# Atmospheric Analysis & Consulting, Inc.

CLIENT : Soil Water Air Protection Enterprise
PROJECT NAME : Bridgeton Sanitary Landfill Air Quality Assessment
AAC PROJECT NO. : 130986
REPORT DATE : 07/31/2013

On July 29, 2013, Atmospheric Analysis & Consulting, Inc. received four (4) Six-Liter Summa Canisters for Volatile Organic Compounds analysis by EPA method TO-15. Upon receipt each sample was assigned a unique Laboratory ID number as follows:

| Client ID | Lab ID | Return Pressure (mmHga) |
|---|---|---|
| U-1 K-Canister | 130986-64986 | 550.9 |
| D-1 W8-Canister | 130986-64987 | 548.8 |
| D-2 W6E-Canister | 130986-64988 | 577.9 |
| D-3 W6-Canister | 130986-64989 | 576.1 |

An initial reading of each canister's vacuum was taken and recorded. Subsequently, each canister was brought to positive pressure using UHP-He and the final pressure was recorded.

TO-15 Analysis - Up to a 500 mL aliquot of sample is concentrated, put through a water and $CO_2$ management system, cryofocused and injected into the GC/MS (full scan mode) for analysis following EPA Method TO-15 as specified in the SOW.

No problems were encountered during receiving, preparation and/ or analysis of these samples. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# TO.15.10.

I certify that this data is technically accurate, complete and in compliance with the terms and conditions of the contract. The Laboratory Director or his designee, as verified by the following signature, has authorized the release of the data contained in this hardcopy data package.

If you have any questions or require further explanation of data results, please contact the undersigned.

Marcus Hueppe
Laboratory Director

This report consists of 62 pages.

ACCREDITED IN ACCORDANCE WITH nelac Certificate #E87837



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Atmospheric Analysis & Consulting, Inc.

# SAMPLE RECEIPT / LOG-IN REPORT

**AAC Project** **130986** **Received By: J. Zachman**

| Sample Receipt Date | Project Desc | Clients ID | Matrix | Sampling Date/Time | Sampled By | Sample # | Analysis Requested |
|---|---|---|---|---|---|---|---|
| 7/29/2013 1115 | Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment | U-1 K Canister | Summa Canister | 7/24/2013 | Client | 64986 | TO15 ASTM D5504 |
| 7/29/2013 1115 | Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment | D-1 W8 Canister | Summa Canister | 7/24/2013 | Client | 64987 | TO15 ASTM D5504 |
| 7/29/2013 1115 | Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment | D-2 W6E Canister | Summa Canister | 7/24/2013 | Client | 64988 | TO15 ASTM D5504 |
| 7/29/2013 1115 | Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment | D-3 W6 Canister | Summa Canister | 7/24/2013 | Client | 64989 | TO15 ASTM D5504 |

**TURN AROUND TIME:** Normal (10days)

Lab Due Date: 8/5/2013

Total Samples: 4

**REMARKS:**

Client retrned 4 x Summa Canisters + 4 x Flows. "Standard TAT for all analyses. If possible deliver report within 2 weeks. Provide Level IV QC package for all analyses."

# CANISTER PRESSURE LOG

Client: Soil Water Air Protection Ent Project No.: 130986

Date: 7/29/2013

| Canister # | Sample # | Initial Pressure | Final Pressure |
|---|---|---|---|
| 577 | 64986 | 550.9 | 1026.4 |
| 697 | 64987 | 548.8 | 1025.2 |
| 730 | 64988 | 577.9 | 1021.2 |
| 788 | 64989 | 576.1 | 1015.1 |

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AAC# 130986

## CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM

*Bridgeton Sanitary Landfill Air Quality Assessment*

Client Name: SOIL / WATER AIR PROTECTION ENTERPRISE

Telephone No. / Fax No.: (310) 434-0110 / (310) 434-0011

Date: **July 24th, 2013**

Page 1 of 1

Project Manager: PAUL ROSENFELD, PH.D.

Address: 1640 FIFTH STREET, SUITE 204, SANTA MONICA, CA 90401

Project Name and Location: BRIDGETON SANITARY LANDFILL AIR QUALITY ASSESSMENT

Sampled By: John Blank

Sampler Signature: John Blank

**REQUESTED TESTS / ANALYSES**

| LAB ID | SAMPLE ID NUMBER | | Type | Date | Time | VOCS - EPA TO-15 | Reduced Sulfur Compounds - ASTM D5504 | Carbonyls - EPA TO-11A | Carboxlylic Acids - Tube GC-MS | HCL - NIOSH 7903 | Ammonia - OSHA ID-188 | SO2 - OSHA ID-200 | HCN - NIOSH 6010 | Amines - NIOSH 2010M | Fixed Gases - EPA 3C | PAHs / Dioxins EPA TO-13A / 8A | Mercury - NIOSH 6009 | Odor Evaluation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LA4986 | U-1 K | Canister | | July 24th | 4 Hr | X | X | | | | | | | | | | | |
| LA4987 | D-1 W8 | Canister | | July 24th | 4 Hr | X | X | | | | | | | | | | | |
| LA4988 | D-2 W6E | Canister | | July 24th | 4 Hr | X | X | | | | | | | | | | | |
| LA4989 | D-3 W6 | Canister | | July 24th | 4 Hr | X | X | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

Flow Control #

| | | |
|---|---|---|
| Canister # | 577 | 813 |
| Canister # | 697 | 718 |
| Canister # | 730 | 803 |
| Canister # | 788 | 804 |

Requested Turnaround Time: Standard turn-around for all analyses. If possible deliver report within 2 weeks.

QC Requirements: Provide Level IV QC Package for all Analyses.

| | | | | | |
|---|---|---|---|---|---|
| Relinquished By: **John Blank** | Date: **July 24th, 2013** | 12 Noon | Received By: | Date: | **Time:** |
| Relinquished By: | Date: | Time: | Received By: | Date: | **Time:** |
| Relinquished By: | Date: | Time: | Received By: | Date: 7/29/13 | **Time:** 1115 |

# Atmospheric Analysis and Consulting Inc.
# Canister Sampling Field Data Sheet

## GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **U-1 K** **Canister # 577** **Flow Control # 813**

AAC Batch ID: 130986 AAC Sample ID: 64986

## SAMPLING INFORMATION

Start Date/Time: **July 24th, 2013 / 11:15** Stop Date/Time: **July 24th, 2013 / 15:15**

Start Temp/Pressure*: **23C / 30.03 psi** Stop Temp/Pressure*: **26C / 30.03 psi**

Initial Can Pressure**: **-30** Final Can Pressure**: **- 8**

** Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)*

Comments: _____

John Blank
*Sampler Name (Print)*

July 24th 2013
*Sampler Signature/Date*

## LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: # **577** Flow Controller Serial No: # **813**

Initial Pressure: 3.4 Certified Flow Rate: 18.0

Return Pressure: 550.9 Certified By/Date: ~~20.6~~ JJ 7/10/13

Final Pressure: 1026.4 Flow Rate upon Return: 20.6

Date Shipped From Lab: 7/10/13 Shipped By: JJ

Date Returned to Lab: 7/29/13 Received By: JJ

Flow Controller Certification File ID: 1503/07081311

Canister Certification File ID: 1503/06121320

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

07/31/13
*Chemist Signature/Date*

MH 8/1/13
*Lab Manager Signature/Date*

***Sampler is required to fill out all highlighted sections during sampling.***
***All remaining sections will be completed upon return by the laboratory.***

# Atmospheric Analysis and Consulting Inc.
# Canister Sampling Field Data Sheet

## GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-1 W8** **Canister # 697** **Flow Control # 718**

AAC Batch ID: 130896 AAC Sample ID: 64987

## SAMPLING INFORMATION

Start Date/Time: **July 24th, 2013 / 11:35** Stop Date/Time: **July 24th, 2013 / 15:35**

Start Temp/Pressure*: **23C / 30.03 psi** Stop Temp/Pressure*: **26C / 30.03 psi**

Initial Can Pressure**: **- 30** Final Can Pressure**: **- 9**

** Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)*

Comments: _____

John Blank

**John Blank** **July 24th 2013**
*Sampler Name (Print)* *Sampler Signature/Date*

## LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: **# 697** Flow Controller Serial No: **# 718**

Initial Pressure: 3.9 Certified Flow Rate: 18.0

Return Pressure: 548.8 Certified By/Date: JJ 7/10/13

Final Pressure: 1025.2 Flow Rate upon Return: 21.0

Date Shipped From Lab: 7/10/13 Shipped By: JJ

Date Returned to Lab: 7/24/13 Received By: JJ

Flow Controller Certification File ID: M603/070813II

Canister Certification File ID: M603/060713O4

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

07/26/13 7/1/13

*Chemist Signature/Date* *Lab Manager Signature/Date*

***Sampler is required to fill out all highlighted sections during sampling.***
***All remaining sections will be completed upon return by the laboratory.***

# Atmospheric Analysis and Consulting Inc.
# Canister Sampling Field Data Sheet

## GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-2 W6E** **Canister # 730** **Flow Control # 803**

AAC Batch ID: 130986 AAC Sample ID: 64988

## SAMPLING INFORMATION

Start Date/Time: **July 24th, 2013 / 11:55** Stop Date/Time: **July 24th, 2013 / 15:55**

Start Temp/Pressure*: **23C / 30.03 psi** Stop Temp/Pressure*: **26C / 30.03 psi**

Initial Can Pressure**: **- 30** Final Can Pressure**: **- 8**

** Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)*

Comments: _____

John Blank Blank

**John Blank** **July 24th 2013**

*Sampler Name (Print)* *Sampler Signature/Date*

## LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: **# 730** Flow Controller Serial No: **# 803**

Initial Pressure: 3.7 Certified Flow Rate: 18.0

Return Pressure: 577.9 Certified By/Date: 7/10/13

Final Pressure: 1021.2 Flow Rate upon Return: 20.7

Date Shipped From Lab: 7/10/13 Shipped By:

Date Returned to Lab: 7/29/13 Received By:

Flow Controller Certification File ID: M03/070831I

Canister Certification File ID: M03/070513C6

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

07/31/13 8/1/13

*Chemist Signature/Date* *Lab Manager Signature/Date*

***Sampler is required to fill out all highlighted sections during sampling.***
***All remaining sections will be completed upon return by the laboratory.***

# Atmospheric Analysis and Consulting Inc.
# Canister Sampling Field Data Sheet

## GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-3 W6** **Canister # 788** **Flow Control # 804**

AAC Batch ID: 130986 AAC Sample ID: 64989

## SAMPLING INFORMATION

Start Date/Time: **July 24th, 2013 / 12:05** Stop Date/Time: **July 24th, 2013 / 16:05**

Start Temp/Pressure*: **23C / 30.03 psi** Stop Temp/Pressure*: **26C / 30.03 psi**

Initial Can Pressure**: **-30** Final Can Pressure**: **- 7**

** Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)*

Comments: _____

John Blank

**John Blank** **July 24th 2013**
*Sampler Name (Print)* *Sampler Signature/Date*

## LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: **# 788** Flow Controller Serial No: **# 804**

Initial Pressure: 3.4 Certified Flow Rate: 18.0

Return Pressure: 576.1 Certified By/Date: JJ 7/10/13

Final Pressure: 1015.1 Flow Rate upon Return: 21.3

Date Shipped From Lab: 7/10/13 Shipped By: JJ

Date Returned to Lab: 7/29/13 Received By: JJ

Flow Controller Certification File ID: 1403/070813(

Canister Certification File ID: 1403/082713(09

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

*Chemist Signature/Date* *Lab Manager Signature/Date*

***Sampler is required to fill out all highlighted sections during sampling.***
***All remaining sections will be completed upon return by the laboratory.***

# American Environmental Laboratories

ISO 9001:2000 Certification #A1836US

**MDNR** **Bridgeton Landfill** **Date: July 24th, 2013**

**Chain of Custody Weekly Sampling Event**

**Air Sampler calibrated for 1 Liter per Minute Flow Rate**
**Flow Rate calibrated with BIOS - Defender 510M - S/N 131756**
**SUMMA Canister with a 4 hour flow valve**

| | | | | Barametric |
|---|---|---|---|---|
| Temperature | 23C | Humidity | 43% | Pressure 30.03 |
| Stop | 26 C | | 42% | 30.03 |

| Sample Point ID U-1 K | | | Start | End | Time Start |
|---|---|---|---|---|---|
| Canister Serial # | 577 | Vacuum | -30 | -8 | 11:15 |
| Flow Control # | 813 | | | | Stop |
| Sample Pump # | 71526 | Flow Rate | 1.029 | 1.035 | 15:15 |
| Sample Tube Type | 226-20 | Sampe Tube # | 4440601056 | Sample Volume L | 247.68 |

| Sample Point ID D-1 W8 | | | Start | End | Time Start |
|---|---|---|---|---|---|
| Canister Serial # | 697 | Vacuum | -30 | -9 | 11:35 |
| Flow Control # | 718 | | | | Stop |
| Sample Pump # | 67385 | Flow Rate | 1.018 | 1.021 | 15:35 |
| Sample Tube Type | 226-20 | Sampe Tube # | 4440601048 | Sample Volume L | 244.68 |

| Sample Point ID D-2 W6E | | | Start | End | Time Start |
|---|---|---|---|---|---|
| Canister Serial # | 730 | Vacuum | -30 | -8 | 11:55 |
| Flow Control # | 803 | | | | Stop |
| Sample Pump # | 67992 | Flow Rate | 1.029 | 1.058 | 15:55 |
| Sample Tube Type | 226-20 | Sampe Tube # | 4440601368 | Sample Volume L | 250.44 |

| Sample Point ID D-3 W6 | | | Start | End | Time Start |
|---|---|---|---|---|---|
| Canister Serial # | 788 | Vacuum | -30 | -7 | 12:05 |
| Flow Control # | 804 | | | | Stop |
| Sample Pump # | 67835 | Flow Rate | 1.02 | 1.028 | 16:05 |
| Sample Tube Type | 226-20 | Sampe Tube # | 4440601049 | Sample Volume L | 245.76 |

Possible Sample Point ID **W1 - W2 - W3 - W4 - W5 - W6 - W7 - W8**

Prepared by:

3441 Morgan Ford Rd. St. Louis, MO 63116 Tel: 314-664-2800 Fax: 314-664-2442

# TO-15 REPORTS

## Laboratory Analysis Report

**CLIENT** : Soil Water Air Protection Enterprise
**PROJECT NO** : 130986
**MATRIX** : AIR
**UNITS** : PPB (v/v)

**DATE RECEIVED** : 07/29/2013
**DATE REPORTED** : 07/31/2013

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | U-1 K-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-1 W8-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64986 | | | | 130986-64987 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.86 | | | | 1.87 | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Chlorodifluoromethane | 0.32 | J | 1.0 | 0.93 | 0.30 | J | 1.0 | 0.93 | 0.5 |
| Propene | 0.78 | J | 1.0 | 1.86 | 0.60 | J | 1.0 | 1.87 | 1.0 |
| Dichlorodifluoromethane | 0.58 | J | 1.0 | 0.93 | 0.60 | J | 1.0 | 0.93 | 0.5 |
| Chloromethane | 0.43 | J | 1.0 | 0.93 | 0.43 | J | 1.0 | 0.93 | 0.5 |
| Dichlorotetrafluoroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Vinyl Chloride | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Methanol | 7.28 | J | 1.0 | 9.32 | 9.77 | | 1.0 | 9.34 | 5.0 |
| 1,3-Butadiene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Bromomethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Chloroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Dichlorofluoromethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Ethanol | 4.73 | | 1.0 | 3.73 | 4.09 | | 1.0 | 3.74 | 2.0 |
| Vinyl Bromide | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Acetone | 4.47 | | 1.0 | 3.73 | 4.54 | | 1.0 | 3.74 | 2.0 |
| Trichlorofluoromethane | 0.26 | J | 1.0 | 0.93 | 0.34 | J | 1.0 | 0.93 | 0.5 |
| 2-Propanol (IPA) | 2.70 | J | 1.0 | 3.73 | 1.20 | J | 1.0 | 3.74 | 2.0 |
| Acrylonitrile | <SRL | U | 1.0 | 1.86 | <SRL | U | 1.0 | 1.87 | 1.0 |
| 1,1-Dichloroethene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Methylene Chloride (DCM) | <SRL | U | 1.0 | 1.86 | <SRL | U | 1.0 | 1.87 | 1.0 |
| Allyl Chloride | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Carbon Disulfide | NR | U | 1.0 | 0.93 | NR | U | 1.0 | 0.93 | 0.5 |
| Trichlorotrifluoroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| trans-1,2-Dichloroethene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,1-Dichloroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Methyl Tert Butyl Ether (MTBE) | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Vinyl Acetate | <SRL | U | 1.0 | 1.86 | <SRL | U | 1.0 | 1.87 | 1.0 |
| 2-Butanone (MEK) | <SRL | U | 1.0 | 1.86 | <SRL | U | 1.0 | 1.87 | 1.0 |
| cis-1,2-Dichloroethene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Hexane | 0.50 | J | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Chloroform | 0.17 | J | 1.0 | 0.93 | 0.15 | J | 1.0 | 0.93 | 0.5 |
| Ethyl Acetate | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Tetrahydrofuran | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,2-Dichloroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,1,1-Trichloroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |


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# Atmospheric Analysis & Consulting, Inc.

## Laboratory Analysis Report

**CLIENT** : **Soil Water Air Protection Enterprise**
**PROJECT NO** : **130986**
**MATRIX** : **AIR**
**UNITS** : **PPB (v/v)**

**DATE RECEIVED** : **07/29/2013**
**DATE REPORTED** : **07/31/2013**

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | U-1 K-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-1 W8-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64986 | | | | 130986-64987 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.86 | | | | 1.87 | | | | |
| | **Result** | **Qualifier** | **Analysis DF** | | **Result** | **Qualifier** | **Analysis DF** | | |
| Benzene | <SRL | U | 1.0 | 0.93 | 0.49 | J | 1.0 | 0.93 | 0.5 |
| Carbon Tetrachloride | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Cyclohexane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,2-Dichloropropane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Bromodichloromethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,4-Dioxane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Trichloroethene (TCE) | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 2,2,4-Trimethylpentane | 0.34 | J | 1.0 | 0.93 | 0.26 | J | 1.0 | 0.93 | 0.5 |
| Heptane | 0.15 | J | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| cis-1,3-Dichloropropene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 4-Methyl-2-pentanone (MiBK) | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| trans-1,3-Dichloropropene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,1,2-Trichloroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Toluene | 0.82 | J | 1.0 | 0.93 | 1.16 | | 1.0 | 0.93 | 0.5 |
| 2-Hexanone (MBK) | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Dibromochloromethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,2-Dibromoethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Tetrachloroethene (PCE) | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Chlorobenzene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Ethylbenzene | 0.19 | J | 1.0 | 0.93 | 0.22 | J | 1.0 | 0.93 | 0.5 |
| m & p-Xylenes | 0.58 | J | 1.0 | 1.86 | 1.23 | J | 1.0 | 1.87 | 1.0 |
| Bromoform | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Styrene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,1,2,2-Tetrachloroethane | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| o-Xylene | 0.22 | J | 1.0 | 0.93 | 0.37 | J | 1.0 | 0.93 | 0.5 |
| 4-Ethyltoluene | 0.09 | J | 1.0 | 0.93 | 0.11 | J | 1.0 | 0.93 | 0.5 |
| 1,3,5-Trimethylbenzene | <SRL | U | 1.0 | 0.93 | 0.11 | J | 1.0 | 0.93 | 0.5 |
| 1,2,4-Trimethylbenzene | 0.30 | J | 1.0 | 0.93 | 0.35 | J | 1.0 | 0.93 | 0.5 |
| Benzyl Chloride (a-Chlorotoluene) | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,3-Dichlorobenzene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,4-Dichlorobenzene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,2-Dichlorobenzene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| 1,2,4-Trichlorobenzene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| Hexachlorobutadiene | <SRL | U | 1.0 | 0.93 | <SRL | U | 1.0 | 0.93 | 0.5 |
| BFB-Surrogate Std. % Recovery | 102% | | | | 101% | | | | 70-130% |

U - Compound was analyzed for, but was not detected at or above the SRL.
J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).
SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.
NR - Not Reported on these analysis.

