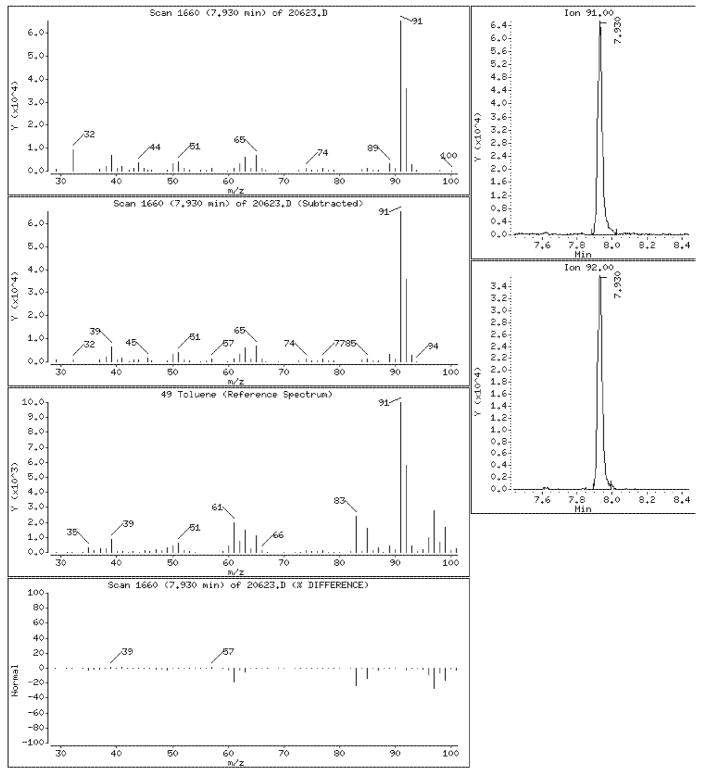
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 623 of 1066

Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

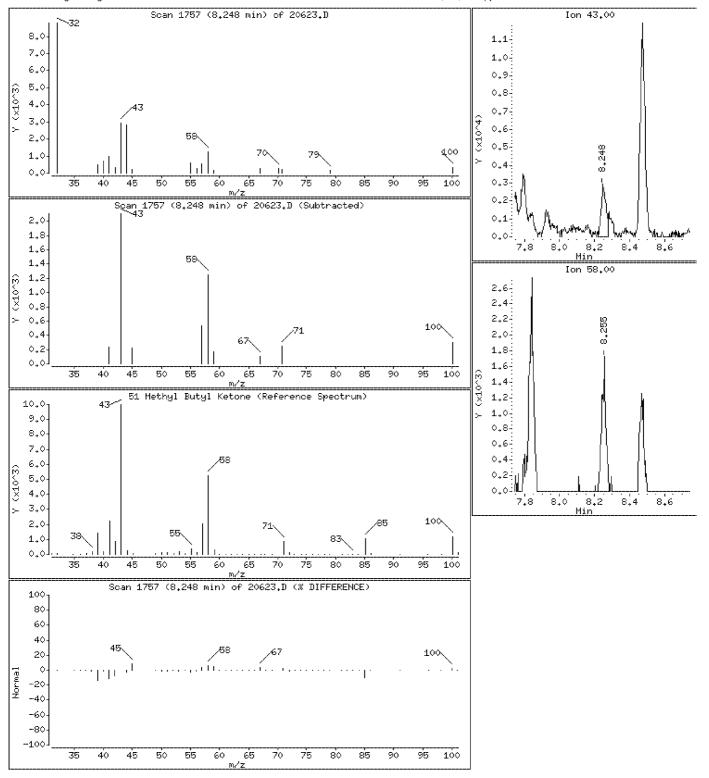
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

51 Methyl Butyl Ketone

Concentration: 0.702 ppbv



10236207 624 of 1066

Date : 25-JUL-2013 23:59

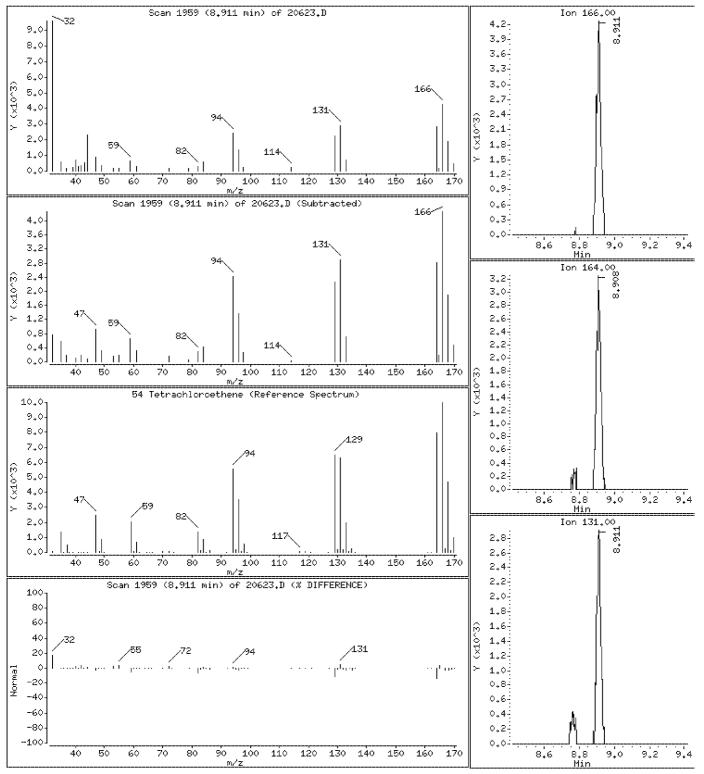
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 625 of 1066

Date : 25-JUL-2013 23:59

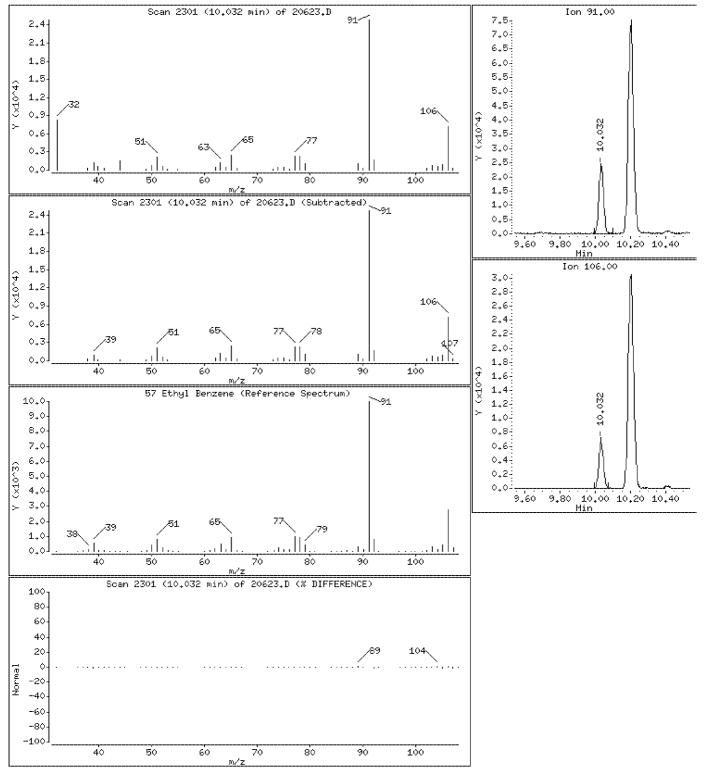
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 626 of 1066

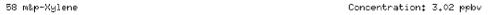
Date : 25-JUL-2013 23:59

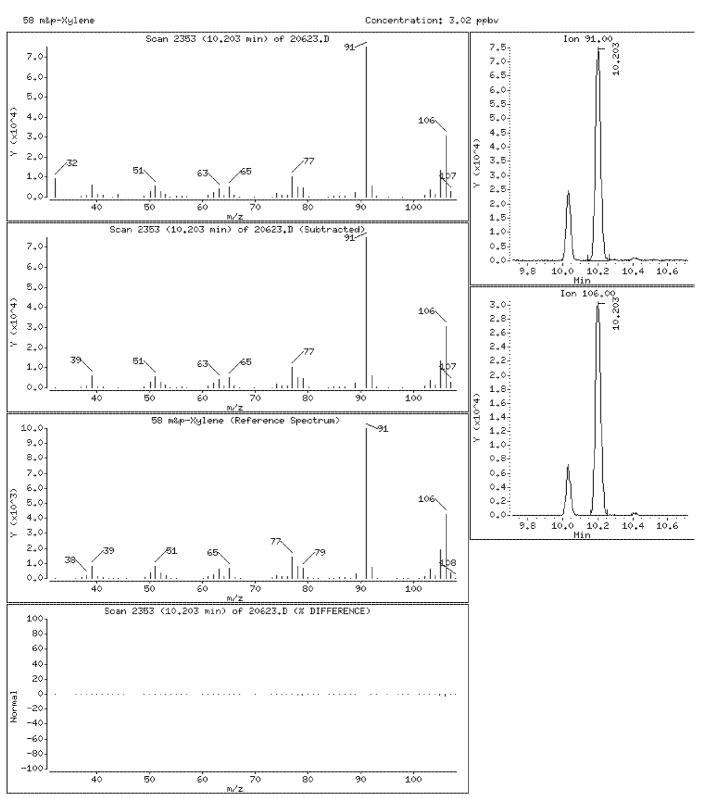
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





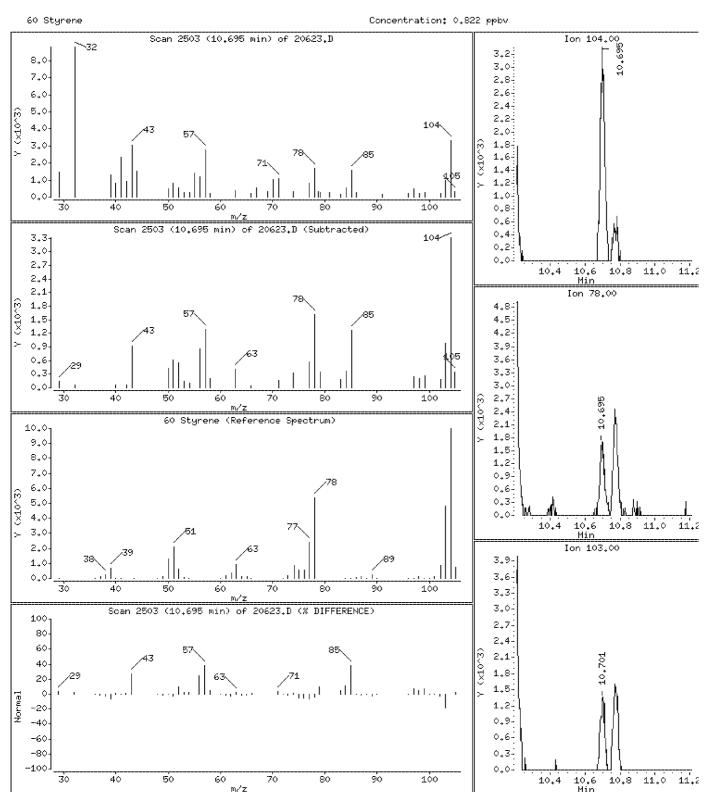
Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 628 of 1066

Date : 25-JUL-2013 23:59

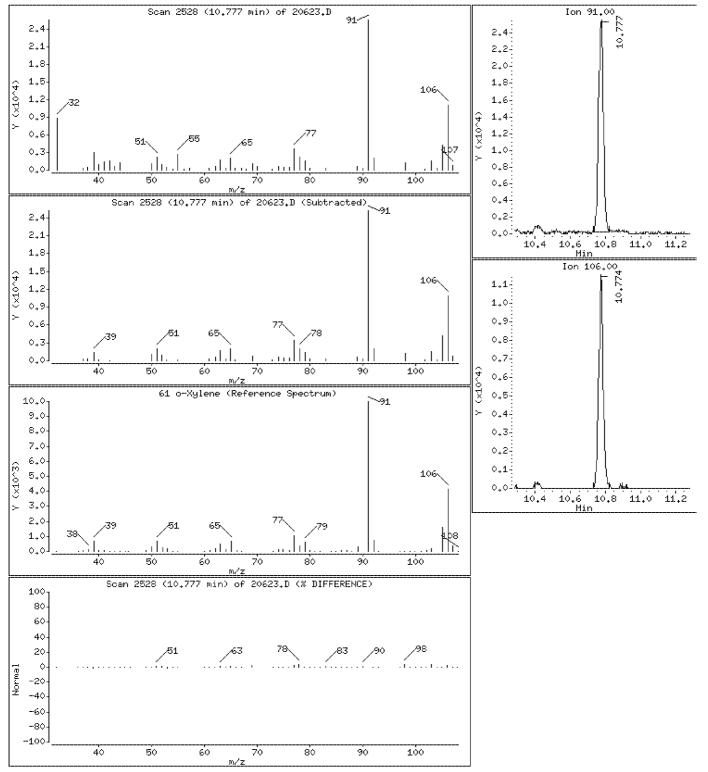
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 629 of 1066

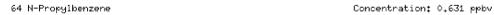
Date : 25-JUL-2013 23:59

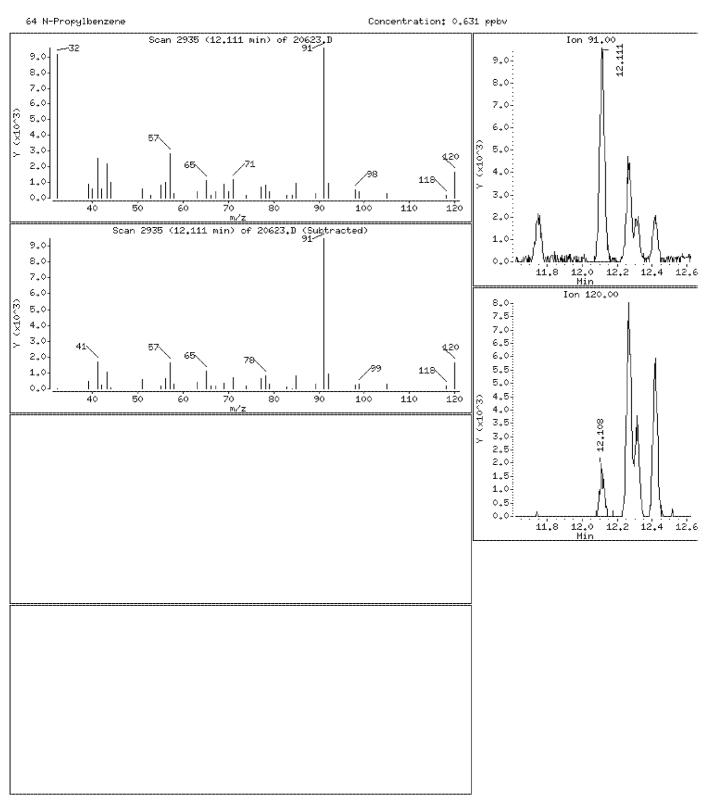
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 23:59

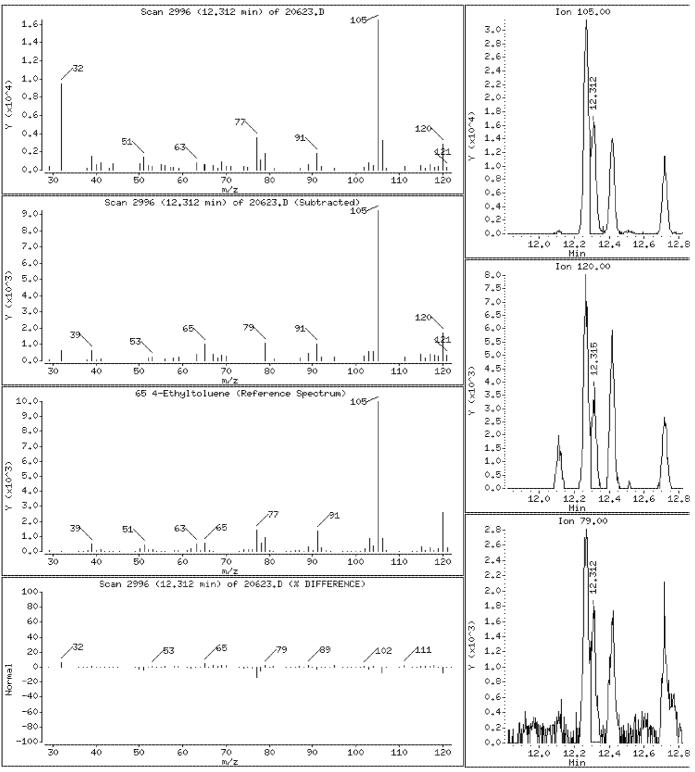
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 631 of 1066

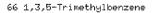
Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

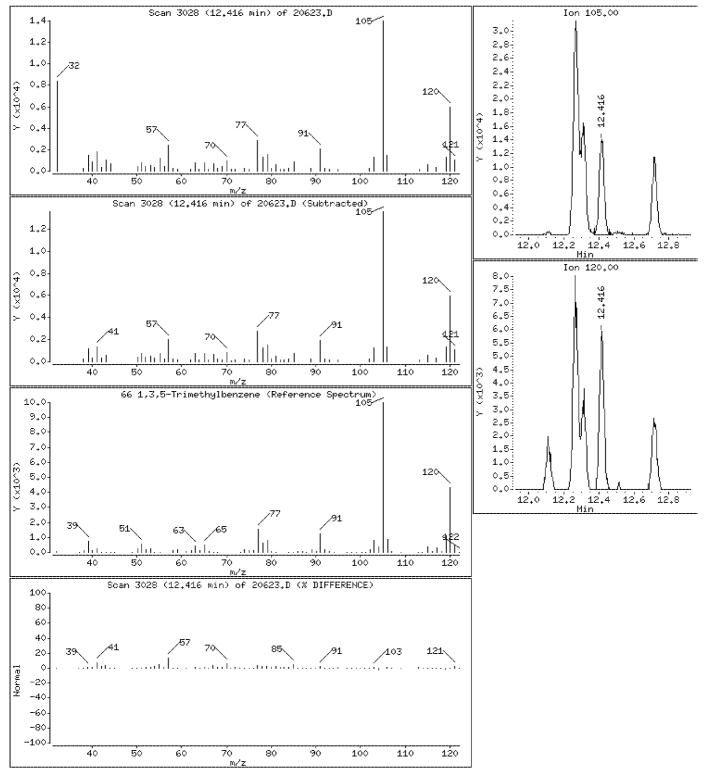
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.867 ppbv



10236207 632 of 1066

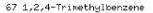
Date : 25-JUL-2013 23:59

Client ID: Instrument: 10airD.i

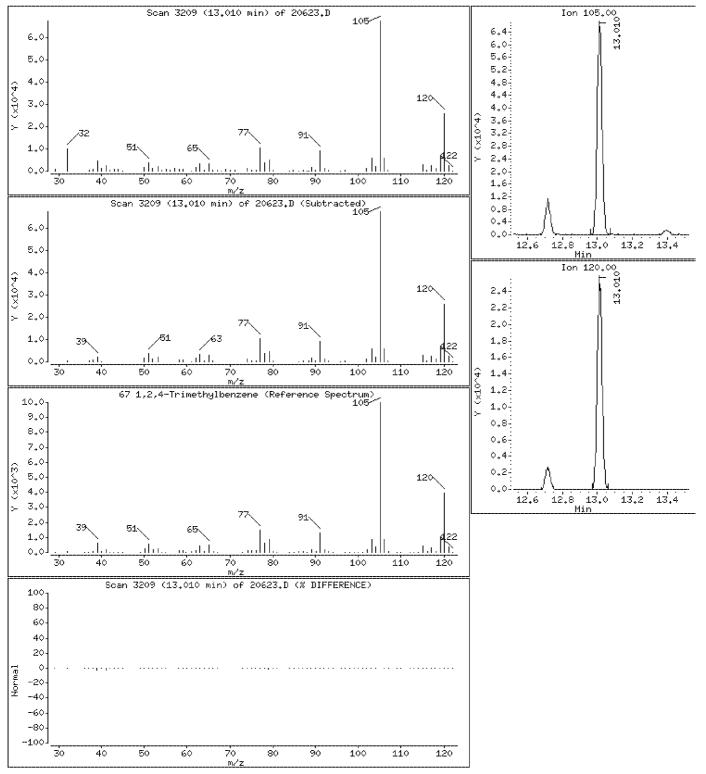
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 633 of 1066

Date : 25-JUL-2013 23:59

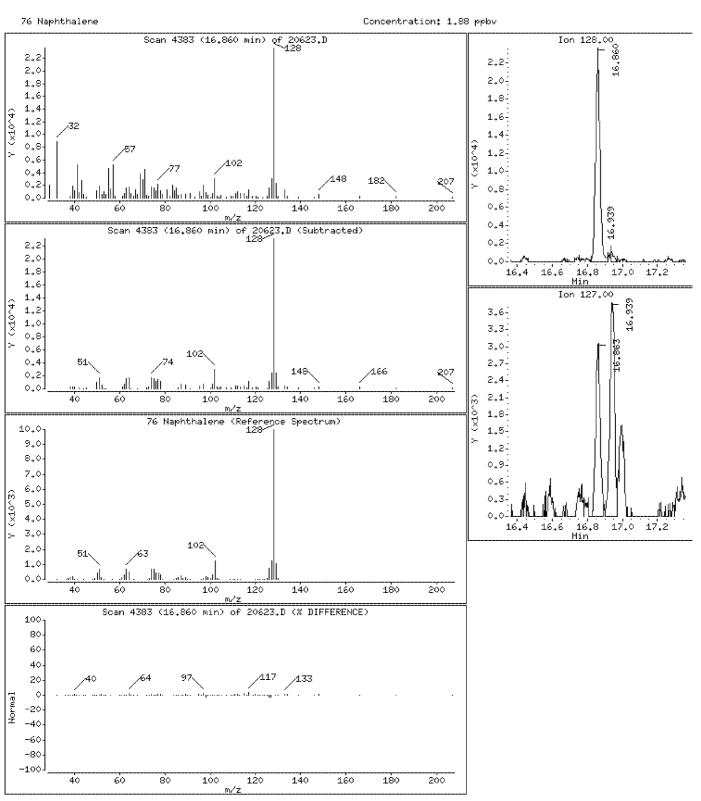
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



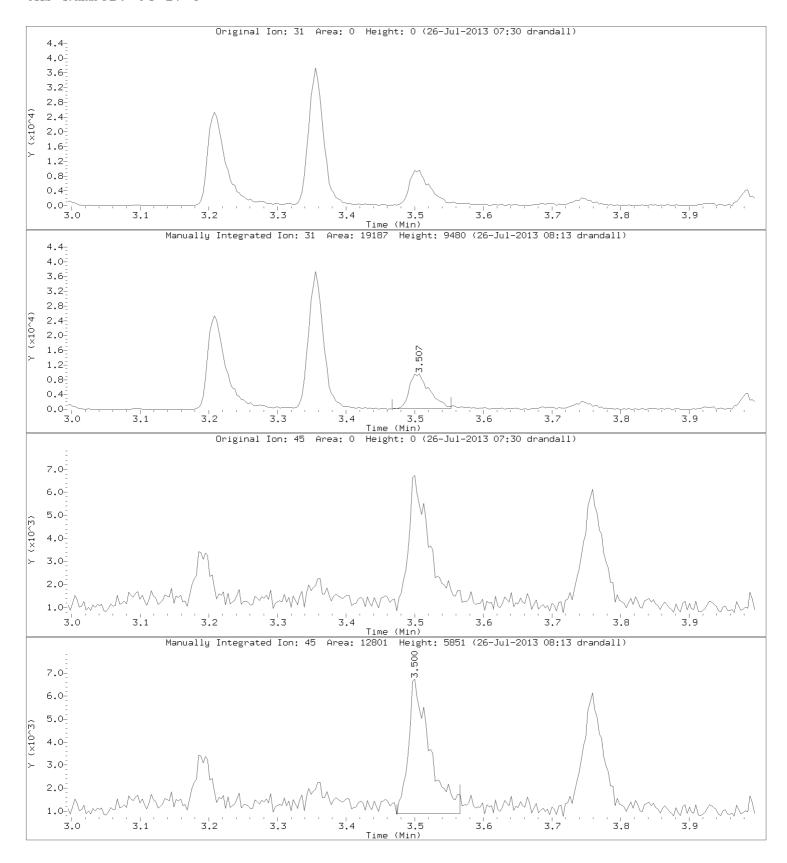


Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: Ethanol CAS Number: 64-17-5



10236207 635 of 1066

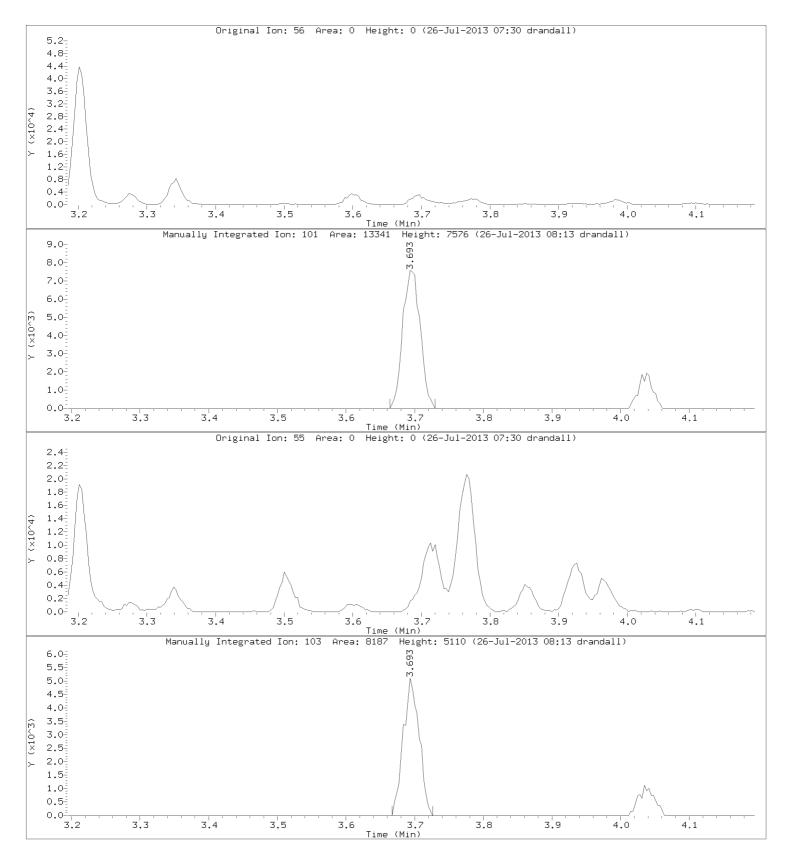
Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: Trichlorofluoromethane

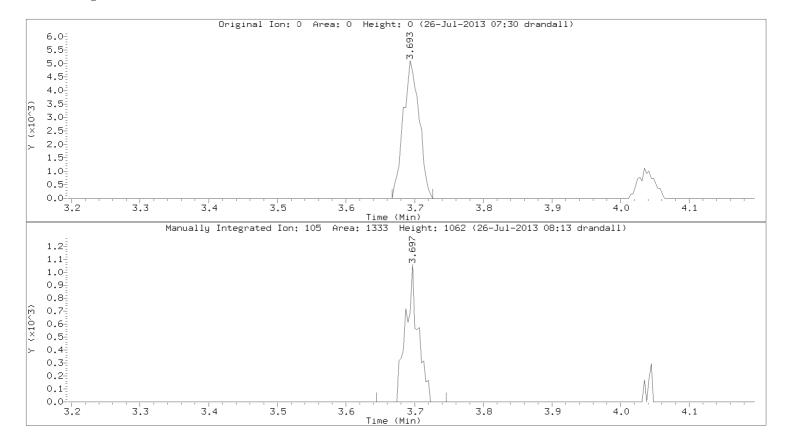
CAS Number: 75-69-4



10236207 636 of 1066

Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i Lab Sample ID: 10236207007

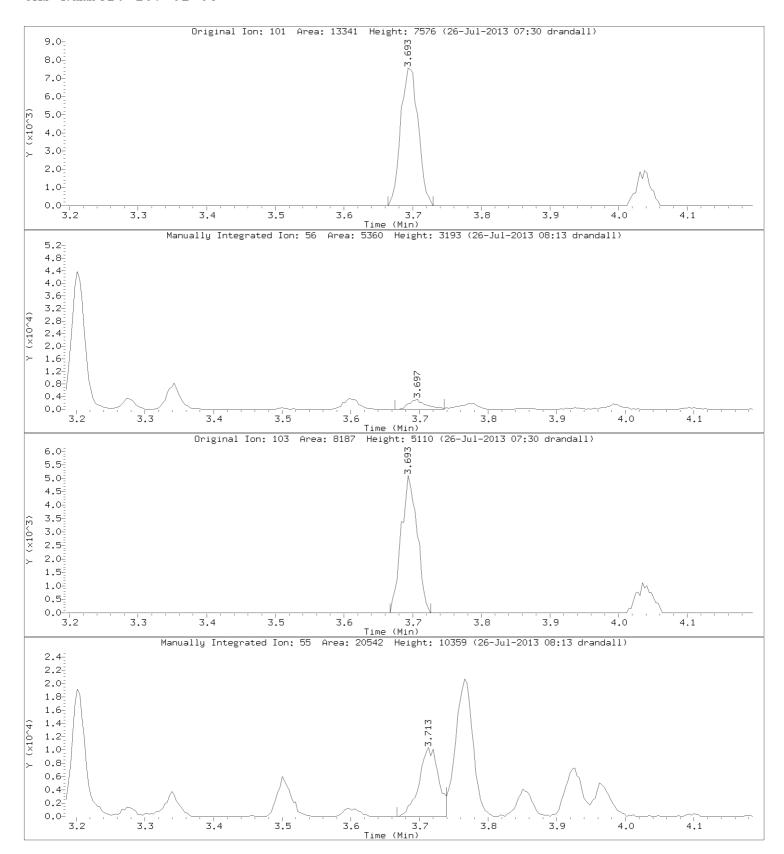


Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: Acrolein CAS Number: 107-02-08



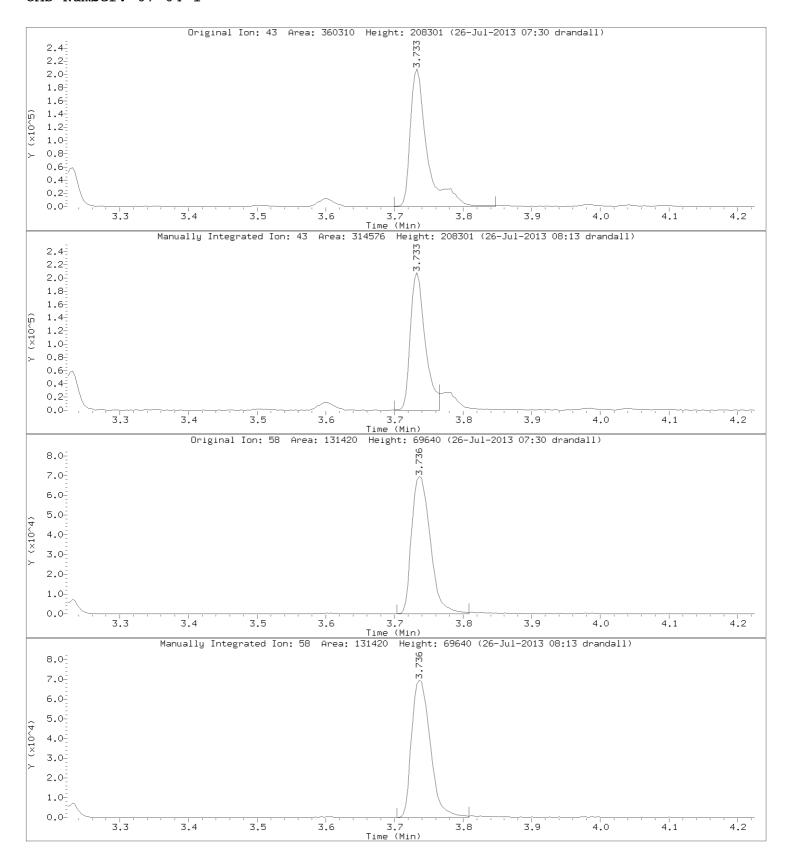
10236207 638 of 1066

Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: Acetone CAS Number: 67-64-1



10236207 639 of 1066

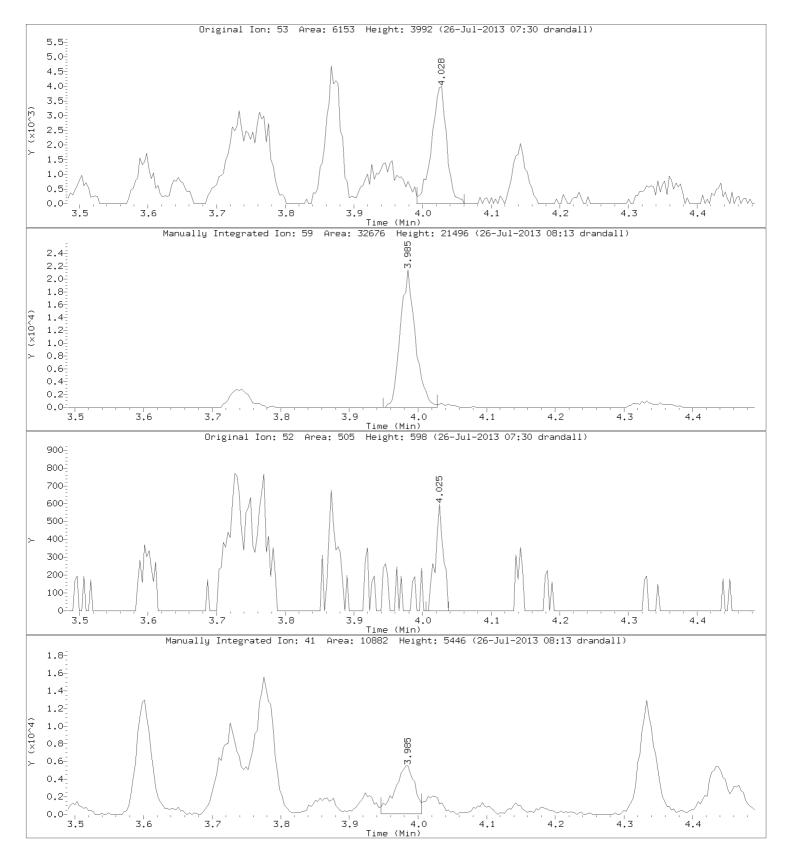
Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0

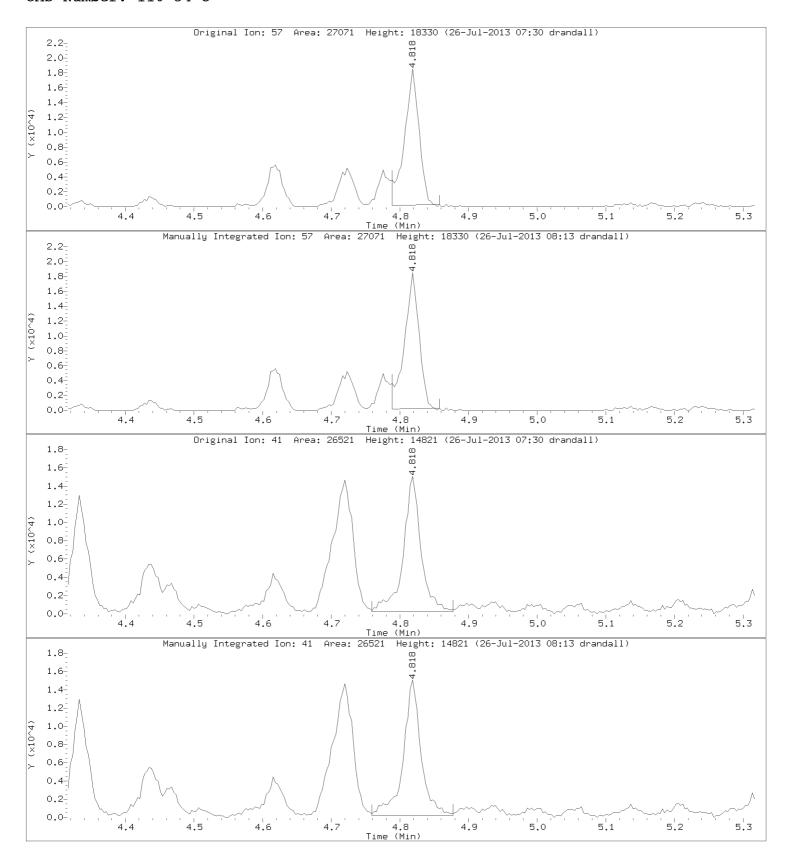


Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

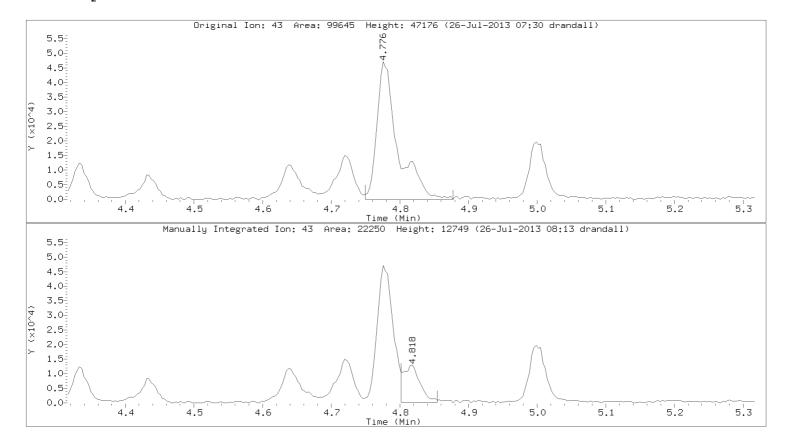
Compound: n-Hexane CAS Number: 110-54-3



10236207 641 of 1066

Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i Lab Sample ID: 10236207007

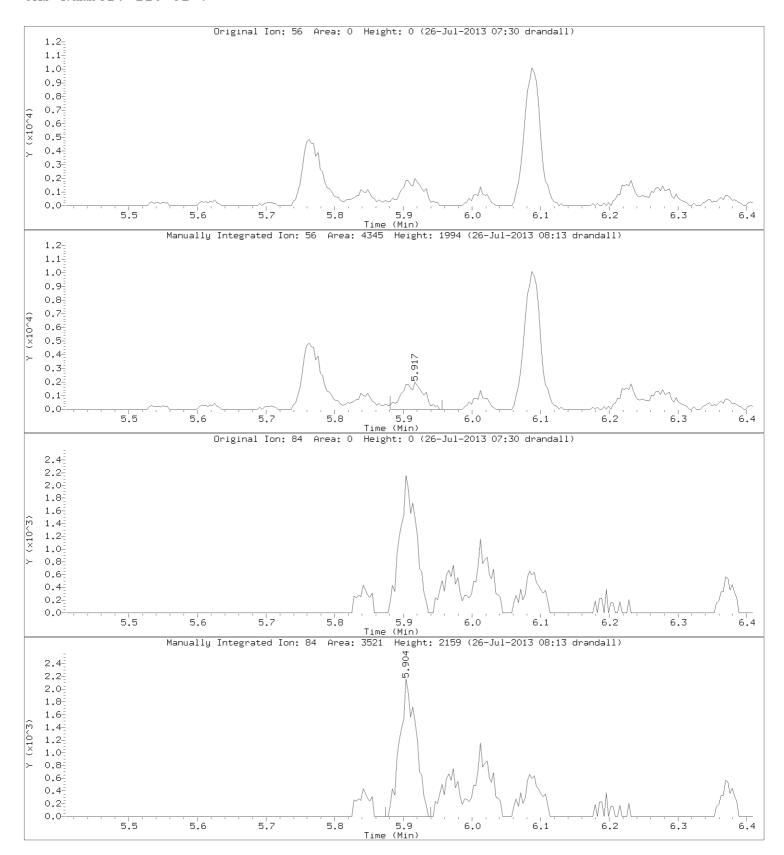


Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

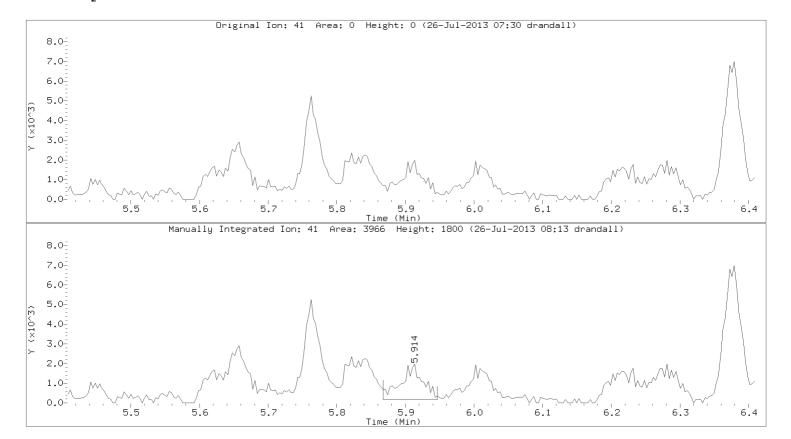
Compound: Cyclohexane CAS Number: 110-82-7



10236207 643 of 1066

Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i Lab Sample ID: 10236207007

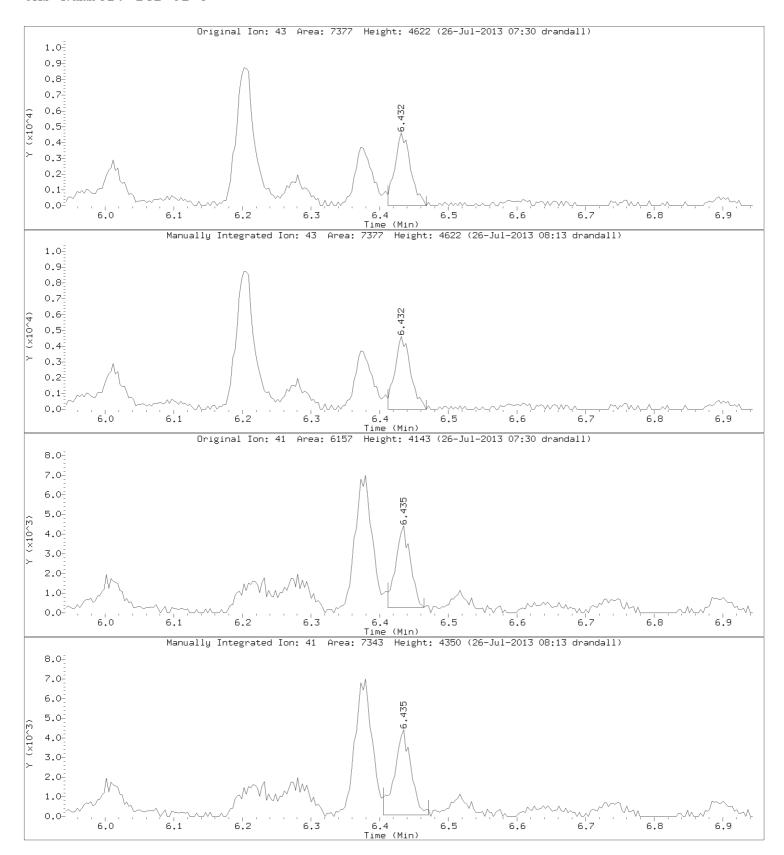


Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: Heptane CAS Number: 142-82-5



10236207 645 of 1066

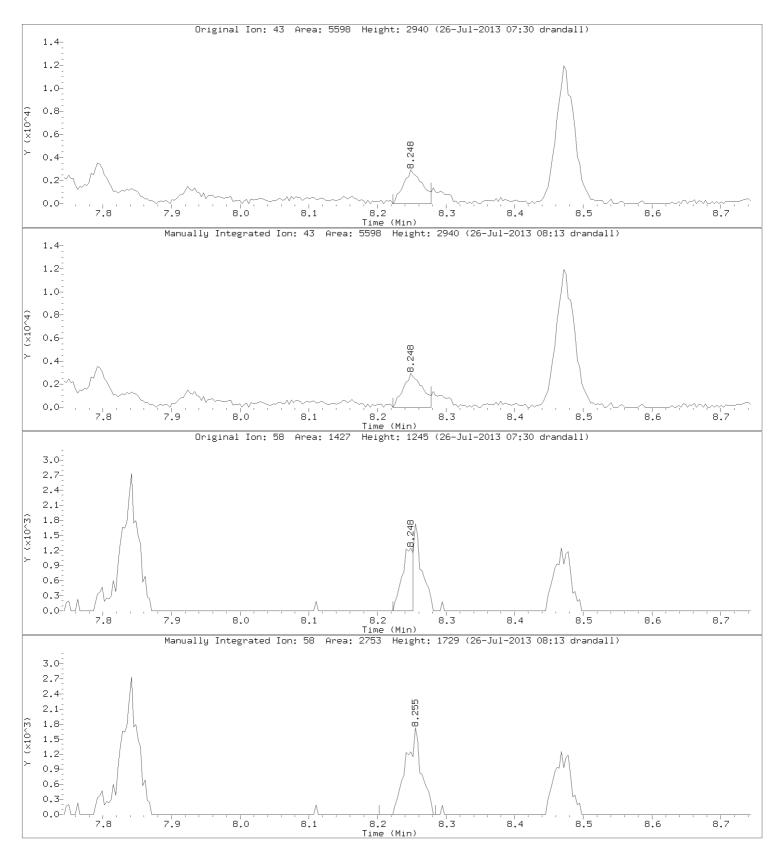
Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: Methyl Butyl Ketone

CAS Number: 591-78-6



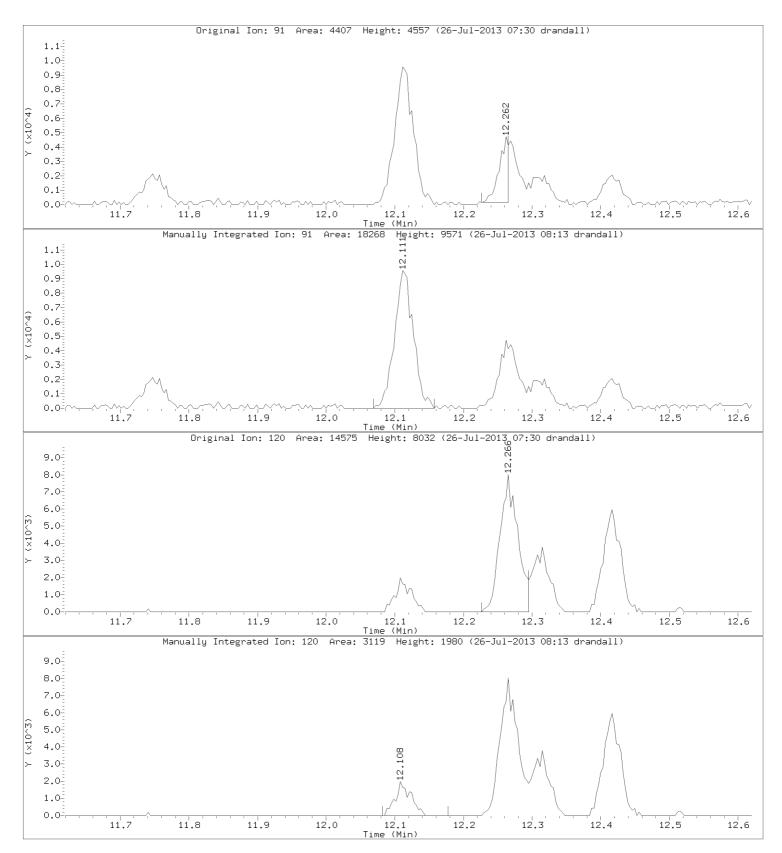
10236207 646 of 1066

Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

Compound: N-Propylbenzene CAS Number: 103-65-1



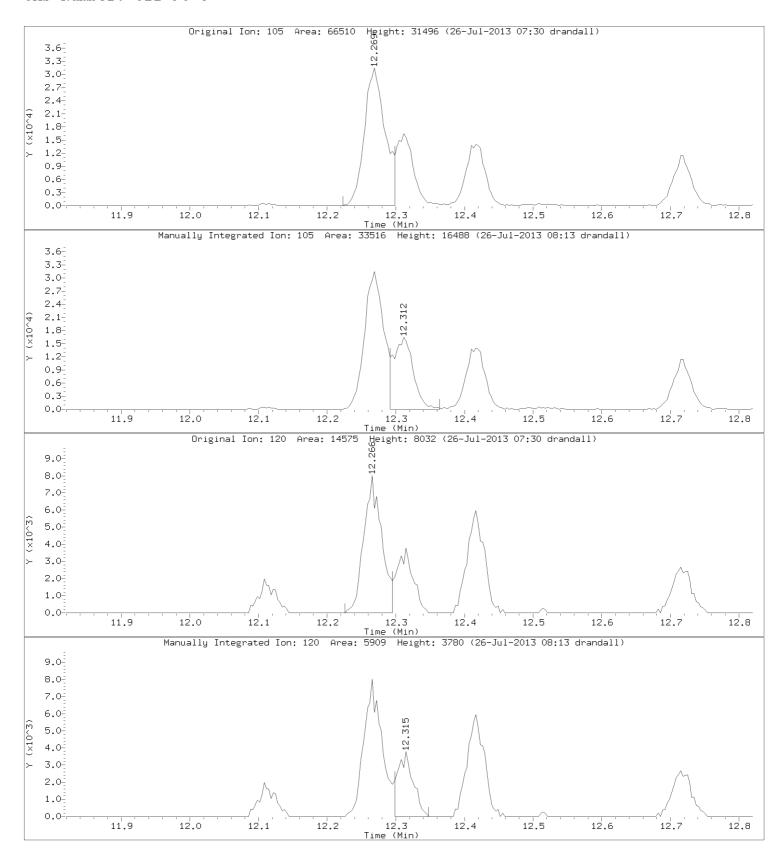
10236207 647 of 1066

Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i

Lab Sample ID: 10236207007

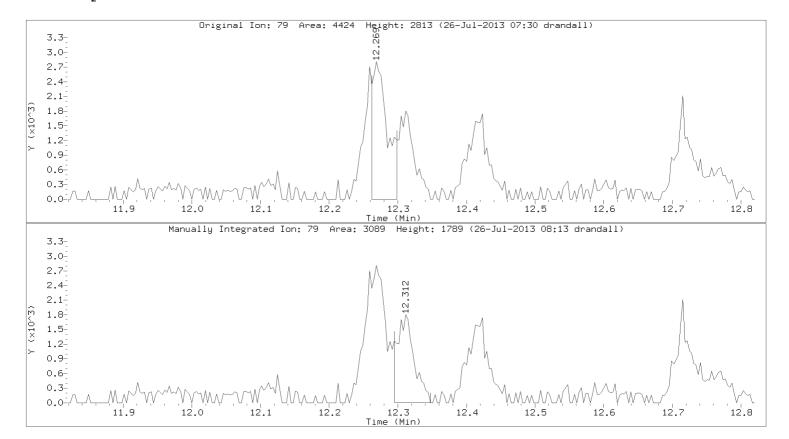
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 648 of 1066

Injection Date: 25-JUL-2013 23:59

Instrument: 10airD.i Lab Sample ID: 10236207007



Report Date: 26-Jul-2013 08:24

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20626.d Lab Smp Id: 10236207008 Inj Date: 26-JUL-2013 01:31 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 26

Dil Factor: 1.49000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)			
1 Propylene	==== 41	2.972 2.982 (0.488) 258710	28.0473 41.8			
2 Dichlorodifluoromethane	85	2.998 3.008 (0.493) 20033	0.22580 0.336			
3 Dichlorotetrafluoroethane	85	Compound Not Detected.				
4 Chloromethane	50	Compound Not Detected.				
5 Vinyl chloride	62	Compound Not Detected.				
6 1,3-Butadiene	54	Compound Not Detected.				
7 Bromomethane	94	Compound Not Detected.				
8 Chloroethane	64	Compound Not Detected.				
9 Ethanol	31	3.500 3.494 (0.575) 21713	2.05428 3.06(M			
10 Vinyl Bromide	106	Compound Not Detected.				
11 Acrolein	56	Compound Not Detected.				
12 Trichlorofluoromethane	101	3.700 3.694 (0.608) 12304	0.12749 0.190(M			
13 Acetone	43	3.729 3.726 (0.613) 487659	10.0805 15.0(M			
14 Isopropyl Alcohol	45	Compound Not Detected.				
15 1,1-Dichloroethene	61	Compound Not Detected.				
16 Acrylonitrile	53	Compound Not Detected.				
17 Tert Butyl Alcohol	59	Compound Not Detected.				
18 Freon 113	101	Compound Not Detected.				
19 Methylene chloride	49	4.096 4.094 (0.673) 6764	0.24678 0.368			
20 Allyl Chloride	76	Compound Not Detected.				
21 Carbon Disulfide	76	4.228 4.224 (0.695) 42111	0.52797 0.787			
22 trans-1,2-dichloroethene	96	Compound Not Detected.				
23 Methyl Tert Butyl Ether	73	Compound Not Detected.				
24 Vinyl Acetate	43	Compound Not Detected.				

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20626.d$ Report Date: 26-Jul-2013 08:24

		CONCENTRATIONS
	QUANT SIG	ON-COLUMN FINAL
Compounds	MASS ====	RT EXP RT REL RT RESPONSE (ppbv) (ppbv)
25 1,1-Dichloroethane	63	Compound Not Detected.
3 26 Hexane-d14(S)	66	4.700 4.700 (0.772) 306769 8.70571 8.70
27 Methyl Ethyl Ketone	72	4.775 4.779 (0.785) 37986 3.39158 5.05
28 n-Hexane	57	4.818 4.818 (0.792) 40693 1.27034 1.89(M)
29 cis-1,2-Dichloroethene	96	Compound Not Detected.
30 Ethyl Acetate	43	4.998 4.999 (0.821) 23308 0.91164 1.36(QM)
31 Chloroform	83	Compound Not Detected.
32 Tetrahydrofuran	42	Compound Not Detected.
33 1,1,1-Trichloroethane	97	Compound Not Detected.
34 1,2-Dichloroethane	62	Compound Not Detected.
35 Benzene	78	5.880 5.887 (0.966) 75786 1.50339 2.24
36 Carbon tetrachloride	117	Compound Not Detected.
37 Cyclohexane	56	5.910 5.910 (0.971) 8117 0.77446 1.15(QM)
38 1,4-Difluorobenzene	114	6.087 6.094 (1.000) 729719 10.0000
39 2,2,4-Trimethylpentane	57	Compound Not Detected.
40 Heptane	43	6.431 6.442 (1.057) 11983 0.90413 1.35
41 1,2-Dichloropropane	63	Compound Not Detected.
42 Trichloroethene	130	Compound Not Detected.
43 1,4-Dioxane	88	Compound Not Detected.
44 Bromodichloromethane	83	Compound Not Detected.
45 Methyl Isobutyl Ketone	43	7.231 7.229 (1.188) 4067 0.50313 0.750(M)
46 cis-1,3-Dichloropropene	75	Compound Not Detected.
47 trans-1,3-Dichloropropene	75	Compound Not Detected.
48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 531974 10.4384 10.4
49 Toluene	91	7.933 7.940 (1.303) 205647 2.72314 4.06
50 1,1,2-Trichloroethane	97	Compound Not Detected.
51 Methyl Butyl Ketone	43	8.251 8.244 (0.852) 6576 0.50852 0.758(M)
52 Dibromochloromethane	129	Compound Not Detected.
53 1,2-Dibromoethane	107	Compound Not Detected.
54 Tetrachloroethene	166	8.907 8.918 (0.920) 5194 0.49433 0.736
55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 282753 10.0000
56 Chlorobenzene	112	Compound Not Detected.
57 Ethyl Benzene	91	10.029 10.039 (1.036) 65458 0.90138 1.34
58 m&p-Xylene	91	10.202 10.213 (1.053) 203951 2.58870 3.86
59 Bromoform	173	Compound Not Detected.
60 Styrene	104	10.701 10.708 (1.105) 8831 0.62029 0.924
61 o-Xylene	91	10.773 10.783 (1.112) 65905 0.91798 1.37
62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.
63 Isopropylbenzene	105	Compound Not Detected.
64 N-Propylbenzene	91	12.114 12.121 (1.251) 22448 0.46316 0.690(M)
65 4-Ethyltoluene	105	12.308 12.321 (1.271) 34764 0.65506 0.976(M)
66 1,3,5-Trimethylbenzene	105	12.419 12.426 (1.282) 28220 0.59942 0.893
67 1,2,4-Trimethylbenzene	105	13.010 13.020 (1.343) 135567 1.86477 2.78
68 1,3-Dichlorobenzene	146	Compound Not Detected.
69 Sec- Butylbenzene	105	Compound Not Detected.
70 1,4-dichlorobenzene-d4 (S)	150	13.449 13.459 (1.389) 105912 9.27978 9.28
71 Benzyl Chloride	91	Compound Not Detected.
72 1,4-Dichlorobenzene	146	Compound Not Detected.
73 1,2-Dichlorobenzene	146	Compound Not Detected.
74 N-Butylbenzene	91	Compound Not Detected.
75 1,2,4-Trichlorobenzene	180	Compound Not Detected.
76 Naphthalene	128	16.856 16.860 (1.741) 58924 1.70388 2.54 (M)
77 Hexachlorobutadiene	225	Compound Not Detected.

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Report Date: 26-Jul-2013 08:24

# QC Flag Legend

 ${\tt Q}$  - Qualifier signal failed the ratio test. M - Compound response manually integrated.

10236207 652 of 1066

Report Date: 26-Jul-2013 08:24

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20626.d

Lab Smp Id: 10236207008 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	TTTU%
=======================================	=======	=======	=======	========	======
38 1,4-Difluorobenze 55 Chlorobenzene - d	579775 221404	347865 132842	811685 309966	729719 282753	25.86 27.71
33 chiolobenzene – d	221404	132042	309900	202733	2,.,1

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

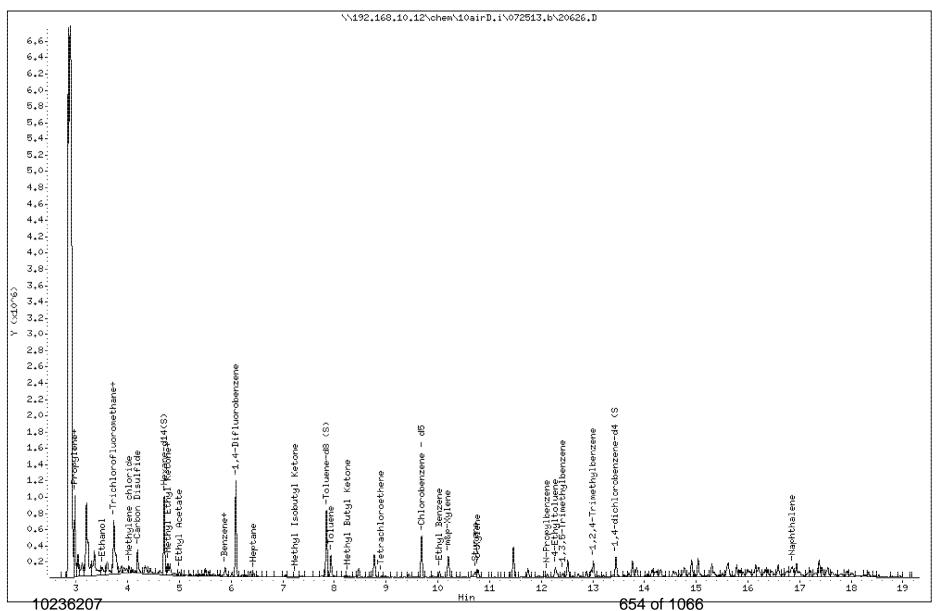
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 01:31

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 26-JUL-2013 01:31

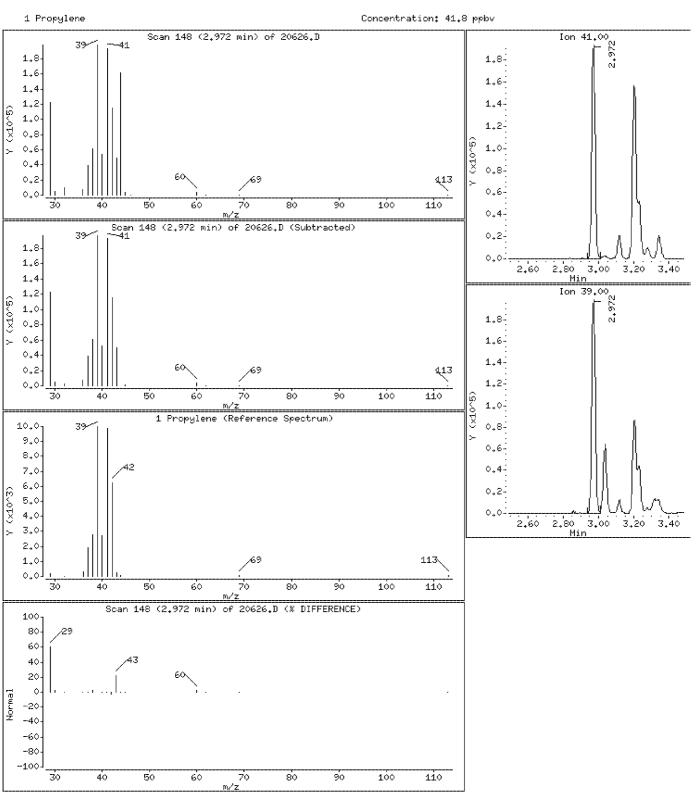
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

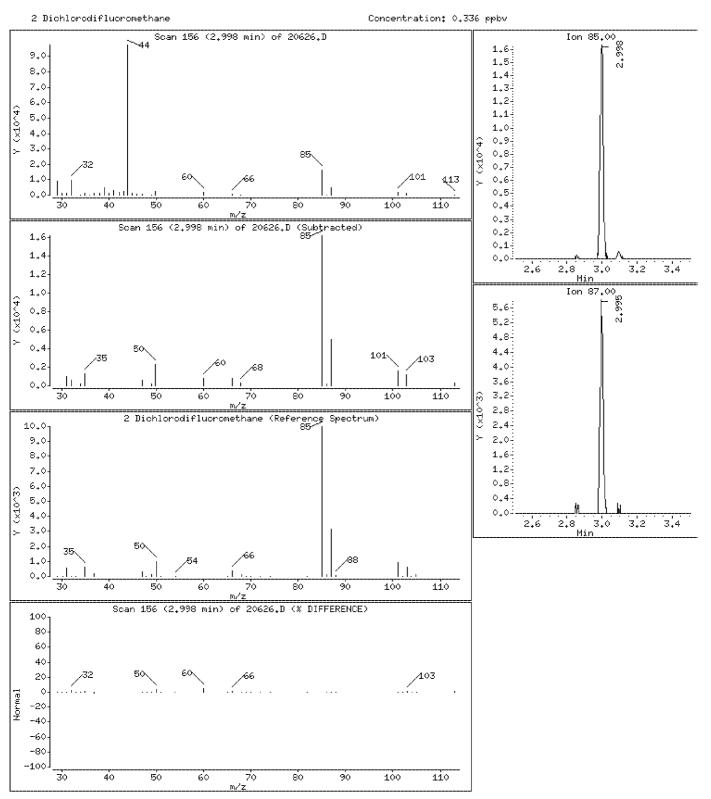
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.336 ppbv



Date : 26-JUL-2013 01:31

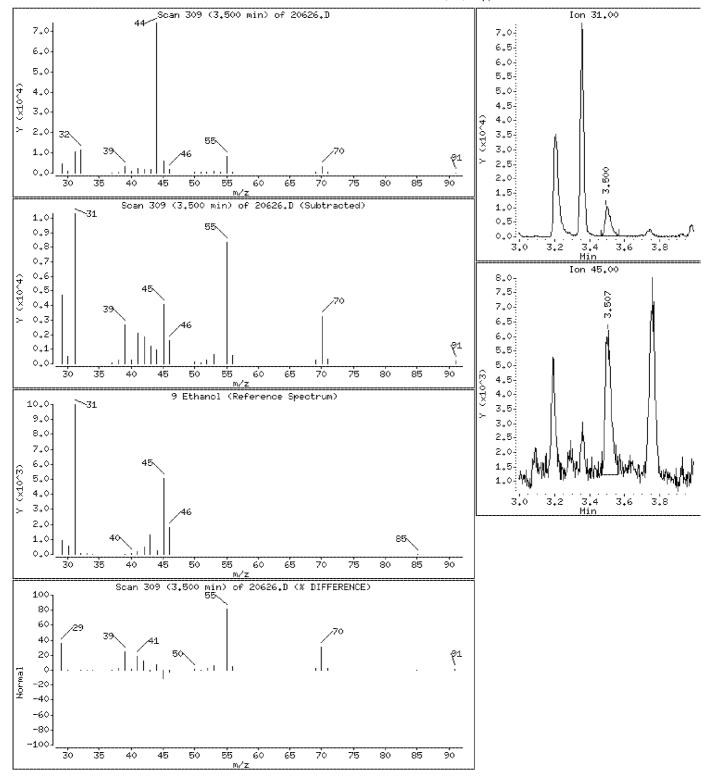
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

9 Ethanol Concentration: 3.06 ppbv



10236207 657 of 1066

Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

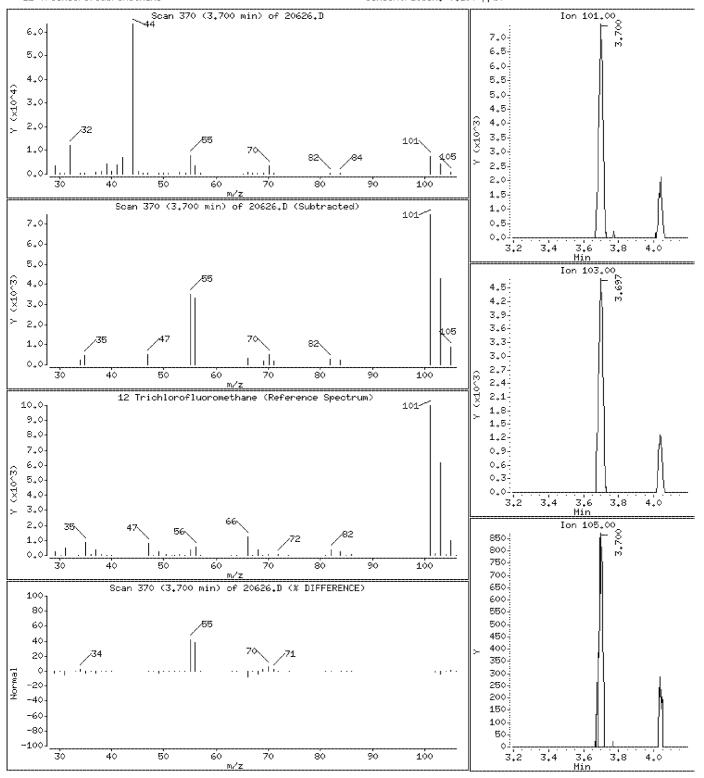
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 658 of 1066

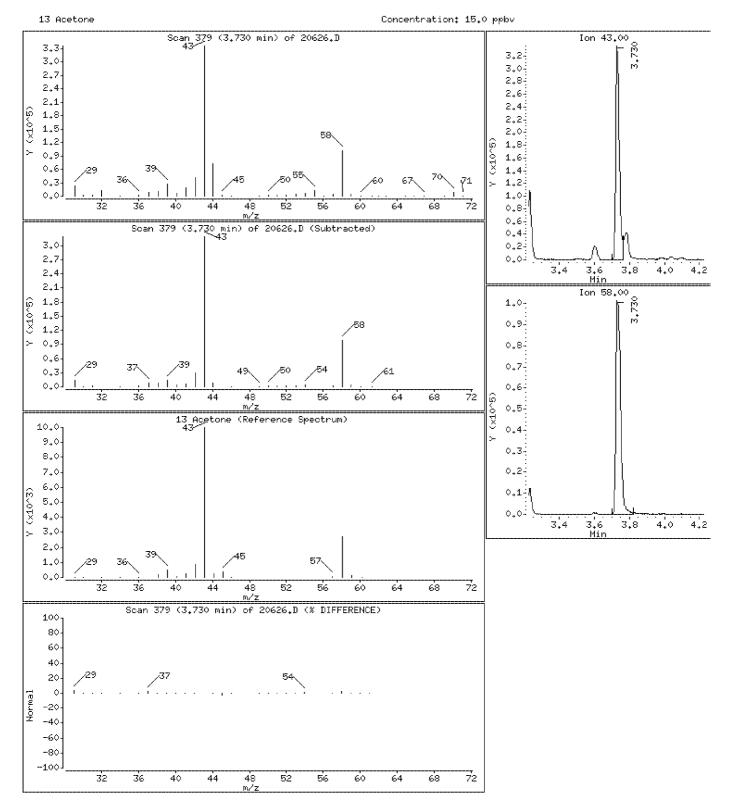
Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 659 of 1066

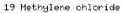
Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

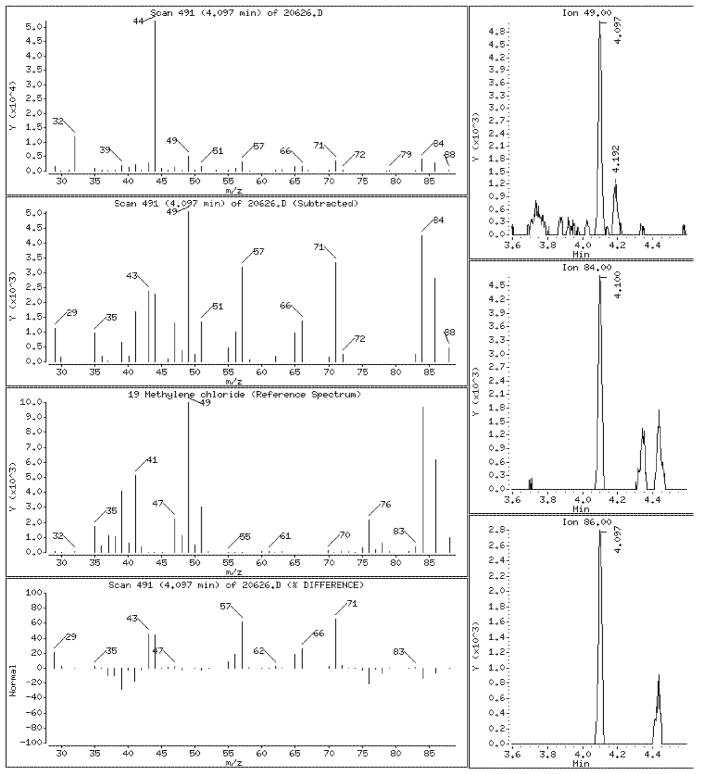
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.368 ppbv



10236207 660 of 1066

Date : 26-JUL-2013 01:31

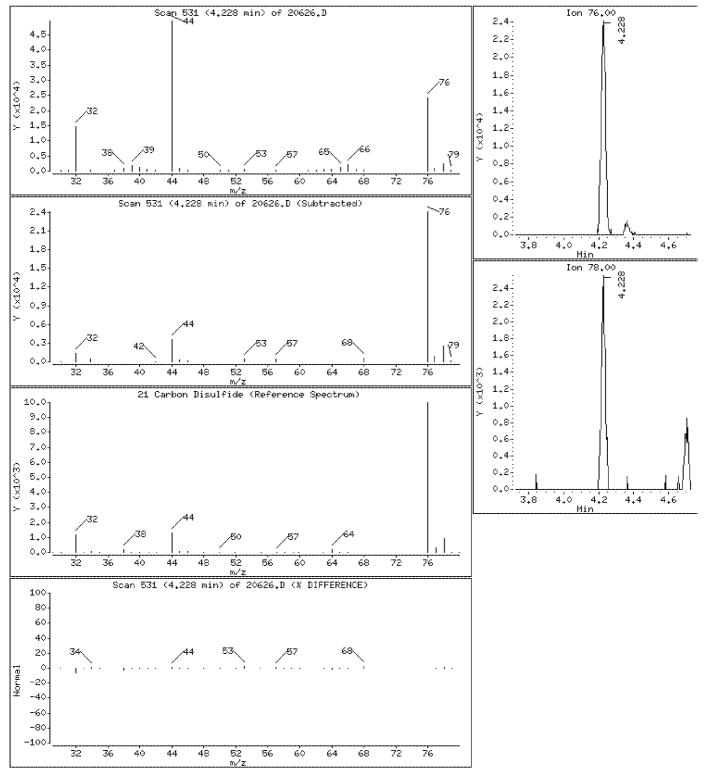
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 661 of 1066

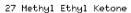
Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

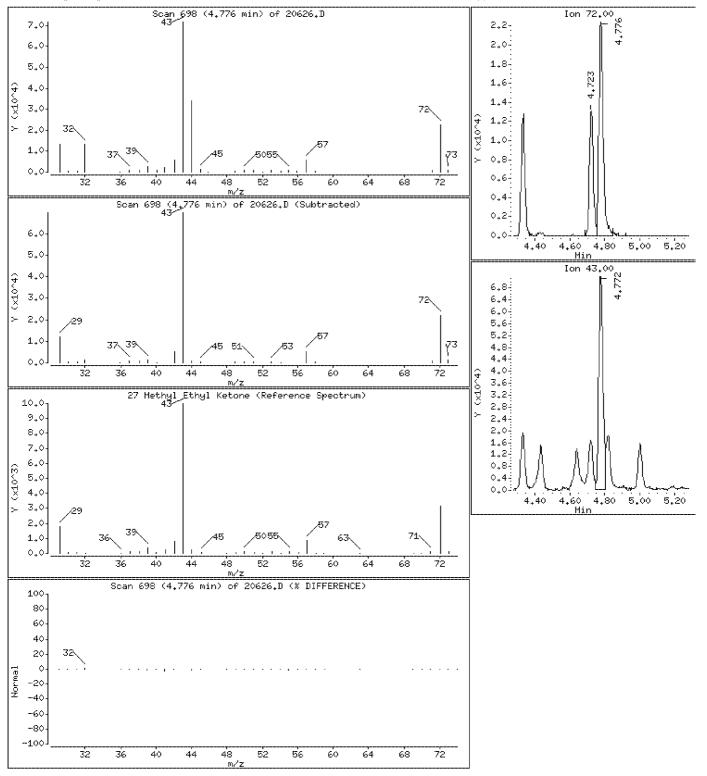
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 5.05 ppbv



10236207 662 of 1066

Date : 26-JUL-2013 01:31

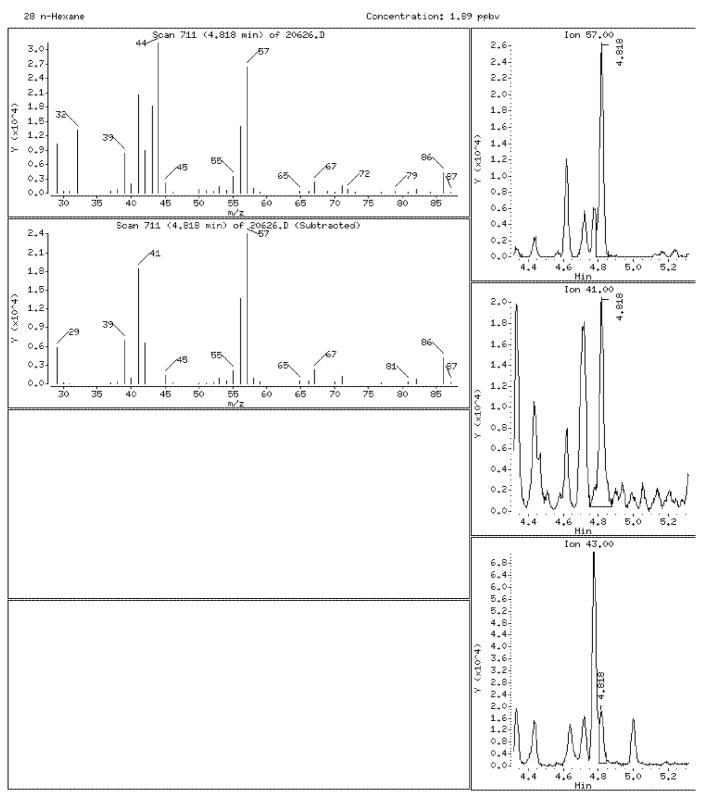
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 1.89 ppbv



Date : 26-JUL-2013 01:31

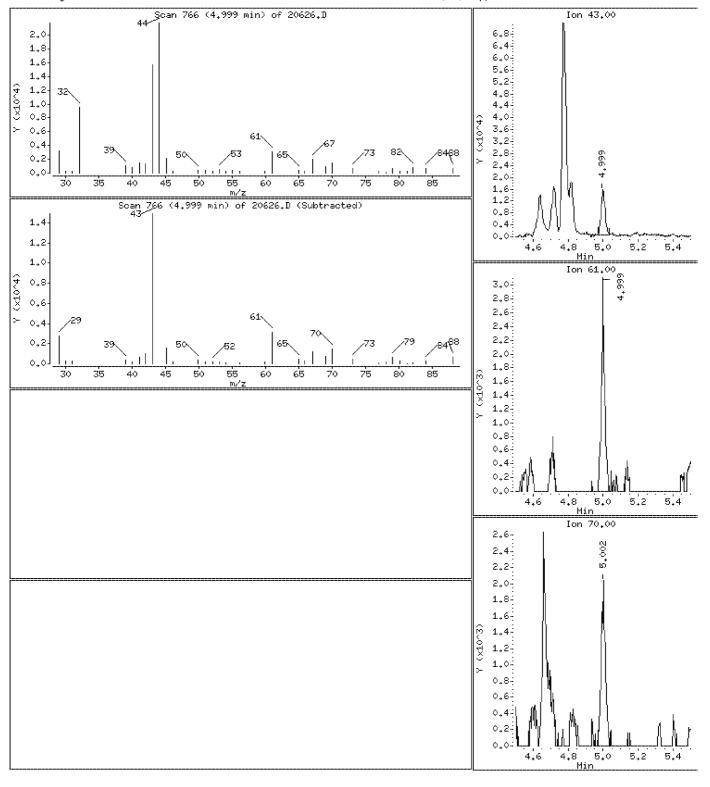
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

30 Ethyl Acetate Concentration: 1.36 ppbv



10236207 664 of 1066

Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

Sample Info:

80

60 40

20

-20

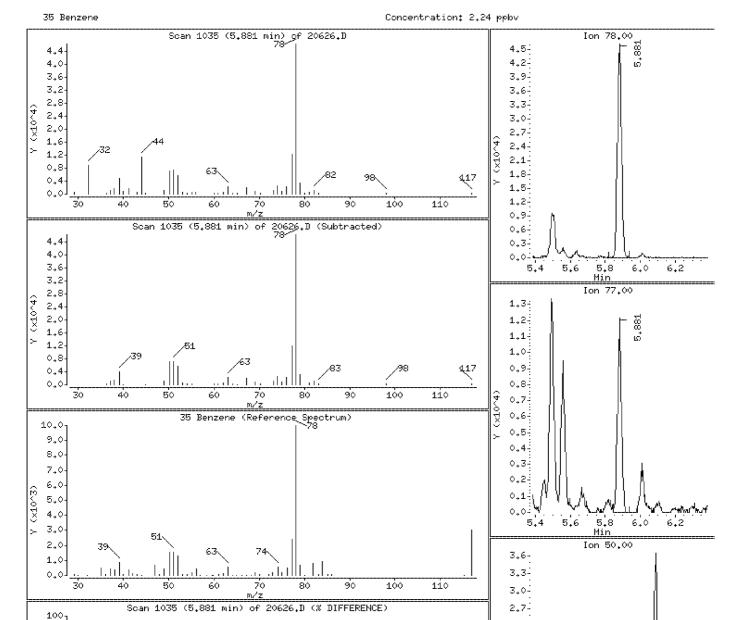
-40

-60 -80 Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

70

80



10236207 665 of 1066

110

2.4

2.1.

1.8

1.5

0.9-

0.6-

5.4

5.6

5.8

6.2

6.0

Date : 26-JUL-2013 01:31

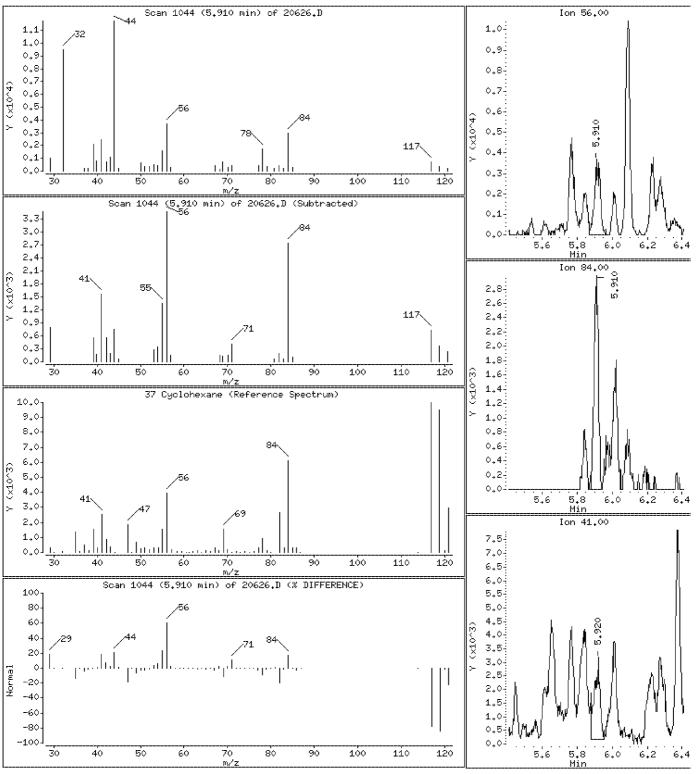
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 666 of 1066

Date : 26-JUL-2013 01:31

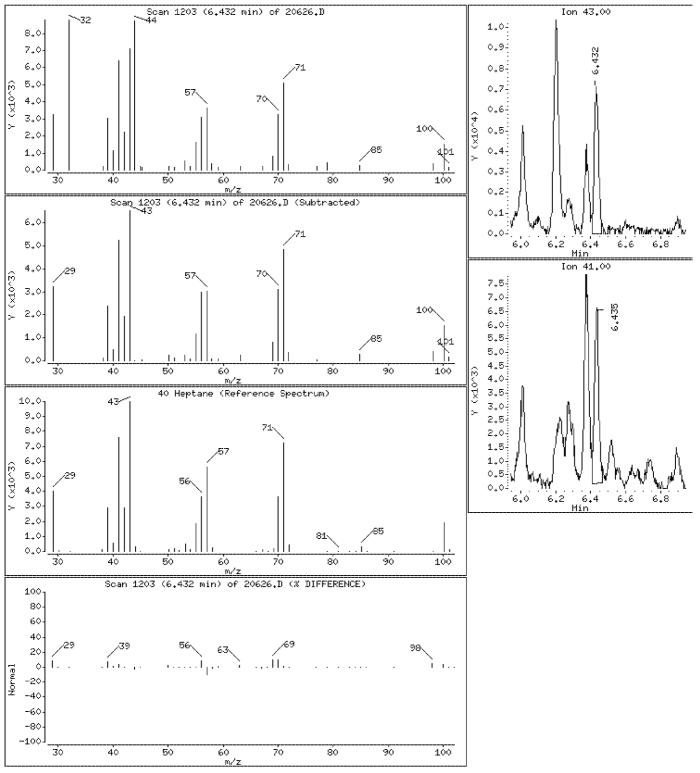
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 667 of 1066

Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

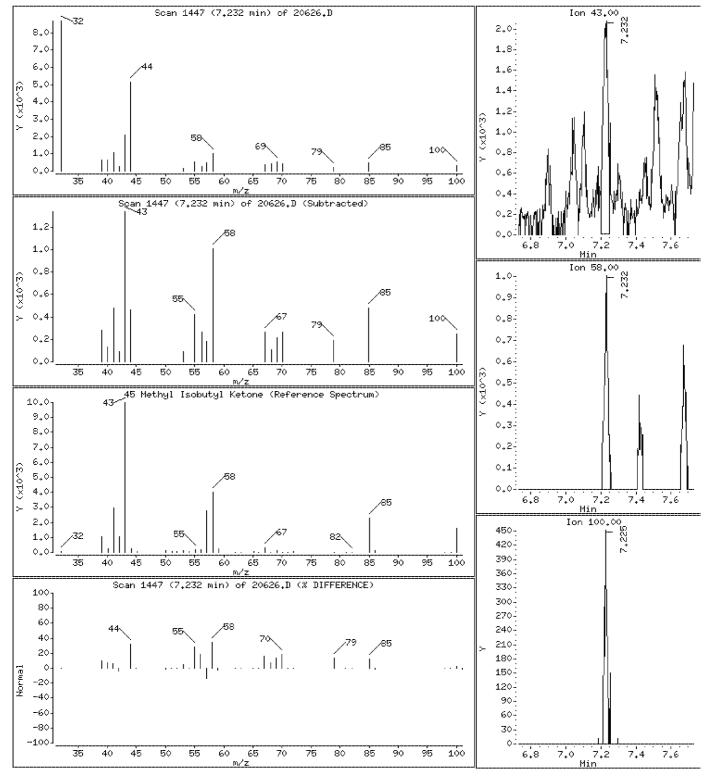
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.750 ppbv



10236207 668 of 1066

Date : 26-JUL-2013 01:31

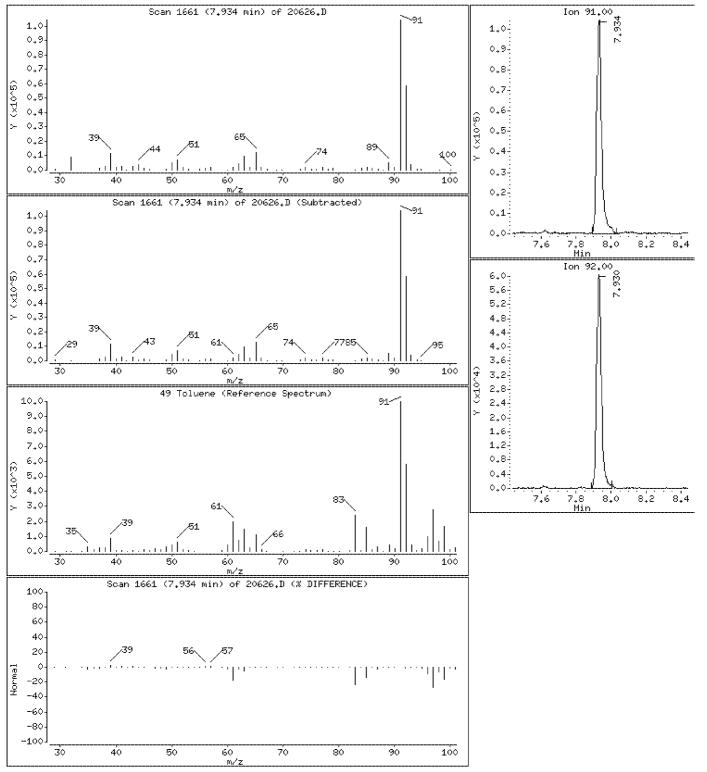
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 669 of 1066

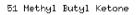
Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

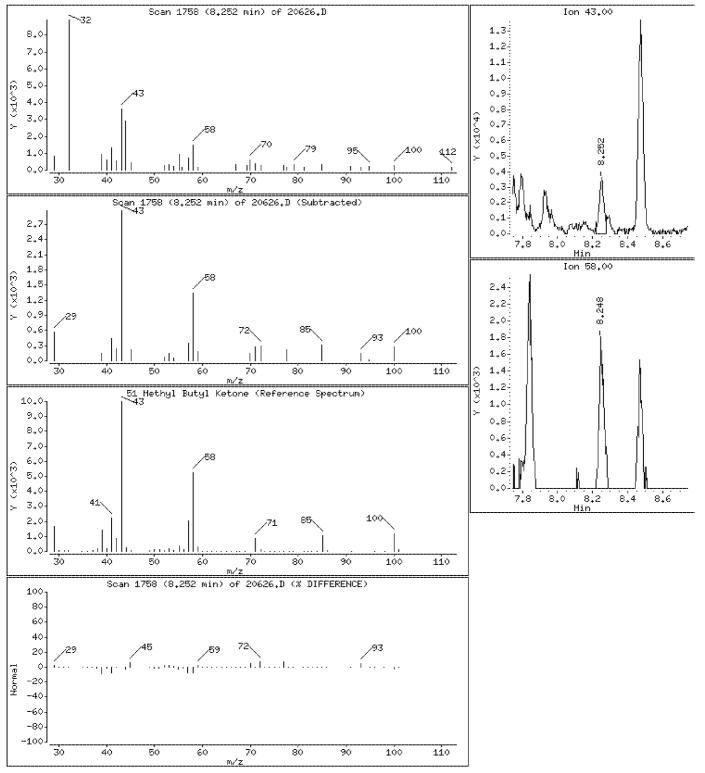
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.758 ppbv



10236207 670 of 1066

Date : 26-JUL-2013 01:31

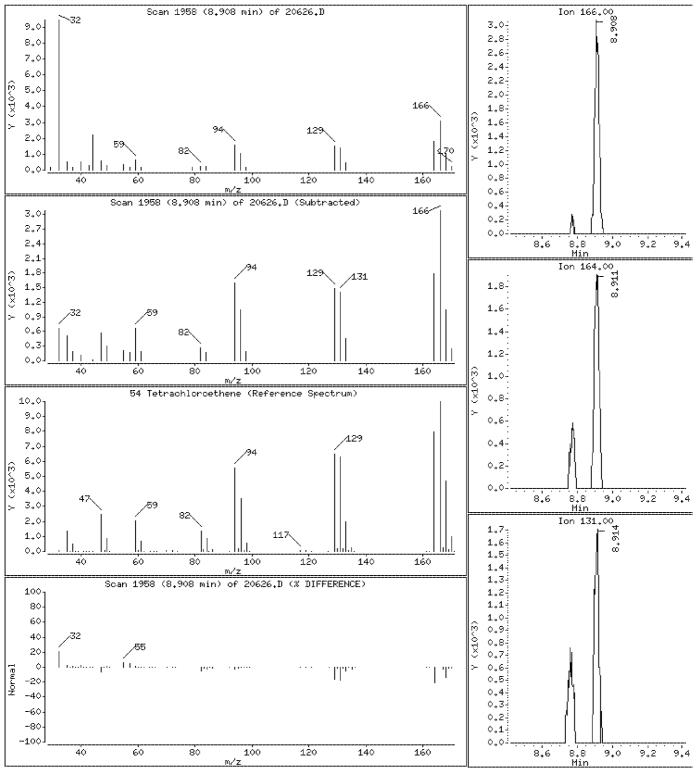
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 671 of 1066

Date : 26-JUL-2013 01:31

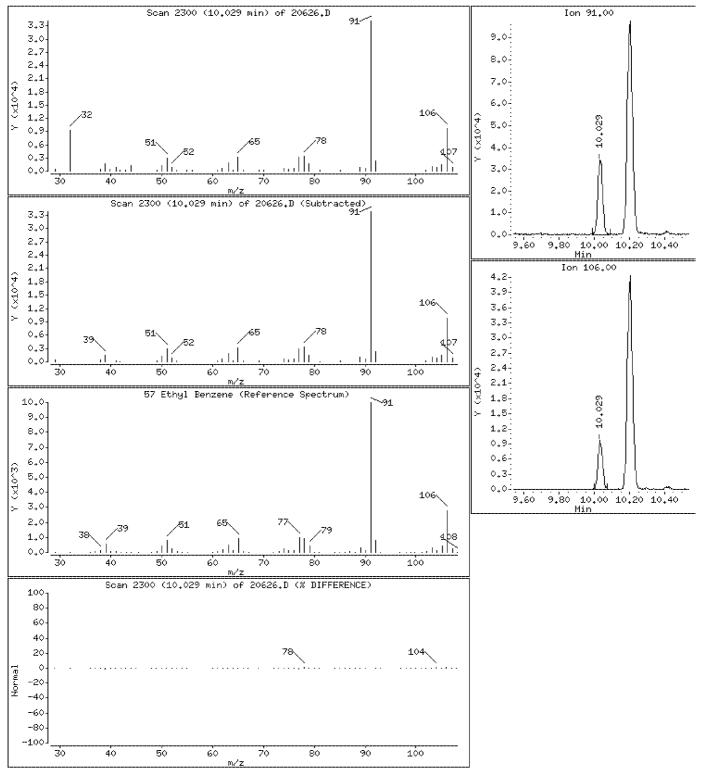
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 672 of 1066

Date : 26-JUL-2013 01:31

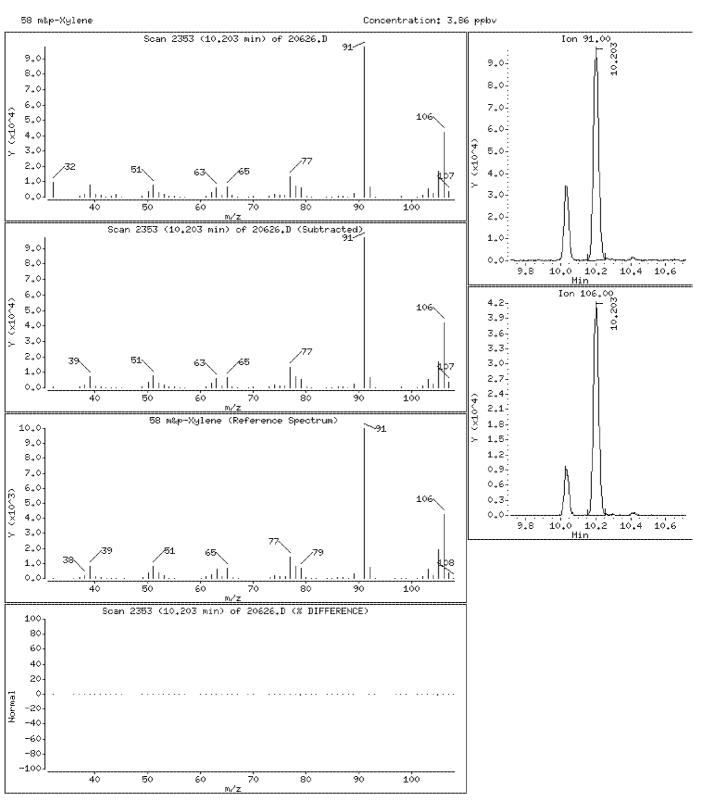
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

Sample Info:

-40

-60

-80

30

40

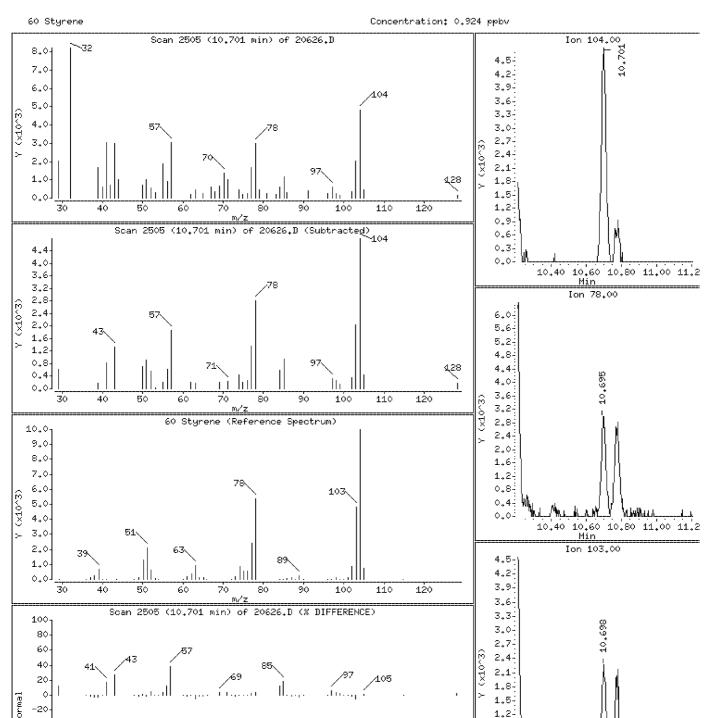
50

60

70

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 674 of 1066

100

110

120

0.9-

0.6

0.3-

10,40

10,60 10,80 11,00 11,2

Date : 26-JUL-2013 01:31

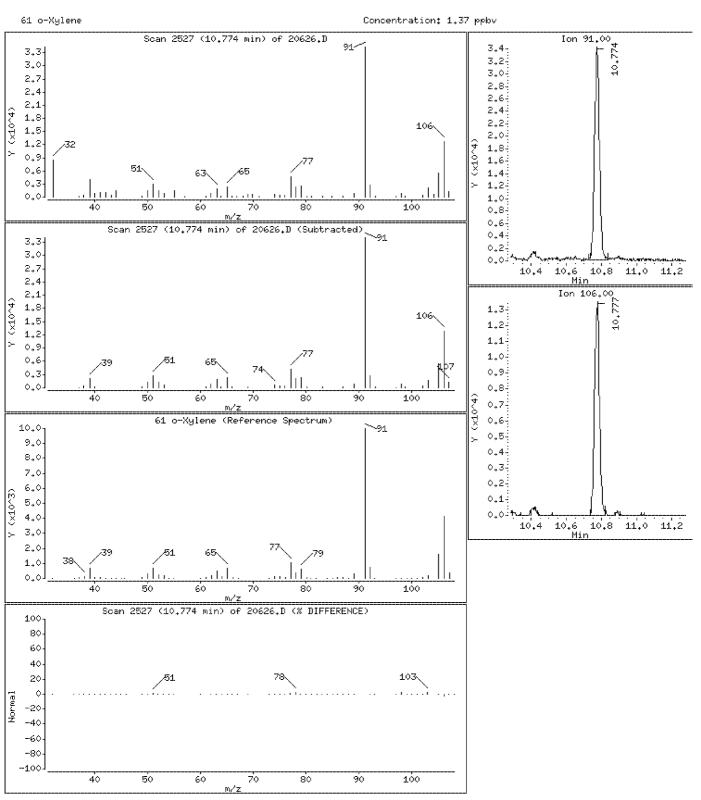
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

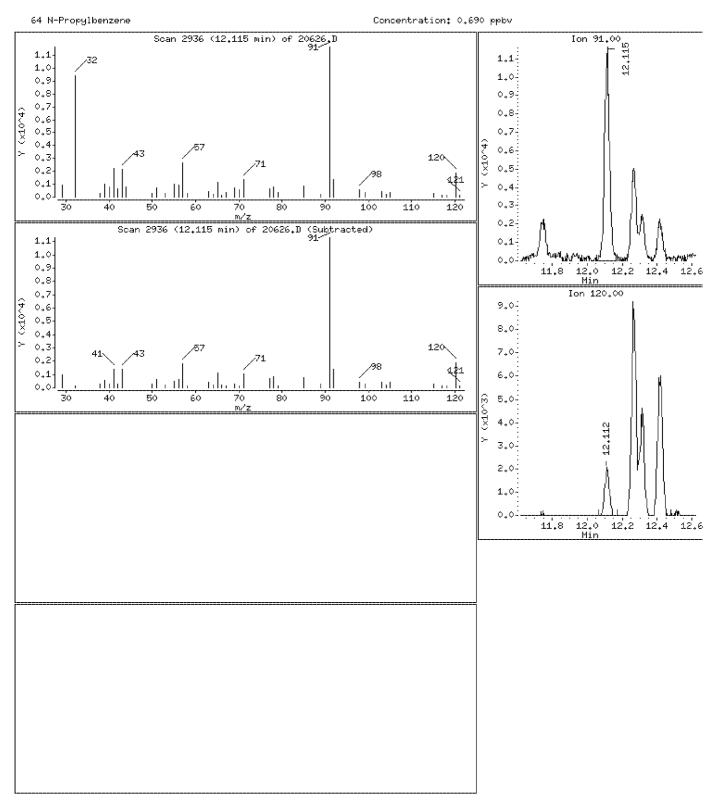
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

64 N-Propylbenzene

Concentration: 0.690 ppbv



Date : 26-JUL-2013 01:31

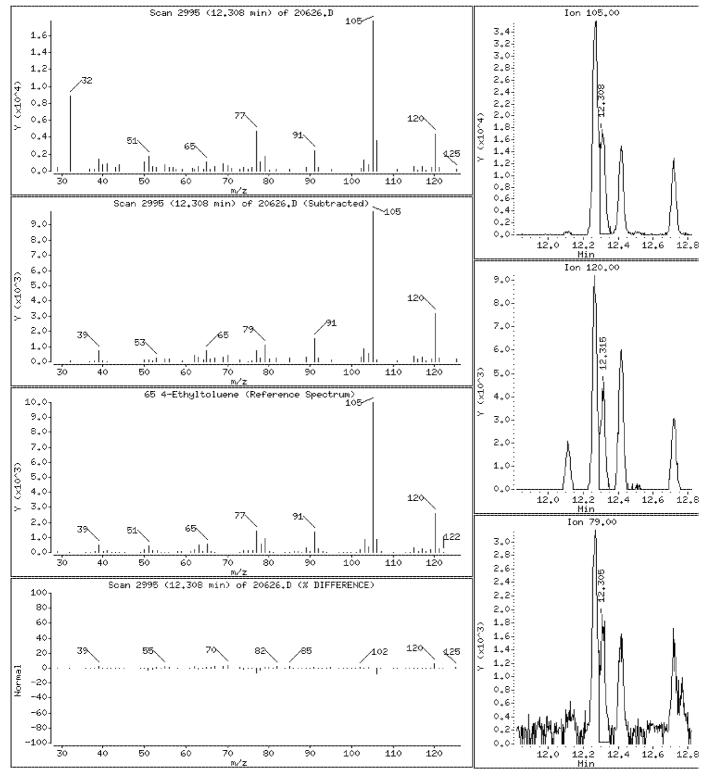
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 677 of 1066

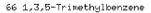
Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

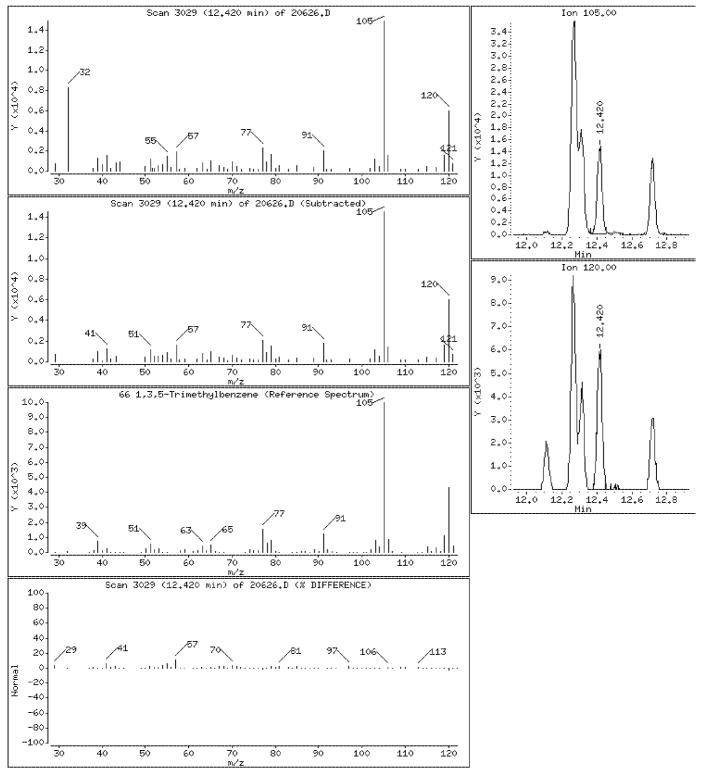
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.893 ppbv



10236207 678 of 1066

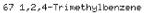
Date : 26-JUL-2013 01:31

Client ID: Instrument: 10airD.i

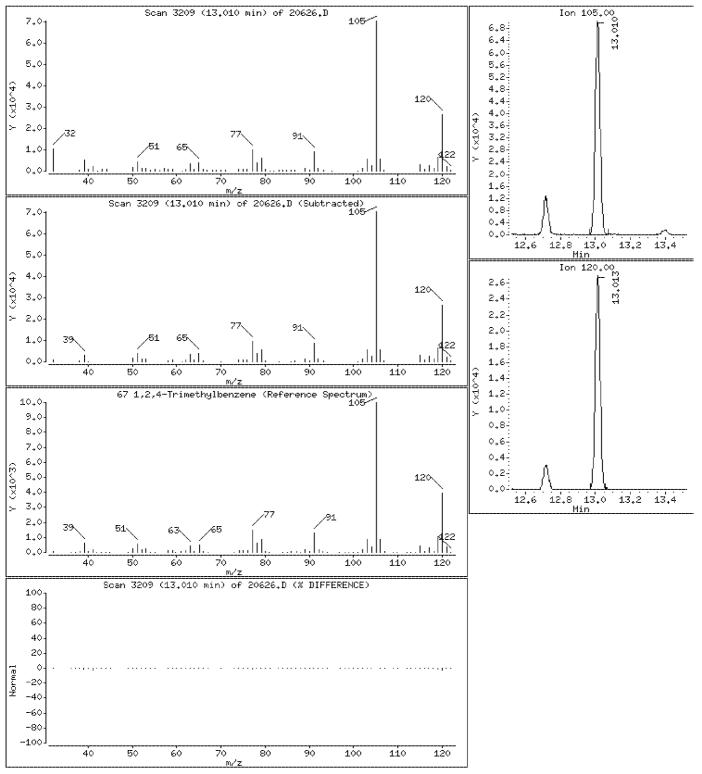
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 679 of 1066

Date : 26-JUL-2013 01:31

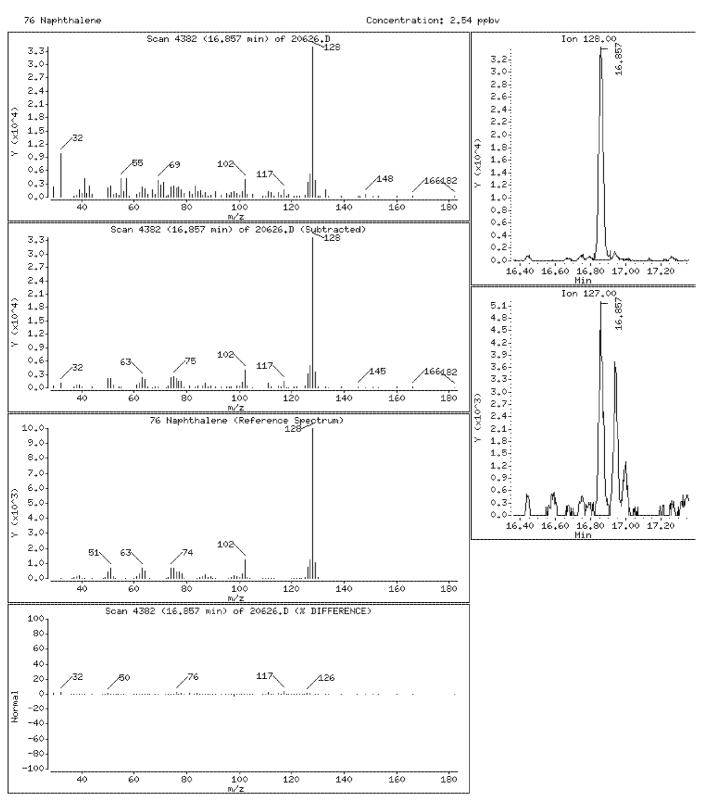
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



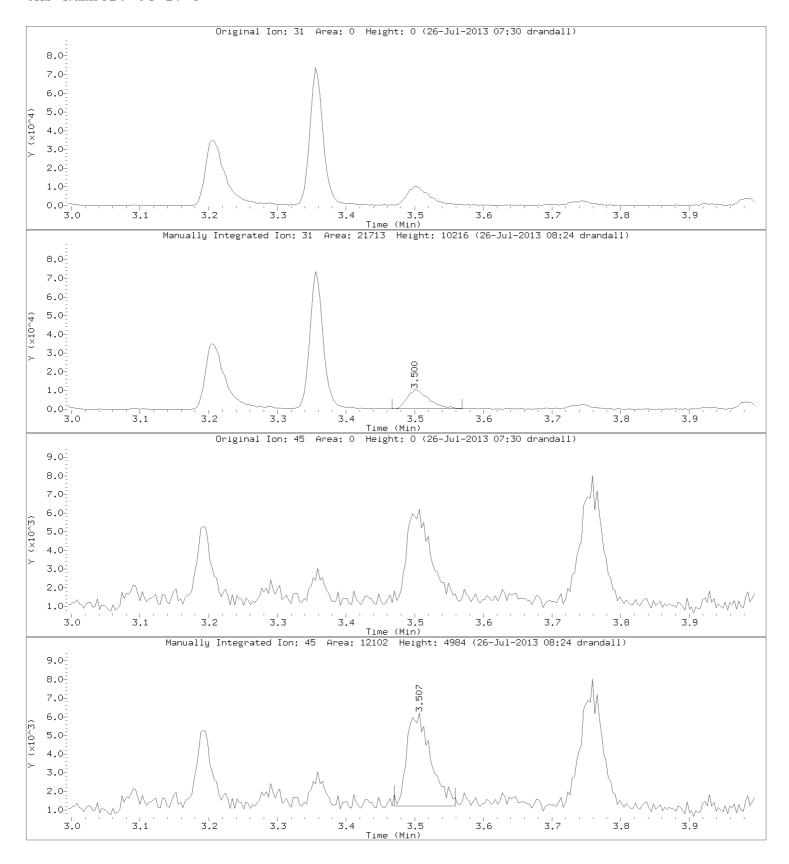


Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

Compound: Ethanol CAS Number: 64-17-5



10236207 681 of 1066

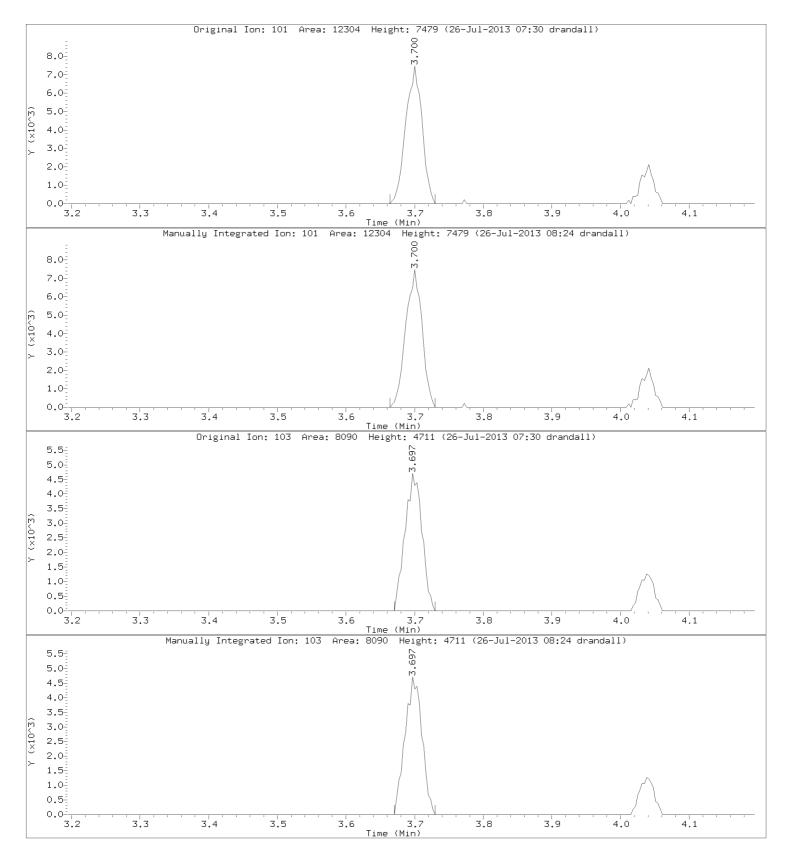
Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

Compound: Trichlorofluoromethane

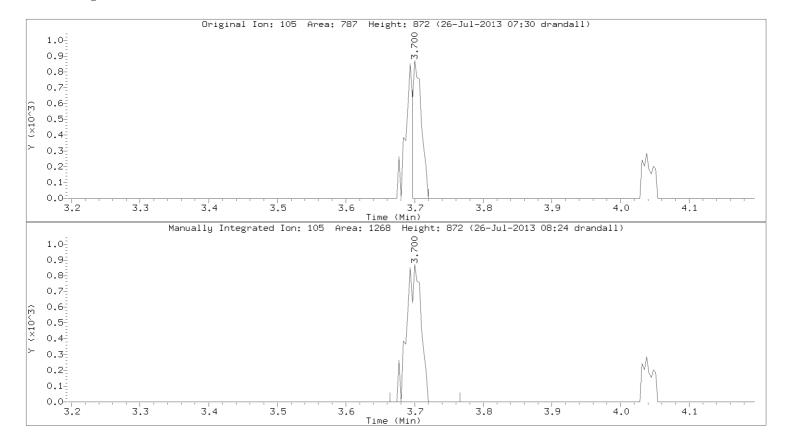
CAS Number: 75-69-4



10236207 682 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i Lab Sample ID: 10236207008

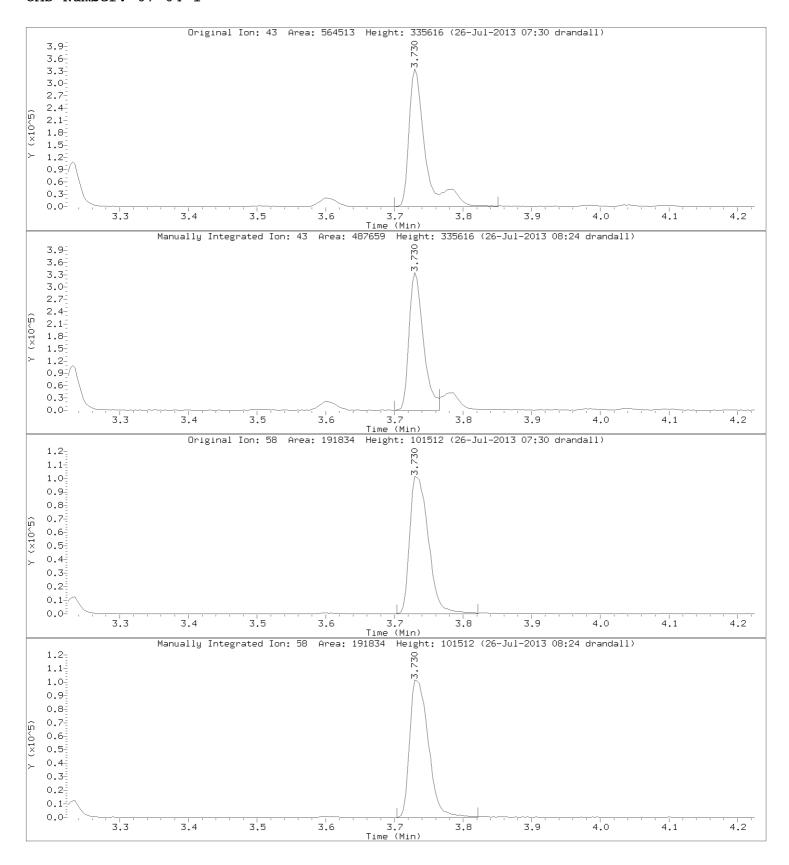


Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

Compound: Acetone CAS Number: 67-64-1



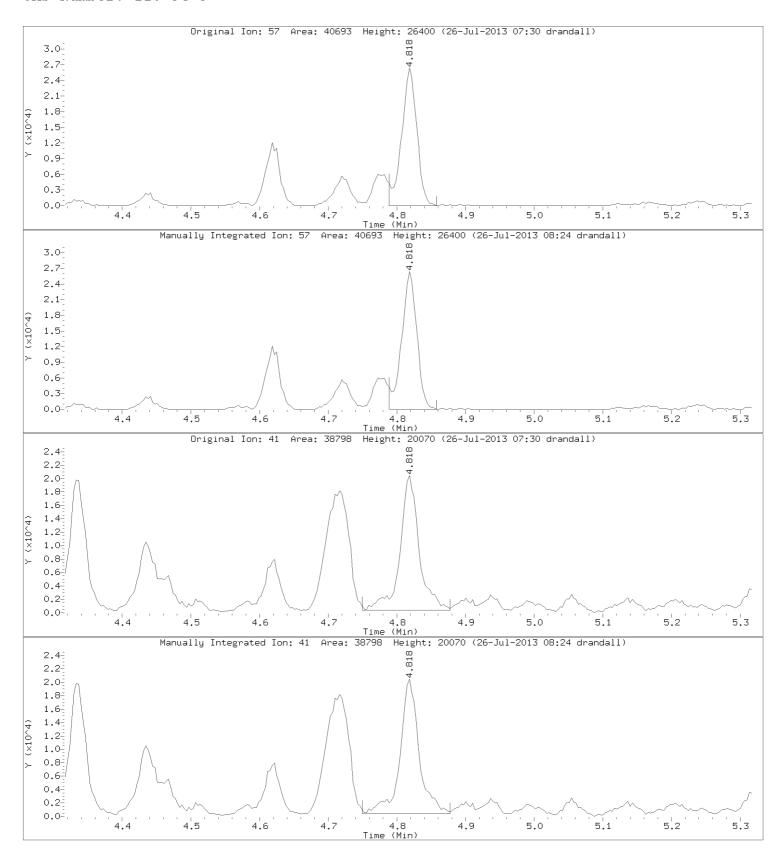
10236207 684 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

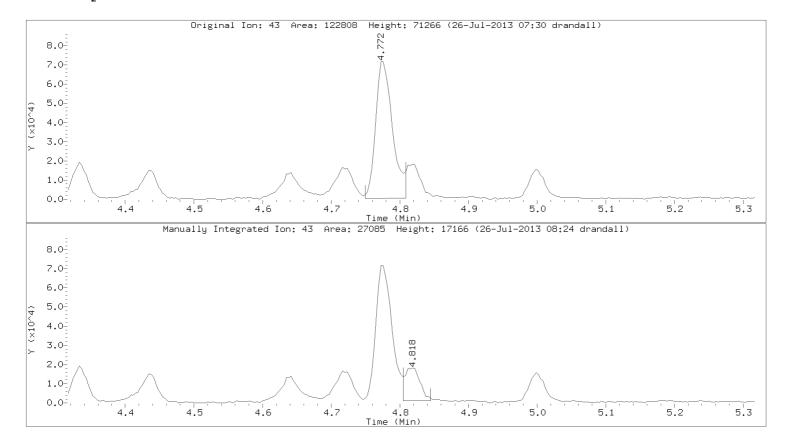
Compound: n-Hexane CAS Number: 110-54-3



10236207 685 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i Lab Sample ID: 10236207008

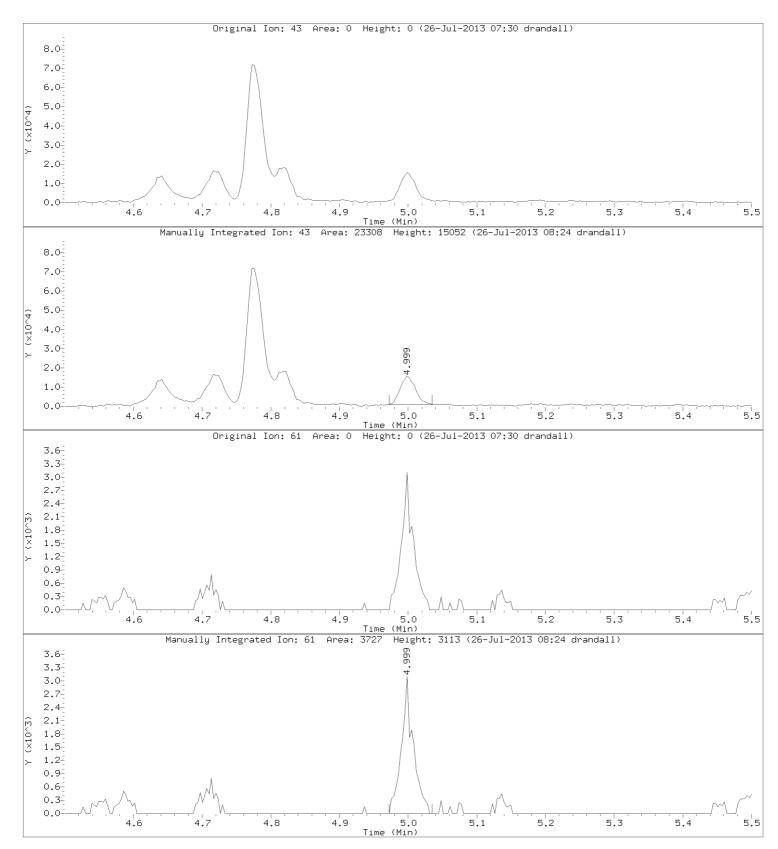


Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

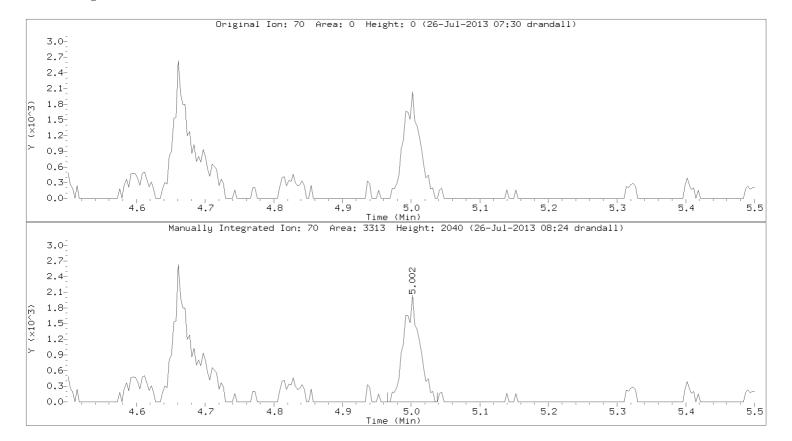
Compound: Ethyl Acetate CAS Number: 141-78-6



10236207 687 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i Lab Sample ID: 10236207008

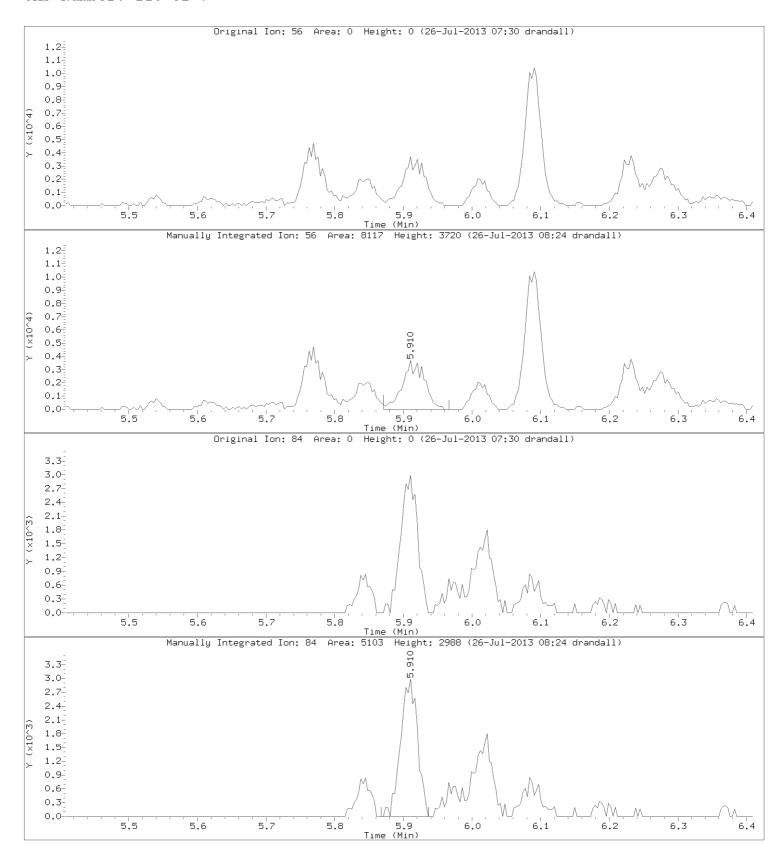


Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

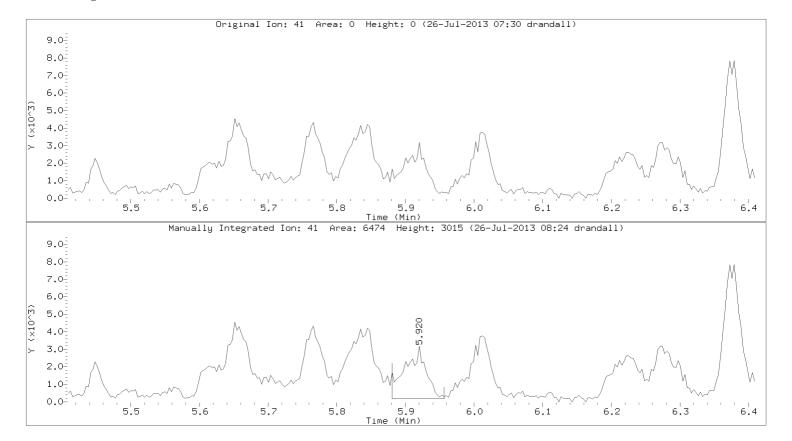
Compound: Cyclohexane CAS Number: 110-82-7



10236207 689 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i Lab Sample ID: 10236207008



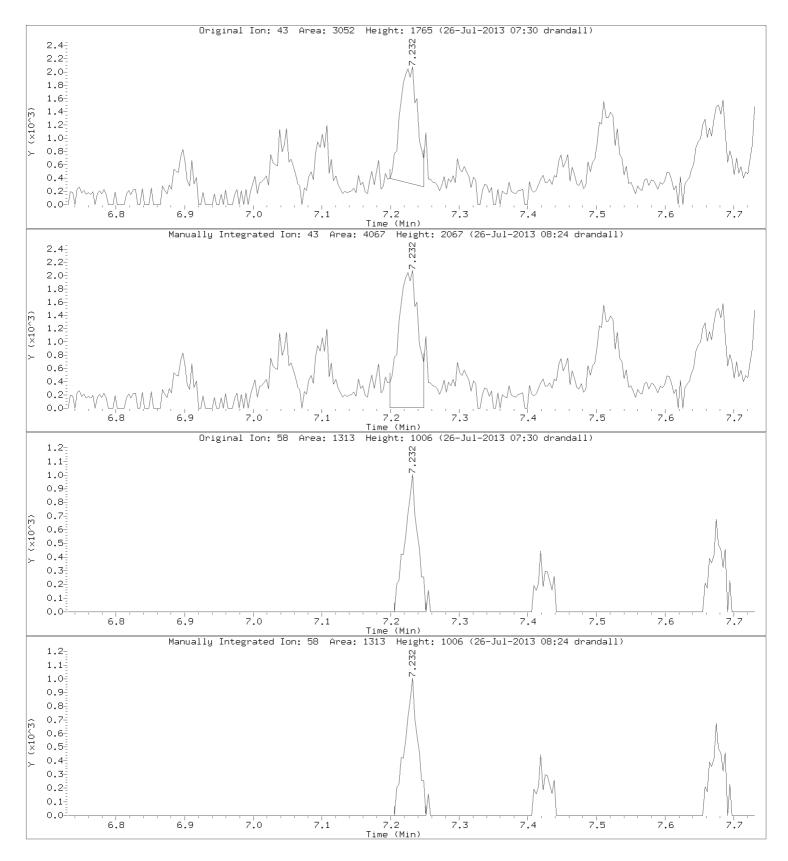
Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

Compound: Methyl Isobutyl Ketone

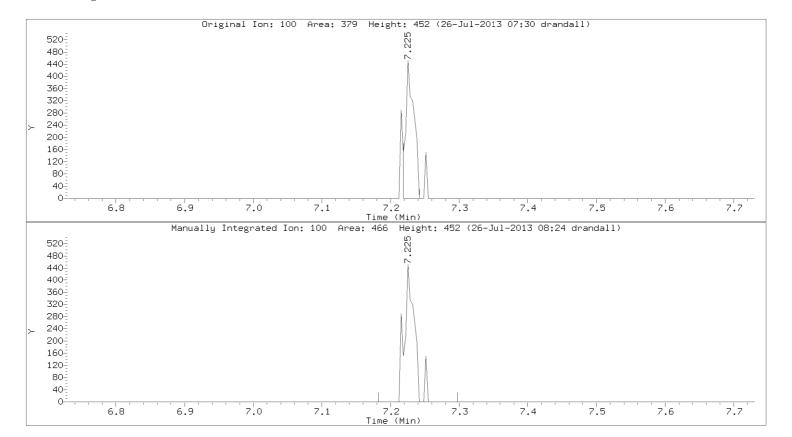
CAS Number: 108-10-1



10236207 691 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i Lab Sample ID: 10236207008



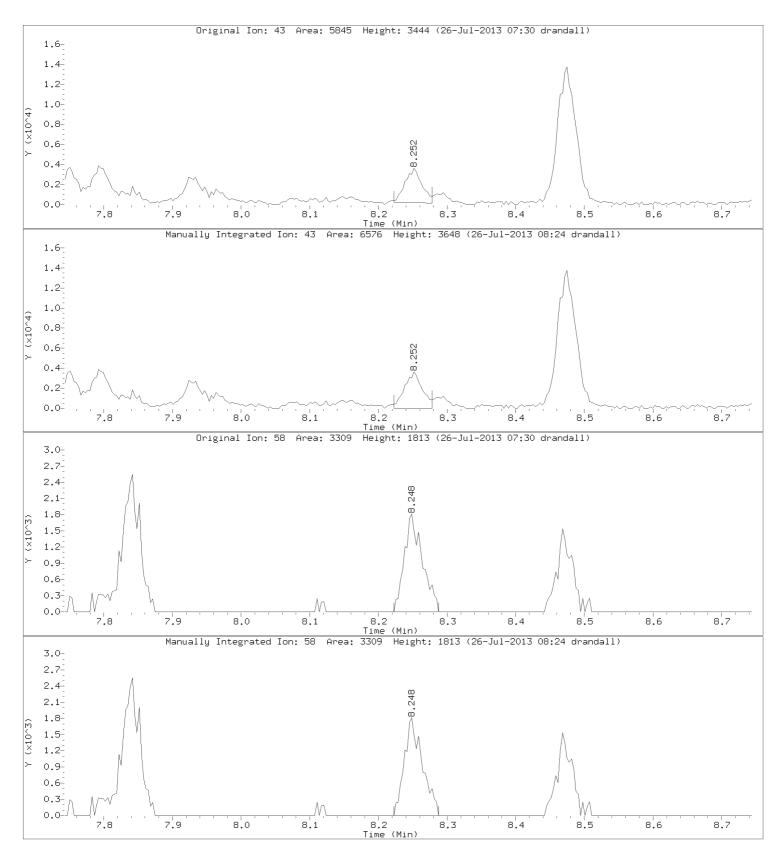
Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

Compound: Methyl Butyl Ketone

CAS Number: 591-78-6



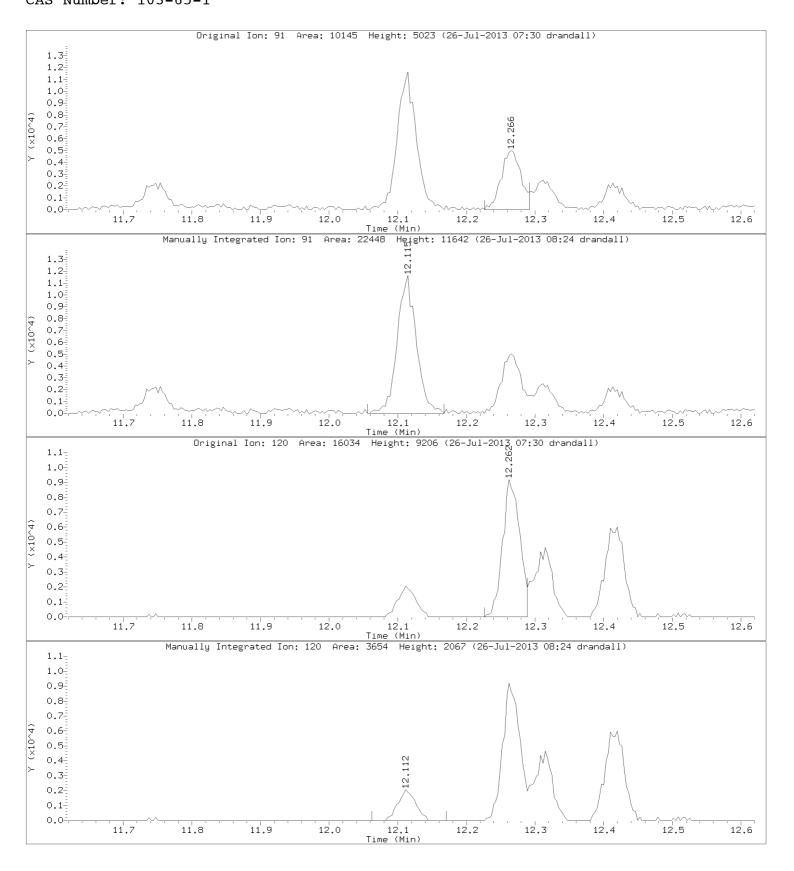
10236207 693 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

Compound: N-Propylbenzene CAS Number: 103-65-1



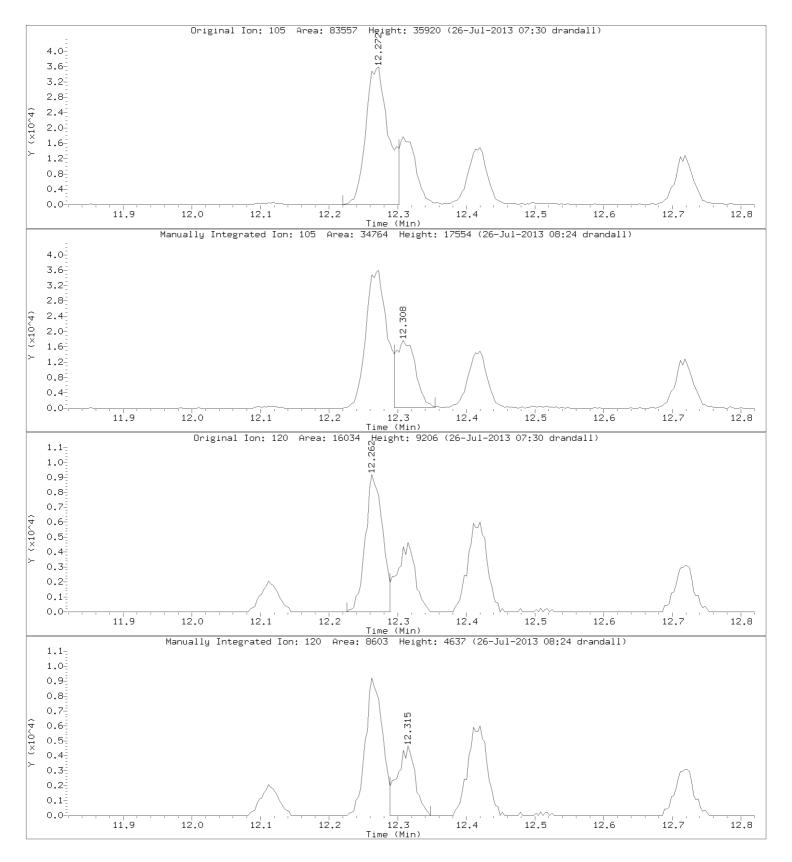
10236207 694 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

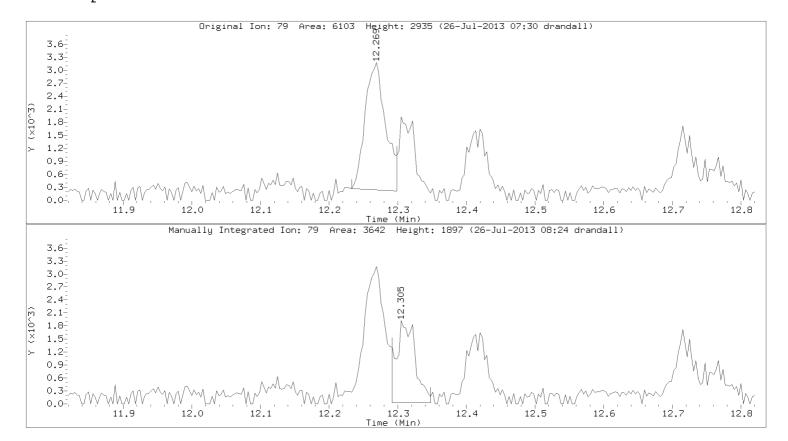
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 695 of 1066

Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i Lab Sample ID: 10236207008

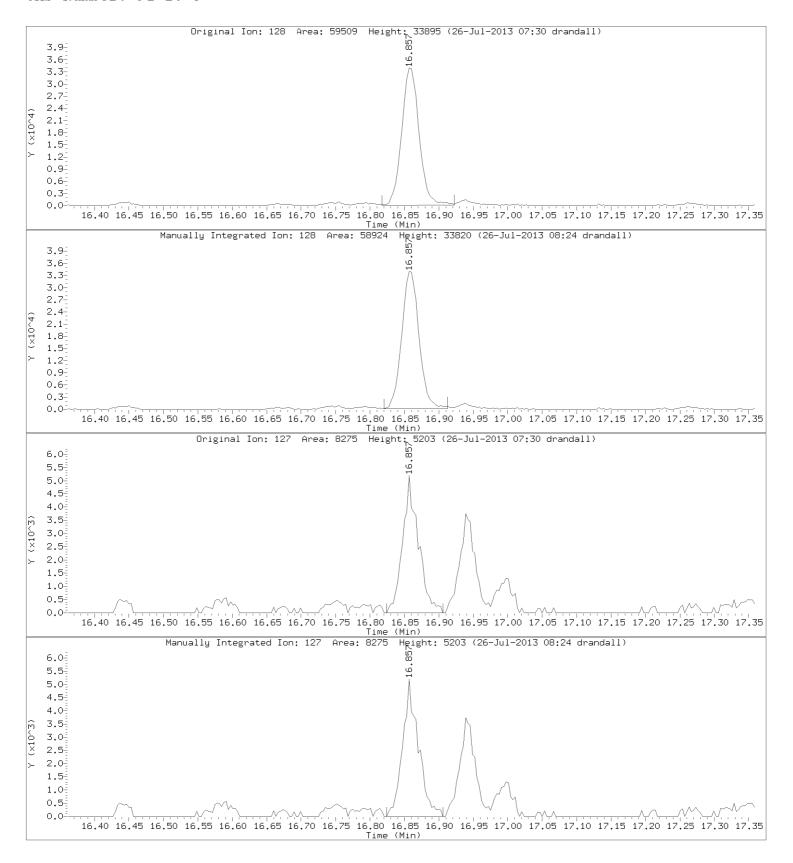


Injection Date: 26-JUL-2013 01:31

Instrument: 10airD.i

Lab Sample ID: 10236207008

Compound: Naphthalene CAS Number: 91-20-3



10236207 697 of 1066

Report Date: 26-Jul-2013 08:32

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20629.d Lab Smp Id: 10236207009 Inj Date: 26-JUL-2013 03:02 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 29

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14 Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description				
DF Uf		Dilution Factor ng unit correction factor				
Cpnd Variable		Local Compound Variable				

Compounds	QUANT SIG MASS	CONCENTRATIONS ON-COLUMN FINAL RT EXP RT REL RT RESPONSE (ppbv) (ppbv)
	====	==== ======= ======= ==================
1 Propylene	41	2.971 2.982 (0.488) 241516 26.0719 37.5
2 Dichlorodifluoromethane	85	2.998 3.008 (0.493) 22551 0.25302 0.364
3 Dichlorotetrafluoroethane	85	Compound Not Detected.
4 Chloromethane	50	Compound Not Detected.
5 Vinyl chloride	62	Compound Not Detected.
6 1,3-Butadiene	54	Compound Not Detected.
7 Bromomethane	94	Compound Not Detected.
8 Chloroethane	64	Compound Not Detected.
9 Ethanol	31	3.493 3.494 (0.574) 70410 6.63108 9.55(M)
10 Vinyl Bromide	106	Compound Not Detected.
11 Acrolein	56	Compound Not Detected.
12 Trichlorofluoromethane	101	3.696 3.694 (0.607) 12405 0.12795 0.184
13 Acetone	43	3.729 3.726 (0.613) 474184 9.75718 14.0
14 Isopropyl Alcohol	45	Compound Not Detected.
15 1,1-Dichloroethene	61	Compound Not Detected.
16 Acrylonitrile	53	Compound Not Detected.
17 Tert Butyl Alcohol	59	3.978 3.989 (0.654) 30525 0.59871 0.862(M)
18 Freon 113	101	Compound Not Detected.
19 Methylene chloride	49	4.096 4.094 (0.673) 10641 0.38646 0.556
20 Allyl Chloride	76	Compound Not Detected.
21 Carbon Disulfide	76	4.227 4.224 (0.695) 45937 0.57331 0.826(M)
22 trans-1,2-dichloroethene	96	Compound Not Detected.
23 Methyl Tert Butyl Ether	73	Compound Not Detected.

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20629.d$ Report Date: 26-Jul-2013 08:32

			CONCENTRATIONS
		QUANT SIG	ON-COLUMN FINAL
Co	mpounds	MASS	RT EXP RT REL RT RESPONSE ( ppbv) ( ppbv)
==		====	
	24 Vinyl Acetate	43	Compound Not Detected.
	25 1,1-Dichloroethane	63	Compound Not Detected.
\$	26 Hexane-d14(S)	66	4.700 4.700 (0.772) 301654 8.52142 8.52
	27 Methyl Ethyl Ketone	72	4.775 4.779 (0.785) 37089 3.29635 4.75
	28 n-Hexane	57	4.818 4.818 (0.792) 39531 1.22842 1.77(M)
	29 cis-1,2-Dichloroethene	96	Compound Not Detected.
	30 Ethyl Acetate	43	Compound Not Detected.
	31 Chloroform	83	Compound Not Detected.
	32 Tetrahydrofuran	42	Compound Not Detected.
	33 1,1,1-Trichloroethane	97	Compound Not Detected.
	34 1,2-Dichloroethane	62	Compound Not Detected.
	35 Benzene	78	5.877 5.887 (0.966) 61574 1.29114 1.86(M)
	36 Carbon tetrachloride	117	Compound Not Detected.
	37 Cyclohexane	56	5.913 5.910 (0.971) 8282 0.77935 1.12(QM)
*	38 1,4-Difluorobenzene	114	6.087 6.094 (1.000) 733070 10.0000
	39 2,2,4-Trimethylpentane	57	Compound Not Detected.
	40 Heptane	43	6.434 6.442 (1.057) 12052 0.90467 1.30
	41 1,2-Dichloropropane	63	Compound Not Detected.
	42 Trichloroethene	130	Compound Not Detected.
	43 1,4-Dioxane	88	Compound Not Detected.
	44 Bromodichloromethane	83	Compound Not Detected.
	45 Methyl Isobutyl Ketone	43	7.225 7.229 (1.187) 7389 0.59121 0.851(M)
	46 cis-1,3-Dichloropropene	75	Compound Not Detected.
	47 trans-1,3-Dichloropropene	75	Compound Not Detected.
\$	48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 527589 10.3050 10.3
	49 Toluene	91	7.930 7.940 (1.303) 190217 2.54103 3.66
	50 1,1,2-Trichloroethane	97	Compound Not Detected.
	51 Methyl Butyl Ketone	43	8.248 8.244 (0.852) 6746 0.51345 0.739(M)
	52 Dibromochloromethane	129	Compound Not Detected.
	53 1,2-Dibromoethane	107	Compound Not Detected.
	54 Tetrachloroethene	166	8.914 8.918 (0.920) 4931 0.48869 0.704
*	55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 282247 10.0000
	56 Chlorobenzene	112	Compound Not Detected.
	57 Ethyl Benzene	91	10.035 10.039 (1.036) 70169 0.94467 1.36
	58 m&p-Xylene	91	10.199 10.213 (1.053) 221146 2.78673 4.01(M)
	59 Bromoform	173	Compound Not Detected.
	60 Styrene	104	10.701 10.708 (1.105) 10319 0.64551 0.930(M)
	61 o-Xylene	91	10.770 10.783 (1.112) 72763 0.99421 1.43
	62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.
	63 Isopropylbenzene	105	Compound Not Detected.
	64 N-Propylbenzene	91	12.114 12.121 (1.251) 24960 0.48138 0.693(M)
	65 4-Ethyltoluene	105	12.308 12.321 (1.271) 45175 0.75099 1.08 (M)
	66 1,3,5-Trimethylbenzene	105	12.413 12.426 (1.282) 33826 0.65843 0.948
	67 1,2,4-Trimethylbenzene	105	13.013 13.020 (1.344) 149262 2.01497 2.90
	68 1,3-Dichlorobenzene	146	Compound Not Detected.
	·		-
ć	69 Sec- Butylbenzene	105	Compound Not Detected. 13.449 13.459 (1.389) 103919 9.12148 9.12
\$	70 1,4-dichlorobenzene-d4 (S)	150	
	71 Benzyl Chloride	91	Compound Not Detected.
	72 1,4-Dichlorobenzene	146	Compound Not Detected.
	73 1,2-Dichlorobenzene	146	Compound Not Detected.
	74 N-Butylbenzene	91	Compound Not Detected.
	75 1,2,4-Trichlorobenzene	180	Compound Not Detected.
	76 Naphthalene	128	16.859 16.860 (1.741) 47623 1.44782 2.08
	77 Hexachlorobutadiene	225	Compound Not Detected.

10236207 699 of 1066

Report Date: 26-Jul-2013 08:32

	====	====					
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppbv)	(ppbv)
	QUANT SIG					ON-COLUMN	FINAL
						CONCENTRATIONS	

# QC Flag Legend

 ${\tt Q}$  - Qualifier signal failed the ratio test. M - Compound response manually integrated.

Report Date: 26-Jul-2013 08:32

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20629.d

Lab Smp Id: 10236207009 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
================	========	========	=======	=======	=====
38 1,4-Difluorobenze	579775	347865	811685	733070	26.44
55 Chlorobenzene - d	221404	132842	309966	282247	27.48

		RT 1	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.06
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.04

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

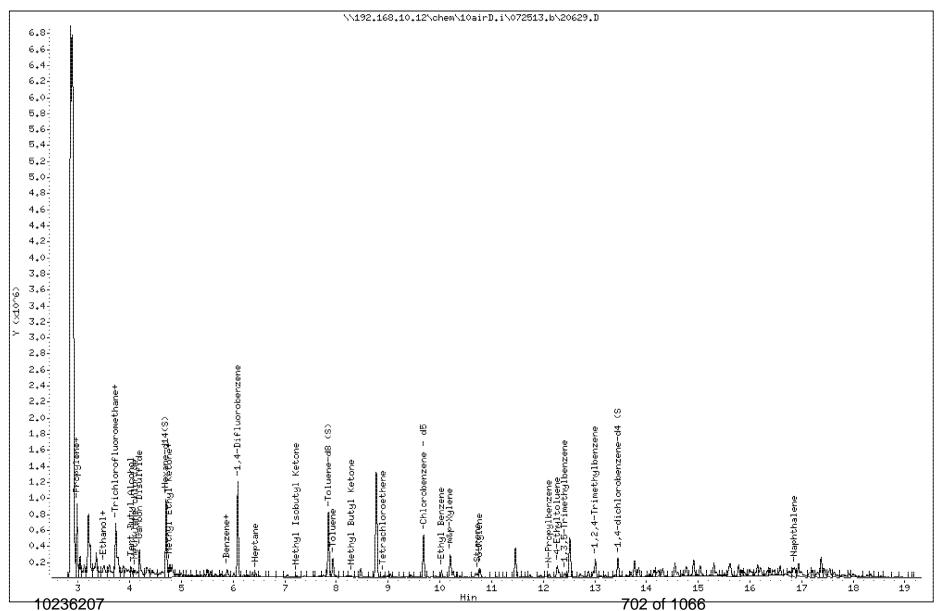
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 03:02

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 26-JUL-2013 03:02

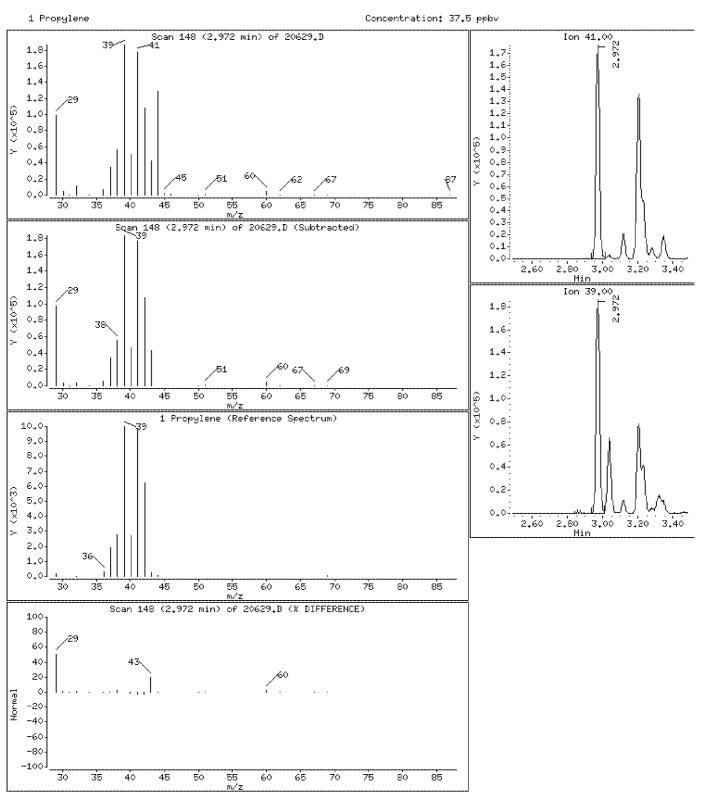
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD.i

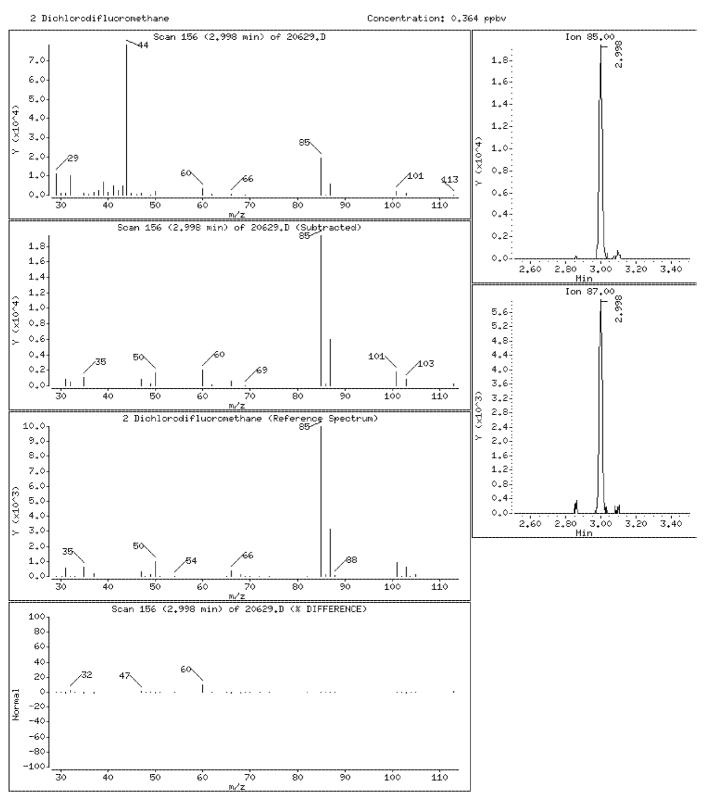
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.364 ppbv



Date : 26-JUL-2013 03:02

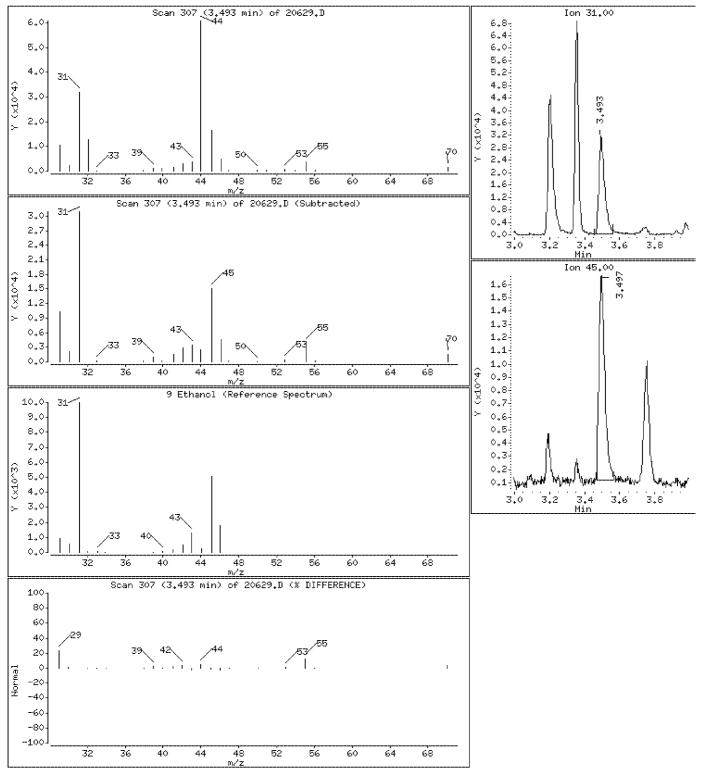
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 705 of 1066

Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD.i

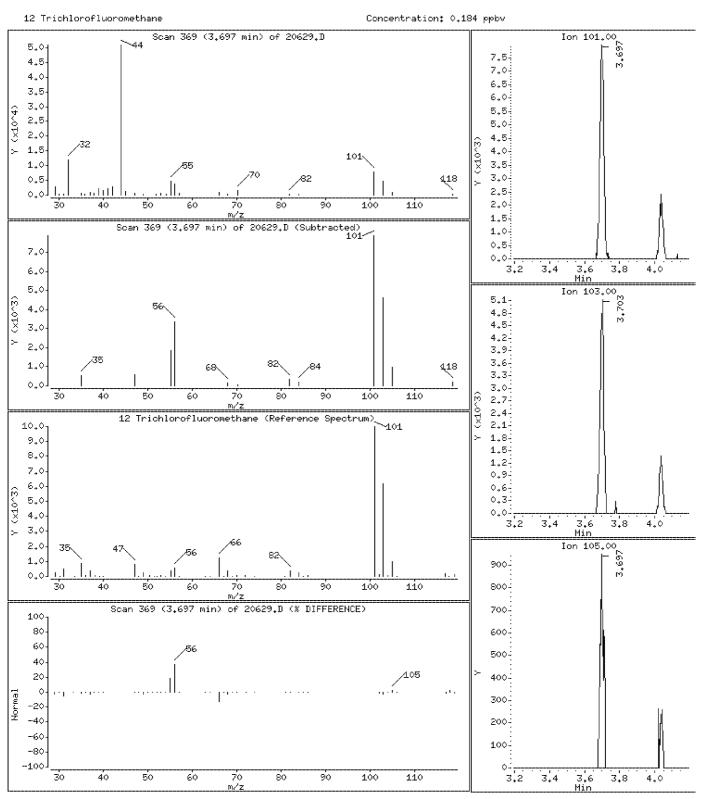
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.184 ppbv



Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD,i

Sample Info:

40 20

-20 -40 -60 -80

30

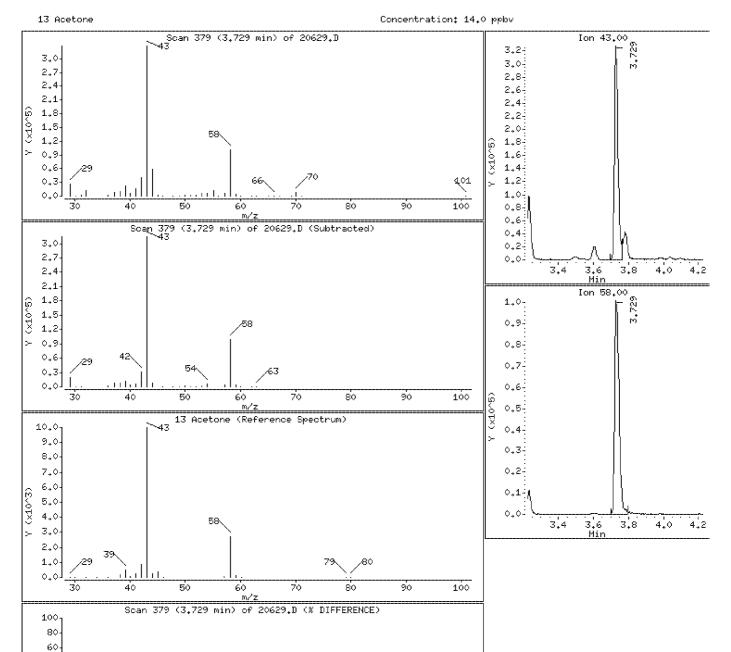
40

50

60

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 707 of 1066

90

100

70

80

Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD.i

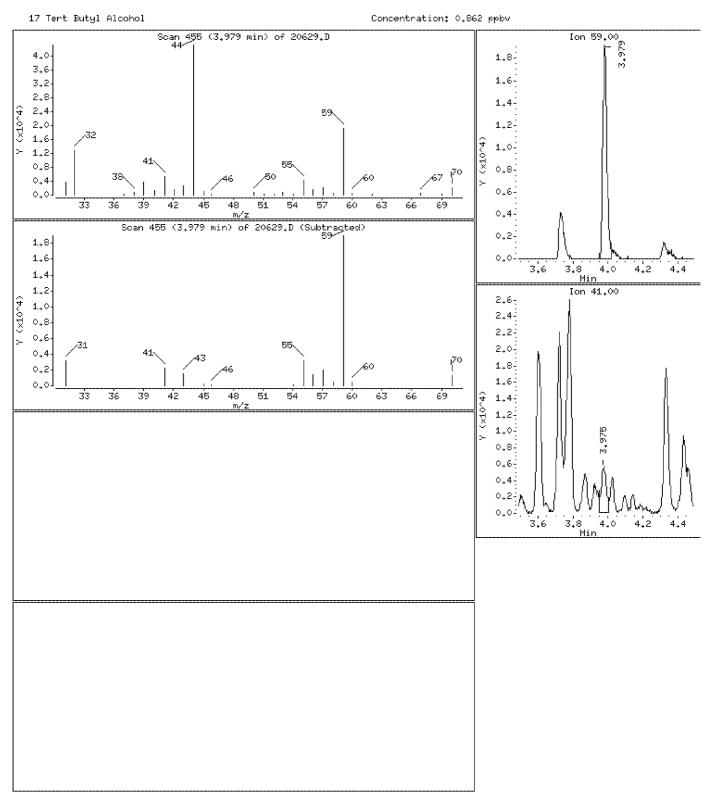
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.862 ppbv



Date : 26-JUL-2013 03:02

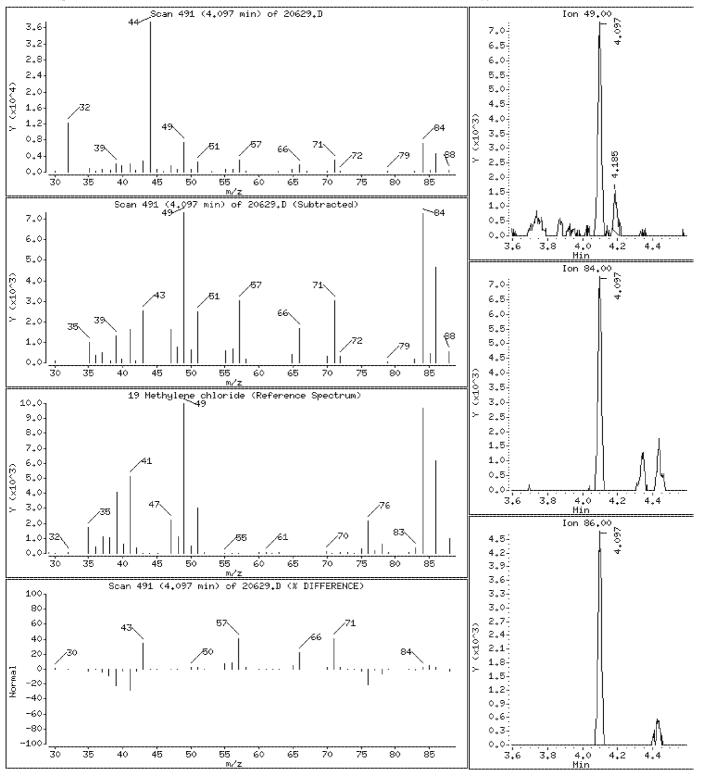
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 709 of 1066

Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD,i

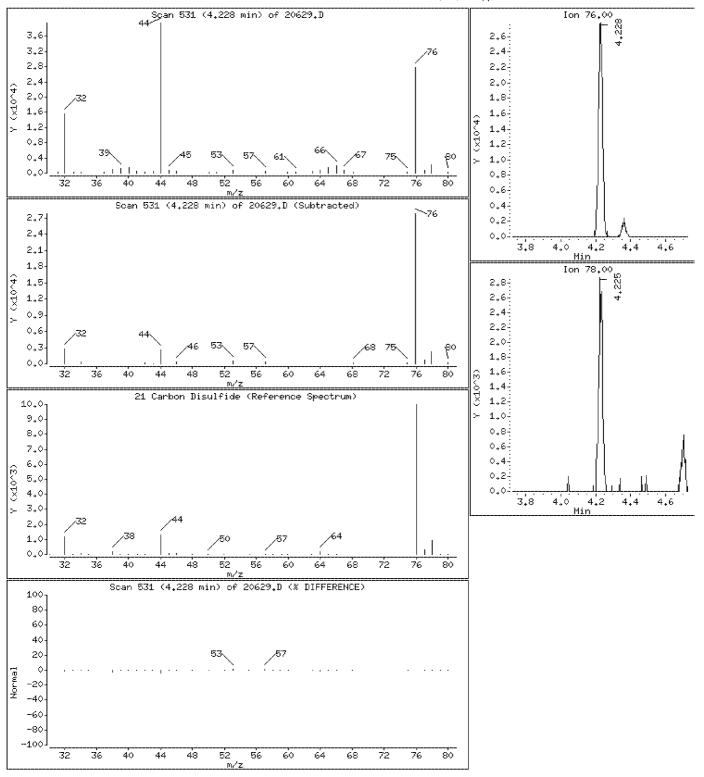
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 710 of 1066

Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD.i

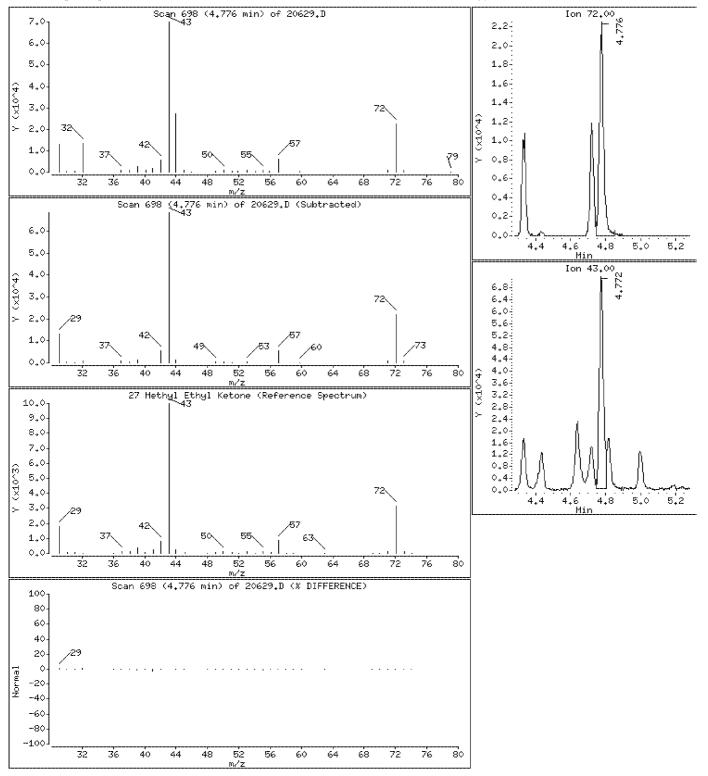
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 4.75 ppbv



10236207 711 of 1066

Date : 26-JUL-2013 03:02

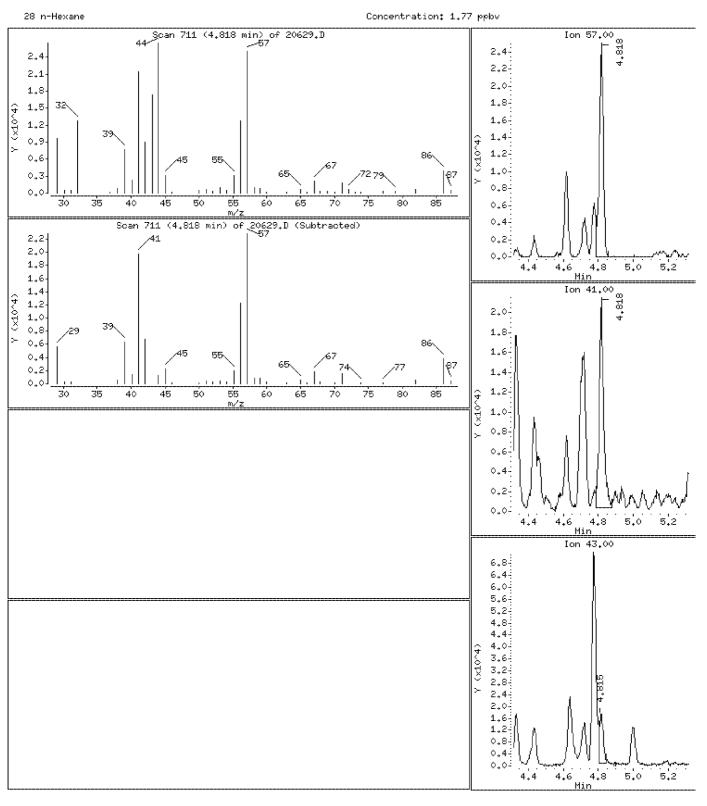
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 1.77 ppbv



Date : 26-JUL-2013 03:02

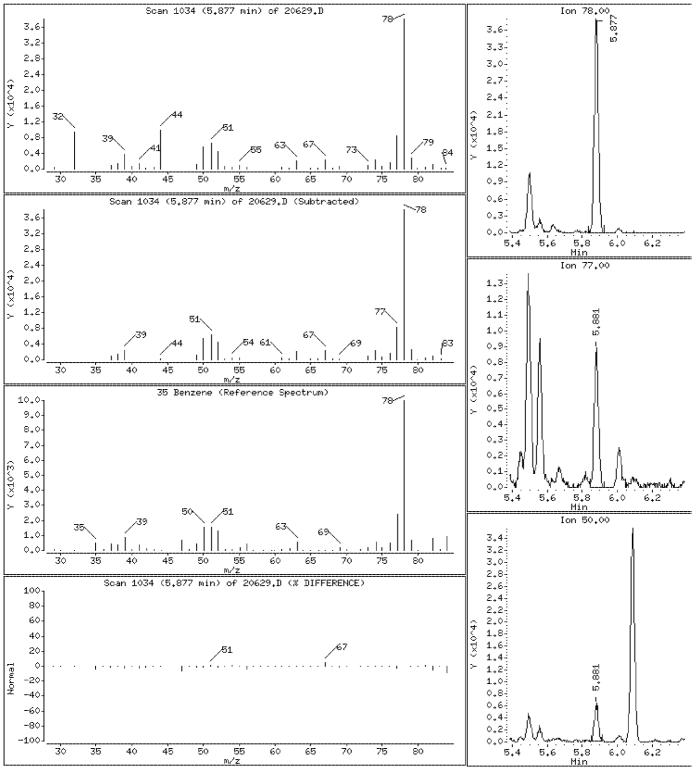
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 713 of 1066

Date : 26-JUL-2013 03:02

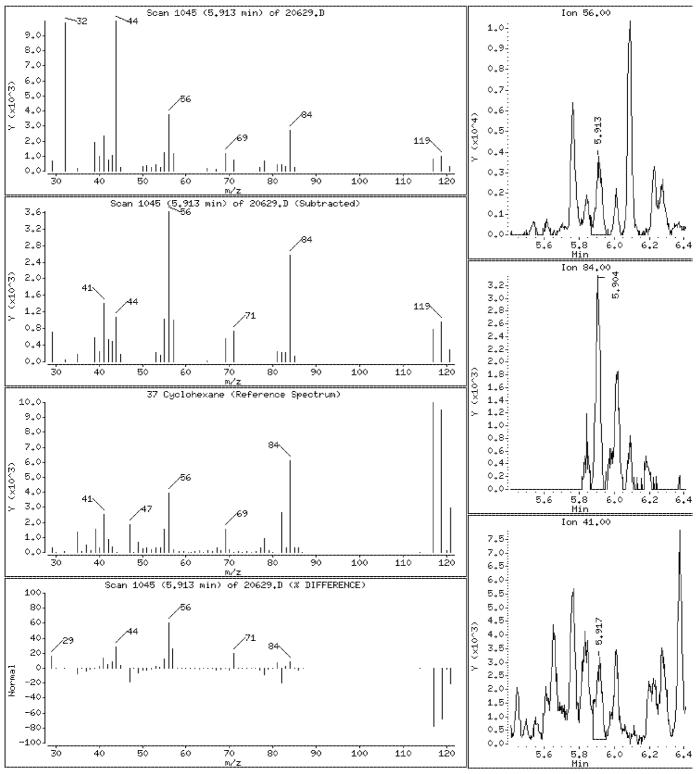
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 714 of 1066

Date : 26-JUL-2013 03:02

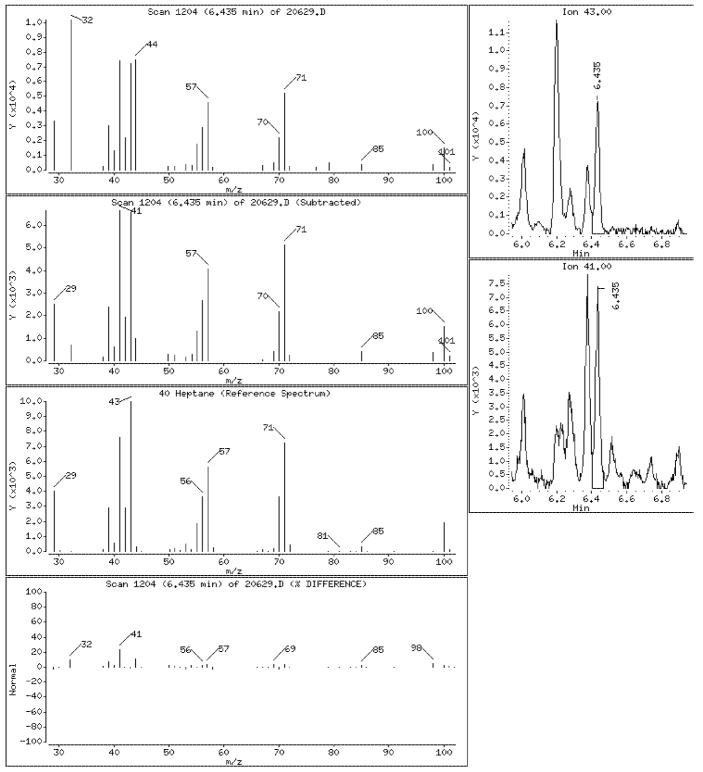
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 715 of 1066

Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD.i

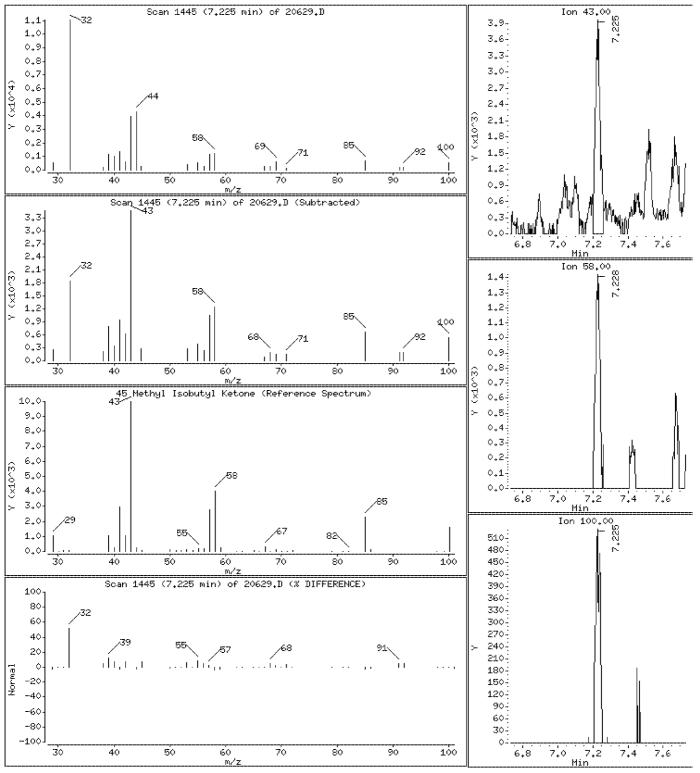
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.851 ppbv



10236207 716 of 1066

Date : 26-JUL-2013 03:02

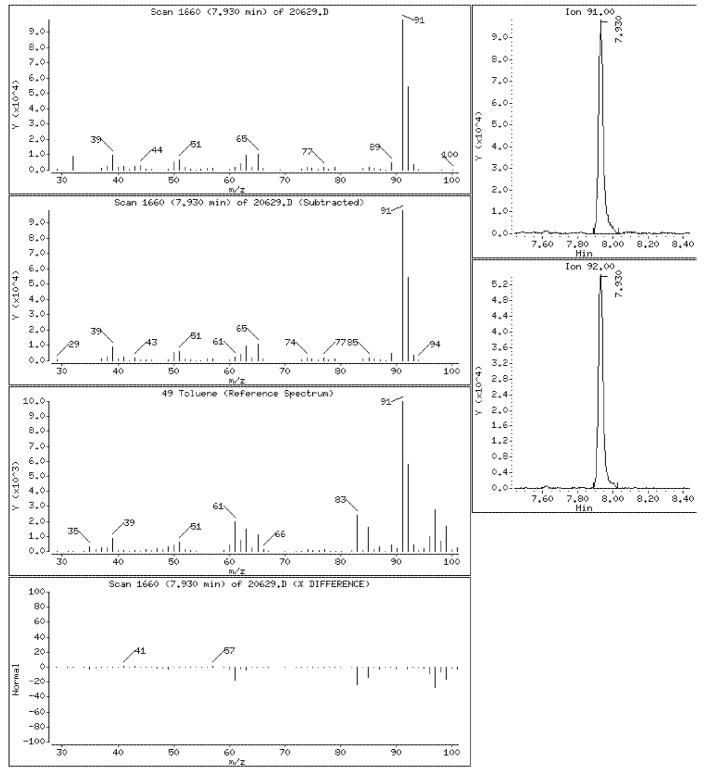
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 717 of 1066

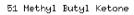
Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD,i

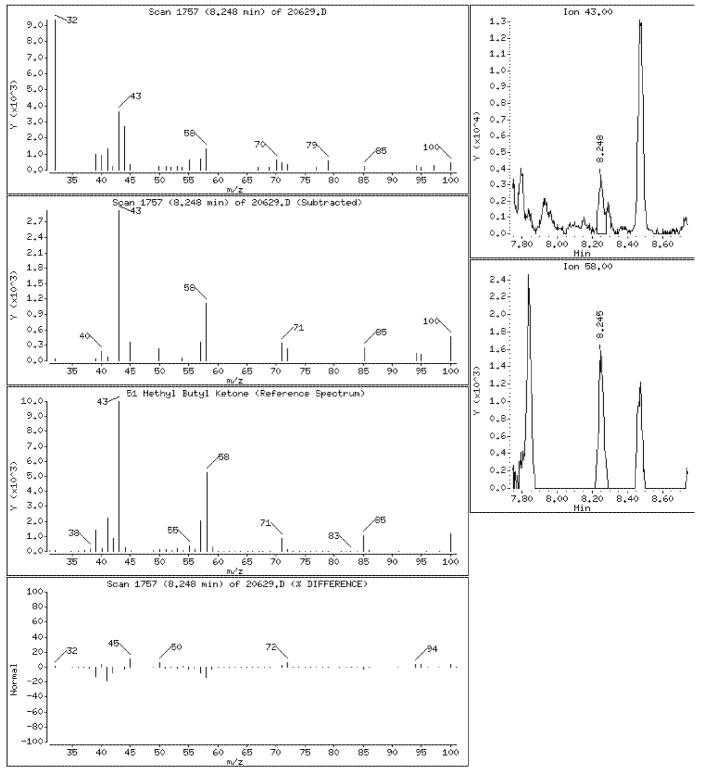
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.739 ppbv



10236207 718 of 1066

Date : 26-JUL-2013 03:02

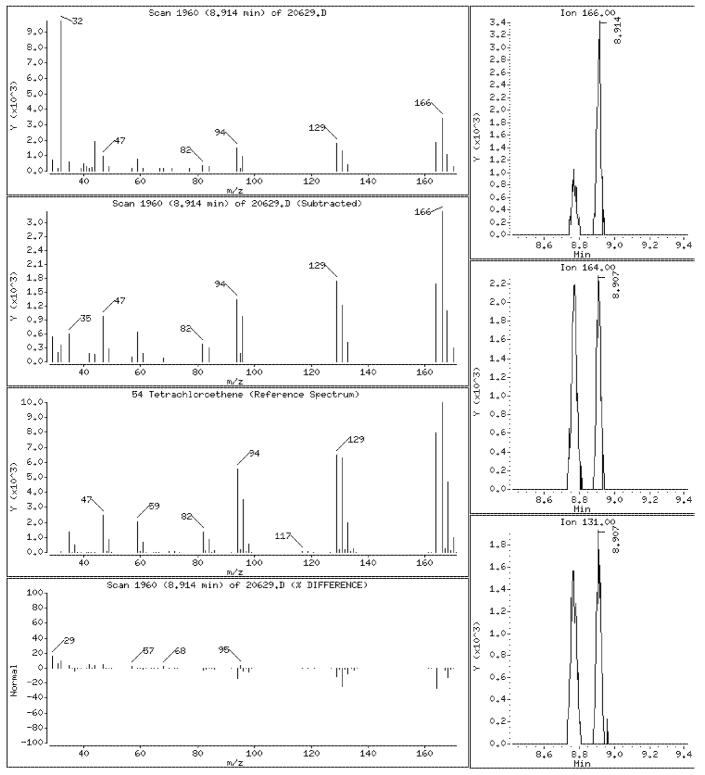
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 719 of 1066

Date : 26-JUL-2013 03:02

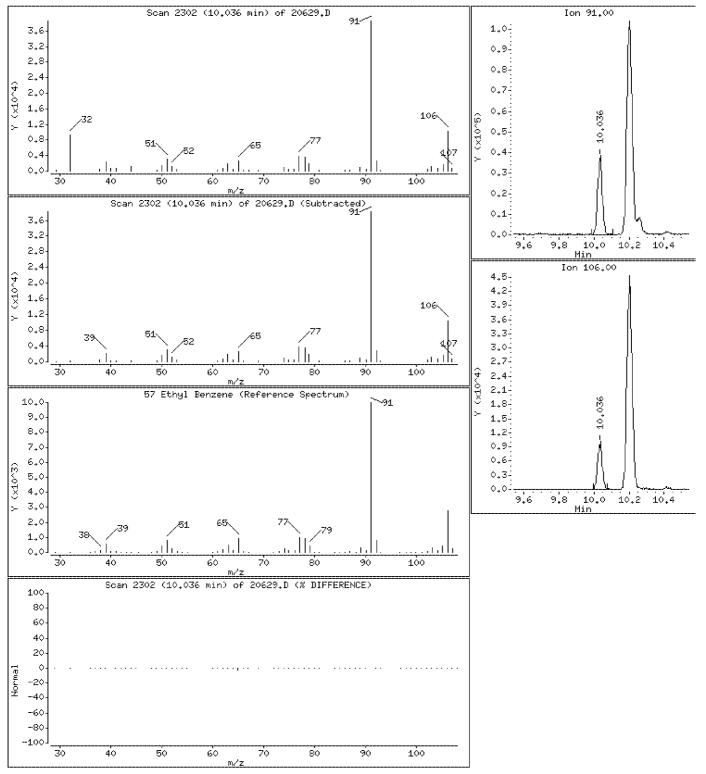
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 720 of 1066

Date : 26-JUL-2013 03:02

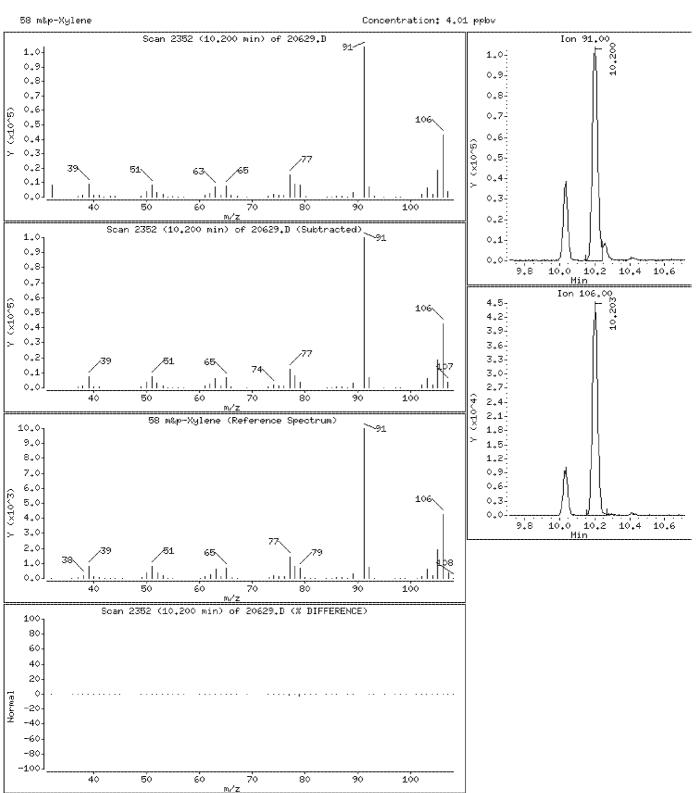
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:02

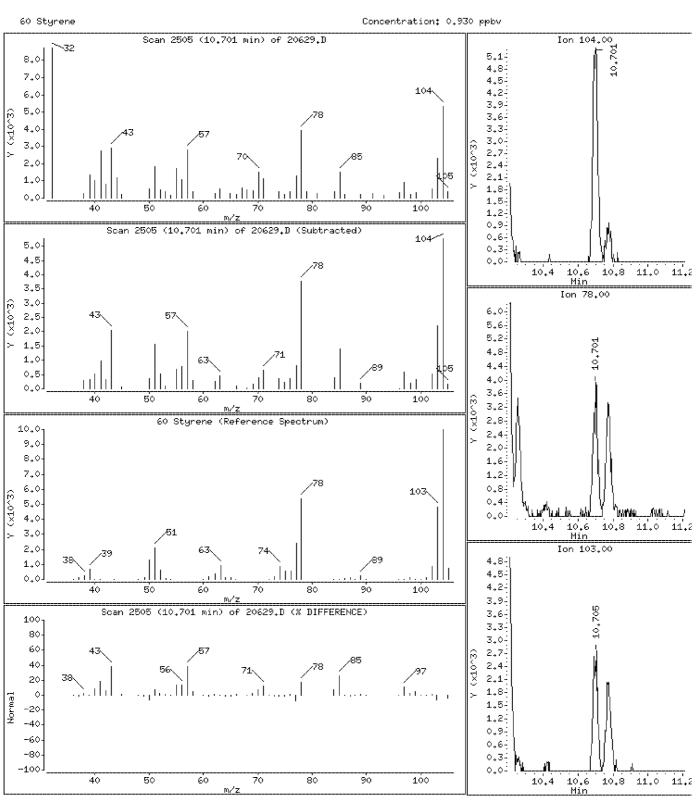
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:02

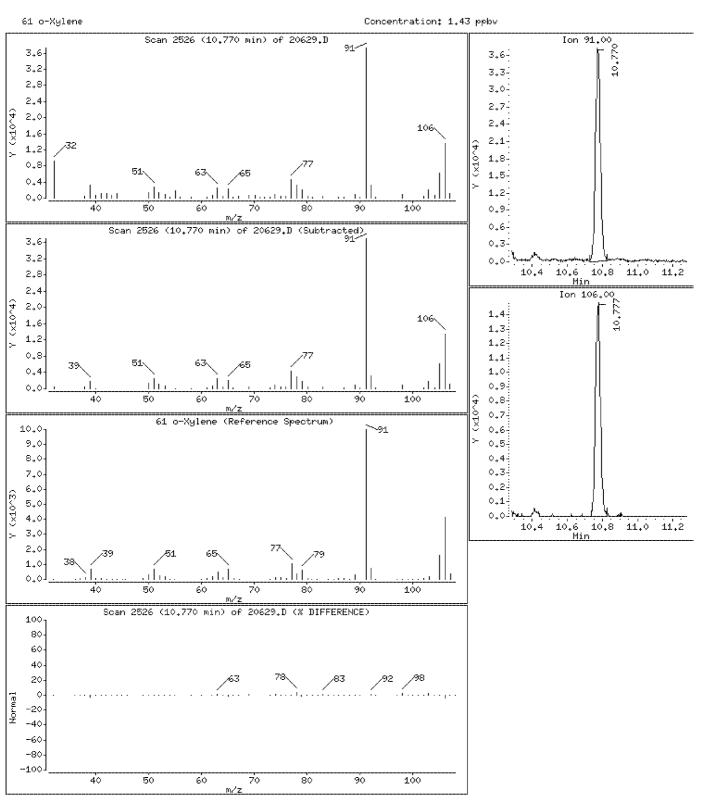
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:02

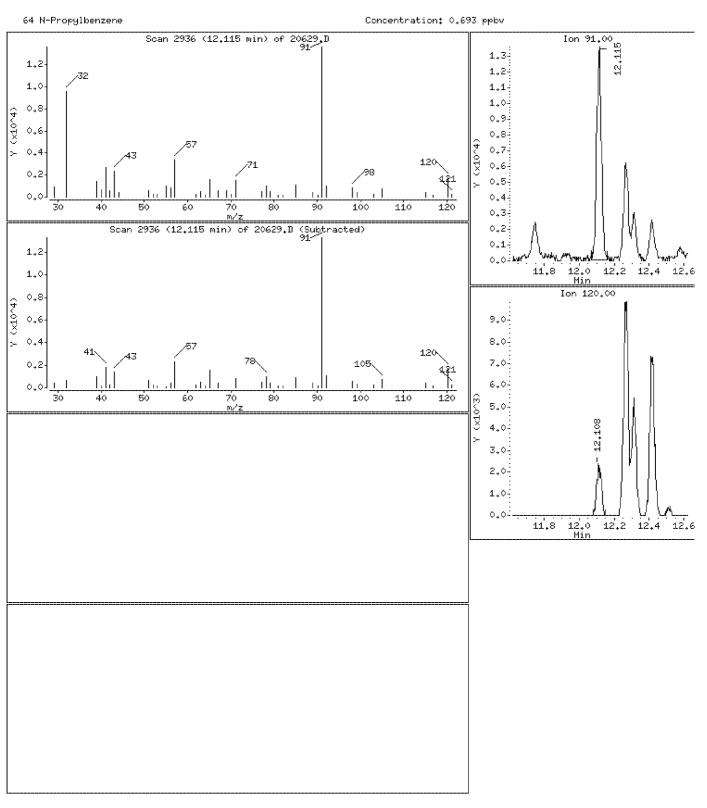
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:02

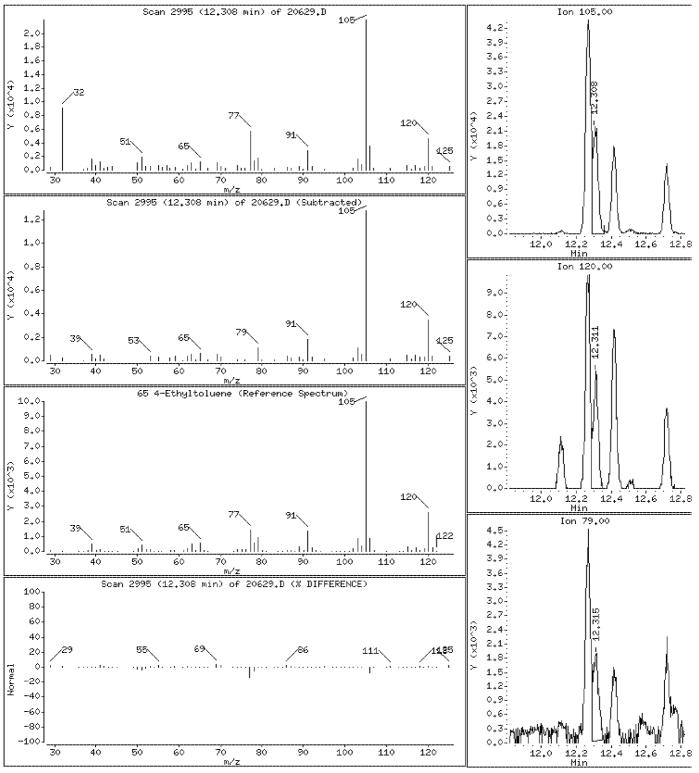
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 725 of 1066

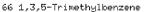
Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD.i

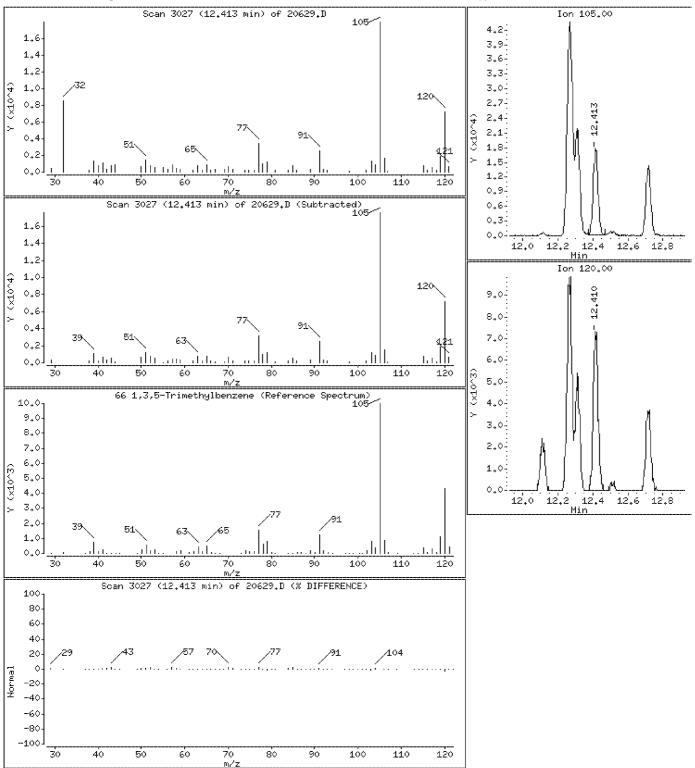
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.948 ppbv



10236207 726 of 1066

Date : 26-JUL-2013 03:02

Client ID: Instrument: 10airD.i

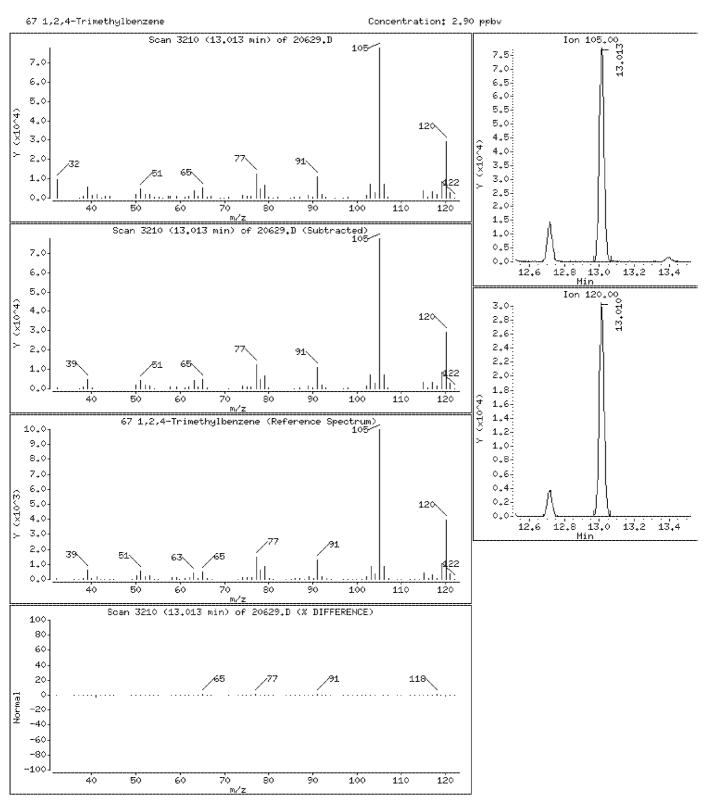
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







Date : 26-JUL-2013 03:02

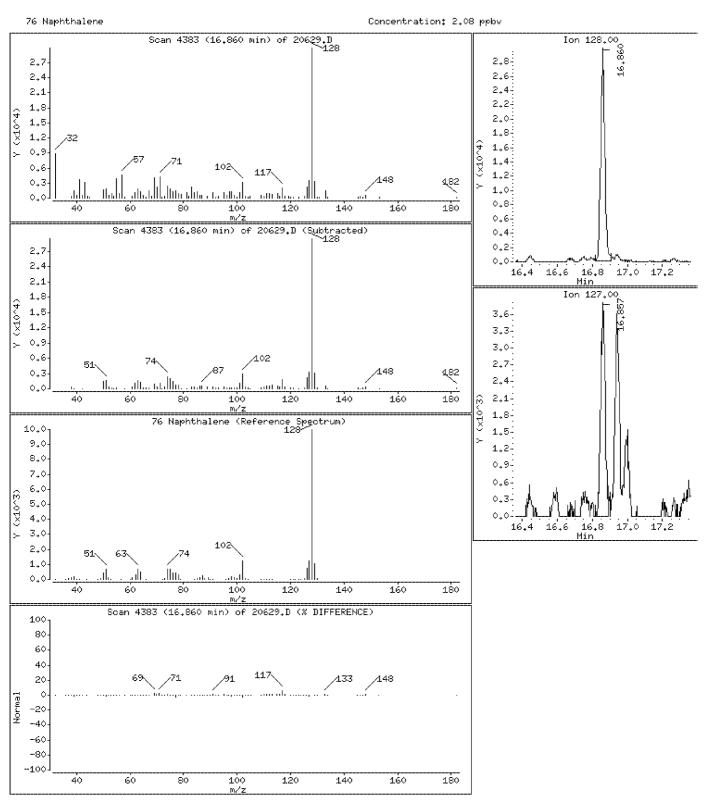
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



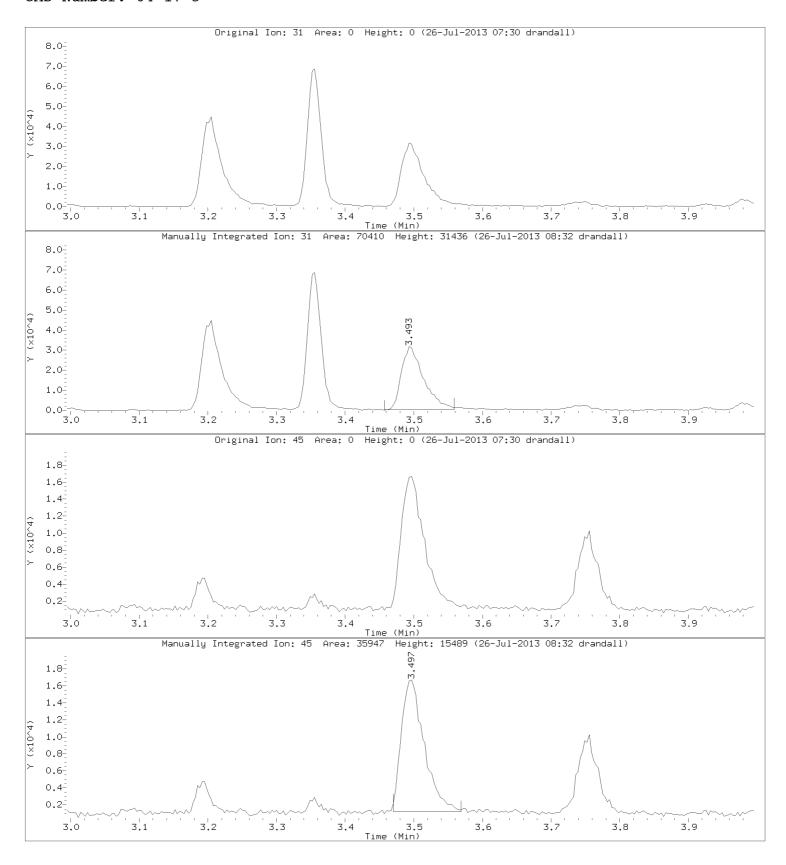


Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

Compound: Ethanol CAS Number: 64-17-5



10236207 729 of 1066

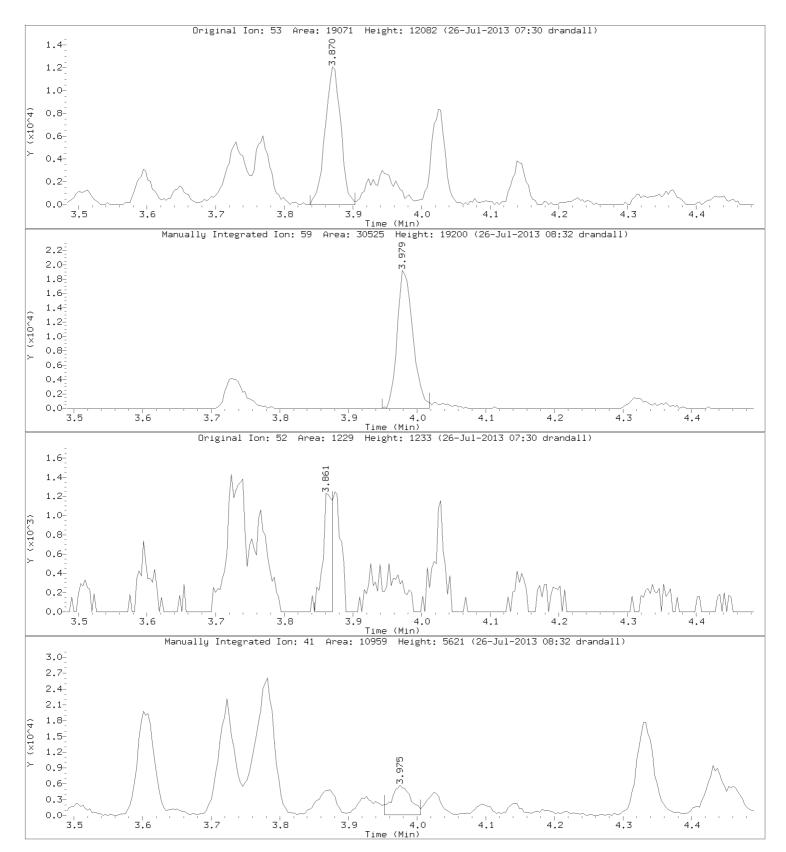
Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



10236207 730 of 1066

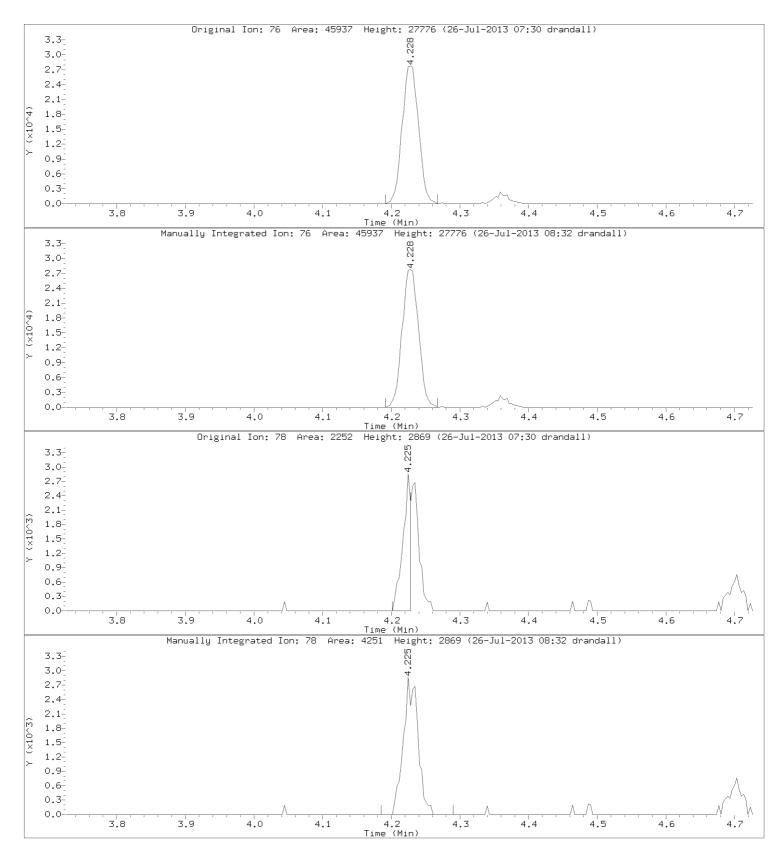
Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

Compound: Carbon Disulfide

CAS Number: 75-15-0



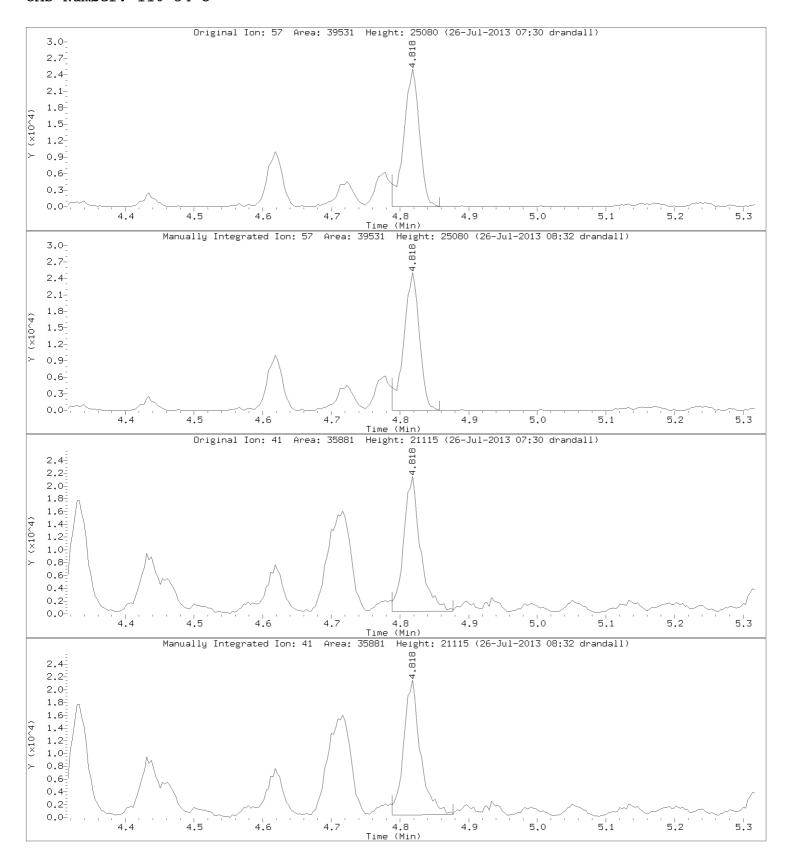
10236207 731 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

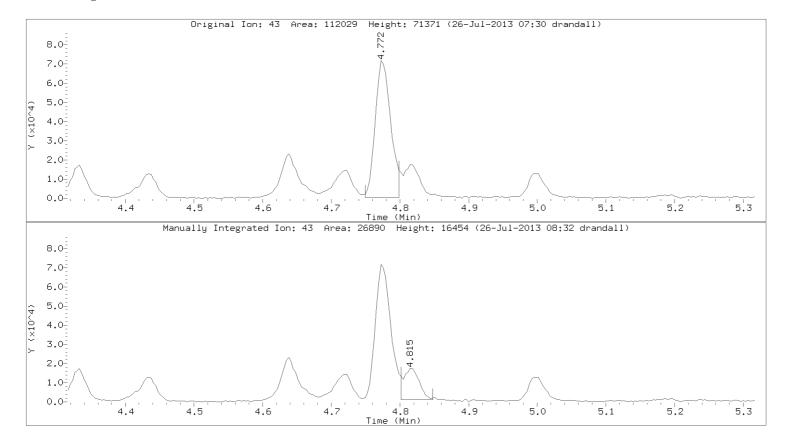
Compound: n-Hexane CAS Number: 110-54-3



10236207 732 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i Lab Sample ID: 10236207009

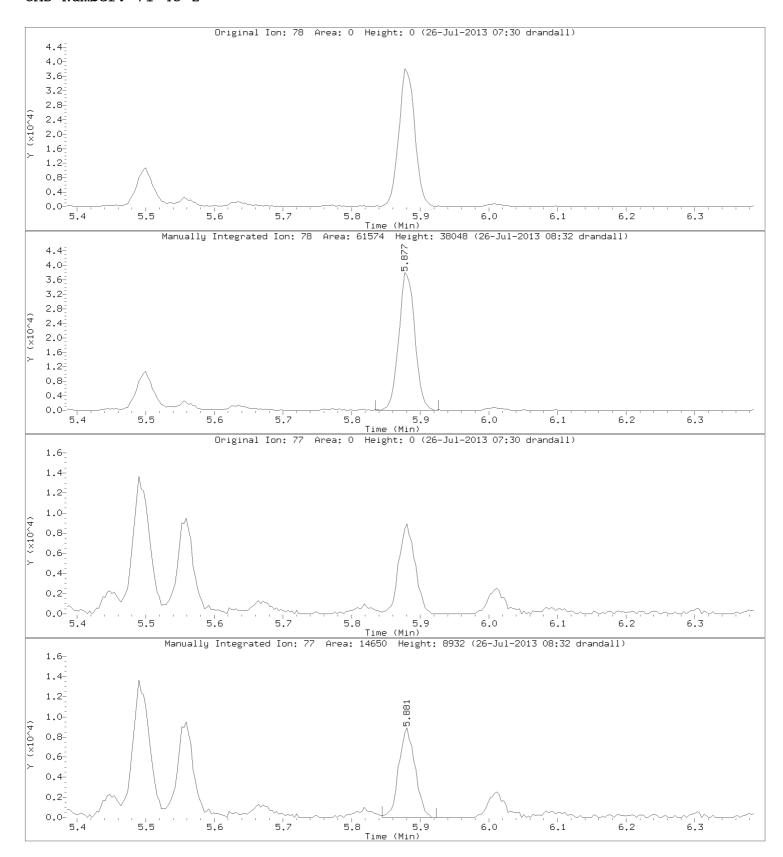


Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

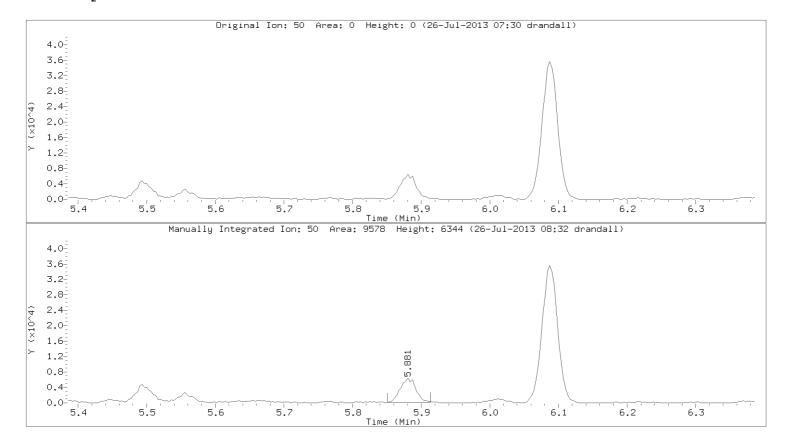
Compound: Benzene CAS Number: 71-43-2



10236207 734 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i Lab Sample ID: 10236207009