Marcus Hueppe
Laboratoy Director



1534 Eastman Ave., Ste. A • Ventura, • CA 93003 www.aaclab.com • (805) 650-1642 • FAX (805) 650-1644

## Laboratory Analysis Report

**CLIENT** : Soil Water Air Protection Enterprise
**PROJECT NO** : 130986
**MATRIX** : AIR
**UNITS** : ug/m3

**DATE RECEIVED** : 07/29/2013
**DATE REPORTED** : 07/31/2013

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | U-1 K-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-1 W8-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64986 | | | | 130986-64987 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.86 | | | | 1.87 | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Chlorodifluoromethane | 1.1 | J | 1.0 | 3.3 | 1.1 | J | 1.0 | 3.3 | 1.8 |
| Propene | 1.4 | J | 1.0 | 3.2 | 1.0 | J | 1.0 | 3.2 | 1.7 |
| Dichlorodifluoromethane | 2.9 | J | 1.0 | 4.6 | 3.0 | J | 1.0 | 4.6 | 2.5 |
| Chloromethane | 0.9 | J | 1.0 | 1.9 | 0.9 | J | 1.0 | 1.9 | 1.0 |
| Dichlorotetrafluoroethane | <SRL | U | 1.0 | 6.5 | <SRL | U | 1.0 | 6.5 | 3.5 |
| Vinyl Chloride | <SRL | U | 1.0 | 2.4 | <SRL | U | 1.0 | 2.4 | 1.3 |
| Methanol | 9.6 | J | 1.0 | 12.2 | 12.8 | | 1.0 | 12.2 | 6.6 |
| 1,3-Butadiene | <SRL | U | 1.0 | 2.1 | <SRL | U | 1.0 | 2.1 | 1.1 |
| Bromomethane | <SRL | U | 1.0 | 3.6 | <SRL | U | 1.0 | 3.6 | 1.9 |
| Chloroethane | <SRL | U | 1.0 | 2.5 | <SRL | U | 1.0 | 2.5 | 1.3 |
| Dichlorofluoromethane | <SRL | U | 1.0 | 3.9 | <SRL | U | 1.0 | 3.9 | 2.1 |
| Ethanol | 8.9 | | 1.0 | 7.0 | 7.7 | | 1.0 | 7.0 | 3.8 |
| Vinyl Bromide | <SRL | U | 1.0 | 4.1 | <SRL | U | 1.0 | 4.1 | 2.2 |
| Acetone | 10.6 | | 1.0 | 8.9 | 10.8 | | 1.0 | 8.9 | 4.8 |
| Trichlorofluoromethane | 1.5 | J | 1.0 | 5.2 | 1.9 | J | 1.0 | 5.2 | 2.8 |
| 2-Propanol (IPA) | 6.6 | J | 1.0 | 9.2 | 2.9 | J | 1.0 | 9.2 | 4.9 |
| Acrylonitrile | <SRL | U | 1.0 | 4.0 | <SRL | U | 1.0 | 4.1 | 2.2 |
| 1,1-Dichloroethene | <SRL | U | 1.0 | 3.7 | <SRL | U | 1.0 | 3.7 | 2.0 |
| Methylene Chloride (DCM) | <SRL | U | 1.0 | 6.5 | <SRL | U | 1.0 | 6.5 | 3.5 |
| Allyl Chloride | <SRL | U | 1.0 | 2.9 | <SRL | U | 1.0 | 2.9 | 1.6 |
| Carbon Disulfide | NR | U | 1.0 | 2.9 | NR | U | 1.0 | 2.9 | 1.6 |
| Trichlorotrifluoroethane | <SRL | U | 1.0 | 7.1 | <SRL | U | 1.0 | 7.2 | 3.8 |
| trans-1,2-Dichloroethene | <SRL | U | 1.0 | 3.7 | <SRL | U | 1.0 | 3.7 | 2.0 |
| 1,1-Dichloroethane | <SRL | U | 1.0 | 3.8 | <SRL | U | 1.0 | 3.8 | 2.0 |
| Methyl Tert Butyl Ether (MTBE) | <SRL | U | 1.0 | 3.4 | <SRL | U | 1.0 | 3.4 | 1.8 |
| Vinyl Acetate | <SRL | U | 1.0 | 6.6 | <SRL | U | 1.0 | 6.6 | 3.5 |
| 2-Butanone (MEK) | <SRL | U | 1.0 | 5.5 | <SRL | U | 1.0 | 5.5 | 2.9 |
| cis-1,2-Dichloroethene | <SRL | U | 1.0 | 3.7 | <SRL | U | 1.0 | 3.7 | 2.0 |
| Hexane | 1.8 | J | 1.0 | 3.3 | <SRL | U | 1.0 | 3.3 | 1.8 |
| Chloroform | 0.8 | J | 1.0 | 4.5 | 0.7 | J | 1.0 | 4.6 | 2.4 |
| Ethyl Acetate | <SRL | U | 1.0 | 3.4 | <SRL | U | 1.0 | 3.4 | 1.8 |
| Tetrahydrofuran | <SRL | U | 1.0 | 2.7 | <SRL | U | 1.0 | 2.8 | 1.5 |
| 1,2-Dichloroethane | <SRL | U | 1.0 | 3.8 | <SRL | U | 1.0 | 3.8 | 2.0 |
| 1,1,1-Trichloroethane | <SRL | U | 1.0 | 5.1 | <SRL | U | 1.0 | 5.1 | 2.7 |



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## Laboratory Analysis Report

**CLIENT** : Soil Water Air Protection Enterprise
**PROJECT NO** : 130986
**MATRIX** : AIR
**UNITS** : ug/m3

**DATE RECEIVED** : 07/29/2013
**DATE REPORTED** : 07/31/2013

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | U-1 K-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-1 W8-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64986 | | | | 130986-64987 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.86 | | | | 1.87 | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Benzene | <SRL | U | 1.0 | 3.0 | 1.6 | J | 1.0 | 3.0 | 1.6 |
| Carbon Tetrachloride | <SRL | U | 1.0 | 5.9 | <SRL | U | 1.0 | 5.9 | 3.1 |
| Cyclohexane | <SRL | U | 1.0 | 3.2 | <SRL | U | 1.0 | 3.2 | 1.7 |
| 1,2-Dichloropropane | <SRL | U | 1.0 | 4.3 | <SRL | U | 1.0 | 4.3 | 2.3 |
| Bromodichloromethane | <SRL | U | 1.0 | 6.2 | <SRL | U | 1.0 | 6.3 | 3.4 |
| 1,4-Dioxane | <SRL | U | 1.0 | 3.4 | <SRL | U | 1.0 | 3.4 | 1.8 |
| Trichloroethene (TCE) | <SRL | U | 1.0 | 5.0 | <SRL | U | 1.0 | 5.0 | 2.7 |
| 2,2,4-Trimethylpentane | 1.6 | J | 1.0 | 4.4 | 1.2 | J | 1.0 | 4.4 | 2.3 |
| Heptane | 0.6 | J | 1.0 | 3.8 | <SRL | U | 1.0 | 3.8 | 2.0 |
| cis-1,3-Dichloropropene | <SRL | U | 1.0 | 4.2 | <SRL | U | 1.0 | 4.2 | 2.3 |
| 4-Methyl-2-pentanone (MiBK) | <SRL | U | 1.0 | 3.8 | <SRL | U | 1.0 | 3.8 | 2.0 |
| trans-1,3-Dichloropropene | <SRL | U | 1.0 | 4.2 | <SRL | U | 1.0 | 4.2 | 2.3 |
| 1,1,2-Trichloroethane | <SRL | U | 1.0 | 5.1 | <SRL | U | 1.0 | 5.1 | 2.7 |
| Toluene | 3.1 | J | 1.0 | 3.5 | 4.4 | | 1.0 | 3.5 | 1.9 |
| 2-Hexanone (MBK) | <SRL | U | 1.0 | 3.8 | <SRL | U | 1.0 | 3.8 | 2.0 |
| Dibromochloromethane | <SRL | U | 1.0 | 7.9 | <SRL | U | 1.0 | 8.0 | 4.3 |
| 1,2-Dibromoethane | <SRL | U | 1.0 | 7.2 | <SRL | U | 1.0 | 7.2 | 3.8 |
| Tetrachloroethene (PCE) | <SRL | U | 1.0 | 6.3 | <SRL | U | 1.0 | 6.3 | 3.4 |
| Chlorobenzene | <SRL | U | 1.0 | 4.3 | <SRL | U | 1.0 | 4.3 | 2.3 |
| Ethylbenzene | 0.8 | J | 1.0 | 4.0 | 1.0 | J | 1.0 | 4.1 | 2.2 |
| m & p-Xylenes | 2.5 | J | 1.0 | 8.1 | 5.4 | J | 1.0 | 8.1 | 4.3 |
| Bromoform | <SRL | U | 1.0 | 9.6 | <SRL | U | 1.0 | 9.7 | 5.2 |
| Styrene | <SRL | U | 1.0 | 4.0 | <SRL | U | 1.0 | 4.0 | 2.1 |
| 1,1,2,2-Tetrachloroethane | <SRL | U | 1.0 | 6.4 | <SRL | U | 1.0 | 6.4 | 3.4 |
| o-Xylene | 1.0 | J | 1.0 | 4.0 | 1.6 | J | 1.0 | 4.1 | 2.2 |
| 4-Ethyltoluene | 0.5 | J | 1.0 | 4.6 | 0.6 | J | 1.0 | 4.6 | 2.5 |
| 1,3,5-Trimethylbenzene | <SRL | U | 1.0 | 4.6 | 0.6 | J | 1.0 | 4.6 | 2.5 |
| 1,2,4-Trimethylbenzene | 1.5 | J | 1.0 | 4.6 | 1.7 | J | 1.0 | 4.6 | 2.5 |
| Benzyl Chloride (a-Chlorotoluene) | <SRL | U | 1.0 | 4.8 | <SRL | U | 1.0 | 4.8 | 2.6 |
| 1,3-Dichlorobenzene | <SRL | U | 1.0 | 5.6 | <SRL | U | 1.0 | 5.6 | 3.0 |
| 1,4-Dichlorobenzene | <SRL | U | 1.0 | 5.6 | <SRL | U | 1.0 | 5.6 | 3.0 |
| 1,2-Dichlorobenzene | <SRL | U | 1.0 | 5.6 | <SRL | U | 1.0 | 5.6 | 3.0 |
| 1,2,4-Trichlorobenzene | <SRL | U | 1.0 | 6.9 | <SRL | U | 1.0 | 6.9 | 3.7 |
| Hexachlorobutadiene | <SRL | U | 1.0 | 9.9 | <SRL | U | 1.0 | 10.0 | 5.3 |
| BFB-Surrogate Std. % Recovery | 102% | | | | 101% | | | | 70-130% |

U - Compound was analyzed for, but was not detected at or above the SRL.
J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).
SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.
NR - Not Reported on these analysis.

Marcus Hueppe
Laboratoy Director



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## Laboratory Analysis Report

**CLIENT** : Soil Water Air Protection Enterprise
**PROJECT NO** : 130986
**MATRIX** : AIR
**UNITS** : PPB (v/v)

**DATE RECEIVED** : 07/29/2013
**DATE REPORTED** : 07/31/2013

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | D-2 W6E-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-3 W6-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64988 | | | | 130986-64989 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.77 | | | | 1.76 | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Chlorodifluoromethane | 0.28 | J | 1.0 | 0.88 | 0.28 | J | 1.0 | 0.88 | 0.5 |
| Propene | 1.01 | J | 1.0 | 1.77 | 1.07 | J | 1.0 | 1.76 | 1.0 |
| Dichlorodifluoromethane | 0.58 | J | 1.0 | 0.88 | 0.56 | J | 1.0 | 0.88 | 0.5 |
| Chloromethane | 0.44 | J | 1.0 | 0.88 | 0.51 | J | 1.0 | 0.88 | 0.5 |
| Dichlorotetrafluoroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Vinyl Chloride | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Methanol | 9.49 | | 1.0 | 8.84 | 24.5 | | 1.0 | 8.81 | 5.0 |
| 1,3-Butadiene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Bromomethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Chloroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Dichlorofluoromethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Ethanol | 4.38 | | 1.0 | 3.53 | 10.6 | | 1.0 | 3.52 | 2.0 |
| Vinyl Bromide | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Acetone | 6.34 | | 1.0 | 3.53 | 9.13 | | 1.0 | 3.52 | 2.0 |
| Trichlorofluoromethane | 0.35 | J | 1.0 | 0.88 | 0.41 | J | 1.0 | 0.88 | 0.5 |
| 2-Propanol (IPA) | 1.96 | J | 1.0 | 3.53 | 2.43 | J | 1.0 | 3.52 | 2.0 |
| Acrylonitrile | <SRL | U | 1.0 | 1.77 | <SRL | U | 1.0 | 1.76 | 1.0 |
| 1,1-Dichloroethene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Methylene Chloride (DCM) | <SRL | U | 1.0 | 1.77 | <SRL | U | 1.0 | 1.76 | 1.0 |
| Allyl Chloride | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Carbon Disulfide | NR | U | 1.0 | 0.88 | NR | U | 1.0 | 0.88 | 0.5 |
| Trichlorotrifluoroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| trans-1,2-Dichloroethene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,1-Dichloroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Methyl Tert Butyl Ether (MTBE) | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Vinyl Acetate | <SRL | U | 1.0 | 1.77 | <SRL | U | 1.0 | 1.76 | 1.0 |
| 2-Butanone (MEK) | 0.90 | J | 1.0 | 1.77 | 1.90 | | 1.0 | 1.76 | 1.0 |
| cis-1,2-Dichloroethene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Hexane | 0.35 | J | 1.0 | 0.88 | 0.41 | J | 1.0 | 0.88 | 0.5 |
| Chloroform | 0.14 | J | 1.0 | 0.88 | 0.14 | J | 1.0 | 0.88 | 0.5 |
| Ethyl Acetate | <SRL | U | 1.0 | 0.88 | 0.19 | J | 1.0 | 0.88 | 0.5 |
| Tetrahydrofuran | 0.39 | J | 1.0 | 0.88 | 1.29 | | 1.0 | 0.88 | 0.5 |
| 1,2-Dichloroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,1,1-Trichloroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |


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# Atmospheric Analysis & Consulting, Inc.

## Laboratory Analysis Report

**CLIENT** : Soil Water Air Protection Enterprise
**PROJECT NO** : 130986
**MATRIX** : AIR
**UNITS** : PPB (v/v)

**DATE RECEIVED** : 07/29/2013
**DATE REPORTED** : 07/31/2013

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | D-2 W6E-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-3 W6-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64988 | | | | 130986-64989 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.77 | | | | 1.76 | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Benzene | 0.58 | J | 1.0 | 0.88 | 2.26 | | 1.0 | 0.88 | 0.5 |
| Carbon Tetrachloride | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Cyclohexane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,2-Dichloropropane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Bromodichloromethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,4-Dioxane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Trichloroethene (TCE) | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 2,2,4-Trimethylpentane | 0.28 | J | 1.0 | 0.88 | 0.39 | J | 1.0 | 0.88 | 0.5 |
| Heptane | 0.14 | J | 1.0 | 0.88 | 0.23 | J | 1.0 | 0.88 | 0.5 |
| cis-1,3-Dichloropropene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 4-Methyl-2-pentanone (MiBK) | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| trans-1,3-Dichloropropene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,1,2-Trichloroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Toluene | 1.11 | | 1.0 | 0.88 | 1.36 | | 1.0 | 0.88 | 0.5 |
| 2-Hexanone (MBK) | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Dibromochloromethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,2-Dibromoethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Tetrachloroethene (PCE) | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Chlorobenzene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Ethylbenzene | 0.25 | J | 1.0 | 0.88 | 0.32 | J | 1.0 | 0.88 | 0.5 |
| m & p-Xylenes | 0.69 | J | 1.0 | 1.77 | 0.86 | J | 1.0 | 1.76 | 1.0 |
| Bromoform | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Styrene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,1,2,2-Tetrachloroethane | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| o-Xylene | 0.25 | J | 1.0 | 0.88 | 0.37 | J | 1.0 | 0.88 | 0.5 |
| 4-Ethyltoluene | 0.09 | J | 1.0 | 0.88 | 0.14 | J | 1.0 | 0.88 | 0.5 |
| 1,3,5-Trimethylbenzene | 0.09 | J | 1.0 | 0.88 | 0.14 | J | 1.0 | 0.88 | 0.5 |
| 1,2,4-Trimethylbenzene | 0.32 | J | 1.0 | 0.88 | 0.42 | J | 1.0 | 0.88 | 0.5 |
| Benzyl Chloride (a-Chlorotoluene) | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,3-Dichlorobenzene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,4-Dichlorobenzene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,2-Dichlorobenzene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| 1,2,4-Trichlorobenzene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| Hexachlorobutadiene | <SRL | U | 1.0 | 0.88 | <SRL | U | 1.0 | 0.88 | 0.5 |
| BFB-Surrogate Std. % Recovery | 100% | | | | 103% | | | | 70-130% |

U - Compound was analyzed for, but was not detected at or above the SRL.
J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).
SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.
NR - Not Reported on these analysis.

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## Laboratory Analysis Report

**CLIENT** : Soil Water Air Protection Enterprise
**PROJECT NO** : 130986
**MATRIX** : AIR
**UNITS** : ug/m3

**DATE RECEIVED** : 07/29/2013
**DATE REPORTED** : 07/31/2013

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | D-2 W6E-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-3 W6-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64988 | | | | 130986-64989 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.77 | | | | 1.76 | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Chlorodifluoromethane | 1.0 | J | 1.0 | 3.1 | 1.0 | J | 1.0 | 3.1 | 1.8 |
| Propene | 1.7 | J | 1.0 | 3.0 | 1.9 | J | 1.0 | 3.0 | 1.7 |
| Dichlorodifluoromethane | 2.9 | J | 1.0 | 4.4 | 2.8 | J | 1.0 | 4.4 | 2.5 |
| Chloromethane | 0.9 | J | 1.0 | 1.8 | 1.1 | J | 1.0 | 1.8 | 1.0 |
| Dichlorotetrafluoroethane | <SRL | U | 1.0 | 6.2 | <SRL | U | 1.0 | 6.2 | 3.5 |
| Vinyl Chloride | <SRL | U | 1.0 | 2.3 | <SRL | U | 1.0 | 2.3 | 1.3 |
| Methanol | 12.4 | | 1.0 | 11.6 | 32.2 | | 1.0 | 11.5 | 6.6 |
| 1,3-Butadiene | <SRL | U | 1.0 | 2.0 | <SRL | U | 1.0 | 1.9 | 1.1 |
| Bromomethane | <SRL | U | 1.0 | 3.4 | <SRL | U | 1.0 | 3.4 | 1.9 |
| Chloroethane | <SRL | U | 1.0 | 2.3 | <SRL | U | 1.0 | 2.3 | 1.3 |
| Dichlorofluoromethane | <SRL | U | 1.0 | 3.7 | <SRL | U | 1.0 | 3.7 | 2.1 |
| Ethanol | 8.3 | | 1.0 | 6.7 | 20.0 | | 1.0 | 6.6 | 3.8 |
| Vinyl Bromide | <SRL | U | 1.0 | 3.9 | <SRL | U | 1.0 | 3.9 | 2.2 |
| Acetone | 15.1 | | 1.0 | 8.4 | 21.7 | | 1.0 | 8.4 | 4.8 |
| Trichlorofluoromethane | 2.0 | J | 1.0 | 5.0 | 2.3 | J | 1.0 | 4.9 | 2.8 |
| 2-Propanol (IPA) | 4.8 | J | 1.0 | 8.7 | 6.0 | J | 1.0 | 8.7 | 4.9 |
| Acrylonitrile | <SRL | U | 1.0 | 3.8 | <SRL | U | 1.0 | 3.8 | 2.2 |
| 1,1-Dichloroethene | <SRL | U | 1.0 | 3.5 | <SRL | U | 1.0 | 3.5 | 2.0 |
| Methylene Chloride (DCM) | <SRL | U | 1.0 | 6.1 | <SRL | U | 1.0 | 6.1 | 3.5 |
| Allyl Chloride | <SRL | U | 1.0 | 2.8 | <SRL | U | 1.0 | 2.8 | 1.6 |
| Carbon Disulfide | NR | U | 1.0 | 2.8 | NR | U | 1.0 | 2.7 | 1.6 |
| Trichlorotrifluoroethane | <SRL | U | 1.0 | 6.8 | <SRL | U | 1.0 | 6.8 | 3.8 |
| trans-1,2-Dichloroethene | <SRL | U | 1.0 | 3.5 | <SRL | U | 1.0 | 3.5 | 2.0 |
| 1,1-Dichloroethane | <SRL | U | 1.0 | 3.6 | <SRL | U | 1.0 | 3.6 | 2.0 |
| Methyl Tert Butyl Ether (MTBE) | <SRL | U | 1.0 | 3.2 | <SRL | U | 1.0 | 3.2 | 1.8 |
| Vinyl Acetate | <SRL | U | 1.0 | 6.2 | <SRL | U | 1.0 | 6.2 | 3.5 |
| 2-Butanone (MEK) | 2.7 | J | 1.0 | 5.2 | 5.6 | | 1.0 | 5.2 | 2.9 |
| cis-1,2-Dichloroethene | <SRL | U | 1.0 | 3.5 | <SRL | U | 1.0 | 3.5 | 2.0 |
| Hexane | 1.3 | J | 1.0 | 3.1 | 1.4 | J | 1.0 | 3.1 | 1.8 |
| Chloroform | 0.7 | J | 1.0 | 4.3 | 0.7 | J | 1.0 | 4.3 | 2.4 |
| Ethyl Acetate | <SRL | U | 1.0 | 3.2 | 0.7 | J | 1.0 | 3.2 | 1.8 |
| Tetrahydrofuran | 1.2 | J | 1.0 | 2.6 | 3.8 | | 1.0 | 2.6 | 1.5 |
| 1,2-Dichloroethane | <SRL | U | 1.0 | 3.6 | <SRL | U | 1.0 | 3.6 | 2.0 |
| 1,1,1-Trichloroethane | <SRL | U | 1.0 | 4.8 | <SRL | U | 1.0 | 4.8 | 2.7 |



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# Atmospheric Analysis & Consulting, Inc.

## Laboratory Analysis Report

**CLIENT** : **Soil Water Air Protection Enterprise**
**PROJECT NO** : **130986**
**MATRIX** : **AIR**
**UNITS** : **ug/m3**

**DATE RECEIVED** : **07/29/2013**
**DATE REPORTED** : **07/31/2013**

### VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

| *Client ID* | D-2 W6E-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | D-3 W6-Canister | | | Sample Reporting Limit (SRL) (MRLxDF's) | Method Reporting Limit (MRL) |
|---|---|---|---|---|---|---|---|---|---|
| *AAC ID* | 130986-64988 | | | | 130986-64989 | | | | |
| *Date Sampled* | 07/24/2013 | | | | 07/24/2013 | | | | |
| *Date Analyzed* | 07/31/2013 | | | | 07/31/2013 | | | | |
| *Can Dilution Factor* | 1.77 | | | | 1.76 | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Benzene | 1.9 | J | 1.0 | 2.8 | 7.2 | | 1.0 | 2.8 | 1.6 |
| Carbon Tetrachloride | <SRL | U | 1.0 | 5.6 | <SRL | U | 1.0 | 5.5 | 3.1 |
| Cyclohexane | <SRL | U | 1.0 | 3.0 | <SRL | U | 1.0 | 3.0 | 1.7 |
| 1,2-Dichloropropane | <SRL | U | 1.0 | 4.1 | <SRL | U | 1.0 | 4.1 | 2.3 |
| Bromodichloromethane | <SRL | U | 1.0 | 5.9 | <SRL | U | 1.0 | 5.9 | 3.4 |
| 1,4-Dioxane | <SRL | U | 1.0 | 3.2 | <SRL | U | 1.0 | 3.2 | 1.8 |
| Trichloroethene (TCE) | <SRL | U | 1.0 | 4.7 | <SRL | U | 1.0 | 4.7 | 2.7 |
| 2,2,4-Trimethylpentane | 1.3 | J | 1.0 | 4.1 | 1.8 | J | 1.0 | 4.1 | 2.3 |
| Heptane | 0.6 | J | 1.0 | 3.6 | 0.9 | J | 1.0 | 3.6 | 2.0 |
| cis-1,3-Dichloropropene | <SRL | U | 1.0 | 4.0 | <SRL | U | 1.0 | 4.0 | 2.3 |
| 4-Methyl-2-pentanone (MiBK) | <SRL | U | 1.0 | 3.6 | <SRL | U | 1.0 | 3.6 | 2.0 |
| trans-1,3-Dichloropropene | <SRL | U | 1.0 | 4.0 | <SRL | U | 1.0 | 4.0 | 2.3 |
| 1,1,2-Trichloroethane | <SRL | U | 1.0 | 4.8 | <SRL | U | 1.0 | 4.8 | 2.7 |
| Toluene | 4.2 | | 1.0 | 3.3 | 5.1 | | 1.0 | 3.3 | 1.9 |
| 2-Hexanone (MBK) | <SRL | U | 1.0 | 3.6 | <SRL | U | 1.0 | 3.6 | 2.0 |
| Dibromochloromethane | <SRL | U | 1.0 | 7.5 | <SRL | U | 1.0 | 7.5 | 4.3 |
| 1,2-Dibromoethane | <SRL | U | 1.0 | 6.8 | <SRL | U | 1.0 | 6.8 | 3.8 |
| Tetrachloroethene (PCE) | <SRL | U | 1.0 | 6.0 | <SRL | U | 1.0 | 6.0 | 3.4 |
| Chlorobenzene | <SRL | U | 1.0 | 4.1 | <SRL | U | 1.0 | 4.1 | 2.3 |
| Ethylbenzene | 1.1 | J | 1.0 | 3.8 | 1.4 | J | 1.0 | 3.8 | 2.2 |
| m & p-Xylenes | 3.0 | J | 1.0 | 7.7 | 3.8 | J | 1.0 | 7.7 | 4.3 |
| Bromoform | <SRL | U | 1.0 | 9.1 | <SRL | U | 1.0 | 9.1 | 5.2 |
| Styrene | <SRL | U | 1.0 | 3.8 | <SRL | U | 1.0 | 3.8 | 2.1 |
| 1,1,2,2-Tetrachloroethane | <SRL | U | 1.0 | 6.1 | <SRL | U | 1.0 | 6.0 | 3.4 |
| o-Xylene | 1.1 | J | 1.0 | 3.8 | 1.6 | J | 1.0 | 3.8 | 2.2 |
| 4-Ethyltoluene | 0.4 | J | 1.0 | 4.3 | 0.7 | J | 1.0 | 4.3 | 2.5 |
| 1,3,5-Trimethylbenzene | 0.4 | J | 1.0 | 4.3 | 0.7 | J | 1.0 | 4.3 | 2.5 |
| 1,2,4-Trimethylbenzene | 1.6 | J | 1.0 | 4.3 | 2.1 | J | 1.0 | 4.3 | 2.5 |
| Benzyl Chloride (a-Chlorotoluene) | <SRL | U | 1.0 | 4.6 | <SRL | U | 1.0 | 4.6 | 2.6 |
| 1,3-Dichlorobenzene | <SRL | U | 1.0 | 5.3 | <SRL | U | 1.0 | 5.3 | 3.0 |
| 1,4-Dichlorobenzene | <SRL | U | 1.0 | 5.3 | <SRL | U | 1.0 | 5.3 | 3.0 |
| 1,2-Dichlorobenzene | <SRL | U | 1.0 | 5.3 | <SRL | U | 1.0 | 5.3 | 3.0 |
| 1,2,4-Trichlorobenzene | <SRL | U | 1.0 | 6.6 | <SRL | U | 1.0 | 6.5 | 3.7 |
| Hexachlorobutadiene | <SRL | U | 1.0 | 9.4 | <SRL | U | 1.0 | 9.4 | 5.3 |
| BFB-Surrogate Std. % Recovery | 100% | | | | 103% | | | | 70-130% |

U - Compound was analyzed for, but was not detected at or above the SRL.
J - Analyte was detected. However the analyte concentration is an estimated value, which is between the Sample Reporting Limit (SRL) and the Sample Quantitation Limit (SQL).
SQL - Sample Quantitation Limit is the Limit Of Quantitation (LOQ) x Dilution Factors.
NR - Not Reported on these analysis.

Marcus Hueppe
Laboratoy Director



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# TO-15 QC REPORT

**ANALYSIS DATE** : 07/31/2013
**ANALYST** : JJG
**INSTRUMENT ID** : GC/MS-03
**CALIBRATION STD ID** : PS071613-02

**VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15**

Continuing Calibration Verification of the 07/22/2013 Calibration

| *Compounds* | *Conc* | *Daily Conc* | *%REC** |
|---|---|---|---|
| 4-BFB (surrogate standard) | 10.00 | 10.26 | 103 |
| Chlorodifluoromethane | 10.10 | 9.80 | 97 |
| Propene | 11.00 | 9.09 | 83 |
| Dichlorodifluoromethane | 9.80 | 9.72 | 99 |
| Chloromethane | 10.10 | 9.23 | 91 |
| Dichlorotetrafluoroethane | 10.10 | 10.14 | 100 |
| Vinyl Chloride | 10.20 | 9.72 | 95 |
| Methanol | 4.90 | 4.97 | 101 |
| 1,3-Butadiene | 10.50 | 9.37 | 89 |
| Bromomethane | 10.20 | 7.55 | 74 |
| Chloroethane | 10.00 | 10.59 | 106 |
| Dichlorofluoromethane | 10.00 | 10.04 | 100 |
| Ethanol | 9.80 | 10.06 | 103 |
| Vinyl Bromide | 10.20 | 9.81 | 96 |
| Acetone | 10.80 | 9.77 | 90 |
| Trichlorofluoromethane | 10.10 | 10.21 | 101 |
| 2-Propanol (IPA) | 11.00 | 10.52 | 96 |
| Acrylonitrile | 10.50 | 10.34 | 98 |
| 1,1-Dichloroethene | 10.50 | 9.38 | 89 |
| Methylene Chloride (DCM) | 10.40 | 9.84 | 95 |
| Allyl Chloride | 11.00 | 9.75 | 89 |
| Carbon Disulfide | 10.50 | 9.63 | 92 |
| Trichlorotrifluoroethane | 10.40 | 10.11 | 97 |
| trans-1,2-Dichloroethene | 10.40 | 10.66 | 103 |
| 1,1-Dichloroethane | 10.40 | 10.01 | 96 |
| Methyl Tert Butyl Ether (MTBE) | 10.60 | 11.10 | 105 |
| Vinyl Acetate | 9.70 | 9.29 | 96 |
| 2-Butanone (MEK) | 10.60 | 10.48 | 99 |
| cis-1,2-Dichloroethene | 10.60 | 10.17 | 96 |
| Hexane | 10.70 | 10.78 | 101 |
| Chloroform | 10.60 | 10.33 | 97 |
| Ethyl Acetate | 11.00 | 10.52 | 96 |
| Tetrahydrofuran | 10.80 | 10.39 | 96 |
| 1,2-Dichloroethane | 10.40 | 10.49 | 101 |
| 1,1,1-Trichloroethane | 10.50 | 10.31 | 98 |



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**ANALYSIS DATE** : 07/31/2013
**ANALYST** : JJG
**INSTRUMENT ID** : GC/MS-03
**CALIBRATION STD ID** : PS071613-02

**VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15**

Continuing Calibration Verification of the 07/22/2013 Calibration

| *Compounds* | *Conc* | *Daily Conc* | *%REC** |
|---|---|---|---|
| Benzene | 10.50 | 9.95 | 95 |
| Carbon Tetrachloride | 10.10 | 9.99 | 99 |
| Cyclohexane | 10.50 | 10.07 | 96 |
| 1,2-Dichloropropane | 10.50 | 9.89 | 94 |
| Bromodichloromethane | 10.30 | 9.97 | 97 |
| 1,4-Dioxane | 10.30 | 9.60 | 93 |
| Trichloroethene (TCE) | 10.30 | 10.02 | 97 |
| 2,2,4-Trimethylpentane | 10.90 | 10.66 | 98 |
| Heptane | 10.70 | 10.51 | 98 |
| cis-1,3-Dichloropropene | 11.00 | 10.64 | 97 |
| 4-Methyl-2-pentanone (MiBK) | 10.30 | 10.02 | 97 |
| trans-1,3-Dichloropropene | 9.80 | 9.22 | 94 |
| 1,1,2-Trichloroethane | 10.60 | 10.65 | 100 |
| Toluene | 10.60 | 10.38 | 98 |
| 2-Hexanone (MBK) | 10.80 | 10.68 | 99 |
| Dibromochloromethane | 11.00 | 11.20 | 102 |
| 1,2-Dibromoethane | 10.40 | 10.07 | 97 |
| Tetrachloroethene (PCE) | 10.40 | 10.46 | 101 |
| Chlorobenzene | 10.60 | 10.52 | 99 |
| Ethylbenzene | 10.50 | 10.57 | 101 |
| m & p-Xylenes | 20.60 | 20.21 | 98 |
| Bromoform | 10.30 | 9.97 | 97 |
| Styrene | 10.40 | 10.61 | 102 |
| 1,1,2,2-Tetrachloroethane | 10.60 | 10.24 | 97 |
| o-Xylene | 10.60 | 10.46 | 99 |
| 4-Ethyltoluene | 10.40 | 10.68 | 103 |
| 1,3,5-Trimethylbenzene | 10.20 | 10.00 | 98 |
| 1,2,4-Trimethylbenzene | 10.20 | 10.08 | 99 |
| Benzyl Chloride (a-Chlorotoluene) | 10.00 | 9.72 | 97 |
| 1,3-Dichlorobenzene | 10.00 | 10.11 | 101 |
| 1,4-Dichlorobenzene | 10.00 | 9.61 | 96 |
| 1,2-Dichlorobenzene | 10.00 | 9.77 | 98 |
| 1,2,4-Trichlorobenzene | 9.30 | 9.36 | 101 |
| Hexachlorobutadiene | 9.80 | 9.73 | 99 |

* - %REC should be 70-130%

Marcus Hueppe
Laboratory Director



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## Quality Control/Quality Assurance Report

| | | | |
|---|---|---|---|
| **CLIENT ID** | **: Laboratory Control Spike** | **DATE ANALYZED** | **: 07/31/2013** |
| **AAC ID** | **: LCS/LCSD** | **DATE REPORTED** | **: 07/31/2013** |
| **MEDIA** | **: Air** | **UNITS** | **: ppbv** |

### TO-15 Laboratory Control Spike Recovery

| Compound | Sample Conc. | Spike Added | Spike Res | Dup Spike Res | Spike % Rec * | Spike Dup % Rec * | RPD** % |
|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 0.0 | 10.50 | 9.38 | 9.79 | 89 | 93 | 4.3 |
| Methylene Chloride (DCM) | 0.0 | 10.40 | 9.84 | 10.22 | 95 | 98 | 3.8 |
| Benzene | 0.0 | 10.50 | 9.95 | 10.12 | 95 | 96 | 1.7 |
| Trichloroethene (TCE) | 0.0 | 10.30 | 10.02 | 10.03 | 97 | 97 | 0.1 |
| Toluene | 0.0 | 10.60 | 10.38 | 10.16 | 98 | 96 | 2.1 |
| Tetrachloroethene (PCE) | 0.0 | 10.40 | 10.46 | 10.16 | 101 | 98 | 2.9 |
| Chlorobenzene | 0.0 | 10.60 | 10.52 | 10.30 | 99 | 97 | 2.1 |
| Ethylbenzene | 0.0 | 10.50 | 10.57 | 10.08 | 101 | 96 | 4.7 |
| m & p-Xylenes | 0.0 | 20.60 | 20.21 | 19.85 | 98 | 96 | 1.8 |
| o-Xylene | 0.0 | 10.60 | 10.46 | 10.18 | 99 | 96 | 2.7 |

* Must be 70-130%

** Must be < 25%

Marcus Hueppe
Laboratory Director



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## Method Blank Analysis Report

| | | | |
|---|---|---|---|
| **MATRIX** | **: AIR** | **ANALYSIS DATE** | **: 07/31/2013** |
| **UNITS** | **: ppbv** | **REPORT DATE** | **: 07/31/2013** |

**VOLATILE ORGANIC COMPOUNDS BY EPA TO-15**

| *Client ID* | Method Blank | RL |
|---|---|---|
| *AAC ID* | MB 073113 | |
| Chlorodifluoromethane | <RL | 0.5 |
| Propene | <RL | 1.0 |
| Dichlorodifluoromethane | <RL | 0.5 |
| Chloromethane | <RL | 0.5 |
| Dichlorotetrafluoroethane | <RL | 0.5 |
| Vinyl Chloride | <RL | 0.5 |
| Methanol | <RL | 5.0 |
| 1,3-Butadiene | <RL | 0.5 |
| Bromomethane | <RL | 0.5 |
| Chloroethane | <RL | 0.5 |
| Dichlorofluoromethane | <RL | 0.5 |
| Ethanol | <RL | 2.0 |
| Vinyl Bromide | <RL | 0.5 |
| Acetone | <RL | 2.0 |
| Trichlorofluoromethane | <RL | 0.5 |
| 2-Propanol (IPA) | <RL | 2.0 |
| Acrylonitrile | <RL | 1.0 |
| 1,1-Dichloroethene | <RL | 0.5 |
| Methylene Chloride (DCM) | <RL | 1.0 |
| Allyl Chloride | <RL | 0.5 |
| Carbon Disulfide | <RL | 0.5 |
| Trichlorotrifluoroethane | <RL | 0.5 |
| trans-1,2-Dichloroethene | <RL | 0.5 |
| 1,1-Dichloroethane | <RL | 0.5 |
| Methyl Tert Butyl Ether (MTBE) | <RL | 0.5 |
| Vinyl Acetate | <RL | 1.0 |
| 2-Butanone (MEK) | <RL | 1.0 |
| cis-1,2-Dichloroethene | <RL | 0.5 |
| Hexane | <RL | 0.5 |
| Chloroform | <RL | 0.5 |
| Ethyl Acetate | <RL | 0.5 |
| Tetrahydrofuran | <RL | 0.5 |
| 1,2-Dichloroethane | <RL | 0.5 |
| 1,1,1-Trichloroethane | <RL | 0.5 |
| Benzene | <RL | 0.5 |
| Carbon Tetrachloride | <RL | 0.5 |
| Cyclohexane | <RL | 0.5 |
| 1,2-Dichloropropane | <RL | 0.5 |
| Bromodichloromethane | <RL | 0.5 |
| 1,4-Dioxane | <RL | 0.5 |
| Trichloroethene (TCE) | <RL | 0.5 |
| 2,2,4-Trimethylpentane | <RL | 0.5 |
| Heptane | <RL | 0.5 |



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## Method Blank Analysis Report

| | | | |
|---|---|---|---|
| **MATRIX** | **: AIR** | **ANALYSIS DATE** | **: 07/31/2013** |
| **UNITS** | **: ppbv** | **REPORT DATE** | **: 07/31/2013** |

**VOLATILE ORGANIC COMPOUNDS BY EPA TO-15**

| *Client ID* / *AAC ID* | Method Blank MB 073113 | RL |
|---|---|---|
| cis-1,3-Dichloropropene | <RL | 0.5 |
| 4-Methyl-2-pentanone (MiBK) | <RL | 0.5 |
| trans-1,3-Dichloropropene | <RL | 0.5 |
| 1,1,2-Trichloroethane | <RL | 0.5 |
| Toluene | <RL | 0.5 |
| 2-Hexanone (MBK) | <RL | 0.5 |
| Dibromochloromethane | <RL | 0.5 |
| 1,2-Dibromoethane | <RL | 0.5 |
| Tetrachloroethene (PCE) | <RL | 0.5 |
| Chlorobenzene | <RL | 0.5 |
| Ethylbenzene | <RL | 0.5 |
| m & p-Xylenes | <RL | 1.0 |
| Bromoform | <RL | 0.5 |
| Styrene | <RL | 0.5 |
| 1,1,2,2-Tetrachloroethane | <RL | 0.5 |
| o-Xylene | <RL | 0.5 |
| 4-Ethyltoluene | <RL | 0.5 |
| 1,3,5-Trimethylbenzene | <RL | 0.5 |
| 1,2,4-Trimethylbenzene | <RL | 0.5 |
| Benzyl Chloride (a-Chlorotoluene) | <RL | 0.5 |
| 1,3-Dichlorobenzene | <RL | 0.5 |
| 1,4-Dichlorobenzene | <RL | 0.5 |
| 1,2-Dichlorobenzene | <RL | 0.5 |
| 1,2,4-Trichlorobenzene | <RL | 0.5 |
| Hexachlorobutadiene | <RL | 0.5 |
| **System Monitoring Compounds** | | |
| BFB-Surrogate Std. % Recovery | 99% | -- |

RL - Reporting Limit

Marcus Hueppe
Laboratory Director



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## Quality Control/Quality Assurance Report

| | | | |
|---|---|---|---|
| **AAC ID** | **: 130986-64986** | **DATE ANALYZED** | **: 07/31/2013** |
| **MATRIX** | **: Air** | **DATE REPORTED** | **: 07/31/2013** |
| | | **UNITS** | **: ppbv** |

### TO-15 Duplicate Analysis

| Compound | Sample Conc | Duplicate Conc | % RPD |
|---|---|---|---|
| Chlorodifluoromethane | <SRL | <SRL | 0.0 |
| Propene | <SRL | <SRL | 0.0 |
| Dichlorodifluoromethane | <SRL | <SRL | 0.0 |
| Chloromethane | <SRL | <SRL | 0.0 |
| Dichlorotetrafluoroethane | <SRL | <SRL | 0.0 |
| Vinyl Chloride | <SRL | <SRL | 0.0 |
| Methanol | <SRL | <SRL | 0.0 |
| 1,3-Butadiene | <SRL | <SRL | 0.0 |
| Bromomethane | <SRL | <SRL | 0.0 |
| Chloroethane | <SRL | <SRL | 0.0 |
| Dichlorofluoromethane | <SRL | <SRL | 0.0 |
| Ethanol | 4.73 | 4.75 | 0.4 |
| Vinyl Bromide | <SRL | <SRL | 0.0 |
| Acetone | 4.47 | 4.47 | 0.0 |
| Trichlorofluoromethane | <SRL | <SRL | 0.0 |
| 2-Propanol (IPA) | <SRL | <SRL | 0.0 |
| Acrylonitrile | <SRL | <SRL | 0.0 |
| 1,1-Dichloroethene | <SRL | <SRL | 0.0 |
| Methylene Chloride (DCM) | <SRL | <SRL | 0.0 |
| Allyl Chloride | <SRL | <SRL | 0.0 |
| Carbon Disulfide | <SRL | <SRL | 0.0 |
| Trichlorotrifluoroethane | <SRL | <SRL | 0.0 |
| trans-1,2-Dichloroethene | <SRL | <SRL | 0.0 |
| 1,1-Dichloroethane | <SRL | <SRL | 0.0 |
| Methyl Tert Butyl Ether (MTBE) | <SRL | <SRL | 0.0 |
| Vinyl Acetate | <SRL | <SRL | 0.0 |
| 2-Butanone (MEK) | <SRL | <SRL | 0.0 |
| cis-1,2-Dichloroethene | <SRL | <SRL | 0.0 |
| Hexane | <SRL | <SRL | 0.0 |
| Chloroform | <SRL | <SRL | 0.0 |
| Ethyl Acetate | <SRL | <SRL | 0.0 |
| Tetrahydrofuran | <SRL | <SRL | 0.0 |
| 1,2-Dichloroethane | <SRL | <SRL | 0.0 |
| 1,1,1-Trichloroethane | <SRL | <SRL | 0.0 |
| Benzene | <SRL | <SRL | 0.0 |
| Carbon Tetrachloride | <SRL | <SRL | 0.0 |



1534 Eastman Ave., Ste. A • Ventura, • CA 93003 www.aaclab.com • (805) 650-1642 • FAX (805) 650-1644

## Quality Control/Quality Assurance Report

| | | | |
|---|---|---|---|
| **AAC ID** | **: 130986-64986** | **DATE ANALYZED** | **: 07/31/2013** |
| **MATRIX** | **: Air** | **DATE REPORTED** | **: 07/31/2013** |
| | | **UNITS** | **: ppbv** |

### TO-15 Duplicate Analysis

| Compound | Sample Conc | Duplicate Conc | % RPD |
|---|---|---|---|
| Cyclohexane | <SRL | <SRL | 0.0 |
| 1,2-Dichloropropane | <SRL | <SRL | 0.0 |
| Bromodichloromethane | <SRL | <SRL | 0.0 |
| 1,4-Dioxane | <SRL | <SRL | 0.0 |
| Trichloroethene (TCE) | <SRL | <SRL | 0.0 |
| 2,2,4-Trimethylpentane | <SRL | <SRL | 0.0 |
| Heptane | <SRL | <SRL | 0.0 |
| cis-1,3-Dichloropropene | <SRL | <SRL | 0.0 |
| 4-Methyl-2-pentanone (MiBK) | <SRL | <SRL | 0.0 |
| trans-1,3-Dichloropropene | <SRL | <SRL | 0.0 |
| 1,1,2-Trichloroethane | <SRL | <SRL | 0.0 |
| Toluene | <SRL | <SRL | 0.0 |
| 2-Hexanone (MBK) | <SRL | <SRL | 0.0 |
| Dibromochloromethane | <SRL | <SRL | 0.0 |
| 1,2-Dibromoethane | <SRL | <SRL | 0.0 |
| Tetrachloroethene (PCE) | <SRL | <SRL | 0.0 |
| Chlorobenzene | <SRL | <SRL | 0.0 |
| Ethylbenzene | <SRL | <SRL | 0.0 |
| m & p-Xylenes | <SRL | <SRL | 0.0 |
| Bromoform | <SRL | <SRL | 0.0 |
| Styrene | <SRL | <SRL | 0.0 |
| 1,1,2,2-Tetrachloroethane | <SRL | <SRL | 0.0 |
| o-Xylene | <SRL | <SRL | 0.0 |
| 4-Ethyltoluene | <SRL | <SRL | 0.0 |
| 1,3,5-Trimethylbenzene | <SRL | <SRL | 0.0 |
| 1,2,4-Trimethylbenzene | <SRL | <SRL | 0.0 |
| Benzyl Chloride (a-Chlorotoluene) | <SRL | <SRL | 0.0 |
| 1,3-Dichlorobenzene | <SRL | <SRL | 0.0 |
| 1,4-Dichlorobenzene | <SRL | <SRL | 0.0 |
| 1,2-Dichlorobenzene | <SRL | <SRL | 0.0 |
| 1,2,4-Trichlorobenzene | <SRL | <SRL | 0.0 |
| Hexachlorobutadiene | <SRL | <SRL | 0.0 |
| **System Monitoring Compounds** | | | |
| BFB-Surrogate Std. % Recovery | 102% | 102% | 0.9 |

SRL - Sample Reporting Limit

Marcus Hueppe
Laboratory Director



1534 Eastman Ave., Ste. A • Ventura, • CA 93003 www.aaclab.com • (805) 650-1642 • FAX (805) 650-1644

# TO-15 RAW DATA

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311305.D
Acq On : 31 Jul 2013 10:44
Operator : JJG
Sample : 130986-64986 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 11:24:10 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 190674 | 10.00 ppbv | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1083357 | 10.00 ppbv | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 991462 | 10.00 ppbv | 0.00 |
| System Monitoring Compounds | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 578659 | 10.15 ppbv | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 101.50% | | |
| Target Compounds | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.836 | 51 | 8178 | 0.17 ppbv # | 94 |
| 3) Propene | 4.799 | 42 | 6144 | 0.42 ppbv | 90 |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 21394 | 0.31 ppbv | 99 |
| 5) Chloromethane | 5.306 | 52 | 2218 | 0.23 ppbv # | 1 |
| 6) Dichlorotetrafluoroethane | 5.342 | 135 | 245 | N.D. | |
| 7) VinylChloride | 0.000 | | 0 | N.D. | |
| 8) Methanol | 5.885 | 31 | 45238m | 3.91 ppbv | |
| 9) 1,3-Butadiene | 0.000 | | 0 | N.D. | |
| 10) Bromomethane | 0.000 | | 0 | N.D. d | |
| 11) Chloroethane | 0.000 | | 0 | N.D. d | |
| 12) Dichlorofluoromethane | 0.000 | | 0 | N.D. | |
| 13) Ethanol | 7.152 | 45 | 32411m | 2.54 ppbv | |
| 14) VinylBromide | 0.000 | | 0 | N.D. | |
| 15) Acetone | 8.002 | 58 | 34758m | 2.40 ppbv | |
| 16) Trichlorofluoromethane | 7.659 | 103 | 5651 | 0.14 ppbv # | 98 |
| 17) 2-Propanol(IPA) | 8.220 | 45 | 67528m | 1.45 ppbv | |
| 18) Acrylonitrile | 0.000 | | 0 | N.D. | |
| 19) 1,1-Dichloroethene | 0.000 | | 0 | N.D. | |
| 20) MethyleneChloride(DCM) | 0.000 | | 0 | N.D. d | |
| 21) AllylChloride | 0.000 | | 0 | N.D. d | |
| 22) CarbonDisulfide | 0.000 | | 0 | N.D. d | |
| 23) Trichlorotrifluoroethane | 0.000 | | 0 | N.D. d | |
| 24) trans-1,2-Dichloroethene | 0.000 | | 0 | N.D. | |
| 25) 1,1-Dichloroethane | 0.000 | | 0 | N.D. | |
| 26) MethylTertButylEther(M... | 0.000 | | 0 | N.D. | |
| 27) VinylAcetate | 10.888 | 43 | 3206 | N.D. | |
| 28) 2-Butanone(MEK) | 0.000 | | 0 | N.D. d | |
| 29) cis-1,2-Dichloroethene | 0.000 | | 0 | N.D. | |
| 30) Hexane | 11.458 | 86 | 1612 | 0.27 ppbv | 85 |
| 31) Chloroform | 12.493 | 83 | 5352 | 0.09 ppbv # | 87 |
| 32) EthylAcetate | 12.118 | 43 | 2071 | N.D. | |