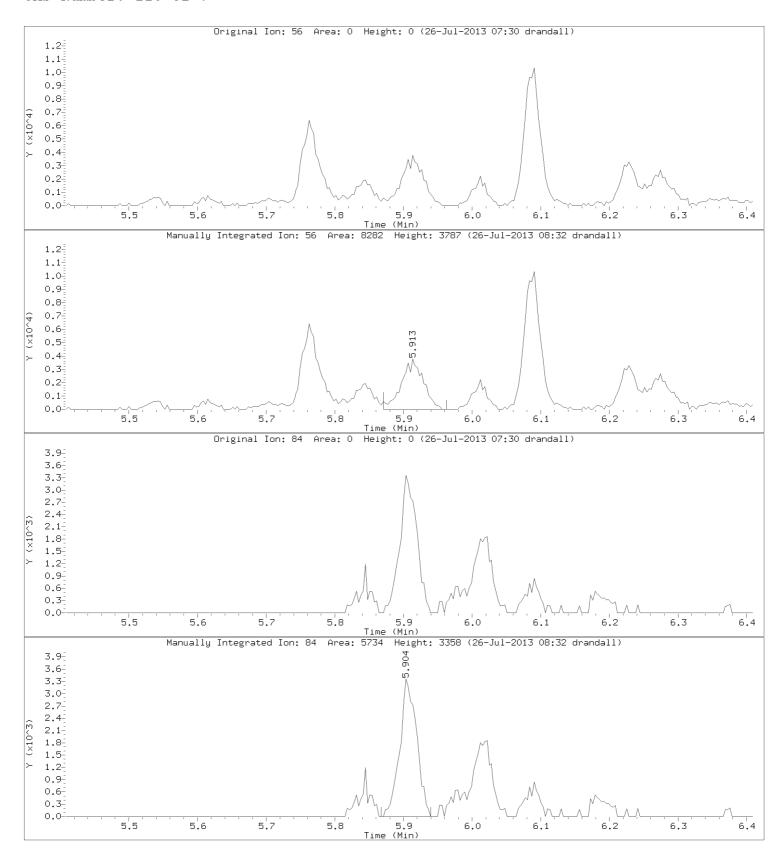


Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

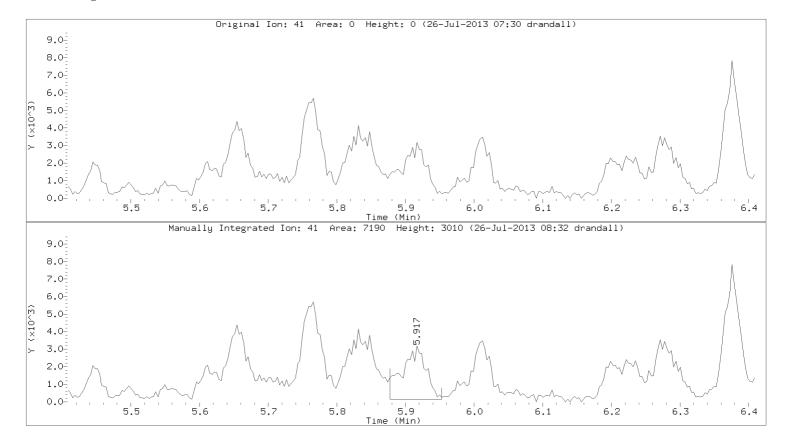
Compound: Cyclohexane CAS Number: 110-82-7



10236207 736 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i Lab Sample ID: 10236207009



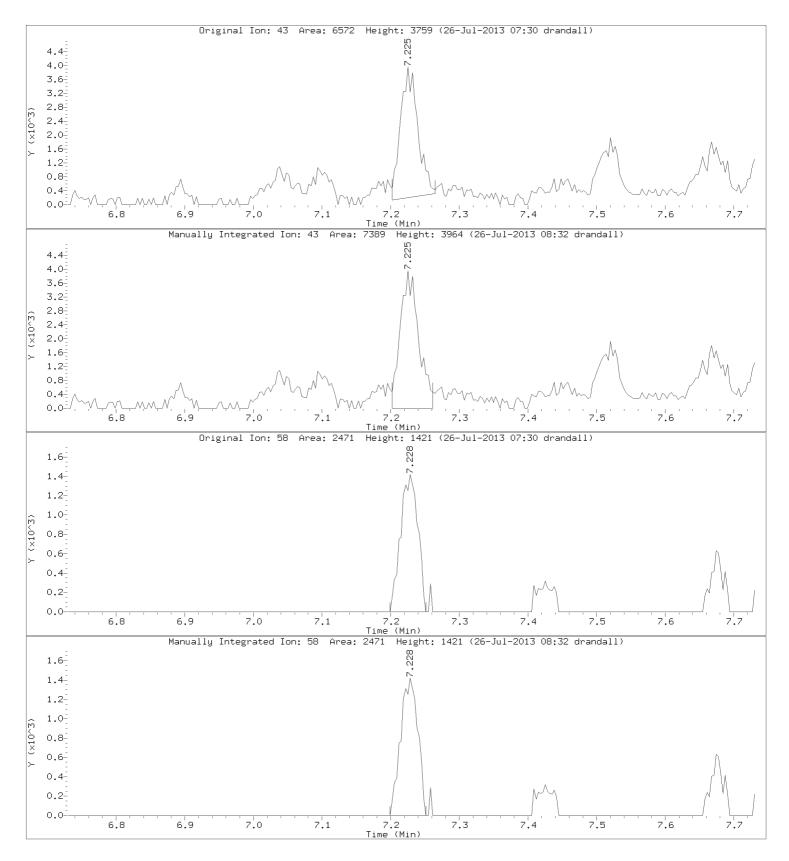
Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

Compound: Methyl Isobutyl Ketone

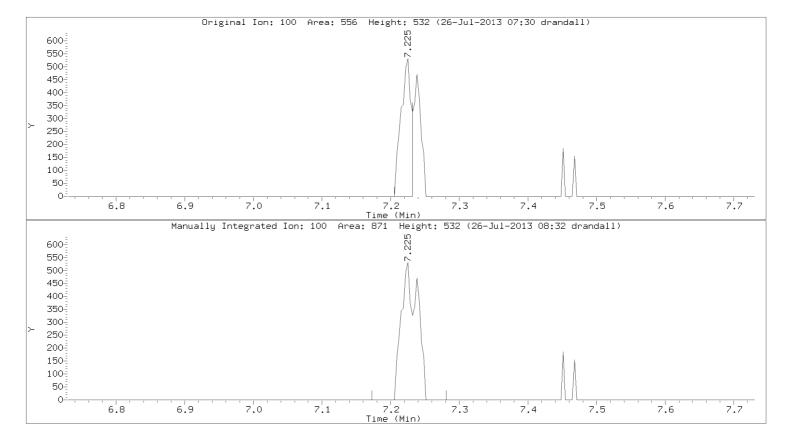
CAS Number: 108-10-1



10236207 738 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i Lab Sample ID: 10236207009



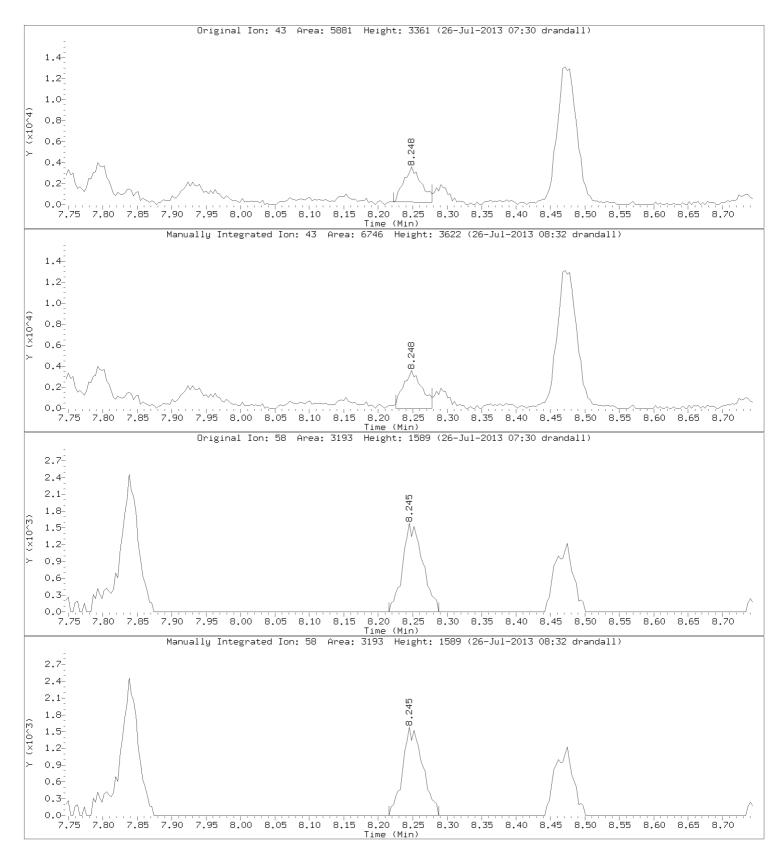
Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

Compound: Methyl Butyl Ketone

CAS Number: 591-78-6



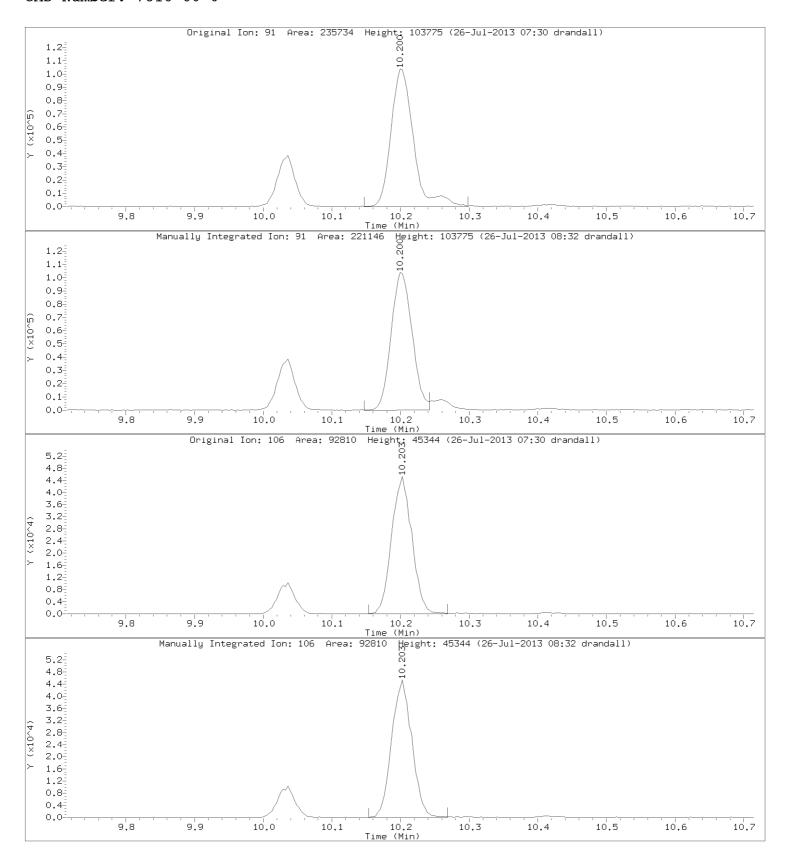
10236207 740 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

Compound: m&p-Xylene CAS Number: 7816-60-0



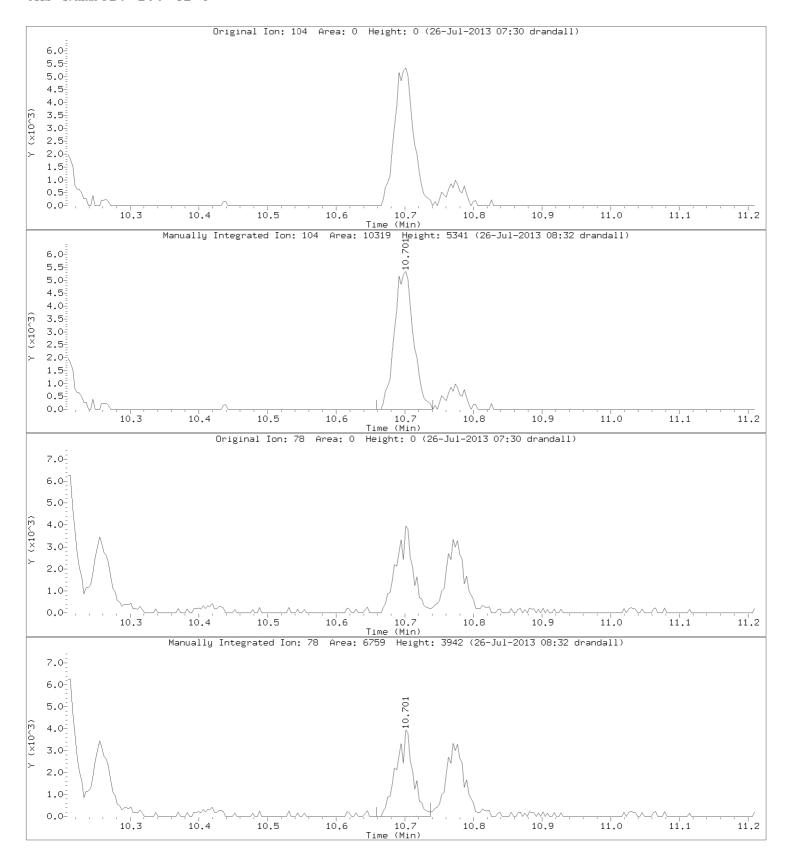
10236207 741 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

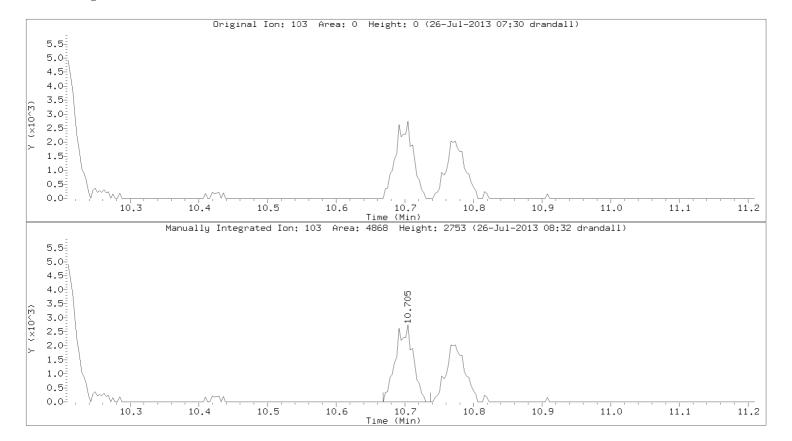
Compound: Styrene CAS Number: 100-42-5



10236207 742 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i Lab Sample ID: 10236207009

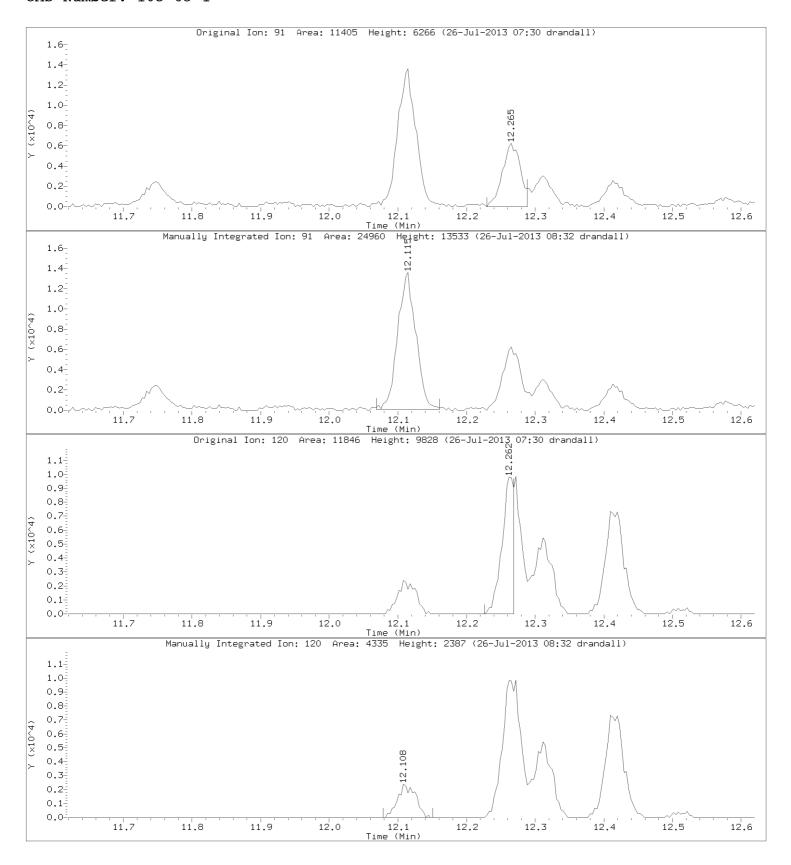


Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

Compound: N-Propylbenzene CAS Number: 103-65-1



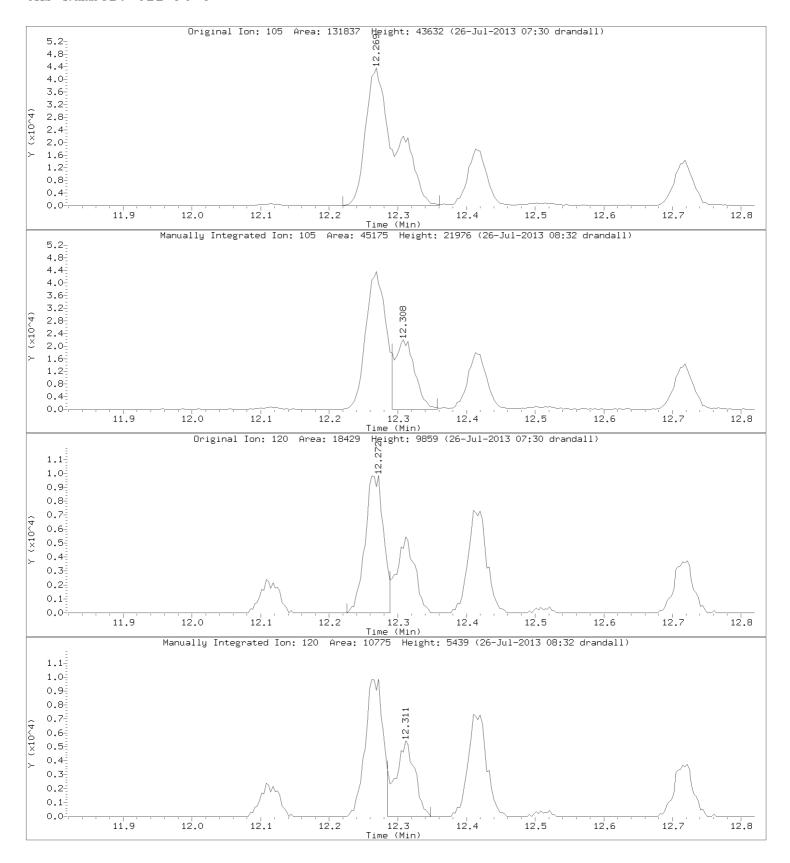
10236207 744 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i

Lab Sample ID: 10236207009

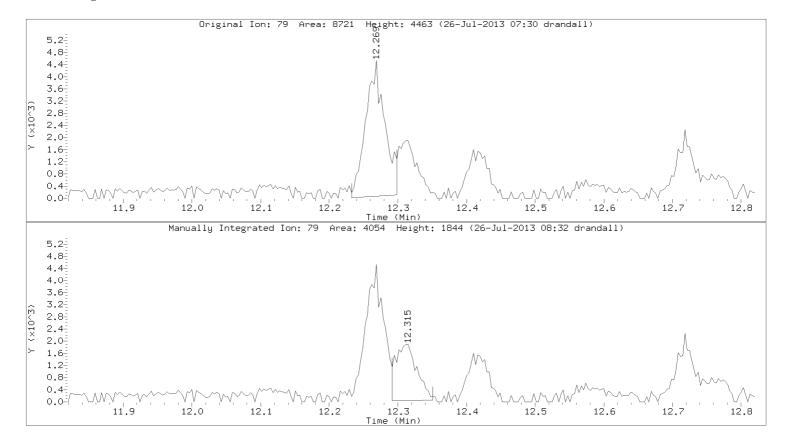
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 745 of 1066

Injection Date: 26-JUL-2013 03:02

Instrument: 10airD.i Lab Sample ID: 10236207009



Report Date: 26-Jul-2013 08:22

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 25

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)			
1 Propylene	41	2.965 2.982 (0.487) 184837	20.1881 29.1			
2 Dichlorodifluoromethane	85	2.991 3.008 (0.491) 20474	0.23211 0.334			
3 Dichlorotetrafluoroethane	85	Compound Not Detected.				
4 Chloromethane	50	Compound Not Detected.				
5 Vinyl chloride	62	Compound Not Detected.				
6 1,3-Butadiene	54	Compound Not Detected.				
7 Bromomethane	94	Compound Not Detected.				
8 Chloroethane	64	Compound Not Detected.				
9 Ethanol	31	3.500 3.494 (0.575) 12555	1.19474 1.72(QM)			
10 Vinyl Bromide	106	Compound Not Detected.				
11 Acrolein	56	Compound Not Detected.				
12 Trichlorofluoromethane	101	3.696 3.694 (0.607) 13310	0.13872 0.200(M)			
13 Acetone	43	3.736 3.726 (0.613) 459169	9.54674 13.7(M)			
14 Isopropyl Alcohol	45	Compound Not Detected.				
15 1,1-Dichloroethene	61	Compound Not Detected.				
16 Acrylonitrile	53	Compound Not Detected.				
17 Tert Butyl Alcohol	59	3.988 3.989 (0.655) 24938	0.49423 0.712(M)			
18 Freon 113	101	Compound Not Detected.				
19 Methylene chloride	49	4.103 4.094 (0.674) 5959	0.21868 0.315			
20 Allyl Chloride	76	Compound Not Detected.				
21 Carbon Disulfide	76	4.228 4.224 (0.694) 31659	0.39924 0.575			
22 trans-1,2-dichloroethene	96	Compound Not Detected.				
23 Methyl Tert Butyl Ether	73	Compound Not Detected.				
24 Vinyl Acetate	43	Compound Not Detected.				

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20625.d$ Report Date: 26-Jul-2013 08:22

			CONCENTRATIONS				
		QUANT SIG	ON-COLUMN FINAL				
Comp	ounds	MASS	RT EXP RT REL RT RESPONSE ( ppbv) ( ppbv)				
2	5 1,1-Dichloroethane	63	Compound Not Detected.				
\$ 2	6 Hexane-d14(S)	66	4.703 4.700 (0.772) 308502 8.80575 8.80				
2	7 Methyl Ethyl Ketone	72	4.775 4.779 (0.784) 38522 3.45942 4.98(M)				
	8 n-Hexane	57	4.821 4.818 (0.792) 30648 0.96231 1.38(QM)				
2	9 cis-1,2-Dichloroethene	96	Compound Not Detected.				
3	0 Ethyl Acetate	43	Compound Not Detected.				
3	1 Chloroform	83	Compound Not Detected.				
3	2 Tetrahydrofuran	42	Compound Not Detected.				
3	3 1,1,1-Trichloroethane	97	Compound Not Detected.				
3	4 1,2-Dichloroethane	62	Compound Not Detected.				
3	5 Benzene	78	5.884 5.887 (0.966) 45769 1.06770 1.54 (M)				
3	6 Carbon tetrachloride	117	Compound Not Detected.				
3	7 Cyclohexane	56	5.917 5.910 (0.971) 5643 0.68053 0.980(QM)				
3	8 1,4-Difluorobenzene	114	6.090 6.094 (1.000) 725505 10.0000				
3	9 2,2,4-Trimethylpentane	57	Compound Not Detected.				
4	0 Heptane	43	6.435 6.442 (1.057) 10330 0.84278 1.21(M)				
4	1 1,2-Dichloropropane	63	Compound Not Detected.				
4	2 Trichloroethene	130	Compound Not Detected.				
4	3 1,4-Dioxane	88	Compound Not Detected.				
4	4 Bromodichloromethane	83	Compound Not Detected.				
4	5 Methyl Isobutyl Ketone	43	7.235 7.229 (1.188) 3901 0.49929 0.719(M)				
4	6 cis-1,3-Dichloropropene	75	Compound Not Detected.				
4	7 trans-1,3-Dichloropropene	75	Compound Not Detected.				
4	8 Toluene-d8 (S)	98	7.842 7.848 (1.288) 509892 10.0632 10.1				
4	9 Toluene	91	7.930 7.940 (1.302) 152537 2.13966 3.08				
5	0 1,1,2-Trichloroethane	97	Compound Not Detected.				
5	1 Methyl Butyl Ketone	43	8.248 8.244 (0.852) 6066 0.49778 0.717				
5	2 Dibromochloromethane	129	Compound Not Detected.				
5	3 1,2-Dibromoethane	107	Compound Not Detected.				
5	4 Tetrachloroethene	166	8.911 8.918 (0.920) 5654 0.50687 0.730				
5	5 Chlorobenzene - d5	117	9.684 9.691 (1.000) 277579 10.0000				
5	6 Chlorobenzene	112	Compound Not Detected.				
5	7 Ethyl Benzene	91	10.035 10.039 (1.036) 51470 0.78478 1.13				
5	8 m&p-Xylene	91	10.199 10.213 (1.053) 167647 2.21520 3.19				
5	9 Bromoform	173	Compound Not Detected.				
6	O Styrene	104	10.701 10.708 (1.105) 7471 0.59986 0.864				
6	1 o-Xylene	91	10.777 10.783 (1.113) 54831 0.80833 1.16				
6	2 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.				
6	3 Isopropylbenzene	105	Compound Not Detected.				
6	4 N-Propylbenzene	91	12.111 12.121 (1.251) 21708 0.46077 0.664 (M)				
6	5 4-Ethyltoluene	105	12.311 12.321 (1.271) 32257 0.63764 0.918(M)				
6	6 1,3,5-Trimethylbenzene	105	12.416 12.426 (1.282) 32009 0.64509 0.929				
6	7 1,2,4-Trimethylbenzene	105	13.013 13.020 (1.344) 149298 2.04242 2.94				
6	8 1,3-Dichlorobenzene	146	Compound Not Detected.				
6	9 Sec- Butylbenzene	105	Compound Not Detected.				
7	0 1,4-dichlorobenzene-d4 (S)	150	13.449 13.459 (1.389) 104555 9.33164 9.33				
7	1 Benzyl Chloride	91	Compound Not Detected.				
7	2 1,4-Dichlorobenzene	146	Compound Not Detected.				
7	3 1,2-Dichlorobenzene	146	Compound Not Detected.				
7	4 N-Butylbenzene	91	Compound Not Detected.				
7	5 1,2,4-Trichlorobenzene	180	Compound Not Detected.				
7	6 Naphthalene	128	16.860 16.860 (1.741) 39150 1.26863 1.83				
	7 Hexachlorobutadiene	225	Compound Not Detected.				

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Report Date: 26-Jul-2013 08:22

# QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

10236207 749 of 1066

Report Date: 26-Jul-2013 08:22

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20625.d

Lab Smp Id: 10236207010 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
======================================	========	=======	=======	========	======
38 1,4-Difluorobenze 55 Chlorobenzene - d	579775 221404	347865 132842	811685 309966	725505 277579	25.14 25.37
	221101	132042	303300	277373	25.5

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

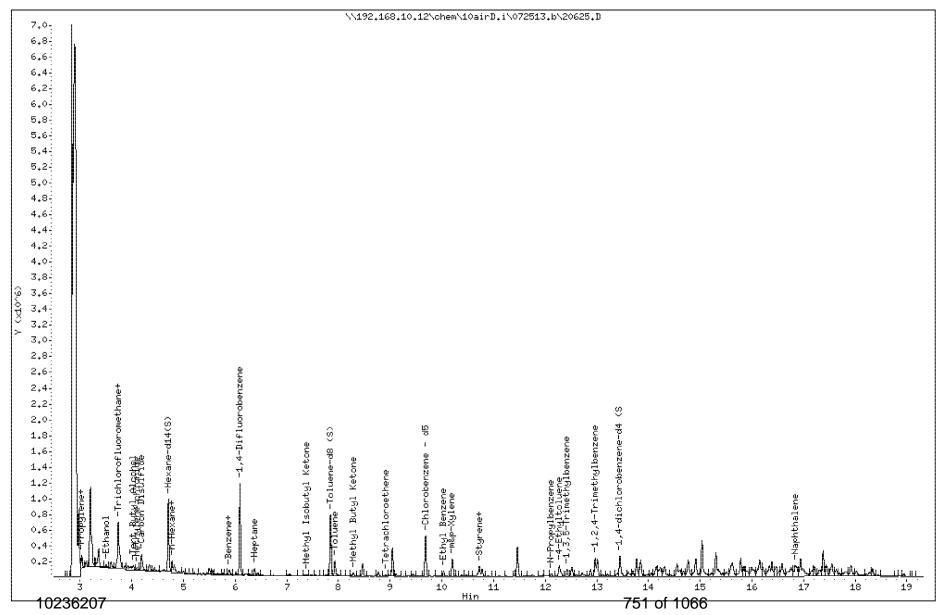
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 01:00

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 26-JUL-2013 01:00

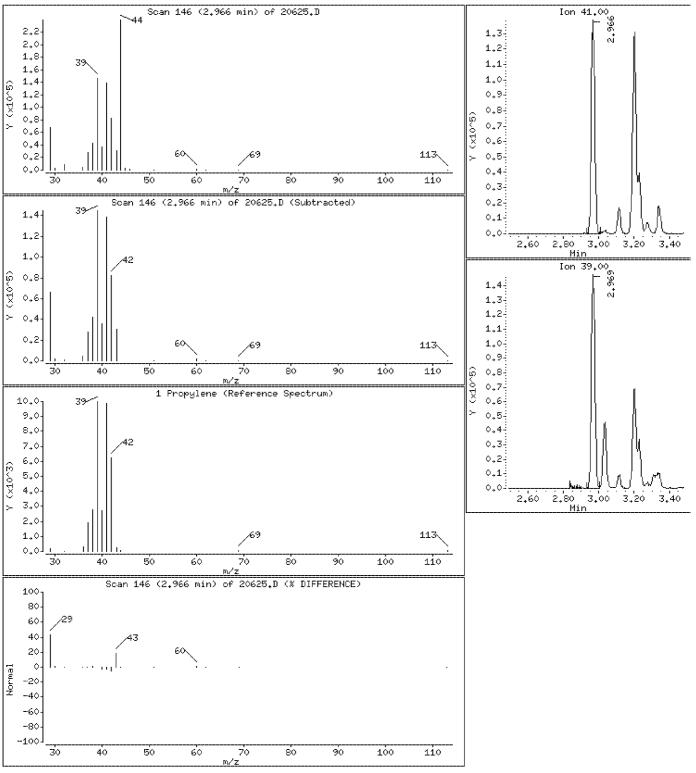
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 752 of 1066

Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

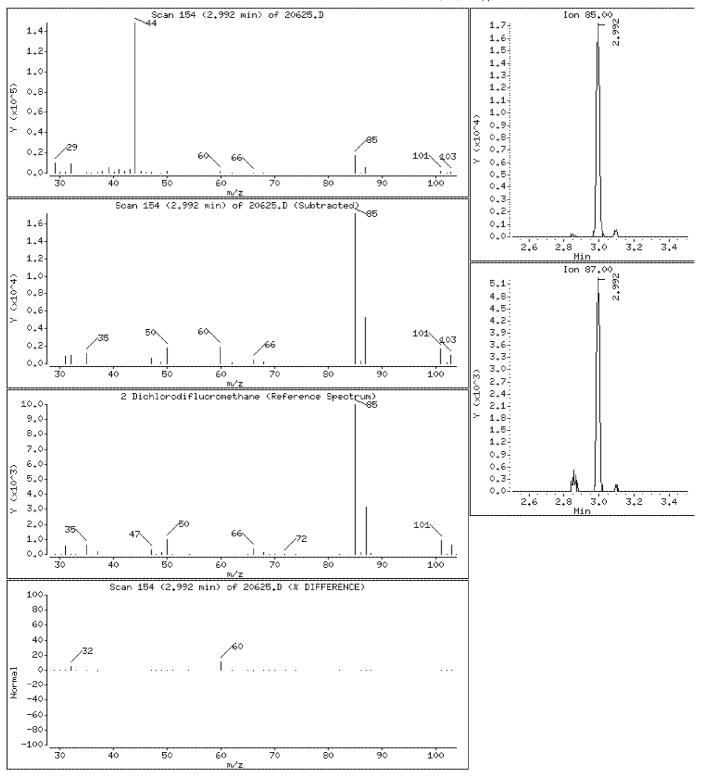
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 753 of 1066

Date : 26-JUL-2013 01:00

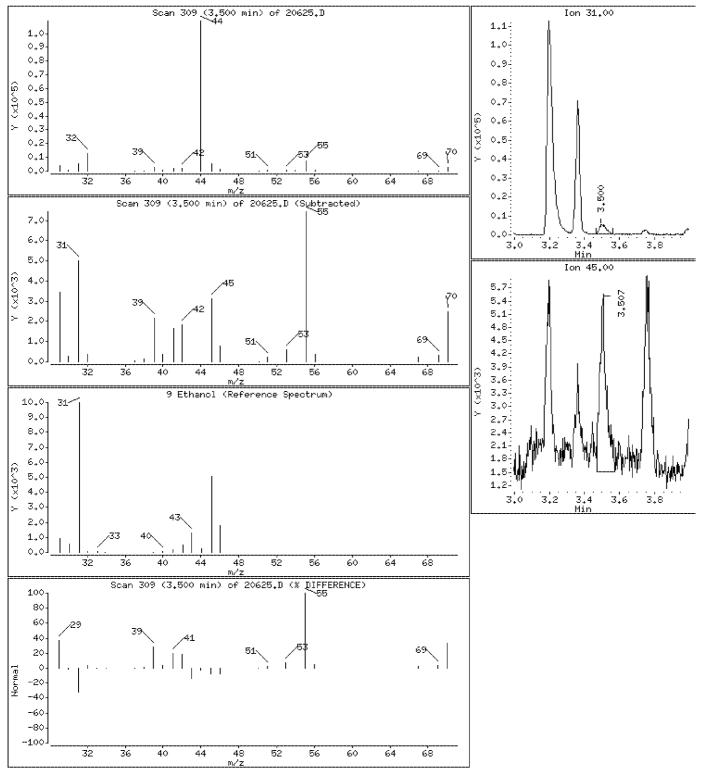
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 754 of 1066

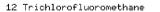
Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

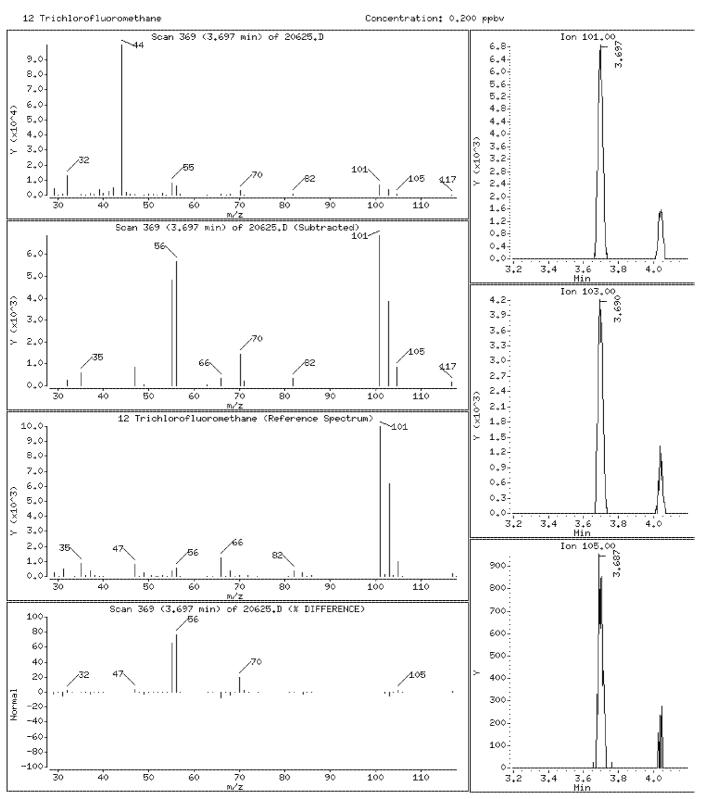
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.200 ppbv



Date : 26-JUL-2013 01:00

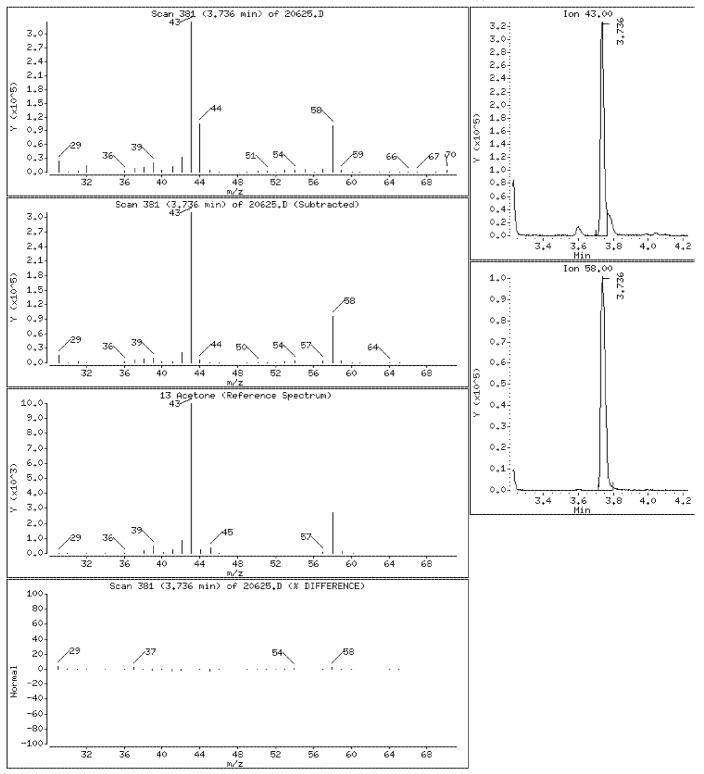
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 756 of 1066

Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

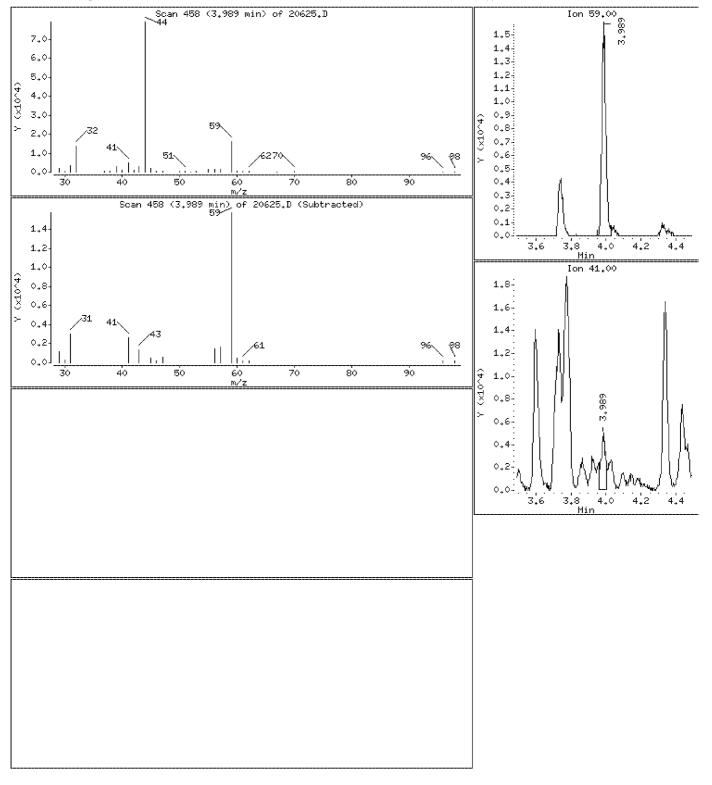
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.712 ppbv



10236207 757 of 1066

Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

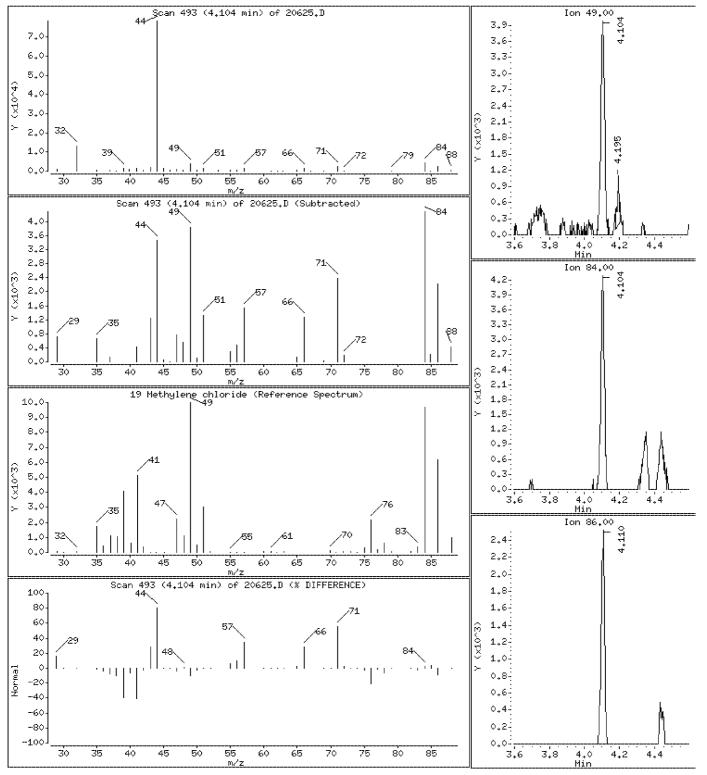
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.315 ppbv



10236207 758 of 1066

Date : 26-JUL-2013 01:00

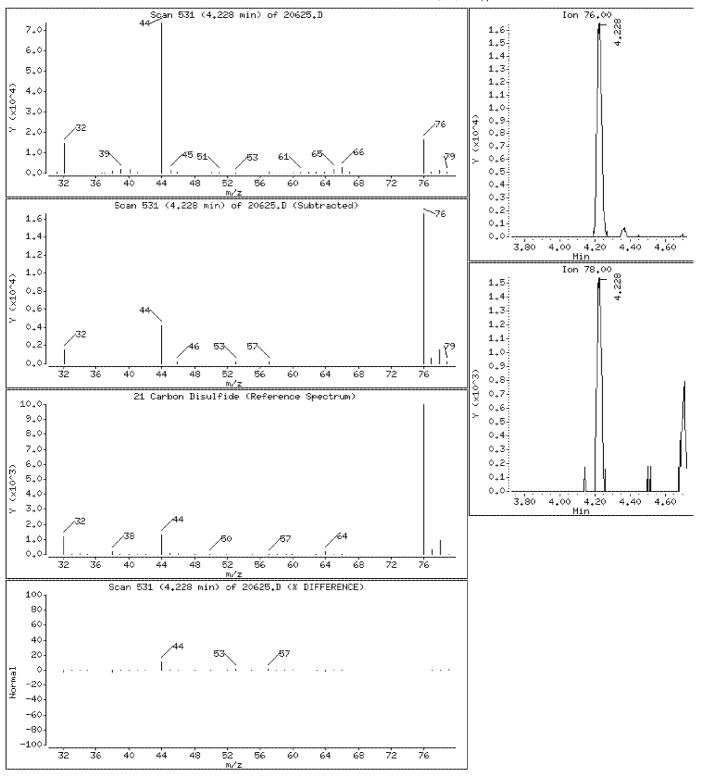
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 759 of 1066

Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

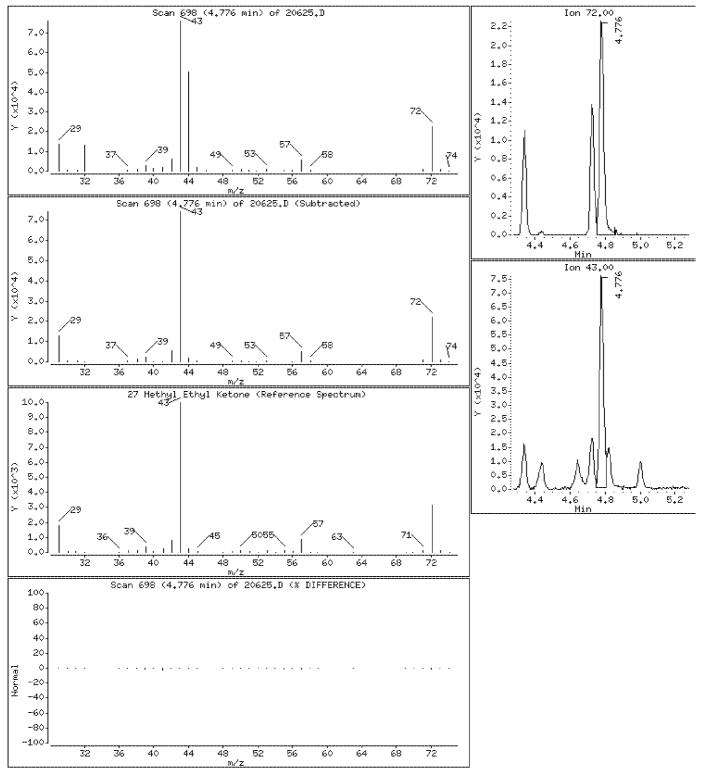
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 4.98 ppbv



10236207 760 of 1066

Date : 26-JUL-2013 01:00

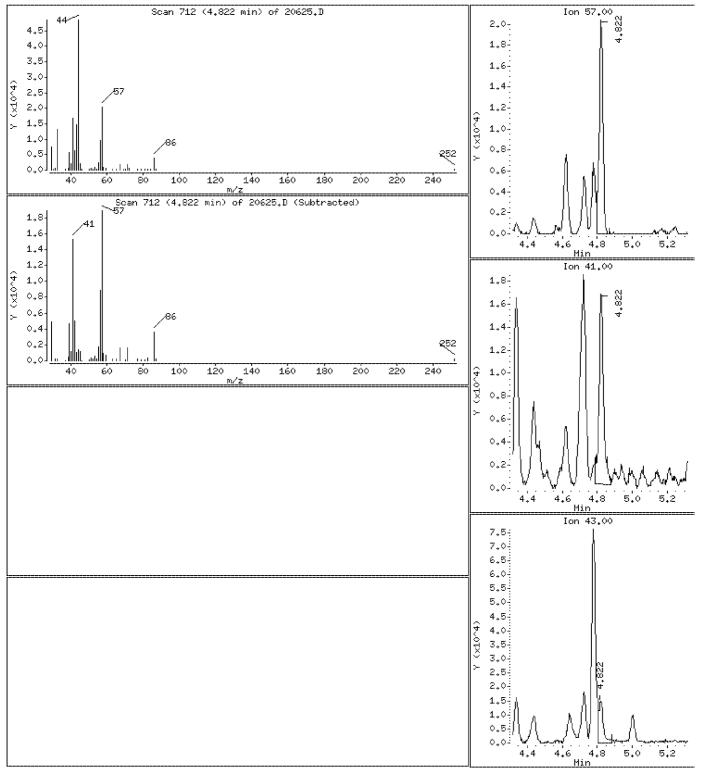
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 1.38 ppbv



10236207 761 of 1066

Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

Sample Info:

1.5

-20

-40

-60

-80

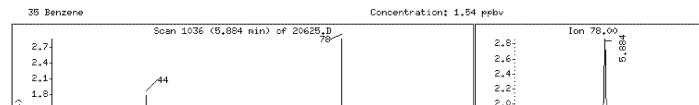
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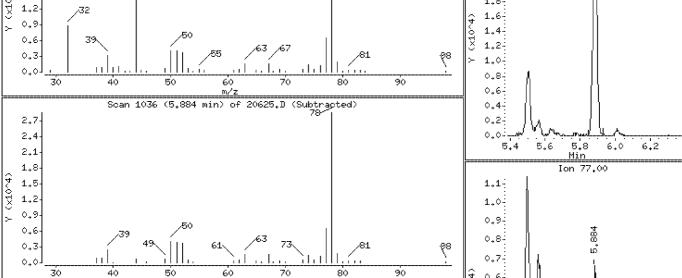
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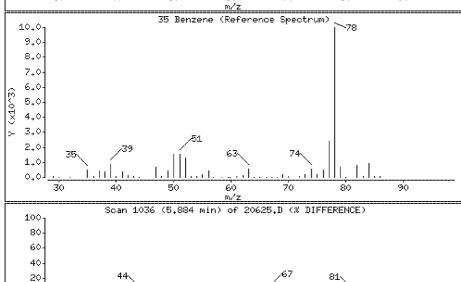
50

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



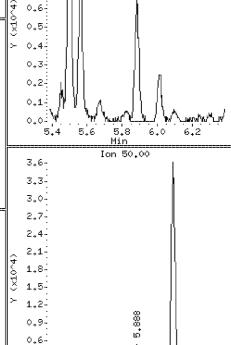




60

70

80



5.8

6.2

6.0

0.3

5.4

5.6

10236207 762 of 1066

90

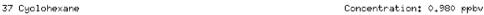
Date : 26-JUL-2013 01:00

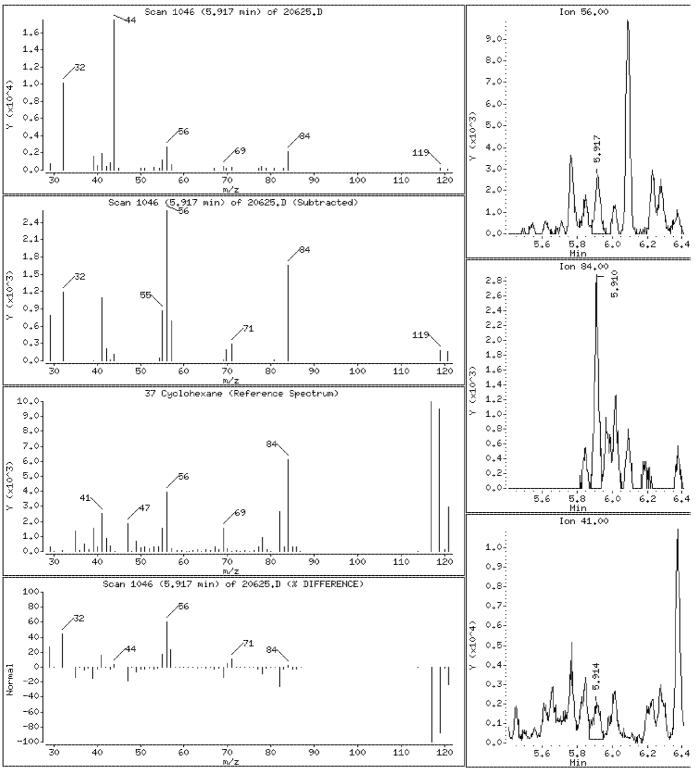
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 763 of 1066

Date : 26-JUL-2013 01:00

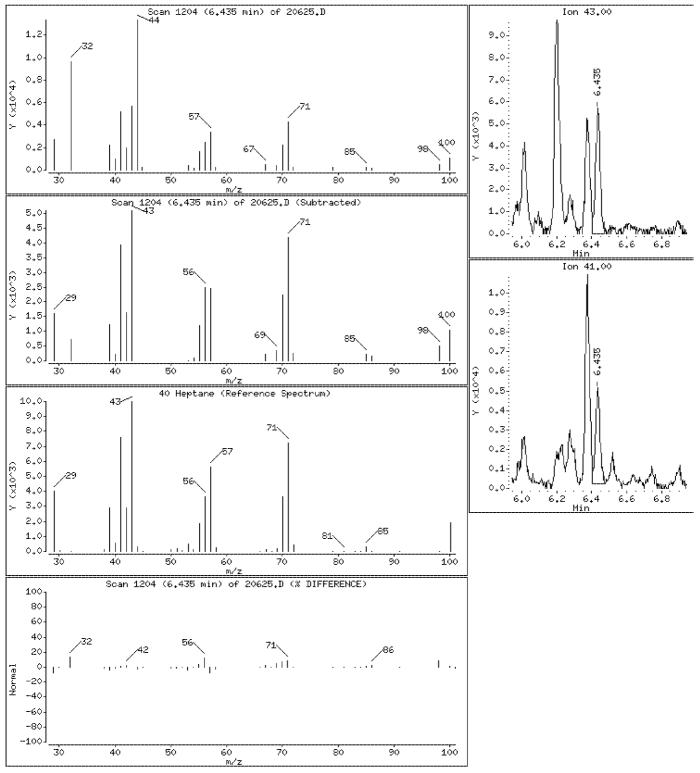
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 764 of 1066

Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

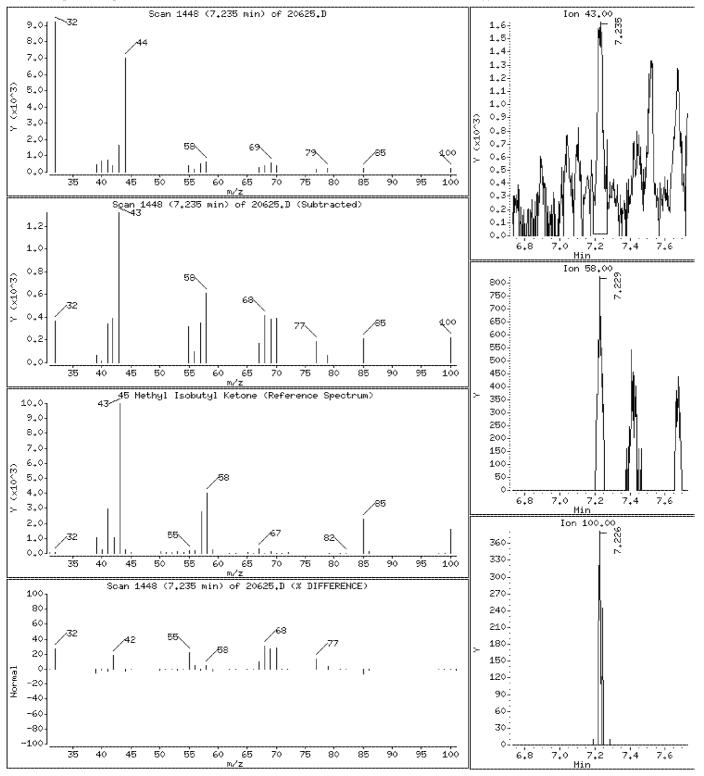
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 765 of 1066

Date : 26-JUL-2013 01:00

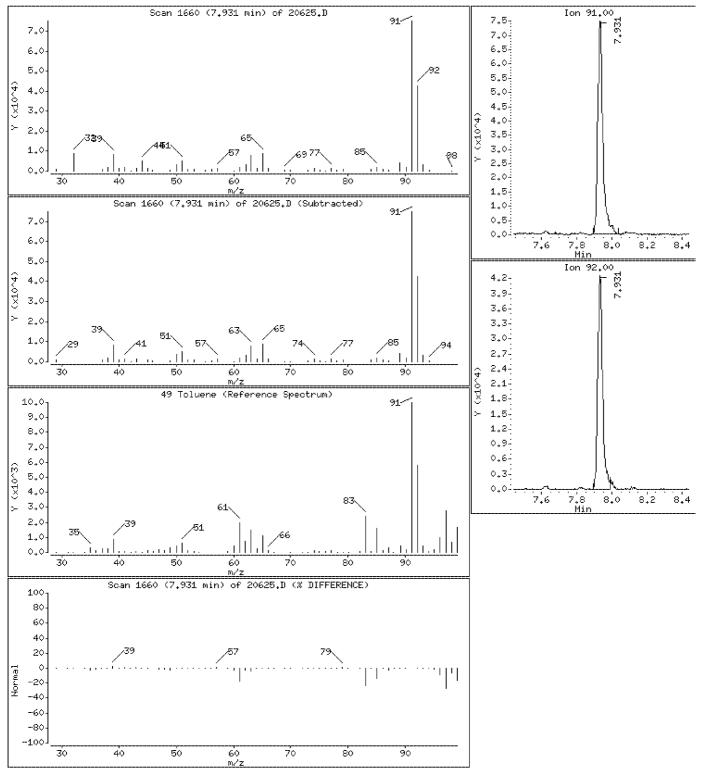
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 766 of 1066

Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

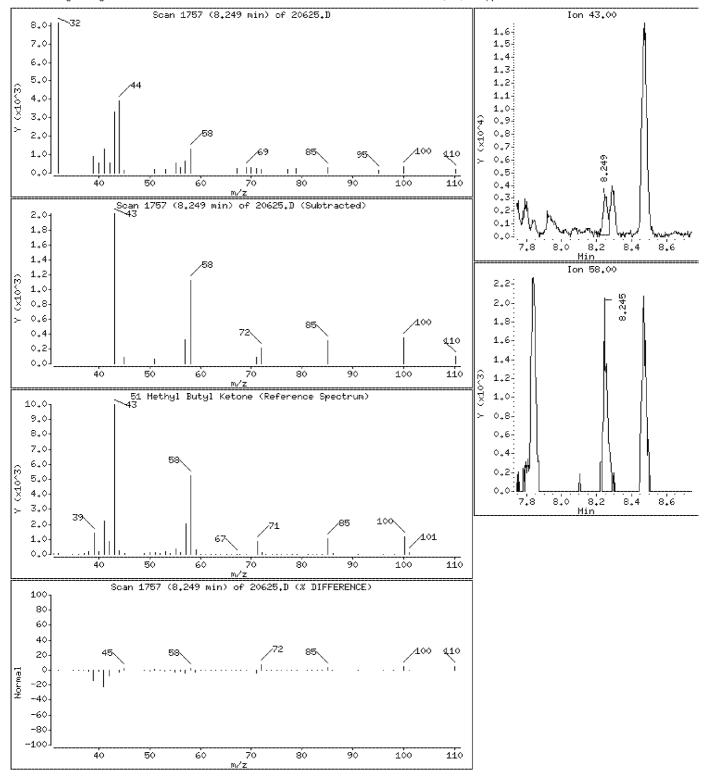
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

51 Methyl Butyl Ketone

Concentration: 0.717 ppbv



10236207 767 of 1066

Date : 26-JUL-2013 01:00

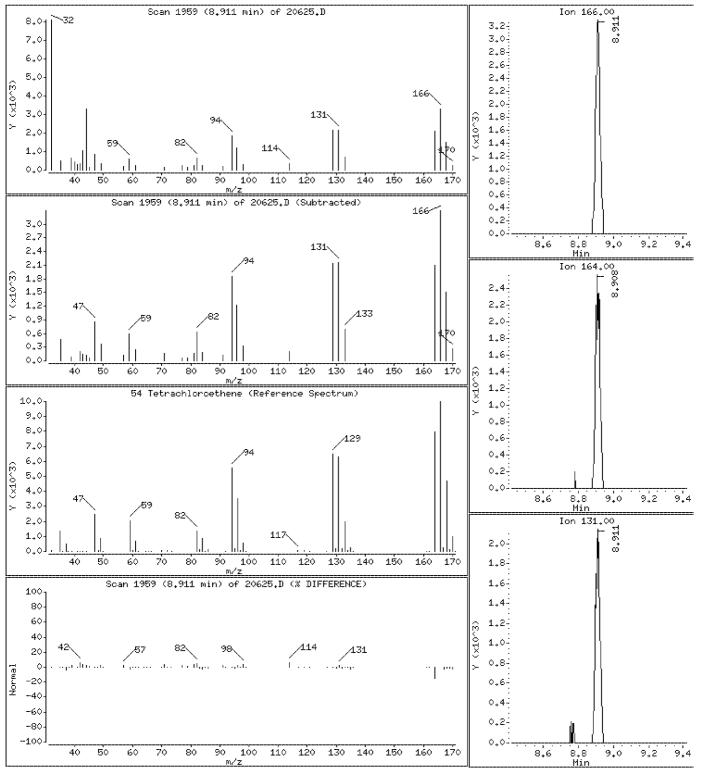
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 768 of 1066

Date : 26-JUL-2013 01:00

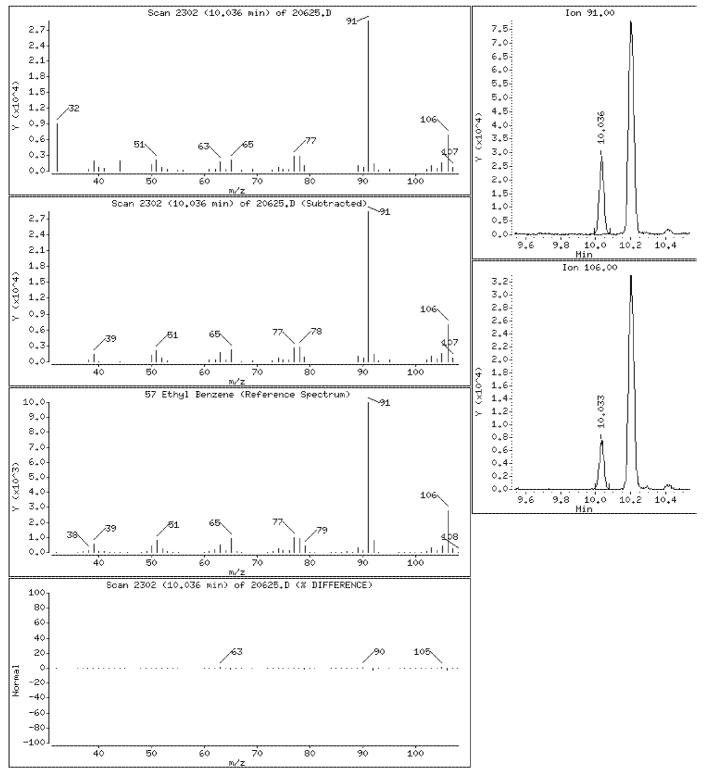
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 769 of 1066

Date : 26-JUL-2013 01:00

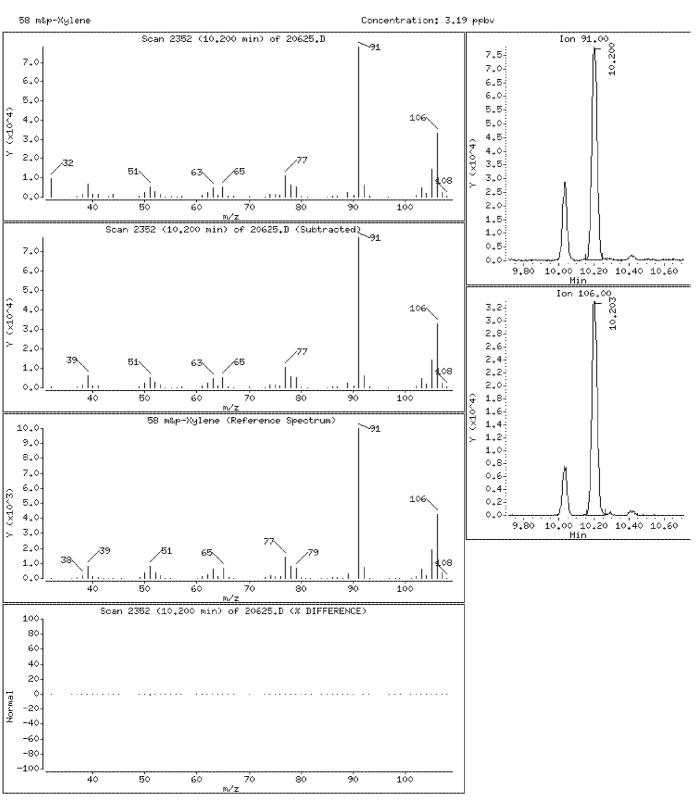
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





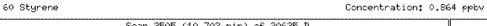
Date : 26-JUL-2013 01:00

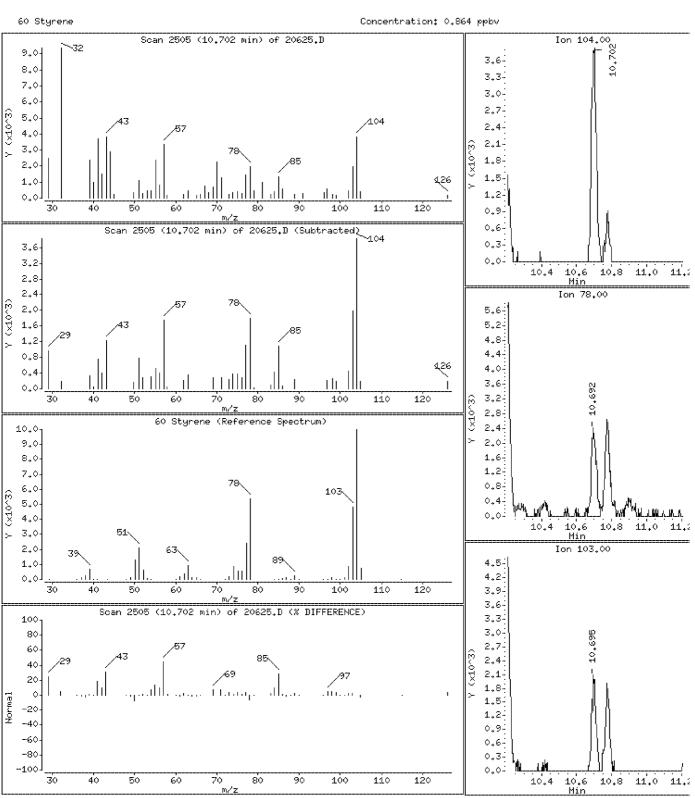
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 01:00

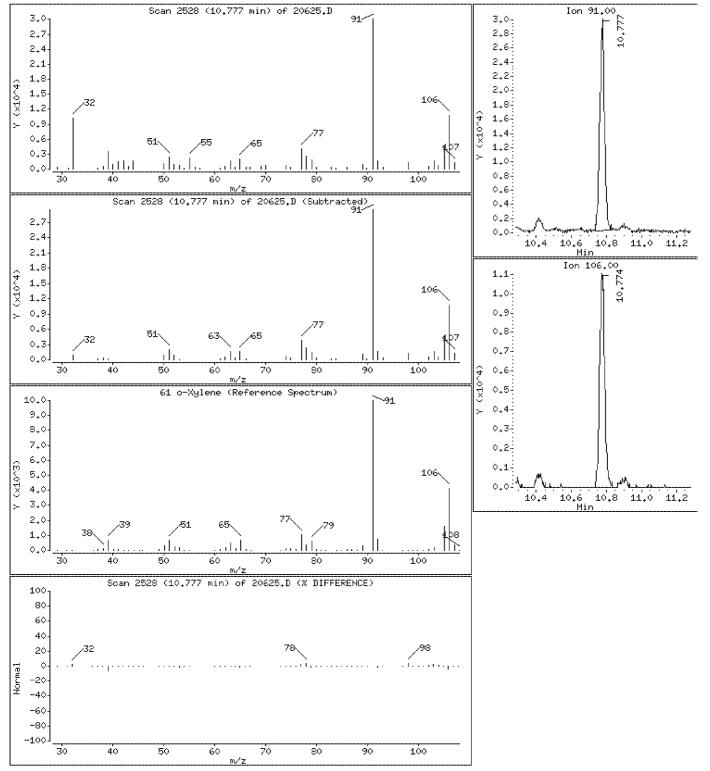
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 772 of 1066

Date : 26-JUL-2013 01:00

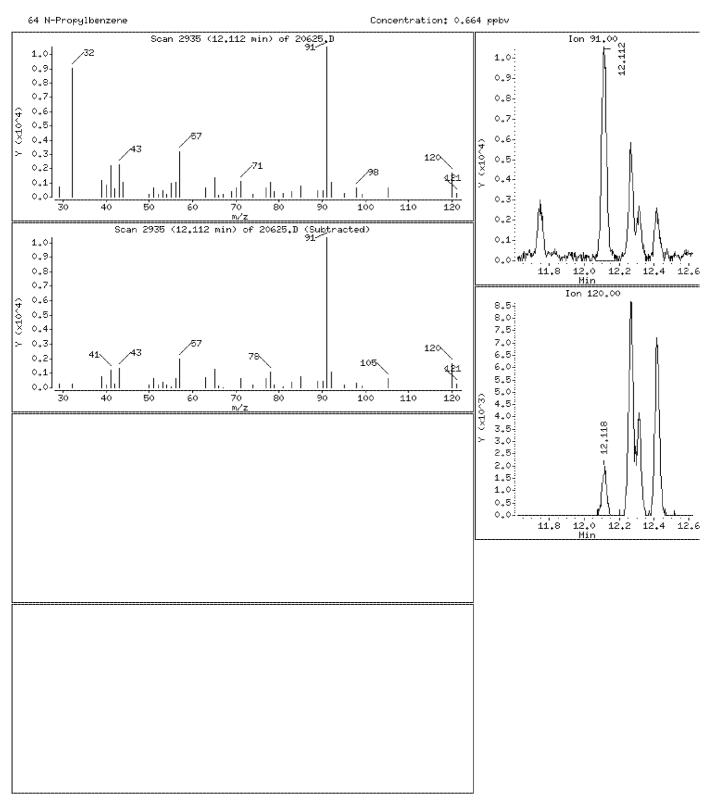
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 01:00

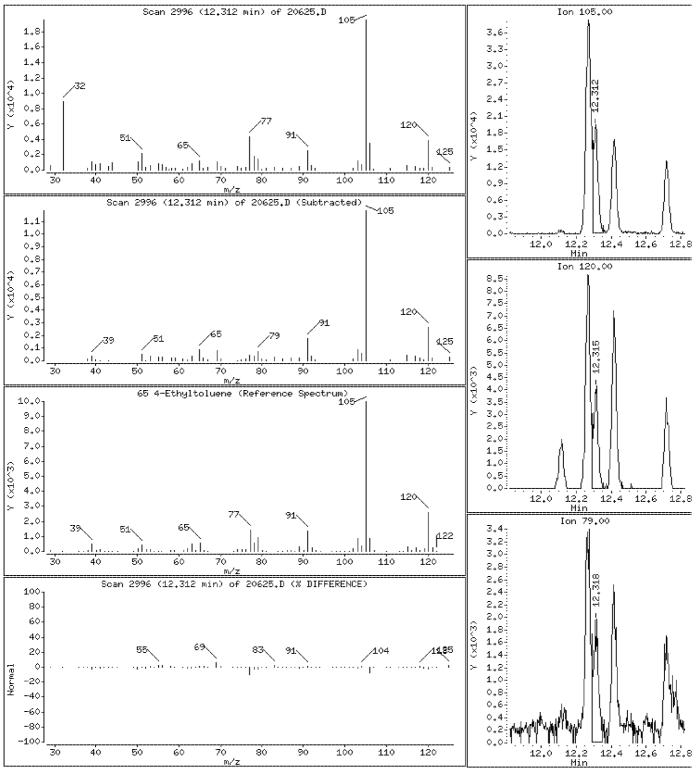
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 774 of 1066

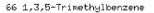
Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

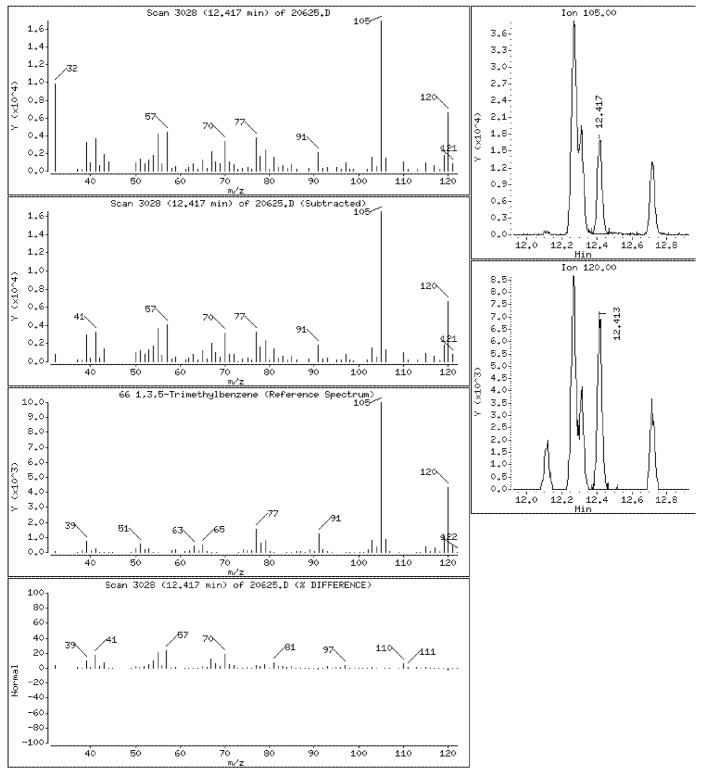
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 775 of 1066

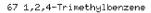
Date : 26-JUL-2013 01:00

Client ID: Instrument: 10airD.i

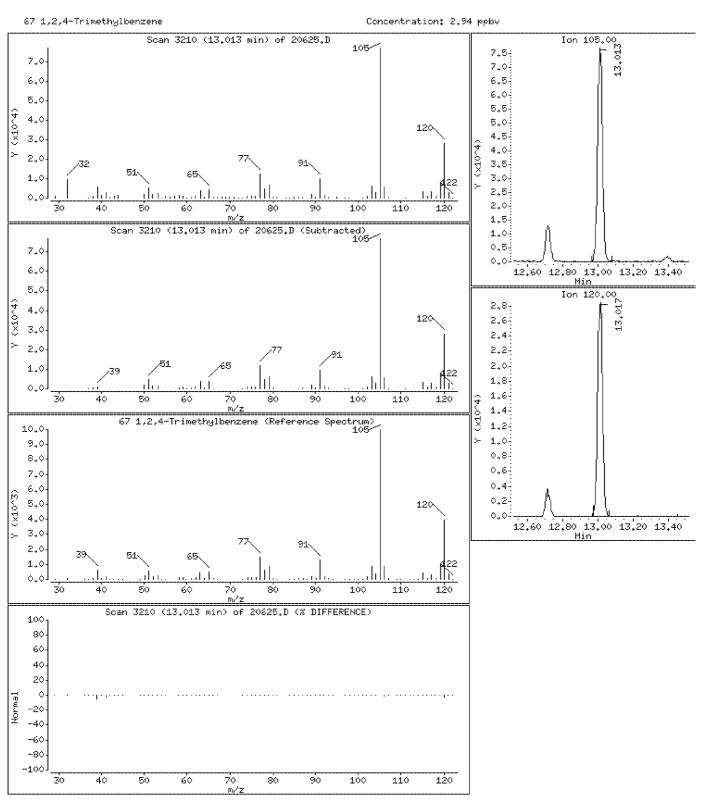
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 2.94 ppbv



Date : 26-JUL-2013 01:00

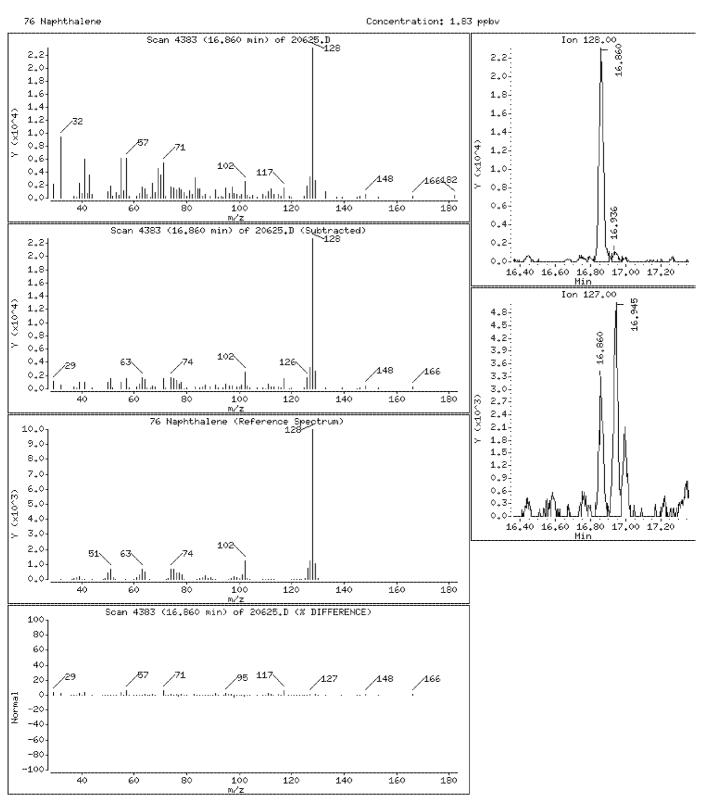
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



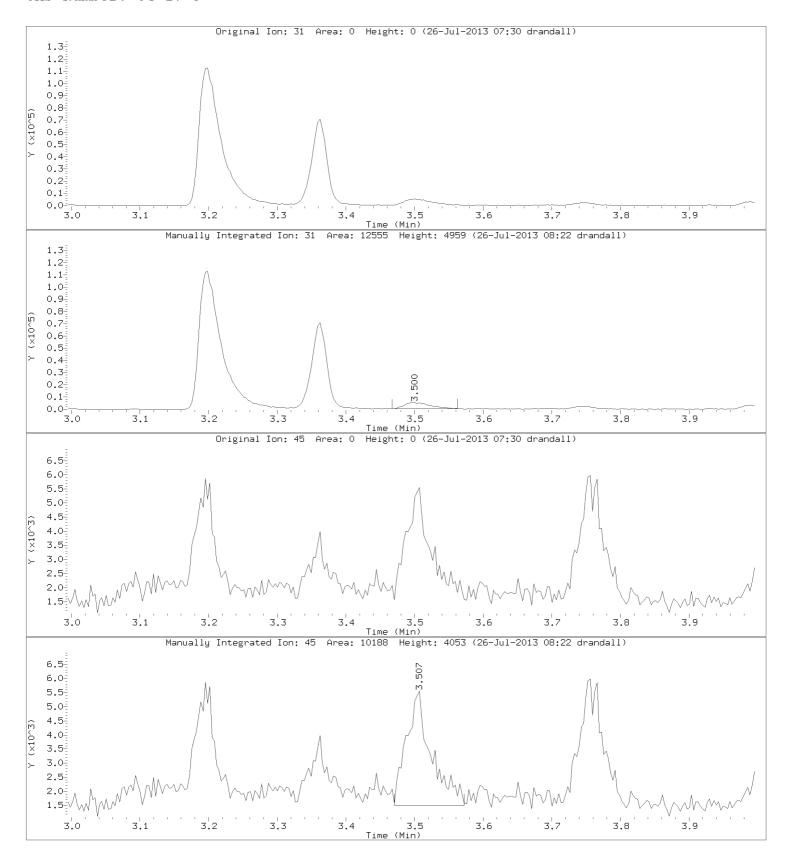


Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: Ethanol CAS Number: 64-17-5



10236207 778 of 1066

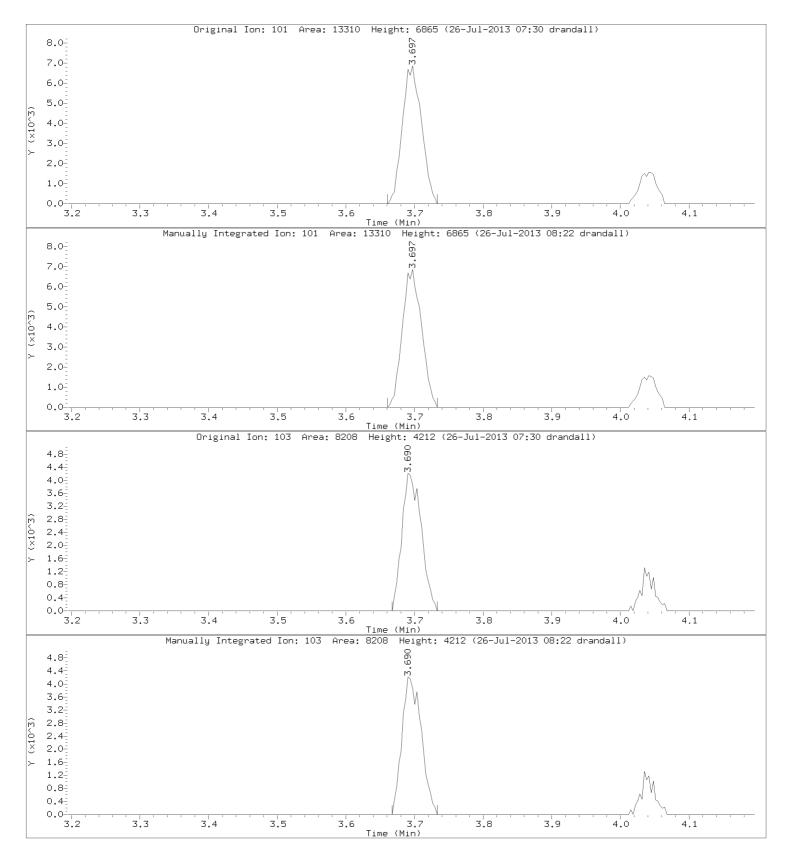
Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: Trichlorofluoromethane

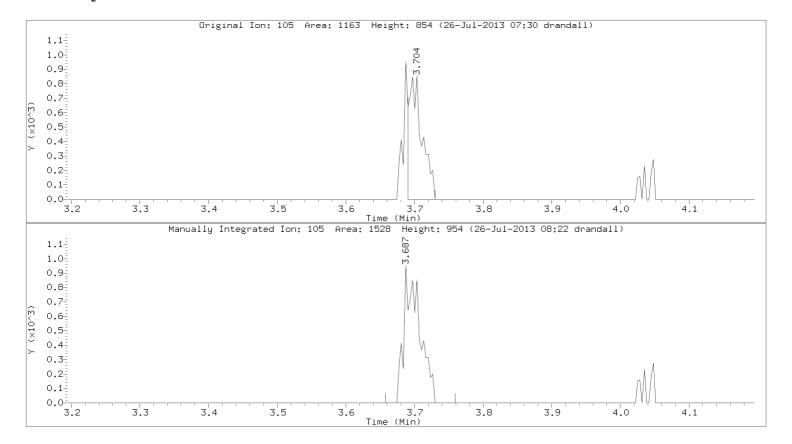
CAS Number: 75-69-4



10236207 779 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i Lab Sample ID: 10236207010

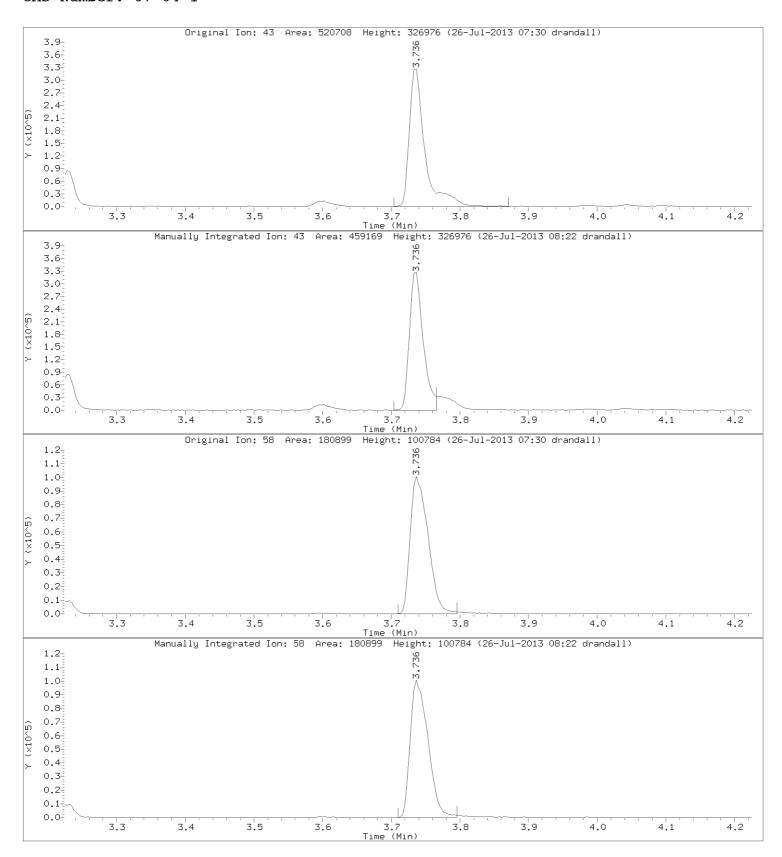


Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: Acetone CAS Number: 67-64-1



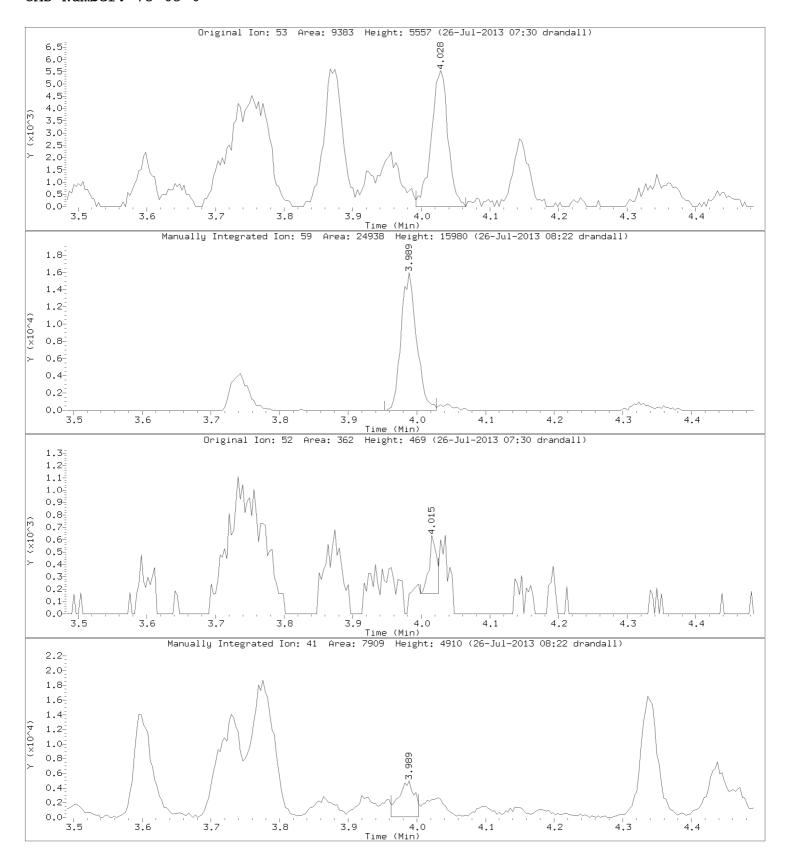
10236207 781 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: Tert Butyl Alcohol CAS Number: 75-65-0



10236207 782 of 1066

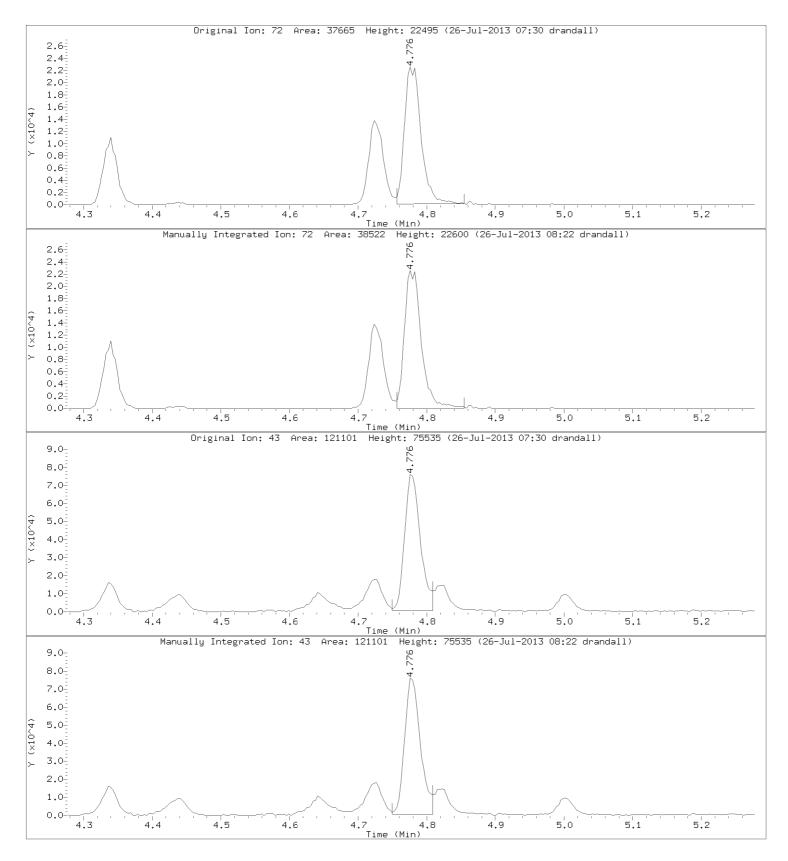
Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: Methyl Ethyl Ketone

CAS Number: 78-93-3



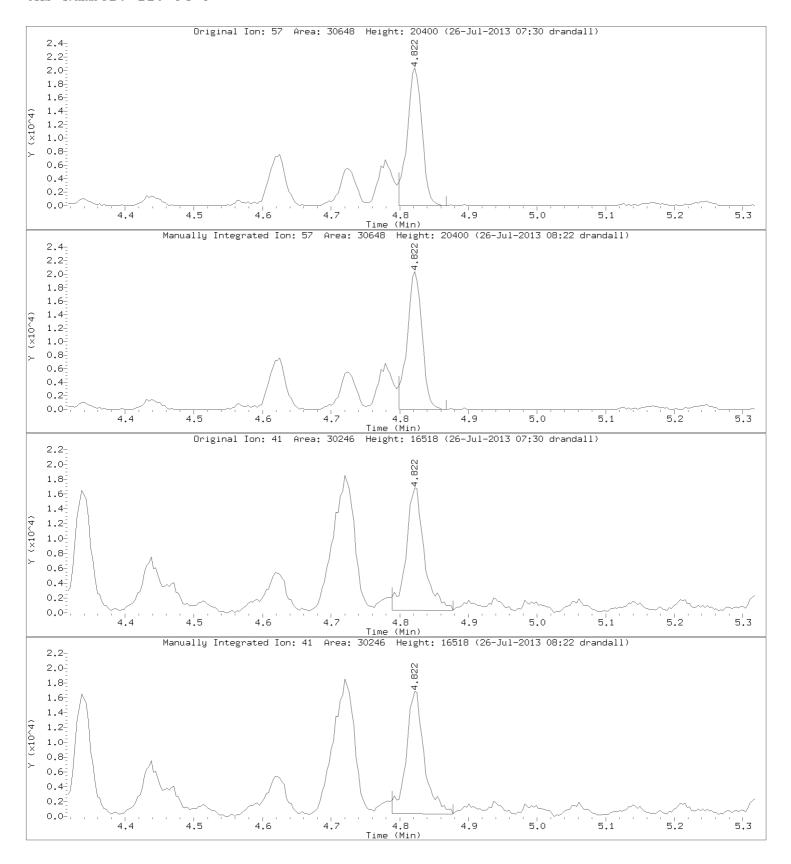
10236207 783 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

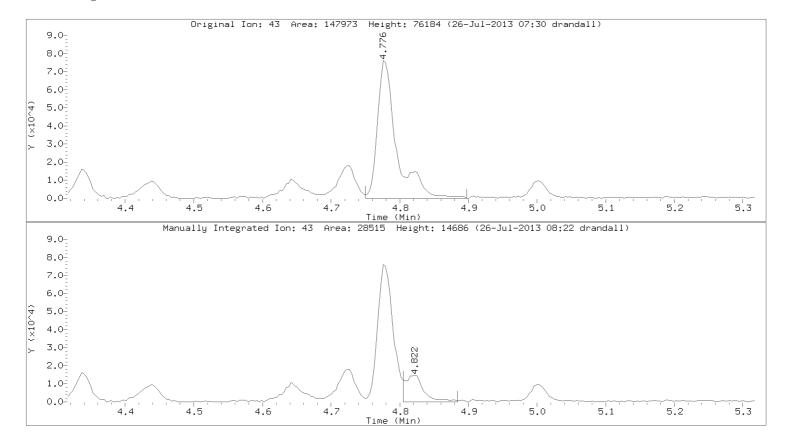
Compound: n-Hexane CAS Number: 110-54-3



10236207 784 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i Lab Sample ID: 10236207010

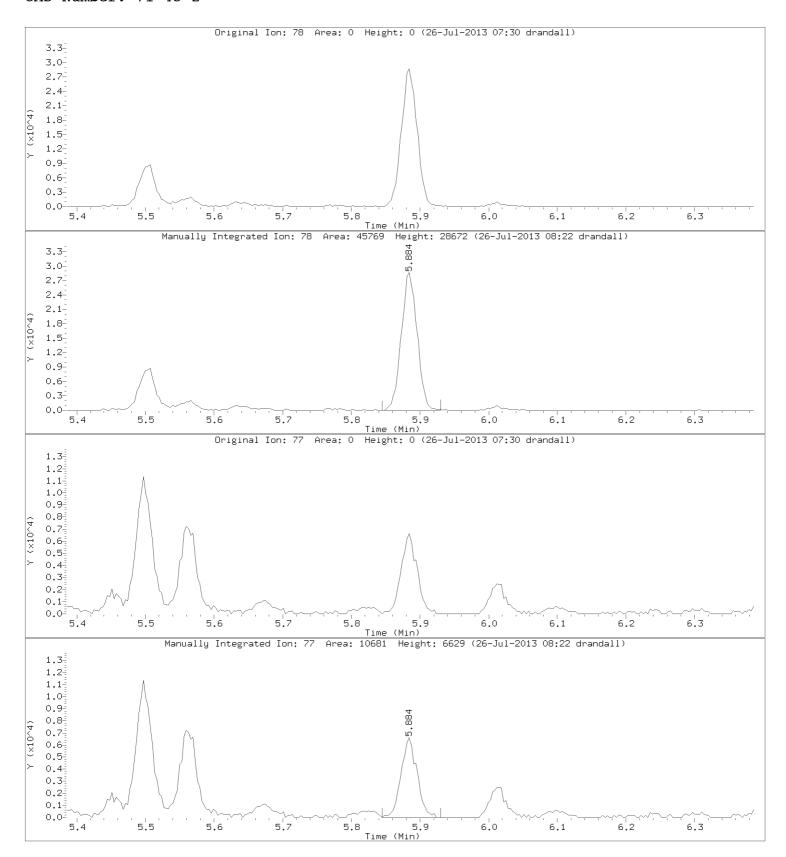


Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

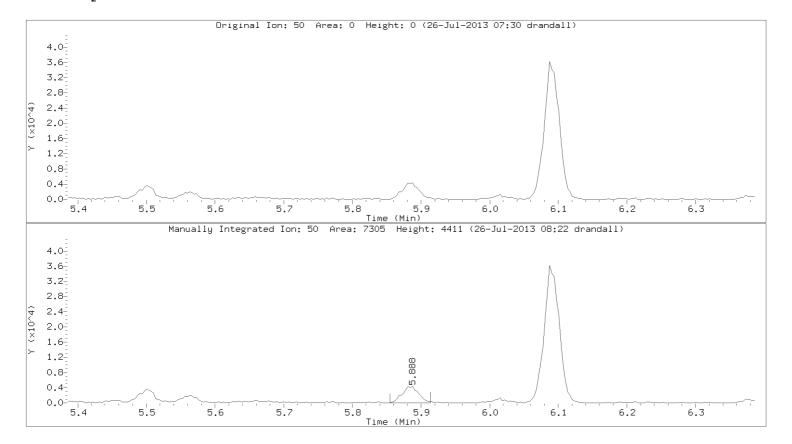
Compound: Benzene CAS Number: 71-43-2



10236207 786 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i Lab Sample ID: 10236207010

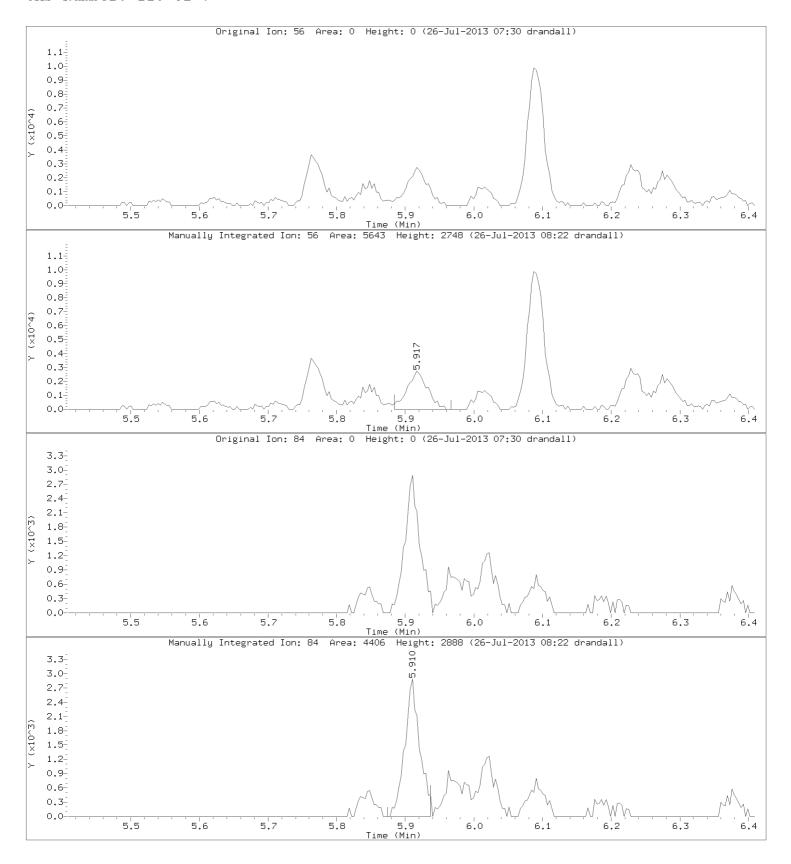


Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

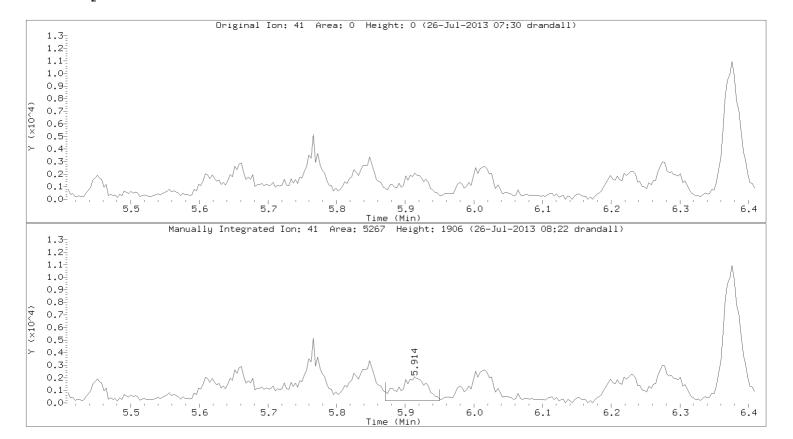
Compound: Cyclohexane CAS Number: 110-82-7



10236207 788 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i Lab Sample ID: 10236207010

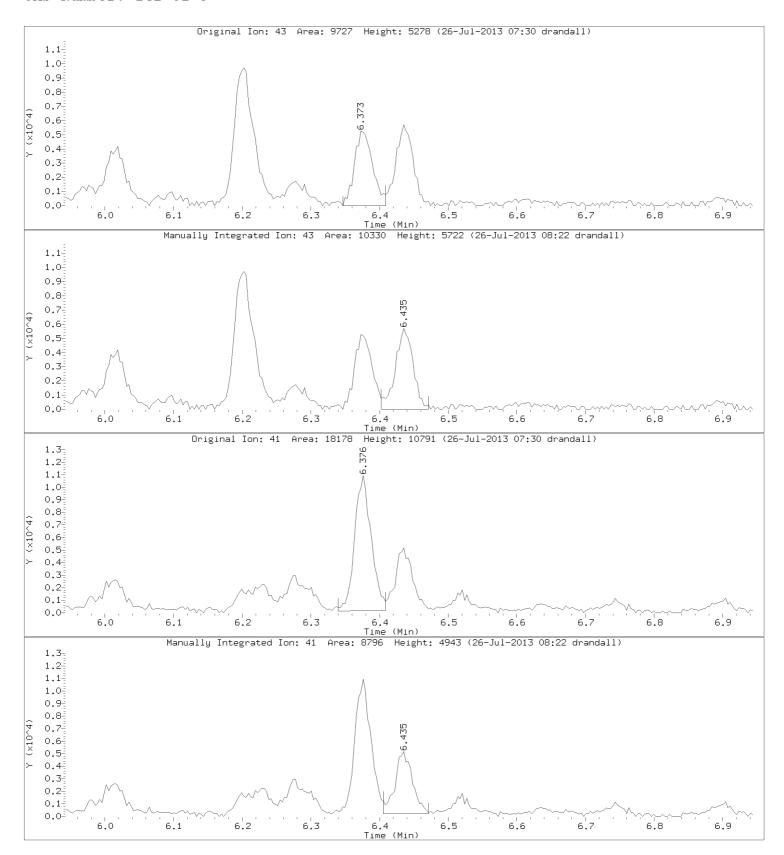


Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: Heptane CAS Number: 142-82-5



10236207 790 of 1066

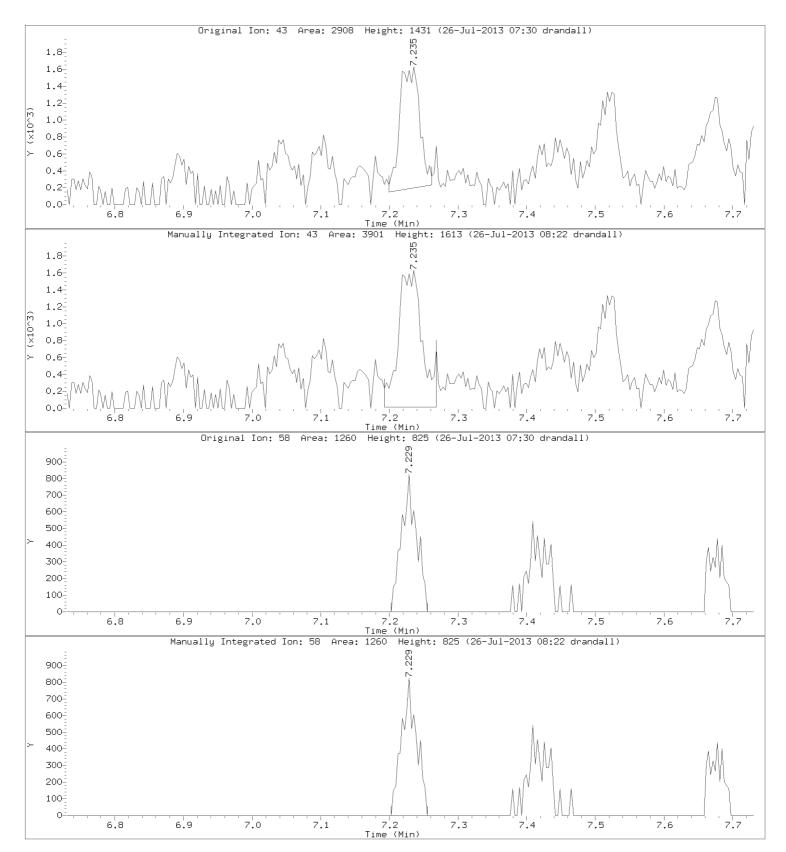
Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: Methyl Isobutyl Ketone

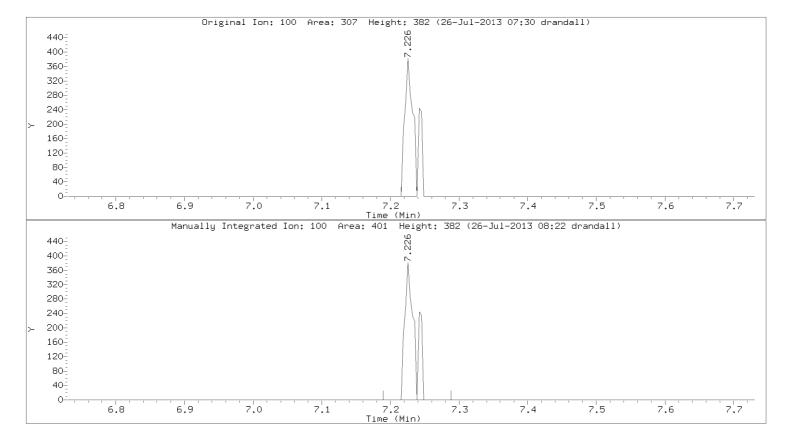
CAS Number: 108-10-1



10236207 791 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i Lab Sample ID: 10236207010

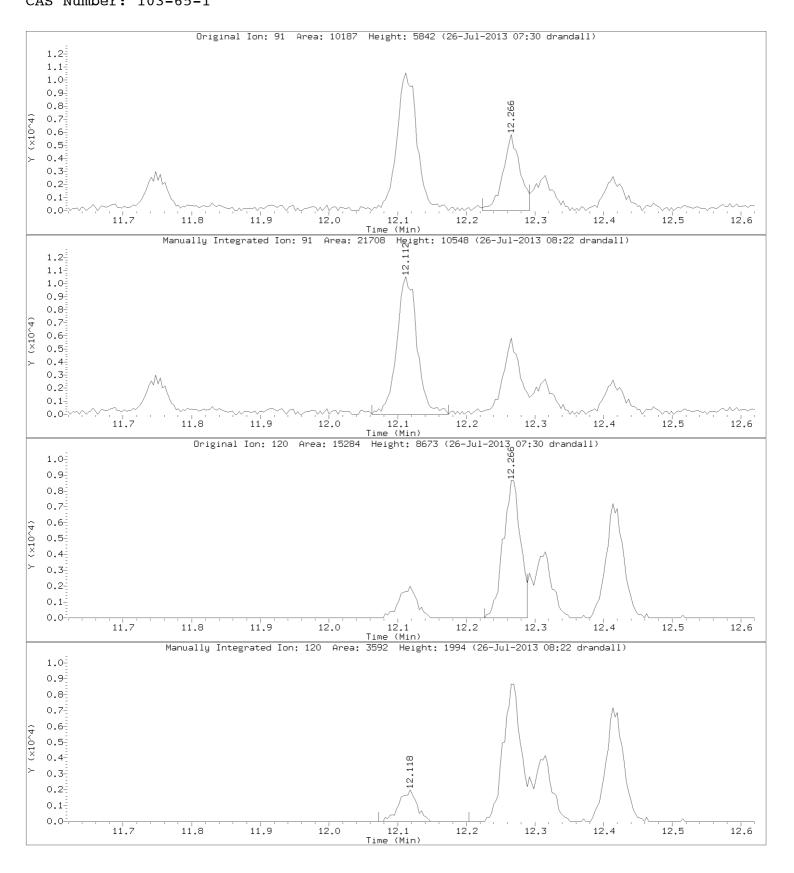


Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

Compound: N-Propylbenzene CAS Number: 103-65-1



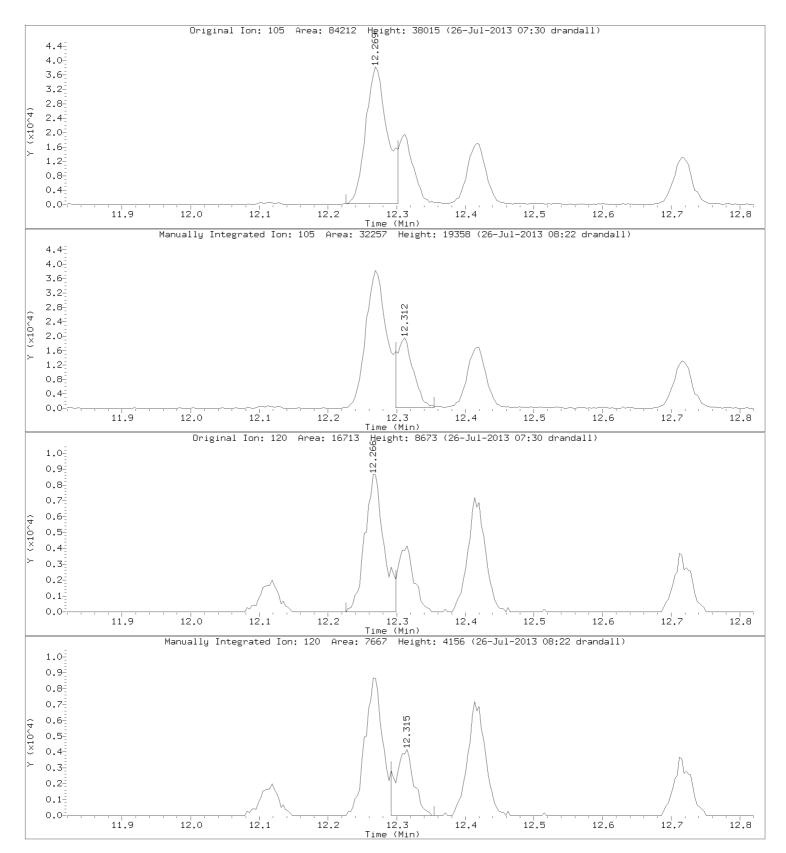
10236207 793 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i

Lab Sample ID: 10236207010

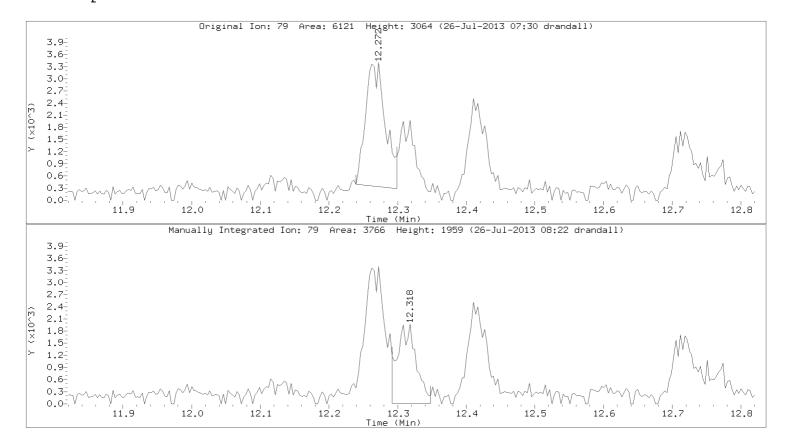
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 794 of 1066

Injection Date: 26-JUL-2013 01:00

Instrument: 10airD.i Lab Sample ID: 10236207010



Report Date: 26-Jul-2013 08:11

### Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20620.d Lab Smp Id: 10236207011 Inj Date: 25-JUL-2013 22:27 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 20

Dil Factor: 1.49000

Integrator: HP RTE Compound Sublist: all.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description		
DF Uf		Dilution Factor ng unit correction factor		
Cpnd Variable		Local Compound Variable		

Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)		
1 Propylene	41	2.975 2.982 (0.489) 208242	22.5284 33.6		
2 Dichlorodifluoromethane	85	3.001 3.008 (0.493) 22050	0.24776 0.369		
3 Dichlorotetrafluoroethane	85	Compound Not Detected.			
4 Chloromethane	50	Compound Not Detected.			
5 Vinyl chloride	62	Compound Not Detected.			
6 1,3-Butadiene	54	Compound Not Detected.			
7 Bromomethane	94	Compound Not Detected.			
8 Chloroethane	64	Compound Not Detected.			
9 Ethanol	31	3.499 3.494 (0.575) 72323	6.82107 10.2(M)		
10 Vinyl Bromide	106	Compound Not Detected.			
11 Acrolein	56	Compound Not Detected.			
12 Trichlorofluoromethane	101	3.700 3.694 (0.607) 13230	0.13666 0.204 (M)		
13 Acetone	43	3.729 3.726 (0.612) 412170	8.49337 12.6		
14 Isopropyl Alcohol	45	Compound Not Detected.			
15 1,1-Dichloroethene	61	3.998 3.979 (0.656) 7324	0.17011 0.253(QM)		
16 Acrylonitrile	53	Compound Not Detected.			
17 Tert Butyl Alcohol	59	3.985 3.989 (0.654) 26943	0.52922 0.788(QM)		
18 Freon 113	101	Compound Not Detected.			
19 Methylene chloride	49	4.096 4.094 (0.673) 16760	0.60957 0.908		
20 Allyl Chloride	76	Compound Not Detected.			
21 Carbon Disulfide	76	4.224 4.224 (0.694) 24021	0.30022 0.447		
22 trans-1,2-dichloroethene	96	Compound Not Detected.			
23 Methyl Tert Butyl Ether	73	Compound Not Detected.			
24 Vinyl Acetate	43	Compound Not Detected.			

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20620.d$ Report Date: 26-Jul-2013 08:11

			CONCENTRATIONS				
		QUANT SIG	ON-COLUMN FINAL				
Co	mpounds	MASS	RT EXP RT REL RT RESPONSE ( ppbv) ( ppbv)				
==	25 1,1-Dichloroethane	==== 63	Compound Not Detected.				
Ś	26 Hexane-d14(S)	66	4.700 4.700 (0.772) 305581 8.64481 8.64				
	27 Methyl Ethyl Ketone	72	4.775 4.779 (0.784) 31500 2.80366 4.18				
	28 n-Hexane	57	4.818 4.818 (0.791) 58298 1.81421 2.70 (M)				
	29 cis-1,2-Dichloroethene	96	Compound Not Detected.				
	30 Ethyl Acetate	43	Compound Not Detected.				
	31 Chloroform	83	Compound Not Detected.				
	32 Tetrahydrofuran	42	Compound Not Detected.				
	33 1,1,1-Trichloroethane	97	Compound Not Detected.				
	34 1,2-Dichloroethane	62	Compound Not Detected.				
	35 Benzene	78	5.880 5.887 (0.966) 352343 5.53720 8.25				
	36 Carbon tetrachloride	117	Compound Not Detected.				
	37 Cyclohexane	56	5.916 5.910 (0.971) 16450 1.09307 1.63(QM)				
*	38 1,4-Difluorobenzene	114	6.090 6.094 (1.000) 732014 10.0000				
	39 2,2,4-Trimethylpentane	57	6.271 6.271 (1.030) 23719 0.69545 1.04 (QM)				
	40 Heptane	43	6.434 6.442 (1.057) 28530 1.53798 2.29				
	41 1,2-Dichloropropane	63	Compound Not Detected.				
	42 Trichloroethene	130	Compound Not Detected.				
	43 1,4-Dioxane	88	Compound Not Detected.				
	44 Bromodichloromethane	83	Compound Not Detected.				
	45 Methyl Isobutyl Ketone	43	Compound Not Detected.				
	46 cis-1,3-Dichloropropene	75	Compound Not Detected.				
	47 trans-1,3-Dichloropropene	75	Compound Not Detected.				
\$	48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 505217 9.88228 9.88				
4	49 Toluene	91	7.933 7.940 (1.303) 485488 5.83270 8.69				
	50 1,1,2-Trichloroethane	97	Compound Not Detected.				
	51 Methyl Butyl Ketone	43	Compound Not Detected.				
	52 Dibromochloromethane	129					
	53 1,2-Dibromoethane	107	Compound Not Detected.				
	54 Tetrachloroethene	166	8.907 8.918 (0.920) 5445 0.50554 0.753				
*	55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 270124 10.0000				
	56 Chlorobenzene	112	Compound Not Detected.				
	57 Ethyl Benzene	91	10.032 10.039 (1.036) 97080 1.22499 1.82				
	58 m&p-Xylene	91	10.202 10.213 (1.053) 260759 3.36542 5.01				
	59 Bromoform	173	Compound Not Detected.				
	60 Styrene	104	10.704 10.708 (1.105) 7688 0.60717 0.905 (M)				
	61 o-Xylene	91	10.776 10.783 (1.113) 84042 1.15868 1.73				
	62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.				
	63 Isopropylbenzene	105	Compound Not Detected.				
	64 N-Propylbenzene	91	12.114 12.121 (1.251) 22704 0.47255 0.704 (M)				
	65 4-Ethyltoluene	105	12.314 12.321 (1.272) 41308 0.73255 1.09 (M)				
	66 1,3,5-Trimethylbenzene	105	12.419 12.426 (1.282) 29708 0.62938 0.938				
	67 1,2,4-Trimethylbenzene	105	13.013 13.020 (1.344) 138155 1.96209 2.92				
	68 1,3-Dichlorobenzene	146	Compound Not Detected.				
	69 Sec- Butylbenzene	105	Compound Not Detected.				
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.446 13.459 (1.388) 107513 9.86047 9.86				
4	71 Benzyl Chloride	91	Compound Not Detected.				
	72 1,4-Dichlorobenzene	146	Compound Not Detected.				
	73 1,2-Dichlorobenzene	146	Compound Not Detected.				
	74 N-Butylbenzene	91	Compound Not Detected.				
	75 1,2,4-Trichlorobenzene	180	Compound Not Detected.				
	76 Naphthalene	128	16.856 16.860 (1.741) 51887 1.59870 2.38				
	77 Hexachlorobutadiene	225	Compound Not Detected.				
	Hevaciitotobafadtelle	223	compound not bettette.				

10236207 797 of 1066

Report Date: 26-Jul-2013 08:11

# QC Flag Legend

 ${\tt Q}$  - Qualifier signal failed the ratio test. M - Compound response manually integrated.

10236207 798 of 1066

Report Date: 26-Jul-2013 08:11

Pace Analytical Services, Inc.

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20620.d

Lab Smp Id: 10236207011 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

Test Mode:

Use Initial Calibration Level 4.

If Continuing Cal. use Initial Cal. Level 4

COMPOUND		STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
======	=======================================	========	=======	=======	========	======
	4-Difluorobenze lorobenzene – d	579775 221404	347865 132842	811685 309966	732014 270124	26.26 22.01

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.00
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

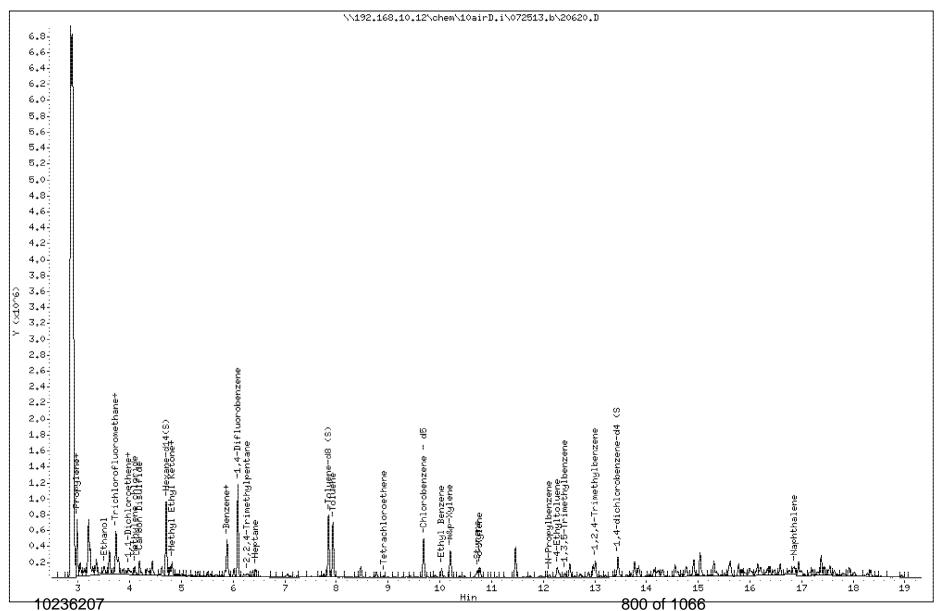
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 25-JUL-2013 22:27

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 25-JUL-2013 22:27

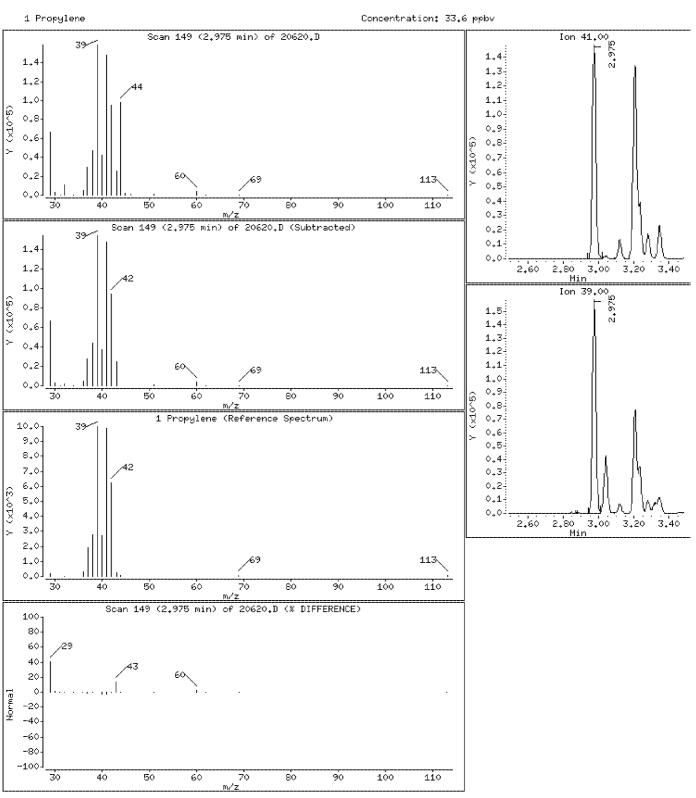
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

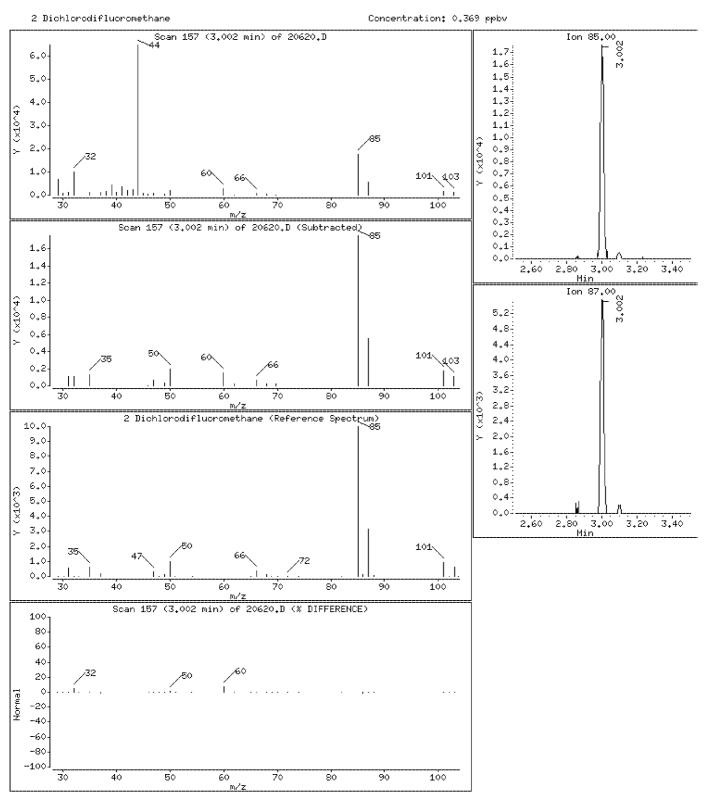
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.369 ppbv



Date : 25-JUL-2013 22:27

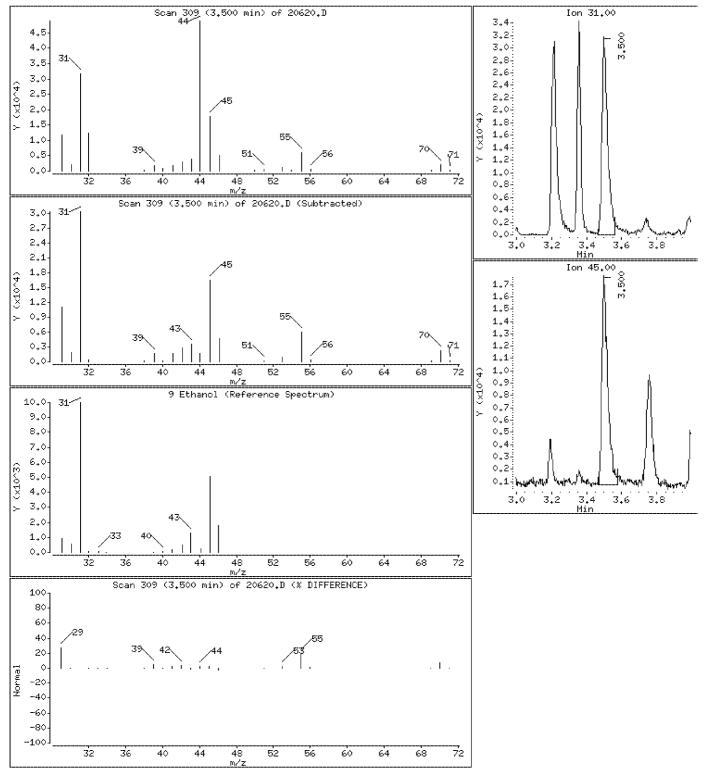
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

9 Ethanol Concentration: 10.2 ppbv



10236207 803 of 1066

Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

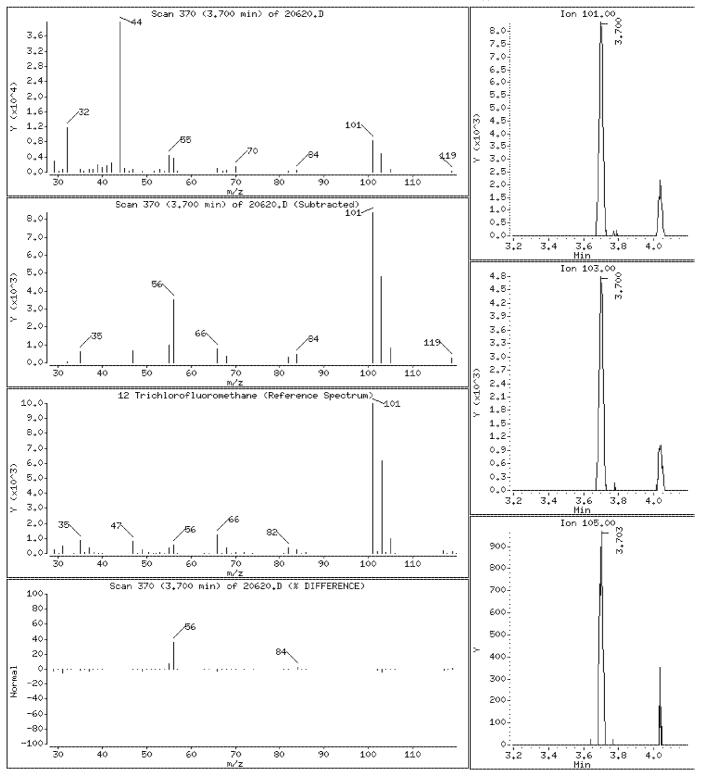
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.204 ppbv



10236207 804 of 1066

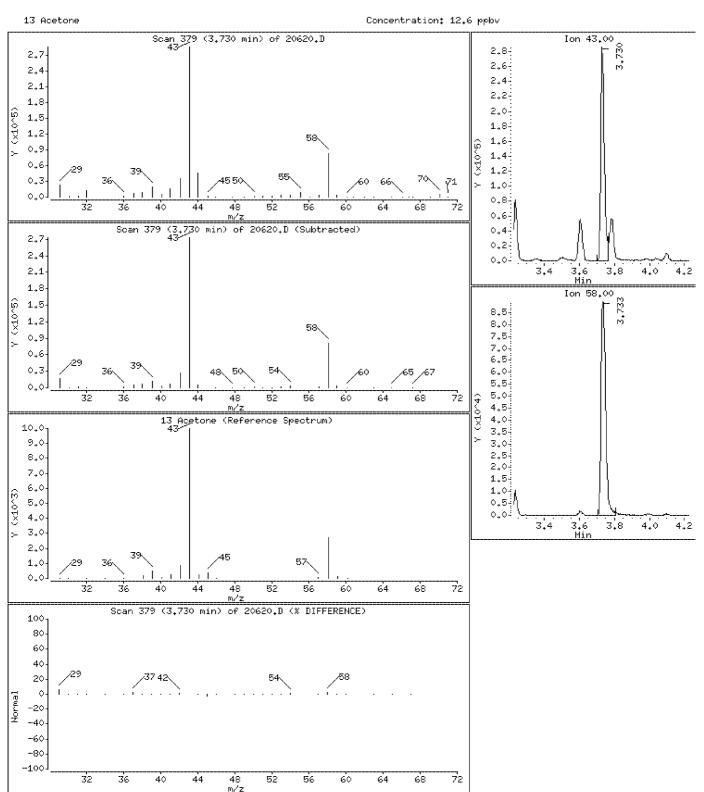
Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 805 of 1066

Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD,i

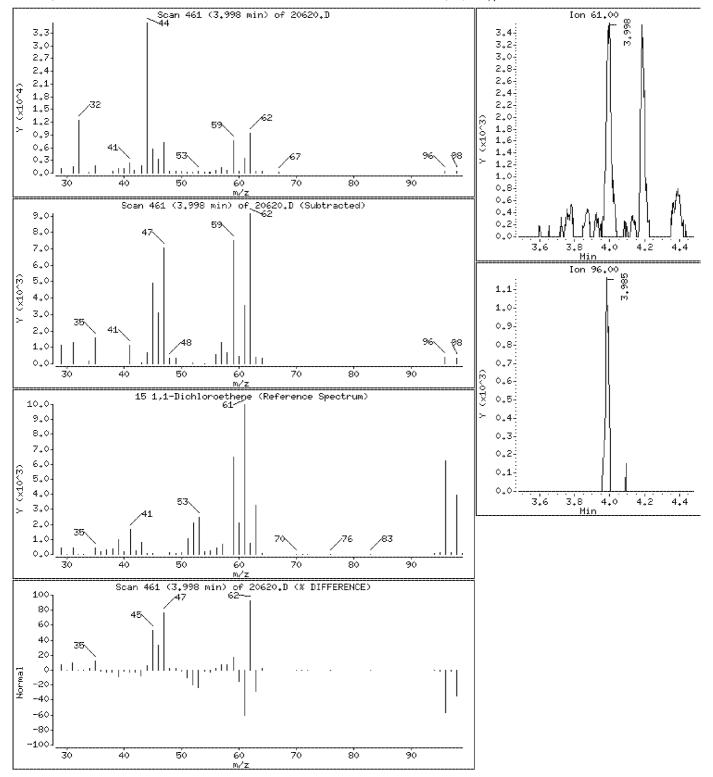
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 806 of 1066

Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

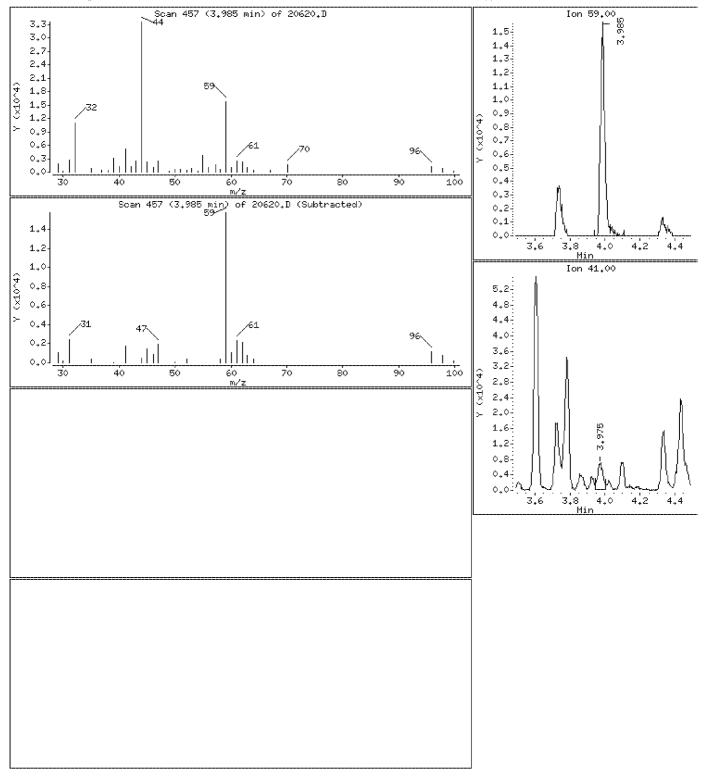
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.788 ppbv



10236207 807 of 1066

Data File: \\192,168,10,12\chem\10airD,i\072513,b\20620,D

Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

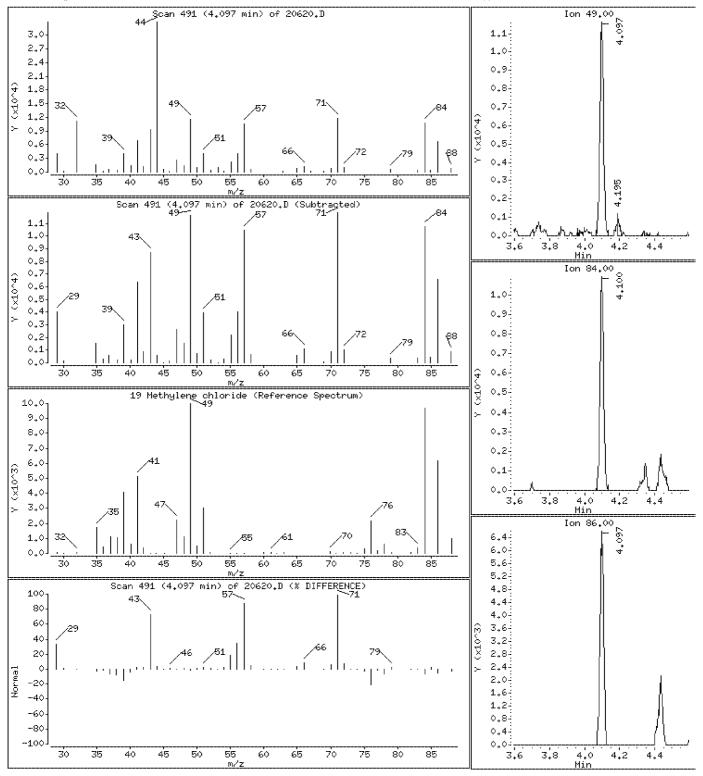
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.908 ppbv



10236207 808 of 1066

Date : 25-JUL-2013 22:27

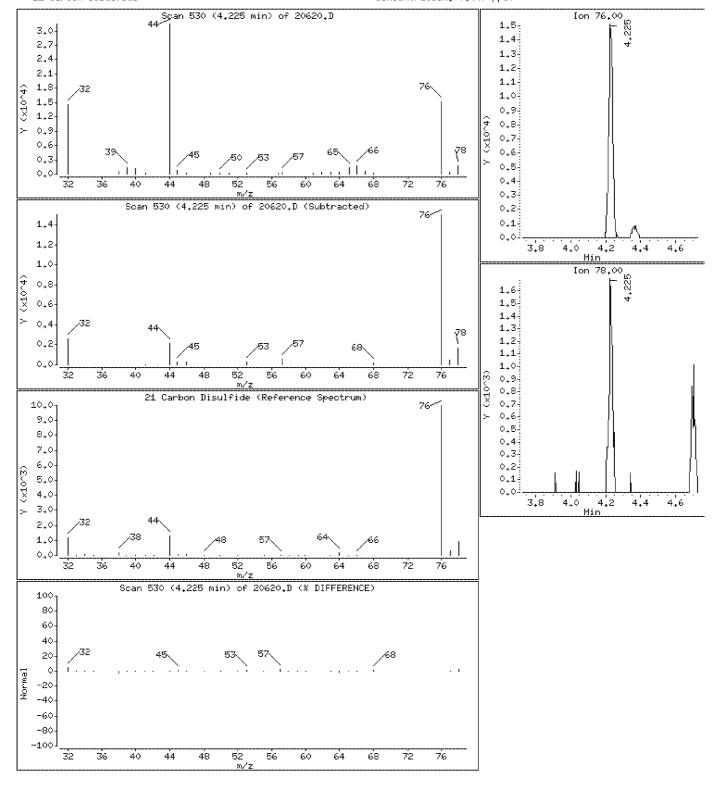
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 809 of 1066

Date : 25-JUL-2013 22:27

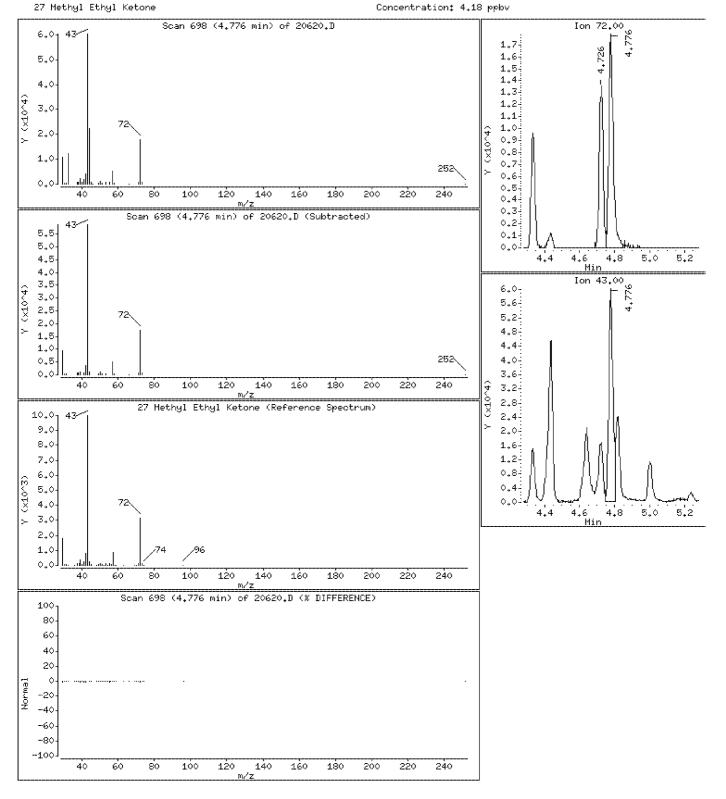
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 22:27

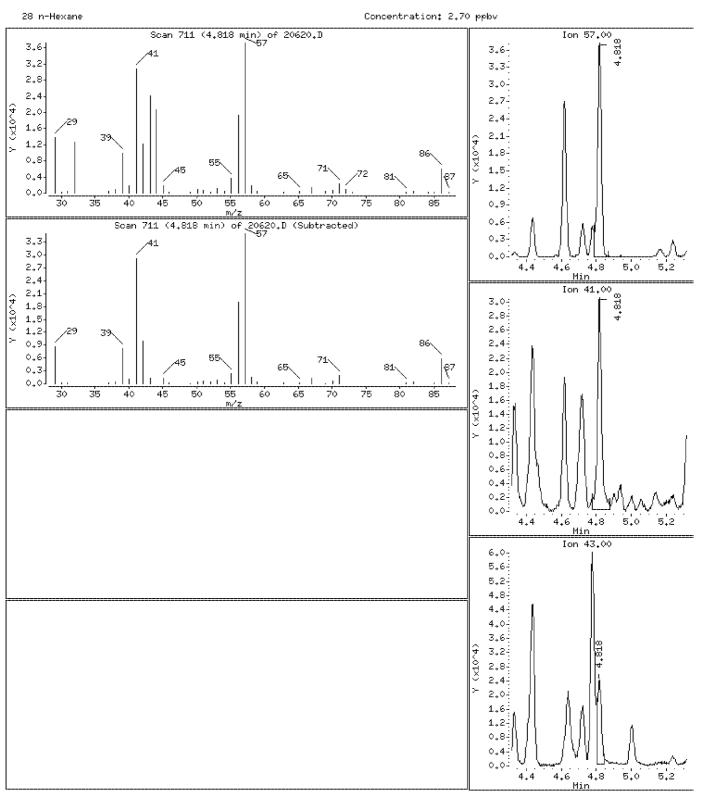
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 2.70 ppbv



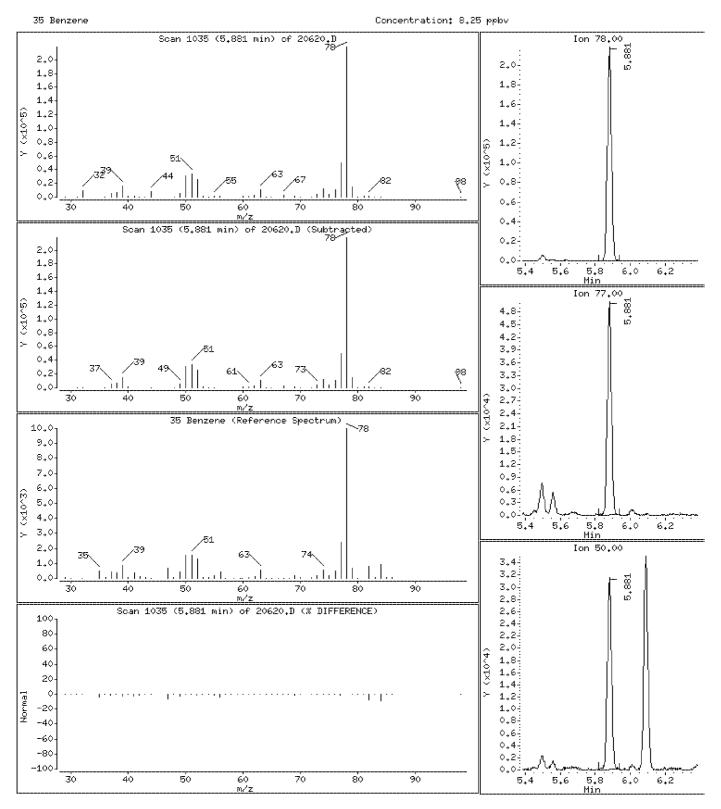
Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 812 of 1066

Date : 25-JUL-2013 22:27

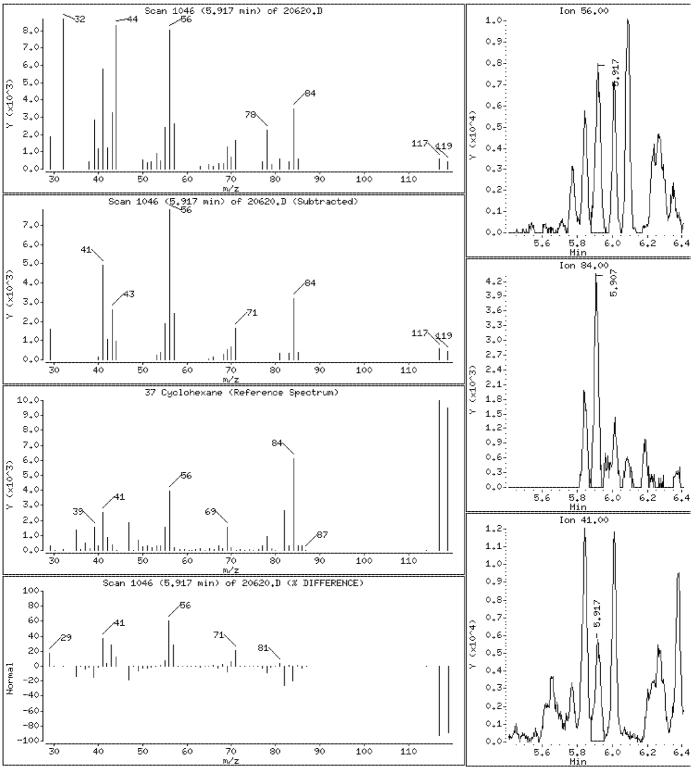
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 813 of 1066

Data File: \\192,168,10,12\chem\10airD,i\072513,b\20620,D

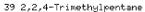
Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

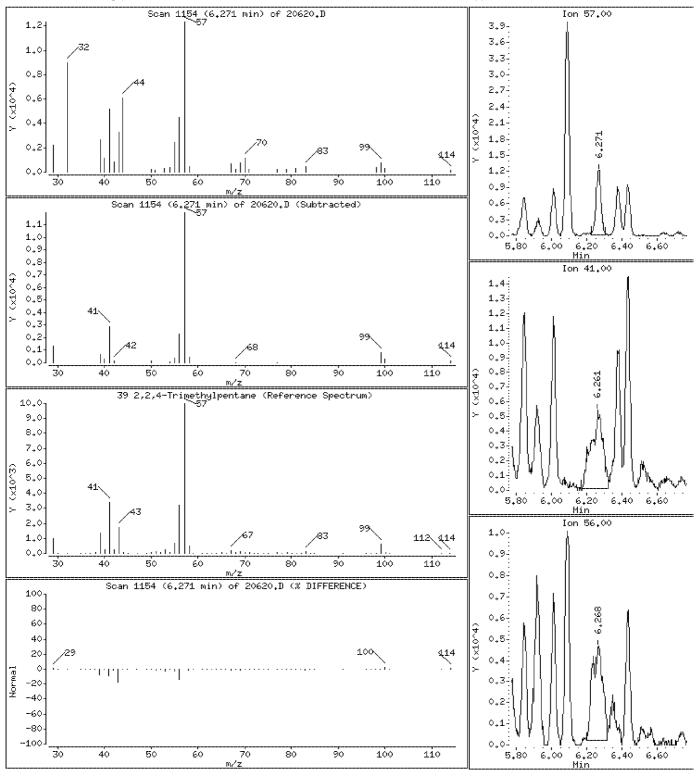
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 1.04 ppbv



10236207 814 of 1066

Date : 25-JUL-2013 22:27

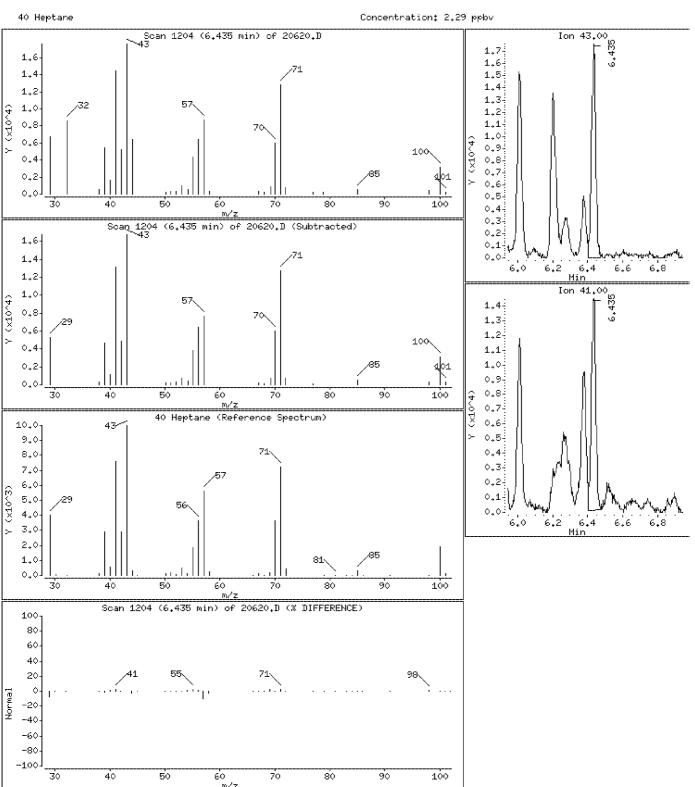
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 22:27

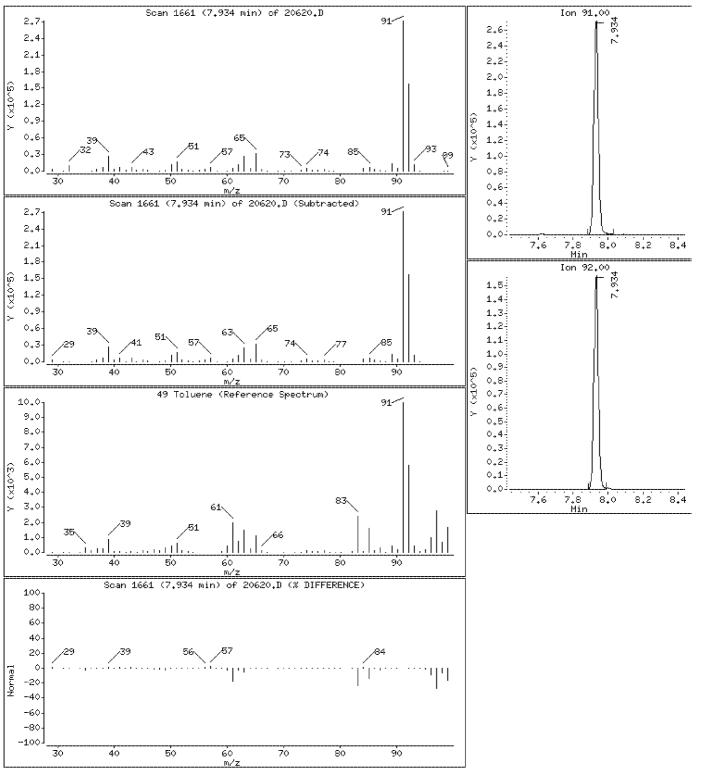
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 816 of 1066

Data File: \\192,168,10,12\chem\10airD,i\072513,b\20620,D

Date : 25-JUL-2013 22:27

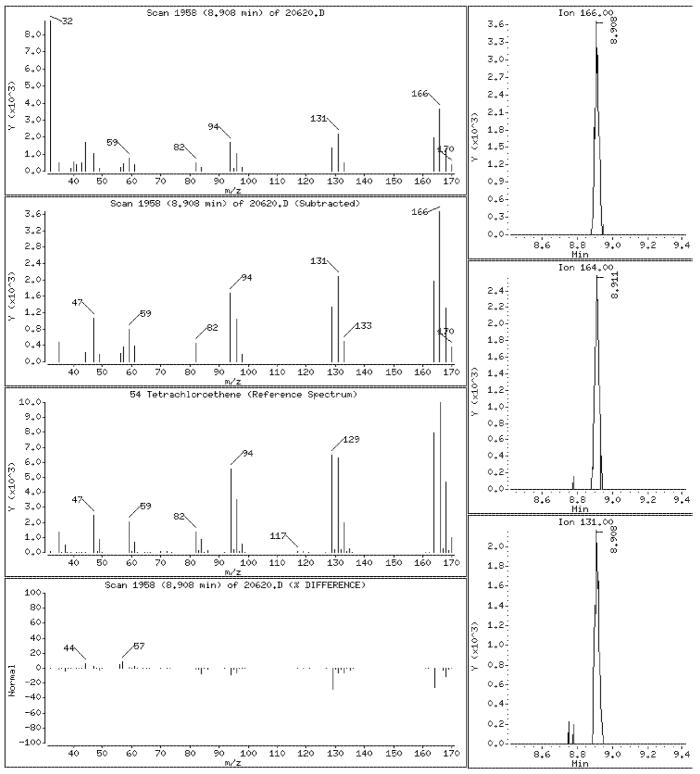
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 817 of 1066

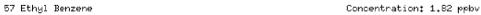
Date : 25-JUL-2013 22:27

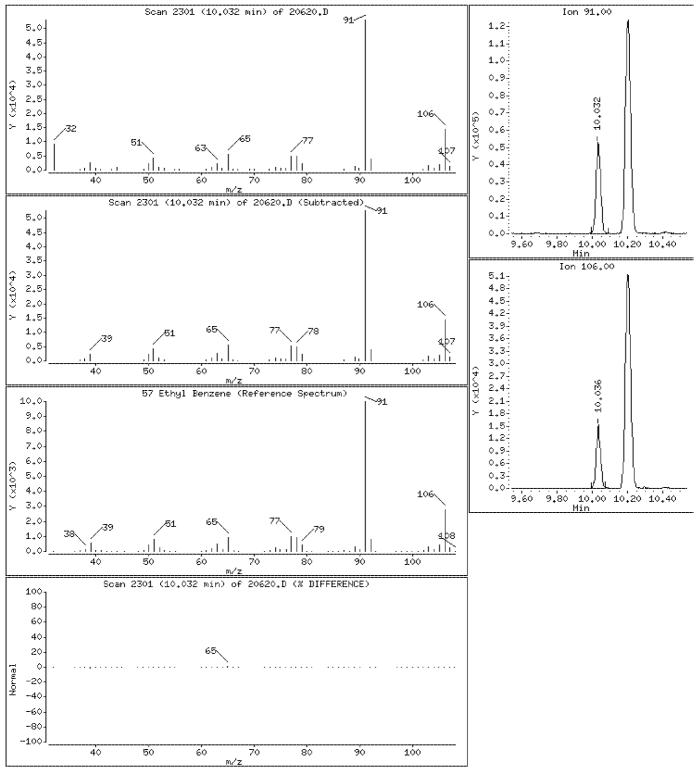
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 818 of 1066

Date : 25-JUL-2013 22:27

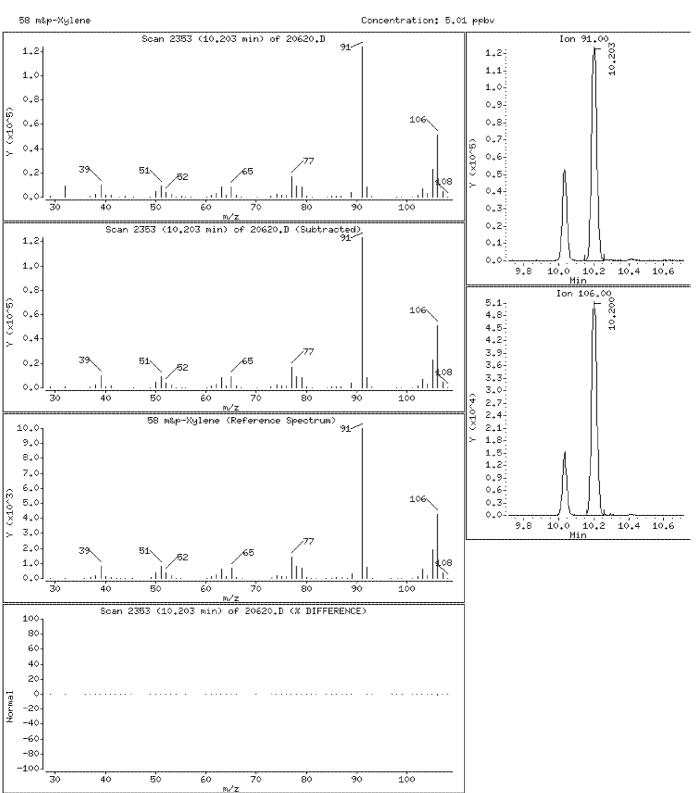
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Data File: \\192,168,10,12\chem\10airD,i\072513,b\20620,D

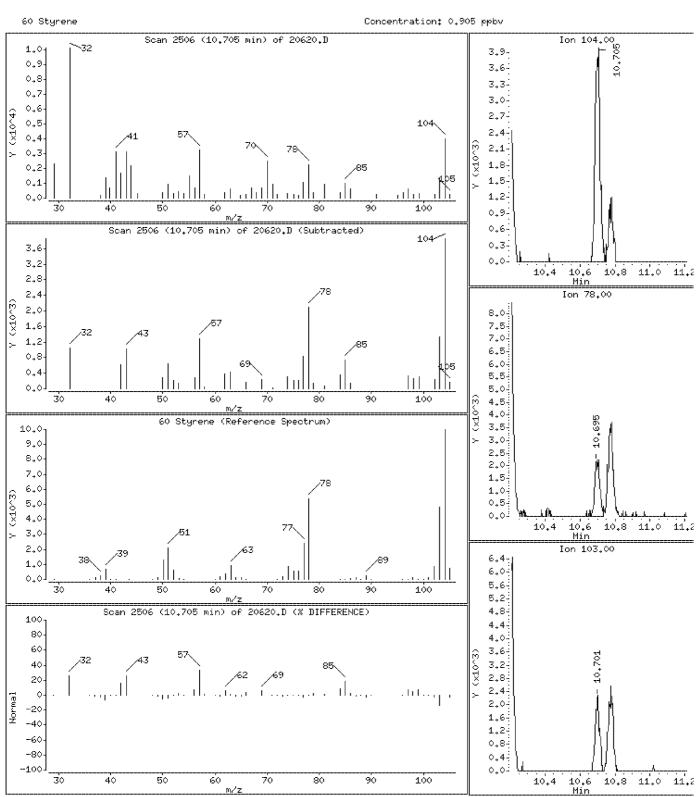
Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 820 of 1066

Date : 25-JUL-2013 22:27

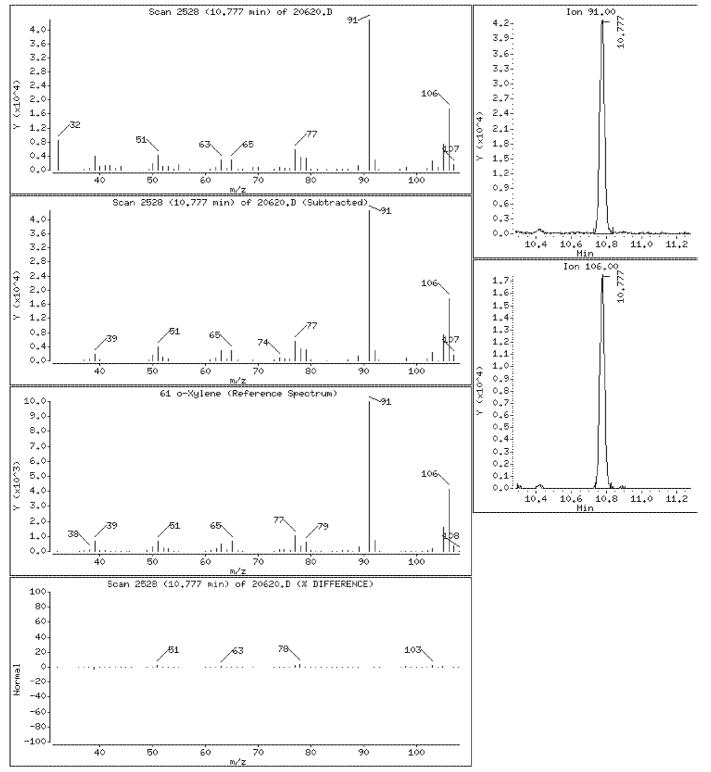
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 821 of 1066

Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

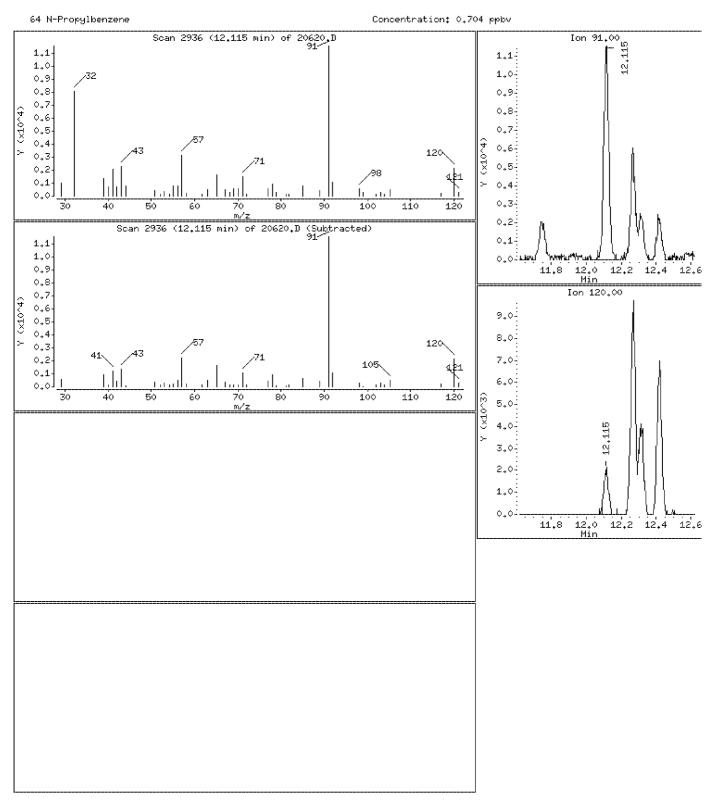
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

64 N-Propylbenzene

Concentration: 0.704 ppbv



Data File: \\192,168,10,12\chem\10airD,i\072513,b\20620,D

Date : 25-JUL-2013 22:27

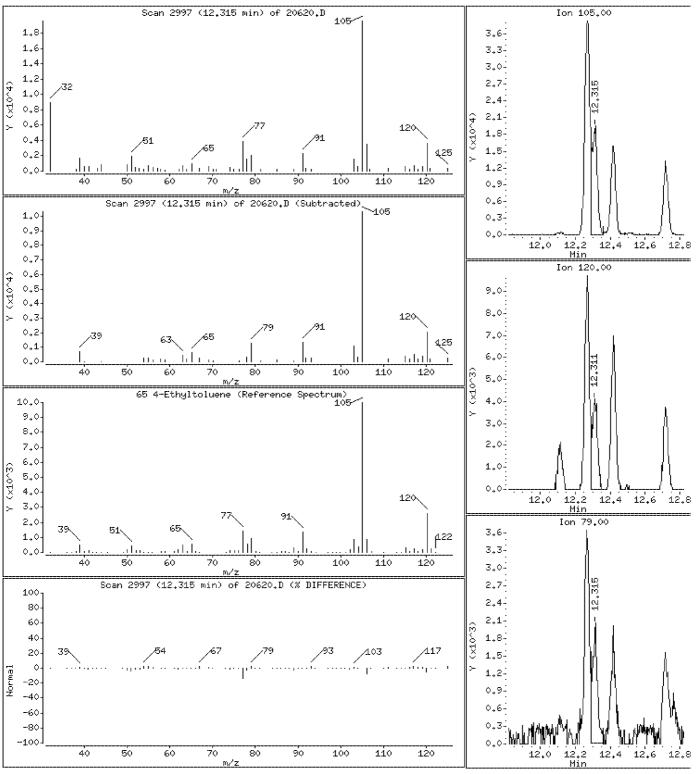
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 823 of 1066

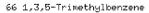
Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

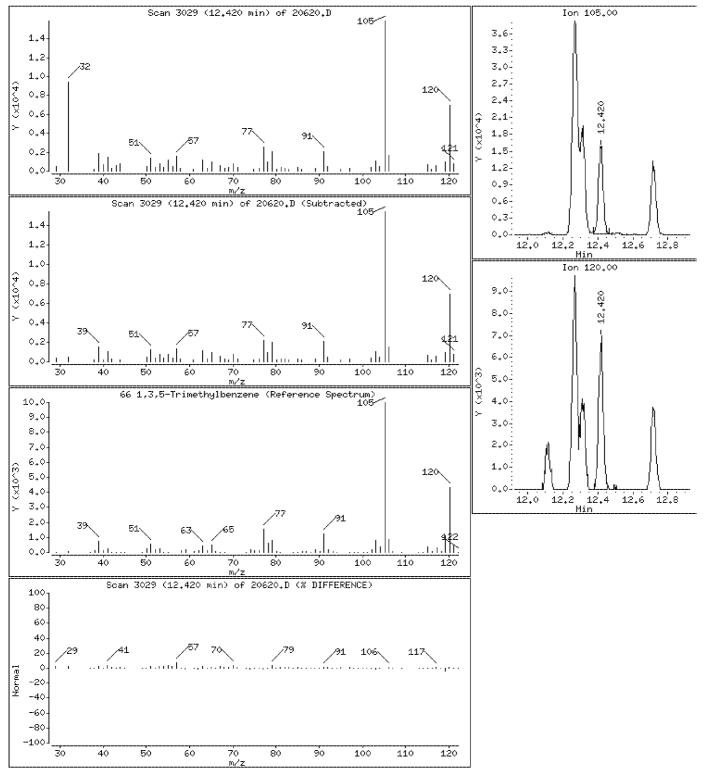
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.938 ppbv



10236207 824 of 1066

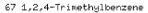
Date : 25-JUL-2013 22:27

Client ID: Instrument: 10airD.i

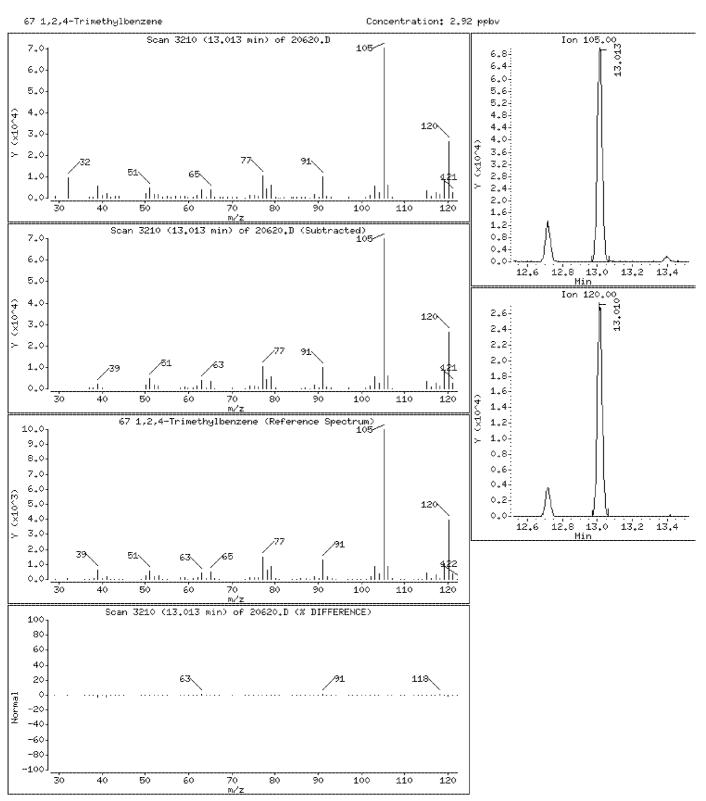
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 2.92 ppbv



Data File: \\192,168,10,12\chem\10airD,i\072513,b\20620,D

Date : 25-JUL-2013 22:27

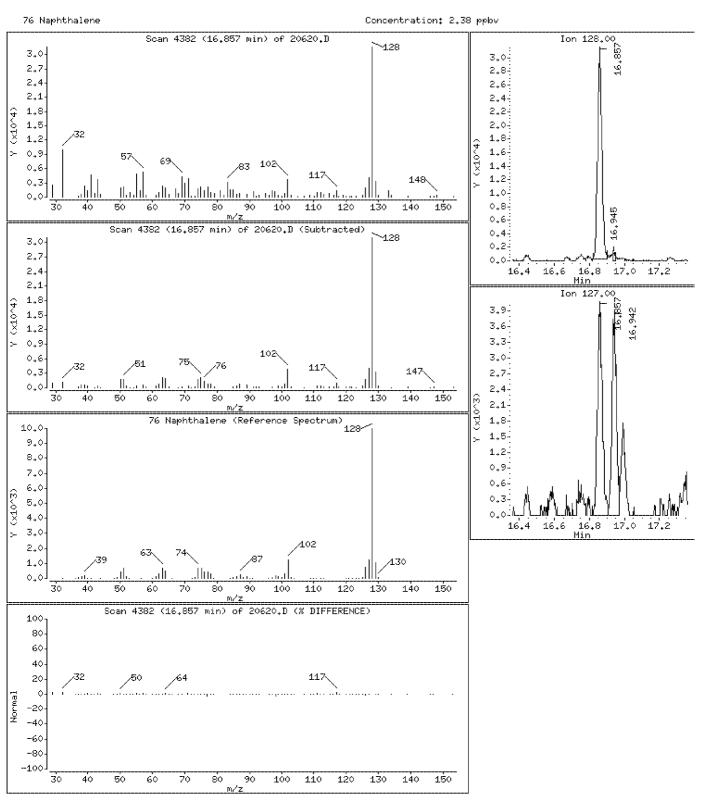
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



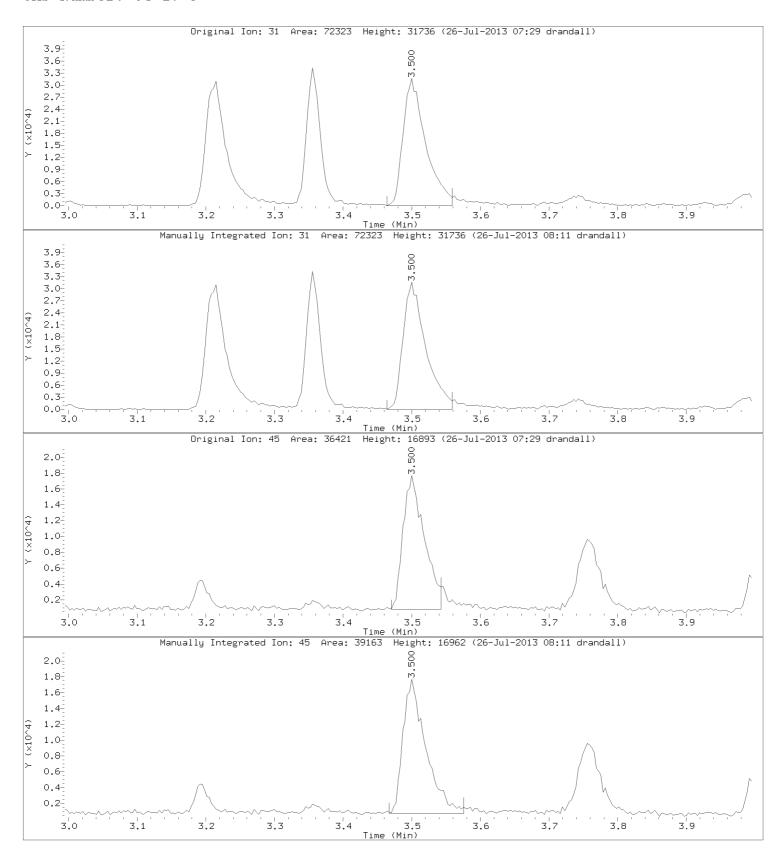


Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

Compound: Ethanol CAS Number: 64-17-5



10236207 827 of 1066

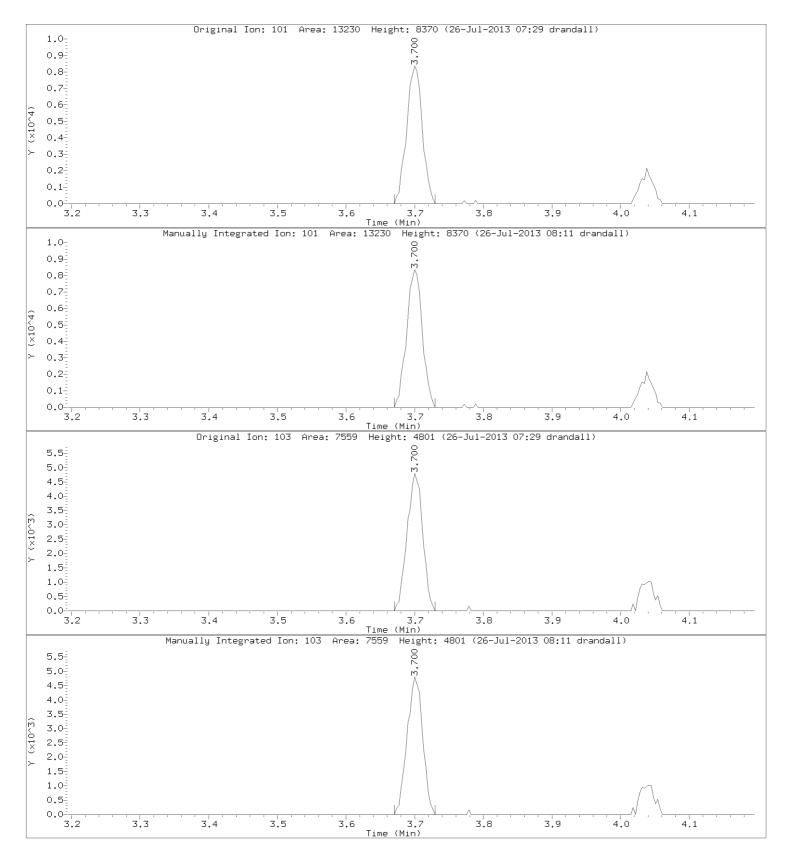
Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

Compound: Trichlorofluoromethane

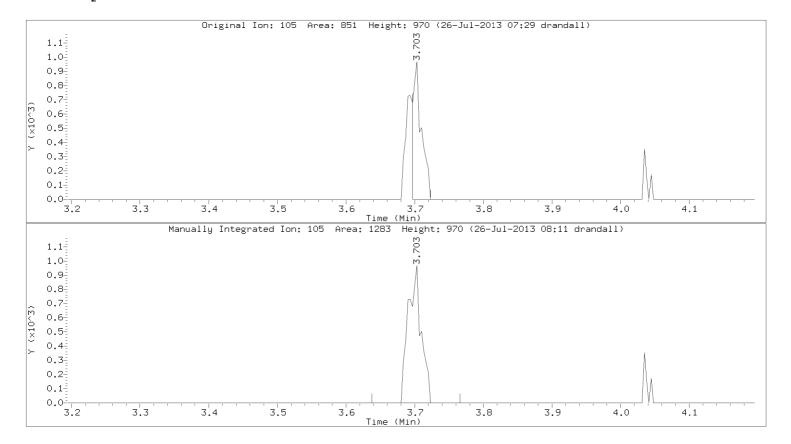
CAS Number: 75-69-4



10236207 828 of 1066

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i Lab Sample ID: 10236207011



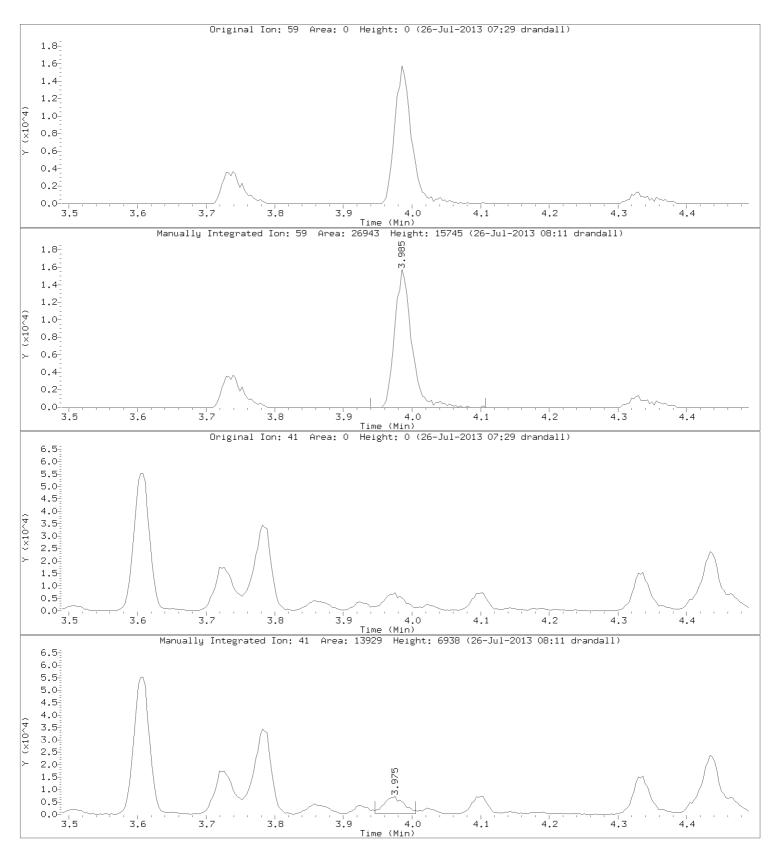
Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



10236207 830 of 1066

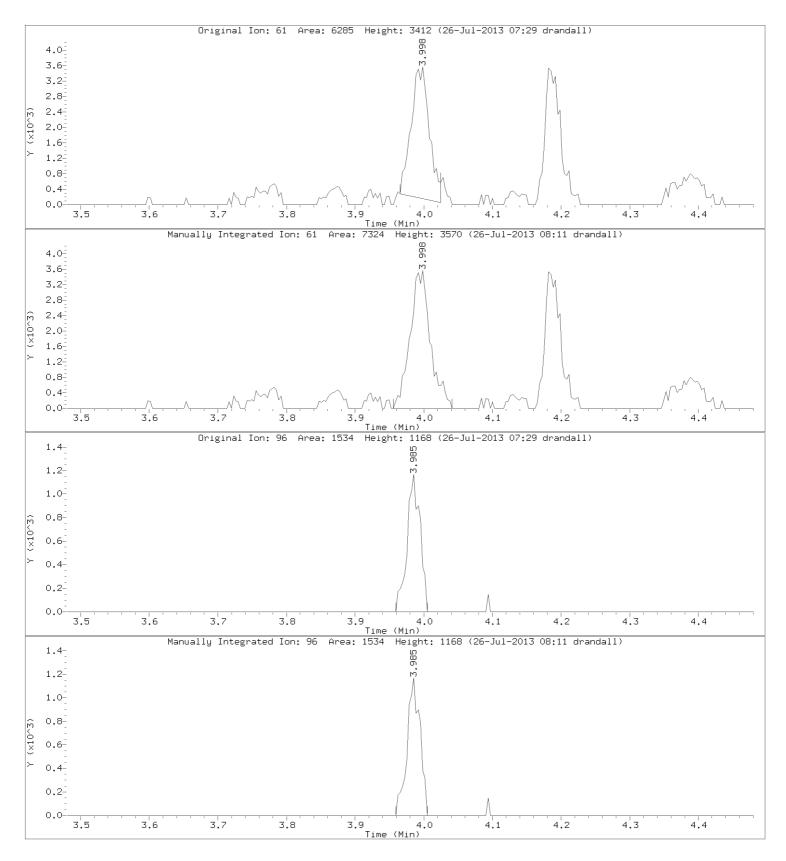
Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

Compound: 1,1-Dichloroethene

CAS Number: 75-35-4



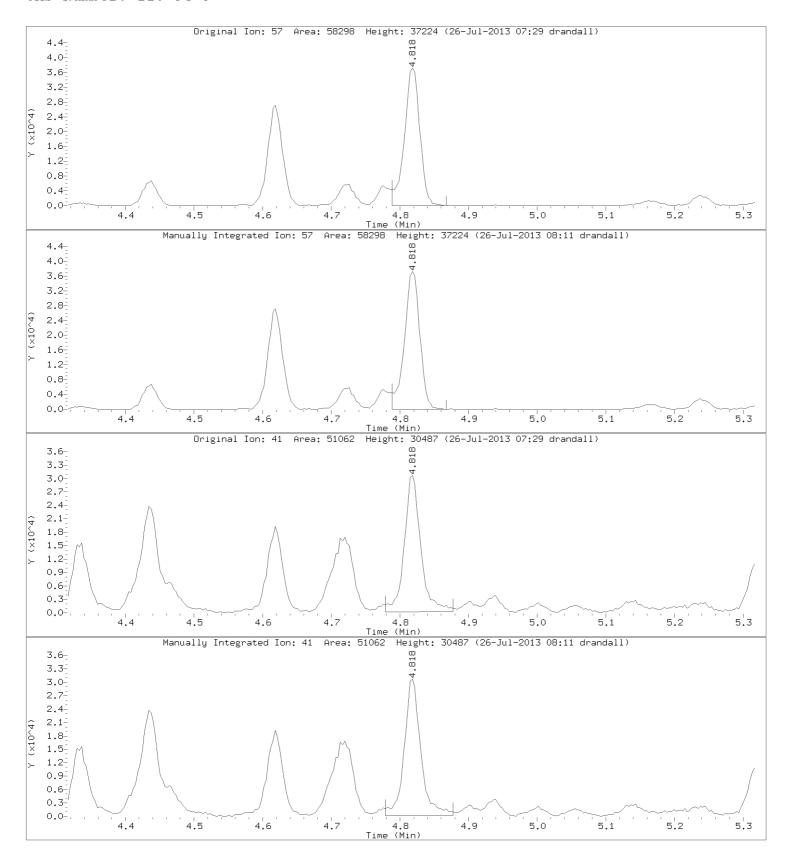
10236207 831 of 1066

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

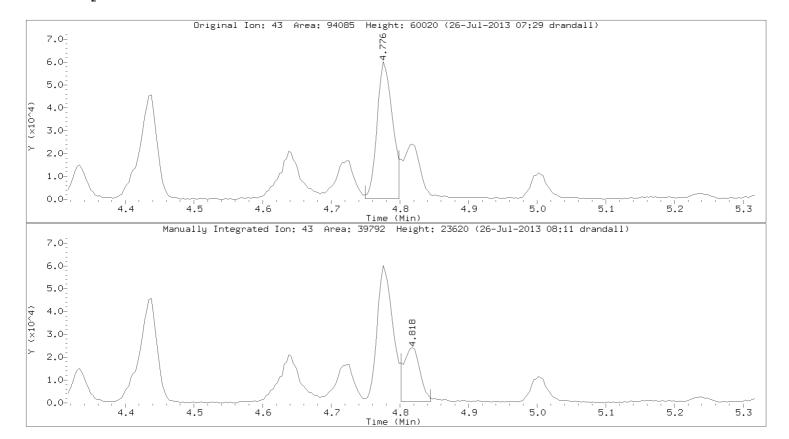
Compound: n-Hexane CAS Number: 110-54-3



10236207 832 of 1066

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i Lab Sample ID: 10236207011

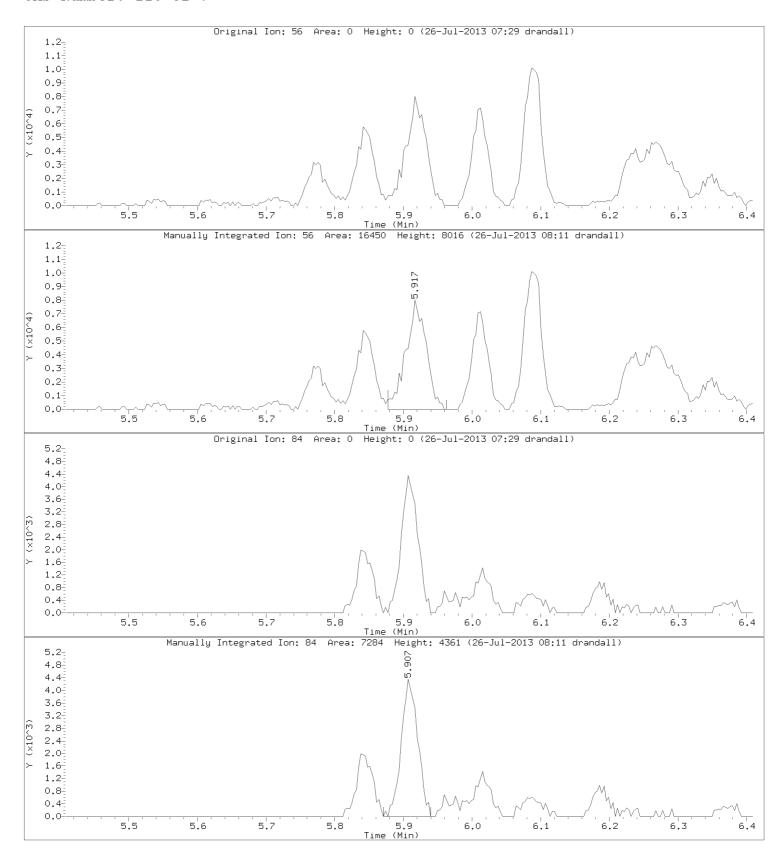


Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

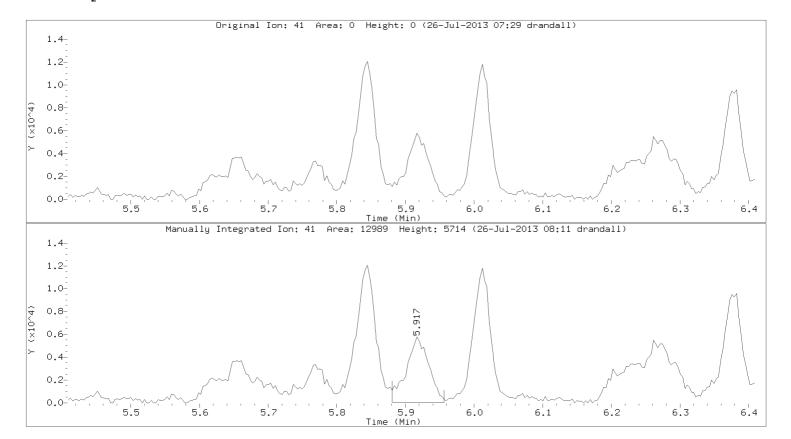
Compound: Cyclohexane CAS Number: 110-82-7



10236207 834 of 1066

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i Lab Sample ID: 10236207011



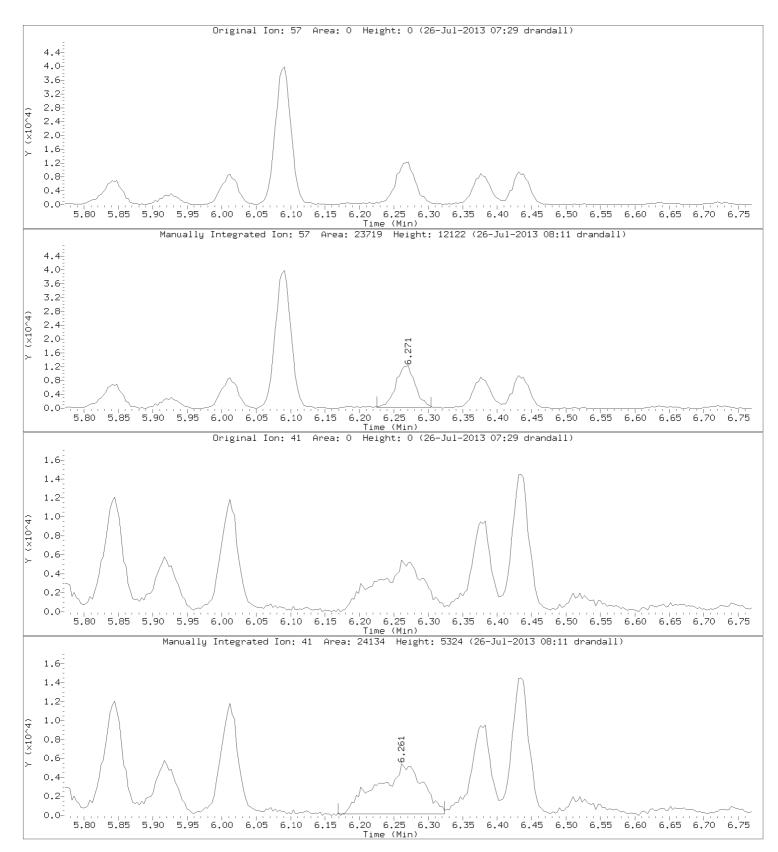
Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

Compound: 2,2,4-Trimethylpentane

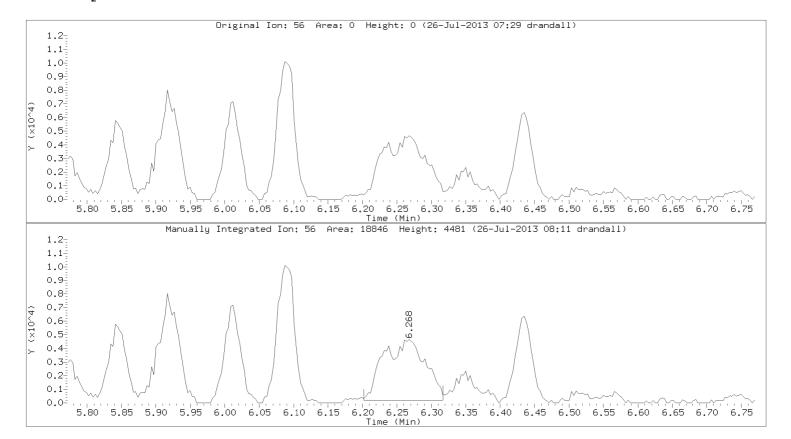
CAS Number: 540-84-1



10236207 836 of 1066

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i Lab Sample ID: 10236207011

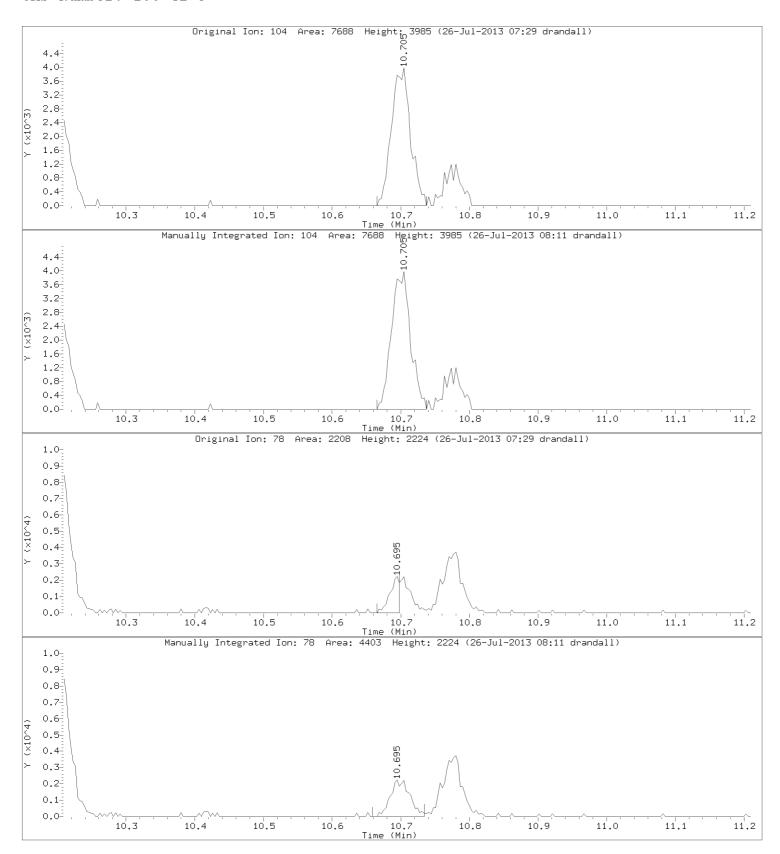


Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

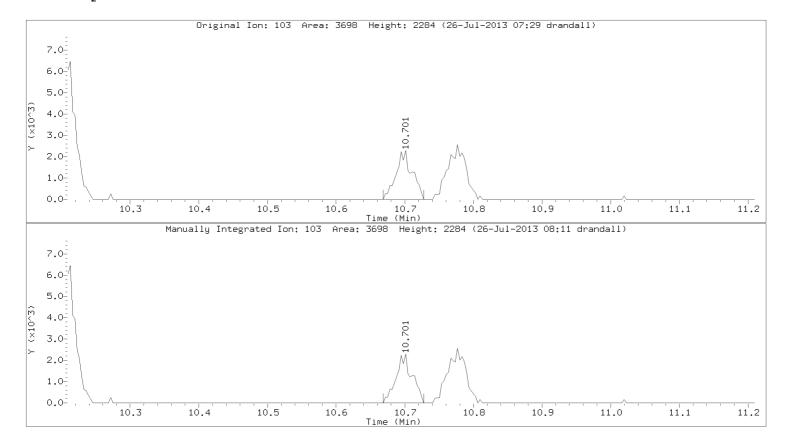
Compound: Styrene CAS Number: 100-42-5



10236207 838 of 1066

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i Lab Sample ID: 10236207011

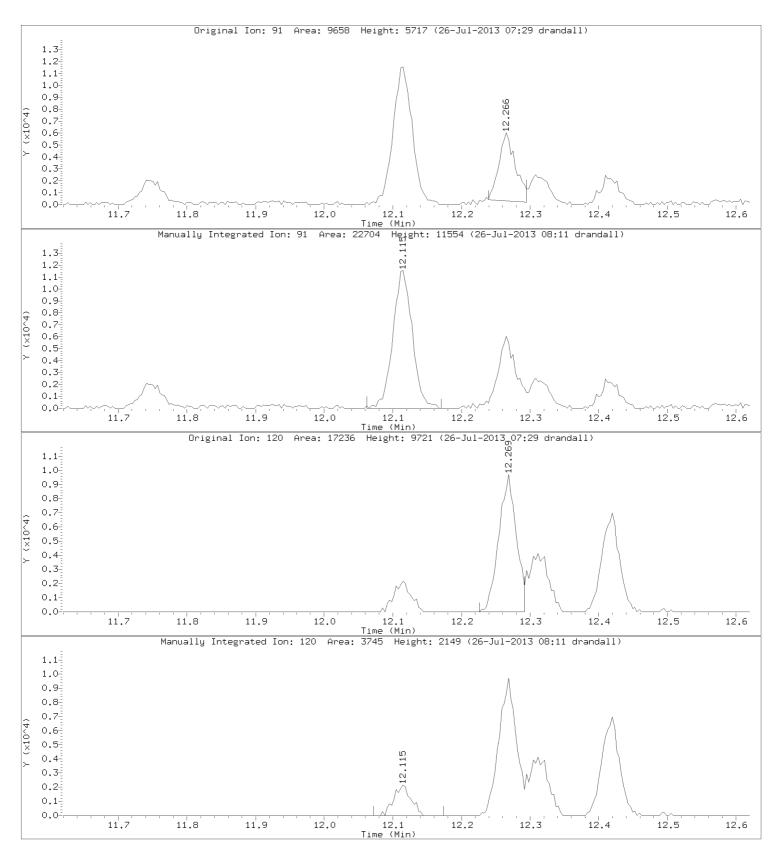


Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

Compound: N-Propylbenzene CAS Number: 103-65-1



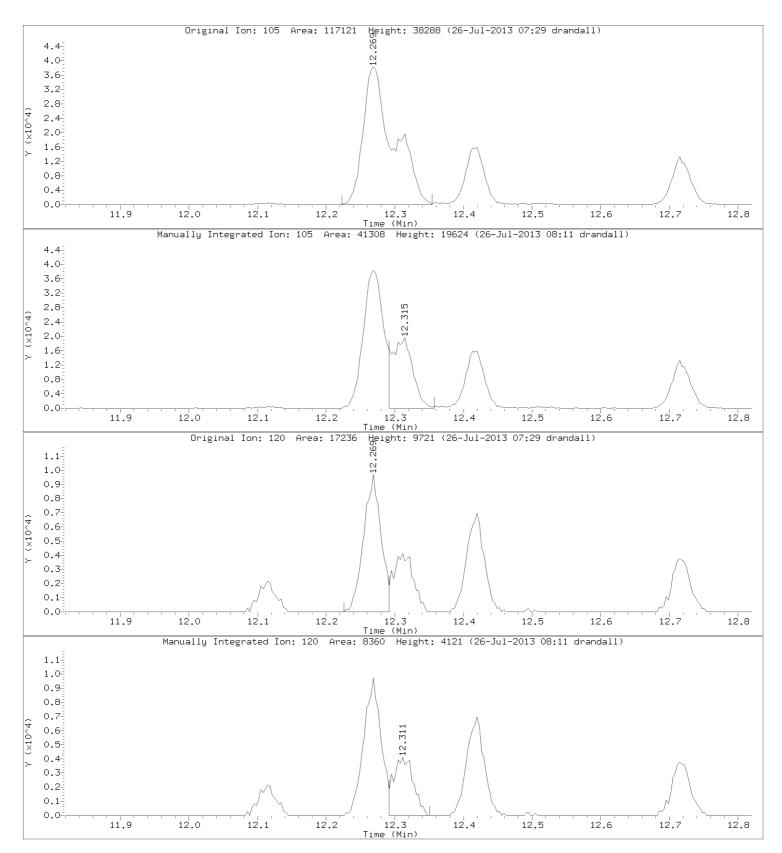
Data File: \\192.168.10.12\chem\10airD.i\072513.b/20620.d

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i

Lab Sample ID: 10236207011

Compound: 4-Ethyltoluene CAS Number: 622-96-8

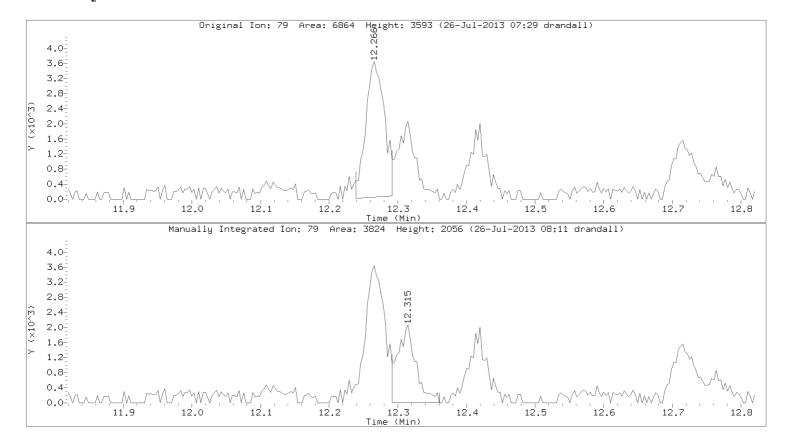


10236207 841 of 1066

Data File: \\192.168.10.12\chem\10airD.i\072513.b/20620.d

Injection Date: 25-JUL-2013 22:27

Instrument: 10airD.i Lab Sample ID: 10236207011



Report Date: 26-Jul-2013 07:58

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20616.d Lab Smp Id: 10236207012 Inj Date: 25-JUL-2013 20:25 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 16

Dil Factor: 1.55000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name		Value	Description		
•	DF Uf		Dilution Factor ng unit correction factor		
(	Cpnd Variable		Local Compound Variable		

Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)				
1 Propylene	==== 41	2.982 2.982 (0.490) 231329	24.7894 38.4				
2 Dichlorodifluoromethane	85	3.004 3.008 (0.494) 23705	0.26396 0.409				
3 Dichlorotetrafluoroethane	85	Compound Not Detected.					
4 Chloromethane	50	Compound Not Detected.					
5 Vinyl chloride	62	Compound Not Detected.					
6 1,3-Butadiene	54	Compound Not Detected.					
7 Bromomethane	94	Compound Not Detected.					
8 Chloroethane	64	Compound Not Detected.					
9 Ethanol	31	3.490 3.494 (0.573) 105279	9.84010 15.2				
10 Vinyl Bromide	106	Compound Not Detected.					
11 Acrolein	56	Compound Not Detected.					
12 Trichlorofluoromethane	101	3.693 3.694 (0.607) 10245	0.10487 0.162(M)				
13 Acetone	43	3.723 3.726 (0.612) 436834	8.92076 13.8				
14 Isopropyl Alcohol	45	Compound Not Detected.					
15 1,1-Dichloroethene	61	Compound Not Detected.					
16 Acrylonitrile	53	Compound Not Detected.					
17 Tert Butyl Alcohol	59	3.978 3.989 (0.654) 42029	0.81812 1.27(M)				
18 Freon 113	101	Compound Not Detected.					
19 Methylene chloride	49	4.090 4.094 (0.672) 6081	0.21918 0.340				
20 Allyl Chloride	76	Compound Not Detected.					
21 Carbon Disulfide	76	4.221 4.224 (0.693) 31740	0.39314 0.609				
22 trans-1,2-dichloroethene	96	Compound Not Detected.					
23 Methyl Tert Butyl Ether	73	Compound Not Detected.					
24 Vinyl Acetate	43	Compound Not Detected.					

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20616.d$ Report Date: 26-Jul-2013 07:58

Compounds	QUANT SIG MASS	RT EXP RT REL RT RE:	SPONSE	CONCENTRA ON-COLUMN ( ppbv)	ATIONS FINAL ( ppbv)		
25 1,1-Dichloroethane	==== 63	Compound Not Detected.	=====	======	======		
\$ 26 Hexane-d14(S)	66	1	313649	8.79336	8.79		
27 Methyl Ethyl Ketone	72	4.769 4.779 (0.783)	39965	3.52514	5.46(M)		
28 n-Hexane	57	4.811 4.818 (0.790)	43702	1.34778	2.09(QM)		
29 cis-1,2-Dichloroethene	96	Compound Not Detected.		(g/			
30 Ethyl Acetate	43	Compound Not Detected.					
31 Chloroform	83	Compound Not Detected.					
32 Tetrahydrofuran	42	Compound Not Detected.					
33 1,1,1-Trichloroethane	97	Compound Not Detected.					
34 1,2-Dichloroethane	62	-					
35 Benzene	78	5.877 5.887 (0.966)	61845	1.28829	2.00		
36 Carbon tetrachloride	117	Compound Not Detected.					
37 Cyclohexane	56	5.916 5.910 (0.972)	6193	0.69755	1.08(QM)		
38 1,4-Difluorobenzene	114	6.087 6.094 (1.000)	738648	10.0000			
39 2,2,4-Trimethylpentane	57	Compound Not Detected.					
40 Heptane	43	6.431 6.442 (1.057)	11435	0.87770	1.36		
41 1,2-Dichloropropane	63	Compound Not Detected.					
42 Trichloroethene	130	Compound Not Detected.					
43 1,4-Dioxane	88	Compound Not Detected.					
44 Bromodichloromethane	83	Compound Not Detected.					
45 Methyl Isobutyl Ketone	43	7.228 7.229 (1.187)	7926	0.60393	0.936(M)		
46 cis-1,3-Dichloropropene	75	5 Compound Not Detected.					
47 trans-1,3-Dichloropropene	75	Compound Not Detected.					
3 48 Toluene-d8 (S)	98	7.841 7.848 (1.288)	516603	10.0142	10.0		
49 Toluene	91	7.933 7.940 (1.303)	187547	2.49558	3.87		
50 1,1,2-Trichloroethane	97	Compound Not Detected.					
51 Methyl Butyl Ketone	43	8.248 8.244 (0.852)	10665	0.62809	0.974		
52 Dibromochloromethane	129	Compound Not Detected.					
53 1,2-Dibromoethane	107	Compound Not Detected.					
54 Tetrachloroethene	166	8.910 8.918 (0.920)	6650	0.53118	0.823(M)		
55 Chlorobenzene - d5	117	· · · ·	274276	10.0000			
56 Chlorobenzene	112	Compound Not Detected.					
57 Ethyl Benzene	91	10.035 10.039 (1.036)	72363	0.98319	1.52		
58 m&p-Xylene	91	,	234566	3.01494	4.67		
59 Bromoform	173	Compound Not Detected.	0040	0.01.050	0.05600		
60 Styrene	104	10.698 10.708 (1.105)	8348	0.61652	0.956(M)		
61 o-Xylene	91	10.773 10.783 (1.112)	77451	1.07003	1.66		
62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
63 Isopropylbenzene	105	Compound Not Detected.	04660	0.40430	0.751(00)		
64 N-Propylbenzene	91 105	12.111 12.121 (1.251) 12.308 12.321 (1.271)	24663	0.48438	0.751 (M)		
65 4-Ethyltoluene 66 1,3,5-Trimethylbenzene	105		33009 29065	0.64835	1.00(M)		
67 1,2,4-Trimethylbenzene	105	12.416 12.426 (1.282) 13.016 13.020 (1.344)	137610	0.61757	0.957(M) 3.00		
68 1,3-Dichlorobenzene	146	Compound Not Detected.	13/010	1.93250	3.00		
69 Sec- Butylbenzene	105	Compound Not Detected.					
5 70 1,4-dichlorobenzene-d4 (S)		-	10/130	0 40635	9.41		
70 1,4-dichioropenzene-d4 (S) 71 Benzyl Chloride	150 91	Compound Not Detected.	104138	9.40635	2•4⊥		
72 1,4-Dichlorobenzene	146	Compound Not Detected.					
73 1,2-Dichlorobenzene	146	Compound Not Detected.					
73 1,2-bichioropenzene 74 N-Butylbenzene	91	Compound Not Detected.					
75 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
76 Naphthalene	128	16.856 16.860 (1.741)	50774	1.55373	2.41(M)		
	+∠∪		JU114				

10236207 844 of 1066

Report Date: 26-Jul-2013 07:58

# QC Flag Legend

 ${\tt Q}$  - Qualifier signal failed the ratio test. M - Compound response manually integrated.