7/31/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311305.D
Acq On : 31 Jul 2013 10:44
Operator : JJG
Sample : 130986-64986 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 11:24:10 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

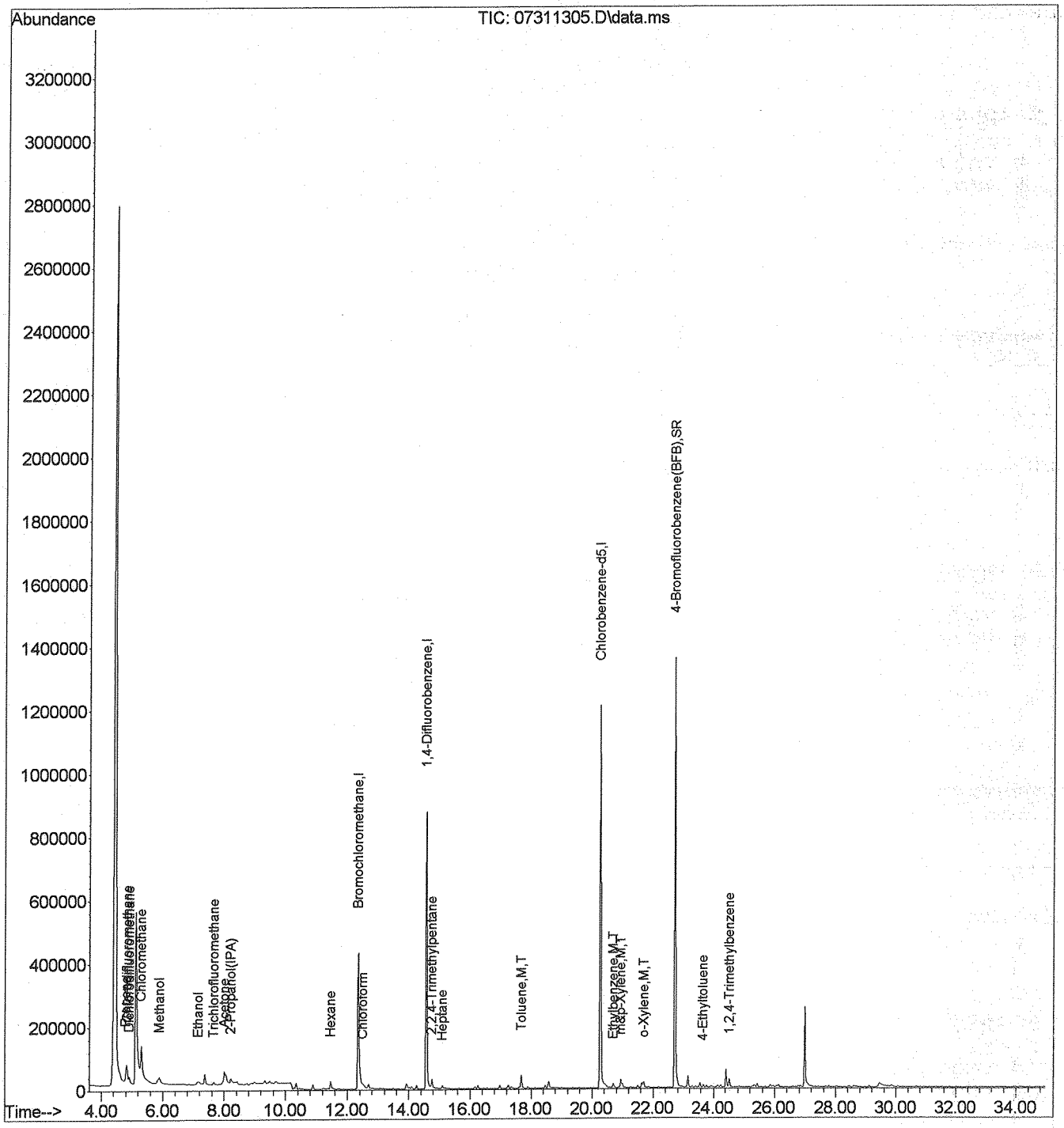
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.778 | 72 | 365 | N.D. | |
| 34) 1,2-Dichloroethane | 0.000 | | 0 | N.D. | |
| 35) 1,1,1-Trichloroethane | 0.000 | | 0 | N.D. | |
| 37) Benzene | 0.000 | | 0 | N.D. d | |
| 38) CarbonTetrachloride | 0.000 | | 0 | N.D. d | |
| 39) Cyclohexane | 0.000 | | 0 | N.D. d | |
| 40) 1,2-Dichloropropane | 15.399 | 63 | 256 | N.D. | |
| 41) Bromodichloromethane | 0.000 | | 0 | N.D. | |
| 42) 1,4-Dioxane | 0.000 | | 0 | N.D. | |
| 43) Trichloroethene(TCE) | 0.000 | | 0 | N.D. | |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 33444 | 0.18 ppbv | 98 |
| 45) Heptane | 15.096 | 71 | 2598 | 0.08 ppbv # | 91 |
| 46) cis-1,3-Dichloropropene | 0.000 | | 0 | N.D. | |
| 47) 4-Methyl-2-pentanone(M... | 0.000 | | 0 | N.D. | |
| 48) trans-1,3-Dichloropropene | 17.664 | 75 | 406 | N.D. | |
| 49) 1,1,2-Trichloroethane | 0.000 | | 0 | N.D. | |
| 50) Toluene | 17.682 | 91 | 49347 | 0.44 ppbv | 98 |
| 51) 2-Hexanone(MBK) | 18.270 | 58 | 124 | N.D. | |
| 52) Dibromochloromethane | 19.019 | 129 | 307 | N.D. | |
| 53) 1,2-Dibromoethane | 0.000 | | 0 | N.D. | |
| 54) Tetrachloroethene(PCE) | 19.019 | 166 | 336 | N.D. | |
| 56) Chlorobenzene | 20.356 | 114 | 172 | N.D. | |
| 57) Ethylbenzene | 20.695 | 91 | 14059 | 0.10 ppbv # | 92 |
| 58) m&p-Xylene | 20.945 | 106 | 16198 | 0.31 ppbv # | 88 |
| 59) Bromoform | 0.000 | | 0 | N.D. | |
| 60) Styrene | 21.658 | 104 | 1434 | N.D. | |
| 61) 1,1,2,2-Tetrachloroethane | 22.336 | 83 | 117 | N.D. | |
| 62) o-Xylene | 21.694 | 91 | 13379 | 0.12 ppbv # | 97 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 2166 | 0.05 ppbv # | 76 |
| 65) 1,3,5-Trimethylbenzene | 0.000 | | 0 | N.D. d | |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 9743 | 0.16 ppbv | 99 |
| 67) BenzylChloride(a-Chlor... | 25.171 | 91 | 439 | N.D. | |
| 68) 1,3-Dichlorobenzene | 25.046 | 146 | 961 | N.D. | |
| 69) 1,4-Dichlorobenzene | 25.278 | 146 | 2494 | N.D. | |
| 70) 1,2-Dichlorobenzene | 25.849 | 146 | 1087 | N.D. | |
| 71) 1,2,4-Trichlorobenzene | 29.451 | 180 | 2172 | N.D. | |
| 72) Hexachlorobutadiene | 30.075 | 225 | 640 | N.D. | |

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311305.D
Acq On : 31 Jul 2013 10:44
Operator : JJG
Sample : 130986-64986 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 11:24:10 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration





Page: 3

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311307.D
Acq On : 31 Jul 2013 12:21
Operator : JJG
Sample : 130986-64987 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 31 12:54:59 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 184662 | 10.00 | ppbv | | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1019083 | 10.00 | ppbv | | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 965910 | 10.00 | ppbv | | 0.00 |
| System Monitoring Compounds | | | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 558937 | 10.07 | ppbv | | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 100.70% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.836 | 51 | 7344 | 0.16 | ppbv | # | 96 |
| 3) Propene | 4.799 | 42 | 4521 | 0.32 | ppbv | # | 79 |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 21201 | 0.32 | ppbv | | 98 |
| 5) Chloromethane | 5.288 | 52 | 2099 | 0.23 | ppbv | # | 1 |
| 6) Dichlorotetrafluoroethane | 5.324 | 135 | 155 | N.D. | | | |
| 7) VinylChloride | 0.000 | | 0 | N.D. | | | |
| 8) Methanol | 5.867 | 31 | 58624m | 5.23 | ppbv | | |
| 9) 1,3-Butadiene | 0.000 | | 0 | N.D. | | | |
| 10) Bromomethane | 0.000 | | 0 | N.D. | d | | |
| 11) Chloroethane | 0.000 | | 0 | N.D. | d | | |
| 12) Dichlorofluoromethane | 0.000 | | 0 | N.D. | | | |
| 13) Ethanol | 7.134 | 45 | 27073m | 2.19 | ppbv | | |
| 14) VinylBromide | 0.000 | | 0 | N.D. | | | |
| 15) Acetone | 8.002 | 58 | 34127m | 2.43 | ppbv | | |
| 16) Trichlorofluoromethane | 7.659 | 103 | 6658 | 0.18 | ppbv | # | 96 |
| 17) 2-Propanol(IPA) | 8.238 | 45 | 28889m | 0.64 | ppbv | | |
| 18) Acrylonitrile | 0.000 | | 0 | N.D. | | | |
| 19) 1,1-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 20) MethyleneChloride(DCM) | 0.000 | | 0 | N.D. | d | | |
| 21) AllylChloride | 9.233 | 39 | 573 | N.D. | | | |
| 22) CarbonDisulfide | 0.000 | | 0 | N.D. | d | | |
| 23) Trichlorotrifluoroethane | 0.000 | | 0 | N.D. | d | | |
| 24) trans-1,2-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 25) 1,1-Dichloroethane | 0.000 | | 0 | N.D. | | | |
| 26) MethylTertButylEther(M... | 0.000 | | 0 | N.D. | | | |
| 27) VinylAcetate | 10.888 | 43 | 2315 | N.D. | | | |
| 28) 2-Butanone(MEK) | 0.000 | | 0 | N.D. | d | | |
| 29) cis-1,2-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 30) Hexane | 0.000 | | 0 | N.D. | d | | |
| 31) Chloroform | 12.493 | 83 | 4319 | 0.08 | ppbv | # | 80 |
| 32) EthylAcetate | 12.100 | 43 | 2175 | N.D. | | | |

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311307.D
Acq On : 31 Jul 2013 12:21
Operator : JJG
Sample : 130986-64987 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 31 12:54:59 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

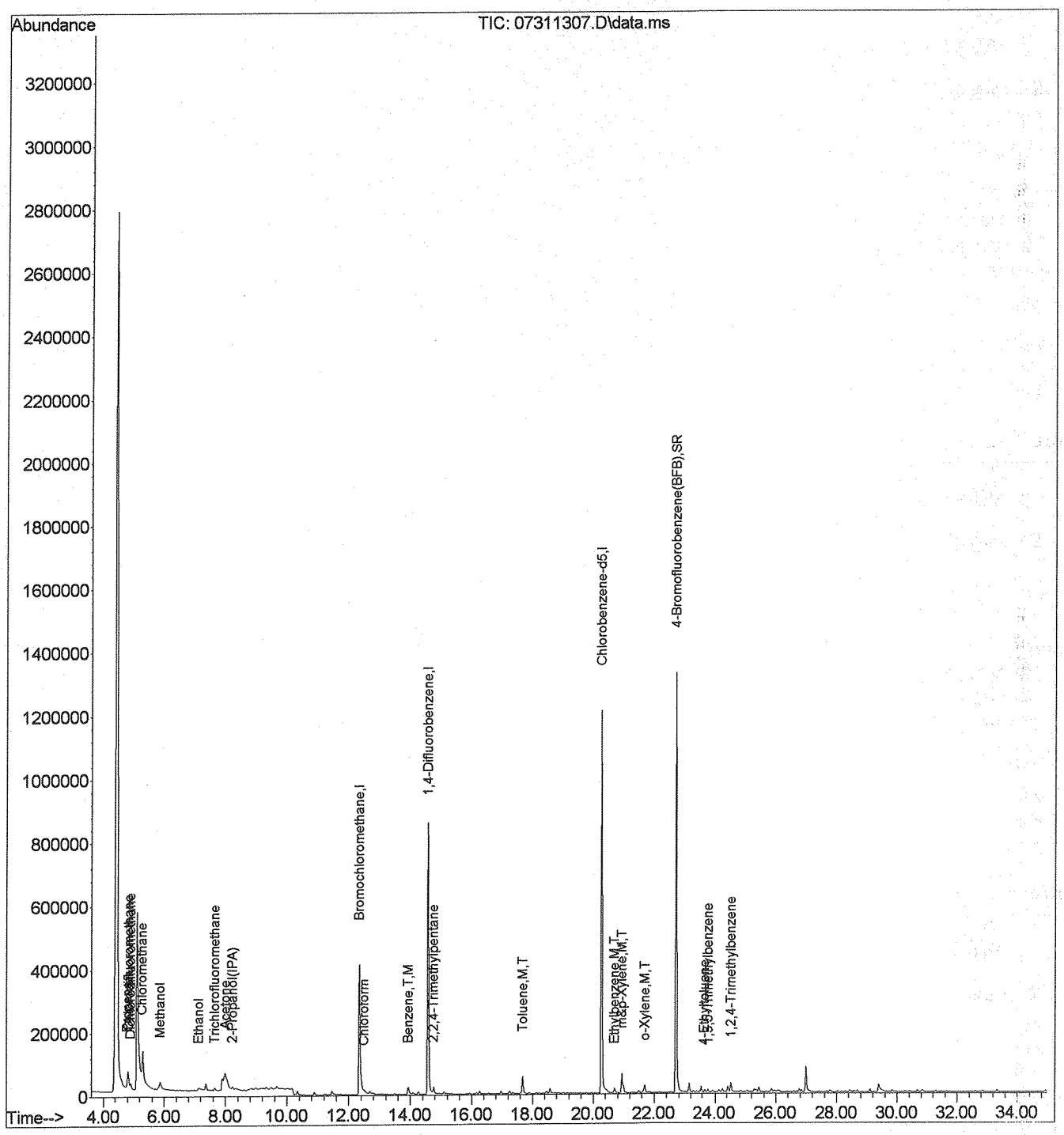
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 0.000 | | 0 | N.D. d | |
| 34) 1,2-Dichloroethane | 13.616 | 62 | 107 | N.D. | |
| 35) 1,1,1-Trichloroethane | 0.000 | | 0 | N.D. | |
| 37) Benzene | 13.937 | 78 | 23021 | 0.26 ppbv # | 92 |
| 38) CarbonTetrachloride | 0.000 | | 0 | N.D. d | |
| 39) Cyclohexane | 14.008 | 69 | 455 | N.D. | |
| 40) 1,2-Dichloropropane | 0.000 | | 0 | N.D. | |
| 41) Bromodichloromethane | 0.000 | | 0 | N.D. | |
| 42) 1,4-Dioxane | 0.000 | | 0 | N.D. | |
| 43) Trichloroethene(TCE) | 0.000 | | 0 | N.D. | |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 24253 | 0.14 ppbv | 97 |
| 45) Heptane | 0.000 | | 0 | N.D. d | |
| 46) cis-1,3-Dichloropropene | 0.000 | | 0 | N.D. | |
| 47) 4-Methyl-2-pentanone(M... | 16.576 | 58 | 275 | N.D. | |
| 48) trans-1,3-Dichloropropene | 17.682 | 75 | 282 | N.D. | |
| 49) 1,1,2-Trichloroethane | 17.842 | 97 | 301 | N.D. | |
| 50) Toluene | 17.682 | 91 | 65731 | 0.62 ppbv | 98 |
| 51) 2-Hexanone(MBK) | 0.000 | | 0 | N.D. | |
| 52) Dibromochloromethane | 0.000 | | 0 | N.D. | |
| 53) 1,2-Dibromoethane | 0.000 | | 0 | N.D. | |
| 54) Tetrachloroethene(PCE) | 0.000 | | 0 | N.D. | |
| 56) Chlorobenzene | 20.339 | 114 | 134 | N.D. | |
| 57) Ethylbenzene | 20.695 | 91 | 16505 | 0.12 ppbv | 95 |
| 58) m&p-Xylene | 20.945 | 106 | 34211 | 0.66 ppbv | 94 |
| 59) Bromoform | 0.000 | | 0 | N.D. | |
| 60) Styrene | 21.694 | 104 | 1259 | N.D. | |
| 61) 1,1,2,2-Tetrachloroethane | 0.000 | | 0 | N.D. | |
| 62) o-Xylene | 21.694 | 91 | 21279 | 0.20 ppbv | 97 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 2367 | 0.06 ppbv # | 95 |
| 65) 1,3,5-Trimethylbenzene | 23.780 | 120 | 3689 | 0.06 ppbv # | 97 |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 10888 | 0.19 ppbv # | 91 |
| 67) BenzylChloride(a-Chlor... | 25.100 | 91 | 384 | N.D. | |
| 68) 1,3-Dichlorobenzene | 25.046 | 146 | 405 | N.D. | |
| 69) 1,4-Dichlorobenzene | 25.278 | 146 | 2147 | N.D. | |
| 70) 1,2-Dichlorobenzene | 25.849 | 146 | 659 | N.D. | |
| 71) 1,2,4-Trichlorobenzene | 29.451 | 180 | 1038 | N.D. | |
| 72) Hexachlorobutadiene | 30.075 | 225 | 139 | N.D. | |

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311307.D
Acq On : 31 Jul 2013 12:21
Operator : JJG
Sample : 130986-64987 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 31 12:54:59 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration






7/31/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311308.D
Acq On : 31 Jul 2013 13:10
Operator : JJG
Sample : 130986-64988 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 31 14:04:00 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 188358 | 10.00 | ppbv | | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1059057 | 10.00 | ppbv | | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 1003285 | 10.00 | ppbv | | 0.00 |
| System Monitoring Compounds | | | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 575820 | 9.99 | ppbv | | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 99.90% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.817 | 51 | 7690 | 0.16 | ppbv | # | 94 |
| 3) Propene | 4.781 | 42 | 8335 | 0.57 | ppbv | | 92 |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 22140 | 0.33 | ppbv | | 99 |
| 5) Chloromethane | 5.288 | 52 | 2321 | 0.25 | ppbv | # | 12 |
| 6) Dichlorotetrafluoroethane | 5.324 | 135 | 431 | N.D. | | | |
| 7) VinylChloride | 0.000 | | 0 | N.D. | | | |
| 8) Methanol | 5.885 | 31 | 61379m | 5.37 | ppbv | | |
| 9) 1,3-Butadiene | 0.000 | | 0 | N.D. | | | |
| 10) Bromomethane | 0.000 | | 0 | N.D. | d | | |
| 11) Chloroethane | 0.000 | | 0 | N.D. | d | | |
| 12) Dichlorofluoromethane | 0.000 | | 0 | N.D. | | | |
| 13) Ethanol | 7.134 | 45 | 31311m | 2.48 | ppbv | | |
| 14) VinylBromide | 0.000 | | 0 | N.D. | | | |
| 15) Acetone | 8.039 | 58 | 51314m | 3.59 | ppbv | | |
| 16) Trichlorofluoromethane | 7.659 | 103 | 7777 | 0.20 | ppbv | | 94 |
| 17) 2-Propanol(IPA) | 8.220 | 45 | 50922m | 1.11 | ppbv | | |
| 18) Acrylonitrile | 0.000 | | 0 | N.D. | | | |
| 19) 1,1-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 20) MethyleneChloride(DCM) | 0.000 | | 0 | N.D. | d | | |
| 21) AllylChloride | 9.251 | 39 | 848 | N.D. | | | |
| 22) CarbonDisulfide | 0.000 | | 0 | N.D. | d | | |
| 23) Trichlorotrifluoroethane | 0.000 | | 0 | N.D. | d | | |
| 24) trans-1,2-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 25) 1,1-Dichloroethane | 0.000 | | 0 | N.D. | | | |
| 26) MethylTertButylEther(M... | 0.000 | | 0 | N.D. | | | |
| 27) VinylAcetate | 10.888 | 43 | 3159 | N.D. | | | |
| 28) 2-Butanone(MEK) | 11.476 | 72 | 6796 | 0.51 | ppbv | # | 49 |
| 29) cis-1,2-Dichloroethene | 11.904 | 96 | 269 | N.D. | | | |
| 30) Hexane | 11.458 | 86 | 1164 | 0.20 | ppbv | | 99 |
| 31) Chloroform | 12.493 | 83 | 4770 | 0.08 | ppbv | # | 90 |
| 32) EthylAcetate | 0.000 | | 0 | N.D. | d | | |



7/31/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311308.D
Acq On : 31 Jul 2013 13:10
Operator : JJG
Sample : 130986-64988 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 31 14:04:00 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.742 | 72 | 2917 | 0.22 ppbv | 91 |
| 34) 1,2-Dichloroethane | 13.598 | 62 | 252 | N.D. | |
| 35) 1,1,1-Trichloroethane | 13.313 | 97 | 242 | N.D. | |
| 37) Benzene | 13.937 | 78 | 30622 | 0.33 ppbv | 99 |
| 38) CarbonTetrachloride | 0.000 | | 0 | N.D. d | |
| 39) Cyclohexane | 14.008 | 69 | 567 | N.D. | |
| 40) 1,2-Dichloropropane | 15.310 | 63 | 506 | N.D. | |
| 41) Bromodichloromethane | 0.000 | | 0 | N.D. | |
| 42) 1,4-Dioxane | 0.000 | | 0 | N.D. | |
| 43) Trichloroethene(TCE) | 15.292 | 130 | 129 | N.D. | |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 29163 | 0.16 ppbv | 95 |
| 45) Heptane | 15.096 | 71 | 2372 | 0.08 ppbv # | 84 |
| 46) cis-1,3-Dichloropropene | 0.000 | | 0 | N.D. | |
| 47) 4-Methyl-2-pentanone(M... | 16.558 | 58 | 798 | N.D. | |
| 48) trans-1,3-Dichloropropene | 17.682 | 75 | 382 | N.D. | |
| 49) 1,1,2-Trichloroethane | 17.842 | 97 | 551 | N.D. | |
| 50) Toluene | 17.682 | 91 | 69030 | 0.63 ppbv | 99 |
| 51) 2-Hexanone(MBK) | 0.000 | | 0 | N.D. | |
| 52) Dibromochloromethane | 0.000 | | 0 | N.D. | |
| 53) 1,2-Dibromoethane | 0.000 | | 0 | N.D. | |
| 54) Tetrachloroethene(PCE) | 19.019 | 166 | 255 | N.D. | |
| 56) Chlorobenzene | 20.356 | 114 | 121 | N.D. | |
| 57) Ethylbenzene | 20.695 | 91 | 20435 | 0.14 ppbv # | 93 |
| 58) m&p-Xylene | 20.945 | 106 | 20787 | 0.39 ppbv | 96 |
| 59) Bromoform | 0.000 | | 0 | N.D. | |
| 60) Styrene | 21.658 | 104 | 1644 | N.D. | |
| 61) 1,1,2,2-Tetrachloroethane | 0.000 | | 0 | N.D. | |
| 62) o-Xylene | 21.694 | 91 | 15939 | 0.14 ppbv | 96 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 2322 | 0.05 ppbv # | 66 |
| 65) 1,3,5-Trimethylbenzene | 23.780 | 120 | 3079 | 0.05 ppbv # | 97 |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 10881 | 0.18 ppbv | 92 |
| 67) BenzylChloride(a-Chlor... | 25.171 | 91 | 279 | N.D. | |
| 68) 1,3-Dichlorobenzene | 25.046 | 146 | 384 | N.D. | |
| 69) 1,4-Dichlorobenzene | 25.278 | 146 | 2650 | N.D. | |
| 70) 1,2-Dichlorobenzene | 25.831 | 146 | 790 | N.D. | |
| 71) 1,2,4-Trichlorobenzene | 29.451 | 180 | 663 | N.D. | |
| 72) Hexachlorobutadiene | 30.075 | 225 | 231 | N.D. | |