10236207 845 of 1066

Report Date: 26-Jul-2013 07:58

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20616.d

Lab Smp Id: 10236207012 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	========	=======	=======	=====
38 1,4-Difluorobenze	579775	347865	811685	738648	27.40
55 Chlorobenzene - d	221404	132842	309966	274276	23.88

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

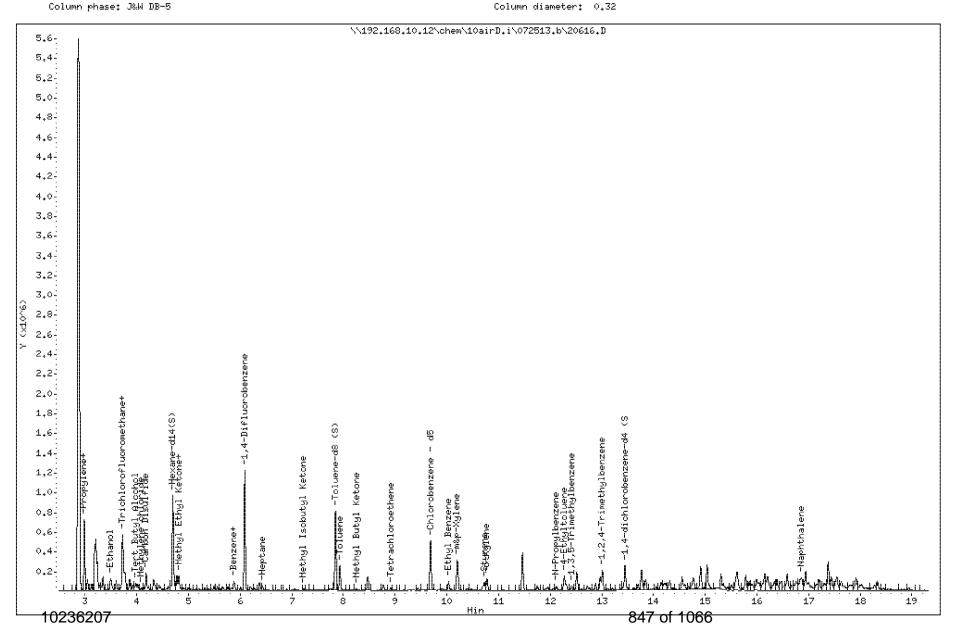
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 25-JUL-2013 20:25

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column diameter: 0.32



Date : 25-JUL-2013 20:25

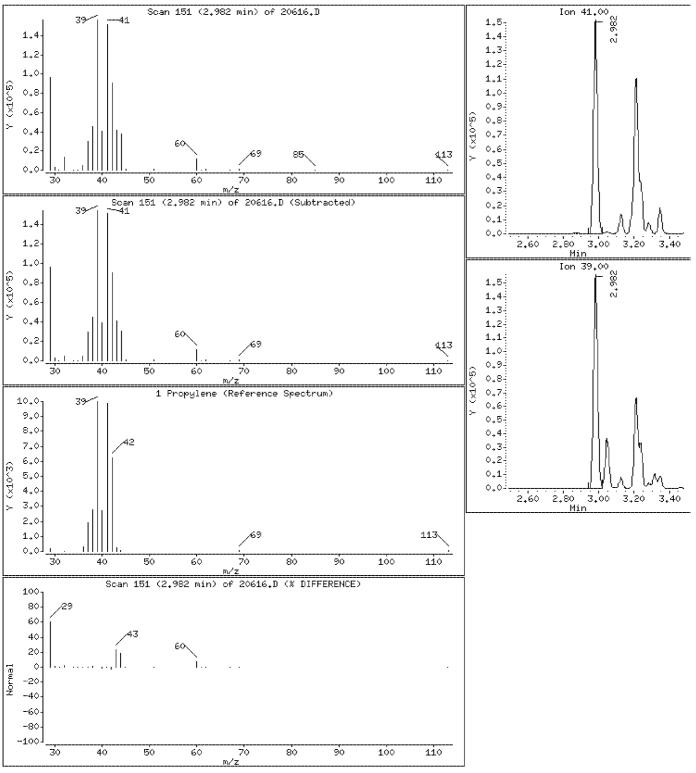
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 848 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD,i

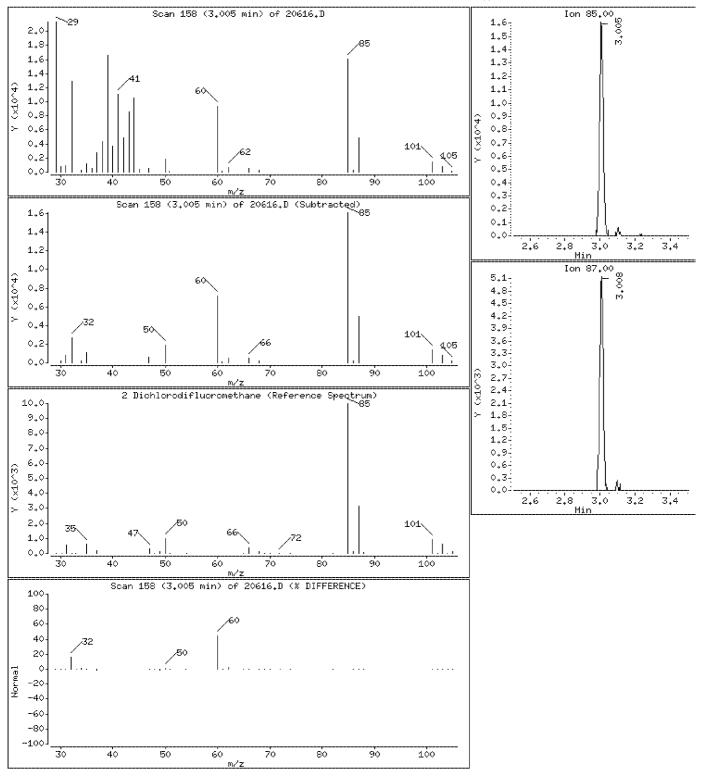
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 849 of 1066

Date : 25-JUL-2013 20:25

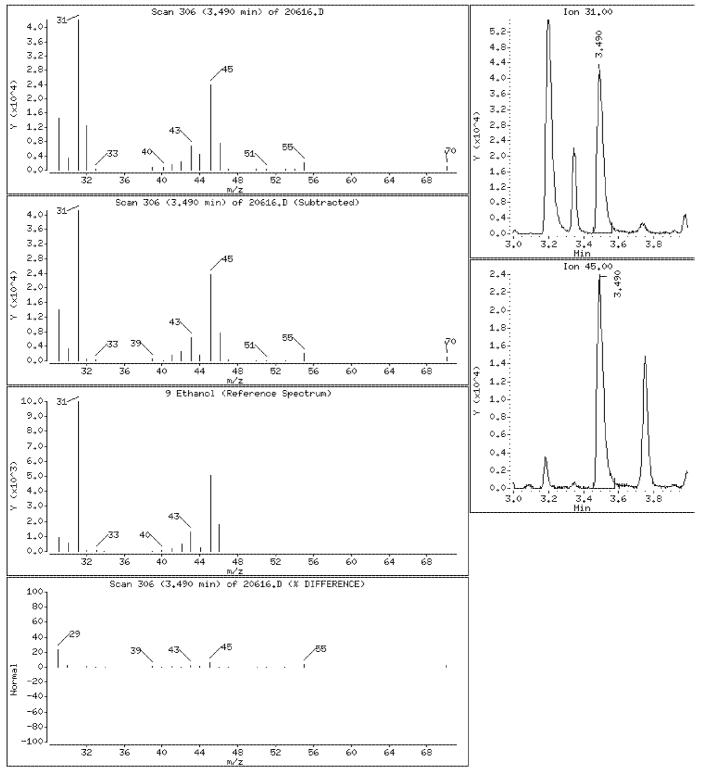
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 850 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

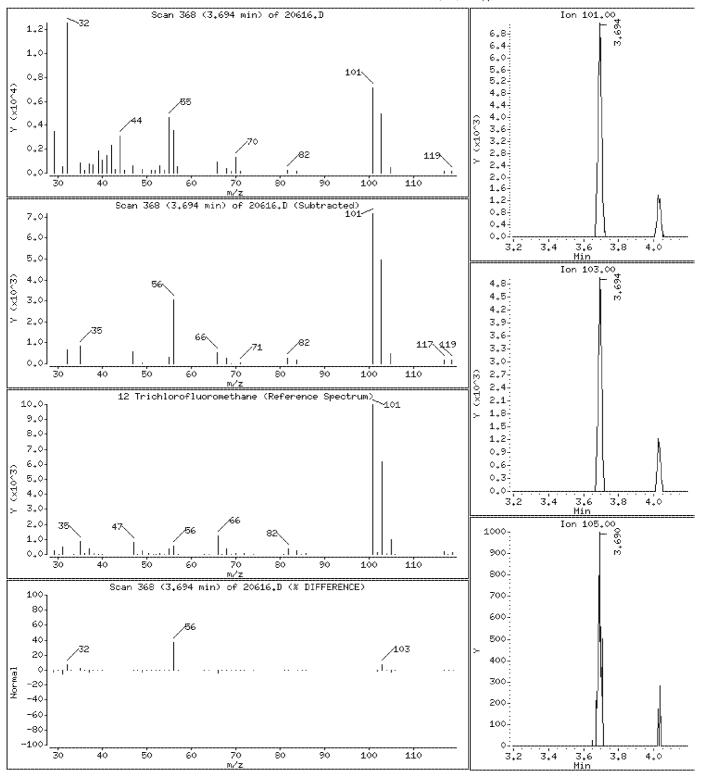
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.162 ppbv



10236207 851 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD,i

Sample Info:

0.9 0.6

0.3

7.0 6.0

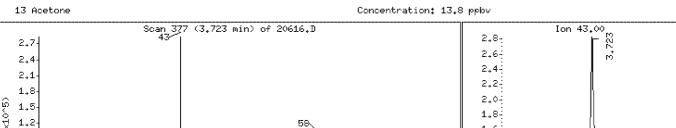
5.0

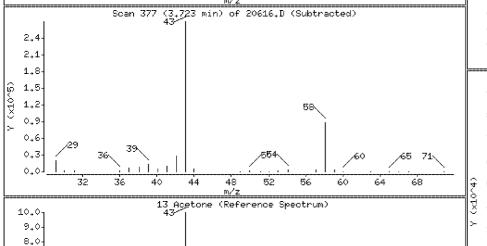
4.0

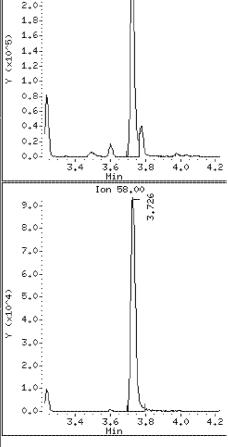
3.0

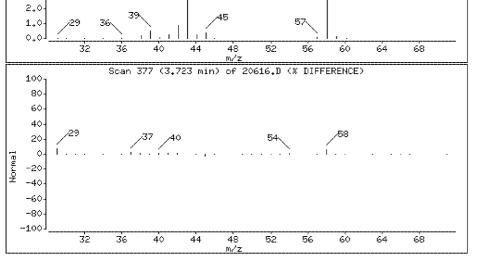
Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32









10236207 852 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

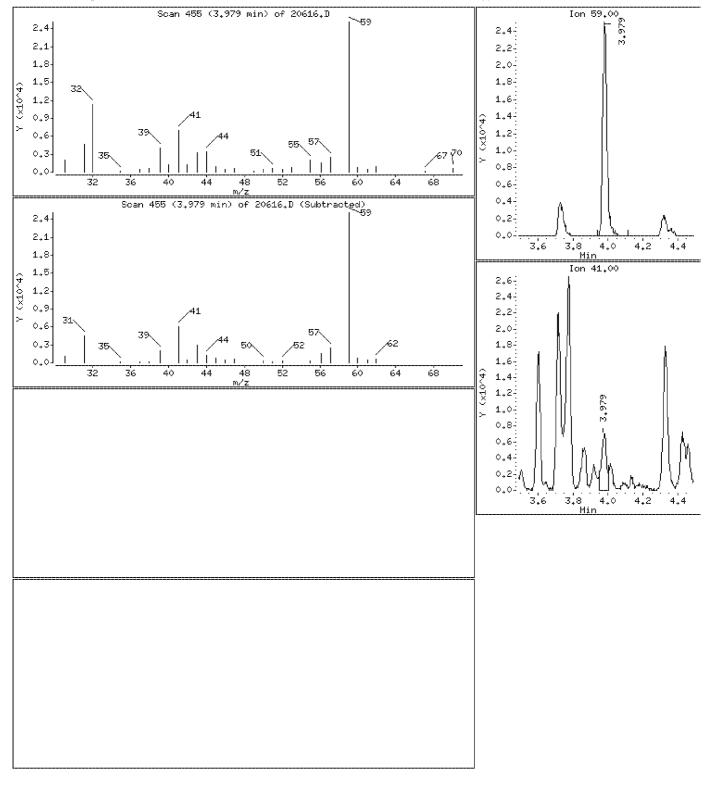
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 1.27 ppbv



10236207 853 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

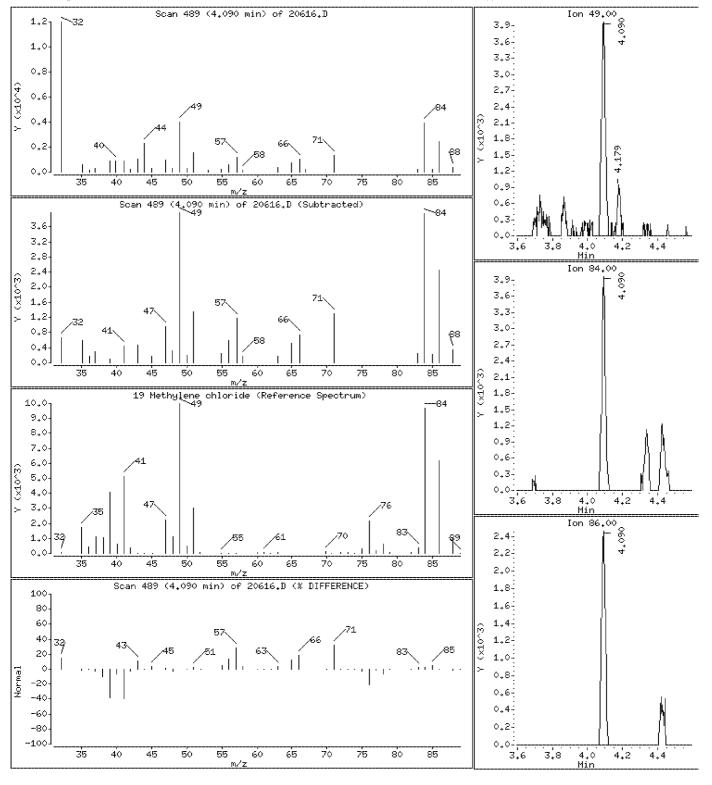
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.340 ppbv



10236207 854 of 1066

Date : 25-JUL-2013 20:25

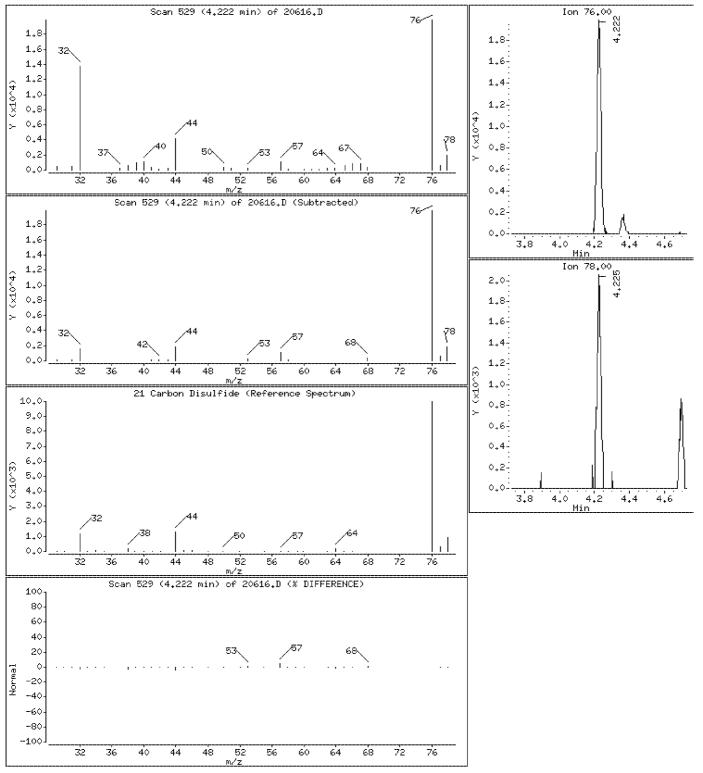
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 855 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

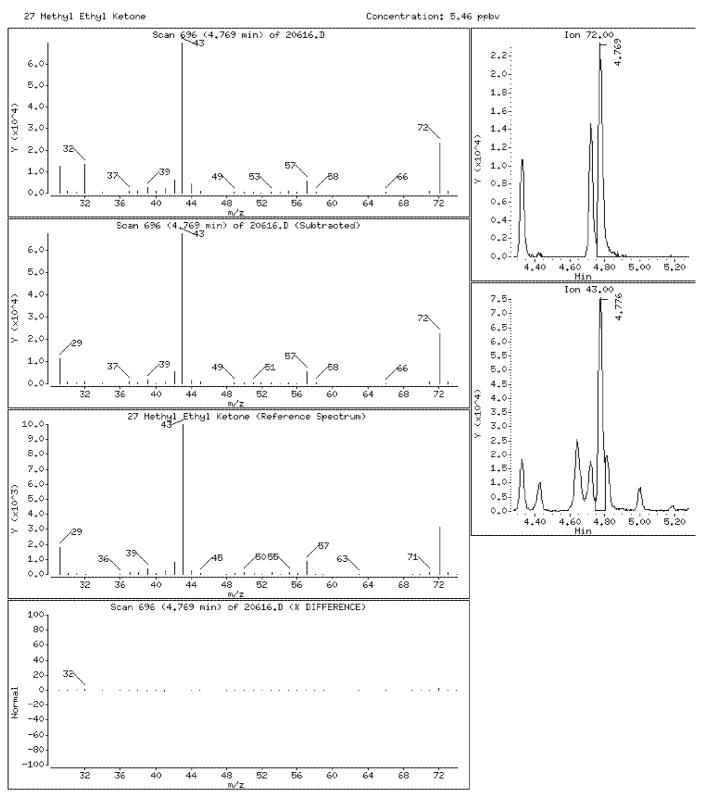
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 5.46 ppbv



Date : 25-JUL-2013 20:25

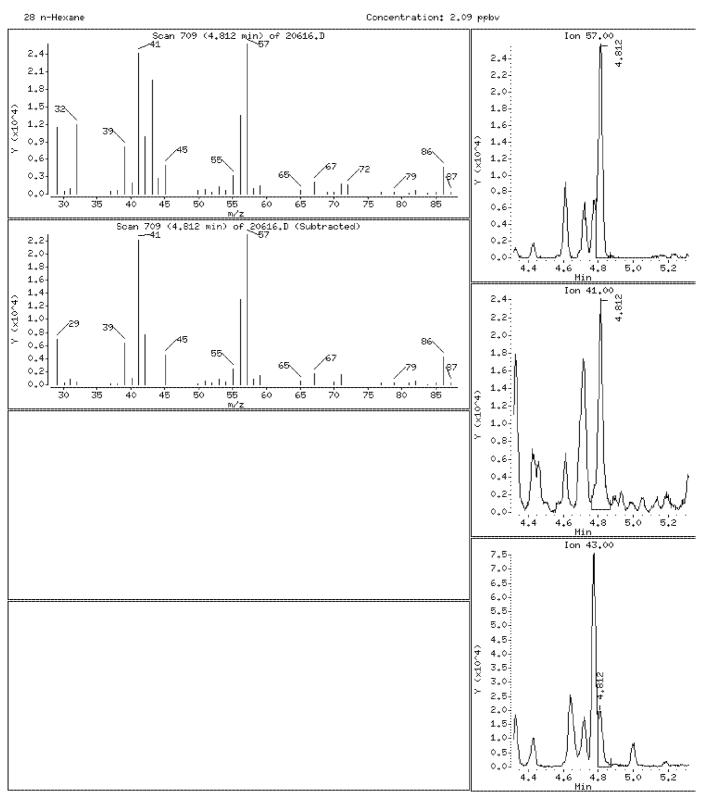
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 2.09 ppbv



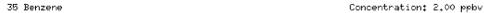
Date : 25-JUL-2013 20:25

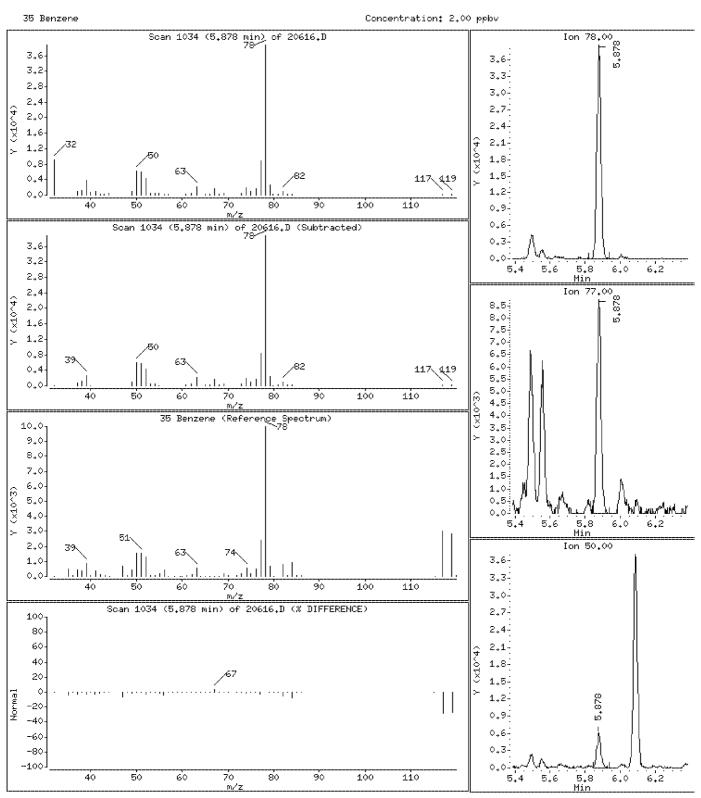
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 20:25

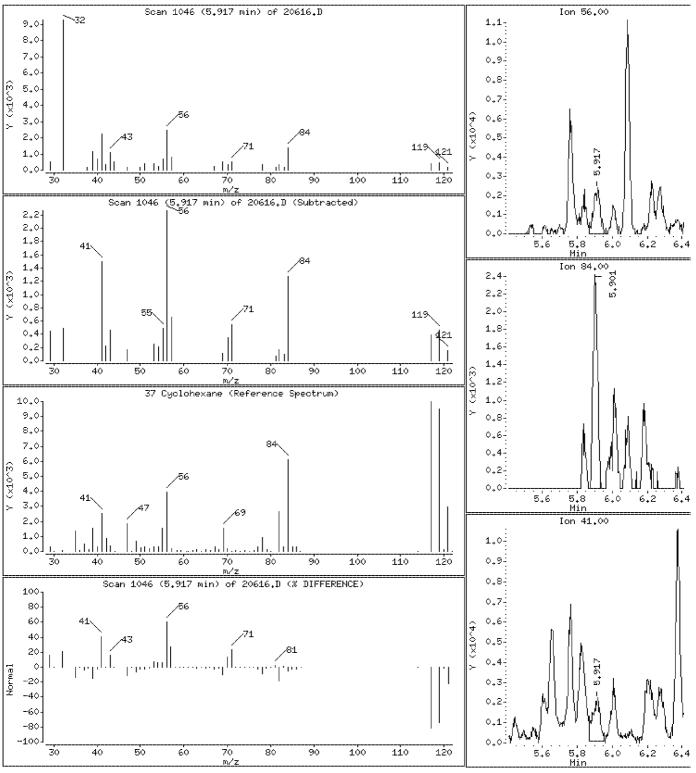
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 859 of 1066

Date : 25-JUL-2013 20:25

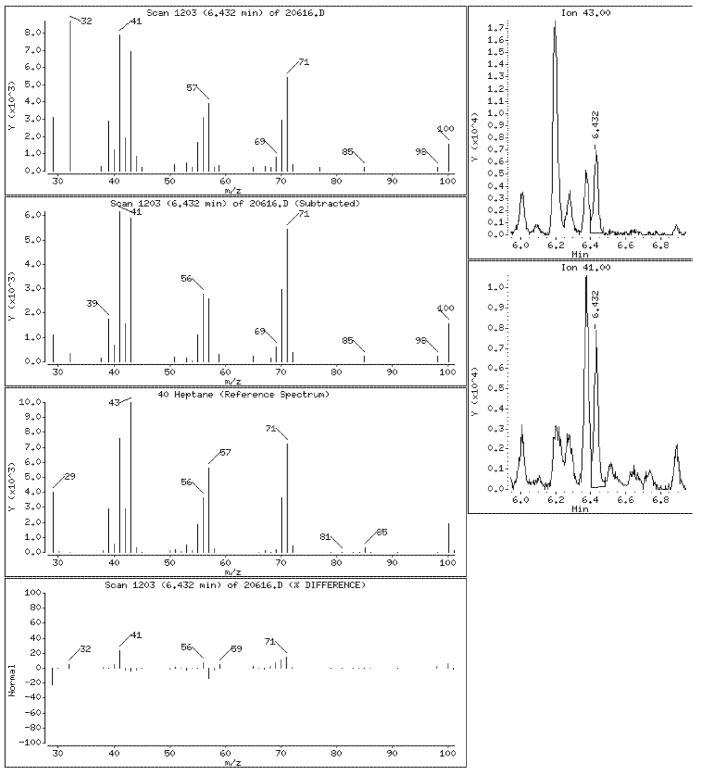
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 860 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

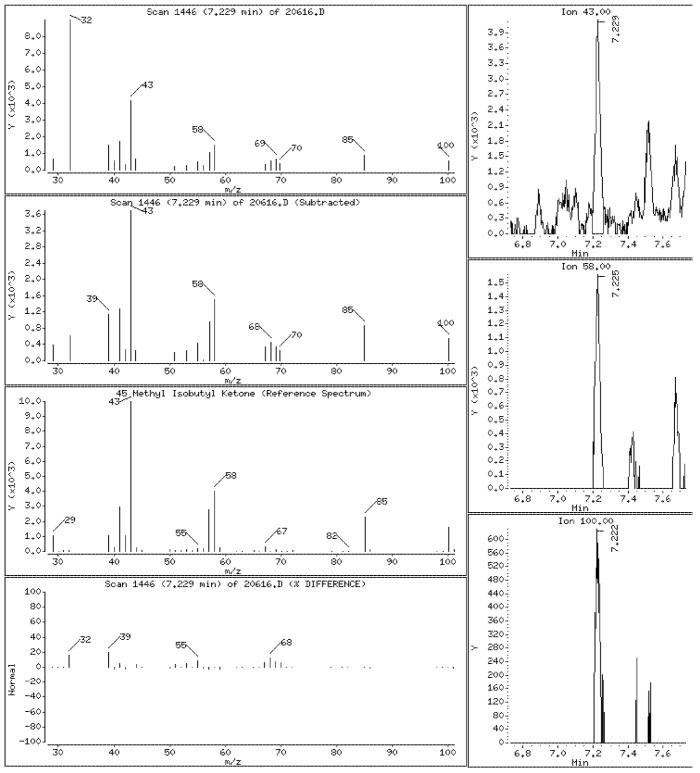
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.936 ppbv



10236207 861 of 1066

Date : 25-JUL-2013 20:25

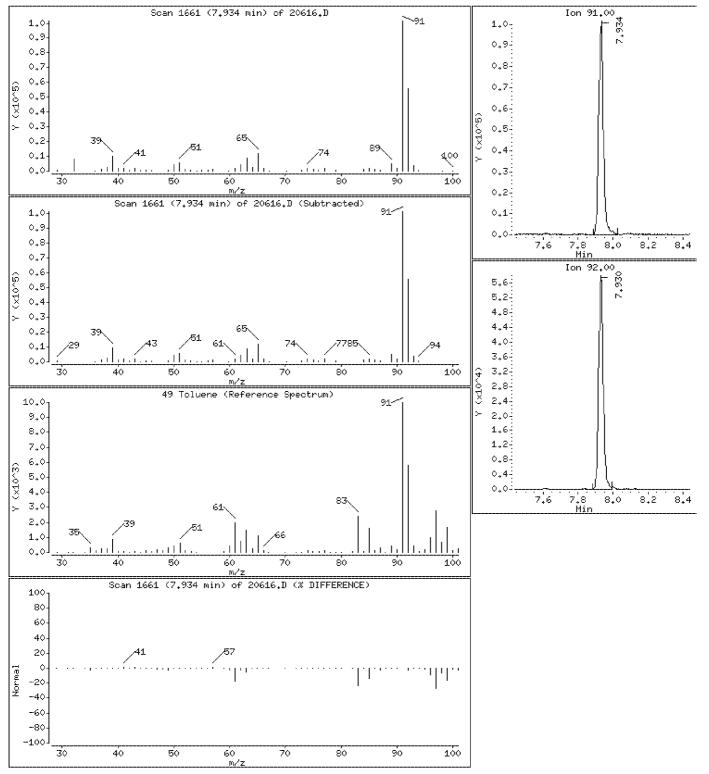
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 862 of 1066

Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

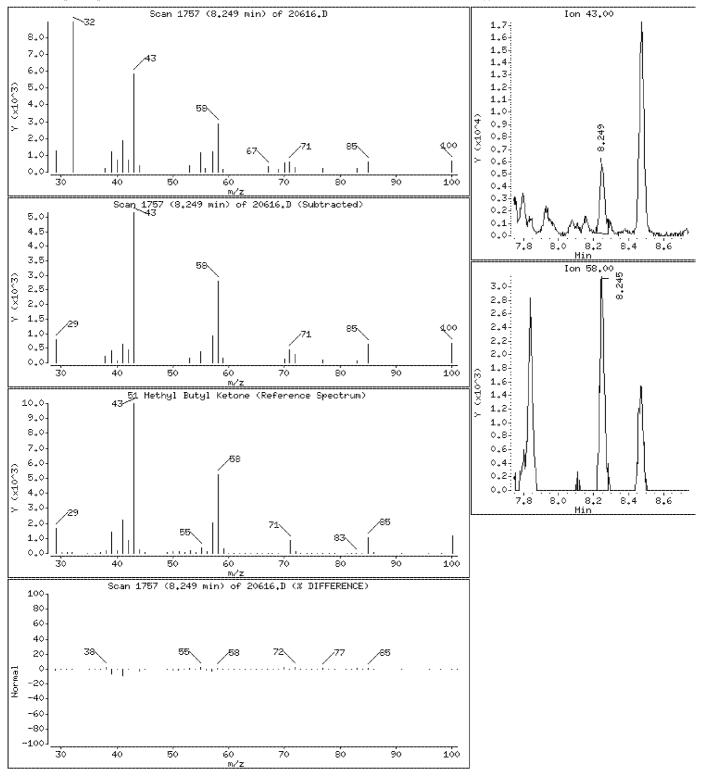
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

51 Methyl Butyl Ketone

Concentration: 0.974 ppbv



10236207 863 of 1066

Date : 25-JUL-2013 20:25

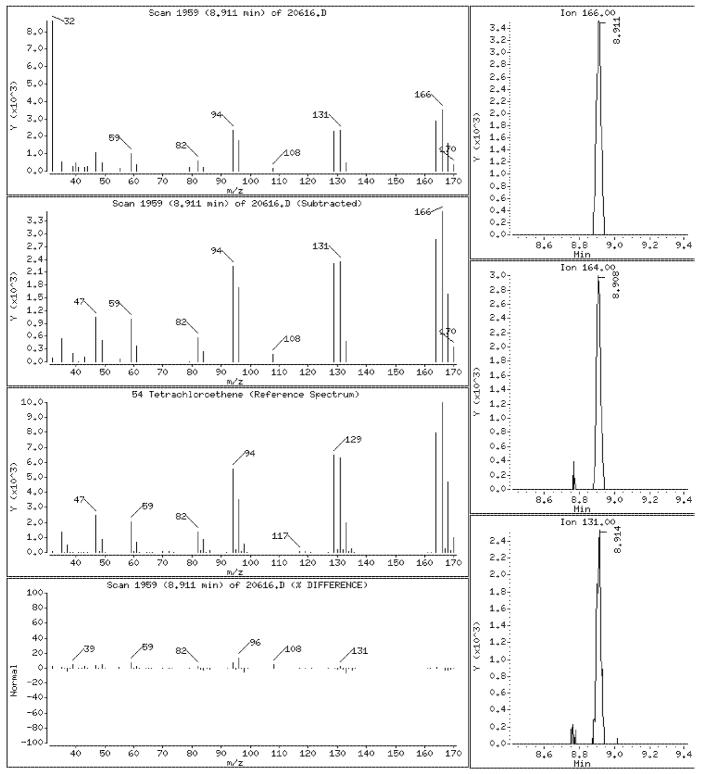
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 864 of 1066

Date : 25-JUL-2013 20:25

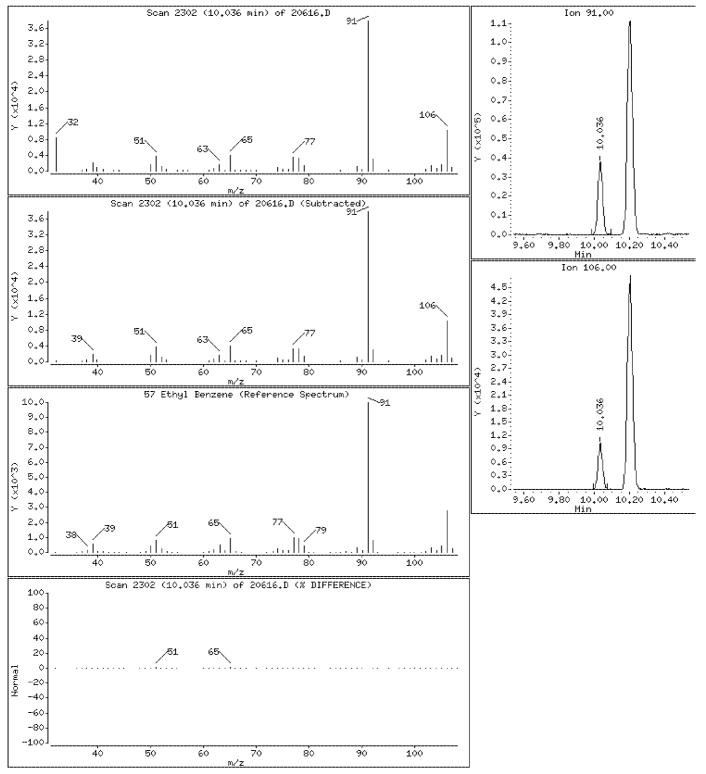
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 865 of 1066

Date : 25-JUL-2013 20:25

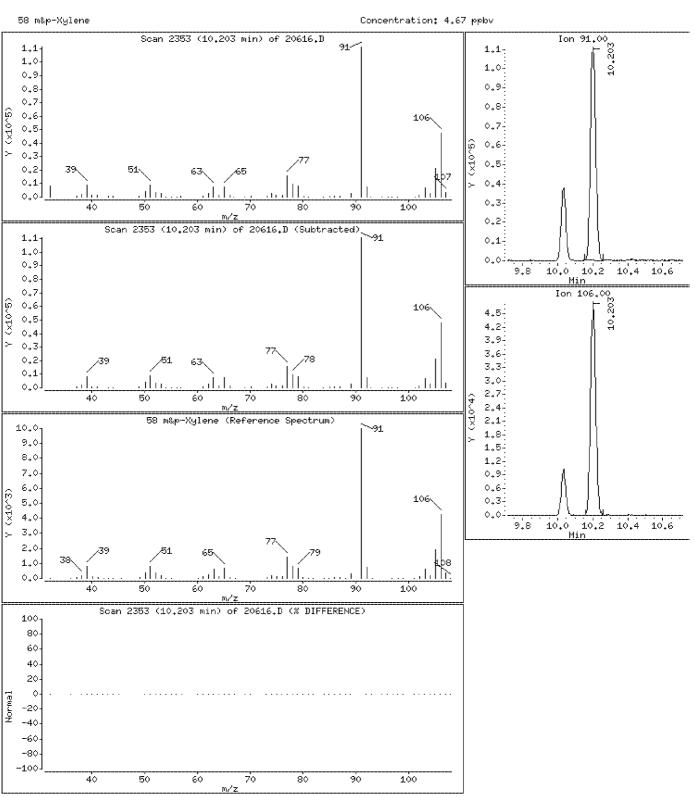
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





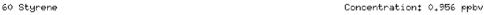
Date : 25-JUL-2013 20:25

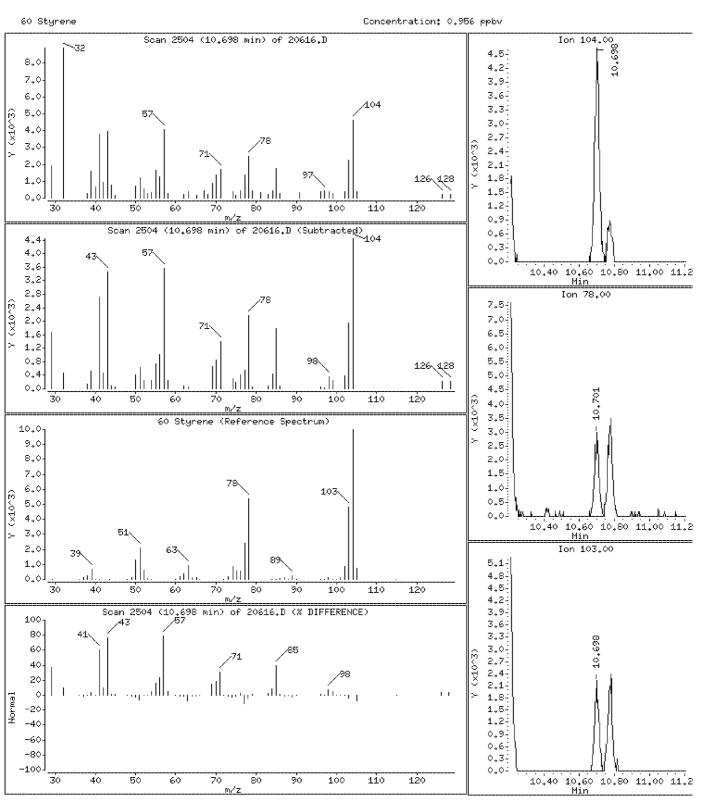
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





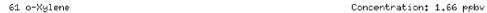
Date : 25-JUL-2013 20:25

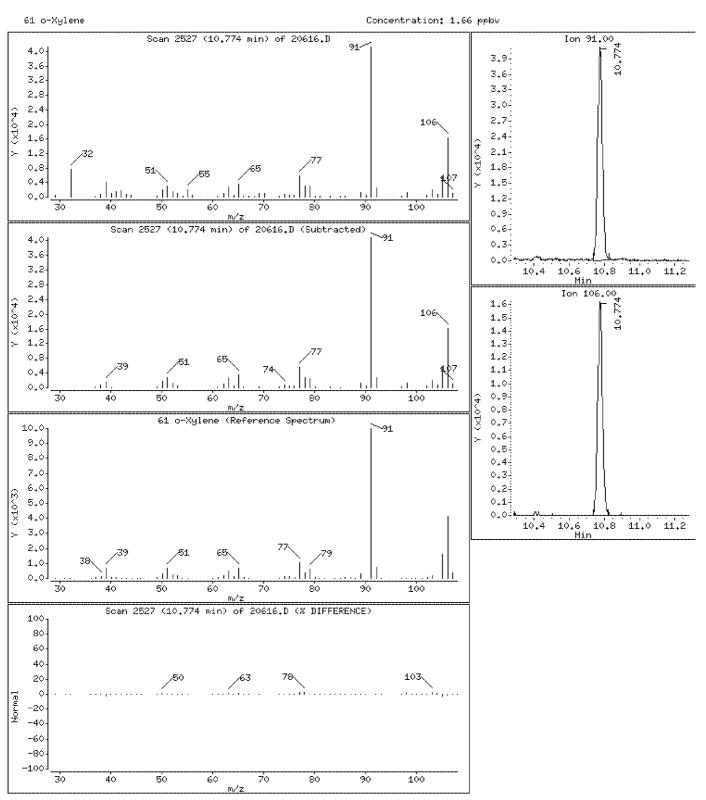
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

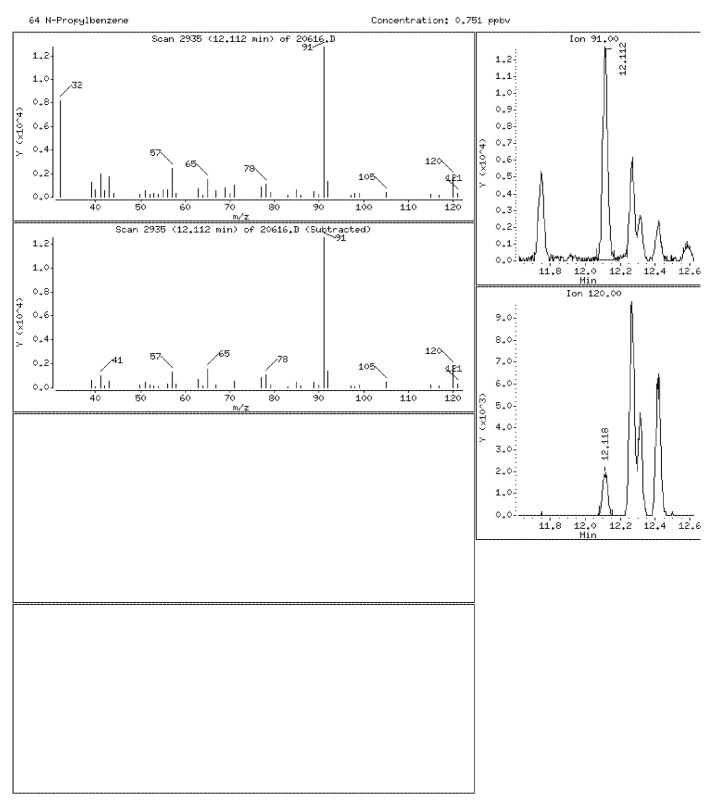
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

64 N-Propylbenzene

Concentration: 0.751 ppbv



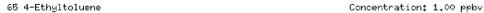
Date : 25-JUL-2013 20:25

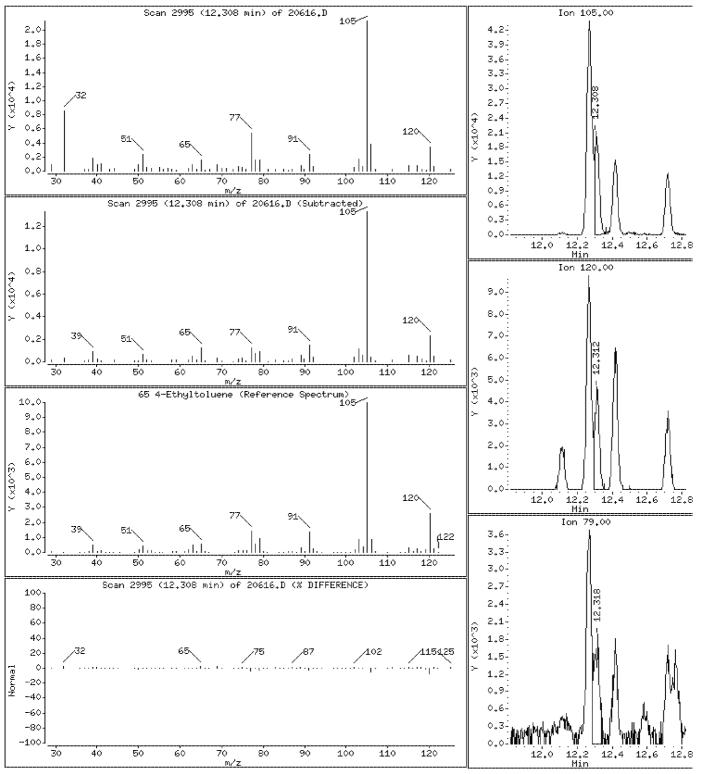
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 870 of 1066

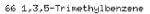
Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

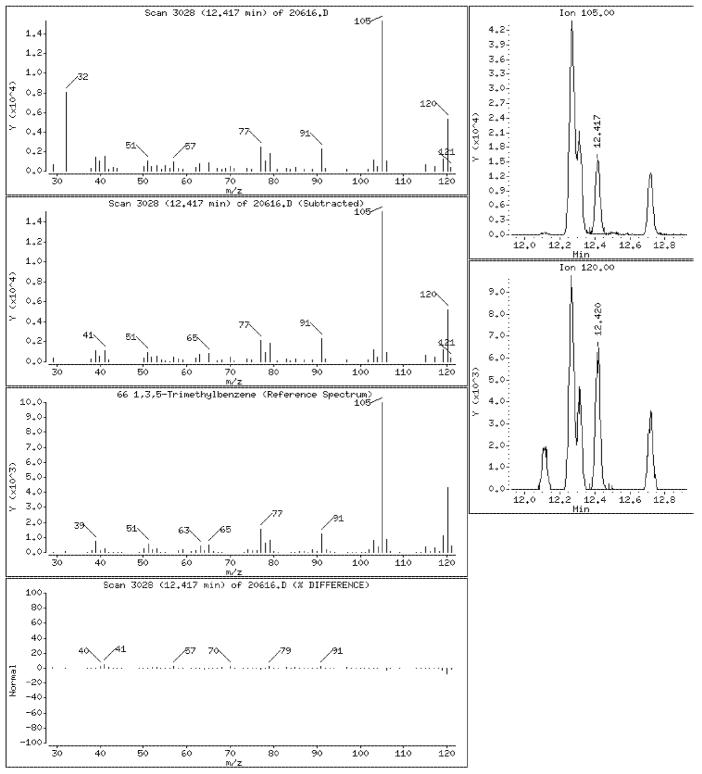
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.957 ppbv



10236207 871 of 1066

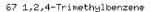
Date : 25-JUL-2013 20:25

Client ID: Instrument: 10airD.i

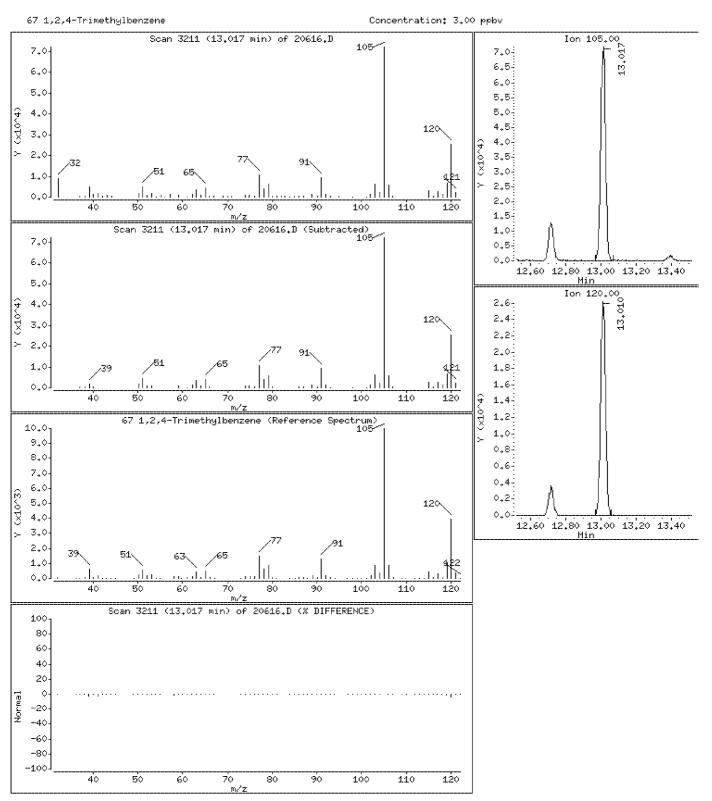
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 3.00 ppbv



Date : 25-JUL-2013 20:25

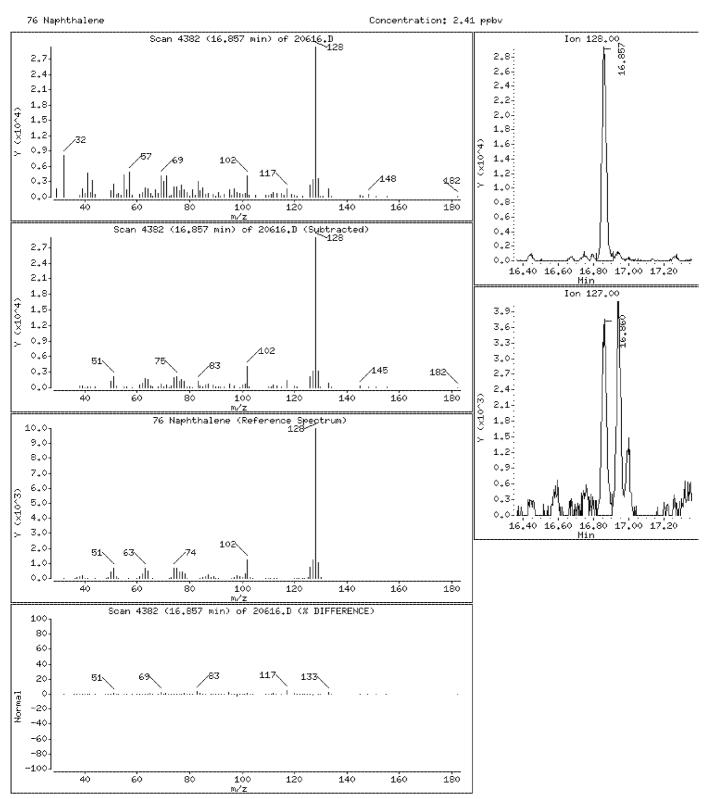
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





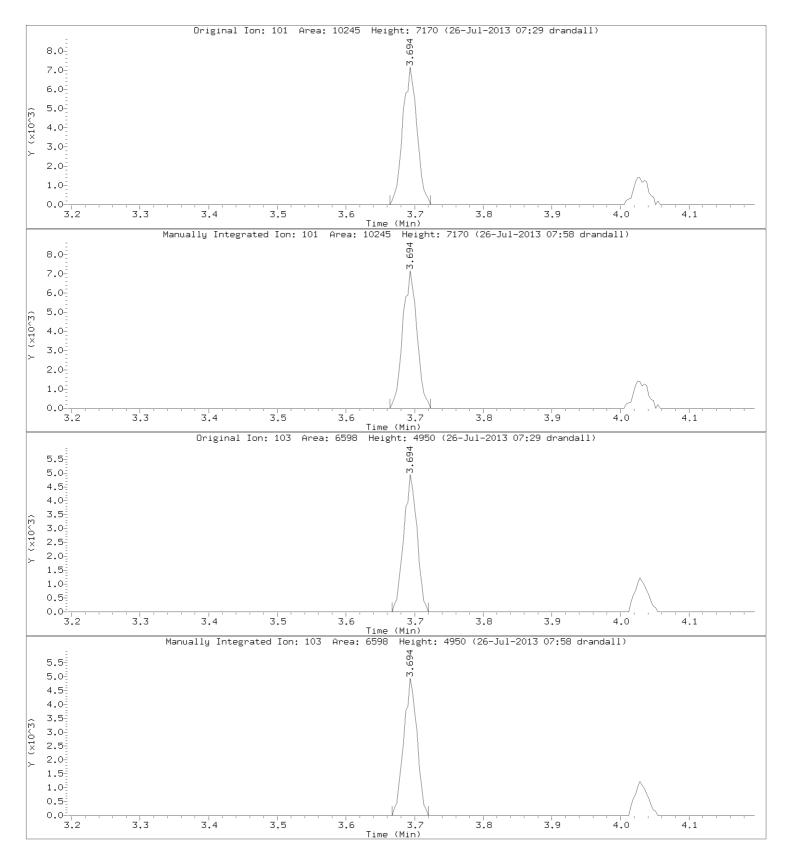
Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: Trichlorofluoromethane

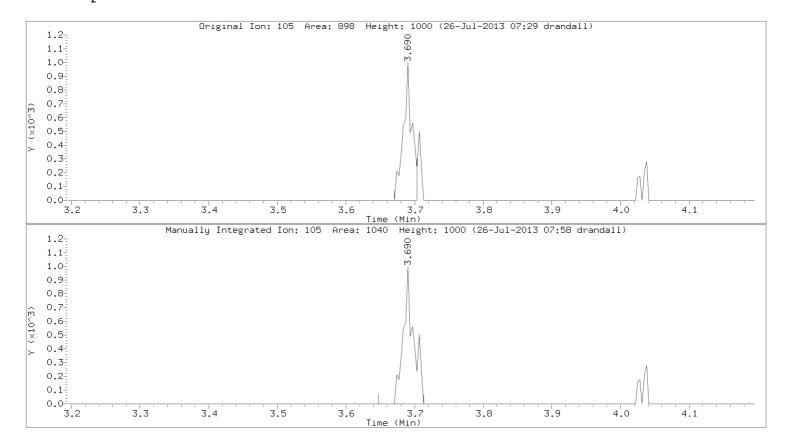
CAS Number: 75-69-4



10236207 874 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i Lab Sample ID: 10236207012



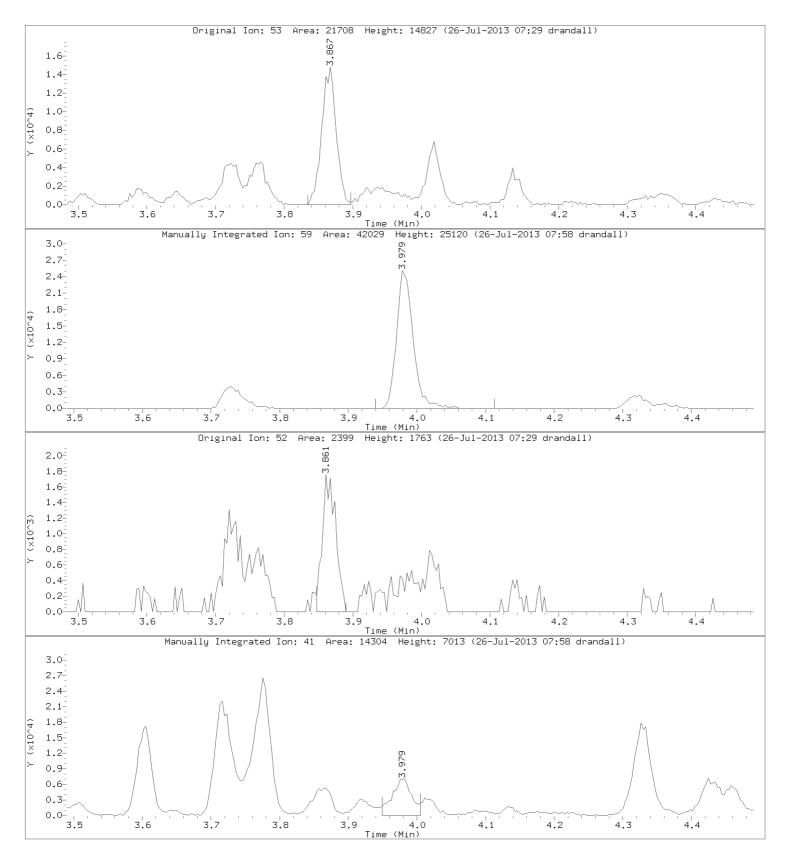
Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



10236207 876 of 1066

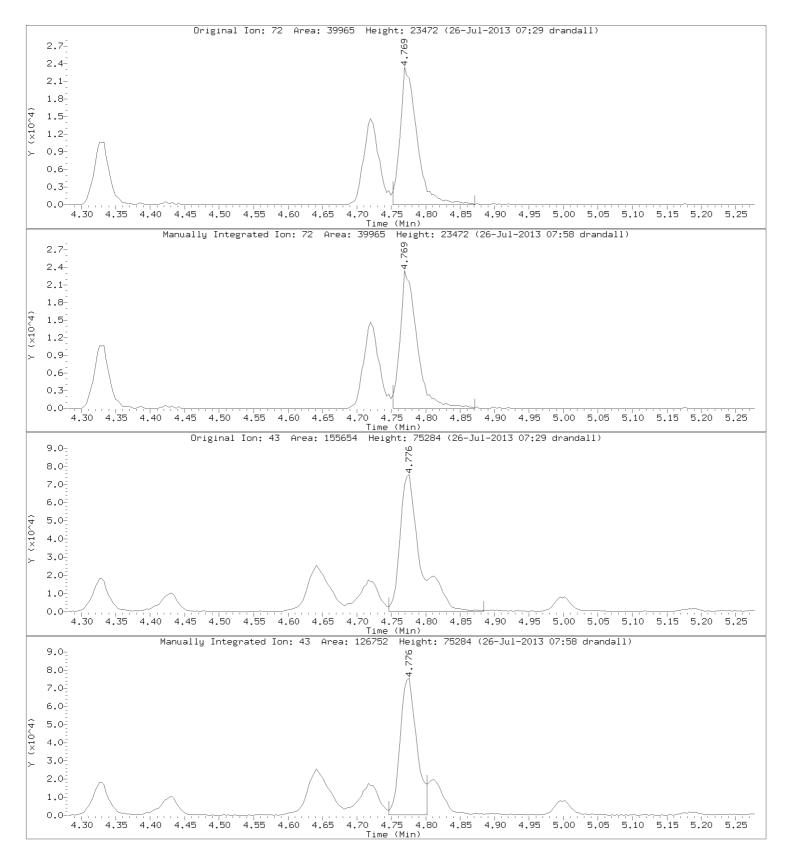
Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: Methyl Ethyl Ketone

CAS Number: 78-93-3



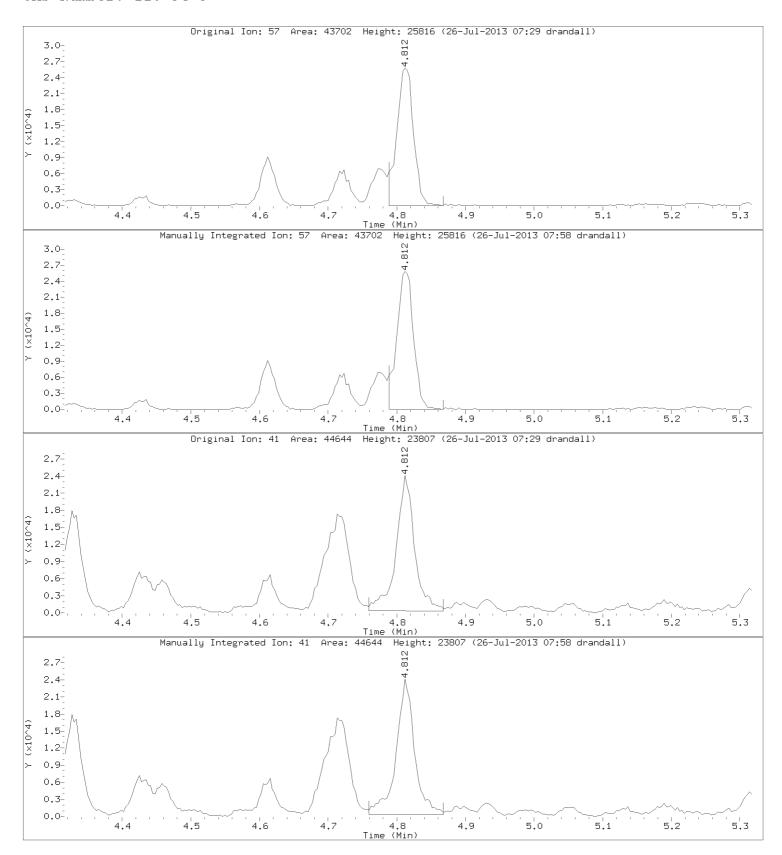
10236207 877 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

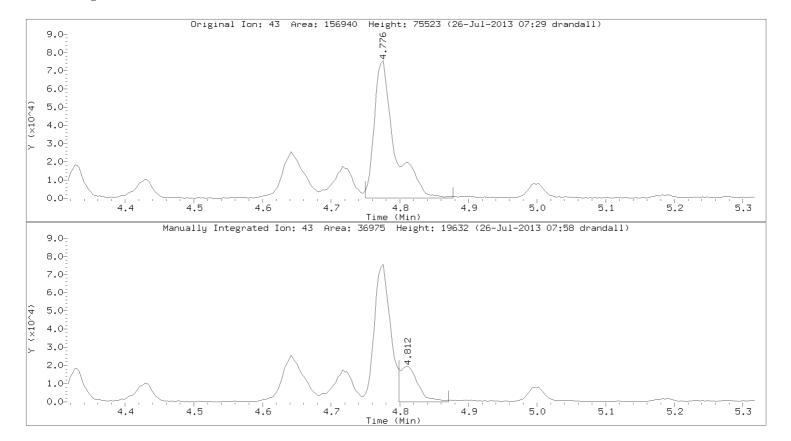
Compound: n-Hexane CAS Number: 110-54-3



10236207 878 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i Lab Sample ID: 10236207012

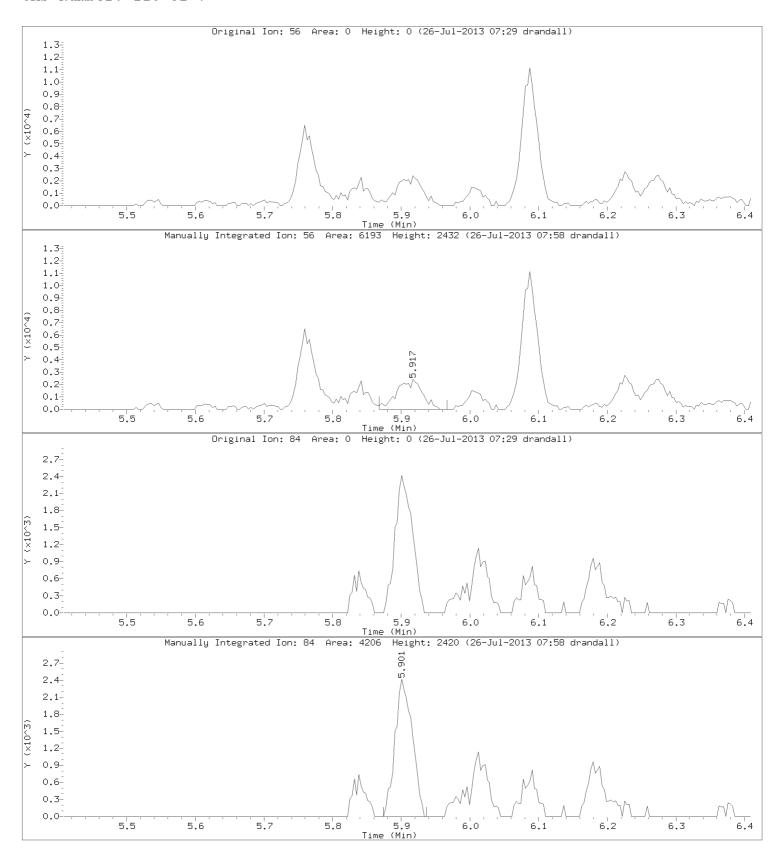


Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

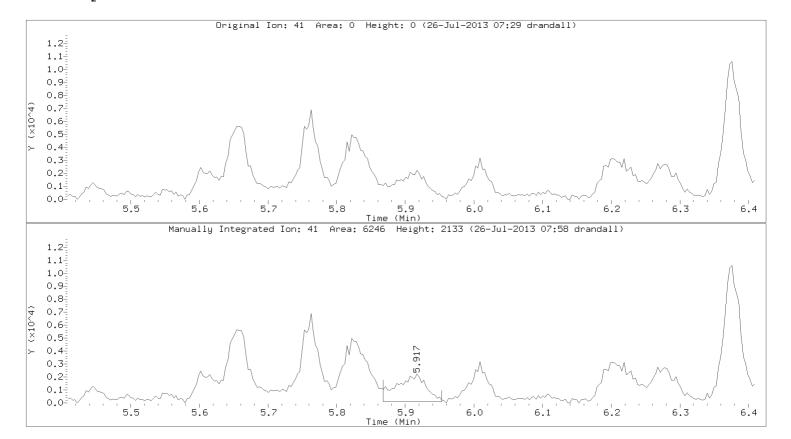
Compound: Cyclohexane CAS Number: 110-82-7



10236207 880 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i Lab Sample ID: 10236207012



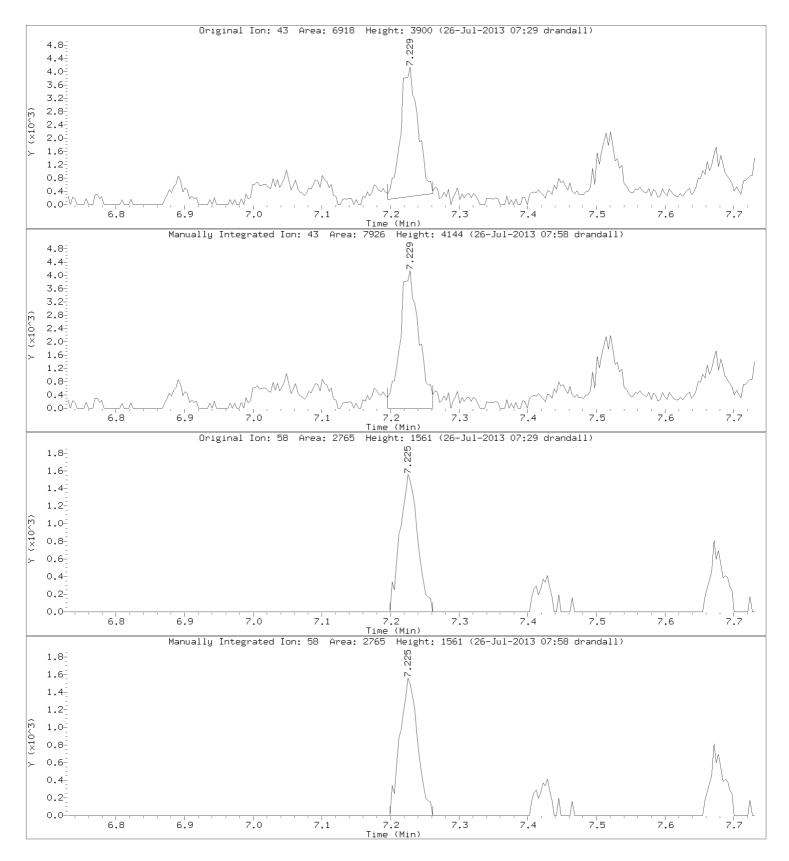
Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: Methyl Isobutyl Ketone

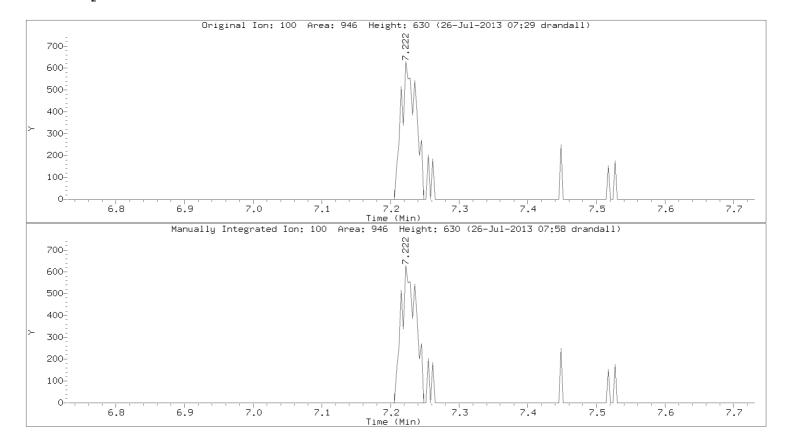
CAS Number: 108-10-1



10236207 882 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i Lab Sample ID: 10236207012



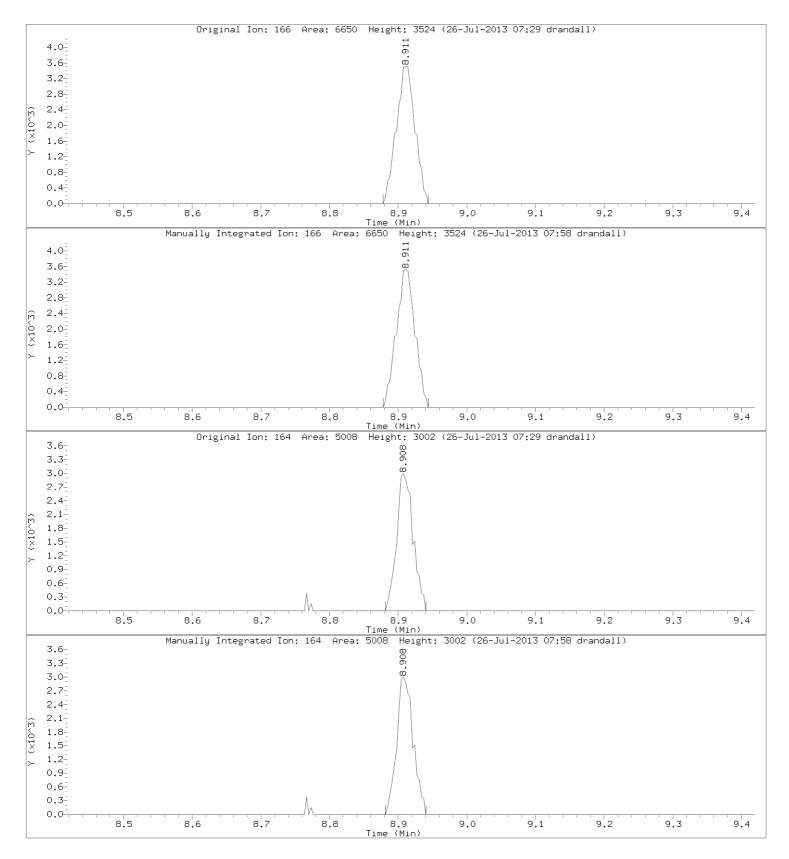
Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: Tetrachloroethene

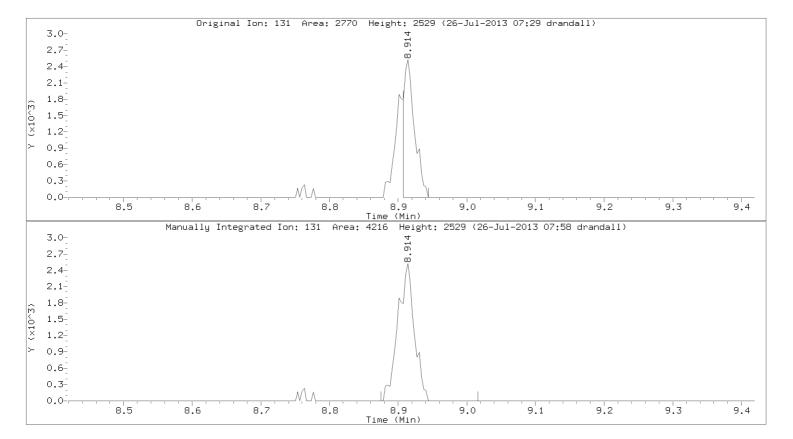
CAS Number: 127-18-4



10236207 884 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i Lab Sample ID: 10236207012

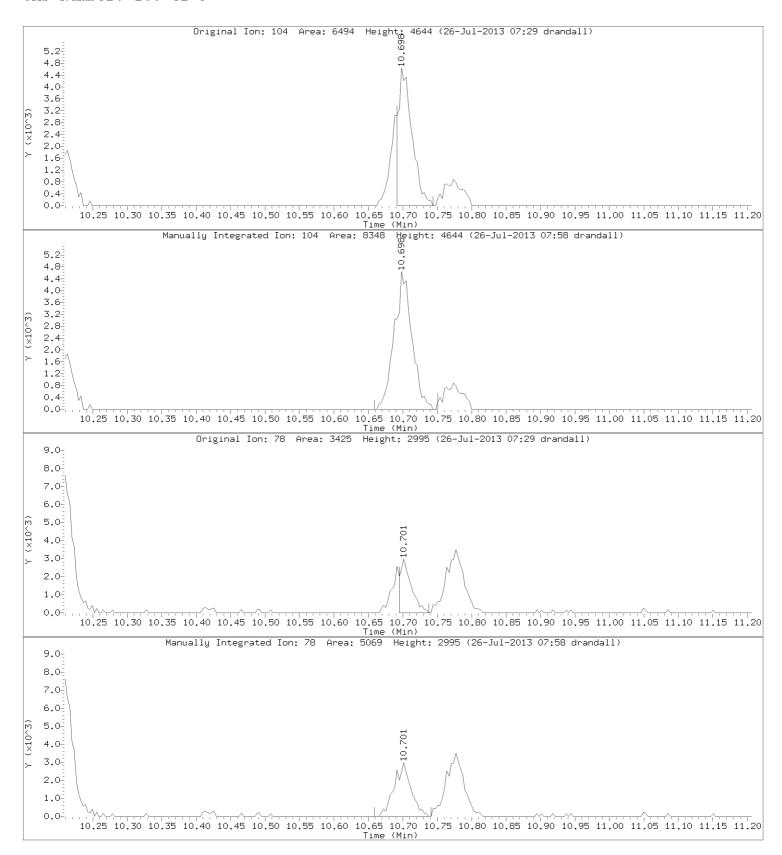


Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

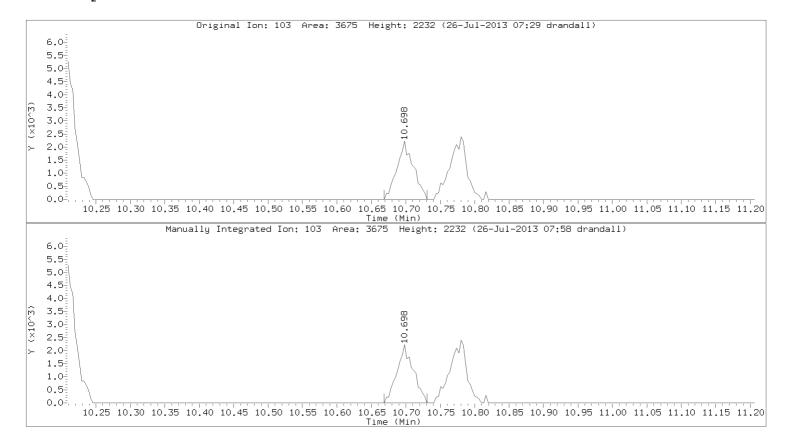
Compound: Styrene CAS Number: 100-42-5



10236207 886 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i Lab Sample ID: 10236207012

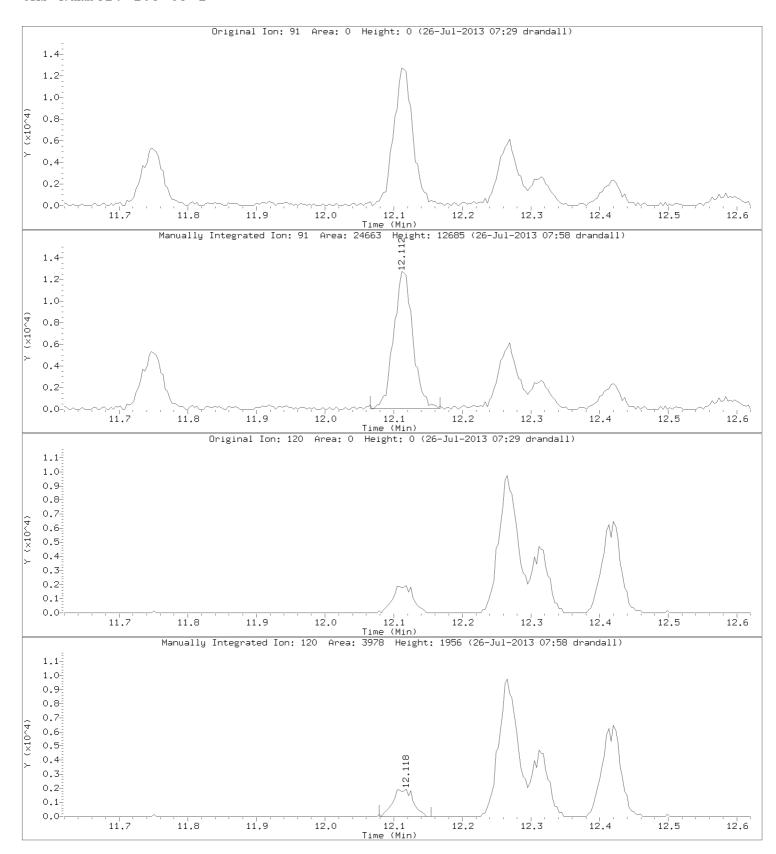


Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: N-Propylbenzene CAS Number: 103-65-1



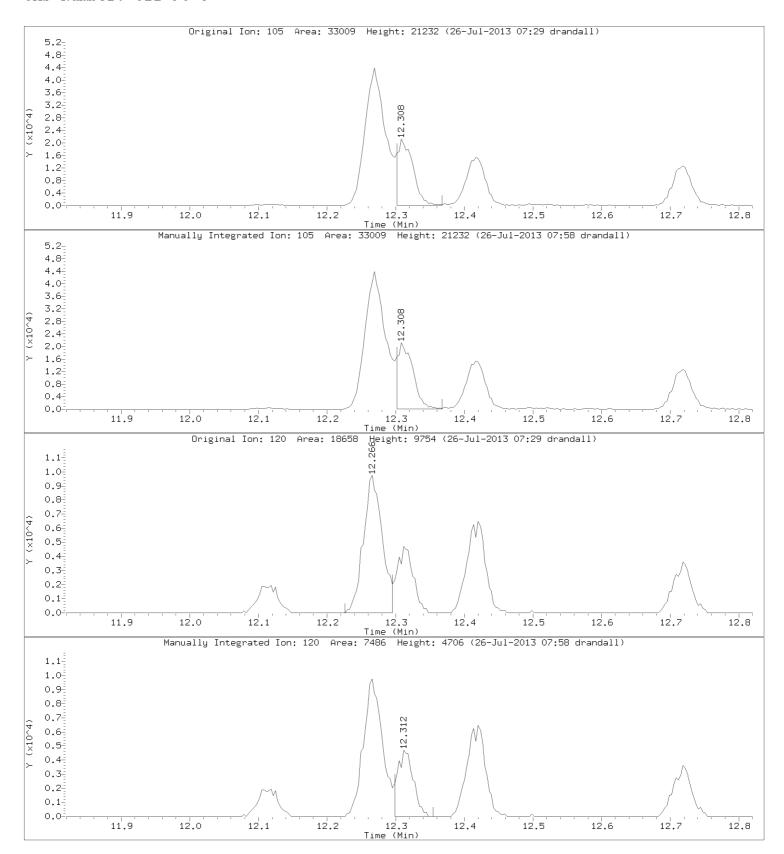
10236207 888 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

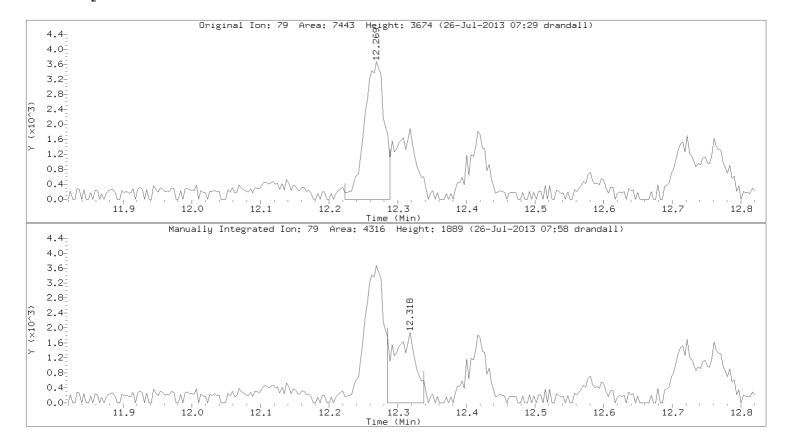
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 889 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i Lab Sample ID: 10236207012



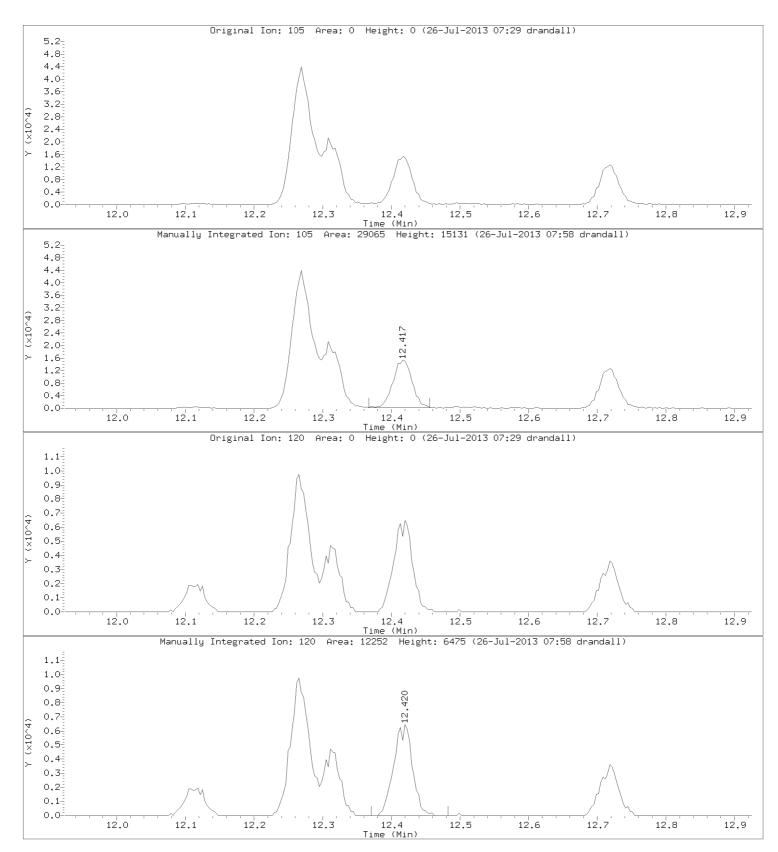
Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



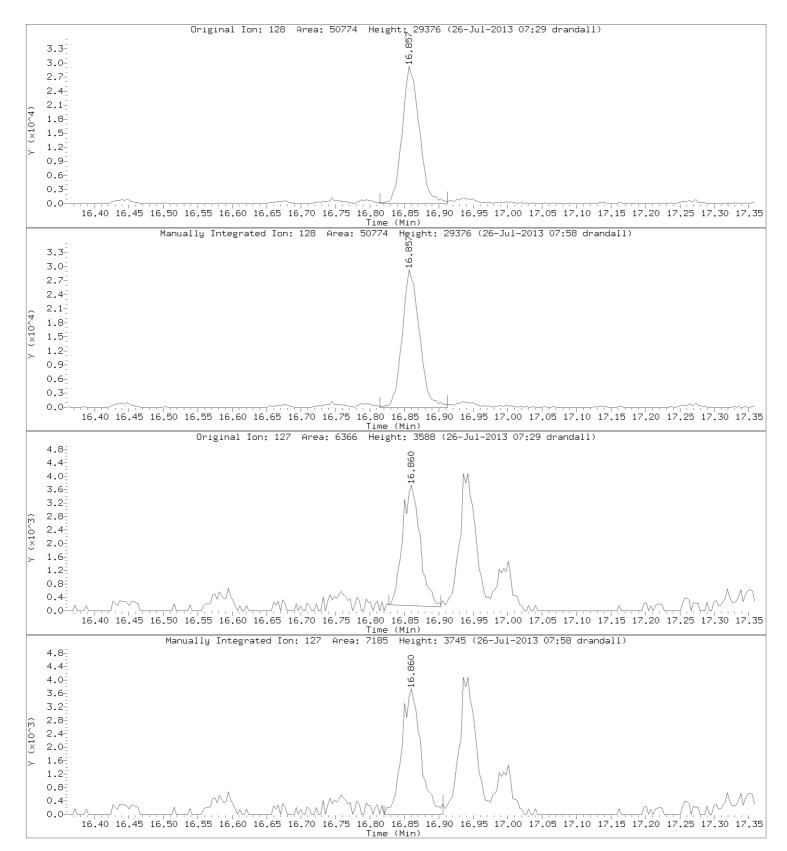
10236207 891 of 1066

Injection Date: 25-JUL-2013 20:25

Instrument: 10airD.i

Lab Sample ID: 10236207012

Compound: Naphthalene CAS Number: 91-20-3



10236207 892 of 1066

Report Date: 26-Jul-2013 08:35

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20630.d Lab Smp Id: 10236207013 Inj Date: 26-JUL-2013 03:33 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 30

Dil Factor: 1.49000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description		
DF Uf Cpnd Variable	1.490 1.000	Dilution Factor ng unit correction factor Local Compound Variable		

		CONCENTRATIONS				
Compounds	QUANT SIG MASS ====	ON-COLUMN FINAL  RT EXP RT REL RT RESPONSE ( ppbv) ( ppbv)				
1 Propylene	41	2.978 2.982 (0.489) 302022 33.2033 49.5(A)				
2 Dichlorodifluoromethane	85	3.005 3.008 (0.494) 23569 0.26957 0.402				
3 Dichlorotetrafluoroethane	85	Compound Not Detected.				
4 Chloromethane	50	Compound Not Detected.				
5 Vinyl chloride	62	Compound Not Detected.				
6 1,3-Butadiene	54	Compound Not Detected.				
7 Bromomethane	94	Compound Not Detected.				
8 Chloroethane	64	Compound Not Detected.				
9 Ethanol	31	3.493 3.494 (0.574) 50320 4.83091 7.20(M)				
10 Vinyl Bromide	106	Compound Not Detected.				
11 Acrolein	56	3.687 3.684 (0.606) 9964 1.56304 2.33(QM)				
12 Trichlorofluoromethane	101	3.696 3.694 (0.607) 11713 0.12315 0.184				
13 Acetone	43	3.723 3.726 (0.612) 527951 11.0741 16.5				
14 Isopropyl Alcohol	45	3.755 3.756 (0.617) 33382 1.06759 1.59(Q)				
15 1,1-Dichloroethene	61	Compound Not Detected.				
16 Acrylonitrile	53	Compound Not Detected.				
17 Tert Butyl Alcohol	59	3.982 3.989 (0.654) 108394 2.16723 3.23(M)				
18 Freon 113	101	Compound Not Detected.				
19 Methylene chloride	49	4.093 4.094 (0.672) 9054 0.33520 0.499				
20 Allyl Chloride	76	Compound Not Detected.				
21 Carbon Disulfide	76	4.224 4.224 (0.694) 134769 1.71458 2.55				
22 trans-1,2-dichloroethene	96	Compound Not Detected.				
23 Methyl Tert Butyl Ether	73	4.457 4.458 (0.732) 72321 1.07872 1.61(M)				
24 Vinyl Acetate	43	Compound Not Detected.				

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20630.d$ Report Date: 26-Jul-2013 08:35

			CONCENTRATIONS
		QUANT SIG	ON-COLUMN FINAL
Compounds		MASS ====	RT EXP RT REL RT RESPONSE (ppbv) (ppbv)
	hloroethane	63	Compound Not Detected.
\$ 26 Hexane-	d14(S)	66	4.697 4.700 (0.772) 307521 8.85557 8.86
27 Methyl	Ethyl Ketone	72	4.775 4.779 (0.785) 59763 5.41452 8.07
28 n-Hexan	e	57	4.815 4.818 (0.791) 52655 1.66797 2.48
29 cis-1,2	-Dichloroethene	96	Compound Not Detected.
30 Ethyl A	cetate	43	Compound Not Detected.
31 Chlorof	orm	83	Compound Not Detected.
32 Tetrahy	drofuran	42	Compound Not Detected.
33 1,1,1-T	richloroethane	97	Compound Not Detected.
34 1,2-Dic	hloroethane	62	Compound Not Detected.
35 Benzene		78	5.877 5.887 (0.966) 59607 1.27931 1.91
	tetrachloride	117	Compound Not Detected.
37 Cyclohe		56	5.907 5.910 (0.970) 9560 0.83539 1.24
	luorobenzene	114	6.087 6.094 (1.000) 719129 10.0000
	rimethylpentane	57	Compound Not Detected.
40 Heptane		43	6.435 6.442 (1.057) 15471 1.04724 1.56
	hloropropane	63	Compound Not Detected.
42 Trichlo		130	Compound Not Detected.
43 1,4-Dio		88	Compound Not Detected.
	chloromethane	83	Compound Not Detected.
=	Isobutyl Ketone	43	Compound Not Detected.
•	-Dichloropropene	75	Compound Not Detected.
	,3-Dichloropropene	75 98	Compound Not Detected. 7.841 7.848 (1.288) 534937 10.6511 10.6
\$ 48 Toluene 49 Toluene		91	
	richloroethane	97	7.930 7.940 (1.303) 176915 2.43123 3.62 Compound Not Detected.
	Butyl Ketone	43	8.245 8.244 (0.851) 11231 0.63099 0.940
4	chloromethane	129	Compound Not Detected.
53 1,2-Dib		107	Compound Not Detected.
54 Tetrach		166	8.914 8.918 (0.920) 6158 0.51414 0.766
	enzene - d5	117	9.684 9.691 (1.000) 286038 10.0000
56 Chlorob		112	Compound Not Detected.
57 Ethyl B		91	10.029 10.039 (1.036) 72552 0.95741 1.43
58 m&p-Xyl		91	10.199 10.213 (1.053) 260154 3.18775 4.75
59 Bromofo		173	Compound Not Detected.
60 Styrene		104	10.698 10.708 (1.105) 10248 0.64204 0.957
61 o-Xylen	e	91	10.773 10.783 (1.112) 96949 1.24446 1.85
62 1,1,2,2	-Tetrachloroethane	83	Compound Not Detected.
63 Isoprop	ylbenzene	105	Compound Not Detected.
64 N-Propy	lbenzene	91	12.111 12.121 (1.251) 44291 0.61521 0.917
65 4-Ethyl	toluene	105	12.311 12.321 (1.271) 95846 1.20345 1.79
66 1,3,5-T	rimethylbenzene	105	12.413 12.426 (1.282) 74930 1.07690 1.60
67 1,2,4-T	rimethylbenzene	105	13.010 13.020 (1.343) 382122 4.46993 6.66
68 1,3-Dic	hlorobenzene	146	Compound Not Detected.
69 Sec- Bu	tylbenzene	105	Compound Not Detected.
\$ 70 1,4-dic	hlorobenzene-d4 (S)	150	13.449 13.459 (1.389) 111225 9.63338 9.63
71 Benzyl	Chloride	91	Compound Not Detected.
72 1,4-Dic	hlorobenzene	146	Compound Not Detected.
73 1,2-Dic	hlorobenzene	146	Compound Not Detected.
74 N-Butyl	benzene	91	Compound Not Detected.
	richlorobenzene	180	Compound Not Detected.
76 Naphtha		128	16.856 16.860 (1.741) 92461 2.44097 3.64
77 Hexachl	orobutadiene	225	Compound Not Detected.

10236207 894 of 1066

Report Date: 26-Jul-2013 08:35

# QC Flag Legend

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

Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.

10236207 895 of 1066

Report Date: 26-Jul-2013 08:35

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20630.d

Lab Smp Id: 10236207013 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	=====
38 1,4-Difluorobenze	579775	347865	811685	719129	24.04
55 Chlorobenzene - d	221404	132842	309966	286038	29.19

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

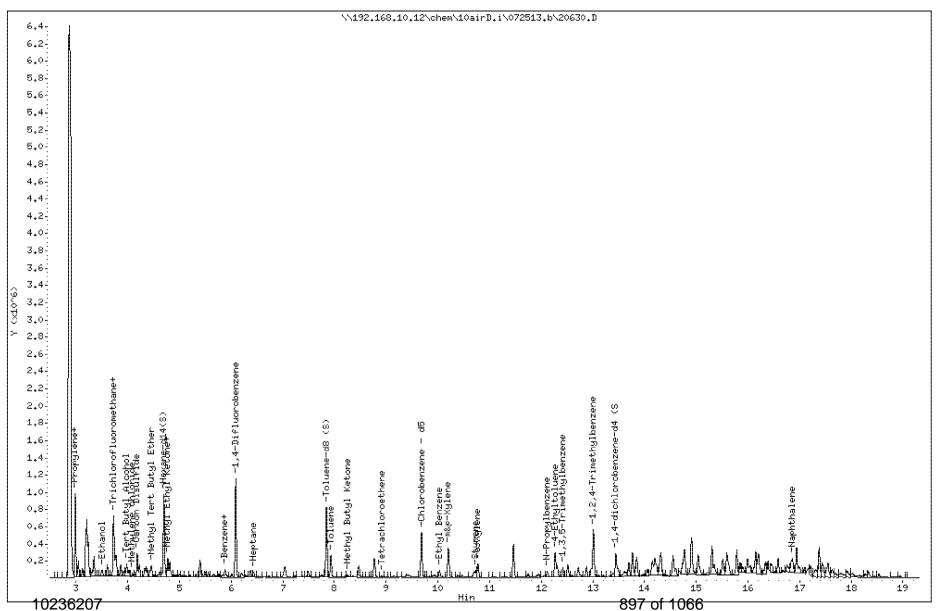
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 03:33

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 26-JUL-2013 03:33

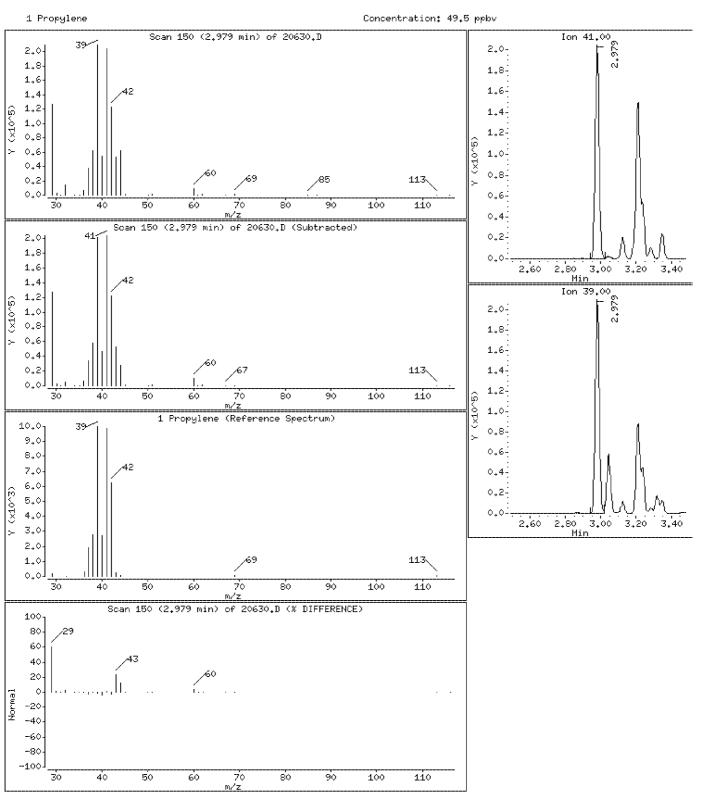
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

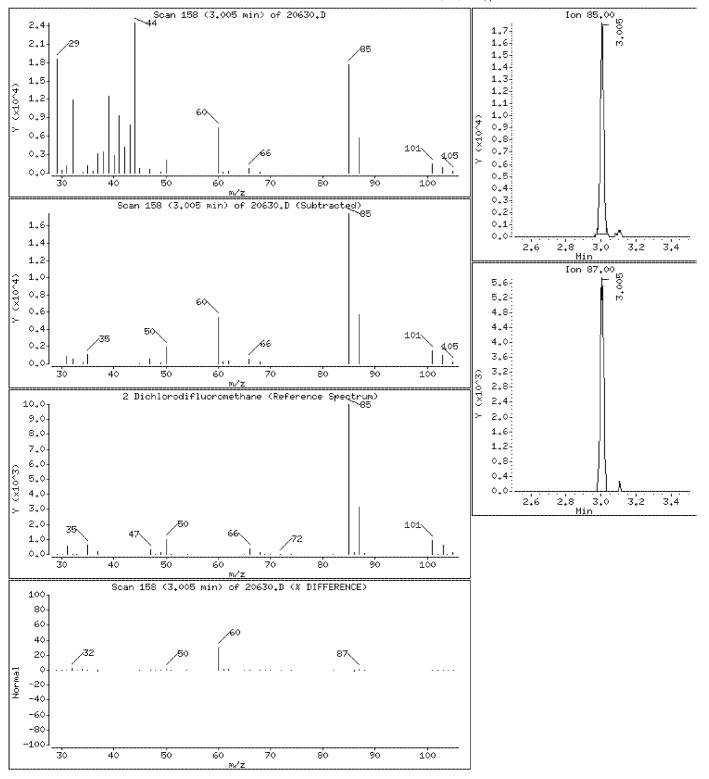
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.402 ppbv



10236207 899 of 1066

Date : 26-JUL-2013 03:33

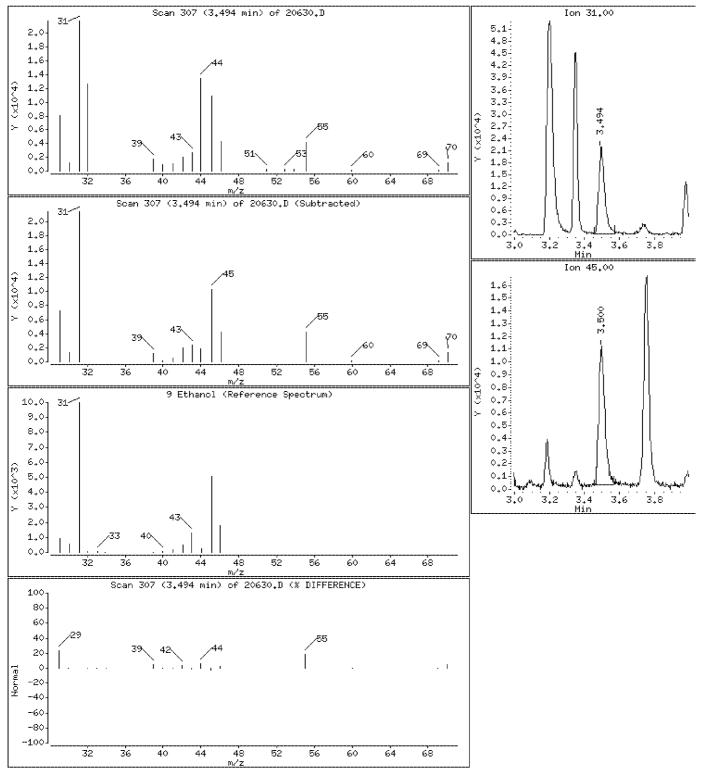
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

9 Ethanol Concentration: 7,20 ppbv



10236207 900 of 1066

Date : 26-JUL-2013 03:33

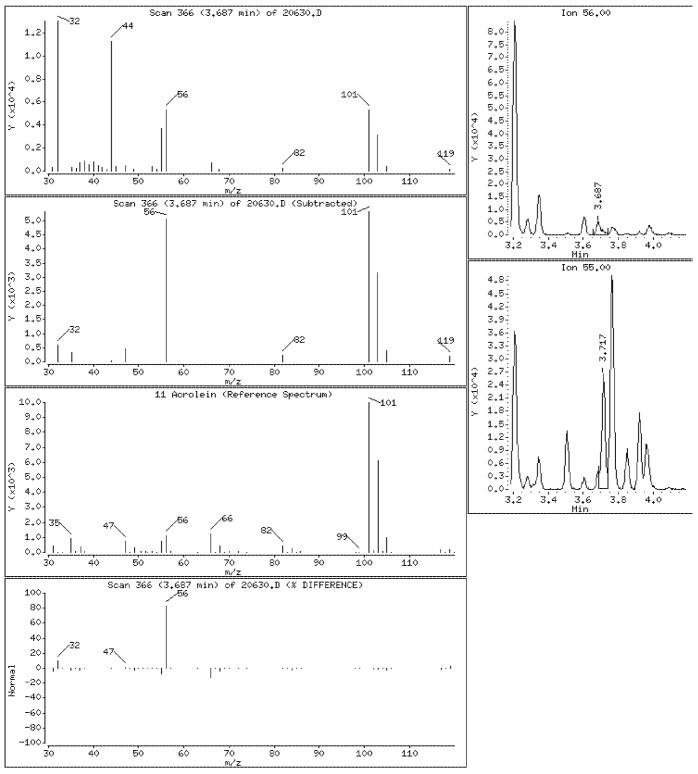
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 901 of 1066

Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

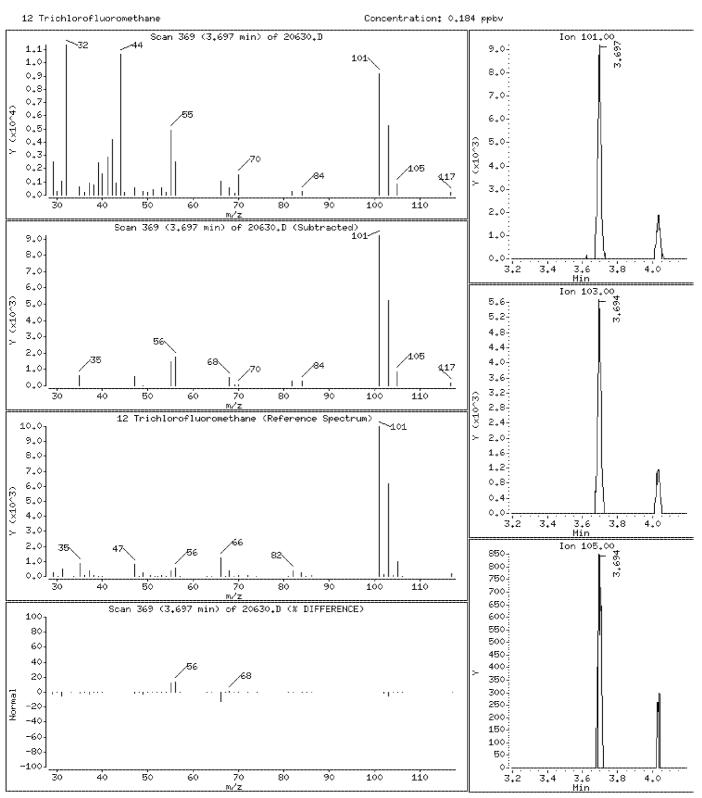
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.184 ppbv



Date : 26-JUL-2013 03:33

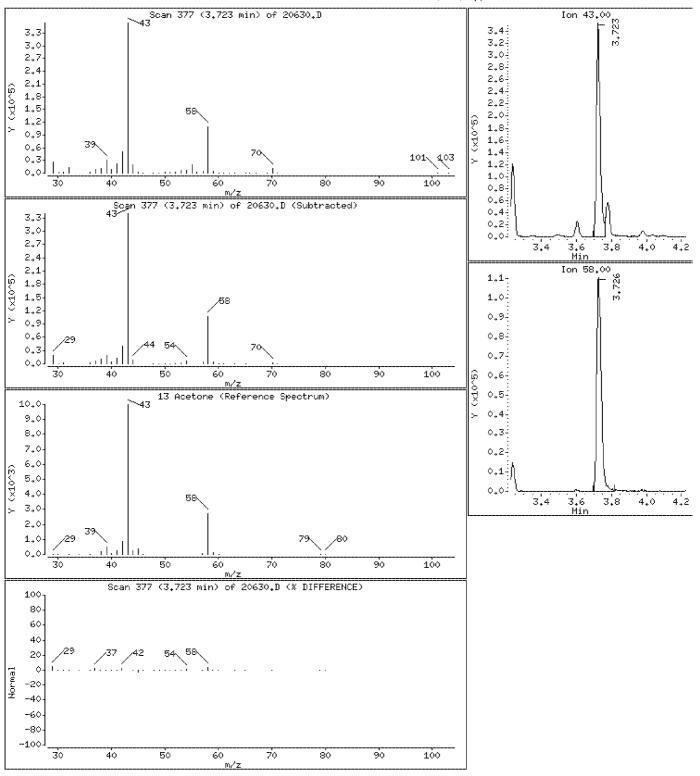
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 903 of 1066

Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

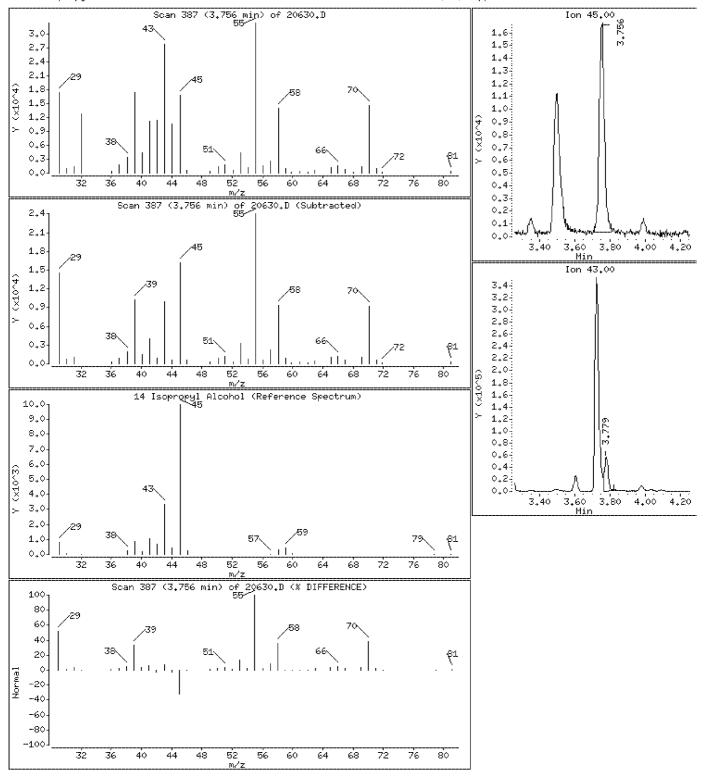
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 1.59 ppbv



10236207 904 of 1066

Date : 26-JUL-2013 03:33

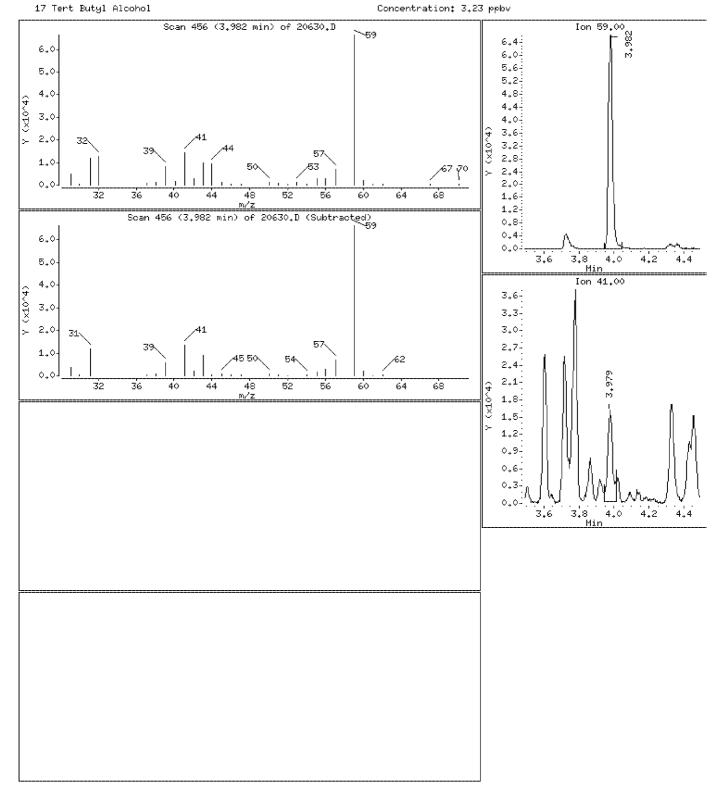
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:33

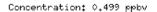
Client ID: Instrument: 10airD.i

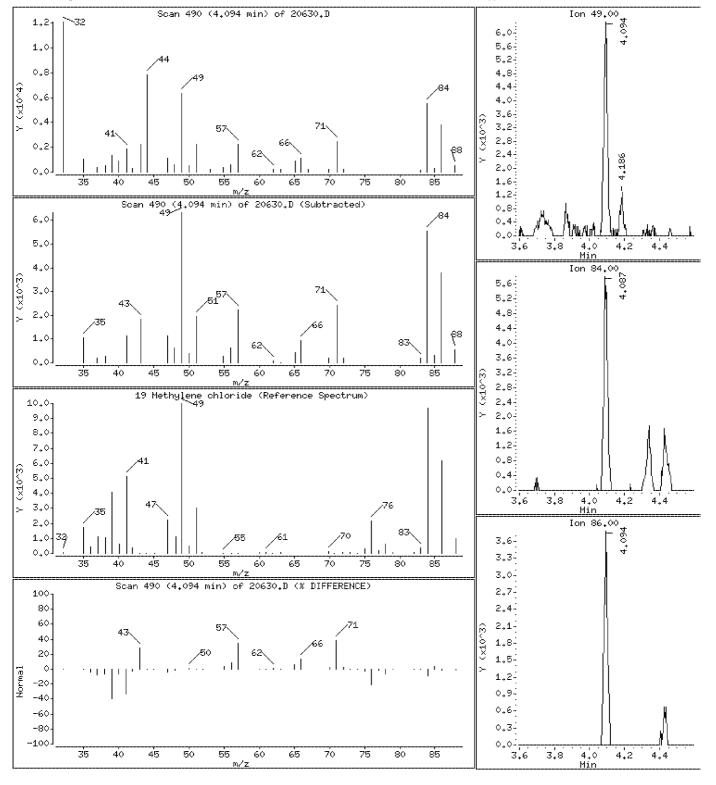
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 906 of 1066

Date : 26-JUL-2013 03:33

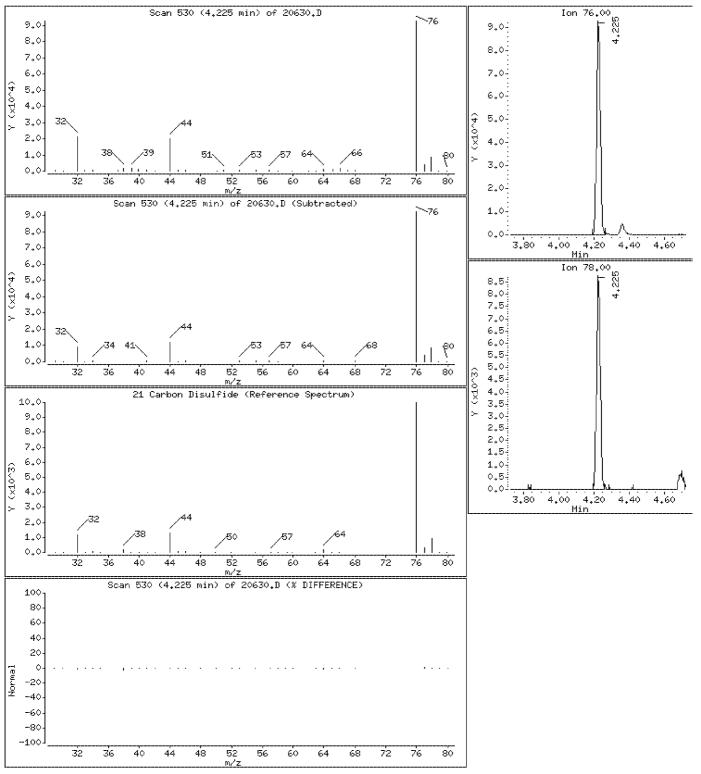
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 907 of 1066

Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

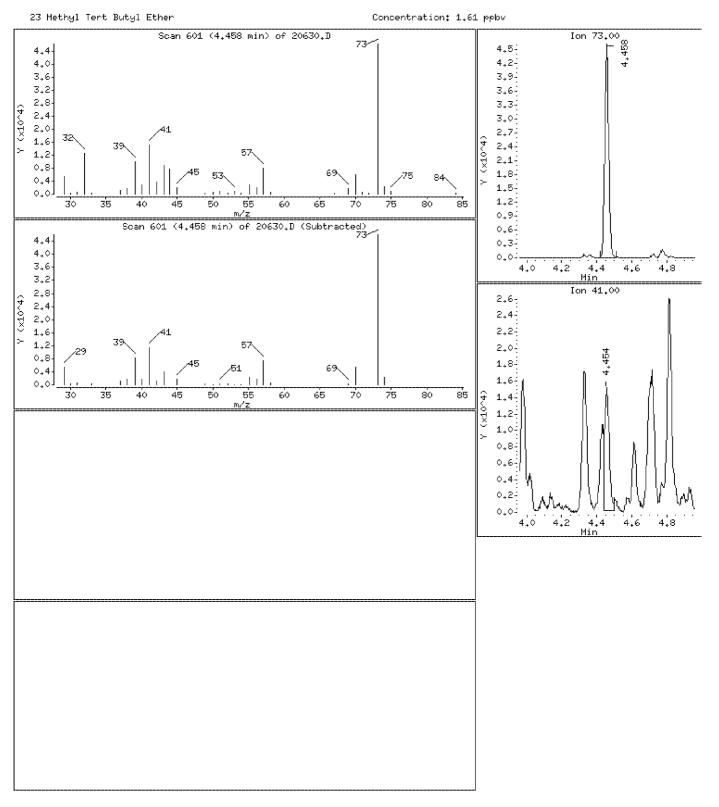
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

23 Methyl Tert Butyl Ether

Concentration: 1.61 ppbv



Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

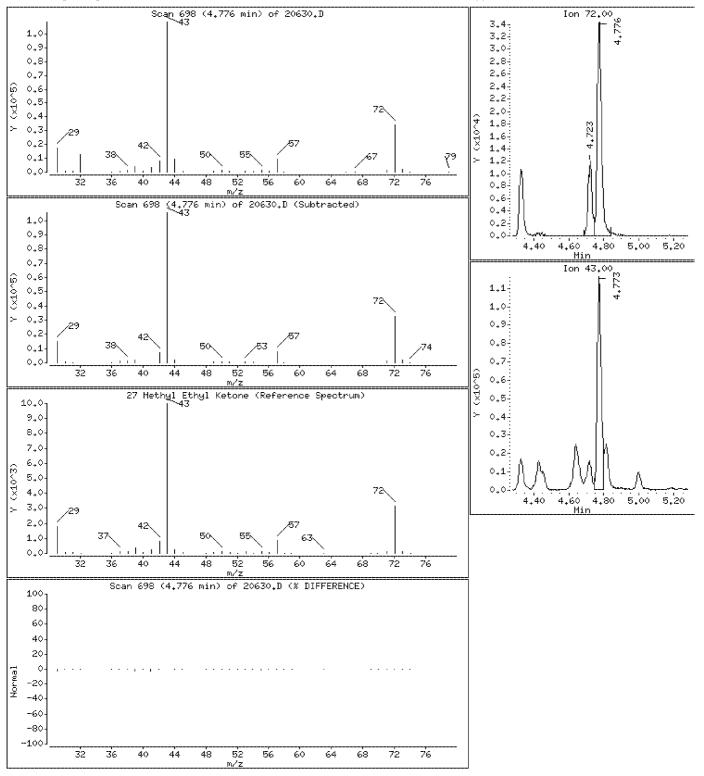
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 8.07 ppbv



10236207 909 of 1066

Date : 26-JUL-2013 03:33

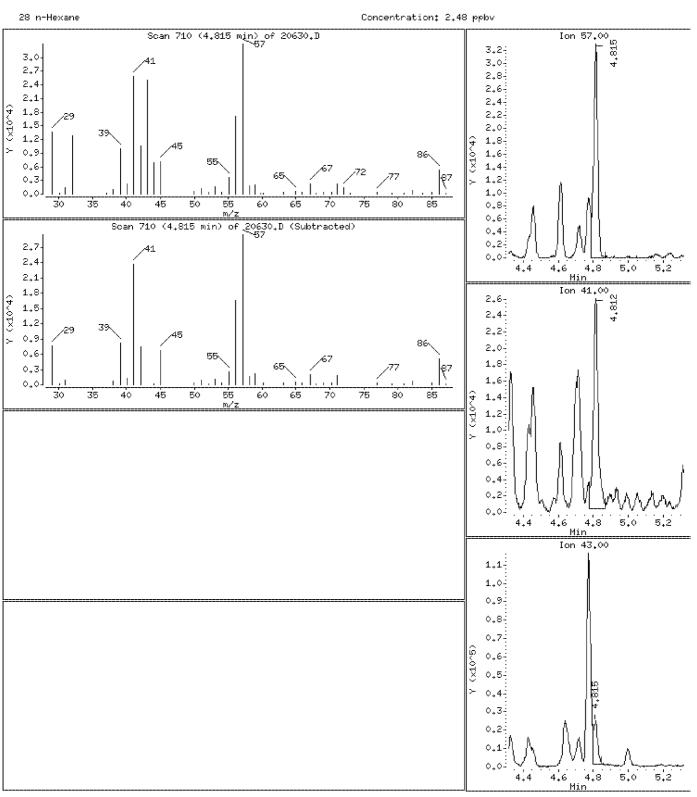
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





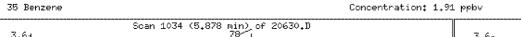
Date : 26-JUL-2013 03:33

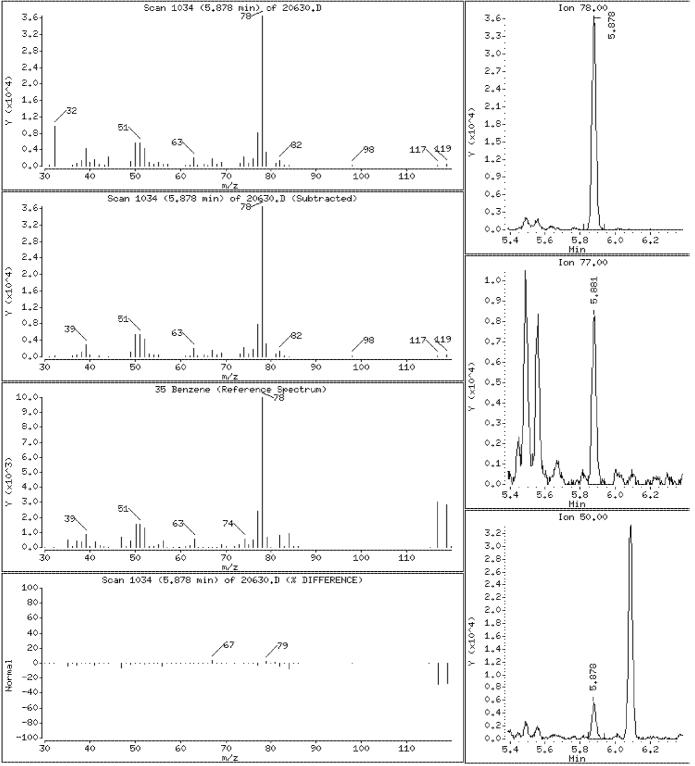
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:33

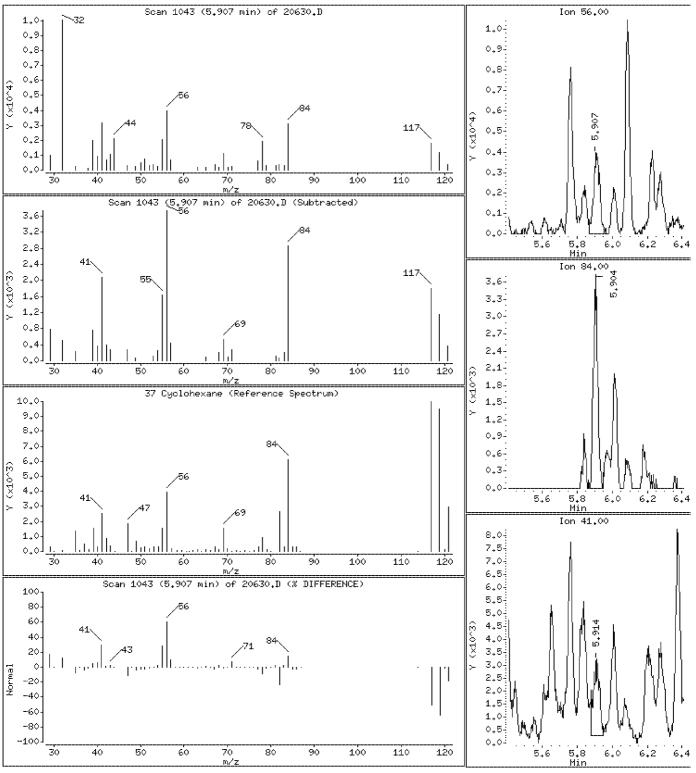
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 912 of 1066

Date : 26-JUL-2013 03:33

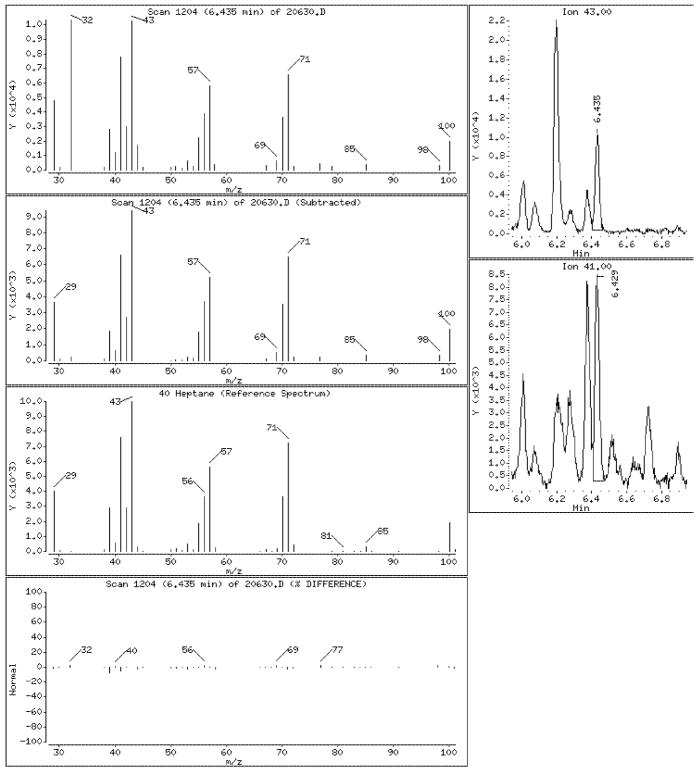
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 913 of 1066

Date : 26-JUL-2013 03:33

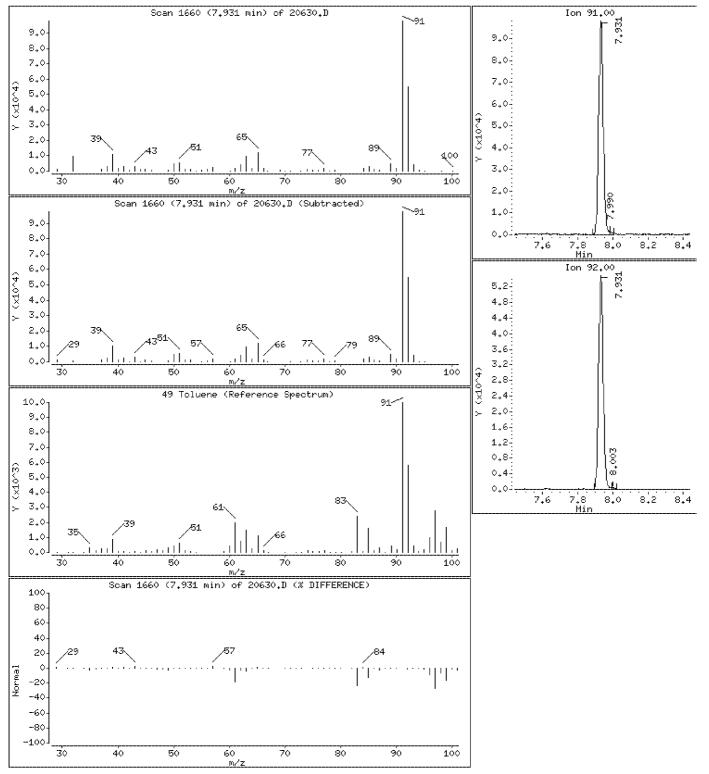
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 914 of 1066

Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

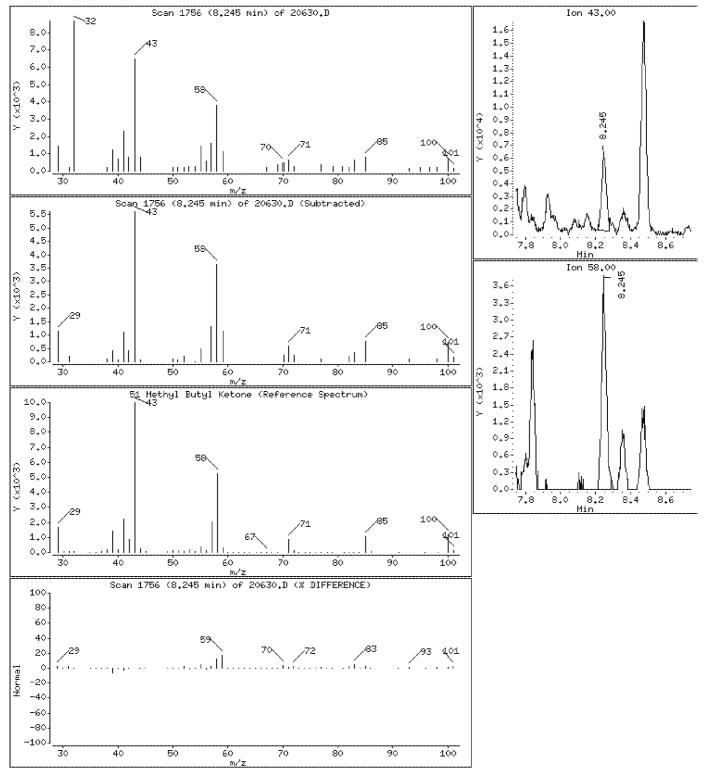
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

51 Methyl Butyl Ketone

Concentration: 0.940 ppbv



10236207 915 of 1066

Date : 26-JUL-2013 03:33

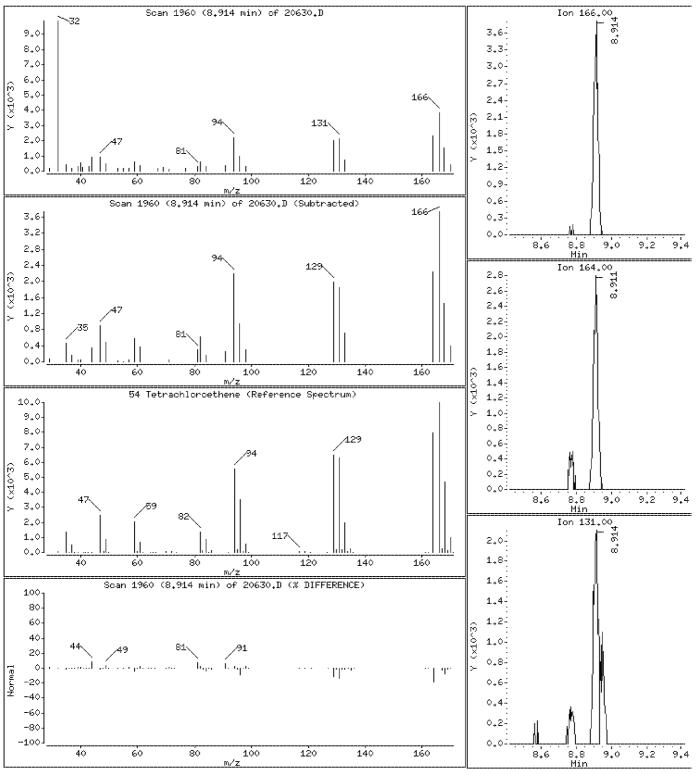
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 916 of 1066

Date : 26-JUL-2013 03:33

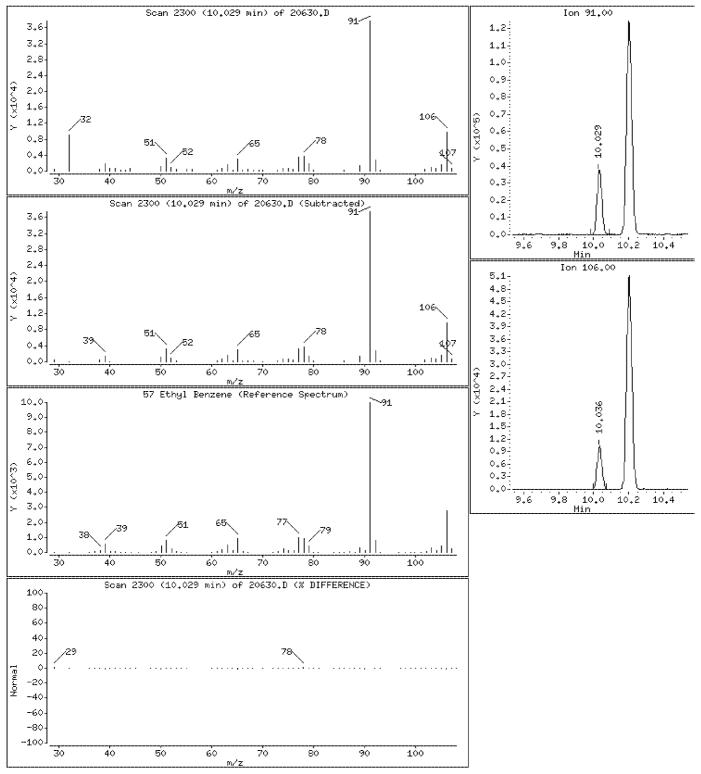
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 917 of 1066

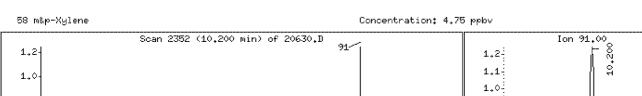
Date : 26-JUL-2013 03:33

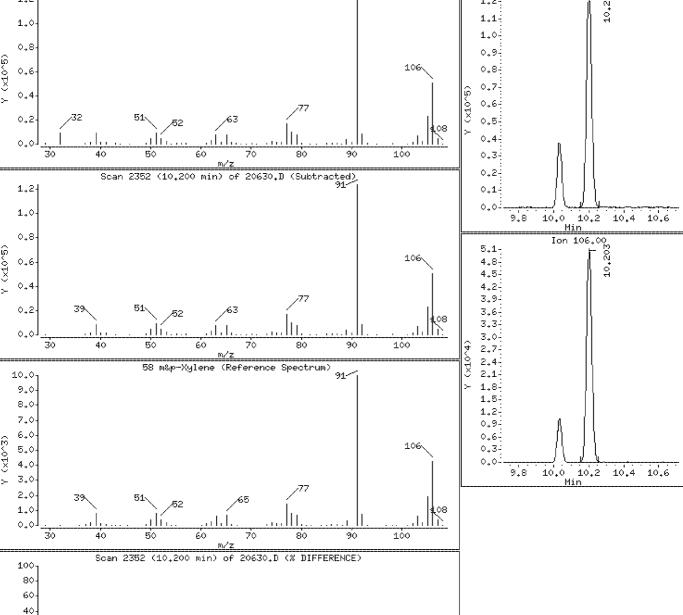
Client ID: Instrument: 10airD.i

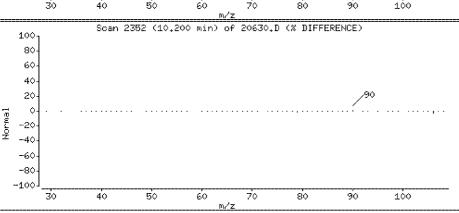
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 918 of 1066

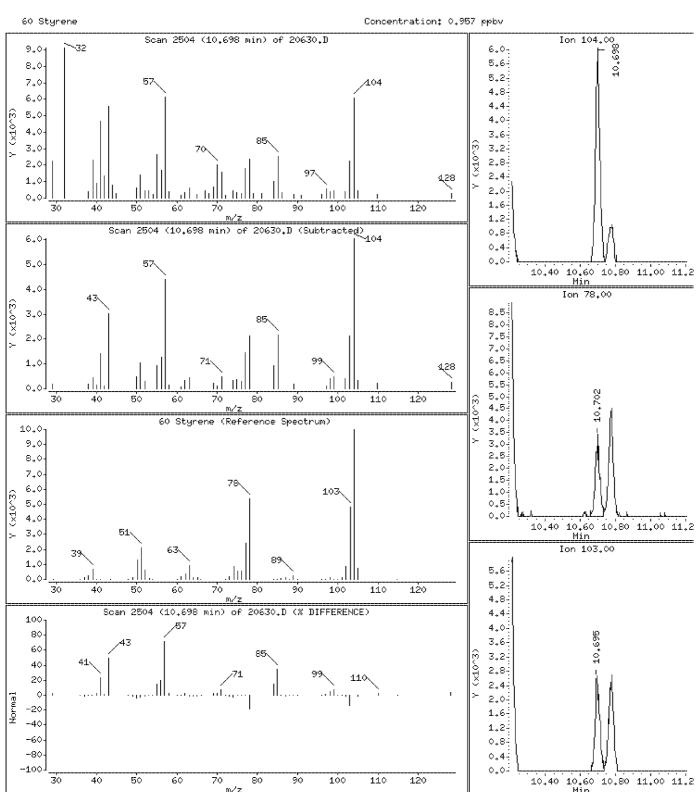
Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 919 of 1066

Date : 26-JUL-2013 03:33

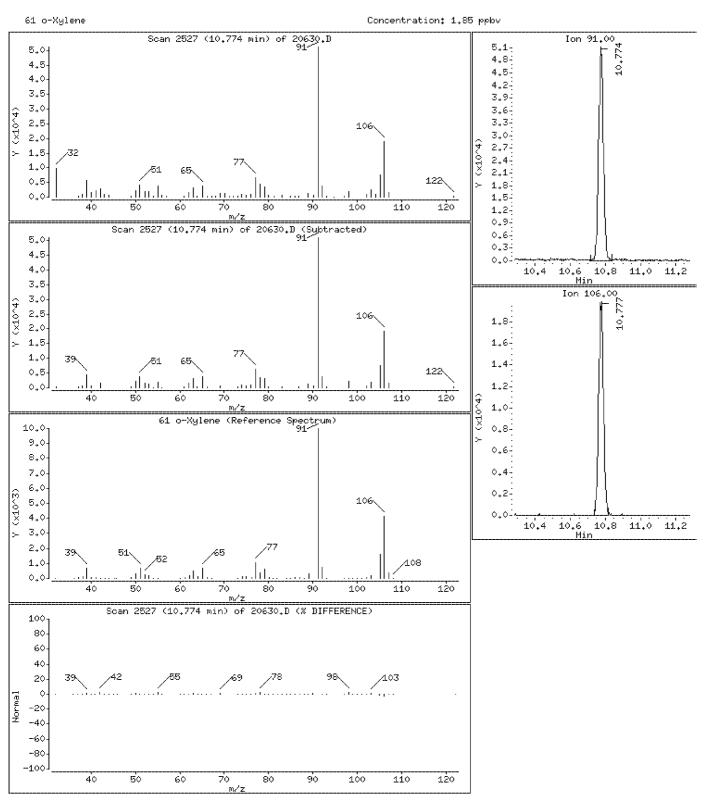
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:33

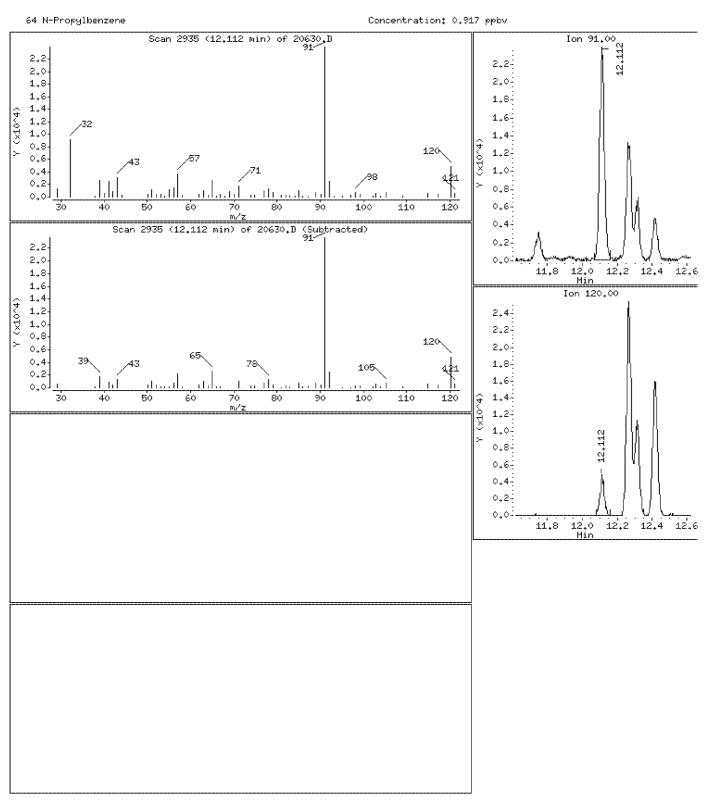
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 03:33

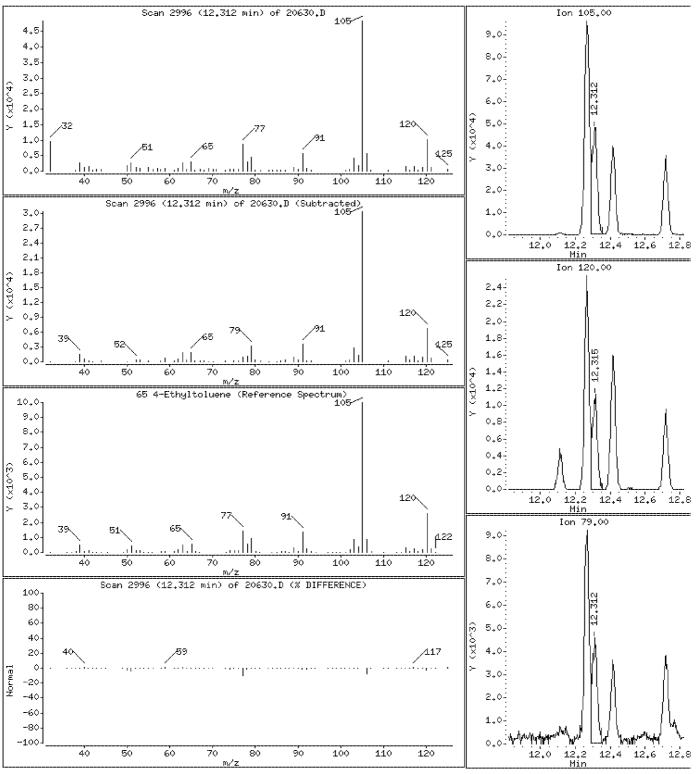
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 922 of 1066

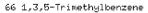
Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

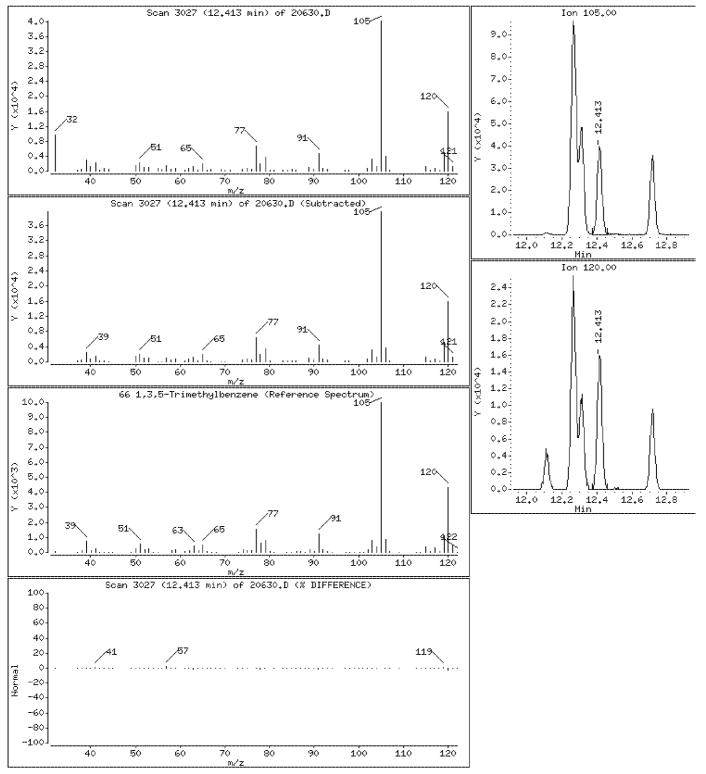
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 1.60 ppbv



10236207 923 of 1066

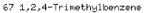
Date : 26-JUL-2013 03:33

Client ID: Instrument: 10airD.i

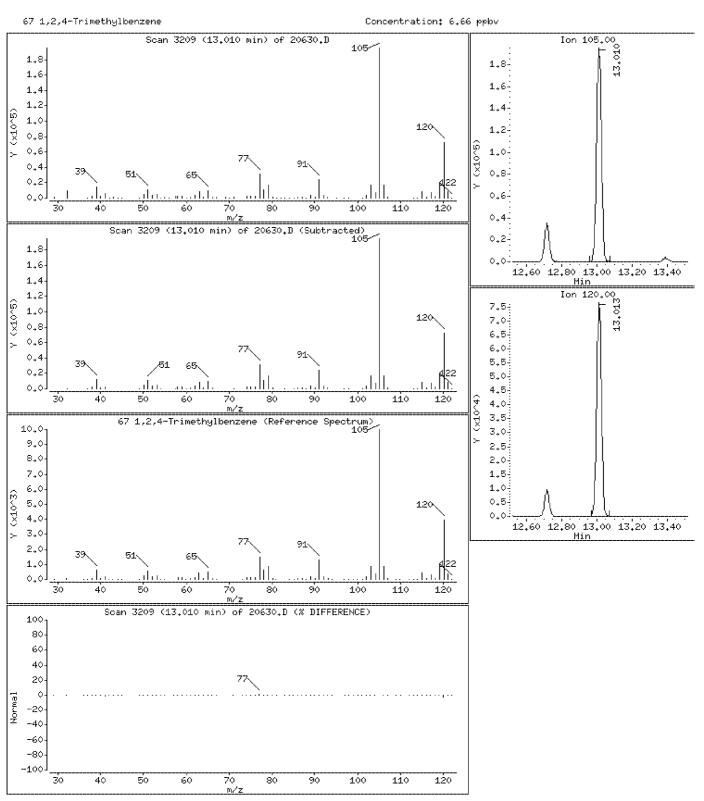
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







Date : 26-JUL-2013 03:33

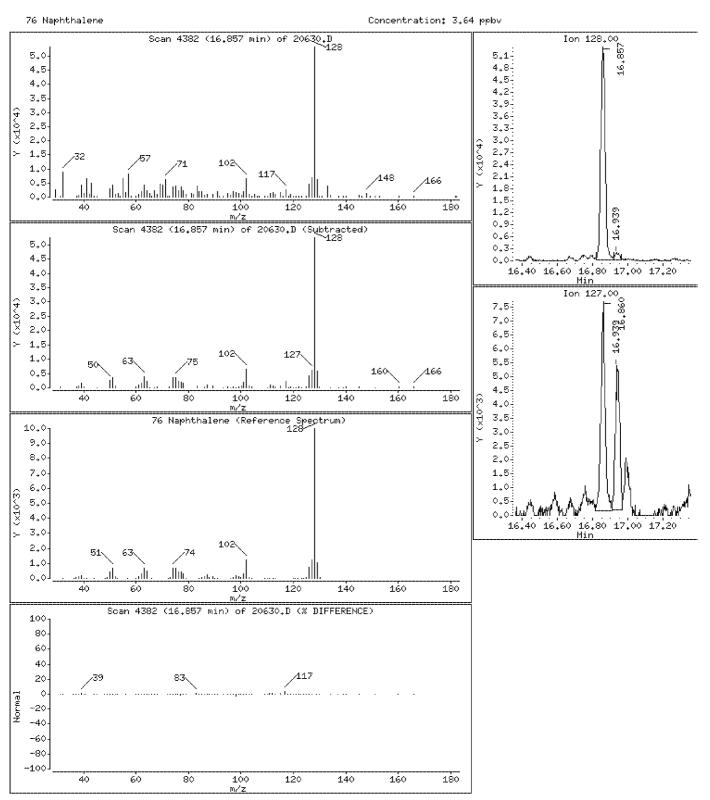
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



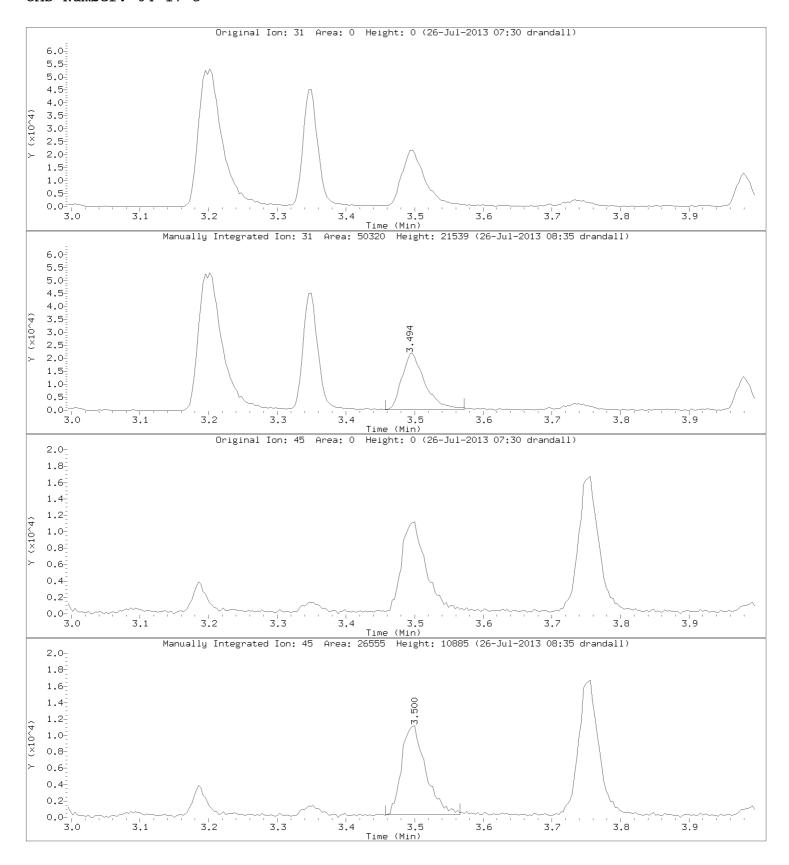


Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

Compound: Ethanol CAS Number: 64-17-5



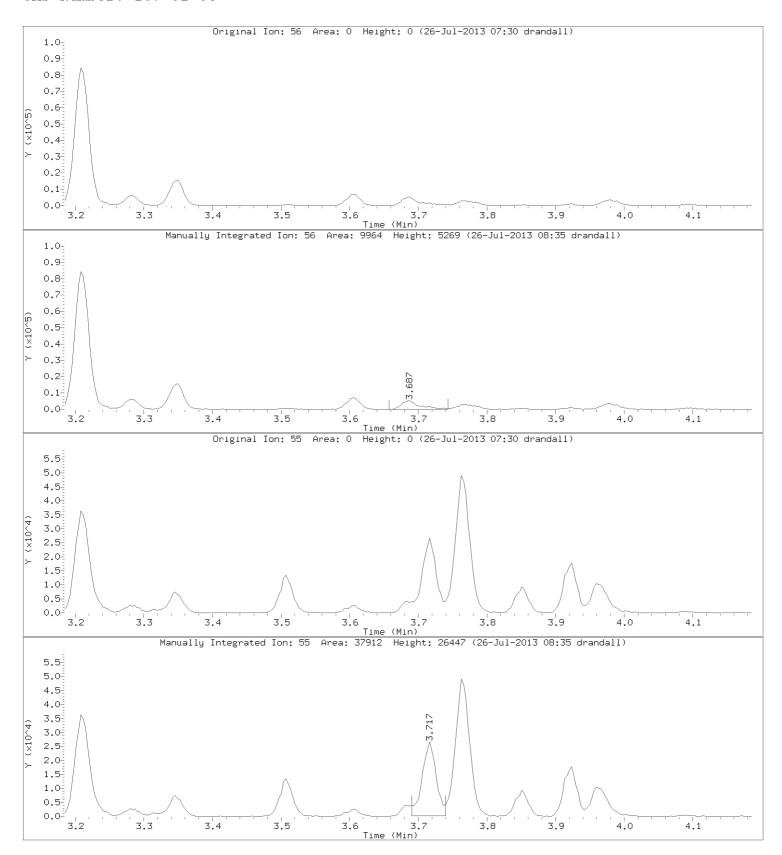
10236207 926 of 1066

Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

Compound: Acrolein CAS Number: 107-02-08



10236207 927 of 1066

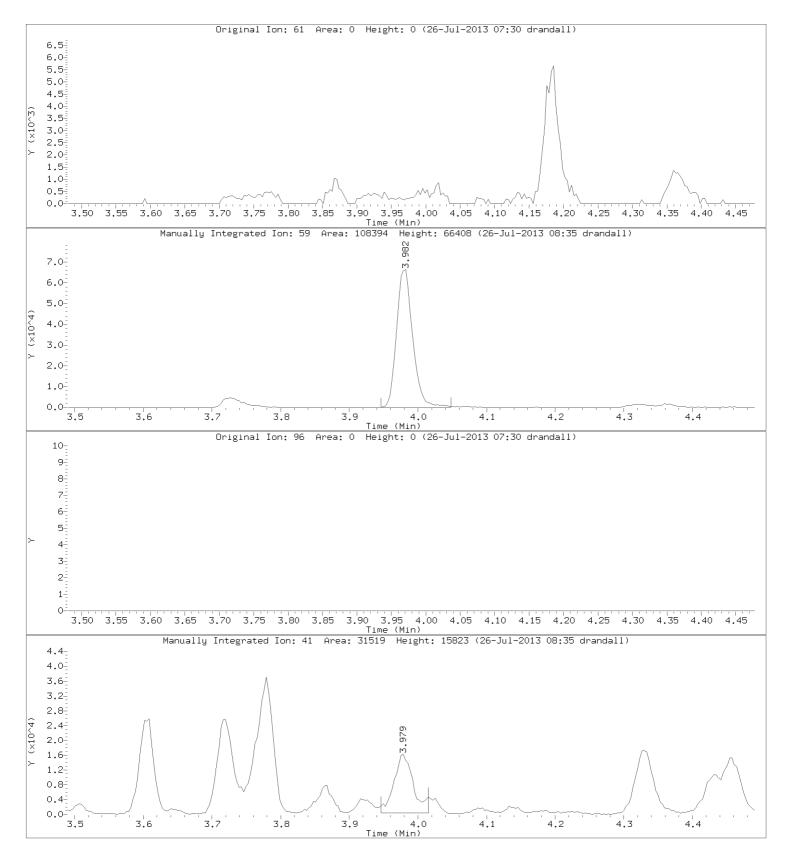
Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



10236207 928 of 1066

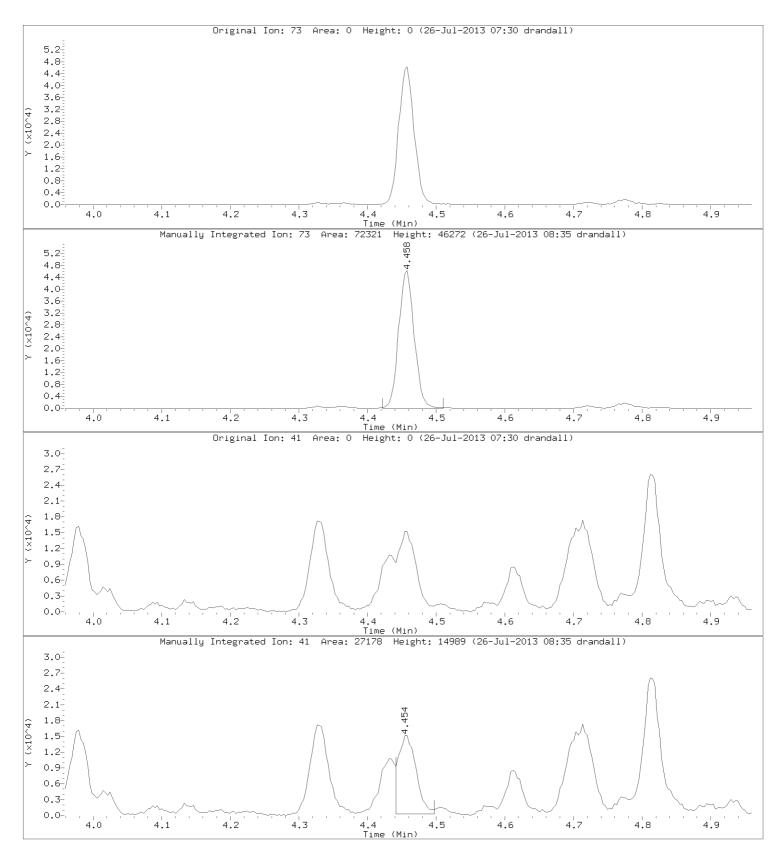
Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

Compound: Methyl Tert Butyl Ether

CAS Number: 1634-04-4



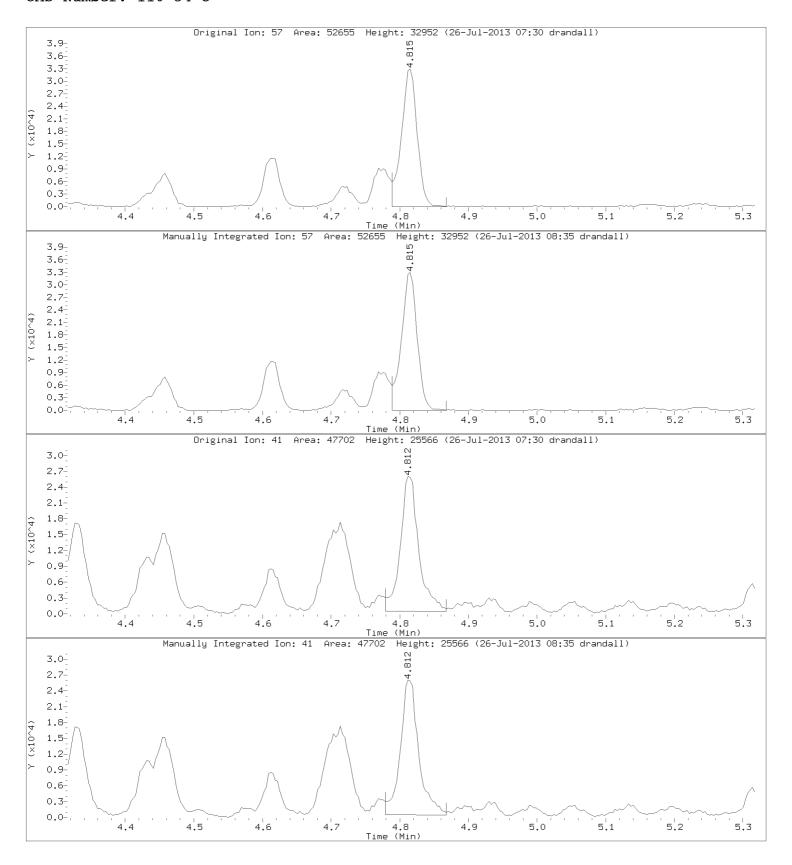
10236207 929 of 1066

Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

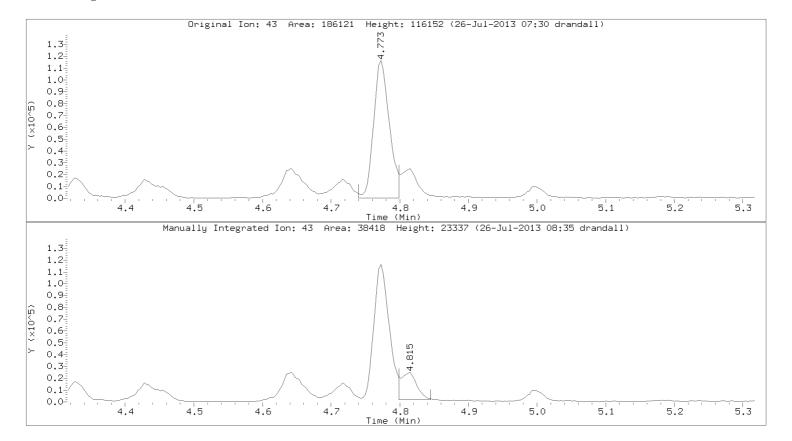
Compound: n-Hexane CAS Number: 110-54-3



10236207 930 of 1066

Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i Lab Sample ID: 10236207013

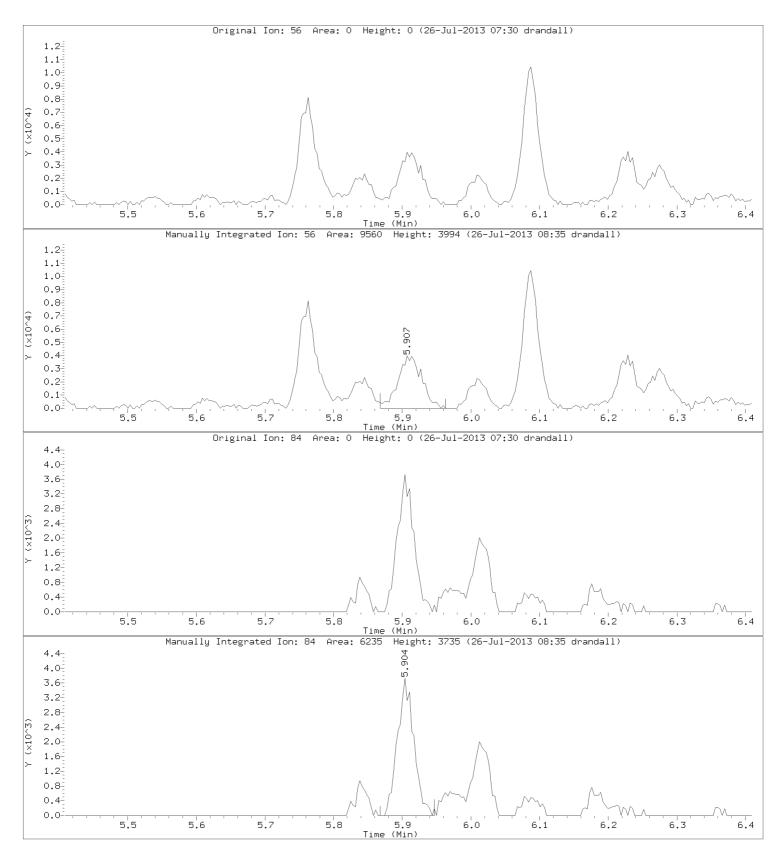


Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

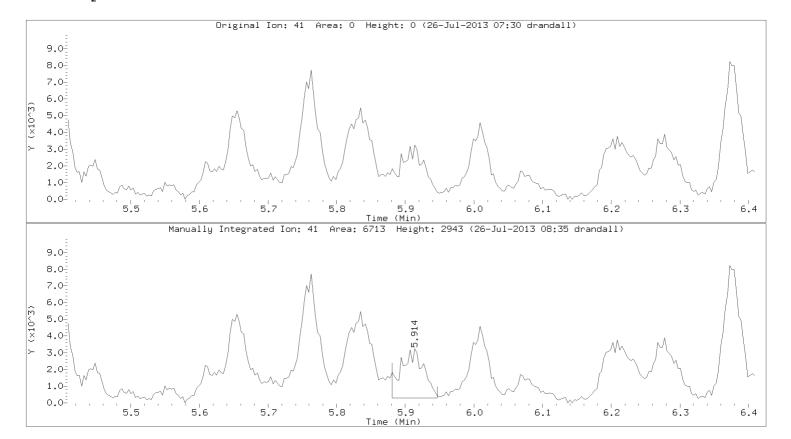
Compound: Cyclohexane CAS Number: 110-82-7



10236207 932 of 1066

Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i Lab Sample ID: 10236207013



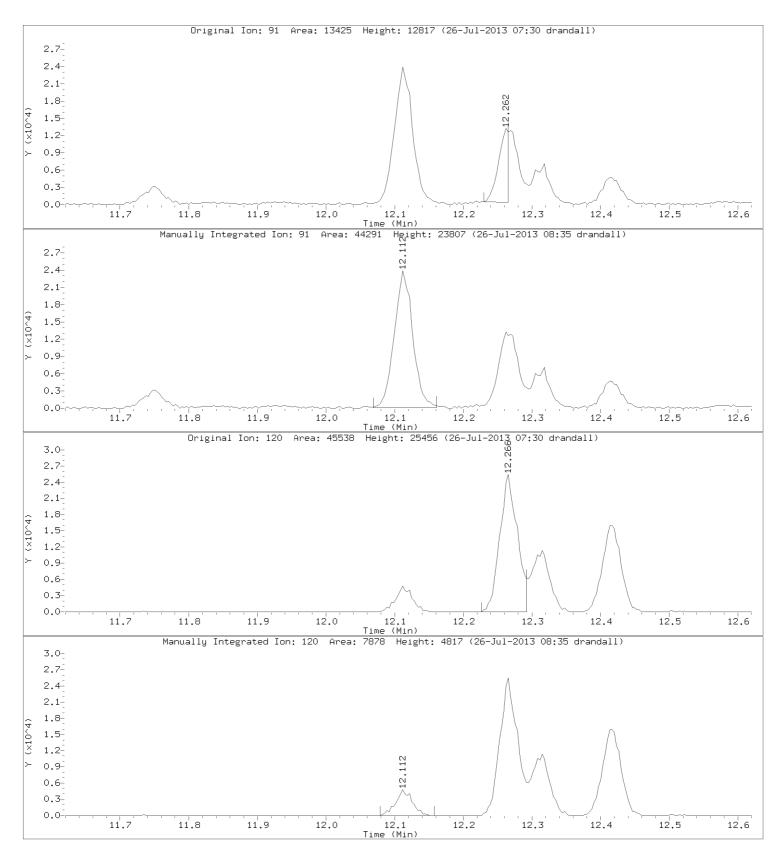
Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

Compound: N-Propylbenzene

CAS Number: 103-65-1



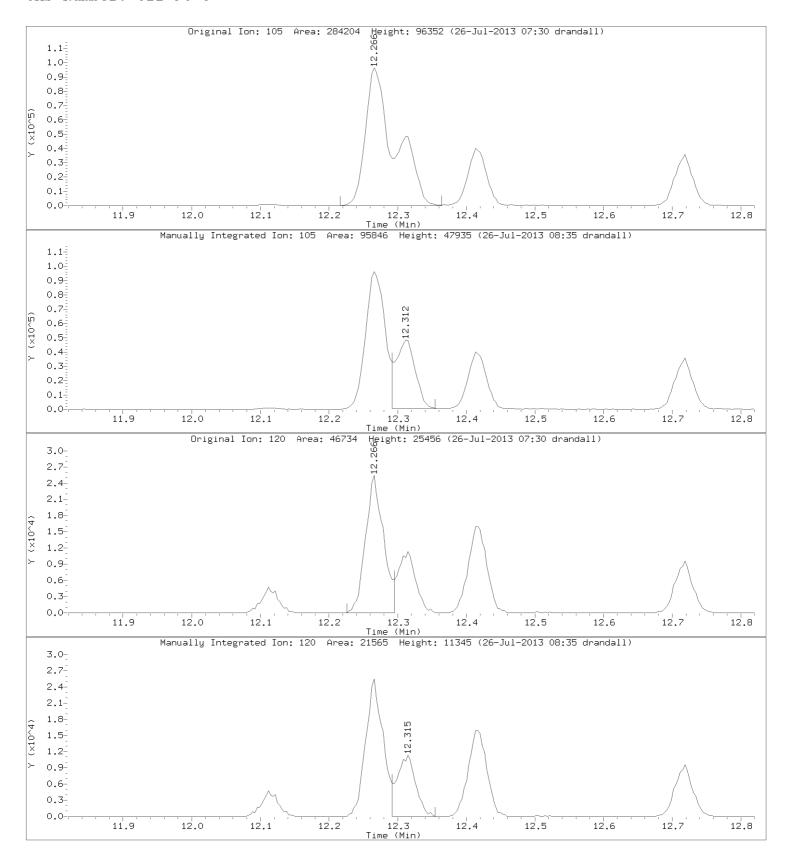
10236207 934 of 1066

Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i

Lab Sample ID: 10236207013

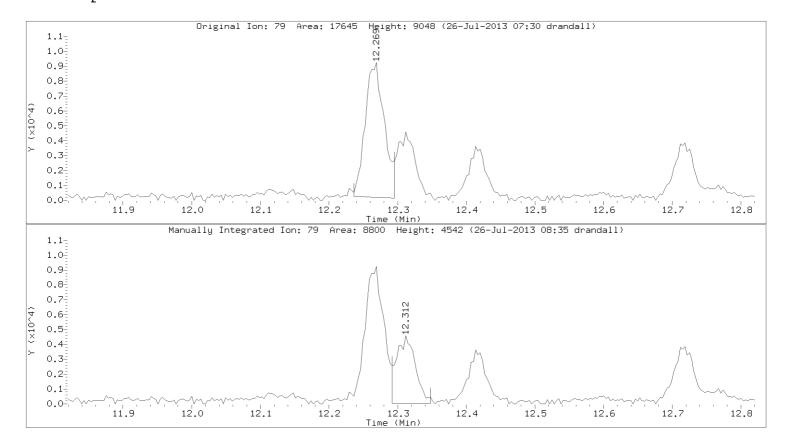
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 935 of 1066

Injection Date: 26-JUL-2013 03:33

Instrument: 10airD.i Lab Sample ID: 10236207013



Report Date: 26-Jul-2013 08:26

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20627.d
Lab Smp Id: 10236207014
Inj Date: 26-JUL-2013 02:01
Operator: DR1
Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 27

Dil Factor: 1.61000

Integrator: HP RTE Compound Sublist: all.su

Target Version: 4.14

Processing Host: 103.TBBC4

Compound Sublist: all.sub

Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

		CONCENTRATIONS			
Compounds	QUANT SIG MASS	ON-COLUMN FINAL RT EXP RT REL RT RESPONSE (ppbv) (ppbv)			
	====	=======================================			
1 Propylene	41	2.968 2.982 (0.488) 2459798 254.689 410(A)			
2 Dichlorodifluoromethane	85	3.001 3.008 (0.493) 20932 0.22618 0.364			
3 Dichlorotetrafluoroethane	85	Compound Not Detected.			
4 Chloromethane	50	Compound Not Detected.			
5 Vinyl chloride	62	Compound Not Detected.			
6 1,3-Butadiene	54	Compound Not Detected.			
7 Bromomethane	94	Compound Not Detected.			
8 Chloroethane	64	Compound Not Detected.			
9 Ethanol	31	Compound Not Detected.			
10 Vinyl Bromide	106	Compound Not Detected.			
11 Acrolein	56	Compound Not Detected.			
12 Trichlorofluoromethane	101	3.703 3.694 (0.608) 14396 0.14300 0.230			
13 Acetone	43	3.726 3.726 (0.612) 1139743 22.5857 36.4(Q)			
14 Isopropyl Alcohol	45	Compound Not Detected.			
15 1,1-Dichloroethene	61	Compound Not Detected.			
16 Acrylonitrile	53	Compound Not Detected.			
17 Tert Butyl Alcohol	59	3.978 3.989 (0.654) 26160 0.49414 0.796(QM)			
18 Freon 113	101	Compound Not Detected.			
19 Methylene chloride	49	4.100 4.094 (0.674) 10840 0.37914 0.610(M)			
20 Allyl Chloride	76	Compound Not Detected.			
21 Carbon Disulfide	76	4.231 4.224 (0.695) 116132 1.39582 2.25			
22 trans-1,2-dichloroethene	96	Compound Not Detected.			
23 Methyl Tert Butyl Ether	73	Compound Not Detected.			

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20627.d$ Report Date: 26-Jul-2013 08:26

		CONCENTRATIONS	
QUANT SIG		ON-COLUMN FINAL	
MASS	RT EXP RT REL RT RESPONSE	(ppbv) (ppbv)	
		======	
	-		
	~	8.48818 8.49	
	, ,	9.20177 14.8	
	· ·	5.42068 8.73(QM)	
	·	J.42000 0.7J(Qr1)	
	-		
	*		
	_		
	-		
	_	3.53580 5.69(M)	
	, ,	3.33360	
	-	1 61956 2 60/OM)	
	, ,	1.61856 2.60(QM) 10.0000	
	, ,		
	, ,	0.62590 1.01(QM) 2.26204 3.64	
	· ·	2.20204 3.04	
	*		
	*		
	_		
	*		
	-		
	_	0.70400	
	· · · · · ·	9.78400 9.78	
	· ·	6.10649 9.83	
	•		
		0.65846 1.06	
	, ,	10.0000	
	*		
	, ,	1.65231 2.66	
	· ·	5.07761 8.17	
		0.99557 1.60	
		1.90057 3.06	
	-		
	<del>-</del>		
		0.67747 1.09(M)	
		0.94128 1.52(M)	
105	12.416 12.426 (1.282) 39928	0.71893 1.16(M)	
105	13.013 13.020 (1.344) 176346	2.29242 3.69	
146	Compound Not Detected.		
105	-		
150	13.449 13.459 (1.389) 131786	11.4797 11.5	
91	Compound Not Detected.		
146	Compound Not Detected.		
146	Compound Not Detected.		
91	Compound Not Detected.		
180	Compound Not Detected.		
128	16.860 16.860 (1.741) 79190	2.15418 3.47	
225	Compound Not Detected.		
	MASS ==== 43 63 66 72 57 96 43 83 42 97 62 78 117 56 114 57 43 63 130 88 83 43 75 75 98 91 97 43 129 107 166 117 112 91 173 104 91 83 105 91 105 105 105 105 105 105 105 105 105 10	## ASS   RT   EXP RT   REL RT   RESPONSE   REL	

Report Date: 26-Jul-2013 08:26

CONCENTRATIONS QUANT SIG

MASS

RT EXP RT REL RT RESPONSE (ppbv) (ppbv)

---
---
---
---
ON-COLUMN FINAL
(ppbv) (ppbv) ON-COLUMN FINAL Compounds \_\_\_\_\_

# QC Flag Legend

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

Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.

Report Date: 26-Jul-2013 08:26

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20627.d

Lab Smp Id: 10236207014 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	TTTT%
====================================	========	========	=========	=======	*DIFF
38 1,4-Difluorobenze	579775	347865	811685	761194	31.29
55 Chlorobenzene - d	221404	132842	309966	284407	28.46

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

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.

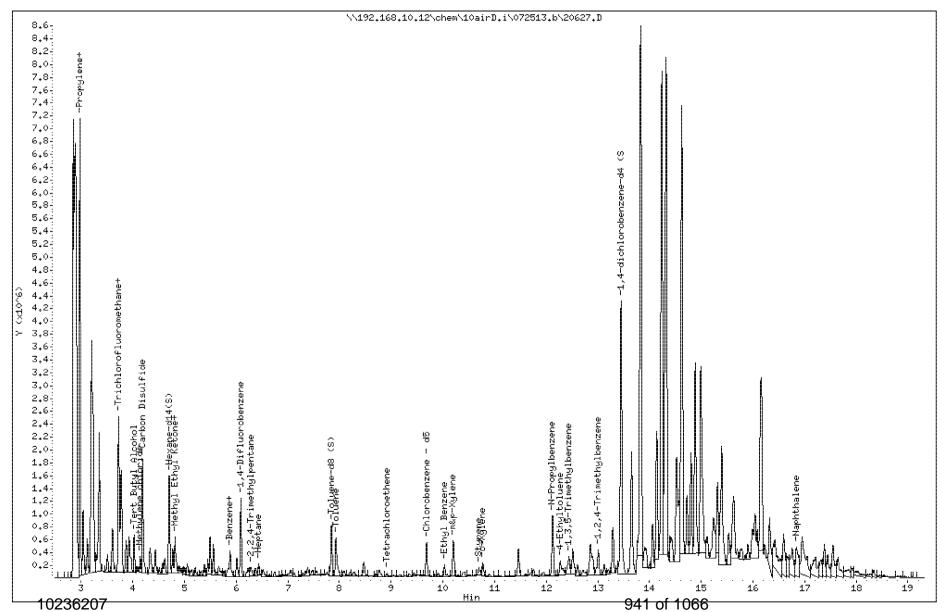
Date : 26-JUL-2013 02:01

Column phase: J&W DB-5

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column diameter: 0.32



Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

Sample Info:

0.8

0.6

0.4

0.2

0.0

9.0 8.0

7.0

6.0

5.0

4.0

3.0

30

Operator: DR1

116

110

1.0

0.9

0.8

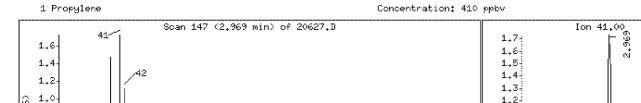
0.6

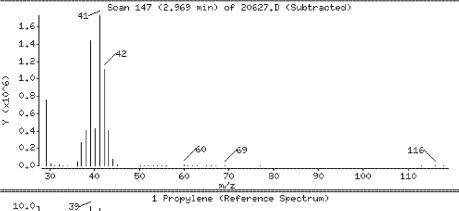
0.5

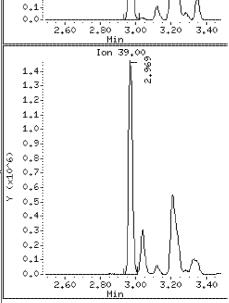
0.4

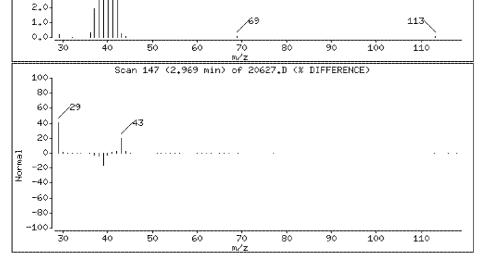
0.24

Column phase: J&W DB-5 Column diameter: 0.32









10236207 942 of 1066

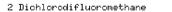
Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD,i

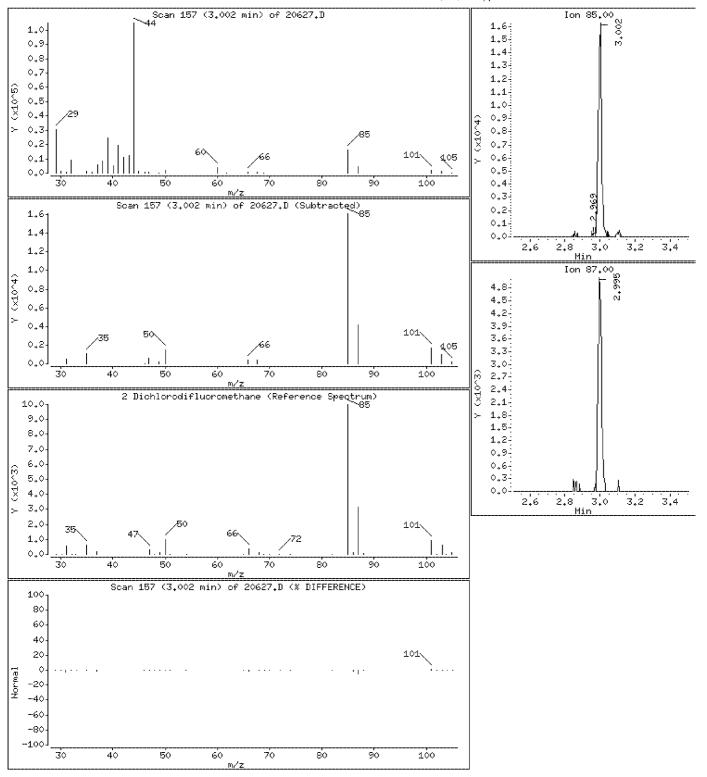
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.364 ppbv



10236207 943 of 1066

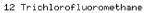
Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

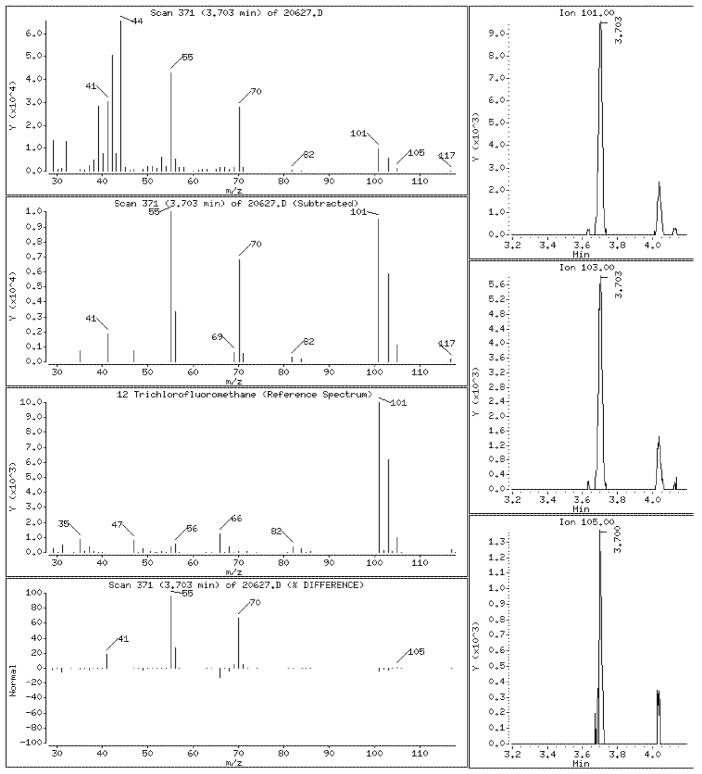
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.230 ppbv



10236207 944 of 1066

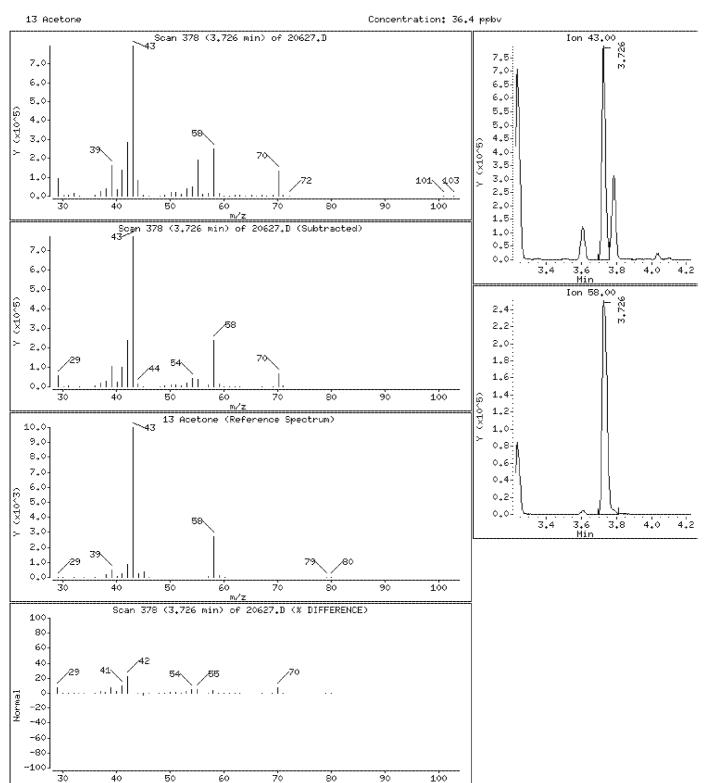
Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 945 of 1066

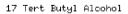
Date : 26-JUL-2013 02:01

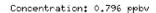
Client ID: Instrument: 10airD.i

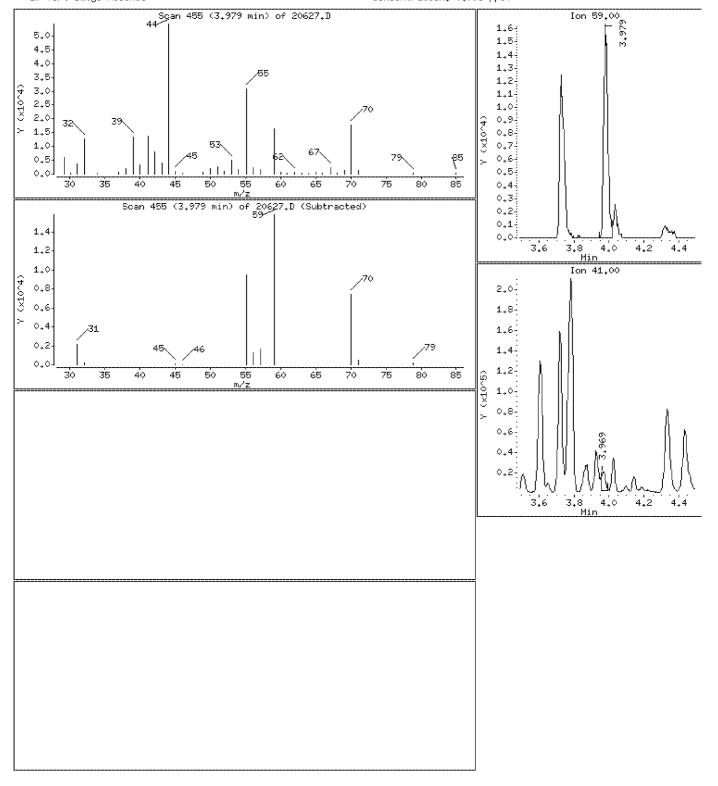
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 946 of 1066

Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

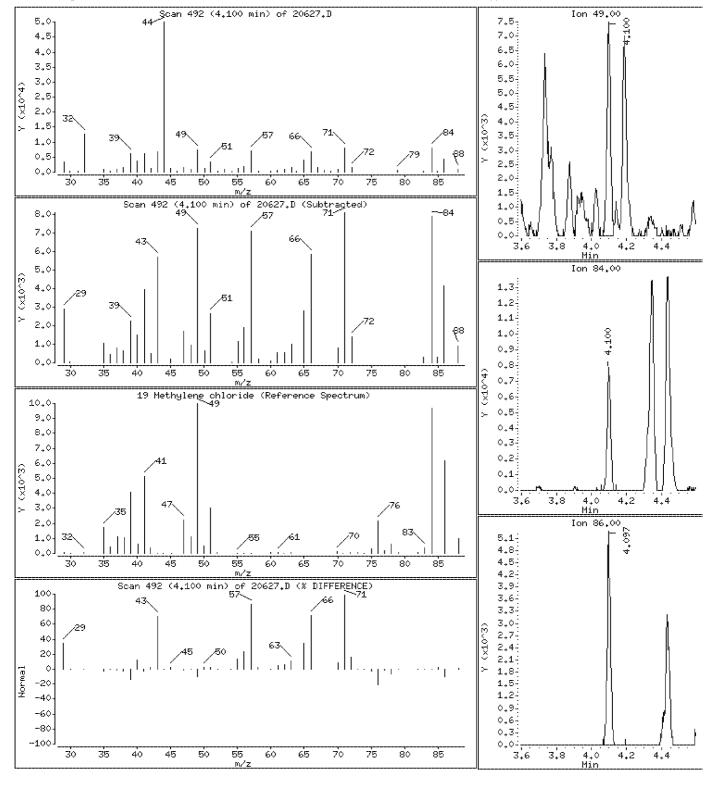
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.610 ppbv



10236207 947 of 1066

Date : 26-JUL-2013 02:01

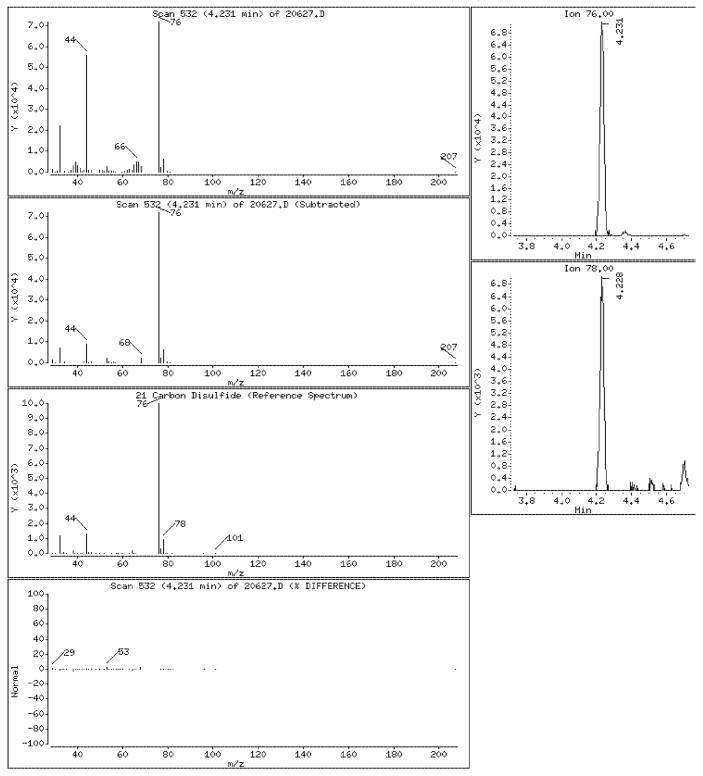
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 948 of 1066

Date : 26-JUL-2013 02:01

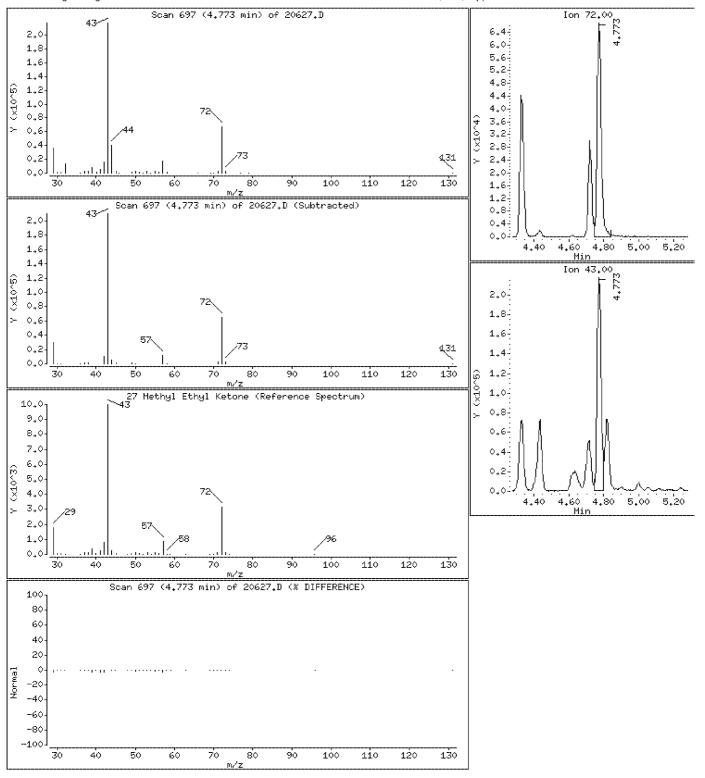
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

27 Methyl Ethyl Ketone Concentration: 14.8 ppbv



10236207 949 of 1066

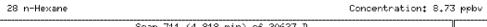
Date : 26-JUL-2013 02:01

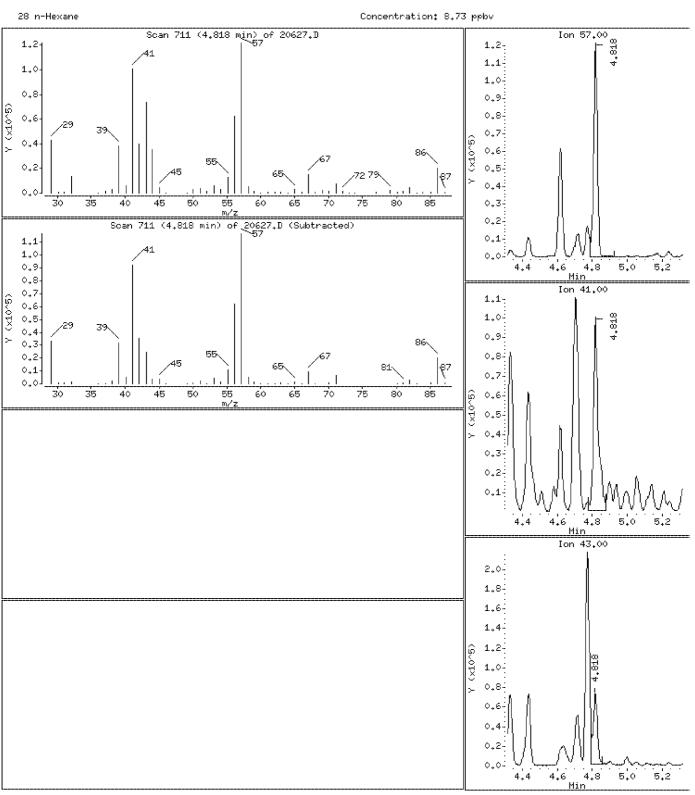
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





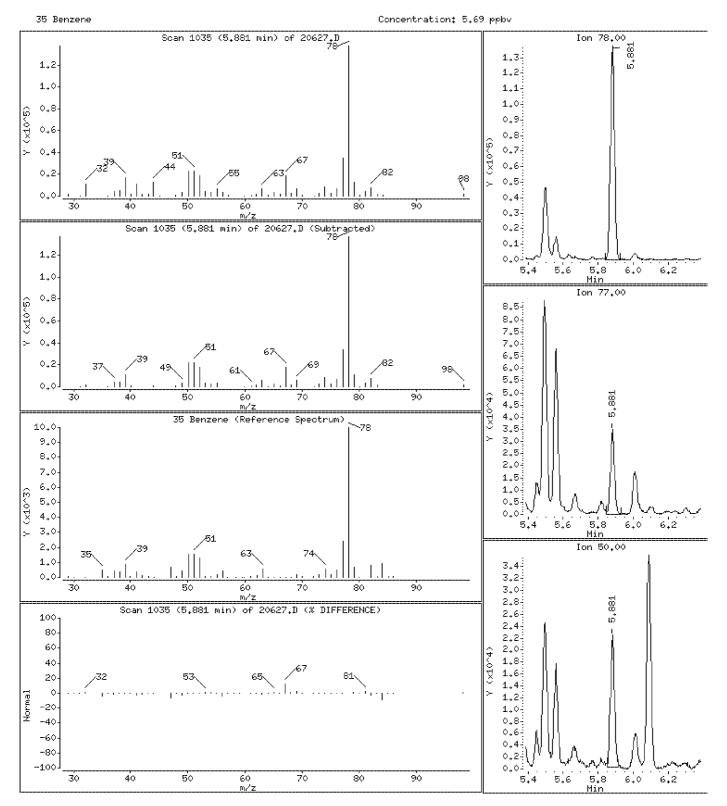
Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



10236207 951 of 1066

Date : 26-JUL-2013 02:01

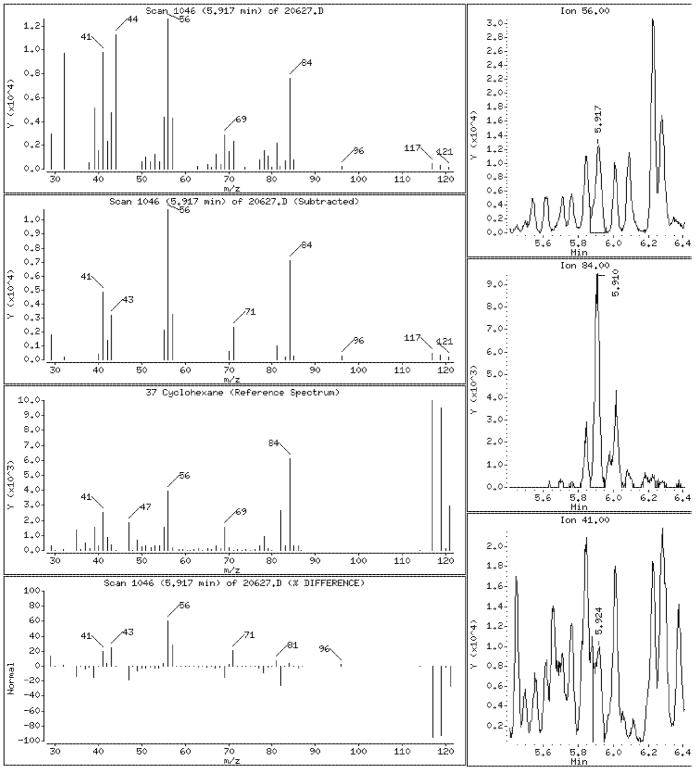
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 952 of 1066

Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

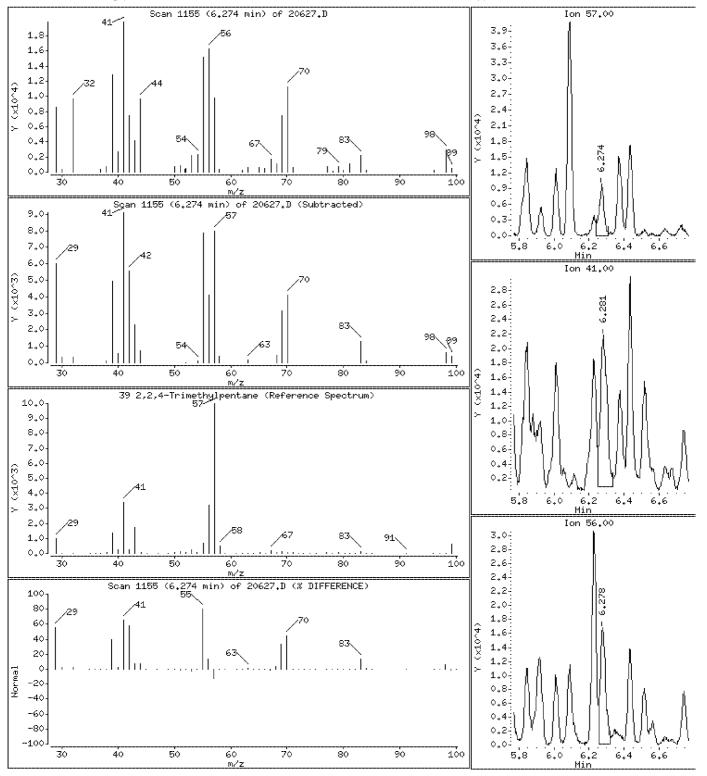
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

39 2,2,4-Trimethylpentane





10236207 953 of 1066

Date : 26-JUL-2013 02:01

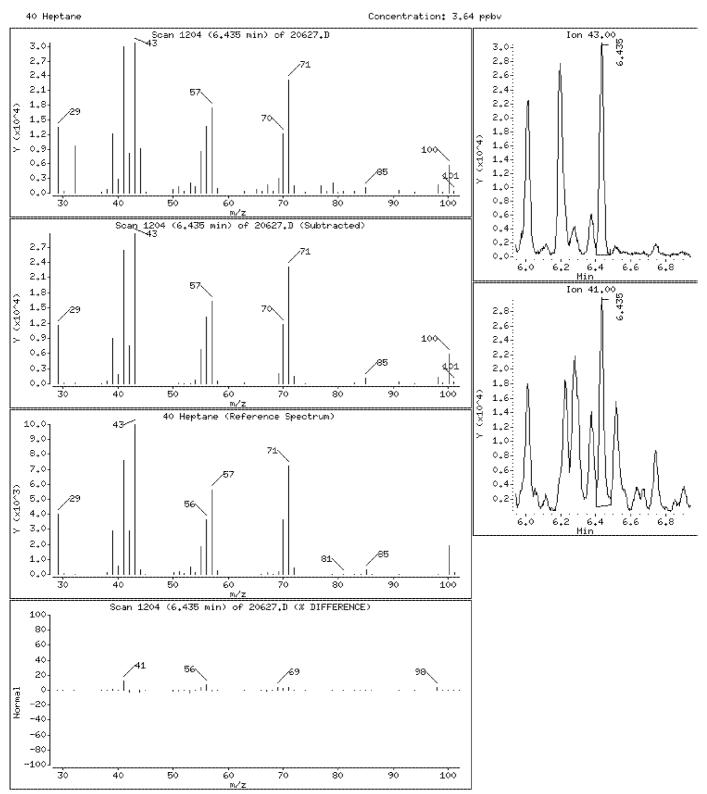
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 02:01

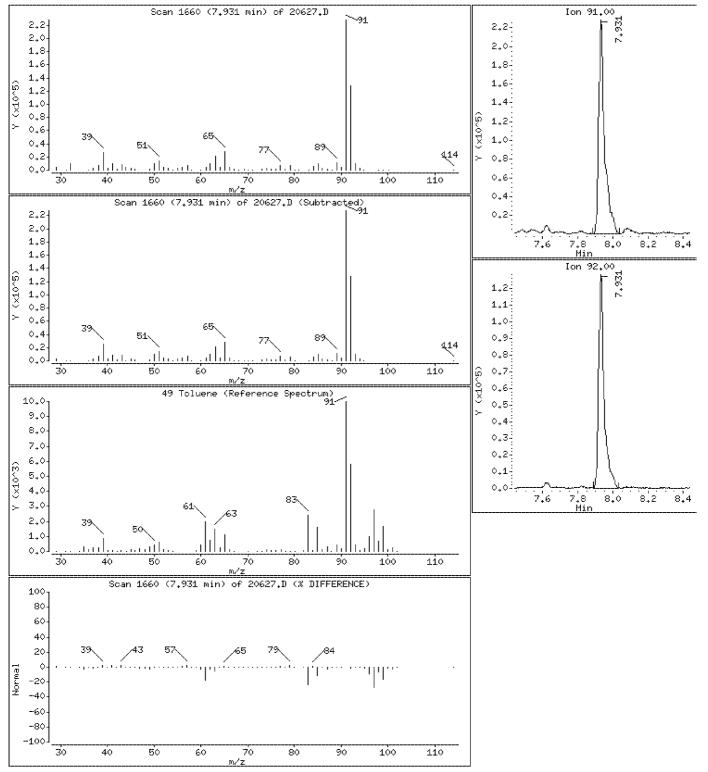
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 955 of 1066

Date : 26-JUL-2013 02:01

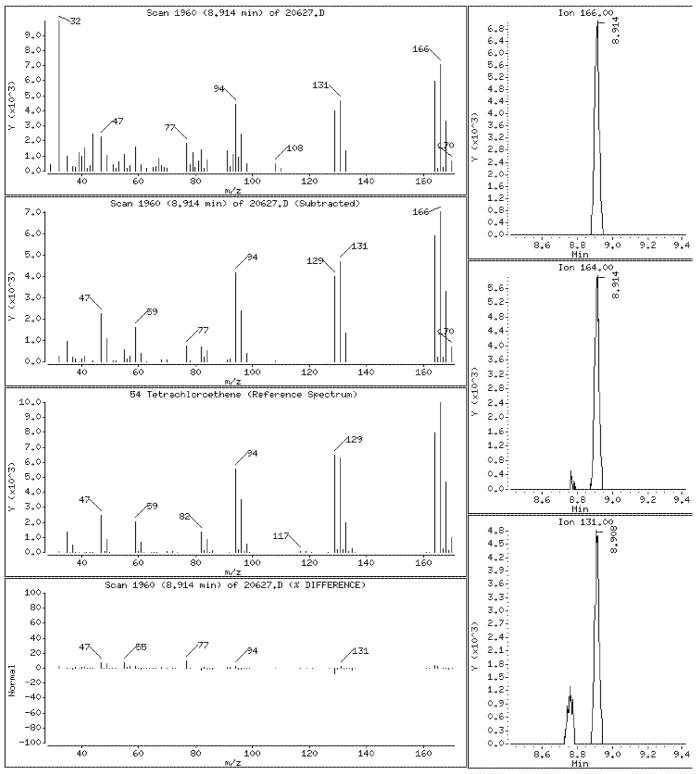
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 956 of 1066

Date : 26-JUL-2013 02:01

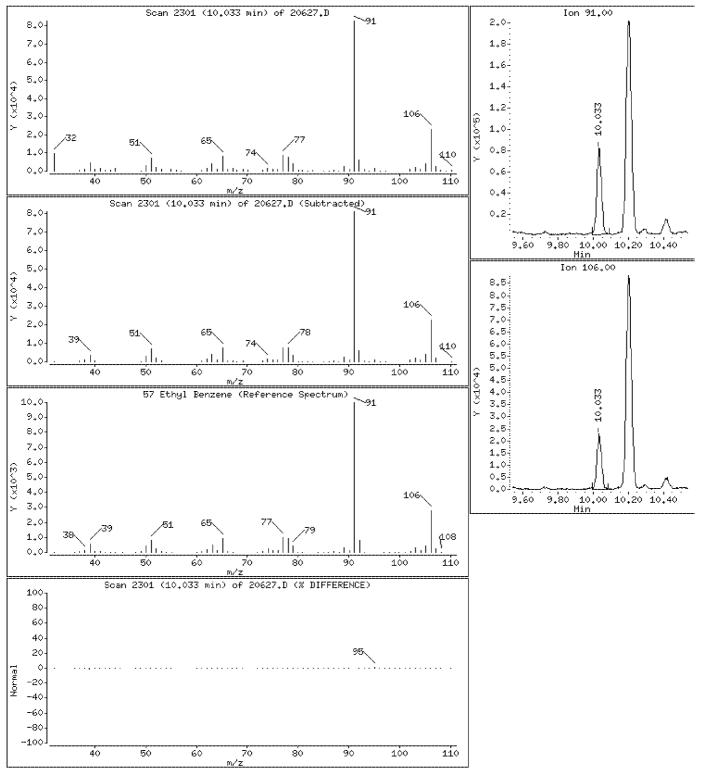
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 957 of 1066

Date : 26-JUL-2013 02:01

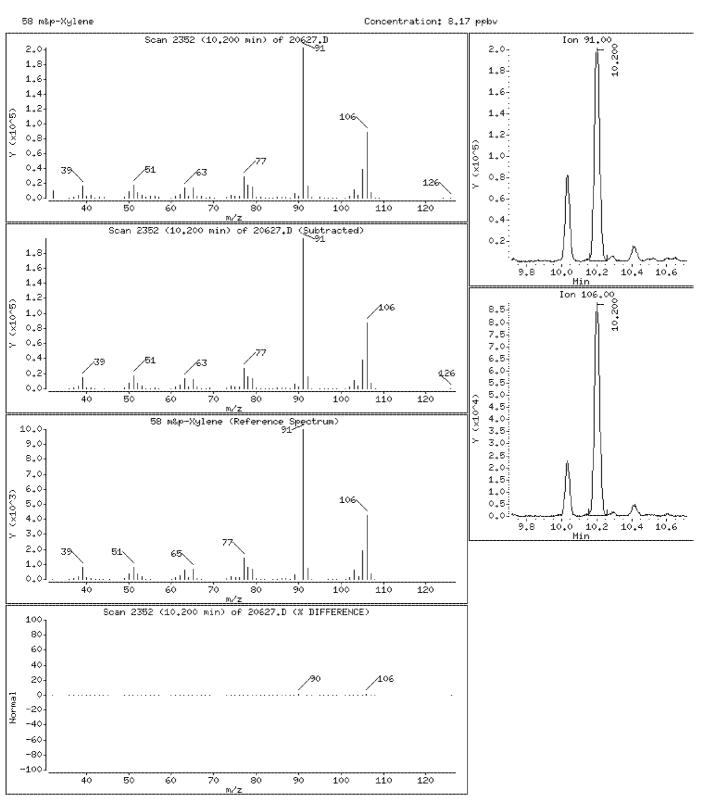
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





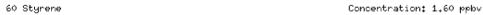
Date : 26-JUL-2013 02:01

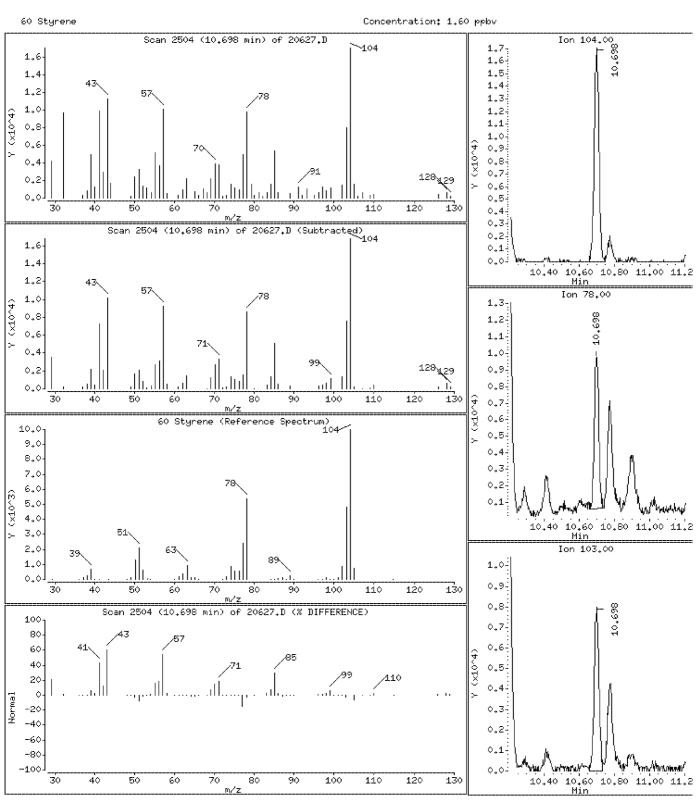
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 02:01

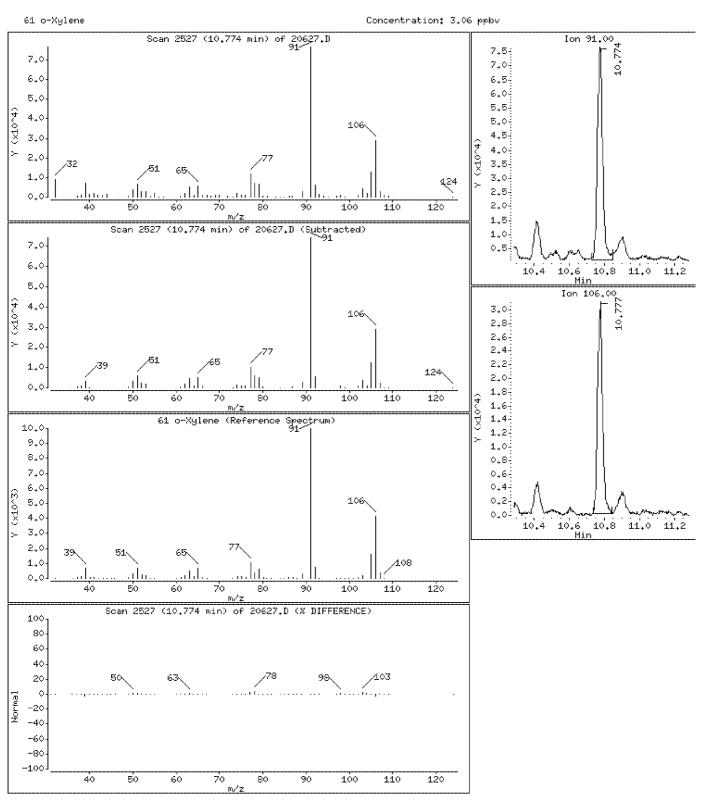
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

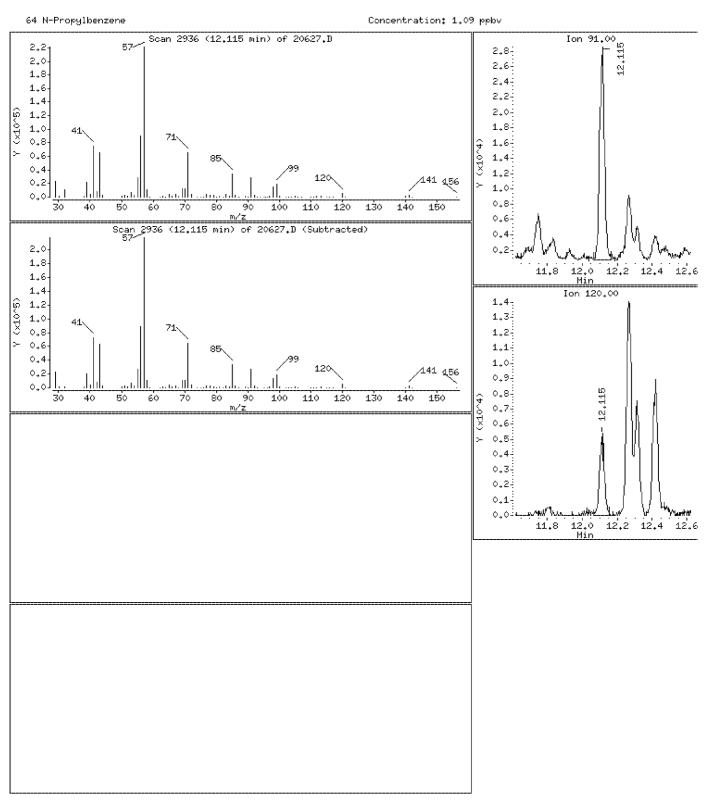
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

64 N-Propylbenzene

Concentration: 1.09 ppbv



Date : 26-JUL-2013 02:01

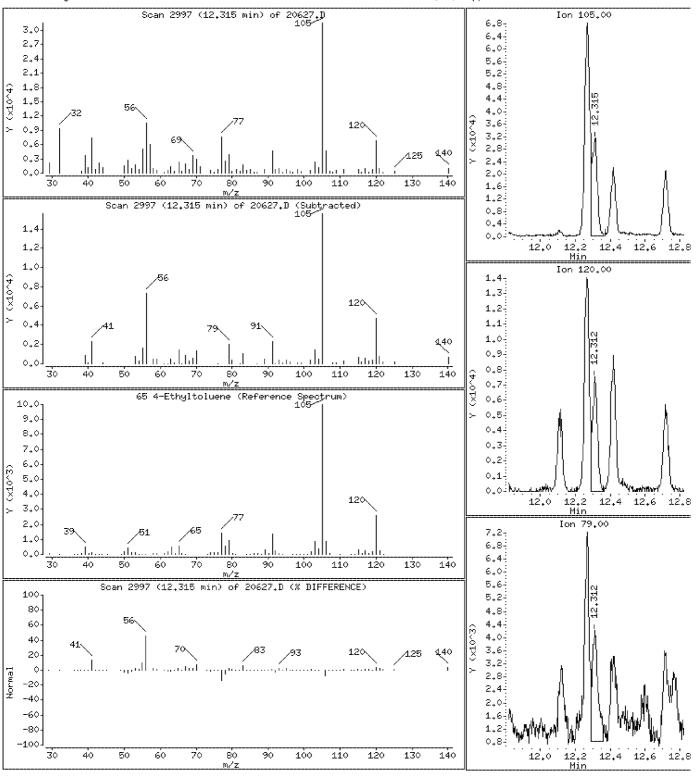
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 962 of 1066

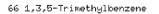
Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

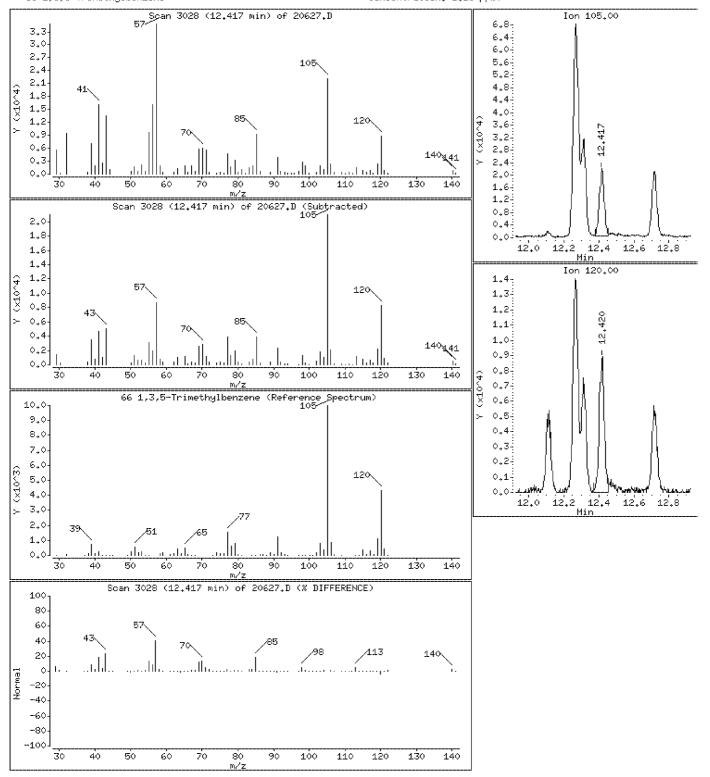
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 963 of 1066