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

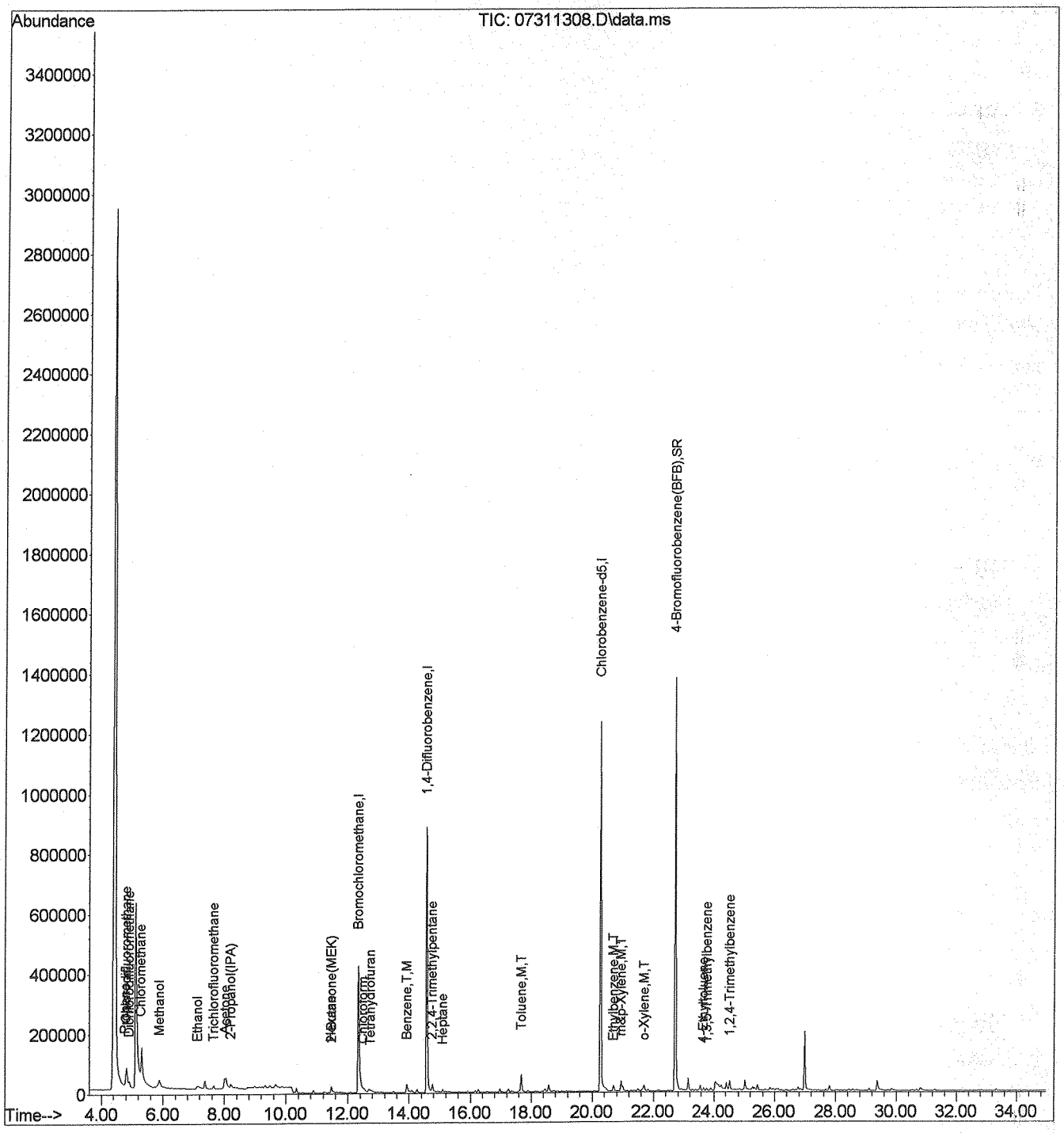


07/31/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311308.D
Acq On : 31 Jul 2013 13:10
Operator : JJG
Sample : 130986-64988 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 31 14:04:00 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration






07/31/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311309.D
Acq On : 31 Jul 2013 14:01
Operator : JJG
Sample : 130986-64989 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 31 14:35:40 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 186253 | 10.00 | ppbv | | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1033983 | 10.00 | ppbv | | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 969547 | 10.00 | ppbv | | 0.00 |
| System Monitoring Compounds | | | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 571742 | 10.26 | ppbv | | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 102.60% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.817 | 51 | 7631 | 0.16 | ppbv | # | 99 |
| 3) Propene | 4.781 | 42 | 8854 | 0.61 | ppbv | | 93 |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 21697 | 0.32 | ppbv | | 98 |
| 5) Chloromethane | 5.288 | 52 | 2697 | 0.29 | ppbv | # | 41 |
| 6) Dichlorotetrafluoroethane | 5.324 | 135 | 163 | N.D. | | | |
| 7) VinylChloride | 0.000 | | 0 | N.D. | | | |
| 8) Methanol | 5.867 | 31 | 157456m | 13.93 | ppbv | | |
| 9) 1,3-Butadiene | 0.000 | | 0 | N.D. | | | |
| 10) Bromomethane | 0.000 | | 0 | N.D. | | d | |
| 11) Chloroethane | 0.000 | | 0 | N.D. | | d | |
| 12) Dichlorofluoromethane | 0.000 | | 0 | N.D. | | | |
| 13) Ethanol | 7.079 | 45 | 75016m | 6.01 | ppbv | | |
| 14) VinylBromide | 0.000 | | 0 | N.D. | | | |
| 15) Acetone | 7.984 | 58 | 73209m | 5.18 | ppbv | | |
| 16) Trichlorofluoromethane | 7.658 | 103 | 8908 | 0.23 | ppbv | # | 93 |
| 17) 2-Propanol(IPA) | 8.201 | 45 | 62571m | 1.38 | ppbv | | |
| 18) Acrylonitrile | 0.000 | | 0 | N.D. | | | |
| 19) 1,1-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 20) MethyleneChloride(DCM) | 0.000 | | 0 | N.D. | | d | |
| 21) AllylChloride | 9.215 | 39 | 899 | N.D. | | | |
| 22) CarbonDisulfide | 0.000 | | 0 | N.D. | | d | |
| 23) Trichlorotrifluoroethane | 0.000 | | 0 | N.D. | | d | |
| 24) trans-1,2-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 25) 1,1-Dichloroethane | 0.000 | | 0 | N.D. | | | |
| 26) MethylTertButylEther(M... | 0.000 | | 0 | N.D. | | | |
| 27) VinylAcetate | 10.888 | 43 | 3139 | N.D. | | | |
| 28) 2-Butanone(MEK) | 11.440 | 72 | 14114 | 1.08 | ppbv | # | 73 |
| 29) cis-1,2-Dichloroethene | 0.000 | | 0 | N.D. | | | |
| 30) Hexane | 11.458 | 86 | 1333 | 0.23 | ppbv | | 88 |
| 31) Chloroform | 12.493 | 83 | 4443 | 0.08 | ppbv | # | 91 |
| 32) EthylAcetate | 12.065 | 43 | 8489 | 0.11 | ppbv | # | 95 |

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311309.D
Acq On : 31 Jul 2013 14:01
Operator : JJG
Sample : 130986-64989 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 31 14:35:40 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

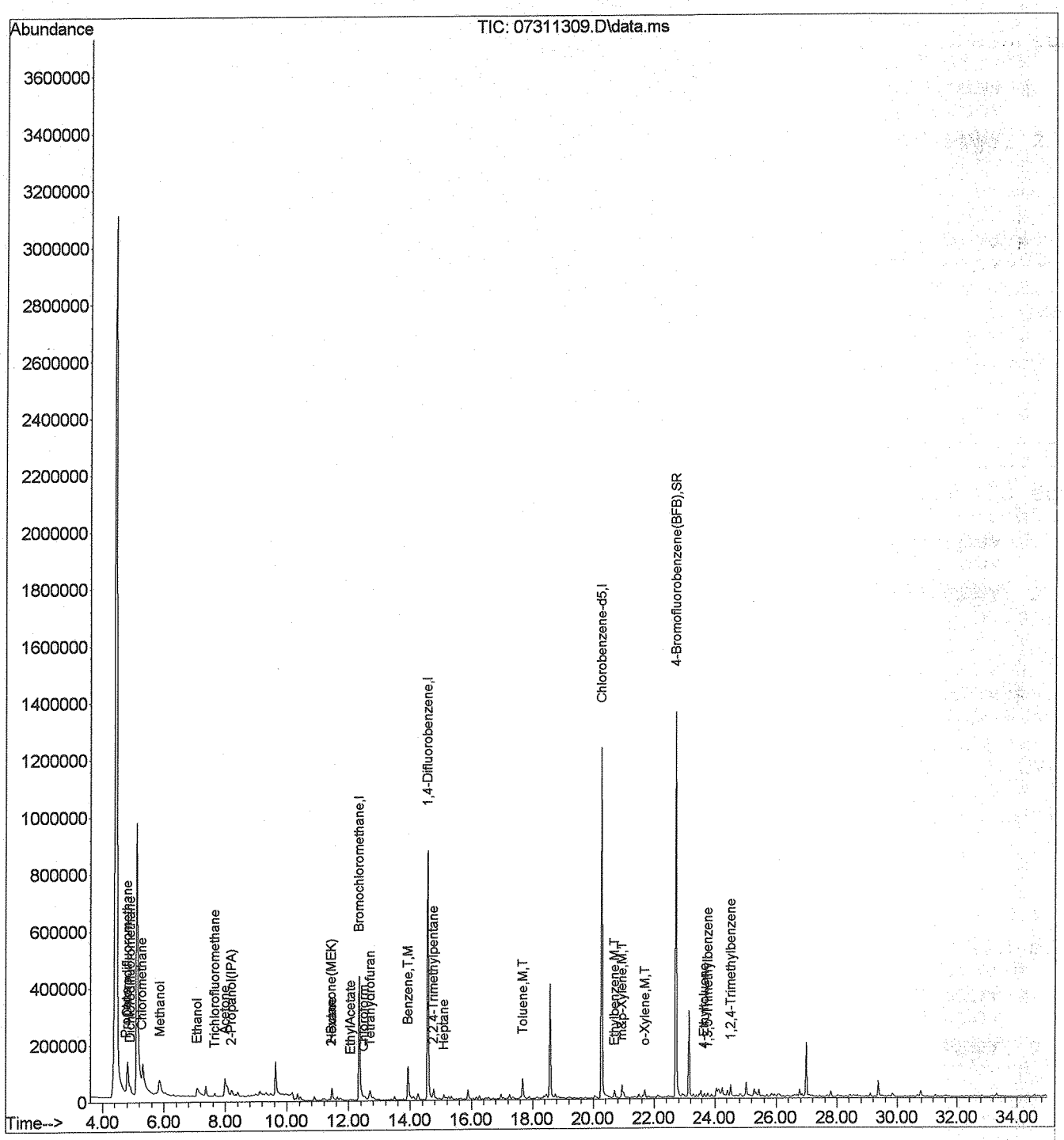
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.707 | 72 | 9698 | 0.73 ppbv | 93 |
| 34) 1,2-Dichloroethane | 0.000 | | 0 | N.D. | |
| 35) 1,1,1-Trichloroethane | 13.313 | 97 | 124 | N.D. | |
| 37) Benzene | 13.937 | 78 | 115755 | 1.28 ppbv | 98 |
| 38) CarbonTetrachloride | 0.000 | | 0 | N.D. d | |
| 39) Cyclohexane | 0.000 | | 0 | N.D. d | |
| 40) 1,2-Dichloropropane | 15.346 | 63 | 413 | N.D. | |
| 41) Bromodichloromethane | 0.000 | | 0 | N.D. | |
| 42) 1,4-Dioxane | 0.000 | | 0 | N.D. | |
| 43) Trichloroethene(TCE) | 0.000 | | 0 | N.D. | |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 38540 | 0.22 ppbv | 96 |
| 45) Heptane | 15.096 | 71 | 3802 | 0.13 ppbv # | 69 |
| 46) cis-1,3-Dichloropropene | 16.701 | 75 | 157 | N.D. | |
| 47) 4-Methyl-2-pentanone(M... | 0.000 | | 0 | N.D. d | |
| 48) trans-1,3-Dichloropropene | 17.664 | 75 | 1012 | N.D. | |
| 49) 1,1,2-Trichloroethane | 0.000 | | 0 | N.D. d | |
| 50) Toluene | 17.682 | 91 | 82189m | 0.77 ppbv | |
| 51) 2-Hexanone(MBK) | 18.217 | 58 | 1059 | N.D. | |
| 52) Dibromochloromethane | 0.000 | | 0 | N.D. | |
| 53) 1,2-Dibromoethane | 0.000 | | 0 | N.D. | |
| 54) Tetrachloroethene(PCE) | 19.019 | 166 | 117 | N.D. | |
| 56) Chlorobenzene | 20.339 | 114 | 227 | N.D. | |
| 57) Ethylbenzene | 20.695 | 91 | 24574 | 0.18 ppbv # | 95 |
| 58) m&p-Xylene | 20.945 | 106 | 25378 | 0.49 ppbv | 97 |
| 59) Bromoform | 0.000 | | 0 | N.D. | |
| 60) Styrene | 21.676 | 104 | 1439 | N.D. | |
| 61) 1,1,2,2-Tetrachloroethane | 0.000 | | 0 | N.D. | |
| 62) o-Xylene | 21.694 | 91 | 22706 | 0.21 ppbv | 99 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 3201 | 0.08 ppbv # | 92 |
| 65) 1,3,5-Trimethylbenzene | 23.780 | 120 | 4683 | 0.08 ppbv # | 96 |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 14129 | 0.24 ppbv | 96 |
| 67) BenzylChloride(a-Chlor... | 25.100 | 91 | 587 | N.D. | |
| 68) 1,3-Dichlorobenzene | 25.046 | 146 | 700 | N.D. | |
| 69) 1,4-Dichlorobenzene | 25.278 | 146 | 3393 | N.D. | |
| 70) 1,2-Dichlorobenzene | 25.831 | 146 | 855 | N.D. | |
| 71) 1,2,4-Trichlorobenzene | 29.451 | 180 | 763 | N.D. | |
| 72) Hexachlorobutadiene | 30.057 | 225 | 108 | N.D. | |

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311309.D
Acq On : 31 Jul 2013 14:01
Operator : JJG
Sample : 130986-64989 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 31 14:35:40 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration






07/31/13

# TO-15 RAW QC & ICAL SUMMARY

# MS #3 Instrument Logbook

Sequence Name: C:\msdchem\1\sequence\2013\073113.S
Comment: GCMS-03
Operator: JJG
Data Path: C:\MSDCHEM\1\MS03\2013\073113\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

| Line | | | Sample Name/Misc Info |
|---|---|---|---|
| 1) | Sample | 1 | 07311301 TO15-5MS TO15 BFB 073113 |
| 2) | Sample | 1 | 07311302 TO15-5MS TO15 CCV 073113 |
| 3) | Sample | 1 | 07311303 TO15-5MS TO15 LCSD 073113 |
| 4) | Sample | 1 | 07311304 TO15-5MS TO15 MB 073113 |
| 5) | Sample | 9 | 07311305 TO15-5MS 130986-64986 x1 |
| 6) | Sample | 9 | 07311306 TO15-5MS 130986-64986 x1 dp |
| 7) | Sample | 10 | 07311307 TO15-5MS 130986-64987 x1 |
| 8) | Sample | 11 | 07311308 TO15-5MS 130986-64988 x1 |
| 9) | Sample | 12 | 07311309 TO15-5MS 130986-64989 x1 |
| 10) | Sample | 13 | 07311310 TO15-5MS Flow Check#073113-01 |
| 11) | Sample | 15 | 07311311 TO15-5MS 130987-64990 x100 |
| 12) | Sample | 16 | 07311312 TO15-5MS 130987-64990 x20 |
| 13) | Sample | 16 | 07311313 TO15-5MS 130987-64990 x50 |
| 14) | Sample | 16 | 07311314 TO15-5MS 130987-64990 x25 |
| 15) | Sample | 15 | 07311315 TO15-5MS Lab Air 073113 x1 |
| 16) | Sample | 16 | 07311316 TO15-5MS Lab Air 073113 x1 |
| 17) | Sample | 16 | 07311317 TO15-5MS Lab Air 073113 x1 |
| 18) | Sample | 16 | 07311318 TO15-5MS Lab Air 073113 x1 |

07/31/13

**Comments:** _____

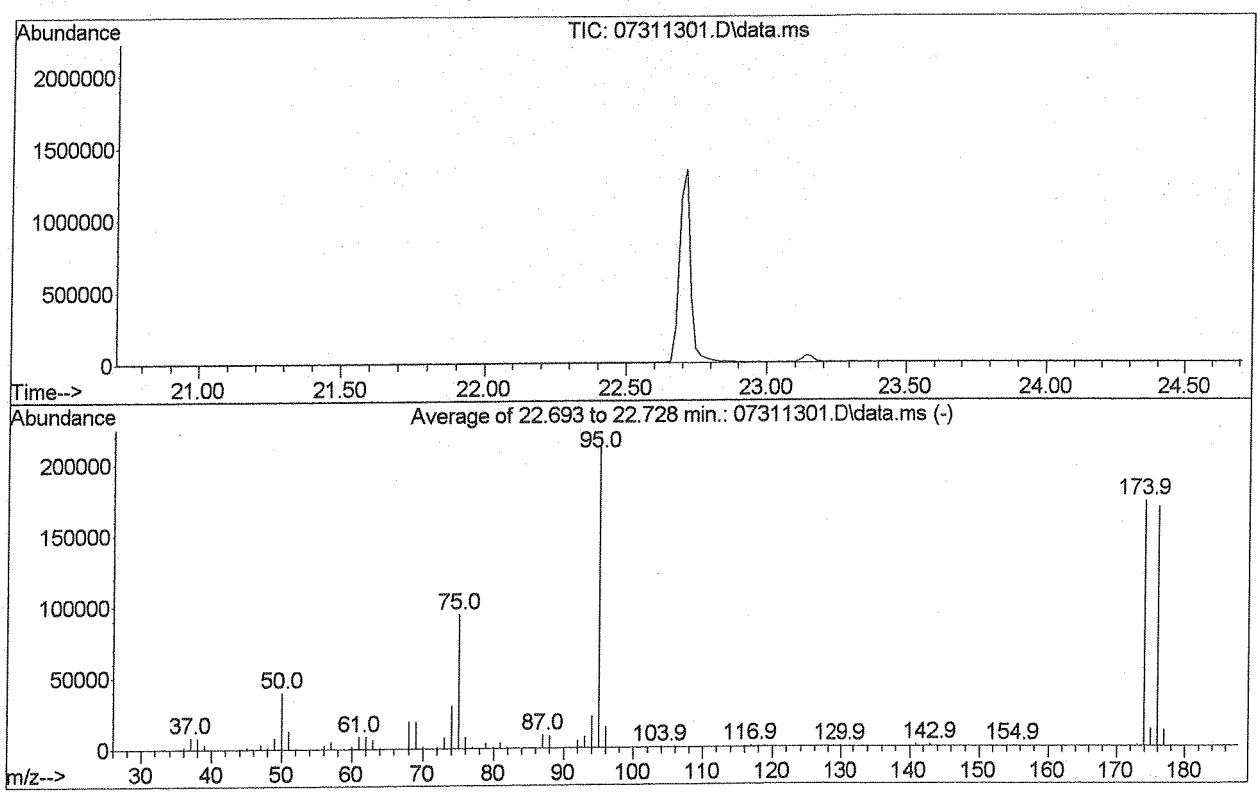
**Analyst:** _____ **Date:** 07/31/13

Page: 22 of _____

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311301.D
Acq On : 31 Jul 2013 7:33 am
Operator : JJG
Sample : TO15 BFB 073113
Misc : IS/Surr: PS082212-01 + 500mL cc#000296
ALS Vial : 1 Sample Multiplier: 1

Integration File: PAMS.P

Method : C:\msdchem\1\METHODS\2013\072213.M
Title : TO-15/TO-14
Last Update : Tue Jul 23 12:50:49 2013




AutoFind: Scans 1064, 1065, 1066; Background Corrected with Scan 1059

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 18.5 | 39750 | PASS |
| 75 | 95 | 30 | 60 | 44.0 | 94411 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 214653 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 14448 | PASS |
| 173 | 174 | 0.00 | 2 | 0.7 | 1199 | PASS |
| 174 | 95 | 50 | 100 | 80.5 | 172835 | PASS |
| 175 | 174 | 5 | 9 | 7.2 | 12387 | PASS |
| 176 | 174 | 95 | 101 | 97.3 | 168235 | PASS |
| 177 | 176 | 5 | 9 | 6.7 | 11199 | PASS |