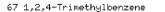
Date : 26-JUL-2013 02:01

Client ID: Instrument: 10airD.i

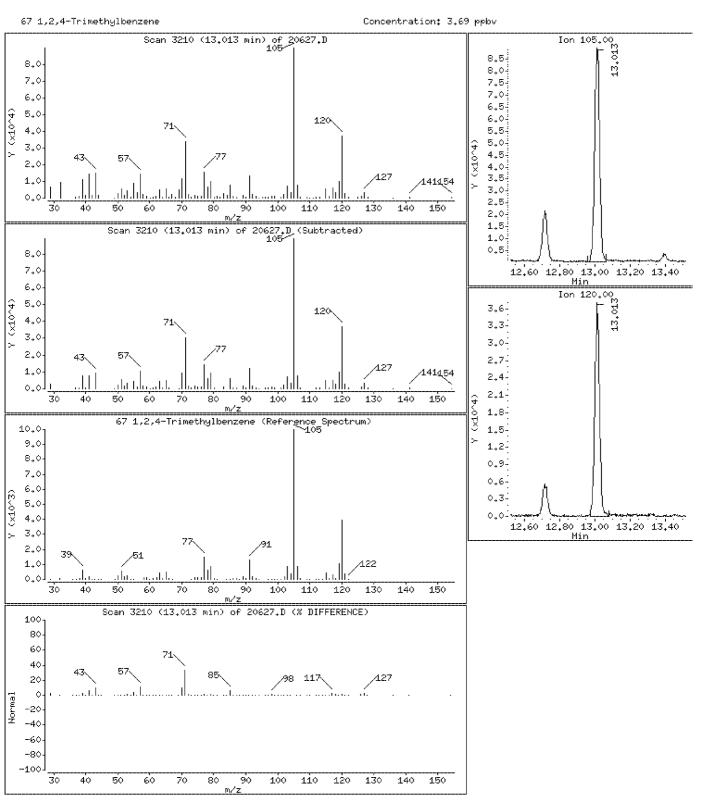
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







Date : 26-JUL-2013 02:01

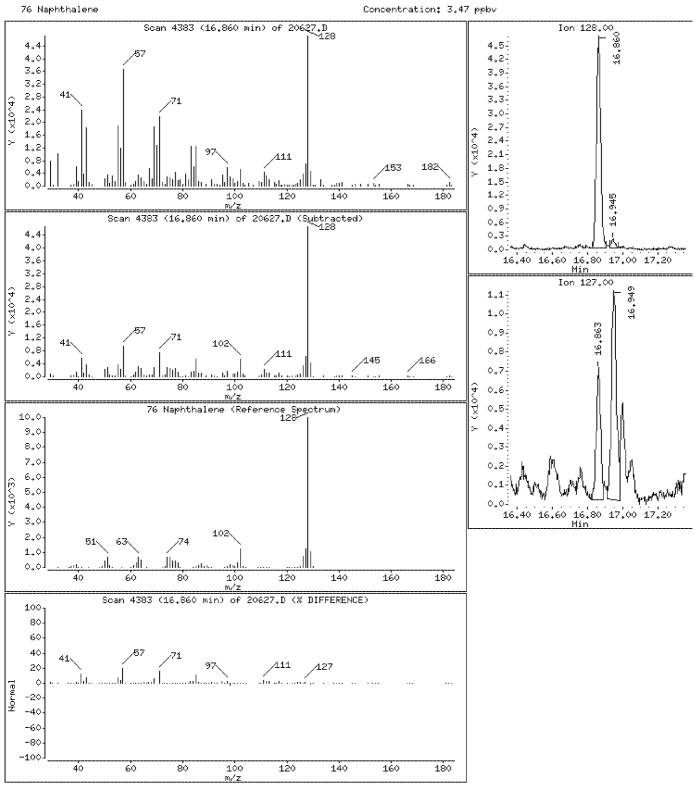
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





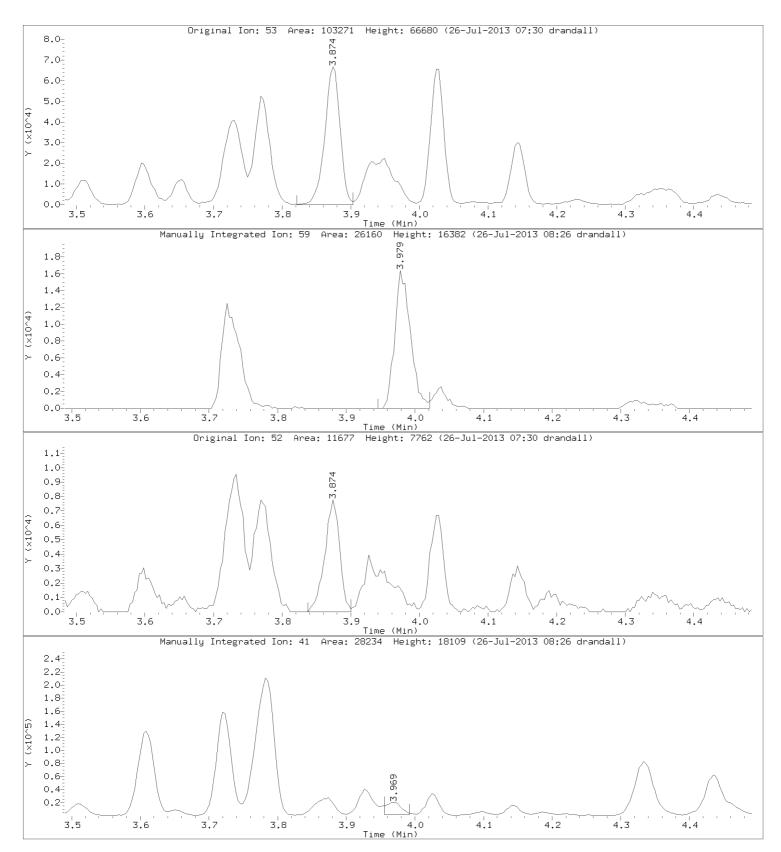
Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



10236207 966 of 1066

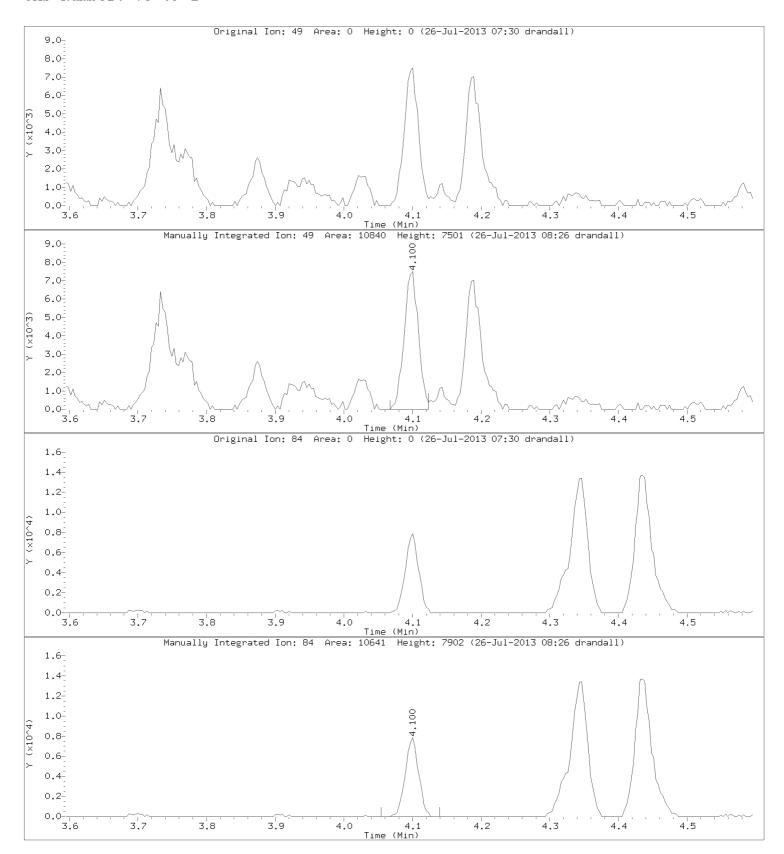
Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

Compound: Methylene chloride

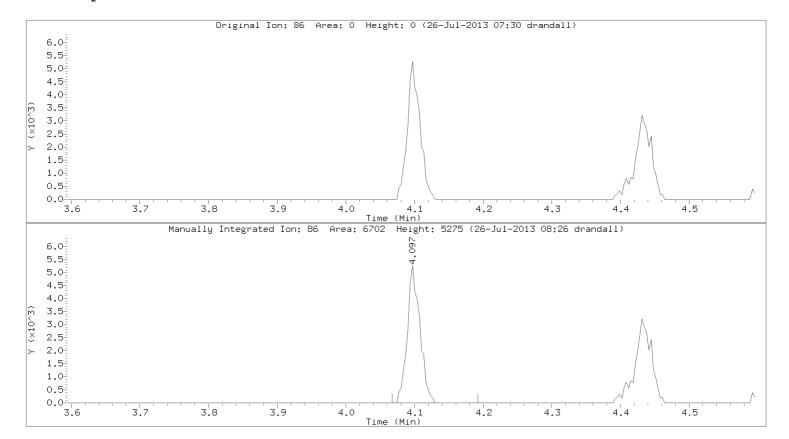
CAS Number: 75-09-2



10236207 967 of 1066

Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i Lab Sample ID: 10236207014

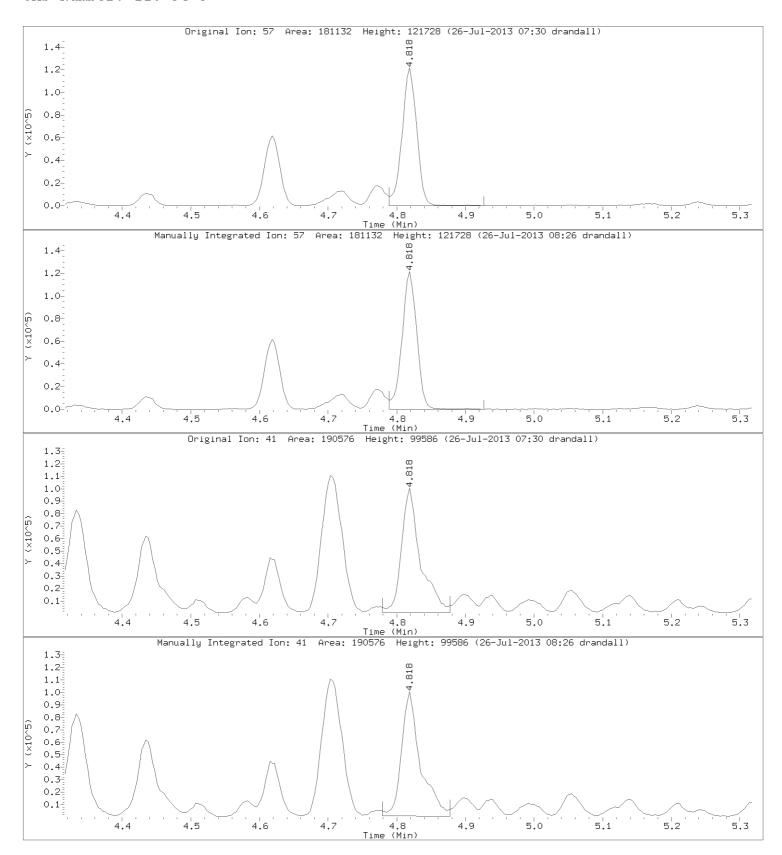


Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

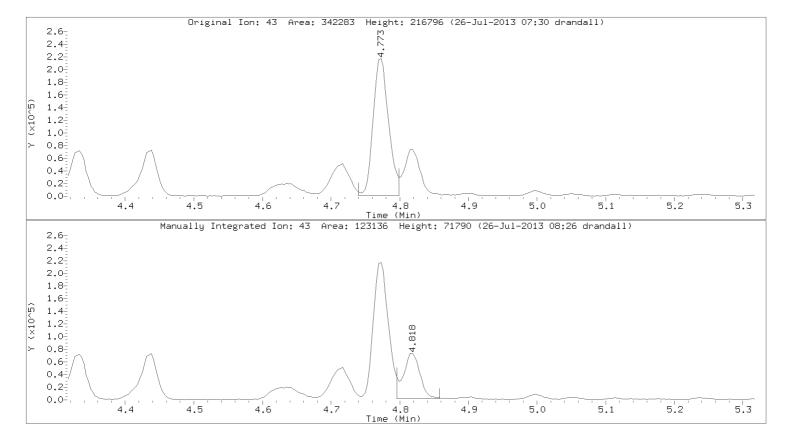
Compound: n-Hexane CAS Number: 110-54-3



10236207 969 of 1066

Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i Lab Sample ID: 10236207014

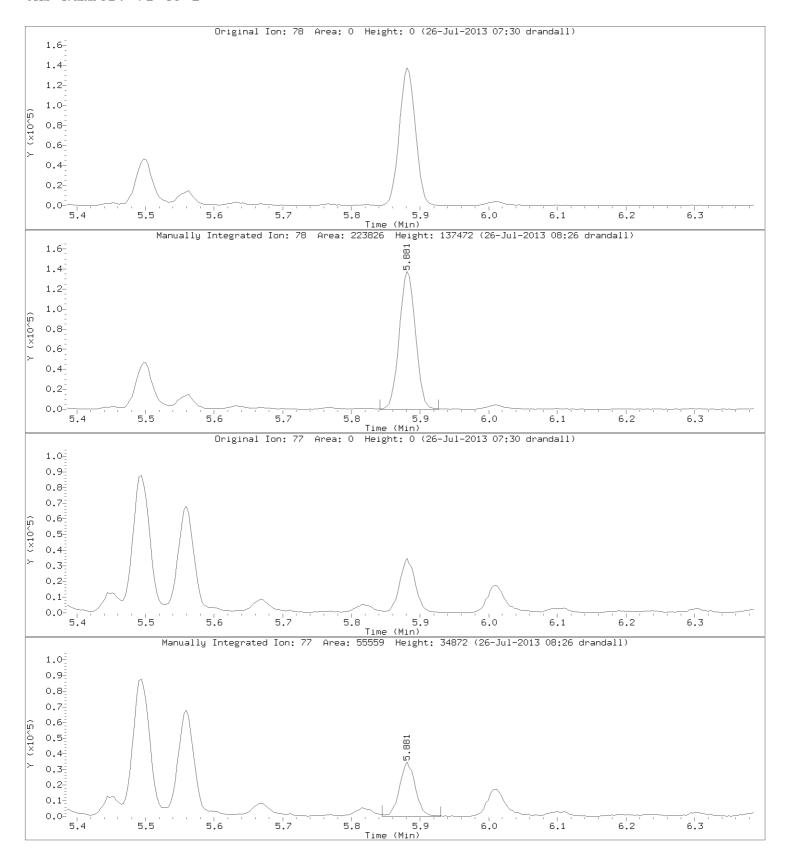


Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

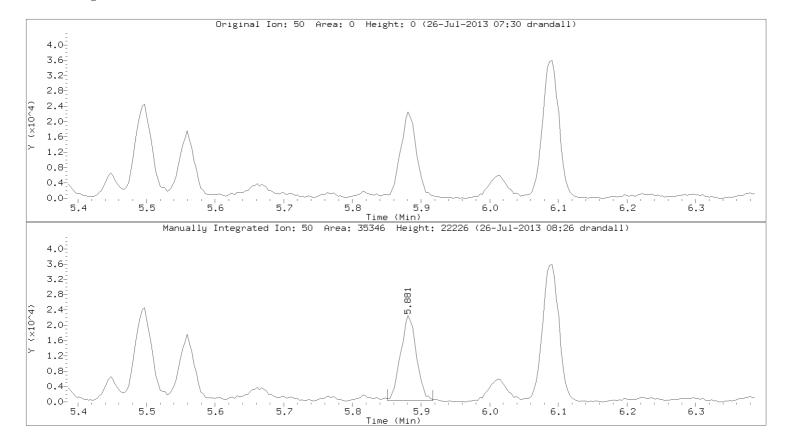
Compound: Benzene CAS Number: 71-43-2



10236207 971 of 1066

Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i Lab Sample ID: 10236207014

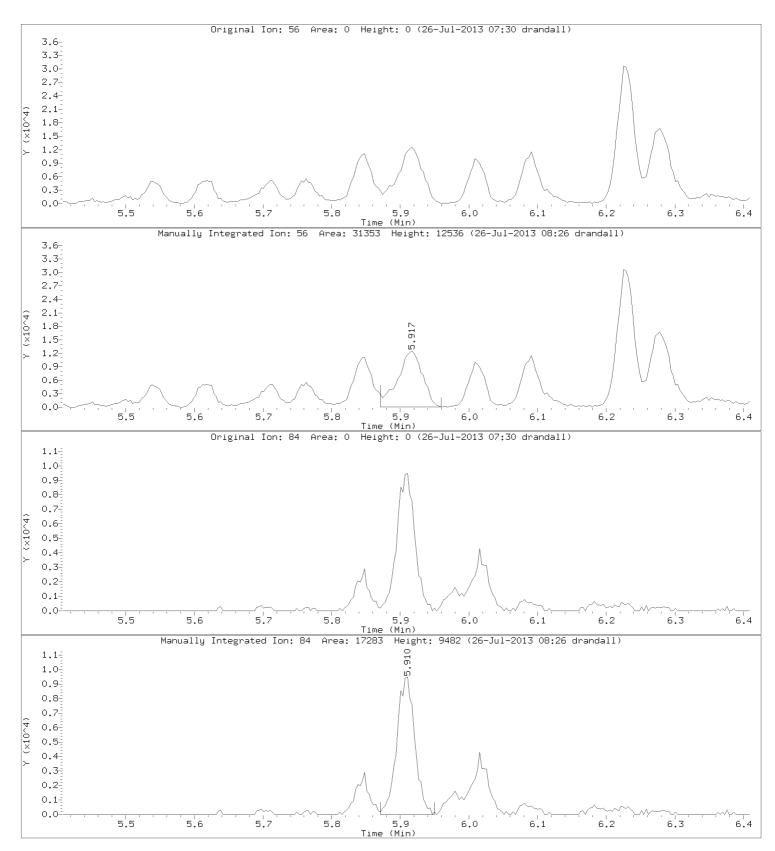


Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

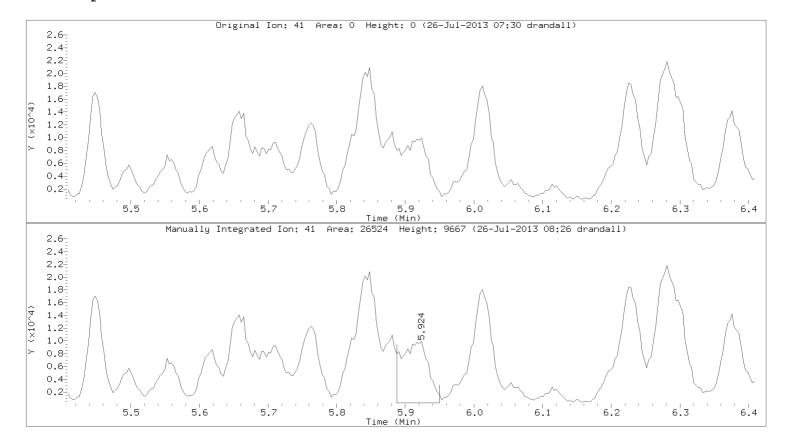
Compound: Cyclohexane CAS Number: 110-82-7



10236207 973 of 1066

Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i Lab Sample ID: 10236207014



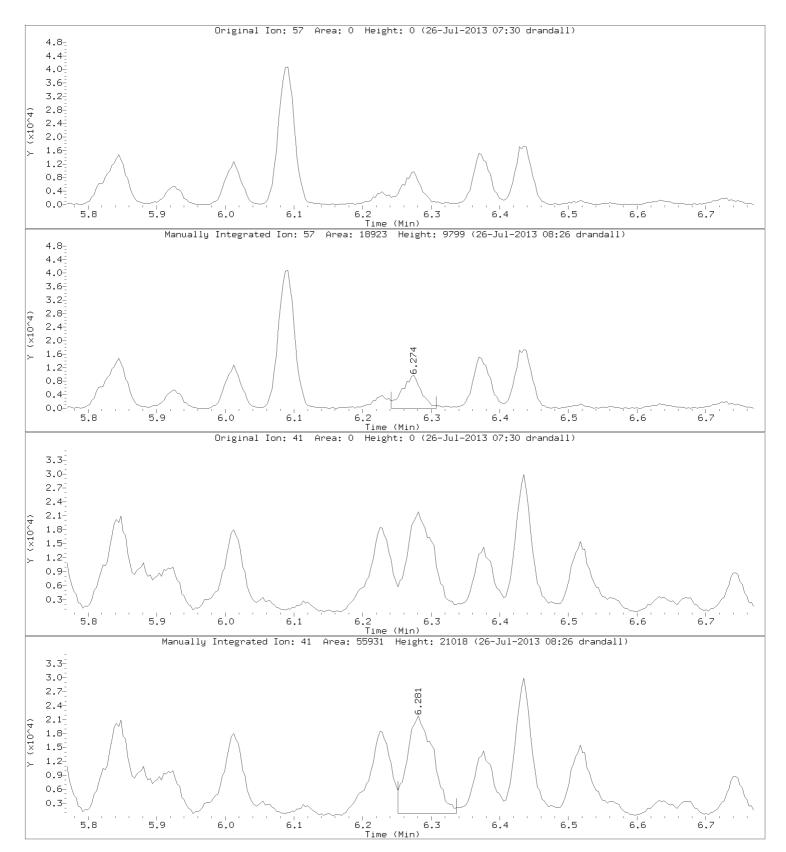
Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

Compound: 2,2,4-Trimethylpentane

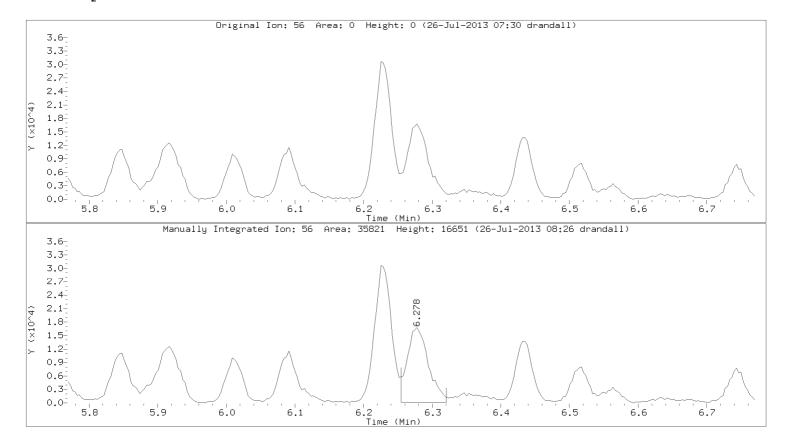
CAS Number: 540-84-1



10236207 975 of 1066

Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i Lab Sample ID: 10236207014

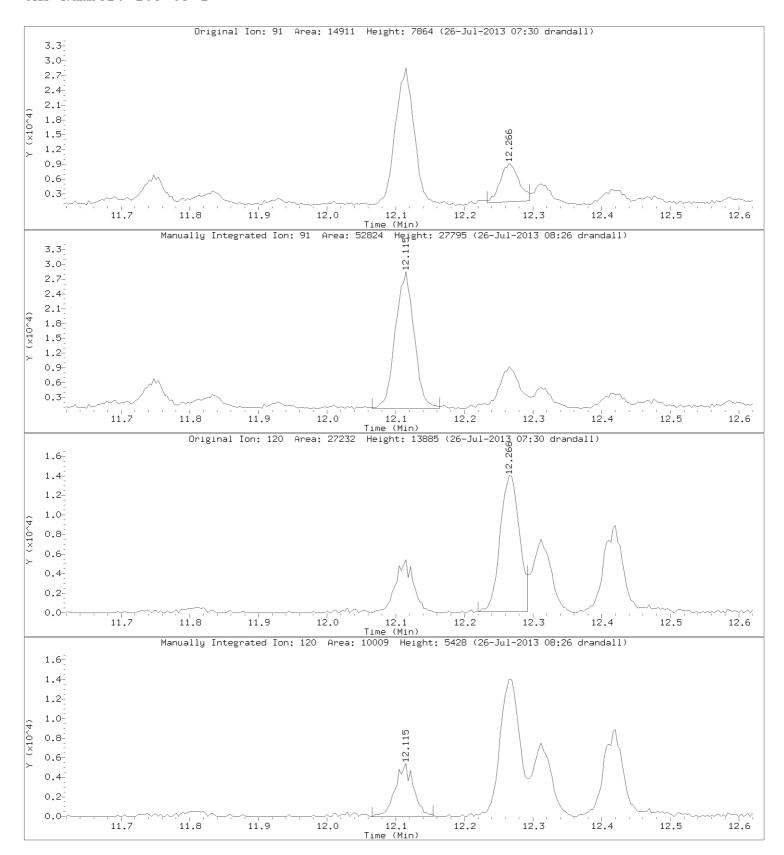


Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

Compound: N-Propylbenzene CAS Number: 103-65-1



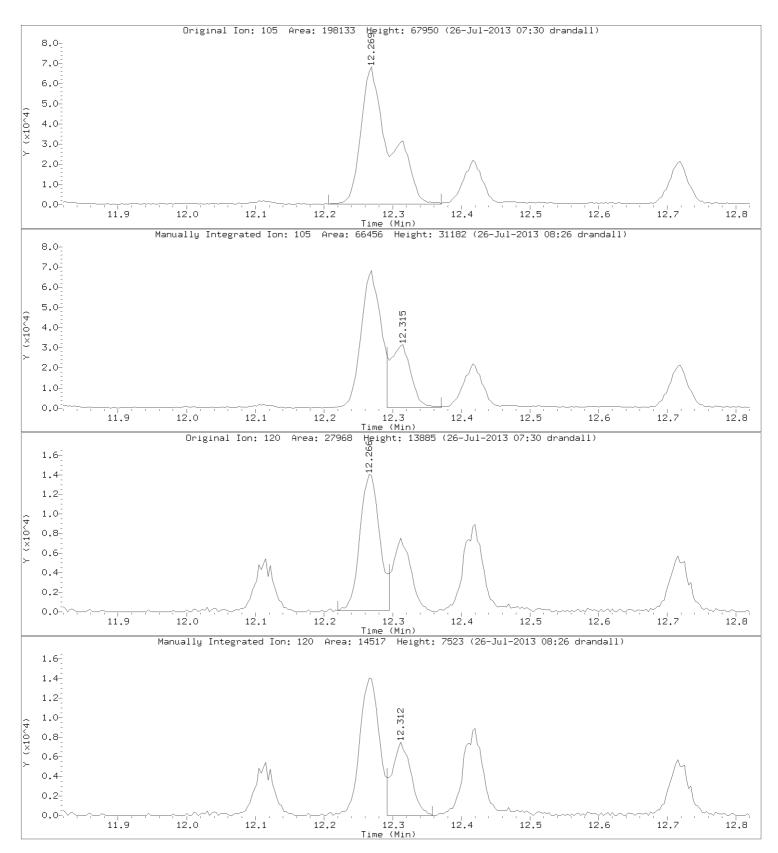
10236207 977 of 1066

Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

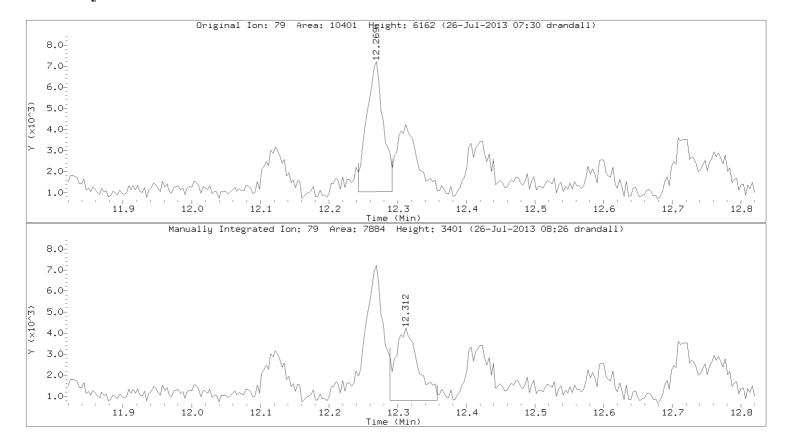
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 978 of 1066

Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i Lab Sample ID: 10236207014



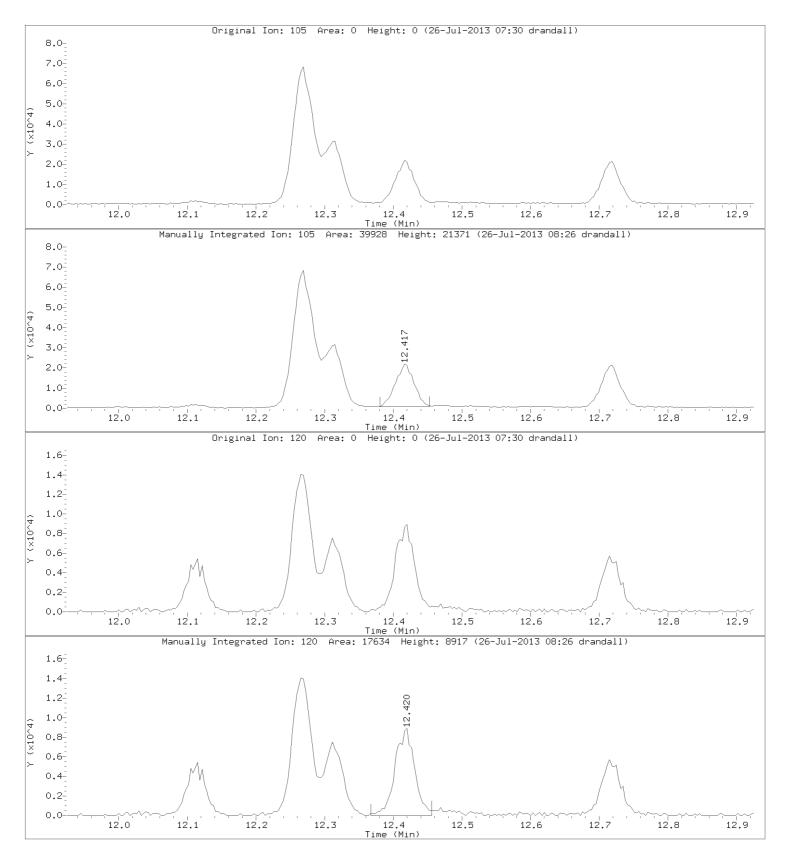
Injection Date: 26-JUL-2013 02:01

Instrument: 10airD.i

Lab Sample ID: 10236207014

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



10236207 980 of 1066

Report Date: 26-Jul-2013 10:30

## Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20633.d Lab Smp Id: 10236207015
Inj Date: 26-JUL-2013 05:04
Operator: DR1
Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 33

Dil Factor: 1.44000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version:  $\overline{4.14}$ Processing Host: 10AIRPC4

## Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description
DF Uf		Dilution Factor ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	CONCENTRATIONS ON-COLUMN FINAL RT EXP RT REL RT RESPONSE (ppbv) (ppbv)				
1 Propylene	41	2.978 2.982 (0.489) 100231 10.9403 15.8				
2 Dichlorodifluoromethane	85	3.001 3.008 (0.493) 26172 0.29505 0.425				
3 Dichlorotetrafluoroethane	85	Compound Not Detected.				
4 Chloromethane	50	Compound Not Detected.				
5 Vinyl chloride	62	Compound Not Detected.				
6 1,3-Butadiene	54	Compound Not Detected.				
7 Bromomethane	94	Compound Not Detected.				
8 Chloroethane	64	Compound Not Detected.				
9 Ethanol	31	3.493 3.494 (0.574) 35015 3.31336 4.77(M				
10 Vinyl Bromide	106	Compound Not Detected.				
11 Acrolein	56	Compound Not Detected.				
12 Trichlorofluoromethane	101	3.696 3.694 (0.607) 15345 0.15903 0.229				
13 Acetone	43	3.726 3.726 (0.612) 413304 8.54498 12.3				
14 Isopropyl Alcohol	45	Compound Not Detected.				
15 1,1-Dichloroethene	61	Compound Not Detected.				
16 Acrylonitrile	53	Compound Not Detected.				
17 Tert Butyl Alcohol	59	3.985 3.989 (0.655) 29143 0.57433 0.827(M				
18 Freon 113	101	Compound Not Detected.				
19 Methylene chloride	49	4.093 4.094 (0.672) 1553901 56.7037 81.6(A				
20 Allyl Chloride	76	Compound Not Detected.				
21 Carbon Disulfide	76	4.224 4.224 (0.694) 20199 0.25329 0.365				
22 trans-1,2-dichloroethene	96	Compound Not Detected.				
23 Methyl Tert Butyl Ether	73	Compound Not Detected.				

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20633.d$ Report Date: 26-Jul-2013 10:30

			CONCENTRATIONS
		QUANT SIG	ON-COLUMN FINAL
Compo	punds	MASS	RT EXP RT REL RT RESPONSE (ppbv) (ppbv)
=====		====	
	Vinyl Acetate	43	Compound Not Detected.
	1,1-Dichloroethane	63	Compound Not Detected.
	Hexane-d14(S)	66	4.697 4.700 (0.772) 303594 8.61709 8.62
	Methyl Ethyl Ketone	72	4.775 4.779 (0.785) 15170 1.35469 1.95(1
	n-Hexane	57	4.815 4.818 (0.791) 143266 4.47318 6.44
	cis-1,2-Dichloroethene	96	Compound Not Detected.
	Ethyl Acetate	43	4.995 4.999 (0.821) 54266 1.73166 2.49(
	Chloroform	83	Compound Not Detected.
	! Tetrahydrofuran	42	Compound Not Detected.
	1,1,1-Trichloroethane	97	Compound Not Detected.
	1,2-Dichloroethane	62	Compound Not Detected.
	Benzene	78	5.874 5.887 (0.965) 26780 0.78580 1.13
	Carbon tetrachloride	117	Compound Not Detected.
	Cyclohexane	56	Compound Not Detected.
	1,4-Difluorobenzene	114	6.087 6.094 (1.000) 729594 10.0000
39	2,2,4-Trimethylpentane	57	6.261 6.271 (1.029) 13711 0.56995 0.821 (I
40	Heptane	43	6.428 6.442 (1.056) 5678 0.66134 0.952
41	1,2-Dichloropropane	63	Compound Not Detected.
42	! Trichloroethene	130	Compound Not Detected.
43	1,4-Dioxane	88	Compound Not Detected.
44	Bromodichloromethane	83	Compound Not Detected.
4.5	Methyl Isobutyl Ketone	43	7.232 7.229 (1.188) 3508 0.48817 0.703(I
4 €	cis-1,3-Dichloropropene	75	Compound Not Detected.
47	trans-1,3-Dichloropropene	75	Compound Not Detected.
\$ 48	Toluene-d8 (S)	98	7.842 7.848 (1.288) 521174 10.2282 10.2
49	Toluene	91	7.930 7.940 (1.303) 145339 2.04962 2.95
50	1,1,2-Trichloroethane	97	Compound Not Detected.
51	Methyl Butyl Ketone	43	Compound Not Detected.
52	Dibromochloromethane	129	Compound Not Detected.
53	1,2-Dibromoethane	107	Compound Not Detected.
54	Tetrachloroethene	166	8.911 8.918 (0.920) 2572 0.43769 0.630(I
* 55	Chlorobenzene - d5	117	9.685 9.691 (1.000) 275469 10.0000
56	Chlorobenzene	112	Compound Not Detected.
	'Ethyl Benzene	91	10.032 10.039 (1.036) 28374 0.57622 0.830
	m&p-Xylene	91	10.199 10.213 (1.053) 99955 1.44777 2.08
	Bromoform	173	Compound Not Detected.
60	Styrene	104	Compound Not Detected.
	o-Xylene	91	10.777 10.783 (1.113) 34002 0.57978 0.835(1
	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.
	Isopropylbenzene	105	Compound Not Detected.
	N-Propylbenzene	91	Compound Not Detected.
	4-Ethyltoluene	105	12.315 12.321 (1.272) 17115 0.49784 0.717(1
	5 1,3,5-Trimethylbenzene	105	12.423 12.426 (1.283) 11463 0.42806 0.616(I
	1,2,4-Trimethylbenzene	105	13.023 13.020 (1.345) 49924 0.95764 1.38(I
	1,3-Dichlorobenzene	146	
	·		Compound Not Detected.
	Sec- Butylbenzene	105	Compound Not Detected.
	1,4-dichlorobenzene-d4 (S)	150	13.456 13.459 (1.389) 112284 10.0982 10.1
	Benzyl Chloride	91	Compound Not Detected.
	1,4-Dichlorobenzene	146	Compound Not Detected.
	1,2-Dichlorobenzene	146	Compound Not Detected.
	N-Butylbenzene	91	Compound Not Detected.
	1,2,4-Trichlorobenzene	180	Compound Not Detected.
	Naphthalene	128	16.863 16.860 (1.741) 13984 0.68175 0.982 (I
77	Hexachlorobutadiene	225	Compound Not Detected.

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Report Date: 26-Jul-2013 10:30

CONCENTRATIONS ON-COLUMN FINAL Compounds \_\_\_\_\_

# QC Flag Legend

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

Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.

Report Date: 26-Jul-2013 10:30

Pace Analytical Services, Inc.

### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20633.d

Lab Smp Id: 10236207015 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DTFF
38 1,4-Difluorobenze	579775	347865	811685	729594	25.84
55 Chlorobenzene - d	221404	132842	309966	275469	24.42

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.69	-0.03

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.

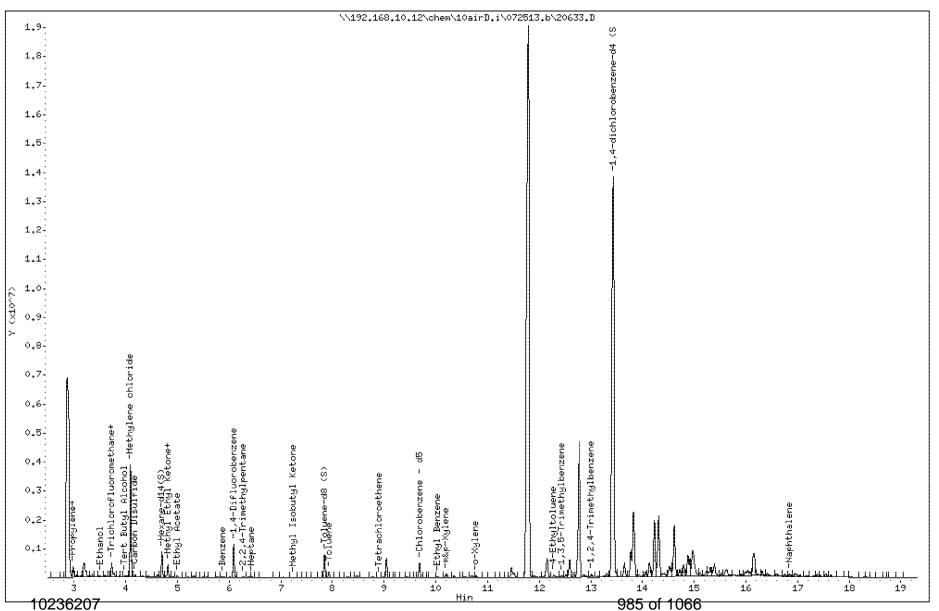
Date : 26-JUL-2013 05:04

Column phase: J&W DB-5

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column diameter: 0.32



Date : 26-JUL-2013 05:04

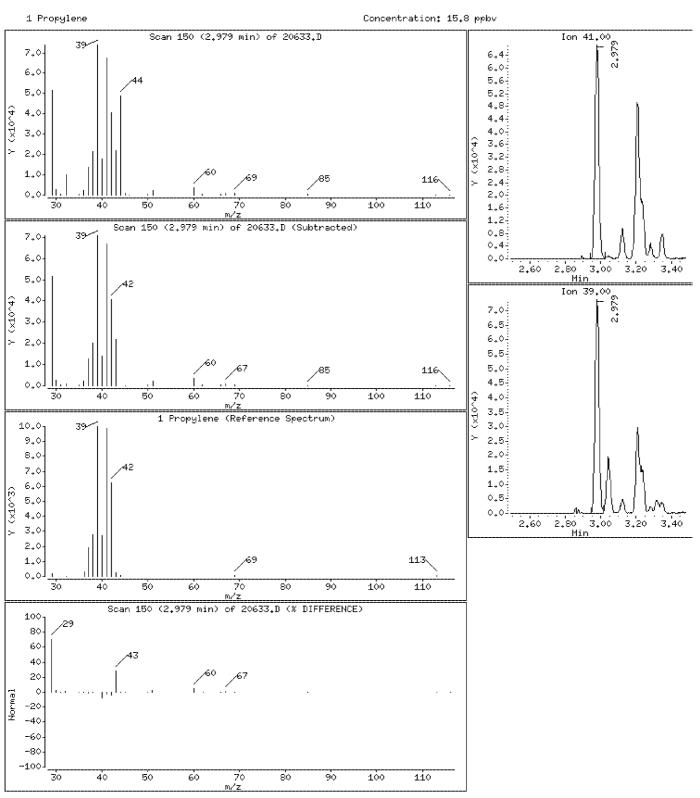
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





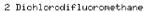
Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

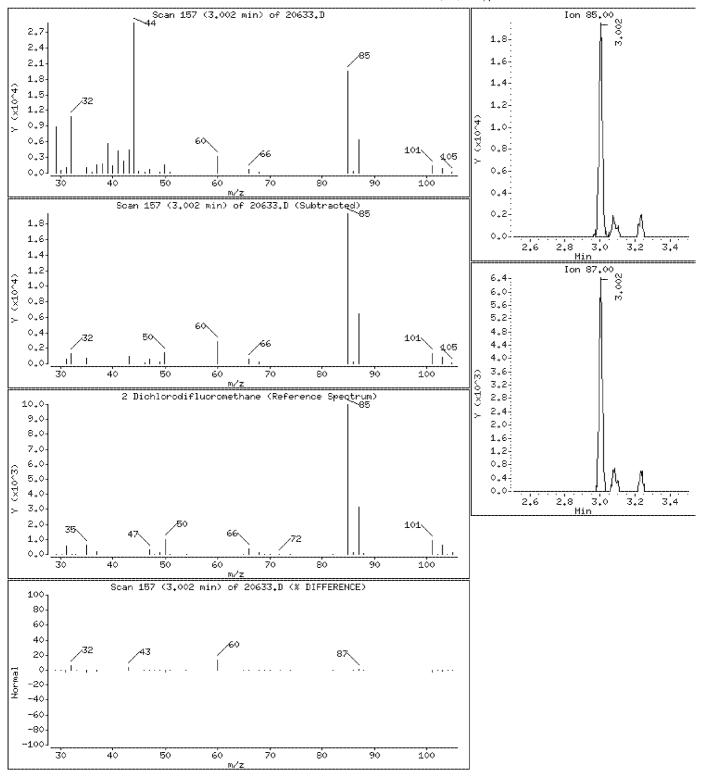
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.425 ppbv



10236207 987 of 1066

Date : 26-JUL-2013 05:04

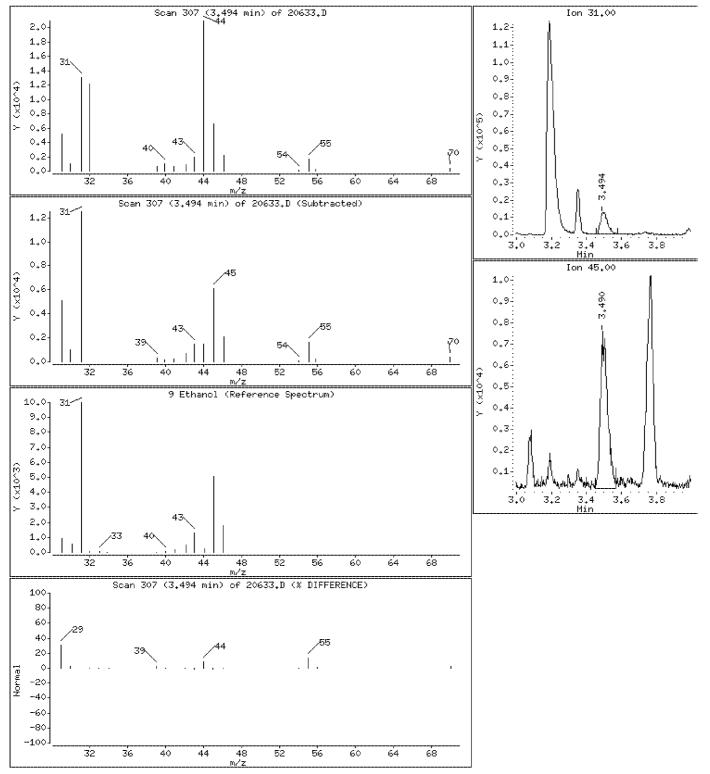
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 988 of 1066

Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

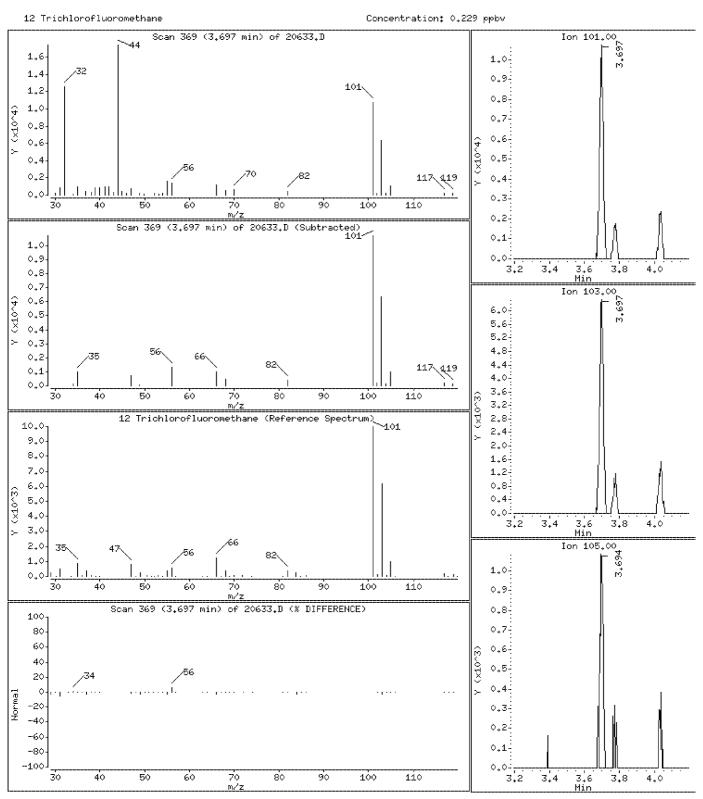
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.229 ppbv



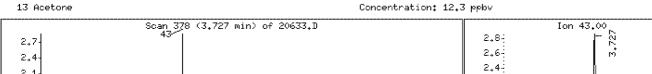
Date : 26-JUL-2013 05:04

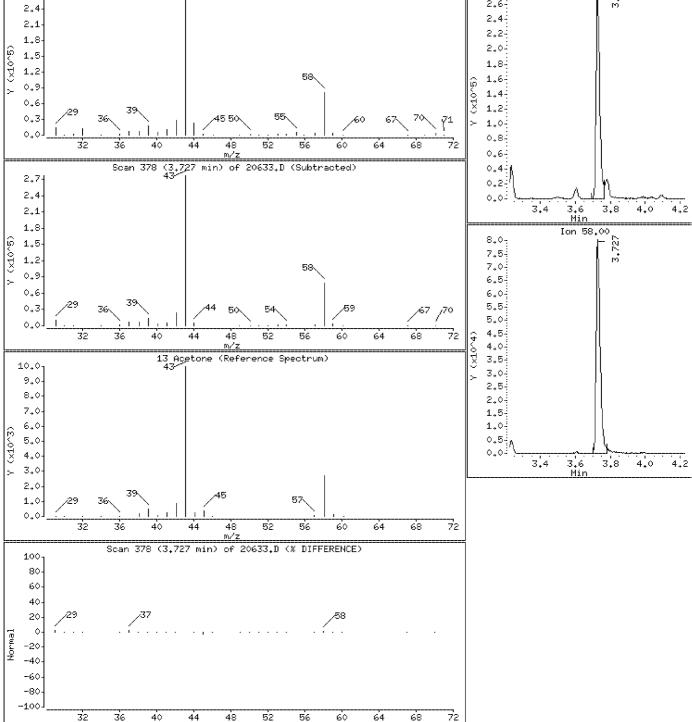
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 990 of 1066

Date : 26-JUL-2013 05:04

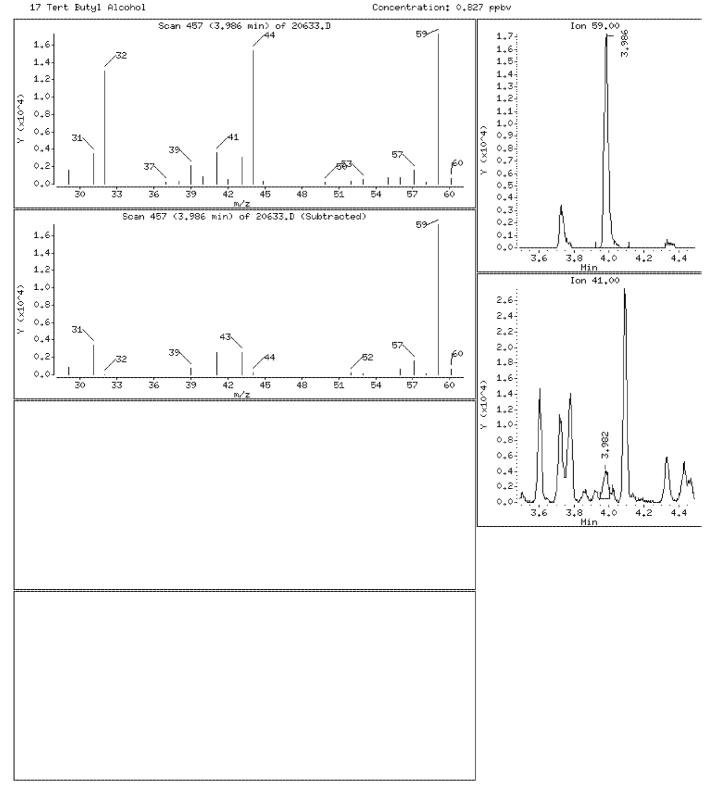
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

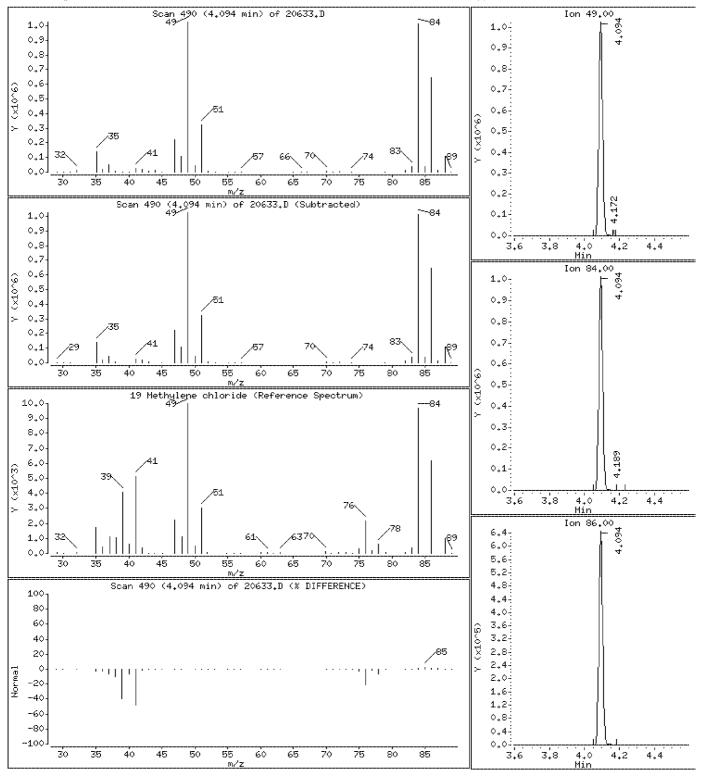
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 81.6 ppbv



10236207 992 of 1066

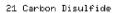
Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

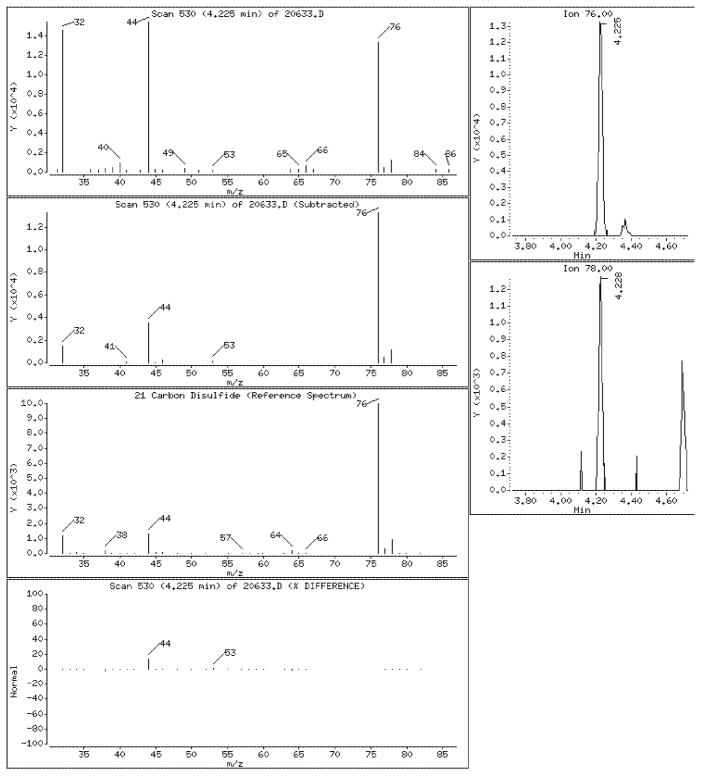
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 993 of 1066

Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

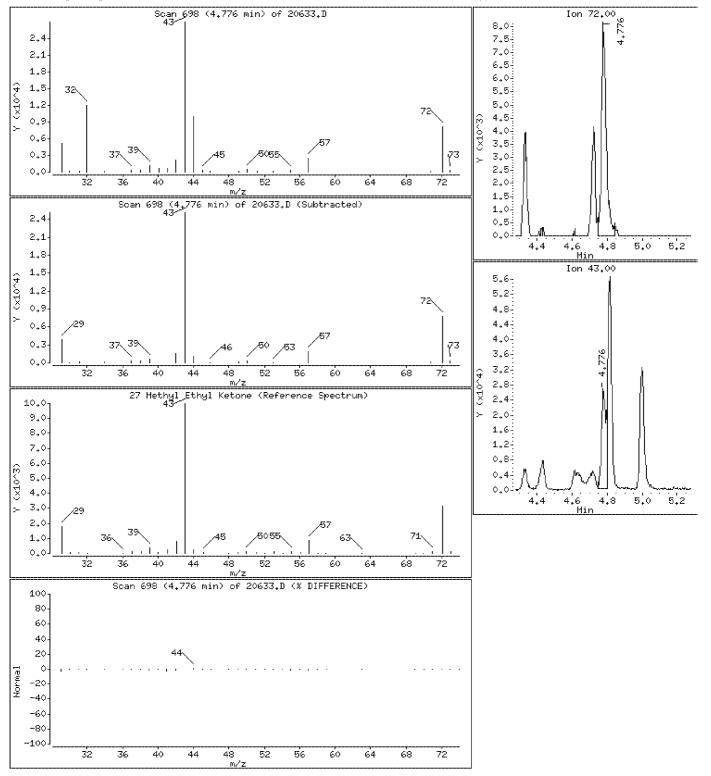
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

27 Methyl Ethyl Ketone

Concentration: 1.95 ppbv



10236207 994 of 1066

Date : 26-JUL-2013 05:04

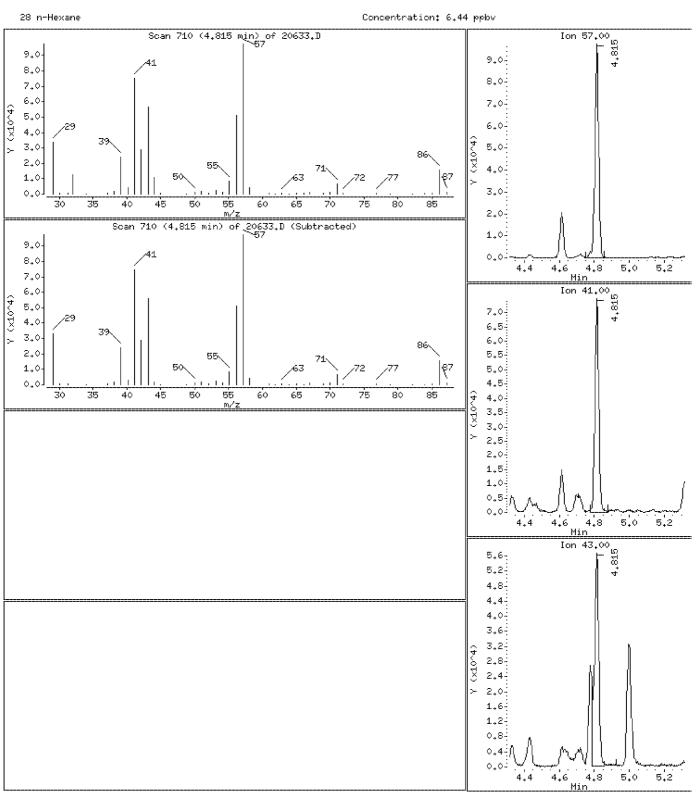
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 05:04

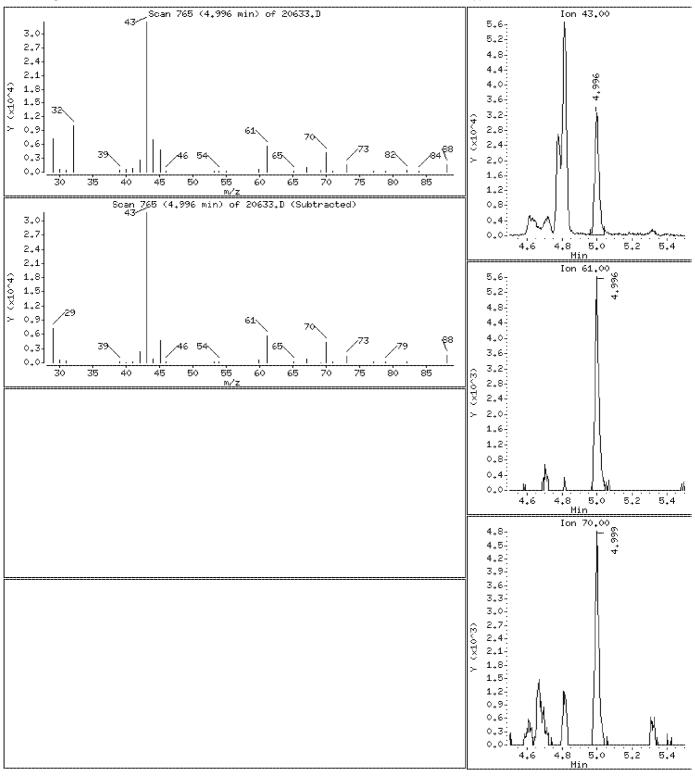
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 996 of 1066

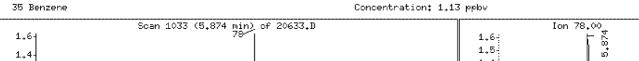
Date : 26-JUL-2013 05:04

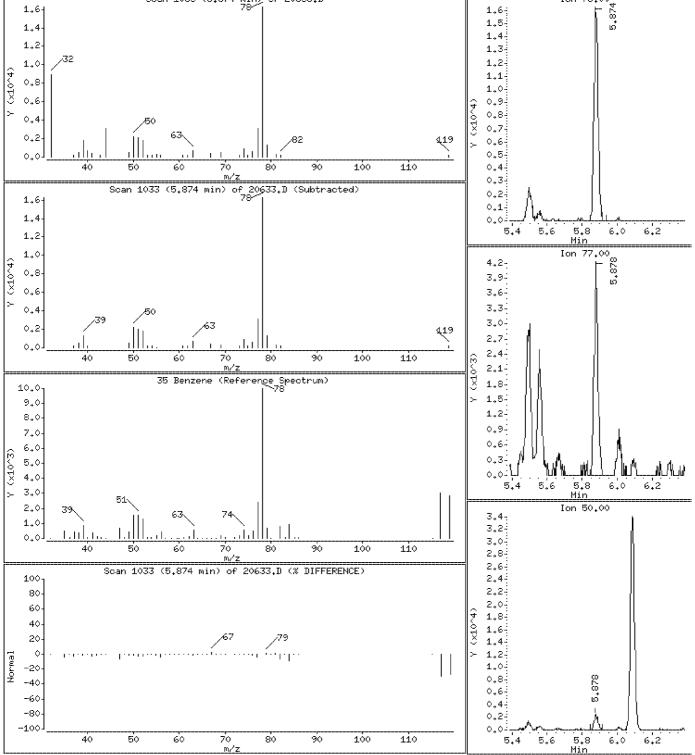
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

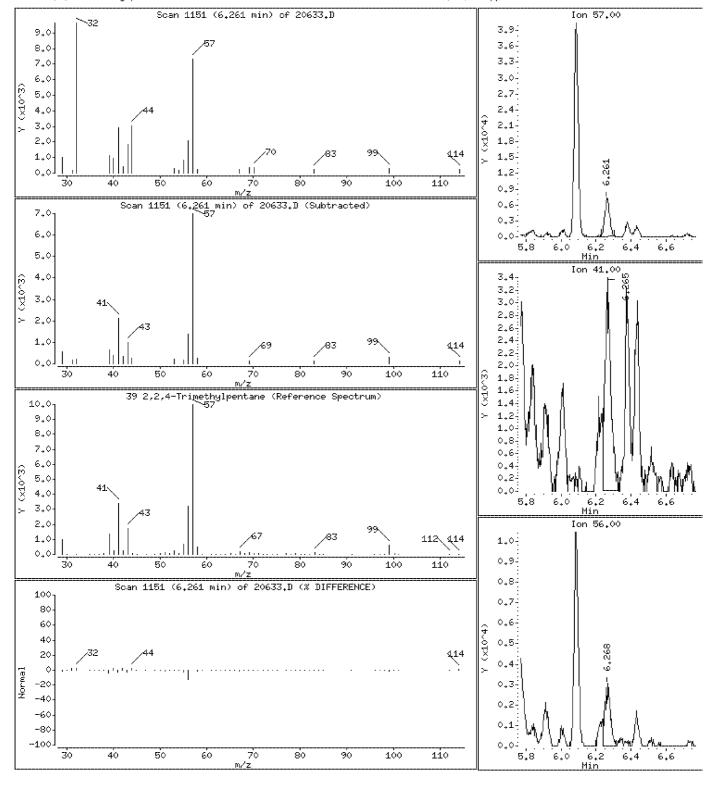
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

39 2,2,4-Trimethylpentane

Concentration: 0.821 ppbv



10236207 998 of 1066

Date : 26-JUL-2013 05:04

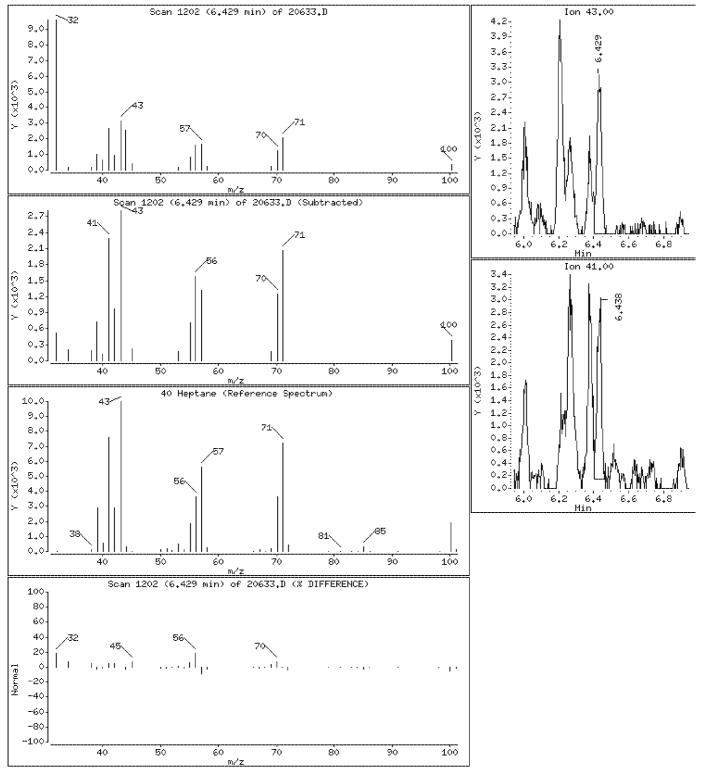
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 999 of 1066

Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

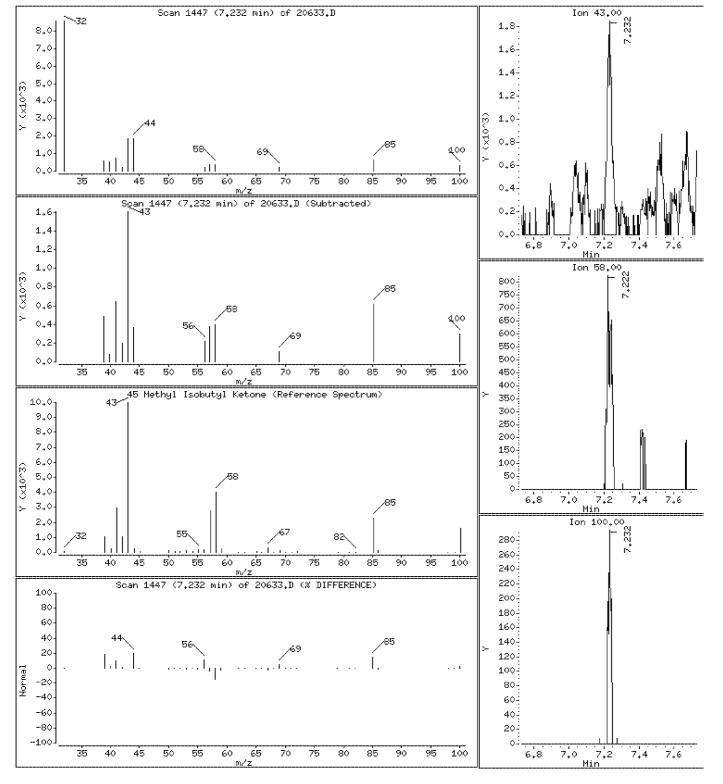
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

45 Methyl Isobutyl Ketone

Concentration: 0.703 ppbv



10236207 1000 of 1066

Date : 26-JUL-2013 05:04

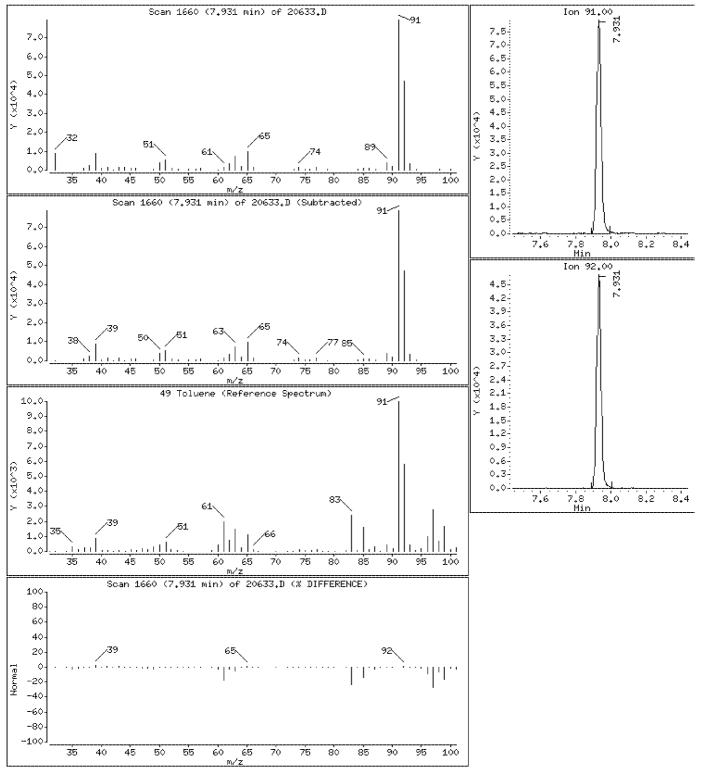
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1001 of 1066

Date : 26-JUL-2013 05:04

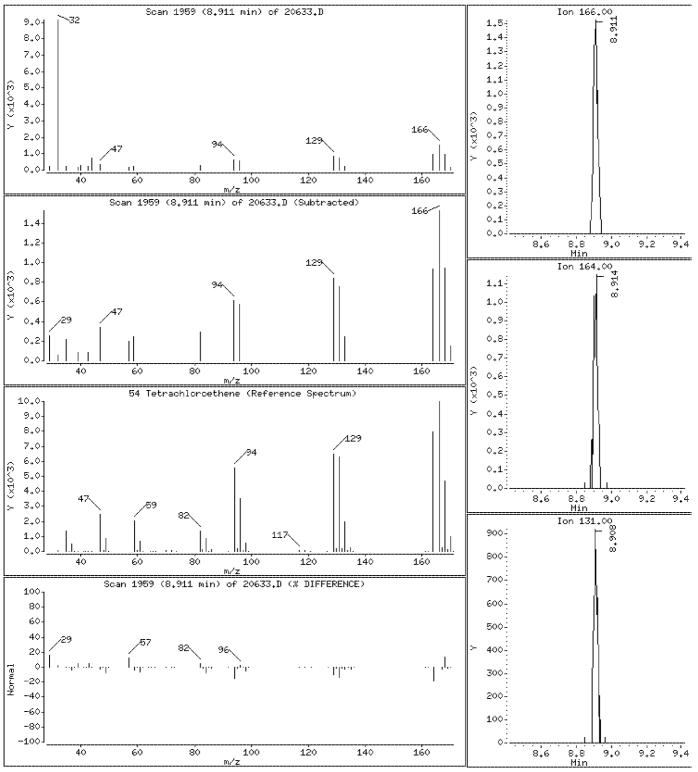
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1002 of 1066

Date : 26-JUL-2013 05:04

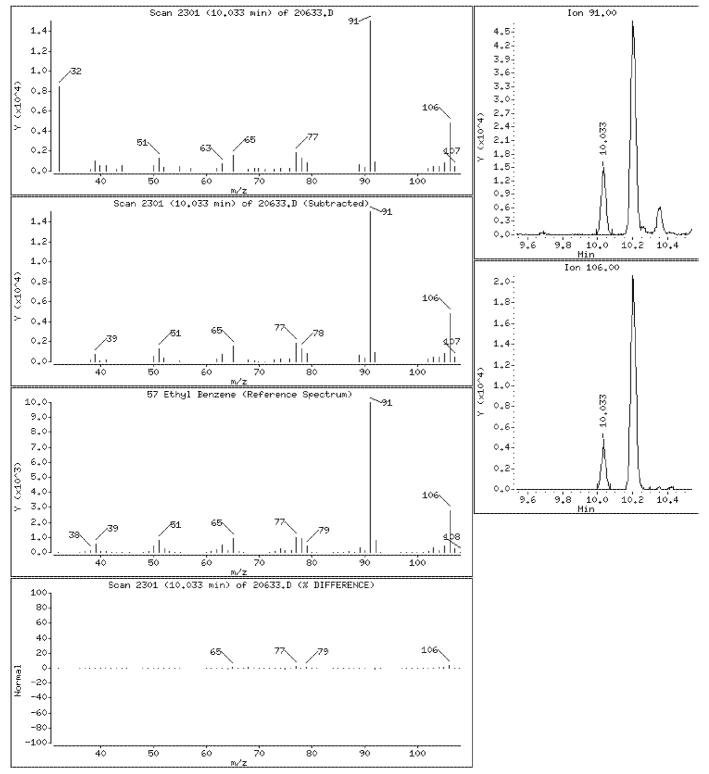
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1003 of 1066

Date : 26-JUL-2013 05:04

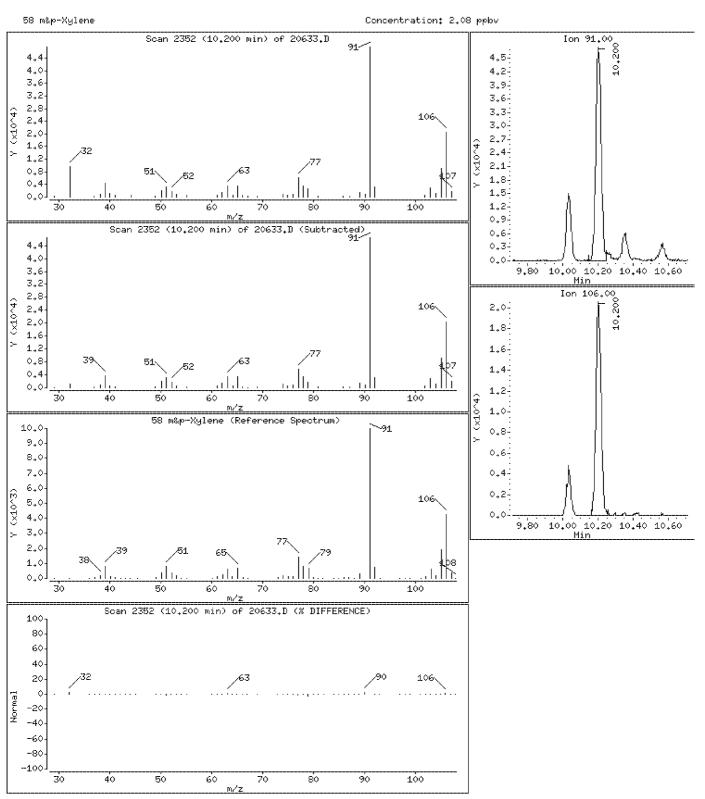
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 05:04

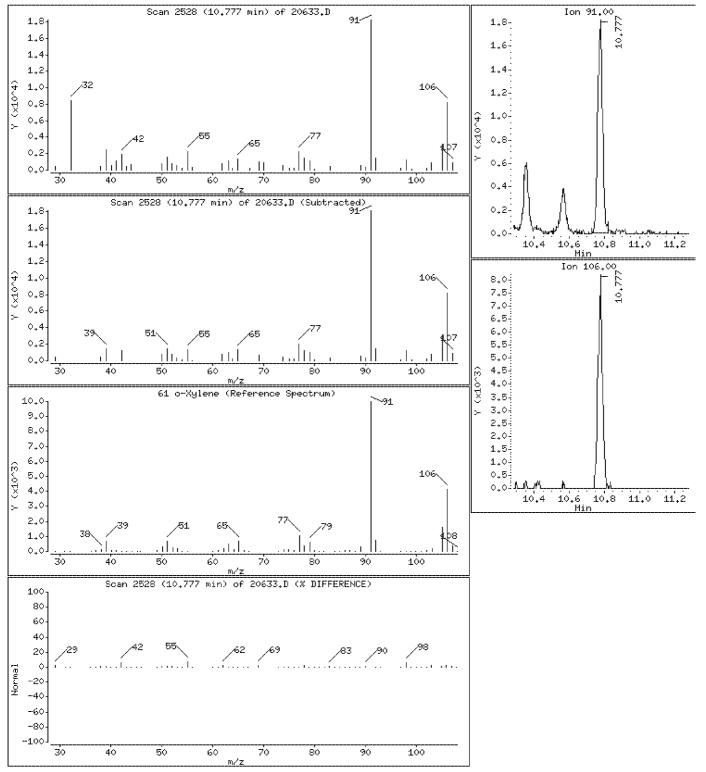
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1005 of 1066

Date : 26-JUL-2013 05:04

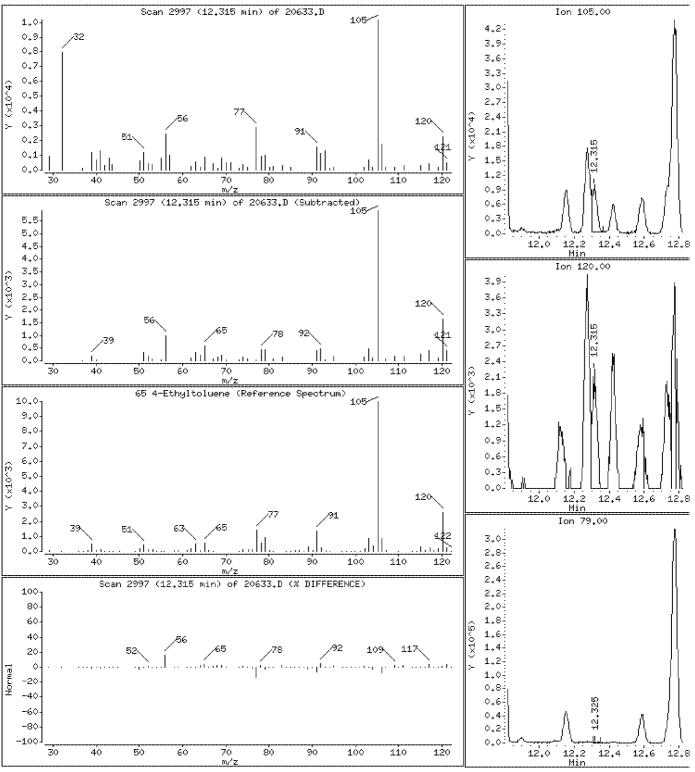
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1006 of 1066

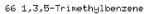
Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

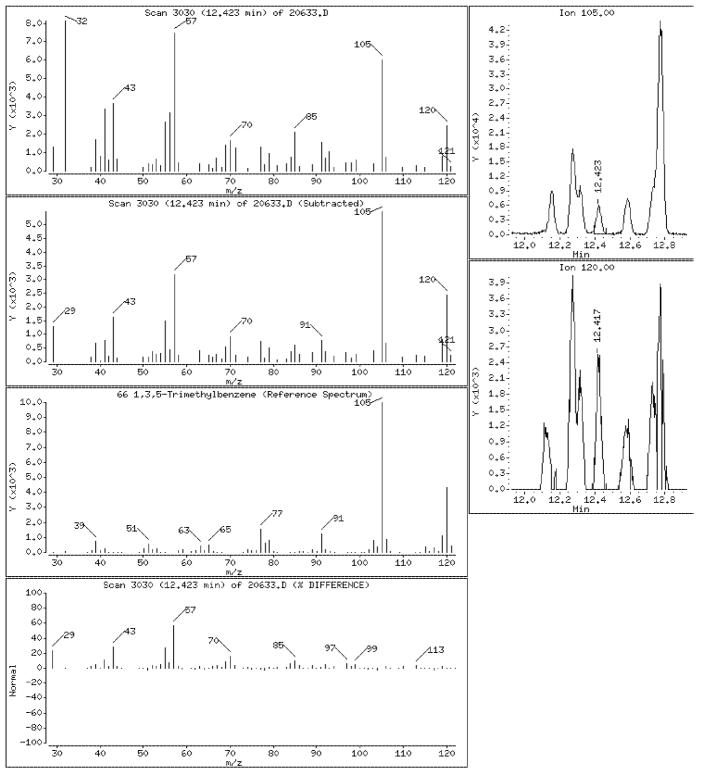
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.616 ppbv



10236207 1007 of 1066

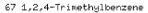
Date : 26-JUL-2013 05:04

Client ID: Instrument: 10airD.i

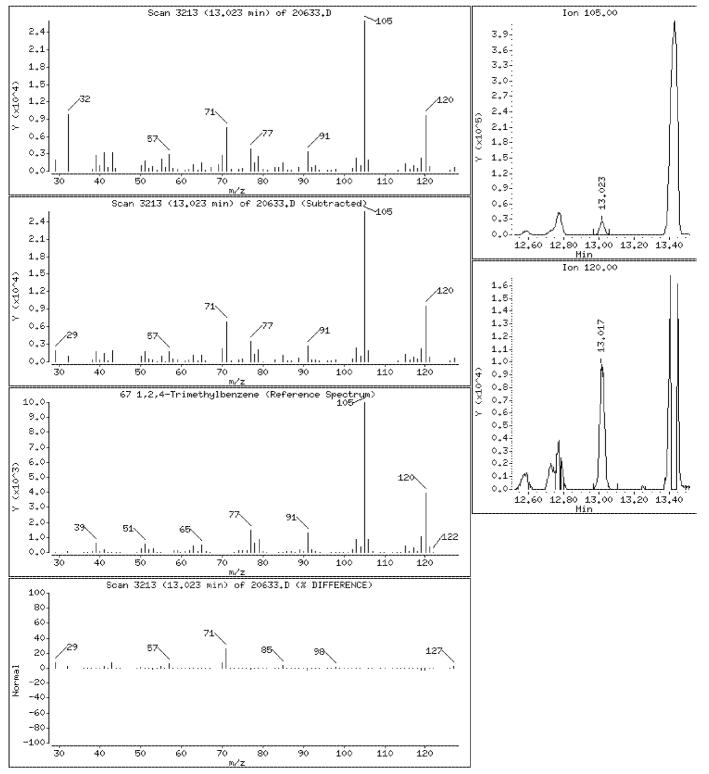
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 1008 of 1066

Date : 26-JUL-2013 05:04

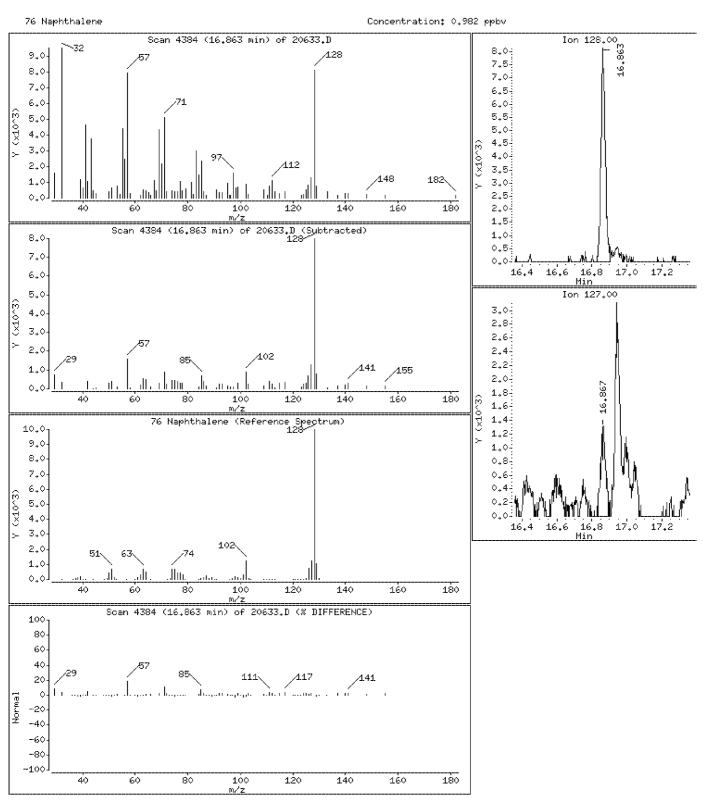
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



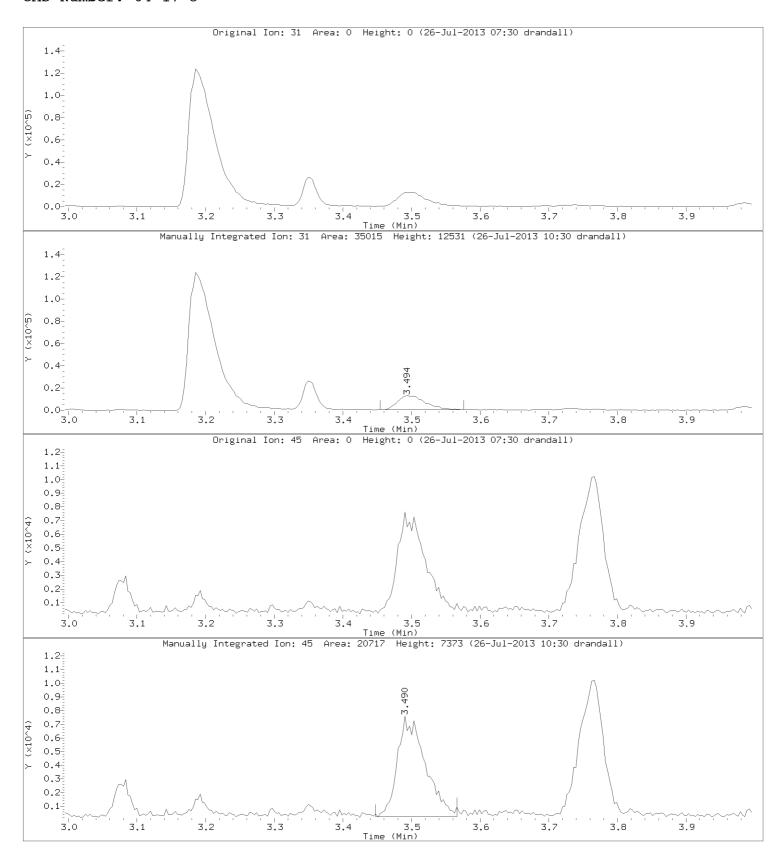


Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: Ethanol CAS Number: 64-17-5



10236207 1010 of 1066

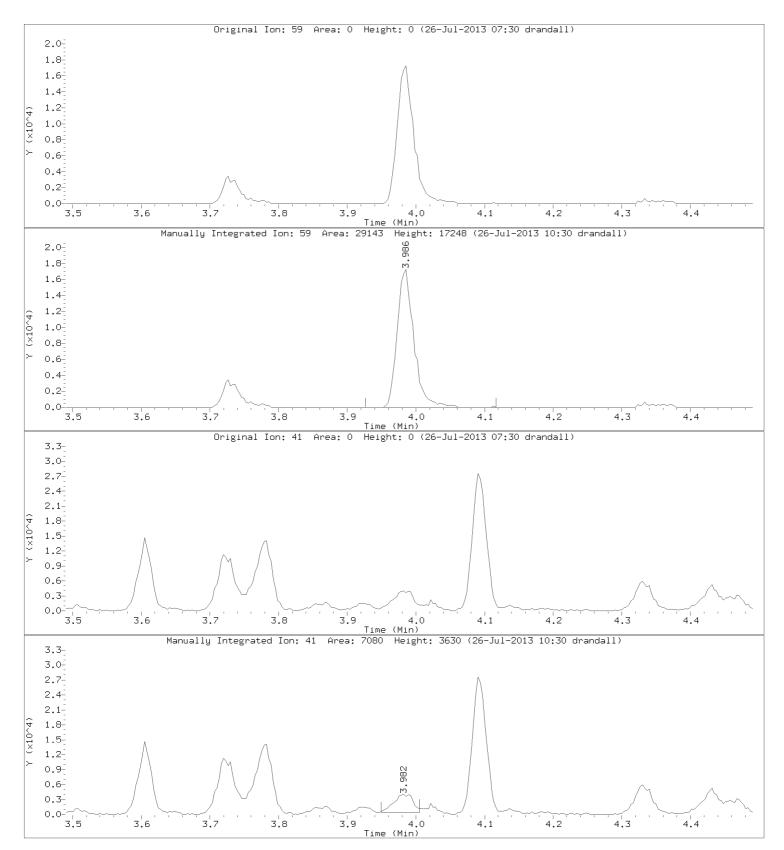
Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: Tert Butyl Alcohol

CAS Number: 75-65-0



10236207 1011 of 1066

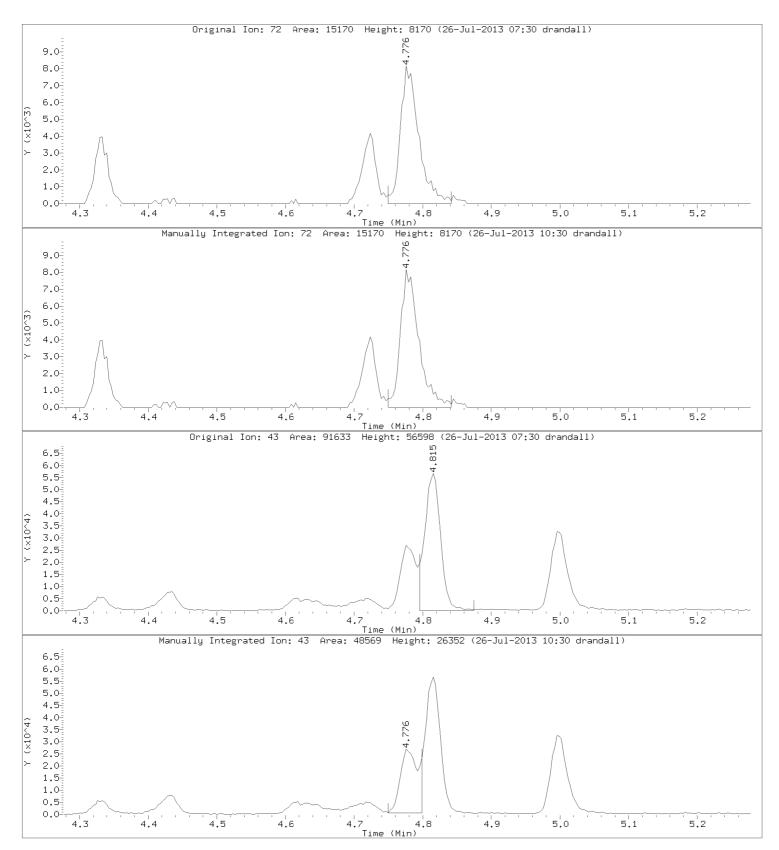
Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: Methyl Ethyl Ketone

CAS Number: 78-93-3



10236207 1012 of 1066

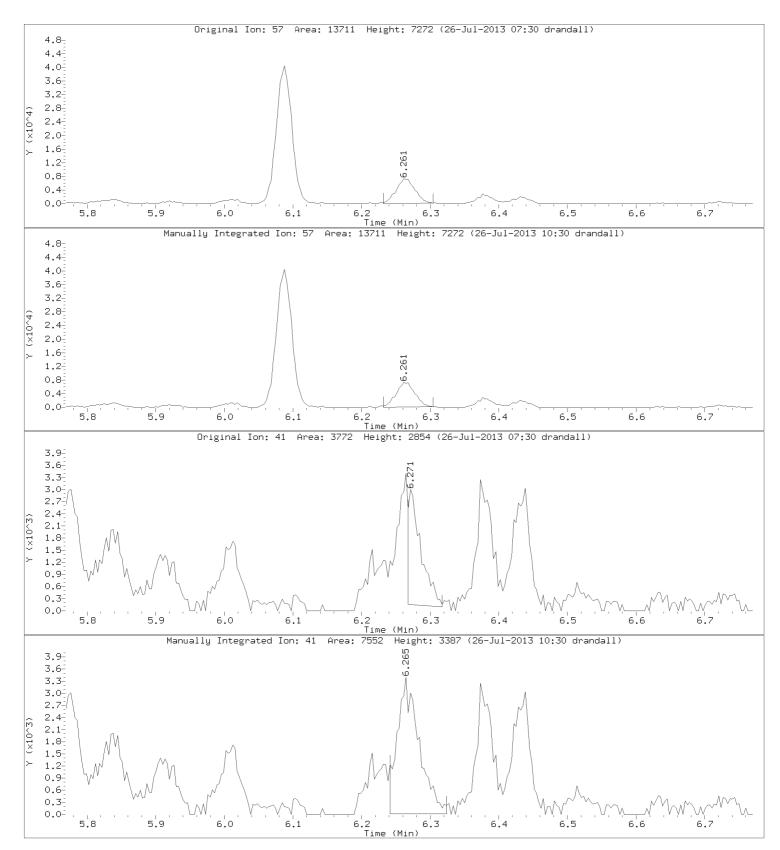
Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: 2,2,4-Trimethylpentane

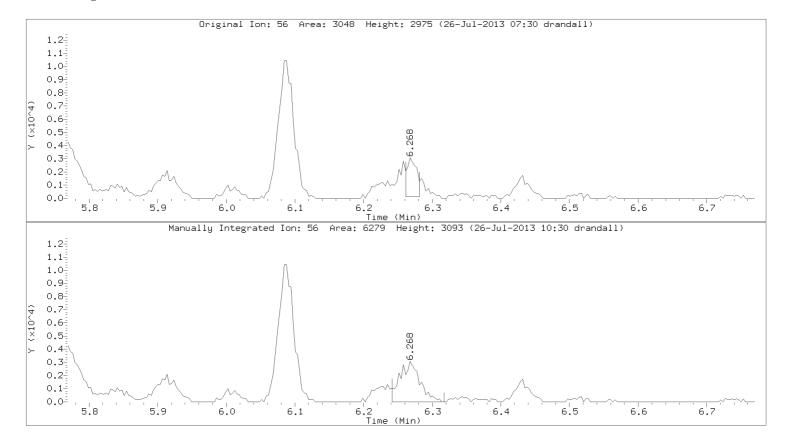
CAS Number: 540-84-1



10236207 1013 of 1066

Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i Lab Sample ID: 10236207015



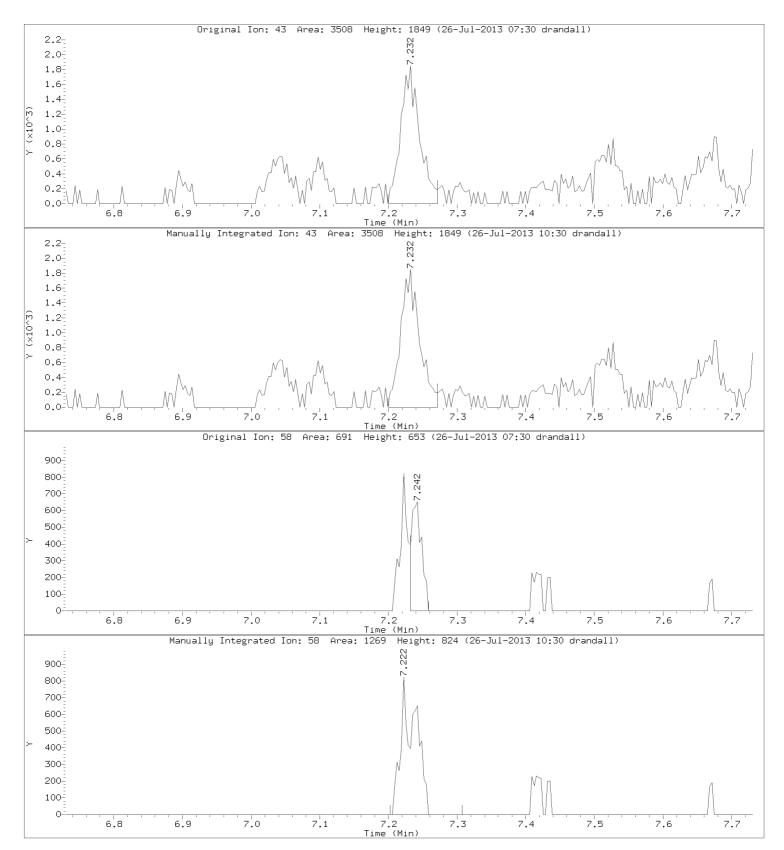
Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: Methyl Isobutyl Ketone

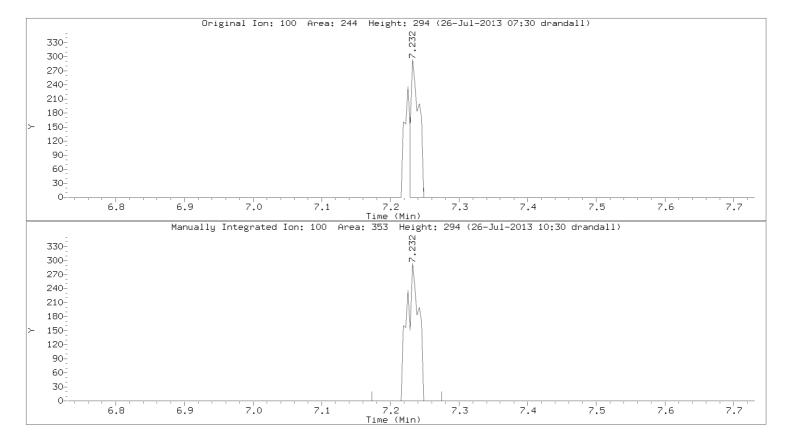
CAS Number: 108-10-1



10236207 1015 of 1066

Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i Lab Sample ID: 10236207015



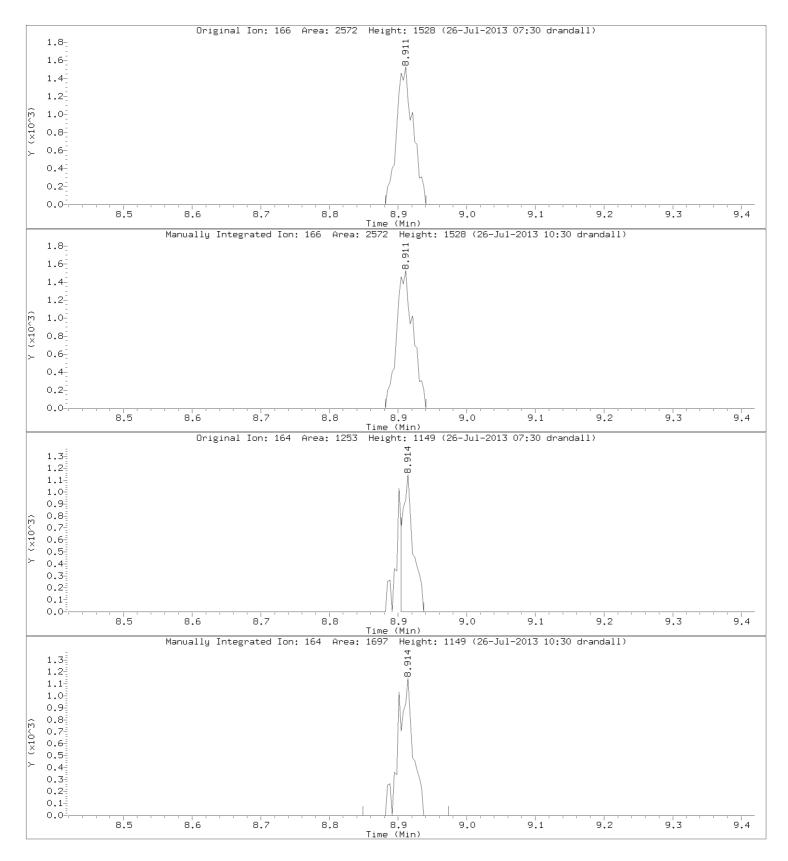
Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: Tetrachloroethene

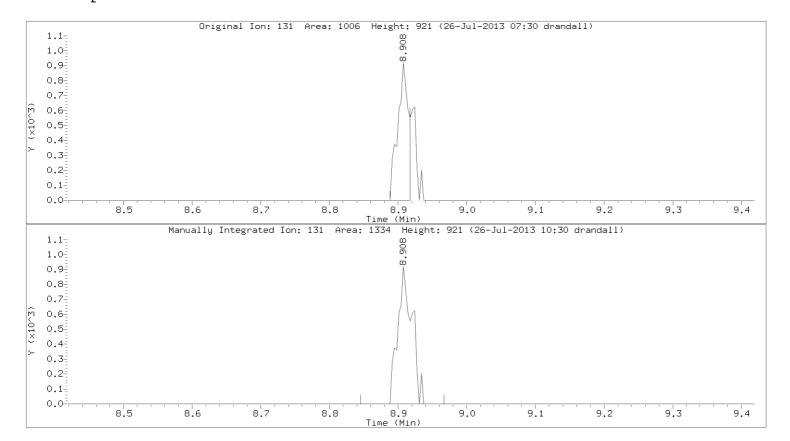
CAS Number: 127-18-4



10236207 1017 of 1066

Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i Lab Sample ID: 10236207015

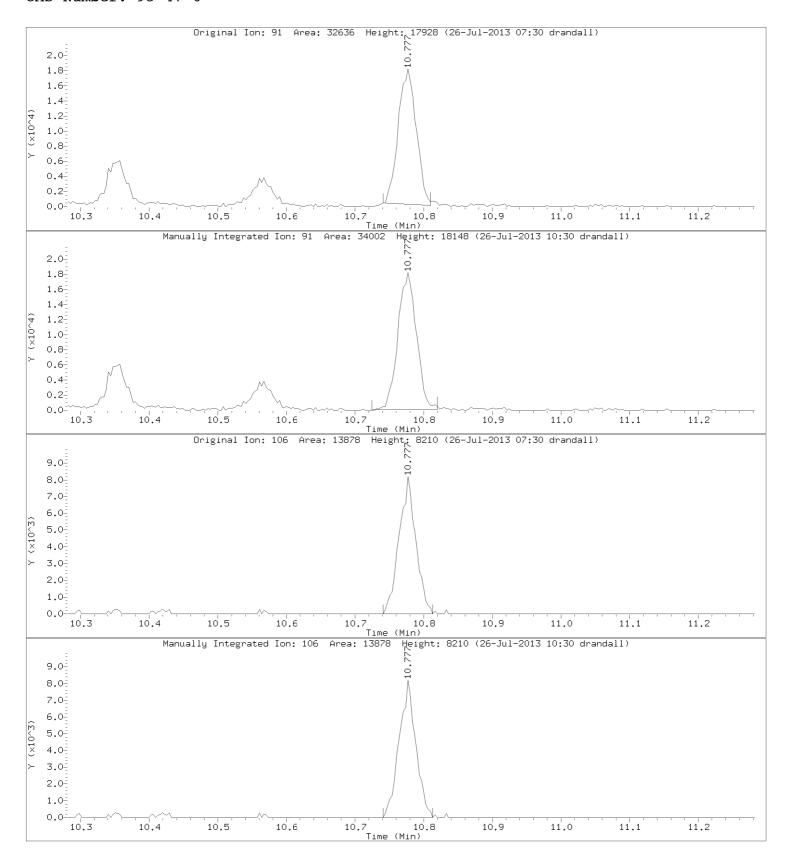


Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: o-Xylene CAS Number: 95-47-6



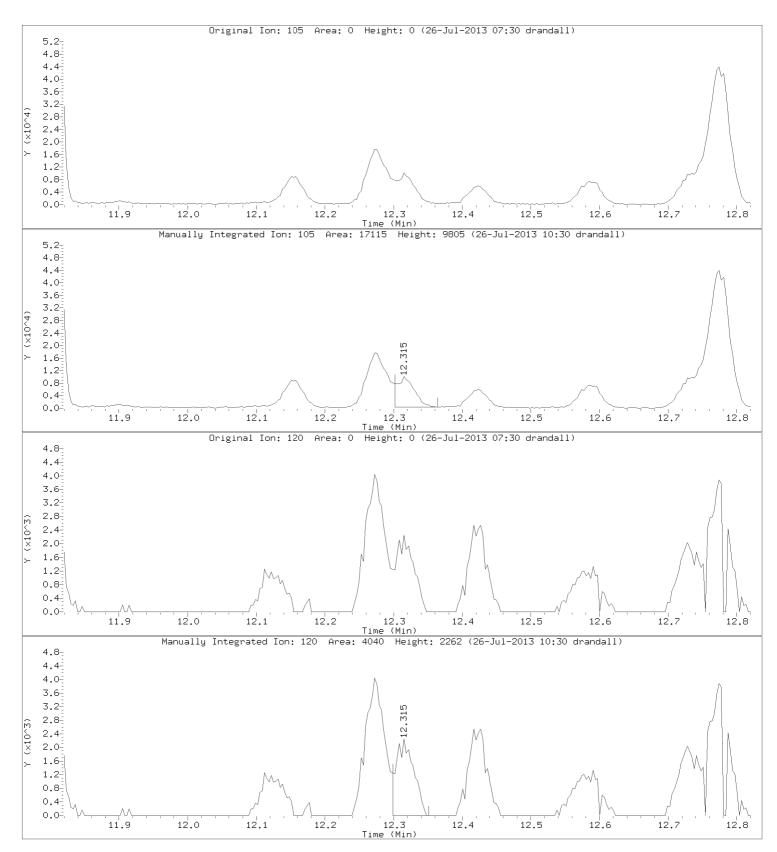
10236207 1019 of 1066

Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

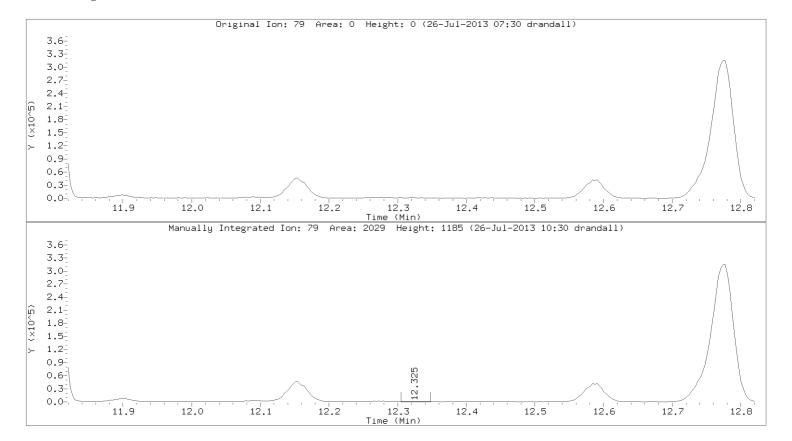
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 1020 of 1066

Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i Lab Sample ID: 10236207015



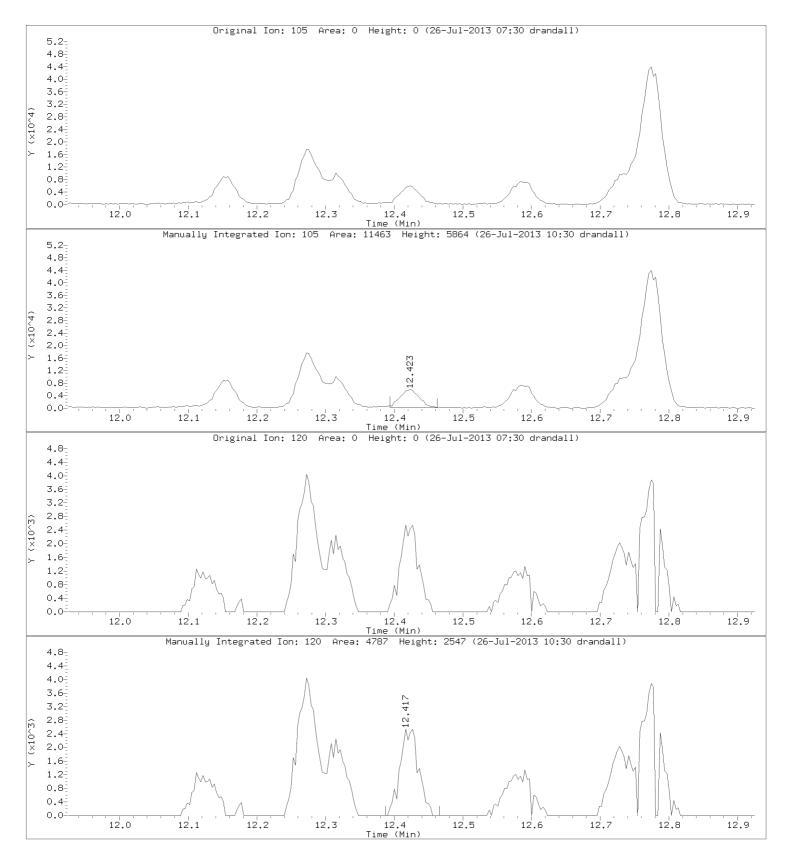
Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



10236207 1022 of 1066

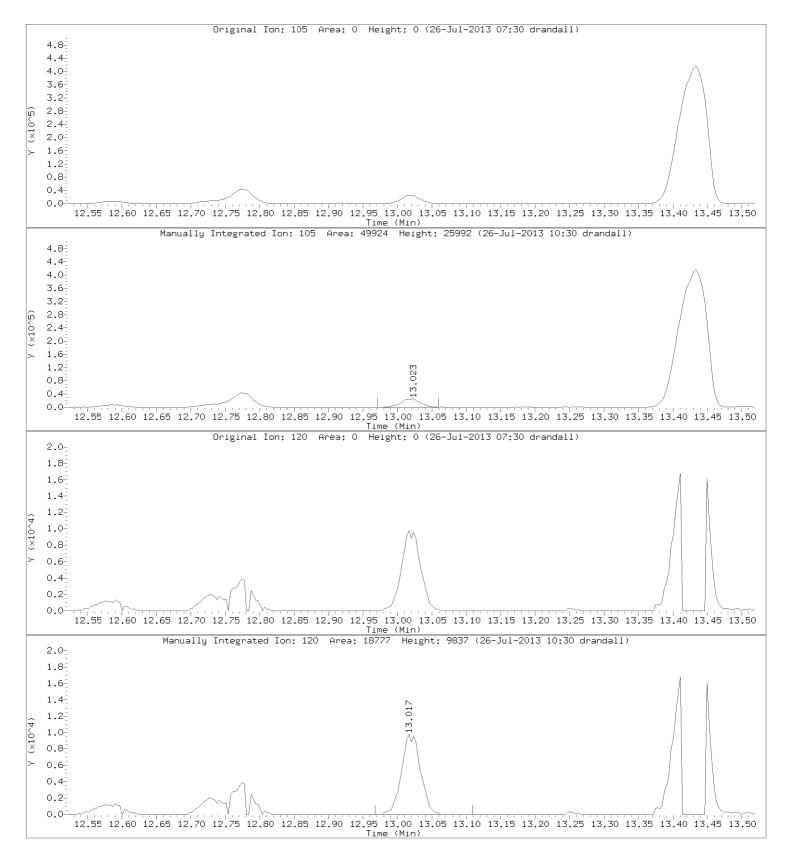
Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: 1,2,4-Trimethylbenzene

CAS Number: 95-63-6



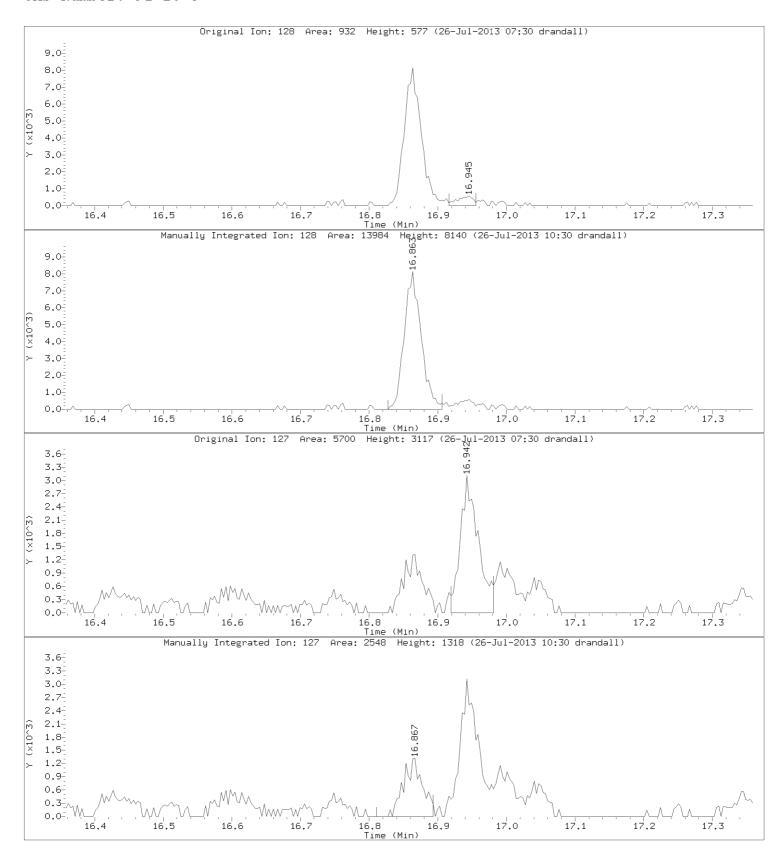
10236207 1023 of 1066

Injection Date: 26-JUL-2013 05:04

Instrument: 10airD.i

Lab Sample ID: 10236207015

Compound: Naphthalene CAS Number: 91-20-3



10236207 1024 of 1066

Report Date: 26-Jul-2013 08:15

### Pace Analytical Services, Inc.

TO15 Analysis (UNIX)

Data file: \\192.168.10.12\chem\10airD.i\072513.b\20624.d Lab Smp Id: 10236207016 Inj Date: 26-JUL-2013 00:30 Operator: DR1 Inst ID: 10airD.i

Smp Info :

Misc Info: 17870

: Volatile Organic COMPOUNDS in Air Comment

Method: \\192.168.10.12\chem\10airD.i\072513.b\T015 205-13.m

Meth Date: 25-Jul-2013 16:57 creindl Quant Type: ISTD

Cal Date: 24-JUL-2013 16:39 Cal File: 20509.d

Als bottle: 24

Dil Factor: 1.49000

Integrator: HP RTE Compound Sublist: all.su

Compound Sublist: all.sub

Target Version: 4.14

### Concentration Formula: Amt \* DF \* Uf \* CpndVariable

Name	Value	Description		
DF Uf		Dilution Factor ng unit correction factor		
Cpnd Variable		Local Compound Variable		

Compounds	QUANT SIG MASS	RT EXP RT REL RT RESPONSE	CONCENTRATIONS ON-COLUMN FINAL ( ppbv) ( ppbv)
1 Propylene	==== 41	2.972 2.982 (0.488) 61432	6.88290 10.2
2 Dichlorodifluoromethane	85	3.001 3.008 (0.493) 21574	0.24805 0.370
3 Dichlorotetrafluoroethane	85	Compound Not Detected.	
4 Chloromethane	50	Compound Not Detected.	
5 Vinyl chloride	62	Compound Not Detected.	
6 1,3-Butadiene	54	Compound Not Detected.	
7 Bromomethane	94	Compound Not Detected.	
8 Chloroethane	64	Compound Not Detected.	
9 Ethanol	31	3.509 3.494 (0.577) 19269	1.85964 2.77 (M)
10 Vinyl Bromide	106	Compound Not Detected.	
11 Acrolein	56	Compound Not Detected.	
12 Trichlorofluoromethane	101	3.693 3.694 (0.607) 11486	0.12140 0.181(M)
13 Acetone	43	3.736 3.726 (0.614) 181528	3.82774 5.70(M)
14 Isopropyl Alcohol	45	Compound Not Detected.	
15 1,1-Dichloroethene	61	Compound Not Detected.	
16 Acrylonitrile	53	Compound Not Detected.	
17 Tert Butyl Alcohol	59	Compound Not Detected.	
18 Freon 113	101	Compound Not Detected.	
19 Methylene chloride	49	4.096 4.094 (0.673) 5571	0.20734 0.309
20 Allyl Chloride	76	Compound Not Detected.	
21 Carbon Disulfide	76	4.228 4.224 (0.695) 9964	0.12743 0.190
22 trans-1,2-dichloroethene	96	Compound Not Detected.	
23 Methyl Tert Butyl Ether	73	Compound Not Detected.	
24 Vinyl Acetate	43	Compound Not Detected.	

# Data File: $\192.168.10.12\chem\10airD.i\072513.b\20624.d$ Report Date: 26-Jul-2013 08:15

				CONCENTRATIONS	
		QUANT SIG		ON-COLUMN	FINAL
	ompounds	MASS ====	RT EXP RT REL RT RESPONSE	( ppbv)	( ppbv)
	25 1,1-Dichloroethane	63	Compound Not Detected.		
\$	26 Hexane-d14(S)	66	4.700 4.700 (0.772) 299682	8.67530	8.68
	27 Methyl Ethyl Ketone	72	4.785 4.779 (0.786) 11690	1.06469	1.59(M)
	28 n-Hexane	57	4.818 4.818 (0.792) 13742	0.43760	0.652(QM
	29 cis-1,2-Dichloroethene	96	Compound Not Detected.		
	30 Ethyl Acetate	43	5.002 4.999 (0.822) 42353	1.43847	2.14(Q)
	31 Chloroform	83	Compound Not Detected.		
	32 Tetrahydrofuran	42	Compound Not Detected.		
	33 1,1,1-Trichloroethane	97	Compound Not Detected.		
	34 1,2-Dichloroethane	62	Compound Not Detected.		
	35 Benzene	78	5.880 5.887 (0.966) 30475	0.84880	1.26
	36 Carbon tetrachloride	117	Compound Not Detected.		
	37 Cyclohexane	56	Compound Not Detected.		
*	38 1,4-Difluorobenzene	114	6.087 6.094 (1.000) 715360	10.0000	
	39 2,2,4-Trimethylpentane	57	Compound Not Detected.		
	40 Heptane	43	6.431 6.442 (1.057) 3574	0.58303	0.869(M)
	41 1,2-Dichloropropane	63	Compound Not Detected.		
	42 Trichloroethene	130	Compound Not Detected.		
	43 1,4-Dioxane	88	Compound Not Detected.		
	44 Bromodichloromethane	83	Compound Not Detected.		
	45 Methyl Isobutyl Ketone	43	Compound Not Detected.		
	46 cis-1,3-Dichloropropene	75	Compound Not Detected.		
	47 trans-1,3-Dichloropropene	75	Compound Not Detected.		0.04
\$	48 Toluene-d8 (S)	98	7.841 7.848 (1.288) 491730	9.84239	9.84
	49 Toluene	91 97	7.930 7.940 (1.303) 57306	1.07863	1.61
	50 1,1,2-Trichloroethane	43	Compound Not Detected.		
	51 Methyl Butyl Ketone 52 Dibromochloromethane	129	Compound Not Detected. Compound Not Detected.		
	53 1,2-Dibromoethane	107	Compound Not Detected.		
	54 Tetrachloroethene	166	8.917 8.918 (0.921) 2075	0.42979	0.640(M)
*	55 Chlorobenzene - d5	117	9.684 9.691 (1.000) 256931	10.0000	0.040(P1)
	56 Chlorobenzene	112	Compound Not Detected.	10.0000	
	57 Ethyl Benzene	91	10.032 10.039 (1.036) 21785	0.53013	0.790(M)
	58 m&p-Xylene	91	10.199 10.213 (1.053) 85704	1.35455	2.02
	59 Bromoform	173	Compound Not Detected.	1.00100	2.02
	60 Styrene	104	Compound Not Detected.		
	61 o-Xylene	91	10.773 10.783 (1.112) 29667	0.55521	0.827
	62 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.		
	63 Isopropylbenzene	105	Compound Not Detected.		
	64 N-Propylbenzene	91	Compound Not Detected.		
	65 4-Ethyltoluene	105	12.318 12.321 (1.272) 18825	0.52664	0.785(M)
	66 1,3,5-Trimethylbenzene	105	12.426 12.426 (1.283) 12257	0.44601	0.664 (M)
	67 1,2,4-Trimethylbenzene	105	13.016 13.020 (1.344) 52134	1.02358	1.52 (M)
	68 1,3-Dichlorobenzene	146	Compound Not Detected.		
	69 Sec- Butylbenzene	105	Compound Not Detected.		
\$	70 1,4-dichlorobenzene-d4 (S)	150	13.459 (1.390) 111822	10.7823	10.8
	71 Benzyl Chloride	91	Compound Not Detected.		
	72 1,4-Dichlorobenzene	146	Compound Not Detected.		
	73 1,2-Dichlorobenzene	146	Compound Not Detected.		
	74 N-Butylbenzene	91	Compound Not Detected.		
	75 1,2,4-Trichlorobenzene	180	Compound Not Detected.		
	76 Naphthalene	128	16.866 16.860 (1.742) 21351	0.89242	1.33(M)
	77 Hexachlorobutadiene	225	Compound Not Detected.		

10236207 1026 of 1066

Data File:  $\192.168.10.12\chem\10airD.i\072513.b\20624.d$  Report Date: 26-Jul-2013 08:15

## QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Report Date: 26-Jul-2013 08:15

Pace Analytical Services, Inc.

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 25-JUL-2013 Calibration Time: 13:08 Instrument ID: 10airD.i

Lab File ID: 20624.d

Lab Smp Id: 10236207016 Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: AIR

Operator: DR1
Method File: \\192.168.10.12\chem\10airD.i\072513.b\T015\_205-13.m

Misc Info: 17870

#### Test Mode:

Use Initial Calibration Level 4. If Continuing Cal. use Initial Cal. Level 4

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	TTTT%
COMPOUND	========	LOWER	UPPER	SAMPLE	9DILL
38 1,4-Difluorobenze	579775	347865	811685	715360	23.39
55 Chlorobenzene - d	221404	132842	309966	256931	16.05

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
======================================	=======	=======	=======	=======	======
38 1,4-Difluorobenze	6.09	5.76	6.42	6.09	-0.05
55 Chlorobenzene - d	9.69	9.36	10.02	9.68	-0.03

AREA UPPER LIMIT = + 40% of internal standard area.

AREA LOWER LIMIT = - 40% of internal standard area.

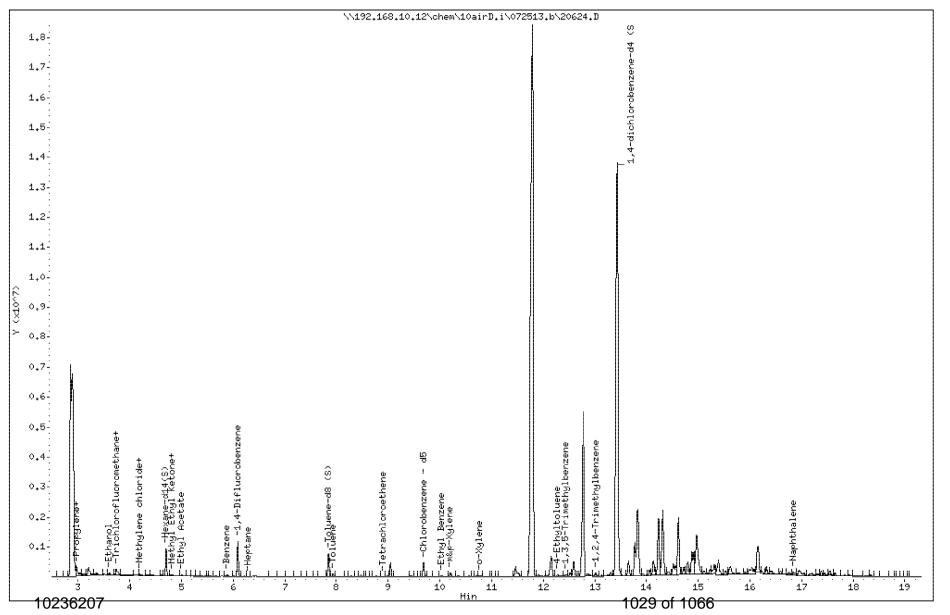
RT UPPER LIMIT = + 0.33 minutes of internal standard RT. RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Date : 26-JUL-2013 00:30

Client ID: Sample Info: Instrument: 10airD.i

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Date : 26-JUL-2013 00:30

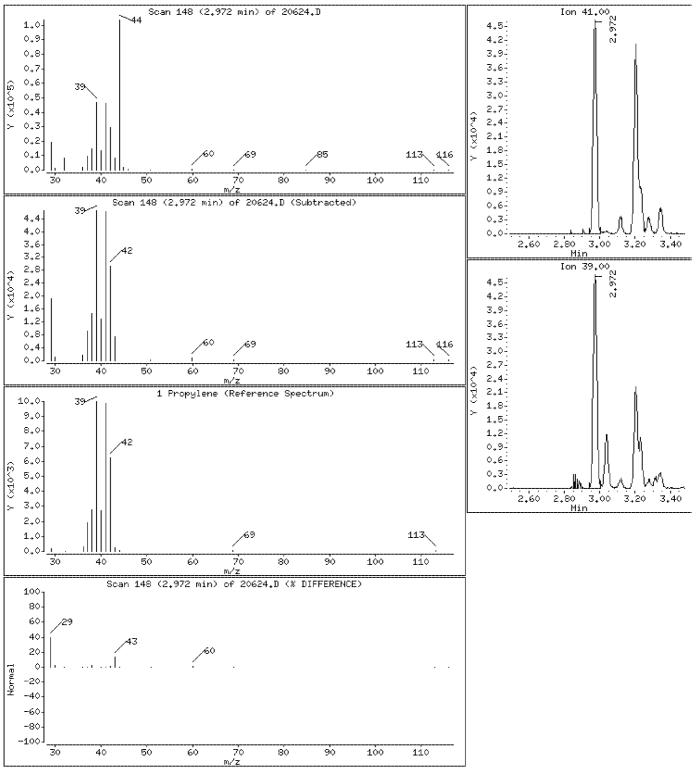
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1030 of 1066

Date : 26-JUL-2013 00:30

Client ID: Instrument: 10airD.i

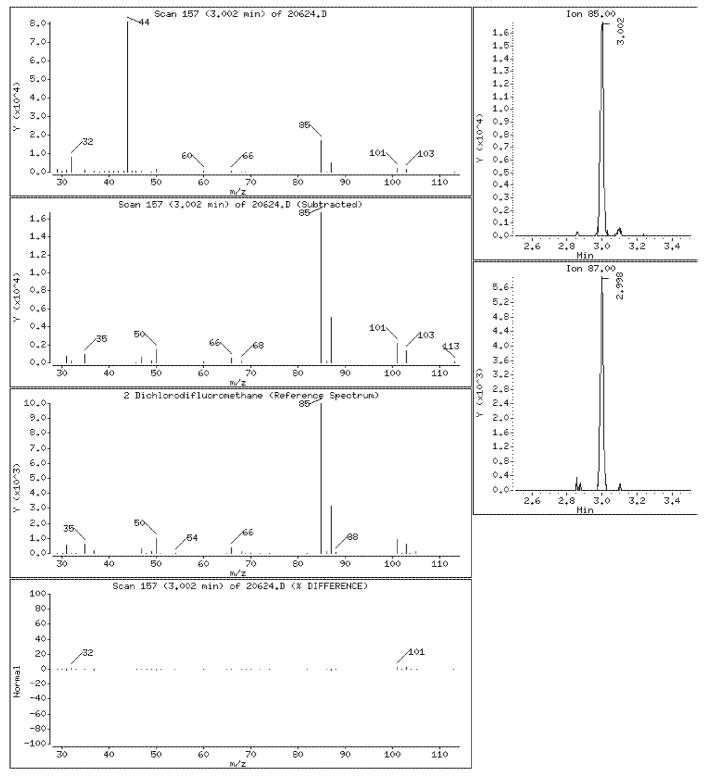
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 1031 of 1066

Date : 26-JUL-2013 00:30

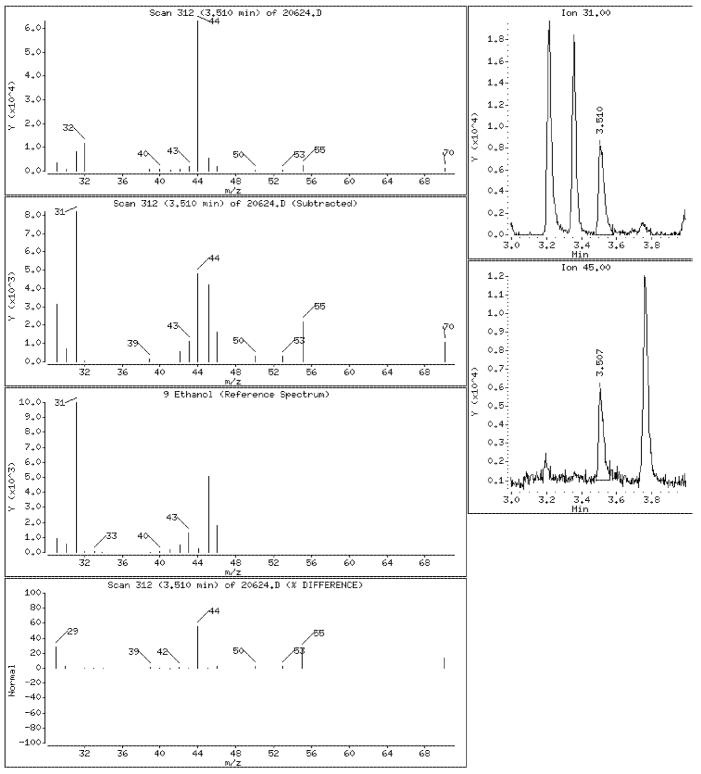
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1032 of 1066

Date : 26-JUL-2013 00:30

Client ID: Instrument: 10airD.i

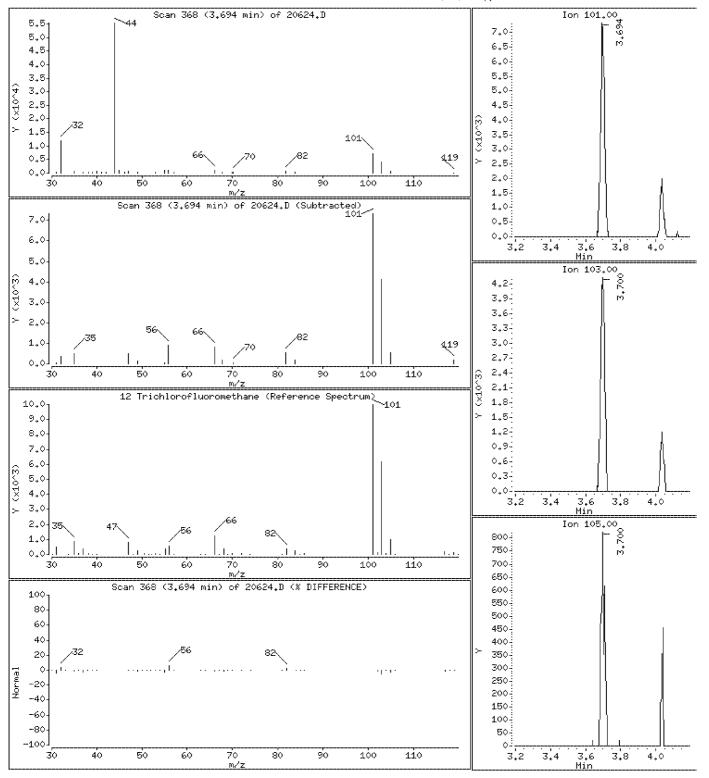
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.181 ppbv



10236207 1033 of 1066

Date : 26-JUL-2013 00:30

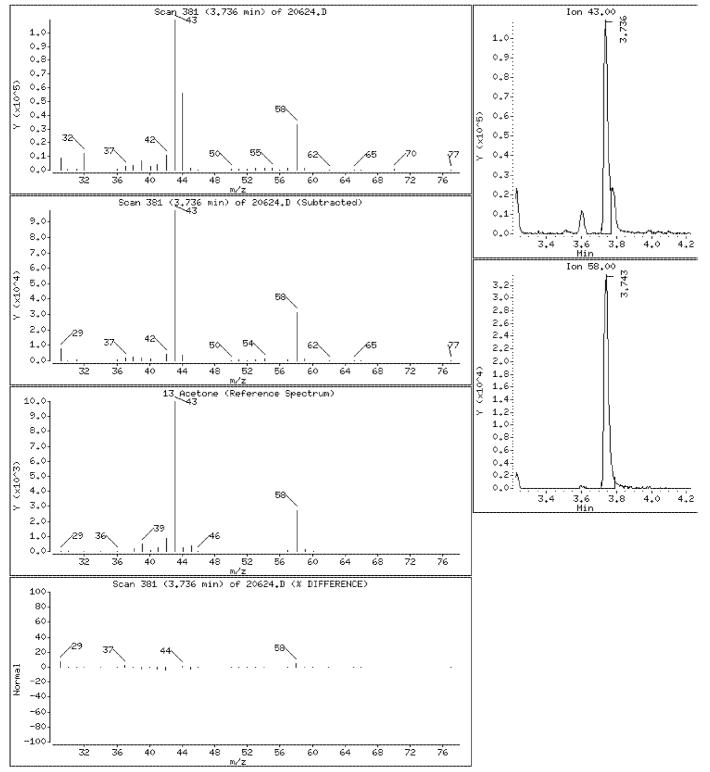
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1034 of 1066

Date : 26-JUL-2013 00:30

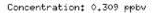
Client ID: Instrument: 10airD.i

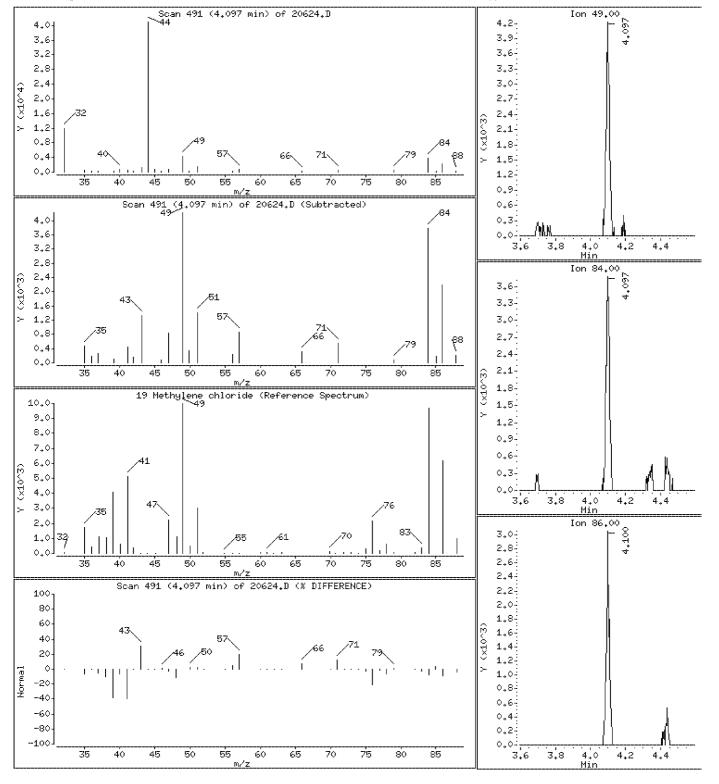
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 1035 of 1066

Date : 26-JUL-2013 00:30

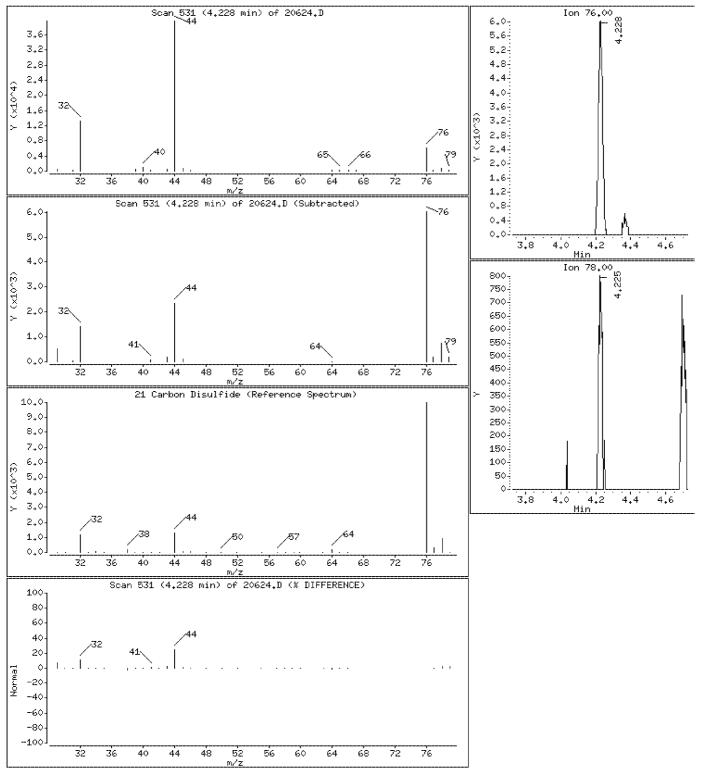
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1036 of 1066

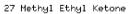
Date : 26-JUL-2013 00:30

Client ID: Instrument: 10airD,i

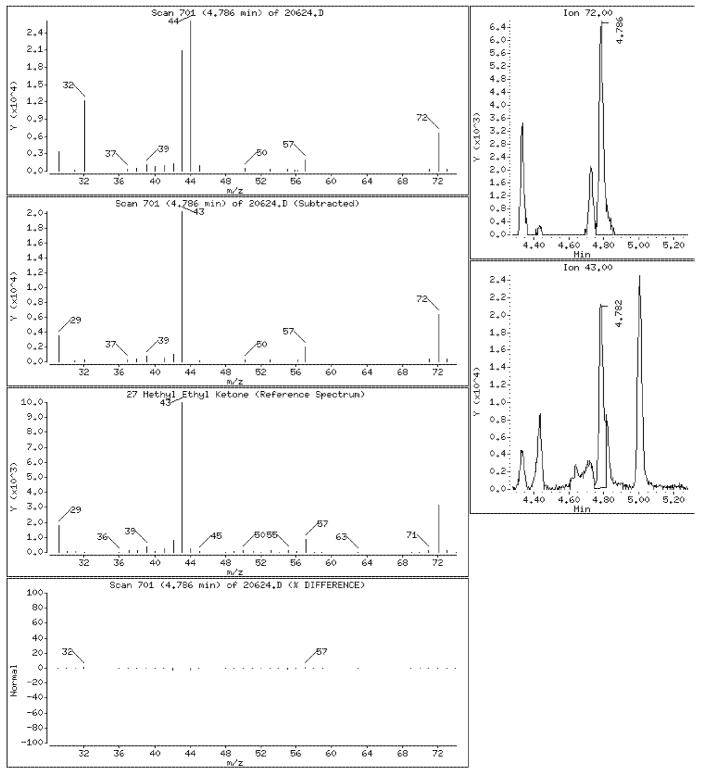
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 1.59 ppbv



10236207 1037 of 1066

Date : 26-JUL-2013 00:30

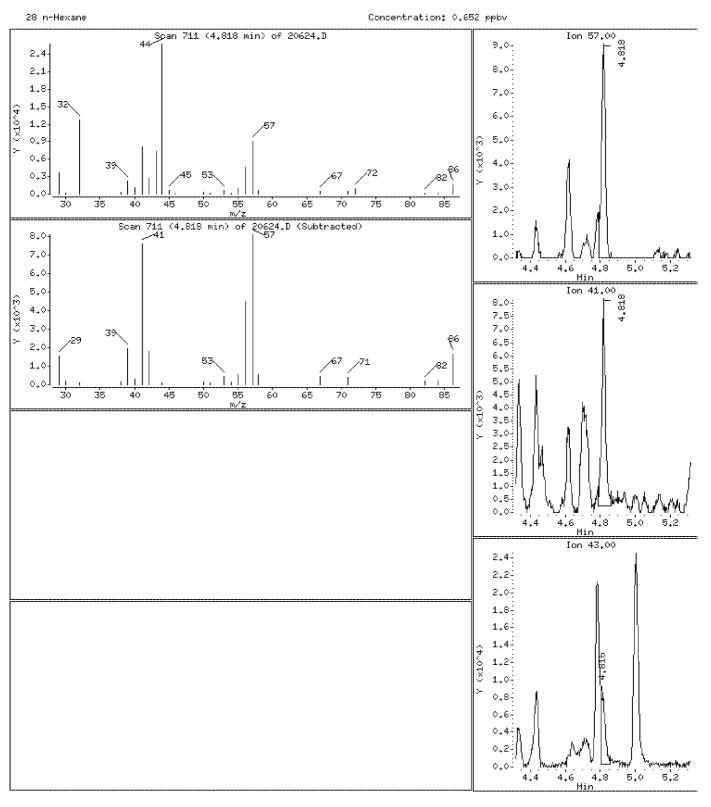
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32

28 n-Hexane Concentration: 0.652 ppbv



Date : 26-JUL-2013 00:30

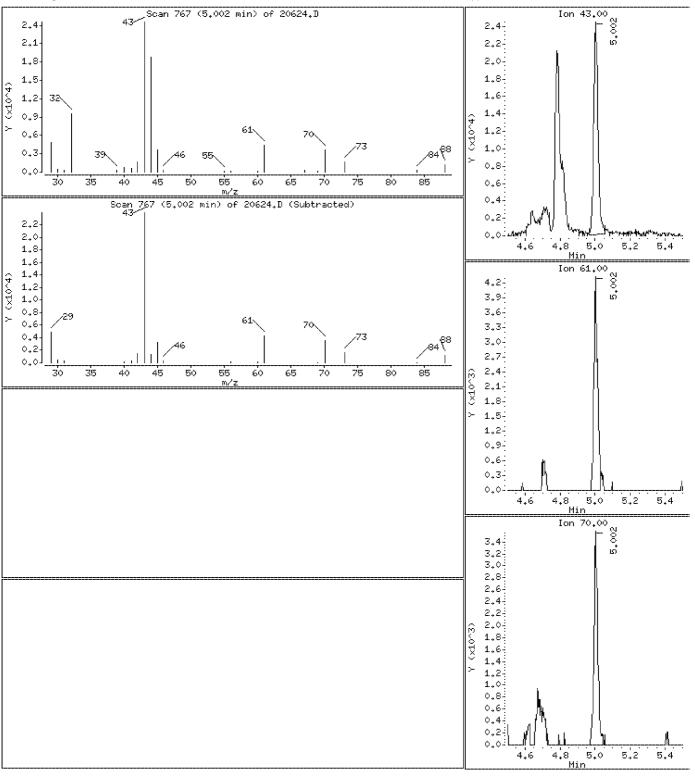
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1039 of 1066

Date : 26-JUL-2013 00:30

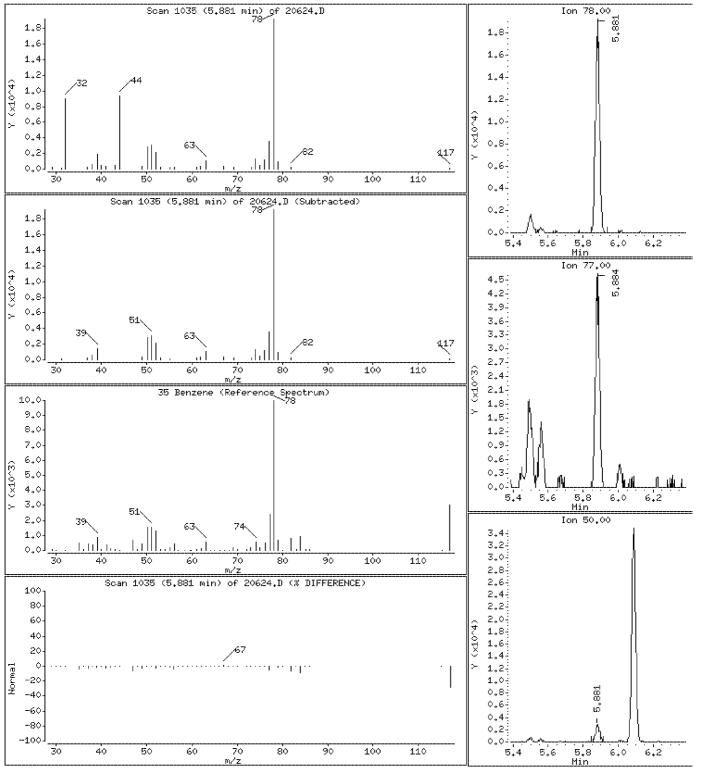
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1040 of 1066

Date : 26-JUL-2013 00:30

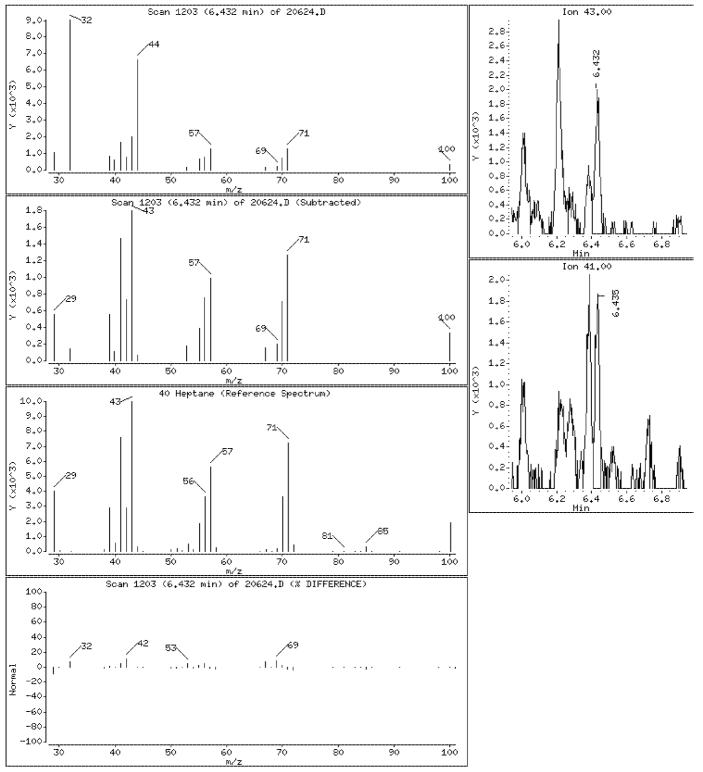
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1041 of 1066

Date : 26-JUL-2013 00:30

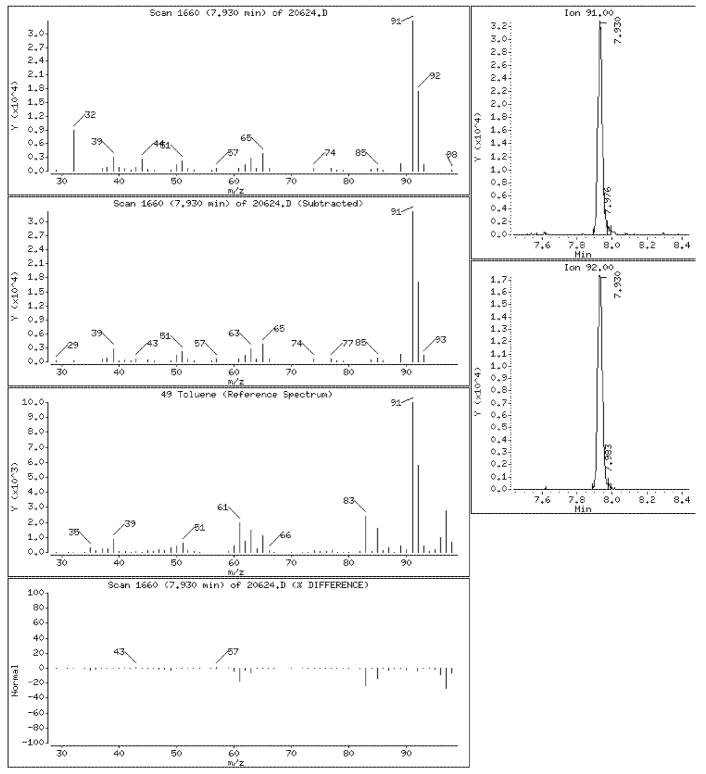
Client ID: Instrument: 10airD,i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1042 of 1066

Date : 26-JUL-2013 00:30

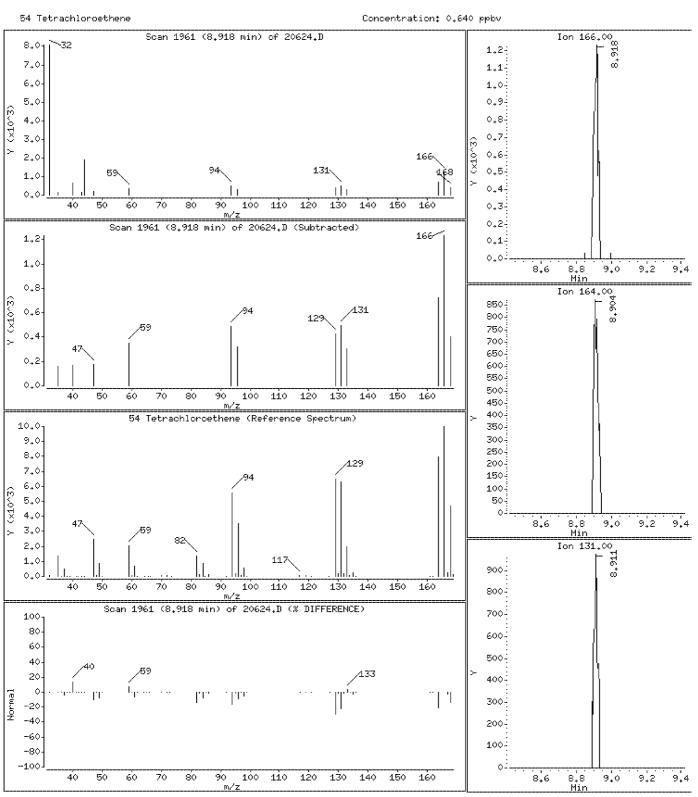
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 00:30

Client ID: Instrument: 10airD,i

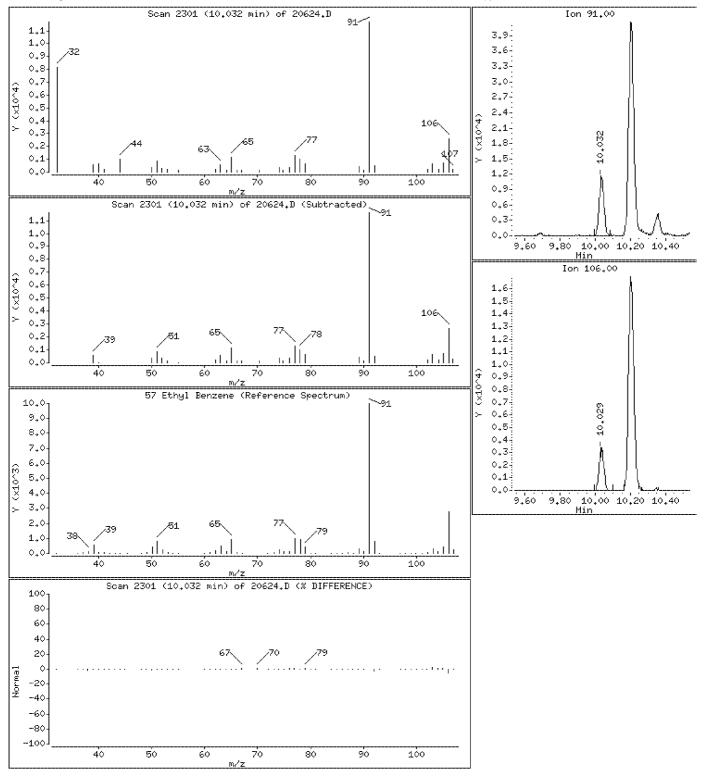
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



Concentration: 0.790 ppbv



10236207 1044 of 1066

Date : 26-JUL-2013 00:30

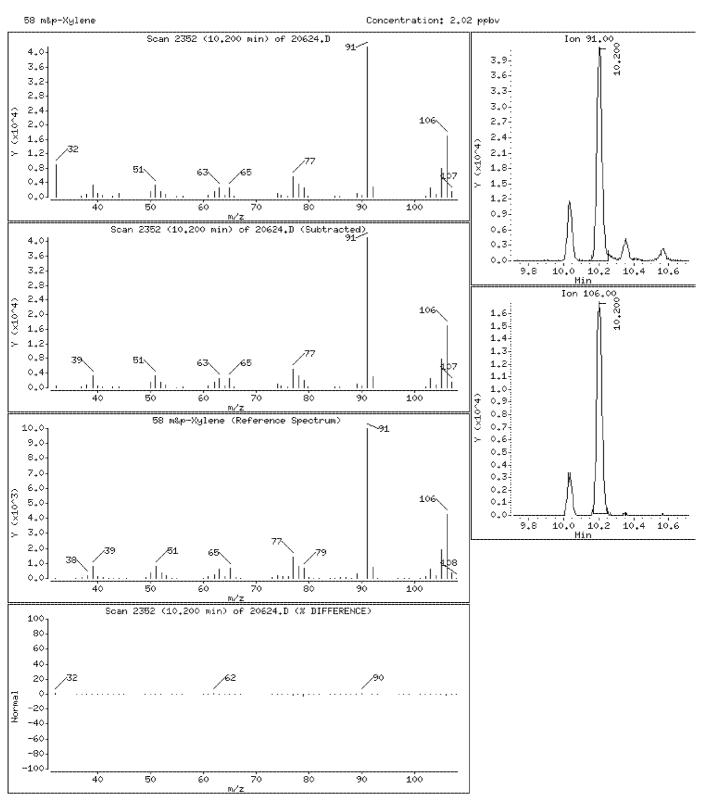
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





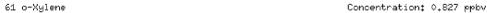
Date : 26-JUL-2013 00:30

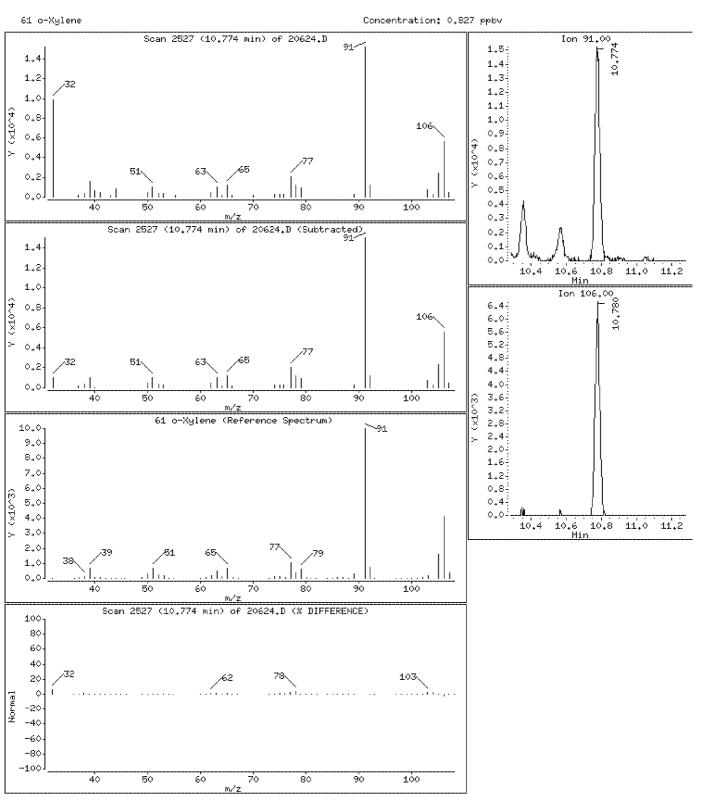
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





Date : 26-JUL-2013 00:30

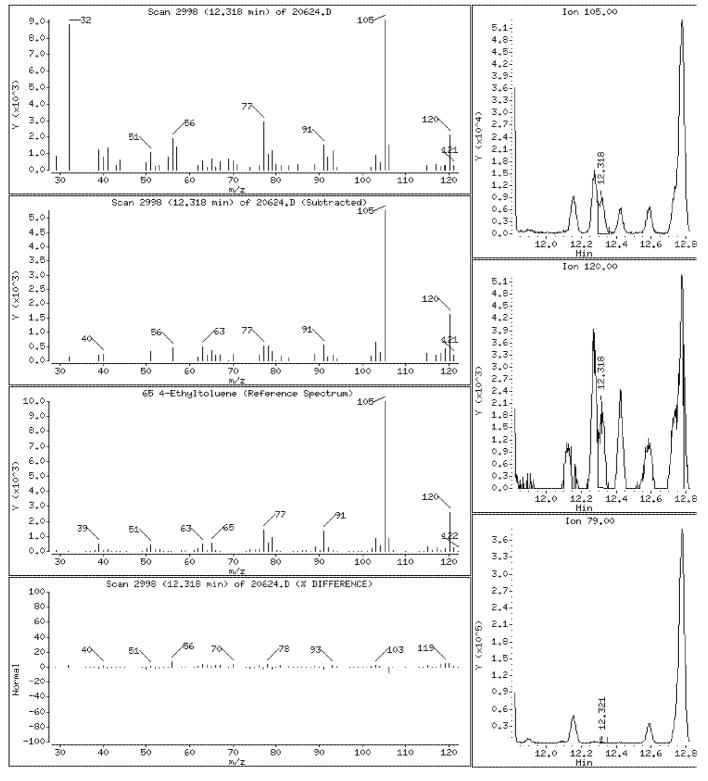
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32





10236207 1047 of 1066

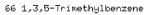
Date : 26-JUL-2013 00:30

Client ID: Instrument: 10airD,i

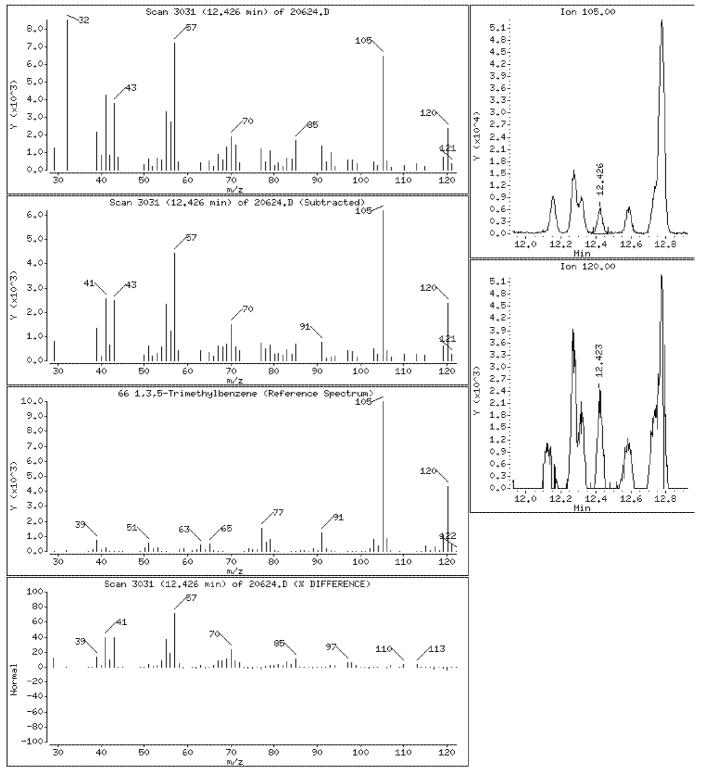
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 1048 of 1066

Date : 26-JUL-2013 00:30

Client ID: Instrument: 10airD,i

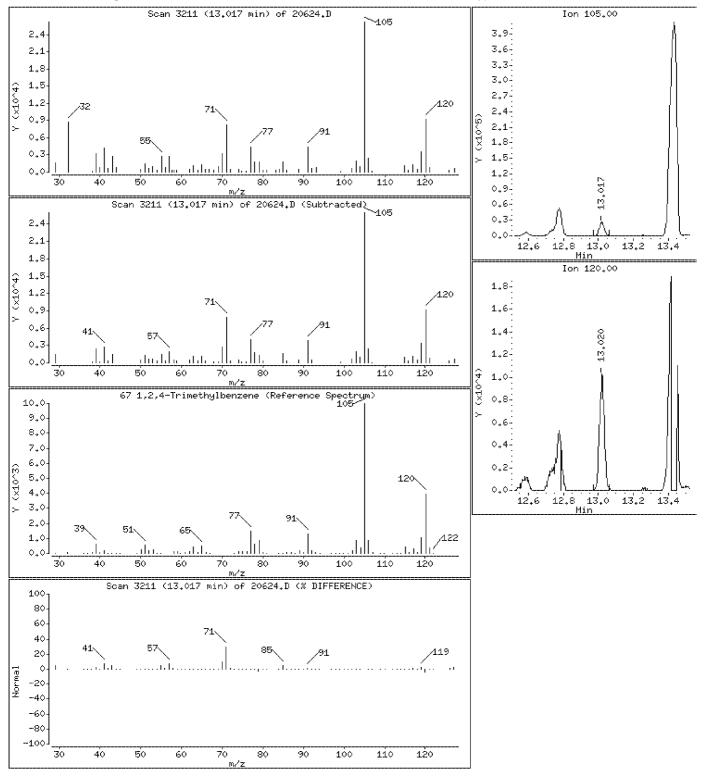
Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32







10236207 1049 of 1066

Date : 26-JUL-2013 00:30

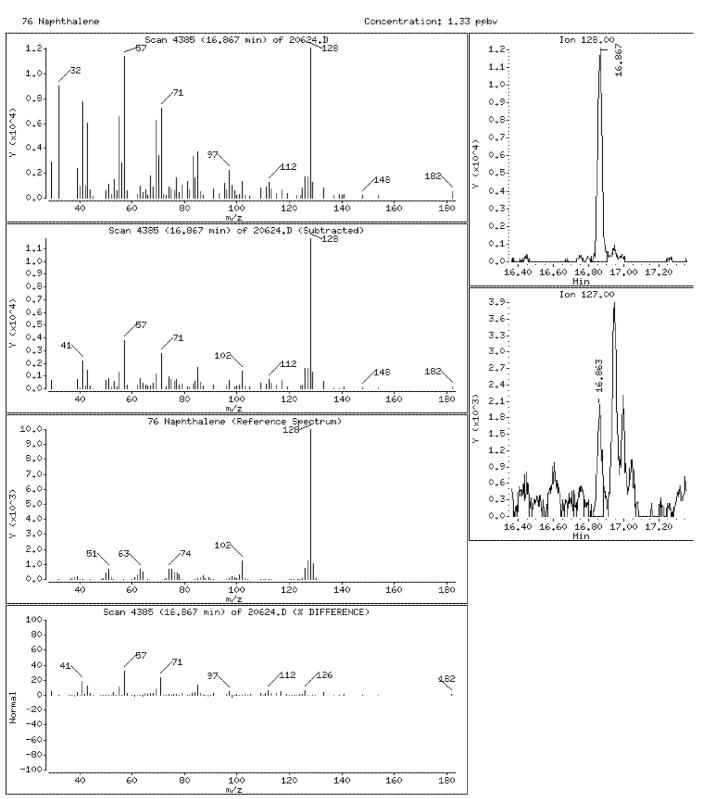
Client ID: Instrument: 10airD.i

Sample Info:

Operator: DR1

Column phase: J&W DB-5 Column diameter: 0.32



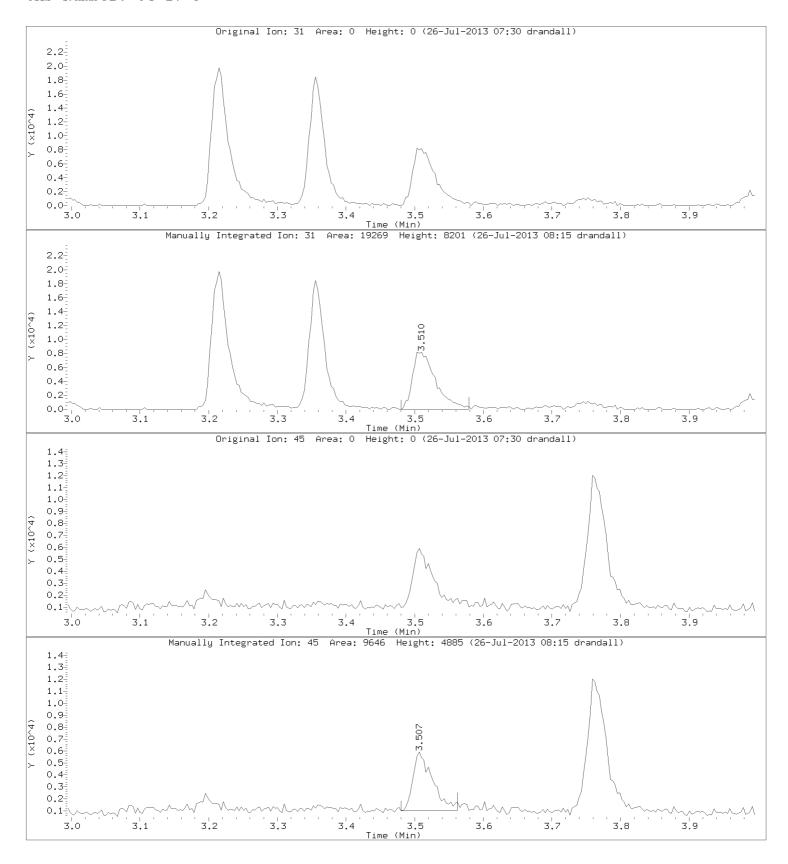


Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Ethanol CAS Number: 64-17-5



10236207 1051 of 1066

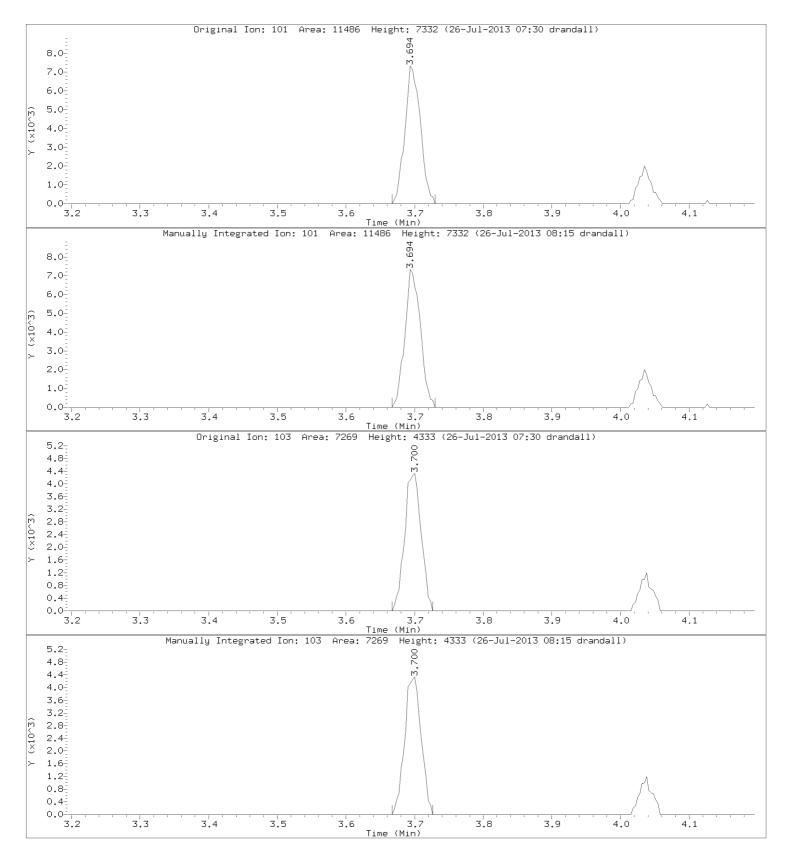
Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Trichlorofluoromethane

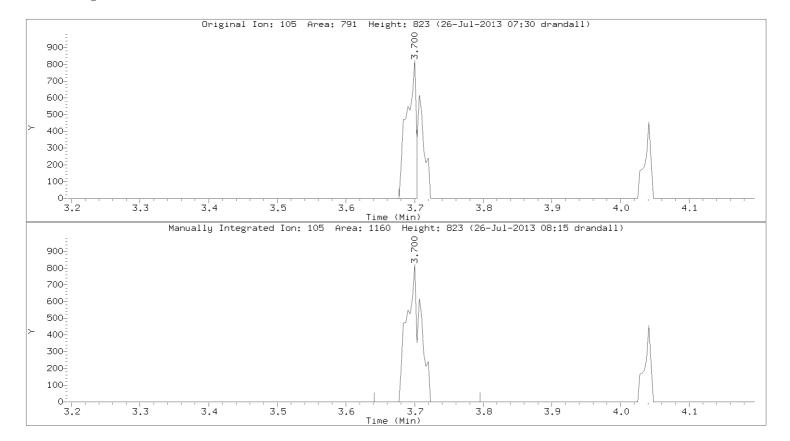
CAS Number: 75-69-4



10236207 1052 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i Lab Sample ID: 10236207016

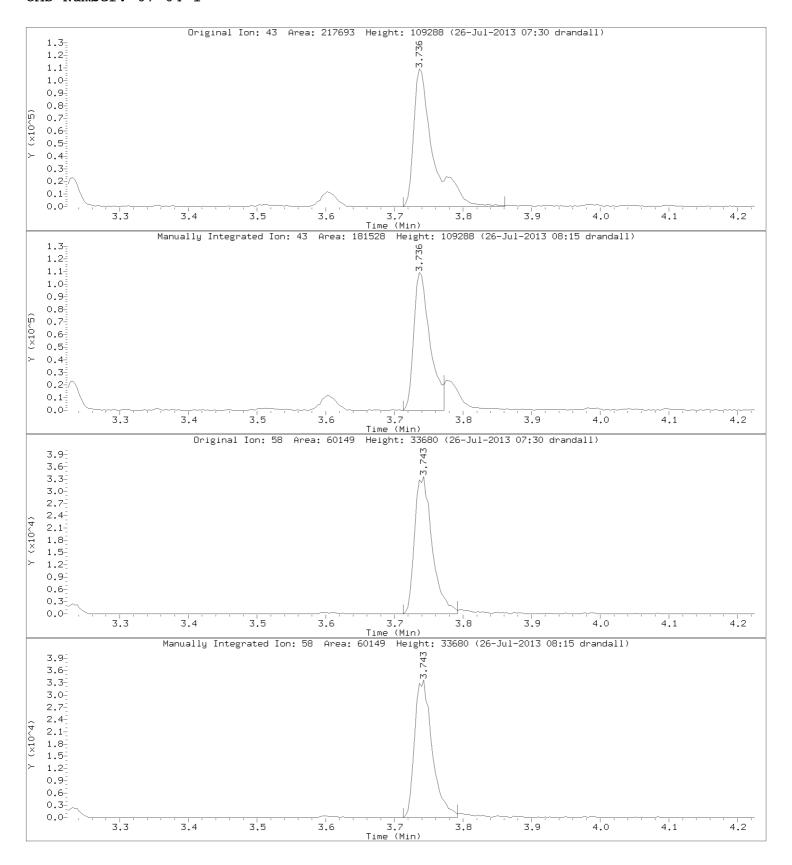


Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Acetone CAS Number: 67-64-1



10236207 1054 of 1066

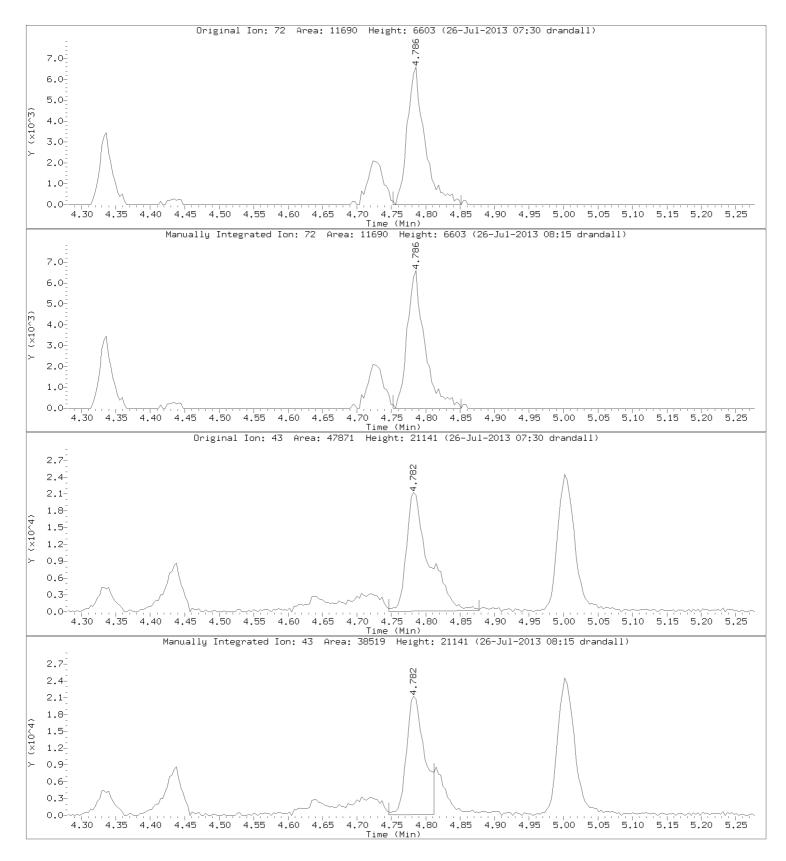
Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Methyl Ethyl Ketone

CAS Number: 78-93-3



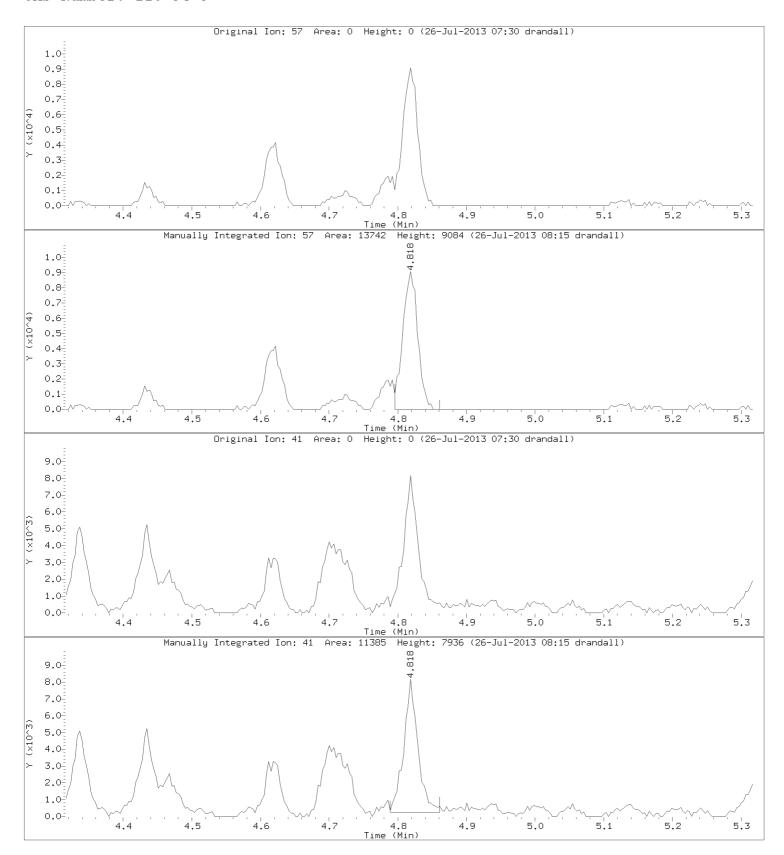
10236207 1055 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

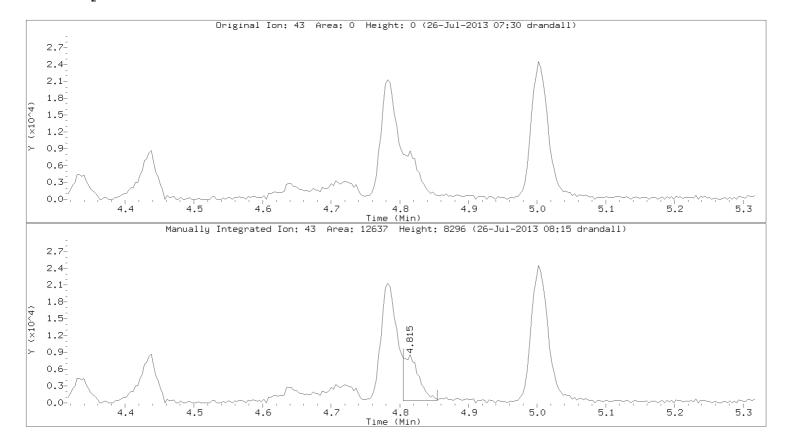
Compound: n-Hexane CAS Number: 110-54-3



10236207 1056 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i Lab Sample ID: 10236207016



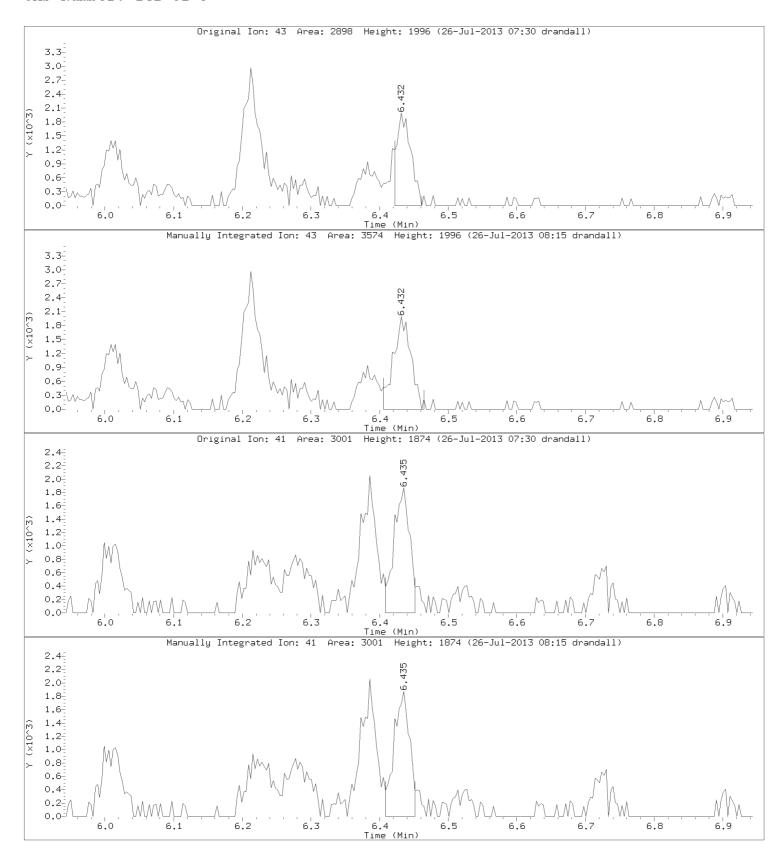
1057 of 1066 10236207

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Heptane CAS Number: 142-82-5



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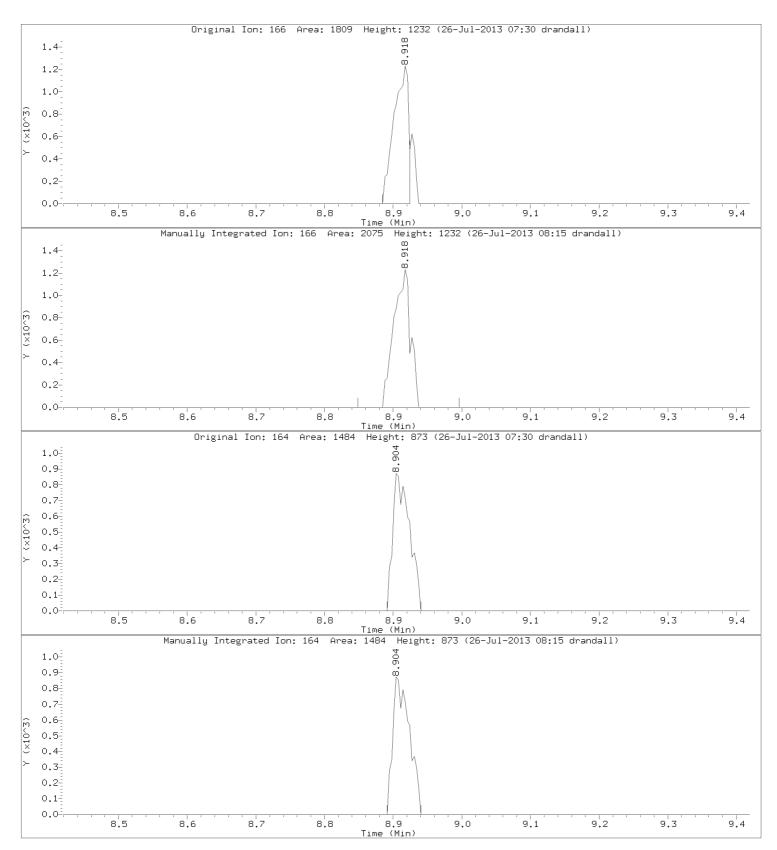
Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Tetrachloroethene

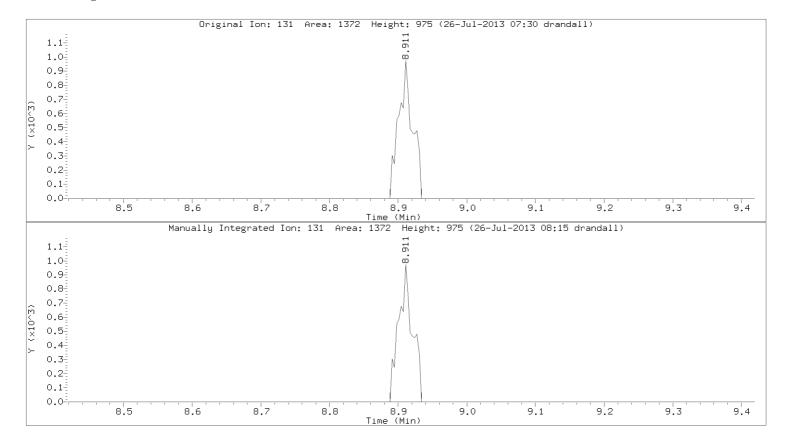
CAS Number: 127-18-4



10236207 1059 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i Lab Sample ID: 10236207016



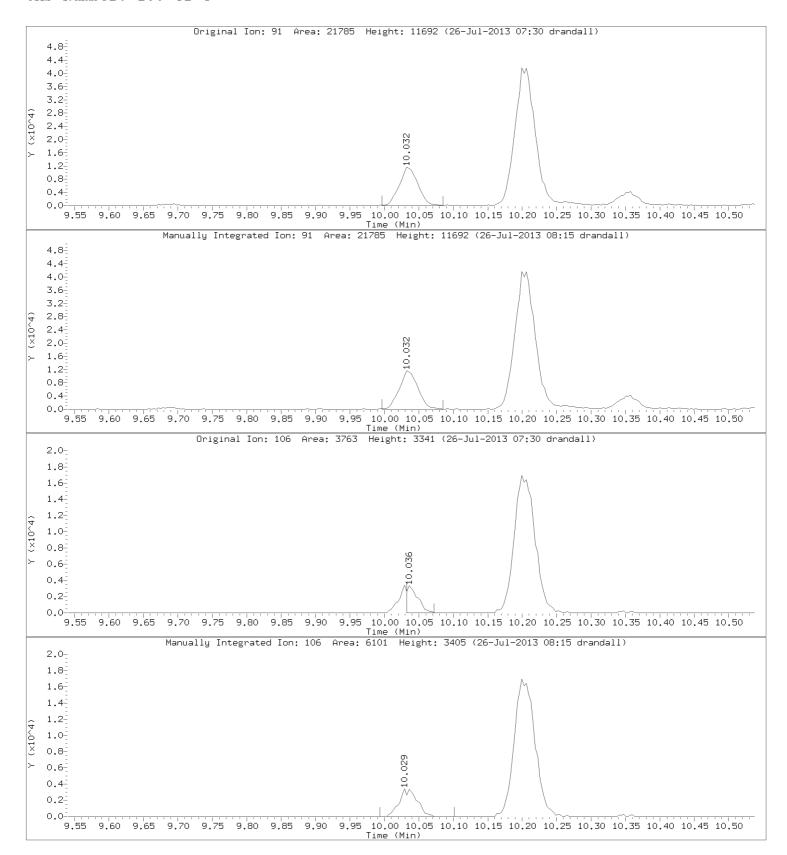
10236207 1060 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Ethyl Benzene CAS Number: 100-41-4



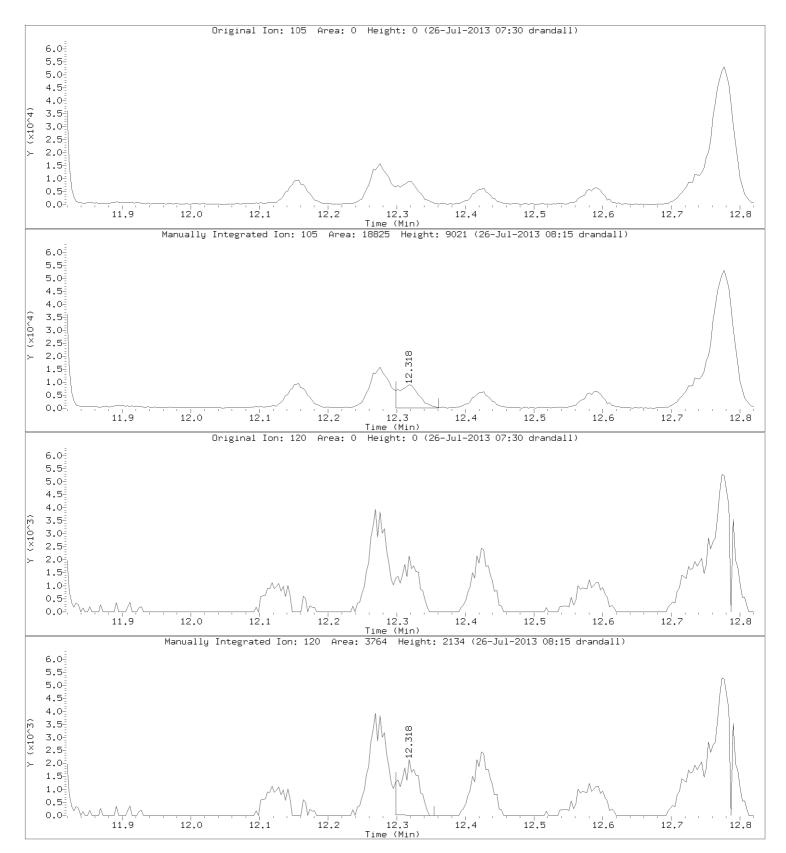
10236207 1061 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

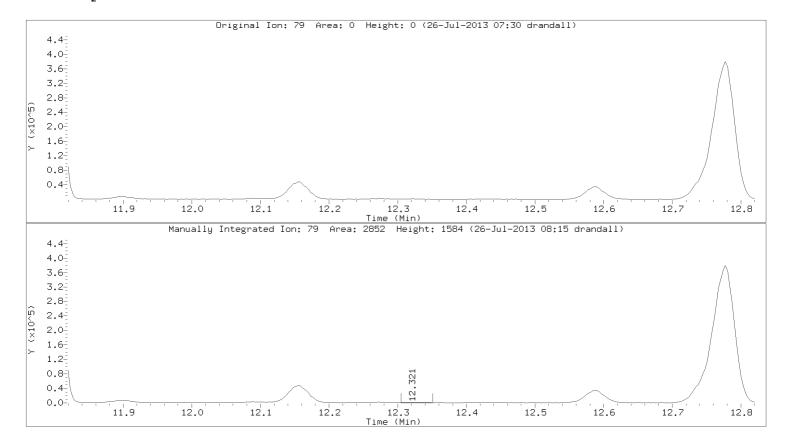
Compound: 4-Ethyltoluene CAS Number: 622-96-8



10236207 1062 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i Lab Sample ID: 10236207016



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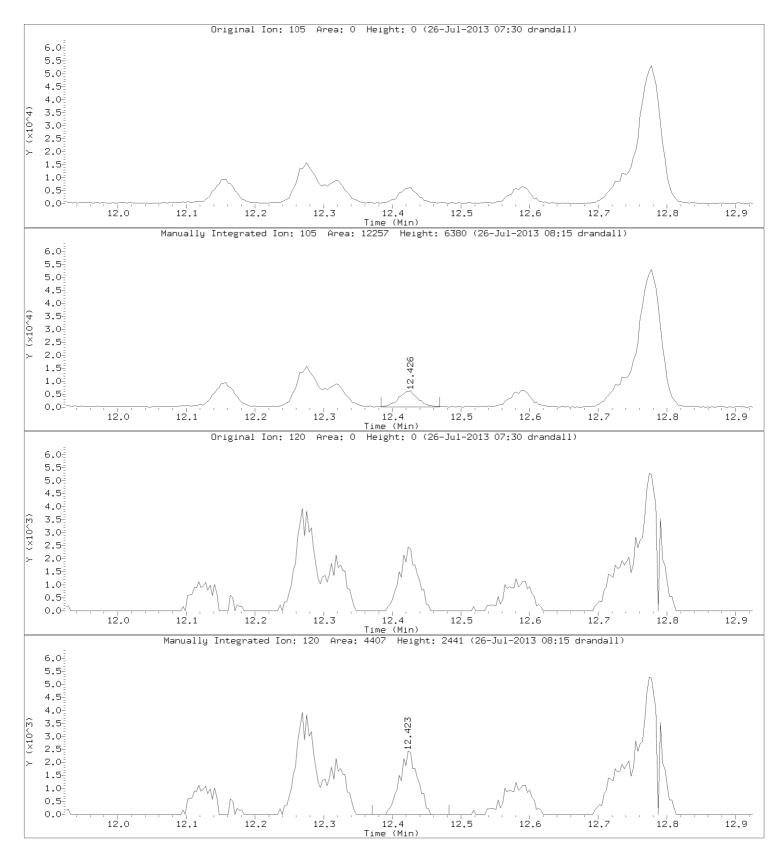
Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: 1,3,5-Trimethylbenzene

CAS Number: 108-67-8



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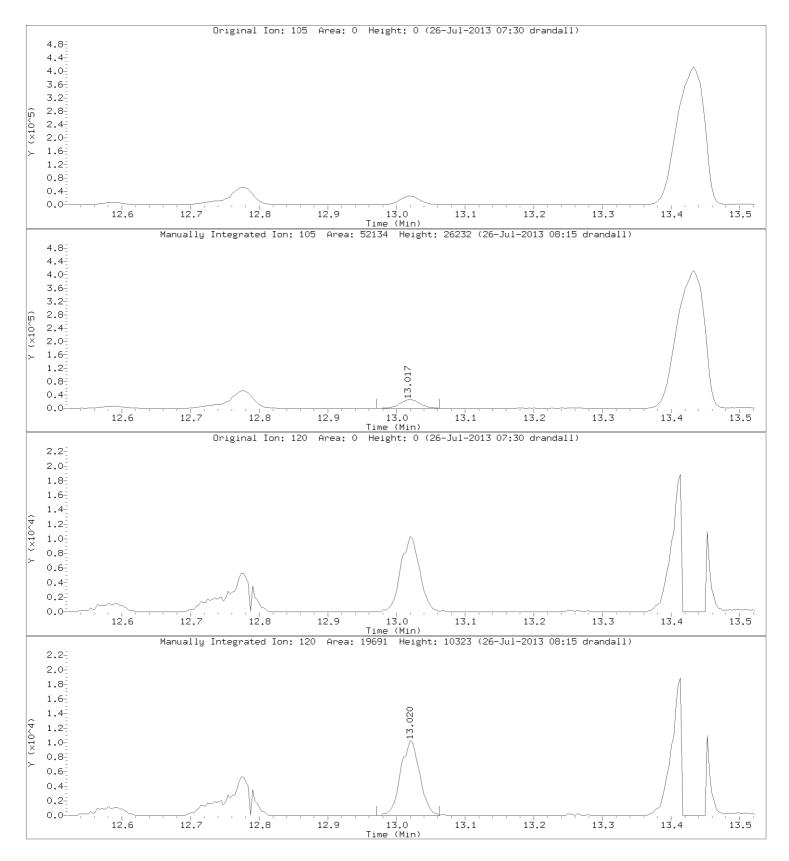
Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: 1,2,4-Trimethylbenzene

CAS Number: 95-63-6



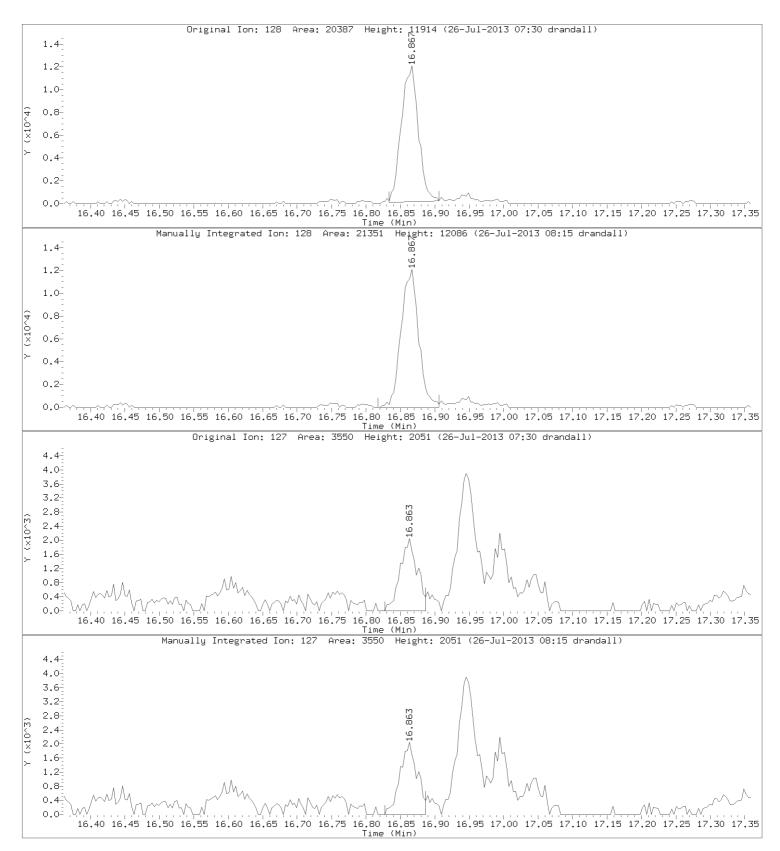
10236207 1065 of 1066

Injection Date: 26-JUL-2013 00:30

Instrument: 10airD.i

Lab Sample ID: 10236207016

Compound: Naphthalene CAS Number: 91-20-3



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# **Attachment B.3**

## **Field Data Validation Form**

### **FIELD DATA VALIDATION FORM**

Site/Event: Site A Soil Vapor Investigation	
Sample Collection Date(s): July 22-23, 2013	
Matrix: Air	
Field Sampler(s): Ryan Lefers	
Date Reviewed: August 6, 2013	Reviewed By: Heather Libby

		QAPP
		Requirements
Item		Met
No.	Item/Question	(yes/no)? <sup>(1)</sup>
1	The sampler's training documentation on file?	Yes
2	All required samples were collected?	Yes
3	All required analyses/analytes were requested?	Yes
4	Chain of Custody filled out in accordance with SOP F-1?	Yes
5	Field notes/documentation covers the required elements in SOP F-1?	Yes
6	Batch Certificate (bottle cleanliness) was obtained?	Yes
7	Sampling methods followed SOPs F-1?	Yes
8	Equipment decontamination followed SOP F-2?	Yes
9	Field duplicates were collected at required frequency?	Yes
10	Samples were properly delivered to the laboratory?	Yes
11	Sampling deviations/corrective action (if any) documented?	Yes
12	Wenck's copy of Chain of Custody and other field documentation properly filed?	Yes

(1) If the QAPP requirements were not met for any item, list the item number(s) below and provide additional explanation.

Item	
No.	Comments
11	No sampling deviations occurred.

# **Attachment B.4**

# **Analytical Data Validation Report**

DIANE SHORT & ASSOCI	ATES.	INC.
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1978 S. Garrison St. # 114 Lakewood CO 80227 303:271-9642 Fax 988-4027 dsa7cbc@eazy.net

### **DATA VALIDATION FORM FOR ORGANICS**

SDG: 10236207
PROJECT: Twin Cities Army Ammunition Plant, Site A Soil Gas Sampling, Wenck Associates
LABORATORY: Pace Analytical, Minneapolis MN
SAMPLE MATRIX: Air
SAMPLING DATE: 07/2013
NO. OF SAMPLES: 16 air canister (2 field duplicates)
ANALYSES REQUESTED: EPA TO-15
SAMPLE NUMBERS: See associated pdf for sample IDs
DATA REVIEWER: Diane Short
QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE:   8/29/13
Telephone Logs included YesNo_X_
Contractual Violations YesNo_X_
Comments:

I. DELIVERABLES
All deliverables were present as specified in the QAPP.
Yes X No
The following are noted for clarification:  Per the SOW, this is a validation review for 7 project-specific compounds. Data were submitted for the analysis of sixteen (16) volatile samples per Method TO-15. There was no field blank identified nor required for this event. Hard copy data were not submitted, but the full package was provided as pdf.
<ul><li>II. ANALYTICAL REPORT FORMS</li><li>A. The Analytical Report or Data Sheets are present and complete for all requested analyses.</li></ul>
Yes X No
B. Holding Times
The required holding times were met for all analyses (time of sample receipt to analysis).  Yes X No
The holding time for air canisters is 28 days.
C. Chain of Custody (COC)
1. Chain of Custody (COC) forms were reviewed and all fields were complete, signatures were present and cross outs were clean and initialed.
YesNoX The laboratory noted that Sample 14 was labeled SG072213 (the rest of the note was not legible). The project manager was contacted and the correct ID was SG072214.
2. Samples were received at the required temperature and preservation. Yes X No
3.Canister Pressure
Canister pressures were measured and recorded for initial vacuum check, initial field vacuum, final field reading, lab initial pressure and final pressure.
YesX No
All readings met the limits or exceptions were noted and pressure corrected YesX No
III. INSTRUMENT CALIBRATION - GC/MS A. Initial Calibration
1. The Relative Response Factor (RRF) and average RRF for all target compounds met the QAPP or method criteria. The current 2007 Validation Guidance requires a Response Factor (RF) of $> 0.05$ for all compounds. The method allows for lower RF (0.01) for poor responders if the detection limits are appropriately elevated to adjust for instrument sensitivity. The method criteria will be applied.
Yes X No N/A Client compounds meet the updated criteria. The full VOA list was submitted and reviewed to find the client compounds.

2. The relative standard deviation (RSD) for all compounds in the standard was less than 30% (with an allowance for up to 40% RSD for the poor responders). Per the method, a correlation coefficient, r, of $> 0.99$ is also acceptable for compounds not meeting a % RSD of $< 20\%$ .
Yes X No N/A
There are routinely no poor responders for air data as there is not purge.
3. The 12 hour system Performance Check was performed as required in SW-846.
Yes X No N/A
B. Continuing Calibration
1. The RRF 50 standard was analyzed at the required frequency, and the QC criteria were met.
Yes X No N/A
Client compounds meet the criteria.
2. The percent difference (% D) criterion of $\pm$ 25.0% for each target compound (with an allowance of 40% for the poor responders per the current validation guidance) was met.
Yes_X_NoN/A
IV. <b>GC/MS INSTRUMENT PERFORMANCE CHECK</b> The BFB performance check was injected once at the beginning of each 12-hour period, and relative abundance criteria for the ions were met.  Yes X_NoN/A
V. <b>INTERNAL STANDARDS</b> The Internal Standard (IS) area percent (Area %) recoveries were within the required control limits of -50.0 to + 100.0% of the daily calibration standard. The Retention Times were within the required windows.  Yes X No N/A
IS Area % recovery summaries were not provided. Recoveries were evaluated per review of the raw data for over 20% of the data.
VI. <b>SURROGATE STANDARDS</b> A. Surrogate standard spikes were prepared and analyzed with every sample.  Yes X No  Three surrogates were reported.
B. The recovery limits were within the required control limits of $75.0 - 125.0\%$ as defined in the QAPP. Yes X No There was no summary table. Each sample result page was required to be checked.
VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE  A. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples were prepared and analyzed per every 20 samples for every matrix.
Yes No NA X
Spikes are not amenable to canister analysis and are not required.  Laboratory duplicates are required and are provided by the laboratory for this SDG

B. The MS and MSD percent recoveries were within the required control limits of $75.0 - 125.0\%$ as defined in the QAPP.
YesNoNA_X_
C. The Matrix Spike Duplicate relative percent differences (RPD) were within the required control limit of less than 20.0% as defined in the QAPP.
Yes_X_No
A duplicate analysis from one canister is required and was performed with acceptable results. There were 2 days of analysis and a client sample, SG07221312, was used on one of those days to meet the 1/20 frequency.
VIII. LABORATORY CONTROL SAMPLE
A. Laboratory Control Samples (LCS) were prepared and analyzed at the required frequency.  Yes X No
B. The LCS percent recoveries were within the required control limits of $75.0 - 125.0\%$ as defined in the QAPP.
Yes_X_No
IX. <b>BLANKS</b> A. Method Blanks were prepared and analyzed at the required frequency.  Yes X No  This is a nitrogen blank run with each set.
B. No blank contamination was found in the Method Blank.
Yes X No
There are no client compounds reported as detected.
C. If Equipment Rinse Blanks, Trip Blanks, or other Field Blanks were identified, no blank contamination was found.
YesNoN/AX
There was no field blank reported or required for this event, per QAPP.
X. FIELD QC
If Field duplicates or Performance Check Compounds were identified, the results were within the guidance limit of $<$ 25% RPD or the % recovery criteria for the project. If values are less than 5 $\times$ RL, the water limit is $\pm$ RL.  Yes X No N/A
There are 2 field duplicate pairs. Both are within limits.
SG07221301 and SG07221302, SG07231301 and SG07231302
XI. <b>SYSTEM PERFORMANCE</b> A. The reconstructed ion chromatograms (RIC), chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.
Yes X No N/A

There is a large (injection?) peak in the chromatograms at about 2.5 minutes. This peak normalized surrogates to about 15% and client peaks as indistinguishable for this data set and the visual chromatogram review cannot be performed.

B. The suggested EQLs for the sample matrices were met.
Yes X No N/A
XII. <b>TCL COMPOUNDS</b> A. The identification was accurate, and all retention times, library spectra and RIC were evaluated for all detected compounds.
Yes X No N/A  Per the 10% check of the raw data, sample SG07221301 had numerous peaks as 'tics' which are labele on the chromatogram but not reported in the quantitation report. As the identified compounds are not part of the client list, no further action was taken. The tetrachloroethene (PCE) is manually integrated a it is at low levels.  Sample SG07221302 had numerous peaks as 'tics' which are labeled on the chromatogram and are reported in the quantitation report. These are predominately gasoline type compounds (medium chain
hydrocarbons, BTEX, toluenes, substituted benzenes, naphthalene). As the identified compounds are not part of the client list, no further action was taken. The tetrachloroethene (PCE) is manually integrated as it is at low levels.
All manual integrations are acceptable.
B. Quantitation of representative compounds was checked to determine the accuracy of the calculation algorithm for in each internal standard quantitation set.  Yes X_NoN/A
XIII. <b>TENTATIVELY IDENTIFIED COMPOUNDS</b> Tentatively Identified Compounds (TIC) were properly identified and met the library identification criteria.  YesNoN/AX
XIV. <b>OVERALL ASSESSMENT OF THE CASE</b> The laboratory has complied with the requested method. Data are fully usable and no qualifiers have been applied.
<u>Deliverables</u>
The following are noted for clarification:

#### Chain of Custody

The laboratory noted that Sample 14 was labeled SG072213 (the rest of the note was not legible). The project manager was contacted and the correct ID was SG072214.

Per the SOW, this is a validation review for 7 project-specific compounds. Data were submitted for the analysis of sixteen (16) volatile samples per Method TO-15. There was no field blank identified. Hard

copy data were not submitted, but the full package was provided as pdf.

#### Calibration

Client compounds meet the updated criteria. The full VOA list was submitted and reviewed to find the client compounds.

There are routinely no poor responders for air data as there is not purge.

#### Matrix Spikes and MS Duplicates

Spikes are not amenable to canister analysis and are not required.

Laboratory duplicates are required and are provided by the laboratory for this SDG,

A duplicate analysis from one canister is required and was performed with acceptable results. There were 2 days of analysis and a client sample, SG07221312, was used on one of those days to meet the 1/20 frequency.

#### Field Duplicates

There are 2 field duplicate pairs. Both are within limits. SG07221301 and SG07221302, SG07231301 and SG07231302

#### Field Blanks

There was no field blank reported or required for this event, per QAPP.

#### Compound Identification

There is a large (injection?) peak in the chromatograms at about 2.5 minutes. This peak normalized surrogates to about 15% and client peaks as indistinguishable for this data set and the visual chromatogram review cannot be performed.

Per the 10% check of the raw data, sample SG07221301 had numerous peaks as 'tics' which are labeled on the chromatogram but not reported in the quantitation report. As the identified compounds are not part of the client list, no further action was taken. The tetrachloroethene (PCE) is manually integrated as it is at low levels.

Sample SG07221302 had numerous peaks as 'tics' which are labeled on the chromatogram and are reported in the quantitation report. These are predominately gasoline type compounds (medium chain hydrocarbons, BTEX, toluenes, substituted benzenes, naphthalene). As the identified compounds are not part of the client list, no further action was taken. The tetrachloroethene (PCE) is manually integrated as it is at low levels.

All manual integrations are acceptable.

### **Summary of Samples and QC Results**

Site A - Soil Gas Sampling

Collected	Workorder	Matrix
7/22/2013	10236207	Air
7/23/2013	10236207	Air
7/23/2013	10236207	Air
	7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013 7/22/2013	7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207           7/22/2013         10236207

### RL and MDL (ug/m3):

Analyte	RL
1,1-Dichloroethene	1.2-1.6
1,2-Dichloroethane	0.59-0.82
Chloroform	1.4-2.0
cis-1,2-Dichloroethene	1.2-1.6
Tetrachloroethene	0.99-1.4
Trichloroethene	0.79-1.1
Vinyl Chloride	0.37-0.52

(RL varies slightly from sample to sample)

### <u>Laboratory Control Sample (LCS):</u>

Analyte	Recovery	QC Limits
1,1-Dichloroethene	96%	75% - 125%
1,2-Dichloroethane	104%	75% - 125%
Chloroform	102%	75% - 125%
cis-1,2-Dichloroethene	99%	75% - 125%
Tetrachloroethene	99%	75% - 125%
Trichloroethene	93%	75% - 125%
Vinyl Chloride	96%	75% - 125%

Laboratory Control Sample (LCS):

Analyte	Recovery	QC Limits
1,1-Dichloroethene	91%	75% - 125%
1,2-Dichloroethane	100%	75% - 125%
Chloroform	100%	75% - 125%
cis-1,2-Dichloroethene	97%	75% - 125%
Tetrachloroethene	104%	75% - 125%
Trichloroethene	95%	75% - 125%
Vinyl Chloride	90%	75% - 125%

Field Duplicate Results:

					RPD
Analyte	Date	Original <i>SG07221301</i>	Duplicate	Calc'd RPD	Goal
1,1-Dichloroethene	7/22/2013	ND	ND	NA	±4xRL
1,2-Dichloroethane	7/22/2013	ND	ND	NA	±4xRL
Chloroform	7/22/2013	ND	ND	NA	±4xRL
cis-1,2-Dichloroethene	7/22/2013	ND	ND	NA	±4xRL
Tetrachloroethene	7/22/2013	5.4	4.7	13.9%	25%
Trichloroethene	7/22/2013	ND	ND	NA	±4xRL
Vinyl Chloride	7/22/2013	ND	ND	NA	<u>+</u> 4xRL

Analyte	Date	Original SG07231301	Duplicate	Calc'd RPD	RPD Goal
1,1-Dichloroethene	7/23/2013	ND	ND	NA	<u>+</u> 4xRL
1,2-Dichloroethane	7/23/2013	ND	ND	NA	±4xRL
Chloroform	7/23/2013	ND	ND	NA	±4xRL
cis-1,2-Dichloroethene	7/23/2013	ND	ND	NA	±4xRL
Tetrachloroethene	7/23/2013	4.3	4.4	2.3%	25%
Trichloroethene	7/23/2013	ND	ND	NA	<u>+</u> 4xRL
Vinyl Chloride	7/23/2013	ND	ND	NA	±4xRL