8/13/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311302.D
Acq On : 31 Jul 2013 8:21
Operator : JJG
Sample : TO15 CCV 073113
Misc : IS/Surr: PS082212-01 + Cal: PS071613-02
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 08:56:48 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 205609 | 10.00 | ppbv | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1092665 | 10.00 | ppbv | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 1053805 | 10.00 | ppbv | 0.00 |
| System Monitoring Compounds | | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 621197 | 10.26 | ppbv | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 102.60% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.817 | 51 | 516036m | 9.80 | ppbv | |
| 3) Propene | 4.781 | 42 | 144787m | 9.09 | ppbv | |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 720146 | 9.72 | ppbv | 99 |
| 5) Chloromethane | 5.288 | 52 | 94358m | 9.23 | ppbv | |
| 6) Dichlorotetrafluoroethane | 5.342 | 135 | 446406 | 10.14 | ppbv | 91 |
| 7) VinylChloride | 5.668 | 62 | 304295m | 9.72 | ppbv | |
| 8) Methanol | 5.867 | 31 | 61991m | 4.97 | ppbv | |
| 9) 1,3-Butadiene | 5.867 | 54 | 195557m | 9.37 | ppbv | |
| 10) Bromomethane | 6.446 | 96 | 158087m | 7.55 | ppbv | |
| 11) Chloroethane | 6.736 | 66 | 48503 | 10.59 | ppbv | 97 |
| 12) Dichlorofluoromethane | 7.007 | 67 | 608068m | 10.04 | ppbv | |
| 13) Ethanol | 7.043 | 45 | 138617m | 10.06 | ppbv | |
| 14) VinylBromide | 7.260 | 108 | 214225m | 9.81 | ppbv | |
| 15) Acetone | 7.966 | 58 | 152572m | 9.77 | ppbv | |
| 16) Trichlorofluoromethane | 7.677 | 103 | 431274 | 10.21 | ppbv | 97 |
| 17) 2-Propanol(IPA) | 8.165 | 45 | 527682m | 10.52 | ppbv | |
| 18) Acrylonitrile | 8.961 | 52 | 237650m | 10.34 | ppbv | |
| 19) 1,1-Dichloroethene | 8.726 | 96 | 230285 | 9.38 | ppbv | 98 |
| 20) MethyleneChloride(DCM) | 9.323 | 84 | 248969m | 9.84 | ppbv | |
| 21) AllylChloride | 9.305 | 39 | 251744m | 9.75 | ppbv | |
| 22) CarbonDisulfide | 9.486 | 76 | 820366m | 9.63 | ppbv | |
| 23) Trichlorotrifluoroethane | 8.998 | 103 | 353352 | 10.11 | ppbv | 97 |
| 24) trans-1,2-Dichloroethene | 10.424 | 96 | 296448m | 10.66 | ppbv | |
| 25) 1,1-Dichloroethane | 10.906 | 63 | 634290 | 10.01 | ppbv | 100 |
| 26) MethylTertButylEther(M... | 10.442 | 73 | 762598 | 11.10 | ppbv | 99 |
| 27) VinylAcetate | 10.888 | 43 | 885334m | 9.29 | ppbv | |
| 28) 2-Butanone(MEK) | 11.405 | 72 | 151171 | 10.48 | ppbv | 98 |
| 29) cis-1,2-Dichloroethene | 11.886 | 96 | 310912 | 10.17 | ppbv | 98 |
| 30) Hexane | 11.458 | 86 | 68402 | 10.78 | ppbv | 98 |
| 31) Chloroform | 12.493 | 83 | 644214 | 10.33 | ppbv | 100 |
| 32) EthylAcetate | 12.011 | 43 | 862407 | 10.52 | ppbv | 99 |

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311302.D
Acq On : 31 Jul 2013 8:21
Operator : JJG
Sample : TO15 CCV 073113
Misc : IS/Surr: PS082212-01 + Cal: PS071613-02
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 08:56:48 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

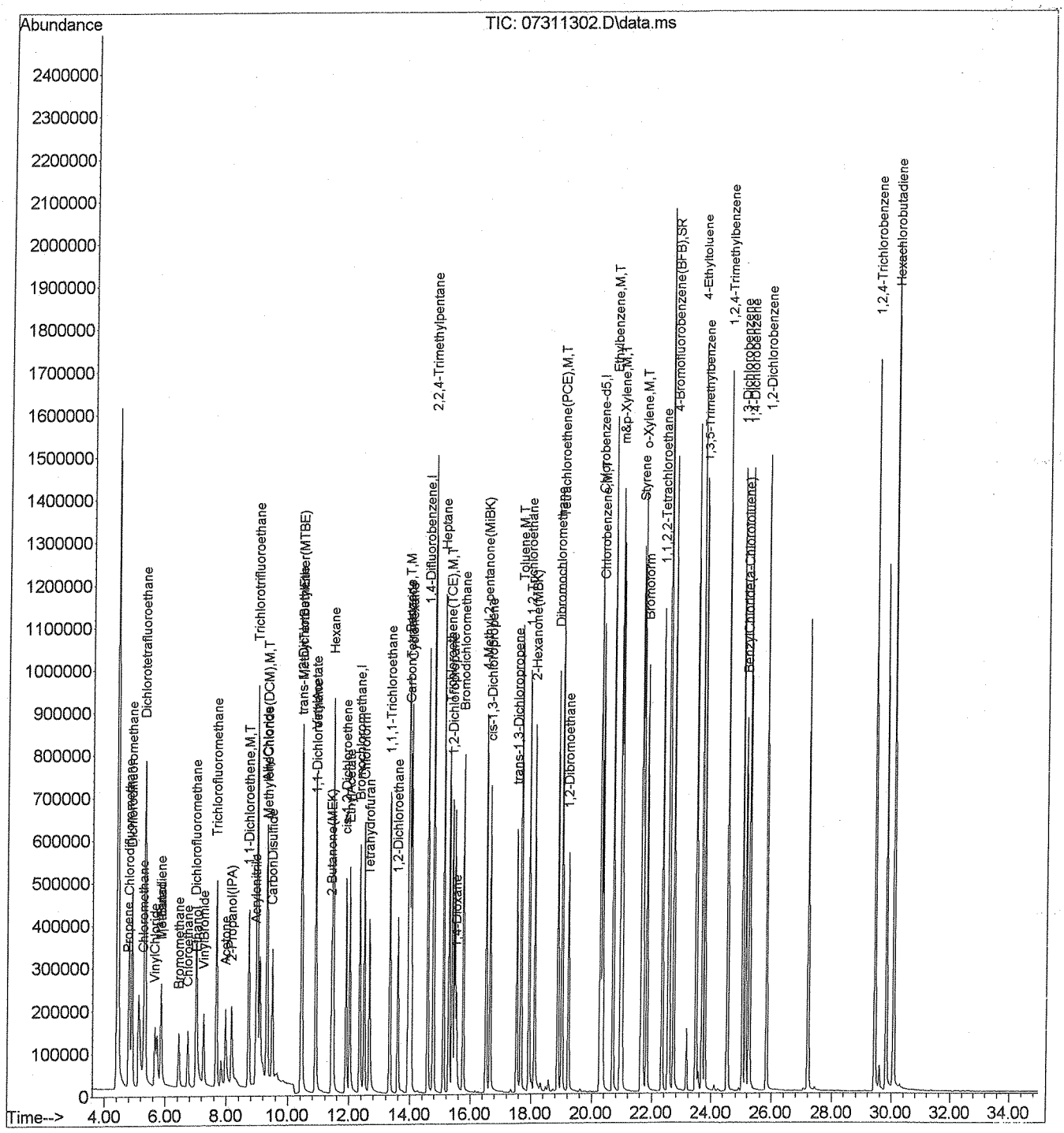
| Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.653 | 72 | 151720 | 10.39 | ppbv | | 98 |
| 34) 1,2-Dichloroethane | 13.580 | 62 | 478127 | 10.49 | ppbv | | 99 |
| 35) 1,1,1-Trichloroethane | 13.331 | 97 | 669508 | 10.31 | ppbv | | 99 |
| 37) Benzene | 13.937 | 78 | 951518 | 9.95 | ppbv | | 100 |
| 38) CarbonTetrachloride | 13.973 | 117 | 642731 | 9.99 | ppbv | | 99 |
| 39) Cyclohexane | 14.026 | 69 | 147736 | 10.07 | ppbv | | 99 |
| 40) 1,2-Dichloropropane | 15.381 | 63 | 413595 | 9.89 | ppbv | | 97 |
| 41) Bromodichloromethane | 15.756 | 85 | 459833 | 9.97 | ppbv | | 99 |
| 42) 1,4-Dioxane | 15.524 | 88 | 218371m | 9.60 | ppbv | | |
| 43) Trichloroethene(TCE) | 15.292 | 130 | 390984 | 10.02 | ppbv | | 99 |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 1963440 | 10.66 | ppbv | | 100 |
| 45) Heptane | 15.096 | 71 | 325095 | 10.51 | ppbv | | 98 |
| 46) cis-1,3-Dichloropropene | 16.647 | 75 | 573474 | 10.64 | ppbv | | 99 |
| 47) 4-Methyl-2-pentanone(M... | 16.505 | 58 | 376794 | 10.02 | ppbv | | 94 |
| 48) trans-1,3-Dichloropropene | 17.521 | 75 | 495263 | 9.22 | ppbv | | 98 |
| 49) 1,1,2-Trichloroethane | 17.931 | 97 | 430671 | 10.65 | ppbv | | 97 |
| 50) Toluene | 17.664 | 91 | 1178225 | 10.38 | ppbv | | 98 |
| 51) 2-Hexanone(MBK) | 18.110 | 58 | 499823 | 10.68 | ppbv | | 96 |
| 52) Dibromochloromethane | 18.876 | 129 | 751874 | 11.20 | ppbv | | 100 |
| 53) 1,2-Dibromoethane | 19.215 | 107 | 626217 | 10.07 | ppbv | | 99 |
| 54) Tetrachloroethene(PCE) | 19.001 | 166 | 541999 | 10.46 | ppbv | # | 92 |
| 56) Chlorobenzene | 20.339 | 114 | 294239 | 10.52 | ppbv | | 94 |
| 57) Ethylbenzene | 20.695 | 91 | 1579042 | 10.57 | ppbv | | 99 |
| 58) m&p-Xylene | 20.945 | 106 | 1137000 | 20.21 | ppbv | | 98 |
| 59) Bromoform | 21.819 | 173 | 712920 | 9.97 | ppbv | | 99 |
| 60) Styrene | 21.640 | 104 | 957509 | 10.61 | ppbv | | 98 |
| 61) 1,1,2,2-Tetrachloroethane | 22.336 | 83 | 961827 | 10.24 | ppbv | | 99 |
| 62) o-Xylene | 21.694 | 91 | 1214949 | 10.46 | ppbv | | 99 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 488848 | 10.68 | ppbv | | 99 |
| 65) 1,3,5-Trimethylbenzene | 23.780 | 120 | 650690 | 10.00 | ppbv | | 99 |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 646455 | 10.08 | ppbv | | 100 |
| 67) BenzylChloride(a-Chlor... | 25.153 | 91 | 1021873 | 9.72 | ppbv | | 99 |
| 68) 1,3-Dichlorobenzene | 25.028 | 146 | 946470 | 10.11 | ppbv | | 99 |
| 69) 1,4-Dichlorobenzene | 25.260 | 146 | 906196m | 9.61 | ppbv | | |
| 70) 1,2-Dichlorobenzene | 25.831 | 146 | 959285m | 9.77 | ppbv | | |
| 71) 1,2,4-Trichlorobenzene | 29.433 | 180 | 869416m | 9.36 | ppbv | | |
| 72) Hexachlorobutadiene | 30.075 | 225 | 703416m | 9.73 | ppbv | | |

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311302.D
Acq On : 31 Jul 2013 8:21
Operator : JJG
Sample : TO15 CCV 073113
Misc : IS/Surr: PS082212-01 + Cal: PS071613-02
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 08:56:48 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311303.D
Acq On : 31 Jul 2013 9:07
Operator : JJG
Sample : TO15 LCSD 073113
Misc : IS/Surr: PS082212-01 + Cal: PS071613-02
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 11:20:04 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 203826 | 10.00 | ppbv | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1107868 | 10.00 | ppbv | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 1069313 | 10.00 | ppbv | 0.00 |
| System Monitoring Compounds | | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 608681 | 9.90 | ppbv | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 99.00% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.817 | 51 | 524294m | 10.04 | ppbv | |
| 3) Propene | 4.781 | 42 | 152776m | 9.68 | ppbv | |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 721304 | 9.82 | ppbv | 100 |
| 5) Chloromethane | 5.288 | 52 | 97235m | 9.60 | ppbv | |
| 6) Dichlorotetrafluoroethane | 5.324 | 135 | 450137m | 10.31 | ppbv | |
| 7) VinylChloride | 5.668 | 62 | 309755m | 9.98 | ppbv | |
| 8) Methanol | 5.849 | 31 | 63261m | 5.11 | ppbv | |
| 9) 1,3-Butadiene | 5.867 | 54 | 210325m | 10.17 | ppbv | |
| 10) Bromomethane | 6.446 | 96 | 173116m | 8.34 | ppbv | |
| 11) Chloroethane | 6.736 | 66 | 48979 | 10.79 | ppbv | 99 |
| 12) Dichlorofluoromethane | 7.007 | 67 | 610268m | 10.17 | ppbv | |
| 13) Ethanol | 7.043 | 45 | 132697m | 9.72 | ppbv | |
| 14) VinylBromide | 7.260 | 108 | 214895m | 9.93 | ppbv | |
| 15) Acetone | 7.966 | 58 | 149943m | 9.69 | ppbv | |
| 16) Trichlorofluoromethane | 7.677 | 103 | 429750 | 10.27 | ppbv | 98 |
| 17) 2-Propanol(IPA) | 8.147 | 45 | 521170m | 10.48 | ppbv | |
| 18) Acrylonitrile | 8.961 | 52 | 234417m | 10.29 | ppbv | |
| 19) 1,1-Dichloroethene | 8.726 | 96 | 238173m | 9.79 | ppbv | |
| 20) MethyleneChloride(DCM) | 9.323 | 84 | 256325m | 10.22 | ppbv | |
| 21) AllylChloride | 9.305 | 39 | 244775m | 9.56 | ppbv | |
| 22) CarbonDisulfide | 9.486 | 76 | 835839m | 9.89 | ppbv | |
| 23) Trichlorotrifluoroethane | 8.998 | 103 | 351308 | 10.14 | ppbv | 97 |
| 24) trans-1,2-Dichloroethene | 10.424 | 96 | 293089m | 10.63 | ppbv | |
| 25) 1,1-Dichloroethane | 10.906 | 63 | 650585 | 10.35 | ppbv | 100 |
| 26) MethylTertButylEther(M... | 10.442 | 73 | 762853 | 11.20 | ppbv | 99 |
| 27) VinylAcetate | 10.888 | 43 | 926276m | 9.80 | ppbv | |
| 28) 2-Butanone(MEK) | 11.423 | 72 | 159973 | 11.19 | ppbv # | 90 |
| 29) cis-1,2-Dichloroethene | 11.904 | 96 | 315098 | 10.40 | ppbv | 95 |
| 30) Hexane | 11.458 | 86 | 68556 | 10.90 | ppbv | 98 |
| 31) Chloroform | 12.493 | 83 | 659845 | 10.67 | ppbv | 99 |
| 32) EthylAcetate | 12.011 | 43 | 926698 | 11.40 | ppbv | 99 |



8/7/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311303.D
Acq On : 31 Jul 2013 9:07
Operator : JJG
Sample : TO15 LCSD 073113
Misc : IS/Surr: PS082212-01 + Cal: PS071613-02
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 11:20:04 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

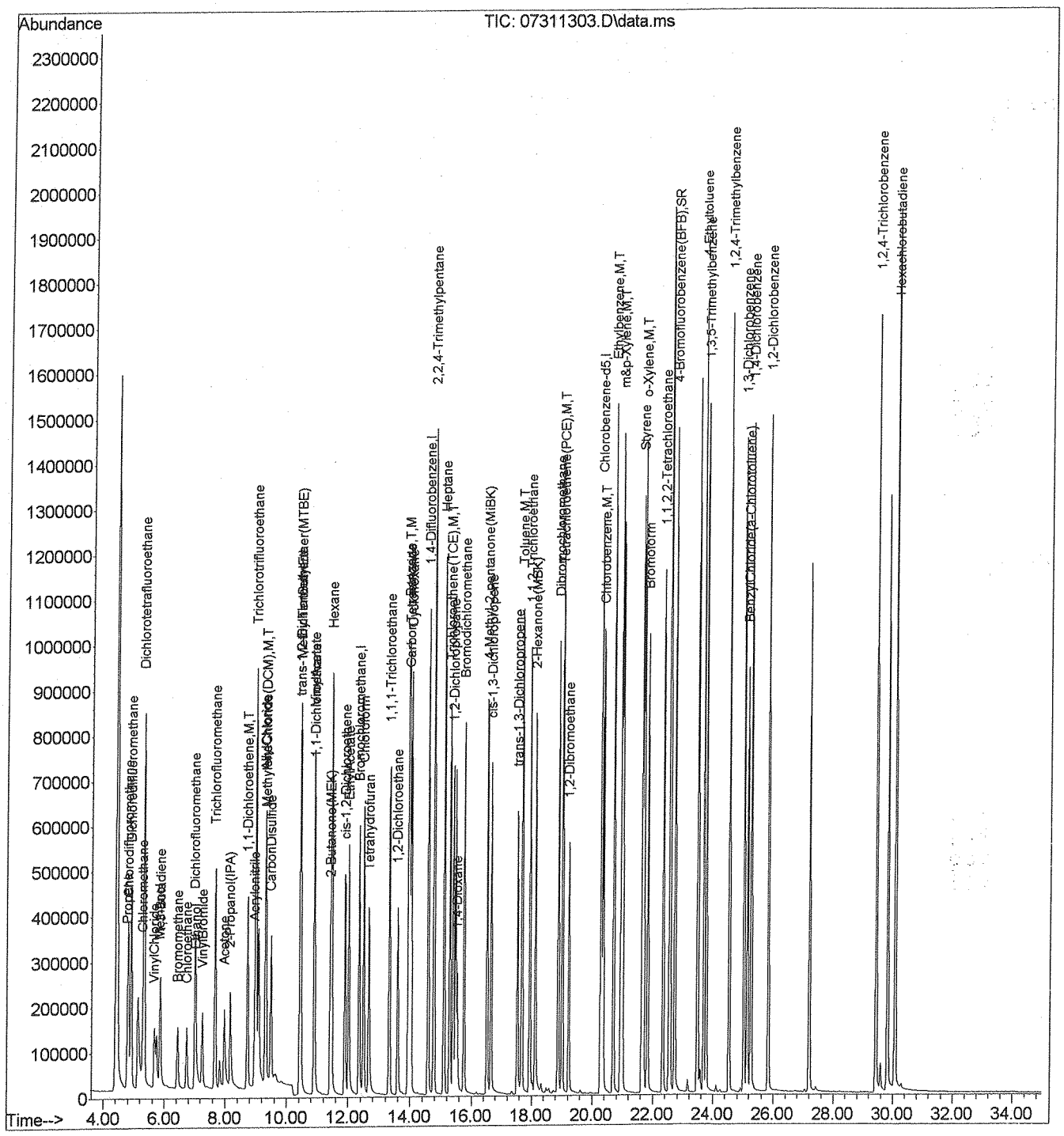
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.671 | 72 | 155572 | 10.75 | ppbv | 91 |
| 34) 1,2-Dichloroethane | 13.580 | 62 | 482204 | 10.67 | ppbv | 99 |
| 35) 1,1,1-Trichloroethane | 13.331 | 97 | 673946 | 10.47 | ppbv | 100 |
| 37) Benzene | 13.937 | 78 | 981179 | 10.12 | ppbv | 99 |
| 38) CarbonTetrachloride | 13.973 | 117 | 644992 | 9.89 | ppbv | 99 |
| 39) Cyclohexane | 14.026 | 69 | 147000 | 9.88 | ppbv | 98 |
| 40) 1,2-Dichloropropane | 15.399 | 63 | 423752 | 10.00 | ppbv | 99 |
| 41) Bromodichloromethane | 15.756 | 85 | 465426 | 9.95 | ppbv | 100 |
| 42) 1,4-Dioxane | 15.524 | 88 | 229367m | 9.95 | ppbv | |
| 43) Trichloroethene(TCE) | 15.292 | 130 | 397049 | 10.03 | ppbv | 99 |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 2022172 | 10.82 | ppbv | 99 |
| 45) Heptane | 15.096 | 71 | 343690 | 10.96 | ppbv | 99 |
| 46) cis-1,3-Dichloropropene | 16.647 | 75 | 588300 | 10.77 | ppbv | 99 |
| 47) 4-Methyl-2-pentanone(M... | 16.523 | 58 | 391363 | 10.26 | ppbv | 99 |
| 48) trans-1,3-Dichloropropene | 17.521 | 75 | 504159 | 9.25 | ppbv | 99 |
| 49) 1,1,2-Trichloroethane | 17.931 | 97 | 418903 | 10.22 | ppbv | 99 |
| 50) Toluene | 17.664 | 91 | 1168861 | 10.16 | ppbv | 99 |
| 51) 2-Hexanone(MBK) | 18.110 | 58 | 510396 | 10.75 | ppbv | 98 |
| 52) Dibromochloromethane | 18.876 | 129 | 740996 | 10.89 | ppbv | 100 |
| 53) 1,2-Dibromoethane | 19.215 | 107 | 641020 | 10.17 | ppbv | 100 |
| 54) Tetrachloroethene(PCE) | 19.019 | 166 | 534201 | 10.16 | ppbv | 99 |
| 56) Chlorobenzene | 20.356 | 114 | 292062 | 10.30 | ppbv | 99 |
| 57) Ethylbenzene | 20.695 | 91 | 1527389 | 10.08 | ppbv | 99 |
| 58) m&p-Xylene | 20.945 | 106 | 1133054 | 19.85 | ppbv | 99 |
| 59) Bromoform | 21.819 | 173 | 721254 | 9.94 | ppbv | 99 |
| 60) Styrene | 21.640 | 104 | 949327 | 10.37 | ppbv | 99 |
| 61) 1,1,2,2-Tetrachloroethane | 22.336 | 83 | 967414 | 10.15 | ppbv | 100 |
| 62) o-Xylene | 21.694 | 91 | 1200810 | 10.18 | ppbv | 99 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 479945 | 10.34 | ppbv | 97 |
| 65) 1,3,5-Trimethylbenzene | 23.780 | 120 | 661968 | 10.03 | ppbv | 100 |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 662588 | 10.18 | ppbv | 97 |
| 67) BenzylChloride(a-Chlor... | 25.153 | 91 | 1069761m | 10.02 | ppbv | |
| 68) 1,3-Dichlorobenzene | 25.028 | 146 | 968260 | 10.19 | ppbv | 99 |
| 69) 1,4-Dichlorobenzene | 25.260 | 146 | 920857m | 9.63 | ppbv | |
| 70) 1,2-Dichlorobenzene | 25.831 | 146 | 971250m | 9.75 | ppbv | |
| 71) 1,2,4-Trichlorobenzene | 29.433 | 180 | 866533m | 9.19 | ppbv | |
| 72) Hexachlorobutadiene | 30.075 | 225 | 709758m | 9.68 | ppbv | |

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311303.D
Acq On : 31 Jul 2013 9:07
Operator : JJG
Sample : TO15 LCSD 073113
Misc : IS/Surr: PS082212-01 + Cal: PS071613-02
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 11:20:04 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311304.D
Acq On : 31 Jul 2013 9:55
Operator : JJG
Sample : TO15 MB 073113
Misc : IS/Surr: PS082212-01 + 500mL cc#000296
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 11:20:55 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 197696 | 10.00 | ppbv | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1107587 | 10.00 | ppbv | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 1026419 | 10.00 | ppbv | 0.00 |
| System Monitoring Compounds | | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 582356 | 9.87 | ppbv | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 98.70% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) Chlorodifluoromethane | 0.000 | | 0 | N.D. | | |
| 3) Propene | 0.000 | | 0 | N.D. | d | |
| 4) Dichlorodifluoromethane | 0.000 | | 0 | N.D. | | |
| 5) Chloromethane | 0.000 | | 0 | N.D. | | |
| 6) Dichlorotetrafluoroethane | 0.000 | | 0 | N.D. | | |
| 7) VinylChloride | 0.000 | | 0 | N.D. | | |
| 8) Methanol | 0.000 | | 0 | N.D. | d | |
| 9) 1,3-Butadiene | 0.000 | | 0 | N.D. | | |
| 10) Bromomethane | 0.000 | | 0 | N.D. | d | |
| 11) Chloroethane | 0.000 | | 0 | N.D. | d | |
| 12) Dichlorofluoromethane | 0.000 | | 0 | N.D. | | |
| 13) Ethanol | 0.000 | | 0 | N.D. | d | |
| 14) VinylBromide | 0.000 | | 0 | N.D. | | |
| 15) Acetone | 0.000 | | 0 | N.D. | d | |
| 16) Trichlorofluoromethane | 0.000 | | 0 | N.D. | | |
| 17) 2-Propanol(IPA) | 0.000 | | 0 | N.D. | d | |
| 18) Acrylonitrile | 9.052 | 52 | 548 | N.D. | | |
| 19) 1,1-Dichloroethene | 0.000 | | 0 | N.D. | | |
| 20) MethyleneChloride(DCM) | 0.000 | | 0 | N.D. | d | |
| 21) AllylChloride | 9.342 | 39 | 467 | N.D. | | |
| 22) CarbonDisulfide | 0.000 | | 0 | N.D. | d | |
| 23) Trichlorotrifluoroethane | 0.000 | | 0 | N.D. | | |
| 24) trans-1,2-Dichloroethene | 0.000 | | 0 | N.D. | | |
| 25) 1,1-Dichloroethane | 0.000 | | 0 | N.D. | | |
| 26) MethylTertButylEther(M... | 0.000 | | 0 | N.D. | | |
| 27) VinylAcetate | 10.977 | 43 | 114 | N.D. | | |
| 28) 2-Butanone(MEK) | 11.565 | 72 | 137 | N.D. | | |
| 29) cis-1,2-Dichloroethene | 0.000 | | 0 | N.D. | | |
| 30) Hexane | 0.000 | | 0 | N.D. | | |
| 31) Chloroform | 0.000 | | 0 | N.D. | | |
| 32) EthylAcetate | 12.029 | 43 | 110 | N.D. | | |

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311304.D
Acq On : 31 Jul 2013 9:55
Operator : JJG
Sample : TO15 MB 073113
Misc : IS/Surr: PS082212-01 + 500mL cc#000296
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 11:20:55 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

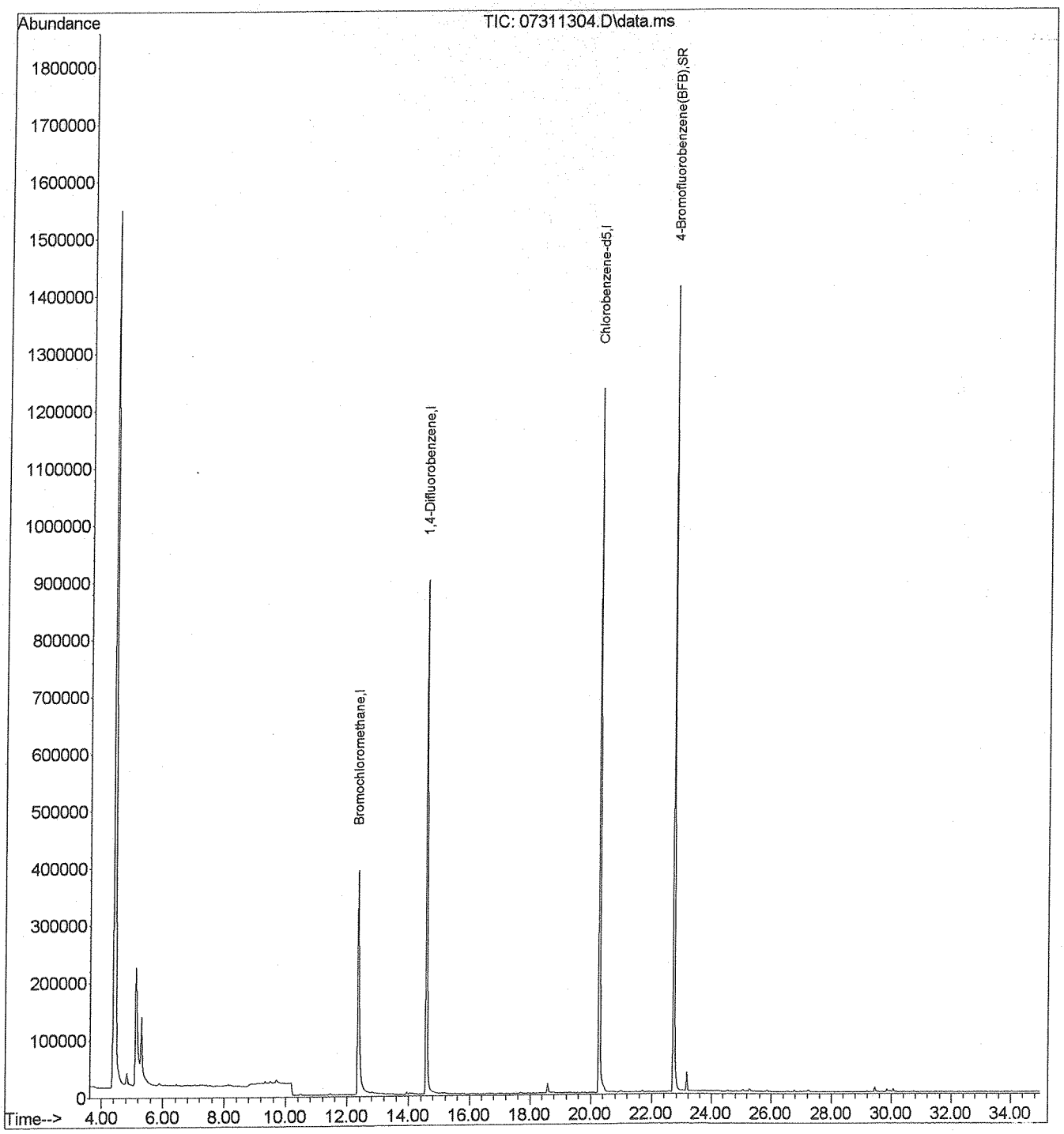
| Compound | R.T. | QIon | Response | Conc Units Dev(Min) |
|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.814 | 72 | 224 | N.D. |
| 34) 1,2-Dichloroethane | 0.000 | | 0 | N.D. |
| 35) 1,1,1-Trichloroethane | 0.000 | | 0 | N.D. |
| 37) Benzene | 0.000 | | 0 | N.D. d |
| 38) CarbonTetrachloride | 0.000 | | 0 | N.D. |
| 39) Cyclohexane | 0.000 | | 0 | N.D. |
| 40) 1,2-Dichloropropane | 15.399 | 63 | 123 | N.D. |
| 41) Bromodichloromethane | 0.000 | | 0 | N.D. |
| 42) 1,4-Dioxane | 0.000 | | 0 | N.D. |
| 43) Trichloroethene(TCE) | 0.000 | | 0 | N.D. |
| 44) 2,2,4-Trimethylpentane | 0.000 | | 0 | N.D. |
| 45) Heptane | 0.000 | | 0 | N.D. |
| 46) cis-1,3-Dichloropropene | 0.000 | | 0 | N.D. |
| 47) 4-Methyl-2-pentanone(M... | 0.000 | | 0 | N.D. |
| 48) trans-1,3-Dichloropropene | 0.000 | | 0 | N.D. |
| 49) 1,1,2-Trichloroethane | 0.000 | | 0 | N.D. |
| 50) Toluene | 17.700 | 91 | 2815 | N.D. |
| 51) 2-Hexanone(MBK) | 18.270 | 58 | 566 | N.D. |
| 52) Dibromochloromethane | 0.000 | | 0 | N.D. |
| 53) 1,2-Dibromoethane | 19.269 | 107 | 111 | N.D. |
| 54) Tetrachloroethene(PCE) | 0.000 | | 0 | N.D. |
| 56) Chlorobenzene | 20.356 | 114 | 579 | N.D. |
| 57) Ethylbenzene | 20.713 | 91 | 1548 | N.D. |
| 58) m&p-Xylene | 21.016 | 106 | 1057 | N.D. |
| 59) Bromoform | 21.837 | 173 | 162 | N.D. |
| 60) Styrene | 21.676 | 104 | 1272 | N.D. |
| 61) 1,1,2,2-Tetrachloroethane | 22.354 | 83 | 776 | N.D. |
| 62) o-Xylene | 21.694 | 91 | 898 | N.D. |
| 64) 4-Ethyltoluene | 23.691 | 120 | 514 | N.D. |
| 65) 1,3,5-Trimethylbenzene | 23.798 | 120 | 706 | N.D. |
| 66) 1,2,4-Trimethylbenzene | 24.547 | 120 | 690 | N.D. |
| 67) BenzylChloride(a-Chlor... | 25.189 | 91 | 1540 | N.D. |
| 68) 1,3-Dichlorobenzene | 25.064 | 146 | 3284 | N.D. |
| 69) 1,4-Dichlorobenzene | 0.000 | | 0 | N.D. d |
| 70) 1,2-Dichlorobenzene | 25.849 | 146 | 2467 | N.D. |
| 71) 1,2,4-Trichlorobenzene | 0.000 | | 0 | N.D. d |
| 72) Hexachlorobutadiene | 30.075 | 225 | 1699 | N.D. |

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311304.D
Acq On : 31 Jul 2013 9:55
Operator : JJG
Sample : TO15 MB 073113
Misc : IS/Surr: PS082212-01 + 500mL cc#000296
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 31 11:20:55 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311305.D
Acq On : 31 Jul 2013 10:44
Operator : JJG
Sample : 130986-64986 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 11:24:10 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 190674 | 10.00 ppbv | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1083357 | 10.00 ppbv | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 991462 | 10.00 ppbv | 0.00 |
| System Monitoring Compounds | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 578659 | 10.15 ppbv | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 101.50% | | |
| Target Compounds | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.836 | 51 | 8178 | 0.17 ppbv # | 94 |
| 3) Propene | 4.799 | 42 | 6144 | 0.42 ppbv | 90 |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 21394 | 0.31 ppbv | 99 |
| 5) Chloromethane | 5.306 | 52 | 2218 | 0.23 ppbv # | 1 |
| 6) Dichlorotetrafluoroethane | 5.342 | 135 | 245 | N.D. | |
| 7) VinylChloride | 0.000 | | 0 | N.D. | |
| 8) Methanol | 5.885 | 31 | 45238m | 3.91 ppbv | |
| 9) 1,3-Butadiene | 0.000 | | 0 | N.D. | |
| 10) Bromomethane | 0.000 | | 0 | N.D. d | |
| 11) Chloroethane | 0.000 | | 0 | N.D. d | |
| 12) Dichlorofluoromethane | 0.000 | | 0 | N.D. | |
| 13) Ethanol | 7.152 | 45 | 32411m | 2.54 ppbv | |
| 14) VinylBromide | 0.000 | | 0 | N.D. | |
| 15) Acetone | 8.002 | 58 | 34758m | 2.40 ppbv | |
| 16) Trichlorofluoromethane | 7.659 | 103 | 5651 | 0.14 ppbv # | 98 |
| 17) 2-Propanol(IPA) | 8.220 | 45 | 67528m | 1.45 ppbv | |
| 18) Acrylonitrile | 0.000 | | 0 | N.D. | |
| 19) 1,1-Dichloroethene | 0.000 | | 0 | N.D. | |
| 20) MethyleneChloride(DCM) | 0.000 | | 0 | N.D. d | |
| 21) AllylChloride | 0.000 | | 0 | N.D. d | |
| 22) CarbonDisulfide | 0.000 | | 0 | N.D. d | |
| 23) Trichlorotrifluoroethane | 0.000 | | 0 | N.D. d | |
| 24) trans-1,2-Dichloroethene | 0.000 | | 0 | N.D. | |
| 25) 1,1-Dichloroethane | 0.000 | | 0 | N.D. | |
| 26) MethylTertButylEther(M... | 0.000 | | 0 | N.D. | |
| 27) VinylAcetate | 10.888 | 43 | 3206 | N.D. | |
| 28) 2-Butanone(MEK) | 0.000 | | 0 | N.D. d | |
| 29) cis-1,2-Dichloroethene | 0.000 | | 0 | N.D. | |
| 30) Hexane | 11.458 | 86 | 1612 | 0.27 ppbv | 85 |
| 31) Chloroform | 12.493 | 83 | 5352 | 0.09 ppbv # | 87 |
| 32) EthylAcetate | 12.118 | 43 | 2071 | N.D. | |



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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311305.D
Acq On : 31 Jul 2013 10:44
Operator : JJG
Sample : 130986-64986 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 11:24:10 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

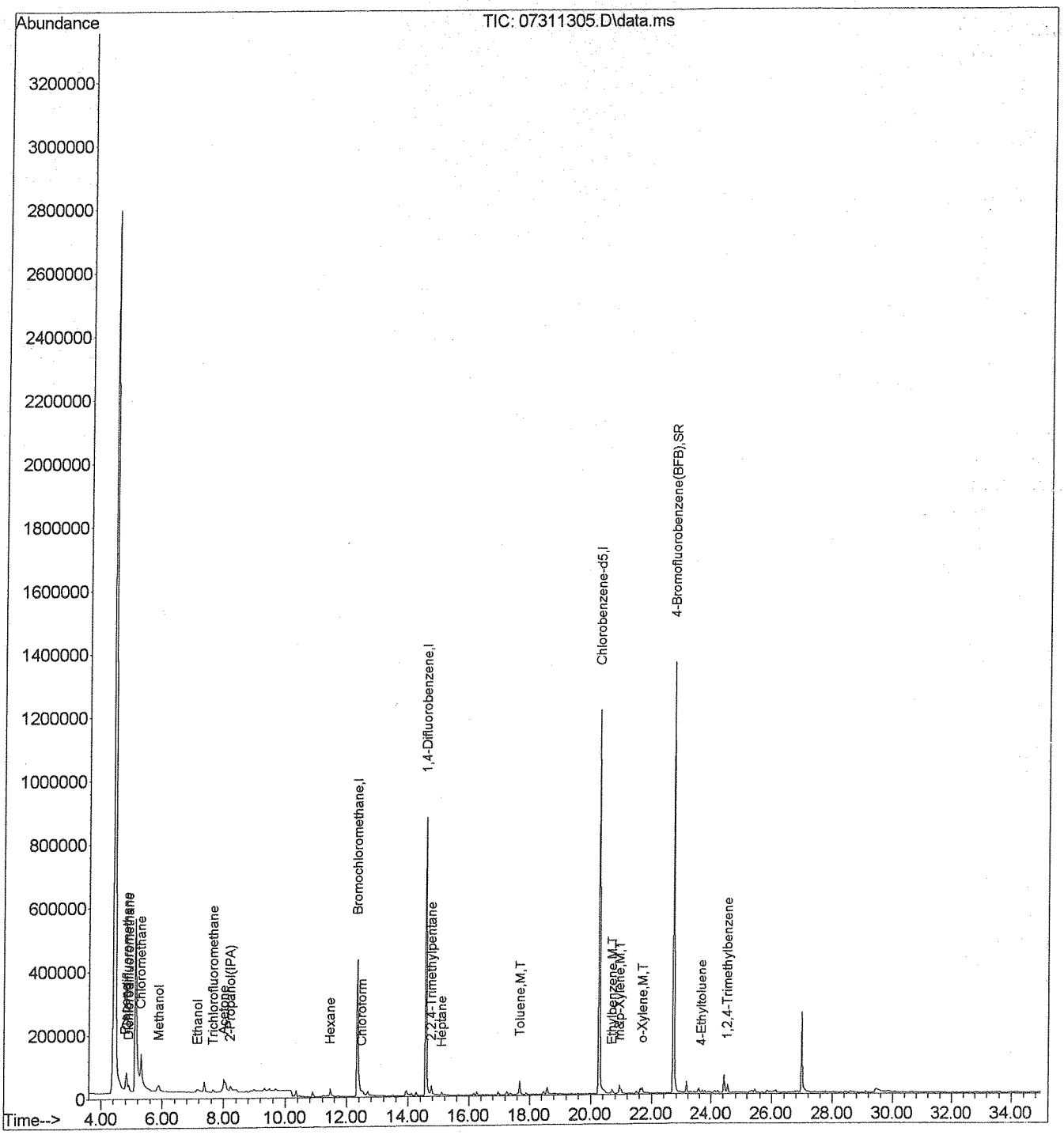
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.778 | 72 | 365 | N.D. | |
| 34) 1,2-Dichloroethane | 0.000 | | 0 | N.D. | |
| 35) 1,1,1-Trichloroethane | 0.000 | | 0 | N.D. | |
| 37) Benzene | 0.000 | | 0 | N.D. d | |
| 38) CarbonTetrachloride | 0.000 | | 0 | N.D. d | |
| 39) Cyclohexane | 0.000 | | 0 | N.D. d | |
| 40) 1,2-Dichloropropane | 15.399 | 63 | 256 | N.D. | |
| 41) Bromodichloromethane | 0.000 | | 0 | N.D. | |
| 42) 1,4-Dioxane | 0.000 | | 0 | N.D. | |
| 43) Trichloroethene(TCE) | 0.000 | | 0 | N.D. | |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 33444 | 0.18 ppbv | 98 |
| 45) Heptane | 15.096 | 71 | 2598 | 0.08 ppbv # | 91 |
| 46) cis-1,3-Dichloropropene | 0.000 | | 0 | N.D. | |
| 47) 4-Methyl-2-pentanone(M... | 0.000 | | 0 | N.D. | |
| 48) trans-1,3-Dichloropropene | 17.664 | 75 | 406 | N.D. | |
| 49) 1,1,2-Trichloroethane | 0.000 | | 0 | N.D. | |
| 50) Toluene | 17.682 | 91 | 49347 | 0.44 ppbv | 98 |
| 51) 2-Hexanone(MBK) | 18.270 | 58 | 124 | N.D. | |
| 52) Dibromochloromethane | 19.019 | 129 | 307 | N.D. | |
| 53) 1,2-Dibromoethane | 0.000 | | 0 | N.D. | |
| 54) Tetrachloroethene(PCE) | 19.019 | 166 | 336 | N.D. | |
| 56) Chlorobenzene | 20.356 | 114 | 172 | N.D. | |
| 57) Ethylbenzene | 20.695 | 91 | 14059 | 0.10 ppbv # | 92 |
| 58) m&p-Xylene | 20.945 | 106 | 16198 | 0.31 ppbv # | 88 |
| 59) Bromoform | 0.000 | | 0 | N.D. | |
| 60) Styrene | 21.658 | 104 | 1434 | N.D. | |
| 61) 1,1,2,2-Tetrachloroethane | 22.336 | 83 | 117 | N.D. | |
| 62) o-Xylene | 21.694 | 91 | 13379 | 0.12 ppbv # | 97 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 2166 | 0.05 ppbv # | 76 |
| 65) 1,3,5-Trimethylbenzene | 0.000 | | 0 | N.D. d | |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 9743 | 0.16 ppbv | 99 |
| 67) BenzylChloride(a-Chlor... | 25.171 | 91 | 439 | N.D. | |
| 68) 1,3-Dichlorobenzene | 25.046 | 146 | 961 | N.D. | |
| 69) 1,4-Dichlorobenzene | 25.278 | 146 | 2494 | N.D. | |
| 70) 1,2-Dichlorobenzene | 25.849 | 146 | 1087 | N.D. | |
| 71) 1,2,4-Trichlorobenzene | 29.451 | 180 | 2172 | N.D. | |
| 72) Hexachlorobutadiene | 30.075 | 225 | 640 | N.D. | |

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311305.D
Acq On : 31 Jul 2013 10:44
Operator : JJG
Sample : 130986-64986 x1
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 11:24:10 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311306.D
Acq On : 31 Jul 2013 11:32
Operator : JJG
Sample : 130986-64986 x1 dp
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 12:42:12 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Bromochloromethane | 12.350 | 128 | 189331 | 10.00 ppbv | 0.00 |
| 36) 1,4-Difluorobenzene | 14.579 | 114 | 1062465 | 10.00 ppbv | 0.00 |
| 55) Chlorobenzene-d5 | 20.267 | 117 | 978380 | 10.00 ppbv | 0.00 |
| System Monitoring Compounds | | | | | |
| 63) 4-Bromofluorobenzene(BFB) | 22.710 | 174 | 575898 | 10.24 ppbv | 0.00 |
| Spiked Amount 10.000 | | | Recovery = 102.40% | | |
| Target Compounds | | | | | Qvalue |
| 2) Chlorodifluoromethane | 4.817 | 51 | 7898 | 0.16 ppbv # | 98 |
| 3) Propene | 4.799 | 42 | 6116 | 0.42 ppbv | 88 |
| 4) Dichlorodifluoromethane | 4.908 | 85 | 22075 | 0.32 ppbv | 98 |
| 5) Chloromethane | 5.288 | 52 | 1946 | 0.21 ppbv # | 6 |
| 6) Dichlorotetrafluoroethane | 5.324 | 135 | 333 | N.D. | |
| 7) VinylChloride | 0.000 | | 0 | N.D. | |
| 8) Methanol | 5.885 | 31 | 45126 | 3.93 ppbv | |
| 9) 1,3-Butadiene | 0.000 | | 0 | N.D. | |
| 10) Bromomethane | 0.000 | | 0 | N.D. d | |
| 11) Chloroethane | 0.000 | | 0 | N.D. d | |
| 12) Dichlorofluoromethane | 0.000 | | 0 | N.D. | |
| 13) Ethanol | 7.134 | 45 | 32306 | 2.55 ppbv | |
| 14) VinylBromide | 0.000 | | 0 | N.D. | |
| 15) Acetone | 8.002 | 58 | 34532 | 2.40 ppbv | |
| 16) Trichlorofluoromethane | 7.658 | 103 | 5678 | 0.15 ppbv # | 98 |
| 17) 2-Propanol(IPA) | 8.219 | 45 | 67863 | 1.47 ppbv | |
| 18) Acrylonitrile | 0.000 | | 0 | N.D. | |
| 19) 1,1-Dichloroethene | 0.000 | | 0 | N.D. | |
| 20) MethyleneChloride(DCM) | 0.000 | | 0 | N.D. d | |
| 21) AllylChloride | 9.323 | 39 | 662 | N.D. | |
| 22) CarbonDisulfide | 0.000 | | 0 | N.D. d | |
| 23) Trichlorotrifluoroethane | 0.000 | | 0 | N.D. d | |
| 24) trans-1,2-Dichloroethene | 0.000 | | 0 | N.D. | |
| 25) 1,1-Dichloroethane | 0.000 | | 0 | N.D. | |
| 26) MethylTertButylEther(M... | 0.000 | | 0 | N.D. | |
| 27) VinylAcetate | 10.888 | 43 | 3434 | N.D. | |
| 28) 2-Butanone(MEK) | 0.000 | | 0 | N.D. d | |
| 29) cis-1,2-Dichloroethene | 0.000 | | 0 | N.D. | |
| 30) Hexane | 11.458 | 86 | 1648 | 0.28 ppbv | 80 |
| 31) Chloroform | 12.493 | 83 | 5615 | 0.10 ppbv # | 92 |
| 32) EthylAcetate | 0.000 | | 0 | N.D. d | |

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311306.D
Acq On : 31 Jul 2013 11:32
Operator : JJG
Sample : 130986-64986 x1 dp
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 12:42:12 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 33) Tetrahydrofuran | 12.796 | 72 | 381 | N.D. | |
| 34) 1,2-Dichloroethane | 0.000 | | 0 | N.D. | |
| 35) 1,1,1-Trichloroethane | 0.000 | | 0 | N.D. | |
| 37) Benzene | 0.000 | | 0 | N.D. d | |
| 38) CarbonTetrachloride | 0.000 | | 0 | N.D. d | |
| 39) Cyclohexane | 0.000 | | 0 | N.D. d | |
| 40) 1,2-Dichloropropane | 15.328 | 63 | 348 | N.D. | |
| 41) Bromodichloromethane | 0.000 | | 0 | N.D. | |
| 42) 1,4-Dioxane | 0.000 | | 0 | N.D. | |
| 43) Trichloroethene(TCE) | 0.000 | | 0 | N.D. | |
| 44) 2,2,4-Trimethylpentane | 14.757 | 57 | 32502 | 0.18 ppbv | 98 |
| 45) Heptane | 15.096 | 71 | 2559 | 0.09 ppbv # | 91 |
| 46) cis-1,3-Dichloropropene | 0.000 | | 0 | N.D. | |
| 47) 4-Methyl-2-pentanone(M... | 0.000 | | 0 | N.D. | |
| 48) trans-1,3-Dichloropropene | 17.682 | 75 | 274 | N.D. | |
| 49) 1,1,2-Trichloroethane | 0.000 | | 0 | N.D. | |
| 50) Toluene | 17.682 | 91 | 49046 | 0.44 ppbv | 98 |
| 51) 2-Hexanone(MBK) | 0.000 | | 0 | N.D. | |
| 52) Dibromochloromethane | 19.001 | 129 | 295 | N.D. | |
| 53) 1,2-Dibromoethane | 0.000 | | 0 | N.D. | |
| 54) Tetrachloroethene(PCE) | 19.019 | 166 | 330 | N.D. | |
| 56) Chlorobenzene | 20.267 | 114 | 485 | N.D. | |
| 57) Ethylbenzene | 20.695 | 91 | 13825 | 0.10 ppbv | 96 |
| 58) m&p-Xylene | 20.945 | 106 | 15410 | 0.30 ppbv # | 87 |
| 59) Bromoform | 0.000 | | 0 | N.D. | |
| 60) Styrene | 21.658 | 104 | 1185 | N.D. | |
| 61) 1,1,2,2-Tetrachloroethane | 0.000 | | 0 | N.D. | |
| 62) o-Xylene | 21.694 | 91 | 13092 | 0.12 ppbv # | 96 |
| 64) 4-Ethyltoluene | 23.673 | 120 | 2165 | 0.05 ppbv # | 95 |
| 65) 1,3,5-Trimethylbenzene | 23.780 | 120 | 2413 | N.D. | |
| 66) 1,2,4-Trimethylbenzene | 24.529 | 120 | 9285 | 0.16 ppbv | 98 |
| 67) BenzylChloride(a-Chlor... | 25.189 | 91 | 109 | N.D. | |
| 68) 1,3-Dichlorobenzene | 25.064 | 146 | 607 | N.D. | |
| 69) 1,4-Dichlorobenzene | 25.278 | 146 | 2001 | N.D. | |
| 70) 1,2-Dichlorobenzene | 25.849 | 146 | 591 | N.D. | |
| 71) 1,2,4-Trichlorobenzene | 29.451 | 180 | 1153 | N.D. | |
| 72) Hexachlorobutadiene | 30.075 | 225 | 256 | N.D. | |

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

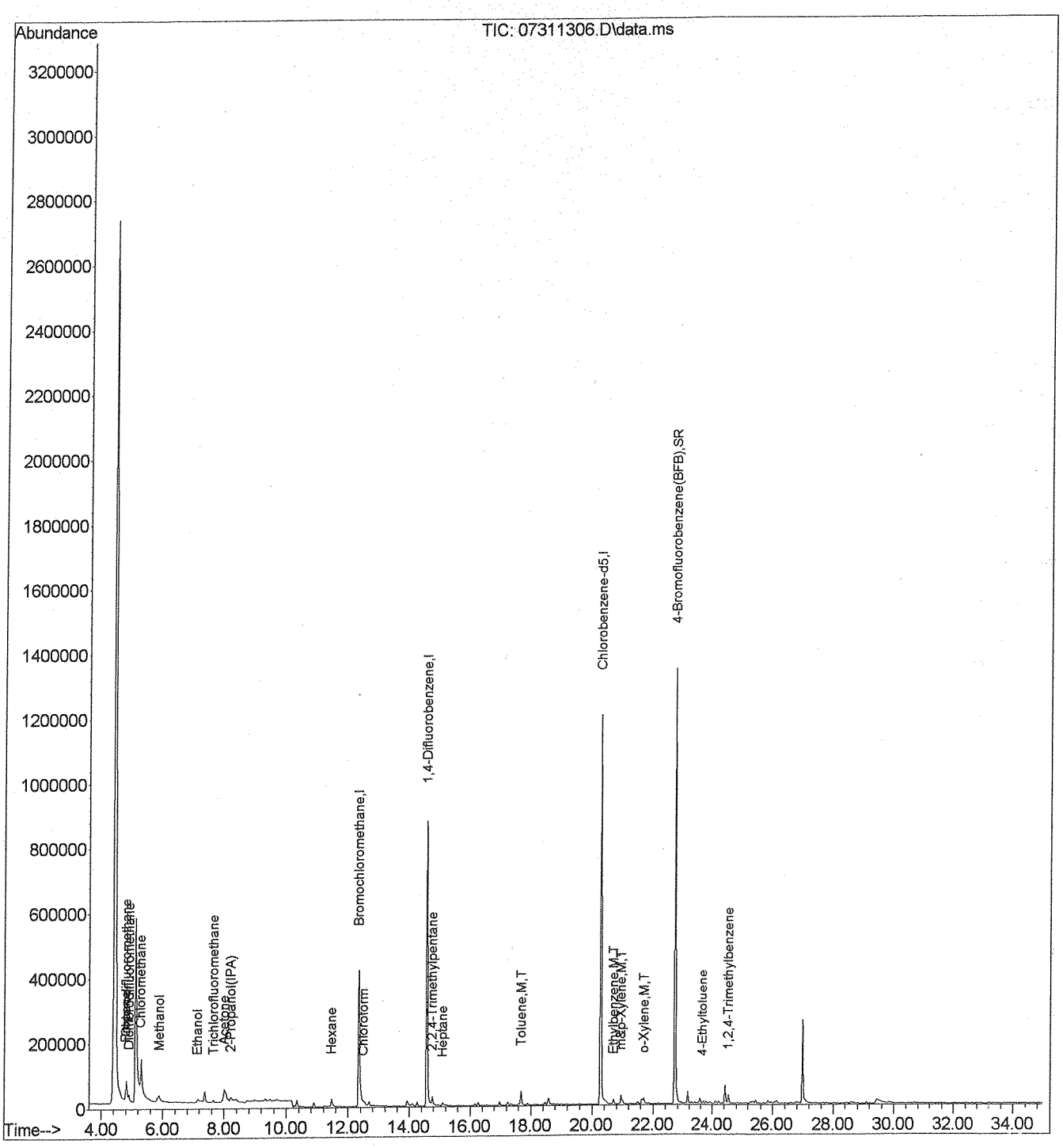


8/31/13

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\MS03\2013\073113\
Data File : 07311306.D
Acq On : 31 Jul 2013 11:32
Operator : JJG
Sample : 130986-64986 x1 dp
Misc : IS/Surr: PS082212-01 + 500mL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 31 12:42:12 2013
Quant Method : C:\msdchem\1\METHODS\2013\072213.M
Quant Title : TO-15/TO-14
QLast Update : Tue Jul 23 12:50:49 2013
Response via : Initial Calibration






07/31/13

Calibration Status Report MS03 Enhanced

Method Path : C:\msdchem\1\METHODS\2013\
Method File : 072213.M
Title : TO-15/TO-14
Last Update : Tue Jul 23 12:38:41 2013
Response Via : Initial Calibration

| # | ID | Conc | ISTD Conc | Path\File |
|---|---|---|---|---|
| 1 | 0.5 | 1 | 10 | C:\msdchem\1\MS03\2013\072213\07221327.D |
| 2 | 1.0 | 1 | 10 | C:\msdchem\1\MS03\2013\072213\07221326.D |
| 3 | 2.0 | 2 | 10 | C:\msdchem\1\MS03\2013\072213\07221325.D |
| 4 | 5.0 | 5 | 10 | C:\msdchem\1\MS03\2013\072213\07221324.D |
| 5 | 10 | 10 | 10 | C:\msdchem\1\MS03\2013\072213\07221323.D |
| 6 | 20 | 20 | 10 | C:\msdchem\1\MS03\2013\072213\07221322.D |
| 7 | 50 | 51 | 10 | C:\msdchem\1\MS03\2013\072213\07221321.D |

| # | ID | Update Time | Quant Time | Acquisition Time |
|---|---|---|---|---|
| 1 | 0.5 | Jul 23 09:46 2013 | Jul 23 09:05 2013 | 23 Jul 2013 6:08 |
| 2 | 1.0 | Jul 23 09:46 2013 | Jul 23 09:02 2013 | 23 Jul 2013 5:21 |
| 3 | 2.0 | Jul 23 09:46 2013 | Jul 23 08:56 2013 | 23 Jul 2013 4:33 |
| 4 | 5.0 | Jul 23 09:45 2013 | Jul 23 08:53 2013 | 23 Jul 2013 3:45 |
| 5 | 10 | Jul 23 09:45 2013 | Jul 23 08:51 2013 | 23 Jul 2013 2:57 |
| 6 | 20 | Jul 23 09:45 2013 | Jul 23 08:48 2013 | 23 Jul 2013 2:09 |
| 7 | 50 | Jul 23 09:44 2013 | Jul 23 08:45 2013 | 23 Jul 2013 1:21 |

072213.M Tue Jul 23 12:40:08 2013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# Response Factor Report MS03 Enhanced

Method Path : C:\msdchem\1\METHODS\2013\
Method File : 072213.M
Title : TO-15/TO-14
Last Update : Tue Jul 23 12:50:49 2013
Response Via : Initial Calibration



Calibration Files
0.5 =07221327.D 1.0 =07221326.D 2.0 =07221325.D 5.0 =07221324.D 10 =07221323.D 20 =07221322.D
50 =07221321.D

| | | Compound | 0.5 | 1.0 | 2.0 | 5.0 | 10 | 20 | 50 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | Bromochloromethane | ISTD | | | | | | | | |
| 2) | | Chlorodifluoro... | 2.952 | 2.719 | 2.720 | 2.599 | 2.471 | 2.310 | 2.156 | 2.561 | 10.57 |
| 3) | | Propene | 0.814 | 0.743 | 0.820 | 0.802 | 0.755 | 0.763 | 0.727 | 0.775 | 4.74 |
| 4) | | Dichlorodifluo... | 4.148 | 3.728 | 3.871 | 3.688 | 3.495 | 3.251 | 3.053 | 3.605 | 10.31 |
| 5) | | Chloromethane | 0.674 | 0.529 | 0.574 | 0.494 | 0.458 | 0.415 | 0.334 | 0.497 | 22.24 |
| 6) | | Dichlorotetraf... | 2.427 | 2.214 | 2.351 | 2.209 | 2.106 | 1.936 | 1.751 | 2.142 | 10.98 |
| 7) | | VinylChloride | 1.683 | 1.535 | 1.640 | 1.564 | 1.507 | 1.399 | 1.332 | 1.523 | 8.19 |
| 8) | | Methanol | | 1.022 | 0.934 | 0.765 | 0.706 | 0.628 | 0.597 | 0.775 | 21.89 |
| 9) | | 1,3-Butadiene | 1.114 | 1.036 | 1.097 | 1.063 | 1.045 | 0.935 | 0.813 | 1.015 | 10.44 |
| 10) | | Bromomethane | 1.291 | 1.082 | 1.098 | 1.045 | 0.973 | 0.880 | 0.756 | 1.018 | 16.80 |
| 11) | | Chloroethane | 0.227 | 0.230 | 0.232 | 0.229 | 0.222 | 0.210 | 0.209 | 0.223 | 4.38 |
| 12) | | Dichlorofluoro... | 3.326 | 3.078 | 3.179 | 2.973 | 2.867 | 2.682 | 2.505 | 2.944 | 9.68 |
| 13) | | Ethanol | 0.733 | 0.689 | 0.652 | 0.772 | 0.690 | 0.612 | 0.543 | 0.670 | 11.40 |
| 14) | | VinylBromide | 1.079 | 1.057 | 1.127 | 1.110 | 1.080 | 1.015 | 0.965 | 1.062 | 5.28 |
| 15) | | Acetone | 1.060 | 0.846 | 0.781 | 0.699 | 0.679 | 0.640 | 0.608 | 0.759 | 20.53 |
| 16) | | Trichlorofluor... | 2.286 | 2.161 | 2.184 | 2.085 | 2.036 | 1.886 | 1.737 | 2.054 | 9.16 |
| 17) | | 2-Propanol(IPA) | 3.119 | 2.473 | 2.598 | 2.550 | 2.369 | 2.106 | 1.869 | 2.440 | 16.23 |
| 18) | | Acrylonitrile | 1.219 | 1.170 | 1.268 | 1.135 | 1.125 | 1.039 | 0.868 | 1.118 | 11.81 |
| 19) | M,T | 1,1-Dichloroet... | 1.345 | 1.306 | 1.308 | 1.264 | 1.165 | 1.021 | 0.947 | 1.194 | 13.02 |
| 20) | M,T | MethyleneChlor... | 1.534 | 1.330 | 1.307 | 1.223 | 1.173 | 1.061 | 0.987 | 1.231 | 14.82 |
| 21) | | AllylChloride | 1.657 | 1.353 | 1.313 | 1.281 | 1.157 | 1.017 | 1.011 | 1.256 | 17.84 |
| 22) | | CarbonDisulfide | 5.264 | 4.508 | 4.405 | 4.060 | 3.861 | 3.478 | 3.439 | 4.145 | 15.52 |
| 23) | | Trichlorotrifl... | 1.998 | 1.892 | 1.886 | 1.743 | 1.645 | 1.491 | 1.242 | 1.699 | 15.54 |
| 24) | | trans-1,2-Dich... | 1.471 | 1.451 | 1.461 | 1.391 | 1.320 | 1.241 | 1.135 | 1.353 | 9.43 |
| 25) | | 1,1-Dichloroet... | 3.654 | 3.319 | 3.417 | 3.155 | 2.942 | 2.692 | 2.400 | 3.083 | 14.13 |
| 26) | | MethylTertButy... | 3.919 | 3.680 | 3.710 | 3.558 | 3.256 | 2.857 | 2.405 | 3.341 | 16.17 |
| 27) | | VinylAcetate | 5.168 | 4.915 | 5.159 | 4.848 | 4.602 | 4.189 | 3.580 | 4.637 | 12.43 |
| 28) | | 2-Butanone(MEK) | 0.710 | 0.699 | 0.735 | 0.741 | 0.714 | 0.678 | 0.631 | 0.701 | 5.34 |



7/24/13

Method Path : C:\msdchem\1\METHODS\2013\
Method File : 072213.M
Title : TO-15/TO-14

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29) | | cis-1,2-Dichlo... | 1.634 | 1.584 | 1.572 | 1.509 | 1.454 | 1.363 | 1.289 | 1.486 | 8.44 |
| 30) | | Hexane | 0.370 | 0.338 | 0.332 | 0.315 | 0.303 | 0.261 | 0.240 | 0.309 | 14.59 |
| 31) | | Chloroform | 3.448 | 3.182 | 3.244 | 3.085 | 3.007 | 2.759 | 2.509 | 3.034 | 10.36 |
| 32) | | EthylAcetate | 4.276 | 4.147 | 4.376 | 4.275 | 3.968 | 3.679 | 3.189 | 3.987 | 10.62 |
| 33) | | Tetrahydrofuran | 0.825 | 0.736 | 0.758 | 0.723 | 0.690 | 0.651 | 0.587 | 0.710 | 10.81 |
| 34) | | 1,2-Dichloroet... | 2.326 | 2.253 | 2.430 | 2.291 | 2.177 | 2.077 | 1.963 | 2.217 | 7.13 |
| 35) | | 1,1,1-Trichlor... | 3.599 | 3.382 | 3.447 | 3.239 | 3.063 | 2.801 | 2.576 | 3.158 | 11.63 |
| 36) | I | 1,4-Difluorobenzene | ----------ISTD---------- | | | | | | | | |
| 37) | T,M | Benzene | 1.065 | 0.986 | 0.941 | 0.901 | 0.833 | 0.755 | 0.647 | 0.875 | 16.28 |
| 38) | | CarbonTetrachl... | 0.677 | 0.646 | 0.646 | 0.609 | 0.568 | 0.523 | 0.453 | 0.589 | 13.49 |
| 39) | | Cyclohexane | 0.161 | 0.151 | 0.147 | 0.135 | 0.127 | 0.116 | 0.103 | 0.134 | 15.23 |
| 40) | | 1,2-Dichloropr... | 0.469 | 0.427 | 0.398 | 0.388 | 0.361 | 0.335 | 0.300 | 0.383 | 14.81 |
| 41) | | Bromodichlorom... | 0.472 | 0.453 | 0.457 | 0.436 | 0.413 | 0.380 | 0.343 | 0.422 | 11.00 |
| 42) | | 1,4-Dioxane | 0.235 | 0.225 | 0.221 | 0.211 | 0.200 | 0.190 | 0.176 | 0.208 | 9.97 |
| 43) | M,T | Trichloroethen... | 0.410 | 0.384 | 0.375 | 0.367 | 0.344 | 0.331 | 0.289 | 0.357 | 11.09 |
| 44) | | 2,2,4-Trimethy... | 2.025 | 1.899 | 1.819 | 1.732 | 1.628 | 1.485 | 1.217 | 1.686 | 16.14 |
| 45) | | Heptane | 0.331 | 0.309 | 0.298 | 0.286 | 0.275 | 0.258 | 0.226 | 0.283 | 12.22 |
| 46) | | cis-1,3-Dichlo... | 0.538 | 0.531 | 0.513 | 0.508 | 0.490 | 0.455 | 0.417 | 0.493 | 8.81 |
| 47) | | 4-Methyl-2-pen... | 0.365 | 0.363 | 0.369 | 0.359 | 0.349 | 0.321 | 0.284 | 0.344 | 8.99 |
| 48) | | trans-1,3-Dich... | 0.538 | 0.527 | 0.521 | 0.493 | 0.471 | 0.463 | 0.430 | 0.492 | 7.97 |
| 49) | | 1,1,2-Trichlor... | 0.434 | 0.410 | 0.399 | 0.373 | 0.354 | 0.328 | 0.293 | 0.370 | 13.26 |
| 50) | M,T | Toluene | 1.219 | 1.151 | 1.141 | 1.056 | 0.996 | 0.904 | 0.802 | 1.038 | 14.28 |
| 51) | | 2-Hexanone(MBK) | 0.439 | 0.458 | 0.470 | 0.446 | 0.429 | 0.400 | 0.357 | 0.428 | 9.03 |
| 52) | | Dibromochlorom... | 0.667 | 0.662 | 0.659 | 0.642 | 0.606 | 0.575 | 0.489 | 0.614 | 10.55 |
| 53) | | 1,2-Dibromoethane | 0.619 | 0.623 | 0.619 | 0.586 | 0.558 | 0.519 | 0.461 | 0.569 | 10.77 |
| 54) | M,T | Tetrachloroeth... | 0.554 | 0.525 | 0.513 | 0.482 | 0.456 | 0.421 | 0.370 | 0.474 | 13.45 |
| 55) | I | Chlorobenzene-d5 | ----------ISTD---------- | | | | | | | | |
| 56) | M,T | Chlorobenzene | 0.296 | 0.300 | 0.279 | 0.262 | 0.261 | 0.246 | 0.215 | 0.265 | 11.14 |
| 57) | M,T | Ethylbenzene | 1.632 | 1.611 | 1.568 | 1.425 | 1.409 | 1.223 | 1.054 | 1.418 | 15.13 |
| 58) | M,T | m&p-Xylene | 0.633 | 0.598 | 0.574 | 0.540 | 0.512 | 0.474 | 0.406 | 0.534 | 14.48 |
| 59) | | Bromoform | 0.749 | 0.738 | 0.739 | 0.693 | 0.687 | 0.618 | 0.527 | 0.679 | 11.88 |
| 60) | | Styrene | 0.925 | 0.921 | 0.903 | 0.869 | 0.866 | 0.789 | 0.720 | 0.856 | 8.86 |
| 61) | | 1,1,2,2-Tetrac... | 1.044 | 1.040 | 0.970 | 0.903 | 0.876 | 0.782 | 0.627 | 0.892 | 16.75 |
| 62) | M,T | o-Xylene | 1.340 | 1.255 | 1.190 | 1.103 | 1.066 | 0.948 | 0.817 | 1.103 | 16.29 |
| 63) | SR | 4-Bromofluorob... | 0.577 | 0.582 | 0.569 | 0.554 | 0.582 | 0.571 | 0.588 | 0.575 | 1.94 |
| 64) | | 4-Ethyltoluene | 0.498 | 0.492 | 0.467 | 0.443 | 0.444 | 0.398 | 0.337 | 0.434 | 11.81 |

Method Path : C:\msdchem\1\METHODS\2013\
Method File : 072213.M
Title : TO-15/TO-14

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 65) | 1,3,5-Trimethy... | 0.684 | 0.705 | 0.681 | 0.623 | 0.612 | 0.544 | 0.471 | 0.617 | 13.72 |
| 66) | 1,2,4-Trimethy... | 0.658 | 0.673 | 0.669 | 0.623 | 0.606 | 0.566 | 0.464 | 0.609 | 12.23 |
| 67) | BenzylChloride... | 0.807 | 0.959 | 0.986 | 1.063 | 1.081 | 1.090 | 0.999 | 0.998 | 9.82 |
| 68) | 1,3-Dichlorobe... | 0.934 | 0.964 | 0.956 | 0.916 | 0.912 | 0.825 | 0.715 | 0.889 | 10.05 |
| 69) | 1,4-Dichlorobe... | 1.028 | 1.004 | 0.965 | 0.900 | 0.871 | 0.796 | 0.698 | 0.895 | 13.19 |
| 70) | 1,2-Dichlorobe... | 1.100 | 1.065 | 1.010 | 0.920 | 0.894 | 0.828 | 0.706 | 0.932 | 14.85 |
| 71) | 1,2,4-Trichlor... | 0.899 | 0.951 | 0.942 | 0.935 | 0.909 | 0.843 | 0.691 | 0.881 | 10.39 |
| 72) | Hexachlorobuta... | 0.762 | 0.771 | 0.750 | 0.699 | 0.696 | 0.622 | 0.500 | 0.686 | 14.06 |

(#) = Out of Range





07/24/13